

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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UNIVERSAL REMOTE CONTROL, INC.,  
Petitioner,

v.

UNIVERSAL ELECTRONICS, INC.,  
Patent Owner.

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Case IPR2014-01102  
Patent 5,228,077

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Before HOWARD B. BLANKENSHIP, SALLY C. MEDLEY, and  
LYNNE E. PETTIGREW, *Administrative Patent Judges*.

PETTIGREW, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
*35 U.S.C. § 318(a) and 37 C.F.R. § 42.73*

I. INTRODUCTION

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed herein, Petitioner has

shown by a preponderance of the evidence that claim 13 of U.S. Patent No. 5,228,077 is unpatentable.

*A. Procedural History*

Petitioner, Universal Remote Control, Inc., filed a Petition for *inter partes* review of claim 13 of U.S. Patent No. 5,228,077 (Ex. 1001, “the ’077 patent”). Paper 1 (“Pet.”). Patent Owner, Universal Electronics, Inc., filed a Preliminary Response. Paper 7 (“Prelim. Resp.”). On January 6, 2015, we instituted an *inter partes* review of claim 13 of the ’077 patent on one ground of unpatentability, pursuant to 35 U.S.C. § 314. Paper 9 (“Dec.”).

Subsequent to institution, Patent Owner filed a Patent Owner Response in both unredacted (confidential) form (Paper 14) and revised redacted form (Paper 46, “PO Resp.”), along with a Motion to Seal (Paper 16). Petitioner filed a Reply in both unredacted (confidential) form (Paper 20) and revised redacted form (Paper 47, “Pet. Reply”), along with a Corrected Motion to Seal (Paper 23).

Petitioner filed a Motion to Exclude (Paper 30, “Pet. Mot. to Exclude”) certain portions of Exhibits 1053 and 1054. Patent Owner filed an Opposition to the Motion to Exclude (Paper 37), and Petitioner filed a Reply (Paper 39).

Patent Owner filed a Motion to Exclude (Paper 31, “PO Mot. to Exclude”) Exhibit 1043, and portions of Petitioner’s Reply that rely on Exhibit 1043. Petitioner filed an Opposition to the Motion to Exclude (Paper 35), and Patent Owner filed a Reply (Paper 38). Patent Owner filed a Motion for Observations (Paper 32), and Petitioner filed a Response to the Observations (Paper 36).

A consolidated oral hearing for IPR2014-01102, IPR2014-01103, IPR2014-01104, and IPR2014-01106 was held on August 19, 2015, and a transcript of the hearing is included in the record (Paper 49, “Tr.”).

*B. Related Matters*

According to the parties, the '077 patent is involved in the following lawsuit: *Universal Electronics, Inc. v. Universal Remote Control, Inc.*, No. SACV 13-00984-AG-JPR (C.D. Cal.). Pet. 1; Paper 4, 2.

*C. The '077 Patent*

The '077 patent relates to a remote control that includes an input with a set of keys or push buttons for inputting commands into the remote control, infrared (IR) signal output circuitry for supplying an infrared signal to a controlled device, and a central processing unit (CPU) coupled to the input and to the signal output circuitry. Ex. 1001, Abstract, Fig. 8 (operating circuitry), Fig. 9B (keyboard circuit). Memory is coupled to the CPU and stores code data for creating IR lamp driver instructions for causing the infrared signal output circuitry to emit infrared signals to control a variety of devices. *Id.* Code data may be supplied from outside the remote control through data coupling circuitry, which includes terminal structure, coupled to the CPU. *Id.* Code data is supplied via a data transmission system that includes coupling circuitry for coupling the terminal structure directly to a computer, through a modem and telephone line to a computer, or to a television set. *Id.*

Figure 20 of the '077 patent is reproduced below:

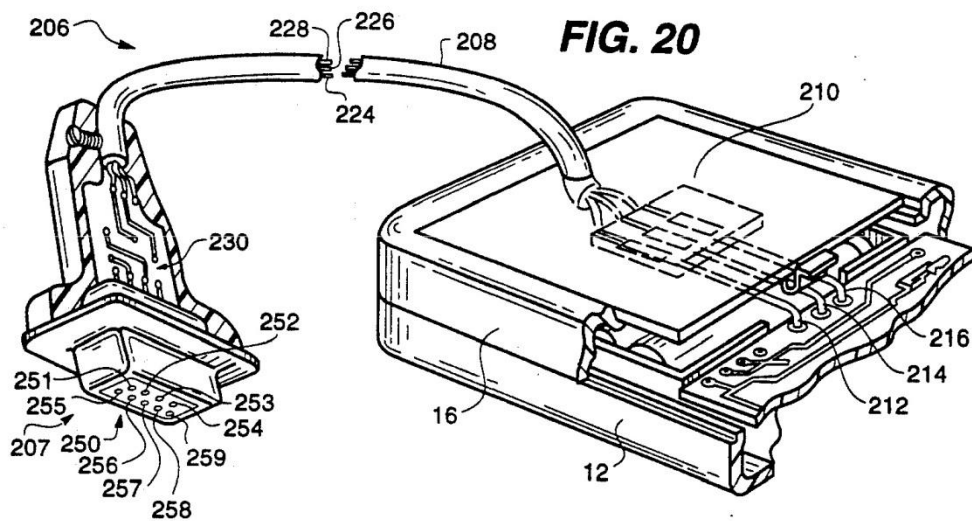


Figure 20 is a fragmentary perspective view of a connector having conversion circuitry and a battery case cover by which data can be input into the random access memory of the operating circuitry of a remote control device. Ex. 1001, 3:36–41. Signal coupling and converting assembly 206 includes connector assembly 207, cable 208, and cover plate 210 for battery compartment 45 (Fig. 7). *Id.* at 18:41–44. Cover plate 210 has three pins 212, 214, and 216 on its underside, which are positioned to connect with three serial ports 1, 2, and 3 (Fig. 7) of the remote control device. *Id.* at 18:44–47. Pins 212, 214, and 216 are connected by three wire conductors 224, 226, and 228 in cable 208 to connector assembly 207, which contains conversion circuitry 230. *Id.* at 18:47–51. Conversion circuitry 230 (Figs. 21, 22) enables using some of the nine sockets 250 of connector assembly 207 for communication with serial ports 1, 2, and 3 via pins 212, 214, and 216. *Id.* at 18:51–57.

*D. Claim 13*

Claim 13 is reproduced below:

13. A universal remote control system including a universal remote control comprising input means including a set of keys or push buttons for inputting commands into the remote control, infrared signal output means for supplying an infrared signal to a controlled device including IR lamp driver circuitry, a central processing unit (CPU) coupled to said input means and to said signal output means, a single, non-volatile read-write memory coupled to said CPU and data coupling means including terminal means comprising a receiving port coupled to said CPU for enabling code data for creating appropriate IR lamp driver instructions for causing said infrared signal output means to emit infrared signals which will cause specific functions to occur in a specific controlled device, for operating a variety of devices to be controlled, to be supplied from outside said remote control through said receiving port of said terminal means directly to said CPU for direct entry to said memory to enable said remote control to control various devices to be controlled upon the inputting of commands to the keys of the input means and a data transmission system including coupling means for coupling said terminal means to a computer directly, through a modem to a telephone line, or through a television set to a television signal picked up by the television set, said coupling means including a cable, first connector means for connection to said terminal means at one end of said cable, and interface connector means at the other end of said cable for connecting directly to a computer, or through a modem and a telephone line to a computer, or to a television set which receives data in a television signal from a computer.

*Id.* at 23:8–38.

*E. Ground of Unpatentability*

We instituted an *inter partes* review on the sole ground that claim 13 is unpatentable under 35 U.S.C. § 103(a) over the combination of Ciarcia<sup>1</sup> and Hastreiter.<sup>2</sup>

II. ANALYSIS

*A. Real Party-in-Interest*

Petitioner certifies that Universal Remote Control, Inc. (“URC”) is the real party-in-interest. Pet. 1. Patent Owner, however, contends that Petitioner failed to also name Ohsung Electronics Co., Ltd. and Ohsung Electronics U.S.A., Inc. (collectively, “Ohsung”), a supplier of products to URC, as real parties-in-interest. PO Resp. 26–30.

Section 312(a) of Title 35 of the United States Code provides that a petition for *inter partes* review under 35 U.S.C. § 311 may be considered only if, among other things, the petition identifies all real parties-in-interest. 35 U.S.C. § 312(a)(2). Whether a non-identified party is a real party-in-interest to a proceeding is a highly fact-dependent question. Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,759 (Aug. 14, 2012) (“Trial Practice Guide”) (citing *Taylor v. Sturgell*, 553 U.S. 880 (2008)). “A common consideration is whether the non-party exercised or could have exercised control over a party’s participation in a proceeding.” Trial Practice Guide, 77 Fed. Reg. at 48,759 (citing *Taylor*, 553 U.S. at 895). The concept of control generally means that “it should be enough that the nonparty has the actual measure of control or opportunity to control that

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<sup>1</sup> Steve Ciarcia, *Build a Trainable Infrared Master Controller*, BYTE, Mar. 1987, at 113 (Ex. 1005).

<sup>2</sup> U.S. Patent No. 4,667,181, issued May 19, 1987 (Ex. 1004).

might reasonably be expected between two formal coparties.” *Id.* (quoting 18A Charles Alan Wright, Arthur R. Miller & Edward H. Cooper, Federal Practice & Procedure § 4451 (2d ed. 2011)).

Patent Owner argues that Ohsung exercised or could have exercised control over Petitioner’s participation in this proceeding based on the close relationship between Petitioner and Ohsung. PO Resp. 27. In support of that argument, Patent Owner first directs us to evidence to support the notion that URC and Ohsung share at least one employee. According to Patent Owner, Mr. Jak You is a “key remote control executive [who] identifies himself as both an Ohsung and URC employee.” *Id.* The evidence cited by Patent Owner dates back to August 8, 2001 (Ex. 2019), July 16, 2012 (Ex. 2018), and July 2013 (Ex. 2021), and shows at most that Mr. You first worked for Petitioner (URC) and then worked for Ohsung. Such evidence, however, does not tend to show that Mr. You, around the time the Petition was filed, held himself out as working for both Ohsung and Petitioner, or that Ohsung and Petitioner share employees.

In any event, and even assuming that URC and Ohsung share an employee, we do not agree with Patent Owner that such sharing of one employee (Mr. You) suggests that Ohsung exercised or could have exercised control over Petitioner’s participation in this proceeding. For instance, Mr. You is said to have been a director of engineering for URC. *Id.* at 28. Patent Owner has not shown that Mr. You was in a position within Ohsung to persuade Ohsung or Petitioner to make a litigation decision to pursue an *inter partes* review.

Moreover, we are not persuaded by Patent Owner’s argument that URC having previously paid for office space used by an Ohsung employee

suggests that Ohsung has reciprocated by paying for anything associated with this proceeding or controlled the proceeding in any other way. *See id.* at 28–29. If anything, the evidence tends to show that URC, not Ohsung, pays for expenses such as the costs associated with this proceeding.

We also have considered Patent Owner’s argument that the closeness of the relationship between Ohsung and URC is exemplified by a settlement and license agreement (Ex. 2050) between Patent Owner and Petitioner, a provision of which obligates Ohsung to pay royalties to Patent Owner. *See* PO Resp. 29–30. Patent Owner argues that the agreement strongly suggests that Ohsung may have had the opportunity to control, direct, or influence the present proceeding. *Id.* at 30. The agreement was executed in 2004, and provides for the payment of royalties in 2005, 2006, and 2007. Ex. 2050, 5, 9. Patent Owner has not shown that the agreement exemplifies a close relationship in 2014 when the Petition in this proceeding was filed. Moreover, the agreement and royalties are directed to a set of patents, none of which is the patent involved in this proceeding. *Id.* at 1. Accordingly, we are not persuaded by this argument.

Lastly, we are not persuaded by Patent Owner’s argument that because URC and Ohsung share litigation counsel in a related case, Ohsung has controlled, or had the opportunity to control, this proceeding. *See* PO Resp. 27. In summary, based on the totality of arguments and evidence presented, we are not persuaded that Ohsung is a real party-in-interest in this proceeding.

### *B. Claim Interpretation*

The ’077 patent has expired and, thus, cannot be amended. For claims of an expired patent, the Board’s claim interpretation is similar to that of a



district court. *See In re Rambus, Inc.*, 694 F.3d 42, 46 (Fed. Cir. 2012). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (en banc)). However, there is a “heavy presumption” that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). Construction of a “means-plus-function” limitation under 35 U.S.C. § 112, sixth paragraph, involves two steps: first identifying the function explicitly recited in the claim, and then identifying the corresponding structure set forth in the written description that performs the particular function set forth in the claim. *Asyst Techs, Inc. v. Empak, Inc.*, 268 F.3d 1364, 1369–70 (Fed. Cir. 2001).

Petitioner proffers constructions for several means-plus-function terms (Pet. 15–17), and Patent Owner weighs in on those constructions (PO Resp. 4–13). For purposes of this Final Written Decision, we determine that those terms do not require express construction. Patent Owner also contends that Petitioner’s failure to propose a construction for “terminal means” in accordance with 35 U.S.C. § 112, sixth paragraph, is fatal to the Petition. PO Resp. 2–3. We agree with Petitioner, however, that “terminal means” as used in claim 13 is not a means-plus-function limitation requiring an analysis under § 112, sixth paragraph, because the claim does not recite a function performed by the “terminal means.” *See* Pet. Reply 11 (citing *Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294, 1302 (Fed. Cir. 1999)).

For this Final Written Decision, we determine that only the term “code data” requires express construction, as the key dispute between the parties focuses on that claim term. That term appears in the following limitation of claim 13: “data coupling means including terminal means coupled to said CPU *for enabling code data for creating appropriate IR lamp instructions for causing said infrared signal output means to emit infrared signals . . . to be supplied from outside said remote control.*” Ex. 1001, 23:16–24 (emphasis added).

Patent Owner argues that “code data” means “instructions and timing information for generating an infrared signal.” PO Resp. 14. Both parties agree that the term “code data” includes timing information or data, but they do not agree that the term “code data” also includes instructions.<sup>3</sup> *Id.*; Pet. Reply 4; Tr. 13, 40, 59. It is necessary for us to construe the phrase because the parties dispute whether the prior art (Ciarcia) describes supplying code data to the remote control from outside the remote control (e.g., a computer connected through a cable to the remote control). In particular, Patent Owner agrees that Ciarcia describes supplying timing data to the remote control, but contends that Ciarcia does not describe supplying instructions to the remote control. PO Resp. 17–19. For the reasons that follow, we determine that “code data” includes timing information or data, but need not include instructions.

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<sup>3</sup> Patent Owner refers to instructions as programming (computer instructions) or computer executable instructions. PO Resp. 19; Ex. 2029 ¶ 61; Tr. 66. Patent Owner contrasts instructions with timing information, which, it submits, constitutes data. PO Resp. 16; Tr. 64.

We begin with the plain language of the claim. Claim 13 recites “enabling<sup>4</sup> code data for creating appropriate IR lamp instructions for causing said infrared signal output means to emit infrared signals.” Based on the words of the claim, “instructions” are created using “code data.” Thus, the claim language differentiates “code data” from “instructions” and expressly refers to “instructions” when the claimed subject matter is directed to instructions. Moreover, claim 13 does not define or further explain what “code data” means. For example, there is nothing in claim 13 that would lead us to believe that data, albeit code data, should be construed to mean data plus programming or executable computer instructions. The phrase is “code *data*,” not “code data and instructions.”

We next turn to the Specification of the ’077 patent. Patent Owner focuses on the following passage from the Specification of the ’077 patent in support of its argument that code data includes instructions:

In the method for learning or acquiring code data for infrared codes disclosed herein, no counting of pulses is carried out. Instead the method involves the following steps:

- (a) receiving a transmission of a train of pulses from a remote control transmitter;
- (b) recording the point-in-time of an edge of each pulse in a train of the pulses;
- (c) transforming the recorded point-in-time data into a list of instructions for generating a replica of the train of pulses;
- (d) timing the duration of a train of the pulses;
- (e) timing the period between trains of pulses;

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<sup>4</sup> During oral hearing, counsel for Petitioner argued that due to the word “enabling,” claim 13 does not require that anything actually be supplied from outside the remote control. Tr. 87–88. This argument was not raised prior to oral hearing, and therefore we do not consider it.

- (f) associating a function key of the universal remote control device 10 with the time duration of the train of pulses and the list of instructions for generating a replica of the train of pulses;
- (g) determining whether or not repetitions of the transmission of train of pulses is present;
- (h) ignoring repetitions of the train of pulses;
- (i) noting that repetitions are present; and
- (j) storing for use in a universal remote control device, the information acquired in steps (c), (d), (e), (f), and (i).

Ex. 1001, 9:52–10:7.

Patent Owner argues that step (c) identifies instructions, and steps (d), (e), (f), and (i) identify timing information. PO Resp. 15. Patent Owner further argues that Figure 14 and the corresponding text of the Specification of the '077 patent confirm that the phrase “code data” is different from an IR code or signal, and is used to generate the IR code based on instructions and timing data. *Id.* at 15–16 (citing Ex. 2029 ¶¶ 52–56). We have reviewed the testimony of Patent Owner’s declarant, Mr. Alex Cook, in support of the proposed construction. Neither he nor Patent Owner discusses any other passages in the Specification of the '077 patent. Rather, his explanation for why we should narrowly construe “code data” focuses solely on one embodiment of the Specification. *See* Ex. 2029 ¶¶ 51–56.

In contrast to the example cited by Patent Owner, there are several passages in the '077 patent that describe code data as separate and distinct from instructions or instruction codes:

Incoming data is received serially at serial port 3 and conveyed to input port 112, when it is desired to update *the code data and/or instructions* in the RAM 54.

Ex. 1001, 8:28–31 (emphasis added).

After the infrared code is deciphered, *the code data therefor and instructions* for generating such code (see the flow chart in FIG. 14) are stored in a programming computer 200 (FIG. 10) and the device is programmed as explained below.

It is to be noted that the circuitry has no ROM and all *instruction codes and code data* are loaded directly into the RAM 54. This allows for infinite upgradability in the field via the serial ports 1, 2, 3.

*Id.* at 8:45–53 (emphases added).

(6) The multiplexing of the address and data lines between the RAM 54 and the CPU 56 enables scrambling of the *instruction codes and the code data* so that the memory image in the RAM 54 is encrypted.

*Id.* at 21:19–22 (emphasis added). In addition, the parent of the '077 patent teaches that only the timing information is part of “code data”: “In learning the infrared code and transforming same to code data . . . , *only the time duration of the pulses . . . as well as the time duration of the pause between bursts are sensed and used* to learn and later to generate the infrared codes.” Ex. 1007, 1:57–66 (emphasis added).

From the above passages, a person of ordinary skill in the art would have understood that code data need not include instructions. In other words, the above passages indicate that “instructions” or instruction codes are separate from “code data.” If code data necessarily included instructions or instruction codes, there would be no occasion for the Specification to refer to instructions or instruction codes separately from code data. Yet, the Patent Owner Response and the supporting testimony of Mr. Cook (Ex. 2029) are silent with respect to these passages.

Lastly, the Specification of the '077 patent describes that code data for the infrared codes “may be obtained from vendor information sheets and

specifications, can be determined using the methods disclosed in U.S. Pat. Nos. 4,623,887 and 4,626,848, or by the method disclosed herein.”

Ex. 1001, 9:47–51. Again, the Patent Owner Response and the supporting testimony of Mr. Cook (Ex. 2029) are silent with respect to this passage and the other ways that code data may be obtained or determined. In summary, there are many passages in the Specification of the '077 patent that tend to support not construing “code data” as Patent Owner would like, yet neither the Patent Owner Response nor the supporting testimony of Mr. Cook (Ex. 2029) discusses any of those other passages. Rather, Patent Owner’s arguments and Mr. Cook’s testimony are confined to discussing only the one embodiment that Patent Owner argues supports the contention that code data always includes instructions. For the reasons discussed above, we are not persuaded by Patent Owner’s arguments that “code data” necessarily includes instructions. Based on the record before us, the term “code data” includes timing information or data, but need not include instructions.

*C. Obviousness over Ciarcia and Hastreiter*

Petitioner contends that claim 13 is unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Ciarcia and Hastreiter. Pet. 41–51. In its Petition, Petitioner explains how the combination of Ciarcia and Hastreiter collectively meets each claim limitation and articulates a rationale for combining the references. *Id.* Petitioner also relies on a Declaration of Stephen D. Bristow to support the assertions made in connection with the Petition. Ex. 1009.

Patent Owner argues that neither Ciarcia nor Hastreiter meets the “code data” limitation of claim 13. PO Resp. 17–19. Patent Owner also argues there is insufficient reason to combine Ciarcia and Hastreiter. *Id.* at

19–22. Lastly, Patent Owner argues that secondary considerations weigh in favor of the nonobviousness of claim 13. *Id.* at 22–25. To support its contentions, Patent Owner relies on a Declaration of Mr. Alex Cook (Ex. 2029) and a Declaration of Mr. Ramzi Ammari (Ex. 2030).<sup>5</sup>

*Ciarcia*

Ciarcia describes a trainable remote control (Master Controller) with a keypad for inputting commands into the remote control. Ex. 1005, 114.<sup>6</sup> The remote control includes a central processing unit (CPU) (Intel 8031 microprocessor, IC1), memory (RAM IC11) coupled to the CPU, and infrared LEDs and driver circuitry that produce an IR signal to a controlled device. *Id.* at 114–115. The remote control may be connected to a personal computer using three wires from an RS-232 interface. *Id.* at 119 (“The serial connector is an RJ-11 telephone jack instead of the usual 25-pin DB-25 connector. Only three wires are required: data from the PC, data to the PC, and signal ground.”). The personal computer is connected to the remote control via the RS-232 interface and is “used to set up menus of devices (receivers, CD players, tape decks) and functions for each device (turn on, play forward, etc.)” *Id.* at 114. Once a menu is downloaded to the remote control, each function is taught and tested, after which a completed menu and synthesis data are uploaded to the personal computer and “stored on disk (in case you want to load it into another Master Controller or add another device later without retraining all of them).” *Id.*

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<sup>5</sup> Patent Owner also has filed a revised redacted version of Mr. Ammari’s Declaration. Ex. 2064.

<sup>6</sup> Citations are to the reference’s magazine page numbers rather than the exhibit page numbers.

*Hastreiter*

Hastreiter describes keyboard data input assemblies, including circuitry for minimizing the number of interconnections with a microprocessor or other apparatus with which a keyboard is used. Ex. 1004, 1:5–10. In particular, Hastreiter describes a keyboard circuit that uses diodes between row and column lines of the keyboard, similar to the keyboard circuit described in the '077 patent. *See, e.g.*, Ex. 1001, Fig. 9B; Ex. 1004, Figs. 1, 2.

*Petitioner's Assertions*

Petitioner relies on Ciarcia to meet all of the limitations of claim 13, with the exception of the “input means.” Pet. 41–51. Based on its construction of “input means” to include at least the corresponding structure of a keyboard circuit as shown in Fig. 9B of the '077 patent, Petitioner relies on the keyboard circuit of Hastreiter in combination with Ciarcia to meet the “input means.” *Id.* at 15, 27–28, and 42–44. Petitioner points to teachings in Hastreiter that the keyboard design can be used to minimize the required number of interconnections with a microprocessor or other apparatus with which a keyboard is used. *Id.* at 44; Ex. 1004, 1:5–11. Mr. Bristow opines that skilled artisans at the time of the invention would have understood that Hastreiter’s keyboard circuit could have been used in Ciarcia’s remote control to minimize connections to the microprocessor. Ex. 1009 ¶ 60.

*Code Data*

Patent Owner does not contest that any feature is missing from the combination of Ciarcia and Hastreiter other than supplying from outside the remote control (e.g., a computer connected through a cable to the remote control) “code data” to the remote control. PO Resp. 17–19. Petitioner



accounts for this limitation by relying on the description in Ciarcia of downloading completed menu and synthesis data to the same or different Master Controller. Pet. 20, 48; Ex. 1005, 114; Ex. 1009 ¶¶ 58–59; Tr. 31–32.

According to Patent Owner, the code data limitation is missing because Ciarcia does not describe supplying “code data” comprising *instructions* from a computer to the remote control. PO Resp. 18–19. As explained above in the claim construction section, Patent Owner has not shown that “code data” necessarily includes instructions. Rather, as stated above, “code data” includes timing information or data, but need not include instructions, e.g., programmable software code. Patent Owner concedes that Ciarcia describes downloading timing information to the remote control. *Id.* at 18; Ex. 1053, 357; Tr. 41.

Based on the record before us, Petitioner has shown by a preponderance of the evidence that all of the limitations in claim 13 are met by the combination of Ciarcia and Hastreiter.

#### *Combining Ciarcia and Hastreiter*

Patent Owner argues that it would not have been obvious to combine Ciarcia and Hastreiter. PO Resp. 19–22. As explained above, Petitioner articulates a rationale with supporting evidence for combining Ciarcia and Hastreiter. In particular, Petitioner points to teachings in Hastreiter that the keyboard design can be used to minimize the required number of interconnections with a microprocessor or other apparatus with which a keyboard is used. Pet. 44; Ex. 1004, 1:5–11. Mr. Bristow opines that skilled artisans at the time of the invention would have understood that Hastreiter’s keyboard circuit could have been used in Ciarcia’s remote control to

minimize connections to the microprocessor. Ex. 1009 ¶ 60. Accordingly, we are not persuaded by Patent Owner’s conclusory assertion that “[t]he Petition fails to articulate any reason why one having ordinary skill in the art would have been motivated to combine Ciarcia with Hastreiter.” PO Resp. 19.

Patent Owner also argues that because Hastreiter says nothing about remote controls, it is not in the same field as Ciarcia, directing attention to Mr. Cook’s testimony, who testifies to the same. *Id.* at 20; Ex. 2029 ¶ 74. The test for determining whether a prior art reference constitutes analogous art to the claimed invention is: (1) whether the prior art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor’s endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. *See In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

Here, Patent Owner has not explained sufficiently why Hastreiter is from a field of endeavor different from that of *the claimed invention*. Patent Owner’s comparison between the fields of endeavor of Ciarcia and Hastreiter misses the mark. In any event, Patent Owner’s argument that Hastreiter is not in the same field as Ciarcia is conclusory, as is Mr. Cook’s testimony. Neither explains why that is so. In addition, Patent Owner has not addressed the second prong of the above test. And, importantly, during cross-examination, Mr. Cook testified that the field of “keypad design is inherently a field that people in remote controls are aware of.” Ex. 1053, 427:21–25. Such a statement would tend to support a finding that Hastreiter is analogous art. Hastreiter is concerned with circuitry interconnections

between a microprocessor and a keyboard data input assembly and even goes as far as to state that it is applicable *for apparatuses that use keyboards*. Ex. 1004, 1:5–10. The claimed invention recites a remote control (an apparatus) with an input means including a set of keys or pushbuttons for inputting commands (e.g., a keyboard), where the input means is coupled to a microprocessor, which processes the commands. Based on the record before us, we find that Hastreiter is analogous art.

Patent Owner also argues that Ciarcia teaches away from any combination with Hastreiter. PO Resp. 21. Patent Owner argues that the keypad arrangement disclosed in Hastreiter is unnecessarily complex to be used in Ciarcia’s remote, and that a person of ordinary skill in the art would not have looked to Hastreiter for a keyboard data input assembly that minimized the number of diode switches used (interconnections) because the Ciarcia remote control only has six keys, such that minimizing interconnections would not be a concern. *Id.*; Ex. 2029 ¶¶ 67–73, 81, 83. We are not persuaded by Patent Owner’s arguments.

Hastreiter is not limited to only keyboards “having a large number of hard keys,” as Mr. Cook asserts. Ex. 2029 ¶ 78. Rather, Hastreiter explains that although a five by five array of keyboard conductors is shown, a person having ordinary skill in the art would have understood that “the present invention may be easily adapted to a square matrix of any size.” Ex. 1004, 3:31–34. For this reason, we do not give substantial weight to Mr. Cook’s testimony that Hastreiter is limited to only keyboards having a large number of keys, and thus is unnecessarily complex to be used in Ciarcia’s remote, because that testimony is not supported by what Hastreiter actually conveys to a person of ordinary skill in the art. For similar reasons, we do not give

substantial weight to Mr. Cook's testimony that "Ciarcia's remote control would not benefit from Hastreiter's keypad arrangement because Ciarcia's remote has very few keys" and that the "benefit of Hastreiter's keypad arrangement increases as the number of keys required grows larger."

Ex. 2029 ¶ 83. Again, Hastreiter is not limited to only keypads with a large number of keys, and even Mr. Cook recognizes that, although the benefit may increase with more keys on a keypad, there is still a benefit from the Hastreiter arrangement of reducing the number of electrical interconnections between the keypad and the microprocessor. *Id.* "[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

#### *Objective Evidence of Nonobviousness*

Factual inquiries for an obviousness determination include secondary considerations based on evaluation and crediting of objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Notwithstanding what the teachings of the prior art would have suggested to a person of ordinary skill in the art at the time of the claimed invention, the totality of evidence submitted, including objective evidence of nonobviousness, may lead to a conclusion that the claimed invention would not have been obvious to one with ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984).

There must be a demonstrated "nexus" between the merits of the claimed invention and the evidence of secondary considerations before that evidence is accorded substantial weight in an obviousness determination.

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*Simmons Fastener Corp. v. Ill. Tool Works, Inc.*, 739 F.2d 1573, 1575 (Fed. Cir. 1984); *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1539 (Fed. Cir. 1983); *see also In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996); *In re Fielder*, 471 F.2d 640, 642 (CCPA 1973). “Nexus” is a legally and factually sufficient connection between the objective evidence and the claimed invention, such that the objective evidence should be considered in determining nonobviousness. *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988). In the absence of an established nexus with the claimed invention, secondary consideration factors such as commercial success, satisfaction of a long-felt but unresolved need, licensing, and copying by others are not entitled to much, if any, weight and generally have no bearing on the legal issue of obviousness. *See In re Vamco Machine & Tool, Inc.*, 752 F.2d 1564, 1577 (Fed. Cir. 1985). The burden of showing that there is a nexus lies with the Patent Owner. *Id.*; *see In re Paulsen*, 30 F.3d 1475, 1482 (Fed. Cir. 1994).

Patent Owner argues that several of the patents owned by Patent Owner, including the '077 patent, were licensed by a substantial portion of the industry, showing commercial acquiescence and competitor acceptance of Patent Owner's licensed patents. PO Resp. 23–24. The mere existence of several licensees, without more specific information about the circumstances surrounding the licensing, is not a good indicator of nonobviousness. In *EWP Corp. v Reliance Universal Inc.*, 755 F.2d 898, 907–08 (Fed. Cir. 1985), the Court of Appeals for the Federal Circuit stated:

Such [licensing] programs are not infallible guides to patentability. They sometimes succeed because they are mutually beneficial to the licensed group or because of business judgments that it is cheaper to take licenses than to defend

infringement suits, or for other reasons unrelated to the unobviousness of the licensed subject matter.

Here, we are not told the circumstances surrounding the licenses. Patent Owner directs us to no testimony from any licensee with regard to why the licensee took a license from Patent Owner. It is unknown how much of the decision to take a license stems from a business cost-benefit analysis with regard to defending an infringement suit or from another business reason, rather than from acknowledged merits of the claimed invention. Patent Owner also does not disclose how many entities refused to take a license or why some entities, if any, refused to take a license. Four licensees may not represent a very successful licensing program if the field of potential application of Patent Owner's technology includes a large number of potential licensees.

Patent Owner also argues that its upgradeable remotes and those of one of its licensees (Logitech's Harmony Remotes) have enjoyed tremendous commercial worldwide success. PO Resp. 24. In particular, Patent Owner argues that it is a market leader in original equipment manufacturing of universal remote controls and made approximately \$1.6 billion in worldwide gross sales from 2000 to 2013. *Id.* at 24–25. Patent Owner argues that Logitech is the established market leader in consumer universal remote controls since 2007 and that from 2007 through 2014, Logitech averaged \$100 million in worldwide net sales of remote controls, a substantial number of sales containing the technology of the claimed invention. *Id.* at 25.

Patent Owner does not describe for us the components or manner of operation of the products sold by it or Logitech. Rather, Patent Owner

directs us to several paragraphs from the Ammari Declaration. Ex. 2064.<sup>7</sup> Mr. Ammari directs us to claim charts that were created during litigation between Patent Owner and Logitech, along with user manuals of several of Logitech's remote control products. *Id.* ¶¶ 20–24. Mr. Ammari testifies that the manuals depict remotes that are upgradeable via a connection to a computer and that when using a Harmony Remote, a user uses software or an online service to configure downloaded code data to the remote control. *Id.* ¶¶ 23, 24. Such a showing does not establish a nexus between the alleged commercially successful products and the claimed invention.

First, we do not know the context of the litigation between Logitech and Patent Owner, such as whether Logitech agreed to the charge of infringement. Based on the record before us, Patent Owner has not established that the infringement charts are meritorious insofar as showing a nexus is concerned. Moreover, Patent Owner has not shown sufficiently that any of the Logitech manuals would have conveyed to a user to use “Logitech’s desktop software or an online service to configure downloaded code data to the remote control” as Mr. Ammari contends. Ex. 2064 ¶ 24. We do not give much weight to Mr. Ammari’s testimony in this regard because it is conclusory. He does not direct us to where in any of the manuals there is a description of configuring a remote control to download code data to the remote control.

In any event, we do not know why \$100 million of Logitech’s or \$1 billion of Patent Owner’s sales constitutes commercial success. It is well established that absolute sales numbers without market share data does not

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<sup>7</sup> At the time of his declaration, Mr. Ammari was employed by Patent Owner and has been employed by Patent Owner since 1997. Ex. 2064 ¶¶ 1, 4.

establish commercial success. *See, e.g., In re Huang*, 100 F.3d at 140. Patent Owner's Response does not discuss and present market share information.

In addition, Patent Owner must prove that the sales were a direct result of the unique characteristics of the invention, and not a result of economic and commercial factors unrelated to the quality of the patent subject matter. *In re Applied Materials, Inc.*, 692 F.3d 1289, 1299–1300 (Fed. Cir. 2012). In addition, “if the commercial success is due to an unclaimed feature of the device,” or “if the feature that creates the commercial success was known in the prior art, the success is not pertinent.” *Ormco Corp., v. Align Tech., Inc.*, 463 F.3d 1299, 1312 (Fed. Cir. 2006); *see also In re Kao*, 639 F.3d 1057, 1070 (Fed. Cir. 2011) (requiring a determination of “whether the commercial success of the embodying product resulted from the merits of the claimed invention as opposed to the prior art or other extrinsic factors”). Here, Patent Owner has not directed us to evidence to explain the reasons for the alleged commercial success of Logitech's and Patent Owner's remote controls.

For all of the foregoing reasons, Patent Owner has failed to establish the necessary “nexus” between the evidence of alleged commercial success and the invention claimed.

### *Conclusion*

We have considered the entirety of the evidence before us, including the evidence of obviousness and the evidence of licensing and commercial success submitted by Patent Owner as indicia of nonobviousness. On balance, the evidence of obviousness outweighs the evidence of nonobviousness with respect to claim 13. The evidence of obviousness is



strong and the evidence of nonobviousness is weak, for the reasons discussed above. All of Patent Owner's arguments have been considered.

Petitioner has proved by a preponderance of the evidence that claim 13 is unpatentable over the combination of Ciarcia and Hastreiter.

*D. Patent Owner's Motion to Exclude*

Patent Owner moves to exclude Exhibit 1043 and portions of Petitioner's Reply that rely on Exhibit 1043 as not relevant to the proceeding. PO Mot. to Exclude 1. The parties refer to Exhibit 1043 as a data sheet for an Intel 8254 Programmable Interval Timer (PIT). Ciarcia describes an 8254 PIT that is programmed to generate IR signals. Ex. 1005, 118–119. In its Reply, Petitioner relies on the 8254 PIT data sheet to show the details of the 8254 PIT used in the Ciarcia described device. Pet. Reply 14. We did not and need not consider such arguments or evidence in connection with the Reply. We have determined that Petitioner has demonstrated, by a preponderance of the evidence, that claim 13 is unpatentable, without considering Petitioner's arguments regarding the details of the Intel 8254 PIT used in the device described in Ciarcia. Accordingly, we *dismiss* Patent Owner's Motion to Exclude.

*E. Petitioner's Motion to Exclude*

Petitioner moves to exclude portions of Exhibits 1053 and 1054, which are deposition transcripts of Patent Owner's witness, Mr. Alex Cook. With respect to both exhibits, Petitioner moves to exclude portions of Mr. Cook's testimony for, among other reasons, being unreliable. Pet. Mot. to Exclude 1. In particular, Petitioner moves to exclude Exhibit 1053 at 419:1–2, 419:14–15, 420:5–21, 421:8–422:2, and 422:9–13, and

Exhibit 1054 at 745:4–8, 745:15–746:1, 746:13–747:4, 747:11–16, 747:22, 748:2, 749:10–11, 749:17–21, and 750:23–751:3. *Id.*

Petitioner has not shown that Patent Owner relied on either Exhibit 1053 or 1054 in support of its papers filed in this proceeding, nor do we find that Patent Owner relied on either exhibit in support of its papers filed in this proceeding. Moreover, Petitioner has not shown that it relied on the objected to portions of either exhibit in support of its papers filed in this proceeding, nor do we find that Petitioner relied on the objected to portions of either exhibit in support of its papers filed in this proceeding. Because we were not directed to the objected to portions of the evidence in any papers before us, we did not and need not consider the objected to portions of Exhibits 1053 and 1054 in rendering this decision. Accordingly, we *dismiss* Patent Owner’s Motion to Exclude.

#### *F. Motions to Seal*

Patent Owner and Petitioner each filed several papers (e.g., Paper 14) and exhibits (e.g., Exhibits 1050 and 1051) under seal, along with motions to seal (Papers 16 and 23) and a protective order (Ex. 2065). The motions are unopposed and are *granted*.

There is an expectation that information will be made public where the information is identified in a Final Written Decision, and that confidential information that is subject to a protective order ordinarily would become public 45 days after final judgment in a trial, unless a motion to expunge is granted. 37 C.F.R. § 42.56; Office Patent Trial Practice Guide, 77 Fed. Reg. at 48,761. In rendering this Final Written Decision, it was not necessary to identify, or discuss in detail, any confidential information. A party who is dissatisfied with this Final Written Decision may appeal the

Decision pursuant to 35 U.S.C. § 141(c), and has 63 days after the date of this Decision to file a notice of appeal. 37 C.F.R. § 90.3(a).

In view of the foregoing, the confidential documents filed in the instant proceeding will remain under seal, at least until the time period for filing a notice of appeal has expired or, if an appeal is taken, the appeal process has concluded. The record for the instant proceeding will be preserved in its entirety, and the confidential documents will not be expunged or made public, pending appeal. Notwithstanding 37 C.F.R. § 42.56 and the Office Patent Trial Practice Guide, neither a motion to expunge confidential documents nor a motion to maintain these documents under seal is necessary or authorized at this time. *See* 37 C.F.R. § 42.5(b).

### III. CONCLUSION

Based on the evidence and arguments, Petitioner has demonstrated by a preponderance of the evidence that claim 13 of the '077 patent is unpatentable under 35 U.S.C. 103(a) as obvious over the combination of Ciarcia and Hastreiter.

### IV. ORDER

Accordingly, it is:

ORDERED that claim 13 of U.S. Patent No. 5,228,077 has been shown to be unpatentable;

FURTHER ORDERED that the parties' respective motions to seal are *granted*;

FURTHER ORDERED that the parties' respective motions to exclude evidence are *dismissed*; and

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FURTHER ORDERED that, because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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