FCC TEST REPORT

(PART 22)

Applicant:	GREAT TALENT TECHNOLOGY LIMITED
Address:	RM602,T3 Software Park, Hi-Tech Park South, Nanshan, Shenzhen, China

Manufacturer or Supplier:	GREAT TALENT TECHNOLOGY LIMITED
Address:	RM602,T3 Software Park, Hi-Tech Park South, Nanshan, Shenzhen, China
Product:	2803
Brand Name:	F30
Model Name:	F30
FCC ID:	2ALZM-F30
Date of tests:	May. 18, 2019 ~ Jun. 11, 2019

The tests have been carried out according to the requirements of the following standard:

☒ **FCC PART 22, Subpart H**
☒ **ANSI/TIA/EIA-603-D**
☒ **ANSI/TIA/EIA-603-E**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Alex Chen Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
 Date: Jun. 14, 2019	 Date: Jun. 14, 2019

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF190517W003-3	Original release	Jun. 14, 2019

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 22 & Part 2			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
2.1046 22.913 (a)	Effective Radiated Power	PASS	Meet the requirement of limit.
2.1055 22.355	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 22.917b	Occupied Bandwidth	PASS	Meet the requirement of limit.
--	Peak to average ratio*	PASS	Meet the requirement of limit.
22.917	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 22.917	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 22.917	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -19.92dB at 1666.000MHz.

* Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01.

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
Effective Radiated Power	±4.48dB
Frequency Stability	±39.27Hz
Radiated emissions	±4.48dB
Conducted emissions	±2 dB
Occupied Channel Bandwidth	±21.7KHz
Band Edge Measurements	±4.48dB
Peak to average ratio	±0.76dB

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

1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Feb. 26,19	Feb. 25,20
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 26,19	Feb. 25,20
Bilog Antenna 1	ETS-LINDGREN	3143B	00161964	Feb. 26,19	Feb. 25,20
Bilog Antenna 2	ETS-LINDGREN	3143B	00161965	Feb. 26,19	Feb. 25,20
Horn Antenna 1	ETS-LINDGREN	3117	00168728	Feb. 26,19	Feb. 25,20
Horn Antenna 2	ETS-LINDGREN	3117	00168692	Nov. 30, 18	Nov. 29, 19
Loop antenna	Daze	ZN30900A	0708	Oct. 23,18	Oct. 22, 19
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Nov. 21, 18	Nov. 20, 19
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 26,19	Feb. 25,20
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jul. 09,18	Jul. 08,19
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jul. 09,18	Jul. 08,19
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Jul. 09,18	Jul. 08,19
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	Feb. 26,19	Feb. 25,20
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jul. 09,18	Jul. 08,19
Power Meter	Anritsu	ML2495A	1506002	Feb. 26,19	Feb. 25,20
Power Sensor	Anritsu	MA2411B	1339352	Feb. 26,19	Feb. 25,20
Humid & Temp Programmable Tester	Juyi	ITH-120-45-CP-AR	IAA1504-001	Jul. 09,18	Jul. 08,19
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 26,19	Feb. 25,20

NOTE: 1. The calibration interval of the above test instruments is 12 months or 24 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.

3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

EUT	2803	
BRAND NAME	F30	
MODEL NAME	F30	
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.85Vdc (Li-ion, battery)	
MODULATION TYPE	**CDMA**	QPSK
	LTE	QPSK, 16QAM
FREQUENCY RANGE	**CDMA BC0**	824.7MHz ~ 848.31MHz
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	824.7MHz ~ 848.3MHz
	LTE Band 5 (Channel Bandwidth: 3MHz)	825.5MHz ~ 847.5MHz
	LTE Band 5 (Channel Bandwidth: 5MHz)	826.5MHz ~ 846.5MHz
	LTE Band 5 (Channel Bandwidth: 10MHz)	829MHz ~ 844MHz
MAX. ERP POWER	**CDMA BC 0**	91mW
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	45mW
	LTE Band 5 (Channel Bandwidth: 3MHz)	46mW
	LTE Band 5 (Channel Bandwidth: 5MHz)	45mW
	LTE Band 5 (Channel Bandwidth: 10MHz)	39mW
EMISSION DESIGNATOR	**CDMA BC 0**	1M30F9W
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	QPSK: 1M09G7D
		16QAM: 1M09W7D
	LTE Band 5 (Channel Bandwidth: 3MHz)	QPSK: 2M69G7D
		16QAM: 2M68W7D
	LTE Band 5 (Channel Bandwidth: 5MHz)	QPSK: 4M48G7D
		16QAM: 4M48W7D
	LTE Band 5 (Channel Bandwidth: 10MHz)	QPSK: 8M94G7D
		16QAM: 8M91W7D
ANTENNA TYPE	PIFA antenna with -1dBi gain FOR CDMA BC0 PIFA antenna with -1dBi gain FOR LTE Band 5	
HW VERSION	Q2803-V1.0	
SW VERSION	F30_V1.1.0	
I/O PORTS	Refer to user's manual	

DATA CABLE	USB cable: non-shielded, detachable, 1.0meter

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT was powered by the following adapter:

ADAPTER	
BRAND:	KFL
MODEL:	TPA-5950070UU
INPUT:	AC 100-240V, 50/60Hz 0.2A
OUTPUT:	DC 5V, 700mA

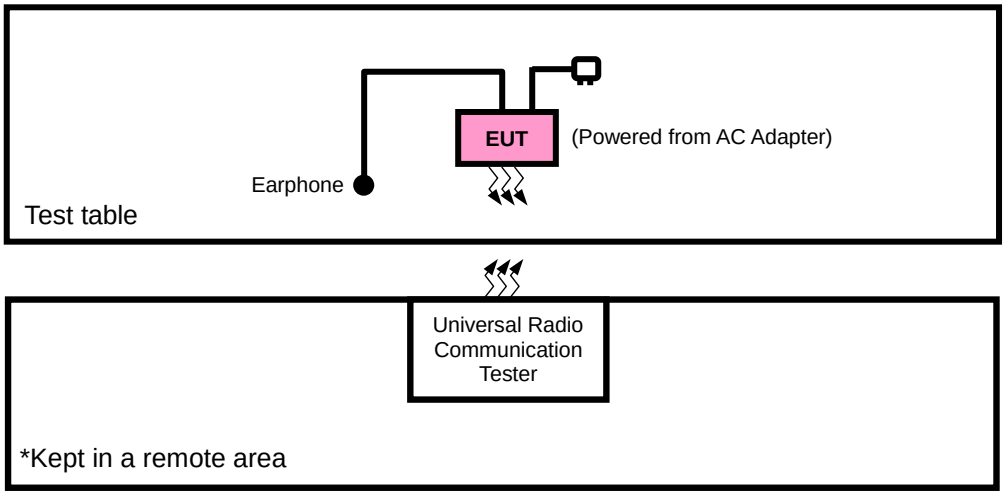
3. The EUT matched the following USB cable:

USB CABLE	
BRAND:	GuoJun
MODEL:	R0PC1S
SIGNAL LINE:	1.0 METER

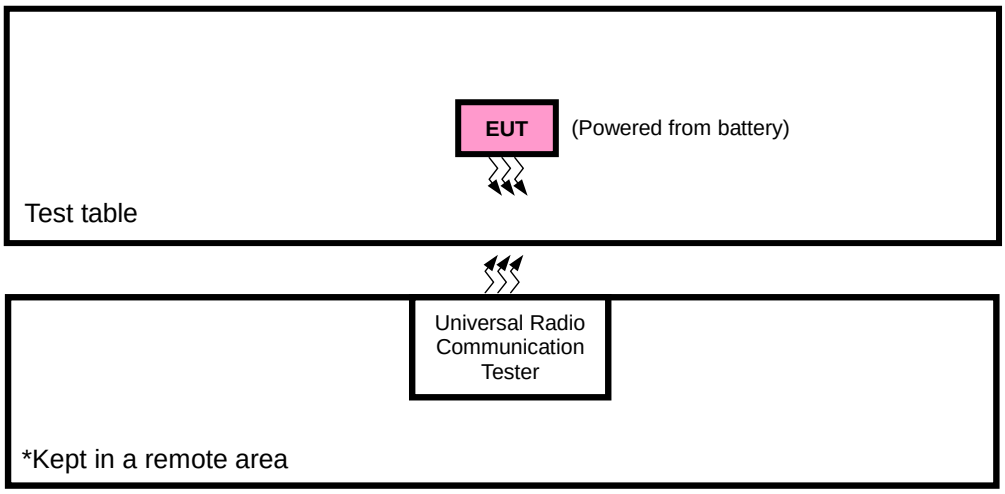
4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION



FOR CONDUCTED & E.R.P. TEST



2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	LONG WEI	PS-6403D	010934269	N/A
2	PC	HP	A6608CN	3CR83825X3	N/A
3	Earphone	N/A	N/A	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m
2	AC Line: Unshielded, Detachable 1.5m
3	Earphone Line: Unshielded, Detachable 1.5m

NOTE:

1. All power cords of the above support units are non shielded (1.8m).

2.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports The worst case in ERP and radiated emission was found when positioned on X-plane for CDMA/LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	**EUT + Adapter + USB Cable+ Earphone with CDMA or LTE link**
B	EUT + Battery with **CDMA or LTE link**

CDMA MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
B	ERP	1013 to 777	1013, 384, 777	CDMA BC 0
B	FREQUENCY STABILITY	1013 to 777	1013, 777	CDMA BC 0
B	OCCUPIED BANDWIDTH	1013 to 777	1013, 384, 777	CDMA BC 0
B	BAND EDGE	1013 to 777	1013, 384, 777	CDMA BC 0
B	CONDCUDETED EMISSION	1013 to 777	1013, 777	CDMA BC 0
A	RADIATED EMISSION	1013 to 777	1013, 384, 777	CDMA BC 0
B	PEAK TO AVERAGE RATIO	1013 to 777	1013, 384, 777	CDMA BC 0

LTE BAND 5 MODE

EUT CONFIGURE MODE	TEST ITEM	Available Channel	Tested Channel	Channel bandwidth	modulation	mode
B	ERP	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	20407 to 20643	20407, 20643	1.4MHz	QPSK	1 RB / 0 RB Offset
		20415 to 20635	20415, 20635	3MHz	QPSK	1 RB / 0 RB Offset
		20425 to 20625	20425, 20625	5MHz	QPSK	1 RB / 0 RB Offset
		20450 to 20600	20450, 20600	10MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK	6 RB / 0 RB Offset
					16QAM	6 RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3MHz	QPSK	15 RB / 0 RB Offset
					16QAM	15 RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5MHz	QPSK	25 RB / 0 RB Offset
					16QAM	25 RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	QPSK	50 RB / 0 RB Offset
					16QAM	50 RB / 0 RB Offset

B	BAND EDGE	20407 to 20643	20407	1.4 MHz	QPSK,16QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
		20407 to 20643	20643	1.4 MHz	QPSK,16QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		20415 to 20635	20415	3 MHz	QPSK,16QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
		20415 to 20635	20635	3 MHz	QPSK,16QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		20425 to 20625	20425	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
		20425 to 20625	20625	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		20450 to 20600	20450	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
		20450 to 20600	20600	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
B	CONDCUDETED EMISSION	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK	1 RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3MHz	QPSK	1 RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5MHz	QPSK	1 RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	20407 to 20643	20525	1.4MHz	QPSK	1 RB / 0 RB Offset
		20415 to 20635	20525	3MHz	QPSK	1 RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5MHz	QPSK	1 RB / 0 RB Offset
		20450 to 20600	20525	10MHz	QPSK	1 RB / 0 RB Offset
B	PEAK TO AVERAGE RATIO	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	23deg. C, 62%RH	3.85Vdc from Battery	Tony
FREQUENCY STABILITY	23deg. C, 62%RH	DC 3.85V/4.3V/3.6V	Rain Wang
OCCUPIED BANDWIDTH	23deg. C, 62%RH	3.85Vdc from Battery	Rain Wang
BAND EDGE	23deg. C, 62%RH	3.85Vdc from Battery	Rain Wang
CONDCUDETED EMISSION	23deg. C, 62%RH	3.85Vdc from Battery	Rain Wang
RADIATED EMISSION	25deg. C, 63.6%RH	5Vdc from adapter	Tony
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	3.85Vdc from Battery	Rain Wang

2.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 22

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile / Portable station are limited to 7 watts e.r.p.

3.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 5MHz for CDMA mode and 10MHz for LTE mode.

b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step b. Record the power level of S.G

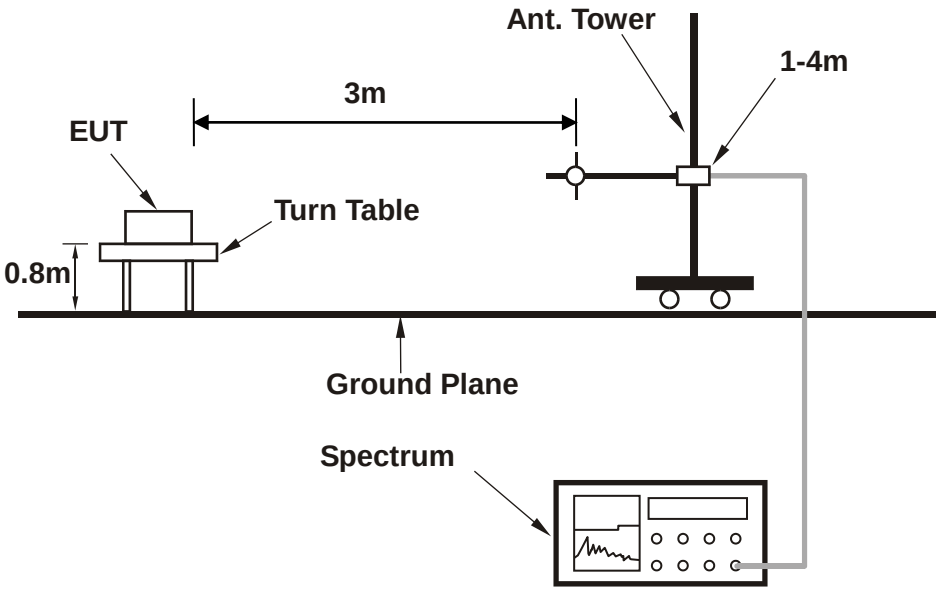
d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

CONDUCTED POWER MEASUREMENT:

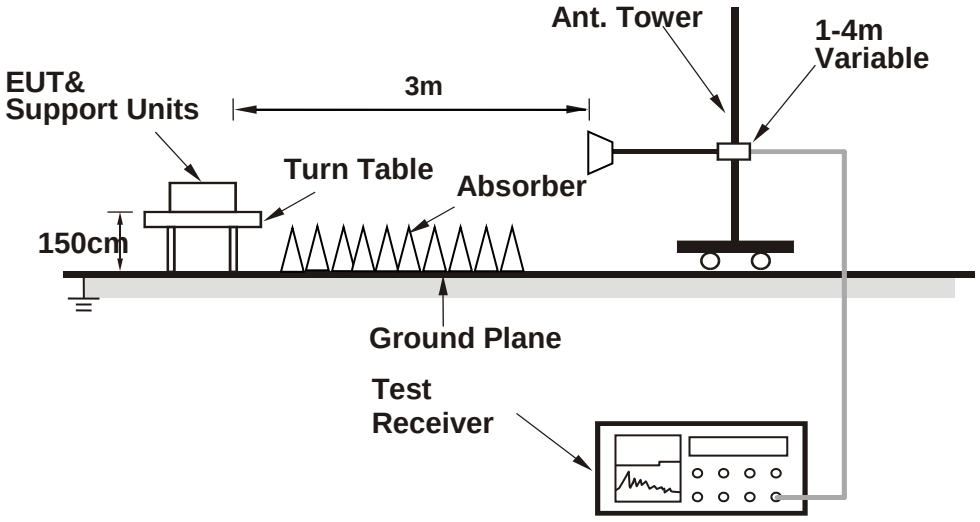
The EUT was set up for the maximum power with CDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

3.1.3 TEST SETUP

EIRP / ERP Measurement:
<Radiated Emission below or equal 1 GHz>

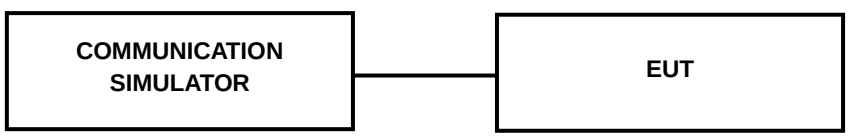


<Radiated Emission above 1 GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).

CONDUCTED POWER MEASUREMENT:



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	CDMA2000 BC0		
Channel	1013	384	777
Frequency (MHz)	824.7	836.52	848.31
RC1+SO55	22.51	22.57	22.78
RC3+SO55	22.56	22.62	**22.83**
RC3+SO32(FCH)	22.53	22.65	22.80
RC3+SO32(SCH)	22.49	22.69	22.76
RTAP 153.6	22.51	22.71	22.78
RETAP 4096	22.46	22.66	22.73

LTE Band 5

Band/BW	Modulation	RB Size	RB Offset	Low CH 20407	Mid CH 20525	High CH 20643	3GPP MPR (dB)
				Frequency 824.7 MHz	Frequency 836.5 MHz	Frequency 848.3 MHz	
5/1.4	QPSK	1	0	23.39	23.51	23.58	0
		1	2	23.65	23.77	23.84	0
		1	5	23.53	23.65	23.72	0
		3	0	23.37	23.49	23.56	0
		3	1	23.63	23.75	23.82	0
		3	3	23.51	23.63	23.70	0
		6	0	22.43	22.55	22.62	1
	16QAM	1	0	22.58	22.70	22.77	1
		1	2	22.75	22.87	22.94	1
		1	5	23.13	23.25	23.32	1
		3	0	22.57	22.69	22.76	1
		3	1	22.74	22.86	22.93	1
		3	3	23.12	23.24	23.31	1
		6	0	21.32	21.44	21.51	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 20415	Mid CH 20525	High CH 20635	3GPP MPR (dB)
				Frequency 825.5 MHz	Frequency 836.5 MHz	Frequency 847.5 MHz	
5/3	QPSK	1	0	23.43	23.55	23.62	0
		1	7	23.69	23.81	23.88	0
		1	14	23.57	23.69	23.76	0
		8	0	22.45	22.57	22.64	1
		8	3	22.50	22.62	22.69	1
		8	7	22.44	22.56	22.63	1
		15	0	22.47	22.59	22.66	1
	16QAM	1	0	22.62	22.74	22.81	1
		1	7	22.79	22.91	22.98	1
		1	14	23.17	23.29	23.36	1
		8	0	21.39	21.51	21.58	2
		8	3	21.49	21.61	21.68	2
		8	7	21.44	21.56	21.63	2
		15	0	21.36	21.48	21.55	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 20425	Mid CH 20525	High CH 20625	3GPP MPR (dB)
				Frequency 826.5 MHz	Frequency 836.5 MHz	Frequency 846.5 MHz	
5/5	QPSK	1	0	23.49	23.61	23.68	0
		1	12	23.75	23.87	23.94	0
		1	24	23.63	23.75	23.82	0
		12	0	22.51	22.63	22.70	1
		12	6	22.56	22.68	22.75	1
		12	13	22.50	22.62	22.69	1
		25	0	22.53	22.65	22.72	1
	16QAM	1	0	22.68	22.80	22.87	1
		1	12	22.85	22.97	23.04	1
		1	24	23.23	23.35	23.42	1
		12	0	21.45	21.57	21.64	2
		12	6	21.55	21.67	21.74	2
		12	13	21.50	21.62	21.69	2
		25	0	21.42	21.54	21.61	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 20450	Mid CH 20525	High CH 20600	3GPP MPR (dB)
				Frequency 829 MHz	Frequency 836.5 MHz	Frequency 844 MHz	
5/10	QPSK	1	0	23.52	23.64	23.71	0
		1	24	23.78	23.90	**23.97**	0
		1	49	23.66	23.78	23.85	0
		25	0	22.54	22.66	22.73	1
		25	12	22.59	22.71	22.78	1
		25	25	22.53	22.65	22.72	1
		50	0	22.56	22.68	22.75	1
	16QAM	1	0	22.71	22.83	22.90	1
		1	24	22.88	23.00	23.07	1
		1	49	23.26	23.38	23.45	1
		25	0	21.48	21.60	21.67	2
		25	12	21.58	21.70	21.77	2
		25	25	21.53	21.65	21.72	2
		50	0	21.45	21.57	21.64	2

ERP POWER (dBm)

CDMA BC 0

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
1013	824.7	-18.98	33.56	12.43	17.49	H
384	836.5	-18.45	33.63	13.03	20.09	H
777	848.3	-18.16	33.57	13.26	21.17	H
1013	824.7	-13.19	34.24	18.90	77.55	V
384	836.5	-12.91	34.59	19.53	89.66	V
777	848.3	-12.88	34.62	19.59	**91.05**	V

REMARKS: 1. ERP Output Power (dBm) = SPA LVL (dBm) + Correction Factor (dB) -2.15(dB).
2. Correction factor (dB) = Free Space Loss + Antenna Factor + Cable Loss

LTE BAND 5

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
20407	824.7	-22.74	33.67	8.79	7.56	H	7
20525	836.5	-22.40	33.62	9.07	8.08	H	7
20643	848.3	-23.17	33.65	8.32	6.80	H	7
20407	824.7	-16.60	34.25	15.50	35.49	V	7
20525	836.5	-16.68	34.60	15.77	37.77	V	7
20643	848.3	-15.93	34.63	16.55	**45.23**	V	7

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
20407	824.7	-23.57	33.67	7.96	6.25	H	7
20525	836.5	-23.42	33.62	8.05	6.39	H	7
20643	848.3	-24.27	33.65	7.22	5.28	H	7
20407	824.7	-17.43	34.25	14.67	29.32	V	7
20525	836.5	-17.70	34.60	14.75	29.87	V	7
20643	848.3	-17.03	34.63	15.45	35.11	V	7

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
20415	825.5	-22.55	33.72	9.03	7.99	H	7
20525	836.5	-22.34	33.62	9.13	8.19	H	7
20635	847.5	-23.04	33.65	8.46	7.01	H	7
20415	825.5	-16.41	34.30	15.74	37.53	V	7
20525	836.5	-16.62	34.60	15.83	38.30	V	7
20635	847.5	-15.80	34.57	16.63	**45.97**	V	7

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
20415	825.5	-23.70	33.72	7.88	6.13	H	7
20525	836.5	-23.44	33.62	8.03	6.36	H	7
20635	847.5	-24.20	33.65	7.30	5.37	H	7
20415	825.5	-17.56	34.30	14.59	28.80	V	7
20525	836.5	-17.72	34.60	14.73	29.73	V	7
20635	847.5	-16.96	34.57	15.47	35.20	V	7

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
20425	826.5	-22.56	33.69	8.99	7.92	H	7
20525	836.5	-22.41	33.62	9.06	8.06	H	7
20625	846.5	-23.11	33.66	8.40	6.92	H	7
20425	826.5	-16.42	34.85	16.28	42.48	V	7
20525	836.5	-16.69	34.60	15.76	37.69	V	7
20625	846.5	-15.87	34.59	16.58	**45.48**	V	7

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
20425	826.5	-23.42	33.69	8.13	6.50	H	7
20525	836.5	-23.28	33.62	8.19	6.59	H	7
20625	846.5	-23.96	33.66	7.55	5.69	H	7
20425	826.5	-17.28	34.85	15.42	34.85	V	7
20525	836.5	-17.56	34.60	14.89	30.85	V	7
20625	846.5	-16.72	34.59	15.73	37.39	V	7

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
20450	829.0	-23.14	33.73	8.44	6.98	H	7
20525	836.5	-22.86	33.62	8.61	7.26	H	7
20600	844.0	-23.69	33.51	7.67	5.85	H	7
20450	829.0	-17.00	34.54	15.39	34.59	V	7
20525	836.5	-17.14	34.60	15.31	33.98	V	7
20600	844.0	-16.45	34.46	15.86	**38.54**	V	7

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
20450	829.0	-24.07	33.73	7.51	5.64	H	7
20525	836.5	-23.93	33.62	7.54	5.68	H	7
20600	844.0	-24.52	33.51	6.84	4.83	H	7
20450	829.0	-17.93	34.54	14.46	27.92	V	7
20525	836.5	-18.21	34.60	14.24	26.56	V	7
20600	844.0	-17.28	34.46	15.03	31.83	V	7

REMARKS: 1. ERP Output Power (dBm) = SPA LVL (dBm) + Correction Factor (dB) -2.15(dB).
2. Correction factor (dB) = Free Space Loss + Antenna Factor + Cable Loss

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

3.2.2 TEST PROCEDURE

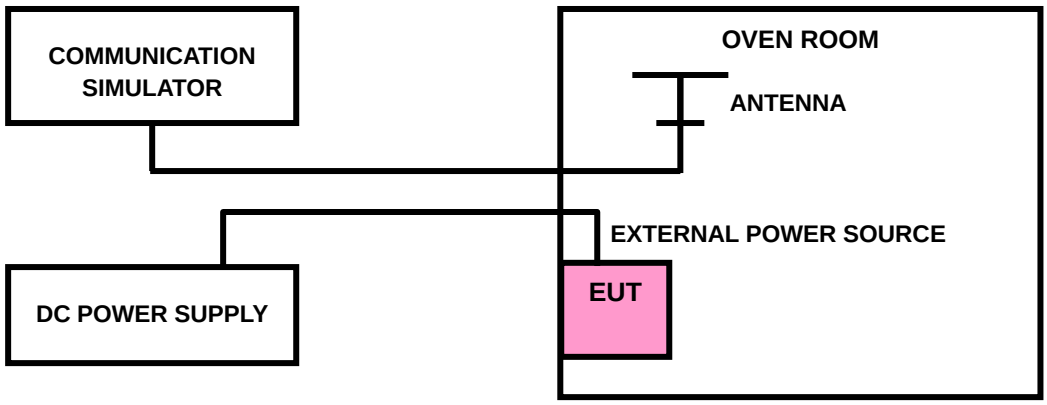
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

3.2.3 TEST SETUP



3.2.4 TEST RESULTS

CDMA BC0

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
3.85	0.0019	0.0018	2.5
3.6	-0.0022	-0.0021	2.5
4.3	0.0019	0.0016	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.6Vdc to 4.3Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
-30	-0.0127	-0.0121	2.5
-20	-0.0116	-0.0111	2.5
-10	-0.0099	-0.0094	2.5
0	-0.0089	-0.0085	2.5
10	-0.0068	-0.0064	2.5
20	-0.0054	-0.0052	2.5
30	-0.0044	-0.0041	2.5
40	-0.0028	-0.0026	2.5
50	-0.0014	-0.0014	2.5

LTE Band 5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
3.85	0.0019	0.0018	2.5
3.6	-0.0027	-0.0026	2.5
4.3	0.0020	0.0019	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.6Vdc to 4.3Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0123	-0.0107	2.5
-20	-0.0116	-0.0094	2.5
-10	-0.0100	-0.0082	2.5
0	-0.0087	-0.0072	2.5
10	-0.0083	-0.0071	2.5
20	-0.0059	-0.0050	2.5
30	-0.0030	-0.0025	2.5
40	-0.0019	-0.0016	2.5
50	-0.0005	-0.0004	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
3.85	0.0015	0.0019	2.5
3.6	-0.0019	-0.0021	2.5
4.3	0.0016	0.0019	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.6Vdc to 4.3Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0122	-0.0114	2.5
-20	-0.0112	-0.0104	2.5
-10	-0.0093	-0.0087	2.5
0	-0.0077	-0.0071	2.5
10	-0.0065	-0.0060	2.5
20	-0.0050	-0.0045	2.5
30	-0.0030	-0.0026	2.5
40	-0.0018	-0.0016	2.5
50	-0.0004	-0.0002	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
3.85	0.0018	0.0022	2.5
3.6	-0.0021	-0.0025	2.5
4.3	0.0018	0.0019	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.6Vdc to 4.3Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0120	-0.0111	2.5
-20	-0.0098	-0.0091	2.5
-10	-0.0089	-0.0082	2.5
0	-0.0074	-0.0069	2.5
10	-0.0054	-0.0050	2.5
20	-0.0038	-0.0034	2.5
30	-0.0033	-0.0029	2.5
40	-0.0020	-0.0018	2.5
50	-0.0005	-0.0003	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
3.85	0.0022	0.0025	2.5
3.6	-0.0026	-0.0024	2.5
4.3	0.0021	0.0022	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.6Vdc to 4.3Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

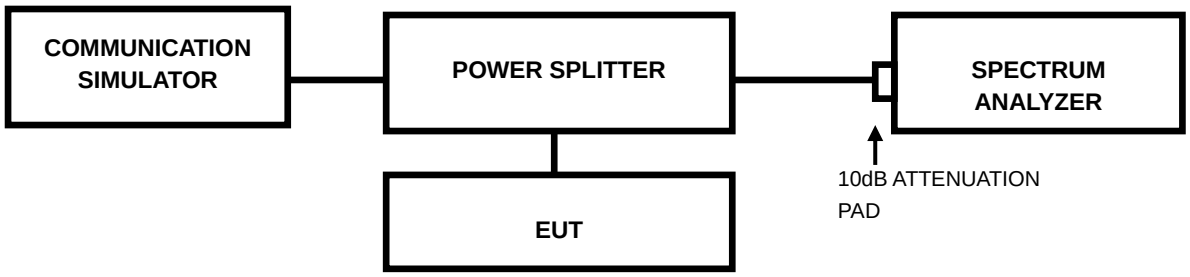
TEMP. (℃)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0117	-0.0109	2.5
-20	-0.0102	-0.0095	2.5
-10	-0.0088	-0.0082	2.5
0	-0.0065	-0.0060	2.5
10	-0.0052	-0.0048	2.5
20	-0.0038	-0.0034	2.5
30	-0.0026	-0.0024	2.5
40	-0.0013	-0.0011	2.5
50	0.0003	0.0004	2.5

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 TEST PROCEDURES

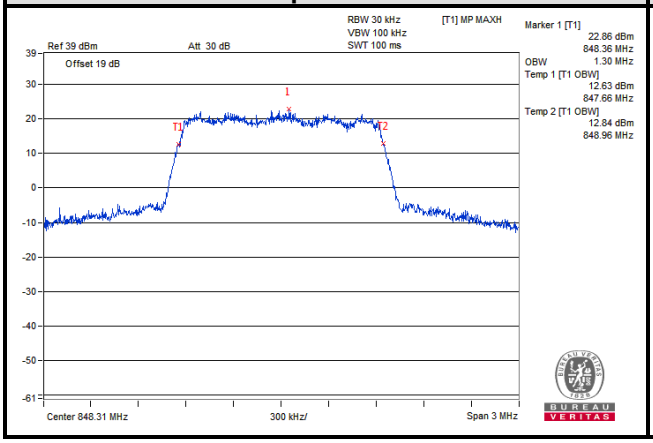
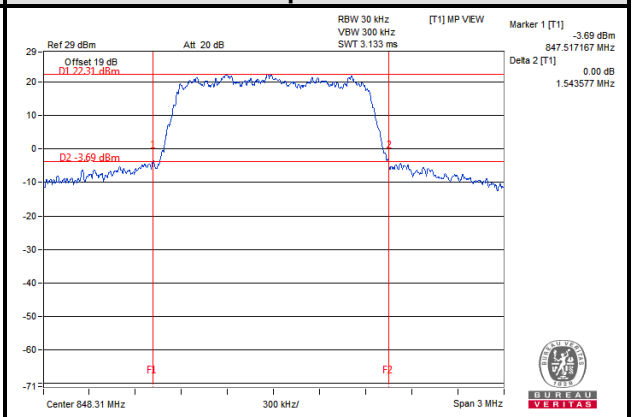
The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

3.3.2 TEST SETUP



3.3.3 TEST RESULTS

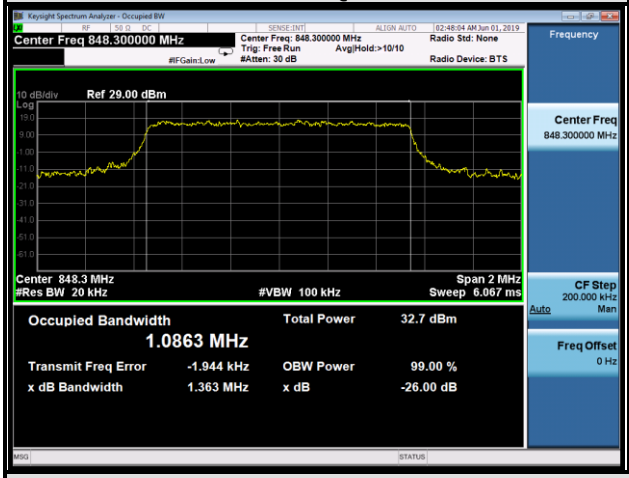
CHANNEL	Frequency (MHz)	99% OCCUPIED Bandwidth (MHz)	CHANNEL	Frequency (MHz)	26dB Bandwidth (MHz)
		CDMA			CDMA
1013	824.70	1.29	1013	824.70	1.46
384	836.52	1.29	384	836.52	1.46
777	848.31	1.30	777	848.31	1.54

SPECTRUM PLOT OF WORST VALUE	
99% Occupied Bandwidth	26dB Occupied Bandwidth
	

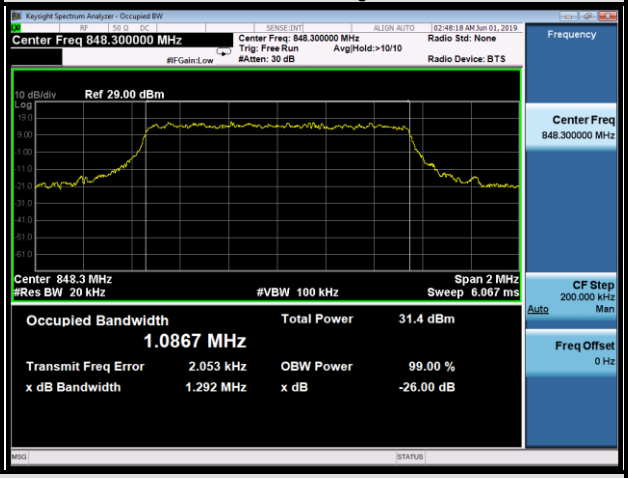
LTE band 5							
Channel Bandwidth : 1.4MHz							
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		Channel	Frequency (MHz)	26 dB bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
20407	824.7	1.08	1.09	20407	824.7	1.25	1.26
20525	836.5	1.08	1.08	20525	836.5	1.26	1.25
20643	848.3	1.09	1.09	20643	848.3	1.36	1.29

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth

1.4MHz/QPSK

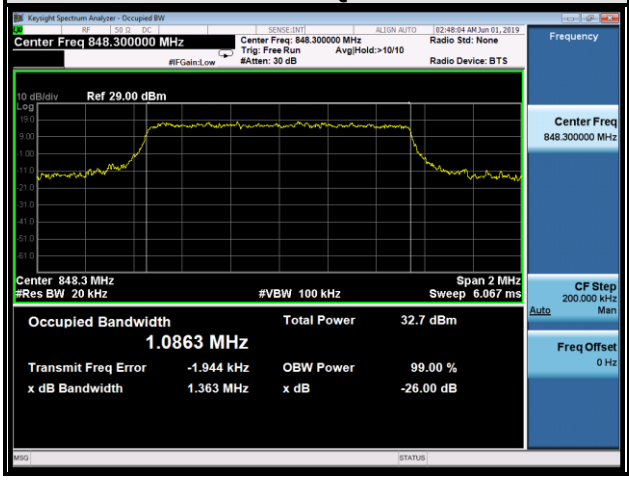


1.4MHz/16QAM

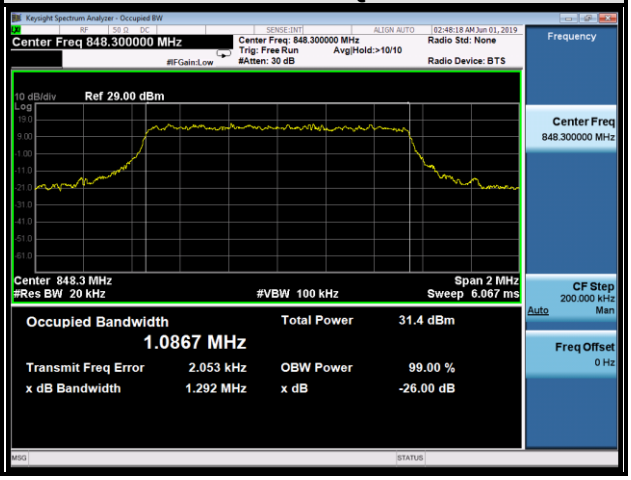


SPECTRUM PLOT OF WORST VALUE of 26dB Occupied Bandwidth

1.4MHz/QPSK



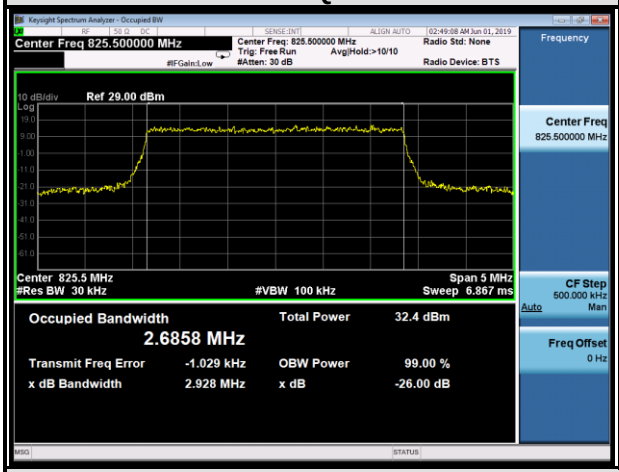
1.4MHz/16QAM



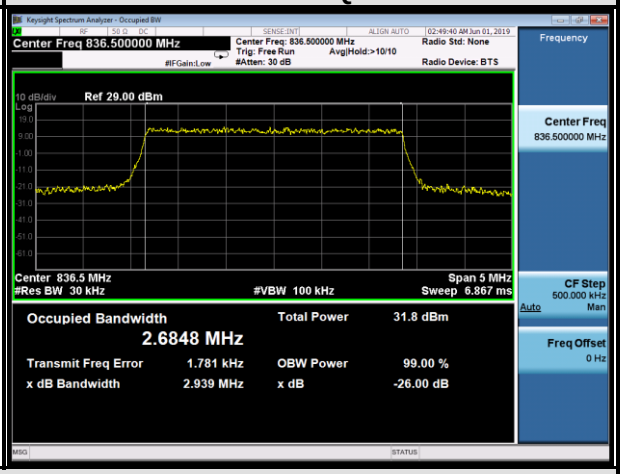
LTE band 5							
Channel Bandwidth : 3MHz							
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		Channel	Frequency (MHz)	26 dB bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
20415	825.5	2.69	2.68	20415	825.5	2.93	2.93
20525	836.5	2.68	2.68	20525	836.5	2.92	2.94
20635	847.5	2.68	2.68	20635	847.5	2.93	2.91

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth

3MHz/QPSK

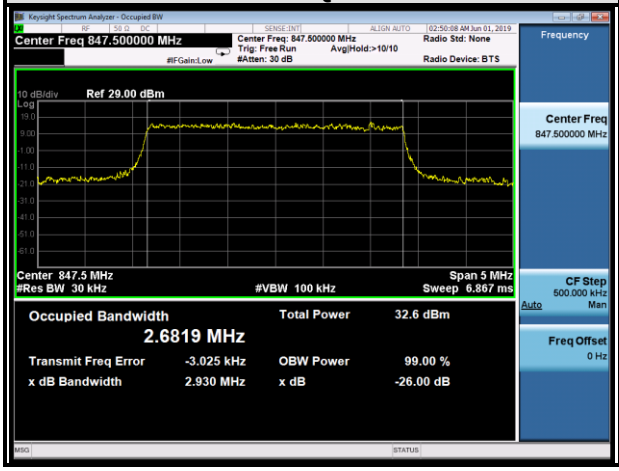


3MHz/16QAM

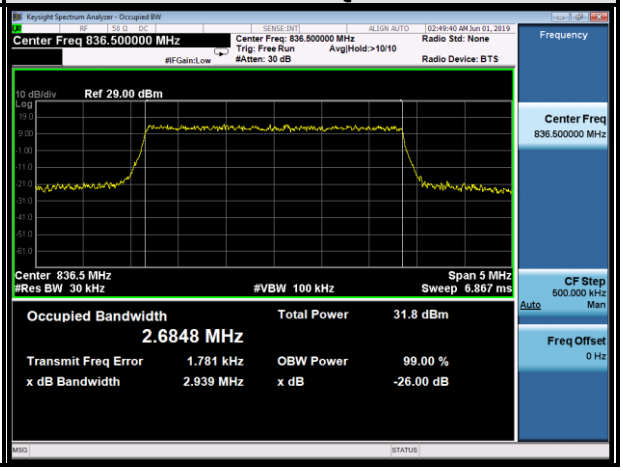


SPECTRUM PLOT OF WORST VALUE of 26dB Occupied Bandwidth

3MHz/QPSK



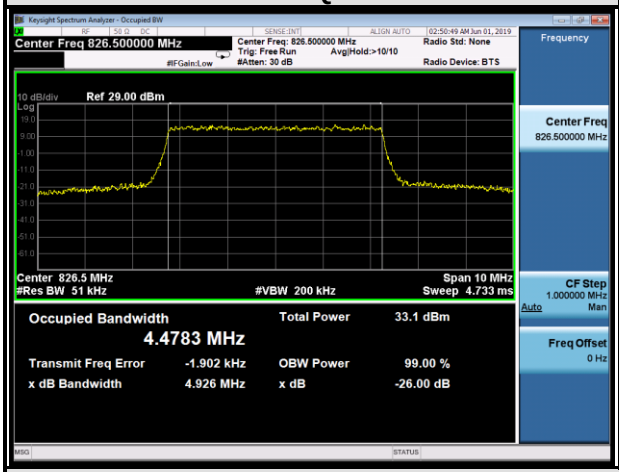
3MHz/16QAM



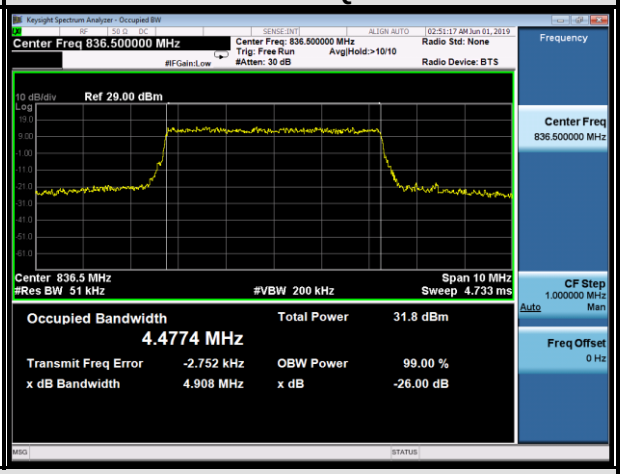
LTE band 5							
Channel Bandwidth : 5 MHz							
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		Channel	Frequency (MHz)	26 dB bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
20425	826.5	4.48	4.47	20425	826.5	4.93	4.91
20525	836.5	4.48	4.48	20525	836.5	4.91	4.91
20625	846.5	4.48	4.47	20625	846.5	4.94	4.93

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth

5MHz/QPSK

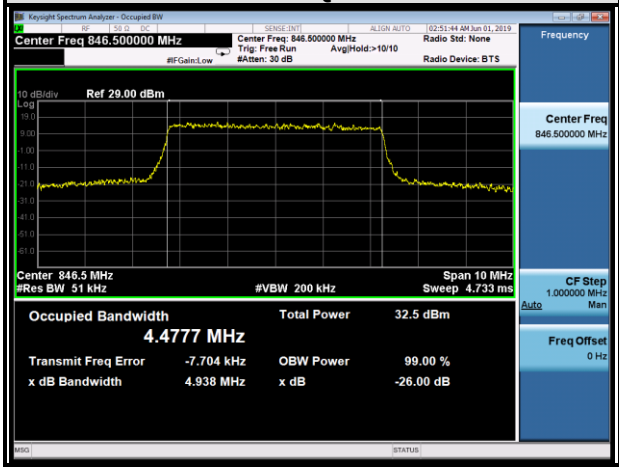


5MHz/16QAM

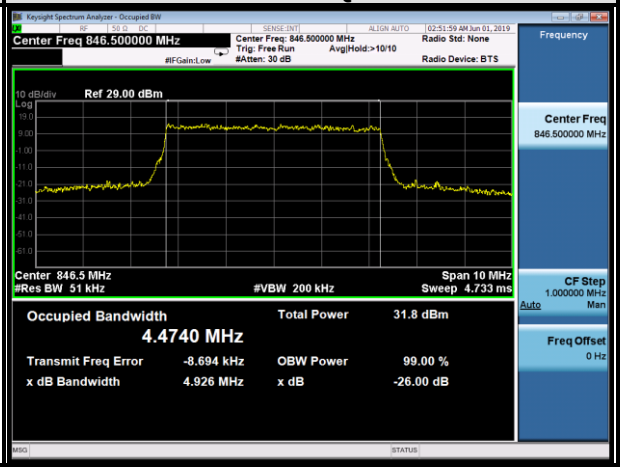


SPECTRUM PLOT OF WORST VALUE of 26dB Occupied Bandwidth

5MHz/QPSK



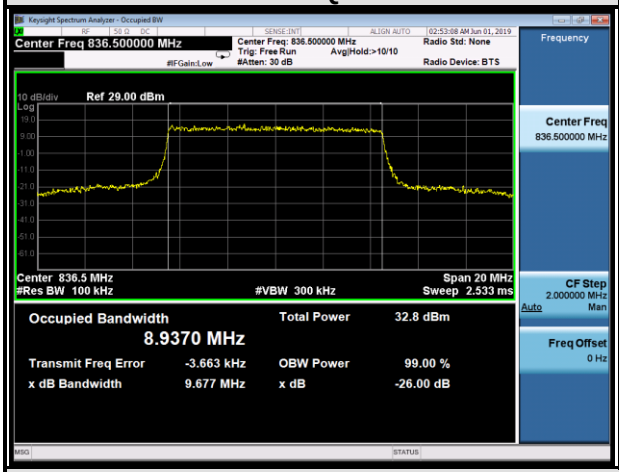
5MHz/16QAM



LTE band 5							
Channel Bandwidth : 10 MHz							
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		Channel	Frequency (MHz)	26 dB bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
20450	829	8.92	8.91	20450	829	9.65	9.61
20525	836.5	8.94	8.91	20525	836.5	9.68	9.62
20600	844	8.93	8.91	20600	844	9.62	9.55

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth

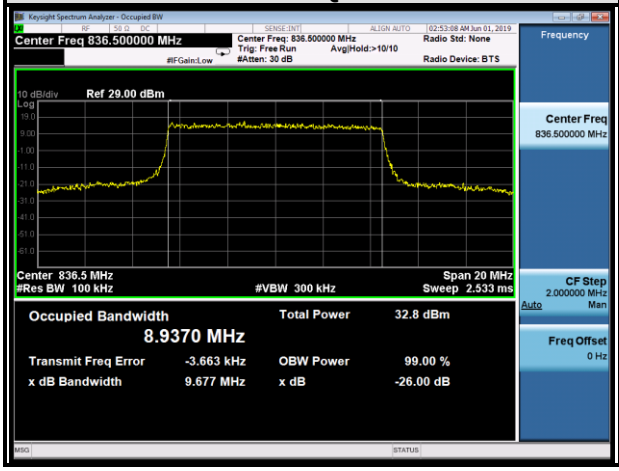
10MHz/QPSK



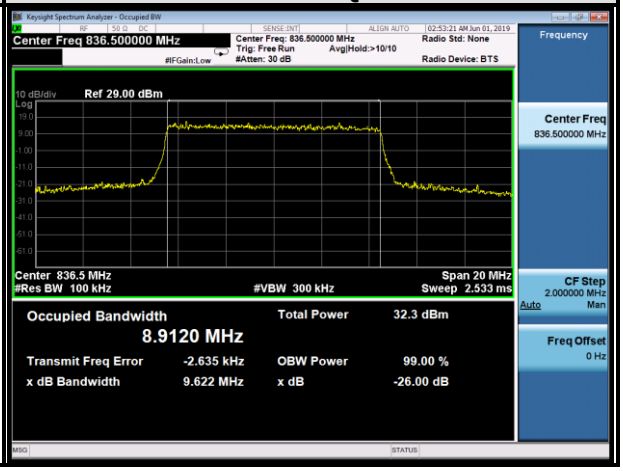
10MHz/16QAM

SPECTRUM PLOT OF WORST VALUE of 26dB Occupied Bandwidth

10MHz/QPSK



10MHz/16QAM

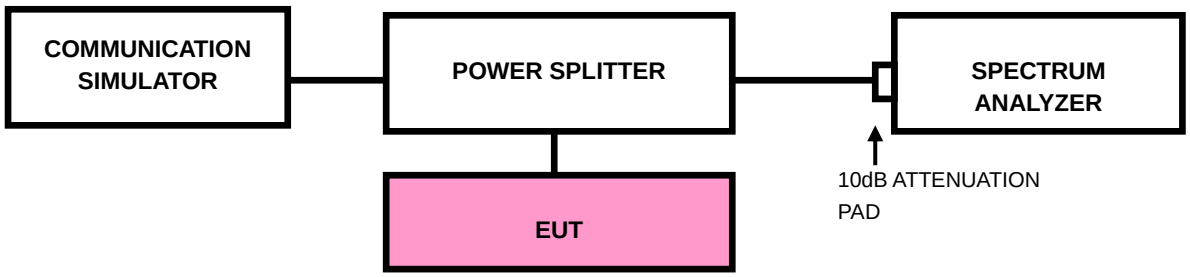


3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

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. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

a. All measurements were done at low and high operational frequency range.

b. The center frequency of spectrum is the band edge frequency and span is 10MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz (CDMA).

c. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 20kHz and VBW of the spectrum is 100 kHz. (LTE bandwidth 1.4MHz).

d. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 30kHz and VBW of the spectrum is 100kHz. (LTE bandwidth 3MHz)

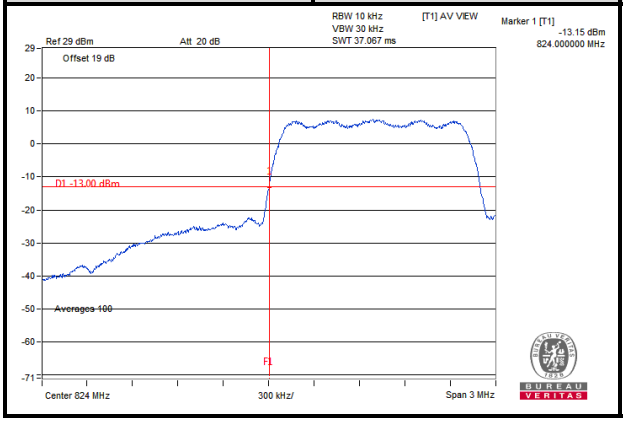
e. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 50kHz and VBW of the spectrum is 200kHz. (LTE bandwidth 5MHz)

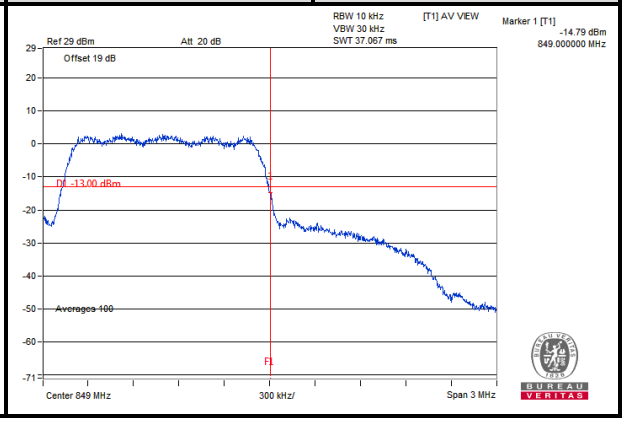
f. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz. (LTE bandwidth 10MHz)

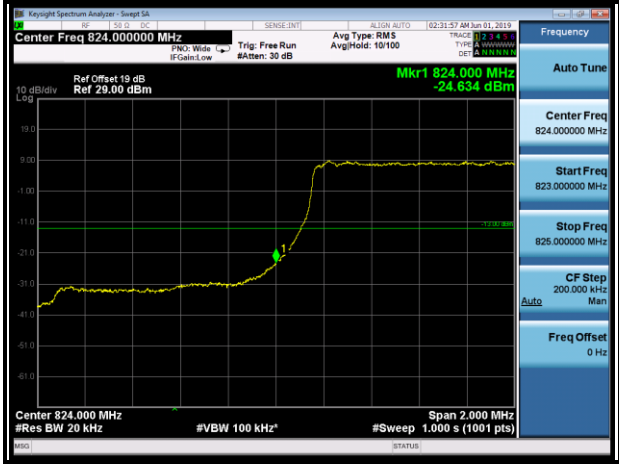
g. Record the max trace plot into the test report.

3.4.4 TEST RESULTS

CDMA BC 0			
CHANNEL	1013	CHANNEL	777





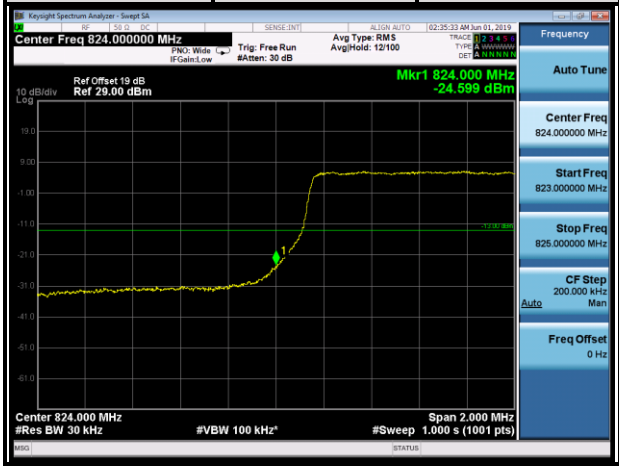
LTE Band5					
Channel Bandwidth: 1.4MHz QPSK					
CHANNEL	20407	1 RB	CHANNEL	20643	1 RB
					
LTE Band5					
Channel Bandwidth: 1.4MHz QPSK					
CHANNEL	20407	Full RB	CHANNEL	20643	Full RB
					

LTE Band5					
Channel Bandwidth: 1.4MHz 16QAM					
CHANNEL	20407	1 RB	CHANNEL	20643	1 RB
					

LTE Band5					
Channel Bandwidth: 1.4MHz 16QAM					
CHANNEL	20407	Full RB	CHANNEL	20643	Full RB
					

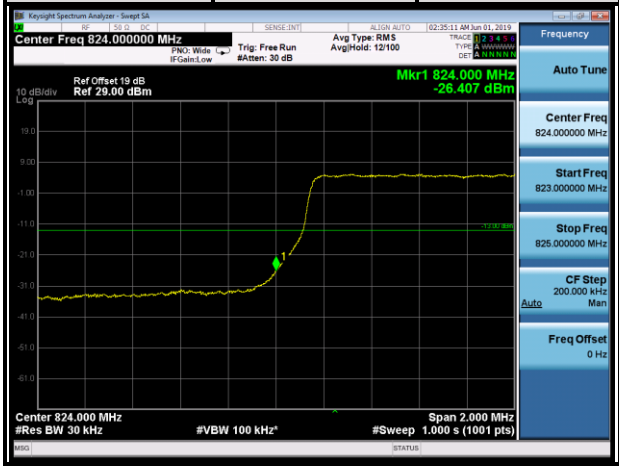
LTE Band5					
Channel Bandwidth: 3MHz QPSK					
CHANNEL	20415	1 RB	CHANNEL	20635	1 RB

LTE Band5					
Channel Bandwidth: 3MHz QPSK					
CHANNEL	20415	Full RB	CHANNEL	20635	Full RB

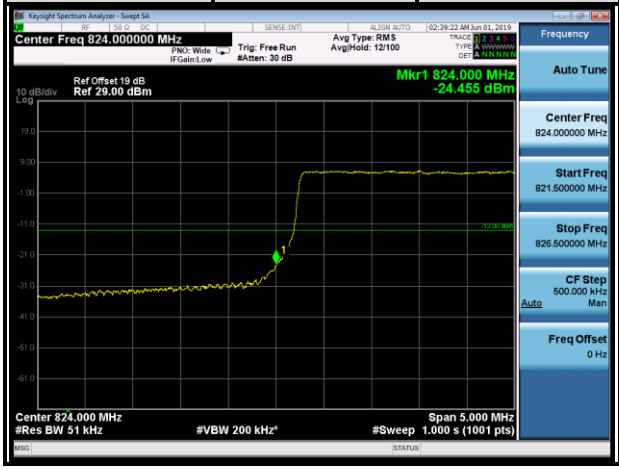


LTE Band5					
Channel Bandwidth: 3MHz 16QAM					
CHANNEL	20415	1 RB	CHANNEL	20635	1 RB

LTE Band5					
Channel Bandwidth: 3MHz 16QAM					
CHANNEL	20415	Full RB	CHANNEL	20635	Full RB

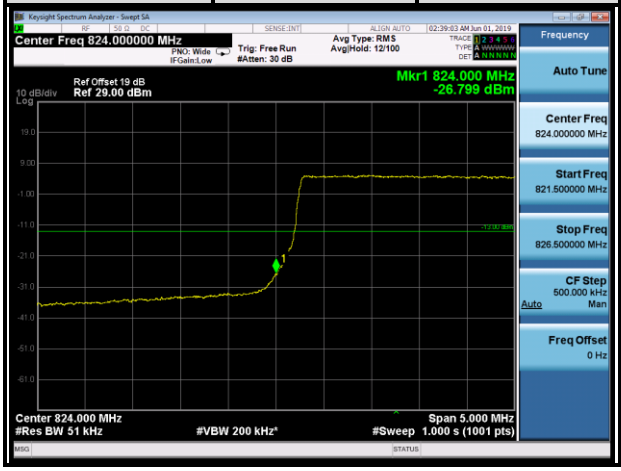


LTE Band5					
Channel Bandwidth: 5MHz QPSK					
CHANNEL	20425	1 RB	CHANNEL	20625	1 RB
					

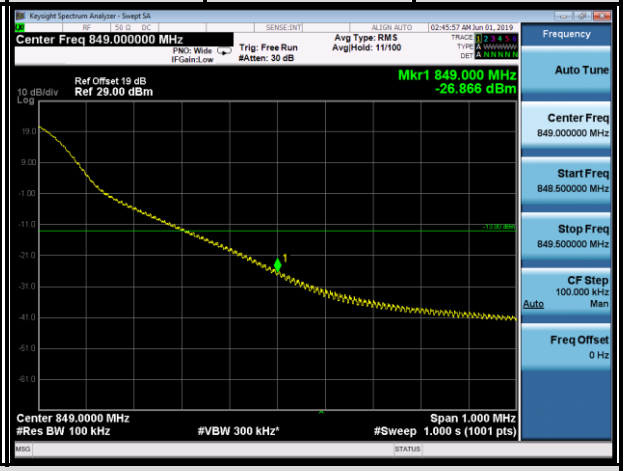
LTE Band5					
Channel Bandwidth: 5MHz QPSK					
CHANNEL	20425	Full RB	CHANNEL	20625	Full RB
					

LTE Band5					
Channel Bandwidth: 5MHz 16QAM					
CHANNEL	20425	1 RB	CHANNEL	20625	1 RB

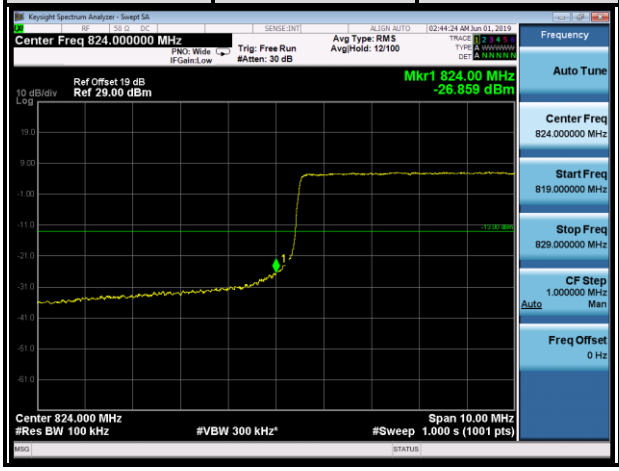
LTE Band5					
Channel Bandwidth: 5MHz 16QAM					
CHANNEL	20425	Full RB	CHANNEL	20625	Full RB



LTE Band5					
Channel Bandwidth: 10MHz QPSK					
CHANNEL	20450	1 RB	CHANNEL	20600	1 RB



LTE Band5					
Channel Bandwidth: 10MHz QPSK					
CHANNEL	20450	Full RB	CHANNEL	20600	Full RB



LTE Band5					
Channel Bandwidth: 10MHz 16QAM					
CHANNEL	20450	1 RB	CHANNEL	20600	1 RB

LTE Band5					
Channel Bandwidth: 10MHz 16QAM					
CHANNEL	20450	Full RB	CHANNEL	20600	Full RB

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

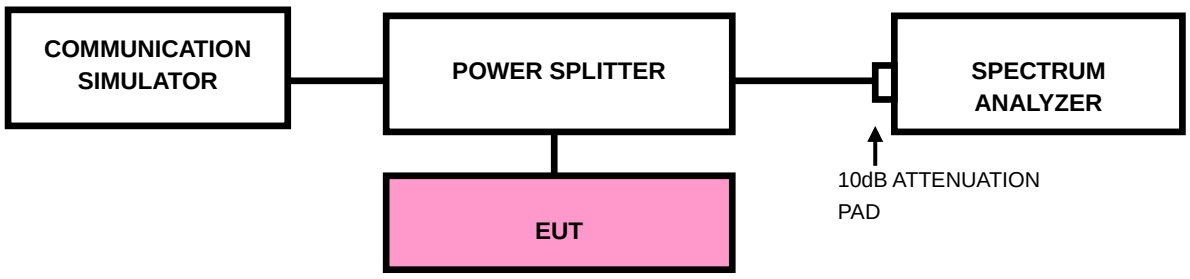
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

3.5.2 TEST PROCEDURE

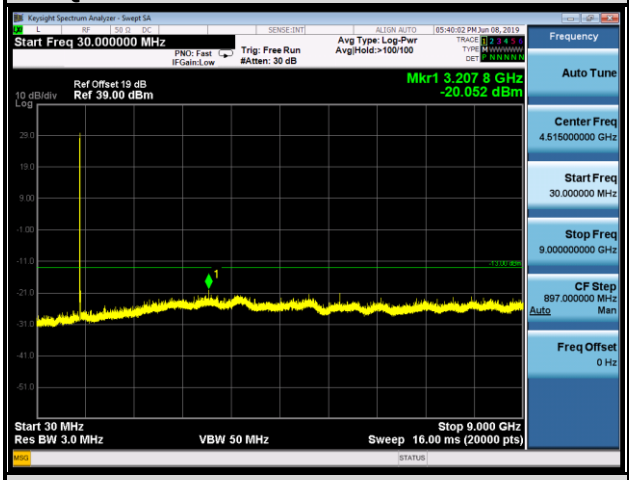
a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.

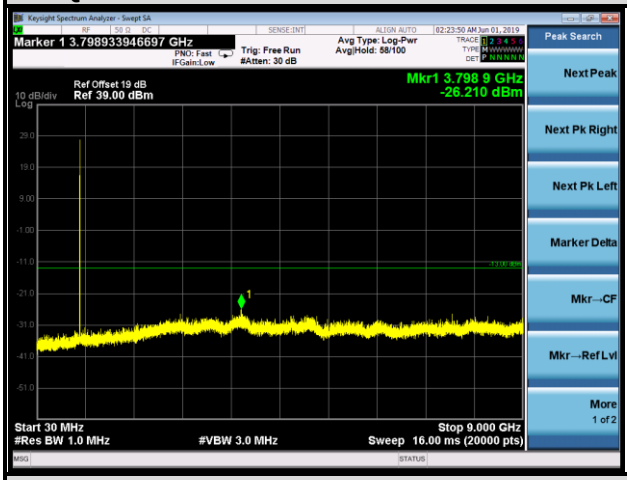
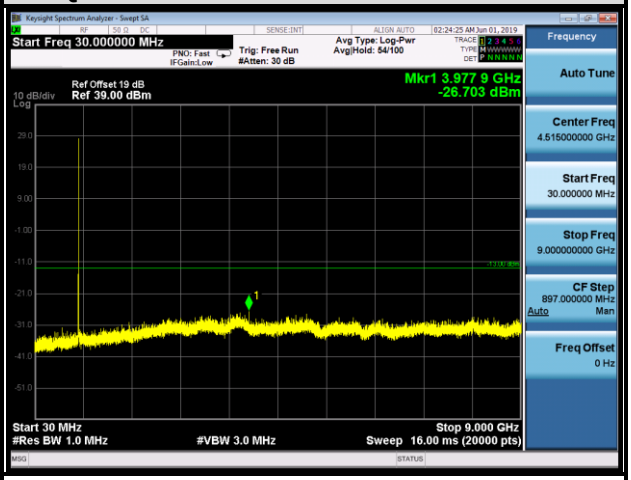
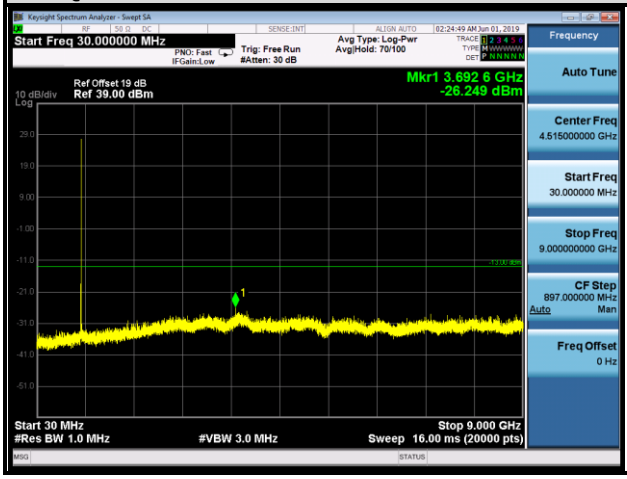
b. Measuring frequency range is from 9 kHz to 9GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

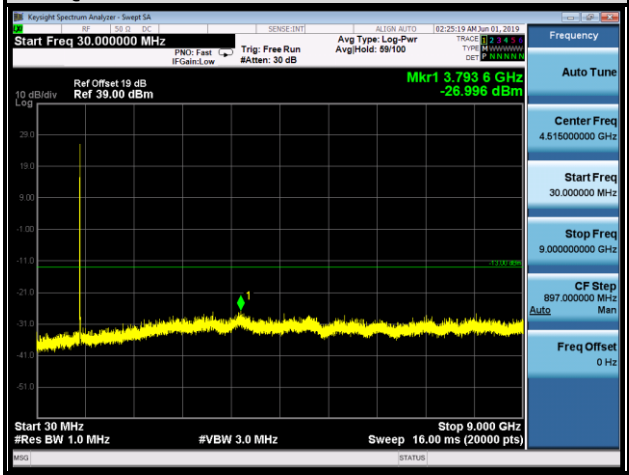
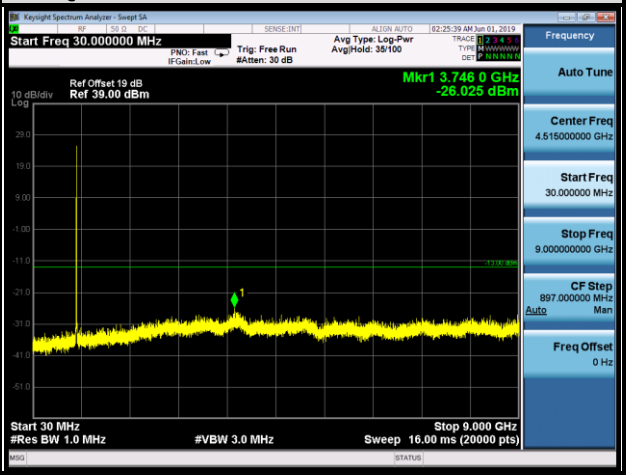
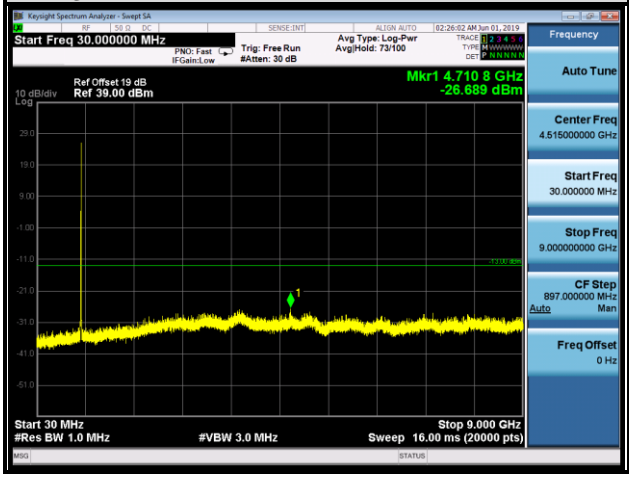
3.5.3 TEST SETUP

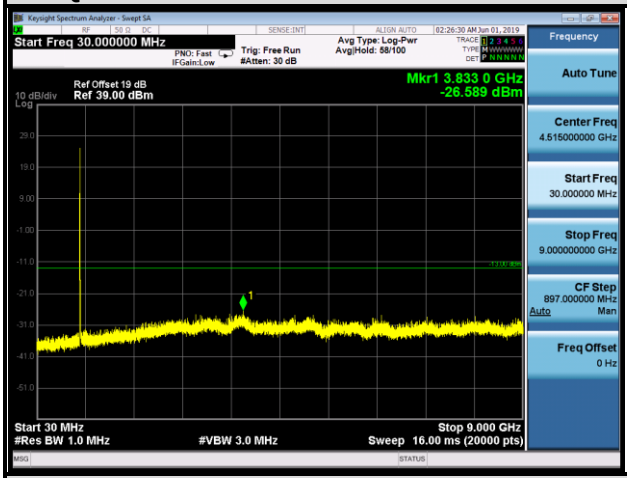
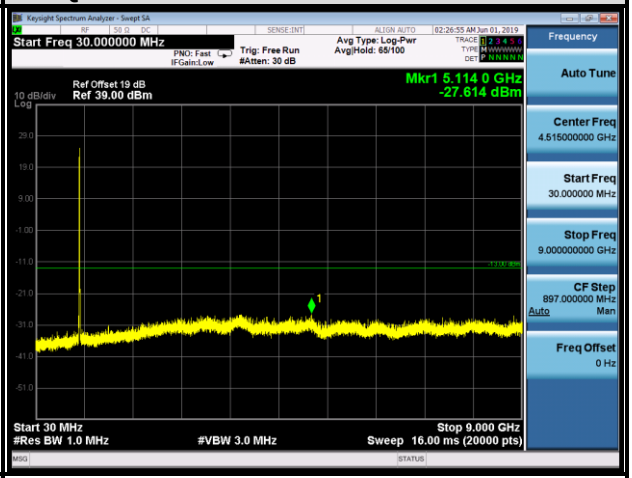
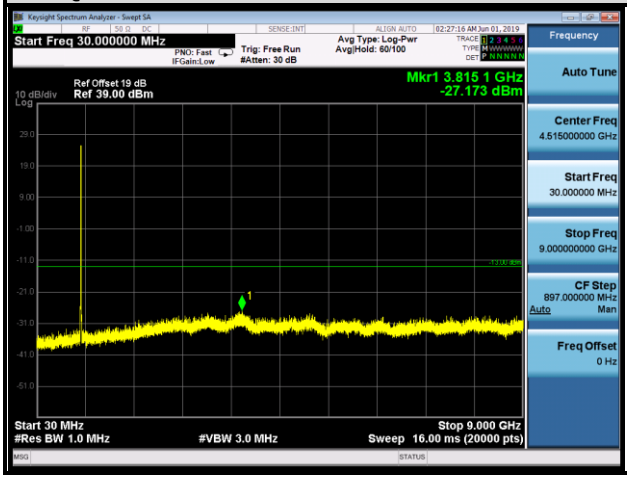


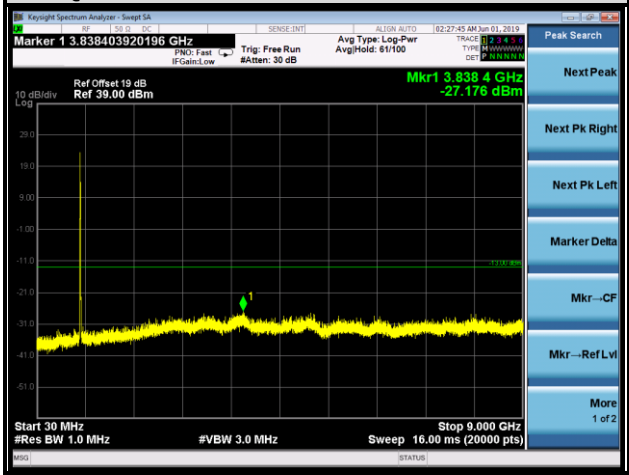
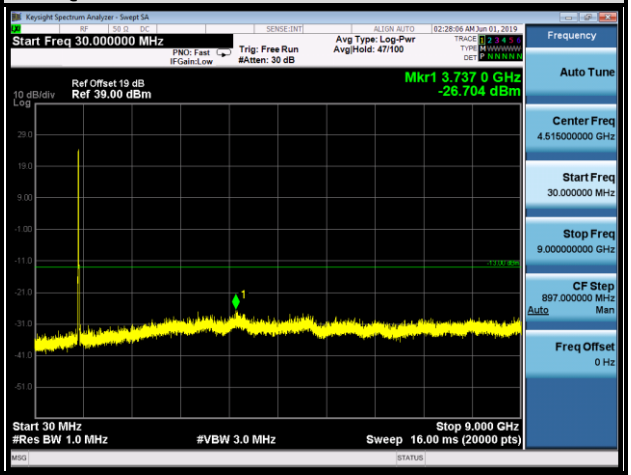
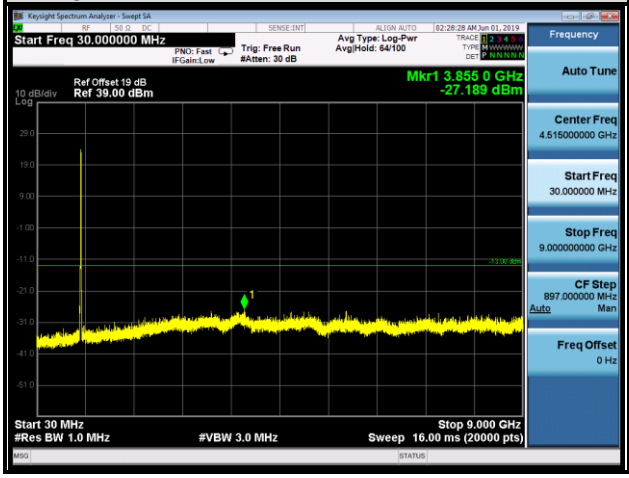
3.5.4 TEST RESULTS

CDMA BC0	
CHANNEL 1013	**CHANNEL 384**
FREQUENCY RANGE : 30MHz~9.0GHz	**FREQUENCY RANGE : 30MHz~9.0GHz**
	
CHANNEL 777	
FREQUENCY RANGE : 30MHz~9.0GHz	
	

LTE Band 5 (Channel Bandwidth: 1.4MHz)	
CHANNEL 20407	CHANNEL 20525
FREQUENCY RANGE : 30MHz~9.0GHz	FREQUENCY RANGE : 30MHz~9.0GHz
	
CHANNEL 20643	
FREQUENCY RANGE : 30MHz~9.0GHz	
	

LTE Band 5 (Channel Bandwidth: 3MHz)	
CHANNEL 20415	CHANNEL 20525
FREQUENCY RANGE : 30MHz~9.0GHz	FREQUENCY RANGE : 30MHz~9.0GHz
	
CHANNEL 20635	
FREQUENCY RANGE : 30MHz~9.0GHz	
	

LTE Band 5 (Channel Bandwidth: 5MHz)	
CHANNEL 20425	**CHANNEL 20525**
FREQUENCY RANGE : 30MHz~9.0GHz	**FREQUENCY RANGE : 30MHz~9.0GHz**
	
CHANNEL 20625	
FREQUENCY RANGE : 30MHz~9.0GHz	
	

LTE Band 5 (Channel Bandwidth: 10MHz)	
CHANNEL 20450	CHANNEL 20525
FREQUENCY RANGE : 30MHz~9.0GHz	FREQUENCY RANGE : 30MHz~9.0GHz
	
CHANNEL 20600	
FREQUENCY RANGE : 30MHz~9.0GHz	
	

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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. The emission limit equal to –13dBm.

3.6.2 TEST PROCEDURES

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G

c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

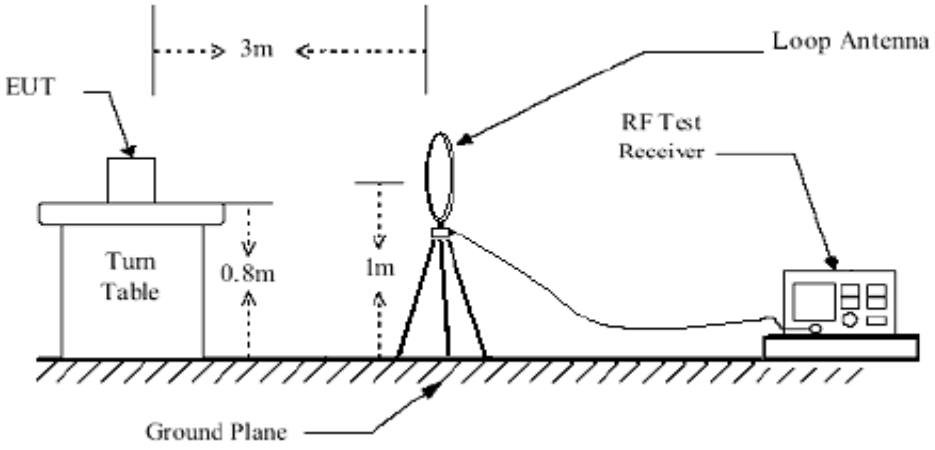
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.6.3 DEVIATION FROM TEST STANDARD

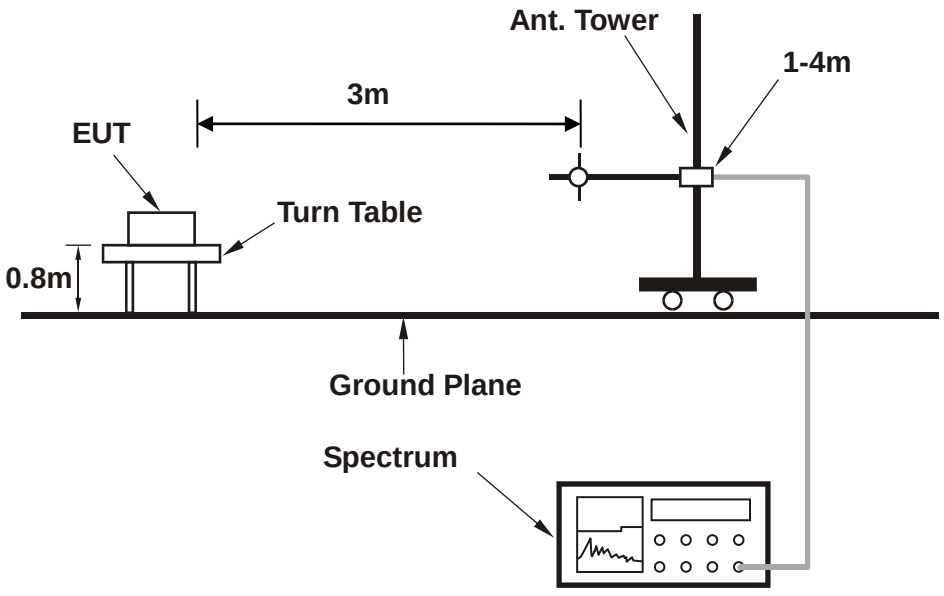
No deviation

3.6.4 TEST SETUP

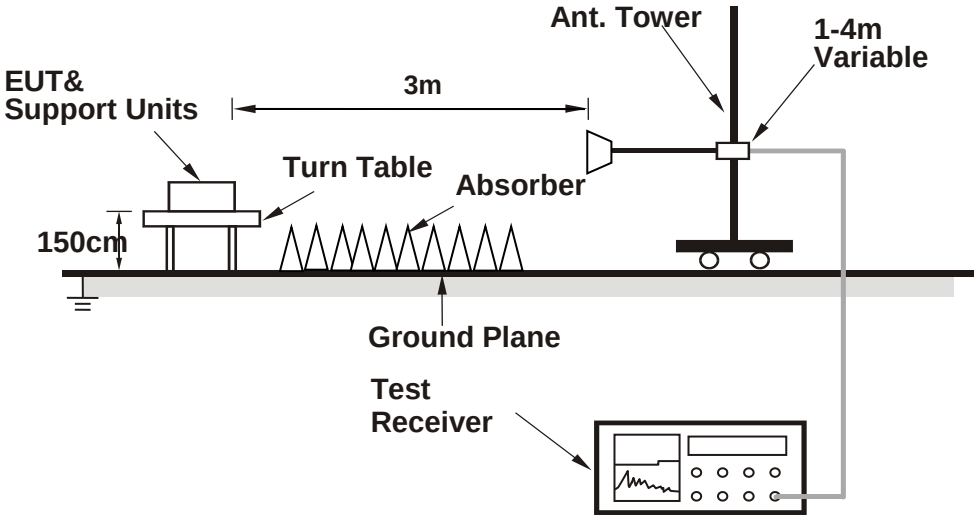
<Below 30MHz>



< Frequency Range 30MHz~1GHz >



< Frequency Range above 1GHz >



For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.6.5 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

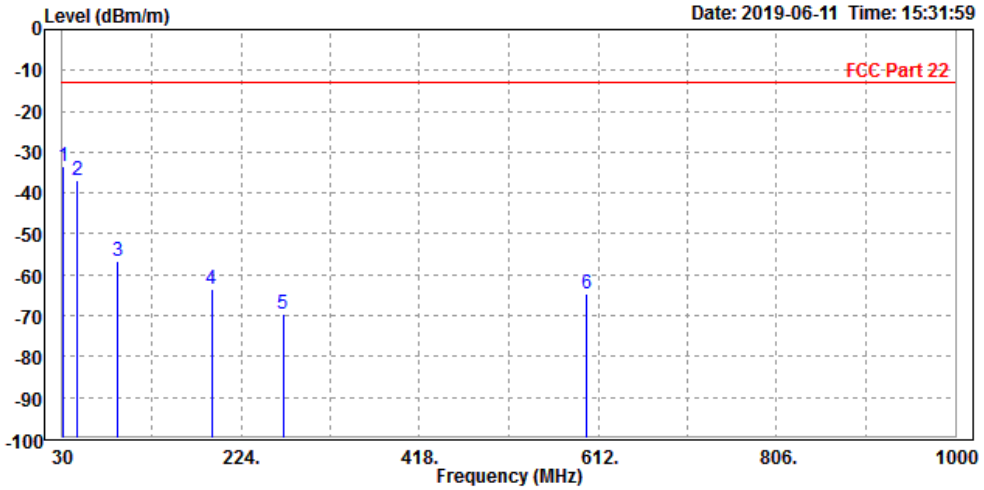
9 KHz – 30 MHz data: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

30 MHz – 1GHz data:

CDMA BC0:

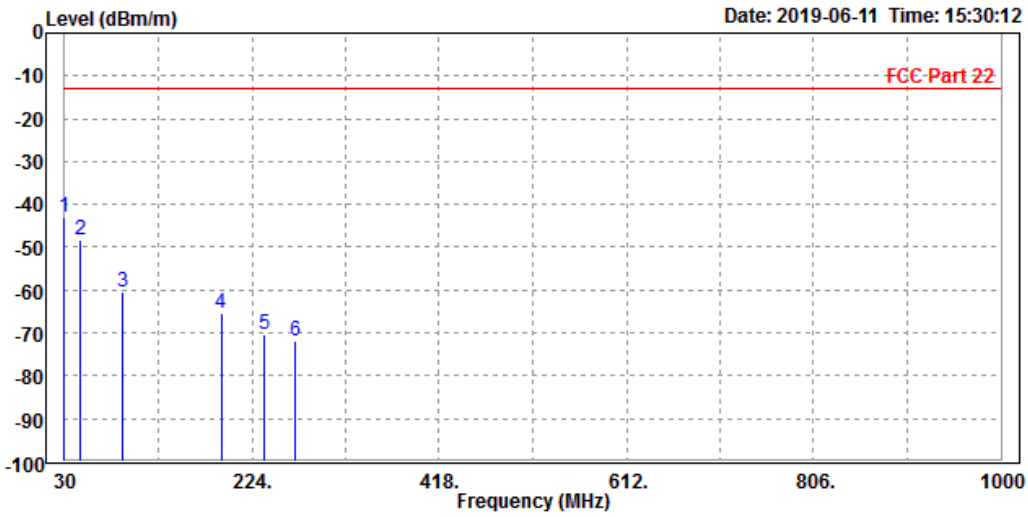
MODE	TX channel 384	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	30.970	-33.63	-51.64	-13.00	-20.63	18.01	Peak	Horizontal
2	45.520	-36.91	-44.14	-13.00	-23.91	7.23	Peak	Horizontal
3	90.140	-56.56	-47.48	-13.00	-43.56	-9.08	Peak	Horizontal
4	191.990	-63.59	-46.14	-13.00	-50.59	-17.45	Peak	Horizontal
5	269.590	-69.67	-54.36	-13.00	-56.67	-15.31	Peak	Horizontal
6	599.390	-64.59	-55.89	-13.00	-51.59	-8.70	Peak	Horizontal



MODE	TX channel 384	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	30.000	-42.88	-48.21	-13.00	-29.88	5.33	Peak	Vertical
2	45.520	-48.34	-45.00	-13.00	-35.34	-3.34	Peak	Vertical
3	90.140	-60.39	-49.85	-13.00	-47.39	-10.54	Peak	Vertical
4	191.990	-65.52	-53.87	-13.00	-52.52	-11.65	Peak	Vertical
5	236.610	-70.48	-59.20	-13.00	-57.48	-11.28	Peak	Vertical
6	268.620	-71.73	-60.29	-13.00	-58.73	-11.44	Peak	Vertical



ABOVE 1GHz DATA

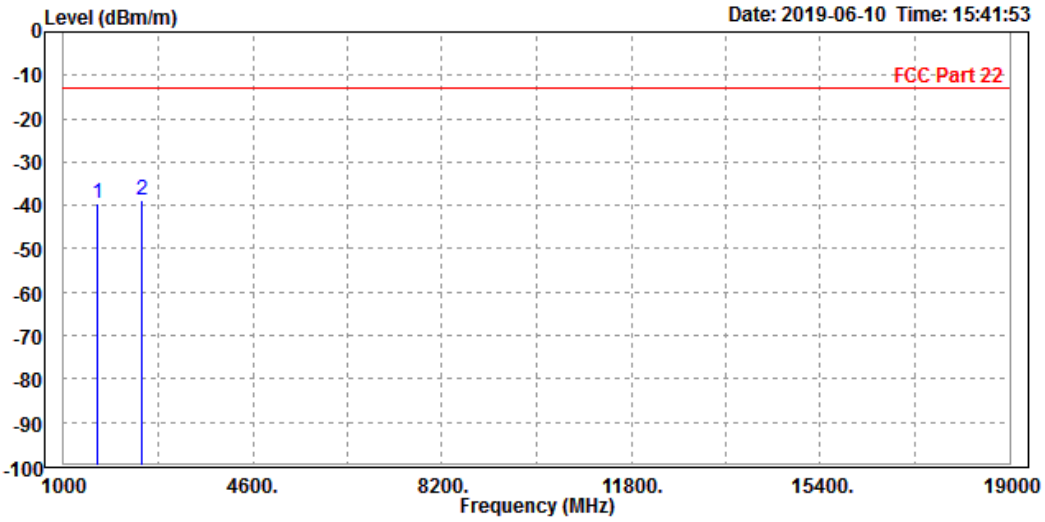
Note: For higher frequency, the emission is too low to be detected.

CDMA BC0:

CH 1013:

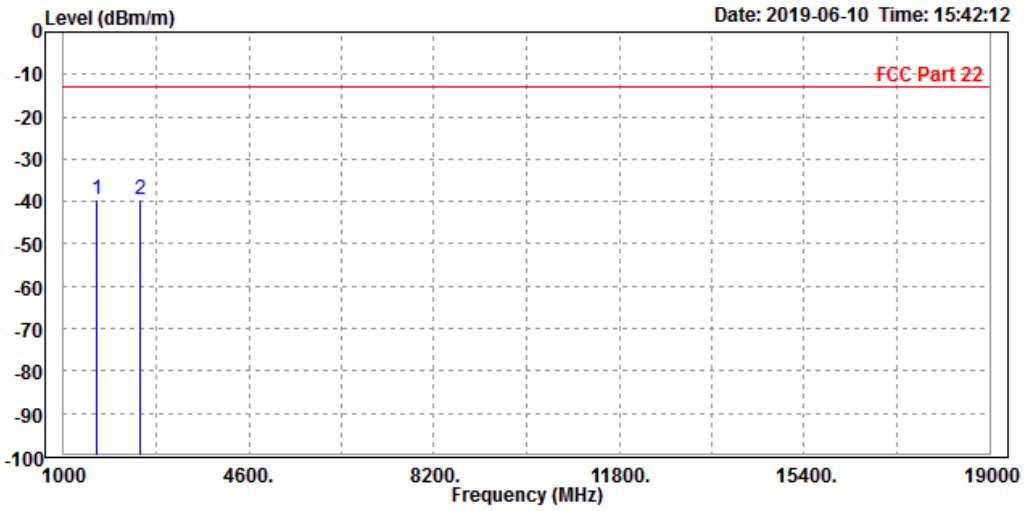
MODE	TX channel 1013	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1648.000	-39.61	-42.86	-13.00	-26.61	3.25	Peak	Horizontal
2 PP	2474.100	-38.70	-46.72	-13.00	-25.70	8.02	Peak	Horizontal



MODE	TX channel 1013	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

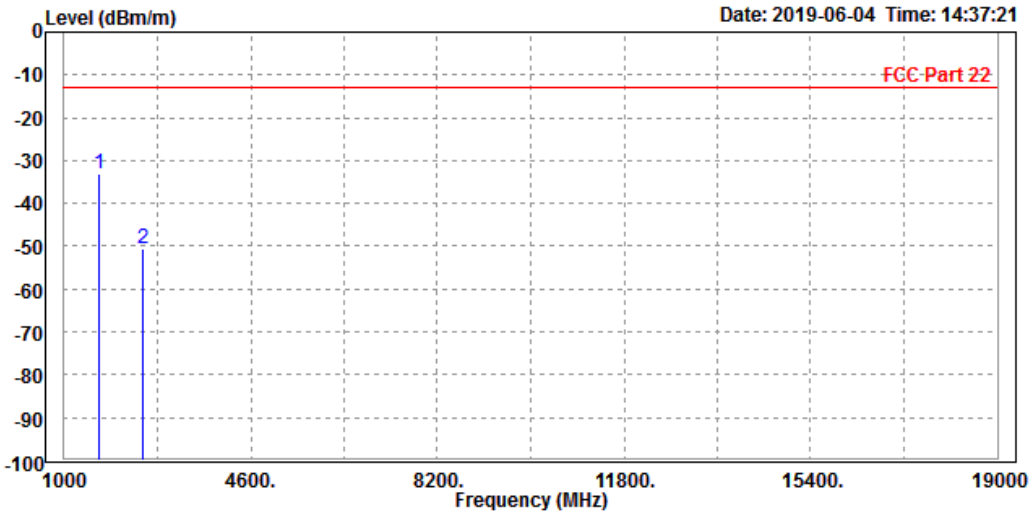
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1648.000	-39.48	-42.86	-13.00	-26.48	3.38	Peak	Vertical
2		2474.100	-39.69	-46.73	-13.00	-26.69	7.04	Peak	Vertical



CH 384:

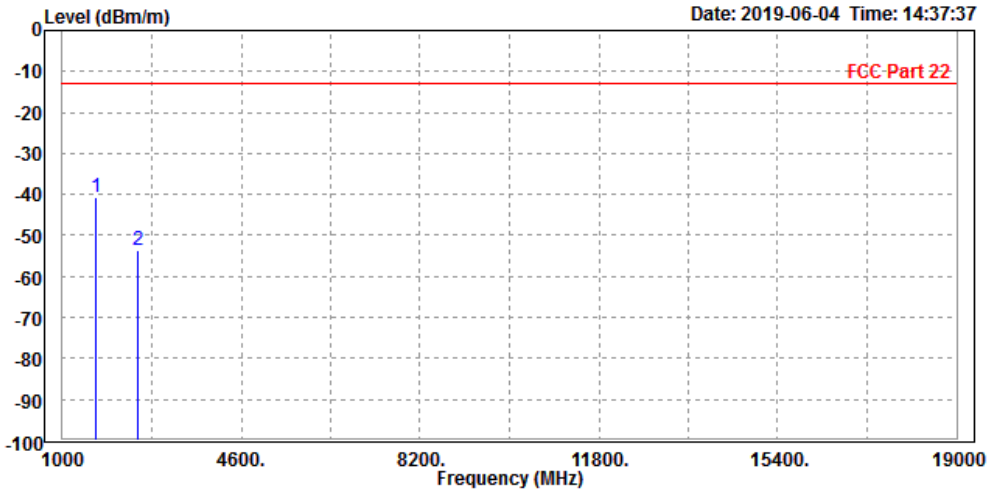
MODE	TX channel 384	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1666.000	-32.92	-36.39	-13.00	-19.92	3.47	Peak	Horizontal
2	2509.560	-50.51	-58.57	-13.00	-37.51	8.06	Peak	Horizontal



MODE	TX channel 384	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

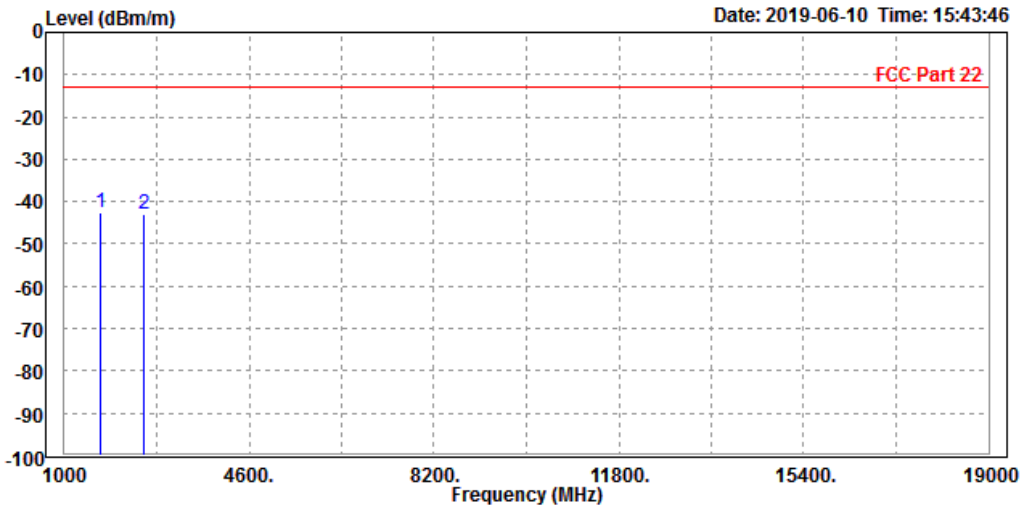
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1666.000	-40.85	-44.39	-13.00	-27.85	3.54	Peak	Vertical
2	2509.560	-53.73	-60.83	-13.00	-40.73	7.10	Peak	Vertical



CH 777:

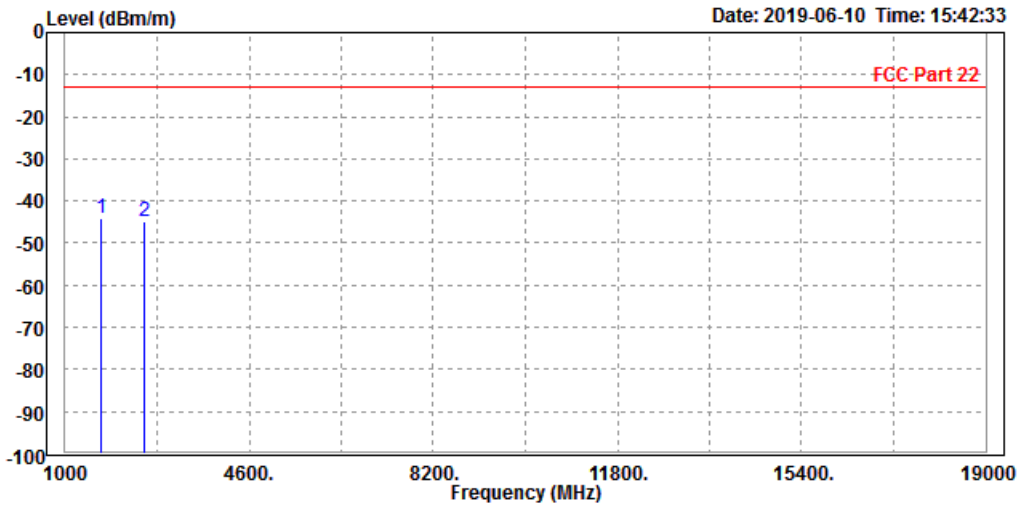
MODE	TX channel 777	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1702.000	-42.58	-46.49	-13.00	-29.58	3.91	Peak	Horizontal
2	2544.930	-43.06	-51.17	-13.00	-30.06	8.11	Peak	Horizontal



MODE	TX channel 777	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1702.000	-44.23	-48.10	-13.00	-31.23	3.87	Peak	Vertical
2	2544.930	-44.76	-51.97	-13.00	-31.76	7.21	Peak	Vertical

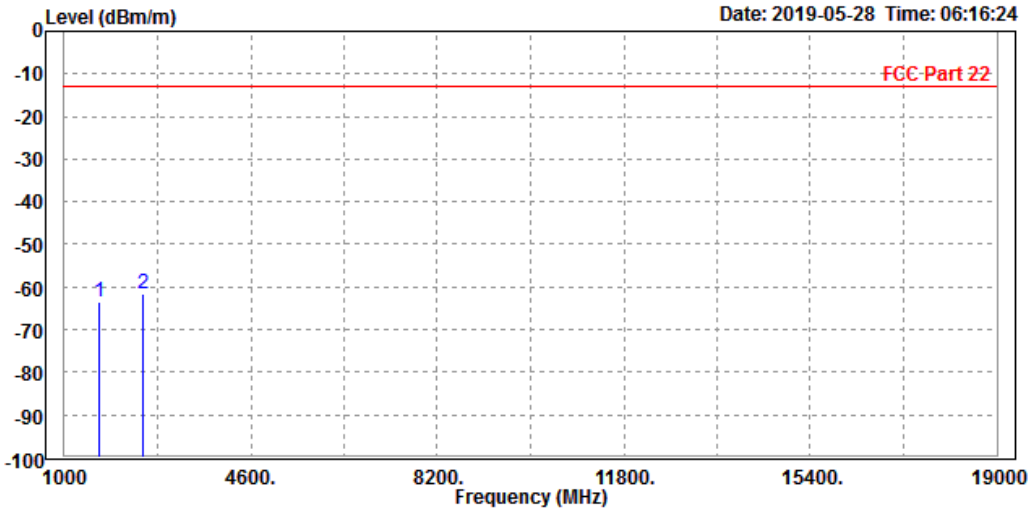


LTE Band 5

CHANNEL BANDWIDTH: 1.4MHz / QPSK

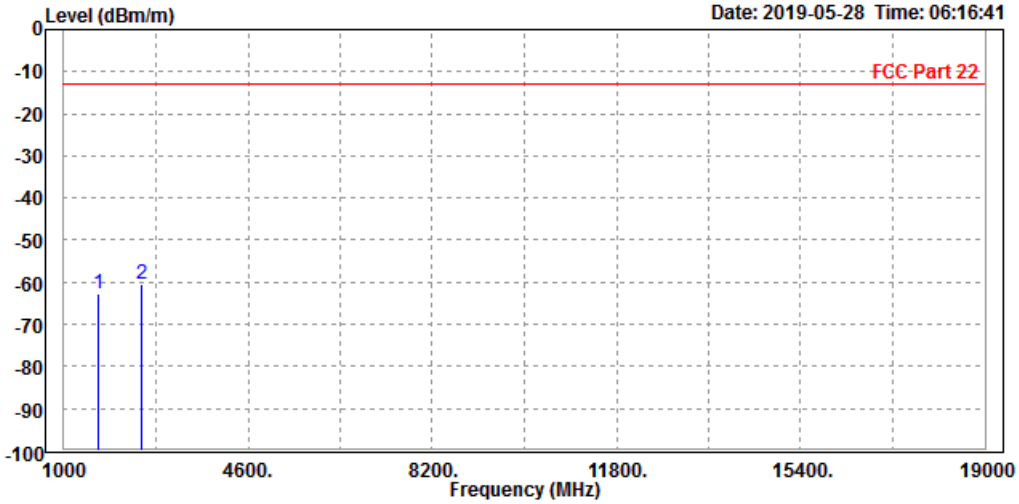
MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-63.69	-58.87	-13.00	-50.69	-4.82	Peak	Horizontal
2 PP	2512.000	-61.47	-59.88	-13.00	-48.47	-1.59	Peak	Horizontal



MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

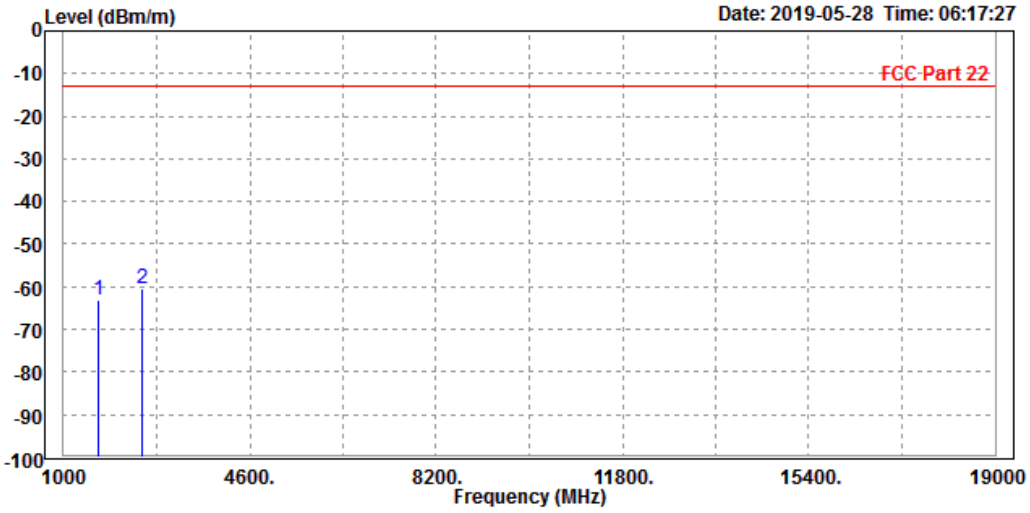
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-62.84	-59.46	-13.00	-49.84	-3.38	Peak	Vertical
2 PP	2512.000	-60.33	-60.21	-13.00	-47.33	-0.12	Peak	Vertical



CHANNEL BANDWIDTH: 3MHz / QPSK

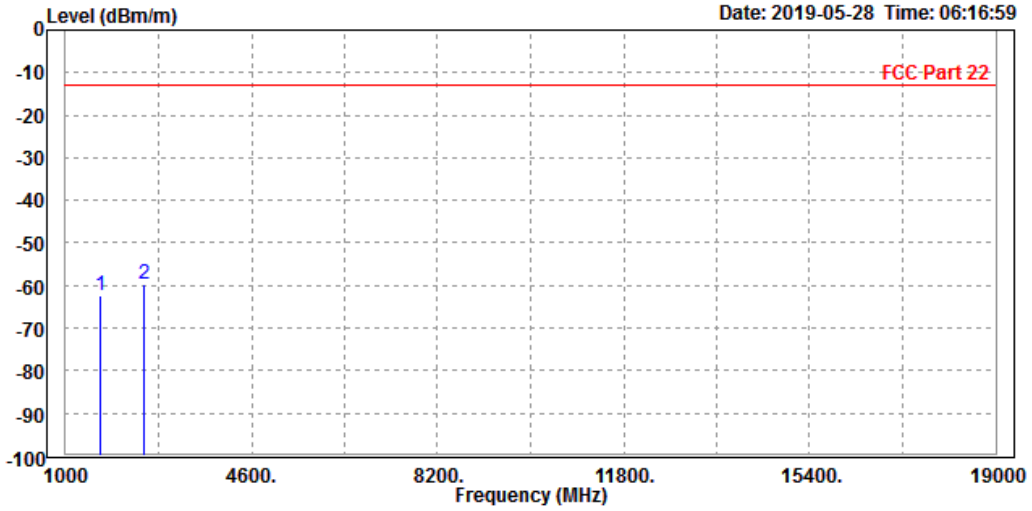
MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-63.24	-58.42	-13.00	-50.24	-4.82	Peak	Horizontal
2 PP	2512.000	-60.56	-58.97	-13.00	-47.56	-1.59	Peak	Horizontal



MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-62.17	-58.79	-13.00	-49.17	-3.38	Peak	Vertical
2 PP	2512.000	-59.80	-59.68	-13.00	-46.80	-0.12	Peak	Vertical

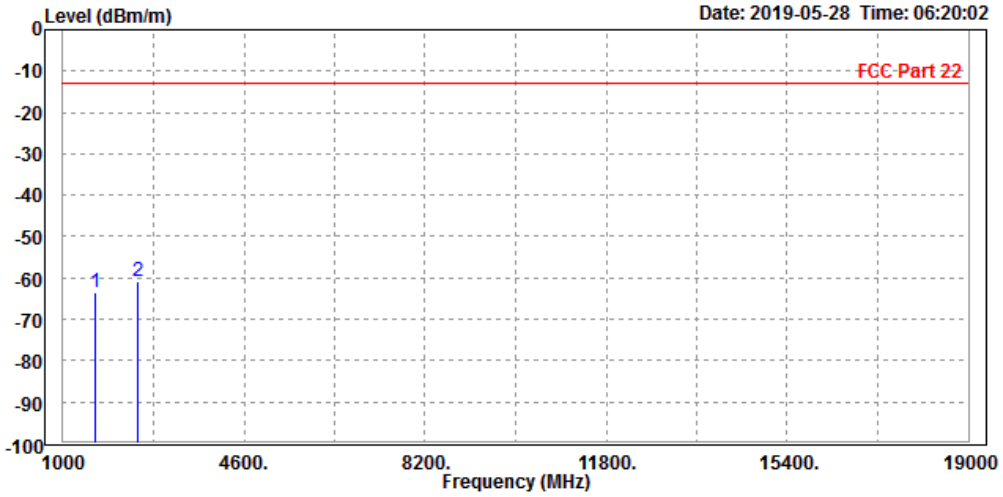


CHANNEL BANDWIDTH: 5MHz / QPSK

CH 20425

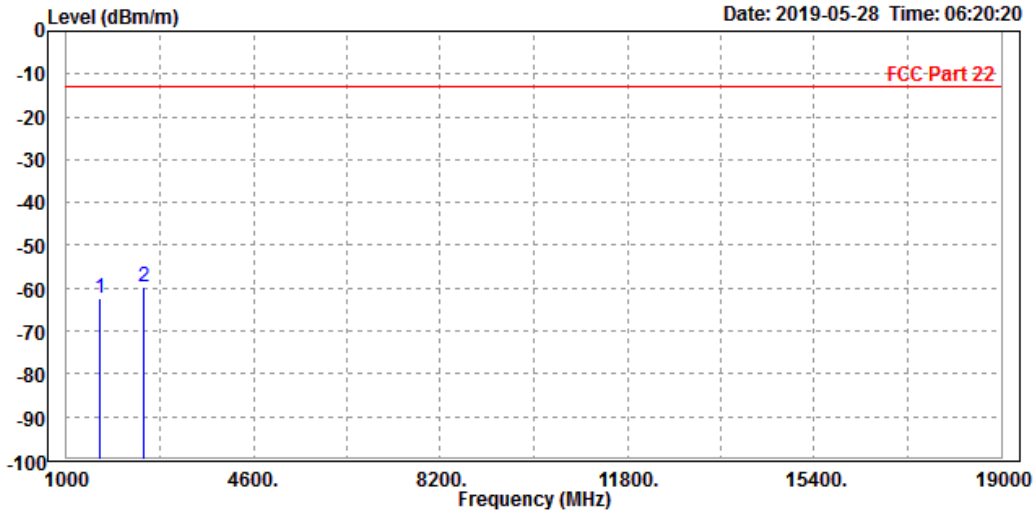
MODE	TX channel 20425	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1648.000	-63.38	-58.41	-13.00	-50.38	-4.97	Peak	Horizontal
2 PP	2480.000	-60.88	-59.23	-13.00	-47.88	-1.65	Peak	Horizontal



MODE	TX channel 20425	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1648.000	-62.24	-58.69	-13.00	-49.24	-3.55	Peak	Vertical
2 PP	2480.000	-59.79	-59.62	-13.00	-46.79	-0.17	Peak	Vertical



CH 20525

MODE	TX channel 20525	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-63.78	-58.96	-13.00	-50.78	-4.82	Peak	Horizontal
2 PP	2512.000	-59.27	-57.68	-13.00	-46.27	-1.59	Peak	Horizontal