

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

**SAMSUNG ELECTRONICS CO., LTD. AND
SAMSUNG ELECTRONICS AMERICA, INC.,**
Petitioners

v.

MAXELL CORPORATION,
Patent Owner

Inter Partes Review No.: IPR2025-01309

PETITIONERS' REPLY TO PATENT OWNER'S RESPONSE

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1015	Letter from Maxell to Samsung dated July 7, 2021.
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1018	IPR2024-00867, Paper 40 (Petitioners’ Response to Patent Owner’s Request for Authorization to File Materials from Related Matters).
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1023	IPR2024-00735, Paper 41 (Petitioners’ Opposition to Motion to Submit Supplemental Information).
1024	Machine Translation of Japanese Patent Application Publication No. H09-26832A (“Kitazawa”).
1025	Petitioners’ Motion to Stay Pending <i>Inter Partes</i> Review from <i>Maxell, Ltd. v. Samsung Elecs. Co.</i> , No. 5:25-cv-00052 (E.D. Tex. Oct. 24, 2025).
1026	“Order Focusing Patent Claims and Prior Art” from <i>Maxell, Ltd. v. Samsung Elecs. Co.</i> , No. 5:25-cv-00052 (E.D. Tex. Aug. 18, 2025).
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CHART OF CLAIMS	
[1pre]	A mobile terminal capable of being changed from an open condition into a closed condition, comprising:
[1a]	a processor which executes program processing; and
[1b]	a clock controller capable of changing a frequency of a clock signal to be fed to the processor;
[1c]	wherein the clock controller controls the frequency of the clock signal so as to become a first frequency when the mobile terminal is in the open condition, and controls the frequency of the clock signal so as to become a second frequency lower than the first frequency when the mobile terminal is in the closed condition, and
[1d]	wherein the clock controller controls the frequency of the clock signal so as to become a frequency higher than the second frequency when a specific processing is executed even if the mobile terminal is in the closed condition, and controls the frequency of the clock signal so as to become the second frequency after the execution of the specific processing is completed.
[2]	The mobile terminal according to claim 1, wherein the specific processing is a processing having an effect on a response to a request from the user.
[3]	The mobile terminal according to claim 1, wherein the specific processing is an image decoding processing or an address retrieval processing or a character conversion processing.
[4pre]	The mobile terminal according to claim 1, further comprising
[4a]	an input unit which allows a user of the mobile terminal to set the frequency of the clock signal,
[4b]	wherein when the frequency is set by the user using the input unit, the first frequency is the frequency set by the user using the input unit.
[5]	The mobile terminal according to claim 4, wherein the user can set the frequency of the clock signal in every processing using the input unit.
[6]	The mobile terminal according to claim 1, further comprising a display which exhibits a display corresponding to the magnitude of the frequency of the clock signal.
[7]	The mobile terminal according to claim 1, wherein the mobile terminal has a folded structure.

I. INTRODUCTION

Petitioners file this reply to Patent Owner's ("PO's") Response ("POR")—the POR fails because it improperly relies on baseless claim constructions, and ignores and contradicts the explicit teachings of the prior art. As demonstrated below, the Challenged Claims are unpatentable over each asserted ground.

II. CLAIM CONSTRUCTION

A. "mobile terminal"

PO argues "mobile terminal" should mean "a cellular phone, not a laptop computer system." POR, 9. Critically, PO never argues, nor could it, that the plain and ordinary meaning of "mobile terminal" is "cellular phone." POR, 9-19. Nor does PO allege there is lexicography. *Id.*; EX1030, 61:9-62:5, 81:17-82:14. Yet PO asks this Board to construe "mobile terminal" as "cellular phone, and not a laptop computer system." POR, 9. The Board should reject this argument, and instead apply the plain and ordinary meaning of "mobile terminal."

"Mobile terminal" is a well-known term in the art that ordinarily encompasses portable devices used for data input and/or output. EX1033, ¶¶12-13. Such devices include, for example, hand-held devices, laptops, cellular phones, and tablets—each is capable of data input/output and portable (i.e., mobile). *Id.* The '417's plain usage of the term "terminal" comports with the definitions of "terminal" in Hargrave's Communications Dictionary ("a device used for data input and/or output") (EX1031) and the McGraw-Hill Dictionary of Electrical and

Computer Engineering (“a site or location at which data can enter or leave a system”) (EX1032). *Id.*

The title, Summary of the Invention, and claims of the ’417 refer to “mobile terminal,” generally—not to a cellular phone. The patent discloses “a hand-held terminal or mobile terminal, for switching the frequency of a clock signal delivered from the side of an application program, is disclosed in JP-A NO. 73237/1999” (Kitazawa). EX1001, 1:17-20. This statement is critically important intrinsic evidence regarding the meaning of “mobile terminal” because the ’417 unambiguously identifies Kitazawa as disclosing an example of what the ’417 refers to as a “mobile terminal.” Notably, Kitazawa describes a handheld portable terminal device having an input unit for entering data, a display unit, and an optical reading unit like a barcode reader for storing data into internal memory, among other units not typically found in cellular phones. EX1028, ¶¶[0003], [0015], [0025]-[0032] (discussing the components in the mobile terminal of Figs. 1 & 3), Fig. 1 (keyboard 43, display/video controller 48,) and Fig. 3 (modem); EX1033, ¶¶19-20. PO in fact concedes components such as video controllers and modems were not known to be part of cellular phones at the time of the invention. POR, 24. Yet they are included in a device that the ’417 states unequivocally is a mobile terminal.

Kitazawa also discloses transferring the stored data to a host computer.

EX1028, [0015]. The words “cellular phone,” or anything similar suggesting that the handheld terminal would be limited to a cellular phone, are nowhere to be found. Nevertheless, PO argues the mobile terminal in Kitazawa “is clearly not a laptop computer.” POR, 13. This attorney argument misses the mark because the issue is whether the mobile terminal in Kitazawa is a cellular phone consistent with PO’s proposed construction, and it clearly is not. PO’s expert admitted he did not discuss Kitazawa in his declaration, it is not on the list of materials he reviewed, and he had no recollection of ever reviewing it. EX1030, 91:8-18, 97:22-98:18. Therefore, the Board should not adopt a construction of “mobile terminal” that excludes a device that the ’417 indisputably states is a “mobile terminal.” Kitazawa (which the ’417 discloses as a “mobile terminal”) describes a portable device used for data input and output, consistent with the plain and ordinary meaning of “mobile terminal.”

PO argues that because the specification states (once) that the “present invention” includes a cellular phone, and thereafter repeatedly references a cellular phone in different embodiments, the term “mobile terminal” must be so limited. POR, 10-13. PO’s position contradicts the law. First, departing from the plain and ordinary meaning is warranted only when a patentee acts as its own lexicographer or disavows the full scope of a claim term in the specification or during prosecution. *Thorner v. Sony Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir.

2012). Neither is true here, and PO does not argue otherwise. EX1030, 68:3-9 (PO's expert admitting PO's construction is not the plain and ordinary meaning). Also, "the phrase 'the present invention' does not 'automatically' limit the meaning of claim terms in all circumstances, and that such language must be read in the context of the entire specification and prosecution history." *Netcraft Corp. v. eBay, Inc.*, 549 F.3d 1394, 1398 (Fed. Cir. 2008).

Similarly, the *GPNE Corp. v. Apple* decision PO cites confirms Petitioners' position. 830 F.3d 1365, 1370 (Fed. Cir. 2016); POPR Reply (Paper 13), 1-2. In *GPNE*, the court limited the claim term "[b]ecause the specification and prosecution history so consistently describe 'nodes' as 'pagers,'" and because nothing in the intrinsic record was "inconsistent with characterizing the devices as a type of pager." *Id.*, 1371. But that is not the case here because, as explained above, the '417 identifies Kitazawa as disclosing a mobile terminal that is inconsistent with characterizing the mobile terminal as only a "cellular phone." *see also* Paper 13 (Reply to POPR), 1-2.

PO and its expert then argue that "mobile terminal" cannot include a laptop because "[t]he '417 Patent's specific teachings—including a condition detector for detecting whether the cellular phone is in a closed or open condition, clock frequency management tied to specific processing such as image decoding, address retrieval, and character conversion, and user-directed clock manipulation—are all

directed to the cellular phone context.” POR, 14. Not so. As the Petition explains, and as PO’s expert admitted, the prior art discloses that those features are found in laptops. EX1030, 25:4-10 (laptops were known to have a mechanism to detect whether the lid was open/closed), 111:12-22 (laptops were known to perform image decoding and character conversion processes), 112:1-9 and 114:12-116:14 (Norris disclosing a laptop in which a user can adjust the clock frequency “is similar” to what the ’417 discloses as user-directed clock manipulation).

Lastly, PO also accuses tablets of infringing the ’417, further undermining its effort to limit “mobile terminal” to “a cellular phone.” POR, 16-19. PO attempts to explain its contradiction away by arguing the accused tablets are mobile terminals because they can make calls, send messages, and connect to LTE and/or Wi-Fi networks to provide cellular phone functionalities. *Id.* Yet, anyone familiar with laptop computers knows they too have these functionalities. EX1033, ¶¶22. In fact, the Petition shows the laptop computer in Belt includes a modem for receiving incoming telephone calls. Pet., 24; EX1004, 5:15-21, Fig. 1b. The same is true for the laptop computer in Foster (waking up in response to interrupt events from serial or modem ports, processing incoming characters from telephone lines). Pet., 24-25; EX1005, 21:9-18, 32:21-25, 60:10-20. PO’s contradictions here doom its claim construction position.

B. “specific processing”

Despite not identifying this term for construction in the POR, PO improperly interprets “specific processing” as “a user-responsive application-level task.” POR, 43. This is incorrect.

The words “user-responsive application-level task” appear nowhere in the patent. The patent states: “Herein, the specific processing refers to, for example, processing for image decoding, address retrieval processing, and application processing such as kana-kanji conversion processing used in entering characters. These processing often have effects on the response of the user.” EX1001, 2:65-3:2 (emphasis added). This broad, non-limiting language couched as “often” having certain effects does not give support PO’s narrow construction. See EX1030, 108:5-109:18 (PO’s expert conceding that claim 1 should not be limited to the examples of specific processing described in the specification).

Further, dependent claim 2 limits the “specific processing” to a “processing having an effect on a response to a request from the user.” Therefore, claim differentiation dictates that the specific processing in claim 1 is broader and should not be limited to “a user-responsive application-level task.” The Board should reject PO’s attempt to read the limitations of claim 2 into claim 1.

Additionally, claim 3 separately limits the “specific processing” to “an image decoding processing or an address retrieval processing or a character

conversion processing.” Claim 3 says nothing about a user-responsive application-level task. PO’s expert admitted that the “specific processing” in claim 1 is broader than the processes defined in claim 3. EX1030, 110:7-16. Therefore, claim 3 directly contradicts PO’s claim construction.

Therefore, “specific processing” should be given its plain and ordinary meaning.

- C. **“wherein the clock controller controls the frequency of the clock signal so as to become a frequency higher ... when a specific processing is executed even if the mobile terminal is in the closed condition, and ... to become the second frequency after the execution of the specific processing is completed.”**

Despite not identifying this term for construction in its POR, PO narrowly interprets this limitation as requiring “a sustained clock frequency increase to serve user-facing tasks.” POR, 43.

PO’s narrow interpretation is incorrect because claim 1 merely requires that the clock change to a higher frequency when specific processing is executed and change to a lower frequency after the execution of the specific processing is completed. The claim imposes no temporal limitation requiring the change to the higher frequency to last for a “sustained” period, let alone to serve “user-facing tasks.” Similarly, the ’417 also does not mention, or even suggest, a sustained period of time for the specific processing. PO’s expert confirmed as much. EX1030, 106:5-107:7.

III. GROUND 1

A. Claim 1

PO does not dispute that the prior art in Ground 1 satisfies limitations 1[a] and 1[b].

1. PO Fails to Rebut the Petition's Invalidity Theories for Limitations 1[c] and 1[d]

The POR is doomed from the outset as it is entirely nonresponsive to the Petition's independent invalidity arguments for limitations 1[c] and 1[d], which are as follows:

For claim 1[c], in a single reference obviousness argument under Belt, the Petition relies on Belt's teaching that during operation, its processor's clock can be changed to balance processing speed with battery power consumption (Pet., 12, 21; EX1004, 3:5-14 (increasing the processor's clock for rapid processing and lowering the processor's clock to save power when processing speed is not critical)) *in view of* Belt's two embodiments that when the lid of the laptop is closed, the processor can remain operational (Pet., 17-19; EX1004, 6:42-50 (options 2 or 3)) as opposed to entering a suspend mode (option 1). A POSITA would have understood or found it obvious that when, e.g., Belt's laptop computer lid is closed, processing speed is not critical and the clock speed would be reduced, and when the lid is open, the clock speed would be increased to more rapidly process information. *Id.*; EX1030, 167:11-168:13 (admitting rapid processing may

not be required when Belt's lid is closed). In other words, this argument is completely unrelated to, and independent of Belt's suspend mode embodiment. Despite this argument being explicitly made in the Petition, neither the POR nor PO's expert directly address this argument. EX1030, 170:8-18 (PO's expert admitting that he did not have an opinion on this argument).

Also for claim 1[c], an obviousness combination argument made in the alternative, the Petition relies on Belt and Foster in which Belt's suspend mode is substituted with Foster's idle mode. Pet., 20-22. Again, despite this argument being explicitly made in the Petition, neither the POR nor PO's expert directly address this argument. EX1030, 181:19-22 ("I haven't analyzed Foster's idle mode ... as to how that may or may not work with Belt."), 195:9-196:4.

Similarly, for claim 1[d], the Petition argues in the alternative how Belt alone, or in combination Foster, renders obvious 1[d] in view of the two alternative theories for claim 1[c], neither of which rely on Belt's suspend mode operation, and therefore neither of which is addressed in the POR.

For both claims 1[c] and 1[d], rather than address these alternative arguments independently as they are set out in the Petition, PO incorrectly merges them together and rebuts an argument never made in the Petition (i.e., one that would rely on Belt's suspend mode). As such, the Petition and Dr. Baker's supporting declaration for limitations 1[c] and 1[d] remain uncontroverted.

2. Belt and Foster Each Disclose a Mobile Terminal

PO argues Belt's laptop computer system is not a "mobile terminal" as recited in claims [1pre], [1.c], [1.d], and claims 2 and 4. POR, 21-23. However, this argument rests solely on its erroneous construction of "mobile terminal" as "a cellular phone, and not a laptop computer system." This construction has no merit and should be rejected. See §II.A. PO provides no alternate argument. As stated above, "mobile terminal" is a well understood term in the art that ordinarily encompasses portable devices that are used for data input and/or output. EX1033, ¶¶12-13. Such devices include, for example, laptops, cellular phones, and tablets, which are all capable of data input/output, and portable (i.e., mobile). *Id.* PO admits that Belt and Foster disclose laptop or notebook-type personal computer systems. POR, 23.

3. [1pre]

PO's only dispute regarding the preamble is that a laptop, like that disclosed in Belt, cannot be a "mobile terminal." POR, 22. This argument fails. See above, and §II.A.

4. The Motivation to Combine Belt and Foster is Sound

PO begins by arguing that a POSITA would not have been motivated to combine the teachings of Belt (directed to a portable computer) and Foster (also directed to a portable computer) because portable computers are not cellular phones. POR, 23-24. And further that "[a] POSITA would have recognized that

the vastly different system architectures, use cases, and design constraints of laptop computers compared to cellular phones would have discouraged any attempt to transplant the power management techniques of one type of device into the other.” POR, 24. This argument is non-sensical. Whether there is motivation to combine the teachings of two prior art references both directed to portable computers is determined by the technologies disclosed in each, independent of the claims at issue, and certainly independent from erroneous claim constructions. On this basis alone, PO’s arguments fail.

Notwithstanding, even *if* the claimed mobile terminal were narrowly construed as a cellular phone (which it should not), PO’s arguments rest on an incorrect understanding of the motivation-to-combine legal principle and still fail. For example, PO alleges the “power management concerns and constraints of laptop computers are fundamentally different from those of cellular phones” because “[l]aptop computers must manage power to [a] wide array of peripheral subsystems” whereas the ’417 “is directed to a cellular phone in which the primary power management challenge is controlling the clock frequency of the central processing unit to balance speed against current consumption from a small battery.” POR, 24. This argument fails because at the processor level, laptops could change the processor’s clock to balance processing speed with battery power consumption as expressly taught by Belt and Foster, independent of any peripheral

subsystem-based power management. Pet., 12, 21; EX1004, 3:5-14 (lowering processor clocks to save power); EX1005, 19:9-11 (same). Thus, a POSITA would have understood that the processor-level power management techniques disclosed in Belt and Foster would apply to processors in a cellular phone. EX1033, ¶¶23-24. Indeed, PO's expert testified that a POSITA would have understood that "similar [laptop power management] software architectures and mechanisms" like those described in the PO-identified power management ACPI specification (POR, 32-33) "could be used [in cellular phones]." EX1030, 207:5-17. It therefore follows that a POSITA would have understood that Belt and Foster's processor-based power management techniques, even though they are discussed in the context of laptops, apply equally to the '417 (even under PO's incorrect construction for mobile terminal).

PO then argues that the suspend-mode "power management method disclosed in Belt is fundamentally incompatible with the dynamic clock frequency control taught and claimed in the '417 Patent." POR, 24-25. But the Petition does not rely on Belt's suspend mode (one of three possible modes when the lid is closed), so these arguments are irrelevant. The Petition relies on embodiments in Belt that lower the clock frequency of the processor to reduce battery power consumption when processing speed is not critical, and keeping the system running when closing the lid (i.e., not the disclosed suspend mode). Pet. 17-19, 23-24,

EX1004, 3:12-14; 6:42-50. Alternately, the Petition relies on replacing Belt's suspend mode with Foster's idle mode. Pet. 19-23, 24-26. Therefore, PO's characterization of Belt as disclosing "a binary, all-or-nothing approach where the processor is either running at its normal operational speed or it is completely halted" is factually incorrect and irrelevant. POR, 25.

Next, although PO admits Belt discloses the ability to run the CPU at different clock speeds (contradicting its repeated argument that Belt only teaches the processor either running at its normal operational speed or completely turned off), PO attempts to diminish this teaching because it is purportedly used only in the specific PMI handler context and is "not related to the open or closed state of the lid, is not used to modulate power consumption during normal operation, and does not constitute dynamic frequency scaling of the kind taught by the '417 Patent." POR, 26. However, the Petition relies on a different user configured system feature triggered by closing the lid to lower clock frequency (Pet., 17-19) for claim [1c], and not the PMI handler, so PO's argument lacks merit.

PO's argument that the PMI handler routine "is not related to the open or closed state of the lid" actually supports the Petition for claim [1d]. Specifically, the Petition relies on the PMI handler routine for the requirement that clock speed manipulation must occur during specific processing regardless of whether the lid is closed. Pet., 23-24; §III.A.5. That the PMI handler, which would occur when the

lid is closed, and does not depend on the state of the lid (Pet., 23-24), is exactly why Belt teaches that limitation of claim [1d].

PO's subsequent argument that the PMI handler "is not used to modulate power consumption during normal operation, and does not constitute dynamic frequency scaling of the kind taught by the '417 Patent" (POR, 26) is similarly unavailing as it mischaracterizes Belt's teachings and what the Petition relies on in Belt. The Petition relies on Belt's teaching, which is separate and apart from the PMI handler discussion, of dynamically adjusting the processors' clock speed—increasing the clock speed when processing is critical and, when it is not, lowering the clock speed to prioritize reducing battery power consumption. Pet., 18-19; EX1004, 3:5-14. Notwithstanding, Belt discloses that during the PMI handler routine, the clock speed of the processor is increased because the PMI interrupt requires rapid processing (i.e., "as fast as possible") and, after the interrupt is processed (rapid processing is no longer needed), the clock speed is then decreased, which reflects the dynamic clock adjustment teaching in the 417. Pet., 23-24; EX1004, 7:47-8:24. Therefore, PO's arguments fail.

PO's arguments regarding Foster are equally unavailing and irrelevant. POR, 26-28. These arguments are based on Foster's close-lid functionality (which the Petition does not rely on), and Foster's hot key mechanism being not responsive to lid condition (which Petition only relies on Foster's hot key mechanism for claims

2 and 4, which are not tied to the lid condition). Pet., 26-37. These arguments by PO can be summarily dismissed.

Accordingly, PO's penultimate conclusory assertion that "[n]either Belt nor Foster, individually or in combination, teach[] or suggest ... the concept of dynamically raising the clock frequency for specific processing while the device remains in the closed condition and then returning to a lower frequency after the processing is completed, as claimed," although irrelevant to the motivation to combine inquiry, is demonstrably false.

Yet PO still argues that "[e]ven if one were to assume, *arguendo*, that the teachings of Belt and Foster could theoretically be combined" (they can, and PO has not shown otherwise), "a POSITA would not have combined Belt and Foster because doing so would amount to a fundamental redesign of both Belt's and Foster's power management architectures" that is not "guided [] by the teachings of the references." POR, 30-31. Specifically, PO argues that one would need to:

(1) extract from Belt the concept that lid closure should trigger a change in the processor's operational state; (2) discard Belt's teaching that the processor should be completely halted in response to lid closure; (3) import from Foster the concept of variable clock speeds (the fast/slow hot key feature); (4) reconceive this user-driven hot key feature as an automatic response to lid position rather than user input; (5) further add the concept that specific processing should cause a temporary increase in clock frequency even in the closed condition; and (6) transplant all of these reconceived concepts from a laptop computer architecture into a cellular phone.

POR, 30. This argument, however, lacks any credible rationale, mischaracterizes the Petition's Ground 1, and ignores the express teachings in Belt and Foster as explained below and throughout this Reply.

First, Belt and Foster each disclose laptops that comprise the same Intel processor that executes a PMI handler routine, includes writable registers that manage the processor's clock speeds, and can enter a suspend mode in which the processor clock is halted; and a modem for receiving, for example, telephone calls. Pet., 23-26. In addition, as explained in the Petition, Foster teaches the advantages of using a low-processor clock idle mode over a halted-processor clock suspend mode which provides the motivation to substitute Belt's suspend mode with Foster's idle mode. Thus, a POSITA would clearly have been motivated to combine these references, and would have known how to do so. Pet. 21-22.

Second, Belt expressly teaches a user can configure what happens to the system when the lid closes as determined by a lid switch 68—namely, placing the system in a suspend mode or maintaining system operation. Pet., 19-20 (citing EX1004, 6:42-50). Therefore, Belt ties the lid closure to the processor's operational state (including triggering a change to the processor's operational state) and provides that Belt's system is not limited

to halting the processor when the lid is closed. PO and its expert ignore this express teaching.

Third, Belt itself explicitly teaches variable clock speeds. Pet., 12 (citing EX1004, 3:5-14). Belt states its “clocks can be set to a **higher speed** when rapid processing is required” (which increases power draw from the battery), whereas “when processing speed is not critical a **lower clock speed** can be used in order to reduce the amount of power being drawn from the battery.” *Id.* As the Petition explains, in view of the user-configurable power management setting where the processor’s operational state is not halted, a POSITA would have understood that “when the lid to Belt’s laptop computer system 10 is closed, higher processing speeds are not critical because the system would not be in active use.” Pet., 18.

Alternatively, even *if* Belt only taught placing the processor in suspend mode when the lid closes, the Petition explains that Foster would motivate a POSITA to change that suspend mode to an idle mode in which “the CPU clock is slowed significantly” to 5Hz, which would be a simple matter of programming. Pet., 20, 22 (citing EX1005, 79:61-80:1). This is because Foster expressly teaches that the idle mode “is much simpler than the suspend or standby modes” and would make it possible for the system to quickly resume to run mode. Pet., 22 (citing EX1005, 79:61-80:17). PO

ignores the Petition's discussion of these disclosures which moots the need to import from Foster the concept of variable clock speeds (the fast/slow hot key feature) or to reconceive this user-driven hot key feature as an automatic response to lid position rather than user input.

Fourth, the Petition explains Belt's PMI routine is the specific processing as it explicitly teaches increasing the CPU to run at its fastest clock speed to process that routine and then returning the processor to its previous setting. Pet., 11. Therefore, there is no need to add "the concept that specific processing should cause a temporary increase in clock frequency even in the closed condition" because Belt already discloses that concept.

Fifth, as explained above, the claimed "mobile terminal" is not limited to cellular phones, as correctly construed, and so there is no need to transplant the teachings of Belt and Foster into a cellular phone.

5. [1c]

As stated above, the POR fails to address the two alternative arguments actually made in the Petition for this claim element, and therefore all of PO's arguments are irrelevant. §III.A.1.

PO's argument in its motivation to combine section that Belt alone does not teach or render obvious this limitation rests entirely on a position that the Petition never takes. Specifically, PO argues that "Belt limits its description to entering into

and exiting from suspend mode, with no mention whatsoever of performing any kind of processing while in that suspend mode.” POR, 32-35 (discussing only Belt’s suspend mode). But for Belt alone, the Petition clearly states that of the three options when the lid is closed (suspend mode being only the first option) it relies on Belt’s other two options where system operation is continued (e.g., the processor remains on) in view of Belt’s further teaching that when processing speed is not critical (e.g., when the lid is closed), a lower clock speed can be used to reduce battery power consumption. Pet., 17-18; EX1004, 3:5-14. Thus, PO’s discussion of Belt’s suspend mode (POR, 33-35) and how the PMI handler (POR, 35-36) operates in that mode are red-herrings that should be ignored. Further, as explained above, PO is wrong that the Petition does not link the lid closure to reducing the processor clock.

PO then attempts to limit the express teachings of Belt by relying on extrinsic ACPI specifications which allegedly would have been the de facto power management mechanism defined by Intel and Microsoft, including the Intel 385SL chip disclosed in Belt and Foster. POR, 32-33. This argument fails. Neither Belt nor Foster mentions ACPI. The Petition does not rely on a processor-off state like the one in ACPI. Pet., 17-18. The extrinsic ACPI specification cannot negate the explicit disclosure in Belt and Foster that the processor speed may be increased for processing speed and lowered to reduce power consumption, and Foster’s

disclosure of an idle mode in which clocks are slowed but not stopped. Pet., 18-23. Finally, even if ACPI were relevant, it specifically provides “throttling” the processor clock (to run at less than maximum performance) when in an operational mode (C0). EX2023 (ACPI rev. 1), 68; EX1033, ¶24.

Regarding the Belt-Foster combination, PO again mischaracterizes and ignores the Petition’s Ground 1 positions and evidence as it focuses on Belt’s suspend mode in isolation, rather than substituting Belt’s suspend mode with Foster’s idle mode as the Petition provides. Pet., 19-21. To this point, PO argues that “Foster does not tie its idle mode to lid closure.” POR, 38. The Petition does not rely on Foster’s trigger for entering idle mode. Rather, Belt teaches an embodiment that enters suspend mode upon lid closure, and when Belts suspend mode is replaced by Foster’s idle mode, it is the idle mode that would be entered upon lid closure. Pet., 20-22. Foster discloses why the idle mode is an improvement over the suspend mode. *Id.* (citing EX1005, 80:7-17). Therefore, as Dr. Baker explained, this would have motivated a POSITA to substitute Belt’s suspend mode with Foster’s idle mode. Pet., 21-22.

Further, PO and its expert argue that “substituting Foster’s idle mode for Belt’s suspend mode upon lid closure would undermine Belt’s entire design purpose” which is to “maximize power savings by halting the processor entirely when the lid is closed.” POR, 38. PO’s argument fails at the outset because Belt

nowhere states that its primary goal is to “maximize power savings.” *See generally* EX1004. Further, this cannot be correct as Belt explicitly discloses two alternate options that do not place the system in suspend mode when the lid is closed, neither of which would maximize power savings relative to suspend mode.

Lastly, PO wrongly argues that Dr. Baker’s declaration parrots the Petition. Indeed, the Petition makes clear that the Petition copied large portions of his declaration, not the other way around. Pet., 5.

6. [1d]

As stated above, the POR fails to address the two alternative arguments actually made in the Petition for this claim element, and therefore all of PO’s arguments are irrelevant. §III.A.1. PO argues in its motivation to combine section that the Petition’s discussion of Belt alone for this limitation is incomplete because there is no discussion of a “user-configured operational closed-lid mode with lower clock frequency.” Untrue. The Petition cites back to limitation 1[c] which, as explained above, provides that Belt teaches the user can configure the system to maintain processor operation when the lid closes **and** that when processing is not a concern (e.g., when the lid is closed), the processor speed can be lowered. Pet., 17-19.

PO next argues “the Petition cites to Belt’s turning off a backlight or a suspend mode for the claimed ‘second frequency....’.” POR, 41. Again, this

misstates the Petition’s Ground 1. The Petition does not rely on turning off a backlight for the second frequency—it relies on Belt’s teachings that when the laptop lid closes, and therefore processing speed is not critical, the processor can be slowed down. Pet., 24. Alternatively, the Petition relies on Foster’s idle mode in which the clock speed drops to 5Hz, rather than on Belt’s suspend mode, as the “second frequency.” Pet., 20-22. It is in these contexts that the Petition then discusses Belt’s PMI handler routine as the “specific processing” which is explicitly disclosed as causing the processor to increase speed even if the terminal is in the closed condition, as claimed. Therefore, PO’s arguments regarding Belt’s suspend mode alone are irrelevant and non-responsive to the Petition. POR, 42, 45. PO’s assertion that Dr. Baker “was unable to identify any Belt example of specific processing that would increase clock frequency while the lid is closed” is wrong. POR, 41. Dr. Baker clearly testified that he did not recall Belt providing specific examples of applications “like a video game versus using a text editor” that “would require higher processing speeds.” EX2022, 38:12-16. That does not disturb Dr. Baker’s opinion that Belt’s PMI handler routine is the claimed “specific processing.”

Recognizing this, PO then attacks the PMI handler routine as not meeting the claimed “specific processing” because it is not an “application-level processing that directly responds to a user input. POR, 43. As explained in §II.B, this

construction is incorrect. Thus, it is irrelevant that the PMI handler is itself a brief process or that the CPU runs at its fastest speed for a short time. *Id.* PO's remaining positions regarding the PMI handler are similarly unavailing.

As with limitation 1[c], PO's reliance on the ACPI for this limitation is misguided and, if anything, supports the Petition. §III.A.5.

Regarding the Belt-Foster combination, PO's only substantive critique is that "Petitioners offer no explanation that the interrupt of Foster would occur 'even if the mobile terminal is in the closed condition.'" POR, 45. This misses the mark. As the Petition explains, Belt provides that even in the suspend mode (e.g., when the lid is closed), the processor may wake itself up to process an interrupt from the modem, so Belt alone teaches this limitation. Pet, 24. Foster explicitly teaches the importance of processing incoming characters from a serial or telephone line to the laptop's modem (like that disclosed Belt and Foster). Pet., 24-25. Therefore, as Dr. Baker explained, a POSITA would have found it obvious to combine Belt and Foster so that the processor fields interrupts from the modem even if the lid is closed to avoid missing incoming characters from a serial or telephone line, as taught by Foster. Pet., 25 (citing EX1003, ¶¶92-94.)

B. Claims 2 and 4-7

PO's only critique of the Petition's Ground 1 regarding claims 2 and 4-7, each of which depends on claim 1, is that the Belt-Norris-Foster combination does not disclose or teach claim 1. As explained above, these arguments are lack merit.

IV. GROUND 2

A. Claim 3

PO first disputes the motivation to combine Alberth with the Belt-Foster-Norris combination. PO argues this combination requires combining “four disparate references from different fields—laptop power management (Belt), laptop processor architecture (Foster), desktop/laptop performance management (Norris), and cellular telephone call handling (Alberth)—without a principled reason beyond hindsight to do so.” POR, 48. This is incorrect. Belt, Foster, and Norris each relate to the same field of power management. Pet., 44-46. Belt and Foster each disclose a laptop which includes a modem that can receive incoming calls and data. *Id.*, 42-43. Because Belt and Foster disclose modems that can receive incoming calls and call data, a POSITA would have been motivated to look at references, i.e., Alberth, which relate to techniques for identifying incoming calls. *Id.*

Next, PO argues that the combination does not satisfy claim 3 because “Belt receives an incoming call while in suspend mode with the lid closed, Belt expressly teaches that the system checks lid state and, if still closed, “return[s] to

the suspend mode—*i.e.*, the clock turns off entirely.” POR, 48. Critically, however, the Petition does not rely on Belt’s suspend mode alone as explained above and therefore, PO’s argument regarding Belt is irrelevant and non-responsive. Accordingly, PO fails to substantively dispute the Petition’s Ground 2.

V. CONCLUSION

All Challenged Claims of the ’417 patent should be found unpatentable for the reasons discussed in the Petition and in this Reply.

Respectfully submitted,

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(c)(1), Petitioners certify that this reply includes 5594 words, as measured by Microsoft Word, exclusive of the table of contents, certificates of service, word count, claim listing, and exhibits.

Date: August 4, 2026

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CERTIFICATE OF SERVICE

The undersigned certifies pursuant to 37 C.F.R. §§ 42.6(e) and 42.105 that on August 4, 2026, a true and correct copy of the Reply in support of the Petition for *Inter Partes* Review of U.S. Patent No. 7,577,417 was served by emailing a copy of the same (by agreement) to the following attorneys for the Patent Owner:

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