

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION

<p>WILUS INSTITUTE OF STANDARDS AND TECHNOLOGY INC.,</p> <p>Plaintiff,</p> <p>v.</p> <p>HP INC.</p> <p>Defendant.</p>	<p>Civil Case No. 2:24-cv-00752-JRG [Lead Case]</p>
<p>WILUS INSTITUTE OF STANDARDS AND TECHNOLOGY INC.,</p> <p>Plaintiff,</p> <p>v.</p> <p>SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC.</p> <p>Defendants.</p>	<p>Civil Case No. 2:24-cv-00746-JRG [Member Case]</p>
<p>WILUS INSTITUTE OF STANDARDS AND TECHNOLOGY INC.,</p> <p>Plaintiff,</p> <p>v.</p> <p>HP INC.</p> <p>Defendant.</p>	<p>Civil Case No. 2:24-cv-00764-JRG [Member Case]</p>

<p>WILUS INSTITUTE OF STANDARDS AND TECHNOLOGY INC.,</p> <p style="text-align: center;">Plaintiff,</p> <p>v.</p> <p>SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC.</p> <p style="text-align: center;">Defendants.</p>	<p>Civil Case No. 2:24-cv-00765-JRG [Member Case]</p>
<p>WILUS INSTITUTE OF STANDARDS AND TECHNOLOGY INC.,</p> <p style="text-align: center;">Plaintiff,</p> <p>v.</p> <p>ASKEY COMPUTER CORP., ASKEY INTERNATIONAL CORP.</p> <p style="text-align: center;">Defendants.</p>	<p>Civil Case No. 2:24-cv-00766-JRG [Member Case]</p>
<p>WILUS INSTITUTE OF STANDARDS AND TECHNOLOGY INC.,</p> <p style="text-align: center;">Plaintiff,</p> <p>v.</p> <p>ASKEY COMPUTER CORP., ASKEY INTERNATIONAL CORP.</p> <p style="text-align: center;">Defendants.</p>	<p>Civil Case No. 2:24-cv-00753-JRG-RSP [Member Case]</p>

**DEFENDANTS' P.R. 3-3 AND 3-4 INVALIDITY CONTENTIONS  
AND SUBJECT MATTER ELIGIBILITY CONTENTIONS**

Pursuant to Docket Control Order (Dkt. No. 47) and Local Patent Rule 3-3, Defendants Samsung Electronics Co., Ltd. and, Samsung Electronics America, Inc., and HP, Inc. (collectively,

“Defendants”)<sup>1</sup> hereby provide their Invalidity Contentions, which include the accompanying claim charts concerning U.S. Patent Nos. 10,313,077 (“the ’077 patent”); 11,159,210 (“the ’210 patent”); 10,687,281 (“the ’281 patent”); 11,470,595 (“the ’595 patent”), 11,116,035 (“the ’035 patent”), 11,516,879 (“the ’879 patent”), 11,129,163 (“the ’163 patent”), and 11,700,597 (“the ’597 patent”) (collectively, the “Asserted Patents”) to Wilus Institute of Standards and Technology Inc. (“Plaintiff” or “Wilus”). Defendants also respectfully submit their subject matter eligibility contentions for the Asserted Claims of the Asserted Patent in accordance with the July 25, 2019 Standing Order Regarding Subject Matter Eligibility Contentions Applicable to All Patent Infringement Cases Assigned to Chief District Judge Rodney Gilstrap (“Standing Order”).

The citation of prior art herein and the accompanying exhibits are not intended to reflect Defendants’ claim construction contentions, which will be disclosed in due course in accordance with the Docket Control Order and may instead reflect Plaintiff’s apparent (and potentially erroneous) claim constructions based on its Infringement Contentions.

**I. Introduction**

As disclosed in its P.R. 3-1 Infringement Contentions served on Defendants, Plaintiff asserts the following patents and claims:

<b>Patent</b>	<b>Claims</b>
U.S. Patent No. 10,313,077	<b>1-7, 8-14</b>
U.S. Patent No. 10,687,281	1-6, 8-13
U.S. Patent No. 11,470,595	<b>1-6, 7-12</b>
U.S. Patent No. 11,159,210	<b>1-5, 6-9</b>
U.S. Patent No. 11,129,163	<b>1-8, 9-16</b>
U.S. Patent No. 11,700,597	<b>1-8, 9-16</b>
U.S. Patent No. 11,116,035	<b>1-5, 8-10</b>
U.S. Patent No. 11,516,879	<b>1-5, 8-10</b>

<sup>1</sup> Defendants reserve the right to rely on any contentions served separately by Askey Computer Corp., and Askey International Corp.

available during the course of this lawsuit. Furthermore, Defendants will make all such devices, software programs, or other products in Defendants’ possession, custody, or control available for inspection by Plaintiff.

Consequently, Defendants reserve the right to amend, modify, or supplement these Invalidity Contentions should additional information become available to them through discovery.

**C. U.S. Patent No. 11,159,210**

Invalidity claim charts identifying disclosures in the references identified in Tables 1-B, 2-B, and 3-B as to the Asserted Claims of the ’210 patent are provided in attached Exhibits B-01 through B-08 and Appendix B.<sup>11</sup>

**Table 1-B: Prior Art Patents and Printed Publications for the ’210 patent**

No.	Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
RB-1	US 2017/0181136 (“Bharadwaj 136”)	June 22, 2017	December 21, 2016
RB-2	US 2018/0176066 (“Lim 066”)	June 21, 2018	December 7, 2017
RB-3	“IEEE P802.11ax/D1.0 Enhancements for High Efficiency WLAN,” (“IEEE P802.11ax/D1.0”)	November 2016	N/A
RB-4	IEEE 802.11-15/0132r15 “Wireless LANs Specification Framework for TGax” (“IEEE 802.11-15/0132r15”)	March 17, 2016	N/A
RB-5	IEEE 802.11ac	December 2013	N/A
RB-6	US 2017/0366310 (“Verma 310”)	December 21, 2017	June 14, 2017
RB-7	US 2016/0285526 (“Hedayat 526”)	September 29, 2016	March 28, 2016
RB-8	US 2017/0064718 to Bharadwaj (“Bharadwaj 718”)	March 2, 2017	August 23, 2016
RB-9	IEEE 802.11-2012	March 2012	N/A
RB-10	IEEE 802.11-2016	December 2016	N/A

<sup>11</sup> Plaintiff reserves its right to rely on patent or patent application publications that are in the same family as the charted references as well as other revisions of the charted IEEE documents.

No.	Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
RB-11	IEEE P802.11ax/D0.5, "High Efficiency (HE) PHY specification" ("IEEE P802.11ax/D0.5")	October 2016	

Further, Defendants are actively searching for information regarding at least the following devices and inventions:

**Table 2-B: Prior Art Systems and Inventions for the '210 patent**

No.	Name of System or Invention	Date of Sale / Offer for Sale / Public Use
RB-12	Systems implementing IEEE 802.11ac ("Wi-Fi 5") <sup>12</sup>	2013
RB-13	HP Spectre 13 (2013 Model)	October 2013
RB-14	HP Envy 17 (2014 Model)	February 2014
RB-15	Samsung Galaxy S4 Smartphone	April 2013
RB-16	Samsung Galaxy Note 3 Smartphone	October 2013
RB-17	Samsung Galaxy Tab Pro	February 2014
RB-18	Samsung Galaxy Tab S	July 2014
RB-19	Samsung ATIV Book 9 (2014 Edition)	May 2014
RB-20	Samsung ATIV Book 9 (2015 Edition)	December 2015

For each of the prior art devices identified above, Defendants have listed and produced one or more documents as evidence of the relevant features and functionality. Defendants have obtained or are in the process of obtaining the identified devices and will make them available for inspection. To the extent that one or more documents (*e.g.*, user manual) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating references under 35 U.S.C. §§ 102 and/or 103.

<sup>12</sup> The attached invalidity chart over IEEE 802.11ac (RB-5) demonstrates how the systems implementing IEEE 802.11ac, listed in this table, disclose each element of each asserted claim.

Discovery is ongoing, and Defendants may serve third parties with document subpoenas. One or more of these devices, along with related documentation, may be invalidating, and Defendants reserve the right to supplement these contentions accordingly.

In addition, Defendants identify, responsive to Plaintiff's infringement contentions, the following patents, publications, and systems as evidence of the state of the art as it relates to signaling for MIMO and MU-MIMO transmissions:<sup>13</sup>

- IEEE 802.11n
- US 9398571B2
- US 9585058B2
- US 10433306B2
- US 20150023291A1
- US 20160014763A1
- US 20160128057A1
- US 20160183224A1
- US 20160330300A1
- US 20170026952A1
- US 20170041929A1
- US 20170048823A1
- US 20170048862A1
- US 20170064718A1
- US 20170093546A1
- US 20170373806A1
- US 20180131553A1
- US 20180138959A1
- US 20180375632A1
- US 20190052353A1
- US 20190124638A1
- US 20190190757A1
- US 20190222393
- US9825789
- US20170331529
- US20110002319
- CN101848525A
- US20180110069
- US 20170280452
- US 2018/0205520

---

<sup>13</sup> Plaintiff reserves its right to rely on any unlisted patents, patent application publications, provisional applications that are related to the listed reference.

- WO2017036402A1
- US 2014/0078966
- KR 2016-0059443
- KR 2016-0052430
- EP 2,959,624
- US 2016/0286012
- KR 2016-0004955
- KR 2014-0101740
- US 8,811,507
- US 2015/0163028
- US 9,048,994
- US 9,130,812
- US 9,107,099
- US 2016/0198500
- US 9,246,738
- EP 2,681,864
- JP 2015-165676
- KR 2015-0073855
- US 2012/0163317
- US 9,049,155
- US 9,143,293
- KR 2015-0128772
- US 2008/0031191
- US 9,295,074
- US 9,143,293
- US 8,903,441
- US 9,113,313
- KR 2008-0064069
- JP 2008-533833
- KR 2012-0081040
- US 7,924,764
- US 8,615,052
- US 8,542,605
- US8175022B2
- KR 2015-0035569
- EP 2,356,769
- US 2015/0124677
- US 8,619,814
- US 7,715,442
- US 2006/0050661
- JP 2010-178129
- US 8,867,563
- JP 5,329,244
- KR 10-1212423

- US 2008/0310391
- 11-16-0928-02-00ax-cr-on-section-26-3-9-8-he-sig-b
- 11-16-0535-10-00ax-comments-on-tgax-d0-1
- 11-16-0873-00-00ax-cr-he-sig-b-part-i
- 11-16-0024-01-00ax-proposed-draft-specification
- 11-15-0132-17-00ax-spec-framework
- 11-16-0866-04-00ax-comment-resolution-of-section-26-3-13-mu-mimo
- 11-16-0203-00-00ax-signalling-support-for-full-bandwidth-mu-mimo-compressed-sig-b-mode

These references show that signaling for MIMO and MU-MIMO transmissions is not novel, and was well-known in the art for many years. In light of the references discussed herein, the Asserted Claims of the '210 patent cannot be valid.

Defendants' reference to a particular product, device, or software program in these contentions should be interpreted as a reference to the system itself and any corresponding patents, publications, or product literature relating to the cited system. Upon information and belief, the systems were publicly disclosed, used, sold, or offered for sale in the United States before the alleged priority date of the Asserted Claims of the '210 patent. Defendants' investigation of such prior art systems is still ongoing and discovery has not yet been received from third parties who may have information concerning such prior art systems. Accordingly, subsequent discovery may reveal information that affects the disclosures and contentions herein. For example, subsequent discovery may provide additional information regarding whether or not any of the third party prior art systems anticipate or render obvious the Asserted Claims of the '210 patent. As such, Defendants reserve all rights to supplement their invalidity contentions.

Many of the inventive, research, design, and development activities concerning these systems and technologies occurred in the United States before the alleged priority date of the Asserted Claims of the '210 patent. Defendants have obtained, and are in the process of

obtaining, additional information regarding the dates by which the cited products and services were publicly disclosed, used, sold, or offered for sale, the circumstances under which the research, design, and development activities were conducted, and the identities of the particular individuals involved in such activities through publicly available patents, publications, and product literature. The actual dates, circumstances, and identities of individuals will be the subject of third party discovery during this lawsuit, which Defendants reserve the right to rely upon to corroborate the prior art status of the prior art identified herein. Defendants reserve the right to modify, amend, or supplement these contentions if additional information becomes available during the course of this lawsuit. Furthermore, Defendants will make all such devices, software programs, or other products in Defendants’ possession, custody, or control available for inspection by Plaintiff.

Consequently, Defendants reserve the right to amend, modify, or supplement these Invalidity Contentions should additional information become available to them through discovery.

**D. U.S. Patent No. 10,687,281**

Invalidity claim charts identifying disclosures in the references identified in Tables 1-C, 2-C, and 3-C as to the Asserted Claims of the ’281 patent are provided in attached Exhibits C1-C13<sup>14</sup> and Appendix C.

**Table 1-C: Prior Art Patents and Printed Publications for the ’281 patent**

No.	Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
RC-1	US 2017/0181129A1 (“Bharadwaj 129”)	Jun. 22, 2017	Dec. 21, 2015
RC-2	US 2017/0094664A1 (“Lee”)	Mar. 30, 2017	Nov. 9, 2015
RC-3	US 2016/0353322A1 (“Li”)	Dec. 1, 2016	May 27, 2015

<sup>14</sup> Plaintiff reserves its right to rely on patent or patent application publications that are in the same family as the charted references as well as other revisions of the charted IEEE documents.

for inspection. To the extent that one or more documents (*e.g.*, user manual) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating references under 35 U.S.C. §§ 102 and/or 103.

Discovery is ongoing, and Defendants may serve third parties with document subpoenas. One or more of these devices, along with related documentation, may be invalidating, and Defendants reserve the right to supplement these contentions accordingly.

In addition, Defendants identify, responsive to Plaintiff's infringement contentions, the following patents, publications, and systems as evidence of the state of the art as it relates to Wi-Fi and discontinuous channel assignment:<sup>17</sup>

- US20170070998A1
- US20170006608A1
- US20170048823A1
- US10154520B1
- US20170041929A1
- US20170041171A1
- WO2016089998 A1
- US10389563B2
- US20160366666A1
- US20180205584A1
- US20160330714A1
- US20160366688A1
- US2015/0381330A
- US20160360528A1
- US20170181130A1
- US2016204912A1
- IEEE 802.11-16/ 0039r1
- IEEE 802.11-15/ 0353r1
- IEEE 802.11-15/ 0132r13
- IEEE 802.11-16/ 0638r2

---

<sup>17</sup> Plaintiff reserves its right to rely on any unlisted patents, patent application publications, provisional applications that are related to the listed reference.

## 2. U.S. Patent No. 11,159,210

The Asserted Claims of the '210 patent are anticipated and/or rendered obvious by prior art. Pursuant to P.R. 3-3(a), Defendants identify the prior art references that anticipate or render obvious the '210 patent Asserted Claims in the claim charts of Exhibits B-01 through B-08 and Appendix B which are hereby incorporated by reference as if fully set forth herein. The claim charts and Appendix B provide an explanation showing how these prior art references teach or suggest each and every element of the '210 patent Asserted Claims. For each reference or combination of references suggested by each chart, Defendants indicate whether the prior art renders the claim anticipated and/or obvious pursuant to P.R. 3-3(b).

In addition to contending that the '210 patent Asserted Claims are invalid in view of the prior art references cited in the claim charts and Appendix B, Defendants further contend that the '210 patent Asserted Claims are invalid as anticipated and/or obvious under U.S.C. §§ 102 and/or 103 in view of public knowledge and uses and/or offers for sale of products and services related to the subject matter of the cited references. As discovery is ongoing, Defendants continue to investigate these items and to reserve the right to amend or supplement these contentions to include additional information or documents regarding such products and/or systems.

Defendants' reference to a particular communications device, modem, circuit, software program, device or product in the claim charts and Appendix B should be interpreted as a reference to the product itself and any corresponding patents, publications, or product literature cited in Appendix B that relates to the cited memory module, circuit, software program, device, or product. In addition, Defendants may rely on other documents or things that have not yet been located to support its contentions regarding such prior art communications device(s), modem(s), circuit(s), software program(s), device(s) or product(s) that are referenced in the charts. Furthermore, Defendants' reference to a wireless communications standard, such as for example IEEE 802.11ac,

in the claim charts and Appendix B should be interpreted as a reference to the products implementing and/or complying with such standard.

Defendants incorporate by reference, as if set forth fully herein, all prior art cited during the prosecution of the '210 patent, all prior art as described in any future *inter partes* review proceedings of the '210 patent, and all prior art disclosed during previous litigation proceedings involving the '210 patent.

Defendants further identify and hereby incorporate by reference as if set forth fully herein the prior art references and invalidity contentions as described in any Other Wilus Proceedings wherein invalidity contentions have been, or will be, provided regarding the '210 patent, its foreign counterparts, or any parent or child patent of the '210 patent. Defendants reserve the right to use any and all portions of the publication, related publications, commercial embodiments of the publication, and other evidence that is discovered in these lawsuits to demonstrate and/or evidence the components, functionality, and capabilities of the devices and systems disclosed in the references charted.

Where Defendants identify a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure, as well as any text relating to the figure in addition to the figure itself. Similarly, where an identified portion of text refers to a figure or other material, the identification should be understood to include the referenced figure or other material as well. It should be recognized that a person of ordinary skill in the art would generally read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field. To understand and interpret any specific statement or disclosure in a prior art reference, a person of ordinary skill in the art would rely upon other information including other publications and general scientific or engineering knowledge.

Defendants therefore reserve the right to rely upon other unidentified portions of the prior art references and on other publications and expert testimony to provide context and to aid understanding and interpretation of the identified portions.

Defendants also reserve the right to rely upon other portions of the prior art references, other publications, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art, including the basis of modifying or combining certain cited references. To the extent any limitation is deemed not to be exactly met by an item of prior art, then any purported differences are such that the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. To the extent that an element of an Asserted Claim is not anticipated, the claim is rendered obvious by combination with one or more other prior art references identified in Appendix B.

### **3. U.S. Patent No. 10,687,281**

The Asserted Claims of the '281 patent are anticipated and/or rendered obvious by prior art. Pursuant to P.R. 3-3(a), Defendants identify the prior art references that anticipate or render obvious the '281 patent Asserted Claims in the claim charts of Exhibits C1 through C13 which are hereby incorporated by reference as if fully set forth herein. The claim charts and Appendix C provide an explanation showing how these prior art references teach or suggest each and every element of the '281 patent Asserted Claims. For each reference or combination of references suggested by each chart, Defendants indicate whether the prior art renders the claim anticipated and/or obvious pursuant to P.R. 3-3(b).

In addition to contending that the '281 patent Asserted Claims are invalid in view of the prior art references cited in the claim charts and Appendix C, Defendants further contend that the '281 patent Asserted Claims are invalid as anticipated and/or obvious under U.S.C. §§ 102

*Markman* Order has not yet been issued in this case. As such, Defendants' inclusion of exemplary combinations does not preclude them from identifying other invalidating combinations as appropriate, and Defendants reserve the right to identify additional specific combinations as well as to detail and explain such combinations.

## **2. U.S. Patent No. 11,159,210**

Pursuant to P.R. 3-3(a) and (b), Defendants identify in Appendix B the prior art references that render obvious the Asserted Claims of the '210 patent and include below exemplary combinations showing the obviousness of the '210 patent Asserted Claims in view of the prior art. To the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix B, the limitation would have been obvious in light of the disclosures within the reference and the knowledge of one of skill in the art at the time of the '210 patent. Moreover, to the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix B, such reference may be combined with any other references listed in Appendix B for such element, thereby rendering the claims invalid for obviousness.

To the extent a finder of fact determines that a limitation of any of the '210 patent Asserted Claims is not disclosed by one of the references identified above pursuant to P.R. 3-3(a), the claim is nevertheless unpatentable as obvious because they contain nothing that constitutes a patentable innovation. To the extent a finder of fact determines that a limitation of the '210 patent Asserted Claims is not anticipated, it does not go beyond combining familiar elements according to known methods to achieve predictable results or does more than choose between clear alternatives known to those of ordinary skill in the art.

### **a) Obviousness Rationale**

For at least the reasons described in these contentions, it would have been obvious to one

of ordinary skill in the art to combine any of a number of prior art references, including any combination of those prior art references identified in Appendix B along with the knowledge of one of ordinary skill in the art to meet the limitations of the '210 patent Asserted Claims. Moreover, as mentioned above, Defendants have not yet completed their search or discovery concerning additional prior art. As such, Defendants' inclusion of exemplary combinations does not preclude them from identifying other invalidating combinations as appropriate, and Defendants reserve the right to identify additional specific combinations as well as to detail and explain such combinations.

To the extent not anticipated, the 210 patent Asserted Claims represent no more than the result of ordinary variations of the prior art. Defendants further believe that no showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, as each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of skill in the art. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415-16 (2007) (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an "expansive and flexible" approach). Indeed, the Supreme Court held that a person of ordinary skill in the art is "a person of ordinary creativity, not an automaton" and "in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 420-21. Nevertheless, in addition to the information contained elsewhere in these contentions, Defendants identify motivation and reason to combine the cited art.

One or more combinations of the prior art references identified in Appendix B would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or

motivation in the prior art generally. In addition, it would have been obvious to try combining the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field of endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one. Further, the combinations of the prior art references identified in Appendix B would have been obvious because the combinations represent known potential options with a reasonable expectation of success.

Additional evidence that there would have been a motivation to combine the prior art references identified above includes the interrelated teachings of multiple prior art references; common authorship; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution encompassed by the '210 patent Asserted Claims; the existence of a known need or problem in the field of the endeavor at the time of the alleged invention(s); and the background knowledge that would have been possessed by a person having ordinary skill in the art.

Thus, the motivation to combine the teachings of the prior art references disclosed in Appendix B is found in the references themselves and also in: (1) the nature of the problem being solved; (2) the express, implied and inherent teachings of the prior art; (3) the knowledge of persons of ordinary skill in the art; (4) the predictable results obtained in combining the different elements of the prior art; (5) the predictable results obtained in simple substitution of one known element for another; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8) the finite number of identified predictable solutions that had a reasonable expectation of success; and (9) known work in various

technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

Additionally, it would be obvious to one of skill in the art to consult and/or combine any of the prior art listed in Appendix B because all of these references relate to the same area of technology and/or are from analogous art. The '210 patent Asserted Claims are directed to signaling for Multi User-Multiple Input Multiple Output (MU-MIMO) transmissions. '210 patent at claims 1 and 6. The prior art references generally relate to IEEE 802.11 wireless local area network technology. The references, like the '210 patent, are also reasonably pertinent to wireless communication issues related to signaling for Multi User-Multiple Input Multiple Output (MU-MIMO) transmissions.

Similarly, it would be obvious to one of skill in the art to consult and/or combine any of the prior art listed in Appendix B because all of these references are works of people in the same technical field. For example, many of the authors of the prior art references are members of the IEEE's 802.11 working group. Moreover, one of ordinary skill in the art would have recognized that members of the IEEE's working groups frequently collaborate with, and build on, each other's work. Thus, one of ordinary skill in the art would have recognized that the works by people that are in the same IEEE working group are likely compatible or otherwise work harmoniously when combined.

The '210 patent Asserted Claims merely unite old elements, well known in the field, with no change in their respective function or result. Given the interrelated teachings of the prior art, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art, it would have been obvious for one of ordinary skill in the art to combine these familiar elements, disclosed and/or

embodied in the prior art listed above to practice the '210 patent Asserted Claims.

All of the '210 patent Asserted Claims are directed to signaling for Multi User-Multiple Input Multiple Output (MU-MIMO) transmissions. '210 patent at 2:56–4:11. Such technology, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, was widely known before the alleged priority date of the '210 Patent, as evidenced by the references in Appendix B. *See, e.g.*, IEEE 802.11ac at § 22.3.4.10; IEEE P802.11ax/D1.0 at pp. 9, 209; Bharadwaj 136 at [0093]-[0094], Figure 1; Lim 066 at [0209]-[0211]; IEEE 802.11-15/0132r15 at pp. 2–3; Verma 310 at [0034]; Hedayat 526 at [0025]; Bharadwaj 718 at [0110].

One of ordinary skill in the art would have been motivated to combine any of the references in Appendix B because at the time of the alleged invention signaling for Multi User-Multiple Input Multiple Output (MU-MIMO) transmissions was a common problem with a well-known solution. In particular, common problems with conventional techniques for signaling for Multi User-Multiple Input Multiple Output (MU-MIMO) transmissions were known to persons of ordinary skill in the art and incorporating a preamble of a data unit that includes specific fields with a given meaning was a well-known solution to achieve improved performance. *See, e.g.*, IEEE 802.11ac at § 22.3.4.10; IEEE P802.11ax/D1.0 at pp. 9, 209; Bharadwaj 136 at [0093]-[0094], Figure 1; Lim 066 at [0209]-[0211]; IEEE 802.11-15/0132r15 at pp. 2–3; Verma 310 at [0034]; Hedayat 526 at [0025]; Bharadwaj 718 at [0110].

It was well-known to one of skill in the art before the time of the '210 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, to receive, through a communication unit, a high efficiency multi-user PHY protocol data unit (HE MU PPDU). *See, e.g.*, IEEE 802.11ac at § 22.3.4.10; IEEE P802.11ax/D1.0 at pp.

9, 209; Bharadwaj 136 at [0093]-[0094], Figure 1; Lim 066 at [0209]-[0211]; IEEE 802.11-15/0132r15 at pp. 2–3; Verma 310 at [0029]; Hedayat 526 at [0112]; Bharadwaj 718 at [0111].

It was well-known to one of skill in the art before the time of the '210 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, for a preamble of an HE MU PPDU to include fields such as a high efficiency signal A field (HE-SIG-A) and high efficiency signal B field (HE-SIG-B). *See, e.g.*, IEEE 802.11ac at § 22.3.1; IEEE P802.11ax/D1.0 at pp. 240-241, 267, 272, 285-286; Bharadwaj 136 at [102]-[103], Figure 2, Figure 3; Lim 066 at [0145]-[0148]; IEEE 802.11-15/0132r15 at pp. 8–9; Verma 310 at [0050]; Hedayat 526 at [0058]; Bharadwaj 718 at [0058].

It was well-known to one of skill in the art before the time of the '210 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, to decode the received HE MU PPDU based on information obtained from the preamble. *See, e.g.*, IEEE 802.11ac at § 22.3.8.3.3; IEEE P802.11ax/D1.0 at pp. 272, 285-286; Bharadwaj 136 at [0098], Figure 1; Lim 066 at [0145], Figure 23A; IEEE 802.11-15/0132r15 at pp. 8–9; Verma 310 at [0006]; Hedayat 526 at [0058]; Bharadwaj 718 at [0091].

It was well-known to one of skill in the art before the time of the '210 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, when a SIG-B compression field of the HE-SIG-A indicates full bandwidth multi User-Multiple Input Multiple Output (MU-MIMO) transmission, a format of user field(s) included in a user specific field of the HE-SIG-B could be identified based on a number of MU-MIMO users indicated by a subfield of the HE-SIG-A. *See, e.g.*, IEEE 802.11ac at § 22.3.8.3.3; IEEE P802.11ax/D1.0 at pp. 238-239; Bharadwaj 136 at [162], Figure 15B; Lim 066 at [0172]-[0173]; IEEE 802.11-15/0132r15 at pp. 8–9; Verma 310 at [0029]; Hedayat 526 at [0058]; Bharadwaj 718

at [0062].

It was well-known to one of skill in the art before the time of the '210 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, when the number of MU-MIMO users indicates two or more users, the user specific field of the HE-SIG-B includes user fields for MU-MIMO allocation. *See, e.g.*, IEEE 802.11ac at § 22.3.1; IEEE P802.11ax/D1.0 at pp. 293-294; Bharadwaj 136 at Figure 15B; Lim 066 at [155]; IEEE 802.11-15/0132r15 at pp. 8-9; Verma 310 at [0050]; Hedayat 526 at [0058]; Bharadwaj 718 at [0099].

It was well-known to one of skill in the art before the time of the '210 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, when the number of MU-MIMO users indicates a single user, the user specific field of the HE-SIG-B includes one user field for non-MU-MIMO allocation. *See, e.g.*, IEEE 802.11ac § 22.3.1; IEEE P802.11ax/D1.0 at p. 296; Bharadwaj 136 at [0126]; Lim 066 at [155]; IEEE 802.11-15/0132r15 at pp. 10-12; Verma 310 at [0050]; Hedayat 526 at [0058]; Bharadwaj 718 at [0098].

It was well-known to one of skill in the art before the time of the '210 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, the user field(s) for MU-MIMO allocation includes a spatial configuration field indicating the total number of spatial streams in an MU-MIMO allocation and the number of spatial streams for each terminal in the MU-MIMO allocation, and wherein the user field for non-MU-MIMO allocation includes a number of space time streams (NSTS) field. *See, e.g.*, IEEE 802.11ac at Table 22-12; IEEE P802.11ax/D1.0 at 296; Bharadwaj 136 at [0098]; Lim 066 at [0155]; IEEE 802.11-15/0132r15 at pp. 8-9; Verma 310 at [0010]; Hedayat 526 at [0072]; Bharadwaj 718 at

[0108].

It was well-known to one of skill in the art before the time of the '210 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, the user field(s) for non-MU-MIMO allocation is a user field based on orthogonal frequency division multiple access (OFDMA) allocation. *See, e.g.*, IEEE P802.11ax/D1.0 at p. 209; Bharadwaj 136 at [0098]; Lim 066 at [155]; IEEE 802.11-15/0132r15 at pp. 8–9; Verma 310 at [0050]; Hedayat 526 at [0058]; Bharadwaj 718 at [0108].

It was well-known to one of skill in the art before the time of the '210 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, the number of MU-MIMO users is indicated by a number of HE-SIG-B symbols field in the HE-SIG-A. *See, e.g.*, IEEE P802.11ax/D1.0 at pp. 9, 209; Bharadwaj 136 at [0093]-[0094], Figure 1; Lim 066 at [0148]; IEEE 802.11-15/0132r15 at pp. 8–9; Verma 310 at [0039]; Hedayat 526 at [0022]; Bharadwaj 718 at [0022].

It was well-known to one of skill in the art before the time of the '210 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, the HE-SIG-A includes the SIG-B compression field and the specific subfield, and wherein the SIG-B compression field indicates whether full bandwidth MU-MIMO transmission is used, and when the SIG-B compression field indicates full bandwidth MU-MIMO transmission, the specific subfield indicates the number of MU-MIMO users. *See, e.g.*, IEEE 802.11ac at Table 22-12; IEEE P802.11ax/D1.0 at 238-239; Bharadwaj 136 at [0093]-[0094]; Lim 066 at [0209]-[0211]; IEEE 802.11-15/0132r15 at pp. 8–9; Verma 310 at [0050]; Hedayat 526 at [0058]; Bharadwaj 718 at [0022].

In addition, the prior art also provided sets of finite, identified, predictable solutions for

known problems that would have been obvious to those of ordinary skill to try with a reasonable expectation of success. For example, it would have been obvious to one of skill in the art at the time that signaling for MU-MIMO transmissions could be achieved by utilizing fields within the preamble of a frame, as including various information related to the processing of the frame within fields in the preamble of a frame was common, it would have been obvious to one of skill in the art to try and modify existing communication frames such that they include such information allowing signaling for MU-MIMO transmissions. Such a modification would have yielded the predictable result of being able to determine when a frame was an MU-MIMO frame.

The prior art references provide motivations to combine because they describe the field of the Asserted Patents, teach improvements, explain desired features, and even expressly state that one of skill in the art would be able to apply their teachings to related systems or methods. *See, e.g.*, Bharadwaj 136 at [0005] (“A wireless network, for example a Wireless Local Area Network (WLAN), such as a Wi-Fi network (IEEE 802.11) may include an access point (AP) that may communicate with one or more stations (STAs) or mobile devices.”); Lim 066 at [0001] (“The present specification relates to a wireless LAN system, and more particularly, to a method for transmitting or receiving a signal on the basis of MU-MIMO in a wireless LAN system and a station for performing the same.”); Bharadwaj 718 at [0002] (“The present disclosure, for example, relates to wireless communication systems, and more particularly to techniques for resource allocation signaling in a high efficiency wireless local area network (WLAN) preamble.”); Verma 310 at [0002] (“The present disclosure relates to wireless communication, and more specifically to full bandwidth multicast indication to multiple users.”); Hedayat 526 at [0002] (“The present description relates in general to wireless communication systems and methods, and more particularly to, for example, without limitation, aggregation methods and systems for multi-user

(MU) multiple-input/multiple-output (MIMO) or orthogonal frequency-division multiple access (OFDMA) operation.”).

Further, the prior art references provide motivations to combine because they explicitly suggest utilizing the teachings and disclosures of other references.

In accordance with these advances, the prior art could have been combined according to methods known to those of ordinary skill within the field of the '210 patent to yield predictable results. The use of information contained in a field within the frame to process the frame could have been predictably achieved by one of ordinary skill at the time of the alleged invention. One of ordinary skill in the art would have been aware of these various applications, including methods for signaling that a packet is a multi-user packet. Those of ordinary skill in the art could have employed known techniques to improve similar prior art devices in the same way as claimed in the '210 patent.

Moreover, it would have been obvious to one of ordinary skill in the art at the time to combine the teachings of a document submitted as part of the IEEE 802.11ax standard development process (*e.g.*, working group documents, draft specifications, technical submissions, working group meeting presentations) with a system implementing an older IEEE standard such as IEEE 802.11ac, IEEE 802.11-2012, or a draft standard. For example, one of ordinary skill in the art would have been motivated to combine the teachings of a document submitted as part of the IEEE 802.11ax standard development process with a real wireless communications hardware/device to yield a working wireless communication system with the improvements and benefits offered by the new standard. In another example, one of ordinary skill in the art would have been motivated to simply substitute an older version of a wireless module implemented on a wireless device/hardware with one implementing a newer version of the standard that addresses

the shortcomings of the older standard. In yet another example, one of ordinary skill in the art would have been motivated to apply the known techniques disclosed in the documents submitted as part of the IEEE 802.11ax standard development process to an older wireless communications system implementing IEEE 802.11ax to yield the predictable results of improved wireless communication performance. Further, one of ordinary skill in the art would have been prompted by the teachings in the documents submitted as part of the IEEE 802.11ax standard development process to modify the wireless communications hardware/device to meet market demands for improved wireless performance.

It would have been obvious to one of ordinary skill in the art at the time to combine teachings of a document submitted as part of IEEE 802.11ax standard development process (e.g., working group documents, draft specification, technical submissions, working group meeting presentations) with teachings of a reference pertaining to hardware/devices for wireless communications (e.g., wireless local area network (WLAN)). For instance, a person of ordinary skill would have been motivated to combine the teachings of a document submitted as part of the IEEE 802.11ax standard development process—which generally address narrow technical issues and solutions—with references disclosing WLAN devices and hardware more broadly (e.g., devices with transceivers and configurable processors) to yield a blueprint for a working device that addresses the technical problem disclosed in the IEEE 802.11ax standard development document. Such a combination amounts to combining known prior art elements according to known methods to yield predictable results. Further, to the extent any prior art WLAN devices/hardware documents disclose deficiencies or technical issues with the state of the art, one of ordinary skill in the art would have been prompted to combine these references with the teachings in documents submitted as part of the IEEE 802.11ax standard development process to

meet market demands for improved wireless performance. This disclosure of deficiencies and/or technical issues would provide a teaching, suggestion, or motivation for a person of ordinary skill to modify the prior art reference based on the IEEE 802.11ax standard working documents.

It would have been obvious to one of ordinary skill in the art at the time to combine teachings of a document submitted as part of IEEE 802.11ax standard development process (*e.g.*, working group documents, draft specification, technical submissions, working group meeting presentations) with teachings of another document submitted as part of IEEE 802.11ax standard development process. For instance, considering the common underlying technical subject matter of the IEEE 802.11ax standard development documents, it would be obvious to one of ordinary skill to try combining the teachings of multiple documents. In doing so, a person of ordinary skill would have a reasonable expectation of success. Moreover, given the common goals and design incentives among authors of IEEE 802.11ax standard development documents (*e.g.*, improving WLAN device performance), a person of ordinary skill would find it obvious to combine the technical solutions disclosed in multiple IEEE 802.11ax standard development documents. Further, given the additive nature of the IEEE standard development process, a person of ordinary skill would have understood that various IEEE 802.11ax standard development documents could be combined to create a cohesive solution. A person of ordinary skill would have a reasonable expectation of success in combining the teachings in these documents.

Any reference or combination of references that anticipates or makes obvious an asserted independent claim also makes obvious any asserted claim dependent on that independent claim, as the element of each dependent '210 patent Asserted Claim was known by a person of ordinary skill at the time of the alleged invention, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, and it would have been obvious to

combine those known elements with the independent claims at least as a matter of common sense and routine innovation. Accordingly, Defendants contend that each Asserted Claim would have been obvious not only by the combinations described in these contentions, but also by any combination of references that renders obvious an Asserted Claim.

In addition to the specific examples of motivation provided above, Defendants reserve the right to rely on the disclosures of the references listed in Appendix B for additional motivation to combine. The above-identified examples of combinations are given merely to illustrate various motivations to combine and are not intended to provide an exhaustive list of every possible combination to which the motivation may apply. Defendants reserve the right to contend that the above-described motivations to combine apply to other combinations at the appropriate time, *i.e.*, in expert reports regarding invalidity.

For at least the reasons described above, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix B with any other reference or references listed in Appendix B along with the knowledge of one of ordinary skill in the art to arrive at the inventions claims in the '210 patent. For example, and without limitation, the Asserted Claims of the '210 patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Bharadwaj 136	<ul style="list-style-type: none"> <li>• Asserted Patents Admitted Prior Art (APA)</li> <li>• Lim 066</li> <li>• Verma 310</li> <li>• Hedayat 526</li> <li>• Bharadwaj 718</li> <li>• IEEE P802.11ax/D0.5</li> <li>• IEEE P802.11ax/D1.0</li> <li>• IEEE 802.11-2012, 802.11ac, and/or 802.11-2016</li> <li>• Knowledge of a person of ordinary skill</li> </ul>
Lim 066	<ul style="list-style-type: none"> <li>• Asserted Patents Admitted Prior Art (APA)</li> <li>• Bharadwaj 136</li> <li>• Verma 310</li> <li>• Hedayat 526</li> <li>• Bharadwaj 718</li> <li>• IEEE P802.11ax/D0.5</li> <li>• IEEE P802.11ax/D1.0</li> <li>• IEEE 802.11-2012, 802.11ac, and/or 802.11-2016</li> <li>• Knowledge of a person of ordinary skill</li> </ul>
IEEE P802.11ax/D1.0	<ul style="list-style-type: none"> <li>• Asserted Patents Admitted Prior Art (APA)</li> <li>• Bharadwaj 136</li> <li>• Lim 066</li> <li>• Verma 310</li> <li>• Hedayat 526</li> <li>• Bharadwaj 718</li> <li>• IEEE 802.11-2012, 802.11ac, and/or 802.11-2016</li> <li>• Knowledge of a person of ordinary skill</li> </ul>
IEEE 802.11ac	<ul style="list-style-type: none"> <li>• Asserted Patents Admitted Prior Art (APA)</li> <li>• Bharadwaj 136</li> <li>• Lim 066</li> <li>• Verma 310</li> <li>• Hedayat 526</li> <li>• Bharadwaj 718</li> <li>• IEEE 802.11-2012, 802.11ac, and/or 802.11-2016</li> <li>• IEEE P802.11ax/D0.5</li> <li>• IEEE P802.11ax/D1.0</li> <li>• Knowledge of a person of ordinary skill</li> </ul>

<b>Patent No. or Title (Primary Inventor/Author)</b>	<b>In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))</b>
IEEE P802.11ax/D0.5	<ul style="list-style-type: none"> <li>• Asserted Patents Admitted Prior Art (APA)</li> <li>• Bharadwaj 136</li> <li>• Lim 066</li> <li>• Verma 310</li> <li>• Hedayat 526</li> <li>• Bharadwaj 718</li> <li>• IEEE 802.11-2012, 802.11ac, and/or 802.11-2016</li> <li>• Knowledge of a person of ordinary skill</li> </ul>
Verma 310	<ul style="list-style-type: none"> <li>• Asserted Patents Admitted Prior Art (APA)</li> <li>• Lim 066</li> <li>• Bharadwaj 136</li> <li>• Hedayat 526</li> <li>• Bharadwaj 718</li> <li>• IEEE P802.11ax/D0.5</li> <li>• IEEE P802.11ax/D1.0</li> <li>• IEEE 802.11-2012, 802.11ac, and/or 802.11-2016</li> <li>• Knowledge of a person of ordinary skill</li> </ul>
Hedayat 526	<ul style="list-style-type: none"> <li>• Asserted Patents Admitted Prior Art (APA)</li> <li>• Lim 066</li> <li>• Bharadwaj 136</li> <li>• Verma 310</li> <li>• Bharadwaj 718</li> <li>• IEEE P802.11ax/D0.5</li> <li>• IEEE P802.11ax/D1.0</li> <li>• IEEE 802.11-2012, 802.11ac, and/or 802.11-2016</li> <li>• Knowledge of a person of ordinary skill</li> </ul>
Bharadwaj 718	<ul style="list-style-type: none"> <li>• Asserted Patents Admitted Prior Art (APA)</li> <li>• Lim 066</li> <li>• Bharadwaj 136</li> <li>• Verma 310</li> <li>• Hedayat 526</li> <li>• IEEE P802.11ax/D0.5</li> <li>• IEEE P802.11ax/D1.0</li> <li>• IEEE 802.11-2012, 802.11ac, and/or 802.11-2016</li> <li>• Knowledge of a person of ordinary skill</li> </ul>

As mentioned above, Defendants have not yet completed their search or discovery

to those of ordinary skill in the art.

**a) Obviousness Rationale**

For at least the reasons described in these contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those prior art references identified in Appendix C along with the knowledge of one of ordinary skill in the art to meet the limitations of the '281 patent Asserted Claims. Moreover, as mentioned above, Defendants have not yet completed their search or discovery concerning additional prior art. As such, Defendants' inclusion of exemplary combinations does not preclude them from identifying other invalidating combinations as appropriate, and Defendants reserve the right to identify additional specific combinations as well as to detail and explain such combinations.

To the extent not anticipated, the '281 patent Asserted Claims represent no more than the result of ordinary variations of the prior art. Defendants further believe that no showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, as each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of skill in the art. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415-16 (2007) (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an "expansive and flexible" approach). Indeed, the Supreme Court held that a person of ordinary skill in the art is "a person of ordinary creativity, not an automaton" and "in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 420-21. Nevertheless, in addition to the information contained elsewhere in these contentions, Defendants identify motivation and reason to combine the cited art.

One or more combinations of the prior art references identified in Appendix C would have been obvious because these references would have been combined using: known methods to yield

Date: February 13, 2025

Respectfully submitted,

/s/ Ralph A. Phillips

---

Michael J. McKeon  
DC Bar No. 459780  
mckeon@fr.com  
Ruffin B. Cordell  
TX Bar No. 04820550  
cordell@fr.com  
Ralph A. Phillips  
DC Bar No. 475571  
rphillips@fr.com  
Bryan J. Cannon  
DC Bar No. 1723657  
cannon@fr.com  
Payal Patel  
DC Bar No. 90019320  
ppatel@fr.com  
FISH & RICHARDSON, P.C.  
1000 Maine Ave., S.W., Ste. 1000  
Washington, DC 20024  
Telephone: 202-783-5070  
Facsimile: 202-783-2331

Thomas H. Reger II  
Texas Bar No. 24032992  
reger@fr.com  
Rodeen Talebi  
TX Bar No. 24103958  
talebi@fr.com  
FISH & RICHARDSON P.C.  
1717 Main Street, Suite 5000  
Dallas, TX 78766  
Telephone: 214-747-5070  
Facsimile: 214-747-2091

Aleksandr Gelberg  
CA Bar No. 279989  
gelberg@fr.com  
John-Paul Fryckman  
CA Bar No. 317591  
fryckman@fr.com  
FISH & RICHARDSON, P.C.  
12860 El Camino Real, Ste. 400  
San Diego, CA 92130

Telephone: 858-678-5070  
Facsimile: 858-678-5099

Bailey K. Benedict  
TX Bar No. 24083139  
benedict@fr.com  
FISH & RICHARDSON, P.C.  
909 Fannin Street, Ste. 2100  
Houston, TX 77010  
Telephone: 713-654-5300  
Facsimile: 713-652-0109

Melissa R. Smith  
Texas Bar No. 24001351  
GILLAM & SMITH, LLP  
303 South Washington Avenue  
Marshall, Texas 75670  
Telephone: 903-934-8450  
Facsimile: 903-934-9257  
Email: melissa@gillamsmithlaw.com

*Attorneys for Defendants  
Samsung Electronics Co., Ltd., and  
Samsung Electronics America, Inc.*

/s/ Lawrence R. Jarvis

Benjamin C. Elacqua (Lead Counsel)  
Texas Bar Number 24055443  
elacqua@fr.com  
FISH & RICHARDSON, P.C.  
909 Fannin Street, Suite 2100  
Houston, TX 77010  
Telephone: (713) 654-5300  
Facsimile: (713-652-0109

Lawrence R. Jarvis  
GA Bar No. 102116  
jarvis@fr.com  
FISH & RICHARDSON, P.C.  
1180 Peachtree St. NE, Fl. 21  
Atlanta, GA 30309  
Telephone: (404) 892-5005  
Facsimile: (404) 892-5002

Melissa R. Smith  
Texas Bar No. 24001351  
GILLAM & SMITH, LLP  
303 South Washington Avenue Marshall,  
Texas 75670  
Telephone: (903) 934-8450  
Facsimile: (903) 934-9257  
Email: melissa@gillamsmithlaw.com

*Attorneys for Defendant HP Inc.*

**CERTIFICATE OF SERVICE**

The undersigned hereby certifies that a true and correct copy of the foregoing document has been served on February 13, 2025, to all counsel of record via e-mail.

*/s/ Ralph A. Phillips* \_\_\_\_\_