

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION**

MOSAID TECHNOLOGIES INC.,

Plaintiff,

v.

**INFINEON TECHNOLOGIES AG and
INFINEON TECHNOLOGIES AMERICAS
CORP.,**

Defendants.

Civil Action No. 1:25-cv-358-ADA

INFINEON’S PRELIMINARY INVALIDITY CONTENTIONS

Defendants Infineon Technologies AG and Infineon Technologies Americas Corp., collectively (“Infineon”) provide the following disclosure of Preliminary Invalidity Contentions to Plaintiff MOSAID Technologies Inc. (“MOSAID”) regarding United States Patent No. 7,111,179 (the “’179 Patent”), United States Patent No. 7,051,306 (the “’306 Patent”), and United States Patent No. 7,349,448 (the “’448 Patent”) (collectively, the “Patents-in-Suit” or “Asserted Patents”).

These preliminary contentions are made only as to the claims of the Patents-in-Suit that MOSAID has identified in its Preliminary Infringement Contentions dated June 20, 2025:

Patent	Asserted Claims	MOSAID Alleged Priority Date(s)	Chart Prefix
’179 Patent	1–13, 15–33, 35–40	October 11, 2001, or, in the alternative, October 11, 2002	179
’306 Patent	1–51	May 7, 2003, or, in the alternative, May 7, 2004	306
’448 Patent	4, 8	August 1, 2003	448

Infineon reserves the right to supplement these preliminary invalidity contentions at least per the parties' agreement and/or to the extent MOSAID is allowed to change their Asserted Claims.

These preliminary invalidity contentions are being made before fact discovery opens and before claim construction. The parties have not yet started general discovery and document production, and no depositions have been noticed or taken. No third-party discovery of any underlying issue has been taken. Accordingly, Infineon reserves the right to supplement and amend these preliminary contentions to the extent additional information becomes available during discovery, including the deadline for serving Final Invalidity Contentions. Infineon may serve third-party discovery on companies that it is informed and believes have relevant prior art. Infineon will also be taking third-party discovery from the individuals named as inventors on MOSAID patent filings and associated companies. Infineon may also serve additional third-party discovery in the future including, but not limited to, based on discovery received from MOSAID, the inventor, and/or the above-referenced third parties. Infineon reserves the right to supplement and/or amend its invalidity contentions to include new prior art discovered from MOSAID, from the named inventors, from these third-party sources, or other sources.

I. RESERVATIONS

A. General Reservation of Right

The information provided shall not be deemed an admission regarding the scope of any claims or the proper construction of those claims or any claim terms. In certain instances, Infineon has applied the claims to the prior art in view of MOSAID's allegations, admissions, or positions for purposes of these preliminary invalidity contentions only, to the extent Infineon can discern MOSAID's allegations. This disclosure of preliminary invalidity contentions is not intended to be, and is not, an admission that any Asserted Claim is infringed by any of Infineon's products,

any particular feature or aspect of any of the accused products practices any limitations of the Asserted Claims, or any of the constructions implicit in MOSAID's Preliminary Infringement Contentions is reasonable, supportable, or proper. Rather, in some instances, Infineon's application of the claims to the prior art is intended to apply MOSAID's apparent interpretation of the claims.

B. The Intrinsic Record

Infineon reserves the right to rely on applicable industry standards and prior art cited in the file histories of the Patents-in-Suit and any related U.S. and foreign patent applications as invalidating references or to show the state of the art. Infineon further reserves the right to rely on the patent applicant's admissions concerning the scope of the prior art relevant to the Patents-in-Suit found in, *inter alia*: the patent prosecution history for the Patents-in-Suit and any related patents and/or parent applications or reexaminations (or *inter partes* review or post-grant review proceedings); any deposition testimony of the named inventor or inventors whose names were removed during prosecution of the Patents-in-Suit; any deposition testimony or other admissions by MOSAID; and the papers filed and any evidence submitted by MOSAID in connection with this or any related litigation or proceeding.

C. Rebuttal Evidence

Prior art not included in these preliminary invalidity contentions, whether known or not known to Infineon, may become relevant. In particular, Infineon is currently unaware of the extent, if any, to which MOSAID will contend that limitations of the Asserted Claims of the Patents-in-Suit are not disclosed in the prior art identified herein or otherwise contend the Patents-in-Suit are not invalid. To the extent that such an issue arises, Infineon reserves the right to identify other references that would render obvious the allegedly missing limitation(s) or the disclosed device or method, or otherwise rebut MOSAID's argument(s).

D. Contextual Evidence

Infineon's claim charts cite particular teachings and disclosures of the prior art as applied to the limitations of each of the Asserted Claims. However, persons having ordinary skill in the art generally may view an item of prior art in the context of his or her experience and training, other publications, literature, products, and understandings. Moreover, common sense may be employed as part of the obviousness analysis. As such, Infineon may rely on the uncited portions of the prior art references and on other publications, expert testimony, and common sense as aids in understanding and interpreting the cited portions, as providing context thereto, and as additional evidence that the prior art discloses a claim limitation or the claimed subject matter as a whole. Infineon further reserves the right to rely on uncited portions of the prior art references, other publications, and testimony, including expert testimony, to establish bases for combinations of certain cited references that render the Asserted Claims obvious. The references discussed in the claim charts may disclose the elements of the Asserted Claims explicitly and/or inherently, and/or they may be relied upon to show the state of the art in the relevant time frame. The suggested obviousness combinations are provided in the alternative to anticipation contentions and are not to be construed as suggesting that any reference included in the combinations is not by itself anticipatory.

II. IDENTIFICATION OF PRIOR ART

The following patents, publications, systems, and admitted prior art are prior art to the Asserted Claims of the Patents-in-Suit under at least 35 U.S.C. §§ 102(a), (b), (d), (e) and/or (g). Infineon also incorporates as if fully set forth in these Preliminary Invalidity Contentions the complete prosecution histories for the Patents-in-Suit and related patents, including the prior art and supporting documents cited in those prosecution histories. Infineon may cite or rely upon the

prosecution histories, the examiner's findings, and the prior art cited therein to support or provide context for these Preliminary Invalidity Contentions.

Infineon not only relies upon the prior art disclosed in these Preliminary Invalidity Contentions, but also relies on any commercial embodiments and accompanying literature (or other evidence and/or witness testimony) of the various assignees that correspond to the respective disclosures found within the prior art disclosed in these contentions. The assignees' various and respective commercial embodiments and/or corresponding literature (or other evidence and/or witness testimony) anticipate and/or render obvious the claims of the Patents-in-Suit for at least the reasons disclosed in these Preliminary Invalidity Contentions, as well as for other independent reasons found within the commercial embodiments and corresponding literature. Infineon also reserves the right to rely on related patents, published applications, foreign patents or publications, and other patent documents as necessary to establish prior art status or clarify the disclosures cited. Infineon further reserves the right to rely on the earliest publication or priority dates to which each of the prior art references are entitled, including dates on which a claim of priority may be based for patent references that are any of a divisional, continuation, or continuation-in-part of an earlier filed patent application.

Infineon reserves the right to revise its claim charts to rely on any of these references to prove the invalidity of the claims of the Patents-in-Suit in a manner consistent with the Federal Rules of Civil Procedure, the Court's Local Rules, and this Court's Orders.

A. Patents and Published Patent Applications

1. '179 Patent

Number	Inventor(s)	Date Filed	Date Issued / Published
US5754436A	Walsh, James; Brown, Jacqueline.	November 6, 1998	May 19, 1998

Number	Inventor(s)	Date Filed	Date Issued / Published
US6845456B1	Menezes, Evandro; Tobias, David F.; Russell, Richard; Altmejd, Morrie.	July 16, 2001	January 18, 2005
US7254721B1	Tobias, David F.; Menezes, Evandro; Russell, Richard; Altmejd, Morrie.	June 7, 2001	August 7, 2007
US6895520B1	Altmejd, Morrie; Menezes, Evandro; Tobias, David.	March 2, 2001	May 17, 2005
US7100061B2	Halepete, Sameer; Anvin, H. Peter; Chen, Zongjian; D'Souza, Godfrey P.; Fleischmann, Marc; Klayman, Keith; Lawrence, Thomas; Read, Andrew.	January 18, 2000	August 29, 2006
US6829713B2	Cooper, James; Arjangrad, Jay.	December 30, 2000	December 7, 2004
US5682273A	Hetzler, Steven R.	September 22, 1995	October 28, 1997
US6513124B1	Furuichi, Sanehiro; Aihara, Toru; Shimotono, Susumu.	May 14, 1999	January 28, 2003
US5452277A	Bajorek, Christopher H.; Glaser, Thomas W.; Klaassen, Klaas B.; Nielsen, Charles R.; Santana, George R.; Smith, Gordon J.; Thompson, David A.	December 30, 1993	September 19, 1995
US5715467A	Jirgal, James J.	April 4, 1996	February 3, 1998
US4879669A	Kihara, Hiroyuki; Mitaki, Kazuya.	March 16, 1988	November 7, 1989
US2001/0005891A1	Nakamura, Satoshi.	December 8, 2000	June 28, 2001
US2001/0044705A	Vardi, David; Barritz, Robert; Kassan, Peter; Cohen, Gerald.	January 9, 2001	November 22, 2001

Number	Inventor(s)	Date Filed	Date Issued / Published
US6768969B1	Nikitin, Alexei V.; Frei, Mark G.; Bhavaju, Naresh C.; Osorio, Ivan;	April 3, 2001	July 27, 2004
US5423045A	Kannan, Krishnamurthi; Jones, Christopher D.; Lee, Nathan J.; Leontiades, Kyriakos; Novak, Frank P.; Sharam, Vikram.	April 15, 1992	published on June 6, 1995

2. '306 Patent

Number	Inventor(s)	Date Filed	Date Issued / Published
US6141762A	Nicol, Christopher J.; Singh, Kanwar Jit.	August 3, 1998	October 31, 2000
US6484265B2	Borkar, Shekhar Y.; De, Vivek K.; Kshavarzi, Ali; Narena, Siva G.	December 30, 1998	November 19, 2002
US6968467B2	Inoue, Akihiko; Hamada, Masao; Koji, Kai.	May 2, 2002	November 22, 2005
US6345362B1	Bertin, Claude Louis; Dean, Alvar Antonio; Goodnow, Kenneth Joseph; Gould, Scott Whitney; Pricer, Wilbur David; Tonti, William Robert; Ventrone, Sebastian Theodore.	April 6, 1999	February 5, 2002
US6353369B1	Boerstler, David William.	November 30, 2000	March 5, 2002
US6895520B1	Altmejd, Morrie; Menezes, Evandro; Tobias, David.	March 2, 2001	May 17, 2005
US5925133A	Buxton, Clark L.; Crycraft, Donald	May 30, 1997	July 20, 1999

Number	Inventor(s)	Date Filed	Date Issued / Published
	G.; Hawkins, Keith G.; Baum, Gary.		
US6859882B2	Fung, Henry T.	May 18, 2001	February 22, 2005
US7174467B1	Helms, Frank P.; Gulick, Dale E.; Hewitt, Larry D.; Hughes, William A.; Miranda, Paul C.; Meyer, Derrick R.; Swanstrom, Scott E.; White, Scott A.	June 28, 2002	February 6, 2007
US6711447B1	Saeed, Ali.	January 22, 2003	March 23, 2004
US6513124B1	Furuichi, Sanehiro; Aihara, Toru; Shimotono, Susumu.	May 14, 1999	January 28, 2003
US7028196B2	Soltis, Jr., Donald C.; Naffziger, Samuel.	December 13, 2002	April 11, 2006
US6496729B2	Thompson, David L.	July 22, 1999	December 17, 2002
US7254721B1	Tobias, David F.; Menezes, Evandro; Russell, Richard; Altmejd, Morrie.	June 7, 2001	August 7, 2007
US5832286A	Yoshida, Yukihiro.	May 23, 1995	November 3, 1998
US6836849B2	Brock, Bishop Chapman; Hofstee, Harm Peter; Johnson, Mark A.; Keller, Jr., Thomas Walter; Nowka, John.	April 5, 2001	December 28, 2004
US7111179B1	Girson, Andrew; Donskoy, Boris; Tennies, Nathan.	October 11, 2002	September 19, 2006
US6885233B2	Huard, Douglas Robert; Burton, Edward Allyn; Wong, Keng L.	May 2, 2002	April 26, 2005
US6845456B1	Menezes, Evandro; Tobias, David F.;	July 16, 2001	January 18, 2005

Number	Inventor(s)	Date Filed	Date Issued / Published
	Russell, Richard; Atlmejd, Morrie.		
US7100061B2	Halepete, Sameer; Anvin, H. Peter; Chen, Zongjian; D'Souza, Godfrey P.; Fleischmann, Marc; Klayman, Keith; Lawrence, Thomas; Read, Andrew.	January 18, 2000	August 29, 2006
US6762629B2	Tam, Simon M.; Rusu, Stefan.	July 26, 2002	July 13, 2004

3. '448 Patent

Number	Inventor(s)	Date Filed	Date Issued / Published
US4363978A	Heimbigner, Gary L.	1980-07-31	1982-12-14
US4782250A	Adams, Robert D.; Flaker, Roy C.; Gray, Kenneth S.; Kalter, Howard L.	1987-08-31	1988-11-01
US5410300A	Gould, Joel M.; Lackritz, Neal M.	1993-08-19	1995-04-25
US5510742A	Lemaire, Frederic	1993-10-21	1996-04-23
US5572535A	Pixley, Carl; Cho, Hyunwoo; Plessier, Bernard F.; Wilson, Jesse R.; McGarity, Ralph	1994-07-05	1996-11-05
WO1995010899A1	Viitanen, Esa; Kemppainen, Vesa; Sahlman, Kari; Oksanen, Toni; Patana, Jari	1994-10-13	1995-04-20
US5717871A	Williams, Mark	1996-02-06	1999-08-31
US6400735B1	Percey, Andrew K.	1998-06-22	2002-06-04
US20020144211A1	Maamari, Fadi; Shum, Sonny	2001-03-27	2002-10-03
US6489830B1	Kostarnov, Igor	2001-09-05	2002-12-03
US20020057103A1	Ngai, Tony; Pedersen, Bruce; Shumarayev, Sergey; Schleicher, James; Huang, Wei-Jen; Maruri, Victor; Patel, Rakesh	2002-01-14	2002-05-16
US20030056080A1	Watanabe, Mitsuhiro	2002-09-18	2003-03-20
US20030128052A1	Cliff, Richard; Ahanin, Bahram; Lytle, Craig; Heile, Francis; Pedersen, Bruce; Veenstra, Kerry	2003-02-20	2003-07-10

B. Publications

1. '179 Patent

Title	Author / Publisher	Pub. Date
Numerical Taxonomy	Sneath, Peter H.; Soka, Robert R.	1963
A Study of Standardization of Variables in Cluster Analysis	Milligan, Glenn W.; Cooper, Martha C.	1988
Powerscope: A Tool for Profiling the Energy Usage of Mobile Applications	Flinn, Jason; Satyanarayanan, M.	1999
Interactive Modular Programming in Scheme	Tung, Sho-Huan Simon.	1992
Advanced Configuration and Power Interface Specification	Intel; Microsoft; Toshiba	December 22, 1996

2. '306 Patent

Title	Author / Publisher	Pub. Date
Advanced Configuration and Power Interface Specification	Intel; Microsoft; Toshiba	December 22, 1996
A 32-bit PowerPC System-on-a-Chip With Support For Dynamic Voltage Scaling and Dynamic Frequency Scaling	Nowka, Kevin J.; Carpenter, Gary D.; MacDonald, Eric W.; Ngo, Hung C.; Brock, Bishop C.; Ishii, Koji I.; Nguyen, Tuyet Y.; Burns, Jeffrey L.	November, 2002
Energy-Efficient Processor Design Using Multiple Clock Domains with Dynamic Voltage and Frequency Scaling	Semeraro, Greg; Magklis, Grigorious; Balasubramonian, Rajeev; Albonesi, David H.; Dwarkadas, Sandhya; Scott, Michael L.	2002

3. '448 Patent

Title	Author / Publisher	Pub. Date
Optimized Design of High Fan-In Multiplexers Using Tri-State Buffers	M. Alioto, G. Di Cataldo, and G. Palumbo	10/2002
Data Path Tradeoffs using MABAL	Kayhan Kucukcakar; Alice C. Parker	1990
Digital Integrated Circuit Design	Ken Martin	2000
Engineering Digital Design (2 nd Ed.)	Richard F. Tinder	2000
Architecture and CAD for Deep-Submicron FPGAs	Vaughn Betz; Jonathan Rose; Alexander Marquardt	1999
Basic Digital Electronics	JA Strong	1991

Infineon additionally identifies and relies on patent or publication references that describe or are otherwise related to the prior art systems identified below. Infineon's investigation into prior art patent and publication references remains ongoing, and Infineon reserves the right to identify and rely on additional patent or publication references that are identified through further investigation or discovery. Infineon reserves the right to supplement as further prior art is identified through investigation or discovery.

C. Systems

The following systems¹ are prior art to one or more of the Asserted Claims.

1. '179 Patent

Item	Person or Entity	Date of Knowledge, Use, Sale, or Offer for Sale
Transmeta Crusoe	Transmeta	At least 2000
Intel Processors	Intel	At least 1999
AMD PowerNow	AMD	At least 2000

¹ Infineon may subpoena one or more of these entities to obtain additional information on the system identified herein. To the extent those subpoenas result in the production of relevant documents or testimony, Infineon will supplement these Preliminary Invalidity Contentions as necessary.

Item	Person or Entity	Date of Knowledge, Use, Sale, or Offer for Sale
PSOC 1	Infineon	At least 2001

2. '306 Patent

Item	Person or Entity	Date of Knowledge, Use, Sale, or Offer for Sale
Transmeta Crusoe	Transmeta	At least 2000
Intel Processors	Intel	At least 1999
AMD PowerNow	AMD	At least 2000
PSOC 1	Infineon	At least 2001

3. '448 Patent

Item	Person or Entity	Date of Knowledge, Use, Sale, or Offer for Sale
AMBA AHB	ARM	At least 2001
IBM CoreConnect	IBM	At least 1999
Cypress PSOC 1 (all variants)	Cypress/Infineon	At least 2001
Bus used with Atmel MicroControllers	Atmel	At least 1999

III. CHARTS SETTING FORTH WHERE IN THE PRIOR ART REFERENCE EACH ELEMENT OF THE ASSERTED CLAIMS ARE FOUND

Exhibits A1 to C15 provide detailed claim charts showing where each claim element may be found in the prior art identified above. Each of these Exhibits is without prejudice to Infineon's indefiniteness positions under 35 U.S.C. § 112(b) and assume that such positions have been rejected by the Court. Nothing in the Exhibits should be taken as a concession that the claims are not indefinite.

The charts include both art that teaches each limitation according to MOSAID apparent construction of its claims based on its infringement contentions as well as art that teaches each limitation according to a proper understanding of the asserted claims. That Infineon has relied on MOSAID apparent constructions in mapping the exemplary teachings of the prior art to the limitations of the asserted claims does not mean that Infineon agrees with those interpretations. Infineon reserves the right to advocate for constructions of the asserted claims that limit them to their proper scope. Moreover, nothing in the asserted charts is an admission that any assertion

expressly or impliedly made in MOSAID infringement contentions is correct. Infineon maintains that it does not infringe any asserted claim, and nothing in these charts discounts from that position.

Infineon relies on all portions and aspects of each item of prior art in support of Infineon's contention that such prior art satisfies each limitation of the Asserted Claims. Infineon has provided specific supporting citations to the prior art, but these citations do not necessarily represent every location, instance, or manner in which a particular claim limitation is satisfied by the prior art. Even where limitations are disclosed at multiple locations within a single item of prior art, Infineon has not necessarily identified every iteration of every such disclosure. Infineon therefore reserves the right to rely on additional, or different, portions/aspects of the prior art other than those specifically cited in the claim charts provided herewith.

For those references for which detailed claim charts are provided in the Exhibits, the Exhibit Number is listed next to the prior art reference in Section IV.A. Prior art references which are not associated with an Exhibit Number are additional prior art references that are pertinent to the invalidity of the Patents-in-Suit, either alone or in combination with other references. At this time, Infineon has not provided claim charts for each of these additional references, either because they are cited in conjunction with references for which charts have already been provided, are cited in these contentions, and/or because these references have similar disclosures to the prior art references for which invalidity charts have been provided and/or may be used to show the state of the art.

Each of the prior art references identified below anticipates and/or renders obvious one or more of the Asserted Claims alone and/or when viewed in combination with other prior art references. Infineon's contentions that the references described in these Preliminary Invalidity Contentions, in various combinations, render the Asserted Claims obvious under 35 U.S.C. § 103

are in no way an admission or suggestion that each reference does not independently anticipate the Asserted Claims under 35 U.S.C. § 102. Furthermore, the specific combinations described in these Preliminary Invalidity Contentions are not intended to be exhaustive, as there are many possible combinations of these references, and it is not practical, particularly at this early stage before further factual investigation and claim construction proceedings, to identify and list all potentially relevant combinations. Infineon reserves the right to identify additional combinations in its final invalidity contentions, during expert discovery, and in later stages of the case.

Infineon provides additional information regarding these combinations below. Each of these exemplary combinations is listed for purposes of explaining and exemplifying which references would be combined under the motivations to combine described in the paragraphs below. These combinations are not intended to be exclusive or limiting but rather intended to provide notice of the reasoning behind the motivations to combine and the references that would be combined thereunder. In many instances, multiple different motivations would apply to a particular combination (for example, if multiple references were both authored by the same person and referred to the same product/system, then both of those motivations would apply) and the specific combinations were not duplicated.

Should any prior art cited above be deemed not to disclose, explicitly or inherently, any limitation of a claim, Infineon reserves the right to argue that any such difference between that prior art and the corresponding claim would have been obvious to one of ordinary skill in the art. To the extent that such an argument is deemed a “combination” analysis for purposes of obviousness, Infineon discloses its present intention to rely on the separate combination of the knowledge of a person of ordinary skill in the art with each item of prior art identified above. The

knowledge of a person of ordinary skill in the art is demonstrated by the full list of references above, the prior art produced, the state of the art, and common sense.

1. '179 Patent

Ex. #	Reference
A-1	Invalidity of 7,111,179 in view of AMD PowerNow
A-2	Invalidity of 7,111,179 in view of US5682273, Milligan, US5754436A, Tung, and US6513124B1
A-3	Invalidity of 7,111,179 in view of Intel Processors
A-4	Invalidity of 7,111,179 in view of PSOC 1
A-5	Invalidity of 7,111,179 in view of US5423045A, US2001/0044705A, and US2001/0005891A
A-6	Invalidity of 7,111,179 in view of US7254721B1
A-7	Invalidity of 7,111,179 in view of Transmeta Crusoe
A-8	Invalidity of 7,111,179 in view of Secondary References

2. '306 Patent

Ex. #	Reference
B-1	Invalidity of U.S. Patent No. 7,051,306 in view of US6895520B1, US6345362B1, and ACPI Specification v 1.0
B-2	Invalidity of U.S. Patent No. 7,051,306 in view of AMD PowerNow
B-3	Invalidity of U.S. Patent No. 7,051,306 in view of Intel Processors
B-4	Invalidity of U.S. Patent No. 7,051,306 in view of US6141762A, US8086884B2, Nowka, and US6484265B2
B-5	Invalidity of U.S. Patent No. 7,051,306 in view of Nowka, US6484265B2, US6353369B1, and US6345362B1
B-6	Invalidity of U.S. Patent No. 7,051,306 in view of PSOC 1
B-7	Invalidity of U.S. Patent No. 7,051,306 in view of Transmeta Crusoe

Ex. #	Reference
B-8	Invalidity of U.S. Patent No. 7,051,306 in view of US5832286A
B-9	Invalidity of U.S. Patent No. 7,051,306 in view of Secondary References

3. '448 Patent

Ex. #	Reference
C-1	Invalidity of U.S. Patent No. 7,349,448 in view of Alioto 2002
C-2	Invalidity of U.S. Patent No. 7,349,448 in view of AMBA AHB
C-3	Invalidity of U.S. Patent No. 7,349,448 in view of Atmel – Microcontrollers
C-4	Invalidity of U.S. Patent No. 7,349,448 in view of Gould '300
C-5	Invalidity of U.S. Patent No. 7,349,448 in view of Hsieh '871
C-6	Invalidity of U.S. Patent No. 7,349,448 in view of IBM – CoreConnect
C-7	Invalidity of U.S. Patent No. 7,349,448 in view of Kostarnov '830
C-8	Invalidity of U.S. Patent No. 7,349,448 in view of Lemaire '742
C-9	Invalidity of U.S. Patent No. 7,349,448 in view of Pixley '535
C-10	Invalidity of U.S. Patent No. 7,349,448 in view of PSOC 1
C-11	Invalidity of U.S. Patent No. 7,349,448 in view of Watanabe '080
C-12	Invalidity of U.S. Patent No. 7,349,448 in view of Cliff '052
C-13	Invalidity of U.S. Patent No. 7,349,448 in view of Percey '735
C-14	Invalidity of U.S. Patent No. 7,349,448 in view of Viitanen '899
C-15	Invalidity of U.S. Patent No. 7,349,448 in view of Secondary References

B. Motivation to Combine

In general, a claimed invention is unpatentable if the differences between it and the prior art “are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.” 35 U.S.C. § 103(a); *Graham v. John Deere*

Co., 383 U.S. 1, 13-14 (1966). In view of the Supreme Court’s *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007) (“KSR”) decision, the USPTO issued a set of Examination Guidelines setting forth a number of potential rationales for combining prior art references. See Examination Guidelines for Determining Obviousness under 35 U.S.C. § 103 in view of the Supreme Court Decision in *KSR*. Those rationales include:

- Combining prior-art elements according to known methods to yield predictable results;
- Simple substitution of one known element for another to obtain predictable results;
- Use of a known technique to improve similar devices (methods, or products) in the same way;
- Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- “Obvious to try”—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- Known work in one field of endeavor that may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art; and
- Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art or to combine prior-art teachings to arrive at the claimed invention.

These rationales are consistent with the Supreme Court’s emphasis in *KSR* that “the results of ordinary innovation” from the perspective of a person of ordinary skill are not patentable, and

further that “[a] person of ordinary skill is also a person of ordinary creativity, not an automaton.” 550 U.S. at 421. Infineon contends that one or more of these rationales apply in considering the obviousness of the Asserted Claims.

For example, a person of ordinary skill in the art at the time of the alleged invention of each of the Patents-in-Suit would have been motivated to combine or adapt known or familiar methods in the art, especially where market forces prompted such variations. Moreover, each of the above-identified references describes methods that were known to offer improvements and benefits to the art, and, accordingly, one of skill in the art would have been motivated to combine or modify the references as identified in each of the combinations above.

Furthermore, since there were a finite number of predictable solutions, a person of ordinary skill in the art had a good reason to pursue the known options. The above-identified prior art references merely use those familiar elements for their primary or well-known purpose in a manner well within the ordinary level of skill in the art. Accordingly, common sense and the knowledge of the prior art render the claims invalid under Section 102 or Section 103.

A person of ordinary skill would also have been motivated to combine the above prior art based on his/her knowledge, the nature of the problem to be solved, and the teachings of the prior art. The identified prior art addresses the same or similar technical issues and suggests the same or similar solutions to those issues. Moreover, some of the prior art refer to or discuss other prior art, illustrating the close technical relationship among the prior art. As one example, the references listed above are directed to the same or similar technology.

One of skill in the art would have been further motivated to look at all of the available documentation for a particular product/system to understand the operation. One of skill in the art would have combined that knowledge from the various related references because it would be clear

that the references were related. For at least this reason, one of skill in the art could consider it obvious to combine the references that collectively teach a product or system. The references were identified in the charts for each such system/product, and Infineon intends to rely upon the combination of references in each of the system/product charts.

One of skill in the art would have been further motivated to combine the different publications and patents that were authored by employees of the company or assigned to the same assignee and related to the same subject matter.

One of skill in the art would have been further motivated to combine different references that were authored, developed, or invented by the same individual(s) related to the same subject matter. The common inventor/author/architect references themselves demonstrate that they relate to continued work in a common field of effort and continued related developments in that field. One of skill in the art would, therefore, combine the references related to each individual. Similarly, based on the teachings of the references and/or the knowledge of one of ordinary skill, one of skill in the art would have been further motivated to combine different references from the same company.

Finally, as explained below and in the attached charts, all concepts recited in the Asserted Claims of the Patents-in-Suit represent well-known techniques and apparatuses. Thus, the Asserted Claims of the Patents-in-Suit are invalid under 35 U.S.C. § 103 because they do nothing more than combine known techniques and apparatuses according to their known and ordinary uses to yield predictable results.

1. '179 Patent

(a) Storage References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose storing a sample in memory, such reference can be combined with the

corresponding disclosures from any one or more of the following prior art references (“Storage References”) to render obvious claims that may require such or similar features.

- Hetzler ’273
- Kihara ’669
- Nakamura ’891

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Storage References to improve the function and utility of the same and such a combination would have been within that person’s skill. As shown in the teachings of the foregoing Storage References, designing a system that stored samples in memory was well-known in the art by the time of the ’179 Patent’s claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Storage References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., the need to store data—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(b) Normalizing References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose normalizing a parameter, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Normalizing References”) to render obvious claims that may require such or similar features.

- Milligan
- Numerical Taxonomy

- Vardi '705
- Nikitin '969

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Normalizing References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Normalizing References, designing a system that normalized data or uses several was well-known in the art by the time of the '179 Patent's claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Normalizing References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., the need to combine data of different scales—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(c) Combining References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose combining parameters, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Combining References”) to render obvious claims that may require such or similar features.

- Walsh '436
- Atlmejd '520
- Kannan '045
- Tobias '721
- Bajorek '277

- Cooper '713
- Menezes '456
- Hetzler '273

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Combining References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Combining References, designing a system that combines parameters was well-known in the art by the time of the '179 Patent's claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Combining References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., the need to combine data—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(d) Sampling Interval References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose fixed or variable sampling intervals, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references ("Sampling Interval References") to render obvious claims that may require such or similar features.

- Walsh '436
- Atlmejd '520
- Kannan '045
- Tobias '721

- Jirgal '467
- Cooper '713
- Menezes '456

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Sampling Interval References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Sampling Interval References, designing a system that samples data at a fixed or variable interval was well-known in the art by the time of the '179 Patent's claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Sampling Interval References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., the flexibility to sample whenever necessary—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(e) Activity Interrupt References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose activity driven interrupts, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references ("Activity Interrupt References") to render obvious claims that may require such or similar features.

- Walsh '436
- Intel Processors
- ACPI Specification v. 1.0

- Kannan '045
- Cooper '713
- Menezes '456
- Tobias '721

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Activity Interrupt References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Activity Interrupt References, designing a system that includes activity driven interrupts was well-known in the art by the time of the '179 Patent's claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Activity Interrupt References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., the need to interrupt systems based on activity—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(f) Weighted Average References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to weigh averages, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references ("Weighted Average References") to render obvious claims that may require such or similar features.

- Walsh '436
- Atlmejd '520

- Kannan '045
- Tobias '721
- Bajorek '277
- Menzes '456

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Weighted Average References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Weighted Average References, designing a system that calculates a weighted average was well-known in the art by the time of the '179 Patent's claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Weighted Average References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., the need to smooth variables through mathematical operations—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

2. '306 Patent

(a) Geographic Factors References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose delineating power islands based on geographic factors, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references ("Geographic Factors References") to render obvious claims that may require such or similar features.

- Nowka
- Atlmejd '520
- Semeraro
- Yoshida '286
- Buxton '133
- Fung '882
- Brock '849
- Soltis, Jr '196

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Geographic Factors References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Weighted Average References, designing a system that delineates power islands based on geographic factors was well-known in the art by the time of the '306 Patent's claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Geographic Factors References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., efficiently distributing power—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(b) Functional Circuitry References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails disclose delineating power islands based on functional circuitry, such reference can be

combined with the corresponding disclosures from any one or more of the following prior art references (“Functional Circuitry References”) to render obvious claims that may require such or similar features.

- Buxton ’133
- Atlmejd ’520
- Brock ’849
- Fung ’882
- Helms ’467
- Yoshida ’286
- Nowka
- Semararo
- Soltis, Jr ’196

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Functional Circuitry References to improve the function and utility of the same and such a combination would have been within that person’s skill. As shown in the teachings of the foregoing Functional Circuitry References, designing a system that delineates power islands based on functional circuitry was well-known in the art by the time of the ’306 Patent’s claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Functional Circuitry References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., ease of power distribution—combined with a finite number of

identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(c) Power Sub-island References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose power sub-islands within power islands, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Power Sub-island References”) to render obvious claims that may require such or similar features.

- Buxton ’133
- Atlmejd ’520
- Brock ’849
- Fung ’882
- Helms ’467
- Nowka
- Semeraro
- Soltis, Jr ’196
- Yoshida ’286

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Power Sub-island References to improve the function and utility of the same and such a combination would have been within that person’s skill. As shown in the teachings of the foregoing Power Sub-island References, designing a system that includes power sub-islands within a power island was well-known in the art by the time of the ’306 Patent’s claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above

exemplary Power Sub-island References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., controlling power with more particularity—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(d) Multiple Clock Domains References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose multiple clock domains, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Multiple Clock Domains References”) to render obvious claims that may require such or similar features.

- Buxton ’133
- Atlmejd ’520
- Brock ’849
- Fung ’882
- Helms ’467
- Nowka
- Semeraro
- Soltis, Jr ’196
- Yoshida ’286
- Borkar ’265
- Thompson ’729

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above

exemplary Multiple Clock Domains References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Multiple Clock Domains References, designing a system that includes multiple clock domains was well-known in the art by the time of the '306 Patent's claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Multiple Clock Domains References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., running components at different frequencies—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(e) Source/Threshold Voltage References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose the voltage for a power island being a source voltage or a threshold voltage, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Source/Threshold Voltage References”) to render obvious claims that may require such or similar features.

- Bertin '362
- Atlmejd '520
- Brock '849
- Fung '882
- Helms '467
- Nowka
- Semeraro

- Soltis, Jr '196
- Yoshida '286
- Borkar '265
- Tobias '721

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Source/Threshold Voltage References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Source/Threshold Voltage References, designing a system that modifies the voltage for a power island being a source voltage or a threshold voltage was well-known in the art by the time of the '306 Patent's claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Source/Threshold Voltage References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., reducing power consumption—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(f) Powering On/Off References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails disclose powering a power island on or off to change its power consumption, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Powering On/Off References”) to render obvious claims that may require such or similar features.

- Bertin '362

- Atlmejd '520
- Brock '849
- Fung '882
- Helms '467
- Nowka
- Soltis, Jr '196
- Yoshida '286
- Tobias '721
- Buxton '133
- Saeed '447

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Powering On/Off References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Powering On/Off References, designing a system that powers a power island on or off to change its power consumption was well-known in the art by the time of the '306 Patent's claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Powering On/Off References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., reducing power—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(g) Saving/Restoring a State References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose saving and restoring a state of components, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Saving/Restoring a State References”) to render obvious claims that may require such or similar features.

- Helms ’467
- Nowka
- Soltis, Jr ’196
- Yoshida ’286
- Tobias ’721

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Saving/Restoring a State References to improve the function and utility of the same and such a combination would have been within that person’s skill. As shown in the teachings of the foregoing Saving/Restoring a State References, designing a system that saves and restores a state of components was well-known in the art by the time of the ’306 Patent’s claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Saving/Restoring a State References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., the need to maintain context—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(h) Master/Slave Power Manager References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose a master and slave manager, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Master/Slave Power Manager References”) to render obvious claims that may require such or similar features.

- Brock ’849
- Fung ’882
- Helms ’467
- Nowka
- Semeraro
- Soltis, Jr ’196
- Yoshida ’286
- Tobias ’721
- Buxton ’133
- Inoue ’467

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Master/Slave Power Manager References to improve the function and utility of the same and such a combination would have been within that person’s skill. As shown in the teachings of the foregoing Master/Slave Power Manager References, designing a system that includes a master and slave manager was well-known in the art by the time of the ’306 Patent’s claimed invention. Combining an anticipatory reference or exemplary combination with any one of the

above exemplary Master/Slave Power Manager References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., controlling power consumption—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(i) Clock Multiplexing References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose clock multiplexing circuitry, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Clock Multiplexing References”) to render obvious claims that may require such or similar features.

- Brock ’849
- Fung ’882
- Nowka
- Soltis, Jr ’196
- Yoshida ’286
- Tobias ’721
- Buxton ’133
- Inoue ’467

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Clock Multiplexing References to improve the function and utility of the same and such a combination would have been within that person’s skill. As shown in the teachings of the foregoing Clock Multiplexing References, designing a system that includes clock multiplexing

circuitry was well-known in the art by the time of the '306 Patent's claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Clock Multiplexing References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., power management—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(j) Voltage Multiplexing References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose voltage multiplexing circuitry, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Voltage Multiplexing References”) to render obvious claims that may require such or similar features.

- Brock '849
- Fung '882
- Nowka
- Soltis, Jr '196
- Yoshida '286
- Buxton '133

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Voltage Multiplexing References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Voltage Multiplexing References, designing a system that includes voltage multiplexing circuitry was well-known in the art by the time of the '306 Patent's claimed invention. Combining

an anticipatory reference or exemplary combination with any one of the above exemplary Voltage Multiplexing References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., power management—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(k) Level Shifting References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose level shifting circuitry, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Level Shifting References”) to render obvious claims that may require such or similar features.

- Walsh ’436
- Atlmejd ’520
- Kannan ’045
- Tobias ’721
- Bajorek ’277
- Menzes ’456

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Level Shifting References to improve the function and utility of the same and such a combination would have been within that person’s skill. As shown in the teachings of the foregoing Level Shifting References, designing a system that includes level shifting circuitry was well-known in the art by the time of the ’306 Patent’s claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Level Shifting

References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—e.g., power management—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

3. '448 Patent

(a) Multiplexing Circuit References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose a circuit that multiplexes data words, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“MultiPlexor References”) to render obvious claims that may require such or similar features.

- Heimbigner '978
- Adams '250
- Gould '300
- Lemaire '742
- Pixley '535
- Viitanen '899
- Hsieh '871
- Williams '807
- Percey '735
- PSoC 1
- Maamari '211
- Kostarnov '830
- Ngai '103

- Watanabe '080
- Cliff '052
- Alioto 2002
- AMBA AHB
- Atmel
- IBM CoreConnect
- Richard F. Tinder – Engineering Digital Design
- Ken Martin - Digital Integrated Circuit Design
- JA Strong – Basic Digital Electronics

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary MultiPlexor References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing MultiPlexor References, designing a system that utilizes circuits for multiplexing, including of data words, was well-known in the art by the time of the '448 Patent's claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary MultiPlexor References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, the need to select a signal output signal given multiple inputs—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(b) Chained Multiplexor References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose multiplexing circuits comprising multiple stages (i.e. a first stage, second stage, third stage), such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Chained Multiplexor References”) to render obvious claims that may require such or similar features.

- Lemaire ’742
- Pixley ’535
- Viitanen ’899
- Hsieh ’871
- Percey ’735
- Maamari ’211
- Kostarnov ’830
- Ngai ’103
- Watanabe ’080
- Richard F. Tinder – Engineering Digital Design
- Ken Martin - Digital Integrated Circuit Design
- JA Strong – Basic Digital Electronics

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Chained Multiplexor References to improve the function and utility of the same and such a combination would have been within that person’s skill. As shown in the teachings of the foregoing Chained Multiplexor References, designing a system that multiplexing circuit comprising multiple stages was well-known in the art by the time of the ’448 Patent’s claimed

invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Chained Multiplexor References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, the need for efficient multiplexing circuits and to distribute multiplexing—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(c) Increasing Signal Strength References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose structures for increasing signal strength such reference can be combined with the corresponding disclosures from any one or more of the following prior art references (“Increasing Signal Strength References”) to render obvious claims that may require such or similar features.

- Heimbigner ’978
- Adams ’250
- Pixley ’535
- Viitanen ’899
- Hsieh ’871
- Maamari ’211
- Alioto 2002
- Richard F. Tinder – Engineering Digital Design
- Ken Martin - Digital Integrated Circuit Design
- JA Strong – Basic Digital Electronics

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above

exemplary Increasing Signal Strength References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Increasing Signal Strength References, designing a system that utilizes structures to maintain signal integrity and/or increase the voltage of a signal was well-known in the art by the time of the '448 Patent's claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Increasing Signal Strength References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, the need to maintain signal integrity or step-up voltage—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

(d) Data Bus References

To the extent MOSAID contends that an anticipatory reference or exemplary combination fails to disclose the use of multiplexing with a data bus, such reference can be combined with the corresponding disclosures from any one or more of the following prior art references ("Data Bus References") to render obvious claims that may require such or similar features.

- Gould '300
- Pixley '535
- Viitanen '899
- Hsieh '871
- Williams '807
- PSoC 1
- Maamari '211
- Kostarnov '830

- Watanabe '080
- Cliff '052
- AMBA AHB
- Atmel
- IBM CoreConnect
- Richard F. Tinder – Engineering Digital Design
- Ken Martin - Digital Integrated Circuit Design
- JA Strong – Basic Digital Electronics

One of ordinary skill in the art would have been motivated to combine any one or more of the anticipatory references or exemplary combinations with any one or more of the above exemplary Data Bus References to improve the function and utility of the same and such a combination would have been within that person's skill. As shown in the teachings of the foregoing Data Bus References, designing a system that utilizes multiplexing with a data bus was well-known in the art by the time of the '448 Patent's claimed invention. Combining an anticipatory reference or exemplary combination with any one of the above exemplary Data Bus References would have amounted to applying a known technique to a known device ready for improvement to yield predictable results. Furthermore, given the design needs—*e.g.*, transmit data across a system in an efficient manner—combined with a finite number of identified, predictable solutions, a person of ordinary skill in the art would have been motivated to combine the teachings of these references.

IV. INVALIDITY UNDER 35 U.S.C. § 112

A. Indefiniteness

Section 112(b) includes a definiteness requirement: “[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the

inventor or a joint inventor regards as the invention.” 35 U.S.C. § 112(b). “[A] patent is invalid for indefiniteness if its claims, read in light of the patent’s specification and prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014).

The definiteness requirement requires that the claim must set forth what the applicant regards as the invention and do so with sufficient particularity and definiteness. *Allen Eng’g Corp. v. Bartell Indus.*, 299 F.3d 1336, 1348 (Fed. Cir. 2002). Where it would be apparent to one of skill in the art, based on the patent specification, that the “invention” set forth in a claim is not what the patent applicant regarded as the invention, the claim is invalid. *Id.*

Based on Infineon’s present understanding of the Asserted Claims and MOSAID’s apparent interpretation of these claims as reflected in its Preliminary Infringement Contentions, the following limitations of the Asserted Claims fail to satisfy the requirements of § 112(b) because the precise scope of at least the terms listed below cannot be determined with reasonable certainty by a POSITA when reading the claims in light of the specification and prosecution history.

1. ’179 Patent

The term **“a sampling module to ascertain and store a plurality of parameter values associated with said electronic device during at least one sampling interval”** (claim 1) and related “sampling module...” terms (claims 8 & 15) are indefinite. The “sampling module” terms are a means-plus-function limitations for which the specification fails to disclose and link adequate corresponding structure.

The term **“a sampling module to ascertain and store a plurality of parameter values associated with said electronic device during at least one sampling interval”** (claim 1) and related “analysis module...” terms (claims 8 & 15) are indefinite. The “analysis module” terms

are a means-plus-function limitations for which the specification fails to disclose and link adequate corresponding structure.

The term **“a combination module to mathematically combine said normalized parameters of each subordinate stage with a succeeding stage to produce an overall value to determine said at least one control value to adjust said power consumption of said electronic device”** (claim 1) and the related **“combination module...”** term (claim 15) are indefinite. The **“combination module”** terms are means-plus-function limitations for which the specification fails to disclose and link adequate corresponding structure.

The term **“a normalization module to normalize said parameter values relative to a numeric range”** (claim 1) is indefinite. The **“normalization module...”** term is a means-plus-function limitation for which the specification fails to disclose and link adequate corresponding structure.

The term **“an adjustment module to adjust power consumption of said electronic device in accordance with said at least one control value to control electronic device power consumption”** (claim 1) is indefinite. The **“adjustment module...”** term is a means-plus-function limitation for which the specification fails to disclose and link adequate corresponding structure.

The term **“a history module to determine said at least one control value based on a parameter value from a current sampling interval and at least one parameter value from a prior sampling interval to adjust said power consumption of said electronic device”** (claim 2) is indefinite. The **“history module”** term is a means-plus-function limitation for which the specification fails to disclose and link adequate corresponding structure.

2. '306 Patent

The term “**power island**” (Claim 1) is definite indefinite. The “power island” term is means-plus-function limitations for which the specification fails to disclose and link adequate corresponding structure.

The term “**power manager**” (Claim 16) is indefinite. The “power manager...” term is a means-plus-function limitation for which the specification fails to disclose and link adequate corresponding structure.

The term “**power control circuitry**” (Claim 1) is indefinite. The “power control circuitry...” term is a means-plus-function limitation for which the specification fails to disclose and link adequate corresponding structure.

The term “**based on the needs and operations of the integrated circuit**” (Claim 1) is indefinite. A POSITA would not understand what is meant by “based on the needs and operations of the integrated circuit” means in the context of the '306 patent, including in view of its specification.

The term “**power sub-island**” (Claim 4) is indefinite. A POSITA would not understand what is meant by “power sub-island” means in the context of the '306 patent, including in view of its specification.

The term “**threshold voltage**” (Claim 9) is indefinite. A POSITA would not understand what is meant by “threshold voltage” means in the context of the '306 patent, including in view of its specification.

The term “**performing another one of the based on the crossing of the threshold level**” (Claim 13) is indefinite. A POSITA would not understand what is meant by “performing another one of the based on the crossing of the threshold level” means in the context of the '306 patent, including in view of its specification.

The term “**save a state of components within the one of the power islands**” (Claim 29) is indefinite. A POSITA would not understand what is meant by “save a state of components within the one of the power islands” means in the context of the ’306 patent, including in view of its specification.

3. ’448 Patent

The term “**increase a signal strength of the first data word**” (Claim 4) is indefinite. The specification of the ’448 patent only describes components that act as a repeater—i.e. components that maintain a signal strength. There is no disclosure in the specification of the ’448 patent of components that “increase” a signal strength as that term would commonly be understood by skilled artisan. Moreover, a POSITA would not be able to discern what “increase” means in the context of the ’448 patent, including in view of its specification.

The term “the first selected signal set” (Claim 8) is indefinite. Despite referring to “*the* first selected signal set,” there is no mention of this signal set previously in the claim (i.e. it lacks an antecedent basis). Moreover, a POSITA would not understand what is meant by “selected signal set” in the context of claim 8, including in light of the specification of the ’448 patent.

B. Written Description

35 U.S.C. § 112 includes a written description requirement: “The specification shall contain a written description of the invention” 35 U.S.C. § 112(a). “To satisfy the written description requirement, a patent applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention.” *ICU Medical Inc. v. Alaris Medical Systems, Inc.*, 558 F.3d 1368, 1377 (Fed. Cir. 2009) (internal quotation marks and citations omitted); *see also Synthes USA, LLC v. Spinal Kinetics, Inc.*, 734 F.3d 1332, 1340 (Fed. Cir. 2013). “The test [for written description support] requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the

art. Based on that inquiry, the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (*en banc*).

The specification must describe the claimed invention in sufficient detail so that a POSITA can recognize what is claimed. “The appearance of mere indistinct words in a specification or a claim, even an original claim, does not necessarily satisfy that requirement.” *University of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 923 (Fed. Cir. 2004) (internal quotation marks and citations omitted).

Based on Infineon’s present understanding of the Asserted Claims and MOSAID’s apparent interpretation of these claims as reflected in its Preliminary Infringement Contentions, the following limitations of the Asserted Claims fail to satisfy the requirements of Section 112 for at least the following limitations:

1. ’179 Patent

According to MOSAID’s infringement allegations, MOSAID alleges that the circuitry that computes a running average is sufficient to meet the claim requirement of a “combination module” and related “combination” terms. Infineon disagrees, as a running average is not within the scope of the claims as properly construed. Nonetheless, to the extent the claims are construed to include a running average computation they are invalid for lack of written description. The only combination computation disclosed in the specification of the ’179 patent is addition of adding two parameters taken during the same cycle (i.e. “Add Performance Zone to IPC” as shown in step 86 of Figure 6). Thus, a POSITA would not understand from the specification of the ’179 patent, that the alleged inventors of the ’179 patent were in possession of the full scope of the asserted claims as MOSAID has alleged infringement of them.

2. '306 Patent

To the extent the below terms/limitations are definite. The '306 Patent, and the provisional that became to the '306 patent fails to describe with sufficient detail or enable them as required by 35 U.S.C. § 112, ¶ 1.

The term “**power sub-island**” (Claim 4) lacks written description. A POSITA would not understand from the specification of the '306 patent, that the alleged inventors of the '306 patent were in possession of the full scope of the asserted claims as MOSAID has alleged infringement of them.

The term “**threshold voltage**” (Claim 9) is indefinite. A POSITA would not understand from the specification of the '306 patent, that the alleged inventors of the '306 patent were in possession of the full scope of the asserted claims as MOSAID has alleged infringement of them.

The term “**performing another one of the based on the crossing of the threshold level**” (Claim 13) is indefinite. A POSITA would not understand from the specification of the '306 patent, that the alleged inventors of the '306 patent were in possession of the full scope of the asserted claims as MOSAID has alleged infringement of them.

The term “**save a state of components within the one of the power islands**” (Claim 29) is indefinite. A POSITA would not understand from the specification of the '306 patent, that the alleged inventors of the '306 patent were in possession of the full scope of the asserted claims as MOSAID has alleged infringement of them.

3. '448 Patent

According to MOSAID's infringement allegations, MOSAID alleges that the AMBA AHB bus meets the limitations of the asserted claims. The '448 patent, though, does not demonstrate that MOSAID invented or was in possession of complex BUS such as AMBA. Indeed, many of the claims recite that data words from the claimed system are output to a bus, not that the invention

is itself a bus. Thus, a POSITA would not understand, from the specification of the '448 patent, that the alleged inventors of the '448 patent were in possession of the full scope of the asserted claims as MOSAID has alleged infringement of them.

Moreover, a POSITA would not understand that the alleged inventors of the '448 patent were in possession of components that “increase a signal strength of the first data word” (Claim 4) as broadly as MOSAID has stretched the claim to allege infringement. MOSAID has alleged (based solely on information and belief) that the accused products contain “write drivers” which (according to MOSAID) falls within the scope of its asserted claims. Write drivers are nowhere disclosed in the specification of the '448 patent.

V. INVALIDITY UNDER 35 U.S.C. § 101

To be patentable subject matter under § 101, a claim must be directed to one of four eligible subject matter categories: “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. “Claims that fall within one of the four subject matter categories may nevertheless be ineligible if they encompass laws of nature, physical phenomena, or abstract ideas.” *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014) (citing *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980)). The Supreme Court established a two-step test for deciding the subject matter eligibility of claims under § 101. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014). First, the claims must be analyzed to determine whether they are drawn to one of the statutory exceptions, *i.e.*, a patent ineligible concept: an abstract idea, a law of nature, or a natural phenomenon. *See id.* Second, the elements of the claims must be viewed both individually and as an ordered combination to see if there is an “inventive concept.” *Id.*; *see also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335-36 (Fed. Cir. 2016). The claims are examined to determine if they merely invoke well-understood, routine,

conventional components and activity to apply an abstract idea. *See, e.g., Elec. Comm'n Techs. v. ShoppersChoice.com*, 958 F.3d 1179, 1180-82 (Fed. Cir. 2020).

The Asserted Claims of '179 Patent are directed to ineligible subject matter under 35 U.S.C. § 101 and applicable case law authority.² The '179 patent claims the abstract idea of collecting data, analyzing data, and adjusting based on the analyzed data. *See, e.g., University of Florida Research Foundation v. GE Company*, 916 F. 3D 1363 (Fed. Cir. 2019) (claims directed to collecting, analyzing, manipulating, and displaying data abstract); *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016) (claims directed to analyzing data abstract). The '179 patent admits that the process of monitoring computer system information and determining whether to reduce power was known. '179 patent at 1:58-2:20. The '179 patent also admits that the embodiments may be implemented by standard hardware, software, or a combination thereof. *Id.* at 4:37-42. The claims of the '179 patent do not add any inventive concept that transforms the

² *See, e.g., Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012); *Trading Techs. Int'l, Inc. v. IBG, LLC*, 921 F.3d 1084 (Fed. Cir. 2019); *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759 (Fed. Cir. 2019); *SAP America, Inc. v. InvestPic, LLC*, 898 F.3d 1161 (Fed. Cir. 2018); *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335 (Fed. Cir. 2018); *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121 (Fed. Cir. 2018); *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329 (Fed. Cir. 2017), *cert. denied*, 139 S. Ct. 378 (2018); *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332 (Fed. Cir. 2017); *Infineon, Inc. v. Ameranth, Inc.*, 842 F.3d 1229 (Fed. Cir. 2016); *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253 (Fed. Cir. 2016); *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016); *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369 (Fed. Cir. 2016); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363 (Fed. Cir. 2015); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343 (Fed. Cir. 2015); *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir. 2015); *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343 (Fed. Cir. 2014); *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350 (Fed. Cir. 2014); *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014); *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366 (Fed. Cir. 2011); *Automated Tracking Sols., LLC v. Coca-Cola Co.*, 723 F. App'x 989 (Fed. Cir. 2018); *EasyWeb Innovations, LLC v. Twitter, Inc.*, 689 F. App'x 969, 971 (Fed. Cir. 2017); *Yu v. Infineon Inc.*, 1 F.4th 1040 (Fed. Cir. 2021).

abstract idea of collecting data, analyzing data, and adjusting based on the analyzed data into patent eligible subject matter, whether the elements are considered individually or as an ordered combination Claim 1, for example, recites known and conventional methods of collecting data and adjusting based on such data. Moreover, the '179 patent claims in functional terms rather than specific instructions, a telltale sign of ineligibility.

Like the '179 Patent, the '306 Patent is also directed to ineligible subject matter. The abstract idea of modifying a current or voltage to affect the operation of a circuit is “pervasive in human activity.” *Ericsson Inc. v. TCL Commc’n Tech. Holdings Ltd.*, 955 F.3d 1317, 1327 (Fed. Cir. 2020); *see also ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759 (Fed. Cir. 2019) (claims for turning an “electric supply on and off to enable and disable charge transfer for electric vehicles” based on energy demand held ineligible under § 101); *Intellectual Ventures II LLC v. Sprint Spectrum, L.P.*, No. 2:17-CV-00662-JRG, 2018 WL 6804804 (E.D. Tex. Sep. 24, 2018) (claims directed to monitoring and receiving signals for purposes of determining a transmission signal strength that will allow for reduced power consumption found ineligible); *Uniloc USA, Inc. v. Apple Inc.*, No. C-18-00358-WHA, 2018 WL 2287675 (N.D. Cal. Dec. 4, 2020) (invalidating claims “directed to a patent-ineligible concept—namely, adjusting a battery’s current flow based on its temperature”). Additionally, the claims of the '306 patent are ineligible under § 101 for attempting to monopolize a “natural phenomenon” and/or “law of nature”—specifically, Watt’s Law. *Mayo Collaborative Servs. v. Prometheus Labs, Inc.*, 566 U.S. 66, 77 (2012). “[E]lectricity” is a “manifestation[] of laws of nature, free to all men and reserved exclusively to none.” *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948). MOSAID cannot patent Watt’s Law by claiming a process consisting simply of varying a voltage or frequency of a circuit to vary its power consumption. *See Aatrix Software, Inc. v. Green Shades Software, Inc.*, 890 F.3d 1354,

1360 (Fed. Cir. 2018) (“Laws of nature (Ohm’s Law, Boyle’s Law, the equivalence of matter and energy), properly construed, should not be eligible for patent.”). The claims of the ’306 patent do not add any inventive concept that transforms the abstract idea of determining a target power level, and performing at least one action to change the power consumption to the target power level into patent eligible subject matter, whether the elements are considered individually or as an ordered combination Claim 1, for example, recites known and conventional methods of determining a power level and adjusting based on the target power level. Further, the ’306 patent claims in results based functional language rather than specific instructions, a telltale sign of ineligibility.

VI. DOCUMENT PRODUCTION ACCOMPANYING INVALIDITY CONTENTIONS

Infineon is producing and/or making available for inspection the documents required under the Court’s Standing Order Governing Patent Proceedings.

Infineon reserves the right to produce and rely on additional documents relating to its products in view of, for example, additional information revealed during discovery regarding MOSAID’s allegations and/or amendments to MOSAID’s preliminary infringement contentions.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the foregoing document was served electronically on August 15, 2025 to all counsel of record.

/s/ David M. Hoffman

David M. Hoffman