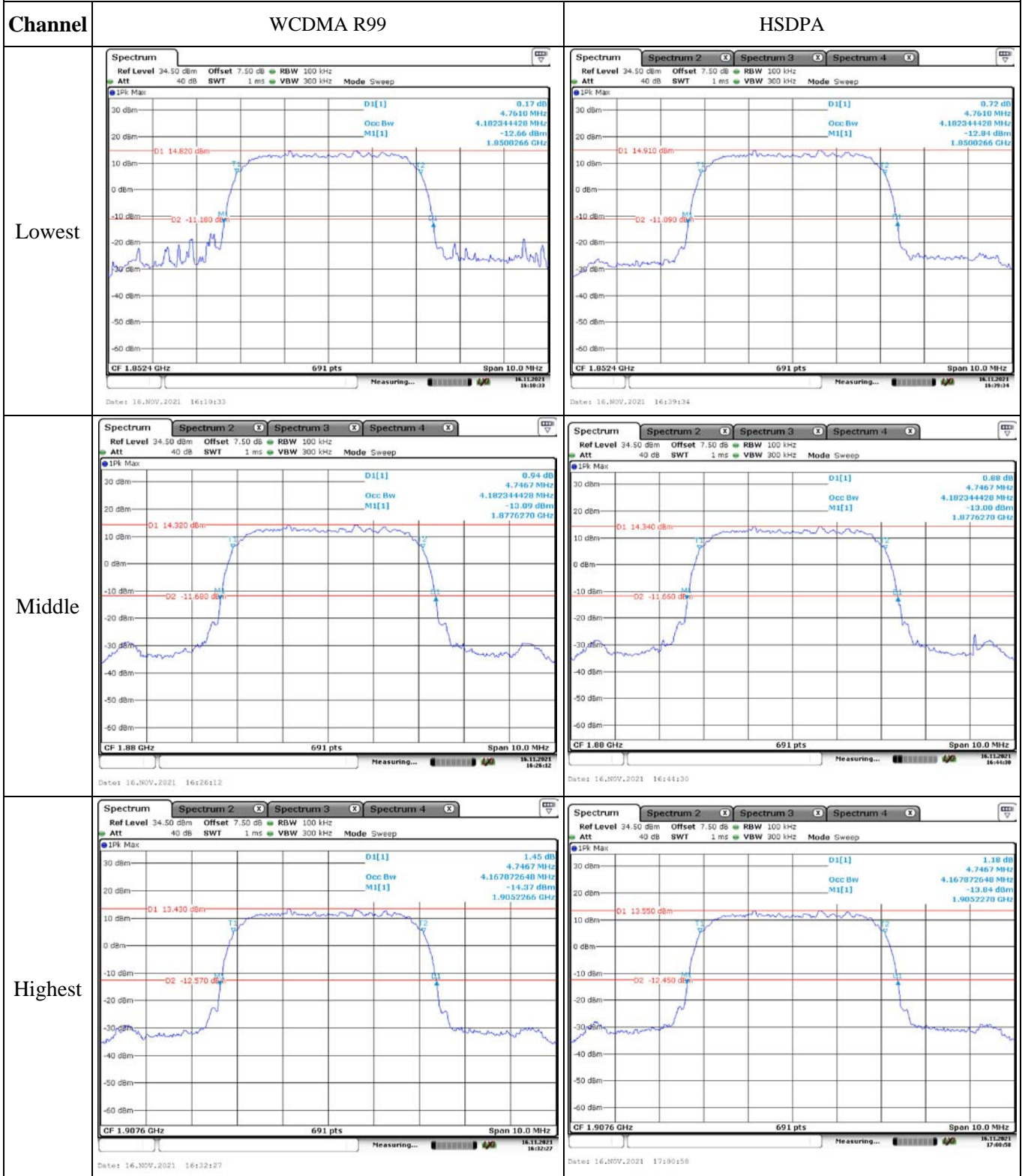


Test Plots:

Occupied Bandwidth

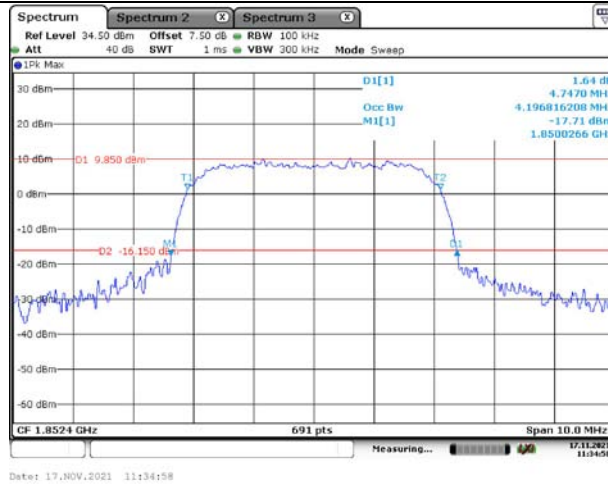


Occupied Bandwidth

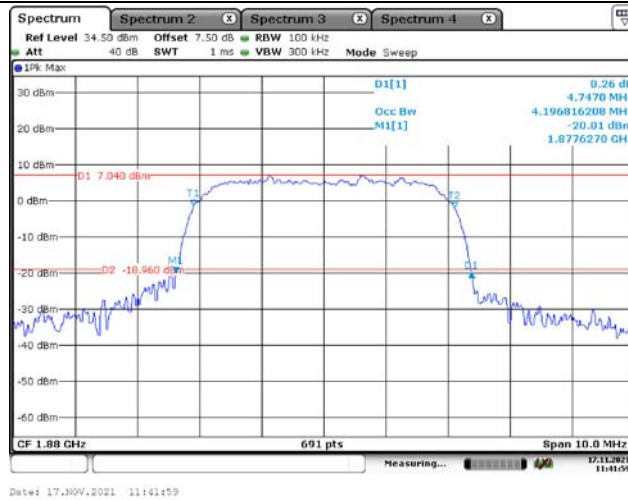
Channel

HSUPA

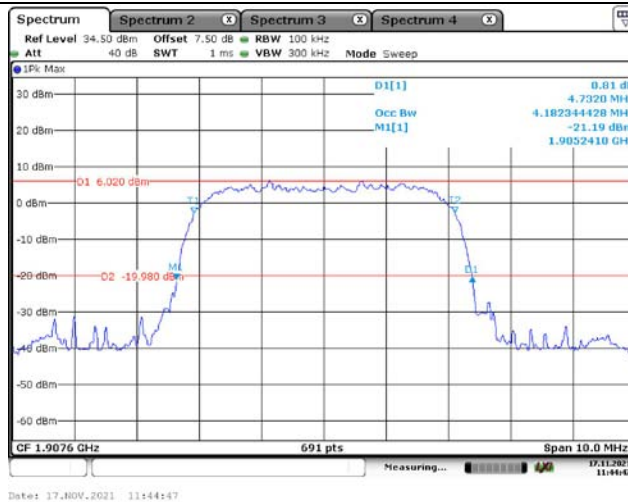
Lowest



Middle



Highest

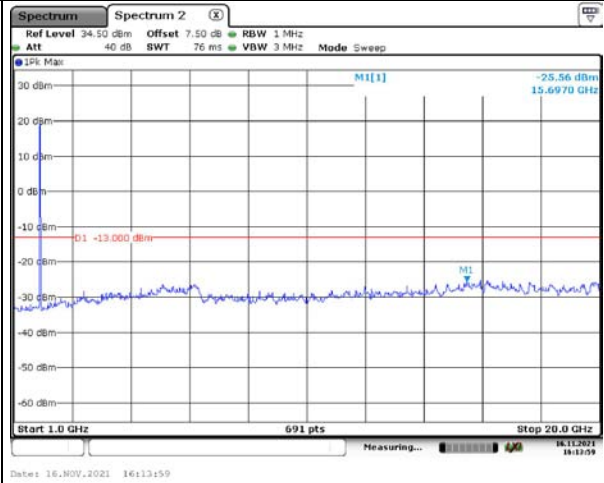
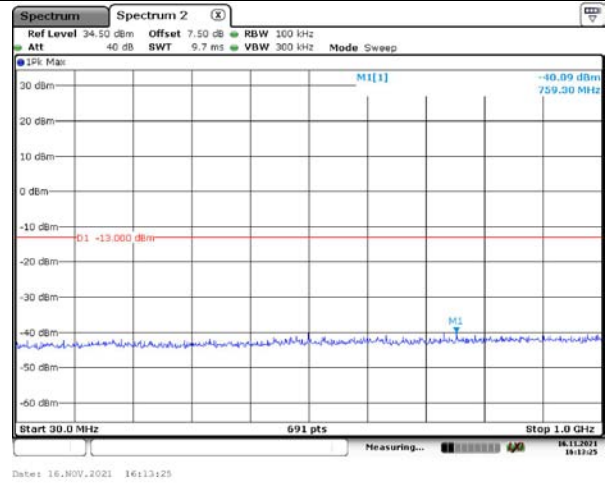


Spurious Emissions at Antenna Terminal

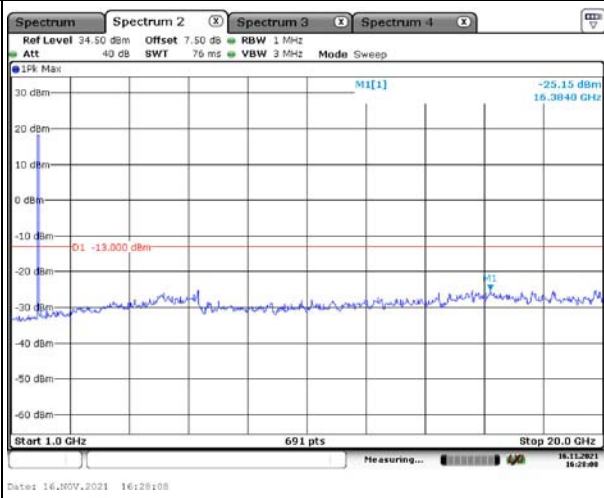
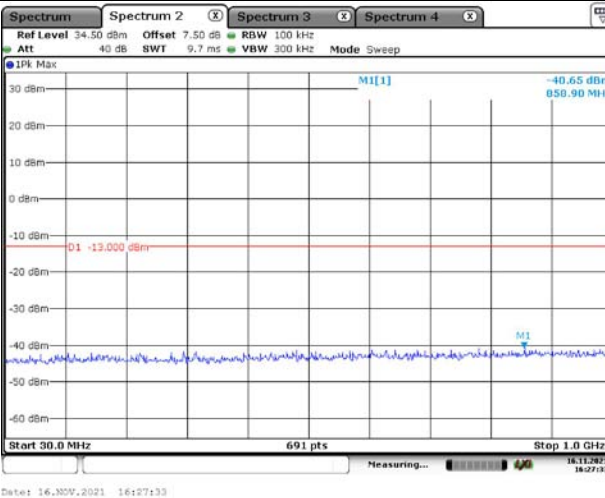
Channel

WCDMA R99

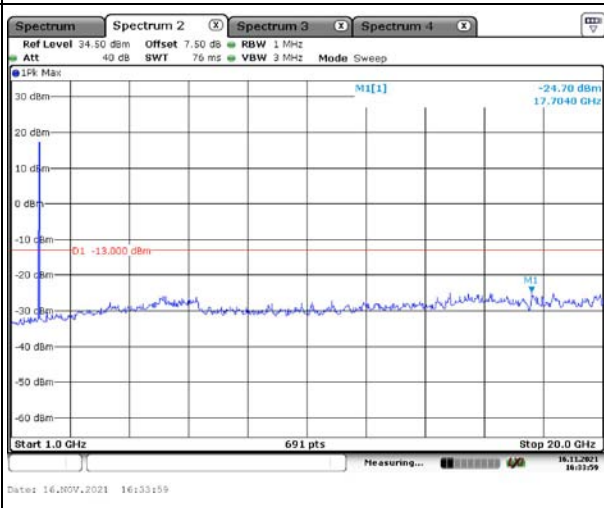
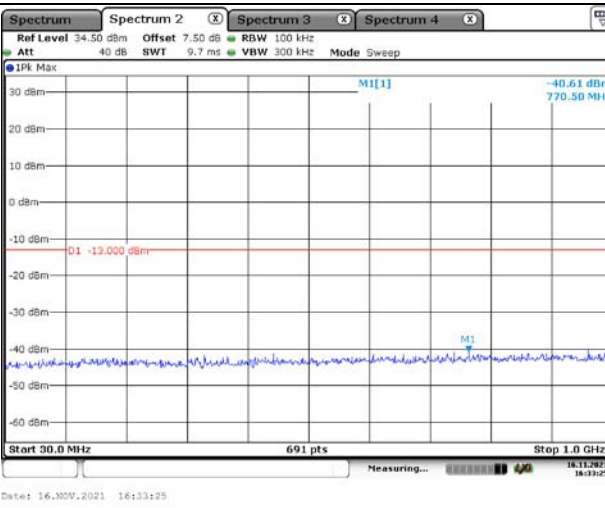
Lowest



Middle



Highest



Out of band emission, Band Edge

Mode	Lowest	Highest
R99		
HSUPA		
HSDPA		

4.4 Antenna Port Test Data and Results for WCDMA Band 5:

Serial Number:	CR21100112-RF-S1	Test Date:	2021/11/11~2021/11/20
Test Site:	RF	Test Mode:	Transmitting
Tester:	Thor Lei	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	21.8~27.7	Relative Humidity: (%)	48~53	ATM Pressure: (kPa)	101.4~101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2021/7/22	2022/7/21
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
R&S	Universal Radio Communication Tester	CMU200	110 825	2021/7/22	2022/7/21
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150	30026	2021/7/22	2022/7/22
UNI-T	Multimeter	UT39A+	C210582554	2021/9/30	2022/9/30
44834	Two-way Splitter	ODP-1-6	OE0120176	Each Time	N/A

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

EUT Information@ WCDMA Band V▲:

Antenna Gain (dBi):	-3.5	Antenna Gain (dBd):	-5.65	Cable Loss (dB):	0.2
Operation Voltage(V _{DC}):					
Lowest:	3.5	Normal:	3.85	Highest:	4.4

Test Frequency For Each Mode:

Operation Modes	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
WCDMA	826.4	836.6	846.6

Test Data:**FCC§2.1046;§ 22.913 (a)****RF Output Power:**

Test Mode	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
	Lowest Channel	Middle Channel	Highest Channel		
WCDMA R99 Subtest 1	23.65	23.85	23.91	18.06	38.45
HSDPA Subtest 1	23.48	23.59	23.47	17.74	38.45
HSDPA Subtest 2	23.55	23.63	23.41	17.78	38.45
HSDPA Subtest 3	23.28	23.19	23.45	17.6	38.45
HSDPA Subtest 4	22.96	22.38	23.17	17.32	38.45
HSUPA Subtest 1	23.84	23.58	23.29	17.99	38.45
HSUPA Subtest 2	23.87	23.52	22.71	18.02	38.45
HSUPA Subtest 3	23.69	23.18	23.17	17.84	38.45
HSUPA Subtest 4	23.25	23.47	23.21	17.62	38.45
HSUPA Subtest 5	22.96	22.74	22.84	17.11	38.45
DC-HSDPA Subtest 1	22.17	22.38	22.46	16.61	38.45
DC-HSDPA Subtest 2	22.15	22.43	22.16	16.58	38.45
DC-HSDPA Subtest 3	22.45	22.38	22.64	16.79	38.45
DC-HSDPA Subtest 4	22.47	22.96	22.41	17.11	38.45
HSPA+ Subtest 1	21.45	21.38	21.73	15.88	38.45

Note: ERP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBd)

Result:**Pass****Peak-to-average Ratio(PAR)**

Test Mode	Peak-to-average Ratio(dB)			Limit (dB)
	Lowest Channel	Middle Channel	Highest Channel	
WCDMA R99	2.96	2.99	3.01	13
HSDPA	3.01	3.04	3.13	13
HSUPA	3.22	2.96	3.07	13
DC-HSDPA	2.89	3.07	2.84	13
HSPA+	2.41	2.36	2.32	13

Result:**Pass**

FCC §2.1049, §22.917, §22.905:Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
WCDMA R99	4.182	4.197	4.182	4.747	4.761	4.747
HSDPA	4.211	4.211	4.226	4.805	4.834	5.123
HSUPA	4.197	4.197	4.226	4.877	4.79	5.21
Note: The test plots please refer to the Plots of Occupied Bandwidth						

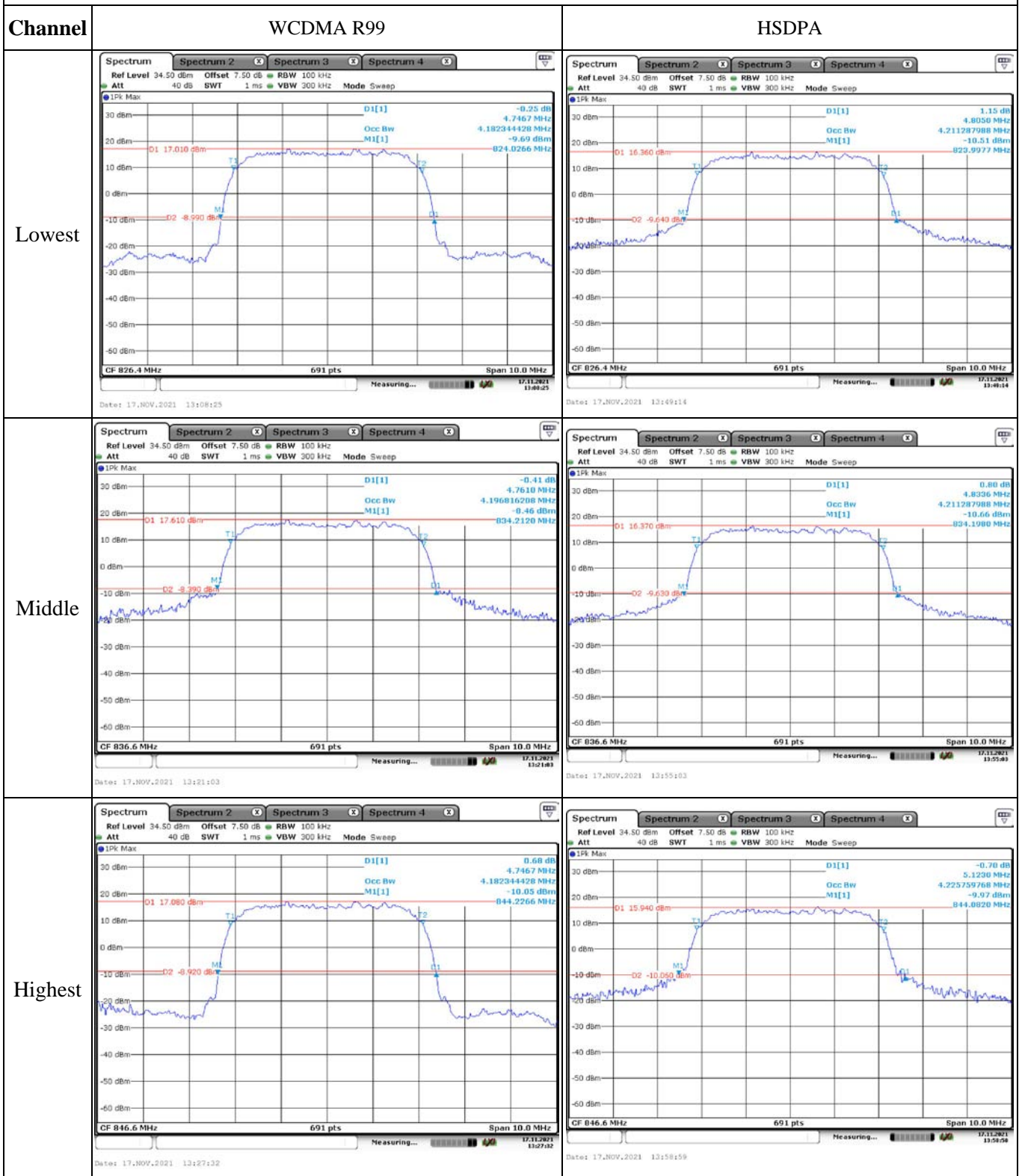
FCC §2.1051, §22.917(a):Spurious Emissions at Antenna Terminal	
Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

FCC §2.1051, §22.917(a):Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

FCC §2.1055, §22.355: Frequency Stability					
Test Modulation:	WCDMA R99		Test Channel:	836.6	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.85	22	0.026	2.5
	-20	3.85	-20	-0.024	2.5
	-10	3.85	24	0.029	2.5
	0	3.85	22	0.026	2.5
	10	3.85	23	0.027	2.5
	20	3.85	28	0.033	2.5
	30	3.85	26	0.031	2.5
	40	3.85	-22	-0.026	2.5
	50	3.85	24	0.029	2.5
Frequency Stability vs. Voltage	20	3.5	-18	-0.022	2.5
	20	4.4	20	0.024	2.5
Result:				Pass	

Test Plots:

Occupied Bandwidth

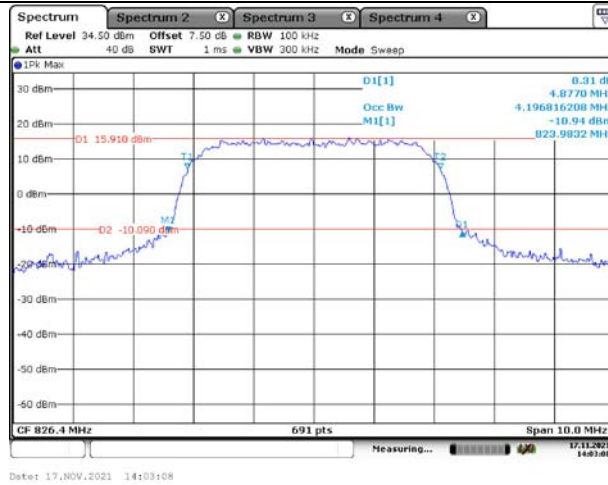


Occupied Bandwidth

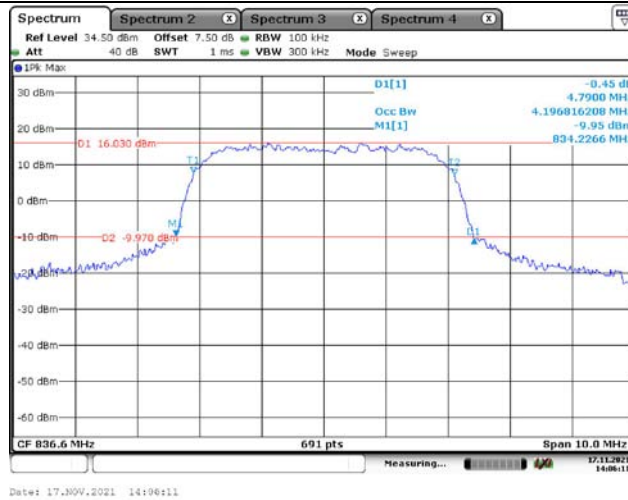
Channel

HSUPA

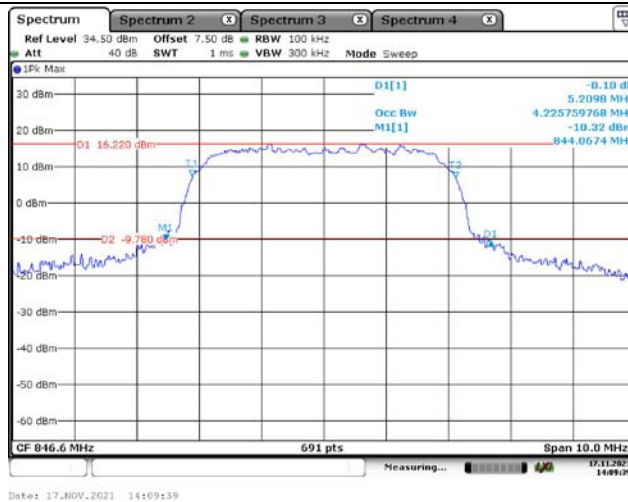
Lowest



Middle



Highest

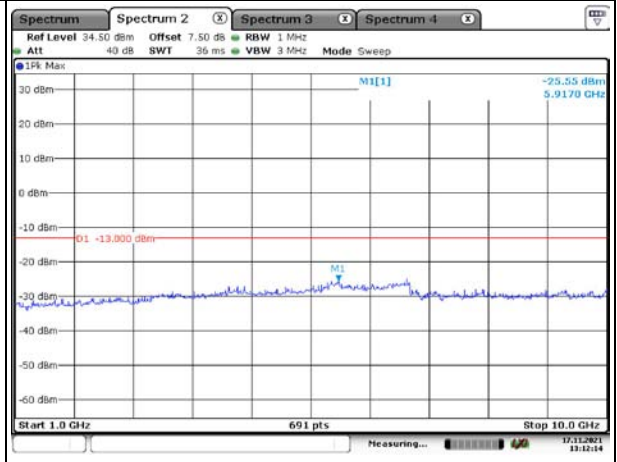
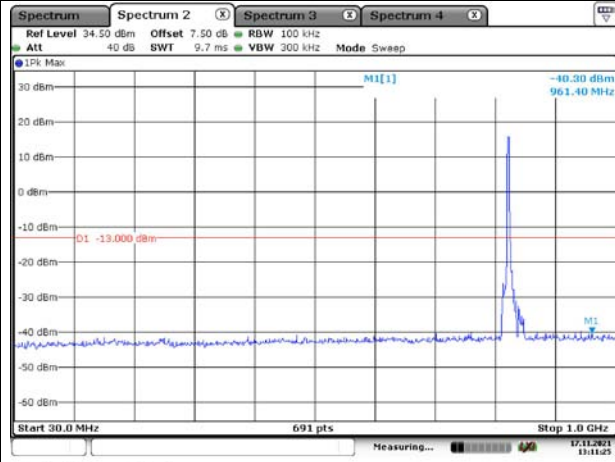


Spurious Emissions at Antenna Terminal

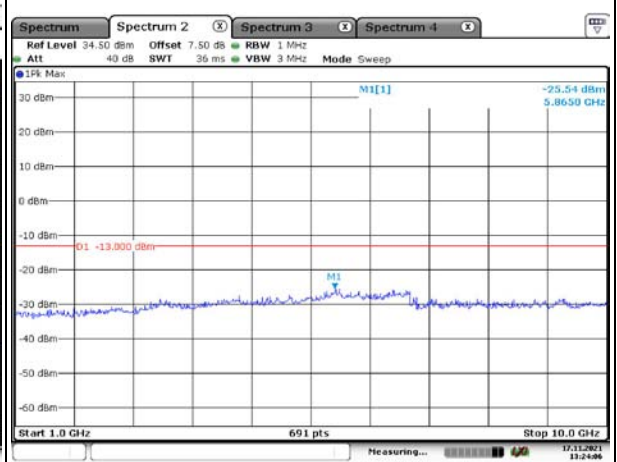
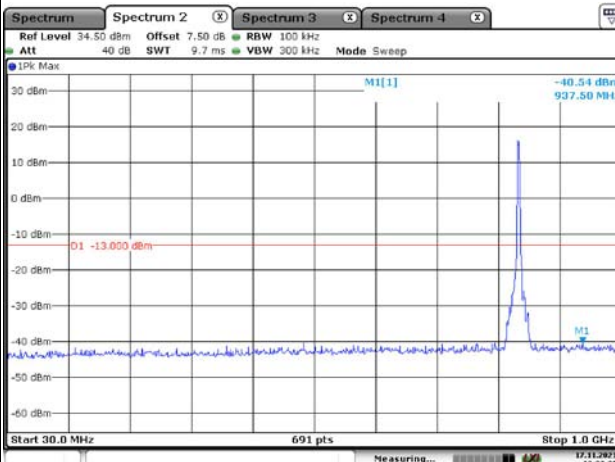
Channel

WCDMA R99

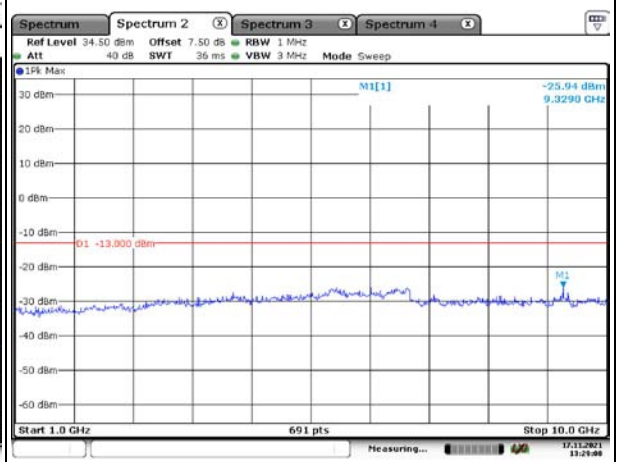
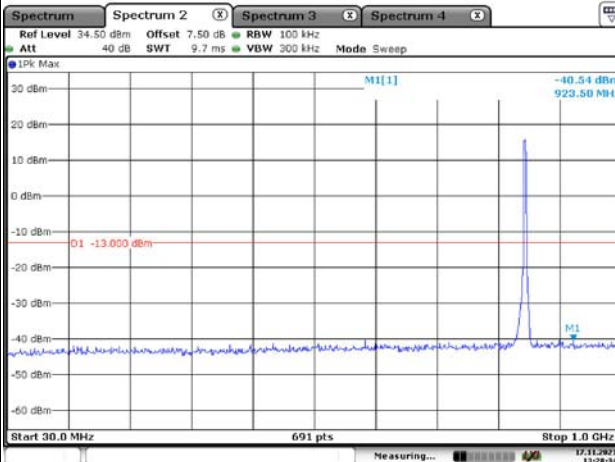
Lowest



Middle



Highest



Out of band emission, Band Edge

Mode	Lowest	Highest
R99		
HSUPA		
HSDPA		

4.5 Antenna Port Test Data and Results for LTE Band 5:

Serial Number:	CR21100112-RF-S1	Test Date:	2021/11/11~2021/11/20
Test Site:	RF	Test Mode:	Transmitting
Tester:	Thor Lei	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	21.8~27.7	Relative Humidity: (%)	48~53	ATM Pressure: (kPa)	101.4~101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2021/7/22	2022/7/21
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2021/7/22	2022/7/21
BACL	TEMP&HUMI Test Chamber	BTH-150	30026	2021/7/22	2022/7/22
UNI-T	Multimeter	UT39A+	C210582554	2021/9/30	2022/9/30
44834	Two-way Splitter	ODP-1-6	OE0120176	Each Time	N/A

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

EUT Information@ LTE Band 5▲:

Antenna Gain (dBi):	-3.5	Antenna Gain (dBd):	-5.65	Cable Loss (dB):	0.2
Operation Voltage(V _{DC}):					
Lowest:	3.5	Normal:	3.85	Highest:	4.4

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	824.7	836.5	848.3
3MHz	825.5	836.5	847.5
5MHz	826.5	836.5	846.5
10MHz	829	836.5	844

Test Data:

FCC§2.1046;§ 22.913 (a)						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	22.93	22.91	22.91	17.24	38.45
	RB1#3	23.09	23.08	23.05		
	RB1#5	22.94	22.89	22.91		
	RB3#0	23.04	22.98	22.97		
	RB3#3	23.00	23.01	22.96		
	RB6#0	21.97	22.01	21.96		
1.4MHz 16QAM	RB1#0	21.91	22.00	21.89	16.34	38.45
	RB1#3	22.07	22.19	22.06		
	RB1#5	21.90	22.00	21.89		
	RB3#0	22.13	21.90	22.03		
	RB3#3	22.16	21.94	21.99		
	RB6#0	20.95	21.00	20.91		
3MHz QPSK	RB1#0	22.98	22.95	22.97	17.14	38.45
	RB1#8	22.96	22.93	22.99		
	RB1#14	22.98	22.94	22.96		
	RB6#0	21.97	21.98	21.91		
	RB6#9	21.94	21.95	21.94		
	RB15#0	21.99	21.99	21.93		
3MHz 16QAM	RB1#0	22.47	22.11	22.01	16.66	38.45
	RB1#8	22.49	22.10	21.95		
	RB1#14	22.51	22.10	21.93		
	RB6#0	21.03	20.95	20.87		
	RB6#9	21.01	20.99	20.87		
	RB15#0	21.02	20.91	20.95		
5MHz QPSK	RB1#0	22.86	22.91	22.85	17.17	38.45
	RB1#13	23.02	23.01	22.99		
	RB1#24	22.94	22.88	22.87		
	RB15#0	21.99	21.98	21.95		
	RB15#10	22.01	21.97	22.03		
	RB25#0	21.96	21.99	21.99		
5MHz 16QAM	RB1#0	21.76	22.18	21.94	16.42	38.45
	RB1#13	21.94	22.27	22.09		
	RB1#24	21.84	22.18	21.99		
	RB15#0	21.01	20.92	20.97		
	RB15#10	21.02	20.91	21.05		
	RB25#0	21	20.94	20.99		
10MHz QPSK	RB1#0	22.93	22.94	22.93	17.31	38.45
	RB1#25	23.16	23.08	23.08		
	RB1#49	22.96	22.97	22.98		

	RB25#0	21.96	21.95	22.05		
	RB25#25	22.10	21.93	22.08		
	RB50#0	22.01	21.92	22.10		
10MHz 16QAM	RB1#0	22.43	22.03	21.90	16.85	38.45
	RB1#25	22.70	22.20	22.13		
	RB1#49	22.51	22.10	21.96		
	RB25#0	21.04	20.96	21.17		
	RB25#25	21.10	20.97	21.17		
	RB50#0	20.98	20.94	21.11		
Note: ERP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBd)						
					Result:	Pass

Peak-to-average Ratio(PAR)					
Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	4.7	5.07	5.07	13
	RB50#0	5.22	5.22	5.36	13
10MHz 16QAM	RB1#0	6	5.65	5.74	13
	RB50#0	6.06	5.94	6.17	13
Result:					Pass

FCC §2.1049, §22.905:Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.102	1.096	1.102	1.302	1.308	1.314
1.4MHz 16QAM	1.102	1.096	1.09	1.296	1.326	1.29
3MHz QPSK	2.683	2.683	2.683	2.88	2.856	2.892
3MHz 16QAM	2.683	2.683	2.683	2.904	2.88	2.88
5MHz QPSK	4.531	4.511	4.491	4.94	4.96	4.94
5MHz 16QAM	4.491	4.531	4.531	4.94	4.94	4.98
10MHz QPSK	8.942	8.942	8.981	9.68	9.6	9.6
10MHz 16QAM	8.942	8.942	8.942	9.56	9.6	9.68
Note: The test plots please refer to the Plots of Occupied Bandwidth						

FCC §2.1051, §22.917(a):Spurious Emissions at Antenna Terminal	
Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

FCC §2.1051, §22.917(a):Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

FCC §2.1055, §22.355: Frequency Stability					
Test Mode:	10 MHz QPSK		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.85	-7.18	-0.009	2.5
	-20	3.85	-5.03	-0.006	2.5
	-10	3.85	6.53	0.008	2.5
	0	3.85	-5.53	-0.007	2.5
	10	3.85	8.51	0.010	2.5
	20	3.85	-7.84	-0.009	2.5
	30	3.85	-8.85	-0.011	2.5
	40	3.85	-6.46	-0.008	2.5
Frequency Stability vs. Voltage	20	3.5	6.92	0.008	2.5
	20	4.4	5.23	0.006	2.5
				Result:	Pass

Test Mode:	10 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.85	-8.48	-0.010	2.5
	-20	3.85	7.27	0.009	2.5
	-10	3.85	6.77	0.008	2.5
	0	3.85	-6.95	-0.008	2.5
	10	3.85	7.38	0.009	2.5
	20	3.85	8.46	0.010	2.5
	30	3.85	-6.44	-0.008	2.5
	40	3.85	8.49	0.010	2.5
Frequency Stability vs. Voltage	20	3.5	5.99	0.007	2.5
	20	4.4	5.87	0.007	2.5
				Result:	Pass

Test Plots:

Occupied Bandwidth

Channel	1.4MHz Bandwidth QPSK	1.4MHz Bandwidth 16QAM
Lowest	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>IPK Max</p> <p>01 15.270 dBm M1[1] -9.64 dBm 824.04600 MHz</p> <p>02 -9.730 dBm M2[1] -0.48 dB 1.101796407 MHz</p> <p>Occ Bw 1.30260 MHz</p> <p>CF 824.7 MHz 501 pts Span 3.0 MHz</p> <p>Date: 16.NOV.2021 11:27:16</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>IPK Max</p> <p>01 15.660 dBm M1[1] -10.20 dBm 824.05200 MHz</p> <p>02 -10.340 dBm M2[1] 0.19 dB 1.101796407 MHz</p> <p>Occ Bw 1.29660 MHz</p> <p>CF 824.7 MHz 501 pts Span 3.0 MHz</p> <p>Date: 16.NOV.2021 11:27:17</p>
Middle	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>IPK Max</p> <p>01 15.720 dBm M1[1] -9.86 dBm 835.85200 MHz</p> <p>02 -10.280 dBm M2[1] -0.41 dB 1.101796407 MHz</p> <p>Occ Bw 1.30860 MHz</p> <p>CF 836.5 MHz 501 pts Span 3.0 MHz</p> <p>Date: 16.NOV.2021 11:27:55</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>IPK Max</p> <p>01 14.980 dBm M1[1] -11.020 dBm 835.85400 MHz</p> <p>02 -11.020 dBm M2[1] -0.19 dB 1.101796407 MHz</p> <p>Occ Bw 1.29660 MHz</p> <p>CF 836.5 MHz 501 pts Span 3.0 MHz</p> <p>Date: 16.NOV.2021 11:28:12</p>
Highest	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>IPK Max</p> <p>01 15.500 dBm M1[1] -10.34 dBm 847.64600 MHz</p> <p>02 -10.500 dBm M2[1] 0.07 dB 1.101796407 MHz</p> <p>Occ Bw 1.31400 MHz</p> <p>CF 848.3 MHz 501 pts Span 3.0 MHz</p> <p>Date: 16.NOV.2021 11:28:30</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>IPK Max</p> <p>01 14.770 dBm M1[1] -11.39 dBm 847.65200 MHz</p> <p>02 -11.230 dBm M2[1] 0.12 dB 1.29000 MHz</p> <p>Occ Bw 1.29000 MHz</p> <p>CF 848.3 MHz 501 pts Span 3.0 MHz</p> <p>Date: 16.NOV.2021 11:28:51</p>

Occupied Bandwidth

Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep IPK Max D1 13.520 dBm MI[1] -12.86 dBm 824.0680 MHz D2 -12.480 dBm D1[1] 0.50 dB 2.8800 MHz CF 825.5 MHz 501 pts Span 6.0 MHz Date: 16.NOV.2021 11:29:15</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep IPK Max D1 12.030 dBm MI[1] -14.44 dBm 824.0680 MHz D2 -13.970 dBm D1[1] 0.27 dB 2.9840 MHz CF 825.5 MHz 501 pts Span 6.0 MHz Date: 16.NOV.2021 11:29:38</p>
Middle	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep IPK Max D1 13.170 dBm MI[1] -12.05 dBm 835.0720 MHz D2 -12.830 dBm D1[1] 0.36 dB 2.8560 MHz CF 836.5 MHz 501 pts Span 6.0 MHz Date: 16.NOV.2021 11:29:56</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep IPK Max D1 11.870 dBm MI[1] -13.62 dBm 835.0680 MHz D2 -14.130 dBm D1[1] -0.92 dB 2.8800 MHz CF 836.5 MHz 501 pts Span 6.0 MHz Date: 16.NOV.2021 11:30:20</p>
Highest	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep IPK Max D1 12.270 dBm MI[1] -13.64 dBm 846.0480 MHz D2 -13.730 dBm D1[1] 0.31 dB 2.8920 MHz CF 847.5 MHz 501 pts Span 6.0 MHz Date: 16.NOV.2021 11:30:50</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 30 kHz Att 25 dB SWT 1.1 ms VBW 100 kHz Mode Sweep IPK Max D1 12.410 dBm MI[1] -13.59 dBm 846.0680 MHz D2 -13.590 dBm D1[1] -0.79 dB 2.8800 MHz CF 847.5 MHz 501 pts Span 6.0 MHz Date: 16.NOV.2021 11:31:11</p>

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

Occupied Bandwidth

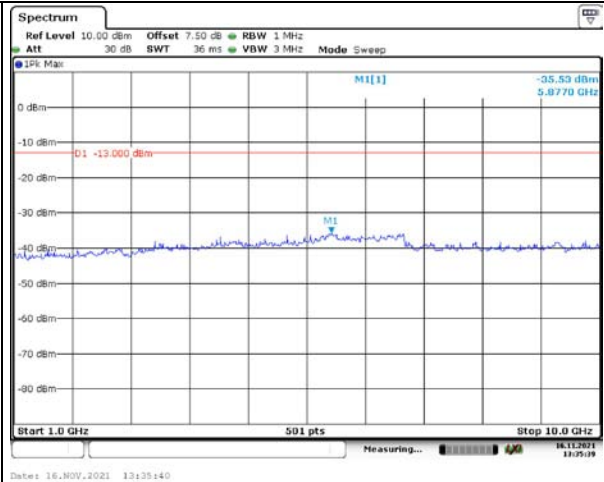
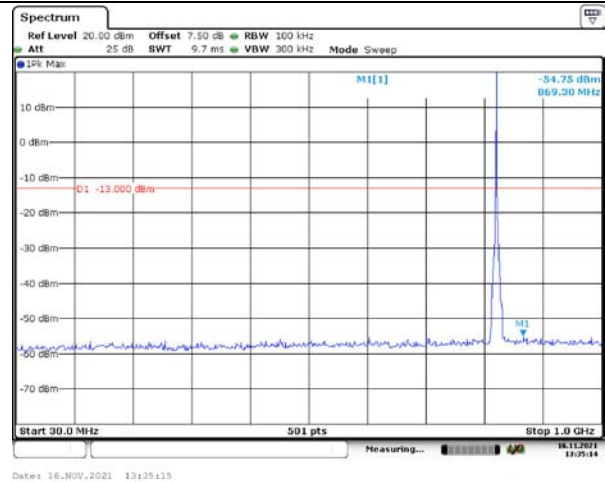
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

Spurious Emissions at Antenna Terminal

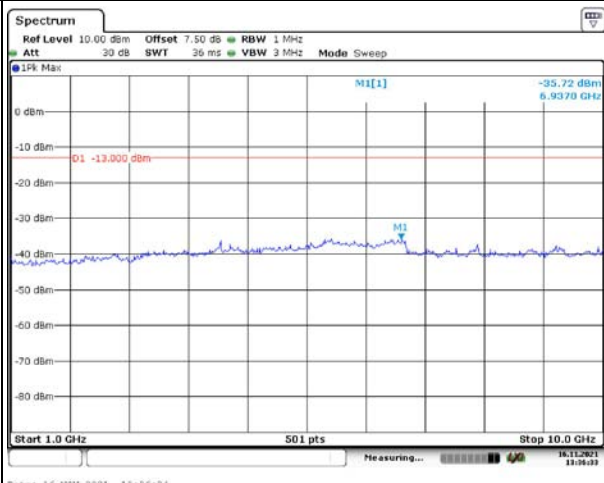
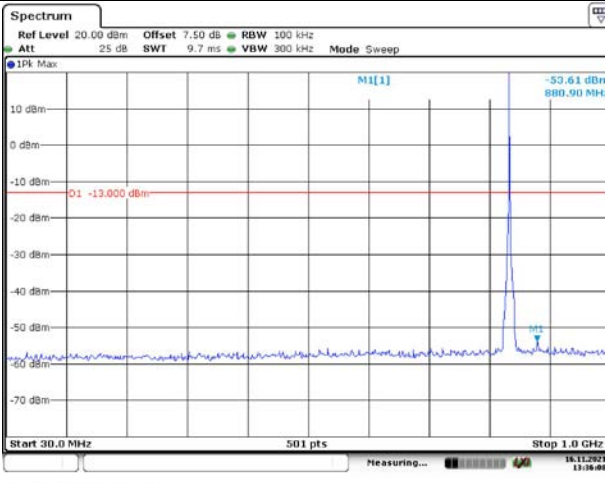
Channel

1.4MHz Bandwidth QPSK

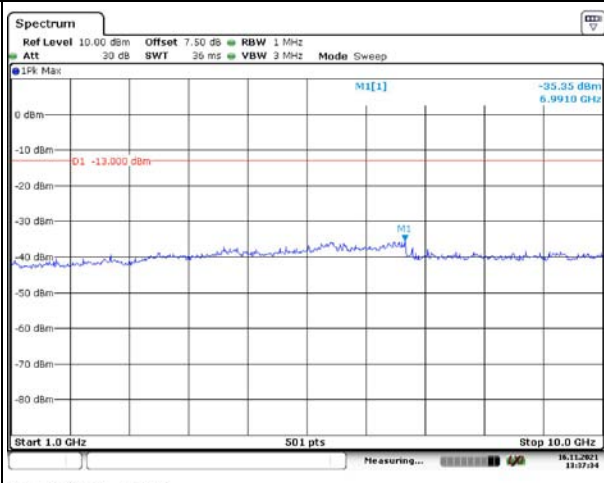
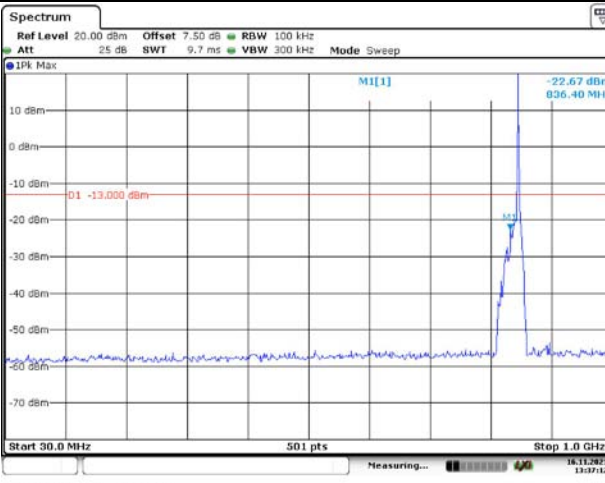
Lowest



Middle



Highest

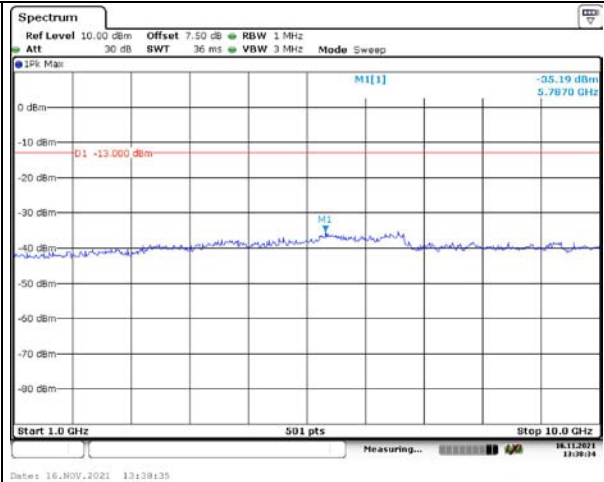
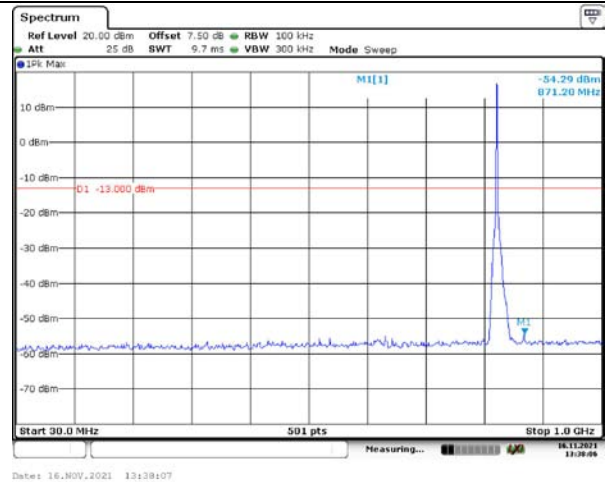


Spurious Emissions at Antenna Terminal

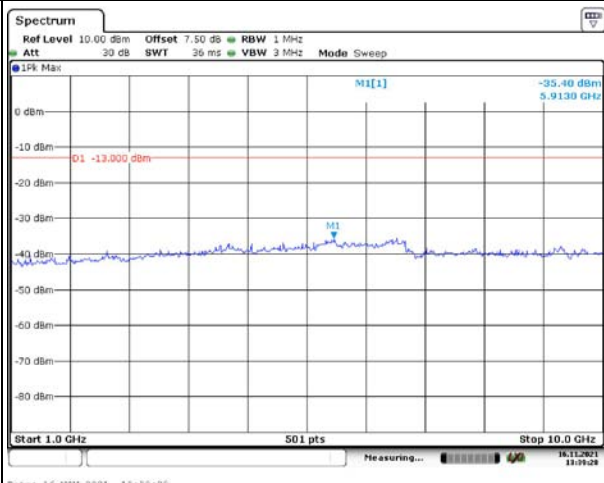
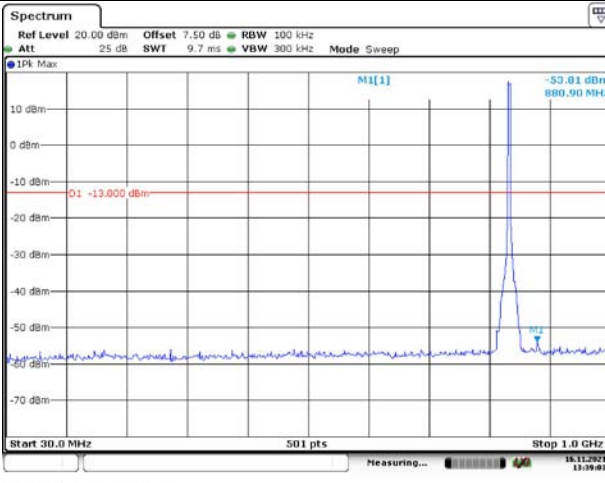
Channel

3MHz Bandwidth QPSK

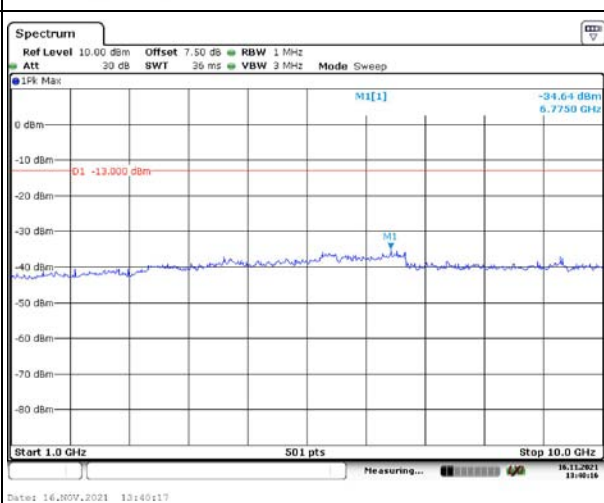
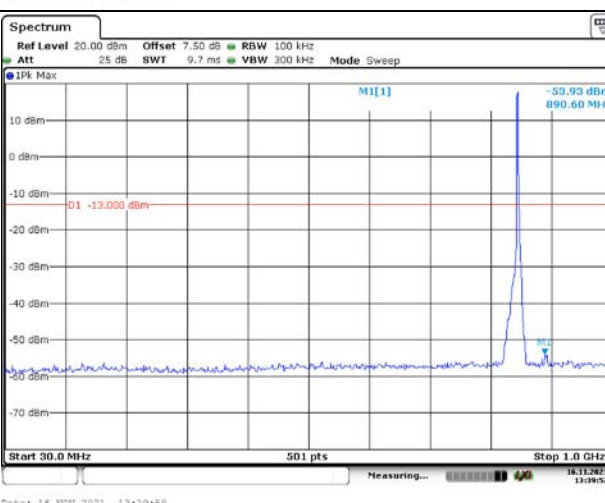
Lowest



Middle



Highest

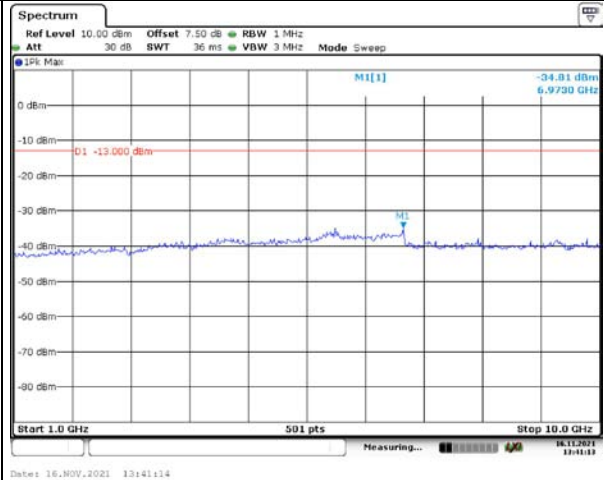
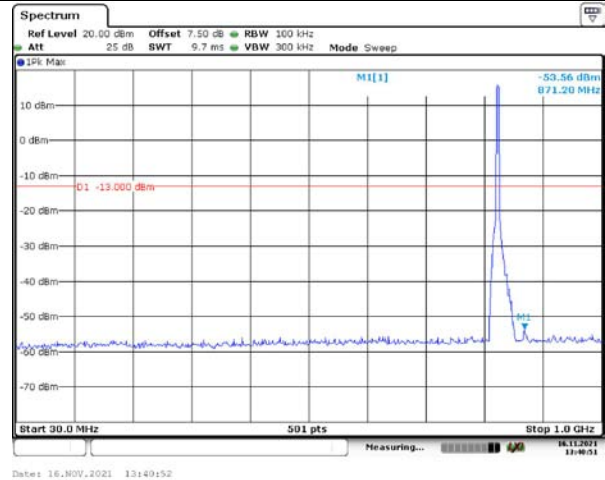


Spurious Emissions at Antenna Terminal

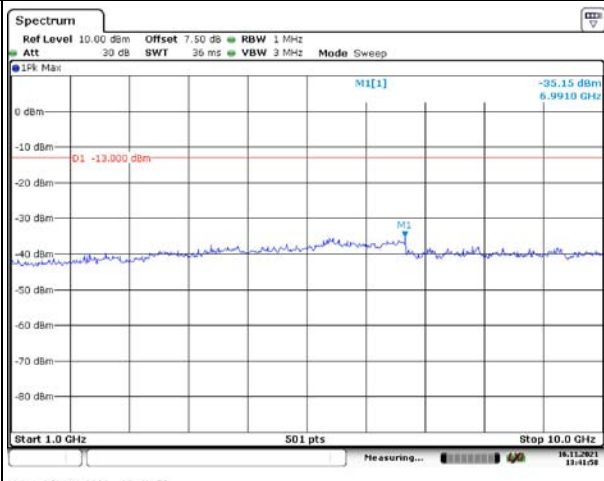
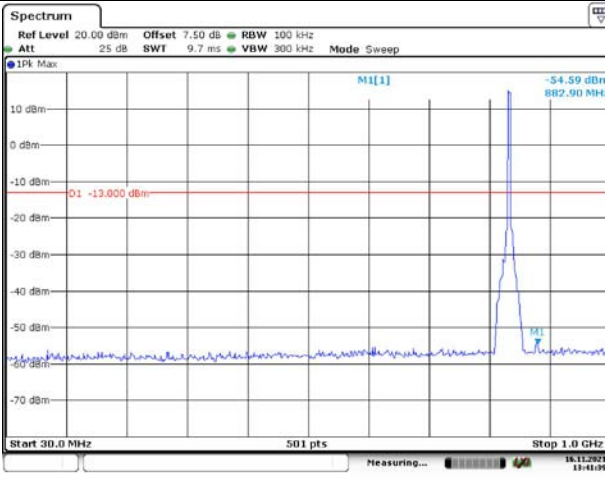
Channel

5MHz Bandwidth QPSK

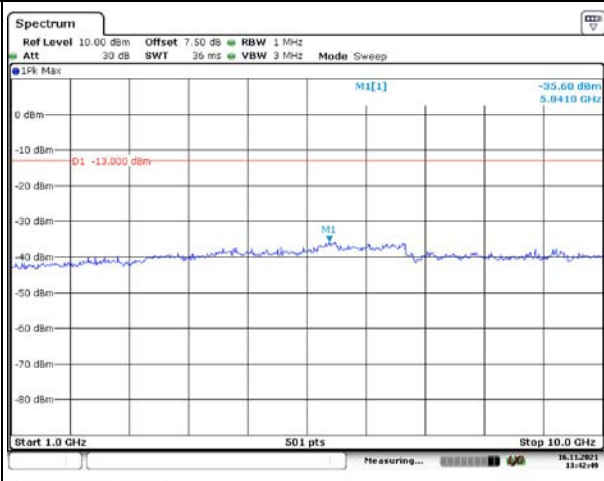
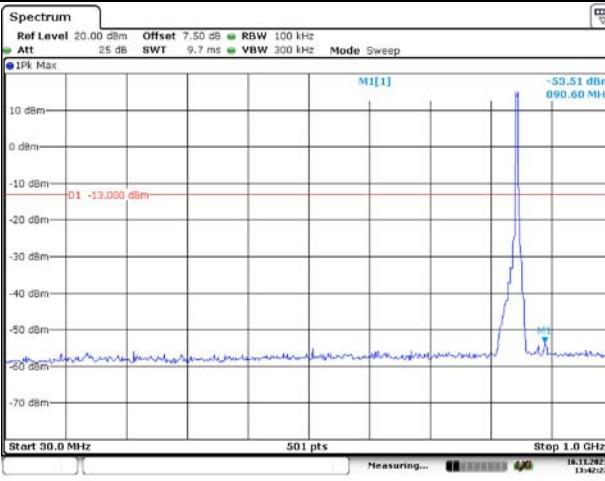
Lowest



Middle



Highest

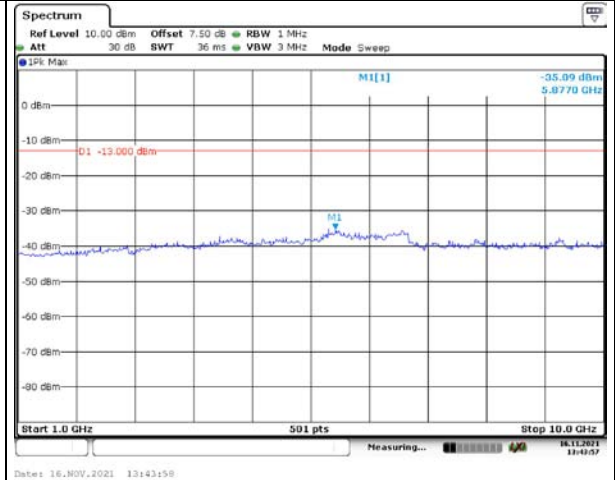
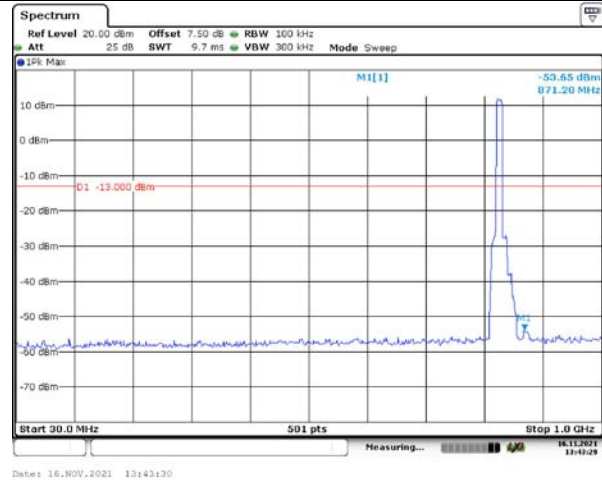


Spurious Emissions at Antenna Terminal

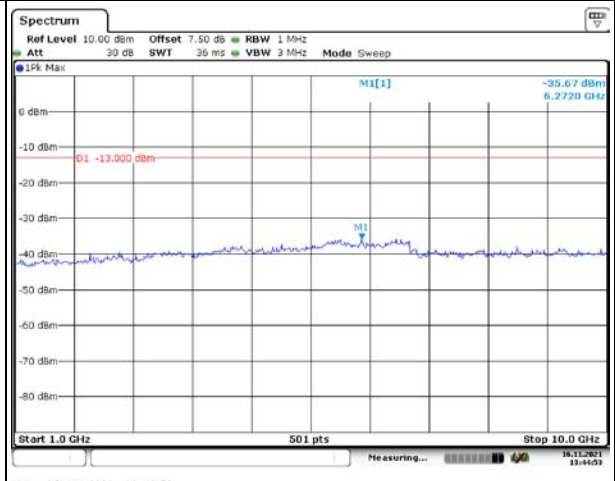
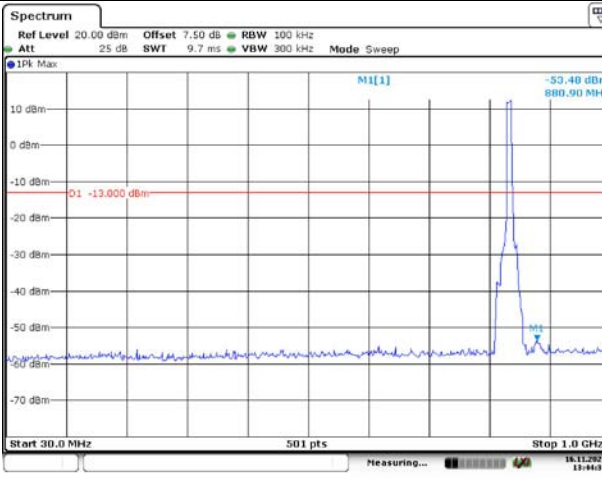
Channel

10MHz Bandwidth QPSK

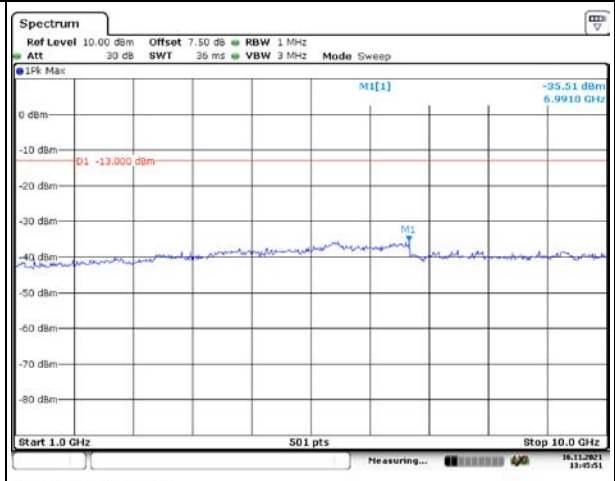
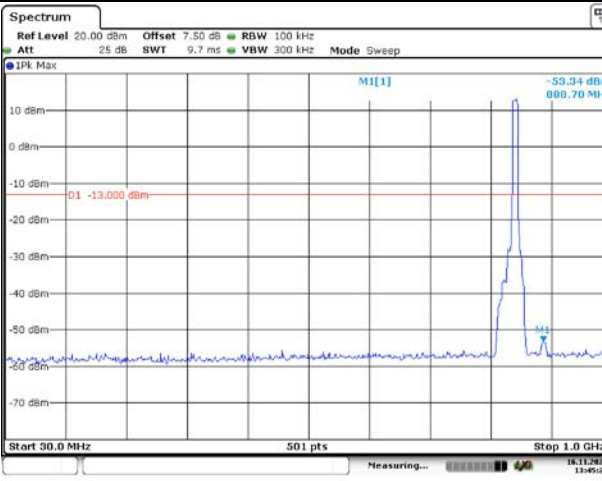
Lowest



Middle



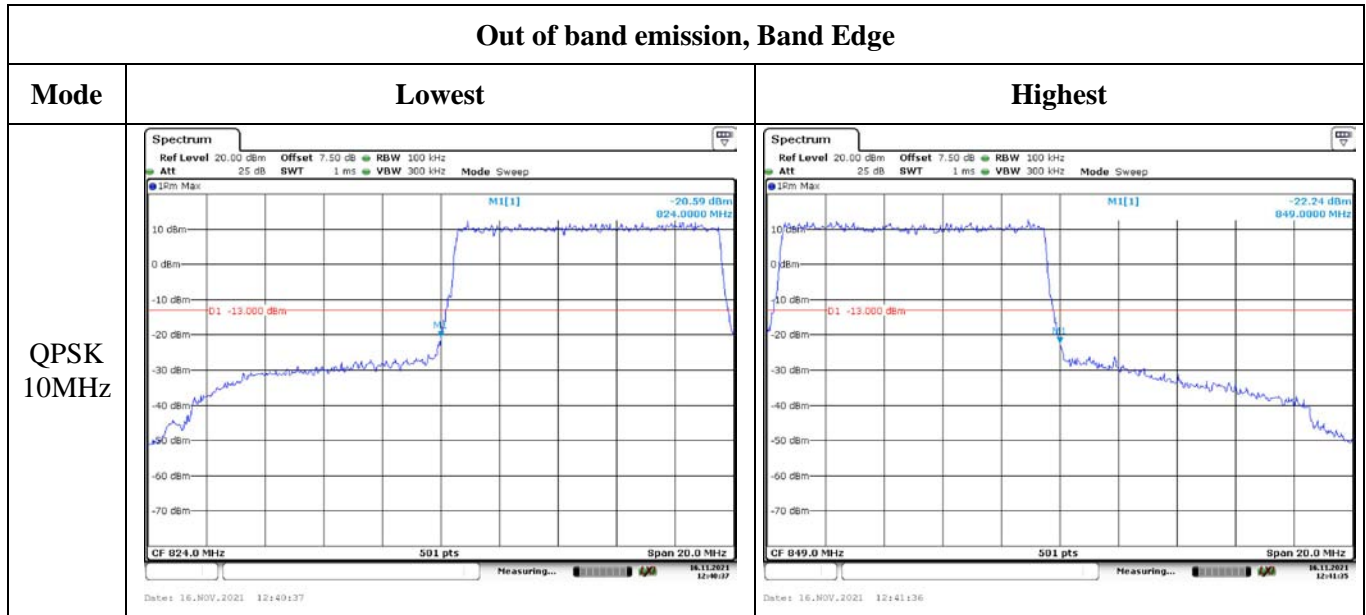
Highest



Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz		
QPSK 3MHz		
QPSK 5MHz		

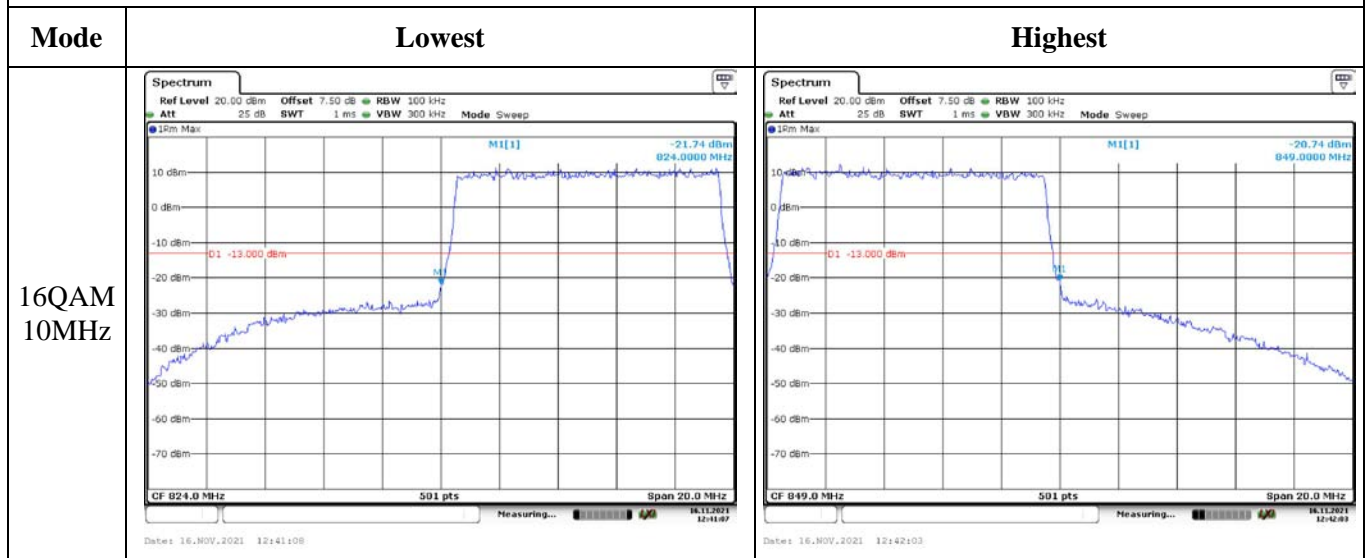
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz		
16QAM 3MHz		
16QAM 5MHz		

Out of band emission, Band Edge



4.6 Antenna Port Test Data and Results for LTE Band 7:

Serial Number:	CR21100112-RF-S1	Test Date:	2021/11/11~2021/11/20
Test Site:	RF	Test Mode:	Transmitting
Tester:	Thor Lei	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	21.8~27.7	Relative Humidity: (%)	48~53	ATM Pressure: (kPa)	101.4~101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2021/7/22	2022/7/21
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2021/7/22	2022/7/21
BACL	TEMP&HUMI Test Chamber	BTH-150	30026	2021/7/22	2022/7/22
UNI-T	Multimeter	UT39A+	C210582554	2021/9/30	2022/9/30
44834	Two-way Splitter	ODP-1-6	OE0120176	Each Time	N/A

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

EUT Information@LTE Band 7▲:

Antenna Gain (dBi):	1	Cable Loss (dB):	0.5
Operation Voltage(V _{DC}):			
Lowest:	3.5	Normal:	3.85
		Highest:	4.4

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2502.5	2535	2567.5
10MHz	2505	2535	2565
15MHz	2507.5	2535	2562.5
20MHz	2510	2535	2560

Test Data:

FCC§2.1046;§ 27.50(h)(2)						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	21.36	21.9	22.28	22.85	33
	RB1#13	21.52	22.02	22.35		
	RB1#24	21.41	22	22.3		
	RB15#0	20.5	20.98	21.35		
	RB15#10	20.57	21.06	21.37		
	RB25#0	20.51	21	21.33		
5MHz 16QAM	RB1#0	20.29	21.17	21.32	21.94	33
	RB1#13	20.37	21.32	21.44		
	RB1#24	20.32	21.22	21.39		
	RB15#0	19.58	19.96	20.42		
	RB15#10	19.62	20.06	20.43		
	RB25#0	19.6	20.03	20.42		
10MHz QPSK	RB1#0	21.47	21.92	22.33	23.04	33
	RB1#25	21.77	22.18	22.54		
	RB1#49	21.69	22.04	22.39		
	RB25#0	20.56	20.98	21.36		
	RB25#25	20.59	21.1	21.43		
	RB50#0	20.57	21.06	21.4		
10MHz 16QAM	RB1#0	21	21.07	21.25	22.01	33
	RB1#25	21.14	21.2	21.51		
	RB1#49	21.11	21.16	21.31		
	RB25#0	19.67	20.04	20.47		
	RB25#25	19.71	20.17	20.56		
	RB50#0	19.58	20.11	20.48		
15MHz QPSK	RB1#0	21.44	21.84	22.24	22.81	33
	RB1#38	21.69	22.05	22.31		
	RB1#74	21.66	22.05	21.96		
	RB36#0	20.68	21.02	20.95		
	RB36#39	20.79	21.16	21.13		
	RB75#0	20.7	21.08	20.97		
15MHz 16QAM	RB1#0	20.88	20.98	21.1	21.75	33
	RB1#38	21.1	21.2	21.25		
	RB1#74	21.14	21.17	21.22		
	RB36#0	19.63	20.01	19.89		
	RB36#39	19.74	20.17	20.19		
	RB75#0	19.67	20.11	19.99		
20MHz QPSK	RB1#0	21.28	21.71	21.93	22.76	33
	RB1#50	21.89	22.17	22.26		
	RB1#99	21.32	21.65	21.64		

	RB50#0	20.45	20.86	20.86		
	RB50#50	20.73	21.08	20.96		
	RB100#0	20.63	20.96	20.85		
20MHz 16QAM	RB1#0	20.51	20.78	21.01	22.16	33
	RB1#50	21.11	21.22	21.66		
	RB1#99	20.78	20.98	21.2		
	RB50#0	19.63	19.9	19.86		
	RB50#50	19.71	20.18	19.94		
	RB100#0	19.67	20.06	19.87		

Note: EIRP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBi)

Result: **Pass**

Peak-to-average Ratio(PAR)

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	3.86	4.55	4.78	13
	RB100#0	4.75	5.1	5.19	13
20MHz 16QAM	RB1#0	4.84	5.48	5.48	13
	RB100#0	5.62	6	6.09	13
Result:					Pass

FCC §2.1049, §27.53:Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
5MHz QPSK	4.511	4.511	4.491	4.94	4.94	4.94
5MHz 16QAM	4.491	4.511	4.511	4.94	4.96	4.94
10MHz QPSK	8.942	8.942	8.942	9.68	9.6	9.6
10MHz 16QAM	8.942	8.981	8.942	9.6	9.64	9.6
15MHz QPSK	13.473	13.473	13.473	14.76	14.7	14.82
15MHz 16QAM	13.533	13.473	13.473	15.12	14.7	14.7
20MHz QPSK	17.884	17.884	17.964	19.28	19.2	19.52
20MHz 16QAM	17.964	17.964	17.964	19.36	19.36	19.44

Note: The test plots please refer to the Plots of Occupied Bandwidth

FCC §2.1051, § 27.53:Spurious Emissions at Antenna Terminal

Result: **Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.**

FCC §2.1051, § 27.53:Out of band emission, Band Edge

Result: **Pass, Please refer to the test plots of Out of band emission, Band Edge.**

FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	2500.528	2500.00	2569.512	2570
	-20	3.85	2500.528	2500.00	2569.510	2570
	-10	3.85	2500.528	2500.00	2569.511	2570
	0	3.85	2500.528	2500.00	2569.512	2570
	10	3.85	2500.529	2500.00	2569.512	2570
	20	3.85	2500.529	2500.00	2569.511	2570
	30	3.85	2500.529	2500.00	2569.512	2570
	40	3.85	2500.527	2500.00	2569.510	2570
Frequency Stability vs. Voltage	20	3.5	2500.529	2500.00	2569.512	2570
	20	4.4	2500.528	2500.00	2569.511	2570
					Result:	Pass

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	2500.529	2500.00	2569.472	2570
	-20	3.85	2500.529	2500.00	2569.472	2570
	-10	3.85	2500.528	2500.00	2569.472	2570
	0	3.85	2500.529	2500.00	2569.471	2570
	10	3.85	2500.528	2500.00	2569.471	2570
	20	3.85	2500.529	2500.00	2569.471	2570
	30	3.85	2500.529	2500.00	2569.471	2570
	40	3.85	2500.527	2500.00	2569.472	2570
Frequency Stability vs. Voltage	20	3.5	2500.528	2500.00	2569.471	2570
	20	4.4	2500.528	2500.00	2569.472	2570
					Result:	Pass

Test Plots:

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>Spectrum Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep IPK Max M1[1] -15.43 dBm 2.5008400 GHz D1[1] 4.9107964 MHz -10.910 dBm -15.090 dBm -0.26 dBm CF 2.5025 GHz 501 pts Span 10.0 MHz Measuring... 16.11.2021 11:07:44 Date: 16.NOV.2021 11:37:45</p>	<p>Spectrum Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep IPK Max M1[1] -15.03 dBm 2.5008400 GHz D1[1] 4.9107964 MHz -9.029 dBm -16.180 dBm -0.77 dBm CF 2.5025 GHz 501 pts Span 10.0 MHz Measuring... 16.11.2021 11:08:11 Date: 16.NOV.2021 11:38:11</p>
Middle	<p>Spectrum Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep IPK Max M1[1] -14.40 dBm 2.5325400 GHz D1[1] 4.9107964 MHz -10.640 dBm -15.360 dBm 0.00 dB CF 2.535 GHz 501 pts Span 10.0 MHz Measuring... 16.11.2021 11:08:05 Date: 16.NOV.2021 11:38:45</p>	<p>Spectrum Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep IPK Max M1[1] -16.08 dBm 2.5325400 GHz D1[1] 4.9107964 MHz -9.560 dBm -16.440 dBm -1.22 dB CF 2.535 GHz 501 pts Span 10.0 MHz Measuring... 16.11.2021 11:08:14 Date: 16.NOV.2021 11:39:15</p>
Highest	<p>Spectrum Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep IPK Max M1[1] -13.98 dBm 2.5650400 GHz D1[1] 4.9107964 MHz -12.210 dBm -13.790 dBm 0.42 dB CF 2.5675 GHz 501 pts Span 10.0 MHz Measuring... 16.11.2021 11:09:01 Date: 16.NOV.2021 11:39:52</p>	<p>Spectrum Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep IPK Max M1[1] -15.11 dBm 2.5650400 GHz D1[1] 4.9107964 MHz -10.360 dBm -15.640 dBm 0.05 dB CF 2.5675 GHz 501 pts Span 10.0 MHz Measuring... 16.11.2021 11:09:05 Date: 16.NOV.2021 11:40:15</p>

Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep MI[1] -16.97 dBm 2.5001600 GHz Occ Bw 9.682115768 MHz -1.67 dB 9.6800 MHz D1 7.670 dBm D2 -18.330 dBm</p> <p>CF 2.505 GHz 501 pts Span 20.0 MHz Measuring... 16.11.2021 11:41:13 Date: 16.NOV.2021 11:41:13</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep MI[1] -18.88 dBm 2.5002000 GHz Occ Bw 9.642115768 MHz -0.14 dB 9.6800 MHz D1 6.980 dBm D2 -19.120 dBm</p> <p>CF 2.505 GHz 501 pts Span 20.0 MHz Measuring... 16.11.2021 11:41:14 Date: 16.NOV.2021 11:41:14</p>
Middle	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep MI[1] -17.60 dBm 2.5352000 GHz Occ Bw 9.942115768 MHz 1.64 dB 9.6800 MHz D1 8.640 dBm D2 -17.360 dBm</p> <p>CF 2.535 GHz 501 pts Span 20.0 MHz Measuring... 16.11.2021 11:41:15 Date: 16.NOV.2021 11:41:15</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep MI[1] -18.84 dBm 2.5352000 GHz Occ Bw 9.982035928 MHz -0.35 dB 9.6400 MHz D1 6.980 dBm D2 -19.020 dBm</p> <p>CF 2.535 GHz 501 pts Span 20.0 MHz Measuring... 16.11.2021 11:41:19 Date: 16.NOV.2021 11:41:20</p>
Highest	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep MI[1] -16.32 dBm 2.5652000 GHz Occ Bw 9.942115768 MHz 0.43 dB 9.6800 MHz D1 9.150 dBm D2 -16.850 dBm</p> <p>CF 2.565 GHz 501 pts Span 20.0 MHz Measuring... 16.11.2021 11:41:17 Date: 16.NOV.2021 11:41:18</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 100 kHz Att 25 dB SWT 1 ms VBW 300 kHz Mode Sweep MI[1] -18.56 dBm 2.5652000 GHz Occ Bw 9.942115768 MHz 0.43 dB 9.6800 MHz D1 8.280 dBm D2 -17.720 dBm</p> <p>CF 2.565 GHz 501 pts Span 20.0 MHz Measuring... 16.11.2021 11:41:18 Date: 16.NOV.2021 11:41:25</p>

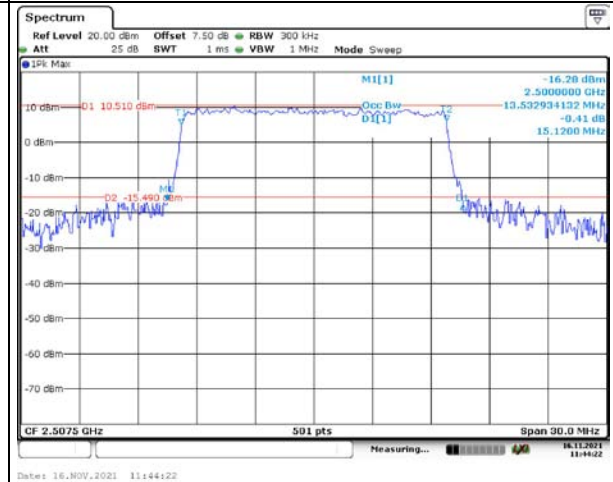
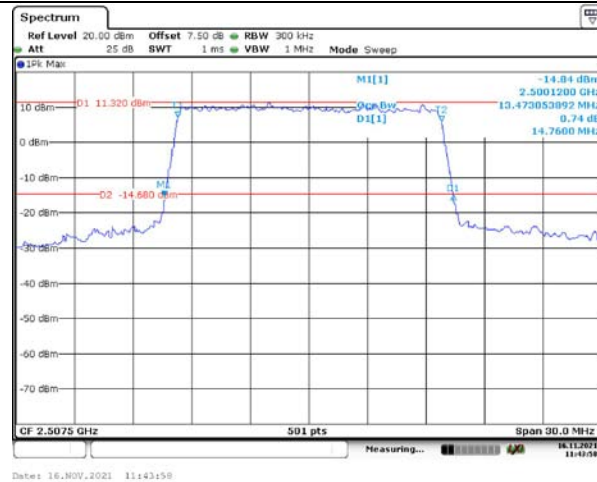
Occupied Bandwidth

Channel

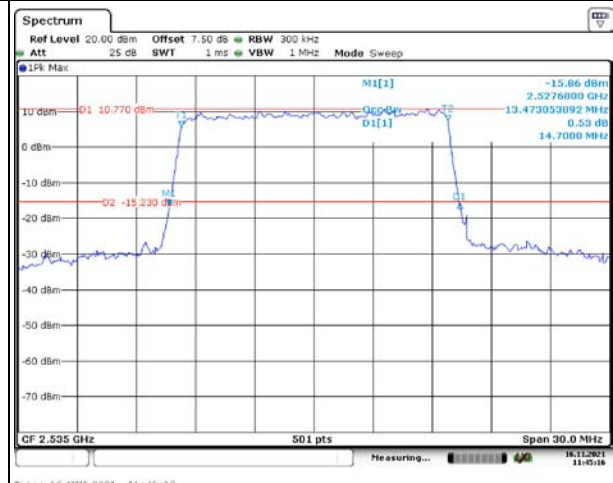
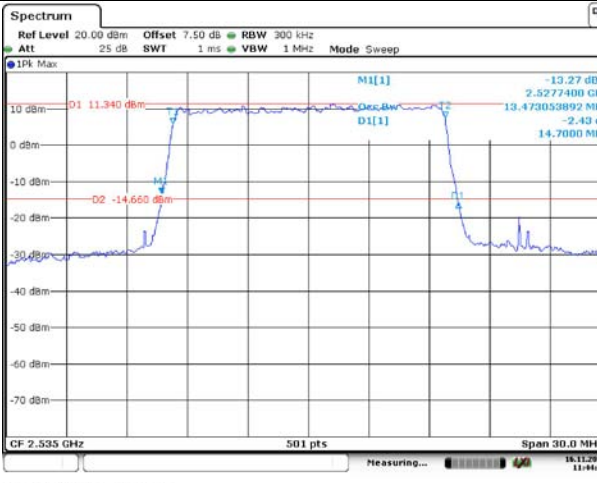
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

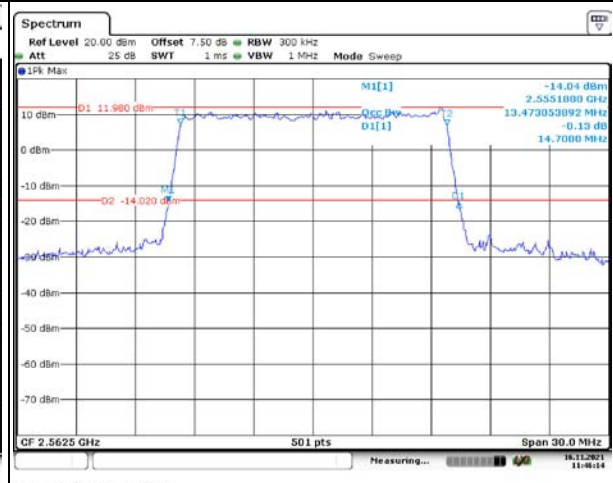
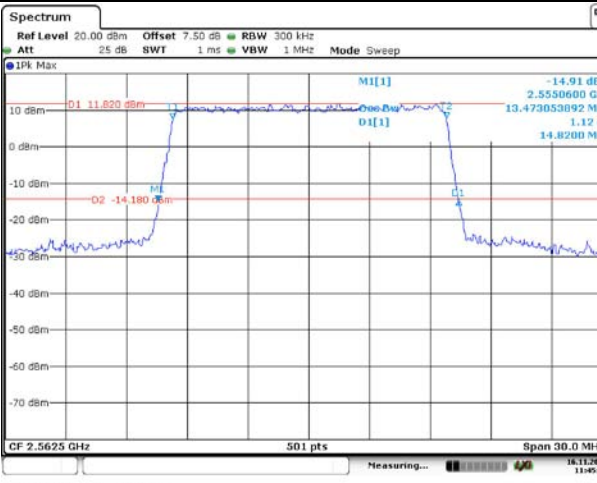
Lowest



Middle



Highest



Occupied Bandwidth

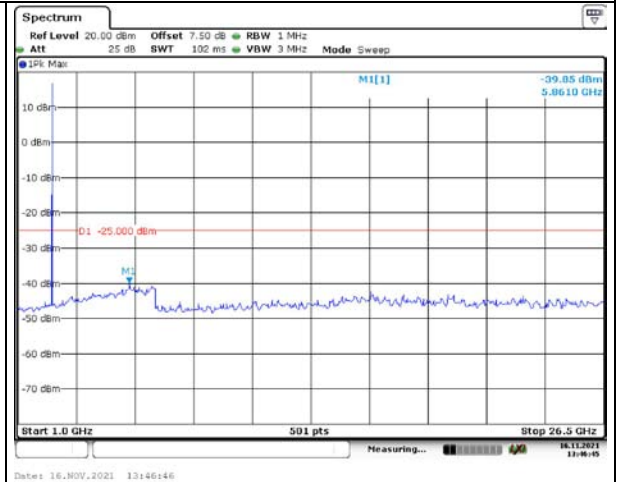
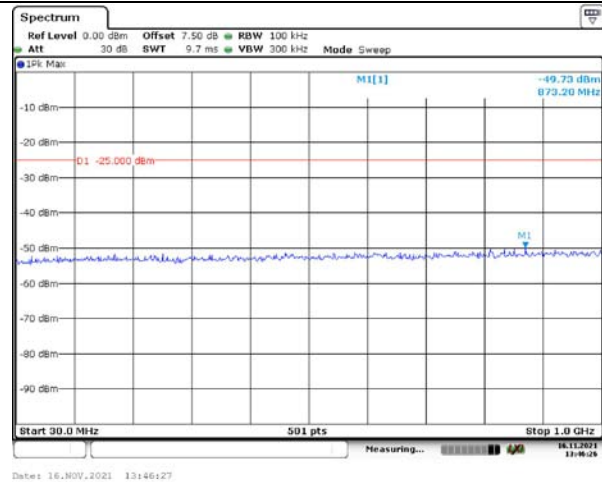
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep IPK Max -16.45 dBm 2.5002200 GHz 17.084231537 MHz 19.2800 MHz 0.76 dB -16.060 dBm CF 2.51 GHz 501 pts Span 40.0 MHz Date: 16.NOV.2021 11:46:42</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep IPK Max -17.53 dBm 2.5002200 GHz 17.964071856 MHz 19.3600 MHz 0.76 dB -16.560 dBm CF 2.51 GHz 501 pts Span 40.0 MHz Date: 16.NOV.2021 11:47:12</p>
Middle	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep IPK Max -13.46 dBm 2.5254800 GHz 17.884231537 MHz 19.2800 MHz -0.95 dB -14.910 dBm CF 2.535 GHz 501 pts Span 40.0 MHz Date: 16.NOV.2021 11:47:39</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep IPK Max -16.29 dBm 2.5254800 GHz 17.964071856 MHz 19.3600 MHz 0.16 dB -16.110 dBm CF 2.535 GHz 501 pts Span 40.0 MHz Date: 16.NOV.2021 11:48:09</p>
Highest	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep IPK Max -15.61 dBm 2.5503200 GHz 17.964071856 MHz 19.5200 MHz 0.51 dB -15.670 dBm CF 2.56 GHz 501 pts Span 40.0 MHz Date: 16.NOV.2021 11:48:40</p>	<p>Ref Level 20.00 dBm Offset 7.50 dB RBW 300 kHz Att 25 dB SWT 1 ms VBW 1 MHz Mode Sweep IPK Max -17.12 dBm 2.5503200 GHz 17.964071856 MHz 19.4400 MHz 1.89 dB -16.280 dBm CF 2.56 GHz 501 pts Span 40.0 MHz Date: 16.NOV.2021 11:49:07</p>

Spurious Emissions at Antenna Terminal

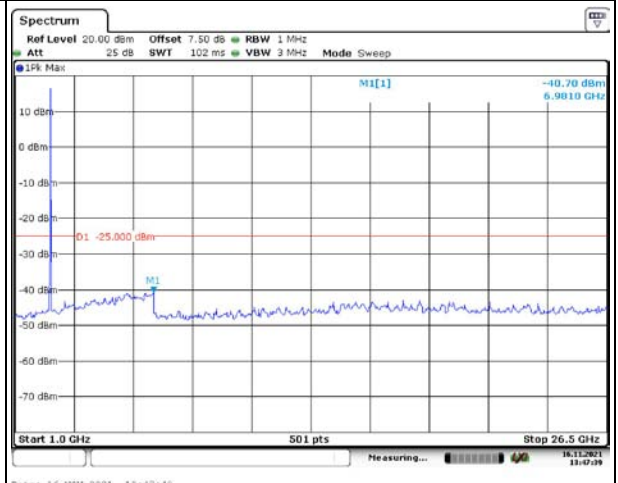
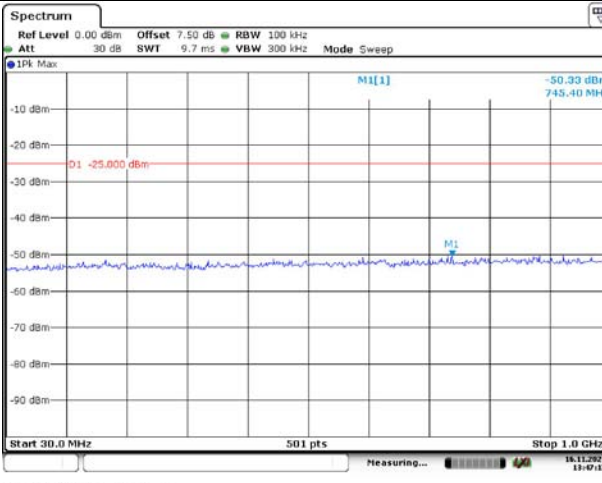
Channel

5MHz Bandwidth QPSK

Lowest



Middle



Highest

