

Roku, Inc.
v.
Universal Electronics Inc.
IPR2022-01289 (US 9,847,083)

PATENT OWNER'S DEMONSTRATIVE EXHIBIT

Contents

- **Claim Construction (all claim construction issues relate to the claimed “protocol and formatting information”)**
 - The plain and ordinary meaning of “protocol and formatting information” to one of ordinary skill in the art.
 - The “protocol and formatting information” is in the “provisioned codeset record” itself.
 - The “protocol and formatting information” is separate and distinct from the “plurality of individual command function entries.”
- **Petitioner’s Failure to Meet its Burden to Prove that the Challenged Claims are Obvious**
 - Aginsky does not disclose “the provisioned codeset record comprising protocol and formatting information.” (all Grounds and Challenged Claims)
 - Aginsky in combination with Stammmler or Hanson fails to disclose, teach, or suggest “a speech recognition engine.” (all Grounds and Challenged Claims)
 - There is no motivation to modify Aginsky in view of Stammmler or Hanson to arrive at the Phonetic Representations Limitation. (all Grounds and Challenged Claims)
 - Petitioner has failed to show that dependent claims 2-6, 7-11, and 13-19 are obvious. (all Grounds)

Claim Construction

“protocol and formatting information”

1. A method for configuring a controlling device to command functional operations of a target appliance, the method comprising:

causing a codeset record to be provisioned to the controlling device for use in commanding functional operations of the target appliance, the provisioned codeset record comprising protocol and formatting information and a plurality of individual command function entries wherein each of the plurality of individual function entries within the codeset record comprises command data, a standard function identifier, data which comprises a phonetic representation of a function name corresponding the standard function identifier, and a plurality of data each of which comprises a phonetic

representation of a unique one of a plurality of synonyms of the function name;

causing less than all of the individual command function entries from within the provisioned codeset record to each be matched to one or more of a plurality of user input elements of the controlling device whereupon a subsequent activation of a one of the plurality of user input elements will cause the controlling device to transmit a command communication by using the protocol and formatting information and the command data of a one or more of the plurality of individual command function entries from within the provisioned codeset record that was mapped to the one of the plurality of user input element activated; and

causing the controlling device to transmit a command communication by using the protocol and formatting information and the command data of a one of the one or more of the plurality of individual command function entries from within the provisioned codeset record having a phonetic representation of the function name or a synonym of the function name which corresponds to voice data provided to a speech recognition engine.

EX1001 at claim 1

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

The plain and ordinary meaning of “protocol and formatting information” to one of skill in the art

Patent Owner’s Position	Petitioner’s Position
“the set of procedures needed to transmit commands from one device to another in a way that the receiving device can make sense of and use the commands”	<u>Petitioner fails to offer a construction</u> Alternatively, “information used in transmission”

Sur-Reply at 7-8 n. 3 (citing *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360-61 (Fed. Cir. 2008) (holding that when the parties raise a dispute regarding the proper scope of the claims, the court must resolve the meaning and scope of the patent claims).)

POR at 19; Reply at 17; Sur-Reply at 5-7

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Both parties' experts agree with Patent Owner's construction

Patent Owner's Expert

67. I understand that Mr. McNair testified that protocol and formatting information is the set of procedures needed to transmit commands from one device to another in a way that the receiving device can make sense of and use the commands. (*See, e.g.*, EX2002 at 32:19-33:3, 33:22-34:9, 36:5-21.) I agree with Mr. McNair.

68. Protocol information is the set of procedures needed to establish a link between two or more electronic devices for the purpose of communication and information exchange.

69. Formatting information is the set of procedures for transforming digital data into a physical signal (*e.g.*, pulse timing, shaping and duration, the type of carrier to use such as radio or light waves, carrier frequencies, modulation scheme, etc.).

EX2001, ¶¶ 67-69

Petitioner's Expert

Q. So at a high level, explain to me what the claim term "protocol and formatting information" means?

A. Well, I can only answer that technically. Formatting and protocol information would be the information that I need to transmit from one device in a way that the receiving device can make sense out of it and use it.

Q. So is it fair to say that protocol information is a set of procedures used to ensure orderly communications and commands between communicating entities?

A. Yes. That's the term of art in the art of communicating systems.

EX2002 at 33:22-34:9, 36:16-21

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Patent Owner's construction is supported by the specification

With reference to FIG. 7b, each code set record 706 may comprise a unique codeset identity number, a block of protocol and formatting information 752 which may describe the physical protocol requirements for transmitting the command data elements which comprise this codeset, including for example items such as carrier frequency, bit encoding, data frame size and structure, appliance address, parity or CRC requirements, etc. Following block 752 may

causing the controlling device to transmit a command communication by using the protocol and formatting information and the command data of a one of the one or more of the plurality of individual command function entries from within the provisioned codeset record having a phonetic representation of the function name or a synonym of the function name which corresponds to voice data provided to a speech recognition engine.

EX1001 at 10:47-54, claim 1; POR at 20-21

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Petitioner's apparent construction renders "protocol and formatting information" meaningless

formatting information. Pet. 26 (citing Aginsky, 13:34-43, 9:30-33). PO argues the "protocols, rules, or other information" disclosed by **Aginsky** are user/device permissions or customized control layouts, and therefore not protocol and formatting information, as claimed. POR 26. However, the "protocols, rules, or other information" are used in transmission and nothing more is required. **Aginsky**

Reply at 17

The Petition, the Reply, and Petitioner's supporting expert declaration also fail to define "protocol and formatting information." (Petition at 26, 36-37, 44-45; EX1003, ¶¶ 107-108, 123-124; Reply at 3, 17.) At best, Petitioner hints in its Reply that "protocol and formatting information" should be construed as nothing more than information used in transmission. (Reply at 5, 17.) Petitioner provides no evidence to support such a broad construction. (*Id.*) Further, "information used in transmission" is so broad that it could encompass any information in a transmitting device, which effectively renders the term "protocol and formatting information" meaningless. Such a construction cannot be correct. *Wasica Fin. GmbH v. Contl. Automotive Sys., Inc.*, 853 F.3d 1272, 1288 n. 10 (Fed. Cir. 2017) ("It is highly disfavored to construe terms in a way that renders them void, meaningless, or superfluous.").

Sur-Reply at 7

Undisputed: “protocol and formatting information” must be in the “provisioned codeset record” itself

1. A method for configuring a controlling device to command functional operations of a target appliance, the method comprising:

causing a codeset record to be provisioned to the controlling device for use in commanding functional operations of the target appliance, the provisioned codeset record comprising protocol and formatting information and a plurality of individual command function entries wherein each of the plurality of individual function entries within the codeset record comprises command data, a standard function identifier, data which comprises a phonetic representation of a function name corresponding the standard function identifier, and a plurality of data each of which comprises a phonetic

Challenged Claims 1 and 12 recite: “the provisioned codeset record comprising protocol and formatting information” and “the provisioned codeset record comprises protocol and formatting information,” respectively. (EX1001 at claims 1 and 12.) Thus, the Challenged Claims are clear and unambiguous that the claimed “protocol and formatting information” must be included in the claimed “provisioned codeset record” itself. (EX2001, ¶ 63.)

EX1001 at claim 1
POR at 17-19; Reply at 2-14
(Petitioner failing to dispute)

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

“protocol and formatting information” is separate and distinct from “plurality of individual command function entries”

1. A method for configuring a controlling device to command functional operations of a target appliance, the method comprising:

causing a codeset record to be provisioned to the controlling device for use in commanding functional operations of the target appliance, the provisioned codeset record comprising protocol and formatting information and a plurality of individual command function entries wherein each of the plurality of individual function entries within the codeset record comprises command data, a standard function identifier, data which comprises a phonetic representation of a function name corresponding the standard function identifier, and a plurality of data each of which comprises a phonetic

Based on the plain language of the Challenged Claims, as well as the specification and prosecution history of the ‘083 patent, the Board should construe the Challenged Claims to clarify that the claimed “protocol and formatting information” is separate and distinct from the claimed “plurality of individual command function entries” and the data contained in the command function entries. (EX2001, ¶ 50.)

The claims support that “protocol and formatting information” is separate and distinct from “plurality of individual command function entries”

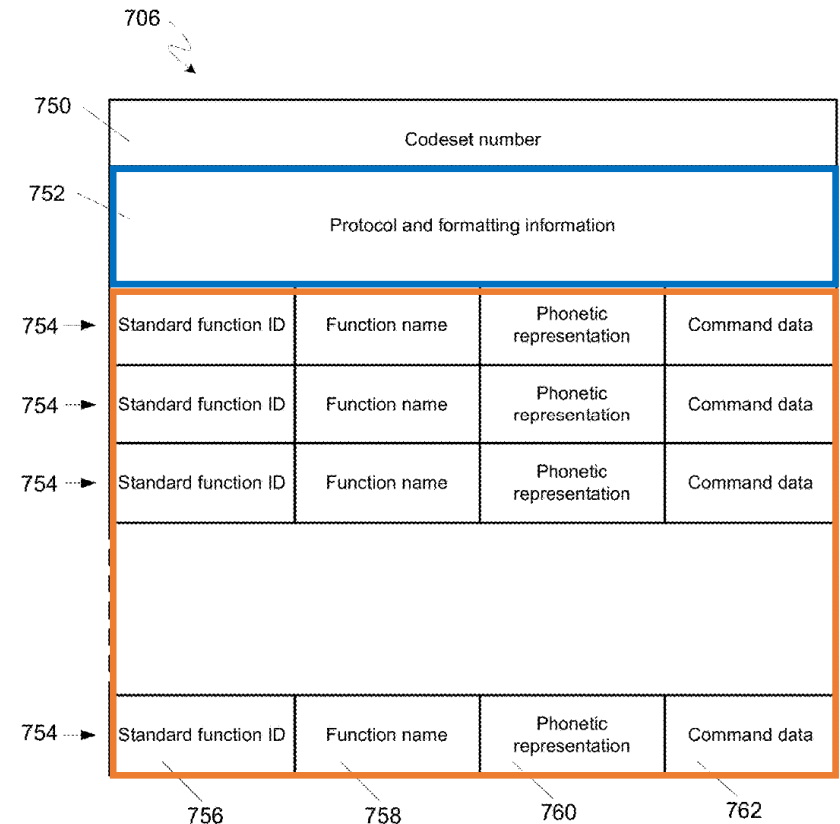
1. A method for configuring a controlling device to command functional operations of a target appliance, the method comprising:

causing a codeset record to be provisioned to the controlling device for use in commanding functional operations of the target appliance, the provisioned codeset record comprising protocol and formatting information and a plurality of individual command function entries wherein each of the plurality of individual function entries within the codeset record comprises command data, a standard function identifier, data which comprises a phonetic representation of a function name corresponding the standard function identifier, and a plurality of data each of which comprises a phonetic

Petitioner is wrong because Patent Owner’s proposed construction is based on the plain language of the Challenged Claims. The law is clear that where “a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.” See *Becton, Dickinson and Co. v. Tyco Healthcare Group, LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010); see also *Kyocera Senco Indus. Tools Inc. v. Intl. Trade Comm’n*, 22 F.4th 1369, 1382 (Fed. Cir. 2022) (holding that components listed separately were presumed to be distinct).

The specification supports that “protocol and formatting information” is separate and distinct from “plurality of individual command function entries”

With reference to FIG. 7b, each code set record 706 may comprise a unique codeset identity number, a block of protocol and formatting information 752 which may describe the physical protocol requirements for transmitting the command data elements which comprise this codeset, including for example items such as carrier frequency, bit encoding, data frame size and structure, appliance address, parity or CRC requirements, etc. Following block 752 may be a series of individual command function entries 754. Each entry may comprise a standard function ID 756, which may be a normalized tag indicative of the function or operation invoked by this command (i.e. so that within a



“protocol and formatting information” is separate and distinct from “plurality of individual command function entries” under Fed. Cir. law

Indeed, the facts at issue here are nearly identical to those in *Becton*. In *Becton*, the Federal Circuit construed two claim limitations as being separate and distinct where the claims listed the two limitations separately and the specification described the two limitations as separate structures. 616 F.3d at 1254. Here, as in *Becton*, the Challenged Claims clearly recite “protocol and formatting information” and the “plurality of individual command function entries” separately, and the specification of the ‘083 patent only describes protocol and formatting information as separate and distinct from command function entries. (EX2001, ¶¶ 52-58; EX1001 at 10:47-55, FIG. 7b, claims 1 and 12.)

Sur-Reply at 1-2; POR at 13-14 (citing *Becton, Dickinson and Co. v. Tyco Healthcare Group, LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010).)

Sur-Reply at 1-2; POR at 13-14

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Petitioner's Failure to Meet its Burden to Prove that the Challenged Claims are Obvious

Petitioner's invalidity grounds

Ground	Statute	Claim(s)	Prior Art
1	§103	1-6, 8-10, 12-18	Aginsky in view of Stammmler
2	§103	7, 11, 19	Aginsky in view of Stammmler and in further view of Dresti
3	§103	1-6, 8-10, 12-18	Aginsky in view of Hanson
4	§103	7, 11, 19	Aginsky in view of Hanson and in further view of Dresti

Petition at 6

Disputes

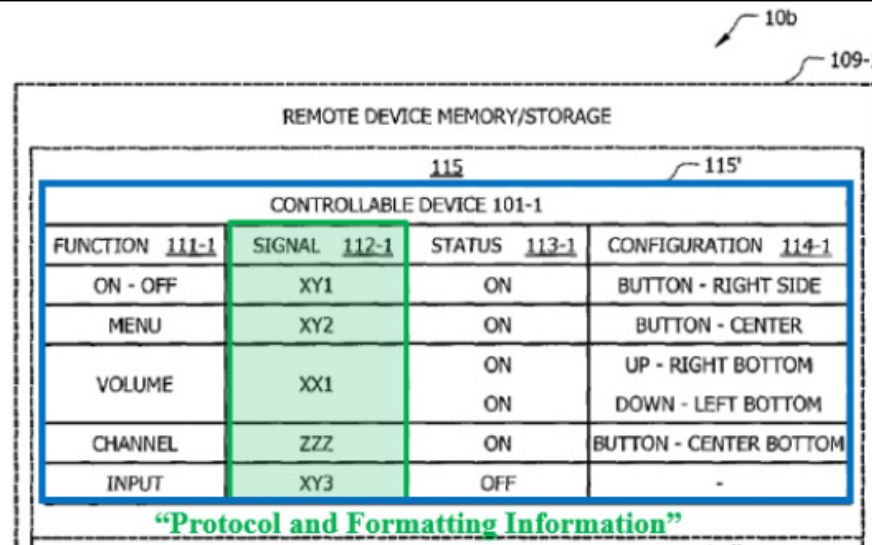
- Aginsky does not disclose “the provisioned codeset record comprising protocol and formatting information.” (all Grounds and Challenged Claims)
- Aginsky in combination with Stammler or Hanson does not disclose, teach, or suggest “a speech recognition engine.” (all Grounds and Challenged Claims)
- There is no motivation to modify Aginsky in view of Stammler or Hanson to arrive at the Phonetic Representations Limitation. (all Grounds and Challenged Claims)
- Petitioner has failed to show that dependent claims 2-6, 7-11, and 13-19 are obvious. (all Grounds)

Sur-Reply at 8-28

Dispute #1: Aginsky does not disclose “the provisioned codeset record comprising protocol and formatting information”
[All Grounds and Challenged Claims]

Petitioner's Theory: Aginsky discloses “the provisioned codeset record comprising protocol and formatting information”

Aginsky discloses the provisioned codeset record comprising protocol and formatting information (e.g. “SIGNAL columns 112-1 and 112-2” “denote the type of signal”).



Petition at 36-37

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Undisputed: “protocol and formatting information” must be included in the claimed “provisioned codeset record” itself

1. A method for configuring a controlling device to command functional operations of a target appliance, the method comprising:

causing a codeset record to be provisioned to the controlling device for use in commanding functional operations of the target appliance, the provisioned codeset record comprising protocol and formatting information and a plurality of individual command function entries wherein each of the plurality of individual function entries within the codeset record comprises command data, a standard function identifier, data which comprises a phonetic representation of a function name corresponding the standard function identifier, and a plurality of data each of which comprises a phonetic

Challenged Claims 1 and 12 recite: “the provisioned codeset record comprising protocol and formatting information” and “the provisioned codeset record comprises protocol and formatting information,” respectively. (EX1001 at claims 1 and 12.) Thus, the Challenged Claims are clear and unambiguous that the claimed “protocol and formatting information” must be included in the claimed “provisioned codeset record” itself. (EX2001, ¶ 63.)

EX1001 at claim 1
POR at 17-19; Reply at 2-14
(Petitioner failing to dispute)

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

For Petitioner to meet its burden, Aginsky's SIGNAL columns 112-1 and 112-2 must include "protocol and formatting information"

Do Aginsky's SIGNAL columns 112-1 and 112-2 actually include "protocol and formatting information" (i.e., "the set of procedures needed to transmit commands from one device to another in a way that the receiving device can make sense of and use the commands")?

10b
109-1

REMOTE DEVICE MEMORY/STORAGE

115 115'

CONTROLLABLE DEVICE 101-1

FUNCTION 111-1	SIGNAL 112-1	STATUS 113-1	CONFIGURATION 114-1
ON - OFF	XY1	ON	BUTTON - RIGHT SIDE
MENU	XY2	ON	BUTTON - CENTER
VOLUME	XX1	ON	UP - RIGHT BOTTOM DOWN - LEFT BOTTOM
CHANNEL	ZZZ	ON	BUTTON - CENTER BOTTOM
INPUT	XY3	OFF	-

"Protocol and Formatting Information"

POR at 23-24

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

20

What Aginsky's SIGNAL columns 112-1 and 112-2 actually include

Aginsky expressly teaches that SIGNAL columns 112-1 and 112-2 “denote the type of signal as well as the code or code sequence of the signal.”

SIGNAL 112-1
XY1
XY2
XX1
ZZZ
XY3

shown, the notation used in SIGNAL columns 112-1 and 112-2 denote the type of signal as well as the code or code sequence of the signal. Further, the functions listed in FUNC-

EX1004 at 9:7-10; Sur-Reply at 11; Petition at 37

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

All record evidence confirms that what is in SIGNAL columns 112-1 and 112-2 is not protocol and formatting information

All the record evidence confirms that the information *actually stored* in SIGNAL columns 112-1 and 112-2 (*i.e.*, “the type of signal as well as the code or code sequence of the signal”) *is not protocol and formatting information.*

Sur-Reply at 11-12

Not protocol
and formatting
information

shown, the notation used in SIGNAL columns 112-1 and ~~112-2~~ denote the type of signal as well as the code or code sequence of the signal. Further, the functions listed in FUNC-

i.e., not “the set of procedures needed to transmit commands from one device to another in a way that the receiving device can make sense of and use the commands”

Petitioner does not contend that “the code or code sequence of the signal” is protocol and formatting information

Regarding “the code or code sequence of the signal,” *Petitioner does not contend* that “the code or code sequence of the signal” is protocol and formatting information. (Petition at 36-37; EX2002 at 46:16-47:2, 47:11-20.)

Not protocol
and formatting
information

~~shown, the notation used in SIGNAL columns 112-1 and 112-2 denote the type of signal as well as~~ the code or code sequence of the signal. Further, the functions listed in FUNC-

POR at 24; Sur-Reply at 12; Petition at 36-37

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Patent Owner has provided unrebutted evidence that “the type of signal” is not protocol and formatting information

However, an indication of a type of signal that is transmitted (e.g., coded IR, Bluetooth, etc.) is not itself the set of procedures needed to transmit commands from one device to another via the indicated signal type (i.e., protocol and formatting information). The actual set of procedures must still be received, obtained, looked up, etc. Thus, a POSITA would not consider an indication of the type of signal that is transmitted to disclose the claimed protocol and formatting information.

**Not protocol
and formatting
information**

shown, the notation used in SIGNAL columns 112-1 and 112-2 denote the type of signal as well as the code or code sequence of the signal. Further, the functions listed in FUNC-

i.e., not “the set of procedures needed to transmit commands from one device to another in a way that the receiving device can make sense of and use the commands”

EX2001, ¶¶ 83-85; POR at 25; Sur-Reply at 12

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

A POSITA would not interpret Aginsky's SIGNAL columns 112-1 and 112-2 to include protocol and formatting information

Unrebutted
Testimony →

90. Protocol and formatting information is information that is common to all communications over a particular communication method. The entries in Aginsky's SIGNAL columns 112-1 and 112-2, however, contain a code (or code sequence) that is highly specific to the performance of a certain function (e.g., power on, volume up, etc.). Storing protocol and formatting information in the entries in Aginsky's SIGNAL columns 112-1 and 112-2 would be redundant, impractical, and non-sensical because the same information would need to be repeated each time a specific signal type is indicated. No POSITA would interpret Aginsky's SIGNAL columns 112-1 and 112-2 to contain protocol and formatting information.

EX2001, ¶ 90; Sur-Reply at 12-13

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

The alleged “protocol and formatting information” is not separate and distinct from “plurality of individual command function entries”

Alleged “plurality of individual command function entries”

Alleged “protocol and formatting information” contained in command function entries

116			
CONTROLLABLE DEVICE 101-2			
FUNCTION 111-2	SIGNAL 112-2	STATUS 113-2	CONFIGURATION 114-2
ON - OFF	XX3	ON	RIGHT SIDE
VOLUME	XY5	ON	UP - DOWN - TOP
START	AB1	ON	GREEN LIGHT
STOP	AB2	ON	RED LIGHT
FAST FORWARD	AB3	ON	ARROW - RIGHT
FAST REWIND	AB4	ON	ARROW - LEFT
PAUSE	AB5	ON	BARS - BOTTOM
RECORD	XY6	ON	BUTTON RED

“Codeset Record”

FIG. 1B

“Individual Command Function Entries”

Petition at 36-38; POR at 21-23; Sur-Reply at 15-16

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Petitioner's Reply arguments regarding “protocol and formatting information”

1. Frequency set, coded IR, and Bluetooth signals incorporate protocol and formatting information within the signal. (Reply at 14-16.)
2. Aginsky's “protocols, rules, or other information” also teach protocol and formatting information. (Reply at 17.)
3. Aginsky's process of checking whether a command is “legal” also teaches protocol and formatting information. (Reply at 17-18.)
4. Protocol and formatting information can be stored in only two places in “a codeset having command entries and protocol and formatting information.” (Reply at 18-19.)

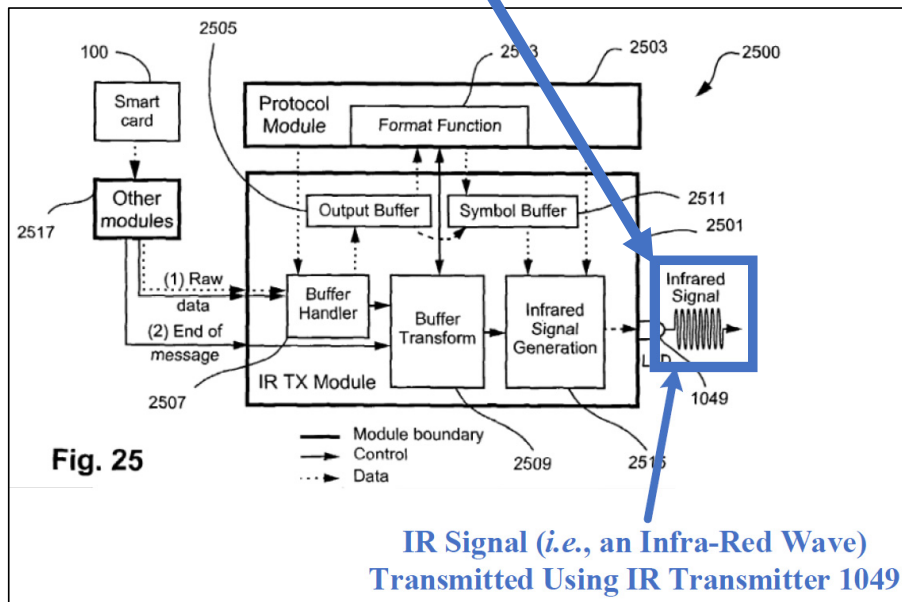
Petitioner's Argument #1: Frequency set, coded IR, and Bluetooth signals incorporate protocol and formatting information within the signal

Aginsky explains that command signals of **SIGNAL columns 112-1 and 112-2** “can be any type of signal required for control purposes” such as frequency sets, a coded IR signals, or Bluetooth signals. Pet. 25 (citing Aginsky, 8:63-9:7). Coded IR includes within the signal all formatting and protocols necessary for an appropriately configured device to recognize the signal. Pet. 37; *see* Section III.A.

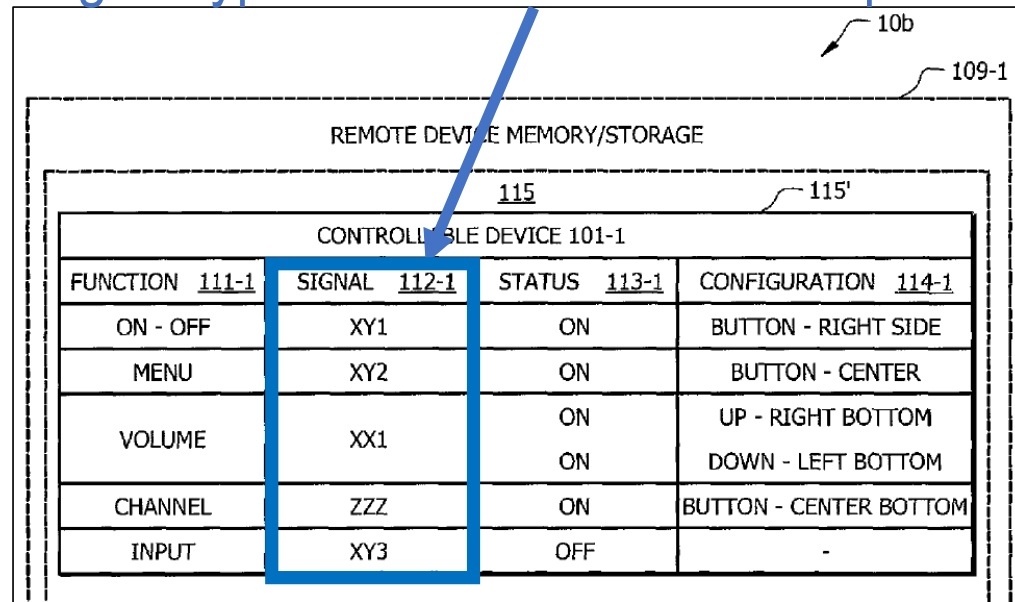
Reply at 15

Response to Petitioner's Argument #1: Petitioner's argument is irrelevant; no signals are included in a codeset record

Petitioner's argument is directed to this



Petitioner ignores what is actually included here (i.e., an indication of a signal type and a code or code sequence)



EX2001, ¶ 85; POR at 25-26; Sur-Reply at 9-11

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Petitioner's Argument #2: Aginsky's "protocols, rules, or other information" also teach protocol and formatting information

As explained in the Petition, Aginsky's disclosure that "the exchanged data structure may ... include protocols, rules, or other information useful to carrying out remote control of the controllable database" also constitutes protocol and formatting information. Pet. 26 (citing Aginsky, 13:34-43, 9:30-33).

Reply at 17

Response to Petitioner's Argument #2: Unrebutted evidence that Aginsky's "protocols, rules, or other information" are not protocol and formatting information

87. Petitioner's and Mr. McNair's statement that Aginsky discloses that its data structure may include "protocols, rules, or other information useful to carrying out remote control of the controllable device" is misleading. (Petition at 26 (quoting EX1004 at 13:40-43); EX1003, ¶ 108.) The "protocols" and "rules" mentioned in the above quote refer to (i) user/device permissions and restrictions (e.g., password requirements, child permissions, etc.); and (ii) customized control layouts for devices (e.g., how the buttons are arranged). (EX1004 at 6:7-7:16, 9:15-28, 10:27-50, 11:49-54; *see also id.* at FIG. 1C (at 121-1 and 121-2).) These "protocols" and "rules" are in no way related to the claimed protocol and formatting information, which again is the set of procedures needed to transmit commands from one device to another.

argument).) Petitioner *concedes* that Aginsky's "protocols" and "rules" are merely (i) user/device permissions and restrictions (e.g., password requirements, child permissions, etc.); and (ii) customized control layouts for devices (e.g., how the buttons are arranged). (Reply at 17; *see also* EX2001, ¶ 87; EX1004 at 6:7-7:16,

Sur-Reply at 13-14; *see also* Reply at 17

EX2001, ¶ 87; POR at 26-27

Petitioner's Argument #3: Checking whether a command is "legal" also teaches protocol and formatting information

then process 309 performs the command ..." *Id.*, 12:31-40. Even under PO's narrowing "set of procedures ..." construction, Aginsky's procedures for determining whether a command signal is 'legal' constitutes a "set of procedures needed to transmit commands from one device to another *in a way that the receiving device can make sense of and use the commands*" at least because it is used by process 307 to determine if the command is legal. *Id.*, 12:31-40. Accordingly, Aginsky also teaches the claimed "protocol and formatting information" with this disclosure.¹

Reply at 17-18

Response to Petitioner's Argument #3: Petitioner's argument is untimely, unsupported by a POSITA, and wrong

data structure to the remote device. At this stage, the initialization is finished and process 306 causes the controllable device to wait for a command signal to be received from any of its paired remote devices.

When process 306 detects receipt of a command signal or other event from a remote device, that command signal is checked by process 307 to determine if it is a "legal" (i.e., permitted or valid) command from an authorized remote device or if it is an authorization request. If the command is an authorization request, then process 308 diverts the request to process 303.

If the received signal corresponds to a proper command then process 309 performs the command delivered by the command signal and if desired, process 310 furnishes feedback to the remote device. The process then returns to process 306 to await an additional command signal or other event.

Aginsky's process 307 of checking whether a command signal is "legal" is *not performed on Aginsky's alleged "controlling device."* (EX1004 at 12:27-42; *see also* Petition at 33-36 (Petitioner asserting that Aginsky's "remote device 107-1" is the claimed "controlling device").) Rather, process 307 is performed on Aginsky's "controllable device." (Id.) A process performed on a "controllable device" is not "protocol and formatting information" stored in a codeset record on a "controlling device."

Process 307 is not performed on Aginsky's "controlling device"

EX1004 at 12:27-42; Sur-Reply at 14-15

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

33

Petitioner's Argument #4: There are only two places for protocol and formatting information to be stored

In a codeset having command entries and protocol and formatting information, if the protocol and formatting information is not expressed in a same storage location as the entries, by definition, it must be outside. These are the only two options.

Reply at 18-19

Response to Petitioner's Argument #4: Aginsky's alleged codeset records have no protocol and formatting information in the first place

Second, Petitioner's argument that protocol and formatting information can be in only two places in "a codeset having command entries and protocol and formatting information" incorrectly presumes that Aginsky's alleged codeset records have "protocol and formatting information" in the first place. As discussed above, in the POR, and in Patent Owner's expert's declaration, Aginsky's alleged codeset records *do not have any "protocol and formatting information."* (POR at 23-27; EX2001, ¶¶ 80-91.)

Sur-Reply at 16

Dispute #2: Aginsky in combination with Stammmler
or Hanson fails to disclose, teach, or suggest
“a speech recognition engine”
[All Grounds and Challenged Claims]

Challenged Claims 1 and 12 each recite “a speech recognition engine”

causing the controlling device to transmit a command communication by using the protocol and formatting information and the command data of a one of the one or more of the plurality of individual command function entries from within the provisioned codeset record having a phonetic representation of the function name or a synonym of the function name which corresponds to voice data provided to a speech recognition engine.

EX1001 at claim 1

and cause the controlling device to transmit a command communication by using the protocol and formatting information and the command data of a one of the one or more of the plurality of individual command function entries from within the provisioned codeset record having a phonetic representation of the function name or a synonym of the function name which corresponds to voice data provided to a speech recognition engine.

EX1001 at claim 12

What the Petition says about the “speech recognition engine”

- The Petition **does not contend** that Petitioner’s primary reference, Aginsky, discloses, teaches, or suggests a “speech recognition engine.” (Petition at 45-46; *see also id.* at 51.)
- The Petition contends that Petitioner’s secondary references (*i.e.*, Stammler and Hanson) disclose a “speech recognition engine.” (*Id.* at 45-46, 75-76.)
- The Petition **does not propose modifying** Petitioner’s primary reference, Aginsky, to have a “speech recognition engine.” (*Id.*)

What Petitioner's Reply says about the “speech recognition engine”

- The Reply **concedes** that the Petition does not propose modifying Petitioner's primary reference, Aginsky, to have a “speech recognition engine.” (Reply at 26.)
- The Reply contends **for the first time** that no modification or motivation is necessary because Aginsky expressly teaches the “speech recognition engine.” (*Id.* at 22-23.)

Finally, PO argues Petitioner failed to identify why a POSA would modify Aginsky to include a speech recognition engine. POR 39-40. Aginsky already teaches voice functionality, including the processor and instructions, and explicitly discloses that remote device 107-1 allows for voice command of controllable devices. Pet. 25 (citing Aginsky, 9:60-65, 6:2-6, 8:8-12). There need be no motivation to do what is expressly taught.

Reply at 26

Response to Petitioner's Reply Argument

- The Board should reject Petitioner's Reply argument.
- Petitioner's belated argument was not presented and developed in the Petition or supporting declaration (Petition at 45-46, 75-76; EX1003, ¶¶ 149-151, 264-266), and thus cannot be presented for the first time in the Reply. *DIRECTV, LLC v. Qurio Holdings, Inc.*, IPR2015-02007, Paper No. 6 at 14 (PTAB April 4, 2016).
- Petitioner's belated argument is based solely on the *ipse dixit* of Petitioner's counsel and is not supported by the testimony of a POSITA. (Reply at 22-23.)

Aginsky does not teach the “speech recognition engine”

Patent Owner has also provided *unrebutted* evidence that Aginsky does not teach a “speech recognition engine.” (EX2001, ¶¶ 122-123.) Aginsky, at best, references voice command capability in passing, with no further detail. (EX1004 at 6:5, 8:11, 9:61.) Patent Owner’s expert demonstrated that voice command capability, alone, does not teach a “speech recognition engine.” (EX2001, ¶¶ 122-123.)

necessary. (*Id.*) Further, even if there were evidence in the record demonstrating that an unspecified “mechanism” would be necessary for recognizing voice commands (there is none), there is certainly no evidence that this unspecified “mechanism” must be the claimed “speech recognition engine.” (*Id.*)

123. Additionally, a speech recognition engine would not have been “necessary.” A speech recognition engine is a turnkey solution for recognizing speech with an unrestricted vocabulary. Rather than use a speech recognition engine, a POSITA could have used a speech recognizer using Dynamic Time Warping, Hidden Markov Models, Neural Networks, etc. Such speech recognizers could be customized for remote-control applications to recognize the specific vocabulary associated with controlling appliances.

Sur-Reply at 19; EX2001, ¶¶ 122-123

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Dispute #3: There is no motivation to modify Aginsky in view of Stammner or Hanson to arrive at the Phonetic Representations Limitation [All Grounds and Challenged Claims]

The Phonetic Representations Limitation

1. A method for configuring a controlling device to command functional operations of a target appliance, the method comprising:

causing a codeset record to be provisioned to the controlling device for use in commanding functional operations of the target appliance, the provisioned codeset record comprising protocol and formatting information and a plurality of individual command function entries wherein each of the plurality of individual function entries within the codeset record comprises command data, a standard function identifier, data which comprises a phonetic representation of a function name corresponding the standard function identifier, and a plurality of data each of which comprises a phonetic representation of a unique one of a plurality of synonyms of the function name;

According to the Phonetic Representations Limitation, each of the plurality of individual command function entries within the claimed codeset record must comprise, *inter alia*:

- (i) a phonetic representation of a function name; and
- (ii) phonetic representations of a plurality of synonyms of the function name. (EX1001 at claims 1, 12; EX2001, ¶¶ 93-94.)

According to the Phonetic Representations Limitation, the claimed phonetic representations *must be stored*:

- (i) in a specific codeset record (i.e., the codeset record provisioned to the controlling device for use in commanding functional operations of the target appliance and comprising protocol and formatting information and a plurality of command function entries); and
- (ii) in a specific location within that specific codeset record (i.e., in each of the command function entries within the provisioned codeset record). (*Id.*)

EX1001 at claim 1; POR at 28

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Motivation to Combine/Modify Law

- To establish obviousness, a Petitioner must “explain why a person of ordinary skill in the art would have combined elements from specific references *in the way the claimed invention does.*” See *ActiveVideo Networks, Inc. v. Verizon Commun., Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012) (emphasis in original).
- Testimony that “is generic and bears no relation to any specific combination of prior art elements” is insufficient to establish obviousness. *Id.*

Petitioner's reasons for combining Aginsky with Stammler's or Hanson's alleged phonetic representations

- To enable voice control in general, which was purportedly a known improvement over the alleged drawbacks of user interfaces. (Petition at 32-33, 40-41, 74.)
- Using synonymous commands to improve upon prior speech dialog systems that allegedly suffered from limited vocabularies. (*Id.* at 32-33, 41-42, 70, 72, 75, 77.)

Argument #1: The Petition fails to explain why a POSITA would have modified Aginsky in the specific manner of the claimed invention

Petitioner failed to explain why a POSITA would have added phonetic representations⁵ to the specific data structures on Aginsky's controlling device that Petitioner relies on in its obviousness analysis (*i.e.*, either of the data structures in tables 115'-116'), as opposed to different data structures in the controlling device's memory, some construct in the controlling device's memory other than a data structure, or to a different device altogether (*e.g.*, to a remote server). (POR at 35, 54.)

Petitioner also failed to explain why a POSITA would have added phonetic representations to each of the alleged command function entries in these data structures, as opposed to some other location in the data structures, to only a subset of the alleged command function entries, etc. (POR at 35, 54.)

Sur-Reply at 22-23; POR at 35-37

Petitioner's Reply is non-responsive and fails to address the gaps in the Petition

PO alleges that motivation to combine **Stammler's** phonetic representation is insufficiently precise. POR 36-37. On the contrary, the Petition's discussion of limitation [1.a.6] expressly begins: "**Aginsky** as modified by **Stammler** teaches wherein each of the plurality of *individual function entries* within the codeset record comprises...data which comprises a phonetic representation of a function name corresponding the standard function identifier." Pet. 40 (emphasis added). The Petition later explains that "a POSITA would have been motivated to apply **Stammler's** teachings ..." Pet. 41 (citing Stammler, 12:19-27; McNair, ¶ 137).

Reply at 25

Argument #2: Patent Owner presented evidence that a POSITA would not have been motivated to use phonetic representations in Aginsky

120. Because Aginsky's vocabulary is limited to a relatively small, pre-defined collection of individually-spoken words, a POSITA would not have been motivated to modify Aginsky to use Stammer's phoneme-based model. Instead, a POSITA would have used a whole-word model to take advantage of the efficiencies in development cost, computational load, and memory use that whole-word models provide over phoneme-based models. In a remote-control application such as Aginsky where functions are provided as isolated commands, discovery of user intention via sentence analysis and hypothesis is not required, making phoneme-based speech recognition unsuitable and unnecessary.

EX2001, ¶¶ 114-120; POR at 37-39

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Patent Owner's evidence is unrebutted; Petitioner's Reply is non-responsive

PO argues a POSITA would lack motivation to use **Stammler's** phoneme-based system because a POSITA would favor a whole-word model for alleged efficiencies and cost savings. POR 38-39. PO's argument is beside the point. The Petition does *not* propose to bodily incorporate **Stammler's** device into **Aginsky's** device. Instead, the Petition states "a POSITA would have been motivated to *modify* **Aginsky** with the teachings of **Stammler** to include phonetic representations and synonym as elements of **Aginsky's** dataset ..." Pet. 32 (emphasis added); *see* Pet. 41.

Reply at 25

Petitioner's Reply is evasive and non-responsive. Patent Owner's argument has nothing to do with bodily incorporation. Patent Owner's argument is that a POSITA would have used whole words in **Aginsky**, not phonetic representations. (POR at 37-39, 55; EX2001, ¶¶ 114-120.)⁶ Simply pointing out that the Petition asserts that a POSITA would have been motivated to modify **Aginsky** to include phonetic representations ignores Patent Owner's argument to the contrary. (Reply at 25.) Patent Owner's position that a POSITA would not have been motivated to use phonetic representations in **Aginsky** remains *unrebutted*.

Sur-Reply at 23-24

Dispute #4: Petitioner has failed to show that dependent claims 2-6, 7-11, and 13-19 are obvious

Petitioner's failures of proof relating to the dependent claims

- **Claims 6 and 18 (Grounds 1 and 3)**: Petitioner relies entirely on its Claim 1 analysis, but Claims 6 and 18 are each materially different than Claim 1.
- **Claims 8-10 (Grounds 1 and 3)**: Petitioner fails to set forth any argument or evidence showing that Aginsky teaches storing data structures relating to other controllable devices (including data relating to the brand of other controllable devices) and causing such data to be provisioned to a controlling device.
- **Claims 13-14 (Grounds 1 and 3)**: Petitioner fails to set forth any argument or evidence showing that Aginsky teaches that instructions are downloaded to a controlling device in a downloadable app.
- **Claims 7, 11, and 19 (Grounds 2 and 4)**: Dresti does not teach using location data to identify a codeset record to be provisioned to a controlling device and there is no discussion regarding how prior art would be combined.

Sur-Reply at 8-28

Claims 6 and 18 are materially different than Claim 1 and Petitioner offered no separate evidence in support of Claims 6 and 18's unpatentability

[6.] The method as recited in claim 1, wherein the method comprises receiving at the speech recognition engine voice data for mapping each of the less than all of the individual command function entries from within the	See [1.b.1], [1.c]. McNair, ¶¶143-146, 149-151, 170-171.
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[18.] The system as recited in claim 12, wherein the instructions use voice	See [1.c], [6]. McNair, ¶¶143-146, 149-151, 170-171, 215-216.
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Petition at 55-56, 59-60

No analysis in Petition
for this limitation

1. A method for configuring a controlling device to command functional operations of a target appliance, the method comprising:

* * *

causing the controlling device to transmit a command communication by using the protocol and formatting information and the command data of a one of the one or more of the plurality of individual command function entries from within the provisioned codeset record having a phonetic representation of the function name or a synonym of the function name which corresponds to voice data provided to a speech recognition engine.

Claim 1 is materially
different than
Claims 6 and 18

6. The method as recited in claim 1, wherein the method comprises receiving at the speech recognition engine voice data for mapping each of the less than all of the individual command function entries from within the provisioned codeset record to the one or more of the plurality of user input elements of the controlling device.

POR at 41; EX1001 at claims 1, 6;
see also Sur-Reply at 24

The prior art does not teach using a brand to identify a codeset record that is caused to be provisioned to a controlling device (Claims 8-10)

8. The method as recited in claim 1, comprising receiving at a speech recognition engine voice data indicative of at least a brand of the target appliance whereupon the speech recognition engine uses the voice data indicative of at least a brand of the target appliance to identify within a library of codeset records the codeset record that is caused to be provisioned to the controlling device.

Challenged Claim 8 requires that “the speech recognition engine use[] the voice data ... to identify ... the codeset record *that is caused to be provisioned to the controlling device.*” (EX1001 at claim 8 (emphasis added).) Merely identifying a codeset record is insufficient. (*Id.*; EX2001, ¶ 136.) While Petitioner argues that it would have been obvious “to use a brand identification to identify the appropriate data structure entry within memory 109-1,” Petitioner does not identify any subsequent provisioning of a “data structure” to a controlling device. (Petition at 57.) In Petitioner’s example, the data structures (*i.e.*, the alleged “codeset records”) have already been provisioned to memory 109-1 of remote device 107-1 (*i.e.*, the alleged “controlling device”). (*Id.*; EX2001, ¶¶ 137-138.)

POR at 41-45; Sur-Reply at 26-27; EX1001 at claim 8

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

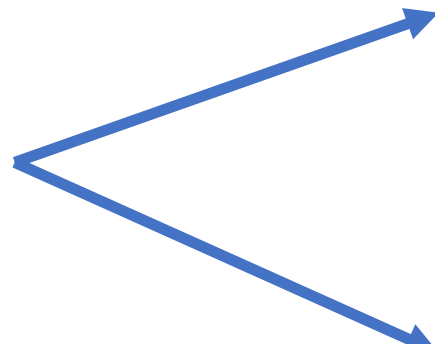
53

Petitioner failed to offer any evidence in support of why Claims 13-14 are unpatentable as obvious

13. The system as recited in claim 12, wherein the instructions are downloaded to the controlling device in a downloadable app.

POR at 45-46; Sur-Reply at 27; EX1001 at claim 13

Petitioner fails to address the claimed “instructions”



Aginsky discloses transferring the **data structure** to “a remote control application (“app”).” Aginsky, Abstract, 2:31-36, 7:36-57; McNair, ¶204.

Aginsky further discloses that “[i]n some situations, the user of the remote device...will download from a third party (typically an ‘app store’) a control application that is designed to control controllable devices. The downloaded control application, typically in code format, is stored in a memory...on **remote device 107-1** and runs on a processor...also contained on remote device. Downloading control applications from an app store is now well-known in the art...” Aginsky, 7:36:57; McNair, ¶205.

In fact, even ’083 admits that “[i]t is known to offer an app for download and installation into memory 312 which app may serve to allow use of the smart phone to transmit commands suitable for operation of entertainment and other appliances.” ’083, 5:42-45;

Petition at 58

Prior art does not teach using location data to identify a codeset record to be provisioned (Claims 7, 11, 19)

Petition

Dresti teaches the general proposition that it was advantageous and well-known for location data to be used when selecting universal remote control codesets. It would have been obvious to a POSITA to implement **Aginsky**'s methods and systems as modified by **Stammler** to thus include location data—either as a threshold selection on its own GUI, or implemented as a component of the brand selection process.

Reply

references of a combination. POR 46-48, 57. The Petition explains *Aginsky* discloses provisioning the data structure to the remote device, while **Dresti** teaches use of location data for selecting universal remote control presets. Pet. 35-36; 64-

The entire premise of Petitioner's proposed combination (*i.e.*, that **Dresti** allegedly teaches using location data to select codesets) is facially incorrect

Petition at 65; Reply at 28;
POR at 46-48; Sur-Reply at 25-26

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Roku, Inc.
v.
Universal Electronics Inc.
IPR2022-01289 (US 9,847,083)

PATENT OWNER'S DEMONSTRATIVE EXHIBIT

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on the below date, I caused the foregoing to be served by electronic mail to the following:

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