

4.14 Antenna Port Test Data and Results for LTE Band 41

Serial Number:	CR22070052-RF-S1	Test Date:	2022-08-23~2022-08-25
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.3~25.8	Relative Humidity: (%)	51~59	ATM Pressure: (kPa)	100.2~100.8
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022-07-15	2023-07-14
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100003	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-04-06	2023-04-05
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
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).

EUT Information@LTE Band 41▲:

Antenna Gain (dBi):	2.98	Path Loss L _C (dB):	0.5
Operation Voltage(V _{DC}):			
Lowest:	3.5	Normal:	3.85
		Highest:	4.4

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2537.5	2595	2652.5
10MHz	2540	2595	2650
15MHz	2542.5	2595	2647.5
20MHz	2545	2595	2645

Test Data:**FCC §2.1046; § 27.50(h)(2)****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	21.88	21.27	20.62	24.5	33
	RB1#13	22.02	21.37	20.75		
	RB1#24	21.91	21.27	20.64		
	RB15#0	20.91	20.32	19.7		
	RB15#10	20.96	20.26	19.69		
	RB25#0	20.89	20.29	19.68		
5MHz 16QAM	RB1#0	20.86	20.3	19.88	23.47	33
	RB1#13	20.99	20.41	19.99		
	RB1#24	20.87	20.23	19.89		
	RB15#0	19.82	19.33	18.76		
	RB15#10	19.89	19.28	18.73		
	RB25#0	19.93	19.3	18.65		
10MHz QPSK	RB1#0	21.94	21.42	20.66	24.77	33
	RB1#25	22.29	21.64	20.95		
	RB1#49	22.17	21.25	20.65		
	RB25#0	20.88	20.36	19.75		
	RB25#25	20.99	20.3	19.68		
	RB50#0	20.93	20.3	19.69		
10MHz 16QAM	RB1#0	20.87	20.52	19.87	23.64	33
	RB1#25	21.16	20.75	20.18		
	RB1#49	20.85	20.35	19.91		
	RB25#0	19.92	19.37	18.75		
	RB25#25	20	19.32	18.66		
	RB50#0	19.89	19.33	18.68		
15MHz QPSK	RB1#0	21.88	21.39	20.57	24.49	33
	RB1#38	22.01	21.32	20.69		
	RB1#74	21.86	21.11	20.59		
	RB36#0	20.92	20.38	19.69		
	RB36#39	20.96	20.26	19.62		
	RB75#0	20.93	20.33	19.65		
15MHz 16QAM	RB1#0	20.8	20.58	19.77	23.37	33
	RB1#38	20.89	20.55	19.92		
	RB1#74	20.77	20.36	19.81		
	RB36#0	19.84	19.4	18.64		
	RB36#39	19.86	19.27	18.58		
	RB75#0	19.87	19.3	18.59		
20MHz QPSK	RB1#0	21.67	21.33	20.43	24.64	33
	RB1#50	22.16	21.64	20.89		
	RB1#99	21.64	20.96	20.42		

	RB50#0	20.83	20.38	19.76		
	RB50#50	20.9	20.22	19.57		
	RB100#0	20.89	20.32	19.65		
20MHz 16QAM	RB1#0	20.66	20.53	19.48	23.62	33
	RB1#50	21.14	20.86	19.96		
	RB1#99	20.62	20.16	19.52		
	RB50#0	19.88	19.43	18.71		
	RB50#50	19.95	19.26	18.58		
	RB100#0	19.92	19.3	18.68		

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

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

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	8.2	9.3	9.25	13
	RB100#0	8.93	9.16	9.25	13
20MHz 16QAM	RB1#0	9.54	10.12	10.09	13
	RB100#0	9.74	10.03	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	4.511	4.511	4.491	5.02	5	4.96
5MHz 16QAM	4.491	4.491	4.511	4.96	4.92	5.16
10MHz QPSK	8.942	8.942	8.942	9.68	9.72	9.72
10MHz 16QAM	8.942	8.942	8.942	9.52	10	9.56
15MHz QPSK	13.473	13.473	13.533	15.6	15.66	15.84
15MHz 16QAM	13.593	13.533	13.533	16.02	16.68	16.32
20MHz QPSK	17.964	17.964	17.964	19.6	20.4	19.92
20MHz 16QAM	17.964	17.964	17.964	20.56	19.76	19.76

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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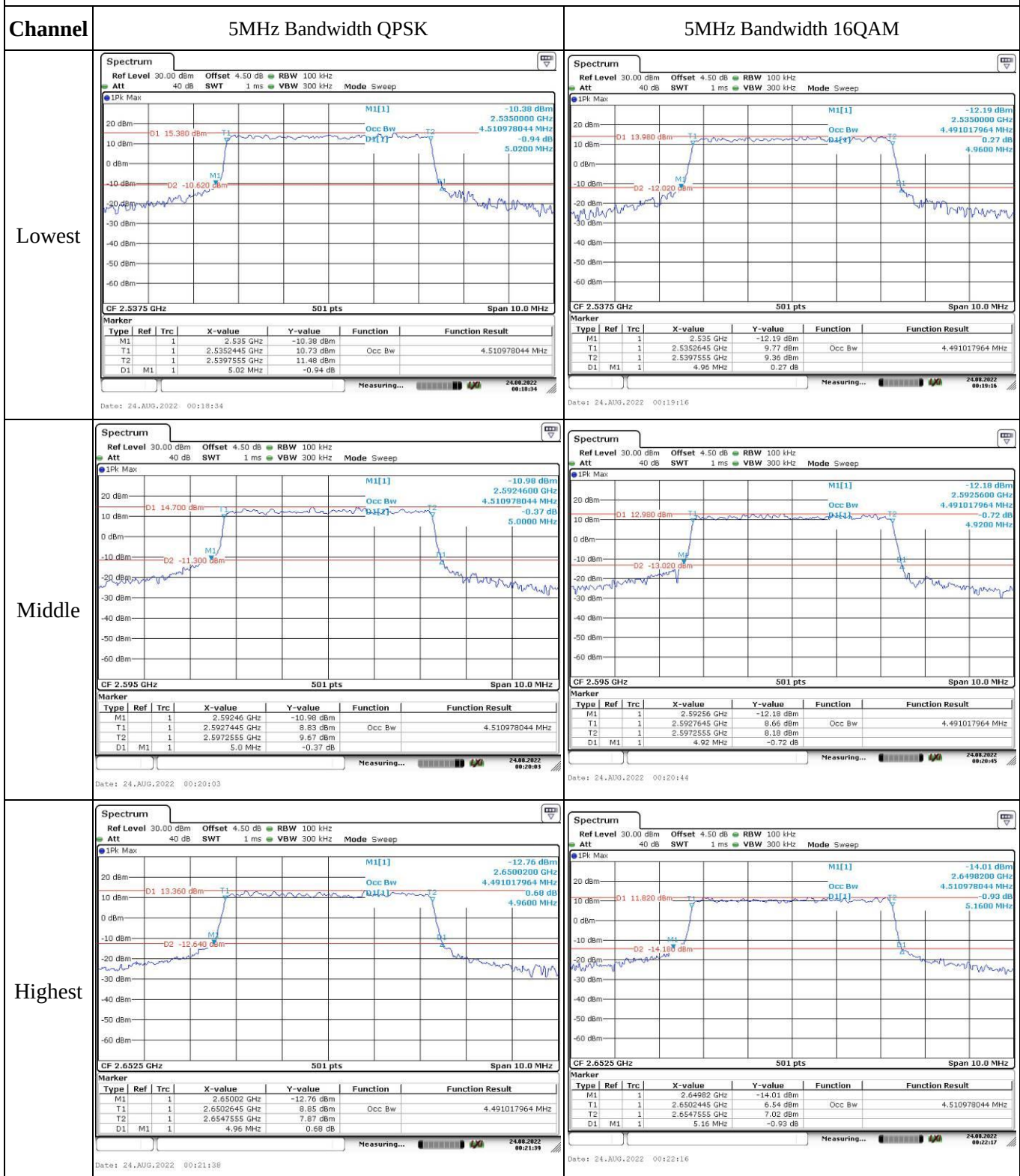
FCC §2.1055, §27.54: Frequency Stability

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	2536.062	2535.00	2653.930	2655
	-20	3.85	2536.080	2535.00	2653.961	2655
	-10	3.85	2536.027	2535.00	2653.905	2655
	0	3.85	2536.049	2535.00	2653.994	2655
	10	3.85	2536.016	2535.00	2653.926	2655
	20	3.85	2536.058	2535.00	2653.975	2655
	30	3.85	2536.099	2535.00	2653.949	2655
	40	3.85	2536.008	2535.00	2653.991	2655
	50	3.85	2536.068	2535.00	2654.000	2655
Frequency Stability vs. Voltage	20	3.5	2536.090	2535.00	2653.978	2655
	20	4.4	2536.086	2535.00	2653.939	2655
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	2536.050	2535.00	2653.958	2655
	-20	3.85	2536.031	2535.00	2653.920	2655
	-10	3.85	2536.059	2535.00	2653.982	2655
	0	3.85	2536.072	2535.00	2653.952	2655
	10	3.85	2536.022	2535.00	2653.910	2655
	20	3.85	2536.058	2535.00	2653.936	2655
	30	3.85	2536.047	2535.00	2653.918	2655
	40	3.85	2536.025	2535.00	2653.909	2655
	50	3.85	2536.058	2535.00	2653.919	2655
Frequency Stability vs. Voltage	20	3.5	2536.012	2535.00	2653.983	2655
	20	4.4	2536.024	2535.00	2653.946	2655
Result:					Pass	

Test Plots:

Occupied Bandwidth



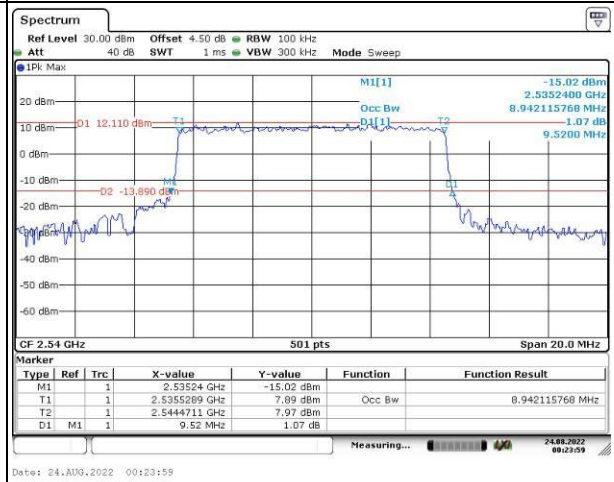
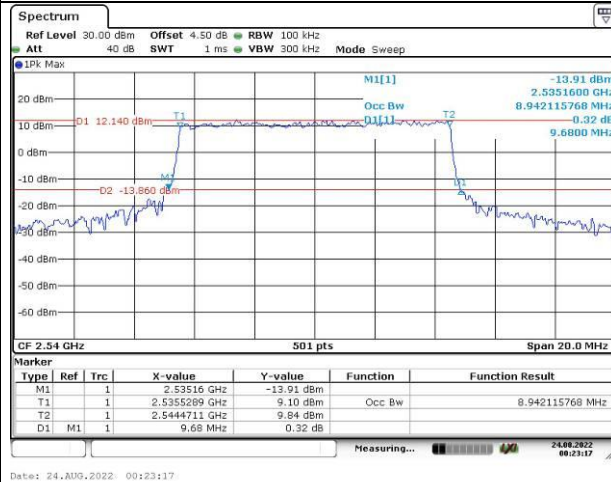
Occupied Bandwidth

Channel

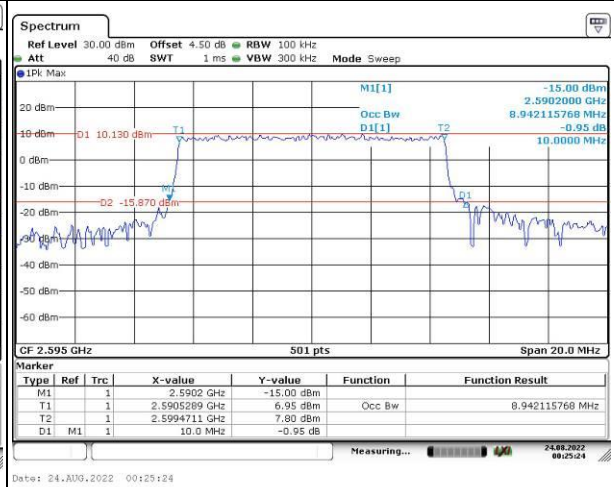
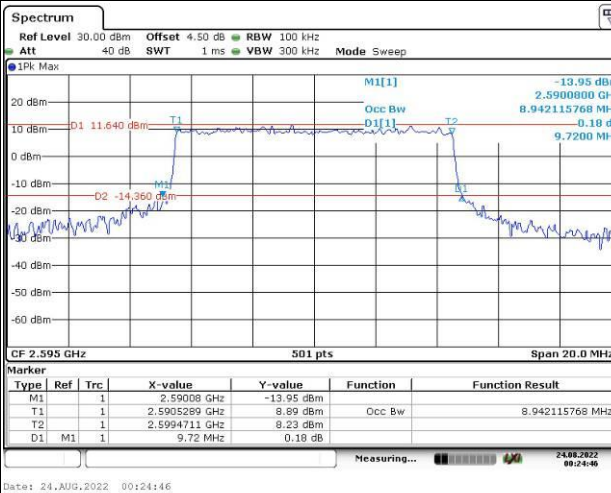
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

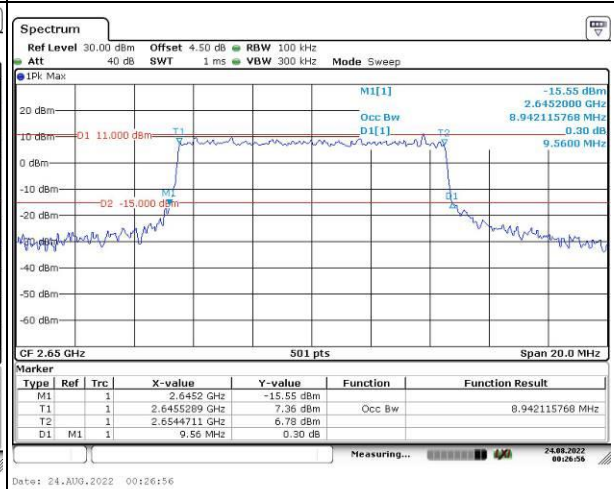
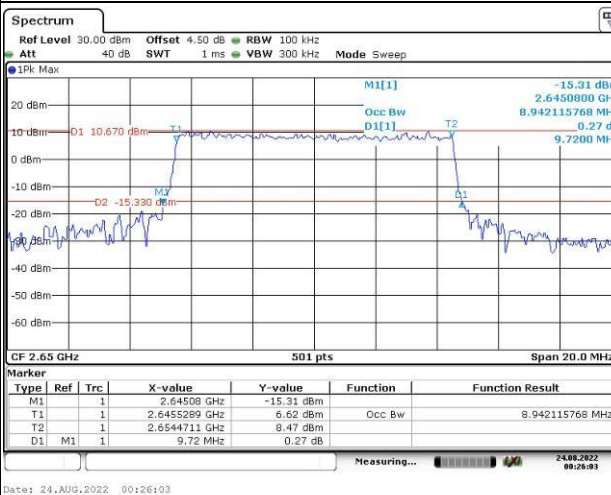
Lowest



Middle



Highest



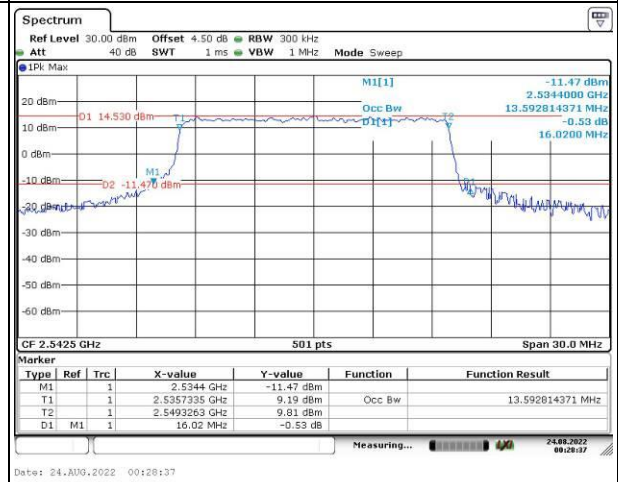
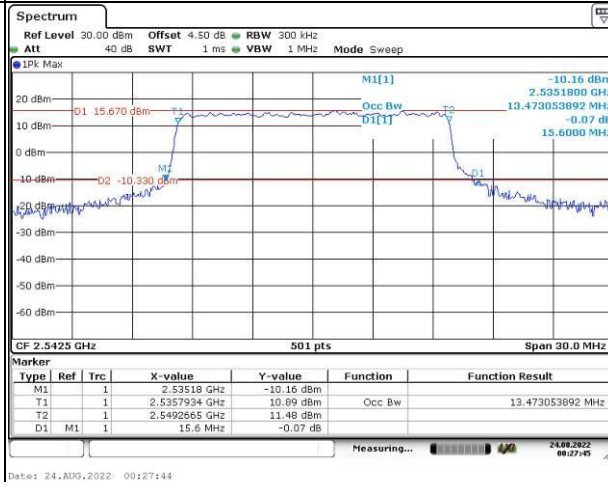
Occupied Bandwidth

Channel

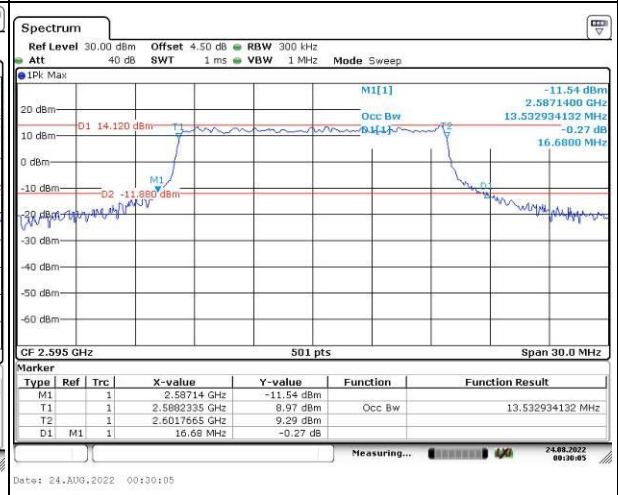
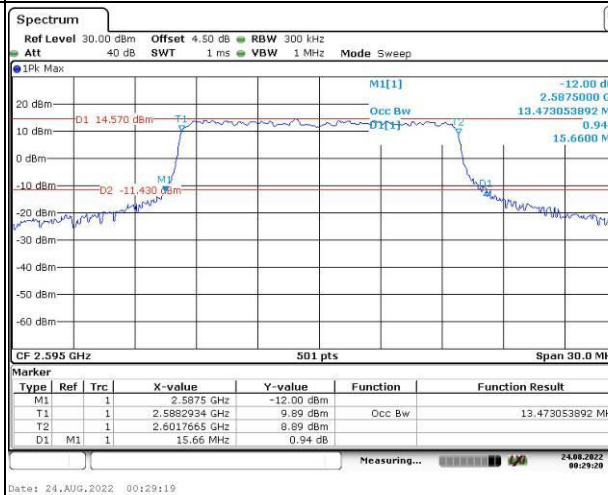
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

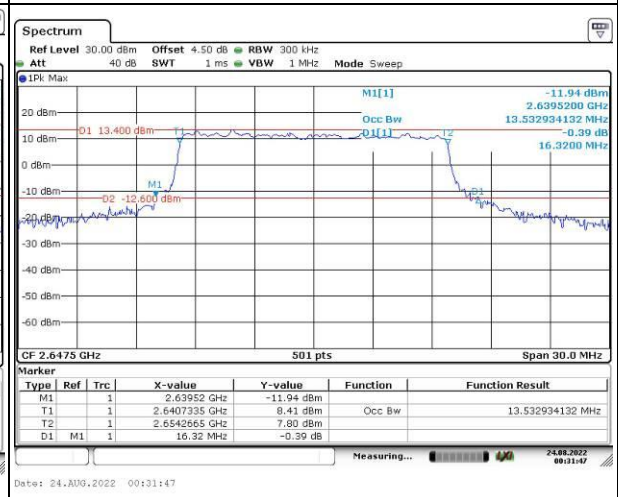
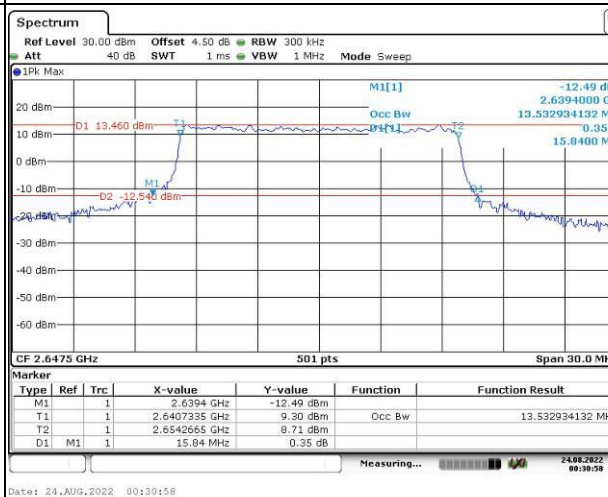
Lowest



Middle



Highest



20MHz Bandwidth 16QAM

Spectrum

Ref Level 30.00 dBm Offset 4.50 dB BW 300 kHz
 Att All SWT 1 ms VBW 1 MHz Mode Sweep

● 1PK Max

20 dBm
 10 dBm
 0 dBm
 -10 dBm
 -20 dBm
 -30 dBm
 -40 dBm
 -50 dBm
 -60 dBm

01 15.200 dBm
 M1[1]
 Occ Bw
 M1[1]
 D2 -10.800 dBm
 M2
 D1
 ~11.76 dBm
 2.535320 GHz
 17.964071856 MHz
 1.00 dB
 19.6000 MHz

CF 2.545 GHz 501 pts Span 40.0 MHz

Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1			2.53532 GHz	-11.76 dBm		
T1	1			2.5360579 GHz	10.40 dBm	Occ Bw	17.964071856 MHz
T2	1			2.554022 GHz	10.46 dBm		
D1	M1	1		19.6 MHz	1.00 dB		

Measuring... 24.00.2022 00:32:44

Date: 24.AUG.2022 00:32:44

Middle

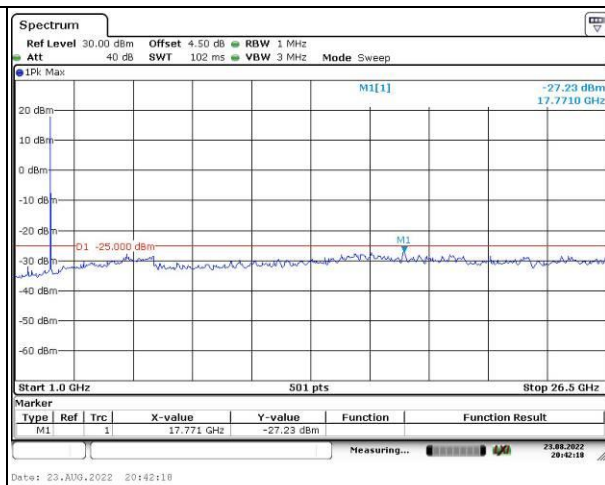
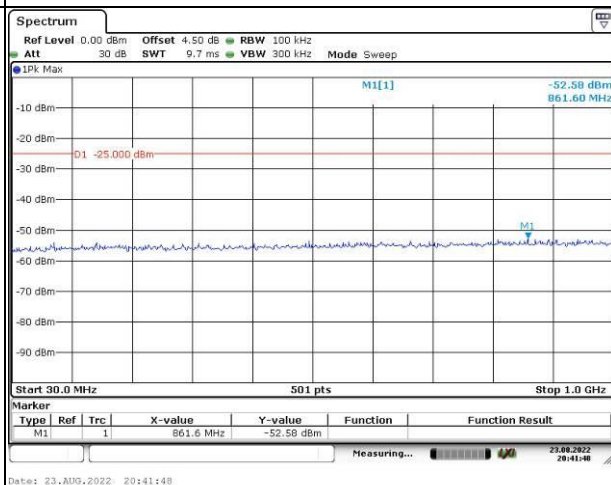
Highest

Spurious Emissions at Antenna Terminal

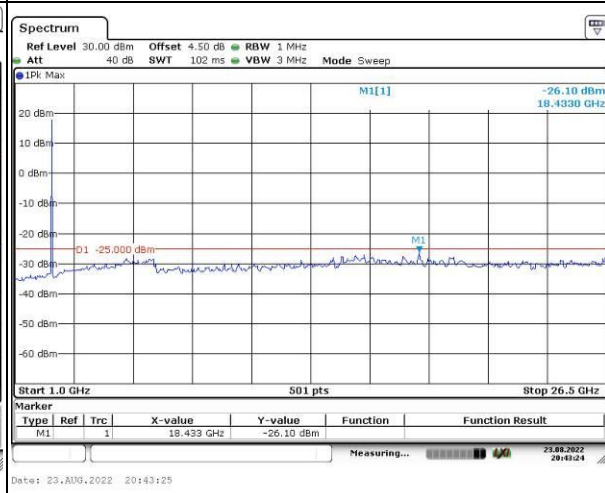
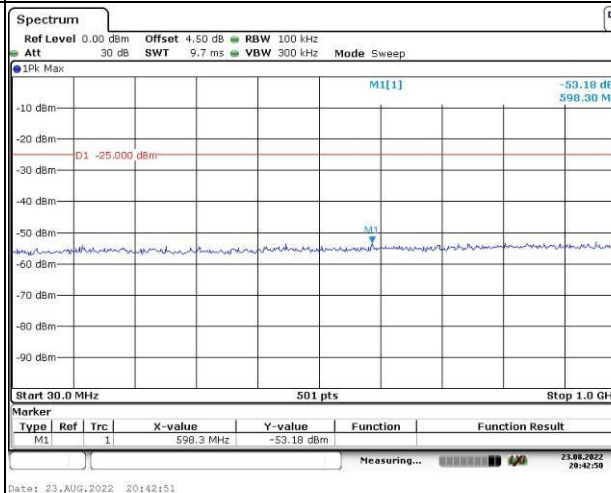
Channel

5MHz Bandwidth QPSK

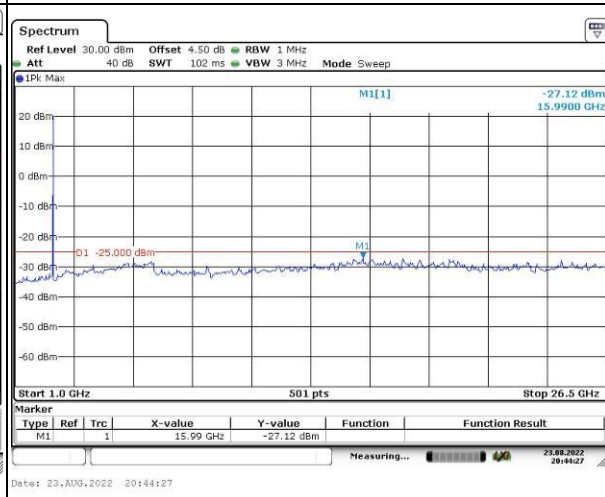
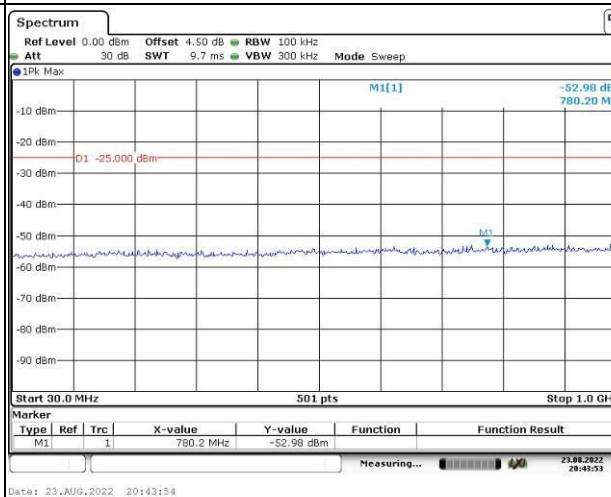
Lowest



Middle



Highest

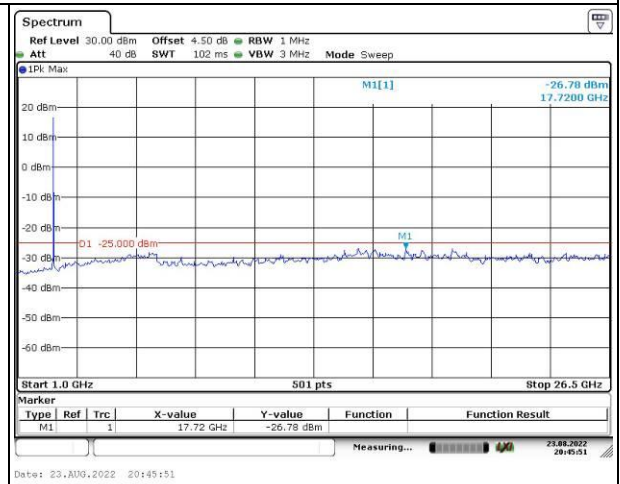
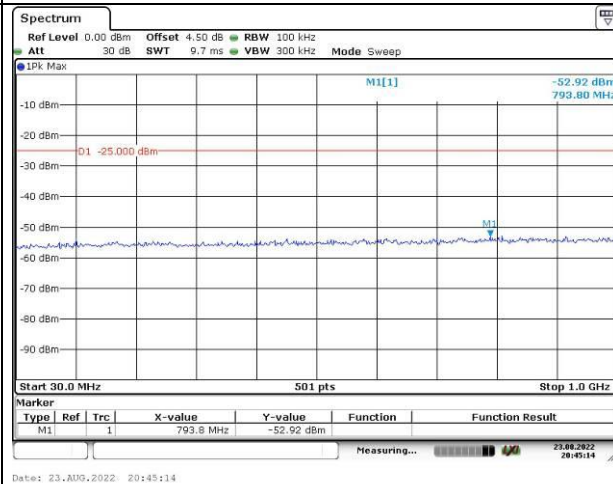


Spurious Emissions at Antenna Terminal

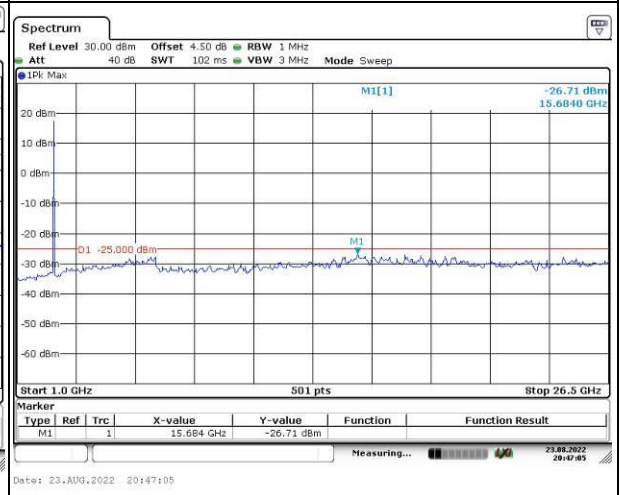
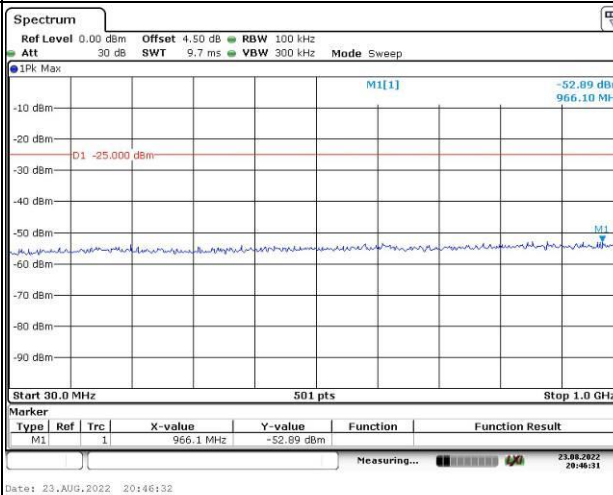
Channel

10MHz Bandwidth QPSK

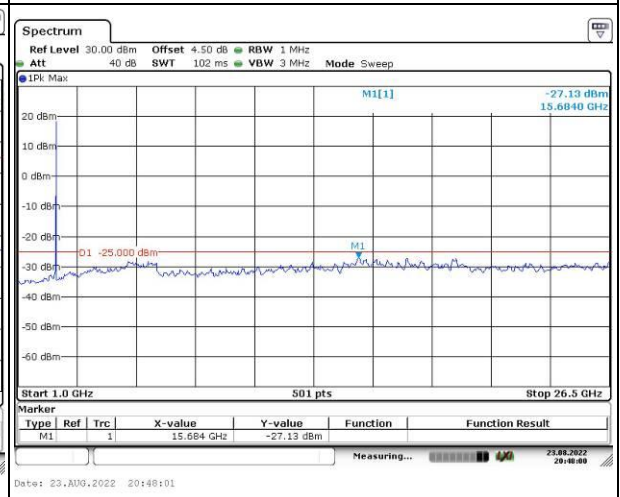
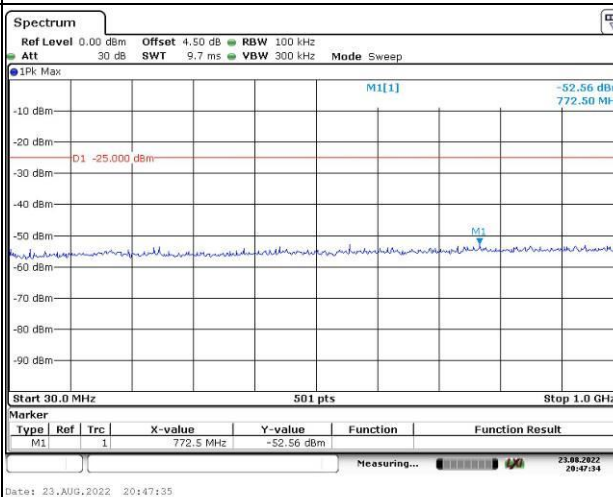
Lowest



Middle



Highest

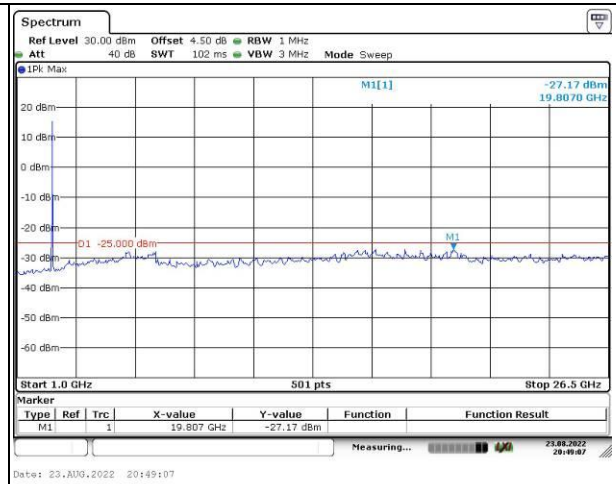
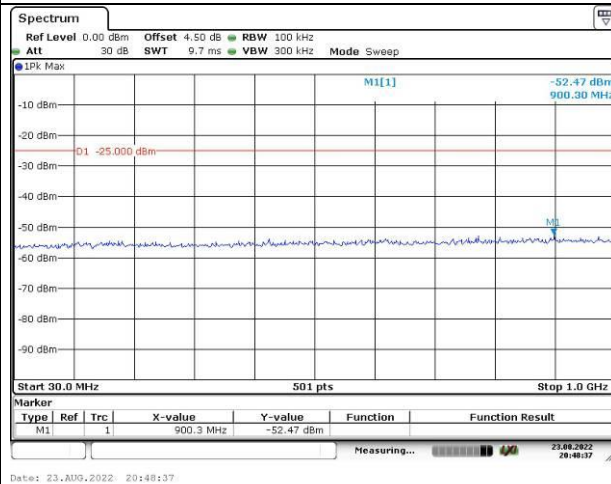


Spurious Emissions at Antenna Terminal

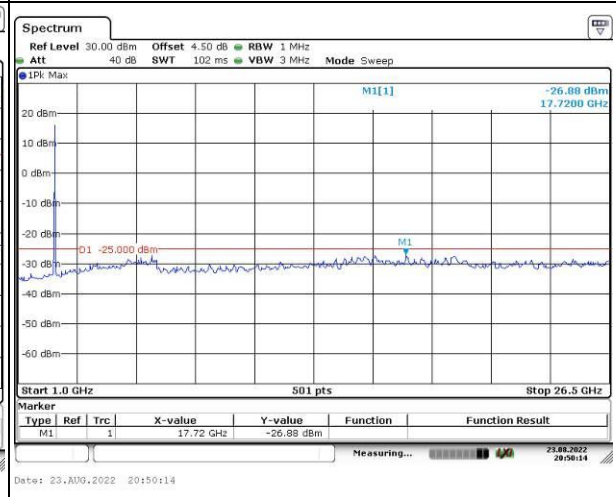
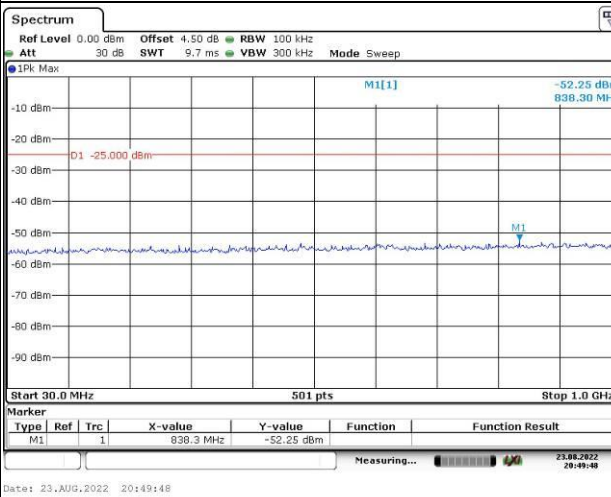
Channel

15MHz Bandwidth QPSK

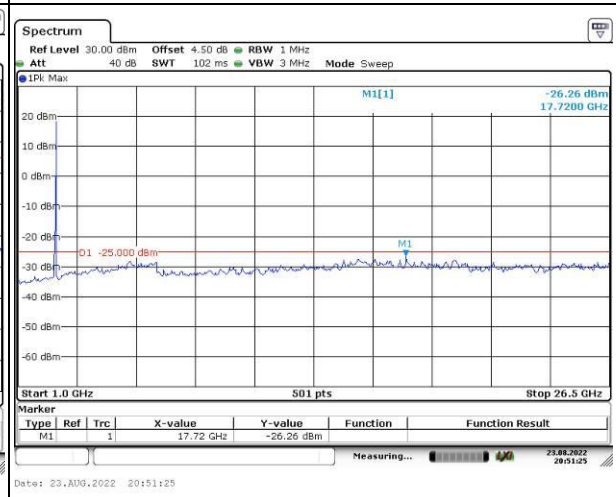
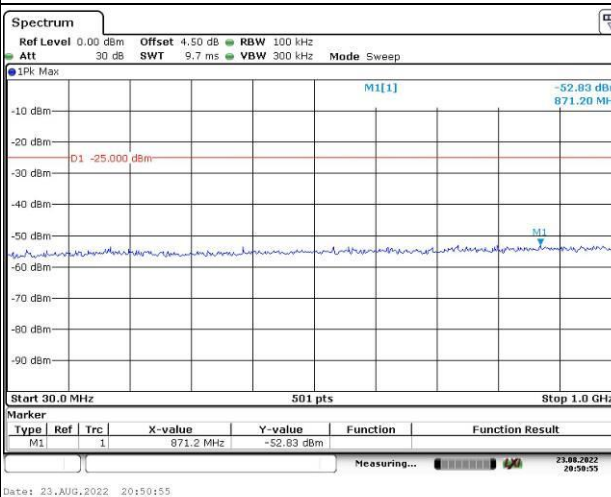
Lowest



Middle



Highest

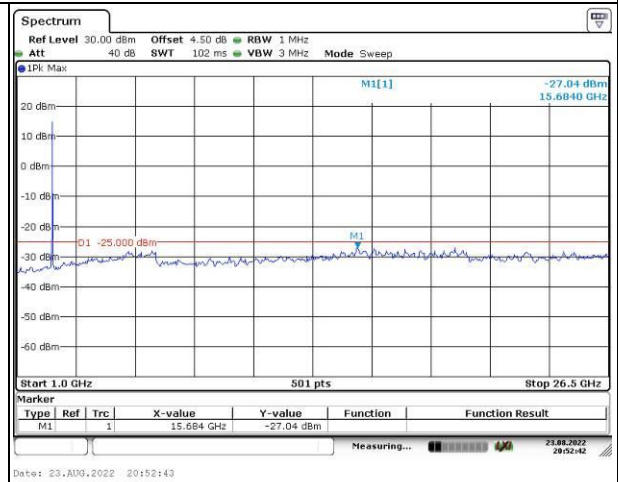
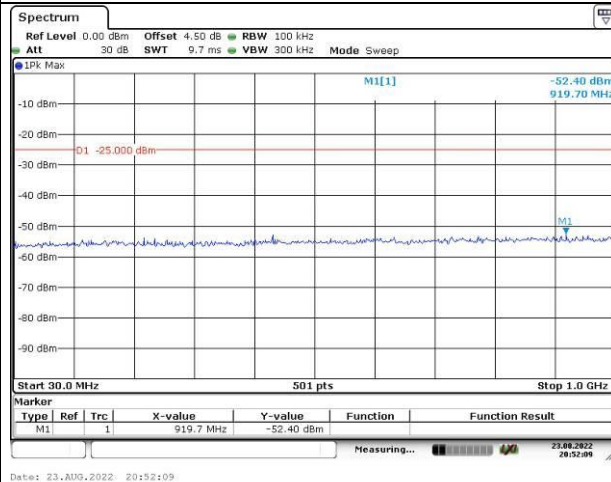


Spurious Emissions at Antenna Terminal

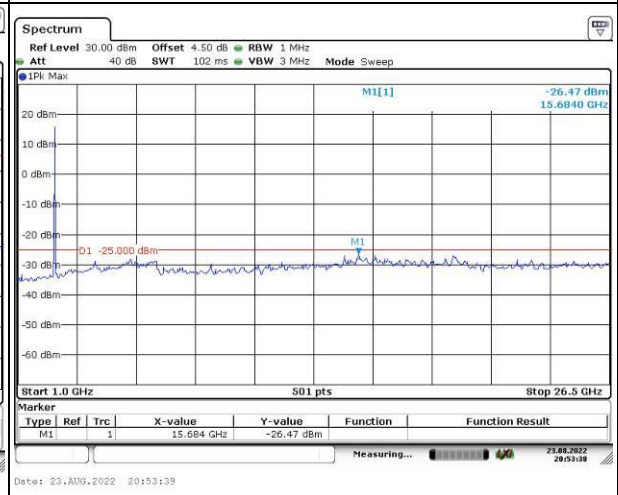
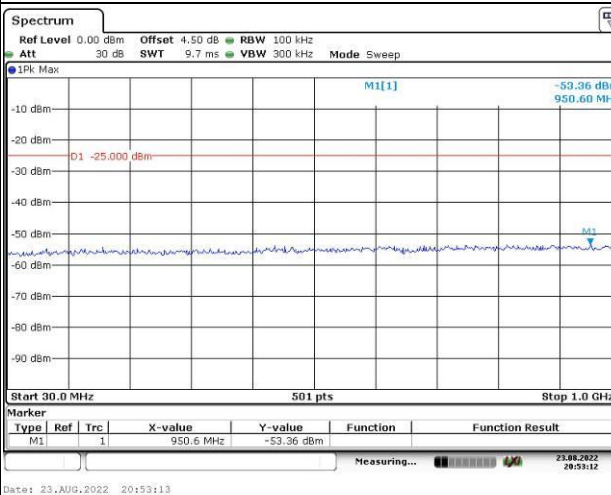
Channel

20MHz Bandwidth QPSK

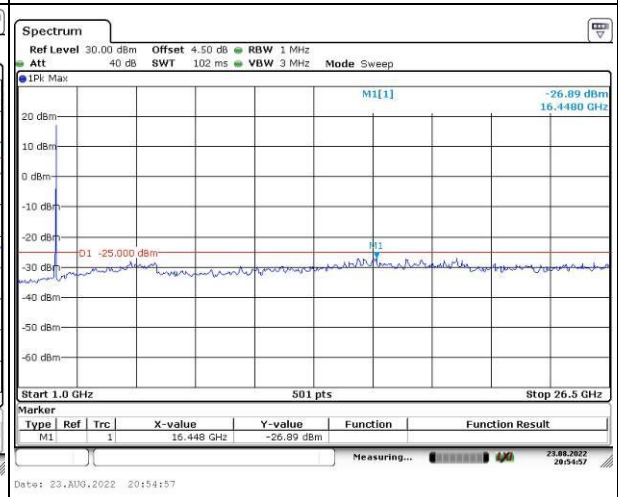
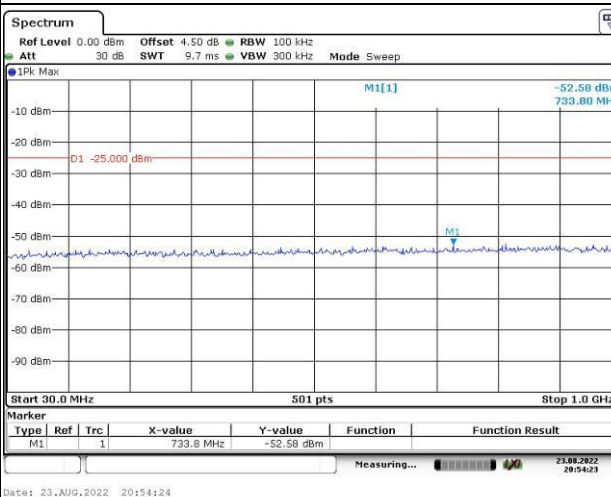
Lowest



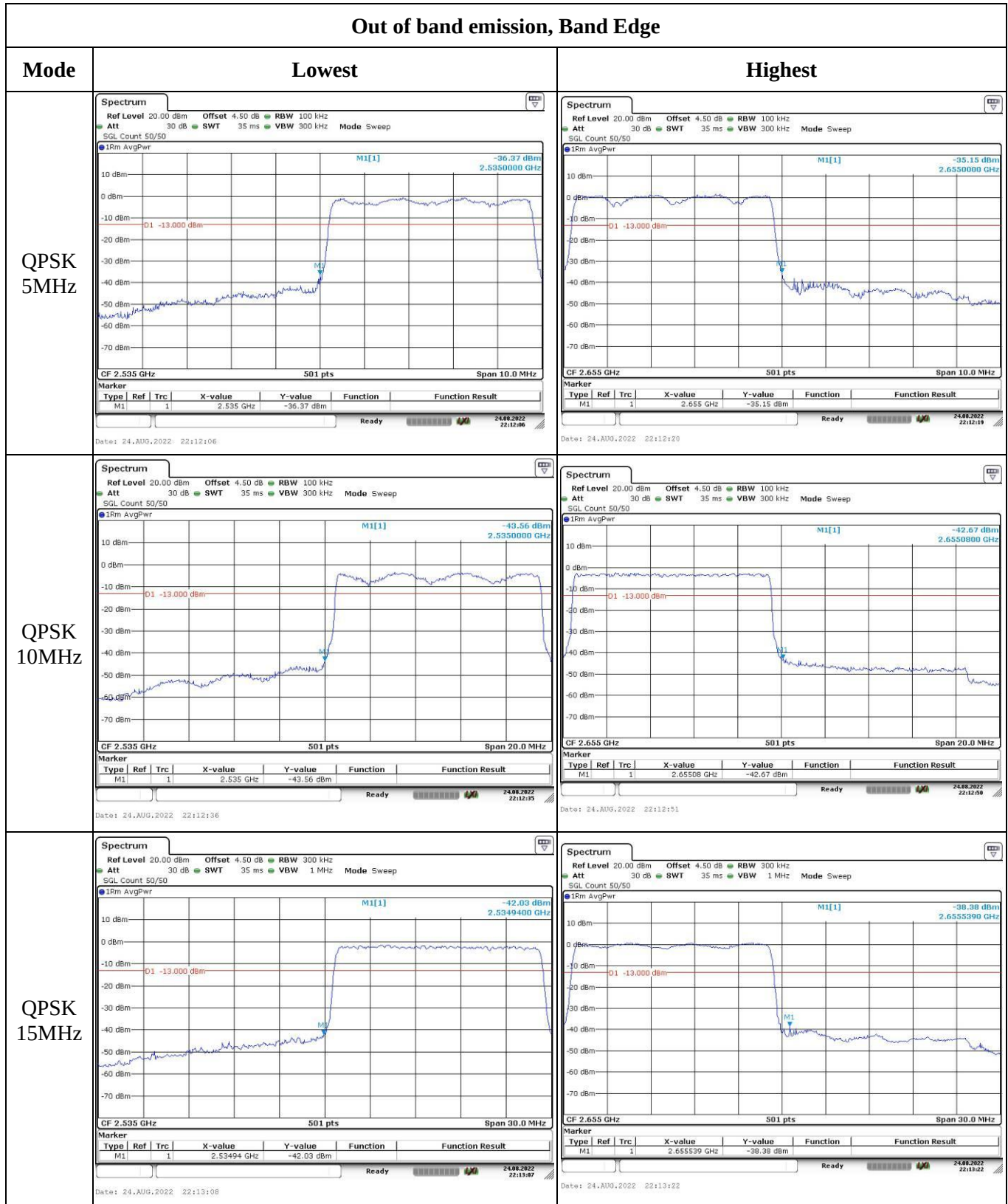
Middle



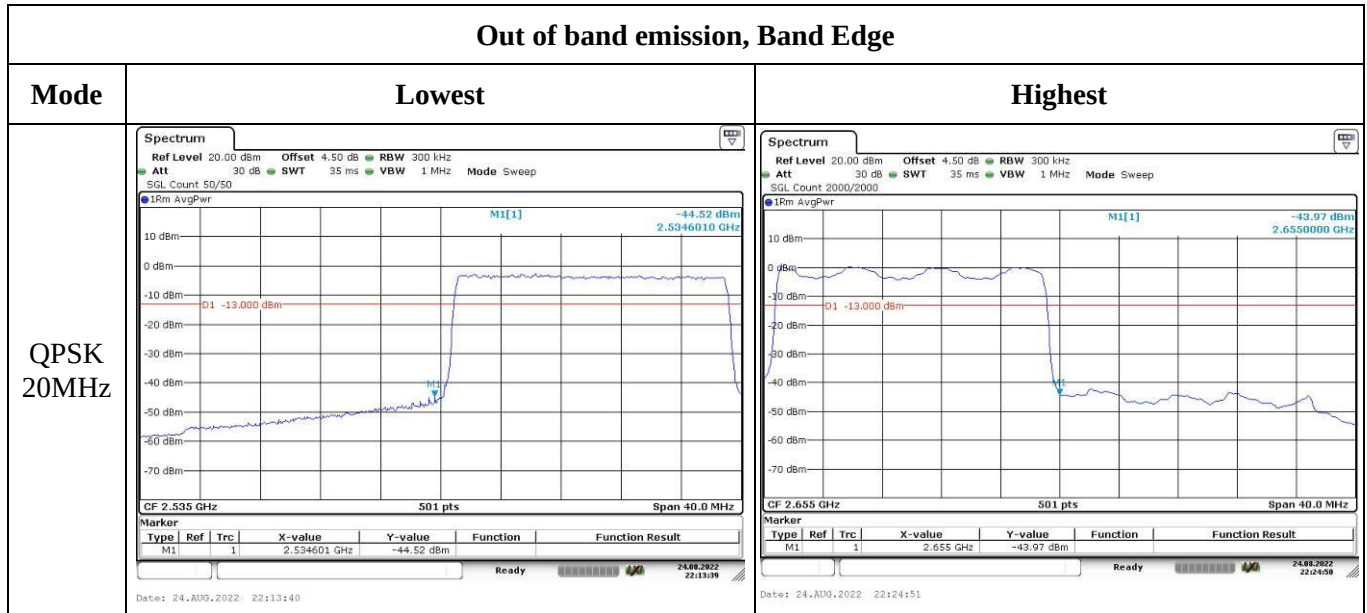
Highest



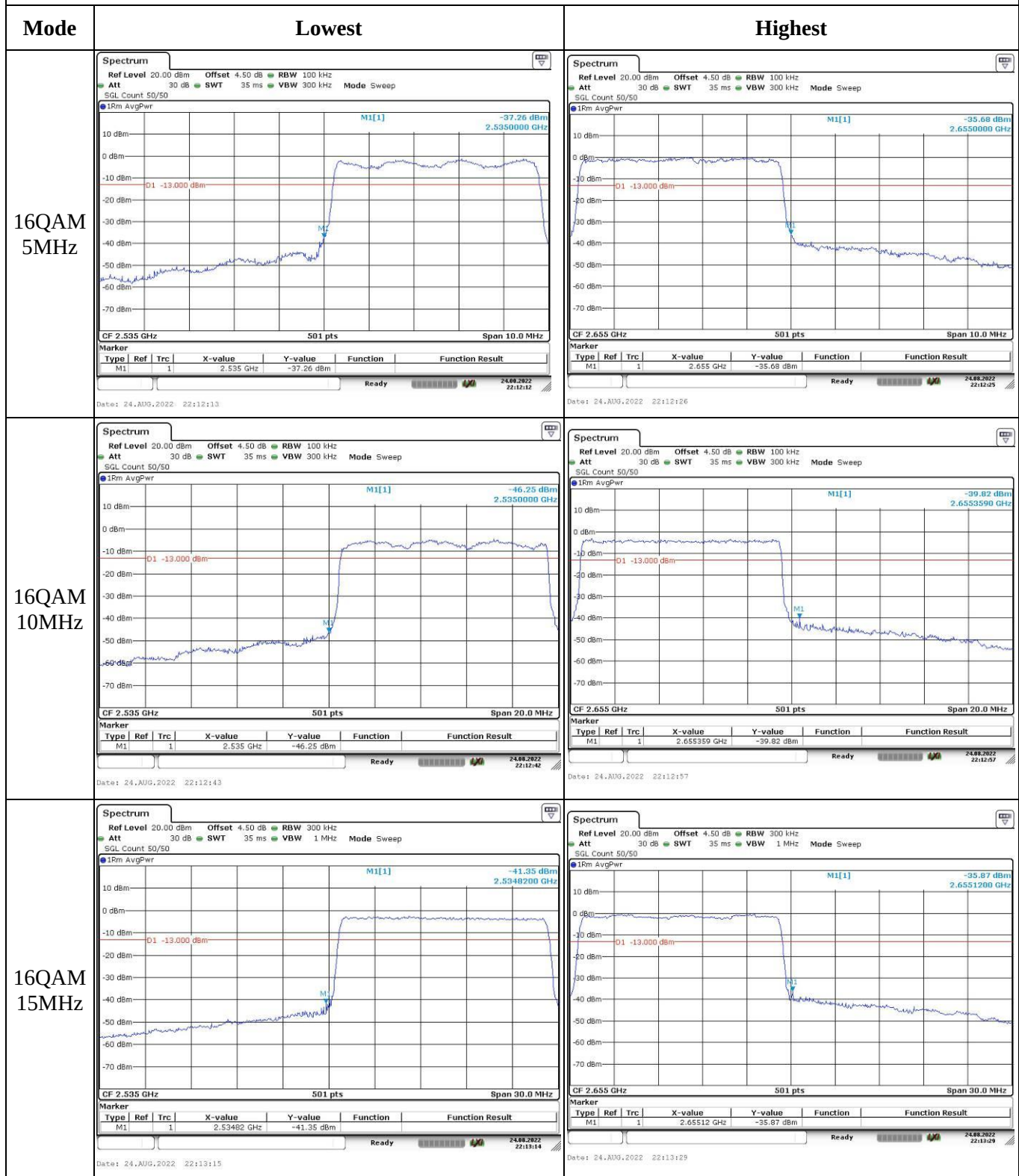
Out of band emission, Band Edge



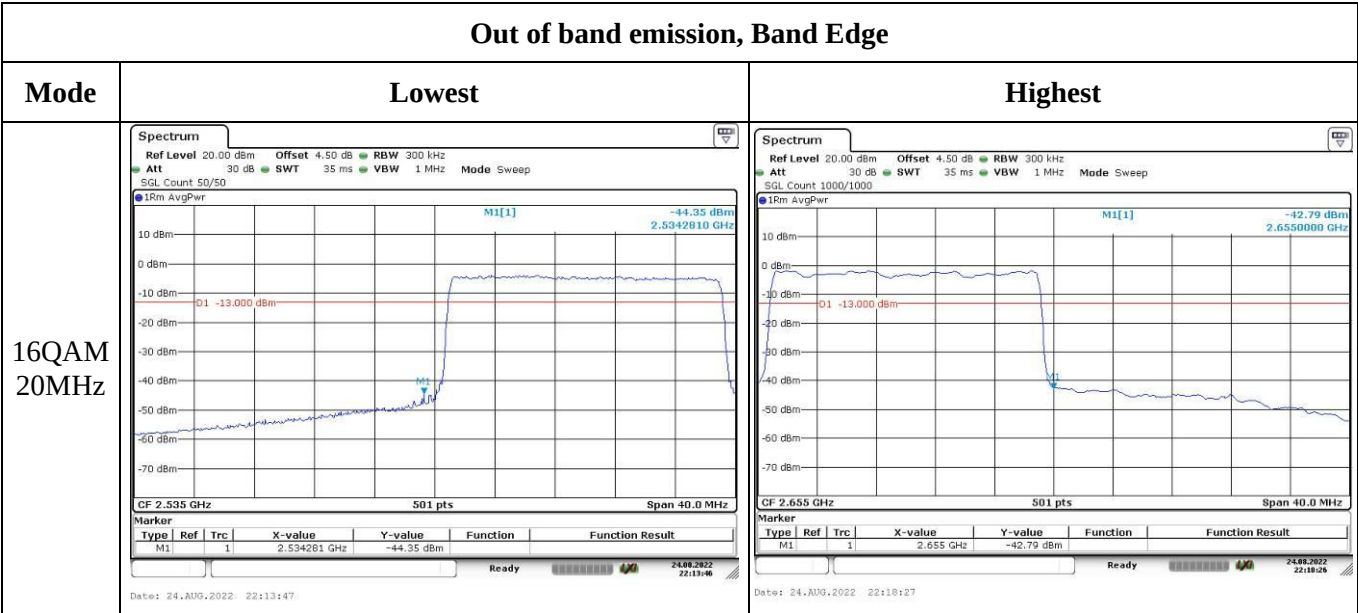
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.15 Radiated Spurious Emissions

Serial Number:	CR22070052-RF-S1	Test Date:	2022-08-06~2022-08-29
Test Site:	966-2, 966-1	Test Mode:	Transmitting
Tester:	Gary Ling, Nick Tang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	27.6~28.4	Relative Humidity: (%)	57~62	ATM Pressure: (kPa)	99.9~100.4
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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	2022-07-15	2023-07-14
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2022-07-17	2023-07-16
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2022-07-17	2023-07-16
Sonoma	Amplifier	310N	186165	2022-07-17	2023-07-16
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020-10-13	2023-10-12
R&S	Spectrum Analyzer	FSV40	101591	2022-07-15	2023-07-14
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2022-08-07	2023-08-06
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2022-08-07	2023-08-06
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2021-11-10	2022-11-09
AH	Double Ridge Guide Horn Antenna	SAS-571	1396	2021-10-18	2024-10-17
MICRO-COAX	Coaxial Cable	UFA210B-0-0720-300300	99G1448	2022-07-17	2023-07-16
Agilent	Signal Generator	E8247C	MY43321352	2022-04-01	2023-03-31
PASTERNAK	Horn Antenna	PE9852/2F-20	112002	2021-02-05	2024-02-04
PASTERNAK	Horn Antenna	PE9852/2F-20	112001	2021-02-05	2024-02-04
AH	Preamplifier	PAM-1840VH	190	2021-11-19	2022-11-18
PASTERNAK	Horn Antenna	PE9850/2F-20	072001	2021-02-05	2024-02-04
PASTERNAK	Horn Antenna	PE9850/2F-20	072002	2021-02-05	2024-02-04
MICRO-COAX	Coaxial Cable	UFB142A-1-2362-200200	235772-001	2022-08-07	2023-08-06

* 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 (PART 22H)**30 MHz-10 GHz:**

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								
182.25	H	40.68	-71.86	0.00	0.25	-72.11	-13.00	59.11
51.45	V	39.84	-62.08	-14.23	0.13	-76.44	-13.00	63.44
1648.40	H	46.23	-58.10	8.68	0.80	-50.22	-13.00	37.22
1648.40	V	50.34	-54.07	8.68	0.80	-46.19	-13.00	33.19
2472.60	H	38.40	-62.38	9.38	1.00	-54.00	-13.00	41.00
2472.60	V	42.87	-57.86	9.38	1.00	-49.48	-13.00	36.48
3296.80	H	37.78	-58.90	10.32	1.15	-49.73	-13.00	36.73
3296.80	V	37.30	-59.14	10.32	1.15	-49.97	-13.00	36.97
GSM 850 Frequency:836.6MHz								
181.35	H	40.87	-71.65	0.00	0.25	-71.90	-13.00	58.90
48.15	V	39.91	-59.50	-16.71	0.12	-76.33	-13.00	63.33
1673.20	H	48.54	-55.77	8.71	0.85	-47.91	-13.00	34.91
1673.20	V	48.00	-56.41	8.71	0.85	-48.55	-13.00	35.55
2509.80	H	42.87	-57.74	9.42	1.01	-49.33	-13.00	36.33
2509.80	V	40.17	-60.45	9.42	1.01	-52.04	-13.00	39.04
3346.40	H	40.31	-56.86	10.34	1.16	-47.68	-13.00	34.68
3346.40	V	39.17	-57.86	10.34	1.16	-48.68	-13.00	35.68
GSM 850 Frequency:848.8MHz								
182.65	H	40.96	-71.58	0.00	0.25	-71.83	-13.00	58.83
47.99	V	39.98	-59.27	-16.87	0.12	-76.26	-13.00	63.26
1697.60	H	51.86	-52.43	8.74	0.90	-44.59	-13.00	31.59
1697.60	V	48.18	-56.24	8.74	0.90	-48.40	-13.00	35.40
2546.40	H	48.73	-51.60	9.47	1.01	-43.14	-13.00	30.14
2546.40	V	42.71	-57.57	9.47	1.01	-49.11	-13.00	36.11
3395.20	H	38.92	-58.77	10.36	1.19	-49.60	-13.00	36.60
3395.20	V	36.30	-61.36	10.36	1.19	-52.19	-13.00	39.19

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								
181.28	H	40.92	-71.60	0.00	0.25	-71.85	-13.00	58.85
47.99	V	39.92	-59.33	-16.87	0.12	-76.32	-13.00	63.32
1652.80	H	48.03	-56.30	8.68	0.81	-48.43	-13.00	35.43
1652.80	V	39.63	-64.78	8.68	0.81	-56.91	-13.00	43.91
2479.20	H	35.51	-65.25	9.39	1.01	-56.87	-13.00	43.87
2479.20	V	35.17	-65.56	9.39	1.01	-57.18	-13.00	44.18
3305.60	H	35.14	-61.59	10.32	1.15	-52.42	-13.00	39.42
3305.60	V	36.66	-59.84	10.32	1.15	-50.67	-13.00	37.67
WCDMA Band 5 Frequency:836.6MHz								
181.28	H	41.42	-71.10	0.00	0.25	-71.35	-13.00	58.35
54.07	V	40.74	-62.44	-13.03	0.13	-75.60	-13.00	62.60
1673.20	H	50.45	-53.86	8.71	0.85	-46.00	-13.00	33.00
1673.20	V	44.98	-59.43	8.71	0.85	-51.57	-13.00	38.57
2509.80	H	36.33	-64.28	9.42	1.01	-55.87	-13.00	42.87
2509.80	V	34.36	-66.26	9.42	1.01	-57.85	-13.00	44.85
3346.40	H	34.77	-62.40	10.34	1.16	-53.22	-13.00	40.22
3346.40	V	35.02	-62.01	10.34	1.16	-52.83	-13.00	39.83
WCDMA Band 5 Frequency:846.6MHz								
181.28	H	41.85	-70.67	0.00	0.25	-70.92	-13.00	57.92
54.07	V	39.89	-63.29	-13.03	0.13	-76.45	-13.00	63.45
1693.20	H	36.89	-67.41	8.73	0.89	-59.57	-13.00	46.57
1693.20	V	37.03	-67.39	8.73	0.89	-59.55	-13.00	46.55
2539.80	H	36.35	-64.03	9.46	1.01	-55.58	-13.00	42.58
2539.80	V	37.00	-63.34	9.46	1.01	-54.89	-13.00	41.89
3386.40	H	33.95	-63.64	10.35	1.18	-54.47	-13.00	41.47
3386.40	V	34.92	-62.62	10.35	1.18	-53.45	-13.00	40.45

PCS Band (PART 24E)**30 MHz-20 GHz:**

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								
181.56	H	41.35	-71.17	0.00	0.25	-71.42	-13.00	58.42
54.05	V	39.87	-63.30	-13.04	0.13	-76.47	-13.00	63.47
3700.40	H	37.86	-59.46	10.60	1.25	-50.11	-13.00	37.11
3700.40	V	36.37	-60.93	10.60	1.25	-51.58	-13.00	38.58
5550.60	H	35.56	-57.70	11.44	1.49	-47.75	-13.00	34.75
5550.60	V	38.61	-54.49	11.44	1.49	-44.54	-13.00	31.54
GSM 1900 Frequency:1880MHz								
182.07	H	41.12	-71.41	0.00	0.25	-71.66	-13.00	58.66
53.65	V	39.67	-63.30	-13.22	0.13	-76.65	-13.00	63.65
3760.00	H	40.45	-55.96	10.66	1.24	-46.54	-13.00	33.54
3760.00	V	39.27	-57.02	10.66	1.24	-47.60	-13.00	34.60
5640.00	H	38.19	-55.26	11.33	1.54	-45.47	-13.00	32.47
5640.00	V	38.45	-54.88	11.33	1.54	-45.09	-13.00	32.09
GSM 1900 Frequency:1909.8MHz								
183.21	H	41.86	-70.69	0.00	0.25	-70.94	-13.00	57.94
53.46	V	39.94	-62.94	-13.31	0.13	-76.38	-13.00	63.38
3819.60	H	39.55	-56.31	10.72	1.29	-46.88	-13.00	33.88
3819.60	V	38.19	-57.53	10.72	1.29	-48.10	-13.00	35.10
5729.40	H	40.85	-52.63	11.22	1.59	-43.00	-13.00	30.00
5729.40	V	43.48	-49.88	11.22	1.59	-40.25	-13.00	27.25

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)			
WCDMA Band II, Frequency:1852.4 MHz								
180.02	H	41.01	-71.48	0.00	0.25	-71.73	-13.00	58.73
54.06	V	39.64	-63.53	-13.03	0.13	-76.69	-13.00	63.69
3704.80	H	36.07	-61.19	10.60	1.25	-51.84	-13.00	38.84
3704.80	V	35.81	-61.42	10.60	1.25	-52.07	-13.00	39.07
5557.20	H	33.96	-59.32	11.43	1.49	-49.38	-13.00	36.38
5557.20	V	35.03	-58.10	11.43	1.49	-48.16	-13.00	35.16
WCDMA Band II, Frequency:1880 MHz								
182.56	H	41.93	-70.61	0.00	0.25	-70.86	-13.00	57.86
54.26	V	39.38	-63.89	-12.94	0.13	-76.96	-13.00	63.96
3760.00	H	36.29	-60.12	10.66	1.24	-50.70	-13.00	37.70
3760.00	V	35.56	-60.73	10.66	1.24	-51.31	-13.00	38.31
5640.00	H	34.56	-58.89	11.33	1.54	-49.10	-13.00	36.10
5640.00	V	34.32	-59.01	11.33	1.54	-49.22	-13.00	36.22
WCDMA Band II, Frequency:1907.6MHz								
182.56	H	41.06	-71.48	0.00	0.25	-71.73	-13.00	58.73
53.51	V	39.19	-63.72	-13.29	0.13	-77.14	-13.00	64.14
3815.20	H	35.40	-60.45	10.72	1.29	-51.02	-13.00	38.02
3815.20	V	35.70	-59.99	10.72	1.29	-50.56	-13.00	37.56
5722.80	H	35.06	-58.43	11.23	1.58	-48.78	-13.00	35.78
5722.80	V	34.89	-58.46	11.23	1.58	-48.81	-13.00	35.81

LTE Bands:
(The Worst modulation and bandwidth was below)

LTE Band 2 (30MHz-20GHz):

E1E Band 1 (50.0MHz to 52.0MHz)								
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,Frequency:1850.7 MHz								
181.92	H	43.55	-68.98	0.00	0.25	-69.23	-13.00	56.23
383.93	V	42.99	-63.64	0.00	0.38	-64.02	-13.00	51.02
3701.40	H	38.32	-58.99	10.60	1.25	-49.64	-13.00	36.64
3701.40	V	36.43	-60.86	10.60	1.25	-51.51	-13.00	38.51
5552.10	H	35.07	-58.20	11.44	1.49	-48.25	-13.00	35.25
5552.10	V	34.25	-58.85	11.44	1.49	-48.90	-13.00	35.90
QPSK,Frequency:1880 MHz								
181.92	H	42.99	-69.54	0.00	0.25	-69.79	-13.00	56.79
54.26	V	39.25	-64.02	-12.94	0.13	-77.09	-13.00	64.09
3760.00	H	36.40	-60.01	10.66	1.24	-50.59	-13.00	37.59
3760.00	V	35.40	-60.89	10.66	1.24	-51.47	-13.00	38.47
5640.00	H	34.69	-58.76	11.33	1.54	-48.97	-13.00	35.97
5640.00	V	35.04	-58.29	11.33	1.54	-48.50	-13.00	35.50
QPSK,Frequency:1909.3 MHz								
182.56	H	44.22	-68.32	0.00	0.25	-68.57	-13.00	55.57
55.03	V	40.10	-63.53	-12.59	0.13	-76.25	-13.00	63.25
3818.60	H	36.22	-59.64	10.72	1.29	-50.21	-13.00	37.21
3818.60	V	35.27	-60.44	10.72	1.29	-51.01	-13.00	38.01
5727.90	H	34.05	-59.43	11.23	1.59	-49.79	-13.00	36.79
5727.90	V	34.54	-58.82	11.23	1.59	-49.18	-13.00	36.18

LTE Band 4 (30MHz-20GHz):

LTE Band 4 (50MHz 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,Frequency:1710.7 MHz								
182.56	H	45.00	-67.54	0.00	0.25	-67.79	-13.00	54.79
383.93	V	44.02	-62.61	0.00	0.38	-62.99	-13.00	49.99
3421.40	H	35.30	-62.46	10.37	1.17	-53.26	-13.00	40.26
3421.40	V	35.65	-62.08	10.37	1.17	-52.88	-13.00	39.88
5132.10	H	34.56	-59.01	11.28	1.47	-49.20	-13.00	36.20
5132.10	V	31.91	-61.55	11.28	1.47	-51.74	-13.00	38.74
QPSK,Frequency:1732.5 MHz								
182.56	H	44.65	-67.89	0.00	0.25	-68.14	-13.00	55.14
47.99	V	40.28	-58.97	-16.87	0.12	-75.96	-13.00	62.96
3465.00	H	36.11	-61.70	10.39	1.15	-52.46	-13.00	39.46
3465.00	V	37.52	-60.25	10.39	1.15	-51.01	-13.00	38.01
5197.50	H	34.39	-59.74	11.32	1.44	-49.86	-13.00	36.86
5197.50	V	34.78	-59.20	11.32	1.44	-49.32	-13.00	36.32
QPSK,Frequency:1752.6MHz								
182.56	H	44.75	-67.79	0.00	0.25	-68.04	-13.00	55.04
46.02	V	39.60	-57.71	-18.80	0.12	-76.63	-13.00	63.63
3505.20	H	35.48	-62.35	10.41	1.18	-53.12	-13.00	40.12
3505.20	V	35.62	-62.15	10.41	1.18	-52.92	-13.00	39.92
5257.80	H	34.68	-59.05	11.35	1.47	-49.17	-13.00	36.17
5257.80	V	34.02	-59.49	11.35	1.47	-49.61	-13.00	36.61

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, Frequency: 824.7 MHz								
181.28	H	42.27	-70.25	0.00	0.25	-70.50	-13.00	57.50
47.99	V	39.45	-59.80	-16.87	0.12	-76.79	-13.00	63.79
1649.40	H	38.24	-66.09	8.68	0.80	-58.21	-13.00	45.21
1649.40	V	38.77	-65.64	8.68	0.80	-57.76	-13.00	44.76
2474.10	H	38.68	-62.10	9.38	1.00	-53.72	-13.00	40.72
2474.10	V	37.98	-62.75	9.38	1.00	-54.37	-13.00	41.37
3298.80	H	34.65	-62.03	10.32	1.15	-52.86	-13.00	39.86
3298.80	V	34.87	-61.57	10.32	1.15	-52.40	-13.00	39.40
QPSK, Frequency: 836.5 MHz								
181.28	H	41.58	-70.94	0.00	0.25	-71.19	-13.00	58.19
44.12	V	39.80	-55.36	-20.96	0.12	-76.44	-13.00	63.44
1673.00	H	37.19	-67.12	8.71	0.85	-59.26	-13.00	46.26
1673.00	V	36.98	-67.43	8.71	0.85	-59.57	-13.00	46.57
2509.50	H	37.63	-62.98	9.42	1.01	-54.57	-13.00	41.57
2509.50	V	36.48	-64.14	9.42	1.01	-55.73	-13.00	42.73
3346.00	H	35.61	-61.55	10.34	1.16	-52.37	-13.00	39.37
3346.00	V	35.11	-61.91	10.34	1.16	-52.73	-13.00	39.73
QPSK, Frequency: 848.3 MHz								
181.92	H	42.42	-70.11	0.00	0.25	-70.36	-13.00	57.36
47.99	V	40.78	-58.47	-16.87	0.12	-75.46	-13.00	62.46
1696.60	H	40.52	-63.77	8.74	0.89	-55.92	-13.00	42.92
1696.60	V	39.53	-64.89	8.74	0.89	-57.04	-13.00	44.04
2544.90	H	41.07	-59.27	9.47	1.01	-50.81	-13.00	37.81
2544.90	V	40.46	-59.84	9.47	1.01	-51.38	-13.00	38.38
3393.20	H	34.92	-62.75	10.36	1.19	-53.58	-13.00	40.58
3393.20	V	33.90	-63.73	10.36	1.19	-54.56	-13.00	41.56

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)			
QPSK, Frequency: 2502.5 MHz								
183.84	H	41.85	-70.72	0.00	0.25	-70.97	-25.00	45.97
66.27	V	39.29	-64.59	-6.98	0.15	-71.72	-25.00	46.72
5005.00	H	34.72	-58.24	11.20	1.47	-48.51	-25.00	23.51
5005.00	V	35.59	-57.23	11.20	1.47	-47.50	-25.00	22.50
7507.50	H	33.70	-56.09	10.90	1.95	-47.14	-25.00	22.14
7507.50	V	33.86	-56.43	10.90	1.95	-47.48	-25.00	22.48
QPSK, Frequency:2535 MHz								
180.02	H	41.87	-70.62	0.00	0.25	-70.87	-25.00	45.87
58.82	V	39.09	-66.36	-10.84	0.14	-77.34	-25.00	52.34
5070.00	H	36.04	-57.15	11.24	1.47	-47.38	-25.00	22.38
5070.00	V	35.22	-57.87	11.24	1.47	-48.10	-25.00	23.10
7605.00	H	34.47	-55.00	10.88	2.01	-46.13	-25.00	21.13
7605.00	V	34.01	-56.18	10.88	2.01	-47.31	-25.00	22.31
QPSK, Frequency: 2567.5 MHz								
178.76	H	41.86	-70.57	0.00	0.25	-70.82	-25.00	45.82
47.99	V	40.06	-59.19	-16.87	0.12	-76.18	-25.00	51.18
5135.00	H	40.43	-53.17	11.28	1.47	-43.36	-25.00	18.36
5135.00	V	38.76	-54.73	11.28	1.47	-44.92	-25.00	19.92
7702.50	H	34.35	-55.17	10.86	1.97	-46.28	-25.00	21.28
7702.50	V	33.88	-56.30	10.86	1.97	-47.41	-25.00	22.41

LTE Band 12 (30MHz-10GHz):

EYE Band 12 (50.0MHz to 300MHz)								
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, Frequency: 699.7 MHz								
183.20	H	44.78	-67.77	0.00	0.25	-68.02	-13.00	55.02
30.21	V	42.22	-37.91	-26.20	0.10	-64.21	-13.00	51.21
1399.40	H	43.31	-60.39	8.22	0.71	-52.88	-13.00	39.88
1399.40	V	45.95	-57.80	8.22	0.71	-50.29	-13.00	37.29
2099.10	H	35.18	-66.70	9.16	0.91	-58.45	-13.00	45.45
2099.10	V	36.91	-64.92	9.16	0.91	-56.67	-13.00	43.67
2798.80	H	53.65	-46.28	9.88	1.04	-37.44	-13.00	24.44
2798.80	V	54.10	-45.70	9.88	1.04	-36.86	-13.00	23.86
QPSK, Frequency: 707.5 MHz								
183.20	H	44.82	-67.73	0.00	0.25	-67.98	-13.00	54.98
31.51	V	42.22	-39.22	-25.61	0.10	-64.93	-13.00	51.93
1415.00	H	42.70	-60.97	8.26	0.72	-53.43	-13.00	40.43
1415.00	V	47.75	-55.97	8.26	0.72	-48.43	-13.00	35.43
2122.50	H	36.17	-65.82	9.17	0.92	-57.57	-13.00	44.57
2122.50	V	36.01	-65.96	9.17	0.92	-57.71	-13.00	44.71
2830.00	H	52.12	-47.68	9.93	1.06	-38.81	-13.00	25.81
2830.00	V	51.95	-47.78	9.93	1.06	-38.91	-13.00	25.91
QPSK, Frequency: 715.3 MHz								
183.20	H	44.50	-68.05	0.00	0.25	-68.30	-13.00	55.30
30.11	V	42.70	-37.33	-26.25	0.10	-63.68	-13.00	50.68
1430.60	H	44.66	-58.97	8.31	0.73	-51.39	-13.00	38.39
1430.60	V	47.67	-56.02	8.31	0.73	-48.44	-13.00	35.44
2145.90	H	36.66	-65.44	9.19	0.93	-57.18	-13.00	44.18
2145.90	V	35.95	-66.16	9.19	0.93	-57.90	-13.00	44.90
2861.20	H	57.20	-42.45	9.98	1.07	-33.54	-13.00	20.54
2861.20	V	57.27	-42.40	9.98	1.07	-33.49	-13.00	20.49

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, Frequency: 706.5 MHz								
183.84	H	44.82	-67.75	0.00	0.25	-68.00	-13.00	55.00
30.42	V	41.74	-38.60	-26.11	0.10	-64.81	-13.00	51.81
1413.00	H	38.75	-64.92	8.26	0.72	-57.38	-13.00	44.38
1413.00	V	45.51	-58.21	8.26	0.72	-50.67	-13.00	37.67
2119.50	H	36.00	-65.97	9.17	0.92	-57.72	-13.00	44.72
2119.50	V	37.34	-64.61	9.17	0.92	-56.36	-13.00	43.36
2826.00	H	49.69	-50.12	9.92	1.06	-41.26	-13.00	28.26
2826.00	V	48.34	-51.40	9.92	1.06	-42.54	-13.00	29.54
QPSK, Frequency:710 MHz								
183.20	H	44.53	-68.02	0.00	0.25	-68.27	-13.00	55.27
30.75	V	42.18	-38.49	-25.96	0.10	-64.55	-13.00	51.55
1420.00	H	38.32	-65.34	8.28	0.73	-57.79	-13.00	44.79
1420.00	V	41.55	-62.16	8.28	0.73	-54.61	-13.00	41.61
2130.00	H	35.56	-66.46	9.18	0.92	-58.20	-13.00	45.20
2130.00	V	36.34	-65.67	9.18	0.92	-57.41	-13.00	44.41
2840.00	H	48.31	-51.44	9.94	1.06	-42.56	-13.00	29.56
2840.00	V	48.32	-51.39	9.94	1.06	-42.51	-13.00	29.51
QPSK, Frequency: 713.5 MHz								
183.56	H	44.28	-68.28	0.00	0.25	-68.53	-13.00	55.53
30.32	V	42.77	-37.47	-26.15	0.10	-63.72	-13.00	50.72
1427.00	H	38.96	-64.68	8.30	0.73	-57.11	-13.00	44.11
1427.00	V	41.46	-62.23	8.30	0.73	-54.66	-13.00	41.66
2140.50	H	35.75	-66.32	9.18	0.93	-58.07	-13.00	45.07
2140.50	V	36.16	-65.92	9.18	0.93	-57.67	-13.00	44.67
2854.00	H	51.28	-48.41	9.97	1.07	-39.51	-13.00	26.51
2854.00	V	51.71	-47.97	9.97	1.07	-39.07	-13.00	26.07

LTE Band 25 (30MHz-20GHz):

EYE Band 25 (50MHz 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, Frequency: 1850.7 MHz								
183.20	H	44.55	-68.00	0.00	0.25	-68.25	-13.00	55.25
181.92	V	39.61	-70.12	0.00	0.25	-70.37	-13.00	57.37
3701.40	H	36.82	-60.49	10.60	1.25	-51.14	-13.00	38.14
3701.40	V	36.79	-60.50	10.60	1.25	-51.15	-13.00	38.15
5552.10	H	34.78	-58.49	11.44	1.49	-48.54	-13.00	35.54
5552.10	V	34.33	-58.77	11.44	1.49	-48.82	-13.00	35.82
QPSK, Frequency:1882.5 MHz								
183.20	H	44.17	-68.38	0.00	0.25	-68.63	-13.00	55.63
383.93	V	42.25	-64.38	0.00	0.38	-64.76	-13.00	51.76
3765.00	H	35.62	-60.71	10.67	1.25	-51.29	-13.00	38.29
3765.00	V	34.99	-61.22	10.67	1.25	-51.80	-13.00	38.80
5647.50	H	35.01	-58.44	11.32	1.55	-48.67	-13.00	35.67
5647.50	V	34.56	-58.77	11.32	1.55	-49.00	-13.00	36.00
QPSK, Frequency: 1914.3 MHz								
183.84	H	44.43	-68.14	0.00	0.25	-68.39	-13.00	55.39
47.83	V	39.15	-59.94	-17.03	0.12	-77.09	-13.00	64.09
3828.60	H	36.84	-59.06	10.73	1.28	-49.61	-13.00	36.61
3828.60	V	35.83	-59.94	10.73	1.28	-50.49	-13.00	37.49
5742.90	H	34.46	-59.02	11.21	1.60	-49.41	-13.00	36.41
5742.90	V	35.12	-58.24	11.21	1.60	-48.63	-13.00	35.63

LTE Band 26 (30MHz-10GHz):

LTE Band 20 (800MHz TDD FDD)								
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, Frequency: 814.7 MHz								
182.56	H	44.12	-68.42	0.00	0.25	-68.67	-13.00	55.67
47.99	V	39.69	-59.56	-16.87	0.12	-76.55	-13.00	63.55
1629.40	H	38.41	-65.94	8.66	0.81	-58.09	-13.00	45.09
1629.40	V	37.03	-67.38	8.66	0.81	-59.53	-13.00	46.53
2444.10	H	38.91	-61.98	9.37	1.00	-53.61	-13.00	40.61
2444.10	V	37.19	-63.56	9.37	1.00	-55.19	-13.00	42.19
3258.80	H	36.26	-60.60	10.30	1.17	-51.47	-13.00	38.47
3258.80	V	34.75	-61.86	10.30	1.17	-52.73	-13.00	39.73
QPSK, Frequency:831.5 MHz								
183.84	H	44.17	-68.40	0.00	0.25	-68.65	-13.00	55.65
47.99	V	40.61	-58.64	-16.87	0.12	-75.63	-13.00	62.63
1663.00	H	36.43	-67.89	8.70	0.83	-60.02	-13.00	47.02
1663.00	V	36.99	-67.42	8.70	0.83	-59.55	-13.00	46.55
2494.50	H	36.59	-64.11	9.40	1.01	-55.72	-13.00	42.72
2494.50	V	37.23	-63.48	9.40	1.01	-55.09	-13.00	42.09
3326.00	H	34.41	-62.54	10.33	1.16	-53.37	-13.00	40.37
3326.00	V	34.07	-62.70	10.33	1.16	-53.53	-13.00	40.53
QPSK, Frequency: 848.3 MHz								
182.56	H	43.58	-68.96	0.00	0.25	-69.21	-13.00	56.21
46.99	V	39.52	-58.74	-17.85	0.12	-76.71	-13.00	63.71
1696.60	H	40.69	-63.60	8.74	0.89	-55.75	-13.00	42.75
1696.60	V	40.27	-64.15	8.74	0.89	-56.30	-13.00	43.30
2544.90	H	41.12	-59.22	9.47	1.01	-50.76	-13.00	37.76
2544.90	V	42.07	-58.23	9.47	1.01	-49.77	-13.00	36.77
3393.20	H	34.92	-62.75	10.36	1.19	-53.58	-13.00	40.58
3393.20	V	34.19	-63.44	10.36	1.19	-54.27	-13.00	41.27

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)			
QPSK, Frequency: 2572.5 MHz								
183.20	H	41.71	-70.84	0.00	0.25	-71.09	-25.00	46.09
90.22	V	39.64	-69.64	0.00	0.18	-69.82	-25.00	44.82
5145.00	H	40.45	-53.23	11.29	1.44	-43.38	-25.00	18.38
5145.00	V	40.04	-53.53	11.29	1.44	-43.68	-25.00	18.68
7717.50	H	33.51	-56.00	10.86	1.99	-47.13	-25.00	22.13
7717.50	V	33.71	-56.42	10.86	1.99	-47.55	-25.00	22.55
QPSK, Frequency:2595 MHz								
183.20	H	42.87	-69.68	0.00	0.25	-69.93	-25.00	44.93
807.43	V	42.08	-56.49	0.00	0.56	-57.05	-25.00	32.05
5190.00	H	44.99	-49.08	11.31	1.44	-39.21	-25.00	14.21
5190.00	V	41.08	-52.84	11.31	1.44	-42.97	-25.00	17.97
7785.00	H	33.97	-55.52	10.84	1.99	-46.67	-25.00	21.67
7785.00	V	33.79	-56.13	10.84	1.99	-47.28	-25.00	22.28
QPSK, Frequency: 2617.5 MHz								
183.20	H	41.62	-70.93	0.00	0.25	-71.18	-25.00	46.18
47.99	V	39.99	-59.26	-16.87	0.12	-76.25	-25.00	51.25
5235.00	H	47.94	-45.96	11.34	1.46	-36.08	-25.00	11.08
5235.00	V	48.10	-45.61	11.34	1.46	-35.73	-25.00	10.73
7852.50	H	33.49	-55.70	10.83	2.03	-46.90	-25.00	21.90
7852.50	V	33.72	-55.86	10.83	2.03	-47.06	-25.00	22.06

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, Frequency: 2537.5 MHz								
177.51	H	41.31	-71.07	0.00	0.25	-71.32	-25.00	46.32
383.93	V	40.58	-66.05	0.00	0.38	-66.43	-25.00	41.43
7075.00	H	34.68	-55.09	11.16	1.91	-45.84	-25.00	20.84
7075.00	V	35.48	-54.20	11.16	1.91	-44.95	-25.00	19.95
10612.50	H	34.03	-51.83	11.40	2.49	-42.92	-25.00	17.92
10612.50	V	33.48	-52.53	11.40	2.49	-43.62	-25.00	18.62
QPSK, Frequency:2595 MHz								
183.20	H	41.13	-71.42	0.00	0.25	-71.67	-25.00	46.67
88.34	V	38.88	-70.33	0.00	0.17	-70.50	-25.00	45.50
5190.00	H	44.32	-49.75	11.31	1.44	-39.88	-25.00	14.88
5190.00	V	41.65	-52.27	11.31	1.44	-42.40	-25.00	17.40
7785.00	H	33.83	-55.66	10.84	1.99	-46.81	-25.00	21.81
7785.00	V	33.69	-56.23	10.84	1.99	-47.38	-25.00	22.38
QPSK, Frequency: 2652.5 MHz								
183.20	H	40.99	-71.56	0.00	0.25	-71.81	-25.00	46.81
54.45	V	38.75	-64.61	-12.85	0.13	-77.59	-25.00	52.59
5305.00	H	38.09	-55.35	11.38	1.46	-45.43	-25.00	20.43
5305.00	V	38.24	-54.94	11.38	1.46	-45.02	-25.00	20.02
7957.50	H	38.38	-50.04	10.81	2.09	-41.32	-25.00	16.32
7957.50	V	33.68	-55.19	10.81	2.09	-46.47	-25.00	21.47

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

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