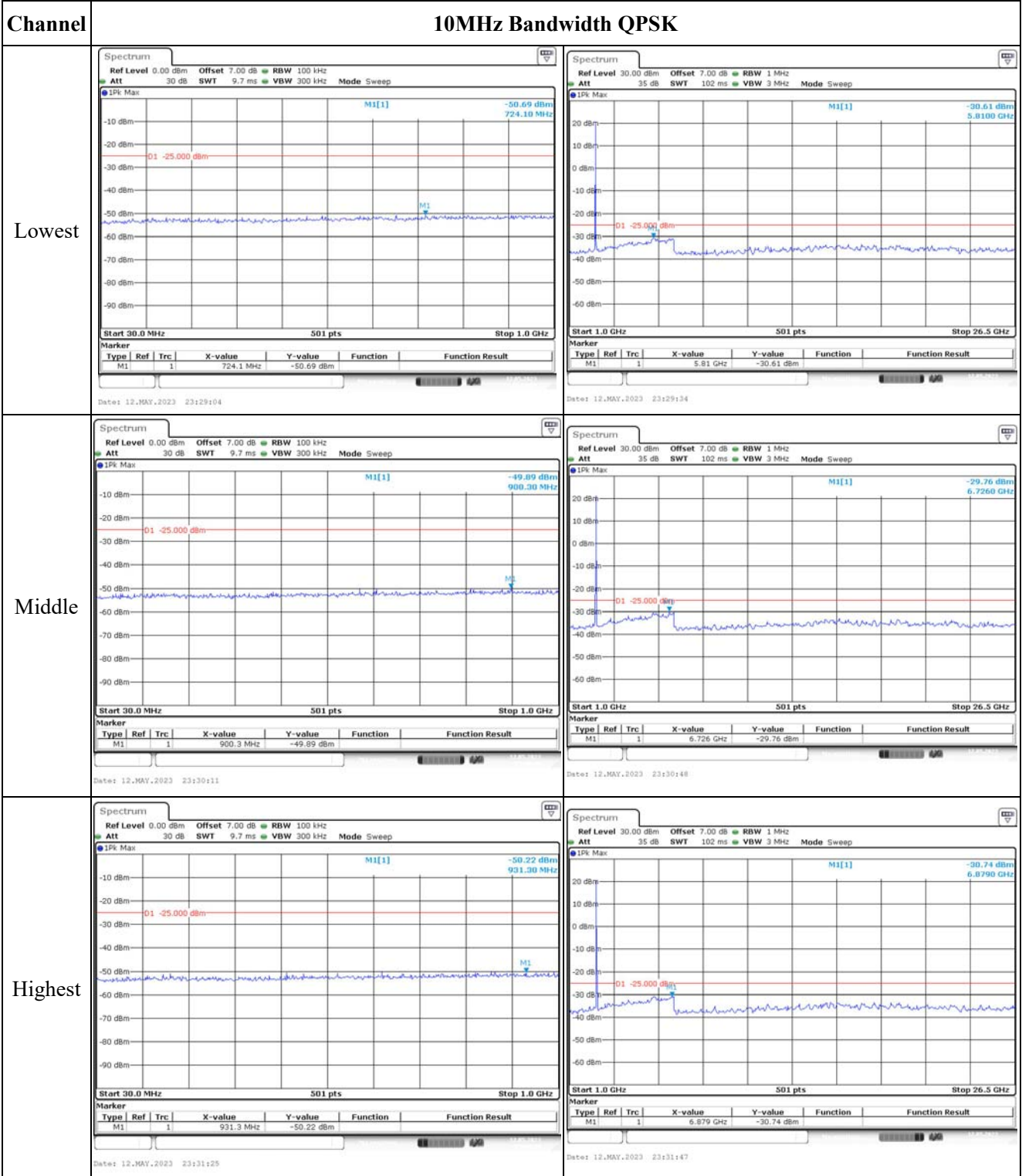


Spurious Emissions at Antenna Terminal

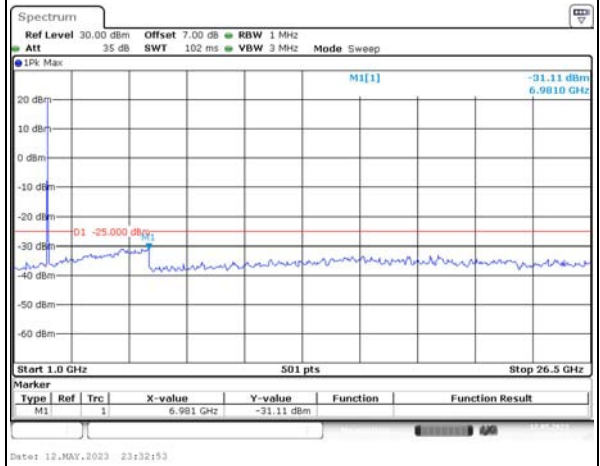
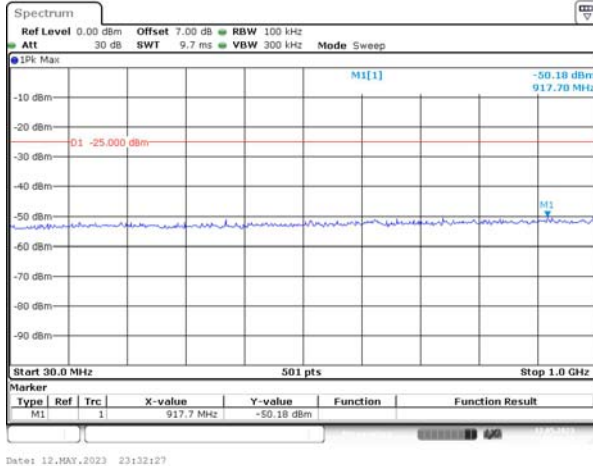


Spurious Emissions at Antenna Terminal

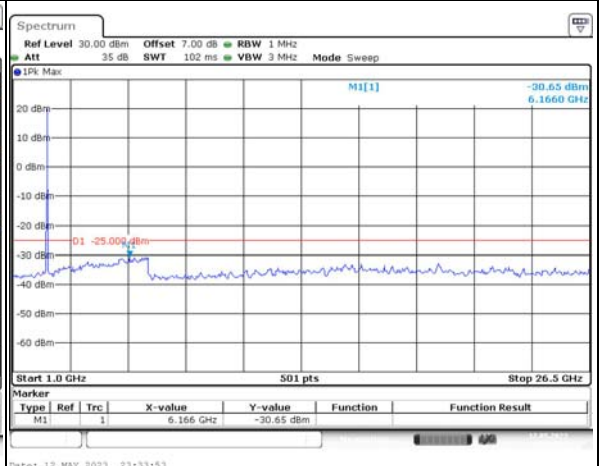
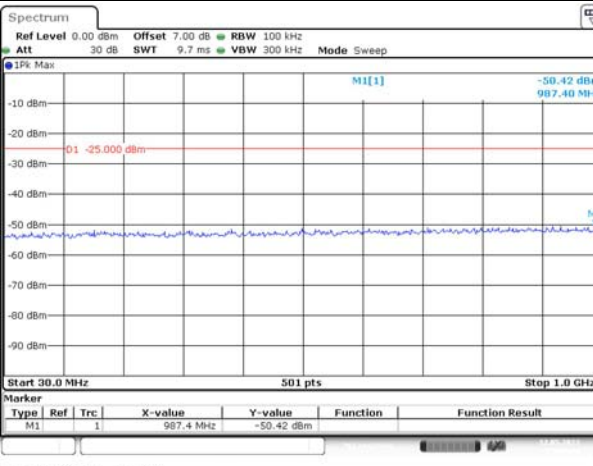
Channel

15MHz Bandwidth QPSK

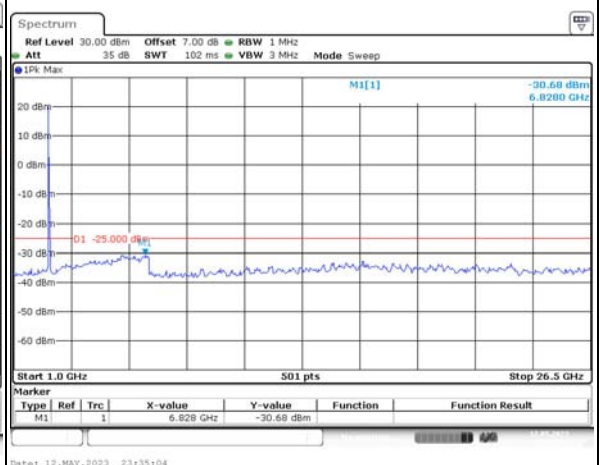
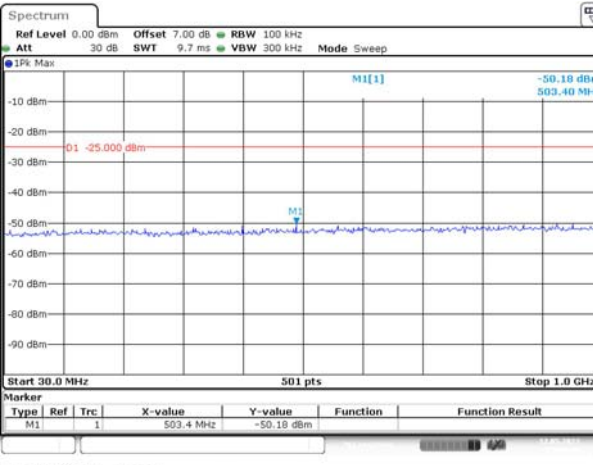
Lowest



Middle



Highest

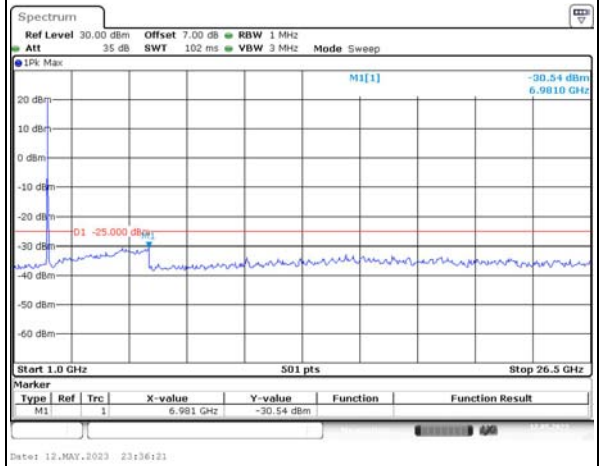
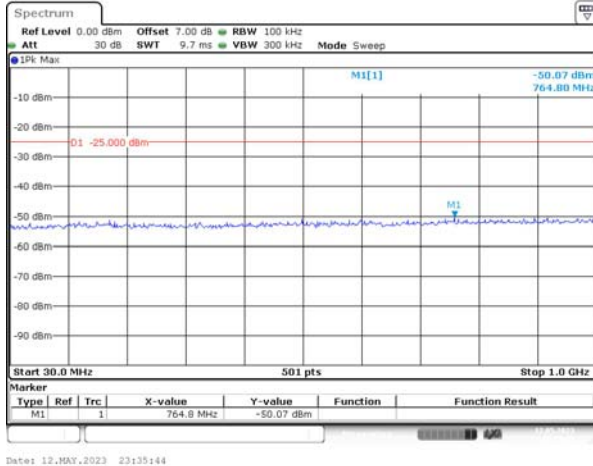


Spurious Emissions at Antenna Terminal

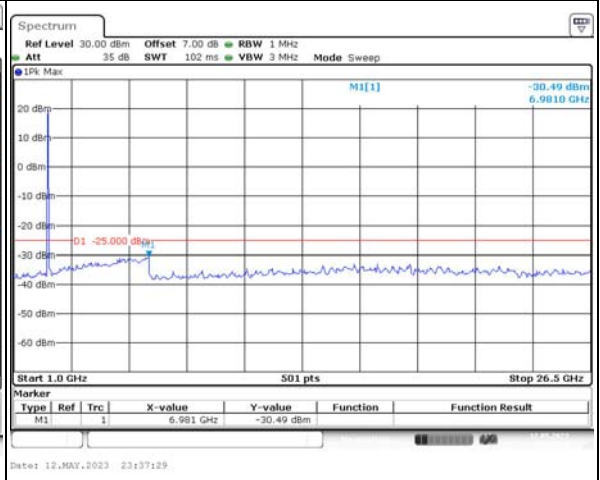
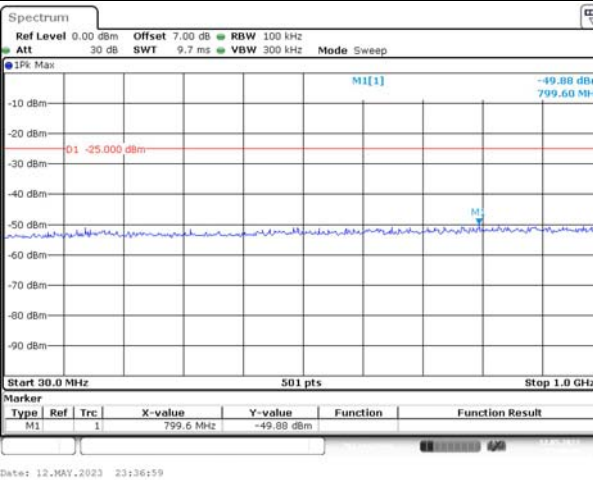
Channel

20MHz Bandwidth QPSK

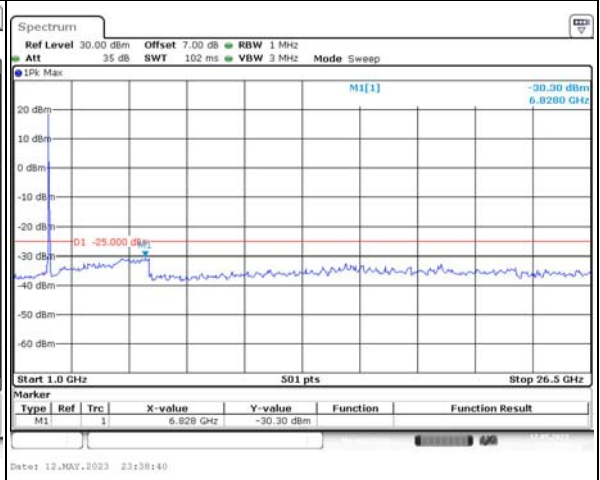
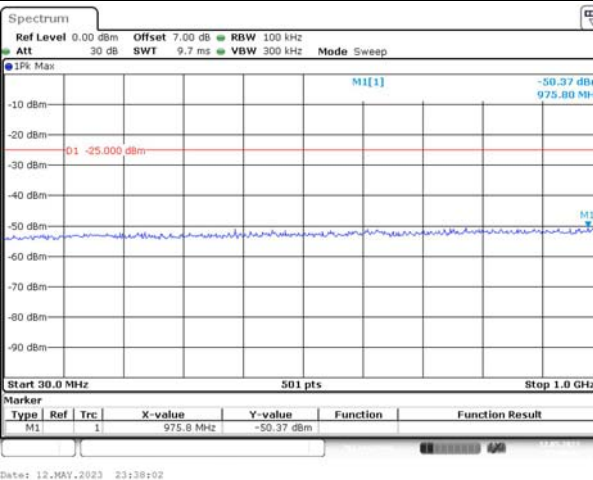
Lowest



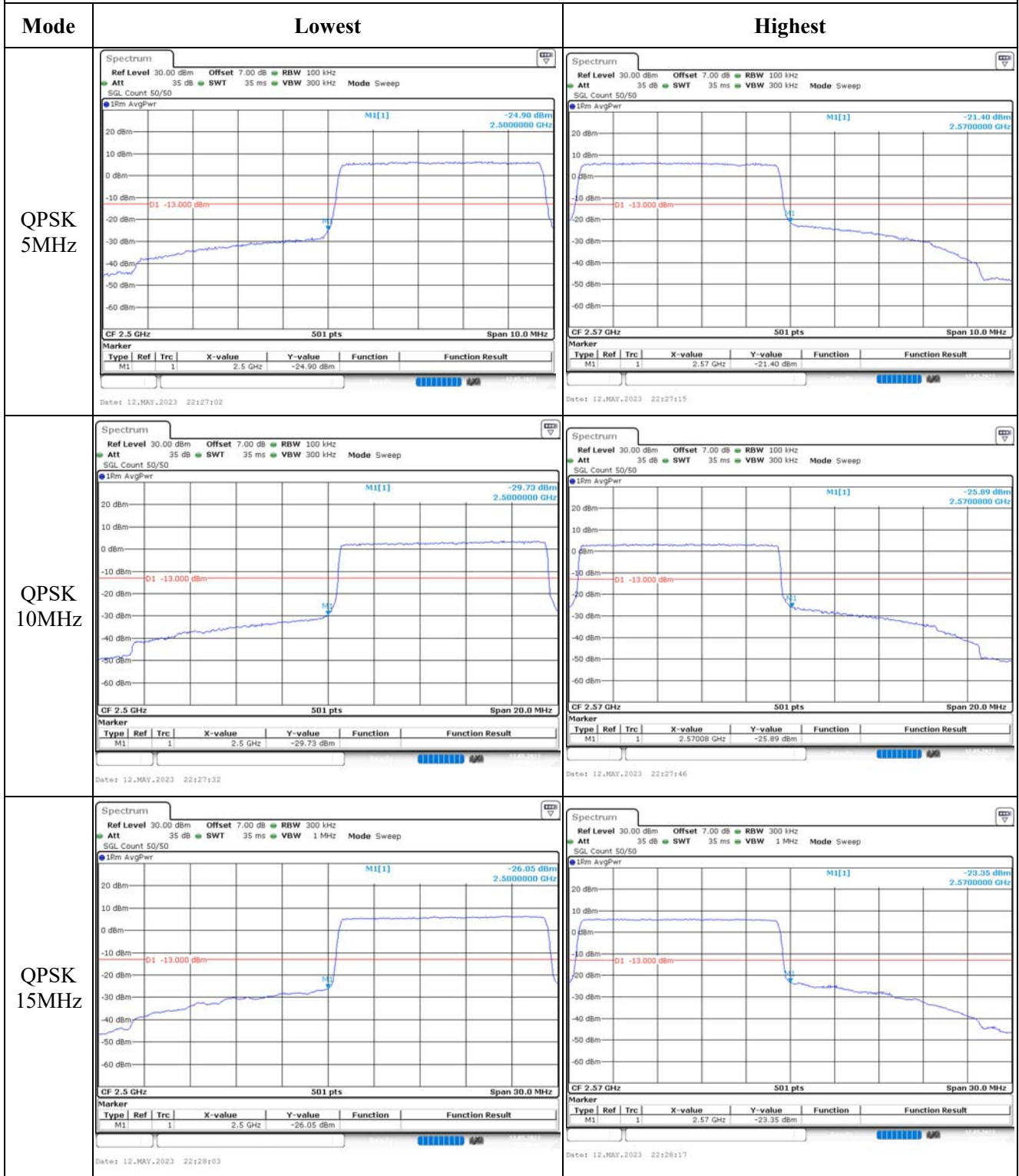
Middle



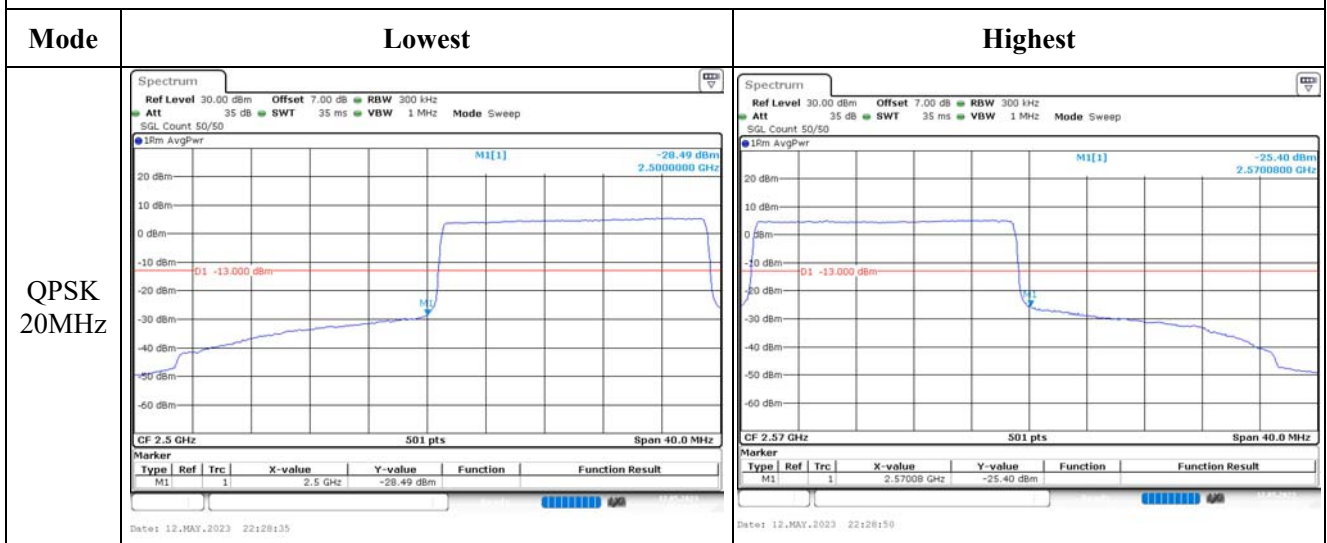
Highest



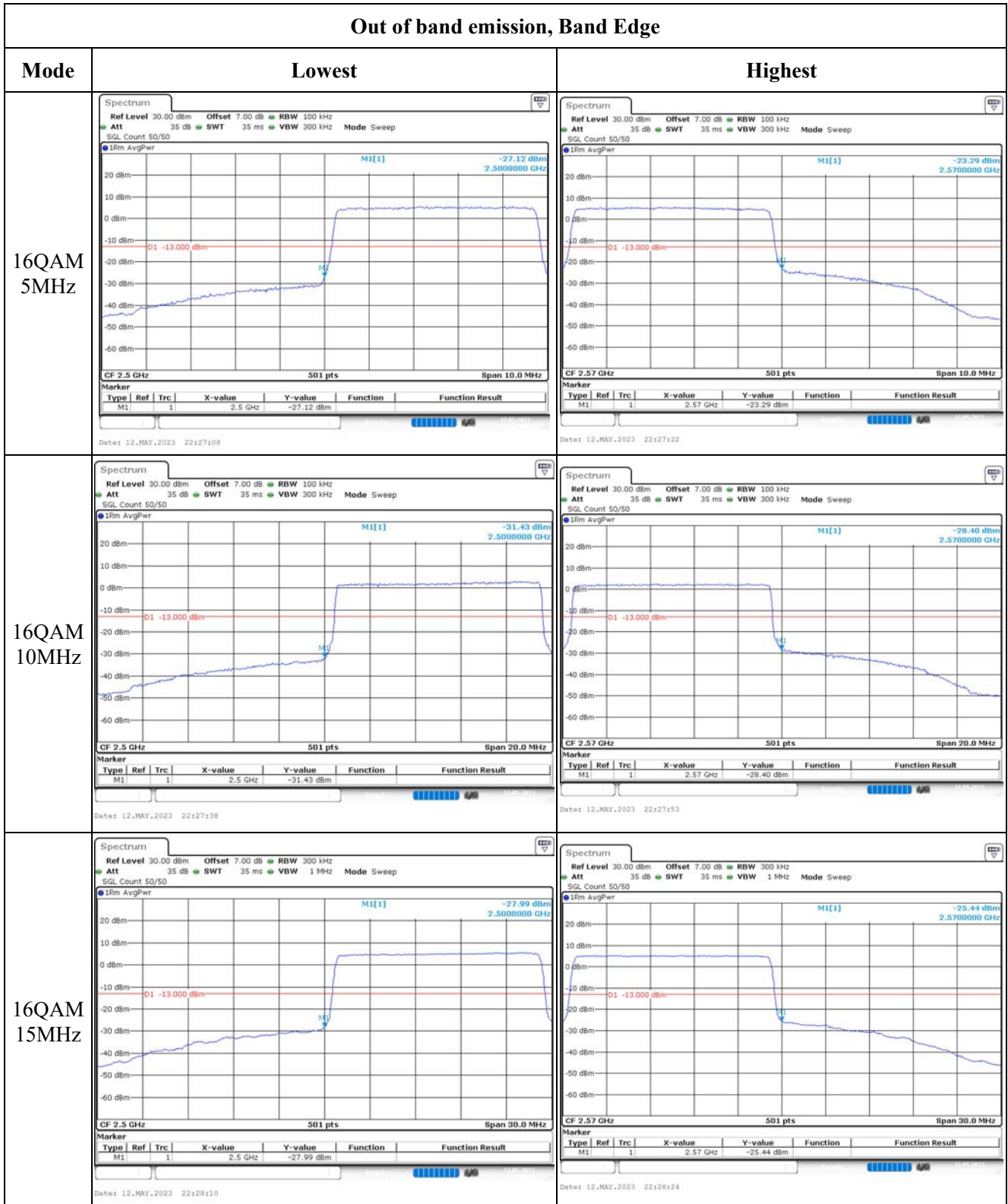
Out of band emission, Band Edge



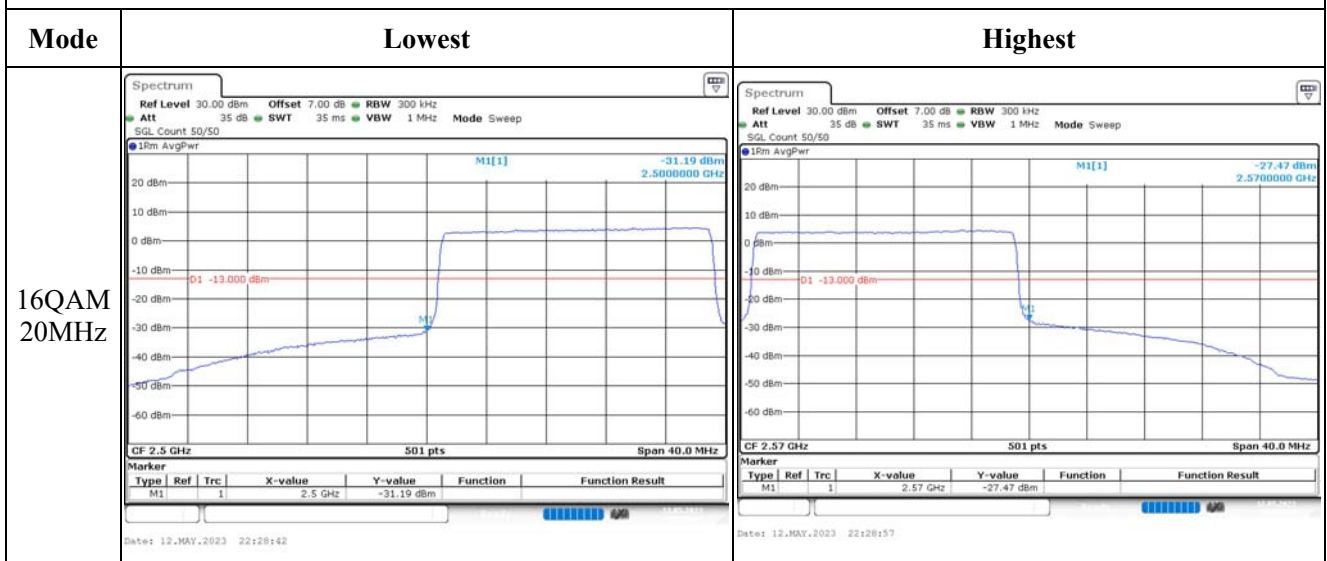
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.10 Radiated Spurious Emissions

Serial Number:	25FP-1	Test Date:	2023/05/09~2023/05/14
Test Site:	966-1, 966-2	Test Mode:	Transmitting
Tester:	Mack Huang, Vic Du	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.6~26	Relative Humidity: (%)	62	ATM Pressure: (kPa)	100.6~100.7
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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
EMCO	Adjustable Dipole Antenna	3121C	9109-756	N/A	N/A
Agilent	Signal Generator	E8247C	MY43321352	2022/11/18	2023/11/17
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	2022/11/09	2023/11/08
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	2022/11/18	2023/11/17
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	2022/11/09	2023/11/08
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								
442.02	H	20.92	-56.09	0.00	0.42	-56.51	-13.00	43.51
521.13	V	20.67	-50.94	0.00	0.41	-51.35	-13.00	38.35
1648.400	H	53.50	-50.83	8.68	0.80	-42.95	-13.00	29.95
1648.400	V	52.35	-52.06	8.68	0.80	-44.18	-13.00	31.18
2472.600	H	40.56	-60.22	9.38	1.00	-51.84	-13.00	38.84
2472.600	V	45.00	-55.73	9.38	1.00	-47.35	-13.00	34.35
3296.800	H	43.02	-53.66	10.32	1.15	-44.49	-13.00	31.49
3296.800	V	44.24	-52.20	10.32	1.15	-43.03	-13.00	30.03
GSM 850 Frequency:836.6MHz								
654.40	H	20.90	-52.67	0.00	0.52	-53.19	-13.00	40.19
915.99	V	22.26	-43.56	0.00	0.58	-44.14	-13.00	31.14
1673.200	H	48.59	-55.72	8.71	0.85	-47.86	-13.00	34.86
1673.200	V	48.62	-55.79	8.71	0.85	-47.93	-13.00	34.93
2509.800	H	39.09	-61.52	9.42	1.01	-53.11	-13.00	40.11
2509.800	V	44.59	-56.03	9.42	1.01	-47.62	-13.00	34.62
3346.400	H	43.43	-53.74	10.34	1.16	-44.56	-13.00	31.56
3346.400	V	42.82	-54.21	10.34	1.16	-45.03	-13.00	32.03
GSM 850 Frequency:848.8MHz								
534.08	H	20.58	-54.58	0.00	0.46	-55.04	-13.00	42.04
724.38	V	21.03	-48.36	0.00	0.51	-48.87	-13.00	35.87
1697.600	H	49.31	-54.98	8.74	0.90	-47.14	-13.00	34.14
1697.600	V	47.17	-57.25	8.74	0.90	-49.41	-13.00	36.41
2546.400	H	41.55	-58.78	9.47	1.01	-50.32	-13.00	37.32
2546.400	V	44.53	-55.75	9.47	1.01	-47.29	-13.00	34.29
3395.200	H	43.53	-54.16	10.36	1.19	-44.99	-13.00	31.99
3395.200	V	38.26	-59.40	10.36	1.19	-50.23	-13.00	37.23

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)			
WCDMA Band 5 Frequency:826.4 MHz								
724.50	H	21.20	-51.63	0.00	0.51	-52.14	-13.00	39.14
915.98	V	28.02	-37.80	0.00	0.58	-38.38	-13.00	25.38
1652.800	H	35.45	-68.88	8.68	0.81	-61.01	-13.00	48.01
1652.800	V	36.17	-68.24	8.68	0.81	-60.37	-13.00	47.37
2479.200	H	35.39	-65.37	9.39	1.01	-56.99	-13.00	43.99
2479.200	V	35.46	-65.27	9.39	1.01	-56.89	-13.00	43.89
3305.600	H	36.21	-60.52	10.32	1.15	-51.35	-13.00	38.35
3305.600	V	36.01	-60.49	10.32	1.15	-51.32	-13.00	38.32
WCDMA Band 5 Frequency:836.6MHz								
932.17	H	21.59	-46.39	0.00	0.64	-47.03	-13.00	34.03
881.41	V	25.81	-40.62	0.00	0.59	-41.21	-13.00	28.21
1673.200	H	36.45	-67.86	8.71	0.85	-60.00	-13.00	47.00
1673.200	V	35.78	-68.63	8.71	0.85	-60.77	-13.00	47.77
2509.800	H	36.35	-64.26	9.42	1.01	-55.85	-13.00	42.85
2509.800	V	36.12	-64.50	9.42	1.01	-56.09	-13.00	43.09
3346.400	H	35.70	-61.47	10.34	1.16	-52.29	-13.00	39.29
3346.400	V	35.01	-62.02	10.34	1.16	-52.84	-13.00	39.84
WCDMA Band 5 Frequency:846.6MHz								
729.47	H	20.61	-52.11	0.00	0.53	-52.64	-13.00	39.64
906.42	V	28.91	-37.09	0.00	0.55	-37.64	-13.00	24.64
1693.200	H	35.45	-68.85	8.73	0.89	-61.01	-13.00	48.01
1693.200	V	36.11	-68.31	8.73	0.89	-60.47	-13.00	47.47
2539.800	H	36.03	-64.35	9.46	1.01	-55.90	-13.00	42.90
2539.800	V	35.74	-64.60	9.46	1.01	-56.15	-13.00	43.15
3386.400	H	35.63	-61.96	10.35	1.18	-52.79	-13.00	39.79
3386.400	V	36.27	-61.27	10.35	1.18	-52.10	-13.00	39.10

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

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
GSM 1900 Frequency:1850.2MHz								
148.44	H	38.81	-73.19	0.00	0.22	-73.41	-13.00	60.41
46.02	V	49.73	-47.57	-18.80	0.12	-66.49	-13.00	53.49
3700.400	H	36.01	-61.31	10.60	1.25	-51.96	-13.00	38.96
3700.400	V	35.79	-61.51	10.60	1.25	-52.16	-13.00	39.16
5550.600	H	35.36	-57.90	11.44	1.49	-47.95	-13.00	34.95
5550.600	V	36.24	-56.86	11.44	1.49	-46.91	-13.00	33.91
GSM 1900 Frequency:1880MHz								
147.40	H	39.08	-72.96	0.00	0.23	-73.19	-13.00	60.19
45.06	V	48.96	-47.40	-19.74	0.12	-67.26	-13.00	54.26
3760.000	H	36.58	-59.83	10.66	1.24	-50.41	-13.00	37.41
3760.000	V	36.45	-59.84	10.66	1.24	-50.42	-13.00	37.42
5640.000	H	35.23	-58.22	11.33	1.54	-48.43	-13.00	35.43
5640.000	V	36.01	-57.32	11.33	1.54	-47.53	-13.00	34.53
GSM 1900 Frequency:1909.8MHz								
148.90	H	39.01	-72.98	0.00	0.22	-73.20	-13.00	60.20
45.38	V	48.34	-48.33	-19.43	0.12	-67.88	-13.00	54.88
3819.600	H	37.01	-58.85	10.72	1.29	-49.42	-13.00	36.42
3819.600	V	36.23	-59.49	10.72	1.29	-50.06	-13.00	37.06
5729.400	H	36.27	-57.21	11.22	1.59	-47.58	-13.00	34.58
5729.400	V	35.77	-57.59	11.22	1.59	-47.96	-13.00	34.96

30 MHz-20 GHz:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ 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								
145.86	H	39.46	-72.63	0.00	0.22	-72.85	-13.00	59.85
45.69	V	50.45	-46.53	-19.12	0.12	-65.77	-13.00	52.77
3704.800	H	36.25	-61.01	10.60	1.25	-51.66	-13.00	38.66
3704.800	V	35.44	-61.79	10.60	1.25	-52.44	-13.00	39.44
5557.200	H	35.39	-57.89	11.43	1.49	-47.95	-13.00	34.95
5557.200	V	36.02	-57.11	11.43	1.49	-47.17	-13.00	34.17
WCDMA Band II, Frequency:1880 MHz								
53.32	H	36.75	-65.12	-13.37	0.13	-78.62	-13.00	65.62
44.28	V	49.47	-45.89	-20.76	0.12	-66.77	-13.00	53.77
3760.000	H	37.58	-58.83	10.66	1.24	-49.41	-13.00	36.41
3760.000	V	36.45	-59.84	10.66	1.24	-50.42	-13.00	37.42
5640.000	H	36.31	-57.14	11.33	1.54	-47.35	-13.00	34.35
5640.000	V	35.89	-57.44	11.33	1.54	-47.65	-13.00	34.65
WCDMA Band II, Frequency:1907.6MHz								
52.21	H	38.28	-63.25	-13.88	0.13	-77.26	-13.00	64.26
44.12	V	47.71	-47.45	-20.96	0.12	-68.53	-13.00	55.53
3815.200	H	37.46	-58.39	10.72	1.29	-48.96	-13.00	35.96
3815.200	V	36.56	-59.13	10.72	1.29	-49.70	-13.00	36.70
5722.800	H	36.01	-57.48	11.23	1.58	-47.83	-13.00	34.83
5722.800	V	35.96	-57.39	11.23	1.58	-47.74	-13.00	34.74

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

LTE Band 2 (30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency: 1850.7 MHz								
39.58	H	39.20	-44.61	-26.20	0.11	-70.92	-13.00	57.92
45.70	V	49.81	-47.18	-19.12	0.12	-66.42	-13.00	53.42
3701.400	H	44.32	-52.99	10.60	1.25	-43.64	-13.00	30.64
3701.400	V	42.39	-54.90	10.60	1.25	-45.55	-13.00	32.55
5552.100	H	41.78	-51.49	11.44	1.49	-41.54	-13.00	28.54
5552.100	V	42.29	-50.81	11.44	1.49	-40.86	-13.00	27.86
QPSK, Frequency: 1880 MHz								
145.35	H	39.12	-72.99	0.00	0.23	-73.22	-13.00	60.22
40.28	V	50.07	-40.11	-26.04	0.11	-66.26	-13.00	53.26
3760.000	H	41.12	-55.29	10.66	1.24	-45.87	-13.00	32.87
3760.000	V	38.78	-57.51	10.66	1.24	-48.09	-13.00	35.09
5640.000	H	40.36	-53.09	11.33	1.54	-43.30	-13.00	30.30
5640.000	V	41.44	-51.89	11.33	1.54	-42.10	-13.00	29.10
QPSK, Frequency: 1909.3 MHz								
51.48	H	38.34	-62.98	-14.22	0.13	-77.33	-13.00	64.33
40.28	V	49.56	-40.62	-26.04	0.11	-66.77	-13.00	53.77
3818.600	H	39.78	-56.08	10.72	1.29	-46.65	-13.00	33.65
3818.600	V	41.21	-54.50	10.72	1.29	-45.07	-13.00	32.07
5727.900	H	40.33	-53.15	11.23	1.59	-43.51	-13.00	30.51
5727.900	V	42.08	-51.28	11.23	1.59	-41.64	-13.00	28.64

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)			
QPSK, Frequency: 1710.7 MHz								
46.67	H	37.00	-58.14	-18.17	0.12	-76.43	-13.00	63.43
40.42	V	50.12	-40.24	-25.85	0.11	-66.20	-13.00	53.20
3421.400	H	45.34	-52.42	10.37	1.17	-43.22	-13.00	30.22
3421.400	V	46.12	-51.61	10.37	1.17	-42.41	-13.00	29.41
5132.100	H	40.13	-53.44	11.28	1.47	-43.63	-13.00	30.63
5132.100	V	42.37	-51.09	11.28	1.47	-41.28	-13.00	28.28
QPSK, Frequency: 1732.5 MHz								
146.89	H	37.98	-74.08	0.00	0.23	-74.31	-13.00	61.31
45.69	V	49.27	-47.71	-19.12	0.12	-66.95	-13.00	53.95
3465.000	H	44.12	-53.69	10.39	1.15	-44.45	-13.00	31.45
3465.000	V	42.37	-55.40	10.39	1.15	-46.16	-13.00	33.16
5197.500	H	39.78	-54.35	11.32	1.44	-44.47	-13.00	31.47
5197.500	V	41.13	-52.85	11.32	1.44	-42.97	-13.00	29.97
QPSK, Frequency: 1754.3MHz								
147.40	H	37.94	-74.10	0.00	0.23	-74.33	-13.00	61.33
45.38	V	49.39	-47.28	-19.43	0.12	-66.83	-13.00	53.83
3508.600	H	45.27	-52.55	10.41	1.19	-43.33	-13.00	30.33
3508.600	V	46.13	-51.63	10.41	1.19	-42.41	-13.00	29.41
5262.900	H	42.10	-51.60	11.36	1.47	-41.71	-13.00	28.71
5262.900	V	41.39	-52.08	11.36	1.47	-42.19	-13.00	29.19

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								
241.13	H	20.49	-60.38	0.00	0.29	-60.67	-13.00	47.67
719.30	V	20.74	-48.76	0.00	0.49	-49.25	-13.00	36.25
1649.400	H	36.25	-68.08	8.68	0.80	-60.20	-13.00	47.20
1649.400	V	35.44	-68.97	8.68	0.80	-61.09	-13.00	48.09
2474.100	H	41.12	-59.66	9.38	1.00	-51.28	-13.00	38.28
2474.100	V	38.28	-62.45	9.38	1.00	-54.07	-13.00	41.07
3298.800	H	37.10	-59.58	10.32	1.15	-50.41	-13.00	37.41
3298.800	V	36.23	-60.21	10.32	1.15	-51.04	-13.00	38.04
QPSK, Frequency: 836.5 MHz								
716.85	H	20.40	-52.58	0.00	0.50	-53.08	-13.00	40.08
704.35	V	21.39	-48.44	0.00	0.55	-48.99	-13.00	35.99
1673.000	H	35.64	-68.67	8.71	0.85	-60.81	-13.00	47.81
1673.000	V	36.01	-68.40	8.71	0.85	-60.54	-13.00	47.54
2509.500	H	42.56	-58.05	9.42	1.01	-49.64	-13.00	36.64
2509.500	V	39.45	-61.17	9.42	1.01	-52.76	-13.00	39.76
3346.000	H	38.45	-58.71	10.34	1.16	-49.53	-13.00	36.53
3346.000	V	37.11	-59.91	10.34	1.16	-50.73	-13.00	37.73
QPSK, Frequency: 848.3 MHz								
989.39	H	21.55	-45.03	0.00	0.64	-45.67	-13.00	32.67
729.36	V	21.01	-48.27	0.00	0.53	-48.80	-13.00	35.80
1696.600	H	36.78	-67.51	8.74	0.89	-59.66	-13.00	46.66
1696.600	V	36.58	-67.84	8.74	0.89	-59.99	-13.00	46.99
2544.900	H	42.39	-57.95	9.47	1.01	-49.49	-13.00	36.49
2544.900	V	40.12	-60.18	9.47	1.01	-51.72	-13.00	38.72
3393.200	H	37.45	-60.22	10.36	1.19	-51.05	-13.00	38.05
3393.200	V	36.39	-61.24	10.36	1.19	-52.07	-13.00	39.07

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								
252.95	H	39.64	-72.19	0.00	0.30	-72.49	-25.00	47.49
45.38	V	49.94	-46.73	-19.43	0.12	-66.28	-25.00	41.28
5005.000	H	39.78	-53.18	11.20	1.47	-43.45	-25.00	18.45
5005.000	V	41.21	-51.61	11.20	1.47	-41.88	-25.00	16.88
7507.500	H	38.12	-51.67	10.90	1.95	-42.72	-25.00	17.72
7507.500	V	36.44	-53.85	10.90	1.95	-44.90	-25.00	19.90
QPSK, Frequency:2535 MHz								
390.72	H	37.66	-71.69	0.00	0.38	-72.07	-25.00	47.07
46.50	V	48.77	-49.01	-18.33	0.12	-67.46	-25.00	42.46
5070.000	H	41.07	-52.12	11.24	1.47	-42.35	-25.00	17.35
5070.000	V	42.13	-50.96	11.24	1.47	-41.19	-25.00	16.19
7605.000	H	37.11	-52.36	10.88	2.01	-43.49	-25.00	18.49
7605.000	V	36.05	-54.14	10.88	2.01	-45.27	-25.00	20.27
QPSK, Frequency: 2567.5 MHz								
721.73	H	38.98	-65.13	0.00	0.50	-65.63	-25.00	40.63
41.42	V	50.51	-41.15	-24.52	0.12	-65.79	-25.00	40.79
5135.000	H	40.05	-53.55	11.28	1.47	-43.74	-25.00	18.74
5135.000	V	41.11	-52.38	11.28	1.47	-42.57	-25.00	17.57
7702.500	H	38.00	-51.52	10.86	1.97	-42.63	-25.00	17.63
7702.500	V	39.58	-50.60	10.86	1.97	-41.71	-25.00	16.71

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 =====