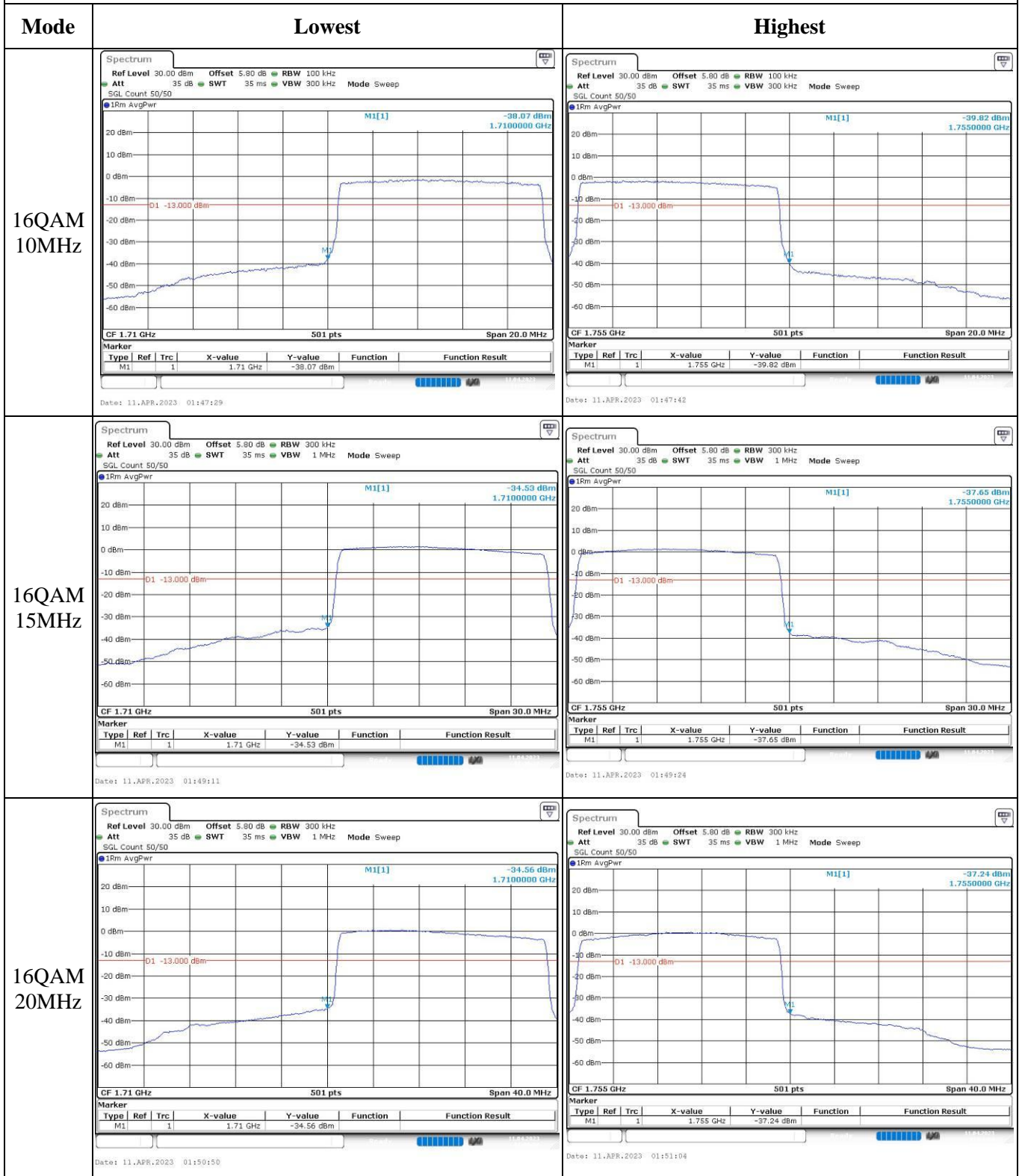


### Out of band emission, Band Edge



**4.8 Radiated Spurious Emissions**

Serial Number:	223V-1	Test Date:	2023/02/28~2023/05/30
Test Site:	966-1,966-2	Test Mode:	Transmitting
Tester:	Mack Huang, Vic Du	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	23.6~26.9	Relative Humidity: (%)	42~68	ATM Pressure: (kPa)	100~102.5
----------------------	-----------	---------------------------	-------	---------------------------	-----------

**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
MICRO-COAX	Coaxial Cable	UFA210B-0-0720- 300300	99G1448	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	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	2022/04/01	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	2022/11/09	2023/11/08
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:****Cellular Band (PART 22H)****30 MHz-10 GHz:**

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)			
GSM 850 Frequency:824.2MHz								
249.49	H	26.29	-54.49	0.00	0.30	-54.79	-13.00	41.79
136.11	V	44.76	-31.26	0.00	0.22	-31.48	-13.00	18.48
1648.400	H	69.14	-35.19	8.68	0.80	-27.31	-13.00	14.31
1648.400	V	64.42	-39.99	8.68	0.80	-32.11	-13.00	19.11
2472.600	H	63.62	-37.16	9.38	1.00	-28.78	-13.00	15.78
2472.600	V	56.57	-44.16	9.38	1.00	-35.78	-13.00	22.78
3296.800	H	39.63	-57.05	10.32	1.15	-47.88	-13.00	34.88
3296.800	V	37.24	-59.20	10.32	1.15	-50.03	-13.00	37.03
GSM 850 Frequency:836.6MHz								
249.49	H	25.59	-55.19	0.00	0.30	-55.49	-13.00	42.49
634.19	V	33.96	-37.15	0.00	0.51	-37.66	-13.00	24.66
1673.200	H	64.87	-39.44	8.71	0.85	-31.58	-13.00	18.58
1673.200	V	58.18	-46.23	8.71	0.85	-38.37	-13.00	25.37
2509.800	H	60.93	-39.68	9.42	1.01	-31.27	-13.00	18.27
2509.800	V	55.19	-45.43	9.42	1.01	-37.02	-13.00	24.02
3346.400	H	38.91	-58.26	10.34	1.16	-49.08	-13.00	36.08
3346.400	V	35.36	-61.67	10.34	1.16	-52.49	-13.00	39.49
GSM 850 Frequency:848.8MHz								
249.49	H	25.67	-55.11	0.00	0.30	-55.41	-13.00	42.41
646.79	V	33.14	-37.74	0.00	0.52	-38.26	-13.00	25.26
1697.600	H	62.07	-42.22	8.74	0.90	-34.38	-13.00	21.38
1697.600	V	55.72	-48.70	8.74	0.90	-40.86	-13.00	27.86
2546.400	H	58.05	-42.28	9.47	1.01	-33.82	-13.00	20.82
2546.400	V	54.59	-45.69	9.47	1.01	-37.23	-13.00	24.23
3395.200	H	39.36	-58.33	10.36	1.19	-49.16	-13.00	36.16
3395.200	V	38.63	-59.03	10.36	1.19	-49.86	-13.00	36.86

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 5 Frequency:826.4 MHz								
249.49	H	24.46	-56.32	0.00	0.30	-56.62	-13.00	43.62
870.63	V	27.13	-39.47	0.00	0.58	-40.05	-13.00	27.05
1652.800	H	43.62	-60.71	8.68	0.81	-52.84	-13.00	39.84
1652.800	V	41.49	-62.92	8.68	0.81	-55.05	-13.00	42.05
2479.200	H	41.56	-59.20	9.39	1.01	-50.82	-13.00	37.82
2479.200	V	42.35	-58.38	9.39	1.01	-50.00	-13.00	37.00
3305.600	H	35.88	-60.85	10.32	1.15	-51.68	-13.00	38.68
3305.600	V	36.32	-60.18	10.32	1.15	-51.01	-13.00	38.01
WCDMA Band 5 Frequency:836.6MHz								
142.89	H	24.47	-56.22	0.00	0.22	-56.44	-13.00	43.44
881.29	V	26.60	-39.83	0.00	0.59	-40.42	-13.00	27.42
1673.200	H	42.86	-61.45	8.71	0.85	-53.59	-13.00	40.59
1673.200	V	40.69	-63.72	8.71	0.85	-55.86	-13.00	42.86
2509.800	H	40.24	-60.37	9.42	1.01	-51.96	-13.00	38.96
2509.800	V	41.21	-59.41	9.42	1.01	-51.00	-13.00	38.00
3346.400	H	35.12	-62.05	10.34	1.16	-52.87	-13.00	39.87
3346.400	V	35.64	-61.39	10.34	1.16	-52.21	-13.00	39.21
WCDMA Band 5 Frequency:846.6MHz								
249.49	H	24.14	-56.64	0.00	0.30	-56.94	-13.00	43.94
890.01	V	25.69	-40.60	0.00	0.64	-41.24	-13.00	28.24
1693.200	H	41.19	-63.11	8.73	0.89	-55.27	-13.00	42.27
1693.200	V	38.93	-65.49	8.73	0.89	-57.65	-13.00	44.65
2539.800	H	38.73	-61.65	9.46	1.01	-53.20	-13.00	40.20
2539.800	V	39.25	-61.09	9.46	1.01	-52.64	-13.00	39.64
3386.400	H	33.66	-63.93	10.35	1.18	-54.76	-13.00	41.76
3386.400	V	33.88	-63.66	10.35	1.18	-54.49	-13.00	41.49

## PCS Band (PART 24E)

## 30 MHz-20 GHz:

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)			
GSM 1900 Frequency:1850.2MHz								
249.49	H	56.42	-55.49	0.00	0.30	-55.79	-13.00	42.79
249.49	V	51.74	-59.21	0.00	0.30	-59.51	-13.00	46.51
3700.400	H	49.55	-47.77	10.60	1.25	-38.42	-13.00	25.42
3700.400	V	47.86	-49.44	10.60	1.25	-40.09	-13.00	27.09
5550.600	H	34.52	-58.74	11.44	1.49	-48.79	-13.00	35.79
5550.600	V	33.26	-59.84	11.44	1.49	-49.89	-13.00	36.89
GSM 1900 Frequency:1880MHz								
249.49	H	55.75	-56.16	0.00	0.30	-56.46	-13.00	43.46
94.44	V	52.96	-55.35	0.00	0.18	-55.53	-13.00	42.53
3760.000	H	48.35	-48.06	10.66	1.24	-38.64	-13.00	25.64
3760.000	V	47.68	-48.61	10.66	1.24	-39.19	-13.00	26.19
5640.000	H	33.42	-60.03	11.33	1.54	-50.24	-13.00	37.24
5640.000	V	33.76	-59.57	11.33	1.54	-49.78	-13.00	36.78
GSM 1900 Frequency:1909.8MHz								
249.49	H	55.86	-56.05	0.00	0.30	-56.35	-13.00	43.35
93.47	V	54.31	-54.22	0.00	0.18	-54.40	-13.00	41.40
3819.600	H	46.75	-49.11	10.72	1.29	-39.68	-13.00	26.68
3819.600	V	46.12	-49.60	10.72	1.29	-40.17	-13.00	27.17
5729.400	H	32.56	-60.92	11.22	1.59	-51.29	-13.00	38.29
5729.400	V	33.13	-60.23	11.22	1.59	-50.60	-13.00	37.60

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								
249.49	H	55.58	-56.33	0.00	0.30	-56.63	-13.00	43.63
92.50	V	53.62	-55.14	0.00	0.18	-55.32	-13.00	42.32
3704.800	H	44.76	-52.50	10.60	1.25	-43.15	-13.00	30.15
3704.800	V	71.35	-25.88	10.60	1.25	-16.53	-13.00	3.53
5557.200	H	33.42	-59.86	11.43	1.49	-49.92	-13.00	36.92
5557.200	V	33.68	-59.45	11.43	1.49	-49.51	-13.00	36.51
WCDMA Band II, Frequency:1880 MHz								
249.49	H	55.83	-56.08	0.00	0.30	-56.38	-13.00	43.38
93.47	V	54.09	-54.44	0.00	0.18	-54.62	-13.00	41.62
3760.000	H	43.32	-53.09	10.66	1.24	-43.67	-13.00	30.67
3760.000	V	39.45	-56.84	10.66	1.24	-47.42	-13.00	34.42
5640.000	H	33.15	-60.30	11.33	1.54	-50.51	-13.00	37.51
5640.000	V	32.16	-61.17	11.33	1.54	-51.38	-13.00	38.38
WCDMA Band II, Frequency:1907.6MHz								
249.49	H	55.65	-56.26	0.00	0.30	-56.56	-13.00	43.56
93.47	V	53.55	-54.98	0.00	0.18	-55.16	-13.00	42.16
3815.200	H	40.21	-55.64	10.72	1.29	-46.21	-13.00	33.21
3815.200	V	39.47	-56.22	10.72	1.29	-46.79	-13.00	33.79
5722.800	H	32.56	-60.93	11.23	1.58	-51.28	-13.00	38.28
5722.800	V	33.04	-60.31	11.23	1.58	-50.66	-13.00	37.66

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

**LTE 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)			
QPSK, Frequency: 1850.7 MHz								
249.49	H	55.66	-56.25	0.00	0.30	-56.55	-13.00	43.55
93.47	V	53.65	-54.88	0.00	0.18	-55.06	-13.00	42.06
3701.400	H	44.15	-53.16	10.60	1.25	-43.81	-13.00	30.81
3701.400	V	43.21	-54.08	10.60	1.25	-44.73	-13.00	31.73
5552.100	H	34.25	-59.02	11.44	1.49	-49.07	-13.00	36.07
5552.100	V	32.58	-60.52	11.44	1.49	-50.57	-13.00	37.57
QPSK, Frequency: 1880 MHz								
249.49	H	55.86	-56.05	0.00	0.30	-56.35	-13.00	43.35
145.80	V	59.67	-48.42	0.00	0.22	-48.64	-13.00	35.64
3760.000	H	42.57	-53.84	10.66	1.24	-44.42	-13.00	31.42
3760.000	V	40.39	-55.90	10.66	1.24	-46.48	-13.00	33.48
5640.000	H	33.47	-59.98	11.33	1.54	-50.19	-13.00	37.19
5640.000	V	32.65	-60.68	11.33	1.54	-50.89	-13.00	37.89
QPSK, Frequency: 1909.3 MHz								
249.49	H	56.00	-55.91	0.00	0.30	-56.21	-13.00	43.21
93.47	V	53.34	-55.19	0.00	0.18	-55.37	-13.00	42.37
3818.600	H	40.59	-55.27	10.72	1.29	-45.84	-13.00	32.84
3818.600	V	39.76	-55.95	10.72	1.29	-46.52	-13.00	33.52
5727.900	H	33.62	-59.86	11.23	1.59	-50.22	-13.00	37.22
5727.900	V	32.79	-60.57	11.23	1.59	-50.93	-13.00	37.93

**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)			
QPSK, Frequency: 1710.7 MHz								
249.49	H	55.65	-56.26	0.00	0.30	-56.56	-13.00	43.56
93.47	V	53.37	-55.16	0.00	0.18	-55.34	-13.00	42.34
3421.400	H	32.64	-65.12	10.37	1.17	-55.92	-13.00	42.92
3421.400	V	33.15	-64.58	10.37	1.17	-55.38	-13.00	42.38
5132.100	H	49.53	-44.04	11.28	1.47	-34.23	-13.00	21.23
5132.100	V	48.79	-44.67	11.28	1.47	-34.86	-13.00	21.86
QPSK, Frequency: 1732.5 MHz								
249.49	H	55.92	-55.99	0.00	0.30	-56.29	-13.00	43.29
93.47	V	53.83	-54.70	0.00	0.18	-54.88	-13.00	41.88
3465.000	H	33.47	-64.34	10.39	1.15	-55.10	-13.00	42.10
3465.000	V	33.26	-64.51	10.39	1.15	-55.27	-13.00	42.27
5197.500	H	48.54	-45.59	11.32	1.44	-35.71	-13.00	22.71
5197.500	V	48.82	-45.16	11.32	1.44	-35.28	-13.00	22.28
QPSK, Frequency: 1754.3MHz								
249.49	H	55.78	-56.13	0.00	0.30	-56.43	-13.00	43.43
93.47	V	53.50	-55.03	0.00	0.18	-55.21	-13.00	42.21
3508.600	H	33.41	-64.41	10.41	1.19	-55.19	-13.00	42.19
3508.600	V	32.87	-64.89	10.41	1.19	-55.67	-13.00	42.67
5262.900	H	47.69	-46.01	11.36	1.47	-36.12	-13.00	23.12
5262.900	V	46.77	-46.70	11.36	1.47	-36.81	-13.00	23.81

## 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 =====**