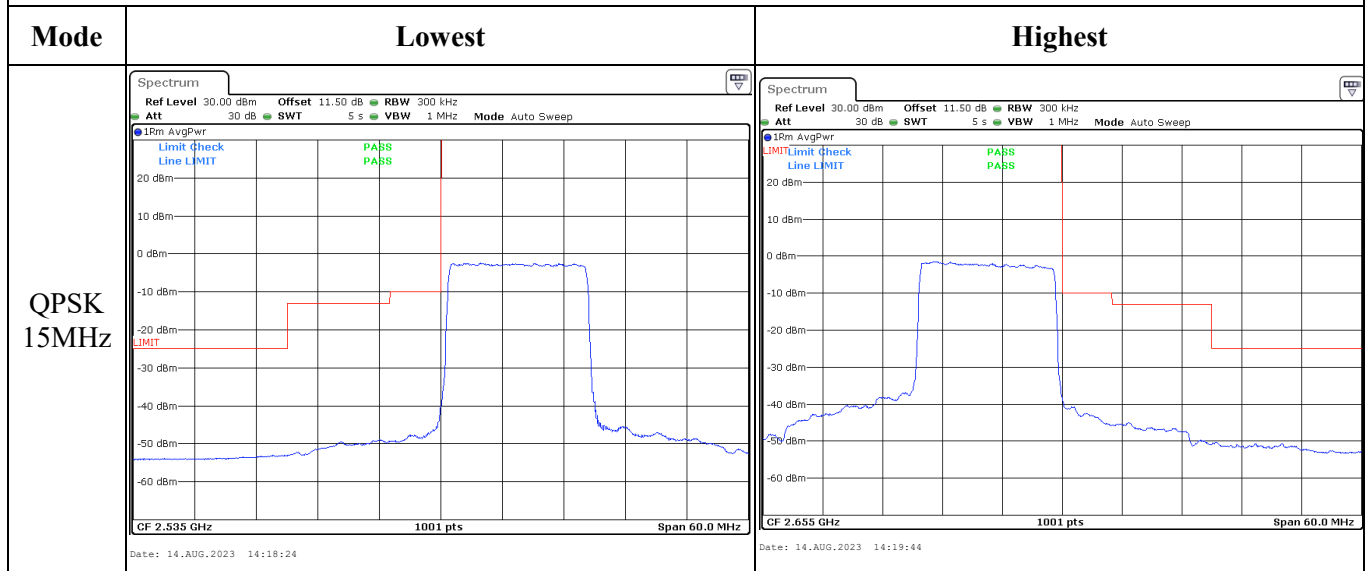
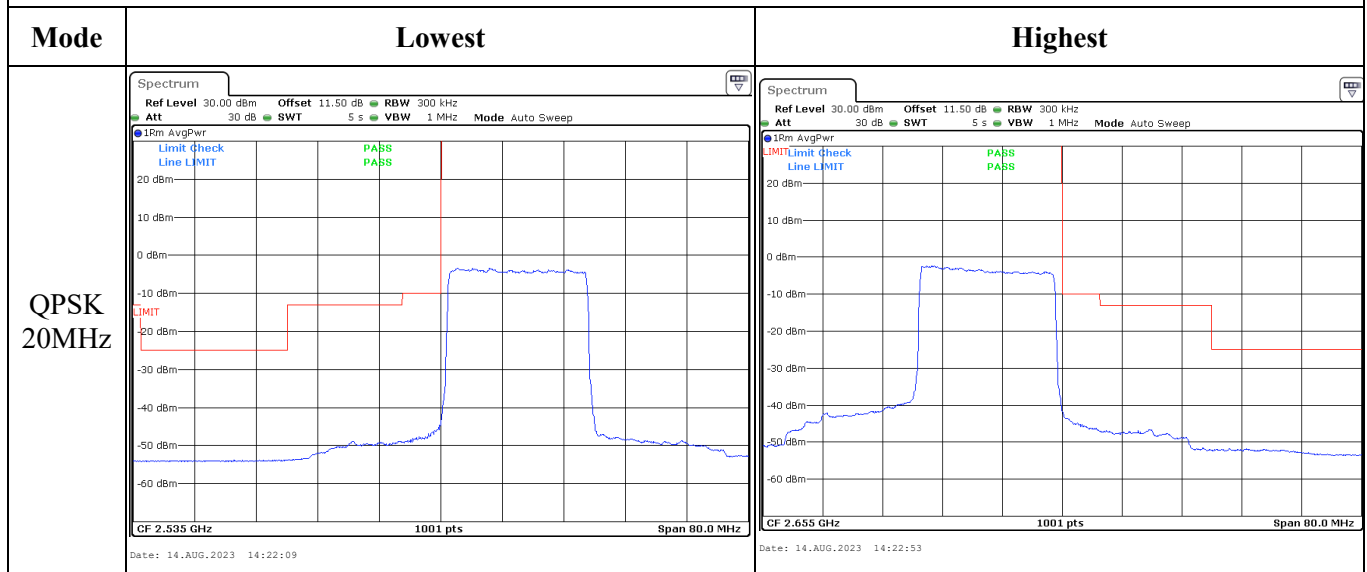


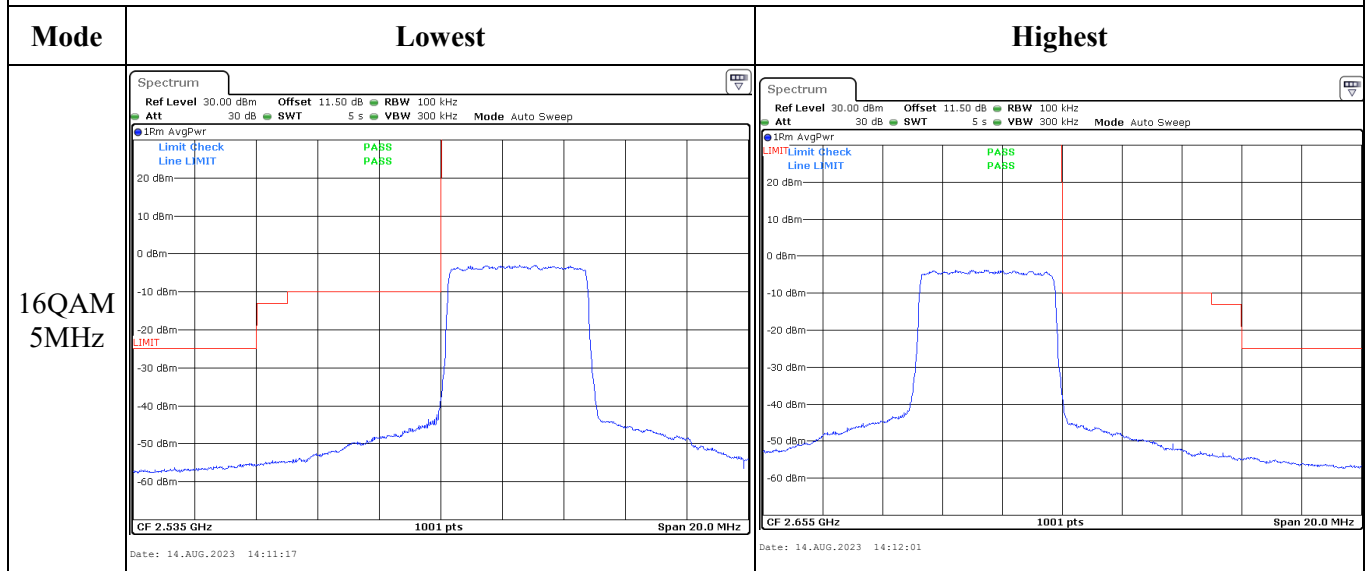
Out of band emission, Band Edge



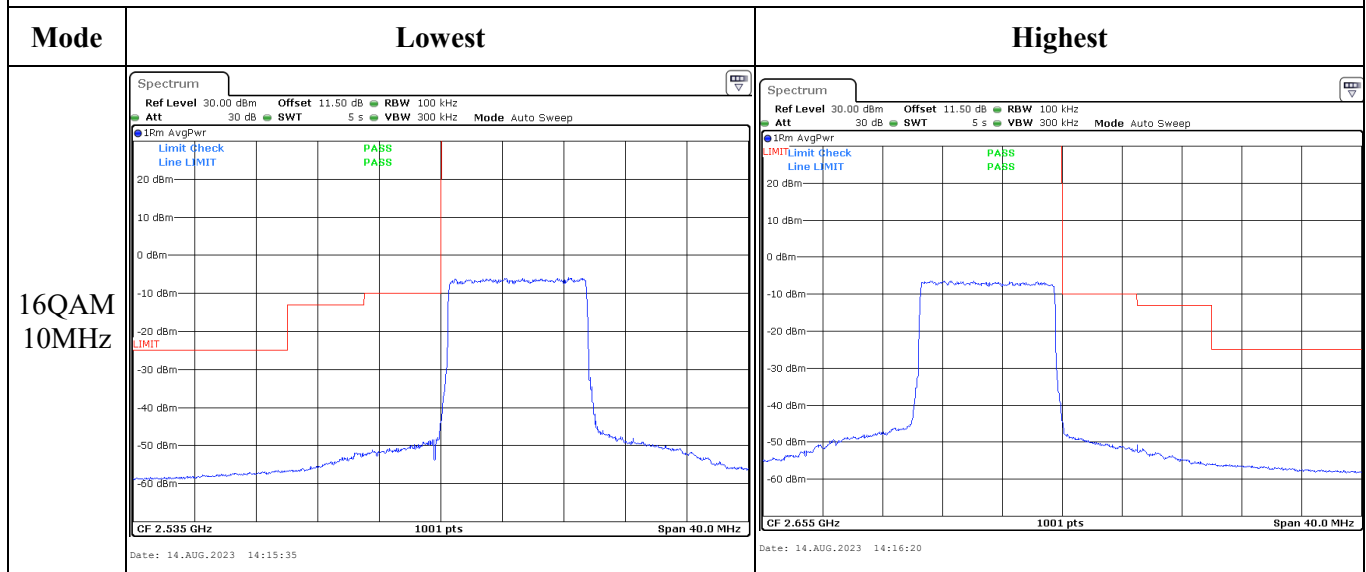
Out of band emission, Band Edge



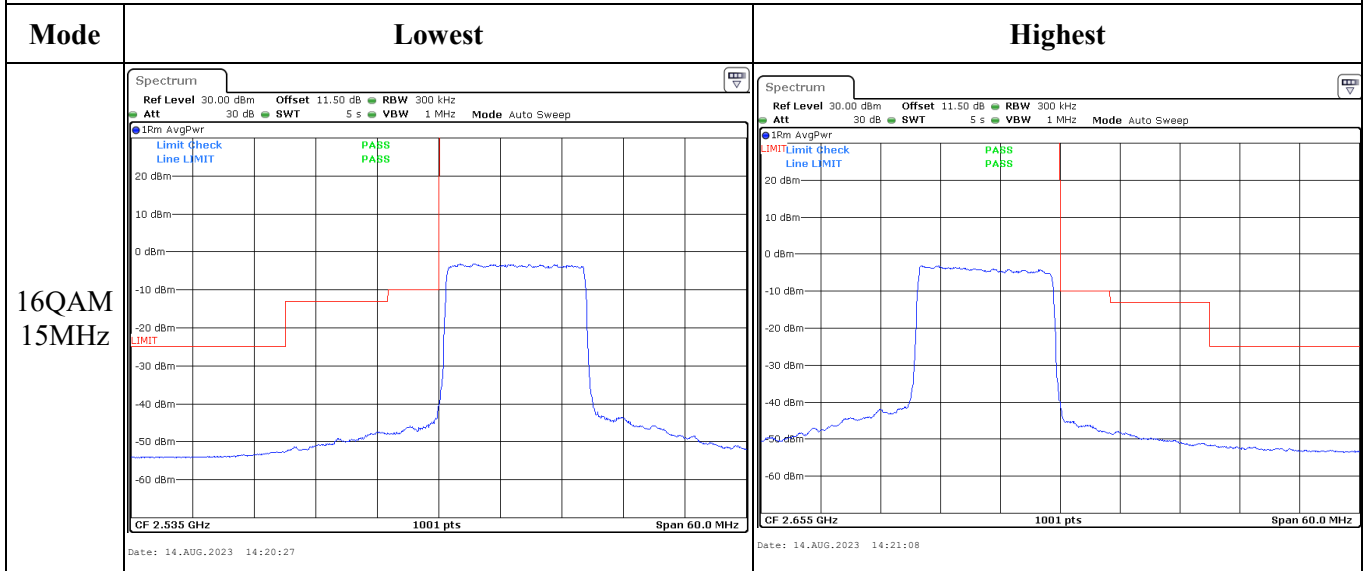
### Out of band emission, Band Edge



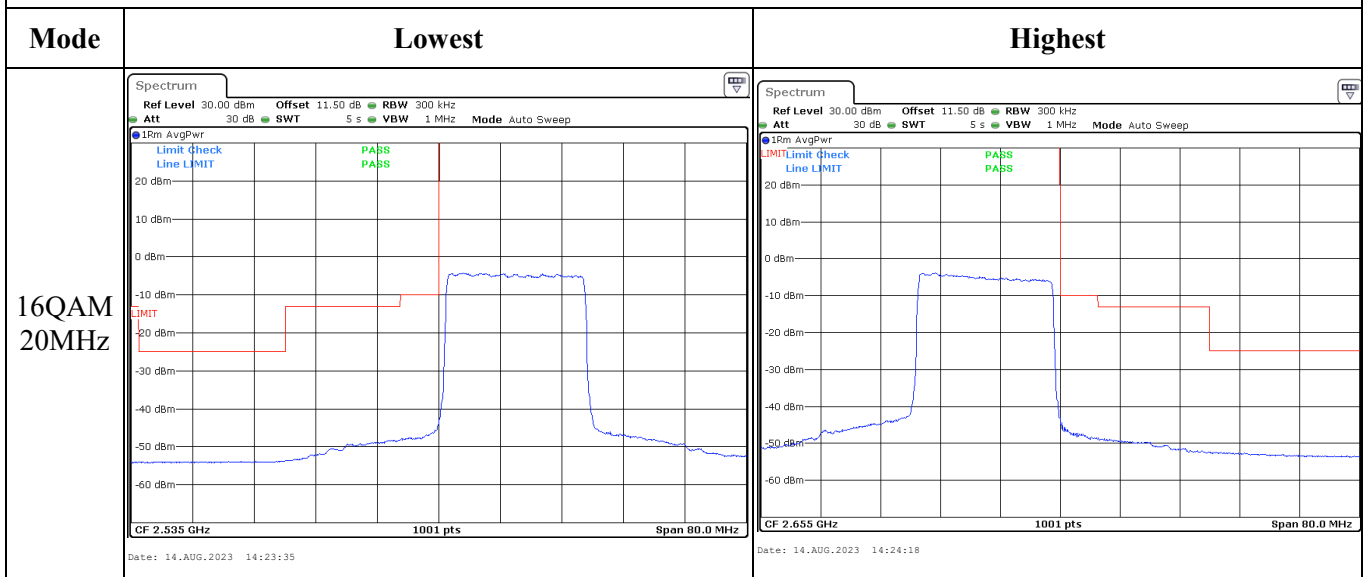
### Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



**4.15 Antenna Port Test Data and Results for LTE Band 66**

Serial Number:	2A4I-1	Test Date:	2023/8/13-2023/8/14
Test Site:	RF	Test Mode:	Transmitting
Tester:	Panda Sun	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	25.3~25.6	Relative Humidity: (%)	64-68	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	FSV40-N	102259	2023/4/18	2024/4/17
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2022/9/29	2023/9/28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A

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

**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:**

<b>FCC§2.1046;§ 27.50(d)(4)</b>						
<b>RF Output Power:</b>						
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	16.55	17.3	17.04	16.69	30
	RB1#3	16.88	17.46	17.11		
	RB1#5	16.75	17.25	16.86		
	RB3#0	16.75	17.37	17.09		
	RB3#3	16.81	17.35	17.01		
	RB6#0	17.89	18.09	17.5		
1.4MHz 16QAM	RB1#0	17.8	18.14	17.48	16.93	30
	RB1#3	18.07	18.33	17.61		
	RB1#5	17.93	18.14	17.38		
	RB3#0	18.14	18.13	17.69		
	RB3#3	18.21	18.13	17.62		
	RB6#0	17.08	17.24	16.65		
3MHz QPSK	RB1#0	16.68	17.26	17.16	16.70	30
	RB1#8	16.98	17.35	17.09		
	RB1#14	16.95	17.2	16.81		
	RB6#0	17.9	18.07	17.67		
	RB6#9	18.1	18.07	17.5		
	RB15#0	18.05	18.1	17.63		
3MHz 16QAM	RB1#0	17.9	18.02	18.23	16.83	30
	RB1#8	18.22	18.13	18.2		
	RB1#14	18.2	18	17.92		
	RB6#0	17.03	17.13	16.9		
	RB6#9	17.25	17.12	16.72		
	RB15#0	17.1	17.25	16.86		
5MHz QPSK	RB1#0	16.36	16.94	17.12	16.74	30
	RB1#13	17.16	17.42	17.34		
	RB1#24	16.74	16.9	16.57		
	RB15#0	17.97	18.05	17.81		
	RB15#10	18.14	18.05	17.7		
	RB25#0	18.03	18.02	17.73		
5MHz 16QAM	RB1#0	17.74	17.77	17.5	17.12	30
	RB1#13	18.52	18.25	17.78		
	RB1#24	18.12	17.75	17.03		
	RB15#0	17.05	17.18	16.93		
	RB15#10	17.23	17.18	16.77		
	RB25#0	17.12	17.14	16.83		
10MHz QPSK	RB1#0	16.46	17.18	17.58	16.98	30

	RB1#25	17.09	17.34	17.43		
	RB1#49	17.38	17.68	17.26		
	RB25#0	18.03	18.09	18.19		
	RB25#25	18.38	18.35	18.07		
	RB50#0	18.23	18.23	18.14		
10MHz 16QAM	RB1#0	17.76	17.93	18.68	17.30	30
	RB1#25	18.32	18.11	18.62		
	RB1#49	18.7	18.43	18.47		
	RB25#0	17.12	17.28	17.41		
	RB25#25	17.47	17.52	17.21		
	RB50#0	17.29	17.35	17.21		
15MHz QPSK	RB1#0	16.78	17.38	17.34	17.01	30
	RB1#38	16.98	17.3	16.9		
	RB1#74	17.28	17.47	16.39		
	RB36#0	18.18	18.22	17.97		
	RB36#39	18.41	18.25	17.55		
	RB75#0	18.29	18.24	17.78		
15MHz 16QAM	RB1#0	17.93	18.45	18.51	17.22	30
	RB1#38	18.31	18.48	18.31		
	RB1#74	18.45	18.62	17.62		
	RB36#0	17.28	17.3	17.1		
	RB36#39	17.51	17.33	16.67		
	RB75#0	17.38	17.3	16.9		
20MHz QPSK	RB1#0	17.2	17.99	17.96	17.11	30
	RB1#50	17.04	17.28	17.11		
	RB1#99	17.58	18.02	16.9		
	RB50#0	18.29	18.44	18.23		
	RB50#50	18.51	18.46	17.76		
	RB100#0	18.4	18.45	18.01		
20MHz 16QAM	RB1#0	18.3	19.08	18.52	17.83	30
	RB1#50	18.47	18.7	18.24		
	RB1#99	18.72	19.23	17.64		
	RB50#0	17.39	17.58	17.41		
	RB50#50	17.59	17.59	16.91		
	RB100#0	17.48	17.58	17.18		
Note: EIRP=Conducted Power(dBm) - Lc(dB) + G <sub>T</sub> (dBi)					<b>Result:</b>	<b>Pass</b>

<b>Peak-to-average Ratio(PAR)</b>					
Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	5.88	6.09	6.2	13
	RB100#0	5.1	5.07	5.33	13
20MHz 16QAM	RB1#0	5.22	5.68	5.8	13
	RB100#0	5.97	5.88	6.12	13
<b>Result:</b>					<b>Pass</b>

<b>FCC §2.1049, §27.53:Occupied Bandwidth</b>						
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	1.096	1.102	1.102	1.260	1.254	1.260
1.4MHz 16QAM	1.102	1.090	1.10	1.266	1.248	1.254
3MHz QPSK	2.695	2.695	2.695	3.012	3.012	2.988
3MHz 16QAM	2.683	2.695	2.695	3.012	3.012	3.024
5MHz QPSK	4.511	4.511	4.531	5.020	5.020	5.020
5MHz 16QAM	4.531	4.531	4.511	5.020	5.020	4.980
10MHz QPSK	8.942	8.942	8.982	9.800	9.800	9.800
10MHz 16QAM	8.942	8.942	8.942	9.800	9.800	9.720
15MHz QPSK	13.473	13.533	13.533	14.880	14.880	15.060
15MHz 16QAM	13.533	13.533	13.533	14.940	15.060	15.000
20MHz QPSK	17.964	18.044	17.884	19.600	19.760	19.520
20MHz 16QAM	17.964	17.884	18.044	19.760	19.680	19.600

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

<b>FCC §2.1051, § 27.53:Spurious Emissions at Antenna Terminal</b>	
<b>Result:</b>	<b>Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.</b>

<b>FCC §2.1051, § 27.53:Out of band emission, Band Edge</b>	
<b>Result:</b>	<b>Pass, Please refer to the test plots of Out of band emission, Band Edge.</b>

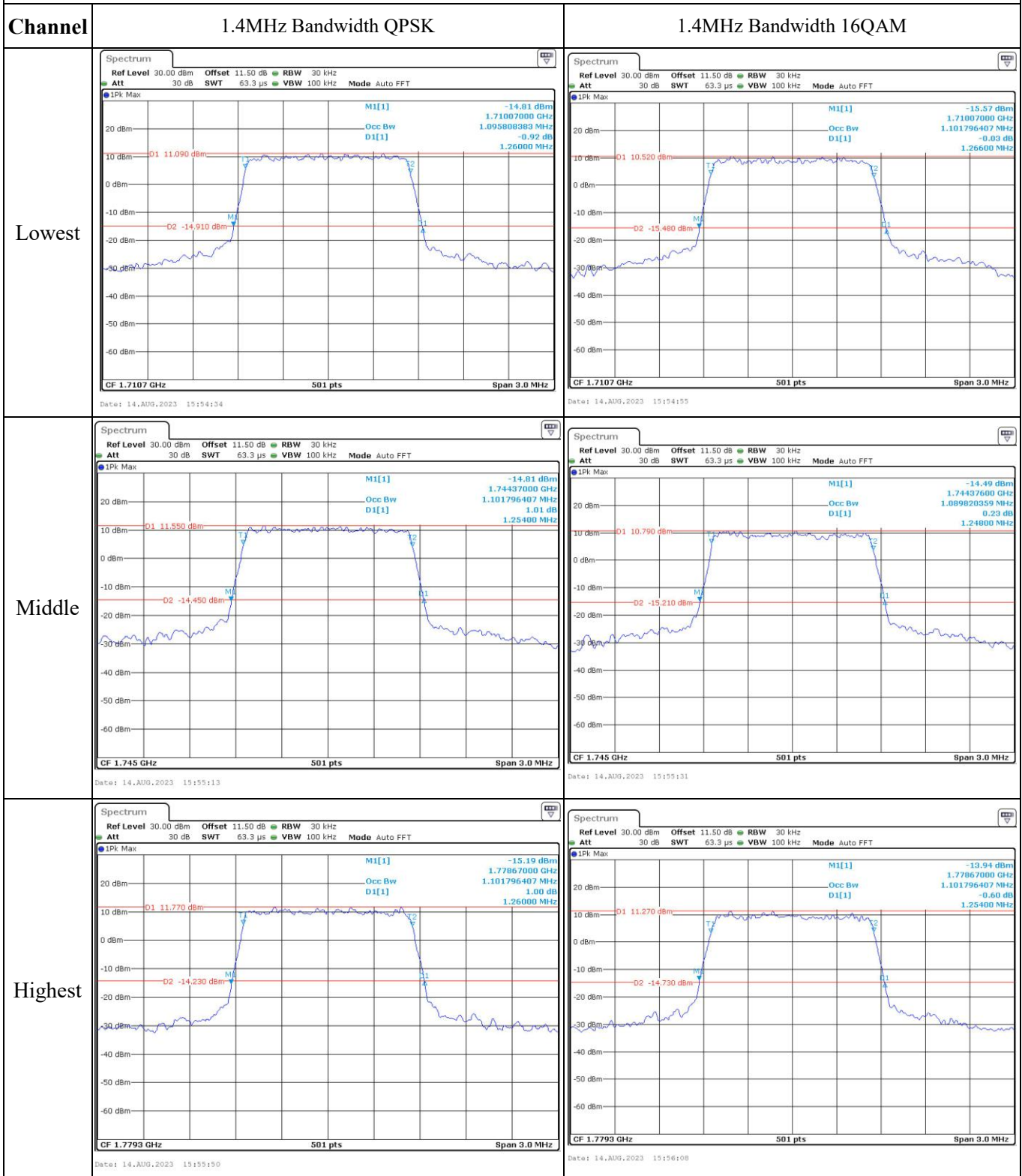
<b>FCC §2.1055, §27.54: Frequency Stability</b>						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	1710.029	1710.00	1779.978	1780
	-20	3.85	1710.026	1710.00	1779.983	1780
	-10	3.85	1710.023	1710.00	1779.982	1780
	0	3.85	1710.021	1710.00	1779.976	1780
	10	3.85	1710.029	1710.00	1779.986	1780
	20	3.85	1710.019	1710.00	1779.967	1780
	30	3.85	1710.028	1710.00	1779.974	1780
	40	3.85	1710.025	1710.00	1779.968	1780
	50	3.85	1710.026	1710.00	1779.988	1780
Frequency Stability vs. Voltage	20	3.35	1710.023	1710.00	1779.964	1780
	20	4.4	1710.023	1710.00	1779.983	1780
					<b>Result:</b>	<b>Pass</b>

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	1710.030	1710.00	1779.968	1780
	-20	3.85	1710.022	1710.00	1779.983	1780
	-10	3.85	1710.028	1710.00	1779.993	1780
	0	3.85	1710.016	1710.00	1779.969	1780
	10	3.85	1710.028	1710.00	1779.982	1780
	20	3.85	1710.030	1710.00	1779.977	1780
	30	3.85	1710.032	1710.00	1779.968	1780
	40	3.85	1710.035	1710.00	1779.974	1780
	50	3.85	1710.014	1710.00	1779.976	1780
Frequency Stability vs. Voltage	20	3.35	1710.017	1710.00	1779.971	1780
	20	4.4	1710.018	1710.00	1779.985	1780
					<b>Result:</b>	<b>Pass</b>



**Test Plots** (Note: The 11.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

**Occupied Bandwidth**



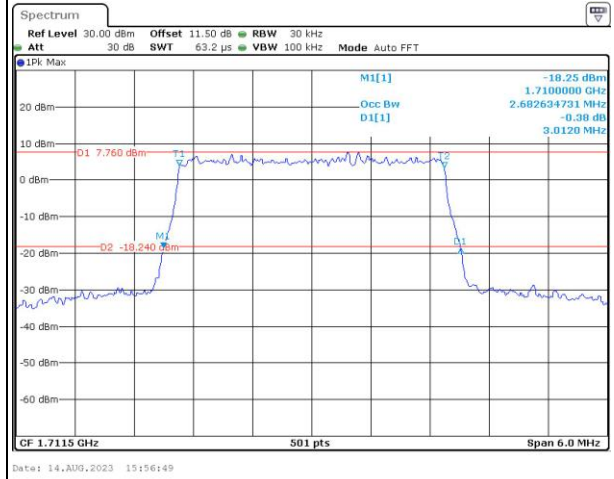
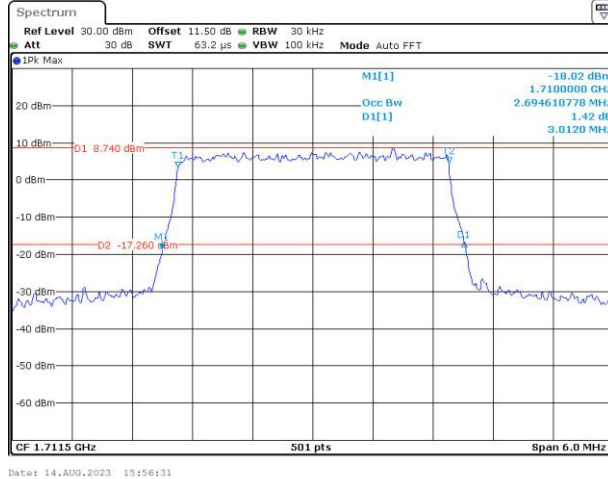
### Occupied Bandwidth

Channel

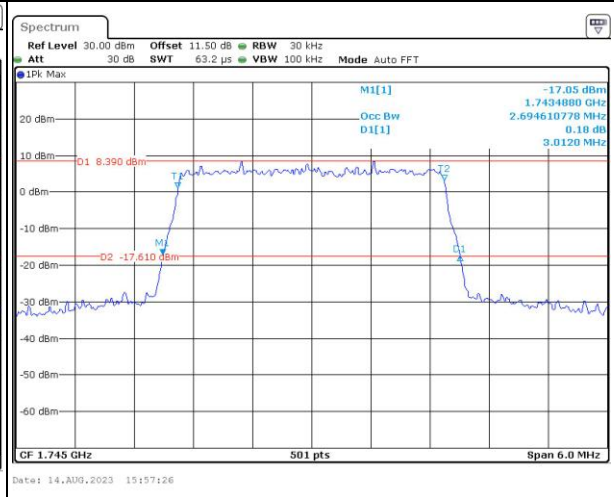
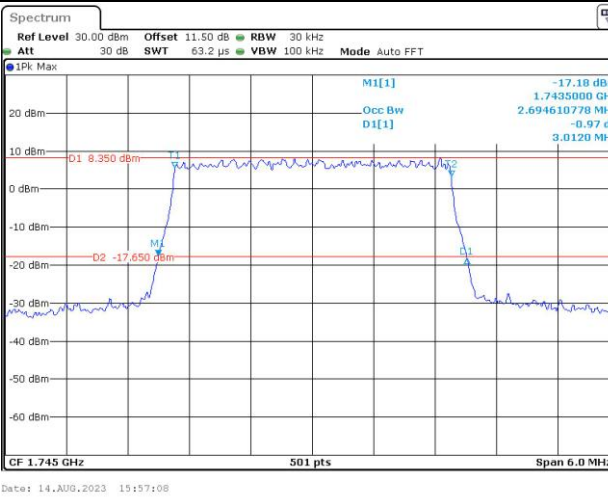
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

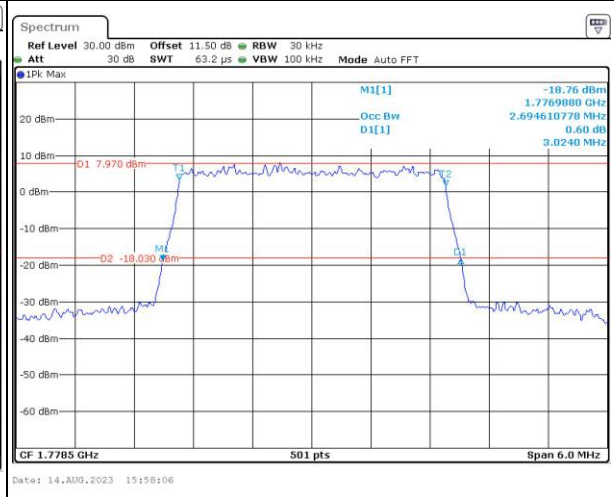
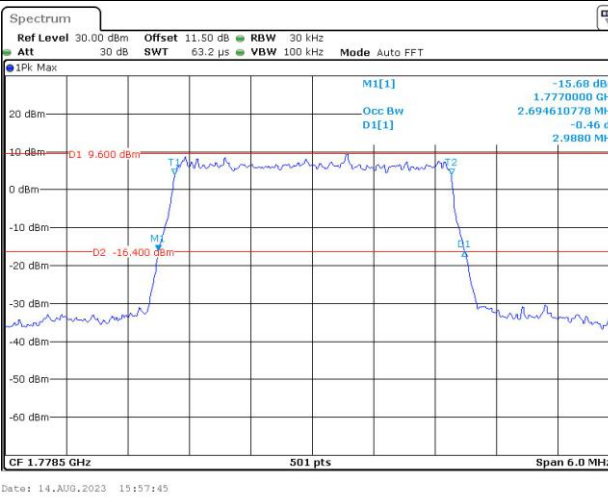
Lowest



Middle



Highest



### Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>CF 1.7125 GHz 501 pts Span 10.0 MHz</p> <p>Date: 14.AUG.2023 15:58:30</p>	<p>CF 1.7125 GHz 501 pts Span 10.0 MHz</p> <p>Date: 14.AUG.2023 15:58:51</p>
Middle	<p>CF 1.745 GHz 501 pts Span 10.0 MHz</p> <p>Date: 14.AUG.2023 15:59:14</p>	<p>CF 1.745 GHz 501 pts Span 10.0 MHz</p> <p>Date: 14.AUG.2023 15:59:39</p>
Highest	<p>CF 1.7775 GHz 501 pts Span 10.0 MHz</p> <p>Date: 14.AUG.2023 16:00:05</p>	<p>CF 1.7775 GHz 501 pts Span 10.0 MHz</p> <p>Date: 14.AUG.2023 16:00:29</p>

### Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -16.72 dBm 1.7101200 GHz Occ Bw 8.942115768 MHz D1[1] -0.43 dB 9.8000 MHz</p> <p>D1 8.980 dBm D2 -17.020 dBm</p> <p>CF 1.715 GHz 501 pts Span 20.0 MHz</p> <p>Date: 14.AUG.2023 16:01:03</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -18.97 dBm 1.7101200 GHz Occ Bw 8.942115768 MHz D1[1] -0.54 dB 9.8000 MHz</p> <p>D1 7.540 dBm D2 -18.460 dBm</p> <p>CF 1.715 GHz 501 pts Span 20.0 MHz</p> <p>Date: 14.AUG.2023 16:01:31</p>
Middle	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -16.51 dBm 1.7401200 GHz Occ Bw 8.942115768 MHz D1[1] -0.19 dB 9.8000 MHz</p> <p>D1 8.830 dBm D2 -17.170 dBm</p> <p>CF 1.745 GHz 501 pts Span 20.0 MHz</p> <p>Date: 14.AUG.2023 16:01:58</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -17.61 dBm 1.7401200 GHz Occ Bw 8.942115768 MHz D1[1] -0.54 dB 9.8000 MHz</p> <p>D1 7.700 dBm D2 -18.300 dBm</p> <p>CF 1.745 GHz 501 pts Span 20.0 MHz</p> <p>Date: 14.AUG.2023 16:02:33</p>
Highest	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -17.25 dBm 1.7700800 GHz Occ Bw 8.982035928 MHz D1[1] 0.28 dB 9.8000 MHz</p> <p>D1 8.820 dBm D2 -17.180 dBm</p> <p>CF 1.775 GHz 501 pts Span 20.0 MHz</p> <p>Date: 14.AUG.2023 16:03:05</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -16.05 dBm 1.7701600 GHz Occ Bw 8.942115768 MHz D1[1] -1.07 dB 9.7200 MHz</p> <p>D1 9.380 dBm D2 -16.620 dBm</p> <p>CF 1.775 GHz 501 pts Span 20.0 MHz</p> <p>Date: 14.AUG.2023 16:03:37</p>

### Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz Att 30 dB SWT 12.7 μs VBW 1 MHz Mode Auto FFT</p> <p>M1[1] -14.51 dBm 1.7101200 GHz Occ Bw 13.473053892 MHz D1[1] -0.75 dB 14.8800 MHz</p> <p>D1 11.160 dBm D2 -14.840 dBm</p> <p>CF 1.7175 GHz 501 pts Span 30.0 MHz</p> <p>Date: 14.AUG.2023 16:04:19</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz Att 30 dB SWT 12.7 μs VBW 1 MHz Mode Auto FFT</p> <p>M1[1] -15.57 dBm 1.7100000 GHz Occ Bw 13.532934132 MHz D1[1] 1.05 dB 14.9400 MHz</p> <p>D1 11.020 dBm D2 -14.980 dBm</p> <p>CF 1.7175 GHz 501 pts Span 30.0 MHz</p> <p>Date: 14.AUG.2023 16:04:50</p>
Middle	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz Att 30 dB SWT 12.7 μs VBW 1 MHz Mode Auto FFT</p> <p>M1[1] -13.85 dBm 1.7375000 GHz Occ Bw 13.532934132 MHz D1[1] -0.21 dB 14.8800 MHz</p> <p>D1 11.720 dBm D2 -14.280 dBm</p> <p>CF 1.745 GHz 501 pts Span 30.0 MHz</p> <p>Date: 14.AUG.2023 16:05:16</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz Att 30 dB SWT 12.7 μs VBW 1 MHz Mode Auto FFT</p> <p>M1[1] -15.28 dBm 1.7375000 GHz Occ Bw 13.532934132 MHz D1[1] -0.41 dB 15.0600 MHz</p> <p>D1 11.040 dBm D2 -14.960 dBm</p> <p>CF 1.745 GHz 501 pts Span 30.0 MHz</p> <p>Date: 14.AUG.2023 16:05:51</p>
Highest	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz Att 30 dB SWT 12.7 μs VBW 1 MHz Mode Auto FFT</p> <p>M1[1] -15.88 dBm 1.7649400 GHz Occ Bw 13.532934132 MHz D1[1] 0.53 dB 15.0600 MHz</p> <p>D1 10.810 dBm D2 -15.190 dBm</p> <p>CF 1.7725 GHz 501 pts Span 30.0 MHz</p> <p>Date: 14.AUG.2023 16:06:23</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz Att 30 dB SWT 12.7 μs VBW 1 MHz Mode Auto FFT</p> <p>M1[1] -15.24 dBm 1.7650000 GHz Occ Bw 13.532934132 MHz D1[1] 0.42 dB 15.0000 MHz</p> <p>D1 10.480 dBm D2 -15.320 dBm</p> <p>CF 1.7725 GHz 501 pts Span 30.0 MHz</p> <p>Date: 14.AUG.2023 16:06:57</p>

### Occupied Bandwidth

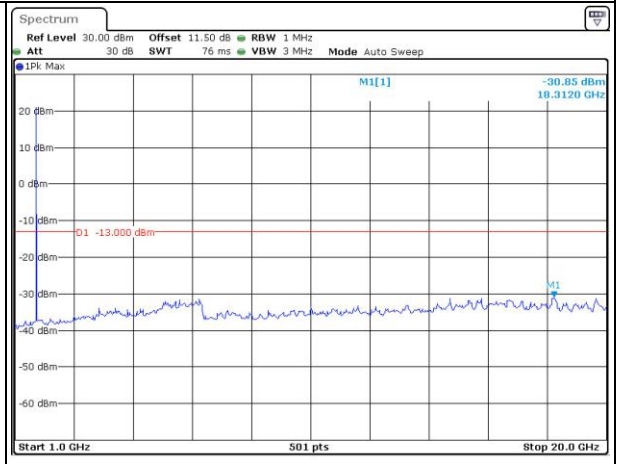
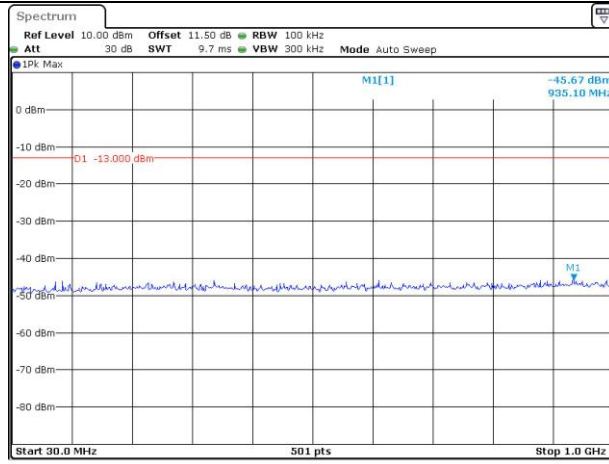
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest	<p>CF 1.72 GHz, 501 pts, Span 40.0 MHz</p> <p>Date: 14.AUG.2023 16:07:40</p>	<p>CF 1.72 GHz, 501 pts, Span 40.0 MHz</p> <p>Date: 14.AUG.2023 16:10:15</p>
Middle	<p>CF 1.745 GHz, 501 pts, Span 40.0 MHz</p> <p>Date: 14.AUG.2023 16:08:50</p>	<p>CF 1.745 GHz, 501 pts, Span 40.0 MHz</p> <p>Date: 14.AUG.2023 16:10:22</p>
Highest	<p>CF 1.77 GHz, 501 pts, Span 40.0 MHz</p> <p>Date: 14.AUG.2023 16:10:04</p>	<p>CF 1.77 GHz, 501 pts, Span 40.0 MHz</p> <p>Date: 14.AUG.2023 16:10:42</p>

### Spurious Emissions at Antenna Terminal

Channel

1.4MHz Bandwidth QPSK

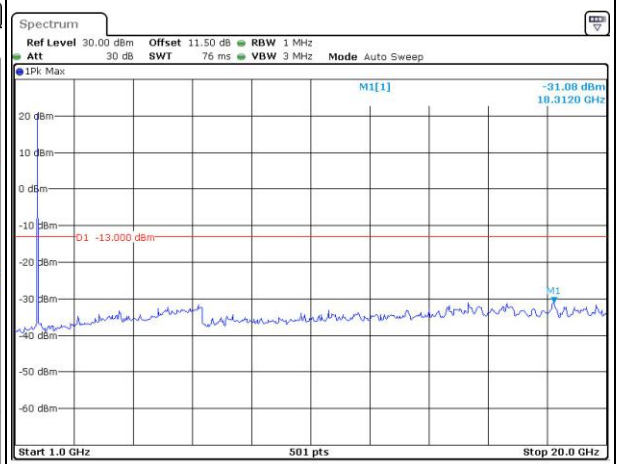
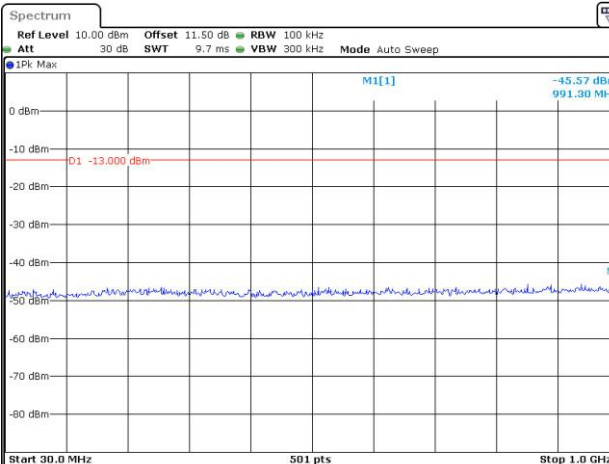
Lowest



Date: 14.AUG.2023 17:31:43

Date: 14.AUG.2023 17:32:12

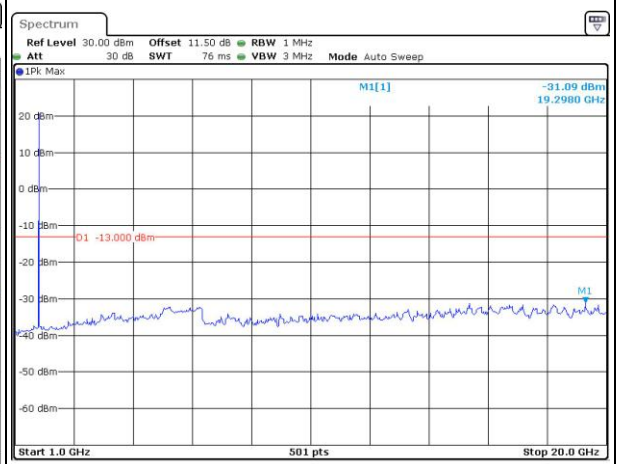
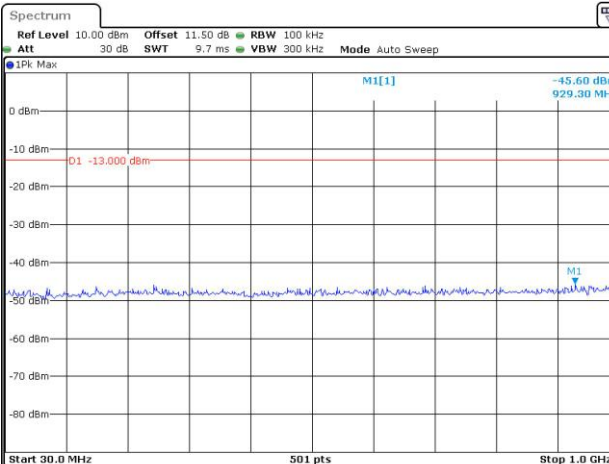
Middle



Date: 14.AUG.2023 17:32:42

Date: 14.AUG.2023 17:33:02

Highest



Date: 14.AUG.2023 17:33:32

Date: 14.AUG.2023 17:33:52

### Spurious Emissions at Antenna Terminal

Channel	3MHz Bandwidth QPSK	
Lowest	<p><b>Spectrum</b>                      Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep                      IPk Max M1[1] -46.13 dBm 728.00 MHz                      -13.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 14.AUG.2023 17:34:32</p>	<p><b>Spectrum</b>                      Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz                      Att 30 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep                      IPk Max M1[1] -30.44 dBm 15.5440 GHz                      -13.000 dBm                      Start 1.0 GHz 501 pts Stop 20.0 GHz                      Date: 14.AUG.2023 17:35:01</p>
	<p><b>Spectrum</b>                      Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep                      IPk Max M1[1] -45.72 dBm 985.50 MHz                      -13.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 14.AUG.2023 17:35:31</p>	<p><b>Spectrum</b>                      Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz                      Att 30 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep                      IPk Max M1[1] -30.55 dBm 18.2740 GHz                      -13.000 dBm                      Start 1.0 GHz 501 pts Stop 20.0 GHz                      Date: 14.AUG.2023 17:35:57</p>
Highest	<p><b>Spectrum</b>                      Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep                      IPk Max M1[1] -45.61 dBm 772.50 MHz                      -13.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 14.AUG.2023 17:36:30</p>	<p><b>Spectrum</b>                      Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz                      Att 30 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep                      IPk Max M1[1] -30.86 dBm 15.8850 GHz                      -13.000 dBm                      Start 1.0 GHz 501 pts Stop 20.0 GHz                      Date: 14.AUG.2023 17:36:57</p>



### Spurious Emissions at Antenna Terminal

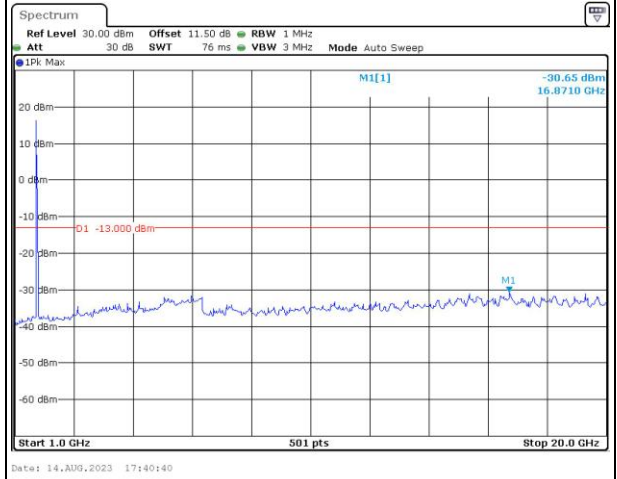
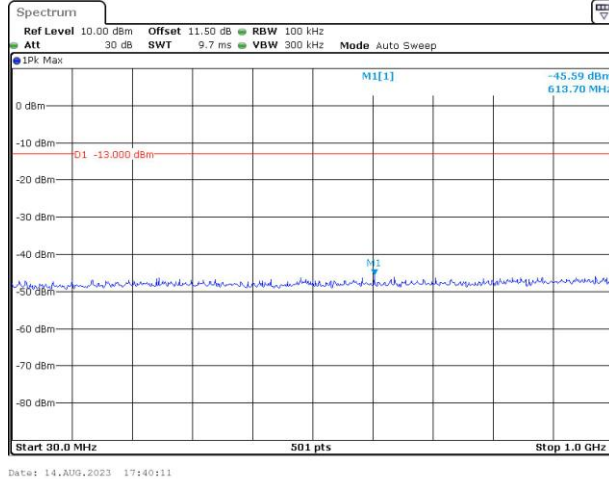
Channel	5MHz Bandwidth QPSK	
Lowest	<p>Ref Level 10.00 dBm, Offset 11.50 dB, RBW 100 kHz, Att 30 dB, SWT 9.7 ms, VBW 300 kHz, Mode Auto Sweep</p> <p>IPk Max: -45.15 dBm @ 219.50 MHz</p> <p>Start 30.0 MHz, 501 pts, Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 17:37:29</p>	<p>Ref Level 30.00 dBm, Offset 11.50 dB, RBW 1 MHz, Att 30 dB, SWT 76 ms, VBW 3 MHz, Mode Auto Sweep</p> <p>IPk Max: -30.76 dBm @ 18.2740 GHz</p> <p>Start 1.0 GHz, 501 pts, Stop 20.0 GHz</p> <p>Date: 14.AUG.2023 17:37:48</p>
	<p>Ref Level 10.00 dBm, Offset 11.50 dB, RBW 100 kHz, Att 30 dB, SWT 9.7 ms, VBW 300 kHz, Mode Auto Sweep</p> <p>IPk Max: -45.25 dBm @ 960.10 MHz</p> <p>Start 30.0 MHz, 501 pts, Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 17:38:15</p>	<p>Ref Level 30.00 dBm, Offset 11.50 dB, RBW 1 MHz, Att 30 dB, SWT 76 ms, VBW 3 MHz, Mode Auto Sweep</p> <p>IPk Max: -30.11 dBm @ 18.2740 GHz</p> <p>Start 1.0 GHz, 501 pts, Stop 20.0 GHz</p> <p>Date: 14.AUG.2023 17:38:41</p>
Highest	<p>Ref Level 10.00 dBm, Offset 11.50 dB, RBW 100 kHz, Att 30 dB, SWT 9.7 ms, VBW 300 kHz, Mode Auto Sweep</p> <p>IPk Max: -45.01 dBm @ 942.90 MHz</p> <p>Start 30.0 MHz, 501 pts, Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 17:39:09</p>	<p>Ref Level 30.00 dBm, Offset 11.50 dB, RBW 1 MHz, Att 30 dB, SWT 76 ms, VBW 3 MHz, Mode Auto Sweep</p> <p>IPk Max: -31.06 dBm @ 6.8590 GHz</p> <p>Start 1.0 GHz, 501 pts, Stop 20.0 GHz</p> <p>Date: 14.AUG.2023 17:39:35</p>

Spurious Emissions at Antenna Terminal

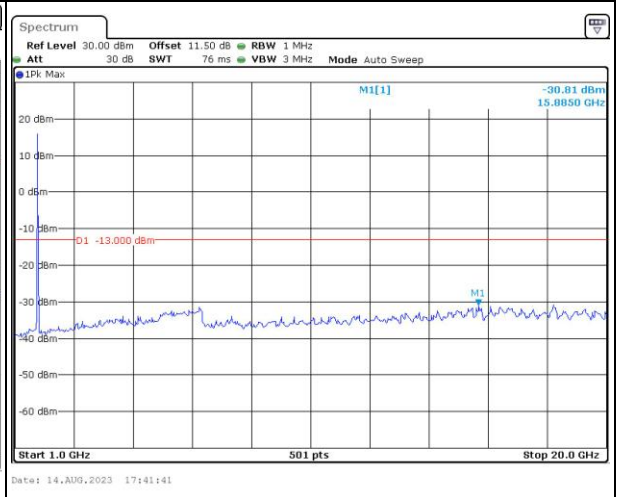
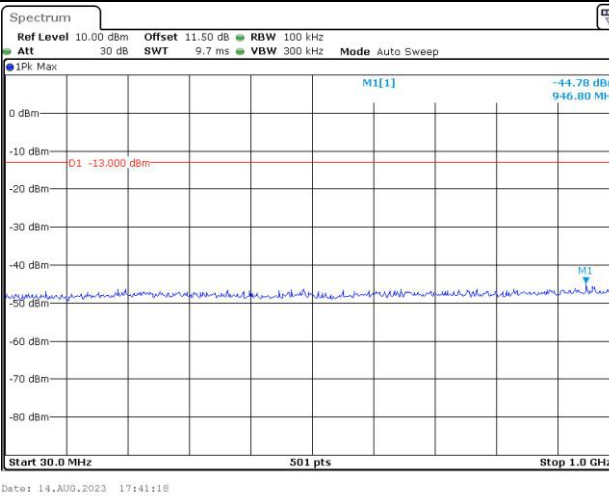
Channel

10MHz Bandwidth QPSK

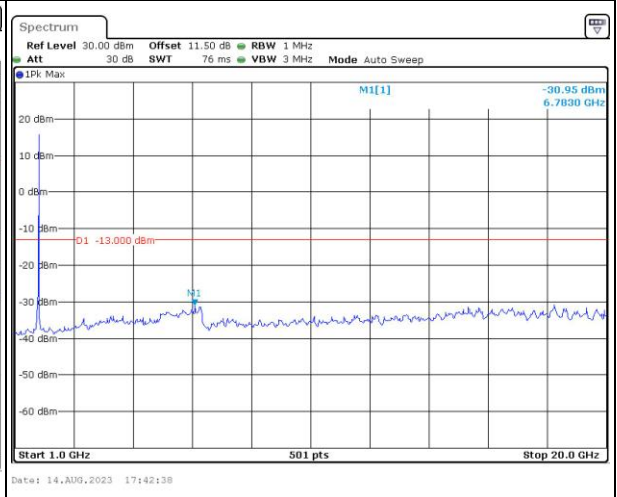
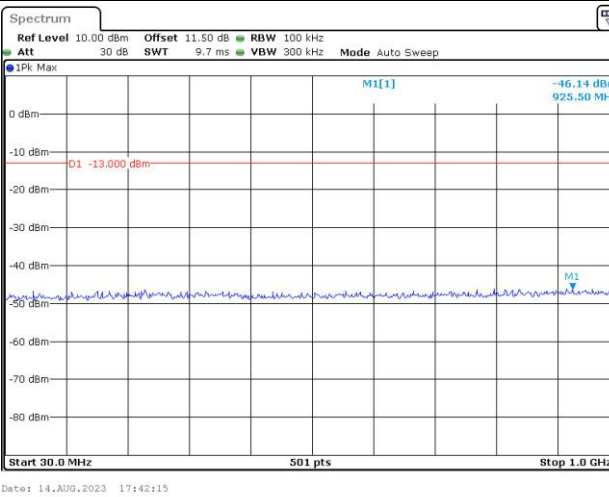
Lowest



Middle



Highest



### Spurious Emissions at Antenna Terminal

Channel	15MHz Bandwidth QPSK	
Lowest	<p>Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.98 dBm 933.20 MHz</p> <p>D1 -13.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 17:43:13</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz Att 30 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max M1[1] -31.06 dBm 19.6780 GHz</p> <p>D1 -13.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 20.0 GHz</p> <p>Date: 14.AUG.2023 17:43:36</p>
	Middle	<p>Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.42 dBm 664.10 MHz</p> <p>D1 -13.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 17:44:13</p>
Highest		<p>Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.71 dBm 718.30 MHz</p> <p>D1 -13.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 14.AUG.2023 17:45:16</p>

### Spurious Emissions at Antenna Terminal

Channel	20MHz Bandwidth QPSK	
Lowest	<p><b>Spectrum</b>                      Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep                      IPk Max M1[1] -45.33 dBm 917.70 MHz                      -01 -13.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 14.AUG.2023 17:46:18</p>	<p><b>Spectrum</b>                      Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz                      Att 30 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep                      IPk Max M1[1] -31.08 dBm 16.9090 GHz                      -01 -13.000 dBm                      Start 1.0 GHz 501 pts Stop 20.0 GHz                      Date: 14.AUG.2023 17:46:47</p>
Middle	<p><b>Spectrum</b>                      Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep                      IPk Max M1[1] -45.24 dBm 992.50 MHz                      -01 -13.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 14.AUG.2023 17:47:24</p>	<p><b>Spectrum</b>                      Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz                      Att 30 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep                      IPk Max M1[1] -31.16 dBm 15.5440 GHz                      -01 -13.000 dBm                      Start 1.0 GHz 501 pts Stop 20.0 GHz                      Date: 14.AUG.2023 17:47:47</p>
Highest	<p><b>Spectrum</b>                      Ref Level 10.00 dBm Offset 11.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep                      IPk Max M1[1] -44.47 dBm 985.50 MHz                      -01 -13.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 14.AUG.2023 17:48:18</p>	<p><b>Spectrum</b>                      Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz                      Att 30 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep                      IPk Max M1[1] -30.90 dBm 16.6440 GHz                      -01 -13.000 dBm                      Start 1.0 GHz 501 pts Stop 20.0 GHz                      Date: 14.AUG.2023 17:48:41</p>

Out of band emission, Band Edge

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

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 10MHz		
QPSK 15MHz		
QPSK 20MHz		

Out of band emission, Band Edge

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

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 10MHz	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 35 ms VBW 300 kHz Mode Auto Sweep SGL Count 50/50 IRm AvgPwr MI[1] -38.57 dBm 1.7100000 GHz -13.000 dBm CF 1.71 GHz 501 pts Span 20.0 MHz Date: 29.AUG.2023 10:01:40</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 35 ms VBW 300 kHz Mode Auto Sweep SGL Count 50/50 IRm AvgPwr MI[1] -38.17 dBm 1.7800000 GHz -13.000 dBm CF 1.78 GHz 501 pts Span 20.0 MHz Date: 29.AUG.2023 10:01:54</p>
16QAM 15MH	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz Att 30 dB SWT 35 ms VBW 1 MHz Mode Auto Sweep SGL Count 50/50 IRm AvgPwr MI[1] -34.71 dBm 1.7100000 GHz -13.000 dBm CF 1.71 GHz 501 pts Span 30.0 MHz Date: 29.AUG.2023 10:02:14</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz Att 30 dB SWT 35 ms VBW 1 MHz Mode Auto Sweep SGL Count 50/50 IRm AvgPwr MI[1] -34.73 dBm 1.7800000 GHz -13.000 dBm CF 1.78 GHz 501 pts Span 30.0 MHz Date: 29.AUG.2023 10:02:30</p>
16QAM 20MH	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz Att 30 dB SWT 35 ms VBW 1 MHz Mode Auto Sweep SGL Count 50/50 IRm AvgPwr MI[1] -36.94 dBm 1.7100000 GHz -13.000 dBm CF 1.71 GHz 501 pts Span 40.0 MHz Date: 29.AUG.2023 10:02:50</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz Att 30 dB SWT 35 ms VBW 1 MHz Mode Auto Sweep SGL Count 50/50 IRm AvgPwr MI[1] -36.32 dBm 1.7800000 GHz -13.000 dBm CF 1.78 GHz 501 pts Span 40.0 MHz Date: 29.AUG.2023 10:03:06</p>



**4.16 Radiated Spurious Emissions**

Serial Number:	2A4I-1	Test Date:	2023/9/7~2023/9/17
Test Site:	966-2,966-1	Test Mode:	Transmitting
Tester:	Hugo Huo, Mack Huang	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	25.1~25.5	Relative Humidity: (%)	52~65	ATM Pressure: (kPa)	100~100.6
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**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020/10/19	2023/10/18
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	2022/7/16	2024/7/15
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020/10/13	2023/10/12
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	2022/11/9	2023/11/8
AH	Double Ridge Guide Horn Antenna	SAS-571	1396	2021/10/18	2024/10/17
MICRO-COAX	Coaxial Cable	UFA210B-0-0720- 300300	99G1448	2022/7/16	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	2022/9/16	2023/9/15
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.

Note: The device can be mounted in multiple orientations, test was performed with X, Y, Z Axis according to C63.26 figure 5, the worst orientation was photographed and it's data was recorded.

**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)			
GSM 850 Frequency:824.2MHz								
63.95	H	37.52	-66.32	-8.21	0.14	-74.67	-13.00	61.67
214.25	V	42.61	-67.17	0.00	0.27	-67.44	-13.00	54.44
1648.400	H	51.97	-52.36	8.68	0.80	-44.48	-13.00	31.48
1648.400	V	46.91	-57.50	8.68	0.80	-49.62	-13.00	36.62
2472.600	H	49.52	-51.26	9.38	1.00	-42.88	-13.00	29.88
2472.600	V	46.74	-53.99	9.38	1.00	-45.61	-13.00	32.61
3296.800	H	34.52	-62.16	10.32	1.15	-52.99	-13.00	39.99
3296.800	V	35.32	-61.12	10.32	1.15	-51.95	-13.00	38.95
GSM 850 Frequency:836.6MHz								
63.95	H	37.56	-66.28	-8.21	0.14	-74.63	-13.00	61.63
214.25	V	42.64	-67.14	0.00	0.27	-67.41	-13.00	54.41
1673.200	H	49.30	-55.01	8.71	0.85	-47.15	-13.00	34.15
1673.200	V	81.20	-23.21	8.71	0.85	-15.35	-13.00	2.35
2509.800	H	48.64	-51.97	9.42	1.01	-43.56	-13.00	30.56
2509.800	V	49.72	-50.90	9.42	1.01	-42.49	-13.00	29.49
3346.400	H	34.52	-62.65	10.34	1.16	-53.47	-13.00	40.47
3346.400	V	34.62	-62.41	10.34	1.16	-53.23	-13.00	40.23
GSM 850 Frequency:848.8MHz								
63.94	H	37.49	-66.35	-8.21	0.14	-74.70	-13.00	61.70
214.23	V	42.51	-67.27	0.00	0.27	-67.54	-13.00	54.54
1697.600	H	48.28	-56.01	8.74	0.90	-48.17	-13.00	35.17
1697.600	V	45.40	-59.02	8.74	0.90	-51.18	-13.00	38.18
2546.400	H	50.31	-50.02	9.47	1.01	-41.56	-13.00	28.56
2546.400	V	54.35	-45.93	9.47	1.01	-37.47	-13.00	24.47
3395.200	H	34.25	-63.44	10.36	1.19	-54.27	-13.00	41.27
3395.200	V	34.80	-62.86	10.36	1.19	-53.69	-13.00	40.69

**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)			
GSM 1900 Frequency:1850.2MHz								
63.77	H	37.49	-66.35	-8.30	0.14	-74.79	-13.00	61.79
214.32	V	42.74	-67.04	0.00	0.27	-67.31	-13.00	54.31
3700.400	H	33.96	-63.36	10.60	1.25	-54.01	-13.00	41.01
3700.400	V	35.52	-61.78	10.60	1.25	-52.43	-13.00	39.43
5550.600	H	33.60	-59.66	11.44	1.49	-49.71	-13.00	36.71
5550.600	V	33.87	-59.23	11.44	1.49	-49.28	-13.00	36.28
GSM 1900 Frequency:1880MHz								
63.75	H	37.44	-66.40	-8.31	0.14	-74.85	-13.00	61.85
214.35	V	42.80	-66.98	0.00	0.27	-67.25	-13.00	54.25
3760.000	H	37.04	-59.37	10.66	1.24	-49.95	-13.00	36.95
3760.000	V	36.50	-59.79	10.66	1.24	-50.37	-13.00	37.37
5640.000	H	34.30	-59.15	11.33	1.54	-49.36	-13.00	36.36
5640.000	V	33.46	-59.87	11.33	1.54	-50.08	-13.00	37.08
GSM 1900 Frequency:1909.8MHz								
63.74	H	37.35	-66.49	-8.32	0.14	-74.95	-13.00	61.95
214.52	V	42.76	-67.02	0.00	0.27	-67.29	-13.00	54.29
3819.600	H	36.92	-58.94	10.72	1.29	-49.51	-13.00	36.51
3819.600	V	37.26	-58.46	10.72	1.29	-49.03	-13.00	36.03
5729.400	H	34.14	-59.34	11.22	1.59	-49.71	-13.00	36.71
5729.400	V	34.04	-59.32	11.22	1.59	-49.69	-13.00	36.69

**WCDMA Band 2(30MHz-20GHz):**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB $\mu$ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
WCDMA Band II, Frequency:1852.4 MHz								
63.74	H	37.54	-66.30	-8.32	0.14	-74.76	-13.00	61.76
214.24	V	42.68	-67.10	0.00	0.27	-67.37	-13.00	54.37
3704.800	H	34.28	-62.98	10.60	1.25	-53.63	-13.00	40.63
3704.800	V	34.11	-63.12	10.60	1.25	-53.77	-13.00	40.77
5557.200	H	38.27	-55.01	11.43	1.49	-45.07	-13.00	32.07
5557.200	V	37.34	-55.79	11.43	1.49	-45.85	-13.00	32.85
WCDMA Band II, Frequency:1880 MHz								
63.80	H	37.49	-66.35	-8.29	0.14	-74.78	-13.00	61.78
214.36	V	42.18	-67.60	0.00	0.27	-67.87	-13.00	54.87
3760.000	H	34.16	-62.25	10.66	1.24	-52.83	-13.00	39.83
3760.000	V	34.66	-61.63	10.66	1.24	-52.21	-13.00	39.21
5640.000	H	40.43	-53.02	11.33	1.54	-43.23	-13.00	30.23
5640.000	V	39.93	-53.40	11.33	1.54	-43.61	-13.00	30.61
WCDMA Band II, Frequency:1907.6MHz								
63.71	H	37.93	-65.91	-8.33	0.14	-74.38	-13.00	61.38
214.55	V	42.10	-67.69	0.00	0.27	-67.96	-13.00	54.96
3815.200	H	34.57	-61.28	10.72	1.29	-51.85	-13.00	38.85
3815.200	V	34.69	-61.00	10.72	1.29	-51.57	-13.00	38.57
5722.800	H	40.22	-53.27	11.23	1.58	-43.62	-13.00	30.62
5722.800	V	34.56	-58.79	11.23	1.58	-49.14	-13.00	36.14

**WCDMA Band 4(30MHz-20GHz):**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB $\mu$ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Frequency:			1712.4 MHz					
63.72	H	37.51	-66.33	-8.33	0.14	-74.80	-13.00	61.80
214.54	V	42.68	-67.11	0.00	0.27	-67.38	-13.00	54.38
3424.800	H	33.62	-64.15	10.37	1.17	-54.95	-13.00	41.95
3424.800	V	34.76	-62.98	10.37	1.17	-53.78	-13.00	40.78
5137.200	H	33.87	-59.75	11.28	1.46	-49.93	-13.00	36.93
5137.200	V	34.15	-59.35	11.28	1.46	-49.53	-13.00	36.53
Frequency:			1732.6 MHz					
63.25	H	37.48	-66.37	-8.58	0.14	-75.09	-13.00	62.09
214.37	V	42.35	-67.43	0.00	0.27	-67.70	-13.00	54.70
3465.200	H	34.52	-63.29	10.39	1.15	-54.05	-13.00	41.05
3465.200	V	34.58	-63.19	10.39	1.15	-53.95	-13.00	40.95
5197.800	H	34.61	-59.52	11.32	1.44	-49.64	-13.00	36.64
5197.800	V	34.75	-59.23	11.32	1.44	-49.35	-13.00	36.35
Frequency:			1752.6 MHz					
63.71	H	37.62	-66.22	-8.33	0.14	-74.69	-13.00	61.69
214.51	V	42.84	-66.94	0.00	0.27	-67.21	-13.00	54.21
3505.200	H	34.39	-63.44	10.41	1.18	-54.21	-13.00	41.21
3505.200	V	34.25	-63.52	10.41	1.18	-54.29	-13.00	41.29
5257.800	H	34.67	-59.06	11.35	1.47	-49.18	-13.00	36.18
5257.800	V	34.08	-59.43	11.35	1.47	-49.55	-13.00	36.55

**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)			
WCDMA Band 5 Frequency:826.4 MHz								
63.84	H	37.53	-66.31	-8.26	0.14	-74.71	-13.00	61.71
214.54	V	42.66	-67.13	0.00	0.27	-67.40	-13.00	54.40
1652.800	H	39.83	-64.50	8.68	0.81	-56.63	-13.00	43.63
1652.800	V	40.41	-64.00	8.68	0.81	-56.13	-13.00	43.13
2479.200	H	42.37	-58.39	9.39	1.01	-50.01	-13.00	37.01
2479.200	V	36.84	-63.89	9.39	1.01	-55.51	-13.00	42.51
3305.600	H	34.26	-62.47	10.32	1.15	-53.30	-13.00	40.30
3305.600	V	34.25	-62.25	10.32	1.15	-53.08	-13.00	40.08
WCDMA Band 5 Frequency:836.6MHz								
63.76	H	37.55	-66.29	-8.31	0.14	-74.74	-13.00	61.74
214.75	V	42.60	-67.19	0.00	0.27	-67.46	-13.00	54.46
1673.200	H	42.57	-61.74	8.71	0.85	-53.88	-13.00	40.88
1673.200	V	41.38	-63.03	8.71	0.85	-55.17	-13.00	42.17
2509.800	H	37.02	-63.59	9.42	1.01	-55.18	-13.00	42.18
2509.800	V	41.03	-59.59	9.42	1.01	-51.18	-13.00	38.18
3346.400	H	34.17	-63.00	10.34	1.16	-53.82	-13.00	40.82
3346.400	V	34.18	-62.85	10.34	1.16	-53.67	-13.00	40.67
WCDMA Band 5 Frequency:846.6MHz								
63.55	H	37.51	-66.33	-8.42	0.14	-74.89	-13.00	61.89
214.25	V	42.87	-66.91	0.00	0.27	-67.18	-13.00	54.18
1693.200	H	43.97	-60.33	8.73	0.89	-52.49	-13.00	39.49
1693.200	V	41.74	-62.68	8.73	0.89	-54.84	-13.00	41.84
2539.800	H	37.99	-62.39	9.46	1.01	-53.94	-13.00	40.94
2539.800	V	38.31	-62.03	9.46	1.01	-53.58	-13.00	40.58
3386.400	H	33.98	-63.61	10.35	1.18	-54.44	-13.00	41.44
3386.400	V	34.63	-62.91	10.35	1.18	-53.74	-13.00	40.74

**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								
63.74	H	37.45	-66.39	-8.32	0.14	-74.85	-13.00	61.85
214.25	V	42.15	-67.63	0.00	0.27	-67.90	-13.00	54.90
3701.400	H	33.94	-63.37	10.60	1.25	-54.02	-13.00	41.02
3701.400	V	33.55	-63.74	10.60	1.25	-54.39	-13.00	41.39
5552.100	H	51.27	-42.00	11.44	1.49	-32.05	-13.00	19.05
5552.100	V	49.41	-43.69	11.44	1.49	-33.74	-13.00	20.74
QPSK, 1.4MHz, Frequency:1880 MHz								
63.74	H	37.63	-66.21	-8.32	0.14	-74.67	-13.00	61.67
214.52	V	42.39	-67.39	0.00	0.27	-67.66	-13.00	54.66
3760.000	H	33.84	-62.57	10.66	1.24	-53.15	-13.00	40.15
3760.000	V	34.31	-61.98	10.66	1.24	-52.56	-13.00	39.56
5640.000	H	50.12	-43.33	11.33	1.54	-33.54	-13.00	20.54
5640.000	V	47.80	-45.53	11.33	1.54	-35.74	-13.00	22.74
QPSK, 1.4MHz, Frequency:1909.3 MHz								
63.66	H	37.49	-66.35	-8.36	0.14	-74.85	-13.00	61.85
214.52	V	42.15	-67.63	0.00	0.27	-67.90	-13.00	54.90
3818.600	H	31.98	-63.88	10.72	1.29	-54.45	-13.00	41.45
3818.600	V	33.89	-61.82	10.72	1.29	-52.39	-13.00	39.39
5727.900	H	47.72	-45.76	11.23	1.59	-36.12	-13.00	23.12
5727.900	V	45.35	-48.01	11.23	1.59	-38.37	-13.00	25.37

**LTE Band 4(30MHz-20GHz):**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB $\mu$ V)	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			
63.42	H	37.64	-66.21	-8.49	0.14	-74.84	-13.00	61.84
214.65	V	42.55	-67.24	0.00	0.27	-67.51	-13.00	54.51
3421.400	H	33.39	-64.37	10.37	1.17	-55.17	-13.00	42.17
3421.400	V	34.11	-63.62	10.37	1.17	-54.42	-13.00	41.42
5132.100	H	37.50	-56.07	11.28	1.47	-46.26	-13.00	33.26
5132.100	V	41.85	-51.61	11.28	1.47	-41.80	-13.00	28.80
1.4MHz QPSK, Frequency:			1732.5		MHz			
63.45	H	37.49	-66.36	-8.47	0.14	-74.97	-13.00	61.97
214.51	V	42.15	-67.63	0.00	0.27	-67.90	-13.00	54.90
3465.000	H	35.10	-62.71	10.39	1.15	-53.47	-13.00	40.47
3465.000	V	34.81	-62.96	10.39	1.15	-53.72	-13.00	40.72
5197.500	H	36.58	-57.55	11.32	1.44	-47.67	-13.00	34.67
5197.500	V	37.69	-56.29	11.32	1.44	-46.41	-13.00	33.41
1.4MHz QPSK, Frequency:			1754.3		MHz			
63.15	H	37.42	-66.43	-8.63	0.14	-75.20	-13.00	62.20
214.36	V	42.21	-67.57	0.00	0.27	-67.84	-13.00	54.84
3508.600	H	34.31	-63.51	10.41	1.19	-54.29	-13.00	41.29
3508.600	V	34.73	-63.03	10.41	1.19	-53.81	-13.00	40.81
5262.900	H	36.77	-56.93	11.36	1.47	-47.04	-13.00	34.04
5262.900	V	41.00	-52.47	11.36	1.47	-42.58	-13.00	29.58



**LTE Band 5(30MHz-10GHz):**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB $\mu$ V)	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								
63.42	H	37.54	-66.31	-8.49	0.14	-74.94	-13.00	61.94
214.38	V	42.68	-67.10	0.00	0.27	-67.37	-13.00	54.37
1649.400	H	42.54	-61.79	8.68	0.80	-53.91	-13.00	40.91
1649.400	V	42.82	-61.59	8.68	0.80	-53.71	-13.00	40.71
2474.100	H	40.48	-60.30	9.38	1.00	-51.92	-13.00	38.92
2474.100	V	38.49	-62.24	9.38	1.00	-53.86	-13.00	40.86
3298.800	H	32.18	-64.50	10.32	1.15	-55.33	-13.00	42.33
3298.800	V	32.36	-64.08	10.32	1.15	-54.91	-13.00	41.91
QPSK, 1.4MHz, Frequency: 836.5 MHz								
63.41	H	37.68	-66.17	-8.49	0.14	-74.80	-13.00	61.80
214.25	V	42.95	-66.83	0.00	0.27	-67.10	-13.00	54.10
1673.000	H	45.27	-59.04	8.71	0.85	-51.18	-13.00	38.18
1673.000	V	42.88	-61.53	8.71	0.85	-53.67	-13.00	40.67
2509.500	H	37.86	-62.75	9.42	1.01	-54.34	-13.00	41.34
2509.500	V	38.06	-62.56	9.42	1.01	-54.15	-13.00	41.15
3346.000	H	32.34	-64.82	10.34	1.16	-55.64	-13.00	42.64
3346.000	V	32.23	-64.79	10.34	1.16	-55.61	-13.00	42.61
QPSK, 1.4MHz, Frequency: 848.3 MHz								
63.28	H	37.45	-66.40	-8.56	0.14	-75.10	-13.00	62.10
214.48	V	42.31	-67.47	0.00	0.27	-67.74	-13.00	54.74
1696.600	H	47.37	-56.92	8.74	0.89	-49.07	-13.00	36.07
1696.600	V	45.24	-59.18	8.74	0.89	-51.33	-13.00	38.33
2544.900	H	43.36	-56.98	9.47	1.01	-48.52	-13.00	35.52
2544.900	V	41.95	-58.35	9.47	1.01	-49.89	-13.00	36.89
3393.200	H	33.36	-64.31	10.36	1.19	-55.14	-13.00	42.14
3393.200	V	32.58	-65.05	10.36	1.19	-55.88	-13.00	42.88

**LTE Band 7(30MHz-26GHz):**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB $\mu$ V)	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			
63.47	H	37.48	-66.37	-8.46	0.14	-74.97	-25.00	49.97
214.62	V	42.95	-66.84	0.00	0.27	-67.11	-25.00	42.11
5005.000	H	34.24	-58.72	11.20	1.47	-48.99	-25.00	23.99
5005.000	V	34.43	-58.39	11.20	1.47	-48.66	-25.00	23.66
7507.500	H	36.33	-53.46	10.90	1.95	-44.51	-25.00	19.51
7507.500	V	36.66	-53.63	10.90	1.95	-44.68	-25.00	19.68
5MHz QPSK, Frequency:			2535		MHz			
63.71	H	37.48	-66.36	-8.33	0.14	-74.83	-25.00	49.83
214.51	V	42.54	-67.24	0.00	0.27	-67.51	-25.00	42.51
5070.000	H	31.71	-61.48	11.24	1.47	-51.71	-25.00	26.71
5070.000	V	32.91	-60.18	11.24	1.47	-50.41	-25.00	25.41
7605.000	H	35.36	-54.11	10.88	2.01	-45.24	-25.00	20.24
7605.000	V	36.45	-53.74	10.88	2.01	-44.87	-25.00	19.87
5MHz QPSK, Frequency:			2567.5		MHz			
63.73	H	37.44	-66.40	-8.32	0.14	-74.86	-25.00	49.86
214.35	V	42.15	-67.63	0.00	0.27	-67.90	-25.00	42.90
5135.000	H	32.89	-60.71	11.28	1.47	-50.90	-25.00	25.90
5135.000	V	34.28	-59.21	11.28	1.47	-49.40	-25.00	24.40
7702.500	H	37.98	-51.54	10.86	1.97	-42.65	-25.00	17.65
7702.500	V	35.88	-54.30	10.86	1.97	-45.41	-25.00	20.41

**LTE Band 12(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: 699.7 MHz								
63.44	H	37.62	-66.23	-8.48	0.14	-74.85	-13.00	61.85
214.36	V	42.56	-67.22	0.00	0.27	-67.49	-13.00	54.49
1399.400	H	41.58	-62.12	8.22	0.71	-54.61	-13.00	41.61
1399.400	V	40.37	-63.38	8.22	0.71	-55.87	-13.00	42.87
2099.100	H	37.40	-64.48	9.16	0.91	-56.23	-13.00	43.23
2099.100	V	36.28	-65.55	9.16	0.91	-57.30	-13.00	44.30
2798.800	H	33.82	-66.11	9.88	1.04	-57.27	-13.00	44.27
2798.800	V	34.87	-64.93	9.88	1.04	-56.09	-13.00	43.09
QPSK, 1.4MHz, Frequency:707.5 MHz								
63.54	H	37.35	-66.49	-8.42	0.14	-75.05	-13.00	62.05
214.35	V	42.36	-67.42	0.00	0.27	-67.69	-13.00	54.69
1415.000	H	40.74	-62.93	8.26	0.72	-55.39	-13.00	42.39
1415.000	V	39.43	-64.29	8.26	0.72	-56.75	-13.00	43.75
2122.500	H	39.51	-62.48	9.17	0.92	-54.23	-13.00	41.23
2122.500	V	39.11	-62.86	9.17	0.92	-54.61	-13.00	41.61
2830.000	H	35.25	-64.55	9.93	1.06	-55.68	-13.00	42.68
2830.000	V	36.47	-63.26	9.93	1.06	-54.39	-13.00	41.39
QPSK, 1.4MHz, Frequency: 715.3 MHz								
63.48	H	37.45	-66.40	-8.46	0.14	-75.00	-13.00	62.00
214.33	V	42.51	-67.27	0.00	0.27	-67.54	-13.00	54.54
1430.600	H	40.93	-62.70	8.31	0.73	-55.12	-13.00	42.12
1430.600	V	39.28	-64.41	8.31	0.73	-56.83	-13.00	43.83
2145.900	H	40.22	-61.88	9.19	0.93	-53.62	-13.00	40.62
2145.900	V	35.96	-66.15	9.19	0.93	-57.89	-13.00	44.89
2861.200	H	32.99	-66.66	9.98	1.07	-57.75	-13.00	44.75
2861.200	V	35.94	-63.73	9.98	1.07	-54.82	-13.00	41.82

**LTE Band 17(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, 5MHz, Frequency: 706.5 MHz								
63.47	H	37.48	-66.37	-8.46	0.14	-74.97	-13.00	61.97
214.53	V	42.51	-67.28	0.00	0.27	-67.55	-13.00	54.55
1413.000	H	40.32	-63.35	8.26	0.72	-55.81	-13.00	42.81
1413.000	V	38.14	-65.58	8.26	0.72	-58.04	-13.00	45.04
2119.500	H	38.14	-63.83	9.17	0.92	-55.58	-13.00	42.58
2119.500	V	37.24	-64.71	9.17	0.92	-56.46	-13.00	43.46
2826.000	H	34.60	-65.21	9.92	1.06	-56.35	-13.00	43.35
2826.000	V	36.68	-63.06	9.92	1.06	-54.20	-13.00	41.20
QPSK, 5MHz, Frequency:710 MHz								
63.48	H	37.62	-66.23	-8.46	0.14	-74.83	-13.00	61.83
214.36	V	42.22	-67.56	0.00	0.27	-67.83	-13.00	54.83
1420.000	H	39.15	-64.51	8.28	0.73	-56.96	-13.00	43.96
1420.000	V	39.22	-64.49	8.28	0.73	-56.94	-13.00	43.94
2130.000	H	39.80	-62.22	9.18	0.92	-53.96	-13.00	40.96
2130.000	V	37.40	-64.61	9.18	0.92	-56.35	-13.00	43.35
2840.000	H	34.78	-64.97	9.94	1.06	-56.09	-13.00	43.09
2840.000	V	37.50	-62.21	9.94	1.06	-53.33	-13.00	40.33
QPSK, 5MHz, Frequency: 713.5 MHz								
63.54	H	37.36	-66.48	-8.42	0.14	-75.04	-13.00	62.04
214.54	V	42.12	-67.67	0.00	0.27	-67.94	-13.00	54.94
1427.000	H	41.17	-62.47	8.30	0.73	-54.90	-13.00	41.90
1427.000	V	37.32	-66.37	8.30	0.73	-58.80	-13.00	45.80
2140.500	H	43.55	-58.52	9.18	0.93	-50.27	-13.00	37.27
2140.500	V	39.32	-62.76	9.18	0.93	-54.51	-13.00	41.51
2854.000	H	34.87	-64.82	9.97	1.07	-55.92	-13.00	42.92
2854.000	V	36.60	-63.08	9.97	1.07	-54.18	-13.00	41.18

**LTE Band 38 5MHz QPSK(30MHz-26.5GHz):**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB $\mu$ V)	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								
63.48	H	37.45	-66.40	-8.46	0.14	-75.00	-25.00	50.00
214.35	V	42.55	-67.23	0.00	0.27	-67.50	-25.00	42.50
5145.000	H	33.65	-60.03	11.29	1.44	-50.18	-25.00	25.18
5145.000	V	33.15	-60.42	11.29	1.44	-50.57	-25.00	25.57
7717.500	H	36.01	-53.50	10.86	1.99	-44.63	-25.00	19.63
7717.500	V	36.76	-53.37	10.86	1.99	-44.50	-25.00	19.50
5MHz QPSK, Frequency: 2595 MHz								
63.24	H	37.48	-66.37	-8.58	0.14	-75.09	-25.00	50.09
214.36	V	42.69	-67.09	0.00	0.27	-67.36	-25.00	42.36
5190.000	H	32.64	-61.43	11.31	1.44	-51.56	-25.00	26.56
5190.000	V	33.42	-60.50	11.31	1.44	-50.63	-25.00	25.63
7785.000	H	35.21	-54.28	10.84	1.99	-45.43	-25.00	20.43
7785.000	V	36.80	-53.12	10.84	1.99	-44.27	-25.00	19.27
5MHz QPSK, Frequency: 2617.5 MHz								
63.44	H	37.42	-66.43	-8.48	0.14	-75.05	-25.00	50.05
214.39	V	42.89	-66.89	0.00	0.27	-67.16	-25.00	42.16
5235.000	H	30.73	-63.17	11.34	1.46	-53.29	-25.00	28.29
5235.000	V	42.06	-51.65	11.34	1.46	-41.77	-25.00	16.77
7852.500	H	35.66	-53.53	10.83	2.03	-44.73	-25.00	19.73
7852.500	V	37.59	-51.99	10.83	2.03	-43.19	-25.00	18.19

**LTE Band 40 Lower(30MHz-24GHz):**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB $\mu$ V)	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			
63.87	H	37.55	-66.29	-8.25	0.14	-74.68	-40.00	34.68
214.39	V	42.19	-67.59	0.00	0.27	-67.86	-40.00	27.86
4615.000	H	38.83	-56.53	10.74	1.41	-47.20	-40.00	7.20
4615.000	V	31.53	-63.69	10.74	1.41	-54.36	-40.00	14.36
6922.500	H	32.52	-58.50	11.22	1.88	-49.16	-40.00	9.16
6922.500	V	28.15	-62.74	11.22	1.88	-53.40	-40.00	13.40
5MHz QPSK, Frequency:			2312.5		MHz			
63.78	H	37.48	-66.36	-8.30	0.14	-74.80	-40.00	34.80
214.29	V	42.35	-67.43	0.00	0.27	-67.70	-40.00	27.70
4625.000	H	27.52	-67.77	10.75	1.41	-58.43	-40.00	18.43
4625.000	V	28.91	-66.26	10.75	1.41	-56.92	-40.00	16.92
6937.500	H	24.32	-66.66	11.21	1.90	-57.35	-40.00	17.35
6937.500	V	25.22	-65.62	11.21	1.90	-56.31	-40.00	16.31

**LTE Band 40 Upper(30MHz-24GHz):**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB $\mu$ V)	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			
63.87	H	37.84	-66.00	-8.25	0.14	-74.39	-40.00	34.39
214.39	V	42.59	-67.19	0.00	0.27	-67.46	-40.00	27.46
4705.000	H	28.47	-66.31	10.85	1.41	-56.87	-40.00	16.87
4705.000	V	23.83	-70.97	10.85	1.41	-61.53	-40.00	21.53
7057.500	H	22.72	-67.29	11.17	1.92	-58.04	-40.00	18.04
7057.500	V	19.75	-70.15	11.17	1.92	-60.90	-40.00	20.90
5MHz QPSK, Frequency:			2357.5		MHz			
63.56	H	37.63	-66.21	-8.41	0.14	-74.76	-40.00	34.76
214.68	V	42.17	-67.62	0.00	0.27	-67.89	-40.00	27.89
4715.000	H	27.57	-67.14	10.86	1.41	-57.69	-40.00	17.69
4715.000	V	28.90	-65.81	10.86	1.41	-56.36	-40.00	16.36
7072.500	H	25.27	-64.53	11.16	1.91	-55.28	-40.00	15.28
7072.500	V	26.37	-63.34	11.16	1.91	-54.09	-40.00	14.09

**LTE Band 41(30MHz-26.55GHz):**

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: 2537.5 MHz								
63.48	H	37.51	-66.34	-8.46	0.14	-74.94	-25.00	49.94
214.63	V	42.15	-67.64	0.00	0.27	-67.91	-25.00	42.91
5075.000	H	33.18	-60.03	11.25	1.48	-50.26	-25.00	25.26
5075.000	V	32.33	-60.78	11.25	1.48	-51.01	-25.00	26.01
7612.500	H	36.14	-53.34	10.88	2.02	-44.48	-25.00	19.48
7612.500	V	36.55	-53.64	10.88	2.02	-44.78	-25.00	19.78
QPSK, 5MHz, Frequency:2595 MHz								
63.58	H	37.44	-66.40	-8.40	0.14	-74.94	-25.00	49.94
214.68	V	42.66	-67.13	0.00	0.27	-67.40	-25.00	42.40
5190.000	H	42.16	-51.91	11.31	1.44	-42.04	-25.00	17.04
5190.000	V	32.08	-61.84	11.31	1.44	-51.97	-25.00	26.97
7785.000	H	35.99	-53.50	10.84	1.99	-44.65	-25.00	19.65
7785.000	V	36.87	-53.05	10.84	1.99	-44.20	-25.00	19.20
QPSK, 5MHz, Frequency: 2652.5 MHz								
63.47	H	37.33	-66.52	-8.46	0.14	-75.12	-25.00	50.12
214.87	V	42.52	-36.07	0.00	0.27	-36.34	-25.00	11.34
5305.000	H	32.09	-61.35	11.38	1.46	-51.43	-25.00	26.43
5305.000	V	31.13	-62.05	11.38	1.46	-52.13	-25.00	27.13
7957.500	H	37.10	-51.32	10.81	2.09	-42.60	-25.00	17.60
7957.500	V	35.61	-53.26	10.81	2.09	-44.54	-25.00	19.54



**LTE Band 66(30MHz-20GHz):**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB $\mu$ V)	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			
63.54	H	37.21	-66.63	-8.42	0.14	-75.19	-13.00	62.19
214.56	V	42.98	-66.81	0.00	0.27	-67.08	-13.00	54.08
3421.400	H	34.63	-63.13	10.37	1.17	-53.93	-13.00	40.93
3421.400	V	33.87	-63.86	10.37	1.17	-54.66	-13.00	41.66
5132.100	H	35.58	-57.99	11.28	1.47	-48.18	-13.00	35.18
5132.100	V	35.62	-57.84	11.28	1.47	-48.03	-13.00	35.03
1.4MHz QPSK, Frequency:			1745		MHz			
63.48	H	37.54	-66.31	-8.46	0.14	-74.91	-13.00	61.91
214.65	V	42.55	-67.24	0.00	0.27	-67.51	-13.00	54.51
3490.000	H	34.19	-63.65	10.40	1.17	-54.42	-13.00	41.42
3490.000	V	35.17	-62.61	10.40	1.17	-53.38	-13.00	40.38
5235.000	H	35.22	-58.68	11.34	1.46	-48.80	-13.00	35.80
5235.000	V	34.94	-58.77	11.34	1.46	-48.89	-13.00	35.89
1.4MHz QPSK, Frequency:			1779.3		MHz			
63.87	H	37.47	-66.37	-8.25	0.14	-74.76	-13.00	61.76
214.68	V	42.36	-67.43	0.00	0.27	-67.70	-13.00	54.70
3558.600	H	34.48	-63.19	10.46	1.22	-53.95	-13.00	40.95
3558.600	V	33.66	-63.91	10.46	1.22	-54.67	-13.00	41.67
5337.900	H	32.13	-61.34	11.40	1.47	-51.41	-13.00	38.41
5337.900	V	32.10	-61.23	11.40	1.47	-51.30	-13.00	38.30

## 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**

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Please refer to the attachment CR230847505-EXP EUT EXTERNAL PHOTOGRAPHS and CR230847505-INP EUT INTERNAL PHOTOGRAPHS

## **6. TEST SETUP PHOTOGRAPHS**

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Please refer to the attachment CR230847505-00E-TSP TEST SETUP PHOTOGRAPHS.

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