



Wireless Module

Catalogue



Revision: 230318

802.11ac Wave 2 Comparison Chart



HARDWARE SPECIFICATIONS

TYPE OF CARD	Wide Size 4 x 4 MU-MIMO 802.11ac Wave 2	Standard size 4 x 4 MU-MIMO 802.11ac Wave 2	Standard size 3 x 3 MU-MIMO 802.11ac Wave 2	Standard size 2 x 2 MU-MIMO 802.11ac Wave 2	Standard size 2 x 2 MU-MIMO 802.11ac Wave 2
MIMO	4 x 4	4 x 4	3 x 3	2 x 2	2 x 2
MODEL	WLEI216V5-23	WLEI216V5-20	WLEI000V5-20	WLE650V5-25	WLE650V5-18
CHIPSET	QCA9984	QCA9984	QCA9982	QCA9888	QCA9888
STANDARD	802.11ac/a/n	802.11ac/a/n	802.11ac/a/n	802.11ac/a/n	802.11ac/a/n
THEORETICAL THROUGHPUT	1733Mbps	1733Mbps	1300Mbps	867Mbps	867Mbps
FORM FACTOR	Wide size	Standard Size	Standard Size	Standard Size	Standard Size
SPECTRUM	5.180 - 5.825 GHz	5.180 - 5.825 GHz	5.180 - 5.825 GHz	5.180 - 5.825 GHz	5.180 - 5.825 GHz
REFERENCE DESIGN	CUS239	x	x	x	x
HOST INTERFACE	MiniPCIe 2.0	MiniPCIe 2.0	MiniPCIe 2.0	MiniPCIe 2.0	MiniPCIe 1.2
OPERATING VOLTAGE	5 VDC	3.3 VDC	3.3 VDC	3.3 VDC	3.3 VDC
POWER (PER CHAIN)	5GHz @ 23dBm	5GHz @ 20dBm	5GHz @ 20dBm	5GHz @ 25dBm	5GHz @ 18dBm
POWER CONSUMPTION	13W (Max)	8.5W (Max)	8.5W (Max)	9.49W (Max)	5.6W (Max)
CHANNEL SUPPORT	20 / 40 / 80 / 80+80MHz	20 / 40 / 80 / 80+80MHz	20 / 40 / 80 / 80+80MHz	20 / 40 / 80/80+80MHz	20 / 40 / 80/80+80MHz
ANTENNA CONNECTOR	4 x U.FL	4 x U.FL	3 x U.FL	2 x MMCX	2 x U.FL
MODULATION TECHNIQUES	OFDM: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM	OFDM: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM	OFDM: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM	OFDM: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM	BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM
OPERATING ENVIRONMENT	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C
CERTIFICATION	RoHS Compliance	RoHS Compliance	RoHS Compliance	RoHS Compliance	RoHS Compliance
DIMENSION (W x H x D)	73.7 x 50.3 x 5.5 mm	50.8x 29.9x 12.9 mm	50.8x 29.9x 12.9 mm	50.8 x 29.9 x 12.2 mm	50.8 x 29.9 x 10.4 mm

802.11ac Wave 1 Comparison Chart



HARDWARE SPECIFICATIONS

TYPE OF CARD	Fat card High Power 2 x 2 MIMO 802.11ac	Fat card High Power 2 x 2 MIMO 802.11ac	Standard size 3 x 3 MIMO 802.11ac	Standard size Industrial Grade 3 x 3 MIMO 802.11ac	Standard size 2 x 2 MIMO 802.11ac Wave 1	Standard size Industrial Grade 2 x 2 MIMO 802.11ac
MIMO	3 x 3	2 x 2	3 x 3	3 x 3	2 x 2	2 x 2
MODEL	WLE900V5-27ESD	WLE600V5-27ESD	WLE900VX	WLE900VX-I	WLE600VX	WLE600VX-I
CHIPSET	QCA9880/QCA9890	QCA9882	QCA9880	QCA9890	QCA9882	QCA9892
STANDARD	802.11ac/a/n	802.11ac/a/n	802.11a/b/g/n/ac	802.11a/b/g/n/ac	802.11a/b/g/n/ac	802.11a/b/g/n/ac
THEORETICAL THROUGHPUT	1300Mbps	867Mbps	1300Mbps	1300Mbps	867Mbps	867Mbps
FORM FACTOR	Wide size	Wide size	Standard size	Standard size	Standard size	Standard size
SPECTRUM	5.180 - 5.825 GHz	5.180 - 5.825 GHz	2.412 - 2.472 GHz 5.180 - 5.825 GHz	2.412 - 2.472 GHz 5.180 - 5.825 GHz	2.412 - 2.472 GHz 5.180 - 5.825 GHz	2.412 - 2.472 GHz 5.180 - 5.825 GHz
REFERENCE DESIGN	CUS223 (High Power)	*	XB140	XB140	XB140	XB140
HOST INTERFACE	MiniPCIe 1.2	MiniPCIe 1.2	MiniPCIe 1.1	MiniPCIe 1.1	MiniPCIe 1.1	MiniPCIe 1.1
OPERATING VOLTAGE	5 VDC	5 VDC	3.3 VDC	3.3 VDC	3.3 VDC	3.3 VDC
POWER (PER CHAIN)	5GHz @ 27dBm	5GHz @ 23dBm	2.4GHz @ 21dBm 5GHz @ 20dBm	2.4GHz @ 21dBm 5GHz @ 20dBm	2.4GHz @ 21dBm 5GHz @ 20dBm	2.4GHz @ 21dBm 5GHz @ 20dBm
POWER CONSUMPTION	10W (Max)	7.5W (Max)	5W (Max)	5W (Max)	3.5W (Max)	3.5W (Max)
CHANNEL SUPPORT	20 / 40 / 80MHz	20 / 40 / 80MHz	20 / 40 / 80MHz	20 / 40 / 80MHz	20 / 40 / 80MHz	20 / 40 / 80MHz
ANTENNA CONNECTOR	3 x MMCX	2 x MMCX	3 x U.FL	3 x U.FL	2 x U.FL	2 x U.FL
MODULATION TECHNIQUES	BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM	BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM	OFDM: BPSK, QPSK, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM, 256-QAM	OFDM: BPSK, QPSK, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM, 256-QAM	OFDM: BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM	OFDM: BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM
OPERATING ENVIRONMENT	QCA9880: -20°C to 70°C QCA9890: -40°C to 85°C	QCA9882: -20°C to 70°C QCA9892: -40°C to 85°C	-20°C to 70°C	-40°C to 70°C*	-20°C to 70°C	-40°C to 70°C*
CERTIFICATION	RoHS Compliance	FCC, CE, RoHS Compliance	FCC, CE, RoHS Compliance	FCC, CE, RoHS Compliance	FCC, CE, RoHS Compliance	FCC, CE, RoHS Compliance
DIMENSION (W x H x D)	50 x 51 x 12.5 mm with normal heatsink, 95 x 51 x 13 mm with large heatsink	50 x 51 x 12.5 mm with normal heatsink, 95 x 51 x 13 mm with large heatsink	50.95 x 30 x 3.2 mm	50.95 x 30 x 3.2 mm	30 x 51 x 3.2 mm	30 x 51 x 3.2 mm

*The wireless module can operate up to 90°C. For long term reliability, it is recommended that a 20°C safety margin be maintained.

802.11a/b/g/n Comparison Chart



HARDWARE SPECIFICATIONS

TYPE OF CARD	Standard size 4 x 4 MU-MIMO 802.11n	Wide size 4 x 4 MU-MIMO 802.11n	Wide size High Power 2 x 2 MIMO 802.11n	Standard size High Power 2 x 2 MIMO 802.11n	Standard size 2 x 2 MIMO 802.11n	Half size 2 x 2 MIMO 802.11n
MIMO	4 x 4	4 x 4	2 x 2	2 x 2	2 x 2	2 x 2
MODEL	WLEI216V2-20	WLEI200V2-22	WLE200N5-23-ESD	WLE200N2-23	WLE200NX	WLE200N2
CHIPSET	QCA9984	QCA9980	AR9280	AR9283	AR9280	AR9287
STANDARD	802.11ac/b/g/n	802.11ac/b/g/n	802.11a/n	802.11b/g/n	802.11a/b/g/n	802.11b/g/n
THEORETICAL THROUGHPUT	800Mbps	600Mbps	300Mbps	300Mbps	300Mbps	300Mbps
FORM FACTOR	Standard size	Wide size	Wide size	Standard size	Standard size	Standard size
SPECTRUM	2.412 - 2.472 GHz	2.412 - 2.472 GHz	5.150 - 5.875 GHz	2.412 - 2.484 GHz	2.412 - 2.484 GHz 5.150 - 5.875 GHz	2.412 - 2.484 GHz
REFERENCE DESIGN	✘	CUS260	✘	✘	XB92	HB97
HOST INTERFACE	MiniPCIe 2.0	MiniPCIe 2.0	MiniPCIe 1.1	MiniPCIe 1.1	MiniPCIe 1.1	MiniPCIe 1.1
OPERATING VOLTAGE	3.3 VDC	5 VDC	3.3 VDC	3.3 VDC	3.3 VDC	3.3 VDC
POWER (PER CHAIN)	2.4GHz @ 20dBm	2.4GHz @ 22dBm	5GHz @ 23dBm	2.4GHz @ 23dBm	2.4GHz @ 18dBm 5GHz @ 17dBm	2.4GHz @ 16dBm
POWER CONSUMPTION	6.68W (Max)	15W (Max)	2.8W (Max)	2.5W (Max)	3.7W (Max)	1.9W (Max)
CHANNEL SUPPORT	20 / 40MHz	20 / 40MHz	20 / 40MHz	20 / 40MHz	20 / 40MHz	20 / 40MHz
ANTENNA CONNECTOR	4 x U.FL	8 x U.FL	2 x MMCX	2 x U.FL	2 x U.FL	2 x U.FL
MODULATION TECHNIQUES	OFDM: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM	OFDM: BPSK, QPSK, 16-QAM, 64-QAM DSSS: DBPSK, DQPSK, CCK	OFDM: BPSK, QPSK, 16-QAM, 64-QAM	OFDM: BPSK, QPSK, 16-QAM, 64-QAM DSSS: DBPSK, DQPSK, CCK	OFDM: BPSK, QPSK, 16-QAM, 64-QAM	OFDM: BPSK, QPSK, 16-QAM, 64-QAM DSSS: DBPSK, DQPSK, CCK
OPERATING ENVIRONMENT	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C
CERTIFICATION	RoHS Compliance	RoHS Compliance	RoHS Compliance	FCC, RoHS Compliance	FCC, CE, RoHS Compliance	FCC, CE, RoHS Compliance
DIMENSION (W x H x D)	50.8x 29.9x 12.9 mm	70.3 x 50.3 x 5.5 mm	43 x 52 x 4 mm	30 x 50.95 x 3.2 mm	30 x 51 x 3.2 mm	30 x 26.8 x 3.45 mm