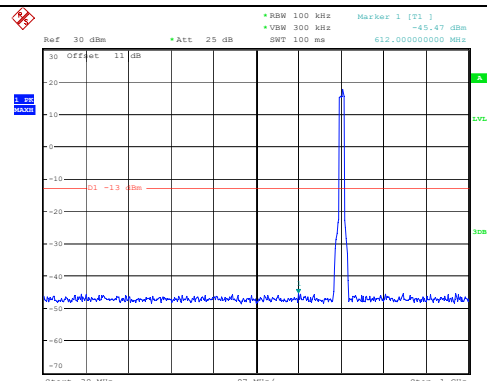
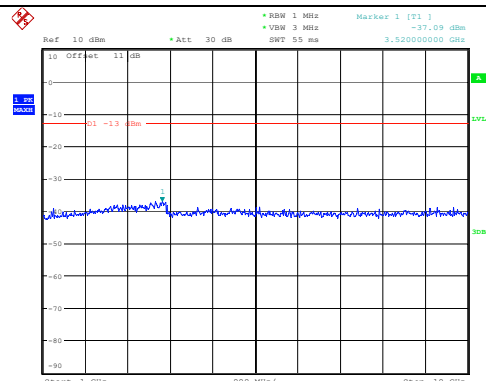


Spurious Emissions at Antenna Terminal

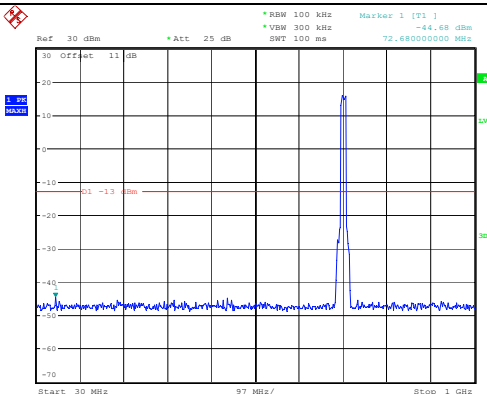
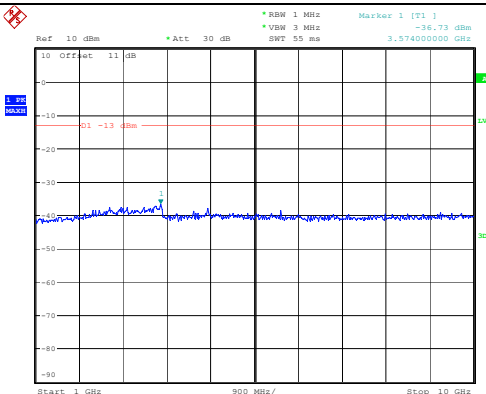
Channel

10MHz Bandwidth QPSK

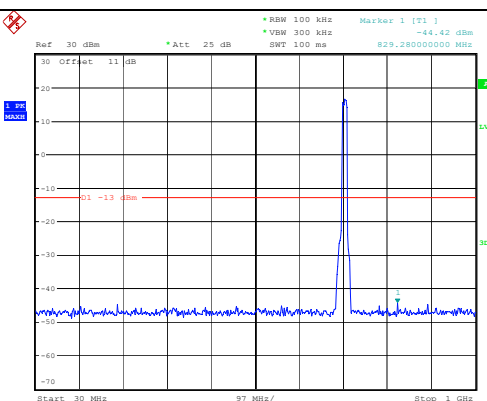
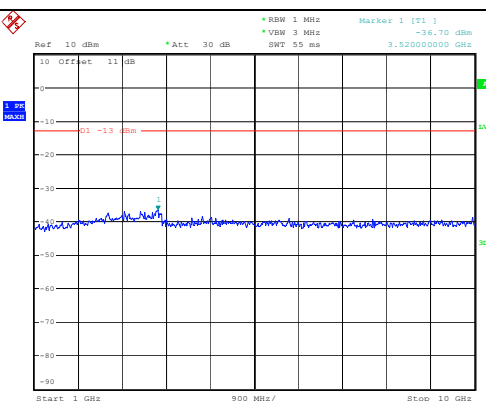
Lowest

ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:50:17ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:50:27

Middle

ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:50:39ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:50:53

Highest

ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:51:08ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:51:18

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 5MHz	Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 35 ms Marker 1 [T1] -20.11 dBm 704.00000000 MHz Center 704 MHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121-RF Tester:Rod Luo Date: 17.NOV.2023 09:41:31	Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 35 ms Marker 1 [T1] -21.75 dBm 716.00000000 MHz Center 716 MHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121-RF Tester:Rod Luo Date: 17.NOV.2023 09:41:45
QPSK 10MHz	Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 35 ms Marker 1 [T1] -27.35 dBm 704.00000000 MHz Center 704 MHz 2 MHz/ Span 20 MHz ProjectNo.:CR231061121-RF Tester:Rod Luo Date: 17.NOV.2023 09:42:02	Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 35 ms Marker 1 [T1] -27.69 dBm 716.00000000 MHz Center 716 MHz 2 MHz/ Span 20 MHz ProjectNo.:CR231061121-RF Tester:Rod Luo Date: 17.NOV.2023 09:42:17
16QAM 5MHz	Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 35 ms Marker 1 [T1] -21.47 dBm 704.00000000 MHz Center 704 MHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121-RF Tester:Rod Luo Date: 17.NOV.2023 09:41:38	Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 35 ms Marker 1 [T1] -23.12 dBm 716.00000000 MHz Center 716 MHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121-RF Tester:Rod Luo Date: 17.NOV.2023 09:41:51

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4.13 Antenna Port Test Data and Results for LTE Band 25

Serial Number:	2CFR-2	Test Date:	2023/11/07-2023/11/27
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rod Luo	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.5-28	Relative Humidity: (%)	48-52	ATM Pressure: (kPa)	101.3-101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200120	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
Minl-Circuits	Power Splitter	ZFRSC-183-S+	S F448201619	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	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).*

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1850.7	1882.5	1914.3
3MHz	1851.5	1882.5	1913.5
5MHz	1852.5	1882.5	1912.5
10MHz	1855	1882.5	1910
15MHz	1857.5	1882.5	1907.5
20MHz	1860	1882.5	1905

Test Data:**FCC§2.1046;§ 24.232****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		
1.4MHz QPSK	RB1#0	17.8	17.96	17.44	16.82	33
	RB1#3	17.92	18.12	17.53		
	RB1#5	17.89	17.93	17.28		
	RB3#0	17.9	18.05	17.52		
	RB3#3	17.92	18.02	17.44		
	RB6#0	16.97	17.11	16.51		
1.4MHz 16QAM	RB1#0	16.93	17.14	16.89	16.02	33
	RB1#3	17.17	17.32	17.01		
	RB1#5	17.01	17.12	16.79		
	RB3#0	17.16	17.11	17.17		
	RB3#3	17.18	17.11	17.29		
	RB6#0	15.95	16.07	16.26		
3MHz QPSK	RB1#0	17.86	18.17	18.35	17.05	33
	RB1#8	18.14	18.32	18.11		
	RB1#14	18.12	18.22	18.03		
	RB6#0	17.03	17.36	17.61		
	RB6#9	17.23	17.41	17.23		
	RB15#0	17.16	17.4	17.41		
3MHz 16QAM	RB1#0	17	17.25	17.59	16.29	33
	RB1#8	17.31	17.41	17.34		
	RB1#14	17.31	17.32	17.02		
	RB6#0	16.01	16.23	16.56		
	RB6#9	16.23	16.28	16.2		
	RB15#0	16.08	16.39	16.5		
5MHz QPSK	RB1#0	17.53	17.79	18.52	17.22	33
	RB1#13	18.29	18.38	18.48		
	RB1#24	17.94	17.93	17.56		
	RB15#0	17.09	17.33	17.68		
	RB15#10	17.28	17.39	17.27		
	RB25#0	17.15	17.32	17.43		
5MHz 16QAM	RB1#0	16.85	16.96	17.48	16.34	33
	RB1#13	17.64	17.55	17.43		
	RB1#24	17.32	17.1	16.54		
	RB15#0	16.05	16.27	16.78		
	RB15#10	16.26	16.34	16.37		
	RB25#0	16.14	16.26	16.56		

10MHz QPSK	RB1#0	17.88	17.96	19.06	17.76	33
	RB1#25	18.5	18.29	18.87		
	RB1#49	18.85	18.78	18.28		
	RB25#0	17.29	17.29	18.26		
	RB25#25	17.81	17.71	17.81		
	RB50#0	17.57	17.51	18.03		
10MHz 16QAM	RB1#0	16.96	17.06	18.77	17.47	33
	RB1#25	17.64	17.39	18.51		
	RB1#49	17.98	17.89	18		
	RB25#0	16.37	16.29	17.35		
	RB25#25	16.9	16.71	16.9		
	RB50#0	16.63	16.45	17.1		
15MHz QPSK	RB1#0	18.17	18.21	18.71	17.41	33
	RB1#38	18.57	18.26	18.43		
	RB1#74	18.47	18.55	17.44		
	RB36#0	17.54	17.38	17.72		
	RB36#39	17.67	17.62	17.14		
	RB75#0	17.6	17.49	17.43		
15MHz 16QAM	RB1#0	17.31	17.69	18.3	17.00	33
	RB1#38	17.72	17.75	18.04		
	RB1#74	17.65	18.02	17.03		
	RB36#0	16.59	16.26	16.81		
	RB36#39	16.72	16.52	16.22		
	RB75#0	16.65	16.38	16.53		
20MHz QPSK	RB1#0	18.85	18.97	19.43	18.13	33
	RB1#50	18.68	18.19	18.5		
	RB1#99	18.75	19.06	17.89		
	RB50#0	18.06	17.68	17.97		
	RB50#50	17.92	17.9	17.46		
	RB100#0	17.98	17.77	17.71		
20MHz 16QAM	RB1#0	18.13	18.61	18.71	17.41	33
	RB1#50	18	17.85	17.82		
	RB1#99	18.02	18.7	17.15		
	RB50#0	16.99	16.59	17.05		
	RB50#50	16.85	16.8	16.53		
	RB100#0	16.91	16.69	16.82		
Note: EIRP=Conducted Power(dBm) - Lc(dB) + G _T (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	5.01	5.07	4.96	13
	RB100#0	5.22	5.39	5.33	13
20MHz 16QAM	RB1#0	5.86	5.36	5.71	13
	RB100#0	6.06	6.23	6.17	13
Result:					Pass

FCC §2.1049, §24.238: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	1.110	1.104	1.104	1.260	1.254	1.260
1.4MHz 16QAM	1.098	1.110	1.116	1.254	1.260	1.266
3MHz QPSK	2.700	2.700	2.700	3.000	3.000	3.012
3MHz 16QAM	2.700	2.700	2.700	3.012	3.000	3.024
5MHz QPSK	4.520	4.520	4.520	5.000	5.000	4.980
5MHz 16QAM	4.540	4.540	4.520	5.020	5.020	4.980
10MHz QPSK	8.960	8.960	9.000	9.680	9.800	9.760
10MHz 16QAM	8.960	8.960	8.960	9.760	9.920	9.760
15MHz QPSK	13.500	13.620	13.560	15.060	15.120	15.060
15MHz 16QAM	13.560	13.560	13.620	15.180	15.120	15.120
20MHz QPSK	18.000	18.080	18.000	19.680	19.920	19.520
20MHz 16QAM	18.080	18.000	18.000	19.680	19.760	19.680
Note: The test plots please refer to the Plots of Occupied Bandwidth						

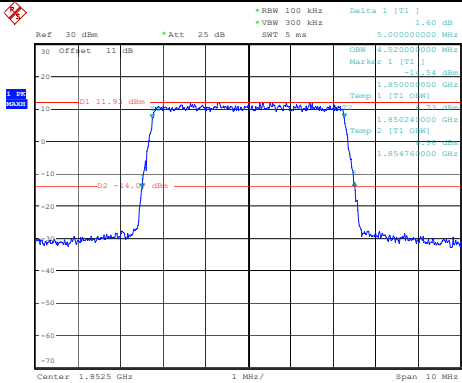
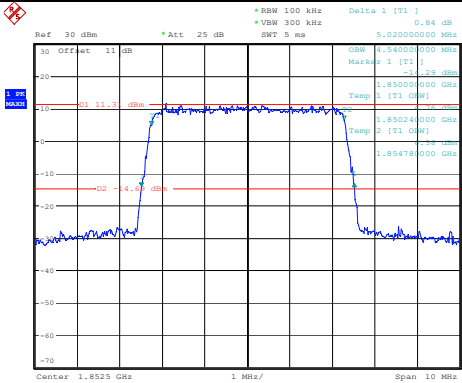
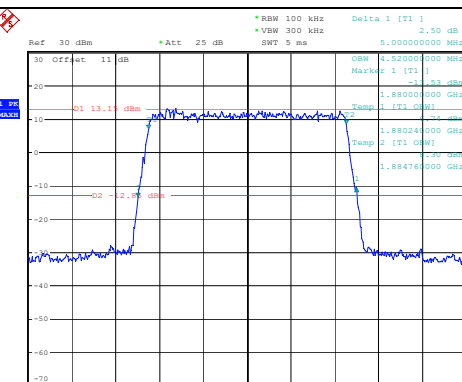
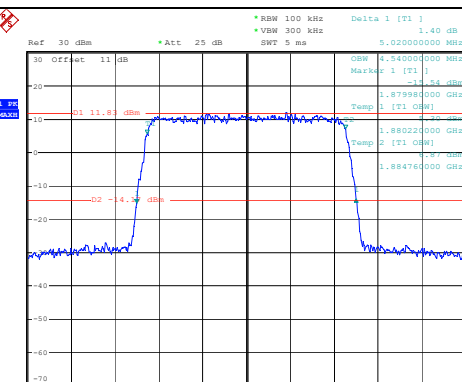
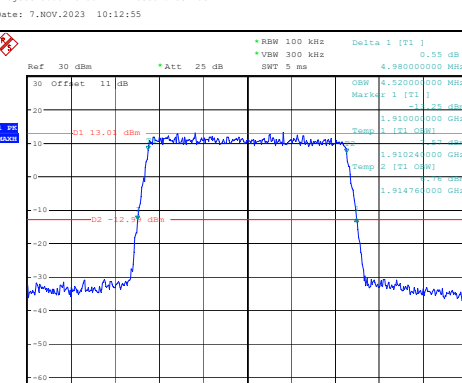
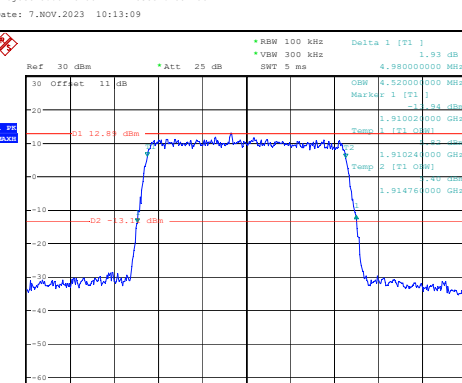
FCC §2.1051, § 24.238 (a):Spurious Emissions at Antenna Terminal	
Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

FCC §2.1051, § 24.238 (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, §24.235: 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	1850.115	1850.000	1914.878	1915.000
	-20	3.85	1850.096	1850.000	1914.977	1915.000
	-10	3.85	1850.136	1850.000	1914.877	1915.000
	0	3.85	1850.005	1850.000	1914.909	1915.000
	10	3.85	1850.119	1850.000	1914.943	1915.000
	20	3.85	1850.003	1850.000	1914.945	1915.000
	30	3.85	1850.098	1850.000	1914.873	1915.000
	40	3.85	1850.112	1850.000	1914.967	1915.000
	50	3.85	1850.092	1850.000	1914.912	1915.000
Frequency Stability vs. Voltage	20	3.5	1850.056	1850.000	1914.864	1915.000
	20	4.4	1850.130	1850.000	1914.861	1915.000
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	1850.035	1850.000	1914.928	1915.000
	-20	3.85	1850.087	1850.000	1914.988	1915.000
	-10	3.85	1850.070	1850.000	1914.995	1915.000
	0	3.85	1850.104	1850.000	1914.976	1915.000
	10	3.85	1850.074	1850.000	1914.879	1915.000
	20	3.85	1850.133	1850.000	1914.952	1915.000
	30	3.85	1850.041	1850.000	1914.884	1915.000
	40	3.85	1850.090	1850.000	1914.995	1915.000
	50	3.85	1850.114	1850.000	1914.888	1915.000
Frequency Stability vs. Voltage	20	3.5	1850.014	1850.000	1914.977	1915.000
	20	4.4	1850.009	1850.000	1914.855	1915.000
Result:					Pass	

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	 Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 2.50 dB *VBW 300 kHz SWT 5 ms 5.00000000 MHz OSW 4.52000000 MHz Marker 1 [T1] -1.14 dBm Temp 1 [T1 OSW] 1.85000000 GHz Temp 2 [T1 OSW] 1.85024000 GHz Temp 3 [T1 OSW] 1.85476000 GHz D1 11.9 dBm D2 -4.07 dBm Center 1.8525 GHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:12:23	 Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 1.40 dB *VBW 300 kHz SWT 5 ms 5.02000000 MHz OSW 4.54000000 MHz Marker 1 [T1] -1.28 dBm Temp 1 [T1 OSW] 1.85000000 GHz Temp 2 [T1 OSW] 1.85024000 GHz Temp 3 [T1 OSW] 1.85476000 GHz D1 11.9 dBm D2 -4.07 dBm Center 1.8525 GHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:12:41
Middle	 Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 2.50 dB *VBW 300 kHz SWT 5 ms 5.00000000 MHz OSW 4.52000000 MHz Marker 1 [T1] -1.14 dBm Temp 1 [T1 OSW] 1.88000000 GHz Temp 2 [T1 OSW] 1.88024000 GHz Temp 3 [T1 OSW] 1.88476000 GHz D1 13.1 dBm D2 -3.89 dBm Center 1.8825 GHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:12:55	 Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 1.40 dB *VBW 300 kHz SWT 5 ms 5.02000000 MHz OSW 4.54000000 MHz Marker 1 [T1] -1.28 dBm Temp 1 [T1 OSW] 1.88000000 GHz Temp 2 [T1 OSW] 1.88024000 GHz Temp 3 [T1 OSW] 1.88476000 GHz D1 13.1 dBm D2 -4.07 dBm Center 1.8825 GHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:13:09
Highest	 Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 0.55 dB *VBW 300 kHz SWT 5 ms 4.98000000 MHz OSW 4.52000000 MHz Marker 1 [T1] -1.25 dBm Temp 1 [T1 OSW] 1.91000000 GHz Temp 2 [T1 OSW] 1.91024000 GHz Temp 3 [T1 OSW] 1.91476000 GHz D1 13.0 dBm D2 -3.76 dBm Center 1.9125 GHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:13:27	 Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 1.93 dB *VBW 300 kHz SWT 5 ms 4.98000000 MHz OSW 4.52000000 MHz Marker 1 [T1] -1.24 dBm Temp 1 [T1 OSW] 1.91000000 GHz Temp 2 [T1 OSW] 1.91024000 GHz Temp 3 [T1 OSW] 1.91476000 GHz D1 12.8 dBm D2 -3.94 dBm Center 1.9125 GHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:13:45

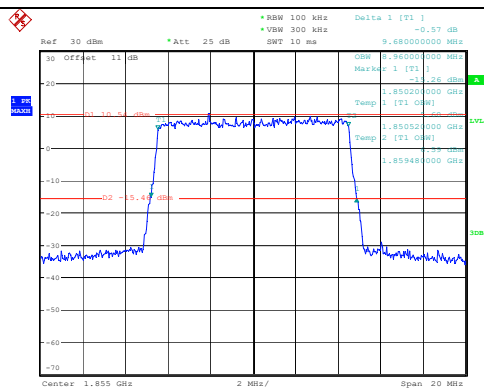
Occupied Bandwidth

Channel

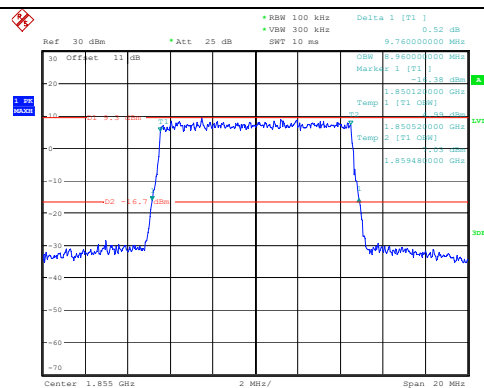
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

Lowest

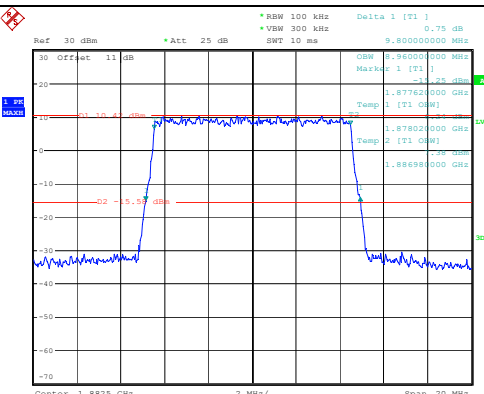


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:14:06

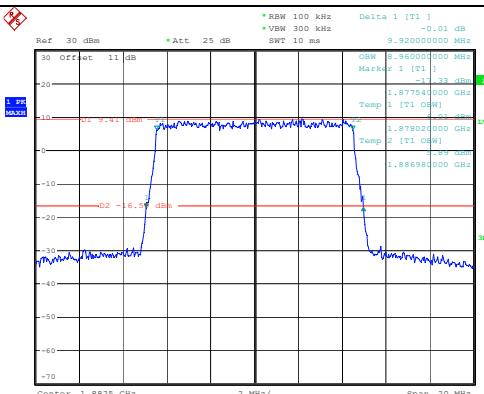


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:14:23

Middle

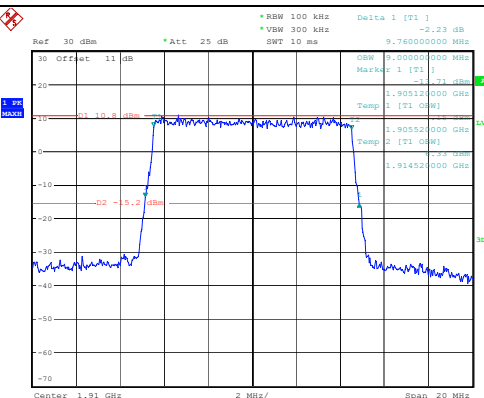


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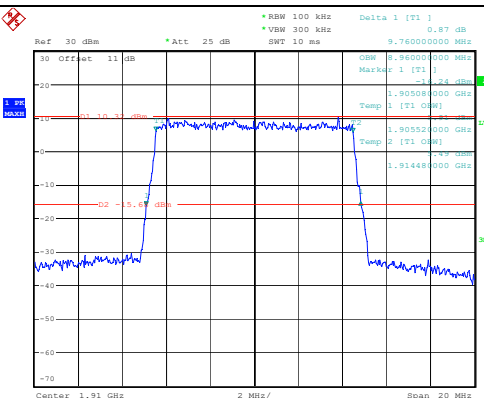


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:14:58

Highest



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:15:16



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:15:34

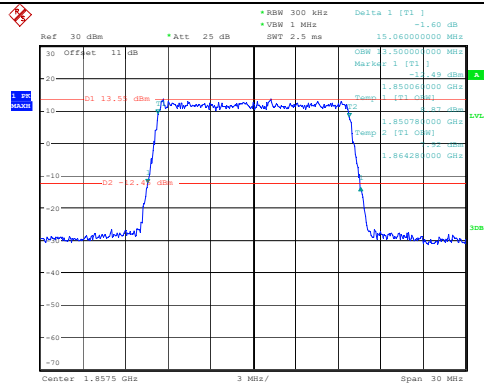
Occupied Bandwidth

Channel

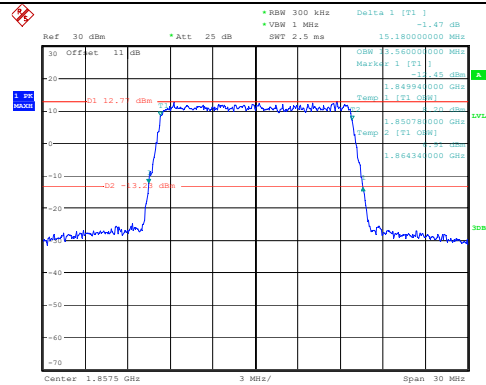
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

Lowest

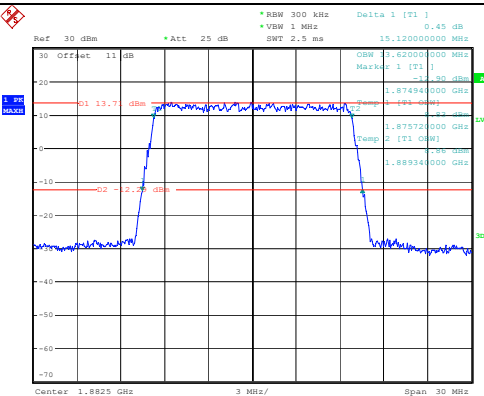


ProjectNo.:CR231061121 Tester:Rod Luo
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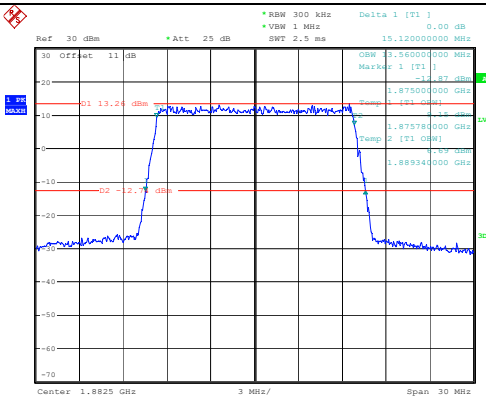


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:16:13

Middle

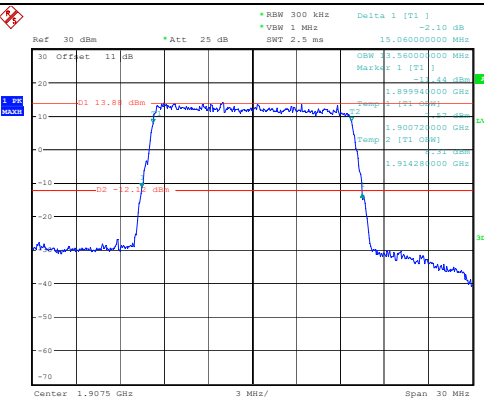


ProjectNo.:CR231061121 Tester:Rod Luo
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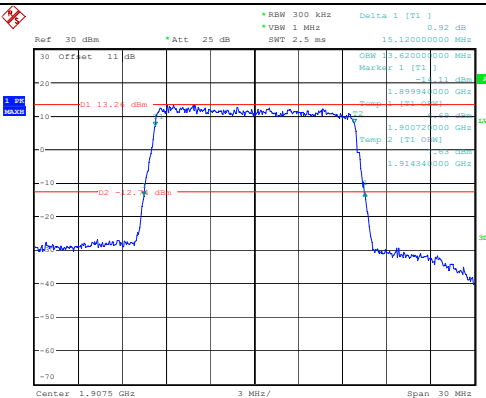


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:16:53

Highest



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:17:13



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:17:33

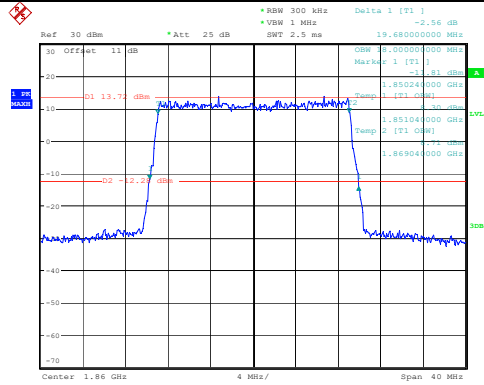
Occupied Bandwidth

Channel

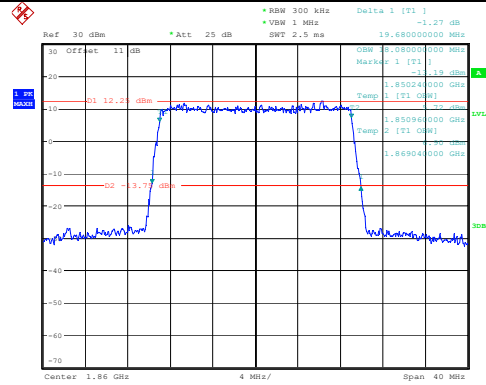
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

Lowest

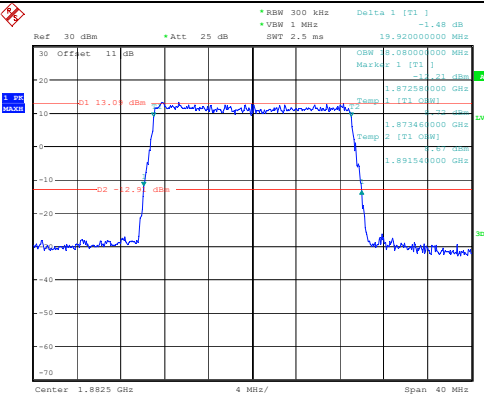


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:17:53

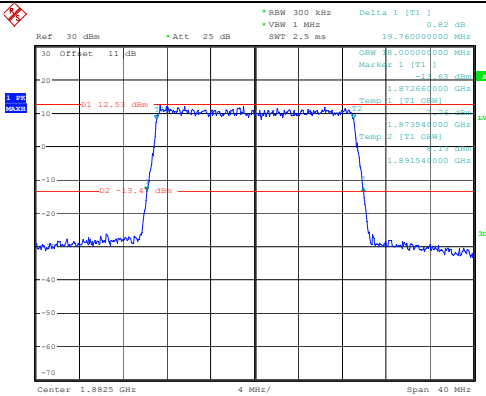


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:18:10

Middle

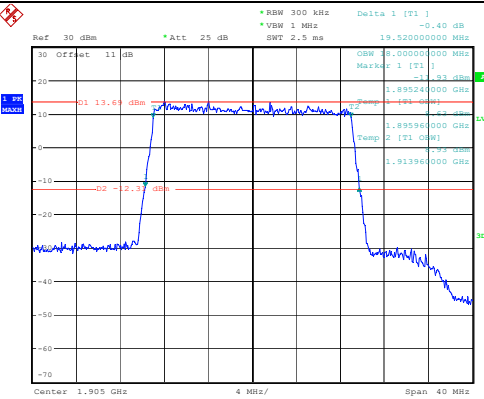


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:18:30

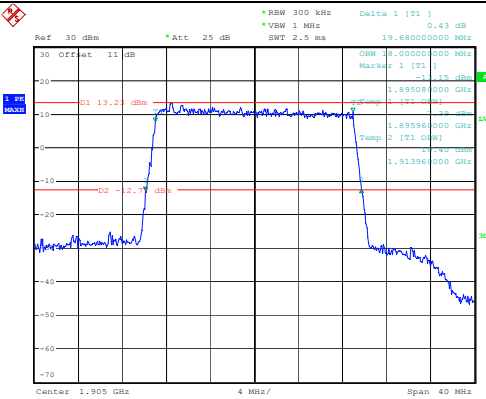


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:18:46

Highest



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:19:06



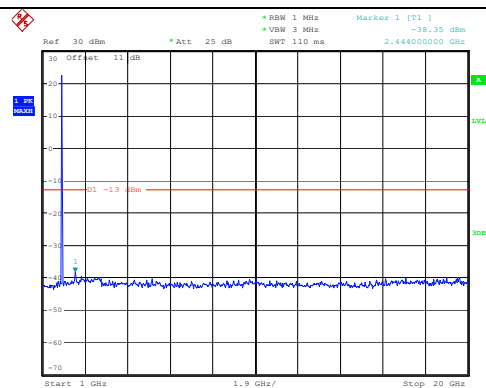
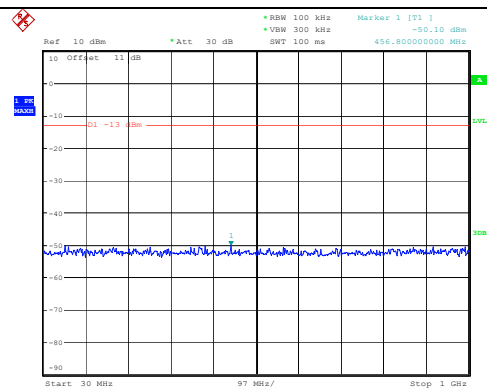
ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:19:26

Spurious Emissions at Antenna Terminal

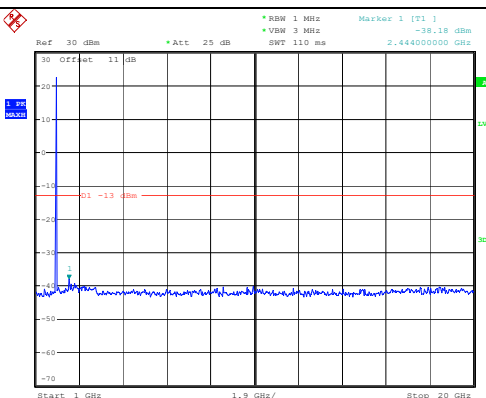
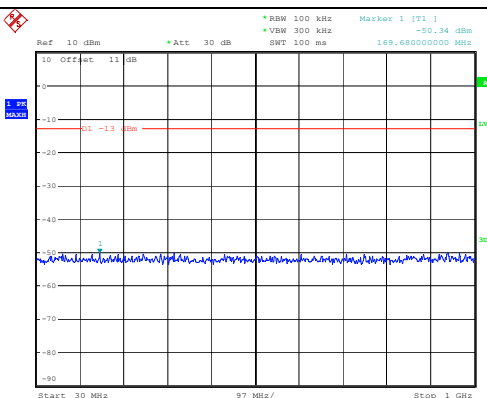
Channel

1.4MHz Bandwidth QPSK

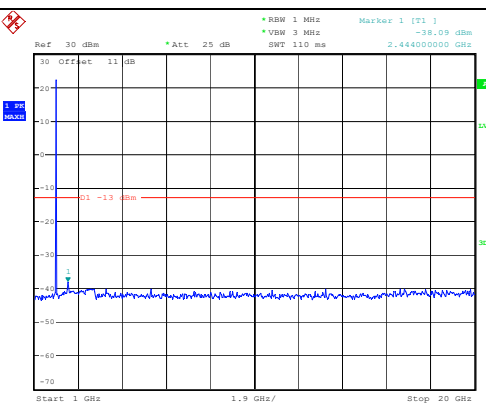
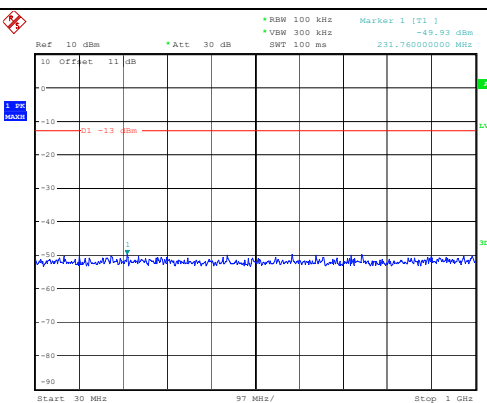
Lowest



Middle



Highest

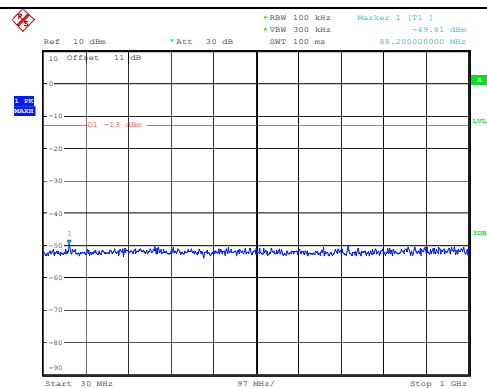


Spurious Emissions at Antenna Terminal

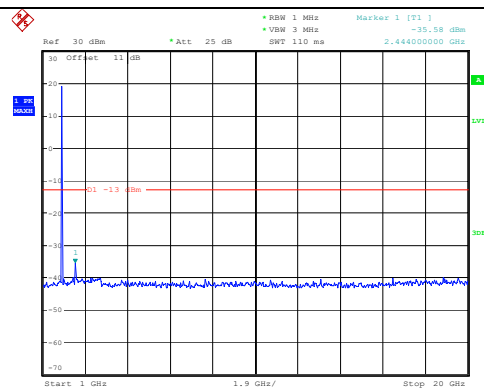
Channel

3MHz Bandwidth QPSK

Lowest

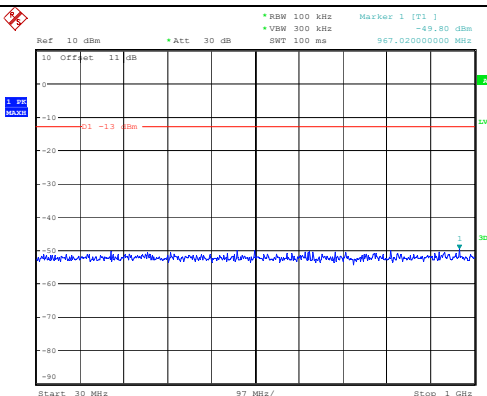


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:39:01

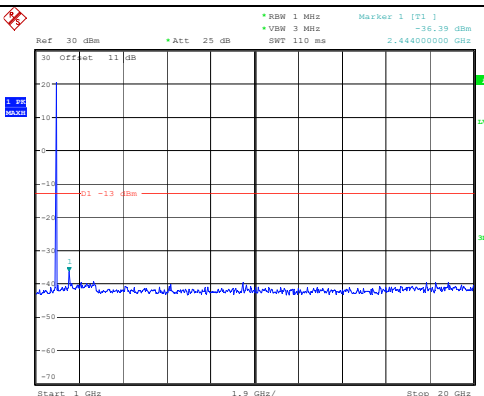


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:39:11

Middle

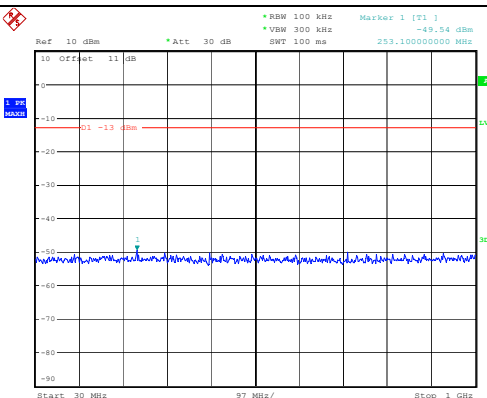


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:39:24

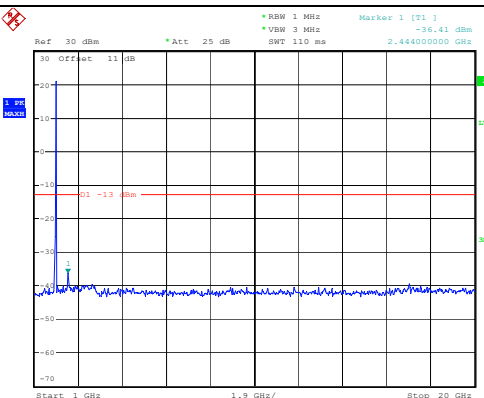


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:39:34

Highest



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:39:46



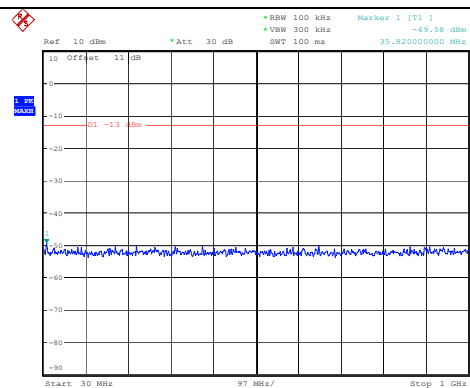
ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:39:56

Spurious Emissions at Antenna Terminal

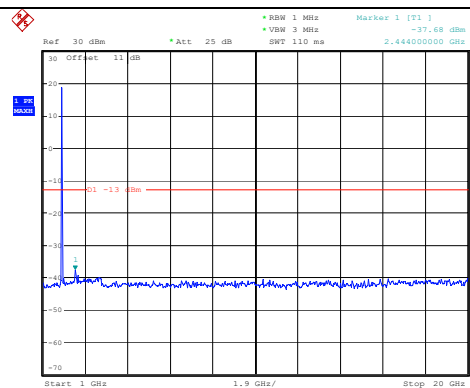
Channel

5MHz Bandwidth QPSK

Lowest

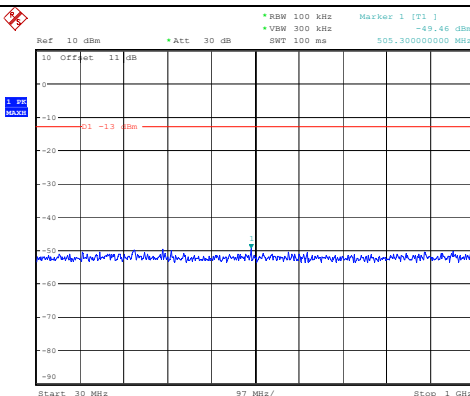


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:40:13

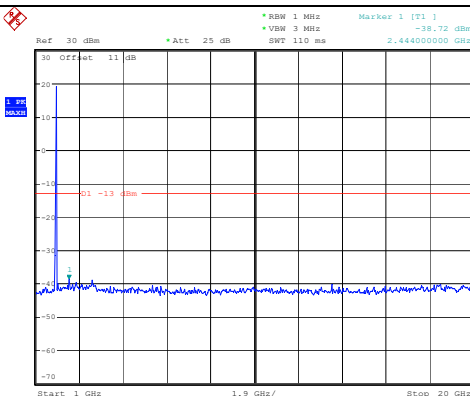


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:40:23

Middle

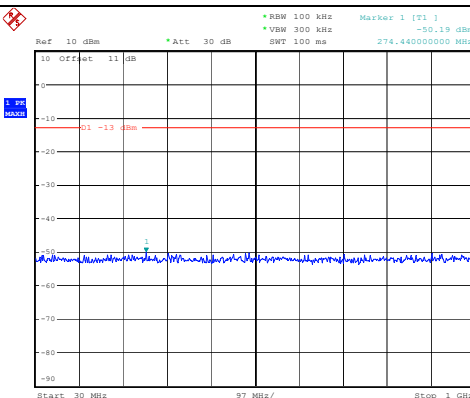


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:40:35

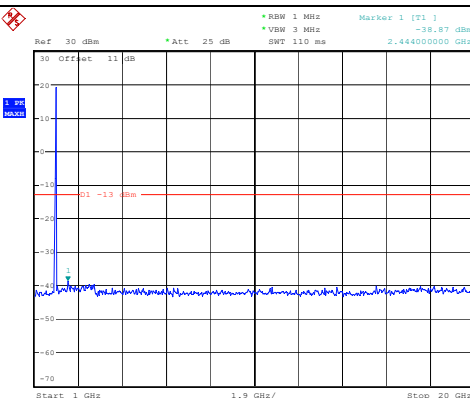


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:40:46

Highest

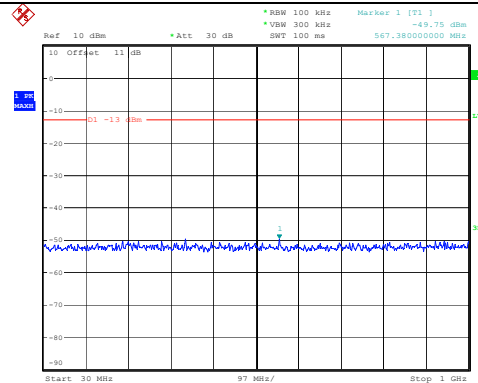
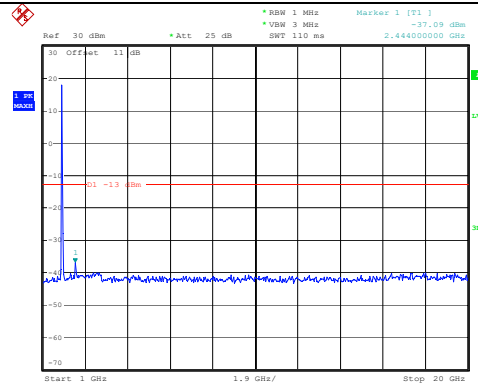
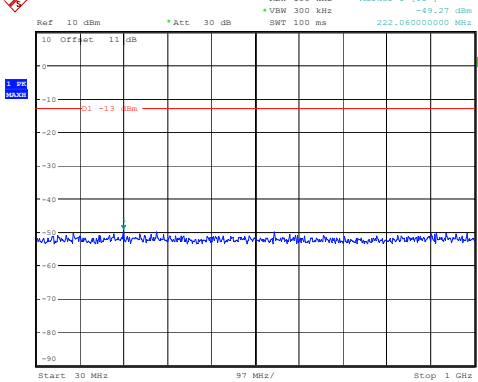
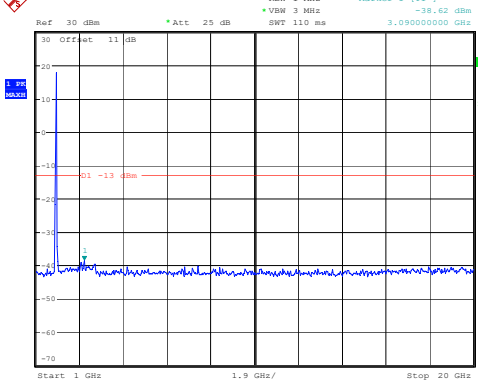
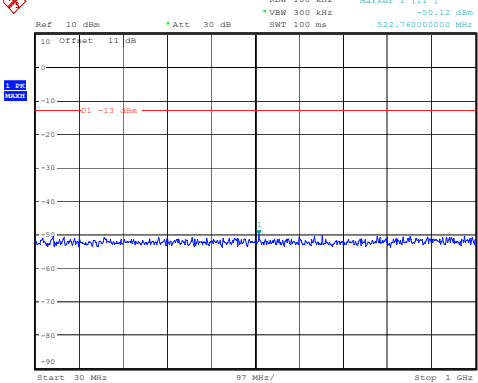
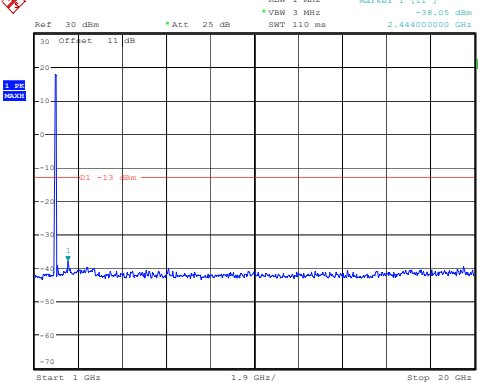


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:40:58



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:41:08

Spurious Emissions at Antenna Terminal

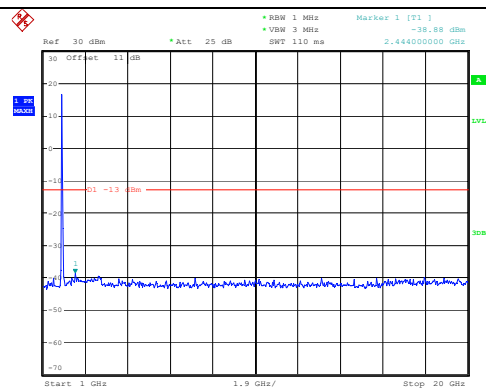
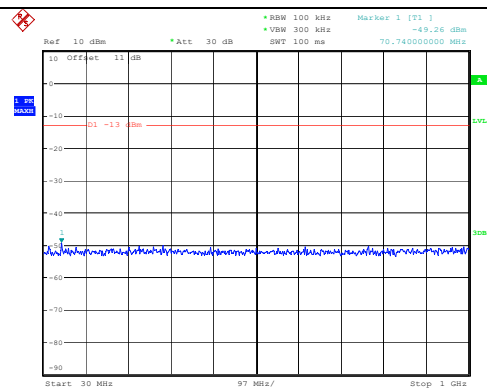
Channel	10 MHz Bandwidth QPSK	
Lowest	 Ref 10 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -49.75 dBm *VSW 300 kHz SWT 100 ms 567.380000000 MHz Start 30 MHz 97 MHz/ Stop 1 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:41:24	 Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] -37.09 dBm *VSW 3 MHz SWT 110 ms 2.444000000 GHz Start 1 GHz 1.9 GHz/ Stop 20 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:41:35
Middle	 Ref 10 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -49.27 dBm *VSW 300 kHz SWT 100 ms 222.060000000 MHz Start 30 MHz 97 MHz/ Stop 1 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:41:47	 Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] -38.62 dBm *VSW 3 MHz SWT 110 ms 3.990000000 GHz Start 1 GHz 1.9 GHz/ Stop 20 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:41:57
Highest	 Ref 10 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -50.12 dBm *VSW 300 kHz SWT 100 ms 522.760000000 MHz Start 30 MHz 97 MHz/ Stop 1 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:42:10	 Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] -38.05 dBm *VSW 3 MHz SWT 110 ms 2.444000000 GHz Start 1 GHz 1.9 GHz/ Stop 20 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:42:20

Spurious Emissions at Antenna Terminal

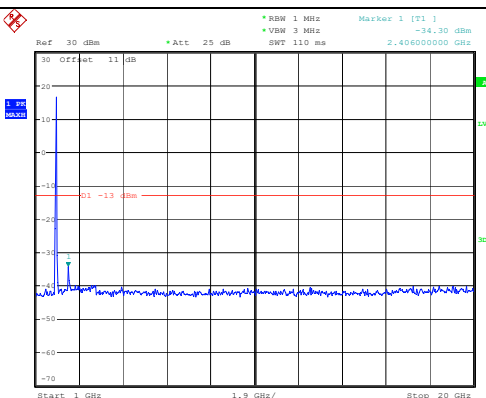
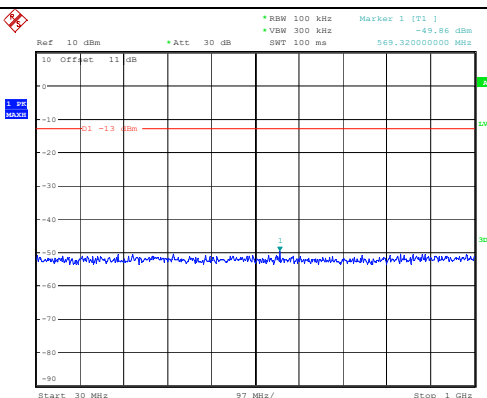
Channel

15MHz Bandwidth QPSK

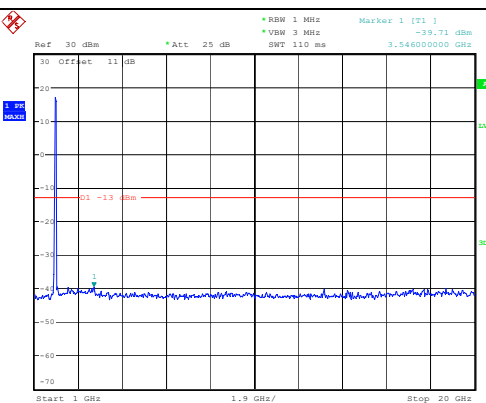
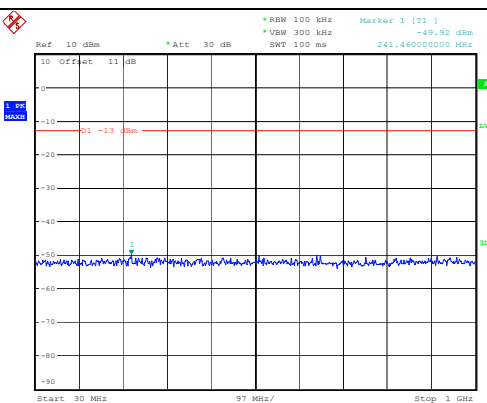
Lowest



Middle



Highest

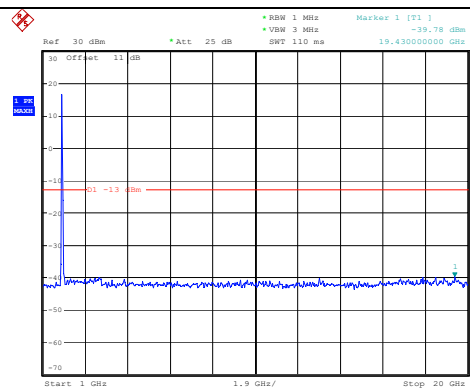
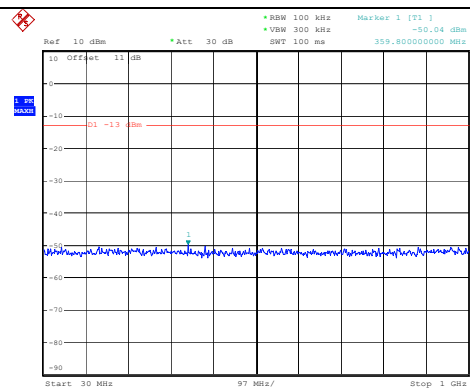


Spurious Emissions at Antenna Terminal

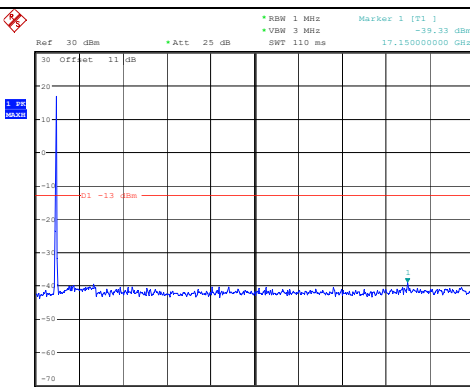
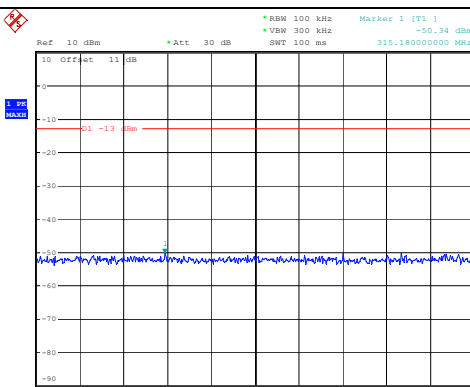
Channel

20MHz Bandwidth QPSK

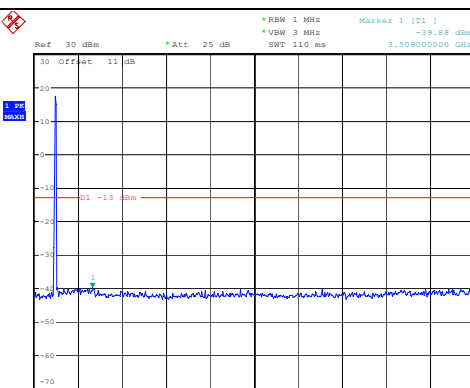
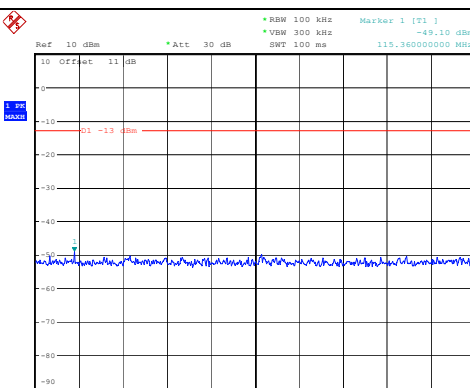
Lowest



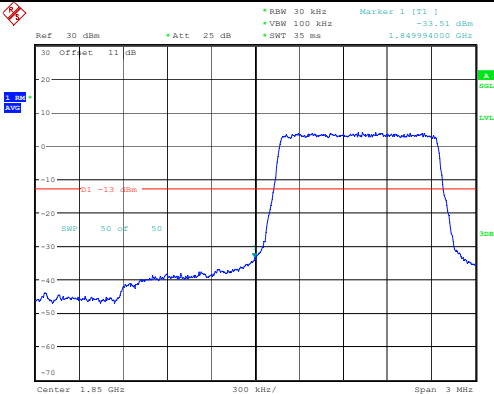
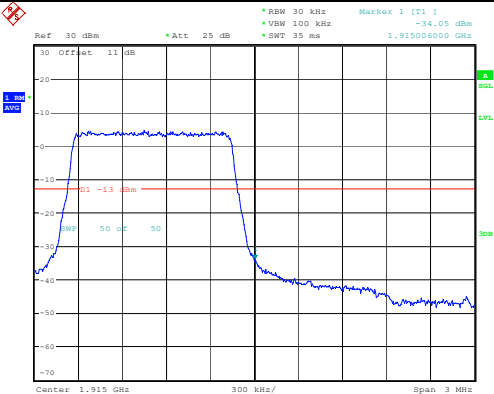
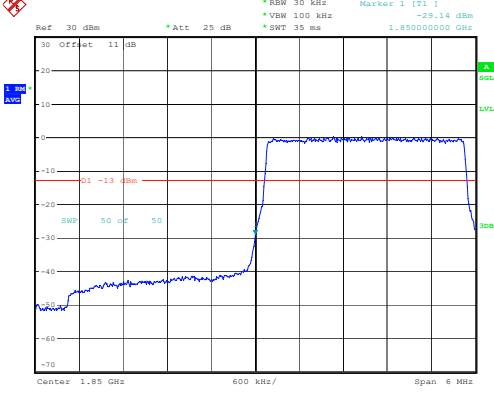
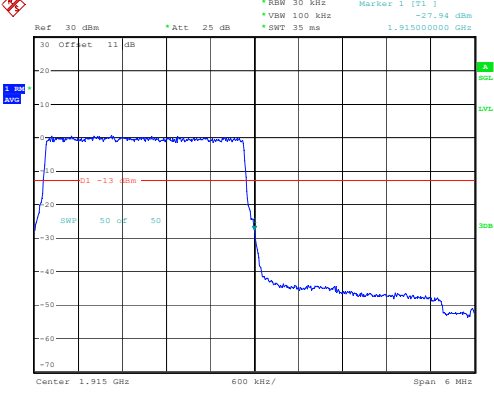
Middle



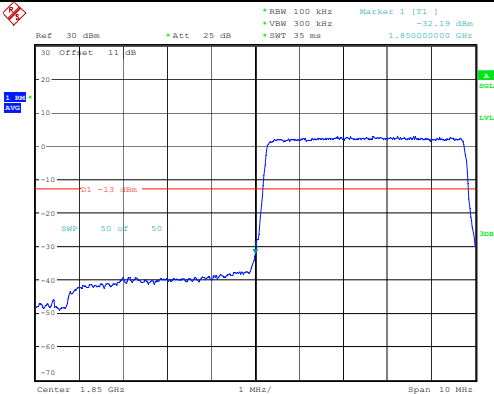
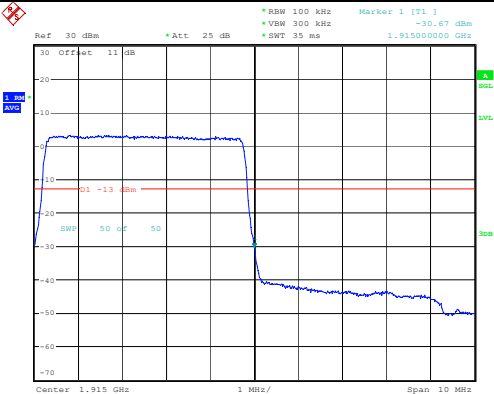
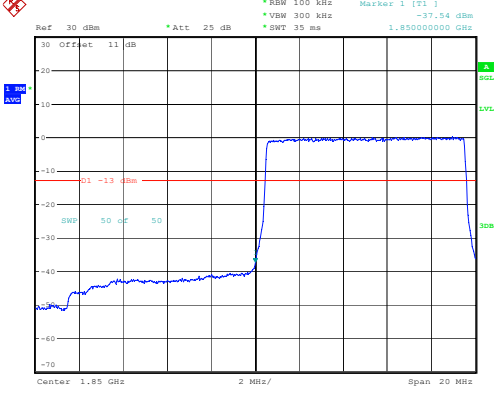
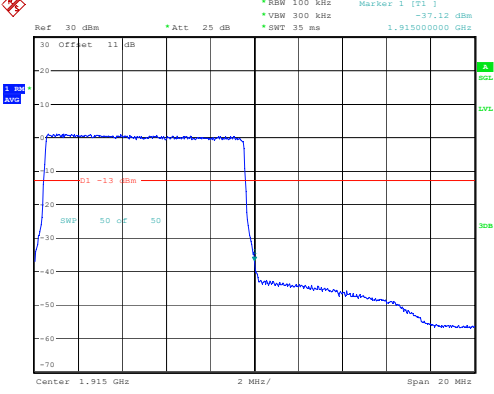
Highest



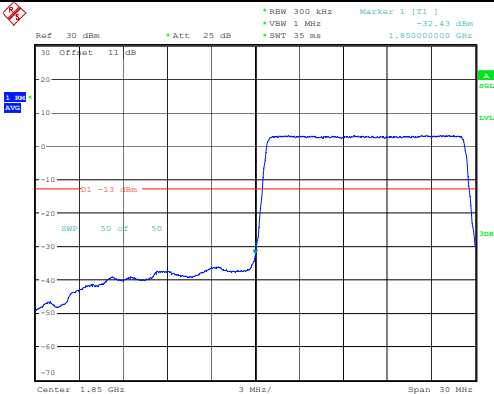
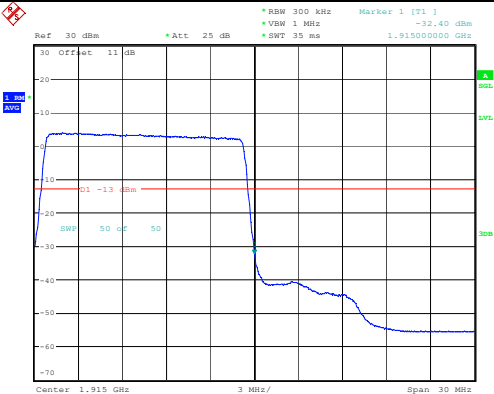
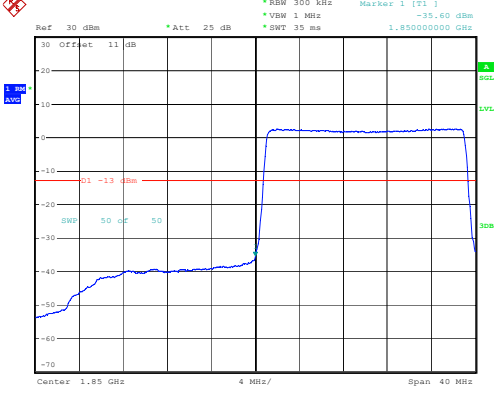
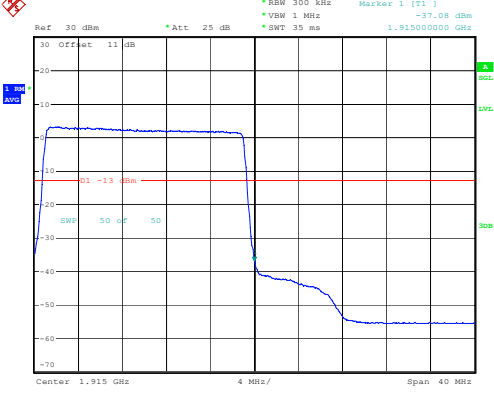
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz	 Ref: 30 dBm, Att: 25 dB, RBW: 30 kHz, VBW: 100 kHz, SWT: 35 ms, Marker 1 [T1]: 1.849994000 GHz, -29.51 dBm Offset: 11 dB, SWP: 50, 0, 50, 50 Center: 1.85 GHz, Span: 3 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:12:31	 Ref: 30 dBm, Att: 25 dB, RBW: 30 kHz, VBW: 100 kHz, SWT: 35 ms, Marker 1 [T1]: 1.915006000 GHz, -24.05 dBm Offset: 11 dB, SWP: 50, 0, 50, 50 Center: 1.915 GHz, Span: 3 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 27.NOV.2023 14:55:08
QPSK 3MHz	 Ref: 30 dBm, Att: 25 dB, RBW: 30 kHz, VBW: 100 kHz, SWT: 35 ms, Marker 1 [T1]: 1.850000000 GHz, -29.14 dBm Offset: 11 dB, SWP: 50, 0, 50, 50 Center: 1.85 GHz, Span: 6 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:13:11	 Ref: 30 dBm, Att: 25 dB, RBW: 30 kHz, VBW: 100 kHz, SWT: 35 ms, Marker 1 [T1]: 1.915000000 GHz, -27.94 dBm Offset: 11 dB, SWP: 50, 0, 50, 50 Center: 1.915 GHz, Span: 6 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:13:25

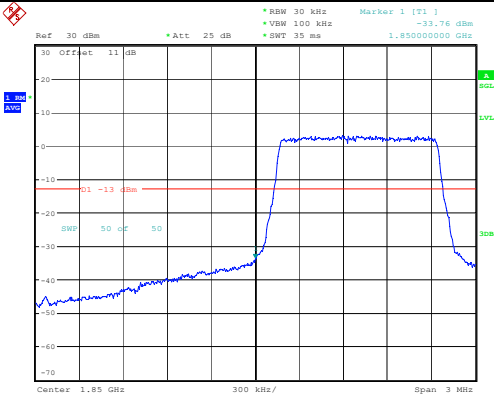
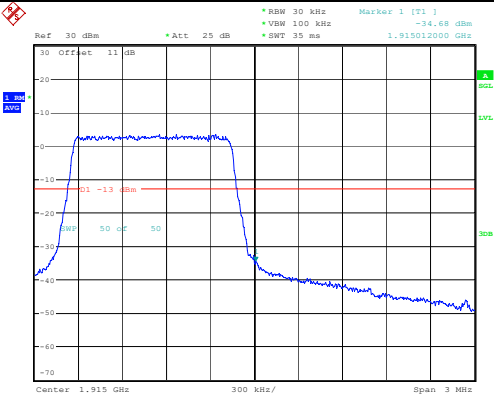
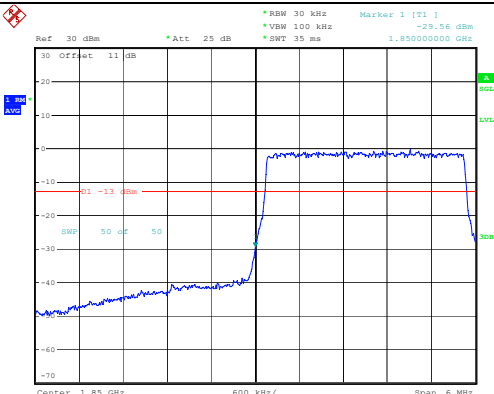
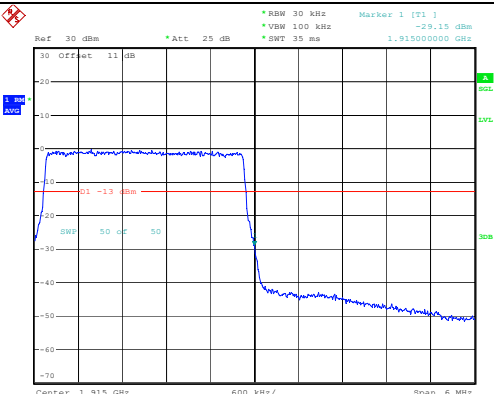
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 5MHz	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:13:42	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:13:55
QPSK 10MHz	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:14:13	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:14:28

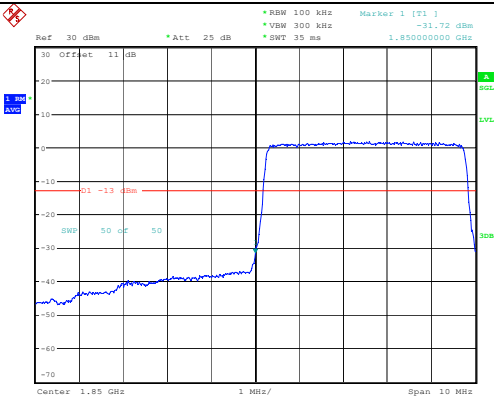
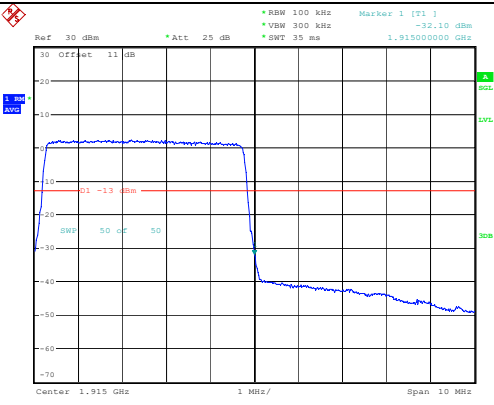
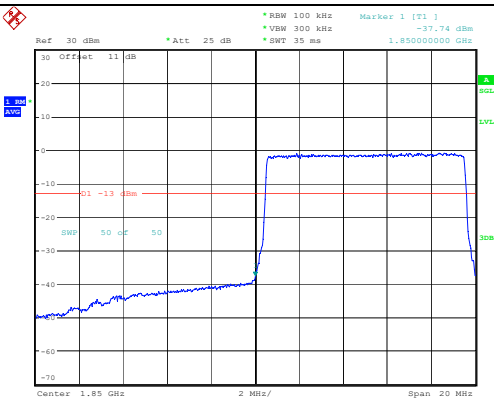
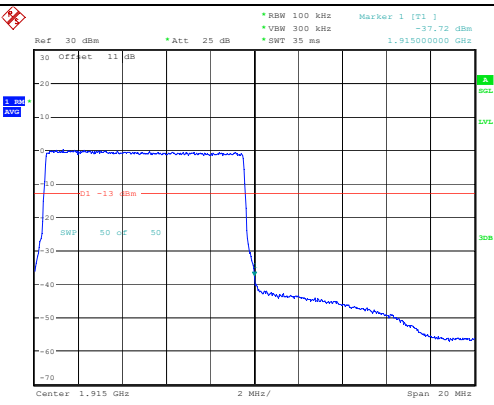
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 15MHz	 Ref: 30 dBm, Offset: 11 dB, Att: 25 dB, RBW: 300 kHz, VBW: 1 MHz, SWT: 35 ms, Marker 1 [T1]: -32.43 dBm, 1.850000000 GHz Center: 1.85 GHz, 3 MHz/, Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:14:46	 Ref: 30 dBm, Offset: 11 dB, Att: 25 dB, RBW: 300 kHz, VBW: 1 MHz, SWT: 35 ms, Marker 1 [T1]: -32.40 dBm, 1.915000000 GHz Center: 1.915 GHz, 3 MHz/, Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:14:58
QPSK 20MHz	 Ref: 30 dBm, Offset: 11 dB, Att: 25 dB, RBW: 300 kHz, VBW: 1 MHz, SWT: 35 ms, Marker 1 [T1]: -35.60 dBm, 1.850000000 GHz Center: 1.85 GHz, 4 MHz/, Span: 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:15:15	 Ref: 30 dBm, Offset: 11 dB, Att: 25 dB, RBW: 300 kHz, VBW: 1 MHz, SWT: 35 ms, Marker 1 [T1]: -37.08 dBm, 1.915000000 GHz Center: 1.915 GHz, 4 MHz/, Span: 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:15:27

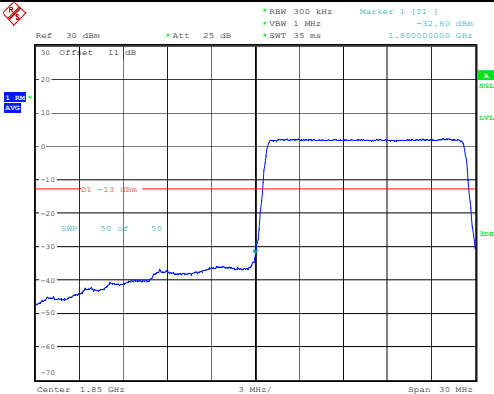
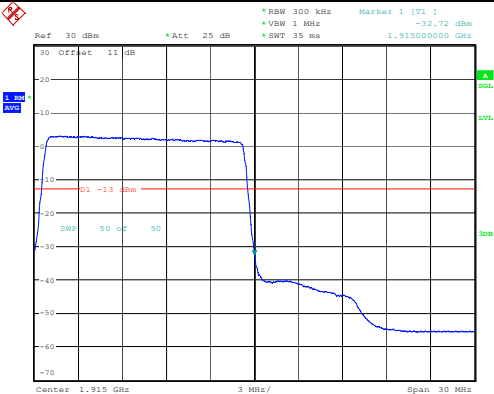
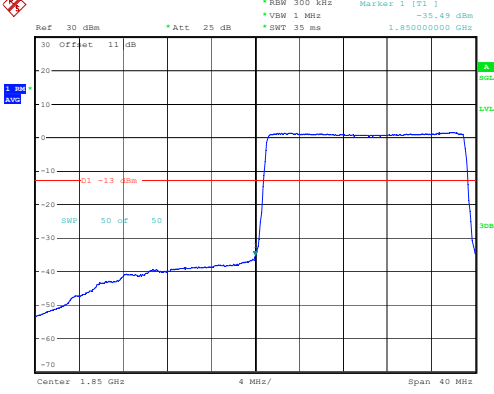
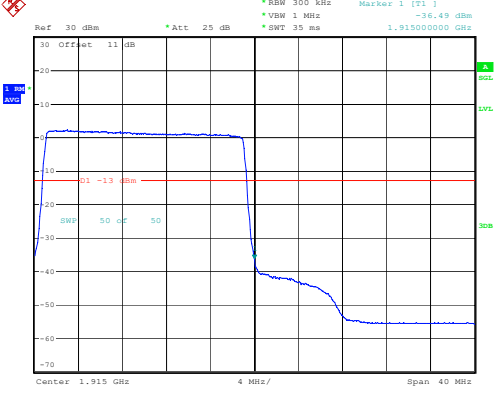
Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:12:37	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:13:02
16QAM 3MHz	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:13:17	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:13:32

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 5MHz	 Ref: 30 dBm Offset: 11 dB *RBW 100 kHz *VBW 300 kHz *SWT 35 ms Marker 1 [T1] -31.72 dBm 1.850000000 GHz Center: 1.85 GHz 1 MHz/ Span: 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:13:48	 Ref: 30 dBm Offset: 11 dB *RBW 100 kHz *VBW 300 kHz *SWT 35 ms Marker 1 [T1] -32.10 dBm 1.915000000 GHz Center: 1.915 GHz 1 MHz/ Span: 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:14:02
16QAM 10MHz	 Ref: 30 dBm Offset: 11 dB *RBW 100 kHz *VBW 300 kHz *SWT 35 ms Marker 1 [T1] -37.74 dBm 1.850000000 GHz Center: 1.85 GHz 2 MHz/ Span: 20 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:14:20	 Ref: 30 dBm Offset: 11 dB *RBW 100 kHz *VBW 300 kHz *SWT 35 ms Marker 1 [T1] -37.72 dBm 1.915000000 GHz Center: 1.915 GHz 2 MHz/ Span: 20 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:14:36

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 15MHz	 Ref: 30 dBm, Offset: 11 dB, Att: 25 dB, RBW: 300 kHz, VBW: 1 MHz, SWT: 35 ms, Marker 1 [T1]: -32.60 dBm, 1.850000000 GHz Center: 1.85 GHz, 3 MHz/, Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:14:51	 Ref: 30 dBm, Offset: 11 dB, Att: 25 dB, RBW: 300 kHz, VBW: 1 MHz, SWT: 35 ms, Marker 1 [T1]: -32.72 dBm, 1.915000000 GHz Center: 1.915 GHz, 3 MHz/, Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:15:04
16QAM 20MHz	 Ref: 30 dBm, Offset: 11 dB, Att: 25 dB, RBW: 300 kHz, VBW: 1 MHz, SWT: 35 ms, Marker 1 [T1]: -35.49 dBm, 1.850000000 GHz Center: 1.85 GHz, 4 MHz/, Span: 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:15:21	 Ref: 30 dBm, Offset: 11 dB, Att: 25 dB, RBW: 300 kHz, VBW: 1 MHz, SWT: 35 ms, Marker 1 [T1]: -36.49 dBm, 1.915000000 GHz Center: 1.915 GHz, 4 MHz/, Span: 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:15:33

4.14 Antenna Port Test Data and Results for LTE Band 26

Serial Number:	2CFR-2	Test Date:	2023/11/8
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rod Luo	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.6	Relative Humidity: (%)	43	ATM Pressure: (kPa)	101
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200120	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
Minl-Circuits	Power Splitter	ZFRSC-183-S+	S F448201619	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	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).*

Test Frequency for Each Mode:

Operation Bandwidth	Lowest Frequency For 90S (MHz)	Highest Frequency For 90S (MHz)	Channel Cross 90S and 22H	Lowest Frequency For 22H (MHz)	Middle Frequency For 22H (MHz)	Highest Frequency For 22H (MHz)
1.4MHz	814.7	823.3	824	824.7	831.5	848.3
3MHz	815.5	822.5	824	825.5	831.5	847.5
5MHz	816.5	821.5	824	826.5	831.5	846.5
10MHz	819	/	824	829	831.5	844
15MHz	821.5	/	824	831.5	836.5	841.5

Note: 15MHz bandwidth 821.5MHz cross Rules 90S and 22H.

4.14.1 Test Data for Part 90S:**FCC§2.1046; § 90.635****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel For 90S	Highest Channel For 90S	Cross Channel		
1.4MHz QPSK	RB1#0	23.9	24.03	24.24	17.12	50
	RB1#3	23.86	24.01	24.27		
	RB1#5	23.89	23.99	24.27		
	RB3#0	23.48	23.28	23.66		
	RB3#3	23.46	23.35	23.66		
	RB6#0	21.39	21.33	21.59		
1.4MHz 16QAM	RB1#0	22.55	23.45	23.79	16.77	50
	RB1#3	22.56	23.32	23.92		
	RB1#5	22.57	23.44	23.74		
	RB3#0	22.51	22.4	22.69		
	RB3#3	22.51	22.34	22.71		
	RB6#0	21.66	21.52	21.84		
3MHz QPSK	RB1#0	24	23.8	24.07	17.00	50
	RB1#8	24.01	23.8	24.15		
	RB1#14	24.05	23.83	24.09		
	RB6#0	21.45	21.28	21.72		
	RB6#9	21.53	21.36	21.62		
	RB15#0	21.41	21.43	21.65		
3MHz 16QAM	RB1#0	23.3	23.34	22.82	16.20	50
	RB1#8	23.27	23.23	22.84		
	RB1#14	23.35	23.22	22.86		
	RB6#0	21.68	21.4	21.87		
	RB6#9	21.71	21.31	21.89		
	RB15#0	21.48	21.41	21.74		
5MHz QPSK	RB1#0	23.9	23.82	24.15	17.00	50
	RB1#13	23.99	23.75	24.1		
	RB1#24	23.97	23.73	24.01		
	RB15#0	21.45	21.42	21.74		
	RB15#10	21.42	21.35	21.65		
	RB25#0	21.61	21.35	21.73		
5MHz 16QAM	RB1#0	22.68	22.14	23.22	16.10	50
	RB1#13	22.69	22.07	23.21		
	RB1#24	22.67	22.02	23.25		
	RB15#0	21.33	21.53	21.67		
	RB15#10	21.43	21.43	21.62		
	RB25#0	21.5	21.56	21.8		
10MHz QPSK	RB1#0	23.97	/	24.18	17.03	50

	RB1#25	23.98	/	24.18		
	RB1#49	23.83	/	24.02		
	RB25#0	21.95	/	22.18		
	RB25#25	21.91	/	22.06		
	RB50#0	22.04	/	22.2		
10MHz 16QAM	RB1#0	23.74	/	22.73	16.59	50
	RB1#25	23.65	/	22.77		
	RB1#49	23.6	/	22.57		
	RB25#0	22.17	/	22.44		
	RB25#25	22	/	22.33		
	RB50#0	22.06	/	22.27		
15MHz QPSK	RB1#0	24.08	/	24.08	16.93	50
	RB1#38	24	/	24		
	RB1#74	23.78	/	23.78		
	RB36#0	22.2	/	22.2		
	RB36#39	22.1	/	22.1		
	RB75#0	22.09	/	22.09		
15MHz 16QAM	RB1#0	23.4	/	23.4	16.25	50
	RB1#38	23.27	/	23.27		
	RB1#74	23.12	/	23.12		
	RB36#0	22.35	/	22.35		
	RB36#39	22.26	/	22.26		
	RB75#0	22.24	/	22.24		

Note:

ERP= Conducted Power(dBm) - Lc(dB) + Gr(dBd)

Gr(dBd)=Gr(dBi)-2.15

Result:

Pass

FCC §2.1049, §90.209: Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Lowest For 90S	Highest For 90S	Cross	Lowest For 90S	Highest For 90S	Cross
1.4MHz QPSK	1.104	1.104	1.104	1.260	1.260	1.260
1.4MHz 16QAM	1.104	1.098	1.092	1.266	1.248	1.254
3MHz QPSK	2.700	2.700	2.700	3.000	2.988	3.000
3MHz 16QAM	2.700	2.700	2.687	3.012	3.012	3.024
5MHz QPSK	4.520	4.520	4.520	5.000	5.000	4.980
5MHz 16QAM	4.540	4.520	4.560	5.000	4.980	5.020
10MHz QPSK	8.960	/	8.960	9.720	/	9.800
10MHz 16QAM	9.000	/	8.960	9.840	/	9.840
15MHz QPSK	13.560	/	13.560	15.060	/	15.120
15MHz 16QAM	13.560	/	13.620	15.060	/	15.120

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

FCC §2.1051, §90.691: Spurious Emissions at Antenna Terminal

Result:	Pass, please refer to the test plots of Spurious Emissions at Antenna Terminal.
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FCC §2.1051, §90.691: Out of band emission, Band Edge

Result:	Pass, please refer to the test plots of Out of band emission, Band Edge.
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FCC §2.1055, §90.213: Frequency Stability

Test Modulation:	15 MHz QPSK		Test Channel:	821.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.85	103.569	0.126	2.5
	-20	3.85	98.127	0.119	2.5
	-10	3.85	99.021	0.121	2.5
	0	3.85	104.304	0.127	2.5
	10	3.85	100.802	0.123	2.5
	20	3.85	95.792	0.117	2.5
	30	3.85	108.108	0.132	2.5
	40	3.85	105.864	0.129	2.5
	50	3.85	99.915	0.122	2.5
Frequency Stability vs. Voltage	20	3.5	103.287	0.126	2.5
	20	4.4	107.399	0.131	2.5
Result:				Pass	

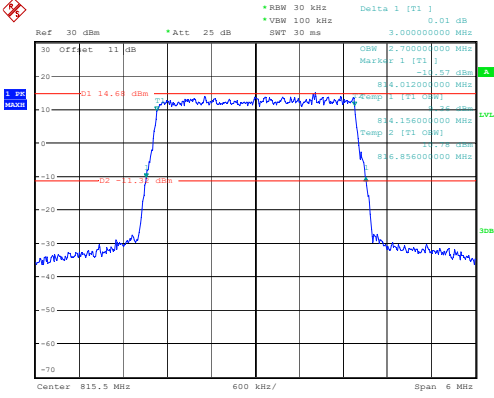
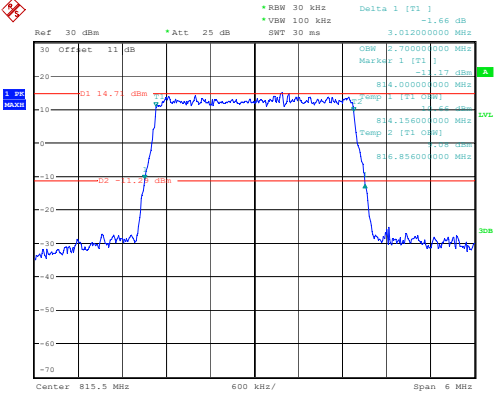
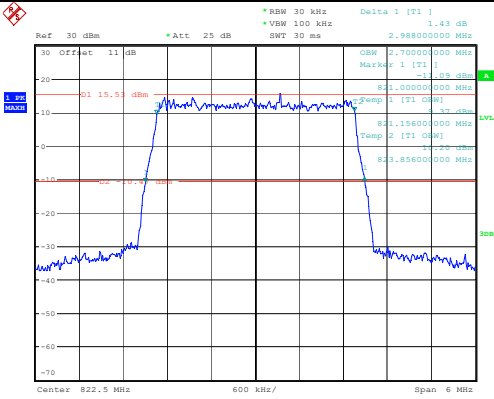
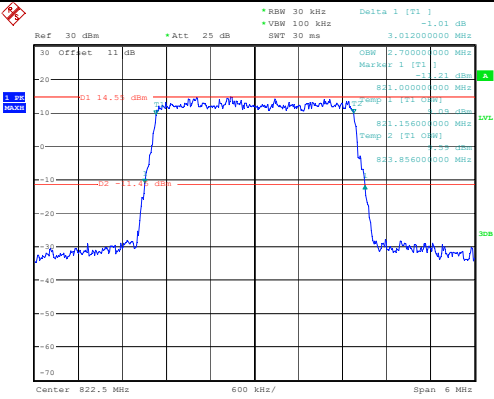
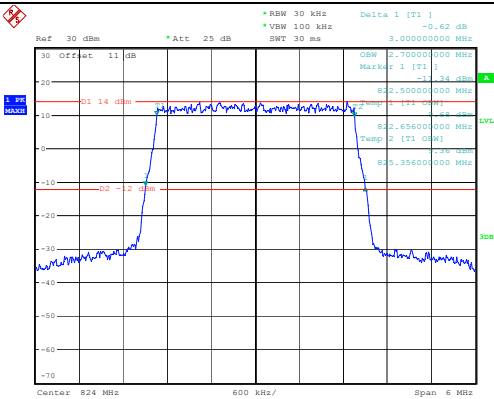
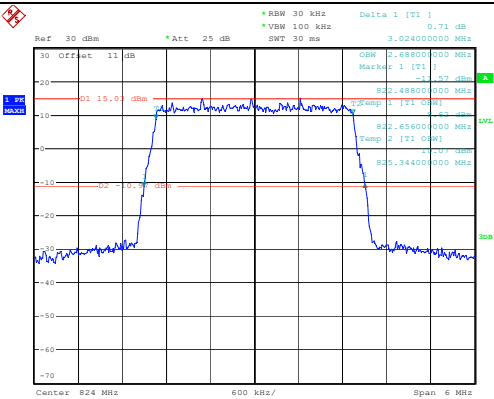
FCC §2.1055, §90.213: Frequency Stability

Test Modulation:	15 MHz 16QAM		Test Channel:	821.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.85	116.834	0.142	2.5
	-20	3.85	109.630	0.133	2.5
	-10	3.85	109.116	0.133	2.5
	0	3.85	102.318	0.125	2.5
	10	3.85	117.091	0.143	2.5
	20	3.85	104.076	0.127	2.5
	30	3.85	101.930	0.124	2.5
	40	3.85	102.001	0.124	2.5
	50	3.85	113.446	0.138	2.5
Frequency Stability vs. Voltage	20	3.5	107.836	0.131	2.5
	20	4.4	115.175	0.140	2.5
Result:				Pass	

(Note: The 10.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

Channel	1.4MHz Bandwidth QPSK	1.4MHz Bandwidth 16QAM
Lowest For 90S	ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 09:17:33	ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 09:19:19
Highest For 90S	ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 09:20:09	ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 09:20:26
Cross Channel	ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 13:33:26	ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 13:33:42

Occupied Bandwidth

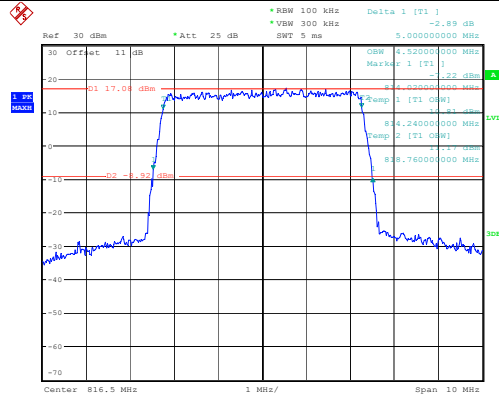
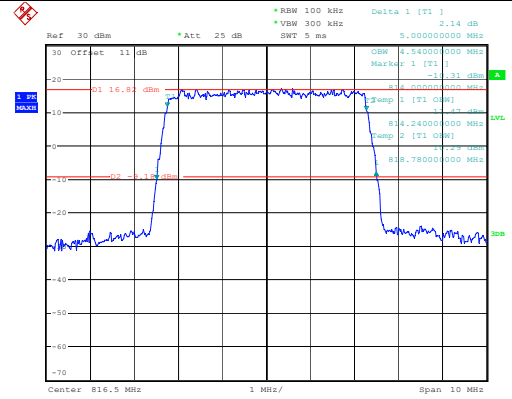
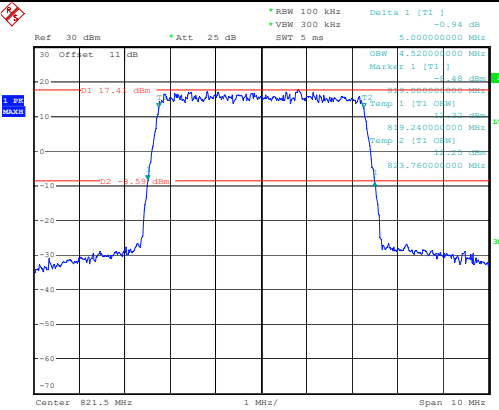
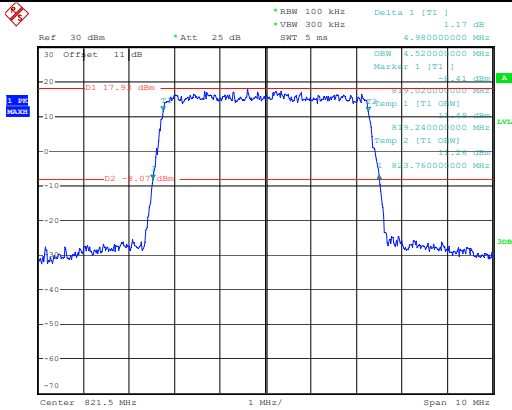
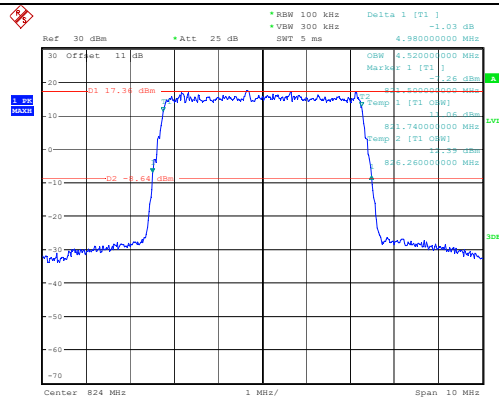
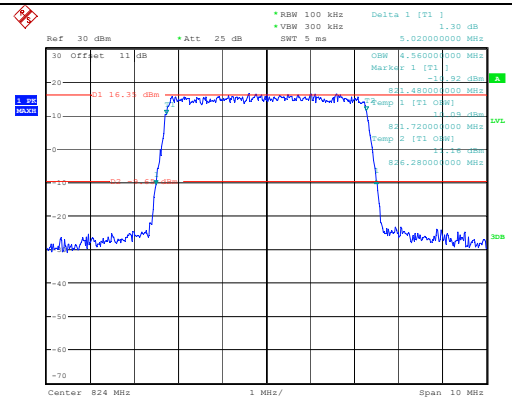
Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest For 90S	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 09:20:43	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 09:21:00
Highest For 90S	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 09:21:46	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 09:22:00
Cross Channel	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 13:35:03	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 13:35:17

Occupied Bandwidth

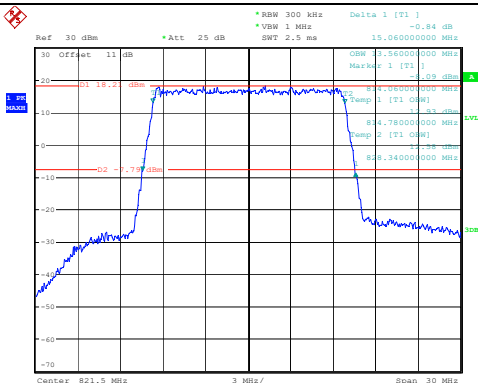
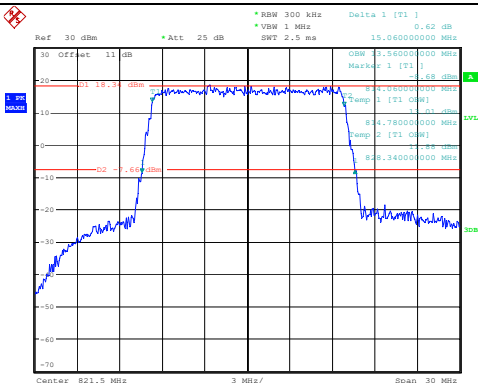
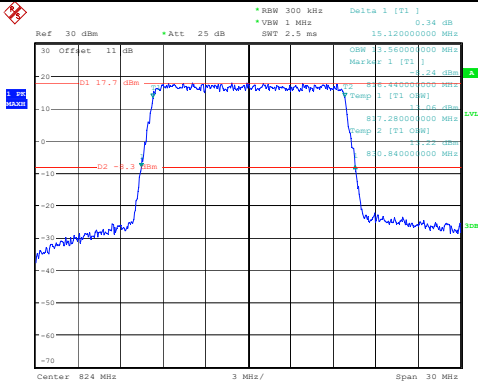
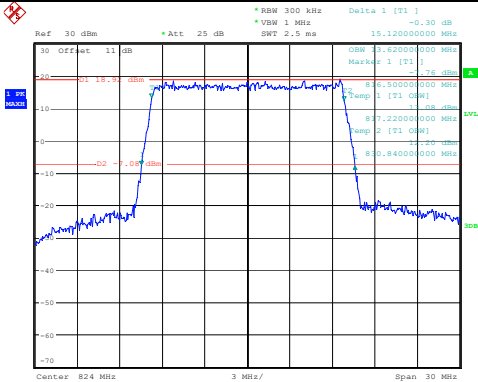
Channel

5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

Lowest
For 90SProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:22:21ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:22:38Highest
For 90SProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:23:29ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:23:43Cross
ChannelProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:36:40ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:36:54

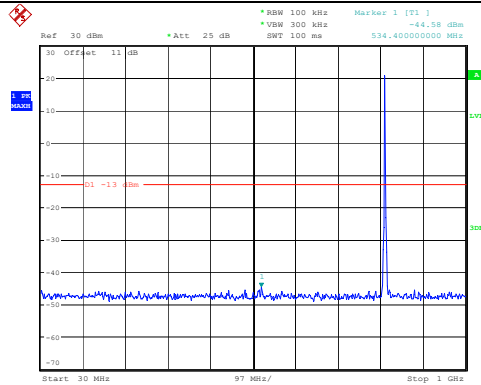
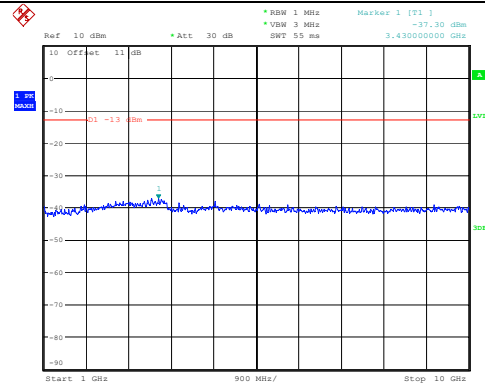
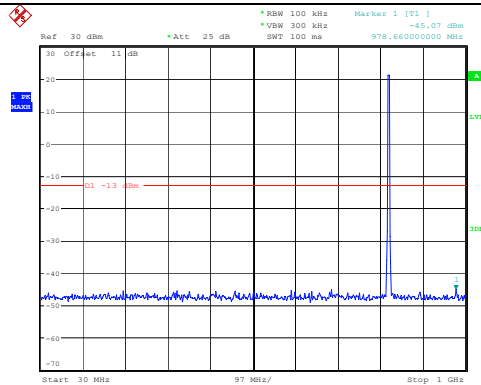
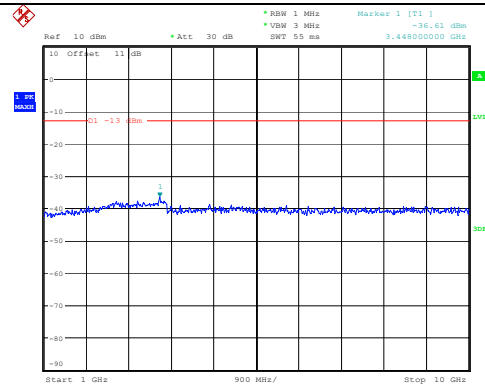
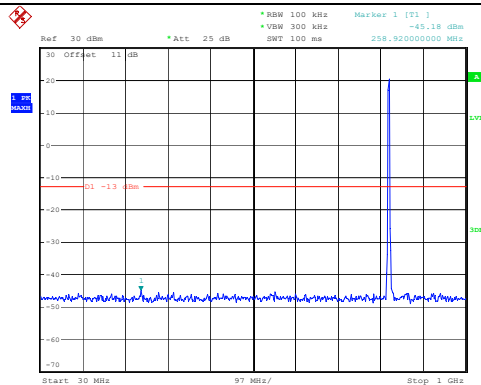
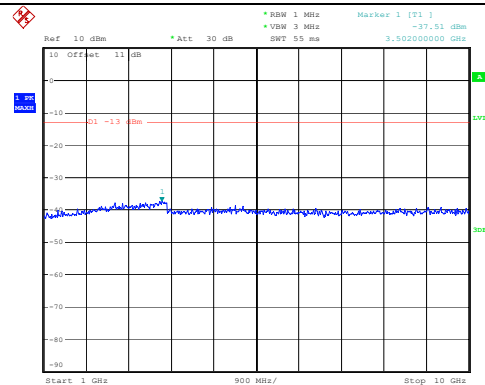
Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Middle For 90S	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 13:39:34	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 13:39:48
Cross Channel	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 13:40:05	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 13:40:21

Spurious Emissions at Antenna Terminal

Channel

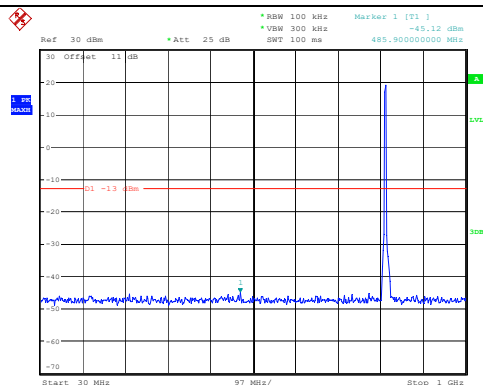
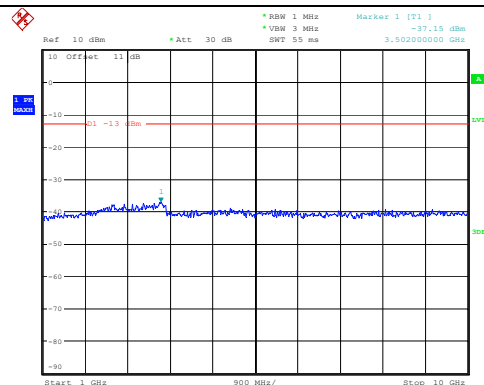
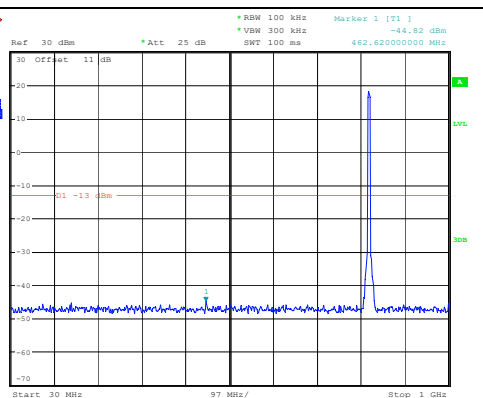
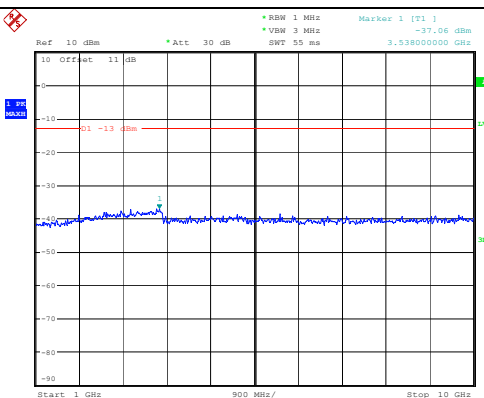
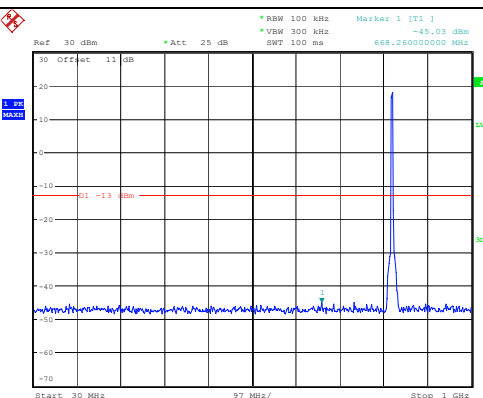
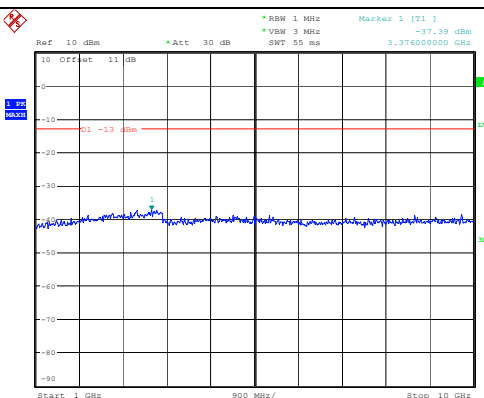
1.4MHz Bandwidth QPSK

Lowest
For 90SProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:39:34ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:39:45Highest
For 90SProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:40:20ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:40:30Cross
ChannelProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:42:29ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:42:40

Spurious Emissions at Antenna Terminal

Channel

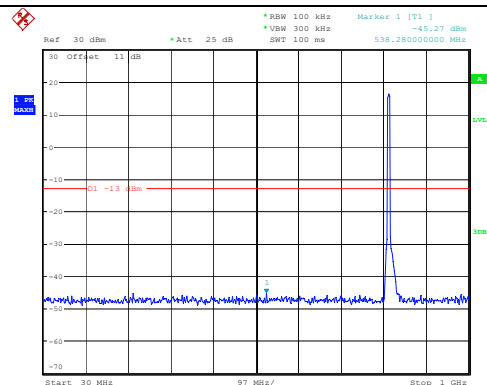
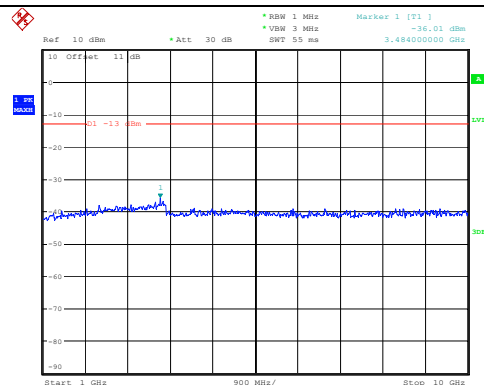
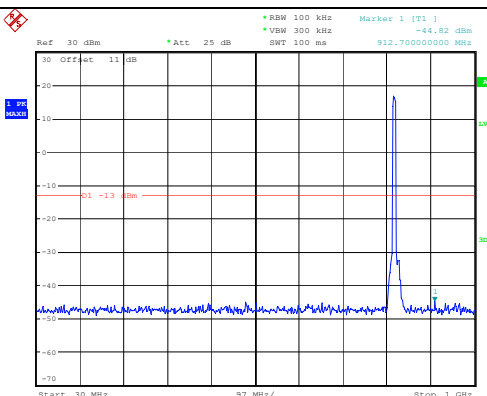
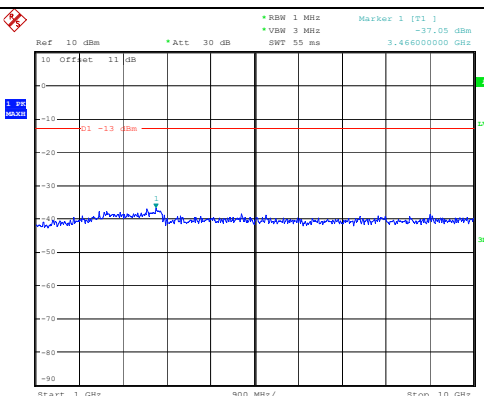
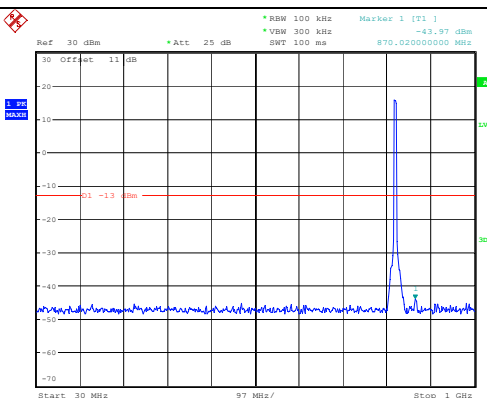
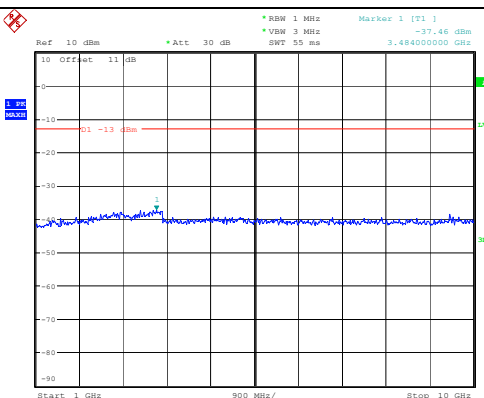
3MHz Bandwidth QPSK

Lowest
For 90SProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:40:49ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:40:59Highest
For 90SProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:41:37ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:41:51Cross
ChannelProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:43:45ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:43:55

Spurious Emissions at Antenna Terminal

Channel

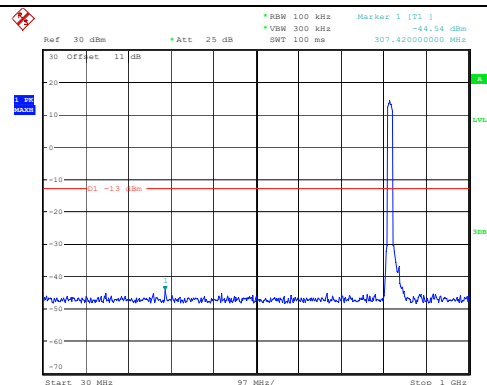
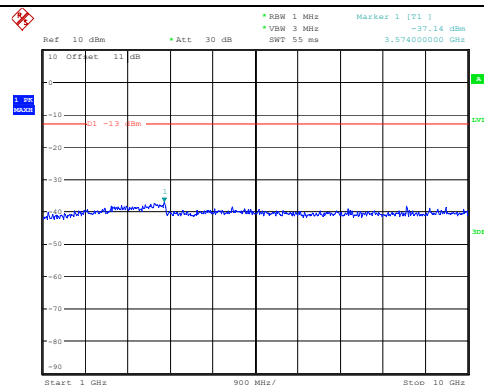
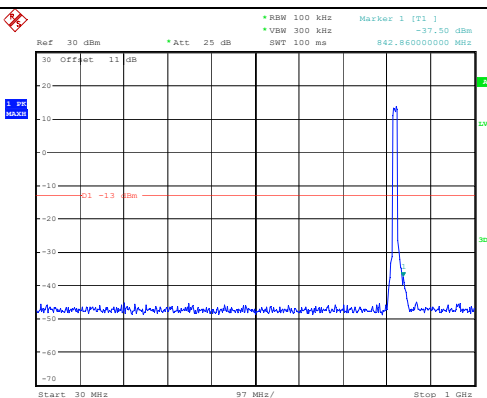
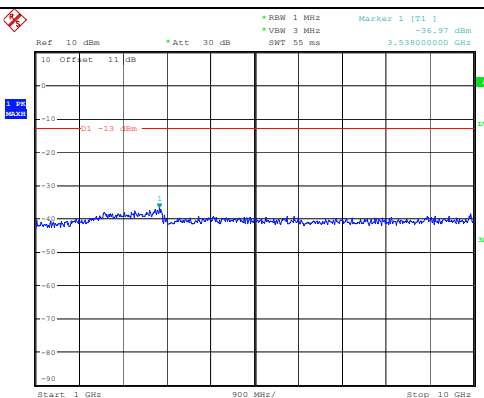
5MHz Bandwidth QPSK

Lowest
For 90SProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:42:06ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:42:17Highest
For 90SProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:42:55ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:43:06Cross
ChannelProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:45:02ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:45:12

Spurious Emissions at Antenna Terminal

Channel

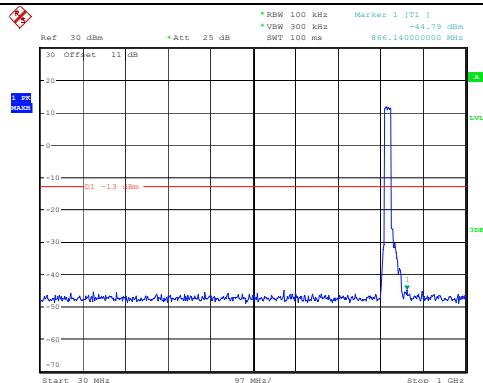
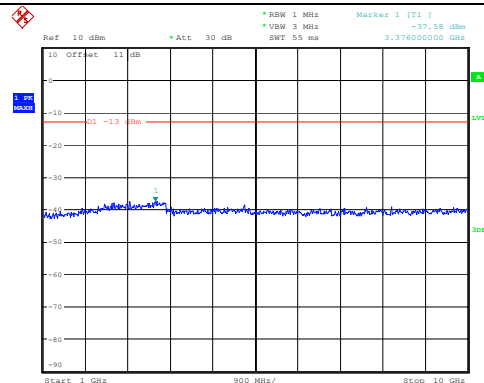
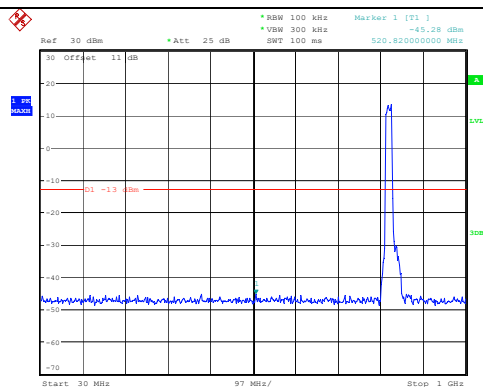
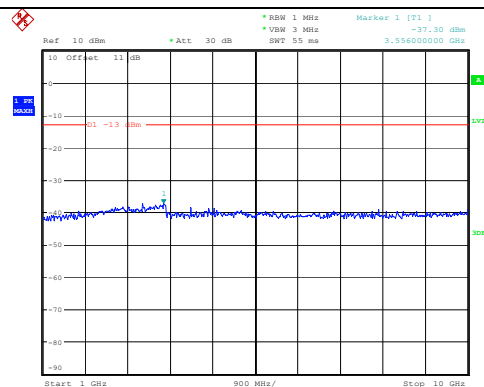
10MHz Bandwidth QPSK

Lowest
For 90SProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:43:24ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 09:43:38Cross
ChannelProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:46:13ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:46:23

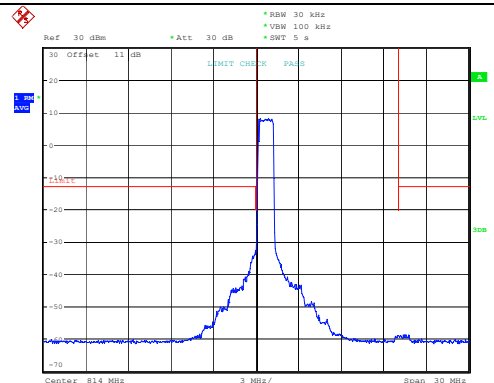
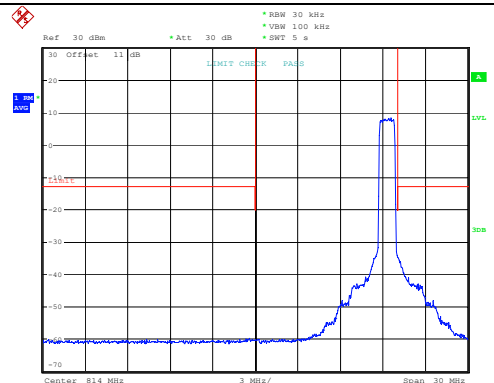
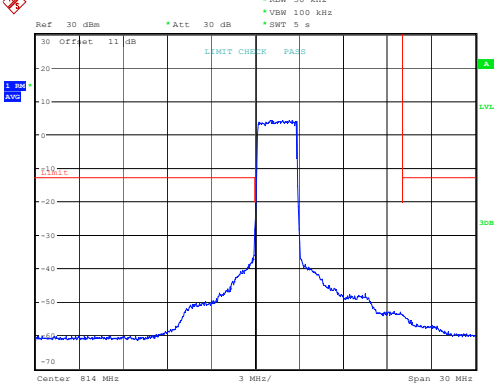
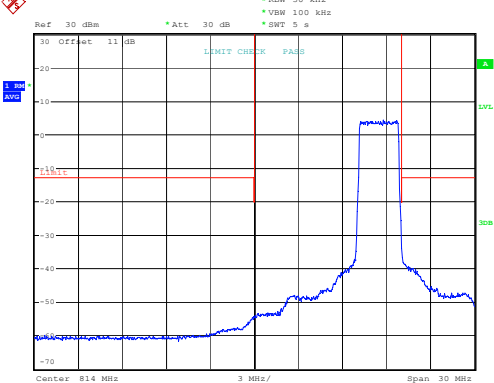
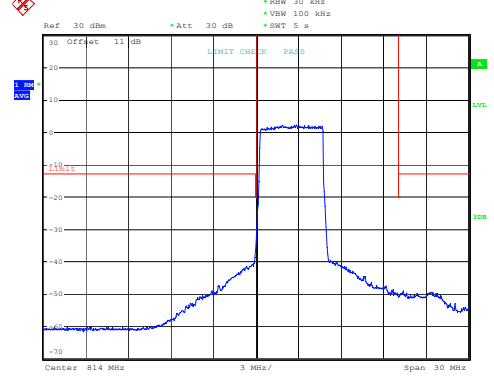
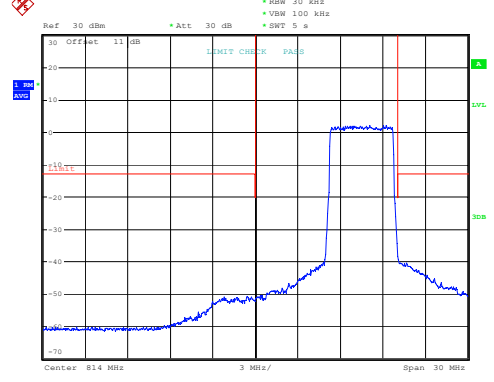
Spurious Emissions at Antenna Terminal

Channel

15MHz Bandwidth QPSK

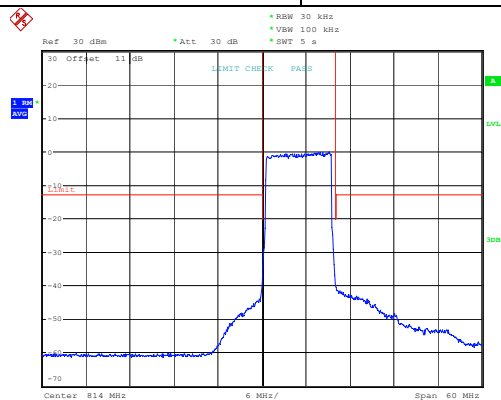
Lowest
For 90SProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:47:02ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:47:12Cross
ChannelProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:47:28ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 13:47:38

Out of band emission, Band Edge

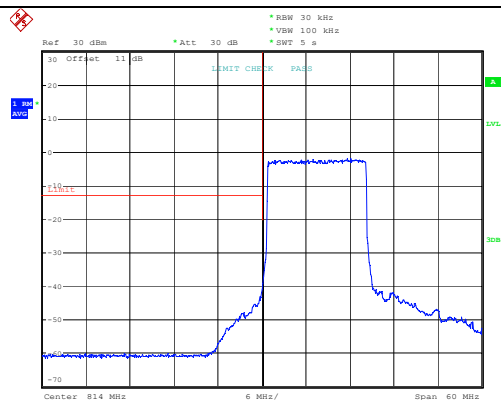
Mode	Lowest	Highest
QPSK 1.4MHz For 90S	 Ref: 30 dBm *Att: 30 dB *RBW 30 kHz *VSW 100 kHz *SWT 5 s 30 Offset 11 dB LIMIT CHECK PASS Center 814 MHz 3 MHz/ Span 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 11:32:56	 Ref: 30 dBm *Att: 30 dB *RBW 30 kHz *VSW 100 kHz *SWT 5 s 30 Offset 11 dB LIMIT CHECK PASS Center 814 MHz 3 MHz/ Span 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 11:34:05
QPSK 3MHz For 90S	 Ref: 30 dBm *Att: 30 dB *RBW 30 kHz *VSW 100 kHz *SWT 5 s 30 Offset 11 dB LIMIT CHECK PASS Center 814 MHz 3 MHz/ Span 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 11:31:38	 Ref: 30 dBm *Att: 30 dB *RBW 30 kHz *VSW 100 kHz *SWT 5 s 30 Offset 11 dB LIMIT CHECK PASS Center 814 MHz 3 MHz/ Span 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 11:29:47
QPSK 5MHz For 90S	 Ref: 30 dBm *Att: 30 dB *RBW 30 kHz *VSW 100 kHz *SWT 5 s 30 Offset 11 dB LIMIT CHECK PASS Center 814 MHz 3 MHz/ Span 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 11:35:56	 Ref: 30 dBm *Att: 30 dB *RBW 30 kHz *VSW 100 kHz *SWT 5 s 30 Offset 11 dB LIMIT CHECK PASS Center 814 MHz 3 MHz/ Span 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 11:37:26

Out of band emission, Band Edge

Mode

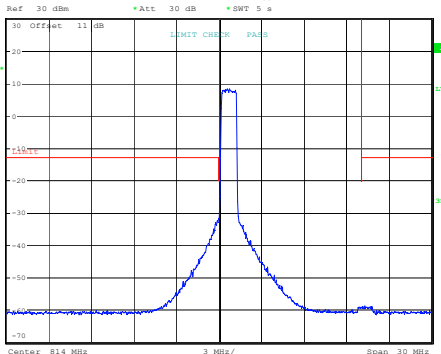
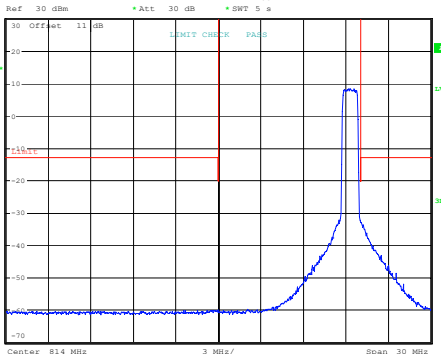
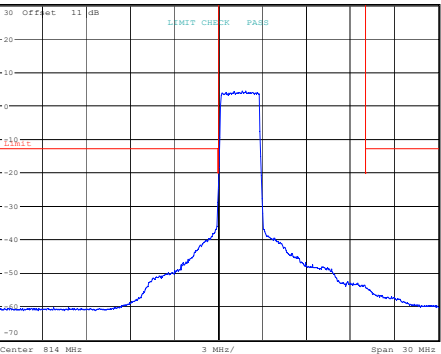
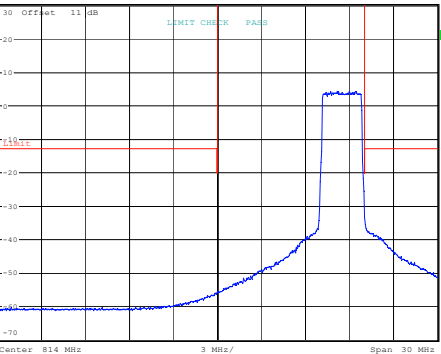
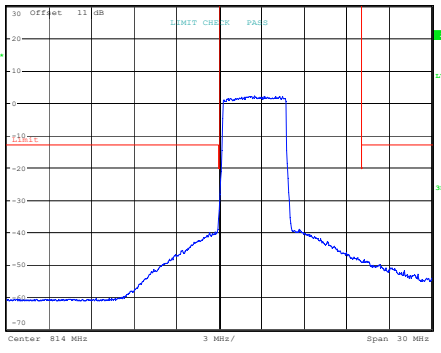
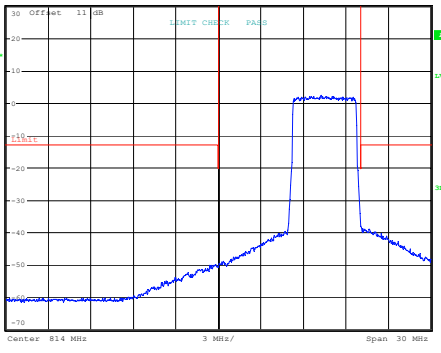
QPSK
10MHz
For 90S

ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 11:42:50

QPSK
15MHz
Across
90S and
22H

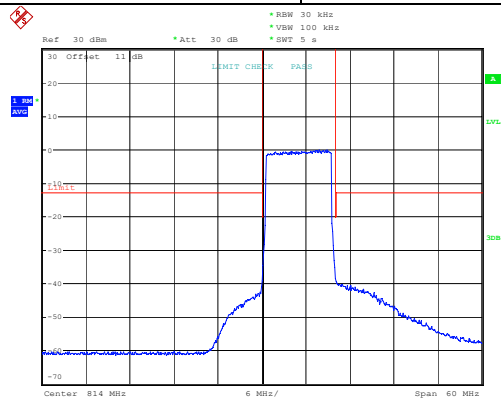
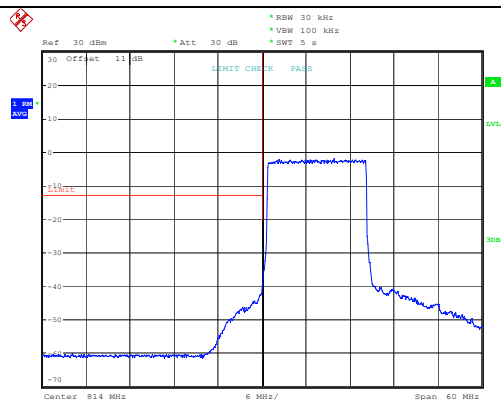
ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 11:46:13

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz For 90S	 Ref: 30 dBm *Att: 30 dB *RBW: 30 kHz *VBW: 100 kHz *SWT: 5 s Center: 814 MHz 3 MHz/ Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 11:32:25	 Ref: 30 dBm *Att: 30 dB *RBW: 30 kHz *VBW: 100 kHz *SWT: 5 s Center: 814 MHz 3 MHz/ Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 11:33:36
16QAM 3MHz For 90S	 Ref: 30 dBm *Att: 30 dB *RBW: 30 kHz *VBW: 100 kHz *SWT: 5 s Center: 814 MHz 3 MHz/ Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 11:31:04	 Ref: 30 dBm *Att: 30 dB *RBW: 30 kHz *VBW: 100 kHz *SWT: 5 s Center: 814 MHz 3 MHz/ Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 11:28:58
16QAM 5MHz For 90S	 Ref: 30 dBm *Att: 30 dB *RBW: 30 kHz *VBW: 100 kHz *SWT: 5 s Center: 814 MHz 3 MHz/ Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 11:35:16	 Ref: 30 dBm *Att: 30 dB *RBW: 30 kHz *VBW: 100 kHz *SWT: 5 s Center: 814 MHz 3 MHz/ Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 11:38:00

Out of band emission, Band Edge

Mode

16QAM
10MHz
For 90SProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 11:43:3316QAM
15MHz
Across
90S and
22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 11:45:34

4.14.3 Test Data for Part 22H:

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 Frequency For 22H	Middle Frequency For 22H	Highest Frequency For 22H		
1.4MHz QPSK	RB1#0	23.88	23.65	23.87	16.73	38.45
	RB1#3	23.73	23.83	23.83		
	RB1#5	23.75	23.77	23.86		
	RB3#0	23.45	23.33	23.27		
	RB3#3	23.41	23.29	23.24		
	RB6#0	21.38	21.35	21.3		
1.4MHz 16QAM	RB1#0	22.54	23.12	23.76	16.61	38.45
	RB1#3	22.53	23.16	23.66		
	RB1#5	22.56	23.14	23.73		
	RB3#0	22.55	22.26	22.15		
	RB3#3	22.52	22.19	22.23		
	RB6#0	21.63	21.34	21.51		
3MHz QPSK	RB1#0	24.04	23.75	23.77	16.89	38.45
	RB1#8	23.97	23.76	23.75		
	RB1#14	23.97	23.78	23.74		
	RB6#0	21.31	21.15	21.25		
	RB6#9	21.3	21.35	21.16		
	RB15#0	21.36	21.37	21.26		
3MHz 16QAM	RB1#0	22.91	22.12	23.09	15.94	38.45
	RB1#8	22.97	22.29	22.94		
	RB1#14	22.89	22.23	22.95		
	RB6#0	21.61	21.24	21.35		
	RB6#9	21.57	21.41	21.36		
	RB15#0	21.37	21.46	21.36		
5MHz QPSK	RB1#0	24	23.6	23.75	16.85	38.45
	RB1#13	23.86	23.71	23.83		
	RB1#24	23.88	23.66	23.76		
	RB15#0	21.44	21.17	21.37		
	RB15#10	21.3	21.47	21.34		
	RB25#0	21.44	21.43	21.23		
5MHz 16QAM	RB1#0	22.84	22.76	22.49	15.69	38.45
	RB1#13	22.81	22.83	22.46		
	RB1#24	22.75	22.74	22.49		
	RB15#0	21.31	21.17	21.34		
	RB15#10	21.22	21.39	21.44		
	RB25#0	21.32	21.51	21.26		

10MHz QPSK	RB1#0	23.93	23.8	23.81	16.78	38.45
	RB1#25	23.88	23.81	23.78		
	RB1#49	23.67	23.82	23.77		
	RB25#0	21.83	21.67	21.76		
	RB25#25	21.82	21.7	21.81		
	RB50#0	21.88	21.89	21.83		
10MHz 16QAM	RB1#0	23.66	22.31	23.26	16.51	38.45
	RB1#25	23.47	22.38	23.16		
	RB1#49	23.44	22.22	23.29		
	RB25#0	21.99	21.91	21.84		
	RB25#25	21.75	21.94	21.95		
	RB50#0	21.91	21.95	21.87		
15MHz QPSK	RB1#0	24.08	23.66	23.74	16.93	38.45
	RB1#38	23.84	23.61	23.74		
	RB1#74	23.93	23.65	23.78		
	RB36#0	21.9	21.69	21.76		
	RB36#39	21.57	21.91	21.79		
	RB75#0	21.82	21.82	21.85		
15MHz 16QAM	RB1#0	23.07	22.93	23.05	15.99	38.45
	RB1#38	22.87	22.93	23.07		
	RB1#74	22.96	22.88	23.14		
	RB36#0	21.96	21.83	21.83		
	RB36#39	21.86	21.85	21.82		
	RB75#0	21.74	21.88	21.85		

Note:

ERP= Conducted Power(dBm) - Lc(dB) + G_T(dBd)G_T(dBd)=G_T(dBi)-2.15**Result:****Pass****Peak-to-average Ratio (PAR)**

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Frequency For 22H	Middle Frequency For 22H	Highest Frequency For 22H	
15MHz QPSK	RB1#0	7.13	7.37	7.70	13
	RB75#0	8.69	6.78	6.83	13
15MHz 16QAM	RB1#0	9.17	7.91	8.47	13
	RB75#0	8.81	9.27	6.51	13
Result:					Pass

FCC §2.1049, §22.905: Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Lowest For 22H	Middle For 22H	Highest For 22H	Lowest For 22H	Middle For 22H	Highest For 22H
1.4MHz QPSK	1.104	1.104	1.104	1.254	1.260	1.260
1.4MHz 16QAM	1.104	1.116	1.098	1.260	1.254	1.248
3MHz QPSK	2.700	2.687	2.700	3.024	3.012	2.988
3MHz 16QAM	2.687	2.687	2.700	3.012	3.036	3.000
5MHz QPSK	4.520	4.520	4.520	5.000	4.960	5.000
5MHz 16QAM	4.540	4.520	4.520	5.020	5.000	5.000
10MHz QPSK	8.960	8.960	8.960	9.760	9.760	9.720
10MHz 16QAM	8.960	8.960	8.960	9.800	9.840	9.800
15MHz QPSK	13.500	13.560	13.560	15.000	15.060	15.060
15MHz 16QAM	13.560	13.560	13.560	15.120	14.940	15.060

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.

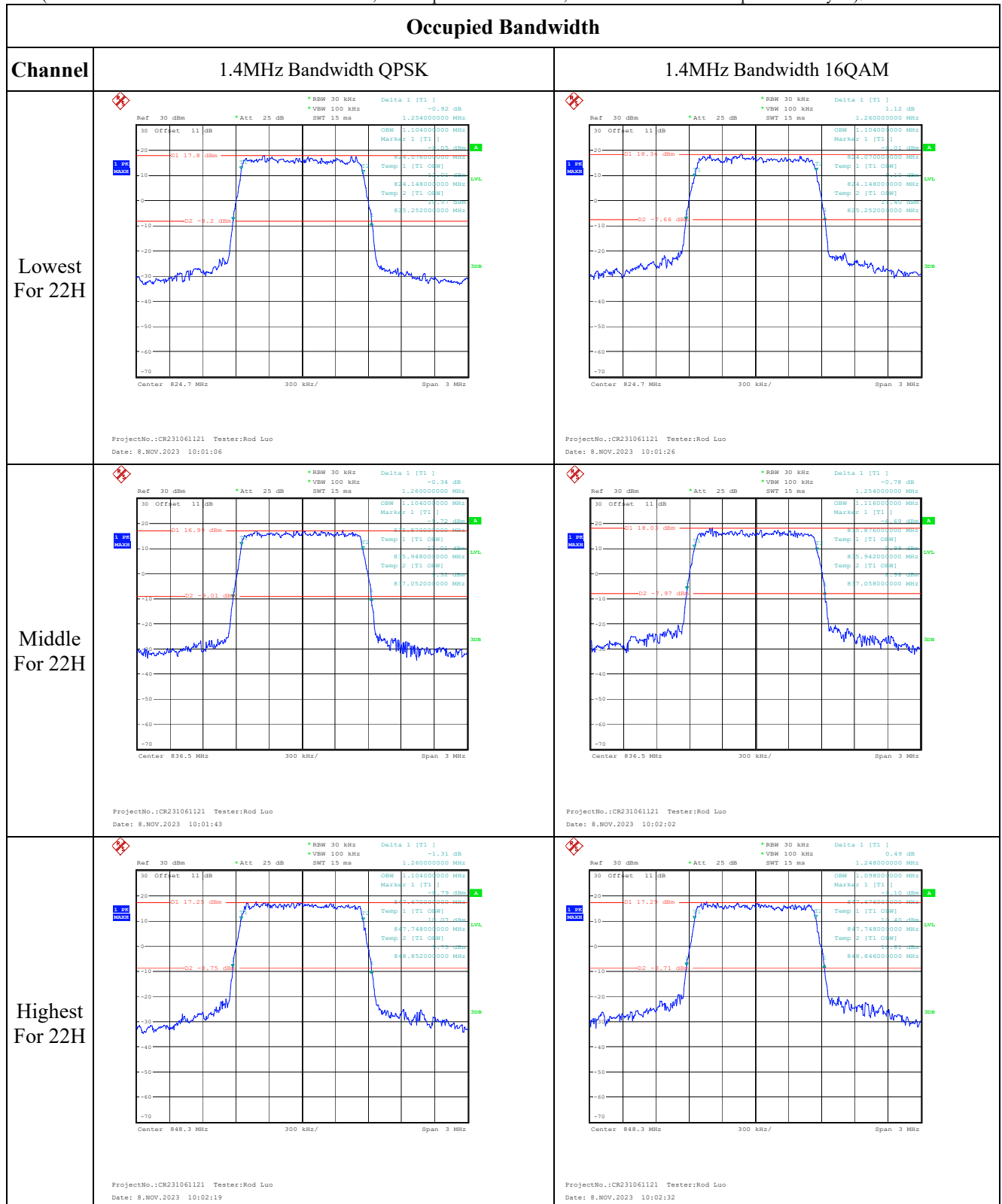
FCC §2.1055, §22.355: Frequency Stability

Test Modulation:	15 MHz QPSK		Test Channel:	831.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.85	100.444	0.121	2.5
	-20	3.85	105.060	0.126	2.5
	-10	3.85	100.000	0.120	2.5
	0	3.85	96.306	0.116	2.5
	10	3.85	103.782	0.125	2.5
	20	3.85	99.447	0.120	2.5
	30	3.85	98.973	0.119	2.5
	40	3.85	98.172	0.118	2.5
	50	3.85	99.596	0.120	2.5
Frequency Stability vs. Voltage	20	3.5	103.007	0.124	2.5
	20	4.4	105.285	0.127	2.5
Result:				Pass	

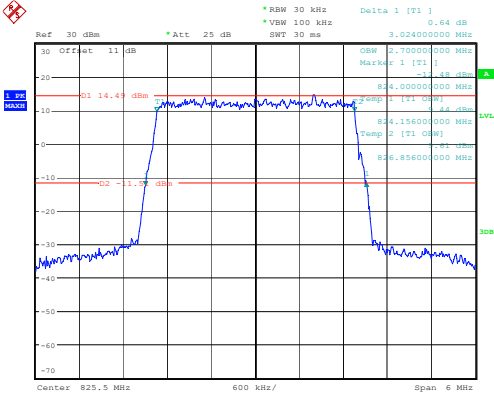
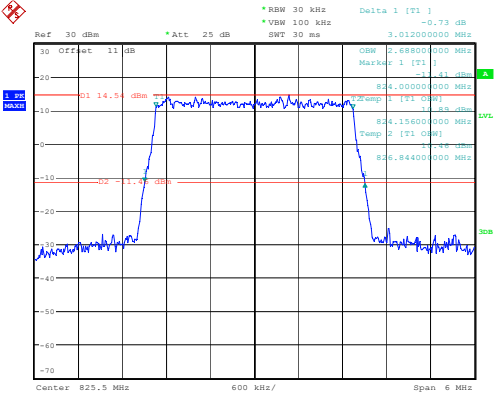
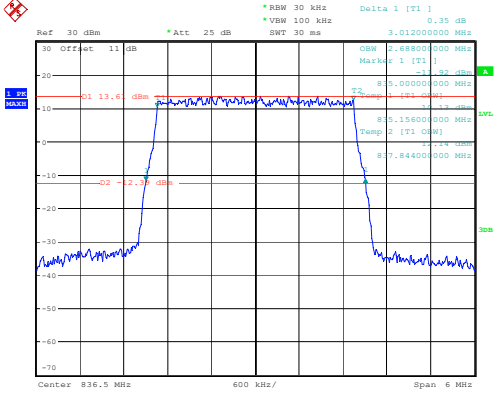
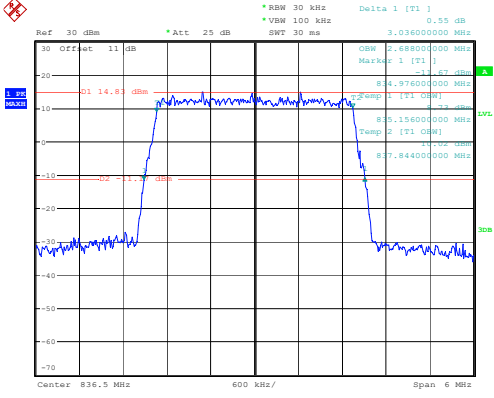
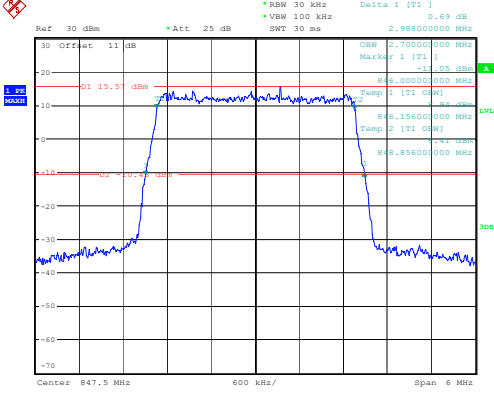
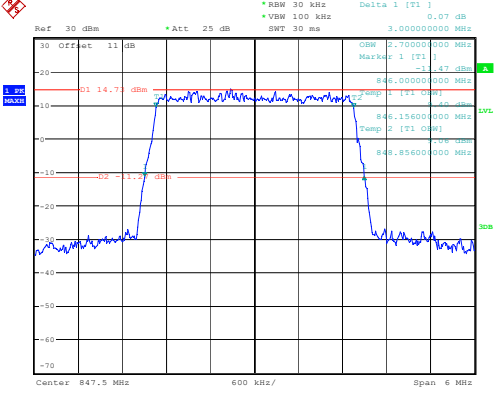
FCC §2.1055, §22.355: Frequency Stability					
Test Modulation:	15 MHz 16QAM		Test Channel:	831.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.85	99.545	0.120	2.5
	-20	3.85	99.765	0.120	2.5
	-10	3.85	98.400	0.118	2.5
	0	3.85	98.319	0.118	2.5
	10	3.85	102.105	0.123	2.5
	20	3.85	105.122	0.126	2.5
	30	3.85	99.260	0.119	2.5
	40	3.85	108.861	0.131	2.5
	50	3.85	99.495	0.120	2.5
Frequency Stability vs. Voltage	20	3.5	97.845	0.118	2.5
	20	4.4	105.565	0.127	2.5
Result:				Pass	

4.14.4 Test Plots for Part 22H:

(Note: The 11dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):



Occupied Bandwidth

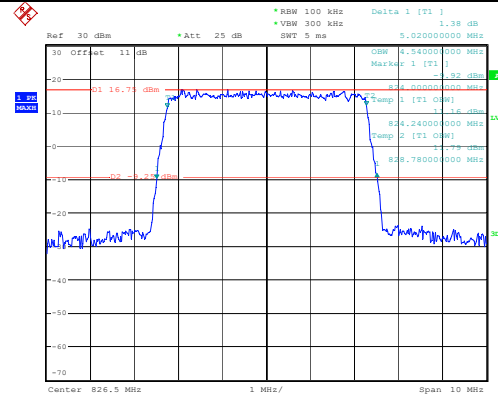
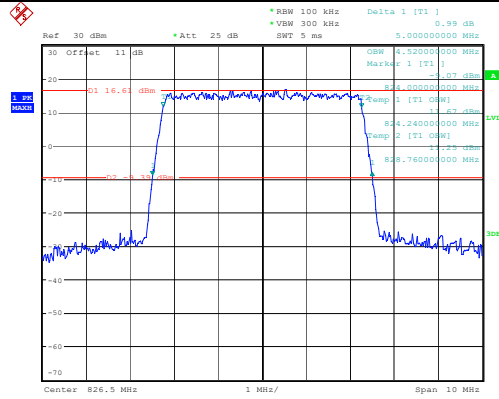
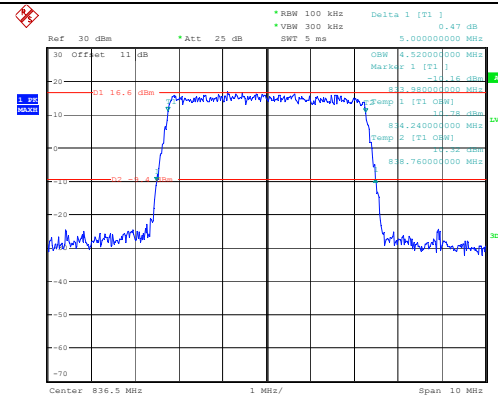
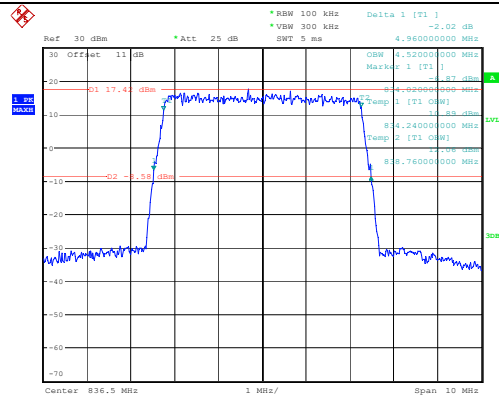
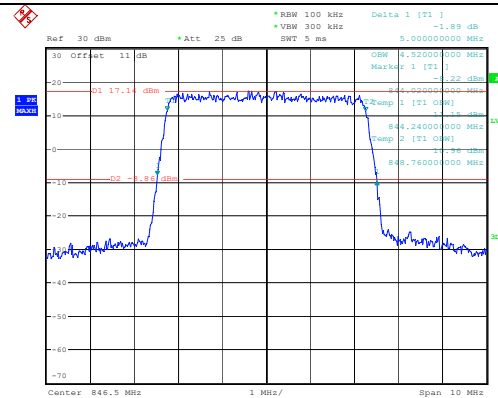
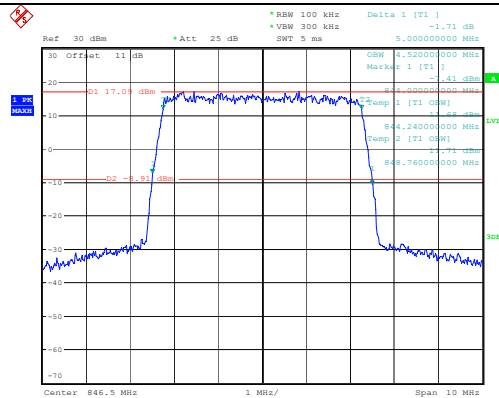
Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest For 22H	 Ref 30 dBm *Att 25 dB *RSW 30 kHz *VSW 100 kHz *VT 30 ms Delta 1 [T1] 0.64 dB OSW 2.700000000 MHz Marker 1 [T1] -14.4 dBm Temp 1 [T1] OSW Temp 2 [T1] OSW Center 825.5 MHz 600 kHz/ Span 6 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:02:49	 Ref 30 dBm *Att 25 dB *RSW 30 kHz *VSW 100 kHz *VT 30 ms Delta 1 [T1] 0.73 dB OSW 2.688000000 MHz Marker 1 [T1] -14.5 dBm Temp 1 [T1] OSW Temp 2 [T1] OSW Center 825.5 MHz 600 kHz/ Span 6 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:03:02
Middle For 22H	 Ref 30 dBm *Att 25 dB *RSW 30 kHz *VSW 100 kHz *VT 30 ms Delta 1 [T1] 0.35 dB OSW 2.688000000 MHz Marker 1 [T1] -13.6 dBm Temp 1 [T1] OSW Temp 2 [T1] OSW Center 836.5 MHz 600 kHz/ Span 6 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:03:16	 Ref 30 dBm *Att 25 dB *RSW 30 kHz *VSW 100 kHz *VT 30 ms Delta 1 [T1] 0.55 dB OSW 2.688000000 MHz Marker 1 [T1] -14.8 dBm Temp 1 [T1] OSW Temp 2 [T1] OSW Center 836.5 MHz 600 kHz/ Span 6 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:03:33
Highest For 22H	 Ref 30 dBm *Att 25 dB *RSW 30 kHz *VSW 100 kHz *VT 30 ms Delta 1 [T1] 0.69 dB OSW 2.700000000 MHz Marker 1 [T1] -15.5 dBm Temp 1 [T1] OSW Temp 2 [T1] OSW Center 847.5 MHz 600 kHz/ Span 6 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:03:46	 Ref 30 dBm *Att 25 dB *RSW 30 kHz *VSW 100 kHz *VT 30 ms Delta 1 [T1] 0.07 dB OSW 2.700000000 MHz Marker 1 [T1] -14.7 dBm Temp 1 [T1] OSW Temp 2 [T1] OSW Center 847.5 MHz 600 kHz/ Span 6 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:04:03

Occupied Bandwidth

Channel

5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

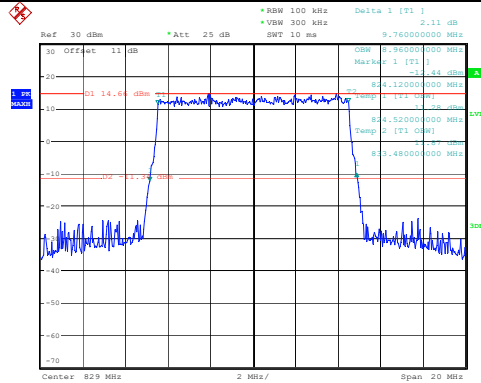
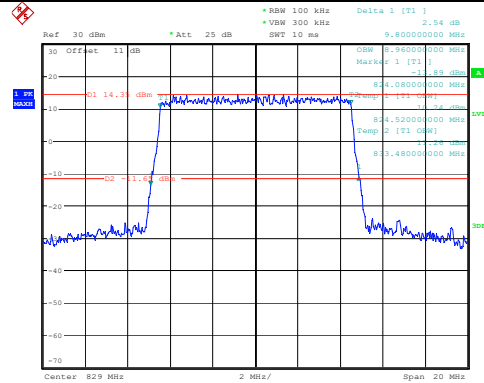
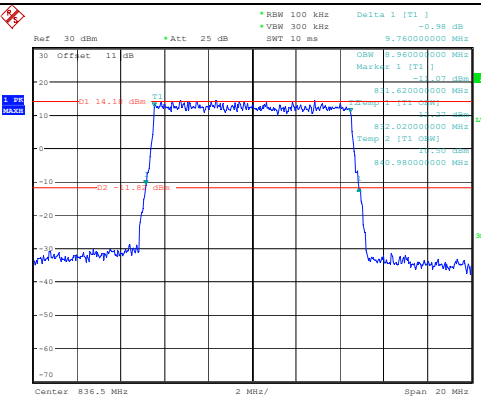
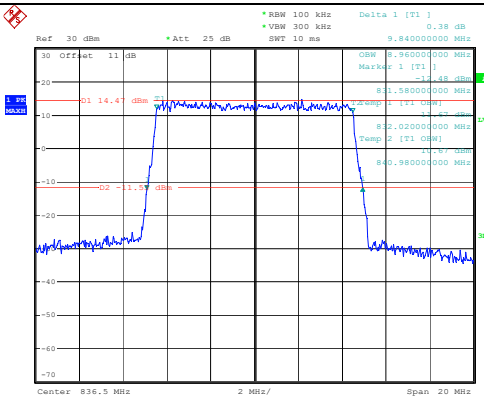
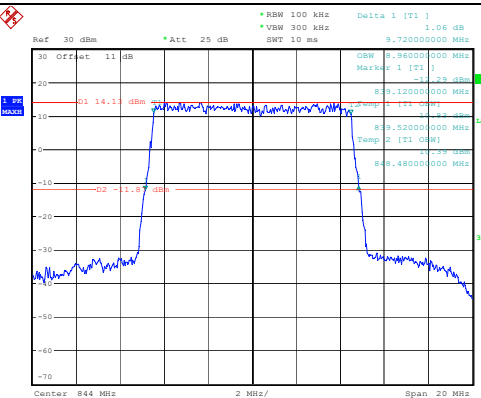
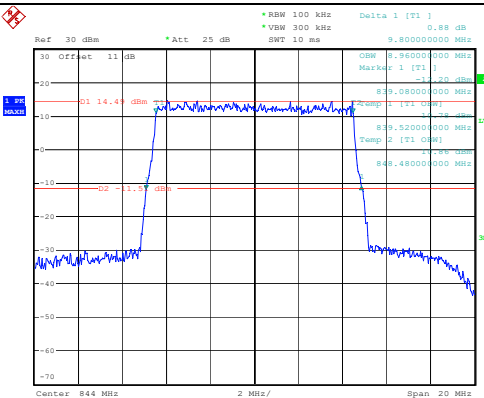
Lowest
For 22HMiddle
For 22HHighest
For 22H

Occupied Bandwidth

Channel

10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

Lowest
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:06:12ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:06:28Middle
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:06:45ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:07:05Highest
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:07:22ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:07:38

Channel

15MHz Bandwidth 16QAM

[illegible][illegible]

Ref 30 dBm *Att 25 dB Delta 5 [T1] -0.20 dB
 *RSM 300 kHz *VVM 1 MHz SWT 2.5 ms 15.06000000 MHz

dB
 20
 10
 0
 -10
 -20
 -30
 -40
 -50
 -60
 -70

Center 836.5 MHz 3 MHz/5 Span 30 MHz

C1 10.4 dBm
 C2 -10.10 dBm

OSW 15.56000000 MHz
 MaxSp 1 [T1] -0.24 dBm
 Temp 1 [T1 OSW]
 Temp 2 [T1 OSW]
 S-3.28000000 MHz

Ref 30 dBm Att 25 dB RBW 300 kHz VBW 1 MHz SWT 2.5 ms 14.9400000000 MHz

20 D1 18.3 dB

10

0

-10 D2 -7.63 dB

-20

-30

-40

-50

-60

-70

Center 836.5 MHz 3 MHz/ Span 30 MHz

836.5200000000 MHz

Temp 1 [T1 GHz]

Temp 2 [T1 GHz]

*RSM 300 kHz Delta 1 [T1] -0.08 dB
 *VBW 1 MHz
 *Att 25 dB
 *Sweep 2.5 ms
 15.9999999999 MHz

Ref 30 dBm
 30 Offset 11 dB

1 18.2 dBm
 0.2 -7.8 dBm

OSW 15.9600000000 MHz
 Marker 1 [T1] 18.2 dBm
 841.5400000000 MHz
 Temp 1 [T1] 0.00 dBm
 841.7200000000 MHz
 Temp 2 [T1] 0.00 dBm
 849.2800000000 MHz

Center 841.5 MHz
 3 MHz
 Span 30 MHz

Ref 30 dBm *Att 25 dB

RBW 300 kHz Ch1a 1 [T1] 0.41 dB

VBW 1 MHz

SWT 2.5 ms 15.06000000 MHz

Offset 11 dB

OSW 15.56000000 MHz

MarSub 1 [T1] 15.56000000 MHz

S1 18.15 dBm

S2 -78.60 dBm

Temp 1 [T1] 0.41 dB

Temp 2 [T1] 0.41 dB

841.56000000 MHz

841.72000000 MHz

841.88000000 MHz

842.04000000 MHz

842.20000000 MHz

842.36000000 MHz

842.52000000 MHz

842.68000000 MHz

842.84000000 MHz

843.00000000 MHz

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843.32000000 MHz

843.48000000 MHz

843.64000000 MHz

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843.96000000 MHz

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866.20000000 MHz

866.36000000 MHz

866.52000000 MHz

866.68000000 MHz

866.84000000 MHz

867.00000000 MHz

867.16000000 MHz

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867.48000000 MHz

867.64000000 MHz

867.80000000 MHz

867.96000000 MHz

868.12000000 MHz

868.28000000 MHz

868.44000000 MHz

868.60000000 MHz

868.76000000 MHz

868.92000000 MHz

869.08000000 MHz

869.24000000 MHz

869.40000000 MHz

869.56000000 MHz

869.72000000 MHz

869.88000000 MHz

870.04000000 MHz

870.20000000 MHz

870.36000000 MHz

870.52000000 MHz

870.68000000 MHz

870.84000000 MHz

871.00000000 MHz

871.16000000 MHz

871.32000000 MHz

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872.12000000 MHz

872.28000000 MHz

872.44000000 MHz

872.60000000 MHz

872.76000000 MHz

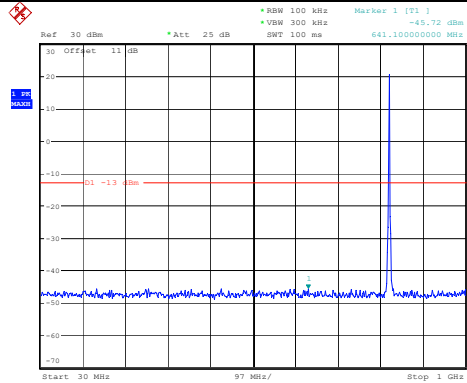
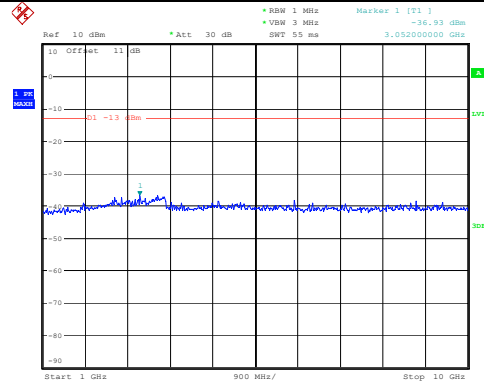
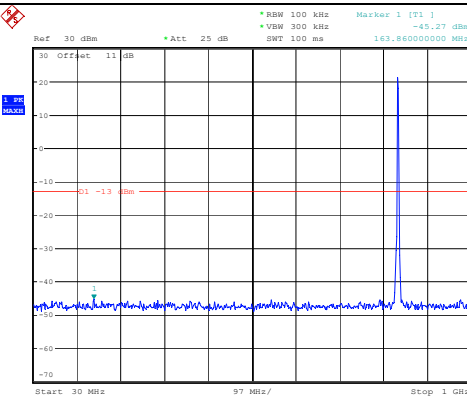
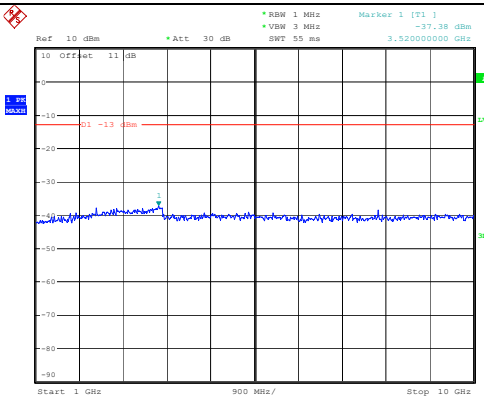
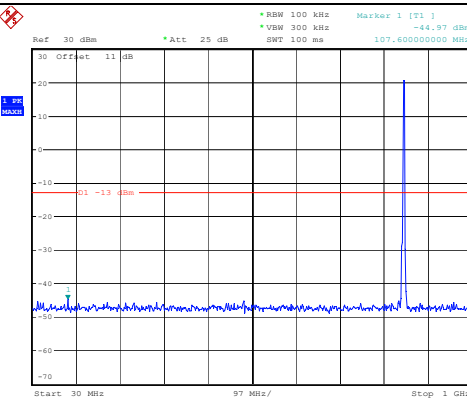
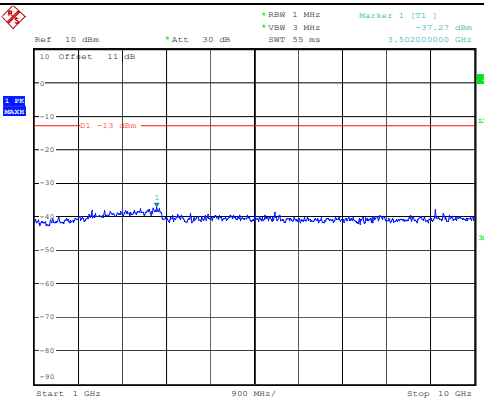
872.9200

ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:09:16

Spurious Emissions at Antenna Terminal

Channel

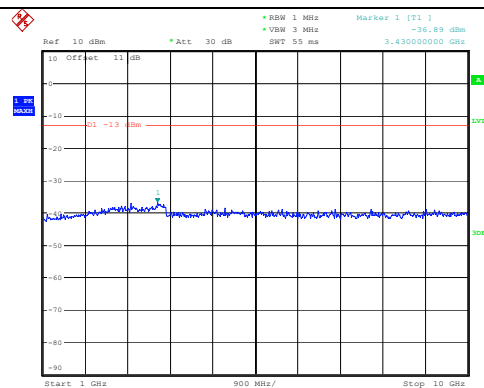
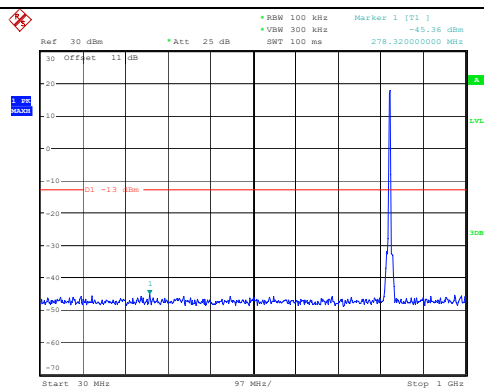
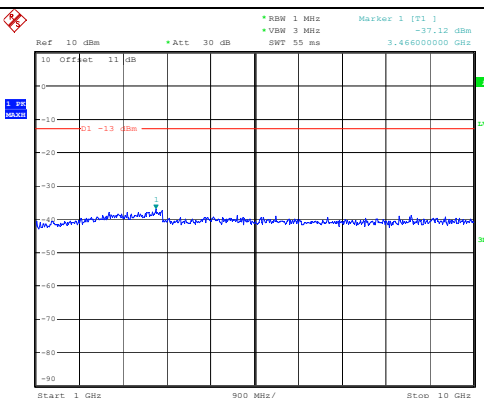
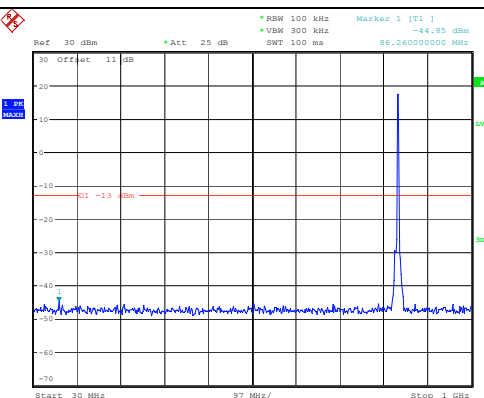
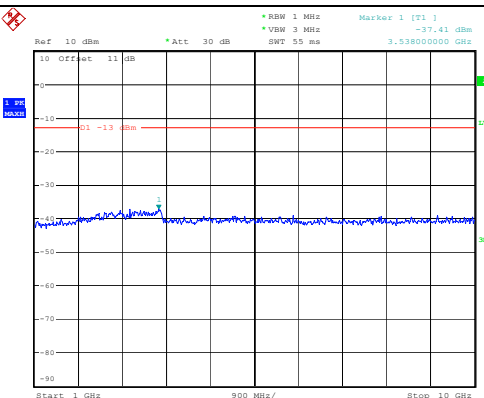
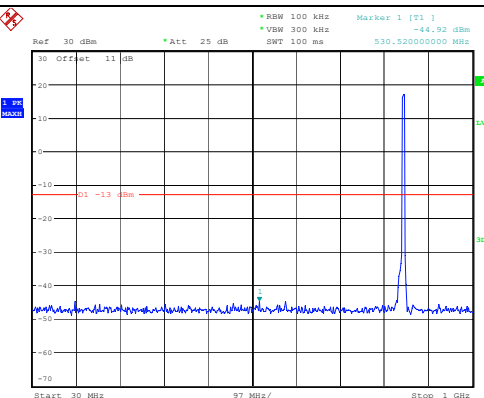
1.4MHz Bandwidth QPSK

Lowest
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:16:55ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:17:05Middle
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:17:18ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:17:28Highest
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:17:40ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:17:51

Spurious Emissions at Antenna Terminal

Channel

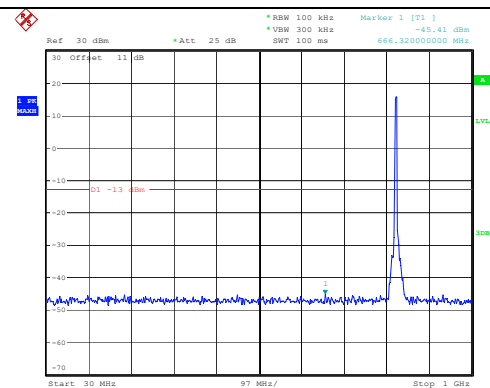
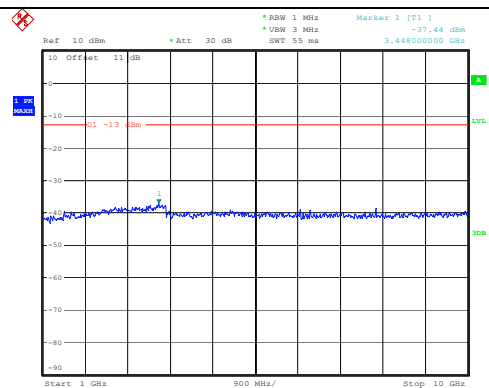
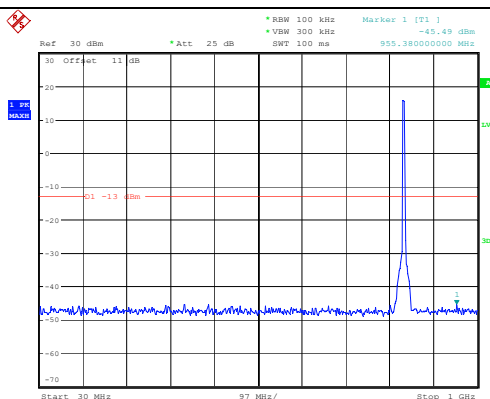
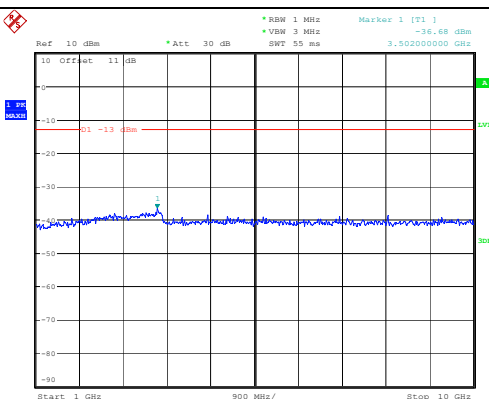
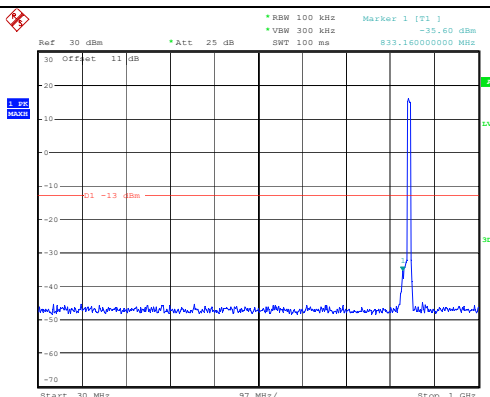
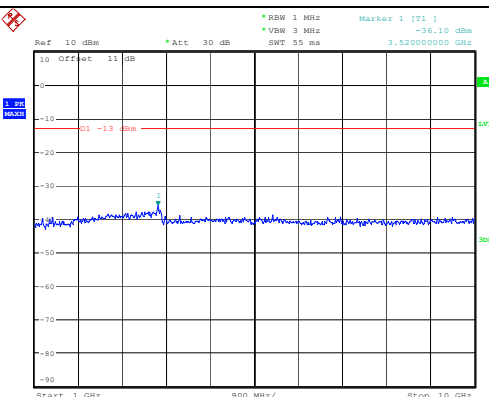
3MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

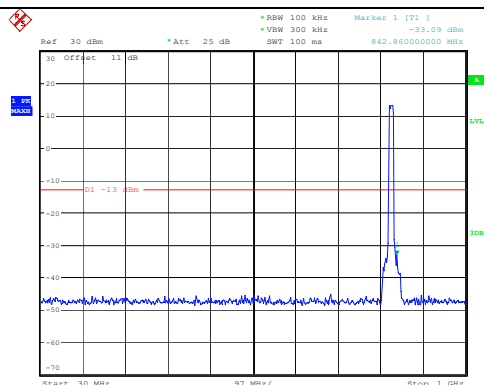
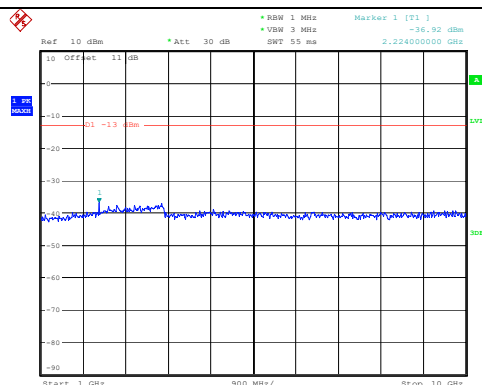
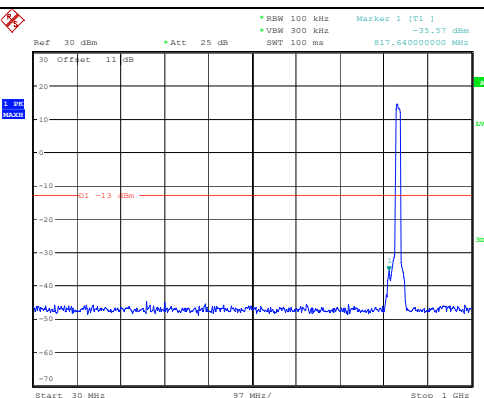
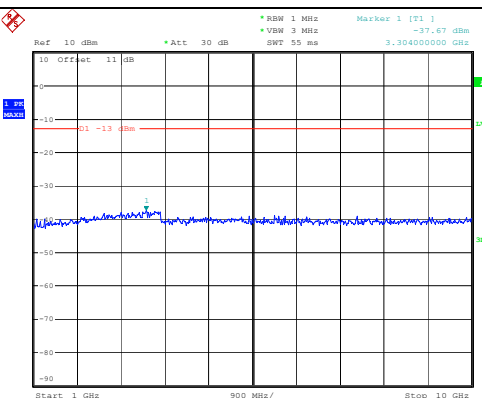
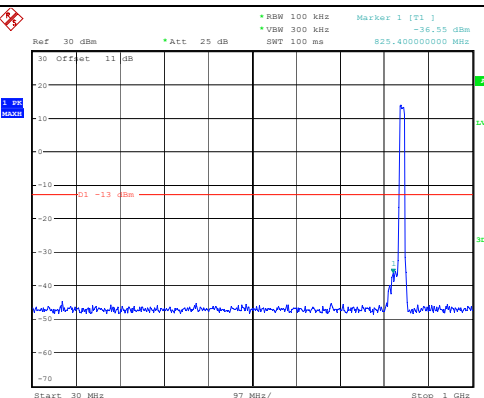
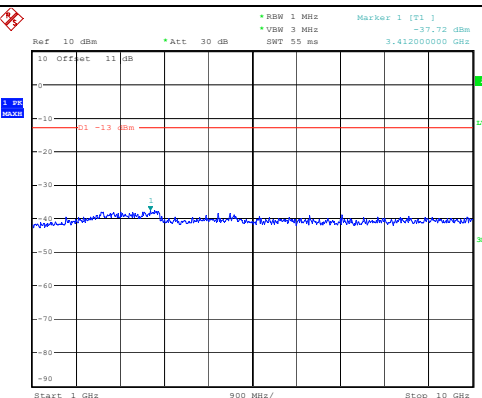
5MHz Bandwidth QPSK

Lowest
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:19:24ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:19:34Middle
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:19:47ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:19:57Highest
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:20:12ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:20:23

Spurious Emissions at Antenna Terminal

Channel

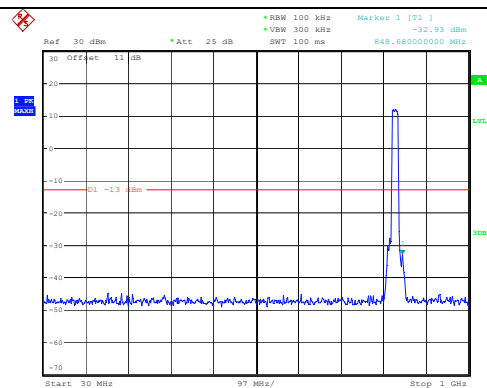
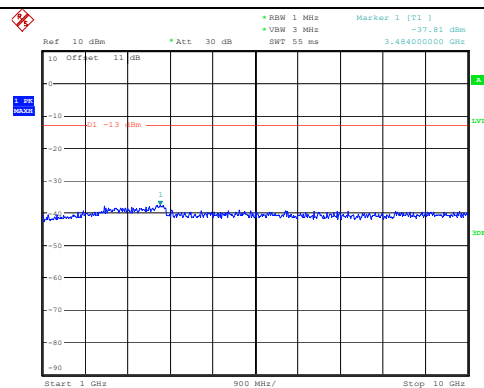
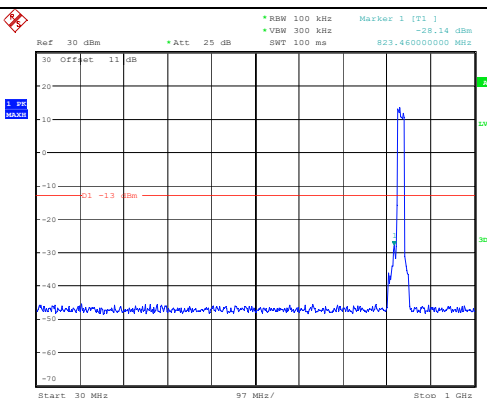
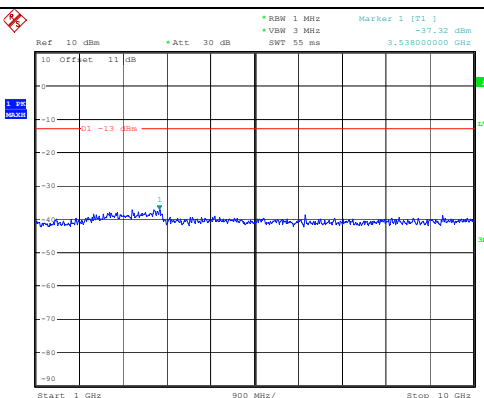
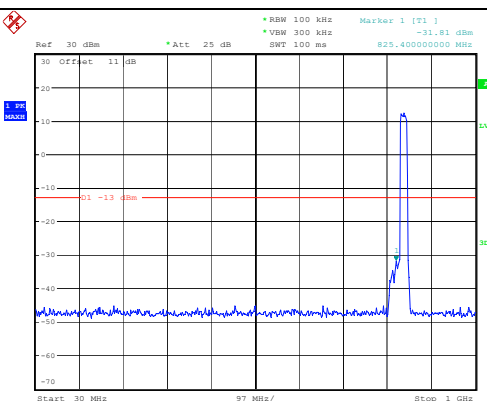
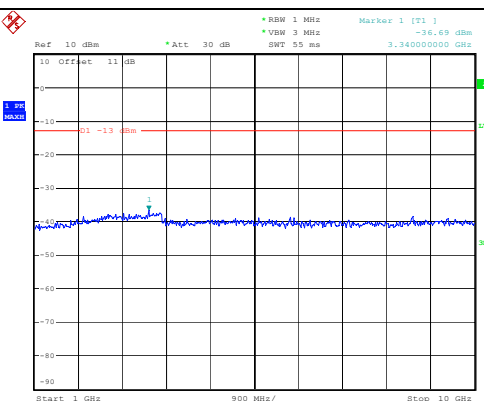
10MHz Bandwidth QPSK

Lowest
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:20:41ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:20:52Middle
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:21:07ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:21:17Highest
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:21:33ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:21:43

Spurious Emissions at Antenna Terminal

Channel

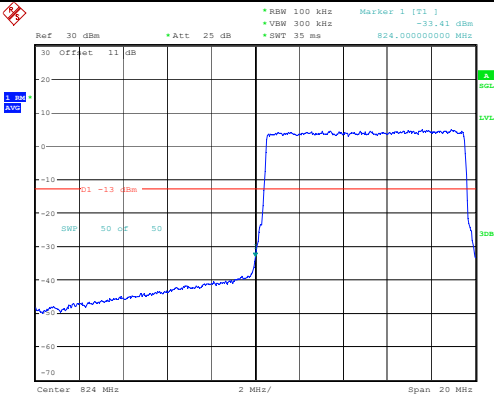
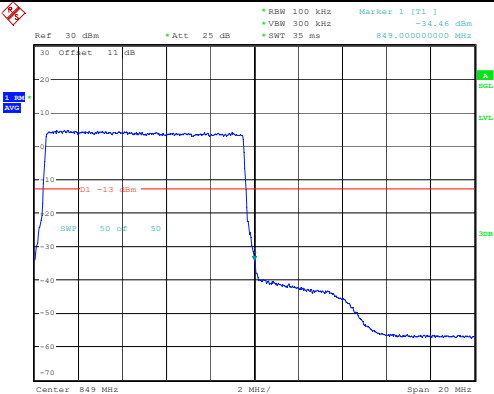
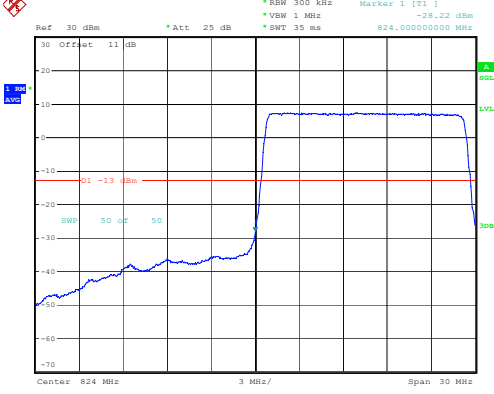
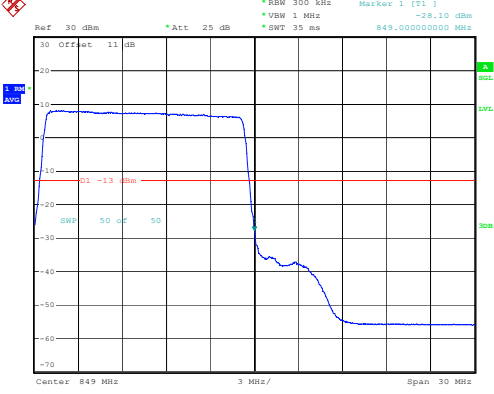
15MHz Bandwidth QPSK

Lowest
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:21:59ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:22:09Middle
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:22:25ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:22:35Highest
For 22HProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:22:47ProjectNo.:CR231061121 Tester:Rod Luo
Date: 8.NOV.2023 10:23:01

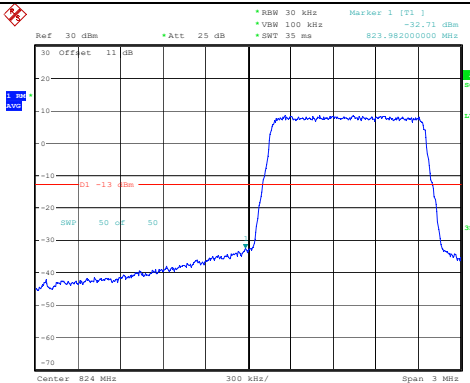
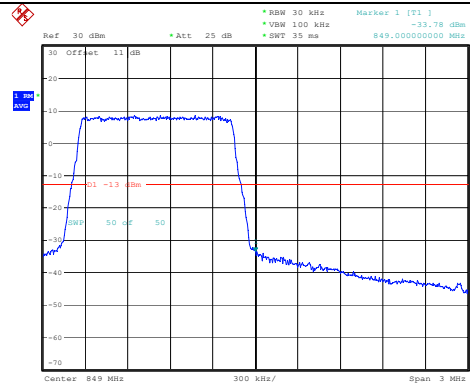
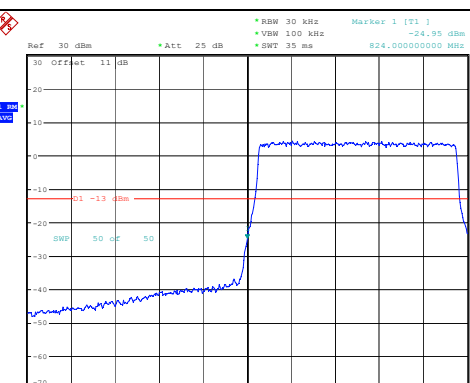
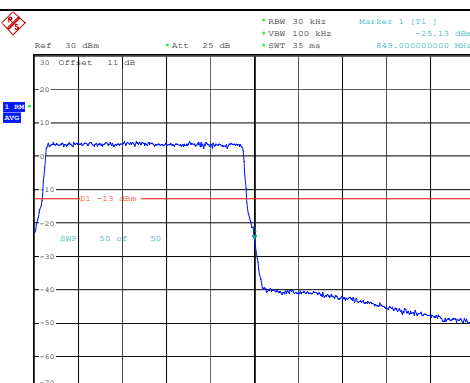
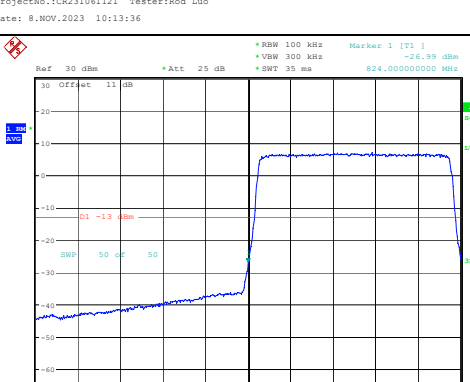
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz For 22H	ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:13:01	ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:13:13
QPSK 3MHz For 22H	ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:13:30	ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:13:43
QPSK 5MHz For 22H	ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:13:59	ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:14:13

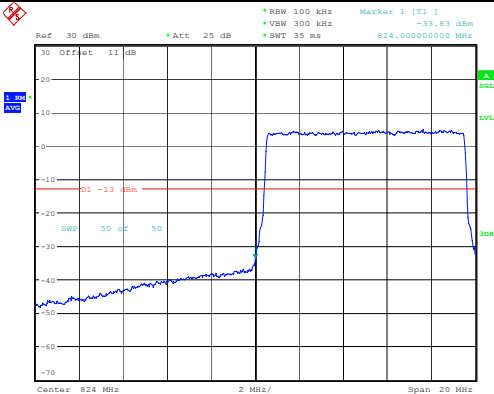
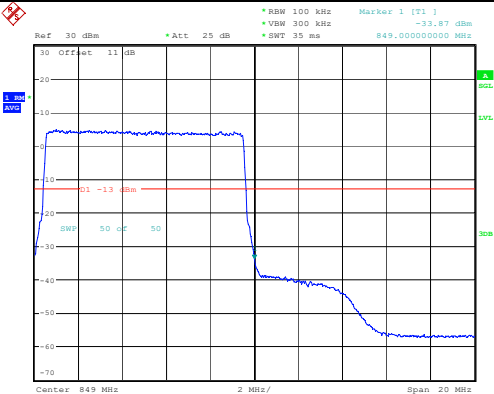
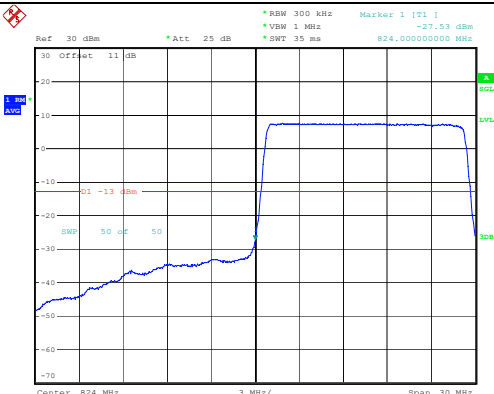
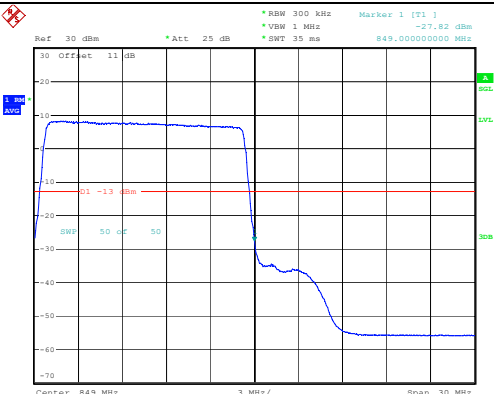
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 10MHz For 22H	 Ref: 30 dBm, Att: 25 dB, RBW: 100 kHz, VBW: 300 kHz, SWT: 35 ms, Marker 1 [T1]: -39.41 dBm, 824.000000000 MHz Center: 824 MHz, Span: 20 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:14:30	 Ref: 30 dBm, Att: 25 dB, RBW: 100 kHz, VBW: 300 kHz, SWT: 35 ms, Marker 1 [T1]: -34.46 dBm, 849.000000000 MHz Center: 849 MHz, Span: 20 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:14:45
QPSK 15MHz For 22H	 Ref: 30 dBm, Att: 25 dB, RBW: 100 kHz, VBW: 1 MHz, SWT: 35 ms, Marker 1 [T1]: -29.22 dBm, 824.000000000 MHz Center: 824 MHz, Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:15:06	 Ref: 30 dBm, Att: 25 dB, RBW: 100 kHz, VBW: 1 MHz, SWT: 35 ms, Marker 1 [T1]: -29.10 dBm, 849.000000000 MHz Center: 849 MHz, Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:15:18

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz For 22H	 Ref: 30 dBm *Att: 25 dB *RBW 30 kHz *VSW 100 kHz *SWT 35 ms Marker 1 [T1] -32.71 dBm 823.982000000 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:13:07	 Ref: 30 dBm *Att: 25 dB *RBW 30 kHz *VSW 100 kHz *SWT 35 ms Marker 1 [T1] -33.78 dBm 849.000000000 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:13:20
16QAM 3MHz For 22H	 Ref: 30 dBm *Att: 25 dB *RBW 30 kHz *VSW 100 kHz *SWT 35 ms Marker 1 [T1] -24.90 dBm 824.000000000 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:13:36	 Ref: 30 dBm *Att: 25 dB *RBW 30 kHz *VSW 100 kHz *SWT 35 ms Marker 1 [T1] -25.13 dBm 849.000000000 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:13:49
16QAM 5MHz For 22H	 Ref: 30 dBm *Att: 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 35 ms Marker 1 [T1] -26.99 dBm 824.000000000 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:14:06	 Ref: 30 dBm *Att: 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 35 ms Marker 1 [T1] -28.24 dBm 849.000000000 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:14:19

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 10MHz For 22H	 Ref: 30 dBm *Att: 25 dB *RBW: 100 kHz *VBW: 300 kHz *SWT: 35 ms Marker 1 [T1] -27.82 dBm 824.000000000 MHz Offset: 11 dB Center: 824 MHz 2 MHz/ Span: 20 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:14:37	 Ref: 30 dBm *Att: 25 dB *RBW: 100 kHz *VBW: 300 kHz *SWT: 35 ms Marker 1 [T1] -27.87 dBm 849.000000000 MHz Offset: 11 dB Center: 849 MHz 2 MHz/ Span: 20 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:14:53
16QAM 15MHz For 22H	 Ref: 30 dBm *Att: 25 dB *RBW: 100 kHz *VBW: 1 MHz *SWT: 35 ms Marker 1 [T1] -27.83 dBm 824.000000000 MHz Offset: 11 dB Center: 824 MHz 3 MHz/ Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:15:12	 Ref: 30 dBm *Att: 25 dB *RBW: 100 kHz *VBW: 1 MHz *SWT: 35 ms Marker 1 [T1] -27.82 dBm 849.000000000 MHz Offset: 11 dB Center: 849 MHz 3 MHz/ Span: 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 8.NOV.2023 10:15:24

4.15 Antenna Port Test Data and Results for LTE Band 38

Serial Number:	2CFR-2	Test Date:	2023/11/7
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rod Luo	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.5	Relative Humidity: (%)	48	ATM Pressure: (kPa)	101.3
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200120	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
Minl-Circuits	Power Splitter	ZFRSC-183-S+	S F448201619	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	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).*

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2572.5	2595	2617.5
10MHz	2575	2595	2615
15MHz	2577.5	2595	2612.5
20MHz	2580	2595	2610

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	18.46	17.76	18.05	18.54	33
	RB1#13	18.74	18.11	18.51		
	RB1#24	18.05	17.49	17.97		
	RB15#0	17.58	16.99	17.5		
	RB15#10	17.42	16.9	17.48		
	RB25#0	17.47	16.9	17.45		
5MHz 16QAM	RB1#0	17.32	16.76	17.39	17.68	33
	RB1#13	17.63	17.13	17.88		
	RB1#24	16.92	16.51	17.33		
	RB15#0	16.54	16.12	16.66		
	RB15#10	16.38	16.03	16.62		
	RB25#0	16.5	16.06	16.55		
10MHz QPSK	RB1#0	18.67	18.19	18.11	18.47	33
	RB1#25	18.48	18.1	18.23		
	RB1#49	18.41	18.2	18.46		
	RB25#0	17.51	17.14	17.18		
	RB25#25	17.37	17.14	17.37		
	RB50#0	17.45	17.13	17.27		
10MHz 16QAM	RB1#0	17.42	17.23	17.26	17.42	33
	RB1#25	17.32	17.14	17.37		
	RB1#49	17.17	17.25	17.62		
	RB25#0	16.56	16.28	16.49		
	RB25#25	16.42	16.28	16.64		
	RB50#0	16.46	16.27	16.52		
15MHz QPSK	RB1#0	19.16	18.69	18.47	18.96	33
	RB1#38	18.54	18.09	18.25		
	RB1#74	18.09	17.96	18.26		
	RB36#0	17.85	17.4	17.38		
	RB36#39	17.26	17.01	17.25		
	RB75#0	17.56	17.2	17.3		
15MHz 16QAM	RB1#0	18.01	17.88	17.58	17.81	33
	RB1#38	17.4	17.25	17.39		
	RB1#74	16.92	17.15	17.37		
	RB36#0	16.8	16.55	16.55		
	RB36#39	16.2	16.16	16.41		
	RB75#0	16.53	16.29	16.43		

20MHz QPSK	RB1#0	19.46	19.4	19.22	19.26	33
	RB1#50	18.24	18.13	18.18		
	RB1#99	17.97	18.37	18.79		
	RB50#0	17.9	17.7	17.68		
	RB50#50	17.12	17.16	17.45		
	RB100#0	17.51	17.42	17.54		
20MHz 16QAM	RB1#0	18.36	18.61	18.2	18.41	33
	RB1#50	17.16	17.29	17.19		
	RB1#99	16.86	17.58	17.77		
	RB50#0	16.91	16.82	16.82		
	RB50#50	16.13	16.27	16.57		
	RB100#0	16.48	16.51	16.67		
Note: EIRP=Conducted Power(dBm) - Lc(dB) + G _T (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	9.25	9.39	8.99	13
	RB100#0	9.13	9.22	9.19	13
20MHz 16QAM	RB1#0	10.17	10.35	9.86	13
	RB100#0	9.86	9.86	9.88	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	4.520	4.520	4.520	5.000	5.060	5.080
5MHz 16QAM	4.520	4.500	4.520	5.140	5.060	5.100
10MHz QPSK	8.960	8.960	8.960	9.800	9.760	9.760
10MHz 16QAM	8.960	8.960	8.960	9.720	10.080	9.720
15MHz QPSK	13.500	13.500	13.620	16.080	15.480	15.660
15MHz 16QAM	13.620	13.620	13.620	15.300	16.440	15.600
20MHz QPSK	18.000	18.000	18.000	20.320	19.840	19.840
20MHz 16QAM	18.080	18.000	18.000	19.920	19.680	19.840
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.
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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.
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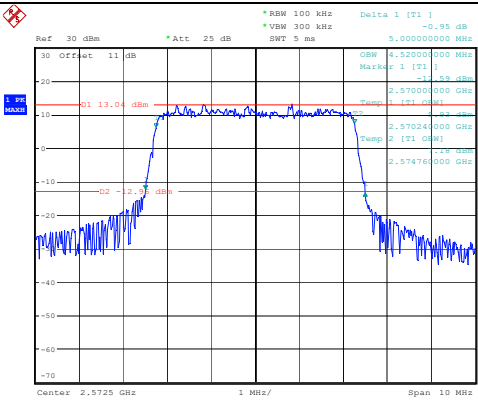
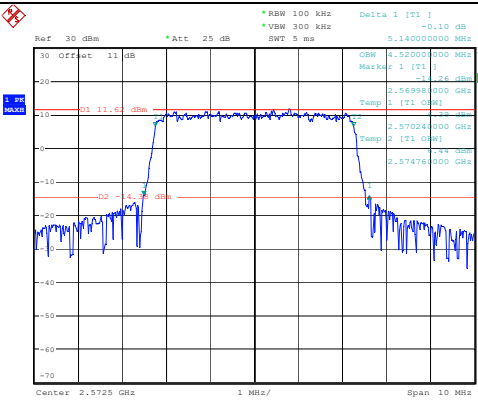
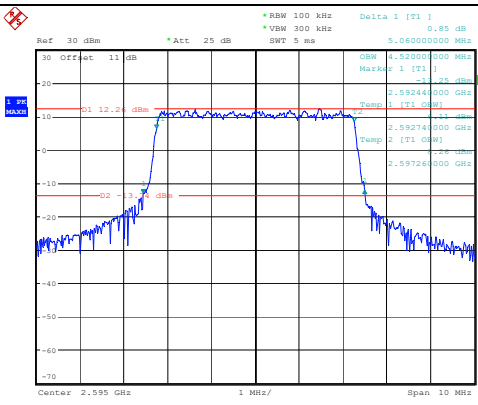
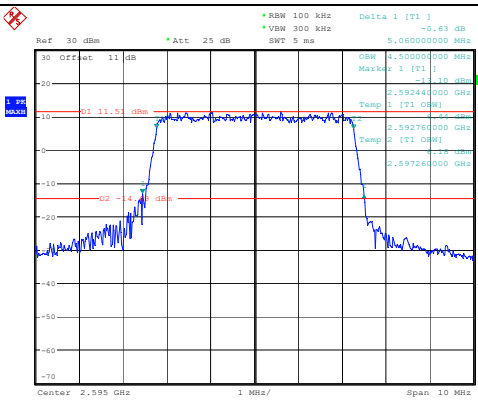
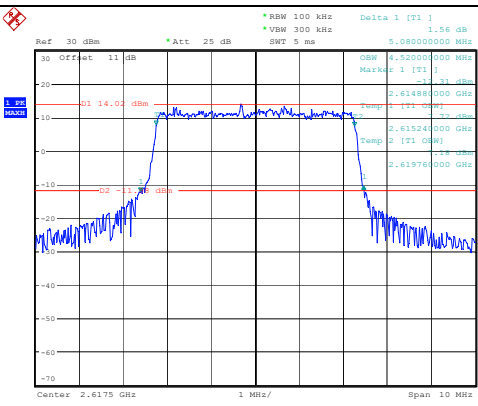
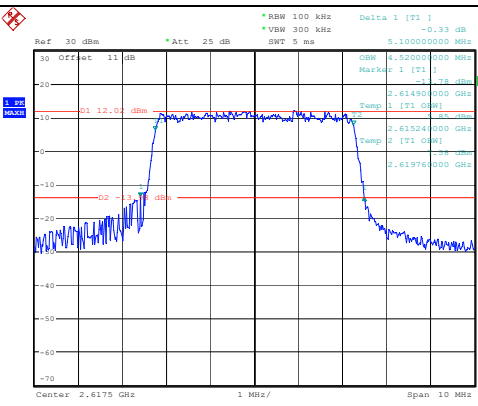
FCC §2.1055, §27.54: Frequency Stability

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	2570.062	2570.00	2619.994	2620
	-20	3.85	2570.038	2570.00	2619.947	2620
	-10	3.85	2570.111	2570.00	2619.869	2620
	0	3.85	2570.142	2570.00	2619.908	2620
	10	3.85	2570.062	2570.00	2619.866	2620
	20	3.85	2570.072	2570.00	2619.903	2620
	30	3.85	2570.117	2570.00	2619.898	2620
	40	3.85	2570.141	2570.00	2619.940	2620
	50	3.85	2570.001	2570.00	2619.868	2620
Frequency Stability vs. Voltage	20	3.5	2570.004	2570.00	2619.995	2620
	20	4.4	2570.047	2570.00	2619.871	2620
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	2570.078	2570.00	2619.905	2620
	-20	3.85	2570.045	2570.00	2619.881	2620
	-10	3.85	2570.062	2570.00	2619.932	2620
	0	3.85	2570.105	2570.00	2619.988	2620
	10	3.85	2570.032	2570.00	2619.978	2620
	20	3.85	2570.105	2570.00	2619.982	2620
	30	3.85	2570.115	2570.00	2619.994	2620
	40	3.85	2570.109	2570.00	2619.873	2620
	50	3.85	2570.069	2570.00	2619.868	2620
Frequency Stability vs. Voltage	20	3.5	2570.088	2570.00	2619.944	2620
	20	4.4	2570.109	2570.00	2619.909	2620
Result:					Pass	

Test Plots(Note: The 11dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	 Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 5 ms Delta 1 [T1] -0.95 dB OSW 4.520000000 MHz Marker 1 [T1] -13.04 dBm Temp 1 [T1] OSW 2.572500000 GHz Temp 2 [T1] OSW 2.574700000 GHz Center 2.5725 GHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:20:35	 Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 5 ms Delta 1 [T1] -0.10 dB OSW 4.520000000 MHz Marker 1 [T1] -11.61 dBm Temp 1 [T1] OSW 2.572500000 GHz Temp 2 [T1] OSW 2.574700000 GHz Center 2.5725 GHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:21:08
Middle	 Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 5 ms Delta 1 [T1] -0.85 dB OSW 4.520000000 MHz Marker 1 [T1] -12.24 dBm Temp 1 [T1] OSW 2.592400000 GHz Temp 2 [T1] OSW 2.597200000 GHz Center 2.595 GHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:21:35	 Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 5 ms Delta 1 [T1] -0.63 dB OSW 4.520000000 MHz Marker 1 [T1] -11.51 dBm Temp 1 [T1] OSW 2.592400000 GHz Temp 2 [T1] OSW 2.597200000 GHz Center 2.595 GHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:21:55
Highest	 Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 5 ms Delta 1 [T1] -1.56 dB OSW 4.520000000 MHz Marker 1 [T1] -14.02 dBm Temp 1 [T1] OSW 2.615200000 GHz Temp 2 [T1] OSW 2.619700000 GHz Center 2.6175 GHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:22:16	 Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 5 ms Delta 1 [T1] -0.33 dB OSW 4.520000000 MHz Marker 1 [T1] -12.01 dBm Temp 1 [T1] OSW 2.615200000 GHz Temp 2 [T1] OSW 2.619700000 GHz Center 2.6175 GHz 1 MHz/ Span 10 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:22:37

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Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:25:16	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:25:42
Middle	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:26:08	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:26:31
Highest	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:26:57	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:27:23

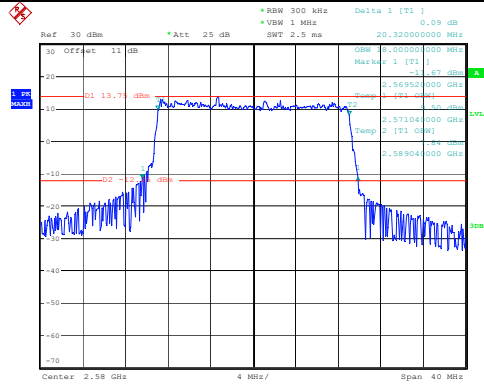
Occupied Bandwidth

Channel

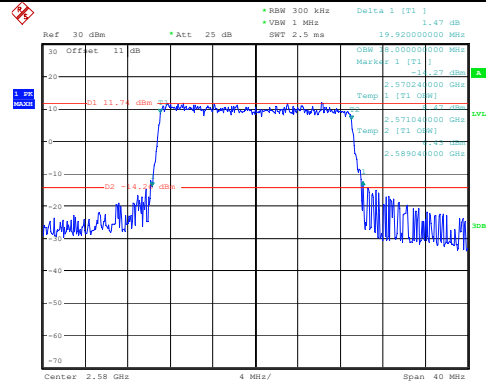
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

Lowest

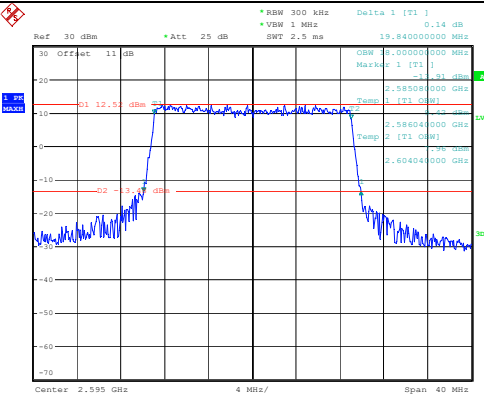


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:27:59

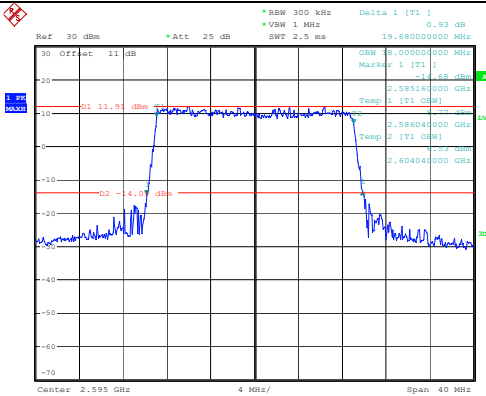


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:28:22

Middle

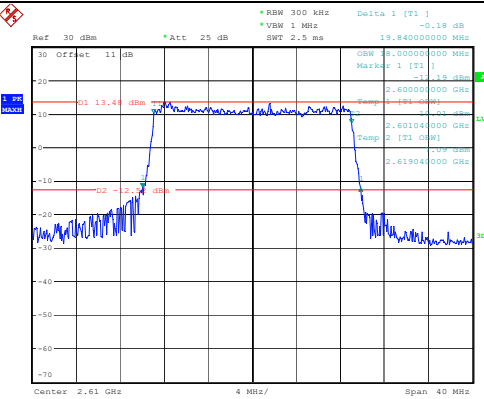


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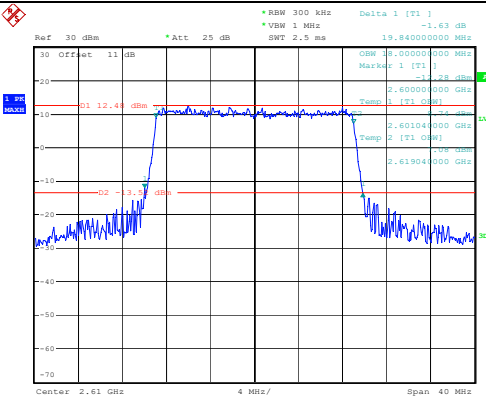


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:29:07

Highest



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:29:31



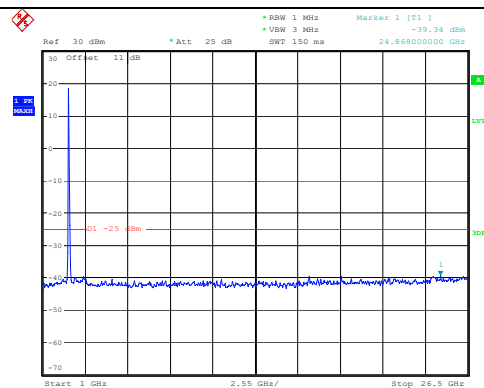
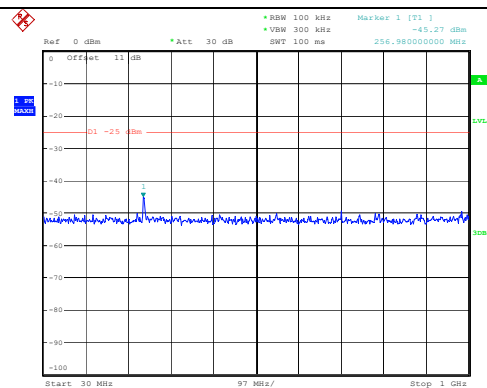
ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:29:53

Spurious Emissions at Antenna Terminal

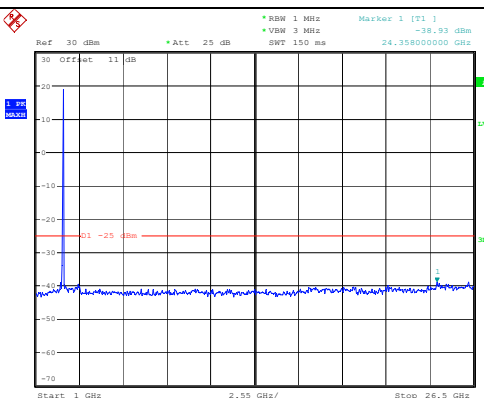
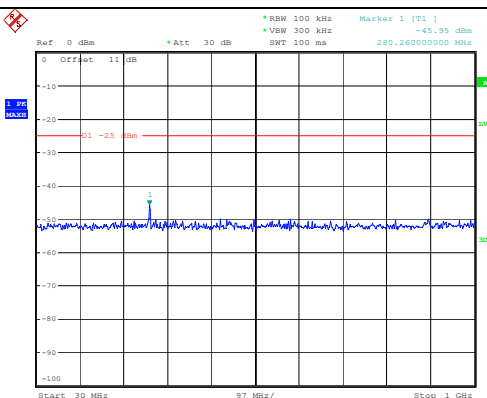
Channel

5MHz Bandwidth QPSK

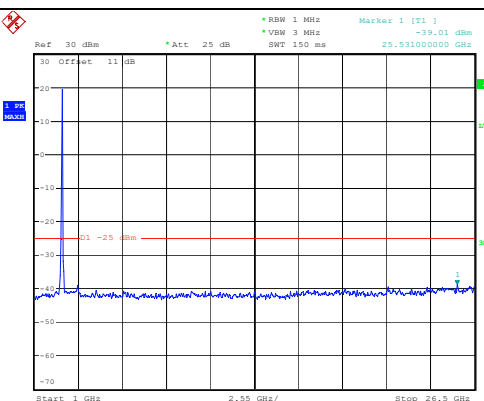
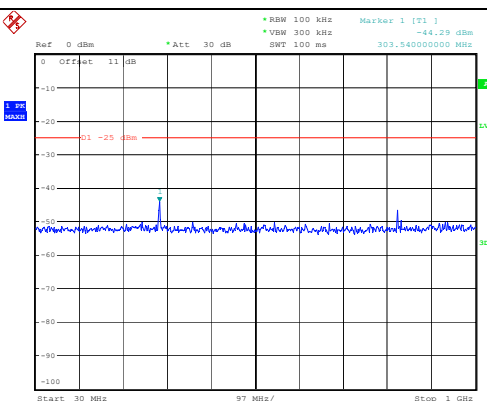
Lowest



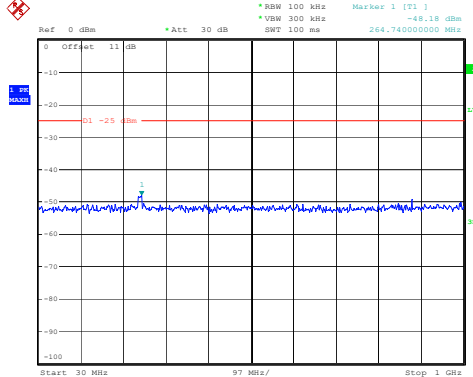
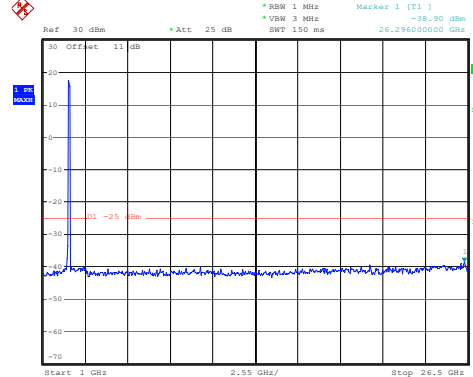
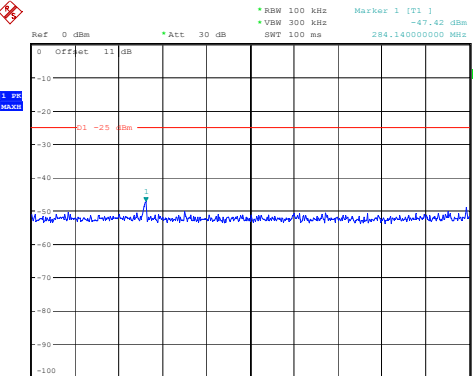
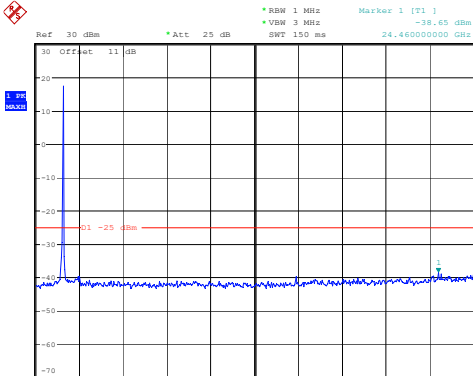
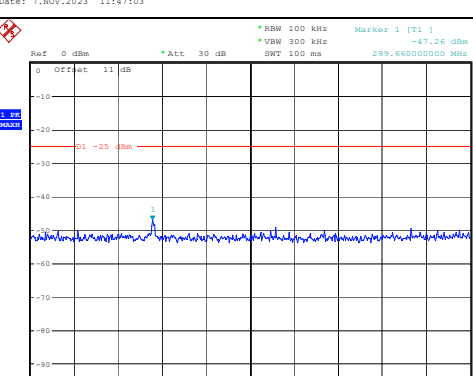
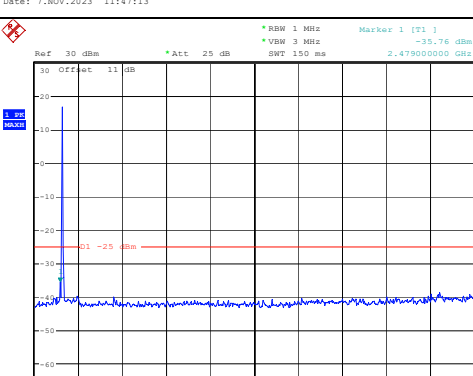
Middle



Highest



Spurious Emissions at Antenna Terminal

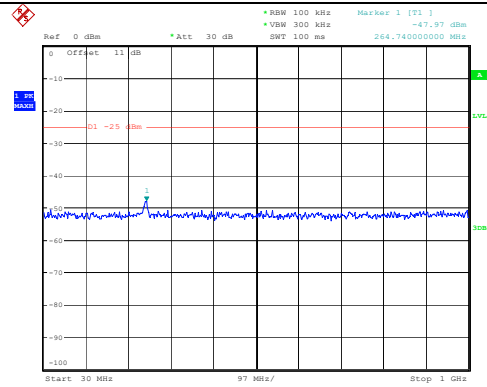
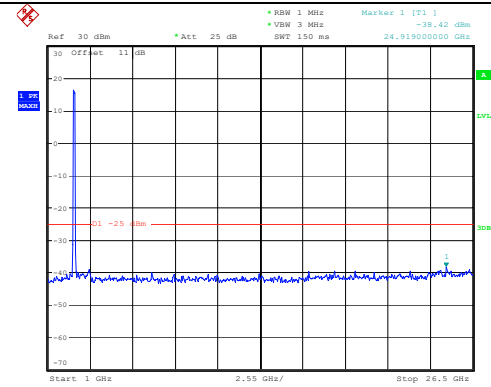
Channel	10MHz Bandwidth QPSK	
Lowest	 Ref 0 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -48.18 dBm *VSW 300 kHz 264.740000000 MHz SWT 100 ms Start 30 MHz 97 MHz/ Stop 1 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:46:40	 Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] -38.90 dBm *VSW 3 MHz 26.296000000 GHz SWT 150 ms Start 1 GHz 2.55 GHz/ Stop 26.5 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:46:50
	 Ref 0 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -47.42 dBm *VSW 300 kHz 284.140000000 MHz SWT 100 ms Start 30 MHz 97 MHz/ Stop 1 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:47:03	 Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] -38.65 dBm *VSW 3 MHz 24.460000000 GHz SWT 150 ms Start 1 GHz 2.55 GHz/ Stop 26.5 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:47:13
Highest	 Ref 0 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -47.26 dBm *VSW 300 kHz 299.660000000 MHz SWT 100 ms Start 30 MHz 97 MHz/ Stop 1 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:47:26	 Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] -35.76 dBm *VSW 3 MHz 2.479000000 GHz SWT 150 ms Start 1 GHz 2.55 GHz/ Stop 26.5 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 11:47:36

Spurious Emissions at Antenna Terminal

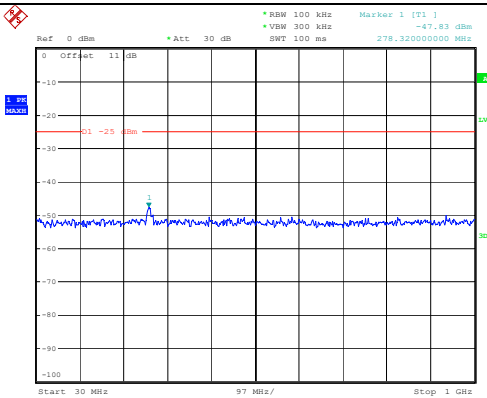
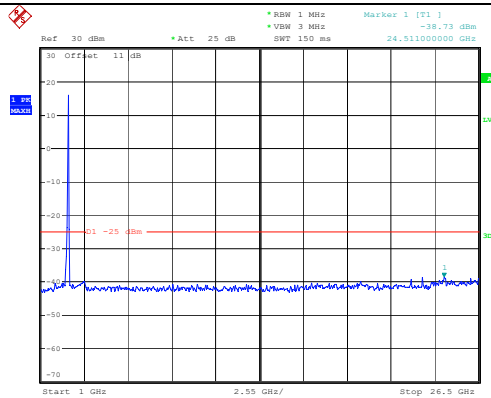
Channel

15MHz Bandwidth QPSK

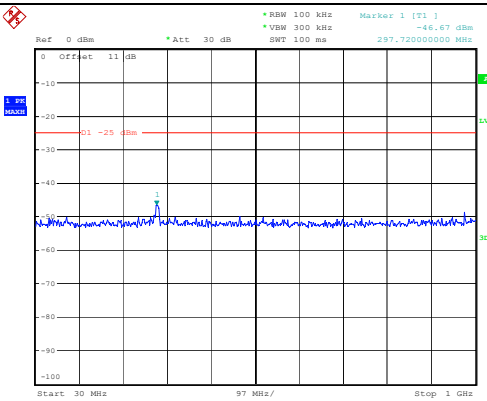
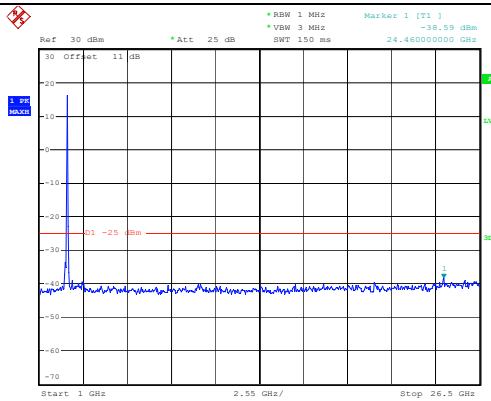
Lowest

ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:47:52ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:48:02

Middle

ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:48:15ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:48:25

Highest

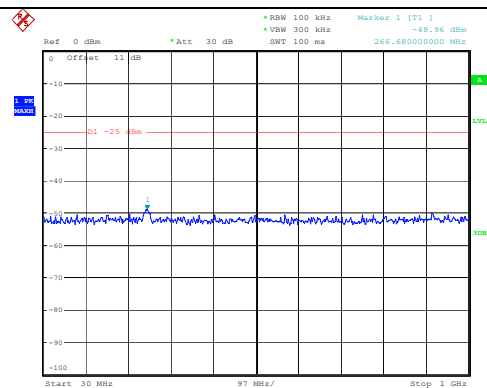
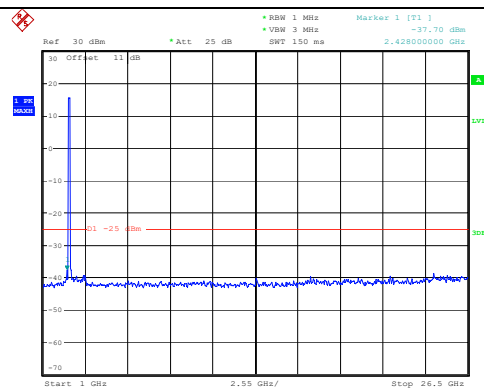
ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:48:41ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:48:51

Spurious Emissions at Antenna Terminal

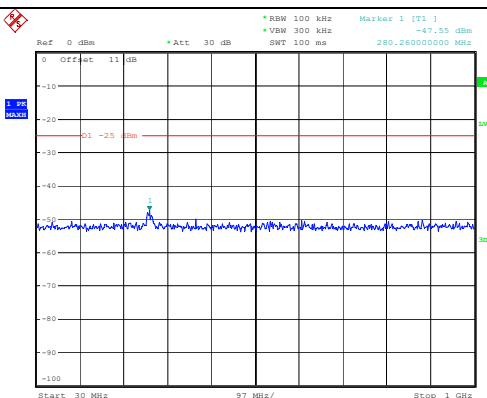
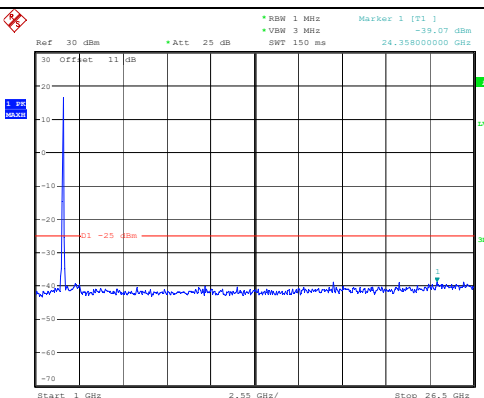
Channel

20MHz Bandwidth QPSK

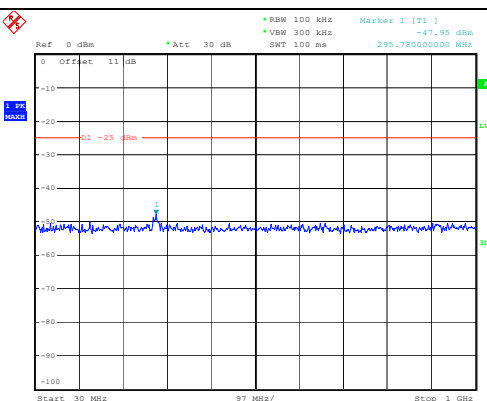
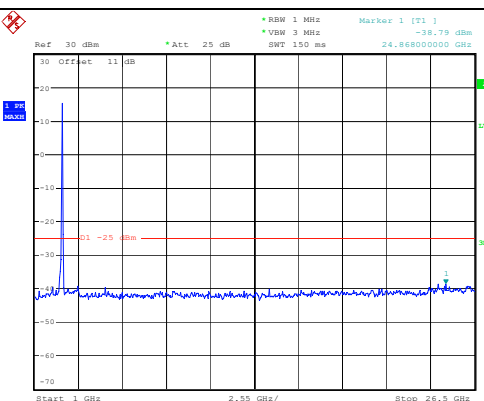
Lowest

ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:50:43ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:50:53

Middle

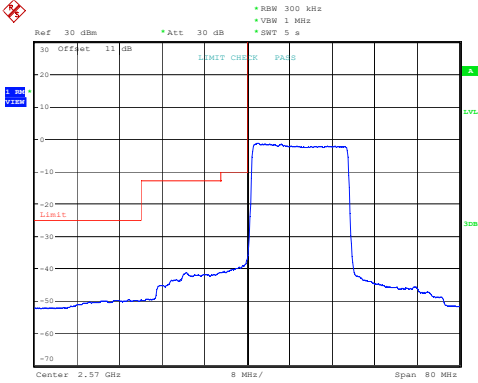
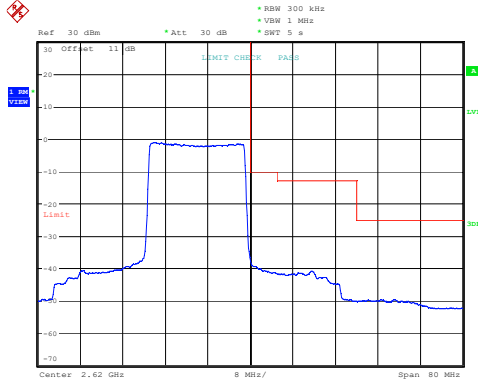
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Date: 7.NOV.2023 11:51:06ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:51:19

Highest

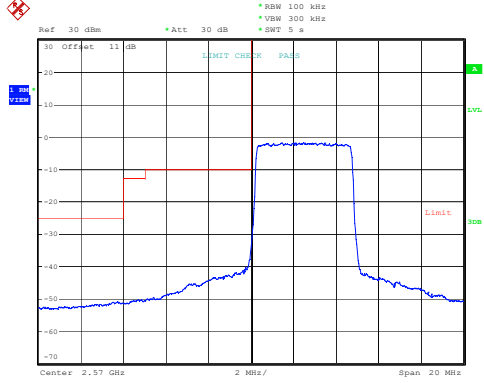
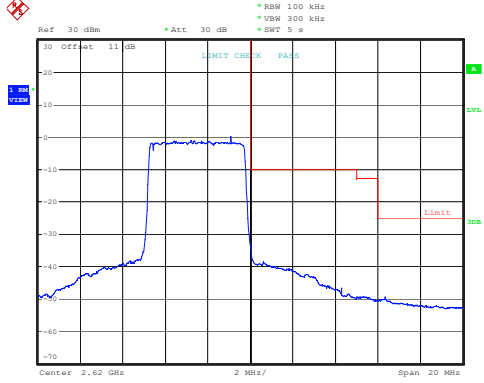
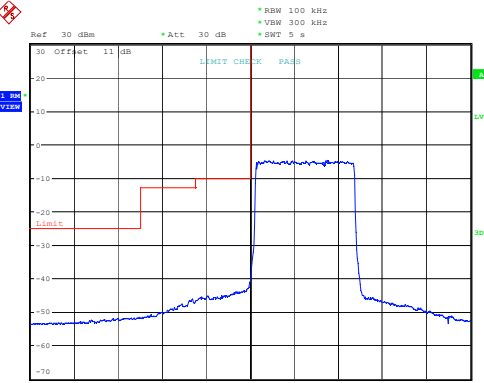
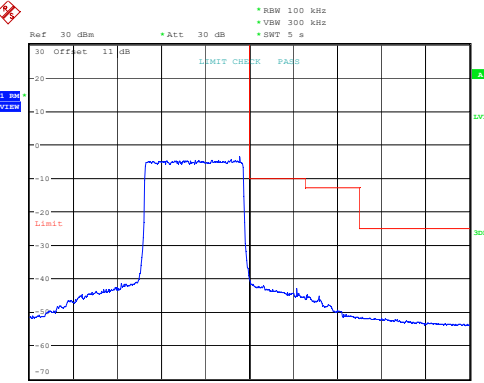
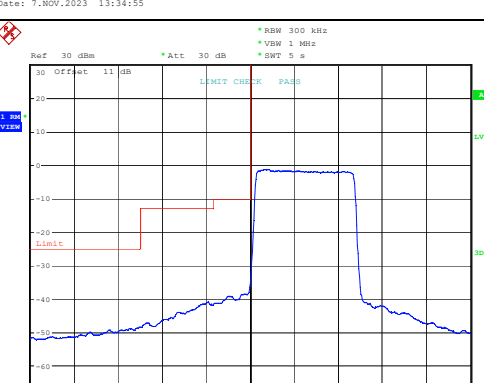
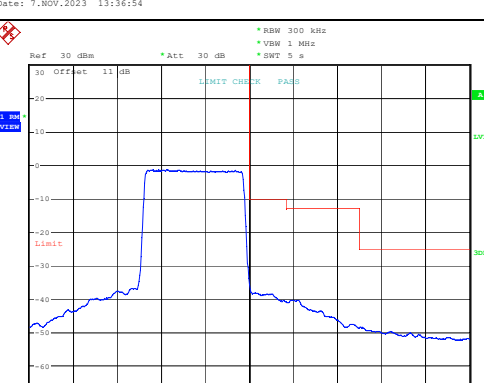
ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:51:34ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:51:45

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 5MHz	Ref 30 dBm *Att 30 dB *RBW 100 kHz *VBW 300 kHz *SWT 5 s 30 Offset 11 dB LIMIT CHECK PASS Center 2.57 GHz 2 MHz/ Span 20 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:29:24	Ref 30 dBm *Att 30 dB *RBW 100 kHz *VBW 300 kHz *SWT 5 s 30 Offset 11 dB LIMIT CHECK PASS Center 2.62 GHz 2 MHz/ Span 20 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:31:56
QPSK 10MHz	Ref 30 dBm *Att 30 dB *RBW 100 kHz *VBW 300 kHz *SWT 5 s 30 Offset 11 dB LIMIT CHECK PASS Center 2.57 GHz 4 MHz/ Span 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:34:08	Ref 30 dBm *Att 30 dB *RBW 100 kHz *VBW 300 kHz *SWT 5 s 30 Offset 11 dB LIMIT CHECK PASS Center 2.62 GHz 4 MHz/ Span 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:36:07
QPSK 15MHz	Ref 30 dBm *Att 30 dB *RBW 300 kHz *VBW 1 MHz *SWT 5 s 30 Offset 11 dB LIMIT CHECK PASS Center 2.57 GHz 6 MHz/ Span 60 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:38:08	Ref 30 dBm *Att 30 dB *RBW 300 kHz *VBW 1 MHz *SWT 5 s 30 Offset 11 dB LIMIT CHECK PASS Center 2.62 GHz 6 MHz/ Span 60 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:39:45

Out of band emission, Band Edge		
Mode	Lowest	Highest
QPSK 20MHz	 Ref: 30 dBm *Att: 30 dB *RBW: 300 kHz *VBW: 1 MHz *SWT: 5 s 30 Offset 11 dB LIMIT CHECK PASS Center: 2.57 GHz 8 MHz/ Span: 80 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:41:44	 Ref: 30 dBm *Att: 30 dB *RBW: 300 kHz *VBW: 1 MHz *SWT: 5 s 30 Offset 11 dB LIMIT CHECK PASS Center: 2.62 GHz 8 MHz/ Span: 80 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:45:57

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 5MHz	 Ref: 30 dBm, Offset: 11 dB, Att: 30 dB, RBW: 100 kHz, VBW: 300 kHz, SWT: 5.0 Center: 2.57 GHz, Span: 20 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:31:02	 Ref: 30 dBm, Offset: 11 dB, Att: 30 dB, RBW: 100 kHz, VBW: 300 kHz, SWT: 5.0 Center: 2.62 GHz, Span: 20 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:32:56
16QAM 10MHz	 Ref: 30 dBm, Offset: 11 dB, Att: 30 dB, RBW: 100 kHz, VBW: 300 kHz, SWT: 5.0 Center: 2.57 GHz, Span: 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:34:55	 Ref: 30 dBm, Offset: 11 dB, Att: 30 dB, RBW: 100 kHz, VBW: 300 kHz, SWT: 5.0 Center: 2.62 GHz, Span: 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:36:54
16QAM 15MHz	 Ref: 30 dBm, Offset: 11 dB, Att: 30 dB, RBW: 300 kHz, VBW: 1 MHz, SWT: 5.0 Center: 2.57 GHz, Span: 60 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:38:59	 Ref: 30 dBm, Offset: 11 dB, Att: 30 dB, RBW: 300 kHz, VBW: 1 MHz, SWT: 5.0 Center: 2.62 GHz, Span: 60 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:40:32

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4.16 Antenna Port Test Data and Results for LTE Band 40

Serial Number:	2CFR-2	Test Date:	2023/11/7~2023/11/27
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rod Luo	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.5-28	Relative Humidity: (%)	48-52	ATM Pressure: (kPa)	101.3-101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200120	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
Minl-Circuits	Power Splitter	ZFRSC-183-S+	S F448201619	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	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).*

Test Frequency for Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2307.5	/	2312.5
10MHz	/	2310	/
5MHz	2352.5	/	2357.5
10MHz	/	2355	/

Test Data:

(Note: Uplink Downlink configuration 3 was tested)

FCC§2.1046;§ 27.50(a)(3)**LTE Band 40 Lower:****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	16.06	/	16.56	16.73	24
	RB1#13	16.77	/	17.53		
	RB1#24	16.42	/	17.3		
	RB15#0	15.64	/	16.26		
	RB15#10	15.78	/	16.56		
	RB25#0	15.69	/	16.4		
5MHz 16QAM	RB1#0	15.45	/	15.83	15.95	24
	RB1#13	16.16	/	16.75		
	RB1#24	15.8	/	16.55		
	RB15#0	14.59	/	15.32		
	RB15#10	14.74	/	15.6		
	RB25#0	15.15	/	15.38		
10MHz QPSK	RB1#0	/	16.16	/	17.2	24
	RB1#25	/	17.03	/		
	RB1#49	/	18	/		
	RB25#0	/	15.66	/		
	RB25#25	/	16.63	/		
	RB50#0	/	16.17	/		
10MHz 16QAM	RB1#0	/	15.22	/	16.27	24
	RB1#25	/	16.09	/		
	RB1#49	/	17.07	/		
	RB25#0	/	14.76	/		
	RB25#25	/	15.73	/		
	RB50#0	/	15.21	/		

Note:

For 5MHz mode, the channel power is equal to the test result in dBm/5MHz.

For 10MHz mode, the channel power is sum of 10MHz bandwidth, the result is less than 24dBm, so in any 5MHz bandwidth, it's will not exceed limit

EIRP=Conducted Power(dBm) - Lc(dB) + Gt(dBi)

EIRP PSD=Conducted PSD(dBm/5MHz) - Lc(dB) + Gt(dBi)

LTE Band 40 Upper:**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	16.76	/	16.74	16.43	24
	RB1#13	17.2	/	17.23		
	RB1#24	16.6	/	16.64		
	RB15#0	16.16	/	16.1		
	RB15#10	16.1	/	16.08		
	RB25#0	16.11	/	16.05		
5MHz 16QAM	RB1#0	16.18	/	15.83	15.81	24
	RB1#13	16.61	/	16.33		
	RB1#24	15.98	/	15.72		
	RB15#0	15.43	/	15.26		
	RB15#10	15.33	/	15.22		
	RB25#0	15.28	/	15.23		
10MHz QPSK	RB1#0	/	17.14	/	16.56	24
	RB1#25	/	17.27	/		
	RB1#49	/	17.36	/		
	RB25#0	/	16.24	/		
	RB25#25	/	16.37	/		
	RB50#0	/	16.3	/		
10MHz 16QAM	RB1#0	/	16.06	/	15.52	24
	RB1#25	/	16.19	/		
	RB1#49	/	16.32	/		
	RB25#0	/	15.45	/		
	RB25#25	/	15.57	/		
	RB50#0	/	15.48	/		

Note:

For 5MHz mode, the channel power is equal to the test result in dBm/5MHz.

For 10MHz mode, the channel power is sum of 10MHz bandwidth, the result is less than 24dBm, so in any 5MHz bandwidth, it's will not exceed limit

EIRP=Conducted Power(dBm) - Lc(dB) + G_T(dBi)EIRP PSD=Conducted PSD(dBm/5MHz) - Lc(dB) + G_T(dBi)**Result:****Pass**

Duty Cycle

Operation Band	Modulation	Bandwidth	Ton (ms)	Ton+off (ms)	Duty Cycle (%)	Limit (%)
LTE Band 40 Lower	QPSK	5M	2.995	10.000	29.95	38
		10M	2.995	10.005	29.94	38
	16QAM	5M	3.005	10.010	30.02	38
		10M	2.995	10.000	29.95	38
LTE Band 40 Upper	QPSK	5M	2.995	10.005	29.94	38
		10M	3.000	10.005	29.99	38
	16QAM	5M	3.000	10.005	29.99	38
		10M	3.000	10.005	29.99	38
					Result:	Pass

FCC §2.1049, §27.53:Occupied Bandwidth**LTE Band 40 Lower:**

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	4.50	/	4.52	5.18	/	5.00
5MHz 16QAM	4.50	/	4.50	5.12	/	5.18
10MHz QPSK	/	8.96	/	/	9.80	/
10MHz 16QAM	/	8.96	/	/	9.72	/

LTE Band 40 Upper:

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	4.52	/	4.52	5.04	/	5.06
5MHz 16QAM	4.52	/	4.52	5.10	/	5.10
10MHz QPSK	/	9.00	/	/	9.84	/
10MHz 16QAM	/	9.00	/	/	9.76	/

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.
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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.
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FCC §2.1055, §27.54: Frequency Stability**LTE Band 40 Lower:**

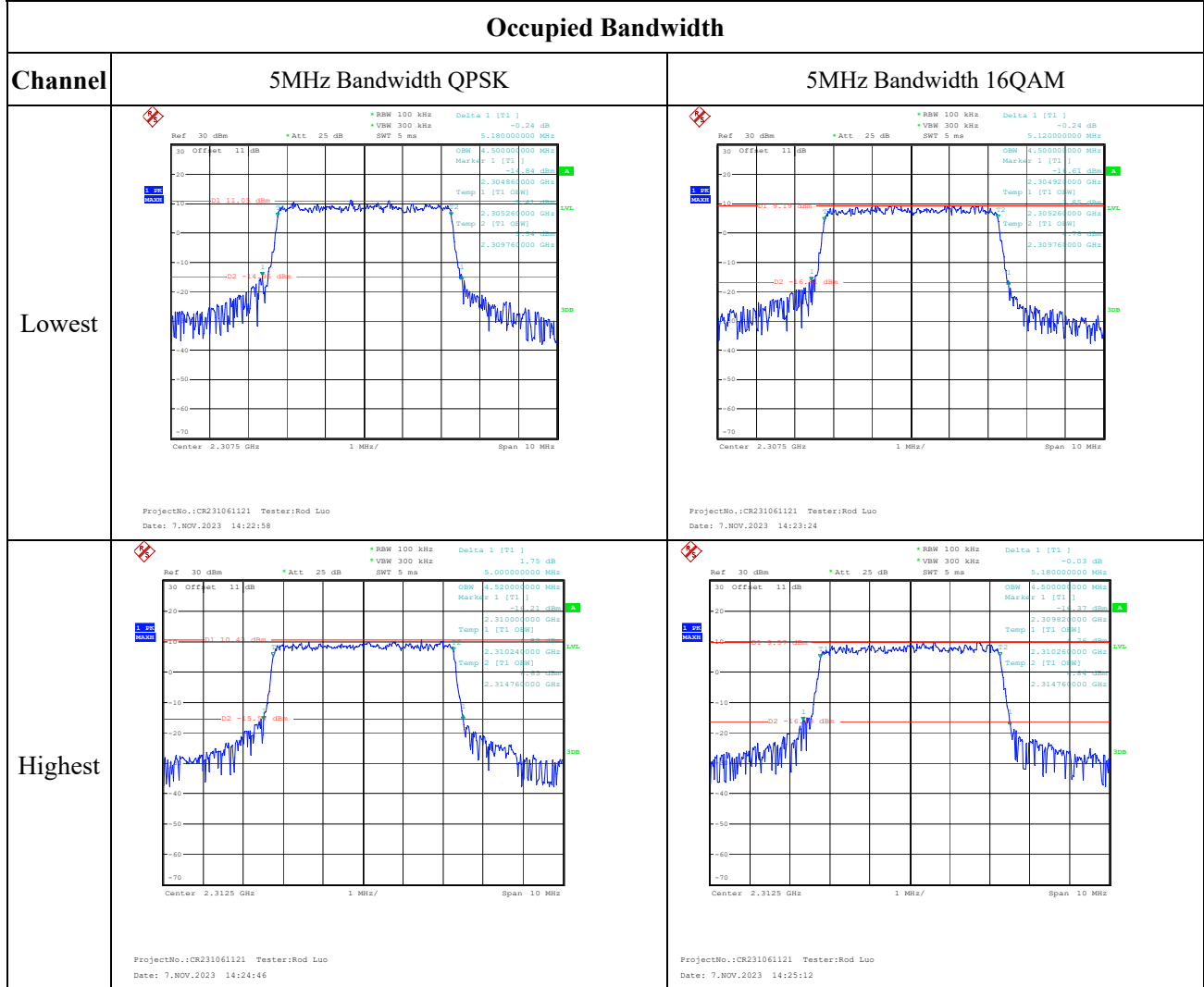
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	2305.112	2305.000	2314.873	2315.000
	-20	3.85	2305.023	2305.000	2314.868	2315.000
	-10	3.85	2305.127	2305.000	2314.907	2315.000
	0	3.85	2305.066	2305.000	2314.860	2315.000
	10	3.85	2305.135	2305.000	2314.974	2315.000
	20	3.85	2305.106	2305.000	2314.873	2315.000
	30	3.85	2305.024	2305.000	2314.866	2315.000
	40	3.85	2305.074	2305.000	2314.975	2315.000
	50	3.85	2305.007	2305.000	2314.950	2315.000
Frequency Stability vs. Voltage	20	3.5	2305.034	2305.000	2314.924	2315.000
	20	4.4	2305.049	2305.000	2314.861	2315.000
					Result:	Pass

Test Mode:	10M 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	2305.024	2305.000	2314.925	2315.000
	-20	3.85	2305.085	2305.000	2314.855	2315.000
	-10	3.85	2305.053	2305.000	2314.873	2315.000
	0	3.85	2305.135	2305.000	2314.947	2315.000
	10	3.85	2305.060	2305.000	2314.881	2315.000
	20	3.85	2305.037	2305.000	2314.988	2315.000
	30	3.85	2305.048	2305.000	2314.897	2315.000
	40	3.85	2305.118	2305.000	2314.992	2315.000
	50	3.85	2305.063	2305.000	2314.888	2315.000
Frequency Stability vs. Voltage	20	3.5	2305.038	2305.000	2314.940	2315.000
	20	4.4	2305.081	2305.000	2314.896	2315.000
					Result:	Pass

LTE Band 40 Upper:						
Test Mode:	10M 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	2350.086	2350.000	2359.857	2360.000
	-20	3.85	2350.148	2350.000	2359.957	2360.000
	-10	3.85	2350.116	2350.000	2359.937	2360.000
	0	3.85	2350.131	2350.000	2359.996	2360.000
	10	3.85	2350.130	2350.000	2359.853	2360.000
	20	3.85	2350.020	2350.000	2359.976	2360.000
	30	3.85	2350.049	2350.000	2359.908	2360.000
	40	3.85	2350.052	2350.000	2359.958	2360.000
	50	3.85	2350.056	2350.000	2359.950	2360.000
Frequency Stability vs. Voltage	20	3.5	2350.029	2350.000	2359.914	2360.000
	20	4.4	2350.020	2350.000	2359.922	2360.000
					Result:	Pass

Test Mode:	10M 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	2350.098	2350.000	2359.870	2360.000
	-20	3.85	2350.113	2350.000	2359.914	2360.000
	-10	3.85	2350.097	2350.000	2359.874	2360.000
	0	3.85	2350.088	2350.000	2359.856	2360.000
	10	3.85	2350.050	2350.000	2359.944	2360.000
	20	3.85	2350.027	2350.000	2359.932	2360.000
	30	3.85	2350.073	2350.000	2359.964	2360.000
	40	3.85	2350.128	2350.000	2359.897	2360.000
	50	3.85	2350.027	2350.000	2359.929	2360.000
Frequency Stability vs. Voltage	20	3.5	2350.031	2350.000	2359.939	2360.000
	20	4.4	2350.040	2350.000	2359.873	2360.000
					Result:	Pass

Test Plots (Note: The 11 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):
2305-2315 MHz:



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Occupied Bandwidth

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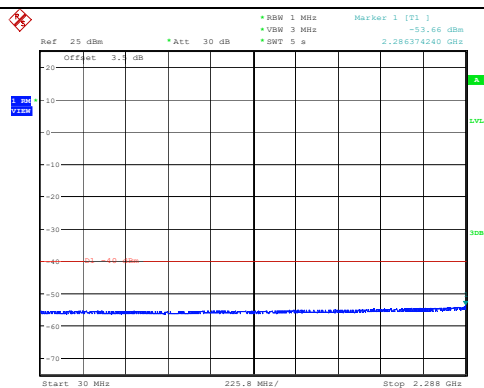
2305-2315 MHz:

Spurious Emissions at Antenna Terminal

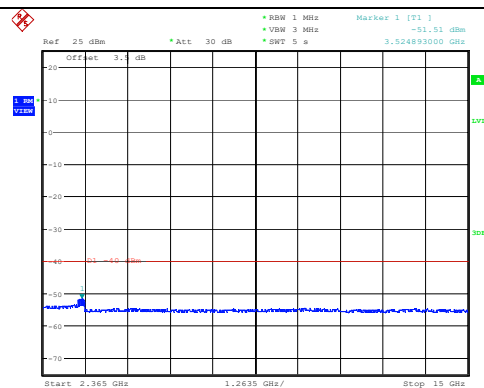
Channel

5MHz Bandwidth QPSK

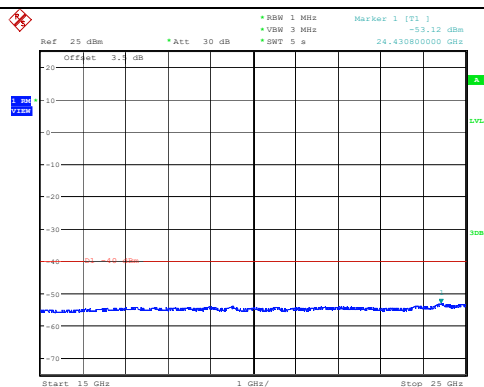
Lowest



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 15:22:02



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 15:22:43



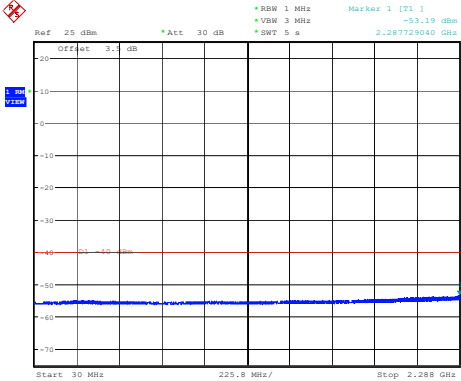
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Date: 27.NOV.2023 15:23:25

Spurious Emissions at Antenna Terminal

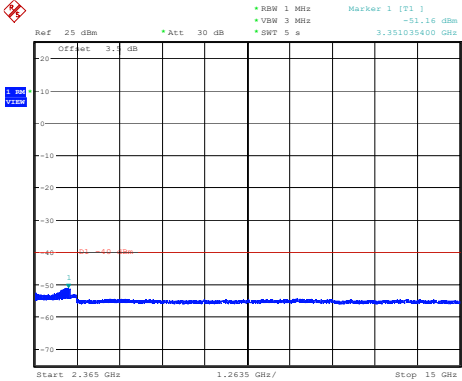
Channel

5MHz Bandwidth QPSK

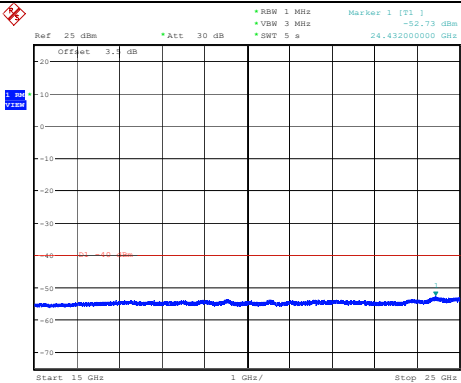
Highest



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 15:27:38

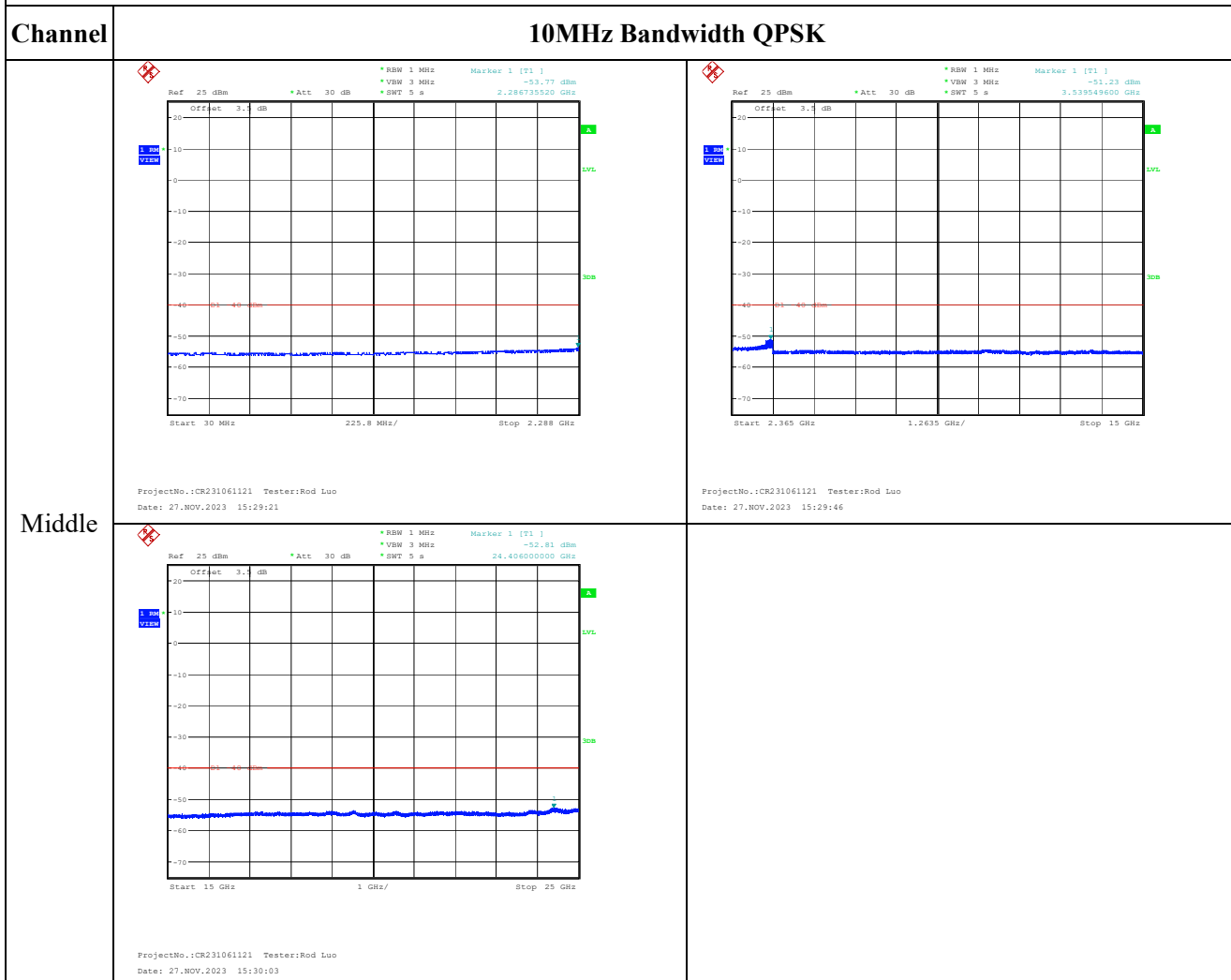


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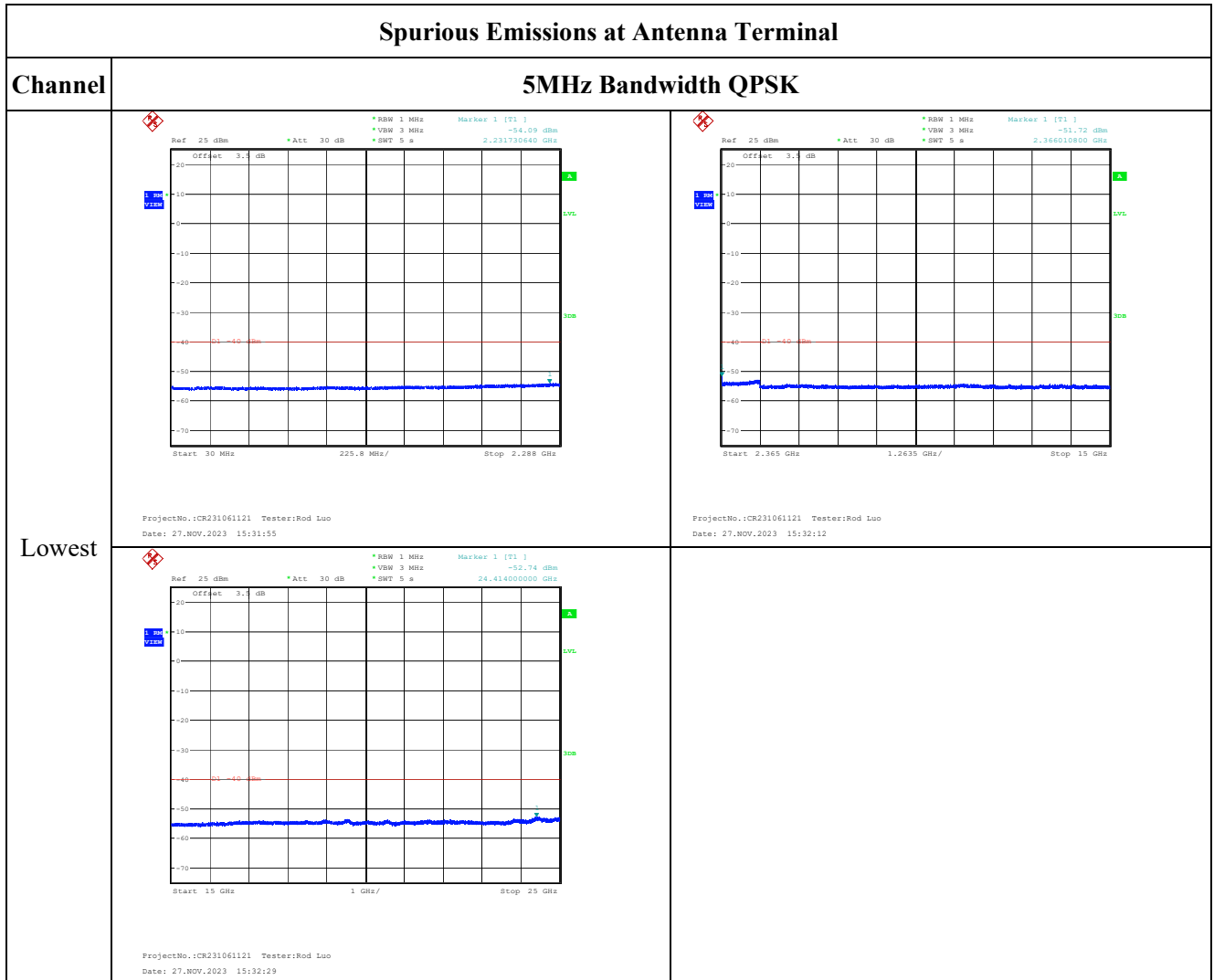


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 15:28:19

Spurious Emissions at Antenna Terminal



Spurious Emissions at Antenna Terminal

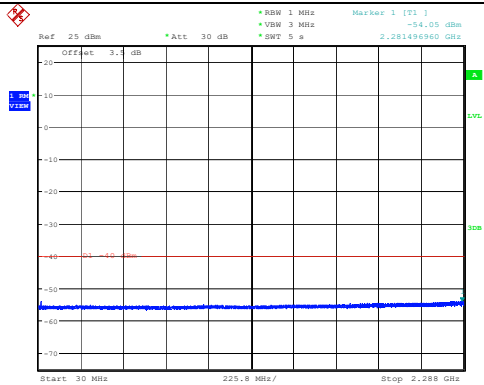


Spurious Emissions at Antenna Terminal

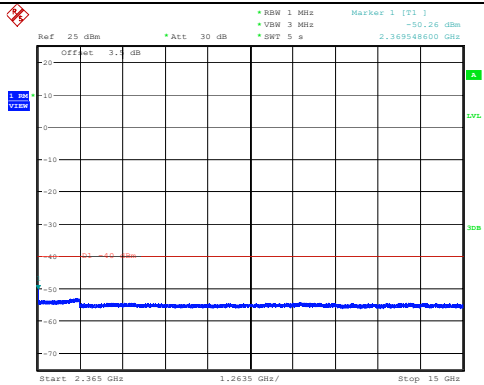
Channel

5MHz Bandwidth QPSK

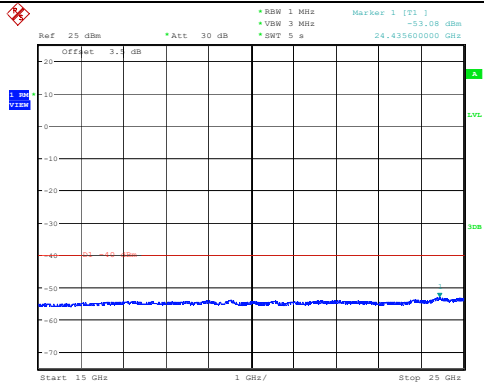
Highest



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 15:39:00



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 15:39:18



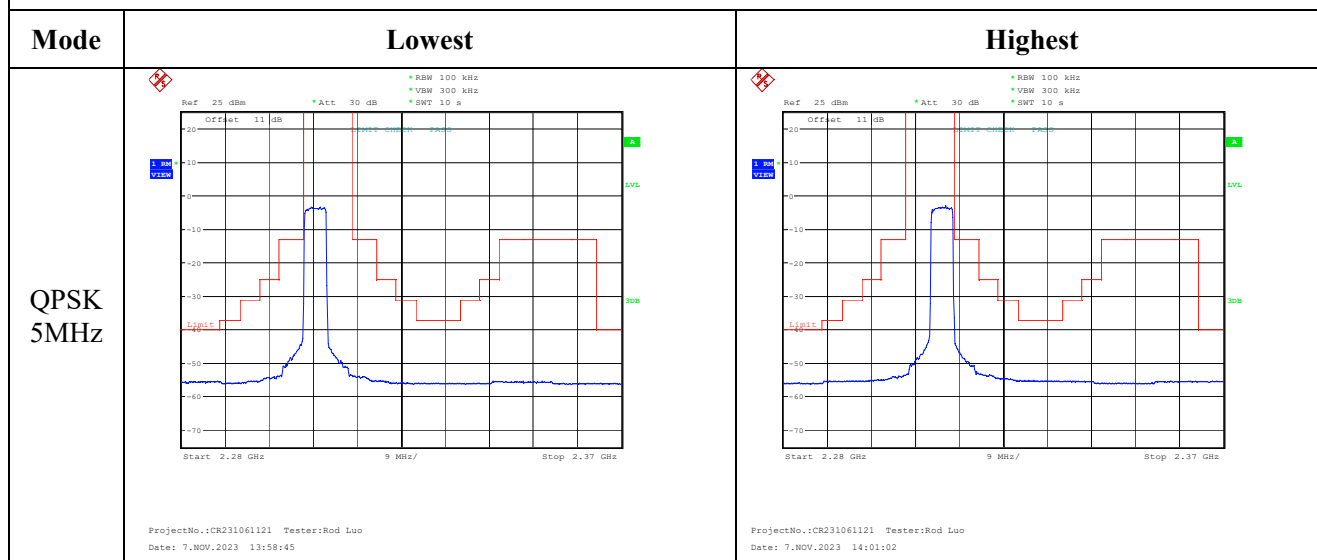
ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 15:39:56

Spurious Emissions at Antenna Terminal

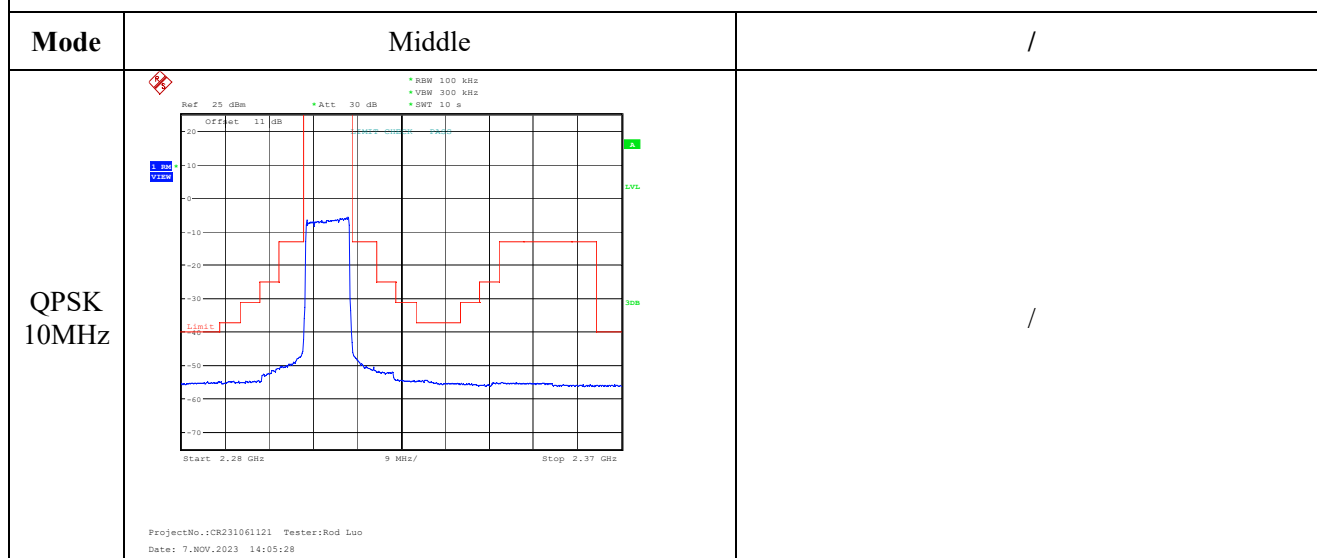
Channel	10MHz Bandwidth QPSK	
Middle		
	ProjectNo.:CR231061121 Tester:Rod Luo Date: 27.NOV.2023 15:36:44	ProjectNo.:CR231061121 Tester:Rod Luo Date: 27.NOV.2023 15:37:23
	ProjectNo.:CR231061121 Tester:Rod Luo Date: 27.NOV.2023 15:37:46	

2305-2315 MHz:

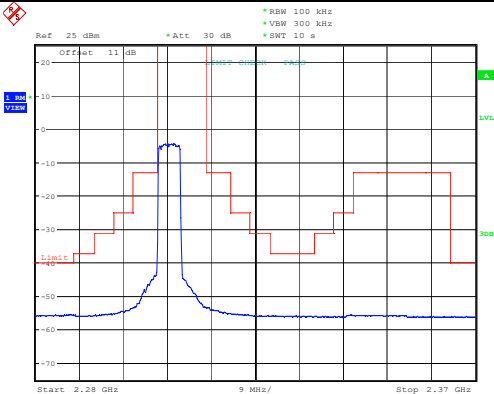
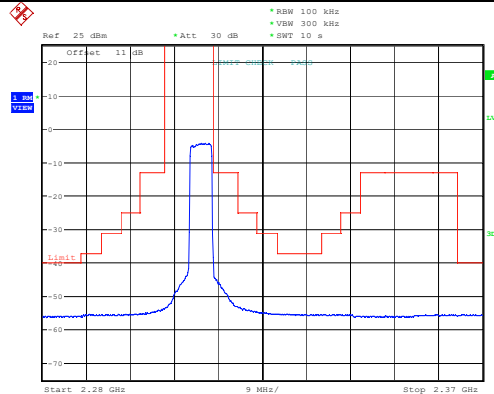
Out of band emission, Band Edge



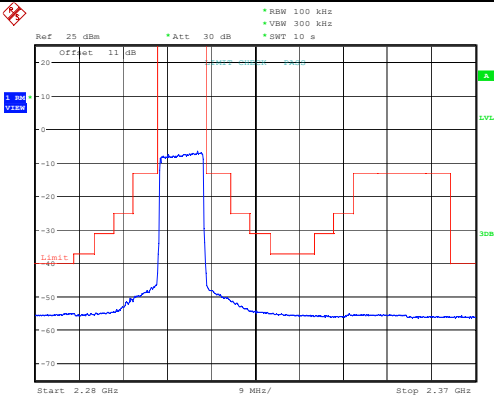
Out of band emission, Band Edge



Out of band emission, Band Edge

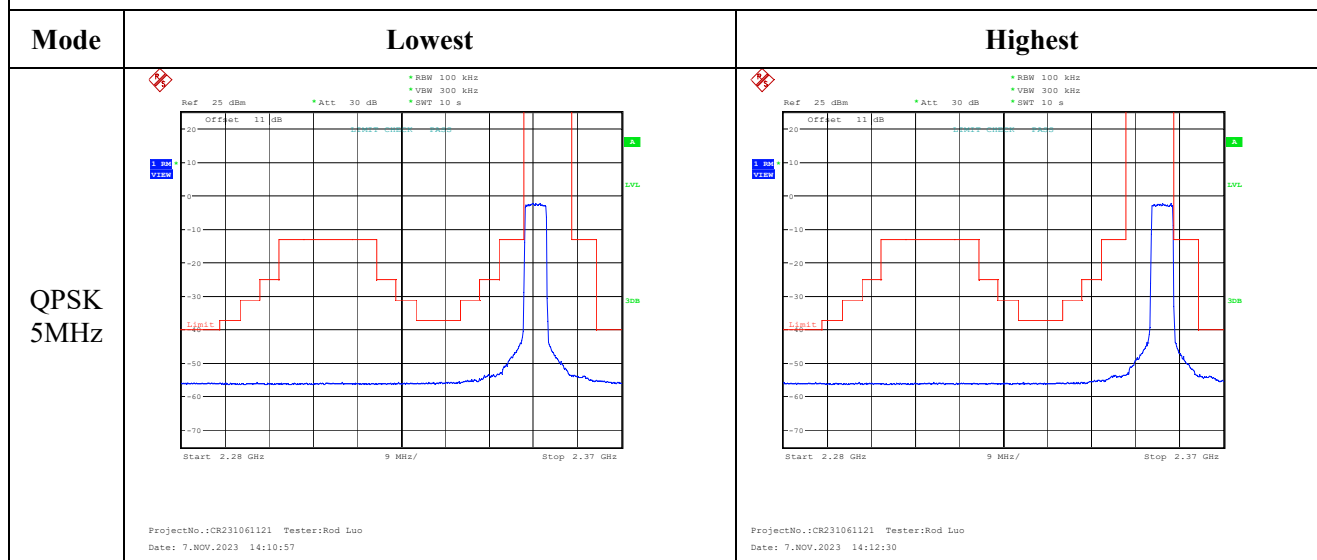
Mode	Lowest	Highest
16QAM 5MHz	 Ref: 25 dBm *RBW 100 kHz *VBW 300 kHz *SWT 10 s Offset: 11 dB *Att: 30 dB Start: 2.28 GHz 9 MHz/ Stop: 2.37 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:59:54	 Ref: 25 dBm *RBW 100 kHz *VBW 300 kHz *SWT 10 s Offset: 11 dB *Att: 30 dB Start: 2.28 GHz 9 MHz/ Stop: 2.37 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 14:02:19

Out of band emission, Band Edge

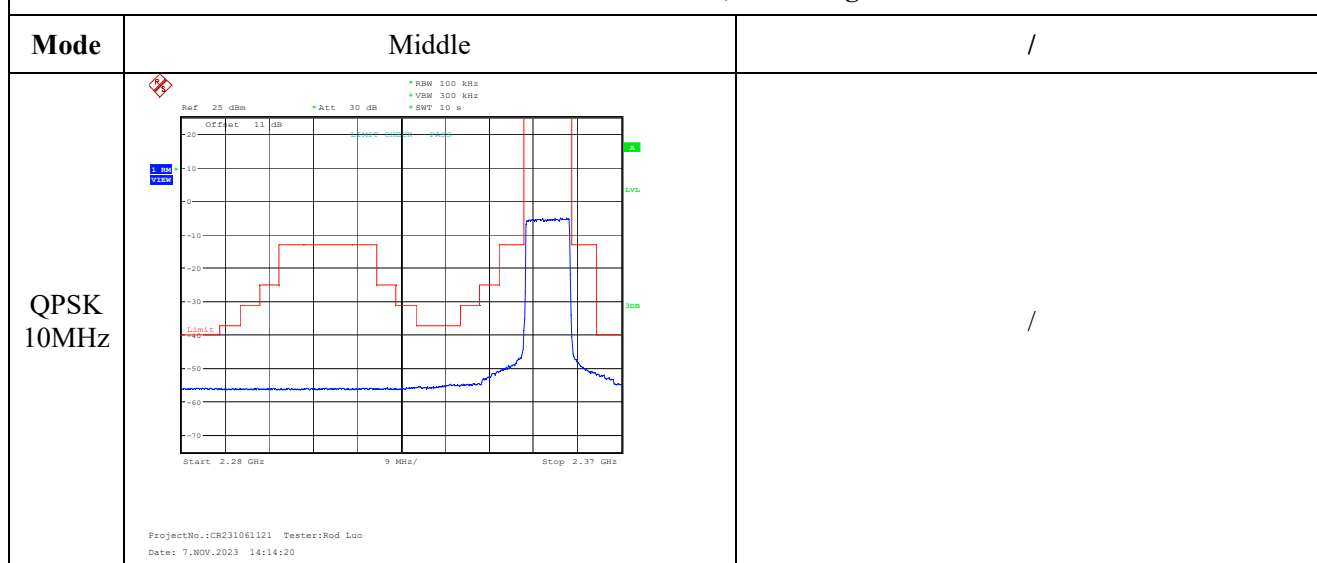
Mode	Middle	/
16QAM 10MHz	 Ref: 25 dBm *RBW 100 kHz *VBW 300 kHz *SWT 10 s Offset: 11 dB *Att: 30 dB Start: 2.28 GHz 9 MHz/ Stop: 2.37 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 14:06:08	/

2350-2360 MHz:

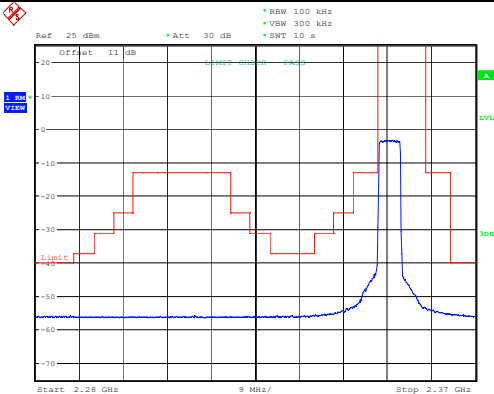
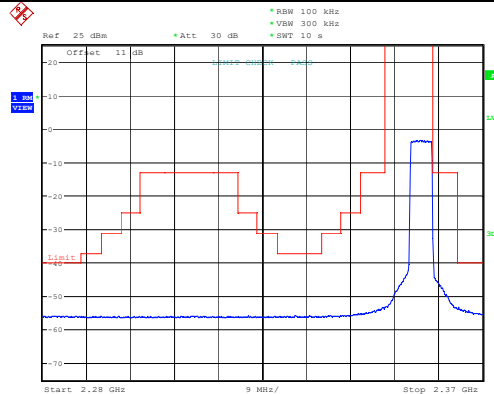
Out of band emission, Band Edge



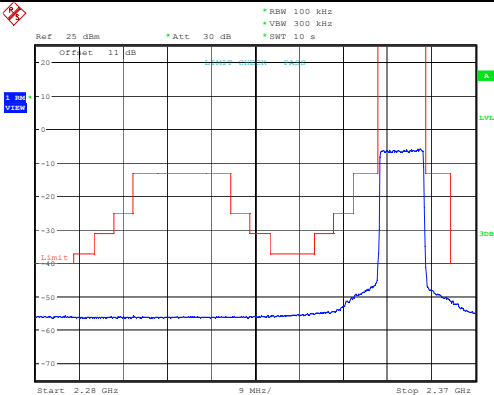
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 5MHz	 Ref: 25 dBm *RBW 100 kHz *VSW 300 kHz *Att: 30 dB *SWT 10 s Offset: 11 dB Start: 2.28 GHz 9 MHz/ Stop: 2.37 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 14:11:43	 Ref: 25 dBm *RBW 100 kHz *VSW 300 kHz *Att: 30 dB *SWT 10 s Offset: 11 dB Start: 2.28 GHz 9 MHz/ Stop: 2.37 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 14:13:18

Out of band emission, Band Edge

Mode	Middle	/
16QAM 10MHz	 Ref: 25 dBm *RBW 100 kHz *VSW 300 kHz *Att: 30 dB *SWT 10 s Offset: 11 dB Start: 2.28 GHz 9 MHz/ Stop: 2.37 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 14:15:05	/

2305-2315 MHz:

Duty cycle		
Mode	QPSK	16QAM
5MHz	Ref 30 dBm *Att 30 dB *VSW 10 MHz SWT 40 ms Delta 2 [T1] 1 -0.04 dB Marker 1 [T1] 1 20.75 dBm Delta 2 [T1] 1 -1.49 dB Q1 2.3075 dBm Center 2.3075 GHz 4 ms/ ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:52:34	Ref 30 dBm *Att 30 dB *VSW 10 MHz SWT 40 ms Delta 2 [T1] 1 0.21 dB Marker 1 [T1] 1 20.75 dBm Delta 2 [T1] 1 -1.24 dB Q1 2.321 dBm Center 2.3075 GHz 4 ms/ ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:52:08
10MHz	Ref 30 dBm *Att 30 dB *VSW 10 MHz SWT 40 ms Delta 2 [T1] 1 -0.27 dB Marker 1 [T1] 1 20.75 dBm Delta 2 [T1] 1 -1.49 dB Q1 1.954 dBm Center 2.31 GHz 4 ms/ ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:53:31	Ref 30 dBm *Att 30 dB *VSW 10 MHz SWT 40 ms Delta 2 [T1] 1 0.56 dB Marker 1 [T1] 1 20.75 dBm Delta 2 [T1] 1 -1.49 dB Q1 1.9 dBm Center 2.31 GHz 4 ms/ ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:53:06

2350-2360 MHz:

Duty cycle		
Mode	QPSK	16QAM
5MHz	Ref 30 dBm * Att 30 dB * VSW 10 MHz * SWT 40 ms Delta 3 [T1] 1.77 dB Marker 1 [T1] 11.00 dBm Delta 2 [T2] 11.00 dBm Delta 3 [T3] 11.00 dBm Q1 3.019 dBm Center 2.3525 GHz 4 ms/ ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:54:18	Ref 30 dBm * Att 30 dB * VSW 10 MHz * SWT 40 ms Delta 3 [T1] -0.71 dB Marker 1 [T1] 11.00 dBm Delta 2 [T2] 11.00 dBm Delta 3 [T3] 11.00 dBm Q1 1.9 dBm Center 2.3525 GHz 4 ms/ ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:54:11
10MHz	Ref 30 dBm * Att 30 dB * VSW 10 MHz * SWT 40 ms Delta 3 [T1] 1.40 dB Marker 1 [T1] 11.00 dBm Delta 2 [T2] 11.00 dBm Delta 3 [T3] 11.00 dBm Q1 2.367 dBm Center 2.355 GHz 4 ms/ ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:55:30	Ref 30 dBm * Att 30 dB * VSW 10 MHz * SWT 40 ms Delta 3 [T1] 1.23 dB Marker 1 [T1] 11.00 dBm Delta 2 [T2] 11.00 dBm Delta 3 [T3] 11.00 dBm Q1 2.704 dBm Center 2.355 GHz 4 ms/ ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 13:55:09

4.17 Antenna Port Test Data and Results for LTE Band 41

Serial Number:	2CFR-2	Test Date:	2023/11/07-2023/11/27
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rod Luo	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.5	Relative Humidity: (%)	48	ATM Pressure: (kPa)	101.3
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200120	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSV40-N	102259	2023/4/18	2024/4/17
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
Minl-Circuits	Power Splitter	ZFRSC-183-S+	S F448201619	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	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).

Test Frequency for Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2498.5	2593	2687.5
10MHz	2501	2593	2685
15MHz	2503.5	2593	2682.5
20MHz	2506	2593	2680

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	18.01	17.85	18.66	18.81	33
	RB1#13	18.35	18.22	19.01		
	RB1#24	17.7	17.59	18.38		
	RB15#0	17.33	17.09	17.82		
	RB15#10	17.22	16.99	17.72		
	RB25#0	17.23	17	17.73		
5MHz 16QAM	RB1#0	17.1	17.04	17.54	17.72	33
	RB1#13	17.46	17.41	17.92		
	RB1#24	16.8	16.8	17.28		
	RB15#0	16.48	16.25	16.67		
	RB15#10	16.36	16.15	16.57		
	RB25#0	16.41	16.11	16.67		
10MHz QPSK	RB1#0	18.69	18.25	19.11	18.93	33
	RB1#25	18.64	18.21	19.02		
	RB1#49	18.78	18.24	19.13		
	RB25#0	17.57	17.28	17.95		
	RB25#25	17.61	17.28	17.95		
	RB50#0	17.58	17.27	17.95		
10MHz 16QAM	RB1#0	17.58	17.44	17.82	17.66	33
	RB1#25	17.57	17.38	17.83		
	RB1#49	17.72	17.41	17.86		
	RB25#0	16.75	16.39	16.95		
	RB25#25	16.8	16.38	16.95		
	RB50#0	16.76	16.38	16.92		
15MHz QPSK	RB1#0	18.88	18.7	19.44	19.24	33
	RB1#38	18.48	18.24	19.14		
	RB1#74	18.59	17.92	18.87		
	RB36#0	17.63	17.51	18.26		
	RB36#39	17.49	17.1	17.91		
	RB75#0	17.54	17.3	18.08		
15MHz 16QAM	RB1#0	17.91	17.63	18.5	18.3	33
	RB1#38	17.57	17.14	18.24		
	RB1#74	17.67	16.84	17.94		
	RB36#0	16.76	16.58	17.26		
	RB36#39	16.62	16.16	16.93		
	RB75#0	16.65	16.4	17.04		

20MHz QPSK	RB1#0	19.15	19.35	19.65	19.45	33
	RB1#50	18.35	18.33	18.94		
	RB1#99	18.96	18.22	18.96		
	RB50#0	17.78	17.83	18.35		
	RB50#50	17.74	17.24	17.99		
	RB100#0	17.74	17.52	18.14		
20MHz 16QAM	RB1#0	18.08	18.58	18.57	18.38	33
	RB1#50	17.32	17.49	18.02		
	RB1#99	17.93	17.43	17.91		
	RB50#0	16.83	16.96	17.39		
	RB50#50	16.8	16.37	17.04		
	RB100#0	16.74	16.63	17.2		
Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(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	9.07	9.83	9.28	13
	RB100#0	9.16	9.19	9.3	13
20MHz 16QAM	RB1#0	9.83	10.35	10	13
	RB100#0	9.91	9.48	10.06	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	4.520	4.520	4.520	5.060	5.080	4.980
5MHz 16QAM	4.520	4.520	4.520	5.180	5.080	5.080
10MHz QPSK	8.960	9.000	9.000	9.800	9.760	9.800
10MHz 16QAM	8.960	8.960	8.960	9.800	9.760	9.800
15MHz QPSK	13.620	13.560	13.500	15.600	15.480	15.780
15MHz 16QAM	13.620	13.560	13.560	16.680	15.360	15.540
20MHz QPSK	18.000	17.920	18.000	19.760	20.240	19.760
20MHz 16QAM	18.000	18.080	18.000	20.080	20.000	19.600
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.
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FCC §2.1051, § 27.53:Out of band emission, Band Edge

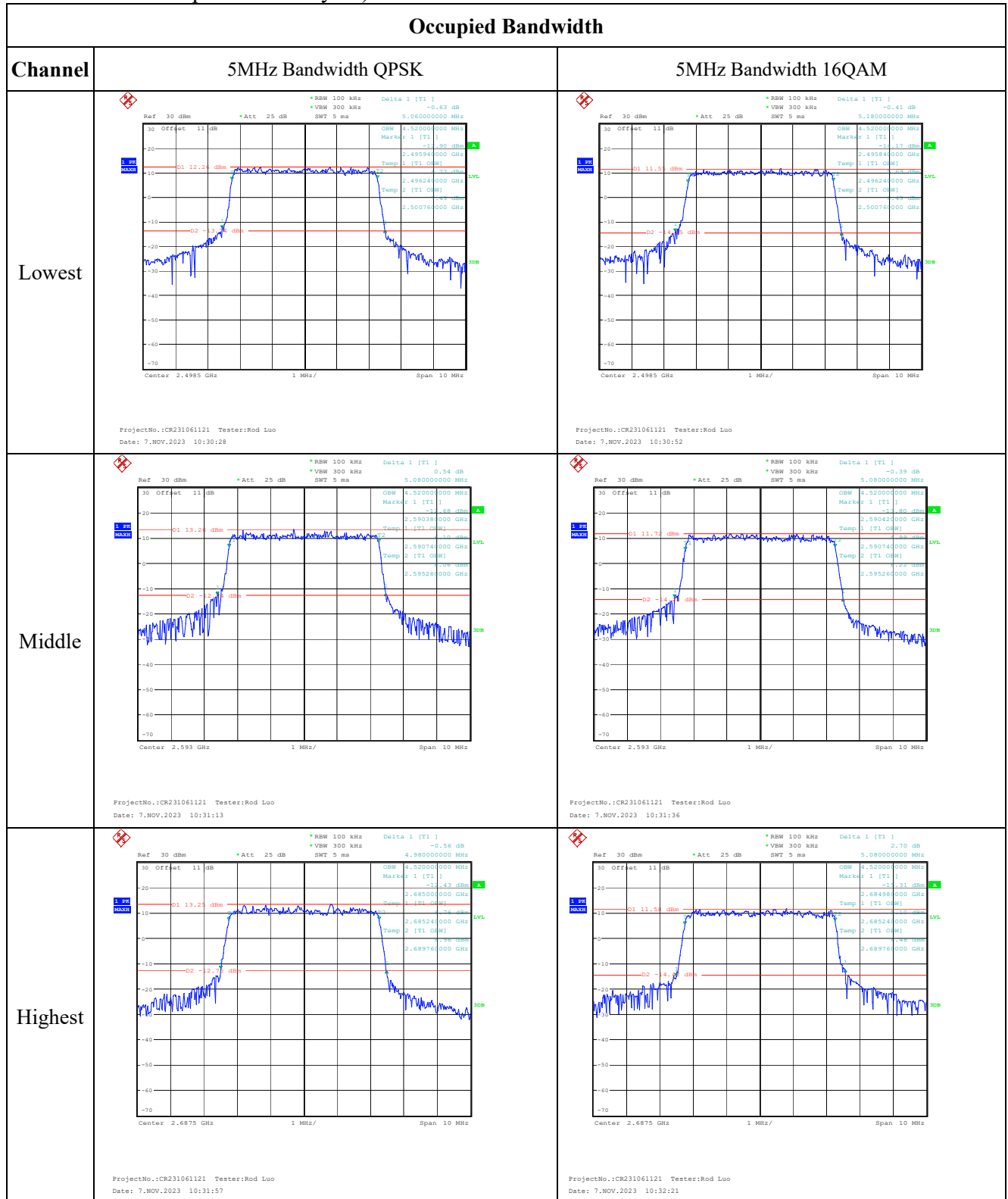
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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FCC §2.1055, §27.54: Frequency Stability

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	2496.060	2496.00	2689.892	2690
	-20	3.85	2496.114	2496.00	2689.921	2690
	-10	3.85	2496.126	2496.00	2689.906	2690
	0	3.85	2496.126	2496.00	2689.994	2690
	10	3.85	2496.126	2496.00	2689.987	2690
	20	3.85	2496.082	2496.00	2689.966	2690
	30	3.85	2496.020	2496.00	2689.938	2690
	40	3.85	2496.147	2496.00	2689.899	2690
	50	3.85	2496.055	2496.00	2689.980	2690
Frequency Stability vs. Voltage	20	3.5	2496.076	2496.00	2689.858	2690
	20	4.4	2496.090	2496.00	2689.926	2690
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	2496.134	2496.00	2689.932	2690
	-20	3.85	2496.029	2496.00	2689.928	2690
	-10	3.85	2496.002	2496.00	2689.947	2690
	0	3.85	2496.066	2496.00	2689.984	2690
	10	3.85	2496.133	2496.00	2689.984	2690
	20	3.85	2496.001	2496.00	2689.968	2690
	30	3.85	2496.073	2496.00	2689.953	2690
	40	3.85	2496.083	2496.00	2689.971	2690
	50	3.85	2496.148	2496.00	2689.994	2690
Frequency Stability vs. Voltage	20	3.5	2496.082	2496.00	2689.880	2690
	20	4.4	2496.127	2496.00	2689.874	2690
Result:					Pass	

Test Plots (Note: The 11 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):



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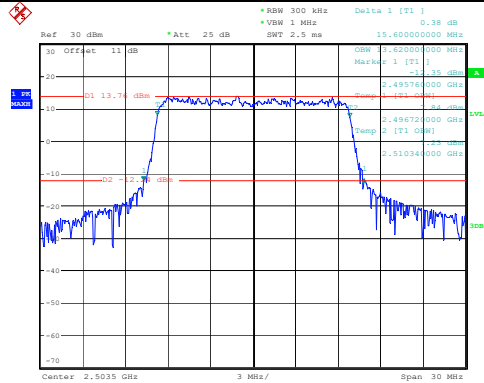
Occupied Bandwidth

Channel

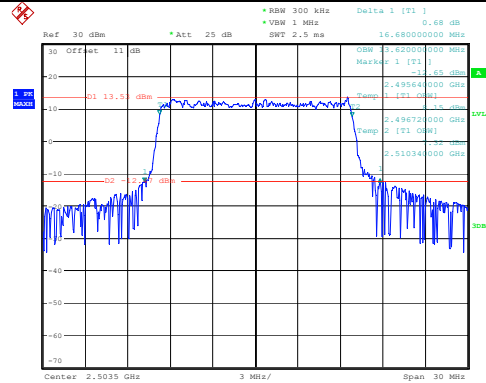
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

Lowest

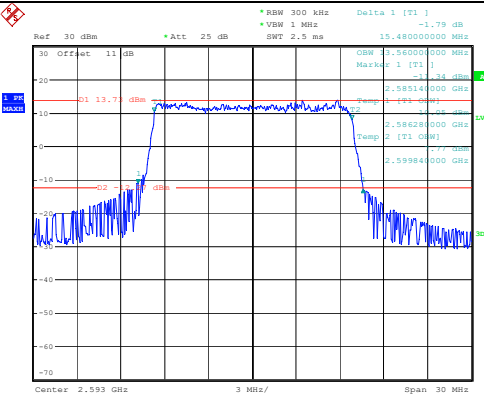


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:36:32

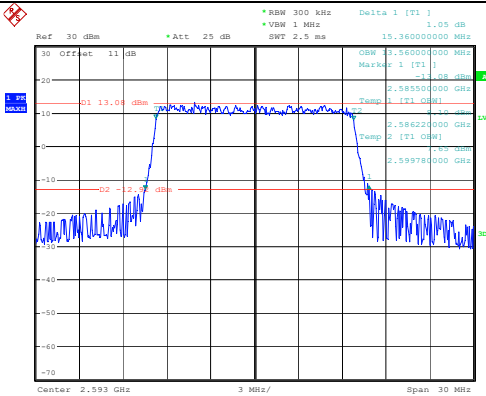


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:37:08

Middle

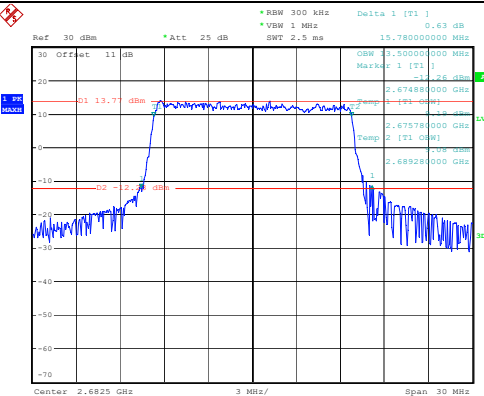


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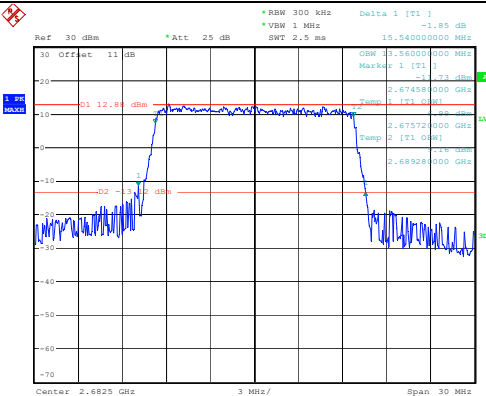


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:37:51

Highest



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:38:20



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 10:38:40

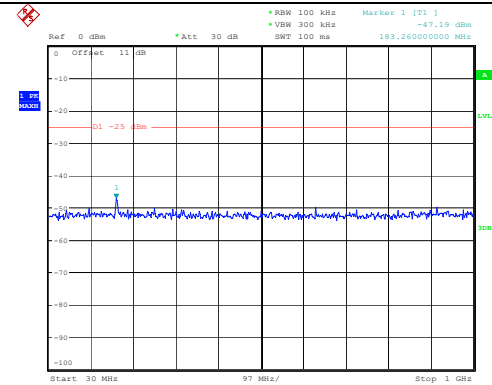
Occupied Bandwidth	
Channel	20MHz Bandwidth QPSK 20MHz Bandwidth 16QAM
Lowest	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:39:49
Middle	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:40:42
Highest	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:41:30

Spurious Emissions at Antenna Terminal

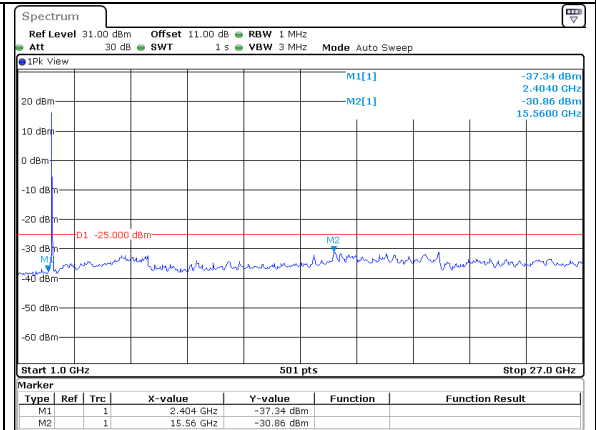
Channel

5MHz Bandwidth QPSK

Lowest

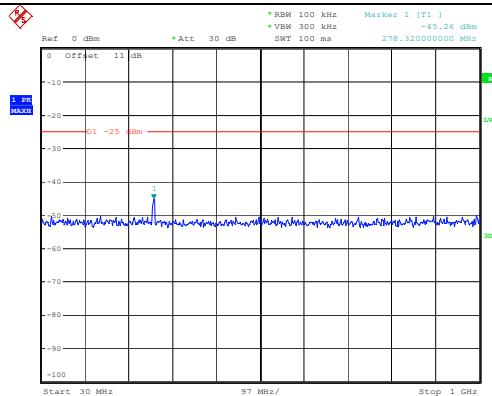


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:52:04

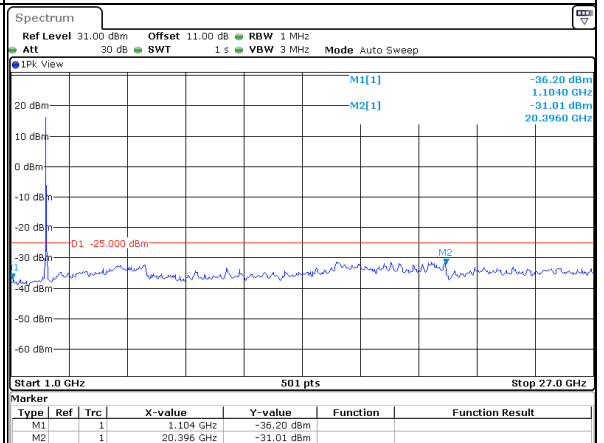


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 18:33:02

Middle

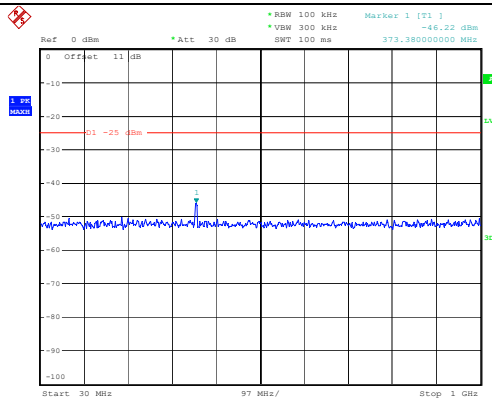


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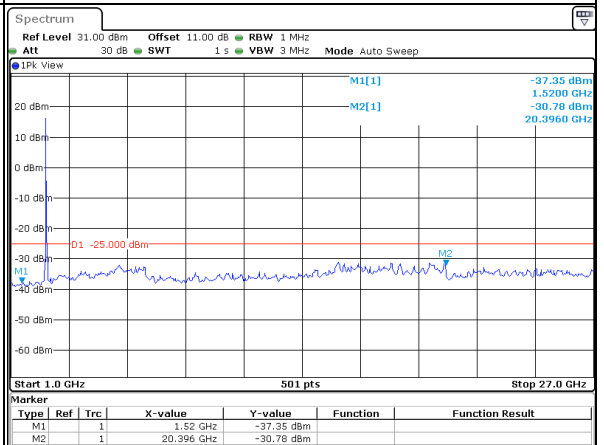


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 18:33:34

Highest



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:52:50



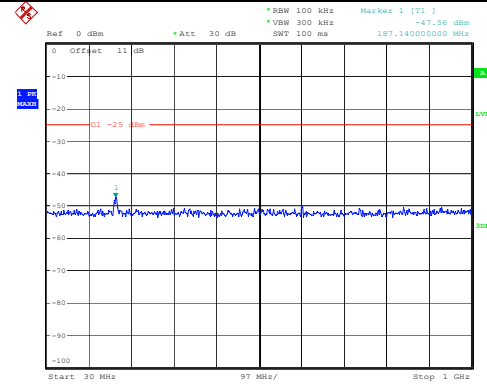
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Date: 27.NOV.2023 18:33:55

Spurious Emissions at Antenna Terminal

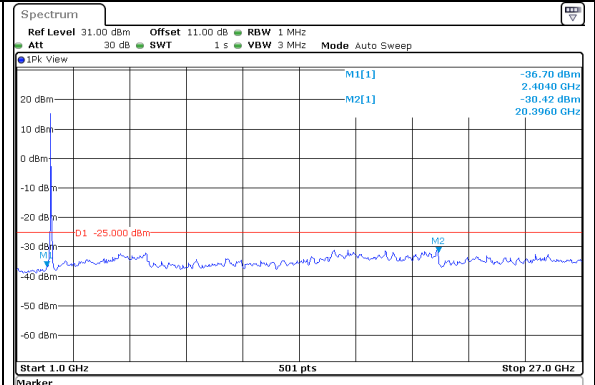
Channel

10MHz Bandwidth QPSK

Lowest

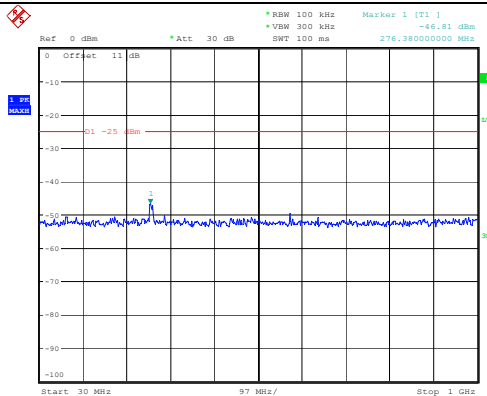


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:54:03

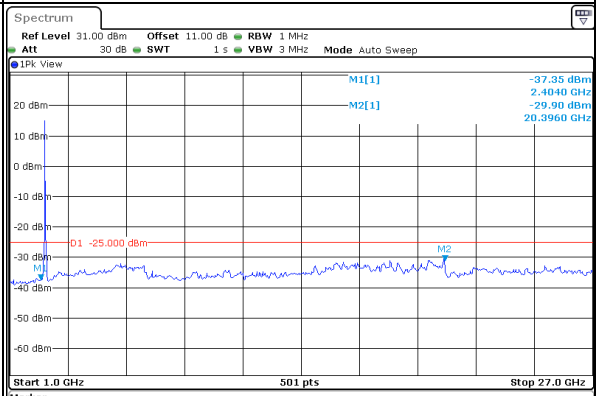


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 18:34:54

Middle

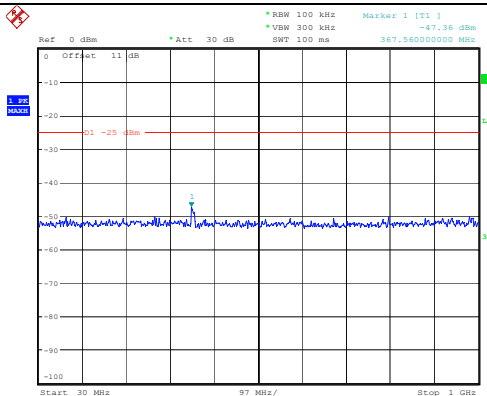


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:54:26

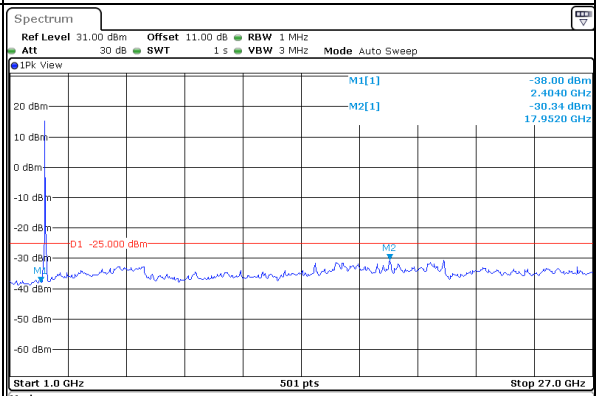


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 18:35:27

Highest



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:54:49



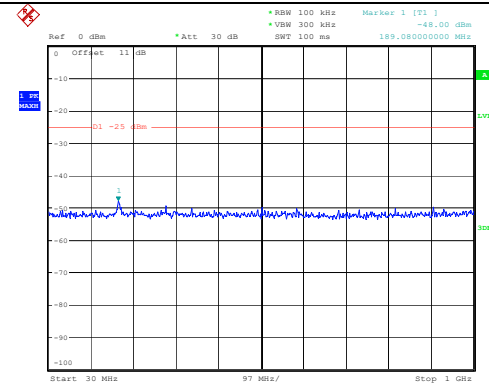
ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 18:35:59

Spurious Emissions at Antenna Terminal

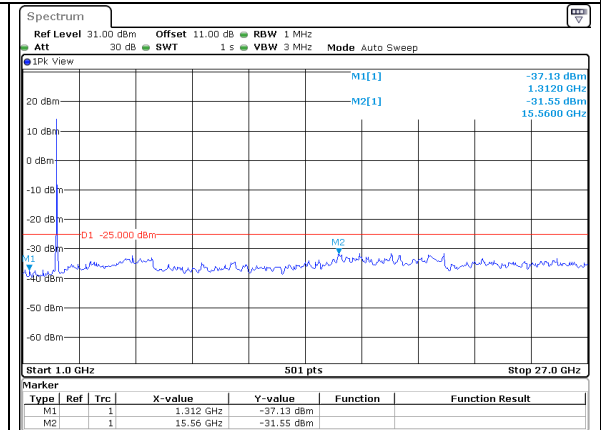
Channel

15MHz Bandwidth QPSK

Lowest

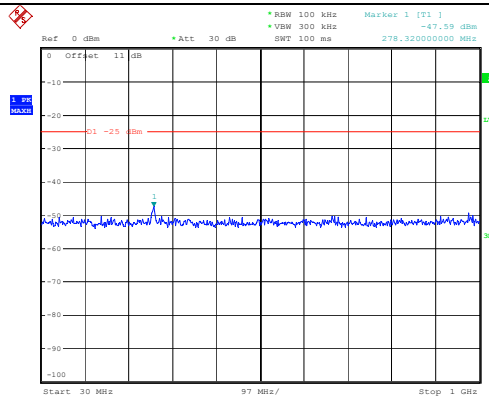


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:56:10

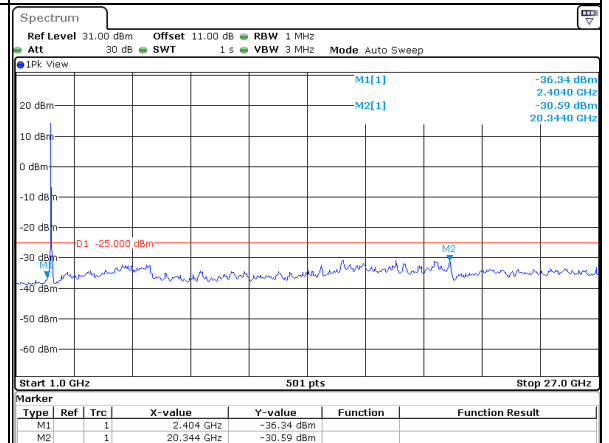


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 18:36:17

Middle

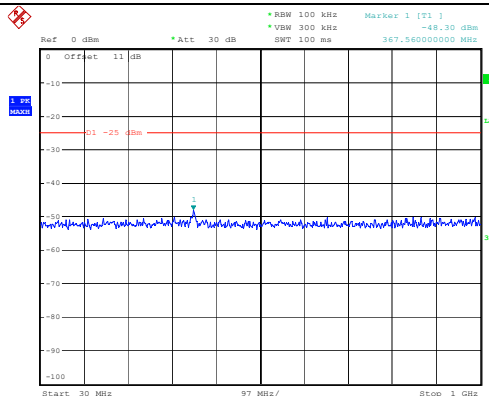


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:56:33

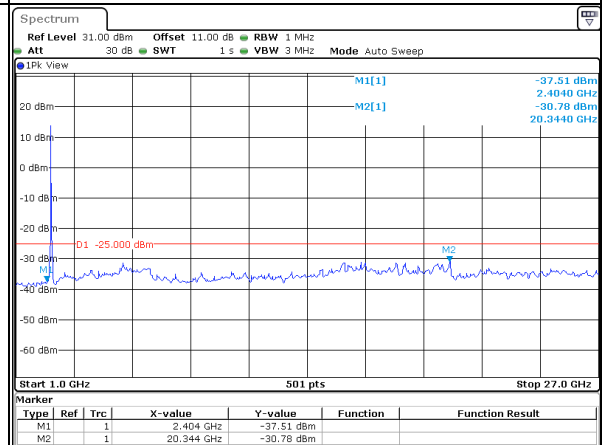


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 18:36:37

Highest



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:56:56



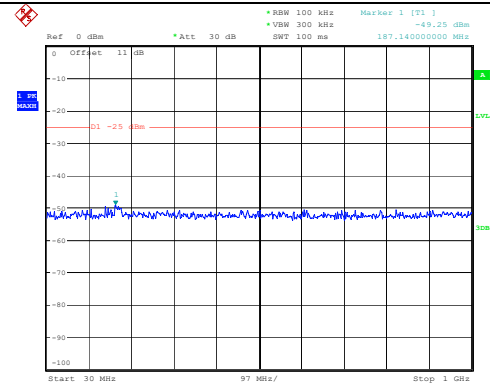
ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 18:36:58

Spurious Emissions at Antenna Terminal

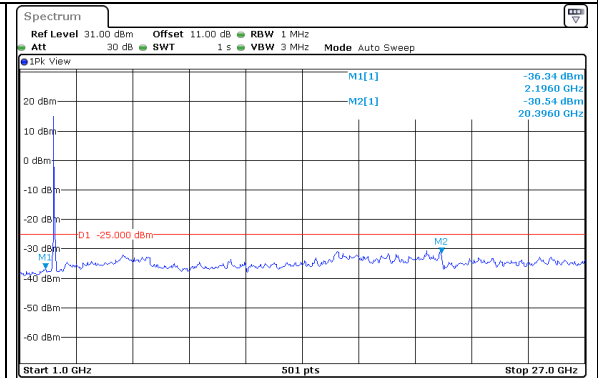
Channel

20MHz Bandwidth QPSK

Lowest



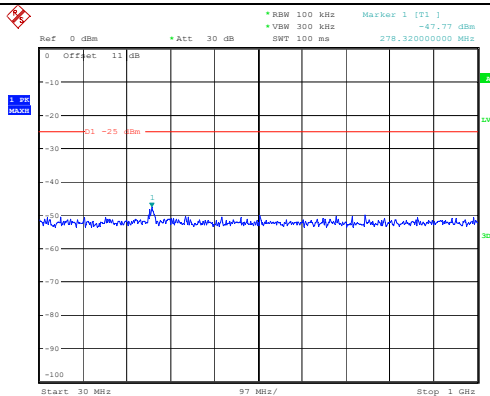
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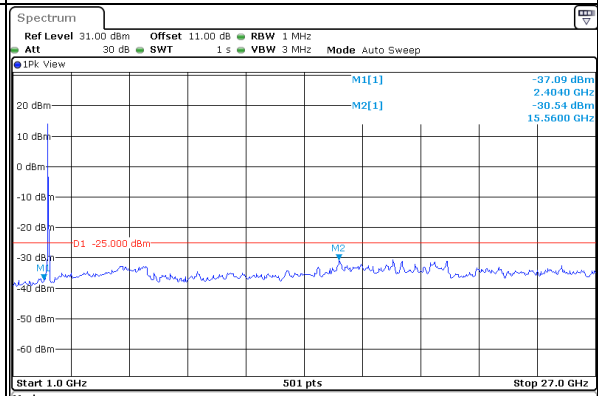
Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1			2.196 GHz	-36.34 dBm		
M2	1			20.396 GHz	-30.54 dBm		

ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 18:37:40

Middle



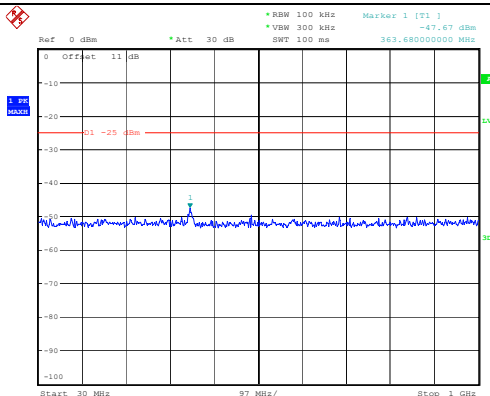
ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 11:58:21



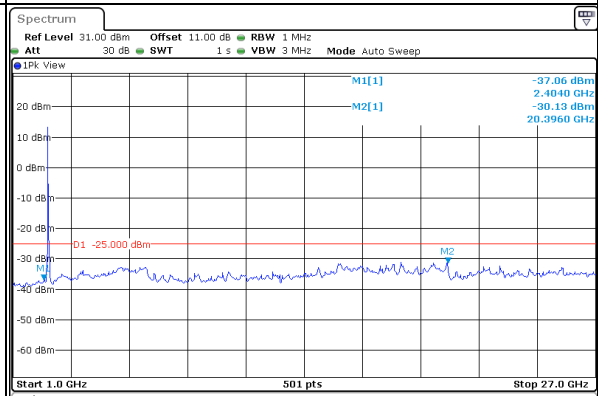
Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1			2.404 GHz	-37.09 dBm		
M2	1			15.56 GHz	-30.54 dBm		

ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 18:38:01

Highest



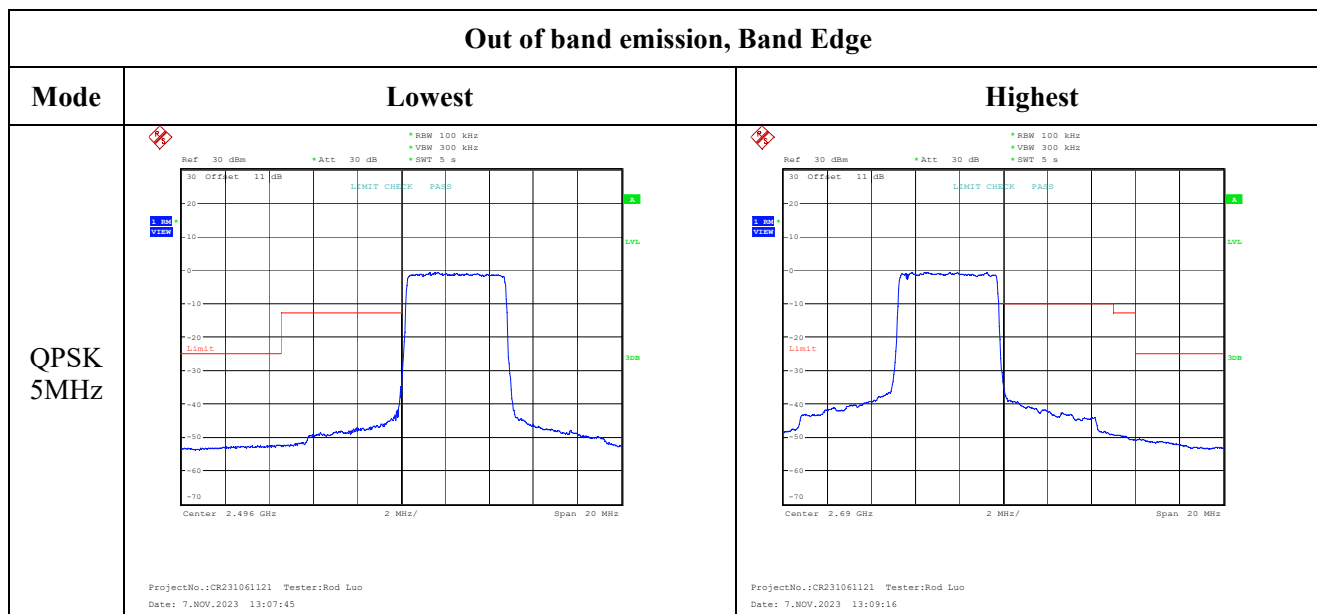
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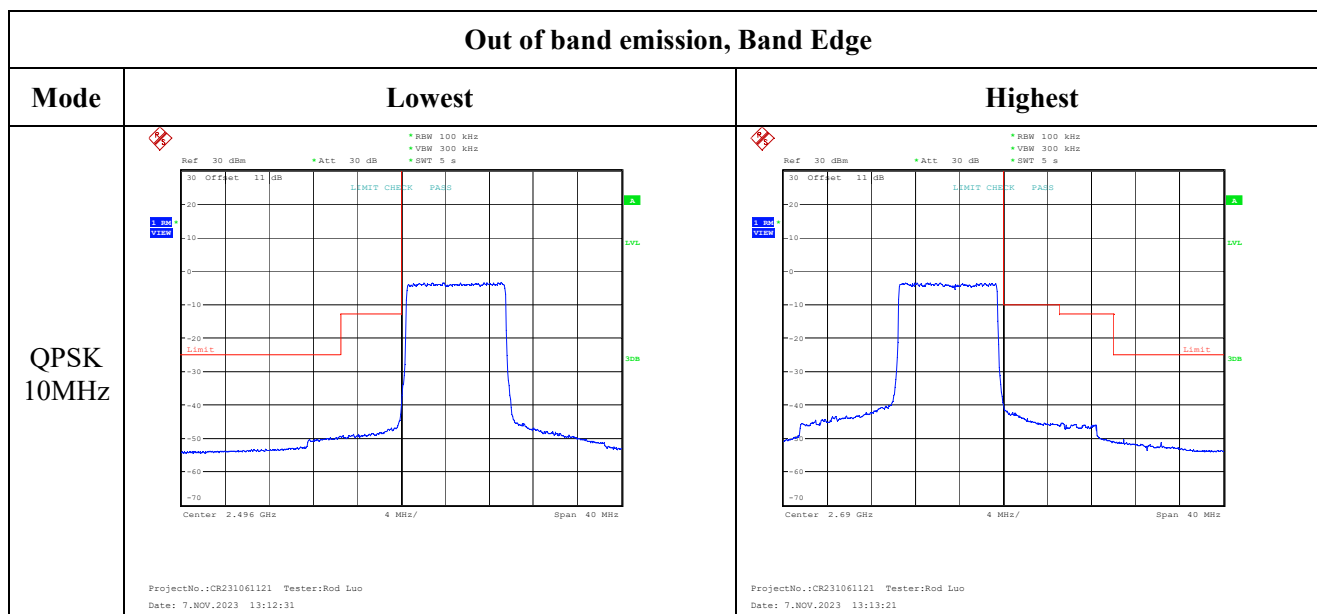
Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1			2.404 GHz	-37.06 dBm		
M2	1			20.396 GHz	-30.13 dBm		

ProjectNo.:CR231061121 Tester:Rod Luo
Date: 27.NOV.2023 18:38:21

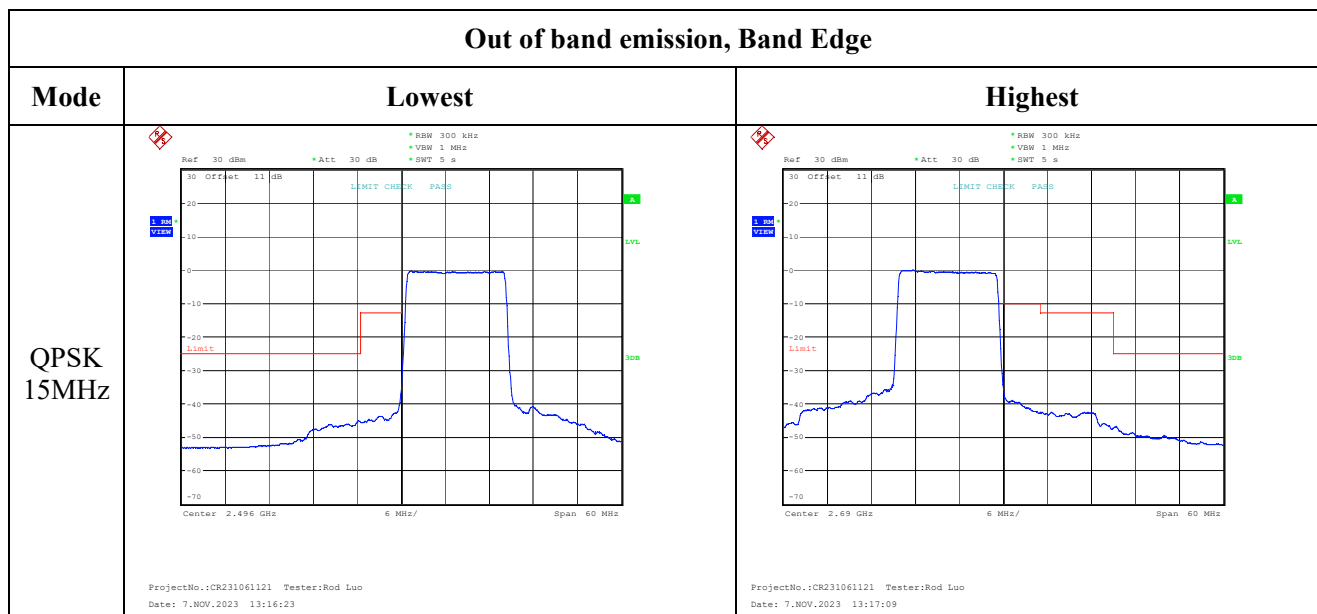
Out of band emission, Band Edge



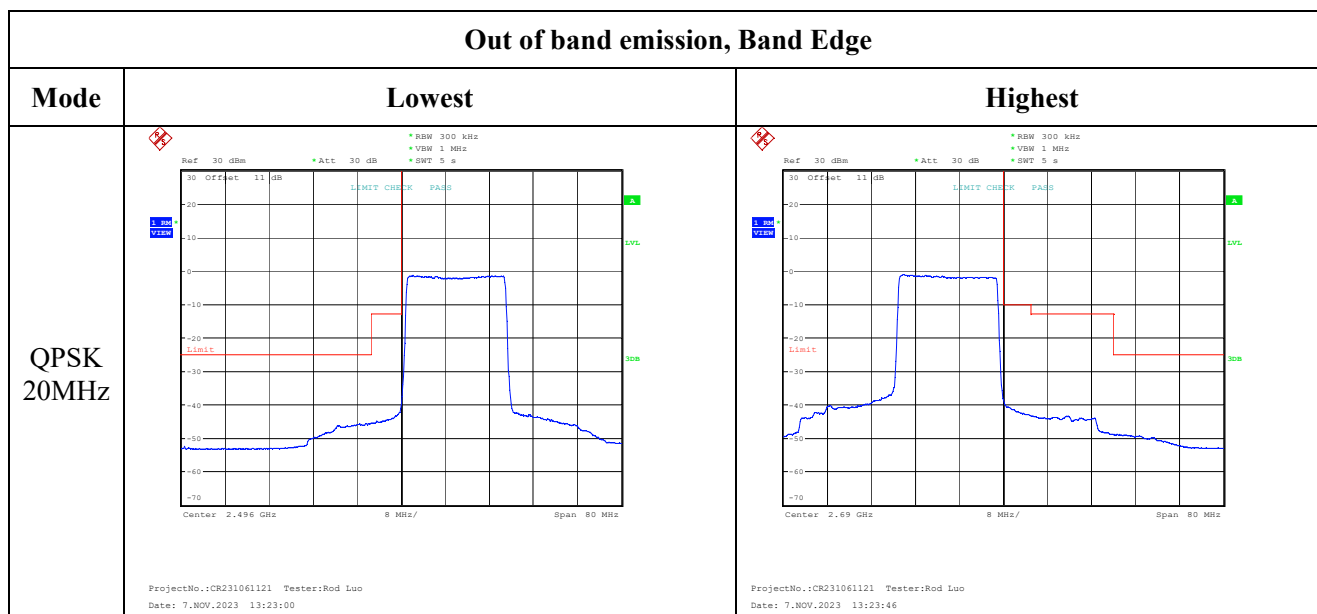
Out of band emission, Band Edge



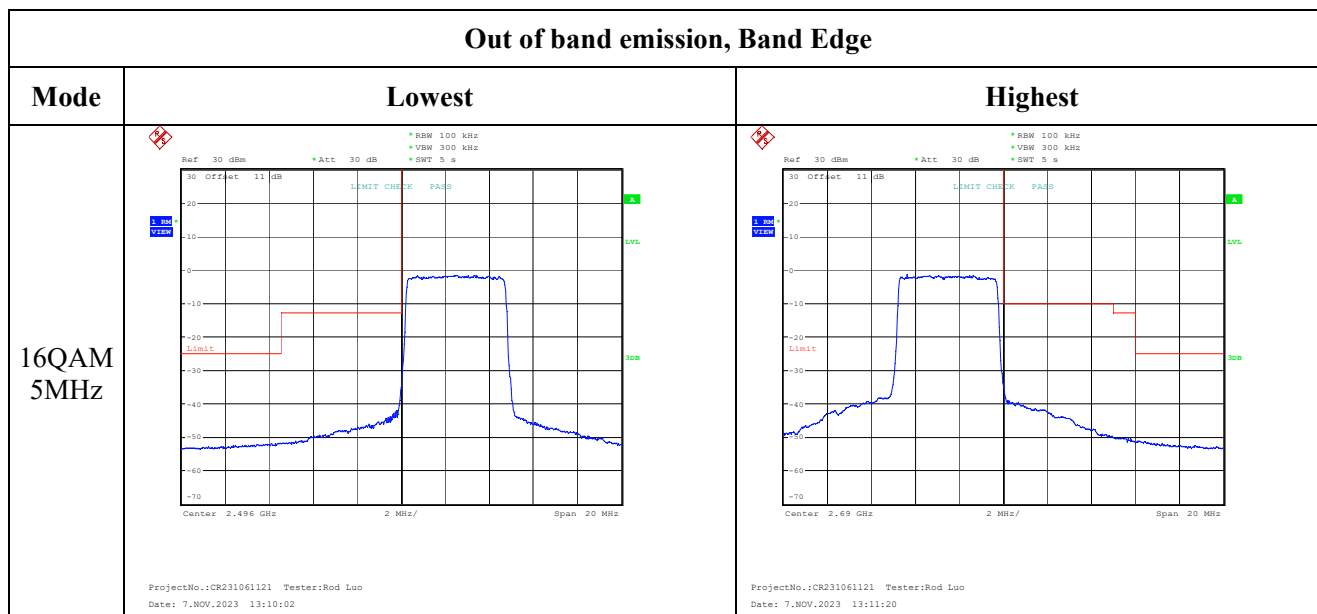
Out of band emission, Band Edge



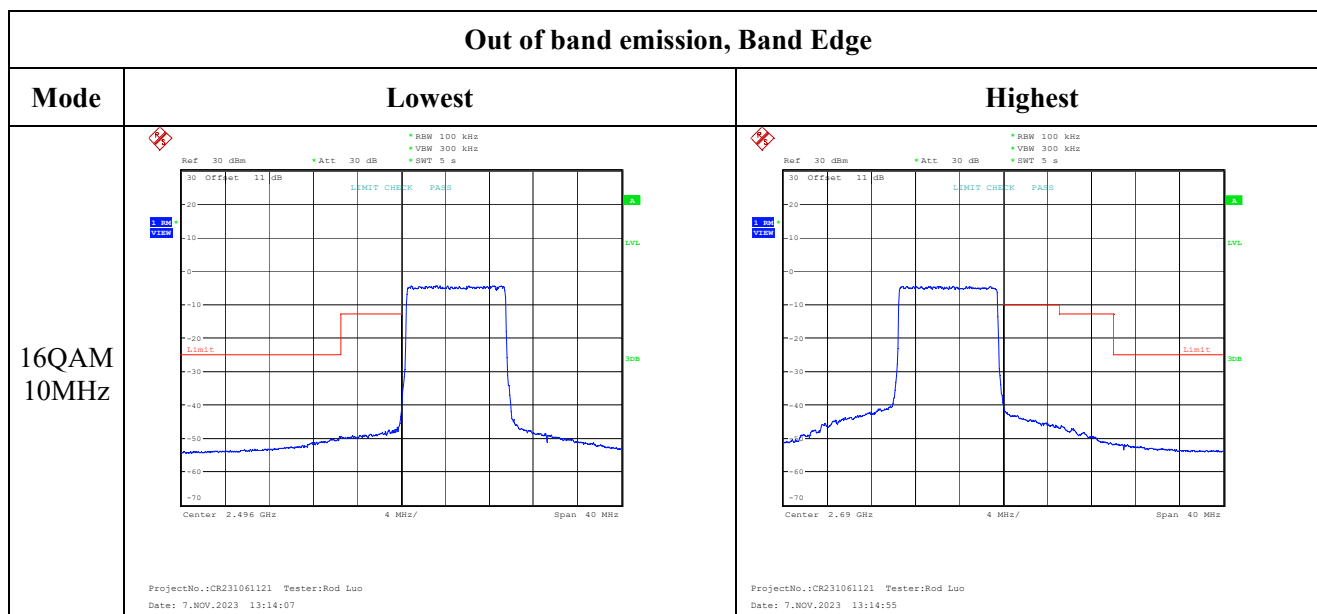
Out of band emission, Band Edge



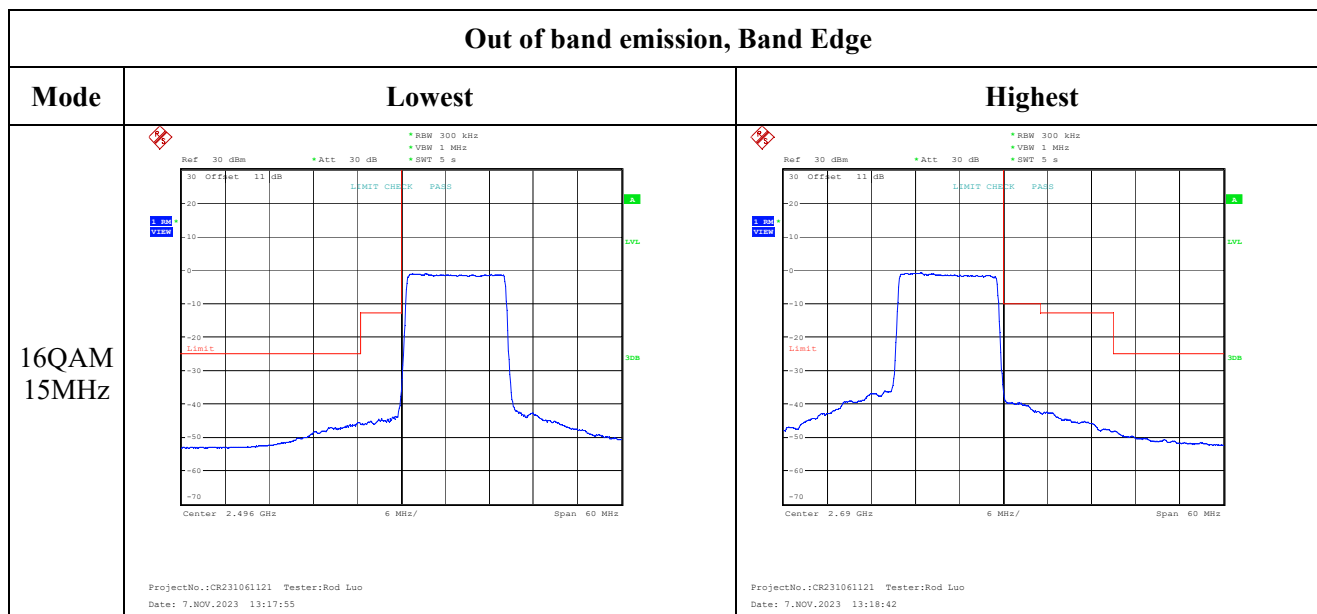
Out of band emission, Band Edge



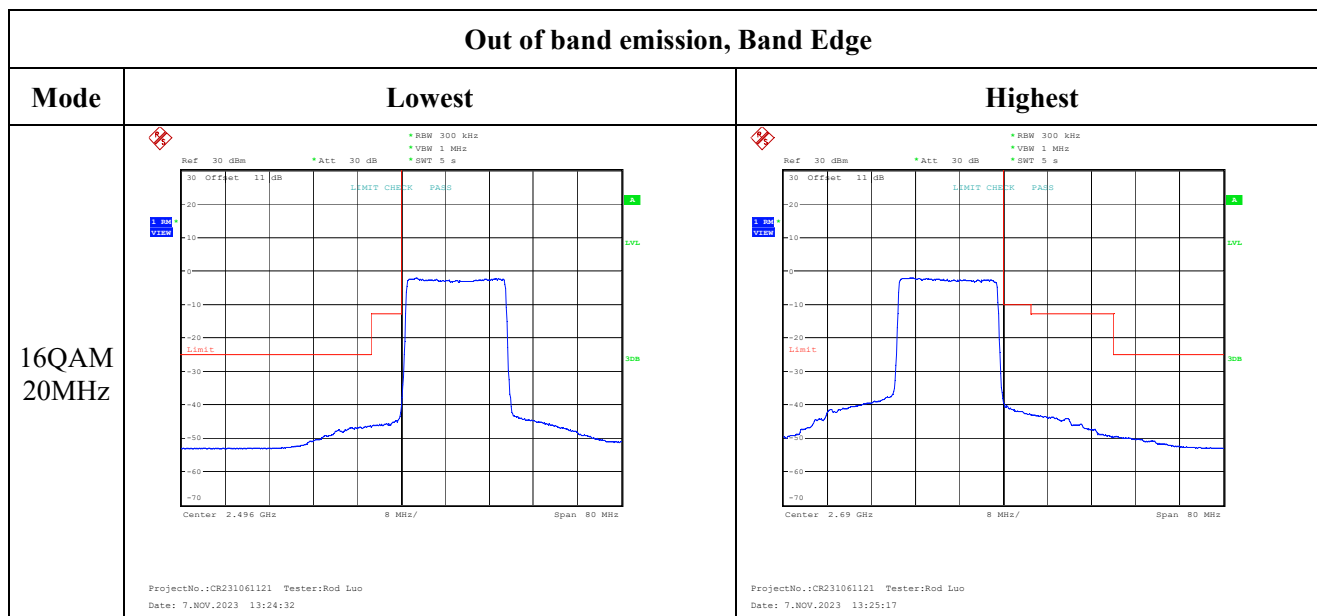
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.18 Antenna Port Test Data and Results for LTE Band 66

Serial Number:	2CFR-2	Test Date:	2023/11/7
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rod Luo	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.5	Relative Humidity: (%)	48	ATM Pressure: (kPa)	101.3
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200120	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
Minl-Circuits	Power Splitter	ZFRSC-183-S+	S F448201619	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	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).

Test Frequency for Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1710.7	1745	1779.3
3MHz	1711.5	1745	1778.5
5MHz	1712.5	1745	1777.5
10MHz	1715	1745	1775
15MHz	1717.5	1745	1772.5
20MHz	1720	1745	1770

Test Data:**FCC§2.1046;§ 27.50(d)(4)****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		
1.4MHz QPSK	RB1#0	17.33	17.6	16.88	16.37	30
	RB1#3	17.65	17.77	16.97		
	RB1#5	17.47	17.57	16.75		
	RB3#0	17.5	17.71	16.95		
	RB3#3	17.55	17.7	16.86		
	RB6#0	16.45	16.77	15.99		
1.4MHz 16QAM	RB1#0	16.33	16.68	16.1	15.61	30
	RB1#3	16.61	16.88	16.22		
	RB1#5	16.52	16.68	15.97		
	RB3#0	16.66	17.01	16.08		
	RB3#3	16.7	17	16.01		
	RB6#0	15.62	15.88	15.04		
3MHz QPSK	RB1#0	17.44	17.6	17.01	16.31	30
	RB1#8	17.71	17.7	16.97		
	RB1#14	17.66	17.55	16.7		
	RB6#0	16.51	16.77	16.18		
	RB6#9	16.67	16.75	15.99		
	RB15#0	16.62	16.78	16.12		
3MHz 16QAM	RB1#0	16.53	16.71	16.22	15.42	30
	RB1#8	16.82	16.82	16.15		
	RB1#14	16.78	16.69	16.02		
	RB6#0	15.65	15.82	15.28		
	RB6#9	15.82	15.8	15.08		
	RB15#0	15.69	15.94	15.29		
5MHz QPSK	RB1#0	17.17	17.26	16.97	16.49	30
	RB1#13	17.89	17.75	17.24		
	RB1#24	17.44	17.23	16.48		
	RB15#0	16.58	16.72	16.25		
	RB15#10	16.71	16.71	16.1		
	RB25#0	16.6	16.66	16.13		
5MHz 16QAM	RB1#0	16.38	16.42	15.95	15.74	30
	RB1#13	17.14	16.93	16.26		
	RB1#24	16.71	16.41	15.49		
	RB15#0	15.65	15.83	15.31		
	RB15#10	15.81	15.82	15.15		
	RB25#0	15.7	15.79	15.2		

10MHz QPSK	RB1#0	17.32	17.56	17.47	16.66	30
	RB1#25	17.71	17.72	17.3		
	RB1#49	18.04	18.06	17.29		
	RB25#0	16.67	16.77	16.62		
	RB25#25	16.93	17.02	16.49		
	RB50#0	16.81	16.9	16.56		
10MHz 16QAM	RB1#0	16.45	16.6	17.15	15.81	30
	RB1#25	16.93	16.82	17.06		
	RB1#49	17.21	17.11	16.96		
	RB25#0	15.67	15.96	15.63		
	RB25#25	15.93	16.21	15.53		
	RB50#0	15.79	16.02	15.55		
15MHz QPSK	RB1#0	17.62	17.81	17.28	16.53	30
	RB1#38	17.54	17.72	16.96		
	RB1#74	17.9	17.93	16.55		
	RB36#0	16.83	16.95	16.28		
	RB36#39	16.9	16.96	15.92		
	RB75#0	16.85	16.9	16.1		
15MHz 16QAM	RB1#0	16.76	17.26	16.93	15.95	30
	RB1#38	16.77	17.23	16.66		
	RB1#74	17.06	17.35	16.22		
	RB36#0	15.82	15.98	15.27		
	RB36#39	15.9	15.99	14.92		
	RB75#0	15.84	15.97	15.1		
20MHz QPSK	RB1#0	18.07	18.47	17.97	17.07	30
	RB1#50	17.58	17.67	17.16		
	RB1#99	18.25	18.46	17.04		
	RB50#0	16.92	17.19	16.57		
	RB50#50	16.99	17.19	16.22		
	RB100#0	16.95	17.18	16.38		
20MHz 16QAM	RB1#0	17.26	18.03	17.26	16.63	30
	RB1#50	16.89	17.38	16.51		
	RB1#99	17.48	18.03	16.35		
	RB50#0	15.93	16.29	15.53		
	RB50#50	15.99	16.28	15.17		
	RB100#0	15.95	16.28	15.37		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + G_T(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	5.51	5.62	5.86	13
	RB100#0	5.62	5.62	5.62	13
20MHz 16QAM	RB1#0	6.03	6.32	6.9	13
	RB100#0	6.46	6.43	6.43	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
1.4MHz QPSK	1.104	1.104	1.104	1.254	1.260	1.266
1.4MHz 16QAM	1.110	1.092	1.098	1.260	1.260	1.254
3MHz QPSK	2.700	2.700	2.700	3.012	3.012	2.976
3MHz 16QAM	2.687	2.700	2.700	3.000	3.012	3.012
5MHz QPSK	4.520	4.500	4.520	5.000	4.980	5.000
5MHz 16QAM	4.520	4.520	4.520	5.000	5.060	4.960
10MHz QPSK	8.960	8.960	8.960	9.800	9.800	9.720
10MHz 16QAM	9.000	8.960	8.960	9.800	9.840	9.840
15MHz QPSK	13.500	13.560	13.560	15.000	15.240	15.060
15MHz 16QAM	13.560	13.560	13.500	15.180	15.120	15.060
20MHz QPSK	18.080	18.000	18.080	19.600	19.680	19.520
20MHz 16QAM	18.000	18.000	18.000	19.760	19.840	19.680
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	1710.042	1710.00	1779.877	1780
	-20	3.85	1710.112	1710.00	1779.964	1780
	-10	3.85	1710.137	1710.00	1779.953	1780
	0	3.85	1710.029	1710.00	1779.857	1780
	10	3.85	1710.072	1710.00	1779.852	1780
	20	3.85	1710.117	1710.00	1779.946	1780
	30	3.85	1710.010	1710.00	1779.935	1780
	40	3.85	1710.024	1710.00	1779.980	1780
	50	3.85	1710.000	1710.00	1779.932	1780
Frequency Stability vs. Voltage	20	3.5	1710.085	1710.00	1779.953	1780
	20	4.4	1710.073	1710.00	1779.865	1780
					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	1710.028	1710.00	1779.886	1780
	-20	3.85	1710.065	1710.00	1779.997	1780
	-10	3.85	1710.023	1710.00	1779.893	1780
	0	3.85	1710.145	1710.00	1779.976	1780
	10	3.85	1710.097	1710.00	1779.866	1780
	20	3.85	1710.038	1710.00	1779.986	1780
	30	3.85	1710.005	1710.00	1779.936	1780
	40	3.85	1710.084	1710.00	1779.953	1780
	50	3.85	1710.142	1710.00	1779.906	1780
Frequency Stability vs. Voltage	20	3.5	1710.141	1710.00	1779.991	1780
	20	4.4	1710.079	1710.00	1779.911	1780
					Result:	Pass

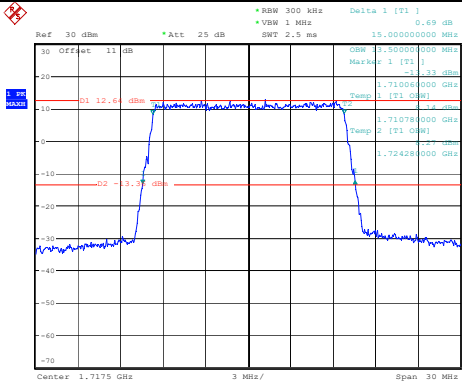
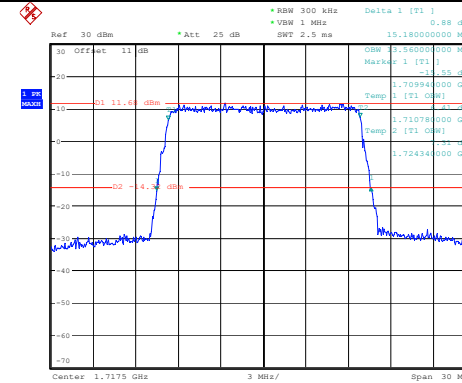
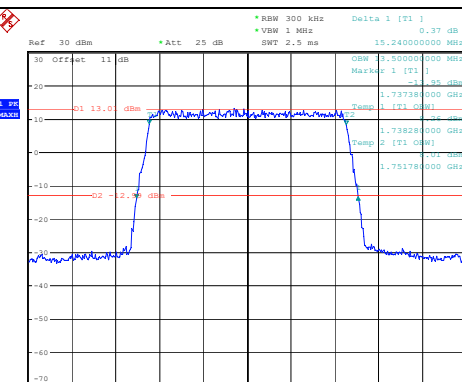
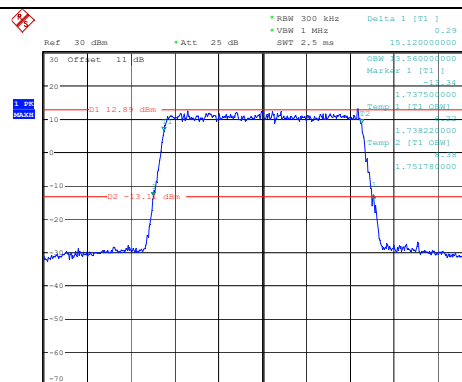
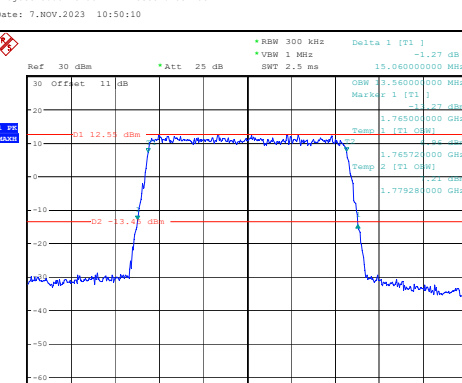
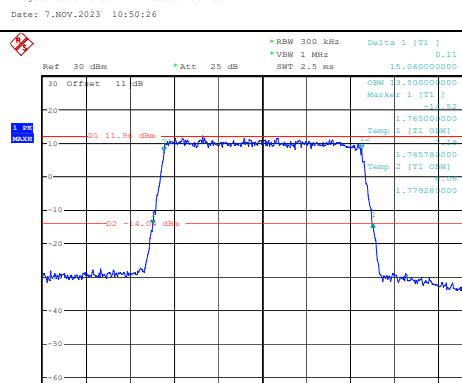
Occupied Bandwidth

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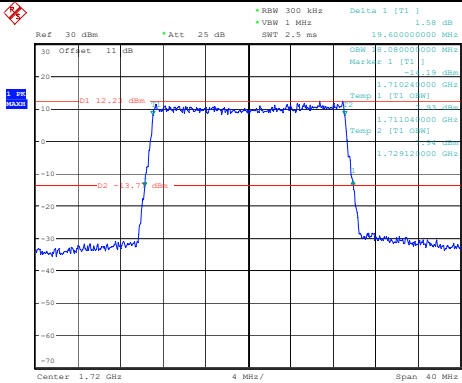
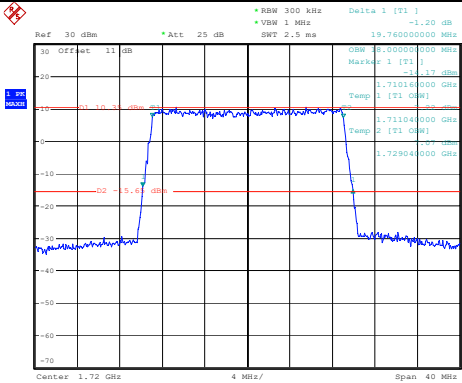
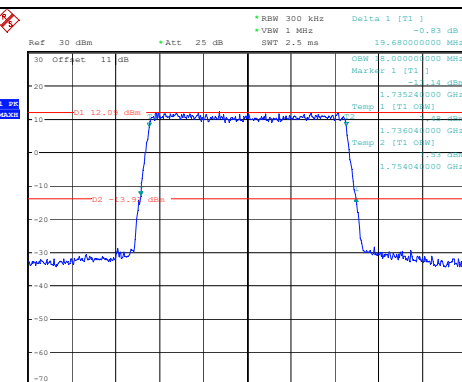
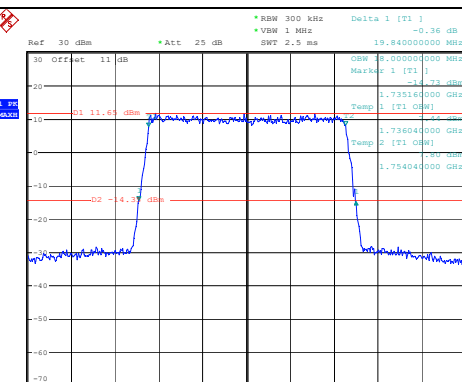
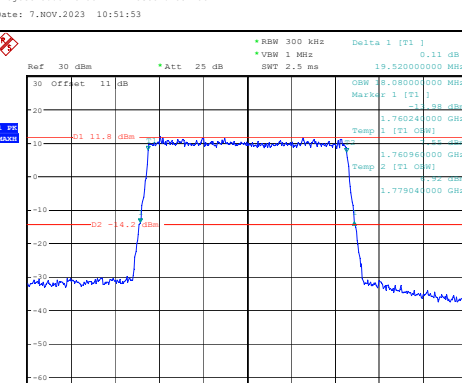
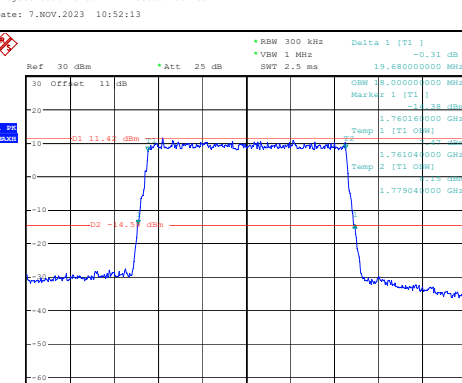
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Occupied Bandwidth		
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:47:55	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:48:12
Middle	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:48:27	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:48:41
Highest	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:48:59	ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:49:16

Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	 Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 0.59 dB *VBW 1 MHz SWT 2.5 ms 15.00000000 MHz OSW 15.00000000 MHz Marker 1 [T1] -1.12 dB 1.710040000 GHz Temp 1 [T1 OSW] 1.710780000 GHz Temp 2 [T1 OSW] 1.724280000 GHz D1 12.64 dBm D2 -3.37 dBm Center 1.7175 GHz 3 MHz/ Span 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:49:37	 Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 0.59 dB *VBW 1 MHz SWT 2.5 ms 15.18000000 MHz OSW 15.18000000 MHz Marker 1 [T1] -1.25 dB 1.709940000 GHz Temp 1 [T1 OSW] 1.710780000 GHz Temp 2 [T1 OSW] 1.724340000 GHz D1 13.64 dBm D2 -4.14 dBm Center 1.7175 GHz 3 MHz/ Span 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:49:53
Middle	 Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 0.37 dB *VBW 1 MHz SWT 2.5 ms 15.24000000 MHz OSW 15.24000000 MHz Marker 1 [T1] -1.85 dB 1.737380000 GHz Temp 1 [T1 OSW] 1.738280000 GHz Temp 2 [T1 OSW] 1.751780000 GHz D1 13.0 dBm D2 -3.96 dBm Center 1.745 GHz 3 MHz/ Span 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:50:10	 Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 0.37 dB *VBW 1 MHz SWT 2.5 ms 15.12000000 MHz OSW 15.12000000 MHz Marker 1 [T1] -1.54 dB 1.737500000 GHz Temp 1 [T1 OSW] 1.738280000 GHz Temp 2 [T1 OSW] 1.751780000 GHz D1 12.89 dBm D2 -3.57 dBm Center 1.745 GHz 3 MHz/ Span 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:50:26
Highest	 Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] -1.27 dB *VBW 1 MHz SWT 2.5 ms 15.06000000 MHz OSW 15.06000000 MHz Marker 1 [T1] -1.27 dB 1.765000000 GHz Temp 1 [T1 OSW] 1.765720000 GHz Temp 2 [T1 OSW] 1.779280000 GHz D1 12.55 dBm D2 -3.43 dBm Center 1.7725 GHz 3 MHz/ Span 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:50:43	 Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 0.11 dB *VBW 1 MHz SWT 2.5 ms 15.06000000 MHz OSW 15.06000000 MHz Marker 1 [T1] -1.52 dB 1.765000000 GHz Temp 1 [T1 OSW] 1.765720000 GHz Temp 2 [T1 OSW] 1.779280000 GHz D1 11.94 dBm D2 -4.07 dBm Center 1.7725 GHz 3 MHz/ Span 30 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:51:00

Occupied Bandwidth

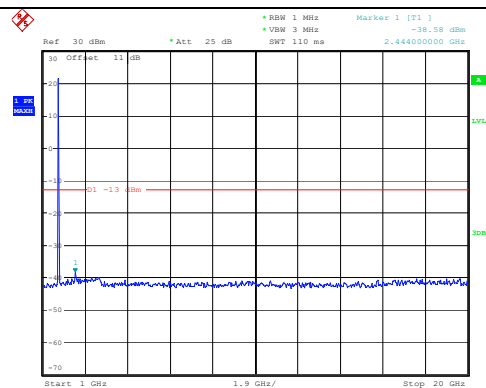
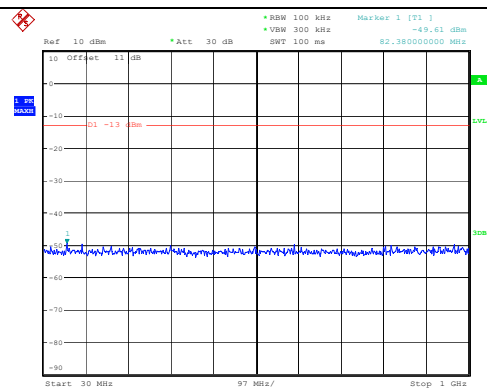
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest	 Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 19.600000000 MHz *VSW 1 MHz -0.83 dB Marker 1 [T1] 1.720000000 GHz D1 12.2 dBm D2 -3.77 dBm Temp 1 [T1] 0.000000000 MHz Temp 2 [T1] 0.000000000 MHz Center 1.72 GHz 4 MHz/ Span 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:51:20	 Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 19.760000000 MHz *VSW 1 MHz -1.20 dB Marker 1 [T1] 1.720000000 GHz D1 12.2 dBm D2 -3.61 dBm Temp 1 [T1] 0.000000000 MHz Temp 2 [T1] 0.000000000 MHz Center 1.72 GHz 4 MHz/ Span 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:51:36
Middle	 Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 19.600000000 MHz *VSW 1 MHz -0.83 dB Marker 1 [T1] 1.745000000 GHz D1 12.0 dBm D2 -3.93 dBm Temp 1 [T1] 0.000000000 MHz Temp 2 [T1] 0.000000000 MHz Center 1.745 GHz 4 MHz/ Span 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:51:53	 Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 19.840000000 MHz *VSW 1 MHz -0.36 dB Marker 1 [T1] 1.745000000 GHz D1 11.6 dBm D2 -4.37 dBm Temp 1 [T1] 0.000000000 MHz Temp 2 [T1] 0.000000000 MHz Center 1.745 GHz 4 MHz/ Span 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:52:13
Highest	 Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 19.520000000 MHz *VSW 1 MHz 0.11 dB Marker 1 [T1] 1.770000000 GHz D1 11.8 dBm D2 -4.27 dBm Temp 1 [T1] 0.000000000 MHz Temp 2 [T1] 0.000000000 MHz Center 1.77 GHz 4 MHz/ Span 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:52:30	 Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 19.600000000 MHz *VSW 1 MHz -0.31 dB Marker 1 [T1] 1.770000000 GHz D1 11.4 dBm D2 -4.57 dBm Temp 1 [T1] 0.000000000 MHz Temp 2 [T1] 0.000000000 MHz Center 1.77 GHz 4 MHz/ Span 40 MHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 10:52:50

Spurious Emissions at Antenna Terminal

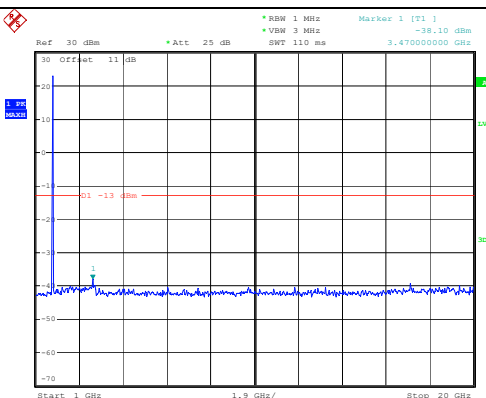
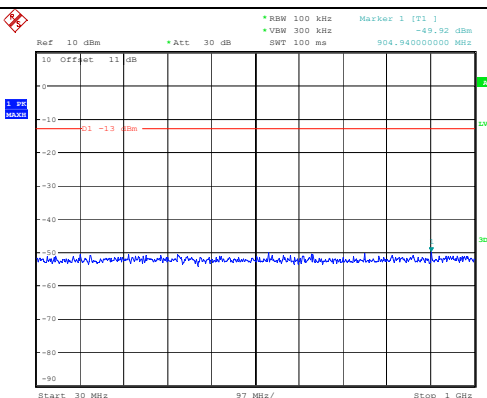
Channel

1.4MHz Bandwidth QPSK

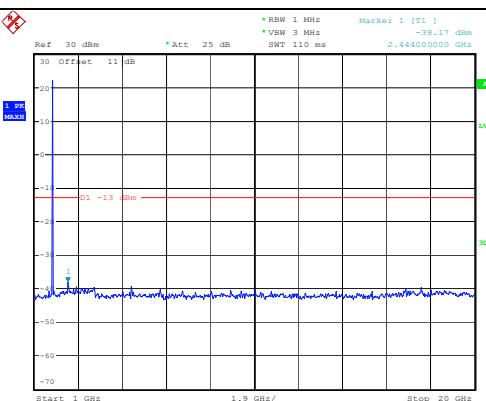
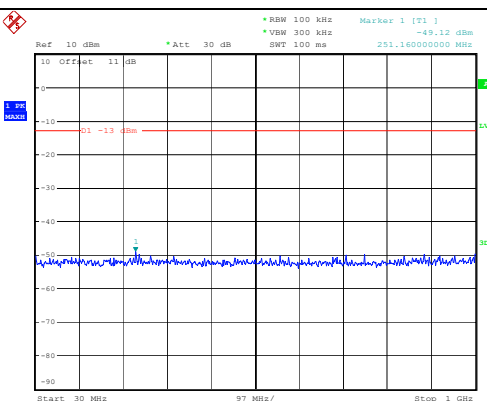
Lowest



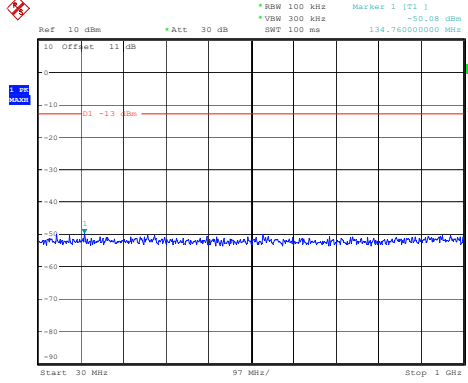
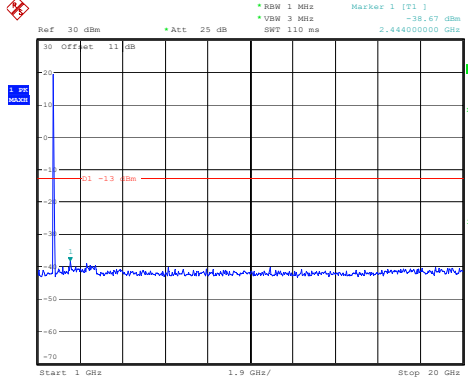
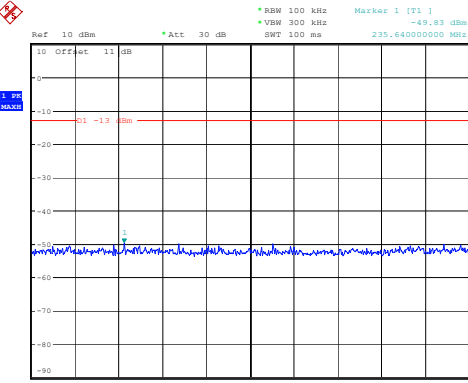
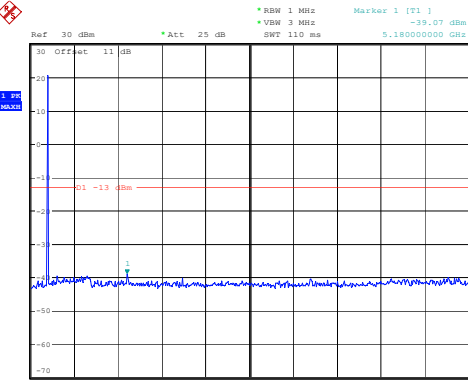
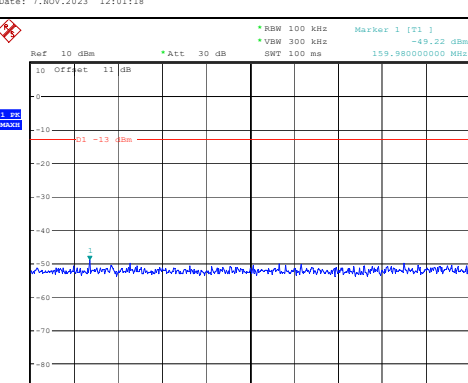
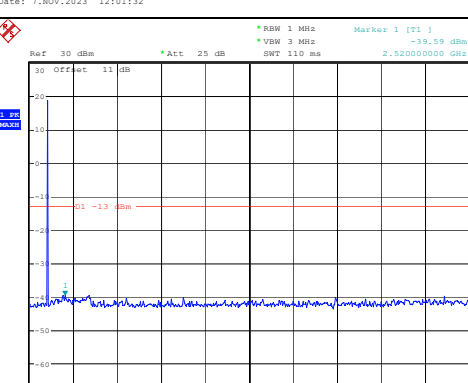
Middle



Highest



Spurious Emissions at Antenna Terminal

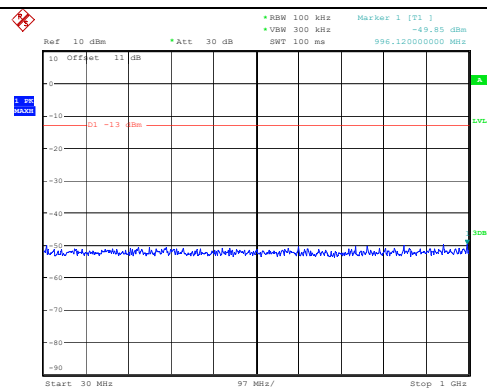
Channel	3MHz Bandwidth QPSK	
Lowest	 Ref 10 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -50.08 dBm *VSW 300 kHz SWT 100 ms 134.76000000 MHz Start 30 MHz 97 MHz/ Stop 1 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 12:00:56	 Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] -38.67 dBm *VSW 3 MHz SWT 110 ms 2.444000000 GHz Start 1 GHz 1.9 GHz/ Stop 20 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 12:01:06
	 Ref 10 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -49.83 dBm *VSW 300 kHz SWT 100 ms 235.640000000 MHz Start 30 MHz 97 MHz/ Stop 1 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 12:01:18	 Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] -39.07 dBm *VSW 3 MHz SWT 110 ms 5.180000000 GHz Start 1 GHz 1.9 GHz/ Stop 20 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 12:01:32
Highest	 Ref 10 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -49.22 dBm *VSW 300 kHz SWT 100 ms 159.980000000 MHz Start 30 MHz 97 MHz/ Stop 1 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 12:01:44	 Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] -39.59 dBm *VSW 3 MHz SWT 110 ms 2.520000000 GHz Start 1 GHz 1.9 GHz/ Stop 20 GHz ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 12:01:54

Spurious Emissions at Antenna Terminal

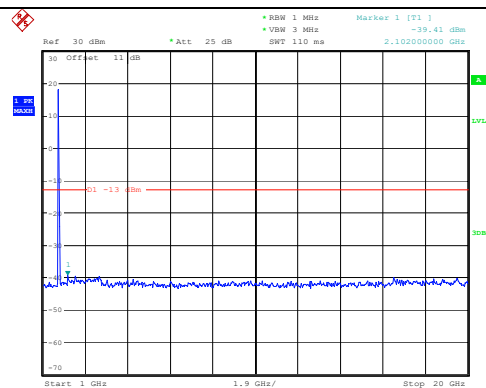
Channel

5MHz Bandwidth QPSK

Lowest

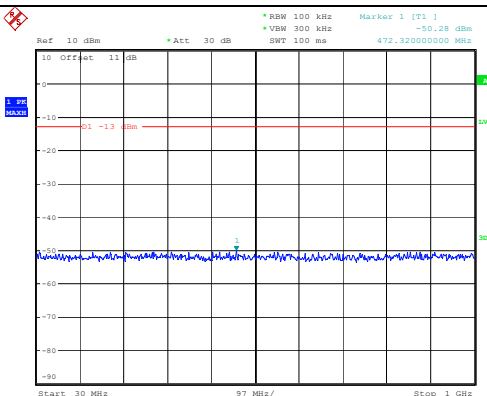


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 12:02:10

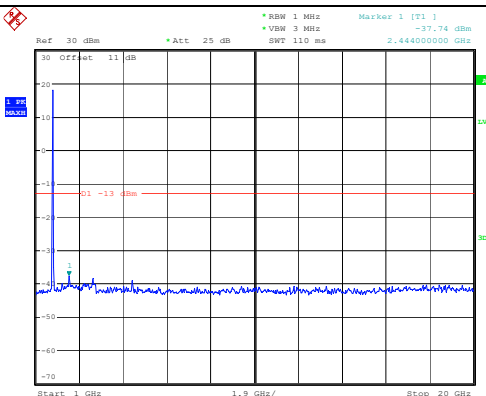


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 12:02:20

Middle

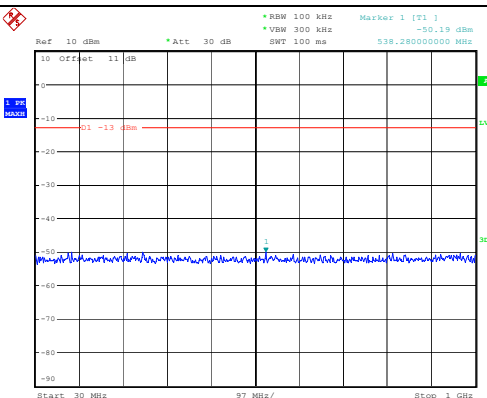


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Date: 7.NOV.2023 12:02:36

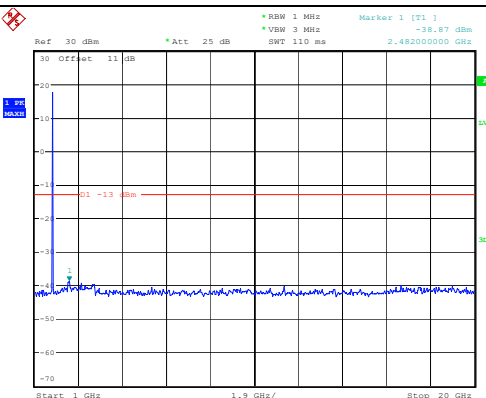


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 12:02:46

Highest



ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 12:02:58



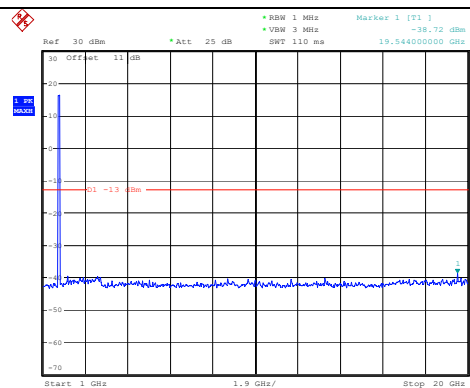
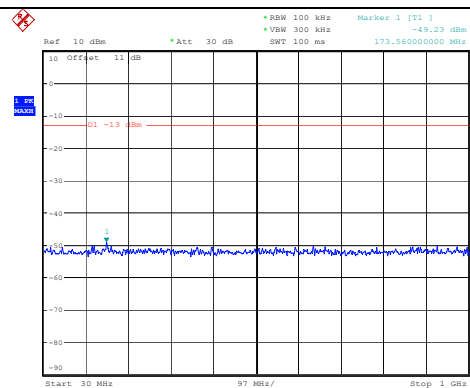
ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 12:03:09

Spurious Emissions at Antenna Terminal

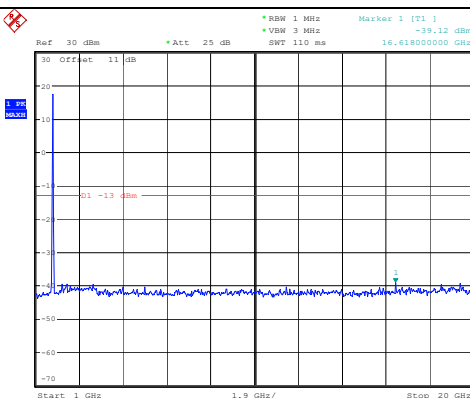
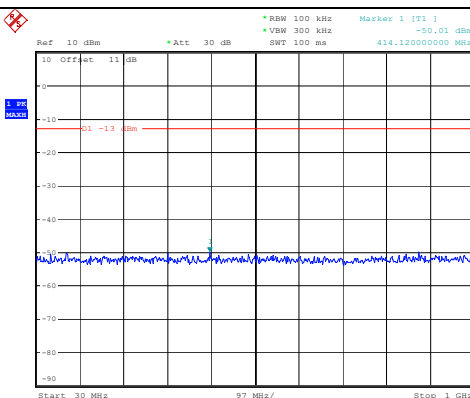
Channel

10MHz Bandwidth QPSK

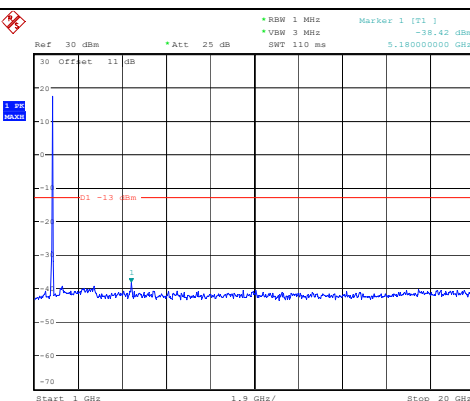
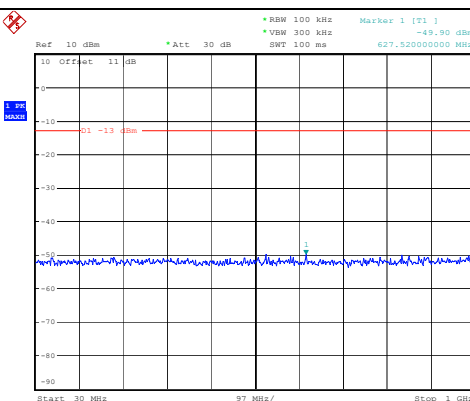
Lowest



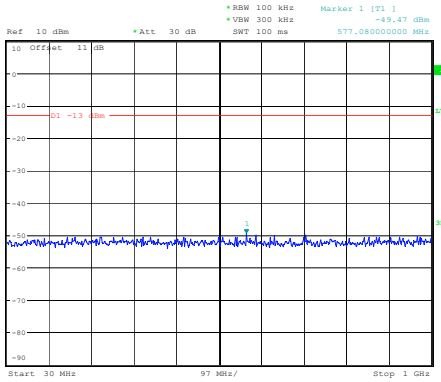
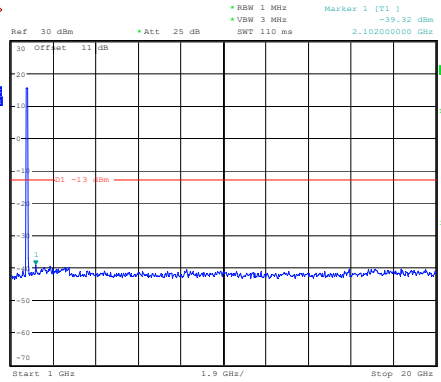
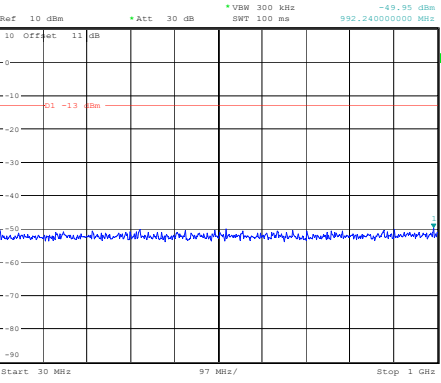
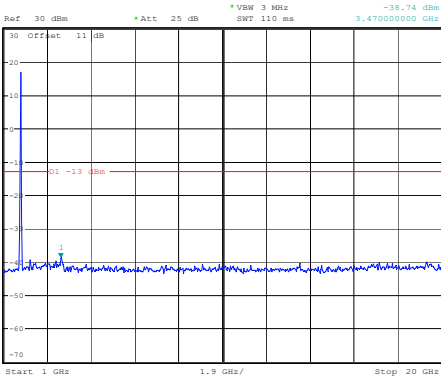
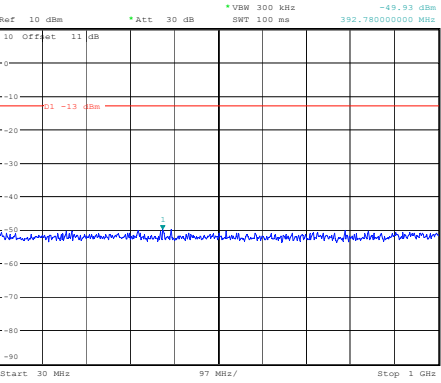
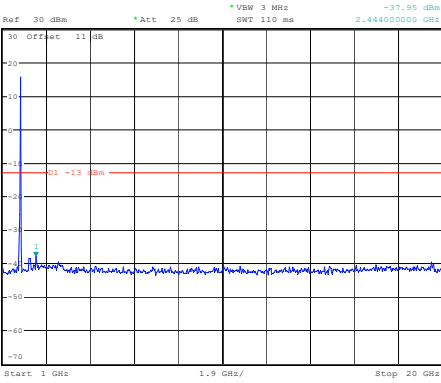
Middle



Highest



Spurious Emissions at Antenna Terminal

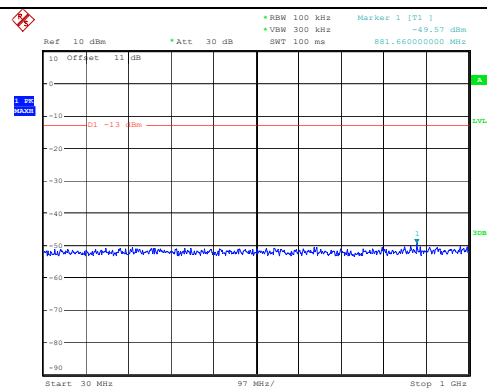
Channel	15MHz Bandwidth QPSK	
Lowest	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 12:04:41	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 12:04:52
	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 12:05:04	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 12:05:14
Highest	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 12:05:30	 ProjectNo.:CR231061121 Tester:Rod Luo Date: 7.NOV.2023 12:05:40

Spurious Emissions at Antenna Terminal

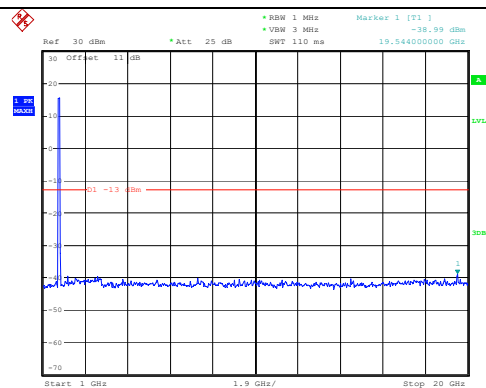
Channel

20MHz Bandwidth QPSK

Lowest

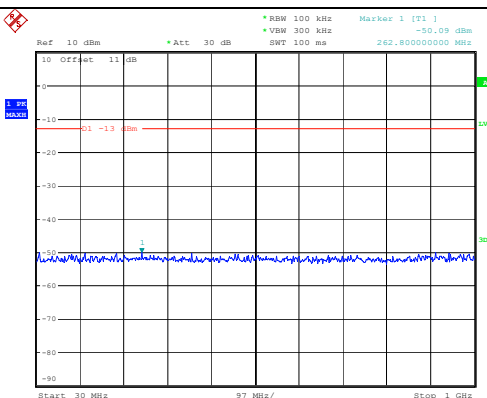


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 12:05:59

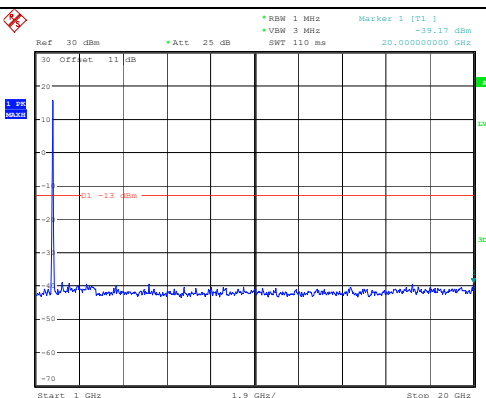


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 12:06:09

Middle

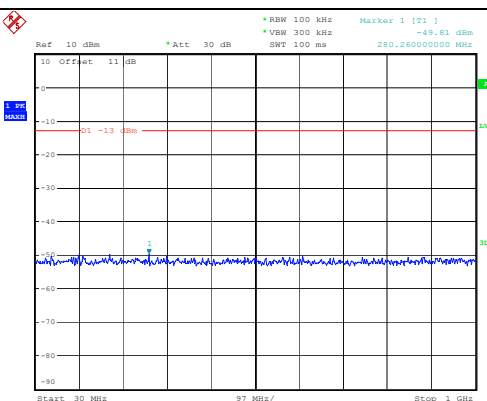


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 12:06:25

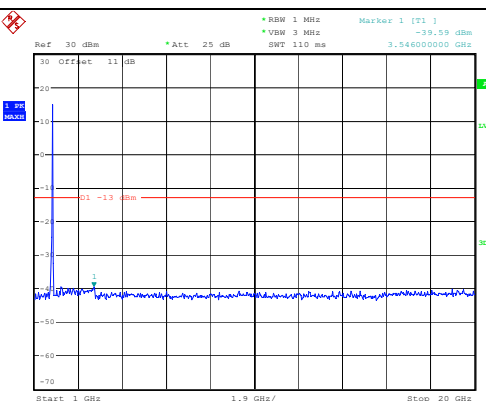


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 12:06:35

Highest

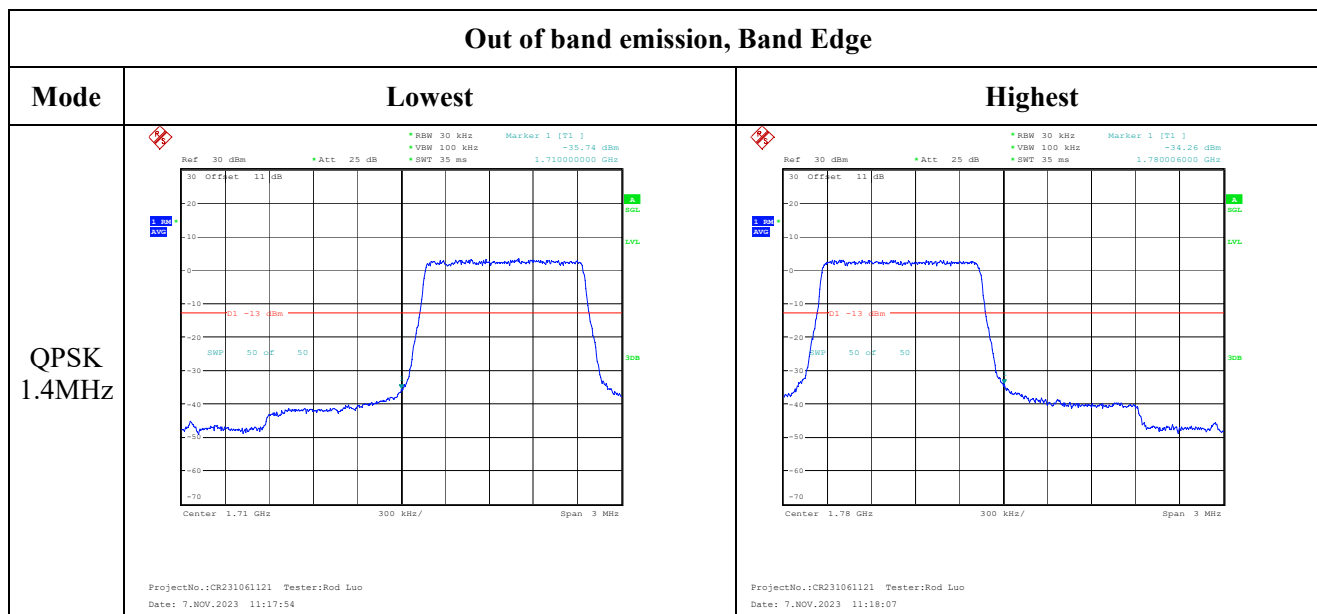


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 12:06:51

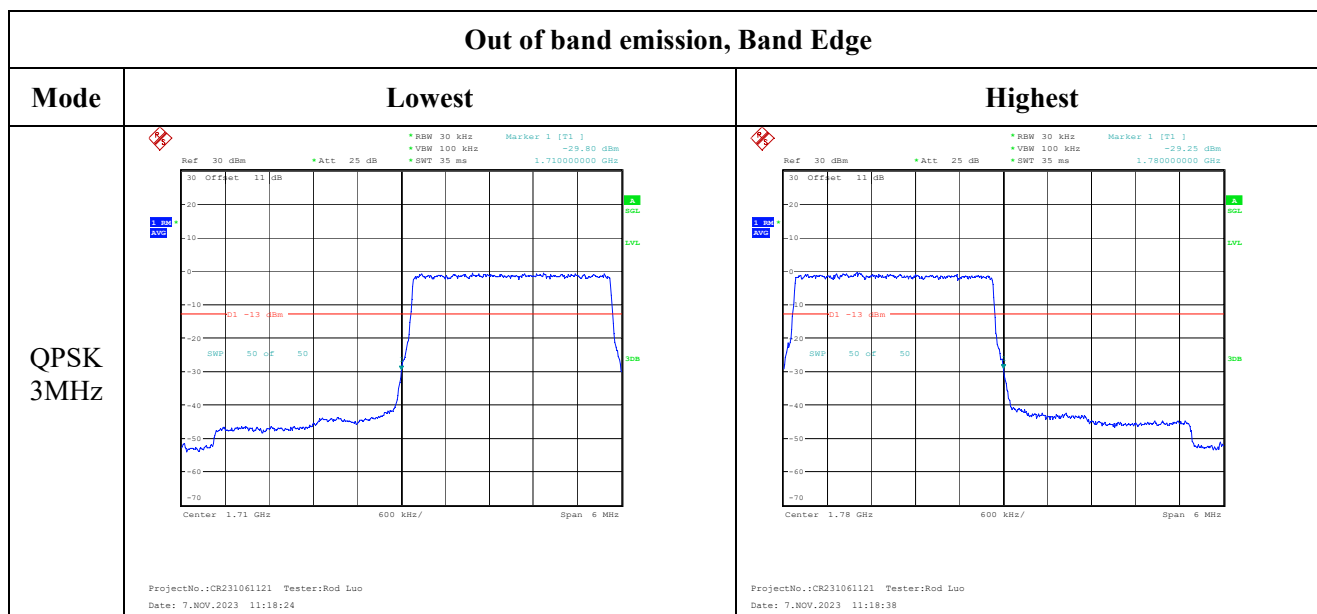


ProjectNo.:CR231061121 Tester:Rod Luo
Date: 7.NOV.2023 12:07:01

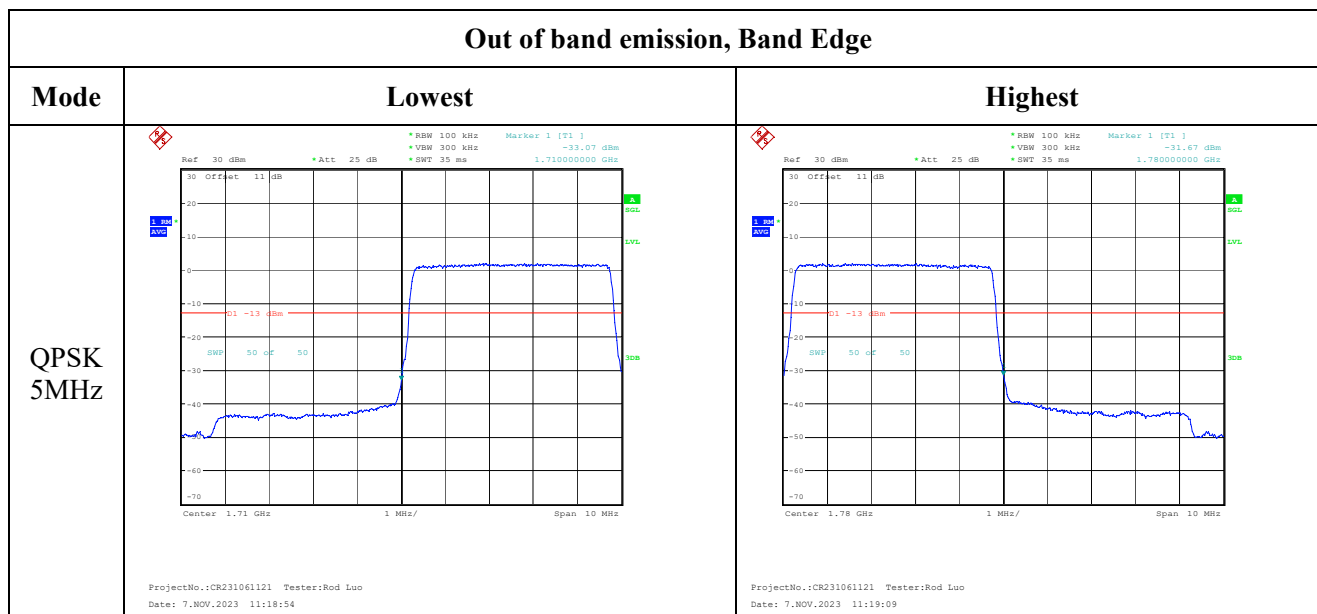
Out of band emission, Band Edge



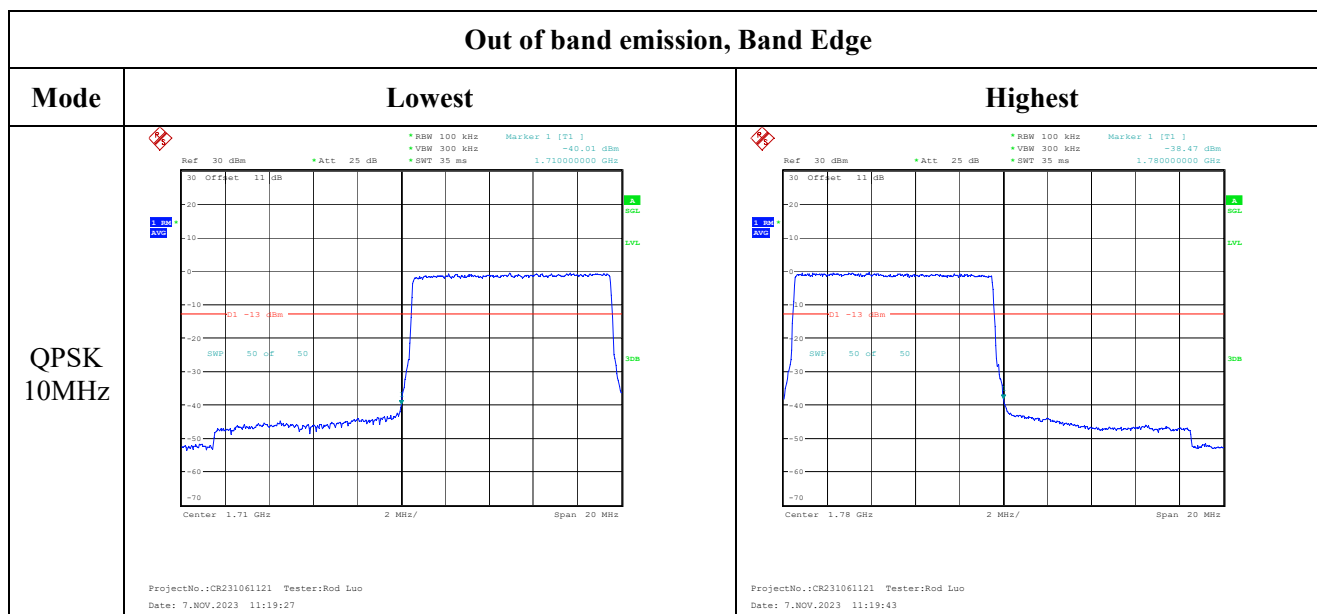
Out of band emission, Band Edge



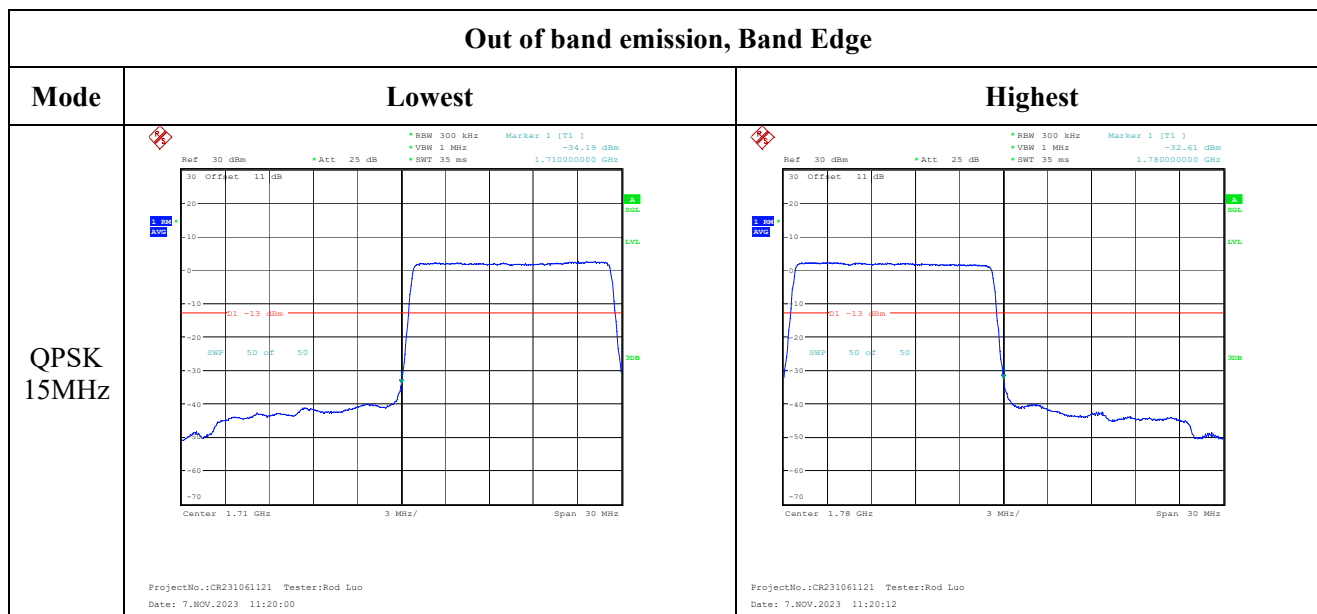
Out of band emission, Band Edge



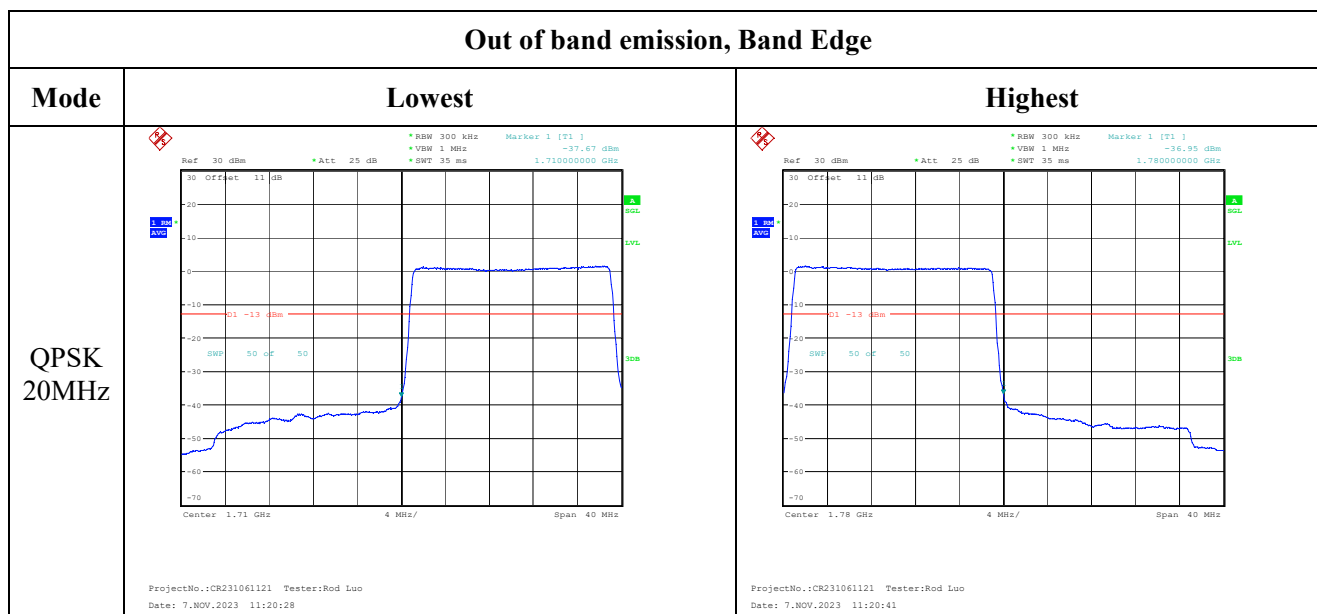
Out of band emission, Band Edge



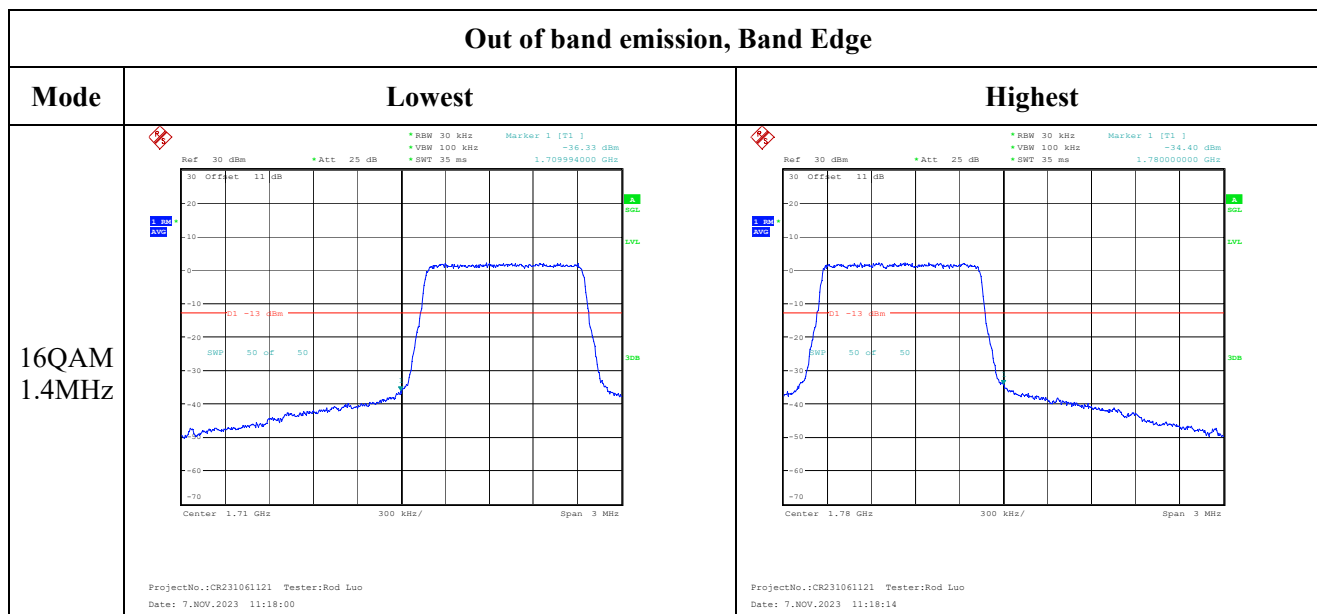
Out of band emission, Band Edge



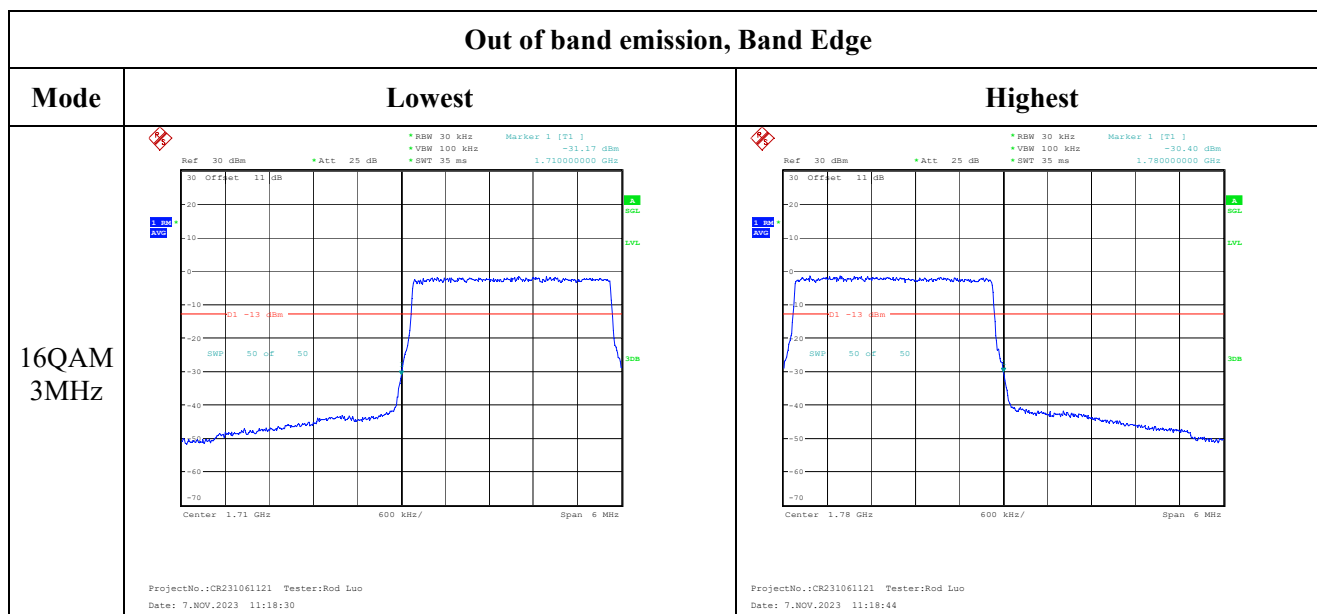
Out of band emission, Band Edge



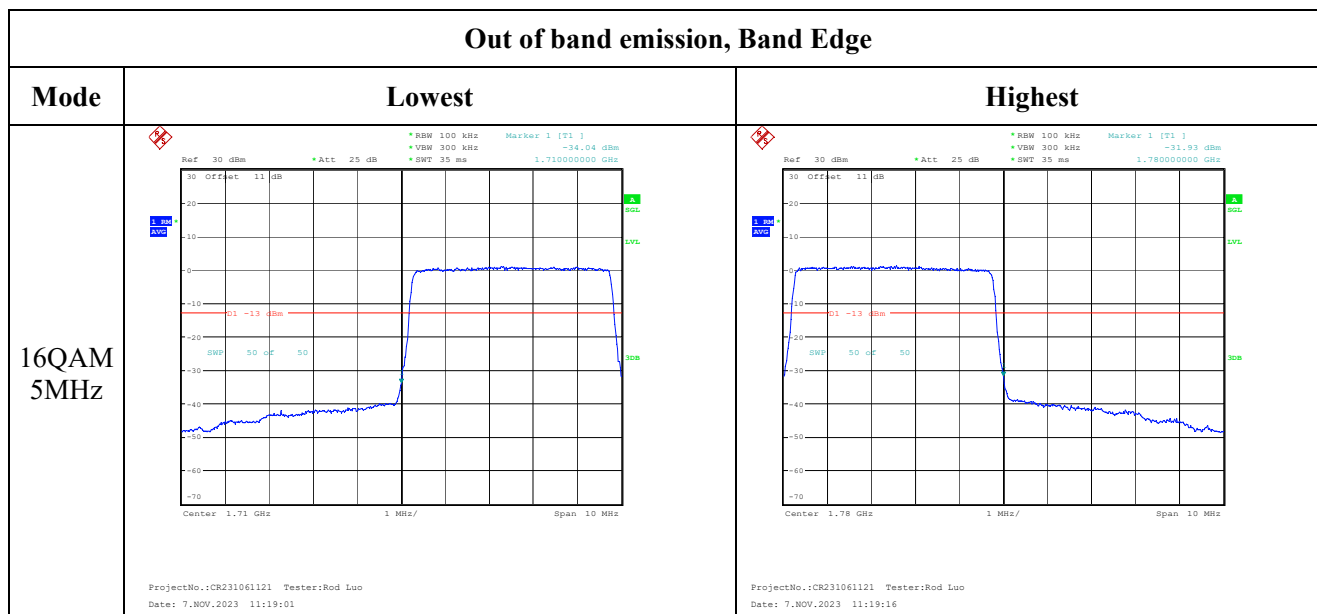
Out of band emission, Band Edge



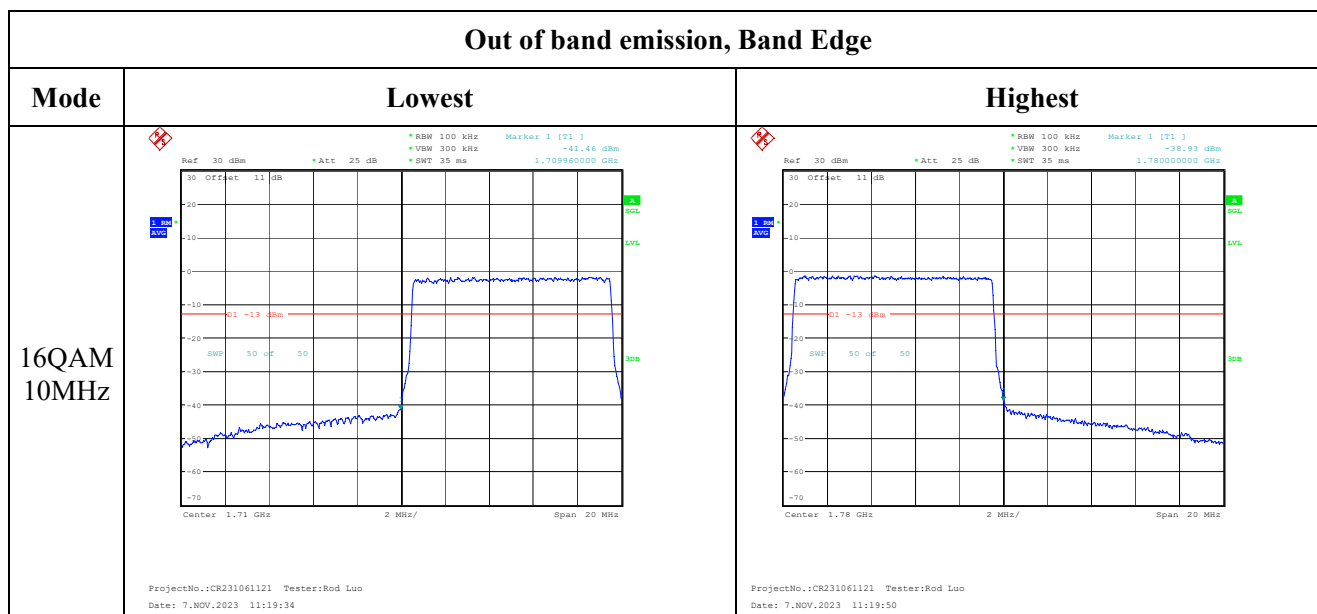
Out of band emission, Band Edge



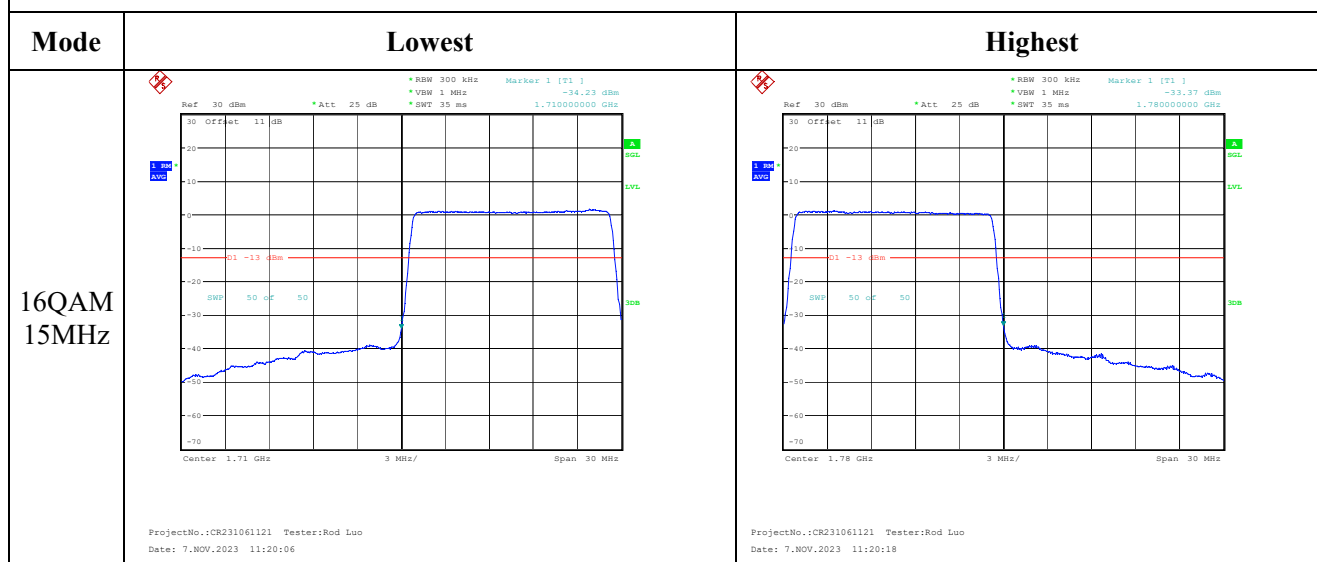
Out of band emission, Band Edge



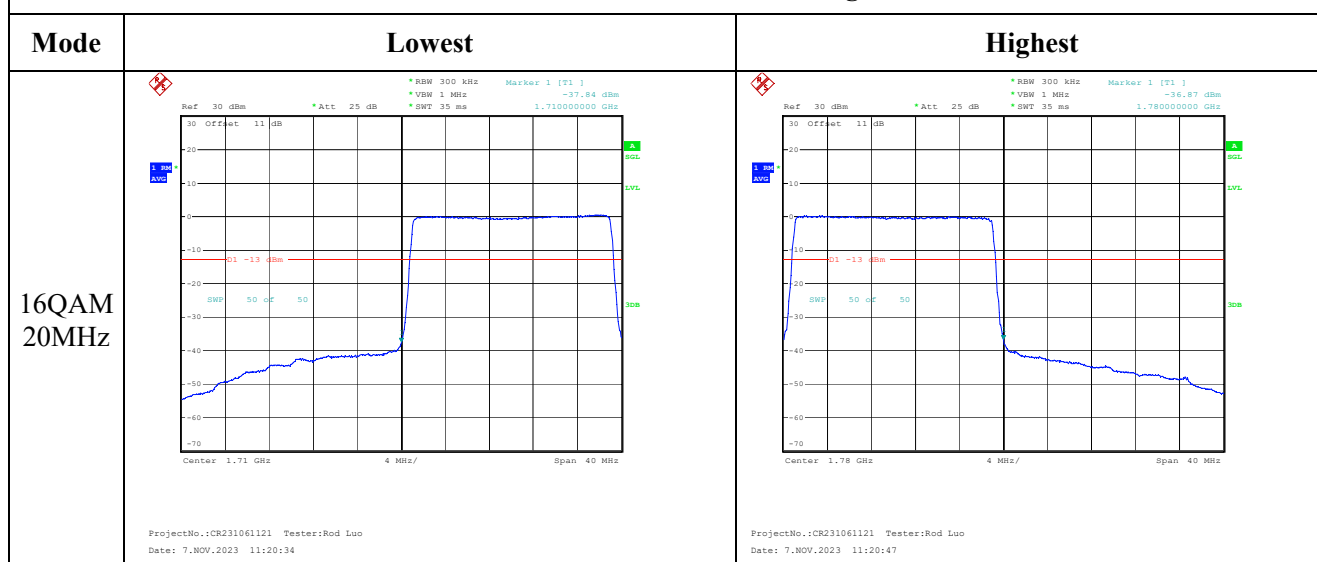
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.19 Radiated Spurious Emissions

Serial Number:	2CFR-1	Test Date:	2023/11/21 for below 1GHz 2023/11/11 for above 1GHz
Test Site:	966-1	Test Mode:	Transmitting
Tester:	Carl Xue, Mack Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.1~25.3	Relative Humidity: (%)	24~47	ATM Pressure: (kPa)	101.3~101.4
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Below 1GHz					
Sunol Sciences	Antenna	JB6	A082520-6	2023/9/18	2026/9/17
R&S	EMI Test Receiver	ESR3	102724	2023/3/31	2024/3/30
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2023/7/16	2024/7/15
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/7/16	2024/7/15
Sonoma	Amplifier	310N	186165	2023/7/16	2024/7/15
EMCO	Adjustable Dipole Antenna	3121C	9109-756	N/A	N/A
MICRO-COAX	Coaxial Cable	UFA210B-0-0720-300300	99G1448	2023/7/16	2024/7/15
Agilent	Signal Generator	E8247C	MY43321352	2023/11/17	2024/11/16
Above 1GHz					
AH	Double Ridge	SAS-571	1394	2023/2/22	2026/2/21
R&S	Spectrum Analyzer	FSV40	101591	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2023/8/6	2024/8/5
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2023/8/6	2024/8/5
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2023/11/8	2024/11/7
AH	Double Ridge Guide Horn Antenna	SAS-571	1396	2021/10/18	2024/10/17
MICRO-COAX	Coaxial Cable	UFA210B-0-0720-300300	99G1448	2023/7/16	2024/7/15
Agilent	Signal Generator	E8247C	MY43321352	2022/11/18	2023/11/17
PASTERNAK	Horn Antenna	PE9852/2F-20	112002	2021/2/5	2024/2/4
PASTERNAK	Horn Antenna	PE9852/2F-20	112001	2021/2/5	2024/2/4
Quinstar	Preamplifier	QLW-18405536-JO	15964001005	2023/9/15	2024/9/14
PASTERNAK	Horn Antenna	PE9850/2F-20	072001	2021/2/5	2024/2/4
PASTERNAK	Horn Antenna	PE9850/2F-20	072002	2021/2/5	2024/2/4
MICRO-COAX	Coaxial Cable	UFB142A-1-2362-200200	235772-001	2023/8/6	2024/8/5

*** 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).

Test Data:

Please refer to the below table and plots.

After pre-scan in the X, Y and Z axes of orientation, the worst case is below:

Cellular Band (30MHz-10GHz)

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Frequency:			824.2	MHz				
706.70	H	20.86	-52.32	0.00	0.54	-52.86	-13.00	39.86
716.87	V	20.71	-48.84	0.00	0.50	-49.34	-13.00	36.34
1648.400	H	47.85	-56.48	8.68	0.80	-48.6	-13.00	35.60
1648.400	V	46.83	-57.58	8.68	0.80	-49.7	-13.00	36.70
2472.600	H	45.50	-55.28	9.38	1.00	-46.9	-13.00	33.90
2472.600	V	45.15	-55.58	9.38	1.00	-47.2	-13.00	34.20
3296.800	H	39.91	-56.77	10.32	1.15	-47.6	-13.00	34.60
3296.800	V	39.37	-57.07	10.32	1.15	-47.9	-13.00	34.90
Frequency:			836.6	MHz				
721.71	H	20.63	-52.25	0.00	0.50	-52.75	-13.00	39.75
706.90	V	20.76	-49.01	0.00	0.54	-49.55	-13.00	36.55
673.200	H	48.45	-55.86	8.71	0.85	-48	-13.00	35.00
1673.200	V	47.35	-57.06	8.71	0.85	-49.2	-13.00	36.20
2509.800	H	46.10	-54.51	9.42	1.01	-46.1	-13.00	33.10
2509.800	V	45.81	-54.81	9.42	1.01	-46.4	-13.00	33.40
3346.400	H	40.79	-56.38	10.34	1.16	-47.2	-13.00	34.20
3346.400	V	40.25	-56.78	10.34	1.16	-47.6	-13.00	34.60
Frequency:			848.8	MHz				
654.28	H	20.97	-52.60	0.00	0.52	-53.12	-13.00	40.12
701.96	V	20.83	-49.05	0.00	0.55	-49.60	-13.00	36.60
1697.600	H	50.75	-53.54	8.74	0.90	-45.7	-13.00	32.70
1697.600	V	49.68	-54.74	8.74	0.90	-46.9	-13.00	33.90
2546.400	H	47.17	-53.16	9.47	1.01	-44.7	-13.00	31.70
2546.400	V	47.72	-52.56	9.47	1.01	-44.1	-13.00	31.10
3395.200	H	41.72	-55.97	10.36	1.19	-46.8	-13.00	33.80
3395.200	V	41.29	-56.37	10.36	1.19	-47.2	-13.00	34.20

PCS Band (30MHz-20GHz)

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Frequency: 1850.2 MHz								
91.81	H	38.68	-74.23	0.00	0.18	-74.41	-13.00	61.41
59.64	V	41.86	-63.98	-10.47	0.14	-74.59	-13.00	61.59
3700.400	H	38.37	-58.95	10.60	1.25	-49.6	-13.00	36.60
3700.400	V	37.95	-59.35	10.60	1.25	-50	-13.00	37.00
5550.600	H	37.51	-55.75	11.44	1.49	-45.8	-13.00	32.80
5550.600	V	36.65	-56.45	11.44	1.49	-46.5	-13.00	33.50
Frequency: 1880 MHz								
103.43	H	38.32	-74.00	0.00	0.19	-74.19	-13.00	61.19
60.06	V	42.36	-63.63	-10.27	0.14	-74.04	-13.00	61.04
3760.000	H	38.89	-57.52	10.66	1.24	-48.1	-13.00	35.10
3760.000	V	38.27	-58.02	10.66	1.24	-48.6	-13.00	35.60
5640.000	H	38.26	-55.19	11.33	1.54	-45.4	-13.00	32.40
5640.000	V	37.24	-56.09	11.33	1.54	-46.3	-13.00	33.30
Frequency: 1909.8 MHz								
93.43	H	38.61	-74.19	0.00	0.18	-74.37	-13.00	61.37
59.85	V	42.16	-63.78	-10.37	0.14	-74.29	-13.00	61.29
3819.600	H	39.43	-56.43	10.72	1.29	-47	-13.00	34.00
3819.600	V	38.79	-56.93	10.72	1.29	-47.5	-13.00	34.50
5729.400	H	39.15	-54.33	11.22	1.59	-44.7	-13.00	31.70
5729.400	V	38.33	-55.03	11.22	1.59	-45.4	-13.00	32.40

WCDMA Band 2(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Frequency: 1852.4 MHz								
103.80	H	38.81	-73.51	0.00	0.19	-73.70	-13.00	60.70
59.44	V	42.42	-63.32	-10.56	0.14	-74.02	-13.00	61.02
3704.800	H	37.21	-60.05	10.60	1.25	-50.7	-13.00	37.70
3704.800	V	36.98	-60.25	10.60	1.25	-50.9	-13.00	37.90
5557.200	H	37.14	-56.14	11.43	1.49	-46.2	-13.00	33.20
5557.200	V	36.99	-56.14	11.43	1.49	-46.2	-13.00	33.20
Frequency: 1880 MHz								
104.90	H	38.62	-73.68	0.00	0.19	-73.87	-13.00	60.87
55.41	V	42.25	-61.57	-12.41	0.13	-74.11	-13.00	61.11
3760.000	H	37.49	-58.92	10.66	1.24	-49.5	-13.00	36.50
3760.000	V	37.07	-59.22	10.66	1.24	-49.8	-13.00	36.80
5640.000	H	36.86	-56.59	11.33	1.54	-46.8	-13.00	33.80
5640.000	V	36.94	-56.39	11.33	1.54	-46.6	-13.00	33.60
Frequency: 1907.6 MHz								
105.27	H	38.76	-73.54	0.00	0.19	-73.73	-13.00	60.73
60.49	V	41.82	-64.02	-10.04	0.14	-74.20	-13.00	61.20
3815.200	H	36.82	-59.03	10.72	1.29	-49.6	-13.00	36.60
3815.200	V	36.16	-59.53	10.72	1.29	-50.1	-13.00	37.10
5722.800	H	37.74	-55.75	11.23	1.58	-46.1	-13.00	33.10
5722.800	V	37.30	-56.05	11.23	1.58	-46.4	-13.00	33.40

WCDMA Band 4(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Frequency: 1712.4 MHz								
104.17	H	39.04	-73.27	0.00	0.19	-73.46	-13.00	60.46
59.85	V	42.32	-63.62	-10.37	0.14	-74.13	-13.00	61.13
3424.800	H	37.47	-60.30	10.37	1.17	-51.1	-13.00	38.10
3424.800	V	37.34	-60.40	10.37	1.17	-51.2	-13.00	38.20
5137.200	H	36.50	-57.12	11.28	1.46	-47.3	-13.00	34.30
5137.200	V	37.28	-56.22	11.28	1.46	-46.4	-13.00	33.40
Frequency: 1732.6 MHz								
106.11	H	38.36	-73.92	0.00	0.19	-74.11	-13.00	61.11
59.64	V	42.19	-63.65	-10.47	0.14	-74.26	-13.00	61.26
3465.200	H	37.77	-60.04	10.39	1.15	-50.8	-13.00	37.80
3465.200	V	37.93	-59.84	10.39	1.15	-50.6	-13.00	37.60
5197.800	H	37.45	-56.68	11.32	1.44	-46.8	-13.00	33.80
5197.800	V	38.10	-55.88	11.32	1.44	-46	-13.00	33.00
Frequency: 1752.6 MHz								
103.08	H	38.28	-74.05	0.00	0.19	-74.24	-13.00	61.24
59.02	V	41.95	-63.59	-10.75	0.14	-74.48	-13.00	61.48
3505.200	H	38.30	-59.53	10.41	1.18	-50.3	-13.00	37.30
3505.200	V	38.24	-59.53	10.41	1.18	-50.3	-13.00	37.30
5257.800	H	37.65	-56.08	11.35	1.47	-46.2	-13.00	33.20
5257.800	V	38.13	-55.38	11.35	1.47	-45.5	-13.00	32.50

WCDMA Band 5(30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Frequency:			826.4	MHz				
719.42	H	20.85	-52.08	0.00	0.49	-52.57	-13.00	39.57
547.09	V	21.08	-50.57	0.00	0.47	-51.04	-13.00	38.04
1652.800	H	46.06	-58.27	8.68	0.81	-50.4	-13.00	37.40
1652.800	V	45.14	-59.27	8.68	0.81	-51.4	-13.00	38.40
2479.200	H	40.18	-60.58	9.39	1.01	-52.2	-13.00	39.20
2479.200	V	40.65	-60.08	9.39	1.01	-51.7	-13.00	38.70
3305.600	H	35.96	-60.77	10.32	1.15	-51.6	-13.00	38.60
3305.600	V	35.53	-60.97	10.32	1.15	-51.8	-13.00	38.80
Frequency:			836.6	MHz				
711.90	H	20.92	-52.16	0.00	0.51	-52.67	-13.00	39.67
713.98	V	20.89	-48.73	0.00	0.50	-49.23	-13.00	36.23
1673.200	H	46.45	-57.86	8.71	0.85	-50	-13.00	37.00
1673.200	V	45.35	-59.06	8.71	0.85	-51.2	-13.00	38.20
2509.800	H	39.80	-60.81	9.42	1.01	-52.4	-13.00	39.40
2509.800	V	40.41	-60.21	9.42	1.01	-51.8	-13.00	38.80
3346.400	H	36.49	-60.68	10.34	1.16	-51.5	-13.00	38.50
3346.400	V	36.35	-60.68	10.34	1.16	-51.5	-13.00	38.50
Frequency:			846.6	MHz				
704.45	H	20.79	-52.44	0.00	0.55	-52.99	-13.00	39.99
694.25	V	20.83	-49.19	0.00	0.55	-49.74	-13.00	36.74
1693.200	H	46.86	-57.44	8.73	0.89	-49.6	-13.00	36.60
1693.200	V	45.88	-58.54	8.73	0.89	-50.7	-13.00	37.70
2539.800	H	39.83	-60.55	9.46	1.01	-52.1	-13.00	39.10
2539.800	V	40.49	-59.85	9.46	1.01	-51.4	-13.00	38.40
3386.400	H	37.52	-60.07	10.35	1.18	-50.9	-13.00	37.90
3386.400	V	37.47	-60.07	10.35	1.18	-50.9	-13.00	37.90

LTE Bands:

(The Worst modulation and bandwidth was below)

LTE Band 2(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, 1.4MHz, Frequency:1850.7 MHz								
105.27	H	39.07	-73.23	0.00	0.19	-73.42	-13.00	60.42
57.99	V	42.72	-62.33	-11.22	0.14	-73.69	-13.00	60.69
3701.400	H	37.06	-60.25	10.60	1.25	-50.9	-13.00	37.90
3701.400	V	37.74	-59.55	10.60	1.25	-50.2	-13.00	37.20
5552.100	H	36.42	-56.85	11.44	1.49	-46.9	-13.00	33.90
5552.100	V	35.85	-57.25	11.44	1.49	-47.3	-13.00	34.30
QPSK, 1.4MHz,Frequency:1880 MHz								
105.27	H	39.07	-73.23	0.00	0.19	-73.42	-13.00	60.42
57.99	V	42.72	-62.33	-11.22	0.14	-73.69	-13.00	60.69
3760.000	H	36.89	-59.52	10.66	1.24	-50.1	-13.00	37.10
3760.000	V	37.17	-59.12	10.66	1.24	-49.7	-13.00	36.70
5640.000	H	37.16	-56.29	11.33	1.54	-46.5	-13.00	33.50
5640.000	V	36.44	-56.89	11.33	1.54	-47.1	-13.00	34.10
QPSK, 1.4MHz,Frequency:1909.3 MHz								
104.15	H	38.68	-73.63	0.00	0.19	-73.82	-13.00	60.82
58.40	V	42.63	-62.62	-11.04	0.14	-73.80	-13.00	60.80
3818.600	H	36.63	-59.23	10.72	1.29	-49.8	-13.00	36.80
3818.600	V	37.08	-58.63	10.72	1.29	-49.2	-13.00	36.20
5727.900	H	38.24	-55.24	11.23	1.59	-45.6	-13.00	32.60
5727.900	V	37.42	-55.94	11.23	1.59	-46.3	-13.00	33.30

LTE Band 4(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
1.4MHz QPSK, Frequency: 1710.7 MHz								
105.62	H	38.53	-73.76	0.00	0.19	-73.95	-13.00	60.95
57.59	V	42.18	-62.68	-11.41	0.14	-74.23	-13.00	61.23
3421.400	H	37.46	-60.30	10.37	1.17	-51.1	-13.00	38.10
3421.400	V	37.43	-60.30	10.37	1.17	-51.1	-13.00	38.10
5132.100	H	39.46	-54.11	11.28	1.47	-44.3	-13.00	31.30
5132.100	V	39.25	-54.21	11.28	1.47	-44.4	-13.00	31.40
1.4MHz QPSK, Frequency: 1732.5 MHz								
103.80	H	38.94	-73.38	0.00	0.19	-73.57	-13.00	60.57
61.55	V	42.55	-62.93	-9.48	0.14	-72.55	-13.00	59.55
3465.000	H	37.77	-60.04	10.39	1.15	-50.8	-13.00	37.80
3465.000	V	37.93	-59.84	10.39	1.15	-50.6	-13.00	37.60
5197.500	H	40.45	-53.68	11.32	1.44	-43.8	-13.00	30.80
5197.500	V	40.10	-53.88	11.32	1.44	-44	-13.00	31.00
1.4MHz QPSK, Frequency: 1754.3 MHz								
104.90	H	38.83	-73.47	0.00	0.19	-73.66	-13.00	60.66
58.20	V	41.83	-63.32	-11.13	0.14	-74.59	-13.00	61.59
3508.600	H	38.40	-59.42	10.41	1.19	-50.2	-13.00	37.20
3508.600	V	38.24	-59.52	10.41	1.19	-50.3	-13.00	37.30
5262.900	H	40.91	-52.79	11.36	1.47	-42.9	-13.00	29.90
5262.900	V	40.28	-53.19	11.36	1.47	-43.3	-13.00	30.30

LTE Band 5(30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, 1.4MHz, Frequency: 824.7 MHz								
689.77	H	20.70	-52.68	0.00	0.54	-53.22	-13.00	40.22
716.68	V	20.85	-48.71	0.00	0.50	-49.21	-13.00	36.21
1649.400	H	49.85	-54.48	8.68	0.80	-46.6	-13.00	33.60
1649.400	V	48.93	-55.48	8.68	0.80	-47.6	-13.00	34.60
2474.100	H	45.10	-55.68	9.38	1.00	-47.3	-13.00	34.30
2474.100	V	45.85	-54.88	9.38	1.00	-46.5	-13.00	33.50
3298.800	H	35.71	-60.97	10.32	1.15	-51.8	-13.00	38.80
3298.800	V	35.37	-61.07	10.32	1.15	-51.9	-13.00	38.90
QPSK, 1.4MHz, Frequency: 836.5 MHz								
704.42	H	20.89	-52.34	0.00	0.55	-52.89	-13.00	39.89
729.34	V	21.15	-48.13	0.00	0.53	-48.66	-13.00	35.66
1673.000	H	50.35	-53.96	8.71	0.85	-46.1	-13.00	33.10
1673.000	V	49.35	-55.06	8.71	0.85	-47.2	-13.00	34.20
2509.500	H	45.40	-55.21	9.42	1.01	-46.8	-13.00	33.80
2509.500	V	46.11	-54.51	9.42	1.01	-46.1	-13.00	33.10
3346.000	H	36.68	-60.48	10.34	1.16	-51.3	-13.00	38.30
3346.000	V	36.44	-60.58	10.34	1.16	-51.4	-13.00	38.40
QPSK, 1.4MHz, Frequency: 848.3 MHz								
724.49	H	20.96	-51.87	0.00	0.51	-52.38	-13.00	39.38
699.32	V	20.93	-49.00	0.00	0.55	-49.55	-13.00	36.55
1696.600	H	51.14	-53.15	8.74	0.89	-45.3	-13.00	32.30
1696.600	V	50.17	-54.25	8.74	0.89	-46.4	-13.00	33.40
2544.900	H	45.68	-54.66	9.47	1.01	-46.2	-13.00	33.20
2544.900	V	46.44	-53.86	9.47	1.01	-45.4	-13.00	32.40
3393.200	H	38.20	-59.47	10.36	1.19	-50.3	-13.00	37.30
3393.200	V	38.06	-59.57	10.36	1.19	-50.4	-13.00	37.40

LTE Band 7(30MHz-26.5GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
5MHz QPSK, Frequency: 2502.5 MHz								
104.53	H	38.99	-73.32	0.00	0.19	-73.51	-25.00	48.51
61.13	V	41.86	-63.77	-9.70	0.14	-73.61	-25.00	48.61
5005.000	H	34.73	-58.23	11.20	1.47	-48.5	-25.00	23.50
5005.000	V	35.69	-57.13	11.20	1.47	-47.4	-25.00	22.40
7507.500	H	39.64	-50.15	10.90	1.95	-41.2	-25.00	16.20
7507.500	V	39.54	-50.75	10.90	1.95	-41.8	-25.00	16.80
5MHz QPSK, Frequency: 2535 MHz								
104.17	H	38.93	-73.38	0.00	0.19	-73.57	-25.00	48.57
57.19	V	42.29	-62.38	-11.59	0.14	-74.11	-25.00	49.11
5070.000	H	35.52	-57.67	11.24	1.47	-47.9	-25.00	22.90
5070.000	V	36.32	-56.77	11.24	1.47	-47	-25.00	22.00
7605.000	H	40.00	-49.47	10.88	2.01	-40.6	-25.00	15.60
7605.000	V	40.12	-50.07	10.88	2.01	-41.2	-25.00	16.20
5MHz QPSK, Frequency: 2567.5 MHz								
103.44	H	38.79	-73.53	0.00	0.19	-73.72	-25.00	48.72
58.02	V	41.92	-63.14	-11.21	0.14	-74.49	-25.00	49.49
5135.000	H	36.39	-57.21	11.28	1.47	-47.4	-25.00	22.40
5135.000	V	37.18	-56.31	11.28	1.47	-46.5	-25.00	21.50
7702.500	H	40.73	-48.79	10.86	1.97	-39.9	-25.00	14.90
7702.500	V	40.79	-49.39	10.86	1.97	-40.5	-25.00	15.50

LTE Band 12:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
1.4MHz QPSK, Frequency: 699.7 MHz								
603.80	H	20.53	-53.31	0.00	0.50	-53.81	-13.00	40.81
578.79	V	20.64	-51.06	0.00	0.46	-51.52	-13.00	38.52
1399.400	H	43.69	-60.01	8.22	0.71	-52.5	-13.00	39.50
1399.400	V	42.54	-61.21	8.22	0.71	-53.7	-13.00	40.70
2099.100	H	46.53	-55.35	9.16	0.91	-47.1	-13.00	34.10
2099.100	V	45.48	-56.35	9.16	0.91	-48.1	-13.00	35.10
2798.800	H	38.39	-61.54	9.88	1.04	-52.7	-13.00	39.70
2798.800	V	38.96	-60.84	9.88	1.04	-52	-13.00	39.00
1.4MHz QPSK, Frequency: 707.5 MHz								
497.99	H	20.68	-55.19	0.00	0.45	-55.64	-13.00	42.64
504.88	V	20.60	-50.99	0.00	0.45	-51.44	-13.00	38.44
1415.000	H	44.13	-59.54	8.26	0.72	-52	-13.00	39.00
1415.000	V	42.98	-60.74	8.26	0.72	-53.2	-13.00	40.20
2122.500	H	47.04	-54.95	9.17	0.92	-46.7	-13.00	33.70
2122.500	V	46.02	-55.95	9.17	0.92	-47.7	-13.00	34.70
2830.000	H	38.63	-61.17	9.93	1.06	-52.3	-13.00	39.30
2830.000	V	39.26	-60.47	9.93	1.06	-51.6	-13.00	38.60
1.4MHz QPSK, Frequency: 715.3 MHz								
543.57	H	20.74	-54.23	0.00	0.47	-54.70	-13.00	41.70
621.35	V	20.71	-50.63	0.00	0.49	-51.12	-13.00	38.12
1430.600	H	44.65	-58.98	8.31	0.73	-51.4	-13.00	38.40
1430.600	V	42.51	-61.18	8.31	0.73	-53.6	-13.00	40.60
2145.900	H	47.84	-54.26	9.19	0.93	-46	-13.00	33.00
2145.900	V	46.85	-55.26	9.19	0.93	-47	-13.00	34.00
2861.200	H	39.14	-60.51	9.98	1.07	-51.6	-13.00	38.60
2861.200	V	39.96	-59.71	9.98	1.07	-50.8	-13.00	37.80

LTE Band 13:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
5MHz QPSK, Frequency:			779.5	MHz				
543.57	H	20.74	-54.23	0.00	0.47	-54.70	-13.00	41.70
621.35	V	20.71	-50.63	0.00	0.49	-51.12	-13.00	38.12
1559.000	H	42.42	-61.57	8.57	0.80	-53.8	-40.00	13.80
1559.000	V	42.48	-61.57	8.57	0.80	-53.8	-40.00	13.80
2338.500	H	41.46	-60.13	9.30	0.97	-51.8	-13.00	38.80
2338.500	V	40.73	-60.63	9.30	0.97	-52.3	-13.00	39.30
3118.000	H	35.87	-61.62	10.25	1.13	-52.5	-13.00	39.50
3118.000	V	36.33	-61.02	10.25	1.13	-51.9	-13.00	38.90
5MHz QPSK, Frequency:			784.5	MHz				
724.10	H	20.96	-51.87	0.00	0.51	-52.38	-13.00	39.38
685.64	V	20.83	-49.35	0.00	0.53	-49.88	-13.00	36.88
1569.000	H	43.21	-60.87	8.58	0.81	-53.1	-40.00	13.10
1569.000	V	43.16	-60.97	8.58	0.81	-53.2	-40.00	13.20
2353.500	H	42.41	-59.04	9.31	0.97	-50.7	-13.00	37.70
2353.500	V	41.98	-59.24	9.31	0.97	-50.9	-13.00	37.90
3138.000	H	36.48	-60.92	10.26	1.14	-51.8	-13.00	38.80
3138.000	V	37.01	-60.22	10.26	1.14	-51.1	-13.00	38.10

LTE Band 17:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
5MHz QPSK, Frequency: 706.5 MHz								
580.70	H	20.77	-53.47	0.00	0.46	-53.93	-13.00	40.93
574.73	V	20.69	-51.00	0.00	0.46	-51.46	-13.00	38.46
1413.000	H	43.23	-60.44	8.26	0.72	-52.9	-13.00	39.90
1413.000	V	42.18	-61.54	8.26	0.72	-54	-13.00	41.00
2119.500	H	46.72	-55.25	9.17	0.92	-47	-13.00	34.00
2119.500	V	45.70	-56.25	9.17	0.92	-48	-13.00	35.00
2826.000	H	38.85	-60.96	9.92	1.06	-52.1	-13.00	39.10
2826.000	V	38.58	-61.16	9.92	1.06	-52.3	-13.00	39.30
5MHz QPSK, Frequency: 710 MHz								
622.84	H	20.73	-53.01	0.00	0.48	-53.49	-13.00	40.49
464.15	V	20.62	-52.38	0.00	0.42	-52.80	-13.00	39.80
1420.000	H	43.51	-60.15	8.28	0.73	-52.6	-13.00	39.60
1420.000	V	42.56	-61.15	8.28	0.73	-53.6	-13.00	40.60
2130.000	H	47.36	-54.66	9.18	0.92	-46.4	-13.00	33.40
2130.000	V	46.35	-55.66	9.18	0.92	-47.4	-13.00	34.40
2840.000	H	39.07	-60.68	9.94	1.06	-51.8	-13.00	38.80
2840.000	V	38.83	-60.88	9.94	1.06	-52	-13.00	39.00
5MHz QPSK, Frequency: 713.5 MHz								
556.79	H	20.66	-54.05	0.00	0.48	-54.53	-13.00	41.53
519.21	V	20.71	-50.90	0.00	0.41	-51.31	-13.00	38.31
1427.000	H	44.17	-59.47	8.30	0.73	-51.9	-13.00	38.90
1427.000	V	43.12	-60.57	8.30	0.73	-53	-13.00	40.00
2140.500	H	48.02	-54.05	9.18	0.93	-45.8	-13.00	32.80
2140.500	V	47.03	-55.05	9.18	0.93	-46.8	-13.00	33.80
2854.000	H	39.79	-59.90	9.97	1.07	-51	-13.00	38.00
2854.000	V	39.58	-60.10	9.97	1.07	-51.2	-13.00	38.20

LTE Band 25:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
1.4MHz QPSK, Frequency: 1850.7 MHz								
101.64	H	38.58	-73.77	0.00	0.19	-73.96	-13.00	60.96
60.49	V	41.87	-63.97	-10.04	0.14	-74.15	-13.00	61.15
3700.800	H	37.17	-60.15	10.60	1.25	-50.8	-13.00	37.80
3700.800	V	37.65	-59.65	10.60	1.25	-50.3	-13.00	37.30
5551.200	H	36.51	-56.75	11.44	1.49	-46.8	-13.00	33.80
5551.200	V	35.75	-57.35	11.44	1.49	-47.4	-13.00	34.40
1.4MHz QPSK, Frequency: 1882.5 MHz								
62.47	H	38.30	-65.56	-8.99	0.14	-74.69	-13.00	61.69
61.13	V	41.80	-63.83	-9.70	0.14	-73.67	-13.00	60.67
3765.000	H	31.52	-64.81	10.67	1.25	-50.2	-13.00	37.20
3765.000	V	31.44	-64.77	10.67	1.25	-49.8	-13.00	36.80
5647.500	H	35.16	-58.29	11.32	1.55	-46.5	-13.00	33.50
5647.500	V	34.55	-58.78	11.32	1.55	-47	-13.00	34.00
1.4MHz QPSK, Frequency: 1914.3 MHz								
105.64	H	38.23	-74.06	0.00	0.19	-74.25	-13.00	61.25
56.79	V	42.06	-62.42	-11.78	0.14	-74.34	-13.00	61.34
3828.600	H	33.39	-62.51	10.73	1.28	-49.7	-13.00	36.70
3828.600	V	33.10	-62.67	10.73	1.28	-49.2	-13.00	36.20
5742.900	H	34.87	-58.61	11.21	1.60	-45.8	-13.00	32.80
5742.900	V	34.75	-58.61	11.21	1.60	-46.4	-13.00	33.40

LTE Band 26:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
1.4MHz QPSK, Frequency: 814.7 MHz								
719.20	H	21.14	-51.79	0.00	0.49	-52.28	-13.00	39.28
691.78	V	20.76	-49.31	0.00	0.54	-49.85	-13.00	36.85
1629.400	H	47.10	-57.25	8.66	0.81	-49.4	-13.00	36.40
1629.400	V	46.16	-58.25	8.66	0.81	-50.4	-13.00	37.40
2444.100	H	44.52	-56.37	9.37	1.00	-48	-13.00	35.00
2444.100	V	44.98	-55.77	9.37	1.00	-47.4	-13.00	34.40
3258.800	H	35.63	-61.23	10.30	1.17	-52.1	-13.00	39.10
3258.800	V	36.18	-60.43	10.30	1.17	-51.3	-13.00	38.30
1.4MHz QPSK, Frequency: 831.5 MHz								
701.77	H	20.94	-52.34	0.00	0.55	-52.89	-13.00	39.89
578.77	V	20.85	-50.85	0.00	0.46	-51.31	-13.00	38.31
1663.000	H	47.55	-56.77	8.70	0.83	-48.9	-13.00	35.90
1663.000	V	46.44	-57.97	8.70	0.83	-50.1	-13.00	37.10
2494.500	H	44.81	-55.89	9.40	1.01	-47.5	-13.00	34.50
2494.500	V	45.72	-54.99	9.40	1.01	-46.6	-13.00	33.60
3326.000	H	35.88	-61.07	10.33	1.16	-51.9	-13.00	38.90
3326.000	V	36.60	-60.17	10.33	1.16	-51	-13.00	38.00
1.4MHz QPSK, Frequency: 848.3 MHz								
665.85	H	21.03	-52.47	0.00	0.50	-52.97	-13.00	39.97
711.65	V	20.87	-48.80	0.00	0.51	-49.31	-13.00	36.31
1696.600	H	48.14	-56.15	8.74	0.89	-48.3	-13.00	35.30
1696.600	V	47.17	-57.25	8.74	0.89	-49.4	-13.00	36.40
2544.900	H	44.98	-55.36	9.47	1.01	-46.9	-13.00	33.90
2544.900	V	45.64	-54.66	9.47	1.01	-46.2	-13.00	33.20
3393.200	H	37.30	-60.37	10.36	1.19	-51.2	-13.00	38.20
3393.200	V	37.96	-59.67	10.36	1.19	-50.5	-13.00	37.50

LTE Band 38 (30MHz-26.5GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
5MHz QPSK, Frequency: 2572.5 MHz								
92.46	H	38.86	-74.01	0.00	0.18	-74.19	-25.00	49.19
60.06	V	41.84	-64.15	-10.27	0.14	-74.56	-25.00	49.56
5145.000	H	36.53	-57.15	11.29	1.44	-47.3	-25.00	22.30
5145.000	V	37.32	-56.25	11.29	1.44	-46.4	-25.00	21.40
7717.500	H	40.74	-48.77	10.86	1.99	-39.9	-25.00	14.90
7717.500	V	40.66	-49.47	10.86	1.99	-40.6	-25.00	15.60
5MHz QPSK, Frequency: 2595 MHz								
103.47	H	38.46	-73.86	0.00	0.19	-74.05	-25.00	49.05
60.91	V	42.15	-63.55	-9.82	0.14	-73.51	-25.00	48.51
5190.000	H	37.30	-56.77	11.31	1.44	-46.9	-25.00	21.90
5190.000	V	38.05	-55.87	11.31	1.44	-46	-25.00	21.00
7785.000	H	41.24	-48.25	10.84	1.99	-39.4	-25.00	14.40
7785.000	V	40.97	-48.95	10.84	1.99	-40.1	-25.00	15.10
5MHz QPSK, Frequency: 2617.5 MHz								
103.83	H	38.58	-73.74	0.00	0.19	-73.93	-25.00	48.93
59.65	V	42.28	-63.56	-10.46	0.14	-74.16	-25.00	49.16
5235.000	H	37.42	-56.48	11.34	1.46	-46.6	-25.00	21.60
5235.000	V	38.13	-55.58	11.34	1.46	-45.7	-25.00	20.70
7852.500	H	41.59	-47.60	10.83	2.03	-38.8	-25.00	13.80
7852.500	V	41.18	-48.40	10.83	2.03	-39.6	-25.00	14.60

LTE Band 40 Lower (30MHz-25GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
5MHz QPSK, Frequency: 2307.5 MHz								
103.44	H	38.72	-73.60	0.00	0.19	-73.79	-40.00	33.79
60.91	V	42.06	-63.64	-9.82	0.14	-73.60	-40.00	33.60
4615.000	H	39.03	-56.33	10.74	1.41	-47	-40.00	7.00
4615.000	V	38.79	-56.43	10.74	1.41	-47.1	-40.00	7.10
6922.500	H	37.58	-53.44	11.22	1.88	-44.1	-40.00	4.10
6922.500	V	36.95	-53.94	11.22	1.88	-44.6	-40.00	4.60
5MHz QPSK, Frequency: 2312.5 MHz								
104.90	H	38.56	-73.74	0.00	0.19	-73.93	-40.00	33.93
59.86	V	41.85	-64.09	-10.36	0.14	-74.59	-40.00	34.59
4625.000	H	39.45	-55.84	10.75	1.41	-46.5	-40.00	6.50
4625.000	V	39.23	-55.94	10.75	1.41	-46.6	-40.00	6.60
6937.500	H	38.27	-52.71	11.21	1.90	-43.4	-40.00	3.40
6937.500	V	37.73	-53.11	11.21	1.90	-43.8	-40.00	3.80

LTE Band 40 Upper (30MHz-25GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
5MHz QPSK, Frequency: 2352.5 MHz								
92.14	H	38.61	-74.28	0.00	0.18	-74.46	-40.00	34.46
60.49	V	41.77	-64.07	-10.04	0.14	-74.25	-40.00	34.25
4705.000	H	37.94	-56.84	10.85	1.41	-47.4	-40.00	7.40
4705.000	V	38.06	-56.74	10.85	1.41	-47.3	-40.00	7.30
7057.500	H	36.36	-53.65	11.17	1.92	-44.4	-40.00	4.40
7057.500	V	36.65	-53.25	11.17	1.92	-44	-40.00	4.00
5MHz QPSK, Frequency: 2357.5 MHz								
105.27	H	37.96	-74.34	0.00	0.19	-74.53	-40.00	34.53
55.22	V	42.04	-61.69	-12.50	0.13	-74.32	-40.00	34.32
4715.000	H	38.76	-55.95	10.86	1.41	-46.5	-40.00	6.50
4715.000	V	38.86	-55.85	10.86	1.41	-46.4	-40.00	6.40
7072.500	H	36.95	-52.85	11.16	1.91	-43.6	-40.00	3.60
7072.500	V	37.06	-52.65	11.16	1.91	-43.4	-40.00	3.40

LTE Band 41 (30MHz-27GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, 5MHz, Frequency: 2498.5 MHz								
91.50	H	38.30	-74.63	0.00	0.18	-74.81	-25.00	49.81
60.70	V	41.97	-63.80	-9.93	0.14	-73.87	-25.00	48.87
4997.000	H	35.54	-57.40	11.20	1.48	-47.9	-25.00	22.90
4997.000	V	36.64	-56.16	11.20	1.48	-46.7	-25.00	21.70
7495.500	H	40.12	-49.67	10.90	1.94	-40.5	-25.00	15.50
7495.500	V	39.93	-50.36	10.90	1.94	-41.4	-25.00	16.40
QPSK, 5MHz, Frequency: 2593 MHz								
92.47	H	38.43	-74.44	0.00	0.18	-74.62	-25.00	49.62
61.34	V	42.39	-63.16	-9.59	0.14	-72.89	-25.00	47.89
5186.000	H	37.10	-56.93	11.31	1.44	-47.1	-25.00	22.10
5186.000	V	37.75	-56.14	11.31	1.44	-46.3	-25.00	21.30
7779.000	H	40.84	-48.65	10.84	1.99	-39.8	-25.00	14.80
7779.000	V	40.47	-49.47	10.84	1.99	-40.6	-25.00	15.60
QPSK, 5MHz, Frequency: 2687.5 MHz								
103.80	H	38.12	-74.20	0.00	0.19	-74.39	-25.00	49.39
59.44	V	42.25	-63.49	-10.56	0.14	-74.19	-25.00	49.19
5375.000	H	37.42	-56.09	11.43	1.49	-46.1	-25.00	21.10
5375.000	V	37.66	-55.84	11.43	1.49	-45.6	-25.00	20.60
8062.500	H	40.70	-47.52	10.81	2.12	-39	-25.00	14.00
8062.500	V	40.35	-48.37	10.81	2.12	-39.8	-25.00	14.80

LTE Band 66:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
1.4MHz QPSK, Frequency: 1710.7 MHz								
104.17	H	38.29	-74.02	0.00	0.19	-74.21	-13.00	61.21
60.28	V	42.04	-63.87	-10.15	0.14	-74.16	-13.00	61.16
3421.400	H	38.06	-59.70	10.37	1.17	-50.5	-13.00	37.50
3421.400	V	37.93	-59.80	10.37	1.17	-50.6	-13.00	37.60
5132.100	H	39.76	-53.81	11.28	1.47	-44	-13.00	31.00
5132.100	V	39.45	-54.01	11.28	1.47	-44.2	-13.00	31.20
1.4MHz QPSK, Frequency: 1745 MHz								
102.72	H	38.48	-73.85	0.00	0.19	-74.04	-13.00	61.04
59.23	V	42.23	-63.41	-10.65	0.14	-74.20	-13.00	61.20
3490.000	H	38.41	-59.43	10.40	1.17	-50.2	-13.00	37.20
3490.000	V	38.15	-59.63	10.40	1.17	-50.4	-13.00	37.40
5235.000	H	40.42	-53.48	11.34	1.46	-43.6	-13.00	30.60
5235.000	V	40.03	-53.68	11.34	1.46	-43.8	-13.00	30.80
1.4MHz QPSK, Frequency: 1779.3 MHz								
104.53	H	37.95	-74.36	0.00	0.19	-74.55	-13.00	61.55
60.49	V	41.87	-63.97	-10.04	0.14	-74.15	-13.00	61.15
3558.600	H	39.03	-58.64	10.46	1.22	-49.4	-13.00	36.40
3558.600	V	38.73	-58.84	10.46	1.22	-49.6	-13.00	36.60
5337.900	H	41.24	-52.23	11.40	1.47	-42.3	-13.00	29.30
5337.900	V	40.80	-52.53	11.40	1.47	-42.6	-13.00	29.60

Note:

- 1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
- 2) Absolute Level = Substituted Level - Cable loss + Antenna Gain
- 3) Margin = Limit-Absolute Level

5. EUT PHOTOGRAPHS

Please refer to the attachment CR231061121-EXP EUT EXTERNAL PHOTOGRAPHS and
CR231061121-INP EUT INTERNAL PHOTOGRAPHS

6. TEST SETUP PHOTOGRAPHS

Please refer to the attachment CR231061121-00E-TSP TEST SETUP PHOTOGRAPHS.

==== END OF REPORT =====