

By: Thomas Engellenner
Pepper Hamilton LLP
125 High Street
19th Floor, High Street Tower
Boston, MA 02110
(617) 204-5100 (telephone)
(617) 204-5150 (facsimile)

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
SAMSUNG ELECTRONICS AMERICA, INC., and
SAMSUNG TELECOMMUNICATIONS AMERICA, LLC,
and
LG ELECTRONICS, INC., LG ELECTRONICS U.S.A., INC., and LG
ELECTRONICS MOBILECOMM U.S.A., INC.
Petitioners

v.

BLACK HILLS MEDIA, LLC
Patent Owner

Case No. IPR2014-00740
Case No. IPR2015-00340
U.S. Patent 8,045,952

EXHIBIT 2013A

As authorized by the Board in an e-mail dated February 20, 2015, Patent Owner hereby submits Exhibit 2013A, which contains the attachments (i.e., Exhibits 1-4) that were inadvertently omitted from the Declaration of Ivan Zatkovich (Exhibit 2013) filed with the Patent Owner Response on February 4, 2015.

Counsel for Petitioners have been consulted and do not object to this filing.

Dated: February 23, 2014

Respectfully submitted,
By: /Thomas Engellenner/
Thomas Engellenner, Reg. No. 28,711
Pepper Hamilton LLP
125 High Street
19th Floor, High Street Tower
Boston, MA 02110
(617) 204-5100 (telephone)
(617) 204-5150 (facsimile)
Attorney for Patent Owner

CERTIFICATE OF SERVICE

I hereby certify that on February 23, 2015, a true and accurate copy of this paper, EXHIBIT 2013A, was served on the following counsel for Petitioners Samsung Electronics Co., Ltd. *et al.* and Petitioners LG Electronics, Inc., *et al.*, via email:

Andrea G. Reister
Gregory S. Discher
Covington & Burling LLP

areister@cov.com
gdischer@cov.com

Dori Johnson Hines, Esq.
Jonathan R. Stroud, Esq.
Finnegan, Henderson, Farabow, Garrett & Dunner, LLP

dori.hines@finnegan.com
jonathan.stroud@finnegan.com

Dated: February 23, 2015

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Boston, MA 02110
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Attorney for Patent Owner

EXHIBIT 1

EXHIBIT 1

CURRICULUM VITAE AND TESTIMONIAL HISTORY

Ivan Zatkovich

301 W. Platt Street, #365 ■ Tampa, FL 33606 ■ (813) 601-8142 ■ ivanzat@ecompc consultants.com

Ivan Zatkovich has over 28 years' experience in computer science, computer networks, digital circuit design, and software engineering. Mr. Zatkovich is the principal consultant with eComp Consultants, a technology consulting firm specializing in intellectual property consulting for telecommunications, computer related technology, eCommerce and Network Communication protocol. Mr. Zatkovich has over 10 years' experience providing expert testimony for patent litigation and software contract disputes in Telecommunications and computer technology, providing expert reports, depositions, and trial testimony.



Mr. Zatkovich has designed and developed Network Communications systems, Telecommunication applications, and high speed computer peripherals and streaming media, as well as, Geolocation, Graphical Information Systems (GIS), Geographic CAD and mapping systems. He has also participated in ISO and ANSI standard committees for disk and video devices. Ivan has testified on cases involving, Remote control of Video signal controllers, channel switching for Video on Demand, and Media Streaming network technology.

Director / Project Manager	13 years	Managed 6 to 35 member teams. Software development, systems Integration, critical path management, PMP/CMM methodologies.
Internet, ecommerce, Streaming media	12 years	Commercial and high volume content websites, streaming media, web marketing and personalization, search engine optimization, Storefront, fulfillment systems, B2B/B2C portals, ERP/supply chain. (Warner Brothers, Caldwell Banker, AAA Travel, Pro Marine)
Telecommunications	11 years	Computer Telephony Integration (CTI) since 1984. Call Center, IVR, ACD, VoIP, and Unified Messaging (Verizon, Bell Canada, PTT Netherlands, and Mercury Communications).
Communications & Signal processing	7 years	Developed early Ethernet signal collision detection, High speed parallel and serial communication drivers, analog to digital signal processing for peripheral and device control. (Digital Equipment Corporation, Tanning Technology).
Expert Witness	11 years	Expert testimony and damage assessment for ecommerce litigation, internet & software copyright, telecommunications. Over 24 cases providing expert reports, depositions, & trial testimony.

Education:

B. S. Computer Science	1980	University of Pittsburgh
Minor in E.E. digital circuit design		
Master's study and thesis in Computer Networks	1981	University of Pittsburgh
Results published in Byte Magazine		

Sample Cases:

GeoTag, Inc v. Frontier Communications Corp. et al.

Jurisdiction: U.S. District Court, Eastern District of Texas
Client: Macy's, Genesco, AGCO Corp., The Rockport Company, LLC, Hennes & Mauritz LP (H&M), Gander Mountain Company, Godiva Chocolatier, DSW, National Interlock Systems
Nature of Case: Patent Litigation
Nature of Engagement: Testifying Expert regarding e-Commerce, Geo location, store locator based technology. Provided Non Infringement Reports for multiple defendants.

ABC v. ENC, CISCO, et.al.

Jurisdiction: U.S. District Court, Southern District of Texas
Client: ABC
Nature of Case: Patent Litigation
Nature of Engagement: Remote control & communication for Video Streaming, Video & TV signal controllers. Provide Infringement reports and invalidity rebuttal reports and deposition.
Represented by: Dunlap Coddling and Smyser Kaplan & Veselka

Zamora Radio LLC v. Last.fm, Pandora, CBS Radio, et.al.

Jurisdiction: U.S. District Court, SOUTHERN DISTRICT OF FLORIDA
Client: Zamora Radio
Nature of Case: Patent Litigation
Nature of Engagement: Testifying expert on streaming players and on-demand media control vs. broadcast (forward only) media control.
Represented by: Ward & Olivo

VTran Media v. Cox Communication, et.al.

Jurisdiction: U.S. District Court, Eastern District of Pennsylvania
Client: VTran
Nature of Case: Patent Litigation
Nature of Engagement: Expertise in Video on Demand, DVR, Cable box interfaces, Channel determination, signal control. Provide report on patent non-Infringement and Invalidity.

eBay (Skype) v. IDT Communications

Client: IDT as defendant in complaint and plaintiff in counterclaim
Nature of case: Voice Over IP, Patent Litigation
Nature of engagement: Testifying expert for Network address resolution, data routing, and VoIP session initiation.
Representing: Holland & Hart followed by Girardi|Keese

TGIP v. AT&T, IDT, et.al.

Jurisdiction: U.S. District Court, Eastern Texas
Client: IDT Corporation
Nature of Case: Patent Litigation
Nature of Engagement: Expertise in Cell phone provisioning and activation, Wireless transaction communication. Provided report on non-Infringement and Invalidity. Deposition.
Represented by: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.

Professional Experience:

- | | | |
|-----------------------|---|------------------------------|
| 2013 - Present | Fund Leader
<i>Vaud Advisors - Social Media Technology Fund</i>
Direct research and assessment of social media companies for venture capital investment. | <i>New York, NY</i> |
| 2000 - Present | Principal Consultant
<i>eComp Consultants</i>

Provide consulting on design and development of software product development, and ecommerce technology. Provide technology consulting and expert support for telecommunications, internet, and ecommerce applications in the areas of: <ul style="list-style-type: none">• Patent portfolio evaluation, market valuation, identification of potential prior art, and licensing opportunities.• Independent consulting for Alcatel-Lucent (AT&T Bell Labs) to review, recommend, and rate Alcatel's extensive Patent portfolio specifically in the area of telecommunications and web-based ecommerce.• Patent litigation consulting for telecommunications and internet technology patents.• Software contract and due diligence consulting for disputes involving custom software projects.• Internet publishing and copyright consulting for web content management and licensing.• Commercial websites, search engine, and web marketing strategies.
Sample clients include: Alcatel-Lucent, LogicLink, NWI Corp, Jones Day, Finnegan Henderson, Fish & Richardson, Cozen O'Connors, Morrison Foerster | <i>Tampa, FL</i> |
| 2007- 2008 | Global Web Markets Manager
<i>Smith & Nephew Inc.</i>

Smith & Nephew is a global manufacturer of medical, wound, orthopedic, and surgical supplies. Smith & Nephew has facilities in 33 countries and maintains 35 websites for different product areas and country marketing. <ul style="list-style-type: none">• Design the S&N Corporate web architecture for all intranet, extranet, and Internet sites.• Direct a staff of web professionals in developing and managing 35 individual S&N web sites maintained in the US and 14 countries for both S&N clients and internal users.• Manage and maintain the 650 domains currently owned by Smith & Nephew• Optimize search engine ranking and website meta tagging.• Develop corporate technology and IT standards and policies including:• Create Web hosting agreements and IT service contracts (SLAs)• Define Web development standards• Research page ranking, redirection, and domain optimization strategies. | <i>Clearwater, FL</i> |
| 2002 – 2007 | eBusiness Director
<i>Eva-Tone Inc</i> | <i>Clearwater, FL</i> |

Eva-Tone is a \$45M commercial multimedia company specializing in ecommerce and marketing solutions, media and content customization, order processing and fulfillment, print & web publishing, CD & DVD manufacturing.

- Set strategic direction of client service offerings in ecommerce and Content Management.
- Designed and Implement High Volume web publishing system.
- Projects proposed and delivered include:
 - McGraw-Hill – Enterprise Content Management and automated Web publishing system.
 - ProMarine USA – B2B storefront, complex part search, order processing and fulfillment.
 - Resource Rabbit – Sales collateral manager. This system retrieves user preferences and client profile information to generate customized electronic presentations and brochures.
 - AAA Travel – CRM sales collateral system, instant customized brochures, print-on-demand.

1999 to 2002

eBusiness Engagement Manager
Tanning Technology and IMRGlobal

Tanning Technology is an international systems integrator specializing in network infrastructure and channel integration for financial markets and the insurance industry. Proposed and managed eBusiness and Internet infrastructure projects focused on client and user personalization, data mining, and web marketing practices.

Client web engagements proposed and managed:

- Eckerd Pharmacy – Developed eBusiness and web marketing for personalized client web content.
- GEICO – Developed a personalized policyholder web service that uses clients' account history and demographics to customize product literature for cross-sell & up-sell opportunities.
- Hartford Insurance – Integrated 3 tier online claims processing & subrogation with legacy systems
- Citicorp Bank – Designed mortgage and loan payment system; managed sale of loan contracts
- Smith Barney – Developed remote access network infrastructure & wireless PDA financial system
- Medwerks – Created medical insurance clearinghouse, MDs centrally process insurance payments

1996 –1999

Director of Network & Customer Support
Utility Partners, Inc.

Tampa, FL

Utility Partners developed and customized utility company software for scheduling service appointments, assigning and routing mobile workforce (field technicians), and dispatching and coordinating resources during power outages.

- Managed client engagement leads for development of client customizations and standardization of product features.
- Setup client support department to manage UP's growing client and product base. This department:
 - Provided Network and IT management for over 800 customer users
 - Created a 24x7 Helpdesk for Utility dispatch centers and IT departments

- Developed system and network monitors for real-time client system monitoring
- Received trouble calls & provided live client support for the following applications:
 - MobileUP – Mobile Workforce Dispatcher
 - TroubleUP – Power outage manager
 - Smartnom – Web Gas Auction System for private gas auctions
 - CAS – Customer Appointment and Call Center application

1987-1996

Project Manager: Telecom Software
GTE Data Services (currently Verizon)

Tampa, FL

GTE was an \$8B Telecommunications company and formed the Commercial Services division to customize their telephone business software to sell to other telephone companies internationally.

- Managed large product implementations for Telecom billing, service order, and Switch management.
- Developed Service manager, an early videotext hypermedia application for online ordering of Telecom equipment and services.
- Specific projects managed:
 - Mercury Communication – setup Service Bureau to bill their new intelligent network services.
 - PTT Netherlands – managed \$5M inter-carrier billing project for PTT Netherlands
 - Bell Canada – developed Pricing Plan & Table Management system
 - Deutsche Telekom – designed and developed a German billing prototype system.
 - Received GTE personal best award.

1980 – 1987

Software Engineer / Technical Lead
Digital Equipment Corp.

Maynard, MA

As Technical Lead, led the development of manufacturing automation and control software. Projects Included:

- Supply Chain, CAD/CAM – Designed system to retrieve parts information from circuit board CAD design. Developed a parts ordering system based on expected volumes.
- Pick & place automation – Automatically program IC insertion machines. Develop system to determine IC insertion order, generate machine instructions, and download program to machine.

As Software Engineer for embedded controllers and video subsystems, designed and developed PDP-11 operating system and device drivers.

- Enhanced high-speed DecNet drivers for Synch, Asynch, and Parallel communications.
- Designed/developed disk firmware and drivers for floppy & Winchester disks.
- Developed Hypermedia and Windows Manager for PRO-350 microcomputer.
- Developed and enhanced video controller firmware and layered graphics system for PRO-350.
- Developed Computer Telephony Integration (CTI) product for telephone answering machines.

Technical Tools & Environments:

- Unix, Windows, NT, Microsoft .NET, C#, C/C++, VB, Assembler
- Java, Java script, JSP, IBM Websphere, Microsoft Commerce engine, Blue Martini

- SQL, Oracle, Foxpro, DB2, Crystal Reports, Active-Reports, MQ Series, Tuxedo, Documentum, Interwoven

Certifications & Publications:

- Industry Speaker: Internet Publishing standards (Momentum conference)
- Department of Justice: Proposal for internet forensics technology
- IBM Websphere – Certified ecommerce Solutions Expert
- Byte Magazine – Published Network Design articles
- Sync Magazine – Published Programming Techniques and Tutorials
- IEEE SigGraph – Presented ICGS Computer Graphic Standards for IEEE SigGraph conference.
- CMM & PMP – Project management methodologies
- ISO and ANSI – On International ISO and National ANSI Committees for Disk and Media format standards

Testimonial History:

Within the past five years, I have testified and/or provided expert services in the following matters (the underlined party identifies which party I was retained by):

- *Bid For Position v. AOL, Google, Microsoft, MIVA, et.al.* 2:07-cv-582 JBF/TEM (E.D. VA 2010) (settled 2008)

Expert for Defendant MIVA on Patent Invalidity for Internet Search Engine technology. Provided expert invalidity report regarding the auctioning of keywords in paid searches.

- *Imhoff Associates v. America's Criminal Defense* (S.D. CA) (settled 2009)

Expert for Defendant ACD for accused Internet Search Engine mis-direction (fraud). Provided expert consulting and identified the unintentional actions of the defendant which caused the search mis-direction.

- *Zamora v. CBS Radio et.al.* 09-20940-CIV-MORENO (S.D. FL 2010) (settled 2010)
Last.fm, Ltd., CBS Radio, Inc., CBS Corp., Slacker, Inc., Pandora Media, Inc., Rhapsody America LLC, Realnetworks, Inc., DKCM, Inc., AOL, LLC, Accuradio, LLC, Yahoo! Inc. and Soundpedia, Inc.

Expert for Plaintiff on Patent Infringement for Internet Radio Technology. Provided expert report and deposition regarding the use of streaming media and Web Radio players.

- *Nuance v. Tellme (a Microsoft subsidiary)* C.A. No. 06-105-slr (S.D. Del 2009) (settled 2010)

Expert for Defendant on Speech Recognition software. Provided expert report and deposition on non-infringement and invalidity for speech recognition used in automated phone directories.

- *TGIP, Inc. v. AT&T Corp, IDT*, 512 F. Supp. 2d 727 (E.D. Tex. 2007) (settled 2007).

Expert for Defendant on non-infringement. Patent and prior art dispute concerning call processing center and service provisioning in which I analyzed telephone network, call processing center, and call routing patents; developed detailed non-infringement chart; and rebutted plaintiff's expert.

- *Swaplease, Inc. v. Sublease Exchange.com, Inc.*, 1:07 CV 00045-SSB (S.D. Ohio 2007) (Pending)

Expert for Plaintiff on infringement. Patent and prior art dispute concerning commercial auto lease web site. Expert infringement report, testified at *Markman* Hearing.

- *Ronald A. Katz v. DHL Express*, 2:2007 CV 02192 (N.D. Cal.)

Patent infringement dispute concerning call processing center and call routing patents. Developed non-infringement reports and deposed.

- *Ronald A. Katz v. Cox Communications*, 2:2007 CV 02299 (N.D. Cal.)
Patent infringement dispute concerning call processing center and call routing patents. Developed non-infringement reports and deposed.

- *Ronald A. Katz v. Earthlink*, 2:2007 CV 02325 (N.D. Cal.). Patent infringement dispute concerning call processing center and call routing patents. Developed non-infringement reports and deposed.

- *Ronald A. Katz v. Fifth Third Bank*, 2:2007 CV 04960 (N.D. Cal.)
Patent infringement dispute concerning call processing center and call routing patents. Developed non-infringement reports and deposed.

- *Ronald A. Katz v. Huntington National Bank*, 2:2007 CV 04960 (N.D. Cal.)
Patent infringement dispute concerning call processing center and call routing patents. Developed non-infringement reports and deposed.

- *Ronald A. Katz v. Echostar*, 2:2007 CV 06222 (N.D. Cal.) (pending)
Patent infringement dispute concerning call processing center and call routing patents. Developed non-infringement reports and deposed.

- *ABC v. ENC, CISCO, WebEx communications, et.al.*, H-06-1032 (S.D. TX.)
Patent infringement dispute concerning computer remote control, remote command processing, and remote communication. Developed non-infringement and invalidity rebuttal reports and deposed.

- *Logiclink v. Keylink*, CV07-1056-DOC(MLGx) (C.D. Cal.)
Patent infringement dispute concerning eCommerce for Kiosks for Hotel Business centers. Developed infringement report and invalidity rebuttal report. Trial Testimony.

- *eBay v. IDT corp*, IDT 4:08-cv-4015-HFB (W.D. Ark) (settled 2010)
Patent infringement. Perform analysis of Voice Over IP providers and prior art candidates; provide non-infringement (suit) and infringement (counter suit) expert reports.

- *i2 Technologies, Inc. v. Oracle Corporation*, 6:09-CV-194-LED (E.D. Tex)
Patent infringement, Testifying expert for Supply Chain Management software, Manufacturing Automation, and Sales projection system software. Provide infringement and Invalidity rebuttal.

- *IslandIP Inc. v. Deutsche Bank Corporation*, 1:09-cv-04673-VM (S.D. NY)
Patent infringement, Testifying expert for Financial Transaction, Omnibus account consolidation and settlement for Banks and Broker Dealers. Provide infringement and Invalidity rebuttal reports.

- *3M Future Africa (PTY) LTD v. The Standard Bank of South Africa LTD, MTN Group Limited and MTN Mobile Money SA (PTY) LTD*, Case #: Patent 2002/2337 (South African High Court)
Patent infringement, testifying expert for Online Payments Security. Provide infringement, validity and trial support.

- *Cohen v. US*, 07-154-C (U.S. District Court of Federal Claims)
Copyright infringement testifying expert for Cohen. US Government FEMA distributed copy righted documents without Cohen's knowledge or approval. Provide expert report, damages and deposition.

- *SFA v. 1-800-Flowers, et.al*, 6:2009-cv-00340-LED (E.D. Tex)
- *SFA v. Barnes & Noble, et.al*, 6:2011-cv-00399-LED (E.D. Tex)

1-800-Flowers.com, Inc., The Plow & Hearth, Inc., including D/B/A Wind & Weather, Inc. The Popcorn Factory, Inc., Winetasting Network, Inc., The Children's Group, Inc., Problem Solvers, Inc., Barnes & Noble, Inc., Barnesandnoble.com LLC, Blockbuster, Inc., BUILD-A-BEAR WORKSHOP, INC., CDW Corporation GameStop, Corp., GameStop, Inc., GameStop.com, Inc., Gander Mountain Company, Overton's, Inc., J & R Electronics, Inc., Newegg, Inc., Newegg.com, Inc. Northern Tool & Equipment Company, Inc., Northern Tool and Equipment Catalog Co. Office Depot, Inc., Omaha Steaks International, Inc., OmahaSteaks.com, Inc. The Timberland Company, Tupperware Brands Corporation, Tupperware.com, Inc.
 Patent infringement, for Computerized Sales Force Automation System. Testifying expert for joint invalidity (9 defendants) and non-infringement (5 defendants).

- *Bloom v. Intuitive*, 06 CV 6301 (S.D. NY)

Software contract dispute, testifying expert concerning Document Management and Publishing for Pharmaceuticals and Regulatory agencies. Comparison of product features and software reuse.

- *Dallal v. New York Times*, 1:2003-cv-10065 (S.D. NY) (settled 2008)

Testifying Expert, Deposition, for Web Copyright. Provided expertise in standard media publishing practices, content licensing, and web content customization.

- *LA Times v. Software AG*, 2:2007-cv-01289-SVW-JWJ (C.D. Cal.) (settled 2008)

Testifying Expert in Network & Database Software licensing dispute. Prepared expert report and deposition on software licensing practices.

- *Bear Creek Technologies v. Verizon Services Corp.*, 1:11-cv-00880-TSE -JFA (E.D. Virginia)(pending)

Testifying Expert, provided infringement and invalidity of VoIP related patents.

- *Cequint v. Apple*, 1:2011-cv-01224 (Wilmington) (pending)

Testifying Expert. Performed code review of Cequint's City ID Software product to determine if and how they are practicing the key limitations of the patents-in-suit focused on Caller ID, CND Messages, City, State lookups, WAP interfaces, Database synchronicity (automatic update of database), Display of incoming caller information and Call Answer and set-up code..

- *Tel-tron Corporation v. Stanley Security Solutions d/ b/a Stanley Healthcare Solutions*, 6:2011-cv-01448 (M.D. Florida)

Testifying Expert regarding network systems for displaying data relating to emergency call systems.

- *Microsoft v 5R Processors, LTD. and Thomas Drake*, 3:12-cv-00263-slc, (W.D. Wisconsin)

Testifying Expert. Evaluate the Microsoft Windows Professional XP OEM Licensing Agreement and Microsoft Refurbished PC Licensing Guidelines and opine on 5R adherence.

- *Walker Digital, LLC v. Fandango, Inc., et al.*, 1:11-cv-00313-SLR (Delaware)

Facebook Inc., Fandango, Inc., Expedia, Inc., Amazon.com, Inc., American Airlines, Inc., eBay Inc., and Zappos.com, Inc.

Testifying Expert regarding e-commerce, shopping carts, e-marketing, and the promotion of financial products such as credit and debit cards for retail, business-to-business ("B2B"), and financial industries. Provided Infringement (Amazon, Expedia, Zappos) Reports and Invalidity Rebuttal Report.

- *Trialcard v. P.S.K.W. & Associates*, 3:11-cv-05693-FLW-TJB (New Jersey)

Testifying Expert for patent re-exam concerning eCommerce technology based on a method of dispensing, tracking, and managing pharmaceutical products by communicatively linking prescribers and pharmacies to a central computing system

- *Catalina Marketing Corporation v. Coupons, Inc.*, JAMS Reference No. 11000654507 (San Francisco)
Testifying Expert to analyze the following Coupons systems, Microsite System & Brandcaster™ System and determine if either system is an “Infringing Capable System”. Provided Expert Report and Mediation Trial support.

- *AKH Co., Inc. v. The Reinalt-Thomas Corp. & Southern California Discount Tire Co., Inc.*, SACV10-1626 CJC
Testifying Expert regarding trademark infringement & cybersquatting. Provided Expert Report and deposition.

- *Soverain v. Euromarket Design*, et al. 6:12-cv-00145-LED (E.D. Texas) (pending)
Testifying Expert regarding e-commerce systems/online shopping carts technology.

- *e-LYNXX Corporation v. InnerWorkings, Inc., et al.* 1:10-CV-2535 (M.D. PA)
InnerWorkings, Standard Register, Cirqit.com and R.R. Donnelley & Sons Co.
Testifying Expert regarding supply chain, custom print jobs, matching job requirements to vendors technology. Provided Infringement, Invalidity and Non Infringement Rebuttal Reports and deposition.

- *Joao Bock Transaction Services v. USAmeribank, et al.*, 8:11-cv-00887-MSS-TGW (Tampa)
USAmeribank, Everbank and BankFirst
Testifying Expert regarding secure transactions on electronic financial accounts.

- *Lodsys v. Brother Intl Group et al.*, 2:11-cv-90(JRG) (E.D. Texas)
Brother Intl Corp, Canon U.S.A., Inc., Hewlett-Packard Company, Hulu, LLC, Lenovo (United States) Inc. Lexmark International, Inc., Motorola Mobility, Inc., Novell, Inc., Samsung Electronics Co., LTD., Samsung Electronics America, Inc., Samsung Telecommunications America, LLC, Trend Micro Incorporated
Testifying Expert regarding interactive media enabling CRM technology. Provided Invalidity Rebuttal Reports and deposition testimony.

- *Progressive v. State Farm, et al.* CBM2012-00003, CBM2013-00004
State Farm Insurance, Hartford Insurance, Liberty Mutual Insurance, Safeco Insurance, Ohio Casualty Insurance, Open Seas Solutions, Octo Telematics
Testifying Expert regarding e-Commerce and vehicle telematics systems. Provided Patent Re-exam Declarations.

- *Black Hills Media, LLC v. Samsung, et al. [ITC case]* (pending)
Samsung, LG, Panasonic, Toshiba, Sharp
Testifying Expert regarding Google Latitude running on smartphones and smart phones running software which can direct the streaming of content between, for example, a laptop and a TV or Blu-ray player. Providing device analysis and code review, Infringement Reports and Rebuttal Reports.

- *Rembrandt Social Media, LP v. Facebook, Inc. and ADDTHIS, Inc.*, 1:13cv158 (TSE/TRJ) (Virginia)
Testifying Expert regarding social media user content and 3rd party interaction -the diary page and "Like" feature. Provided Non Infringement Report and deposition.

- *GeoTag, Inc v. Frontier Communications Corp. et al. [Multiple cases]* (pending)
Macy's, Genesco, AGCO Corp., The Rockport Company, LLC., Hennes & Mauritz LP (H&M), Gander Mountain Company, Godiva Chocolatier, DSW, National Interlock Systems

Testifying Expert regarding e-Commerce, Geo location, store locator based technology. Provided Non Infringement Reports for multiple defendants.

- *CareerFairs.com v. United Business Media, LLC, et al.*, 11-20329-CIV-KING (S.D. Florida)

Testifying Expert regarding videoconferencing, virtual career fairs technology.

- *Transauction LLC v. eBay Patent 7343339* 3:2009cv03705 (N.D. CA)

Expert regarding computerized electronic auction payment systems.

- *Ameranth v. Six Continents Hotels*

Testifying Expert regarding Internet Advertising & Website Technology. Expert Report and deposition.

- *Carolina Power & Light Company v. Aspect Software* 5:08-cv-00449-BO (E.D. NC)

Testifying Expert in telecommunications technology.

- *Dominion v. Aspect Software*, 3:08-cv-00737-REP (Virginia)

Testifying Expert in telecommunications and IVR call processing. Provided expert declaration and testimony.

- *ComplementSoft v. SAS Institute*, 12-C-7372 (N.D. IL)

Expert regarding software development tools, database manipulation, SAS programming.

- *Moricz v. Google*, 10-cv-01240-RSL (Seattle)

Expert regarding use of deep search methodology. Claim Contruction support.

- *Media Rights Technologies v. Capital One, et al.*, 1:13cv476-AJT/TRJ (Virginia)

Expert regarding secure internet Banking System technology USPatent# 7316033.

- *CertusView v. S&N*, 2:13-cv-346 (MSD) (LRL) (Virginia)

Testifying Expert regarding geolocation. U.S. PATENT # 8,265,344, 8,290,204, 8,340,359, 8,407,001, AND 8,532,341

- *Bright Edge v. SearchMetrics*, 3:14cv-01009 WHO (San Francisco)

Testifying Expert regarding search optimization, USPatent# 8478700, USPatent# 8478746.

- *Black Hills Media, LLC v. Sonos*, 2:14-CV-00486 SJO (PJWx) (California Western Division)

Testifying Expert regarding delivery of stored and streaming audio content over wide-area and local area networks. U.S. PATENT # 6,757,517, 7,236,739, 7,742,740 and 6,826,283

EXHIBIT 2

TerraTec



High Quality Audio Decoder

Manual (English)

18.05.00

BHM Ex. 2013A

CE Declaration of conformity

This product is in conformity with prevailing EU guidelines. A valuation of conformity has been carried out, as stipulated in EU guidelines.

Company: **TerraTec Electronic GmbH · Herrenpfad 38 · D-41334 Nettetal · Germany**

Product: **MP3-CD-Player m3po**

According to Low-Voltage Guideline 73/23/EU The following norm has been observed:

EN 60 065: 1993

According to Electromagnetic Sociability Guideline 89/336/EU, the following norms have been observed:

EN 55 013: 1990 · EN 55 020-1: 1995

(incorporating EN 55 013: 1991 + 1995)

The company holds the following documentation available on request:

- Manual
- Testing documents
- Other technical documentation

Nettetal, 26.04.2000



TerraTec® ProMedia, SoundSystem Gold, SoundSystem Maestro, SoundSystem Base1, AudioSystem EWS®64, SoundSystem DMX, phono PreAMp, XLerate, Base2PCI, TerraTec 128iPCI, TerraTV+, m3po, WaveSystem, MIDI Smart and MIDI Master Pro are trademarks of TerraTec® Electronic GmbH Nettetal.

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Box CONTENTS.

First, you might want to check the contents of your box. In doing so, you should come across the following items:

- The Player,
- a remote control unit with batteries,
- a power chord,
- a cinch-chord,
- one MP3 demo CD,
- screws for installing the optional hard disk,
- this manual,
- a menu overview
- and finally, a registration card.

SETUP, MAINTENANCE AND SAFETY DIRECTIONS.

- The player needs to be placed on a level and dry surface to avoid fire, damage, or electrical shocks.
- Keep it away from radiators and hi-fi equipment. This will avoid excessive heat building up. In particular, do not place any devices with no feet and nothing containing liquids like bottles or plant pots on your m3po.
- When connecting to an AC outlet, ensure that the correct voltage is supplied to the m3po.
- If you don't use the m3po for a longer period of time, you disconnect it. To avoid short circuits, never pull on the cable, pull on the plug instead. You should also disconnect the m3po during thunderstorms.
- If you open the case to install a hard disk, you must disconnect it first! In addition, please follow the instructions in this manual to the letter.
- If the player is exposed to strong temperature fluctuations, leave it for about one hour **without** connecting it, as condensation could have built up inside the case, which could compromise its functionality.

Important: the m3po incorporates a class 1 laser product which operates with invisible, potentially hazardous laser beams.



- Clean the m3po-Player with a dry or slightly damp, non-fuzzy cloth. Chemical cleaning products may damage the surface and should not be used.

Tip! After installing the hard disk, check the case for any small animals or rodents (Mice, moths, etc.).



The battery.

Inside the case, we have installed the following battery type:

Description:	CR2032
Type:	Lithium
Primary:	Yes
Quantity:	1
Weight:	3g

Install new batteries only after consulting our technicians and make sure you insert it correctly ('+' facing upwards).

Never subject the battery to fire or high temperature. It could leak or even explode. When disposing of the battery, please do so in an appropriate manner.

The power supply.

The power supply runs on 40W with a voltage of 110 to 230 Volt at 50 to 60 Hertz. The unit is fused internally at 250 V/3,15A. Do not attempt to change the fuse yourself, instead consult our technicians).

Summary: Simply apply 'common sense' when using the m3po. Deliberate damage is not covered by our warranty. Thank you.

WELCOME.

Great that you have chosen TerraTec's new m3po. This player belongs to a new era of Hi-fi components. You have probably used a CD Player before and most of the basic functions will be familiar to you. TerraTec's m3po, however, takes this concept one step further and incorporates the possibilities of modern Computer and Internet possibilities into a desirable and typical piece of Hi-fi kit.

In this manual, we would like to introduce you to this device as informatively and entertainingly as possible. Again, most of the basic functions will already be familiar to you. The in-depth concept of the m3po and its true capabilities, however, will be described by us in this manual. In addition, you will hear about some of the Internet's possibilities, as well as tips and tricks of how to archive your music in the MP3 format.

We hope you enjoy this manual

... Your TerraTec Team!

Quick guide to the manual.

In order to make this manual as efficient as possible, we have highlighted certain contents in different ways.

A short summary of several paragraphs or explicitly important passages will be framed.



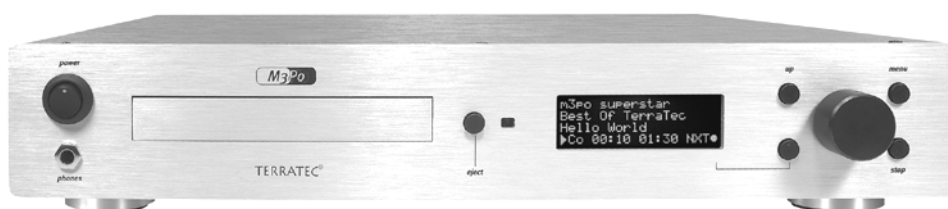
- Display messages on the m3po-Player, are printed in a different font.
- Filenames, which appear in the display of your m3po-Player are printed in a different font.
- Internet Links are printed in a different font.
- " ;-)" indicates a joke. Haha.

UNPACK AND GO! THE QUICK-START TOUR.

Here we have a quick-guide for experienced users, who have used a CD Player in the past. As the SELECT Wheel has a multitude of functions, we presume a certain standard setting for this tour (page 28).



Having unpacked and connected your m3po, the player is ready to go. Power and cinch-chords are to be connected in the usual way. If you want to continue to use your existing CD Player, you may use any input but the phone socket to connect the m3po.



Switch on the m3po-Player and take a look at the display. The machine takes a few seconds to search for internal drives (more on this later).

The message "No CD in drive" will appear. Press EJECT and insert a CD (for the purpose of this tour, please use the supplied demo CD) in the usual way with the label facing upwards. Close the drawer by pressing EJECT for the second time. At this point it should be mentioned, that if your m3po has already a hard disk installed, it will display the main path of the internal HD. However, this should not stop you from pressing EJECT for the second time.

The machine will display "Scanning for files" and the m3po starts searching for MP3 files. Turn the SELECT Wheel clockwise until you find "Welcome m3po".

Press SELECT, that's all. The m3po now plays the chosen title.

What's next?

While m3po does its duty, we'll take a look at what else we can find on the CD. Press SELECT and keep turning – you will find three different symbols in the display window:

- Note – The note indicates a MP3 title. Press SELECT and you can start playing that title at once (or, in "DJ Mode", pre-select that title. More on this later).
- Table – the small table (horizontal lines) represents the playlist. The playlist is a pre-selected sequence of titles you wish the m3po to play. More on this on page 44.
- Arrow – the arrow pointing downwards indicates a file (or directory) in which you can find titles, playlists or more files.

Chose the file "www.callasong.de" and then another file (you won't find any titles or playlists here), which you think might be interesting. You do this exactly the same way as before: simply chose and select.

Now you will see a number of titles in the display (unless, of course you have accidentally chosen the "Intro" file ... there you will find only one title). Play any one of the songs by pressing SELECT. "Welcome m3po" will stop and the new song commences. Pretty quick, no?

Bottom right of the display will show NXT. This abbreviation stands for "next" and indicates the next title. Now press the display button (soft button, bottom left to the wheel). The next title will now be played. This button always carries out, whatever function is displayed on the bottom right-hand corner.

Stopping playback requires your pushing one button: the STOP button. Surprised? Hope not.

Finally, we climb the ladder back up to the top level of the CD. To do so, press UP twice. If everything has worked, then you will be presented with the same data as when you first inserted the CD.

Now you can explore the m3po on your own, The general functions should be clear by now. More detailed information, however, is what this manual is all about. And it starts overleaf.

Enjoy.

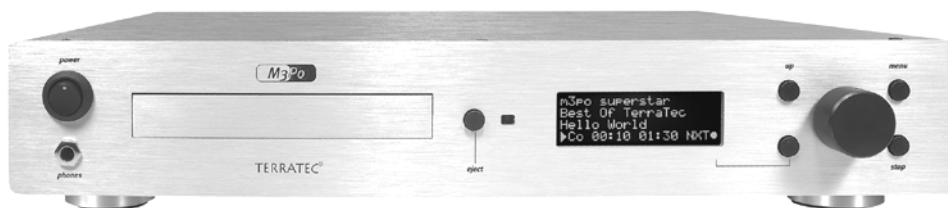
SETUP AND CONNECTION.

This chapter is dedicated to the m3po-Players necessary preparations prior to operating it.



- Carefully remove the m3po-Player from its packaging and place it on a dry and level surface – ideally on a hi-fi rack.
- Connect the supplied cinch-cable to the AUDIO OUT socket of the m3po-Player and the other end to a vacant input on your hi-fi amplifier. You can use the CD, TAPE or AUX socket. The PHONO socket is a definite nono, as this operates on a different input sensitivity. You also need to consider the color coding of the plugs: Red goes to the right input, white (or black) to the left.

If necessary, consult your amplifiers manual on alternative connecting options.

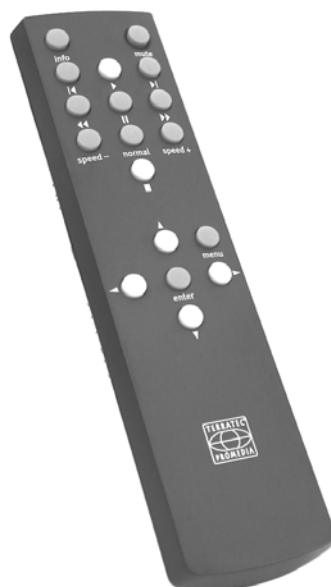


What else can I connect the m3po to?

Your m3po can also be connected to a pair of active speakers (with integrated pre-amps). Even the connection to the line in of a compatible computer soundcard is a possibility, but not really ingenious (the m3po has not been designed with this application in mind).

Remember: The m3po-Player cannot be digitally connected to other devices.

- Plug the power chord into a power outlet.
- Insert the supplied batteries into the remote control unit.



You will also find a headphone socket. This is located under the POWER button on the front panel. The volume can be adjusted in the m3po menu "Volume (Phones)". (page 30).

Your m3po is now ready. Following is a description of the various functions and how to access them. You could follow the tour at the beginning of this manual (page 9) if you have not done this already and if you are already familiar with the basic functions of the player.

The m3po can be integrated into a 19" rack module, the optional "rackit!". You can order it over the Internet.



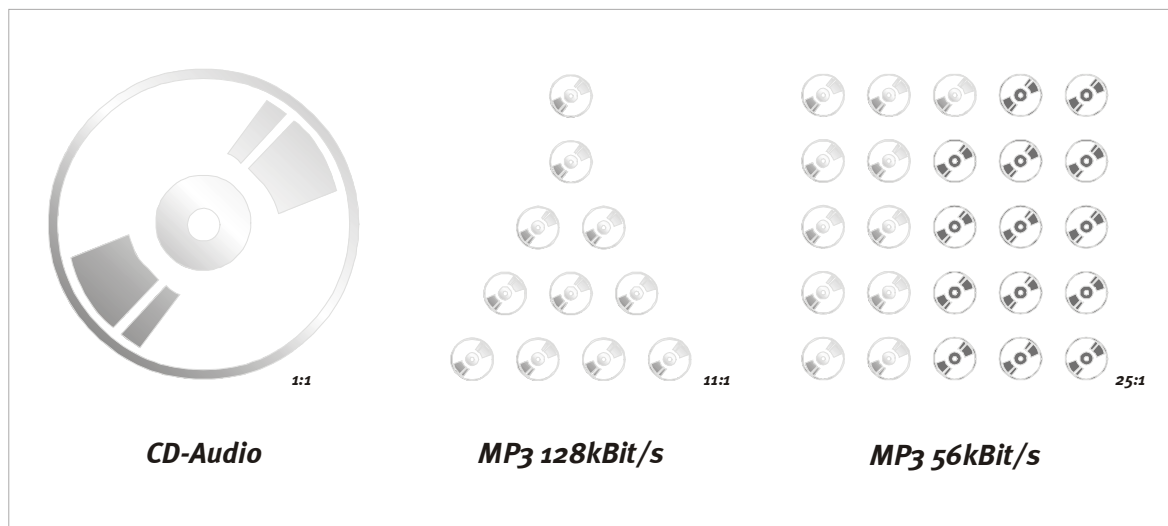
WHAT IS THE m3PO AND WHAT CAN IT DO?

Your new m3po-Player is very similar to a standard CD player. However, there are a number of differences, as the m3po is fundamentally more versatile and more powerful. Don't worry, this does not make it any more complicated.

The m3po is capable of playing standard (Audio) CDs. The operation is akin to a CD player: Insert CD, chose title, press PLAY. In addition to this, it can read and play MP3 data. These can be located on a CD-ROM, or an optional hard disk. The m3po cannot record.

Why MP3?

MP3 is currently the most common format for music on the Internet. Its main advantage is the small size of its audio files, as described in the following example: If you record a standard audio CD on your home PC, then this will use about 650 Megabyte (MB) of hard disk space. Converting this into MP3 files, you are presented with only 1/11 of its original size, roughly 60MB. If the files contain nothing but speech (i.e. language courses), the size of the file can be reduced to 1/25 of its original size, without losing too much of its sound quality. This is quite useful, as you can see:



You will find more information on MP3 in the chapter "Useful information on MP3" on page 46.



You can burn your MP3 files onto CD-R in your computer and it is exactly this feature which distinguishes the m3po from other MP3 players: The CD is much more efficient and cheaper than conventional MP3 players, which use flash ROM chips to store data.

Housekeeping.

Back to your player: Your new m3po plays audio and data Ds. As the CD-R stores eleven times more music than conventional audio CDs, you will need to find a way to keep everything in order and not get lost in this audio jungle. If you own a PC, then you will know the file structure on your hard disk: Programs are located in files, documents, like letters etc in other places. So it makes sense to apply the same approach to filing your MP3-files (classical, Hardcore Gabba or Zappa).



Files which are located on a CD-ROM, will be displayed as such: a small arrow in the display indicates these files. And here we have the main difference between the m3po and a CD player: You 'move' through the directory and chose the titles by name and not by number – for this you only need to use the wheel and the 'UP' (back) button.

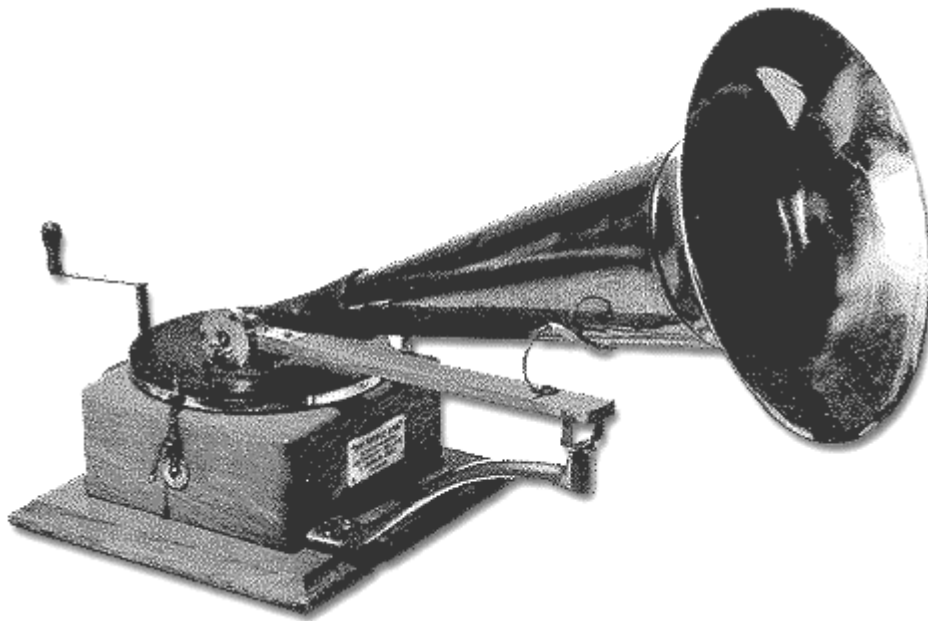
Anything else?

Yes, the m3po can do even more. It can search for titles, it allows you to compile your own playlists, display information about any title (data rates or ID tags), pre-select titles while a different one is playing and vary the playback speed without – like a record player* – changing the pitch. All these functions can be accessed via the display and controlled with the buttons on the front panel or the remote control unit.

Following is a description of all the buttons, and functions "hidden behind the display". You could follow the tour at the beginning of this manual (page 9) if you have not done this already.

** For the ones too young to remember: A record is a spinning disc made from black vinyl, which by the end of the 20th century were only used by 'DJs' ... ;-)*

If you would like to find out more about this cultural heritage, have a look at the following website:



<http://fabdp.fh-potsdam.de/lehre/studpro/steffen/record/head/head.htm>

Please note, that this site has been constructed independently of us and we are not responsible for its contents. Thank you.

USING THE M3PO.

The m3po-Player can be operated easily and intuitively via its front panel or its remote control unit. Apart from the display, the most important element is the SELECT wheel, which doubles up as a button. The UP button takes you to a higher level within the operating menu, MENU calls up the menu and its various settings and STOP will not be explained at all. You might take offence ;-). The same applies to the EJECT and POWER buttons.

THE LC DISPLAY.

The Display on the m3po is like a communication port to the player. Here you find all the information to operate the unit, as well as information on the chosen titles (ID Tags). The display shows file names and folders, which are located on the CD (you can find more information on folders in "What is the m3po and what can it do?" on page 13).

While navigating around the CD or hard disk or while a title is being played, The display will indicate the current playback mode. The "Play mode" and "Repeat & Shuffle" mode can be combined freely. The abbreviations stand for the following:

1. Letter ...	for play mode	2. Letter ...	for Shuffle&Repeat
A_	All titles	_N	Normal
F_	All titles in one folder	_R	Repeat
O_	Only 1 title playing	_S	Shuffle
P_	Playing playlist		
I_	Introsan		
D_	DJ*		

For example: "AN" stands for playback of all titles in sequence. "PS" stands for playback of the playlist in shuffle mode, or random play.

* The "DJ Mode" is always the normal mode. Repeat and shuffle are of course pointless in this mode.

You will find three different symbols in the display window:

- Note – The note indicates an MP3 title. Press SELECT and you can start playing that title at once (or, in "DJ Mode", pre-select that title. More in this later).
- Table – the small table (horizontal lines) represents the playlist. The playlist to program a sequence of titles you want the m3po to play. More on this on page 44.
- Arrow – the arrow pointing downwards indicates a file (or index) in which you can find titles, playlists or more files.

Finally, the display window opens up the functions of the menu, which can be called up by pressing MENU. All menu functions are described in detail on page 19.

THE SELECT WHEEL / ENTER BUTTON.

The SELECT wheel is the main navigation tool of the m3po. Dialing clockwise takes you deeper into the menu, counterclockwise takes you back up. Pressing the wheel, will carry out that function, enters a submenu, changes folders or plays a pre-selected title. In the latter case the display changes its mode and now shows the ID Tags, if available. To carry on navigating, you will need to press the wheel again.

THE UP BUTTON.

Once you have navigated into a folder (for example `Bach` in the `classical` folder), you can move up by one level by pressing the UP button. For example: Press once to return to `classical`, twice to go back to the start. If you press the UP button again, you will go back to choosing CD or hard disk, provided there is one installed.

THE DISPLAY BUTTON (SOFT BUTTON).

Under the wheel to the left, you will find the display button, whose functions depend on the settings on the m3po. Usually, the display will present you with whatever function the button is currently offering. This could be choosing the next title (NXT), the escape function (ESC).

Abbreviation	Function
ADD	Add title to your playlist ("My Playlist").
BCK	Back to "Edit Playlist".
DEL	Delete pre-selected songs in the DJ mode.
Enter	Enter (or confirm entry, e.g. define a folder name).
Enter Password	Enter password to unlock "Party Lock".
ESC	Escape (quit menu or operation of a function).
NXT	Next (play next title).
OPT	Other options for "Edit Playlist".
Search	Starting search or continuing search.
XXX%	Displaying change of speed in % (operated using the wheel). The function of the soft buttons corresponds to NXT.

THE MENU BUTTON.

m3po offers a multitude of menu settings. You gain access to the menu by pressing the MENU button. If you don't carry out any functions at this point for a few seconds, the display switches back to displaying the song title. All menu functions will be described in detail in the chapter "The menu functions" on page 19.

THE STOP BUTTON.

All right: Pressing STOP will stop the playback of the current title. The STOP button is just that – a PAUSE function is only available via the remote control unit.

THE EJECT BUTTON.

Just like conventional CD players, this will open and close the CD tray. After a short time, the drawer closes automatically in order not to catch any unnecessary dust or to double up as a can holder. By the way, the unauthorized opening of the drawer can be prevented using the Party Lock function (page 29).

Emergency Exit.

If the CD is damaged and the m3po "hangs", switch the player off. Hold down the EJECT button and switch the player back on. The drawer opens and you can take out the CD.

Tip: This function is also available in "Party Lock" (page 29).



POWER.

Switches the machine off and on. Using the "AutoPlay" function in the More menu can start playback immediately after switching on (or after a power cut). More information on page 28.

THE MENU FUNCTIONS.

Pressing the MENU button will open all the menu functions. Following is detailed information on the in-depth functions of the m3po.

Please remember, that some functions will only be displayed, if there is an optional hard disk installed.

PLAY MODE.

In play mode, you determine, which titles are to be played. An Introsan is also possible. The following options are available:

All songs	Plays all songs in sequence.
All in folder	Plays all songs in one folder.
One song only	Plays only one song.
My Playlist	Plays the playlist in sequence once.
Introsan	Like "All Songs", but plays only the first few seconds of each song. The introsan time can be determined in the MORE menu (page 28).
DJ	Like "All Songs" but you can select one or more titles, which are to be played at the end of the current song using the wheel. More information on this is coming up.

Pressing `..back` takes you back to the main menu.

DJ Mode.

The DJ Mode is, as you may have guessed, one of THE party tools of the m3po. In DJ mode, you can pre-select titles, which will then be played in the sequence you selected them, basically, it is a mini-playlist (up to 10 titles), i.e. in case you need to go and get some more drinks, or are involved in a chit-chat you wish would never end.

The operation is quick and easy:

- Switch play mode to DJ and the wheel to SELECT (important, as you need to choose the titles).
- Choose a title using the wheel. If no song is playing at that time, this song (the (first song) will be played immediately.
- Every other title you select, will be listed for playback and marked with a "+". Playback of the selected song starts automatically after the current one.

-
- The display shows in the bottom line, how many songs are still outstanding. For every added title, you will see a horizontal bar exactly between the two timing points. For more than 5 titles, 3 dots will be shown.
 - Spending some time at the bar, won't be a problem now – don't forget to engage the Party Lock (see page 29). ;-)

The DJ mode also allows you to skip to the next title when pressing the soft button NXT. Turning the wheel (i.e. to add another title to the list), reveals another function, DEL (delete), where all following titles will be deleted and the current one will not be interrupted.

Tip: To go straight to the playback display, press MENU twice.



Mixing playback modes.

As you have seen in the chapter "Using the m3po", the play mode and the repeat&shuffle mode can be combined freely. This makes it possible to repeat songs from only one folder, or to play songs from one playlist in shuffle mode. To keep you up-to-date, which mode is currently in operation, the display will show a simple combination of letters, which will tell you what is going on. You can read more on "The LC Display" on page 16.

REPEAT & SHUFFLE.

In this menu, you determine how to play your songs:

Normal	Plays the selected songs in sequence.
Repeat	Repeats all selected songs.
Shuffle	Plays all selected songs in random sequence.

Mixing playback modes.

As you have seen in the chapter "Using the m3po", the play mode and the repeat&shuffle mode can be combined freely. This makes it possible to repeat songs from only one folder, or to play songs from one playlist in shuffle mode. To keep you up-to-date, which mode is currently in operation, the display will show a simple combination of letters, which will tell you what is going on. You can read more on "The LC Display" on page 16.

WHEEL MODE.

The SELECT wheel cannot only be used for navigational purposes. While a song is playing, you can operate the following functions just by using the wheel:

Skip	Turn right: The next song starts playing. Turn left: The previous song starts playing. Press: Switches to select mode. Note: When changing titles during playback, a short click or pop may be audible. This is normal.
Search	Turn right: Fast Forward. Turn left: Rewind. Press: Switches to select mode. Note: MP3 files cannot be wound back further than the beginning.
Select	Turn right: Display the next song title. Turn left: Displays the previous song title. Press: The selected title will be played.
Speed	Turn right: Increases playback speed in %. Turn left: Decreases playback speed in %. Press: Reset the playback speed to 100%. Note: Switching to speed mode may cause a short click or pop. This is normal.

Pressing `..back` takes you back to the main menu.

PLAYLISTS.

The m3po offers numerous options for compiling, saving and playing of playlists. Playlists are pre-selected songs, which are played automatically by the m3po. The playlist mode allows you to access all editing functions for playlists.

Call up "Playlist.. " in the menu and you will be presented with the following options:

Edit Playlist	Displays all titles in the current playlist. You can scroll using the SELECT wheel. Pressing the wheel selects every entry. Whether no, or several titles have been chosen, the soft button now offers access to the options menu (OPT), which will be described later.
Start Playlist	Plays the playlist.
Clear Playlist	Deletes the currently selected playlist.
Save my Playlist	Saves the current playlist as M3U playlist to the hard disk. This message will only appear, if there is a hard disk installed.
Add to my Playlist	Switches to the playback window and adds to the playlist.
Playlists on CD	Lists all playlists found on CD and HD.

Options menu (even if no tracks are present)	
Add entry	Switches to the playback window and adds a title to the playlist by pressing the soft button (ADD) to the current playlist. The wheel functions exactly like in the select mode: turn to choose the song, then press to play it.
Load Playlist	Switches to select mode, but only displays playlists. Pressing the wheel loads the contents of the current playlist into the Edit Playlist Menu.

Options Menu (no or one title marked)	
Play entry	Plays the chosen song and switches to playback mode. Pressing the soft button (BCK) takes you back to the ' Edit Playlist ' menu.
Add entry	Switches to the playback window and adds a title to the playlist by pressing the soft button (ADD) to the current playlist. The wheel functions exactly like in the select mode: turn to choose the song, then press to play it.
Delete entry	Deletes title from the playlist.
Move entry	Turning the wheel, this moves a title up or down within the playlist. Pressing the wheel slots the song into its new position.
New Playlist	Deletes all titles from the playlist without asking for your confirmation.
Load Playlist	Switches to select mode, but only displays playlists. Pressing the wheel loads the contents of the current playlist into the Edit Playlist menu.
Save Playlist	Allows naming your playlist and saves the edited playlist.

Options Menu (more than one title marked)	
Unmark entries	Unmarks entries.
Delete entries	Deletes all marked entries without asking for your confirmation.
Save entries as	Allows input of file name or playlist and saves the marked titles as a new playlist.

Pressing ..back will take you back to the main menu.

Note: Any unsaved playlists will be lost when switching off the m3po. Please make sure you save your entries first.



As mentioned before, you can save your own playlists to the hard disk, provided there is one installed. Adding a filename and saving the pre-determined folder works like this:

- Turning the wheel changes the symbols, pressing it enters the symbol and switches to the next symbol. If you have made a mistake, you can always delete the previous symbol by pressing the STOP button.
- "UP" works like the SHIFT button on your computer keyboard. It lets you switch to capital letters.
- When you are finished, you can enter the name by pressing the soft button (Enter).
- Pressing the wheel saves the playlist (in the .M3U format, see page 44) to the folder, which you have chosen in the `Select Destination` menu function in the `HDD Functions` -menu. If you have not chosen a specific folder, the playlist will be saved in the main root of your hard disk. Pressing the soft button (ESC) cancels the operation.

You can find further information on playlists in the chapter "Playlists" on page 44.

HD FUNCTIONS.

If you have installed a hard disk (HD) in your machine, then you also have access to all functions for organizing your hard disk. More information on installing the hard disk is available on page 34.

Make Directory	Creates a new folder – in the current folder.
Remove File/Dir	Deletes the selected file (song or playlist) or the selected folder from the hard disk.
Select Destination	Here you choose the hard disk destination of your songs or playlists.
Free space on HDD	Indicates how much available disk space you have.
Format HDD	Formats the hard disk. Necessary immediately after installing it.

Pressing `..back` takes you back to the main menu.

Using `Make Directory` allows you to create new folders on the hard disk yourself in order to copy songs into it.

- Turning the wheel changes the symbols, pressing it enters the symbol and switches to the next symbol. If you have made a mistake, you can always delete the previous symbol by pressing the `STOP` button.
- `'UP'` works like the `SHIFT` button on your computer keyboard. It lets you switch to capital letters.
- When you have finished, you can enter the name by pressing the soft button (`Enter`).
- Entering symbols using exclusively the remote control is also possible. You can read all about it on page 32.

The `Select Destination` function will assist you with everything that has anything to do with creating folders and saving them to your hard disk. First you need to select an existing folder, or the main root and select the function by turning the `SELECT` wheel. The chosen folder will appear in the display. Now you can save or copy into this folder `.MP3` files or playlists.

SEARCH FILE.

This is a search function. Using the wheel, you can enter a file name (or part of).

- Turning the wheel changes the symbols, pressing it enters the symbol and switches to the next symbol. If you have made a mistake, you can always delete the previous symbol by pressing the STOP button.
- When you have finished, you can enter the name by pressing the soft button (Enter).
- The search engine will then browse the hard disk and the CD. Please note, that only .MP3 file names can be found– searching for ID tags or playlists would simply take too long.
- Searching using exclusively the remote control is also possible. You can read all about it on page 32.

Note: You can use this function during playback of another title. However, this may take a little longer. This is perfectly normal.



SOUND.

This menu allows simple adjustments to the sound of .MP3 files. You have bass and treble controls. Note: these adjustments only work for .MP3 files, the sound of audio CDs cannot be adjusted and will not be affected.

Pressing . .back takes you back to the main menu.

THE MORE MENU.

Here you have various different functions. They are in detail:

Sleep timer..	The sleep timer stops playback automatically after a certain period of time (10-120 minutes) and switches the CD transport and the HDD to a near silent standby mode. In order to prevent the machine from switching off while using it (i.e. to enter a playlist), pressing any button will add one minute to the timer.
AutoPlay..	Starts playback automatically when switching on. You can choose between First Song – plays the first song on the CD or HDD Shuffle Song – Randomly chooses a song from the CD or HDD
Party Lock..	Protects the m3po from unauthorized access. Lock CD Eject – prevents opening the CD drawer. Lock HD – prevents writing onto the HDD. Lock CD & HD – prevents opening the CD drawer and writing onto the HDD. Lock complete – disables all access to the m3po. Unlock complete – enables all access to the m3po. Set Password – lets you choose a password. You can read more on the Party Lock later.
Split mode..	Allows for a better display of very long file names or ID tags. You can read more on scrolling later.
Sort HD Directories	Organizes songs, playlists and folders in alphabetical order. Depending on the number of entries, this may take a little while.
Create HD index	Creates an index of all titles for faster access.
IDE Speed	Determines the speed of your IDE Interface (for CD and HDD) and, as such, the speed of copy and read operations. You can choose between the following: Slow – Slow data transfer. Most secure mode Normal – secure mode Fast – fast data transfer. Depending on the medium, this mode might produce errors.
Endless Select	Searching through a folder using the SELECT wheel switches back to the first one. So there is no need for endless scrolling.
Show ID Tags	Switches display of ID tags on and off (see page 45).
Introsan Time	Changes the intro time (s. Page 20 ff.).
Reset m3po	Resets all settings in all menus back to standard settings.
Scrolling	Switches the scrolling feature for titles with very long file (or folder, see page 29) names on and off. (Scrolling: 2s pause, from right to left, 2s pause and back).
Time and Date	Displays date, time and the machine's serial number.
Set Time and Date	Set date and time.
MPEG Info	Displays resolution and Bit rate of the current .MP3 file being played.
About m3po	Displays manufacturer's info about the m3po.

Pressing . .back takes you back to the main menu.

Party Lock.

The Party Lock function protects the m3po from unauthorized access, for example, when you are busy enjoying your own party as discussed above, there are several access restriction functions available. The only way to override this is to enter a password chosen by yourself.

To set a password, dial to "Set Password".

- Turning the wheel changes the symbols, pressing it enters the symbol and switches to the next symbol. If you have made a mistake, you can always delete the previous symbol by pressing the STOP button.
- Once you have finished, you can set the password by the soft button (Enter) and confirm it using the SELECT wheel.

The password can only be changed, when all functions of the m3po have been unlocked. **Important: Never forget the password! Once your m3po is locked, it stays locked – even after turning off the power and switching it back on.** However, if it does happen, (i.e. after severe amnesia) you will need to contact our technical support team. Please have your serial number and the average of your street number;-) ready, whenever you contact us.

INFO: The Emergency Exit (page 19) is still available, when party-locked.



Split mode.

Sometimes, your song names and / or folder names can be very long. To list those lucidly, the m3po offers a split mode. This will trigger an automatic shift in the display line, when certain common symbols appear in the name. These are:

- `-(dash)
- ` - ` (space, dash, space)
- ` _ ` (underline)
- ` --- ` (space, triple dash, space)
- `(` (closed bracket)
- `[` (closed corner brackets)

Finally, you can set the shift point to 20 symbols per line (>20 Chars). If the scrolling function has been activated, the names will be displayed without the shift break

Scrolling will not be activated, if this function has been turned off in the MORE menu.

MUTE.

The Mute function mutes the m3po. The chosen titles are still being played back inaudibly, though. (One could also refer to it as "being played virtually" ;-)).

VOLUME (PHONES).

Here you can adjust the volume of the headphones. Please note, that a value of higher than 10 causes distortion in many songs. This volume control does not affect the main output stage.

Pressing `..back` takes you back to the playback window.

Note: All settings – except for the settings in the playlist you change in all the menus, are kept after switching the player off. This means, you won't need to re-activate the DJ mode, if you like to use it regularly.

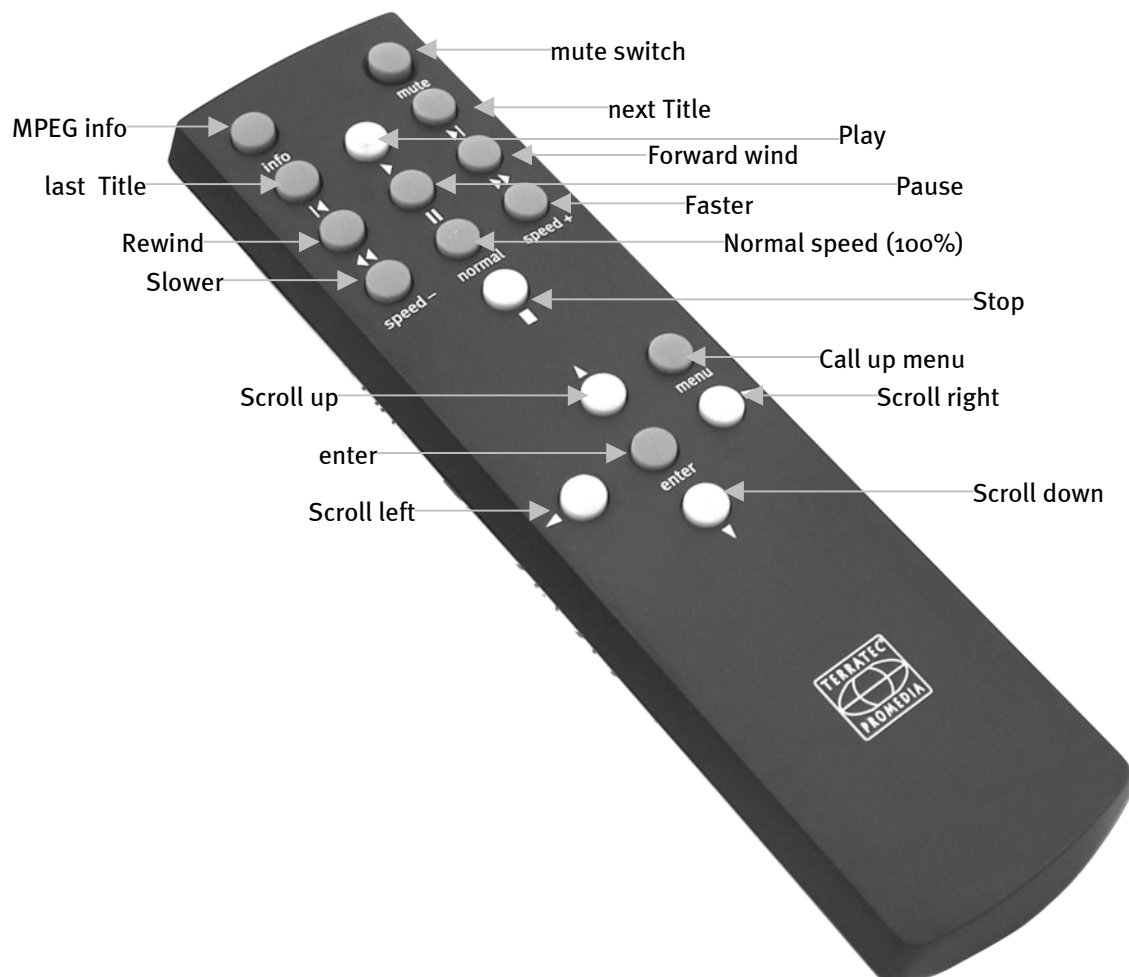


You can reset the m3po completely using the `Reset m3po`-feature in the `More`-menu.

THE REMOTE CONTROL.

Many important functions of the m3po can be accessed via its remote control. Please ensure that the space between the remote control and the machine is not obstructed. Infrared rays are light rays, which, according to today's scientific knowledge, do not pass through solid bodies. ;-)

The following graphic describes the functions in detail.



Symbol entry using the remote control.

The entry of symbols for the search function or for creating new folders is also possible – if a little bit tricky. This is how you do it:

- Select a symbol using the `arrow left` and `arrow right` buttons.
- The `arrow up` button switches between normal letters and capital letters. This function is only available for creating new folders. The search function (`Search`) does not require this function.
- `Enter` enters a symbol and moves cursor to the next position.
- The `arrow down` deletes a symbol and goes back to the previous one.
- Once you have finished, confirm the name by pressing `Play (!)`.
- When creating a new folder, you will be required to confirm for a second time by pressing `Play` again. Every other button cancels the operation. The second confirmation will not be required when operating the `SEARCH` function.

Decimal codes.

Friends of alternative remote controls will be looking for the decimal codes in order to program their own remote controls. For handheld devices utilizing Palm OS and IR interface can download the necessary software:

PalmRemote:

<http://hp.vector.co.jp/authors/VA005810/remocon/premocce.htm>

OmniRemote:

<http://www.pacificneotek.com>

Please note that these websites have been compiled independently from us and that we cannot accept responsibility for their contents. Thank you.

dec code	element	signature	Function
112	Info	info	Show MP3 Info on display
111	Mute	mute	Mutes the complete playback volume (headphones, lineout, CD and MP3 playback)
82	Previous	symbol	Skip to previous track
113	Play	symbol	Start playback of track(s)
83	Next	symbol	Skip to next track
97	Rewind	symbol	Search in playing track (rewind)
79	Pause	symbol	Pause playback
106	Forward	symbol	Search in playing track (forward)
80	Speed -	Speed -	decreases playback speed of MP3 Playback
86	Speed normal	normal	resets the speed of MP3 Playback to 100%
107	Speed +	Speed +	increases playback speed of MP3 Playback
108	Stop	symbol	Stop playback
109	Up	symbol	same function like ,up' button, see (2.)
110	Menu	menu	same function like ,menu' button, see (2.)
81	Left	symbol	same function like turning the wheel left, see (1.)
85	Enter	enter	same function like ,enter' button, see (2.)
70	Right	symbol	same function like turning the wheel left, see (1.)
87	Down	down	down for navigation in menu, or enter in related wheel mode

FITTING A HARD DISK.

The m3po can be equipped with an optionally available hard disk. The installation process is relatively simple, PC buffs will probably have already skipped this page. Please pay extra attention to the safety precautions.

Important: Disconnect the machine from the mains outlet and your hi-fi before opening the case!



Quick-guide for PC buffs.

- Use a normal (preferably quiet!) IDE drive, SCSI won't work.
- Size doesn't matter.
- The drive should be configured to SLAVE. AUTO or CABLE SELECT is not possible. Some hard disks, however, can cause problems when slaving to a CD drive. In this case, the hard disk must be set to MASTER and the internal CD-ROM to SLAVE.
- You can format it using your PC or the m3po. The format is FAT16/32-compatible.
- Have fun.

Which hard disk should I choose?

The m3po can accommodate standard 3,5" ATAPI IDE drives. There are currently no size restrictions, but at the time of writing this manual, we could only test drives of up to 35Gb.

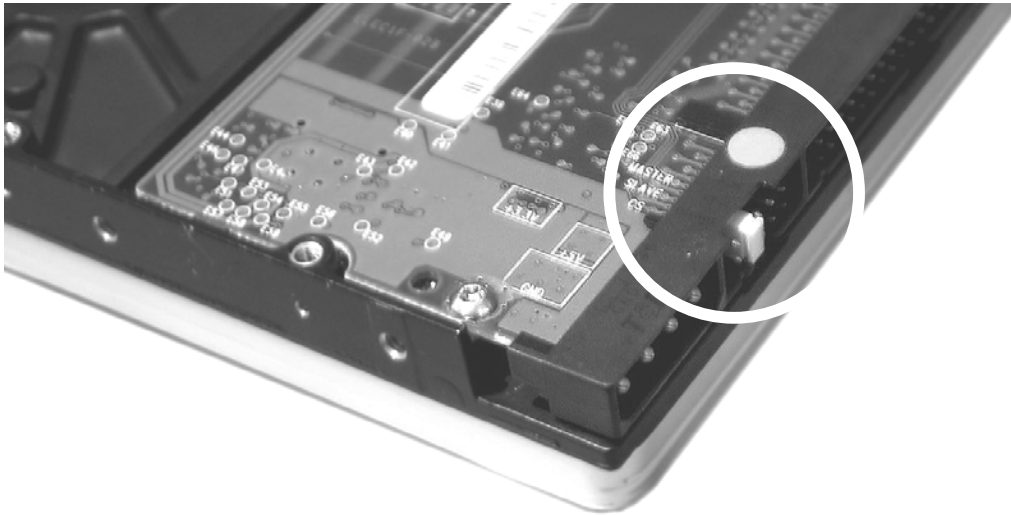
SCSI drives are not compatible with the m3po.

You should choose the quietest hard disk you can find. For research on this matter, you can consult computer magazines in addition to the manufacturer's information. Note: Investing in a proper and well-specified drive will pay off in the long-term.

STEP-BY-STEP.

- Touch the surface of the case and disconnect the unit from the mains outlet. This way, you prevent damage to the components due to your own static load.
- Open the lid with a crosshead screwdriver.
- Remove the hard disk from its packaging and take a closer look at its connections. A hard disk can be configured in two modes, MASTER (primary unit) and SLAVE (secondary unit). This is a legacy of its PC application, as a PC can run several hard disks. The m3po has already a CD drive installed (primary unit), and the hard disk should be configured accordingly:

The circle shows the jumper section of the hard disk. Next to it, you should find a little diagram depicting the SLAVE settings. Usually, only one jumper needs to be moved. That's all.



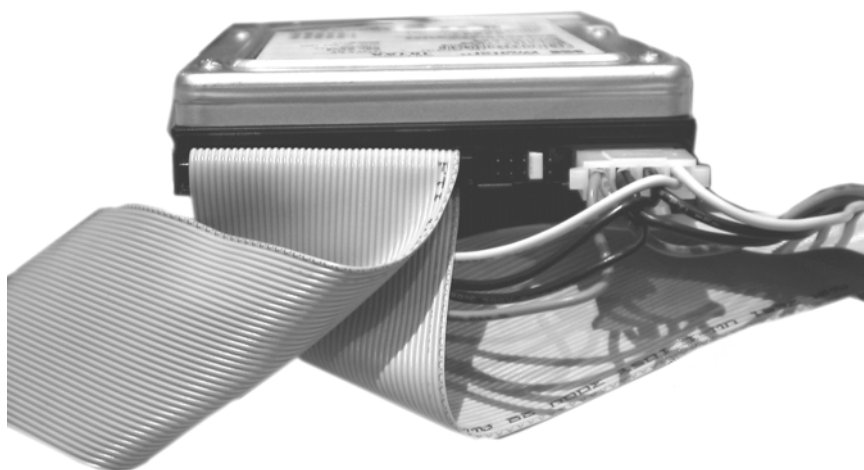
Set the hard disk to SLAVE or MASTER mode.

Note: Some hard disks, however, can cause problem when slaving to a CD drive. In this case, the hard disk must be set to MASTER and the internal CD-ROM to SLAVE. Use the same steps on the CD drive – move the plastic pin on the CD drive from MASTER to SLAVE.

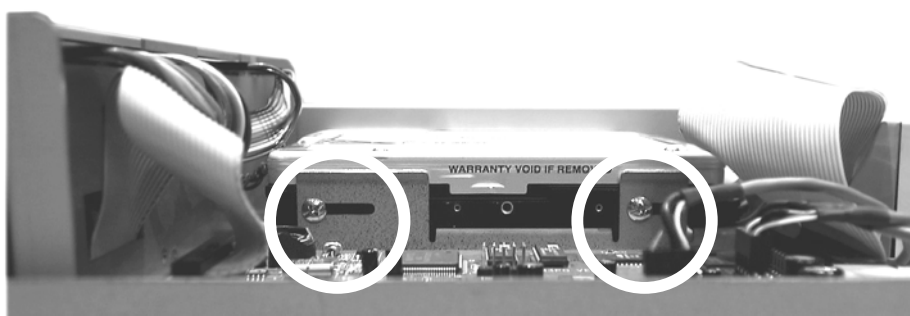
If you get stuck with our step-by-step guide, consult the hard disk's manual, or ask the vendor for help. Note for experienced users: The m3po does not support the AUTO-setting.



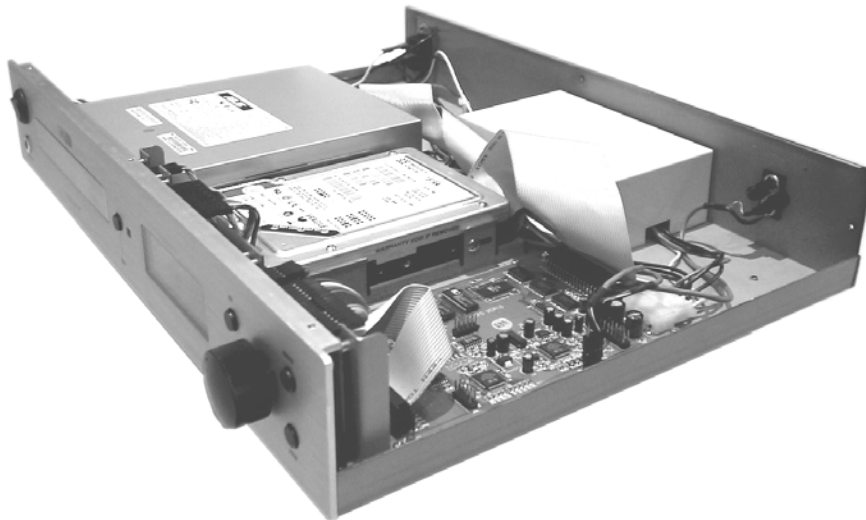
-
- Connect the ribbon cable to the hard disk. Important: The red lead of the cable must be connected to the side marked with "1". But usually, the layout of the plug prevents you from connecting it incorrectly.
 - Connect the multicolored cable to the hard disk. The yellow end of the cable must face the far end of the hard disk. But usually, the layout of the plug prevents you from connecting it incorrectly.



- Affix the hard disk to the fixing points using the screws supplied with your m3po.



Affix the hard disk with two screws.



A correctly installed hard disk.

- Close the case of your m3po. Make sure you do not leave anything inside, which doesn't belong there.
- Finally, reconnect the m3po to the mains outlet and switch it back on.
- Read the following page.

WHAT HAPPENS NEXT?

To be able to use the hard disk, you need to prepare it for operation. In PC terms: You will need to format it.

After switching on, dial up the menu and go to `HDD Functions...`

Select `Format HDD` and confirm this. The hard disk will be formatted. Any data, which might have been stored on the HDD will be permanently erased.

After formatting the HDD, you can now access the hard disk as well as the CD drive. The hard disk appears on the main root directory together with the CD drive and can be accessed using the `SELECT` wheel and the `UP` button.

The `HDD Functions` menu described above contains several more functions. You can, for example create, or delete, folders and – most importantly – copy from CD to HDD. The `Free space on HDD` feature indicates the available disc space in Megabyte (MB). A common 128kBit/s–rate will accommodate about two weeks of non-stop music on a 20Gb hard disk.

Note: All HDD functions stop playback automatically.



Tip: The file system of a hard disk formatted inside the m3po is FAT32 compatible. This allows you to store .MP3 Data on your hard disk with compatible software (Windows and Linux; Macintosh with additional software) and access it in your m3po.

COPYING FILES.

Copying data from CD to HDD is simple. Choose the title in the usual way and press down the SELECT wheel for about two seconds. The file will then be copied to the hard disk's main root .

The same applies to copying complete folders. However, do not open the folder by pressing the wheel so that the folder's contents is displayed.

It is also possible to copy a file or a complete folder from CD into another folder on your HDD.

- Use the wheel to navigate as usual until you reach the folder, which you want to copy into. Do not open the folder (see above)
- Find the `Select Destination.` -function and confirm this by pressing the SELECT wheel.
- Select the title on the CD and press down the SELECT wheel for about two seconds. The track will now be copied to the destination of your choice.

It is not possible to copy a playlist, as the titles on the lists are not necessarily on the disc, and more importantly, in the same location. Has a playlist and all its titles been saved to one folder, then the entire folder and its playlists will be copied to HDD.

SOFTWARE UPDATES.

The functions of your m3po may conveniently be updated from time to time. As with many other hard and software products, upgrades are provided by TerraTec Electronic GmbH over the Internet – usually free of charge. Alternatively, we can send you the upgrade on CD-ROM subject to a minimal charge

Our web-address is: <http://www.m3po.net> .

INSTALLING UPDATES.

Upgrading the m3po is very simple thanks to an improved monitor function (version 2.0 and later). If you have downloaded the upgrade from the Internet, you will find the file

M3POOSxxx.EXE (where x stands for the version number), which can be run under Windows. After running the program, you will find a number of files with the .BIN extension. Copy these files to CD and ensure, that they are directly on the root directory, and not hidden away in folders! It is possible to burn other data onto the CD (i.e. more songs) and use the one CD for a multi-session.

Note for users of other operating systems (i.e. Linux): The .EXE file should show up in your zip files and can be unpacked manually

Depending on which m3po OS version you are updating from, just follow the steps:

Updating from version 1.xx .

- Insert the CD in the m3po.
- After the automatic scanning process, press the menu button and
- Select the MORE menu.
- Select "Update with CD.." .
- The display will now indicate, that it has found an update (Update was found). If you do not wish to update at this point, press the soft button (ESC). Otherwise...
- ... press down the wheel.
- After a few seconds, the message 'Update finished' will appear.
- Switch the m3po off and wait for about 2-3 seconds.
- Press down the STOP button when switching back on.
- After initialization, the new 'M3PO Advanced Monitor' will appear.
- Press the MENU button and
- select 'Update from CD'.
- The display will now indicate, that it has found an update (Update was found).
- Press down the wheel.
- After a few seconds, the message "Update finished" will appear.

The m3po will now resume normal operation. The update has been installed successfully.

Note: Menu settings will be lost after auto-reset (see page 28, ' The More Menu. ')

Updating from version 2.xx .

- Insert the CD in the m3po.
- Switch the m3po off and wait for about 2-3 seconds.
- Press down the STOP button when switching back on.
- After initialization, the new "M3PO Advanced Monitor" will appear.
- Press the MENU button and
- select "Update from CD".
- The display will now indicate, that it has found an update (Update was found). If you do not wish to update at this point, press the soft button (ESC). Otherwise...
- ... press down the wheel.
- After a few seconds, the message "Update finished" will appear.

The m3po will now resume normal operation. The update has been installed successfully.

Note: Menu settings will be lost after auto-reset (see page 28, 'The More Menu.')

Tip for the pro's: From version 2.0 and later, you can also upgrade from HD ('Update from HD').



Downgrading a new operating system to version 1.xx .

Just in case you still prefer the old operating system, you could perform a downgrade. For this purpose, the old files `M3PO.BIN` need to be renamed to `M3PO_MON.BIN`. Burn a CD with the file in the usual way and ...

- ...insert the CD in the m3po.
- Switch the m3po off and wait for about 2-3 seconds.
- Press down the STOP button when switching back on.
- After initialization, the new 'M3PO Advanced Monitor' will appear.
- Press the MENU button and
- select "Update from CD".
- The display will now indicate , that it has found an update (Update was found). If you do not wish to update (or downgrade) at this point, press the soft button (ESC). Otherwise...
- ... press down the wheel.
- After a few seconds, the message "Update finished" will appear.

The m3po will now resume normal operation. The update has been installed successfully.

Note: Menu settings will be lost after auto-reset (see page 28, "The More Menu.")

Updating "M3PO Advanced Monitor" from version 2.xx .

- Insert the CD in the m3po.
- Switch the m3po off and wait for about 2-3 seconds.
- Press down the STOP button when switching back on.
- After initialization, the new "M3PO Advanced Monitor" will appear.
- Press the MENU button and
- select "Update from CD".
- The display will now indicate , that it has found an update (Update was found). If you do not wish to update at this point, press the soft button (ESC). Otherwise...
- ... press down the wheel.
- After a few seconds, the message "Update finished" will appear.

The m3po will now resume normal operation. The update has been installed successfully.

Note: Menu settings will be lost after auto-reset (see page 28, "The More Menu.")

Caution: A power cut during the software installation process may cause damage to the operating system (EEPROM). Never perform a software update during thunderstorms or in areas with high fluctuations in the mains voltage.



PLAYLISTS.

The m3po offers great possibilities to compile, save and playback of playlists. Playlists consist of pre-programmed titles which are played back by the m3po. You can read more on this in the chapter "Menu functions" on page 19. If there is a hard disk installed in the m3po, these lists can be saved to disc and played back.

The playlists used by the m3po are .M3U compatible, which has been made a common standard by the Winamp Player. This allows you to compile playlists inside your PC and burn these to CD together with your .MP3 data.



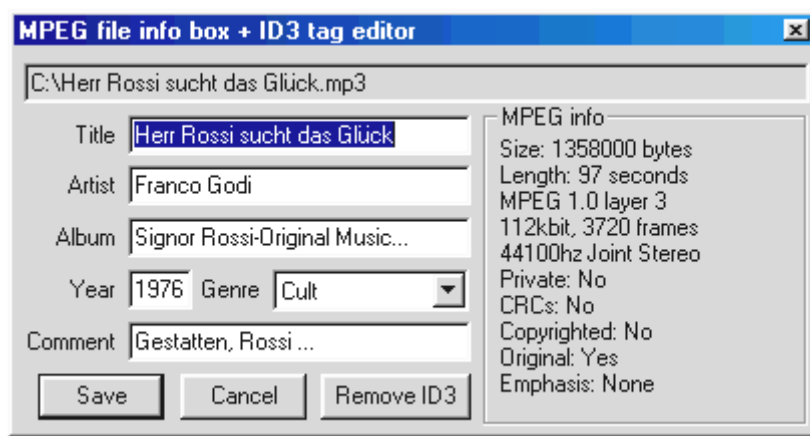
When copying playlists ...

When copying playlists from CD to HD, please note that it is not possible to copy a complete playlist, as the titles on the lists are not necessarily on the disc, and more importantly, in the same location. If a playlist and all its titles have been saved to one folder, then the entire folder and its playlists will be copied to HD.

You can read more on this subject on page 39.

WHAT ARE ID TAGS?

ID Tags are additional information contained within the .MP3 file. A small part in the header of the .MP3 file is reserved for the track name (which need not be identical to the file name), artist and album. In addition, you could store information on the year of release and music style. This data, however, is not displayed in the playback mode, but is available on pressing the info button on the remote control (or when accessing the "MPEG Info" function in the MORE menu).



ID Tag in Winamp Player.

The display of ID Tags can be disabled in the MORE menu. See page 28.

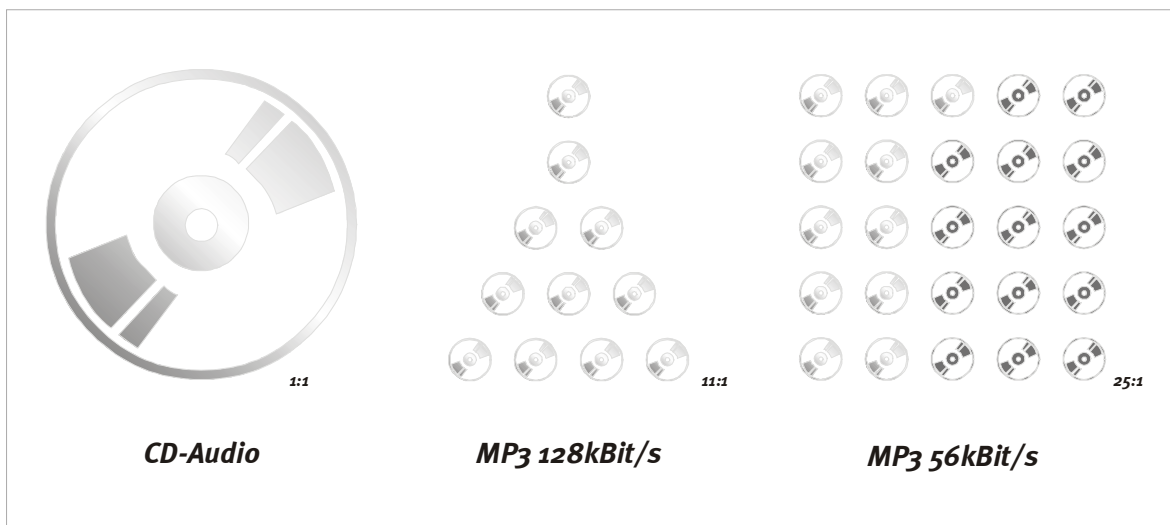
USEFUL INFORMATION ON MP3.

Here we have compiled some general information on MP3, its origin and software to convert your own music and, most important, what is allowed and what is not?

WHAT IS MP3?

MP3 is an abbreviation for MPEG Layer 3, which in turn contains another abbreviation: MPEG = Motion Picture Experts Group, which is governed by a group of competent experts from film production industry. MPEG is basically a storage format for audio and video data, which has been in constant development for years. The basics for today's popular third layer of the MPEG2.5 audio specification has been developed in the late eighties by the Fraunhofer Institut für integrierte Schaltungen (Fraunhofer IIS - Germany).

Its main advantage is the small size of its audio files, as described in the following example: If you record a standard audio CD on your home PC, then this will use about 650 Megabyte (MB) of hard disk space. Converting this into MP3 files, you are presented with only 1/11 of its original size, roughly 60MB. If the files contain nothing but speech (i.e. language courses), the size of the file can be reduced to 1/25 of its original size, without losing too much of its sound quality. This is quite useful, as you can see:



How come?

"Layer 3" is a clever combination of data compression and data reduction. This means that digital data is being compressed (The PC calls this 'packing', for example when converting to the .ZIP format). In the process, the data will be scanned for repeat data. To save space, this data will only be saved once and tagged with information, where it needs to re-appear. This can account for massive reduction in storage space and means that the data will be identical to the original, once 'unpacked' (i.e. decompressed).

In order to achieve a decrease of 1:11 or more, another process will be required - data reduction. You may have guessed by its name, that some data will actually be cancelled in this process. As the most important aspect is what you are left with, we will take a quick look at the actual process:

The applied data reduction is based on algorithms, which cancel out inaudible data. For example, the brain can hardly hear very quiet sounds, which occur immediately after (a few milliseconds) after a loud signal. If the sounds are outside the frequency spectrum of the human hearing, it becomes literally impossible.

Canceling this data in the recording process leads to another significant reduction in data. This data has now been permanently erased from the original file. This shouldn't be too much of a problem. Reducing data to one eleventh of its original size (128kBit/s) in this manner, does lead to an audible difference to CD, but the quality should not really be the issue here. .MP3 was never developed in competition to CD, but to offer an alternative option of storing your audio data. And .MP3 is a great alternative, which is a great benefit to the user.

Legal or not?

The issue of legality will be on many people's mind. What is legal and what is not?

There is a , possibly, quite legitimate objection from the music industry against the use of this technology: The Internet is being used to distribute copyright-protected art forms (music in this case). This cannot be questioned, as, given enough time, you can find loads of information on the Internet, which really doesn't belong there.

At this point, we would like to ask you to handle this issue responsibly, because it is not only the industry, which can be damaged from the Internet, but also the artists themselves, especially those ones, who have no alternative of marketing their product.

The private use of this technology with legally purchased material, has not been a problem so far – enough for us to develop and supply machines, which make the most of this new medium. So how do you use your player that no-one goes empty-handed? The best way, of course, is to have direct access to your vast amount of music on an HD. Therefore, you need to have purchased the music legally, usually on CD. You can save these CDs to HD, convert them to .MP3 files and use them in your m3po player – as you have always done with conventional CDs for private use. At this point, we would like to draw a comparison with copying to tape (for your car stereo), or minidisk – everything OK.

However, it is generally not allowed to copy complete CDs for public (non-private) use.

In connection with this, the Internet should not be branded a nest of illegal activities. The web is already the information source No. 1 and as a result, your first point of contact for purchasing .MP3 software, or simply for learning more about the .MP3 format. Also, more and more record labels appear in the web and offer hundreds of thousands of songs from newcomers, as well as more established artists like: Alanis Morissette, Tori Amos, David Bowie, Beastie Boys, Billy Idol, Peter Dinklage, Dionne Warwick, George Clinton, Die Toten Hosen – the list is exhaustive. And this is only the beginning of a new format, which had been dreamt of by many artists (and predicted by not so many...) for years.

How does it all work?

So how do you create an .MP3 file and how do you get it into your player? An important question, and we would like to answer it right here.

As described above, the .MP3 format differs greatly from the data you find on an audio CD. .MP3 files are data-reduced, which means that they are manipulated by computer software. This shrinking process is called encoding. This is very time-consuming, as the data is being scanned for repeat data, which can be filtered out. The encoding process itself can be done by yourself, given the right software – The only other thing you'll need is a fast PC or lots of time.

The most common practice these days is the reading of audio files and the subsequent encoding in the .MP3 format. First, the CD's content will be saved to disc. Providing you are using a high-quality CD drive, the copy will be identical to the original – even though minor errors can occur, they are usually inaudible .

Once the data is on HD, you can start the encoding process. Here you can usually choose the amount of data compression you want to apply to the data. This compression (next to data reduction) is measured in kilobits per second (kBit/s), for example 96kBit/s. The smaller the value, the smaller the size of the .MP3 file. But also the bigger the deterioration in sound quality. Music in stereo CD quality requires a value of no smaller than 112-128kBit/s. Speech (mono) is usually being compressed to a value of 32-56kBit/s . The following table will show you a few applications:

ity	kBit/s	Reduction
Telephone	8	96:1
Better than short wave radio	16	48:1
Good general quality	32	24:1
Radio quality (stereo)	56...64	26...24:1
Near CD quality (stereo)	96	16:1
CD quality (stereo)	112..160	14..8:1

The m3po processes bit rates of up to 320kBit per second.

The coded data can be burned to CD and played back by your m3po. As simple as that.

INTERNET LINKS.

The fastest way to find more information on .MP3 and music, is to search the Internet. The following addresses should offer you a starting point:

Provider	Description	http://
TerraTec	Your manufacturer.	www.terratec.net
TerraTec	The m3po Homepage.	www.m3po.net
Fraunhofer Institut	Where it all began.	www.iis.fhg.de/amm/ techinf/layer3/index.html

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EXHIBIT 3

SIREN™ Jukebox

Product registration

To register on-line with Sonic Foundry, please follow the steps outlined in the registration wizards upon installation of this product.

Registering your product will provide technical support, notification of product updates, and special promotions exclusive only to Siren registered users.

Sonic Foundry product registration helps protect against software copyright infringement and allows us to provide support exclusive to registered users.

If you do not have access to the Internet, registration assistance (in English) is available. Please contact our Customer Service Department, 24 hours per day, seven days per week.

Telephone

- 1-800-577-6642 (toll-free) in the US, Canada, and the Virgin Islands.
- +800-000-76642 (toll-free) in Australia, Denmark, France, Germany, Italy, Sweden, UK, Netherlands, and Japan.
- +608-256-3133, extension 2300 in all other countries.

E-mail

customerservice@sonicfoundry.com

Fax

1-608-250-1745

Technical Support

1-608-256-5555 Monday through Friday between 7am and 10pm (CST).

Fax: 608-250-1745

E-mail: support@sonicfoundry.com

Sonic Foundry, Inc.
754 Williamson Street
Madison, WI 53703

Sonic Foundry Europe

PO Box 2903
2601 CX Delft
Netherlands

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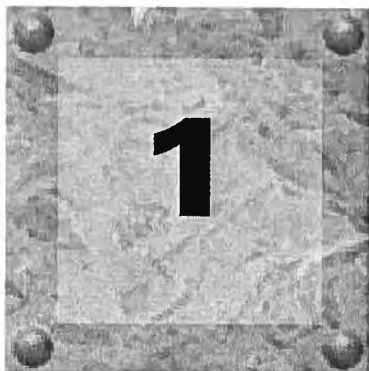
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SIREN™ Jukebox

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Overview

Introduction

Sonic Foundry's SIREN™ Jukebox allows you to play audio CDs and music files of various formats from your computer. SIREN Jukebox will record music from your personal CD collection to your computer for playback, as well as allow you to create custom CDs and download music to portable players.

With SIREN Jukebox, you can organize create and organize a personal music library, making it easy to locate a specific song, even in an extensive collection. SIREN Jukebox will also sort, group, and filter your music library to create custom playlists for any occasions.

This manual describes the basic features of SIREN Jukebox, and provides the procedures needed to take full advantage of the program.

SIREN Jukebox Highlights

Siren will help build and manage your music collection by:

- Playing CDs and music files.
- Recording music from CDs to the computer for playback.
- Organizing music into playlists.
- Storing extensive database information for your music library.
- Helping you download music from the Internet.
- Creating custom CDs from your music library.
- Downloading music to portable players.

System Requirements

The system's components affect Siren's performance. What follows is a list of the minimum, common, and recommended system requirements.

Minimum System Requirements

- 200 MHz processor
- VGA display
- 32 MB RAM
- DirectX Media 6.0 or later

Common System Requirements

- Microsoft ® Windows™ 98, 2000, or NT 4.0
- CD-ROM drive
- Supported CD-Writer (for CD writing features)
- Supported portable player (for portable player features; not available for Windows NT or Windows 2000 systems)
- 20 MB hard-disk space for program installation
- Windows-compatible sound card
- Internet Explorer™ 4.0 or later to view the online help
- 1024x768 pixel screen area

Recommended System Requirements

- 4 GB of hard drive space (This allows for storage of over 100 CDs).

Note: When recording at CD quality, one minute of recorded music uses 1 Mb of storage space.

- 24-bit color display (for viewing spectrum and scope analysis)
- 64 MB RAM

Registration

Registering a SIREN Jukebox Download

Users who own a full version of Siren 1.0 and download Siren 1.5 from the Sonic Foundry web site, need only to uninstall the previous version and install the updated application. The Siren 1.0 serial number or product unlock key will unlock a full version of Siren 1.5.

Once Siren is unlocked, choose **Register Siren** from the **Help** menu and follow the dialog instructions to register the program. While registering is not mandatory, it allows Sonic Foundry to provide you with technical support, application updates, and special promotions.

Registering a Sonic Foundry SIREN Jukebox CD

Sonic Foundry's new browserless registration process allows owners to immediately begin taking full advantage of Siren's powerful array of features. The system will automatically detect if Siren is being installed from an authentic Sonic Foundry CD, and if so, unlock all of the program's features without requiring any user input.

Once Siren is unlocked, choose **Register Siren** from the **Help** menu and follow the dialog instructions to register the program. While registering is not mandatory, it allows Sonic Foundry to provide you with technical support, application updates, and special promotions.




If the application was not purchased, users may elect to purchase a full version of Siren, or use Siren XPress.

Purchasing a Full Version of SIREN Jukebox

If Siren was not purchased, a registration dialog is displayed the first time the program is launched. From this dialog, users may elect to enter a serial number for a full version of Siren, or use Siren XPress.


Purchasing SIREN Jukebox Online



To purchase Siren online:

1. Select the I would like to use Siren XPress radio button and click . Siren XPress is launched.
2. From the **Help** menu, choose **Instant Upgrade**. The Purchase Upgrade dialog is displayed.
3. Select the I want to purchase online radio button and click . The system attempts to launch its browser and connect to the Sonic Foundry Web site.
4. Follow the instructions to purchase the upgrade. When the transaction is completed a Product Unlock Key is e-mailed to the user.
5. Enter the Product Unlock Key and click . The full version of Siren is unlocked.

Purchasing SIREN Jukebox Over the Phone

To purchase Siren over the phone:

1. Select the I would like to use Siren XPress radio button and click . Siren XPress is launched.
2. From the **Help** menu, choose **Instant Upgrade**. The Purchase Upgrade dialog is displayed.

3. Select the I want to purchase over the phone radio button and click . The Purchase Upgrade via Phone dialog is displayed.
4. Write down the provided Computer ID number and contact the Sonic Foundry Customer Service Department at:
 - 1-800-577-6642 in the U.S., Canada, and the Virgin Islands
 - +800-000-76642 in Austria, Denmark, France, Germany, Italy, Sweden, UK, Netherlands, and Japan
 - +608-256-3133 extension 2300 in all other countries
5. When the transaction is complete, enter the Product Unlock Key and click . The full version of Siren is unlocked.

Note: *Note: The Computer ID is a number that serves to identify the computer for licensing purposes only, and contains no specific information about you, your computer, or any files or other data on your system. Sonic Foundry is aware of your privacy concerns and strives to collect only as much data as is required to make your Internet and/or product use experience as efficient and satisfying as possible.*

Using SIREN Jukebox XPress

Users not wishing to purchase a full version of Siren may use Siren XPress, a limited version of the application, free of charge. To avoid confusion, features included only in the full version of Siren are identified with the following icon:



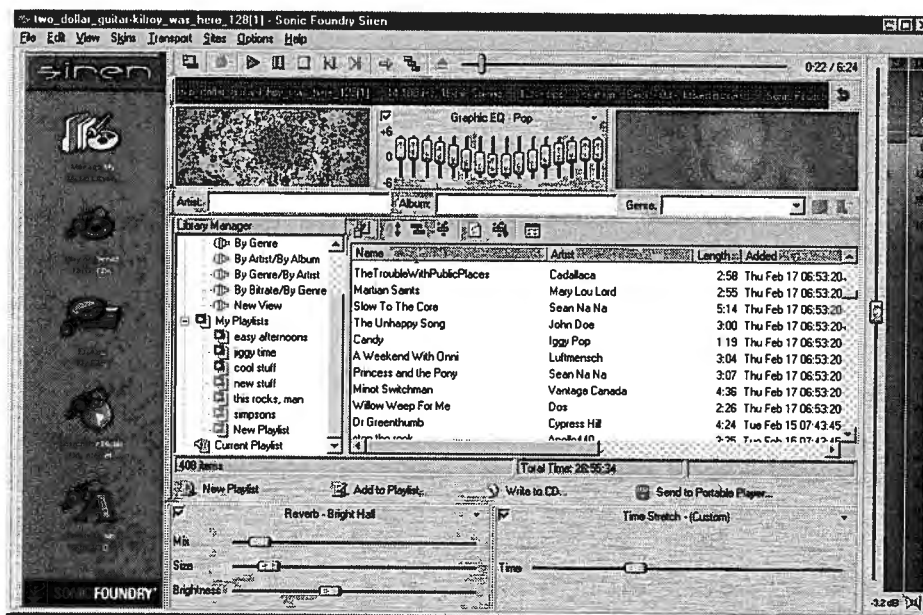
Music Files

Music files are any audio file Siren will playback from the computer. Siren supports the following audio file formats:

File Type	Extension	Description
Wave (Microsoft)	*.wav	Standard audio format used on Windows-based computers.
MPEG Layer 3	*.mp3	Popular audio compression format. In addition to playing .mp3 files, Siren can create .mp3 files from music recorded off audio CDs, and from .wav files. .Mp3 files are the only files that can be downloaded to portable players.
Windows Media Audio	*.wma	Microsoft file compression format that provides security features to prevent unauthorized duplication. In addition to playing .wma files, Siren can also create .wma files from music recorded off audio CDs, as well as from .wav and .mp3 files.

Main Window

Siren's main window and panels are depicted below. Each of the labeled panels can be toggled on/off by choosing the appropriate panel in the **View** menu. *For more information, see SIREN Jukebox Panels on page 15.*



Note: For detailed information regarding the main window, refer to online help.

Using Online Help

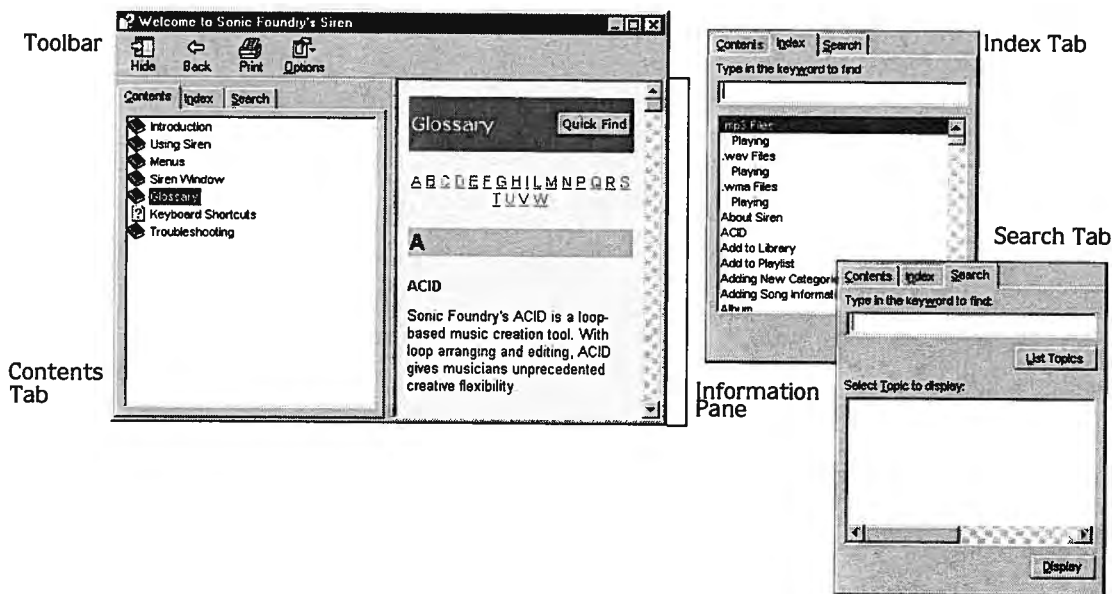
Siren includes online help, which contains detailed information about all program components and functions. Internet Explorer 4.0 or higher (included on the Siren CD-ROM) must be installed on the system to view online help.

Accessing Help

Online help is displayed using the keyboard or the **Help** menu.

Main Help Window

The main help window is displayed by choosing Contents and Index from the **Help** menu or by pressing the **[F1]** key. The main help window contains three tabs which are used to locate the desired information.



The Contents tab provides a categorized listing of available help topics. Click a book (📖), and a topic page (📄) to display a topic.

The Index tab provides a complete listing of the help topics available. Use the scroll bar to scroll through the list or enter a word in the text box to quickly locate related topics. Select the topic and click **Display**.

The Search tab allows users to enter a keyword and display all pertinent topics in online help. Enter a keyword in the text box and click **List Topics**. Select a topic from the list and click **Display**. The selected topic is displayed in the information pane.

Help on the Web

Additional help is available on the Sonic Foundry web site. To quickly connect to the Sonic Foundry web site, choose **Sonic Foundry on the Web** followed by the appropriate help subject from **Help** menu. Siren launches an internal browser and attempts to connect to the appropriate page on the Sonic Foundry web site, via your Internet Service Provider (ISP).



Setting Up SIREN Jukebox

SIREN Jukebox Settings

Prior to using Siren, users must configure various operating settings to allow them to take full advantage of Siren's features.

Before using Siren for the first time, users should:

- Customize the Siren window; displaying, sizing, and arranging panels to make the screen as comfortable and intuitive as possible. *For more information, see Customizing the SIREN Jukebox Screen on page 9.*
- Specify the music library folders using the Configuration Wizard. *For more information, see Configuration Wizard on page 10.*
- Verify that the computer is configured to play CDs automatically. *For more information, see CD Autoplay on page 47.*
- Search the computer for music to begin building a music library.

Customizing the SIREN Jukebox Screen

Users can move and resize the majority of Siren's panels. Panels can also be toggled on/off by choosing the appropriate panel from the **View** menu. *For more information, see SIREN Jukebox Panels on page 15.*

Configuration Wizard

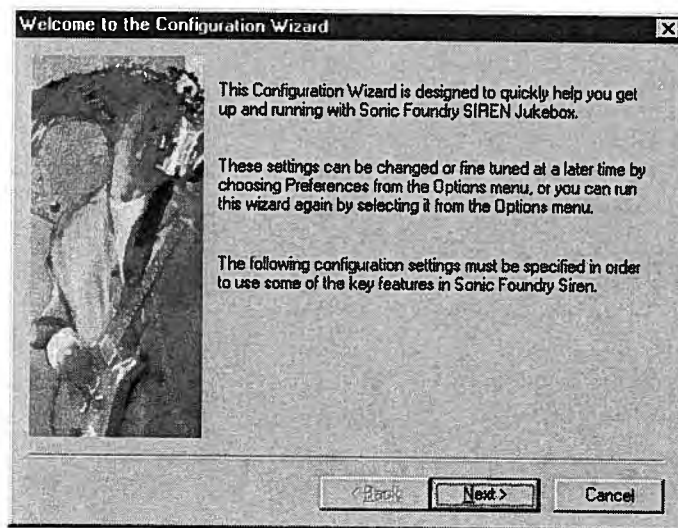
The Configuration Wizard is automatically launched the first time Siren is run, and allows users to configure their Siren preferences.


Note: *The Configuration Wizard can also be launched by choosing Configuration Wizard from the **Options** menu.*

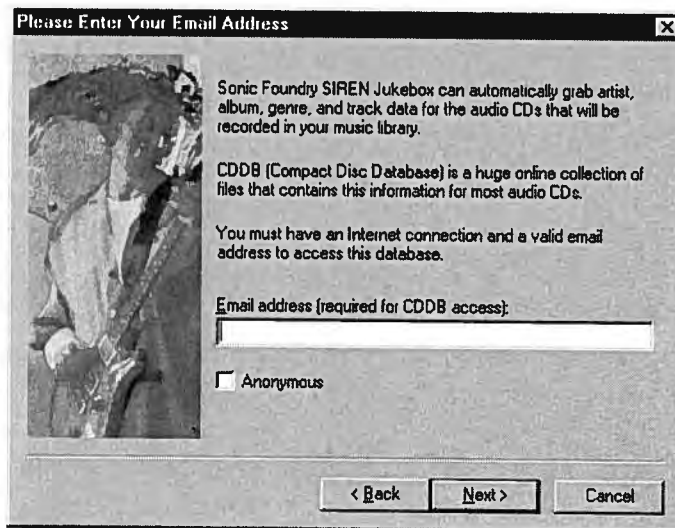
Completing the Configuration Wizard


To use the Configuration Wizard:

1. Choose Configuration Wizard from the **Options** menu. The Welcome to the Configuration Wizard dialog is displayed.

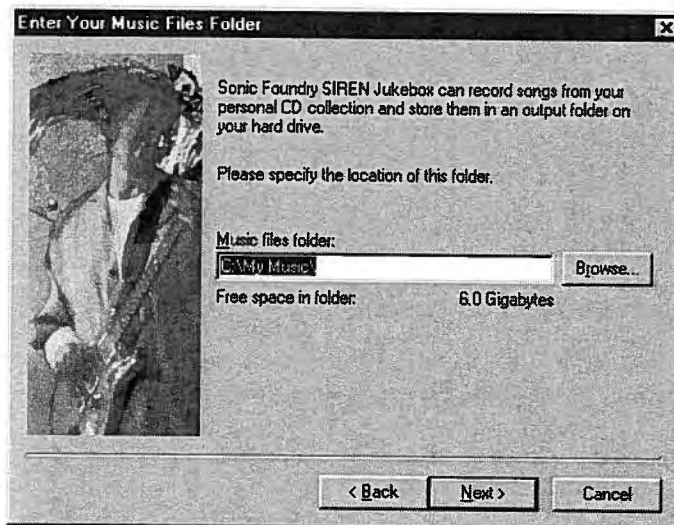




2. Click . The Please Enter Your Email Address dialog is displayed.

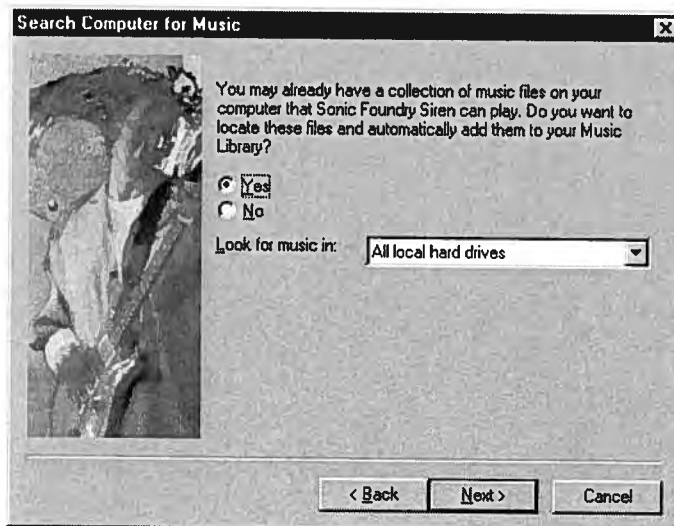



3. Enter an appropriate e-mail address in the field and click . The Enter Your Music Files Folder dialog is displayed.

Note: Users not wishing to provide an e-mail address can simply select the Anonymous checkbox.



4. Accept the default folder location or click  and select the system folder in which Siren will store music files.
5. Click . The Search Computer for Music dialog is displayed.

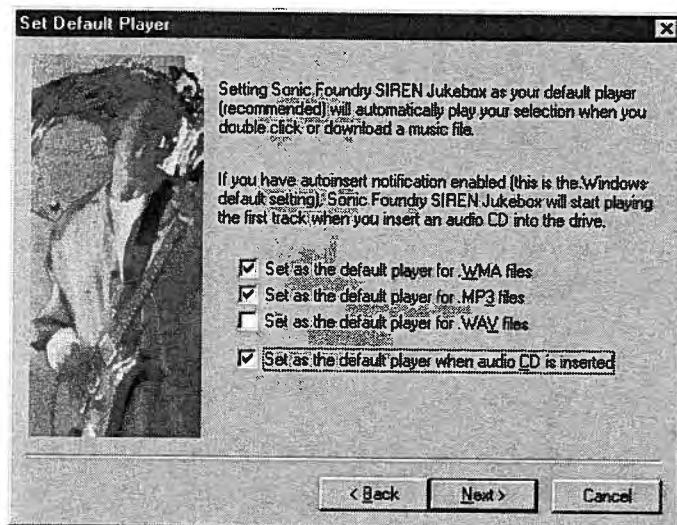



6. If necessary, specify a drive to search from the Look for music in drop-down list and click . Siren searches the selected hard drive(s) and indicates the number of music files found.

Note: Users not wishing to search for music should select the No radio button.

For more information, see *Searching for Music on a Hard Drive* on page 13.

7. Click . The Set Default Player dialog is displayed.



8. Select the checkbox(es) corresponding to the file type(s) for which Siren will serve as the default player.
9. Click . Siren's preferences are configured. Individual settings may be edited by choosing Preferences from the **Options** menu.

Searching for Music on a Hard Drive

Siren will scan the specified drive(s) for .wav, .mp3, and .wma files, then either physically move the files to the music files folder or simply add links to each song.



To search the computer for music:

1. Choose Search Computer for Music from the **Options** menu. The Search Computer for Music dialog is displayed.



2. Specify the drive(s) to be searched in the Look for music in drop-down list.
3. Select the checkbox(es) corresponding to the file format(s) to be added.
4. To physically move files to the music library folder, select the Move located music files into my music files folder checkbox.

When this checkbox is cleared, music files remain in their system location, and Siren simply creates links to the Manage My Music Library view.

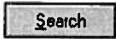

5. Click  to begin searching. Once Siren has completed the search, it indicates the number of music files found.
6. Click . The music search is completed and Siren's main window is displayed.

Searching for Music in a Network, Removable Drive, or Folder

To search a network, removable drive, or folder for music:

1. Select the Navigator panel's Explore My Files icon.
2. Use the tree view to select the drive or folder to be searched.
3. Right-click and choose Search For Music from the shortcut menu.
4. The Search Computer for Music dialog is displayed.
5. Select the checkbox(es) corresponding to the file format(s) to be added.
6. To physically move files to the music library, select the Move located music files into my music files folder checkbox.

When this checkbox is cleared, music files remain in their system location, and Siren simply creates links to the Manage My Music Library view.


7. Click  to begin searching. Once Siren has completed the search, it indicates the number of music files found.
8. Click . The music search is completed and Siren's main window is displayed.

Compact Mode

Siren allows users to place the application in compact mode and use skins to give the Siren a new look. Though skins typically include only a portion of available Siren controls (often only the Transport bar) they are convenient for placing on the desktop and providing limited Siren control while working in another application.

Toggling Compact Mode On/Off

Users can toggle between Siren's compact and normal modes by:

- Clicking  in the Transport toolbar
- Choosing Compact/Skin Mode from the **View** menu
- Pressing **Ctrl+M** on the keyboard

Selecting a Skin

Siren features a number of built-in skins. To use a skin, simply select it from the **Skins** menu. Siren is automatically placed in compact mode and the new skin is displayed.

Getting More Skins

Users can download additional Siren skins, as well as the resources needed to create custom skins. To download new skins, or the Sonic Foundry Skin Grafters Kit, choose **Get Skins** from the **Skins** menu. Siren launches the internal browser and attempts to connect to the page of the Sonic Foundry web site dedicated to Siren skin support.



SIREN Jukebox Panels

SIREN Jukebox Panels

Siren features a number of panels designed to help manage music collections, customize audio attributes, and enhance the jukebox experience.

Displaying Panels

To toggle a panel display on/off, select the appropriate panel from the **View** menu.

Navigator



The Navigator panel displays several icons designed to assist users in acquiring and managing personal music libraries.

My Music

The Manage My Music Library icon displays the contents of a personal music library, views and playlists, in the Explorer panel.

Audio CD

The Play or Record Music CDs icon lists the contents of the audio CD in the system's current CD drive.

Explore

The Explore My Files icon launches an Explorer within Siren, allowing users to navigate the system without exiting the application.

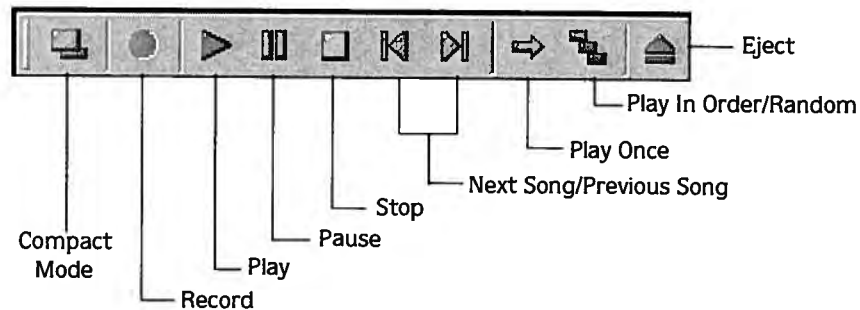
Get Music

The Search for Music on the Internet icon launches Siren's internal browser and displays links to several Internet music resource sites.

Create Music

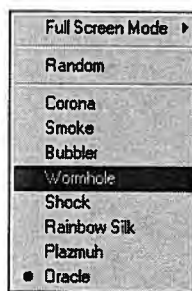
The Create Music with ACID icon launches any Sonic Foundry ACID product installed on the system. If an ACID product is not located on the system, Siren launches an internal browser and attempts to connect to the area of the Sonic Foundry web site dedicated to ACID.

Transport



The Transport panel contains buttons corresponding to Siren's music playback control. For more information regarding the Transport panel, refer to online help.

Spectrum



Spectrum is one of Siren's two visual displays. The Spectrum panel is capable of displaying real-time visualizations based on FFT (Fast Fourier Transform) analysis of songs.

Selecting the Spectrum Display

To select the Spectrum panel display, right click on the panel and choose the desired display from the shortcut menu.

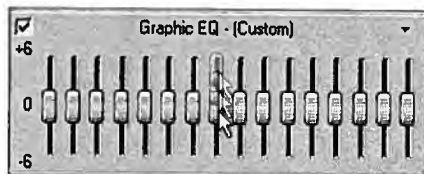
Full Screen Mode

Selecting full screen mode expands the Spectrum display to fill the screen at a user-specified resolution.

Graphic EQ

The Graphic EQ panel divides the audio spectrum in sixteen bands, and allows users to customize their listening experience by boosting or cutting specific frequencies.

Setting the Graphic EQ

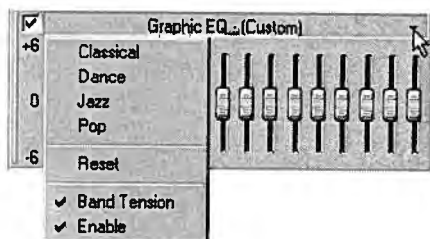


To adjust a band, left-click on the fader thumb, and using the mouse, drag it up or down. If **Band Tension** is disabled, individual bands can be adjusted independent of the surrounding faders. If **Band Tension** is enabled, adjusting a fader affects all adjacent faders.

Enabling Graphic EQ

Selecting the Graphic EQ checkbox applies equalization to the current audio. Clearing the checkbox bypasses the current EQ settings.

Graphic EQ Shortcut Menu



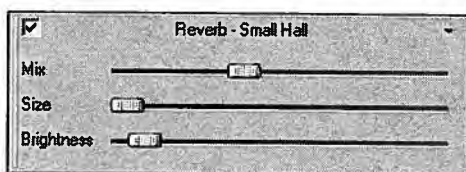
Clicking the title bar of the Graphic EQ panel displays the Graphic EQ shortcut menu. Using this shortcut menu, users can quickly:

- Select an EQ preset
- Reset all EQ bands
- Toggle **Band Tension** on/off
- Enable/disable the Graphic EQ



Reverb

Reverb simulates the acoustics of various venues and situations. It can also be used to create interesting effects by placing sounds in spaces, real and otherwise, where they are normally not heard.

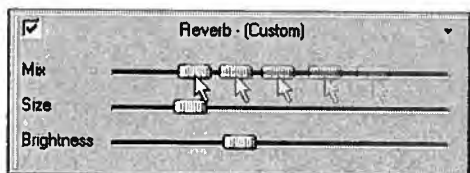


Configuring Reverb

Configuring Siren's Reverb involves three individual parameters:

- **Mix** determines the amount of processed sound in the output. When **Mix** is set to 100%, only the reverberated signal is heard. For more realistic reverb effects, reduce the mix level.
- **Size** determines the time lapse between the initial audio and the onset of reverberation. This, in turn, determines the illusion of the size of the acoustic space. Longer times are associated with larger spaces, therefore, increasing the **Size** values simulates a larger room.

- Brightness determines the reverb decay time. In a dampened room, walls absorb sound quickly, whereas in a bright room, such as a gymnasium, walls reflect more sound. Reverberation in a bright room lasts substantially longer than in a damp room, therefore, increasing the Brightness level simulates a larger, brighter venue.



Like Graphic EQ, Reverb values are set by left-clicking on the appropriate slider thumb and dragging it to the left or right:

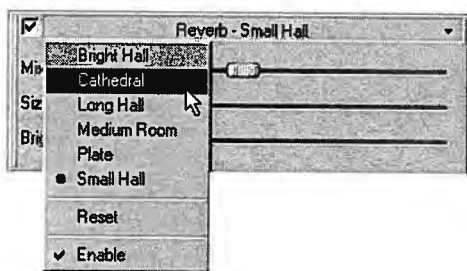
- Moving the thumb to the right increases the value.
- Moving the thumb to the left decreases the value.

Users are encouraged to experiment freely with the Reverb parameters to create custom effects.

Enabling Reverb

Selecting the Reverb checkbox applies reverberation to the current audio. Clearing the checkbox bypasses the current reverb settings.

Reverb Shortcut Menu

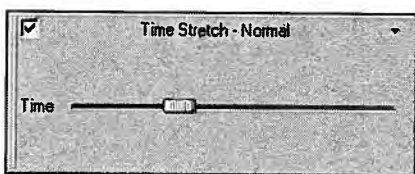


Clicking the title bar of the Reverb panel displays the Reverb shortcut menu. Using this shortcut menu, users can quickly:

- Select a Reverb preset
- Reset all Reverb parameters
- Enable/disable the Reverb



Time Stretch

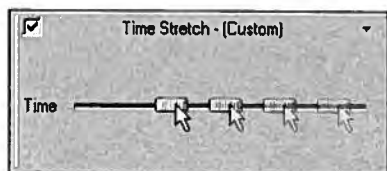


Time Stretch alters the length of a song without changing its pitch. It is important to realize that this feature is most effective for applying light to medium time compression or expansion. Attempting to severely alter the length of a song typically results in a distracting distortion of the audio signal.

Setting Time Stretch

To set Time Stretch, left click on the slider thumb and drag it left or right:

- Moving the thumb to the right speeds the song up, thereby decreasing its length.
- Moving the thumb to the left slows the song down, thereby increasing its length.



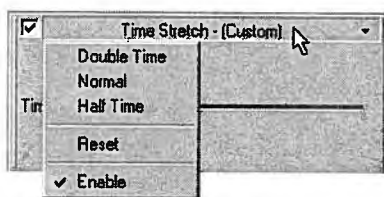
Notice that the Time Stretch value is depicted as a percentage of the song's original speed.

Note: Double-clicking the Time Stretch slider thumb returns the song to its original length and tempo.

Enabling Time Stretch

Selecting the Time Stretch checkbox applies the current setting to the audio. Clearing the checkbox bypasses the current time stretch settings.

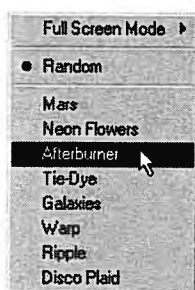
Time Stretch Shortcut Menu



Clicking the title bar of the Time Stretch panel displays the Time Stretch shortcut menu. Using this shortcut menu, users can quickly:

- Double the length of a song
- Halve the length of a song
- Restore a song to its original length and tempo
- Enable/disable Time Stretch

Scope



Scope, Siren's other visual effect, displays real-time visualizations based on waveform analysis of songs.

Selecting the Scope Display

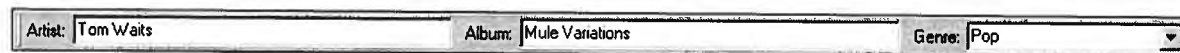
To select the Scope display, right click on the panel and choose the desired display from the shortcut menu.

Full Screen Mode

Choosing full screen mode expands the Scope display to fill the screen at a user-specified size resolution.

Song Info

The Song Info panel lists the artist, album, and genre of the current song.



Status Bar

The Status Bar is a scrolling display that provides playback information, based on whether Siren is in Playback or Recording mode.

Playback Status Bar

During playback, the Status Bar displays:

- The current song's title, artist, album, sample rate, bit-depth, channels, and bit rate
- The next song's title, artist, and album



Recording Status Bar

During recording, the Status Bar displays:

- The name of the song being recorded, its track number, and sample rate
- Size of the song (in MB)
- Drive location of the music library
- Space remaining on drive

Volume

The Volume panel, which contains a volume fader and level meters, allows users to determine and monitor Siren's playback volume.

Setting Volume

To set Siren's volume, left-click the fader thumb and drag it up or down:

- Moving the thumb up increases playback volume.
- Moving the thumb down decreases playback volume.

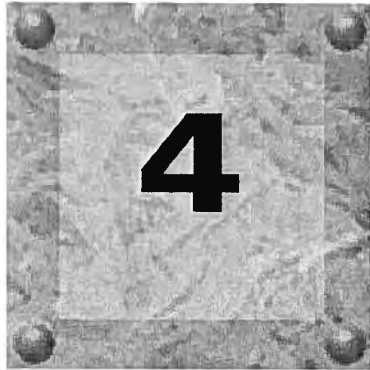
Volume Shortcut

Right-clicking the Volume panel displays the Volume shortcut menu. Using this menu, users can:

- Reset volume level clips

- Enable/disable volume meter labeling
- Determine labeling increments
- Enable/disable the hold peak and hold valley features

For additional information on any of Siren's panels, refer to online help.



Organizing Music

Organizing Music

Music in the Manage My Music Library view can be categorized, sorted, and filtered. Siren organizes songs based on information provided with the song, including artist, album, and genre. If information is not available for a song, Siren places it in an Unknown folder in each category.

In addition to predefined organization included in the Manage My Music Library view, Siren can create custom playlists. *For more information, see Custom Playlists on page 29.*

CD Information

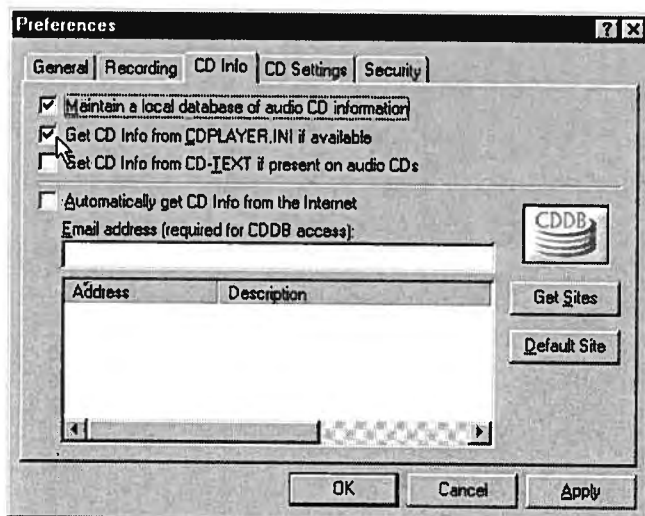
If Siren is able to retrieve information about a CD, either from the CD itself or a local database, this information is displayed.


Configuring CD Information Preferences

Prior to using the Siren's CD information features, users must configure the music database preferences.

To set the music database preferences:

1. Choose **Preferences** from the **Options** menu. The Preferences dialog is displayed.
2. Select the CD Info tab.



3. Select the checkbox(es) corresponding to the desired CD information option(s) and click . Siren is configured to retrieve CD information automatically when a CD is inserted and the Play or Record Music CDs icon is clicked.

Compact Disc Database

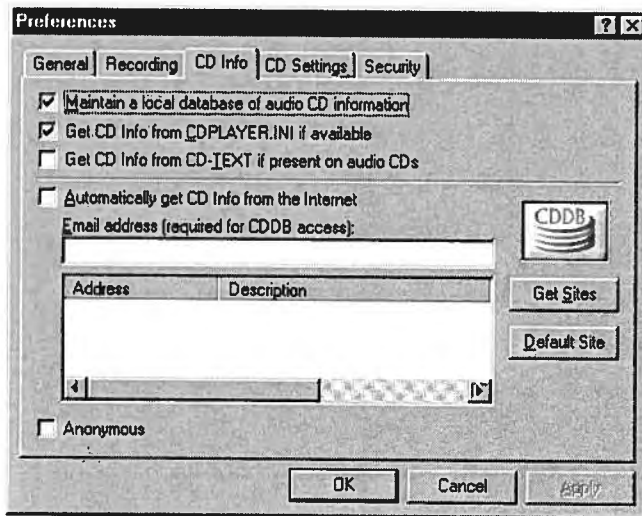
In addition to the previously discussed option, Siren can retrieve CD information over the Internet from the Compact Disc Database (CDDb).

Configuring CDDb

Users typically configure CDDb in the Configuration Wizard that is launched the first time Siren is run. However, CDDb configuration can be edited at any time.

To edit the CDDb configuration:

1. Choose Preferences from the **Options** menu. The Preferences dialog is displayed.
2. Select the CD Info tab.
3. If desired, select the Automatically get CD Info from the Internet checkbox.



4. Enter a valid e-mail address in the Email address field and click **Apply**. CDDB is configured.


Note: Users not wishing to sub an e-mail address can simply select the Anonymous checkbox.

Using CDDB

To access song information using CDDB:

1. Verify that the computer is connected to the Internet.
2. Place a CD in the CD drive and click the Play or Record Music CDs icon in the Explorer panel. If Siren is configured to automatically retrieve CDDB information, it is accessed and displayed. *For more information, see Configuring CDDB on page 24.*

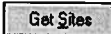

Track	Start	Length	Size
14 Maybe Partying Will Help	00:22:30.55	00:01:56.32	19.6 MB
15 Toadies	00:24:27.12	00:01:38.18	16.5 MB
16 Retreat	00:26:05.30	00:02:00.40	20.3 MB
17 The Big Foist	00:28:05.70	00:01:30.55	15.3 MB
18 God Bows To Math	00:29:36.60	00:01:16.30	12.9 MB
19 Corona	00:30:53.15	00:02:25.40	24.5 MB
20 The Glory Of Man	00:33:18.55	00:02:57.42	29.9 MB
21 Take 5, D.	00:36:16.22	00:01:39.63	16.8 MB
22 My Heart And The Real World	00:37:56.10	00:01:06.25	11.2 MB
23 History Lesson - Part II	00:39:02.35	00:02:12.10	22.2 MB
24 You Need The Glory	00:41:14.45	00:02:03.10	20.7 MB
25 The Roar Of The Masses Could Be Fats	00:43:17.55	00:01:21.02	13.6 MB
26 West Germany	00:44:38.57	00:01:49.13	18.4 MB
27 The Politics Of Time	00:46:27.70	00:01:12.47	12.2 MB
28 Themselves	00:47:40.42	00:01:18.20	13.2 MB
29 Please Don't Be Gentle With Me	00:48:58.62	00:00:47.68	8.1 MB
30 Nothing Indeed	00:49:46.55	00:01:22.22	13.8 MB
31 No Exchange	00:51:08.02	00:01:51.43	18.8 MB
32 There Ain't No No. T.V. Toadies	00:53:00.45	00:01:24.67	15.8 MB

If Siren is not configured to automatically retrieve CDDB information, click , or choose CD Info, followed by Get from the **File** menu.

Note: Once Siren retrieves information from CDDB, it is saved to a local database.

Problems with CDDB Connections


Occasionally, users may experience problems connecting to CDDB. When experiencing problems connecting to CDDB:

1. Choose Preferences from the **Options** menu. The Preferences dialog is displayed.
2. Select the CD Info tab.
3. Click . A list of available CDDB sites is displayed.
4. Select a site and click . Siren will connect to the new CDDB site when prompted.

Submitting CDDB Information

Given the number of CDs released each year, it is inevitable that users will eventually encounter a CD without CDDB information. When this happens, users can submit information to CDDB, which is added to the database and made available for future users.

To submit CD information to CDDB:

1. Insert a CD for which CDDB has no information and click the Play or Record Music CDs icon.
2. Manually enter the CD information. *For more information, see Adding CD Information Manually on page 27.*
3. Click , or choose CD Info, followed by Submit from the **File** menu. Siren attempts to connect to CDDB, and if successful, submits the user-provided information.

If CDDB submission is unsuccessful, the user will receive an e-mail notification. Anonymous users, however, will not receive notification of submission problems.

Adding/Editing Song Information

Typically, Siren retrieves song information from a CD or local database and displays the information in Siren's Explorer panel. When this information is unavailable, Siren displays generic song information. For example, when an audio CD containing no song information is inserted, or a CDDB connection cannot be made, Siren simply lists the tracks numerically.

Adding CD Information Manually

If Siren is unable to retrieve song information for a CD, information should be manually entered before the song is recorded to the computer. Siren copies this information while recording the audio.

To add CD information:

1. Place a CD in the CD drive. Siren alerts the user that CD information cannot be located and lists the songs numerically.
2. Enter the appropriate information in the Album, Artist, and Genre fields.
3. Select a song.
4. Right-click on the selected song and choose Rename from the shortcut menu. An edit field is displayed in place of the current song title.
5. Enter the new title and press **Enter**. Siren stores the information in a local database, and retrieves it whenever the CD is inserted. In addition, this information remains with the songs after they are recorded to the computer.
6. Repeat steps 3 through 5 until all desired songs are named.

Editing Song Information in Views and Playlists


To manually add or edit song information, do one of the following:

- Select the song and edit the artist, album, or genre information in the Song Info panel.

Artist: Tom Waits	Album: Mule Variations	Genre: Pop
-------------------	------------------------	------------

- Select the song and click the area below the category column to be edited. Siren enters edit mode. Enter the correct information followed by:
 - **Enter** to move one cell down
 - **Shift** + **Enter** to move one cell up
 - **Tab** to move one cell to the right
 - **Shift** + **Tab** to move one cell to the left

Name	Artist	Album	Genre
Biosphere	Trance International	http://www.stargrass.com	
Bizarre	U God	Golden Arms Redemption	Hip-Hop
Black Leather	All the Pretty Horses		
Bleeding	Simon V.	One Night	
Boom-Boom	Babaloo		
Boys_Life	Fire Engine Red		
Braille	My Lai	Learn... Forget... Re-Learn	
Bring the Noise	anthrax and PE		metal/rap
Bryan Ferry - Slave To Love	Bryan Ferry		
Burn Baby, Burn	SKINNeR	SKINNeR	Rock
Burning Down The House	The Cardigans & Tom Jones		Other
Buzz Fledderjon	Tom Waits	Mule Variations	Pop
Callin The Shots	Planet Asia	Callin The Shots 12"	Hip-Hop
Camouflage Of Righteousness	Little Steven	Born Again Savage	Pop

- Select the song and choose Properties from the **File** menu. When the Properties dialog is displayed, select the Song Info tab. Edit the song information and click .

Properties - Unknown Artist-Disk [E0F9FD3A]-Track 06- M...

General Song Info

Name:

Artist:

Album:

Genre:

OK Cancel Apply


Note: When artist, album, or genre information is edited, the song is resorted in the Manage My Music Library views. If the artist, album, or genre information does not have an existing category, Siren creates a new view containing the song.

Auto Rename Files Command

Users are able to rename linked music files based on the information retrieved from the local music database. This feature changes a song's filename to include available song information, thereby making it more easily identifiable to users. When the Auto Rename Files feature is used, Siren uses the following renaming format: artist-album-track-title.extension.

Using Auto Rename Files

To use the Auto Rename Files feature:

1. Select a song in the Manage My Music Library view.
2. Choose Auto Rename Files from the **Edit** menu. The file is renamed according to Siren's renaming format.
3. Click  or press F5 to refresh the Manage My Music Library view.

Note: *The Auto Rename Files command can be used on several files simultaneously.*

MP3 Files and ID3 Tags

ID3 Tags allow additional information, musical and otherwise, to be saved as part of an .mp3 file.

Saving an ID3 Tag

To save an ID3 tag with an .mp3 file:

1. Add or edit song information as desired. *For more information, see Editing Song Information in Views and Playlists on page 27.*
2. From the **Edit** menu, choose Update ID3 Tags. The appropriate ID3 Tags are added or edited.

When the song's properties are viewed, the updated ID3 Tags are included in the Properties dialog.

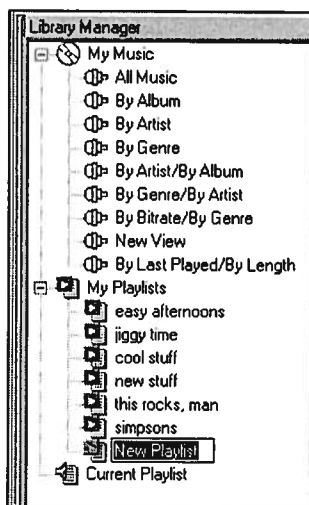
Custom Playlists

Siren allows users to create custom playlists from the music library. Playlists enable users to store links to music located in a number of different views. Using this simple idea, users can create playlists for parties, work, reading, etc., and since playlists use links to songs rather than copies, a song can be included in multiple playlists without depleting hard drive space.

Creating a Playlist

To create a playlist:

1. From the Manage My Music Library view, click the New Playlist button, or choose New Playlist from the **Edit** menu. Siren creates a new playlist with a default name and displays it beneath the My Playlists icon.



2. Name the playlist and press **Enter**.

Note: Change a playlist name by right-clicking on it and choosing Rename from the shortcut menu.

3. Add songs to the playlist using any of the following methods:
 - Drag and drop songs from the music library to a playlist
 - Select a song and choose Add to Playlist from the **Edit** menu
 - Select a song and click Add to Playlist at the bottom of the Explorer panel

Note: When Add to Playlist is selected, Siren prompts the user to specify the playlist to which the song will be added.

An Alternate Method of Creating a Playlist

To create a playlist:

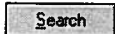
1. Select the song(s) to be added to the new playlist.
2. Choose **Add to Playlist** from the **Edit** menu, or click Add to Playlist at the bottom of the Explorer panel.
3. Name the playlist.

Adding a Playlist

Once placed in a playlist, songs can be arranged using drag and drop.


Importing Playlists

To import a playlist:

1. Choose **Search Computer for Music** from the **Options** menu. The Search Computer for Music dialog is displayed.
2. Select the Known Playlists checkbox and click . Siren searches the computer for previously created playlists (.m3u or .pls) and adds them to the music library.

Exporting Playlists

To export a playlist:

1. Click the Manage My Music Library icon, or choose **Manage My Music Library** from the **View** menu.
2. Select a playlist for export.
3. Right-click the mouse and choose **Export Playlist** from the menu. The Export Playlist dialog is displayed.
4. Specify a location and name for the .m3u file and click .

Locking Views and Playlists

Once a view or playlist is created and configured to the user's satisfaction, it can be locked to prevent accidental deletion. To lock a view or play, right-click on it in the Explorer panel and select **Locked** from the shortcut menu. A checkmark is displayed adjacent to the **Locked** command and subsequent right-clicking on the locked view or playlist displays an unavailable **Delete** option. To unlock a view or playlist, thereby allowing it to be deleted, right-click on it and reselect **Locked** from the shortcut menu.

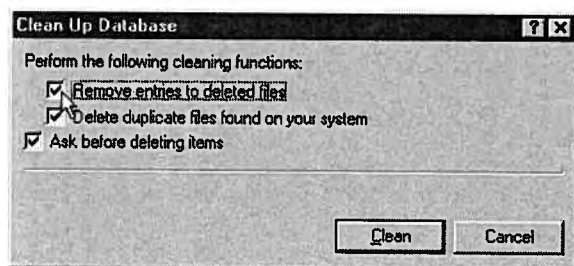
Note: A locked view or playlist can be renamed.

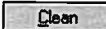
Clean Database

Siren's Clean Database command, as one might expect, allows users to clear their music database of deleted and duplicate file entries.

To clean the database:

1. Choose Clean Database from the **Edit** menu. The Clean Up Database dialog is displayed.



2. Select the checkbox(es) corresponding to the desired option(s) and click .

Clean Database Functions

Remove Entries to Deleted Files

Siren searches the music database for files that have been deleted from the computer and removes their database entries.

Delete Duplicate Files Found On Your System

Siren searches the music database for duplicate files and deletes them, retaining a single database entry for each file.

Ask Before Deleting Items

Sirens prompts the user prior to deleting files or database entries.

Advanced Music Management


Siren features a number of database tools designed to allow users gain superior control over their music libraries and listening habits. These include the Field Chooser, Sort Bar, Group Bar, and Filter Bar.

Field Chooser



The Field Chooser allows users to determine the database categories used to display, sort, group, and filter their music libraries.

Displaying the Field Chooser

To display the Field Chooser, click  in the database toolbar, or right-click in the head row and choose Field Chooser from the shortcut menu.

Explorer Panel Fields

All fields listed in the Field Chooser can be displayed in the Explorer panel. By default, Siren displays only the name, artist, album, and genre information for a song.

Adding Fields to the Explorer Panel

To demonstrate adding fields to the Explorer panel:

1. Display any view or playlist.
2. Display the Field Chooser.
3. Click and hold the left mouse button on the desired field in the Field Chooser.
4. Drag the field from the Field Chooser and drop it into the Explorer panel's head row. When the field is properly positioned, two small, red arrows appear above and below the head row.



After the field is dropped, a new field column is added to the head row and all songs in the list display a value, if applicable.

Removing Fields from the Explorer Panel

To remove a field from the Explorer panel, right-click on the field to be removed, and choose Remove This Column from the shortcut menu.

Note: *The fields displayed in the Explorer panel have no effect on sorts, groupings, or filters applied to the music library.*

Editable and Non-Editable Fields

Select fields are populated with information retrieved directly from the music file, the CD, or a local database, and this information may be permanent, or subject to editing. Other fields rely on user input for their information. *For more information, see Editing Song Information in Views and Playlists on page 27.*


The following table lists all available fields, and identifies each as either editable, or non-editable.

Field	Status
Added	Non-editable
Album	Editable
Artist	Editable
Bitrate	Non-editable
Comment	Editable
File Path	Non-editable
File Size	Non-editable
File Type	Non-editable
Genre	Editable
Icon	Non-editable
Last Played	Non-editable
Length	Non-editable
Name	Editable
Play Command	Non-editable
Played	Non-editable
Track	Editable
Volume Name	Editable
Year	Editable

Sort Bar

The Sort Bar, which can be used from any Manage My Music Library view, allows all songs in the music library to be listed, or sorted, by field(s). This feature is useful for ordering and displaying the music library alphabetically (by artist, album, or song name), chronologically, by date added, number of times played, or by any other available field.

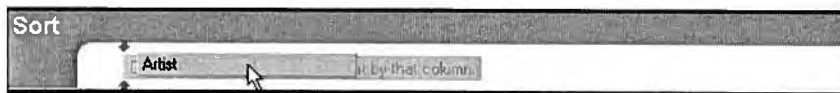
Displaying the Sort Bar

To display the Sort Bar, click  in the database toolbar, or right-click in the database toolbar and choose Show Sort Bar from the shortcut menu.

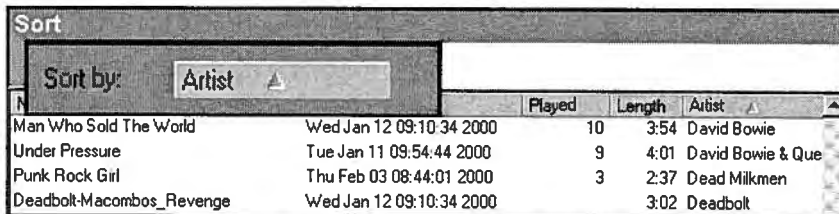
Creating a Sort

To demonstrate creating a sort:

1. Display the All Music view and the Sort Bar.
2. Drag a field (Artist in the case of this demonstration) from the Field Chooser or head row and drop it in the Sort Bar. When the field is properly positioned, two small, red arrows appear in the Sort Bar.



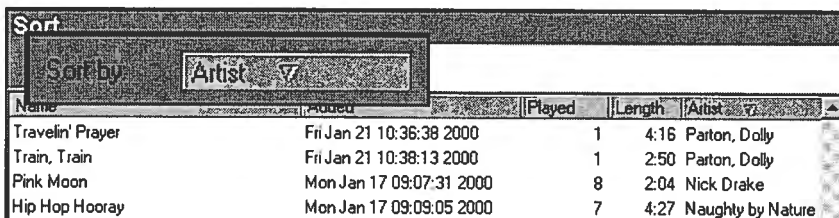
The field is added to the Sort Bar with a small, up-pointing arrow, and all music library artists are listed from A to Z.



The image shows the 'Sort' bar with 'Artist' selected. Below it, a table of music library entries is displayed, sorted by artist from A to Z.

	Played	Length	Artist
Man Who Sold The World	Wed Jan 12 09:10:34 2000	10	3:54 David Bowie
Under Pressure	Tue Jan 11 09:54:44 2000	9	4:01 David Bowie & Que
Punk Rock Girl	Thu Feb 03 08:44:01 2000	3	2:37 Dead Milkmen
Deadbolt-Macombos_Revenge	Wed Jan 12 09:10:34 2000		3:02 Deadbolt

3. Click the Artist field button in the Sort Bar. The arrow turns down and the sort reverses directions; listing all library artists from Z to A.



The image shows the 'Sort' bar with 'Artist' selected. Below it, a table of music library entries is displayed, sorted by artist from Z to A.

Name	Played	Length	Artist
Travelin' Prayer	Fri Jan 21 10:36:38 2000	1	4:16 Parton, Dolly
Train, Train	Fri Jan 21 10:38:13 2000	1	2:50 Parton, Dolly
Pink Moon	Mon Jan 17 09:07:31 2000	8	2:04 Nick Drake
Hip Hop Hooray	Mon Jan 17 09:09:05 2000	7	4:27 Naughty by Nature

Note: Clicking a field bar in the head row automatically adds it to the Sort Bar.

Multiple Field Sorts

Sorts may be comprised of several fields. Using the previous procedure, users can add additional sort fields. Continuing with the previous example, adding the Name field to the Sort Bar will list each artist's songs alphabetically with the initial sort.

Fields in the Sort Bar can be arranged by dragging and dropping, with the left-most field being the primary sort.


Removing Fields from a Sort

To remove a field from the Sort Bar, right-click on the field and choose Remove This Sort from the shortcut menu.

To remove all fields from the Sort Bar, right-click on a field and choose Remove All Sorts from the shortcut menu.

Saving a Sort


To save a sort as a new view:

1. Click  in the database toolbar, or right-click in the database toolbar and choose Make New View from the shortcut menu. A new view with a default name is created.
2. Enter a name for the new view and press **Enter**.

Group Bar

The Group Bar, which can be used in any Manage My Music Library view, groups all songs in the music library by field(s). This feature is useful for creating simple or complex groups of songs. For example, grouping by genre allows the user to quickly identify all free jazz songs in the music library. A multi-level grouping will allow users to easily identify song groupings as elaborate as all 1997 death-metal .mp3 files with 128kbs bitrates added to the music library on January 11, 2000.

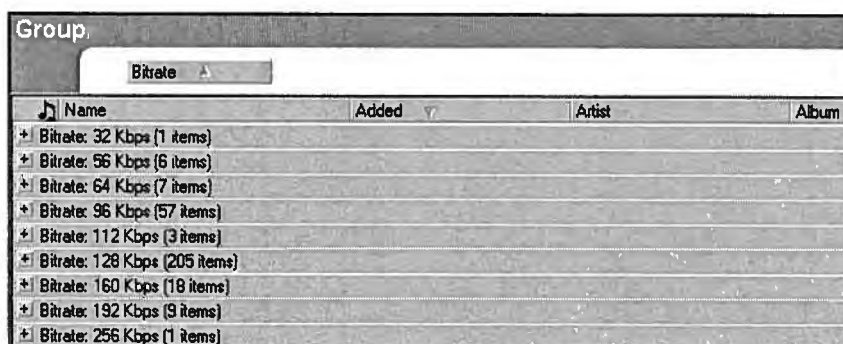
Displaying the Group Bar

To display the Group Bar, click  in the database toolbar, or right-click in the database toolbar and choose Show Group Bar from the shortcut menu.

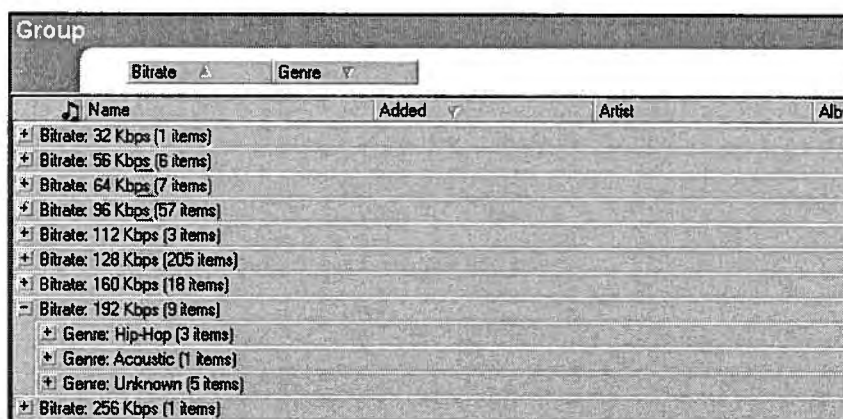
Creating a Grouping

To demonstrate creating a group:

1. Display the All Music view and the Group Bar.
2. Drag the Bitrate field from the Field Chooser or head row and drop it into the Group Bar. All songs in the music library are grouped and displayed by bitrate.



3. Drag the Genre field from the Field Chooser or head row and drop it in the Group Bar. All songs are sorted by bitrate, and sub-sorted by genre.




Using this procedure, users can add additional fields. Fields in the Group Bar can be arranged by dragging and dropping, with the left-most field being the primary grouping.

Removing Fields from a Grouping

To remove a field from the Group Bar, right-click on the field and choose Remove This Grouping from the shortcut menu.

To remove all fields from the Group Bar, right-click on a field and choose Remove All Groupings from the shortcut menu.


Saving a Grouping

To save a grouping as a new view, click  in the database toolbar, or right-click in the database toolbar and choose Make New View from the shortcut menu. A new view, with a name based on the grouping field order, is created and displayed.

Filter Bar

The Filter Bar, which can be used in any Manage My Music Library view, allows users to select, or filter, songs fitting user-specified criteria. Whereas the Group Bar allows users to group songs by field, the Filter Bar is more flexible, enabling users to apply comparative values or ranges to determine which song meet their criteria, regardless of how specific. For example, all songs between four and five minutes in length. Using Siren's filter capabilities, users can quickly isolate all library songs recorded between 1970 and 1980 that are longer than ten minutes, have the word *booty* in the title, and have been played more than 25 times, but haven't been played since January 1, 2000.

Displaying the Filter Bar


To display the Filter Bar, click  in the database toolbar, or right-click in the database toolbar and choose Show Filter Bar from the shortcut menu.

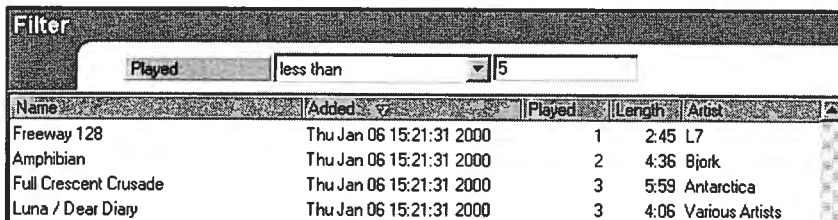
Creating a Filter

To demonstrate creating a filter:

1. Display the All Music view and the Filter Bar.
2. Drag the Played field from the Field Chooser or head row and drop it in the Filter Bar. The Played field is added to the Filter Bar with a corresponding drop-down list and edit field.




3. Specify less than in the drop-down list.
4. Enter 5 in the edit field.
5. Press **Enter**, click  in the database toolbar, or right-click in the Filter Bar and choose Apply Filter from the shortcut menu. The filter is applied and only songs from the music library that have been played 5 times or less are listed.



Name	Added	Played	Length	Artist
Freeway 128	Thu Jan 06 15:21:31 2000	1	2:45	L7
Amphibian	Thu Jan 06 15:21:31 2000	2	4:36	Bjork
Full Crescent Crusade	Thu Jan 06 15:21:31 2000	3	5:59	Antarctica
Luna / Dear Diary	Thu Jan 06 15:21:31 2000	3	4:06	Various Artists

Adding a Second Filter

To add a second filter:

1. Drag the Bitrate field from the Field Chooser or head row and drop it in the Filter Bar. The Bitrate field is added under the Played filter with a corresponding drop-down list and edit field.
2. Specify equals from the drop-down list.
3. Enter 128 kbs in the edit field.
4. Press **Enter**, click  in the database toolbar, or right-click in the Filter Bar and choose Apply Filter from the shortcut menu. The second filter is applied and only songs from the music library that have been played less than 5 times or less, *and* have bitrates of 128kbs are listed.

Filter				
Played	less than	5		
Bitrate	equals	128 kbs		
Name	Added	Played	Bitrate	Length
Lawyers, Guns and Money	Wed Jan 12 09:10:34 2000	5	128 Kbps	
Rollins Band - Four Sticks	Wed Jan 12 09:10:34 2000		128 Kbps	
David Bowie - China Girl	Wed Jan 12 09:10:34 2000	1	128 Kbps	
The End Of Life In America, An	Wed Jan 12 09:10:34 2000	5	128 Kbps	

Note: Fields in the Filter Bar cannot be re-arranged.

Added and Last Played Field Values

Siren allows all views and playlists to be filtered using two different date fields, Added and Last Played. Since there are countless ways to create a date value, Siren's database features have been designed with maximum flexibility. What follows is a partial list of valid date values:

yesterday	today	tomorrow
last week	next week	x days ago
x weeks ago	x months ago	x years ago
x hours ago	month last year	month x years ago
day last week	day x weeks ago	month date
month date year	month (abbr.) date year	

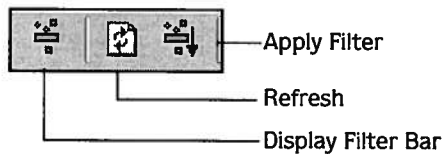
Removing Fields from a Filter

To remove a field from the Filter Bar, right-click on the field and choose Remove This Filter from the shortcut menu.

To remove all fields from the Filter Bar, right-click on a field and choose Remove All Filters from the shortcut menu.


Refreshing a View

After a filter is removed, the view can be updated, or refreshed, by clicking the Refresh button, located between the Show Filter Bar and Apply Filter buttons.



Saving a Filter

To save a filter as a new playlist:

1. Click  in the database toolbar, or right-click in the database toolbar and choose Make New View from the shortcut menu. A new playlist, with a default name, is created and displayed in the Manage My Music Library view.
2. Enter a name for the new playlist and press **Enter**.

Combining Sorts, Groups, and Filters

As described previously, sorts, groups, and filters can be used independently of each other. However, Siren's music organization power can be further exploited by using these functions in conjunction with each other. For example, users can quickly configure Siren to group songs by bitrate and genre, sort by length and file type, and filter by date added and number of times played. Combining these features allows users to find the perfect song for any situation.

Note: When database features are combined, they are always applied in Group-Sort-Filter order.



Playing and Recording Music

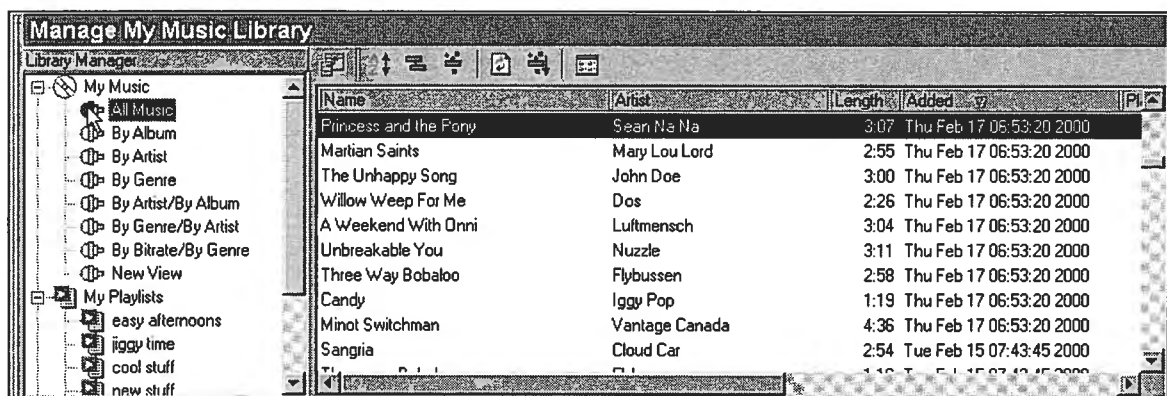
Playing Music Files with SIREN Jukebox

Once music is added to the music library, it can be played-back from any My Music view or custom playlist. In addition, Siren will play most .wav, .mp3, and .wma files from the computer or a network drive.

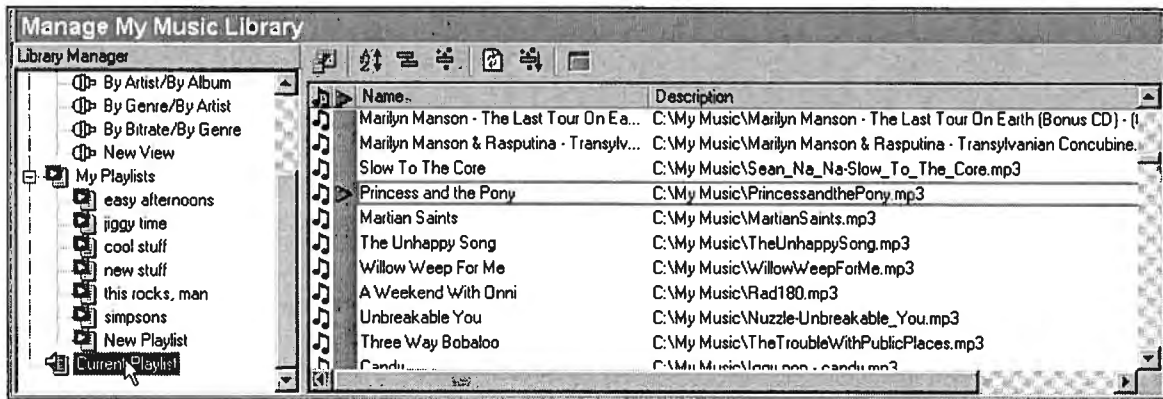
The Current Playlist

Regardless of whether it is playing from a CD, a music view, a custom playlist, or a network location, Siren always performs playback using the songs and sequence displayed in the Current Playlist. Siren generates a Current Playlist each time the user selects a song for playback from any of Siren's available sources. To view a Current Playlist:

1. Click the Manage My Music Library icon in the Navigator panel.
2. Select the All Music icon.
3. Select any song in the All Music view and initiate playback.



4. Select the Current Playlist icon, which is located at the bottom on the Explorer tree.



Notice that the current song is highlighted, and the preceding and following songs are indicated. *For more information, see Play in Order versus Play Randomized on page 43.*

Instant Current Playlists

Siren generates a Current Playlist whenever the user specifies a folder, CD, view, or even a single song for playback.

Folders and CDs

When a network folder, computer folder, or CD is selected for playback, its contents automatically become the Current Playlist. The playback sequence can be as originally arranged, or randomized. *For more information, see Play in Order versus Play Randomized on page 43.*



Music Library

Current Playlists generated from the music library are more involved than those generated from folders and CDs. The following table describes Siren's Current Playlist generation based on user action and the source of the music files. Again, the playback sequence can be as originally arranged in the music library view, or randomized. *For more information, see Play in Order versus Play Randomized on page 43.*

User Action	Resulting Current Playlist
Select a view from the Explorer panel tree	Entire content of view is placed in Current Playlist. Playback begins with the first song in the view.
Select a single song	Entire content of view is placed in Current Playlist. Playback begins with the selected song.
Select a group of songs	Only selected songs are placed in Current Playlist. Playback begins with the first song selected.
Select song from multi-category view	Only songs located in selected branch are placed in Current Playlist. Playback begins with selected song.



Play in Order versus Play Randomized

When playing music from any source, users can specify whether the Current Playlist is generated using the original order, or with a random order, by clicking the playback toggle button in the Transport panel.

- When  is displayed, songs are played-back in the listed order
- When  is displayed, song are played-back in a random order

Play Once versus Continuous Play

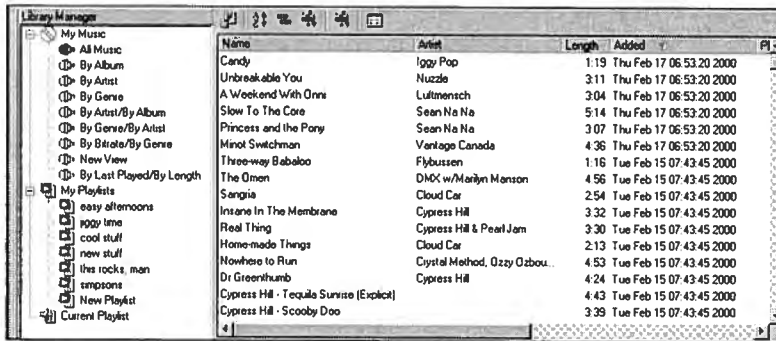
Like the previous feature, users are able to specify whether Current Playlist playback occurs once, or is looped infinitely by clicking the appropriate toggle button in the Transport panel.

- When  is displayed, playback is halted once the CD or playlist is complete
- When  is displayed, playback continues infinitely (looped)

Playing Music from a My Music View

To play music from a Manage My Music Library view:

1. Display the contents of the music library by clicking on the Manage My Music Library icon in the Navigator panel, or by choosing **Manage My Music Library** from the **View** menu.
2. Click the All Music view. Siren lists all songs in the music library.

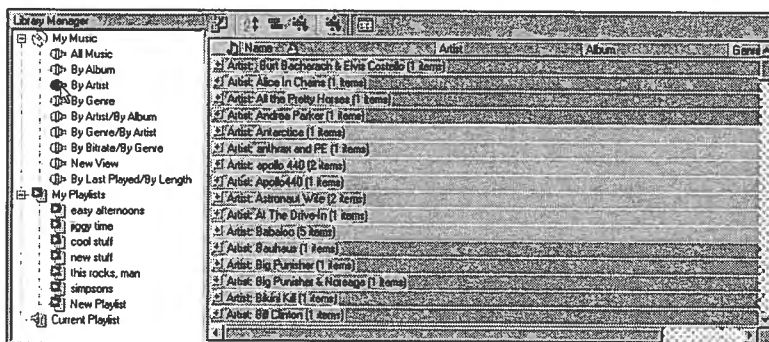


3. Click ► on the Transport panel. Siren generates a Current Playlist, begins playing the first song, and continues through the entire view. To begin playback with an alternate track, double-click the track, or highlight it and click ►.

Playing Music from Other Views

To playback music from another of Siren's views:

1. Display the contents of the music library by clicking on the Manage My Music Library icon in the Navigator panel, or by choosing **Manage My Music Library** from the **View** menu.
2. Select the desired view. All music from the view is sorted and displayed in appropriate branches.



3. Click the desired branch. Siren displays all songs in the branch.

Note: Depending upon the complexity of the view, it may be necessary to click through several layers of branches before locating song

listings.

4. Select a song and click ► on the Transport panel, or double-click it to begin playback. Siren generates a Current Playlist and plays only the songs located in the specified branch.

Playing Music from a Custom Playlist

As discussed previously, Siren will instantly generate a Current Playlist to allow users to immediately begin listening to music from the music library, a CD, or a network folder/drive. In addition, Siren also allows users to create custom playlists to satisfy individual tastes or requirements. To playback music from a playlist:

1. Display the music library by clicking the Manage My Music Library icon in the Navigator panel or by choosing **Manage My Music Library** from the **View** menu.
2. Double-click the My Playlists icon in the Library Manager to display all playlists.
3. Select the desired playlist. The playlist's songs are listed.
4. Click ► on the Transport panel. Siren begins playing the first song in the list and continues through the playlist. To begin playback with an alternate track, double-click the track, or select it and click ►.

For more information, see Custom Playlists on page 29.

Using the Play Command Field

The Play Command field allows users to initiate playback from a view or playlist with a single mouse click. To use the Play Command field:

1. Display any view or playlist.
2. Display the Field Chooser. *For more information, see Field Chooser on page 33.*
3. Drag the Play Command field from the Field Chooser, and drop it into the Explorer panel's head row. A Play Command column (►) is added to the Explorer panel.
4. Left-click in the Play Command column. Playback begins with the adjacent song and continues through the view or playlist.

Note: *The Play Command field is displayed by default in the Current Playlist.*

Playing Music from the Computer or a Drive Location

While music is typically played from the music library or a CD, Siren can also play music from a folder on the computer, or from a network drive. In addition, links to these files can be created in the Manage My Music Library view for easy accessibility.

Note: Secured .wma files cannot be played from a network drive. However, .wav and .mp3 files can be played or copied from a network location.

To play music from the computer or a network drive:

1. Click the Explore My Files icon in the Navigator panel to view all drives and folders in the Explorer panel.
2. Navigate to the file containing the music to be played.
3. Click ►. Siren creates a Current Playlist and begins playback with the first song in the list. To begin playback with a different track, double-click the track, or highlight it and click ►.

Adding Music From the Computer or Network to My Music

To add files to the Manage My Music Library view from folders on the computer or a network drive, do one of the following:

- Choose Search Computer for Music from the **Options** menu.
- Click the Explore My Files icon, right-click on the desired folder, and choose Search for Music from the shortcut menu.

If music located on a network drive is linked to a Manage My Music Library view, it is available only when the computer is connected to that drive.

Identifying Network Music

As stated previously, music located on a network drive is only available when the computer is connected to the network. Attempting to play music from a network when the computer is disconnected produces an error message. To avoid error messages when the computer is disconnected from the network, simply apply a filter using the File Path field, and specify only songs located at the system's hard drive address (typically C:). For more information, see Filter Bar on page 38.

Playing CDs



Siren will play audio CDs from the computer's CD-ROM drive. Use Siren's Transport panel or the **Transport** menu to control CD playback.

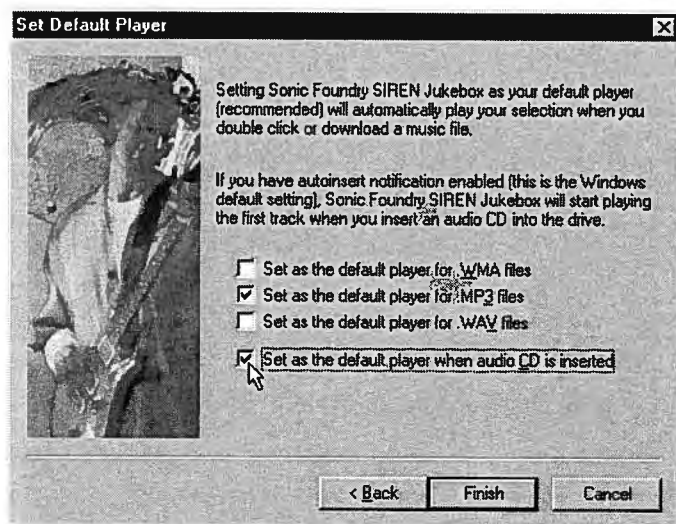
CD Autoplay

If Siren and the system are configured to play CDs automatically, Siren initiates CD playback when a CD is inserted.

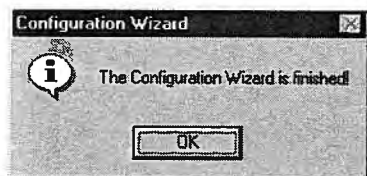
Configuring Siren Autoplay

To configure Siren's CD Autoplay feature:

1. Choose Configuration Wizard from the **Options** menu. The Welcome to the Configuration Wizard dialog is displayed.
2. Click  until the Set Default Player dialog is displayed.
3. Select the Set as the default player when audio CD is inserted checkbox and click .



The user is alerted that the configuration is complete.







4. Click . Siren's Autoplay feature is configured.

Note: *If Siren still does not automatically play CDs, and the system is running Windows 9x, the system's Autoplay feature must be configured.*

Configuring System Autoplay (Windows 9x only)

To configure the system to automatically play CDs:



1. Choose **Settings**, then **Control Panel** from the  **Start** menu.
2. Double-click the **System** icon.
3. Select the **Device Manager** tab.
4. Click the appropriate  to display the system's CD-ROM drive(s).
5. Select the desired CD-ROM drive and click .
6. Select the **Settings** tab.
7. Select the **Auto insert notification** checkbox and click . The system's Autoplay feature is configured.

Playing CDs Without Autoplay

If the system is not configured to play CDs automatically, or to play a CD currently in the CD-ROM drive:

1. Click the **Play or Record Music CDs** icon in Siren's Navigator panel. The Explorer panel displays the available tracks and Siren attempts to retrieve and display CD information from local databases, or from the CD itself.

If this information is not available, the songs are listed numerically. Users may attempt to retrieve CD information from the Internet using CDDB. *For more information, see Compact Disc Database on page 24.*

2. Click  on the Transport panel. Siren makes the CDs content the Current Playlist, and plays the entire CD, starting with the first track. To begin playback with an alternate track, double-click the track, or highlight it and click .

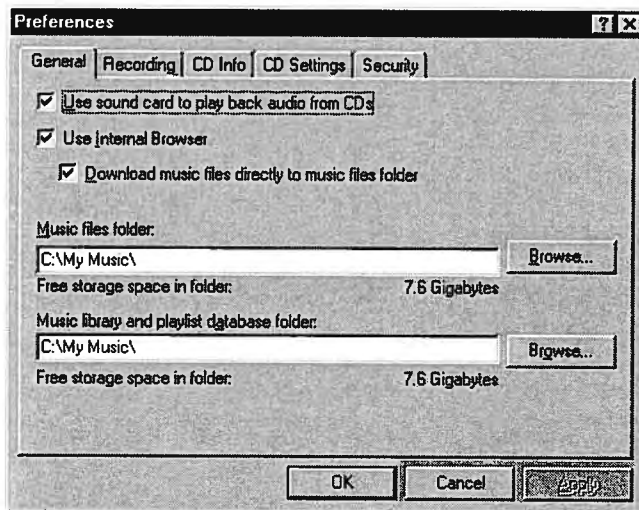
Recording from CD


Siren is able to record songs from a CD, place the files in a user-specified location, and create links to those files in the Manage My Music Library view. In addition, users can listen to music from the music library while recording CDs to the computer. However, it is not possible to listen to a CD while recording it to the computer. In addition, while tracks can be recorded from a previously created custom CD, these tracks cannot be written to another CD.

Selecting the Music Files View

As mentioned previously, users must specify the system folder for music storage. To specify the music files folder:

1. From the **Options** menu, choose Preferences. The Preferences dialog is displayed.
2. Select the General tab.

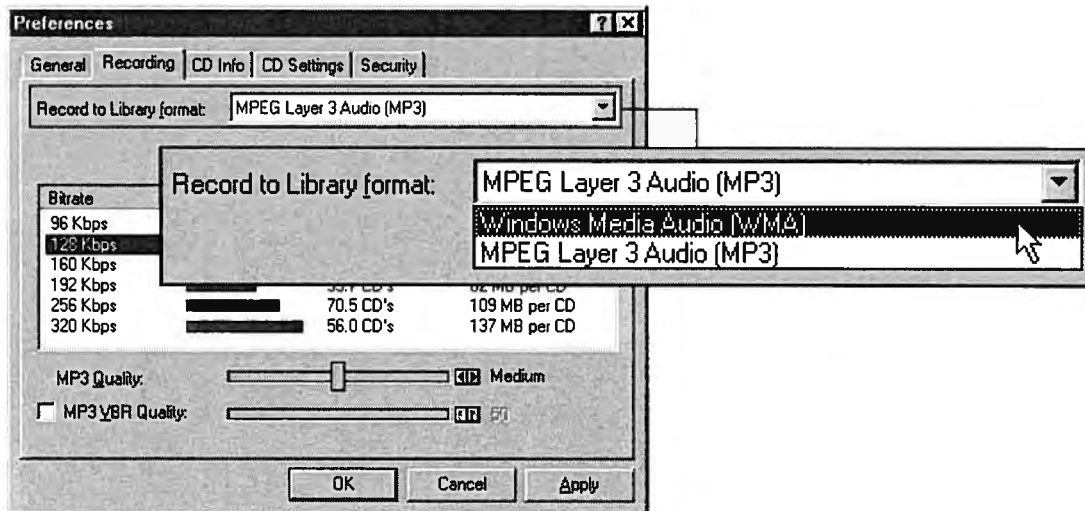


3. Enter the path to the folder in the Music files folder field and click . The folder location is updated.

Specifying the Record Format

Users are able to record tracks to the computer in .mp3 or .wma format. To specify the record format:

1. Choose Preferences from the **Options** menu. The Preferences dialog is displayed.
2. Select the Recording tab.
3. Specify the record format from the Record to Library format drop-down list.

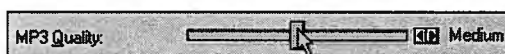


Siren displays the available recording bitrates.

4. Select the recording bitrate. *For more information, see Recording Bitrates on page 50.*

Bitrate	Quality Level	Limit	Diskspace
96 Kbps		187.4 CD's	41 MB per CD
128 Kbps		142.3 CD's	54 MB per CD
160 Kbps		113.0 CD's	68 MB per CD
192 Kbps		93.7 CD's	82 MB per CD
256 Kbps		70.5 CD's	109 MB per CD
320 Kbps		56.0 CD's	137 MB per CD

5. If encoding to .mp3, use the MP3 Quality slider to select the recording quality.
 - Setting to Fastest Encode (far left) records files as quickly as possible.
 - Setting to Highest Quality (far right) records files with the highest possible audio quality.



6. If desired, select the MP3VBR Quality checkbox and use the corresponding slider to set the encoding sensitivity value. *For more information, see MP3VBR Quality on page 51.*
7. Click **Apply**. The configuration is saved.



Recording Bitrates

Available recording bitrates vary based on the recording format. The Windows Media Audio (.wma) format offers 64, 96, 128, and 160kbps. Conversely, selecting the MPEG Layer 3 Audio (.mp3) format allows the user to specify from the following bitrates: 96, 128, 160, 192, 256 or 320kbps.

Siren XPress users are limited to 64 and 96kbps bitrate in the .wma format, and twenty .mp3 encodes.

MP3VBR Quality

Variable bitrate (VBR) is an encoding method available only when recording to .mp3. The bitrate is automatically adjusted during recording, resulting in higher quality audio and smaller file sizes.

Recording from CD to the Computer

To record music from CD to the computer:

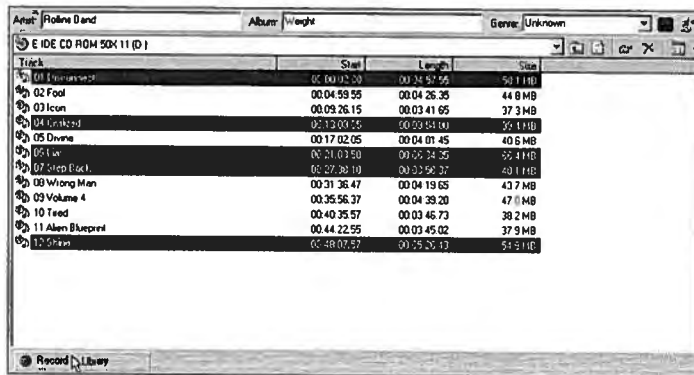
1. Place an audio CD in the system's CD-ROM drive.
2. Click the Play or Record Music CDs icon in the Navigator panel. The CD's tracks and database information are displayed.

Note: *If the system has multiple CD drives, users must specify the appropriate drive to display the track listing and database information.*

3. If the track information is not displayed, access CDDB or add this information manually. For more information, see *CD Information* on page 23.

Note: *If track information is not displayed or added, Siren records all songs as unknown and numbers them sequentially.*

4. Select the track(s) to be recorded and click Record to Library from the Explorer menu command bar, or choose Record to Library from the **File** menu.

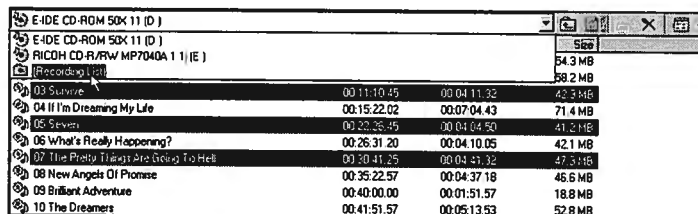


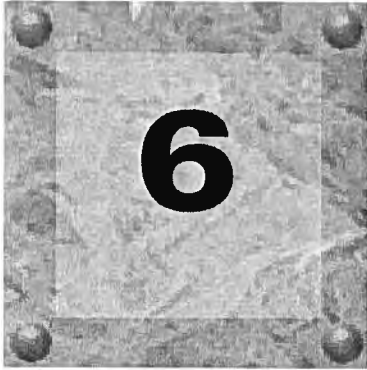
Siren records the song(s) to the music files folder and a progress meter is displayed in the Status panel. To halt recording, click Cancel.



Monitoring the Recording Process

To monitor the recording progress, specify Recording List from the Explorer toolbar drop-down list.





Custom CDs

Creating CDs




Once music is in the music library, users can create custom CDs using a supported CD writer. Custom CDs can be constructed using personal CD tracks along with .wav, .mp3, and .wma files recorded or downloaded from the Internet.

Note: .Wma files may only be written to a custom CD if the file includes a flag permitting the file to be written to CD.

In accordance with copyright law, users may create a personal copy of copyrighted material. This allows users to record music from personal CDs to the computer, and use that music to create a custom CD of that music. However, users may not copy a custom CD or record its music to another computer.

Configuring SIREN Jukebox to Write Custom CDs

To configure Siren to write custom CDs:

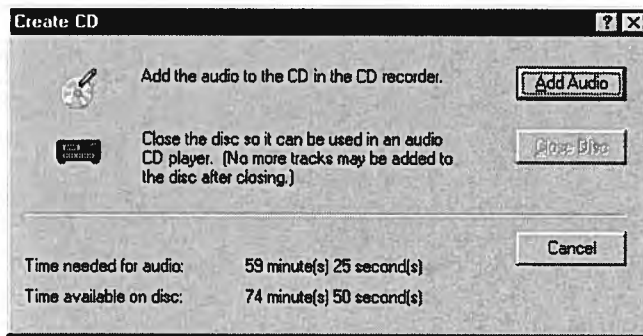
1. Choose **Preferences** from the **Options** menu. The Preferences dialog is displayed.
2. Select the CD Settings tab.
3. Specify the connected CD-R drive from the Write to CD drive drop-down list.
4. Set an appropriate Write to CD speed for the drive and click .

Creating Custom CDs

To create a custom CD:

1. Verify that Siren is properly configured to create CDs. For more information, see *Configuring SIREN Jukebox to Write Custom CDs on page 53*.

2. Verify that the supported CD writer (CD-R or CD-RW) is connected to the computer.
3. In the Explorer panel, select the song(s) to be written to the CD.
4. Click Write to CD in the Explorer panel's command bar or choose Write to CD from the **File** menu. The Create CD dialog is displayed.

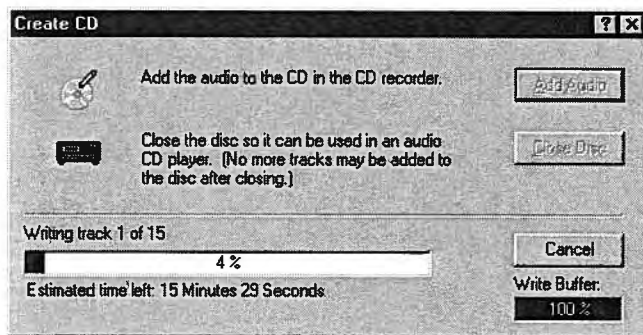


The Create CD dialog contains two very important values.


- The Time needed for audio value indicates the total time of the selected song(s).
- The Time available on disc value indicates the space remaining on the CD.

Note: The user will be alerted if the selected song(s) require more space than the amount remaining on the CD.

5. Click **Add Audio**. Siren begins writing the selected music to the CD and the Create CD dialog displays the progress and time remaining.



Note: Sonic Foundry recommends allowing Siren to complete this operation. Clicking Cancel, may render the CD unusable.

-
6. When Siren finishes adding the selected song(s), it displays a message declaring that the operation was successful. Click .

If any error messages are displayed during CD writing, refer to Siren's online help.

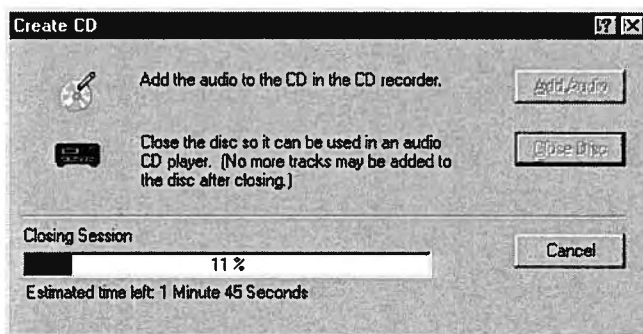
Use this method to write additional songs to the CD. The CD can be removed from the drive and inserted in the future to continue adding songs, because the CD remains at the current position and each song appends to it. When the custom CD is complete or full, it must be closed. *For more information, see Closing the CD Session on page 56.*

Closing the CD Session

Once all desired songs are written to a custom CD, the CD session must be closed. Closing a CD allows it to be played in consumer CD players. Once a CD is closed, new songs can no longer be added.

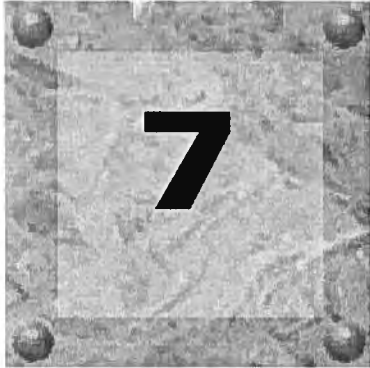
To close a CD session:

1. If it is not currently displayed, open the Create CD dialog by choosing **Close CD Session** from the **File** menu.
2. Click . Siren begins closing the CD and the Create CD dialog displays the progress and time remaining.



3. When Siren completes the closing process, it displays a message declaring that the operation was successful. Click .

If any error messages are displayed during CD writing, refer to Siren's online help.



Downloading Music to a Portable Player

Sending Music to a Portable Player

Siren is able to download .mp3 files to a portable player, as well as manage files once they are placed in the player's memory. However, Siren's portable player features are available only for Windows 95 and 98 operating systems.

Siren downloads music to portable players in one of two ways:

- Songs are selected from the Explorer panel, and downloaded using the **Send to Portable Player** command. *For more information, see [Selecting Songs from the Explorer Window](#) on page 57.*
- Songs are selected and downloaded while managing the player. *For more information, see [Downloading Music while Managing the Portable Player](#) on page 59.*

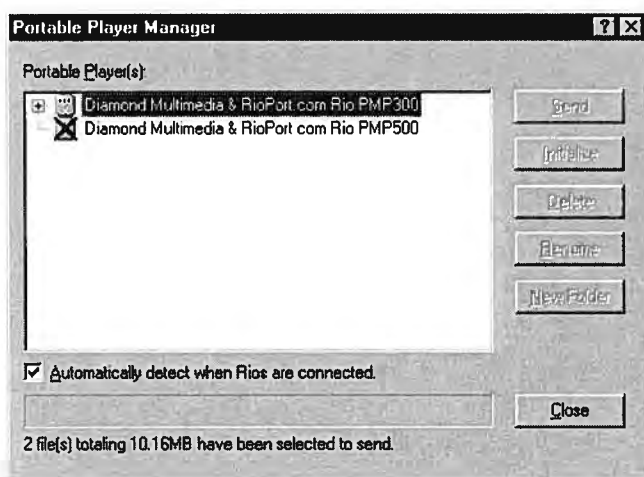
Note: *Windows and dialogs pictured in this chapter are examples only. Screens and options vary based on the player.*

Selecting Songs from the Explorer Window

To select songs for download from the Explorer panel:

1. Verify that the portable player is properly connected to the computer as described in the player's documentation.
2. In the Explorer panel, select the .mp3 file(s) to be downloaded to the portable player.

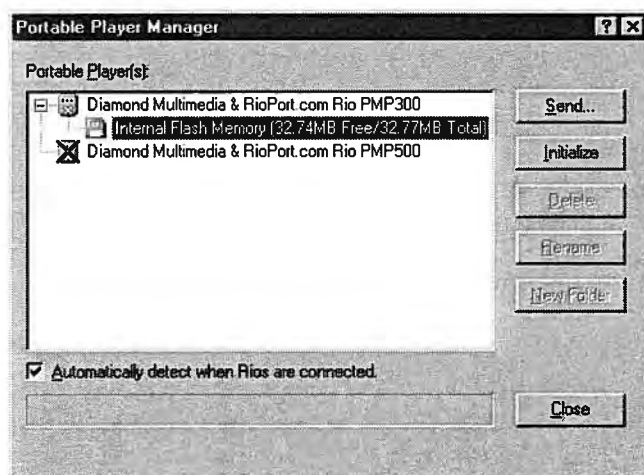
- Click Send to Portable Player in the Explorer panel's command bar, or choose Send to Portable Player from the **File** menu. The Portable Player Manager dialog is displayed.

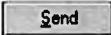


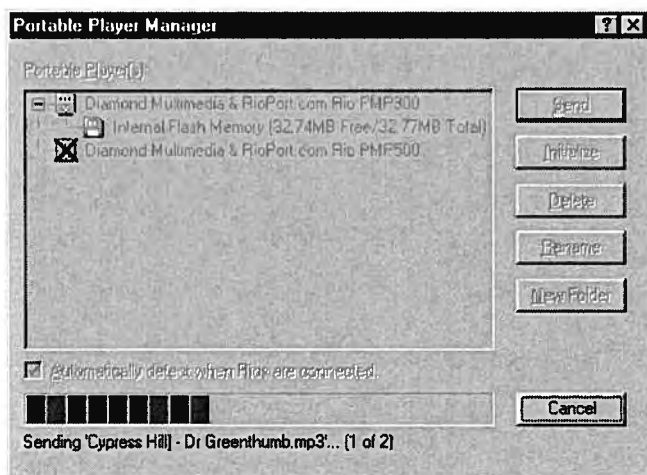
All connected portable players are displayed in the Portable Player Manager dialog, however, if the player is turned off, its icon is inactive (crossed-out).

Note: If the player has a battery save feature, and is idle for an extended period of time, it may display as inactive even if properly connected and previously on.

- Click appropriate to the desired portable player. The content of the player's internal memory, and any removable memory cards, is displayed.




5. Select the memory, or folder, to which the selected music will be added. For more information, see *Folders* on page 59.
6. Click . The Portable Player Manager dialog displays the download progress of each song.



Note: Sonic Foundry recommends allowing Siren to complete this operation. Clicking Cancel may leave the portable player in an unknown state.

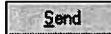
Once all selected songs are downloaded, the Portable Player Manager dialog closes and Siren's main screen is displayed. To manage songs in the player's memory, choose **Manage Portable Player** from the **File** menu. For more information, see *Managing the Portable Player* on page 61.

Folders

Select portable player models support folders. If the connected player supports this feature, the  button is active in the Portable Player Manager dialog. For more information about folders, refer to online help.

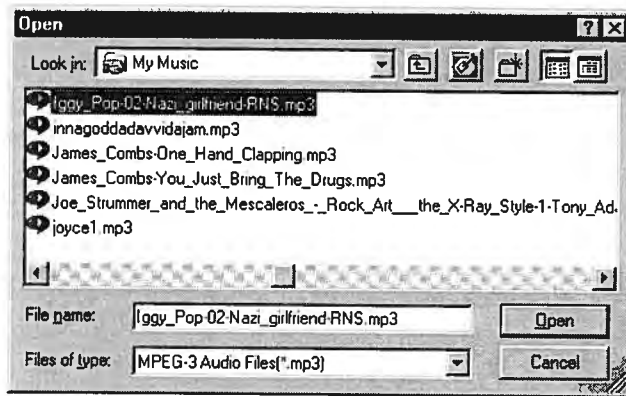
Downloading Music while Managing the Portable Player

To download music while managing the portable player:

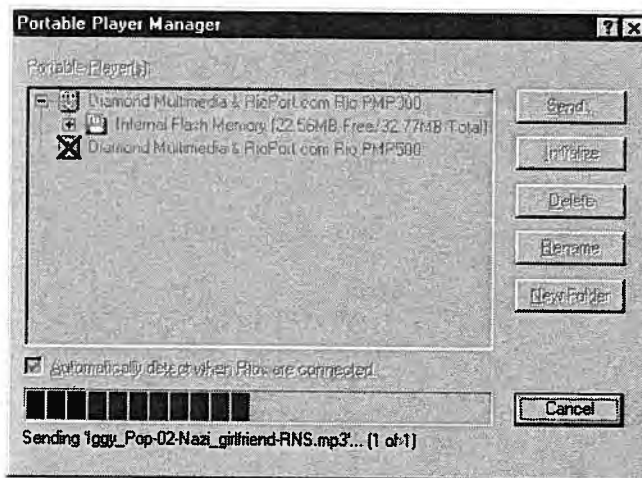
1. Choose **Manage Portable Player** from the **File** menu. The Portable Player Manager dialog is displayed.
2. Click . The Open dialog is displayed.

3. Select the system folder containing the song(s) to be downloaded.
4. Select the song(s) to download.

Note: To select multiple songs, use **Ctrl**-click.

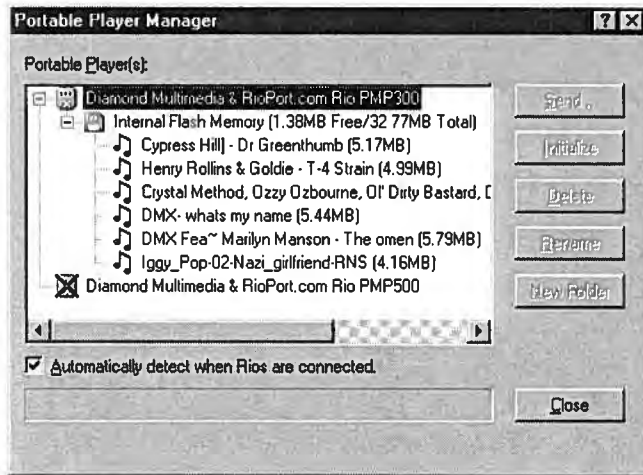


5. Click **Open**. The Portable Player Manager dialog displays the download progress of each song.



Note: Sonic Foundry recommends allowing Siren to complete this operation. Clicking Cancel may leave the portable player in an unknown state.

After Siren downloads all selected songs, the Portable Player Manager dialog displays a list of songs in the player.

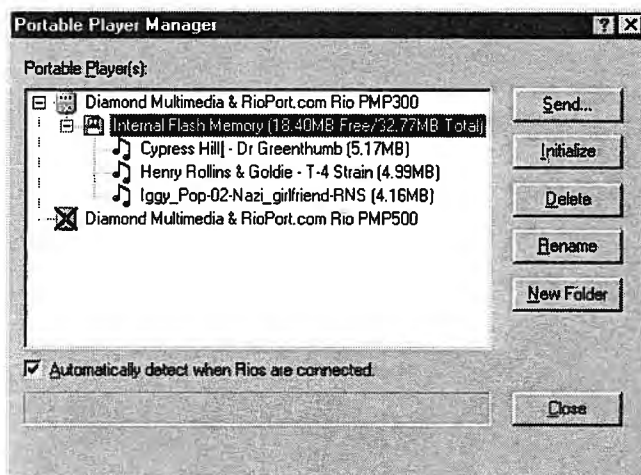


Managing the Portable Player

In addition to downloading .mp3 files to portable players, Siren can also manage files. However, management options vary based on the make and model of the player.

To manage music in a portable player:

1. Verify that the portable player is properly connected to the computer, as described in the player's documentation.
2. Choose **Manage Portable Player** from the **File** menu. The Portable Player Manager dialog is displayed, listing songs in the player's memory.



From this dialog, users are able to download .mp3 files to the portable player, as well as manage the .mp3 files stored in the player's memory. Management options vary based on the make and model of the portable player.

Note: *For more information on portable player management features, refer to Siren's online help.*

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EXHIBIT 4

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WINDOWS MEDIA™ PLAYER 7 HANDBOOK

SETH McEVOY

Microsoft®

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How Does the Player Work?

In this chapter you'll learn how to operate Windows Media Player 7. You'll see how to play files, use the buttons to navigate, change the settings, use the menus, and switch to different views and modes. You'll also be shown how to find files on the Internet, copy music from CDs, and use playlists.

Playing a file in only three steps

Playing music or video on the Player is a simple 1-2-3 process:

1. Go to the **Now Playing** view.
2. Pick a song from a playlist and click the song title.
3. Then click the **Play** button to begin playing.

The three steps to playing a song are shown below in more detail.

Step 1: Start with the full mode Player

When you start Windows Media Player 7 for the first time, and you are connected to the Internet, you should see the full mode Player in the **Media Guide** view. Figure 2.1a shows a typical **Media Guide** view.

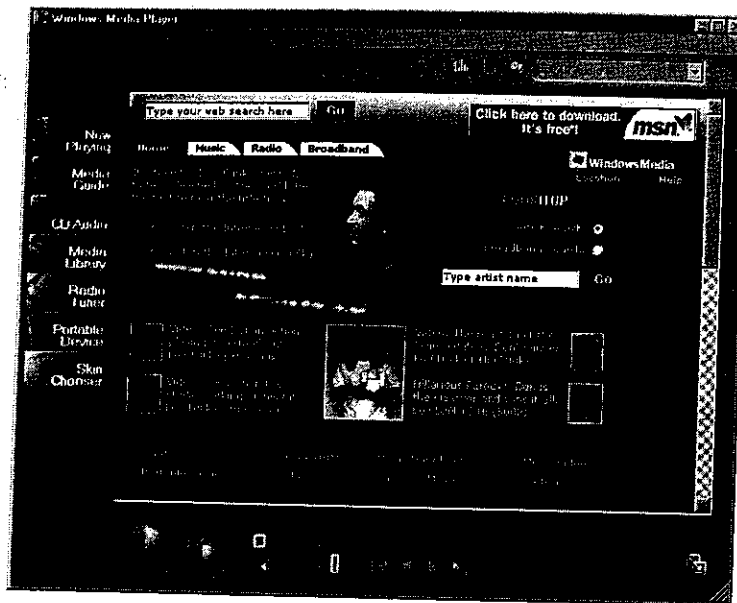


Figure 2.1a - Full mode Player in Media Guide view with Internet connection.

The **Media Guide** is a Web site that gives you a doorway into the world of audio and video on the Internet. The contents change nearly every day, giving you new audio and video selections, current entertainment news, and free downloads.

If you are *not* connected to the Internet, you'll see a screen similar to Figure 2.1b.

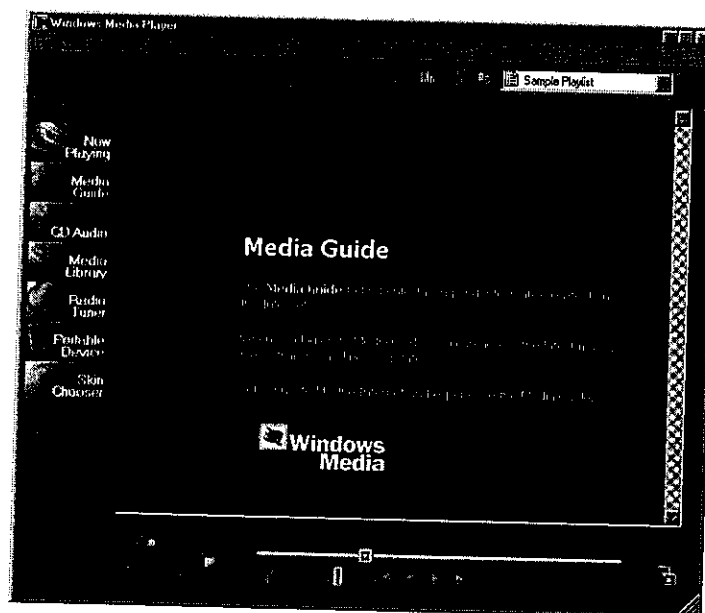


Figure 2.1b – Media Guide view without an Internet connection.

You can now get started using Windows Media Player. Click **Now Playing** on the left side of the full mode Player. You should see a view similar to Figure 2.2.

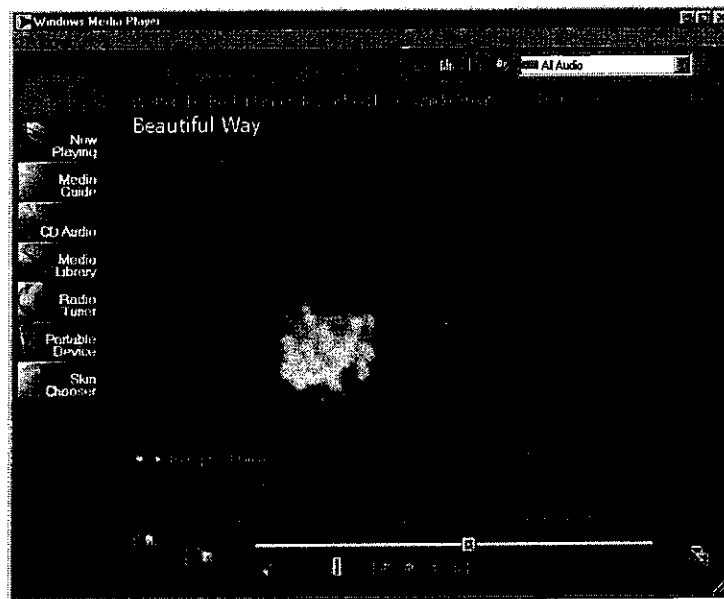


Figure 2.2 – Windows Media Player in full mode in the *Now Playing* view.

If you don't see something like Figure 2.2, you're probably looking at a skin. A skin may have been loaded by the last person to use the Player; you won't be able to see the **Now Playing** view when a skin is running. If you are viewing a skin, you will want to return to the full mode of Windows Media Player.

Windows Media Player comes in two modes: full mode and compact mode. The compact mode is used to display skins, and the full mode displays the standard Player. To return to full mode from any skin, right-click anywhere on the skin and then click **Return to Full Mode** on the shortcut menu that appears.

The full mode has several different views it can display. Right now, all you want to do is play a file, so click **Now Playing** at the left side of the full mode Player. You should now see something that looks close to Figure 2.2. You probably will have a different visualization or a different playlist loaded on your computer, but you're ready to start.

Step 2: Choose a song

There are several ways to choose a file to play, but the easiest way is to use a playlist. Playlists will be covered in greater detail later in this chapter, but to get you started, use the playlist that should be visible on the right side of the **Now Playing** view.

Figure 2.3 shows a **Now Playing** view with a playlist named “All Audio” that contains all the songs that the Player has information about. The third song, “Laure”, is selected and playing. You can double-click any item in the playlist to start playing that item.

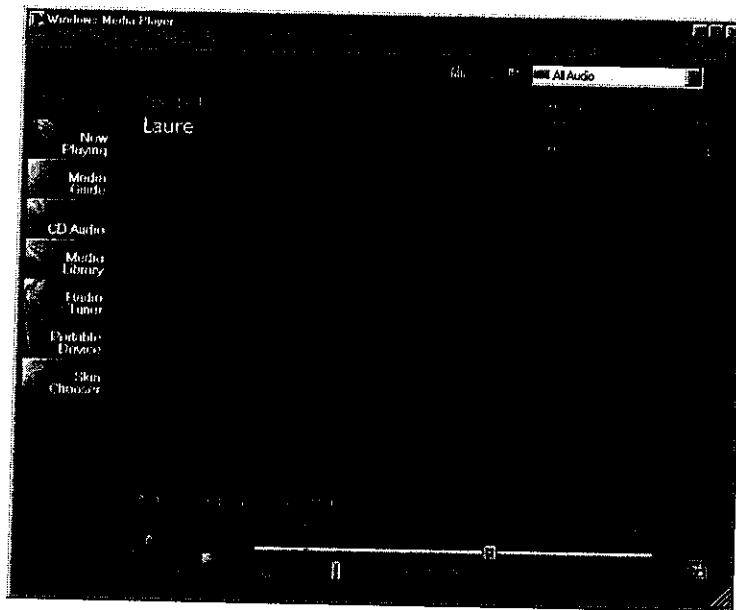


Figure 2.3 – *A playlist with more than one item.*

You can learn more about using playlists later in this chapter. There are other ways to choose audio and video files as well, and they will also be covered in this chapter.

Step 3: Click Play

Now that you’ve selected a song title, click the **Play** button. It looks like an arrow that is pointing to the right. You can see it in Figure 2.4.



Figure 2.4 – *The Play button of the full mode Player.*

When you click the **Play** button, two things happen. The music starts playing and the button changes. The button now looks like Figure 2.5.



Figure 2.5 – *The Pause button of the full mode Player.*

This new button is the **Pause** button. Any time you want to stop the Player, just click the **Pause** button. That will stop the music playing and change the **Pause** button back to a **Play** button.

Using the navigation buttons

Windows Media Player has several other buttons you can use to enhance your playing experience. The following buttons are always at the bottom of the window in the full mode Player and are listed here from left to right:

- **Play/Pause**
- **Stop**
- **Seek**
- **Mute**
- **Volume**
- **Previous**
- **Fast Reverse**
- **Fast Forward**
- **Next**
- **Switch to compact mode**

If you hover over a button with the mouse pointer, the name of the button will appear.

Figure 2.6 shows the navigation buttons for the full mode Player. These buttons are also called transport buttons and use symbols that are common to the electronic industry for controlling tape recorders, VCRs, and CD players. You'll often see the same button symbols in skins, but because every artist designs skins his own way, and the artwork varies widely, you won't necessarily find all the same buttons in each skin, or the buttons may not be in the same order.



Figure 2.6 – *Navigation buttons.*

Here is a brief explanation of each button.

Play/Pause

This button toggles back and forth between two states: **Play** and **Pause**. **Play** starts the selected music or video playing, and **Pause** pauses it. Clicking **Play** from a paused state will start the program playing from the same position it was paused at.

Stop

This button stops a currently playing program. If you click **Play** after clicking **Stop**, the program will start over at the beginning.

Seek

This is the long bar that extends above the other buttons. The **Seek** bar shows the current position in the file. If you click and drag the tiny box, you can change the current position in the file to anywhere you want. The left end of the **Seek** bar represents the beginning of the file, and the right end represents the end of the file. So the midpoint of the bar represents the midpoint of the file, regardless of its length.

Mute

Click this to mute the sound of the currently playing file. Click it again to return the sound to its previous volume.

Volume

This is a short triangular bar with a box above it. Click and drag the box left or right to increase or decrease the volume of the sound.

Previous

Click this to go to the previous title in a playlist.

Fast Reverse

Click this to move the current seek position of the file backward. Click it again to start playing from the new seek position. This button only works for video files that use the Windows Media video file format.

Fast Forward

Click this to move the current seek position of the file forward. Click it again to start playing from the new seek position. This button only works for video files that use the Windows Media video file format.

Next

Click this to go to the next title in the playlist.

Switch to compact mode

Use this to change the Player display to compact mode. This will change the user interface to the default skin or the last skin you selected.

Watching visualizations

At the bottom of the left side of the **Now Playing** pane, you'll see two buttons. Click these to change visualization presets. These buttons are shown in Figure 2.7.

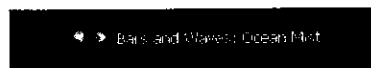


Figure 2.7 – *Previous visualization and Next visualization preset buttons.*

Visualizations draw moving shapes and colors on the screen that rise and fall in time to the beat and tone of the music. Several visualizations are included with Windows Media Player, and more are available from the Windows Media Player Visualizations Gallery. Click **Download Visualizations** on the **Tools** menu to go there.

Each visualization has several presets. Each preset gives a different “flavor” or “twist” to the visualization; for example, one preset might make all the colors soft pastels and another preset would make them vivid primary colors. You can change visualizations and presets by clicking the **Previous visualization** and **Next visualization** buttons. The visualization and preset names are displayed to the right of the buttons, with the visualization name first, and the preset name following, separated by a colon.

You won't see a visualization if you're playing a video, because they both use the same display pane.

Changing other settings

There's one other button that can be useful when playing audio and video. At the top of the full mode Windows Media Player, just to the right of center, you'll see the **Show Equalizer & Settings** button that looks like Figure 2.8.



Figure 2.8 – *Show/Hide Equalizer & Settings in Now Playing button.*

Clicking this button will show a new pane in the **Now Playing** area that is below the visualization/video pane. This pane covers several settings. To move to a new setting, click the **Previous setting** or **Next setting** button. These buttons are shown in Figure 2.9.



Figure 2.9 – *Previous setting and Next setting buttons.*

The following settings are accessed from this pane by clicking the **Previous setting** and **Next setting** buttons:

- **SRS WOW Effects**
- **Graphic Equalizer**
- **Video Settings**
- **Windows Media Information**
- **Captions**

Here is a brief explanation of each setting.

SRS WOW Effects settings

This pane allows you to adjust the SRS WOW settings. SRS is a type of surround sound that makes your audio sound more lifelike and three-dimensional. You can see the **SRS WOW Effects** pane in Figure 2.10.

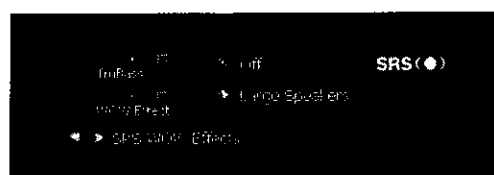


Figure 2.10 – SRS WOW Effects pane.

On the right is the logo for SRS. Click it to find out more about SRS. On the left are two horizontal sliders that adjust the **TruBass** and **WOW Effect**. Between the two sliders and the SRS logo are two buttons: the top turns SRS on and off, and the bottom one toggles between various presets.

Here is a brief explanation of each button:

TruBass

Sliding this all the way to the right increases the bass enhancement of the audio. Sliding to the left decreases it.

WOW Effect

Sliding this to the right increases the perceived height and width of the audio image.

On/Off

Click this toggle button to turn the **SRS WOW Effects** on or off.

Speaker Settings

Click this to toggle through the following speaker settings: normal speakers, large speakers, and headphones.

Graphic Equalizer settings

This pane allows you to adjust the audio to make it sound exactly the way you'd like. If you want to boost the bass or cut out high notes, this is the place to do it. Figure 2.11 shows the **Graphic Equalizer** pane.

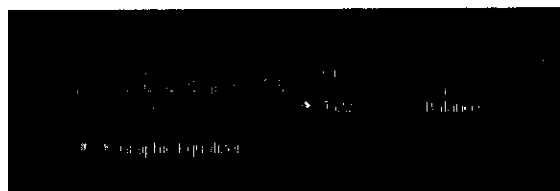


Figure 2.11 – Graphic Equalizer pane.

On the left you see ten sliders that correspond to ten divisions of the audio spectrum. Move the leftmost slider up to increase the power of the lowest fre-

quencies, move it down to reduce them. Similarly, the rightmost slider controls the upper tenth of the spectrum (the highest frequencies). Play with the sliders to see what sounds good to you.

To the immediate right of the sliders are two buttons. The top one turns the graphic equalizer on or off. If it is off, the settings are completely "flat," that is, no modification is made to the sounds. The bottom button toggles through several presets that are based on popular styles of music. For example, the **Jazz** preset will boost the middle frequencies more than the **Acoustic** setting. If you make changes in the **Custom** preset, those changes will be saved for the next time you use the Player.

To the right of those two buttons is a final horizontal slider that allows you to adjust the stereo balance. Move it to the left to increase the apparent volume of the left channel and to the right to increase the right volume.

Video settings

This pane allows you to adjust the video to make it look the way you like it. If you want to adjust the brightness or the intensity of the color, this is the place to do it. Figure 2.12 shows the **Video Settings** pane.



Figure 2.12 – *Video Settings* pane.

On the left side of the pane are four horizontal sliders. They adjust the **Brightness**, **Contrast**, **Hue**, and **Saturation** of the video picture. To the right of these sliders is a button that resets all the sliders to their default (centered) positions.

Here is a brief explanation of each slider:

Brightness

This adjusts the brightness of the video picture. Slide it all the way to the left to make the picture completely black and all the way to the right to make it completely white. Usually you'll want it somewhere in between.

Contrast

Use this to sharpen or blur video images. Moving this slider all the way to the left makes the picture sharper. This effect is sometimes known as posterization. Moving it to the right makes the image look blurry, as if everything was photographed in a dense fog or underwater.

Hue

Adjust the hue for basic color changes. Slide it to the left to make everything more red/purple and to the right for green.

Saturation

This adjusts how much color is shown in the video. Slide the slider all the way to the left, and only the gray tones are used, with no color at all. Slide it all the way to the right, and the colors are extremely intense (saturated).

Windows Media Information

This pane isn't really a setting, but shows additional information about a particular item. For example, if you load the **Sample Playlist**, and open the **Windows Media Information** pane, you'll see something like Figure 2.13.

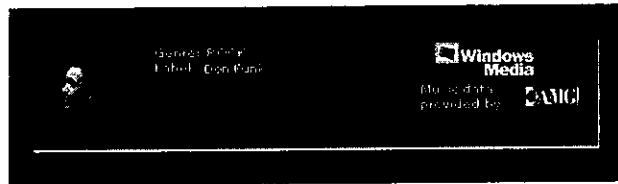


Figure 2.13 – *Windows Media Information* pane.

The **Windows Media Information** pane can display details such as genre and label, but can also display pictures, links, and other useful information. In this example, if you click the album cover or the link to the right of it, you'll be taken to a Web page that gives more details about the artist, album, label, and so on. For more information on how to create advertising information such as the kind you see in the **Windows Media Information** pane, see Chapter 13.

Captions

This pane isn't really a setting either, but shows captions for video files. See Figure 2.14 for a typical caption file.

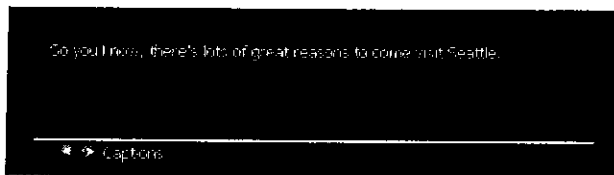


Figure 2.14 – *Captions pane.*

For more information about captions, see Chapter 13.

Using menus

Many of the operations you can perform with buttons can also be done through menus. The **File** menu is always available in the full mode view but is also available in skins that provide menus. Here is a brief listing of each menu item and what it does.

File menu

The **File** menu helps you work with files. The following commands are available on the **File** menu:

Open

Use this to load a file, using the standard Windows **Open** dialog box. The file you select will be loaded into a new playlist, and the file will start playing.

Open URL

Use this to load a file from a Web site or over a network. A URL (Uniform Resource Locator) is a path to a file; for example, *http://internalsite/laure.wma* is a URL. You must type a URL that links to an audio or video file. If you type a URL to a Web page, you will get an error.

Close

This doesn't close the Player; it closes the media file that is playing. It stops the Player and deselects the current item in the current playlist.

Add to Library

Use this to add a track to the media library. The media library is the collection of all audio and video that the Player has information about. When you select this option, you are given three choices: **Add Currently Playing Track**, **Add File**, and **Add URL**. The first choice is useful when you want to add the content that is currently playing to the media library. The second and third choices are similar to the **Open** and **Open URL** commands on the **File** menu except that instead of playing the file, the Player just adds it to the media library.

Import Playlist to Library

Use this to import a playlist into the media library. Playlists are Windows Media metafiles that have an extension of .asx, .wax, .wvx. You can also import a .m3u file which will automatically be converted to a playlist.

Export Playlist to File

Use this to save a selected playlist in a text file. If you don't have any playlists selected (or any playlists at all), the media library will be saved as a playlist.

Copy to CD

Use this to copy files to a CD. You must have a CD-ROM that is recordable and a CD drive capable of recording. For more information about copying files to a CD-ROM, see Chapter 3. You may not see this menu item if you do not have a recordable CD drive installed on your computer.

Properties

Selecting this will display information about the audio or video that is currently playing.

Work Offline

Use this option if you don't want the Player to go out to the Internet to gather information about CDs.

Exit

This will shut down Windows Media Player.

View menu

The **View** menu helps you see all the different parts of Windows Media Player and work with visual elements. The following commands are available through the **View** menu:

Full Mode

This option returns you to the full mode view.

Compact Mode

Use this to change from full mode to a skin. Whatever skin you used last will be the default skin.

Now Playing Tools

Select this to change how the **Now Playing** area looks. You can choose to hide or display the playlist, title, and visualization portions of the pane. You can also show or hide the following settings: **SRS WOW Effects**, **Graphic Equalizer**, **Video**, **Windows Media Information**, and **Captions**. Finally, you can also hide or show the resize bars, which are the bars that separate the sub-panes of the **Now Playing** area.

Task Bar

The **Task Bar** menu command provides access to the same features found on the **Task Bar** tabs at the left side of the full mode Player. The following features are provided: **Now Playing**, **Media Guide**, **CD Audio**, **Media Library**, **Radio Tuner**, **Portable Device**, and **Skin Chooser**. For more information about the **Task Bar**, see the "Changing views in full mode" section of this chapter.

Visualizations

Selecting this option provides a list of the currently loaded visualizations. Selecting a visualization shows you the presets that are available for each visualization.

File Markers

Use this to go to a specific position in a file that has markers. If a file doesn't have markers, you can't select this option. For more information about file markers, see Chapter 12.

Statistics

Selecting this option can show you how well the file is playing. This can be particularly useful if you want to report problems with files that you are receiving in real time through the Internet (called streaming). If there are problems, you usually will know, but this option can give you exact answers, such as how many packets are being lost during transmission.

Full Screen

If you are playing a visualization that supports it, use this option to have the visualization display over the full screen of your computer. Once in

full screen, you can return to normal mode by pressing the ALT and ENTER keys simultaneously.

Refresh

Use this to refresh the page when you are using the **Media Guide**, **Portable Device**, or **Radio Tuner** panes. If you think you're looking at yesterday's Web page, you may be right. Some information in these task panes is cached, that is, stored on your hard disk, depending on the settings in Internet Explorer or your portable device.

Zoom

This allows you to change the size of a video that is playing. You can choose to make it fit the screen, or pick a specific percentage of the original. The percentages are 50%, 100%, and 200%.

Play menu

The **Play** menu gives you most of the same options that the transport buttons offer. The following commands are available through the **Play** menu:

Play/Pause

This starts the music or video program playing, or if it is already playing, pauses it. The Player must have at least one item in the media library in order to play. Playing a paused file starts the file playing at the same position it was paused at.

Stop

This stops the currently playing program. If you click **Play** after stopping the program, the song or video will start over at the beginning.

Skip Back

This stops the currently playing item in the playlist and plays the previous item in the same playlist. This corresponds to the **Previous** button in the Player buttons at the bottom of the full mode Player. If you are at the first item in a playlist and you select **Skip Back**, the last item in the playlist will be played.

Skip Forward

This stops the currently playing item in the playlist and plays the next item in the same playlist. This corresponds to the **Next** button in the Player buttons at the bottom of the full mode Player. If you are at the last item in a playlist and you select **Skip Forward**, the first item in the playlist will be played.

Rewind

This rewinds a video in short intervals. You can only rewind videos that are encoded in Windows Media Format. This corresponds to the **Fast Reverse** button in the Player buttons at the bottom of the full mode Player.

Fast Forward

This fast forwards a video in short intervals. You can only fast forward videos that are encoded in Windows Media Format. This corresponds to the **Fast Forward** button in the Player buttons at the bottom of the full mode Player.

Shuffle

This plays the items in the current playlist in a random order. It does not change the order of the items in the playlist, only the order in which they are played while the shuffle option is selected.

Repeat

This repeats the playing of the entire current playlist, not specific items in a playlist. If you want to repeat only one item, create a new playlist, put only that item in it, and repeat that playlist.

Volume

This lets you nudge the volume up or down by a small amount. It also allows you to mute the volume.

Tools menu

The **Tools** menu is for advanced features of Windows Media Player. The following commands are available through the **Tools** menu:

Download Visualizations

Select this to go to a Web page that will let you download new visualizations.

Search Computer for Media

Use this to search your computer for all audio and video files. The Player will add the files it finds to your media library and divide them between the audio and video collections. If you choose the option to search for WAV and MIDI files, you will add a lot of Windows sound effects that you may not want to play with the Player; on the other hand, you may

discover some interesting MIDI files that are hidden away inside your Windows folder. You can choose to load from local drives, network drives, all drives, or a specific drive, and even a specific directory. If you have mapped a network drive to your computer, you can search that drive as well. For example, if drive X: is mapped to a network drive, you can search that drive, or directories on that drive.

License Management

If you download music that requires a license, or make copies of CD tracks, this option specifies where you want to store the licenses on your computer. You might want to pick a folder that you can find easily so you can conveniently back up your licenses to another drive or storage medium. If you pay for a song and the song needs a license to play, you'll want to take good care of your licenses. For more information about licensing, see "Understanding digital rights" in Chapter 3.

Options

This is the option for everything else not covered in other menu items. The following section, "Options dialog box," provides more information about this menu item.

Options dialog box

If you go to the **Tools** menu and click **Options**, the **Options** dialog box is displayed. It covers various options you may want to change. The following tabs are included in the **Options** dialog box:

Player

This tab lets you set how often you want Windows Media Player to check for software upgrades (daily, weekly, monthly), whether you want the Player to automatically download codecs it needs (See Chapter 3 for more about codecs.), whether you want the Player to identify itself to Web sites and download licenses automatically, whether you want the Player to start up in **Media Guide** (instead of whatever you mode you used last time), and whether you want skins to be on top of other windows. You can also decide whether you want the anchor to be displayed when using skins. The anchor window is a small window that appears in the lower right corner of the screen when Windows Media Player is in compact mode. You can click the anchor window, and then click **Return to Full Mode** to return to the full mode of the Player. Most

of the time you'll want to leave these options the way they were initially set.

Network

If you are an advanced networking user, you can use this tab to set proxies, ports, and protocols.

CD Audio

Use this to set up how you will play or record CDs. For playing CDs, you can choose whether to use digital playback, if your computer supports it, and whether to use error correction. Change these options if you are having problems playing CDs. For copying music from CDs, you can select how much compression to use when converting music from CD format to music file formats. You'll have to choose between smaller file sizes and better quality. You can also choose whether to use digital copying or error correction, and whether to use personal rights management. Finally, you can choose what folder you want the copied audio files to be created in. For more information about copying CDs and digital rights, see Chapter 3.

Portable Device

If you have a portable device, you can use this pane to decide whether to let the Player convert the music automatically or let you pick a tradeoff between file size and audio quality. You can also click a button and find out what devices are supported by Windows Media Player. For more information about portable devices, see Chapter 5.

Performance

You might want to use this tab if you are having trouble with viewing live files (streaming). You can tell the Player what network connection you have, how much buffering to do, whether you want to use hardware acceleration with video, and how to adjust digital video settings. For more information about streaming, see Chapter 4.

Media Library

Use this tab to set access rights to your media library. You can specify what levels of access you want to grant outside Web sites to read or modify the media in your library. This involves both security and privacy issues. This also specifies whether you want Internet music purchases to be added to your library automatically.

Visualizations

If you have installed a visualization that has properties you can change, go to this tab to change them. For example, the Ambience visualization will let you set the full-screen size and offscreen buffer size. You can also use this tab to load a visualization that is stored on your computer but that is not registered with the Player. Be sure you know the source of any visualization before loading, and load them from only trusted sites, so that you can avoid viruses.

Formats

Use this tab to make sure the Player plays the file formats you want it to play. If another brand of player starts playing a file that you want Windows Media Player to play, change the file association here, if it is a file format the Player can play.

Help menu

The **Help** menu gives you help and information. This menu has the following three commands:

Help Topics

This command launches the Help file that comes with Windows Media Player. The Help file covers all the features you need to know about to use the Player. You can also get the Help file by pressing the F1 key on your computer at any time while Windows Media Player is the active Window.

Check For Player Upgrades

Use this command any time you're curious about upgrades to Windows Media Player. The Player will do this automatically for you, but you may want to do it yourself if you've heard news of a new version.

About Windows Media Player

This will display the name, copyright, version number, and product ID of Windows Media Player.

Compact mode shortcut menu

When Windows Media Player is in compact mode, you can right-click the skin and get a menu. Each of the commands on the menu corresponds to a similarly named command on one of the menus of the full mode Player.

Table 2.1 shows the commands on the menu of the compact mode along with their corresponding full mode menu commands.

Compact mode menu command	Full mode menu command
Open	File menu Open option
Open URL	File menu Open URL option
Shuffle	Play menu Shuffle option
Repeat	Play menu Repeat option
Volume	Play menu Volume option
Play/Pause	Play menu Play/Pause option
Stop	Play menu Stop option
Skip Back	Play menu Skip Back option
Skip Forward	Play menu Skip Back option
Return to Full Mode	Play menu Skip Forward option
Full Screen	View menu Full Screen option
Properties	File menu Properties option
Statistics	View menu Statistics option
Options	Tools menu Options option
Help	Help menu Help Topics option
About	Help menu About Windows Media Player option
Exit	File menu Exit option

Table 2.1 – Menu commands of the compact mode Player.

Changing views in full mode

The full mode of Windows Media Player has seven views that are accessed by clicking tabs on the **Task Bar**, which is on the left side of the window. Each view gives you a different way to interact with audio and video. Here is a list of the views:

Now Playing

This view shows a visualization or video on the left pane and a playlist on the right. You can also display a hidden settings pane to make various adjustments or see additional information. You'll spend most of your time in this view.

Media Guide

This is the default view of the Player and opens up a world of audio and video through the Internet. You can get daily news of new audio and video releases, tune in to Internet radio stations, and download tons of things to see and hear, most of it free! For more help with downloading, see the "Finding files on the Internet" section in this chapter.

CD Audio

If you have a CD player in your computer, you can play your CD tracks using Windows Media Player. For more information about using CDs, see the "Copying music from CDs" section in this chapter. For more information about creating your own CDs, see Chapter 3.

Media Library

This is where you can organize all your audio and video. You can search for audio and video files on your computer, create playlists, and change your Internet radio presets here. For more information about working with playlists, see the "Using playlists" section of this chapter.

Radio Tuner

Use this feature to search out and sort Internet radio stations. From around the world or around the block, you can listen to music every hour of every day and never hear the same thing twice!

Portable Devices

Use this pane to download music to your Pocket PC or other portable device. For more information about portable devices, see Chapter 5.

Skin Chooser

Use this to apply skins that came with your installation. You can also use this feature to download new skins from the Windows Media Skins Gallery Web site. Once you try one skin, you'll never want to stop! New skins will be appearing frequently, so check this site often.

Finding files on the Internet

Now that you know how to use the Windows Media Player, you can go out on the Web and find more music. You can use a browser to do this of course, but Windows Media Player gives you a special window to the world of music and video. This window is called the **Media Guide**. Earlier in this chapter you saw a typical view of the **Media Guide** in Figure 2.1a.

The Player will start up with the **Media Guide** view. You can always get to it by using the full mode of the Player and clicking **Media Guide** on the **Task Bar** on the left side of the Player. If you don't want **Media Guide** to be the default view, go to the **Tools** menu and click **Options**; then click the **Player** tab and clear the **Start Player in Media Guide** check box.

The **Media Guide** is a window to the WindowsMedia.com Web site. The **Media Guide** has hundreds of links to new audio and video files to play and download, and gives you lots of information about what's new in the world of audio and video. You can spend hours and hours exploring the **Media Guide**.

For more information about file formats you can download, see Chapter 3. For information about seeing and hearing files without waiting to download them (streaming), see Chapter 4.

Copying music from CDs

If you want to listen to music from different CDs without inserting and removing your CDs all the time, Windows Media Player can save you a lot of time. All you have to do is copy the CD (or just the tracks you want) onto your computer, then assemble the tracks into playlists and create your own customized musical experience.

Also, you can have the Player compress the files so they won't take up as much room on your hard disk. You can control the amount of compression you need. Choosing high compression will create files that won't sound as good but will take up less space.

Copying tracks

Copying CD tracks is extremely easy. All you need to do is load a CD into your CD-ROM drive and start Windows Media Player. When the Player starts, it loads the CD tracks into a playlist and displays the **CD Audio** pane of the full mode Player. Figure 2.15 shows a typical **CD Audio** pane, which you can always get to from the full mode view of the Player by clicking the **CD Audio** tab of the **Task Bar** on the left side of the Player.

If you are connected to the Internet, the Player will go out to a database and get information about each track on the CD, showing you not only track names and lengths, but artist, genre, style, and so on. On many CDs, you can even click the **Album Details** and go to a Web site that contains more information about the CD.

After you've loaded your CD, all you have to do is decide which tracks you want to copy to your computer. After you've decided, select the check box at the left of each track to select the tracks you want to copy.

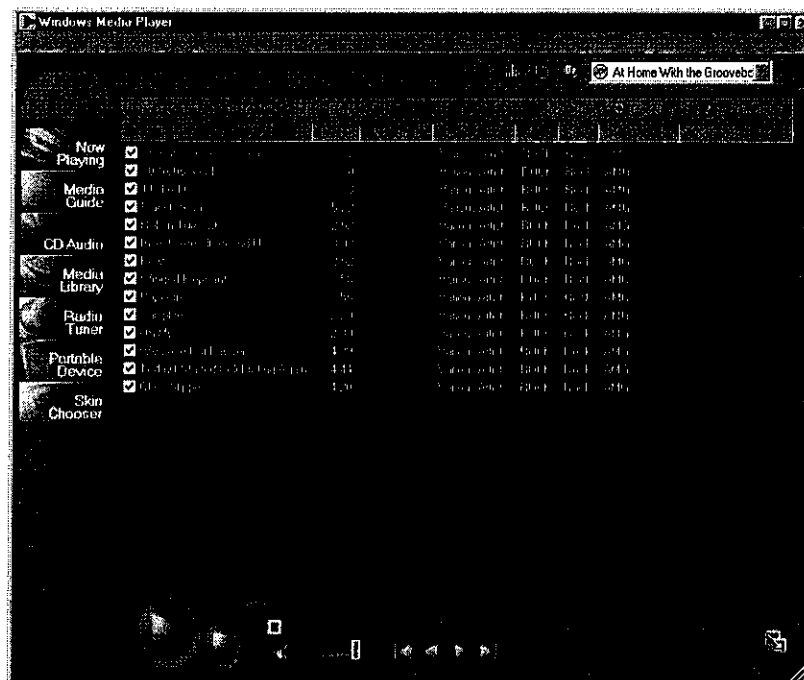


Figure 2.15 – Audio CD pane.

When you're ready to copy, just click the red **Copy Music** button. You'll see that the Player starts copying because there is a Copy Status column in the

CD Audio playlist, and the status will be displayed. Files that are being copied will have a percent-copied display; files that will be copied are labeled "Pending" and when a file is finished copying, it will be labeled "Copied to Library" in the status column.

Selecting copy options

There are several options you can select that will allow you to change the way that the Player copies files from a CD to your computer. Click **Options** on the **Tools** menu, and then click the **CD Audio** tab. You'll see the following choices:

Digital playback (under Playback Settings)

This setting only applies to playback, not to copying CDs. If your computer supports digital playback, select this check box and see how digital playback sounds. If you don't select this option, you will not be able to see visualizations.

Use error correction (under Playback Settings)

This setting only applies to playback, not to copying CDs. If you are experiencing a lot of errors, selecting this check box may help correct them during playback. You'll know you're getting errors if the audio sounds as if parts are missing or the video starts jumping around and missing frames. You can only select this if you have also selected the **Digital playback** check box.

Copy music at this quality (under Copying Settings)

Windows Media Player can compress the digital information in the files it creates so that the files will be smaller. It does this using a variety of techniques. Depending on the type of music you're copying, you may or may not notice the difference. You can choose the amount of compression with a slider bar. An average music CD can be compressed from as small as 28 MB to as large as 70 MB. The larger the file, the better the sound quality.

Digital copying (under Copying Settings)

Select this check box to copy CD tracks to audio files that enable digital playback. Not all computers and sound cards have digital playback. If yours do, this is a good option to use, and the sound doesn't need to be converted to analog and back to digital. If you're not sure, try a track both ways and see what you like.

Use error correction (under Copying Settings)

You can only select this check box if you've also selected the **Digital copying** option. Use this if your tracks are producing errors. Once again, if you're not sure whether to use this, try a track both ways and listen to the results.

Enable Personal Rights Management (under Copying Settings)

If this check box is selected, the files you create will have information attached to them indicating that they were created on your computer. You will definitely want to keep this option checked if you want to copy your files to a portable device such as a Pocket PC; many portable devices will not play music if you have not licensed the appropriate rights for a particular file. However, if you keep this option checked, you cannot play files you have copied on another computer. So if you want to copy files from your CD and then transfer them to another computer, you should not select this option. Of course, before copying and transferring, be sure you have the legal right to do so. The issues of digital rights are covered in Chapter 3.

Using playlists

A playlist is a convenient way to organize groups of audio and video files. The term comes from the radio industry and refers to the list of songs that a disc jockey plays on a particular radio program.

You might want to make up playlists for different performers or different kinds of music or videos. You can shuffle playlists or repeat them endlessly. This way, you can create a media experience that is continuously entertaining.

You can see which playlist is playing by looking in the upper-right corner of the full mode Player. You will see a drop-down list box, which shows the current playlist.

Using the Media Library

The **Media Library** is the key to understanding playlists. The **Media Library** is where you create your playlists. You can get to the **Media Library** by choosing the **Media Library** tab on the **Task Bar** of the full mode Windows Media Player. Figure 2.16 shows a typical view of the **Media Library**.

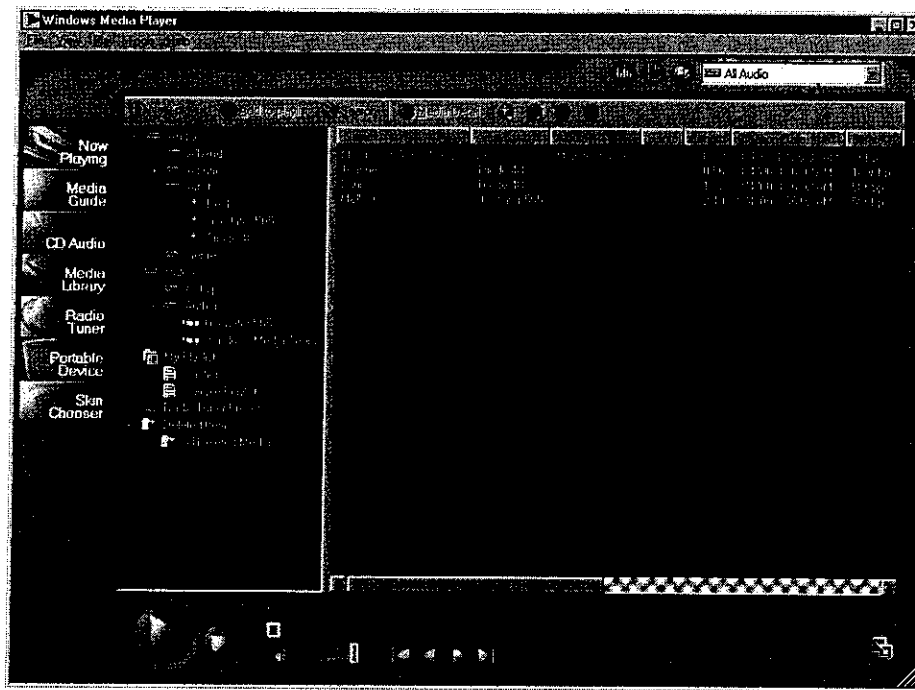


Figure 2.16 – Media Library.

On the left side of the **Media Library** you'll see a tree-like list of all the audio and video that the Player has information about, as well as all playlists and radio presets. This is set up similar to Microsoft Windows Explorer in that you click an item on the left and the contents of that item appear on the right.

The **Media Library** is divided into the following sections:

- Audio
- Video
- My Playlists
- Radio Tuner Presets
- Deleted Items

Each section is a node in the tree. Figure 2.17 shows the five nodes of the **Media Library**.

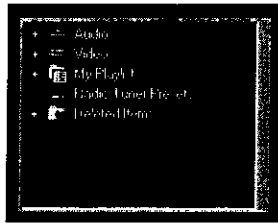


Figure 2.17 – *Five nodes of the Media Library.*

Figure 2.18 shows the nodes expanded by one level for each node. You can expand a node to show the items inside it by clicking the plus sign to the left of the node name.

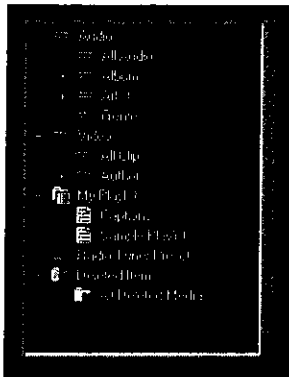


Figure 2.18 – *Media Library nodes expanded by one level.*

You can explore the contents of the **Media Library** by expanding the nodes. Any time you click one of the node item names, the contents of that node, if it is a folder, will be displayed in the right pane of the **Media Library**.

Understanding the audio collection

The audio collection is the part of the library that keeps track of audio files on your computer and other audio files that the Player has information about (for example, files on the Internet).

Adding Audio Files

You can add to the audio collection in several ways:

- Click the **File** menu, click **Open**, and then choose an audio file.
- Click the **File** menu, click **Open URL**, and then choose an audio file.
- Click the **File** menu, click **Add to Library**, and then choose an audio file.

- Click the **File** menu, and click **Import Playlist to Library** (if the playlist has links to audio files in it).
- From the **CD Audio** task pane, copy a CD track to your computer.
- Start an audio file playing by double-clicking it.
- Start an audio file playing by right-clicking it and selecting the **Play** option.

Sorting audio files

You can find a file by clicking the **Search** button at the top of the **Media Library** pane.

The Audio collection is a database of audio files, and like other databases, it stores not only the file name and location of audio files, but additional information such as artist, album, and genre. This additional information is used to sort the Audio collection into at least four categories. You can see the categories by clicking the nodes to the left of the **Audio** label. Figure 2.19 shows the four nodes inside the Audio collection.

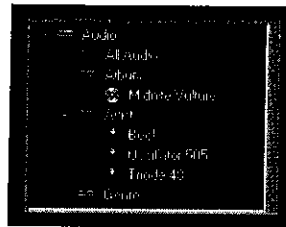


Figure 2.19 – *The four nodes of the audio collection.*

Here is an explanation of each category:

All Audio

This includes a list of all audio that Windows Media Player has information about.

Album

This shows a list of all music that is associated with albums. The album information can come from a CD, from a playlist, or can be embedded in the file itself. The Player can get album information about CDs from Internet databases.

Artist

You can see a list of all the artists that are associated with the audio files in the Audio collection.

Genre

If you want to find audio files that have a genre associated with them, this is the place to look.

Understanding the video collection

The video collection uses the same concepts as the audio collection except that it keeps track of video files. Instead of **All Audio**, the video collection will refer to **All Clips**, **Artist** becomes **Author**, and there is no album or genre equivalent for videos.

Understanding My Playlists

This is a collection of all playlists that the Player has information about. Playlists are lists that you create of audio and video content.

Creating playlists

Creating playlists couldn't be simpler. Click the **New Playlist** button at the top left of the **Media Library** and enter the new playlist name.

Adding to playlists

You can add to playlists by doing the following:

1. Create your playlist.
2. Find the audio or video file you want to add. You must open an Audio or Video collection and select a file from the collection. For example, open the Audio collection, then open the Artist collection, choose an artist you like, displaying all the songs by that artist in the right pane.
3. Select the audio or video file, and add it to the playlist. You can do this in one of two ways. The easy way is to right-click the file and choose the **Add to Playlist** option. You'll be provided with a list of playlists. Pick one and you're done. There's also an **Add to Playlist** button at the top of the **Media Library** pane if you prefer to click a button.
4. You can also select the audio or video file and drag it to the playlist in the left pane. This requires a bit of opening and closing of nodes in the collection, but after you get used to it, you'll find that this is a useful way to work with complicated playlists.

Deleting and renaming playlists

You can also delete and rename playlists by right-clicking a playlist and choosing the delete or rename option. Deleted playlists aren't really deleted, they are transferred to the **Deleted Items** part of the **Media Library**.

Deleting media items and playlists

If you delete an item in the audio or video collection, the item is transferred to the **Deleted Items** part of the **Media Library**. The same is true for deleted playlists. This is similar to the Recycle Bin in Windows.

Restoring media items and playlists

You can get the file or playlist back by right-clicking it and selecting the **Restore** option. The file or playlist will return to the place you deleted it from.

Permanently deleting media items and playlists

If you want to permanently erase the media items and playlists you deleted, you can reclaim their disk space by right-clicking the **Deleted Items** node and choosing the **Empty Deleted Items** option. Be careful! After you do this, you can't go back! But at least you're given an option to change your mind before the media files and playlists are gone forever.

Using the Radio Tuner

The **Radio Tuner** feature lets you use the Player to listen to Internet radio stations from around the world. Thousands of stations broadcast audio programs of music, news, and commentary.

Figure 2.20 shows the **Radio Tuner** view, which you can get to by clicking **Radio Tuner** in the task bar on the left side of the full mode of Windows Media Player.

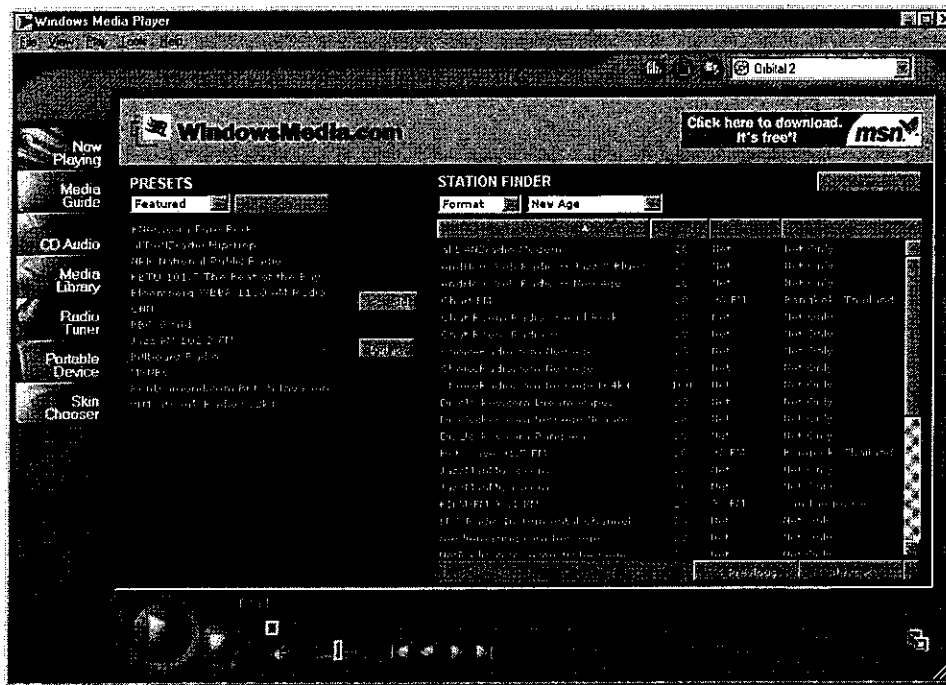


Figure 2.20 – Radio Tuner view in the full mode Player.

The **Radio Tuner** view has two panes: **Station Finder** and **Presets**.

Using Station Finder

The **Station Finder** can help you tune in to Internet Radio stations. Even though there are thousands of stations around the globe, you can easily find one you like with only a few clicks. The contents of the **Station Finder** are updated frequently by WindowsMedia.com so that as new stations go on the air, you can tune in to them right away.

All the stations are listed in a table that sorts them by station name, speed, frequency, and format or city. You can sort the table rows by clicking the column heading you want to sort on. Double-click a station listing to start it playing.

Above the table of radio stations is one or more list boxes. The box on the left has several categories that you can use to find particular radio stations, including the following:

Format

This gives you a set of predefined radio station formats ranging from Alternative Rock to Classical to News Radio.

Band

You can choose to search through the AM band or FM band, or choose Internet-only.

Language

There are several spoken languages to choose from, including Chinese, English, Latvian, and 20 others.

Location

Countries such as the United States, Finland, Korea, and 30 others are represented in the table listings with radio stations. If you choose the United States, you can search by state.

Callsign

If you know the call letters of a radio station, you can find the station by typing the call letters in the search box. For example, if you type "CKWW", you'll listen to station CKWW in Detroit, Michigan, that specializes in big band music.

Frequency

You can tune in to a station by typing the frequency; for example, 88.5 on the FM dial would give you radio station KPLU in the Seattle, Washington, area.

Keyword

If a station has a slogan, you can find it with a keyword. For example, searching for "oldies" will give you several stations to choose from.

Using station presets

There are two default presets that you can use to sort radio stations that you will want to use often. One is called Featured and has stations that are currently featured by Windows Media Player. You can't add stations to Featured. But you can add radio stations that you want to use frequently to My Presets.

You can create your own preset categories by clicking the **Edit** button above the **Presets** list.

Working with radio stations in the Media Library

All presets created in the **Radio Tuner** are automatically copied to the **Media Library** in the **Radio Tuner Presets** category.