TEST REPORT

APPLICANT	:	Horizon Powered USA Inc.
PRODUCT NAME	:	5MF500
MODEL NAME	:	MH500C
BRAND NAME	:	Horizon
FCC ID	:	2BE94MH500C
STANDARD(S)	:	47 CFR Part 2 47 CFR Part 22, Subpart H 47 CFR Part 24, Subpart E 47 CFR Part 27, Subpart D&F&H&L&M&N 47 CFR Part 90, Subpart S&R 47 CFR Part 96
RECEIPT DATE	:	2024-08-23
TEST DATE	:	2024-10-01 to 2024-10-28
ISSUE DATE	:	2024-12-02

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Change History		
Version	Date	Reason for change
1.0	2024-12-02	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Horizon Powered USA Inc.
Applicant Address:	8350 NW 52nd Terrace, Suite 301 Miami, Florida 33166 United States
Manufacturer:	Horizon Powered USA Inc.
Manufacturer Address:	8350 NW 52nd Terrace, Suite 301 Miami, Florida 33166 United States

1.2. Equipment Under Test (EUT) Description

Product Name:	5MF500	
Sample No.:	2#, 5#	
Hardware Version:	A1	
Software Version:	1.10.20	
Modulation Type:	QPSK, 16QAM, 64QAM, 256QAM	
Operation Band:	Band 2 / 4 / 5 / 7 / 12 / 13 / 14 / 17 / 25 / 26 / 30 / 38 / 41 / 48 / 66 / 71 Band 29(Rx) / 46(Rx)	
Carrier Aggregation(UL):	CA_2C, CA_5B, CA_7C, CA_38C, CA_41C, CA_66B, CA_66C	
Frequency Range:	LTE Band 2	Tx: 1850MHz–1910MHz
		Rx: 1930MHz–1990MHz
	LTE Band 4	Tx: 1710MHz–1755MHz
		Rx: 2110MHz–2155MHz
	LTE Band 5	Tx: 824MHz–849MHz
		Rx: 869MHz–894MHz
	LTE Band 7	Tx: 2500MHz–2570MHz
		Rx: 2620MHz–2690MHz
	LTE Band 12	Tx: 699MHz–716MHz
		Rx: 729MHz–746MHz
	LTE Band 13	Tx: 777MHz–787MHz
		Rx: 746MHz–756MHz
	LTE Band 14	Tx: 788MHz–798MHz
		Rx: 758MHz–768MHz

Frequency Range:	LTE Band 17	Tx: 704MHz–716MHz
		Rx: 734MHz–746MHz
	LTE Band 25	Tx: 1850MHz–1915MHz
		Rx: 1930MHz–1995MHz
	LTE Band 26	Tx: 814MHz–849MHz
		Rx: 859MHz–894MHz
	LTE Band 29	Rx: 717MHz–728MHz
	LTE Band 30	Tx: 2305MHz–2315MHz
		Rx: 2350MHz–2360MHz
	LTE Band 38	Tx: 2570MHz–2620MHz
		Rx: 2570MHz–2620MHz
	LTE Band 41	Tx: 2496MHz–2690MHz
		Rx: 2496MHz–2690MHz
	LTE Band 46	Rx: 5150MHz–5925MHz
	LTE Band 48	Tx: 3550MHz–3700MHz
		Rx: 3550MHz–3700MHz
	LTE Band 66	Tx: 1710MHz–1780MHz
		Rx: 2110MHz–2200MHz
	LTE Band 71	Tx: 663MHz–698MHz
		Rx: 617MHz–652MHz
Channel Bandwidth:	LTE Band 2	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 4	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 5	1.4MHz, 3MHz, 5MHz, 10MHz
	LTE Band 7	5 MHz, 10MHz, 15MHz, 20MHz
	LTE Band 12	1.4MHz, 3 MHz, 5 MHz, 10MHz
	LTE Band 13	5 MHz, 10MHz
	LTE Band 14	5MHz, 10MHz
	LTE Band 17	5 MHz, 10MHz
	LTE Band 25	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 26	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz
	LTE Band 30	5 MHz, 10MHz
	LTE Band 38	5 MHz, 10MHz, 15MHz, 20MHz
	LTE Band 41	5 MHz, 10MHz, 15MHz, 20MHz
	LTE Band 48	5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 66	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	LTE Band 71	5MHz, 10MHz, 15MHz, 20MHz
Antenna Type:	Fixed FPC Internal Antenna	

Antenna Gain:	LTE Band 2	ANT0: 1.7dBi; ANT1: -1.8dBi
	LTE Band 4	ANT0: 1.7dBi; ANT1: -1.8dBi
	LTE Band 5	ANT0: -3.1dBi; ANT1: -1.5dBi
	LTE Band 7	ANT0: 2.6dBi; ANT1: 0.9dBi
	LTE Band 12	ANT0: -2.1dBi; ANT1: -0.9dBi
	LTE Band 13	ANT0: -2.1dBi; ANT1: -0.9dBi
	LTE Band 14	ANT0: -2.1dBi; ANT1: -0.9dBi
	LTE Band 17	ANT0: -2.1dBi; ANT1: -0.9dBi
	LTE Band 25	ANT0: 1.7dBi; ANT1: -1.8dBi
	LTE Band 26	ANT0: -3.1dBi; ANT1: -1.5dBi
	LTE Band 30	ANT0: 1.8dBi; ANT1: -1.4dBi
	LTE Band 38	ANT0: 2.6dBi; ANT1: 1.9dBi
	LTE Band 41	ANT0: 2.6dBi; ANT1: 1.9dBi
	LTE Band 48	ANT0: 1.2dBi; ANT1: 1.5dBi
	LTE Band 66	ANT0: 1.7dBi; ANT1: -1.8dBi
	LTE Band 71	ANT0: -3.1dBi; ANT1: -1.1dBi
Accessory Information:	Battery	
	Brand Name:	Donpguan Lisheng
	Model No.:	BL5060
	Serial No.:	N/A
	Rated Capacity:	5000mAh
	Rated Voltage:	3.8V
	Charge Limit:	4.35V
	Manufacturer:	Donpguan Lisheng
	AC Adapter	
	Brand Name:	DONGGUAN GUANGSHU
	Model No.:	P050W3000LU
	Serial No.:	N/A
	Rated Output:	5V⎓3A, 9V⎓2A, 12V⎓1.5A
	Rated Input:	100-240V～50/60Hz, 0.5maxA
	Manufacturer:	DONGGUAN GUANGSHU

Note 1: The test results of all conducted test items please refer to the module FCC test report (Report No.: 2204RSU037-U1 / 2204RSU037-U2 / 2204RSU037-U3 / 2204RSU037-U4 / 2204RSU037-U5, FCC ID: XMR2022RG520NNA), which issued on Aug. 07, 2022 and Oct. 23, 2024 by MRT Technology (Suzhou) Co., Ltd.

Note 2: We have evaluated and recorded the result of conducted output power / E.I.R.P.(E.R.P.) and radiated spurious emissions in this report. Due to the antenna gain is different from the original

module, we have rested conducted output power / E.I.R.P. for B30/B48, for other frequency bands we only recorded the worst E.I.R.P.(E.R.P.) values in this report.

Note 3: The EUT can be used with two kinds of antenna. Both of the two antennas were evaluated separately, only the worst test result(ANT1) were recorded in the test report.

Note 4: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.3. Maximum E.R.P./E.I.R.P.

LTE Band 30	Maximum E.R.P./E.I.R.P. (W)			
BW (MHz)	QPSK	16QAM	64QAM	256QAM
10	0.204	0.173	0.134	0.064
5	0.200	0.173	0.138	0.077
LTE Band 48	**Maximum E.R.P./E.I.R.P. (W)**			
BW (MHz)	QPSK	16QAM	64QAM	256QAM
20	0.084	0.091	0.088	0.071
15	0.084	0.089	0.087	0.072
10	0.087	0.091	0.090	0.072
5	0.087	0.090	0.089	0.070

Test Band	Channel Bandwidth (MHz)	Modulation	Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (dBm)
Band 2/25	20	QPSK	23.45	1.7	25.15	0.327	<33.01
Band 2/25	15	QPSK	23.23	1.7	24.93	0.311	<33.01
Band 2/25	10	QPSK	23.26	1.7	24.96	0.313	<33.01
Band 2/25	5	QPSK	23.36	1.7	25.06	0.321	<33.01
Band 2/25	3	QPSK	23.31	1.7	25.01	0.317	<33.01
Band 2/25	1.4	QPSK	23.36	1.7	25.06	0.321	<33.01
Band 2/25	20	16QAM	23.38	1.7	25.08	0.322	<33.01
Band 2/25	15	16QAM	22.97	1.7	24.67	0.293	<33.01
Band 2/25	10	16QAM	22.99	1.7	24.69	0.294	<33.01
Band 2/25	5	16QAM	23.13	1.7	24.83	0.304	<33.01
Band 2/25	3	16QAM	23.13	1.7	24.83	0.304	<33.01
Band 2/25	1.4	16QAM	22.85	1.7	24.55	0.285	<33.01
Band 2/25	20	64QAM	21.85	1.7	23.55	0.226	<33.01
Band 2/25	15	64QAM	21.72	1.7	23.42	0.220	<33.01
Band 2/25	10	64QAM	21.79	1.7	23.49	0.223	<33.01
Band 2/25	5	64QAM	21.96	1.7	23.66	0.232	<33.01
Band 2/25	3	64QAM	21.86	1.7	23.56	0.227	<33.01
Band 2/25	1.4	64QAM	21.83	1.7	23.53	0.225	<33.01
Band 2/25	20	256QAM	18.99	1.7	20.69	0.117	<33.01
Band 2/25	15	256QAM	19.01	1.7	20.71	0.118	<33.01

Band 2/25	10	256QAM	18.93	1.7	20.63	0.116	<33.01
Band 2/25	5	256QAM	18.97	1.7	20.67	0.117	<33.01
Band 2/25	3	256QAM	18.95	1.7	20.65	0.116	<33.01
Band 2/25	1.4	256QAM	18.98	1.7	20.68	0.117	<33.01
Band 4/66	20	QPSK	23.11	1.7	24.81	0.303	<30
Band 4/66	15	QPSK	23.08	1.7	24.78	0.301	<30
Band 4/66	10	QPSK	23.18	1.7	24.88	0.308	<30
Band 4/66	5	QPSK	23.20	1.7	24.9	0.309	<30
Band 4/66	3	QPSK	23.19	1.7	24.89	0.308	<30
Band 4/66	1.4	QPSK	23.13	1.7	24.83	0.304	<30
Band 4/66	20	16QAM	23.01	1.7	24.71	0.296	<30
Band 4/66	15	16QAM	22.89	1.7	24.59	0.288	<30
Band 4/66	10	16QAM	22.85	1.7	24.55	0.285	<30
Band 4/66	5	16QAM	22.98	1.7	24.68	0.294	<30
Band 4/66	3	16QAM	23.05	1.7	24.75	0.299	<30
Band 4/66	1.4	16QAM	22.75	1.7	24.45	0.279	<30
Band 4/66	20	64QAM	21.67	1.7	23.37	0.217	<30
Band 4/66	15	64QAM	21.76	1.7	23.46	0.222	<30
Band 4/66	10	64QAM	21.72	1.7	23.42	0.220	<30
Band 4/66	5	64QAM	21.80	1.7	23.5	0.224	<30
Band 4/66	3	64QAM	21.67	1.7	23.37	0.217	<30
Band 4/66	1.4	64QAM	21.74	1.7	23.44	0.221	<30
Band 4/66	20	256QAM	18.80	1.7	20.5	0.112	<30
Band 4/66	15	256QAM	18.90	1.7	20.6	0.115	<30
Band 4/66	10	256QAM	18.79	1.7	20.49	0.112	<30
Band 4/66	5	256QAM	18.86	1.7	20.56	0.114	<30
Band 4/66	3	256QAM	18.84	1.7	20.54	0.113	<30
Band 4/66	1.4	256QAM	18.83	1.7	20.53	0.113	<30
Band 5	10	QPSK	22.78	-1.5	19.13	0.082	<38.45
Band 5	5	QPSK	22.81	-1.5	19.16	0.082	<38.45
Band 5	3	QPSK	22.80	-1.5	19.15	0.082	<38.45
Band 5	1.4	QPSK	22.81	-1.5	19.16	0.082	<38.45
Band 5	10	16QAM	22.50	-1.5	18.85	0.077	<38.45
Band 5	5	16QAM	22.64	-1.5	18.99	0.079	<38.45
Band 5	3	16QAM	22.42	-1.5	18.77	0.075	<38.45
Band 5	1.4	16QAM	22.50	-1.5	18.85	0.077	<38.45
Band 5	10	64QAM	21.43	-1.5	17.78	0.060	<38.45
Band 5	5	64QAM	21.42	-1.5	17.77	0.060	<38.45

Band 5	3	64QAM	21.44	-1.5	17.79	0.060	<38.45
Band 5	1.4	64QAM	21.45	-1.5	17.80	0.060	<38.45
Band 5	10	256QAM	18.39	-1.5	14.74	0.030	<38.45
Band 5	5	256QAM	18.53	-1.5	14.88	0.031	<38.45
Band 5	3	256QAM	18.61	-1.5	14.96	0.031	<38.45
Band 5	1.4	256QAM	18.42	-1.5	14.77	0.030	<38.45
Band 7	20	QPSK	23.46	2.6	26.06	0.404	<33.01
Band 7	15	QPSK	23.50	2.6	26.1	0.407	<33.01
Band 7	10	QPSK	23.50	2.6	26.1	0.407	<33.01
Band 7	5	QPSK	23.46	2.6	26.06	0.404	<33.01
Band 7	20	16QAM	23.13	2.6	25.73	0.374	<33.01
Band 7	15	16QAM	23.31	2.6	25.91	0.390	<33.01
Band 7	10	16QAM	23.38	2.6	25.98	0.396	<33.01
Band 7	5	16QAM	23.38	2.6	25.98	0.396	<33.01
Band 7	20	64QAM	21.96	2.6	24.56	0.286	<33.01
Band 7	15	64QAM	21.94	2.6	24.54	0.284	<33.01
Band 7	10	64QAM	22.25	2.6	24.85	0.305	<33.01
Band 7	5	64QAM	22.10	2.6	24.7	0.295	<33.01
Band 7	20	256QAM	18.99	2.6	21.59	0.144	<33.01
Band 7	15	256QAM	19.01	2.6	21.61	0.145	<33.01
Band 7	10	256QAM	19.30	2.6	21.9	0.155	<33.01
Band 7	5	256QAM	19.13	2.6	21.73	0.149	<33.01
Band 12	10	QPSK	22.50	-0.9	19.45	0.088	<34.77
Band 12	5	QPSK	22.50	-0.9	19.45	0.088	<34.77
Band 12	3	QPSK	22.49	-0.9	19.44	0.088	<34.77
Band 12	1.4	QPSK	22.49	-0.9	19.44	0.088	<34.77
Band 12	10	16QAM	22.25	-0.9	19.20	0.083	<34.77
Band 12	5	16QAM	22.30	-0.9	19.25	0.084	<34.77
Band 12	3	16QAM	22.14	-0.9	19.09	0.081	<34.77
Band 12	1.4	16QAM	22.13	-0.9	19.08	0.081	<34.77
Band 12	10	64QAM	21.30	-0.9	18.25	0.067	<34.77
Band 12	5	64QAM	21.45	-0.9	18.40	0.069	<34.77
Band 12	3	64QAM	21.35	-0.9	18.30	0.068	<34.77
Band 12	1.4	64QAM	21.35	-0.9	18.30	0.068	<34.77
Band 12	10	256QAM	18.39	-0.9	15.34	0.034	<34.77
Band 12	5	256QAM	18.36	-0.9	15.31	0.034	<34.77
Band 12	3	256QAM	18.33	-0.9	15.28	0.034	<34.77
Band 12	1.4	256QAM	18.31	-0.9	15.26	0.034	<34.77

Band 13	10	QPSK	22.37	-0.9	19.32	0.086	<34.77
Band 13	5	QPSK	22.38	-0.9	19.33	0.086	<34.77
Band 13	10	16QAM	22.05	-0.9	19.00	0.079	<34.77
Band 13	5	16QAM	22.20	-0.9	19.15	0.082	<34.77
Band 13	10	64QAM	21.16	-0.9	18.11	0.065	<34.77
Band 13	5	64QAM	22.44	-0.9	19.39	0.087	<34.77
Band 13	10	256QAM	18.27	-0.9	15.22	0.033	<34.77
Band 13	5	256QAM	18.22	-0.9	15.17	0.033	<34.77
Band 14	10	QPSK	22.51	-0.9	19.46	0.088	<44.77
Band 14	5	QPSK	22.44	-0.9	19.39	0.087	<44.77
Band 14	10	16QAM	22.21	-0.9	19.16	0.082	<44.77
Band 14	5	16QAM	22.32	-0.9	19.27	0.085	<44.77
Band 14	10	64QAM	21.54	-0.9	18.49	0.071	<44.77
Band 14	5	64QAM	21.22	-0.9	18.17	0.066	<44.77
Band 14	10	256QAM	18.50	-0.9	15.45	0.035	<44.77
Band 14	5	256QAM	18.41	-0.9	15.36	0.034	<44.77
Band 17	10	QPSK	22.47	-0.9	19.42	0.087	<34.77
Band 17	5	QPSK	22.61	-0.9	19.56	0.090	<34.77
Band 17	10	16QAM	22.15	-0.9	19.10	0.081	<34.77
Band 17	5	16QAM	22.63	-0.9	19.58	0.091	<34.77
Band 17	10	64QAM	21.23	-0.9	18.18	0.066	<34.77
Band 17	5	64QAM	21.58	-0.9	18.53	0.071	<34.77
Band 17	10	256QAM	18.27	-0.9	15.22	0.033	<34.77
Band 17	5	256QAM	18.31	-0.9	15.26	0.034	<34.77
Band 26part22	15	QPSK	22.55	-1.5	18.90	0.078	<38.45
Band 26part22	10	QPSK	22.78	-1.5	19.13	0.082	<38.45
Band 26part22	5	QPSK	22.81	-1.5	19.16	0.082	<38.45
Band 26part22	3	QPSK	22.80	-1.5	19.15	0.082	<38.45
Band 26part22	1.4	QPSK	22.81	-1.5	19.16	0.082	<38.45
Band 26part22	15	16QAM	22.17	-1.5	18.52	0.071	<38.45
Band 26part22	10	16QAM	22.50	-1.5	18.85	0.077	<38.45

Band 26part22	5	16QAM	22.64	-1.5	18.99	0.079	<38.45
Band 26part22	3	16QAM	22.42	-1.5	18.77	0.075	<38.45
Band 26part22	1.4	16QAM	22.50	-1.5	18.85	0.077	<38.45
Band 26part22	15	64QAM	21.44	-1.5	17.79	0.060	<38.45
Band 26part22	10	64QAM	21.43	-1.5	17.78	0.060	<38.45
Band 26part22	5	64QAM	21.42	-1.5	17.77	0.060	<38.45
Band 26part22	3	64QAM	21.44	-1.5	17.79	0.060	<38.45
Band 26part22	1.4	64QAM	21.45	-1.5	17.80	0.060	<38.45
Band 26part22	15	256QAM	18.37	-1.5	14.72	0.030	<38.45
Band 26part22	10	256QAM	18.39	-1.5	14.74	0.030	<38.45
Band 26part22	5	256QAM	18.53	-1.5	14.88	0.031	<38.45
Band 26part22	3	256QAM	18.61	-1.5	14.96	0.031	<38.45
Band 26part22	1.4	256QAM	18.42	-1.5	14.77	0.030	<38.45
Band 26 part 90	15	QPSK	22.51	-1.5	18.86	0.077	<100
Band 26 part 90	10	QPSK	22.55	-1.5	18.90	0.078	<100
Band 26 part 90	5	QPSK	22.5	-1.5	18.85	0.077	<100
Band 26 part 90	3	QPSK	22.51	-1.5	18.86	0.077	<100
Band 26 part 90	1.4	QPSK	22.53	-1.5	18.88	0.077	<100
Band 26 part 90	15	16QAM	22.26	-1.5	18.61	0.073	<100

Band 26 part 90	10	16QAM	22.19	-1.5	18.54	0.071	<100
Band 26 part 90	5	16QAM	22.32	-1.5	18.67	0.074	<100
Band 26 part 90	3	16QAM	22.11	-1.5	18.46	0.070	<100
Band 26 part 90	1.4	16QAM	22.3	-1.5	18.65	0.073	<100
Band 26 part 90	15	64QAM	21.17	-1.5	17.52	0.056	<100
Band 26 part 90	10	64QAM	21.4	-1.5	17.75	0.060	<100
Band 26 part 90	5	64QAM	21.35	-1.5	17.70	0.059	<100
Band 26 part 90	3	64QAM	21.31	-1.5	17.66	0.058	<100
Band 26 part 90	1.4	64QAM	21.34	-1.5	17.69	0.059	<100
Band 26 part 90	15	256QAM	18.22	-1.5	14.57	0.029	<100
Band 26 part 90	10	256QAM	18.26	-1.5	14.61	0.029	<100
Band 26 part 90	5	256QAM	18.39	-1.5	14.74	0.030	<100
Band 26 part 90	3	256QAM	18.34	-1.5	14.69	0.029	<100
Band 26 part 90	1.4	256QAM	18.3	-1.5	14.65	0.029	<100
Band 38/41	20	QPSK	26.33	2.6	28.93	0.782	<33.01
Band 38/41	15	QPSK	26.16	2.6	28.76	0.752	<33.01
Band 38/41	10	QPSK	26.28	2.6	28.88	0.773	<33.01
Band 38/41	5	QPSK	26.41	2.6	29.01	0.796	<33.01
Band 38/41	20	16QAM	25.67	2.6	28.27	0.671	<33.01
Band 38/41	15	16QAM	25.54	2.6	28.14	0.652	<33.01
Band 38/41	10	16QAM	25.47	2.6	28.07	0.641	<33.01
Band 38/41	5	16QAM	25.57	2.6	28.17	0.656	<33.01
Band 38/41	20	64QAM	24.56	2.6	27.16	0.520	<33.01
Band 38/41	15	64QAM	24.76	2.6	27.36	0.545	<33.01

Band 38/41	10	64QAM	24.44	2.6	27.04	0.506	<33.01
Band 38/41	5	64QAM	24.52	2.6	27.12	0.515	<33.01
Band 38/41	20	256QAM	21.53	2.6	24.13	0.259	<33.01
Band 38/41	15	256QAM	21.44	2.6	24.04	0.254	<33.01
Band 38/41	10	256QAM	21.52	2.6	24.12	0.258	<33.01
Band 38/41	5	256QAM	21.61	2.6	24.21	0.264	<33.01
Band 71	20	QPSK	22.44	-1.1	19.19	0.083	<34.77
Band 71	15	QPSK	22.36	-1.1	19.11	0.081	<34.77
Band 71	10	QPSK	22.40	-1.1	19.15	0.082	<34.77
Band 71	5	QPSK	22.45	-1.1	19.20	0.083	<34.77
Band 71	20	16QAM	21.99	-1.1	18.74	0.075	<34.77
Band 71	15	16QAM	22.34	-1.1	19.09	0.081	<34.77
Band 71	10	16QAM	22.09	-1.1	18.84	0.077	<34.77
Band 71	5	16QAM	22.18	-1.1	18.93	0.078	<34.77
Band 71	20	64QAM	21.07	-1.1	17.82	0.061	<34.77
Band 71	15	64QAM	21.22	-1.1	17.97	0.063	<34.77
Band 71	10	64QAM	21.26	-1.1	18.01	0.063	<34.77
Band 71	5	64QAM	21.23	-1.1	17.98	0.063	<34.77
Band 71	20	256QAM	18.10	-1.1	14.85	0.031	<34.77
Band 71	15	256QAM	18.10	-1.1	14.85	0.031	<34.77
Band 71	10	256QAM	18.13	-1.1	14.88	0.031	<34.77
Band 71	5	256QAM	18.29	-1.1	15.04	0.032	<34.77
Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)							

1.4. Test Standards and Results

The objective of the report is to perform testing according to Part 2, Part 22, Part 24, Part 27, Part90&96 for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22	Public Mobile Services
3	47 CFR Part 24	Personal Communications Services
4	47 CFR Part 27	Miscellaneous Wireless Communications Services
5	47 CFR Part 90	Miscellaneous Wireless Communications Services
6	47 CFR Part 96	CITIZENS BROADBAND RADIO SERVICE

Test detailed items/section required by FCC rules and results are as below:

Section	Description	Test Date	Test Engineer	Result	Method Determination /Remark
2.1053 22.917(a) 24.238(a) 27.53(a)(4) 27.53(c)(2) 27.53(g) 27.53(h) 27.53 (i)(2) 27.53(m)(4) 90.691 96.41(e)	Radiated Spurious Emissions	Sep. 10&28, 2024	Li Hanbin	PASS	No deviation

Note 1: The test results of all conducted test items please refer to the module FCC test report (Report No.: 2204RSU037-U1 / 2204RSU037-U2 / 2204RSU037-U3 / 2204RSU037-U4 / 2204RSU037-U5, FCC ID: XMR2022RG520NNA), Aug. 07, 2022 and Oct. 23, 2024 by MRT Technology (Suzhou) Co., Ltd.

Note 2: The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 and ANSI/TIA-603-E-2016.

Note 3: Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

Note 4: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

1.5. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15-35
Relative Humidity (%):	30-60
Atmospheric Pressure (kPa):	86-106

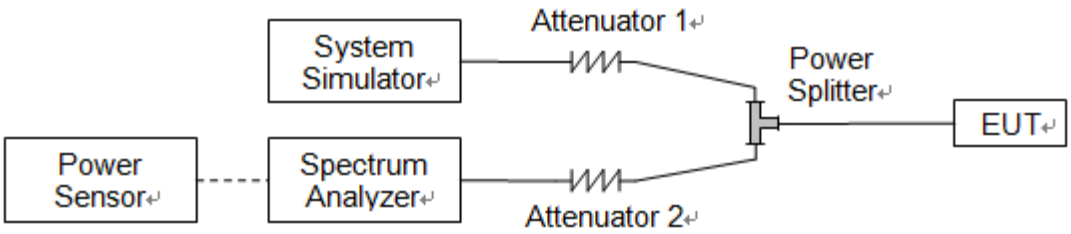
2. 47 CFR Part 2, Part 22H, Part 24E, Part 27 D&F&H&L&M&N, Part 90 and Part96 Requirements

2.1. Transmitter Conducted Output Power and E.R.P./E.I.R.P.

2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

2.1.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2.1.3. Test Procedure

KDB 971168 D01v03 Section 5.2 and ANSI/TIA-603-E-2016.

E.I.R.P. (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)
E.R.P. (dBm) = E.I.R.P. (dBm) - 2.15

2.1.4. Result

Conducted Output Power

LTE Band 30						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				/	27710	/
Frequency (MHz)				/	2310	/
10	QPSK	1	0	/	21.10	/
10	QPSK	1	25	/	21.30	/
10	QPSK	1	49	/	21.12	/
10	QPSK	25	0	/	20.14	/
10	QPSK	25	12	/	20.15	/
10	QPSK	25	25	/	20.04	/
10	QPSK	50	0	/	20.00	/
10	16QAM	1	0	/	20.58	/
10	16QAM	1	25	/	20.46	/
10	16QAM	1	49	/	20.25	/
10	16QAM	25	0	/	19.31	/
10	16QAM	25	12	/	19.25	/
10	16QAM	25	25	/	19.11	/
10	16QAM	50	0	/	19.25	/
10	64QAM	1	0	/	19.37	/
10	64QAM	1	25	/	19.09	/
10	64QAM	1	49	/	19.46	/
10	64QAM	25	0	/	18.30	/
10	64QAM	25	12	/	18.24	/
10	64QAM	25	25	/	18.28	/
10	64QAM	50	0	/	18.08	/
10	256QAM	1	0	/	16.17	/
10	256QAM	1	25	/	15.92	/
10	256QAM	1	49	/	16.04	/
10	256QAM	25	0	/	15.64	/
10	256QAM	25	12	/	15.77	/
10	256QAM	25	25	/	15.73	/
10	256QAM	50	0	/	16.29	/

LTE Band 30						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				27685	27710	27735
Frequency (MHz)				2307.5	2310	2312.5
5	QPSK	1	0	21.13	20.96	20.90
5	QPSK	1	12	20.65	21.22	20.76
5	QPSK	1	24	20.91	20.94	20.92
5	QPSK	12	0	20.15	20.09	20.32
5	QPSK	12	7	19.92	19.98	20.09
5	QPSK	12	13	19.73	20.04	20.16
5	QPSK	25	0	20.19	19.88	20.07
5	16QAM	1	0	20.14	20.58	20.27
5	16QAM	1	12	20.26	20.52	20.04
5	16QAM	1	24	20.34	20.57	20.23
5	16QAM	12	0	19.07	19.03	19.27
5	16QAM	12	7	19.27	19.19	18.76
5	16QAM	12	13	19.10	19.27	19.28
5	16QAM	25	0	18.85	19.21	19.30
5	64QAM	1	0	19.16	19.54	18.84
5	64QAM	1	12	19.39	19.39	19.61
5	64QAM	1	24	19.31	19.18	19.11
5	64QAM	12	0	17.89	17.84	17.92
5	64QAM	12	7	18.36	17.94	18.28
5	64QAM	12	13	18.26	18.14	18.19
5	64QAM	25	0	18.18	18.29	18.26
5	256QAM	1	0	16.66	16.72	16.49
5	256QAM	1	12	17.00	16.01	16.00
5	256QAM	1	24	16.80	15.97	15.67
5	256QAM	12	0	15.60	15.69	16.07
5	256QAM	12	7	17.02	16.45	16.59
5	256QAM	12	13	16.67	16.00	16.30
5	256QAM	25	0	16.21	17.04	16.80

LTE Band 48						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				55340	55990	56640
Frequency (MHz)				3560	3625	3690
20	QPSK	1	0	17.53	17.73	17.72
20	QPSK	1	49	17.49	17.67	17.57
20	QPSK	1	99	17.08	17.55	17.45
20	QPSK	50	0	17.35	17.69	17.65
20	QPSK	50	24	17.21	17.65	17.68
20	QPSK	50	50	17.46	17.66	17.59
20	QPSK	100	0	17.52	17.66	17.64
20	16QAM	1	0	17.58	17.92	18.11
20	16QAM	1	49	17.71	17.81	17.80
20	16QAM	1	99	17.31	17.80	17.62
20	16QAM	50	0	17.46	17.70	17.73
20	16QAM	50	24	17.55	17.71	17.69
20	16QAM	50	50	17.29	17.59	17.73
20	16QAM	100	0	17.53	17.67	17.66
20	64QAM	1	0	17.61	17.72	17.95
20	64QAM	1	49	17.44	17.54	17.64
20	64QAM	1	99	17.30	17.46	17.61
20	64QAM	50	0	17.43	17.66	17.67
20	64QAM	50	24	17.09	17.61	17.69
20	64QAM	50	50	17.39	17.67	17.61
20	64QAM	100	0	17.51	17.62	17.36
20	256QAM	1	0	15.40	17.04	16.58
20	256QAM	1	49	15.69	15.48	16.09
20	256QAM	1	99	16.02	15.48	15.67
20	256QAM	50	0	15.49	15.83	16.11
20	256QAM	50	24	15.74	16.90	16.58
20	256QAM	50	50	15.88	15.66	16.09
20	256QAM	100	0	15.38	15.41	17.00

LTE Band 48						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				55315	55990	56665
Frequency (MHz)				3557.5	3625	3692.5
15	QPSK	1	0	17.47	17.71	17.71
15	QPSK	1	37	17.48	17.73	17.71
15	QPSK	1	74	17.40	17.54	17.54
15	QPSK	36	0	17.37	17.73	17.63
15	QPSK	36	20	17.46	17.55	17.27
15	QPSK	36	39	17.39	17.57	17.70
15	QPSK	75	0	17.45	17.50	17.63
15	16QAM	1	0	17.68	17.75	18.01
15	16QAM	1	37	17.70	17.96	17.80
15	16QAM	1	74	17.49	17.70	17.60
15	16QAM	36	0	17.39	17.64	17.66
15	16QAM	36	20	17.44	17.57	17.67
15	16QAM	36	39	17.39	17.60	17.59
15	16QAM	75	0	17.26	17.58	17.57
15	64QAM	1	0	17.63	17.58	17.89
15	64QAM	1	37	17.47	17.89	17.73
15	64QAM	1	74	17.35	17.65	17.55
15	64QAM	36	0	17.36	17.60	17.77
15	64QAM	36	20	17.43	17.59	17.65
15	64QAM	36	39	17.39	17.43	17.65
15	64QAM	75	0	17.48	17.55	17.64
15	256QAM	1	0	16.99	16.14	15.81
15	256QAM	1	37	16.51	15.47	15.55
15	256QAM	1	74	16.84	16.05	15.78
15	256QAM	36	0	16.07	17.08	16.71
15	256QAM	36	20	15.65	15.41	16.43
15	256QAM	36	39	16.87	16.30	16.53
15	256QAM	75	0	15.54	15.62	15.71

LTE Band 48						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				55290	55990	56690
Frequency (MHz)				3555	3625	3695
10	QPSK		0	17.56	17.86	17.86
10	QPSK	1	25	17.87	17.90	17.89
10	QPSK	1	49	17.44	17.49	17.62
10	QPSK	25	0	17.54	17.71	17.72
10	QPSK	25	12	17.55	17.46	17.80
10	QPSK	25	25	17.50	17.75	17.77
10	QPSK	50	0	17.51	17.69	17.70
10	16QAM	1	0	17.66	17.85	18.11
10	16QAM	1	25	17.69	17.83	18.10
10	16QAM	1	49	17.53	17.95	18.03
10	16QAM	25	0	17.46	17.70	17.80
10	16QAM	25	12	17.58	17.60	17.73
10	16QAM	25	25	17.51	17.76	17.81
10	16QAM	50	0	17.24	17.68	17.72
10	64QAM		0	17.70	17.90	18.04
10	64QAM	1	25	17.77	17.80	17.76
10	64QAM	1	49	17.46	17.81	17.90
10	64QAM	25	0	17.57	17.78	17.75
10	64QAM	25	12	17.62	17.77	17.72
10	64QAM	25	25	17.55	17.74	17.56
10	64QAM	50	0	17.51	17.70	17.68
10	256QAM	1	0	16.12	15.41	15.40
10	256QAM	1	25	16.78	16.63	15.87
10	256QAM	1	49	15.52	16.53	16.31
10	256QAM	25	0	16.19	16.11	17.06
10	256QAM	25	12	16.28	15.65	16.50
10	256QAM	25	25	15.64	15.91	17.03
10	256QAM	50	0	15.45	15.83	16.84

LTE Band 48						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				55265	55990	56175
Frequency (MHz)				3552.5	3625	3697.5
5	QPSK	1	0	17.46	17.50	17.89
5	QPSK	1	12	17.17	17.86	17.87
5	QPSK	1	24	17.38	17.68	17.75
5	QPSK	12	0	17.32	17.66	17.74
5	QPSK	12	7	17.65	17.82	17.83
5	QPSK	12	13	17.60	17.72	17.75
5	QPSK	25	0	17.60	17.64	17.77
5	16QAM	1	0	17.72	17.87	18.03
5	16QAM	1	12	18.00	18.02	17.85
5	16QAM	1	24	17.69	17.97	17.83
5	16QAM	12	0	17.78	17.62	17.79
5	16QAM	12	7	17.73	17.74	17.82
5	16QAM	12	13	17.64	17.81	17.87
5	16QAM	25	0	17.36	17.59	17.78
5	64QAM	1	0	17.61	17.74	17.93
5	64QAM	1	12	17.66	17.77	18.00
5	64QAM	1	24	17.54	17.61	17.85
5	64QAM	12	0	17.61	17.67	17.83
5	64QAM	12	7	17.74	17.86	17.87
5	64QAM	12	13	17.55	17.90	17.74
5	64QAM	25	0	17.56	17.66	17.78
5	256QAM	1	0	16.88	16.21	16.01
5	256QAM	1	12	15.48	16.54	16.25
5	256QAM	1	24	16.49	15.73	16.54
5	256QAM	12	0	16.43	16.21	15.49
5	256QAM	12	7	16.84	16.53	15.62
5	256QAM	12	13	15.97	16.92	16.03
5	256QAM	25	0	16.97	15.53	16.17

Effective Radiated Power and Effective Isotropic Radiated Power

LTE Band 30				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				/		27710		/	
Frequency (MHz)				/		2310		/	
				dBm	W	dBm	W	dBm	W
10	QPSK	1	0	/	/	22.90	0.195	/	/
10	QPSK	1	25	/	/	23.10	0.204	/	/
10	QPSK	1	49	/	/	22.92	0.196	/	/
10	QPSK	25	0	/	/	21.94	0.156	/	/
10	QPSK	25	12	/	/	21.95	0.157	/	/
10	QPSK	25	25	/	/	21.84	0.153	/	/
10	QPSK	50	0	/	/	21.80	0.151	/	/
10	16QAM	1	0	/	/	22.38	0.173	/	/
10	16QAM	1	25	/	/	22.26	0.168	/	/
10	16QAM	1	49	/	/	22.05	0.160	/	/
10	16QAM	25	0	/	/	21.11	0.129	/	/
10	16QAM	25	12	/	/	21.05	0.127	/	/
10	16QAM	25	25	/	/	20.91	0.123	/	/
10	16QAM	50	0	/	/	21.05	0.127	/	/
10	64QAM	1	0	/	/	21.17	0.131	/	/
10	64QAM	1	25	/	/	20.89	0.123	/	/
10	64QAM	1	49	/	/	21.26	0.134	/	/
10	64QAM	25	0	/	/	20.10	0.102	/	/
10	64QAM	25	12	/	/	20.04	0.101	/	/
10	64QAM	25	25	/	/	20.08	0.102	/	/
10	64QAM	50	0	/	/	19.88	0.097	/	/
10	256QAM	1	0	/	/	17.97	0.063	/	/
10	256QAM	1	25	/	/	17.72	0.059	/	/
10	256QAM	1	49	/	/	17.84	0.061	/	/
10	256QAM	25	0	/	/	17.44	0.055	/	/
10	256QAM	25	12	/	/	17.57	0.057	/	/
10	256QAM	25	25	/	/	17.53	0.057	/	/
10	256QAM	50	0	/	/	18.09	0.064	/	/

LTE Band 30				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				27685		27710		27735	
Frequency (MHz)				2307.5		2310		2312.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	22.93	0.196	22.76	0.189	22.70	0.186
5	QPSK	1	12	22.45	0.176	23.02	0.200	22.56	0.180
5	QPSK	1	24	22.71	0.187	22.74	0.188	22.72	0.187
5	QPSK	12	0	21.95	0.157	21.89	0.155	22.12	0.163
5	QPSK	12	7	21.72	0.149	21.78	0.151	21.89	0.155
5	QPSK	12	13	21.53	0.142	21.84	0.153	21.96	0.157
5	QPSK	25	0	21.99	0.158	21.68	0.147	21.87	0.154
5	16QAM	1	0	21.94	0.156	22.38	0.173	22.07	0.161
5	16QAM	1	12	22.06	0.161	22.32	0.171	21.84	0.153
5	16QAM	1	24	22.14	0.164	22.37	0.173	22.03	0.160
5	16QAM	12	0	20.87	0.122	20.83	0.121	21.07	0.128
5	16QAM	12	7	21.07	0.128	20.99	0.126	20.56	0.114
5	16QAM	12	13	20.90	0.123	21.07	0.128	21.08	0.128
5	16QAM	25	0	20.65	0.116	21.01	0.126	21.10	0.129
5	64QAM	1	0	20.96	0.125	21.34	0.136	20.64	0.116
5	64QAM	1	12	21.19	0.132	21.19	0.132	21.41	0.138
5	64QAM	1	24	21.11	0.129	20.98	0.125	20.91	0.123
5	64QAM	12	0	19.69	0.093	19.64	0.092	19.72	0.094
5	64QAM	12	7	20.16	0.104	19.74	0.094	20.08	0.102
5	64QAM	12	13	20.06	0.101	19.94	0.099	19.99	0.100
5	64QAM	25	0	19.98	0.100	20.09	0.102	20.06	0.101
5	256QAM	1	0	18.46	0.070	18.52	0.071	18.29	0.067
5	256QAM	1	12	18.80	0.076	17.81	0.060	17.80	0.060
5	256QAM	1	24	18.60	0.072	17.77	0.060	17.47	0.056
5	256QAM	12	0	17.40	0.055	17.49	0.056	17.87	0.061
5	256QAM	12	7	18.82	0.076	18.25	0.067	18.39	0.069
5	256QAM	12	13	18.47	0.070	17.80	0.060	18.10	0.065
5	256QAM	25	0	18.01	0.063	18.84	0.077	18.60	0.072

LTE Band 48				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				55340		55990		56640	
Frequency (MHz)				3560		3625		3690	
				dBm	W	dBm	W	dBm	W
20	QPSK	1	0	19.03	0.080	19.23	0.084	19.22	0.084
20	QPSK	1	49	18.99	0.079	19.17	0.083	19.07	0.081
20	QPSK	1	99	18.58	0.072	19.05	0.080	18.95	0.079
20	QPSK	50	0	18.85	0.077	19.19	0.083	19.15	0.082
20	QPSK	50	24	18.71	0.074	19.15	0.082	19.18	0.083
20	QPSK	50	50	18.96	0.079	19.16	0.082	19.09	0.081
20	QPSK	100	0	19.02	0.080	19.16	0.082	19.14	0.082
20	16QAM	1	0	19.08	0.081	19.42	0.087	19.61	0.091
20	16QAM	1	49	19.21	0.083	19.31	0.085	19.30	0.085
20	16QAM	1	99	18.81	0.076	19.30	0.085	19.12	0.082
20	16QAM	50	0	18.96	0.079	19.20	0.083	19.23	0.084
20	16QAM	50	24	19.05	0.080	19.21	0.083	19.19	0.083
20	16QAM	50	50	18.79	0.076	19.09	0.081	19.23	0.084
20	16QAM	100	0	19.03	0.080	19.17	0.083	19.16	0.082
20	64QAM	1	0	19.11	0.081	19.22	0.084	19.45	0.088
20	64QAM	1	49	18.94	0.078	19.04	0.080	19.14	0.082
20	64QAM	1	99	18.80	0.076	18.96	0.079	19.11	0.081
20	64QAM	50	0	18.93	0.078	19.16	0.082	19.17	0.083
20	64QAM	50	24	18.59	0.072	19.11	0.081	19.19	0.083
20	64QAM	50	50	18.89	0.077	19.17	0.083	19.11	0.081
20	64QAM	100	0	19.01	0.080	19.12	0.082	18.86	0.077
20	256QAM	1	0	16.90	0.049	18.54	0.071	18.08	0.064
20	256QAM	1	49	17.19	0.052	16.98	0.050	17.59	0.057
20	256QAM	1	99	17.52	0.056	16.98	0.050	17.17	0.052
20	256QAM	50	0	16.99	0.050	17.33	0.054	17.61	0.058
20	256QAM	50	24	17.24	0.053	18.40	0.069	18.08	0.064
20	256QAM	50	50	17.38	0.055	17.16	0.052	17.59	0.057
20	256QAM	100	0	16.88	0.049	16.91	0.049	18.50	0.071

LTE Band 48				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				55315		55990		56665	
Frequency (MHz)				3557.5		3625		3692.5	
				dBm	W	dBm	W	dBm	W
15	QPSK	1	0	18.97	0.079	19.21	0.083	19.21	0.083
15	QPSK	1	37	18.98	0.079	19.23	0.084	19.21	0.083
15	QPSK	1	74	18.90	0.078	19.04	0.080	19.04	0.080
15	QPSK	36	0	18.87	0.077	19.23	0.084	19.13	0.082
15	QPSK	36	20	18.96	0.079	19.05	0.080	18.77	0.075
15	QPSK	36	39	18.89	0.077	19.07	0.081	19.20	0.083
15	QPSK	75	0	18.95	0.079	19.00	0.079	19.13	0.082
15	16QAM	1	0	19.18	0.083	19.25	0.084	19.51	0.089
15	16QAM	1	37	19.20	0.083	19.46	0.088	19.30	0.085
15	16QAM	1	74	18.99	0.079	19.20	0.083	19.10	0.081
15	16QAM	36	0	18.89	0.077	19.14	0.082	19.16	0.082
15	16QAM	36	20	18.94	0.078	19.07	0.081	19.17	0.083
15	16QAM	36	39	18.89	0.077	19.10	0.081	19.09	0.081
15	16QAM	75	0	18.76	0.075	19.08	0.081	19.07	0.081
15	64QAM	1	0	19.13	0.082	19.08	0.081	19.39	0.087
15	64QAM	1	37	18.97	0.079	19.39	0.087	19.23	0.084
15	64QAM	1	74	18.85	0.077	19.15	0.082	19.05	0.080
15	64QAM	36	0	18.86	0.077	19.10	0.081	19.27	0.085
15	64QAM	36	20	18.93	0.078	19.09	0.081	19.15	0.082
15	64QAM	36	39	18.89	0.077	18.93	0.078	19.15	0.082
15	64QAM	75	0	18.98	0.079	19.05	0.080	19.14	0.082
15	256QAM	1	0	18.49	0.071	17.64	0.058	17.31	0.054
15	256QAM	1	37	18.01	0.063	16.97	0.050	17.05	0.051
15	256QAM	1	74	18.34	0.068	17.55	0.057	17.28	0.053
15	256QAM	36	0	17.57	0.057	18.58	0.072	18.21	0.066
15	256QAM	36	20	17.15	0.052	16.91	0.049	17.93	0.062
15	256QAM	36	39	18.37	0.069	17.80	0.060	18.03	0.064
15	256QAM	75	0	17.04	0.051	17.12	0.052	17.21	0.053

LTE Band 48				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				55290		55990		56690	
Frequency (MHz)				3555		3625		3695	
				dBm	W	dBm	W	dBm	W
10	QPSK	1	0	19.06	0.081	19.36	0.086	19.36	0.086
10	QPSK	1	25	19.37	0.086	19.40	0.087	19.39	0.087
10	QPSK	1	49	18.94	0.078	18.99	0.079	19.12	0.082
10	QPSK	25	0	19.04	0.080	19.21	0.083	19.22	0.084
10	QPSK	25	12	19.05	0.080	18.96	0.079	19.30	0.085
10	QPSK	25	25	19.00	0.079	19.25	0.084	19.27	0.085
10	QPSK	50	0	19.01	0.080	19.19	0.083	19.20	0.083
10	16QAM	1	0	19.16	0.082	19.35	0.086	19.61	0.091
10	16QAM	1	25	19.19	0.083	19.33	0.086	19.60	0.091
10	16QAM	1	49	19.03	0.080	19.45	0.088	19.53	0.090
10	16QAM	25	0	18.96	0.079	19.20	0.083	19.30	0.085
10	16QAM	25	12	19.08	0.081	19.10	0.081	19.23	0.084
10	16QAM	25	25	19.01	0.080	19.26	0.084	19.31	0.085
10	16QAM	50	0	18.74	0.075	19.18	0.083	19.22	0.084
10	64QAM	1	0	19.20	0.083	19.40	0.087	19.54	0.090
10	64QAM	1	25	19.27	0.085	19.30	0.085	19.26	0.084
10	64QAM	1	49	18.96	0.079	19.31	0.085	19.40	0.087
10	64QAM	25	0	19.07	0.081	19.28	0.085	19.25	0.084
10	64QAM	25	12	19.12	0.082	19.27	0.085	19.22	0.084
10	64QAM	25	25	19.05	0.080	19.24	0.084	19.06	0.081
10	64QAM	50	0	19.01	0.080	19.20	0.083	19.18	0.083
10	256QAM	1	0	17.62	0.058	16.91	0.049	16.90	0.049
10	256QAM	1	25	18.28	0.067	18.13	0.065	17.37	0.055
10	256QAM	1	49	17.02	0.050	18.03	0.064	17.81	0.060
10	256QAM	25	0	17.69	0.059	17.61	0.058	18.56	0.072
10	256QAM	25	12	17.78	0.060	17.15	0.052	18.00	0.063
10	256QAM	25	25	17.14	0.052	17.41	0.055	18.53	0.071
10	256QAM	50	0	16.95	0.050	17.33	0.054	18.34	0.068

LTE Band 48				Measured E.I.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				55265		55990		56175	
Frequency (MHz)				3552.5		3625		3697.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	18.96	0.079	19.00	0.079	19.39	0.087
5	QPSK	1	12	18.67	0.074	19.36	0.086	19.37	0.086
5	QPSK	1	24	18.88	0.077	19.18	0.083	19.25	0.084
5	QPSK	12	0	18.82	0.076	19.16	0.082	19.24	0.084
5	QPSK	12	7	19.15	0.082	19.32	0.086	19.33	0.086
5	QPSK	12	13	19.10	0.081	19.22	0.084	19.25	0.084
5	QPSK	25	0	19.10	0.081	19.14	0.082	19.27	0.085
5	16QAM	1	0	19.22	0.084	19.37	0.086	19.53	0.090
5	16QAM	1	12	19.50	0.089	19.52	0.090	19.35	0.086
5	16QAM	1	24	19.19	0.083	19.47	0.089	19.33	0.086
5	16QAM	12	0	19.28	0.085	19.12	0.082	19.29	0.085
5	16QAM	12	7	19.23	0.084	19.24	0.084	19.32	0.086
5	16QAM	12	13	19.14	0.082	19.31	0.085	19.37	0.086
5	16QAM	25	0	18.86	0.077	19.09	0.081	19.28	0.085
5	64QAM	1	0	19.11	0.081	19.24	0.084	19.43	0.088
5	64QAM	1	12	19.16	0.082	19.27	0.085	19.50	0.089
5	64QAM	1	24	19.04	0.080	19.11	0.081	19.35	0.086
5	64QAM	12	0	19.11	0.081	19.17	0.083	19.33	0.086
5	64QAM	12	7	19.24	0.084	19.36	0.086	19.37	0.086
5	64QAM	12	13	19.05	0.080	19.40	0.087	19.24	0.084
5	64QAM	25	0	19.06	0.081	19.16	0.082	19.28	0.085
5	256QAM	1	0	18.38	0.069	17.71	0.059	17.51	0.056
5	256QAM	1	12	16.98	0.050	18.04	0.064	17.75	0.060
5	256QAM	1	24	17.99	0.063	17.23	0.053	18.04	0.064
5	256QAM	12	0	17.93	0.062	17.71	0.059	16.99	0.050
5	256QAM	12	7	18.34	0.068	18.03	0.064	17.12	0.052
5	256QAM	12	13	17.47	0.056	18.42	0.070	17.53	0.057
5	256QAM	25	0	18.47	0.070	17.03	0.050	17.67	0.058

2.2. Radiated Spurious Emissions

2.2.1. Requirement

According to FCC section 2.1051, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm.

Additional requirement for LTE Band 7, 38, 41

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 55 + 10 log(P) dB. This calculated to be -25dBm.

Additional requirement for Band 13

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (E.I.R.P.) for wideband signals, and −80 dBW E.I.R.P. for discrete emissions of less than 700 Hz bandwidth. This calculated to be -40dBm.

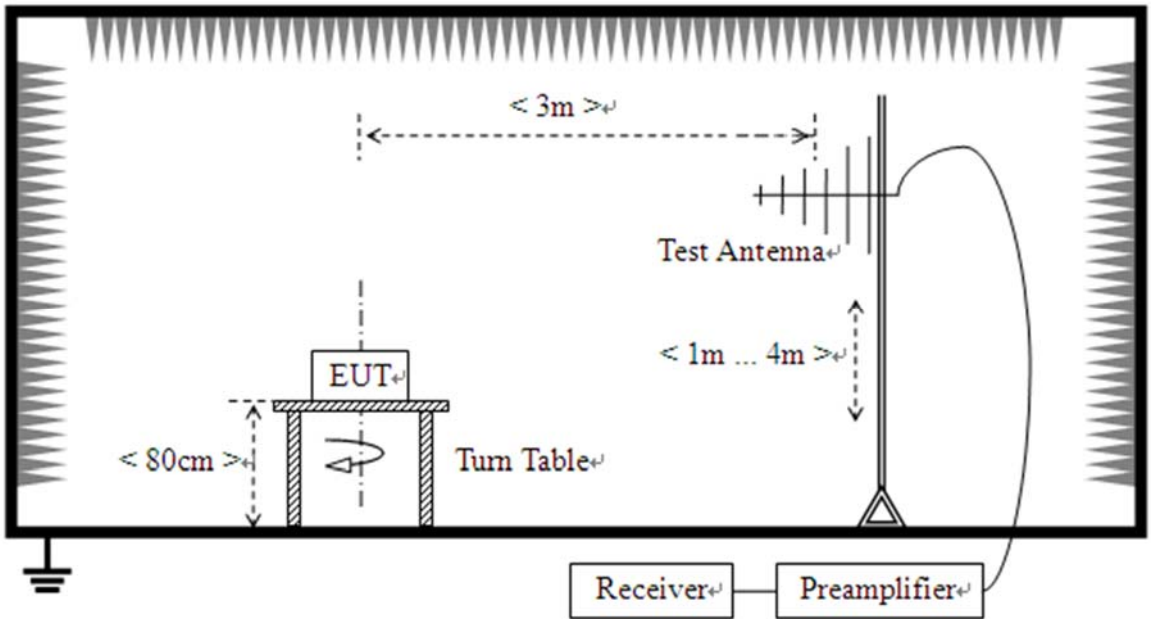
Additional requirement for LTE Band 30

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 70 + 10 log (P) dB. This calculated to be -40dBm.

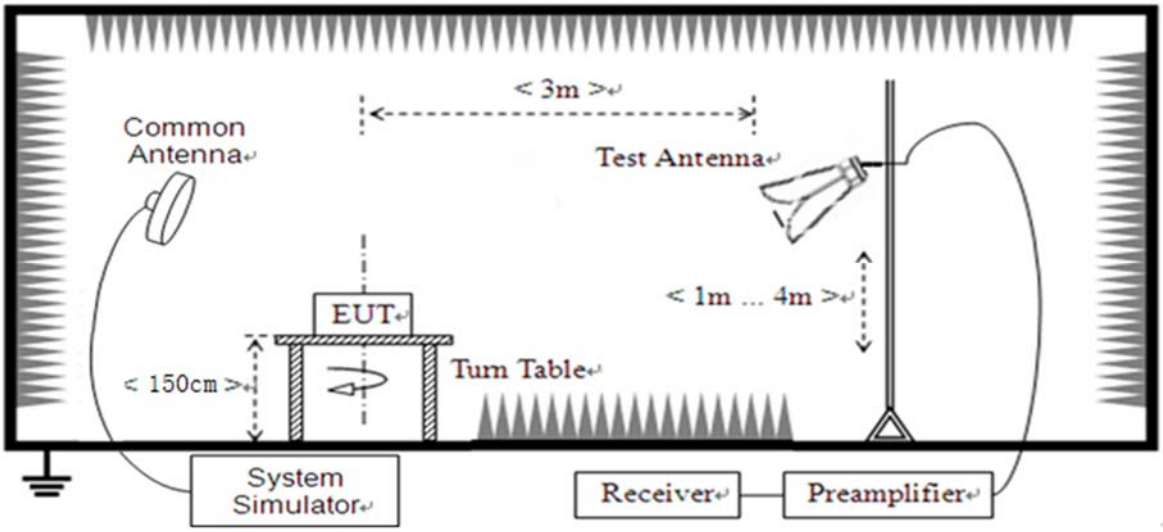
Additional requirement for LTE Band 48

The power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

2.2.2. Test Description



(For the test frequency from 30MHz to1GHz)



(For the test frequency above 1GHz)

The EUT is located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power, and only the test result of the maximum output power was recorded.

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test

Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground and the Turn Table is actuated to turn from 0° to 360°to determine the maximum value of the radiated power. The emission levels at both horizontal and vertical polarizations should be tested. The Filters consists of Notch Filters and High Pass Filter.

Note: When doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

2.2.3. Test Procedure

KDB 971168 D01v03 Section 5.8 and ANSI/TIA-603-E-2016.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements.

For measurements above 1GHz (exclude 1559-1610 MHz) the resolution bandwidth is set to 1MHz, the video band width is set to 3MHz for peak measurements.

2.2.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested to verify the out of band emissions.

The substitution corrections are obtained as described below:

$A_{SUBST} = P_{SUBST_TX} - P_{SUBST_RX} - L_{SUBST_CABLES} + G_{SUBST_TX_ANT}$

$A_{TOT} = L_{CABLES} + A_{SUBST}$

Where A_{SUBST} is the final substitution correction including receive antenna gain.

P_{SUBST_TX} is signal generator level,

P_{SUBST_RX} is receiver level,

L_{SUBST_CABLES} is cable losses including TX cable,

$G_{SUBST_TX_ANT}$ is substitution antenna gain.

A_{TOT} is total correction factor including cable loss and substitution correction

During the test, the data of A_{TOT} was added in the test spectrum analyze, so spectrum analyze reading is the final values which contain the data of A_{TOT}.

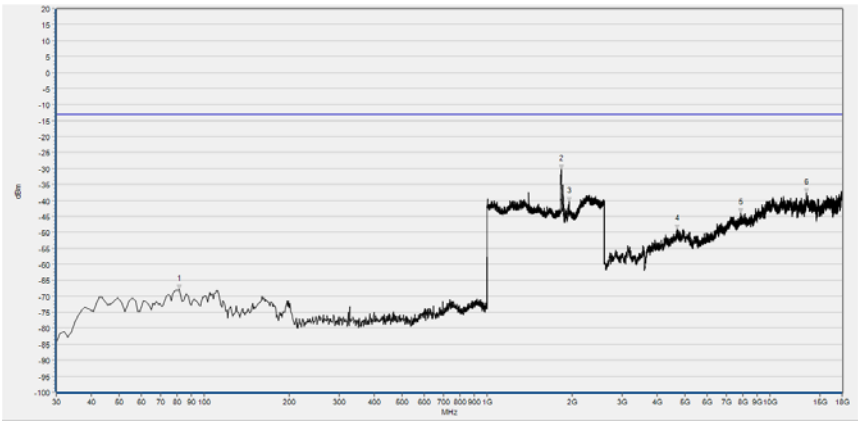
Note1: The power of the EUT transmitting frequency should be ignored.

Note2: All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

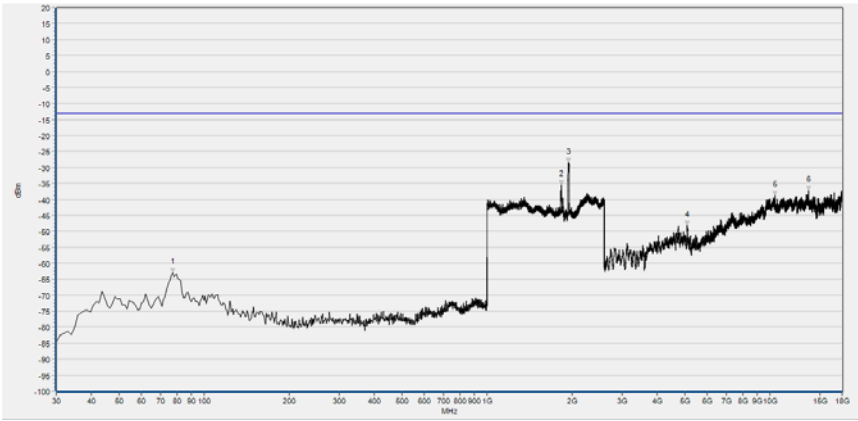
Note3: All bandwidth and modulation were considered and evaluated respectively by performing full test for each band, only the worst cases (Max Bandwidth and QPSK mode) were recorded in this test report.

Note4: N/A means the frequency is the basic frequency or the base station frequency, they are no need to verdict.

LTE Band 2, 20MHz BW, Low Channel, QPSK

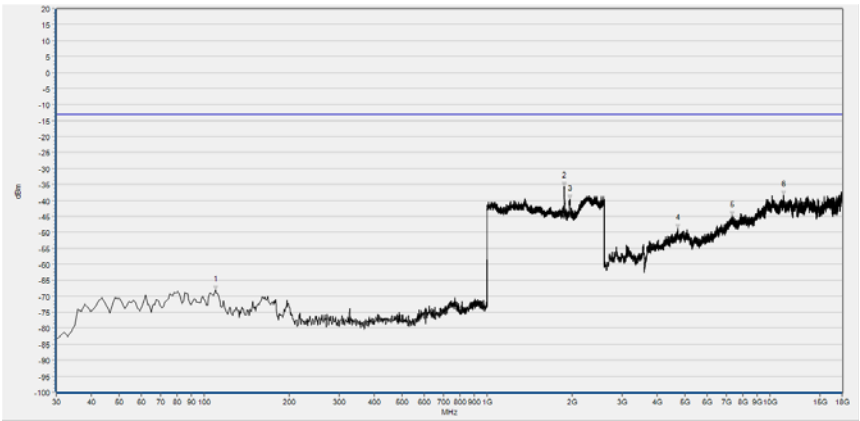


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	81.410	-67.85	-13.00	Horizontal	PASS
2	1832.333	-30.33	-13.00	Horizontal	N/A
3	1948.219	-40.42	-13.00	Horizontal	N/A
4	4694.781	-49.00	-13.00	Horizontal	PASS
5	7892.962	-43.85	-13.00	Horizontal	PASS
6	13485.579	-37.74	-13.00	Horizontal	PASS

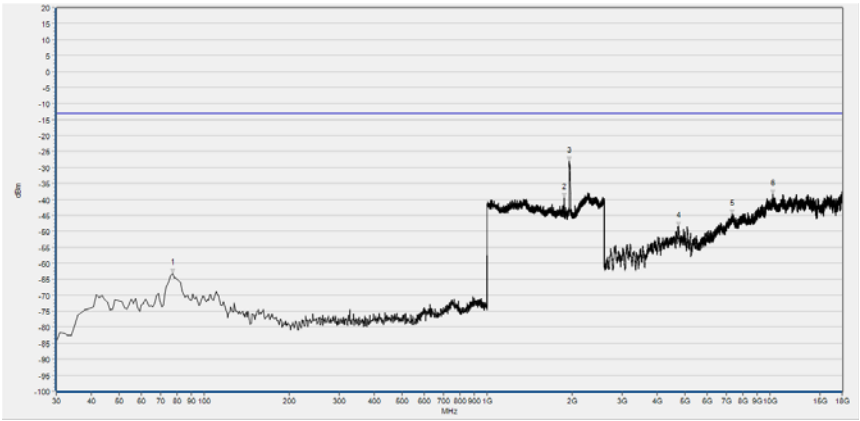


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	77.530	-62.92	-13.00	Vertical	PASS
2	1830.412	-35.33	-13.00	Vertical	N/A
3	1945.658	-28.59	-13.00	Vertical	N/A
4	5103.655	-48.22	-13.00	Vertical	PASS
5	10424.623	-38.78	-13.00	Vertical	PASS
6	13684.415	-37.30	-13.00	Vertical	PASS

LTE Band 2, 20MHz BW, Mid Channel, QPSK

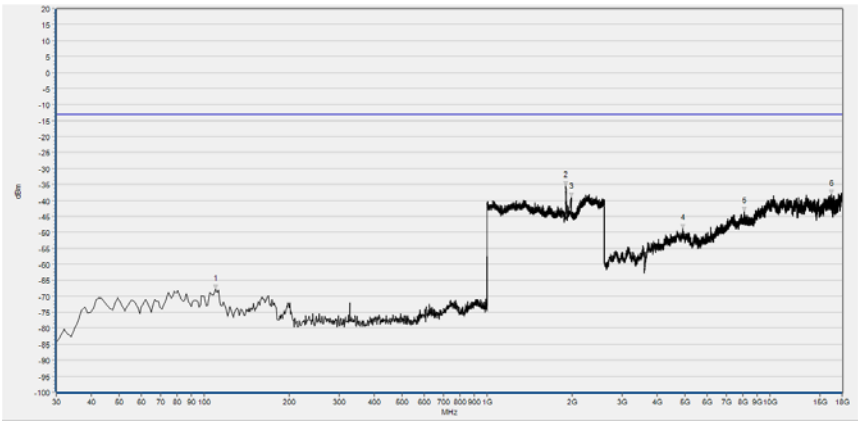


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	109.540	-68.09	-13.00	Horizontal	PASS
2	1875.230	-35.65	-13.00	Horizontal	N/A
3	1958.463	-39.77	-13.00	Horizontal	N/A
4	4717.185	-48.81	-13.00	Horizontal	PASS
5	7358.065	-44.83	-13.00	Horizontal	PASS
6	11163.957	-38.37	-13.00	Horizontal	PASS

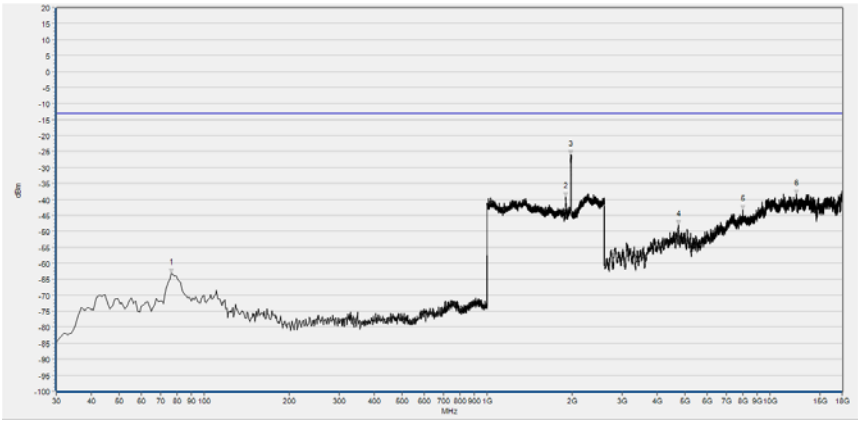


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	77.530	-63.13	-13.00	Vertical	PASS
2	1873.950	-39.49	-13.00	Vertical	N/A
3	1952.061	-28.07	-13.00	Vertical	N/A
4	4745.190	-48.32	-13.00	Vertical	PASS
5	7369.267	-44.56	-13.00	Vertical	PASS
6	10253.792	-38.40	-13.00	Vertical	PASS

LTE Band 2, 20MHz BW, High Channel, QPSK

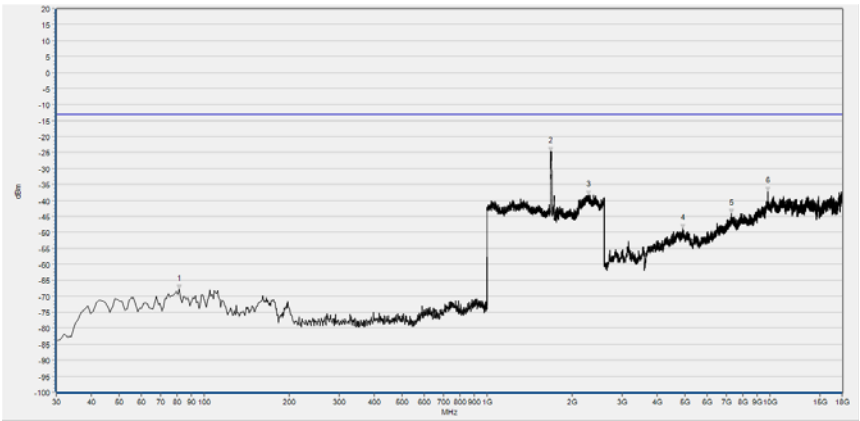


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	109.540	-67.71	-13.00	Horizontal	PASS
2	1900.200	-35.36	-13.00	Horizontal	N/A
3	1982.153	-38.99	-13.00	Horizontal	N/A
4	4930.024	-48.86	-13.00	Horizontal	PASS
5	8114.203	-43.37	-13.00	Horizontal	PASS
6	16456.919	-38.06	-13.00	Horizontal	PASS

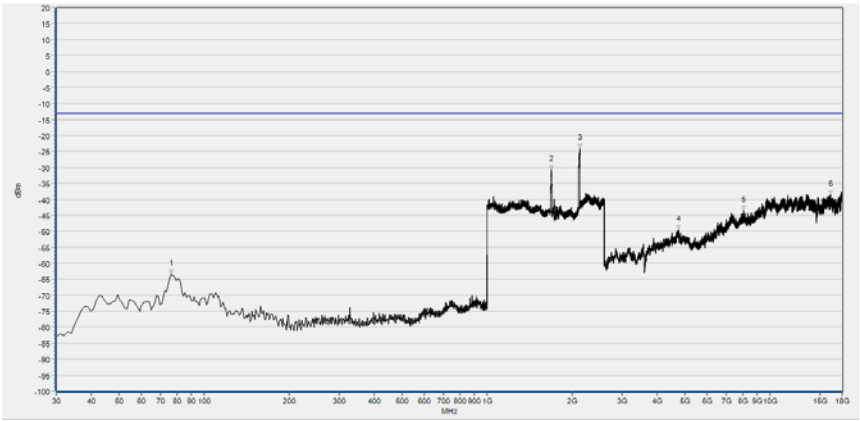


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	76.560	-63.09	-13.00	Vertical	PASS
2	1898.920	-39.11	-13.00	Vertical	N/A
3	1978.952	-26.09	-13.00	Vertical	N/A
4	4745.190	-47.94	-13.00	Vertical	PASS
5	8032.988	-43.16	-13.00	Vertical	PASS
6	12407.383	-38.40	-13.00	Vertical	PASS

LTE Band 4, 20MHz BW, Low Channel, QPSK

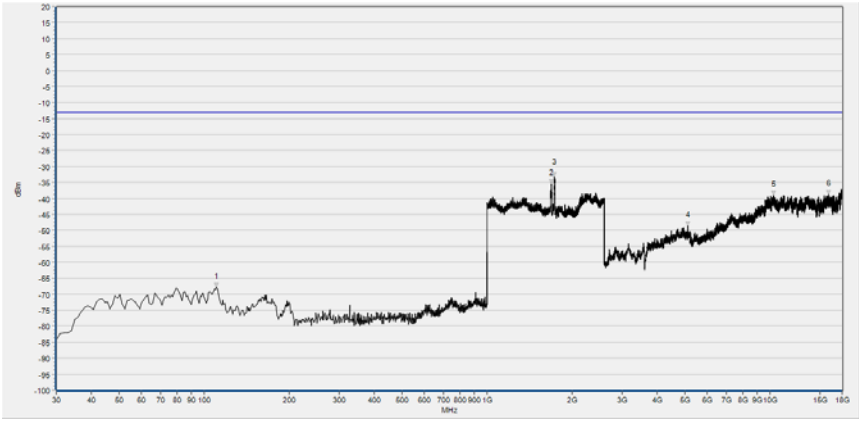


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	81.410	-67.71	-13.00	Horizontal	PASS
2	1681.232	-24.73	-13.00	Horizontal	N/A
3	2283.713	-38.33	-13.00	Horizontal	PASS
4	4927.223	-48.86	-13.00	Horizontal	PASS
5	7296.454	-44.20	-13.00	Horizontal	PASS
6	9825.314	-37.30	-13.00	Horizontal	PASS

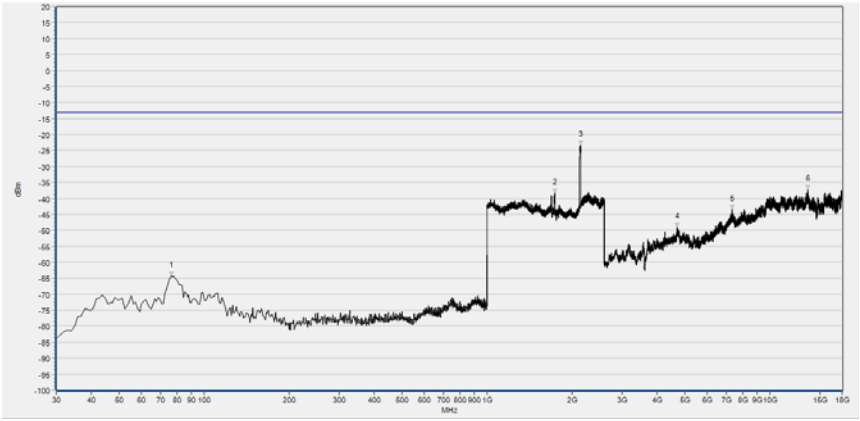


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	76.560	-63.38	-13.00	Vertical	PASS
2	1687.635	-30.83	-13.00	Vertical	N/A
3	2126.851	-24.05	-13.00	Vertical	N/A
4	4759.193	-49.56	-13.00	Vertical	PASS
5	8060.993	-43.44	-13.00	Vertical	PASS
6	16412.111	-38.46	-13.00	Vertical	PASS

LTE Band 4, 20MHz BW, Mid Channel, QPSK

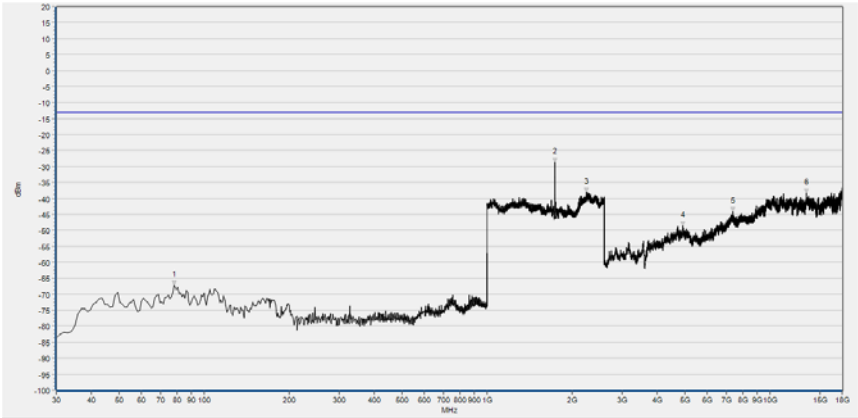


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	110.510	-67.81	-13.00	Horizontal	PASS
2	1689.556	-35.41	-13.00	Horizontal	N/A
3	1732.453	-33.28	-13.00	Horizontal	N/A
4	5128.860	-48.61	-13.00	Horizontal	PASS
5	10292.999	-39.01	-13.00	Horizontal	PASS
6	16126.459	-38.87	-13.00	Horizontal	PASS

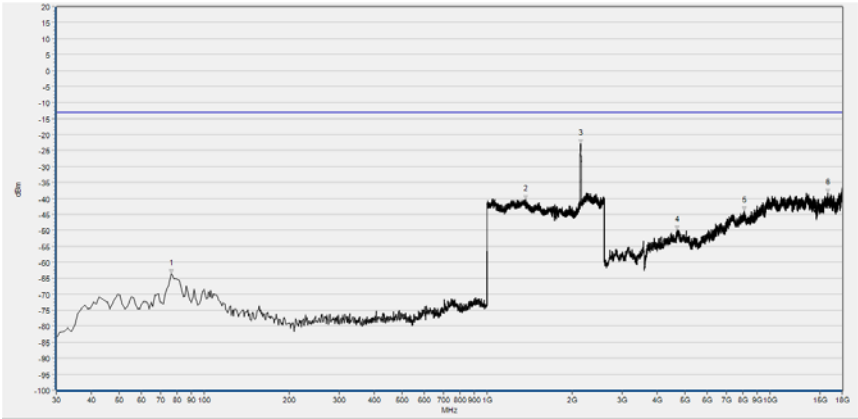


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	76.560	-64.23	-13.00	Vertical	PASS
2	1733.733	-38.30	-13.00	Vertical	N/A
3	2137.735	-23.43	-13.00	Vertical	N/A
4	4705.983	-49.10	-13.00	Vertical	PASS
5	7349.664	-43.49	-13.00	Vertical	PASS
6	13597.600	-37.17	-13.00	Vertical	PASS

LTE Band 4, 20MHz BW, High Channel, QPSK

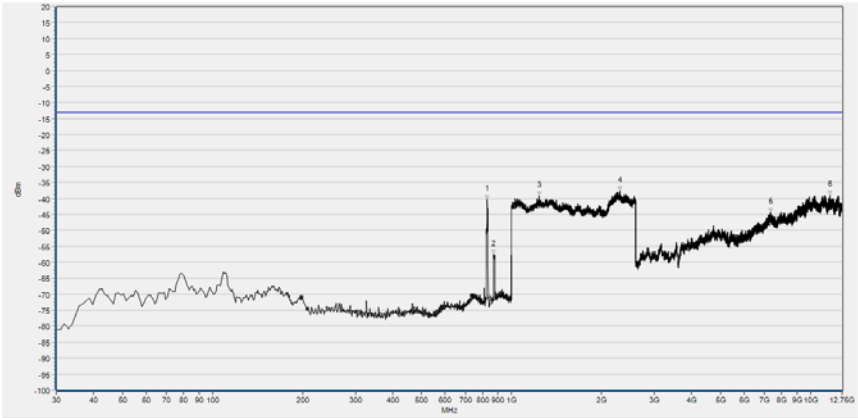


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	78.500	-67.26	-13.00	Horizontal	PASS
2	1736.935	-28.67	-13.00	Horizontal	N/A
3	2247.859	-38.20	-13.00	Horizontal	PASS
4	4921.622	-48.65	-13.00	Horizontal	PASS
5	7414.075	-44.24	-13.00	Horizontal	PASS
6	13451.973	-38.23	-13.00	Horizontal	PASS

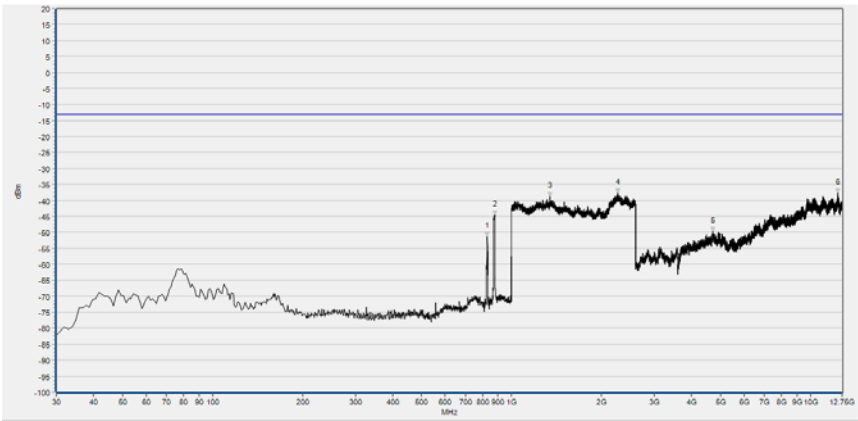


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	76.560	-63.63	-13.00	Vertical	PASS
2	1369.428	-40.31	-13.00	Vertical	PASS
3	2137.095	-22.83	-13.00	Vertical	N/A
4	4705.983	-49.95	-13.00	Vertical	PASS
5	8128.205	-43.92	-13.00	Vertical	PASS
6	15989.234	-38.31	-13.00	Vertical	PASS

LTE Band 5, 10MHz BW, Low Channel, QPSK

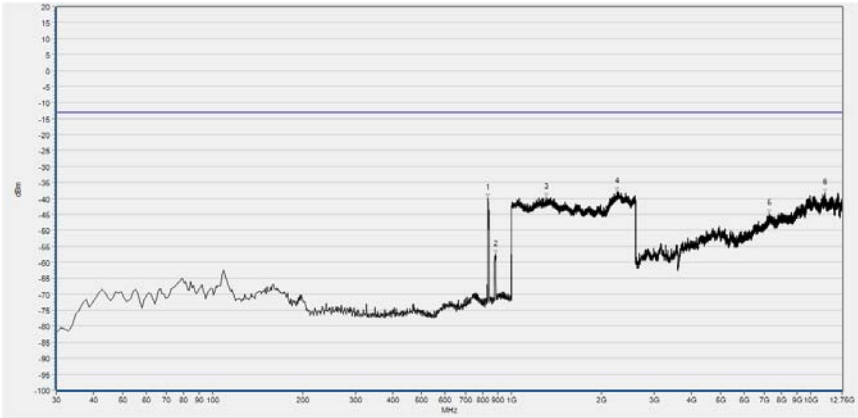


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	828.310	-40.41	-13.00	Horizontal	N/A
2	871.960	-57.65	-13.00	Horizontal	N/A
3	1233.693	-39.16	-13.00	Horizontal	PASS
4	2306.122	-37.69	-13.00	Horizontal	PASS
5	7345.526	-44.38	-13.00	Horizontal	PASS
6	11605.610	-39.01	-13.00	Horizontal	PASS

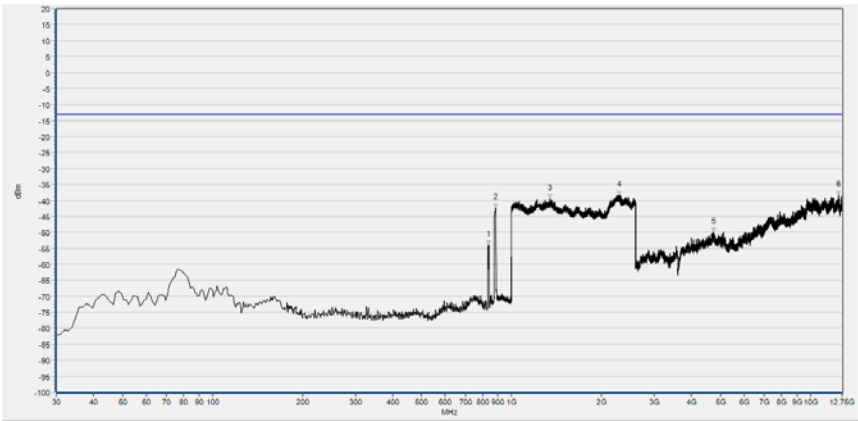


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	828.310	-51.18	-13.00	Vertical	N/A
2	877.780	-44.69	-13.00	Vertical	N/A
3	1341.257	-38.85	-13.00	Vertical	PASS
4	2267.707	-37.72	-13.00	Vertical	PASS
5	4707.892	-49.72	-13.00	Vertical	PASS
6	12349.464	-37.70	-13.00	Vertical	PASS

LTE Band 5, 10MHz BW, Mid Channel, QPSK

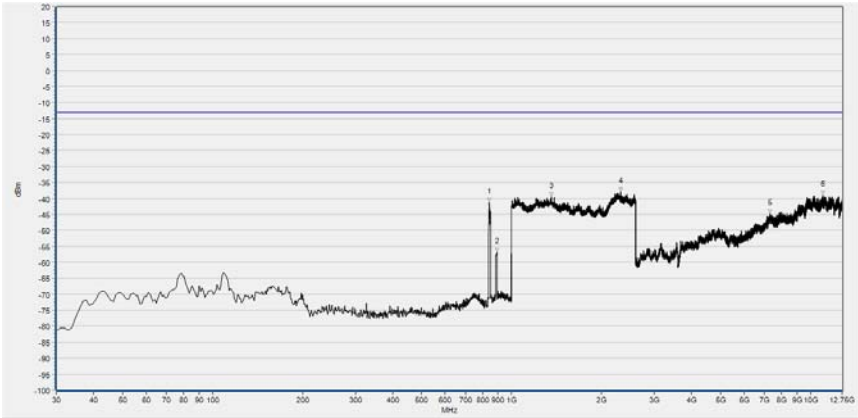


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	834.130	-39.87	-13.00	Horizontal	N/A
2	883.600	-57.60	-13.00	Horizontal	N/A
3	1306.042	-39.57	-13.00	Horizontal	PASS
4	2258.103	-37.90	-13.00	Horizontal	PASS
5	7277.232	-44.82	-13.00	Horizontal	PASS
6	11144.163	-38.25	-13.00	Horizontal	PASS

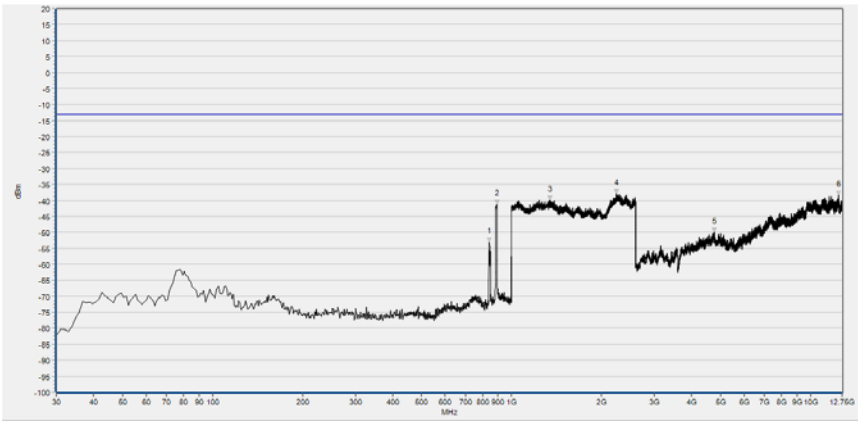


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	835.100	-53.94	-13.00	Vertical	N/A
2	885.540	-42.43	-13.00	Vertical	N/A
3	1340.616	-39.46	-13.00	Vertical	PASS
4	2287.555	-38.40	-13.00	Vertical	PASS
5	4731.888	-49.92	-13.00	Vertical	PASS
6	12410.375	-38.39	-13.00	Vertical	PASS

LTE Band 5, 10MHz BW, High Channel, QPSK

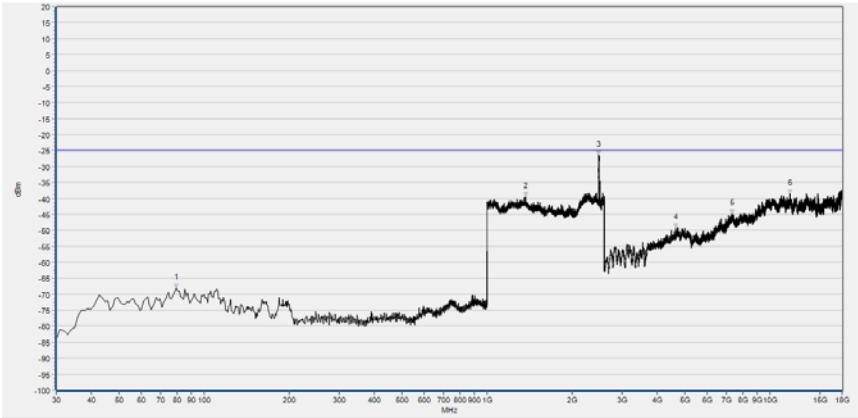


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	843.830	-41.24	-13.00	Horizontal	N/A
2	893.300	-56.78	-13.00	Horizontal	N/A
3	1360.464	-39.38	-13.00	Horizontal	PASS
4	2313.165	-37.81	-13.00	Horizontal	PASS
5	7314.148	-44.81	-13.00	Horizontal	PASS
6	10979.887	-39.02	-13.00	Horizontal	PASS

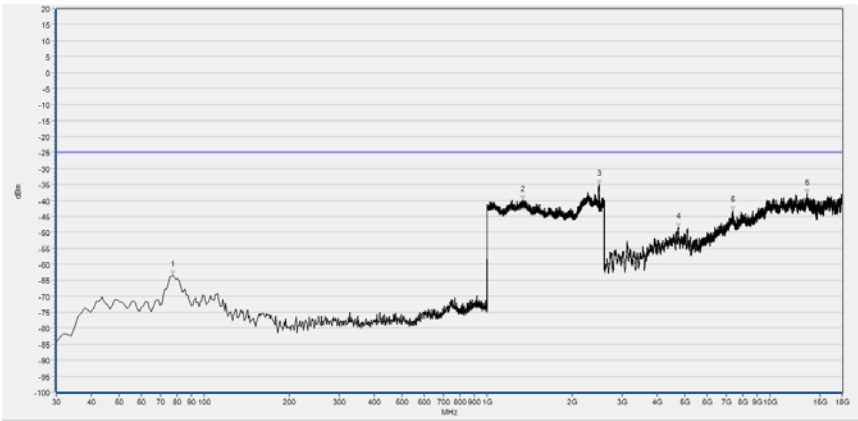


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	843.830	-52.97	-13.00	Vertical	N/A
2	892.330	-41.14	-13.00	Vertical	N/A
3	1341.897	-39.97	-13.00	Vertical	PASS
4	2241.457	-37.99	-13.00	Vertical	PASS
5	4766.958	-49.98	-13.00	Vertical	PASS
6	12404.837	-38.38	-13.00	Vertical	PASS

LTE Band 7, 20MHz BW, Low Channel, QPSK

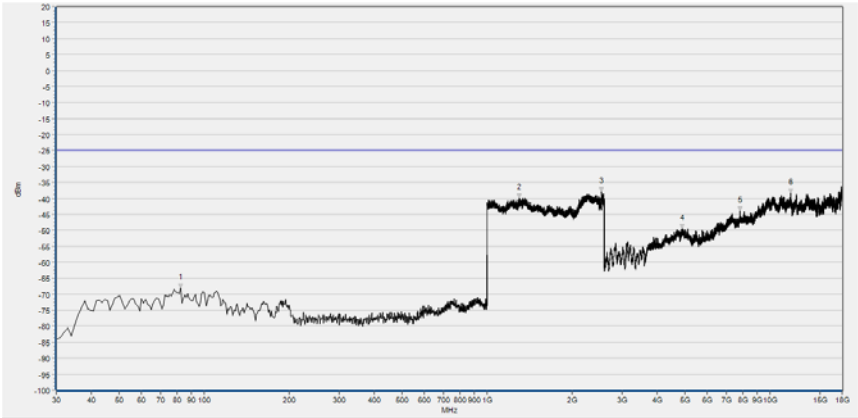


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	79.470	-68.05	-25.00	Horizontal	PASS
2	1367.507	-39.54	-25.00	Horizontal	PASS
3	2484.754	-26.47	-25.00	Horizontal	N/A
4	4647.172	-49.27	-25.00	Horizontal	PASS
5	7366.467	-44.85	-25.00	Horizontal	PASS
6	11782.870	-38.50	-25.00	Horizontal	PASS

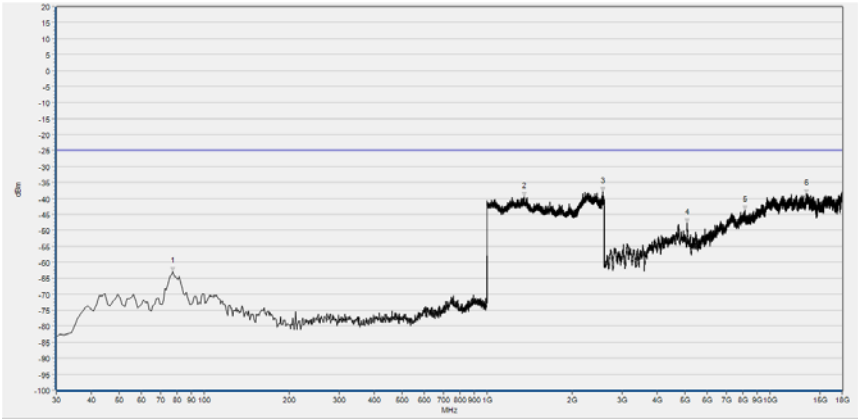


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	77.530	-63.28	-25.00	Vertical	PASS
2	1341.257	-39.85	-25.00	Vertical	PASS
3	2486.675	-34.99	-25.00	Vertical	N/A
4	4745.190	-48.30	-25.00	Vertical	PASS
5	7391.671	-43.16	-25.00	Vertical	PASS
6	13566.794	-37.81	-25.00	Vertical	PASS

LTE Band 7, 20MHz BW, Mid Channel, QPSK

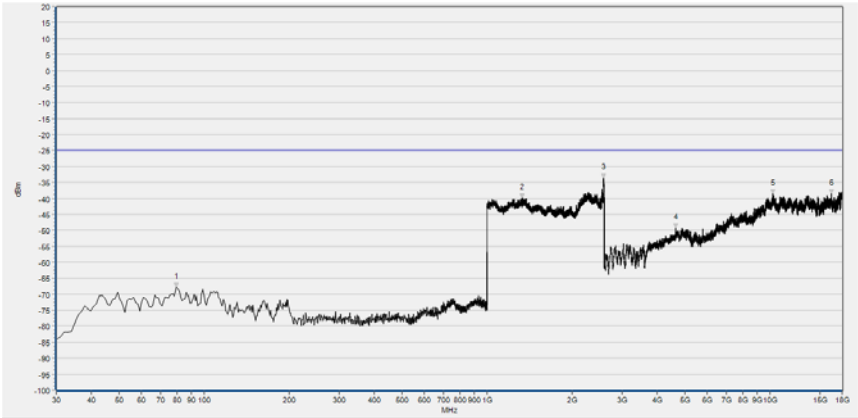


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	82.380	-67.98	-25.00	Horizontal	PASS
2	1295.798	-39.92	-25.00	Horizontal	PASS
3	2543.017	-37.93	-25.00	Horizontal	PASS
4	4904.819	-49.51	-25.00	Horizontal	PASS
5	7839.753	-43.92	-25.00	Horizontal	PASS
6	11813.675	-38.39	-25.00	Horizontal	PASS

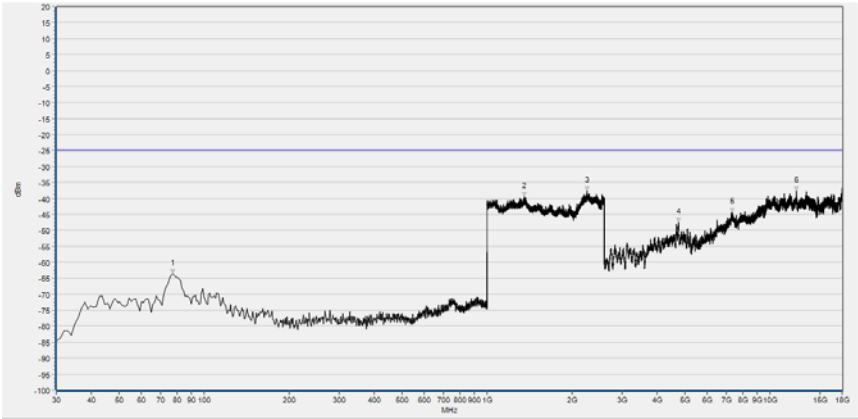


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	77.530	-62.83	-25.00	Vertical	PASS
2	1354.062	-39.51	-25.00	Vertical	PASS
3	2569.908	-37.77	-25.00	Vertical	PASS
4	5106.456	-47.63	-25.00	Vertical	PASS
5	8153.410	-43.69	-25.00	Vertical	PASS
6	13479.978	-38.66	-25.00	Vertical	PASS

LTE Band 7, 20MHz BW, High Channel, QPSK

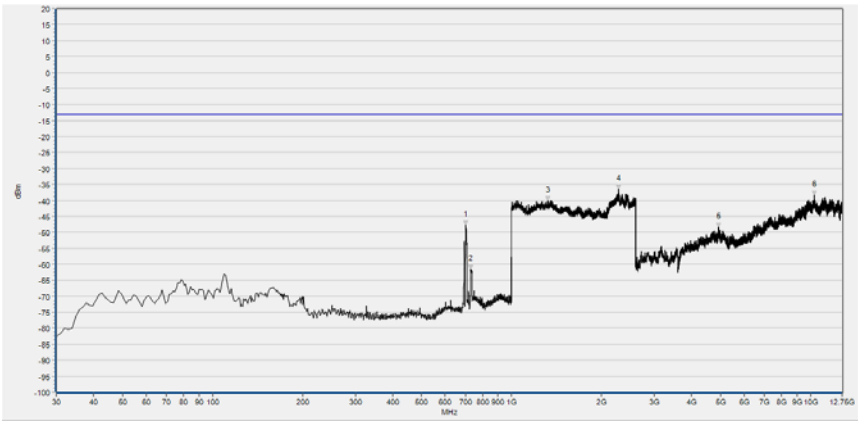


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	79.470	-67.83	-25.00	Horizontal	PASS
2	1326.531	-39.90	-25.00	Horizontal	PASS
3	2587.835	-33.73	-25.00	Horizontal	N/A
4	4649.973	-49.34	-25.00	Horizontal	PASS
5	10236.989	-38.62	-25.00	Horizontal	PASS
6	16454.119	-38.61	-25.00	Horizontal	PASS

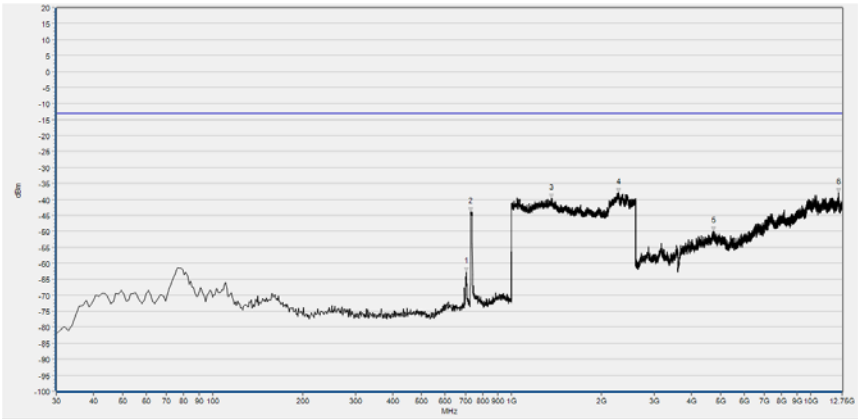


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	77.530	-63.52	-25.00	Vertical	PASS
2	1352.781	-39.44	-25.00	Vertical	PASS
3	2262.585	-37.66	-25.00	Vertical	PASS
4	4747.991	-47.40	-25.00	Vertical	PASS
5	7372.068	-44.27	-25.00	Vertical	PASS
6	12390.580	-37.65	-25.00	Vertical	PASS

LTE Band 12, 10MHz BW, Low Channel, QPSK

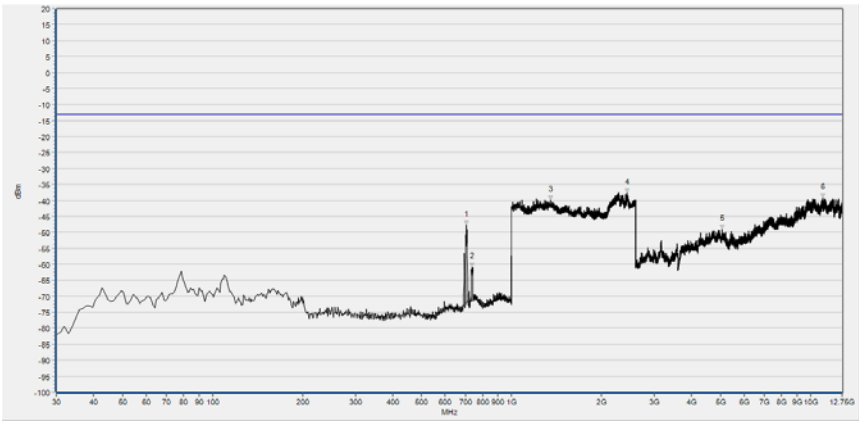


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	703.180	-47.70	-13.00	Horizontal	N/A
2	730.340	-61.48	-13.00	Horizontal	N/A
3	1324.610	-40.21	-13.00	Horizontal	PASS
4	2275.390	-36.63	-13.00	Horizontal	PASS
5	4918.312	-48.28	-13.00	Horizontal	PASS
6	10306.174	-38.36	-13.00	Horizontal	PASS

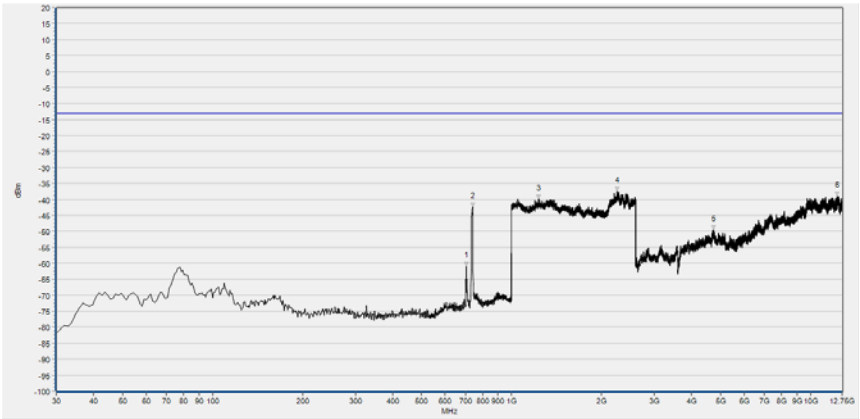


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	706.090	-62.72	-13.00	Vertical	N/A
2	730.340	-43.99	-13.00	Vertical	N/A
3	1357.903	-39.71	-13.00	Vertical	PASS
4	2275.390	-37.86	-13.00	Vertical	PASS
5	4724.504	-49.84	-13.00	Vertical	PASS
6	12408.529	-37.90	-13.00	Vertical	PASS

LTE Band 12, 10MHz BW, Mid Channel, QPSK

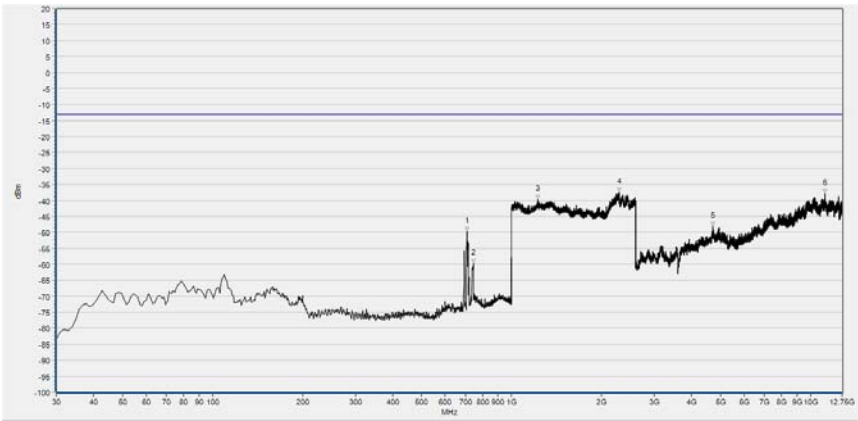


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	706.090	-47.61	-13.00	Horizontal	N/A
2	739.070	-60.88	-13.00	Horizontal	N/A
3	1347.659	-39.86	-13.00	Horizontal	PASS
4	2439.296	-37.75	-13.00	Horizontal	PASS
5	5047.518	-48.95	-13.00	Horizontal	PASS
6	10989.116	-39.11	-13.00	Horizontal	PASS

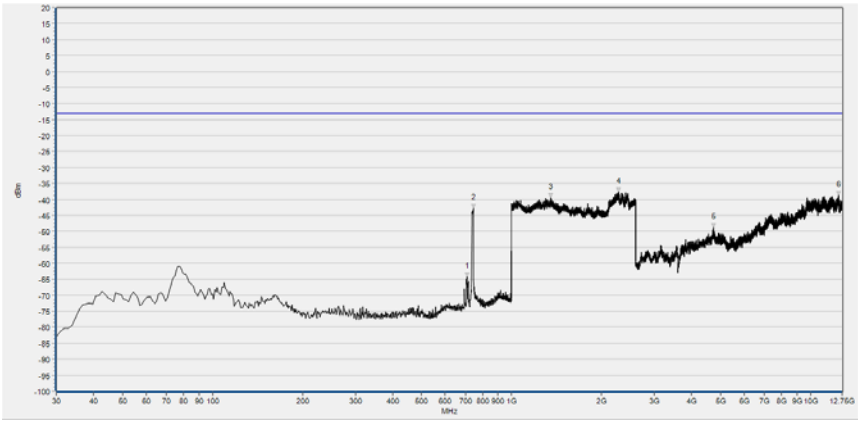


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	706.090	-60.92	-13.00	Vertical	N/A
2	741.010	-42.44	-13.00	Vertical	N/A
3	1227.931	-39.90	-13.00	Vertical	PASS
4	2249.140	-37.47	-13.00	Vertical	PASS
5	4744.808	-49.59	-13.00	Vertical	PASS
6	12284.861	-39.06	-13.00	Vertical	PASS

LTE Band 12, 10MHz BW, High Channel, QPSK

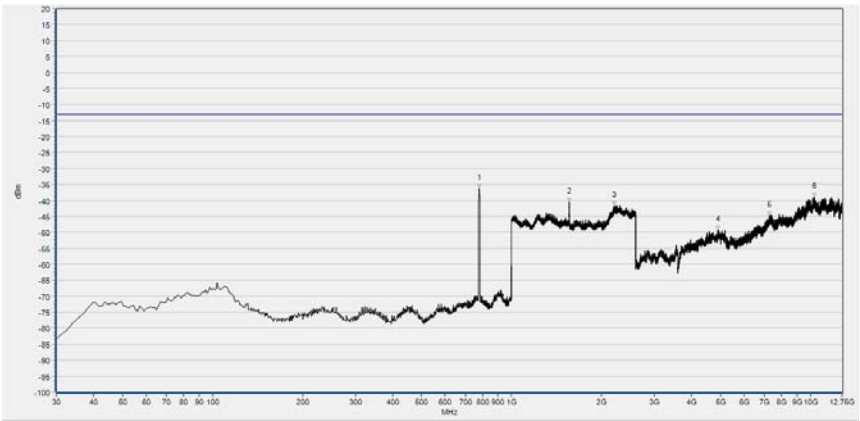


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	709.000	-49.73	-13.00	Horizontal	N/A
2	744.890	-59.70	-13.00	Horizontal	PASS
3	1226.010	-39.62	-13.00	Horizontal	PASS
4	2288.836	-37.43	-13.00	Horizontal	PASS
5	4700.509	-48.24	-13.00	Horizontal	PASS
6	11158.929	-37.88	-13.00	Horizontal	PASS

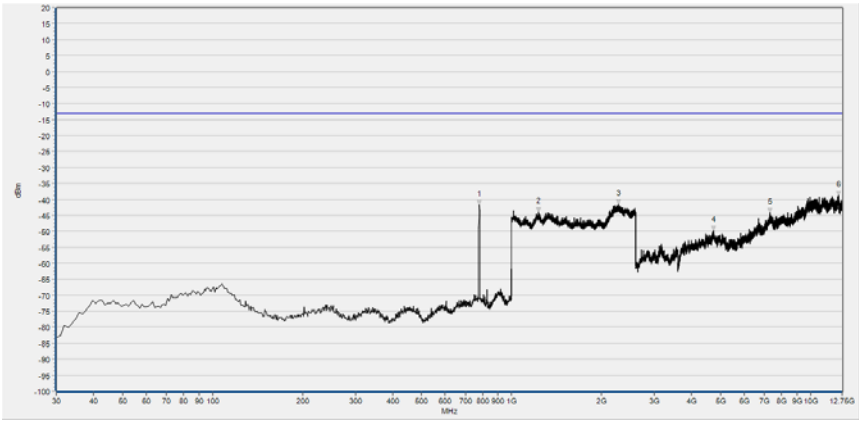


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	709.000	-64.20	-13.00	Vertical	N/A
2	743.920	-42.89	-13.00	Vertical	N/A
3	1354.062	-39.55	-13.00	Vertical	PASS
4	2276.030	-37.76	-13.00	Vertical	PASS
5	4724.504	-48.84	-13.00	Vertical	PASS
6	12402.991	-38.83	-13.00	Vertical	PASS

LTE Band 13, 5MHz BW, Low Channel, QPSK

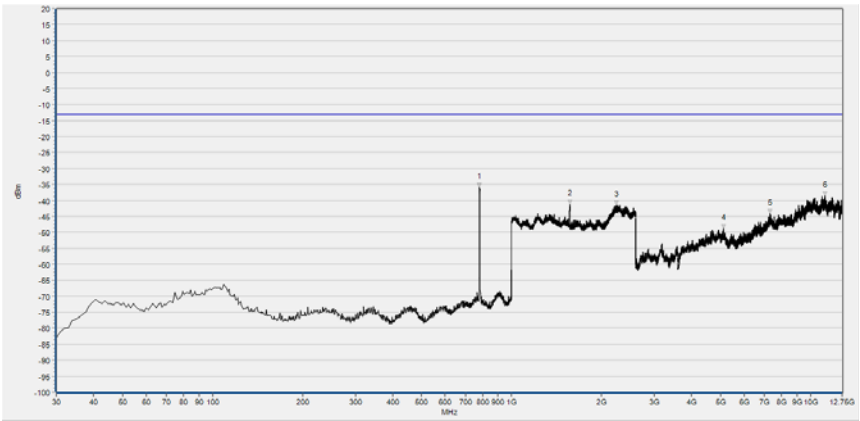


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	778.840	-36.41	-13.00	Horizontal	N/A
2	1558.944	-40.64	-13.00	Horizontal	PASS
3	2210.084	-41.77	-13.00	Horizontal	PASS
4	4901.700	-49.38	-13.00	Horizontal	PASS
5	7258.774	-44.86	-13.00	Horizontal	PASS
6	10280.333	-38.98	-13.00	Horizontal	PASS

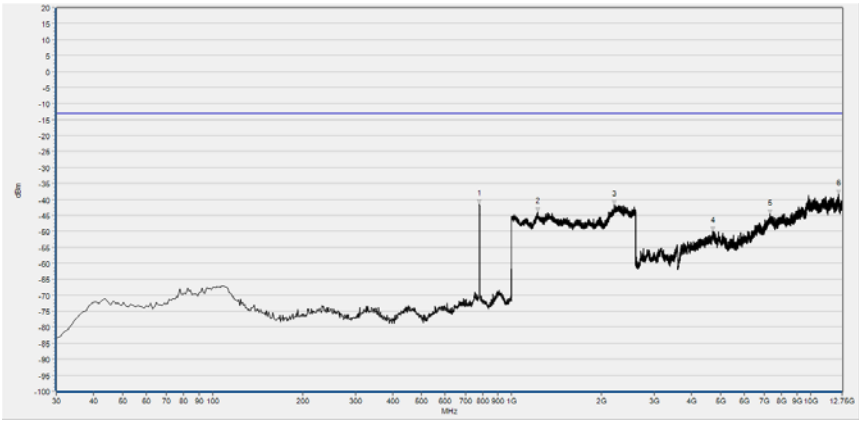


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	779.810	-41.77	-13.00	Vertical	N/A
2	1232.413	-44.00	-13.00	Vertical	PASS
3	2281.793	-41.52	-13.00	Vertical	PASS
4	4748.500	-49.83	-13.00	Vertical	PASS
5	7325.223	-44.20	-13.00	Vertical	PASS
6	12386.379	-38.87	-13.00	Vertical	PASS

LTE Band 13, 5MHz BW, Mid Channel, QPSK

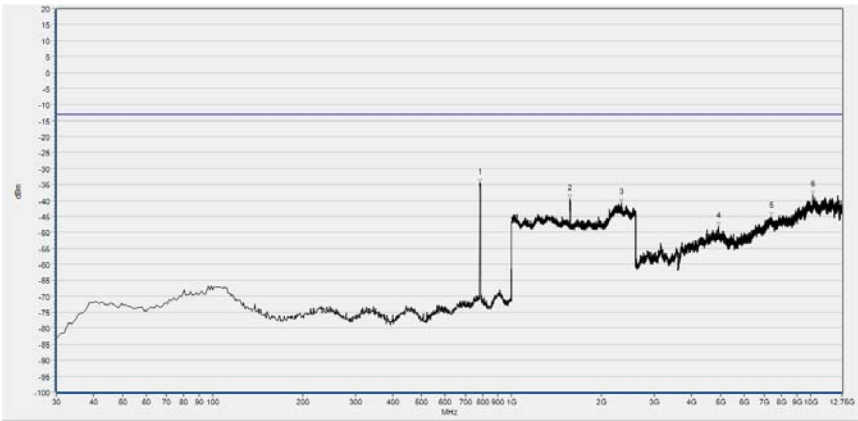


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	780.780	-35.89	-13.00	Horizontal	N/A
2	1564.066	-41.29	-13.00	Horizontal	PASS
3	2241.457	-41.53	-13.00	Horizontal	PASS
4	5108.429	-48.85	-13.00	Horizontal	PASS
5	7306.765	-44.09	-13.00	Horizontal	PASS
6	11164.466	-38.59	-13.00	Horizontal	PASS

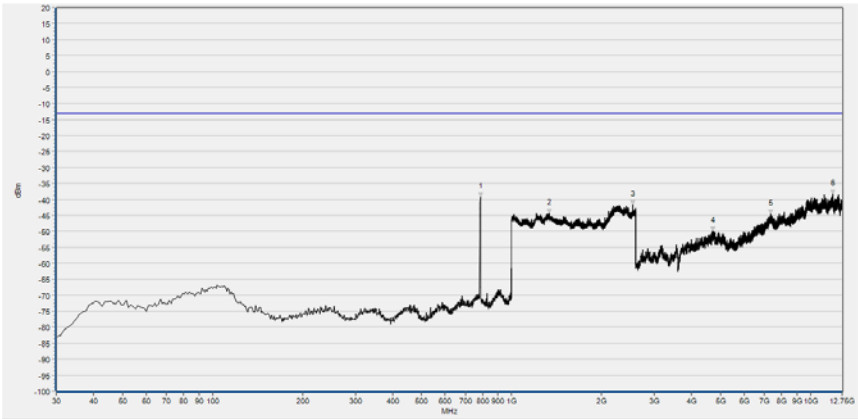


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	780.780	-41.51	-13.00	Vertical	N/A
2	1224.090	-43.96	-13.00	Vertical	PASS
3	2208.804	-41.68	-13.00	Vertical	PASS
4	4706.047	-50.01	-13.00	Vertical	PASS
5	7328.914	-44.58	-13.00	Vertical	PASS
6	12410.375	-38.36	-13.00	Vertical	PASS

LTE Band 13, 5MHz BW, High Channel, QPSK

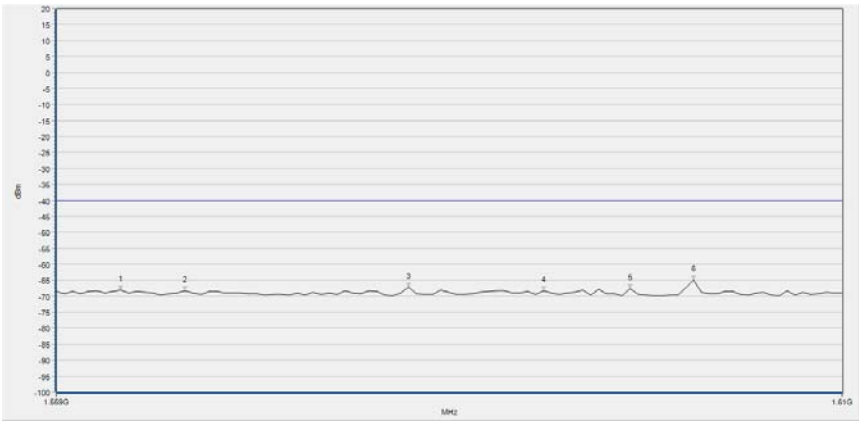


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	783.690	-34.47	-13.00	Horizontal	N/A
2	1569.188	-39.47	-13.00	Horizontal	PASS
3	2334.294	-40.86	-13.00	Horizontal	PASS
4	4927.541	-48.17	-13.00	Horizontal	PASS
5	7404.592	-45.04	-13.00	Horizontal	PASS
6	10180.660	-38.26	-13.00	Horizontal	PASS

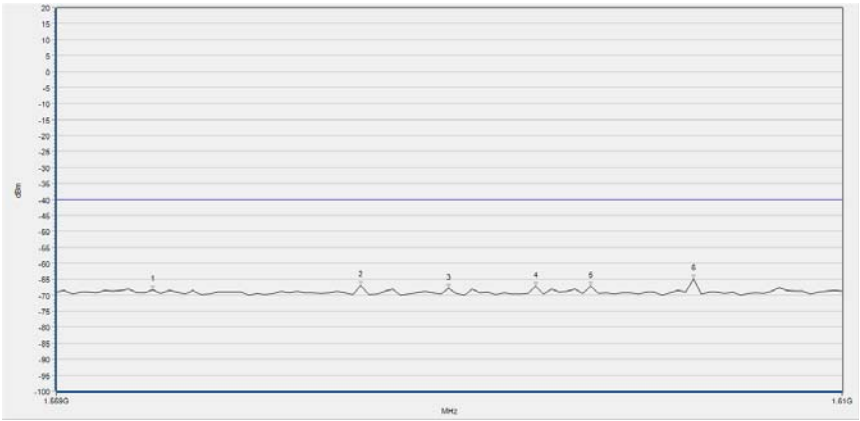


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	786.600	-39.14	-13.00	Vertical	N/A
2	1335.494	-44.38	-13.00	Vertical	PASS
3	2536.615	-41.74	-13.00	Vertical	PASS
4	4715.276	-49.96	-13.00	Vertical	PASS
5	7358.447	-44.62	-13.00	Vertical	PASS
6	11876.941	-38.39	-13.00	Vertical	PASS

LTE Band 13,1559MHz-1610MHz, 5MHz BW, Mid Channel, QPSK

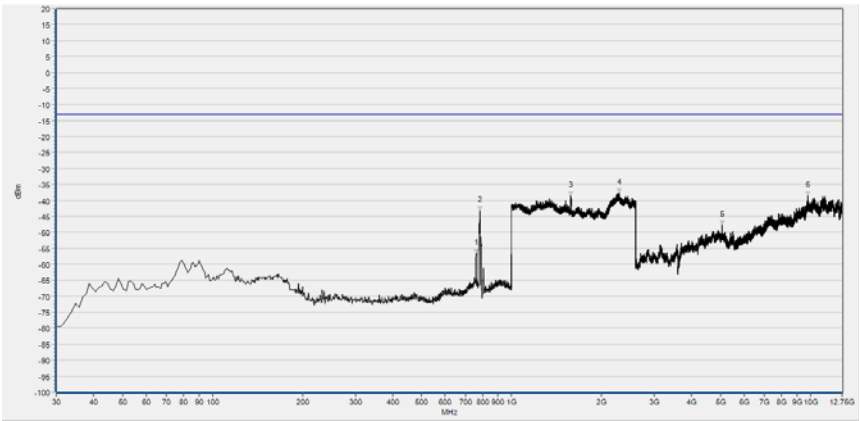


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	1563.121	-68.02	-40.00	Horizontal	PASS
2	1567.242	-68.27	-40.00	Horizontal	PASS
3	1581.667	-67.23	-40.00	Horizontal	PASS
4	1590.424	-68.24	-40.00	Horizontal	PASS
5	1596.091	-67.56	-40.00	Horizontal	PASS
6	1600.212	-64.83	-40.00	Horizontal	PASS

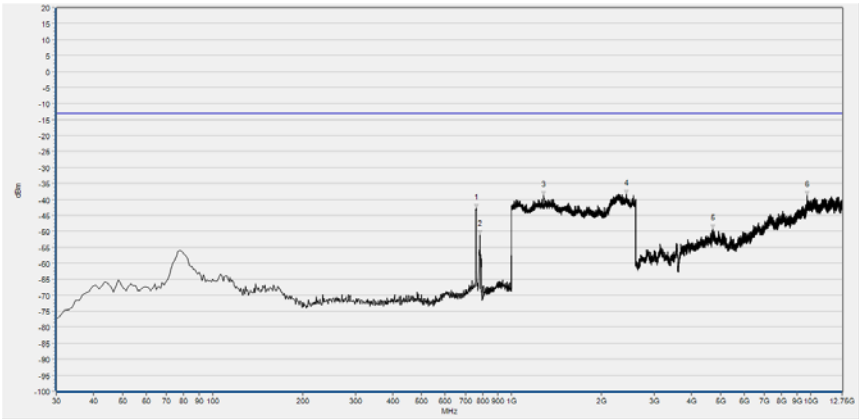


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	1565.182	-68.20	-40.00	Vertical	PASS
2	1578.576	-66.86	-40.00	Vertical	PASS
3	1584.242	-67.77	-40.00	Vertical	PASS
4	1589.909	-67.06	-40.00	Vertical	PASS
5	1593.515	-67.23	-40.00	Vertical	PASS
6	1600.212	-64.87	-40.00	Vertical	PASS

LTE Band 14, 5MHz BW, Low Channel, QPSK

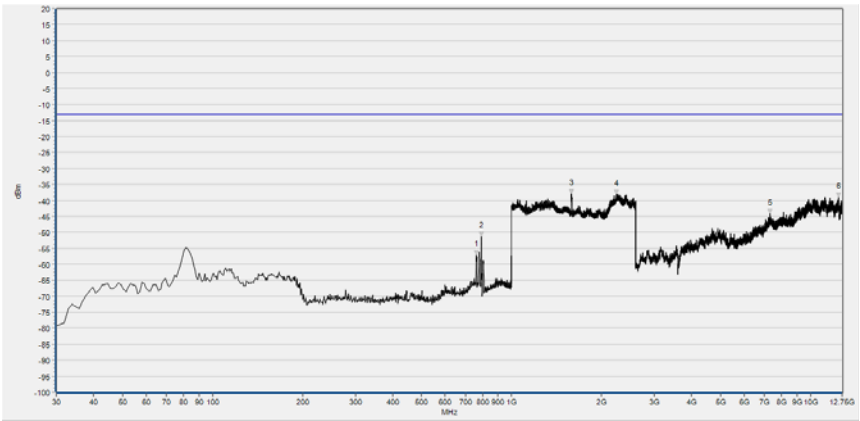


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	761.380	-56.54	-13.00	Horizontal	N/A
2	784.660	-43.26	-13.00	Horizontal	N/A
3	1578.151	-38.48	-13.00	Horizontal	PASS
4	2288.836	-37.73	-13.00	Horizontal	PASS
5	5060.438	-47.62	-13.00	Horizontal	PASS
6	9809.656	-38.45	-13.00	Horizontal	PASS

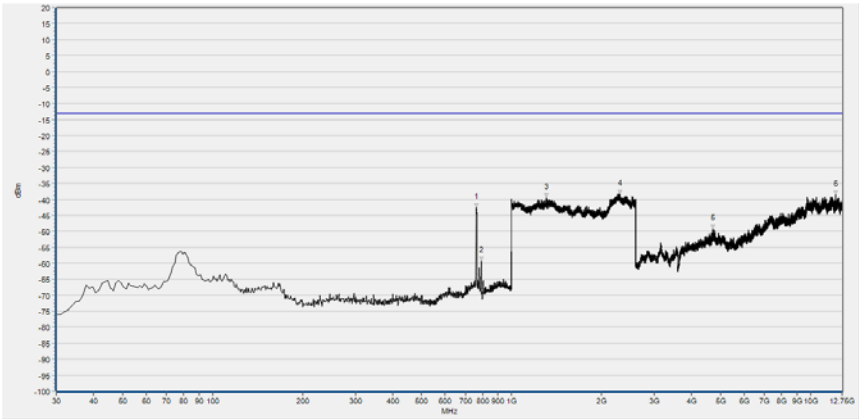


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	761.380	-42.89	-13.00	Vertical	N/A
2	783.690	-51.10	-13.00	Vertical	N/A
3	1281.713	-38.84	-13.00	Vertical	PASS
4	2421.369	-38.31	-13.00	Vertical	PASS
5	4704.201	-49.25	-13.00	Vertical	PASS
6	9735.825	-38.83	-13.00	Vertical	PASS

LTE Band 14, 5MHz BW, Mid Channel, QPSK

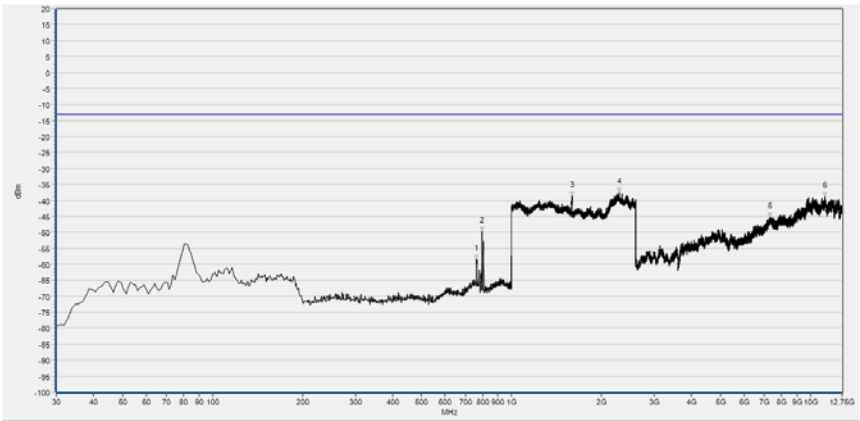


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	762.350	-57.00	-13.00	Horizontal	N/A
2	792.420	-51.26	-13.00	Horizontal	N/A
3	1585.834	-37.85	-13.00	Horizontal	PASS
4	2240.176	-38.10	-13.00	Horizontal	PASS
5	7299.382	-44.17	-13.00	Horizontal	PASS
6	12421.449	-38.97	-13.00	Horizontal	PASS

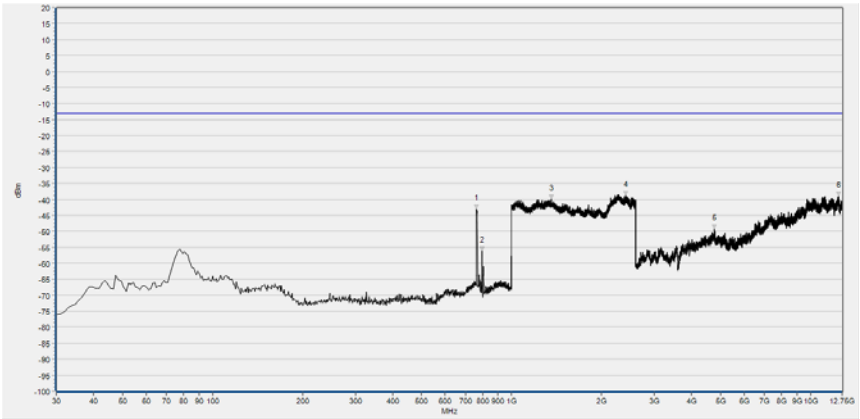


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	760.410	-42.46	-13.00	Vertical	N/A
2	792.420	-59.34	-13.00	Vertical	N/A
3	1309.884	-39.43	-13.00	Vertical	PASS
4	2308.043	-38.41	-13.00	Vertical	PASS
5	4715.276	-49.28	-13.00	Vertical	PASS
6	12102.128	-38.62	-13.00	Vertical	PASS

LTE Band 14, 5MHz BW, High Channel, QPSK

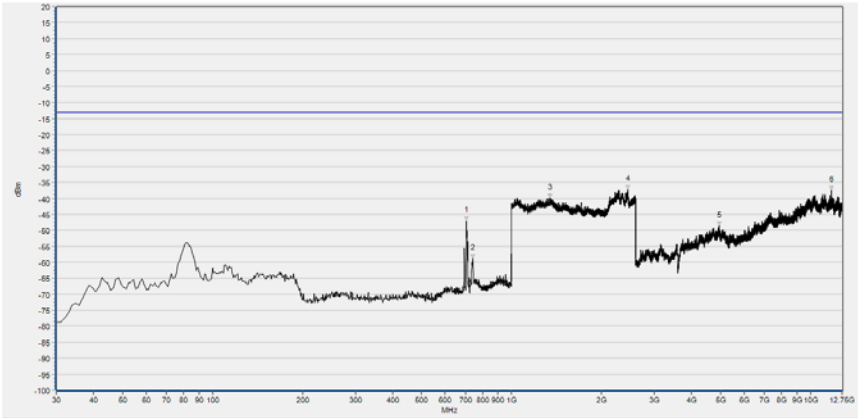


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	764.290	-58.34	-13.00	Horizontal	N/A
2	797.270	-49.72	-13.00	Horizontal	N/A
3	1590.956	-38.62	-13.00	Horizontal	PASS
4	2288.195	-37.48	-13.00	Horizontal	PASS
5	7317.840	-45.17	-13.00	Horizontal	PASS
6	11157.083	-38.84	-13.00	Horizontal	PASS

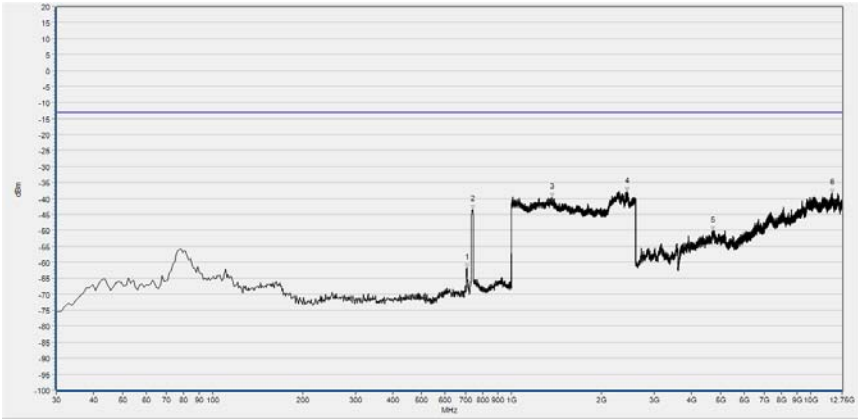


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	764.290	-43.01	-13.00	Vertical	N/A
2	797.270	-56.26	-13.00	Vertical	N/A
3	1358.543	-39.99	-13.00	Vertical	PASS
4	2408.563	-38.76	-13.00	Vertical	PASS
5	4774.341	-49.24	-13.00	Vertical	PASS
6	12382.688	-38.92	-13.00	Vertical	PASS

LTE Band 17, 10MHz BW, Low Channel, QPSK

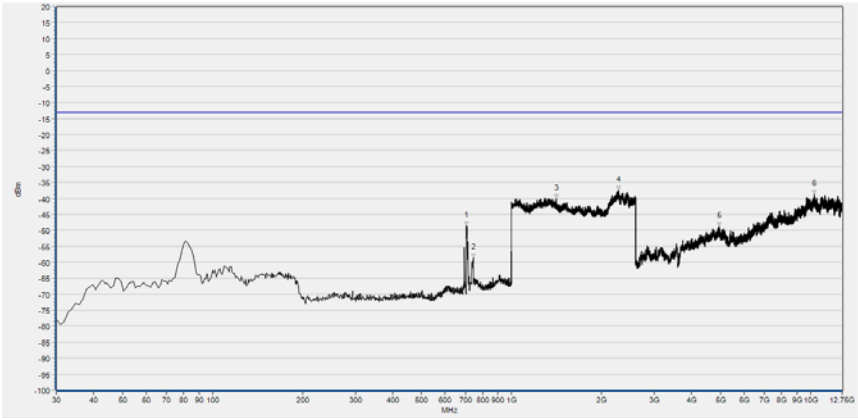


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	706.090	-47.02	-13.00	Horizontal	N/A
2	741.010	-58.98	-13.00	Horizontal	N/A
3	1345.738	-39.93	-13.00	Horizontal	PASS
4	2443.778	-37.17	-13.00	Horizontal	PASS
5	4936.770	-48.51	-13.00	Horizontal	PASS
6	11768.040	-37.45	-13.00	Horizontal	PASS

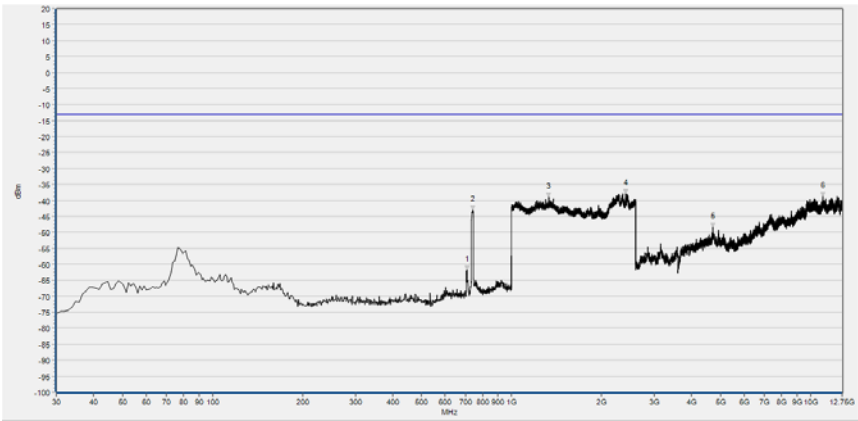


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	709.000	-61.79	-13.00	Vertical	N/A
2	741.010	-43.42	-13.00	Vertical	N/A
3	1363.025	-39.72	-13.00	Vertical	PASS
4	2430.332	-37.98	-13.00	Vertical	PASS
5	4718.967	-50.26	-13.00	Vertical	PASS
6	11799.418	-38.35	-13.00	Vertical	PASS

LTE Band 17, 10MHz BW, Mid Channel, QPSK

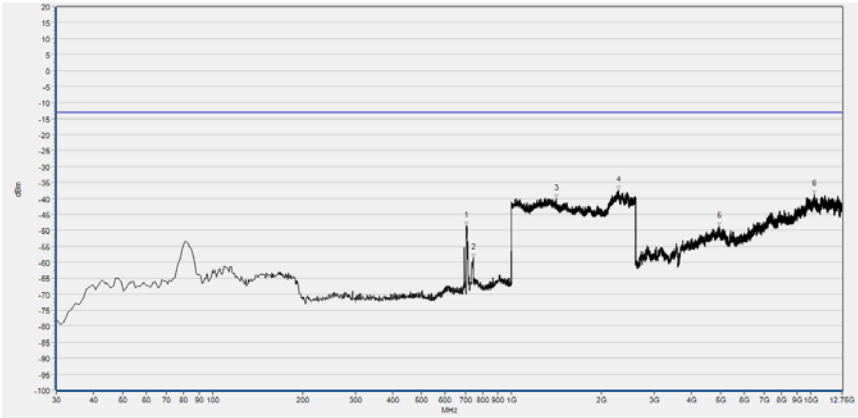


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	706.090	-48.61	-13.00	Horizontal	N/A
2	743.920	-58.65	-13.00	Horizontal	N/A
3	1412.965	-40.14	-13.00	Horizontal	PASS
4	2276.671	-37.36	-13.00	Horizontal	PASS
5	4942.308	-48.78	-13.00	Horizontal	PASS
6	10284.024	-38.81	-13.00	Horizontal	PASS

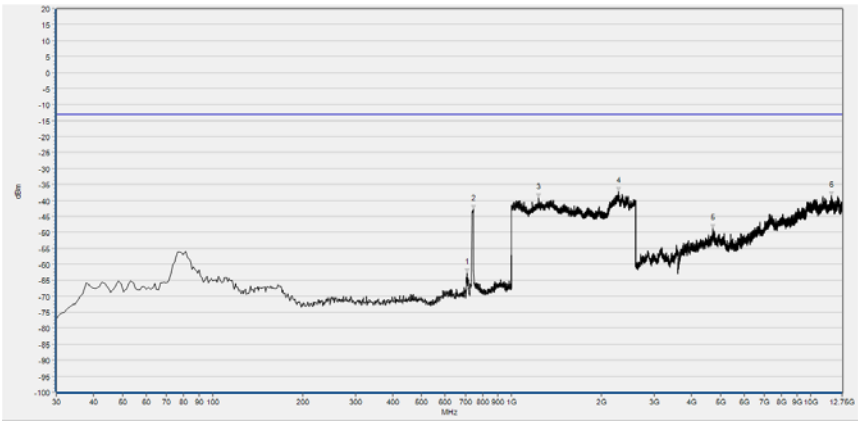


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	709.970	-61.87	-13.00	Vertical	N/A
2	740.040	-43.12	-13.00	Vertical	N/A
3	1332.293	-39.07	-13.00	Vertical	PASS
4	2406.002	-37.97	-13.00	Vertical	PASS
5	4702.355	-48.42	-13.00	Vertical	PASS
6	11007.574	-38.78	-13.00	Vertical	PASS

LTE Band 17, 10MHz BW, High Channel, QPSK

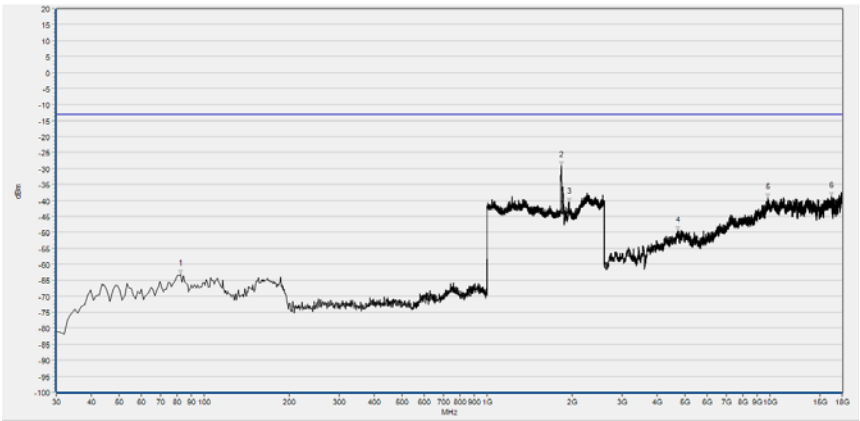


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	708.030	-49.67	-13.00	Horizontal	N/A
2	744.890	-58.67	-13.00	Horizontal	N/A
3	1368.147	-39.27	-13.00	Horizontal	PASS
4	2447.619	-37.27	-13.00	Horizontal	PASS
5	4700.509	-49.33	-13.00	Horizontal	PASS
6	12415.912	-38.85	-13.00	Horizontal	PASS

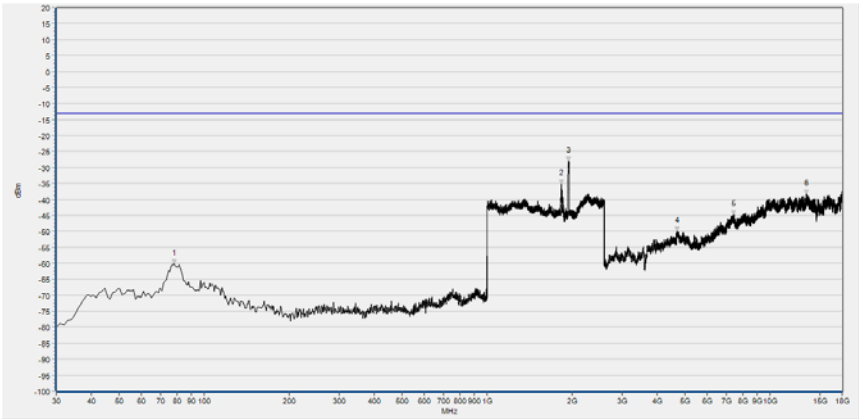


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	709.000	-62.57	-13.00	Vertical	N/A
2	744.890	-42.86	-13.00	Vertical	N/A
3	1233.053	-39.25	-13.00	Vertical	PASS
4	2278.591	-37.31	-13.00	Vertical	PASS
5	4720.813	-48.85	-13.00	Vertical	PASS
6	11771.731	-38.56	-13.00	Vertical	PASS

LTE Band 25, 20MHz BW, Low Channel, QPSK

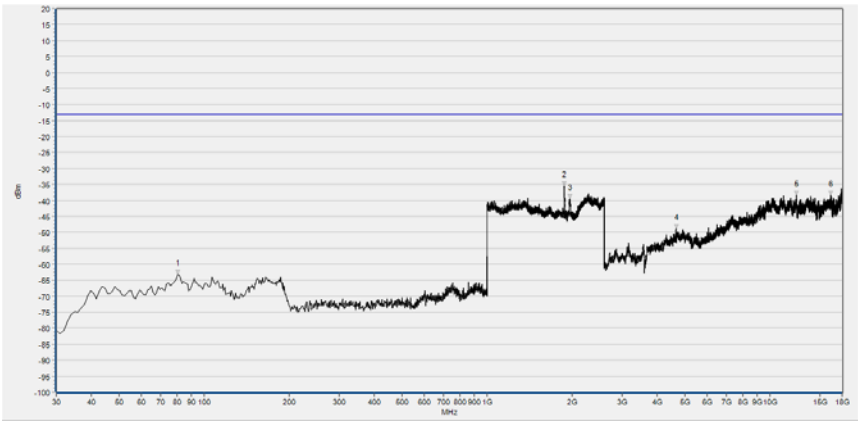


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	82.380	-63.19	-13.00	Horizontal	PASS
2	1833.613	-29.23	-13.00	Horizontal	PASS
3	1948.219	-40.65	-13.00	Horizontal	PASS
4	4722.786	-49.42	-13.00	Horizontal	PASS
5	9816.912	-39.29	-13.00	Horizontal	PASS
6	16465.321	-38.86	-13.00	Horizontal	PASS

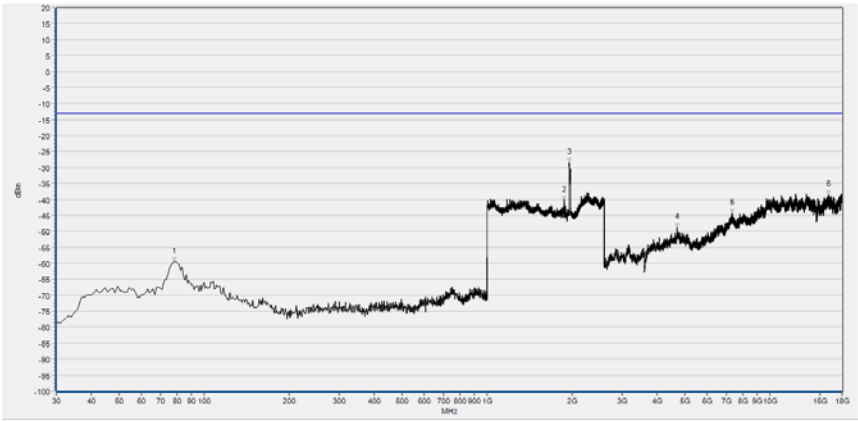


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	78.500	-60.18	-13.00	Vertical	PASS
2	1833.613	-35.26	-13.00	Vertical	N/A
3	1943.097	-28.01	-13.00	Vertical	N/A
4	4686.379	-50.04	-13.00	Vertical	PASS
5	7425.277	-44.90	-13.00	Vertical	PASS
6	13477.178	-38.43	-13.00	Vertical	PASS

LTE Band 25, 20MHz BW, Mid Channel, QPSK

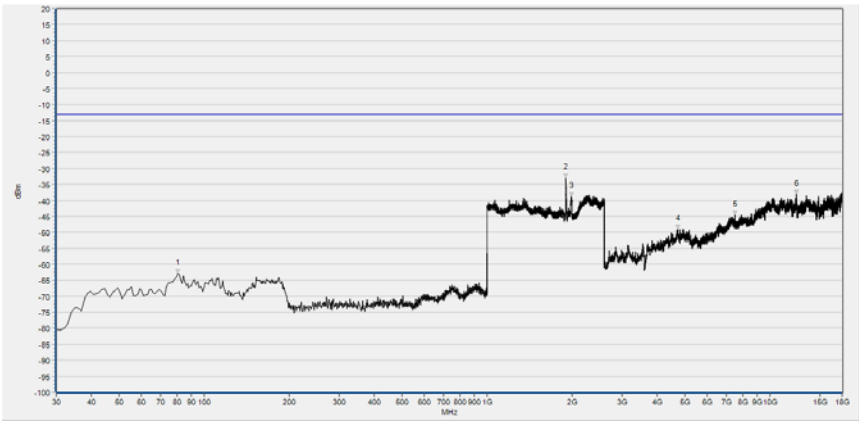


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	80.440	-63.07	-13.00	Horizontal	PASS
2	1874.590	-35.32	-13.00	Horizontal	N/A
3	1960.384	-39.43	-13.00	Horizontal	N/A
4	4658.374	-48.87	-13.00	Horizontal	PASS
5	12410.184	-38.36	-13.00	Horizontal	PASS
6	16409.311	-38.22	-13.00	Horizontal	PASS

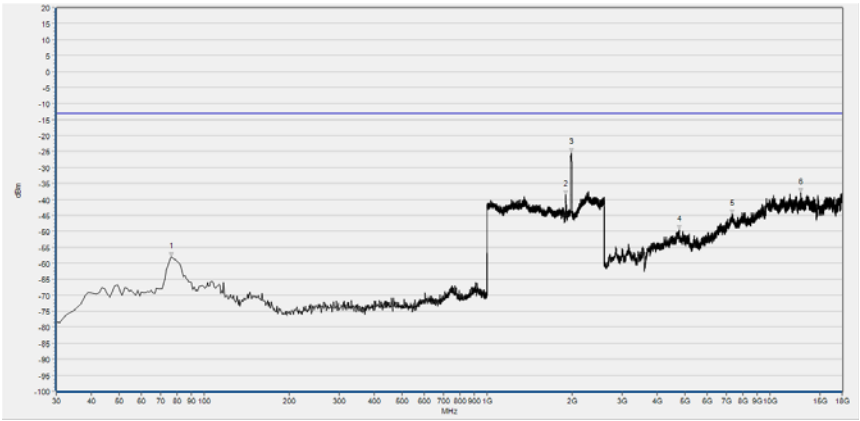


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	78.500	-59.51	-13.00	Vertical	PASS
2	1874.590	-40.29	-13.00	Vertical	N/A
3	1955.902	-28.56	-13.00	Vertical	N/A
4	4705.983	-48.85	-13.00	Vertical	PASS
5	7352.464	-44.38	-13.00	Vertical	PASS
6	16151.664	-38.64	-13.00	Vertical	PASS

LTE Band 25, 20MHz BW, High Channel, QPSK

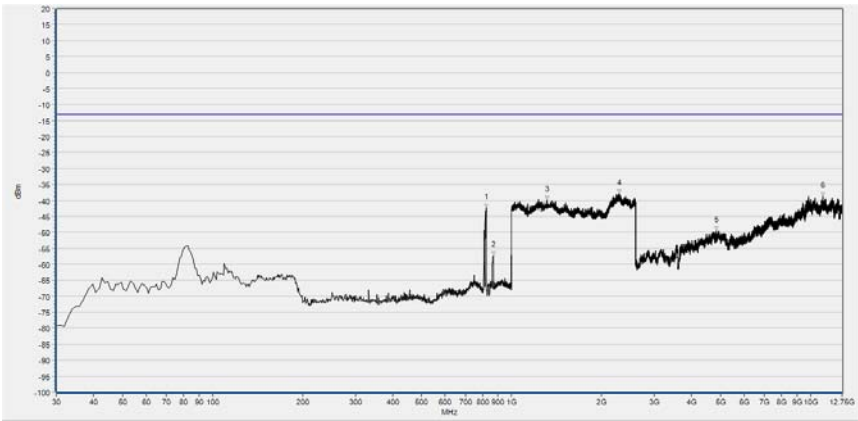


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	80.440	-63.00	-13.00	Horizontal	PASS
2	1900.840	-33.07	-13.00	Horizontal	N/A
3	1983.433	-38.86	-13.00	Horizontal	N/A
4	4719.985	-49.10	-13.00	Horizontal	PASS
5	7526.096	-44.63	-13.00	Horizontal	PASS
6	12410.184	-38.12	-13.00	Horizontal	PASS

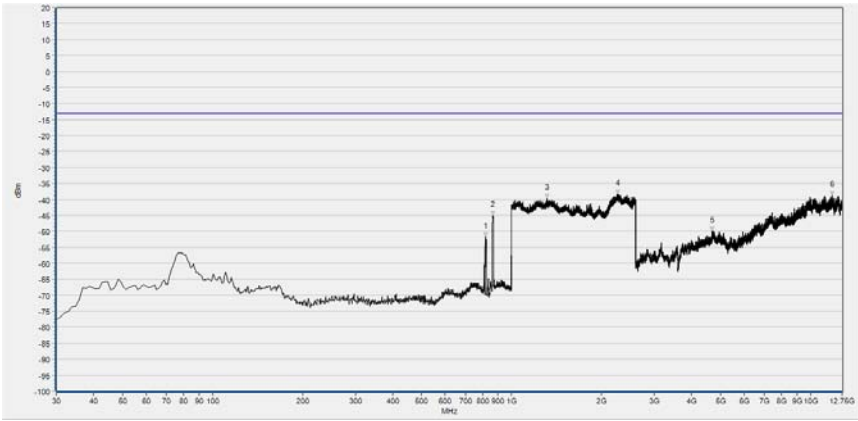


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	76.560	-57.88	-13.00	Vertical	PASS
2	1899.560	-38.53	-13.00	Vertical	N/A
3	1982.153	-25.46	-13.00	Vertical	N/A
4	4773.195	-49.55	-13.00	Vertical	PASS
5	7335.661	-44.48	-13.00	Vertical	PASS
6	12883.470	-37.98	-13.00	Vertical	PASS

(Part 22) LTE Band 26, 15MHz BW, Low Channel, QPSK

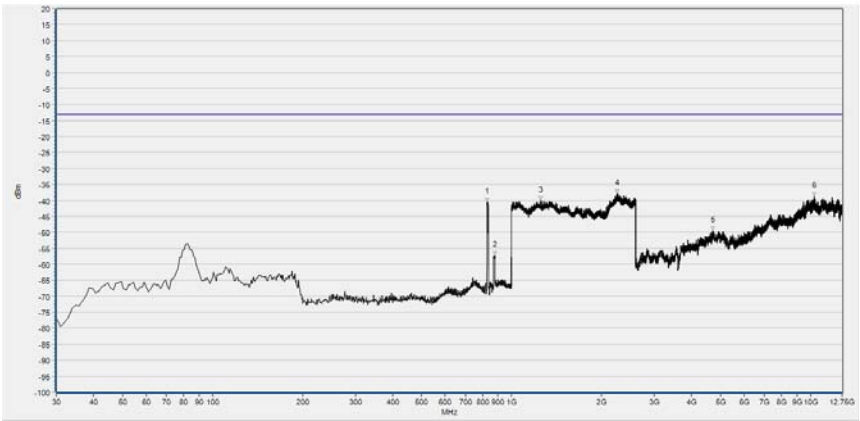


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	822.490	-42.33	-13.00	Horizontal	N/A
2	868.080	-57.33	-13.00	Horizontal	N/A
3	1316.927	-39.92	-13.00	Horizontal	PASS
4	2285.634	-37.99	-13.00	Horizontal	PASS
5	4833.406	-49.56	-13.00	Horizontal	PASS
6	10976.196	-38.82	-13.00	Horizontal	PASS

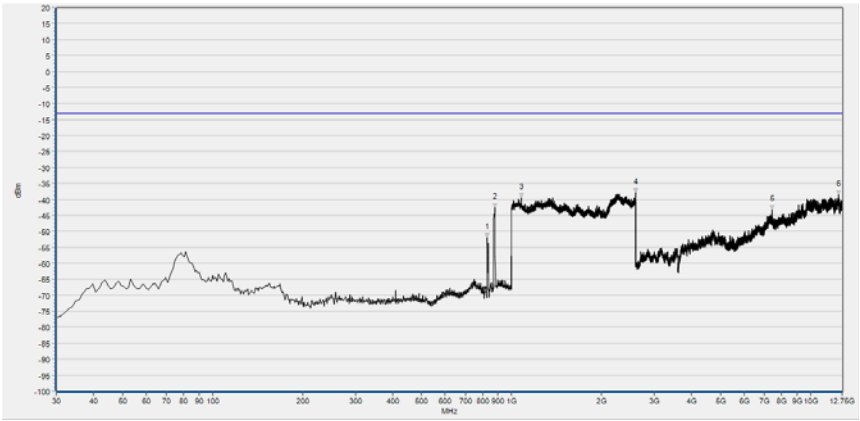


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-51.73	-13.00	Vertical	N/A
2	865.170	-45.09	-13.00	Vertical	N/A
3	1315.006	-39.69	-13.00	Vertical	PASS
4	2269.628	-38.24	-13.00	Vertical	PASS
5	4691.280	-49.96	-13.00	Vertical	PASS
6	11782.806	-38.71	-13.00	Vertical	PASS

(Part 22) LTE Band 26, 15MHz BW, Mid Channel, QPSK

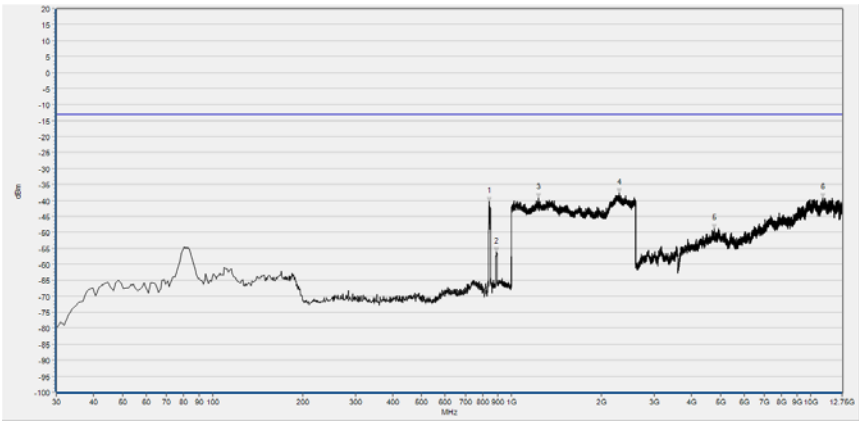


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	827.340	-40.52	-13.00	Horizontal	N/A
2	880.690	-57.29	-13.00	Horizontal	N/A
3	1249.700	-40.08	-13.00	Horizontal	PASS
4	2258.743	-37.84	-13.00	Horizontal	PASS
5	4717.121	-49.42	-13.00	Horizontal	PASS
6	10309.865	-38.85	-13.00	Horizontal	PASS

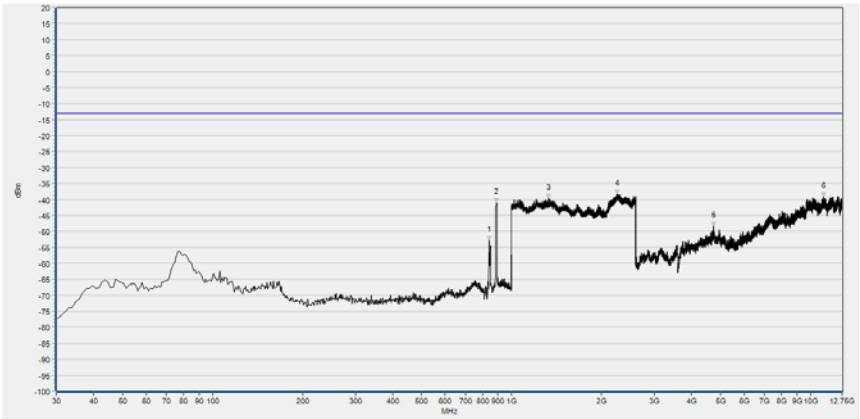


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	827.340	-51.90	-13.00	Vertical	N/A
2	879.720	-42.53	-13.00	Vertical	N/A
3	1078.111	-39.54	-13.00	Vertical	PASS
4	2593.597	-37.95	-13.00	Vertical	PASS
5	7423.050	-43.21	-13.00	Vertical	PASS
6	12402.991	-38.47	-13.00	Vertical	PASS

(Part 22) LTE Band 26, 15MHz BW, High Channel, QPSK

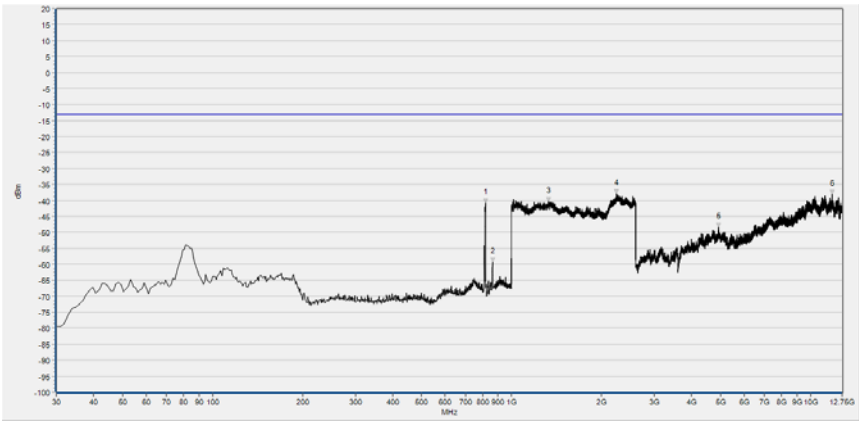


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	843.830	-40.33	-13.00	Horizontal	N/A
2	890.390	-56.22	-13.00	Horizontal	N/A
3	1232.413	-39.21	-13.00	Horizontal	PASS
4	2289.476	-37.63	-13.00	Horizontal	PASS
5	4774.341	-48.89	-13.00	Horizontal	PASS
6	10983.579	-39.27	-13.00	Horizontal	PASS

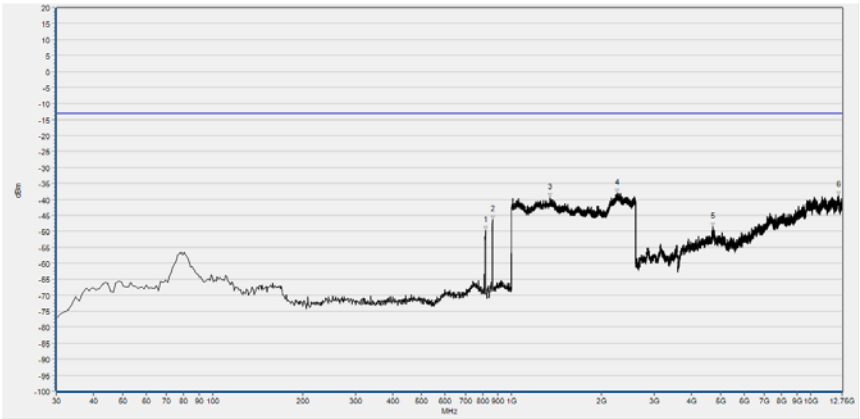


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	843.830	-52.81	-13.00	Vertical	N/A
2	891.360	-40.92	-13.00	Vertical	N/A
3	1331.653	-39.76	-13.00	Vertical	PASS
4	2255.542	-38.41	-13.00	Vertical	PASS
5	4731.888	-48.37	-13.00	Vertical	PASS
6	11033.415	-39.17	-13.00	Vertical	PASS

(Part 90) LTE Band 26, 15MHz BW, Low Channel, QPSK

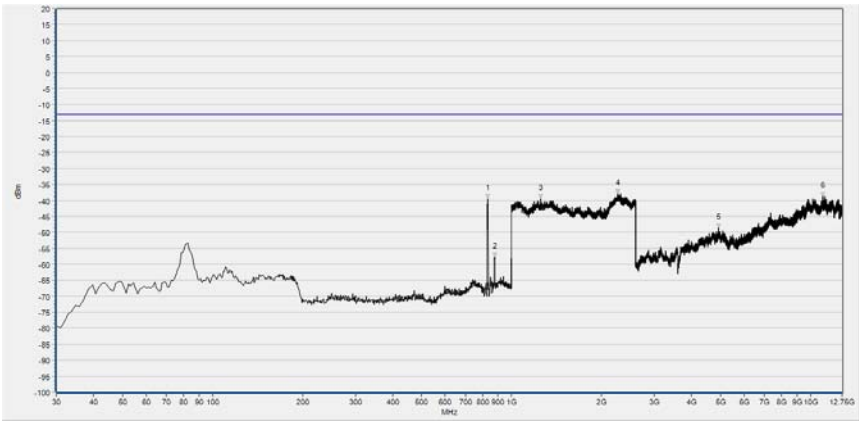


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-40.78	-13.00	Horizontal	N/A
2	863.230	-59.23	-13.00	Horizontal	N/A
3	1325.890	-40.33	-13.00	Horizontal	PASS
4	2246.579	-37.96	-13.00	Horizontal	PASS
5	4922.004	-48.31	-13.00	Horizontal	PASS
6	11779.114	-38.00	-13.00	Horizontal	PASS

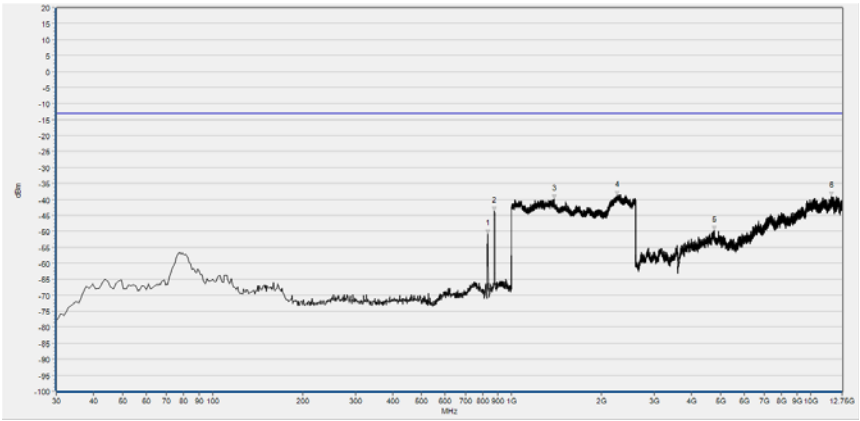


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	817.640	-49.83	-13.00	Vertical	N/A
2	863.230	-46.27	-13.00	Vertical	N/A
3	1341.897	-39.55	-13.00	Vertical	PASS
4	2258.103	-38.18	-13.00	Vertical	PASS
5	4700.509	-48.60	-13.00	Vertical	PASS
6	12406.683	-38.70	-13.00	Vertical	PASS

(Part 90) LTE Band 26, 15MHz BW, Mid Channel, QPSK

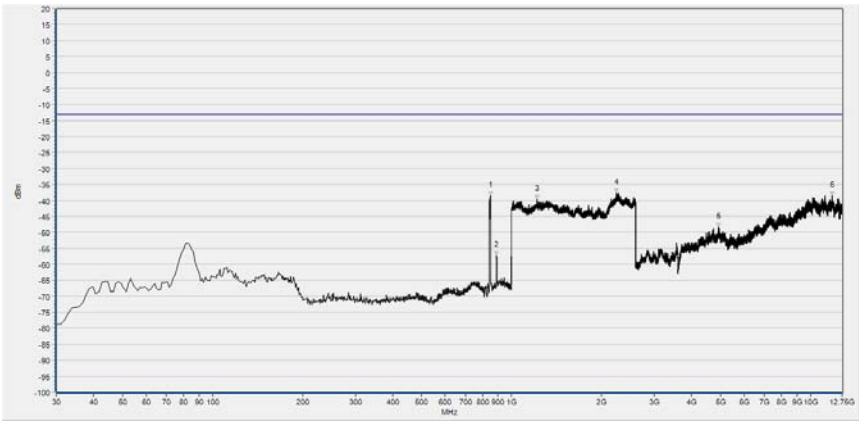


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	833.160	-39.53	-13.00	Horizontal	N/A
2	878.750	-57.86	-13.00	Horizontal	N/A
3	1252.901	-39.53	-13.00	Horizontal	PASS
4	2265.146	-37.94	-13.00	Horizontal	PASS
5	4922.004	-48.68	-13.00	Horizontal	PASS
6	10979.887	-38.79	-13.00	Horizontal	PASS

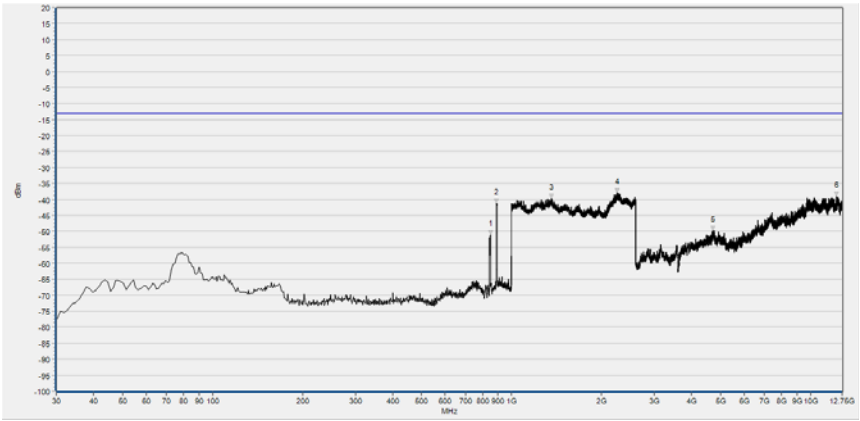


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	833.160	-50.81	-13.00	Vertical	N/A
2	875.840	-43.70	-13.00	Vertical	N/A
3	1384.794	-39.97	-13.00	Vertical	PASS
4	2254.902	-38.79	-13.00	Vertical	PASS
5	4763.266	-49.73	-13.00	Vertical	PASS
6	11751.428	-38.92	-13.00	Vertical	PASS

(Part 90) LTE Band 26, 15MHz BW, High Channel, QPSK

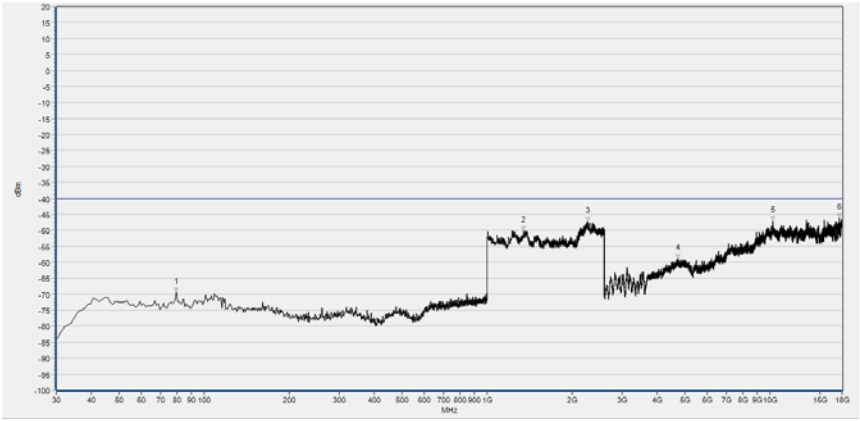


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	848.680	-38.48	-13.00	Horizontal	N/A
2	890.390	-57.24	-13.00	Horizontal	N/A
3	1217.047	-39.68	-13.00	Horizontal	PASS
4	2245.298	-37.60	-13.00	Horizontal	PASS
5	4923.850	-48.40	-13.00	Horizontal	PASS
6	11797.572	-38.46	-13.00	Horizontal	PASS

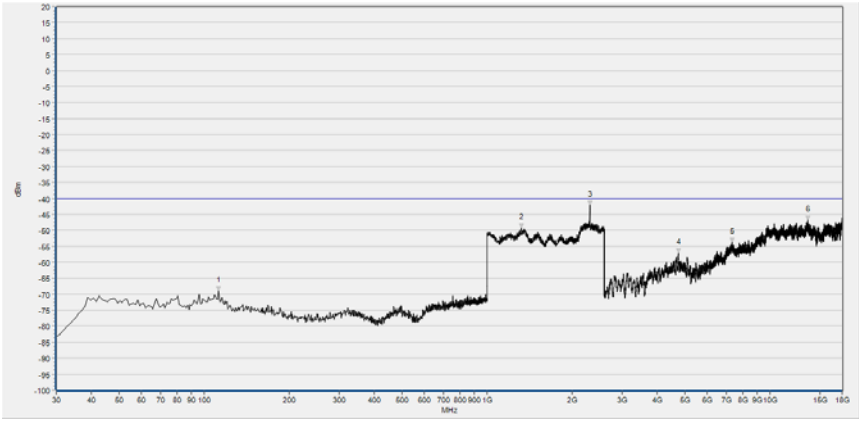


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	848.680	-51.17	-13.00	Vertical	N/A
2	890.390	-41.12	-13.00	Vertical	N/A
3	1360.464	-39.69	-13.00	Vertical	PASS
4	2248.499	-37.80	-13.00	Vertical	PASS
5	4700.509	-49.72	-13.00	Vertical	PASS
6	12172.268	-38.90	-13.00	Vertical	PASS

LTE Band 30, 5MHz BW, Low Channel, QPSK

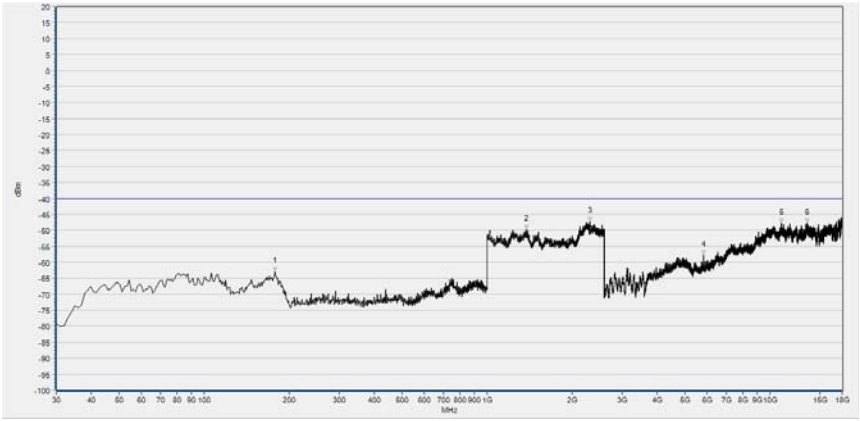


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	79.520	-69.44	-40.00	Horizontal	PASS
2	1345.946	-50.13	-40.00	Horizontal	PASS
3	2271.672	-47.32	-40.00	Horizontal	PASS
4	4713.303	-58.97	-40.00	Horizontal	PASS
5	10264.573	-47.11	-40.00	Horizontal	PASS
6	17556.391	-46.07	-40.00	Horizontal	PASS

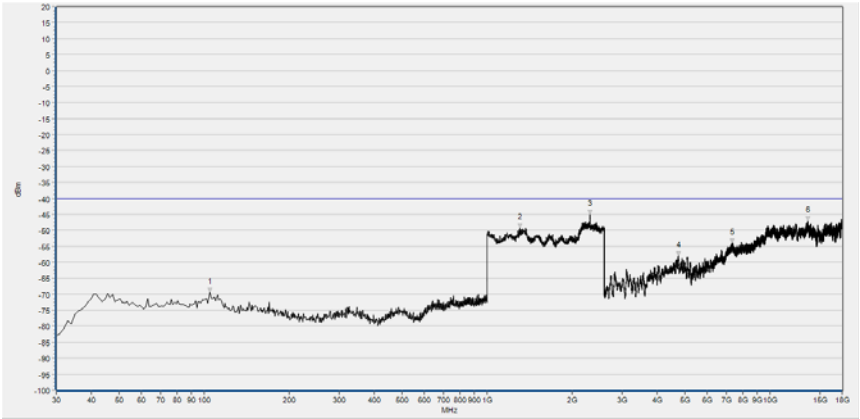


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	112.533	-69.03	-40.00	Vertical	PASS
2	1325.125	-49.23	-40.00	Vertical	PASS
3	2306.907	-42.11	-40.00	Vertical	N/A
4	4741.028	-56.99	-40.00	Vertical	PASS
5	7362.633	-53.72	-40.00	Vertical	PASS
6	13588.558	-46.85	-40.00	Vertical	PASS

LTE Band 30, 5MHz BW, Mid Channel, QPSK

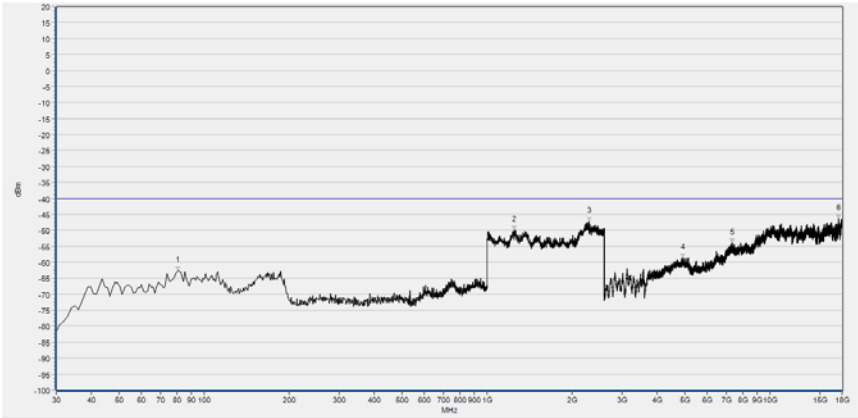


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	177.588	-62.98	-40.00	Horizontal	PASS
2	1376.376	-49.69	-40.00	Horizontal	PASS
3	2311.712	-47.33	-40.00	Horizontal	PASS
4	5813.083	-57.79	-40.00	Horizontal	PASS
5	11003.921	-47.74	-40.00	Horizontal	PASS
6	13502.300	-47.70	-40.00	Horizontal	PASS

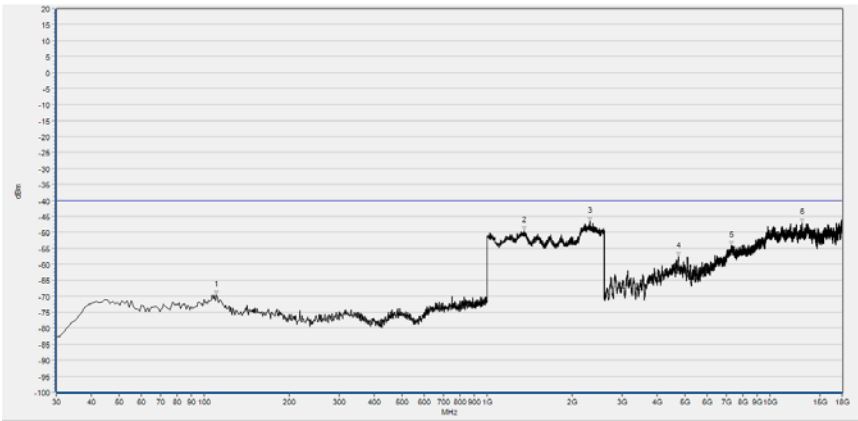


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	104.765	-69.31	-40.00	Vertical	PASS
2	1307.508	-49.37	-40.00	Vertical	PASS
3	2308.509	-45.09	-40.00	Vertical	N/A
4	4741.028	-58.01	-40.00	Vertical	PASS
5	7365.713	-54.01	-40.00	Vertical	PASS
6	13613.203	-47.02	-40.00	Vertical	PASS

LTE Band 30, 5MHz BW, High Channel, QPSK

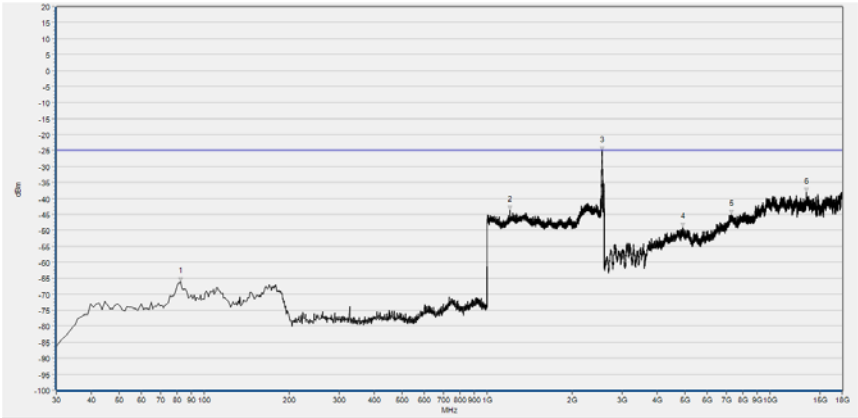


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	80.490	-62.61	-40.00	Horizontal	PASS
2	1249.850	-49.85	-40.00	Horizontal	PASS
3	2290.891	-47.33	-40.00	Horizontal	PASS
4	4913.543	-58.57	-40.00	Horizontal	PASS
5	7337.988	-53.99	-40.00	Horizontal	PASS
6	17513.263	-46.36	-40.00	Horizontal	PASS

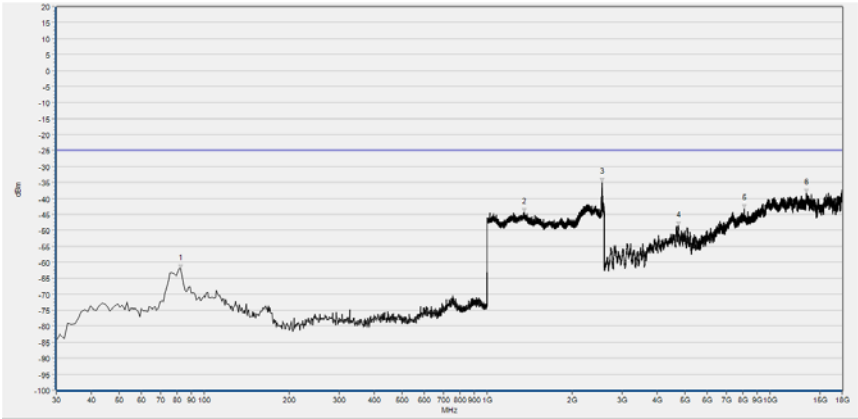


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	110.591	-69.53	-40.00	Vertical	PASS
2	1353.954	-49.60	-40.00	Vertical	PASS
3	2313.313	-46.67	-40.00	Vertical	PASS
4	4747.189	-57.64	-40.00	Vertical	PASS
5	7310.262	-54.11	-40.00	Vertical	PASS
6	12975.515	-47.02	-40.00	Vertical	PASS

LTE Band 38, 20MHz BW, Low Channel, QPSK

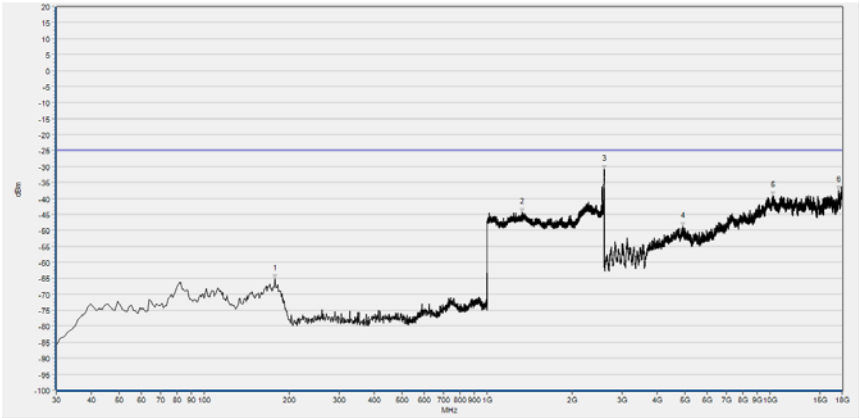


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	82.380	-66.12	-25.00	Horizontal	PASS
2	1202.321	-43.59	-25.00	Horizontal	PASS
3	2556.463	-25.16	-25.00	Horizontal	N/A
4	4907.620	-48.98	-25.00	Horizontal	PASS
5	7302.055	-45.04	-25.00	Horizontal	PASS
6	13485.579	-38.06	-25.00	Horizontal	PASS

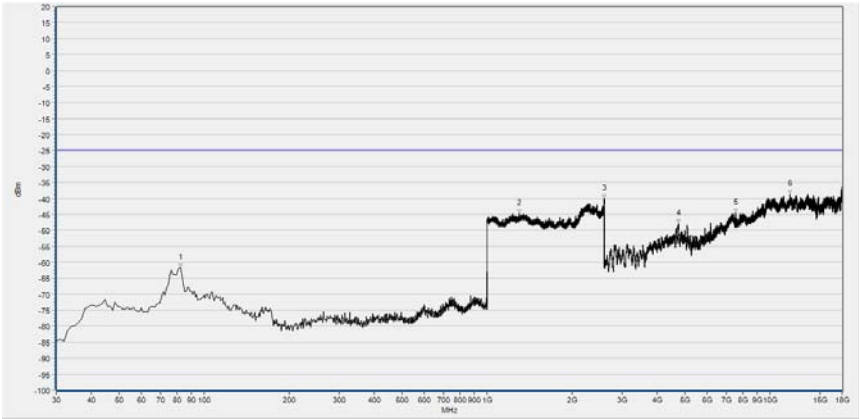


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	82.380	-62.08	-25.00	Vertical	PASS
2	1353.421	-44.26	-25.00	Vertical	PASS
3	2553.261	-35.06	-25.00	Vertical	N/A
4	4739.589	-48.63	-25.00	Vertical	PASS
5	8105.801	-43.17	-25.00	Vertical	PASS
6	13474.377	-38.27	-25.00	Vertical	PASS

LTE Band 38, 20MHz BW, Mid Channel, QPSK

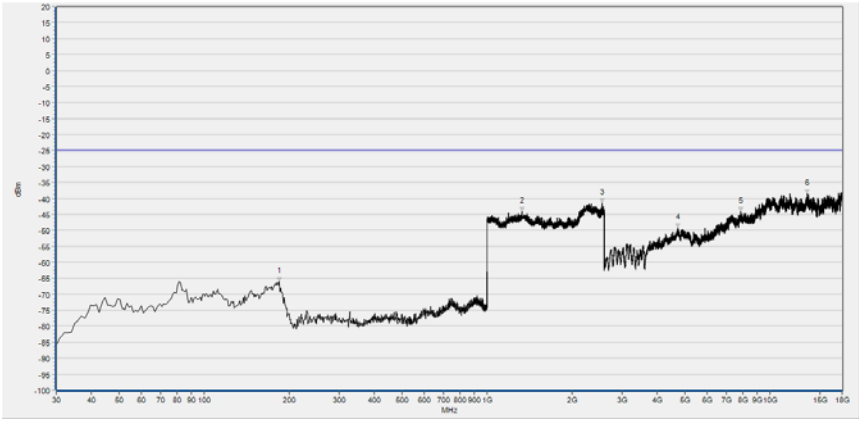


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	177.440	-65.10	-25.00	Horizontal	PASS
2	1333.573	-44.32	-25.00	Horizontal	PASS
3	2596.158	-31.00	-25.00	Horizontal	N/A
4	4916.021	-48.73	-25.00	Horizontal	PASS
5	10250.991	-39.15	-25.00	Horizontal	PASS
6	17529.514	-37.34	-25.00	Horizontal	PASS

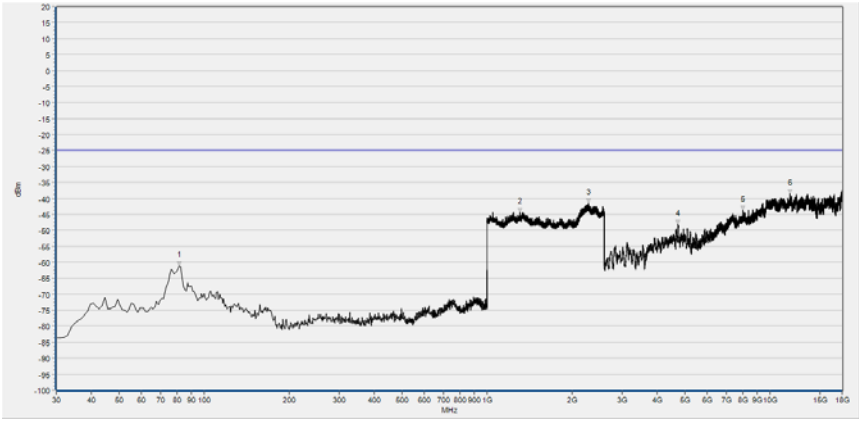


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	82.380	-61.82	-25.00	Vertical	PASS
2	1300.280	-44.71	-25.00	Vertical	PASS
3	2592.957	-40.20	-25.00	Vertical	N/A
4	4747.991	-47.92	-25.00	Vertical	PASS
5	7568.103	-44.68	-25.00	Vertical	PASS
6	11785.670	-38.77	-25.00	Vertical	PASS

LTE Band 38, 20MHz BW, High Channel, QPSK

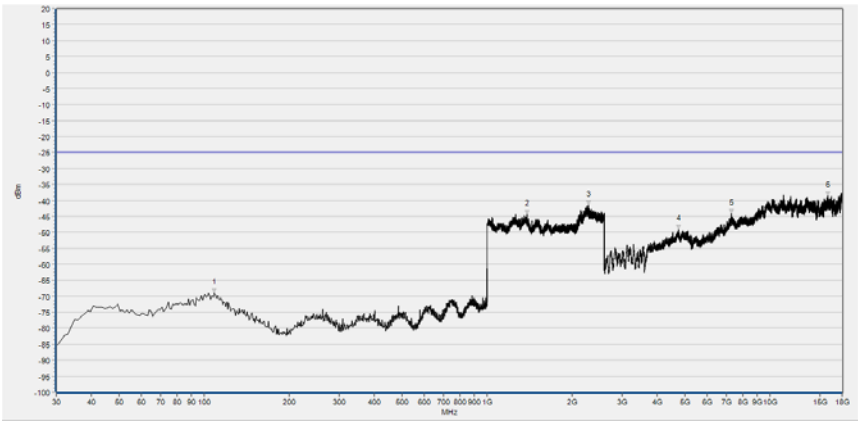


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	184.230	-65.95	-25.00	Horizontal	PASS
2	1326.531	-44.22	-25.00	Horizontal	PASS
3	2550.700	-41.41	-25.00	Horizontal	PASS
4	4725.586	-49.22	-25.00	Horizontal	PASS
5	7870.558	-44.05	-25.00	Horizontal	PASS
6	13575.195	-38.46	-25.00	Horizontal	PASS

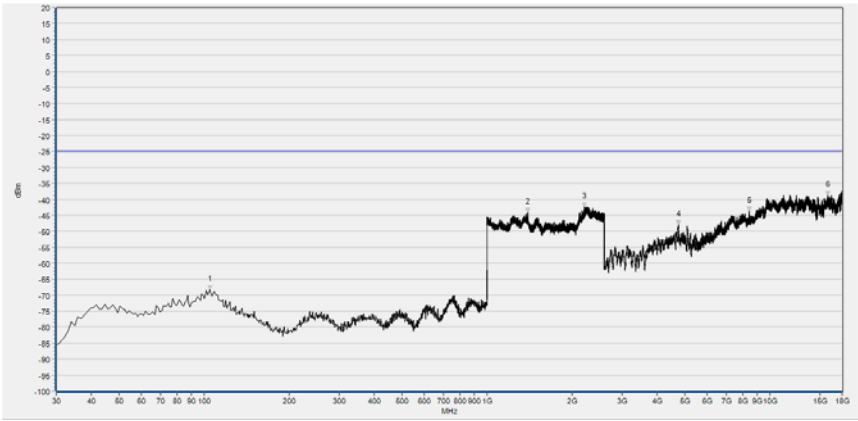


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	81.410	-61.01	-25.00	Vertical	PASS
2	1304.762	-44.41	-25.00	Vertical	PASS
3	2287.555	-41.54	-25.00	Vertical	PASS
4	4736.789	-48.21	-25.00	Vertical	PASS
5	8021.786	-43.69	-25.00	Vertical	PASS
6	11794.072	-38.65	-25.00	Vertical	PASS

LTE Band 41, 20MHz BW, Low Channel, QPSK

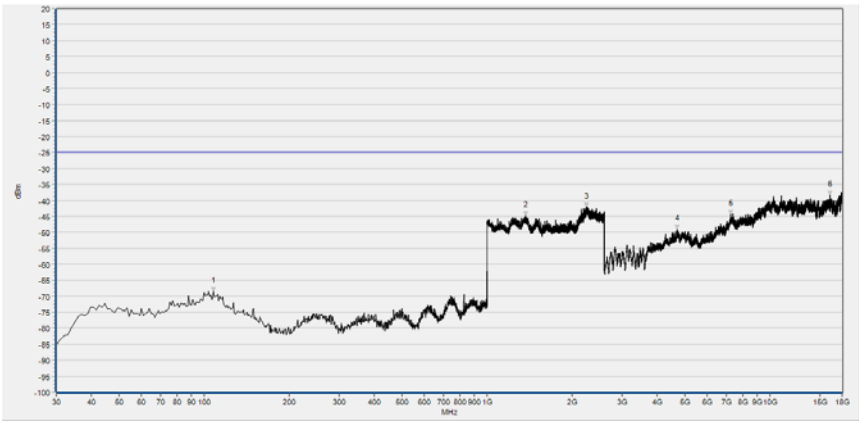


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	108.570	-68.86	-25.00	Horizontal	PASS
2	1382.233	-44.45	-25.00	Horizontal	PASS
3	2285.634	-41.56	-25.00	Horizontal	PASS
4	4756.392	-49.07	-25.00	Horizontal	PASS
5	7318.858	-44.11	-25.00	Horizontal	PASS
6	16000.436	-38.63	-25.00	Horizontal	PASS

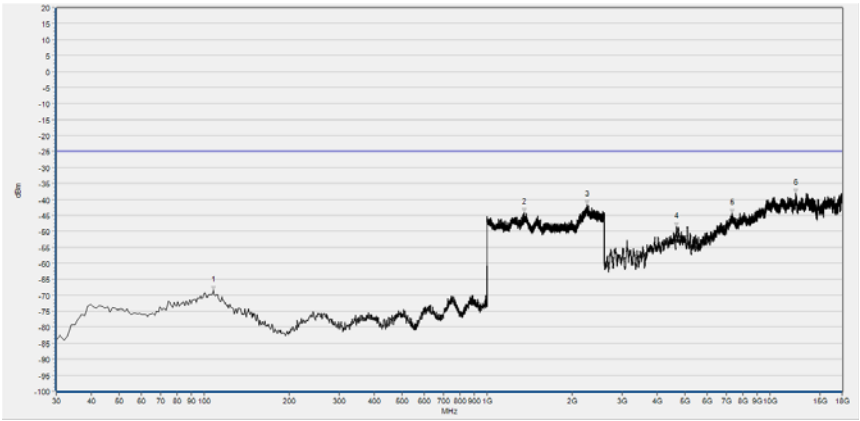


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	104.690	-68.33	-25.00	Vertical	PASS
2	1395.678	-44.22	-25.00	Vertical	PASS
3	2212.005	-42.40	-25.00	Vertical	PASS
4	4742.390	-47.89	-25.00	Vertical	PASS
5	8436.261	-43.60	-25.00	Vertical	PASS
6	15978.032	-38.69	-25.00	Vertical	PASS

LTE Band 41, 20MHz BW, Mid Channel, QPSK

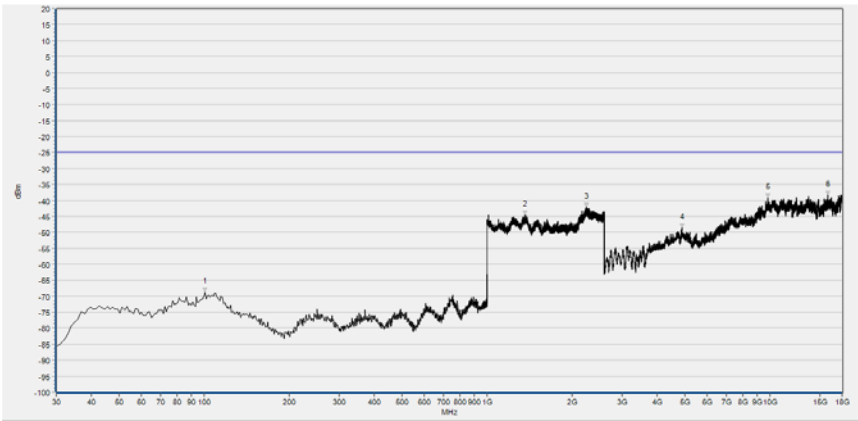


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	107.600	-68.40	-25.00	Horizontal	PASS
2	1369.428	-44.86	-25.00	Horizontal	PASS
3	2242.737	-42.02	-25.00	Horizontal	PASS
4	4691.980	-49.16	-25.00	Horizontal	PASS
5	7274.050	-44.27	-25.00	Horizontal	PASS
6	16322.495	-38.28	-25.00	Horizontal	PASS

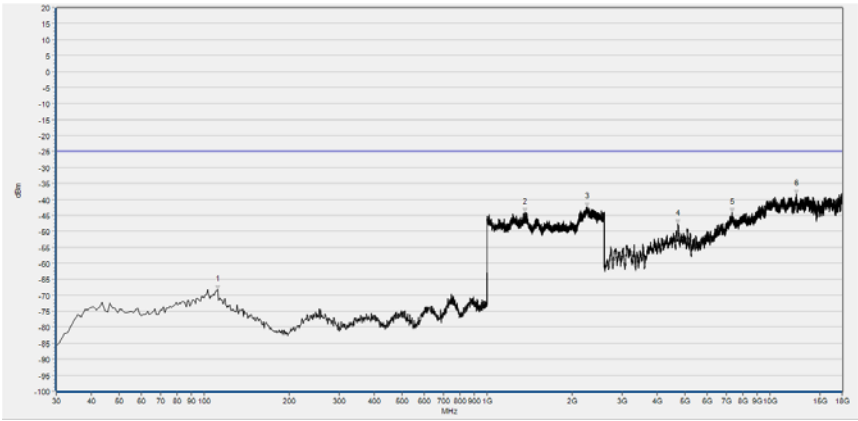


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	107.600	-68.45	-25.00	Vertical	PASS
2	1354.702	-44.23	-25.00	Vertical	PASS
3	2258.743	-41.78	-25.00	Vertical	PASS
4	4663.975	-48.62	-25.00	Vertical	PASS
5	7352.464	-44.31	-25.00	Vertical	PASS
6	12362.575	-37.99	-25.00	Vertical	PASS

LTE Band 41, 20MHz BW, High Channel, QPSK

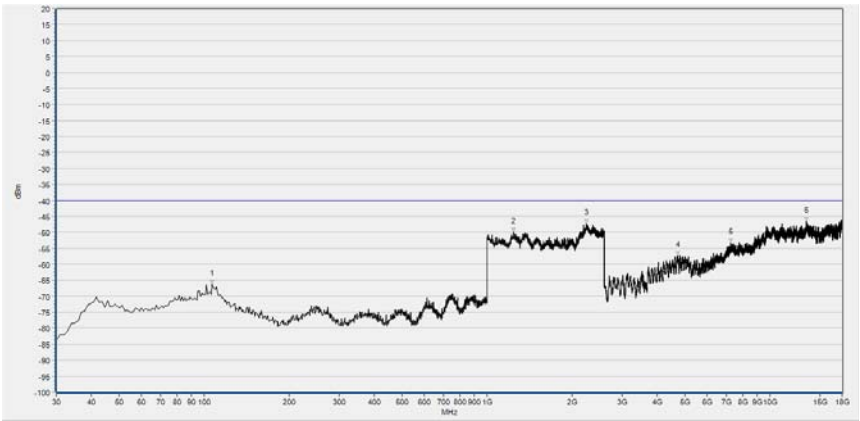


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	100.810	-68.69	-25.00	Horizontal	PASS
2	1361.745	-44.67	-25.00	Horizontal	PASS
3	2249.140	-42.10	-25.00	Horizontal	PASS
4	4879.614	-48.52	-25.00	Horizontal	PASS
5	9825.314	-39.17	-25.00	Horizontal	PASS
6	16062.048	-38.26	-25.00	Horizontal	PASS

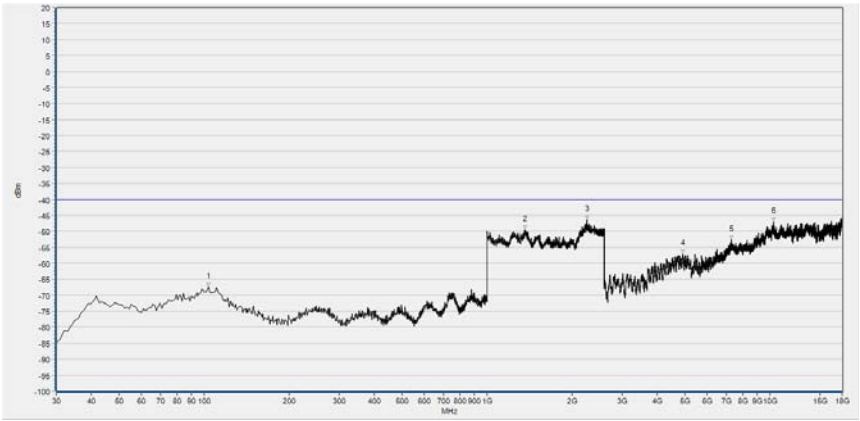


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	111.480	-68.18	-25.00	Vertical	PASS
2	1363.025	-44.04	-25.00	Vertical	PASS
3	2256.182	-42.37	-25.00	Vertical	PASS
4	4736.789	-47.63	-25.00	Vertical	PASS
5	7363.666	-44.21	-25.00	Vertical	PASS
6	12415.785	-38.26	-25.00	Vertical	PASS

LTE Band 48, 20MHz BW, Low Channel, QPSK

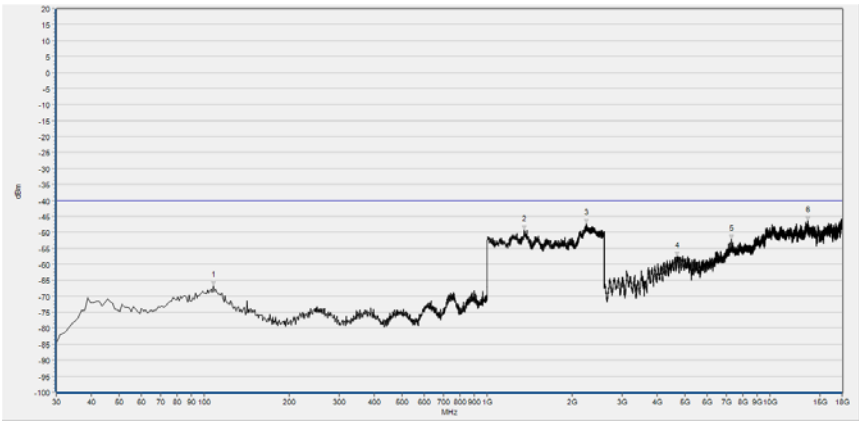


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	106.707	-66.18	-40.00	Horizontal	PASS
2	1241.842	-50.01	-40.00	Horizontal	PASS
3	2244.444	-47.31	-40.00	Horizontal	PASS
4	4713.303	-57.23	-40.00	Horizontal	PASS
5	7273.295	-53.39	-40.00	Horizontal	PASS
6	13489.978	-46.49	-40.00	Horizontal	PASS

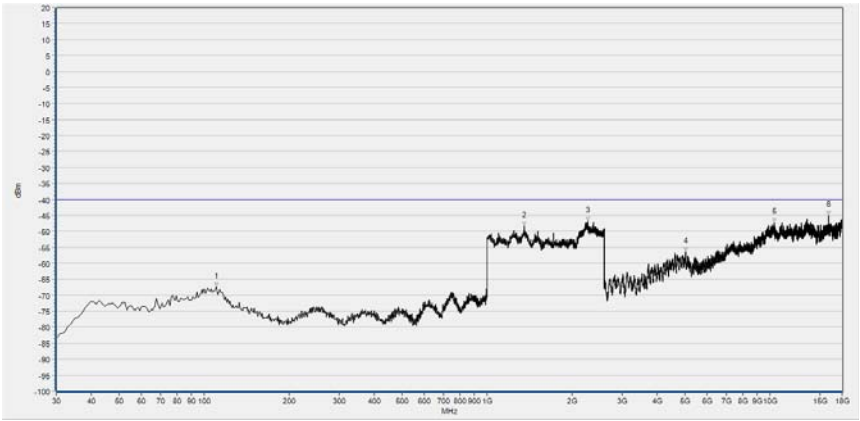


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	103.794	-67.44	-40.00	Vertical	PASS
2	1358.759	-49.55	-40.00	Vertical	PASS
3	2252.452	-46.42	-40.00	Vertical	PASS
4	4913.543	-56.99	-40.00	Vertical	PASS
5	7316.423	-52.53	-40.00	Vertical	PASS
6	10307.702	-47.03	-40.00	Vertical	PASS

LTE Band 48, 20MHz BW, Mid Channel, QPSK

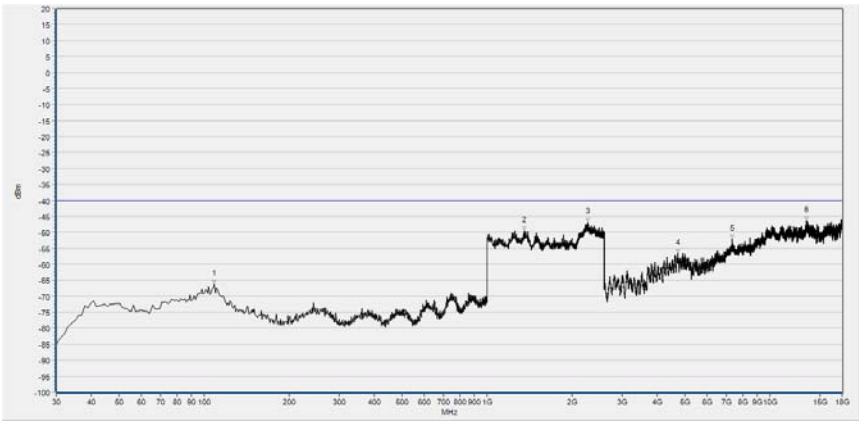


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	107.678	-66.76	-40.00	Horizontal	PASS
2	1352.352	-49.24	-40.00	Horizontal	PASS
3	2246.046	-47.24	-40.00	Horizontal	PASS
4	4700.980	-57.61	-40.00	Horizontal	PASS
5	7325.665	-52.26	-40.00	Horizontal	PASS
6	13585.477	-46.29	-40.00	Horizontal	PASS

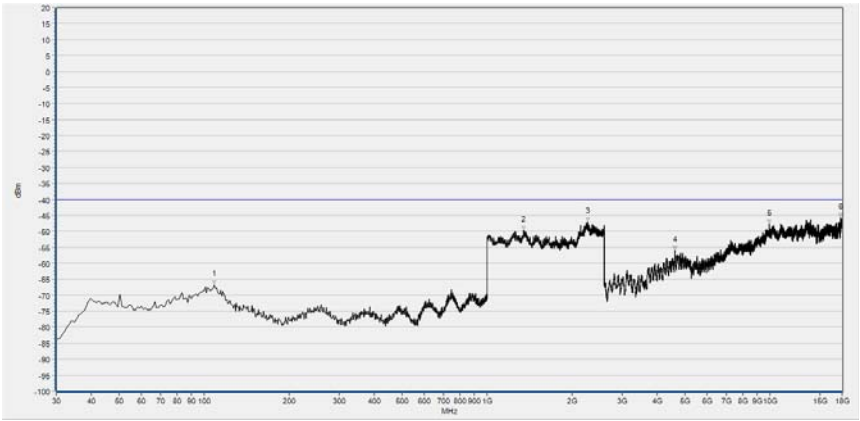


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	110.591	-67.30	-40.00	Vertical	PASS
2	1357.157	-48.43	-40.00	Vertical	PASS
3	2273.273	-46.75	-40.00	Vertical	PASS
4	5036.767	-56.47	-40.00	Vertical	PASS
5	10347.750	-47.16	-40.00	Vertical	PASS
6	16148.550	-45.10	-40.00	Vertical	PASS

LTE Band 48, 20MHz BW, High Channel, QPSK

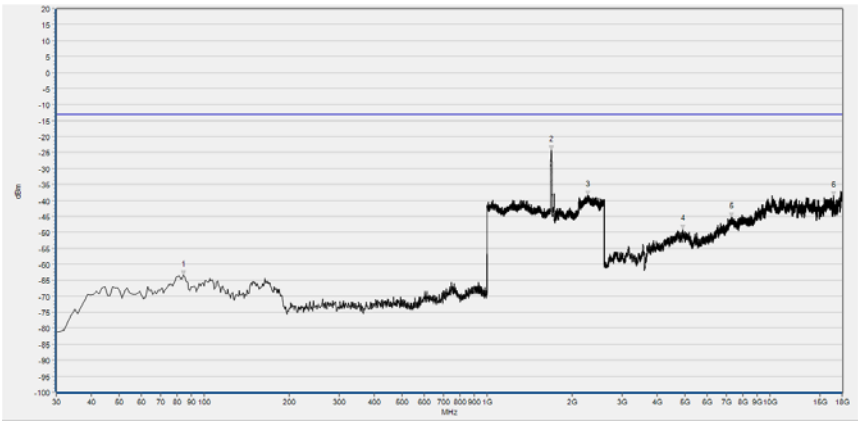


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	108.649	-66.24	-40.00	Horizontal	PASS
2	1353.954	-49.52	-40.00	Horizontal	PASS
3	2270.070	-46.73	-40.00	Horizontal	PASS
4	4731.786	-56.65	-40.00	Horizontal	PASS
5	7368.794	-52.28	-40.00	Horizontal	PASS
6	13486.897	-46.38	-40.00	Horizontal	PASS

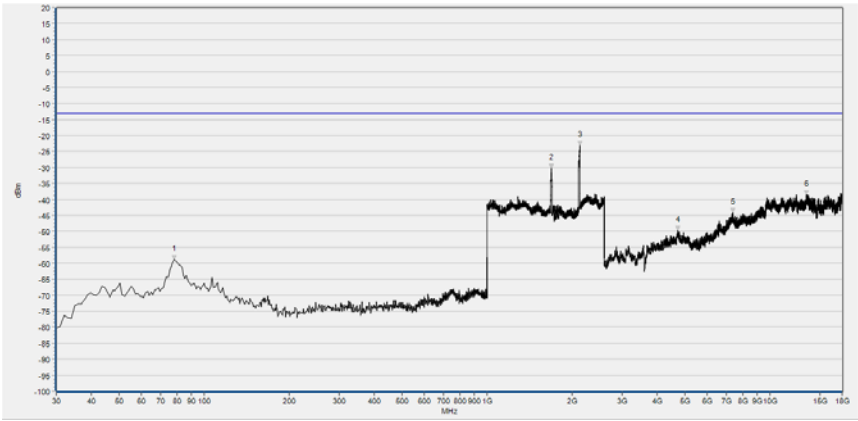


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	108.649	-66.77	-40.00	Vertical	PASS
2	1347.548	-49.73	-40.00	Vertical	PASS
3	2265.265	-47.05	-40.00	Vertical	PASS
4	4620.884	-55.89	-40.00	Vertical	PASS
5	9953.431	-47.82	-40.00	Vertical	PASS
6	17824.405	-45.73	-40.00	Vertical	PASS

LTE Band 66, 20MHz BW, Low Channel, QPSK

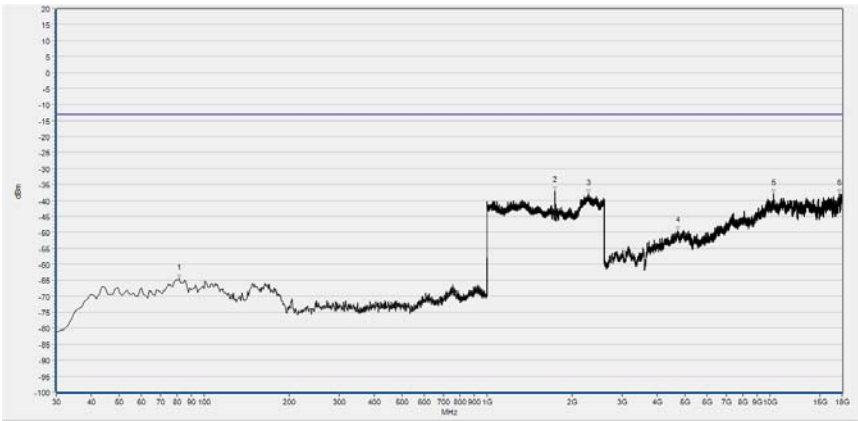


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	84.320	-63.36	-13.00	Horizontal	PASS
2	1689.556	-24.35	-13.00	Horizontal	N/A
3	2276.030	-38.23	-13.00	Horizontal	PASS
4	4916.021	-49.04	-13.00	Horizontal	PASS
5	7304.855	-45.29	-13.00	Horizontal	PASS
6	16798.582	-38.62	-13.00	Horizontal	PASS

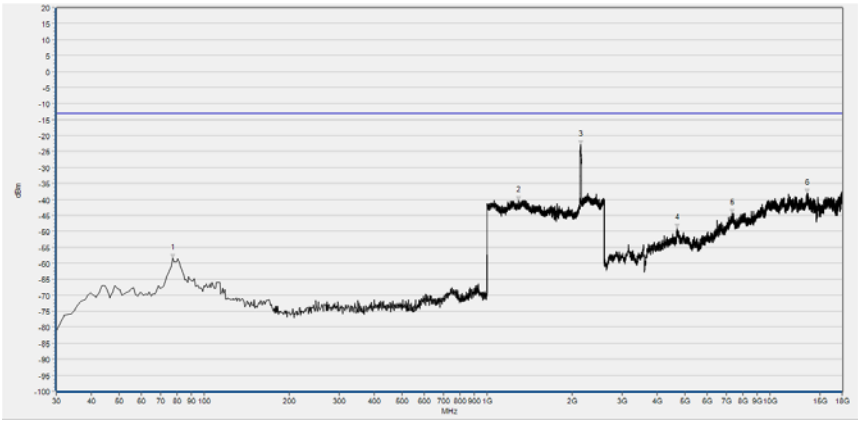


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	78.500	-58.97	-13.00	Vertical	PASS
2	1687.635	-30.38	-13.00	Vertical	N/A
3	2127.491	-23.13	-13.00	Vertical	N/A
4	4717.185	-49.69	-13.00	Vertical	PASS
5	7402.873	-44.03	-13.00	Vertical	PASS
6	13493.981	-38.58	-13.00	Vertical	PASS

LTE Band 66, 20MHz BW, Mid Channel, QPSK

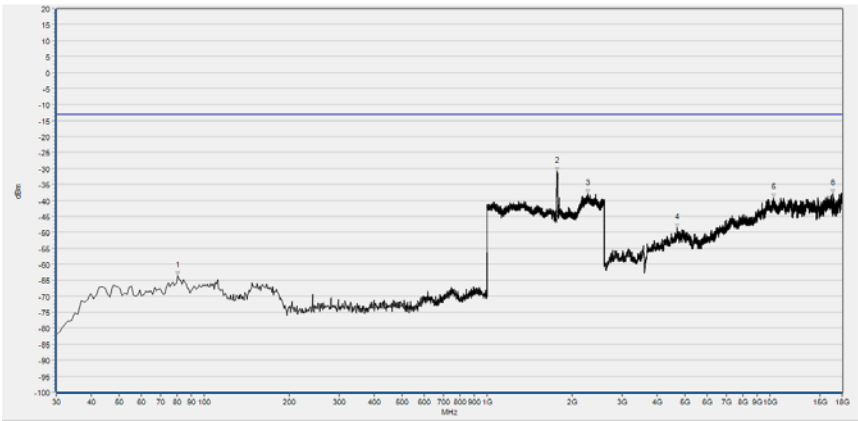


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	81.410	-64.37	-13.00	Horizontal	PASS
2	1736.295	-36.89	-13.00	Horizontal	N/A
3	2289.476	-37.77	-13.00	Horizontal	PASS
4	4731.187	-49.61	-13.00	Horizontal	PASS
5	10290.198	-37.91	-13.00	Horizontal	PASS
6	17551.919	-37.90	-13.00	Horizontal	PASS

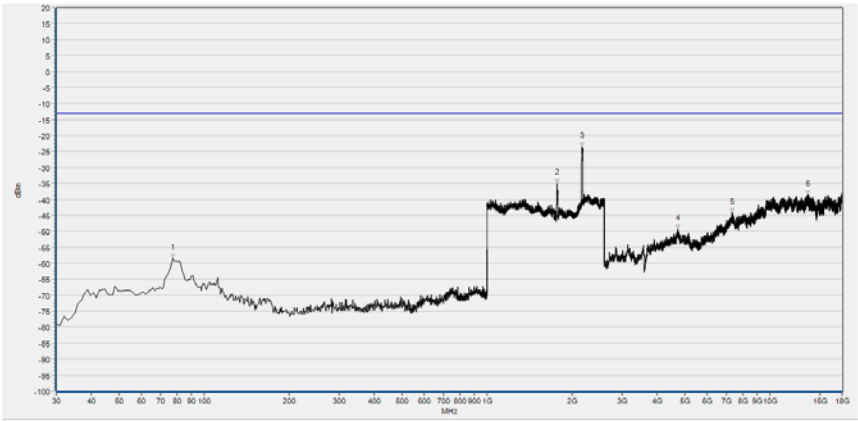


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	77.530	-58.54	-13.00	Vertical	PASS
2	1292.597	-40.36	-13.00	Vertical	PASS
3	2138.375	-22.87	-13.00	Vertical	N/A
4	4703.182	-49.05	-13.00	Vertical	PASS
5	7338.462	-44.41	-13.00	Vertical	PASS
6	13575.195	-38.20	-13.00	Vertical	PASS

LTE Band 66, 20MHz BW, High Channel, QPSK

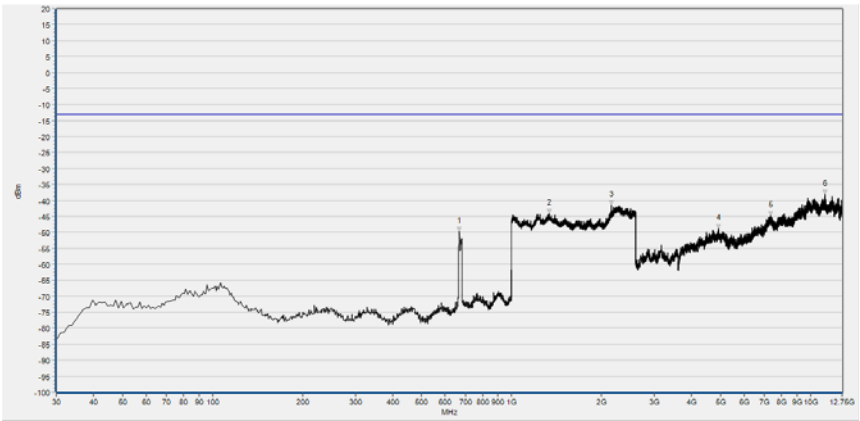


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	80.440	-63.53	-13.00	Horizontal	PASS
2	1767.027	-31.01	-13.00	Horizontal	N/A
3	2276.030	-37.92	-13.00	Horizontal	PASS
4	4691.980	-48.69	-13.00	Horizontal	PASS
5	10292.999	-39.15	-13.00	Horizontal	PASS
6	16736.970	-37.95	-13.00	Horizontal	PASS

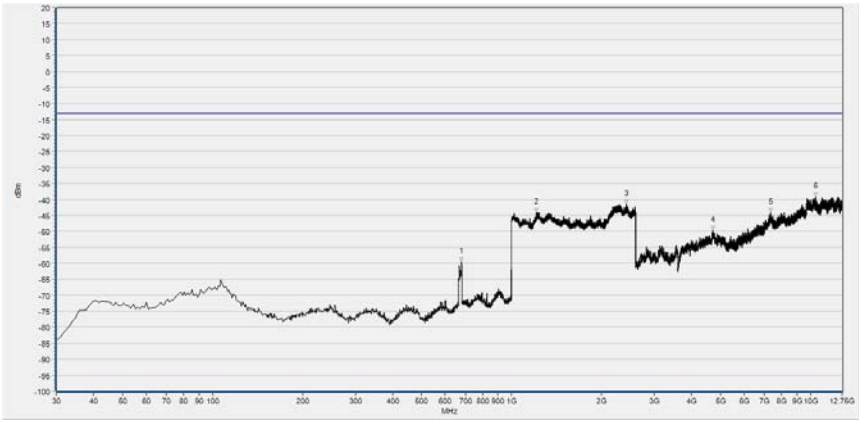


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	77.530	-58.37	-13.00	Vertical	PASS
2	1767.027	-35.04	-13.00	Vertical	N/A
3	2172.309	-23.62	-13.00	Vertical	N/A
4	4719.985	-49.28	-13.00	Vertical	PASS
5	7349.664	-44.12	-13.00	Vertical	PASS
6	13589.198	-38.47	-13.00	Vertical	PASS

LTE Band 71, 20MHz BW, Low Channel, QPSK

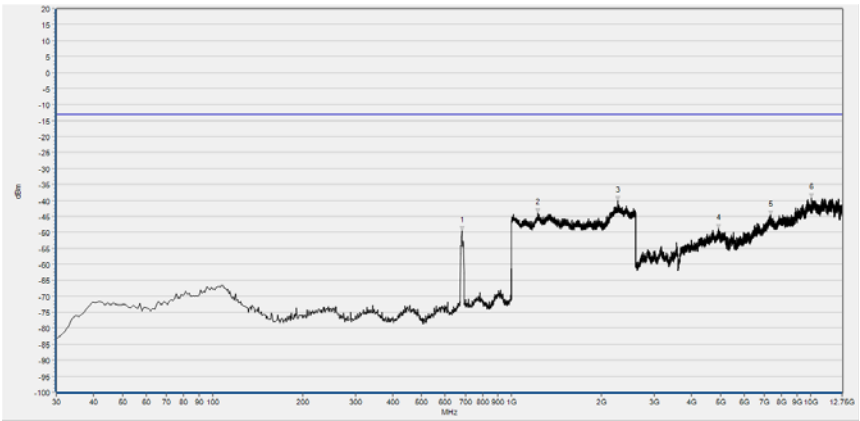


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	669.230	-49.79	-13.00	Horizontal	N/A
2	1336.134	-44.18	-13.00	Horizontal	PASS
3	2151.821	-41.44	-13.00	Horizontal	PASS
4	4916.467	-48.84	-13.00	Horizontal	PASS
5	7349.218	-44.74	-13.00	Horizontal	PASS
6	11164.466	-38.20	-13.00	Horizontal	PASS

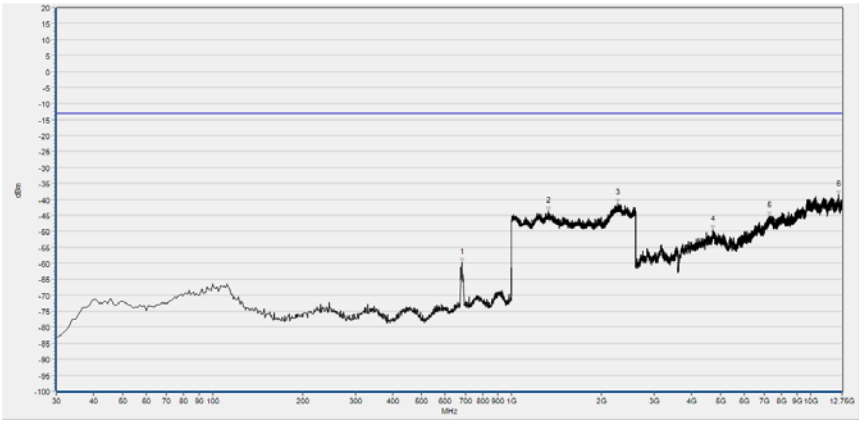


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	680.870	-59.63	-13.00	Vertical	N/A
2	1210.644	-44.22	-13.00	Vertical	PASS
3	2421.369	-41.40	-13.00	Vertical	PASS
4	4715.276	-49.79	-13.00	Vertical	PASS
5	7338.143	-44.07	-13.00	Vertical	PASS
6	10415.075	-39.19	-13.00	Vertical	PASS

LTE Band 71, 20MHz BW, Mid Channel, QPSK

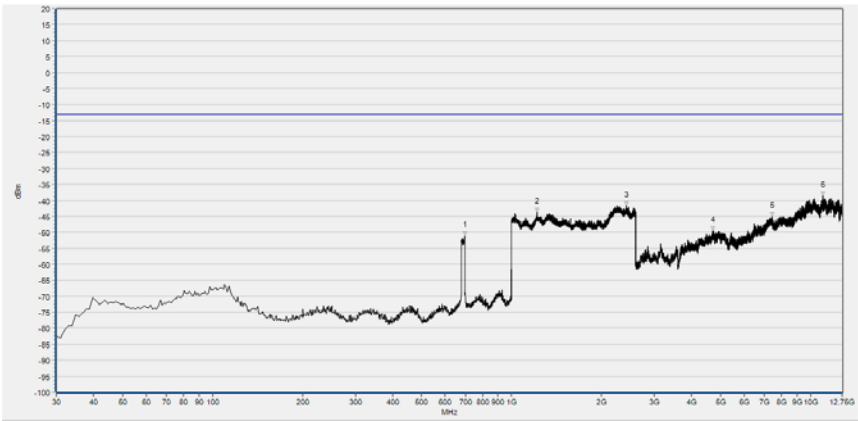


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	681.840	-49.49	-13.00	Horizontal	N/A
2	1221.529	-43.91	-13.00	Horizontal	PASS
3	2263.866	-40.10	-13.00	Horizontal	PASS
4	4922.004	-48.85	-13.00	Horizontal	PASS
5	7367.676	-44.52	-13.00	Horizontal	PASS
6	10084.679	-39.27	-13.00	Horizontal	PASS

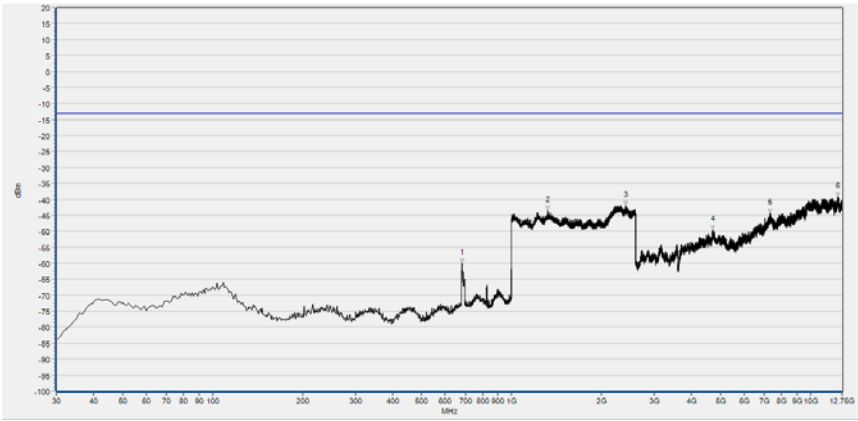


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	681.840	-59.86	-13.00	Vertical	N/A
2	1329.092	-43.60	-13.00	Vertical	N/A
3	2271.549	-41.30	-13.00	Vertical	PASS
4	4717.121	-49.45	-13.00	Vertical	PASS
5	7260.620	-45.17	-13.00	Vertical	PASS
6	12397.454	-38.64	-13.00	Vertical	PASS

LTE Band 71, 20MHz BW, High Channel, QPSK



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	696.390	-51.07	-13.00	Horizontal	N/A
2	1215.766	-43.65	-13.00	Horizontal	PASS
3	2417.527	-41.74	-13.00	Horizontal	PASS
4	4698.663	-49.53	-13.00	Horizontal	PASS
5	7445.199	-45.01	-13.00	Horizontal	PASS
6	10979.887	-38.55	-13.00	Horizontal	PASS



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	644.010	-67.02	-13.00	Vertical	N/A
2	685.720	-16.37	-13.00	Vertical	N/A
3	1375.830	-32.10	-13.00	Vertical	PASS
4	4741.117	-47.93	-13.00	Vertical	PASS
5	7410.129	-43.90	-13.00	Vertical	PASS
6	9822.577	-39.28	-13.00	Vertical	PASS

Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test Items	Uncertainty
Radiated Spurious Emissions	±6 dB

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.

4. Test Equipments Utilized

4.1Radiated Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
System Simulator	152038	CMW500	R&S	2023.10.17	2024.10.16
				2024.09.11	2025.09.10
Receiver	MY56060145	N9020A	Agilent	2024.05.30	2025.05.29
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2024.06.22	2025.06.21
Test Antenna - Horn	9120D-963	BBHA 9120D	Schwarzbeck	2024.06.22	2025.06.21
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2024.05.30	2025.05.29
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2024.05.30	2025.05.29
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2024.05.30	2025.05.29
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40-KK-0.5	Qualwave	2024.07.03	2025.07.02
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-KK F-2	Qualwave	2024.07.03	2025.07.02
Preamplifier (10MHz-6GHz)	46732	S10M100L380 2	LUCIX CORP.	2024.05.30	2025.05.29
Preamplifier (2GHz-18GHz)	61171/61172	S020180L320 3	LUCIX CORP.	2024.05.30	2025.05.29
Preamplifier (18GHz-40GHz)	DS77209	DCLNA0118-4 0C-S	Decentest	2024.05.30	2025.05.29
Notch Filter	N/A	WRCGV -LTE B2	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE B4	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE B5	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE B7	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE B12	Wainwright	N/A	N/A

Notch Filter	N/A	WRCGV -LTE 13	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE 14	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE B17	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE B25	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE 26	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE B30	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE B38	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE B41	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE B42	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE B43	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE B48	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE B66	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV -LTE 71	Wainwright	N/A	N/A
Anechoic Chamber	N/A	9m*6m*6m	CRT	2022.05.10	2025.05.09
Software Version: V1.2					

END OF REPORT