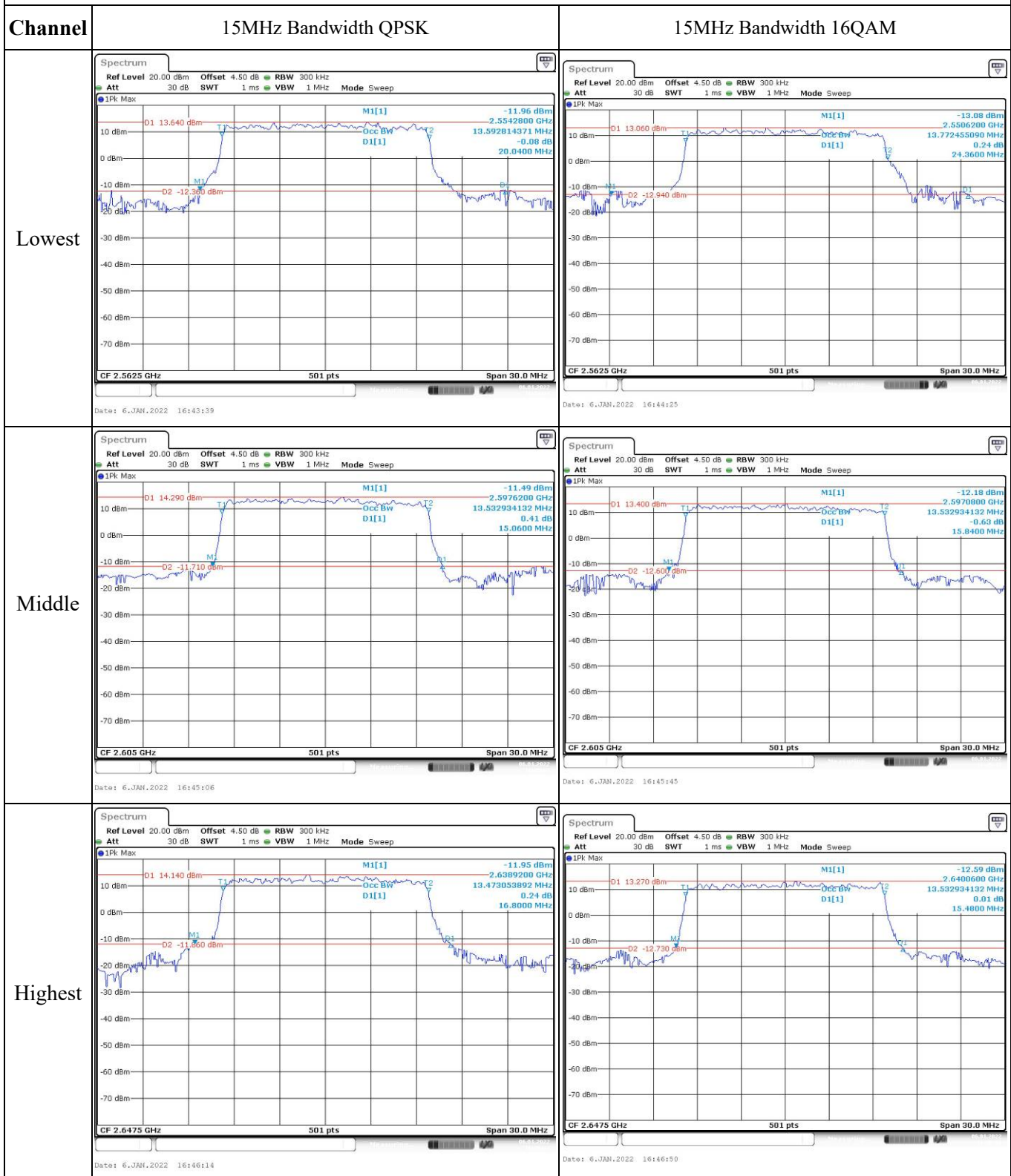
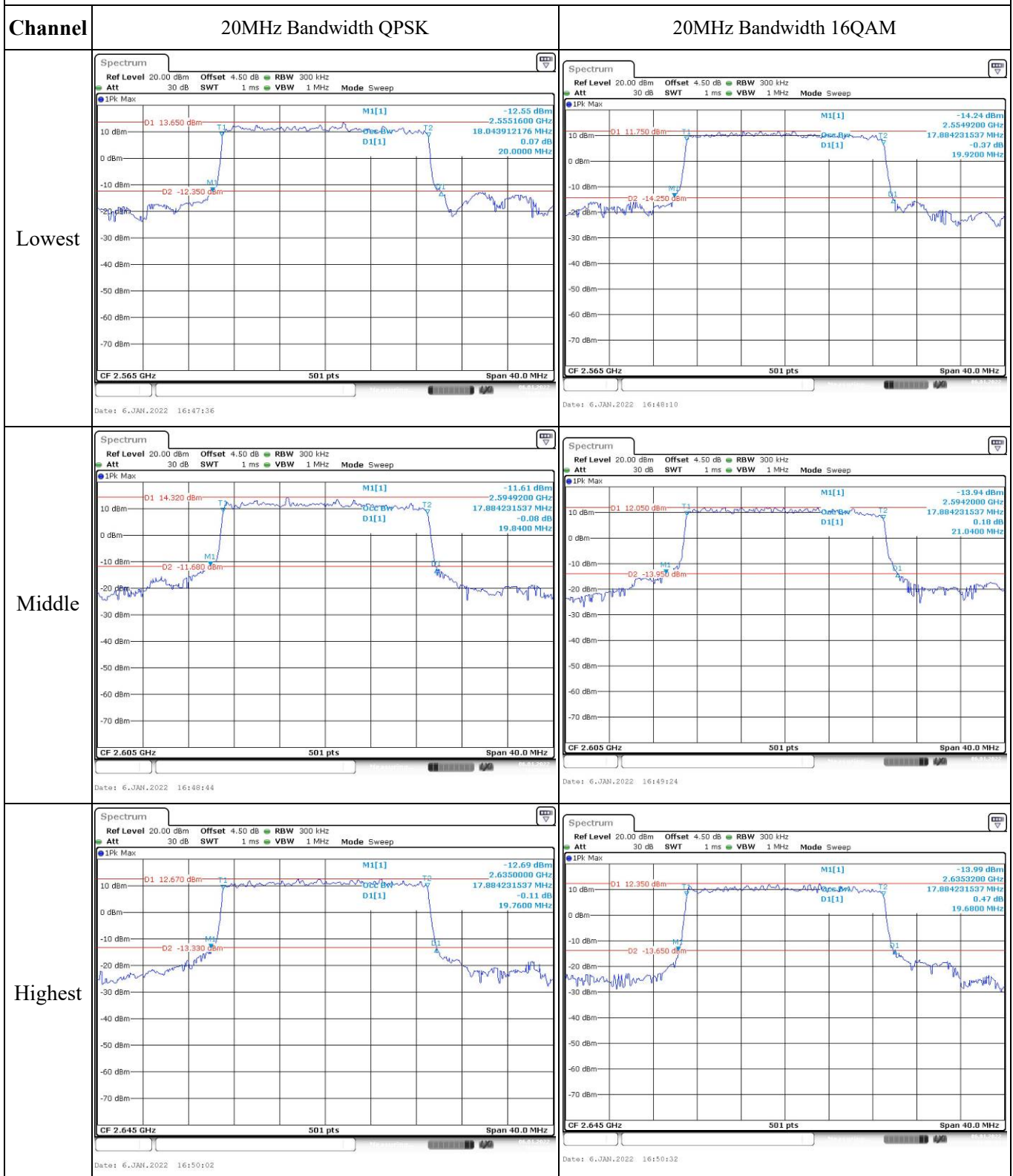


Occupied Bandwidth



Occupied Bandwidth

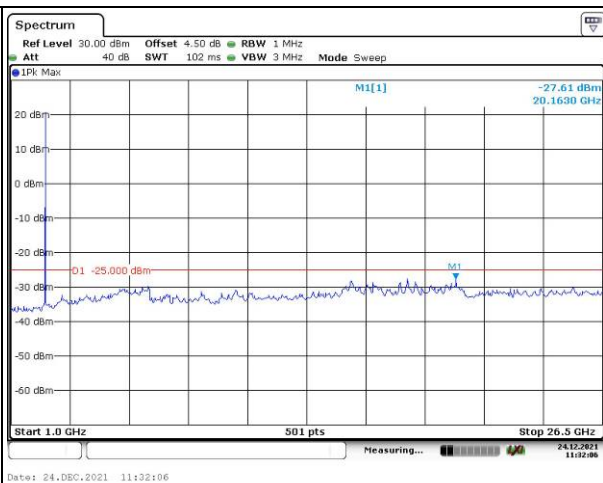
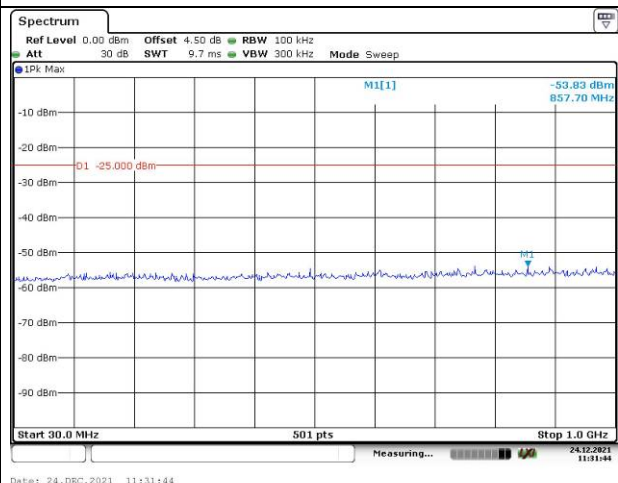


Spurious Emissions at Antenna Terminal

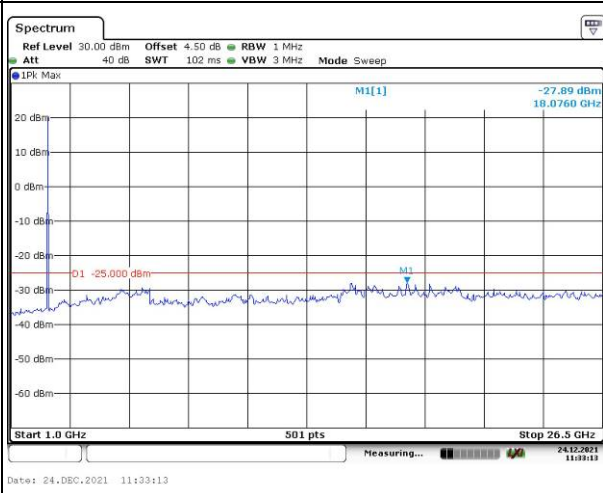
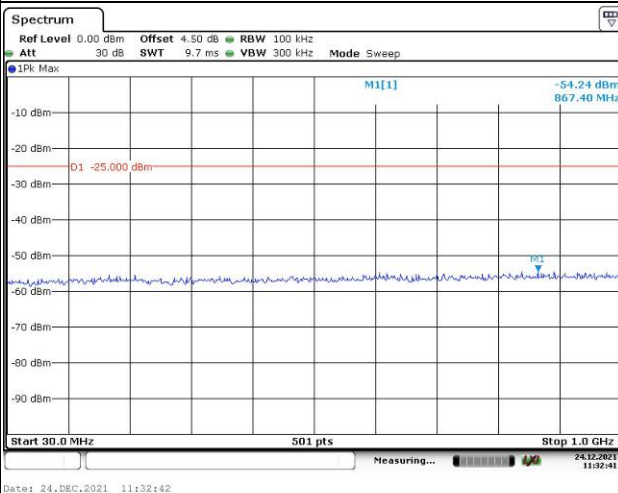
Channel

5MHz Bandwidth QPSK

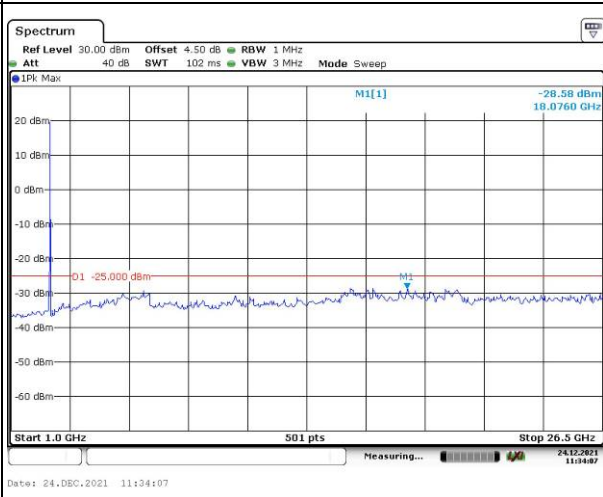
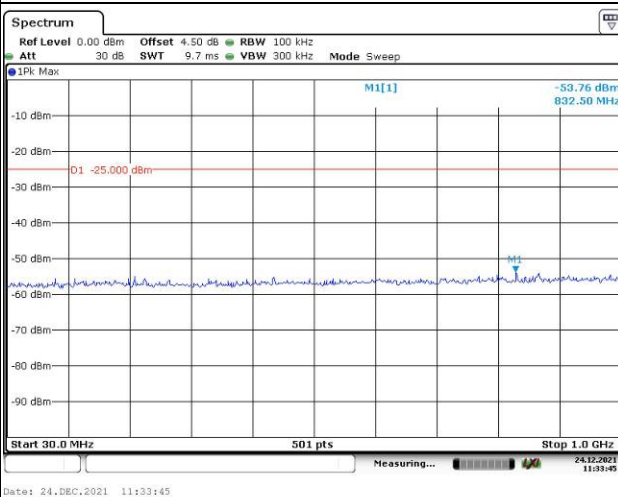
Lowest



Middle



Highest

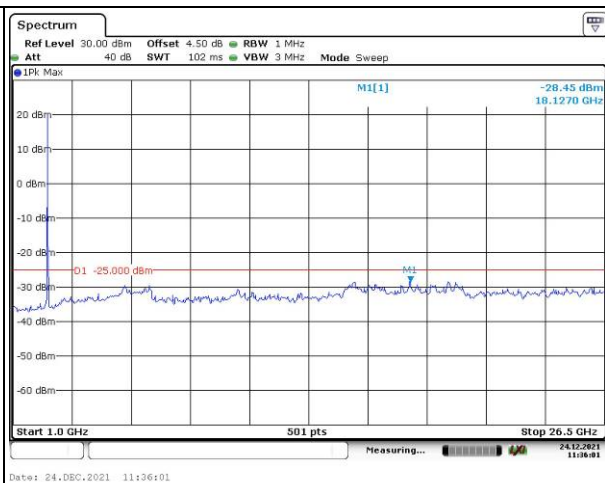
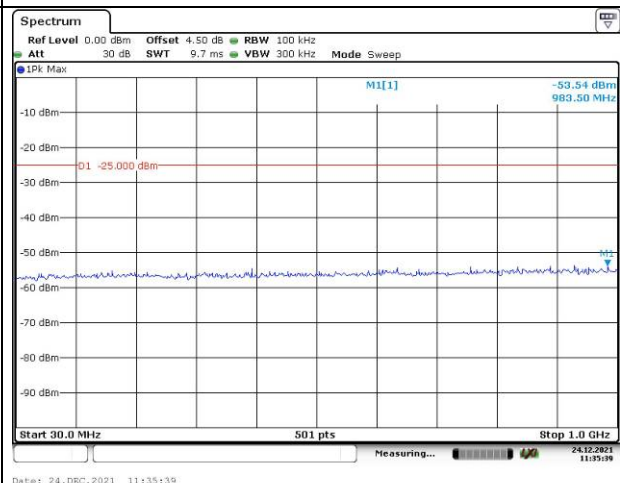


Spurious Emissions at Antenna Terminal

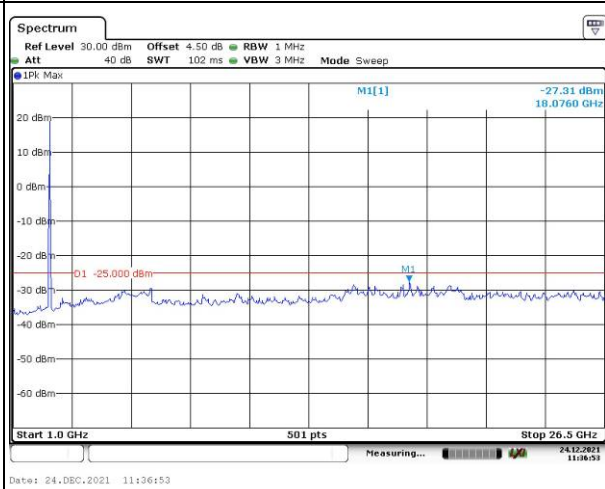
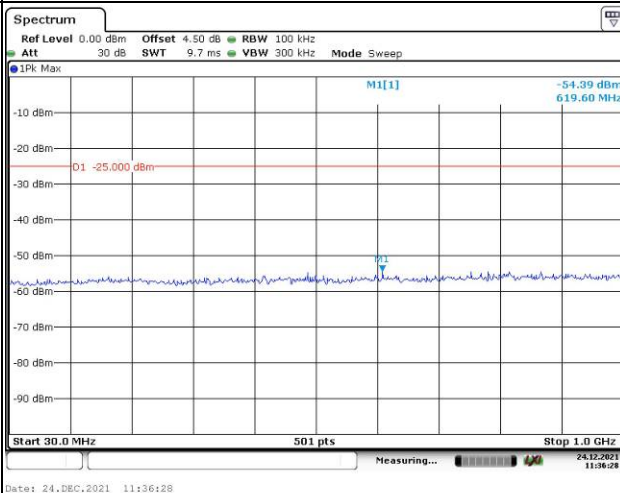
Channel

10MHz Bandwidth QPSK

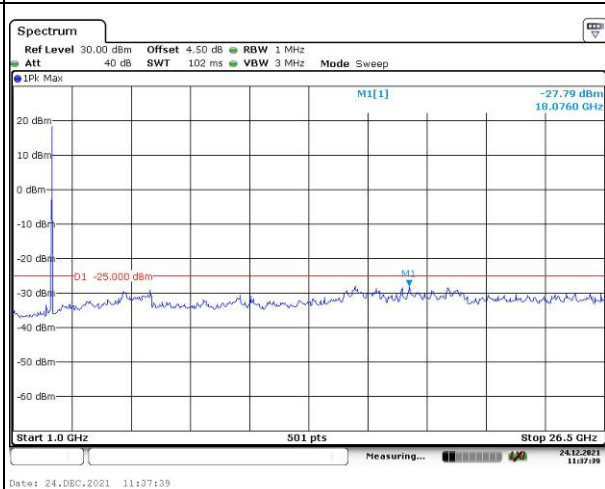
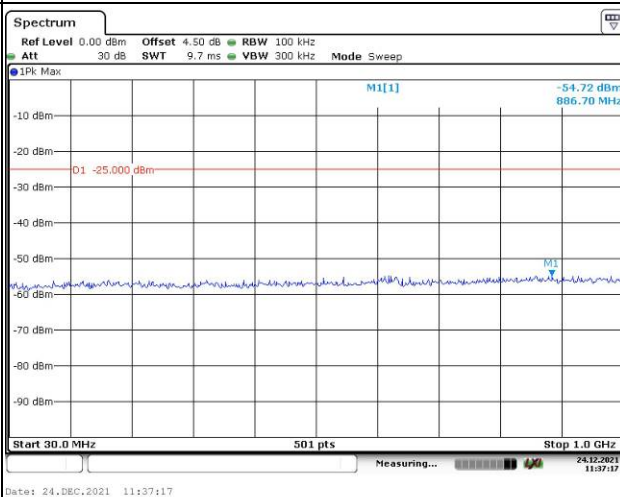
Lowest



Middle



Highest

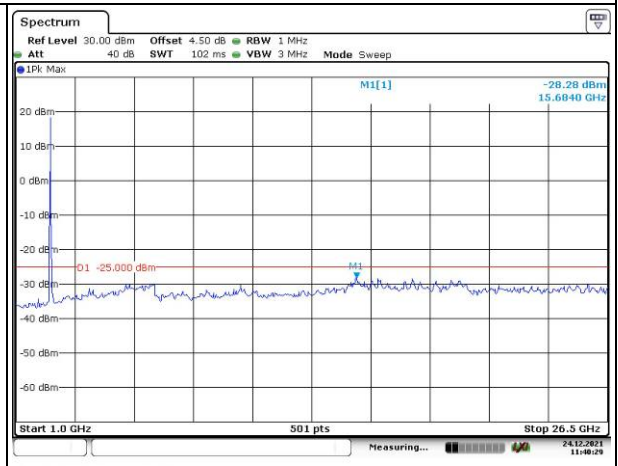
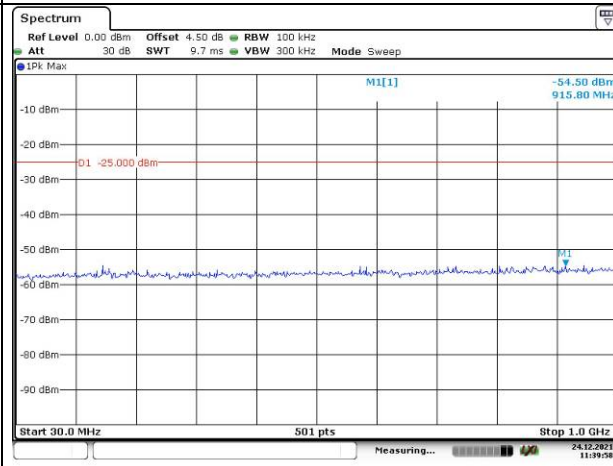


Spurious Emissions at Antenna Terminal

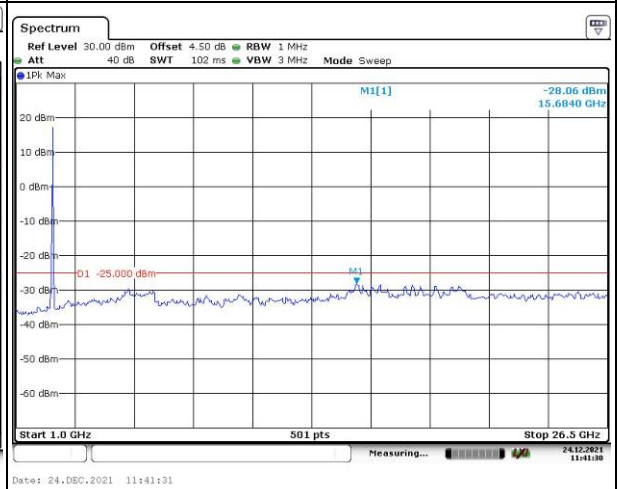
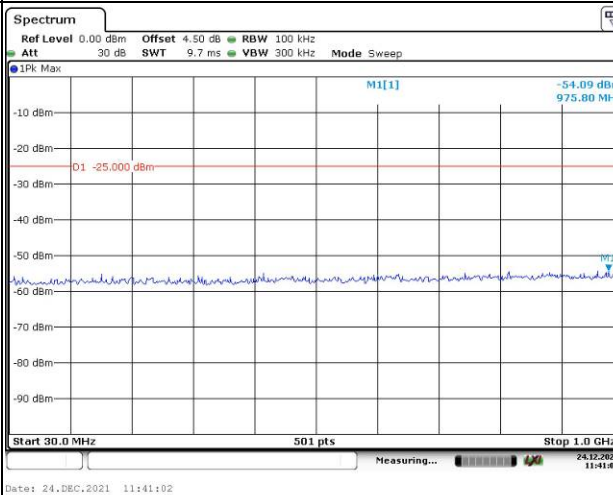
Channel

15MHz Bandwidth QPSK

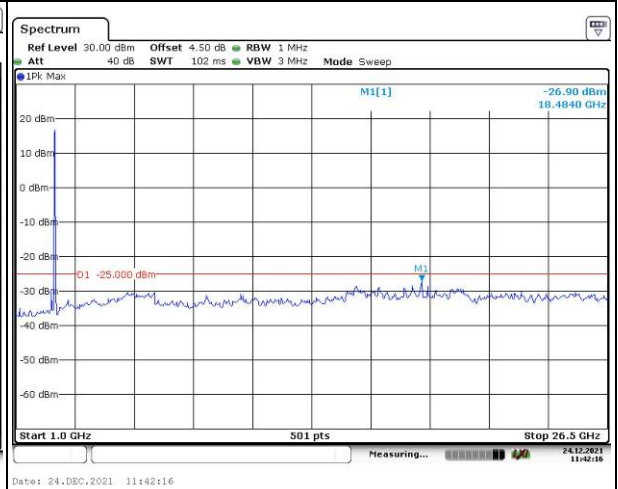
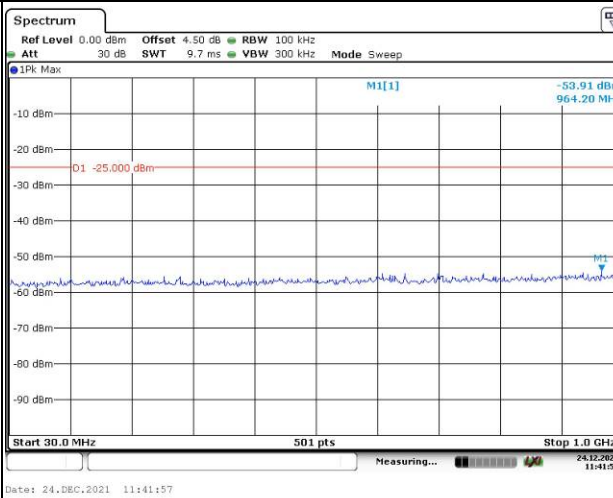
Lowest



Middle



Highest

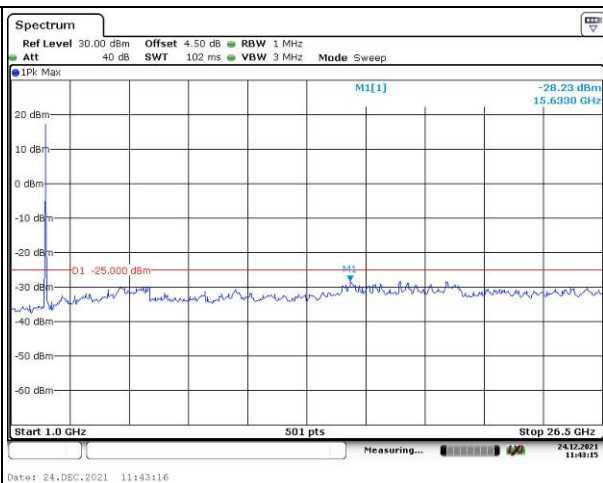
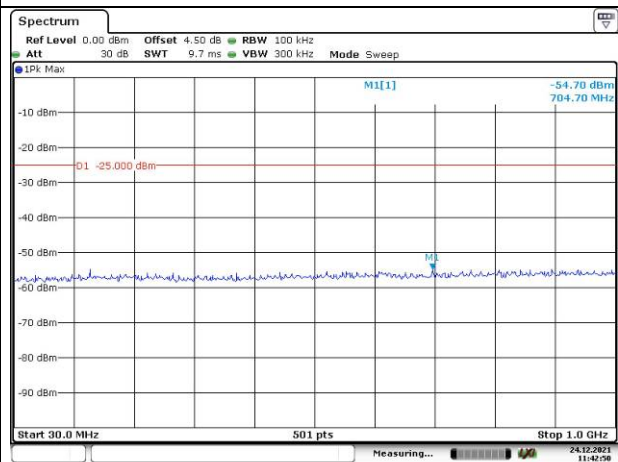


Spurious Emissions at Antenna Terminal

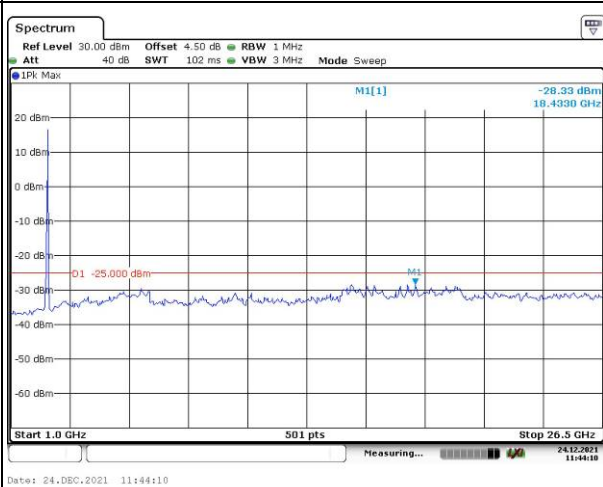
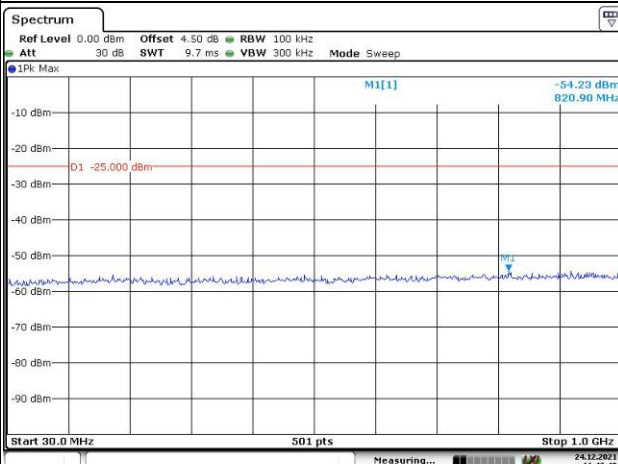
Channel

20MHz Bandwidth QPSK

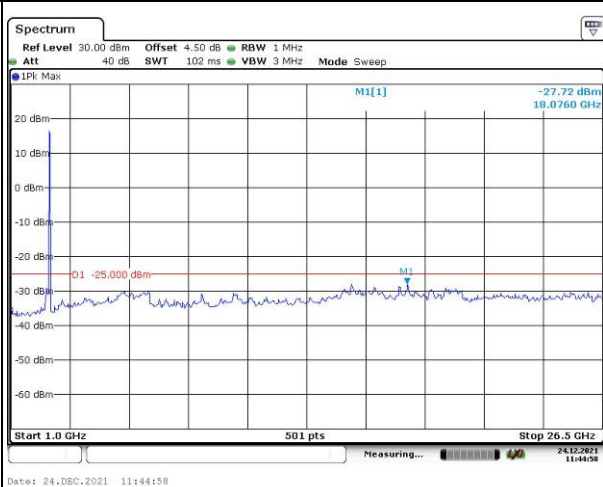
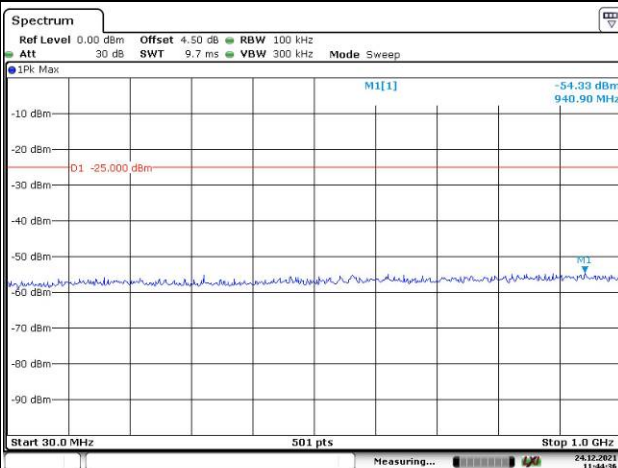
Lowest



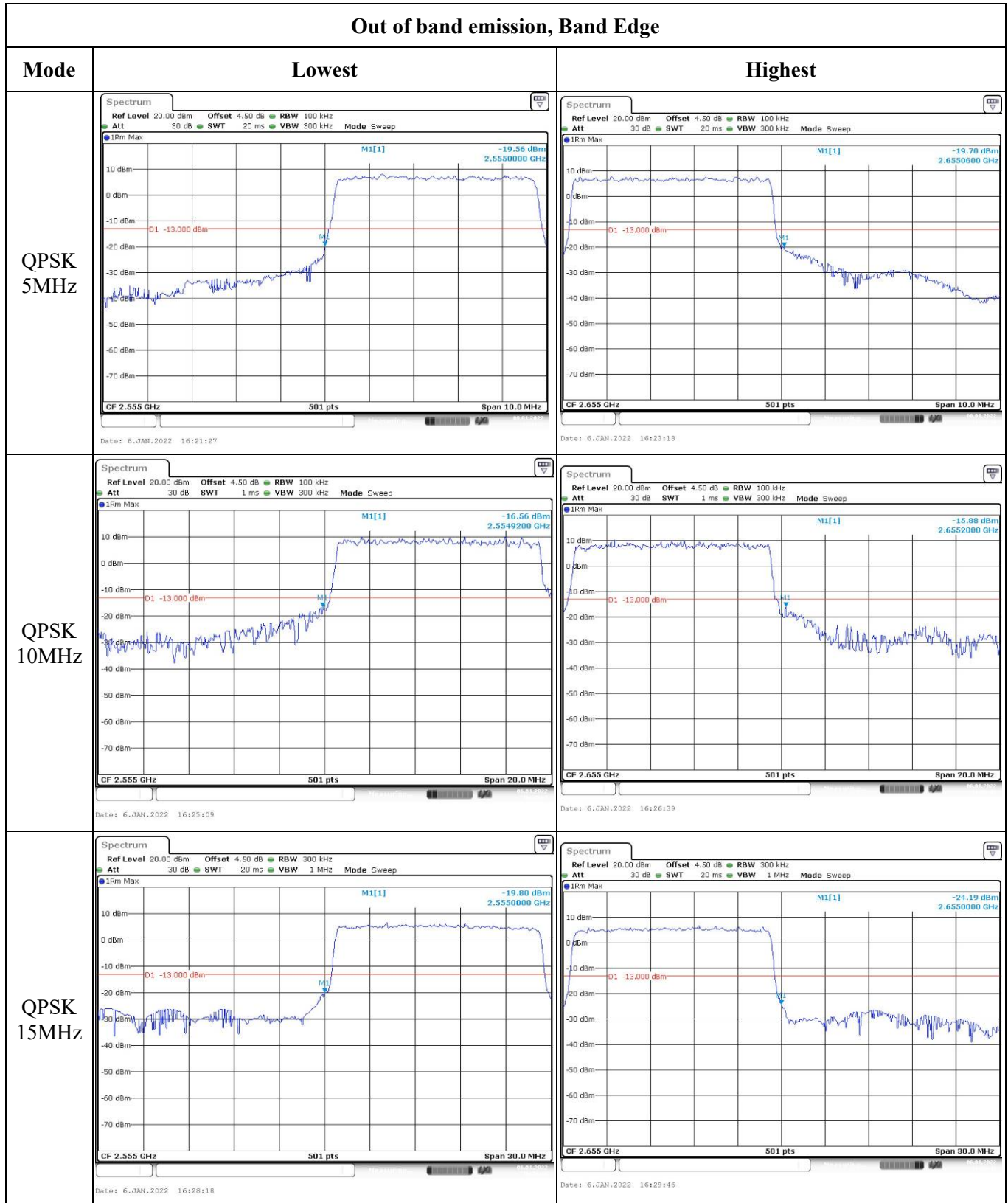
Middle



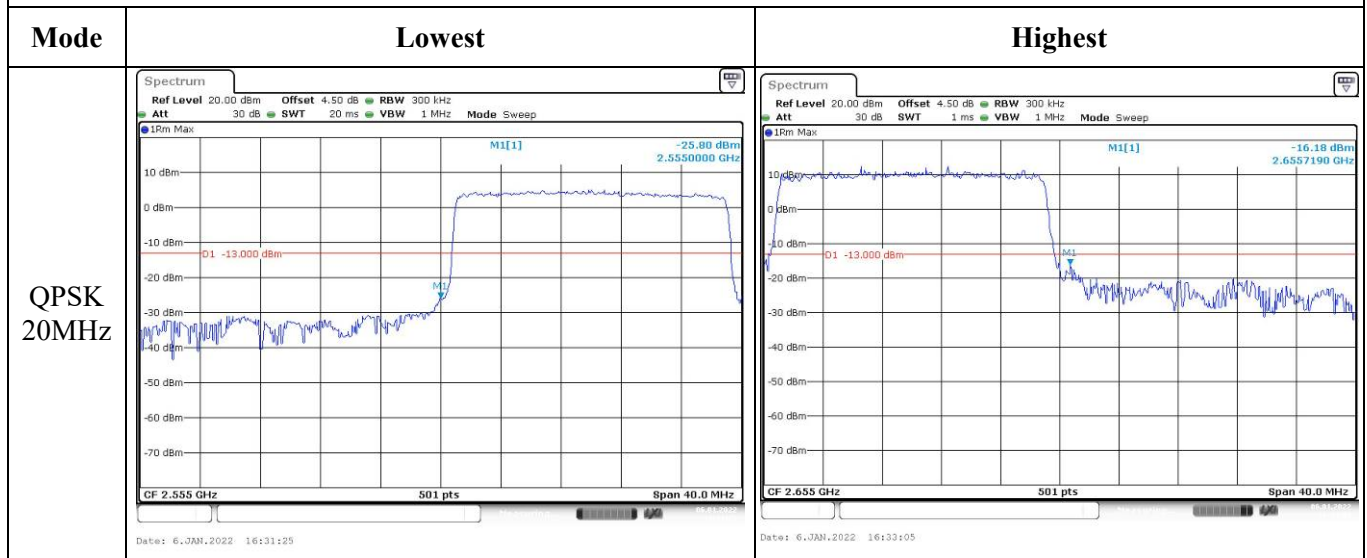
Highest



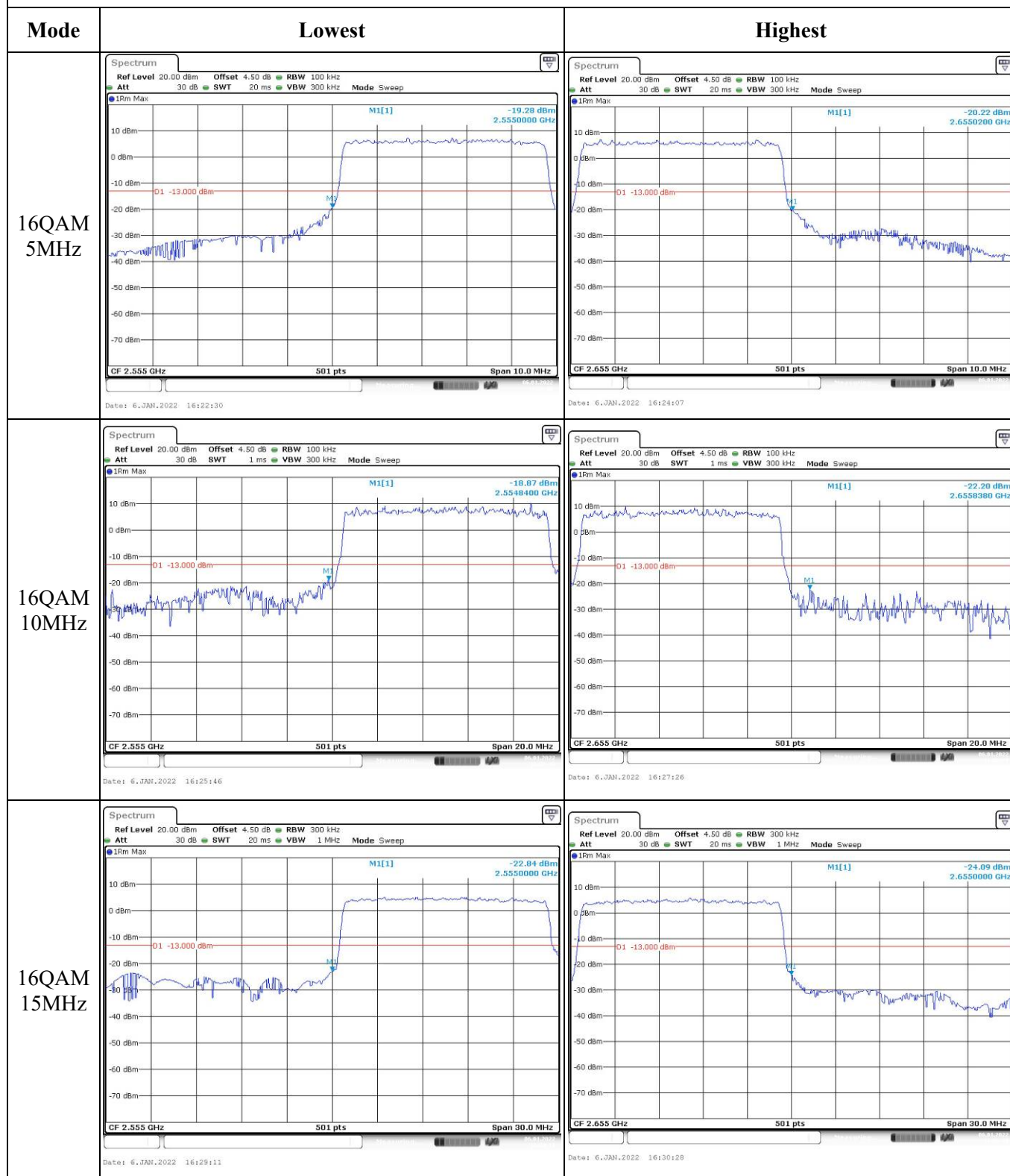
Out of band emission, Band Edge



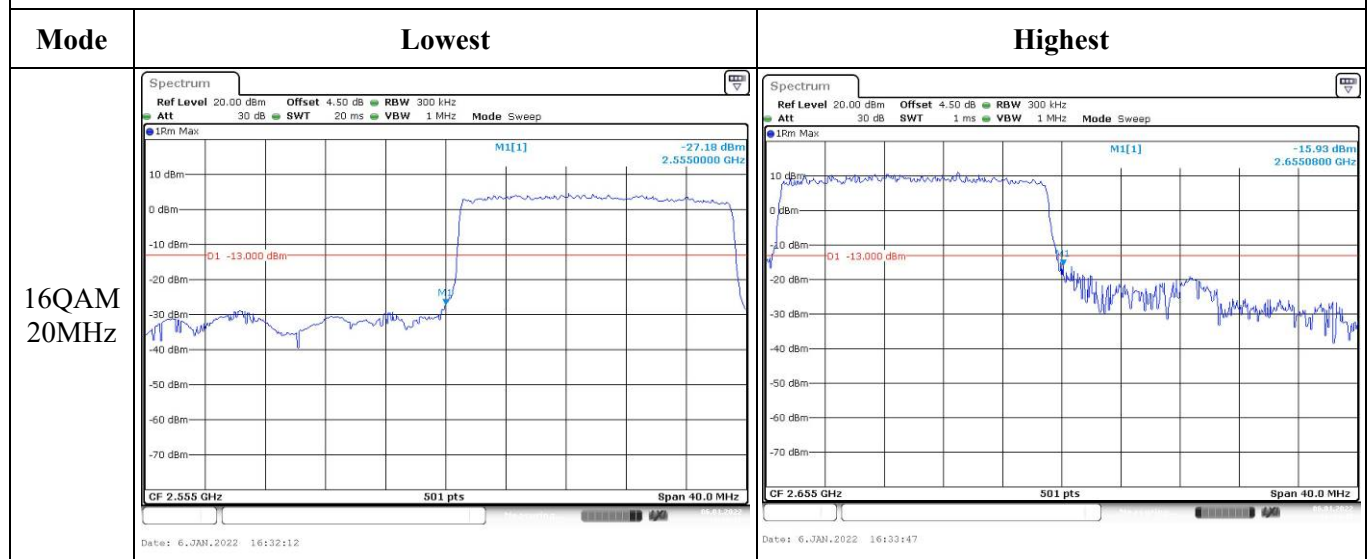
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.4 Spurious Emissions

Serial Number:	CR21110071-RF-S1	Test Date:	2021-12-14~2021-12-16
Test Site:	966-2, 966-1	Test Mode:	Transmitting
Tester:	Great Qiao, Carl Liang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	20.1~21.5	Relative Humidity: (%)	49~53	ATM Pressure: (kPa)	101.1~101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020-10-13	2023-10-12
R&S	Spectrum Analyzer	FSV40	101591	2021-07-22	2022-07-21
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2021-08-08	2022-08-07
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2021-08-08	2022-08-07
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	2023-10-17
MICRO-COAX	Coaxial Cable	UFA210B-0-0720-300300	99G1448	2021-07-25	2022-07-24
Agilent	Signal Generator	E8247C	MY43321352	2021-04-25	2022-04-24
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	2021-08-08	2022-08-07
Sunol Sciences	Antenna	JB6	A082520-5	2020-10-19	2023-10-18
R&S	EMI Test Receiver	ESR3	102724	2021-07-22	2022-07-21
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2021-07-18	2022-07-17
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2021-07-18	2022-07-17

Sonoma	Amplifier	310N	186165	2021-07-18	2022-07-17
EMCO	Adjustable Dipole Antenna	3121C	9109-756	N/A	N/A
<i>* 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).</i>					

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, the worst orientation was photographed and it's data was recorded.

Test Data:**Cellular Band (PART 22H)**

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								
1652.80	H	44.64	-59.69	8.68	0.81	-51.82	-13.00	38.82
1652.80	V	40.24	-64.17	8.68	0.81	-56.30	-13.00	43.30
2479.20	H	34.60	-66.16	9.39	1.01	-57.78	-13.00	44.78
2479.20	V	35.10	-65.63	9.39	1.01	-57.25	-13.00	44.25
3305.60	H	34.42	-62.31	10.32	1.15	-53.14	-13.00	40.14
3305.60	V	35.54	-60.96	10.32	1.15	-51.79	-13.00	38.79
330.00	H	31.76	-47.18	0.00	0.34	-47.52	-13.00	34.52
89.00	V	26.31	-51.39	0.00	0.18	-51.57	-13.00	38.57
WCDMA Band 5 Frequency:836.6MHz								
1673.20	H	42.33	-61.98	8.71	0.85	-54.12	-13.00	41.12
1673.20	V	43.83	-60.58	8.71	0.85	-52.72	-13.00	39.72
2509.80	H	33.08	-67.53	9.42	1.01	-59.12	-13.00	46.12
2509.80	V	35.69	-64.93	9.42	1.01	-56.52	-13.00	43.52
3346.40	H	34.97	-62.20	10.34	1.16	-53.02	-13.00	40.02
3346.40	V	34.72	-62.31	10.34	1.16	-53.13	-13.00	40.13
330.00	H	31.51	-47.43	0.00	0.34	-47.77	-13.00	34.77
210.00	V	26.49	-51.91	0.00	0.26	-52.17	-13.00	39.17
WCDMA Band 5 Frequency:846.6MHz								
1693.20	H	38.60	-65.70	8.73	0.89	-57.86	-13.00	44.86
1693.20	V	39.95	-64.47	8.73	0.89	-56.63	-13.00	43.63
2539.80	H	37.51	-62.87	9.46	1.01	-54.42	-13.00	41.42
2539.80	V	40.99	-59.35	9.46	1.01	-50.90	-13.00	37.90
3386.40	H	35.32	-62.27	10.35	1.18	-53.10	-13.00	40.10
3386.40	V	35.56	-61.98	10.35	1.18	-52.81	-13.00	39.81
330.00	H	31.58	-47.36	0.00	0.34	-47.70	-13.00	34.70
210.00	V	26.88	-51.52	0.00	0.26	-51.78	-13.00	38.78

LTE Band 5(30MHz-10GHz):

EYE Band 3 (30MHz To 3GHz)								
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								
1649.40	H	52.32	-52.01	8.68	0.80	-44.13	-13.00	31.13
1649.40	V	50.08	-54.33	8.68	0.80	-46.45	-13.00	33.45
2474.10	H	43.56	-57.22	9.38	1.00	-48.84	-13.00	35.84
2474.10	V	41.73	-59.00	9.38	1.00	-50.62	-13.00	37.62
3298.80	H	40.27	-56.41	10.32	1.15	-47.24	-13.00	34.24
3298.80	V	45.86	-50.58	10.32	1.15	-41.41	-13.00	28.41
330.00	H	31.57	-47.37	0.00	0.34	-47.71	-13.00	34.71
210.00	V	26.53	-51.87	0.00	0.26	-52.13	-13.00	39.13
QPSK, Frequency: 836.5 MHz								
1673.00	H	53.19	-51.12	8.71	0.85	-43.26	-13.00	30.26
1673.00	V	50.45	-53.96	8.71	0.85	-46.10	-13.00	33.10
2509.50	H	42.61	-58.00	9.42	1.01	-49.59	-13.00	36.59
2509.50	V	41.12	-59.50	9.42	1.01	-51.09	-13.00	38.09
3346.00	H	39.12	-58.04	10.34	1.16	-48.86	-13.00	35.86
3346.00	V	46.24	-50.78	10.34	1.16	-41.60	-13.00	28.60
330.00	H	34.46	-44.48	0.00	0.34	-44.82	-13.00	31.82
210.00	V	26.85	-51.55	0.00	0.26	-51.81	-13.00	38.81
QPSK, Frequency: 848.3 MHz								
1696.60	H	52.95	-51.34	8.74	0.89	-43.49	-13.00	30.49
1696.60	V	50.67	-53.75	8.74	0.89	-45.90	-13.00	32.90
2544.90	H	43.81	-56.53	9.47	1.01	-48.07	-13.00	35.07
2544.90	V	42.57	-57.73	9.47	1.01	-49.27	-13.00	36.27
3393.20	H	40.80	-56.87	10.36	1.19	-47.70	-13.00	34.70
3393.20	V	45.25	-52.38	10.36	1.19	-43.21	-13.00	30.21
330.00	H	30.75	-48.19	0.00	0.34	-48.53	-13.00	35.53
210.00	V	26.35	-52.05	0.00	0.26	-52.31	-13.00	39.31

LTE Band 41(30MHz-26.5GHz):

LTE Band 41(50MHz-20.5GHz)								
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: 2557.5 MHz								
4997.00	H	42.50	-50.44	11.20	1.48	-40.72	-25.00	15.72
4997.00	V	40.17	-52.63	11.20	1.48	-42.91	-25.00	17.91
7495.50	H	34.82	-54.97	10.90	1.94	-46.01	-25.00	21.01
7495.50	V	35.63	-54.66	10.90	1.94	-45.70	-25.00	20.70
330.00	H	30.59	-48.35	0.00	0.34	-48.69	-25.00	23.69
210.00	V	26.89	-51.51	0.00	0.26	-51.77	-25.00	26.77
QPSK, Frequency: 2605 MHz								
5186.00	H	43.30	-50.73	11.31	1.44	-40.86	-25.00	15.86
5186.00	V	40.32	-53.57	11.31	1.44	-43.70	-25.00	18.70
7779.00	H	34.53	-54.96	10.84	1.99	-46.11	-25.00	21.11
7779.00	V	35.13	-54.81	10.84	1.99	-45.96	-25.00	20.96
330.00	H	31.47	-47.47	0.00	0.34	-47.81	-25.00	22.81
210.00	V	26.51	-51.89	0.00	0.26	-52.15	-25.00	27.15
QPSK, Frequency: 2652.5 MHz								
5375.00	H	45.87	-47.64	11.43	1.49	-37.70	-25.00	12.70
5375.00	V	43.04	-50.46	11.43	1.49	-40.52	-25.00	15.52
8062.50	H	35.27	-52.95	10.81	2.12	-44.26	-25.00	19.26
8062.50	V	35.94	-52.78	10.81	2.12	-44.09	-25.00	19.09
330.00	H	31.56	-47.38	0.00	0.34	-47.72	-25.00	22.72
210.00	V	25.78	-52.62	0.00	0.26	-52.88	-25.00	27.88

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. RF EXPOSURE EVALUATION

5.1 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

5.1.1 Applicable Standard

FCC §1.1310 & §2.1091

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See §1.1307(b)(1) of this chapter.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

5.1.2 Procedure

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

5.1.3 Calculated Result

Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
WCDMA B5	824-849	3.06	2.02	23	199.53	20	0.0802	0.549
LTE B5	824-849	3.06	2.02	24	251.19	20	0.1009	0.549
LTE B41	2555-2655	3.06	2.02	22	158.49	20	0.0637	1.0

Result: The device meet FCC MPE at 20 cm distance.

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