

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,

Petitioner

v.

LBT IP I LLC,

Patent Owner

Case IPR2020-01190
U.S. Patent No. 8,542,113

**PATENT OWNER'S REPLY TO PETITIONER'S OPPOSITION TO
PATENT OWNER'S REVISED MOTION TO AMEND**

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PATENT OWNER'S EXHIBIT LIST

<u>Exhibit Numer</u>	<u>Description</u>
2001	Declaration of Brian S. Seal in support of Patent Owner's Unopposed Motion For <i>Pro Hac Vice</i> Admission
2002	Revised Declaration of Brian S. Seal in support of Patent Owner's Unopposed Motion For <i>Pro Hac Vice</i> Admission
2003	Transcript of deposition of Scott Andrews
2004	U.S. Pub. No. 2009/0174603 (Appl. No. 11/969,905)
2005	Sun, U.S. Patent Number 7,612,663
2006	Syrjarinne et al., U.S. Pub. No. 2005/0113124
2007	Suprun et al., U.S. Patent Number 7,292,223
2008	Croyle et al., U.S. Patent Number 5,862,511
2009	Lau et al., U.S. Patent Number 5,592,173
2010	Tsai, U.S. Pub. No. 2007/0057068
2011	Huang et al., U.S. Patent Number 7,826,968
2012	File history of U.S. Patent Number 8,421,619
2013	U.S. Pub. No. 2009/0189807 (Appl. No. 12/419,451)
2014	U.S. Appl. No. 13/356,614
2015	U.S. Appl. No. 11/969,905
2016	U.S. Appl. No. 13/356,599
2017	U.S. Appl. No. 12/419,451
2018	U.S. Appl. No. 13/356,643

I. INTRODUCTION

Petitioner's Opposition to Patent Owner's Revised Motion to Amend (Paper 34, "*Opp.*") asserts that claims 27-36 are obvious over any of Grounds 1-4 and new Ground 5. *See Opp.* at 1-11. Petitioner also asserts that claims 21 and 37 are rendered obvious by Grounds 3-4. *See id.* at 11-22.

As discussed below, the proposed substitute claims and Patent Owner's claim construction have written description support and are patentable over the prior art.

II. CLAIMS 27-36

A. *Sakamoto* does not disclose "adjusting applied power levels ... in response to measurement of a receive communication signal level relative to a single predetermined signal level"

Petitioner asserts "*Sakamoto* teaches placement of the GPS receiver in the stop-position searching mode when the GPS signals are too weak for GPS positioning. *Opp.* at 1 (citing *Sakamoto*, [0038]). However, in contrast to Petitioner's assertion, *Sakamoto*'s stop-position searching mode does not adjust applied power levels.

Sakamoto explicitly discloses: a) that, by default, a position terminal waits in a state in which power is cut off to a GPS receiver; b) that power to the GPS receiver is turned on and off in response to a manual request in "normal sensitivity positioning mode"; and c) that power to the GPS receiver is maintained on after a successful positioning in "high sensitivity positioning mode". *See Sakamoto*, [0020] and [0024]-[0025]. *Sakamoto* also discloses "[a]fter the positioning is completed, if

the position information communication terminal 1 is in the normal sensitivity positioning mode, the power of the GPS receiver 10 is shut off, and in the high sensitivity positioning mode, the power of the GPS receiver 10 is continuously turned on.” *Id.*, [0036]. *Sakamoto* does not, however, disclose any other changes or adjustments to power of a GPS receiver.

With this context, *Sakamoto* further discloses “[i]f it is determined that the positioning cannot be performed when the signal level value is equal to or lower than a predetermined threshold value, the position search may be stopped.” *Id.*, [0038]. *Sakamoto* does not, however, disclose that stopping a position search initiates any change or adjustment to applied power levels. Rather, at most, *Sakamoto* discloses “power consumption can be reduced by stopping the position search when positioning is not possible.” *Id.*, [0050].

As such, after “stopping the position search”, *Sakamoto*’s GPS receiver reduces power consumption by either a) remaining powered off if in the waiting state or b) remaining powered off if in normal sensitivity positioning mode. *Sakamoto* does not disclose that such reduction in power consumption is achieved by transitioning from continuous power applied to a GPS receiver to power cut off to the GPS receiver. Rather, *Sakamoto* only discloses that a requested positioning search will not be performed.

To be clear, *Sakamoto* discloses automatically transitioning to a high sensitivity mode based on one threshold level and automatically transitioning to normal sensitivity mode based on a different threshold level. *See id.*, [0027]. *Sakamoto* also discloses including positioning mode information designating either high sensitivity mode or normal sensitivity mode in a position search request message. *See id.*, [0038]. However, *Sakamoto* does not disclose any automatic transition to or from, or including in a position search request information designating, Petitioner's "stop-position search mode". Instead, *Sakamoto* only discloses that a position search is stopped if positioning cannot be performed because a signal level is below a threshold. *See id.* In context, such position search may be stopped by not sending a position search request, in which case power to the GPS receiver remains unchanged.

Petitioner maintains "[i]n the modified *Sakamoto* system including the accelerometer, when the GPS receiver is in the stop-position searching mode, the GPS receiver is powered down and the accelerometer is powered up." *Opp.* at 1-2 (citing Paper 1, 60 (Mapping for Original Claim 7(b))). However, being in an already powered down state, as taught by *Sakamoto*, does not disclose any adjustment to applied power levels. As such, *Sakamoto* does not disclose a single predetermined signal level that initiates the power adjustment and none of Grounds

1-4 provided in the Petition and Paper 26 and relying on *Sakamoto* teach the plain meaning of claim 27.

Petitioner maintains “[t]he limitation does not preclude adjusting responsive to a first predetermined signal level, a second predetermined signal level, etc.” and asserts “[t]here is also no § 112(1) or other support limiting the adjustment to be responsive to measuring a signal level relative to a single predetermined signal level applying LBT’s apparent construction.” *Opp.* at 2. However, Petitioner also notes “[i]n fact, the use of the word ‘first’ to describe the signal level implies the inventors envisioned more than one signal level at which adjustment may occur.” *Id.* at 3. Since the inventors envisioned more than one signal level at which adjustment may occur, the disclosure provides clear support for limiting adjustment to only a single level in the claims.

Since *Sakamoto* does not disclose adjusting power levels in response to measurement of a GPS signal level relative to a single predetermined signal level, claims 27-36 are patentable in view of the various combinations based on *Sakamoto* in Grounds 1-4.

B. *Alberth* in combination with *Gotoh* does not disclose “adjusting applied power levels ... in response to measurement of a receive communication signal level relative to a single predetermined signal level”

Patent Owner notes that proposed substitute claim 27 recites, in part, “adjusting applied power levels...in response to measurement of a receive

communication signal level relative to a single predetermined signal level.” At the same time, dependent claim 29 recites activating primary location tracking circuitry, dependent claim 30 recites deactivating primary location tracking circuitry, dependent claim 31 recites activating supplemental location tracking circuitry, and dependent claim 32 recites deactivating supplemental location tracking circuitry. Based on the doctrine of claim differentiation, a proper interpretation of “adjusting applied power levels” is one that encompasses both increasing and decreasing applied power levels. Patent Owner also notes that “applied power levels” is plural and not singular. As such, “adjusting applied power levels” of claim 27 requires both “increasing and decreasing an applied power level of the primary location tracking circuitry” and “increasing and decreasing an applied power level of the supplemental location tracking circuitry.” Further, claim 27 requires that “adjusting applied power levels” is performed “in response to measurement of a receive communication signal level relative to a single predetermined signal level.”

In contrast, Petitioner, in mapping *Alberth* and *Gotoh* to “Claim 27(b)”, only asserts that *Alberth* discloses deactivating a GPS receiver and *Gotoh* discloses activating an accelerometer, and that such actions occur in response to *Alberth*’s determination that received GPS signals are too weak. *See opp.* at 4-5. However, Petitioner does not present any arguments or evidence that *Alberth*’s GPS receiver

is activated and *Gotoh*'s accelerometer is deactivated in response to a determination that the same received GPS signals are not too weak.

In relation to claim 29, Petitioner asserts “*Alberth* teaches this limitation at 4:25-30, discussing returning to “normal operation” where the GPS receiver activates at the first rate when the position location signals are suitable for processing.” *Opp.* at 8 (emphasis added). However, contrary to Petitioner’s assertion that *Alberth* returns to normal operation in this passage, *Alberth* explicitly discloses “[i]f the position location signals are suitable for processing, normal operation **continues.**” *Alberth*, col. 4, ll. 25-26 (emphasis added). In context, *Alberth* discloses that a GPS receiver continues to cycle on and off at a first frequency when “position location signals” are suitable for processing and that the GPS receiver cycles on and off at a second frequency when “position location signals” are not suitable for processing. *See id.*, col. 4, ll. 14-34.

Of note, the explicit disclosure of *Alberth* is that a frequency of when a GPS receiver cycles on and off is changed in response to “position location signals”. *See id.* *Alberth* does not disclose that an applied power level of the GPS receiver is adjusted nor that such adjustment is in response to measurement of a receive communication signal level relative to a single predetermined signal level. The only disclosure in *Alberth* of adjusting an applied power level to a GPS receiver is that the GPS receiver is activated or deactivated based on the quality of a cellular

communication signal. *See id.*, col. 4, ll. 54-57 and col. 5, ll. 34-45. In particular, the GPS receiver is activated or reactivated if the cellular signal improves and is deactivated “[i]f the short term signal strength is still too weak for processing.” *Id.*, col. 5, ll.41-42. Such “short term signal” is a cellular signal. *See id.*, col. 4, ll. 59-62, col. 4, l. 66 – col. 5, l. 3, and col. 5, ll. 21-23. Petitioner acknowledges that “*Alberth*’s cellular signal level is not a ‘receive communication signal level’ per Claim 27(a).” *Opp.* at 4.

Since *Alberth* does not disclose “adjusting [an] applied power level[s]” of a GPS receiver “in response to measurement of a receive communication signal level relative to a single predetermined signal level”, *Alberth* in combination with *Gotoh* cannot disclose the limitation of claim 27(b) as proposed in new Ground 5. As such, claims 27-36 are patentable in view of newly proposed Ground 5.

III. CLAIMS 21 AND 37 ARE NOT RENDERED OBVIOUS BY GROUNDS 3-4

A. *Sakamoto* does not disclose taking any action “in response to measurement of a receive communication signal level less than a single predetermined signal level”

Petitioner acknowledges that two actions (i.e., reducing applied power to primary location tracking circuitry and increasing applied power to supplemental location tracking circuitry) occur in response to measuring a receive communication signal level less than a single predetermined signal level. *See Opp.* at pp. 11-12.

Petitioner further asserts that *Sakamoto*'s GPS receiver is placed in a low power mode in a "stop-position searching mode." *Id.* at p. 12.

However, as discussed above in Section II.A, *Sakamoto* does not provide any disclosure of reducing an applied power level to a GPS receiver when a position search is stopped. Rather, the explicit disclosure of *Sakamoto* is "[i]f it is determined that the positioning cannot be performed when the signal level value is equal to or lower than a predetermined threshold value, the position search may be stopped." *Sakamoto*, [0038]. Petitioner relies solely on *Sakamoto* as disclosing a single predetermined signal level and reducing applied power to a GPS receiver. *See opp.* at 12-13. Since *Sakamoto* does not disclose reducing applied power when a position search is stopped, the proposed combinations in Grounds 3-4 based on *Sakamoto* cannot render obvious proposed substitute claims 21 and 37 or their dependent claims.

B. Alberth and Gronemeyer do not disclose a low power mode consuming reduced power

The priority documents of the '113 Patent consistently and repeatedly refer to "a sleep or standby mode". *See* Ex. 2014, [0030]; Ex. 2015, p. 10, ll. 2-10. In particular, these passages disclose that an accelerometer and/or an amplifier block are placed or remain in this "sleep or standby mode". Separately, these documents refer to "standby, low power mode, or disabling entirely". *See* Ex. 2014, [0035]; Ex. 2015, p. 11, l. 25. That is, a clear distinction is drawn between "sleep or standby

mode”, “low power mode”, and “disabling entirely”. Further, these later passages disclose “the transceiver circuitry...consumes reduced battery power for GPS circuitry while the electronic tracking device 100 communicates displacement vectors”. *Id.* Of note, both passages disclose similar functionality, but the later passage discloses a distinct approach to such functionality. That is, instead of disclosing that the transceiver circuitry remains in a “sleep or standby mode” as disclosed earlier, the later passage discloses that “low power mode” is distinct from either “standby mode” or “disabling entirely” and that the transceiver circuitry consumes reduced power while displacement vectors are communicated.

Petitioner proposes that “[a] component that ‘consumes at least reduced power’ is ‘met by a component that is periodically activated’ during operation in the low power mode.” *Opp.* pp. 13-14. However, based on the disclosure of the priority documents, such “periodic activation” is more akin to a “sleep or standby mode” and not the disclosed “low power mode”.

Petitioner makes reference to previously-submitted substitute Claim 27. However, the Board noted “given that this limitation is part of a step directed to ‘adjusting applied power levels,’ it is unclear...how adjustments would be made to power levels consistent with power consumption being continued.” *Preliminary Guidance* at 6. Of note, Claim 27 has a different scope from either Claim 21 or 37. The Board did not raise any concern with the proposed claim construction related to

Claims 21 and 37 and Patent Owner is not attempting to revive via claim construction an unsupported limitation that was abandoned.

Alberth and *Gronemeyer* each, at most, disclose a “sleep or standby mode” in which GPS receiver power is cycled between on and off. Neither *Alberth* nor *Gronemeyer* disclose “a low power mode in which the primary location tracking circuitry consumes at least reduced power” as recited in Claims 21 and 37.

C. Claims 21 and 37 are not obvious in view of *Alberth*

As discussed above in Section II.B, *Alberth* discloses changing a frequency of when a GPS receiver cycles on and off in response to a position signal. See *Alberth*, col. 4, ll. 14-34. However, *Alberth* also explicitly discloses that reducing applied power to a GPS receiver occurs in response to a cellular signal. See *id.*, col. 4, ll. 54-57 and col. 5, ll. 34-45. *Alberth* does not disclose that applied power is reduced to a GPS receiver based on a GPS signal. *Alberth* also does not disclose that, when deactivated or otherwise placed in a low power mode, a GPS receiver consumes at least reduced power. As such, claims 21 and 37 are not obvious in view of *Alberth*.

D. Proposed combination of *Sakamoto* and *Alberth* is improper

Petitioner summarizes that “*Sakamoto* is modified such that its stop-position searching mode is a low power mode where the GPS receiver is periodically activated, per *Alberth*, to determine if the GPS signal level is above a predetermined

threshold.” *Opp.* at 18 (citing Paper 26, 18-20). Petitioner also maintains “the proposed Ground 3 merely requires modifying *Sakamoto* to enter the low power mode to periodically activate the GPS receiver.” *Id.* However, *Sakamoto* already discloses a “cycle set in advance” that is defined by a user in which, independent of either a normal sensitivity positioning mode or a high sensitivity positioning mode, a satellite signal level is measured. *See Sakamoto*, [0037]. The proposed combination would “use a second cycle set in advance (i.e., *Alberth*’s second rate) in the stop-position searching mode.” Paper 26, 19-20. Petitioner provides no explanation why a user-defined “cycle set in advance” is insufficient to determine a GPS signal level or why “a second cycle set in advance” that is only utilized after a position search is stopped (i.e., Petitioner’s “stop-position searching mode”) and is redundant to the user-defined “cycle set in advance” is needed. The only apparent motivation is impermissible hindsight. Furthermore, as previously articulated, the proposed combination would fundamentally alter *Sakamoto* in an impermissible fashion. As such, the proposed combination is improper.

E. Claims 21 and 37 are not obvious in view of *Gronemeyer*

Petitioner asserts “[a] POSITA would have been motivated and found it obvious to modify *Sakamoto* (as otherwise modified by *Gotoh* and *Levi*) to include *Gronemeyer*’s clock and oscillator powered on at all times.” Paper 26, 23. However, Petitioner provides no other explanation of *how Sakamoto* might be modified to

include *Gronemeyer*'s low power time keeping circuit. Of note, *Gronemeyer*'s GPS receiver unit 100 refers to an entire device while *Sakamoto*'s GPS receiver 10 is a component within a larger device. See *Gronemeyer*, FIGs. 3-4 and *Sakamoto*, FIG. 1. That is, *Gronemeyer*'s GPS receiver unit 100 is not a direct replacement for *Sakamoto*'s GPS receiver 10. Furthermore, *Gronemeyer* clearly discloses that power to GPS-related components is turned off while power to the low power time keeping circuit is maintained on at a constant level. See *Gronemeyer*, col. 6, ll. 36-48. Nothing in the proposed combination would suggest that *Gronemeyer*'s low power time keeping circuit is incorporated into or otherwise modifies *Sakamoto*'s GPS receiver 10 individually. The only reasonable and obvious understanding is that the proposed combination includes a distinct low power time keeping circuit while GPS-related circuitry/components (i.e., GPS receiver 10) have power turned off when deactivated. As such, the proposed combination including *Gronemeyer* does not disclose "a low power mode in which the primary location tracking circuitry consumes at least reduced power" as recited in proposed substitute independent claims 21 and 37.

IV. CONCLUSION

For each original claim the Board finds unpatentable, Patent Owner respectfully requests that the Board grant the revised motion to amend as to the substituted claim.

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Date: December 7, 2021

Respectfully submitted,

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U.S. Patent No. 8,542,113

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), I hereby certify that the foregoing PATENT OWNER'S REPLY TO PETITIONER'S OPPOSITION TO PATENT OWNER'S REVISED MOTION TO AMEND contains 12 pages, excluding the parts of the motion exempted by 37 C.F.R. § 42.24(a), as measured by the word-processing system used to prepare this paper.

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e))

The undersigned hereby certifies that PURSUANT TO 37 C.F.R. §42.8(a)(2) the foregoing PATENT OWNER'S REPLY TO PETITIONER'S OPPOSITION TO PATENT OWNER'S REVISED MOTION TO AMEND is being served electronically via e-mail on December 7, 2021, in its entirety on the following counsel of record for Petitioners:

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