

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner

v.

VEVEO, INC.
Patent Owner

Patent No. 7,937,394

Filing Date: August 2, 2010

Issue Date: May 3, 2011

Title: METHOD AND SYSTEM FOR DYAMICALLY PROCESSING
AMBIGUOUS, REDUCED TEXT SEARCH QUERIES AND HIGHLIGHTING
RESULTS THEREOF

Inter Partes Review No.: IPR2019-00291

Declaration of Carrie Gardner, Ph.D.

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I, Carrie Gardner, hereby declare under penalty of perjury:

I. INTRODUCTION

1. I have personal knowledge of the facts and opinions set forth in this declaration, I believe them to be true, and if called upon to do so, I would testify competently to them. I have been warned that willful false statements and the like are punishable by fine or imprisonment, or both.

2. I have extensive experience in the field of library and information science. I have taught library and information science courses for San Jose State University since 2002. I was an assistant professor at the Catholic University of America and for the Pennsylvania State System of Higher Education. I have been the principal consultant at Clairmaxine Consulting since 1991. I have delivered over 200 speeches, lectures, workshops and classes on aspects of information authenticity, information flow in our society, intellectual property, and confidentiality with regards to information access.

3. I have been retained by Banner & Witcoff, Ltd., to authenticate and establish the dates of public accessibility of certain documents in an *inter partes* review proceeding for U.S. Patent No. 7,937,394. For this service, I am being paid my usual hourly fee of \$150/hour. My compensation in no way depends on the substance of my testimony or the outcome of this proceeding.

II. BACKGROUND AND QUALIFICATIONS

4. My educational history is as follows:

- 2001: Doctor of Philosophy in Library Science, University of Pittsburgh. Dissertation: Conflict Resolution Behaviors among Stakeholders in Developing and Implementing Internet Use Policies in Pennsylvania Public High Schools.
- 2014: Master of Education (Reading), Edinboro University of Pennsylvania
- 2004: Master of Education (Administration), Temple University.
- 1993: Master of Library Science, University of Pittsburgh.
- 1990: Bachelor of Science, Education and Library Science, Millersville University of Pennsylvania. Magna Cum Laude.

5. My employment history is as follows:

- Principal Consultant, Clairmaxine, 1991-Present.
- Assistant Professor, Pennsylvania State System of Higher Education, 2007-2012.
- Assistant Professor, School of Library and Information Science, Catholic University of America. 2003-2007;
- Coordinator, Library Media Services, Milton Hershey School. 1999-2003;
- Library Media Specialist, Milton Hershey School. 1996-1999;
- Teaching Fellow, University of Pittsburgh 1993-1995;
- Graduate Student Assistant, University of Pittsburgh. 1992-1993;
- Library Media Specialist, Palmyra School District. 1990-1992; and

- Student Retrospective Conversion Cataloger, Millersville University. 1987-1990.

6. In the course of my twenty seven years of academic life, I have myself been an active researcher and librarian. I have collaborated with dozens of individual researchers and worked to provide information to over five thousand patrons. During the course of this work I have developed and maintained expert skills in information management and retrieval.

7. Appendix A is my full resume.

III. PRELIMINARIES

8. *Scope of this declaration.* I am not a lawyer and I am not rendering an opinion on the legal question of whether any particular document is, or is not, a “printed publication” under the law.

9. I am, however, rendering my expert opinion on the authenticity of the documents referenced herein and on when and how each of these documents was disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, could have located the documents.

10. *Materials considered.* In forming the opinions expressed in this declaration, I have reviewed the documents and attachments referenced herein. These materials are records created in the ordinary course of business by businesses, publishers, libraries, indexing services, and others. From my years of

experience, I am familiar with the process for creating many of these records, and I know these records are created by people with knowledge of the information in the record. Further, these records are created with the expectation that researchers and other members of the public will use them. All materials cited in this declaration and its attachments are of a type that experts in my field would reasonably rely upon and refer to in forming their opinions.

IV. OPINIONS REGARDING DOCUMENT 1

Document 1: Nokia 3220 User Manual—Appendix C to Exhibit 1114 in IPR2019-00291.

1. Authentication

11. Document 1 is a user guide for a Nokia 3220 cellular telephone. Page iii of Document 1 (as shown below) indicates that the document was printed in Canada in September of 2004. Document 1 also indicates that it was copyrighted by Nokia in 2004. In addition, absent the cover page and Appendices to Document 1, the bottom of each page, including the final page, indicates a notice of “Copyright © 2004 Nokia”. Finally, the last page also includes a notation of “09/04” in the lower left corner, indicating a date stamp of September 2004, which matches the same information shown on page iii (as shown below). The consistency of these dates suggests authenticity to me.

LEGAL INFORMATION

Part No. 9232826. Issue No. 1

Copyright © 2004 Nokia. All rights reserved.

Nokia, Nokia Connecting People, the Nokia Original Enhancements logos, Nokia 3220, Xpress-on, and Pop-Port are trademarks or registered trademarks of Nokia Corporation. All other product and company names mentioned herein may be trademarks or tradenames of their respective owners.

Printed in Canada, September 2004

US Patent No 5818437, 5953541, 6011554, and other pending patents.

T9 text input software Copyright ©1999-2004. Tegic Communications, Inc.

All rights reserved.

Figure 1—Excerpt from Page iii of Document 1

12. Attachment 1a is a true and correct copy of Document 1 (along with the volume cover, inside cover, editorial and other information page, and contents pages) obtained from an online repository for product manuals¹.

13. Attachment 1a is in a condition that creates no suspicion about its authenticity. Specifically, attachment 1a is not missing any intermediate pages of the manual's text, the text on each page appears to flow seamlessly from one page to the next, and there are no visible alterations to the document. Attachment 1a was found within an online repository for product manuals – a place where, if authentic, it would likely be found.

14. Document 1 is also readily available via other online avenues. For instance, attachment 1b is a true and correct copy of Document 1 that was

¹ Obtained, on November 11, 2018, at

<https://www.manualslib.com/manual/299865/Nokia-3220.html>

obtained from the website of a cellular service provider². In my opinion, attachment 1b is the same document as Document 1.

15. Attachment 1b is in a condition that creates no suspicion about its authenticity. Specifically, attachment 1b is not missing any intermediate pages of the manual's text, the text on each page appears to flow seamlessly from one page to the next, and there are no visible alterations to the document. Further, the website of a cellular service provider is also a place where, if authentic, Document 1 would likely be found.

16. I have examined the copies of Document 1 in attachments 1a and 1b and find them to be the substantively the same document. It is my opinion that attachments 1a and 1b are authentic copies of Document 1.

17. I conclude, based on finding multiple, virtually identical copies of Document 1 online at multiple websites, that Document 1 is authentic.

2. Public Accessibility

18. In order to discover the date the Nokia 3220 was released to the public, I entered "Nokia 3220 Press Release" into the search engine at Google.com. The first search result was an entry from the Securities and

² Obtained, on November 11, 2018, at

https://www.wireless.att.com/download/phone_manual/nokia_3220.pdf

Exchange Commission³ for a Form 6-K, which included a press release by Nokia concerning the phone on May 31, 2004. The press release indicates, “With a burst of rhythmic, flashing lights, the Nokia 3220 camera phone, signaled its arrival – and an innovative way to communicate with friends in a crowd. Unveiled today at Nokia Totally Board in Thessaloniki, Greece, the Nokia 3220 is highlighted by transparent Nokia Xpress-On™ grips, which pulsate with light effects to indicate calls, messages, and in sync with the beat of ringtones.” I then visited www.phonearena.com, which stated that the phone was announced on May 31, 2004. Based on the information from these two websites, I concluded that it was likely that the Nokia 3220 was publicly released in 2004.

19. As I noted above, page iii of Document 1 indicates that it was printed in Canada in September of 2004. As the world wide web became ubiquitous, in addition to providing hard copies of user manuals to consumers, companies also placed manuals online and directed consumers to their websites to retrieve the manuals. This appears to have been the case for Document 1.

³ Obtained, in August 25, 2017, at

https://www.sec.gov/Archives/edgar/data/924613/000110465904015952/a04-6593_16k.htm (attached as Appendix B).

20. Document 1 was found on publicly accessible websites.

Google.com is the most used search engine in the United States and a highly respected search engine throughout the world.

21. I began by learning that the Nokia 3220 was introduced to the market in 2004. In order to discover publicly accessible websites where copies of Document 1 are located and were located in 2004, I went to Google.com and completed a search for “Nokia 3220 manual”. After Google.com displayed search results for “Nokia 3220 manual”, I clicked on the “tools” button in the web browser user interface. This resulted in Google.com allowing me to run a more detailed query involving dates. I selected a date range of 2002 to 2006. The year 2002 was selected because it is before the known date of introduction. The search results show that a copy of Document 1 was available on publicly accessible websites as early as September 15, 2004 at

https://www.wireless.att.com/download/phone_manual/nokia_3220.pdf.

22. For instance, the image below is an excerpt of a screenshot taken from a Google.com search. It indicates a date of September 15, 2004 (highlighted with the red box around it.)

[PDF] Nokia 3220 phone at a glance

https://www.wireless.att.com/download/phone_manual/nokia_3220.pdf ▼

Sep 15, 2004 - The information in this user guide was written for the Nokia 3220 phone. Nokia operates instructions for their use and explain what charges will apply.

Figure 2—Excerpt of Screenshot from Internet Search Results

23. According to the Google Search Help, this date in Google indicates the date it was published. It is my opinion that the date indicates that this copy of Document 1 was publicly available by September 15, 2004.

24. In view of the foregoing, it is my opinion that Document 1 was available to the public as early as September 15, 2004.

3. Conclusions Regarding Authenticity and Public Accessibility

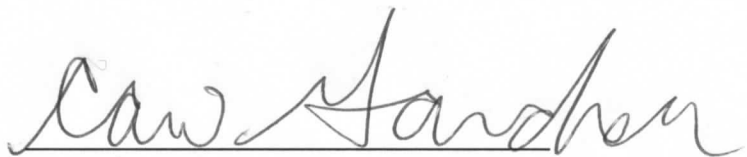
25. Based on the evidence presented here—publication on publicly accessible websites—**it is my opinion that Document 1 is an authentic document that was publicly available by at least September 15, 2004.**

V. CONCLUSION

26. I reserve the right to supplement my opinions in the future to respond to any arguments that Patent Owner or its expert(s) may raise and to take into account new information as it becomes available to me.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 11th day of November, 2018 in Bowie Maryland

A handwritten signature in cursive script, appearing to read "Carrie Gardner", written over a horizontal line.

Carrie Gardner

Appendix A

Carrie Gardner Ph.D.

P.O. Box 1
Bowie Maryland 20719
Cell: 717-329-4159
carrie.gardner@gmail.com

Education

Doctor of Philosophy in Library Science
University of Pittsburgh 2001
Dissertation: *Conflict Resolution Behaviors among Stakeholders in
Developing and Implementing Internet Use Policies in Pennsylvania
Public High Schools.*

Master of Education, Reading 2014
Edinboro University of Pennsylvania

Master of Education, Educational Administration 2004
Temple University

Master of Library Science 1993
University of Pittsburgh

Bachelor of Science, Education and Library Science 1990
Millersville University of Pennsylvania. Magna Cum Laude

Teaching Certifications

Pennsylvania
*Instructional II Library Science
*K-12 Principal

Maryland
*Library Science K-12
*Reading
*Administration

Employment

Clairmaxine Consulting 1991-Present
Senior Consultant

Pennsylvania State System of Higher Education 2007-2012

*Assistant Professor, Department of Library Science,
Clarion University, Clarion Pennsylvania. 2010-2012*

*Assistant Professor, Department of Library Science and Instructional
Technology, Kutztown University of Pennsylvania,
Kutztown Pennsylvania, 2007-2010*

*Assistant Professor, School of Library and Information Science
Catholic University of America, Washington, D.C.* 2003-2007

*Coordinator, Library Media Services
Milton Hershey School, Hershey PA*

**Supervisor of 2 professionals, 3 para-professionals and
approximately 40 hours of part-time employees* 1999-2003

*Library Media Specialist
Milton Hershey School, Hershey PA* 1996-1999

*Teaching Fellow
University of Pittsburgh, Pittsburgh PA* 1993-1995

*Graduate Student Assistant
University of Pittsburgh, Pittsburgh PA* 1992-1993

*Library Media Specialist
Palmyra School District, Palmyra, NJ* 1990-1992

*Student Retrospective Conversion Cataloger
Millersville University* 1987-1990

San Jose State University Online Teaching

*100% Online Intellectual Freedom Seminar
Every Fall Semester 2002-2017, Summer Semesters 2006 and 2007*

Mansfield University of Pennsylvania Online Teaching

*100% Online Access and Legal Issues in the Information Age
Summer 2001, Spring 2002, Summer 2002, Fall 2002, Summer 2003, Summer 2004,
Fall 2004, Spring 2005*

The University of Pittsburgh Teaching Experiences

Integrating the Internet into the K-12 Curriculum Summer 2000

Integrating the Internet into the K-12 Curriculum Summer 1998

*Two course sections via Distance Education: Intellectual
Freedom in the Electronic Age and Integrating the*

<i>Internet in the K-12 Environment</i>	<i>Fall 1997</i>
<i>Integrating the Internet into the K-12 Curriculum</i>	
<i>Internet Issues: Developing Policies and Procedures</i>	
<i>Using the Internet: Getting Started</i>	<i>Summer 1997</i>
<i>Integrating the Internet into K-12 Curriculum</i>	
<i>Internet Issues: Developing Policies and Procedures</i>	<i>Summer 1996</i>
<i>Using the Internet: Getting Started</i>	
<i>Using the Internet: Beyond the Basics</i>	
<i>Integrating the Internet into the K-12 Curriculum</i>	
<i>Co-Instructor:</i>	
<i>Internet Issues: Developing Policies and Procedures</i>	
<i>How to Connect to the Internet</i>	<i>Summer 1995</i>
<i>Co-Instructor</i>	
<i>Using the Internet: Getting Started</i>	
<i>Using the Internet: Beyond the Basics</i>	<i>Summer 1994</i>
<i>Co-Instructor</i>	
<i>Using the Internet: Getting Started</i>	
<i>Using the Internet: Beyond the Basics</i>	<i>Summer 1993</i>

Funded Projects

<i>Funded: \$400,000 IMLS Grant</i>	<i>2007</i>
-------------------------------------	-------------

Publication Advisory Board

<i>Teacher Librarian</i>	<i>2003-Present</i>
<i>Current Studies in Librarianship, Clarion University</i>	<i>2005-Present</i>

Publications

Book Chapters

Tales out of School: Developing Professional Dispositions. Gail Bush and Jamie Biles Jones, editor. Libraries Unlimited, 2009.

Ethics and Intellectual Freedom in Ethics in School Librarianship: A Reader. Carol Simpson, editor, Linworth Publishing, 2003.

Student Learning: Linking Research and Practice. with A. James Jones. In *Learning and Libraries in an Information Age: Principals and Practice.* Barbara K. Stripling, editor, Libraries Unlimited, 1999.

Thomas Jefferson and Intellectual Freedom. In *Speaking Out! Voices in Celebration of*

Intellectual Freedom. Ann K. Symons and Sally G. Reed, editors, ALA Editions, 1999.

Can Intellectual Freedom Survive the Information Age? with Gordon M. Conable in *Creating the Future: Essays on Librarianship in an Age of Great Change.* Sally G. Reed, editor. McFarland & Co. 1996.

Journal Articles

"What is the Library Bill of Rights and Why Should I Care?" *Learning and Media*, Fall 2001 vol. 29, number 4. p. 6.

"On the Firing Line." *Learning and Media*, Fall 2001 vol. 29, number 4, p. 7.

"To Government Regulations Be True." *Educational Leadership*, December 2001 vol. 59, number 4. p. 33.

"What is the Library Bill of Rights and Why Should I Care?" *Learning and Media*, Fall 2001 vol. 29. Issue 4, p. 6.

"On the Firing Line." *Learning and Media*, Fall 2001 vol. 29. Issue 4, p.7.

"Trainer's Forum: Surfing the Net with Kids." *Families Helping Families*, Summer 2000, vol. 19. Issue 3, p. 10-11.

"Conference Call: Children's Access: Protection or Preparation?." *American Libraries*, November 1999, p. 59.

"The Power of Information." *Learning and Media*, Summer 1999, p.4.

"The Importance of Libraries." *Lebanon Daily News*, January 15, 1999, Education Section p.1

"Out on a Limb." *Learning and Media*, Spring 1995, vol. 23, no. 2, p. 25.

"What Can the Intellectual Freedom Committee Do For You?" *Learning and Media*, Winter 1995, vol. 23, no. 1, p. 28.

"Twenty-third Annual International Association of School Librarianship Conference: Pittsburgh USA." *IASL Newsletter*, April 1994, vol. 23, no. 2, p.1.

____Margaret Tassia. "Outstanding Contribution: Dr. Blanche Woolls." *Learning and Media*, Summer/Fall 1993, vol. 21, no. 3. p. 11-12.

____Maria Spiros Joseph and Cindy Backes. "Of Note." *Learning and Media*, Fall 1992, vol. 20, no. 4, p. 8.

"National Library Week in the Bag!" *Learning and Media*, Winter 1992, vol. 20, no. 1, p. 5.

Column Editorships

School Library Media Quarterly

Reviews and News Column Editor 1993-1996

Professional Update Column Editor 1994-1996

Technology Update Column Editor 1995-1996

Presentations

Invited: March 28, 2017. Copyright and Digital Rights Management: Everything You Didn't Know You Wanted to Know. I-LEAD Program, Harrisburg, Pennsylvania.

Invited: March 28, 2017. Privacy and Confidentiality. I-LEAD Program, Harrisburg, Pennsylvania.

Invited: November 10, 2016. Controversial Issues: Patron Confidentiality, Privacy, Copyright and Digital Rights Management. Uniontown Public Library, Uniontown Pennsylvania.

Invited: November 10, 2016. Controversial Issues: Patron Confidentiality, Privacy, Copyright and Digital Rights Management. Citizens Library, Washington, Pennsylvania.

Invited: March 11, 2013. Intellectual Freedom. University of Maryland Class of Dr. Mary Edsall.

Invited: June 1, 2012. Intellectual Freedom and Privacy. Washington County District Library Meeting. Washington, Pennsylvania.

Invited: Week of September 6, 2011. Online Discussion regarding Intellectual Freedom. Young Adult Library Services Division of the American Library Association.

Invited: August 18, 2011. An End to Copyright Confusion! Montgomery County Public Schools. Gaithersburg, Maryland.

Invited: July 7, 2011. Safe Schools in This Electronic Age. ULSTER BOCES. New Paltz, New York.

Invited: June 18, 2011. Who Needs Friends? Creating and Maintaining Friends Groups for your Public Library! Scranton, Pennsylvania.

Juried: February 14, 2011. AUP's: It's a Mad, Mad, Mad, Mad World! PETE & C Conference. Hershey Pennsylvania.

Invited: November 16, 2010. Intellectual Freedom and Young Adult Literature. Online Sessions via Wimba for Dr. Andrea Miller. Clarion University. Clarion, Pennsylvania.

Invited: November 18, 2010. Library Ethics 101. Eastern Shore Librarians. Denton, Maryland.

Invited: November 4, 2010. Intellectual Freedom and Privacy. Johnstown District Meeting. Johnstown, Pennsylvania.

Invited: October 21, 2010. Intellectual Freedom. University of Maryland Student Group Meeting. College Park, Maryland.

Invited: June 27, 2010. Self Censorship. (co-presenter). American Library Association, Washington D.C.

Invited: May 21, 2010 Sex, Lies and Facebook. Southwestern Association of Pennsylvania Librarians Association, Greensburg, Pennsylvania.

Invited: April 23, 2010 Everything You always wanted to know about Intellectual Freedom. Southeastern Pennsylvania Library Association. Valley Forge, Pennsylvania

Invited: April 21, 2010 Privacy! Maryland Library Association Pre-conference. Ocean City, Maryland.

Invited: April 16, 2010 Dirty Little Secret: Self-Censorship in Libraries. Texas Library Association. San Antonio, Texas.

Juried: Nov. 7, 2009 Banned Books in 2009. American Association of School Librarians Conference. Charlotte, North Carolina.

Juried: Nov. 7, 2009 Rev up your AUP! American Association of School Librarians Conference. Charlotte, North Carolina.

Invited: Nov. 13, 2009 Loose Lips Violate State Law! Southwestern Pennsylvania Librarians Association. Greensburg, Pennsylvania.

Invited: May 15, 2009. Protecting Patron Privacy: It's the Law! Maryland Library Association. Ocean City, Maryland.

Invited: May 6, 2009. Cooperative Collection Development. Berks County Librarians. Reading, Pennsylvania.

Juried: May 1, 2009. Intellectual Freedom Basics. Pennsylvania School Librarians

Association Annual Conference. State College, Pennsylvania.

Invited: April 2, 2009. Sex, Drugs and Rock and Roll: Intellectual Freedom in 2009. Bucks County Library Association, Levittown, Pennsylvania.

Juried: March 31, 2009. Improve Internet Access Through Your AUP. Internet@Schools East. Arlington, Virginia.

Invited: March 6, 2009. Copyright Basics for Educators. Kutztown School District, Kutztown, Pennsylvania.

Invited: November 4, 2008. Hot Topics for Librarians! Chester County Intermediate Unit In-Service program. With Eloise Long. Downingtown, Pennsylvania.

Invited: October 20, 2008. Harmful to Minors? The Rights of Youth to Access Library Materials. Maryland Library Association Workshop. Boonsboro, Maryland.

Invited: October 13, 2008. Copyright for Educators. In-service Presentation. Pennsylvania Intermediate Unit 8. Sommerset, Pennsylvania

Substitute for Judith Krug October 7, 2008. Intellectual Freedom and Libraries. Arkansas Library Association, Bentonville, Arkansas

Juried: August 7, 2008. Acceptable Use Policy Language: Impact on Student Use of Information. International Association of School Librarians Annual Conference. Berkeley, California.

Juried: August 3, 2008. Acceptable Use Policies: Is Yours Ready for Web 2.0? International Association of School Librarians Annual Conference. Berkeley, California.

Invited: July 24, 2008. Intellectual Freedom and Privacy. Vermont Library Association Workshop, Burlington Vermont.

Invited: July 11, 2008. Updating Your Acceptable Use Policies. Intermediate Eight Summer Workshop. State College, Pennsylvania.

Invited: April 21, 2008. Legislating Away Intellectual Freedom. Oklahoma Library Association, Annual Conference. Tulsa, Oklahoma.

Invited: February 22, 2008. Intellectual Freedom. University of Washington Class Session. Via Skype.

Invited: February 8, 2008. Copyright for Educators. West Chester BOCES. In-service Program. Elmsford, New York.

Juried: January 9, 2008. What does civic librarianship have to do with today? ALISE Annual Conference. Philadelphia, Pennsylvania.

Invited: November 28, 2007. Intellectual Freedom in 2007. Berks County School Librarians Fall Meeting. Topton, Pennsylvania.

Invited: November 6, 2007. Intellectual Freedom for School Librarians. Chester County Common In-service. Malvern, Pennsylvania.

Invited: November 6, 2007. Patron Privacy in School Libraries. Chester County In-service. Malvern, Pennsylvania.

Invited: October 29, 2007. Intellectual Freedom in America. Parkland Community Library, Allentown, Pennsylvania.

Juried: October 27, 2007. Sticky Issues: Labels on Resources. American Association of School Librarians National Conference. Reno, Nevada.

Juried: October 26, 2007. Is there a Book Challenge in your future? With Barbara Stripling and Helen Adams. American Association of School Librarians National Conference. Reno, Nevada.

Invited: October 1, 2007. Harmful to Minors? The Rights of Youth Access to Library Materials.. Maryland Library Association, Odenton Maryland.

Invited: August 7, 2007. Intellectual Freedom for Librarians. District Meeting. Williamsport, Pennsylvania.

Invited: July 20, 2007. Safe Computing Town Hall Open House. U.S. Capital Building, Washington D.C.

Invited: June 25, 2007. A Sticky Issue: Is Labeling a Form of Censorship? ALA Annual Conference. Washington D.C.

Invited: June 21, 2007. Keynote Address. Intellectual Freedom. ALA Intellectual Freedom Round Table Preconference. Washington, D.C.

Invited: May 2, 2007. Can the KKK Meet in the Library? Maryland Library Association Annual Conference. Ocean City, Maryland

Invited: May 2, 2007. What is this Filth? Maryland Library Association Annual Conference. Ocean City, Maryland.

Invited: April 12, 2007 Intellectual Freedom 2007. District Workshop, Citizens Library. Washington, Pennsylvania.

Invited: March 6, 2007. Intellectual Freedom for Youth. Oklahoma Library Association Workshop. Oklahoma City, Oklahoma.

Invited: February 1, 2007. Copyright for Educators. Millersville University, Millersville, Pennsylvania.

Invited: November 8, 2006. Intellectual Freedom. State Library of Pennsylvania Workshop. Pittsburgh, Pennsylvania.

Invited: October 31, 2006. Intellectual Freedom. State Library of Pennsylvania Workshop. Harrisburg, Pennsylvania.

Juried: October 27, 2006. Intellectual Freedom Basics. Virginia Educational Media Association. Hampton Roads, Virginia.

Juried: October 27, 2006. Before the Censor Comes: Preparing Your Policies, Procedures, and Patience! Virginia Educational Media Association. Hampton Roads, Virginia.

Invited: October 11, 2006. Copyright for Law Librarians. Law Librarians of D.C. Group. Washington, D.C.

Invited: August 24, 2006. The USA Patriot Act. Scranton Multi-District Workshop. East Pittston, Pennsylvania.

Invited: August 16, 2006. Keeping Resources in your Collection. Henrico County Public Schools Librarians Conference, Henrico County, Virginia.

Invited: August 16, 2006. Keynote Address: Intellectual Freedom in 2006. Henrico County Public Schools Librarians Conference, Henrico County, Virginia.

Invited: May 18, 2006. Everything you need to Know about Copyright! Ulster BOCES. New Paltz, New York.

Juried: April 29, 2006. Patron Privacy in School Libraries. Virginia Educational Media Association, Potomac Region 2006 Regional Conference. Loudoun County Virginia.

Juried: April 29, 2006. Copyright Basics. Virginia Educational Media Association, Potomac Region 2006 Regional Conference. Loudoun County Virginia.

Invited: March 17, 2006. Facilitated Meeting on the possible combination of a public high

school library and public library. York, Pennsylvania.

Juried: January 17, 2006. Where all the Students are above average? Co presenter with Kathy Latrobe, June Lester and Sydney Pierce. Association of Library and Information Science Educators Annual Conference, San Antonio, Texas.

Invited Presentation: October 29, 2005. Selection/Reconsideration Policy Check-Up! New York Library Association. Buffalo, New York.

Invited: October 29, 2005. Exploring Aspects of Intellectual Freedom. New York Library Association Annual Conference. Buffalo New York.

Invited: July 12, 2005. Copyrights and Copywrongs. New York Library Association Workshop. Central New York.

Invited: September 27, 2005. WREC Radio Station.. Banned Book Week Interview. Station from Memphis Tennessee.

Juried: September 25, 2005. Communicating an Intellectual Freedom Message. Pennsylvania Librarians Association Annual Conference, Hershey, Pennsylvania.

Invited: September 21, 2005. Teaching for Understanding. Catholic University of America Library Employees Special Session. Washington, D.C.

Invited: July 12, 2005. Copyright for Everyone. Regional Workshop. Middletown, New York.

Juried: April 30, 2005. Power up Privacy in Pennsylvania School Libraries. Pennsylvania School Librarians Association Annual Conference. Hershey, Pennsylvania.

Invited: March 22, 2005. Intellectual Freedom. Young Adult Resources Class at the University of Pittsburgh, School of Information Sciences. Pittsburgh, Pennsylvania.

Invited: October 25, 2004. Copyright for Educators and Librarians. SPIES Consortium Meeting. Gettysburg, Pennsylvania.

Invited: October 25, 2004. Intellectual Freedom Update. SPIES Consortium Meeting. Gettysburg, Pennsylvania.

Invited: October 21, 2004. An Intellectual Freedom Primer. New York Library Association Annual Conference. Rochester, New York.

Invited: October 20, 2004. Copyrights and Copywrongs: Copyright Basics for All

Librarians. All Day pre-conference. New York Library Association Annual Conference. Rochester, New York.

Juried: October 14, 2004 Before the Censor Comes: Preparing Your Policies, Procedures and Patience. Maryland Educational Media Organization. Ellicott City, Maryland.

Juried: September 26, 2004. Intellectual Freedom Update 2004. Pennsylvania Library Association. Valley Forge, Pennsylvania.

Juried: September 26, 2004. Radio Frequency Identification (RFID) Tags and Libraries: Curse or Cure? . Pennsylvania Library Association. Valley Forge, Pennsylvania.

Invited: August 31, 2004. The Power of School Librarianship. Loudoun County Public Schools Staff Development Day. Leesburg, Virginia.

Invited: August 25, 2004. School Library Update. Moon Township School District Staff Development Day. Moon Township, Pennsylvania.

Invited: June 28, 2004. Youth Privacy Matters: Practical Approaches to Implementation. American Library Association Annual Conference. Orlando, Florida.

Juried: June 18, 2004. The Reading Role of the School Librarian. With Blanche Woolls, Ph.D. International Association of School Librarianship. Dublin, Ireland.

Juried: May 1, 2004. Intellectual Freedom Update. Pennsylvania School Librarians Association Annual Conference. Hershey, Pennsylvania.

Invited: March 28, 2004. Looking Forward. Alaska Library Association. Fairbanks, Alaska.

Invited: March 27, 2004. Privacy in Libraries: Policies, Practices and Pitfalls. Alaska Library Association. Fairbanks, Alaska.

Juried: February 2004. Student's Secrets, Your Data and the USA Patriot Act. Pennsylvania Educational Technology Expo and Conference. Hershey, Pennsylvania.

Invited: December 12, 2003. Copyright Compliance for Health Care Workers. The Nursing Teaching Staff Inservice Day at Reading Hospital. Reading, Pennsylvania.

Invited: December 1, 2003. The Censorship of the book: Invisible Man. Mike Romig Show on KDKA Radio. Pittsburgh, Pennsylvania.

Juried: October 24, 2003. Intellectual Freedom Matters. American Association of School Librarians. Kansas City, Missouri.

Juried: October 24, 2003. Patron Privacy Matters. American Association of School Librarians. Kansas City, Missouri.

Invited: October 16, 2003. USA Patriot Act Debate with TIME Magazine Person of the Year Coleen Rowley, FBI Agent. South Dakota Library Association. Sioux Falls, South Dakota.

Invited: January 20, 2002. School Librarians' Toolkit: How to Update your Library Program. Moon Area School District Librarians Meeting. Moon, Pennsylvania.

Invited: November 14 2002. Plagiarism and School Students Today. Lancaster-Lebanon Library Association. Lancaster, Pennsylvania.

Juried: November 13, 2002. The USA Patriot Act and it's impact on Libraries. Pennsylvania Library Association. Hershey, Pennsylvania.

Invited: November 11, 2002. The USA Patriot Act and it's impact on Libraries. Lower Merion Library System. Bryn Mawr, Pennsylvania.

Invited: October 23, 2002. The USA Patriot Act and it's impact on Libraries. Lower Merion Library System, Norristown, Pennsylvania.

Invited: August 12, 2002. Staying Safe on the Internet: What do we teach the Students? Pennsylvania Middle School Association. Hershey, Pennsylvania.

Invited: May 21, 2002. An Intellectual Freedom Primer. Southern Nevada Librarians. Las Vegas, Nevada.

Invited: May 20, 2002. An Intellectual Freedom Primer. Northern Nevada Librarians. Reno, Nevada.

Invited: May 6, 2002. Children and Intellectual Freedom. Maine Library Association. Augusta, Maine.

Invited: May 2, 2002. Intellectual Freedom. Share Northwest School Librarians Group, Erie, Pennsylvania.

Juried: April 19, 2002. How Private is too Private? Computers, Freedom and Privacy National Conference. San Francisco, California.

Invited: March 14, 2002. CIPA, the USA PATRIOT Act and Other Irritants that Prevent You From Accessing Information. Clarion University. Clarion, Pennsylvania.

Invited: March 6, 2002. Intellectual Freedom and Christianity. Panel Discussion with Author Katherine Paterson. Messiah College, Grantham, Pennsylvania.

Juried: February 11, 2002. Right vs. Privilege: Student Internet Access. PETC Conference, Hershey, Pennsylvania.

Invited: January 3, 2002. Harry Potter: A Live Debate. Smart Talk Live, WITF Television. Harrisburg, Pennsylvania.

Invited: November 23, 2001. Intellectual Freedom Basics. The Keystone State Reading Association Annual Conference. Hershey, Pennsylvania.

Juried: November 16, 2001. Sex, Drugs, Rock and Roll and Filtering Software: Issues for School Library Media Centers. American Association of School Librarians National Conference. Indianapolis, Indiana.

Invited: November 5, 2001. Copyright in the Digital Age. Commonwealth Libraries Technology Conference. Grantville, Pennsylvania.

Invited: October 15, 2001. What is Intellectual Freedom? Marywood University Library School Class. Marywood University, Scranton Pennsylvania.

Invited: June 7, 2001. Filtering Software in School Libraries. Pennsylvania House Judicial Committee, Task Force on Internet Technology Law. Harrisburg, Pennsylvania.

Juried: April 28, 2001. Places I Never Meant to Be. Pennsylvania School Librarians Association. Hershey, Pennsylvania.

Invited: April 11, 2001. Privacy in the Digital Age. Indiana Federated Library Association. Indianapolis, Indiana.

Invited: April 11, 2001. To Filter or Not to Filter: A Live International Teleconference. Indiana Federated Library Association. Indianapolis, Indiana.

Invited: November 14, 2000. Educational Technology 2000 and Beyond. Penn State Harrisburg Class Session, Hershey, Pennsylvania.

Invited: October 18, 2000. All about Internet Filtering: A One-Day Pre-Conference. Iowa Library Association, Ames Iowa.

Invited: October 12, 2000. Children and the Internet: Safety First! Pennsylvania Foster Parents Association, Grantville, Pennsylvania.

Invited: September 14, 2000. Libraries and the Cyberage: Filtering, Censorship and the

First Amendment. Winthrop University, Rock Hill, South Carolina.

Invited: July 21, 2000 The Role of a School Library. Commission on Online Child Protection, Congressional Internet Caucus Advisory Committee, Richmond Virginia.

Invited: July 17, 2000. The Role of a School Library. For the National Academies Project: Tools and Strategies for Protecting Kids from Pornography and Their Applicability to Other Inappropriate Internet Content. Washington, D.C.

Invited: May 12, 2000. Burning Books and Cyberspace: Intellectual Freedom for 2000 and Beyond. University of Pittsburgh at Greensburg Children's Literature Conference, Greensburg, Pennsylvania.

Juried: May 5, 2000. Kids Have Rights and Librarians Have Ulcers: Internet Use Policies for 2000 and Beyond. Pennsylvania School Librarians Association Annual Conference, Hershey, Pennsylvania.

Juried: May 4, 2000. The Thought Processes used to build a library for the Third Millennium. Pennsylvania School Librarians Association Annual Conference, Hershey, Pennsylvania.

Juried: April 4, 2000. Here a Photocopy, There a Photocopy: Copyright Issues in the Digital Age. Pennsylvania Middle School Association State Conference, State College Pennsylvania.

Clarion University Service

- Chair, Faculty Search Committee 2010-2012
- Co-Advisor, Lambda Sigma Student Group 2010-2011
- Advisor, Lambda Sigma Student Group
- Co-Advisor, Student Pennsylvania Librarians. Assoc 2010-2011
- Member, Faculty Senate Subcommittee on Student Activities 2010-2011
- Organizer, Webinar September 28, 2010
- Co-Chair, Curriculum Committee **2010-2011**
- Member, M. Coffta's evaluation committee Fall 2010
- Chair, C. Rudowsky's evaluation committee Spring 2011
- Member, C. Nawalsky's evaluation committee Spring 2011
- Faculty Senate Subcommittee on Student Activities (remove - 2010-Present) (2010-2012)
- Middle States Taskforce #5: Faculty 2010-2011
- Member, Department NCATE Committee 2010-2011
- Member, Department Scholarship Committee 2010-2011

- Member, L. McColl's evaluation Committee Fall 2011
- Member, M. Marsteller's evaluation Committee Fall 2011

Kutztown University Service

- Co-Advisor, Alpha Beta Alpha Honor Fraternity 2007-2010
- Advisement Workshop October 10, 2007
- Guest Lecture: Intellectual Freedom and Ethics October 18, 2007
- Teen Library Day Committee (remove - 2007-Present) (2007-2010)
- Department Representative at Career Day February 7, 2008
- Workshop: Summarizing Data Using Excel Histograms February 26, 2008
- 3 Fall Open House Academic Marketplace Days 2007-2008
- It's Academic-University TV Show March 4, 2008
- DO-IT Online Course on Accommodating Students with Disabilities May 2008
- Personal Response System Workshop June 24, 2008
- P.E.T Committee: Nancy Latanision Fall 2008
- Department Representative to APSCUF (remove - Fall 2007-Present) (2007-2010)
- Faculty Search Committee Fall 2008
- P.E.T. Committee Spring 2009
 - Nancy Latanision
 - Gail Clifford
 - Joanne Beriswell Ph. D
 - Andrea Harmer Ph. D
 - Michelle Sims Ph. D
- P.E.T. Committee Spring 2010
 - Andrea Harmer Ph.D.
 - Michelle Sims Ph.D.
 - R. Kiker
 - Gail Clifford
 - Nancy Latanision

Catholic University of America Service

- Read Across America Coordinator Spring 2004
- Coordinator, School Library Media Program 2003-2007
- Failing Grades Committee 2004-2005
- AGLISS Student Group Advisor 2003-2005
- Middle States Commission on Higher Education Periodic Review Report 2004-2005
- Reviewed over 30 Admissions Files Summer 2004
- School Library Media Program Website Revision Summer 2004
- School of Library and Information Science Representative

<i>On the Council of Teacher Education</i>	2003-2007
• <i>Search Committee Chair (3 positions)</i>	December 2005-March 2006
• <i>ALA Accreditation Team</i>	2003-2007
• <i>Curriculum Committee</i>	2003-2007
• <i>Rovelstad Scholarship Committee</i>	2005-2007

Professional Associations

<u><i>American Library Association</i></u>	1990-Present
<i>President Ann K. Symons, Presidential Committee</i>	1998-99
<i>Co-Chair of the Presidents Education Strand</i>	1998-99
<i>Margaret Edwards Trust Pre-Conference Committee</i>	1999
<i>Election Task Force</i>	200-2009
<i>ALA Council</i>	2008-2011
<i>Special Committee on the Membership Meeting Quorum</i>	2001

American Library Association Intellectual Freedom Committee

<i>Sub-committee on Privacy Chair</i>	2008-2009
<i>Member</i>	1997-2001, 2004-2008, 2009-2011
<i>Sub-committee on Access to Electronic Networks</i>	1994-1996
<i>Intern</i>	1994-1997
<i>Sub-committee on Privacy</i>	1998-2011
<i>ALA Student to Conference Assigned to ALA Intellectual Freedom Committee</i>	1993

American Association of School Librarians

<i>Intellectual Freedom Committee</i>	1993-96, 1998-2002
<i>Legislation Committee</i>	1994-1998
<i>Chair, SIRS/AASL Intellectual Freedom Award Committee</i>	1994
<i>Intellectual Freedom Committee Chair</i>	1999-2001
<i>Treasurer</i>	2003-2004
<i>Vision Expansion Special Committee</i>	2003-2004
<i>ALA Planning and Budget Committee</i>	2003-2004
<i>Bylaws Committee</i>	2008-2010
<i>Nominating Committee</i>	2010-2011

American Library Association Intellectual Freedom Round Table

<i>Chair</i>	2001-2002 and 2011-2012
<i>Publications Committee Chair and Newsletter Editor</i>	1998-2000
<i>Publications Committee Co-Chair</i>	1996-1998
<i>Nominations Committee</i>	2004-2005
<i>Liaison to the American Library Association Intellectual Freedom Committee</i>	2003-2004

Nominating Committee Member	2005
Annual Conference Program Chair	2006-2009
Director	2008-2011
<u>Association for Library Service to Children</u>	
Intellectual Freedom Committee	1994-1998, 2007-2008
<u>ALISE</u>	
Member, Garfield Doctoral Dissertation Award Committee	2005
<u>Young Adult Library Services Association (YALSA)</u>	
Education Committee	1993-1998
YALSA Representative to the ALA Intellectual Freedom Committee	2011-2012
YALSA Representative to the Freedom to Read Foundation	2011-2012
YALSA Intellectual Freedom Co-Convener	2011-2012
<u>International Association of School Librarianship</u>	1992-Present
-- Newsletter Editor	1993-1994
--Local Arrangements Committee	1994 and 2008
--Treasurer Annual Conference	2008
<u>International Reading Association</u>	2011-Present
<u>Maryland Educational Media Organization</u>	2003-2007
<u>Pennsylvania Citizens for Better Libraries</u>	
Board Member	2003-Present
Annual Awards Luncheon Program Committee	2008
<u>Pennsylvania Library Association</u>	2000-Present
<u>Pennsylvania School Librarians Association</u>	1986-2010
Poster Session: TV! Friend or Foe?	1990
Chair, Intellectual Freedom Committee	1991-1992, 1994-2003
Co-Chair, Intellectual Freedom Committee	1992-1994
Moderator of two Intellectual Freedom Sessions	April 28 -29, 1994
Moderator of Winnebago Users Group Session	April 25, 1996
Moderator of three sessions	1997 Conference
Organizer of a 15 hour for credit course on Intellectual Freedom	1998 Conference
Web Page Development Team	1997-1998
Board of Directors	1998-2001
Moderator of two sessions	1999 Conference
Introduced Banquet Speaker Cynthia Voight,	1999 Banquet

<i>Moderator of a session</i>	<i>2000 Conference</i>
<i>Moderator of a session</i>	<i>2004 Conference</i>

<i><u>University of Pittsburgh, School of Information Sciences</u></i>	<i>2002-Present</i>
<i>School Library Certification Program Advisory Group</i>	

<i><u>Virginia Educational Media Association</u></i>	<i>2003-2007</i>
<i>Chair, Intellectual Freedom Committee</i>	<i>2005-2007</i>

<i><u>Information Futures Institute</u></i>	<i>2004-2008</i>
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<i><u>University of Pittsburgh School Library Program Advisory Group</u></i>	<i>2004-Present</i>
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<i><u>Freedom to Read Foundation</u></i>	<i>1993-Present</i>
<i>Conable Scholarship Committee</i>	<i>2008 - 2011</i>
<i>Board of Trustees</i>	<i>2008-2010</i>

Activities

Spring 2008. Read Laura Bush Improving Literacy Through School Libraries Grants.

July 30, 2007. Consultant for Institute of International Education, 2007 Educators to Saudi Arabia Project. Washington D.C.

Spring 2006. Consultant on School Library Formation at new K-12 Schools in the District of Columbia for the organization, Teaching for Change.

March 9-10, 2006. IMLS Laura Bush 21st Century Librarian Program Grant Reviewer. Washington D.C.

2002-Present. University of Pittsburgh School Library Media Program Advisory Group

2004-2006. University of Pittsburgh Group to Advise on the ALA COA Program Presentation.

October 30, 2002. Library Services and Construction Act Grant Reviewer, State Library of Pennsylvania. Harrisburg, Pennsylvania.

September, 1997. Middle States Evaluation Team, Notre Dame High School, East Stroudsburg, Pennsylvania.

March 7-8 , 1997 Organizer of the Pennsylvanians for Intellectual Freedom Statewide Conference, Hershey Pennsylvania.

October 20-23, 1996 Middle States Evaluation Team. St. Timothy School, Stevenson, Maryland.

April 24, 1996. Testified before the Pennsylvania Senate Judiciary Committee regarding House Bill 881 at the request of the Motion Picture Association of America and the American Library Association.

May 1995, Library Services and Construction Act Grant Reviewer, State Library of Pennsylvania. Harrisburg, Pennsylvania.

1994 American Library Association. Author of skit performed during a program sponsored by the American Library Association Committee on Professional Ethics.

1994 American Library Association Annual Conference. Conference: Assistant to Judith Krug and the Office for Intellectual Freedom Staff. Miami, Florida.

1993 American Library Association Annual Conference. University of Pittsburgh/American Library Association Student Representative to Conference. New Orleans, Louisiana.

Selected Seminars

<i>Quality Matters: Online Course Development and Delivery</i>	2010
<i>Milton Hershey School Adult Leadership Academy</i>	2000
<i>Dr. Stephen Covey, The Four Roles of a Leader</i>	2000
<i>Seven Habits of Highly Effective People</i>	1998
<i>Dale Carnegie</i>	1998

Honor Fraternities

<i>Beta Phi Mu</i>	1993-Present
<i>Phi Kappa Phi</i>	1990-Present

Awards

<i>Named one of the 103 Outstanding School Librarians in The Whole School Library Handbook by Blanche Woolls and David L. Loertscher</i>	2005
<i>The ALA Intellectual Freedom Roll of Honor</i>	1999
<i>The Pennsylvania School Librarians Association Student Award</i>	1993
<i>Who's Who Among Students in American Universities and Colleges</i>	1990
<i>The Arthur and Claribel Walker Gerhard Memorial Scholarship</i>	1990
<i>The Alpha Beta Alpha Award</i>	1990
<i>The Laura B. Doering Library Service Scholarship</i>	1989
<i>The Beatrice U. Datesman Senior Award</i>	1989
<i>The Class of 1927 Education Scholarship</i>	1988

Appendix B

6-K 1 a04-6593_16k.htm 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 6-K**Report of Foreign Private Issuer****Pursuant to Rule 13a -16 or 15d -16 of
the Securities Exchange Act of 1934****Report on Form 6-K dated June 1, 2004****Nokia Corporation****Nokia House
Keilalahdentie 4
02150 Espoo
Finland**

(Name and address of registrant's principal executive office)

(Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.)

Form 20-F ☒Form 40-F ☐

Enclosures:

Nokia Press Release, may 12, 2004

Nokia Announces Eight New N-Gage Titles for 2004 – 2005

Nokia Press Release, May 27, 2004

Nokia to expand Bharti's GSM/GPRS/EDGE networks in five circles in an approximately 275 million USD deal

Nokia Press Release, May 31, 2004

Nokia delivers GSM Radio Network enhancement to INDOSAT in Indonesia

Nokia Press Release, May 31, 2004

Nokia 3220 camera phone: Light Fever!**N-GAGE
NOKIA****Nokia Announces Eight New N-Gage Titles for 2004 – 2005****Expanding Games Portfolio with Range of Genres and Unique Features**

Los Angeles, May 11, 2004 – Nokia today announced eight new titles for its N-Gage platform. Ranging in genres from driving and sports to strategy and role-playing, these eight titles increase the N-Gage portfolio of offerings for customers, as well as show the advanced technology and benefits of the N-Gage Arena and mobile multiplayer features. The N-Gage Arena is the worldwide online community for mobile gamers in which members communicate and compete against one another across the globe. The eight new titles are: Civilization®, DRIV3RTM, FIFA 2005, King of Fighters, Glimmerati, Rifts, SSX Out of Bounds and Xanadu Next.

“The past six months have been a crucial time of education for Nokia – in terms of platform and content,” said Ilkka Raiskinen, Senior Vice President, Games Business Unit, Nokia. “As a result, we are amplifying our content by forming stronger relationships with industry publishers and independent game developers, as well as developing and publishing titles in-house. Our strong 2004-2005 line-up ranges in genres and offerings, and effectively shows the capabilities of mobile online technology and the N-Gage Arena.”

The new titles and details about the games were announced at a press conference held in Los Angeles earlier today.

- DRIV3R, the award-winning 3d action driving game from Atari.
- Civilization, Sid Meier’s strategy masterpiece from Atari.
- FIFA 2005, EA Sport’s most authentic soccer experience with special N-Gage features.
- SSX Out of Bounds, EA’s adrenaline-rushing fantasy snowboarding game with nine original tracks for the N-Gage platform
- Rifts, The highly acclaimed role-playing game from Kevin Siembieda keeps the Rifts experience and adds an original storyline, co-operative multiplayer features via Bluetooth, and head-to-head combat over N-Gage Arena.
- King of Fighters, The first N-Gage fighting game from Hudson Soft that lets gamers compete for the ultimate fighting title.
- Xanadu Next, the legendary role-playing game with 3D action from Falcom.
- Glimmerati, the ultimate glam driving experience from Nokia.

About N-Gage

The N-Gage game deck is an innovative mobile device that is creating an entirely new market for the games industry. Built for active gamers, the N-Gage platform is the first mobile and connected game deck to feature online high-quality 3D multiplayer gameplay over Bluetooth wireless technology and GPRS. The N-Gage device also offers unique online games services as well as a comprehensive and growing games catalogue from the leading game publishers. Nokia is the world leader in mobile communications. Nokia and N-Gage are trademarks or registered trademarks of Nokia Corporation.

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www.n-gage.com/press
www.nokia.com

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**PRESS RELEASE**

May 27, 2004

Nokia to expand Bharti's GSM/GPRS/EDGE networks in five circles in an approximately 275 million USD deal**Deal includes multiyear service contract for managed services.**

Bharti Tele-Ventures, India's leading telecommunications conglomerate has chosen Nokia to expand its GSM/GPRS network in a deal worth approximately 275 million USD, projected for the next three years for the supply of equipment and managed services. Nokia will supply both core and GSM/EDGE radio network equipment to build or upgrade Bharti's networks in five "telecom circles" in a deal which includes the full management of Bharti's network by Nokia. Bharti currently serves more than seven million customers under the brand name AirTel.

Under a two-year agreement, Nokia will supply equipment to modernize AirTel's existing circles in Mumbai, Maharashtra (including Goa), and Gujarat. Nokia has not previously supplied networks to AirTel in these circles. In addition, Nokia will deploy new networks for AirTel in Bihar, Jharkhand, and Orissa states.

The deployment will boost network capacity up to five-fold, providing reduced congestion, seamless coverage and enhanced quality across the five circles, including the important commercial hubs of Mumbai, Maharashtra and Gujarat. As part of the contract, Nokia will continuously deliver equipment and services based on Bharti's capacity requirements, securing a cost-efficient rollout of on-demand capacity.

In addition, Nokia and Bharti have signed a three-year service contract for network deployment, maintenance and managed services in all five circles. As part of this contract, Bharti will outsource its network management and maintenance activities to Nokia, including the transfer of a number of Bharti employees.

"Our agreement with Nokia is a major step forward in aligning the interest of the operator and the vendor partner," said Mr. Manoj Kohli, President – Mobility, Bharti Tele- Ventures Ltd., announcing the initiative. "This shall enable us to have world class state of art network, wider coverage and significantly improved quality of service on one hand while giving us economies of scale and significantly improved cash flows on the other."

"Nokia is proud to collaborate with Bharti, India's leading mobile operator, on this significant network expansion exercise," said Mr. Ashish Chowdhary, Country Head, India & South Asia, Networks, Nokia. "We feel that this deployment will enable Bharti to offer world-class network quality and services to its end consumers."

"This deal underscores Nokia's commitment to India, fulfilling our promise to bring high-quality equipment and advanced services to India's mobile world," added Mr. Chowdhary. "And we congratulate Bharti on its innovative approach to the provisioning of mobile services in this country."

"Managed services are today playing an increasingly important role for operators globally," said Jyrki Holmala, Vice President & General Manager, Nokia Operations Solutions, Networks, Nokia. "By providing managed services to its customers, Nokia helps operators to achieve further OPEX

savings and move away from the day-to-day operations of their networks to focus on serving their own customers."

Nokia will provide installation, system integration and an extensive range of care services including, emergency support, software maintenance and training to maintain the competitiveness of Bharti's networks. The services will be provided using Nokia NetAct(TM), the only fully-featured, multi-vendor, multi-technology operations support system on a single platform. In addition, Nokia will provide spare part management service for multi-vendor hardware.

In addition to a full GSM/GPRS system, Nokia and AirTel plan to deploy EDGE technology (Enhanced Data Rate for Global Evolution), voice quality enhancers and dual band networks (GSM 900/1800). With EDGE, AirTel customers can experience faster data transfer rates when compared with competing wireless technologies while enjoying the full potential of advanced mobile Internet services such as streaming videos and other Internet based multimedia services.

About Nokia

A market leader in the cellular industry in Asia Pacific, Nokia provides innovative, industry leading and market-relevant technology and products to around 20 diverse markets in the region.

Nokia is the world leader in mobile communications, driving the growth and sustainability of the broader mobility industry. Nokia is dedicated to enhancing people's lives and productivity by providing easy-to-use and secure products like mobile phones, and solutions for imaging, games, media, mobile network operators and businesses. Nokia is a broadly held company with listings on five major exchanges.

About Bharti

Bharti Tele-Ventures is India's leading private sector provider of telecommunications services with an aggregate of 7.6 million customers as of end of April 2004, consisting of over 7 million mobile customers. The Company today offers mobile services in sixteen out of 23 circles in India. The Company also provides fixed - line services in 5 circles.

The company complements its mobile and fixed-line services with national and international long distance services. The company also has a submarine cable landing station at Chennai, which connects the submarine cable connecting Chennai and Singapore. The company provides reliable end-to-end data and enterprise services including VSAT and Internet services to the corporate customers by leveraging its nationwide fibre optic backbone, last mile connectivity in fixed-line and mobile circles, VSATs, ISP and international bandwidth access through the gateways and landing station. For more information, visit www.bhartiteleventures.com.

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www.nokia.com

NOKIA**PRESS RELEASE**

May 31, 2004

Nokia delivers GSM Radio Network enhancement to INDOSAT in Indonesia

Nokia has signed a deal for the upgrade and expansion of INDOSAT GSM network in Indonesia valued at USD 50 million. This agreement will enhance service coverage, capacity and quality for its GSM network in East Java.

The Phase 1 project has been completed and the implementation of Phase 2 expansion has begun. Based on regular monitoring on the network performance & quality, significant improvements have been achieved in terms of coverage and quality of the East Java BSS network. This has resulted in significant increase in network utilization/traffic.

Nokia will supply the full range of GSM network equipment, including Nokia Ultrasite Base Stations and Nokia Base Station Controller BSC3i. An industry-leading product, Nokia UltraSite can support GSM/EDGE, High Speed Data, GPRS, and WCDMA for

3G technologies.

In addition, Nokia is providing rollout planning and network optimization to enhance the network quality, implementation of both indoor and outdoor solutions, logistics services as well as training to realize the full potential of personnel resources in accordance with technology shifts and market needs. The services will be provided using Nokia NetAct™, the only fully-featured, multi-vendor, multi-technology operations support system on a single platform.

“We’re very pleased to enter into cooperation with Indosat, one of the biggest operators in Indonesia, a market with tremendous growth potential. This is an important step for both Indosat and Nokia as it will allow Indosat to fully benefit from Nokia’s leadership in the wireless communication market, while allowing Nokia to position its leading products in the East Java market,” says John Stefanac, Vice President, Networks, Nokia.

“Our leading edge GSM system equipment will provide Indosat with a solution that supports the evolution to future GSM technologies and services, such as EDGE, while immediately improving the quality and coverage of Indosat existing voice and GPRS based data services in East Java,” he adds.

Nokia is the world leader in mobile communications, driving the growth and sustainability of the broader mobility industry. Nokia is dedicated to enhancing people’s lives and productivity by providing easy-to-use and secure products like mobile phones, and solutions for imaging, games, media, mobile network operators and businesses. Nokia is a broadly held company with listings on five major exchanges.

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NOKIA

PRESS RELEASE

May 31, 2004

Nokia 3220 camera phone: Light Fever!

Glowing grips and Light Messaging highlight camera phone

With a burst of rhythmic, flashing lights, the Nokia 3220 camera phone, signaled its arrival – and an innovative way to communicate with friends in a crowd. Unveiled today at Nokia Totally Board in Thessaloniki, Greece, the Nokia 3220 is highlighted by transparent Nokia Xpress-On™ grips, which pulsate with light effects to indicate calls, messages, and in sync with the beat of ringtones. Self-styled cut-out covers and mobile themes, including ringtones, wallpapers, color schemes and light sequences, make personalization simple and fun. Best of all, the Nokia 3220 comes with a “lite” sales tag with an unsubsidized retail price estimated to start around 250 EUR.

From the company that pioneered text messaging, picture messaging and multimedia messaging, comes new innovation – Light Messaging. By waving the Nokia 3220 from side to side, the LED lights of the Nokia Xpress-on™ Fun Shell light up to “write” a message that appears to float in mid-air. Exchanging messages across a crowded room or at open-air concerts will never be the same.

How's your tribe? Someone need voting off? The Nokia 3220 puts your "survivor" skills to the test with the first mobile game of the popular television series Survivor. Control characters. Create alliances. Vote off rivals. Compete against others to be the last one standing! Compelling mobile games, applications and services, including Survivor, can be purchased at www.nokia.com/shop*.

For a different twist, use your Nokia 3220 as a joystick in the motion games that complement the Nokia Xpress-on™ Fun Shell. Literally jump into the action by tilting the phone to move characters through a series of challenges and tests. Two motion games are included: *SwampRacer*, a high-octane airboat racing game, and *AirExpress*, where you fly freely around an exotic archipelago world.

What's the point in experiencing real-life adventures when you can't share them? With a built-in VGA camera you can send pics and videos using multimedia messaging service (MMS)**. Photos and short videos are easily stored on the Nokia 3220 phone so you can carry those summer memories with you all year.

For glowing personalities who enjoy being the life of the party, the Nokia 3220 answers the call.

The Nokia 3220 is a tri-band camera phone that will be available in two versions: a GSM 900/1800/1900 primarily for the European and Asian markets, and a GSM 850/1800/1900 primarily for the Americas. Shipments are expected to start in summer 2004.

About Nokia

Nokia is the world leader in mobile communications, driving the growth and sustainability of the broader mobility industry. Nokia is dedicated to enhancing people's lives and productivity by providing easy-to-use and secure products like mobile phones, and solutions for imaging, games, media, mobile network operators and businesses. Nokia is a broadly held company with listings on five major exchanges.

Editors Note:

- Images can be downloaded from www.nokia.com/press. Technical specifications of the Nokia 3220 can be found at www.nokia.com/3220.

* The Survivor mobile game will be available for download in Europe, Middle East, Africa and Asia Pacific markets only.

** Please note that the MMS-related services are dependent on the network as well as the compatibility of the devices used and the content formats supported.

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www.nokia.com

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant, Nokia Corporation, has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: June 1, 2004

Nokia Corporation

By:

/s/ Ursula Ranin

Name: Ursula Ranin

Title: Vice President, General Counsel

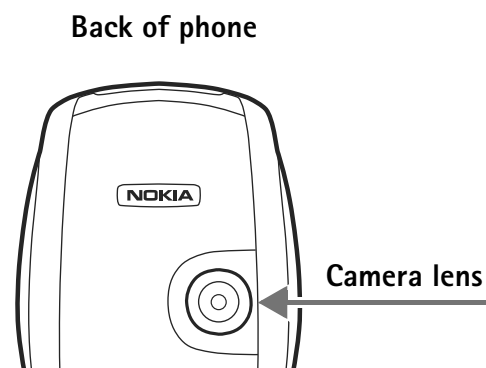
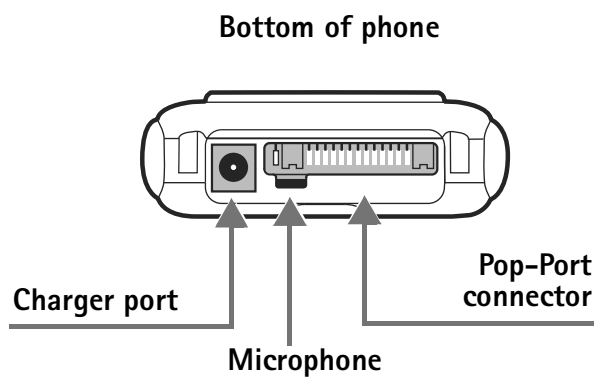
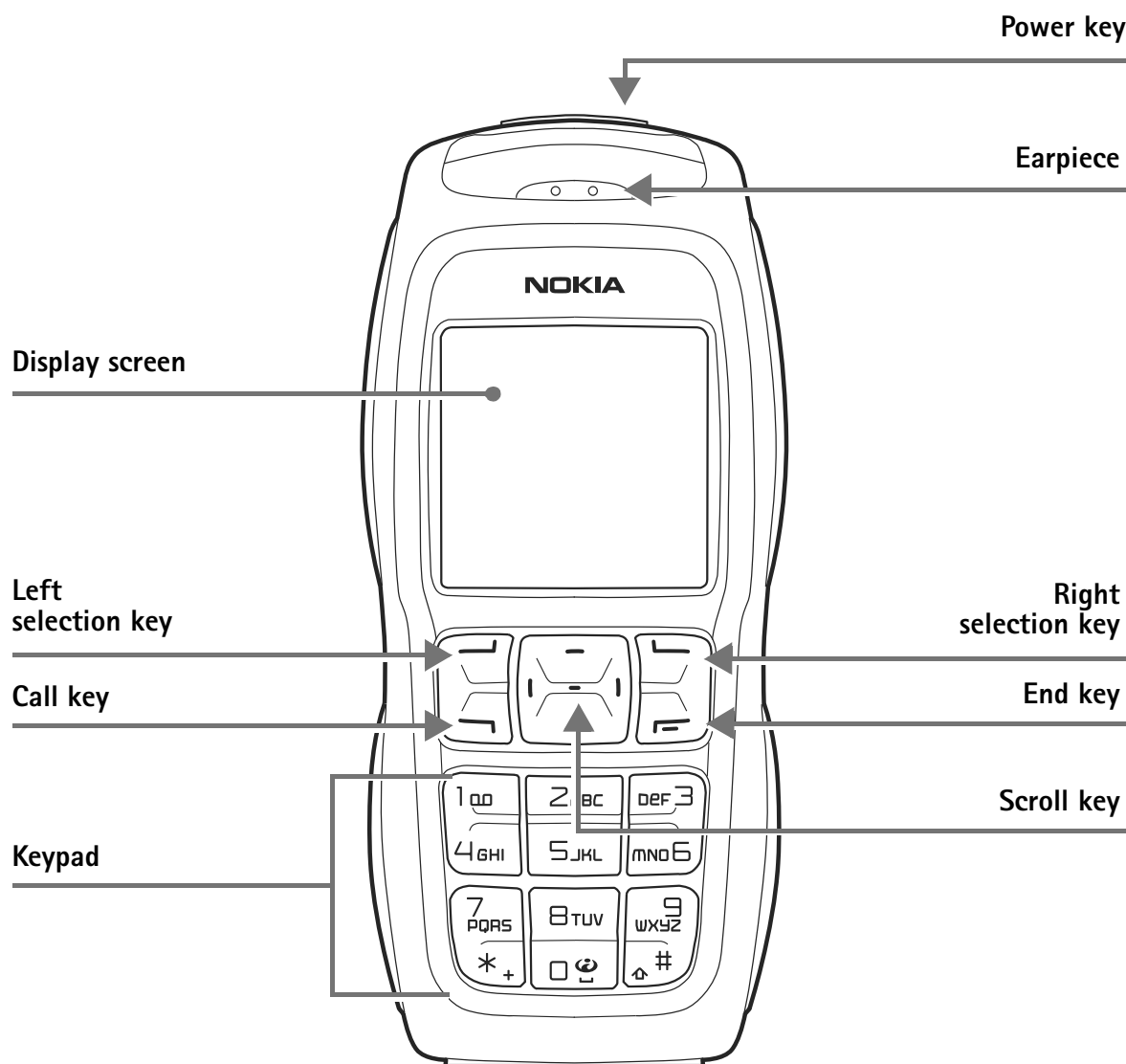
Attachment 1a

NOKIA
CONNECTING PEOPLE

User Guide



Nokia 3220 phone at a glance



• QUICK GUIDE

Action	Description
Make a call	Enter a phone number, and press the Call key.
Answer a call	Press the Call key, or select Answer .
Answer call during call	Press the Call key.
End a call	Press the End key.
Decline a call	Press the End key to send the call to voice mail.
Mute a call	Select Mute during a call.
Redial	Press the Talk key twice.
Adjust call volume	Press the Scroll left and Scroll right keys during a call.
Use in-call menu	Select Options during a call.
Save name and number	Enter a number. Select Options > Save . Enter a name. Select OK .
Use 1-touch dialing	Press and hold a key (2–8). You must assign a key to a number in the phone book.
Look up a name	Select Contacts > Find .
Check voice mail	Press and hold the 1 key (contact your service provider for details).
Write text messages	Select Menu > Messages > Text Messages > Create message . Write the message.
Send text messages	In the message entry screen, select Options > Send . Enter the recipient's phone number or search for it in contacts, and select OK . The message service is dependent on the service provider.
Read new message	If n message(s) received appears on the display, select Show , then the message you want to read.
Reply to a message	Select Options > Reply . Write a reply. Select Options > Send .
Press	Press a key briefly and release it.
Press and hold	Press a key, hold it for 2 to 3 seconds, and release it.

DECLARATION OF CONFORMITY

We, NOKIA CORPORATION declare under our sole responsibility that the products RH-37 and RH-49 are in conformity with the provisions of the following Council Directive:1999/5/EC.

A copy of the Declaration of Conformity can be found at http://www.nokia.com/phones/declaration_of_conformity/.

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LEGAL INFORMATION

Part No. 9232826, Issue No. 1

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Printed in Canada, September 2004

US Patent No 5818437, 5953541, 6011554, and other pending patents.

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This device may contain commodities, technology, or software subject to export laws and regulations from the U.S. and other countries. Diversion contrary to law is prohibited.

FCC/INDUSTRY CANADA NOTICE

Your device may cause TV or radio interference (for example, when using a telephone in close proximity to receiving equipment). The FCC or Industry Canada can require you to stop using your telephone if such interference cannot be eliminated. If you require assistance, contact your local service facility. This device complies with part 15 of the FCC rules. Operation is subject to the condition that this device does not cause harmful interference.

Manufactured or sold under one or more following US Patents.
Asterisk (*) indicates design patents pending.

RE 32,580	4558302	4868846	4945633	4969192	5001372
5101175	5151946	5173927	5212834	5230091	5241583
5311151	5317283	5331638	5335362	5353328	5371481
5378935	5384782	5396657	5400949	5416435	5442521
5446364	5479476	5526366	5553125	5557639	5565821
5570369	5581244	5600708	5625274	5677620	5692032
5729541	5760568	5794142	5802465	5809413	5818437
5827082	5839101	5844884	5845219	5870683	5884103
5889770	5907823	5912570	5914690	5914796	5917868
5920826	5953541	5956332	5956625	5956633	5966378
5977887	5987137	5991857	6006114	6011554	6011853
6014551	6014573	6026161	6035189	6038238	6043760
6047196	6049796	6050415	6055439	6060193	6069923
6072787	6081732	6084920	6084962	6094587	6097964
6105784	6112099	6115617	6119180	6121846	6128509
6138091	6140966	6144243	6144676	6148209	6151485
6151507	6163609	6164547	6167248	6185295	6188909
6249584	6259312	6266330	6272361	6282436	6292668
6295286	6311054	6314166	6324389	6324412	6347218
6363259	6370362	6370389	6377820	6381468	6392660
6400958	6453179	6463278	6470470	6487397	6522670
6198928	4969192	5266782	5390223	5444816	5487084
5640395	5664053	5699482	5701392	5722074	5754976
5805301	5835889	5857151	5859843	5862178	5898925
5930233	5946651	5960354	5960389	5963901	6005857
6011971	6031827	6118775	6128322	6137789	6167248
6170073	6178535	6195338	6199035	6240076	6266321
6285888	6356759	6377803	6430163	6438370	6456237

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NOTES

1 For your safety

Read these simple guidelines. Not following them may be dangerous or illegal. Read the complete user guide for further information.



SWITCH ON SAFELY

Do not switch the phone on when wireless phone use is prohibited or when it may cause interference or danger.



ROAD SAFETY COMES FIRST

Obey all local laws. Always keep your hands free to operate the vehicle while driving. Your first consideration while driving should be road safety.



INTERFERENCE

All wireless phones may be susceptible to interference, which could affect performance.



SWITCH OFF IN HOSPITALS

Follow any restrictions. Switch the phone off near medical equipment.



SWITCH OFF IN AIRCRAFT

Follow any restrictions. Wireless devices can cause interference in aircraft.



SWITCH OFF WHEN REFUELING

Don't use the phone at a refueling point. Don't use near fuel or chemicals.



SWITCH OFF NEAR BLASTING

Follow any restrictions. Don't use the phone where blasting is in progress.



USE SENSIBLY

Use only in the normal position as explained in the product documentation. Don't touch the antenna unnecessarily.



QUALIFIED SERVICE

Only qualified personnel may install or repair this product.



ENHANCEMENTS AND BATTERIES

Use only approved enhancements and batteries. Do not connect incompatible products.



WATER-RESISTANCE

Your phone is not water-resistant. Keep it dry.



BACKUP COPIES

Remember to make back-up copies or keep a written record of all important information stored in your phone.



CONNECTING TO OTHER DEVICES

When connecting to any other device, read its user guide for detailed safety instructions. Do not connect incompatible products.



EMERGENCY CALLS

Ensure the phone is switched on and in service. Press **End** as many times as needed to clear the display and return to the main screen. Enter the emergency number, then press **Call**. Give your location. Do not end the call until given permission to do so.

• About your device

The wireless device described in this guide comes in two models. The Nokia 3220 phone is approved for use on the EGSM 900 and GSM 1800 and 1900 networks. The Nokia 3220b phone is approved for use on the GSM 850, 1800 and 1900 networks. See "Find information about your phone" on page 5 to identify your specific phone model. Contact your service provider for more information about networks.

When using the features in this device, obey all laws and respect privacy and legitimate rights of others.



Warning: To use any features in this device, other than the alarm clock, the phone must be switched on. Do not switch the device on when wireless phone use may cause interference or danger.



Note: Your device and its enhancements may contain small parts. Keep them out of the reach of small children.

• Network Services

To use the phone you must have service from a wireless service provider. Many of the features in this device depend on features in the wireless network to function. These Network Services may not be available on all networks or you may have to make specific arrangements with your service provider before you can utilize Network Services. Your service provider may need to give you additional instructions for their use and explain what charges will apply. Some networks may have limitations that affect how you can use Network Services. For instance, some networks may not support all language-dependent characters and services.

Your service provider may have requested that certain features be disabled or not activated in your device. If so, they will not appear on your device menu. Contact your service provider for more information.

• Shared memory

The phone has three different memories. The following features in this device may share the first memory: contacts, text messages, SMS e-mail, voice tags, calendar, and notes. The second shared memory is used by multimedia messages, files stored in **Gallery**, and configuration settings. The third shared memory is used by Java games and applications. Using one or more of these features may reduce the memory available for the remaining features sharing the same memory. For example, saving many **Gallery** items may use all of the available memory in the second memory. Your device may display a message that the memory is full when you try to use a shared memory feature. In this case, delete some of the information or entries stored in the corresponding shared memory before continuing.

2 Welcome

Congratulations on your purchase of the Nokia 3220 mobile phone. Your phone provides many functions that are practical for daily use, such as a calendar, a clock, an alarm clock, and a built-in camera. The camera can be used for recording video clips and taking pictures that you can, for example, attach as wallpaper in the standby mode or as thumbnail pictures in **Contacts**. See "Camera" on page 40.

You can personalize your phone with cut-out covers and with themes. See "Create custom back cover" on page 12 and "Themes" on page 34. Also, a range of Nokia Xpress-on™ covers and Nokia Xpress-on grips are available for your phone. To change the covers and grips, see "Change the phone covers" on page 12 and "Change the grips" on page 11.

Other features on your phone are:

- Multimedia messaging. See "Multimedia messages (MMS) (network service)" on page 22.
- Instant messages, see "Instant messaging" on page 26.
- EDGE (enhanced data rates for GSM evolution), see "GPRS and EGPRS" on page 37.
- Java 2 Platform Micro Edition, J2ME™, see "Applications" on page 44.
- XHTML browser, see "Settings" on page 34.

• Access alternate formats

This user guide is available in alternate formats, contact Nokia at www.nokiaaccessibility.com or call 1-888-665-4228 for more information.

• Register your phone

Make sure to register your phone at www.warranty.nokiausa.com or 1-888-NOKIA-2U (1-888-665-4228) so that we can serve your needs better if you should need to call the center or have your phone repaired.

• Copyright protection

Copyright protections may prevent some images, ringing tones, and other content from being copied, modified, transferred, or forwarded.

• Contact Nokia

If you ever need to call Nokia Customer Care or your service provider, you will need to provide specific information about your phone (see "Find information about your phone" on page 5).

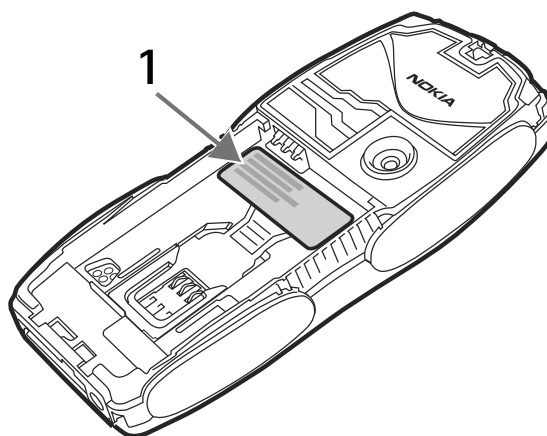
Whether you are calling about your phone or an enhancement, have the equipment with you when you call. If a Nokia representative asks a specific question about the enhancement, you will have it available for quick reference.

Nokia Customer Care Center, USA	Customer Care, Canada
Nokia Mobile Phones 7725 Woodland Center Boulevard, Suite #150 Tampa, Florida 33614 Tel:1-888-NOKIA-2U (1-888-665-4228) Fax: 1-813-249-9619 For TTY users: 1-800-24-NOKIA (1-800-246-6542)	Nokia Products Ltd. 601 Westney Rd. South Ajax, Ontario L1S 4N7 Tel:1-905-427-1373 1-888-22-NOKIA (1-888-226-6542) Fax:1-905-619-4360 Web site: www.nokia.ca

Find information about your phone

Information about your phone is provided on the phone label (1), which is on the back of the phone under the battery (see "Remove the back cover and battery" on page 7). The label contains the model and serial numbers, as well as the following:

- Phone type (such as RH-37 or RH-49)
- Phone model (such as Nokia 3220 or Nokia 3220b)
- International Mobile Equipment Identity (IMEI)
- FCC ID number



Contact your service provider

In many cases, the service provider will make available descriptions of its services and instructions for using features, such as:

- Voice mail and voice privacy
- Call waiting, call forwarding, and caller ID
- Messaging
- News and information services
- Selected Internet services

Service providers may differ in their support of features. Before you sign up with a service provider, make sure that the service provider supports the features that you need.

3 SIM card and battery

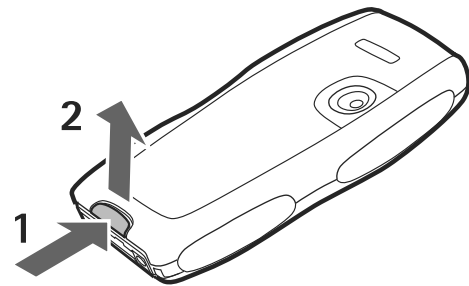
The SIM card and its contacts can easily be damaged by scratches or bending, so be careful when handling, inserting, or removing the card.

Keep all SIM cards out of the reach of small children. For availability and information on using SIM card services, contact your SIM card vendor. This may be the service provider or another vendor.

Always switch the device off and disconnect the charger before removing the battery.

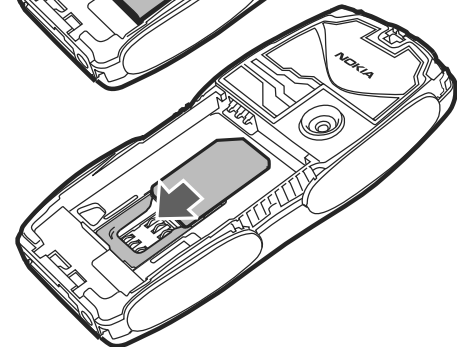
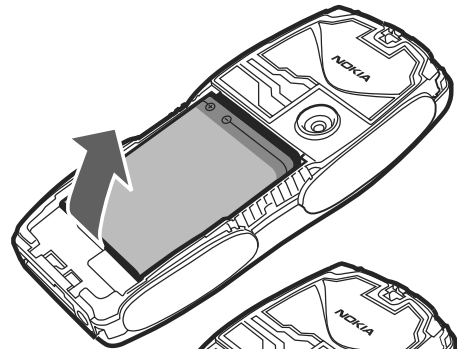
- **Remove the back cover and battery**

- 1 Push the back cover release button at the bottom of the phone (1) and gently pull the back cover away from the phone beginning at the bottom of the phone (2).
- 2 Remove the battery by lifting it as shown.

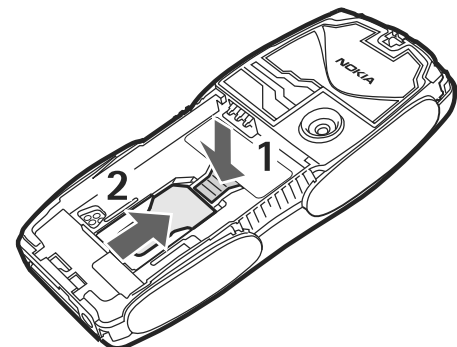


- **Insert the SIM card**

Insert the SIM card into the SIM card holder until it snaps into position. Make sure that the SIM card is properly inserted and that the gold-colored contact area on the card is facing downward.



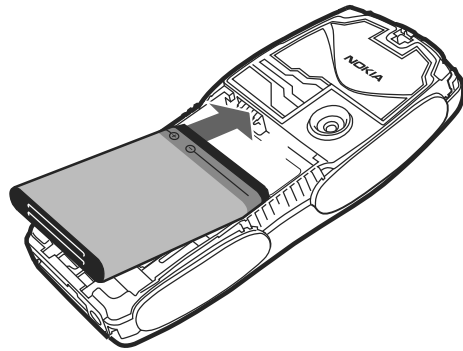
If you need to remove the SIM card, press the card release (1), and slide the SIM card toward the top of the phone (2).



• Replace the battery

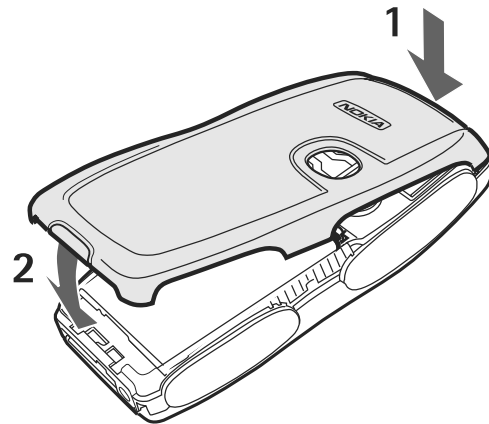
The SIM card must be installed *before* installing the battery.

Insert the battery so that the gold-colored contacts match up with those on the phone.



• Replace the back cover

Align the top of the back cover with the top of the phone (1), and press the bottom of the back cover to lock it (2).



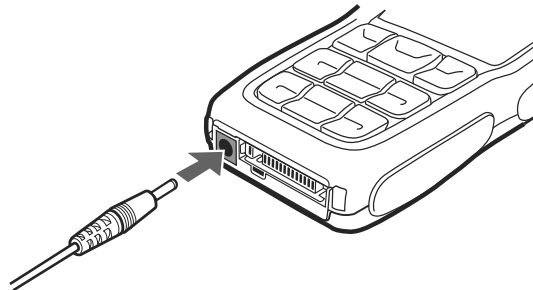
• Charge the battery



Warning: Use only batteries, chargers, and enhancements approved by Nokia for use with this particular model. The use of any other types may invalidate any approval or warranty, and may be dangerous.

Your phone is powered by a rechargeable battery. To charge the battery, do the following:

- 1 Plug the charger transformer into a standard ac outlet.
- 2 Insert the charger output plug into the charger port at the bottom end of the phone.



After a few seconds, the battery indicator in the display starts to scroll from bottom to top. If the battery is completely discharged, it may take a few minutes before the charging indicator appears on the display or any calls can be made.

You can use the phone while the charger is connected.

The BL-5B battery provides up to 3.5 hours of talk time and up to 14 days of standby time. Operation times are estimates and may vary depending on network conditions, charging, and phone use. Charging the battery with the ACP-12 charger takes approximately 1 hour and 20 minutes while the phone is in standby mode.

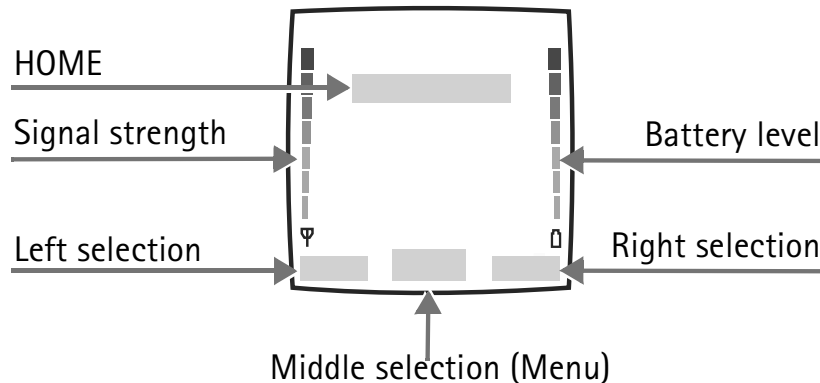
4 About your phone

• In-phone help

Many features have brief descriptions (help text) that can be viewed on the display. To view the help text, scroll to a feature, and wait for about 15 seconds. Select **More** to view all of the description (if necessary) or **Back** to exit. For instructions on how to turn the help text feature on and off, see "Phone settings" on page 36.

• Start screen (standby mode)

The start screen is home base and indicates that the phone is in the standby mode.



HOME—The name of your service provider may appear here.

Signal strength—A higher bar indicates a stronger network signal.

Battery level—A higher bar indicates more power in the battery.

Left selection—The **Left selection** key in the standby mode opens the **Go to** menu. See "Go to options" on page 35.

Middle selection—Press the middle of the scroll key to select the item displayed in the bottom center (middle selection area) of the display screen. For example, in the standby mode, pressing the middle of the scroll key opens the **Menu**. See "Phone menu" on page 19.

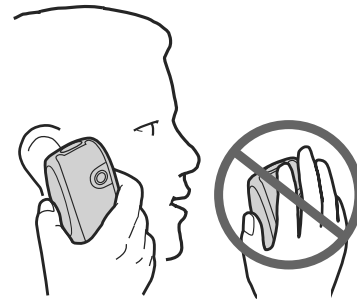
Right selection—The **Right selection** key in the standby mode opens either the **Contacts** menu (default), a service provider's home page, or a user-specified function. See "Personal shortcuts" on page 35.

• Antenna

Your device has an internal antenna.



Note: As with any other radio transmitting device, do not touch the antenna unnecessarily when the device is switched on. Contact with the antenna affects call quality and may cause the phone to operate at a higher power level than otherwise needed. Avoiding contact with the antenna area when operating the phone optimizes the antenna performance and the battery life.



• Indicators and icons

The following icons may be displayed in the standby mode:

Icon	Indicates...
------	--------------



You have one or more text or picture messages. See "Text messages (SMS) (network service)" on page 20.



The phone has logged a missed call. See "Call log" on page 30.



or



Your phone is connected to the instant messaging service, and the availability status is online or offline, respectively. See "Instant messaging" on page 26.



You have received one or several instant messages, and you are connected to the instant messages service. See "Instant messaging" on page 26.



You have one or more multimedia messages. See "Multimedia messages (MMS) (network service)" on page 22.



You have one or more voice messages. See "Voice messages" on page 24.



Your phone keypad is locked. See "Lock the keypad (Keyguard)" on page 18.














Your phone is set to the **Silent** profile. See "Profiles" on page 34.



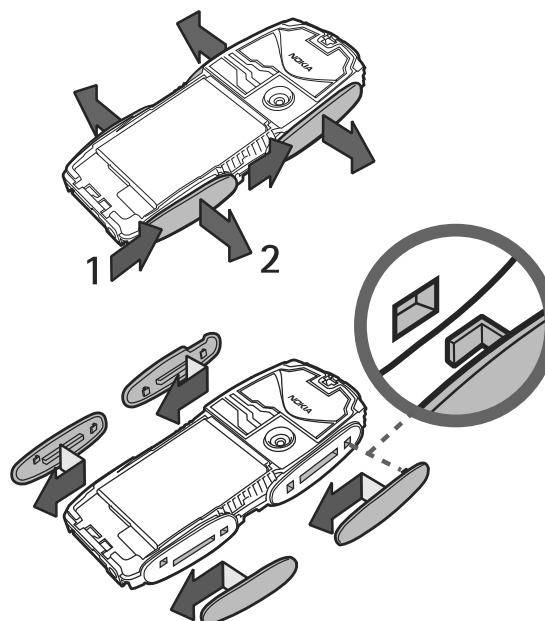
The alarm clock is set to **On**. See "Alarm clock" on page 42.

Icon Indicates...

-  The GPRS connection mode **Always online** is selected, and the GPRS service is available, or there is an active GPRS connection.
-  You have an incoming or outgoing call during a GPRS dial-up connection. GPRS is suspended.
-  Forward all voice calls. All calls are forwarded to another number. If you have two phone lines, the indicator for line 1 is  and for line 2 .
-  If you have two phone lines, this indicates that you are on the second phone line. See "Call settings" on page 36.
-  Calls are limited to a closed user group. See "Security settings" on page 39.
-  The timed profile is selected. See "Profiles" on page 34.
-  Integrated handsfree is active. See "Loudspeaker" on page 15.
-  A headset, handsfree, or Nokia Loopset enhancement is connected to the phone.
- or
- 

• Change the grips

- 1 Remove the covers from the phone as described in "Change the phone covers" on page 12.
- 2 To remove the grips, slide them to the top of the phone (1), then remove the grip (2).
- 3 Replace the grips as shown.
- 4 Replace the covers of the phone as described in "Change the phone covers" on page 12.

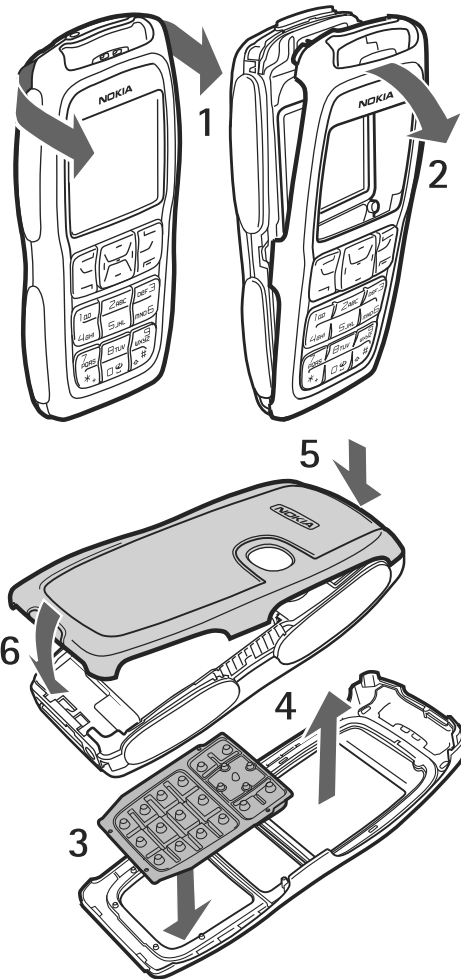


• Change the phone covers



Note: Before removing the cover, always switch off the power and disconnect the charger and any other device. Avoid touching electronic components while changing the covers. Always store and use the device with the covers attached.

- 1 Remove the back cover from the phone as described in "Remove the back cover and battery" on page 7.
- 2 Beginning at the top of the phone (1), gently pull the front cover away from the phone and detach it (2).
- 3 To remove the key mat from the front cover, take it out gently.
- 4 Place the key mat in the new front cover (3).
- 5 To replace the front cover, press it gently onto the phone until it snaps into position (4).
- 6 Align the top of the back cover with the top of the phone (5), and press the bottom of the back cover to lock it (6).



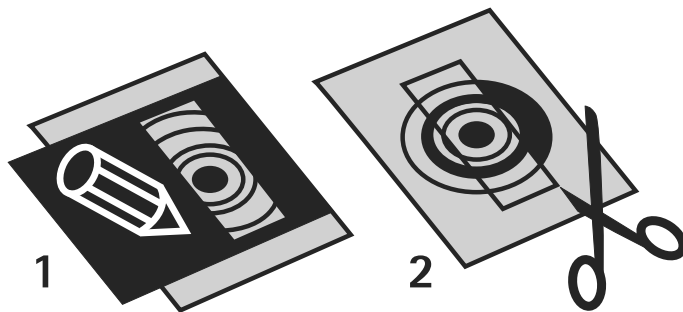
• Create custom back cover



Note: Use normal, plain paper as found in standard printers or use a photo print that is not thicker than 0.3 mm. To avoid affecting the antenna performance the material must not contain metal particles.

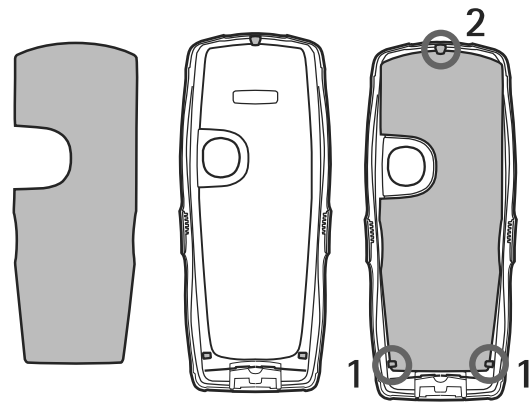
Use the plastic stencil to create a cut-out cover using your own design.

- 1 Place the stencil in the correct position and draw the outline (1).
- 2 Carefully cut out your new cover (2).



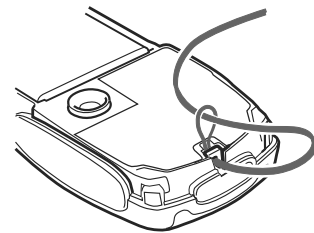
• Change cut-out cover

- 1 Remove the back cover from the phone as described in "Remove the back cover and battery" on page 7.
- 2 Remove the cut-out cover from the back cover.
- 3 To place the new cut-out cover into the back cover, slide the cut-out cover under the two guides at the bottom (1), then under the guide at the top (2).
- 4 Replace the back cover.



• Attach the wrist strap

Remove the back cover as described in "Remove the back cover and battery" on page 7 and thread the strap as shown in the picture. Tighten the strap, and replace the back cover.



5 Basic operations

• Switch the phone on or off

- 1 To turn your phone on or off, press and hold the **Power** key as shown.

If the phone displays **Insert SIM card** even though the SIM card is properly inserted, or **SIM card not supported**, contact your service provider.

- 2 If the phone asks for a PIN code, enter the PIN code (displayed as ****), and select **OK**.
- 3 If the phone asks for a security code, enter the security code, and select **OK**.

See "Access codes" on page 18 for more information.



• Set the time

Select **Menu > Settings > Time and date settings > Clock > Set the time**. Enter the time (in *hh:mm* format), and select **OK > am** or **pm**.

• Make and answer calls

Use the keypad—Enter the phone number (including the area code), and press the **Call** key. To delete a character to the left of the cursor, select **Clear**. To end the call or to cancel the call attempt, press the **End** key.

Use contacts—At the start screen, press the **Scroll down** key to view your contacts, scroll to the entry you want to call, and press the **Call** key to make the call.

Redial the last number—At the start screen, press the **Call** key twice.

Make an international call—Press * twice to enter the international prefix [a plus (+) sign] in place of the international access code. Then enter the country code, the area code without a leading zero (if necessary), and the phone number.

Answer or reject a call—Press the **Call** key to answer the call or the **End** key to reject the call. If **Forward if busy** is activated to your voice mailbox, the call is forwarded to your voice mail. If not, the call is rejected.

If you select **Silence**, only the ringing tone is muted. You can then answer or reject the incoming call.

Answer a call with the keypad locked—See "Lock the keypad (Keyguard)" on page 18.

1-touch dialing—See "1-touch dialing" on page 32.

Call waiting—See "Call settings" on page 36.

- **Adjust the earpiece volume**

To increase the volume of a call, press the **Right scroll** key. To decrease the volume of a call, press the **Left scroll** key. When adjusting the volume, a bar chart appears in the display indicating the volume level. See also **Automatic volume control** in "Call settings" on page 36.

You can only adjust the earpiece volume during an active call.



- **Loudspeaker**

You can use your phone as a loudspeaker during a call. Do not hold the phone to your ear during the loudspeaker operation as the volume may be very high.

To activate the loudspeaker, select **Options > Loudspeaker**. To deactivate the loudspeaker during a call, select **Options > Handset**.

6 Write text

You can use two methods for entering text and numbers:

- **Standard mode** () is the only way to enter names into **Contacts** and to rename caller groups.
- **Predictive text input** () is a quick and easy method for writing messages.

Press **#** to switch predictive text on or off and to use predictive text in various modes.

• Standard mode

Press a key once to insert the first letter on the key, twice for the second letter, etc. If you pause briefly, the last letter in the display is accepted and your phone awaits the next entry.





Select **Clear** to backspace the cursor and delete a character.

Select and hold **Clear** to backspace continuously and delete characters.

Press **0** to enter a space and accept a completed word.

Press **1** to enter a period (.).

Press ***** to display special characters. See "Enter punctuation and special characters" on page 17.

Press and hold **#** to switch between text and numeric entry. The icon  is displayed at the top of the screen when the phone is in numeric entry mode. Depending on which capitalization mode you have selected, , , or  is displayed when the phone is in text entry mode.

• Predictive text

Predictive text input allows you to write messages quickly using your keypad and the built-in phone dictionary. It is faster than using the standard multi-tap method. You can use predictive text to write a message and create a calendar note.

To activate predictive text at any text entry screen, select **Options > Predictive text** and a language.

How to use predictive text

- For each letter of the word that you want to spell, press the corresponding key on your keypad only *once*, even if the letter you want is not the first letter on the key. The phone "guesses" the word you are trying to spell.
- If a displayed word is not correct, press ***** to see other matches. To move forward through a list of matches, keep pressing *****. To return to the previous word in the list of matches, select **Previous**.

- Press **0** to accept the word, enter a space, and begin writing the next word.
- If **?** appears after a word, select **Spell** to add the word to the dictionary. See "Add words to the dictionary" on page 17.
- Press **1** to insert a period into your message.
- Press and hold ***** to display special characters. See "Enter punctuation and special characters" on page 17.

Compound words

Enter the first part of the word; to confirm it, press the **Scroll right** key.
Enter the last part of the word; to confirm it, press **0**.

Add words to the dictionary

If you encounter a word that predictive text does not recognize, a question mark (?) follows the word, and **Spell** appears in the lower left of the display.

Select **Spell**, enter your new word using the keypad, and select **Save**. The word is added to the dictionary and to the message that you are writing.

Keep these factors in mind when adding words:

- To accept and save new words to the dictionary, select **Save**, or press **0**, or delete the space between two words.
- Depending on the language and the length of the words, you may be able to add hundreds of words to the dictionary.
- When the dictionary is full, the most recent addition replaces the first.

• Enter punctuation and special characters

While at any text entry screen, press ***** to display special characters (press and hold ***** if predictive text is on) or press ***** twice to display the **Smiley** menu.

To navigate through the list of special characters, use the **Four-way scroll** key like a joystick. Once a character is highlighted, select **Insert** to insert the character into your message.

7 Phone security

• Lock the keypad (Keyguard)

You can lock the keypad to prevent accidental key presses. To answer a call with keyguard on, press the **Call** key. During the call, all features function as normal. When you end or reject a call, the keypad automatically relocks.

- To lock the keypad, select **Menu > ***.
- To unlock the keypad, select **Unlock > ***.

When the keypad is locked, calls may be possible to the official emergency number programmed into your phone. Enter the emergency number, and press the **Call** key.

• Automatic Keyguard

You can set your phone to lock the keys automatically after a time you specify. See "Phone settings" on page 36 to activate this feature.

• Access codes

The following access codes allow you to secure your phone from unauthorized use. To change access codes, see "Security settings" on page 39. Keep the new codes secret and in a safe place, separate from your phone.

Security code—This code, supplied with the phone, protects your phone against unauthorized use. The preset code is 12345.

PIN code—This code, supplied with the SIM card, protects the card against unauthorized use. Turn the **PIN code request** on so that the code is requested each time the phone is switched on. If you enter an incorrect PIN code three times in succession, the SIM card is blocked. You must enter the PUK code to unblock the SIM card and set a new PIN code.

PIN2 code—This code is supplied with some SIM cards and is required to access certain services, such as charging unit counters. If you enter an incorrect PIN2 code three times in succession, **PIN2 code blocked** appears in the display and you will be asked for the PUK2 code.

PUK and PUK2 codes—These unblocking codes may be supplied with the SIM card. For more information, contact your service provider.

Call restriction password (4 digits)—This password is needed when using **Call restrictions**. You can obtain the password from your service provider.

8 Phone menu

Phone features are accessed through the main menu of your phone. Use the menus and submenus to select or view items and customize phone features.



Note: Some service providers order the phones specially programmed for their network. This may mean that some features are not shown on the menu.

In the standby mode, press the middle of the scroll key to select **Menu**. The first menu item is displayed.

You can view the menu as a list or as a grid:

List view—List view is the default view for the main menu. Scroll up and down to view main menu selections one at a time.

Grid view—To switch between **List** and **Grid** view, see "Display settings" on page 35. In **Grid** view, scroll up, down, right, and left to navigate through the main menu icons.

In the **Grid** view, the icon for the selected menu is outlined, and the name of the menu appears at the top of the display.

As you scroll through the menus, the menu number appears in the upper right corner of the display.

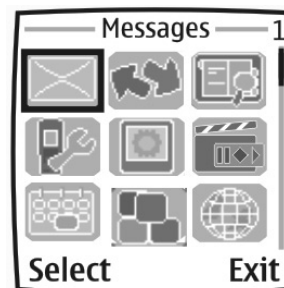
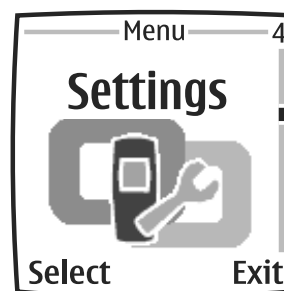
Below the menu number is a scroll bar with a tab. The tab moves up or down as you scroll through the menus, providing a visual representation of your current position in the menu structure.

Open a menu item—Scroll to it, and press the **Left selection** key.

Open a submenu—If the menu contains submenus, scroll to highlight the desired menu; then press the **Left selection** key.

Return to the previous menu—Select **Back** (press the **Right selection** key) to return to the previous menu or submenu.

Return to the start screen—Press the **End** key from any menu screen.



• Messages

The message services can only be used if they are supported by your network or your service provider.



To select the font size for reading and writing messages, select **Menu > Messages > Message settings > Other settings > Font size**.



Note: When sending messages, your phone may display the words **Message sent**. This is an indication that the message has been sent by your device to the message center number programmed into your device. This is not an indication that the message has been received at the intended destination. For more details about messaging services, check with your service provider.

Text messages (SMS) (network service)

Using the SMS (short message service), your phone can send and receive multipart messages, which consist of several ordinary text messages. Invoicing may be based on the number of ordinary messages that are required for a multipart message.

Before you can send a message, you need to save some message settings. See "text and SMS e-mail messages" on page 24.


You can also send and receive text messages that contain pictures. A picture message can be a multipart message.



Note: Only devices that offer picture message features can receive and display picture messages.

WRITE AND SEND MESSAGES

Your device supports the sending of text messages beyond the normal 160-character limit. If your message exceeds 160 characters, it will be sent as a series of two or more messages. The number of available characters and the current part number of a multipart message are shown on the top right of the display, for example 120/2. Note that using special (Unicode) characters such as ë, â, á, ì take up more space.

- 1 Select **Menu > Messages > Create message > Text message**.
- 2 Enter a message. See "Write text" on page 16. To insert text templates or a picture into the message, see "Templates" on page 21.
- 3 Select **Send**, or press the **Call** key to send the message.
The messages that you have sent will be saved in the **Sent items** folder if the setting **Save sent messages** is set to **Yes**. See "text and SMS e-mail messages" on page 24. Text messages are indicated with .
- 4 Enter the recipient's phone number, or search for the phone number in **Contacts**.
- 5 Select **OK** to send the message.

OPTIONS FOR SENDING A MESSAGE




After you have written a message, select **Options > Sending options** and one of the following:

Send to many—Send the message to several recipients.

Send as e-mail—Send a message as an SMS e-mail (network service).

Sending profile—Use a predefined message profile to send the message. To define a message profile, see "text and SMS e-mail messages" on page 24.

READ AND REPLY TO A MESSAGE OR E-MAIL

When you receive a message or an SMS e-mail, , the number of new messages, and **messages received** is shown. A blinking  indicates that the message memory is full. Before you can receive new messages, delete some of your old messages in the **Inbox** folder. If more than one message has been received, select the one that you want to read. An unread text message or SMS e-mail is indicated by .

- 1 Select **Show** to view the new message or **Exit** to view it later.

When you select **Options** while reading a message, some of the following options may be available: **Delete**, **Forward**, or **Edit** the message as a text message or an SMS e-mail; **Rename** the message you are reading or move it to another folder; **Copy to calendar** to copy text at the beginning of the message to your phone calendar as a reminder note for the current day; **Message details** to view, if available, the sender's name and phone number, the message center used, and the date and time of receipt; **Use detail** to extract numbers, e-mail addresses, and website addresses from the current message.

When reading a picture message, select **Save picture** to save the picture in the **Templates** folder.

- 2 Select **Reply** and the message type to reply to a message.



When replying to an SMS e-mail, confirm or edit the e-mail address and subject first. Then write your reply message.

- 3 To send the message to the displayed number, select **Send > OK**.

INBOX AND SENT ITEMS FOLDERS

The phone saves incoming text and multimedia messages in the **Inbox** folder. Sent text messages are saved in the **Sent items** folder.

TEMPLATES

Your phone includes text templates, indicated by , and picture templates, indicated by . To access the template list, select **Menu > Messages > Saved items > Text messages > Templates**.

SAVED ITEMS FOLDER AND MY FOLDERS

To organize your messages, you can move some of them to the **Saved items** folder or add new folders for your messages. While reading a message, select **Options > Move** and the new folder.

To add or delete a folder, select **Menu > Messages > Saved items > Text messages > My folders**. To add a folder if you have not saved any folder, select **Add**. Otherwise, select **Options > Add folder**. To delete a folder, scroll to the folder that you want to delete, and select **Options > Delete folder**.

Multimedia messages (MMS) (network service)



Note: Only devices that offer compatible multimedia message features can receive and display multimedia messages. Exercise caution when opening messages. Messages may contain malicious software or otherwise be harmful to your device or PC.

A multimedia message can contain text, sound, and a picture or a video clip. The phone supports multimedia messages that are up to 100 KB. If the message contains a picture, the phone scales it down to fit the display area.

The default setting to receive multimedia messages (**Allow multimedia reception**) is generally set to **Yes** or **In home network**. See "multimedia messages" on page 25.

Multimedia messaging supports the following formats:

- Picture: JPEG, GIF, WBMP, BMP, and PNG.
- Sound: scalable polyphonic MIDI (SP-MIDI), AMR audio, and monophonic ringing tones.
- Video clips in 3gp format with SubQCIF and QCIF resolution and AMR audio.

The phone does not necessarily support all variations of these file formats. If a received message contains any unsupported elements, they may be replaced with the file name and **Object format not supported**.

You are not able to receive any multimedia messages if you have a call in progress, a game, or another Java application running.


WRITE AND SEND A MESSAGE


To modify multimedia messaging settings, see "multimedia messages" on page 25. To check availability and subscribe to the multimedia messaging service, contact your service provider.

Copyright protections may prevent some images, ringing tones, and other content from being copied, modified, transferred, or forwarded.


- 1 Select **Menu > Messages > Create message > Multimedia msg.**
- 2 Enter a message. See "Write text" on page 16.
 - To insert a file in the message, select **Options > Insert**, and the desired option from the gallery or **Calendar note** or **Business card**.
To move the text component to the top or bottom of the message, select **Options > Place text first** or **Place text last**.
 - Your phone supports the sending and receiving of multimedia messages that contain several pages (slides). To insert a slide in the message, select **Options > Insert > Slide**. Each slide can contain text, one image, and one sound clip.
If the message contains several slides, to open the desired one, select **Options > Previous slide**, **Next slide**, or **Slide list**. To set the interval between the slides, select **Slide timing**.


- The following options may also be available: **Delete** (to delete an image, slide, or sound clip from the message), **Preview**, or **Save message**. In **More options** the following options may be available: **Insert contact**, **Insert number**, **Message details**, and **Edit subject**.
- 3 To send the message, select **Send**; or select **Options > Send to e-mail** or **Send to many**.
 - 4 Enter the recipient's phone number (or e-mail address), or search for it in **Contacts**.

While the multimedia message is being sent,  is displayed, and you can use other functions on the phone. If there is an interruption while the message is being sent, the phone tries to resend it a few times. If this fails, the message will remain in the **Outbox** folder, and you can try to resend it later.

The messages that you have sent will be saved in the **Sent items** folder if **Save sent messages** is set to **Yes**. See "multimedia messages" on page 25. Multimedia messages are indicated with .

READ AND REPLY TO A MESSAGE

When your phone receives a multimedia message,  and **Multimedia message received** are displayed. The appearance of a multimedia message may vary depending on the receiving device.


- 1 Select **Show** to view the message or **Exit** to view it later.
If more than one message has been received, select the one that you want to read. An unread multimedia message is indicated by .
- 2 Scroll to view the message.

Refer also to the options in **Gallery** (see "Gallery" on page 40).

MESSAGE FOLDERS

The phone saves the received multimedia messages in the **Inbox** folder. Multimedia messages that have not yet been sent are moved to the **Outbox** folder. The multimedia messages that you wish to send later can be saved in the **Saved items** folder. The multimedia messages that have been sent are saved in the **Sent items** folder of the **Multimedia msgs.** submenu if **Save sent messages** is set to **Yes**. See "multimedia messages" on page 25.

MESSAGE MEMORY FULL


When you have a new multimedia message waiting and the memory for the messages is full,  blinks, and **Multimedia memory full, view waiting msg.** is shown. To view the waiting message, select **Show**. To save the message, select **Options > Save message**. To delete old messages, first select the folder, then the old message to be deleted. To discard the waiting message, select **Exit > Yes**; if you select **No**, you can view the message.

Voice messages

The voice mailbox is a network service, and you may need to subscribe to it. For more information and for the voice mailbox number, contact your service provider.

Select **Menu > Messages > Voice messages** and one of the following:

- **Listen to voice messages** to call your voice mailbox.
- **Voice mailbox number** to enter, search for, or edit your voice mailbox number.

If supported by the network, the indicator  will show new voice messages. Select **Listen** to call your voice mailbox number.

Press and hold **1** to call your voice mailbox if you have the number set.

Info messages

With the info message network service you may be able to receive messages on various topics. For details, contact your service provider.

Service commands

Select **Menu > Messages > Service commands**. Enter and send service requests (also known as USSD commands), such as activation commands for network services, to your service provider.

Delete all messages from a folder

To delete all messages from a folder, select **Menu > Messages > Delete messages**. Select the folder from which you want to delete the messages, and select **OK** to confirm.

If the folder contains unread messages, the phone will ask whether you want to delete them.

Message settings

The message settings affect the sending, receiving, and viewing of messages.

TEXT AND SMS E-MAIL MESSAGES

- 1 Select **Menu > Messages > Message settings > Text messages > Sending profile**.
- 2 Select the message profile that you want to change, and update the following settings as you choose: **Message center number** (delivered by your service provider), **Messages sent via**, **Message validity**, **Default recipient number** (text messages) or **E-mail server** (SMS e-mail), **Delivery reports**, **Use GPRS**, **Reply via same center** (network service) and **Rename sending profile**.
- 3 Select **Back**.
- 4 Select **Save sent messages > Yes** to set the phone to save sent messages in the **Sent items** folder. If you select **No**, the sent messages are not saved.

MULTIMEDIA MESSAGES

Select **Menu > Messages > Message settings > Multimedia msgs.** and one of the following:

- **Save sent messages**—Select **Yes** to set the phone to save sent multimedia messages in the **Sent items** folder. If you select **No**, the sent messages are not saved.
- **Delivery reports**—Select **On** for the network to send delivery reports about your messages (network service).
- **Scale image down**—Select **Yes** to change the image size when you insert an image into a multimedia message.
- **Default slide timing**—Set the default time for slides in multimedia messages.
- **Allow multimedia reception**—Choose **No**, **Yes**, or **In home network** to use the multimedia service. If **Allow multimedia reception** is set to **Yes** or **In home network**, your operator or service provider may charge you for every message you receive. The default setting to receive multimedia messages is generally on.
- **Incoming multimedia messages**—Select **Retrieve** to set the phone to automatically get newly received multimedia messages or **Reject** if you do not wish to receive multimedia messages. This setting is not shown if **Allow multimedia reception** is set to **No**.
- **Configuration settings**—Select **Configuration** and the default service provider for retrieving multimedia messages. Select **Account** to see the accounts provided by the service provider. If more than one account is displayed choose the one that you want to use. You may receive the settings as a configuration message from the service provider. To enter the settings manually see "Configuration settings" on page 38.
- **Allow advertisements**—Select whether you want to allow your phone to receive advertisement messages. This setting is not shown if **Allow multimedia reception** is set to **No**.

OTHER SETTINGS

Select **Menu > Messages > Message settings > Other settings > Font size** to select the font size for reading and writing messages.

Message counter

To view how many messages you have sent and received, select **Menu > Messages > Message counter**. Select **Sent messages** or **Received messages**, or select **Clear counters** to clear the counters.

• Instant messaging

Take text messaging to the next level by experiencing instant messaging (IM) in a wireless environment. Engage in instant messaging with friends and family, regardless of the mobile system or platform they are using (like the Internet), as long as you all use the same IM service. Check with your wireless service provider for availability.

Before you can start using IM on your phone, you must first subscribe to your wireless service provider's text messaging service. GPRS network service is required to use instant messaging. You must also register with the IM service you want to use. See "Register with an IM service" on page 26 for more information.



Note: Depending on both your IM service provider and your wireless service provider, you may not have access to all of the features described in this guide.

Register with an IM service

Before you can use IM, you must register with an IM service to obtain an IM user name and password. You can obtain an IM user name and password by registering over the Internet (using your computer) with the IM service provider you have selected. During the registration process, you will have the opportunity to create the user name and password of your choice. For more information about signing up for IM services, contact your wireless service provider.

IM icons and menu items

Each IM service provider has its own unique interface, so the IM menu items, screen display text, and icons on your phone may appear differently for each IM service. If you have questions about the differences in the various IM service providers' screen text and icons, contact your wireless service provider for more information.

IM menus

OFFLINE

When you select **IM** from your phone menu, a list of available IM services is displayed. Select the desired IM service to access the IM offline menu options: **Login, Saved convers., and Settings**. Depending on the IM service provider you are using, these may not be the exact menu items displayed. See "IM icons and menu items" on page 26.

ONLINE

After you log into IM, the following IM online menu options appear:

Conversations, IM contacts, Add contact, Create group, Saved convers., IM availability, Settings, Blocked list, and Logout. Depending on the IM service provider you are using, these may not be the exact menu items displayed. See "IM icons and menu items" on page 26.

Log in

- 1 Select **Menu > IM >** and the IM service you want to log into.
You must select the IM service every time you log in.
- 2 Select **Login**.
- 3 At the prompt, enter your user name if it is not already displayed, and select **OK**.
- 4 At the prompt, enter your password, and select **OK**.

Depending on your IM service, you may not need to enter your user name and password manually every time you log in.

After you have logged into IM the first time, you can choose to log in automatically or you can continue logging in manually. See the **Automatic login** option under "IM settings" on page 29.

Begin an IM session

You can send instant messages to anyone if you have the person's user name and you use the same IM service. As the conversation progresses, the most recent message appears at the top of the screen, causing the previous messages to move down one level (some IM services may do this in the opposite direction).

If you want to chat with a person, you must first add that person to **IM Contacts**. See "IM contacts" on page 28.

To begin an IM session with one contact:

- 1 From the **IM** online menu, select **IM contacts**.
- 2 Scroll to a contact who is online, and press **Select > Open**.
A conversation screen is opened, and the contact's name is displayed at the top.
- 3 Select **Write**, and enter a message. See "Write text" on page 16.
- 4 When you finish the message, select **Send**.

Begin a group chat

You can create your own private chat groups. The participants must be entered into **IM contacts**. See "IM contacts" on page 28.

- 1 From the **IM** online menu, select **Create group**.
- 2 Enter the group name (up to 10 characters), and select **OK**.
- 3 After your screen name appears, select **OK**.
The group chat screen is displayed.
- 4 To add group members, select **Options > Group members**.
- 5 Select the contact whom you want to invite to the group chat.
- 6 Enter the invitation text, and select **Send**.

Receive and reply to messages

If you have an active chat open and receive an instant message from the contact or group member with whom you are chatting, the new message is displayed on the conversation screen in the sequence in which they are received. Select **Write** to reply.

If you receive an instant message when you have the IM application open but do not have an active chat open, a screen appears showing you have a new instant message with the name of the sender. Select **Open** to open the conversation screen with that contact's new message displayed. To reply, select **Write**, enter a message, and select **Send**.

If you receive an instant message when you are logged in to the IM service but do not have the IM application open on your phone, a message is displayed telling you that a new IM message has been received. Select **Start** to open the IM application and view the new message.

Return to chat session

From the **IM** online menu, select **Conversations**. This list displays all IM conversations and group chats in which you are currently participating. To view a conversation or continue chatting, scroll to a group name or contact name, and press **Select**.

IM contacts

You can add the names of contacts with whom you interact frequently by instant messaging to the **IM contacts** list.

ADD A NEW CONTACT

To add a person to **IM Contacts** during an instant messaging session, select **Options > Add**.

To add a new contact from the IM online menu, select **Add contact**. Enter the contact's user name for the IM service, and select **OK**. Enter a nickname for the contact, and select **OK**. The contact is added to your **IM contacts** list.

To add a new contact from the IM contacts list, select any contact to open the IM contacts menu. Select **Add contact**, enter the contact's user name for the IM service, and select **OK**. Enter a nickname for the contact, and select **OK**. The contact is added to your **IM contacts** list.

REMOVE A CONTACT

From the **IM** online menu, select **IM contacts** and the contact you want to remove; then select **Remove contact > OK**.

BLOCK OR UNBLOCK CONTACTS

To block or unblock instant messages from a contact, select **IM Contacts** from the IM online menu, the contact name, and **Block contact** or **Unblock > OK**.

To view a list of the contacts you have blocked, select **Blocked list** from the IM online menu.

Save chat session

You can save a chat session while you have the conversation open. Select **Options > Save**, edit the name if desired, and select **Save**.

To view a saved chat session, go to the IM online menu, select **Saved convers.** and the desired conversation name to open it for viewing. While viewing the saved conversation, you can select **Delete** or **Options > Rename**.

Set your availability

You can determine if other users can tell whether you are available or not. From the **IM** online menu, select **IM Availability > Available for all, Available for contacts**, or **Appear offline**.

IM settings

You can customize your IM settings, depending upon the IM service you have selected. From the IM online menu, select **Settings** and one of the following:

Screen name—Enter a screen name (also called an alias or a nickname) that is 1–20 characters in length. This name is shown in front of the messages that you send to your contacts. It is also your default screen name when you join a group chat.

Automatic login—You can use automatic login after you have logged in at least once to an IM service with your user name and password. When you select **IM** from the phone main menu and then select the same IM service provider, you are then logged in automatically and do not have to enter your user name and password.

Sort contacts—Specify whether you want your IM contacts to be displayed **Alphabetically** or **By status**.

Status updates—Select **On** if you want your IM contacts list to be updated when a contact's availability changes. If you set this feature to **Off**, you can select **Refresh list** from the IM contacts menu to update your contacts' status manually.

Network—Modify network connection settings for the IM service.

Log off service

EXIT INSTANT MESSAGING

From the IM online menu, you can exit the IM application but still be connected to the IM service. Select **Back** until the IM online menu appears; then select **Exit**. If you open **IM** again, you do not need to log in again.

You can then receive instant messages and chat invitations from your contacts when using your phone for other purposes, such as playing a game. If you are connected to your IM service, but you have not used your IM application for some time, you may be automatically disconnected from the IM service. The next time you open the IM application, **Not connected** is displayed, and you are taken to the offline menu where you have to log in again.

LOG OUT OF INSTANT MESSAGING

To disconnect from the IM service, you must log out from the online menu. You will be taken to the IM service provider list, where you can exit the IM application or select an IM service and log in again.

From the IM online menu, select **Logout > OK**.

• Call log



The phone logs the phone numbers of missed, received, and dialed calls, and the approximate length of your calls. To log this information, the phone must be switched on and within the network's service area, and the network must support these functions.

To view recent call logs, select **Menu > Call log > Missed calls, Received calls, or Dialed numbers**.

When viewing a list, select **Options** to view the date and the time of the call, edit or delete the phone number from the list, save the number in **Contacts**, or send a message to the number.

Delete log contents

To delete recent call lists, select **Menu > Call log > Delete recent call lists > All, Missed, Received, or Dialed**.

Counters and timers for calls, data, and messages




Note: The actual invoice for calls and services from your service provider may vary, depending upon network features, rounding off for billing, taxes, and so forth.

Select **Menu > Call log > Call timers, GPRS data counter, or GPRS connection timer** for approximate information on your recent communications.

• Contacts



You can save names and phone numbers (contacts) in the phone memory and the SIM card memory.

- The phone memory may save names with numbers and text notes about each name. You can also save an image for a certain number of names.
- Names and numbers saved in the SIM card memory, are indicated by .

Contact settings


Select **Menu > Contacts > Settings > Memory in use, Contacts view, or Memory status**.

Add contact

Select **Menu > Contacts > Add new contact**. Enter the name and the phone number. When the name and number are saved, select **Done**.

Add numbers, text or an image

You can save different types of phone numbers, short text items, and an image for each name in the internal phone memory for contacts.

The first number saved is automatically set as the default number and is indicated with a frame around the number type indicator, for example . When you select a name from contacts to make a call, the default number is used unless you select another number.

- 1 Make sure that the memory in use is either **Phone** or **Phone and SIM**. See "Contact settings" on page 30.
- 2 Open your contacts list and scroll to the contact you want to modify.
- 3 Select **Details > Options** and one of the following:

Add number—Select one of the number types, enter the number, and select **OK** to save it. To set the selected number as the default number, select **Set as default**.

Add detail—Select one of the text types, enter the text (see "Write text" on page 16), and select **OK** to save it.

Add image—When you select this option, **Gallery** is opened automatically so that you can choose the image. Open the image you want to add, and select **Options > Save to contacts**.
- 4 Select **Back > Exit** to return to the standby mode.

To change the number or text type, select **Change type** in the options list. You cannot change the type of an ID when it is in **IM contacts** or the **Subscribed names** list.

Search for a contact

Select **Menu > Contacts > Find**, or to find a contact name quickly, scroll down in the standby mode. You can enter the first characters of the name you are searching for in the pop-up window.

Contact options

The following options may be available in the **Contacts** menu:

- **Add new contact**
- **Delete**
- **Copy**—Copy names and phone numbers between the phone contact directory and the SIM card memory.
- **Settings**—Select how the names and numbers are displayed, and view the free and used memory capacity. See "Contact settings" on page 30.

- **1-touch dialing**—Assign a number to a 1-touch dialing key. To activate 1-touch dialing see "1-touch dialing" on page 32.
- **Info numbers**—Call the information numbers of your service provider if the numbers are included on your SIM card (network service).
- **Service numbers**—Call the service numbers of your service provider if the numbers are included on your SIM card (network service).
- **My numbers**—View the phone numbers assigned to your SIM card. Only shown, if the numbers are included on your SIM card.
- **Caller groups**—Arrange the names and phone numbers saved in the memory into caller groups with different ringing tones.

Edit or delete details

- 1 Search for the contact that you want to edit or delete, and select **Details**.
- 2 Scroll to the name, number, text item, or image that you want to edit or delete, and select **Options**.
- 3 Select **Edit name**, **Edit number**, **Edit detail**, **Change image**, **Delete number**, **Delete detail**, or **Delete image**.
 - You cannot edit or delete an ID when it is in **IM contacts** or the **Subscribed names** list.
 - Deleting an image attached to the contact does not delete it from **Gallery**.

Send and receive a business card

You can send and receive a person's contact information as a business card if you are using a compatible device. When you have received a business card, select **Show > Save** to save the business card in the phone memory. To discard the business card, select **Exit > Yes**.

To send a business card, do the following:

- 1 In **Contacts**, search for the name and phone number that you want to send.
- 2 Select **Details > Options > Send bus. card > Via text message** (network service) or **Via multimedia** (network service).
- 3 Select **Primary number** or **All details**.

1-touch dialing

To assign a number to a 1-touch dialing key:

- 1 Select **Menu > Contacts > 1-touch dialing**, and scroll to a key number.
- 2 Select **Assign**, or if a number has already been assigned to the key, select **Options > Change**.

3 Select **Find** and the name and number that you want to assign.

If the **1-touch dialing** function is off, the phone asks whether you want to activate it. See also **1-touch dialing** in "Call settings" on page 36.

To use 1-touch dialing, hold down the desired 1-touch dialing enter the standby mode.

Voice dialing

To make a phone call, say a voice tag that has been added to a phone number. Any spoken word, such as a person's name, can be a voice tag. You can add up to 10 voice tags.

Before using voice tags, note the following:


- Voice tags are not language-dependent. They are dependent on the speaker's voice.
- You must say the name exactly as you said it when you recorded it.
- Voice tags are sensitive to background noise. Record voice tags and use them in a quiet environment.
- Very short names are not accepted. Use long names and avoid similar names for different numbers.



Note: Using voice tags may be difficult in a noisy environment or during an emergency, so you should not rely solely upon voice dialing in all circumstances.

ADD AND MANAGE VOICE TAGS

Save or copy the contacts to which you want to add a voice tag in to phone memory. You can also add voice tags to the names in the SIM card. If you replace your SIM card with a new one, you must delete the old voice tags before you add new ones.

- 1 Scroll down in the standby mode to open your contact list.
- 2 Scroll to the contact to which you want to add a voice tag, and select **Details**.
- 3 Scroll to the phone number you want, and select **Options > Add voice tag**.
- 4 Select **Start**, and say clearly the words you want to record as a voice tag. After recording, the phone plays the recorded tag.  appears after the phone number with a voice tag.

To check the voice tags, select **Menu > Contacts > Voice tags**. Scroll to the contact with the voice tag that you want, and press **Select** to see the options to listen to, delete, or change the recorded voice tag.

MAKE A CALL

In the standby mode, press and hold the **Right selection** key. A short tone is played, and **Speak now** is displayed. Say the voice tag clearly. The phone plays the recognized voice tag and dials the voice tag phone number after 1.5 seconds.

• Settings



Profiles

Use **Profiles** to adjust and customize ringing tones and sound tones for different events and environments. You can customize the profiles and activate a profile to use it. Available profiles are **Normal**, **Silent**, **Meeting**, **Outdoor**, **My profile 1**, and **My profile 2**.

Select **Menu > Settings > Profiles > a profile**, then:

- To activate the selected profile, select **Activate**.
- To personalize the profile, select **Customize**. Select the setting you want to change, and modify it.
- To set the profile to be active until a certain time up to 24 hours, select **Timed**, and set the time for the profile setting to end. When the time set for the profile expires, the previous profile that was not timed becomes active.

Themes

A theme is a package that may include a screen saver, a wallpaper image, a ringing tone, and a color scheme to customize your phone for different events and environments. Themes are stored in **Gallery**. To activate a theme, do the following:

- 1 Select **Menu > Settings > Themes > Select theme**.
The gallery is automatically opened so that you can locate a theme.
- 2 Open the **Themes** folder, scroll to a theme, and select **Options > Apply theme**.
See also to "Gallery" on page 40.

To download new themes, select **Menu > Settings > Themes > Theme downloads**. See "Download" on page 50.

Tone settings

To change the tone settings for the active profile, select **Menu > Settings > Tone settings**. Select and change **Incoming call alert**, **Ringing tone**, **Ringing volume**, **Vibrating alert**, **Message alert tone**, **Instant message alert tone**, **Keypad tones**, and **Warning tones**. You can find the same settings in the **Profiles** menu. See "Profiles" on page 34.

Select **Alert for** to set the phone to ring only upon calls from phone numbers that belong to a selected caller group. Scroll to the caller group you want, or select **All calls > Mark**.

Light settings

You can select different light sequences that follow the phone functions. Select **Menu > Settings > Light settings > Light sequences** to set the light effects on or off.

Personal shortcuts

With personal shortcuts you get quick access to frequently used phone functions.

RIGHT SELECTION KEY

Select **Menu > Settings > Personal shortcuts > Right selection key** and a phone function from the list to assign to the **Right selection** key. See "Start screen (standby mode)" on page 9. This menu is not shown in some operator variants.


GO TO OPTIONS

To assign phone functions from a predefined list to the **Go to** menu that is available, press the **Left selection** key.

Select **Menu > Settings > Personal shortcuts**. Press **Select 'Go to' options** to add functions to the shortcut list. Select **Organize 'Go to' options** to rearrange the functions on your personal shortcut list. See "Start screen (standby mode)" on page 9.

VOICE COMMANDS

You can activate certain phone functions by saying a voice command. Up to five functions can be selected for voice commands.

Select **Menu > Settings > Personal shortcuts > Voice commands**, the function folder that you want, scroll to the function to which you want to add a voice command, and select **Add**. A voice command is indicated with .

When you are using voice commands, the same guidelines apply in "Make a call" on page 33.

Display settings

Select **Menu > Settings > Display settings** and one of the following:

Wallpaper—Set your phone to display a background image, known as wallpaper, when the phone is in the standby mode.

Screen saver—Press **Select s. saver** to choose an animation or a still image as screen saver from **Gallery**. Select in **Time-out** the time after which the screen saver will be activated. Select **On** to activate the screen saver.

Independent of the screen saver settings, for power saving purposes, a digital clock view is activated when no phone function is used after a certain time.

Color schemes—Change the color in some display components, such as indicators, the signal bar, the battery bar, and the background image that appears when using a menu function.

Menu view—Set the way the phone displays the main menu.

Operator logo—Set your phone to display or hide the operator logo.

Time and date settings

Select **Menu > Settings > Time and date settings**, and one of the following:

Clock—Set the phone to show the clock in the standby mode, adjust the clock, and select time zone and format.

Date—Set the phone to show the date in the standby mode, set the date, and select the date format and separator.

Auto-update of date & time (network service)—Set the phone to automatically update the time and date according to the current time zone.

Call settings

Select **Menu > Settings > Call settings**, and one of the following:

Automatic volume control—Set the phone to automatically adjust the speaker volume according to the background noise.

Call forwarding (network service)—Forward your incoming calls. For details, contact your service provider.

Anykey answer—Select **On**; to answer an incoming call, briefly press any key except the **Power** key, the **End** key, or the **Right** and **Left selection** keys.

Automatic redial—Select **On**; your phone will make a maximum of 10 attempts to connect the call after an unsuccessful call attempt.

1-touch dialing—Select **On**; to dial the names and phone numbers assigned to the 1-touch dialing keys from **2** to **9**, press and hold the corresponding number key.

Call waiting—Select **Activate** for the network to notify you of an incoming call while you have a call in progress (network service).

Summary after call—Select **On**; the phone briefly displays the approximate duration and cost (network service) of the call after each call.

Send my caller ID (network service)—Select **Set by network**, **Yes**, or **No**.

Line for outgoing calls (network service)—Select phone line 1 or 2 to make calls. This option is shown only if supported by your SIM card.

Phone settings

Select **Menu > Settings > Phone settings**, and one of the following:

Phone language—Set the display language of your phone. If you select **Automatic**, the phone selects the language according to the information on the SIM card.

Automatic keyguard—Set the keypad of your phone to lock automatically after a preset time delay when the phone is in the standby mode and no function of the phone has been used. Select **On**, and set the time from 5 seconds to 60 minutes. When the keyguard is on, calls still may be possible to the official emergency number. Enter the emergency number, and press the **Call** key.

Cell info display—Select **On** to receive information from the network, depending on the network cell used (network service).

Welcome note—Enter the note you would like to be shown briefly when the phone is switched on. To save the note, select **Save**.

Operator selection—Select **Automatic**; the phone automatically selects one of the cellular networks available in your area. Select **Manual**, and a network that has a roaming agreement with your service provider.

Confirm SIM service actions—See "SIM services" on page 53.

Help text activation—Select whether the phone shows the help texts.

Start-up tone—Select whether the phone plays a start-up tone when switched on.

Connectivity

You can define the settings for GPRS dial-up connections.

GPRS AND EGPRS

GPRS (general packet radio service) is a network service that allows mobile phones to be used for sending and receiving data over an Internet protocol (IP)-based network. GPRS is a data bearer that enables wireless access to data networks such as the Internet.

EGPRS (enhanced GPRS), also known as EDGE (enhanced data rates for global evolution), is similar to GPRS. EDGE is a radio interface modulation technique which increases GPRS data rates. For more information on the availability of EGPRS and data transfer speed, contact your service provider.

When you have selected **GPRS** as a data bearer, the phone uses EGPRS instead of GPRS if it is available in the network. You cannot select between EGPRS and GPRS in your phone, but for some applications, you may be able to select either **GPRS** or **GSM data** (CSD—circuit switched data) as the data bearer. The data bearer is part of the preferred access point and can be changed in **Configuration settings** (see "Configuration settings" on page 38).

The applications that may use GPRS are MMS, instant messaging, browsing sessions, remote SyncML, Java application downloading, and the PC dial-up (for example, Internet connections).

Before you can use GPRS technology, contact your service provider for availability of and subscription to the GPRS service, and save the GPRS settings for each of the applications used over GPRS.

GPRS CONNECTION

Select **Menu > Settings > Connectivity > GPRS > GPRS connection** and one of the following:

- **Always online**—Set the phone to automatically register to a GPRS network when you switch the phone on.
- **When needed**—Set the phone to establish GPRS registration and connection when an application using GPRS needs it and to close the connection when you end the application.

GPRS MODEM SETTINGS

You can connect the phone by a data cable connection to a compatible PC and use the phone as a modem to enable GPRS connectivity from the PC.

To define the settings for GPRS connections from your PC, select **Menu > Settings > Connectivity > GPRS > GPRS modem settings** and one of the following:

Active access point—Activate the access point that you want to use.

Edit active access point—Change the access point settings:

- **Alias for access point**—Enter a name for the activated access point, and select **OK**.
- **GPRS access point**—Enter the access point name (APN) to establish a connection to a GPRS network, and select **OK**. Contact your service provider for the APN.

You can also set the GPRS dial-up service settings (access point name) on your PC using the **Nokia Modem Options** software. See "PC Suite" on page 54. If you have set the settings both on your PC and on your phone, the PC settings will be used.

Enhancement settings

The enhancement settings menu is shown only if the phone is or has been connected to a compatible mobile enhancement, charger, or hands-free unit.

Select **Menu > Settings > Enhancement settings**. You can select an enhancement menu if the corresponding enhancement is or has been connected to the phone.

Configuration settings

Some of the network services need to have the correct configuration settings on your phone. Get the settings from a service provider as a configuration message, or enter your personal settings manually. Configuration settings from up to 10 different service providers can be stored in the phone and can be managed within this menu.

Select **Menu > Settings > Configuration settings**, and one of the following:

Default configuration settings—View the list of service providers stored on the phone (the default service provider is highlighted), and select another service provider as default. Scroll to a provider, and select **Details** to view the list with supported applications. To delete a service provider from the list, select **Options > Delete**.

Activate default in all applications—Set the applications to use the settings from the default service provider.

Preferred access point—Select another access point. Normally the access point from your service provider is to be used.

To enter, view, and edit the settings manually, select **Menu > Settings > Configuration settings > Personal configuration settings**. To add a new configuration, select **Add new** or **Options > Add new**. Choose one of the application types from the list and enter all the necessary settings. To activate the settings, select **Back > Options > Activate**.

To view or to edit the user-defined settings, select the application that you want to view, and select the setting to edit.

Security settings

When security features that restrict calls are in use (such as call restriction, closed user group, and fixed dialing) calls still may be possible to the official emergency number programmed into your device.

Select **Menu > Settings > Security settings**, and one of the following:

PIN code request—Set the phone to request your PIN code every time the phone is switched on. Some SIM cards do not allow the PIN code request to be turned off.

Call restrictions (network service)—Restrict incoming calls to and outgoing calls from your phone. A restriction password is required.

Fixed dialing—Restrict your outgoing calls to selected phone numbers if this function is supported by your SIM card.

Closed user group (network service)—Specify the group of people whom you can call and who can call you.

Security level—Select **Phone** for phone to request the security code whenever a new SIM card is inserted. Select **Memory** for the phone to request the security code when the SIM card memory is selected and you want to change the memory in use.

Access codes—Change the security code, PIN code, PIN2 code, or restriction password.

Restore factory settings

To reset some of the menu settings to their original values, select **Menu > Settings > Restore factory settings**.

• Operator menu

This menu lets you access a portal to services provided by your service provider. This menu is operator specific. The name and the icon depend on the operator. For more information, contact your service provider.

The operator can update this menu with a service message. For more information, refer to "Service inbox" on page 50.

• Gallery



In this menu, you can manage graphics, images, video clips, recordings, and tones. These files are arranged in folders.

Your phone supports a digital rights management (DRM) system to protect acquired content. A piece of content (for example a ringing tone) can be protected and associated with certain usage rules, such as the number of usage times and a certain usage period. The rules are defined in the activation key of the content, which can be delivered either together with the content or independently, depending on the service provider. You may be able to update these activation keys. Always check the delivery terms of any content and activation key before acquiring them, as they may be subject to a fee.

Copyright protections may prevent some images, ringing tones, and other content from being copied, modified, transferred, or forwarded.

1 Select **Menu > Gallery**.

A list of folders is displayed. **Images**, **Video clips**, **Themes**, **Graphics**, **Tones**, and **Recordings** are the default folders on the phone.

2 Scroll to a folder, and select **Open** to view a list of files in the folder or **Options** to choose from additional options.

3 After you open a folder, select the file that you want to view and **Open**.

If you select the **Themes** folder, scroll to a theme, and select **Open > View** to view the theme package. To choose it as your theme, select **Options > Apply theme**.

4 After you open a file, select **Options** to choose additional options.

• Media



Camera

You can take photos or record video clips with the built-in camera. The camera produces pictures in JPEG format and the video clips in 3GP format.

The Nokia 3220 device supports an image capture resolution of 640 x 480 pixels. The image resolution in these materials may appear different.

TAKE A PHOTO OR A VIDEO CLIP

Select **Menu > Media > Camera**. The live image appears on the display, and you can use the display as a viewfinder. Scroll left and right to change the camera mode: **Standard photo**, **Portrait photo**, or **Video**, or **Night mode** (if the lighting is dim for taking photos). If you want to add the photo to a name or a phone number saved in contacts, select **Portrait photo**.

Take a photo

Select **Capture**. A shutter sound is heard. The phone saves the photo in the **Images** folder of the **Gallery** menu.

If you want to send the photo as a multimedia message, select **Send**.

Select **Back** to take another photo, or select **Options** and select an option to rename or zoom the saved photo, set the contrast, see the details, set the photo as wallpaper, open the gallery, or delete the photo.

You can activate the self-timer of the camera for one picture at a time. To put the camera in photo mode, select **Options > Self-timer > Start**. After the timeout, the camera takes the photo. While the self-timer is running, a beeping sound is heard.

Record a video

To start recording a video clip, select **Record**. When you are recording a video clip, the remaining recording time is shown on the top of the display.

To pause the recording, select **Pause**. To resume the recording, select **Continue**. To stop the recording, select **Stop**. The phone saves the recording in the **Video clips** folder of the **Gallery** menu. To view the recorded video clip, select **Play**.

Select **Back** to start recording a new video clip. Select **Options** and an option to delete or rename the saved video clip, set the contrast, see the details, send it as a multimedia message, open the gallery, or mute/unmute the microphone.

CAMERA SETTINGS

Select **Menu > Media > Camera > Options**. Depending on the active camera mode, the following options may appear: **Change mode**, **Self-timer**, **Mute/Unmute**, **Open Gallery**, **Settings** (to adjust the camera settings), **Default mode**, **Image quality**, **Video clip length**, **Camera sounds**, **Self-timer lights**, and **Default title**.

Voice recorder

You can record pieces of speech, sound, or an active call for up to 5 minutes. For example, this is useful when recording a name and phone number for writing down later.

The recorder cannot be used when a data call or GPRS connection is active.

RECORD

- 1 Select **Menu > Media > Voice recorder**.
- 2 To start the recording, select **Record**. To start the recording during a call, select **Options > Record**.
While recording a call, all parties to the call will hear a faint beeping sound every 5 seconds approximately.
- 3 To end the recording, select **Stop**.
The recording is saved in the **Recordings** folder of the **Gallery** menu.
- 4 To listen to the latest recording, select **Play last recorded**.
- 5 To send the latest recording, select **Send last recorded**.

LIST OF RECORDINGS

Select **Menu > Media > Voice recorder > Recordings list**. The list of folders in the **Gallery** is shown. Open **Recordings** to see the list with recordings.

• Organizer



Alarm clock

You can set the phone to sound an alarm at a desired time.

Select **Menu > Organizer > Alarm clock**.

To set the alarm, select **Alarm time**, and enter the alarm time. To change the alarm time when the alarm time is set, select **On**. Select **Repeat alarm** to set the phone to alert you on selected days of the week.

Select **Alarm tone** and the default alarm tone. To customize the alarm tone, select one from the ringing tone list or from **Gallery**.

When the alarm time expires, the phone sounds an alert tone and flashes **Alarm!** and the current time on the display, even if the phone is switched off. Select **Stop** to stop the alarm. If you let the phone continue to sound the alarm for a minute or select **Snooze**, the alarm stops for about 10 minutes, then resumes.

If the alarm time is reached while the device is switched off, the device switches itself on and starts sounding the alarm tone. If you Select **Stop**, the device asks whether you want to activate the device for calls. Select **No** to switch off the device or **Yes** to make and receive calls. Do not select **Yes** when wireless phone use may cause interference or danger.

Calendar

Select **Menu > Organizer > Calendar**.






The current day is indicated by a frame. If there are any notes set for the day, the day is in bold type. To view the day notes, select **View**. To view a week, select **Options > Week view**. To view a single note, select **View**.

Other options for the calendar view may be options for creating a note; deleting, editing, moving, and repeating a note; copying a note to another day; or sending a note directly to another compatible phone as a note, text message, or a multimedia message.

In **Settings** you can set the date, time, time zone, date and time format, and the first day of the week. In the **Auto-delete** option you can set the phone to delete old notes automatically after a specified time.


To delete all notes in the calendar, select the month or week view and **Options > Delete all notes**.

MAKE A CALENDAR NOTE

Select **Menu > Organizer > Calendar**. Scroll to the date you want, and select **Options > Make a note**. Select one of the following note types:  **Meeting**,  **Call**,  **Birthday**,  **Memo**, or  **Reminder**.

CALENDAR NOTE ALARMS

The phone must be turned on to sound a calendar note alarm tone. If you want to set an alarm that will sound while the phone is turned off, see "Alarm clock" on page 42.

When the phone sounds an alarm for a calendar note, the phone beeps, and displays the note. To call a displayed number (when a call note  on the display), press the **Call** key. To stop the alarm and view the note, select **View**. Select **Snooze**, and the phone sounds an alarm again after 10 minutes. To stop the alarm without viewing the note, select **Exit**.

To-do list

You can save a note for a task that you have to do, select a priority level for the note, and mark it as done when you complete it. You can sort the notes by priority or by date.

Select **Menu > Organizer > To-do list**.

Select **Add note** to make a note. Enter the note, and select **Save**. Select the priority for the note. The phone automatically sets the deadline without an alarm for the note. To change the deadline, view the note, and select the deadline option.

When viewing a note, you can select **Options** to view and delete the selected note and delete all the notes that you have marked as done. You can sort the notes by priority or by deadline, send a note to another phone, save a note as a calendar note, or access the calendar. You can also select an option to edit the selected note, edit the deadline or priority for the note, or mark the note as done.

Notes

You can use this application for writing and sending notes to compatible devices by MMS.

Select **Menu > Organizer > Notes**. The phone will ask you to set the date and time if they have not already been set when you start to write a note. To add a note, select **Add note** or **Options > Make a note**. Enter the note, and select **Save**; or scroll to a note, and select **View** or **Options** to see the options for notes.

Synchronization

Synchronization allows you to save your calendar and contacts data on a remote Internet server (network service) or on a compatible PC. If you have saved data on the remote Internet server, you can synchronize your phone by starting the synchronization from your phone. You can also synchronize the data in the contacts list, calendar, and notes of your phone to correspond to the data of your compatible PC by starting the synchronization from your PC.

The contact data in your SIM card will not be synchronized.

SYNCHRONIZE FROM YOUR PHONE

Before synchronizing from your phone, you need to subscribe to a synchronization service and get the configuration settings from your service provider. For more information on availability and the synchronization service settings, contact your service provider.

To start the synchronization from your phone, do the following:

- 1 Activate the connection settings you need for the synchronization. See "Synchronization settings" on page 44.
- 2 Select **Menu > Organizer > Synchronization > Server sync > Data to be synchronized**, mark the data to be synchronized, and select **Done > Synchronize**.

The marked data of the active set will be synchronized after confirmation.

SYNCHRONIZATION SETTINGS

You may receive the synchronization settings for your phone as a configuration message from the service provider. For more information on availability and the synchronization service settings, contact your service provider. To enter the settings manually, see "Configuration settings" on page 38.

Select **Menu > Organizer > Synchronization > Server sync > Sync settings > Configuration**. Select the service provider whose settings you would like to activate. Select **Account** to see the accounts provided by the service provider. If more than one account is displayed, choose the one you want to use.

SYNCHRONIZE FROM YOUR COMPATIBLE PC

You must use a data cable to connect your phone to a PC to synchronize contacts, the calendar, and the notes from your PC. To view compatible data cables, see "Enhancements" on page 55. You also need the PC Suite software of your phone installed on the PC. Start the synchronization from the PC using PC Suite.

Verify that the phone is in the standby mode and that the time and date are set.

● Applications



Games and applications

Your phone software may include some games and Java applications specially designed for this Nokia phone.

LAUNCH A GAME OR AN APPLICATION

Select **Menu > Applications > Games > Select game or Collection > Select application**. Scroll to a game or an application and select **Open**.

GAME AND APPLICATION DOWNLOADS

Your phone supports J2ME Java applications. Make sure that the application is compatible with your phone before downloading it.

Select **Menu > Applications > Games > Game downloads** or **Collection > App. downloads**. The list of available bookmarks is shown. Select **More bookmarks** to access the list of bookmarks in the **Services** menu. See "Bookmarks" on page 50. Select a bookmark to connect to the desired service. For the availability of different services, pricing, and tariffs, contact your service provider.



Important: Only install and use applications from sources that offer adequate security and protection against harmful software.

Note that downloaded applications may be saved in the **Games** menu instead of the **Applications** menu.

GAME SETTINGS

Select **Menu > Applications > Games > App. settings** to set sounds, lights, and shakes for games.

MEMORY STATUS FOR GAMES AND APPLICATIONS

To view the amount of memory available for game and application installations (third shared memory), select **Menu > Applications > Games** or **Collection > Memory**.

Calculator

The calculator in your phone adds, subtracts, multiplies, divides, calculates the square and the square root, and converts currency values.

- 1 Select **Menu > Applications > Extras > Calculator**.
- 2 When **0** is displayed on the screen, enter in the first number in the calculation. Press **#** for a decimal point.
- 3 Select **Options > Add, Subtract, Multiply, Divide, Square, Square root, or Change sign**.
- 4 Enter the second number.
- 5 To get the answer, select **Equals**.
- 6 To start a new calculation, press and hold **Clear**.

This calculator has a limited accuracy and rounding errors may occur, especially in long divisions.

PERFORM A CURRENCY CONVERSION

- 1 Select **Menu > Applications > Extras > Calculator**.
- 2 To save the exchange rate, select **Options > Exchange rate**.
- 3 Select either of the displayed options.
- 4 Enter the exchange rate, press **#** for a decimal point, and select **OK**.
The exchange rate remains in the memory until you replace it with another one.
- 5 To perform the currency conversion, enter the amount to be converted, and select **Options > To home or To foreign**.

Countdown timer

Select **Menu > Applications > Extras > Countdown timer**. Enter the alarm time in hours, minutes, and seconds, and select **OK**. You can write your own text to be displayed when the time expires, and select **Start** to start the countdown timer.

To change the countdown time, select **Change time**, or to stop the timer, select **Stop timer**.

If the alarm time is reached when the phone is in the standby mode, the phone sounds a tone and flashes the note text if it is set; otherwise, it flashes the text **Countdown completed**.

To stop the alarm, press any key. If no key is pressed, the alarm automatically stops within 30 seconds. To stop the alarm and delete the note text, select **Exit**.

Stopwatch

You can use the stopwatch to measure time, take intermediate times, or take lap times.

TIME OBSERVATION AND TIME SPLITTING

Select **Menu > Applications > Extras > Stopwatch > Split timing**. Select **Start** to start the time observation. Select **Split** every time you want to take an intermediate time; the intermediate times are listed below the running time on the display. Select **Stop** to stop the time observation. To save the times, select **Save**. Select **Options** to start the time observation again or reset the times without saving.

LAP TIMES

Select **Menu > Applications > Extras > Stopwatch > Lap timing**. Select **Start** to start the time observation and **Lap** to take a lap time. Select **Stop** to stop the lap timing. To save the times, select **Save** and enter a name. Select **Options** to save or reset the lap times.

USE OTHER PHONE FEATURES WHILE TIMING

If you have already started the stopwatch and want to use other phone features while the stopwatch continues to run, press the **End** key to return to the standby mode. To return to the stopwatch, select **Menu > Applications > Extras > Stopwatch > Continue**.

Using the stopwatch or allowing it to run in the background when using other features increases the demand on battery power and reduces battery life.

VIEW AND DELETE TIMES

Select **Menu > Applications > Extras > Stopwatch**.

If the stopwatch is not reset, you can select **Show last time** to view the most recent measured time. Select **View times** to select from a list of names or final times of the time sets.

To delete the saved times, select **Delete times**. Select **Delete all > Yes** or **One by one**. Scroll to the times you want to delete, and select **Delete > Yes**.

Wallet

In **Wallet** you can save personal information such as credit card numbers and addresses. The data saved in the wallet can easily be retrieved to automatically fill in data fields when making purchases while browsing, as long as the service supports wallet functionality. You can also save access codes to mobile services that request a user name and password.

If you have tried to access or have accessed confidential information requiring passwords, empty the cache after each use. To empty the cache, see "Cache memory" on page 51.

SET WALLET CODE

The data in the wallet is protected with a wallet code that you can define when you access the wallet for the first time. At **Create wallet code**, enter the code, and select **OK** to confirm it. At **Verify wallet code**, enter the code again, and select **OK**.

DELETE WALLET CONTENT

If you want to delete all the content of the wallet along with the wallet code, enter ***#7370925538#** in the standby mode. You also need the phone security code (see "Access codes" on page 18).

USE THE WALLET

You can set up your personal information by using the wallet menu. To use the content of the wallet in a mobile service, access the wallet through the browser (see "Services" on page 48).

To use the wallet feature, select **Menu > Applications > Extras > Wallet**. Enter your wallet code, select **OK** and one of the following:

Wallet profiles—When you have saved your personal card details, you can combine them together into a wallet profile. You can use the profile to retrieve wallet data from different cards while browsing.

Cards—Use this option to create and save **Payment cards**, **Loyalty cards**, **Access cards**, **User info cards**, or **Address cards**. For availability of receiving card information as configuration settings, contact the card issuer or your service provider.

Tickets—Save notifications for e-tickets you have bought through a mobile service.

Receipts—Save mobile purchase receipts.

Personal notes—Save personal information, such as account numbers, passwords, codes, or notations. Personal notes are protected with the wallet PIN code. When viewing a note, select **Options** and **Send via text msg.** to copy the note as a text message; **Copy to calendar** to copy the note to the calendar as a memo; **Use detail** to extract numbers, e-mail addresses, and web addresses from a note; and **Delete** to delete the note you are viewing.

Settings—Use this option to change wallet settings.

• Services



Your phone has a browser that you can use to access various mobile Internet services.

Check the availability of these services, pricing, and tariffs with your service provider.

With the browser you can view the services that use wireless mark-up language (WML) or extensible hypertext mark-up language (XHTML) on their pages. Appearance may vary due to screen size. Note that you may not be able to view all the details of the Internet pages.

Access services

- 1 Save the service settings that are required to access the service that you want to use. See "Set up the phone to access a service" on page 48.
- 2 Make a connection to the given service. See "Connect to a service" on page 48.
- 3 Start browsing the pages of the service. See "Browse the pages of a service" on page 49.
- 4 When you are finished browsing, end the connection to the service. See "Disconnect from a service" on page 49.

Set up the phone to access a service

Your phone may already have some service settings stored. Additional settings may be received as a configuration message from the service provider that offers the service you want to use. For more information and for the appropriate settings, contact your service provider. See also "Configuration settings" on page 38.

Connect to a service



Make sure that the service settings of the service you want to use are activated. To activate the settings, select **Menu > Services > Settings > Configuration settings > Configuration** and the configuration setting you want to activate.

Connect to the service by one of the following methods:

- To open the homepage of the service provider, select **Menu > Services > Home**, or in the standby mode, press and hold **0**.
- To open a bookmark of the service, select **Menu > Services > Bookmarks** and a bookmark. If the bookmark does not work with the current active service settings, activate another set of service settings and try again.
- To access the last URL, select **Menu > Services > Last web addr**.
- Enter the address of the service, select **Menu > Services > Go to address**, enter the address of the service, and select **OK**.

Browse the pages of a service

After you have connected to the service, begin to browse its pages. The function of the phone keys may vary in different services. Follow the text guides on the phone display. For more information, contact your service provider.

If **GPRS** is selected as the data bearer,  is shown on the top left of the display during browsing. If you receive a call or a text message, or make a call during a GPRS connection,  will be shown on the top left of the display to indicate that the GPRS connection is suspended (on hold). After a call the phone tries to reconnect the GPRS connection. See also "GPRS and EGPRS" on page 37.

If you have tried to access or have accessed confidential information requiring passwords, empty the cache after each use. To empty the cache, see "Cache memory" on page 51.

USE THE PHONE KEYS WHILE BROWSING

- Use any of the scroll keys to browse through the page.
- To select a highlighted item, press the **Call** key, or select **Options** and the option to open the link.
- To enter letters and numbers, press the keys **1–9**. To enter special characters, press *****.

DIRECT CALLING

While browsing, you can make a voice call, send touch tones while a voice call is in progress, and save a name and a phone number from a page.

Disconnect from a service

To quit browsing and end the connection, select **Options > Quit**. When **Quit browsing?** is displayed, select **Yes**.

You can also disconnect by pressing the **End** key twice, or press and hold the **End** key.

Appearance settings for the browser

While browsing, select **Options > Other options > Appear. settings**, or in the standby mode, select **Menu > Services > Settings > Appearance settings** and one of the following:

Text wrapping—Select **On**, and the text continues on the next line. If you select **Off**, the text is abbreviated.

Font size—Select a font size.

Show images—Select **No**, and any pictures appearing on the page are not shown.

Alerts—Select **Alert for unsecure connection** and **Yes** to set the phone to alert when a secure connection changes to an insecure one during browsing. Select **Alert for unsecure items** and **Yes** to set the phone to alert when a secure page contains an insecure item. These alerts do not guarantee a secure connection. For more information, see "Browser security" on page 51.

Character encoding—Select the character set that the phone uses to show browser pages that do not include that information; or select whether to always use UTF-8 encoding when sending a Web address to a compatible phone.

Cookies

A cookie is data that a site saves in the cache memory of the browser (for example, your user information or your browsing preferences). Cookies are saved until you clear the cache memory. See "Cache memory" on page 51.

While browsing, select **Options > Other options > Security > Cookie settings**, or in the standby mode, select **Menu > Services > Settings > Security settings > Cookies**. Select **Allow** to allow cookies or **Reject** to prevent the phone from receiving them.

Bookmarks

You can save page addresses as bookmarks in the phone memory.

- 1 While browsing, select **Options > Bookmarks**, or in the standby mode, select **Menu > Services > Bookmarks**.
- 2 Scroll to the bookmark that you want to use, and select **Select** to make a connection to the page associated with the bookmark; or select **Options** to view the title and the address of the selected bookmark, edit or delete the selected bookmark, send it directly to another phone as a bookmark or text message, or create a new bookmark.

Your device may have some bookmarks loaded for sites not affiliated with Nokia. Nokia does not warrant or endorse these sites. If you choose to access them, you should take the same precautions for security or content as you would with any Internet site.

RECEIVE A BOOKMARK

When you receive a bookmark, **1 bookmark received** is displayed. Select **Show** to view the bookmark. To save the bookmark, select **Save**. Select **Options > View** to see the details or **Delete** to discard it.

Download

To download more tones, graphics, games, videos, themes, or applications to your phone (network service), select the type of download to receive.



Important: Only install applications from sources that offer adequate protection against harmful software.

For the availability of different services, pricing, and tariffs, contact your service provider.

Service inbox

The phone can receive service messages (pushed messages) from your service provider (network service). Service messages are, for example, notifications of news headlines, and they may contain a text message or an address of a service.

When you receive a service message in the standby mode, you have the following options:

- To access the message, select **Show**.
- To move the message to the **Service inbox**, select **Exit**.
- To access the message later, select **Menu > Services > Service inbox**.
- To access the message while browsing, select **Options > Other options > Service inbox**.
- To activate the browser and download marked content, select **Retrieve**.
- To display detailed information on a service notification, select **Options > Details**.
- To delete information on a service notification, select **Options > Delete**.

SERVICE INBOX SETTINGS

Select **Menu > Services > Settings > Service inbox settings** and one of the following:

Service messages—Select **On** or **Off** to set the phone to receive or not receive service messages.

Message filter—Select **On** to set the phone to receive service messages only from content authors approved by the service provider. To view the list of the approved content authors, select **Trusted channels**.

Automatic connection—If you set the phone to receive service messages and select **On**, the phone automatically activates the browser from the standby mode when the phone receives a service message. If you select **Off**, the phone activates the browser when it receives a service message, but only after you select **Retrieve**.

Cache memory

The information or services that you have accessed are stored in the cache of your phone. A cache is a buffer memory, which is used to store data temporarily. To empty the cache while browsing, select **Options > Other options > Clear the cache**; or in the standby mode, select **Menu > Services > Clear the cache**.

Browser security

Security features may be required for some services, such as banking services or online shopping. For such connections, you need security certificates and possibly a security module, which may be available on your SIM card. For more information, contact your service provider.

SECURITY MODULE

The security module can contain certificates as well as private and public keys. The purpose of the security module is to improve security services for applications requiring browser connection. It allows you to use a digital signature. The certificates are saved in the security module by the service provider. See also "Access codes" on page 18.

Select **Menu > Services > Settings > Security settings > Security module settings** and one of the following:

Security module details—Show the security module title, status, manufacturer, and serial number.

Module PIN request—Set the phone to request the module PIN when using services provided by the security module. Enter the code, and select **On**. To disable the module PIN request, select **Off**.


Change module PIN—Change the module PIN, if allowed by the security module. Enter the current module PIN code; then enter the new code twice.

Change signing PIN—Select the signing PIN that you want to change. Enter the current PIN code; then enter the new code twice.

CERTIFICATES

There are three kinds of certificates:

Server certificates—Used by the phone to create a connection with improved security to the content server. The phone receives the server certificate from the service provider before the connection is established, and its validity is checked using the authority certificates saved in the phone. Server certificates are not saved.

The security indicator  is displayed during a connection if the data transmission between the phone and the content server is encrypted.

The security icon does not indicate that the data transmission between the gateway and the content server (or place where the requested resource is stored) is secure. The service provider secures the data transmission between the gateway and the content server.

Authority certificates—Used by some services, such as banking services, for checking the validity of other certificates. Authority certificates can either be saved in the security module by the service provider, or they can be downloaded from the network if the service supports the use of authority certificates.

User certificates—Issued to users by a certifying authority. User certificates are required (for example, to create a digital signature). They associate the user with a specific private key in a security module.




Important: Even if the use of certificates makes the risks involved in remote connections and software installation considerably smaller, they must be used correctly in order to benefit from increased security. The existence of a certificate does not offer any protection by itself; the certificate manager must contain correct, authentic, or trusted certificates for increased security to be available. Certificates have a restricted lifetime. If **Expired certificate** or **Certificate not valid yet** are shown, even if the certificate should be valid, verify that the current date and time in your device are correct.

Before changing any certificate settings, you must make sure that you trust the owner of the certificate and that the certificate belongs to the listed owner.

DIGITAL SIGNATURE

You can make digital signatures with your phone if your SIM card has a security module. The signature can be traced back to you by the private key on the security module and the user certificate that was used to perform the signature. To use the digital signature, can be the same as signing your name to a paper bill, contract, or other document. See also "Security module" on page 51.

To make a digital signature, select a link on a page, such as the title of the book that you want to buy and its price. The text to sign (possibly including amount, date, etc.) will be shown.

Check that the header text is **Read** and that the digital signature icon  is shown.



Note: If the digital signature icon does not appear, there is a security breach, and you should not enter any personal data such as your signing PIN.

To sign the text, read all of the text first; then you can select **Sign**.

The text may not fit within a single screen. Therefore, make sure to scroll through and read all of the text before signing.

Select the user certificate you want to use. Enter the signing PIN, and select **OK**. The digital signature icon will disappear, and the service may display a confirmation of your purchase.

• SIM services



In addition to the functions available on the phone, your SIM card may provide services that you can access in this menu item, which is shown only if it is supported by your SIM card. The name and contents of the menu depend on the SIM card.

For availability, rates, and information on using SIM services, contact your SIM card vendor, for example, the service provider or other vendor.

Depending on the operator, you can set the phone to show you the confirmation messages sent between your phone and the network when you are using the SIM services. Select **Menu > Settings > Phone settings > Confirm SIM service actions > Yes**.

Note that accessing these services may involve sending messages or making a phone call for which you may be charged.

9 PC connectivity

You can access the Internet when you use a data cable to connect your phone to a compatible PC. You can use a variety of PC connectivity and data communications applications with your phone. For example, with PC Suite you can synchronize contacts, calendar, and notes between your phone and the compatible PC or a remote Internet server (network service).

You may find more information and downloadable files, including PC Suite, in the support area on the Nokia website www.nokia.com.

Copyright protections may prevent some images, ringing tones, and other content from being copied, modified, transferred, or forwarded.

• PC Suite

PC Suite allows you to transfer and synchronize information between your phone and your PC. With PC Suite, you can edit contacts in your phone, install J2ME Java applications (such as games and dictionaries) from a compatible PC to the phone, and backup and restore personal data between your phone and a compatible PC. To see the comprehensive features offered by PC Suite, you can download the application from the Nokia website www.nokia.com.

• GPRS, EGPRS, HSCSD, and CSD

You can use the following data services with your phone:

- GPRS (general packet radio service)
- EGPRS (enhanced GPRS) (See "GPRS and EGPRS" on page 37.)
- HSCSD (high speed circuit switched data)
- CSD (circuit switched data—or GSM data)

For availability and subscription to data services, contact your service provider.

Note that the use of HSCSD services consumes the battery faster than normal voice or data calls. You may need to connect the phone to a charger for the duration of the data transfer.

• Data communication applications

For information on using a data communication application, refer to the documentation provided with it.

Note that making or answering phone calls during a computer connection is not recommended because it might disrupt the operation.

For better performance during data calls, place the phone on a stationary surface with the keypad facing downward. Do not move the phone by holding it in your hand during a data call.

10 Reference information

• BATTERY INFORMATION

Charging and discharging

Your device is powered by a rechargeable battery. The full performance of a new battery is achieved only after two or three complete charge and discharge cycles. The battery can be charged and discharged hundreds of times but it will eventually wear out. When the talk and standby times are noticeably shorter than normal, buy a new battery. Use only Nokia approved batteries, and recharge your battery only with Nokia approved chargers designated for this device.

Unplug the charger from the electrical plug and the device when not in use. Do not leave the battery connected to a charger. Overcharging may shorten its lifetime. If left unused, a fully charged battery will lose its charge over time. Temperature extremes can affect the ability of your battery to charge.

Use the battery only for its intended purpose. Never use any charger or battery that is damaged.

Do not short-circuit the battery. Accidental short-circuiting can occur when a metallic object such as a coin, clip, or pen causes direct connection of the positive (+) and negative (-) terminals of the battery. (These look like metal strips on the battery.) This might happen, for example, when you carry a spare battery in your pocket or purse. Short-circuiting the terminals may damage the battery or the connecting object.

Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 59°F and 77°F (15°C and 25°C). A device with a hot or cold battery may not work temporarily, even when the battery is fully charged. Battery performance is particularly limited in temperatures well below freezing.

Do not dispose of batteries in a fire! Dispose of batteries according to local regulations. Please recycle when possible. Do not dispose as household waste.

• ENHANCEMENTS

A few practical rules about accessories and enhancements:

- Keep all accessories and enhancements out of the reach of small children.
- When you disconnect the power cord of any accessory or enhancement, grasp and pull the plug, not the cord.
- Check regularly that enhancements installed in a vehicle are mounted and are operating properly.
- Installation of any complex car enhancements must be made by qualified personnel only.

If you want to enhance phone functionality, a range of enhancements is available for you. You can select any of these items to help accommodate your specific communication needs. For availability of these and other enhancements, contact your dealer.



Audio

- Boom headset (HDB-4)
- Standard headset (HS-5)
- Fashion stereo headset (HS-3)
- Stereo headset (HDS-3)
- Retractable headset (HS-10)
- Inductive loopset (LPS-4)
- Wireless audio adapter (AD-5B)
- Radio headset (HS-2R)

Power

- Battery, 760 mAh, Li-ion (BL-5B)
- Chargers (ACP-12, ACP-9, ACP-8, and ACP-7)
- Retractable charger (AC-1)

Data

- Connectivity adapter cables (DKU-5)

Car

- Mobile chargers (LCH-12 and LCH-9)

Imaging

- Nokia observation camera
- Image viewer (SU-5)
- Image album (PD-1)
- Camera flash (PD-2)

Cover/carrying

- Xpress-on covers and style packs
- Wrist strap

● **CARE AND MAINTENANCE**

Your device is a product of superior design and craftsmanship and should be treated with care. The suggestions below will help you protect your warranty coverage and enjoy your device for many years.

- Keep the device dry. Precipitation, humidity, and all types of liquids or moisture can contain minerals that will corrode electronic circuits. If your device does get wet, remove the battery and allow the device to dry completely before replacing it.
- Do not use or store the device in dusty, dirty areas. Its moving parts and electronic components can be damaged.
- Do not store the device in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the device in cold areas. When the device returns to its normal temperature, moisture can form inside the device and damage electronic circuit boards.

- Do not attempt to open the device other than as instructed in this guide.
- Do not drop, knock, or shake the device. Rough handling can break internal circuit boards and fine mechanics.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the device.
- Do not paint the device. Paint can clog the moving parts and prevent proper operation.
- Use a soft, clean, dry cloth to clean any lenses (such as camera, proximity sensor, and light sensor lenses).
- Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications, or attachments could damage the device and may violate regulations governing radio devices.

All of the above suggestions apply equally to your device, battery, charger, or any enhancement. If any device is not working properly, take it to the nearest authorized service facility for service.

• ADDITIONAL SAFETY INFORMATION

Operating environment

Remember to follow any special regulations in force in any area and always switch off your device when its use is prohibited or when it may cause interference or danger. Use the device only in its normal operating positions. This device meets RF exposure guidelines when used either in the normal use position against the ear or when positioned at least 7/8 inch (2.2 cm) away from the body. When a carry case, belt clip, or holder is used for body-worn operation, it should not contain metal and should position the device at least 7/8 inch (2.2 cm) away from your body.

In order to transmit data files or messages, this device requires a quality connection to the network. In some cases, transmission of data files or messages may be delayed until such a connection is available. Ensure the above separation distance instructions are followed until the transmission is completed.

Medical devices

Operation of any radio transmitting equipment, including wireless phones, may interfere with the functionality of inadequately protected medical devices. Consult a physician or the manufacturer of the medical device to determine if they are adequately shielded from external RF energy or if you have any questions. Switch off your phone in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF energy.

PACEMAKERS

Pacemaker manufacturers recommend that a minimum separation of 6 inches (15.3 cm) be maintained between a wireless phone and a pacemaker to avoid potential interference with the pacemaker. These recommendations are consistent with the independent research by and recommendations of Wireless Technology Research. To minimize the potential for interference, persons with pacemakers should

- Always keep the device more than 6 inches (15.3 cm) from their pacemaker when the device is switched on
- Not carry the device in a breast pocket
- Hold the device to the ear opposite the pacemaker

If you have any reason to suspect that interference is taking place, switch off your device immediately.

HEARING AID

Some digital wireless devices may interfere with some hearing aids. If interference occurs, consult your service provider.

Vehicles

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles such as electronic fuel injection systems, electronic antiskid (antilock) braking systems, electronic speed control systems, air bag systems. For more information, check with the manufacturer or its representative of your vehicle or any equipment that has been added.

Only qualified personnel should service the device, or install the device in a vehicle. Faulty installation or service may be dangerous and may invalidate any warranty that may apply to the device. Check regularly that all wireless device equipment in your vehicle is mounted and operating properly. Do not store or carry flammable liquids, gases, or explosive materials in the same compartment as the device, its parts, or enhancements. For vehicles equipped with an air bag, remember that an air bags inflate with great force. Do not place objects, including installed or portable wireless equipment in the area over the air bag or in the air bag deployment area. If in-vehicle wireless equipment is improperly installed and the air bag inflates, serious injury could result.

Potentially explosive environments

Switch off your device when in any area with a potentially explosive atmosphere and obey all signs and instructions. Potentially explosive atmospheres include areas where you would normally be advised to turn off your vehicle engine. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death. Switch off the device at refuelling points such as near gas pumps at service stations. Observe restrictions on the use of radio equipment in fuel depots, storage, and distribution areas, chemical plants or where blasting operations

are in progress. Areas with a potentially explosive atmosphere are often but not always clearly marked. They include below deck on boats, chemical transfer or storage facilities, vehicles using liquefied petroleum gas (such as propane or butane), and areas where the air contains chemicals or particles such as grain, dust or metal powders.

FCC regulations prohibit using your wireless device while in the air. The use of wireless telephones in an aircraft may be dangerous to the operation of the aircraft, disrupt the wireless telephone network, and may be illegal.

Failure to observe these instructions may lead to suspension or denial of telephone services to the offender, legal action, or both.

EMERGENCY CALLS



Important: Wireless phones, including this phone, operate using radio signals, wireless networks, landline networks, and user-programmed functions. Because of this, connections in all conditions cannot be guaranteed. You should never rely solely on any wireless phone for essential communications like medical emergencies.

To make an emergency call:

- 1 If the phone is not on, switch it on. Check for adequate signal strength. Some networks may require that a valid SIM card is properly inserted in the phone.
- 2 Press the **End** key as many times as needed to clear the display and ready the phone for calls.
- 3 Key in the official emergency number for your present location. Emergency numbers vary by location.
- 4 Press the **Call** key.

If certain features are in use, you may first need to turn those features off before you can make an emergency call. Consult this guide or your service provider. When making an emergency call, give all the necessary information as accurately as possible. Your wireless phone may be the only means of communication at the scene of an accident. Do not end the call until given permission to do so.

CERTIFICATION INFORMATION (SAR)

THIS DEVICE MEETS THE GOVERNMENT'S REQUIREMENTS FOR EXPOSURE TO RADIO WAVES.

Your mobile device is a radio transmitter and receiver. It is designed and manufactured not to exceed the limits for exposure to radio frequency (RF) energy adopted by the governments of the USA through the Federal Communications Commission (FCC) and Canada through Industry Canada (IC). These limits establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

The exposure guidelines for mobile devices employ a unit of measurement known as the Specific Absorption Rate or SAR. The SAR limit adopted by the USA and Canada is 1.6 watts/kilogram (W/kg) averaged over one gram of tissue. The limit incorporates a substantial margin of safety to give additional protection for the public and to account for any variations in measurements. Tests for SAR are conducted using standard operating positions with the device transmitting at its highest certified power level in all tested frequency bands. The actual SAR level of an operating device can be well below the maximum value because the device is designed to use only the power required to reach the network. That amount changes depending on a number of factors such as how close you are to a network base station.

The highest SAR value reported to the FCC and IC for the Nokia 3220 phone when tested for use at the ear is 0.57 W/kg, and when properly worn on the body is 0.83 W/kg. The highest SAR value reported to the FCC and IC for the Nokia 3220b phone model when tested for use at the ear is 1.01 W/kg, and when properly worn on the body is 1.04 W/kg. SAR information on file with the FCC can be found under the Display Grant section of <http://www.fcc.gov/oet/fccid> after searching on FCC ID PPIRH-37 for the Nokia 3220 phone and on FCC ID PPIRH-49 for the Nokia 3220b phone. SAR values reported in other countries may vary depending on differences in reporting and testing requirements and the network band. Additional SAR information may be provided under product information at <http://www.nokia.com>.

• TECHNICAL INFORMATION

Feature	Specification
Dimensions	Width 44.2 mm Height 104.5 mm Depth 18.7 mm
Weight	86 g with BL-5B Li-Ion Battery
Wireless networks	Nokia 3220: EGSM 900 and GSM 1800 and 1900 networks Nokia 3220b: GSM 850, 1800, and 1900 networks
Size (volume)	70 cm ³
Frequency range (Tx)	GSM 850: 824–849 MHz (for RH-49) EGSM 900: 880–915 MHz (for RH-37) GSM 1800: 1710–1785 MHz (for RH-49 and RH-37) GSM 1900: 1850–1910 MHz (for RH-49 and RH-37)
Frequency range (Rx)	GSM 850: 869–894 MHz (for RH-49) EGSM 900: 925–960 MHz (for RH-37) GSM 1800: 1805–1865 MHz (for RH-49 and RH-37) GSM 1900: 1930–1990 MHz (for RH-49 and RH-37)
Tx output power	2 W (max)
Battery voltage	3.7 V dc
Number of channels	299
Memory size	16 MB flash memory, approximately 2 MB available to user
Operating temperature	Between 59°F and 77°F (15°C and 25°C).

• Nokia ONE-YEAR LIMITED WARRANTY

Nokia Inc. ("Nokia") warrants that this cellular phone ("Product") is free from defects in material and workmanship that result in Product failure during normal usage, according to the following terms and conditions:

- 1 The limited warranty for the Product extends for ONE (1) year beginning on the date of the purchase of the Product. This one year period is extended by each whole day that the Product is out of your possession for repair under this warranty.
- 2 The limited warranty extends only to the original purchaser ("Consumer") of the Product and is not assignable or transferable to any subsequent purchaser/end-user.
- 3 The limited warranty extends only to Consumers who purchase the Product in the United States of America.
- 4 During the limited warranty period, Nokia will repair, or replace, at Nokia's sole option, any defective parts, or any parts that will not properly operate for their intended use with new or refurbished replacement items if such repair or replacement is needed because of product malfunction or failure during normal usage. No charge will be made to the Consumer for any such parts. Nokia will also pay for the labor charges incurred by Nokia in repairing or replacing the defective parts. The limited warranty does not cover defects in appearance, cosmetic, decorative or structural items, including framing, and any non-operative parts. Nokia's limit of liability under the limited warranty shall be the actual cash value of the Product at the time the Consumer returns the Product for repair, determined by the price paid by the Consumer for the Product less a reasonable amount for usage. Nokia shall not be liable for any other losses or damages. These remedies are the Consumer's exclusive remedies for breach of warranty.
- 5 Upon request from Nokia, the Consumer must prove the date of the original purchase of the Product by a dated bill of sale or dated itemized receipt.
- 6 The Consumer shall bear the cost of shipping the Product to Nokia in Melbourne, Florida. Nokia shall bear the cost of shipping the Product back to the Consumer after the completion of service under this limited warranty.
- 7 The Consumer shall have no coverage or benefits under this limited warranty if any of the following conditions are applicable:
 - a) The Product has been subjected to abnormal use, abnormal conditions, improper storage, exposure to moisture or dampness, unauthorized modifications, unauthorized connections, unauthorized repair, misuse, neglect, abuse, accident, alteration, improper installation, or other acts which are not the fault of Nokia, including damage caused by shipping.

- b) The Product has been damaged from external causes such as collision with an object, or from fire, flooding, sand, dirt, windstorm, lightning, earthquake or damage from exposure to weather conditions, an Act of God, or battery leakage, theft, blown fuse, or improper use of any electrical source, damage caused by computer or internet viruses, bugs, worms, Trojan Horses, cancelbots or damage caused by the connection to other products not recommended for interconnection by Nokia.
 - c) Nokia was not advised in writing by the Consumer of the alleged defect or malfunction of the Product within fourteen (14) days after the expiration of the applicable limited warranty period.
 - d) The Product serial number plate or the enhancement data code has been removed, defaced or altered.
 - e) The defect or damage was caused by the defective function of the cellular system or by inadequate signal reception by the external antenna, or viruses or other software problems introduced into the Product.
- 8 Nokia does not warrant uninterrupted or error-free operation of the Product. If a problem develops during the limited warranty period, the Consumer shall take the following step-by-step procedure:
- a) The Consumer shall return the Product to the place of purchase for repair or replacement processing.
 - b) If "a" is not convenient because of distance (more than 50 miles) or for other good cause, the Consumer shall ship the Product prepaid and insured to:
Nokia Inc., Attn: Repair Department
795 West Nasa Blvd.
Melbourne, FL 32901
 - c) The Consumer shall include a return address, daytime phone number and/or fax number, complete description of the problem, proof of purchase and service agreement (if applicable). Expenses related to removing the Product from an installation are not covered under this limited warranty.
 - d) The Consumer will be billed for any parts or labor charges not covered by this limited warranty. The Consumer will be responsible for any expenses related to reinstallation of the Product.
 - e) Nokia will repair the Product under the limited warranty within 30 days after receipt of the Product. If Nokia cannot perform repairs covered under this limited warranty within 30 days, or after a reasonable number of attempts to repair the same defect, Nokia at its option, will provide a replacement Product or refund the purchase price of the Product less a reasonable amount for usage. In some states the Consumer may have the right to a loaner if the repair of the Product takes more than

ten (10) days. Please contact the Customer Service Center at Nokia at the telephone number listed at the end of this warranty if you need a loaner and the repair of the Product has taken or is estimated to take more than ten (10) days.

- f) If the Product is returned during the limited warranty period, but the problem with the Product is not covered under the terms and conditions of this limited warranty, the Consumer will be notified and given an estimate of the charges the Consumer must pay to have the Product repaired, with all shipping charges billed to the Consumer. If the estimate is refused, the Product will be returned freight collect. If the Product is returned after the expiration of the limited warranty period, Nokia's normal service policies shall apply and the Consumer will be responsible for all shipping charges.
- 9 You (the Consumer) understand that the product may consist of refurbished equipment that contains used components, some of which have been reprocessed. The used components comply with Product performance and reliability specifications.
 - 10 ANY IMPLIED WARRANTY OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE OR USE, SHALL BE LIMITED TO THE DURATION OF THE FOREGOING LIMITED WRITTEN WARRANTY. OTHERWISE, THE FOREGOING LIMITED WARRANTY IS THE CONSUMER'S SOLE AND EXCLUSIVE REMEDY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. NOKIA SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF ANTICIPATED BENEFITS OR PROFITS, LOSS OF SAVINGS OR REVENUE, LOSS OF DATA, PUNITIVE DAMAGES, LOSS OF USE OF THE PRODUCT OR ANY ASSOCIATED EQUIPMENT, COST OF CAPITAL, COST OF ANY SUBSTITUTE EQUIPMENT OR FACILITIES, DOWNTIME, THE CLAIMS OF ANY THIRD PARTIES, INCLUDING CUSTOMERS, AND INJURY TO PROPERTY, RESULTING FROM THE PURCHASE OR USE OF THE PRODUCT OR ARISING FROM BREACH OF THE WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL OR EQUITABLE THEORY, EVEN IF NOKIA KNEW OF THE LIKELIHOOD OF SUCH DAMAGES. NOKIA SHALL NOT BE LIABLE FOR DELAY IN RENDERING SERVICE UNDER THE LIMITED WARRANTY, OR LOSS OF USE DURING THE PERIOD THAT THE PRODUCT IS BEING REPAIRED.
 - 11 Some states do not allow limitation of how long an implied warranty lasts, so the one year warranty limitation may not apply to you (the Consumer). Some states do not allow the exclusion or limitation of incidental and consequential damages, so certain of the above limitations or exclusions may not apply to you (the Consumer). This limited warranty gives the Consumer specific legal rights and the Consumer may also have other rights which vary from state to state.

- 12** Nokia neither assumes nor authorizes any authorized service center or any other person or entity to assume for it any other obligation or liability beyond that which is expressly provided for in this limited warranty including the provider or seller of any extended warranty or service agreement.
- 13** This is the entire warranty between Nokia and the Consumer, and supersedes all prior and contemporaneous agreements or understandings, oral or written, relating to the Product, and no representation, promise or condition not contained herein shall modify these terms.
- 14** This limited warranty allocates the risk of failure of the Product between the Consumer and Nokia. The allocation is recognized by the Consumer and is reflected in the purchase price.
- 15** Any action or lawsuit for breach of warranty must be commenced within eighteen (18) months following purchase of the Product.
- 16** Questions concerning this limited warranty may be directed to:
Nokia Inc.
Attn: Customer Service
7725 Woodland Center Blvd., Ste. 150
Tampa, FL 33614
Telephone: 1-888-NOKIA-2U (1-888-665-4228)
Facsimile: (813) 249-9619
TTY/TDD Users Only: 1-800-24-NOKIA (1-800-246-6542)
- 17** The limited warranty period for Nokia supplied attachments and accessories is specifically defined within their own warranty cards and packaging.

NOTES

Appendix A Message from the CTIA

(Cellular Telecommunications & Internet Association) to all users of mobile phones

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Safety is the most important call you will ever make.

A Guide to Safe and Responsible Wireless Phone Use

Tens of millions of people in the U.S. today take advantage of the unique combination of convenience, safety and value delivered by the wireless telephone. Quite simply, the wireless phone gives people the powerful ability to communicate by voice--almost anywhere, anytime--with the boss, with a client, with the kids, with emergency personnel or even with the police. Each year, Americans make billions of calls from their wireless phones, and the numbers are rapidly growing.

But an important responsibility accompanies those benefits, one that every wireless phone user must uphold. When driving a car, driving is your first responsibility. A wireless phone can be an invaluable tool, but good judgment must be exercised at all times while driving a motor vehicle--whether on the phone or not.

The basic lessons are ones we all learned as teenagers. Driving requires alertness, caution and courtesy. It requires a heavy dose of basic common sense---keep your head up, keep your eyes on the road, check your mirrors frequently and watch out for other drivers. It requires obeying all traffic signs and signals and staying within the speed limit. It means using seatbelts and requiring other passengers to do the same.

But with wireless phone use, driving safely means a little more. This brochure is a call to wireless phone users everywhere to make safety their first priority when behind the wheel of a car. Wireless telecommunications is keeping us in touch, simplifying our lives, protecting us in emergencies and providing opportunities to help others in need.

When it comes to the use of wireless phones, *safety is your most important call.*

Wireless Phone "Safety Tips"

Below are safety tips to follow while driving and using a wireless phone which should be easy to remember.

- 1 Get to know your wireless phone and its features such as speed dial and redial. Carefully read your instruction manual and learn to take advantage of valuable features most phones offer, including automatic redial and memory. Also, work to memorize the phone keypad so you can use the speed dial function without taking your attention off the road.
- 2 When available, use a hands free device. A number of hands free wireless phone accessories are readily available today. Whether you choose an installed mounted device for your wireless phone or a speaker phone accessory, take advantage of these devices if available to you.
- 3 Position your wireless phone within easy reach. Make sure you place your wireless phone within easy reach and where you can grab it without removing your eyes from the road. If you get an incoming call at an inconvenient time, if possible, let your voice mail answer it for you.

- 4 Suspend conversations during hazardous driving conditions or situations. Let the person you are speaking with know you are driving; if necessary, suspend the call in heavy traffic or hazardous weather conditions. Rain, sleet, snow and ice can be hazardous, but so is heavy traffic. As a driver, your first responsibility is to pay attention to the road.
- 5 Do not take notes or look up phone numbers while driving. If you are reading an address book or business card, or writing a "to do" list while driving a car, you are not watching where you are going. It's common sense. Don't get caught in a dangerous situation because you are reading or writing and not paying attention to the road or nearby vehicles.
- 6 Dial sensibly and assess the traffic; if possible, place calls when you are not moving or before pulling into traffic. Try to plan your calls before you begin your trip or attempt to coincide your calls with times you may be stopped at a stop sign, red light or otherwise stationary. But if you need to dial while driving, follow this simple tip--dial only a few numbers, check the road and your mirrors, then continue.
- 7 Do not engage in stressful or emotional conversations that may be distracting. Stressful or emotional conversations and driving do not mix--they are distracting and even dangerous when you are behind the wheel of a car. Make people you are talking with aware you are driving and if necessary, suspend conversations which have the potential to divert your attention from the road.
- 8 Use your wireless phone to call for help. Your wireless phone is one of the greatest tools you can own to protect yourself and your family in dangerous situations--with your phone at your side, help is only three numbers away. Dial 9-1-1 or other local emergency number in the case of fire, traffic accident, road hazard or medical emergency. Remember, it is a free call on your wireless phone!
- 9 Use your wireless phone to help others in emergencies. Your wireless phone provides you a perfect opportunity to be a "Good Samaritan" in your community. If you see an auto accident, crime in progress or other serious emergency where lives are in danger, call 9-1-1 or other local emergency number, as you would want others to do for you.
- 10 Call roadside assistance or a special wireless non-emergency assistance number when necessary. Certain situations you encounter while driving may require attention, but are not urgent enough to merit a call for emergency services. But you still can use your wireless phone to lend a hand. If you see a broken-down vehicle posing no serious hazard, a broken traffic signal, a minor traffic accident where no one appears injured or a vehicle you know to be stolen, call roadside assistance or other special non-emergency wireless number.

Careless, distracted individuals and people driving irresponsibly represent a hazard to everyone on the road. Since 1984, the Cellular Telecommunications Industry Association and the wireless industry have conducted educational outreach to inform wireless phone users of their responsibilities as safe drivers and good citizens. As we approach a new century, more and more of us will take advantage of the benefits of wireless telephones. And, as we take to the roads, we all have a responsibility to drive safely.

The wireless industry reminds you to use your phone safely when driving.

For more information, please call 1-888-901-SAFE.

For updates: <http://www.wow-com.com/consumer/issues/driving/articles.cfm?ID=85>

Appendix B Message from the FDA

(U.S. Food and Drug Administration) to all users of mobile phones

©July 18, 2001 For updates: <http://www.fda.gov/cdrh/phones>

Consumer Update on Wireless Phones

U.S. Food and Drug Administration

1. Do wireless phones pose a health hazard?

The available scientific evidence does not show that any health problems are associated with using wireless phones. There is no proof, however, that wireless phones are absolutely safe. Wireless phones emit low levels of radiofrequency energy (RF) in the microwave range while being used. They also emit very low levels of RF when in the stand-by mode. Whereas high levels of RF can produce health effects (by heating tissue), exposure to low level RF that does not produce heating effects causes no known adverse health effects. Many studies of low level RF exposures have not found any biological effects. Some studies have suggested that some biological effects may occur, but such findings have not been confirmed by additional research. In some cases, other researchers have had difficulty in reproducing those studies, or in determining the reasons for inconsistent results.

2. What is FDA's role concerning the safety of wireless phones?

Under the law, FDA does not review the safety of radiation-emitting consumer products such as wireless phones before they can be sold, as it does with new drugs or medical devices. However, the agency has authority to take action if wireless phones are shown to emit radiofrequency energy (RF) at a level that is hazardous to the user. In such a case, FDA could require the manufacturers of wireless phones to notify users of the health hazard and to repair, replace or recall the phones so that the hazard no longer exists.

Although the existing scientific data do not justify FDA regulatory actions, FDA has urged the wireless phone industry to take a number of steps, including the following:

- Support needed research into possible biological effects of RF of the type emitted by wireless phones;
- Design wireless phones in a way that minimizes any RF exposure to the user that is not necessary for device function; and
- Cooperate in providing users of wireless phones with the best possible information on possible effects of wireless phone use on human health.

FDA belongs to an interagency working group of the federal agencies that have responsibility for different aspects of RF safety to ensure coordinated efforts at the federal level. The following agencies belong to this working group:

- National Institute for Occupational Safety and Health
- Environmental Protection Agency
- Federal Communications Commission
- Occupational Safety and Health Administration
- National Telecommunications and Information Administration

The National Institutes of Health participates in some interagency working group activities, as well.

FDA shares regulatory responsibilities for wireless phones with the Federal Communications Commission (FCC). All phones that are sold in the United States must comply with FCC safety guidelines that limit RF exposure. FCC relies on FDA and other health agencies for safety questions about wireless phones. FCC also regulates the base stations that the wireless phone networks rely upon. While these base stations operate at higher power than do the wireless phones themselves, the RF exposures that people get from these base stations are typically thousands of times lower than those they can get from wireless phones. Base stations are thus not the subject of the safety questions discussed in this document.

3. What kinds of phones are the subject of this update?

The term wireless phone refers here to hand-held wireless phones with built-in antennas, often called cell mobile or PCS phones. These types of wireless phones can expose the user to measurable radiofrequency energy (RF) because of the short distance between the phone and the user's head. These RF exposures are limited by Federal Communications Commission safety guidelines that were developed with the advice of FDA and other federal health and safety agencies. When the phone is located at greater distances from the user, the exposure to RF is drastically lower because a person's RF exposure decreases rapidly with increasing distance from the source. The so-called cordless phones; which have a base unit connected to the telephone wiring in a house, typically operate at far lower power levels, and thus produce RF exposures far below the FCC safety limits.

4. What are the results of the research done already?

The research done thus far has produced conflicting results, and many studies have suffered from flaws in their research methods. Animal experiments investigating the effects of radiofrequency energy (RF) exposures characteristic of wireless phones have yielded conflicting results that often cannot be repeated in other laboratories. A few animal studies, however, have suggested that low levels of RF could accelerate the development of cancer in laboratory animals. However, many of the studies that showed increased tumor development used animals that had been genetically engineered or treated with cancer-causing chemicals so as to be pre-disposed to develop cancer in the absence of RF exposure. Other studies exposed the animals to RF for up to 22 hours per day. These conditions are not similar to the conditions under which people use wireless phones, so we don't know with certainty what the results of such studies mean for human health.

Three large epidemiology studies have been published since December 2000. Between them, the studies investigated any possible association between the use of wireless phones and primary brain cancer, glioma, meningioma, or acoustic neuroma, tumors of the brain or salivary gland, leukemia, or other cancers. None of the studies demonstrated the existence of any harmful

health effects from wireless phone RF exposures. However, none of the studies can answer questions about long-term exposures, since the average period of phone use in these studies was around three years.

5. What research is needed to decide whether RF exposure from wireless phones poses a health risk?

A combination of laboratory studies and epidemiological studies of people actually using wireless phones would provide some of the data that are needed. Lifetime animal exposure studies could be completed in a few years. However, very large numbers of animals would be needed to provide reliable proof of a cancer promoting effect if one exists. Epidemiological studies can provide data that is directly applicable to human populations, but 10 or more years follow-up may be needed to provide answers about some health effects, such as cancer. This is because the interval between the time of exposure to a cancer-causing agent and the time tumors develop - if they do - may be many, many years. The interpretation of epidemiological studies is hampered by difficulties in measuring actual RF exposure during day-to-day use of wireless phones. Many factors affect this measurement, such as the angle at which the phone is held, or which model of phone is used.

6. What is FDA doing to find out more about the possible health effects of wireless phone RF?

FDA is working with the U.S. National Toxicology Program and with groups of investigators around the world to ensure that high priority animal studies are conducted to address important questions about the effects of exposure to radiofrequency energy (RF).

FDA has been a leading participant in the World Health Organization International Electromagnetic Fields (EMF) Project since its inception in 1996. An influential result of this work has been the development of a detailed agenda of research needs that has driven the establishment of new research programs around the world. The Project has also helped develop a series of public information documents on EMF issues.

FDA and the Cellular Telecommunications & Internet Association (CTIA) have a formal Cooperative Research and Development Agreement (CRADA) to do research on wireless phone safety. FDA provides the scientific oversight, obtaining input from experts in government, industry, and academic organizations. CTIA-funded research is conducted through contracts to independent investigators. The initial research will include both laboratory studies and studies of wireless phone users. The CRADA will also include a broad assessment of additional research needs in the context of the latest research developments around the world.

7. How can I find out how much radiofrequency energy exposure I can get by using my wireless phone?

All phones sold in the United States must comply with Federal Communications Commission (FCC) guidelines that limit radiofrequency energy (RF) exposures. FCC established these guidelines in consultation with FDA and the other federal health and safety agencies. The FCC limit for RF exposure from wireless telephones is set at a Specific Absorption Rate (SAR) of 1.6 watts per kilogram (1.6 W/kg). The FCC limit is consistent with the safety standards developed by the Institute of Electrical and Electronic Engineering (IEEE) and the National Council on Radiation Protection and Measurement. The exposure limit takes into consideration the body's ability to remove heat from the tissues that absorb energy from the wireless phone and is set well below levels known to have effects.

Manufacturers of wireless phones must report the RF exposure level for each model of phone to the FCC. The FCC website (<http://www.fcc.gov/oet/rfsafety>) gives directions for locating the FCC identification number on your phone so you can find your phone's RF exposure level in the online listing.

8. What has FDA done to measure the radiofrequency energy coming from wireless phones?

The Institute of Electrical and Electronic Engineers (IEEE) is developing a technical standard for measuring the radiofrequency energy (RF) exposure from wireless phones and other wireless handsets with the participation and leadership of FDA scientists and engineers. The standard, Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques, sets forth the first consistent test methodology for measuring the rate at which RF is deposited in the heads of wireless phone users. The test method uses a tissue-simulating model of the human head. Standardized SAR test methodology is expected to greatly improve the consistency of measurements made at different laboratories on the same phone. SAR is the measurement of the amount of energy absorbed in tissue, either by the whole body or a small part of the body. It is measured in watts/kg (or milliwatts/g) of matter. This measurement is used to determine whether a wireless phone complies with safety guidelines.

9. What steps can I take to reduce my exposure to radiofrequency energy from my wireless phone?

If there is a risk from these products--and at this point we do not know that there is--it is probably very small. But if you are concerned about avoiding even potential risks, you can take a few simple steps to minimize your exposure to radiofrequency energy (RF). Since time is a key factor in how much exposure a person receives, reducing the amount of time spent using a wireless phone will reduce RF exposure.

If you must conduct extended conversations by wireless phone every day, you could place more distance between your body and the source of the RF, since the exposure level drops off dramatically with distance. For example, you could use a headset and carry the wireless phone away from your body or use a wireless phone connected to a remote antenna.

Again, the scientific data do not demonstrate that wireless phones are harmful. But if you are concerned about the RF exposure from these products, you can use measures like those described above to reduce your RF exposure from wireless phone use.

10. What about children using wireless phones?

The scientific evidence does not show a danger to users of wireless phones, including children and teenagers. If you want to take steps to lower exposure to radiofrequency energy (RF), the measures described above would apply to children and teenagers using wireless phones. Reducing the time of wireless phone use and increasing the distance between the user and the RF source will reduce RF exposure. Some groups sponsored by other national governments have advised that children be discouraged from using wireless phones at all. For example, the government in the United Kingdom distributed leaflets containing such a recommendation in December 2000. They noted that no evidence exists that using a wireless phone causes brain tumors or other ill effects. Their recommendation to limit wireless phone use by children was strictly precautionary; it was not based on scientific evidence that any health hazard exists.

11. What about wireless phone interference with medical equipment?

Radiofrequency energy (RF) from wireless phones can interact with some electronic devices. For this reason, FDA helped develop a detailed test method to measure electromagnetic interference (EMI) of implanted cardiac pacemakers and defibrillators from wireless telephones. This test method is now part of a standard sponsored by the Association for the Advancement of Medical Instrumentation (AAMI). The final draft, a joint effort by FDA, medical device manufacturers, and many other groups, was completed in late 2000. This standard will allow manufacturers to ensure that cardiac pacemakers and defibrillators are safe from wireless phone EMI. FDA has tested hearing aids for interference from handheld wireless phones and helped develop a voluntary standard sponsored by the Institute of Electrical and Electronic Engineers (IEEE). This standard specifies test methods and performance requirements for hearing aids and wireless phones so that no interference occurs when a person uses a compatible phone and a accompanied hearing aid at the same time. This standard was approved by the IEEE in 2000. FDA continues to monitor the use of wireless phones for possible interactions with other medical devices. Should harmful interference be found to occur, FDA will conduct testing to assess the interference and work to resolve the problem.

12. Where can I find additional information?

For additional information, please refer to the following resources:

- FDA web page on wireless phones
<http://www.fda.gov/cdrh/phones/index.html>
- Federal Communications Commission (FCC) RF Safety Program
<http://www.fcc.gov/oet/rfsafety>
- International Commission on Non-Ionizing Radiation Protection
<http://www.icnirp.de>
- World Health Organization (WHO) International EMF Project
<http://www.who.int/emf>
- National Radiological Protection Board (UK)
<http://www.nrpb.org.uk/>

July 18, 2001 For updates: <http://www.fda.gov/cdrh/phones>

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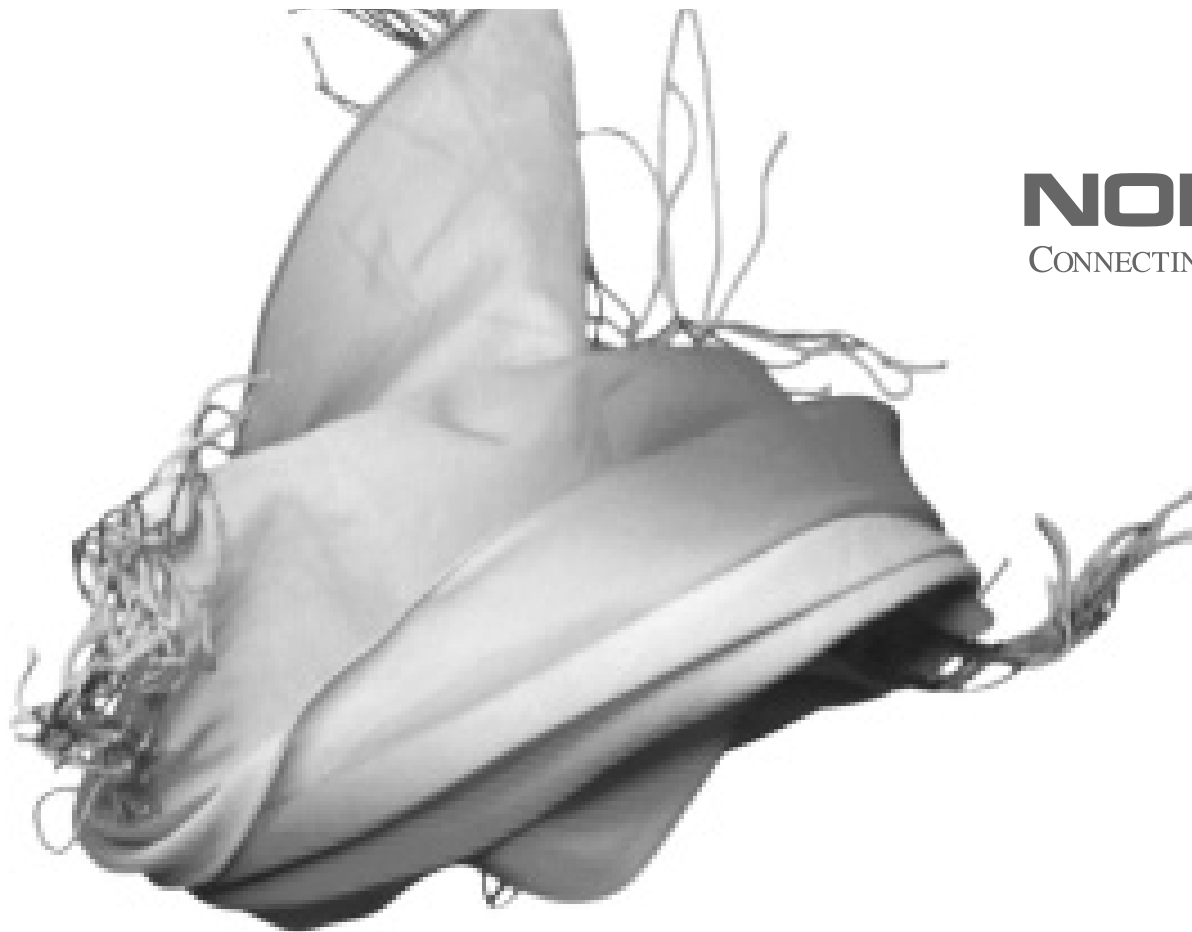
Para obtener un manual del usuario en español favor de llamar o enviar un fax al teléfono 1-888-NOKIA-2U, fax 813-249-9619.

Nokia 3220 User Guide 9232826

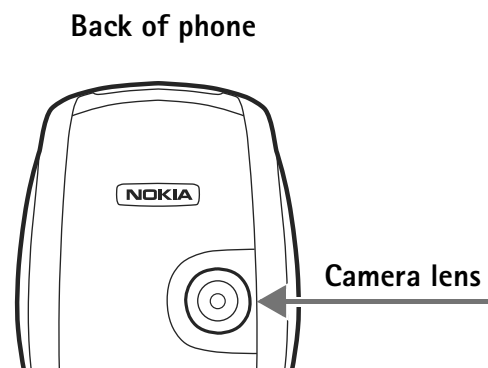
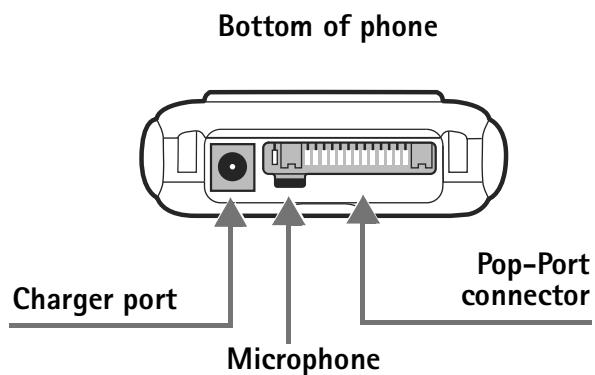
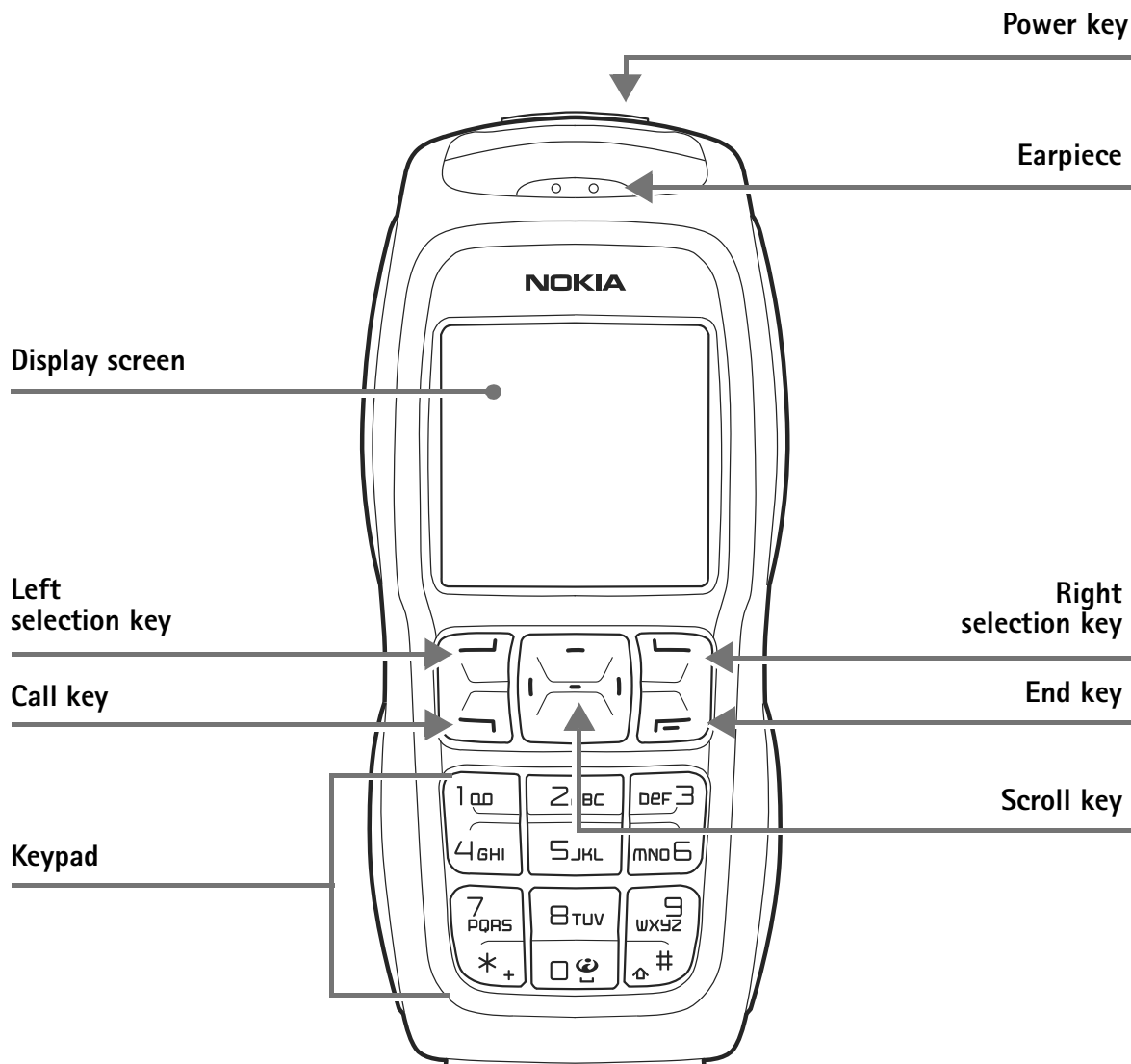
Attachment 1b

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CONNECTING PEOPLE

User Guide



Nokia 3220 phone at a glance



• QUICK GUIDE

Action	Description
Make a call	Enter a phone number, and press the Call key.
Answer a call	Press the Call key, or select Answer .
Answer call during call	Press the Call key.
End a call	Press the End key.
Decline a call	Press the End key to send the call to voice mail.
Mute a call	Select Mute during a call.
Redial	Press the Talk key twice.
Adjust call volume	Press the Scroll left and Scroll right keys during a call.
Use in-call menu	Select Options during a call.
Save name and number	Enter a number. Select Options > Save . Enter a name. Select OK .
Use 1-touch dialing	Press and hold a key (2–8). You must assign a key to a number in the phone book.
Look up a name	Select Contacts > Find .
Check voice mail	Press and hold the 1 key (contact your service provider for details).
Write text messages	Select Menu > Messages > Text Messages > Create message . Write the message.
Send text messages	In the message entry screen, select Options > Send . Enter the recipient's phone number or search for it in contacts, and select OK . The message service is dependent on the service provider.
Read new message	If n message(s) received appears on the display, select Show , then the message you want to read.
Reply to a message	Select Options > Reply . Write a reply. Select Options > Send .
Press	Press a key briefly and release it.
Press and hold	Press a key, hold it for 2 to 3 seconds, and release it.

DECLARATION OF CONFORMITY

We, NOKIA CORPORATION declare under our sole responsibility that the products RH-37 and RH-49 are in conformity with the provisions of the following Council Directive:1999/5/EC.

A copy of the Declaration of Conformity can be found at http://www.nokia.com/phones/declaration_of_conformity/.

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LEGAL INFORMATION

Part No. 9232826, Issue No. 1

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Printed in Canada, September 2004

US Patent No 5818437, 5953541, 6011554, and other pending patents.

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Includes RSA BSAFE cryptographic or security protocol software from RSA Security.



Java is a trademark of Sun Microsystems, Inc.

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This device may contain commodities, technology, or software subject to export laws and regulations from the U.S. and other countries. Diversion contrary to law is prohibited.

FCC/INDUSTRY CANADA NOTICE

Your device may cause TV or radio interference (for example, when using a telephone in close proximity to receiving equipment). The FCC or Industry Canada can require you to stop using your telephone if such interference cannot be eliminated. If you require assistance, contact your local service facility. This device complies with part 15 of the FCC rules. Operation is subject to the condition that this device does not cause harmful interference.

Manufactured or sold under one or more following US Patents.
Asterisk (*) indicates design patents pending.

RE 32,580	4558302	4868846	4945633	4969192	5001372
5101175	5151946	5173927	5212834	5230091	5241583
5311151	5317283	5331638	5335362	5353328	5371481
5378935	5384782	5396657	5400949	5416435	5442521
5446364	5479476	5526366	5553125	5557639	5565821
5570369	5581244	5600708	5625274	5677620	5692032
5729541	5760568	5794142	5802465	5809413	5818437
5827082	5839101	5844884	5845219	5870683	5884103
5889770	5907823	5912570	5914690	5914796	5917868
5920826	5953541	5956332	5956625	5956633	5966378
5977887	5987137	5991857	6006114	6011554	6011853
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6400958	6453179	6463278	6470470	6487397	6522670
6198928	4969192	5266782	5390223	5444816	5487084
5640395	5664053	5699482	5701392	5722074	5754976
5805301	5835889	5857151	5859843	5862178	5898925
5930233	5946651	5960354	5960389	5963901	6005857
6011971	6031827	6118775	6128322	6137789	6167248
6170073	6178535	6195338	6199035	6240076	6266321
6285888	6356759	6377803	6430163	6438370	6456237

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NOTES

1 For your safety

Read these simple guidelines. Not following them may be dangerous or illegal. Read the complete user guide for further information.



SWITCH ON SAFELY

Do not switch the phone on when wireless phone use is prohibited or when it may cause interference or danger.



ROAD SAFETY COMES FIRST

Obey all local laws. Always keep your hands free to operate the vehicle while driving. Your first consideration while driving should be road safety.



INTERFERENCE

All wireless phones may be susceptible to interference, which could affect performance.



SWITCH OFF IN HOSPITALS

Follow any restrictions. Switch the phone off near medical equipment.



SWITCH OFF IN AIRCRAFT

Follow any restrictions. Wireless devices can cause interference in aircraft.



SWITCH OFF WHEN REFUELING

Don't use the phone at a refueling point. Don't use near fuel or chemicals.



SWITCH OFF NEAR BLASTING

Follow any restrictions. Don't use the phone where blasting is in progress.



USE SENSIBLY

Use only in the normal position as explained in the product documentation. Don't touch the antenna unnecessarily.



QUALIFIED SERVICE

Only qualified personnel may install or repair this product.



ENHANCEMENTS AND BATTERIES

Use only approved enhancements and batteries. Do not connect incompatible products.



WATER-RESISTANCE

Your phone is not water-resistant. Keep it dry.



BACKUP COPIES

Remember to make back-up copies or keep a written record of all important information stored in your phone.



CONNECTING TO OTHER DEVICES

When connecting to any other device, read its user guide for detailed safety instructions. Do not connect incompatible products.



EMERGENCY CALLS

Ensure the phone is switched on and in service. Press **End** as many times as needed to clear the display and return to the main screen. Enter the emergency number, then press **Call**. Give your location. Do not end the call until given permission to do so.

• About your device

The wireless device described in this guide comes in two models. The Nokia 3220 phone is approved for use on the EGSM 900 and GSM 1800 and 1900 networks. The Nokia 3220b phone is approved for use on the GSM 850, 1800 and 1900 networks. See "Find information about your phone" on page 5 to identify your specific phone model. Contact your service provider for more information about networks.

When using the features in this device, obey all laws and respect privacy and legitimate rights of others.



Warning: To use any features in this device, other than the alarm clock, the phone must be switched on. Do not switch the device on when wireless phone use may cause interference or danger.



Note: Your device and its enhancements may contain small parts. Keep them out of the reach of small children.

• Network Services

To use the phone you must have service from a wireless service provider. Many of the features in this device depend on features in the wireless network to function. These Network Services may not be available on all networks or you may have to make specific arrangements with your service provider before you can utilize Network Services. Your service provider may need to give you additional instructions for their use and explain what charges will apply. Some networks may have limitations that affect how you can use Network Services. For instance, some networks may not support all language-dependent characters and services.

Your service provider may have requested that certain features be disabled or not activated in your device. If so, they will not appear on your device menu. Contact your service provider for more information.

• Shared memory

The phone has three different memories. The following features in this device may share the first memory: contacts, text messages, SMS e-mail, voice tags, calendar, and notes. The second shared memory is used by multimedia messages, files stored in **Gallery**, and configuration settings. The third shared memory is used by Java games and applications. Using one or more of these features may reduce the memory available for the remaining features sharing the same memory. For example, saving many **Gallery** items may use all of the available memory in the second memory. Your device may display a message that the memory is full when you try to use a shared memory feature. In this case, delete some of the information or entries stored in the corresponding shared memory before continuing.

2 Welcome

Congratulations on your purchase of the Nokia 3220 mobile phone. Your phone provides many functions that are practical for daily use, such as a calendar, a clock, an alarm clock, and a built-in camera. The camera can be used for recording video clips and taking pictures that you can, for example, attach as wallpaper in the standby mode or as thumbnail pictures in **Contacts**. See "Camera" on page 40.

You can personalize your phone with cut-out covers and with themes. See "Create custom back cover" on page 12 and "Themes" on page 34. Also, a range of Nokia Xpress-on™ covers and Nokia Xpress-on grips are available for your phone. To change the covers and grips, see "Change the phone covers" on page 12 and "Change the grips" on page 11.

Other features on your phone are:

- Multimedia messaging. See "Multimedia messages (MMS) (network service)" on page 22.
- Instant messages, see "Instant messaging" on page 26.
- EDGE (enhanced data rates for GSM evolution), see "GPRS and EGPRS" on page 37.
- Java 2 Platform Micro Edition, J2ME™, see "Applications" on page 44.
- XHTML browser, see "Settings" on page 34.

• Access alternate formats

This user guide is available in alternate formats, contact Nokia at www.nokiaaccessibility.com or call 1-888-665-4228 for more information.

• Register your phone

Make sure to register your phone at www.warranty.nokiausa.com or 1-888-NOKIA-2U (1-888-665-4228) so that we can serve your needs better if you should need to call the center or have your phone repaired.

• Copyright protection

Copyright protections may prevent some images, ringing tones, and other content from being copied, modified, transferred, or forwarded.

• Contact Nokia

If you ever need to call Nokia Customer Care or your service provider, you will need to provide specific information about your phone (see "Find information about your phone" on page 5).

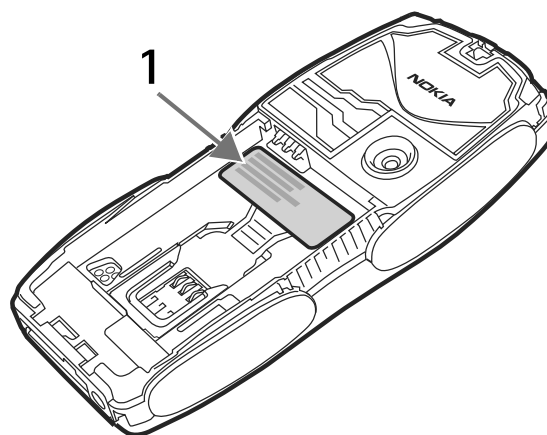
Whether you are calling about your phone or an enhancement, have the equipment with you when you call. If a Nokia representative asks a specific question about the enhancement, you will have it available for quick reference.

Nokia Customer Care Center, USA	Customer Care, Canada
Nokia Mobile Phones 7725 Woodland Center Boulevard, Suite #150 Tampa, Florida 33614 Tel: 1-888-NOKIA-2U (1-888-665-4228) Fax: 1-813-249-9619 For TTY users: 1-800-24-NOKIA (1-800-246-6542)	Nokia Products Ltd. 601 Westney Rd. South Ajax, Ontario L1S 4N7 Tel: 1-905-427-1373 1-888-22-NOKIA (1-888-226-6542) Fax: 1-905-619-4360 Web site: www.nokia.ca

Find information about your phone

Information about your phone is provided on the phone label (1), which is on the back of the phone under the battery (see "Remove the back cover and battery" on page 7). The label contains the model and serial numbers, as well as the following:

- Phone type (such as RH-37 or RH-49)
- Phone model (such as Nokia 3220 or Nokia 3220b)
- International Mobile Equipment Identity (IMEI)
- FCC ID number



Contact your service provider

In many cases, the service provider will make available descriptions of its services and instructions for using features, such as:

- Voice mail and voice privacy
- Call waiting, call forwarding, and caller ID
- Messaging
- News and information services
- Selected Internet services

Service providers may differ in their support of features. Before you sign up with a service provider, make sure that the service provider supports the features that you need.

3 SIM card and battery

The SIM card and its contacts can easily be damaged by scratches or bending, so be careful when handling, inserting, or removing the card.

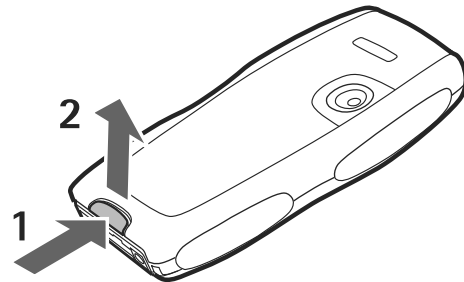
Keep all SIM cards out of the reach of small children. For availability and information on using SIM card services, contact your SIM card vendor.

This may be the service provider or another vendor.

Always switch the device off and disconnect the charger before removing the battery.

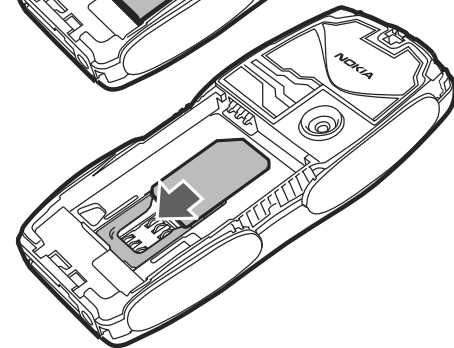
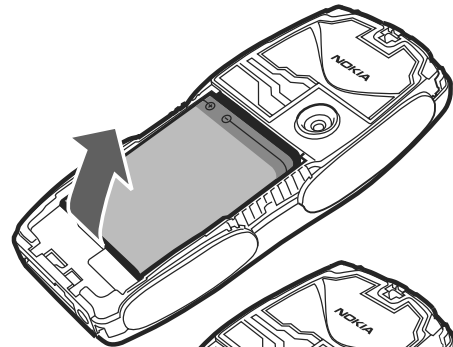
- **Remove the back cover and battery**

- 1 Push the back cover release button at the bottom of the phone (1) and gently pull the back cover away from the phone beginning at the bottom of the phone (2).
- 2 Remove the battery by lifting it as shown.

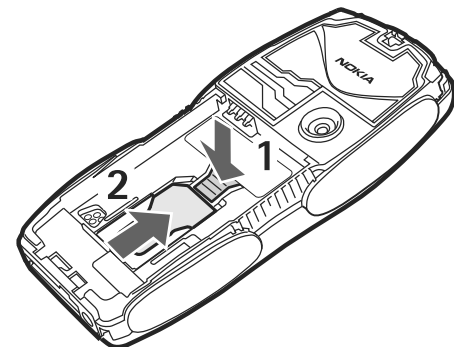


- **Insert the SIM card**

Insert the SIM card into the SIM card holder until it snaps into position. Make sure that the SIM card is properly inserted and that the gold-colored contact area on the card is facing downward.



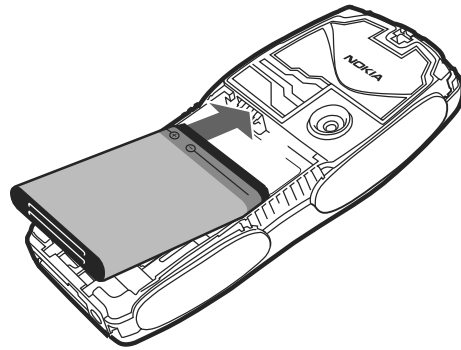
If you need to remove the SIM card, press the card release (1), and slide the SIM card toward the top of the phone (2).



• Replace the battery

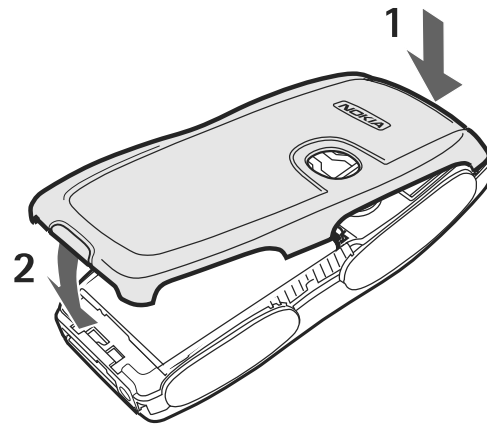
The SIM card must be installed *before* installing the battery.

Insert the battery so that the gold-colored contacts match up with those on the phone.



• Replace the back cover

Align the top of the back cover with the top of the phone (1), and press the bottom of the back cover to lock it (2).



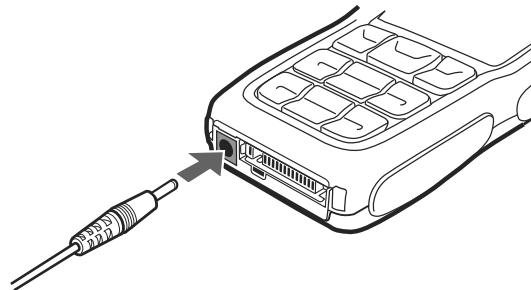
• Charge the battery



Warning: Use only batteries, chargers, and enhancements approved by Nokia for use with this particular model. The use of any other types may invalidate any approval or warranty, and may be dangerous.

Your phone is powered by a rechargeable battery. To charge the battery, do the following:

- 1 Plug the charger transformer into a standard ac outlet.
- 2 Insert the charger output plug into the charger port at the bottom end of the phone.



After a few seconds, the battery indicator in the display starts to scroll from bottom to top. If the battery is completely discharged, it may take a few minutes before the charging indicator appears on the display or any calls can be made.

You can use the phone while the charger is connected.

The BL-5B battery provides up to 3.5 hours of talk time and up to 14 days of standby time. Operation times are estimates and may vary depending on network conditions, charging, and phone use. Charging the battery with the ACP-12 charger takes approximately 1 hour and 20 minutes while the phone is in standby mode.

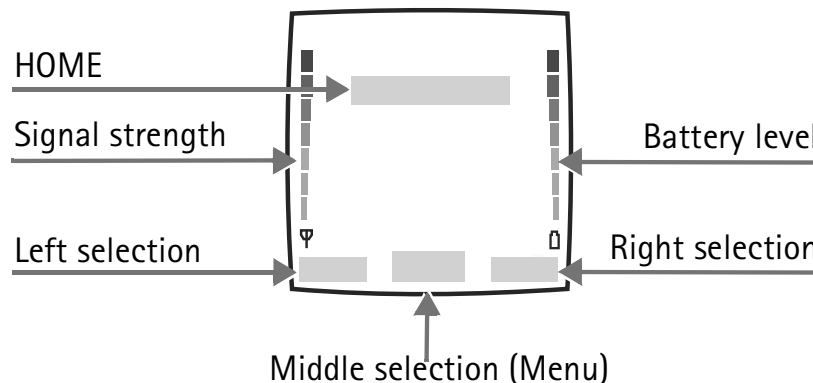
4 About your phone

• In-phone help

Many features have brief descriptions (help text) that can be viewed on the display. To view the help text, scroll to a feature, and wait for about 15 seconds. Select **More** to view all of the description (if necessary) or **Back** to exit. For instructions on how to turn the help text feature on and off, see "Phone settings" on page 36.

• Start screen (standby mode)

The start screen is home base and indicates that the phone is in the standby mode.



HOME—The name of your service provider may appear here.

Signal strength—A higher bar indicates a stronger network signal.

Battery level—A higher bar indicates more power in the battery.

Left selection—The **Left selection** key in the standby mode opens the **Go to** menu. See "Go to options" on page 35.

Middle selection—Press the middle of the scroll key to select the item displayed in the bottom center (middle selection area) of the display screen. For example, in the standby mode, pressing the middle of the scroll key opens the **Menu**. See "Phone menu" on page 19.

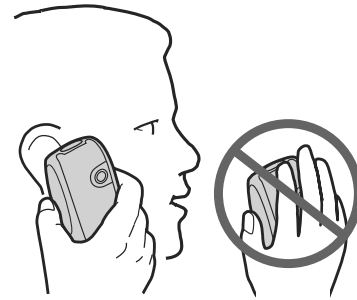
Right selection—The **Right selection** key in the standby mode opens either the **Contacts** menu (default), a service provider's home page, or a user-specified function. See "Personal shortcuts" on page 35.

• Antenna

Your device has an internal antenna.



Note: As with any other radio transmitting device, do not touch the antenna unnecessarily when the device is switched on. Contact with the antenna affects call quality and may cause the phone to operate at a higher power level than otherwise needed. Avoiding contact with the antenna area when operating the phone optimizes the antenna performance and the battery life.



• Indicators and icons

The following icons may be displayed in the standby mode:

Icon Indicates...



You have one or more text or picture messages. See "Text messages (SMS) (network service)" on page 20.



The phone has logged a missed call. See "Call log" on page 30.



or



Your phone is connected to the instant messaging service, and the availability status is online or offline, respectively. See "Instant messaging" on page 26.



You have received one or several instant messages, and you are connected to the instant messages service. See "Instant messaging" on page 26.



You have one or more multimedia messages. See "Multimedia messages (MMS) (network service)" on page 22.



You have one or more voice messages. See "Voice messages" on page 24.



Your phone keypad is locked. See "Lock the keypad (Keyguard)" on page 18.














Your phone is set to the **Silent** profile. See "Profiles" on page 34.



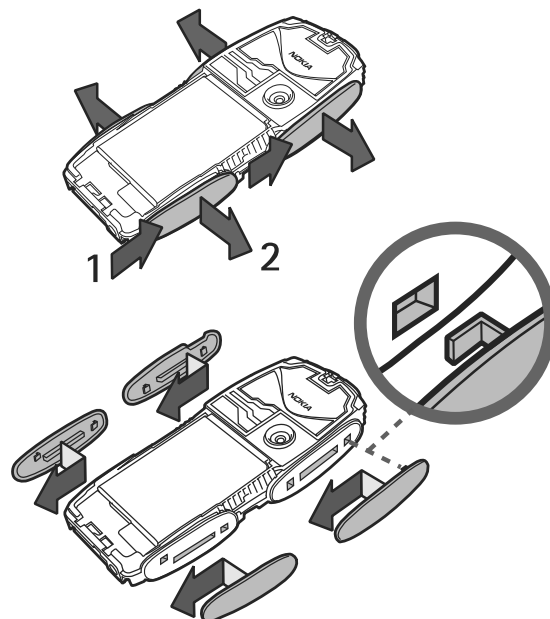
The alarm clock is set to **On**. See "Alarm clock" on page 42.

Icon Indicates...

-  The GPRS connection mode **Always online** is selected, and the GPRS service is available, or there is an active GPRS connection.
-  You have an incoming or outgoing call during a GPRS dial-up connection. GPRS is suspended.
-  Forward all voice calls. All calls are forwarded to another number. If you have two phone lines, the indicator for line 1 is  and for line 2 .
-  If you have two phone lines, this indicates that you are on the second phone line. See "Call settings" on page 36.
-  Calls are limited to a closed user group. See "Security settings" on page 39.
-  The timed profile is selected. See "Profiles" on page 34.
-  Integrated handsfree is active. See "Loudspeaker" on page 15.
-  A headset, handsfree, or Nokia Loopset enhancement is connected to the phone.
- or
- 

• Change the grips

- 1 Remove the covers from the phone as described in "Change the phone covers" on page 12.
- 2 To remove the grips, slide them to the top of the phone (1), then remove the grip (2).
- 3 Replace the grips as shown.
- 4 Replace the covers of the phone as described in "Change the phone covers" on page 12.

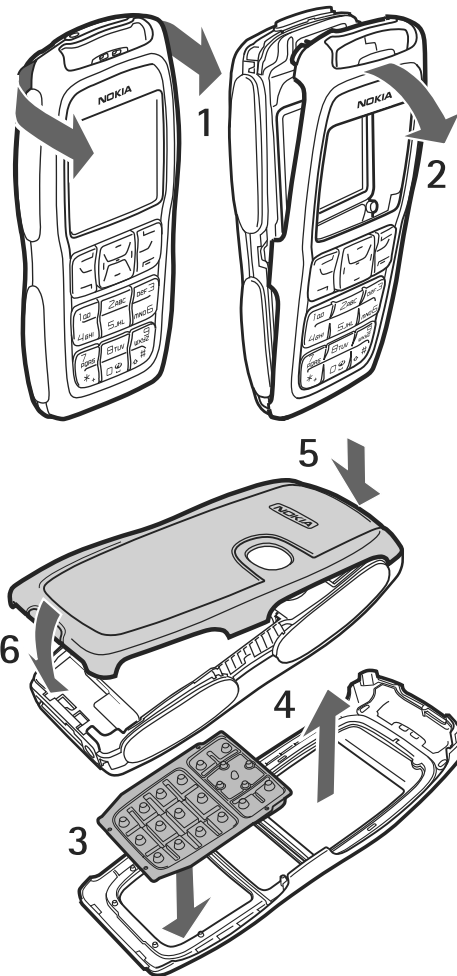


• Change the phone covers



Note: Before removing the cover, always switch off the power and disconnect the charger and any other device. Avoid touching electronic components while changing the covers. Always store and use the device with the covers attached.

- 1 Remove the back cover from the phone as described in "Remove the back cover and battery" on page 7.
- 2 Beginning at the top of the phone (1), gently pull the front cover away from the phone and detach it (2).
- 3 To remove the key mat from the front cover, take it out gently.
- 4 Place the key mat in the new front cover (3).
- 5 To replace the front cover, press it gently onto the phone until it snaps into position (4).
- 6 Align the top of the back cover with the top of the phone (5), and press the bottom of the back cover to lock it (6).



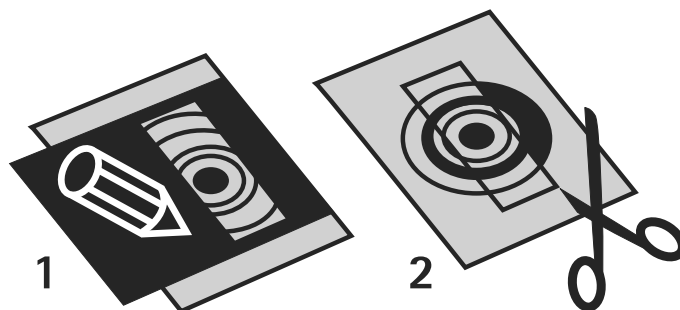
• Create custom back cover



Note: Use normal, plain paper as found in standard printers or use a photo print that is not thicker than 0.3 mm. To avoid affecting the antenna performance the material must not contain metal particles.

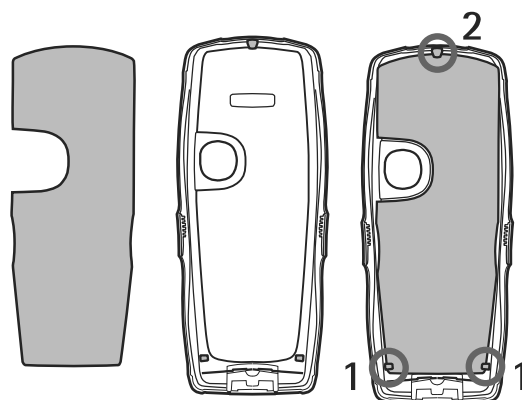
Use the plastic stencil to create a cut-out cover using your own design.

- 1 Place the stencil in the correct position and draw the outline (1).
- 2 Carefully cut out your new cover (2).



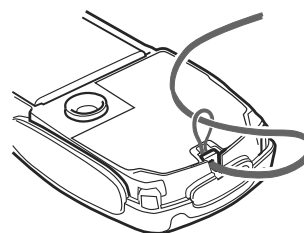
• Change cut-out cover

- 1 Remove the back cover from the phone as described in "Remove the back cover and battery" on page 7.
- 2 Remove the cut-out cover from the back cover.
- 3 To place the new cut-out cover into the back cover, slide the cut-out cover under the two guides at the bottom (1), then under the guide at the top (2).
- 4 Replace the back cover.



• Attach the wrist strap

Remove the back cover as described in "Remove the back cover and battery" on page 7 and thread the strap as shown in the picture. Tighten the strap, and replace the back cover.



5 Basic operations

• Switch the phone on or off

- 1 To turn your phone on or off, press and hold the **Power** key as shown.

If the phone displays **Insert SIM card** even though the SIM card is properly inserted, or **SIM card not supported**, contact your service provider.

- 2 If the phone asks for a PIN code, enter the PIN code (displayed as ****), and select **OK**.
- 3 If the phone asks for a security code, enter the security code, and select **OK**.



See "Access codes" on page 18 for more information.

• Set the time

Select **Menu > Settings > Time and date settings > Clock > Set the time**. Enter the time (in *hh:mm* format), and select **OK > am** or **pm**.

• Make and answer calls

Use the keypad—Enter the phone number (including the area code), and press the **Call** key. To delete a character to the left of the cursor, select **Clear**. To end the call or to cancel the call attempt, press the **End** key.

Use contacts—At the start screen, press the **Scroll down** key to view your contacts, scroll to the entry you want to call, and press the **Call** key to make the call.

Redial the last number—At the start screen, press the **Call** key twice.

Make an international call—Press * twice to enter the international prefix [a plus (+) sign] in place of the international access code. Then enter the country code, the area code without a leading zero (if necessary), and the phone number.

Answer or reject a call—Press the **Call** key to answer the call or the **End** key to reject the call. If **Forward if busy** is activated to your voice mailbox, the call is forwarded to your voice mail. If not, the call is rejected.

If you select **Silence**, only the ringing tone is muted. You can then answer or reject the incoming call.

Answer a call with the keypad locked—See "Lock the keypad (Keyguard)" on page 18.

1-touch dialing—See "1-touch dialing" on page 32.

Call waiting—See "Call settings" on page 36.

- **Adjust the earpiece volume**

To increase the volume of a call, press the **Right scroll** key. To decrease the volume of a call, press the **Left scroll** key. When adjusting the volume, a bar chart appears in the display indicating the volume level. See also **Automatic volume control** in "Call settings" on page 36.

You can only adjust the earpiece volume during an active call.



- **Loudspeaker**

You can use your phone as a loudspeaker during a call. Do not hold the phone to your ear during the loudspeaker operation as the volume may be very high.

To activate the loudspeaker, select **Options > Loudspeaker**. To deactivate the loudspeaker during a call, select **Options > Handset**.

6 Write text

You can use two methods for entering text and numbers:

- **Standard mode** () is the only way to enter names into **Contacts** and to rename caller groups.
- **Predictive text input** () is a quick and easy method for writing messages.

Press **#** to switch predictive text on or off and to use predictive text in various modes.

• Standard mode

Press a key once to insert the first letter on the key, twice for the second letter, etc. If you pause briefly, the last letter in the display is accepted and your phone awaits the next entry.





Select **Clear** to backspace the cursor and delete a character.

Select and hold **Clear** to backspace continuously and delete characters.

Press **0** to enter a space and accept a completed word.

Press **1** to enter a period (.).

Press ***** to display special characters. See "Enter punctuation and special characters" on page 17.

Press and hold **#** to switch between text and numeric entry. The icon  is displayed at the top of the screen when the phone is in numeric entry mode. Depending on which capitalization mode you have selected, , , or  is displayed when the phone is in text entry mode.

• Predictive text

Predictive text input allows you to write messages quickly using your keypad and the built-in phone dictionary. It is faster than using the standard multi-tap method. You can use predictive text to write a message and create a calendar note.

To activate predictive text at any text entry screen, select **Options > Predictive text** and a language.

How to use predictive text

- For each letter of the word that you want to spell, press the corresponding key on your keypad only *once*, even if the letter you want is not the first letter on the key. The phone "guesses" the word you are trying to spell.
- If a displayed word is not correct, press ***** to see other matches. To move forward through a list of matches, keep pressing *****. To return to the previous word in the list of matches, select **Previous**.

- Press **0** to accept the word, enter a space, and begin writing the next word.
- If **?** appears after a word, select **Spell** to add the word to the dictionary. See "Add words to the dictionary" on page 17.
- Press **1** to insert a period into your message.
- Press and hold ***** to display special characters. See "Enter punctuation and special characters" on page 17.

Compound words

Enter the first part of the word; to confirm it, press the **Scroll right** key.

Enter the last part of the word; to confirm it, press **0**.

Add words to the dictionary

If you encounter a word that predictive text does not recognize, a question mark (?) follows the word, and **Spell** appears in the lower left of the display.

Select **Spell**, enter your new word using the keypad, and select **Save**. The word is added to the dictionary and to the message that you are writing.

Keep these factors in mind when adding words:

- To accept and save new words to the dictionary, select **Save**, or press **0**, or delete the space between two words.
- Depending on the language and the length of the words, you may be able to add hundreds of words to the dictionary.
- When the dictionary is full, the most recent addition replaces the first.

• Enter punctuation and special characters

While at any text entry screen, press ***** to display special characters (press and hold ***** if predictive text is on) or press ***** twice to display the **Smiley** menu.

To navigate through the list of special characters, use the **Four-way scroll** key like a joystick. Once a character is highlighted, select **Insert** to insert the character into your message.

7 Phone security

• Lock the keypad (Keyguard)

You can lock the keypad to prevent accidental key presses. To answer a call with keyguard on, press the **Call** key. During the call, all features function as normal. When you end or reject a call, the keypad automatically relocks.

- To lock the keypad, select **Menu > ***.
- To unlock the keypad, select **Unlock > ***.

When the keypad is locked, calls may be possible to the official emergency number programmed into your phone. Enter the emergency number, and press the **Call** key.

• Automatic Keyguard

You can set your phone to lock the keys automatically after a time you specify. See "Phone settings" on page 36 to activate this feature.

• Access codes

The following access codes allow you to secure your phone from unauthorized use. To change access codes, see "Security settings" on page 39. Keep the new codes secret and in a safe place, separate from your phone.

Security code—This code, supplied with the phone, protects your phone against unauthorized use. The preset code is 12345.

PIN code—This code, supplied with the SIM card, protects the card against unauthorized use. Turn the **PIN code request** on so that the code is requested each time the phone is switched on. If you enter an incorrect PIN code three times in succession, the SIM card is blocked. You must enter the PUK code to unblock the SIM card and set a new PIN code.

PIN2 code—This code is supplied with some SIM cards and is required to access certain services, such as charging unit counters. If you enter an incorrect PIN2 code three times in succession, **PIN2 code blocked** appears in the display and you will be asked for the PUK2 code.

PUK and PUK2 codes—These unblocking codes may be supplied with the SIM card. For more information, contact your service provider.

Call restriction password (4 digits)—This password is needed when using **Call restrictions**. You can obtain the password from your service provider.

8 Phone menu

Phone features are accessed through the main menu of your phone. Use the menus and submenus to select or view items and customize phone features.



Note: Some service providers order the phones specially programmed for their network. This may mean that some features are not shown on the menu.

In the standby mode, press the middle of the scroll key to select **Menu**. The first menu item is displayed.

You can view the menu as a list or as a grid:

List view—List view is the default view for the main menu. Scroll up and down to view main menu selections one at a time.

Grid view—To switch between **List** and **Grid** view, see “Display settings” on page 35. In **Grid** view, scroll up, down, right, and left to navigate through the main menu icons.

In the **Grid** view, the icon for the selected menu is outlined, and the name of the menu appears at the top of the display.

As you scroll through the menus, the menu number appears in the upper right corner of the display.

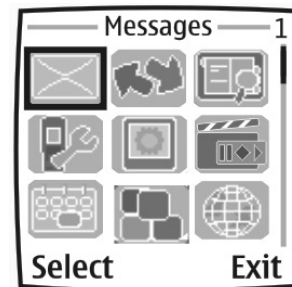
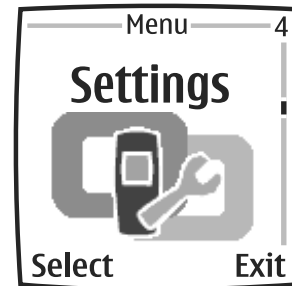
Below the menu number is a scroll bar with a tab. The tab moves up or down as you scroll through the menus, providing a visual representation of your current position in the menu structure.

Open a menu item—Scroll to it, and press the **Left selection** key.

Open a submenu—If the menu contains submenus, scroll to highlight the desired menu; then press the **Left selection** key.

Return to the previous menu—Select **Back** (press the **Right selection** key) to return to the previous menu or submenu.

Return to the start screen—Press the **End** key from any menu screen.



• Messages



The message services can only be used if they are supported by your network or your service provider.

To select the font size for reading and writing messages, select **Menu > Messages > Message settings > Other settings > Font size**.



Note: When sending messages, your phone may display the words **Message sent**. This is an indication that the message has been sent by your device to the message center number programmed into your device. This is not an indication that the message has been received at the intended destination. For more details about messaging services, check with your service provider.

Text messages (SMS) (network service)

Using the SMS (short message service), your phone can send and receive multipart messages, which consist of several ordinary text messages. Invoicing may be based on the number of ordinary messages that are required for a multipart message.

Before you can send a message, you need to save some message settings. See "text and SMS e-mail messages" on page 24.


You can also send and receive text messages that contain pictures. A picture message can be a multipart message.



Note: Only devices that offer picture message features can receive and display picture messages.

WRITE AND SEND MESSAGES

Your device supports the sending of text messages beyond the normal 160-character limit. If your message exceeds 160 characters, it will be sent as a series of two or more messages. The number of available characters and the current part number of a multipart message are shown on the top right of the display, for example 120/2. Note that using special (Unicode) characters such as ã, â, á, ì take up more space.

- 1 Select **Menu > Messages > Create message > Text message**.
- 2 Enter a message. See "Write text" on page 16. To insert text templates or a picture into the message, see "Templates" on page 21.
- 3 Select **Send**, or press the **Call** key to send the message.
The messages that you have sent will be saved in the **Sent items** folder if the setting **Save sent messages** is set to **Yes**. See "text and SMS e-mail messages" on page 24. Text messages are indicated with .
- 4 Enter the recipient's phone number, or search for the phone number in **Contacts**.
- 5 Select **OK** to send the message.

OPTIONS FOR SENDING A MESSAGE




After you have written a message, select **Options > Sending options** and one of the following:

Send to many—Send the message to several recipients.

Send as e-mail—Send a message as an SMS e-mail (network service).

Sending profile—Use a predefined message profile to send the message. To define a message profile, see "text and SMS e-mail messages" on page 24.

READ AND REPLY TO A MESSAGE OR E-MAIL

When you receive a message or an SMS e-mail, , the number of new messages, and **messages received** is shown. A blinking  indicates that the message memory is full. Before you can receive new messages, delete some of your old messages in the **Inbox** folder. If more than one message has been received, select the one that you want to read. An unread text message or SMS e-mail is indicated by .

- 1 Select **Show** to view the new message or **Exit** to view it later.

When you select **Options** while reading a message, some of the following options may be available: **Delete**, **Forward**, or **Edit** the message as a text message or an SMS e-mail; **Rename** the message you are reading or move it to another folder; **Copy to calendar** to copy text at the beginning of the message to your phone calendar as a reminder note for the current day; **Message details** to view, if available, the sender's name and phone number, the message center used, and the date and time of receipt; **Use detail** to extract numbers, e-mail addresses, and website addresses from the current message.

When reading a picture message, select **Save picture** to save the picture in the **Templates** folder.

- 2 Select **Reply** and the message type to reply to a message.



When replying to an SMS e-mail, confirm or edit the e-mail address and subject first. Then write your reply message.

- 3 To send the message to the displayed number, select **Send > OK**.

INBOX AND SENT ITEMS FOLDERS

The phone saves incoming text and multimedia messages in the **Inbox** folder. Sent text messages are saved in the **Sent items** folder.

TEMPLATES

Your phone includes text templates, indicated by , and picture templates, indicated by . To access the template list, select **Menu > Messages > Saved items > Text messages > Templates**.

SAVED ITEMS FOLDER AND MY FOLDERS

To organize your messages, you can move some of them to the **Saved items** folder or add new folders for your messages. While reading a message, select **Options > Move** and the new folder.

To add or delete a folder, select **Menu > Messages > Saved items > Text messages > My folders**. To add a folder if you have not saved any folder, select **Add**. Otherwise, select **Options > Add folder**. To delete a folder, scroll to the folder that you want to delete, and select **Options > Delete folder**.

Multimedia messages (MMS) (network service)



Note: Only devices that offer compatible multimedia message features can receive and display multimedia messages. Exercise caution when opening messages. Messages may contain malicious software or otherwise be harmful to your device or PC.

A multimedia message can contain text, sound, and a picture or a video clip. The phone supports multimedia messages that are up to 100 KB. If the message contains a picture, the phone scales it down to fit the display area.

The default setting to receive multimedia messages (**Allow multimedia reception**) is generally set to **Yes** or **In home network**. See "multimedia messages" on page 25.

Multimedia messaging supports the following formats:

- Picture: JPEG, GIF, WBMP, BMP, and PNG.
- Sound: scalable polyphonic MIDI (SP-MIDI), AMR audio, and monophonic ringing tones.
- Video clips in 3gp format with SubQCIF and QCIF resolution and AMR audio.

The phone does not necessarily support all variations of these file formats. If a received message contains any unsupported elements, they may be replaced with the file name and **Object format not supported**.

You are not able to receive any multimedia messages if you have a call in progress, a game, or another Java application running.


WRITE AND SEND A MESSAGE


To modify multimedia messaging settings, see "multimedia messages" on page 25. To check availability and subscribe to the multimedia messaging service, contact your service provider.

Copyright protections may prevent some images, ringing tones, and other content from being copied, modified, transferred, or forwarded.


- 1 Select **Menu > Messages > Create message > Multimedia msg.**
- 2 Enter a message. See "Write text" on page 16.
 - To insert a file in the message, select **Options > Insert**, and the desired option from the gallery or **Calendar note** or **Business card**.
To move the text component to the top or bottom of the message, select **Options > Place text first** or **Place text last**.
 - Your phone supports the sending and receiving of multimedia messages that contain several pages (slides). To insert a slide in the message, select **Options > Insert > Slide**. Each slide can contain text, one image, and one sound clip.
If the message contains several slides, to open the desired one, select **Options > Previous slide**, **Next slide**, or **Slide list**. To set the interval between the slides, select **Slide timing**.


- The following options may also be available: **Delete** (to delete an image, slide, or sound clip from the message), **Preview**, or **Save message**. In **More options** the following options may be available: **Insert contact**, **Insert number**, **Message details**, and **Edit subject**.
- 3 To send the message, select **Send**; or select **Options > Send to e-mail** or **Send to many**.
 - 4 Enter the recipient's phone number (or e-mail address), or search for it in **Contacts**.

While the multimedia message is being sent,  is displayed, and you can use other functions on the phone. If there is an interruption while the message is being sent, the phone tries to resend it a few times. If this fails, the message will remain in the **Outbox** folder, and you can try to resend it later.

The messages that you have sent will be saved in the **Sent items** folder if **Save sent messages** is set to **Yes**. See "multimedia messages" on page 25. Multimedia messages are indicated with .

READ AND REPLY TO A MESSAGE

When your phone receives a multimedia message,  and **Multimedia message received** are displayed. The appearance of a multimedia message may vary depending on the receiving device.


- 1 Select **Show** to view the message or **Exit** to view it later.
If more than one message has been received, select the one that you want to read. An unread multimedia message is indicated by .
- 2 Scroll to view the message.

Refer also to the options in **Gallery** (see "Gallery" on page 40).

MESSAGE FOLDERS

The phone saves the received multimedia messages in the **Inbox** folder. Multimedia messages that have not yet been sent are moved to the **Outbox** folder. The multimedia messages that you wish to send later can be saved in the **Saved items** folder. The multimedia messages that have been sent are saved in the **Sent items** folder of the **Multimedia msgs.** submenu if **Save sent messages** is set to **Yes**. See "multimedia messages" on page 25.

MESSAGE MEMORY FULL


When you have a new multimedia message waiting and the memory for the messages is full,  blinks, and **Multimedia memory full, view waiting msg.** is shown. To view the waiting message, select **Show**. To save the message, select **Options > Save message**. To delete old messages, first select the folder, then the old message to be deleted. To discard the waiting message, select **Exit > Yes**; if you select **No**, you can view the message.

Voice messages

The voice mailbox is a network service, and you may need to subscribe to it. For more information and for the voice mailbox number, contact your service provider.

Select **Menu > Messages > Voice messages** and one of the following:

- **Listen to voice messages** to call your voice mailbox.
- **Voice mailbox number** to enter, search for, or edit your voice mailbox number.

If supported by the network, the indicator  will show new voice messages. Select **Listen** to call your voice mailbox number.

Press and hold **1** to call your voice mailbox if you have the number set.

Info messages

With the info message network service you may be able to receive messages on various topics. For details, contact your service provider.

Service commands

Select **Menu > Messages > Service commands**. Enter and send service requests (also known as USSD commands), such as activation commands for network services, to your service provider.

Delete all messages from a folder

To delete all messages from a folder, select **Menu > Messages > Delete messages**. Select the folder from which you want to delete the messages, and select **OK** to confirm.

If the folder contains unread messages, the phone will ask whether you want to delete them.

Message settings

The message settings affect the sending, receiving, and viewing of messages.

TEXT AND SMS E-MAIL MESSAGES

- 1 Select **Menu > Messages > Message settings > Text messages > Sending profile**.
- 2 Select the message profile that you want to change, and update the following settings as you choose: **Message center number** (delivered by your service provider), **Messages sent via**, **Message validity**, **Default recipient number** (text messages) or **E-mail server** (SMS e-mail), **Delivery reports**, **Use GPRS**, **Reply via same center** (network service) and **Rename sending profile**.
- 3 Select **Back**.
- 4 Select **Save sent messages > Yes** to set the phone to save sent messages in the **Sent items** folder. If you select **No**, the sent messages are not saved.

MULTIMEDIA MESSAGES

Select **Menu > Messages > Message settings > Multimedia msggs.** and one of the following:

- **Save sent messages**—Select **Yes** to set the phone to save sent multimedia messages in the **Sent items** folder. If you select **No**, the sent messages are not saved.
- **Delivery reports**—Select **On** for the network to send delivery reports about your messages (network service).
- **Scale image down**—Select **Yes** to change the image size when you insert an image into a multimedia message.
- **Default slide timing**—Set the default time for slides in multimedia messages.
- **Allow multimedia reception**—Choose **No**, **Yes**, or **In home network** to use the multimedia service. If **Allow multimedia reception** is set to **Yes** or **In home network**, your operator or service provider may charge you for every message you receive. The default setting to receive multimedia messages is generally on.
- **Incoming multimedia messages**—Select **Retrieve** to set the phone to automatically get newly received multimedia messages or **Reject** if you do not wish to receive multimedia messages. This setting is not shown if **Allow multimedia reception** is set to **No**.
- **Configuration settings**—Select **Configuration** and the default service provider for retrieving multimedia messages. Select **Account** to see the accounts provided by the service provider. If more than one account is displayed choose the one that you want to use. You may receive the settings as a configuration message from the service provider. To enter the settings manually see "Configuration settings" on page 38.
- **Allow advertisements**—Select whether you want to allow your phone to receive advertisement messages. This setting is not shown if **Allow multimedia reception** is set to **No**.

OTHER SETTINGS

Select **Menu > Messages > Message settings > Other settings > Font size** to select the font size for reading and writing messages.

Message counter

To view how many messages you have sent and received, select **Menu > Messages > Message counter**. Select **Sent messages** or **Received messages**, or select **Clear counters** to clear the counters.

• Instant messaging

Take text messaging to the next level by experiencing instant messaging (IM) in a wireless environment. Engage in instant messaging with friends and family, regardless of the mobile system or platform they are using (like the Internet), as long as you all use the same IM service. Check with your wireless service provider for availability.

Before you can start using IM on your phone, you must first subscribe to your wireless service provider's text messaging service. GPRS network service is required to use instant messaging. You must also register with the IM service you want to use. See "Register with an IM service" on page 26 for more information.



Note: Depending on both your IM service provider and your wireless service provider, you may not have access to all of the features described in this guide.

Register with an IM service

Before you can use IM, you must register with an IM service to obtain an IM user name and password. You can obtain an IM user name and password by registering over the Internet (using your computer) with the IM service provider you have selected. During the registration process, you will have the opportunity to create the user name and password of your choice. For more information about signing up for IM services, contact your wireless service provider.

IM icons and menu items

Each IM service provider has its own unique interface, so the IM menu items, screen display text, and icons on your phone may appear differently for each IM service. If you have questions about the differences in the various IM service providers' screen text and icons, contact your wireless service provider for more information.

IM menus

OFFLINE

When you select **IM** from your phone menu, a list of available IM services is displayed. Select the desired IM service to access the IM offline menu options: **Login, Saved convers., and Settings**. Depending on the IM service provider you are using, these may not be the exact menu items displayed. See "IM icons and menu items" on page 26.

ONLINE

After you log into IM, the following IM online menu options appear:

Conversations, IM contacts, Add contact, Create group, Saved convers., IM availability, Settings, Blocked list, and Logout. Depending on the IM service provider you are using, these may not be the exact menu items displayed. See "IM icons and menu items" on page 26.

Log in

- 1 Select **Menu > IM >** and the IM service you want to log into.
You must select the IM service every time you log in.
- 2 Select **Login**.
- 3 At the prompt, enter your user name if it is not already displayed, and select **OK**.
- 4 At the prompt, enter your password, and select **OK**.

Depending on your IM service, you may not need to enter your user name and password manually every time you log in.

After you have logged into IM the first time, you can choose to log in automatically or you can continue logging in manually. See the **Automatic login** option under "IM settings" on page 29.

Begin an IM session

You can send instant messages to anyone if you have the person's user name and you use the same IM service. As the conversation progresses, the most recent message appears at the top of the screen, causing the previous messages to move down one level (some IM services may do this in the opposite direction).

If you want to chat with a person, you must first add that person to **IM Contacts**. See "IM contacts" on page 28.

To begin an IM session with one contact:

- 1 From the **IM** online menu, select **IM contacts**.
- 2 Scroll to a contact who is online, and press **Select > Open**.
A conversation screen is opened, and the contact's name is displayed at the top.
- 3 Select **Write**, and enter a message. See "Write text" on page 16.
- 4 When you finish the message, select **Send**.

Begin a group chat

You can create your own private chat groups. The participants must be entered into **IM contacts**. See "IM contacts" on page 28.

- 1 From the **IM** online menu, select **Create group**.
- 2 Enter the group name (up to 10 characters), and select **OK**.
- 3 After your screen name appears, select **OK**.
The group chat screen is displayed.
- 4 To add group members, select **Options > Group members**.
- 5 Select the contact whom you want to invite to the group chat.
- 6 Enter the invitation text, and select **Send**.

Receive and reply to messages

If you have an active chat open and receive an instant message from the contact or group member with whom you are chatting, the new message is displayed on the conversation screen in the sequence in which they are received. Select **Write** to reply.

If you receive an instant message when you have the IM application open but do not have an active chat open, a screen appears showing you have a new instant message with the name of the sender. Select **Open** to open the conversation screen with that contact's new message displayed. To reply, select **Write**, enter a message, and select **Send**.

If you receive an instant message when you are logged in to the IM service but do not have the IM application open on your phone, a message is displayed telling you that a new IM message has been received. Select **Start** to open the IM application and view the new message.

Return to chat session

From the **IM** online menu, select **Conversations**. This list displays all IM conversations and group chats in which you are currently participating. To view a conversation or continue chatting, scroll to a group name or contact name, and press **Select**.

IM contacts

You can add the names of contacts with whom you interact frequently by instant messaging to the **IM contacts** list.

ADD A NEW CONTACT

To add a person to **IM Contacts** during an instant messaging session, select **Options > Add**.

To add a new contact from the IM online menu, select **Add contact**. Enter the contact's user name for the IM service, and select **OK**. Enter a nickname for the contact, and select **OK**. The contact is added to your **IM contacts** list.

To add a new contact from the IM contacts list, select any contact to open the IM contacts menu. Select **Add contact**, enter the contact's user name for the IM service, and select **OK**. Enter a nickname for the contact, and select **OK**. The contact is added to your **IM contacts** list.

REMOVE A CONTACT

From the **IM** online menu, select **IM contacts** and the contact you want to remove; then select **Remove contact > OK**.

BLOCK OR UNBLOCK CONTACTS

To block or unblock instant messages from a contact, select **IM Contacts** from the IM online menu, the contact name, and **Block contact** or **Unblock > OK**.

To view a list of the contacts you have blocked, select **Blocked list** from the IM online menu.

Save chat session

You can save a chat session while you have the conversation open. Select **Options > Save**, edit the name if desired, and select **Save**.

To view a saved chat session, go to the IM online menu, select **Saved convers.** and the desired conversation name to open it for viewing. While viewing the saved conversation, you can select **Delete** or **Options > Rename**.

Set your availability

You can determine if other users can tell whether you are available or not. From the **IM** online menu, select **IM Availability > Available for all**, **Available for contacts**, or **Appear offline**.

IM settings

You can customize your IM settings, depending upon the IM service you have selected. From the IM online menu, select **Settings** and one of the following:

Screen name—Enter a screen name (also called an alias or a nickname) that is 1–20 characters in length. This name is shown in front of the messages that you send to your contacts. It is also your default screen name when you join a group chat.

Automatic login—You can use automatic login after you have logged in at least once to an IM service with your user name and password. When you select **IM** from the phone main menu and then select the same IM service provider, you are then logged in automatically and do not have to enter your user name and password.

Sort contacts—Specify whether you want your IM contacts to be displayed **Alphabetically** or **By status**.

Status updates—Select **On** if you want your IM contacts list to be updated when a contact's availability changes. If you set this feature to **Off**, you can select **Refresh list** from the IM contacts menu to update your contacts' status manually.

Network—Modify network connection settings for the IM service.

Log off service

EXIT INSTANT MESSAGING

From the IM online menu, you can exit the IM application but still be connected to the IM service. Select **Back** until the IM online menu appears; then select **Exit**. If you open **IM** again, you do not need to log in again.

You can then receive instant messages and chat invitations from your contacts when using your phone for other purposes, such as playing a game. If you are connected to your IM service, but you have not used your IM application for some time, you may be automatically disconnected from the IM service. The next time you open the IM application, **Not connected** is displayed, and you are taken to the offline menu where you have to log in again.

LOG OUT OF INSTANT MESSAGING

To disconnect from the IM service, you must log out from the online menu. You will be taken to the IM service provider list, where you can exit the IM application or select an IM service and log in again.

From the IM online menu, select **Logout > OK**.

• Call log



The phone logs the phone numbers of missed, received, and dialed calls, and the approximate length of your calls. To log this information, the phone must be switched on and within the network's service area, and the network must support these functions.

To view recent call logs, select **Menu > Call log > Missed calls, Received calls, or Dialed numbers**.

When viewing a list, select **Options** to view the date and the time of the call, edit or delete the phone number from the list, save the number in **Contacts**, or send a message to the number.

Delete log contents

To delete recent call lists, select **Menu > Call log > Delete recent call lists > All, Missed, Received, or Dialed**.

Counters and timers for calls, data, and messages




Note: The actual invoice for calls and services from your service provider may vary, depending upon network features, rounding off for billing, taxes, and so forth.

Select **Menu > Call log > Call timers, GPRS data counter, or GPRS connection timer** for approximate information on your recent communications.

• Contacts



You can save names and phone numbers (contacts) in the phone memory and the SIM card memory.

- The phone memory may save names with numbers and text notes about each name. You can also save an image for a certain number of names.
- Names and numbers saved in the SIM card memory, are indicated by .

Contact settings


Select **Menu > Contacts > Settings > Memory in use, Contacts view, or Memory status**.

Add contact

Select **Menu > Contacts > Add new contact**. Enter the name and the phone number. When the name and number are saved, select **Done**.

Add numbers, text or an image

You can save different types of phone numbers, short text items, and an image for each name in the internal phone memory for contacts.

The first number saved is automatically set as the default number and is indicated with a frame around the number type indicator, for example . When you select a name from contacts to make a call, the default number is used unless you select another number.

- 1 Make sure that the memory in use is either **Phone** or **Phone and SIM**. See "Contact settings" on page 30.
- 2 Open your contacts list and scroll to the contact you want to modify.
- 3 Select **Details > Options** and one of the following:
 - Add number**—Select one of the number types, enter the number, and select **OK** to save it. To set the selected number as the default number, select **Set as default**.
 - Add detail**—Select one of the text types, enter the text (see "Write text" on page 16), and select **OK** to save it.
 - Add image**—When you select this option, **Gallery** is opened automatically so that you can choose the image. Open the image you want to add, and select **Options > Save to contacts**.
- 4 Select **Back > Exit** to return to the standby mode.

To change the number or text type, select **Change type** in the options list. You cannot change the type of an ID when it is in **IM contacts** or the **Subscribed names** list.

Search for a contact

Select **Menu > Contacts > Find**, or to find a contact name quickly, scroll down in the standby mode. You can enter the first characters of the name you are searching for in the pop-up window.

Contact options

The following options may be available in the **Contacts** menu:

- **Add new contact**
- **Delete**
- **Copy**—Copy names and phone numbers between the phone contact directory and the SIM card memory.
- **Settings**—Select how the names and numbers are displayed, and view the free and used memory capacity. See "Contact settings" on page 30.

- **1-touch dialing**—Assign a number to a 1-touch dialing key. To activate 1-touch dialing see "1-touch dialing" on page 32.
- **Info numbers**—Call the information numbers of your service provider if the numbers are included on your SIM card (network service).
- **Service numbers**—Call the service numbers of your service provider if the numbers are included on your SIM card (network service).
- **My numbers**—View the phone numbers assigned to your SIM card. Only shown, if the numbers are included on your SIM card.
- **Caller groups**—Arrange the names and phone numbers saved in the memory into caller groups with different ringing tones.

Edit or delete details

- 1 Search for the contact that you want to edit or delete, and select **Details**.
- 2 Scroll to the name, number, text item, or image that you want to edit or delete, and select **Options**.
- 3 Select **Edit name**, **Edit number**, **Edit detail**, **Change image**, **Delete number**, **Delete detail**, or **Delete image**.
 - You cannot edit or delete an ID when it is in **IM contacts** or the **Subscribed names** list.
 - Deleting an image attached to the contact does not delete it from **Gallery**.

Send and receive a business card

You can send and receive a person's contact information as a business card if you are using a compatible device. When you have received a business card, select **Show > Save** to save the business card in the phone memory. To discard the business card, select **Exit > Yes**.

To send a business card, do the following:

- 1 In **Contacts**, search for the name and phone number that you want to send.
- 2 Select **Details > Options > Send bus. card > Via text message** (network service) or **Via multimedia** (network service).
- 3 Select **Primary number** or **All details**.

1-touch dialing

To assign a number to a 1-touch dialing key:

- 1 Select **Menu > Contacts > 1-touch dialing**, and scroll to a key number.
- 2 Select **Assign**, or if a number has already been assigned to the key, select **Options > Change**.

- 3 Select **Find** and the name and number that you want to assign.

If the **1-touch dialing** function is off, the phone asks whether you want to activate it. See also **1-touch dialing** in "Call settings" on page 36.

To use 1-touch dialing, hold down the desired 1-touch dialing enter the standby mode.

Voice dialing

To make a phone call, say a voice tag that has been added to a phone number. Any spoken word, such as a person's name, can be a voice tag. You can add up to 10 voice tags.

Before using voice tags, note the following:


- Voice tags are not language-dependent. They are dependent on the speaker's voice.
- You must say the name exactly as you said it when you recorded it.
- Voice tags are sensitive to background noise. Record voice tags and use them in a quiet environment.
- Very short names are not accepted. Use long names and avoid similar names for different numbers.



Note: Using voice tags may be difficult in a noisy environment or during an emergency, so you should not rely solely upon voice dialing in all circumstances.

ADD AND MANAGE VOICE TAGS

Save or copy the contacts to which you want to add a voice tag in to phone memory. You can also add voice tags to the names in the SIM card. If you replace your SIM card with a new one, you must delete the old voice tags before you add new ones.

- 1 Scroll down in the standby mode to open your contact list.
- 2 Scroll to the contact to which you want to add a voice tag, and select **Details**.
- 3 Scroll to the phone number you want, and select **Options > Add voice tag**.
- 4 Select **Start**, and say clearly the words you want to record as a voice tag. After recording, the phone plays the recorded tag.  appears after the phone number with a voice tag.

To check the voice tags, select **Menu > Contacts > Voice tags**. Scroll to the contact with the voice tag that you want, and press **Select** to see the options to listen to, delete, or change the recorded voice tag.

MAKE A CALL

In the standby mode, press and hold the **Right selection** key. A short tone is played, and **Speak now** is displayed. Say the voice tag clearly. The phone plays the recognized voice tag and dials the voice tag phone number after 1.5 seconds.

• Settings



Profiles

Use **Profiles** to adjust and customize ringing tones and sound tones for different events and environments. You can customize the profiles and activate a profile to use it. Available profiles are **Normal**, **Silent**, **Meeting**, **Outdoor**, **My profile 1**, and **My profile 2**.

Select **Menu > Settings > Profiles > a profile**, then:

- To activate the selected profile, select **Activate**.
- To personalize the profile, select **Customize**. Select the setting you want to change, and modify it.
- To set the profile to be active until a certain time up to 24 hours, select **Timed**, and set the time for the profile setting to end. When the time set for the profile expires, the previous profile that was not timed becomes active.

Themes

A theme is a package that may include a screen saver, a wallpaper image, a ringing tone, and a color scheme to customize your phone for different events and environments. Themes are stored in **Gallery**. To activate a theme, do the following:

- 1 Select **Menu > Settings > Themes > Select theme**.

The gallery is automatically opened so that you can locate a theme.

- 2 Open the **Themes** folder, scroll to a theme, and select **Options > Apply theme**.

See also to "Gallery" on page 40.

To download new themes, select **Menu > Settings > Themes > Theme downloads**. See "Download" on page 50.

Tone settings

To change the tone settings for the active profile, select **Menu > Settings > Tone settings**. Select and change **Incoming call alert**, **Ringing tone**, **Ringing volume**, **Vibrating alert**, **Message alert tone**, **Instant message alert tone**, **Keypad tones**, and **Warning tones**. You can find the same settings in the **Profiles** menu. See "Profiles" on page 34.

Select **Alert for** to set the phone to ring only upon calls from phone numbers that belong to a selected caller group. Scroll to the caller group you want, or select **All calls > Mark**.

Light settings

You can select different light sequences that follow the phone functions. Select **Menu > Settings > Light settings > Light sequences** to set the light effects on or off.

Personal shortcuts

With personal shortcuts you get quick access to frequently used phone functions.

RIGHT SELECTION KEY

Select **Menu > Settings > Personal shortcuts > Right selection key** and a phone function from the list to assign to the **Right selection** key. See "Start screen (standby mode)" on page 9. This menu is not shown in some operator variants.


GO TO OPTIONS

To assign phone functions from a predefined list to the **Go to** menu that is available, press the **Left selection** key.

Select **Menu > Settings > Personal shortcuts**. Press **Select 'Go to' options** to add functions to the shortcut list. Select **Organize 'Go to' options** to rearrange the functions on your personal shortcut list. See "Start screen (standby mode)" on page 9.

VOICE COMMANDS

You can activate certain phone functions by saying a voice command. Up to five functions can be selected for voice commands.

Select **Menu > Settings > Personal shortcuts > Voice commands**, the function folder that you want, scroll to the function to which you want to add a voice command, and select **Add**. A voice command is indicated with .

When you are using voice commands, the same guidelines apply in "Make a call" on page 33.

Display settings

Select **Menu > Settings > Display settings** and one of the following:

Wallpaper—Set your phone to display a background image, known as wallpaper, when the phone is in the standby mode.

Screen saver—Press **Select s. saver** to choose an animation or a still image as screen saver from **Gallery**. Select in **Time-out** the time after which the screen saver will be activated. Select **On** to activate the screen saver.

Independent of the screen saver settings, for power saving purposes, a digital clock view is activated when no phone function is used after a certain time.

Color schemes—Change the color in some display components, such as indicators, the signal bar, the battery bar, and the background image that appears when using a menu function.

Menu view—Set the way the phone displays the main menu.

Operator logo—Set your phone to display or hide the operator logo.

Time and date settings

Select **Menu > Settings > Time and date settings**, and one of the following:

Clock—Set the phone to show the clock in the standby mode, adjust the clock, and select time zone and format.

Date—Set the phone to show the date in the standby mode, set the date, and select the date format and separator.

Auto-update of date & time (network service)—Set the phone to automatically update the time and date according to the current time zone.

Call settings

Select **Menu > Settings > Call settings**, and one of the following:

Automatic volume control—Set the phone to automatically adjust the speaker volume according to the background noise.

Call forwarding (network service)—Forward your incoming calls. For details, contact your service provider.

Anykey answer—Select **On**; to answer an incoming call, briefly press any key except the **Power** key, the **End** key, or the **Right** and **Left selection** keys.

Automatic redial—Select **On**; your phone will make a maximum of 10 attempts to connect the call after an unsuccessful call attempt.

1-touch dialing—Select **On**; to dial the names and phone numbers assigned to the 1-touch dialing keys from **2** to **9**, press and hold the corresponding number key.

Call waiting—Select **Activate** for the network to notify you of an incoming call while you have a call in progress (network service).

Summary after call—Select **On**; the phone briefly displays the approximate duration and cost (network service) of the call after each call.

Send my caller ID (network service)—Select **Set by network**, **Yes**, or **No**.

Line for outgoing calls (network service)—Select phone line 1 or 2 to make calls. This option is shown only if supported by your SIM card.

Phone settings

Select **Menu > Settings > Phone settings**, and one of the following:

Phone language—Set the display language of your phone. If you select **Automatic**, the phone selects the language according to the information on the SIM card.

Automatic keyguard—Set the keypad of your phone to lock automatically after a preset time delay when the phone is in the standby mode and no function of the phone has been used. Select **On**, and set the time from 5 seconds to 60 minutes. When the keyguard is on, calls still may be possible to the official emergency number. Enter the emergency number, and press the **Call** key.

Cell info display—Select **On** to receive information from the network, depending on the network cell used (network service).

Welcome note—Enter the note you would like to be shown briefly when the phone is switched on. To save the note, select **Save**.

Operator selection—Select **Automatic**; the phone automatically selects one of the cellular networks available in your area. Select **Manual**, and a network that has a roaming agreement with your service provider.

Confirm SIM service actions—See "SIM services" on page 53.

Help text activation—Select whether the phone shows the help texts.

Start-up tone—Select whether the phone plays a start-up tone when switched on.

Connectivity

You can define the settings for GPRS dial-up connections.

GPRS AND EGPRS

GPRS (general packet radio service) is a network service that allows mobile phones to be used for sending and receiving data over an Internet protocol (IP)-based network. GPRS is a data bearer that enables wireless access to data networks such as the Internet.

EGPRS (enhanced GPRS), also known as EDGE (enhanced data rates for global evolution), is similar to GPRS. EDGE is a radio interface modulation technique which increases GPRS data rates. For more information on the availability of EGPRS and data transfer speed, contact your service provider.

When you have selected **GPRS** as a data bearer, the phone uses EGPRS instead of GPRS if it is available in the network. You cannot select between EGPRS and GPRS in your phone, but for some applications, you may be able to select either **GPRS** or **GSM data** (CSD—circuit switched data) as the data bearer. The data bearer is part of the preferred access point and can be changed in **Configuration settings** (see "Configuration settings" on page 38).

The applications that may use GPRS are MMS, instant messaging, browsing sessions, remote SyncML, Java application downloading, and the PC dial-up (for example, Internet connections).

Before you can use GPRS technology, contact your service provider for availability of and subscription to the GPRS service, and save the GPRS settings for each of the applications used over GPRS.

GPRS CONNECTION

Select **Menu > Settings > Connectivity > GPRS > GPRS connection** and one of the following:

- **Always online**—Set the phone to automatically register to a GPRS network when you switch the phone on.
- **When needed**—Set the phone to establish GPRS registration and connection when an application using GPRS needs it and to close the connection when you end the application.

GPRS MODEM SETTINGS

You can connect the phone by a data cable connection to a compatible PC and use the phone as a modem to enable GPRS connectivity from the PC.

To define the settings for GPRS connections from your PC, select **Menu > Settings > Connectivity > GPRS > GPRS modem settings** and one of the following:

Active access point—Activate the access point that you want to use.

Edit active access point—Change the access point settings:

- **Alias for access point**—Enter a name for the activated access point, and select **OK**.
- **GPRS access point**—Enter the access point name (APN) to establish a connection to a GPRS network, and select **OK**. Contact your service provider for the APN.

You can also set the GPRS dial-up service settings (access point name) on your PC using the **Nokia Modem Options** software. See "PC Suite" on page 54. If you have set the settings both on your PC and on your phone, the PC settings will be used.

Enhancement settings

The enhancement settings menu is shown only if the phone is or has been connected to a compatible mobile enhancement, charger, or hands-free unit.

Select **Menu > Settings > Enhancement settings**. You can select an enhancement menu if the corresponding enhancement is or has been connected to the phone.

Configuration settings

Some of the network services need to have the correct configuration settings on your phone. Get the settings from a service provider as a configuration message, or enter your personal settings manually. Configuration settings from up to 10 different service providers can be stored in the phone and can be managed within this menu.

Select **Menu > Settings > Configuration settings**, and one of the following:

Default configuration settings—View the list of service providers stored on the phone (the default service provider is highlighted), and select another service provider as default. Scroll to a provider, and select **Details** to view the list with supported applications. To delete a service provider from the list, select **Options > Delete**.

Activate default in all applications—Set the applications to use the settings from the default service provider.

Preferred access point—Select another access point. Normally the access point from your service provider is to be used.

To enter, view, and edit the settings manually, select **Menu > Settings > Configuration settings > Personal configuration settings**. To add a new configuration, select **Add new** or **Options > Add new**. Choose one of the application types from the list and enter all the necessary settings. To activate the settings, select **Back > Options > Activate**.

To view or to edit the user-defined settings, select the application that you want to view, and select the setting to edit.

Security settings

When security features that restrict calls are in use (such as call restriction, closed user group, and fixed dialing) calls still may be possible to the official emergency number programmed into your device.

Select **Menu > Settings > Security settings**, and one of the following:

PIN code request—Set the phone to request your PIN code every time the phone is switched on. Some SIM cards do not allow the PIN code request to be turned off.

Call restrictions (network service)—Restrict incoming calls to and outgoing calls from your phone. A restriction password is required.

Fixed dialing—Restrict your outgoing calls to selected phone numbers if this function is supported by your SIM card.

Closed user group (network service)—Specify the group of people whom you can call and who can call you.

Security level—Select **Phone** for phone to request the security code whenever a new SIM card is inserted. Select **Memory** for the phone to request the security code when the SIM card memory is selected and you want to change the memory in use.

Access codes—Change the security code, PIN code, PIN2 code, or restriction password.

Restore factory settings

To reset some of the menu settings to their original values, select **Menu > Settings > Restore factory settings**.

• Operator menu

This menu lets you access a portal to services provided by your service provider. This menu is operator specific. The name and the icon depend on the operator. For more information, contact your service provider.

The operator can update this menu with a service message. For more information, refer to "Service inbox" on page 50.

• Gallery



In this menu, you can manage graphics, images, video clips, recordings, and tones. These files are arranged in folders.

Your phone supports a digital rights management (DRM) system to protect acquired content. A piece of content (for example a ringing tone) can be protected and associated with certain usage rules, such as the number of usage times and a certain usage period. The rules are defined in the activation key of the content, which can be delivered either together with the content or independently, depending on the service provider. You may be able to update these activation keys. Always check the delivery terms of any content and activation key before acquiring them, as they may be subject to a fee.

Copyright protections may prevent some images, ringing tones, and other content from being copied, modified, transferred, or forwarded.

1 Select **Menu > Gallery**.

A list of folders is displayed. **Images**, **Video clips**, **Themes**, **Graphics**, **Tones**, and **Recordings** are the default folders on the phone.

2 Scroll to a folder, and select **Open** to view a list of files in the folder or **Options** to choose from additional options.

3 After you open a folder, select the file that you want to view and **Open**.

If you select the **Themes** folder, scroll to a theme, and select **Open > View** to view the theme package. To choose it as your theme, select **Options > Apply theme**.

4 After you open a file, select **Options** to choose additional options.

• Media



Camera

You can take photos or record video clips with the built-in camera. The camera produces pictures in JPEG format and the video clips in 3GP format.

The Nokia 3220 device supports an image capture resolution of 640 x 480 pixels. The image resolution in these materials may appear different.

TAKE A PHOTO OR A VIDEO CLIP

Select **Menu > Media > Camera**. The live image appears on the display, and you can use the display as a viewfinder. Scroll left and right to change the camera mode: **Standard photo**, **Portrait photo**, or **Video**, or **Night mode** (if the lighting is dim for taking photos). If you want to add the photo to a name or a phone number saved in contacts, select **Portrait photo**.

Take a photo

Select **Capture**. A shutter sound is heard. The phone saves the photo in the **Images** folder of the **Gallery** menu.

If you want to send the photo as a multimedia message, select **Send**.

Select **Back** to take another photo, or select **Options** and select an option to rename or zoom the saved photo, set the contrast, see the details, set the photo as wallpaper, open the gallery, or delete the photo.

You can activate the self-timer of the camera for one picture at a time. To put the camera in photo mode, select **Options > Self-timer > Start**. After the timeout, the camera takes the photo. While the self-timer is running, a beeping sound is heard.

Record a video

To start recording a video clip, select **Record**. When you are recording a video clip, the remaining recording time is shown on the top of the display.

To pause the recording, select **Pause**. To resume the recording, select **Continue**. To stop the recording, select **Stop**. The phone saves the recording in the **Video clips** folder of the **Gallery** menu. To view the recorded video clip, select **Play**.

Select **Back** to start recording a new video clip. Select **Options** and an option to delete or rename the saved video clip, set the contrast, see the details, send it as a multimedia message, open the gallery, or mute/unmute the microphone.

CAMERA SETTINGS

Select **Menu > Media > Camera > Options**. Depending on the active camera mode, the following options may appear: **Change mode**, **Self-timer**, **Mute/Unmute**, **Open Gallery**, **Settings** (to adjust the camera settings), **Default mode**, **Image quality**, **Video clip length**, **Camera sounds**, **Self-timer lights**, and **Default title**.

Voice recorder

You can record pieces of speech, sound, or an active call for up to 5 minutes. For example, this is useful when recording a name and phone number for writing down later.

The recorder cannot be used when a data call or GPRS connection is active.

RECORD

- 1 Select **Menu > Media > Voice recorder**.
- 2 To start the recording, select **Record**. To start the recording during a call, select **Options > Record**.
While recording a call, all parties to the call will hear a faint beeping sound every 5 seconds approximately.
- 3 To end the recording, select **Stop**.
The recording is saved in the **Recordings** folder of the **Gallery** menu.
- 4 To listen to the latest recording, select **Play last recorded**.
- 5 To send the latest recording, select **Send last recorded**.

LIST OF RECORDINGS

Select **Menu > Media > Voice recorder > Recordings list**. The list of folders in the **Gallery** is shown. Open **Recordings** to see the list with recordings.

• Organizer



Alarm clock

You can set the phone to sound an alarm at a desired time.

Select **Menu > Organizer > Alarm clock**.

To set the alarm, select **Alarm time**, and enter the alarm time. To change the alarm time when the alarm time is set, select **On**. Select **Repeat alarm** to set the phone to alert you on selected days of the week.

Select **Alarm tone** and the default alarm tone. To customize the alarm tone, select one from the ringing tone list or from **Gallery**.

When the alarm time expires, the phone sounds an alert tone and flashes **Alarm!** and the current time on the display, even if the phone is switched off. Select **Stop** to stop the alarm. If you let the phone continue to sound the alarm for a minute or select **Snooze**, the alarm stops for about 10 minutes, then resumes.

If the alarm time is reached while the device is switched off, the device switches itself on and starts sounding the alarm tone. If you Select **Stop**, the device asks whether you want to activate the device for calls. Select **No** to switch off the device or **Yes** to make and receive calls. Do not select **Yes** when wireless phone use may cause interference or danger.

Calendar

Select **Menu > Organizer > Calendar**.






The current day is indicated by a frame. If there are any notes set for the day, the day is in bold type. To view the day notes, select **View**. To view a week, select **Options > Week view**. To view a single note, select **View**.

Other options for the calendar view may be options for creating a note; deleting, editing, moving, and repeating a note; copying a note to another day; or sending a note directly to another compatible phone as a note, text message, or a multimedia message.

In **Settings** you can set the date, time, time zone, date and time format, and the first day of the week. In the **Auto-delete** option you can set the phone to delete old notes automatically after a specified time.


To delete all notes in the calendar, select the month or week view and **Options > Delete all notes**.

MAKE A CALENDAR NOTE

Select **Menu > Organizer > Calendar**. Scroll to the date you want, and select **Options > Make a note**. Select one of the following note types:  **Meeting**,  **Call**,  **Birthday**,  **Memo**, or  **Reminder**.

CALENDAR NOTE ALARMS

The phone must be turned on to sound a calendar note alarm tone. If you want to set an alarm that will sound while the phone is turned off, see "Alarm clock" on page 42.

When the phone sounds an alarm for a calendar note, the phone beeps, and displays the note. To call a displayed number (when a call note  on the display), press the **Call** key. To stop the alarm and view the note, select **View**. Select **Snooze**, and the phone sounds an alarm again after 10 minutes. To stop the alarm without viewing the note, select **Exit**.

To-do list

You can save a note for a task that you have to do, select a priority level for the note, and mark it as done when you complete it. You can sort the notes by priority or by date.

Select **Menu > Organizer > To-do list**.

Select **Add note** to make a note. Enter the note, and select **Save**. Select the priority for the note. The phone automatically sets the deadline without an alarm for the note. To change the deadline, view the note, and select the deadline option.

When viewing a note, you can select **Options** to view and delete the selected note and delete all the notes that you have marked as done. You can sort the notes by priority or by deadline, send a note to another phone, save a note as a calendar note, or access the calendar. You can also select an option to edit the selected note, edit the deadline or priority for the note, or mark the note as done.

Notes

You can use this application for writing and sending notes to compatible devices by MMS.

Select **Menu > Organizer > Notes**. The phone will ask you to set the date and time if they have not already been set when you start to write a note. To add a note, select **Add note** or **Options > Make a note**. Enter the note, and select **Save**; or scroll to a note, and select **View** or **Options** to see the options for notes.

Synchronization

Synchronization allows you to save your calendar and contacts data on a remote Internet server (network service) or on a compatible PC. If you have saved data on the remote Internet server, you can synchronize your phone by starting the synchronization from your phone. You can also synchronize the data in the contacts list, calendar, and notes of your phone to correspond to the data of your compatible PC by starting the synchronization from your PC.

The contact data in your SIM card will not be synchronized.

SYNCHRONIZE FROM YOUR PHONE

Before synchronizing from your phone, you need to subscribe to a synchronization service and get the configuration settings from your service provider. For more information on availability and the synchronization service settings, contact your service provider.

To start the synchronization from your phone, do the following:

- 1 Activate the connection settings you need for the synchronization. See "Synchronization settings" on page 44.
- 2 Select **Menu > Organizer > Synchronization > Server sync > Data to be synchronized**, mark the data to be synchronized, and select **Done > Synchronize**.

The marked data of the active set will be synchronized after confirmation.

SYNCHRONIZATION SETTINGS

You may receive the synchronization settings for your phone as a configuration message from the service provider. For more information on availability and the synchronization service settings, contact your service provider. To enter the settings manually, see "Configuration settings" on page 38.

Select **Menu > Organizer > Synchronization > Server sync > Sync settings > Configuration**. Select the service provider whose settings you would like to activate. Select **Account** to see the accounts provided by the service provider. If more than one account is displayed, choose the one you want to use.

SYNCHRONIZE FROM YOUR COMPATIBLE PC

You must use a data cable to connect your phone to a PC to synchronize contacts, the calendar, and the notes from your PC. To view compatible data cables, see "Enhancements" on page 55. You also need the PC Suite software of your phone installed on the PC. Start the synchronization from the PC using PC Suite.

Verify that the phone is in the standby mode and that the time and date are set.

• Applications



Games and applications

Your phone software may include some games and Java applications specially designed for this Nokia phone.

LAUNCH A GAME OR AN APPLICATION

Select **Menu > Applications > Games > Select game or Collection > Select application**. Scroll to a game or an application and select **Open**.

GAME AND APPLICATION DOWNLOADS

Your phone supports J2ME Java applications. Make sure that the application is compatible with your phone before downloading it.

Select **Menu > Applications > Games > Game downloads** or **Collection > App. downloads**. The list of available bookmarks is shown. Select **More bookmarks** to access the list of bookmarks in the **Services** menu. See "Bookmarks" on page 50. Select a bookmark to connect to the desired service. For the availability of different services, pricing, and tariffs, contact your service provider.



Important: Only install and use applications from sources that offer adequate security and protection against harmful software.

Note that downloaded applications may be saved in the **Games** menu instead of the **Applications** menu.

GAME SETTINGS

Select **Menu > Applications > Games > App. settings** to set sounds, lights, and shakes for games.

MEMORY STATUS FOR GAMES AND APPLICATIONS

To view the amount of memory available for game and application installations (third shared memory), select **Menu > Applications > Games** or **Collection > Memory**.

Calculator

The calculator in your phone adds, subtracts, multiplies, divides, calculates the square and the square root, and converts currency values.

- 1 Select **Menu > Applications > Extras > Calculator**.
- 2 When **0** is displayed on the screen, enter in the first number in the calculation. Press **#** for a decimal point.
- 3 Select **Options > Add, Subtract, Multiply, Divide, Square, Square root, or Change sign**.
- 4 Enter the second number.
- 5 To get the answer, select **Equals**.
- 6 To start a new calculation, press and hold **Clear**.

This calculator has a limited accuracy and rounding errors may occur, especially in long divisions.

PERFORM A CURRENCY CONVERSION

- 1 Select **Menu > Applications > Extras > Calculator**.
- 2 To save the exchange rate, select **Options > Exchange rate**.
- 3 Select either of the displayed options.
- 4 Enter the exchange rate, press **#** for a decimal point, and select **OK**.
The exchange rate remains in the memory until you replace it with another one.
- 5 To perform the currency conversion, enter the amount to be converted, and select **Options > To home** or **To foreign**.

Countdown timer

Select **Menu > Applications > Extras > Countdown timer**. Enter the alarm time in hours, minutes, and seconds, and select **OK**. You can write your own text to be displayed when the time expires, and select **Start** to start the countdown timer.

To change the countdown time, select **Change time**, or to stop the timer, select **Stop timer**.

If the alarm time is reached when the phone is in the standby mode, the phone sounds a tone and flashes the note text if it is set; otherwise, it flashes the text **Countdown completed**.

To stop the alarm, press any key. If no key is pressed, the alarm automatically stops within 30 seconds. To stop the alarm and delete the note text, select **Exit**.

Stopwatch

You can use the stopwatch to measure time, take intermediate times, or take lap times.

TIME OBSERVATION AND TIME SPLITTING

Select **Menu > Applications > Extras > Stopwatch > Split timing**. Select **Start** to start the time observation. Select **Split** every time you want to take an intermediate time; the intermediate times are listed below the running time on the display. Select **Stop** to stop the time observation. To save the times, select **Save**. Select **Options** to start the time observation again or reset the times without saving.

LAP TIMES

Select **Menu > Applications > Extras > Stopwatch > Lap timing**. Select **Start** to start the time observation and **Lap** to take a lap time. Select **Stop** to stop the lap timing. To save the times, select **Save** and enter a name. Select **Options** to save or reset the lap times.

USE OTHER PHONE FEATURES WHILE TIMING

If you have already started the stopwatch and want to use other phone features while the stopwatch continues to run, press the **End** key to return to the standby mode. To return to the stopwatch, select **Menu > Applications > Extras > Stopwatch > Continue**.

Using the stopwatch or allowing it to run in the background when using other features increases the demand on battery power and reduces battery life.

VIEW AND DELETE TIMES

Select **Menu > Applications > Extras > Stopwatch**.

If the stopwatch is not reset, you can select **Show last time** to view the most recent measured time. Select **View times** to select from a list of names or final times of the time sets.

To delete the saved times, select **Delete times**. Select **Delete all > Yes** or **One by one**. Scroll to the times you want to delete, and select **Delete > Yes**.

Wallet

In **Wallet** you can save personal information such as credit card numbers and addresses. The data saved in the wallet can easily be retrieved to automatically fill in data fields when making purchases while browsing, as long as the service supports wallet functionality. You can also save access codes to mobile services that request a user name and password.

If you have tried to access or have accessed confidential information requiring passwords, empty the cache after each use. To empty the cache, see "Cache memory" on page 51.

SET WALLET CODE

The data in the wallet is protected with a wallet code that you can define when you access the wallet for the first time. At **Create wallet code**, enter the code, and select **OK** to confirm it. At **Verify wallet code**, enter the code again, and select **OK**.

DELETE WALLET CONTENT

If you want to delete all the content of the wallet along with the wallet code, enter ***#7370925538#** in the standby mode. You also need the phone security code (see "Access codes" on page 18).

USE THE WALLET

You can set up your personal information by using the wallet menu. To use the content of the wallet in a mobile service, access the wallet through the browser (see "Services" on page 48).

To use the wallet feature, select **Menu > Applications > Extras > Wallet**. Enter your wallet code, select **OK** and one of the following:

Wallet profiles—When you have saved your personal card details, you can combine them together into a wallet profile. You can use the profile to retrieve wallet data from different cards while browsing.

Cards—Use this option to create and save **Payment cards**, **Loyalty cards**, **Access cards**, **User info cards**, or **Address cards**. For availability of receiving card information as configuration settings, contact the card issuer or your service provider.

Tickets—Save notifications for e-tickets you have bought through a mobile service.

Receipts—Save mobile purchase receipts.

Personal notes—Save personal information, such as account numbers, passwords, codes, or notations. Personal notes are protected with the wallet PIN code.

When viewing a note, select **Options** and **Send via text msg.** to copy the note as a text message; **Copy to calendar** to copy the note to the calendar as a memo; **Use detail** to extract numbers, e-mail addresses, and web addresses from a note; and **Delete** to delete the note you are viewing.

Settings—Use this option to change wallet settings.

• Services



Your phone has a browser that you can use to access various mobile Internet services.

Check the availability of these services, pricing, and tariffs with your service provider.

With the browser you can view the services that use wireless mark-up language (WML) or extensible hypertext mark-up language (XHTML) on their pages. Appearance may vary due to screen size. Note that you may not be able to view all the details of the Internet pages.

Access services

- 1 Save the service settings that are required to access the service that you want to use. See "Set up the phone to access a service" on page 48.
- 2 Make a connection to the given service. See "Connect to a service" on page 48.
- 3 Start browsing the pages of the service. See "Browse the pages of a service" on page 49.
- 4 When you are finished browsing, end the connection to the service. See "Disconnect from a service" on page 49.

Set up the phone to access a service

Your phone may already have some service settings stored. Additional settings may be received as a configuration message from the service provider that offers the service you want to use. For more information and for the appropriate settings, contact your service provider. See also "Configuration settings" on page 38.

Connect to a service



Make sure that the service settings of the service you want to use are activated. To activate the settings, select **Menu > Services > Settings > Configuration settings > Configuration** and the configuration setting you want to activate.

Connect to the service by one of the following methods:

- To open the homepage of the service provider, select **Menu > Services > Home**, or in the standby mode, press and hold **0**.
- To open a bookmark of the service, select **Menu > Services > Bookmarks** and a bookmark. If the bookmark does not work with the current active service settings, activate another set of service settings and try again.
- To access the last URL, select **Menu > Services > Last web addr**.
- Enter the address of the service, select **Menu > Services > Go to address**, enter the address of the service, and select **OK**.

Browse the pages of a service

After you have connected to the service, begin to browse its pages. The function of the phone keys may vary in different services. Follow the text guides on the phone display. For more information, contact your service provider.

If **GPRS** is selected as the data bearer,  is shown on the top left of the display during browsing. If you receive a call or a text message, or make a call during a GPRS connection,  will be shown on the top left of the display to indicate that the GPRS connection is suspended (on hold). After a call the phone tries to reconnect the GPRS connection. See also "GPRS and EGPRS" on page 37.

If you have tried to access or have accessed confidential information requiring passwords, empty the cache after each use. To empty the cache, see "Cache memory" on page 51.

USE THE PHONE KEYS WHILE BROWSING

- Use any of the scroll keys to browse through the page.
- To select a highlighted item, press the **Call** key, or select **Options** and the option to open the link.
- To enter letters and numbers, press the keys **1–9**. To enter special characters, press *****.

DIRECT CALLING

While browsing, you can make a voice call, send touch tones while a voice call is in progress, and save a name and a phone number from a page.

Disconnect from a service

To quit browsing and end the connection, select **Options > Quit**. When **Quit browsing?** is displayed, select **Yes**.

You can also disconnect by pressing the **End** key twice, or press and hold the **End** key.

Appearance settings for the browser

While browsing, select **Options > Other options > Appear. settings**, or in the standby mode, select **Menu > Services > Settings > Appearance settings** and one of the following:

Text wrapping—Select **On**, and the text continues on the next line. If you select **Off**, the text is abbreviated.

Font size—Select a font size.

Show images—Select **No**, and any pictures appearing on the page are not shown.

Alerts—Select **Alert for unsecure connection** and **Yes** to set the phone to alert when a secure connection changes to an insecure one during browsing. Select **Alert for unsecure items** and **Yes** to set the phone to alert when a secure page contains an insecure item. These alerts do not guarantee a secure connection. For more information, see "Browser security" on page 51.

Character encoding—Select the character set that the phone uses to show browser pages that do not include that information; or select whether to always use UTF-8 encoding when sending a Web address to a compatible phone.

Cookies

A cookie is data that a site saves in the cache memory of the browser (for example, your user information or your browsing preferences). Cookies are saved until you clear the cache memory. See "Cache memory" on page 51.

While browsing, select **Options > Other options > Security > Cookie settings**, or in the standby mode, select **Menu > Services > Settings > Security settings > Cookies**. Select **Allow** to allow cookies or **Reject** to prevent the phone from receiving them.

Bookmarks

You can save page addresses as bookmarks in the phone memory.

- 1 While browsing, select **Options > Bookmarks**, or in the standby mode, select **Menu > Services > Bookmarks**.
- 2 Scroll to the bookmark that you want to use, and select **Select** to make a connection to the page associated with the bookmark; or select **Options** to view the title and the address of the selected bookmark, edit or delete the selected bookmark, send it directly to another phone as a bookmark or text message, or create a new bookmark.

Your device may have some bookmarks loaded for sites not affiliated with Nokia. Nokia does not warrant or endorse these sites. If you choose to access them, you should take the same precautions for security or content as you would with any Internet site.

RECEIVE A BOOKMARK

When you receive a bookmark, **1 bookmark received** is displayed. Select **Show** to view the bookmark. To save the bookmark, select **Save**. Select **Options > View** to see the details or **Delete** to discard it.

Download

To download more tones, graphics, games, videos, themes, or applications to your phone (network service), select the type of download to receive.



Important: Only install applications from sources that offer adequate protection against harmful software.

For the availability of different services, pricing, and tariffs, contact your service provider.

Service inbox

The phone can receive service messages (pushed messages) from your service provider (network service). Service messages are, for example, notifications of news headlines, and they may contain a text message or an address of a service.

When you receive a service message in the standby mode, you have the following options:

- To access the message, select **Show**.
- To move the message to the **Service inbox**, select **Exit**.
- To access the message later, select **Menu > Services > Service inbox**.
- To access the message while browsing, select **Options > Other options > Service inbox**.
- To activate the browser and download marked content, select **Retrieve**.
- To display detailed information on a service notification, select **Options > Details**.
- To delete information on a service notification, select **Options > Delete**.

SERVICE INBOX SETTINGS

Select **Menu > Services > Settings > Service inbox settings** and one of the following:

Service messages—Select **On** or **Off** to set the phone to receive or not receive service messages.

Message filter—Select **On** to set the phone to receive service messages only from content authors approved by the service provider. To view the list of the approved content authors, select **Trusted channels**.

Automatic connection—If you set the phone to receive service messages and select **On**, the phone automatically activates the browser from the standby mode when the phone receives a service message. If you select **Off**, the phone activates the browser when it receives a service message, but only after you select **Retrieve**.

Cache memory

The information or services that you have accessed are stored in the cache of your phone. A cache is a buffer memory, which is used to store data temporarily. To empty the cache while browsing, select **Options > Other options > Clear the cache**; or in the standby mode, select **Menu > Services > Clear the cache**.

Browser security

Security features may be required for some services, such as banking services or online shopping. For such connections, you need security certificates and possibly a security module, which may be available on your SIM card. For more information, contact your service provider.

SECURITY MODULE

The security module can contain certificates as well as private and public keys. The purpose of the security module is to improve security services for applications requiring browser connection. It allows you to use a digital signature. The certificates are saved in the security module by the service provider. See also "Access codes" on page 18.

Select **Menu > Services > Settings > Security settings > Security module settings** and one of the following:

Security module details—Show the security module title, status, manufacturer, and serial number.

Module PIN request—Set the phone to request the module PIN when using services provided by the security module. Enter the code, and select **On**. To disable the module PIN request, select **Off**.


Change module PIN—Change the module PIN, if allowed by the security module. Enter the current module PIN code; then enter the new code twice.

Change signing PIN—Select the signing PIN that you want to change. Enter the current PIN code; then enter the new code twice.

CERTIFICATES

There are three kinds of certificates:

Server certificates—Used by the phone to create a connection with improved security to the content server. The phone receives the server certificate from the service provider before the connection is established, and its validity is checked using the authority certificates saved in the phone. Server certificates are not saved.

The security indicator  is displayed during a connection if the data transmission between the phone and the content server is encrypted.

The security icon does not indicate that the data transmission between the gateway and the content server (or place where the requested resource is stored) is secure. The service provider secures the data transmission between the gateway and the content server.

Authority certificates—Used by some services, such as banking services, for checking the validity of other certificates. Authority certificates can either be saved in the security module by the service provider, or they can be downloaded from the network if the service supports the use of authority certificates.

User certificates—Issued to users by a certifying authority. User certificates are required (for example, to create a digital signature). They associate the user with a specific private key in a security module.




Important: Even if the use of certificates makes the risks involved in remote connections and software installation considerably smaller, they must be used correctly in order to benefit from increased security. The existence of a certificate does not offer any protection by itself; the certificate manager must contain correct, authentic, or trusted certificates for increased security to be available. Certificates have a restricted lifetime. If **Expired certificate** or **Certificate not valid yet** are shown, even if the certificate should be valid, verify that the current date and time in your device are correct.

Before changing any certificate settings, you must make sure that you trust the owner of the certificate and that the certificate belongs to the listed owner.

DIGITAL SIGNATURE

You can make digital signatures with your phone if your SIM card has a security module. The signature can be traced back to you by the private key on the security module and the user certificate that was used to perform the signature. To use the digital signature, can be the same as signing your name to a paper bill, contract, or other document. See also "Security module" on page 51.

To make a digital signature, select a link on a page, such as the title of the book that you want to buy and its price. The text to sign (possibly including amount, date, etc.) will be shown.

Check that the header text is **Read** and that the digital signature icon  is shown.



Note: If the digital signature icon does not appear, there is a security breach, and you should not enter any personal data such as your signing PIN.

To sign the text, read all of the text first; then you can select **Sign**.

The text may not fit within a single screen. Therefore, make sure to scroll through and read all of the text before signing.

Select the user certificate you want to use. Enter the signing PIN, and select **OK**. The digital signature icon will disappear, and the service may display a confirmation of your purchase.

• SIM services



In addition to the functions available on the phone, your SIM card may provide services that you can access in this menu item, which is shown only if it is supported by your SIM card. The name and contents of the menu depend on the SIM card.

For availability, rates, and information on using SIM services, contact your SIM card vendor, for example, the service provider or other vendor.

Depending on the operator, you can set the phone to show you the confirmation messages sent between your phone and the network when you are using the SIM services. Select **Menu > Settings > Phone settings > Confirm SIM service actions > Yes**.

Note that accessing these services may involve sending messages or making a phone call for which you may be charged.

9 PC connectivity

You can access the Internet when you use a data cable to connect your phone to a compatible PC. You can use a variety of PC connectivity and data communications applications with your phone. For example, with PC Suite you can synchronize contacts, calendar, and notes between your phone and the compatible PC or a remote Internet server (network service).

You may find more information and downloadable files, including PC Suite, in the support area on the Nokia website www.nokia.com.

Copyright protections may prevent some images, ringing tones, and other content from being copied, modified, transferred, or forwarded.

• PC Suite

PC Suite allows you to transfer and synchronize information between your phone and your PC. With PC Suite, you can edit contacts in your phone, install J2ME Java applications (such as games and dictionaries) from a compatible PC to the phone, and backup and restore personal data between your phone and a compatible PC. To see the comprehensive features offered by PC Suite, you can download the application from the Nokia website www.nokia.com.

• GPRS, EGPRS, HSCSD, and CSD

You can use the following data services with your phone:

- GPRS (general packet radio service)
- EGPRS (enhanced GPRS) (See "GPRS and EGPRS" on page 37.)
- HSCSD (high speed circuit switched data)
- CSD (circuit switched data—or GSM data)

For availability and subscription to data services, contact your service provider.

Note that the use of HSCSD services consumes the battery faster than normal voice or data calls. You may need to connect the phone to a charger for the duration of the data transfer.

• Data communication applications

For information on using a data communication application, refer to the documentation provided with it.

Note that making or answering phone calls during a computer connection is not recommended because it might disrupt the operation.

For better performance during data calls, place the phone on a stationary surface with the keypad facing downward. Do not move the phone by holding it in your hand during a data call.

10 Reference information

• BATTERY INFORMATION

Charging and discharging

Your device is powered by a rechargeable battery. The full performance of a new battery is achieved only after two or three complete charge and discharge cycles. The battery can be charged and discharged hundreds of times but it will eventually wear out. When the talk and standby times are noticeably shorter than normal, buy a new battery. Use only Nokia approved batteries, and recharge your battery only with Nokia approved chargers designated for this device.

Unplug the charger from the electrical plug and the device when not in use. Do not leave the battery connected to a charger. Overcharging may shorten its lifetime. If left unused, a fully charged battery will lose its charge over time. Temperature extremes can affect the ability of your battery to charge.

Use the battery only for its intended purpose. Never use any charger or battery that is damaged.

Do not short-circuit the battery. Accidental short-circuiting can occur when a metallic object such as a coin, clip, or pen causes direct connection of the positive (+) and negative (-) terminals of the battery. (These look like metal strips on the battery.) This might happen, for example, when you carry a spare battery in your pocket or purse. Short-circuiting the terminals may damage the battery or the connecting object.

Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 59°F and 77°F (15°C and 25°C). A device with a hot or cold battery may not work temporarily, even when the battery is fully charged. Battery performance is particularly limited in temperatures well below freezing.

Do not dispose of batteries in a fire! Dispose of batteries according to local regulations. Please recycle when possible. Do not dispose as household waste.

• ENHANCEMENTS

A few practical rules about accessories and enhancements:

- Keep all accessories and enhancements out of the reach of small children.
- When you disconnect the power cord of any accessory or enhancement, grasp and pull the plug, not the cord.
- Check regularly that enhancements installed in a vehicle are mounted and are operating properly.
- Installation of any complex car enhancements must be made by qualified personnel only.

If you want to enhance phone functionality, a range of enhancements is available for you. You can select any of these items to help accommodate your specific communication needs. For availability of these and other enhancements, contact your dealer.



Audio

- Boom headset (HDB-4)
- Standard headset (HS-5)
- Fashion stereo headset (HS-3)
- Stereo headset (HDS-3)
- Retractable headset (HS-10)
- Inductive loopset (LPS-4)
- Wireless audio adapter (AD-5B)
- Radio headset (HS-2R)

Power

- Battery, 760 mAh, Li-ion (BL-5B)
- Chargers (ACP-12, ACP-9, ACP-8, and ACP-7)
- Retractable charger (AC-1)

Data

- Connectivity adapter cables (DKU-5)

Car

- Mobile chargers (LCH-12 and LCH-9)

Imaging

- Nokia observation camera
- Image viewer (SU-5)
- Image album (PD-1)
- Camera flash (PD-2)

Cover/carrying

- Xpress-on covers and style packs
- Wrist strap

● **CARE AND MAINTENANCE**

Your device is a product of superior design and craftsmanship and should be treated with care. The suggestions below will help you protect your warranty coverage and enjoy your device for many years.

- Keep the device dry. Precipitation, humidity, and all types of liquids or moisture can contain minerals that will corrode electronic circuits. If your device does get wet, remove the battery and allow the device to dry completely before replacing it.
- Do not use or store the device in dusty, dirty areas. Its moving parts and electronic components can be damaged.
- Do not store the device in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the device in cold areas. When the device returns to its normal temperature, moisture can form inside the device and damage electronic circuit boards.

- Do not attempt to open the device other than as instructed in this guide.
- Do not drop, knock, or shake the device. Rough handling can break internal circuit boards and fine mechanics.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the device.
- Do not paint the device. Paint can clog the moving parts and prevent proper operation.
- Use a soft, clean, dry cloth to clean any lenses (such as camera, proximity sensor, and light sensor lenses).
- Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications, or attachments could damage the device and may violate regulations governing radio devices.

All of the above suggestions apply equally to your device, battery, charger, or any enhancement. If any device is not working properly, take it to the nearest authorized service facility for service.

• **ADDITIONAL SAFETY INFORMATION**

Operating environment

Remember to follow any special regulations in force in any area and always switch off your device when its use is prohibited or when it may cause interference or danger. Use the device only in its normal operating positions. This device meets RF exposure guidelines when used either in the normal use position against the ear or when positioned at least 7/8 inch (2.2 cm) away from the body. When a carry case, belt clip, or holder is used for body-worn operation, it should not contain metal and should position the device at least 7/8 inch (2.2 cm) away from your body.

In order to transmit data files or messages, this device requires a quality connection to the network. In some cases, transmission of data files or messages may be delayed until such a connection is available. Ensure the above separation distance instructions are followed until the transmission is completed.

Medical devices

Operation of any radio transmitting equipment, including wireless phones, may interfere with the functionality of inadequately protected medical devices. Consult a physician or the manufacturer of the medical device to determine if they are adequately shielded from external RF energy or if you have any questions. Switch off your phone in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF energy.

PACEMAKERS

Pacemaker manufacturers recommend that a minimum separation of 6 inches (15.3 cm) be maintained between a wireless phone and a pacemaker to avoid potential interference with the pacemaker. These recommendations are consistent with the independent research by and recommendations of Wireless Technology Research. To minimize the potential for interference, persons with pacemakers should

- Always keep the device more than 6 inches (15.3 cm) from their pacemaker when the device is switched on
- Not carry the device in a breast pocket
- Hold the device to the ear opposite the pacemaker

If you have any reason to suspect that interference is taking place, switch off your device immediately.

HEARING AID

Some digital wireless devices may interfere with some hearing aids. If interference occurs, consult your service provider.

Vehicles

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles such as electronic fuel injection systems, electronic antiskid (antilock) braking systems, electronic speed control systems, air bag systems. For more information, check with the manufacturer or its representative of your vehicle or any equipment that has been added.

Only qualified personnel should service the device, or install the device in a vehicle. Faulty installation or service may be dangerous and may invalidate any warranty that may apply to the device. Check regularly that all wireless device equipment in your vehicle is mounted and operating properly. Do not store or carry flammable liquids, gases, or explosive materials in the same compartment as the device, its parts, or enhancements. For vehicles equipped with an air bag, remember that an air bags inflate with great force. Do not place objects, including installed or portable wireless equipment in the area over the air bag or in the air bag deployment area. If in-vehicle wireless equipment is improperly installed and the air bag inflates, serious injury could result.

Potentially explosive environments

Switch off your device when in any area with a potentially explosive atmosphere and obey all signs and instructions. Potentially explosive atmospheres include areas where you would normally be advised to turn off your vehicle engine. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death. Switch off the device at refuelling points such as near gas pumps at service stations. Observe restrictions on the use of radio equipment in fuel depots, storage, and distribution areas, chemical plants or where blasting operations

are in progress. Areas with a potentially explosive atmosphere are often but not always clearly marked. They include below deck on boats, chemical transfer or storage facilities, vehicles using liquefied petroleum gas (such as propane or butane), and areas where the air contains chemicals or particles such as grain, dust or metal powders.

FCC regulations prohibit using your wireless device while in the air. The use of wireless telephones in an aircraft may be dangerous to the operation of the aircraft, disrupt the wireless telephone network, and may be illegal.

Failure to observe these instructions may lead to suspension or denial of telephone services to the offender, legal action, or both.

EMERGENCY CALLS



Important: Wireless phones, including this phone, operate using radio signals, wireless networks, landline networks, and user-programmed functions. Because of this, connections in all conditions cannot be guaranteed. You should never rely solely on any wireless phone for essential communications like medical emergencies.

To make an emergency call:

- 1 If the phone is not on, switch it on. Check for adequate signal strength. Some networks may require that a valid SIM card is properly inserted in the phone.
- 2 Press the **End** key as many times as needed to clear the display and ready the phone for calls.
- 3 Key in the official emergency number for your present location. Emergency numbers vary by location.
- 4 Press the **Call** key.

If certain features are in use, you may first need to turn those features off before you can make an emergency call. Consult this guide or your service provider. When making an emergency call, give all the necessary information as accurately as possible. Your wireless phone may be the only means of communication at the scene of an accident. Do not end the call until given permission to do so.

CERTIFICATION INFORMATION (SAR)

THIS DEVICE MEETS THE GOVERNMENT'S REQUIREMENTS FOR EXPOSURE TO RADIO WAVES.

Your mobile device is a radio transmitter and receiver. It is designed and manufactured not to exceed the limits for exposure to radio frequency (RF) energy adopted by the governments of the USA through the Federal Communications Commission (FCC) and Canada through Industry Canada (IC). These limits establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

The exposure guidelines for mobile devices employ a unit of measurement known as the Specific Absorption Rate or SAR. The SAR limit adopted by the USA and Canada is 1.6 watts/kilogram (W/kg) averaged over one gram of tissue. The limit incorporates a substantial margin of safety to give additional protection for the public and to account for any variations in measurements. Tests for SAR are conducted using standard operating positions with the device transmitting at its highest certified power level in all tested frequency bands. The actual SAR level of an operating device can be well below the maximum value because the device is designed to use only the power required to reach the network. That amount changes depending on a number of factors such as how close you are to a network base station.

The highest SAR value reported to the FCC and IC for the Nokia 3220 phone when tested for use at the ear is 0.57 W/kg, and when properly worn on the body is 0.83 W/kg. The highest SAR value reported to the FCC and IC for the Nokia 3220b phone model when tested for use at the ear is 1.01 W/kg, and when properly worn on the body is 1.04 W/kg. SAR information on file with the FCC can be found under the Display Grant section of <http://www.fcc.gov/oet/fccid> after searching on FCC ID PPIRH-37 for the Nokia 3220 phone and on FCC ID PPIRH-49 for the Nokia 3220b phone. SAR values reported in other countries may vary depending on differences in reporting and testing requirements and the network band. Additional SAR information may be provided under product information at <http://www.nokia.com>.

• TECHNICAL INFORMATION

Feature	Specification
Dimensions	Width 44.2 mm Height 104.5 mm Depth 18.7 mm
Weight	86 g with BL-5B Li-Ion Battery
Wireless networks	Nokia 3220: EGSM 900 and GSM 1800 and 1900 networks Nokia 3220b: GSM 850, 1800, and 1900 networks
Size (volume)	70 cm ³
Frequency range (Tx)	GSM 850: 824–849 MHz (for RH-49) EGSM 900: 880–915 MHz (for RH-37) GSM 1800: 1710–1785 MHz (for RH-49 and RH-37) GSM 1900: 1850–1910 MHz (for RH-49 and RH-37)
Frequency range (Rx)	GSM 850: 869–894 MHz (for RH-49) EGSM 900: 925–960 MHz (for RH-37) GSM 1800: 1805–1865 MHz (for RH-49 and RH-37) GSM 1900: 1930–1990 MHz (for RH-49 and RH-37)
Tx output power	2 W (max)
Battery voltage	3.7 V dc
Number of channels	299
Memory size	16 MB flash memory, approximately 2 MB available to user
Operating temperature	Between 59°F and 77°F (15°C and 25°C).

• Nokia ONE-YEAR LIMITED WARRANTY

Nokia Inc. ("Nokia") warrants that this cellular phone ("Product") is free from defects in material and workmanship that result in Product failure during normal usage, according to the following terms and conditions:

- 1 The limited warranty for the Product extends for ONE (1) year beginning on the date of the purchase of the Product. This one year period is extended by each whole day that the Product is out of your possession for repair under this warranty.
- 2 The limited warranty extends only to the original purchaser ("Consumer") of the Product and is not assignable or transferable to any subsequent purchaser/end-user.
- 3 The limited warranty extends only to Consumers who purchase the Product in the United States of America.
- 4 During the limited warranty period, Nokia will repair, or replace, at Nokia's sole option, any defective parts, or any parts that will not properly operate for their intended use with new or refurbished replacement items if such repair or replacement is needed because of product malfunction or failure during normal usage. No charge will be made to the Consumer for any such parts. Nokia will also pay for the labor charges incurred by Nokia in repairing or replacing the defective parts. The limited warranty does not cover defects in appearance, cosmetic, decorative or structural items, including framing, and any non-operative parts. Nokia's limit of liability under the limited warranty shall be the actual cash value of the Product at the time the Consumer returns the Product for repair, determined by the price paid by the Consumer for the Product less a reasonable amount for usage. Nokia shall not be liable for any other losses or damages. These remedies are the Consumer's exclusive remedies for breach of warranty.
- 5 Upon request from Nokia, the Consumer must prove the date of the original purchase of the Product by a dated bill of sale or dated itemized receipt.
- 6 The Consumer shall bear the cost of shipping the Product to Nokia in Melbourne, Florida. Nokia shall bear the cost of shipping the Product back to the Consumer after the completion of service under this limited warranty.
- 7 The Consumer shall have no coverage or benefits under this limited warranty if any of the following conditions are applicable:
 - a) The Product has been subjected to abnormal use, abnormal conditions, improper storage, exposure to moisture or dampness, unauthorized modifications, unauthorized connections, unauthorized repair, misuse, neglect, abuse, accident, alteration, improper installation, or other acts which are not the fault of Nokia, including damage caused by shipping.

- b) The Product has been damaged from external causes such as collision with an object, or from fire, flooding, sand, dirt, windstorm, lightning, earthquake or damage from exposure to weather conditions, an Act of God, or battery leakage, theft, blown fuse, or improper use of any electrical source, damage caused by computer or internet viruses, bugs, worms, Trojan Horses, cancelbots or damage caused by the connection to other products not recommended for interconnection by Nokia.
 - c) Nokia was not advised in writing by the Consumer of the alleged defect or malfunction of the Product within fourteen (14) days after the expiration of the applicable limited warranty period.
 - d) The Product serial number plate or the enhancement data code has been removed, defaced or altered.
 - e) The defect or damage was caused by the defective function of the cellular system or by inadequate signal reception by the external antenna, or viruses or other software problems introduced into the Product.
- 8 Nokia does not warrant uninterrupted or error-free operation of the Product. If a problem develops during the limited warranty period, the Consumer shall take the following step-by-step procedure:
- a) The Consumer shall return the Product to the place of purchase for repair or replacement processing.
 - b) If "a" is not convenient because of distance (more than 50 miles) or for other good cause, the Consumer shall ship the Product prepaid and insured to:
Nokia Inc., Attn: Repair Department
795 West Nasa Blvd.
Melbourne, FL 32901
 - c) The Consumer shall include a return address, daytime phone number and/or fax number, complete description of the problem, proof of purchase and service agreement (if applicable). Expenses related to removing the Product from an installation are not covered under this limited warranty.
 - d) The Consumer will be billed for any parts or labor charges not covered by this limited warranty. The Consumer will be responsible for any expenses related to reinstallation of the Product.
 - e) Nokia will repair the Product under the limited warranty within 30 days after receipt of the Product. If Nokia cannot perform repairs covered under this limited warranty within 30 days, or after a reasonable number of attempts to repair the same defect, Nokia at its option, will provide a replacement Product or refund the purchase price of the Product less a reasonable amount for usage. In some states the Consumer may have the right to a loaner if the repair of the Product takes more than

ten (10) days. Please contact the Customer Service Center at Nokia at the telephone number listed at the end of this warranty if you need a loaner and the repair of the Product has taken or is estimated to take more than ten (10) days.

- f) If the Product is returned during the limited warranty period, but the problem with the Product is not covered under the terms and conditions of this limited warranty, the Consumer will be notified and given an estimate of the charges the Consumer must pay to have the Product repaired, with all shipping charges billed to the Consumer. If the estimate is refused, the Product will be returned freight collect. If the Product is returned after the expiration of the limited warranty period, Nokia's normal service policies shall apply and the Consumer will be responsible for all shipping charges.
- 9 You (the Consumer) understand that the product may consist of refurbished equipment that contains used components, some of which have been reprocessed. The used components comply with Product performance and reliability specifications.
 - 10 ANY IMPLIED WARRANTY OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE OR USE, SHALL BE LIMITED TO THE DURATION OF THE FOREGOING LIMITED WRITTEN WARRANTY. OTHERWISE, THE FOREGOING LIMITED WARRANTY IS THE CONSUMER'S SOLE AND EXCLUSIVE REMEDY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. NOKIA SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF ANTICIPATED BENEFITS OR PROFITS, LOSS OF SAVINGS OR REVENUE, LOSS OF DATA, PUNITIVE DAMAGES, LOSS OF USE OF THE PRODUCT OR ANY ASSOCIATED EQUIPMENT, COST OF CAPITAL, COST OF ANY SUBSTITUTE EQUIPMENT OR FACILITIES, DOWNTIME, THE CLAIMS OF ANY THIRD PARTIES, INCLUDING CUSTOMERS, AND INJURY TO PROPERTY, RESULTING FROM THE PURCHASE OR USE OF THE PRODUCT OR ARISING FROM BREACH OF THE WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL OR EQUITABLE THEORY, EVEN IF NOKIA KNEW OF THE LIKELIHOOD OF SUCH DAMAGES. NOKIA SHALL NOT BE LIABLE FOR DELAY IN RENDERING SERVICE UNDER THE LIMITED WARRANTY, OR LOSS OF USE DURING THE PERIOD THAT THE PRODUCT IS BEING REPAIRED.
 - 11 Some states do not allow limitation of how long an implied warranty lasts, so the one year warranty limitation may not apply to you (the Consumer). Some states do not allow the exclusion or limitation of incidental and consequential damages, so certain of the above limitations or exclusions may not apply to you (the Consumer). This limited warranty gives the Consumer specific legal rights and the Consumer may also have other rights which vary from state to state.

- 12 Nokia neither assumes nor authorizes any authorized service center or any other person or entity to assume for it any other obligation or liability beyond that which is expressly provided for in this limited warranty including the provider or seller of any extended warranty or service agreement.
- 13 This is the entire warranty between Nokia and the Consumer, and supersedes all prior and contemporaneous agreements or understandings, oral or written, relating to the Product, and no representation, promise or condition not contained herein shall modify these terms.
- 14 This limited warranty allocates the risk of failure of the Product between the Consumer and Nokia. The allocation is recognized by the Consumer and is reflected in the purchase price.
- 15 Any action or lawsuit for breach of warranty must be commenced within eighteen (18) months following purchase of the Product.
- 16 Questions concerning this limited warranty may be directed to:
Nokia Inc.
Attn: Customer Service
7725 Woodland Center Blvd., Ste. 150
Tampa, FL 33614
Telephone: 1-888-NOKIA-2U (1-888-665-4228)
Facsimile: (813) 249-9619
TTY/TDD Users Only: 1-800-24-NOKIA (1-800-246-6542)
- 17 The limited warranty period for Nokia supplied attachments and accessories is specifically defined within their own warranty cards and packaging.

NOTES

Appendix A Message from the CTIA

(Cellular Telecommunications & Internet Association) to all users of mobile phones

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Safety is the most important call you will ever make.

A Guide to Safe and Responsible Wireless Phone Use

Tens of millions of people in the U.S. today take advantage of the unique combination of convenience, safety and value delivered by the wireless telephone. Quite simply, the wireless phone gives people the powerful ability to communicate by voice--almost anywhere, anytime--with the boss, with a client, with the kids, with emergency personnel or even with the police. Each year, Americans make billions of calls from their wireless phones, and the numbers are rapidly growing.

But an important responsibility accompanies those benefits, one that every wireless phone user must uphold. When driving a car, driving is your first responsibility. A wireless phone can be an invaluable tool, but good judgment must be exercised at all times while driving a motor vehicle--whether on the phone or not.

The basic lessons are ones we all learned as teenagers. Driving requires alertness, caution and courtesy. It requires a heavy dose of basic common sense---keep your head up, keep your eyes on the road, check your mirrors frequently and watch out for other drivers. It requires obeying all traffic signs and signals and staying within the speed limit. It means using seatbelts and requiring other passengers to do the same.

But with wireless phone use, driving safely means a little more. This brochure is a call to wireless phone users everywhere to make safety their first priority when behind the wheel of a car. Wireless telecommunications is keeping us in touch, simplifying our lives, protecting us in emergencies and providing opportunities to help others in need.

When it comes to the use of wireless phones, *safety is your most important call.*

Wireless Phone "Safety Tips"

Below are safety tips to follow while driving and using a wireless phone which should be easy to remember.

- 1 Get to know your wireless phone and its features such as speed dial and redial. Carefully read your instruction manual and learn to take advantage of valuable features most phones offer, including automatic redial and memory. Also, work to memorize the phone keypad so you can use the speed dial function without taking your attention off the road.
- 2 When available, use a hands free device. A number of hands free wireless phone accessories are readily available today. Whether you choose an installed mounted device for your wireless phone or a speaker phone accessory, take advantage of these devices if available to you.
- 3 Position your wireless phone within easy reach. Make sure you place your wireless phone within easy reach and where you can grab it without removing your eyes from the road. If you get an incoming call at an inconvenient time, if possible, let your voice mail answer it for you.

- 4 Suspend conversations during hazardous driving conditions or situations. Let the person you are speaking with know you are driving; if necessary, suspend the call in heavy traffic or hazardous weather conditions. Rain, sleet, snow and ice can be hazardous, but so is heavy traffic. As a driver, your first responsibility is to pay attention to the road.
- 5 Do not take notes or look up phone numbers while driving. If you are reading an address book or business card, or writing a "to do" list while driving a car, you are not watching where you are going. It's common sense. Don't get caught in a dangerous situation because you are reading or writing and not paying attention to the road or nearby vehicles.
- 6 Dial sensibly and assess the traffic; if possible, place calls when you are not moving or before pulling into traffic. Try to plan your calls before you begin your trip or attempt to coincide your calls with times you may be stopped at a stop sign, red light or otherwise stationary. But if you need to dial while driving, follow this simple tip--dial only a few numbers, check the road and your mirrors, then continue.
- 7 Do not engage in stressful or emotional conversations that may be distracting. Stressful or emotional conversations and driving do not mix--they are distracting and even dangerous when you are behind the wheel of a car. Make people you are talking with aware you are driving and if necessary, suspend conversations which have the potential to divert your attention from the road.
- 8 Use your wireless phone to call for help. Your wireless phone is one of the greatest tools you can own to protect yourself and your family in dangerous situations--with your phone at your side, help is only three numbers away. Dial 9-1-1 or other local emergency number in the case of fire, traffic accident, road hazard or medical emergency. Remember, it is a free call on your wireless phone!
- 9 Use your wireless phone to help others in emergencies. Your wireless phone provides you a perfect opportunity to be a "Good Samaritan" in your community. If you see an auto accident, crime in progress or other serious emergency where lives are in danger, call 9-1-1 or other local emergency number, as you would want others to do for you.
- 10 Call roadside assistance or a special wireless non-emergency assistance number when necessary. Certain situations you encounter while driving may require attention, but are not urgent enough to merit a call for emergency services. But you still can use your wireless phone to lend a hand. If you see a broken-down vehicle posing no serious hazard, a broken traffic signal, a minor traffic accident where no one appears injured or a vehicle you know to be stolen, call roadside assistance or other special non-emergency wireless number.

Careless, distracted individuals and people driving irresponsibly represent a hazard to everyone on the road. Since 1984, the Cellular Telecommunications Industry Association and the wireless industry have conducted educational outreach to inform wireless phone users of their responsibilities as safe drivers and good citizens. As we approach a new century, more and more of us will take advantage of the benefits of wireless telephones. And, as we take to the roads, we all have a responsibility to drive safely.

The wireless industry reminds you to use your phone safely when driving.

For more information, please call 1-888-901-SAFE.

For updates: <http://www.wow-com.com/consumer/issues/driving/articles.cfm?ID=85>

Appendix B Message from the FDA

(U.S. Food and Drug Administration) to all users of mobile phones

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Consumer Update on Wireless Phones

U.S. Food and Drug Administration

1. Do wireless phones pose a health hazard?

The available scientific evidence does not show that any health problems are associated with using wireless phones. There is no proof, however, that wireless phones are absolutely safe. Wireless phones emit low levels of radiofrequency energy (RF) in the microwave range while being used. They also emit very low levels of RF when in the stand-by mode. Whereas high levels of RF can produce health effects (by heating tissue), exposure to low level RF that does not produce heating effects causes no known adverse health effects. Many studies of low level RF exposures have not found any biological effects. Some studies have suggested that some biological effects may occur, but such findings have not been confirmed by additional research. In some cases, other researchers have had difficulty in reproducing those studies, or in determining the reasons for inconsistent results.

2. What is FDA's role concerning the safety of wireless phones?

Under the law, FDA does not review the safety of radiation-emitting consumer products such as wireless phones before they can be sold, as it does with new drugs or medical devices. However, the agency has authority to take action if wireless phones are shown to emit radiofrequency energy (RF) at a level that is hazardous to the user. In such a case, FDA could require the manufacturers of wireless phones to notify users of the health hazard and to repair, replace or recall the phones so that the hazard no longer exists.

Although the existing scientific data do not justify FDA regulatory actions, FDA has urged the wireless phone industry to take a number of steps, including the following:

- Support needed research into possible biological effects of RF of the type emitted by wireless phones;
- Design wireless phones in a way that minimizes any RF exposure to the user that is not necessary for device function; and
- Cooperate in providing users of wireless phones with the best possible information on possible effects of wireless phone use on human health.

FDA belongs to an interagency working group of the federal agencies that have responsibility for different aspects of RF safety to ensure coordinated efforts at the federal level. The following agencies belong to this working group:

- National Institute for Occupational Safety and Health
- Environmental Protection Agency
- Federal Communications Commission
- Occupational Safety and Health Administration
- National Telecommunications and Information Administration

The National Institutes of Health participates in some interagency working group activities, as well.

FDA shares regulatory responsibilities for wireless phones with the Federal Communications Commission (FCC). All phones that are sold in the United States must comply with FCC safety guidelines that limit RF exposure. FCC relies on FDA and other health agencies for safety questions about wireless phones. FCC also regulates the base stations that the wireless phone networks rely upon. While these base stations operate at higher power than do the wireless phones themselves, the RF exposures that people get from these base stations are typically thousands of times lower than those they can get from wireless phones. Base stations are thus not the subject of the safety questions discussed in this document.

3. What kinds of phones are the subject of this update?

The term wireless phone refers here to hand-held wireless phones with built-in antennas, often called cell mobile or PCS phones. These types of wireless phones can expose the user to measurable radiofrequency energy (RF) because of the short distance between the phone and the user's head. These RF exposures are limited by Federal Communications Commission safety guidelines that were developed with the advice of FDA and other federal health and safety agencies. When the phone is located at greater distances from the user, the exposure to RF is drastically lower because a person's RF exposure decreases rapidly with increasing distance from the source. The so-called cordless phones; which have a base unit connected to the telephone wiring in a house, typically operate at far lower power levels, and thus produce RF exposures far below the FCC safety limits.

4. What are the results of the research done already?

The research done thus far has produced conflicting results, and many studies have suffered from flaws in their research methods. Animal experiments investigating the effects of radiofrequency energy (RF) exposures characteristic of wireless phones have yielded conflicting results that often cannot be repeated in other laboratories. A few animal studies, however, have suggested that low levels of RF could accelerate the development of cancer in laboratory animals. However, many of the studies that showed increased tumor development used animals that had been genetically engineered or treated with cancer-causing chemicals so as to be pre-disposed to develop cancer in the absence of RF exposure. Other studies exposed the animals to RF for up to 22 hours per day. These conditions are not similar to the conditions under which people use wireless phones, so we don't know with certainty what the results of such studies mean for human health.

Three large epidemiology studies have been published since December 2000. Between them, the studies investigated any possible association between the use of wireless phones and primary brain cancer, glioma, meningioma, or acoustic neuroma, tumors of the brain or salivary gland, leukemia, or other cancers. None of the studies demonstrated the existence of any harmful

health effects from wireless phone RF exposures. However, none of the studies can answer questions about long-term exposures, since the average period of phone use in these studies was around three years.

5. What research is needed to decide whether RF exposure from wireless phones poses a health risk?

A combination of laboratory studies and epidemiological studies of people actually using wireless phones would provide some of the data that are needed. Lifetime animal exposure studies could be completed in a few years. However, very large numbers of animals would be needed to provide reliable proof of a cancer promoting effect if one exists. Epidemiological studies can provide data that is directly applicable to human populations, but 10 or more years follow-up may be needed to provide answers about some health effects, such as cancer. This is because the interval between the time of exposure to a cancer-causing agent and the time tumors develop - if they do - may be many, many years. The interpretation of epidemiological studies is hampered by difficulties in measuring actual RF exposure during day-to-day use of wireless phones. Many factors affect this measurement, such as the angle at which the phone is held, or which model of phone is used.

6. What is FDA doing to find out more about the possible health effects of wireless phone RF?

FDA is working with the U.S. National Toxicology Program and with groups of investigators around the world to ensure that high priority animal studies are conducted to address important questions about the effects of exposure to radiofrequency energy (RF).

FDA has been a leading participant in the World Health Organization International Electromagnetic Fields (EMF) Project since its inception in 1996. An influential result of this work has been the development of a detailed agenda of research needs that has driven the establishment of new research programs around the world. The Project has also helped develop a series of public information documents on EMF issues.

FDA and the Cellular Telecommunications & Internet Association (CTIA) have a formal Cooperative Research and Development Agreement (CRADA) to do research on wireless phone safety. FDA provides the scientific oversight, obtaining input from experts in government, industry, and academic organizations. CTIA-funded research is conducted through contracts to independent investigators. The initial research will include both laboratory studies and studies of wireless phone users. The CRADA will also include a broad assessment of additional research needs in the context of the latest research developments around the world.

7. How can I find out how much radiofrequency energy exposure I can get by using my wireless phone?

All phones sold in the United States must comply with Federal Communications Commission (FCC) guidelines that limit radiofrequency energy (RF) exposures. FCC established these guidelines in consultation with FDA and the other federal health and safety agencies. The FCC limit for RF exposure from wireless telephones is set at a Specific Absorption Rate (SAR) of 1.6 watts per kilogram (1.6 W/kg). The FCC limit is consistent with the safety standards developed by the Institute of Electrical and Electronic Engineering (IEEE) and the National Council on Radiation Protection and Measurement. The exposure limit takes into consideration the body's ability to remove heat from the tissues that absorb energy from the wireless phone and is set well below levels known to have effects.

Manufacturers of wireless phones must report the RF exposure level for each model of phone to the FCC. The FCC website (<http://www.fcc.gov/oet/rfsafety>) gives directions for locating the FCC identification number on your phone so you can find your phone's RF exposure level in the online listing.

8. What has FDA done to measure the radiofrequency energy coming from wireless phones?

The Institute of Electrical and Electronic Engineers (IEEE) is developing a technical standard for measuring the radiofrequency energy (RF) exposure from wireless phones and other wireless handsets with the participation and leadership of FDA scientists and engineers. The standard, Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques, sets forth the first consistent test methodology for measuring the rate at which RF is deposited in the heads of wireless phone users. The test method uses a tissue-simulating model of the human head. Standardized SAR test methodology is expected to greatly improve the consistency of measurements made at different laboratories on the same phone. SAR is the measurement of the amount of energy absorbed in tissue, either by the whole body or a small part of the body. It is measured in watts/kg (or milliwatts/g) of matter. This measurement is used to determine whether a wireless phone complies with safety guidelines.

9. What steps can I take to reduce my exposure to radiofrequency energy from my wireless phone?

If there is a risk from these products--and at this point we do not know that there is--it is probably very small. But if you are concerned about avoiding even potential risks, you can take a few simple steps to minimize your exposure to radiofrequency energy (RF). Since time is a key factor in how much exposure a person receives, reducing the amount of time spent using a wireless phone will reduce RF exposure.

If you must conduct extended conversations by wireless phone every day, you could place more distance between your body and the source of the RF, since the exposure level drops off dramatically with distance. For example, you could use a headset and carry the wireless phone away from your body or use a wireless phone connected to a remote antenna.

Again, the scientific data do not demonstrate that wireless phones are harmful. But if you are concerned about the RF exposure from these products, you can use measures like those described above to reduce your RF exposure from wireless phone use.

10. What about children using wireless phones?

The scientific evidence does not show a danger to users of wireless phones, including children and teenagers. If you want to take steps to lower exposure to radiofrequency energy (RF), the measures described above would apply to children and teenagers using wireless phones. Reducing the time of wireless phone use and increasing the distance between the user and the RF source will reduce RF exposure. Some groups sponsored by other national governments have advised that children be discouraged from using wireless phones at all. For example, the government in the United Kingdom distributed leaflets containing such a recommendation in December 2000. They noted that no evidence exists that using a wireless phone causes brain tumors or other ill effects. Their recommendation to limit wireless phone use by children was strictly precautionary; it was not based on scientific evidence that any health hazard exists.

11. What about wireless phone interference with medical equipment?

Radiofrequency energy (RF) from wireless phones can interact with some electronic devices. For this reason, FDA helped develop a detailed test method to measure electromagnetic interference (EMI) of implanted cardiac pacemakers and defibrillators from wireless telephones. This test method is now part of a standard sponsored by the Association for the Advancement of Medical instrumentation (AAMI). The final draft, a joint effort by FDA, medical device manufacturers, and many other groups, was completed in late 2000. This standard will allow manufacturers to ensure that cardiac pacemakers and defibrillators are safe from wireless phone EMI. FDA has tested hearing aids for interference from handheld wireless phones and helped develop a voluntary standard sponsored by the Institute of Electrical and Electronic Engineers (IEEE). This standard specifies test methods and performance requirements for hearing aids and wireless phones so that no interference occurs when a person uses a compatible phone and a accompanied hearing aid at the same time. This standard was approved by the IEEE in 2000. FDA continues to monitor the use of wireless phones for possible interactions with other medical devices. Should harmful interference be found to occur, FDA will conduct testing to assess the interference and work to resolve the problem.

12. Where can I find additional information?

For additional information, please refer to the following resources:

- FDA web page on wireless phones
<http://www.fda.gov/cdrh/phones/index.html>
- Federal Communications Commission (FCC) RF Safety Program
<http://www.fcc.gov/oet/rfsafety>
- International Commission on Non-Ionizing Radiation Protection
<http://www.icnirp.de>
- World Health Organization (WHO) International EMF Project
<http://www.who.int/emf>
- National Radiological Protection Board (UK)
<http://www.nrpb.org.uk/>

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