

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TRICKLESTAR LLC,
Petitioner,

v.

EMBERTEC PTY LTD.,
Patent Owner.

Case IPR2016-01336
Patent 9,106,099 B2

Before BARBARA A. BENOIT, LYNNE E. PETTIGREW, and
STACY B. MARGOLIES, *Administrative Patent Judges*.

MARGOLIES, *Administrative Patent Judge*.

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

I. INTRODUCTION

In this *inter partes* review, instituted pursuant to 35 U.S.C. § 314, TrickleStar LLC (“Petitioner”) challenges the patentability of certain claims of U.S. Patent No. 9,106,099 B2 (Ex. 1001, “the ’099 patent”), owned by Embertec Pty Ltd. (“Patent Owner”). We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, Petitioner has shown by a preponderance of the evidence that claims 1–7 and 9 of the ’099 patent are unpatentable.

A. Procedural History

Petitioner filed a Petition for *inter partes* review of claims 1–16 of the ’099 patent. Paper 1 (“Pet.”). Patent Owner filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). On December 27, 2016, we instituted an *inter partes* review of claims 1–7 and 9 of the ’099 patent on the following grounds: (1) claims 1–4, 7, and 9 of the ’099 patent as anticipated under 35 U.S.C. § 102(a) or (b)¹ by EP ’379,² and (2) claims 5 and 6 of the ’099 patent as obvious under 35 U.S.C. § 103 over EP ’379 and EP ’752.³ Paper 7, 23–24 (“Dec.”).

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103. Because the ’099 patent has an effective filing date before the effective date of the applicable AIA amendments, we refer to the pre-AIA versions of 35 U.S.C. §§ 102 and 103.

² EP 2 051 379 A1, filed Oct. 16, 2008, published Apr. 22, 2009 (Ex. 1002, “EP ’379”).

³ EP 1 223 752 A2, filed Nov. 30, 2001, published July 17, 2002 (Ex. 1003, “EP ’752”).

Subsequent to institution, Patent Owner did not file a Patent Owner Response. *See* Ex. 3002 (email stating that Patent Owner “will not be filing a Patent Owner Response”); 37 C.F.R. § 42.120(a) (providing that “[a] patent owner may file a response to the petition addressing any ground for unpatentability not already denied”). Neither party requested oral argument. *See* Paper 10 (noting that neither party requested oral argument and ordering that no oral argument take place); 37 C.F.R. § 42.70(a) (providing that “[a] party may request oral argument on an issue raised in a paper”).

B. Related Matters

The parties do not identify any related district court proceedings, *inter partes* reviews, post-grant reviews, or covered business method patent reviews. *See* Pet. 1; Paper 4, 1.

C. The '099 Patent

The '099 patent is directed to an energy saving device that monitors the electrical power supply to electrical equipment to reduce unnecessary power consumption. Ex. 1001, [57], 1:14–18. The '099 patent explains that “[m]onitoring can have many advantages, especially in detecting abnormal usage, faults and theft.” *Id.* at 2:60–61. For example, according to the '099 patent, the system may detect excessive power consumption in an office due to use of a portable heater and alert supervisory personnel to the abnormal energy usage. *Id.* at 2:62–67. The patent also describes alerting a user to cessation of power consumption, such as that caused by breakdown of a refrigerator or freezer. *Id.* at 3:1–4.

Figure 1 of the '099 patent, below, is a general representation the components of the energy saving device:

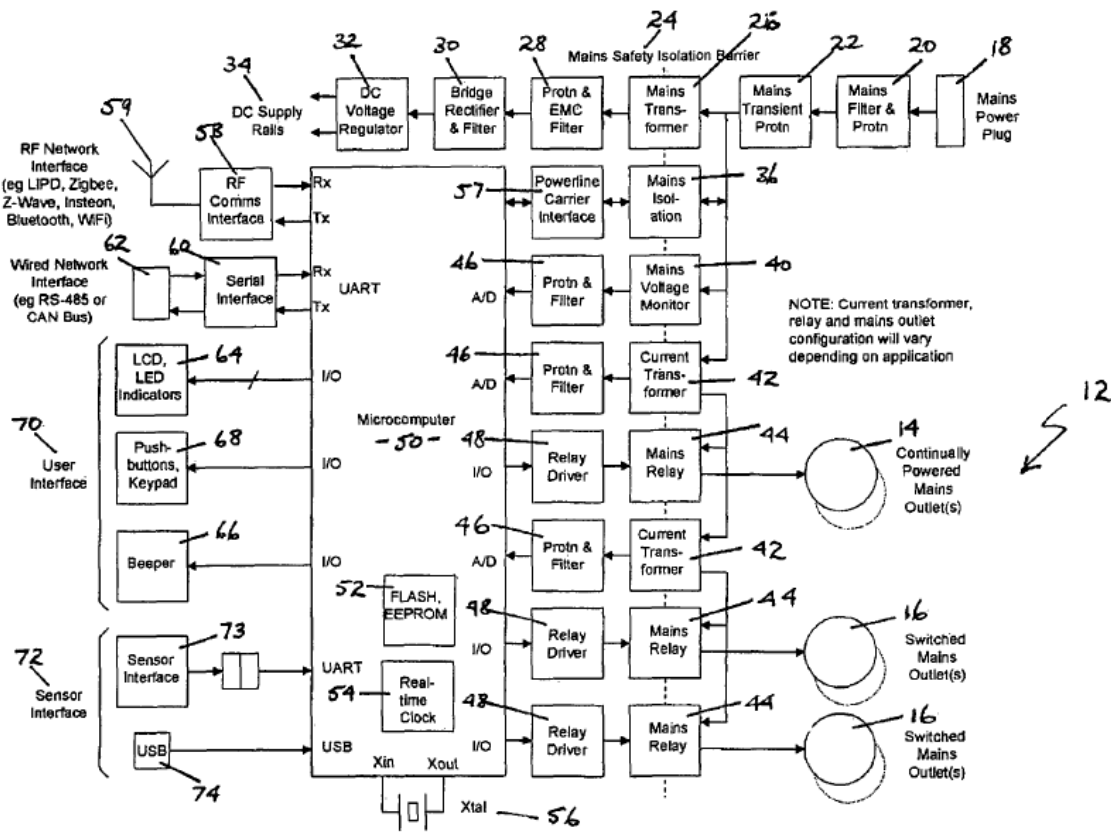


Figure 1

Id. at 5:52–54. As illustrated in Figure 1 above, energy saving device 12 includes one or more continually powered mains outlets 14 and two or more switched mains outlets 16. *Id.* at 5:58–60. Electrical devices (not shown) are plugged into mains outlets 14 and switched mains outlets 16 as required. *Id.* at 5:60–62. Energy saving device 12 also includes mains power plug 18 for connection to a mains power supply (not shown) and microcomputer 50, which implements energy saving algorithms and includes flash and/or EEPROM non-volatile memory 52 for storing energy saving configuration parameters. *Id.* at 5:63–64, 6:56–64.

Figure 1 above also illustrates a number of interfaces. *Id.* at 7:4–5. User interface 70 includes LCD or LED indicators 64, beeper 66, and pushbuttons and keypad 68. *Id.* at 7:20–21. According to the '099 patent,

the LCD or LED indicators “output data from monitored power consumption and provide an indication of status to the use” and the beeper “provide[s] an audible output to indicate faults or status change conditions, such as imminent powering down of connected mains powered equipment.” *Id.* at 7:22–24, 7:8–30.

Figure 1 also illustrates “[s]ensor interface 72 and 73,” which according to the ’099 patent “provides an interface for wired connection of an external sensor module (not shown) including a remote control [infrared (IR)] sensor for IR remote control activity sensing in audio-visual applications.” *Id.* at 7:35–38. The patent states that “[t]he purpose of this is to enable automatic power reduction or power increase to electrical devices, such as in audio-visual equipment, if power can be reduced depending on user activity.” *Id.* at 7:41–44. For example, in the embodiment illustrated in Figure 3 of the ’099 patent for a networked universal wall plug or general power outlet (GPO), “when the user operates the wireless transmitter via its push button or touch sensor, a wireless RF signal would be transmitted and received by wall plug 12*b*, causing it to supply mains power to the appliance.” *Id.* at 8:65–67, 9:34–40. The ’099 patent also discloses that the purported invention provides “[u]ser control to optimize energy savings function for individual outlets, e.g.,[,] by setting idle power threshold levels, ‘active standby’ timeout periods, etc.” *Id.* at 14:26–28.

D. Illustrative Claims

Among the claims at issue in this proceeding, claims 1 and 9 are independent. Claims 1, 5, and 9 are illustrative of the claims at issue and read as follows:

1. An energy saving device for reducing power consumption of an external electrical device, comprising:

an input connectable to an external power supply;

an output connectable to the external electrical device for selectively providing operating power thereto;

a processor for controlling when power is supplied to the external electrical device via the output; and

a sensor for monitoring wireless output signals of a remote control device that control functions of the external electrical device or another electrical device associated with the external electrical device, said sensor being coupled to the processor, and wherein the processor operates to terminate the power supplied to the external electrical device based upon the absence of the detection of the wireless output signals of the remote control device by the sensor.

5. The energy saving device of claim 1, further including an alert device, which provides an alert signal to a user prior to the termination of the power supply to the external electrical device.

9. An energy saving device including:

an electrical input configured for connecting to a power supply;

an electrical output configured for connecting to an electrical device of the type which, when connected to a power supply has an 'ON' state and a 'STANDBY' state;

a switch configured to selectively connect said electrical output to said electrical input; and

a sensor able to wirelessly sense activity of a user-operated remote control device for controlling the electrical device;

wherein said switch is configured to disconnect said electrical output from said electrical input in response to at least one of:

- (i) said electrical device is in said 'ON' state and an absence of said activity is detected by said sensor for a predetermined timeout period, or,

- (ii) said electrical device entering said ‘STANDBY’ state.

Id. at 15:5–19, 15:33–36, 15:52–67 (indentations added to claim 9).

II. DISCUSSION

A. Principles of Law

To prevail in its challenge to Patent Owner’s patent claims, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review).

A claim is anticipated if a single prior art reference either expressly or inherently discloses every limitation of the claim. *Orion IP, LLC v. Hyundai Motor Am.*, 605 F.3d 967, 975 (Fed. Cir. 2010). A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time of the invention to a person having ordinary skill in the art. *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any

differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness.

Graham v. John Deere Co., 383 U.S. 1, 17–18 (1966). “A determination of whether a patent claim is invalid as obvious under § 103 requires consideration of all four *Graham* factors, and it is error to reach a conclusion of obviousness until all those factors are considered.” *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016) (en banc) (citations omitted). “This requirement is in recognition of the fact that each of the *Graham* factors helps inform the ultimate obviousness determination.” *Id.*

B. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, 35 U.S.C. § 103 requires us to resolve the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors that may be considered in determining the level of ordinary skill in the art include, but are not limited to, the types of problems encountered in the art, the sophistication of the technology, and educational level of active workers in the field. *Id.* at 1579. In a given case, one or more factors may predominate. *Id.* Generally, it is easier to establish obviousness under a higher level of ordinary skill in the art. *Innovention Toys, LLC v. MGA Entm’t, Inc.*, 637 F.3d 1314, 1323 (Fed. Cir. 2011) (“A less sophisticated level of skill generally favors a

determination of nonobviousness . . . while a higher level of skill favors the reverse.”).

Petitioner contends that a person having ordinary skill in the art at the time of the invention would have had “at least an undergraduate degree in Electrical Engineering and three years of experience working with designing hardware and software interfaces and power supply and monitoring systems, or an equivalent combination and experience in related fields.” Pet. 7.

Petitioner’s declarant, Mr. Thomas A. Gafford, likewise opines that a person of ordinary skill in the art would have had that background. Ex. 1006 ¶ 17.

Patent Owner did not file a Patent Owner Response and thus does not challenge Petitioner’s contention or Mr. Gafford’s testimony regarding the level of one of ordinary skill in the art at the time of the invention.⁴

We determine that the level of ordinary skill proposed by Petitioner and Petitioner’s declarant is consistent with the challenged patent and the asserted prior art, and we therefore adopt that definition of the level of ordinary skill in the art for the purposes of the analysis below. See Ex. 1001, 1:14–15 (“The invention relates to aspects of the monitoring of electrical power supply to electrical equipment.”); Ex. 1002 ¶ 1 (“The present invention relates to a method and system to provide power saving for electronic devices while such devices are in the standby mode and are not in use, particularly for a setting accommodating multiple electronic devices especially in the end-user sector.”); Ex. 1003 ¶ 1 (“The present invention relates to an automatic means switch device used to disconnect a load from

⁴ We note that, in its Preliminary Response, Patent Owner did not challenge Petitioner’s contention or Mr. Gafford’s testimony regarding the level of ordinary skill in the art. See *generally* Prelim. Resp.

the electrical mains line, particularly useful in association with electrical appliances controlled by remote control units like, for example, television sets.”) (emphasis omitted).

C. Claim Construction

In an *inter partes* review, we construe claim terms in an unexpired patent according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). Consistent with the broadest reasonable construction, claim terms are presumed to have their ordinary and customary meaning as understood by a person of ordinary skill in the art in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). An inventor may provide a meaning for a term that is different from its ordinary meaning by defining the term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner proposes constructions for “input” (claim 1), “electrical input” (claim 9), “sensor” (claims 1 and 9), and “alert device” (claim 5). Pet. 7–10. Petitioner asserts that “input” and “electrical input” each mean “a power or electrical line for connecting a power supply to the energy saving device.” *Id.* at 8. Petitioner asserts that “sensor” means “any signal detection device that detects any kind of wireless signal from a remote controller.” *Id.* at 9. Petitioner asserts that “alert device” means “any device which can send out a visual or audible signal to a user.” *Id.* at 9–10.

Patent Owner did not file a Patent Owner Response and thus does not challenge in this instituted *inter partes* review any of Petitioner’s proposed constructions. See 35 U.S.C. § 316(a)(8) (stating that the Director “shall prescribe regulations . . . providing for the filing by the patent owner of a response to the petition . . . after an *inter partes* review has been instituted, and requiring that the patent owner file with such response, through affidavits or declarations, any additional factual evidence and expert opinions on which patent owner relies in support of the response”); 37 C.F.R. § 42.120(a) (providing that “[a] patent owner may file a response to the petition addressing any ground for unpatentability not already denied”).

We note that in its Preliminary Response, Patent Owner asserted that each term should be given its plain and ordinary meaning, without specifying what that plain and ordinary meaning is. Prelim. Resp. 12–22. With respect to the terms “input” and “electrical input,” Patent Owner argued that “electrical plug”—recited in claim 10—does not have the same meaning as “input” and “electrical input.” *Id.* at 12–18. With respect to “sensor,” Patent Owner argued that Petitioner’s proposed construction makes other claim terms redundant. *Id.* at 20. And with respect to “alert device,” Patent Owner argued that “alert device” does not require construction because neither of Petitioner’s proposed grounds in its Petition turn on the meaning of “alert device.” *Id.* at 21.

We determine that we do not need to expressly construe “input” (claim 1), “electrical input” (claim 9), “sensor” (claims 1 and 9), and “alert device” (claim 5) to determine whether Petitioner has shown by a preponderance of the evidence that claims 1–7 and 9 are unpatentable.

D. Asserted Anticipation by EP '379

Petitioner contends that claims 1–4, 7, and 9 are unpatentable under 35 U.S.C. § 102(a) or (b) as anticipated by EP '379. Pet. 3, 11–36. Relying in part on the testimony of Mr. Gafford, Petitioner purportedly explains how EP '379 discloses each claim limitation. *Id.* at 11–36 (citing Ex. 1006).

As stated above, Patent Owner did not file a Patent Owner Response. We also note that Patent Owner did not challenge in its Preliminary Response Petitioner's contention that claims 1–4, 7, and 9 are anticipated by EP '379. *See generally* Prelim. Resp. The burden, however, remains on the Petitioner to demonstrate by a preponderance of the evidence that these claims are anticipated by EP '379. 35 U.S.C. § 316(e); *Dynamic Drinkware*, 800 F.3d at 1378.

We have reviewed Petitioner's arguments in the Petition as well as the evidence discussed in the Petition, including the declaration of Mr. Gafford. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–4, 7, and 9 are anticipated by EP '379.

1. Summary of EP '379

EP '379 discloses a power saving system for electronic devices when the devices are in standby mode and not in use. Ex. 1002, 1. According to EP '379, television sets, audio systems, DVD players, and “many similar electronic devices widely used in the end-user electronics market consume energy in their standby mode, though the amount of energy consumed in this mode is less as compared to their operating mode.” *Id.* ¶ 2. EP '379 explains that an advantage of the invention described therein is saving energy that many devices consume during their standby period. *Id.* ¶ 28.

Figure 2 of EP '379, below, illustrates a block diagram of the power saving system:

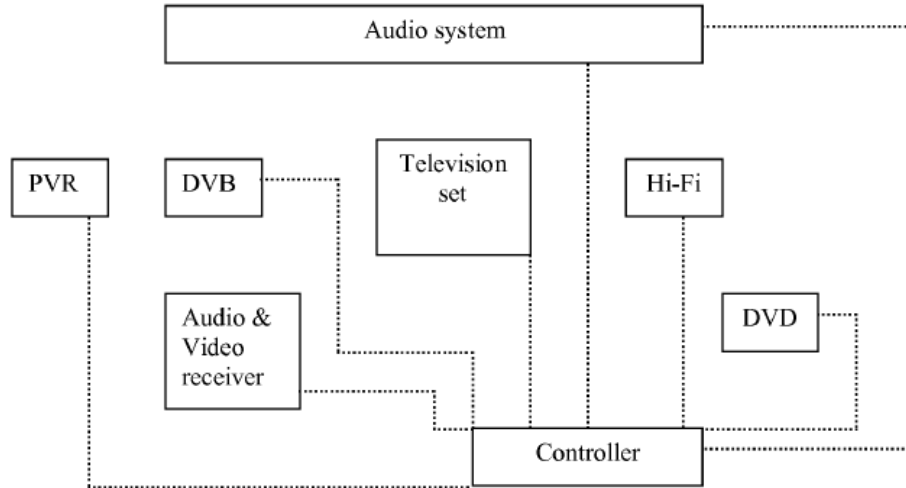


Figure 2

Id. ¶ 12. As shown above in Figure 2, a controller is connected to electronic devices such as television set, DVD player, and audio and video receiver.

Id. ¶¶ 16, 17, 21.

Figure 3 of EP '379, below, illustrates the components of the controller:

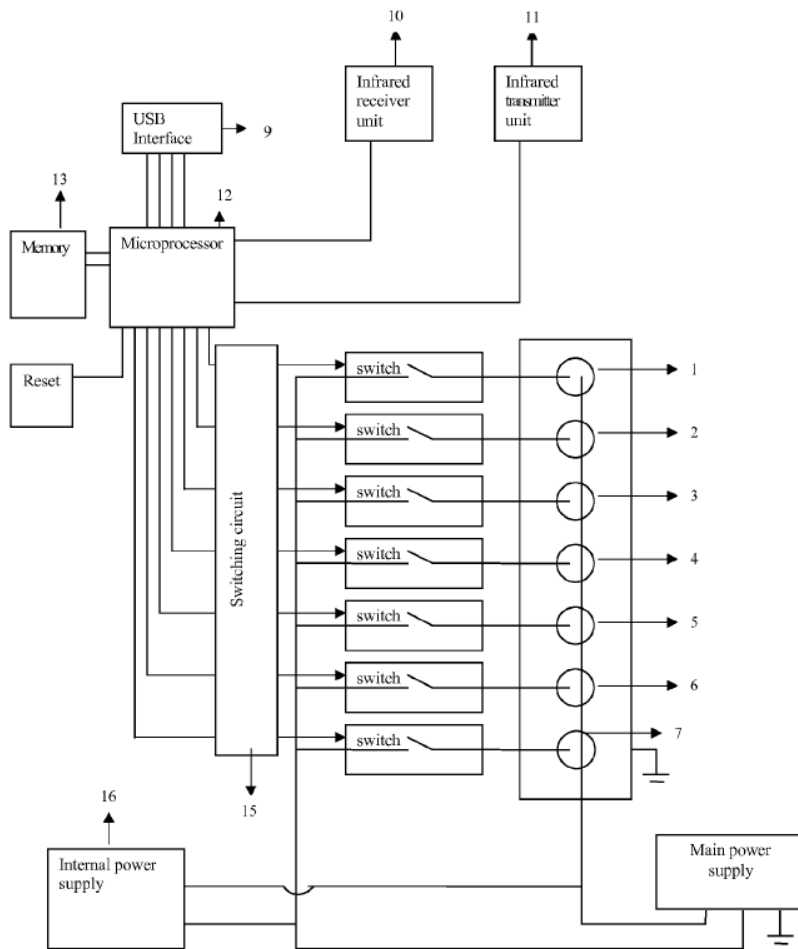


Figure 3

Id. ¶ 12. As shown in Figure 3 above, the controller includes memory 13, microprocessor 12, a signal receiving unit (in this example, infrared receiver unit 10), a signal transmitting unit (in this example, infrared transmitter unit 11), a main power supply, internal power supply 16, switches for powering on or off electronic devices 1 to 7 (shown in Figure 1), and plug outputs for connecting to electronic devices 1 to 7. *Id.* ¶¶ 16, 17, 21, 23.

EP '379 describes an example in which a user utilizes a remote control to transmit a signal to switch the television to standby mode, and the internal electronics of the television switch the television to standby mode.

Id. ¶¶ 19, 24. EP '379 discloses that the controller senses the remote control

signal and completely interrupts the power to the television after a short period of time, according to a predetermined shutting-down rule. *Id.*

According to EP '379, the controller also completely interrupts the power to other connected devices in accordance with rules stored in the memory of the controller. *Id.* ¶ 21. For example, the controller may also interrupt the power to the DVD player and the video/audio receiver, thereby saving power to all three devices. *Id.*

EP '379 also discloses that when the controller does not sense a signal from the remote control for a certain period of time (e.g., three hours), the controller may power off the devices connected to it in accordance with an automatic turning-off rule. *Id.* ¶ 26.

2. Analysis

a. Whether EP '379 is Prior Art

Petitioner asserts that the '099 patent “is a national stage entry of a PCT patent application designating the United States, filed on June 3, 2010 and claims priority to Australian patent application AU2009902532.” Pet. 7. Petitioner argues that “the effective filing date of the '099 patent is June 3, 2010,” and “the earliest priority date of the '099 patent is June 3, 2009”—the filing date of the Australian patent application. *Id.* Petitioner contends that EP '379—which was published April 22, 2009—is prior art under 35 U.S.C. § 102(a) or § 102(b). Pet. 3.

Patent Owner does not challenge that EP '379 is prior art to the claims at issue in this *inter partes* review. Patent Owner also does not argue or provide any supporting evidence that the claims at issue are entitled to an

invention date prior to June 3, 2009, the filing date of the Australian patent application.⁵

EP '379 was published April 22, 2009. Ex. 1002, [43]. Because EP '379 was published before the earliest possible invention date of record in this proceeding, Petitioner has shown by a preponderance of the evidence that EP '379 is prior art to claims 1–4, 7, and 9 of the '099 patent at least under 35 U.S.C. § 102(a).

b. Claim 1

Petitioner contends that EP '379 discloses each limitation of independent claim 1. Pet. 11–18. Specifically, Petitioner contends that EP '379 discloses an energy saving device—a power saving system controller—that turns off power to a connected device when no remote command has been received for a predetermined time period. *Id.* at 11 (citing Ex. 1002, [57]). Petitioner cites passages of EP '379, and identifies components of the controller illustrated in Figure 3 of EP '379 that purportedly correspond to each limitation of claim 1. *Id.* at 11–18.

Having reviewed the Petition and the evidence discussed therein, we determine that Petitioner has demonstrated by a preponderance of the evidence that claim 1 is unpatentable under 35 U.S.C. § 102(a) as anticipated by EP '379. *See* Pet. 11–18; Ex. 1002 ¶¶ 23, 24, 26, Figs. 2, 3. First, EP '379 discloses an energy saving device for reducing power consumption of an external electrical device. Ex. 1002, [57] (disclosing “a method and system to provide power saving for electronic devices”); Ex. 1006 ¶ 42. EP '379 also discloses turning off devices for which no signal is received from a

⁵ We also note that Patent Owner did not challenge the prior art status of EP '379 in its Preliminary Response. *See generally* Prelim. Resp.

remote control for a predetermined time period. *Id.* at ¶ 26; *see* Pet. 17 (citing, e.g., Ex. 1002 ¶ 26).

EP '379 also discloses that the energy saving device includes an input connectable to an external power supply, as illustrated in Petitioner's annotated version of Figure 3 of EP '379, below:

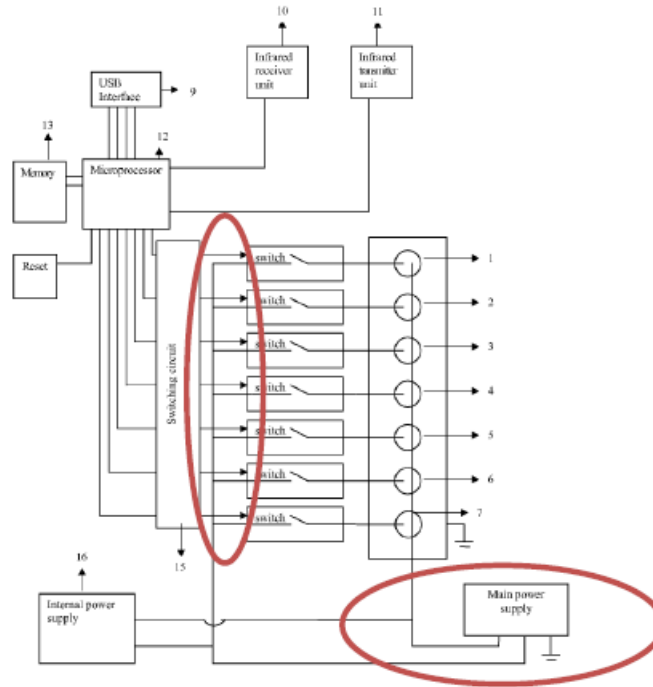


Figure 3

Pet. 11–12; Ex. 1002, Fig. 3, ¶ 23; Ex. 1006 ¶ 47. Petitioner's annotated Figure 3 adds red ovals around the main power supply and the input to the switches that selectively power electronic devices 1–7. *Id.* at 11–13; Ex. 1002 ¶ 23. EP '379 discloses that the line connecting the switches to the main power supply (as opposed to “internal” power supply 16 illustrated in Figure 3) is an input connectable to an external power supply. Ex. 1002, Fig. 3, ¶ 23; *see also* Ex. 1006 ¶ 47 (opining that main power supply depicted in Figure 3 is an external power supply).

EP '379 also discloses that the energy saving device includes an output connectable to the external electrical device for selectively providing operating power thereto, as illustrated in Petitioner's annotated version of Figure 3:

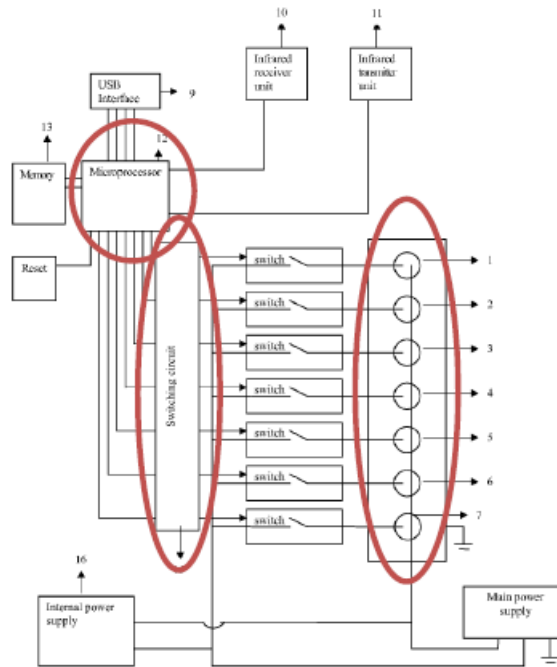


Figure 3

Pet. 13–14 (citing Ex. 1002, Fig. 3, ¶¶ 23, 24; Ex. 1006 ¶ 49). Petitioner annotates Figure 3 above with red circles around a microprocessor, switching circuit, and plug outputs. *Id.* at 13; Ex. 1002, Fig. 3, ¶ 23. EP '379 discloses that “the plugs (i.e. wall plugs) to connect . . . electronic devices are placed on [the] controller.” Ex. 1002 ¶ 16; *see also id.* ¶ 21 (disclosing that electronic devices 1–7 (illustrated in Figure 1) are connected to the controller via plugs on the controller). EP '379 also discloses that “the controller may include power switches (14a-14g) capable to powering on and off the relevant units.” *Id.* ¶ 23. EP '379 also discloses that the switches selectively connect the external electrical devices to the main

power supply and thereby selectively provide operating power to the external electrical device, as claimed. *Id.* ¶¶ 23, 26 (“[I]f the user does not depress any key on any remote control of any electronic device connected to the controller, . . . the controller may power off the electronic devices connected to itself according to an automatic turning-off rule.”). Thus, EP ’379 discloses a plug output connectable to an electronic device for selectively powering that device.

EP ’379 also discloses that the energy saving device includes a processor for controlling when power is supplied to the external device. Ex. 1002, Fig. 3, ¶ 24; Ex. 1006 ¶ 49. Specifically, EP ’379 discloses a microprocessor (element 12 in Figure 3), which implements a turning-ON rule for, for example, switching an electronic device to standby mode. Ex. 1002, Fig. 3, ¶ 24. EP ’379 discloses that “[t]he controller unit identifies as to which electronic device’s remote control the user has depressed . . . and then, allows power to be supplied to the relevant electronic device according to the ON/OFF status of devices stored on its memory (13), and to a turning-ON rule stored on its microprocessor (12).” *Id.* ¶ 24.

EP ’379 also discloses that the energy saving device includes a sensor for monitoring wireless output signals of a remote control device, the sensor being coupled to the processor, and wherein the processor operates to terminate the power supplied to the external electrical device based upon the absence of the detection of wireless output signals of the remote control device by the sensor. Ex. 1002, Fig. 3, ¶¶ 23, 24, 26; Ex. 1006 ¶ 50.

Petitioner’s annotated Figure 3 is below:

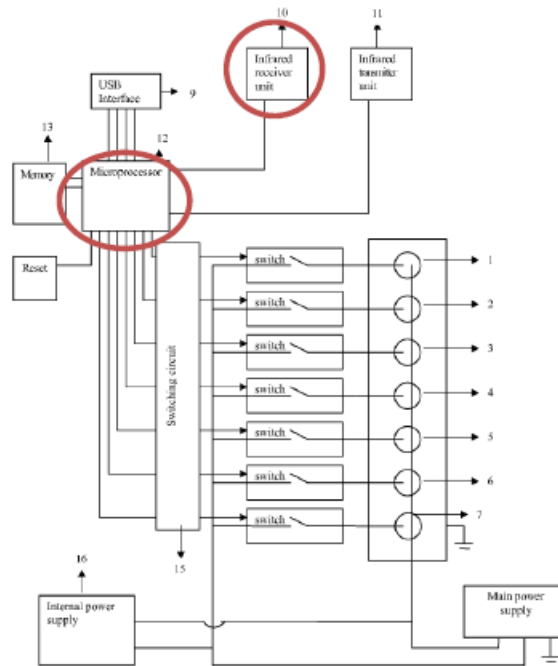


Figure 3

Pet. 16. As illustrated above, Petitioner adds red ovals around what it contends, and with which we agree, correspond to the claimed sensor and microprocessor: infrared receiver unit 10 and microprocessor 12. *Id.* EP '379 discloses that infrared receiver unit 10 is coupled to microprocessor 12 and that the infrared receiver unit monitors wireless output signals from a remote control. Ex. 1002, Fig. 3, ¶¶ 24, 26. Specifically, EP '379 discloses that “the signals of the remote controls of electronic devices connected to the subject controller [are] sensed, identified, and interpreted by the controller.” *Id.* ¶ 23; see also *id.* ¶ 26 (stating that “the remote control signals controlling the devices connected to the controller can also be sensed by the controller”). According to EP '379, “[t]he controller unit identifies as to which electronic device’s remote control the user has depressed by means of the signal receiver (10) on itself.” *Id.* ¶ 24.

EP '379 also discloses that the microprocessor terminates power supplied to the external electrical device based upon the absence of detection of signals from the remote control. *Id.* ¶ 26. EP '379 states the following:

The controller can be set to a predetermined time period in order to save power, and if no signal is received within this time period from a remote control of any device connected to it, the controller can turn OFF such devices in turn or at the same time according to a predetermined power saving rule.

Id. EP '379 adds an example of a user setting the automatic turn-off period to three hours. *Id.* Under this example, according to EP '379, “if the user does not depress any key on any remote control of any electronic device connected to the controller, or if no signal is sensed by the controller within three hours, the controller may power off the electronic devices connected to itself in sequence according to an automatic turning-off rule.” *Id.*

In sum, Petitioner shows by a preponderance of the evidence that claim 1 is unpatentable as anticipated by EP '379.

c. Claims 2 and 3

Claim 2 depends from claim 1 and adds “wherein the wireless output signals of the remote control device comprise radio frequency (RF) control signals and wherein the sensor is configured for monitoring RF signals.” Ex. 1001, 15:20–23. Claim 3 depends from claim 2 and adds “wherein wireless output signals of the remote control device comprise infrared (IR) control signals and wherein the sensor is configured for monitoring IR signals.” *Id.* at 15:20–27. Petitioner contends that EP '379 discloses the limitations of claims 2 and 3. Pet. 34–35.

Having reviewed the Petition and the evidence discussed therein, we determine that Petitioner has demonstrated by a preponderance of the

evidence that claims 2 and 3 are unpatentable under 35 U.S.C. § 102(a) as anticipated by EP '379. See Pet. 34–35 (citing Ex. 1002 ¶¶ 19, 23); Ex. 1006 ¶¶ 67, 69; Ex. 1002, Fig. 3, ¶¶ 19, 23. As explained above, EP '379 discloses all of the limitations of claim 1. In addition, EP '379 discloses that the wireless output signals of the remote control can be radio frequency control signals and can be infrared control signals. For example, the sensor depicted in Figure 3 of EP '379 is an “[i]nfrared receiver unit.” Ex. 1002, Fig. 3; *see also id.* ¶ 23 (describing the example of “an infrared signal transceiver”). EP '379 also states that, “[i]n addition to infrared rays, the electronic devices can be controlled by radio signals or by any other known remote control methods as well.” Ex. 1002 ¶ 19. Further, EP '379 discloses that “[t]he signals used to control the electronic devices are also sensed by the controller.” *Id.* Petitioner thus shows that EP '379 discloses the limitations of claims 2 and 3.

d. Claim 4

Claim 4 depends from claim 1 and adds “wherein the processor terminates the supply of power to the external electrical device when the absence of the detection of the wireless output signals of the remote control device by the sensor exceeds a predetermined time-out period.” Ex. 1001, 15:28–32. Petitioner contends that EP '379 discloses the limitations of claim 4. Pet. 35–36.

Having reviewed the Petition and the evidence discussed therein, we determine that Petitioner has demonstrated by a preponderance of the evidence that claim 4 is unpatentable under 35 U.S.C. § 102(a) as anticipated by EP '379. See Pet. 35–36 (citing Ex. 1002 ¶¶ 19, 24, 26); Ex. 1002 ¶¶ 19, 24, 26. As explained above, EP '379 discloses all of the limitations of

claim 1. Also as explained above in connection with claim 1, EP '379 discloses terminating the supply of power to an external electrical device when wireless output signals from a remote control are not detected for greater than a predetermined time-out period, such as three hours. *See supra* Section II.D.2.b. Specifically, EP '379 discloses:

The controller can be set to a predetermined time period in order to save power, and *if no signal is received within this time period from a remote control of any device connected to it, the controller can turn OFF such devices in turn or at the same time according to a predetermined power saving rule.*

Ex. 1002 ¶ 26 (emphases added). EP '379 also discloses an example in which the controller “completely interrupt[s] the power” of a television in standby mode “after a short period of time.” *Id.* ¶ 19. EP '379 explains:

The signals used to control the electronic devices are also sensed by the controller. The controlling unit is designed so as to individually or collectively interrupt the power of electronic device(s) connected to it. Turning back to this example, after the television is switched to the standby mode by the user, *the power of the television system is completely interrupted, with the controller sending the same signal and executing a pre-determined shutting-down rule.*

Id. Petitioner thus shows that EP '379 discloses the limitations of claim 4.

e. Claim 7

Claim 7 depends from claim 1 and requires that the energy saving device further comprise “a plurality of outputs, each of the plurality of outputs configured for selectively electrically connecting to the input for providing operating power to external electrical devices connected thereto.” *Id.* at 15:39–43. Petitioner contends that EP '379 discloses the limitations of claim 7. Pet. 36.

Having reviewed the Petition and the evidence discussed therein, we determine that Petitioner has demonstrated by a preponderance of the evidence that claim 7 is unpatentable under 35 U.S.C. § 102(a) as anticipated by EP '379. See Pet. 36 (citing Ex. 1002, Fig. 3, ¶ 23); Ex. 1002, Fig. 3, ¶ 23. As explained above, EP '379 discloses all of the limitations of claim 1. EP '379 also discloses that the energy saving device has a plurality of outputs, each configured for selectively connecting to the input for providing operating power to the external electrical devices connected thereto, as illustrated in Figure 3 below:

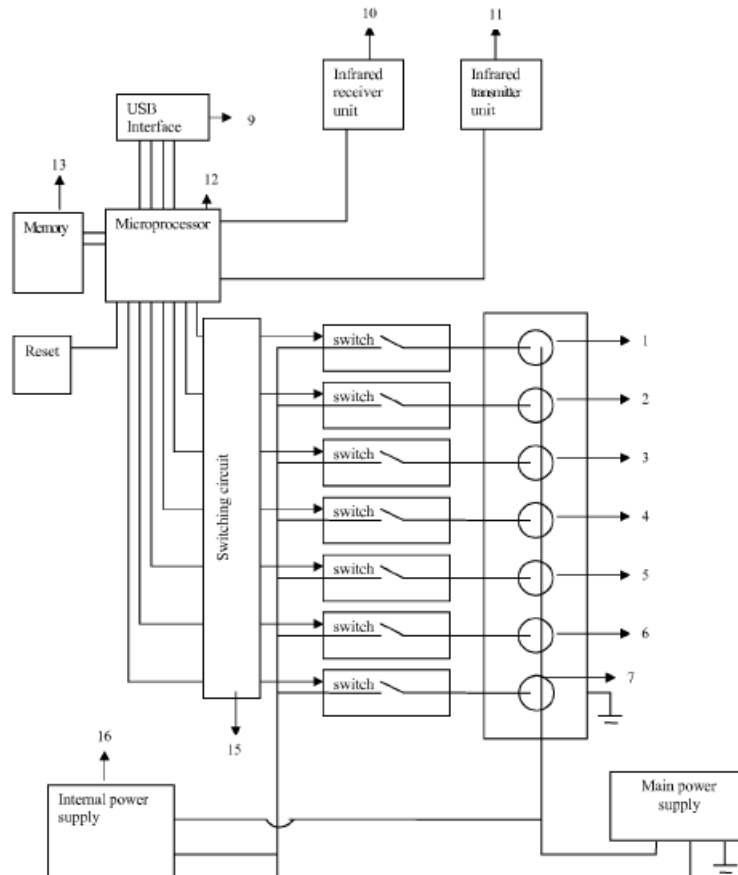


Figure 3

Figure 3 of EP '379 above illustrates seven outputs/plugs for connecting, respectively, to external devices 1–7 (illustrated in Figure 1). Ex. 1002, Figs. 1, 3, ¶ 21. The external devices include a television, a DVD player, and a Hi-Fi sound system. *Id.* at Figs. 1, 2, ¶ 13. EP '379 states that “the plugs (i.e. wall plugs) to connect . . . electronic devices are placed on [the] controller.” *Id.* ¶ 16. EP '379 also discloses that “the controller may include power switches (14a-14g) capable to powering on and off the relevant units.” *Id.* ¶ 23. EP '379 discloses that the switches selectively connect the external electrical devices to the input, which is connectable to the main power supply to provide operating power to the external electrical devices, as claimed. *Id.* ¶ 23.

f. Claim 9

Petitioner contends that EP '379 discloses each limitation of independent claim 9. Pet. 18–26. Petitioner cites passages of EP '379, and identifies components of the controller illustrated in Figure 3 of EP '379 that purportedly correspond to each limitation of claim 9. *Id.*

Having reviewed the Petition and the evidence discussed therein, we determine that Petitioner has demonstrated by a preponderance of the evidence that claim 9 is unpatentable under 35 U.S.C. § 102(a) as anticipated by EP '379.

First, EP '379 discloses an energy saving device. Ex. 1002, [57]. EP '379 discloses “a method and system to provide power saving for electronic devices” in which multiple electronic devices “are connected to a controller and the ON, standby, and OFF status of such devices are monitored such that power saving is executed according to predetermined rules.” *Id.*

EP '379 also discloses that the energy saving device includes an electrical input configured for connecting to a power supply. Ex. 1002, Fig. 3, ¶ 23; Ex. 1006 ¶ 47. This limitation is similar to the “input” limitation of claim 1, but does not require that the power supply be external. Petitioner relies on the same annotated version of Figure 3 of EP '379, below, for illustrating the claimed electrical input and power supply:

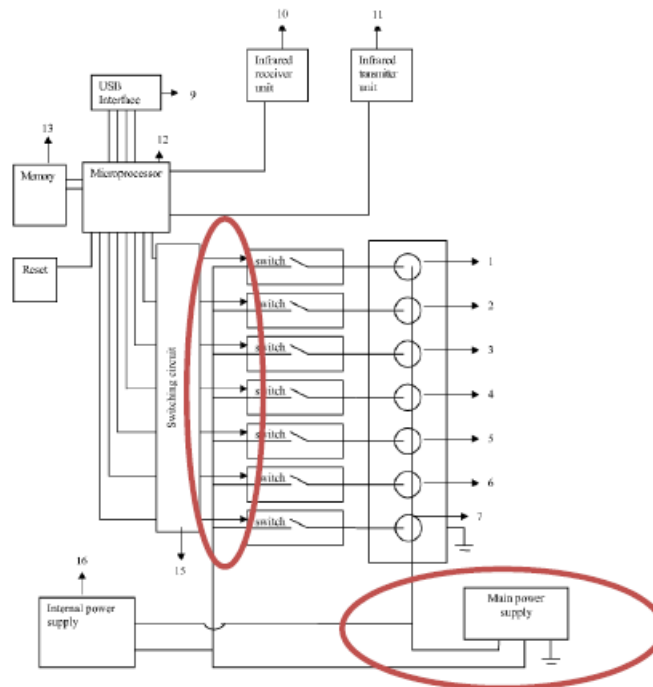


Figure 3

Pet. 18–19. As shown above, Petitioner’s annotated Figure 3 has a red oval around the input to the switches that selectively power electronic devices 1–7 and a red oval around the main power supply. *Id.* at 19. We agree with Petitioner that EP '379 discloses that the line connecting the switches to the main power supply is an electrical input configured for connecting to a power supply. Ex. 1002, Fig. 3, ¶ 23.

EP '379 also discloses that the energy saving device includes an electrical output configured for connecting to an electrical device of the type

which, when connected to a power supply, has an “ON” and a “STANDBY” state. Pet. 19–21 (citing Ex. 1002, Fig. 3, ¶ 23; Ex. 1006 ¶ 47). Petitioner relies in part on its annotated Figure 3 below:

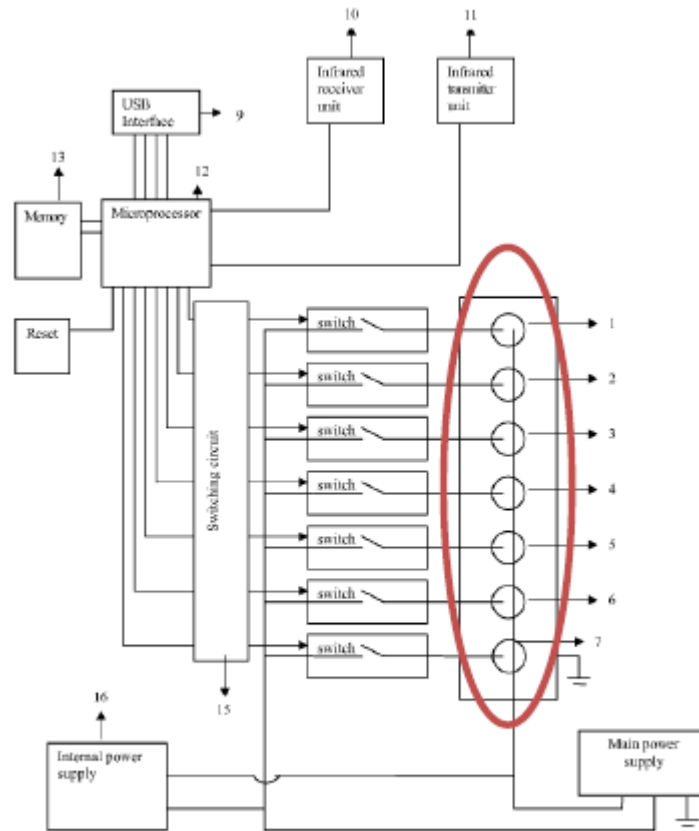


Figure 3

Pet. 19–20. As illustrated above, Petitioner annotates Figure 3 with a red oval around plug outputs for connecting to devices 1–7. *Id.* at 20; Ex. 1002, Fig. 3, ¶ 23. EP ’379 discloses that “the plugs (i.e. wall plugs) to connect . . . electronic devices are placed on [the] controller.” Ex. 1002 ¶ 16; *see also id.* ¶ 21 (disclosing that electronic devices 1–7 (illustrated in Figure 1) are connected to the controller via plugs on the controller), 9:11–14 (claim 6 of EP ’379 referring to the plugs on the controller as “power sockets”). EP ’379 also discloses that the electronic devices, when

connected to a power supply, have an ON state and a STANDBY state. Ex. 1002 ¶ 14. Specifically, EP '379 states that the basic function of the invention disclosed therein “is to control the ON, the standby, and the OFF status of electronic devices by means of a controller in a setting accommodating many such electronic devices.” *Id.*

EP '379 also discloses that the energy saving device includes a switch configured to selectively connect the electrical output to the electrical input, as illustrated in Petitioner’s annotated Figure 3 below:

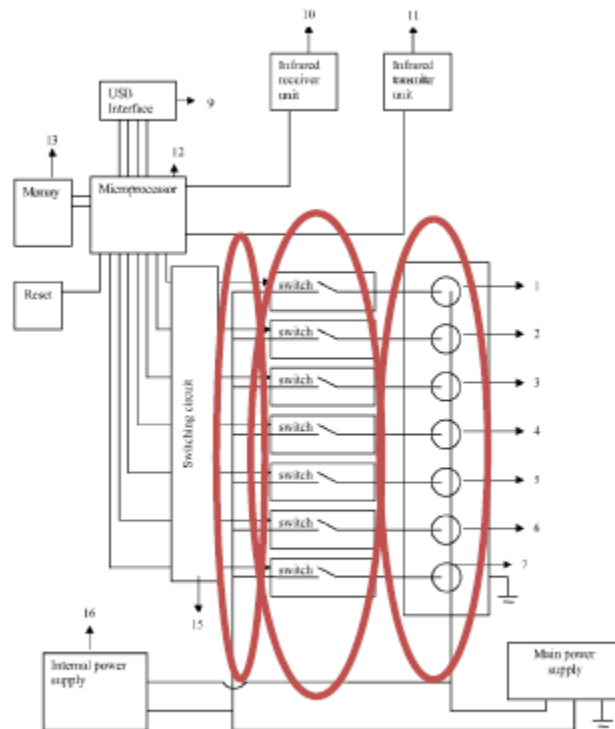


Figure 3

Pet. 21–22; Ex. 1002, Fig. 3, ¶ 23. In the annotated figure above, Petitioner places ovals around the input, the switches, and the output. Pet. 21–22. As Petitioner contends, EP '379 discloses a switch configured to selectively connect a plug (the claimed electrical output) to the input line connected to the main power supply (the claimed electrical input). Ex. 1002, Fig. 3, ¶ 23.

EP '379 states that, “[a]s can be seen in Figure 3, the controller may include many power switches (14a–14g) capable to powering on and off the relevant units.” *Id.* ¶ 23.

EP '379 also discloses that the energy saving device includes a sensor able to wirelessly sense activity of a user-operated remote control device for controlling the electrical device. Pet. 22–23 (citing Ex. 1002, Fig. 3, ¶¶ 23, 24). As discussed above in connection with claim 1, EP '379 discloses that infrared receiver unit 10 (illustrated in Figure 3) senses wireless output signals from a remote control for a particular device. Ex. 1002, Fig. 3, ¶ 24. Specifically, EP '379 discloses that “the signals of the remote controls of electronic devices connected to the subject controller [are] sensed, identified, and interpreted by the controller.” *Id.* ¶ 23. EP '379 also states that “[t]he controller unit identifies as to which electronic device’s remote control the user has depressed by means of the signal receiver (10) on itself.” *Id.* ¶ 24.

Finally, EP '379 discloses that the switch is configured to disconnect the electrical output from the electrical input in response to at least one of (i) the electrical device being in an ON state and no activity is detected by the sensor for a predetermined timeout period, or (ii) the electrical device enters a STANDBY state. Pet. 23–26 (citing Ex. 1002, Fig. 3, ¶¶ 19, 24, 26). As explained above, EP '379 discloses that the switches are used to disconnect the electrical output from the electrical input. Ex. 1002 ¶ 23. In addition, as explained above in connection with claim 1, EP '379 discloses that the controller terminates power supplied to the electrical device based upon the absence of activity detected by the sensor. *Id.* ¶ 26. EP '379 states the following:

The controller can be set to a predetermined time period in order to save power, and if no signal is received within this time period

from a remote control of any device connected to it, the controller can turn OFF such devices in turn or at the same time according to a predetermined power saving rule.

Id. EP '379 adds an example of a user setting the automatic turn-off period to three hours. *Id.* Under this example, according to EP '379, “if the user does not depress any key on any remote control of any electronic device connected to the controller, or if no signal is sensed by the controller within three hours, the controller may power off the electronic devices connected to itself in sequence according to an automatic turning-off rule.” *Id.*

EP '379 also discloses disconnecting the power after the electrical device is in the standby state, as follows:

The signals used to control the electronic devices are also sensed by the controller. The controlling unit is designed so as to individually or collectively interrupt the power of electronic device(s) connected to it. Turning back to this example, *after the television is switched to the standby mode by the user, the power of the television system is completely interrupted*, with the controller sensing the same signal and executing a predetermined shutting-down rule.

Id. ¶ 19 (emphasis added). EP '379 adds that “[t]he devices which are switched to standby from the ON mode by means of a remote control . . . are first switched to the standby mode by their internal electronics, and then, their power is interrupted by means of the controller according to a predetermined shutting-off rule.” *Id.* ¶ 24.

In sum, Petitioner shows by a preponderance of the evidence that claim 9 is unpatentable as anticipated by EP '379.

E. Asserted Obviousness over EP '379 and EP '752

Petitioner contends that claims 5 and 6 of the '099 patent are unpatentable under 35 U.S.C. § 103(a) as obvious over EP '379 and

EP '752. Pet. 3, 37–60. Relying in part on the testimony of Mr. Gafford, Petitioner explains how the references allegedly teach or suggest the claim limitations and provides purported reasoning for combining the teachings of the references. *Id.* at 37–60.

As stated above, Patent Owner did not file a Patent Owner Response. We also note that Patent Owner did not challenge in its Preliminary Response Petitioner's contention that the subject matter of claims 5 and 6 would have been obvious over EP '379 and EP '752. *See generally* Prelim. Resp. The burden, however, remains on the Petitioner to demonstrate by a preponderance of the evidence that the subject matter of these claims would have been obvious. 35 U.S.C. § 316(e); *Dynamic Drinkware*, 800 F.3d at 1378.

We have reviewed Petitioner's arguments in the Petition as well as the evidence discussed in the Petition, including the declaration of Mr. Gafford. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claims 5 and 6 of the '099 patent would have been obvious over EP '379 and EP '752.

1. Summary of EP '752

EP '752 is a European patent application publication published on July 17, 2002. Ex. 1003, [43]. EP '752 is prior art to the '099 patent under 35 U.S.C. § 102(b). *Compare* Ex. 1003, [43], *with* Ex. 1001, [22].

EP '752 discloses an automatic mains switch device that monitors the presence of a load on an electric power line and disconnects the load when it is not in use. Ex. 1003, 1. Figure 1 of EP '752, shown below, illustrates mains switch device 1 connected to television set 2 and receiver unit 4 for receiving signals from remote control unit 5:

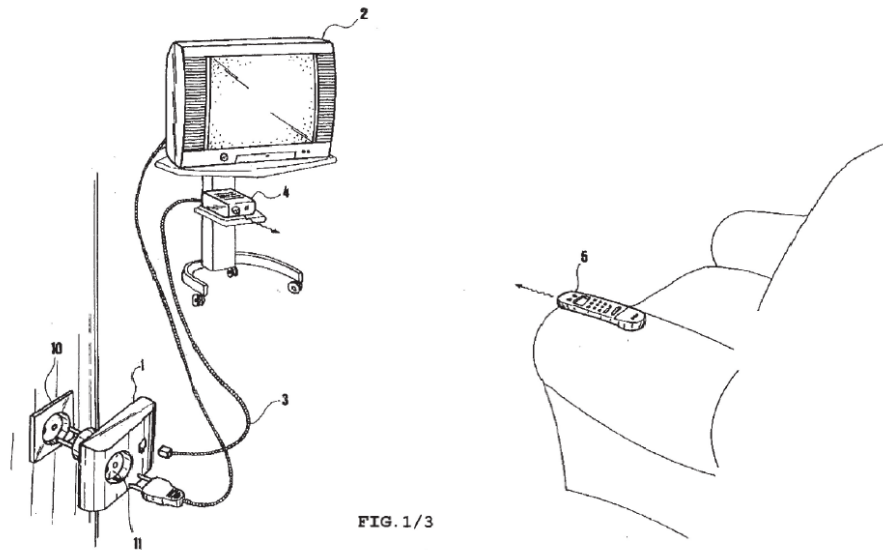


FIG. 1/3

Id. ¶¶ 15, 17, Fig. 1. As illustrated in Figure 1 above, mains switch device 1 is connected to first mains power socket 10, and a load (here, television set 2) is connected to second mains power socket 11 in mains switch device 1.

Id. ¶ 17.

The components of device 1 are illustrated in Figure 2 of EP '752, shown below:

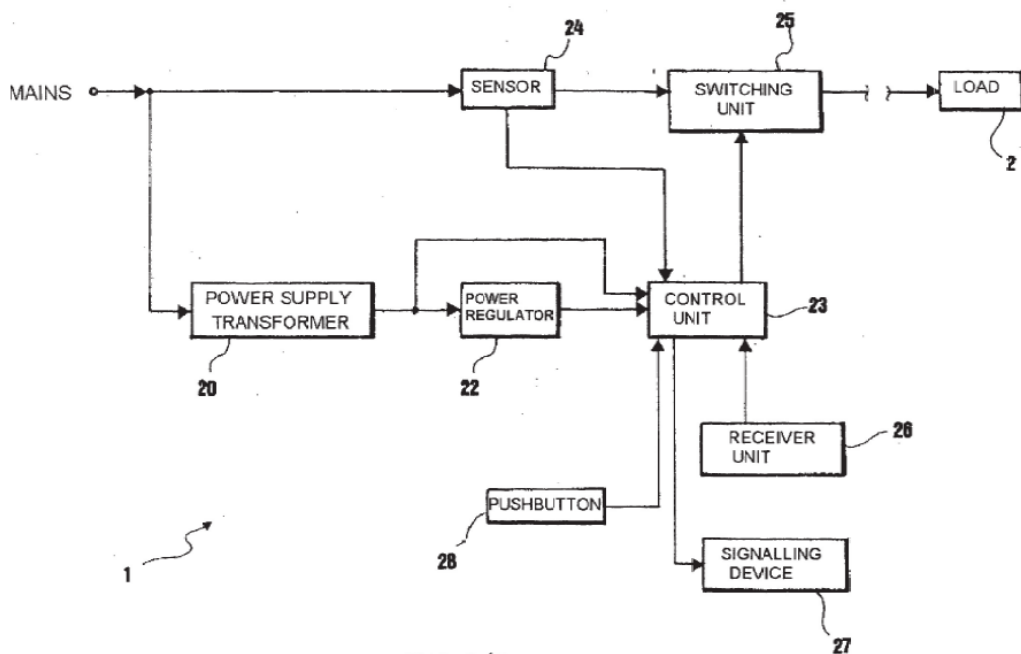


FIG. 2/3

Id. ¶ 15, Fig. 2. As illustrated above, mains switch device 1 is connected by means of power supply transformer 20 to the electric mains line from which the device takes the power required for its operation. *Id.* ¶ 18, Fig. 2.

Device 1 also includes sensor unit 24, which is used to detect the possible presence of an active electrical load connected to device 1. *Id.* ¶ 21, Fig. 2. According to EP '752, “[s]ensor unit 24 will output a first electrical signal when the presence of an active load is detected and will output a second electrical signal when no active load is detected.” *Id.* ¶ 22. EP '752 discloses that “[s]ensor unit 24 will be able to detect . . . when the electric load has been turned off, i.e., when the television set has been turned off by using its remote control unit.” *Id.* ¶ 34. EP '752 explains that in such a case, sensor unit 24 will send an appropriate signal to logical control unit 23, which will disconnect load 2 from the mains power line. *Id.*

Device 1 also includes signaling device 27, which is used in connection with a deactivation procedure. *Id.* ¶¶ 26, 34, 35. EP '752 discloses that the signaling device may be a visual signaling device such as a light emitting diode (LED) or an acoustic device such as a buzzer. *Id.* ¶ 26. EP '752 describes an automatic deactivation feature in which, “after a pre-determined delay, e.g.,] 60 minutes, the logical control unit 23 will activate switch unit 25 as to disconnect the load 2 from the mains power line.” *Id.* ¶ 35. EP '752 states that “[t]he automatic deactivation procedure is started over again every time a key on the remote control unit is pressed.” *Id.* EP '752 discloses that “[t]he visual [signaling] devices provided as part of the automatic mains switch device will be activated [a] few seconds before switch unit 25 is activated, to warn the user that disconnection of the electrical load is going to take place in a short time.” *Id.*; see also *id.* ¶ 34

(“The visual [signaling] devices provided as part of the automatic mains switch device will be activated during the delay period, to warn the user that the deactivation phase has been started.”).

2. Analysis

Claim 5 requires that the energy saving device of claim 1 further include “an alert device, which provides an alert signal to a user prior to the termination of the power supply to the external electrical device.” Claim 6 depends from claim 5 and recites “wherein said alert device provides at least one of an audible signal or a visual signal.” Petitioner contends that the combination of EP ’379 and EP ’752 teaches the limitations of claims 5 and 6. Pet. 37–40, 51–52. Petitioner also provides reasons why a person having ordinary skill in the art at the time of the invention would have added the feature of alerting the user prior to disconnecting power as taught by EP ’752 to the system of EP ’379. *Id.* at 38–40 (citing, e.g., Ex. 1006 ¶¶ 79–82).

Having reviewed the Petition and the evidence discussed therein, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 5 and 6 are unpatentable under 35 U.S.C. § 103(a) as obvious over EP ’379 and EP ’752. *See* Pet. 11–18 (citing, e.g., Ex. 1002, Fig. 3, [57], ¶¶ 23, 24, 26; Ex. 1006 ¶ 47), 37–40, 51 (citing Ex. 1003 ¶ 35, claim 10). As explained above, EP ’379 discloses all of the limitations of claim 1. *See supra* Section II.D.2.b. In addition, EP ’752 discloses an energy saving device which includes an alert device that provides an alert signal to a user prior to the termination of the power supply to external electrical device. Specifically, as illustrated in Figure 2 of EP ’752, the energy saving device in EP ’752 includes signaling device 27, which warns

or alerts a user that disconnection of an electrical load, such as a television, “is going to take place in a short time.” Ex. 1003 ¶ 35; *see id.* at Fig. 1, ¶¶ 16–17 (describing the example load of a television set). EP ’752 discloses that the signaling device may be a buzzer that provides an audible signal or an LED that provides a visual signal. *Id.* ¶ 26 (disclosing that signaling device 27 may be an LED that notifies a user by “predetermined lighting sequences” or may be “an acoustic device” such as a buzzer); Ex. 1006 ¶ 95.

Petitioner also provides persuasive reasoning with rational underpinning for combining the teachings of the EP ’379 and EP ’752 as claimed. Pet. 38–40. Both EP ’379 and EP ’752 describe power saving devices aimed at addressing the problem of unused household electronic devices wasting power. Ex. 1002, [57], ¶¶ 17, 23, 24; Ex. 1003, [57], ¶¶ 9, 14, 20, 31, 36. For example, EP ’379 discloses that “electronic devices widely used in the end-user electronics market consume energy in their standby mode” and that the invention described therein “provide[s] power saving for electronic devices while such devices are in the standby mode and are not in use.” Ex. 1002 ¶ 2, [57]. Similarly, EP ’752 discloses that an advantage of the device described therein “is the energy saving resulting from the complete disconnection of the electric load from the mains line.” Ex. 1003 ¶ 14. In addition, both references describe devices that include a microprocessor for implementing power saving rules and other rules of operation. Ex. 1002, [57], ¶¶ 17, 23, 24; Ex. 1003 ¶¶ 8, 20, 23, 24, 26, 27, 36. The feature of alerting the user prior to disconnecting power—as taught by EP ’752—merely requires the addition of an LED, buzzer, or other mechanism that provides a visual or audible signal and minor software logic

to the teachings of EP '379, which is in the same field of technology as that of EP '752. Ex. 1006 ¶ 80. Given that the alert mechanism described in EP '752 is used in a microprocessor-based automated power saving device for consumer electronics that is similar to the power saving device taught in EP '379, modifying the teachings of EP '379 to incorporate an alert mechanism such as an LED or a buzzer would have been achieved with a reasonable expectation of success. *Id.*; Ex. 1002, [57], Fig. 3, ¶¶ 23, 24, 26; Ex. 1003, [57], ¶¶ 8, 9, 14, 20, 21, 23, 36. A person of ordinary skill in the art would have been motivated to add an alert mechanism to the teachings of EP '379 to provide a desirable, user-friendly feature of warning the user that power will be disconnected to a device prior to the disconnection. Ex. 1006 ¶ 81. Such a warning, for example, would have enabled the user to press a key on the remote control to re-start the time period for the automatic turning-off rule prior to disconnection. See Ex. 1002 ¶ 26 (“Whenever the user depresses on any key in this predetermined time period, the predetermined time period may be reinitiated.”).

III. CONCLUSION

Based on the evidence and arguments, Petitioner has demonstrated by a preponderance of the evidence that (i) claims 1–4, 7, and 9 are unpatentable under 35 U.S.C. § 102(a) as anticipated by EP '379, and (ii) claims 5 and 6 are unpatentable under 35 U.S.C. § 103(a) as obvious over EP '379 and EP '752.

IV. ORDER

Accordingly, it is

ORDERED that claims 1–7 and 9 of U.S. Patent No. 9,106,099 B2 have been shown to be unpatentable;

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.

IPR2016-01336
Patent 9,106,099 B2

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