UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.
Petitioner

v.

LYNK LABS, INC.
Patent Owner

Patent No. 11,019,697

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 11,019,697

TABLE OF CONTENTS

I. INTRODUCTION 1

II. MANDATORY NOTICES 1

III. PAYMENT OF FEES 2

IV. GROUNDS FOR STANDING..2

V. PRECISE RELIEF REQUESTED AND GROUNDS 2

VI. LEVEL OF ORDINARY SKILL 4

VII. OVERVIEW OF THE ’697 PATENT 5

VIII. CLAIM CONSTRUCTION 6

IX. DETAILED EXPLANATION OF GROUNDS..7

A. Ground 1: Claims 1-5 Are Obvious Over *Oba*, *Sato*, *Gillespie*, and *Hara* 7

1. Claim 1 7

2. Claim 3 24

3. Claim 4 24

4. Claim 5 25

5. Claim 2 32

B. Ground 2: Claim 6 Is Obvious Over *Oba*, *Sato*, *Gillespie*, *Hara*, and *Yang* 32

1. Claim 6 32

C. Ground 3: Claims 14, 19, and 20 Are Obvious Over *Oba* and *Hara* 34

1. Claim 14 34

2. Claim 19 46

3. Claim 20 48

D. Ground 4: Claim 22 Is Obvious Over *Oba*, *Hara*, and *Jensen* 49

1. Claim 22 49

E. Ground 5: Claims 15-16 Are Obvious Over *Oba*, *Hara*, and *Sontag* 52

1. Claim 15 52
2. Claim 16 55

F. Ground 6: Claims 17-18 Are Obvious Over *Oba*, *Hara*, *Sontag*, and *Gillespie* 56

1. Claim 17 56
2. Claim 18 57

G. Ground 7: Claims 7-9 Are Obvious Over *Oba*, *Zhang*, and *Hara* 59

1. Claim 7 59
2. Claim 8 72
3. Claim 9 73

H. Ground 8: Claims 10-11 Are Obvious Over *Oba*, *Zhang*, *Hara,* and *Sato* 74

1. Claim 10 74
2. Claim 11 75

I. Ground 9: Claims 12-13 Are Obvious Over *Oba, Zhang*, *Hara, Sato*, and *Gillespie* 75

1. Claim 12 75
2. Claim 13 76

J. Ground 10: Claim 21 Is Obvious Over *Oba*, *Zhang*, *Hara*, and *Jensen* 78

1. Claim 21 78

X. DISCRETIONARY DENIAL IS NOT APPROPRIATE HERE 79

XI. CONCLUSION 83

LIST OF EXHIBITS

Ex. 1001	U.S. Patent No. 11,019,697
Ex. 1002	Declaration of R. Jacob Baker, Ph.D., P.E.
Ex. 1003	Curriculum Vitae of R. Jacob Baker, Ph.D., P.E.
Ex. 1004	Prosecution History of U.S. Patent No. 11,019,697
Ex. 1005	U.S. Patent Application Publication No. 2004/0263084 ("*Mor*")
Ex. 1006	Watson, J., Mastering Electronics, Third Ed., McGraw-Hill, Inc. (1990)
Ex. 1007	Sedra *et al.*, Microelectronic Circuits, Fourth Ed., Oxford University Press (1998)
Ex. 1008	U.S. Patent No. 6,879,319 ("*Cok*")
Ex. 1009	U.S. Patent No. 7,226,442 ("*Sheppard*")
Ex. 1010	GB Patent Application Publication No. 2202414 ("*Logan*")
Ex. 1011	U.S. Patent No. 6,936,936 ("*Fischer*")
Ex. 1012	U.S. Patent No. 6,686,697 ("*Cho*")
Ex. 1013	U.S. Patent No. 6,078,148 ("*Hochstein*")
Ex. 1014	U.S. Patent Application Publication No. 2002/0081982 ("*Schwartz*")
Ex. 1015	U.S. Patent No. 4,350,973 ("*Petryk*")
Ex. 1016	U.S. Patent No. 4,797,651 ("*Havel*")
Ex. 1017	Hinton *et al.*, "The Microarchitecture of the Pentium® 4 Processor," *Intel Tech. J.* Q1, 2001
Ex. 1018	IEEE 802.15.1, Part 15.1 (2002)
Ex. 1019	U.S. Patent No. 6,844,675 ("*Yang*")
Ex. 1020	U.S. Patent No. 4,816,698 ("*Hook*")

Ex. 1021	U.S. Patent Application Publication No. 2003/0137258 ("*Piepgras*")
Ex. 1022	U.S. Reissue Patent No. RE33285 ("*Kunen*")
Ex. 1023	U.S. Patent No. 5,324,316 ("*Schulman*")
Ex. 1024	U.S. Patent No. 10,575,376
Ex. 1025	U.S. Patent No. 10,492,252
Ex. 1026	U.S. Patent No. 10,492,251
Ex. 1027	U.S. Patent No. 10,091,842
Ex. 1028	U.S. Patent No. 9,615,420
Ex. 1029	U.S. Patent No. 9,198,237
Ex. 1030	WO2011082168 (Application No. PCT/US2010/062235)
Ex. 1031	U.S. Patent No. 8,179,055
Ex. 1032	U.S. Patent No. 8,148,905
Ex. 1033	U.S. Patent No. 7,489,086
Ex. 1034	WO2010138211 (Application No. PCT/US2010/001597)
Ex. 1035	WO2010126601 (Application No. PCT/US2010/001269)
Ex. 1036	U.S. Provisional Application No. 61/333,963
Ex. 1037	U.S. Provisional Application No. 61/284,927
Ex. 1038	U.S. Provisional Application No. 61/335,069
Ex. 1039	U.S. Provisional Application No. 60/997,771
Ex. 1040	U.S. Provisional Application No. 60/547,653
Ex. 1041	U.S. Provisional Application No. 60/559,867
Ex. 1042	U.S. Provisional Application No. 61/217,215

Ex. 1043	U.S. Provisional Application No. 61/215,144
Ex. 1044	U.S. Patent No. 6,600,243 ("*Hara*")
Ex. 1045	U.S. Patent No. 6,988,053 ("*Namaky*")
Ex. 1046	U.S. Patent Application Publication No. 2004/0207484 ("*Forrester*")
Ex. 1047	U.S. Patent No. 7,161,590 ("*Daniels*")
Ex. 1048	Australian Patent Application Publication No. AU2003100206 ("*Birrell*")
Ex. 1049	U.S. Patent Publication No. 2002/0021573 ("*Zhang-573*")
Ex. 1050	U.S. Patent Publication No. 2003/0122502 ("*Clauberg*")
Ex. 1051	U.S. Patent Publication No. 2005/0128751 ("*Roberge*")
Ex. 1052	U.S. Patent Publication No. 2002/0195968 ("*Sanford*")
Ex. 1053	WO 03/009535 A1 (Application No. PCT/JP020/07198) (Japanese original and English translation, including translator's certification) ("*Oba*")[1]
Ex. 1054	U.S. Patent No. 8,326,225 ("*Oba II"*)
Ex. 1055	Universal Serial Bus Specification Revision 2.0, April 27, 2000
Ex. 1056	U.S. Patent No. 6,891,786 ("*Sato*")
Ex. 1057	U.S. Patent No. 5,293,494 ("*Saito*")

[1] References to Ex. 1053 are to English translation document page:line numbers. Further, *Oba* (Ex. 1053) is the published priority application relied on by *Oba II* (Ex. 1054, 1), which includes substantially the same specification and figures as *Oba* (Ex. 1053). (Ex. 1053, 1 (verified statement of translator).)

Ex. 1058	U.S. Patent No. 6,814,642 ("*Siwinski*")
Ex. 1059	U.S. Patent Application Publication No. 2003/0076306 ("*Zadesky*")
Ex. 1060	U.S. Patent Application Publication No. 2003/0231168 ("*Bell*")
Ex. 1061	U.S. Patent No. 6,643,336 ("*Hsieh*")
Ex. 1062	U.S. Patent Application Publication No. 2002/0158590 ("*Saito-590*")
Ex. 1063	U.S. Patent No. 6,907,089 ("*Jensen*")
Ex. 1064	U.S. Patent No. 5,532,641 ("*Balasubramanian*")
Ex. 1065	U.S. Patent No. 4,654,880 ("*Sontag*")
Ex. 1066	U.S. Patent No. 7,176,885 ("*Troxell*")
Ex. 1067	U.S. Patent Application Publication No. 2003/0146897 ("*Hunter*")
Ex. 1068	U.S. Patent No. 6,439,731 ("*Johnson*")
Ex. 1069	U.S. Patent No. 7,348,957 ("*Cui*")
Ex. 1070	U.S. Patent No. 4,573,766 ("*Bournay*")
Ex. 1071	U.S. Patent Application Publication No. 2002/0191029 ("*Gillespie*")
Ex. 1072	U.S. Patent Application Publication No. 2002/0080010 ("*Zhang*")
Ex. 1073	Judge Albright's (W.D. Tex.) "Order Governing Proceedings - Patent Cases 062421.pdf" available at https://www.txwd.uscourts.gov/judges-information/standing-orders/
Ex. 1074	Complaint (Dkt. #1) in *Lynk Labs, Inc. v. Samsung Elecs. Co., Ltd.*, No. 6:21-cv-00526 (W.D. Tex. May 25, 2021)
Ex. 1075	First Amended Complaint (Dkt. #19) in *Samsung Elecs. Co., Ltd.*, *v. Lynk Labs, Inc.*, No. 1:21-cv-2665 (N.D. Ill. May 25, 2021)
Ex. 1076	Complaint (Dkt. #1) in *Samsung Elecs. Co., Ltd.*, *v. Lynk Labs, Inc.*, No. 1:21-cv-2665 (N.D. Ill. May 17, 2021)

Ex. 1077	Case docket in *Samsung Elecs. Co., Ltd.*, *v. Lynk Labs, Inc.*, No. 1:21-cv-2665 (N.D. Ill.) (accessed Sept. 6, 2021)
Ex. 1078	Case docket in *Lynk Labs, Inc. v. Samsung Elecs. Co., Ltd.*, No. 6:21-cv-00526 (W.D. Tex.) (accessed Sept. 2, 2021)
Ex. 1079	Judge Albright's (W.D. Tex.) "Amended Standing Order Regarding Motion for Inter District Transfer 060821.pdf" available at https://www.txwd.uscourts.gov/judges-information/standing-orders/
Ex. 1080	Lynk Labs, Inc.'s Preliminary Infringement Contentions in *Samsung Elecs. Co., Ltd. v. Lynk Labs, Inc.*, No. 1:21-cv-2665 (N.D. Ill.) (served July 21, 2021)
Ex. 1081	Lynk Labs, Inc.'s Exemplary Infringement Charts for U.S. Patent No. 11,019,697 (Apps. A-7, B-7, C-5, D-7) accompanying Lynk Labs, Inc.'s Preliminary Infringement Contentions in *Samsung Elecs. Co., Ltd. v. Lynk Labs, Inc.*, No. 1:21-cv-2665 (N.D. Ill.) (served July 21, 2021)
Ex. 1082	Lynk Labs, Inc.'s Answer and Counterclaims (Dkt. #51) in *Samsung Elecs. Co., Ltd.*, *v. Lynk Labs, Inc.*, No. 1:21-cv-2665 (N.D. Ill. Aug. 3, 2021)
Ex. 1083	Notification of Docket Entry (Dkt. #50) in *Samsung Elecs. Co., Ltd.*, *v. Lynk Labs, Inc.*, No. 1:21-cv-2665 (N.D. Ill. July 27, 2021)
Ex. 1084	Order (Dkt. #57) in *Samsung Elecs. Co., Ltd.*, *v. Lynk Labs, Inc.*, No. 1:21-cv-2665 (N.D. Ill. Aug. 19, 2021)
Ex. 1085	Samsung Electronics America, Inc.'s Motion (i) To Dismiss, Transfer, or Stay Under The First-To-File Rule, and (ii) To Dismiss or Transfer for Improper Venue and/or Under Section 1404(a) (Dkt. #15) in *Lynk Labs, Inc. v. Samsung Elecs. Co., Ltd.*, No. 6:21-cv-00526 (W.D. Tex. July 21, 2021)
Ex. 1086	First Amended Complaint for Patent Infringement (Dkt. #11) in *Lynk Labs, Inc. v. Samsung Elecs. Co., Ltd.*, No. 6:21-cv-00526 (W.D. Tex. June 9, 2021)

Ex. 1087	Lynk Labs, Inc.'s Amended Preliminary Infringement Contentions in *Samsung Elecs. Co., Ltd. v. Lynk Labs, Inc.*, No. 1:21-cv-2665 (N.D. Ill.) (served Aug. 31, 2021)
Ex. 1088	Lynk Labs, Inc.'s Exemplary Infringement Charts for U.S. Patent No. 11,019,697 (Apps. A-7, B-7, C-5, D-7) accompanying Lynk Labs, Inc.'s Amended Preliminary Infringement Contentions in *Samsung Elecs. Co., Ltd. v. Lynk Labs, Inc.*, No. 1:21-cv-2665 (N.D. Ill.) (served Aug. 31, 2021)
Ex. 1089	Estimated Patent Case Schedule for Northern District of Illinois (available at https://www.ilnd.uscourts.gov/_assets/_documents/_forms/_judges/Pacold/Estimated%20Patent%20Schedule.pdf)

I. INTRODUCTION

Samsung Electronics Co., Ltd. ("Petitioner") requests *inter partes* review of claims 1-22 ("challenged claims") of U.S. Patent No. 11,019,697 ("the '697 patent") (Ex. 1001) assigned to Lynk Labs, Inc. ("PO"). For the reasons below, the challenged claims should be found unpatentable and canceled.

II. MANDATORY NOTICES

Real Parties-in-Interest: Petitioner identifies the following as the real parties-in-interest: Samsung Electronics Co., Ltd., Samsung Electronics America, Inc.

Related Matters: The '697 patent is at issue in the following matters:

- *Samsung Electronics Co., Ltd. v. Lynk Labs, Inc.*, No. 1-21-cv-02665 (N.D. Ill.) (seeking declaratory judgment of non-infringement as to the '697 patent and also U.S Patent Nos. 10,492,252, 10,499,466, 10,506,674, 10,966,298, 10,492,251, 10,750,583, 10,687,400, and 10,517,149) ("Illinois Litigation");
- *Lynk Labs, Inc. v. Samsung Electronics Co., Ltd.*, No. 6-21-cv-00526 (W.D. Tex.) ("Texas Litigation").

The '697 patent claims priority to two provisional applications (U.S. Provisional Application Nos. 60/574,653 filed February 25, 2004 and 60/559,867 filed April 6, 2004) to which U.S. Patent No. 8,531,118, which was at issue in IPR2016-01133, also claims priority.

Counsel and Service Information: Lead counsel: Naveen Modi (Reg. No. 46,224), and Backup counsel are (1) Joseph E. Palys (Reg. No. 46,508), (2) Arvind Jairam (Reg. No. 62,759), (3) Howard Herr (*pro hac vice* admission to be requested). Service information is Paul Hastings LLP, 2050 M St., Washington, D.C., 20036, Tel.: 202.551.1700, Fax: 202.551.1705, email: PH-Samsung-LynkLabs-IPR@paulhastings.com. Petitioner consents to electronic service.

III. PAYMENT OF FEES

The PTO is authorized to charge any fees due during this proceeding to Deposit Account No. 50-2613.

IV. GROUNDS FOR STANDING

Petitioner certifies the ’697 patent is available for review and Petitioner is not barred or estopped from requesting review on the grounds identified herein.

V. PRECISE RELIEF REQUESTED AND GROUNDS

Claims 1-22 should be canceled as unpatentable based on the following grounds:

Ground 1: Claims 1-5 are unpatentable under pre-AIA 35 U.S.C. § 103(a) as being obvious over *Oba*, *Sato*, *Gillespie*, and *Hara*;

<u>Ground 2</u>: Claim 6 is unpatentable under § 103(a) as being obvious over *Oba*, *Sato*, *Gillespie*, *Hara*, and *Yang*;

<u>Ground 3</u>: Claims 14, 19, and 20 are unpatentable under § 103(a) as being obvious over *Oba* and *Hara*;

<u>Ground 4</u>: Claim 22 is unpatentable under § 103(a) as being obvious over *Oba*, *Hara*, and *Jensen*;

<u>Ground 5</u>: Claims 15-16 are unpatentable under § 103(a) as being obvious over *Oba*, *Hara*, and *Sontag*;

<u>Ground 6</u>: Claims 17-18 are unpatentable under § 103(a) as being obvious over *Oba*, *Hara*, *Sontag*, and *Gillespie*;

<u>Ground 7</u>: Claims 7-9 are unpatentable under § 103(a) as being obvious over *Oba*, *Zhang*, and *Hara*;

<u>Ground 8</u>: Claims 10-11 are unpatentable under § 103(a) as being obvious over *Oba*, *Zhang*, *Hara,* and *Sato*;

<u>Ground 9</u>: Claims 12-13 are unpatentable under § 103(a) as being obvious over *Oba, Zhang, Hara, Sato*, and *Gillespie*; and

<u>Ground 10</u>: Claim 21 is unpatentable under § 103(a) as being obvious over *Oba*, *Zhang*, *Hara*, and *Jensen*.

The application for the ’697 patent was filed January 10, 2020, and claims priority to February 25, 2004. Without conceding the priority claim, for purposes of this proceeding, Petitioner assumes the critical date is February 25, 2004.

Oba published January 30, 2003 and thus is prior art at least under § 102(a). *Hara* issued from an application filed January 28, 2000, *Sato* issued from an application filed November 28, 2001, *Yang* issued from an application filed May 28, 2003, and *Jensen* issued from an application filed November 14, 2001; thus, each qualifies as prior art at least under § 102(e). *Zhang* published June 27, 2002, *Gillespie* published December 19, 2002, and *Sontag* issued March 31, 1987; thus, each qualifies as prior art at least under § 102(b).

None of these references were considered during prosecution. (*See generally* Ex. 1004.)

VI. LEVEL OF ORDINARY SKILL

A person of ordinary skill in the art as of the claimed priority date of the ’697 patent (“POSITA”) would have had at least a bachelor’s degree in electrical engineering, computer engineering, computer science, physics, or the equivalent, and two or more years of experience with LED devices and/or related circuit design, or a related field. (Ex. 1002, ¶¶20-21.)[2] More education can supplement practical experience and vice versa. (*Id.*)

VII. OVERVIEW OF THE '697 PATENT

While the '697 patent purports to identify an invention directed to an LED device/system having various features (*e.g.,* Ex. 1001, 4:25-10:67, 13:36-14:2), the claims are broadly directed to generic apparatuses having compilations of familiar one-off components/features that provide no novel functionality to advance the art. Indeed, the specification and claims provide no criticality concerning components like an LED circuit, data receiver, transmission conductor(s), touch circuit, circuit board, etc. in the claimed "apparatus." Such compilations of conventional features as recited in the claims were demonstrably obvious as explained below. *See In re Gorman*, 933 F.2d 982, 986 (Fed. Cir. 1991) ("The criterion ... is not the number of references, but what they would have meant to a person of ordinary skill in the field of the invention."). (*Infra* Section IX; Ex. 1002, ¶¶56-58; *see also id.*, ¶¶22-55 (citing, *inter alia*, Exs. 1006, 1020-1022, 1048, 1050-1052, 1062), 60-198; *see generally* Ex. 1004; *id.*, 2242-2248, 2254-2259; Exs. 1024-1043.)

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[2] Petitioner submits the declaration of R. Jacob Baker, Ph.D., P.E. (Ex. 1002), an expert in the field of the '697 patent. (Ex. 1002, ¶¶1-19; Ex. 1003.)

VIII. CLAIM CONSTRUCTION

The Board only construes the claims when necessary to resolve the underlying controversy. *Toyota Motor Corp. v. Cellport Systems, Inc.*, IPR2015-00633, Paper No. 11 at 16 (Aug. 14, 2015) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). For purposes of this proceeding, Petitioner believes that no special constructions are necessary to assess whether the challenged claims are unpatentable over the asserted prior art.[3] (Ex. 1002, ¶59.)

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[3] Petitioner reserves all rights to raise claim construction and other arguments, including challenges under 35 U.S.C. §§ 101 or 112, in district court as relevant to those proceedings. *See, e.g.*, *Target Corp. v. Proxicom Wireless, LLC*, IPR2020-00904, Paper 11 at 11–13 (Nov. 10, 2020). A comparison of the claims to any accused products in litigation may raise controversies that are not presented here given the similarities between the references and the patent.

IX. DETAILED EXPLANATION OF GROUNDS

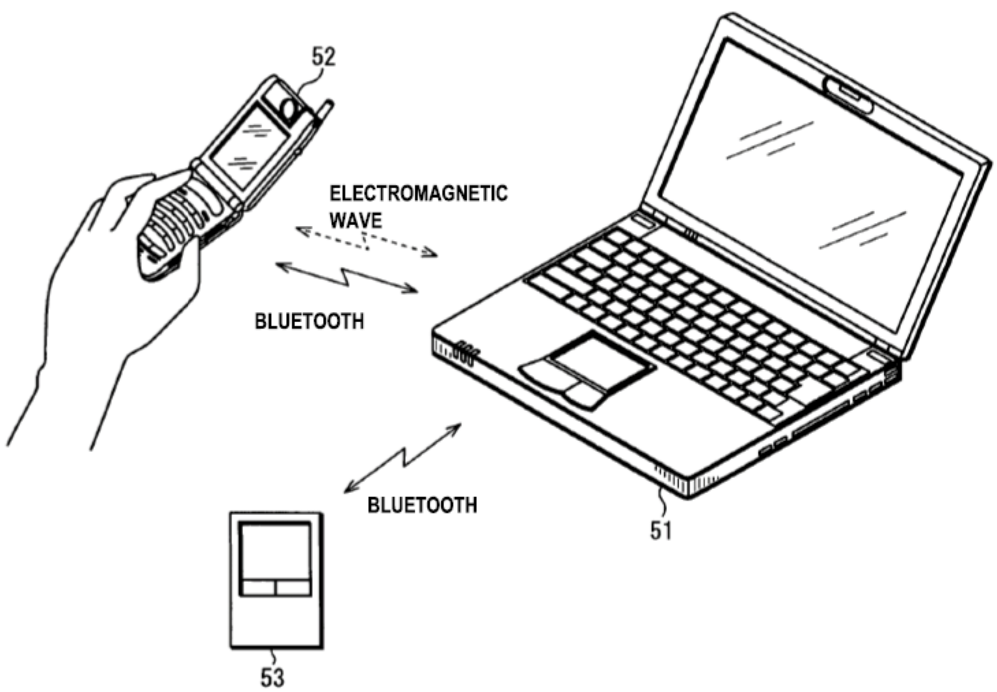
A. Ground 1: Claims 1-5 Are Obvious Over *Oba*, *Sato*, *Gillespie*, and *Hara*[4]

1. Claim 1

a) An apparatus comprising:

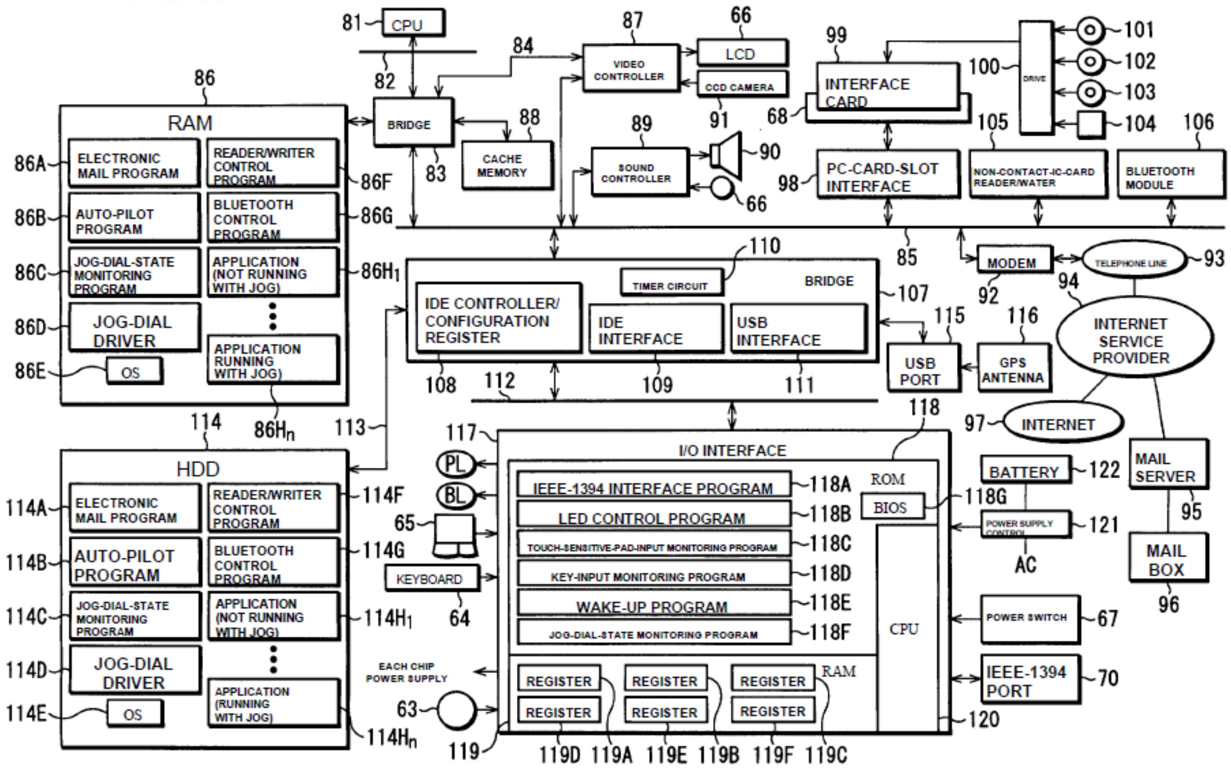
Oba discloses a portable personal computer 51 ("notebook" computer), which is an "apparatus" as claimed. (Ex. 1053, FIGS. 6, 11, 14, 16, 17:22-19:13, 20:9-26:8; Ex. 1002, ¶¶88-89; *infra* Sections IX.A.1(b)-(h).)

FIG. 6



[4] Claim 2 is addressed after claim 5 for reasons stated in Section IX.A.5.

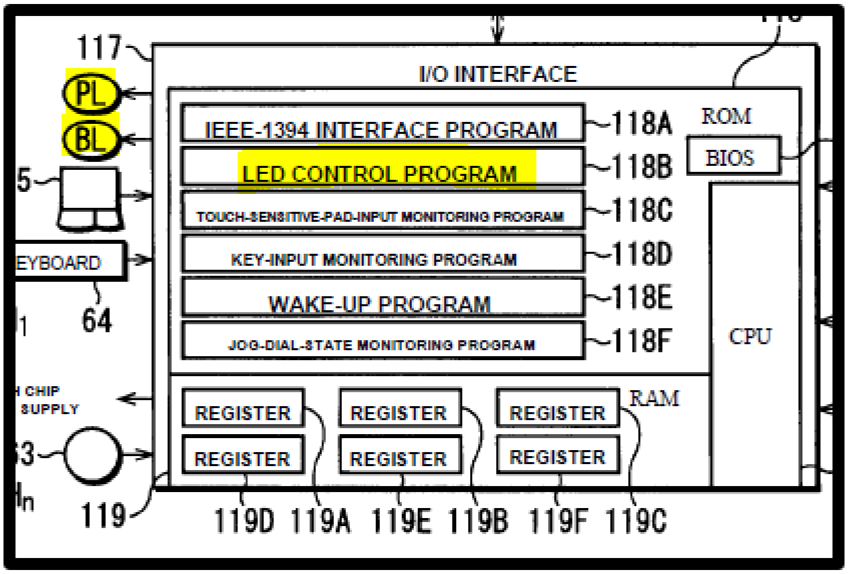
FIG. 11



(Ex. 1053, FIGS. 6, 11.)

b) at least one LED;

Oba discloses this limitation. (Ex. 1002, ¶¶90-91.) Computer 51 includes LED lamps (e.g., PL, BL, ML), which illuminate in accordance with certain operations. (Ex. 1053, 19:14-18, 24:9-11, 25:6-10, 25:16-19.)



(*Id.*, FIG. 11 (excerpted/annotated); Ex. 1002, ¶90.)

In addition, as explained below for claim 5 (Section IX.A.4), it also would have been obvious to modify *Oba* to provide an OLED touch display or LED backlight touch display in view of *Gillespie*, and thus, the combination also discloses/suggests "at least one LED" via the modified LED-based touch display.[5] (Ex. 1002, ¶91.)

[5] PO relies on an LED display, LED flash, and LED backlights for this limitation in the Illinois Litigation. (Ex. 1081, 2, 22, 42, 50; Ex. 1082, ¶¶122-123; Ex. 1088, 2, 21, 39, 47; *see also* Exs. 1080, 1087.)

c) a semiconductor device configured to emit a laser;

Oba-Sato discloses or suggests this limitation. (Ex. 1002, ¶¶92-95.) Computer 51 includes an interface card 99 connected to a drive 100 that sends/receives data to/from "an optical disk 102." (Ex. 1053, FIG. 11, 22:20-22; *id.*, 22:23-23:2.) While *Oba* does not expressly disclose that computer 51 includes an optical disk drive configured to emit a laser, it would have been obvious to modify *Oba*'s computer 51 to include an internal optical disk drive with a semiconductor device configured to emit a laser, given that optical disk drives were known to be used in notebook computers and to use lasers to access/write data. (Ex. 1002, ¶92.) *Sato* describes an optical disk drive that uses a laser diode to perform access functionalities that is configurable for notebook computer applications. (Ex. 1056, Abstract, 1:9-14, 2:35-52 ("laser diode"), 5:21-32, 6:18-26, 7:1-2, 14:32-41; Ex. 1002, ¶93.)

A POSITA would have looked to *Sato* and sought to implement similar optical drive features in *Oba*'s computer 51. (Ex. 1002, ¶94.) A POSITA would have recognized the known characteristics of laser diodes to implement optical disk drives and configure such drives as a "built-in" type drive for notebook or portable computers, and thus been motivated to configure *Oba*'s computer 51 to similarly provide optical drive features with a laser diode (which is a semiconductor device configured to emit a laser). (Ex. 1056, 14:32-41; Ex. 1002, ¶94.)

Integrating an optical drive in computer 51 would have further supported the portability of *Oba*'s notebook computer. (Ex. 1002, ¶95.) Because such features/technologies were known and conventional to incorporate as part of a notebook computer such as disclosed in *Oba*, a POSITA would have had the skills to achieve the configuration with a reasonable expectation of success. (*Id.*) Such a modification would have been an application of known components according to known methods, to produce predictable results.[6] (*Id.*) *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

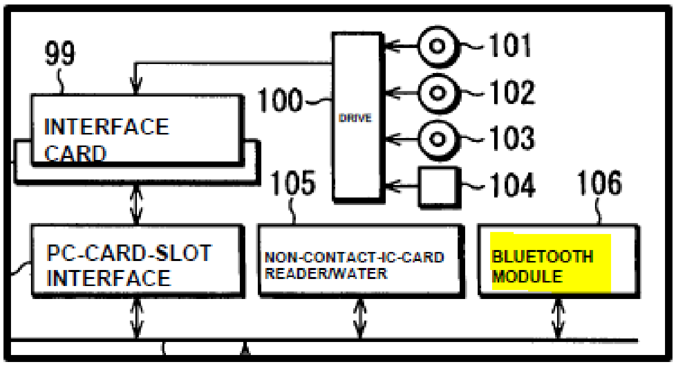
d) a data receiver including an antenna, wherein the data receiver is configured to transmit and receive data;

Oba-Sato discloses or suggests this limitation.[7] (Ex. 1002, ¶¶96-97.) *Oba*'s computer 51 includes a Bluetooth module 106 ("data receiver") configured to send/receive data via an antenna 194. (Ex. 1053, FIGS. 11, 13, 20-21, 29:1-20 (sending/receiving data via antenna 194 and control block 193), 22:6-8, 26:19-21,

[6] PO relies on alleged laser in camera system for this limitation. (Ex. 1081, 3, 23, 43; Ex. 1082, ¶¶122-123; Ex. 1088, 3, 22, 40.)

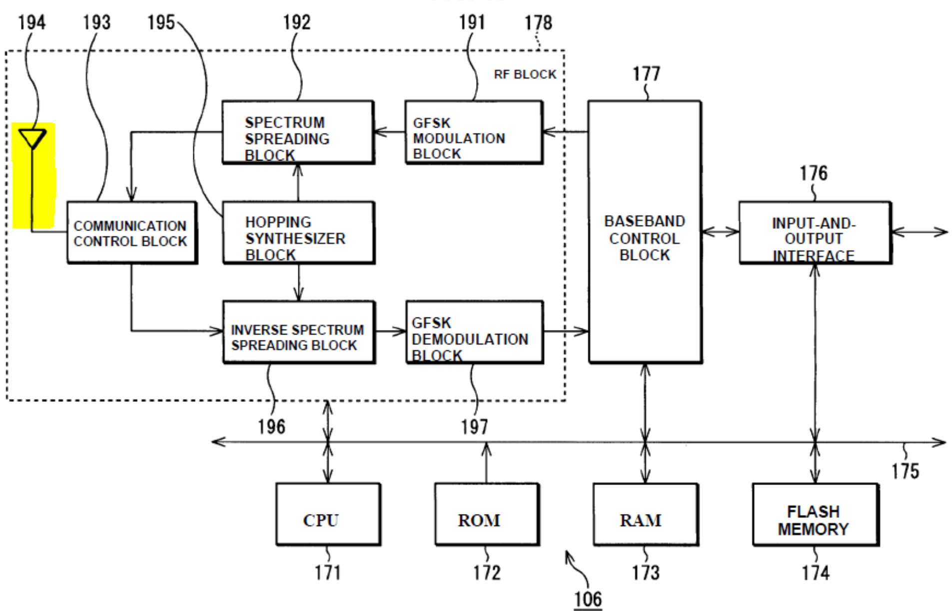
[7] PO contends an apparatus supporting Bluetooth connectivity necessarily meets this limitation. (Ex. 1081, 3-4, 23-24, 44; Ex. 1082, ¶¶122-123; Ex. 1088, 3-4, 22-23, 41.)

27:18-29:27 (e.g., 29:18-20), 38:3-5 (modules 106 and 247 transmitting/receiving data), 39:7-43:17 (data communications regarding Figures 20-21 (below)).)



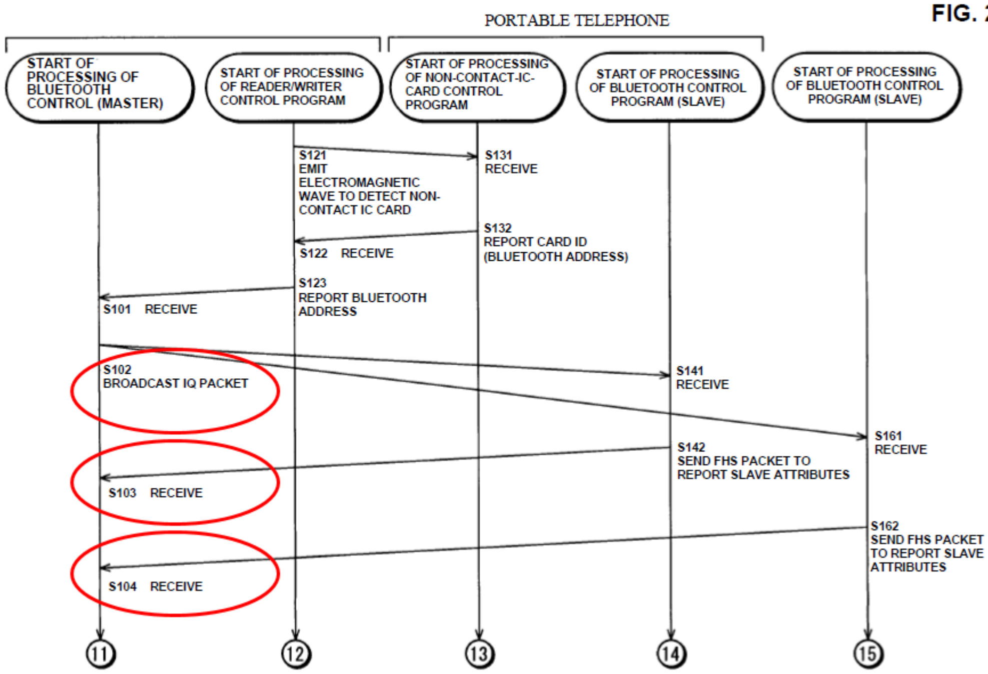
(Ex. 1053, FIG. 11 (excerpted/annotated); Ex. 1002, ¶96.)

FIG. 13



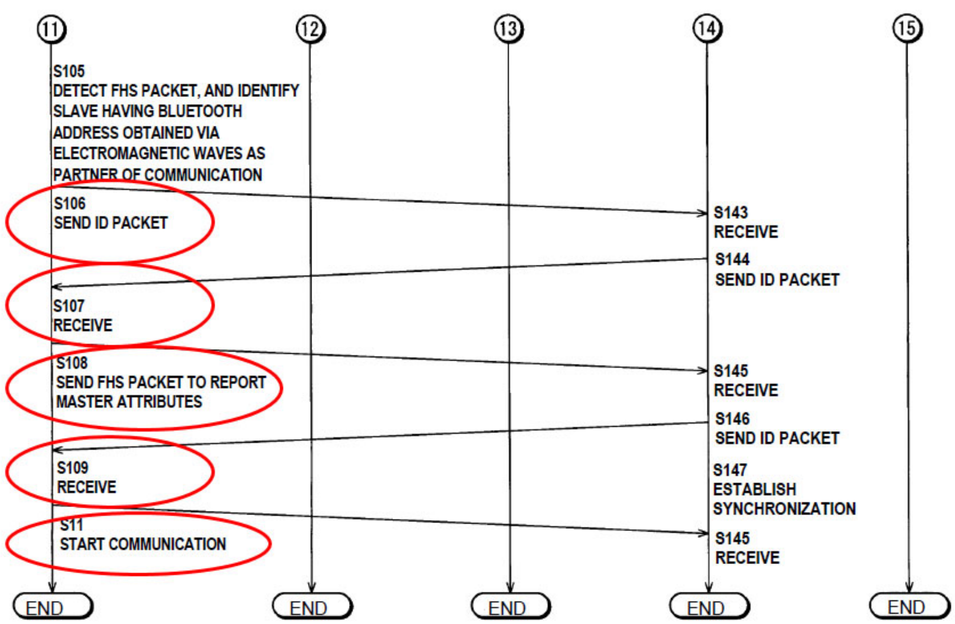
(Ex. 1053, FIG. 13 (annotated); Ex. 1002, ¶96.)

FIG. 20



(Ex. 1053, FIG. 20 (annotated); Ex. 1002, ¶96.)

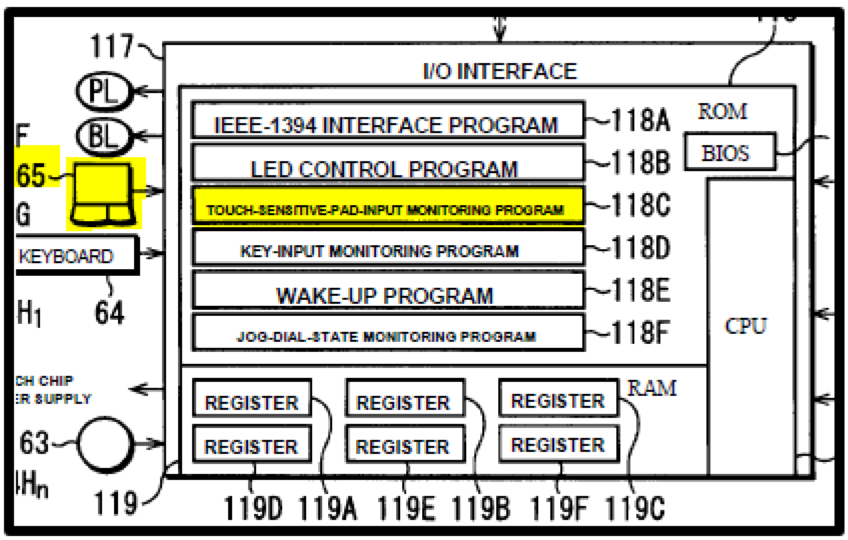
FIG. 21



(Ex. 1053, FIG. 21 (annotated); Ex. 1002, ¶96.)

e) a circuit configured to detect human touch via capacitive sensing; and

Oba-Sato in view of *Gillespie* discloses or suggests this limitation.[8] (Ex. 1002, ¶¶98-101.) *Oba*'s computer 51 includes a touch pad/panel 65 for sensing human touch input to control operations of computer 51. (Ex. 1053, FIG. 11, 19:9-12, 19:25-20:2, 24:6-13, 25:6-8, 25:12-19.)



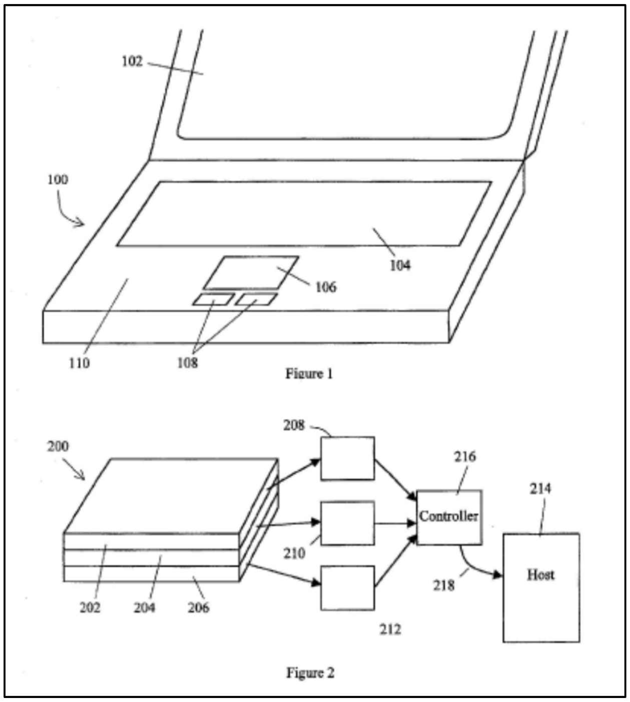
(*Id.*, FIG. 11 (excerpted/annotated); Ex. 1002, ¶98.)

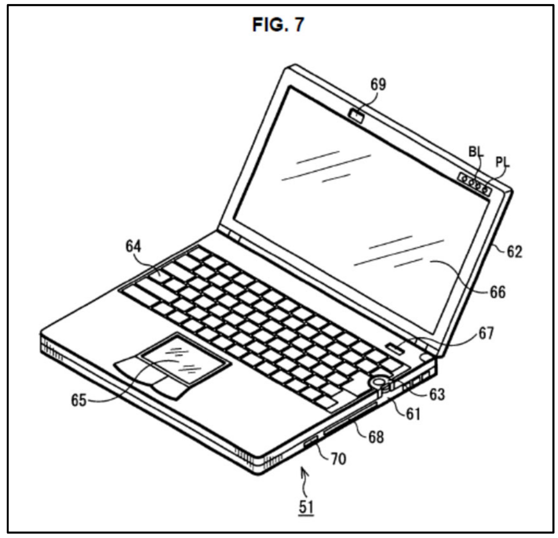
Touch pad/panel 65 necessarily includes touch detection circuitry because without such known components, the touch pad/panel 65 would not operate as described (e.g., detect touch for controlling input that is monitored by monitoring

[8] PO relies on a touchscreen for this limitation in the Illinois Litigation. (*E.g.*, Ex. 1081, 4, 24, 44; Ex. 1082, ¶¶122-123; Ex. 1088, 4, 23, 41.)

program 118C). (Ex. 1002, ¶98; Ex. 1053, 19:9-12, 25:12-19.) For example, a POSITA would have understood that touch pad/panel 65, like other components of computer 51, requires power, which requires current flowing in a circuit. Thus, *Oba* necessarily includes a *circuit* configured to detect human touch as claimed. (Ex. 1002, ¶98.) *Oba* does not provide details as to how touch detection is accomplished, but in view of *Gillespie* and the state of the art, it would have been obvious to configure the touch pad/panel of computer 51 to include a circuit configured to provide *capacitive* touch sensing. (*Id.*)

Gillespie discloses a notebook computer 100 similar to *Oba*'s, e.g., with common components of portable computers. (*Id.*, ¶99); Ex. 1071, FIGS. 1-2, ¶¶[0036]-[0037].) For example, computer 100 includes a display 102 and touch screen 106 positioned similar to *Oba*'s touch pad on computer 51 and providing touch control functionality.





(Ex. 1071, FIGS. 1-2.) (Ex. 1053, FIG. 7.)

Gillespie's touch screen 106 includes an assembly 200 comprising touch sensor 202, display 204, and backlight 206. (Ex. 1071, FIG. 2, ¶¶[0014], [0037].) Touch sensor 202 can be a capacitive touch sensor, which is "ideally suited for use in the present invention due to their sensitivity, low cost, ruggedness, and suitability to small sensing areas." (*Id.*, ¶[0037].) Functions can be controlled via input provided via the touch screen. (*Id.*, ¶¶[0050]-[0058].)

Gillespie is in the same field of endeavor as *Oba*, which also discloses touch pad functionalities in a notebook computer similar to *Gillespie*. (Ex. 1002, ¶100; Ex. 1071, FIGS. 1-2, ¶¶[0002], [0036]-[0037].) Thus, a POSITA would have had reason to consider the disclosures of *Gillespie* when contemplating implementing

Oba's modified computer 51. A POSITA would have appreciated benefits in implementing *Oba*'s touch pad/panel 65 as a capacitive touch screen because it would have been a known and foreseeable way to implement *Oba*'s touch pad/panel features. (Ex. 1053, 19:9-12, 25:12-19; Ex. 1002, ¶100.) A POSITA would have appreciated via *Gillespie* that capacitive touch sensors were ideal for use in small sensing areas like *Oba*'s touch pad/panel 65 (Ex. 1071, ¶[0037]) and known that capacitive touch sensing was a common way of implementing touch-related user input functionalities. (Ex. 1002, ¶100; Ex. 1058, FIGS. 3A, 9, 1:44-50, 2:17-37, 5:53-4:4; Ex. 1059, ¶¶[0011]-[0013], FIGS. 1, 8, 9 ¶¶[0014], [0036], [0041] [0052], [0064]; Ex. 1060, ¶¶[0107], [0116], [0132]; Ex. 1008, Title, Abstract, 2:42-46, 12:18-22).)[9]

Thus, it would have been obvious to configure the touch pad/panel of computer 51 as a *capacitive* touch display with associated circuitry, as that was one of finite available technologies for implementing touch detection. (Ex. 1002, ¶101.) *KSR*, 550 U.S. at 421. Such a modification would have been a straightforward implementation of known technologies and techniques for use in touch pad/panel components (*Oba*) and thus a POSITA would have had a reasonable expectation of success implementing such a modification. (Ex. 1002, ¶101.) *KSR*, 550 U.S. at 416.

[9] Exhibits 1008, 1058-1060 demonstrate state of art. (Ex. 1002, ¶100.)

f) a battery ground capacitively coupled to at least one of the data receiver, the circuit, the at least one LED, or the semiconductor device via a conductor,

Oba-Sato-Gillespie in view of *Hara* discloses or suggests this limitation.[10] (Ex. 1002, ¶¶102-108.) *Oba*'s computer 51 includes a battery 122 that provides power for notebook computer 51. (Ex. 1053, FIGS. 6, 11, 25:20-22, 19:14-16 ("battery" lamp BL).) *Oba*'s battery necessarily includes a battery *ground* because, consistent with known electronic circuits, *Oba*'s circuit components (including the battery) must include an electrical ground so that the circuit can have a reference node with respect to which the voltage of other circuit nodes can be expressed. (Ex. 1002, ¶102; Ex. 1057, FIGS. 1, 2, 5:37-41, 6:21-26, 6:31-46.)[11] While *Oba*'s battery provides power for components of personal computer 51, *Oba* does not expressly disclose capacitively coupling a battery ground to at least one of the above-described claim components. However, it would have been obvious to configure the *Oba-Sato-Gillespie* combined apparatus to implement such features. (Ex. 1002, ¶102.)

A POSITA would have recognized the desirability/advantages of implementing such features given it was known to couple a capacitor between a

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[10] PO provides no details for this limitation in its infringement assertions. (Ex. 1081, 4, 24, 44; Ex. 1082, ¶¶122-123; Ex. 1088, 4, 23, 41.)

[11] Exhibit 1057 demonstrates state of the art. (Ex. 1002, ¶102.)

ground and other circuit elements to serve as a filter, e.g., to smooth delivered power. (*Id.*, ¶103.) For example, *Hara* discloses the known feature of providing a capacitor between a battery ground and electronic circuits of a portable device for filtering. (Ex. 1044, Abstract, FIGS. 1-3, 7-8, 18, 2:9-21, 2:24-34, 2:39-42, 3:54-65, 4:8-57, 5:9-33, 5:65-6:2, 7:10-36.)

FIG.1

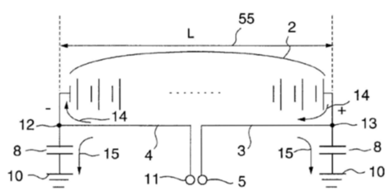


FIG.2

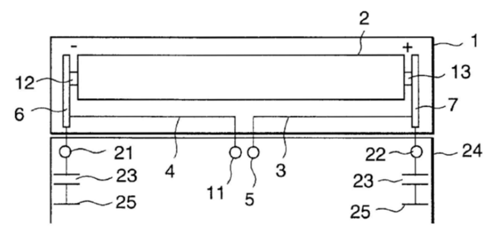
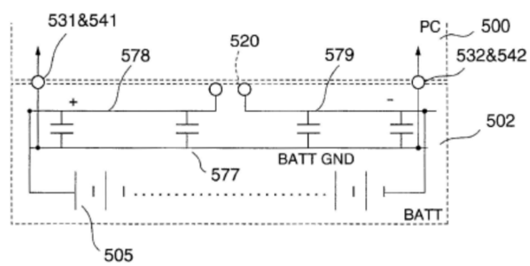


FIG.18



(*Id.*, FIGS. 1, 2, 18; *id.*, FIG. 17.) *Hara* describes "at least one capacitive element (for example a capacitor) mounted in the proximity of the terminals of the ... battery" and that a terminal of the battery "may be **connected electrically to the ground** of the information processing device **through this capacitive element**." (*Id.*, 1:52-64.)[12]

In view of *Hara* and the state of the art, a POSITA would have been motivated, and found obvious, to implement a battery ground in the combined *Oba-Sato-Gillespie* apparatus, which includes a battery, to be capacitively coupled to one or more of the data receiver (e.g., limitation 1(d)), touch circuit (limitation 1(e)), LED(s) (limitation 1(b)), and semiconductor device (limitation 1(c)). (Ex. 1002, ¶104.) Such capacitive coupling would have predictably provided filtering (e.g., smoothing) of power delivered by *Oba*'s battery, which would provide reliable operation of the modified apparatus, e.g., by facilitating a steady supply of power. (*Id.*)

Oba's notebook computer 51 includes circuitry and conductors for delivering power (*see, e.g.*, Ex. 1053, FIG. 11 (power supply control 121)), and thus it would have been obvious to implement such a capacitive coupling *via a conductor*, particularly because implementing electrical couplings via conductors was known as a fundamental aspect of circuit design. (Ex. 1002, ¶105; Ex. 1044, 7:33-36.) Indeed, *Hara* describes various ways to implement such a capacitor in context of a

[12] Emphasis added unless indicated otherwise.

notebook computer like *Oba*. (Ex. 1044, 3:41-65, 4:8-29 (notebook PC 24), 6:65-7:36, 7:58-66, 8:33-38; Ex. 1002, ¶105.)

Such a modification would have been within the capabilities of a POSITA. (Ex. 1002, ¶106; Ex. 1045, FIG. 4D2, 11:27-35, 11:60-62; Ex. 1013, FIG. 1, 4:19-24 (capacitor to filter DC power).)[13] Indeed, *Hara* informed a POSITA that it was known to connect the ground of a notebook PC to a battery ground. (Ex. 1044, 6:3-14, FIG. 14; Ex. 1002, ¶107.) A POSITA would have thus had reasons and ability to consider and implement workable circuit arrangements based on such teachings/suggestions from *Oba* and *Hara* to configure *Oba's* computer to include a capacitor between a battery ground and the above-discussed computer components (limitations 1(b)-1(e)) to promote the provision of smoothed (noise-reduced) power to those components. (Ex. 1044, 7:34-36, 8:33-38; Ex. 1002, ¶108.) Therefore, a POSITA would have had a reasonable expectation of success implementing such a configuration. (Ex. 1002, ¶108.)

g) wherein the apparatus is portable, and

Oba discloses this limitation because computer 51 is a notebook computer, which is portable. (Ex. 1053, FIGS. 6, 7, 19:1-8; Ex. 1002, ¶109.)

[13] Exhibits 1013 and 1045 demonstrate the state of the art. (Ex. 1002, ¶106.)

h) wherein the at least one LED, the semiconductor device, the data receiver, the circuit, and the battery ground are contained within a package and connected to at least one circuit board within the package.

Oba-Sato-Gillespie in view of *Hara* discloses or suggests this limitation. (Ex. 1002, ¶¶110-113.) *Oba*'s computer 51 includes a "body" 61 and display block 62, which contains the components of the computer as an integrated unit typical to notebook computers. (*Id.*, ¶110; Ex. 1053, FIG. 7, 19:2-6.) Accordingly, the housing of *Oba*'s computer 51 (e.g., display block and body) is a "package" consistent with PO's representations in district court.[14] (Ex. 1002, ¶111.) Each of the components discussed above in the *Oba-Sato-Gillespie-Hara* combinations (e.g., limitations 1(b)-(f)) would have been contained within the housing ("package") of *Oba*'s computer 51 because the device is a portable notebook computer and provides features consistent with such devices. (Ex. 1002, ¶111.) Indeed, *Oba* discloses that computer 51 includes a CPU 81, which is "formed of a Pentium ... processor" and "connected to a host bus 82" that is "further connected to a bridge 83" (Ex. 1053, 20:9-16) and thus such computer components and those discussed for limitations

[14] PO generically refers to a similar housing as a package in its complaint. (Ex. 1074, 9 (¶30); Ex. 1082, ¶125; *see also* Ex. 1081, 5, 24-25, 45; Ex. 1088, 5, 23-24, 42.) While Petitioner reserves the right to challenge that interpretation, for purposes of this proceeding, the prior art discloses a "package" under PO's interpretation.

1(b)-(e) would have been implemented within *Oba*'s modified computer housing ("package"). (Ex. 1002, ¶111.)

While *Oba* does not expressly disclose a circuit board, a POSITA would have understood that all the features discussed above for limitations 1(b)-(f) are electrical components requiring circuitry to enable current to flow to these components and provide power and/or data signals to them. (*Id.*, ¶112.) The use of circuit boards for electronic circuits/systems like that described by *Oba* was known. (*Id.*) Indeed, *Hara* informed a POSITA of the well-known use of circuit boards for coupling components in portable computers. (*Id.*; Ex. 1044, 4:24-26, 6:9-14, 6:42-45, 6:4-14.) Thus, it would have been obvious to configure the *Oba-Sato-Gillespie-Hara* apparatus such that it included *at least one circuit board* that connects to one or more of the above-discussed components (e.g., LED, optical drive, data receiver, battery ground) to provide a base for such electronics and components. The above configuration would have been a straightforward, practical design implementation (and a POSITA would have had a reasonable expectation of success implementing it), as usage of circuit boards was a common, cost-effective design technique allowing efficient routing of current and providing physical stability for *Oba*'s computer. (Ex. 1002, ¶113.)

2. Claim 3

a) The apparatus of claim 1, wherein the semiconductor device is a laser diode.

Oba-Sato-Gillespie-Hara discloses this limitation for reasons explained for limitation 1(c). (Section IX.A.1(c); Ex. 1002, ¶114.)

3. Claim 4

a) The apparatus of claim 1, further comprising a three-way switch.

Oba-Sato-Gillespie-Hara discloses or suggests this limitation. (Ex. 1002, ¶¶115-117.) The ’697 patent does not associate any criticality with respect to the use of the claimed “three-way switch.” (*See generally* Ex. 1001.) Three-way switches were known for controlling circuits/signals. (Ex. 1002, ¶115; Ex. 1014, FIG. 15D, ¶[0075]; Ex. 1046, FIG. 8, ¶¶[0009], [0048].)[15] A POSITA would have been motivated to consider and use known three-way switch design concepts in the *Oba-Sato-Gillespie-Hara* computer. (Ex. 1002, ¶116.) For example, a POSITA would have recognized advantages of using a three-way switch to selectively control the LED lamps and their illumination based on signals from, for example, LED control program 118B, or with drive 100 to selectively control signals for accessing/using various memory devices (101-104), or for controlling how power is

[15] Exhibits 1014 and 1046 demonstrate the state of the art. (Ex. 1002, ¶115.)

provided to computer 51 or to selectively control distribution of power. (Ex. 1012, Abstract, FIG. 2, 2:51-61; Ex. 1053, 25:20-23; Ex. 1002, ¶116.)[16] A POSITA would have had a reasonable expectation of success in implementing such modifications, which would have involved usage of known technologies and techniques to produce predictable results. (Ex. 1002, ¶117.) *KSR*, 550 U.S. at 416.

4. Claim 5

a) The apparatus of claim 1, further comprising a power supply configured to increase power supplied to the at least one LED when the circuit detects a touch.

Oba-Sato-Gillespie-Hara discloses or suggests this limitation. (Ex. 1002, ¶¶118-129.) Section IX.A.1 above explains how *Oba-Sato-Gillespie-Hara* discloses or suggests claim 1. *Oba-Sato-Gillespie-Hara* also discloses or suggests certain limitations of claim 1 another way. As explained below, it would have been obvious to configure the touch pad/panel 65 in the above-discussed *Oba* modified computer 51 as an OLED touch screen or an LED backlit touch screen in view of *Gillespie* and the state of the art. (Ex. 1002, ¶118.) Such a modified apparatus discloses/suggests the features of claim 5 and the "at least one LED" (limitation 1(b)) and limitations 1(f) and 1(h) for reasons similar for claim 1 and those below.

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[16] Exhibit 1012 demonstrates state of the art. (Ex. 1002, ¶116.)

As explained in Section IX.A.1(e), *Gillespie*'s touch screen 106 includes an assembly 200 comprising touch sensor 202, display 204 and backlight 206 (Ex. 1071, ¶¶[0014], [0037]) where sensor 202 can be a capacitive touch sensor (*id.*, ¶[0037]). Further, display 204 can be an LCD or OLED display or any other small display "suitable for mounting in a portable computer." (*Id.*, ¶[0038].) Backlight 206 can be used to enhance readability by projecting light through the stack layer of touch screen assembly 200 and can be controlled by touch screen activations (and power control features). (*Id.*, ¶¶[0039], [0041], [0043], [0050]-[0058], [0112]-[0113].) For instance, the touch screen can be used to control "slider controls" that adjust system parameters such as "the brightness and contrast of the main screen or touch screen." (*Id.*, ¶[0057], FIGS. 4-5.)

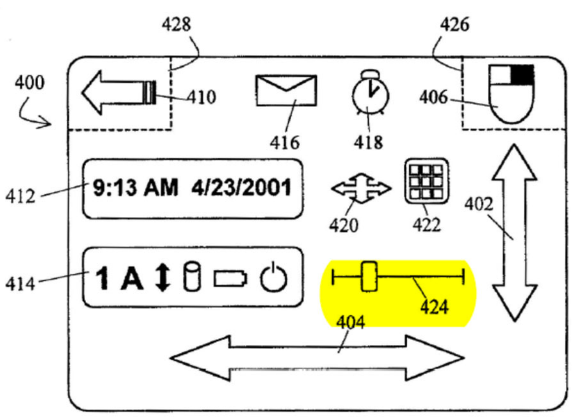

Figure 4

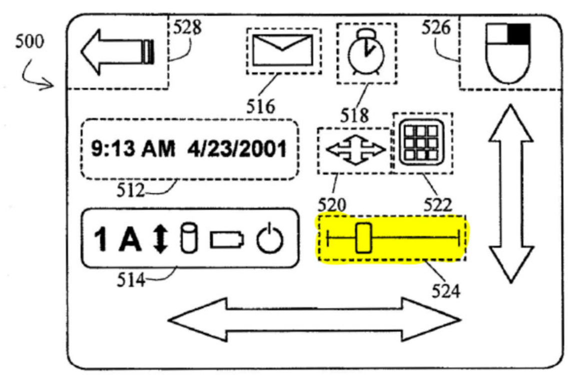

Figure 5

(*Id.*, FIGS. 4-5 (annotated); Ex. 1002, ¶119.)

As explained, a POSITA would have had reason to consider *Gillespie*'s disclosures when implementing *Oba*'s modified computer 51. (Section IX.A.1(e);

Ex. 1002, ¶120.) A POSITA would have appreciated benefits in implementing *Oba*'s touch pad/panel 65 as a capacitive OLED or LED backlit touch screen in light of *Gillespie*, which would have predictably enhanced the features offered by *Oba*'s touch input mechanisms. (Ex. 1002, ¶120.) For example, it would have allowed *Oba*'s touch pad/panel to be configured as a capacitive touch screen that was illuminated by common light sources (e.g., LEDs) and displayed status information, which would in one way help "eliminate[] the need for the special dedicated LED … status displays that are typically used in prior art computers," as explained by *Gillespie* and relevant to *Oba*'s status indicator features. (Ex. 1071, ¶[0053].) Moreover, *Gillespie* explains that such a touch screen 106 can replace "the conventional touch pad of a computer" or "could be introduced in addition to the other user interface devices of the computer," and thus the above modification would have expanded user input options/capabilities of *Oba*'s computer 51. (Ex. 1071, ¶[0036]; *id.*, ¶¶[0043]-[0044].) Thus, a POSITA would have considered various ways (e.g., as described by *Gillespie*) to implement such functionalities within *Oba*'s computer 51. (Ex. 1002, ¶120; Ex. 1071, claims 1-71.)

For example, it would have been obvious to configure *Oba*'s touch pad/panel as a capacitive OLED touch display especially since usage of OLEDs for displays was one of a finite number of available and known technologies for implementing such features at the time. (Ex. 1002, ¶121.) *KSR*, 550 U.S. at 421. Such a modification would have been a straightforward implementation of known technologies and techniques for use in *Oba*'s touch pad/panel components and thus a POSITA would have had a reasonable expectation of successfully implementing such a modification. (Ex. 1002, ¶121.) *KSR*, 550 U.S. at 416.

Similarly, it would also have been obvious to implement *Oba*'s touch pad/panel as an LED-backlit capacitive touch display. (Ex. 1002, ¶122.) *Gillespie* describes that backlight 206 of a capacitive touch display can be used to "enhance readability in all lighting conditions." (Ex. 1071, ¶[0039].) Thus, it would have been obvious to alternatively configure the capacitive touch display in the *Oba-Gillespie* combination as an LED backlit display because it, too, would have involved implementation of one of a known, finite number of ways to provide illumination for backlight displays as described by *Gillespie*. (Ex. 1002, ¶122; Ex. 1068, 4:53-7:14, 6:8-52, 7:35-60; Ex. 1069, Abstract, FIGS. 4-5, 1:45-55, 2:61-3:7, 3:54-65, 4:40-5:55 (control power to LED-backlit LCD display); Ex. 1070, Abstract, 3:6-35, 4:5-14, 4:38-5:4).)[17] Such an implementation would have been a straightforward application of known technologies and techniques and thus a POSITA would have had a reasonable expectation of success in such an implementation. (Ex. 1002, ¶122.) *KSR*, 550 U.S. at 416.

[17] Exhibits 1068-1070 demonstrate the state of the art. (Ex. 1002, ¶122.)

Thus, for the reasons above (and discussed for limitation 1(e)), a POSITA would have been motivated, and found it obvious, to configure *Oba*'s touch pad/panel 65 as LED-based capacitive touch display features (e.g., OLEDs or LED-backlit display), especially since such a modification would have been a foreseeable way to implement useful touch features to accept user touch input for controlling computer functions and display information, as guided by *Gillespie.* (Ex. 1053, 19:9-12, 25:12-19; Ex. 1002, ¶123; Section IX.A.1(e).)

In addition, a POSITA would have been motivated to configure the modified *Oba* computer to include a power supply to increase power to at least one of those LEDs in response to the touch detection circuit detecting a user touch. (Ex. 1002, ¶124.) *Gillespie* guides that a touch display can display icons and other information that allow a user to control various notebook computer functions (Ex. 1071, ¶¶[0049]-[0060]), including the brightness of the main screen and "touch screen" (*id.*, ¶¶[0057]-[0058] (slider controls that can adjust system parameters such as "brightness and contrast" of touch screen)). *Gillespie* discloses that "[b]acklights draw more power than the other components" and it is "advantageous to switch the back light off when it is not needed" or when the touch screen is not used after a "certain amount of time", and "[s]imilarly, the backlight could be **switched on whenever the touch screen is in the activated state**." (*Id.*, ¶ [0112]; *id.*, ¶[0113] ("[s]witching on the backlight when the touch screen is activated has the **added**

benefit of reminding the user that the behavior of the touch screen has changed").) *Gillespie* explains that "**finger taps** are interpreted as a signal to enter or toggle the activated state of the touch screen," and thus touch detection can be used to turn on the lighting for *Gillespie*'s touch screen. (*Id.*, ¶[0069]; Ex. 1002, ¶125.)[18] Turning on the touch screen (backlit or OLED-based) requires increasing power to the light source that provides the illumination because an LED/OLED requires power to emit light. (Ex .1002, ¶125.)

In light of such disclosures/suggestions, a POSITA would have been motivated to configure the modified *Oba* computer such that the power supply (e.g., battery 112 and/or power control circuitry 121) is configured to increase power to the LEDs that illuminate the modified display discussed above to increase the brightness when the user initiates action via the touch display as modified above. (Ex. 1002, ¶126.) Indeed, as disclosed/suggested by *Gillespie* and *Oba*, the brightness of LEDs is controlled by the amount of power provided to the LEDs and it was known that the brightness of displays can be controlled by increasing/decreasing power to LEDs in response to touch sensor inputs. (Ex. 1002, ¶127; Ex. 1067, ¶¶[0012], [0016]-[0017], [0018]-[0020] (increasing brightness of

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[18] PO relies on "tap to wake" features for this limitation in the Illinois Litigation. (Ex. 1081, 6-7, 26-27, 47; Ex. 1088, 6-7, 25-26, 44.)

active window), [0021] ("power consumption of each [LED] pixel of the display screen may increase as the brightness of the pixel increases"), [0022]-[0023], claims 1, 4-5, 7; Ex. 1057, FIGS. 1-2, 9A-9B, 2:27, 4:1-7, 13:63-67, 6:3-11, *id.*, 9:24-10:3, 10:3-8, 13:53-14:4; Ex. 1068, 4:41-45, 6:9-22; Ex. 1002, ¶127.)[19]

Accordingly, a POSITA would have been motivated to implement the above modification to conserve power used by *Oba*'s computer's LED-based touch display (as modified above) and to provide better readability as contemplated by *Gillespie*. (Ex. 1002, ¶128; Ex. 1071, ¶[0113].)

In such configurations, a POSITA would have also been motivated and found obvious to configure the *Oba*-*Sato*-*Gillespie*-*Hara* computer to include such LED(s) and associated circuitry (OLED or LED-backlit touch display) in the same "package" and connected to the same at least one "circuit board" as discussed above for limitation 1(h) for the reasons discussed. (Section IX.A.1(h); Ex. 1002, ¶129.) Likewise, a POSITA would have been motivated and found it obvious to configure the *Oba*-*Sato*-*Gillespie*-*Hara* computer such that the battery ground (discussed for limitation 1(f)) is capacitively coupled to at least one of the LEDs and capacitive touch sensor circuitry for the OLED or LED-backlit touch display with the other components discussed for limitations 1(c)-1(e). (Section IX.A.1(f); Ex. 1002, ¶129.)

[19] Exhibits 1057, 1067-1068 demonstrate state of art. (Ex. 1002, ¶127.)

A POSITA would have had the same motivation, knowledge, and expectation of success in such implementations as discussed above for claim 1. (Sections IX.A.1(f), IX.A.1(h); Ex. 1002, ¶129.) *KSR*, 550 U.S. at 416.

5. Claim 2

a) The apparatus of claim 1, wherein the at least one LED includes an organic light emitting diode.

The *Oba-Sato-Gillespie-Hara* combination discussed above for claim 5 includes, as one example, an OLED touch display and thus discloses claim 2 for the reasons presented above for claim 5. (Section IX.A.4; Ex. 1002, ¶130.)

B. Ground 2: Claim 6 Is Obvious Over *Oba*, *Sato*, *Gillespie*, *Hara*, and *Yang*

1. Claim 6

a) The apparatus of claim 1, wherein the at least one LED is mounted on a glass substrate.

Oba-*Sato*-*Gillespie*-*Hara*-*Yang* discloses or suggests this limitation. (Ex. 1002, ¶¶131-135.) As explained for claims 2 and 5, the *Oba*-*Sato*-*Gillespie*-*Hara* computer includes an OLED capacitive touch display. (Sections IX.A.4-IX.A.5.) A POSITA would have been motivated to configure the *Oba*-*Sato*-*Gillespie*-*Hara* computer to mount the LEDs forming the OLED touch display on a glass substrate in light of *Yang*, so that "the at least one LED is mounted on a glass substrate," as claimed. (Ex. 1002, ¶132.)

Yang explains that OLED displays were known and provided "high brightness," fast response," and "full color" for "portable information products" including a "notebook" computer. (Ex. 1019, 1:15-26.) *Yang* further confirms that "[c]onventional OLED display structures [were] "built on glass substrate[s]" (*id.*, 1:27-28; *id.*, FIG. 2, 1:40-43), consistent with a POSITA's knowledge. (Ex. 1066, FIG. 8, 3:8-11, 4:15-16, 8:12-21, 8:32-33, claim 8; Ex. 1008, 1:53-2:12, 3:11-12, 3:33-34, 6:64-7:4, FIGS. 1, 9; Ex. 1047, FIG. 13, 1:46-2:45, 12:64-13:5, 16:22-17:5; Ex. 1002, ¶133).[20]

A POSITA would have thus known how to configure and implement an OLED display and its related circuitry/arrangement to operate as the capacitive touch display in the modified *Oba*-*Sato*-*Gillespie*-*Hara* apparatus. (Ex. 1002, ¶134.) In doing so, a POSITA would have been motivated to mount the OLEDs in the touch display on a glass substrate consistent with that known in the art. (*Id.*) Such an implementation would have provided a known, conventional way of providing an OLED display. (*Id.*; Section IX.A.4.)

A POSITA would have had the knowledge and skills to consider design tradeoffs associated with such an implementation, and successfully implement a touch display with glass-mounted OLEDs with *Oba*'s modified computer using

[20] Exhibits 1008, 1047, and 1066 demonstrate the state of the art. (Ex. 1002, ¶133.)

known techniques. (Ex. 1002, ¶135.) Accordingly, in light of *Yang*, *Gillespie*, and *Oba*, and a POSITA's knowledge, this implementation would have been a predictable application of known technologies/techniques to achieve the foreseeable result of configuring the modified capacitive touch display for the *Oba-Sato-Gillespie-Hara* combination, and thus a POSITA would have also had a reasonable expectation of success in such an implementation. (*Id.*) *KSR*, 550 U.S. at 416.

C. Ground 3: Claims 14, 19, and 20 Are Obvious Over *Oba* and *Hara*

1. Claim 14

a) An apparatus comprising:

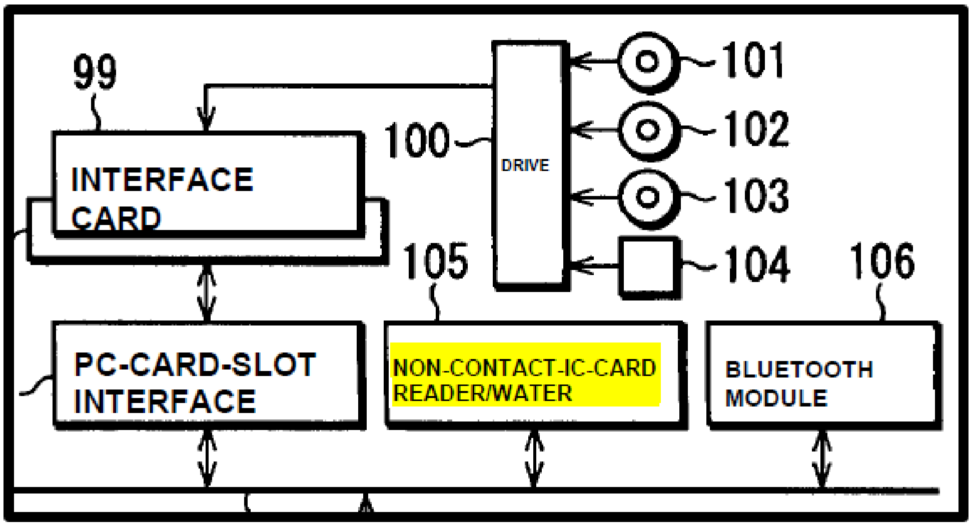
Oba discloses this limitation for reasons discussed for limitation 1(a). (Section IX.A.1(a); Ex. 1002, ¶¶136-137; Sections IX.C.1(b)-(g).)

b) an LED circuit comprising at least one LED;

Section IX.A.1(b) explains how *Oba*'s computer 51 ("apparatus") includes at least one LED. (Section IX.A.1(b).) While *Oba* does not explicitly disclose an LED "circuit" comprising the LED(s) discussed above, *Oba* necessarily discloses such features. *Oba*'s LED lamps must have LED circuitry in order for the lamps, which are electrical components requiring power, to be controlled and operate and provide the LED light indications as disclosed. (Ex. 1002, ¶138; Ex. 1053, 19:14-18, 24:9-11, 25:6-10, 25:18-19.) While *Oba* discloses use of LED control program 118B (Ex. 1053, 24:10-11), the control of such LEDs must also be facilitated by "circuitry" that would receive signals generated in response to the "program" in order to provide the requisite signals to the LED circuit forming the LED lamp and associated drive components. (Ex. 1002, ¶138.) Without such LED circuitry, *Oba*'s LED lamps would not illuminate; thus, such circuitry is necessarily disclosed by *Oba.* (*Id.*)

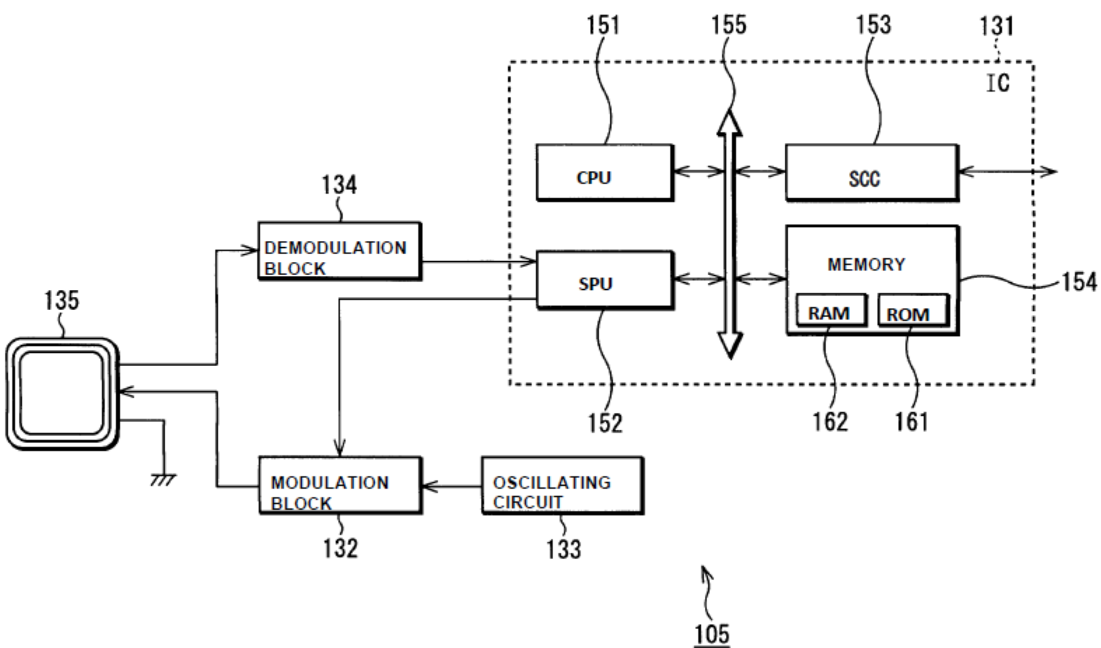
c) a transmission conductor configured to wirelessly receive power and data from an alternating electromagnetic field;

Oba discloses or suggests this limitation. (Ex. 1002, ¶¶139-145.) In its infringement contentions, PO states that "wireless charging necessarily requires a transmission conductor configured to wirelessly receive power and data from an alternating electromagnetic field." (Ex. 1081, 16, 36, 51; Ex. 1088, 14, 34, 48.) *Oba*'s computer 51 includes a non-contact IC card reader/writer 105 that operates to wirelessly transfer power and send/receive data from a non-contact IC card 246 on portable telephone 52 via electromagnetic waves emitted from or received by reader/writer 105. (Ex. 1053, FIGS. 11-12, 17:28-18:6, 18:7-11, 22:1-5, 26:9-27:17.)



(*Id.*, FIG. 11 (excerpted/annotated); Ex. 1002, ¶139.)

FIG. 12

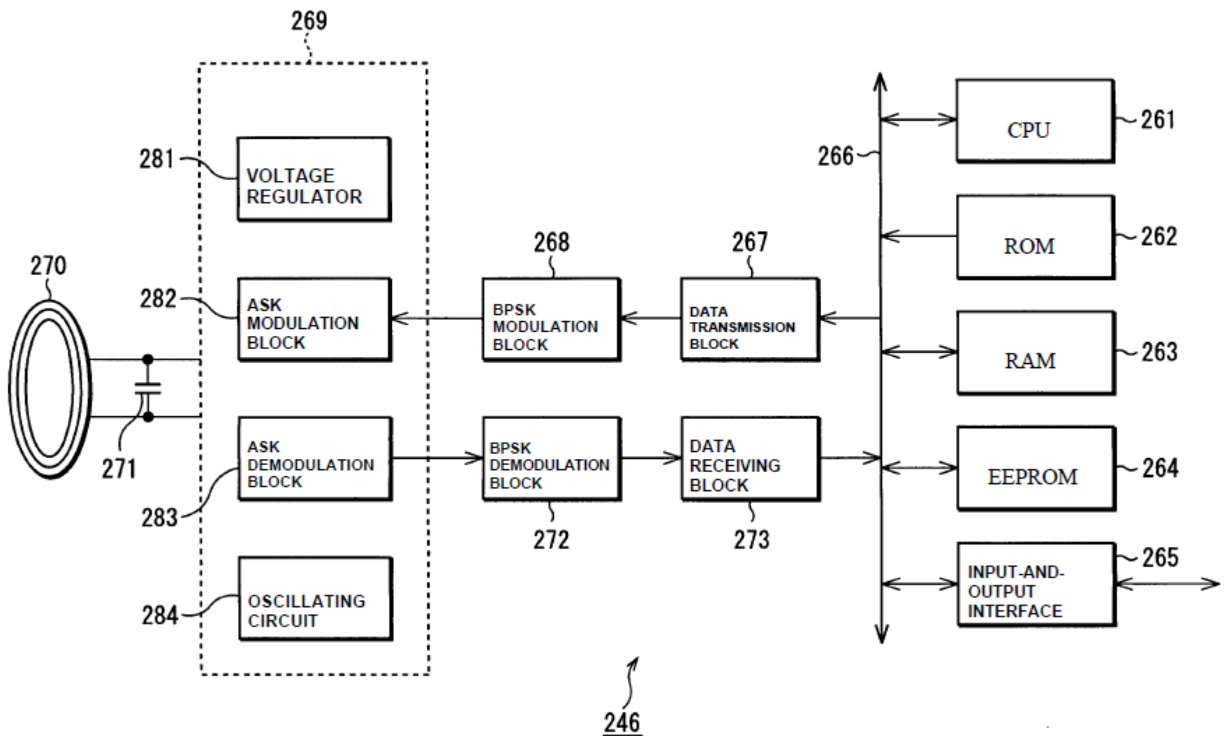


(Ex. 1053, FIG. 12.) Antenna 135 of reader/writer 105 emits a "predetermined electromagnetic wave" received by IC card 246 in telephone 52 when located close to antenna 135. (*Id.*, 27:14-15.) When card 246 is close, antenna 135 sends and receives "various types of data to and from the non-contact IC card 246." (*Id.*, 27:15-17; *id.*, 37:12-21, FIGS. 20-23.) As shown in Figure 12, conductor(s) connect antenna to communicate power and data. (Ex. 1002, ¶139.)

While *Oba* describes that reader/writer 105 of notebook computer transfers power to card 246 and "reader/writer 105 and the non-contact IC card 246 are individually configured" (Ex. 1053, 55:22-23), *Oba* also explains that a "device having the **functions of both of these devices may be respectively provided to the personal computer 51** and the portable telephone 52" or may be provided via software that would "**extend the functions of the personal computer 51** and the portable telephone 52." (*Id.*, 55:23-26.) Thus, in addition to reader/writer 105, computer 51 may include the features provided by card 246. (Ex. 1002, ¶140.)

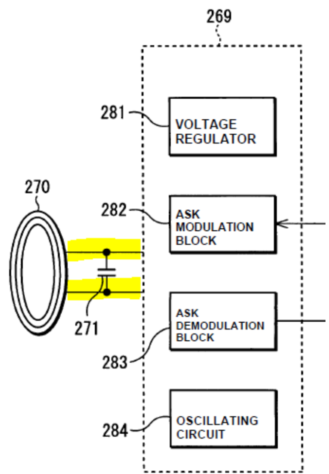
IC card 246 includes components and functionalities that allow it to "receive" electromagnetic waves, which trigger operations to initiate Bluetooth data synchronization with another remote device. (Ex. 1053, 44:19-45:22.) Card 246 "does not necessarily have to be shaped as a card" and its name is for "convenience of description." (*Id.*, 35:21-24). Card 246 can be formed with a loop antenna 270 and a capacitor 271 (FIG. 17, below) and "performs half duplex communication of various pieces of data with the reader/writer 105 by using electromagnetic induction." (*Id.*, 35:17-21; *id.*, 35:25-36:10; Ex. 1002, ¶141.)

FIG. 17



(Ex. 1053, FIG. 17.)

Oba explains that "an AC [alternating current] magnetic field excited at the antenna 270 is rectified, ... stabilized, ... and supplied to each block as DC power" and that the "electric power of the electromagnetic wave emitted from the reader/writer 105 is adjusted" to provide the "electric power required by the non-contact IC card 246." (*Id.*, 36:11-15; *id.*, 46:17-20, 47:8-10; Ex. 1002, ¶142.) Thus, by receiving electromagnetic waves, card 246 (which can be integrated within computer 51) receives power communicated to power the card components via a conductor connected to the antenna, and card 246 uses the same conductor to send and receive data via the same antenna. (Ex. 1002, ¶142; Ex. 1053, FIG. 18, 37:12-38:2.) Indeed, Figure 17 shows a conductor connecting antenna 270 or as part of antenna 270 (which can include one or more of the conductors extending into block 269).



(Ex. 1053, FIG. 17 (excerpted/annotated); *id.*, 35:18-21, 36:6-15; Ex. 1002, ¶142.)

To the extent such features are not expressly disclosed in *Oba*, a device having a receive antenna and an RF link (as disclosed in *Oba*'s card 246) would have necessarily been configured to include a transmission conductor to receive the power and data, especially because antenna 270 converts the RF radiation to electrical signals for use by other components. (Ex. 1002, ¶142.)

Accordingly, card 246 includes a "transmission conductor" as claimed (e.g., antenna 270 with an attached conductor or the conductor necessarily connecting antenna 270 to block 269) configured to wirelessly receive power and data from an alternating electromagnetic field (e.g., power is received and data is communicated via the AC magnetic field excited at antenna 270 which receives the electromagnetic waves provided by reader/writer 105 in a resonance state due to the inductor-capacitor (LC) configuration of antenna 270 and capacitor 271). (Ex. 1053, FIG. 17, 36:8-10; Ex. 1002, ¶143.) Where computer 51 includes both reader/writer 105 and IC card 246 functionalities as explained, *Oba* discloses an "apparatus" (e.g., computer 51) that includes a "transmission conductor" as claimed. (Ex. 1002, ¶143.)

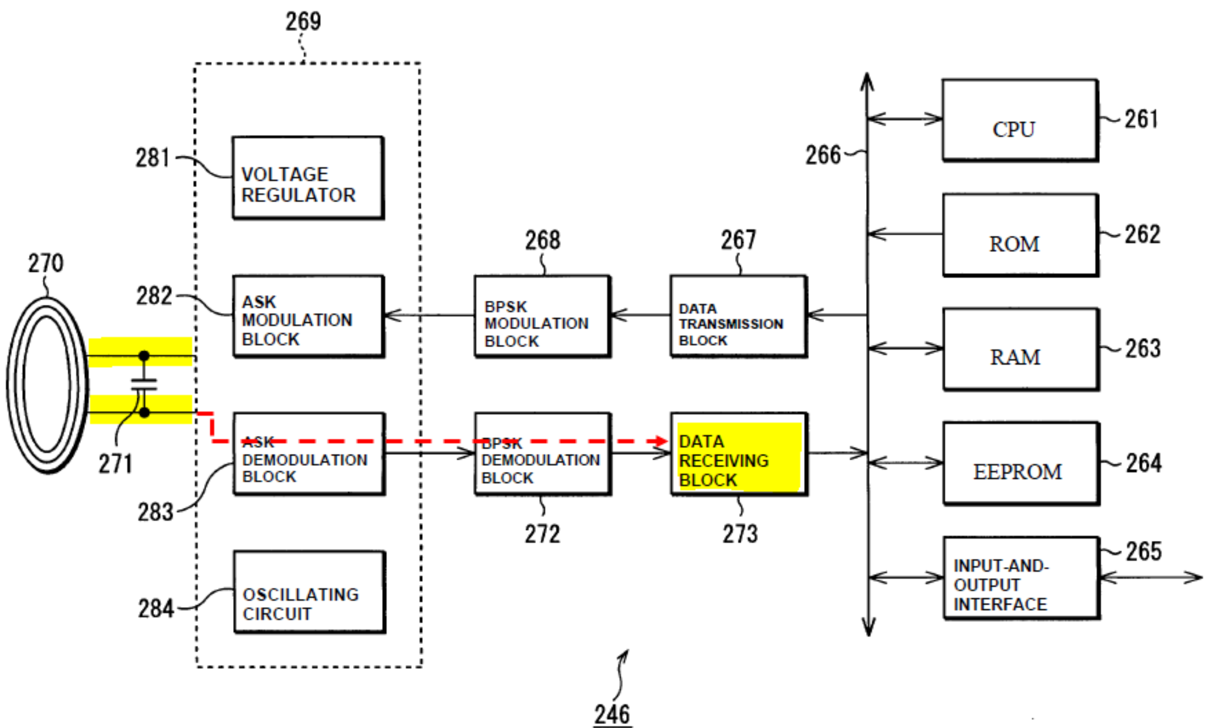
To the extent *Oba* does not explicitly disclose a transmission conductor configured to wirelessly receive an *alternating* electromagnetic field, this feature would have been obvious in view of the state of the art and *Oba*. (Ex. 1002, ¶144.) As explained, *Oba* provides for an AC magnetic field at antenna 270. Further, it was known to energize a transmitter coil using an alternating electromagnetic field to wirelessly send information to a receiver with a receiver coil. (*Id.*) For example, *Logan* discloses features consistent with that known by a POSITA regarding transmitting power and/or data wirelessly. (Ex. 1010, Title, Abstract, FIG. 2.) *Logan* demonstrates it was known to use an "electromagnetic signal … of sinusoidal form" to convey such data and also convey power between a transmitter 24 and a receiver 22. (Ex. 1010, 6:12-14, FIG. 2.) Likewise, *Logan* demonstrates knowledge about "energising a transmitter coil 12 to create an **alternating** electromagnetic flux," which "induces an E.M.F. in a receiver coil 16" (*id.*, 3:19-23) "to [wirelessly] convey information to a demodulator in the receiver," and that "a basic sinusoidal transmitter could convey power to the receiver" (*id.*, 3:24-28).

In light of such knowledge/disclosures, a POSITA would have been motivated, and found obvious, to configure the card 246 features provided in *Oba*'s personal computer 51 to include a transmission conductor configured to wirelessly receive power and data from an alternating electromagnetic field. (Ex. 1002, ¶145.) This would have been a predictable, known application of electromagnetic radiation, such as RF radiation used by *Oba*'s IC card 246, to wirelessly receive power and data. (Ex. 1002, ¶145; Ex. 1053, 36:11-15.) This implementation would have been a combination of known technologies/techniques to produce the foreseeable result of providing wireless signal reception in the card 246 implemented in *Oba*'s computer 51. Similarly, a POSITA would have had a reasonable expectation of success in configuring *Oba*'s computer 51 ("apparatus") to provide such features. (Ex. 1002, ¶145.) *KSR*, 550 U.S. at 416.

d) a data receiver configured to receive the data from at least one of the transmission conductor or an antenna;

Oba discloses this limitation. (Ex. 1002, ¶¶146-147.) *Oba*'s IC card 246 (integrated in computer 51) can receive data wirelessly (Section IX.C.1(c)) and includes a "data receiving section" 273 that receives the data from the antenna 270 and "transmission conductor" as discussed above for limitation 14(c). Figure 17 shows how the data receiving section receives the data after demodulation (blocks 283, 272). (Ex. 1053, 37:2-5.)

FIG. 17



(Ex. 1053, FIG. 17 (annotated)[21]; *id.*, 35:18-21, 36:6-15, 37:2-5; Ex. 1002, ¶146.)

Accordingly, *Oba* discloses the claimed "data receiver" in numerous ways. **First**, interface block 269 is a "data receiver" because it is configured to receive the data from the transmission conductor connecting antenna 270 and interface block

[21] Annotations herein are exemplary (e.g., annotations here exemplify general path directions and are not intended to reflect precise location of signal paths (necessarily present)). (Ex. 1002, ¶146.)

269 (shown above). (Ex. 1002, ¶147.) **Second**, interface block 269 is a "data receiver" because it is configured to receive the data from antenna 270. (*Id.*) **Third**, demodulator 283 is a "data receiver" because it is configured to receive the data from the transmission conductor connecting antenna 270 to interface block 269 (hosting demodulator 283) and alternatively from antenna 270. (*Id.*) **Fourth**, demodulator 272 is a "data receiver" because it is configured to receive the data from the transmission conductor connecting antenna 270 to interface block 269 (via demodulator 283) and alternatively from antenna 270 (via demodulator 283). (*Id.*) **Fifth**, data receiving block 273 is a "data receiver" because it is configured to receive the data from the transmission conductor connecting antenna 270 to interface block 269 (via demodulators 283 and 272) and alternatively from antenna 270 (via demodulators 283 and 272). (*Id.*) **Sixth**, demodulators 272 and 283 collectively are also a "data receiver" for similar reasons presented above. (*Id.*) **Seventh**, CPU 261 alone or collectively with ROM 262, RAM 263, and/or EEPROM 264 is a "data receiver" because CPU 261 is configured to receive the data from the transmission conductor connecting antenna 270 (via demodulators 283 and 272 and data receiving block 273) and alternatively from antenna 270 (via same components). (Ex. 1053, 35:25-36:5; Ex. 1002, ¶147.)

e) a battery ground capacitively coupled to at least one of the data receiver, the transmission conductor, or the LED circuit via a conductor,

Oba in view of *Hara* discloses or suggests this limitation for reasons similar to those explained for limitation 1(f). (Section IX.A.1(f); Ex. 1002, ¶148.) That analysis explains how the combined *Oba-Hara* teachings/suggestions and state of the art would have motivated a POSITA to configure *Oba*'s computer 51 to include a "battery ground capacitively coupled to at least one of the data receiver … the at least one LED, … via a conductor" among other components. (Section IX.A.1(f); Ex. 1002, ¶148.) For those same reasons, it would have been obvious to configure the *Oba* modified computer 51 (Section IX.C.1(c)) to include a battery ground capacitively coupled to the claimed components mapped to claim 14 (e.g., data receiver (limitation 14(d)), transmission conductor (limitation 14(c)), or LED circuit (limitation 14(b))). (Ex. 1002, ¶148.) A POSITA would have had the same reasons, skills, appreciations, knowledge, and expectation of success in implementing such features here as explained for the *Oba-Sato-Gillespie-Hara* combination in Ground 1. (*Id.*)

f) wherein the apparatus is portable, and

Oba discloses this limitation for the reasons discussed for limitation 1(g). (Section IX.A.1(g); Ex. 1002, ¶149.)

g) wherein the LED circuit, the transmission conductor, the at least one data receiver, and the battery ground are connected to at least one circuit board within a package.

Oba-Hara discloses or suggests this limitation for similar reasons as for limitations 1(h) and 14(e). (Sections IX.A.1(h), IX.C.1(e); Ex. 1002, ¶150.) That analysis explains how the mapped components of *Oba*'s modified computer 51 would have been contained in a "package." (Section IX.A.1(h).) For similar reasons explained for limitations 1(h) and 14(e), it would have been obvious to configure the *Oba-Hara* combined computer 51 (discussed for limitation 14(e)) to connect those same components to a circuit board within a "package" (limitations 14(b), 14(d), 14(e)) and also configure the same with the transmission conductor (discussed above for limitation 14(c)). (Sections IX.A.1(h), IX.C.1(b)-(e); Ex. 1002, ¶150.) A POSITA would have had the same reasons, skills, appreciations, knowledge, and expectation of success in implementing such features here as explained for the *Oba-Sato-Gillespie-Hara* combination in Ground 1. (Ex. 1002, ¶150.)

2. Claim 19

a) The apparatus of claim 14, wherein the data receiver comprises digital logic circuitry.

Oba discloses this limitation (as modified with *Hara*).[22] (Ex. 1002, ¶¶151-153.) For example, where CPU 261 (alone or collectively with ROM, RAM, EEPROM), which *Oba* describes as a "Pentium" processor (Ex. 1053, 20:10-11), is the "data receiver" (Section IX.C.1(d)), CPU 261 is of microprocessor form that necessarily includes digital logic circuitry to perform known processor functions consistent with that described by *Oba*. (Ex. 1002, ¶151.) A Pentium processor comprises digital logic circuitry, e.g., in order to provide processing relating to bits (binary digits) in memory. (Ex. 1017, 1, 3, FIGS. 4, 7; Ex. 1002, ¶151.) Likewise, memory (e.g., RAM 263) was known to include digital logic circuitry and thus necessarily comprises such components. (Ex. 1002, ¶151; Ex. 1007, 1043-1049, 1116-1122.)[23] Nonetheless, to the extent *Oba* does not explicitly disclose digital logic circuitry in any components/arrangements mapped from *Oba* to the "data receiver" as identified for limitation 14(d) (Section IX.C.1(d)), it would have been

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[22] PO has alleged no details regarding how this limitation is met in its contentions. (Ex. 1081, 19, 39.)

[23] Exhibits 1007 and 1017 (above) demonstrate state of the art. (Ex. 1002, ¶151.)

obvious to configure any of those components to include such circuitry. (Ex. 1002, ¶¶151.)

Usage of digital logic circuitry was known, including in the context of a data receiver. (Ex. 1002, ¶152; *see, e.g.*, Ex. 1015, Abstract, 2:4-8; Ex. 1016, 3:45-62; Ex. 1023, FIGS. 2, 4, 4:58-5:9, 6:13-32, 8:12-42; Ex. 1009, 8:25-43, 13:14-19.) Indeed, it was known to implement demodulators using digital circuitry. (Ex. 1002, ¶152; Ex. 1063, 1:12-62; Ex. 1064, Abstract, FIGS. 1-5, 1:40-2:39.)[24]

In light of such knowledge, a POSITA would have been motivated, and found obvious, to configure the "data receiver" component(s) in the modified *Oba* computer (discussed for limitation 14(d)) to comprise digital logic circuitry. (Ex. 1002, ¶153.) Doing so would have provided a known way of performing some of the data receiving functionalities (including demodulation) in connection with operations disclosed by *Oba*. (*See, e.g.*, Ex. 1053, 35:25-36:2.) Using digital logic circuits in such a manner would have beneficially leveraged a widely used, known type of circuitry. (Ex. 1002, ¶153; Ex. 1063, 1:49-54 (demonstrating state of art).) Such an implementation would have been a predictable design choice for a POSITA given the common use of digital logic circuitry in circuit designs. (Ex. 1002, ¶153.)

[24] Exhibits 1009, 1015-1016, 1023 (above), and 1063-1064 demonstrate state of the art. (Ex. 1002, ¶152.)

As such, configuring any one of the above-identified "data receiver[s]" in *Oba-Hara* with digital logic circuitry would have been a straightforward implementation of known technologies and design techniques, and a POSITA would have had a reasonable expectation of successfully implementing such a modification. (*Id.*) *KSR*, 550 U.S. at 416.

3. Claim 20

a) The apparatus of claim 19, wherein the digital logic circuitry includes TTL circuitry.

Oba-Hara discloses or suggests this limitation.[25] (Ex. 1002, ¶154.) As explained for claim 19, it would have been obvious to configure any of the identified "data receiver[s]" in *Oba* using digital logic circuitry. (Section IX.C.2.) Similarly, it would have been obvious to configure such digital logic circuitry using TTL circuitry. (Ex. 1002, ¶154.) Transistor-transistor logic (TTL) circuitry was a well-known example of digital logic circuit design and was applied in many implementations, including receivers. (*Id.*; Ex. 1015, Abstract (circuitry for converting "electrical signals into **TTL** level **digital signals**" and "amplifier for changing the electrical signal to **TTL digital logic** levels."), 2:4-8; Ex. 1016, 4:8-14; Ex. 1007, 1043-1049, 1158-1159, 1167-1195; Section IX.C.2.) A POSITA

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[25] PO has alleged no details how this limitation is met in its contentions. (Ex. 1081, 20, 39.)

would have thus appreciated that TTL circuitry was a basic design technique familiar to a POSITA and a predictable way to implement digital logic circuitry for various applications, including in a receiver. (Ex. 1002, ¶154.) Thus, for reasons similar to that explained for claim 19, it would have been obvious and straightforward to design any of the identified "data receiver[s]" in *Oba* using commonplace design concepts/technologies (TTL circuitry) when implementing the digital logic circuitry for the data receiver in the combined *Oba-Hara* apparatus. (Section IX.C.2; Ex. 1002, ¶154.) Thus, a POSITA would have had a reasonable expectation of success in such an implementation. (Ex. 1002, ¶154.) *KSR*, 550 U.S. at 416.

D. Ground 4: Claim 22 Is Obvious Over *Oba*, *Hara*, and *Jensen*

1. Claim 22

a) The apparatus of claim 14, wherein DC offset circuitry is coupled to the transmission conductor.

While *Oba-Hara* does not explicitly disclose DC offset circuitry coupled to the transmission conductor (limitation 14(c)), it would have been obvious in view of *Jensen* and the state of art to implement this feature.[26] (Ex. 1002, ¶¶155-159.)

[26] PO provides no details how this limitation is met in its contentions. (Ex. 1081, 20, 40; Ex. 1088, 19, 37.)

DC offset was a known characteristic in circuit design, from basic circuit applications to more complex ones involving data receivers. (Ex. 1002, ¶156; Ex. 1007, 58-62, 101-105; Ex. 1061, Abstract, 1:7-2:25, 3:66-4:15, 5:32-50.) *Jensen* discloses a digital demodulator used in radio receivers using known antenna circuitry and a DC offset module. (Ex. 1063, FIGS. 2, 12, 1:6-8, 1:12-62, 3:12-14, 3:26-36, 4:55-5:20.)

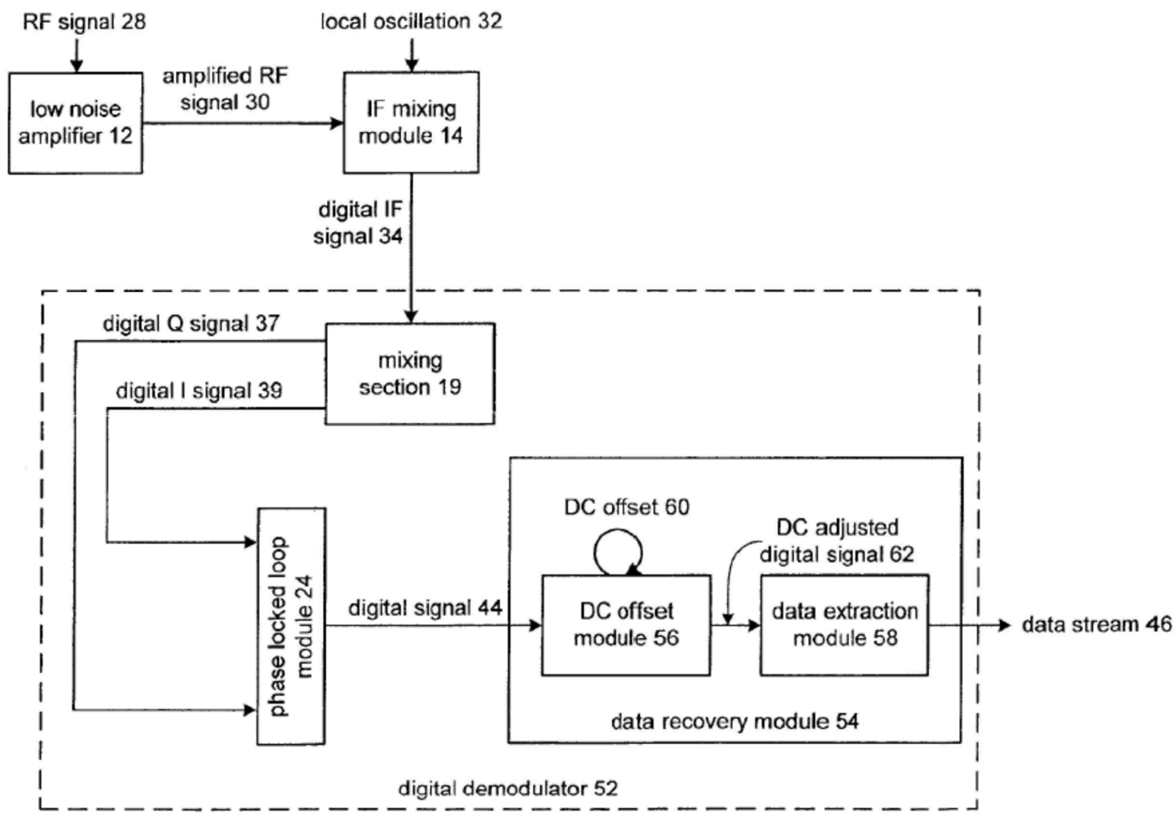

FIG. 2 radio receiver 50

(*Id.*, FIG. 2.)

Jensen explains that DC offset module 56 determines a DC offset 60 from a digital signal, which occurs from a difference in frequencies used in a transmitter radio and that of a receiving radio. (*Id.*, 5:3-15.) *Jensen* explains "[a]s one of average skill in the art will further appreciate," proper accounting of DC offset is needed to "ensure accurate extraction of data." (*Id.*, 5:11-20; *id.*, 5:24-26, 8:55-60, 9:36-12:28; 14:20-29; Ex. 1002, ¶157.)

In light of *Jensen* and the state of the art, it would have been predictable and obvious to implement DC offset circuitry coupled to the transmission conductor identified for limitation 14(c) in *Oba*'s card 246. (Ex. 1002, ¶158; Section IX.C.1(c).) As explained, the "transmission conductor" (limitation 14(c)) in *Oba*'s card 246 is configured to wirelessly receive RF signals that are provided by a RF transmitter and used by components of card 246. (Section IX.C.1(c); Ex. 1053, FIG. 17.) Thus, a POSITA would have recognized advantages of implementing DC offset circuitry to determine any DC offset that may occur during operation of the wireless communication and processing that *Oba*'s IC card 246. (Ex. 1002, ¶158.) Consistent with that known in the art, *Jensen* explains that determining DC offset arising from frequency differences between receiver and transmitter circuits was known and important to ensure "accurate extraction of data" in a wireless receiver. (*Id.*; Ex. 1063, 5:3-20; Ex. 1061, Abstract, FIG. 2, 1:8-11, 1:23-41, 2:4-13, 3:66-4:15.)[27] It would have been obvious to configure components of card 246 in *Oba*'s

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[27] Exhibit 1061 demonstrates state of art. (Ex. 1002, ¶158.)

modified computer 51 to include DC offset circuitry coupled to the "transmission conductor" (limitation 14(c)) to at least determine any DC offset that may occur in the RF signals received/processed by components of card 246 of *Oba*'s modified computer 51 so that the offset can be addressed in accordance with known DC offset compensation/correction mechanisms (like those described by *Jensen* and in the state of the art). (Ex. 1002, ¶158.)

Thus, given the knowledge of a POSITA and disclosures of *Jensen* and *Oba*, it would have been obvious and straightforward to design the circuitry in *Oba*'s card 246 (integrated in the above-described modified computer 51) using commonplace design concepts and conventional technologies that account for any DC offset that were known to possibly exist in wireless communication receiver circuits and systems and ensure proper data extraction. (*Id.*, ¶159.) Similarly, a POSITA would have had a reasonable expectation of success implementing this modification. (*Id.*) *KSR*, 550 U.S. at 416.

E. Ground 5: Claims 15-16 Are Obvious Over *Oba*, *Hara*, and *Sontag*

1. Claim 15

a) The apparatus of claim 14, further comprising an inductor coupled to the transmission conductor.

As discussed for limitation 14(c), *Oba* discloses an LC configuration of antenna 270 and capacitor 271. (Section IX.C.1(c); Ex. 1053, FIG. 17, 36:8-10.) While *Oba-Hara* does not explicitly disclose an inductor coupled to the transmission conductor discussed for limitation 14(c), it would have been obvious to implement this feature in view of *Sontag* and the state of the art.[28] (Ex. 1002, ¶¶160-164.)

The use of an inductor in wireless communication circuits/systems similar to those disclosed by *Oba* was known, and applying such widely available circuit design components in configuring the card 246 features integrated in computer 51 would have been a foreseeable, straightforward application of known circuit design concepts. (Ex. 1002, ¶162.) *Sontag* discloses circuitry relating to wireless signal transmission systems "with close proximity between transmitting and receiving apparatus" (Ex. 1065, 1:8-12), which is relevant to the close-range wireless transmissions described by *Oba* (Ex. 1053, FIG. 6, 18:20-22, 22:1-5, 26:19-21, 27:15-17, 32:26-33:2, 35:14-16; Ex. 1002, ¶162.) *Sontag* describes known usage of an inductor coupled to conductors that provide received wireless signals. (Ex. 1065, FIGS. 1-3, 3:2-23, 4:7-48.)

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[28] PO provides no details how this limitation is met in its contentions. (Ex. 1081, 17, 37.)

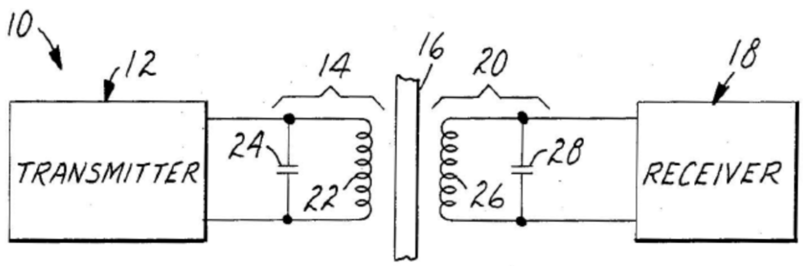

FIG. 1

(Ex. 1065, FIG. 1.)

In light of *Sontag*'s guidance coupled with *Oba*'s antenna and related circuitry for card 246 (Ex. 1053, 35:17-37:11), a POSITA would have been motivated to implement in the card 246 circuitry in the modified *Oba* computer 51 an inductor coupled to the transmission conductor (limitation 14(c)) (and a capacitor) to facilitate wireless transmission aspects of card 246. (Ex. 1002, ¶163; Ex. 1005, 5:39-66; Ex. 1010, Abstract, FIGS. 1-2, 3:19-23, 4:12-14, 6:3-5.)[29] Such a modification would have been a predictable extension to the configuration of *Oba*'s card 246 circuitry, which includes an LC (inductor-capacitor) circuit connected to the "transmission conductor." (Ex. 1053, FIG. 17; 36:8-10; Section IX.C.1(c); Ex. 1002, ¶163.)

Thus, it would have been obvious to configure the modified *Oba* computer to include an inductor coupled to the transmission conductor, so that the alternating

[29] Exhibits 1005 and 1919 demonstrate state of the art. (Ex. 1002, ¶163.)

electromagnetic field energy received at the computer (*see* limitation 14(c)) can be used to provide data and power to necessary components of the card 246 portion of computer 51. (Ex. 1002, ¶164.) Indeed, given the known use of inductor coils for facilitating wireless signal transmission (*see, e.g.*, Ex. 1010, Abstract, FIGS. 1-2, 3:19-23, 4:12-14, 6:3-5; Ex. 1005, 5:39-66), such a modification would have been a straightforward implementation of known technologies/techniques for facilitating wireless reception of signals for transmission along conductors to other components. (Ex. 1002, ¶164.) *KSR*, 550 U.S. at 416. Accordingly, a POSITA would have had a reasonable expectation of success implementing such features. (Ex. 1002, ¶164.)

2. Claim 16

a) The apparatus of claim 15, further comprising a capacitor coupled to the inductor.

Oba-Hara-Sontag discloses or suggests this limitation for the same reasons discussed for claim 15, which explains how the combination discloses an inductor coupled to a capacitor (LC circuit).[30] (Section IX.E.1; Ex. 1002, ¶165; Ex. 1065, FIGS. 1-3, 3:2-23, 4:7-48.)

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[30] PO provides no details how this limitation is met in its contentions. (Ex. 1081, 17-18, 37.)

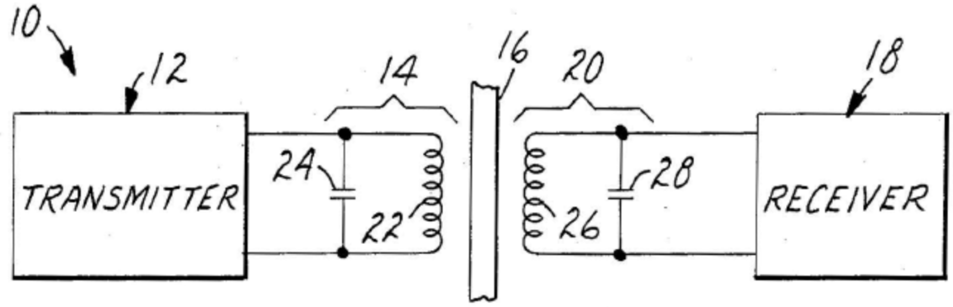
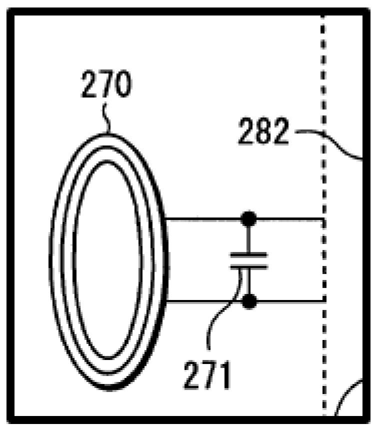


FIG. 1

(Ex. 1065, FIG. 1; Ex. 1053, 23:48-51.)



(Ex. 1053, FIG. 17 (excerpted; discussed above in Section IX.E.1).)

F. Ground 6: Claims 17-18 Are Obvious Over *Oba*, *Hara*, *Sontag*, and *Gillespie*

1. Claim 17

a) The apparatus of claim 16, further comprising a circuit configured to detect human touch via capacitive sensing.

Oba-Hara-Sontag in view of *Gillespie* discloses or suggests this limitation for similar reasons as explained for limitation 1(e) in Ground 1 and claim 16. (Sections

IX.A.1(e), IX.E.2; Ex. 1002, ¶¶166-167.) The analysis for limitation 1(e) explains how disclosures/suggestions in *Oba* in light of *Gillespie* and the state of the art would have motivated a POSITA to configure *Oba*'s touch pad 65 as a capacitive touch screen with associated circuitry to provide enhanced touch input and display/control functionalities (Section IX.A.1(e)). (Ex. 1002, ¶167; Ex. 1058, 1:44-50, FIGS. 3A, 9, 2:17-37, 5:53-4:4; Ex. 1059, ¶¶[0011]-[0013], FIGS. 1, 8, 9, ¶¶[0014], [0036], [0041] [0052], [0064]; Ex. 1060, ¶¶[0107], [0116], [0132]; Ex. 1008, Abstract, 2:42-46, 12:18-22) (all demonstrating state of the art).) Similarly, a POSITA would have had the same motivation, knowledge, skill, and expectation of success in implementing such a modification as discussed for the *Oba-Sato-Gillespie-Hara* combination for limitation 1(e) in Section IX.A.1(e) for the *Oba-Hara-Sontag-Gillespie* combination discussed here for claim 17. (Ex. 1002, ¶167.) *KSR*, 550 U.S. at 416.

2. Claim 18

a) The apparatus of claim 17, further comprising a power supply configured to increase power supplied to the at least one LED when the circuit detects a touch.

Oba-Hara-Sontag-Gillespie discloses or suggests this limitation for similar reasons as explained for claims 5 and 17. (Sections IX.A.4, IX.F.1; Ex. 1002, ¶¶168-169.) The analysis for claim 17 explains how *Oba* in view of *Gillespie* and the state of the art would have led a POSITA to configure the touch pad/panel in the *Oba*-

Hara-Sontag computer as a capacitive touch screen providing features similar to those described by *Gillespie*. (*See* Sections IX.A.1(e), IX.F.1.) The analysis for claim 5 explains how in light of *Oba* and *Gillespie*, it would have been obvious to configure *Oba*'s modified computer 51 to include a power supply configured to increase power supplied to the at least one LED in the modified OLED or LED-backlit touch screen when the capacitive touch sensor circuit in the modified apparatus detects a touch. (*See* analysis, citations, and rationale regarding this modification regarding the *Oba-Sato-Gillespie-Hara* combination of Ground 1 (Sections IX.A.1(e), IX.A.4), which are applicable here; Ex. 1002, ¶168.)

Similarly, a POSITA would have had the same capabilities, understandings, and expectation of success for implementing such power supply features (as recited in claim 18), as explained for the *Oba-Sato-Gillespie-Hara* combination (for claim 5) for the *Oba-Hara-Sontag-Gillespie* combination discussed here for claim 18 (which recites similar features). (Ex. 1002, ¶169.) *KSR*, 550 U.S. at 416. Accordingly, for those reasons, the *Oba-Hara-Sontag-Gillespie* combination discloses or suggests the limitations of claim 18. (Ex. 1002, ¶169.)

G. Ground 7: Claims 7-9 Are Obvious Over *Oba*, *Zhang*, and *Hara*

1. Claim 7

a) An apparatus comprising:

Oba discloses this limitation for the reasons discussed for limitation 1(a). (Section IX.A.1(a); Ex. 1002, ¶¶170-171; Sections IX.G.1(b)-(h).)

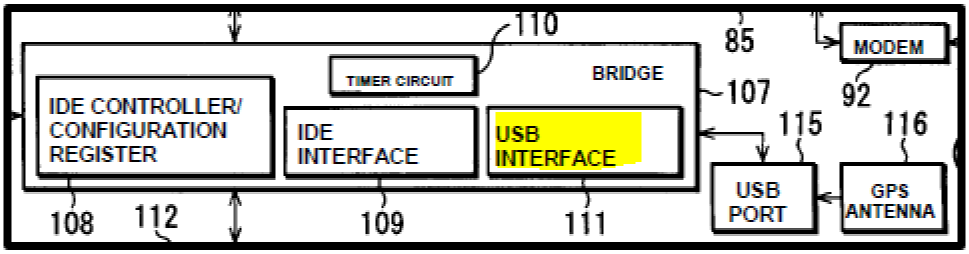
b) an LED circuit comprising at least one LED;

Oba discloses this limitation for the reasons discussed for limitations 1(b) and 14(b). (Sections IX.A.1(b), IX.C.1(b); Ex. 1002, ¶172.)

c) a first transmission conductor configured to receive first power and first data;

Oba in view of *Zhang* discloses or suggests this limitation. (Ex. 1002, ¶¶173-178.) PO relies on a USB port to meet this limitation in its contentions in district court. (Ex. 1081, 8-9, 28-29; Ex. 1088, 8-9, 27-28.)[31] Under PO's interpretation, *Oba* discloses this limitation because computer 51 includes a USB connector and USB port. (Ex. 1053, FIG. 11 (111, 115), 22:23-23:10, 47:21-24.)

[31] Petitioner does not acquiesce to PO's interpretation/assertion and reserves the right to dispute PO's position here and in district court.



(*Id.*, FIG. 11 (excerpted/annotated); Ex. 1002, ¶173.)

USB connectors (e.g., interface or port such as described by *Oba*) were known to be configured to receive power and data over a conductor. (Ex. 1002, ¶174; Ex. 1055, 17-18 (§§4.2.1-4.3.2), 85-91, 102; Ex. 1011, FIGS. 1-2 (element 54), FIG. 3, 1:36-40, 3:43-57, 5:56-60, 5:60-6:14; 6:22-27, 6:46-48, 6:62-7:2, 11:57-12:2.)[32] Moreover, a USB connection, like described by *Oba*, necessarily included connections to carry power and data. (*E.g.*, Ex. 1055, 85-94; Ex. 1002, ¶174.)

Accordingly, *Oba* necessarily discloses a first transmission conductor configured to receive first power and first data via the USB port and/or USB connector, under PO's interpretation of this limitation. (Ex. 1002, ¶175.)

Moreover, *Oba* in view of *Zhang* discloses and/or suggests this limitation another way. For example, to the extent *Oba* does not disclose a "first transmission conductor" configured to receive first power and first data (such as via a USB connector as PO interprets the limitation), it would have been obvious to implement

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[32] Exhibits 1011 and 1055 demonstrate state of the art. (Ex. 1002, ¶174.)

such features in light of the state of the art and *Zhang*. (*Id.*) *Zhang* discloses a configuration for transmitting data over a power line that powers a computer device including a data bus interface unit for exchanging data with a computer and a power line data transceiver unit for communication data and receiving power. (Ex. 1072, Abstract, ¶[0007].) While *Zhang* discloses a configuration including a DC/data cable 17 that connects DC output to a network data interface and also to a DC powered computer device 2 (*id.*, FIG. 2A, ¶¶[0018]-[0019]), *Zhang* discloses an arrangement with "reduced wire count" where a DC power and data modulator/demodulator is provided within device 2 that connects to a power network module 1 over a conductor 17, as shown in Figure 2B (below). (*Id.*, ¶[0019].)

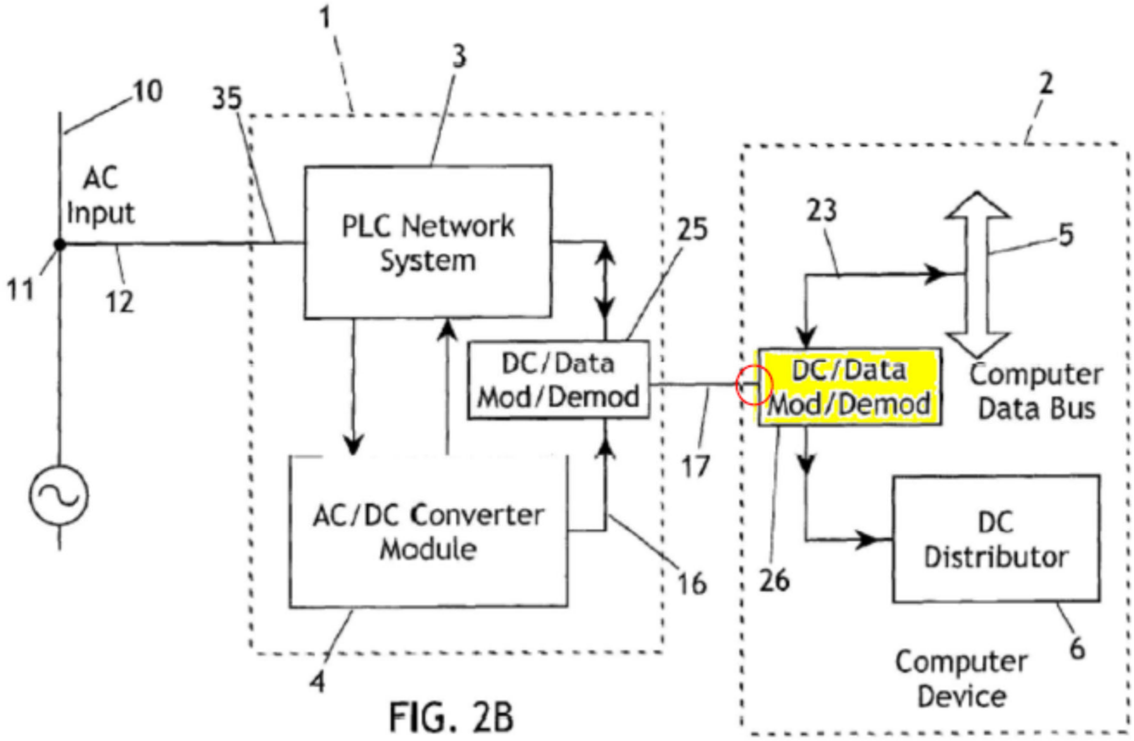

FIG. 2B

(*Id.*, FIG. 2B (annotated to show conductor 17 extending (red) into device 2); Ex. 1002, ¶175.)[33]

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[33] While *Zhang* explains that DC/data cable 17 "may" include two conductors for DC power and at least two conductors for data communications, such arrangement is not required given the conditional description and *Zhang*'s follow-on discussion of Figure 2C, which provides a reduced wire count. (Ex. 1002, ¶175.)

FIG. 1A

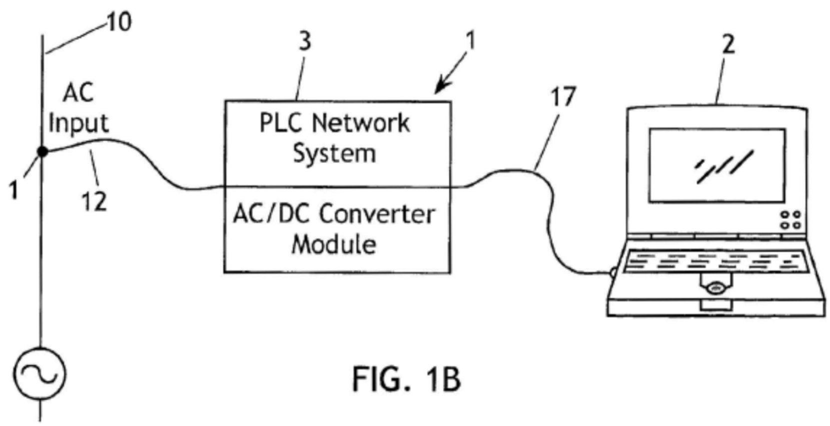


FIG. 1B

(Ex. 1072, FIG. 1B; *id.*, ¶¶[0010], [0017] ("cable 17 may carry both DC power and data"); Ex. 1002, ¶175.)

Zhang also explains that the "circuitry of the PLC network system can physically be installed internally in the computer device." (Ex. 1072, ¶[0033]; *see also id.*, FIG. 2C, ¶¶[0020], [0026]-[0032]; claims 1-2, 9 ("single connector for conducting DC power and system data to the computer device"); Ex. 1002, ¶175.)

In light of the teachings/suggestions of *Zhang* and *Oba*, a POSITA would have been motivated to configure *Oba*'s modified computer 51 to include an interface configured to receive first power and first data to reduce wire count and provide an alternate mechanism for receiving such signals over a wired connection. (Ex. 1002, ¶176.) *Zhang* discloses configurations for providing data communications (and power) for a computer device, which is related to technical discussions associated with *Oba*'s computer and thus is in the same technical field. A POSITA would have been motivated to modify *Oba* to include an interface that provides a "first" transmission conductor to receive power and data similar to that described by *Zhang*, especially given *Oba* provides for AC power input and describes usage of various mechanisms for receiving power and/or data. (*Id.*)

Thus, a POSITA would have understood *Oba*'s concerns for providing multiple ways for computer 51 to send and/or receive data and/or power and thus would have been motivated in light of *Zhang* to configure another mechanism that includes a transmission conductor for receiving power and data using AC power input components already present in computer 51. (*Id.*, ¶177.) *Zhang* would have provided guidance motivating a POSITA to design and implement such a component with reduced wire count while providing a way to receive data and power using the AC power components with reduced wire count. (*Id.*; Ex. 1072, ¶[0019].)

Such a modification would have been within the skills and capabilities of a POSITA, and given the disclosures of *Oba* and *Zhang*, and that the modification would have involved the use of known data/power communication circuit technologies, a POSITA would have had a reasonable expectation of success implementing it. (Ex. 1002, ¶178.) In certain exemplary ways, a POSITA may have considered the use of components similar to or based on functionalities similar to *Zhang*'s PLC network system that is incorporated entirely into computer 51 as contemplated by *Zhang* (Ex. 1072, ¶[0033]) or may have been configured to provide an interface circuitry internal to computer 51 that communicates with external components that operated similar to or were based on functionalities similar to *Zhang*'s PLC network system (*e.g., id.*, FIGS 1B, 2B, ¶¶[0024]-[0033]). (Ex. 1002, ¶178.) In any of these or other configurations, the modification would have included a "first" transmission conductor that received "first" power and "first" data like that recited in limitation 7(c).

d) a second transmission conductor configured to wirelessly receive second power and second data from an alternating electromagnetic field;

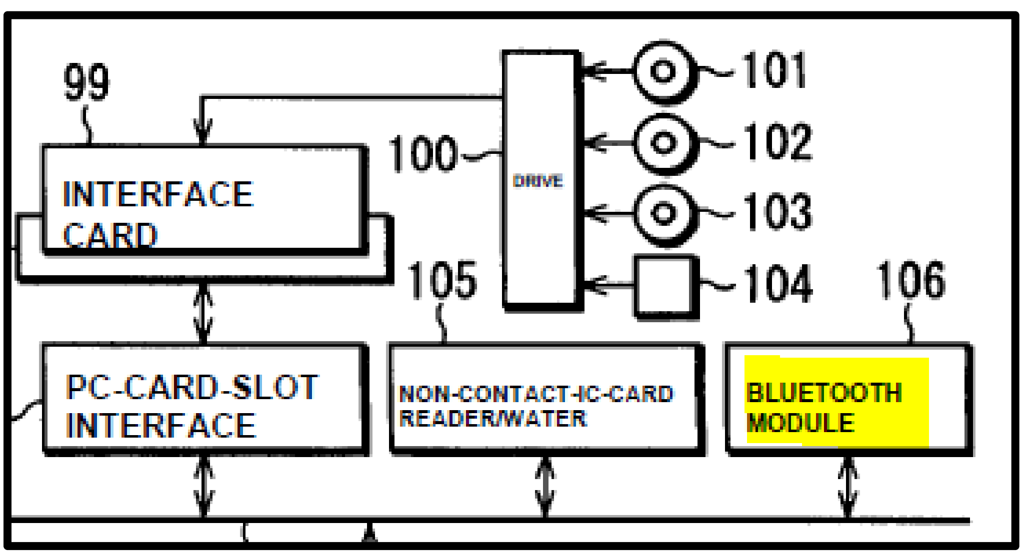
Oba (as modified above) discloses or suggests this limitation for reasons discussed for limitation 14(c). (Section IX.C.1(c); Ex. 1002, ¶¶179-180.)

Section IX.C.1(c) explains how *Oba* (and the state of the art) discloses or suggests the features recited in limitation 14(c), which are similar to those of limitation 7(d). In light of the state of the art and *Oba*'s disclosures, a POSITA would have had the same capabilities, understandings, and expectation of success for configuring the "transmission conductor" (discussed for limitation 14(c) regarding the *Oba-Hara* combination (Ground 3) for the *Oba-Zhang-Hara* combination here. Thus, for similar reasons motivated by *Oba* and the state of art as discussed for limitation 14(c) above, it would have been obvious to configure the *Oba* modified computer 51 with a "second transmission conductor" as recited in limitation 7(d). (Ex. 1002, ¶179.)

For example, for similar reasons as above, *Oba* discloses that IC card 246 includes a "second transmission conductor" (conductor necessarily connected to or part of antenna 270 (Ex. 1053, FIG. 17)) configured to wirelessly receive second power and second data from an alternating electromagnetic field (e.g., power is received and data is communicated via the AC magnetic field excited at antenna 270, which receives the electromagnetic waves provided by reader/writer 105. (Ex. 1002, ¶180.) And where, as explained, personal computer 51 includes both reader/writer 105 (*see* limitation 7(c)) and an IC card 246, *Oba* discloses an "apparatus" (e.g., computer 51) that includes a second transmission conductor as claimed. (*Id.*) The transmission conductor in the IC card 246 (as discussed above) implemented in computer 51 is a "second" transmission conductor that is "configured" to receive "second" power and data because in context of the combination here, the above-disclosed "transmission conductor" (described for limitation 14(c)) is different from the USB-based transmission conductor ("first transmission conductor") discussed for limitation 7(c) and the signals received via the second conductor are different from the "first" power and data received via the USB interface 111. (Ex. 1002, ¶180.) To the extent *Oba* does not explicitly disclose the card 246 (implemented in computer 51) includes a transmission conductor configured to receive an *alternating* electromagnetic field, this feature would have been obvious in view of the state of the art for the same reasons explained for limitation 14(c). (Section IX.C.1(c); Ex. 1002, ¶180.)

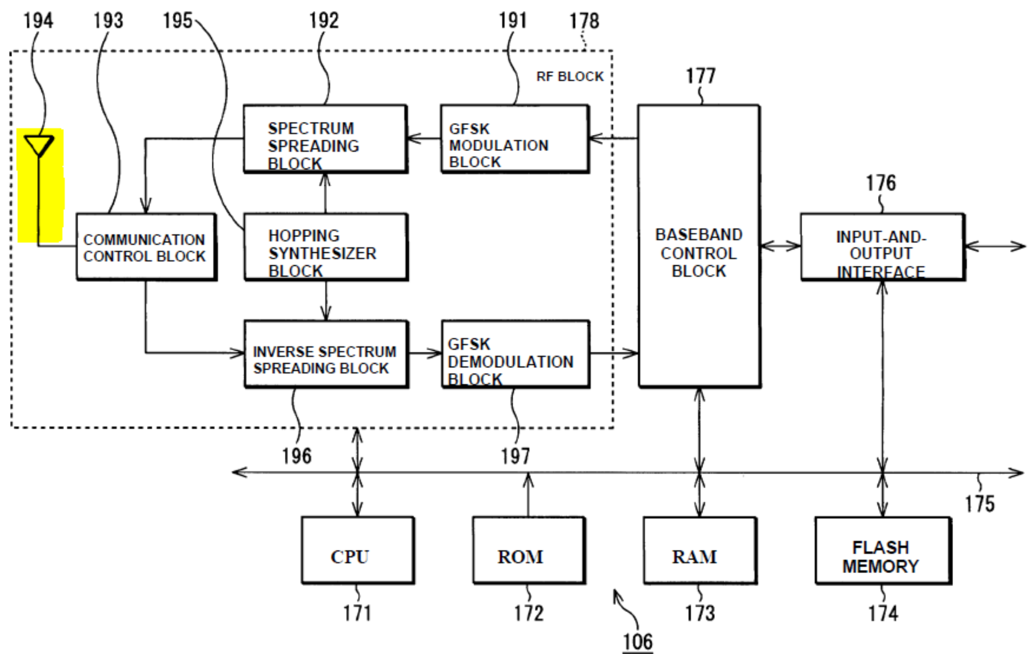
e) at least one data receiver configured to receive the first and second data respectively from the first and second transmission conductor, or receive third data via an antenna; and

Oba (as modified based on *Zhang*) discloses this limitation. (Ex. 1002, ¶¶181-182.) *Oba* explains that computer 51 includes a Bluetooth module 106 configured to receive [third] data via an antenna 194. (Ex. 1053, FIGS. 11, 13, 20-21, 22:6-8, 26:19-21, 27:18-29:27 (e.g., 29:19-20 ("signal received by the antenna 194")), 38:3-5, 39:7-43:17 (describing data communications to/from Bluetooth module 106 regarding FIGS. 20-21 (below)).)



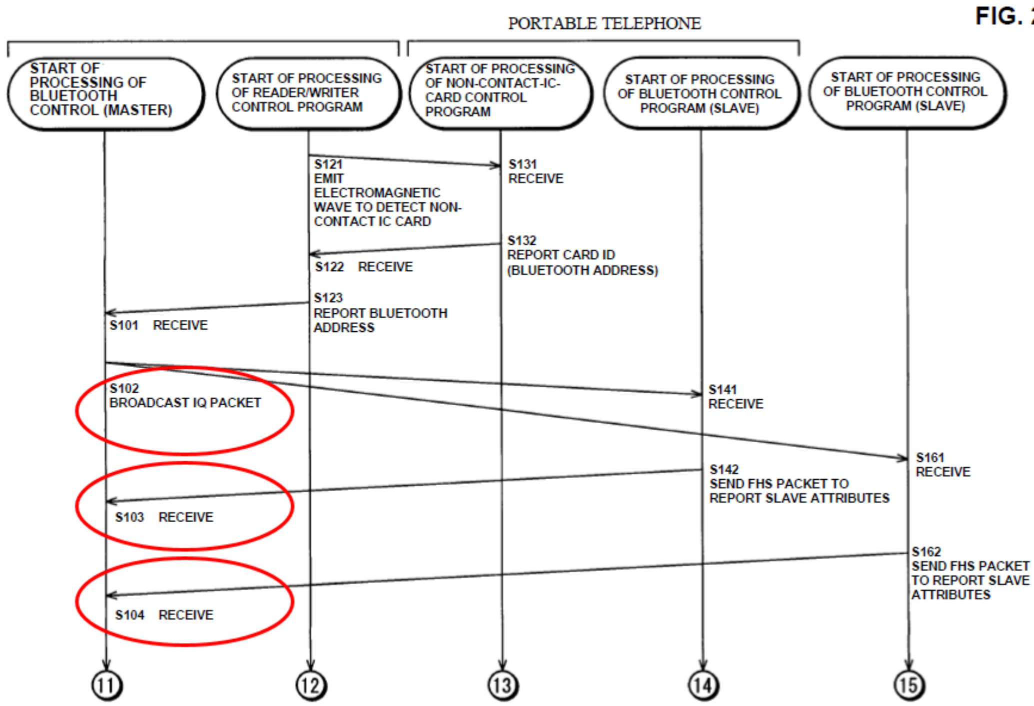
(Ex. 1053, FIG. 11 (excerpted/annotated); Ex. 1002, ¶181.)

FIG. 13



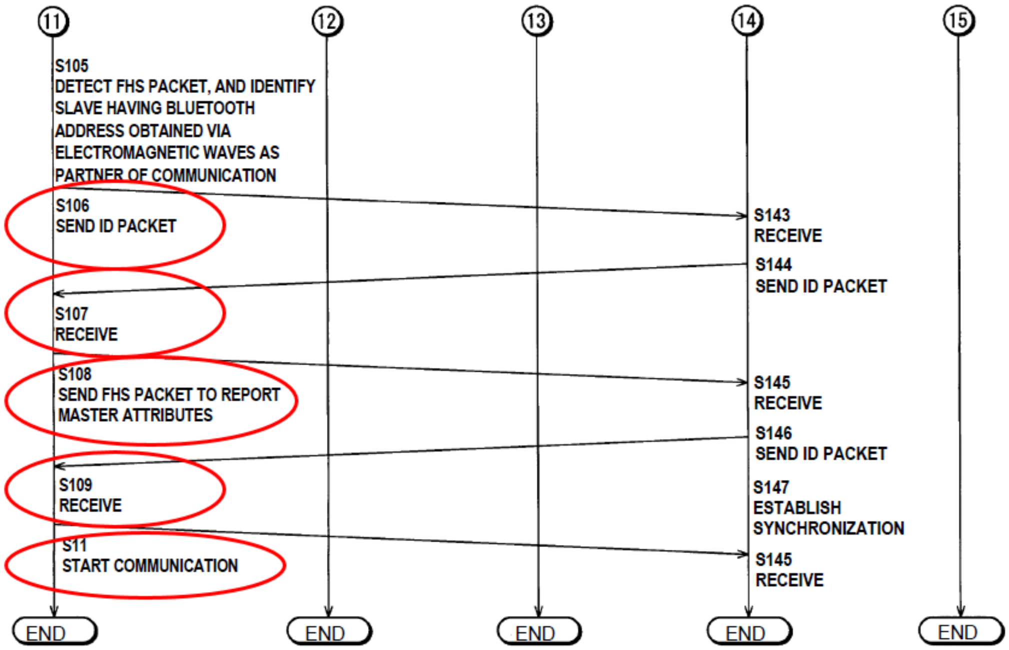
(Ex. 1053, FIG. 13 (annotated); Ex. 1002, ¶181.)

FIG. 20



(Ex. 1053, FIG. 20 (annotated); Ex. 1002, ¶181.)

FIG. 21



(Ex. 1053, FIG. 21 (annotated); Ex. 1002, ¶181.)

Thus, *Oba* discloses computer 51 ("apparatus") including a "data receiver" (e.g., Bluetooth module 106, or components within module 106 (e.g., communication control section 193 receiving data via antenna 194)) configured to "receive third data via an antenna" (e.g., any Bluetooth data received via antenna 194, which is different data than the "first" and "second" data discussed for limitations 7(c)-(d)). (Ex. 1002, ¶182.)

f) a battery ground capacitively coupled to at least one of the at least one data receiver, the LED circuit, the first transmission conductor, or the second transmission conductor via a conductor,

The *Oba-Zhang* combination and *Hara* discloses or suggests this limitation for reasons similar for limitations 1(f) and 14(e). (Sections IX.A.1(f), IX.C.1(e); Ex. 1002, ¶183.) That analysis explains how *Oba*'s battery necessarily includes a battery *ground* and how *Oba* in view of the state of the art and asserted combinations in those grounds would have motivated a POSITA to configure *Oba*'s computer 51 to include a "battery ground capacitively coupled" to claimed components of the modified *Oba* computer. (Sections IX.A.1(f), IX.C.1(e); Ex. 1002, ¶183.) Similarly, it would have been obvious to configure the *Oba-Zhang-Hara* combined computer 51 to include a battery ground capacitively coupled to the claimed components mapped to claim 7, e.g., data receiver (limitation 7(e)), transmission conductors (limitation 7(c)-(d)), or LED circuit (limitation 7(b)). (Ex. 1002, ¶183.) A POSITA would have had the same reasons, skills, appreciations, knowledge, and expectation of success in implementing such features as explained above for the combinations in Grounds 1 and 3 for the *Oba-Zhang-Hara* combination here for claim 7. (*Id.*; Sections IX.A.1(f), IX.C.1(e).)

g) wherein the apparatus is portable, and

Oba discloses this limitation for reasons discussed for limitation 1(g). (Section IX.A.1(g); Ex. 1002, ¶184.)

h) wherein the LED circuit, the first transmission conductor, the second transmission conductor, the at least one data receiver, and the battery ground are contained within a package and connected to at least one circuit board within the package.

Oba-Zhang-Hara discloses or suggests this limitation for reasons similar to those discussed for limitations 1(h) and 14(g). (Sections IX.A.1(h), IX.C.1(g); Ex. 1002, ¶185.) That analysis explains how the components of *Oba*'s modified computer mapped to the limitations of claims 1 and 14 are contained in a "package" and how/why it would have been obvious to configure *Oba*'s modified computer to connect the components to at least one circuit board in the package, like claimed in limitation 7(h). (Sections IX.A.1(h), IX.C.1(g); Ex. 1002, ¶185.) Similarly, it would have been obvious to configure the *Oba-Zhang-Hara* combined computer 51 to connect the claimed components mapped to claim 7 (e.g., data receiver (limitation 7(e)), transmission conductors (limitation 7(c)-(d)), and LED circuit (limitation 7(b)) to at least one circuit board in the "package." (Ex. 1002, ¶185.) A POSITA would have had the same reasons, skills, appreciations, knowledge, and expectation of success in implementing such features as explained above for the combinations in Grounds 1 and 3 for the *Oba-Zhang-Hara* combination here for claim 7. (*Id.*; Sections IX.A.1(h), IX.C.1(g).)

2. Claim 8

a) The apparatus of claim 7, wherein the at least one data receiver further comprises digital logic circuitry.

Oba-*Zhang*-*Hara* discloses or suggests this limitation for reasons similar to those discussed for claim 19. (Ex. 1002, ¶¶186-188; Section IX.C.2.) *Oba*'s Bluetooth module (or components therein) ("data receiver") necessarily includes digital logic circuitry because Bluetooth was known to operate with computers that perform logic functions to facilitate data reception/processing according to the Bluetooth specification. (Ex. 1002, ¶186.) *Oba*'s Bluetooth component 106 includes a CPU 171 that would have been formed with a microprocessor or similar processor and memories (172-174) that were known to use digital logic to operate. (Ex. 1053, FIG. 13, 27:18-28:12; Ex. 1018, 24, 45; Ex. 1007, 1043-1049, 1116-1122; Ex. 1002, ¶186.)[34] Thus, at least CPU 171 necessarily includes digital logic circuitry, given it processes and/or stores instructions and signals for use by other components, consistent with known processors and digital circuits. (Ex. 1053, 27:20-21; Ex. 1002, ¶186.)

To the extent *Oba* does not disclose such claimed features, it would have been obvious to implement digital logic circuitry in Bluetooth module 106. (Ex. 1002, ¶187.) Digital logic circuitry was known, including in the context of a data receiver.

[34] Exhibits 1018 and 1007 demonstrate state of the art. (Ex. 1002, ¶186.)

(Ex. 1002, ¶187; *see, e.g.*, Ex. 1015, Abstract, 2:4-8; Ex. 1016, 3:45-62; Ex. 1023, FIGS. 2, 4, 4:58-5:9, 6:13-32, 8:12-42; Ex. 1009, 8:25-43, 13:14-19; Ex. 1063, 1:12-62; Ex. 1064, Abstract, FIGS. 1-5, 1:40-2:39.)[35] In light of such knowledge, a POSITA would have been motivated to configure the data receiver in the *Oba-Zhang-Hara* device to comprise digital logic circuitry. (Ex. 1002, ¶188.) Such a configuration would have been a straightforward implementation of known technologies/techniques promoting low cost, reliability, and rapidity of design/development for reasons similar to those explained for claim 19 (Section IX.C.2), and a POSITA would similarly have had a reasonable expectation of success implementing such a modification. (Ex. 1002, ¶188.)

3. Claim 9

a) The apparatus of claim 8, wherein the digital logic circuitry includes transistor-transistor logic ("TTL") circuitry.

Oba-Zhang-Hara discloses or suggests this limitation. (Ex. 1002, ¶189.) The analysis for claim 8 above explains how *Oba* necessarily discloses, or alternatively how a POSITA would have found obvious, a "data receiver" using digital logic circuitry. (Section IX.G.2.) Similarly, it would have been obvious to configure

[35] Exhibits 1009, 1015-1016, 1023, and 1063-1064 demonstrate state of the art. (Ex. 1002, ¶187.)

such digital logic circuitry using TTL circuitry. (Ex. 1002, ¶189.) TTL circuitry was a known example of digital logic circuit design. (*Id.*; Ex. 1015, Abstract, 2:4-8; Ex. 1016, 4:8-14; Ex. 1007, 1043-1049, 1158-1159, 1167-1195; Section IX.G.2.) Thus, for similar reasons as explained for claims 8 (Section IX.G.2) and 20 (Section IX.C.3) and in light of the state of the art, it would have been obvious and straightforward to design the "data receiver" using commonplace design concepts/technologies (e.g., TTL circuitry) when implementing the digital logic circuitry for the "data receiver" in the *Oba-Zhang-Hara* apparatus discussed above. (Ex. 1002, ¶189.) A POSITA would have had the same reasons, skills, appreciations, knowledge, and expectation of success in implementing such features as explained above for claim 8 and the *Oba-Hara* combination for claim 20, for the *Oba-Zhang-Hara* combination here. (*Id.*)

H. Ground 8: Claims 10-11 Are Obvious Over *Oba*, *Zhang*, *Hara,* and *Sato*

1. Claim 10

a) The apparatus of claim 7, further comprising a semiconductor device configured to emit a laser.

Oba-Zhang-Hara in view of *Sato* discloses or suggests this limitation for reasons similar to those discussed for limitation 1(c). (Ex. 1002, ¶¶190-191; Section IX.A.1(c).) That analysis explains how *Oba* in view of the state of the art and *Sato* would have motivated a POSITA to configure *Oba*'s modified computer to include optical disk drive circuitry with a laser diode. (Section IX.A.1(c).) Similarly, it would have been obvious to implement similar features in the *Oba-Zhang-Hara* combined computer (for claim 7) in light of *Sato*. (Ex. 1002, ¶191.) A POSITA would have had the same reasons, skills, appreciations, knowledge, and expectation of success in implementing such features as explained above for the combination in Ground 1 and for the *Oba-Zhang-Hara-Sato* combination here for claim 10. (*Id*.)

2. Claim 11

a) The apparatus of claim 10, wherein the semiconductor device comprises a laser diode.

Oba-Zhang-Hara-Sato discloses or suggests this limitation for the reasons explained for claim 10. (Section IX.H.1; Ex. 1002, ¶192.)

I. Ground 9: Claims 12-13 Are Obvious Over *Oba, Zhang*, *Hara, Sato*, and *Gillespie*

1. Claim 12

a) The apparatus of claim 10, further comprising a circuit configured to detect human touch via capacitive sensing.

Oba-Zhang-Hara-Sato in view of *Gillespie* discloses or suggests this limitation for similar reasons as explained for limitation 1(e) in Ground 1 and claim 10. (Sections IX.A.1(e), IX.H.1; Ex. 1002, ¶¶193-194.) The analysis for limitation 1(e) explains how the disclosures/suggestions in *Oba* in light of *Gillespie* and the state of the art motivated a POSITA to configure *Oba*'s touch pad/panel as a capacitive touch screen with associated circuitry to provide enhanced touch input and display/control functionalities (Section IX.A.1(e)). (Ex. 1002, ¶194; Ex. 1058, 1:44-50, FIGS. 3A, 9, 2:17-37, 5:53-4:4; Ex. 1059, ¶¶[0011]-[0013], FIGS. 1, 8-9, ¶¶[0014], [0036], [0041] [0052], [0064]; Ex. 1060, ¶¶[0107], [0116], [0132]; Ex. 1008, Abstract, 2:42-46, 12:18-22 (all demonstrating state of the art).) Similarly, in light of *Gillespie* and the state of the art, a POSITA would have had the same motivation, knowledge, skill, and expectation of success in implementing such a modification as discussed for the *Oba-Sato-Gillespie-Hara* combination for limitation 1(e) in Section IX.A.1(e) for the *Oba-Zhang-Hara-Sato-Gillespie* combination discussed here for claim 12 (which recites similar features) and claim 10 (discussing *Oba-Zhang-Hara-Sato*). (Ex. 1002, ¶194; Section IX.H.1.) *KSR*, 550 U.S. at 416.

2. Claim 13

a) The apparatus of claim 12, further comprising a power supply configured to increase power supplied to the at least one LED when the circuit detects a touch.

Oba-Zhang-Hara-Sato-Gillespie discloses or suggests this limitation for similar reasons explained for claims 5 and 12. (Sections IX.A.4, IX.I.1; Ex. 1002, ¶¶195-196.) The analysis for claim 12 explains how *Oba* in view of *Gillespie* and the state of the art would have led a POSITA to configure the touch pad/panel in the *Oba-Hara-Sontag* computer as a capacitive touch display providing features similar to those described by *Gillespie*. (*See* Sections IX.A.1(e), IX.I.1.) The analysis for claim 5 explains how in light of *Oba* and *Gillespie* (and the state of the art), it would have been obvious to configure *Oba*'s modified computer 51 to include a power supply configured to increase power supplied to at least one LED in a modified OLED or LED-backlit touch display when the touch sensor circuit detects a touch. (*See* analysis regarding this modification in context of the *Oba-Sato-Gillespie-Hara* combination of Ground 1 (Sections IX.A.1(e), IX.A.4), which are applicable here; Ex. 1002, ¶195.)

A POSITA would have had the same capabilities, understandings, and expectation of success for implementing such power supply features (recited in claim 13), as explained for the *Oba-Sato-Gillespie-Hara* combination (for claim 5) for the *Oba-Zhang-Hara-Sato-Gillespie* combination discussed here. (Ex. 1002, ¶196.) *KSR*, 550 U.S. at 416.

J. Ground 10: Claim 21 Is Obvious Over *Oba*, *Zhang*, *Hara*, and *Jensen*

1. Claim 21

a) The apparatus of claim 7, wherein the data receiver includes DC offset circuitry.

Oba-Zhang-Hara-Jensen discloses or suggests this limitation for reasons similar to those discussed for claims 7 and 22.[36] (Ex. 1002, ¶¶197-198; Sections IX.G.1, IX.D.1.)

The analysis for claim 7 explains how *Oba* (as modified in view of *Zhang*) discloses a "data receiver" (for limitation 7(e)). (Section IX.G.1(e).) The analysis for claim 22 explains how in light of *Oba* and *Jensen* (and the state of the art), it would have been obvious to configure *Oba*'s modified computer 51 to include DC offset circuitry within the wireless communication aspects of card 246 for the described *Oba-Hara* combination for Ground 4. (Section IX.D.1; Ex. 1002, ¶198.) In light of *Jensen* and state of the art as discussed there, a POSITA would have had the same capabilities, understandings, and expectation of success for implementing a DC offset circuit in wireless communication card 246 for the *Oba-Hara-Jensen* combination in the "data receiver" (limitation 7(e)) for the *Oba-Zhang-Hara-Jensen*

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[36] PO provides no details how this limitation is met in its contentions. (Ex. 1081, 20, 39-40; Ex. 1088, 18, 37.)

combination here. (Ex. 1002, ¶198.) *Jensen* provides examples of the above discussed DC offset features in context of a Bluetooth receiver, which would have been equally applicable to the Bluetooth module 106 ("data receiver") mappings in the *Oba-Zhang-Hara* combination of claim 7. (*Id.*; Ex. 1065, 1:12-21, 3:61-63, 9:1-35.) Thus, for similar reasons motivated by *Jensen* (and state of art) discussed for claim 22 above, it would have been obvious to implement DC offset circuitry within the Bluetooth module 106 circuitry ("data receiver" (limitation 7(e)). (Ex. 1002, ¶198.)

X. DISCRETIONARY DENIAL IS NOT APPROPRIATE HERE

An evaluation of the factors under *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (Mar. 20, 2020) (precedential), favors institution notwithstanding the Texas and Illinois Litigations (Section II).

The **first *Fintiv* factor** favors institution. Petitioner will seek stays of the Texas and Illinois Litigations upon institution. The Board should not speculate regarding the likelihood of stay, particularly because courts routinely issue stays after institution. *Western Digital Corp. et al v. Kuster*, IPR2020-01391, Paper 10 at 8-9 (Mar. 11, 2021; *Samsung Elec. Am., Inc. v. Snik LLC*, IPR2020-01427, Paper 10 at 10 (Mar. 9, 2021).

The **second and third *Fintiv* factors** favor institution. The Texas and Illinois Litigations are at early stages. In both, a trial date has not been set, and there has not been significant resource investment by the court and parties, particularly compared to resource expenditures leading up to trial. (Exs. 1077-1078, 1084.) Significantly, **PO has represented that it will drop the ’697 patent from the Texas Litigation**. Additionally, Petitioner has moved to dismiss the Texas Litigation or transfer it to Illinois (Ex. 1085), and the Illinois court **denied PO’s motion to transfer the Illinois Litigation to Texas** (Ex. 1083). Thus, it is highly likely that only the Illinois Litigation, where Petitioner filed an action for declaratory judgment of non-infringement (Exs. 1075-1076), will proceed as to the ’697 patent, and accordingly only that litigation is relevant for *Fintiv* analysis. Any trial in the Illinois Litigation (if it occurs) would likely only occur at least 102 weeks after the service of the complaint—and thus after a final written decision in this IPR. (Ex. 1089, 1-2 (document available at Northern District of Illinois website, estimating “Case Ready for Trial” 102 weeks after complaint served); Ex. 1077, 5 (Dkt. #16 showing summons returned May 19, 2021).)

In the Texas Litigation, PO has not even completed service on Samsung Electronics Co., Ltd. (*See generally* Ex. 1078.) Furthermore, the Texas court’s order governing patent proceedings sets a default *Markman* hearing date as “23 weeks after [case management conference] (or as soon as practicable)” and a default trial date as “52 weeks after *Markman* hearing (or as soon as practicable).” (Ex. 1073, 9, 11.) Thus, trial in Texas (even if it includes the ’697 patent) is unlikely to occur at least until 75 weeks **after the (unscheduled) case management conference**. Even without other delays, trial is thus likely to occur after any final written decision. Additionally, the venue dispute in the Texas Litigation will need to be resolved before claim construction. (Ex. 1079, 1 ("[t]he Court will not conduct a Markman hearing until it has resolved the pending motion to transfer").) Additionally, WDTX civil trials "may possibly slip" due to "months of backlogged trials." *HP Inc. v. Slingshot Printing LLC*, IPR2020-01085, Paper 12 at 7 (Jan. 14, 2021). If the Texas Litigation is transferred to Illinois, any trial date in Illinois will likely be even later.

The **fourth *Fintiv* factor** favors institution. In the Illinois Litigation, PO has asserted claims 1-3, 5-7, 10-14, 17-18, and 21-22 of the '697 patent, and the amended complaint in the Texas Litigation identifies only 3 out of the 22 claims, while this Petition challenges all 22 claims, so the district court cases will not resolve all disputed validity issues. (Section IX; Ex. 1074, ¶26; Ex. 1086, ¶31; Ex. 1087, 2-3; Ex. 1088, 2-49.) Furthermore, Petitioner stipulates it will not pursue, in either the Texas or Illinois Litigations, invalidity based on any instituted IPR grounds in this proceeding.

Finally, the **sixth *Fintiv* factor** favors institution. Petitioner diligently filed this Petition **within three months of PO's amended complaint** in the Texas Litigation (Ex. 1086, 17) and **within one week of PO's amended infringement contentions** in the Illinois Litigation (Ex. 1087), with strong grounds (*supra* Section

IX). Institution is consistent with the significant public interest against "leaving bad patents enforceable." *Thryv, Inc. v. Click-To-Call Techs., LP*, 140 S. Ct. 1367, 1374 (2020). This Petition is the ***sole*** PTAB challenge to the '697 patent—a "crucial fact" favoring institution. *Google LLC v. Uniloc 2017 LLC*, IPR2020-00115, Paper 10 at 6 (May 12, 2020).

XI. CONCLUSION

Petitioner requests institution of IPR for the challenged claims based on the specified grounds.

Respectfully submitted,

Dated: September 7, 2021 By: /Joseph E. Palys/
Joseph E. Palys (Reg. No. 46,508)
Counsel for Petitioner

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 11,019,697 contains, as measured by the word-processing system used to prepare this paper, 13,996 words. This word count does not include the items excluded by 37 C.F.R. § 42.24 as not counting towards the word limit.

Respectfully submitted,

Dated: September 7, 2021

By: /Joseph E. Palys/
Joseph E. Palys (Reg. No. 46,508)
Counsel for Petitioner

CERTIFICATE OF SERVICE

I hereby certify that on September 7, 2021, I caused a true and correct copy of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 11,019,697 and supporting exhibits to be served via express mail on the Patent Owner at the following correspondence address of record as listed on PAIR:

K&L Gates LLP-Chicago
P.O. Box 1135
Chicago IL 60690

By: /Joseph E. Palys/
Joseph E. Palys (Reg. No. 46,508)