



QUALCOMM Incorporated

5775 Morehouse Drive
San Diego, CA 92121-1714
858-587-1121

www.qualcomm.com

September 28, 2015

Via Email and Federal Express

Attn: Daro Bruno
ATSC
1776 K STREET NW 8th FLOOR
WASHINGTON, DC 20006-2304

Re: QUALCOMM Incorporated's IPR Declaration of September 28, 2015 for ATSC Candidate Standard: ATSC 3.0 Working Draft: S32 Physical Layer Standard (S32-230r19).

Dear Sir,

Enclosed please find Qualcomm Incorporated's IPR Disclosure Statement and Licensing Declaration for ATSC Candidate Standard: ATSC 3.0 Working Draft: S32 Physical Layer Standard (S32-230r19).

Please confirm receipt of this declaration at your earliest convenience via email to ip.disclosure@qualcomm.com. If you have any questions or concerns, please contact me directly at 858-587-1121. Thank you for your time and assistance with this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'TRR', with a long horizontal flourish extending to the right.

Thomas R. Rouse
VP, QTL Patent Counsel
Qualcomm Incorporated

TR/jwn

ATSC

Disclosure Statement and Licensing Declaration

This declaration does not represent an implied license grant

Please return to:

President
ATSC
1750 K Street NW
Suite 1200
Washington, DC 20006
202-872-9160 – Office
202-872-9161 - Fax

Discloser:

Name of Participant: QUALCOMM Incorporated

Contact Information for

Participant's Representative: Thomas R. Rouse, VP, QTL Patent Counsel

Name of Representative: Thomas R. Rouse, VP, QTL Patent Counsel

Address: 5775 Morehouse Drive, San Diego, CA 92121

Tel. No.: 858-587-1121

Fax: 858-658-2503

Email: ip.disclosure@qualcomm.com

URL (optional): www.qualcomm.com

Identification of ATSC Specification Document relevant to the Disclosure Statement:

Number:

Title: ATSC 3.0 Working Draft: S32-Physical Layer Standard (S32-230r19)

Licensing Declaration

If the Discloser is the holder of a patent and/or pending patent application that is the subject of an **Essential Claim, i.e., the use of which it believes would be required to implement the** identified ATSC Specification Document, the Discloser hereby declares, in accordance with the Statement on ATSC Patent Policy (see ATSC website), that (check one box only).

a. The Discloser agrees to make a license to the Essential Claim available without compensation upon request to all applicants for the purpose of implementing the Specification Document, which license may be conditioned upon license reciprocity with respect to the same Specification Document. Negotiations are left to the parties concerned and are performed outside of ATSC.

Mark here if the Discloser's willingness to license is conditioned on reciprocity for the above ATSC Standard.

b. The Discloser agrees to make a license to the Essential Claim available upon request under reasonable and nondiscriminatory terms and conditions to all applicants for the purpose of implementing the Specification Document, which conditions may include license reciprocity with respect to the same Specification Document. Negotiations are left to the parties concerned and are performed outside of ATSC.

Mark here if the Discloser's willingness to license is conditioned on reciprocity for the above ATSC Standard.

c. The Discloser will not make a license to the Essential Claim under reasonable and nondiscriminatory terms and conditions to applicants for the purpose of implementing the Specification Document.

Without Compensation: The phrase "without compensation" does not mean that the Discloser is waiving all of its rights with respect to each patent or patent application that is the subject matter of the Essential Claim. Rather, "without compensation" refers to the issue of monetary **compensation; i.e., that the Discloser will not seek any monetary compensation as part of the** licensing arrangement (whether such compensation is called a royalty, a one-time licensing fee, etc.). However, while the Discloser in this situation is committing to not charging any monetary amount, the Discloser is still entitled to require that the implementer of the ATSC Specification Document sign a license agreement that contains other reasonable terms and conditions such as **those relating to governing law, field of use, reciprocity, warranties, etc.**

Reciprocity: As used herein, the word "reciprocity" means that the Discloser shall only be required to license any prospective licensee under the stated terms (without compensation or under reasonable and nondiscriminatory terms and conditions) if such prospective licensee will commit to license its patent(s) or patent application(s) forming the subject matter of an Essential Claim under similar (without compensation or under reasonable and nondiscriminatory) terms and conditions.

In accordance with Sections 3 and 4 of the ATSC Patent Policy, if the Discloser has made a licensing declaration under paragraph (c) above, please provide the following information.

- an identification of each patent or patent application that is the subject matter of the Essential Claim;
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- an identification of specific section(s) or text of the Specification Document that are relevant to the Essential Claim; and
- an identification of each patent or patent application claim covering the Specification Document.

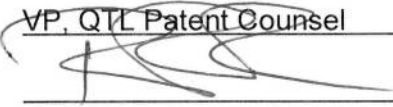
This information is informal in nature and does not constitute a legal opinion, but should be based on "good faith and belief" of the Discloser. Information provided in this section does not represent a formal "notice" that implementation of any resulting ATSC Standard or Recommended Practice would infringe any patent or patent application for the Essential Claim.

Completed By:

Name of Participant: QUALCOMM Incorporated

Name of Representative: Thomas R. Rouse

Title of Representative: VP, QTL Patent Counsel

Signature:  _____

Place, Date: San Diego, CA Sept. 28, 2015

Disclosure of Patents

In accordance with Sections 3 and 4 of the ATSC Patent Policy, please identify each patent or patent application forming the subject matter of any Potential Claim of which any Representative of the Discloser who is active in an ATSC technology group or specialist group has actual personal knowledge. The Discloser, in good faith, believes that the Potential Claim may be relevant to the implementation of the Specification Document identified by this Disclosure Statement.

No.	Patent/Application	Country	Patent/Application Holder	Status [granted/pending]
1	6,961,388	United States	QUALCOMM Incorporated	Granted
	11/208,263	United States	QUALCOMM Incorporated	Pending
	PI0206877-0	Brazil	QUALCOMM Incorporated	Pending
	ZL02805983.2	China P.R.	QUALCOMM Incorporated	Granted
	200710087637.9	China P.R.	QUALCOMM Incorporated	Pending
	02717372.3	European Patent Convention	QUALCOMM Incorporated	Pending
	HK1063698	Hong Kong	QUALCOMM Incorporated	Granted
	07111899.2	Hong Kong	QUALCOMM Incorporated	Pending
	10-0883941	Republic of Korea	QUALCOMM Incorporated	Granted
	586280	Taiwan	QUALCOMM Incorporated	Granted
	7,724,838	United States	QUALCOMM Incorporated	Granted
	8,542,765	United States	QUALCOMM Incorporated	Granted
	PI0414720-0	Brazil	QUALCOMM Incorporated	Pending
	2540026	Canada	QUALCOMM Incorporated	Granted
	CL43.879	Chile	QUALCOMM Incorporated	Granted
	ZL200480034751.X	China P.R.	QUALCOMM Incorporated	Granted
	2	EP1678866	European Patent Convention	QUALCOMM Incorporated
10162201.7		European Patent Convention	QUALCOMM Incorporated	Pending
EP1678866		France	QUALCOMM Incorporated	Granted
EP1678866		Germany	QUALCOMM Incorporated	Granted
EP1678866		Great Britain	QUALCOMM Incorporated	Granted
244087		India	QUALCOMM Incorporated	Granted
174515		Israel	QUALCOMM Incorporated	Pending
EP1678866		Italy	QUALCOMM Incorporated	Granted
4509116		Japan	QUALCOMM Incorporated	Granted
271231		Mexico	QUALCOMM Incorporated	Granted
1-2006-500616		Philippines	QUALCOMM Incorporated	Granted
10-0780578		Republic of Korea	QUALCOMM Incorporated	Granted
2316900		Russian Federation	QUALCOMM Incorporated	Granted
120679		Singapore	QUALCOMM Incorporated	Granted
EP1678866		Spain	QUALCOMM Incorporated	Granted

3	I390873	Taiwan	QUALCOMM Incorporated	Granted
	094045	Thailand	QUALCOMM Incorporated	Pending
	7545	Vietnam	QUALCOMM Incorporated	Granted
	7,221,680	United States	QUALCOMM Incorporated	Granted
	14/058,199	United States	QUALCOMM Incorporated	Pending
	8,605,705	United States	QUALCOMM Incorporated	Granted
	2004302856	Australia	QUALCOMM Incorporated	Granted
	PI0414065-6	Brazil	QUALCOMM Incorporated	Pending
	2230-2004	Chile	QUALCOMM Incorporated	Pending
	ZL200480032549.3	China P.R.	QUALCOMM Incorporated	Granted
	201210344797.8	China P.R.	QUALCOMM Incorporated	Pending
	236666	India	QUALCOMM Incorporated	Granted
	174046	Israel	QUALCOMM Incorporated	Pending
	5642618	Japan	QUALCOMM Incorporated	Granted
	267326	Mexico	QUALCOMM Incorporated	Granted
	1-2006-500437	Philippines	QUALCOMM Incorporated	Granted
	10-1154910	Republic of Korea	QUALCOMM Incorporated	Granted
	2368083	Russian Federation	QUALCOMM Incorporated	Granted
	2009123799	Russian Federation	QUALCOMM Incorporated	Pending
	119999	Singapore	QUALCOMM Incorporated	Granted
	1404379	Taiwan	QUALCOMM Incorporated	Granted
	101120167	Taiwan	QUALCOMM Incorporated	Pending
	093447	Thailand	QUALCOMM Incorporated	Pending
	7359	Vietnam	QUALCOMM Incorporated	Granted
	8,599,764	United States	QUALCOMM Incorporated	Granted
	P040103882	Argentina	QUALCOMM Incorporated	Pending
	PI0415856-3	Brazil	QUALCOMM Incorporated	Pending
	CL45.014	Chile	QUALCOMM Incorporated	Granted
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	241254	India	QUALCOMM Incorporated	Granted
	175102	Israel	QUALCOMM Incorporated	Pending
	4481995	Japan	QUALCOMM Incorporated	Granted
	4843084	Japan	QUALCOMM Incorporated	Granted
265281	Mexico	QUALCOMM Incorporated	Granted	
1-2006-500815	Philippines	QUALCOMM Incorporated	Pending	
10-2006-7010082	Republic of Korea	QUALCOMM Incorporated	Pending	
10-0877536	Republic of Korea	QUALCOMM Incorporated	Granted	
2345485	Russian Federation	QUALCOMM Incorporated	Granted	
121625	Singapore	QUALCOMM Incorporated	Granted	
I353133	Taiwan	QUALCOMM Incorporated	Granted	
1-2006-00817	Vietnam	QUALCOMM Incorporated	Pending	
4				

5	8,385,386	United States	QUALCOMM Incorporated	Granted
	7,787,517	United States	QUALCOMM Incorporated	Granted
	PI0507147-0	Brazil	QUALCOMM Incorporated	Pending
	2554764	Canada	QUALCOMM Incorporated	Pending
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	EP1712053	European Patent Convention	QUALCOMM Incorporated	Granted
	12165716.7	European Patent Convention	QUALCOMM Incorporated	Pending
	EP1712053	Germany	QUALCOMM Incorporated	Granted
	EP1712053	Great Britain	QUALCOMM Incorporated	Granted
	247548	India	QUALCOMM Incorporated	Granted
	177085	Israel	QUALCOMM Incorporated	Pending
	4768634	Japan	QUALCOMM Incorporated	Granted
	266213	Mexico	QUALCOMM Incorporated	Granted
	1-2006-501448	Philippines	QUALCOMM Incorporated	Pending
	10-1120443	Republic of Korea	QUALCOMM Incorporated	Granted
	2006130790	Russian Federation	QUALCOMM Incorporated	Pending
	7,457,231	United States	QUALCOMM Incorporated	Granted
	7,907,593	United States	QUALCOMM Incorporated	Granted
	2565527	Canada	QUALCOMM Incorporated	Granted
	2699640	Canada	QUALCOMM Incorporated	Granted
1014-2005	Chile	QUALCOMM Incorporated	Pending	
ZL200580022669.X	China P.R.	QUALCOMM Incorporated	Granted	
EP1745618	European Patent Convention	QUALCOMM Incorporated	Granted	
09153505.4	European Patent Convention	QUALCOMM Incorporated	Pending	
EP1745618	France	QUALCOMM Incorporated	Granted	
EP1745618	Germany	QUALCOMM Incorporated	Granted	
EP1745618	Great Britain	QUALCOMM Incorporated	Granted	
254530	India	QUALCOMM Incorporated	Granted	
EP1745618	Italy	QUALCOMM Incorporated	Granted	
5048481	Japan	QUALCOMM Incorporated	Granted	
5080546	Japan	QUALCOMM Incorporated	Granted	
5474728	Japan	QUALCOMM Incorporated	Granted	
10-0878430	Republic of Korea	QUALCOMM Incorporated	Granted	
10-0925909	Republic of Korea	QUALCOMM Incorporated	Granted	
EP1745618	Spain	QUALCOMM Incorporated	Granted	
I361600	Taiwan	QUALCOMM Incorporated	Granted	
099996	Thailand	QUALCOMM Incorporated	Pending	
8,102,926	United States	QUALCOMM Incorporated	Granted	
9,049,066	United States	QUALCOMM Incorporated	Granted	
2005289789	Australia	QUALCOMM Incorporated	Granted	
PI0515900-8	Brazil	QUALCOMM Incorporated	Pending	

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2580963	Canada	QUALCOMM Incorporated	Pending
ZL200580032368.5	China P.R.	QUALCOMM Incorporated	Granted
ZL201010183369.2	China P.R.	QUALCOMM Incorporated	Granted
201210402893.3	China P.R.	QUALCOMM Incorporated	Pending
05798643.2	European Patent Convention	QUALCOMM Incorporated	Pending
11102811.0	Hong Kong	QUALCOMM Incorporated	Pending
239577	India	QUALCOMM Incorporated	Granted
181994	Israel	QUALCOMM Incorporated	Pending
4550902	Japan	QUALCOMM Incorporated	Granted
5384427	Japan	QUALCOMM Incorporated	Granted
5675723	Japan	QUALCOMM Incorporated	Granted
5657755	Japan	QUALCOMM Incorporated	Granted
2014-145155	Japan	QUALCOMM Incorporated	Pending
MY-143990-A	Malaysia	QUALCOMM Incorporated	Granted
274500	Mexico	QUALCOMM Incorporated	Granted
10-0909262	Republic of Korea	QUALCOMM Incorporated	Granted
2375828	Russian Federation	QUALCOMM Incorporated	Granted
094133099	Taiwan	QUALCOMM Incorporated	Pending
88026	Ukraine	QUALCOMM Incorporated	Granted
7,630,451	United States	QUALCOMM Incorporated	Granted
8,194,796	United States	QUALCOMM Incorporated	Granted
PI0606719-0	Brazil	QUALCOMM Incorporated	Pending
ZL200680004766.0	China P.R.	QUALCOMM Incorporated	Granted
ZL201010583628.0	China P.R.	QUALCOMM Incorporated	Granted
201410043828.5	China P.R.	QUALCOMM Incorporated	Pending
1154/MUMNP/2007	India	QUALCOMM Incorporated	Pending
10-0914877	Republic of Korea	QUALCOMM Incorporated	Granted
10-1028974	Republic of Korea	QUALCOMM Incorporated	Granted
2007130729	Russian Federation	QUALCOMM Incorporated	Pending
2007/06259	South Africa	QUALCOMM Incorporated	Pending
095108219	Taiwan	QUALCOMM Incorporated	Pending
9,036,567	United States	QUALCOMM Incorporated	Granted
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10-1456968	Republic of Korea	QUALCOMM Incorporated	Granted
100104191	Taiwan	QUALCOMM Incorporated	Pending
7,072,413	United States	QUALCOMM Incorporated	Granted
7,649,954	United States	QUALCOMM Incorporated	Granted
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ZL02814932.7	China P.R.	QUALCOMM Incorporated	Granted
ZL200610142537.7	China P.R.	QUALCOMM Incorporated	Granted
EP1400035	European Patent Convention	QUALCOMM Incorporated	Granted

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	EP1400035	France	QUALCOMM Incorporated	Granted
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	583854	Taiwan	QUALCOMM Incorporated	Granted
11	7,920,884	United States	QUALCOMM Incorporated	Granted
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	PI0511809-3	Brazil	QUALCOMM Incorporated	Pending
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	05756553.3	European Patent Convention	QUALCOMM Incorporated	Pending
	12004198.3	European Patent Convention	QUALCOMM Incorporated	Pending
	14105193.8	Hong Kong	QUALCOMM Incorporated	Pending
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	236677	India	QUALCOMM Incorporated	Granted
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	I436679	Taiwan	QUALCOMM Incorporated	Granted
	200700107	Ukraine	QUALCOMM Incorporated	Pending
12	8,089,855	United States	QUALCOMM Incorporated	Granted
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	PI0511811-5	Brazil	QUALCOMM Incorporated	Pending
	2569455	Canada	QUALCOMM Incorporated	Granted
	ZL200580026035.1	China P.R.	QUALCOMM Incorporated	Granted
	225726	India	QUALCOMM Incorporated	Granted
	IDP0022783	Indonesia	QUALCOMM Incorporated	Granted
	179802	Israel	QUALCOMM Incorporated	Granted

