FCC TEST REPORT

(PART 27)

Applicant:	DataRemote Incorporated
Address:	18001 Old Cutler Rd. Suite 600, Miami, FL 33157

Manufacturer or Supplier:	DataRemote Incorporated
Address:	18001 Old Cutler Rd. Suite 600, Miami, FL 33157
Product:	LTE Cellular Router
Brand Name:	DataRemote
Model Name:	CDS-9090
FCC ID:	2AJLF-CDS-9090
Date of tests:	Feb. 15, 2019 ~ Mar. 11, 2019

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

☒ **FCC Part 27, Subpart C, N** ☒ **ANSI/TIA/EIA-603- D**
☒ **FCC Part 2** ☒ **ANSI/TIA/EIA-603-E** ☒ **ANSI C63.26-2015**

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

Prepared by Roger Li Engineer / Mobile Department	Approved by Sam Tung Manager / Mobile Department
 Date: Mar. 15, 2019	 Date: Mar. 15, 2019

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF190128W002-6	Original release	Mar. 15, 2019

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 27 & Part 2			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
2.1046 27.50(c)(10)	Maximum Peak Output Power	PASS	Meet the requirement of limit.
2.1055 27.54	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 27.53(g)	Occupied Bandwidth	PASS	Meet the requirement of limit.
27.50(d)(5)	Peak to average ratio	PASS	Meet the requirement of limit.
27.53(g)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 27.53(g)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 27.53(g)	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -17.20dB at 38.92MHz.

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
Maximum Peak Output Power	±1dB
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	Mar. 16,18	Mar. 15,19
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Mar. 16,18	Mar. 15,19
Bilog Antenna 1	ETS-LINDGREN	3143B	00161964	Mar. 15,18	Mar. 14,19
Bilog Antenna 2	ETS-LINDGREN	3143B	00161965	Mar. 15,18	Mar. 14,19
Horn Antenna 1	ETS-LINDGREN	3117	00168728	Mar. 15,18	Mar. 14,19
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	Apr. 21,18	Apr. 20,19
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	Mar. 16,18	Mar. 15,19
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	Mar. 13,18	Mar. 12,19

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

PRODUCT	LTE Cellular Router	
MODEL NAME	CDS-9090	
POWER SUPPLY	15.0Vdc (adapter or host equipment) 7.4Vdc (Li-ion, battery)	
MODULATION TECHNOLOGY	**LTE**	QPSK, 16QAM
FREQUENCY RANGE	**LTE Band 71 Channel Bandwidth: 5MHz**	665.5MHz ~ 695.5MHz
	LTE Band 71 Channel Bandwidth: 10MHz	668MHz ~ 693MHz
	LTE Band 71 Channel Bandwidth: 15MHz	670.5MHz ~ 690.5MHz
	LTE Band 71 Channel Bandwidth: 20MHz	673MHz ~ 688MHz
EMISSION DESIGNATOR	**LTE Band 71 Channel Bandwidth: 5MHz**	QPSK: 4M48G7D
		16QAM: 4M47W7D
	LTE Band 71 Channel Bandwidth: 10MHz	QPSK: 8M93G7D
		16QAM: 8M93W7D
	LTE Band 71 Channel Bandwidth: 15MHz	QPSK: 13M4G7D
		16QAM: 13M4W7D
	LTE Band 71 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M8W7D
MAX. ERP/EIRP POWER	**LTE Band 71 Channel Bandwidth: 5MHz**	270mW
	LTE Band 71 Channel Bandwidth: 10MHz	291mW
	LTE Band 71 Channel Bandwidth: 15MHz	305mW
	LTE Band 71 Channel Bandwidth: 20MHz	256mW
ANTENNA TYPE	Fixed External Antenna with -1.1dBi gain	
HW VERSION	V1.2	
SW VERSION	V0.5.5	
ACCESSORY DEVICE	Refer to note as below	
DATA CABLE	N/A	

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:	Shenzhen Mass Power Electronic Limited
MODEL:	NBS40C150200B3
INPUT:	AC 100-240V, 1A
OUTPUT:	DC 15V, 2A

3. The EUT matched the following Ethernet Cable and Telephone Cables:

ETHERNET CABLE	
BRAND:	Shenzhen Eternity Ju Electronic Co., Ltd
MODEL:	RJ45-8P8C
SIGNAL LINE:	1500±20mm

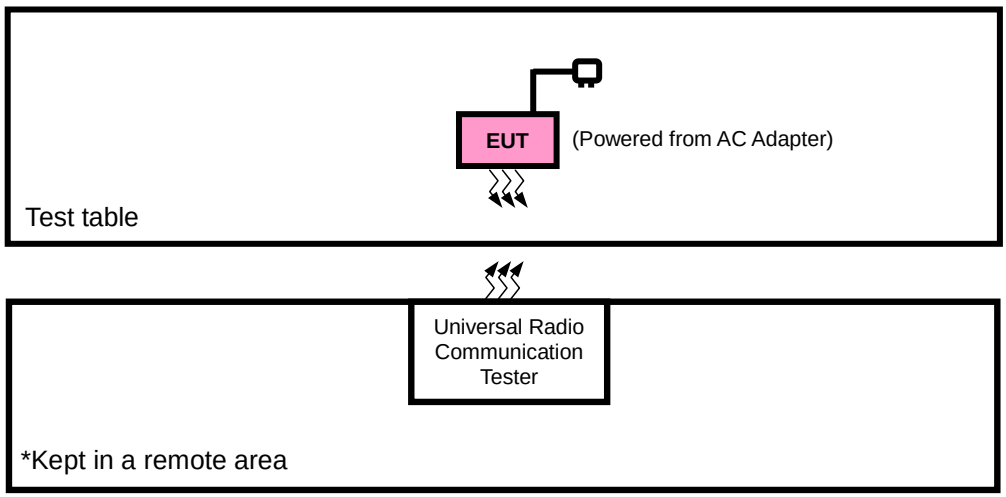
TELEPHONE CABLE 1	
BRAND:	Shenzhen Eternity Ju Electronic Co., Ltd
MODEL:	RJ11-6P2C
SIGNAL LINE:	1500±20mm

TELEPHONE CABLE 2	
BRAND:	Shenzhen Eternity Ju Electronic Co., Ltd
MODEL:	RJ11-6P2C
SIGNAL LINE:	1500±20mm

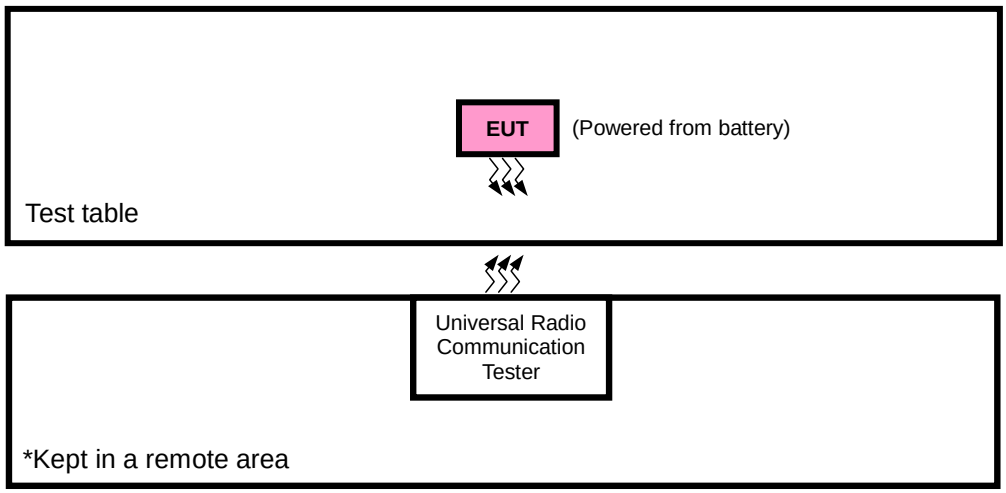
4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



FOR CONDUCTED & E.I.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

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

NOTE:

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

2.4 DESCRIPTION OF TEST MODES

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/EIRP and radiated emission was found when positioned on X-plane for LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	**EUT + Adapter with LTE link**
B	EUT + Battery with **LTE link**

LTE BAND 71

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	ERP	133147 to 133447	133147, 133297, 133447	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		133172 to 133422	133172, 133297, 133422	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	133147 to 133447	133147 133447	5MHz	QPSK	1 RB / 0 RB Offset
		133172 to 133422	133172 133422	10MHz	QPSK	1 RB / 0 RB Offset
		133197 to 133397	133197 133397	15MHz	QPSK	1 RB / 0 RB Offset
		133222 to 133372	133222 133372	20MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	133147 to 133447	133147, 133297, 133447	5MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		133172 to 133422	133172, 133297, 133422	10MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK, 16QAM	50 RB / 0 RB Offset
B	PEAK TO AVERAGE RATIO	133147 to 133447	133147, 133297, 133447	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		133172 to 133422	133172, 133297, 133422	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
B	BAND EDGE	133147 to 133447	133147	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			133447	5MHz	QPSK, 16QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		133172 to 133422	133172	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			1334227	10MHz	QPSK, 16QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		133197 to 133397	133197	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			133397	15MHz	QPSK, 16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		133222 to 133372	133222	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			133372	20MHz	QPSK, 16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset

B	CONDCUDETED EMISSION	133147 to 133447	133147, 133297, 133447	5MHz	QPSK	1 RB / 0 RB Offset
		133172 to 133422	133172, 133297, 133422	10MHz	QPSK	1 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK	1 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	131979 to 132665	133297	5MHz	QPSK	1 RB / 0 RB Offset
		133172 to 133422	133297	10MHz	QPSK	1 RB / 0 RB Offset
		133197 to 133397	133297	15Hz	QPSK	1 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK	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 CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP(ERP)	24deg. C, 60%RH	7.4Vdc from Battery	Rose Ma
FREQUENCY STABILITY	24deg. C, 61%RH	DC 7V/15V/16V	Rain Wang
OCCUPIED BANDWIDTH	24deg. C, 61%RH	7.4Vdc from Battery	Rain Wang
PEAK TO AVERAGE RATIO	24deg. C, 61%RH	7.4Vdc from Battery	Rain Wang
BAND EDGE	24deg. C, 61%RH	7.4Vdc from Battery	Rain Wang
CONDCUDETED EMISSION	24deg. C, 61%RH	7.4Vdc from Battery	Rain Wang
RADIATED EMISSION	23eg. C, 7%RH	15Vdc from adapter	Rose Ma

2.5 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 27

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

Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP

3.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

a. The EUT was set up for the maximum power with LTE link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range). RBW and VBW is 10MHz for LTE.

b. E.I.R.P power 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 a. Record the power level of S.G

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

e. E.R.P = E.I.R.P- 2.15 dB

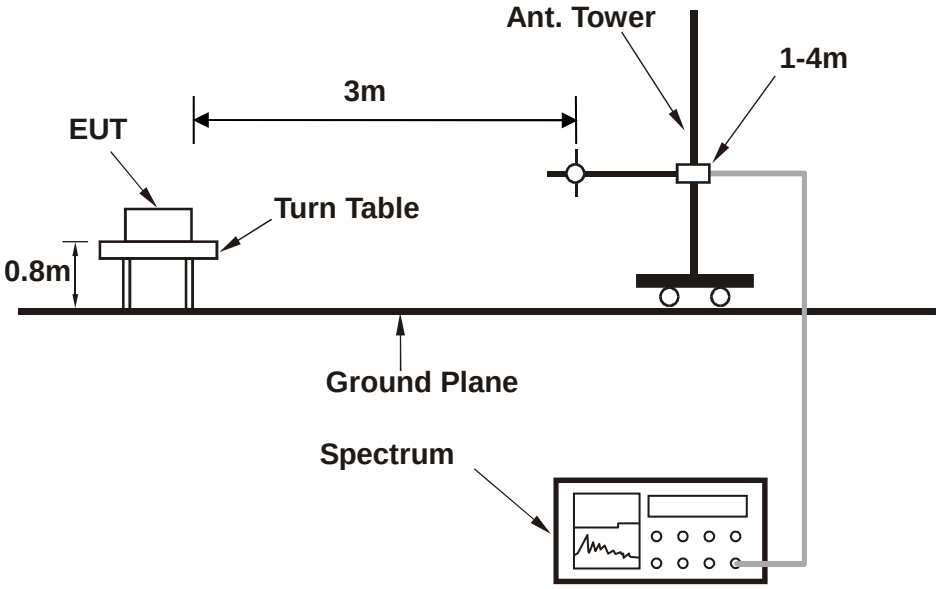
CONDUCTED POWER MEASUREMENT:

a. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.

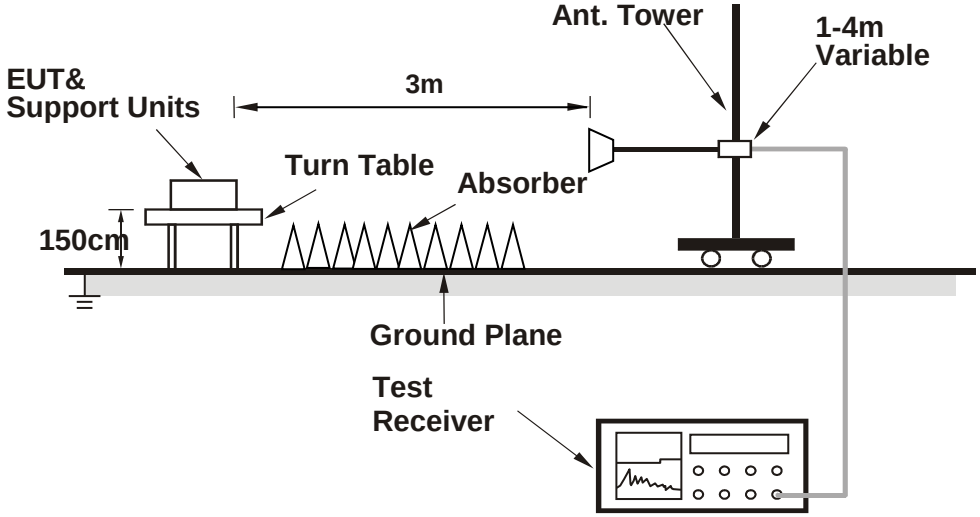
b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

3.1.3 TEST SETUP

ERP MEASUREMENT:

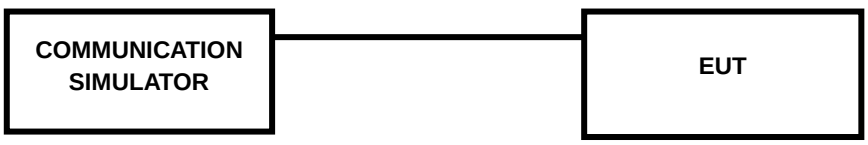


EIRP MEASUREMENT:



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

CONDUCTED POWER MEASUREMENT:



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

3.1.4 TEST RESULTS

AVERAGE CONDUCTED OUTPUT POWER (dBm)

LTE Band 71							
BW	**Modulation**	**RB Size**	**RB Offset**	**Low CH 133147**	**Mid CH 133297**	**High CH 133447**	**MPR**
				Frequency 665.5 MHz	**Frequency 680.5 MHz**	**Frequency 695.5 MHz**	
5 MHz	QPSK	1	0	23.55	23.64	23.69	0
		1	12	23.25	23.34	23.39	0
		1	24	23.03	23.12	23.17	0
		12	0	22.13	22.22	22.27	1
		12	6	22.07	22.16	22.21	1
		12	13	22.03	22.12	22.17	1
		25	0	22.12	22.21	22.26	1
	16QAM	1	0	21.67	21.76	21.81	1
		1	12	21.62	21.71	21.76	1
		1	24	21.57	21.66	21.71	1
		12	0	21.01	21.10	21.15	2
		12	6	20.90	20.99	21.04	2
		12	13	20.87	20.96	21.01	2
		25	0	21.04	21.13	21.18	2
BW	**Modulation**	**RB Size**	**RB Offset**	**Low CH 133172**	**Mid CH 133297**	**High CH 133442**	**MPR**
				Frequency 668 MHz	**Frequency 680.5 MHz**	**Frequency 693 MHz**	
10 MHz	QPSK	1	0	23.57	23.66	23.71	0
		1	24	23.27	23.36	23.41	0
		1	49	23.05	23.14	23.19	0
		25	0	22.15	22.24	22.29	1
		25	12	22.09	22.18	22.23	1
		25	25	22.05	22.14	22.19	1
		50	0	22.14	22.23	22.28	1
	16QAM	1	0	21.69	21.78	21.83	1
		1	24	21.64	21.73	21.78	1
		1	49	21.59	21.68	21.73	1
		25	0	21.03	21.12	21.17	2
		25	12	20.92	21.01	21.06	2
		25	25	20.89	20.98	21.03	2
		50	0	21.06	21.15	21.20	2

LTE Band 71							
BW	Modulation	RB Size	RB Offset	Low CH 133197	Mid CH 133297	High CH 133397	MPR
				Frequency 670.5 MHz	Frequency 680.5 MHz	Frequency 690.5 MHz	
15 MHz	QPSK	1	0	23.60	23.69	23.74	0
		1	37	23.30	23.39	23.44	0
		1	74	23.08	23.17	23.22	0
		36	0	22.18	22.27	22.32	1
		36	19	22.12	22.21	22.26	1
		36	39	22.08	22.17	22.22	1
		75	0	22.17	22.26	22.31	1
	16QAM	1	0	21.72	21.81	21.86	1
		1	37	21.67	21.76	21.81	1
		1	74	21.62	21.71	21.76	1
		36	0	21.06	21.15	21.20	2
		36	19	20.95	21.04	21.09	2
		36	39	20.92	21.01	21.06	2
		75	0	21.09	21.18	21.23	2
BW	Modulation	RB Size	RB Offset	Low CH 133222	Mid CH 133322	High CH 133372	MPR
				Frequency 673 MHz	Frequency 683 MHz	Frequency 688 MHz	
20 MHz	QPSK	1	0	23.65	23.74	23.79	0
		1	50	23.35	23.44	23.49	0
		1	99	23.13	23.22	23.27	0
		50	0	22.23	22.32	22.37	1
		50	25	22.17	22.26	22.31	1
		50	50	22.13	22.22	22.27	1
		100	0	22.22	22.31	22.36	1
	16QAM	1	0	21.77	21.86	21.91	1
		1	50	21.72	21.81	21.86	1
		1	99	21.67	21.76	21.81	1
		50	0	21.11	21.20	21.25	2
		50	25	21.00	21.09	21.14	2
		50	50	20.97	21.06	21.11	2
		100	0	21.14	21.23	21.28	2

ERP

LTE BAND 71

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
133147	665.5	-31.97	45.65	13.68	23.32	H	3
133297	680.5	-32.40	46.04	13.64	23.09	H	3
133447	695.5	-32.76	45.87	13.11	20.45	H	3
133147	665.5	-22.72	47.03	24.31	**269.65**	V	3
133297	680.5	-22.91	46.57	23.66	232.27	V	3
133447	695.5	-23.02	46.98	23.96	248.89	V	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
133147	665.5	-32.80	45.65	12.85	19.27	H	3
133297	680.5	-33.42	46.04	12.62	18.26	H	3
133447	695.5	-33.86	45.87	12.01	15.87	H	3
133147	665.5	-23.55	47.03	23.48	222.74	V	3
133297	680.5	-23.93	46.57	22.64	183.65	V	3
133447	695.5	-24.12	46.98	22.86	193.20	V	3

LTE BAND 71

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
133172	668	-31.78	45.65	13.87	24.37	H	3
133297	680.5	-32.34	46.04	13.70	23.42	H	3
133442	693	-32.63	46.07	13.44	22.05	H	3
133172	668	-22.53	47.18	24.65	**291.47**	V	3
133297	680.5	-22.85	46.57	23.72	235.50	V	3
133442	693	-22.89	47.06	24.17	261.46	V	3

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
133172	668	-32.93	45.65	12.72	18.70	H	3
133297	680.5	-33.44	46.04	12.60	18.18	H	3
133442	693	-33.79	46.07	12.28	16.88	H	3
133172	668	-23.68	47.18	23.50	223.67	V	3
133297	680.5	-23.95	46.57	22.62	182.81	V	3
133442	693	-24.05	47.06	23.01	200.17	V	3

LTE BAND 71

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
133197	670.5	-31.79	45.63	13.84	24.23	H	3
133297	680.5	-32.41	46.04	13.63	23.04	H	3
133397	690.5	-32.70	45.94	13.24	21.08	H	3
133197	670.5	-22.54	47.39	24.85	**305.42**	V	3
133297	680.5	-22.92	46.57	23.65	231.74	V	3
133397	690.5	-22.96	47.00	24.04	253.45	V	3

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
133197	670.5	-32.65	45.63	12.98	19.87	H	3
133297	680.5	-33.28	46.04	12.76	18.86	H	3
133397	690.5	-33.55	45.94	12.39	17.33	H	3
133197	670.5	-23.40	47.39	23.99	250.55	V	3
133297	680.5	-23.79	46.57	22.78	189.67	V	3
133397	690.5	-23.81	47.00	23.19	208.40	V	3

LTE BAND 71

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
133222	673	-32.37	45.80	13.43	22.02	H	3
133322	683	-32.86	46.04	13.18	20.77	H	3
133372	688	-33.28	45.83	12.55	18.00	H	3
133222	673	-23.12	47.21	24.09	**256.45**	V	3
133322	683	-23.37	46.57	23.20	208.74	V	3
133372	688	-23.54	47.07	23.53	225.37	V	3

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)	LIMIT (W)
133222	673	-33.30	45.80	12.50	17.78	H	3
133322	683	-33.93	46.04	12.11	16.24	H	3
133372	688	-34.11	45.83	11.72	14.87	H	3
133222	673	-24.05	47.21	23.16	207.01	V	3
133322	683	-24.44	46.57	22.13	163.15	V	3
133372	688	-24.37	47.07	22.70	186.17	V	3

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

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

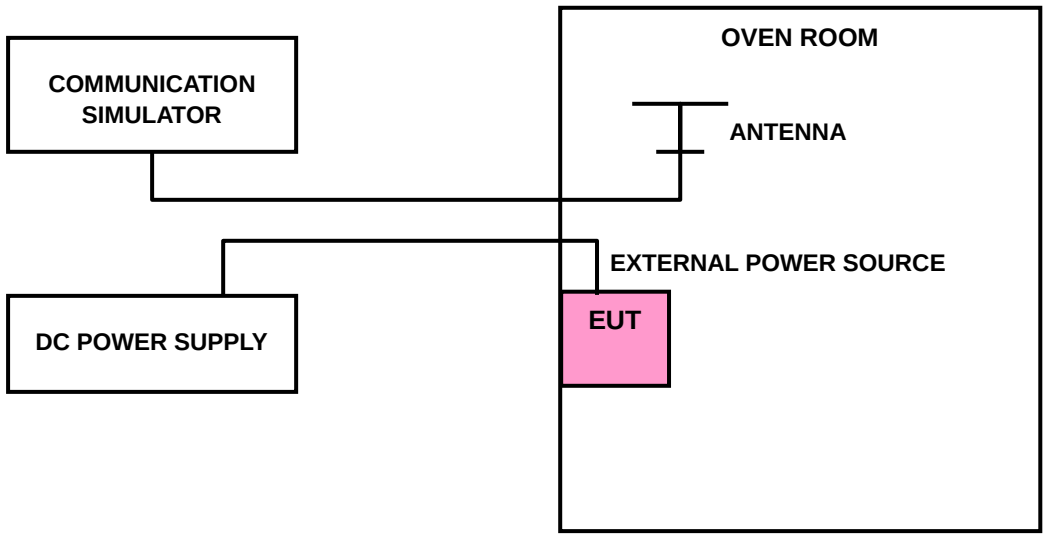
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

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

LTE BAND 71

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
15	0.0005	0.0005	2.5
7	-0.0006	-0.0005	2.5
16	0.0005	0.0004	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 7Vdc to 16Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0034	-0.0029	2.5
-20	-0.0030	-0.0025	2.5
-10	-0.0026	-0.0022	2.5
0	-0.0024	-0.0020	2.5
10	-0.0019	-0.0016	2.5
20	-0.0015	-0.0013	2.5
30	-0.0011	-0.0010	2.5
40	-0.0007	-0.0006	2.5
50	-0.0001	-0.0001	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
15	0.0006	0.0007	2.5
7	-0.0006	-0.0007	2.5
16	0.0006	0.0006	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 7Vdc to 16Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0041	-0.0043	2.5
-20	-0.0036	-0.0038	2.5
-10	-0.0026	-0.0028	2.5
0	-0.0022	-0.0023	2.5
10	-0.0018	-0.0019	2.5
20	-0.0014	-0.0015	2.5
30	-0.0009	-0.0010	2.5
40	-0.0007	-0.0007	2.5
50	-0.0004	-0.0004	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	15MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
15	0.0006	0.0005	2.5
7	-0.0007	-0.0006	2.5
16	0.0006	0.0005	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 7Vdc to 16Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	15MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0043	-0.0047	2.5
-20	-0.0039	-0.0043	2.5
-10	-0.0031	-0.0034	2.5
0	-0.0028	-0.0031	2.5
10	-0.0022	-0.0024	2.5
20	-0.0017	-0.0019	2.5
30	-0.0010	-0.0011	2.5
40	-0.0007	-0.0007	2.5
50	-0.0002	-0.0002	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	20MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
15	0.0006	0.0006	2.5
7	-0.0006	-0.0006	2.5
16	0.0004	0.0005	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 7Vdc to 16Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

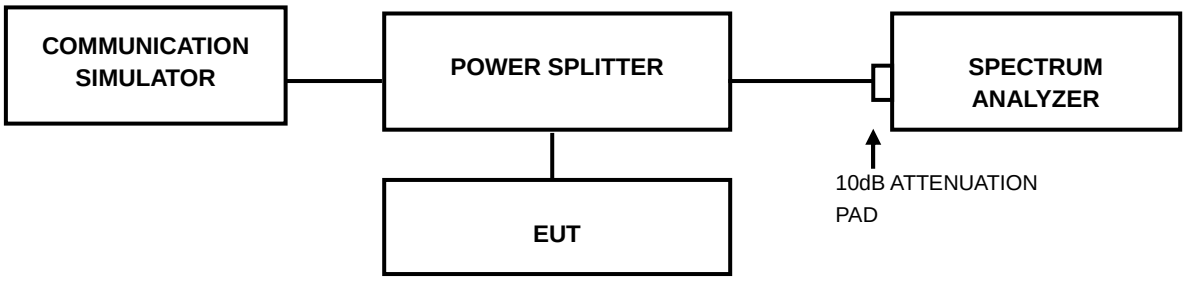
TEMP. (℃)	20MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0042	-0.0045	2.5
-20	-0.0041	-0.0044	2.5
-10	-0.0037	-0.0039	2.5
0	-0.0031	-0.0033	2.5
10	-0.0023	-0.0024	2.5
20	-0.0018	-0.0019	2.5
30	-0.0014	-0.0015	2.5
40	-0.0009	-0.0010	2.5
50	-0.0003	-0.0004	2.5

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

3.3.2 TEST SETUP



3.3.3 TEST PROCEDURES

a. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

b. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

3.3.4 TEST RESULTS

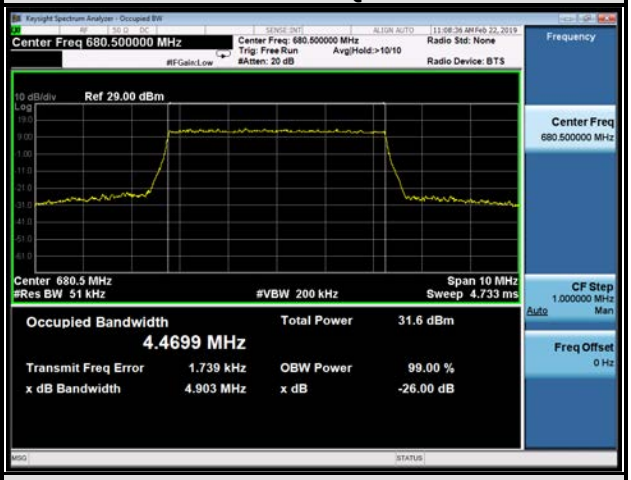
LTE BAND 71

Channel Bandwidth : 5MHz				Channel Bandwidth : 10MHz			
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)	
		QPSK	16QAM			QPSK	16QAM
133147	665.5	4.46	4.47	133172	668	8.92	8.92
133297	680.5	4.48	4.47	133297	680.5	8.92	8.92
133447	695.5	4.48	4.47	133422	693	8.93	8.93

SPECTRUM PLOT OF WORST VALUE

5MHz / QPSK

5MHz / 16QAM



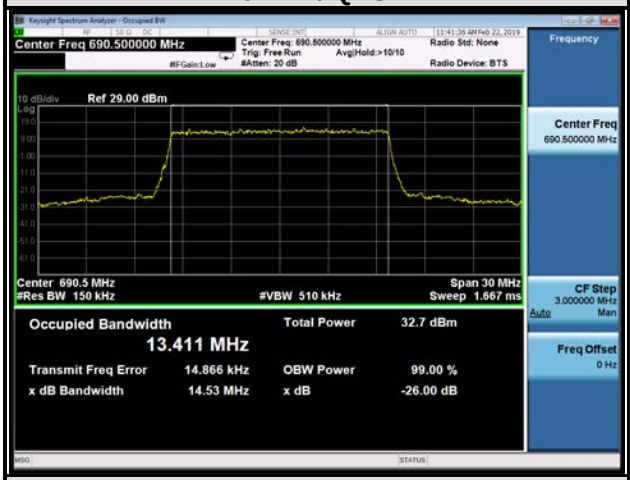
10MHz / QPSK

10MHz / 16QAM

Channel Bandwidth : 15MHz				Channel Bandwidth : 20MHz			
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)	
		QPSK	16QAM		QPSK	QPSK	16QAM
133197	670.5	13.38	13.39	133222	673	17.80	17.83
133297	680.5	13.38	13.36	133322	683	17.81	17.84
133397	690.5	13.41	13.41	133372	688	17.88	17.82

SPECTRUM PLOT OF WORST VALUE

15MHz / QPSK



15MHz / 16QAM

20MHz / QPSK

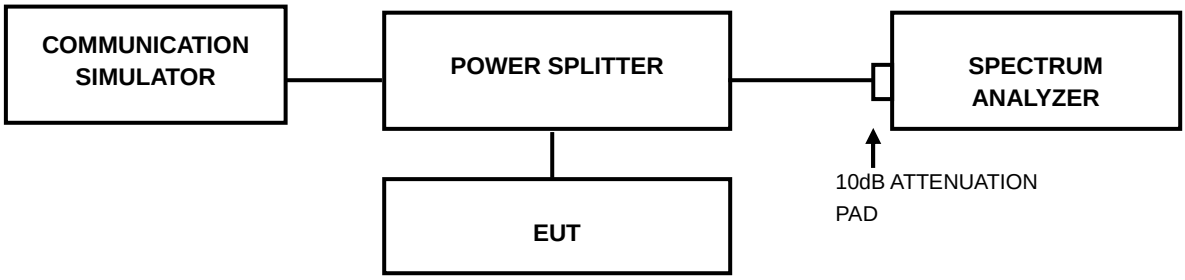
20MHz / 16QAM

3.4 PEAK TO AVERAGE RATIO

3.4.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

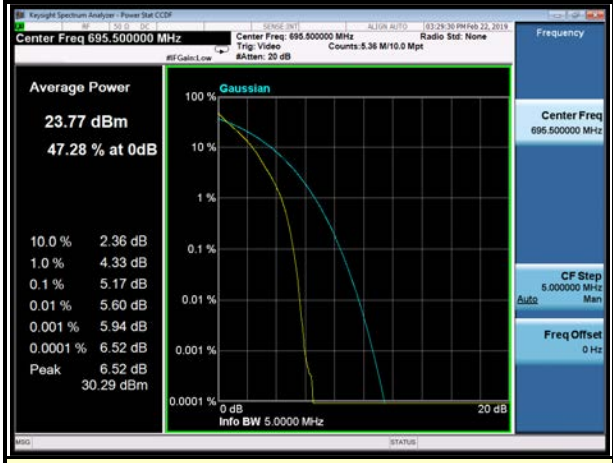
3.4.4 TEST RESULTS

LTE BAND 71

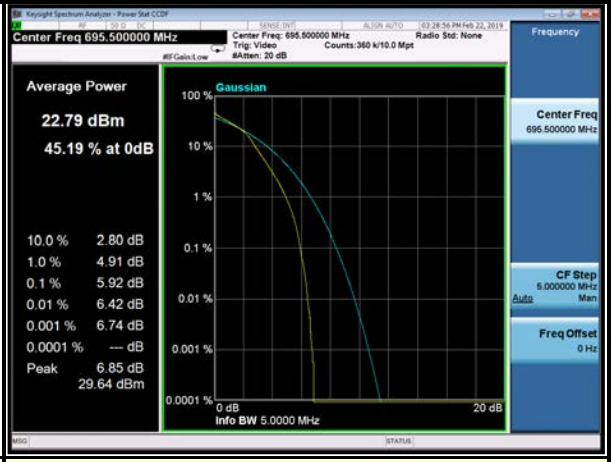
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
133147	665.5	4.86	5.63	133172	668	4.72	5.57
133297	680.5	5.05	5.84	133297	680.5	4.90	5.74
133447	695.5	5.17	5.92	133422	693	5.12	5.89

SPECTRUM PLOT OF WORST VALUE

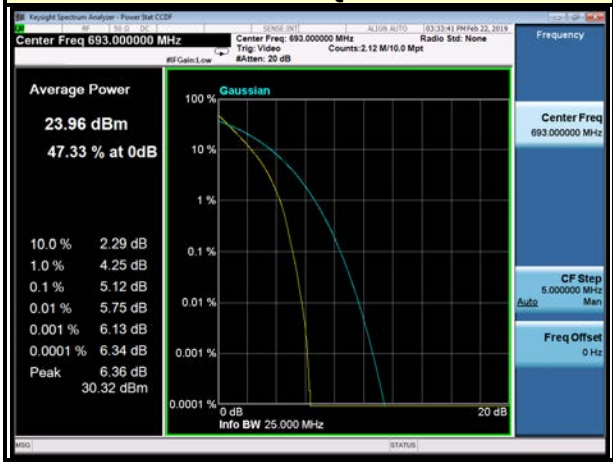
5MHz / QPSK



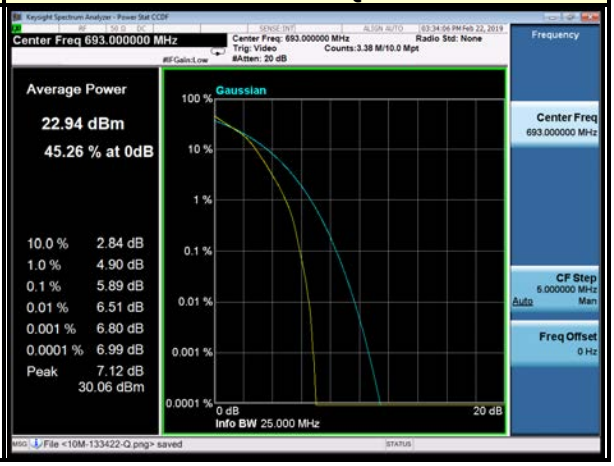
5MHz / 16QAM



10MHz / QPSK



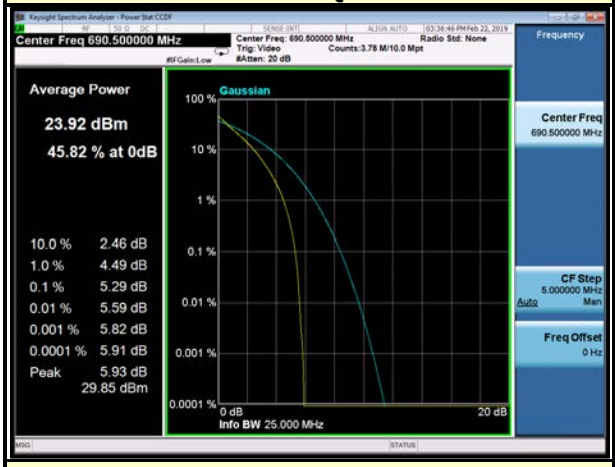
10MHz / 16QAM



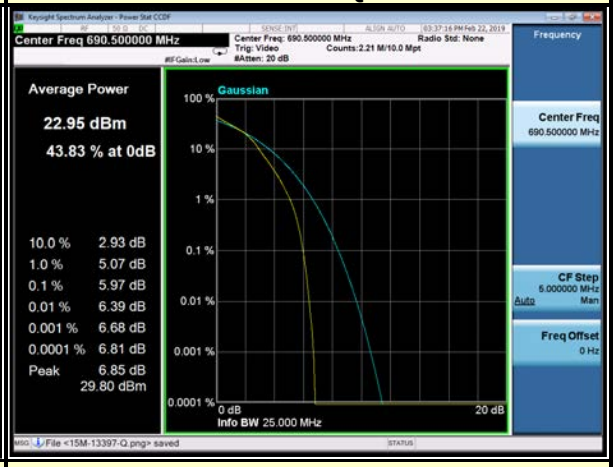
CHANNEL BANDWIDTH: 15MHz				CHANNEL BANDWIDTH: 20MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
133197	670.5	5.19	5.86	133222	673	5.03	5.83
133297	680.5	5.07	5.82	133322	683	4.94	5.80
133397	690.5	5.29	5.97	133372	688	5.14	5.89

SPECTRUM PLOT OF WORST VALUE

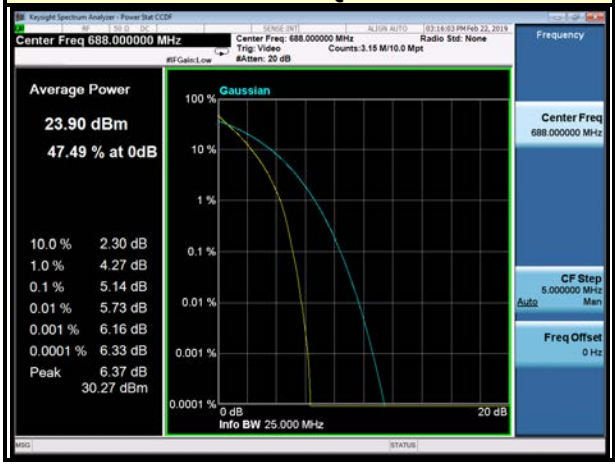
15MHz / QPSK



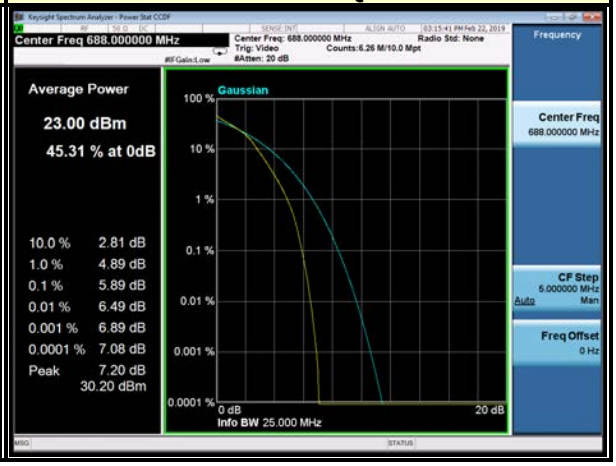
15MHz / 16QAM



20MHz / QPSK



20MHz / 16QAM

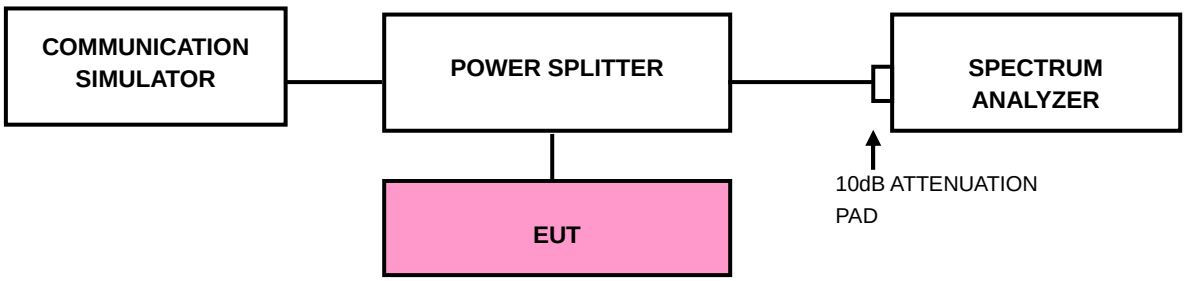


3.5 BAND EDGE MEASUREMENT

3.5.1 LIMITS OF BAND EDGE MEASUREMENT

The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater.
However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

3.5.2 TEST SETUP



3.5.3 TEST PROCEDURES

a. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range.).

b. The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

c. 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)

d. 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)

e. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 200kHz and VBW of the spectrum is 1MHz. (LTE bandwidth 15MHz)

f. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 200kHz and VBW of the spectrum is 1MHz. (LTE bandwidth 20MHz)

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

3.5.4 TEST RESULTS

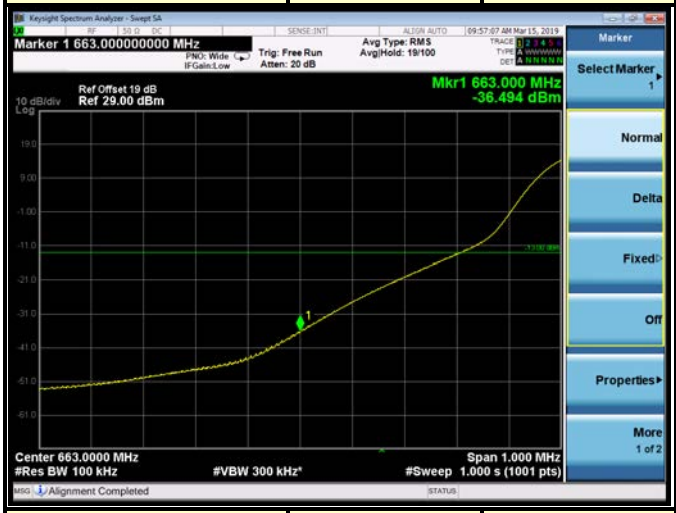
LTE BAND 71

Channel Bandwidth: 5MHz / QPSK					
CHANNEL	133147	1 RB	CHANNEL	133447	1 RB
					
CHANNEL	133147	Full RB	CHANNEL	133447	Full RB
					

Channel Bandwidth: 5MHz / 16QAM					
CHANNEL	133147	1 RB	CHANNEL	133447	1 RB
					
CHANNEL	133147	Full RB	CHANNEL	133447	Full RB
					

LTE BAND 71

Channel Bandwidth: 10MHz/ QPSK					
CHANNEL	133172	1 RB	CHANNEL	133442	1 RB
					
CHANNEL	133172	Full RB	CHANNEL	133442	Full RB
					

Channel Bandwidth: 10MHz/ 16QAM					
CHANNEL	133172	1 RB	CHANNEL	133442	1 RB
					
CHANNEL	133172	Full RB	CHANNEL	133442	Full RB
					

LTE BAND 71

Channel Bandwidth: 15MHz/ QPSK					
CHANNEL	133197	1 RB	CHANNEL	133397	1 RB
					
CHANNEL	133197	Full RB	CHANNEL	133397	Full RB
					

Channel Bandwidth: 15MHz/ 16QAM

CHANNEL	133197	1 RB	CHANNEL	133397	1 RB

CHANNEL	133197	Full RB	CHANNEL	133397	Full RB

LTE BAND 71

Channel Bandwidth: 20MHz/ QPSK					
CHANNEL	133222	1 RB	CHANNEL	133372	1 RB
					
CHANNEL	133222	Full RB	CHANNEL	133372	Full RB
					

Channel Bandwidth: 20MHz/ 16QAM					
CHANNEL	133222	1 RB	CHANNEL	133372	1 RB
					
CHANNEL	133222	Full RB	CHANNEL	133372	Full RB
					

3.6 CONDUCTED SPURIOUS EMISSIONS

3.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

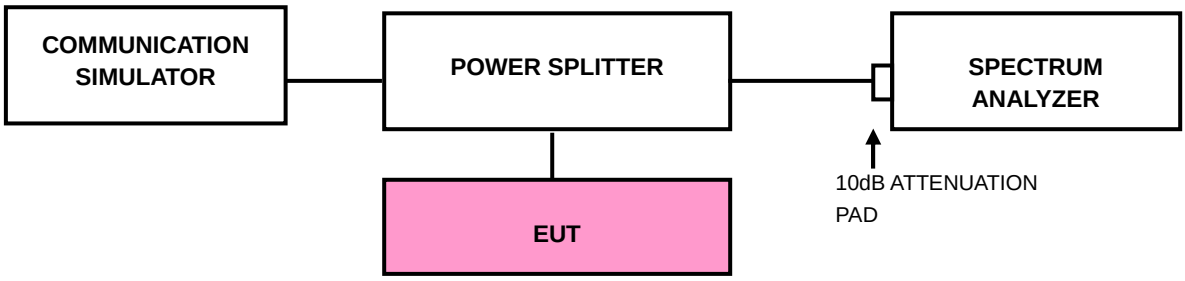
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm

3.6.2 TEST PROCEDURE

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

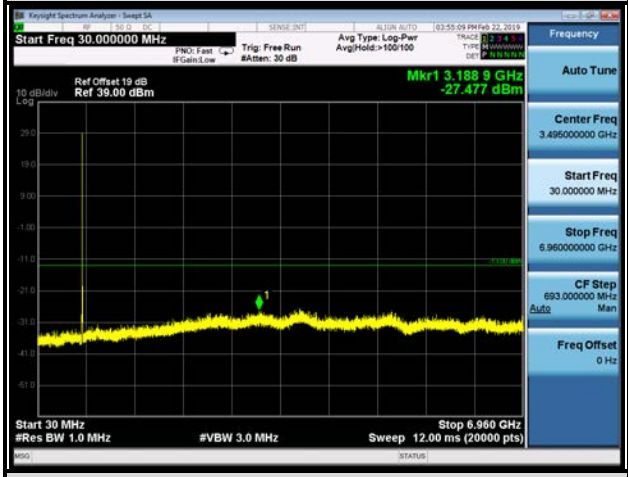
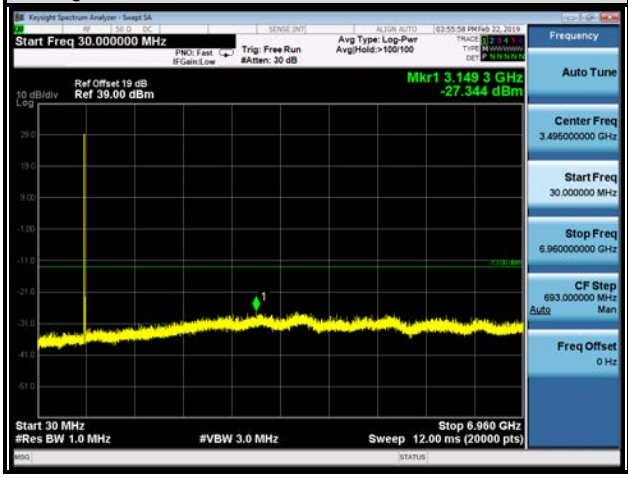
b. Measuring frequency range is from 30 MHz to 6.96GHz for LTE Band 71. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz are used for conducted emission measurement.

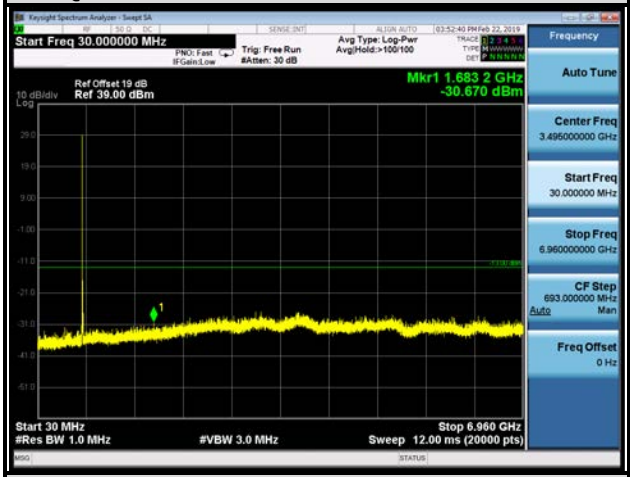
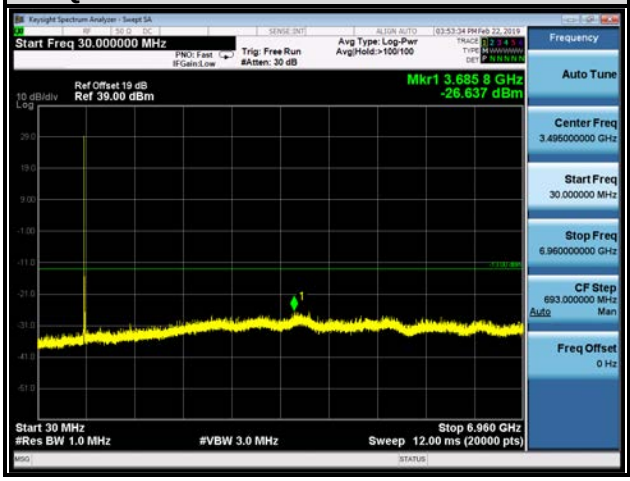
3.6.3 TEST SETUP

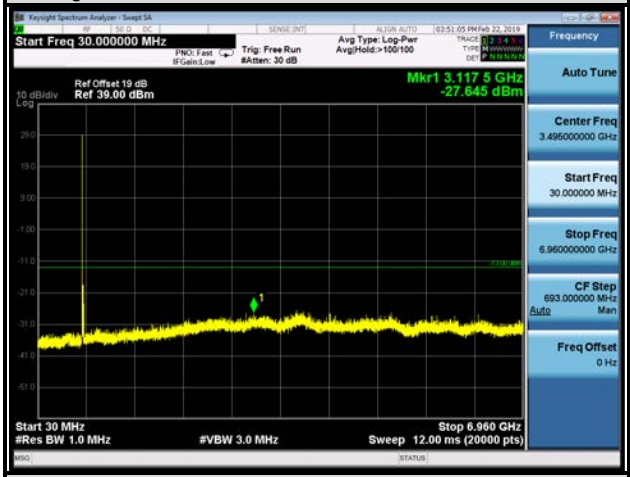
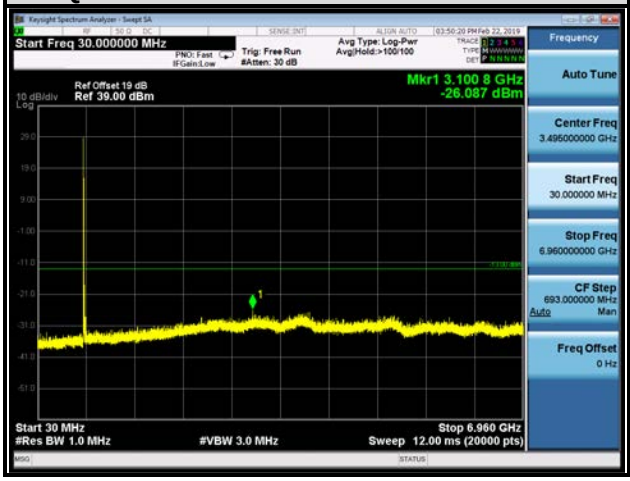


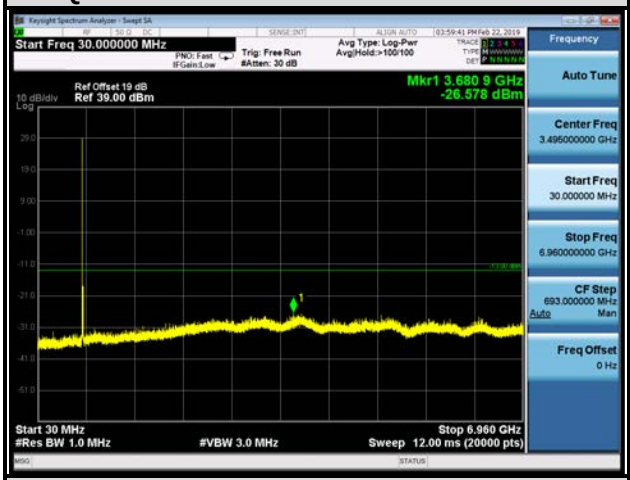
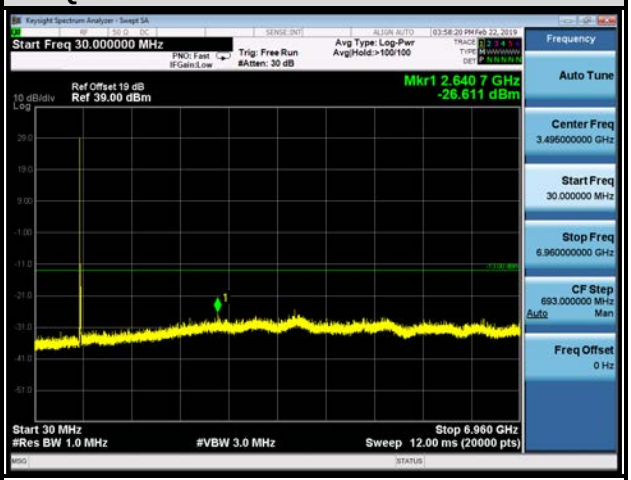
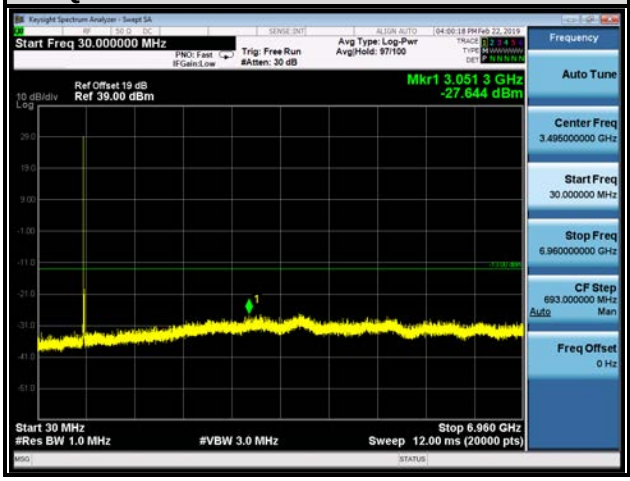
3.6.4 TEST RESULTS

LTE BAND 71

5MHz / QPSK	
CHANNEL 133147	CHANNEL 133297
FREQUENCY RANGE : 30MHz~6.96GHz	FREQUENCY RANGE : 30MHz~6.96GHz
	
CHANNEL 133447	
FREQUENCY RANGE : 30MHz~6.96GHz	
	

10MHz / QPSK	
CHANNEL 133172	CHANNEL 133297
FREQUENCY RANGE : 30MHz~6.96GHz	FREQUENCY RANGE : 30MHz~6.96GHz
	
CHANNEL 133442	
FREQUENCY RANGE : 30MHz~6.96GHz	
	

15MHz / QPSK	
CHANNEL 133197	CHANNEL 133297
FREQUENCY RANGE : 30MHz~6.96GHz	FREQUENCY RANGE : 30MHz~6.96GHz
	
CHANNEL 133397	
FREQUENCY RANGE : 30MHz~6.96GHz	
	

20MHz / QPSK	
CHANNEL 133222	CHANNEL 133322
FREQUENCY RANGE : 30MHz~6.96GHz	FREQUENCY RANGE : 30MHz~6.96GHz
	
CHANNEL 133372	
FREQUENCY RANGE : 30MHz~6.96GHz	
	

3.7 RADIATED EMISSION MEASUREMENT

3.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm

3.7.2 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.

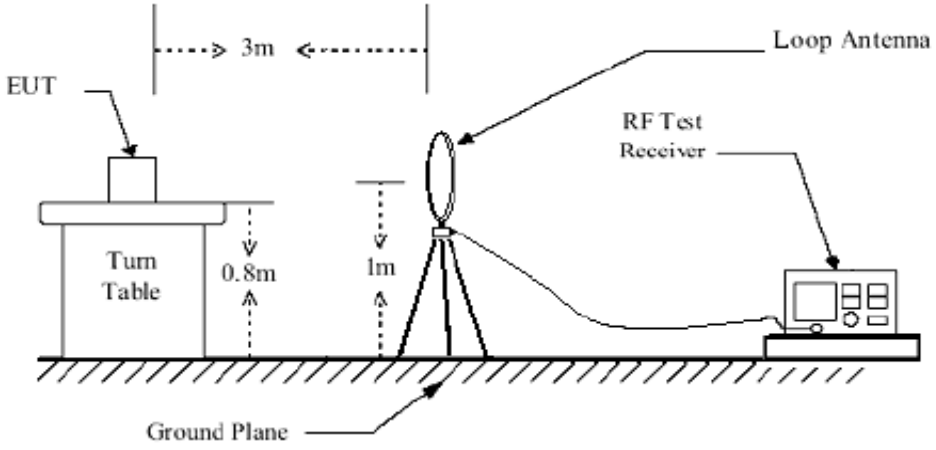
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.7.3 DEVIATION FROM TEST STANDARD

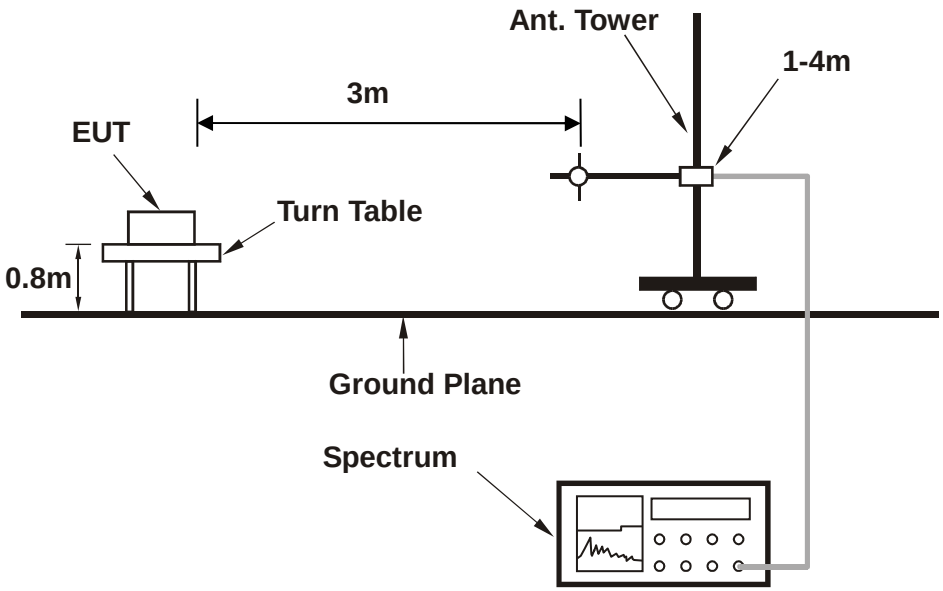
No deviation

3.7.4 TEST SETUP

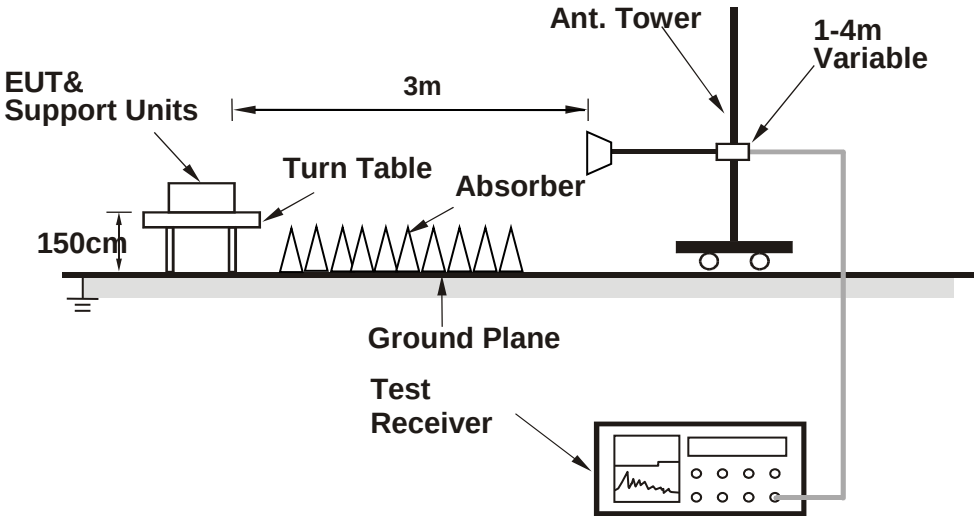
<Below 30MHz>



< Frequency Range 30MHz~1GHz >



< Frequency Range above 1GHz >



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

3.7.5 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

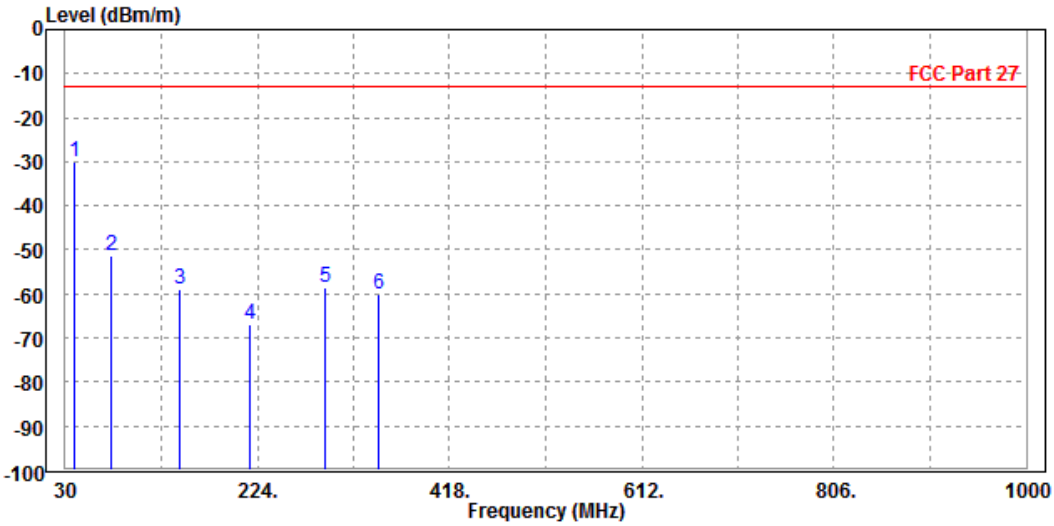
9 KHz – 30 MHz data: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

30 MHz – 1GHz data:

LTE Band 71:

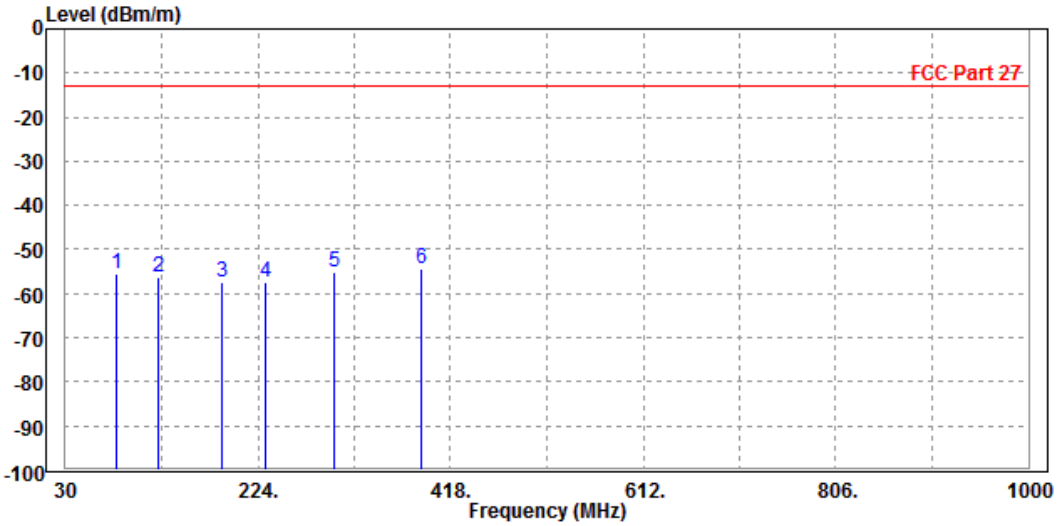
MODE	TX channel 133297	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 15V from adapter
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	38.920	-30.20	-42.35	-13.00	-17.20	12.15	Peak	Horizontal
2	76.380	-51.52	-42.17	-13.00	-38.52	-9.35	Peak	Horizontal
3	145.760	-59.06	-39.89	-13.00	-46.06	-19.17	Peak	Horizontal
4	216.720	-66.83	-49.92	-13.00	-53.83	-16.91	Peak	Horizontal
5	292.270	-58.45	-44.26	-13.00	-45.45	-14.19	Peak	Horizontal
6	345.690	-59.90	-47.62	-13.00	-46.90	-12.28	Peak	Horizontal



MODE	TX channel 133297	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 15V from adapter
TESTED BY	Rose Ma		
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	81.270	-55.42	-45.14	-13.00	-42.42	-10.28	Peak	Vertical
2	123.670	-56.19	-43.68	-13.00	-43.19	-12.51	Peak	Vertical
3	187.660	-57.31	-45.11	-13.00	-44.31	-12.20	Peak	Vertical
4	231.470	-57.51	-46.32	-13.00	-44.51	-11.19	Peak	Vertical
5	301.230	-54.95	-43.66	-13.00	-41.95	-11.29	Peak	Vertical
6 PP	389.270	-54.23	-43.26	-13.00	-41.23	-10.97	Peak	Vertical



ABOVE 1GHz

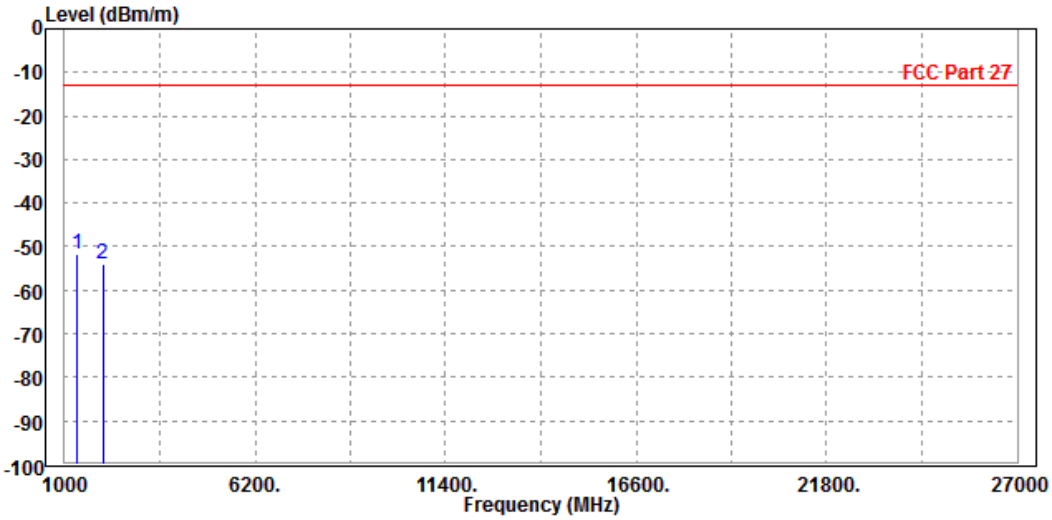
Note: For higher frequency, the emission is too low to be detected.

LTE BAND 71

CHANNEL BANDWIDTH: 5MHz / QPSK

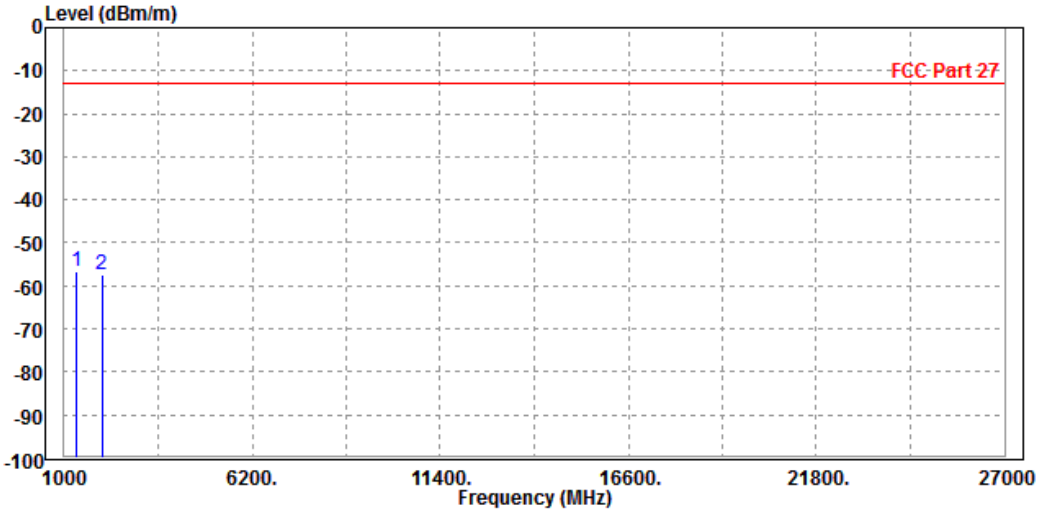
MODE	TX channel 133297	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 15V from adapter
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1361.000	-51.74	-44.68	-13.00	-38.74	-7.06	Peak	Horizontal
2	2041.500	-53.83	-51.83	-13.00	-40.83	-2.00	Peak	Horizontal



MODE	TX channel 133297	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 15V from adapter
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

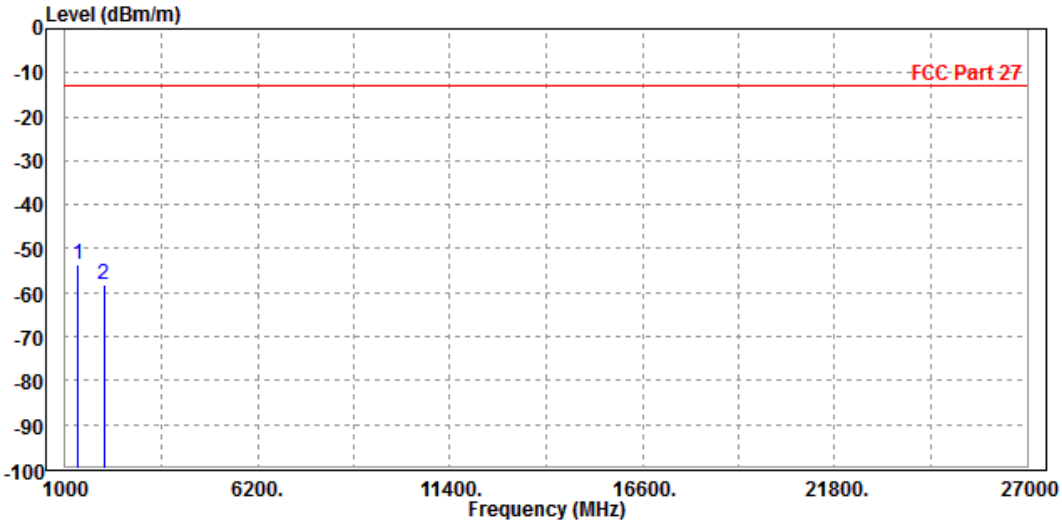
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1361.000	-56.81	-51.04	-13.00	-43.81	-5.77	Peak	Vertical
2	2041.500	-57.24	-56.98	-13.00	-44.24	-0.26	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz / QPSK

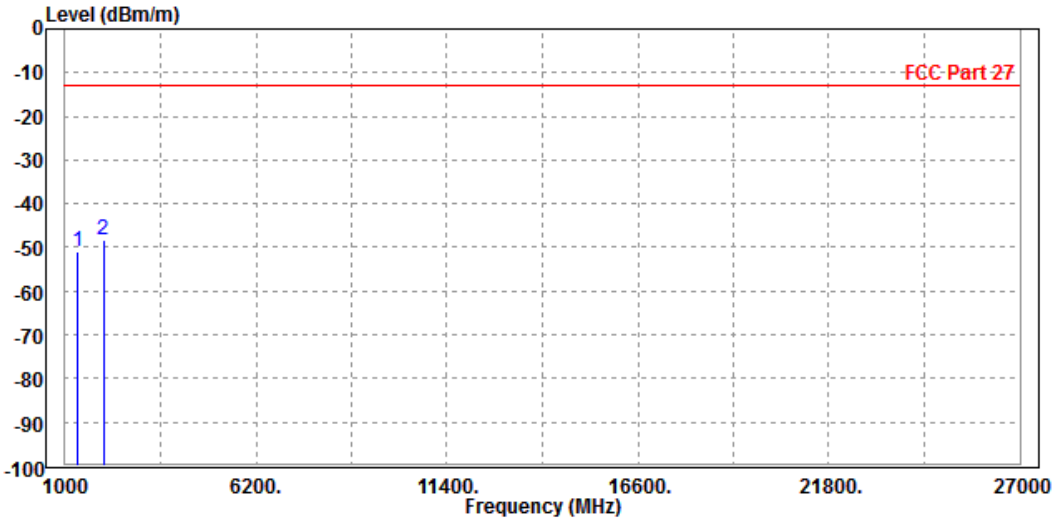
MODE	TX channel 133297	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 15V from adapter
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1361.000	-53.47	-46.41	-13.00	-40.47	-7.06	Peak	Horizontal
2		2041.500	-58.24	-56.24	-13.00	-45.24	-2.00	Peak	Horizontal



MODE	TX channel 133297	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 15V from adapter
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

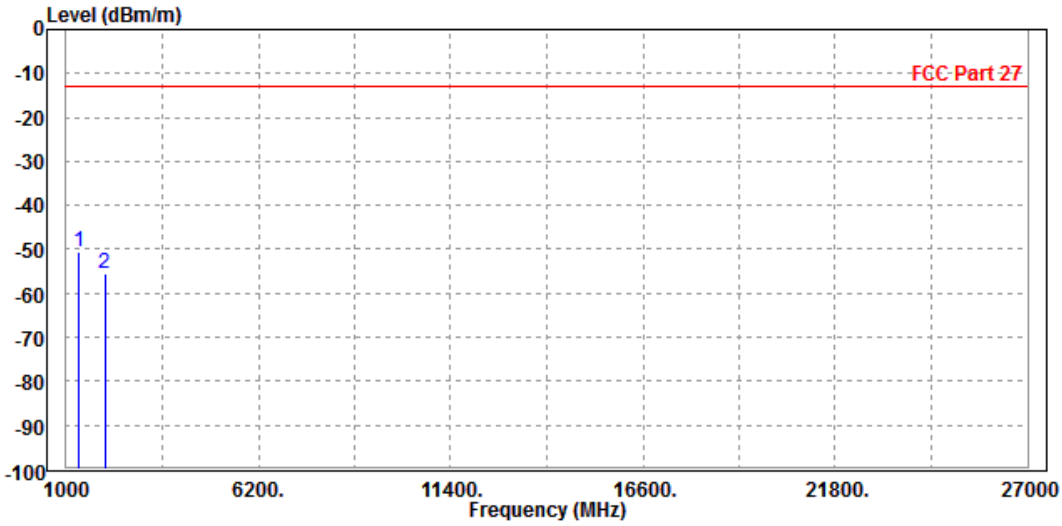
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1361.000	-50.91	-45.14	-13.00	-37.91	-5.77	Peak	Vertical
2 PP	2041.500	-48.12	-47.86	-13.00	-35.12	-0.26	Peak	Vertical



CHANNEL BANDWIDTH: 15MHz / QPSK

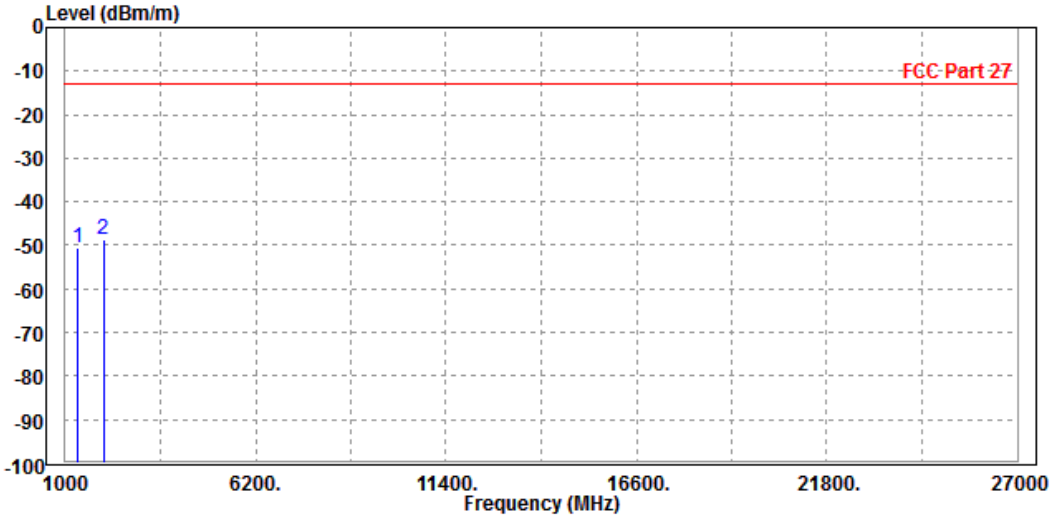
MODE	TX channel 133297	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 15V from adapter
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1361.000	-50.63	-43.57	-13.00	-37.63	-7.06	Peak	Horizontal
2	2041.500	-55.46	-53.46	-13.00	-42.46	-2.00	Peak	Horizontal



MODE	TX channel 133297	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 15V from adapter
TESTED BY	Rose Ma		
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	1361.000	-50.51	-44.74	-13.00	-37.51	-5.77	Peak	Vertical
2 PP	2041.500	-48.75	-48.49	-13.00	-35.75	-0.26	Peak	Vertical

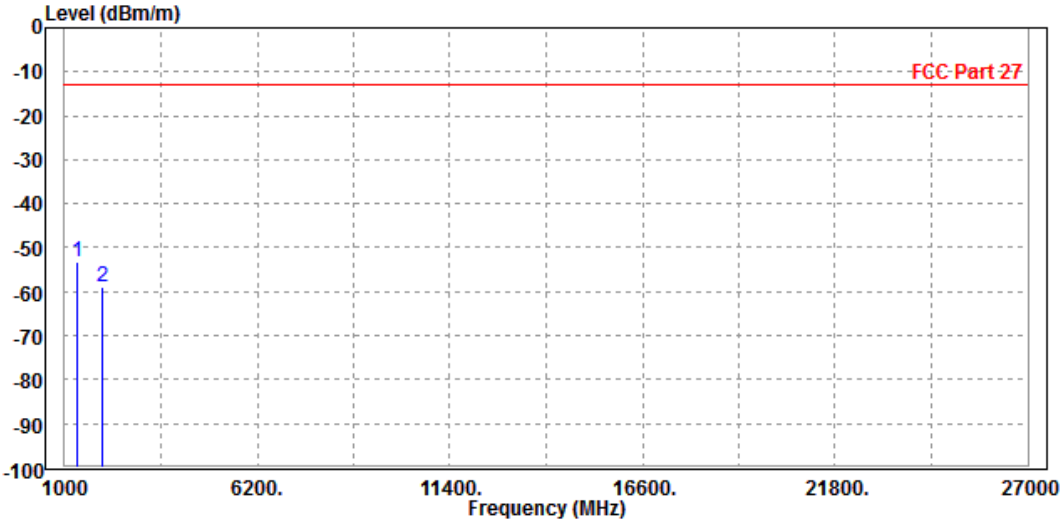


CHANNEL BANDWIDTH: 20MHz / QPSK

CH133222

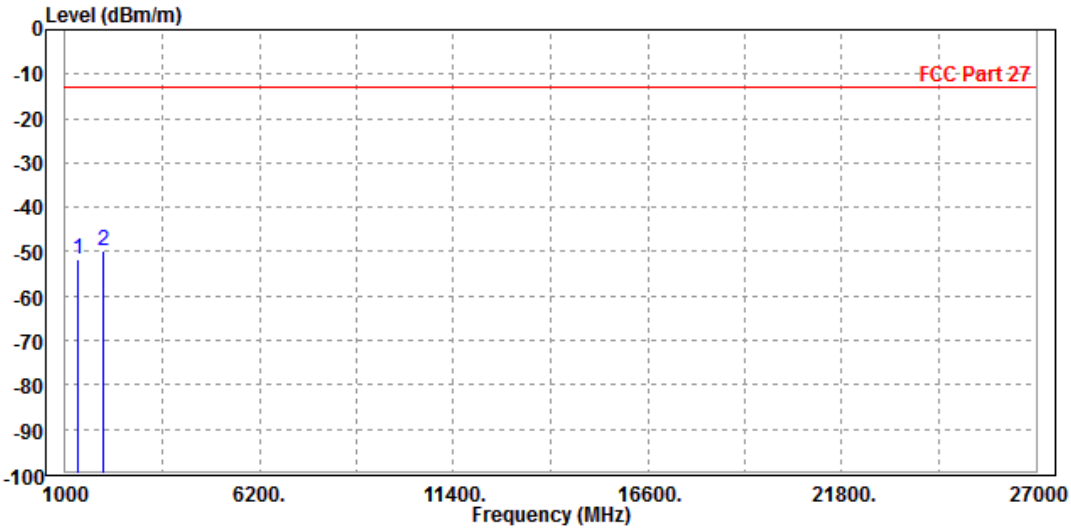
MODE	TX channel 133222	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 15V from adapter
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1346.000	-53.30	-46.15	-13.00	-40.30	-7.15	Peak	Horizontal
2	2019.000	-58.90	-56.88	-13.00	-45.90	-2.02	Peak	Horizontal



MODE	TX channel 133222	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 15V from adapter
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

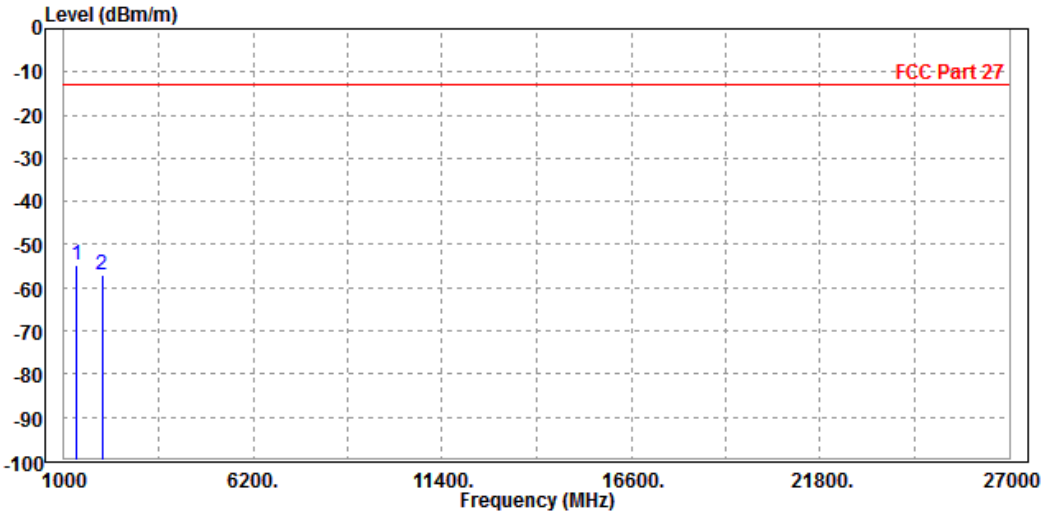
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1346.000	-51.64	-45.78	-13.00	-38.64	-5.86	Peak	Vertical
2 PP	2019.000	-49.83	-49.57	-13.00	-36.83	-0.26	Peak	Vertical



CH133322

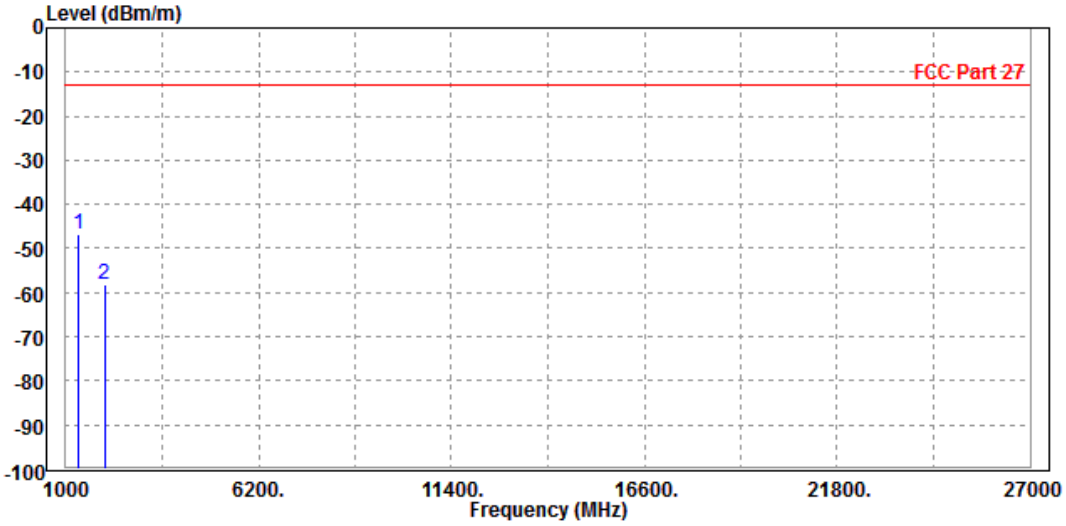
MODE	TX channel 133322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 15V from adapter
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1361.000	-54.71	-47.65	-13.00	-41.71	-7.06	Peak	Horizontal
2	2041.500	-57.14	-55.14	-13.00	-44.14	-2.00	Peak	Horizontal



MODE	TX channel 133322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 15V from adapter
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

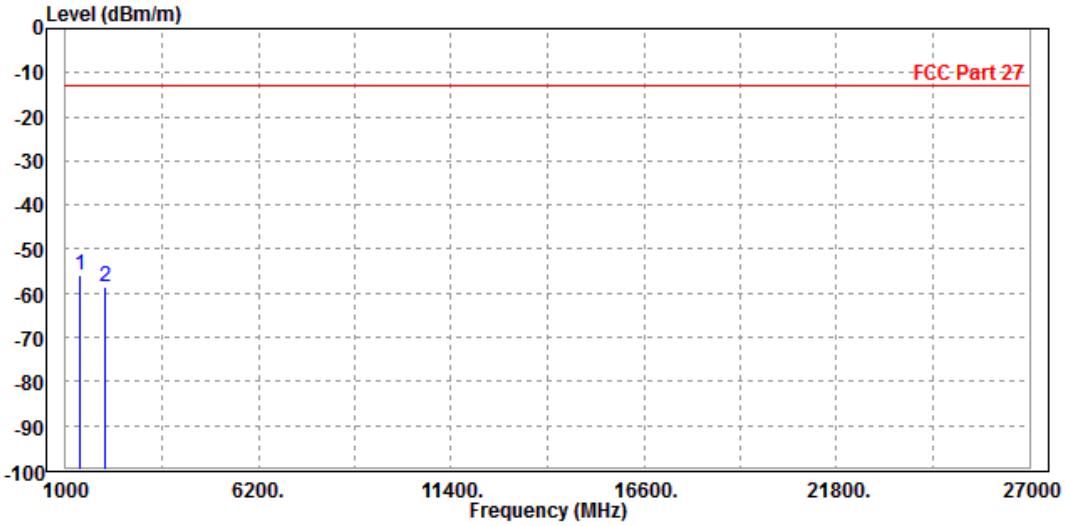
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1361.000	-46.89	-41.12	-13.00	-33.89	-5.77	Peak	Vertical
2	2041.500	-58.10	-57.84	-13.00	-45.10	-0.26	Peak	Vertical



CH133372

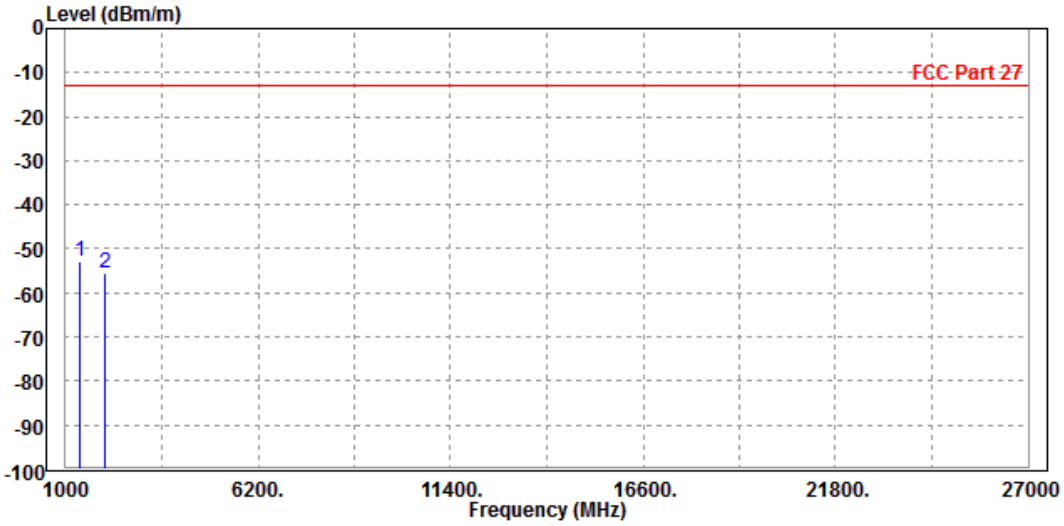
MODE	TX channel 133372	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 15V from adapter
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1376.000	-55.71	-48.75	-13.00	-42.71	-6.96	Peak	Horizontal
2	2064.000	-58.71	-56.73	-13.00	-45.71	-1.98	Peak	Horizontal



MODE	TX channel 133372	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 15V from adapter
TESTED BY	Rose Ma		
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	1376.000	-52.96	-47.28	-13.00	-39.96	-5.68	Peak	Vertical
2	2064.000	-55.44	-55.19	-13.00	-42.44	-0.25	Peak	Vertical



4 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Email: customerservice.dg@cn.bureauveritas.com
Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---