Appendix A

RF Test Data for BT V4.0(BDR/EDR) (Conducted Measurement)

Product Name: IP PHONE

Trade Mark: TILLEK

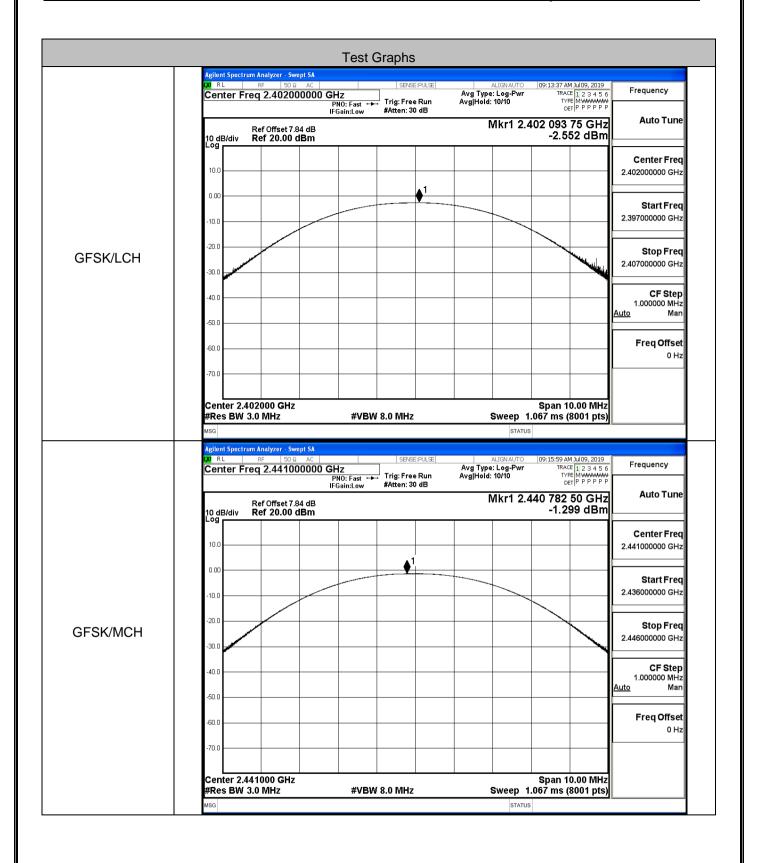
Test Model: UC507

Environmental Conditions

Temperature:	24.6 ° C
Relative Humidity:	53.7%
ATM Pressure:	100.0 kPa
Test Engineer:	WANGCHUANG
Supervised by:	TOM.LIU

A.1 Maxmum Conducted Peak Output Power

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
	LCH -2.552		21	PASS
GFSK	MCH	-1.299	21	PASS
	HCH	-1.555	21	PASS
	LCH	-3.146	21	PASS
π/4DQPSK	MCH	-1.931	21	PASS
	HCH	-2.165	21	PASS
	LCH	-2.944	21	PASS
8DPSK	MCH	-1.782	21	PASS
	НСН	-2.125	21	PASS

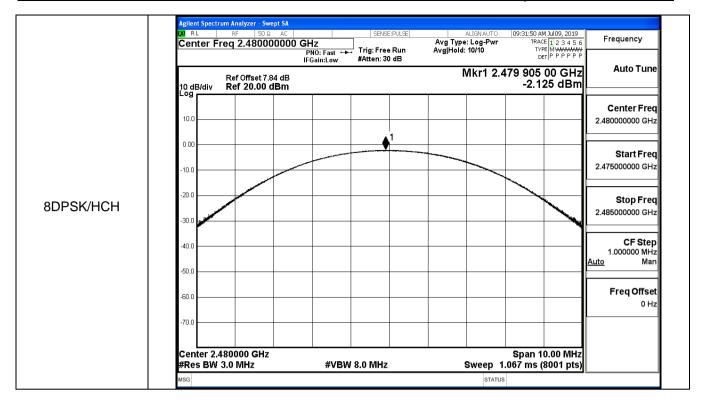


SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA Agilent Spectrum Analyzer - Swept SA TO 09:17:40 AM Jul 09, 2019 WY TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P P P P P P Frequency Avg Type: Log-Pwr Avg|Hold: 10/10 Trig: Free Run #Atten: 30 dB Mkr1 2.479 962 50 GHz -1.555 dBm Auto Tune Ref Offset 7.84 dB Ref 20.00 dBm 10 dB/div Log Center Freq 10.1 2.480000000 GHz 0.00 Start Freq 2.475000000 GHz -10.0 -20.0 Stop Freq GFSK/HCH 2.485000000 GHz **CF Step** 1.000000 MHz 40.0 <u>Auto</u> -50 C Freq Offset -60.0 0 Hz -70.0 Center 2.480000 GHz Span 10.00 MHz Sweep 1.067 ms (8001 pts) #Res BW 3.0 MHz **#VBW 8.0 MHz** Agilent Spectrum Analyzer - Swept SA OTO 09:20:09 AM Jul 09, 2019 TRACE 1 2 3 4 5 6 TYPE M WWWWWW DET P P P P P P Frequency Avg Type: Log-Pwr Avg|Hold: 10/10 **Auto Tune** Mkr1 2.402 235 00 GHz Ref Offset 7.84 dB Ref 20.00 dBm 10 dB/div Log -3.146 dBm Center Freq 10.1 2.402000000 GHz 0.00 Start Freq 2.397000000 GHz -10.0 -20.0 Stop Freq $\pi/4DQPSK/LCH$ 2.407000000 GHz **CF Step** 1.000000 MHz -40.0 <u>Auto</u> -50 O Freq Offset -60.0 0 Hz -70.0 Center 2.402000 GHz Span 10.00 MHz #Res BW 3.0 MHz **#VBW 8.0 MHz** Sweep 1.067 ms (8001 pts) STATUS

SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA Agilent Spectrum Analyzer - Swept SA TO 09:23:08 AM Jul 09, 2019 WT TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P P P P P P Frequency Avg Type: Log-Pwr Avg|Hold: 10/10 Trig: Free Run #Atten: 30 dB Mkr1 2.441 003 75 GHz -1.931 dBm Auto Tune Ref Offset 7.84 dB Ref 20.00 dBm 10 dB/div Log Center Freq 10.1 2.441000000 GHz 0.00 Start Freq 2.436000000 GHz -10.0 -20.0 Stop Freq π/4DQPSK/MCH 2.446000000 GHz **CF Step** 1.000000 MHz 40.0 <u>Auto</u> -50 O Freq Offset -60.0 0 Hz -70.0 Center 2.441000 GHz Span 10.00 MHz Sweep 1.067 ms (8001 pts) #Res BW 3.0 MHz **#VBW 8.0 MHz** Agilent Spectrum Analyzer - Swept SA OTO 09:24:47 AM Jul 09, 2019 TRACE 1 2 3 4 5 6 TYPE M WWWWWW DET P P P P P P Frequency Avg Type: Log-Pwr Avg|Hold: 10/10 Auto Tune Mkr1 2.480 135 00 GHz Ref Offset 7.84 dB Ref 20.00 dBm 10 dB/div Log -2.165 dBm Center Freq 10.1 2.480000000 GHz 0.00 Start Freq 2.475000000 GHz -10.0 -20.0 Stop Freq π/4DQPSK/HCH 2.485000000 GHz **CF Step** 1.000000 MHz -40.0 <u>Auto</u> -50 O Freq Offset -60.0 0 Hz -70.0 Center 2.480000 GHz Span 10.00 MHz Sweep 1.067 ms (8001 pts) #Res BW 3.0 MHz **#VBW 8.0 MHz** STATUS

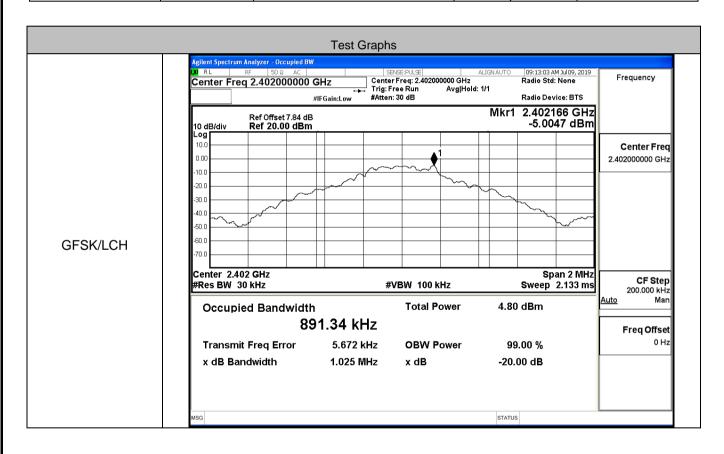
SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA Agilent Spectrum Analyzer - Swept SA RL RF 50 \(\text{RC} \) AC | Center Freq 2.402000000 GHz PN0: Fast → IFGain:Low TO 09:27:18 AM Jul 09, 2019 WT TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P P P P P P Frequency Avg Type: Log-Pwr Avg|Hold: 10/10 Trig: Free Run #Atten: 30 dB Auto Tune Mkr1 2.401 838 75 GHz Ref Offset 7.84 dB Ref 20.00 dBm 10 dB/div Log -2.944 dBm Center Freq 10.1 2.402000000 GHz 0.00 Start Freq 2.397000000 GHz -10.0 -20.0 Stop Freq 8DPSK/LCH 2.407000000 GHz **CF Step** 1.000000 MHz 40.0 <u>Auto</u> -50 C Freq Offset -60.0 0 Hz -70.0 Center 2.402000 GHz Span 10.00 MHz Sweep 1.067 ms (8001 pts) #Res BW 3.0 MHz **#VBW 8.0 MHz** Agilent Spectrum Analyzer - Swept SA OTO 09:30:12 AM Jul 09, 2019 TRACE 1 2 3 4 5 6 TYPE M WWWWWW DET P P P P P P Frequency Avg Type: Log-Pwr Avg|Hold: 10/10 Mkr1 2.441 046 25 GHz -1.782 dBm Auto Tune Ref Offset 7.84 dB Ref 20.00 dBm 10 dB/div Log Center Freq 10.1 2.441000000 GHz 0.00 Start Freq 2.436000000 GHz -10.0 -20.0 Stop Freq 8DPSK/MCH 2.446000000 GHz **CF Step** 1.000000 MHz -40.0 <u>Auto</u> -50 O Freq Offset -60.0 0 Hz -70.0 Center 2.441000 GHz #Res BW 3.0 MHz Span 10.00 MHz Sweep 1.067 ms (8001 pts) **#VBW 8.0 MHz** STATUS

SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA



A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
	LCH	1.025	Not Specified	PASS
GFSK	MCH	0.9710	Not Specified	PASS
	HCH	1.032	Not Specified	PASS
	LCH	1.291	Not Specified	PASS
π/4DQPSK	MCH	1.290	Not Specified	PASS
	HCH	1.291	Not Specified	PASS
8DPSK	LCH	1.305	Not Specified	PASS
	MCH	1.295	Not Specified	PASS
	HCH	1.302	Not Specified	PASS



FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. gilent Spectrum Analyzer - Occupied BW SENSE:PULSE Center Freq: 2.441000000 GHz Trig: Free Run Avg|Hold#Atten: 30 dB 09:15:25 AM Jul 09, 2019 Radio Std: None Frequency Center Freq 2.441000000 GHz Avg|Hold: 1/1 Radio Device: BTS Mkr1 2.441162 GHz Ref Offset 7.84 dB Ref 20.00 dBm -3.5945 dBm 10 dB/div 10.0 Center Freq 0.00 2.441000000 GHz -10.0 -20.0 -30.0 -40 C -50.0 -60.0 GFSK/MCH Center 2.441 GHz Span 2 MHz CF Step #Res BW 30 kHz #VBW 100 kHz Sweep 2.133 ms 200.000 kHz <u>Auto</u> Occupied Bandwidth **Total Power** 6.07 dBm 894.96 kHz Freq Offset 0 Hz Transmit Freq Error 4.709 kHz **OBW Power** 99.00 % x dB Bandwidth 971.0 kHz x dB -20.00 dB STATUS Agilent Spectrum Analyzer - Occupied BW SENSE:PULSE Center Freq: 2.480000000 GHz Trig: Free Run Avg|Hold#Atten: 30 dB 09:17:07 AM Jul 09, 2019 Radio Std: None Frequency Center Freq 2.480000000 GHz Avg|Hold: 1/1 #IFGain:Low Radio Device: BTS Mkr1 2.480162 GHz Ref Offset 7.84 dB Ref 20.00 dBm -3.8470 dBm 10 d<u>B/div</u> 10.0 Center Freq 0.00 2.480000000 GHz -10.0 -20.0 -30.0 40 O -50.0 GFSK/HCH Center 2.48 GHz Span 2 MHz CF Step #Res BW 30 kHz **#VBW 100 kHz** Sweep 2.133 ms 200.000 kHz <u>Auto</u> Occupied Bandwidth **Total Power** 5.81 dBm 896.71 kHz Freq Offset 0 Hz Transmit Freq Error 5.949 kHz **OBW Power** 99.00 % 1.032 MHz -20.00 dB x dB Bandwidth x dB STATUS

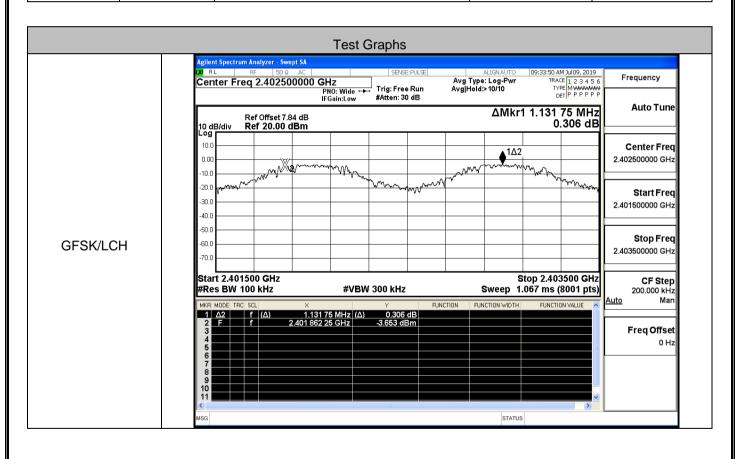
FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. Agilent Spectrum Analyzer - Occupied BW SENSE:PULSE Center Freq: 2.402000000 GHz Trig: Free Run Avg|Hold#Atten: 30 dB 09:19:35 AM Jul 09, 2019 Radio Std: None Frequency Center Freq 2.402000000 GHz Avg|Hold: 1/1 Radio Device: BTS Mkr1 2.402162 GHz Ref Offset 7.84 dB Ref 20.00 dBm -6.6766 dBm 10 dB/div 10.0 Center Freq 0.00 2.402000000 GHz -10.0 -20.0 -30.0 -40 O -50.0 -60.0 π/4DQPSK/LCH Center 2.402 GHz Span 2 MHz CF Step #Res BW 30 kHz #VBW 100 kHz Sweep 2.133 ms 200.000 kHz <u>Auto</u> Occupied Bandwidth **Total Power** 3.36 dBm 1.1763 MHz Freq Offset 0 Hz Transmit Freg Error 472 Hz **OBW Power** 99.00 % 1.291 MHz x dB Bandwidth x dB -20.00 dB STATUS Agilent Spectrum Analyzer - Occupied BW SENSE:PULSE Center Freq: 2.441000000 GHz Trig: Free Run Avg|Hole #Atten: 30 dB 09:22:34 AM Jul 09, 2019 Radio Std: None Frequency Center Freq 2.441000000 GHz Avg|Hold: 1/1 #IFGain:Low Radio Device: BTS Mkr1 2.441162 GHz Ref Offset 7.84 dB Ref 20.00 dBm -5.4842 dBm 10 d<u>B/div</u> 10.0 Center Freq 0.00 2.441000000 GHz -10.0 -20.0 -30.0 -40 C -50.0 π/4DQPSK/MCH Center 2.441 GHz #Res BW 30 kHz Span 2 MHz CF Step 200.000 kHz **#VBW 100 kHz** Sweep 2.133 ms <u>Auto</u> Occupied Bandwidth **Total Power** 4.54 dBm 1.1735 MHz Freq Offset 0 Hz Transmit Freq Error -1.074 kHz **OBW Power** 99.00 % 1.290 MHz -20.00 dB x dB Bandwidth x dB STATUS

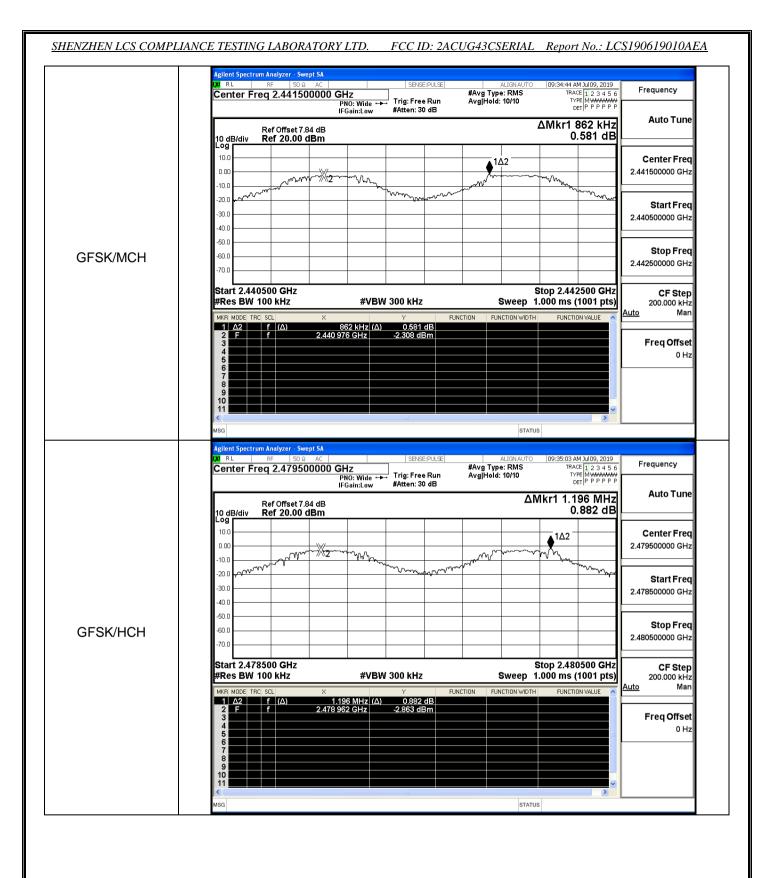
FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. Agilent Spectrum Analyzer - Occupied BW SENSE:PULSE Center Freq: 2.480000000 GHz Trig: Free Run Avg|Hold#Atten: 30 dB 09:24:13 AM Jul 09, 2019 Radio Std: None Frequency Center Freq 2.480000000 GHz Avg|Hold: 1/1 Radio Device: BTS Mkr1 2.480164 GHz Ref Offset 7.84 dB Ref 20.00 dBm -5.8816 dBm 10 dB/div 10.0 Center Freq 0.00 2.480000000 GHz -10.0 -20.0 -30.0 -40 C -50.0 -60.0 π/4DQPSK/HCH Center 2.48 GHz Span 2 MHz CF Step #Res BW 30 kHz #VBW 100 kHz Sweep 2.133 ms 200.000 kHz <u>Auto</u> Occupied Bandwidth **Total Power** 4.12 dBm 1.1728 MHz Freq Offset 0 Hz Transmit Freg Error -548 Hz **OBW Power** 99.00 % 1.291 MHz x dB Bandwidth x dB -20.00 dB STATUS Agilent Spectrum Analyzer - Occupied BW SENSE:PULSE Center Freq: 2.402000000 GHz Trig: Free Run Avg|Hold#Atten: 30 dB 09:26:43 AM Jul 09, 2019 Radio Std: None Frequency Center Freq 2.402000000 GHz Avg|Hold: 1/1 #IFGain:Low Radio Device: BTS Mkr1 2.40217 GHz Ref Offset 7.84 dB Ref 20.00 dBm -6.7944 dBm 10 d<u>B/div</u> 10.0 Center Freq 0.00 2.402000000 GHz -10.0 -20.0 -30.0 40 O -50.0 8DPSK/LCH Center 2.402 GHz Span 2 MHz CF Step 200.000 kHz #Res BW 30 kHz **#VBW 100 kHz** Sweep 2.133 ms <u>Auto</u> Occupied Bandwidth **Total Power** 3.26 dBm 1.1890 MHz Freq Offset 0 Hz Transmit Freq Error 1.002 kHz **OBW Power** 99.00 % 1.305 MHz -20.00 dB x dB Bandwidth x dB STATUS

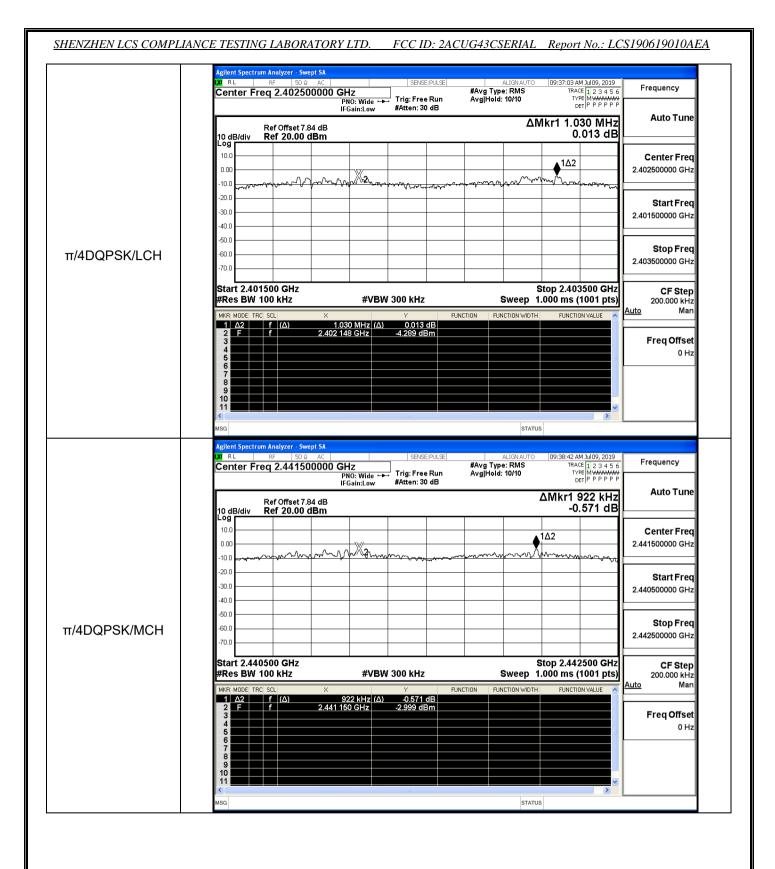
FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. Agilent Spectrum Analyzer - Occupied BW SENSE:PULSE Center Freq: 2.441000000 GHz Trig: Free Run Avg|Hold#Atten: 30 dB 09:29:38 AM Jul 09, 2019 Radio Std: None Frequency Center Freq 2.441000000 GHz Avg|Hold: 1/1 Radio Device: BTS Mkr1 2.441162 GHz Ref Offset 7.84 dB Ref 20.00 dBm -4.8000 dBm 10 dB/div 10.0 Center Freq 0.00 2.441000000 GHz -10.0 -20.0 -30.0 -40 O -50.0 -60.0 8DPSK/MCH Center 2.441 GHz Span 2 MHz CF Step #Res BW 30 kHz #VBW 100 kHz Sweep 2.133 ms 200.000 kHz <u>Auto</u> Occupied Bandwidth **Total Power** 4.32 dBm 1.1876 MHz Freq Offset 0 Hz Transmit Freg Error 477 Hz **OBW Power** 99.00 % 1.295 MHz x dB Bandwidth x dB -20.00 dB STATUS Agilent Spectrum Analyzer - Occupied BW SENSE:PULSE Center Freq: 2.480000000 GHz Trig: Free Run Avg|Hold#Atten: 30 dB 09:31:15 AM Jul 09, 2019 Radio Std: None Frequency Center Freq 2.480000000 GHz Avg|Hold: 1/1 #IFGain:Low Radio Device: BTS Mkr1 2.480168 GHz Ref Offset 7.84 dB Ref 20.00 dBm -5.6695 dBm 10 d<u>B/div</u> 10.0 Center Freq 0.00 2.480000000 GHz -10.0 -20.0 -30.0 -40 C **~**~ -50.0 8DPSK/HCH Center 2.48 GHz Span 2 MHz CF Step #Res BW 30 kHz **#VBW 100 kHz** Sweep 2.133 ms 200.000 kHz <u>Auto</u> Occupied Bandwidth **Total Power** 4.02 dBm 1.1836 MHz Freq Offset 0 Hz Transmit Freq Error 2.212 kHz **OBW Power** 99.00 % 1.302 MHz -20.00 dB x dB Bandwidth x dB STATUS

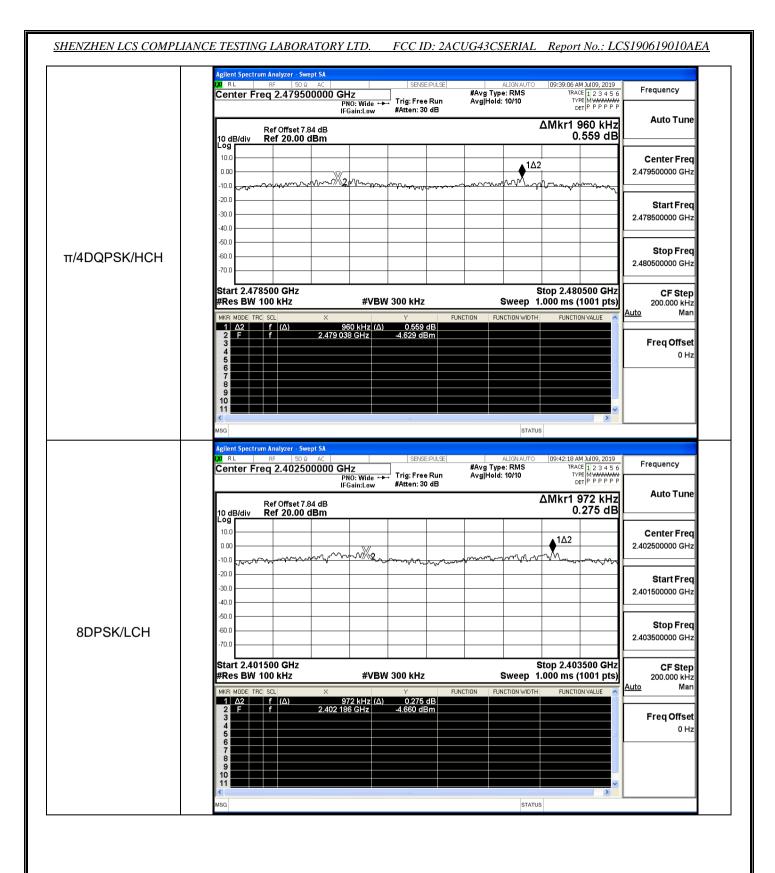
A.3 Carrier Frequency Separation

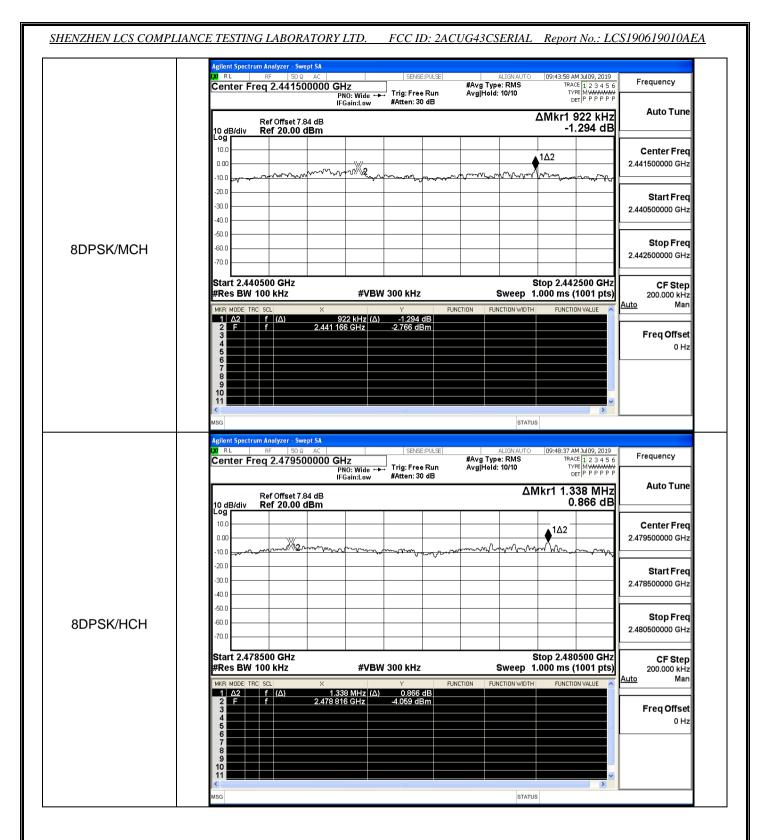
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
	LCH	1.132	0.688	PASS
GFSK	MCH	0.862	0.688	PASS
	HCH	1.196	0.688	PASS
	LCH	1.030	0.861	PASS
π/4DQPSK	MCH	0.922	0.861	PASS
	HCH	0.960	0.861	PASS
	LCH	0.972	0.870	PASS
8DPSK	MCH	0.922	0.870	PASS
	HCH	1.338	0.870	PASS





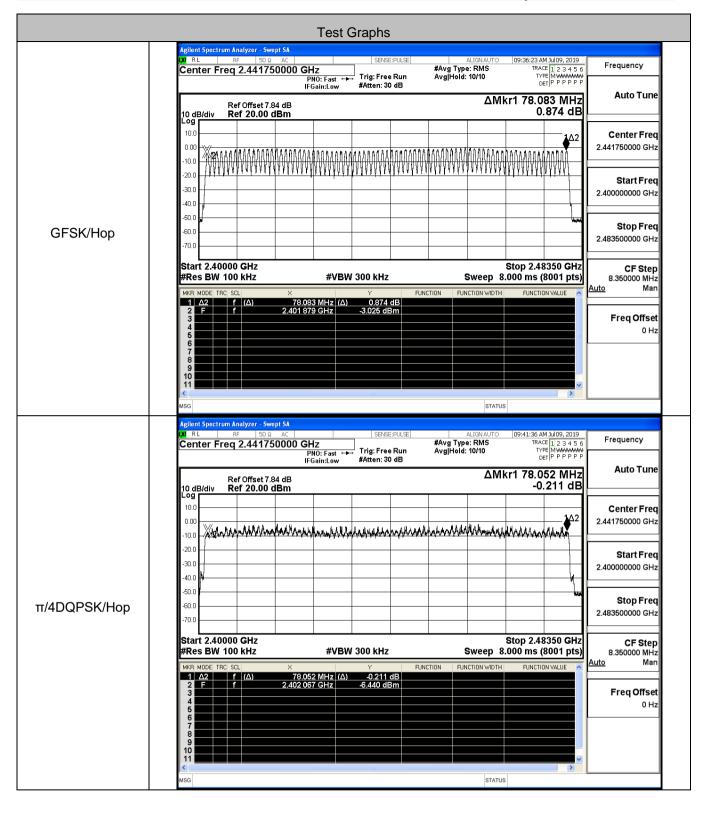






A.4 Hopping Channel Number

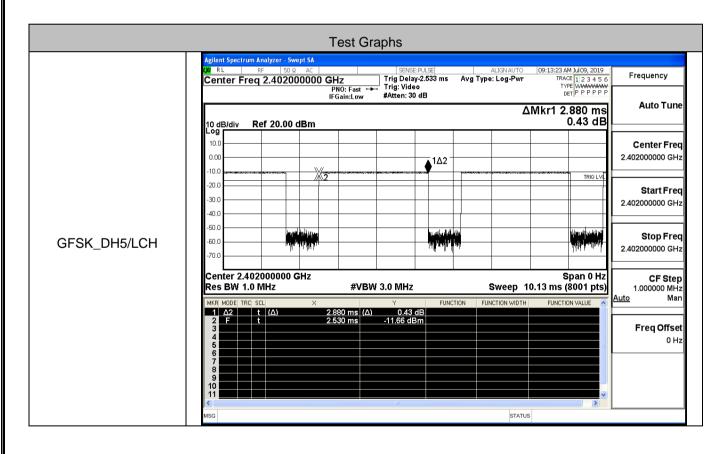
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Нор	79	>=15	PASS
π/4DQPSK	Нор	79	>=15	PASS
8DPSK	Нор	79	>=15	PASS



FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. Agilent Spectrum Analyzer - Swept SA RL RF 50 Ω AC | Center Freq 2.441750000 GHz PN0: Fast IFGain:Low 09:46:52 AM Jul 09, 2019 TRACE 1 2 3 4 5 6 TYPE M WWWWWWW DET P P P P P P #Avg Type: RMS Avg|Hold: 10/10 Frequency Trig: Free Run #Atten: 30 dB Auto Tune ΔMkr1 77.780 MHz Ref Offset 7.84 dB Ref 20.00 dBm 1.026 dB 10 dB/div Log 10.0 Center Freq 2.441750000 GHz 0.00 -10.0 -20.0 Start Freq -30.0 2.400000000 GHz -40.0 -50.0 Stop Freq 8DPSK/Hop -60.0 2.483500000 GHz 70.0 Stop 2.48350 GHz Start 2.40000 GHz CF Step 8.350000 MHz Man Sweep 8.000 ms (8001 pts) #Res BW 100 kHz **#VBW** 300 kHz <u>Auto</u> FUNCTION FUNCTION WIDTH FUNCTION VALUE 77.780 MHz (Δ) 1.026 dB 2.402 067 GHz -4.335 dBm Freq Offset 0 Hz STATUS

A.5 Dwell Time

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
	DH5	LCH	2.88	106.7	0.307	0.4	PASS
GFSK	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5 HCH		2.88	106.7	0.307	0.4	PASS
	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS
	3DH5	LCH	2.88	106.7	0.308	0.4	PASS
8DPSK	3DH5	MCH	2.88	106.7	0.308	0.4	PASS
	3DH5	HCH	2.88	106.7	0.308	0.4	PASS



FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. Agilent Spectrum Analyzer - Swept SA Frequency Center Freq 2.441000000 GHz PNO: Fast ++IFGain:Low **Auto Tune** ΔMkr1 2.880 ms -0.90 dB Ref 20.00 dBm 10 dB/div Log 10.0 Center Freq <u></u>1Δ2 2.441000000 GHz 0.00 10.0 TRIG LV -20.0 Start Freq -30.0 2.441000000 GHz -40.0 -50.0 Stop Freq -60.0 GFSK_DH5/MCH 2.441000000 GHz -7n n Center 2.441000000 GHz Span 0 Hz **CF Step** 1.000000 MHz Sweep 10.13 ms (8001 pts) Res BW 1.0 MHz **#VBW** 3.0 MHz <u>Auto</u> FUNCTION FUNCTION WIDTH FUNCTION VALUE -0.90 dB -9.76 dBm Freq Offset 0 Hz STATUS Agilent Spectrum Analyzer - Swept SA © RL RF | 50 Ω AL | Center Freq 2.480000000 GHz PN0: Fast → IFGain:Low Frequency **Auto Tune** ΔMkr1 2.879 ms -0.15 dB Ref 20.00 dBm 10 dB/div Log 10.0 Center Freq 0.00 **▲**1Δ2 2.480000000 GHz 10.0 TRIG LV -20.0 Start Freq -30.0 2.480000000 GHz -40.0 -50.0 Stop Freq GFSK_DH5/HCH -60.0 2.480000000 GHz -7n n Center 2.480000000 GHz Span 0 Hz **CF Step** 1.000000 MHz Res BW 1.0 MHz #VBW 3.0 MHz Sweep 10.13 ms (8001 pts) FUNCTION FUNCTION WIDTH FUNCTION VALUE Freq Offset 0 Hz STATUS

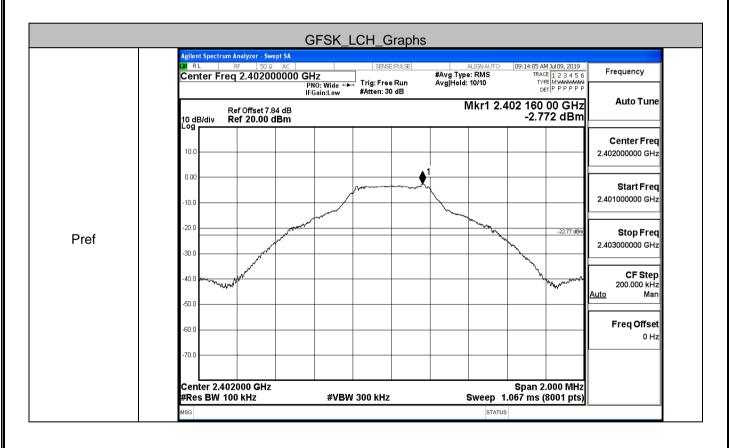
FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. Agilent Spectrum Analyzer - Swept SA Frequency Center Freq 2.402000000 GHz PNO: Fast ++IFGain:Low **Auto Tune** ΔMkr1 2.884 ms -0.55 dB Ref 20.00 dBm 10 dB/div Log 10.0 Center Freq 2.402000000 GHz 0.00 **▲**1Δ2 10.0 -20.0 Start Freq -30.0 2.402000000 GHz -40.0 -50.0 π/4DQPSK Stop Freq -60.0 2.402000000 GHz 2DH5/LCH -7N I Center 2.402000000 GHz Span 0 Hz **CF Step** 1.000000 MHz Sweep 10.13 ms (8001 pts) Res BW 1.0 MHz **#VBW** 3.0 MHz <u>Auto</u> FUNCTION FUNCTION WIDTH FUNCTION VALUE 2.884 ms (Δ) -0.55 dB 409.1 μs -13.18 dBm Freq Offset 0 Hz STATUS Agilent Spectrum Analyzer - Swept SA Center Freq 2.441000000 GHz PN0: Fast → IFGain:Low Frequency **Auto Tune** ΔMkr1 2.884 ms -3.10 dB Ref 20.00 dBm 10 dB/div Log 10.0 Center Freq 0.00 2.441000000 GHz 1Δ2 10.0 TRIG LV -20.0 Start Freq -30.0 2.441000000 GHz -40.0 -50.0 π/4DQPSK Stop Freq -60.0 2.441000000 GHz _2DH5/MCH -7n n Center 2.441000000 GHz Span 0 Hz **CF Step** 1.000000 MHz Res BW 1.0 MHz #VBW 3.0 MHz Sweep 10.13 ms (8001 pts) FUNCTION FUNCTION WIDTH FUNCTION VALUE 2.884 ms (Δ) -3.10 dB 2.530 ms -11.09 dBm Freq Offset 0 Hz STATUS

SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA Agilent Spectrum Analyzer - Swept SA Frequency Center Freq 2.480000000 GHz PNO: Fast ++IFGain:Low **Auto Tune** ΔMkr1 2.884 ms -1.15 dB Ref 20.00 dBm 10 dB/div Log 10.0 Center Freq 2.480000000 GHz 0.00 1Δ2 10.0 TRIG L -20.0 Start Freq -30.0 2.480000000 GHz -40.0 -50.0 π/4DQPSK Stop Freq -60.0 2.480000000 GHz 2DH5/HCH -7n n Center 2.480000000 GHz Span 0 Hz **CF Step** 1.000000 MHz Sweep 10.13 ms (8001 pts) Res BW 1.0 MHz **#VBW** 3.0 MHz <u>Auto</u> FUNCTION FUNCTION WIDTH FUNCTION VALUE 2.884 ms (Δ) -1.15 dB 2.361 ms -12.11 dBm Freq Offset 0 Hz STATUS Agilent Spectrum Analyzer - Swept SA M RL RF | 50 Ω AL | Center Freq 2.402000000 GHz PN0: Fast → IFGain:Low Frequency **Auto Tune** ΔMkr1 2.887 ms -0.73 dB Ref 20.00 dBm 10 dB/div Log 10.0 Center Freq 0.00 2.402000000 GHz 1Δ2 10.0 -20.0 Start Freq -30.0 2.402000000 GHz -40.0 -50.0 Stop Freq 8DPSK_3DH5/LCH -60.0 2.402000000 GHz -7n n Center 2.402000000 GHz Span 0 Hz **CF Step** 1.000000 MHz Res BW 1.0 MHz #VBW 3.0 MHz Sweep 10.13 ms (8001 pts) FUNCTION FUNCTION WIDTH FUNCTION VALUE 2.887 ms (Δ) -0.73 dB 2.014 ms -13.98 dBm Freq Offset 0 Hz STATUS

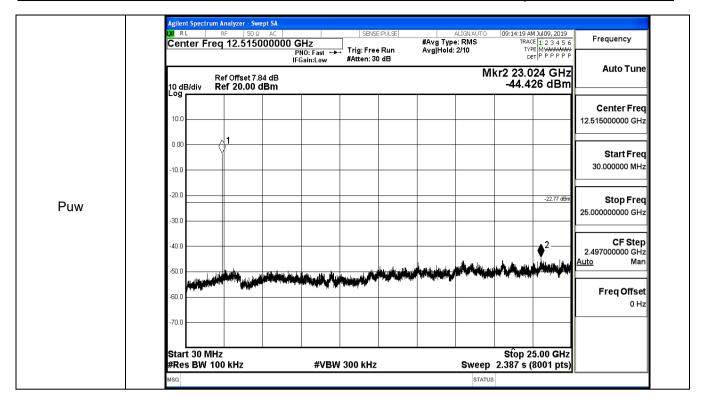
SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA Agilent Spectrum Analyzer - Swept SA M RL RF | 50 Ω AC | Center Freq 2.441000000 GHz PN0: Fast → IFGain:Low | SENSE:PULSE | ALIGNAUTO | Trig Delay-2.533 ms | Avg Type: Log-Pwr | Trig: Video |#Atten: 30 dB 09:29:58 AM Jul 09, 2019 TRACE 1 2 3 4 5 6 Frequency DET PPPP **Auto Tune** ΔMkr1 2.885 ms -0.15 dB Ref 20.00 dBm 10 dB/div Log 10.0 Center Freq 2.441000000 GHz 0.00 **1Δ2** 10.0 -20.0 Start Freq -30.0 2.441000000 GHz -40.0 -50.0 Stop Freq -60.0 8DPSK_3DH5/MCH 2.441000000 GHz -7n n Center 2.441000000 GHz Span 0 Hz **CF Step** 1.000000 MHz Sweep 10.13 ms (8001 pts) Res BW 1.0 MHz **#VBW** 3.0 MHz <u>Auto</u> FUNCTION FUNCTION WIDTH FUNCTION VALUE 2.885 ms (Δ) -0.15 dB 3.692 ms -11.59 dBm Freq Offset 0 Hz STATUS Agilent Spectrum Analyzer - Swept SA © RL RF | 50 Ω AL | Center Freq 2.480000000 GHz PN0: Fast → IFGain:Low Frequency **Auto Tune** ΔMkr1 2.885 ms -2.46 dB Ref 20.00 dBm 10 dB/div Log 10.0 Center Freq 0.00 2.480000000 GHz 1Δ2 10.0 TRIG LV -20.0 Start Freq -30.0 2.480000000 GHz -40.0 -50.0 Stop Freq 8DPSK_3DH5/HCH -60.0 2.480000000 GHz -7n n Center 2.480000000 GHz Span 0 Hz **CF Step** 1.000000 MHz Res BW 1.0 MHz #VBW 3.0 MHz Sweep 10.13 ms (8001 pts) FUNCTION FUNCTION WIDTH FUNCTION VALUE 2.885 ms (Δ) -2.46 dB 2.531 ms -11.05 dBm Freq Offset 0 Hz STATUS

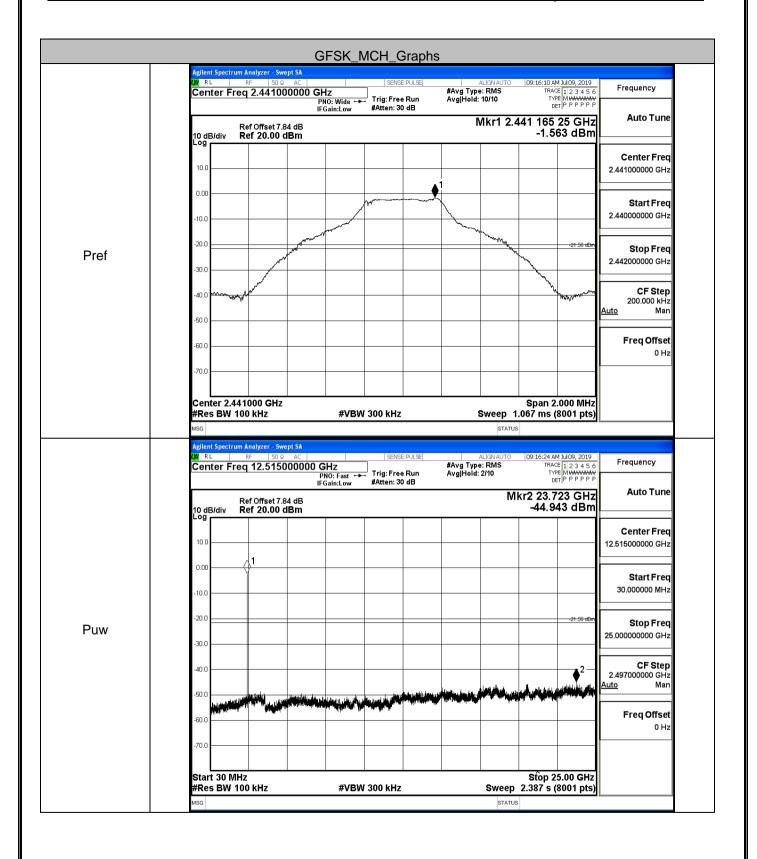
A.6 RF Conducted Spurious Emissions

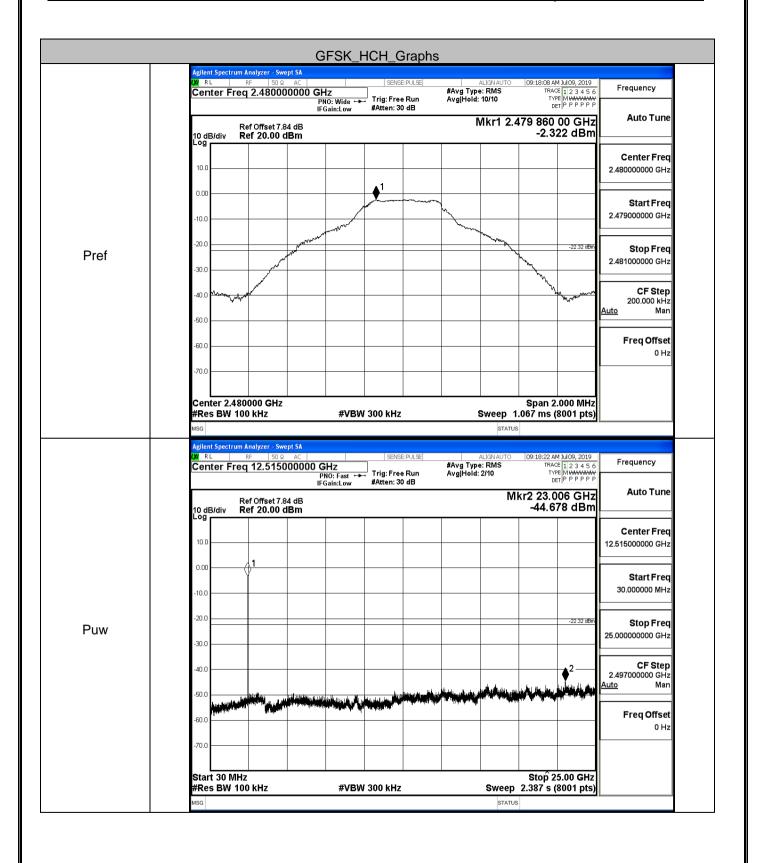
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
	LCH	-2.772	-44.426	-22.772	PASS
GFSK	MCH	-1.563	-44.943	-21.563	PASS
	HCH	-2.322	-44.678	-22.322	PASS
	LCH	-4.389	-44.749	-24.389	PASS
π/4DQPSK	MCH	-3.342	-44.721	-23.342	PASS
	НСН	-3.124	-45.307	-23.124	PASS
	LCH	-3.873	-44.805	-23.873	PASS
8DPSK	MCH	-2.852	-44.997	-22.852	PASS
	НСН	-3.087	-44.857	-23.087	PASS

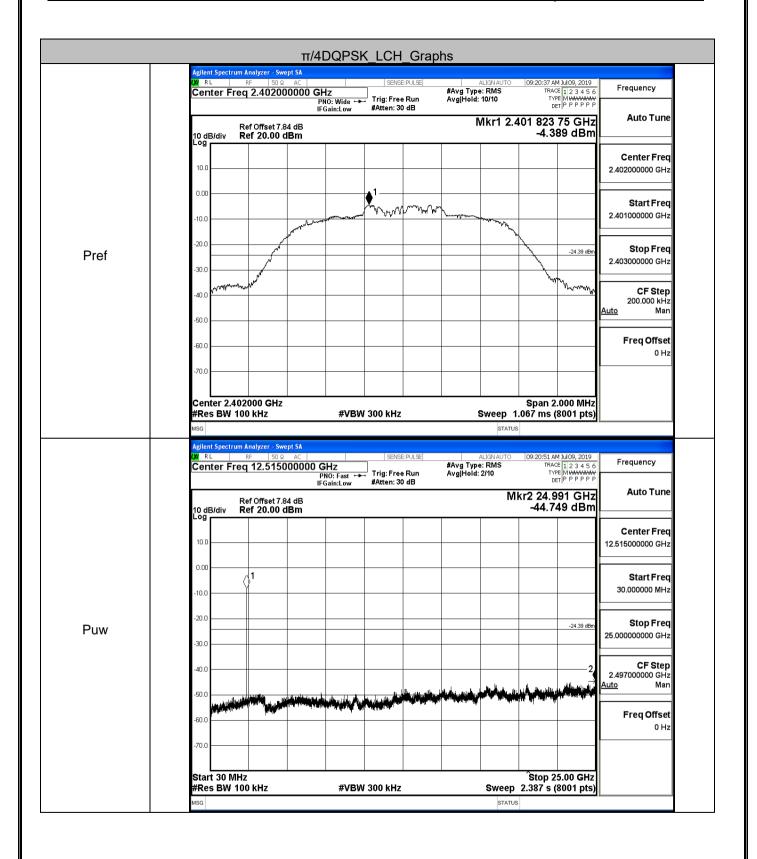


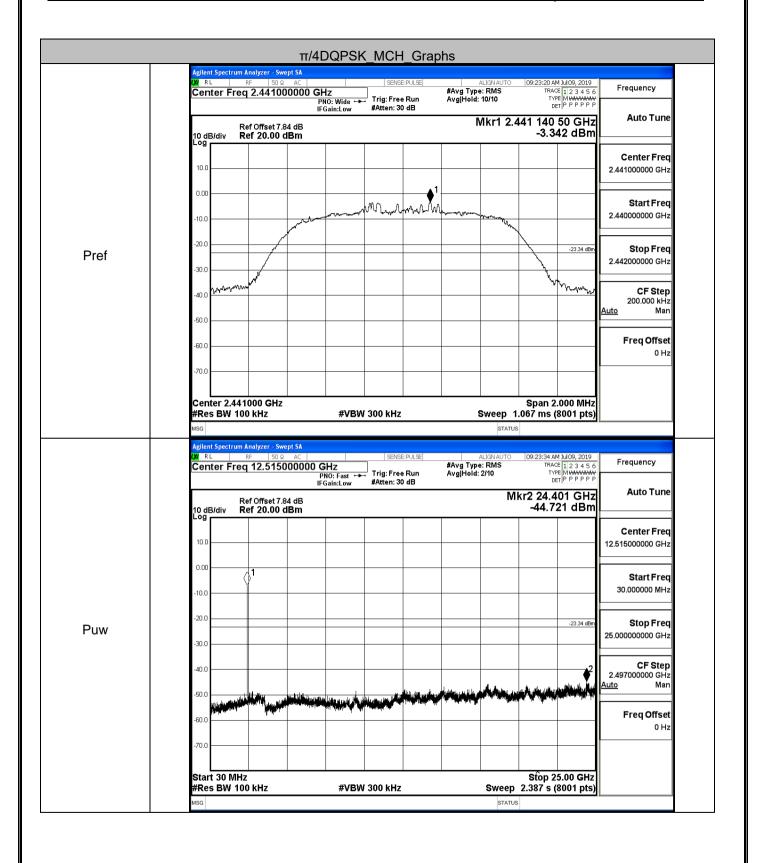
SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA

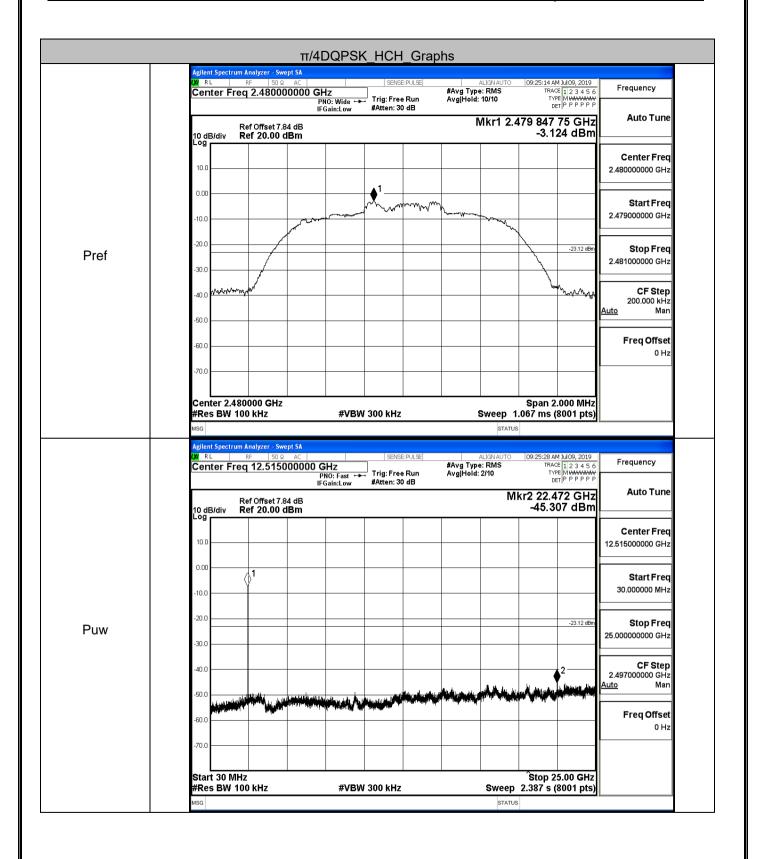


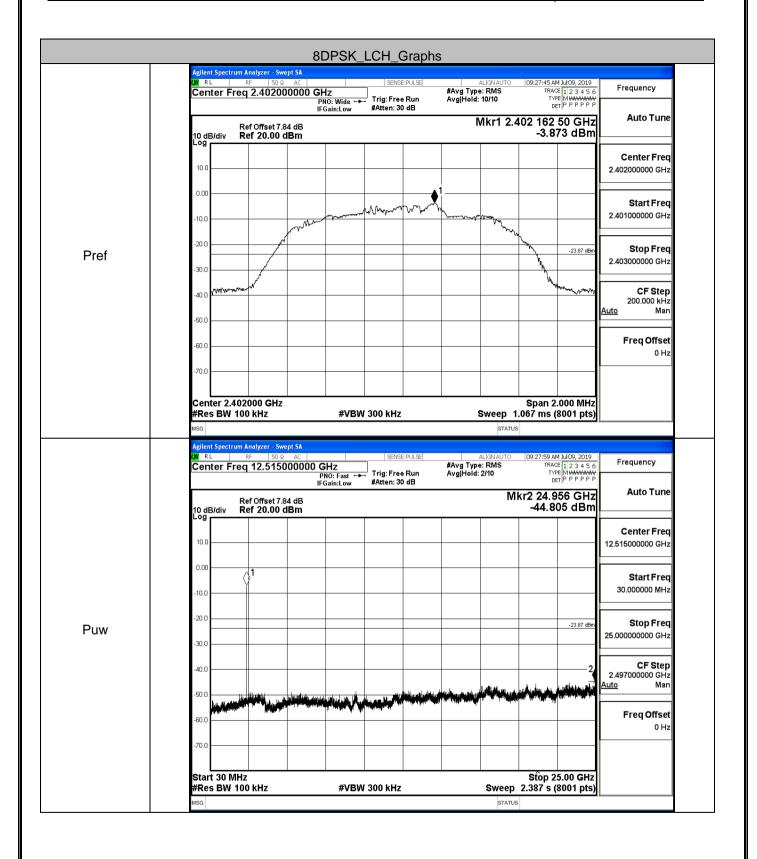


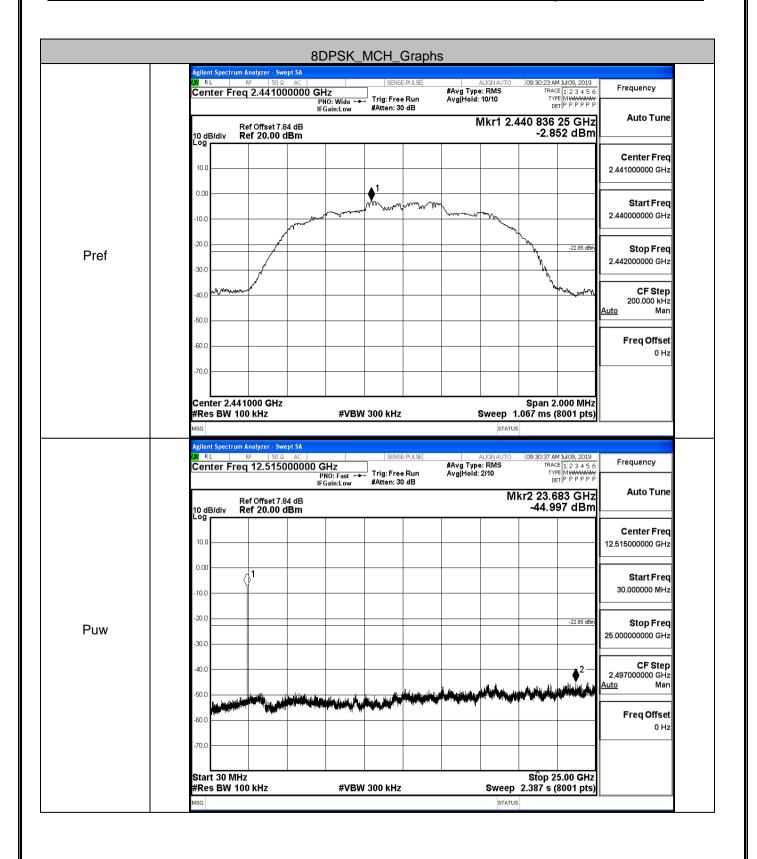


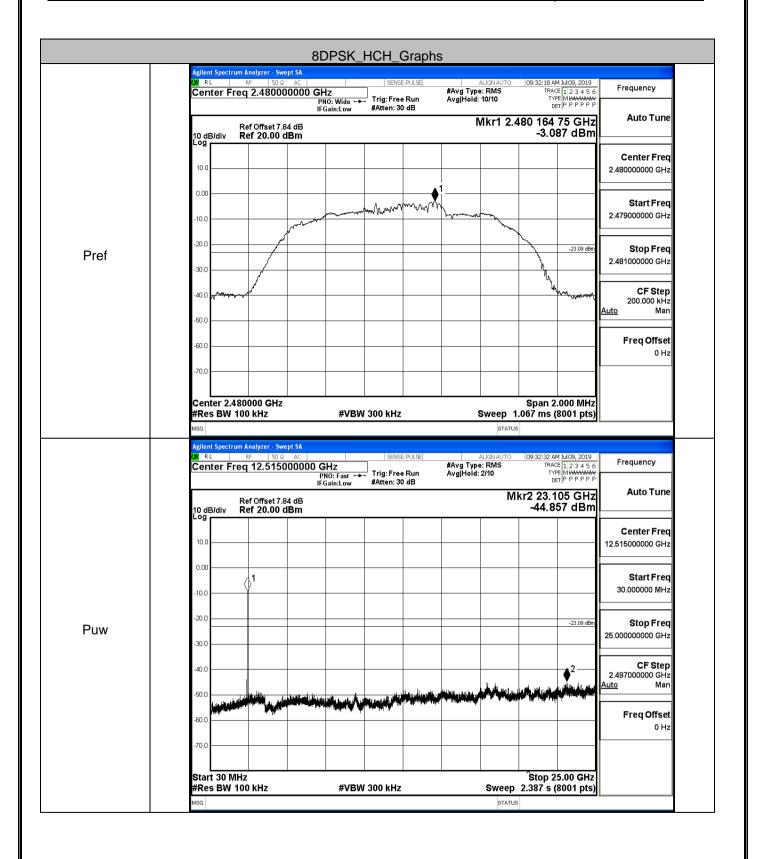






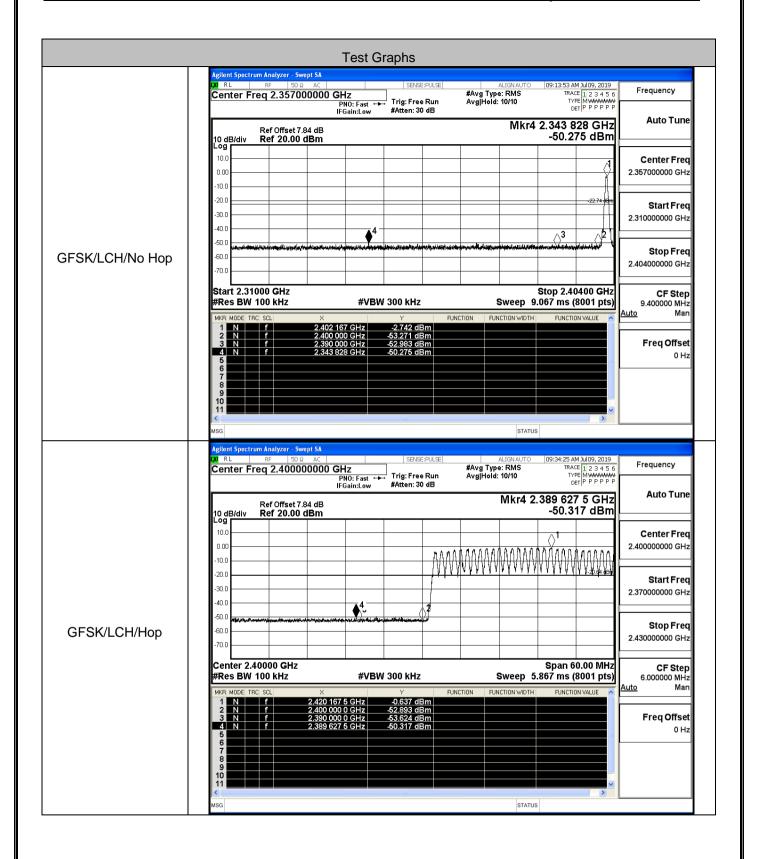






A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
		0.400	-2.742	Off	-50.275	-22.74	PASS
2-21/	LCH	2402	-0.637	On	-50.317	-20.64	PASS
GFSK	нсн		-1.789	Off	-50.091	-21.79	PASS
		2480	-0.123	On	-49.563	-20.12	PASS
	LCH	2402	-4.230	Off	-49.540	-24.23	PASS
			-1.878	On	-49.805	-21.88	PASS
π/4DQPSK	нсн		-3.636	Off	-50.458	-23.64	PASS
		2480	-1.618	On	-49.532	-21.62	PASS
			-4.037	Off	-50.247	-24.04	PASS
8DPSK	LCH	2402	-1.834	On	-49.535	-21.83	PASS
			-3.038	Off	-50.108	-23.04	PASS
	HCH	2480	-1.429	On	-49.187	-21.43	PASS



SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA Agilent Spectrum Analyzer - Swept SA 09:17:57 AM Jul 09, 2019 TRACE 1 2 3 4 5 6 #Avg Type: RMS Avg|Hold: 10/10 Frequency Center Freq 2.489000000 GHz PNO: Fast +> IFGain:Low Trig: Free Run #Atten: 30 dB DET PPPP **Auto Tune** Mkr4 2.486 500 25 GHz Ref Offset 7.84 dB Ref 20.00 dBm -50.091 dBm 10 dB/div 10 (Center Freq 2.489000000 GHz 0.0 10.0 -20.0 Start Freq -3n r 2.478000000 GHz -40.0 -50.0 Stop Freq -60.0 GFSK/HCH/No Hop 2.500000000 GHz -7n r Start 2.47800 GHz Stop 2.50000 GHz **CF Step** 2.200000 MHz Sweep 2.133 ms (8001 pts) #Res BW 100 kHz #VBW 300 kHz Auto FUNCTION FUNCTION WIDTH Freq Offset 0 Hz STATUS Agilent Spectrum Analyzer - Swept SA 09:35:38 AM Jul 09, 2019 TRACE 1 2 3 4 5 6 TYPE M WWWWWW DET P P P P P P #Avg Type: RMS Avg|Hold: 10/10 Frequency Center Freq 2.483500000 GHz PNO: Fast +++ IFGain:Low Trig: Free Run #Atten: 30 dB **Auto Tune** Mkr4 2.492 650 0 GHz Ref Offset 7.84 dB Ref 20.00 dBm -49.563 dBm 10 dB/div Log 10.0 Center Freq 2.483500000 GHz 0.00 -10.0 -20.12 dB -20.0 Start Freq -30.0 2.453500000 GHz -40.0 √2 -50.0 Stop Freq GFSK/HCH/Hop -60.0 2.513500000 GHz .7n r Center 2.48350 GHz Span 60.00 MHz CF Step #Res BW 100 kHz #VBW 300 kHz Sweep 5.867 ms (8001 pts) 6.000000 MHz <u>Auto</u> Man FUNCTION FUNCTION WIDTH FUNCTION VALUE Freq Offset 0 Hz /ISG STATUS

SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA Agilent Spectrum Analyzer - Swept SA 09:25:03 AM Jul 09, 2019 TRACE 1 2 3 4 5 6 #Avg Type: RMS Avg|Hold: 10/10 Frequency Center Freq 2.489000000 GHz PNO: Fast ↔ IFGain:Low Trig: Free Run #Atten: 30 dB DET PPPP **Auto Tune** Mkr4 2.488 595 75 GHz Ref Offset 7.84 dB Ref 20.00 dBm -50.458 dBm 10 dB/div 10 (Center Freq ٨1 2.489000000 GHz 0.0 10.0 -20.0 Start Freq -3n r 2.478000000 GHz -40.0 -50.0 π/4DQPSK/HCH/No Stop Freq -60.0 2.500000000 GHz Hop -7n r Start 2.47800 GHz Stop 2.50000 GHz **CF Step** 2.200000 MHz Sweep 2.133 ms (8001 pts) #Res BW 100 kHz #VBW 300 kHz Auto FUNCTION FUNCTION WIDTH -3.636 dBm -53.310 dBm -52.348 dBm -50.458 dBm Freq Offset 0 Hz STATUS kgilent Spectrum Analyzer - Swept SA Frequency Center Freq 2.483500000 GHz PNO: Fast +++ IFGain:Low Trig: Free Run #Atten: 30 dB **Auto Tune** Mkr4 2.495 140 0 GHz Ref Offset 7.84 dB Ref 20.00 dBm -49.532 dBm 10 dB/div 1N I Center Freq 2.483500000 GHz 0.0 -10.0 -20. -21 62 dB Start Freq -30.0 2.453500000 GHz -40.0 √2 $^{\wedge}$ 3 -50.0 Stop Freq π/4DQPSK/HCH/Hop -60.0 2.513500000 GHz -7n r Center 2.48350 GHz Span 60.00 MHz CF Step #Res BW 100 kHz #VBW 300 kHz Sweep 5.867 ms (8001 pts) 6.000000 MHz Auto FUNCTION FUNCTION WIDTH FUNCTION VALUE Freq Offset 0 Hz /ISG STATUS

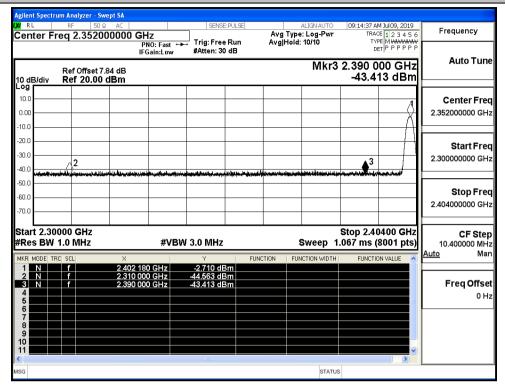
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SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2ACUG43CSERIAL Report No.: LCS190619010AEA Agilent Spectrum Analyzer - Swept SA 09:32:06 AM Jul 09, 2019 TRACE 1 2 3 4 5 6 #Avg Type: RMS Avg|Hold: 10/10 Frequency Center Freq 2.489000000 GHz PNO: Fast ↔ IFGain:Low Trig: Free Run #Atten: 30 dB DET PPPP **Auto Tune** Mkr4 2.491 915 00 GHz Ref Offset 7.84 dB Ref 20.00 dBm -50.108 dBm 10 dB/div 10 (Center Freq 2.489000000 GHz 0.0 10.0 -20.0 Start Freq -3n r 2.478000000 GHz -40.0 -50.0 Stop Freq -60.0 8DPSK/HCH/No Hop 2.500000000 GHz -7n r Start 2.47800 GHz Stop 2.50000 GHz **CF Step** 2.200000 MHz Sweep 2.133 ms (8001 pts) #Res BW 100 kHz #VBW 300 kHz Auto FUNCTION FUNCTION WIDTH -3.038 dBm -51.971 dBm -52.391 dBm -50.108 dBm Freq Offset 0 Hz STATUS kgilent Spectrum Analyzer - Swept SA Frequency Center Freq 2.483500000 GHz PNO: Fast +++ IFGain:Low Trig: Free Run #Atten: 30 dB **Auto Tune** Mkr4 2.492 035 0 GHz Ref Offset 7.84 dB Ref 20.00 dBm -49.187 dBm 10 dB/div Log r 1N I Center Freq 2.483500000 GHz 0.0 <u></u> 10.0 -20. -21.43 dB Start Freq -30.0 2.453500000 GHz -40.0 -50.0 Stop Freq 8DPSK/HCH/Hop -60.0 2.513500000 GHz -7n r Center 2.48350 GHz Span 60.00 MHz CF Step #Res BW 100 kHz #VBW 300 kHz Sweep 5.867 ms (8001 pts) 6.000000 MHz Auto Man FUNCTION FUNCTION WIDTH FUNCTION VALUE Freq Offset 0 Hz /ISG STATUS

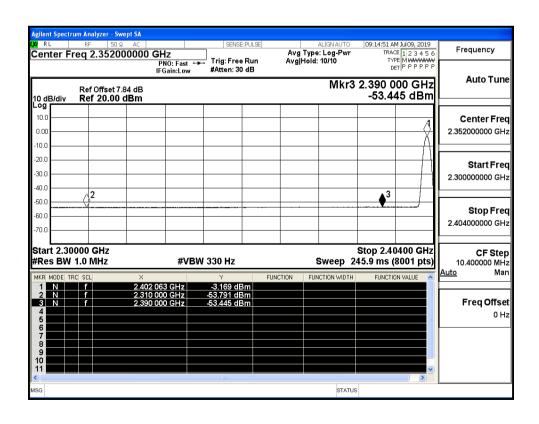
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
	Off	2310.0	-44.56	3.8	0	54.5	PEAK	74	PASS
	Off	2310.0	-53.79	3.8	0	45.27	AV	54	PASS
	Off	2390.0	-43.41	3.8	0	55.65	PEAK	74	PASS
2-21	Off	2390.0	-53.45	3.8	0	45.61	AV	54	PASS
GFSK	Off	2483.5	-42.81	3.8	0	56.25	PEAK	74	PASS
	Off	2483.5	-53.30	3.8	0	45.76	AV	54	PASS
	Off	2500.0	-42.99	3.8	0	56.07	PEAK	74	PASS
	Off	2500.0	-53.20	3.8	0	45.86	AV	54	PASS
	Off	2310.0	-43.55	3.8	0	55.51	PEAK	74	PASS
	Off	2310.0	-53.82	3.8	0	45.24	AV	54	PASS
	Off	2390.0	-44.02	3.8	0	55.04	PEAK	74	PASS
	Off	2390.0	-53.58	3.8	0	45.48	AV	54	PASS
π/4DQPSK	Off	2483.5	-42.49	3.8	0	56.57	PEAK	74	PASS
	Off	2483.5	-53.29	3.8	0	45.77	AV	54	PASS
	Off	2500.0	-43.25	3.8	0	55.81	PEAK	74	PASS
	Off	2500.0	-53.13	3.8	0	45.93	AV	54	PASS
	Off	2310.0	-44.13	3.8	0	54.93	PEAK	74	PASS
	Off	2310.0	-53.84	3.8	0	45.22	AV	54	PASS
	Off	2390.0	-43.53	3.8	0	55.53	PEAK	74	PASS
	Off	2390.0	-53.48	3.8	0	45.58	AV	54	PASS
8DPSK	Off	2483.5	-43.62	3.8	0	55.44	PEAK	74	PASS
	Off	2483.5	-53.32	3.8	0	45.74	AV	54	PASS
	Off	2500.0	-44.13	3.8	0	54.93	PEAK	74	PASS
	Off	2500.0	-53.00	3.8	0	46.06	AV	54	PASS

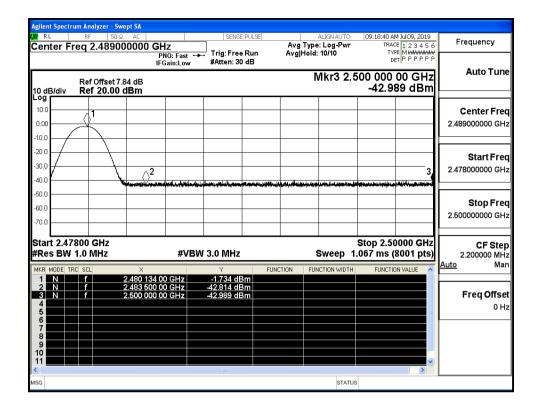




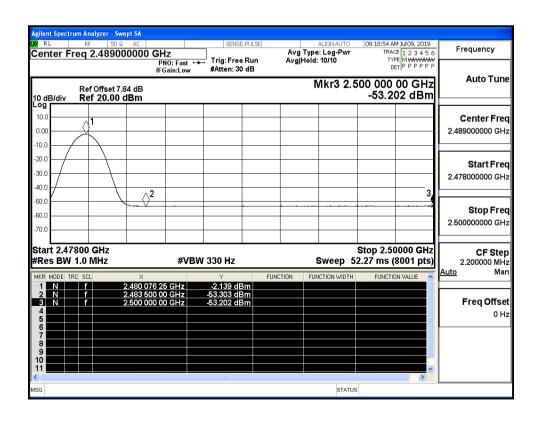
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



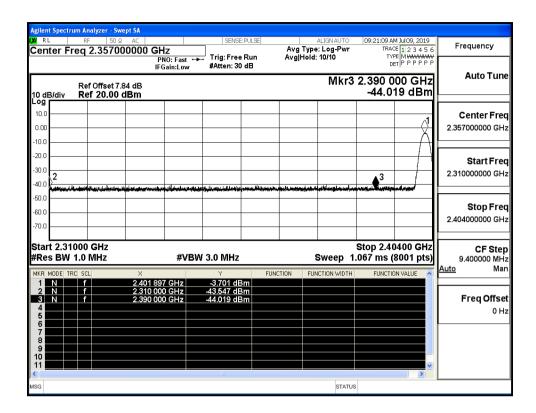
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



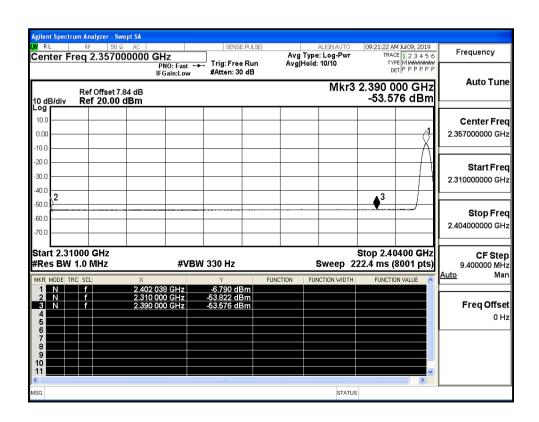
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



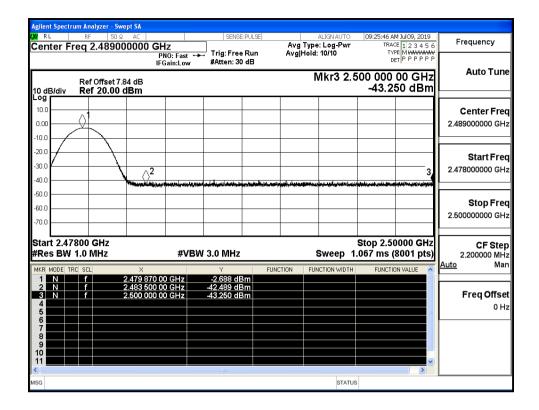
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



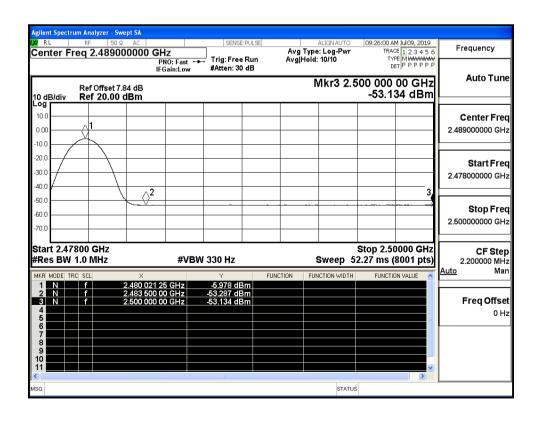
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



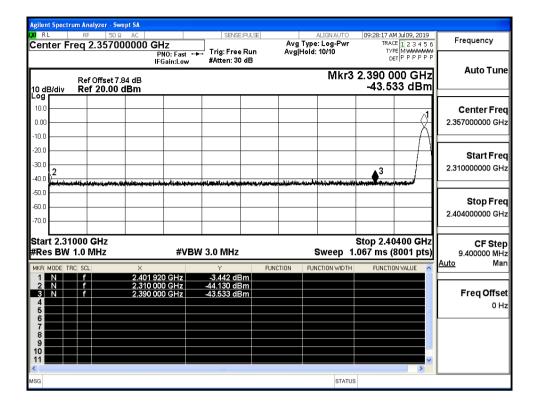
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



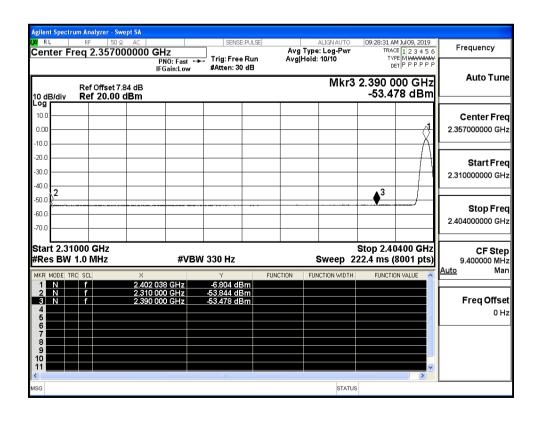
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



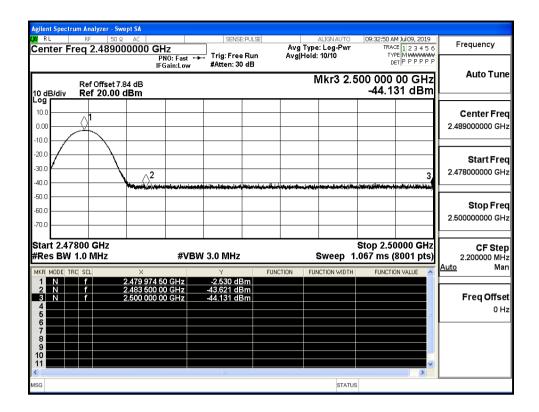
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (Low Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (High Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (High Channel)

