



Qualcomm Technologies, Inc.

QCC730 xPA Hostless Design Sample

Reference Schematic

80-WL730-41 Rev. AG

May 21, 2025

Revision history

Revision	Date	Description
AA	November 2023	Initial release
AB	March 2024	Updated the following information in Section 1.2 <i>Schematic</i> ▪ Changed C15 from 0.01 uF to 1.5 pF ▪ Changed R56 from 10 pF to 6.2 pF ▪ Changed C16 from 0402 to 0201 ▪ Added L5 between C15 and C16 Updated parts list information in Chapter 2 <i>Parts list</i>
AC	June 2024	Added a note about SMPS power inductor and capacitor in Page 9 <i>Fermion Power</i>
AD	July 2024	▪ Updated Section 1.1 <i>Schematic</i> ▪ Updated Chapter 2 <i>Parts list</i>
AE	December 2024	▪ Updated Section 1.1 <i>Schematic</i> ▪ Updated Chapter 2 <i>Parts list</i>
AF	April 2025	Updated for public release. No technical content was changed in this revision.
AG	May 2025	Updated the legal statements in 1.1 <i>Schematic</i> . No technical content was changed in this revision.

Contents

1 Introduction 5

 1.1 Schematic 5

2 Parts list..... 13

Tables

Table 2-1 Parts list.....	14
---------------------------	----

1 Introduction

This document includes a parts list and schematic for the reference board. The connectivity chip applicable to this reference schematic is QCC730.

1.1 Schematic

This schematic is subject to change without notice and is not optimized to production products due to its conservative design approach and Qualcomm Technologies, Inc. internal test requirements.

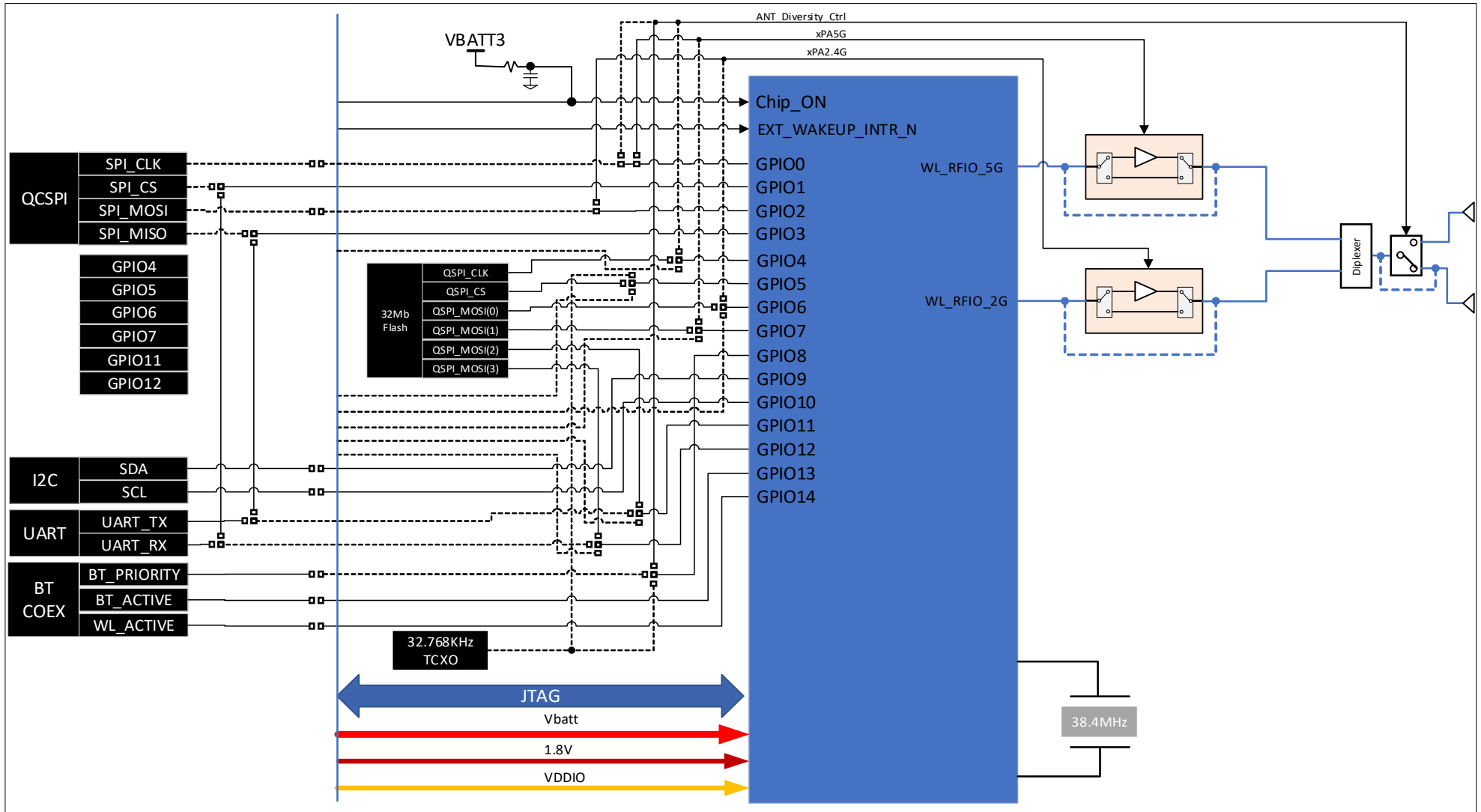
DATE	REVISION NUMBER	INITIALS	DESCRIPTION
November 2023	Rev. AA		Initial Release
March 2024	Rev. AB		1) Change C15 from 0.01uF to 1.5pF. 2) Change R56 from 10pF to 6.2pF. 3) Change C16 from 0402 to 0201. 4) Add L5 between C15 and C16.
May 2024	Rev. AC		Adding note for SMPS power inductor and capacitor
July 2024	Rev. AD		1) Add 0.8pF to C57 and C58 2) Change C13 to 2200pF
Nov 2024	Rev. AE		Change C35, C51 to 10pF
April 2025	Rev. AF		Updated for public release. No technical content was changed in this revision.
May 2025	Rev. AG		Updated the legal statements. No technical content was changed in this revision.

QCC730 xPA Hostless Design Sample Reference Schematic

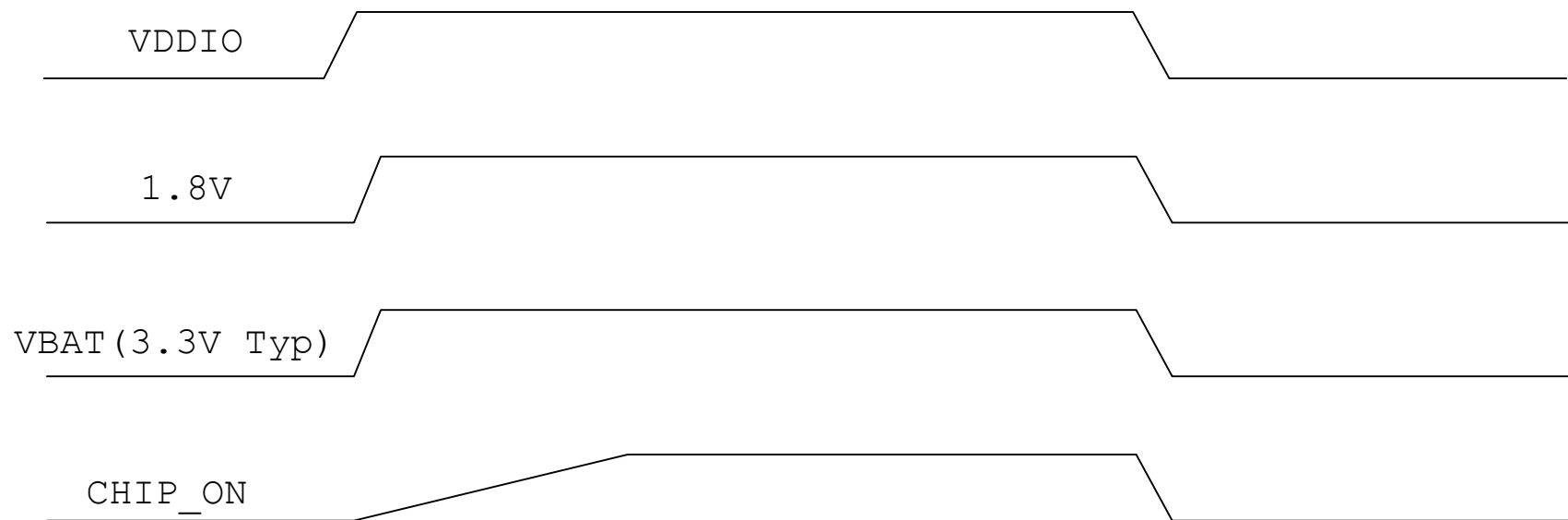
TABLE OF CONTENTS
PAGE 01 : Title_And_Rev
PAGE 02 : Block_Diagram
PAGE 03 : Sequence
PAGE 04 : Fermion Power Rails
PAGE 05 : Fermion IO
PAGE 06 : Fermion RF_CLK
PAGE 07 : LGA_PINOUT

CONTRACT NO.		QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, 92121 U.S.A	
DRAWN BY Wayne Chen	DATE 2024/02/04	TITLE QCC730 xPA Hostless Design Sample Reference Schematic	
ENGINEER			
PROJECT ENGINEER			
QUALITY ASSURANCE			
CONFIGURATION			
DESIGN ACTIVITY APPROVAL			
DESIGN APPROVAL			
SIZE D		DRAWING NO 80-WL730-41	REV AC
SCALE NONE		RELEASE DATE	SHEET 1 OF 7

Block Diagram



QUALCOMM TECHNOLOGIES, INC. 5775 MIDCOURT DRIVE SAN DIEGO, CA 92121 U.S.A.			
TITLE	QCCT30 xPA Hostless Design Sample Reference Schematic		
SIZE	DRAWING NO.	REV.	
D	80-WL730-41	AC	
SCALE	NONE	SHEET	2 OF 7



CHIP_ON is generated by RC delay(155ms) based on VBAT.

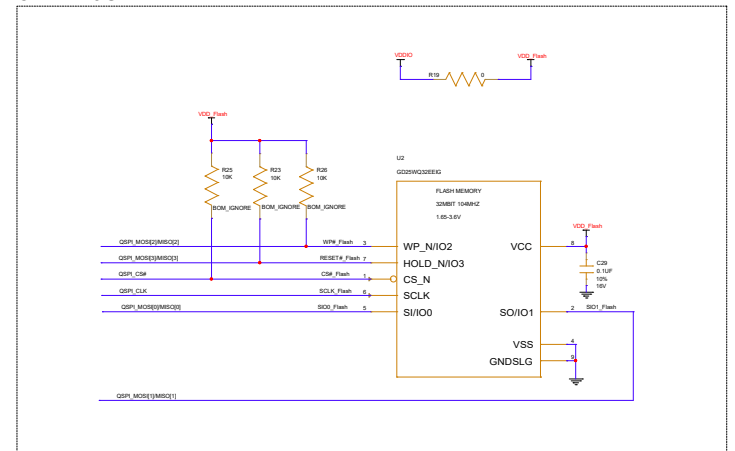
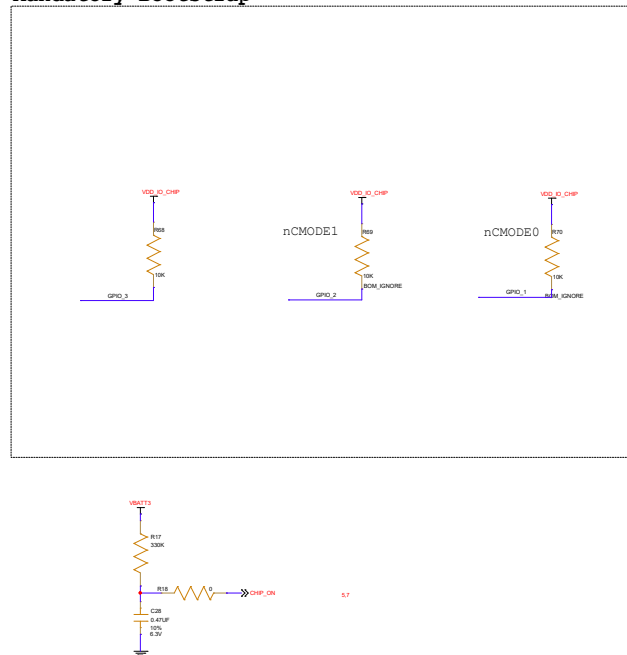
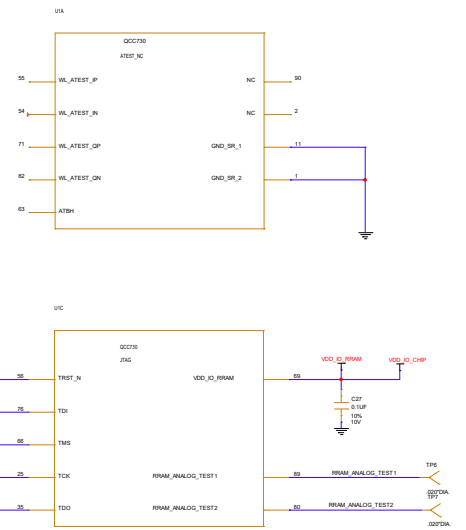
QUALCOMM TECHNOLOGIES, INC. 5755 MIDCOURSE DRIVE SAN DIEGO, CA 92121 USA	TITLE QCCT30 xPA Hostless Design Sample Reference Schematic		
	SIZE D	DRAWING NO 80-WL730-41	REV A0
SCALE NONE		SHEET 3 OF 7	

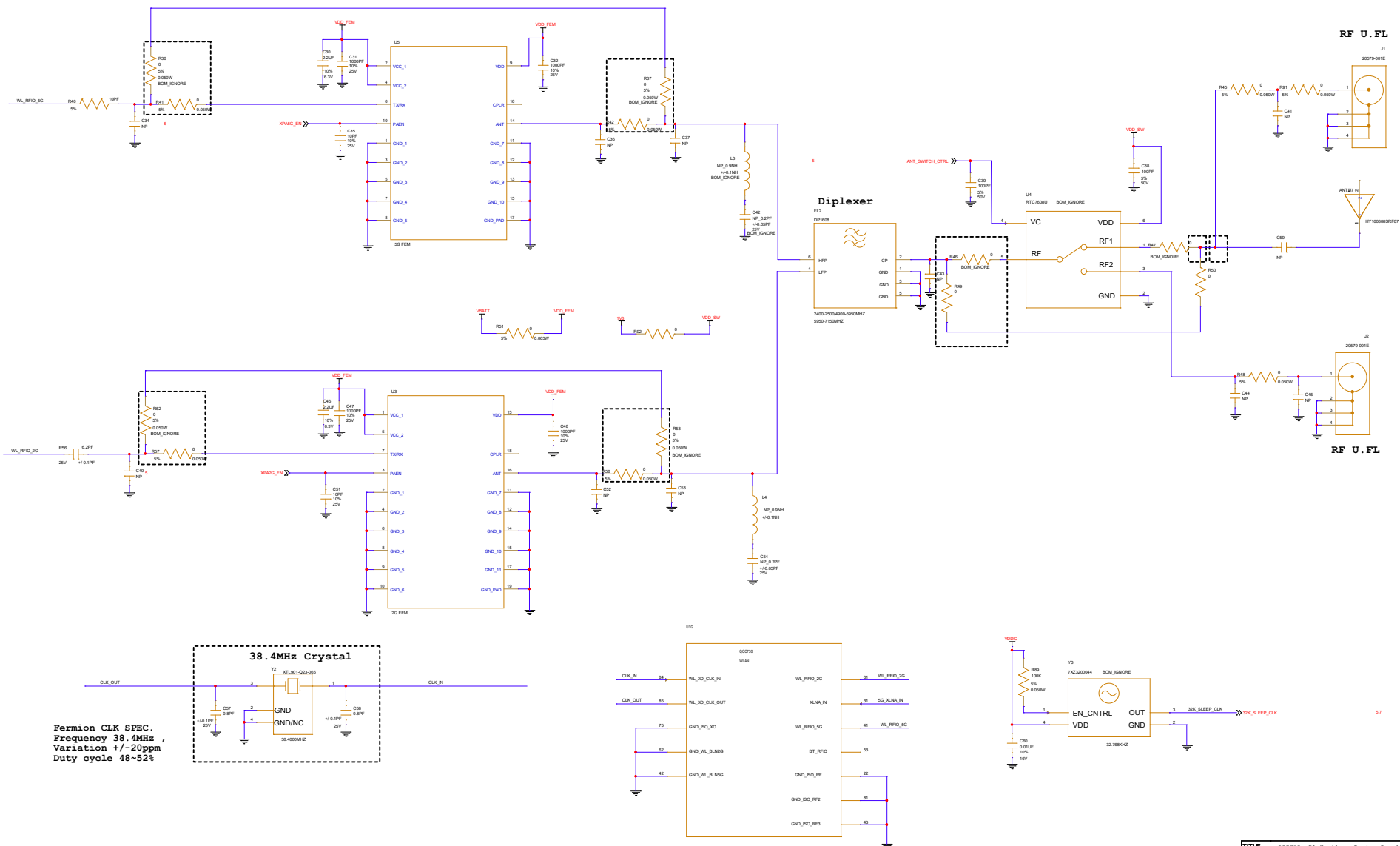


WTE

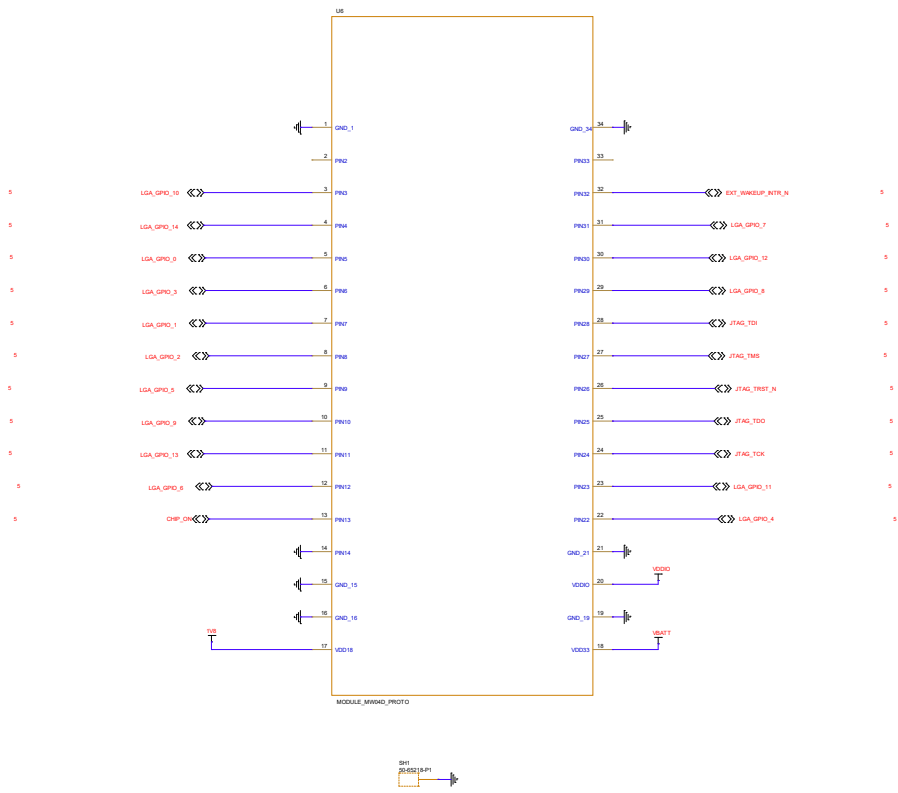


QUALCOMM TECHNOLOGIES, INC.
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92122
U.S.A





TITLE			
QCCT30 xPA Roastless Design Sample			
Reference Schematic			
SIZE	DRAWING NO	REV	AC
D	80-WL730-41		
SCALE		SHEET	
NONE		6	7



QUALCOMM TECHNOLOGIES, INC. 5775 MURPHREE DRIVE SAN DIEGO, CA 92122 U.S.A.			
TITLE QCC730 x8A Hostless Design Sample Reference Schematic			
SIZE	DRAWING NO	REV	
D	80-WL730-41	A1	
SCALE NONE		SHEET	7 OF 7

2 Parts list

The parts list included in this document is preliminary and is subject to change without notice. The parts list on the following pages is for reference only and is not optimized for production due to its conservative design approach and Qualcomm Technologies, Inc. internal test requirements.

Table 2-1 Parts list

Reference designator	Qty	MPN	Manufacturer	Description
R17	1	ERJ1GEJ334C ERJ1GNJ334C PFR03S-334-JNH-39 RC0201JR-07330KL WR02X334JAL	PANASONIC INDUSTRIAL CO PANASONIC INDUSTRIAL CO CYNTEC CO. LTD. YAGEO CORPORATION WALSIN TECHNOLOGY CORP	RES 330 K 200PPM 5% 0.050W 0201 ROHS
L5, R1, R3, R5, R7, R10-R11, R22, R24, R32, R41-R42, R45, R57-R58, R88, R91-R92, R18- R20, R27-R30, R48-R50	28	CRCW02010000Z0ED ERJ1GE0R00C ERJ1GN0R00C MCR006YLPJ000 MCR006YZPJ000 PFR03S-000-XNH-39 RC0201JR-070RL RK73Z1HTTB RK73Z1HTTC RM02JTN0 RMCF0201ZT0R00 RR0306S-000-XNH-39 RTT010000JTH WR02X000 PAL WR02X000JAL WR02X000PAL	VISHAY INTERTECHNOLOGY INC PANASONIC INDUSTRIAL CO PANASONIC INDUSTRIAL CO ROHM ELECTRONICS ROHM ELECTRONICS CYNTEC CO. LTD. YAGEO CORPORATION KOA SPEER ELECTRONICS INC KOA SPEER ELECTRONICS INC TA-I TECHNOLOGY CO LTD STACKPOLE COMPONENTS CO CYNTEC CO. LTD. RALEC WALSIN TECHNOLOGY CORP WALSIN TECHNOLOGY CORP WALSIN TECHNOLOGY CORP	RES 0 JUMPER 0.050W 0201 0.05OHM (MS) ROHS

Reference designator	Qty	MPN	Manufacturer	Description
R16, R68	2	CR0201-JW-103GLF CRCW020110K0JNED ERJ1GNJ103C RC0201JR-0710KL RK73B1HTTB103J RK73B1HTTC103J RR0306S-103-JNH-39 WR02X103 JAL WR02X103JAL	BOURNS INC VISHAY INTERTECHNOLOGY INC PANASONIC INDUSTRIAL CO YAGEO CORPORATION KOA SPEER ELECTRONICS INC KOA SPEER ELECTRONICS INC CYNTEC CO. LTD. WALSIN TECHNOLOGY CORP WALSIN TECHNOLOGY CORP	RES 10K 200PPM 5% 0.050W 0201 ROHS
R89	1	CRCW0201100KJNED ERJ1GEJ104C ERJ1GNJ104C MCR006YZPJ104 RC0201JR-07100KL RK73B1HTTB104J RK73B1HTTC104J RM02JTN104 RR0306S-104-JNH-39 WR02X104JAL	VISHAY INTERTECHNOLOGY INC PANASONIC INDUSTRIAL CO PANASONIC INDUSTRIAL CO ROHM ELECTRONICS YAGEO CORPORATION KOA SPEER ELECTRONICS INC KOA SPEER ELECTRONICS INC TA-I TECHNOLOGY CO LTD CYNTEC CO. LTD. WALSIN TECHNOLOGY CORP	RES 100K 200PPM 5% 0.050W 0201 ROHS
R2, R6, R8, R51	4	CRCW04020000Z0ED ERJ2GE0R00X MCR01MZPJ000 PFR05X-000-XNH-39 RC0402JR-070RL RK73Z1ETTP RMCF0402ZT0R00 RR0510X-000-X-N RR0510X-000-X-NH RTT02000JTH WR04X000PTL	VISHAY INTERTECHNOLOGY INC PANASONIC INDUSTRIAL CO ROHM CO LTD(65940) CYNTEC CO. LTD. YAGEO CORPORATION KOA SPEER ELECTRONICS INC STACKPOLE COMPONENTS CO CYNTEC CO. LTD. CYNTEC CO. LTD. RALEC WALSIN TECHNOLOGY CORP	RES 0 200PPM 5% 0.063W 0402 ROHS

Reference designator	Qty	MPN	Manufacturer	Description
C14, C20, C22, C24, C38-C39	6	0201CG101J9B200 C0603C0G1H101J030BA CC0201JRNPO9BN101 CC0402JRNPO9BN101 CL03C101JB3ANNC GRM0335C1H101JA01D GRM0335C1H101JD01D MSASU063SCG101JFNA01 UMK063CG101JT-F	PHYCOMP TDK CORP OF AMERICA YAGEO CORPORATION YAGEO CORPORATION SAMSUNG ELECTRO-MECHANICS MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD	CAP,CHIP CERAMIC 100PF 5% C0G/NP0 50V ROHS
C15, C60	2	0201YC103KAT2A CC0201KRX7R7BB103 EMK063B7103KP EMK063B7103KP-F GRM033R71C103KE14D MSASE063SB7103KFNA01	KYOCERA AVX COMPONENTS CORP YAGEO CORPORATION TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD MURATA ERIE NORTH AMERICA INC TAIYO YUDEN CO LTD	CAP,CHIP CERAMIC 0.01UF 10% X7R 16V ROHS
C29	1	0402YC104KAT2A C0402C104K4RAC7867 C0402C104K4RACTU CC0402KRX7R7BB104 EMK105B7104KV-F GRM155R71C104KA88D MSASE105SB7104KFNA01	KYOCERA AVX COMPONENTS CORP KEMET ELECTRONICS CORP KEMET ELECTRONICS CORP YAGEO CORPORATION TAIYO YUDEN CO LTD MURATA ERIE NORTH AMERICA INC TAIYO YUDEN CO LTD	CAP,CHIP CERAMIC 0.1UF 10% X7R 16V ROHS

Reference designator	Qty	MPN	Manufacturer	Description
C1-C2, C30, C46	4	C0402C225K9PAC7867 C1005X5R0J225K C1005X5R0J225K050BC C1005X5R0J225KT C1005X5R0J225KTJA0E CL05A225KQ5NNNC GRM155R60J225KE01D GRM155R60J225KE95D GRM155R60J225KE95J JMK105BJ225KV-F JMK105BJ225MV-F MSASJ105SB5225KFNA01	KEMET ELECTRONICS CORP TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA SAMSUNG ELECTRO-MECHANICS MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD	CAP,CHIP CERAMIC 2.2UF 10% X5R 6.3V ROHS
C5, C23	2	C1005X5R0J475K050BC C1005X5R0J475KB C1005X5R0J475KT C1005X5R0J475KTJ00F CL05A475KQ5NRNC GRM155R60J475KE96D	TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA SAMSUNG ELECTRO-MECHANICS MURATA ERIE NORTH AMERICA INC	CAP,CHIP CERAMIC 4.7UF 10% X5R 6.3V ROHS

Reference designator	Qty	MPN	Manufacturer	Description
C3-C4, C6, C11, C25-C27	7	0201ZD104KAT2A CL03A104KP3NNNC ECJZEB1A104K GRM033R61A104KE15D GRM033R61A104KE84D LMK063BJ104KP-F MSASL063SB5104KFNA01	KYOCERA AVX COMPONENTS CORP SAMSUNG ELECTRO-MECHANICS PANASONIC INDUSTRIAL CO MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD	CAP,CHIP CERAMIC 0.1UF 10% X5R 10V ROHS
C31, C32, C47, C48	4	02013D102KAT2A 0201X102K250CT C0603X5R1E102K030BA C0603X5R1E102KT C0603X5R1E102KT00NN CE TMK063BJ102KP-F GRM033R61E102KA01D MSAST063SB5102KFNA01 RM TMK063BJ102KP-F	KYOCERA AVX COMPONENTS CORP WALSIN TECHNOLOGY CORP TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA TAIYO YUDEN CO LTD MURATA ERIE NORTH AMERICA INC TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD	CAP,CHIP CERAMIC 1000PF 10% X5R 25V ROHS

Reference designator	Qty	MPN	Manufacturer	Description
C8, C12, C21, C17-C19	6	02016D105MAT2A C0201X5R6R3-105MNP C0603X5R0J105M030BC C0603X5R0J105MT C0603X5R0J105MT00NE CC0201MRX5R5BB105 CL03A105MQ3CSNC CL03A105MQ3CSNC CL03A105MQ3CSNH CL03A105MQ3CSNH CM03X5R105M06AH-SSP GRM033R60J105MEA2 GRM033R60J105MEA2D GRM033R60J105MEA2J JMK063ABJ105MP-F MSASJ063AB5105MFNA01 RM JMK063ABJ105MP-F	KYOCERA AVX COMPONENTS CORP VENKEL CORP(0NX17) TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA YAGEO CORPORATION SAMSUNG ELECTRO-MECHANICS SAMSUNG AMERICA INC SAMSUNG ELECTRO-MECHANICS SAMSUNG AMERICA INC KYOCERA AVX COMPONENTS CORP MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD	CAP,CHIP CERAMIC 1.0UF 20% X5R 6.3V ROHS
C9-C10	2	GRM155R61A106ME21D LDK105BBJ106MVBF RM LDK105BBJ106MVBF	MURATA ERIE NORTH AMERICA INC TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD	CAP,CHIP CERAMIC 10UF 20% X5R 10V MAX HT=0.65MM ROHS
L1-L2	2	DFE21CCN2R2MELL	MURATA ERIE NORTH AMERICA INC	INDUCTOR,POWER-CHOKE 2.2UH 20% 1.8A 0.091OHM ROHS

Reference designator	Qty	MPN	Manufacturer	Description
	Alt	HTQH20120H-2R2MSR-39	CYNTEC CO. LTD.	INDUCTOR,CHIP COIL 2.2UH 20% 0.138OHM 2.1A ROHS
FL2	1	DP1608-R2461MFB/LF DP1608-R2461MFB/LF(ES) DP1608-R2461MFT/LF DP1608-R2461MFT/LF(ES)	ADVANCED CERAMIC X CORP ADVANCED CERAMIC X CORP ADVANCED CERAMIC X CORP ADVANCED CERAMIC X CORP	FILTER,DIPLEXER 2400-2500/5150-6000/6000-7125MHZ IL=0.5/0.9/1.4DB WLAN ROHS
Y2	1	XTL901-Q23-065	SIWARD INTERNATIONAL INC	CRYSTAL,QUARTZ 38.4000MHZ 10PPM CL=6PF ROHS
U2	1	GD25WQ32EEEG GD25WQ32EEEEGR GD25WQ32EEIG GD25WQ32EEIGR	GIGADEVICE SEMICONDUCTOR INC GIGADEVICE SEMICONDUCTOR INC GIGADEVICE SEMICONDUCTOR INC GIGADEVICE SEMICONDUCTOR INC	IC,MEMORY FLASH DUAL/QUAD 32MBIT SPI 104MHZ 1.65-3.6V ROHS
J1-J2	2	20579-001E	I-PEX USA	CONN,RF COAX MICRO RCPT VERT 12GHZ SMT 2X2X0.6MM AU ROHS
C7	1	02016D475MAT2S CL03A475MQ5C65C CM03X5R475M06A055 GRM035R60J475ME15 GRM035R60J475ME15D JDK063BBJ475MV-AT MEASJ065QB5475MA1A01 RM JDK063BBJ475MV-AT	KYOCERA AVX COMPONENTS CORP SAMSUNG ELECTRO-MECHANICS KYOCERA AVX COMPONENTS CORP MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD	CAP,CHIP CERAMIC 4.7UF 20% X5R 6.3V (MS) ROHS

Reference designator	Qty	MPN	Manufacturer	Description
U5	1	SGM23001AYTLAG16G/TR SGM23001AYTLAG16G/TR(ES)	SG MICRO LIMITED SG MICRO LIMITED	IC,RF FRONT END MODULE 802.11N WIFI 5.8GHZ HF-ROHS
U3	1	SGM22001AYTLAF18G/TR SGM22001AYTLAF18G/TR(ES)	SG MICRO LIMITED SG MICRO LIMITED	IC,RF FRONT END MODULE 802.11N WIFI 2.4GHZ HF-ROHS
R40, R56, C35, C51	4	02013A100JAT2A 0201N100J250LT C0603C0G1E100DT00NN C0603C0G1E100JT C0603NP0100JFTS CC0201JRNPO8BN100 ECJZEC1E100J GRM0335C1E100JA01D GRM0335C1E100JD01D GRM0335C1E101JD01B GRM0335C1E101JD01D GRM0335C1E101JD01E GRM0335C1E101JD01F	KYOCERA AVX COMPONENTS CORP WALSIN TECHNOLOGY CORP TDK CORP OF AMERICA TDK CORP OF AMERICA DARFON ELECTRONICS CORP YAGEO CORPORATION PANASONIC INDUSTRIAL CO MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC	CAP,CHIP CERAMIC 10PF 5% C0G/NP0 25V ROHS

Reference designator	Qty	MPN	Manufacturer	Description
C28	1	02016D474KAT2A C0603X5R0J474K030BC C0603X5R0J474KTJ0NE CL03A474KQ3NNNC GRM033R60J474KE90D JMK063BJ474KP JMK063BJ474KP-F MSASJ063SB5474KFNA01 RM JMK063 BJ473KP-F RM JMK063 BJ474KP-F	KYOCERA AVX COMPONENTS CORP TDK CORP OF AMERICA TDK CORP OF AMERICA SAMSUNG SEMI INC MURATA ERIE NORTH AMERICA INC TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD	CAP,CHIP CERAMIC 0.47UF 10% X5R 6.3V ROHS
C57-C58	2	02013A0R8BAT2A 0201N0R8B250LT 250R05L0R8BV4T C0603NP0808BFTS GRM0335C1ER80BA01D GRM0335C1ER80BZ01D	KYOCERA AVX COMPONENTS CORP WALSIN TECHNOLOGY CORP JOHANSON DIELECTRICS INC DARFON ELECTRONICS CORP MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC	CAP,CHIP CERAMIC 0.8PF +/-0.1PF C0G/NP0 25V ROHS
C16	1	CL03A475MQ3CRNC GRM033R60J475ME05D GRM033R60J475ME05J GRM033R60J475ME05W	SAMSUNG ELECTRO-MECHANICS MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC MURATA ERIE NORTH AMERICA INC	CAP,CHIP CERAMIC 4.7UF 20% X5R 6.3V ROHS

Reference designator	Qty	MPN	Manufacturer	Description
C13	1	0201ZD222KAT2A GRM033R61A222KA01D	KYOCERA AVX COMPONENTS CORP MURATA ERIE NORTH AMERICA INC	CAP,CHIP CERAMIC 2200PF 10% X5R 10V ROHS
U1	1	QCC-730-1-WLPSP90-TR-03-0-02	Qualcomm	QCC730 (103-0-02), WLPSP90, WIFI 2.4/5G 802.11 ABGN FOR BATTERY OPERATED DEVICES. IPA & XPA SUPPORT (I-TEMP), OTP V6.0, FERMION (2.1), TSMC

LEGAL INFORMATION

Your access to and use of this material, along with any documents, software, specifications, reference board files, drawings, diagnostics and other information contained herein (collectively this “Material”), is subject to your (including the corporation or other legal entity you represent, collectively “You” or “Your”) acceptance of the terms and conditions (“Terms of Use”) set forth below. If You do not agree to these Terms of Use, you may not use this Material and shall immediately destroy any copy thereof.

1) Legal Notice.

This Material is being made available to You solely for Your internal use with those products and service offerings of Qualcomm Technologies, Inc. (“Qualcomm Technologies”), its affiliates and/or licensors described in this Material, and shall not be used for any other purposes. If this Material is marked as “Qualcomm Internal Use Only”, no license is granted to You herein, and You must immediately (a) destroy or return this Material to Qualcomm Technologies, and (b) report Your receipt of this Material to qualcomm.support@qti.qualcomm.com. This Material may not be altered, edited, or modified in any way without Qualcomm Technologies’ prior written approval, nor may it be used for any machine learning or artificial intelligence development purpose which results, whether directly or indirectly, in the creation or development of an automated device, program, tool, algorithm, process, methodology, product and/or other output. Unauthorized use or disclosure of this Material or the information contained herein is strictly prohibited, and You agree to indemnify Qualcomm Technologies, its affiliates and licensors for any damages or losses suffered by Qualcomm Technologies, its affiliates and/or licensors for any such unauthorized uses or disclosures of this Material, in whole or part.

Qualcomm Technologies, its affiliates and/or licensors retain all rights and ownership in and to this Material. No license to any trademark, patent, copyright, mask work protection right or any other intellectual property right is either granted or implied by this Material or any information disclosed herein, including, but not limited to, any license to make, use, import or sell any product, service or technology offering embodying any of the information in this Material.

THIS MATERIAL IS BEING PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND, WHETHER EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE. TO THE MAXIMUM EXTENT PERMITTED BY LAW, QUALCOMM TECHNOLOGIES, ITS AFFILIATES AND/OR LICENSORS SPECIFICALLY DISCLAIM ALL WARRANTIES OF TITLE, MERCHANTABILITY, NON-INFRINGEMENT, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, COMPLETENESS OR ACCURACY, AND ALL WARRANTIES ARISING OUT OF TRADE USAGE OR OUT OF A COURSE OF DEALING OR COURSE OF PERFORMANCE. MOREOVER, NEITHER QUALCOMM TECHNOLOGIES, NOR ANY OF ITS AFFILIATES AND/OR LICENSORS, SHALL BE LIABLE TO YOU OR ANY THIRD PARTY FOR ANY EXPENSES, LOSSES, USE, OR ACTIONS HOWSOEVER INCURRED OR UNDERTAKEN BY YOU IN RELIANCE ON THIS MATERIAL.

Certain product kits, tools and other items referenced in this Material may require You to accept additional terms and conditions before accessing or using those items.

Technical data specified in this Material may be subject to U.S. and other applicable export control laws. Transmission contrary to U.S. and any other applicable law is strictly prohibited.

Nothing in this Material is an offer to sell any of the components or devices referenced herein.

This Material is subject to change without further notification.

In the event of a conflict between these Terms of Use and the Website Terms of Use on www.qualcomm.com, the *Qualcomm Privacy Policy* referenced on www.qualcomm.com, or other legal statements or notices found on prior pages of the Material, these Terms of Use will control. In the event of a conflict between these Terms of Use and any other agreement (written or click-through, including, without limitation any non-disclosure agreement) executed by You and Qualcomm Technologies or a Qualcomm Technologies affiliate and/or licensor with respect to Your access to and use of this Material, the other agreement will control.

These Terms of Use shall be governed by and construed and enforced in accordance with the laws of the State of California, excluding the U.N. Convention on International Sale of Goods, without regard to conflict of laws principles. Any dispute, claim or controversy arising out of or relating to these Terms of Use, or the breach or validity hereof, shall be adjudicated only by a court of competent jurisdiction in the county of San Diego, State of California, and You hereby consent to the personal jurisdiction of such courts for that purpose.

2) Trademark and Product Attribution Statements.

Qualcomm is a trademark or registered trademark of Qualcomm Incorporated. Arm is a registered trademark of Arm Limited (or its subsidiaries) in the U.S. and/or elsewhere. The Bluetooth® word mark is a registered trademark owned by Bluetooth SIG, Inc. Other product and brand names referenced in this Material may be trademarks or registered trademarks of their respective owners.

Snapdragon and Qualcomm branded products referenced in this Material are products of Qualcomm Technologies, Inc. and/or its subsidiaries. Qualcomm patented technologies are licensed by Qualcomm Incorporated.