ACCREDITED
Certificate # 3939.01

FCC TEST REPORT

(PART 24)

Applicant:	Quectel Wireless Solutions Co., Ltd.
Address:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233

Manufacturer or Supplier	Quectel Wireless Solutions Co., Ltd.
Address	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233
Product	LTE Module
Brand Name	Quectel
Model Name	SC66-A
FCC ID	XMR201908SC66A
Date of tests	Jul. 13, 2019 ~ Sept. 06, 2019

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

☒ **FCC PART 24, Subpart E** ☒ **FCC PART 2**
☒ **ANSI/TIA/EIA-603-D** ☒ **ANSI/TIA/EIA-603-E** ☒ **ANSI C63.26-2015**

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
Alex Date: Sept. 09, 2019	Luke Lu Date: Sept. 09, 2019

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF190522W005-2	Original release	Sept. 09, 2019

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 24 & Part 2		
STANDARD SECTION	**TEST TYPE**	**RESULT**
2.1046 24.232	Equivalent Isotropic Radiated Power	Compliance
2.1055 24.235	Frequency Stability	Compliance
2.1049 24.238(b)	Occupied Bandwidth	Compliance
24.232(d)	Peak to average ratio	Compliance
24.238(b)	Band Edge Measurements	Compliance
2.1051 24.238	Conducted Spurious Emissions	Compliance
2.1053 24.238	Radiated Spurious Emissions	Compliance

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
Frequency Stability	±76.97Hz
Radiated emissions & Radiated Power (30MHz~1GMHz)	±4.98dB
Radiated emissions & Radiated Power (1GMHz ~6GMHz)	±4.70dB
Radiated emissions (6GMHz ~18GMHz)	±4.60dB
Radiated emissions (18GMHz ~40GMHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Band Edge Measurements	±4.70dB
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	ETS-LINDGREN	3143B	00161965	Feb. 26,19	Feb. 25,20
Horn Antenna (1GHz-18GHz)	ETS-LINDGREN	3117	00168692	Nov. 30, 18	Nov. 29, 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	Jun. 24,19	Jun. 23,20
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 24,19	Jun. 23,20
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Jun. 24,19	Jun. 23,20
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	Jun. 24,19	Jun. 23,20
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	Jun. 24,19	Jun. 23,20
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 26,19	Feb. 25,20
Power Divider	MCLI/USA	PS2-15	24880	Jul. 09,19	Jul. 08,20

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

PRODUCT	LTE Module	
BRAND NAME	Quectel	
MODEL NAME	SC66-A	
POWER SUPPLY	V_{min}=3.55Vdc, V_{nor}=4Vdc, V_{max}=4.4Vdc	
MODULATION TYPE	**WCDMA:** BPSK, QPSK **LTE:** QPSK, 16QAM	
FREQUENCY RANGE	**WCDMA**	1852.4MHz ~ 1907.6MHz
	LTE Band 2 Channel Bandwidth: 1.4MHz	1850.7MHz ~ 1909.3MHz
	LTE Band 2 Channel Bandwidth: 3MHz	1851.5MHz ~ 1908.5MHz
	LTE Band 2 Channel Bandwidth: 5MHz	1852.5MHz ~ 1907.5MHz
	LTE Band 2 Channel Bandwidth: 10MHz	1855.0MHz ~ 1905.0MHz
	LTE Band 2 Channel Bandwidth: 15MHz	1857.5MHz ~ 1902.5MHz
	LTE Band 2 Channel Bandwidth: 20MHz	1860.0MHz ~ 1900.0MHz
	LTE Band 25 Channel Bandwidth: 1.4MHz	1850.7MHz ~ 1914.3MHz
	LTE Band 25 Channel Bandwidth: 3MHz	1851.5MHz ~ 1913.5MHz
	LTE Band 25 Channel Bandwidth: 5MHz	1852.5MHz ~ 1912.5MHz
	LTE Band 25 Channel Bandwidth: 10MHz	1855.0MHz ~ 1910.0MHz
	LTE Band 25 Channel Bandwidth: 15MHz	1857.5MHz ~ 1907.5MHz
	LTE Band 25 Channel Bandwidth: 20MHz	1860.0MHz ~ 1905.0MHz

MAX. EIRP POWER	WCDMA	265.46 mW
	LTE Band 2 Channel Bandwidth: 1.4MHz	283.14 mW
	LTE Band 2 Channel Bandwidth: 3MHz	278.61 mW
	LTE Band 2 Channel Bandwidth: 5MHz	277.97 mW
	LTE Band 2 Channel Bandwidth: 10MHz	278.61 mW
	LTE Band 2 Channel Bandwidth: 15MHz	279.90 mW
	LTE Band 2 Channel Bandwidth: 20MHz	281.84 mW
	LTE Band 25 Channel Bandwidth: 1.4MHz	301.30 mW
	LTE Band 25 Channel Bandwidth: 3MHz	302.69 mW
	LTE Band 25 Channel Bandwidth: 5MHz	303.39 mW
	LTE Band 25 Channel Bandwidth: 10MHz	301.30 mW
	LTE Band 25 Channel Bandwidth: 15MHz	306.20 mW
	LTE Band 25 Channel Bandwidth: 20MHz	306.90 mW

EMISSION DESIGNATOR	**WCDMA**	4M15F9W
	LTE Band 2 Channel Bandwidth: 1.4MHz	QPSK: 1M08G7D
		16QAM: 1M08W7D
	LTE Band 2 Channel Bandwidth: 3MHz	QPSK: 2M69G7D
		16QAM: 2M69W7D
	LTE Band 2 Channel Bandwidth: 5MHz	QPSK: 4M48G7D
		16QAM: 4M49W7D
	LTE Band 2 Channel Bandwidth: 10MHz	QPSK: 8M94G7D
		16QAM: 8M95W7D
	LTE Band 2 Channel Bandwidth: 15MHz	QPSK: 13M4G7D
		16QAM: 13M4W7D
	LTE Band 2 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M8W7D
	LTE Band 25 Channel Bandwidth: 1.4MHz	QPSK: 1M08G7D
		16QAM: 1M08W7D
	LTE Band 25 Channel Bandwidth: 3MHz	QPSK: 2M68G7D
		16QAM: 2M68W7D
	LTE Band 25 Channel Bandwidth: 5MHz	QPSK: 4M47G7D
		16QAM: 4M47W7D
	LTE Band 25 Channel Bandwidth: 10MHz	QPSK: 8M94G7D
		16QAM: 8M92W7D
	LTE Band 25 Channel Bandwidth: 15MHz	QPSK: 13M4G7D
		16QAM: 13M4W7D
	LTE Band 25 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
ANTENNA TYPE	Fixed External Antenna with 1.38dBi gain	
HW VERSION	R1.0	
SW VERSION	SC66ANAR01A06	
I/O PORTS	Refer to user's manual	

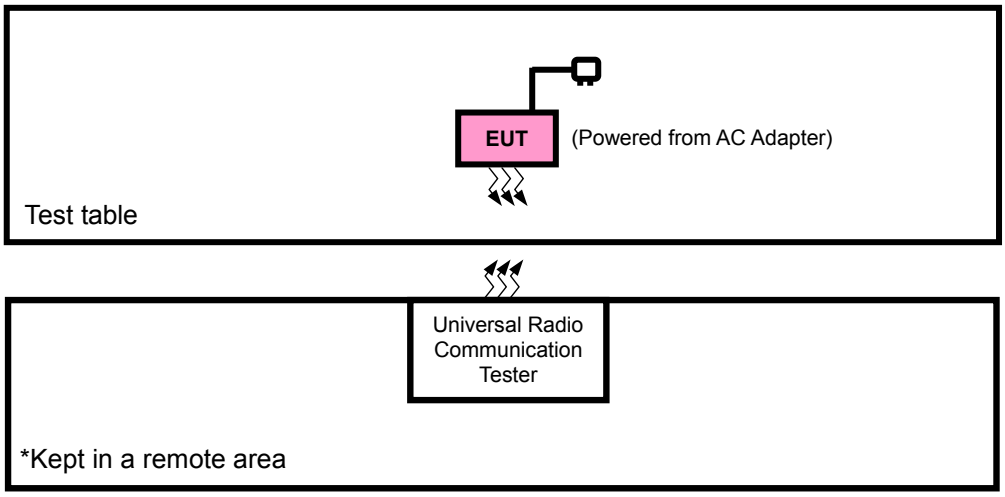
NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
WCDMA	1TX/1RX
LTE	1TX/1RX

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION 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	Adapter	JINGSAI	CLS-050200	N/A	N/A
2	DC source	LONG WEI	PS-6403D	010934269	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	Unshielded, Detachable 1.8m
2	DC Line: Unshielded, Detachable 1.0m

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 radiated emission was found when positioned on X-plane for WCDMA/ 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 WCDMA or LTE link**
B	EUT + Battery with **WCDMA or LTE link**

WCDMA MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
EIRP	9262 to 9538	9262, 9400, 9538	WCDMA
FREQUENCY STABILITY	9262 to 9538	9262, 9538	WCDMA
OCCUPIED BANDWIDTH	9262 to 9538	9262, 9400, 9538	WCDMA
PEAK TO AVERAGE RATIO	9262 to 9538	9262, 9400, 9538	WCDMA
BAND EDGE	9262 to 9538	9262, 9538	WCDMA
CONDCUDETED EMISSION	9262 to 9538	9262, 9400, 9538	WCDMA
RADIATED EMISSION	9262 to 9538	9262, 9400, 9538	WCDMA

LTE BAND 2

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
EIRP	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
FREQUENCY STABILITY	18607 to 19193	18607, 19193	1.4MHz	QPSK	1 RB / 0 RB Offset
	18615 to 19185	18615, 19185	3MHz	QPSK	1 RB / 0 RB Offset
	18625 to 19175	18625, 19175	5MHz	QPSK	1 RB / 0 RB Offset
	18650 to 19150	18650, 19150	10MHz	QPSK	1 RB / 0 RB Offset
	18675 to 19125	18675, 19125	15MHz	QPSK	1 RB / 0 RB Offset
	18700 to 19100	18700, 19100	20MHz	QPSK	1 RB / 0 RB Offset
OCCUPIED BANDWIDTH	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
PEAK TO AVERAGE RATIO	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM	1 RB / 0 RB Offset

BAND EDGE	18607 to 19193	18607	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
					6 RB / 0 RB Offset
		19193	1.4MHz	QPSK,16QAM	1 RB / 5 RB Offset
					6 RB / 0 RB Offset
	18615 to 19185	18615	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
					15 RB / 0 RB Offset
		19185	3MHz	QPSK,16QAM	1 RB / 14 RB Offset
					15 RB / 0 RB Offset
	18625 to 19175	18625	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
		19175	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	18650 to 19150	18650	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
		19150	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
					50 RB / 0 RB Offset
	18675 to 19125	18675	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
					75 RB / 0 RB Offset
		19125	15MHz	QPSK,16QAM	1 RB / 74 RB Offset
					75 RB / 0 RB Offset
	18700 to 19100	18700	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
					100 RB / 0 RB Offset
		19100	20MHz	QPSK,16QAM	1 RB / 99 RB Offset
					100 RB / 0 RB Offset
CONDCUDETED EMISSION	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK	1 RB / 0 RB Offset
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK	1 RB / 0 RB Offset
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK	1 RB / 0 RB Offset
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK	1 RB / 0 RB Offset
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK	1 RB / 0 RB Offset
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK	1 RB / 0 RB Offset
RADIATED EMISSION	18607 to 19193	18900	1.4MHz	QPSK	1 RB / 0 RB Offset
	18615 to 19185	18900	3MHz	QPSK	1 RB / 0 RB Offset
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK	1 RB / 0 RB Offset
	18650 to 19150	18900	10MHz	QPSK	1 RB / 0 RB Offset
	18675 to 19125	18900	15MHz	QPSK	1 RB / 0 RB Offset
	18700 to 19100	18900	20MHz	QPSK	1 RB / 0 RB Offset

LTE BAND 25

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
EIRP	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
	26055 to 26675	26055, 26365, 26675	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
	26065 to 26665	26065, 26365, 26665	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
	26090 to 26640	26090, 26365, 26640	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
	26115 to 26615	26115, 26365, 26615	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
	26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
FREQUENCY STABILITY	26047 to 26683	26047, 26683	1.4MHz	QPSK	1 RB / 0 RB Offset
	26055 to 26675	26055, 26675	3MHz	QPSK	1 RB / 0 RB Offset
	26065 to 26665	26065, 26665	5MHz	QPSK	1 RB / 0 RB Offset
	26090 to 26640	26090, 26640	10MHz	QPSK	1 RB / 0 RB Offset
	26115 to 26615	26115, 26615	15MHz	QPSK	1 RB / 0 RB Offset
	26140 to 26590	26140, 26590	20MHz	QPSK	1 RB / 0 RB Offset
OCCUPIED BANDWIDTH	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
	26055 to 26675	26055, 26365, 26675	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
	26065 to 26665	26065, 26365, 26665	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
	26090 to 26640	26090, 26365, 26640	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
	26115 to 26615	26115, 26365, 26615	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
	26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
PEAK TO AVERAGE RATIO	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
	26055 to 26675	26055, 26365, 26675	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
	26065 to 26665	26065, 26365, 26665	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
	26090 to 26640	26090, 26365, 26640	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
	26115 to 26615	26115, 26365, 26615	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
	26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM	1 RB / 0 RB Offset

BAND EDGE	26047 to 26683	26047	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
					6 RB / 0 RB Offset
		26683	1.4MHz	QPSK,16QAM	1 RB / 5 RB Offset
					6 RB / 0 RB Offset
	26055 to 26675	26055	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
					15 RB / 0 RB Offset
		26675	3MHz	QPSK,16QAM	1 RB / 14 RB Offset
					15 RB / 0 RB Offset
	26065 to 26665	26065	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
		26665	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	26090 to 26640	26090	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
		26640	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
					50 RB / 0 RB Offset
	26115 to 26615	26115	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
					75 RB / 0 RB Offset
		26615	15MHz	QPSK,16QAM	1 RB / 74 RB Offset
					75 RB / 0 RB Offset
	26140 to 26590	26140	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
					100 RB / 0 RB Offset
		26590	20MHz	QPSK,16QAM	1 RB / 99 RB Offset
					100 RB / 0 RB Offset
CONDCUDETED EMISSION	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK	1 RB / 0 RB Offset
	26055 to 26675	26055, 26365, 26675	3MHz	QPSK	1 RB / 0 RB Offset
	26065 to 26665	26065, 26365, 26665	5MHz	QPSK	1 RB / 0 RB Offset
	26090 to 26640	26090, 26365, 26640	10MHz	QPSK	1 RB / 0 RB Offset
	26115 to 26615	26115, 26365, 26615	15MHz	QPSK	1 RB / 0 RB Offset
	26140 to 26590	26140, 26365, 26590	20MHz	QPSK	1 RB / 0 RB Offset
RADIATED EMISSION	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK	1 RB / 0 RB Offset
	26055 to 26675	26365	3MHz	QPSK	1 RB / 0 RB Offset
	26065 to 26665	26365	5MHz	QPSK	1 RB / 0 RB Offset
	26090 to 26640	26365	10MHz	QPSK	1 RB / 0 RB Offset
	26115 to 26615	26365	15MHz	QPSK	1 RB / 0 RB Offset
	26140 to 26590	26365	20MHz	QPSK	1 RB / 0 RB Offset

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	23deg. C, 70%RH	5Vdc from adapter	Star Le
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.55V/4V/4.4V	Walker Ye
OCCUPIED BANDWIDTH	23deg. C, 70%RH	5Vdc from adapter	Walker Ye
BAND EDGE	23deg. C, 70%RH	5Vdc from adapter	Walker Ye
CONDCUDETED EMISSION	23deg. C, 70%RH	5Vdc from adapter	Walker Ye
RADIATED EMISSION	23deg. C, 70%RH	5Vdc from adapter	Star Le
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	5Vdc from adapter	Walker Ye

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 24

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 and portable stations are limited to 2 watts EIRP.

3.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determing the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

ERP or EIRP = $P_{Meas} + G_T - L_C$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as P_{Meas}, typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

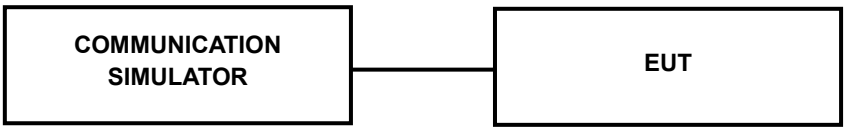
L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with WCDMA 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

CONDUCTED POWER MEASUREMENT:



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	WCDMA II		
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880	1907.6
RMC 12.2K	22.71	22.74	22.86
HSPA			
HSDPA Subtest-1	21.75	21.87	21.82
HSDPA Subtest-2	21.82	21.76	21.93
HSDPA Subtest-3	21.27	21.28	21.35
HSDPA Subtest-4	21.31	21.24	21.27
DC-HSDPA Subtest-1	21.69	21.78	21.85
DC-HSDPA Subtest-2	21.78	21.65	21.91
DC-HSDPA Subtest-3	21.19	21.33	21.29
DC-HSDPA Subtest-4	21.22	21.16	21.34
HSUPA Subtest-1	21.93	21.86	21.79
HSUPA Subtest-2	19.84	19.97	20.06
HSUPA Subtest-3	20.81	20.94	20.76
HSUPA Subtest-4	19.93	19.82	19.95
HSUPA Subtest-5	21.76	21.68	21.90

LTE Band 2							
BW	Modulation	RB Size	RB Offset	Low CH 18607	Mid CH 18900	High CH 19193	3GPP MPR (dB)
				Frequency 1850.7 MHz	Frequency 1880 MHz	Frequency 1909.3 MHz	
1.4MHz	QPSK	1	0	22.94	23.04	23.01	0
		1	2	22.96	23.06	23.06	0
		1	5	22.88	22.96	22.94	0
		3	0	22.92	23.03	23.05	0
		3	1	23.02	23.14	23.04	0
		3	3	22.91	23.01	22.99	0
		6	0	21.96	22.04	22.04	1
	16QAM	1	0	22.15	22.26	22.24	1
		1	2	22.26	22.33	22.35	1
		1	5	22.17	22.27	22.30	1
		3	0	21.01	21.13	21.09	1
		3	1	22.03	22.23	22.15	1
		3	3	21.98	22.10	22.10	1
		6	0	20.98	21.15	21.08	2

LTE Band 2							
BW	Modulation	RB Size	RB Offset	Low CH 18615	Mid CH 18900	High CH 19185	3GPP MPR (dB)
				Frequency 1851.5 MHz	Frequency 1880 MHz	Frequency 1908.5 MHz	
3MHz	QPSK	1	0	22.96	23.06	23.00	0
		1	7	22.92	23.07	23.06	0
		1	14	22.84	22.96	22.94	0
		8	0	21.91	22.06	22.05	1
		8	3	21.95	22.14	22.06	1
		8	7	21.88	22.08	22.03	1
		15	0	21.93	22.05	21.98	1
	16QAM	1	0	22.12	22.32	22.27	1
		1	7	22.23	22.36	22.33	1
		1	14	22.20	22.27	22.30	1
		8	0	19.97	20.14	20.09	2
		8	3	21.08	21.18	21.18	2
		8	7	21.00	21.08	21.06	2
		15	0	20.98	21.09	21.11	2

LTE Band 2							
BW	Modulation	RB Size	RB Offset	Low CH 18625	Mid CH 18900	High CH 19175	3GPP MPR (dB)
				Frequency 1852.5 MHz	Frequency 1880 MHz	Frequency 1907.5 MHz	
5MHz	QPSK	1	0	22.97	23.01	23.01	0
		1	12	22.97	23.04	23.06	0
		1	24	22.85	22.95	22.98	0
		12	0	21.94	22.06	22.02	1
		12	6	21.95	22.15	22.07	1
		12	13	21.92	22.04	22.04	1
		25	0	21.91	22.08	22.01	1
	16QAM	1	0	22.13	22.28	22.27	1
		1	12	22.20	22.39	22.32	1
		1	24	22.20	22.27	22.29	1
		12	0	19.97	20.12	20.06	2
		12	6	21.05	21.22	21.14	2
		12	13	20.95	21.10	21.09	2
		25	0	20.98	21.10	21.08	2

LTE Band 2							
BW	Modulation	RB Size	RB Offset	Low CH 18650	Mid CH 18900	High CH 19150	3GPP MPR (dB)
				Frequency 1855 MHz	Frequency 1880 MHz	Frequency 1905 MHz	
10MHz	QPSK	1	0	22.94	23.04	23.01	0
		1	24	22.97	23.04	23.07	0
		1	49	22.82	22.99	22.94	0
		25	0	21.95	22.05	22.05	1
		25	12	22.01	22.09	22.07	1
		25	25	21.90	22.01	22.03	1
		50	0	21.96	22.08	21.98	1
	16QAM	1	0	22.13	22.25	22.23	1
		1	24	22.25	22.35	22.35	1
		1	49	22.20	22.28	22.26	1
		25	0	19.99	20.10	20.12	2
		25	12	21.09	21.16	21.19	2
		25	25	20.94	21.11	21.06	2
		50	0	21.02	21.09	21.12	2

LTE Band 2							
BW	Modulation	RB Size	RB Offset	Low CH 18675	Mid CH 18900	High CH 19125	3GPP MPR (dB)
				Frequency 1857.5 MHz	Frequency 1880 MHz	Frequency 1902.5 MHz	
15MHz	QPSK	1	0	23.01	23.04	22.98	0
		1	37	22.95	23.09	23.02	0
		1	74	22.88	23.02	22.95	0
		36	0	21.92	22.06	22.06	1
		36	19	22.02	22.14	22.07	1
		36	39	21.88	22.02	22.03	1
		75	0	21.96	22.06	22.03	1
	16QAM	1	0	22.17	22.32	22.23	1
		1	37	22.24	22.36	22.35	1
		1	74	22.16	22.33	22.28	1
		36	0	20.03	20.10	20.13	2
		36	19	21.03	21.20	21.15	2
		36	39	20.99	21.09	21.09	2
		75	0	21.03	21.12	21.05	2

LTE Band 2							
BW	Modulation	RB Size	RB Offset	Low CH 18700	Mid CH 18900	High CH 19100	3GPP MPR (dB)
				Frequency 1860 MHz	Frequency 1880 MHz	Frequency 1900 MHz	
20MHz	QPSK	1	0	23.02	23.08	23.06	0
		1	50	22.99	23.12	23.08	0
		1	99	22.90	23.03	22.99	0
		50	0	21.98	22.11	22.07	1
		50	25	22.03	22.16	22.12	1
		50	50	21.96	22.09	22.05	1
		100	0	21.97	22.10	22.06	1
	16QAM	1	0	22.20	22.33	22.29	1
		1	50	22.28	22.41	22.37	1
		1	99	22.22	22.35	22.31	1
		50	0	20.05	20.18	20.14	2
		50	25	21.11	21.24	21.20	2
		50	50	21.02	21.15	21.11	2
		100	0	21.04	21.17	21.13	2

LTE Band 25							
BW	Modulation	RB Size	RB Offset	Low CH 26047	Mid CH 26365	High CH 26683	3GPP MPR (dB)
				Frequency 1850.7 MHz	Frequency 1882.5 MHz	Frequency 1914.3 MHz	
1.4MHz	QPSK	1	0	23.41	23.40	23.21	0
		1	2	23.15	23.07	22.93	0
		1	5	23.14	23.04	22.88	0
		3	0	23.28	23.21	23.09	0
		3	1	23.28	23.22	22.98	0
		3	3	23.09	23.01	22.85	0
		6	0	22.16	22.06	21.92	1
	16QAM	1	0	22.73	22.66	22.50	1
		1	2	22.43	22.32	22.20	1
		1	5	22.43	22.35	22.24	1
		3	0	22.34	22.28	22.10	1
		3	1	22.26	22.28	22.06	1
		3	3	22.14	22.08	21.94	1
		6	0	21.17	21.16	20.95	2

LTE Band 25							
BW	Modulation	RB Size	RB Offset	Low CH 26055	Mid CH 26365	High CH 26675	3GPP MPR (dB)
				Frequency 1851.5 MHz	Frequency 1882.5 MHz	Frequency 1913.5 MHz	
3MHz	QPSK	1	0	23.43	23.42	23.20	0
		1	7	23.11	23.08	22.93	0
		1	14	23.10	23.04	22.88	0
		8	0	22.27	22.24	22.09	1
		8	3	22.21	22.22	22.00	1
		8	7	22.06	22.08	21.89	1
		15	0	22.13	22.07	21.86	1
	16QAM	1	0	22.70	22.72	22.53	1
		1	7	22.40	22.35	22.18	1
		1	14	22.46	22.35	22.24	1
		8	0	21.30	21.29	21.10	2
		8	3	21.31	21.23	21.09	2
		8	7	21.16	21.06	20.90	2
		15	0	21.17	21.10	20.98	2

LTE Band 25							
BW	Modulation	RB Size	RB Offset	Low CH 26065	Mid CH 26365	High CH 26665	3GPP MPR (dB)
				Frequency 1852.5 MHz	Frequency 1882.5 MHz	Frequency 1912.5 MHz	
5MHz	QPSK	1	0	23.44	23.37	23.21	0
		1	12	23.16	23.05	22.93	0
		1	24	23.11	23.03	22.92	0
		12	0	22.30	22.24	22.06	1
		12	6	22.21	22.23	22.01	1
		12	13	22.10	22.04	21.90	1
		25	0	22.11	22.10	21.89	1
	16QAM	1	0	22.71	22.68	22.53	1
		1	12	22.37	22.38	22.17	1
		1	24	22.46	22.35	22.23	1
		12	0	21.30	21.27	21.07	2
		12	6	21.28	21.27	21.05	2
		12	13	21.11	21.08	20.93	2
		25	0	21.17	21.11	20.95	2

LTE Band 25							
BW	Modulation	RB Size	RB Offset	Low CH 26090	Mid CH 26365	High CH 26640	3GPP MPR (dB)
				Frequency 1855 MHz	Frequency 1882.5 MHz	Frequency 1910 MHz	
10MHz	QPSK	1	0	23.41	23.40	23.21	0
		1	24	23.16	23.05	22.94	0
		1	49	23.08	23.07	22.88	0
		25	0	22.31	22.23	22.09	1
		25	12	22.27	22.17	22.01	1
		25	25	22.08	22.01	21.89	1
		50	0	22.16	22.10	21.86	1
	16QAM	1	0	22.71	22.65	22.49	1
		1	24	22.42	22.34	22.20	1
		1	49	22.46	22.36	22.20	1
		25	0	21.32	21.25	21.13	2
		25	12	21.32	21.21	21.10	2
		25	25	21.10	21.09	20.90	2
		50	0	21.21	21.10	20.99	2

LTE Band 25							
BW	Modulation	RB Size	RB Offset	Low CH 26115	Mid CH 26365	High CH 26615	3GPP MPR (dB)
				Frequency 1857.5 MHz	Frequency 1882.5 MHz	Frequency 1907.5 MHz	
15MHz	QPSK	1	0	23.48	23.40	23.18	0
		1	37	23.14	23.10	22.89	0
		1	74	23.14	23.10	22.89	0
		36	0	22.28	22.24	22.10	1
		36	19	22.28	22.22	22.01	1
		36	39	22.06	22.02	21.89	1
		75	0	22.16	22.08	21.91	1
	16QAM	1	0	22.75	22.72	22.49	1
		1	37	22.41	22.35	22.20	1
		1	74	22.42	22.41	22.22	1
		36	0	21.36	21.25	21.14	2
		36	19	21.26	21.25	21.06	2
		36	39	21.15	21.07	20.93	2
		75	0	21.22	21.13	20.92	2

LTE Band 25							
BW	Modulation	RB Size	RB Offset	Low CH 26140	Mid CH 26365	High CH 26590	3GPP MPR (dB)
				Frequency 1860 MHz	Frequency 1882.5 MHz	Frequency 1905 MHz	
20MHz	QPSK	1	0	23.49	23.44	23.26	0
		1	50	23.18	23.13	22.95	0
		1	99	23.16	23.11	22.93	0
		50	0	22.34	22.29	22.11	1
		50	25	22.29	22.24	22.06	1
		50	50	22.14	22.09	21.91	1
		100	0	22.17	22.12	21.94	1
	16QAM	1	0	22.78	22.73	22.55	1
		1	50	22.45	22.40	22.22	1
		1	99	22.48	22.43	22.25	1
		50	0	21.38	21.33	21.15	2
		50	25	21.34	21.29	21.11	2
		50	50	21.18	21.13	20.95	2
		100	0	21.23	21.18	21.00	2

EIRP POWER (dBm)

WCDMA

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
9262	1852.4	22.71	1.38	24.09	256.45	2
9400	1880.0	22.74	1.38	24.12	258.23	2
9538	1907.6	22.86	1.38	24.24	265.46	2

LTE BAND 2

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	**Frequency (MHz)**	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18607	1850.7	23.02	1.38	24.40	275.42	2
18900	1880.0	23.14	1.38	24.52	283.14	2
19193	1908.3	23.06	1.38	24.44	277.97	2

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	**Frequency (MHz)**	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18607	1850.7	22.26	1.38	23.64	231.21	2
18900	1880.0	22.33	1.38	23.71	234.96	2
19193	1908.3	22.35	1.38	23.73	236.05	2

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18615	1851.5	22.96	1.38	24.34	271.64	2
18900	1880.0	23.07	1.38	24.45	278.61	2
19185	1908.5	23.06	1.38	24.44	277.97	2

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18615	1851.5	22.23	1.38	23.61	229.61	2
18900	1880.0	22.36	1.38	23.74	236.59	2
19185	1908.5	22.33	1.38	23.71	234.96	2

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18625	1852.5	22.97	1.38	24.35	272.27	2
18900	1880.0	23.04	1.38	24.42	276.69	2
19175	1907.5	23.06	1.38	24.44	277.97	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18625	1852.5	22.20	1.38	23.58	228.03	2
18900	1880.0	22.39	1.38	23.77	238.23	2
19175	1907.5	22.32	1.38	23.70	234.42	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18650	1855.0	22.97	1.38	24.35	272.27	2
18900	1880.0	23.04	1.38	24.42	276.69	2
19150	1905.0	23.07	1.38	24.45	278.61	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18650	1855.0	22.25	1.38	23.63	230.67	2
18900	1880.0	22.35	1.38	23.73	236.05	2
19150	1905.0	22.35	1.38	23.73	236.05	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	23.01	1.38	24.39	274.79	2
18900	1880.0	23.09	1.38	24.47	279.90	2
19125	1902.5	23.02	1.38	24.40	275.42	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	22.24	1.38	23.62	230.14	2
18900	1880.0	22.36	1.38	23.74	236.59	2
19125	1902.5	22.00	1.38	23.38	217.77	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	23.02	1.38	24.40	275.42	2
18900	1880.0	23.12	1.38	24.50	281.84	2
19125	1902.5	23.08	1.38	24.46	279.25	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	22.28	1.38	23.66	232.27	2
18900	1880.0	22.41	1.38	23.79	239.33	2
19125	1902.5	22.37	1.38	23.75	237.14	2

LTE BAND 25

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26047	1850.7	23.41	1.38	24.79	301.30	2
26340	1880.0	23.40	1.38	24.78	300.61	2
26683	1914.3	22.93	1.38	24.31	269.77	2

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26047	1850.7	22.73	1.38	24.11	257.63	2
26340	1880.0	22.66	1.38	24.04	253.51	2
26683	1914.3	22.50	1.38	23.88	244.34	2

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26055	1851.5	23.43	1.38	24.81	302.69	2
26340	1880.0	23.42	1.38	24.80	302.00	2
26675	1913.5	22.93	1.38	24.31	269.77	2

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26055	1851.5	22.70	1.38	24.08	255.86	2
26340	1880.0	22.72	1.38	24.10	257.04	2
26675	1913.5	22.53	1.38	23.91	246.04	2

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26065	1852.5	23.44	1.38	24.82	303.39	2
26340	1880.0	23.37	1.38	24.75	298.54	2
26665	1912.5	23.21	1.38	24.59	287.74	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26065	1852.5	22.71	1.38	24.09	256.45	2
26340	1880.0	22.68	1.38	24.06	254.68	2
26665	1912.5	22.53	1.38	23.91	246.04	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26090	1855.0	23.41	1.38	24.79	301.30	2
26340	1880.0	23.40	1.38	24.78	300.61	2
26640	1910.0	23.21	1.38	24.59	287.74	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26090	1855.0	22.71	1.38	24.09	256.45	2
26340	1880.0	22.65	1.38	24.03	252.93	2
26640	1910.0	22.49	1.38	23.87	243.78	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26115	1857.5	23.48	1.38	24.86	306.20	2
26340	1880.0	23.40	1.38	24.78	300.61	2
26615	1907.5	23.18	1.38	24.56	285.76	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26115	1857.5	22.75	1.38	24.13	258.82	2
26340	1880.0	22.72	1.38	24.10	257.04	2
26615	1907.5	22.49	1.38	23.87	243.78	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26140	1860.0	23.49	1.38	24.87	306.90	2
26340	1880.0	23.44	1.38	24.82	303.39	2
26590	1905.0	23.26	1.38	24.64	291.07	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26140	1860.0	22.78	1.38	24.16	260.62	2
26340	1880.0	22.73	1.38	24.11	257.63	2
26590	1905.0	22.55	1.38	23.93	247.17	2

3.2 Frequency stability MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

3.2.2 TEST PROCEDURE

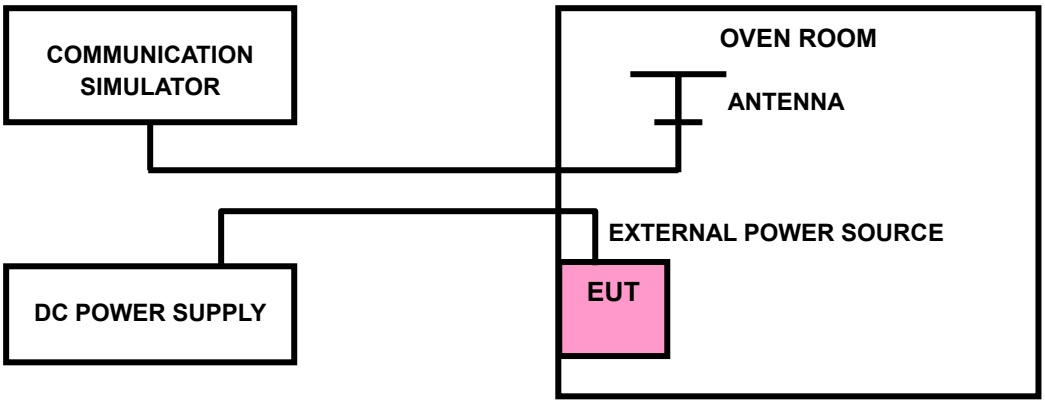
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

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

WCDMA BAND II

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
V_{nor}	0.0010	0.0011	2.5
V_{min}	-0.0011	-0.0009	2.5
V_{max}	0.0011	0.0011	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
-30	-0.0054	-0.0052	2.5
-20	-0.0044	-0.0047	2.5
-10	-0.0037	-0.0037	2.5
0	-0.0033	-0.0032	2.5
10	-0.0021	-0.0021	2.5
20	-0.0017	-0.0017	2.5
30	-0.0014	-0.0018	2.5
40	-0.0010	-0.0007	2.5
50	-0.0002	-0.0002	2.5

LTE BAND 2

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0019	0.0025	2.5
V_{min}	-0.0031	-0.0030	2.5
V_{max}	0.0021	0.0020	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0118	-0.0118	2.5
-20	-0.0101	-0.0109	2.5
-10	-0.0085	-0.0081	2.5
0	-0.0076	-0.0074	2.5
10	-0.0047	-0.0048	2.5
20	-0.0042	-0.0042	2.5
30	-0.0040	-0.0037	2.5
40	-0.0015	-0.0016	2.5
50	-0.0005	-0.0005	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0021	0.0021	2.5
V_{min}	-0.0021	-0.0025	2.5
V_{max}	0.0018	0.0018	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0115	-0.0110	2.5
-20	-0.0109	-0.0097	2.5
-10	-0.0084	-0.0082	2.5
0	-0.0078	-0.0073	2.5
10	-0.0056	-0.0051	2.5
20	-0.0039	-0.0040	2.5
30	-0.0038	-0.0024	2.5
40	-0.0021	-0.0020	2.5
50	-0.0004	-0.0005	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0021	0.0026	2.5
V_{min}	-0.0024	-0.0030	2.5
V_{max}	0.0022	0.0021	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0120	-0.0120	2.5
-20	-0.0105	-0.0104	2.5
-10	-0.0085	-0.0084	2.5
0	-0.0077	-0.0074	2.5
10	-0.0045	-0.0052	2.5
20	-0.0042	-0.0044	2.5
30	-0.0028	-0.0034	2.5
40	-0.0016	-0.0021	2.5
50	-0.0004	-0.0003	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0025	0.0025	2.5
V_{min}	-0.0031	-0.0030	2.5
V_{max}	0.0025	0.0025	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0117	-0.0121	2.5
-20	-0.0100	-0.0105	2.5
-10	-0.0084	-0.0082	2.5
0	-0.0078	-0.0072	2.5
10	-0.0052	-0.0046	2.5
20	-0.0038	-0.0039	2.5
30	-0.0038	-0.0042	2.5
40	-0.0017	-0.0016	2.5
50	-0.0005	-0.0006	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	15MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0024	0.0023	2.5
V_{min}	-0.0031	-0.0030	2.5
V_{max}	0.0025	0.0025	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	15MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0112	-0.0116	2.5
-20	-0.0104	-0.0109	2.5
-10	-0.0086	-0.0079	2.5
0	-0.0074	-0.0073	2.5
10	-0.0053	-0.0055	2.5
20	-0.0043	-0.0041	2.5
30	-0.0030	-0.0034	2.5
40	-0.0021	-0.0019	2.5
50	-0.0004	-0.0001	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	20MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0026	0.0024	2.5
V_{min}	-0.0030	-0.0030	2.5
V_{max}	0.0024	0.0026	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	20MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0122	-0.0116	2.5
-20	-0.0111	-0.0110	2.5
-10	-0.0081	-0.0080	2.5
0	-0.0078	-0.0073	2.5
10	-0.0054	-0.0049	2.5
20	-0.0043	-0.0043	2.5
30	-0.0027	-0.0028	2.5
40	-0.0020	-0.0018	2.5
50	-0.0004	-0.0003	2.5

LTE BAND 25

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0019	0.0023	2.5
V_{min}	-0.0031	-0.0030	2.5
V_{max}	0.0021	0.0021	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0123	-0.0117	2.5
-20	-0.0106	-0.0105	2.5
-10	-0.0082	-0.0083	2.5
0	-0.0076	-0.0074	2.5
10	-0.0050	-0.0046	2.5
20	-0.0045	-0.0042	2.5
30	-0.0041	-0.0037	2.5
40	-0.0020	-0.0019	2.5
50	-0.0005	-0.0003	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0021	0.0021	2.5
V_{min}	-0.0021	-0.0025	2.5
V_{max}	0.0018	0.0018	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0121	-0.0117	2.5
-20	-0.0112	-0.0099	2.5
-10	-0.0081	-0.0080	2.5
0	-0.0076	-0.0076	2.5
10	-0.0052	-0.0048	2.5
20	-0.0043	-0.0041	2.5
30	-0.0033	-0.0029	2.5
40	-0.0017	-0.0021	2.5
50	-0.0003	-0.0003	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0021	0.0025	2.5
V_{min}	-0.0024	-0.0030	2.5
V_{max}	0.0022	0.0021	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0115	-0.0118	2.5
-20	-0.0113	-0.0107	2.5
-10	-0.0082	-0.0083	2.5
0	-0.0077	-0.0073	2.5
10	-0.0045	-0.0044	2.5
20	-0.0039	-0.0038	2.5
30	-0.0032	-0.0029	2.5
40	-0.0019	-0.0019	2.5
50	-0.0006	-0.0005	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0024	0.0024	2.5
V_{min}	-0.0031	-0.0030	2.5
V_{max}	0.0024	0.0024	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0113	-0.0114	2.5
-20	-0.0112	-0.0099	2.5
-10	-0.0081	-0.0081	2.5
0	-0.0076	-0.0073	2.5
10	-0.0049	-0.0051	2.5
20	-0.0038	-0.0040	2.5
30	-0.0024	-0.0030	2.5
40	-0.0023	-0.0021	2.5
50	-0.0002	-0.0005	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	15MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0024	0.0026	2.5
V_{min}	-0.0031	-0.0030	2.5
V_{max}	0.0025	0.0025	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	15MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0122	-0.0114	2.5
-20	-0.0103	-0.0108	2.5
-10	-0.0082	-0.0080	2.5
0	-0.0077	-0.0073	2.5
10	-0.0055	-0.0050	2.5
20	-0.0040	-0.0038	2.5
30	-0.0027	-0.0034	2.5
40	-0.0019	-0.0016	2.5
50	-0.0005	-0.0006	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	20MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0024	0.0025	2.5
V_{min}	-0.0031	-0.0031	2.5
V_{max}	0.0026	0.0025	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

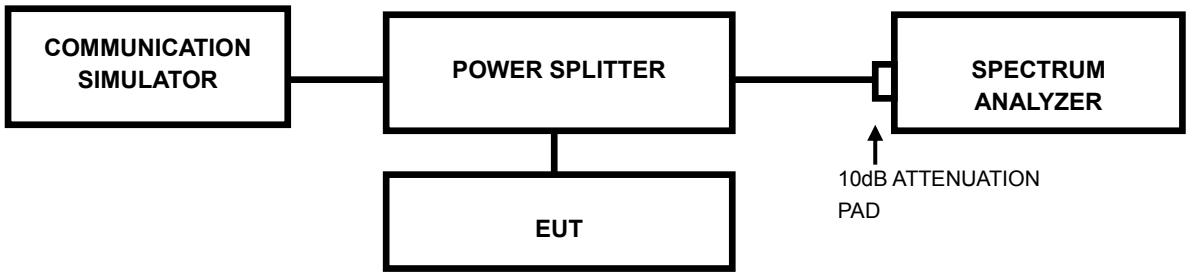
TEMP. (℃)	20MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0121	-0.0119	2.5
-20	-0.0111	-0.0104	2.5
-10	-0.0086	-0.0080	2.5
0	-0.0077	-0.0073	2.5
10	-0.0048	-0.0054	2.5
20	-0.0044	-0.0037	2.5
30	-0.0029	-0.0033	2.5
40	-0.0015	-0.0021	2.5
50	-0.0003	-0.0002	2.5

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 TEST PROCEDURES

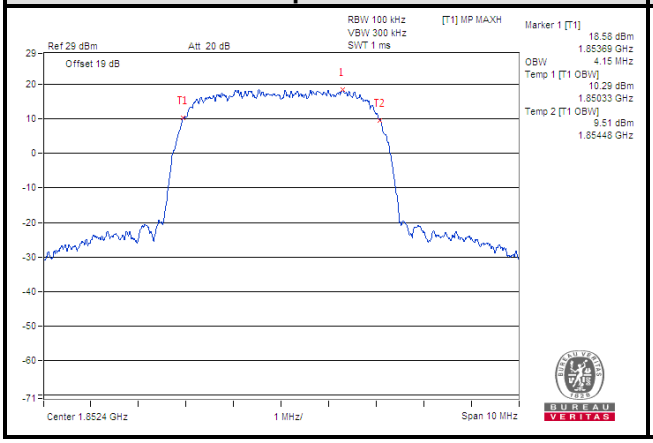
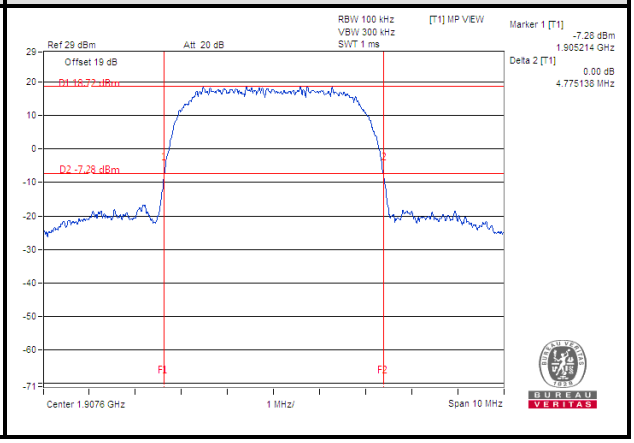
The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function 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)	26dB bandwidth (MHz)
		WCDMA	WCDMA
9262	1852.4	4.15	4.72
9400	1880.0	4.14	4.74
9538	1907.6	4.14	4.78

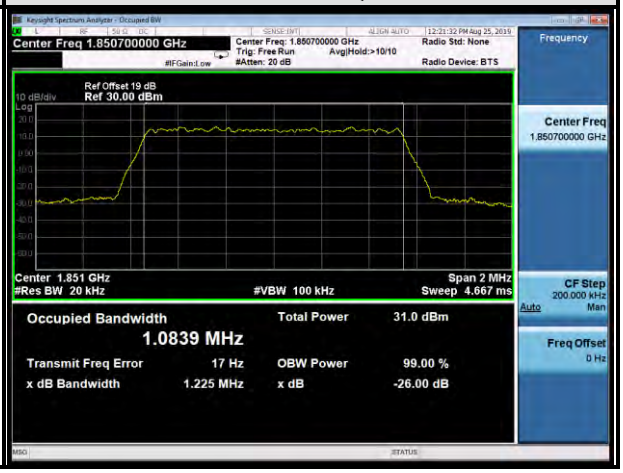
SPECTRUM PLOT OF WORST VALUE	
99% Occupied bandwidth	26dB bandwidth
	

LTE band 2					
Channel Bandwidth : 1.4MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26 dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
18607	1850.7	1.08	1.08	1.23	1.23
18900	1880	1.08	1.08	1.23	1.22
19193	1909.3	1.08	1.08	1.23	1.22

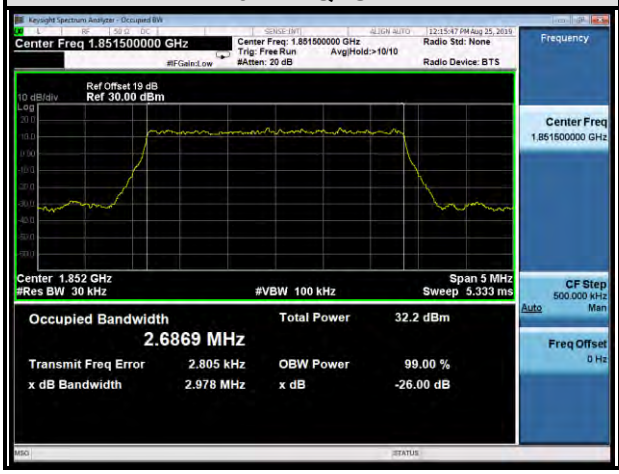
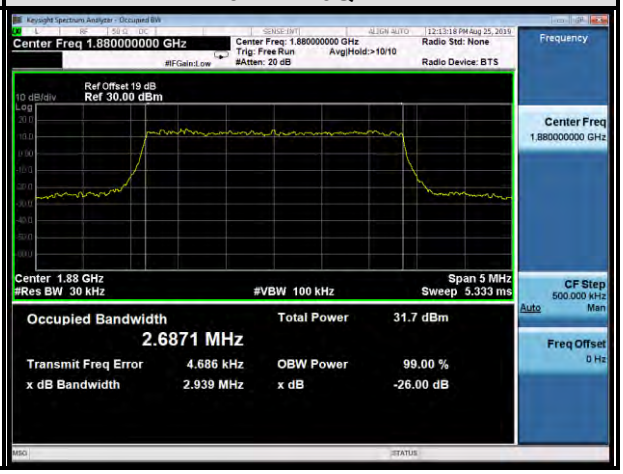
SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth/26 dB bandwidth

1.4MHz/QPSK

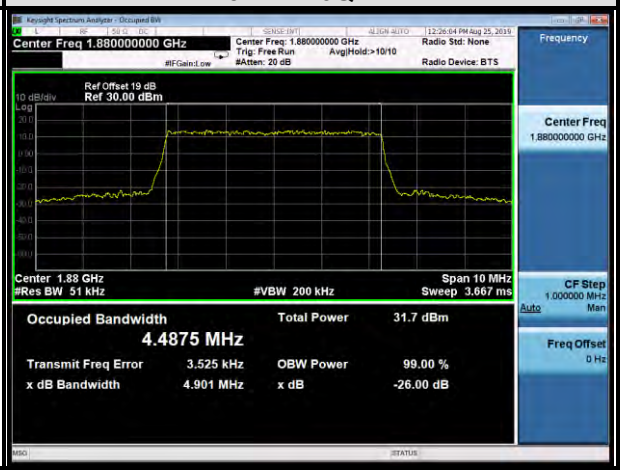
1.4MHz/16QAM



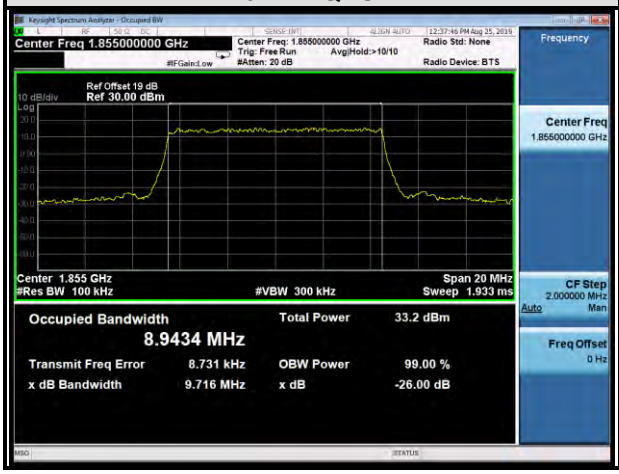
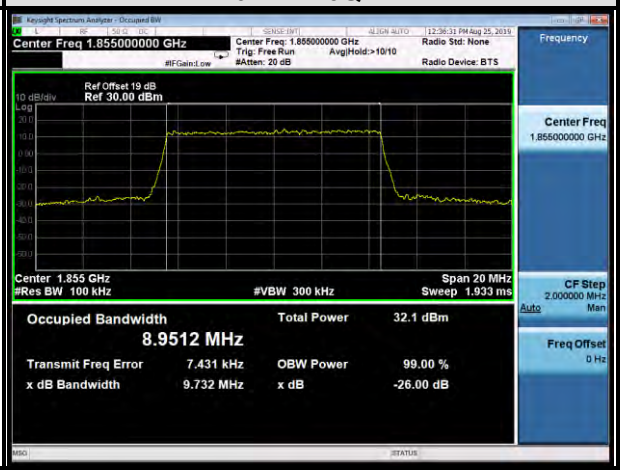
LTE band 2					
Channel Bandwidth : 3MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26 dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
18615	1851.5	2.69	2.68	2.98	2.94
18900	1880	2.69	2.69	2.99	2.94
19185	1908.5	2.69	2.68	3.00	2.94

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth/26 dB bandwidth	
3MHz/QPSK	3MHz/16QAM
	

LTE band 2					
Channel Bandwidth : 5MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26 dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
18625	1852.5	4.48	4.48	4.91	4.88
18900	1880	4.48	4.49	4.90	4.90
19175	1907.5	4.48	4.47	4.90	4.89

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth/26 dB bandwidth	
5MHz/QPSK	5MHz/16QAM
	

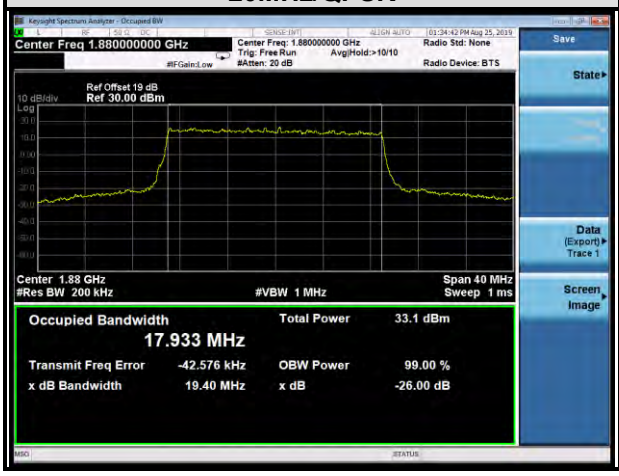
LTE band 2					
Channel Bandwidth : 10MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26 dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
18650	1855	8.94	8.95	9.72	9.73
18900	1880	8.94	8.95	9.78	9.73
19150	1905	8.94	8.94	9.70	9.73

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth/26 dB bandwidth	
10MHz/QPSK	10MHz/16QAM
	

LTE band 2					
Channel Bandwidth : 15MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26 dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
18675	1857.5	13.39	13.39	14.44	14.44
18900	1880	13.40	13.42	14.51	14.51
19125	1902.5	13.36	13.38	14.47	14.45

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth/26 dB bandwidth	
15MHz/QPSK	15MHz/16QAM

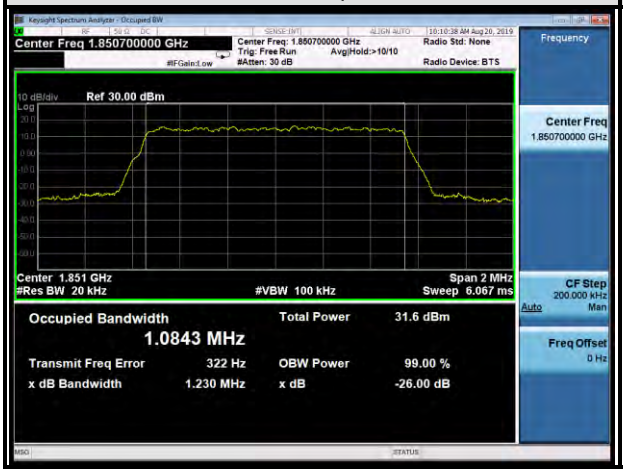
LTE band 2					
Channel Bandwidth : 20MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26 dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
18700	1860	17.90	17.82	19.38	19.07
18900	1880	17.93	17.84	19.40	19.10
19100	1900	17.88	17.79	19.23	18.99

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth/26 dB bandwidth	
20MHz/QPSK	20MHz/16QAM
	

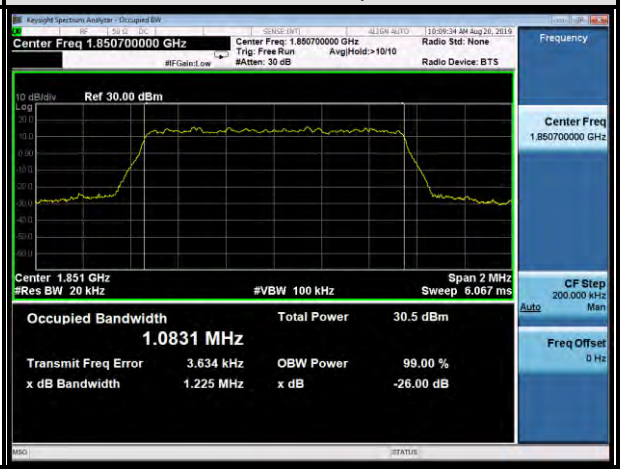
LTE band 25					
Channel Bandwidth : 1.4MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26 dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26047	1850.7	1.08	1.08	1.23	1.23
26365	1882.5	1.08	1.08	1.23	1.23
26683	1914.3	1.08	1.08	1.23	1.23

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth/26 dB bandwidth

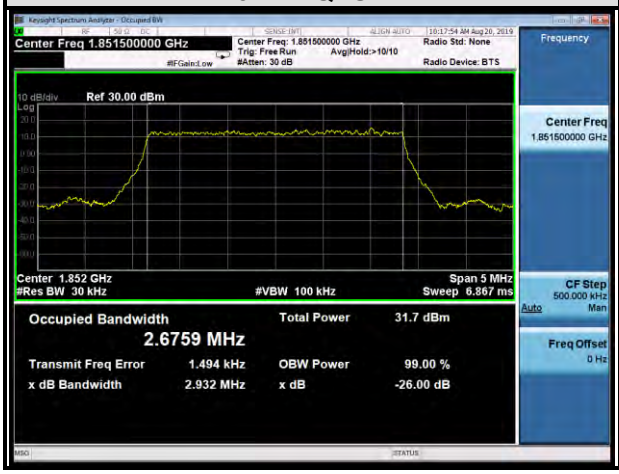
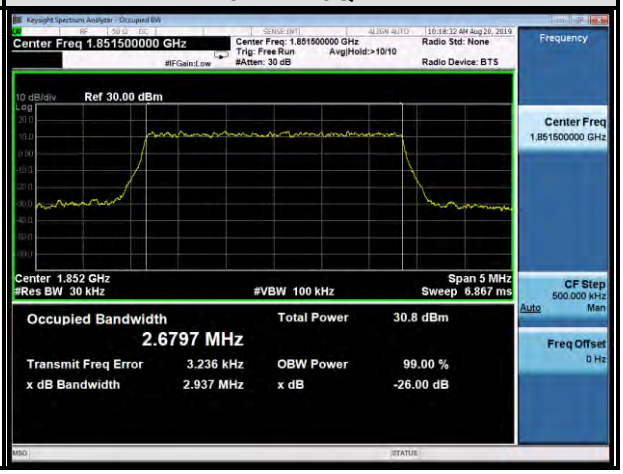
1.4MHz/QPSK



1.4MHz/16QAM



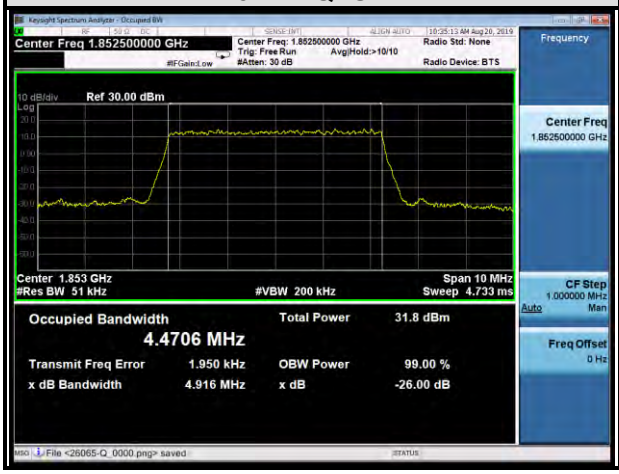
LTE band 25					
Channel Bandwidth : 3MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26 dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26055	1851.5	2.68	2.68	2.93	2.94
26365	1882.5	2.68	2.68	2.92	2.94
26675	1913.5	2.68	2.68	2.98	2.94

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth/26 dB bandwidth	
3MHz/QPSK	3MHz/16QAM
	

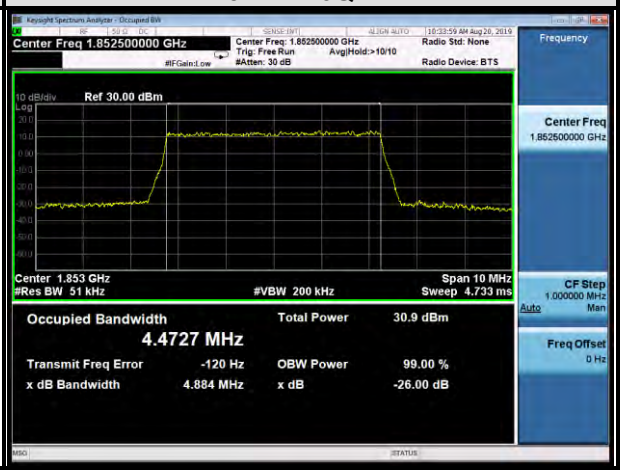
LTE band 25					
Channel Bandwidth : 5MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26 dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26065	1852.5	4.47	4.47	4.92	4.88
26365	1882.5	4.47	4.47	4.91	4.90
26665	1912.5	4.47	4.47	4.91	4.94

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth/26 dB bandwidth

5MHz/QPSK



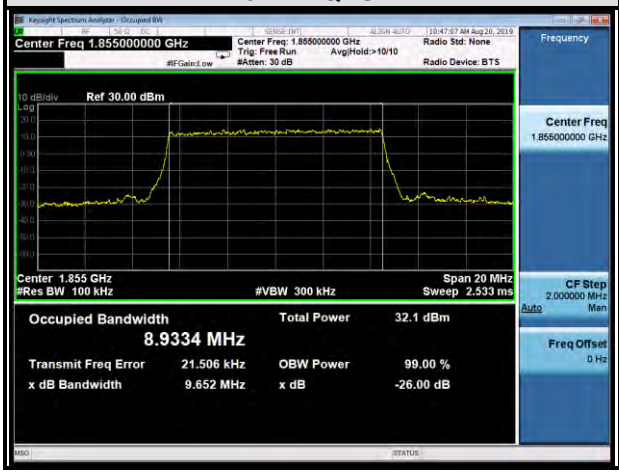
5MHz/16QAM



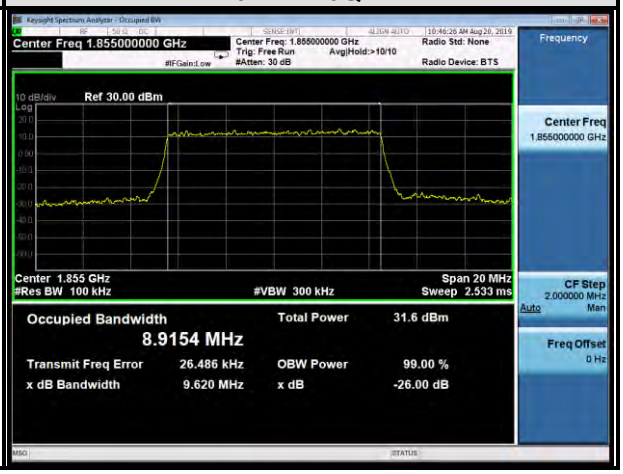
LTE band 25					
Channel Bandwidth : 10MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26 dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26090	1855	8.93	8.92	9.65	9.62
26365	1882.5	8.94	8.92	9.65	9.60
26640	1910	8.92	8.90	9.63	9.57

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth/26 dB bandwidth

10MHz/QPSK



10MHz/16QAM



LTE band 25					
Channel Bandwidth : 15MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26 dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26115	1857.5	13.40	13.38	14.40	14.40
26365	1882.5	13.41	13.40	14.44	14.49
26615	1907.5	13.40	13.39	14.47	14.45

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth/26 dB bandwidth	
15MHz/QPSK	15MHz/16QAM

LTE band 25					
Channel Bandwidth : 20MHz					
Channel	Frequency (MHz)	99% Occupied bandwidth (MHz)		26 dB bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
26140	1860	17.80	17.79	19.05	19.03
26365	1882.5	17.85	17.88	19.11	19.18
26590	1905	17.80	17.84	19.00	19.04

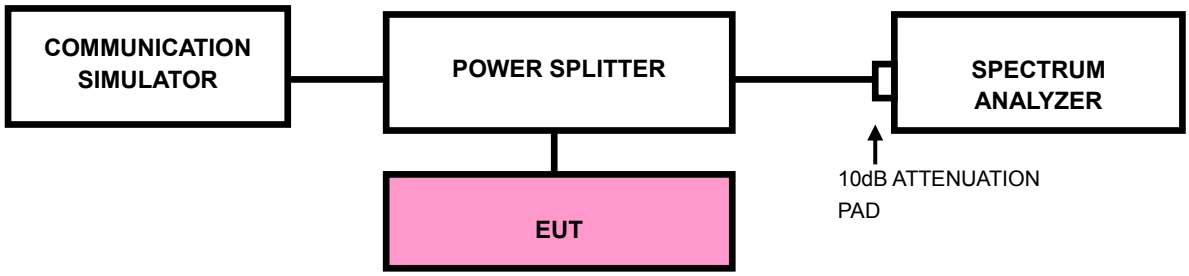
SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth/26 dB bandwidth	
20MHz/QPSK	20MHz/16QAM

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 1.5 MHz. RBW of the spectrum is 10kHz and VBW of the spectrum is 30kHz (GSM/GPRS/ EDGE).

c. 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 (WCDMA).

d. 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)

e. 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)

f. 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)

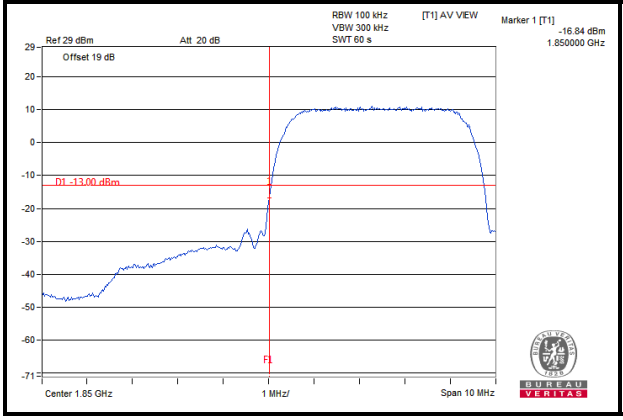
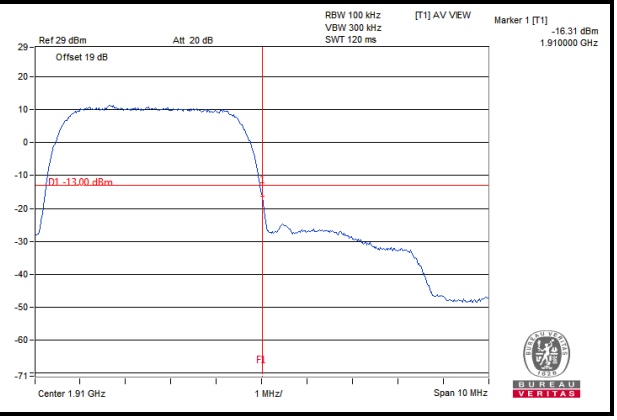
g. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz. (LTE bandwidth 10MHz)

h. 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)

i. he 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)

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

3.4.4. TEST RESULTS

WCDMA			
CHANNEL	9262	CHANNEL	9538
			

LTE BAND 2

Channel Bandwidth: 1.4MHz QPSK					
CHANNEL	18607	1 RB	CHANNEL	19193	1 RB
CHANNEL	18607	Full RB	CHANNEL	19193	Full RB

Channel Bandwidth: 1.4MHz 16QAM

CHANNEL	18607	1 RB	CHANNEL	19193	1 RB

CHANNEL	18607	Full RB	CHANNEL	19193	Full RB

LTE BAND 2

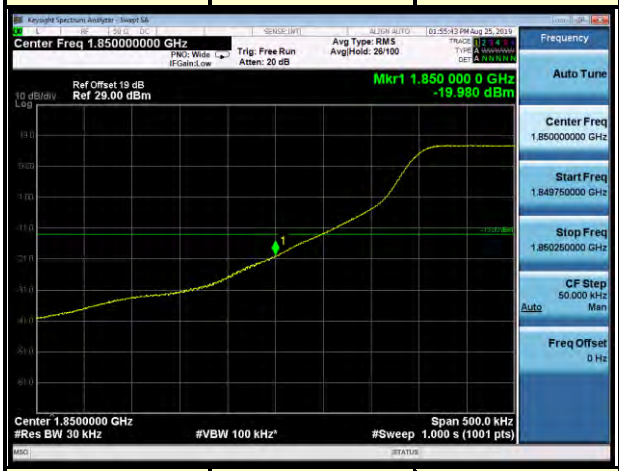
Channel Bandwidth: 3MHz QPSK

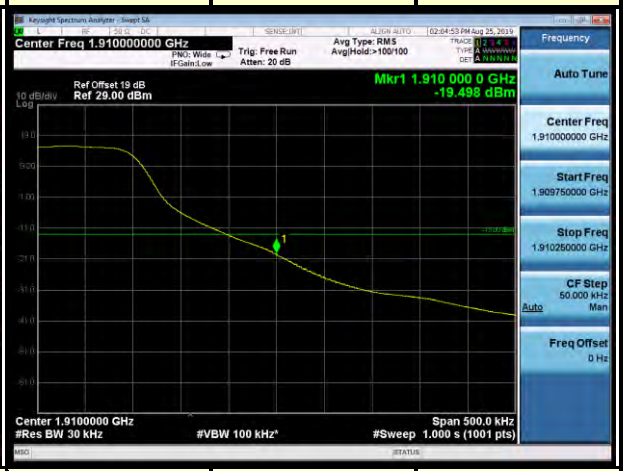
CHANNEL	18615	1 RB	CHANNEL	19185	1 RB

CHANNEL	18615	Full RB	CHANNEL	19185	Full RB

Channel Bandwidth: 3MHz 16QAM

CHANNEL	18615	1 RB	CHANNEL	19185	1 RB





CHANNEL	18615	Full RB	CHANNEL	19185	Full RB

LTE BAND 2

Channel Bandwidth: 5MHz QPSK

CHANNEL	18625	1 RB	CHANNEL	19175	1 RB

CHANNEL	18625	Full RB	CHANNEL	19175	Full RB

Channel Bandwidth: 5MHz 16QAM

CHANNEL	18625	1 RB	CHANNEL	19175	1 RB

CHANNEL	18625	Full RB	CHANNEL	19175	Full RB

LTE BAND 2

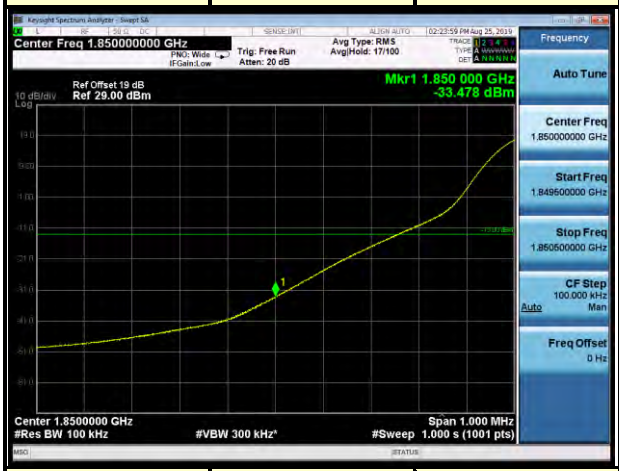
Channel Bandwidth: 10MHz QPSK

CHANNEL	18650	1 RB	CHANNEL	19150	1 RB

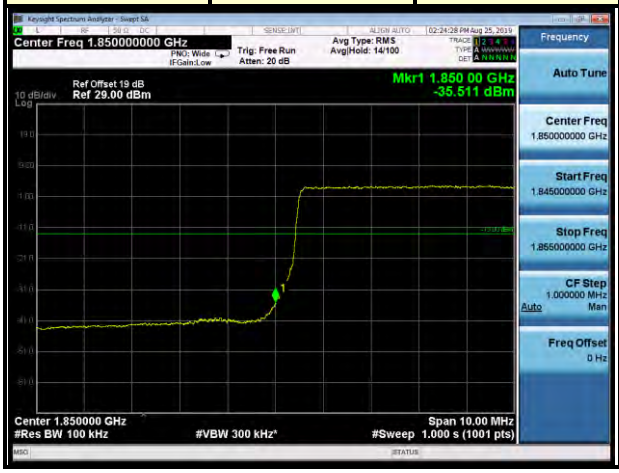
CHANNEL	18650	Full RB	CHANNEL	19150	Full RB

Channel Bandwidth: 10MHz 16QAM

CHANNEL	18650	1 RB	CHANNEL	19150	1 RB



CHANNEL	18650	Full RB	CHANNEL	19150	Full RB

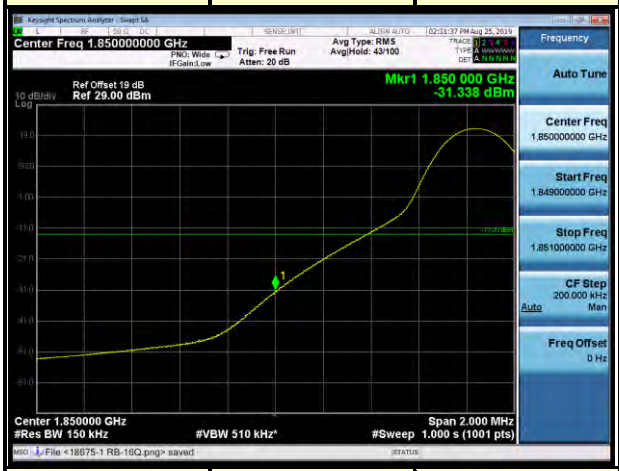


LTE BAND 2

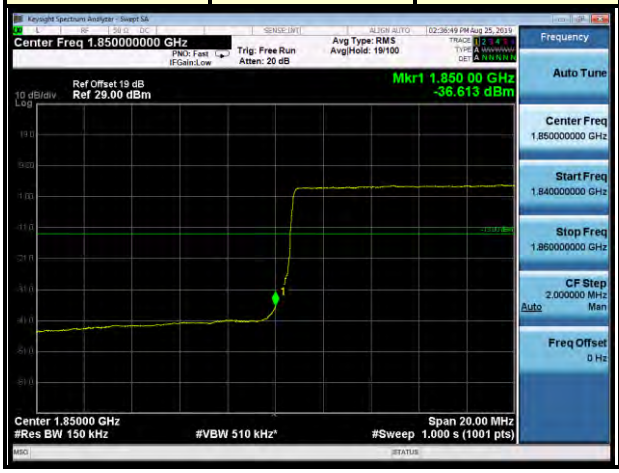
Channel Bandwidth: 15MHz QPSK					
CHANNEL	18675	1 RB	CHANNEL	19125	1 RB
CHANNEL	18675	Full RB	CHANNEL	19125	Full RB

Channel Bandwidth: 15MHz 16QAM

CHANNEL	18675	1 RB	CHANNEL	19125	1 RB



CHANNEL	18675	Full RB	CHANNEL	19125	Full RB



LTE BAND 2

Channel Bandwidth: 20MHz QPSK

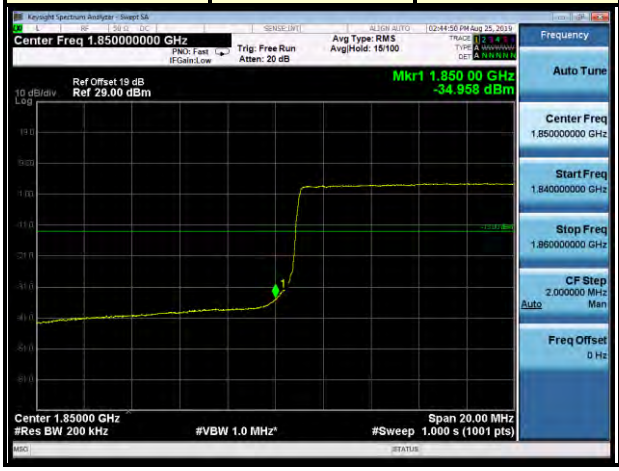
CHANNEL	18700	1 RB	CHANNEL	19100	1 RB

CHANNEL	18700	Full RB	CHANNEL	19100	Full RB

Channel Bandwidth: 20MHz 16QAM

CHANNEL	18700	1 RB	CHANNEL	19100	1 RB

CHANNEL	18700	Full RB	CHANNEL	19100	Full RB



LTE BAND 25

Channel Bandwidth: 1.4MHz QPSK					
CHANNEL	26047	1 RB	CHANNEL	26683	1 RB
CHANNEL	26047	Full RB	CHANNEL	26683	Full RB

Channel Bandwidth: 1.4MHz 16QAM

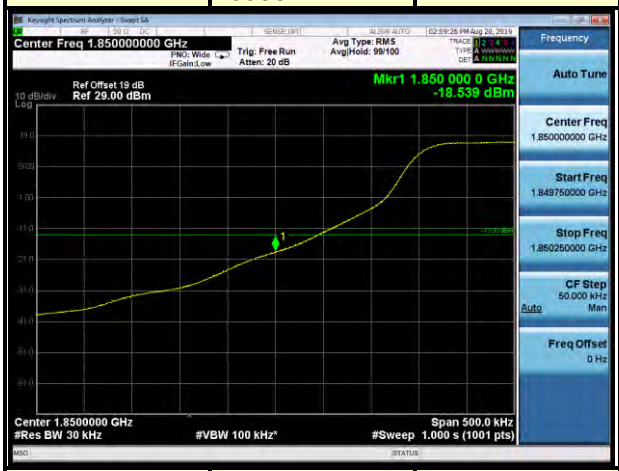
CHANNEL	26047	1 RB	CHANNEL	26683	1 RB

CHANNEL	26047	Full RB	CHANNEL	26683	Full RB

LTE BAND 25

Channel Bandwidth: 3MHz QPSK

CHANNEL	26055	1 RB	CHANNEL	26675	1 RB



CHANNEL	26055	Full RB	CHANNEL	26675	Full RB

Channel Bandwidth: 3MHz 16QAM

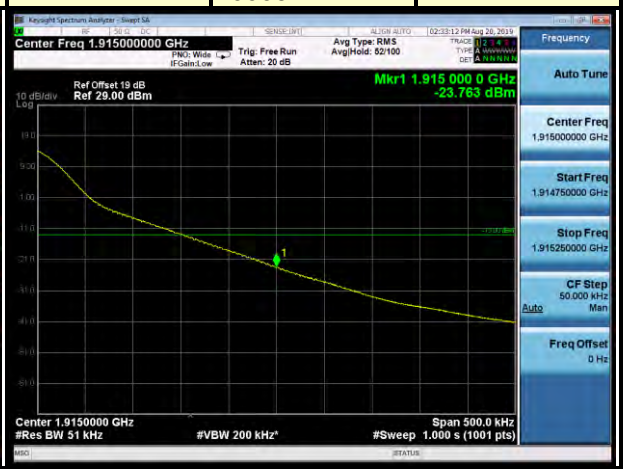
CHANNEL	26055	1 RB	CHANNEL	26675	1 RB

CHANNEL	26055	Full RB	CHANNEL	26675	Full RB

LTE BAND 25

Channel Bandwidth: 5MHz QPSK

CHANNEL	26065	1 RB	CHANNEL	26665	1 RB



CHANNEL	26065	Full RB	CHANNEL	26665	Full RB

Channel Bandwidth: 5MHz 16QAM

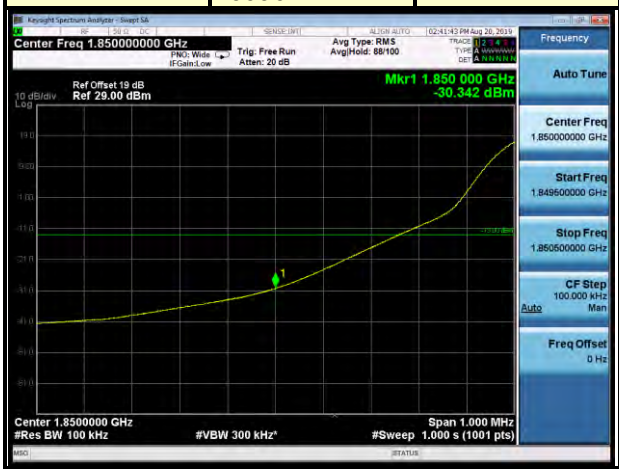
CHANNEL	26065	1 RB	CHANNEL	26665	1 RB

CHANNEL	26065	Full RB	CHANNEL	26665	Full RB

LTE BAND 25

Channel Bandwidth: 10MHz QPSK

CHANNEL	26090	1 RB	CHANNEL	26640	1 RB



CHANNEL	26090	Full RB	CHANNEL	26640	Full RB

Channel Bandwidth: 10MHz 16QAM

CHANNEL	26090	1 RB	CHANNEL	26640	1 RB

CHANNEL	26090	Full RB	CHANNEL	26640	Full RB

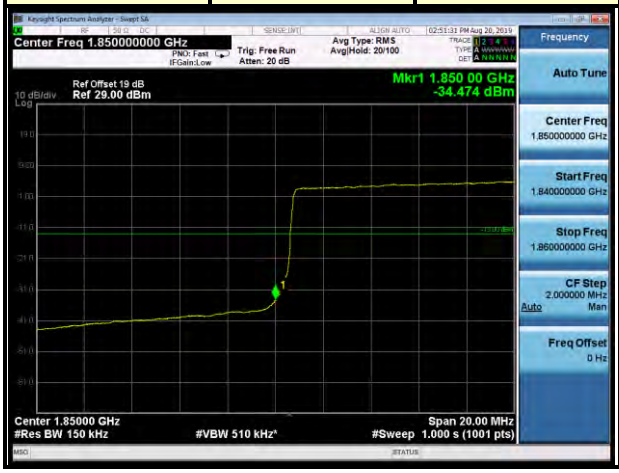
LTE BAND 25

Channel Bandwidth: 15MHz QPSK					
CHANNEL	26115	1 RB	CHANNEL	26615	1 RB
CHANNEL	26115	Full RB	CHANNEL	26615	Full RB

Channel Bandwidth: 15MHz 16QAM

CHANNEL	26115	1 RB	CHANNEL	26615	1 RB

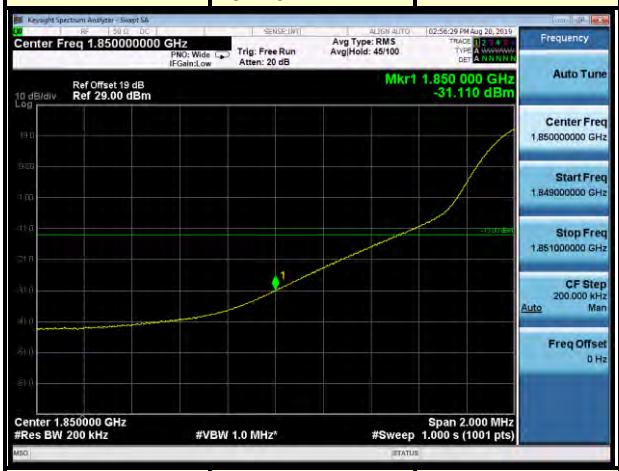
CHANNEL	26115	Full RB	CHANNEL	26615	Full RB



LTE BAND 25

Channel Bandwidth: 20MHz QPSK

CHANNEL	26140	1 RB	CHANNEL	26590	1 RB



CHANNEL	26140	Full RB	CHANNEL	26590	Full RB

Channel Bandwidth: 20MHz 16QAM

CHANNEL	26140	1 RB	CHANNEL	26590	1 RB

CHANNEL	26140	Full RB	CHANNEL	26590	Full RB

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

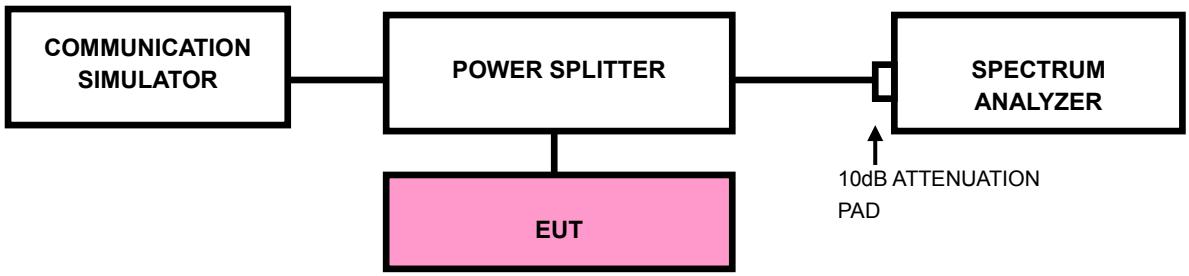
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

3.5.2 TEST PROCEDURE

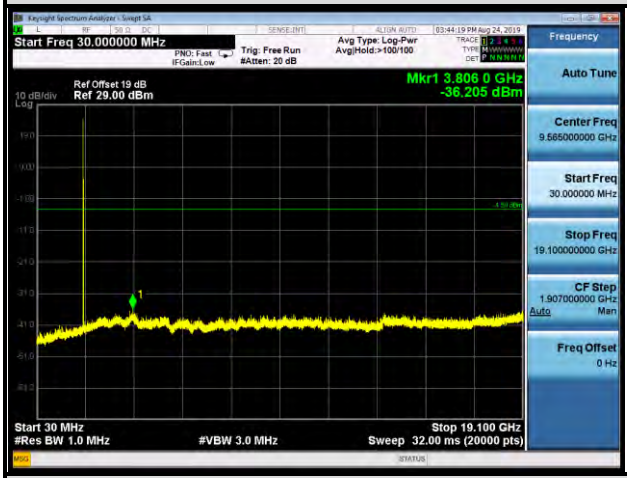
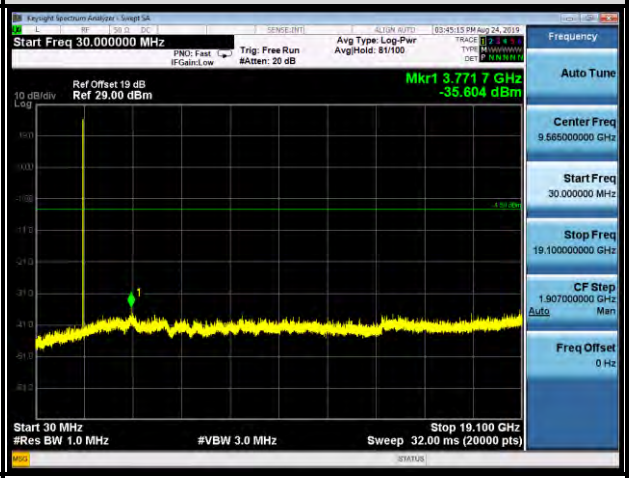
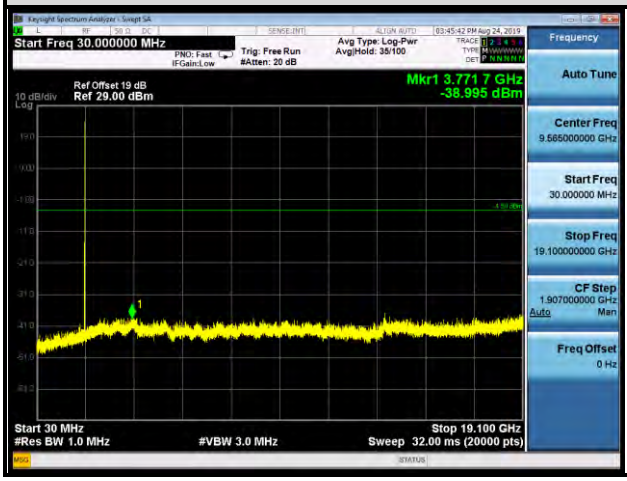
a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.

b. Measuring frequency range is from 30 MHz to 19.1GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

3.5.3 TEST SETUP

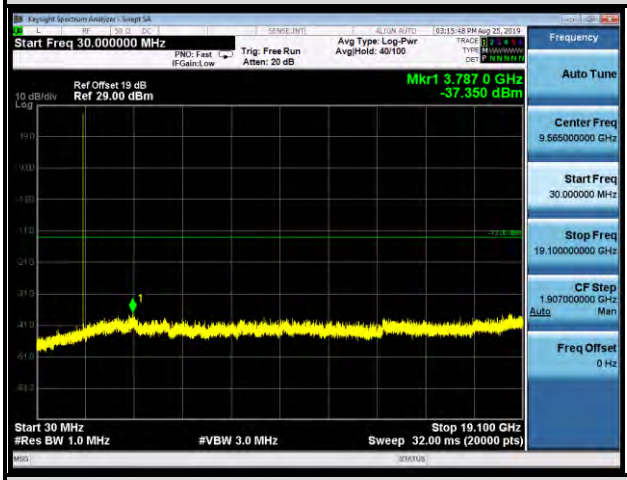
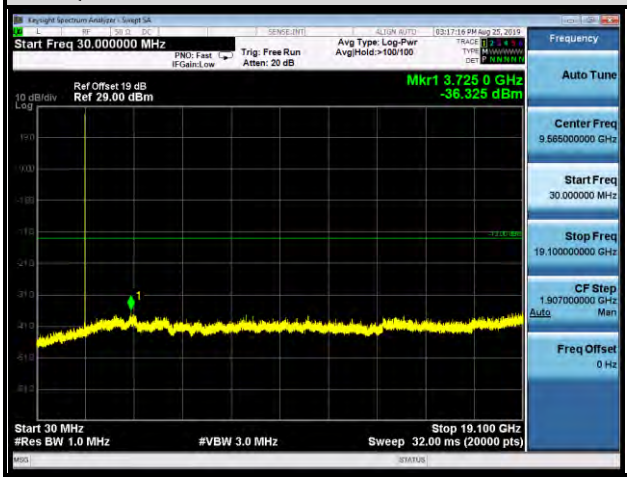


3.5.4 TEST RESULTS

WCDMA	
CHANNEL 9262	**CHANNEL 9400**
FREQUENCY RANGE : 30MHz~19.1GHz	**FREQUENCY RANGE : 30MHz~19.1GHz**
	
CHANNEL 9538	
FREQUENCY RANGE : 30MHz~19.1GHz	
	

LTE BAND 2

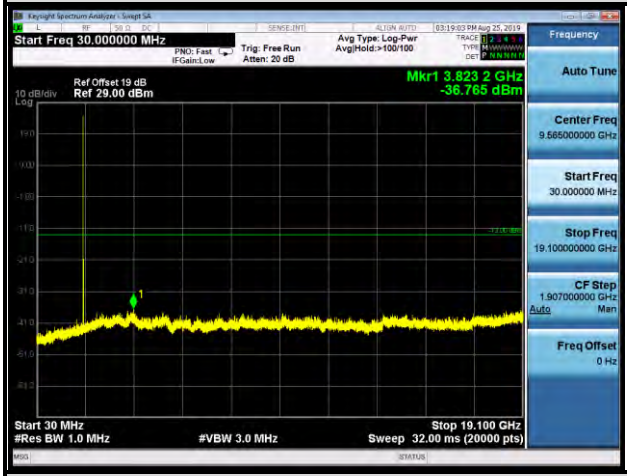
1.4MHz / QPSK

CHANNEL 18607	CHANNEL 18900
FREQUENCY RANGE : 30MHz~19.1GHz	FREQUENCY RANGE : 30MHz~19.1GHz
	
CHANNEL 19193	
FREQUENCY RANGE : 30MHz~19.1GHz	
	

3MHz / QPSK

CHANNEL 18615

FREQUENCY RANGE : 30MHz~19.1GHz

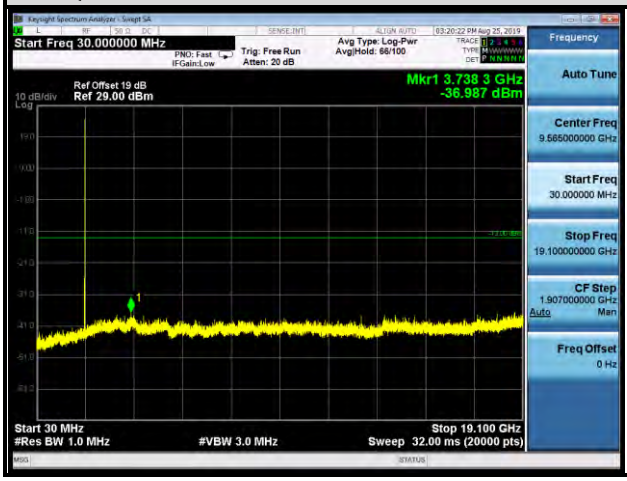


CHANNEL 18900

FREQUENCY RANGE : 30MHz~19.1GHz

CHANNEL 19185

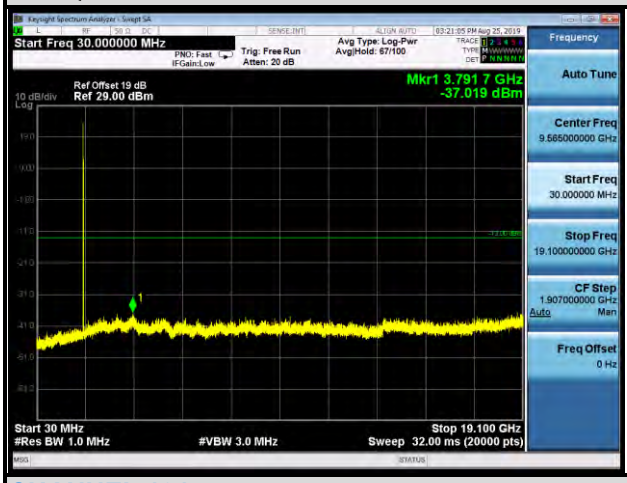
FREQUENCY RANGE : 30MHz~19.1GHz



5MHz / QPSK

CHANNEL 18625

FREQUENCY RANGE : 30MHz~19.1GHz

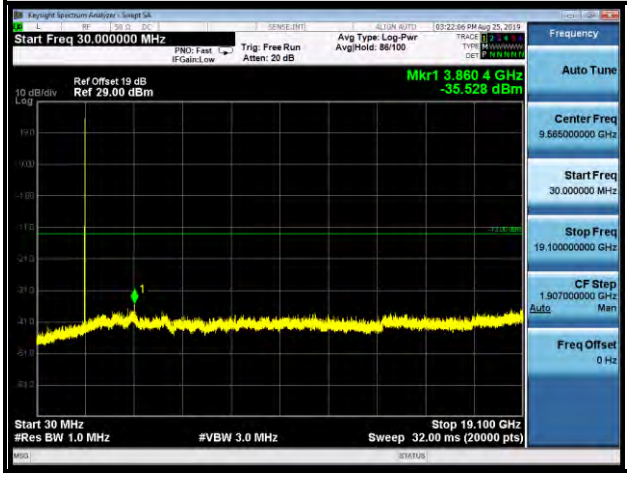


CHANNEL 18900

FREQUENCY RANGE : 30MHz~19.1GHz

CHANNEL 19175

FREQUENCY RANGE : 30MHz~19.1GHz



10MHz / QPSK

CHANNEL 18650

FREQUENCY RANGE : 30MHz~19.1GHz

CHANNEL 18900

FREQUENCY RANGE : 30MHz~19.1GHz

CHANNEL 19150

FREQUENCY RANGE : 30MHz~19.1GHz

15MHz / QPSK

CHANNEL 18675

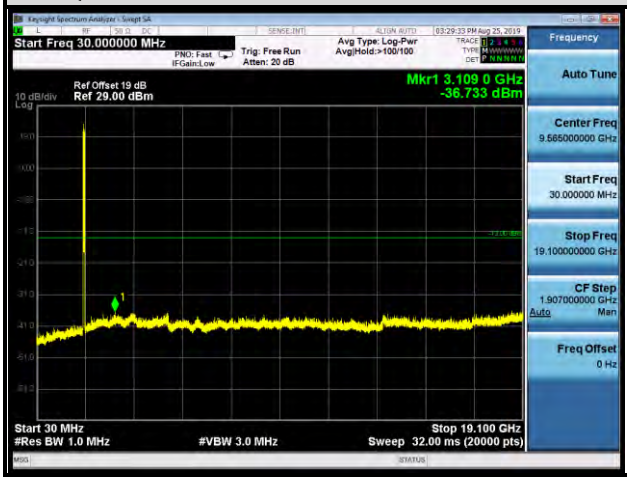
FREQUENCY RANGE : 30MHz~19.1GHz

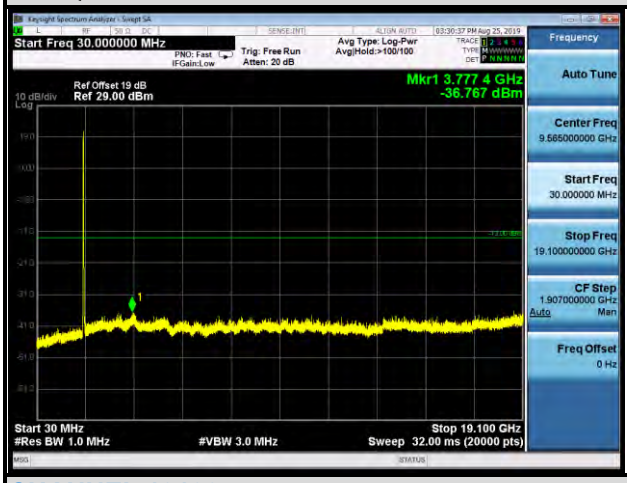
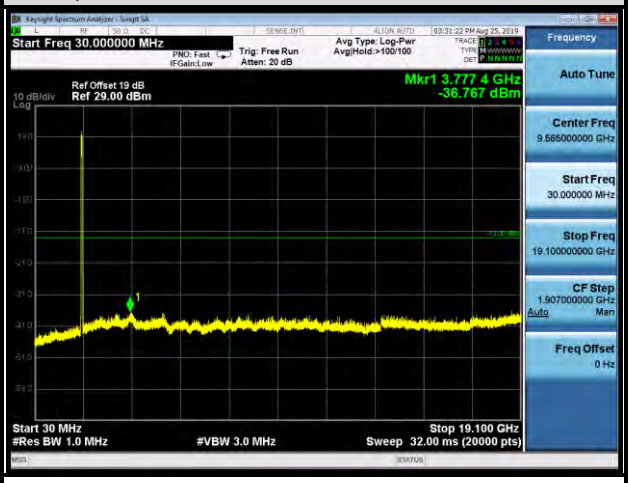
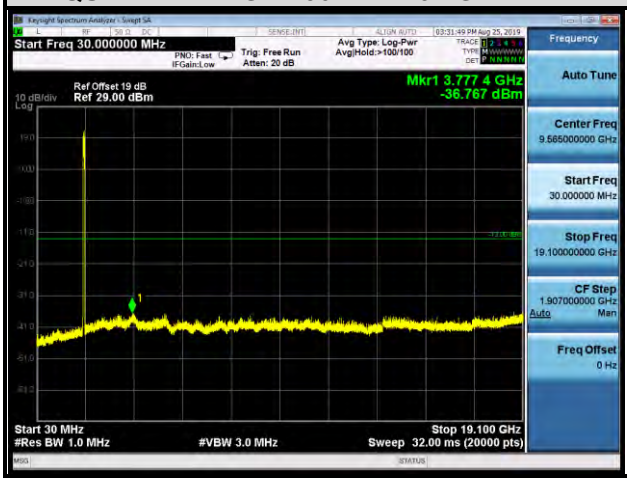
CHANNEL 18900

FREQUENCY RANGE : 30MHz~19.1GHz

CHANNEL 19125

FREQUENCY RANGE : 30MHz~19.1GHz



20MHz / QPSK	
CHANNEL 18700	CHANNEL 18900
FREQUENCY RANGE : 30MHz~19.1GHz	FREQUENCY RANGE : 30MHz~19.1GHz
	
CHANNEL 19100	
FREQUENCY RANGE : 30MHz~19.1GHz	
	

LTE BAND 25

1.4MHz / QPSK

CHANNEL 26047	CHANNEL 26365
FREQUENCY RANGE : 30MHz~19.15GHz	FREQUENCY RANGE : 30MHz~19.15GHz

CHANNEL 26683	
FREQUENCY RANGE : 30MHz~19.15GHz	

3MHz / QPSK

CHANNEL 26055

FREQUENCY RANGE : 30MHz~19.15GHz

CHANNEL 26365

FREQUENCY RANGE : 30MHz~19.15GHz

CHANNEL 26675

FREQUENCY RANGE : 30MHz~19.15GHz

5MHz / QPSK

CHANNEL 26065

FREQUENCY RANGE : 30MHz~19.15GHz

CHANNEL 26365

FREQUENCY RANGE : 30MHz~19.15GHz

CHANNEL 26665

FREQUENCY RANGE : 30MHz~19.15GHz

10MHz / QPSK

CHANNEL 26090

FREQUENCY RANGE : 30MHz~19.15GHz

CHANNEL 26365

FREQUENCY RANGE : 30MHz~19.15GHz

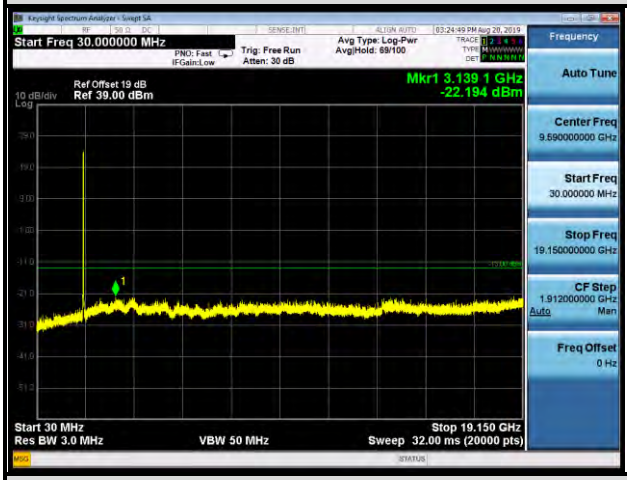
CHANNEL 26640

FREQUENCY RANGE : 30MHz~19.1GHz

15MHz / QPSK

CHANNEL 26115

FREQUENCY RANGE : 30MHz~19.15GHz



CHANNEL 26365

FREQUENCY RANGE : 30MHz~19.15GHz

CHANNEL 26615

FREQUENCY RANGE : 30MHz~19.15GHz

20MHz / QPSK

CHANNEL 26140

FREQUENCY RANGE : 30MHz~19.15GHz

CHANNEL 26365

FREQUENCY RANGE : 30MHz~19.15GHz

CHANNEL 26590

FREQUENCY RANGE : 30MHz~19.15GHz

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.

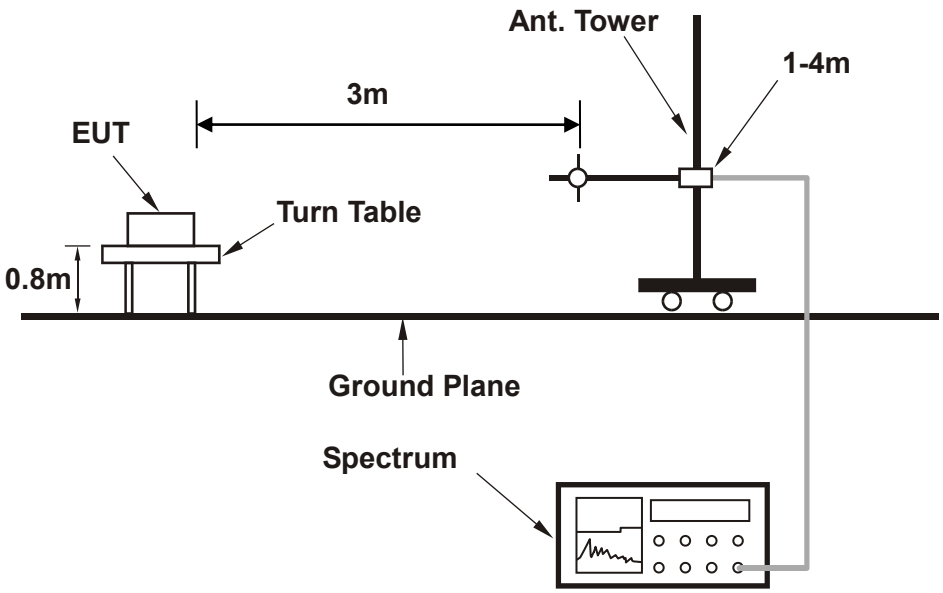
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.6.3 DEVIATION FROM TEST STANDARD

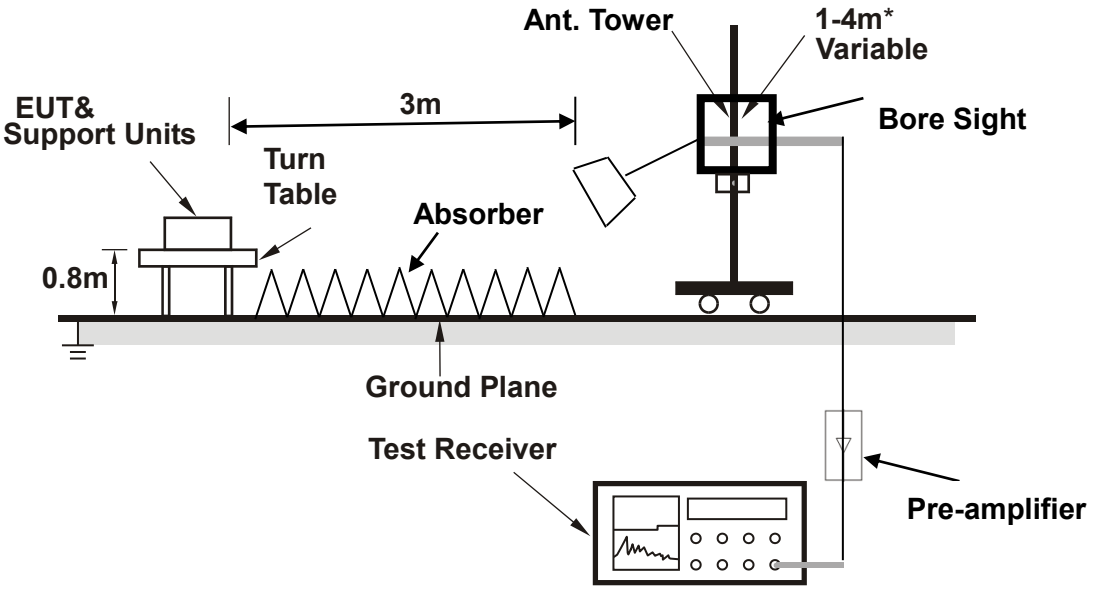
No deviation

3.6.4 TEST SETUP

< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

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

3.6.5 TEST RESULTS

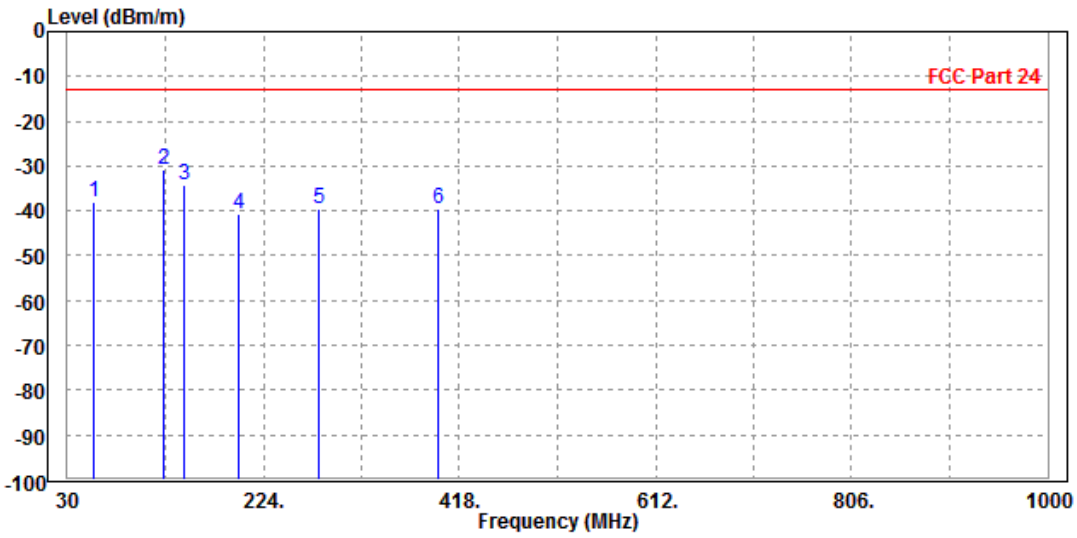
BELOW 1GHz WORST-CASE DATA

30 MHz – 1GHz data:

LTE BAND 2:

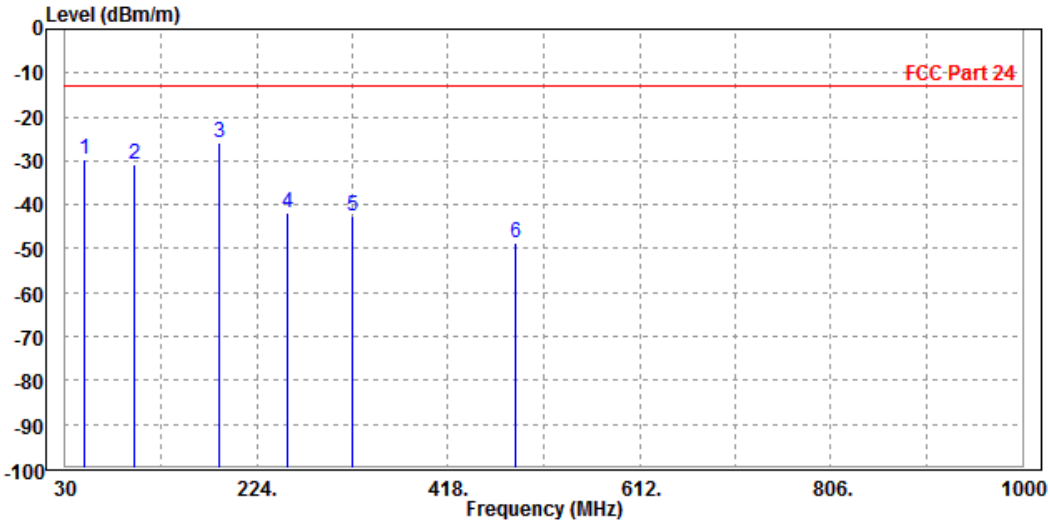
MODE	TX channel 18900	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		56.350	-38.19	-45.16	-13.00	-25.19	6.97	Peak	Horizontal
2	PP	125.340	-30.85	-39.51	-13.00	-17.85	8.66	Peak	Horizontal
3		145.230	-34.30	-43.57	-13.00	-21.30	9.27	Peak	Horizontal
4		199.520	-40.86	-51.65	-13.00	-27.86	10.79	Peak	Horizontal
5		278.610	-39.61	-53.24	-13.00	-26.61	13.63	Peak	Horizontal
6		396.850	-39.38	-56.48	-13.00	-26.38	17.10	Peak	Horizontal



MODE	TX channel 18900	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
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		48.960	-29.81	-37.25	-13.00	-16.81	7.44	Peak	Vertical
2		99.560	-30.83	-40.58	-13.00	-17.83	9.75	Peak	Vertical
3	PP	185.460	-25.70	-36.21	-13.00	-12.70	10.51	Peak	Vertical
4		255.420	-41.85	-55.16	-13.00	-28.85	13.31	Peak	Vertical
5		321.150	-42.56	-57.42	-13.00	-29.56	14.86	Peak	Vertical
6		485.630	-48.78	-67.28	-13.00	-35.78	18.50	Peak	Vertical



ABOVE 1GHz DATA

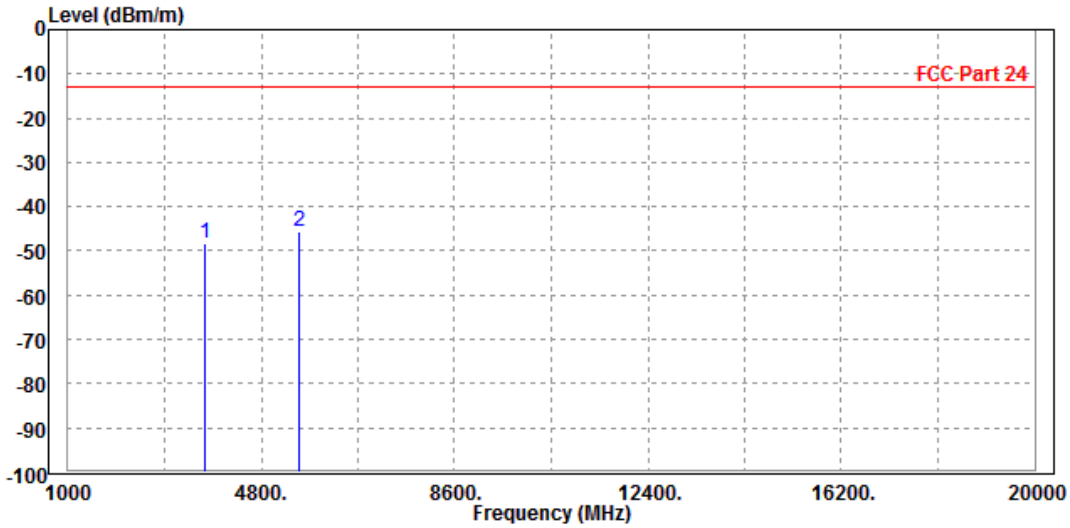
Note: For higher frequency, the emission is too low to be detected.

WCDMA Band II

CH 9262

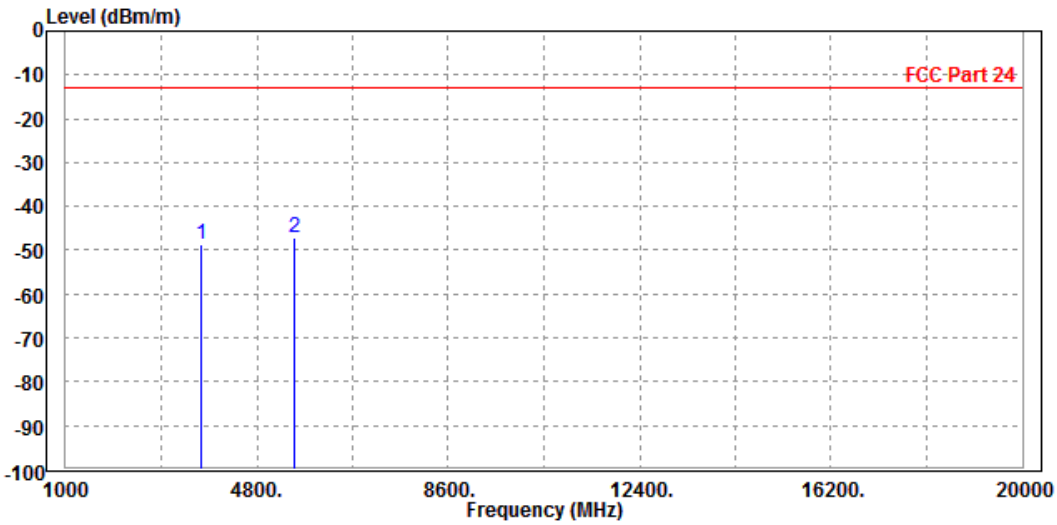
MODE	TX channel 9262	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3705.000	-48.21	-51.36	-13.00	-35.21	3.15	Peak	Horizontal
2	PP	5556.000	-45.61	-54.64	-13.00	-32.61	9.03	Peak	Horizontal



MODE	TX channel 9262	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

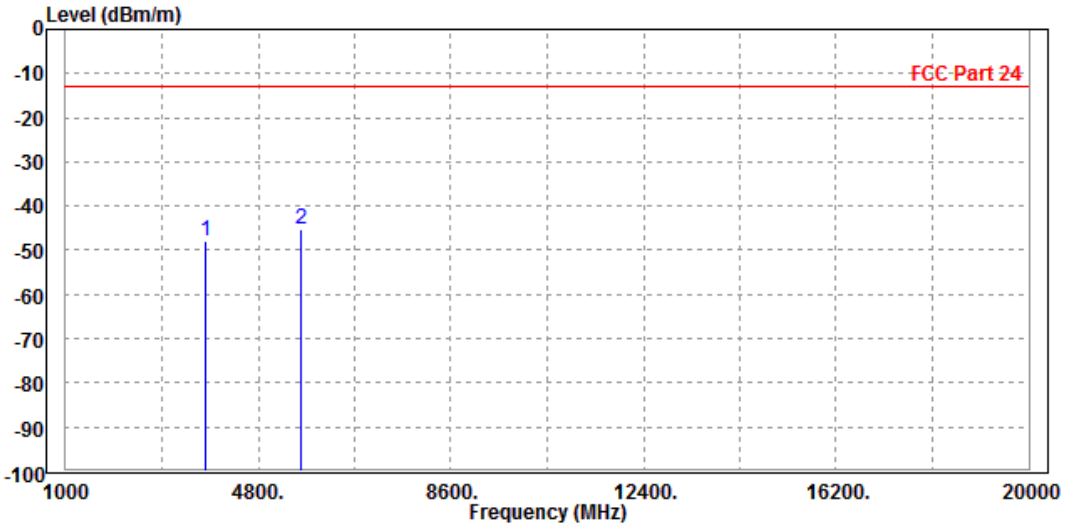
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3705.000	-48.74	-52.34	-13.00	-35.74	3.60	Peak	Vertical
2	PP	5556.000	-47.15	-55.23	-13.00	-34.15	8.08	Peak	Vertical



CH 9400

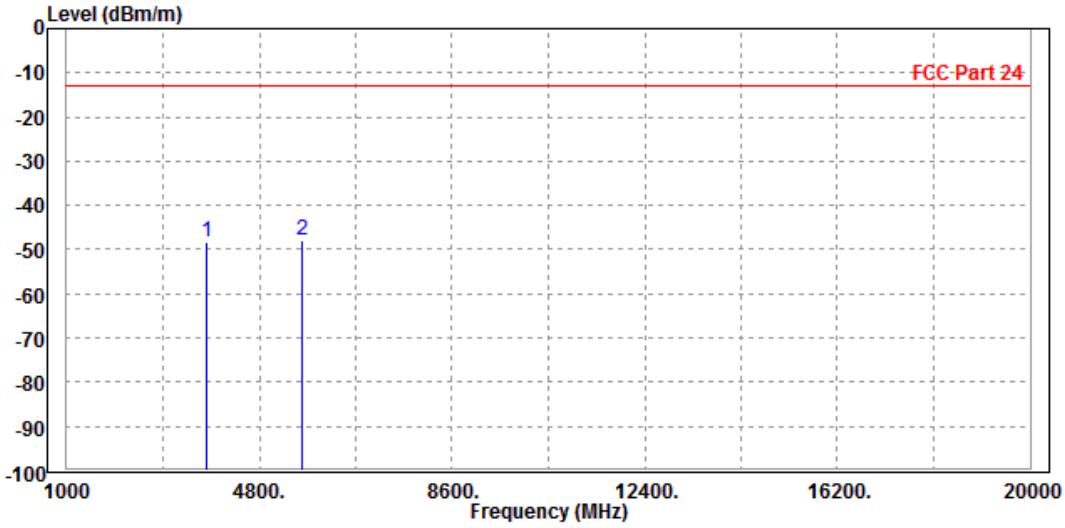
MODE	TX channel 9400	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3755.000	-47.86	-51.25	-13.00	-34.86	3.39	Peak	Horizontal
2 PP	5636.000	-45.22	-54.34	-13.00	-32.22	9.12	Peak	Horizontal



MODE	TX channel 9400	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

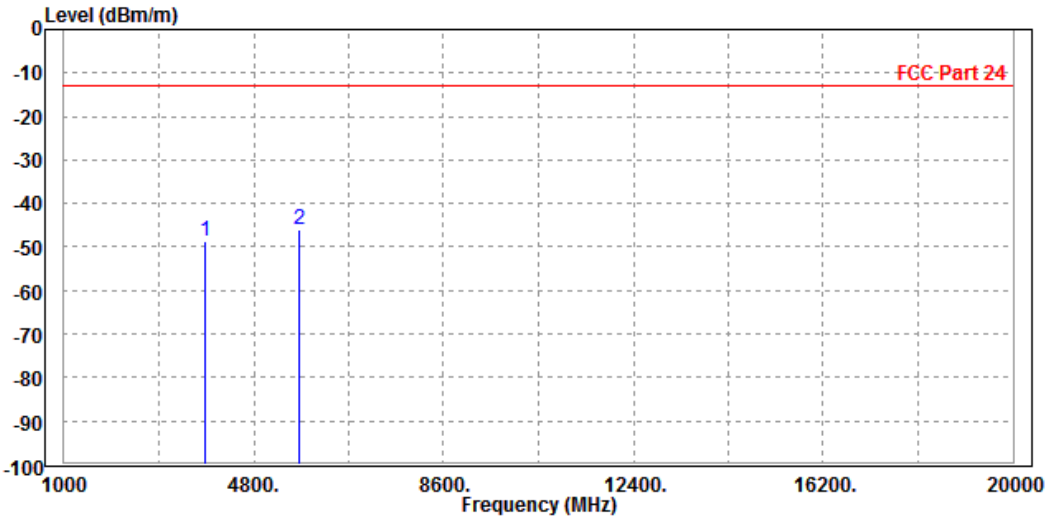
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3755.000	-48.46	-52.31	-13.00	-35.46	3.85	Peak	Vertical
2	PP	5640.000	-48.02	-56.28	-13.00	-35.02	8.26	Peak	Vertical



CH 9538

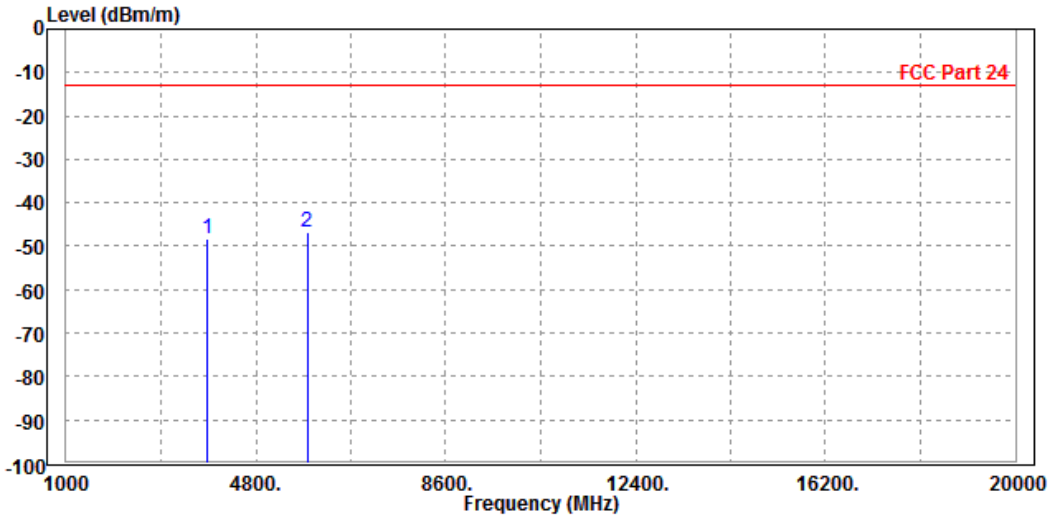
MODE	TX channel 9538	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3815.000	-48.51	-52.19	-13.00	-35.51	3.68	Peak	Horizontal
2	PP	5725.000	-46.14	-55.36	-13.00	-33.14	9.22	Peak	Horizontal



MODE	TX channel 9538	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
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		3815.000	-48.15	-52.31	-13.00	-35.15	4.16	Peak	Vertical
2	PP	5825.000	-46.76	-55.39	-13.00	-33.76	8.63	Peak	Vertical

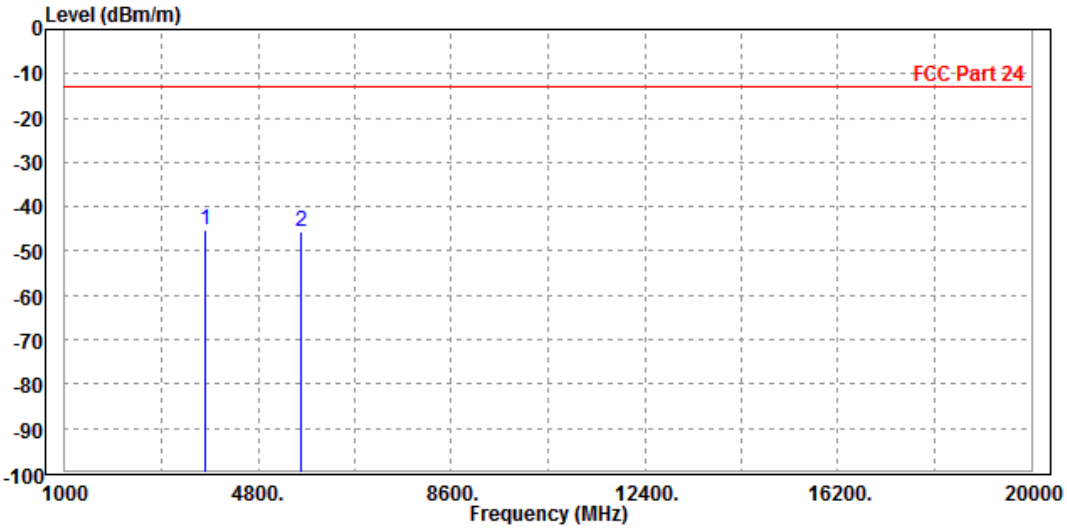


LTE Band 2

CHANNEL BANDWIDTH: 1.4MHz / QPSK

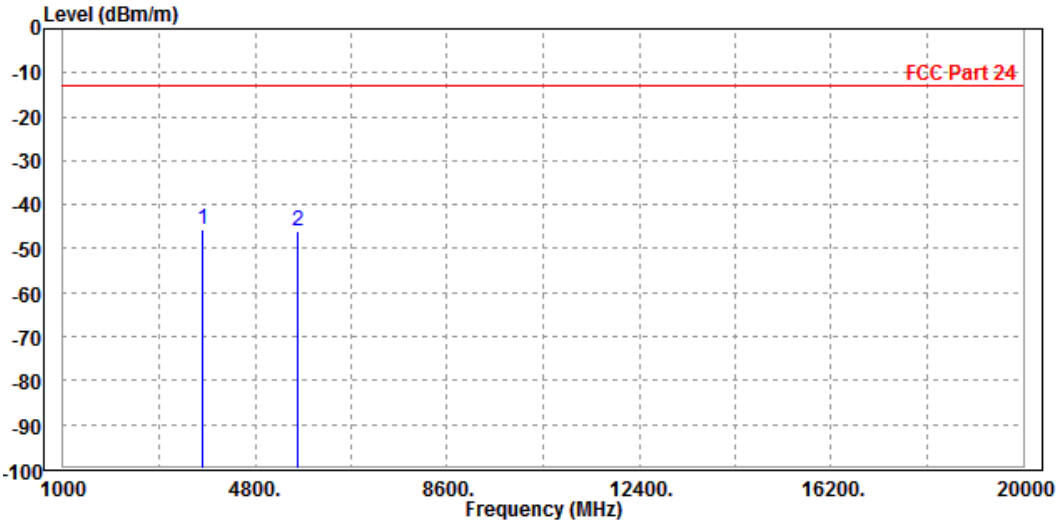
MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3755.000	-45.28	-48.67	-13.00	-32.28	3.39	Peak	Horizontal
2		5640.000	-45.57	-54.69	-13.00	-32.57	9.12	Peak	Horizontal



MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

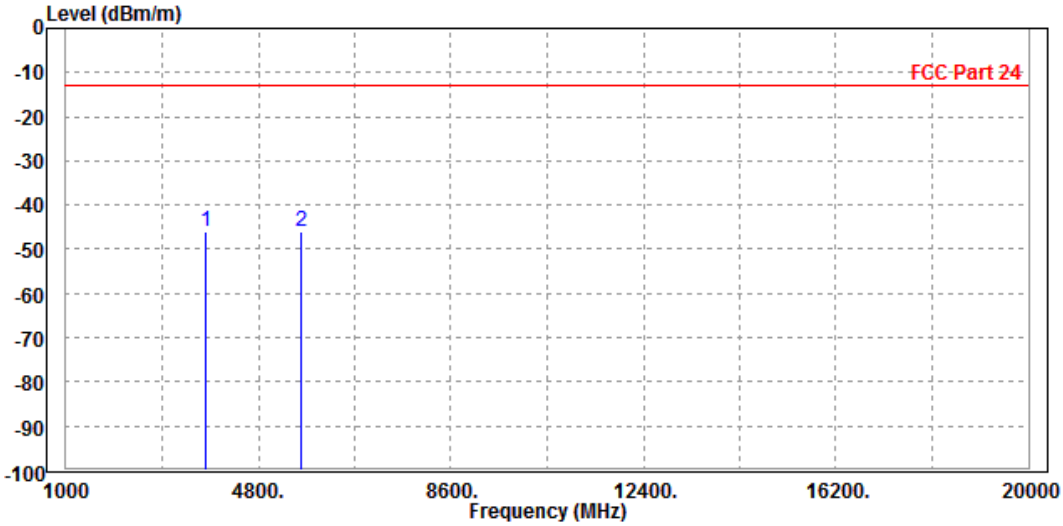
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3755.000	-45.82	-49.67	-13.00	-32.82	3.85	Peak	Vertical
2		5640.000	-46.02	-54.28	-13.00	-33.02	8.26	Peak	Vertical



CHANNEL BANDWIDTH: 3MHz / QPSK

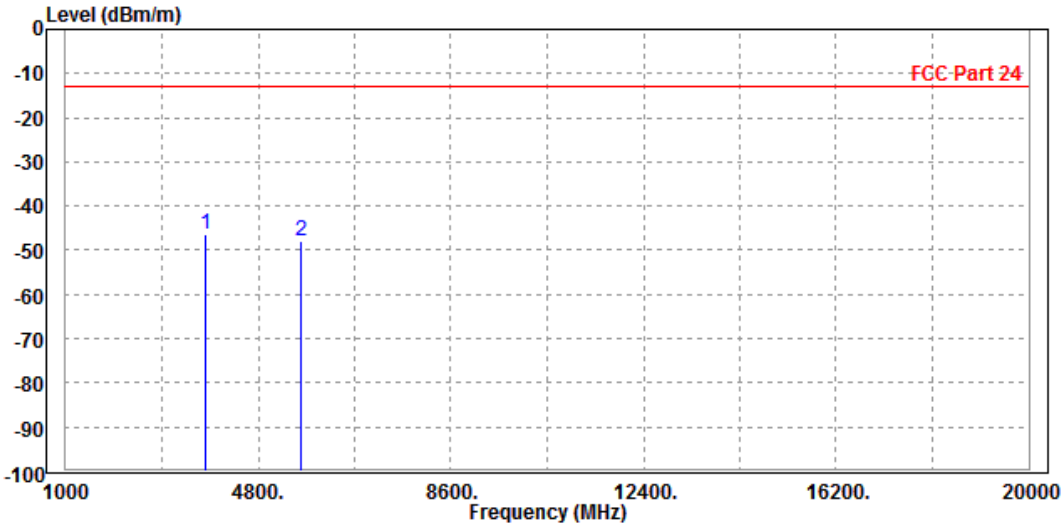
MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3755.000	-45.96	-49.35	-13.00	-32.96	3.39	Peak	Horizontal
2	5640.000	-46.17	-55.29	-13.00	-33.17	9.12	Peak	Horizontal



MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
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	3755.000	-46.31	-50.16	-13.00	-33.31	3.85	Peak	Vertical
2		5640.000	-48.08	-56.34	-13.00	-35.08	8.26	Peak	Vertical

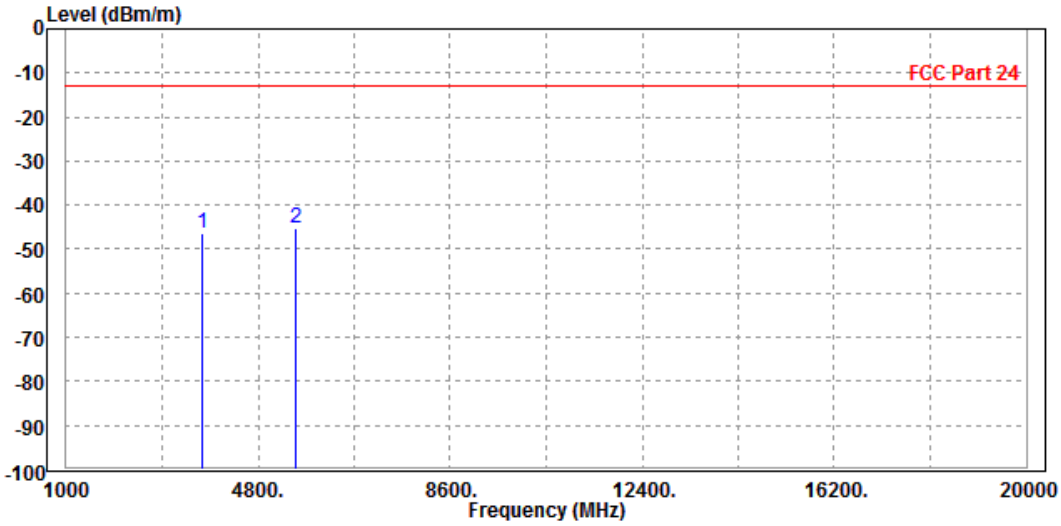


CHANNEL BANDWIDTH: 5MHz / QPSK

CH18625

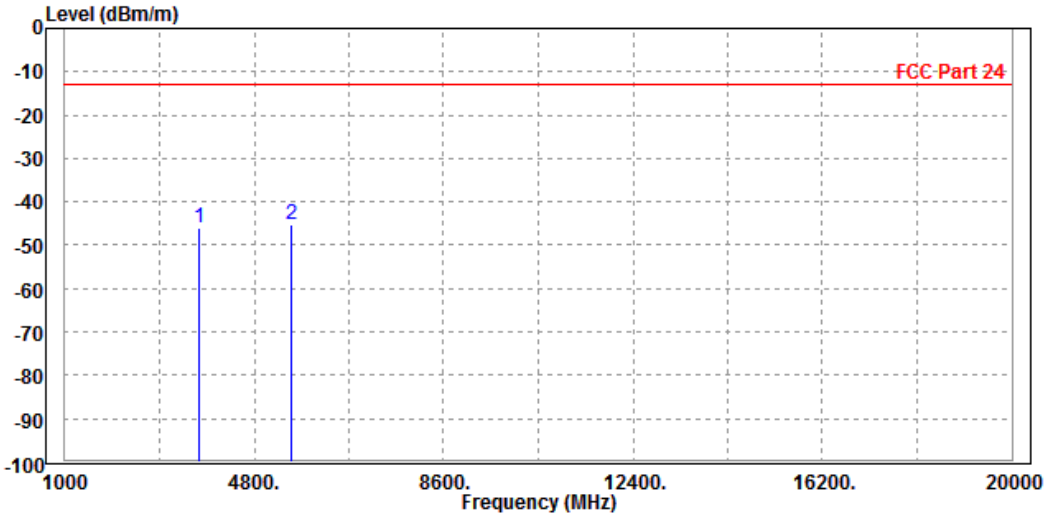
MODE	TX channel 18625	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3705.000	-46.48	-49.63	-13.00	-33.48	3.15	Peak	Horizontal
2	PP	5556.000	-45.23	-54.26	-13.00	-32.23	9.03	Peak	Horizontal



MODE	TX channel 18625	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

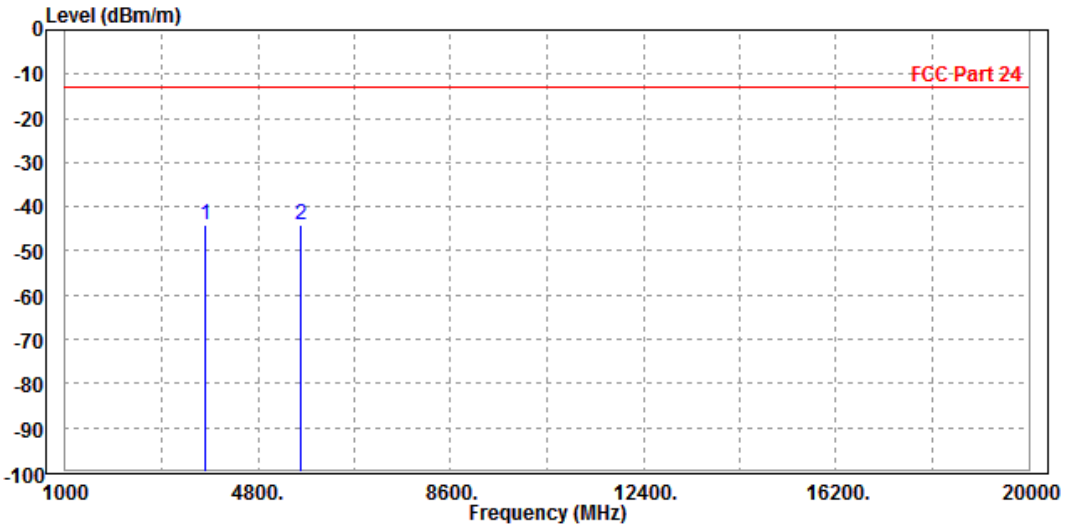
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3705.000	-45.98	-49.58	-13.00	-32.98	3.60	Peak	Vertical
2	PP	5556.000	-45.34	-53.42	-13.00	-32.34	8.08	Peak	Vertical



CH18900

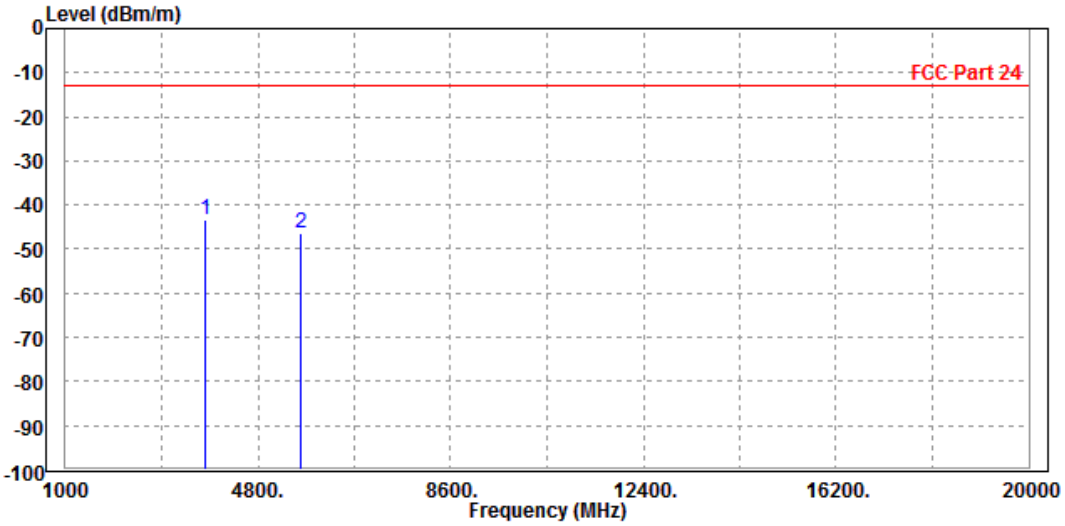
MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3755.000	-44.17	-47.56	-13.00	-31.17	3.39	Peak	Horizontal
2	PP	5640.000	-44.09	-53.21	-13.00	-31.09	9.12	Peak	Horizontal



MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

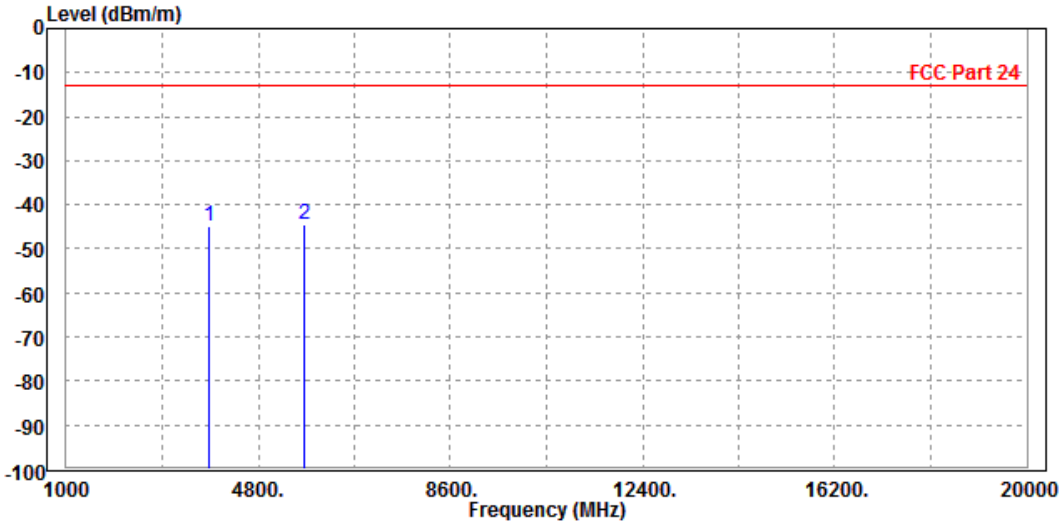
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3755.000	-43.47	-47.32	-13.00	-30.47	3.85		Vertical
2		5640.000	-46.42	-54.68	-13.00	-33.42	8.26		Vertical



CH19175

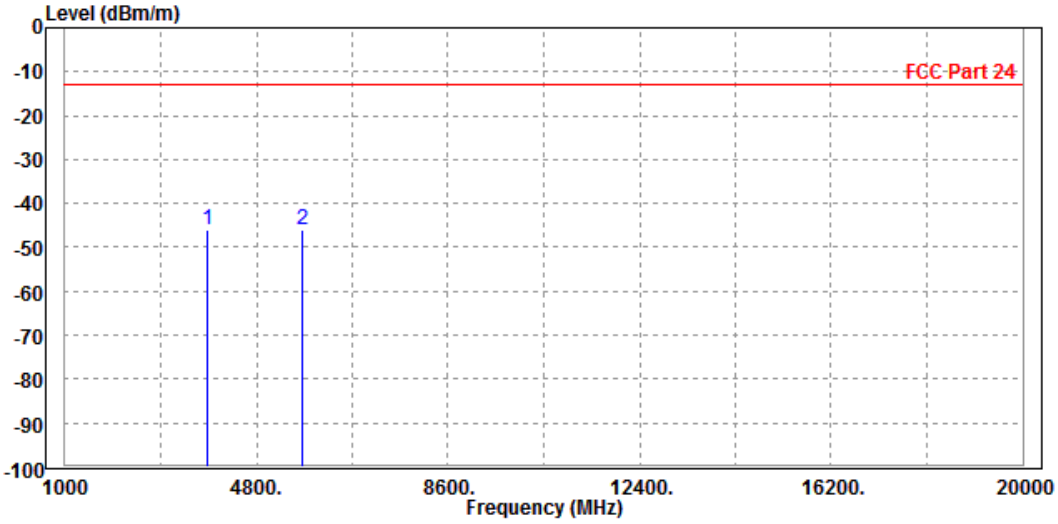
MODE	TX channel 19175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3815.000	-44.89	-48.57	-13.00	-31.89	3.68	Peak	Horizontal
2 PP	5725.000	-44.46	-53.68	-13.00	-31.46	9.22	Peak	Horizontal



MODE	TX channel 19175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

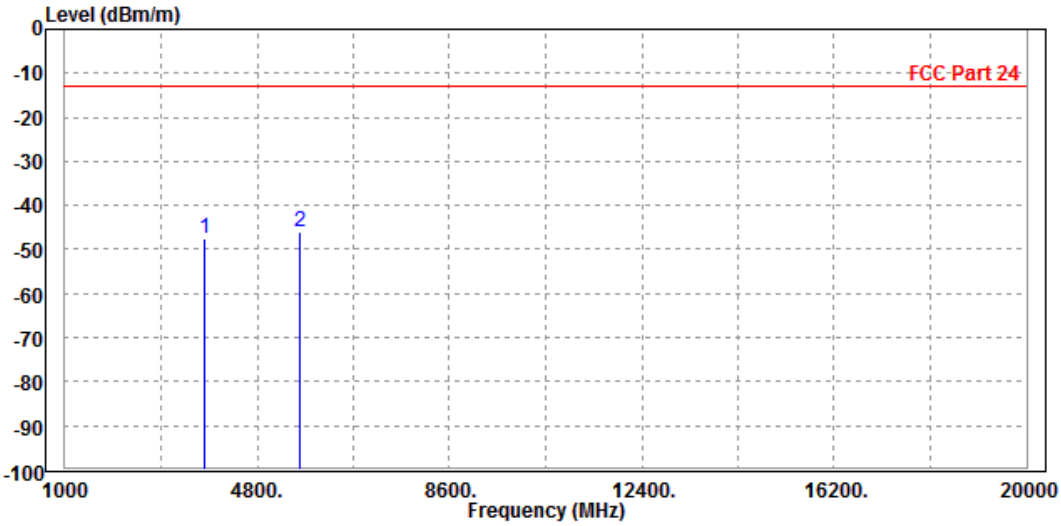
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3815.000	-46.13	-50.29	-13.00	-33.13	4.16	Peak	Vertical
2	PP	5725.000	-45.89	-54.32	-13.00	-32.89	8.43	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz / QPSK

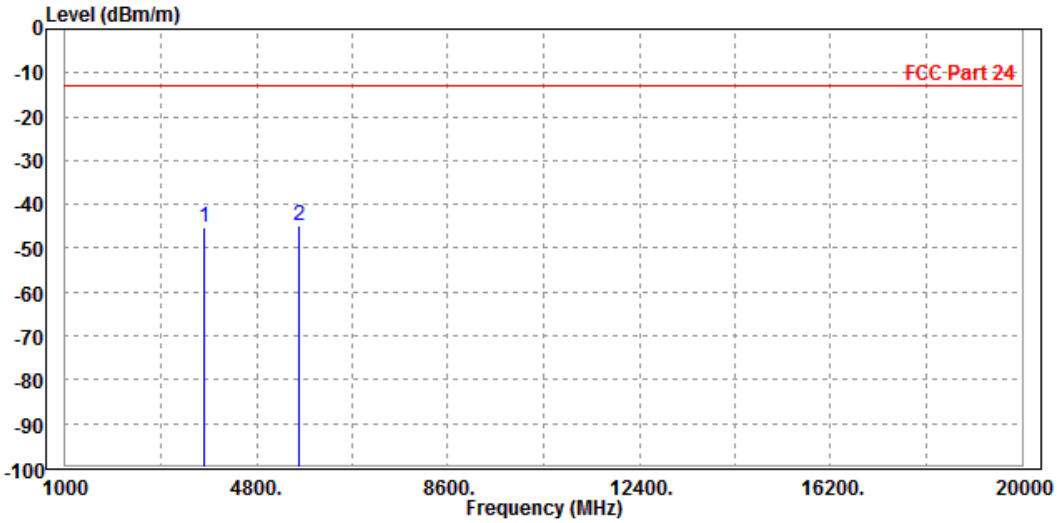
MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3755.000	-47.63	-51.02	-13.00	-34.63	3.39	Peak	Horizontal
2	PP	5640.000	-46.19	-55.31	-13.00	-33.19	9.12	Peak	Horizontal



MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

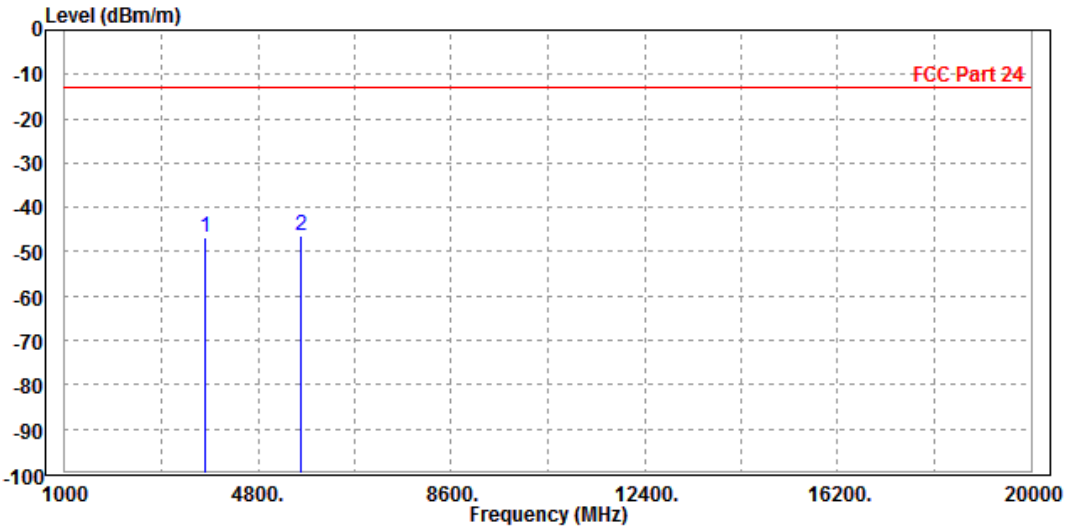
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3755.000	-45.40	-49.25	-13.00	-32.40	3.85	Peak	Vertical
2	PP	5636.000	-44.87	-53.12	-13.00	-31.87	8.25	Peak	Vertical



CHANNEL BANDWIDTH: 15MHz / QPSK

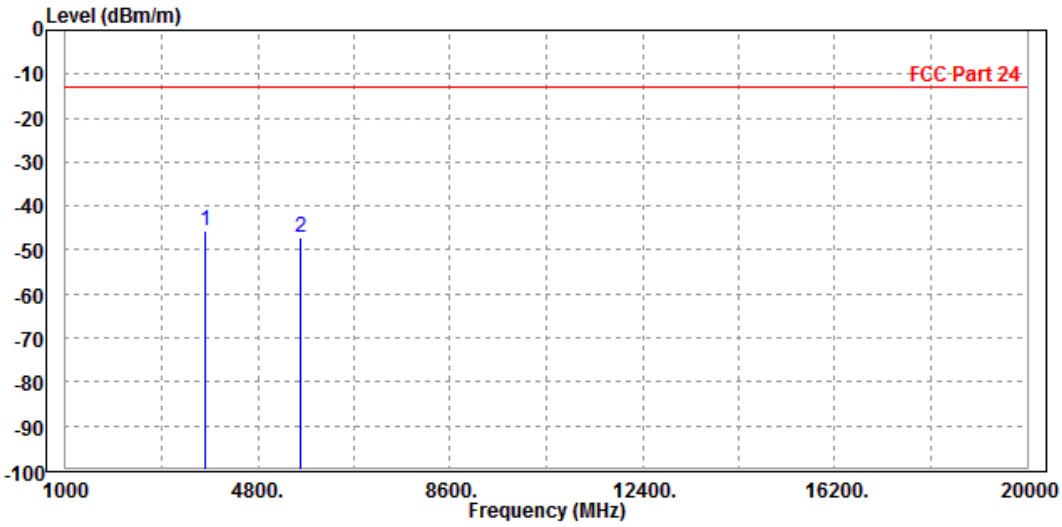
MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3755.000	-46.90	-50.29	-13.00	-33.90	3.39	Peak	Horizontal
2 PP	5640.000	-46.49	-55.61	-13.00	-33.49	9.12	Peak	Horizontal



MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

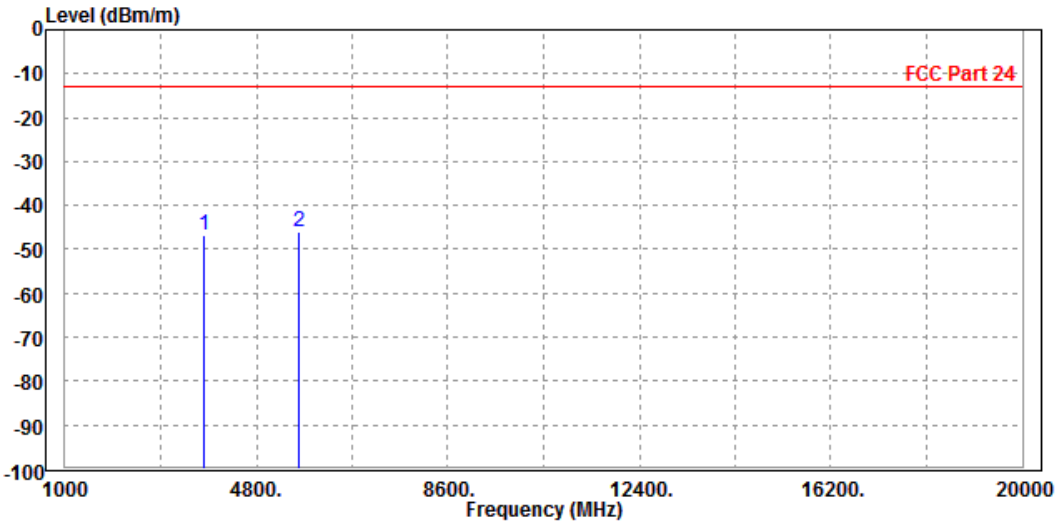
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3755.000	-45.79	-49.64	-13.00	-32.79	3.85	Peak	Vertical
2		5640.000	-47.12	-55.38	-13.00	-34.12	8.26	Peak	Vertical



CHANNEL BANDWIDTH: 20MHz / QPSK

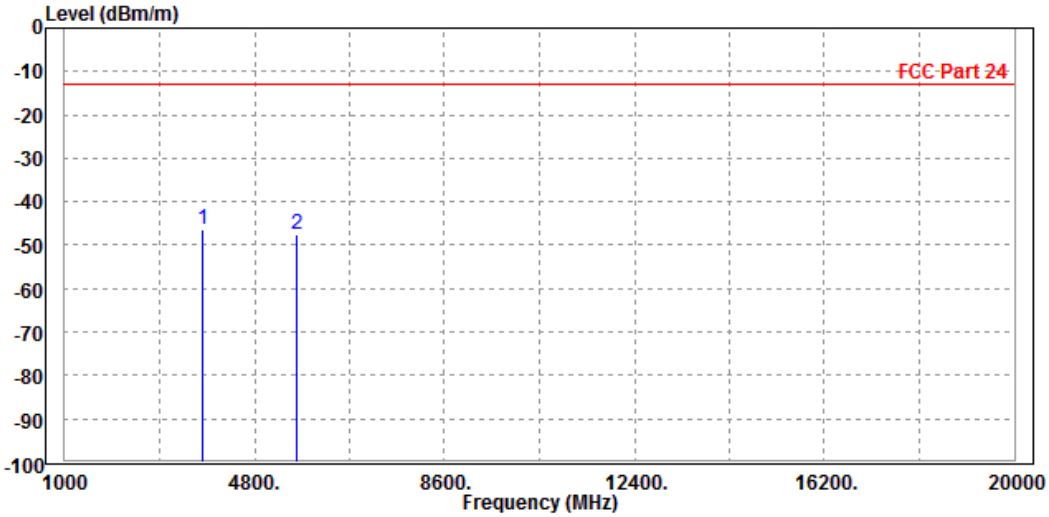
MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3755.000	-46.75	-50.14	-13.00	-33.75	3.39	Peak	Horizontal
2 PP	5640.000	-46.16	-55.28	-13.00	-33.16	9.12	Peak	Horizontal



MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
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	3755.000	-46.39	-50.24	-13.00	-33.39	3.85	Peak	Vertical
2		5640.000	-47.37	-55.63	-13.00	-34.37	8.26	Peak	Vertical



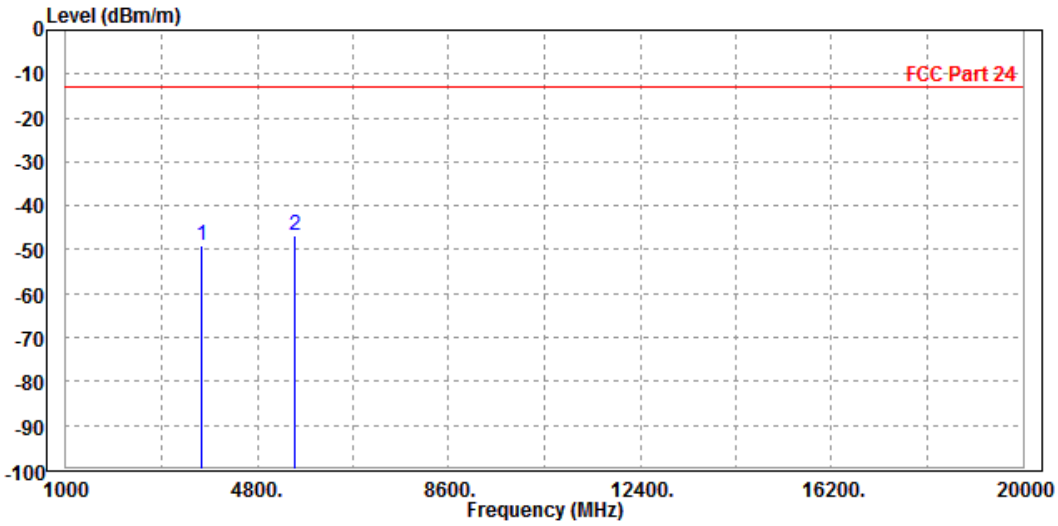
LTE Band 25

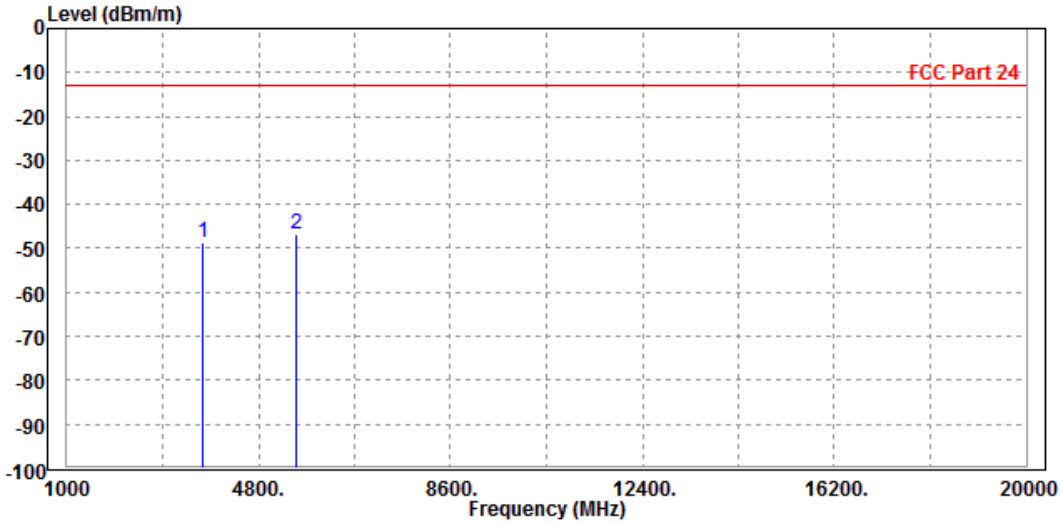
CHANNEL BANDWIDTH: 1.4MHz / QPSK

CH 26047

MODE	TX channel 26047	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
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	3704.000	-49.20	-52.34	-13.00	-36.20	3.14	Peak	Horizontal
2 PP	5552.100	-46.67	-55.69	-13.00	-33.67	9.02	Peak	Horizontal



MODE	TX channel 26047	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Star Le		
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		3704.000	-48.56	-52.16	-13.00	-35.56	3.60	Peak	Vertical
2	PP	5552.100	-46.77	-54.85	-13.00	-33.77	8.08	Peak	Vertical