

FCC TEST REPORT

(PART 27)

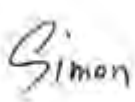
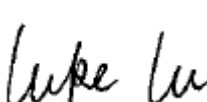
Applicant:	MUNIC
Address:	100 Avenue de Stalingrad 94800 Villejuif – France

Manufacturer or Supplier:	MUNIC
Address:	100 Avenue de Stalingrad 94800 Villejuif – France
Product:	telematics embedded system
Brand Name:	MUNIC
Model Name:	C4D-4G4USAA_V8+
FCC ID:	A6GC4D-4G4USV8
Date of tests:	Nov. 15, 2021 ~ Dec. 01, 2021

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

☒ **FCC Part 27, Subpart C, M** ☒ **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 Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
 Date: Dec. 02, 2021	 Date: Dec. 02, 2021

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P21090018RF06	Original release	Dec. 02, 2021

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 27 & PART 2		
STANDARD SECTION	1.1.1.1.1 TEST TYPE AND LIMIT	RESULT
2.1046 27.50(h)(2)	Equivalent Isotropically Radiated Power	Compliance
2.1055 27.54	Frequency Stability	Compliance
2.1049 27.53(m)(6)	Occupied Bandwidth	Compliance
2.1051 27.53(m)(4)(6)	Band Edge Measurements	Compliance
2.1051 27.53(m)(4)(6)	Conducted Spurious Emissions	Compliance
2.1053 27.53(m)(4)(6)	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	$\pm 76.97\text{Hz}$
Radiated emissions & Radiated Power (30MHz~1GMHz)	$\pm 4.98\text{dB}$
Radiated emissions & Radiated Power (1GMHz ~6GMHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GMHz ~18GMHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GMHz ~40GMHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Conducted Output power	$\pm 2.06\text{dB}$
Band Edge Measurements	$\pm 4.70\text{dB}$

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	Apr. 22,21	Apr. 21,22
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 03,21	Jun. 02,22
Bilog Antenna 2	ETS-LINDGREN	3143B	00161965	Mar. 05,21	Mar. 04,22
Horn Antenna 1	ETS-LINDGREN	3117	00168728	Aug. 21,20	Aug. 20,21
Horn Antenna 2	ETS-LINDGREN	3117	00168692	Apr. 02,21	Apr. 01,22
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 25, 21	Aug. 24, 22
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 25,21	Feb. 24,22
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 02,21	Jun. 01,22
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 03,21	Jun. 02,22
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 22,21	Apr. 21,22
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 20,21	May. 19,22
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,22	May. 18,23
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated_V 7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 03,21	Jun. 02,22
Power Meter	Anritsu	ML2495A	1506002	Apr. 07,21	Apr. 06,22
Power Sensor	Anritsu	MA2411B	1339352	May. 07,21	May. 06,22
Temperature Chamber	ESPEC	SH-242	93000855	Jun. 02,21	Jun. 01,22
MXG Analog Microwave Signal Generator	KEYSIGHT	N5183A	MY50143024	Mar. 05,21	Mar. 04,22
Power Divider	MCLI/USA	PS2-15	24880	N/A	N/A

- NOTE:**
1. The calibration interval of the above test instruments is 12 months or 36 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	telematics embedded system	
BRAND NAME	MUNIC	
MODEL NAME	C4D-4G4USAA_V8+	
NOMINAL VOLTAGE	DC13.7V	
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM
FREQUENCY RANGE	LTE Band 4 Channel Bandwidth: 1.4MHz	1710.7MHz ~ 1754.3MHz
	LTE Band 4 Channel Bandwidth: 3MHz	1711.5MHz ~ 1753.5MHz
	LTE Band 4 Channel Bandwidth: 5MHz	1712.5MHz ~ 1752.5MHz
	LTE Band 4 Channel Bandwidth: 10MHz	1715MHz ~ 1750MHz
	LTE Band 4 Channel Bandwidth: 15MHz	1717.5MHz ~ 1747.5 MHz
	LTE Band 4 Channel Bandwidth: 20MHz	1720MHz ~ 1745MHz
	LTE Band 12 Channel Bandwidth: 1.4MHz	699.7MHz ~ 715.3MHz
	LTE Band 12 Channel Bandwidth: 3MHz	700.5MHz ~ 714.5MHz
	LTE Band 12 Channel Bandwidth: 5MHz	701.5MHz ~ 713.5MHz
	LTE Band 12 Channel Bandwidth: 10MHz	704MHz ~ 711MHz
	LTE Band 66 Channel Bandwidth: 1.4MHz	1710.7MHz ~ 1779.3MHz
	LTE Band 66 Channel Bandwidth: 3MHz	1711.5MHz ~ 1778.5MHz
	LTE Band 66 Channel Bandwidth: 5MHz	1712.5MHz ~ 1777.5MHz
	LTE Band 66 Channel Bandwidth: 10MHz	1715MHz ~ 1775MHz
	LTE Band 66 Channel Bandwidth: 15MHz	1717.5MHz ~ 1772.5MHz
	LTE Band 66 Channel Bandwidth: 20MHz	1720MHz ~ 1770MHz
	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 4 Channel Bandwidth: 1.4MHz	QPSK: 1M12G7D 16QAM: 1M12W7D
	LTE Band 4 Channel Bandwidth: 3MHz	QPSK: 2M75G7D 16QAM: 2M74W7D
	LTE Band 4 Channel Bandwidth: 5MHz	QPSK: 4M56G7D 16QAM: 4M59W7D
	LTE Band 4 Channel Bandwidth: 10MHz	QPSK: 9M06G7D 16QAM: 9M05W7D
	LTE Band 4 Channel Bandwidth: 15MHz	QPSK: 13M6G7D 16QAM: 13M6W7D
	LTE Band 4 Channel Bandwidth: 20MHz	QPSK: 18M1G7D 16QAM: 18M1W7D
	LTE Band 12 Channel Bandwidth: 1.4MHz	QPSK: 1M12G7D 16QAM: 1M12W7D
	LTE Band 12 Channel Bandwidth: 3MHz	QPSK: 2M75G7D 16QAM: 2M73W7D
	LTE Band 12 Channel Bandwidth: 5MHz	QPSK: 4M55G7D 16QAM: 4M58W7D
	LTE Band 12 Channel Bandwidth: 10MHz	QPSK: 9M05G7D 16QAM: 9M06W7D
	LTE Band 66 Channel Bandwidth: 1.4MHz	QPSK: 1M12G7D 16QAM: 1M12W7D
	LTE Band 66 Channel Bandwidth: 3MHz	QPSK: 2M76G7D 16QAM: 2M75W7D
	LTE Band 66 Channel Bandwidth: 5MHz	QPSK: 4M57G7D 16QAM: 4M57W7D
	LTE Band 66 Channel Bandwidth: 10MHz	QPSK: 9M05G7D 16QAM: 9M04W7D
	LTE Band 66 Channel Bandwidth: 15MHz	QPSK: 13M6G7D 16QAM: 13M5W7D
	LTE Band 66 Channel Bandwidth: 20MHz	QPSK: 18M0G7D 16QAM: 18M1W7D
	LTE Band 71 Channel Bandwidth: 5MHz	QPSK: 4M56G7D 16QAM: 4M58W7D
	LTE Band 71 Channel Bandwidth: 10MHz	QPSK: 9M05G7D 16QAM: 9M02W7D

	LTE Band 71 Channel Bandwidth: 15MHz	QPSK: 13M6G7D
		16QAM: 13M6W7D
	CLTE Band 71 Channel Bandwidth: 20MHz	QPSK: 18M0G7D
		16QAM: 18M0W7D
MAX. EIRP POWER	LTE Band 4 Channel Bandwidth: 1.4MHz	693.43mW
	LTE Band 4 Channel Bandwidth: 3MHz	696.63mW
	LTE Band 4 Channel Bandwidth: 5MHz	698.23mW
	LTE Band 4 Channel Bandwidth: 10MHz	693.43mW
	LTE Band 4 Channel Bandwidth: 15MHz	704.69mW
	LTE Band 4 Channel Bandwidth: 20MHz	706.32mW
	LTE Band 12 Channel Bandwidth: 1.4MHz	610.94mW
	LTE Band 12 Channel Bandwidth: 3MHz	613.76mW
	LTE Band 12 Channel Bandwidth: 5MHz	606.74mW
	LTE Band 12 Channel Bandwidth: 10MHz	616.60mW
	LTE Band 66 Channel Bandwidth: 1.4MHz	779.83mW
	LTE Band 66 Channel Bandwidth: 3MHz	778.04mW
	LTE Band 66 Channel Bandwidth: 5MHz	778.04mW
	LTE Band 66 Channel Bandwidth: 10MHz	779.83mW
	LTE Band 66 Channel Bandwidth: 15MHz	770.90mW
	LTE Band 66 Channel Bandwidth: 20MHz	781.63mW
	LTE Band 71 Channel Bandwidth: 5MHz	443.61mW
	LTE Band 71 Channel Bandwidth: 10MHz	444.63mW
	LTE Band 71 Channel Bandwidth: 15MHz	439.54mW
	LTE Band 71 Channel Bandwidth: 20MHz	445.66mW
ANTENNA TYPE	Fixed Internal Antenna with 5.54dBi gain for LTE B4/ LTE B12/ LTE B66/ LTE B71	



**BUREAU
VERITAS**

Test Report No.: W7L-P21090018RF06

HW VERSION	HW.01
SW VERSION	SW.01
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	N/A
EXTREME TEMPERATURE	-50-20 °C
EXTREME VOLTAGE	DC8V – DC18V

NOTE:

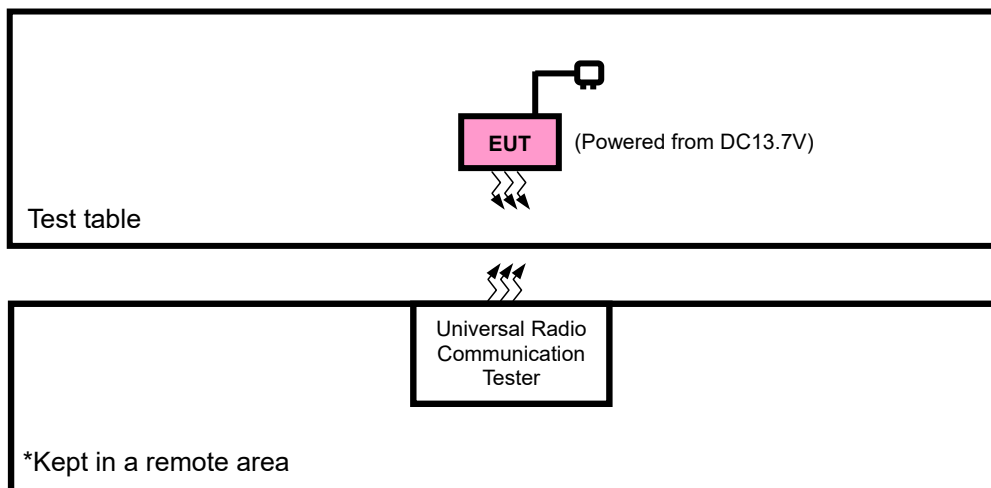
1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. C4D-4G4USAA_V8+ have ESIM and SIM two modes, respectively corresponding to MFF2 SIM and 4FF SIM detail describe in PED , pre-scan two models. worst case mode MFF2 SIM is reflected in this report

List of Accessory:

ACCESSORIES	BRAND	MODEL	SPECIFICATION
Battery 1	Howell	Li-polymer 552535H	Capacity : Li-ion, 450mAh
Battery 2	Akkutronics	382530-PTL	Capacity : Li-ion, 450mAh

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	DC source	LONG WEI	PS-6403D	010934269	N/A

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

2.4 TEST ITEM AND TEST CONFIGURATION

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

EUT CONFIGURE MODE	1.1.1.1.1.2DESCRIPTION
A	EUT + DC source with LTE link

LTE BAND 4

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	EIRP	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	19957 to 20393	19957, 20393	1.4MHz	QPSK	1 RB / 0 RB Offset
		19965 to 20385	19965, 20385	3MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	19975, 20375	5MHz	QPSK	1 RB / 0 RB Offset
		20000 to 20350	20000, 20350	10MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20025, 20325	15MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20050, 20300	20MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
B	PEAK TO AVERAGE RATIO	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	BAND EDGE	19957 to 20393	19957	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			20393	1.4MHz	QPSK,16QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		19965 to 20385	19965	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			20385	3MHz	QPSK,16QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		19975 to 20375	19975	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			20375	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		20000 to 20350	20000	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			20350	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset

B	BAND EDGE	20025 to 20325	20025	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
		20050 to 20300	20325	15MHz	QPSK,16QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
			20050	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
			20300	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
B	CONDCUDETED EMISSION	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK	1 RB / 0 RB Offset
		19965 to 20385	20175	3MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	20175	5MHz	QPSK	1 RB / 0 RB Offset
		20000 to 20350	20175	10MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20175	15MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20175	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.

						100 RB / 0 RB Offset
B	CONDCUDE TED EMISSION	20775 to 21425	20775, 21100, 21425	5MHz	QPSK	1 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK	1 RB / 0RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK	1 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	20775 to 21425	20775, 21100, 21425	5MHz	QPSK	1 RB / 0 RB Offset
		20800 to 21400	21100	10MHz	QPSK	1 RB / 0 RB Offset
		20825 to 21375	21100	15MHz	QPSK	1 RB / 0 RB Offset
		20850 to 21350	21100	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.

LTE BAND 12

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	ERP	23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		23025 to 23165	23025, 23095 ,23165	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095 ,23155	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	23017 to 23173	23017, 23173	1.4MHz	QPSK	1 RB / 0 RB Offset
		23025 to 23165	23025, 23165	3MHz	QPSK	1 RB / 0 RB Offset
		23035 to 23155	23035, 23155	5MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23130	10MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		23025 to 23165	23025, 23095 ,23165	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
		23035 to 23155	23035, 23095 ,23155	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
B	PEAK TO AVERAGE RATIO	23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		23025 to 23165	23025, 23095 ,23165	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095 ,23155	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	BAND EDGE	23017 to 23173	23017	1.4MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
		23025 to 23165	23173	1.4MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		23035 to 23155	23025	3MHz	QPSK	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
		23060 to 23130	23165	3MHz	QPSK	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		23017 to 23173	23035	5MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
		23025 to 23165	23155	5MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
B	CONDCUETED EMISSION	23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK	1 RB / 0 RB Offset
		23025 to 23165	23025, 23095 ,23165	3MHz	QPSK	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095 ,23155	5MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	23017 to 23173	23095	1.4MHz	QPSK	1 RB / 0 RB Offset
		23025 to 23165	23095	3MHz	QPSK	1 RB / 0 RB Offset
		23035 to 23155	23095	5MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095 ,23130	10MHz	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.

LTE BAND 66

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	EIRP	131979 to 132665	131979,132322,132665	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	131979 to 132665	131979,132665	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	131987,132657	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997,132647	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132022,132622	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132047,132597	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132072,132572	20MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	131979 to 132665	131979,132322,132665	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
B	BAND EDGE	131979 to 132322	131979	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			132322	1.4MHz	QPSK,16QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		131987 to 132657	131987	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			132657	3MHz	QPSK,16QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		131987 to 132657	131987	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			132657	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		131997 to 132647	131997	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			132647	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		132047 to 132597	132047	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			132597	15MHz	QPSK,16QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		132072 to 132572	132072	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			132572	20MHz	QPSK,16QAM	1 RB / 99 RB Offset

						100 RB / 0 RB Offset
B	CONDCUDED EMISSION	131979 to 132665	131979,132322,132665	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	131979 to 132665	132322	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	132322	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132322	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132322	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132322	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.

LTE BAND 71

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	ERP	133147 to 133447	133147, 133247, 133447	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		133172 to 133172	133172, 133272, 133172	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 133172	133172, 133172	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, 133247, 133447	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		133172 to 133172	133172, 133272, 133172	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
B	BAND EDGE	133147 to 133447	133147	5MHz	QPSK,16QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
			133447	5MHz	QPSK,16QAM	1 RB / 24 RB Offset 25 RB / 0 RB Offset
		133172 to 133172	133172	10MHz	QPSK,16QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
			133172	10MHz	QPSK,16QAM	1 RB / 49 RB Offset 50 RB / 0 RB Offset
		133197 to 133397	133197	15MHz	QPSK,16QAM	1 RB / 0 RB Offset 75 RB / 0 RB Offset
			133397	15MHz	QPSK,16QAM	1 RB / 74 RB Offset 75 RB / 0 RB Offset
		133222 to 133372	133222	20MHz	QPSK,16QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset
			133372	20MHz	QPSK,16QAM	1 RB / 99 RB Offset 100 RB / 0 RB Offset
B	CONDCUDED EMISSION	133147 to 133447	133147, 133247, 133447	5MHz	QPSK	1 RB / 0 RB Offset
		133172 to 133172	133172, 133272, 133172	10MHz	QPSK	1 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK	1 RB / 0 RB Offset



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		133222 to 133372	133222, 133322, 133372	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	133147 to 133447	133247	5MHz	QPSK	1 RB / 0 RB Offset
		133172 to 133172	133272	10MHz	QPSK	1 RB / 0 RB Offset
		133197 to 133397	133297	15MHz	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
ERP	23deg. C, 70%RH	DC 13.7V	Jace Hu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 13.7V	James Fu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 13.7V	James Fu
BAND EDGE	23deg. C, 70%RH	DC 13.7V	James Fu
CONDCUDED EMISSION	23deg. C, 70%RH	DC 13.7V	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC 13.7V	Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 13.7V	James Fu



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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

The radiated peak output power shall be according to the specific rule Part 27.50(h)(2) that “User stations are limited to 2 watts” and 27.50(i) specific that “Peak transmit power must be measure over any interval of continuous transmission using instrumentation calibration in terms of rms-equivalent voltage.”

Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt 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 determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

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

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 LTE 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:



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 4

Band/BW	Modulation	RB Size	RB Offset	Low CH 19957	Mid CH 20175	High CH 20393	MPR
				Frequency 1710.7 MHz	Frequency 1732.5 MHz	Frequency 1754.3 MHz	
4/ 1.4	QPSK	1	0	22.87	22.47	22.68	0
		1	2	22.35	21.92	22.19	0
		1	5	22.64	22.19	22.44	0
		3	0	22.48	22.06	22.42	0
		3	1	22.53	22.10	22.27	0
		3	3	22.31	21.88	22.21	0
		6	0	21.41	20.92	21.23	1
	16QAM	1	0	21.33	20.92	21.15	1
		1	2	21.24	20.76	21.11	1
		1	5	21.21	20.81	21.13	1
		3	0	21.38	20.90	21.23	1
		3	1	21.27	20.97	21.18	1
		3	3	21.41	20.96	21.30	1
		6	0	20.42	20.01	20.21	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 19965	Mid CH 20175	High CH 20385	MPR
				Frequency 1711.5 MHz	Frequency 1732.5 MHz	Frequency 1753.5 MHz	
4/ 3	QPSK	1	0	22.89	22.49	22.67	0
		1	7	22.31	21.93	22.19	0
		1	14	22.60	22.19	22.44	0
		8	0	21.47	21.09	21.42	1
		8	3	21.46	21.10	21.29	1
		8	7	21.28	20.95	21.25	1
		15	0	21.38	20.93	21.17	1
	16QAM	1	0	21.30	20.98	21.18	1
		1	7	21.21	20.79	21.09	1
		1	14	21.24	20.81	21.13	1
		8	0	20.34	19.91	20.23	2
		8	3	20.32	19.92	20.21	2
		8	7	20.43	19.94	20.26	2
		15	0	20.42	19.95	20.24	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 19975	Mid CH 20175	High CH 20375	MPR
				Frequency 1712.5 MHz	Frequency 1732.5 MHz	Frequency 1752.5 MHz	
4/ 5	QPSK	1	0	22.90	22.44	22.68	0
		1	12	22.36	21.90	22.19	0
		1	24	22.61	22.18	22.48	0
		12	0	21.50	21.09	21.39	1
		12	6	21.46	21.11	21.30	1
		12	13	21.32	20.91	21.26	1
		25	0	21.36	20.96	21.20	1
	16QAM	1	0	21.31	20.94	21.18	1
		1	12	21.18	20.82	21.08	1
		1	24	21.24	20.81	21.12	1
		12	0	20.34	19.89	20.20	2
		12	6	20.29	19.96	20.17	2
		12	13	20.38	19.96	20.29	2
		25	0	20.42	19.96	20.21	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 20000	Mid CH 20175	High CH 20350	MPR
				Frequency 1715 MHz	Frequency 1732.5 MHz	Frequency 1750 MHz	
4/ 10	QPSK	1	0	22.87	22.47	22.68	0
		1	24	22.36	21.90	22.20	0
		1	49	22.58	22.22	22.44	0
		25	0	21.51	21.08	21.42	1
		25	12	21.52	21.05	21.30	1
		25	25	21.30	20.88	21.25	1
		50	0	21.41	20.96	21.17	1
	16QAM	1	0	21.31	20.91	21.14	1
		1	24	21.23	20.78	21.11	1
		1	49	21.24	20.82	21.09	1
		25	0	20.36	19.87	20.26	2
		25	12	20.33	19.90	20.22	2
		25	25	20.37	19.97	20.26	2
		50	0	20.46	19.95	20.25	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 20025	Mid CH 20175	High CH 20325	MPR
				Frequency 1717.5 MHz	Frequency 1732.5 MHz	Frequency 1747.5 MHz	
4/ 15	QPSK	1	0	22.94	22.47	22.65	0
		1	37	22.34	21.95	22.15	0
		1	74	22.64	22.25	22.45	0
		36	0	21.48	21.09	21.43	1
		36	19	21.53	21.10	21.30	1
		36	39	21.28	20.89	21.25	1
		75	0	21.41	20.94	21.22	1
	16QAM	1	0	21.35	20.98	21.14	1
		1	37	21.22	20.79	21.11	1
		1	74	21.20	20.87	21.11	1
		36	0	20.40	19.87	20.27	2
		36	19	20.27	19.94	20.18	2
		36	39	20.42	19.95	20.29	2
		75	0	20.47	19.98	20.18	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 20050	Mid CH 20175	High CH 20300	MPR
				Frequency 1720 MHz	Frequency 1732.5 MHz	Frequency 1745 MHz	
4/ 20	QPSK	1	0	22.95	22.51	22.73	0
		1	50	22.38	21.98	22.21	0
		1	99	22.66	22.26	22.49	0
		50	0	21.54	21.14	21.44	1
		50	25	21.52	21.12	21.35	1
		50	50	21.36	20.96	21.27	1
		100	0	21.42	20.98	21.25	1
	16QAM	1	0	21.38	20.99	21.20	1
		1	50	21.26	20.84	21.13	1
		1	99	21.26	20.89	21.14	1
		50	0	20.42	19.95	20.28	2
		50	25	20.35	19.98	20.23	2
		50	50	20.45	20.01	20.31	2
		100	0	20.48	20.03	20.26	2

LTE Band 12

Band/BW	Modulation	RB Size	RB Offset	Low CH 23017	Mid CH 23095	High CH 23173	MPR
				Frequency 699.7 MHz	Frequency 707.5 MHz	Frequency 715.3 MHz	
12/ 1.4	QPSK	1	0	24.18	24.47	24.08	0
		1	2	23.96	24.14	23.84	0
		1	5	23.84	24.03	23.72	0
		3	0	23.86	24.10	23.76	0
		3	1	23.82	24.15	23.65	0
		3	3	23.86	24.09	23.75	0
		6	0	23.18	23.44	23.05	1
	16QAM	1	0	23.12	23.39	23.04	1
		1	2	23.21	23.48	23.11	1
		1	5	23.13	23.31	23.04	1
		3	0	22.94	23.22	22.80	1
		3	1	22.89	23.27	22.79	1
		3	3	22.96	23.24	22.91	1
		6	0	21.79	22.09	21.68	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 23025	Mid CH 23095	High CH 23165	MPR
				Frequency 700.5 MHz	Frequency 707.5 MHz	Frequency 714.5 MHz	
12/ 3	QPSK	1	0	24.20	24.49	24.07	0
		1	7	23.92	24.15	23.84	0
		1	14	23.80	24.03	23.72	0
		8	0	22.85	23.13	22.76	1
		8	3	22.75	23.15	22.67	1
		8	7	22.83	23.16	22.79	1
		15	0	23.15	23.45	22.99	1
	16QAM	1	0	23.09	23.45	23.07	1
		1	7	23.18	23.51	23.09	1
		1	14	23.16	23.31	23.04	1
		8	0	21.90	22.23	21.80	2
		8	3	21.94	22.22	21.82	2
		8	7	21.98	22.22	21.87	2
		15	0	21.79	22.03	21.71	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 23035	Mid CH 23095	High CH 23155	MPR
				Frequency 701.5 MHz	Frequency 707.5 MHz	Frequency 713.5 MHz	
12/ 5	QPSK	1	0	24.21	24.44	24.08	0
		1	12	23.97	24.12	23.84	0
		1	24	23.81	24.02	23.76	0
		12	0	22.88	23.13	22.73	1
		12	6	22.75	23.16	22.68	1
		12	13	22.87	23.12	22.80	1
		25	0	23.13	23.48	23.02	1
	16QAM	1	0	23.10	23.41	23.07	1
		1	12	23.15	23.54	23.08	1
		1	24	23.16	23.31	23.03	1
		12	0	21.90	22.21	21.77	2
		12	6	21.91	22.26	21.78	2
		12	13	21.93	22.24	21.90	2
		25	0	21.79	22.04	21.68	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 23060	Mid CH 23095	High CH 23130	MPR
				Frequency 704 MHz	Frequency 707.5 MHz	Frequency 711 MHz	
12/ 10	QPSK	1	0	24.26	24.51	24.13	0
		1	24	23.99	24.20	23.86	0
		1	49	23.86	24.10	23.77	0
		25	0	22.92	23.18	22.78	1
		25	12	22.83	23.17	22.73	1
		25	25	22.91	23.17	22.81	1
		50	0	23.19	23.50	23.07	1
	16QAM	1	0	23.17	23.46	23.09	1
		1	24	23.23	23.56	23.13	1
		1	49	23.18	23.39	23.05	1
		25	0	21.98	22.27	21.85	2
		25	12	21.97	22.28	21.84	2
		25	25	22.00	22.29	21.92	2
		50	0	21.85	22.11	21.73	2

LTE Band 66

Band/BW	Modulation	RB Size	RB Offset	Low CH 131979	Mid CH 132322	High CH 132665	MPR
				Frequency 1710.7MHz	Frequency 1745MHz	Frequency 1779.3MHz	
66/ 1.4	QPSK	1	0	22.77	23.07	23.10	0
		1	2	23.01	23.28	23.37	0
		1	5	22.71	22.96	23.03	0
		3	0	22.92	23.20	23.38	0
		3	1	22.68	22.95	22.94	0
		3	3	22.75	23.02	23.17	0
		6	0	21.83	22.04	22.17	1
	16QAM	1	0	22.06	22.35	22.40	1
		1	2	21.93	22.15	22.32	1
		1	5	21.45	21.75	21.89	1
		3	0	21.75	21.97	22.12	1
		3	1	21.85	22.25	22.28	1
		3	3	21.76	22.01	22.17	1
		6	0	20.71	21.00	21.02	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 131987	Mid CH 132322	High CH 132657	MPR
				Frequency 1711.5MHz	Frequency 1745MHz	Frequency 1778.5MHz	
66/ 3	QPSK	1	0	22.79	23.09	23.09	0
		1	7	22.97	23.29	23.37	0
		1	14	22.67	22.96	23.03	0
		8	0	21.91	22.23	22.38	1
		8	3	21.61	21.95	21.96	1
		8	7	21.72	22.09	22.21	1
		15	0	21.80	22.05	22.11	1
	16QAM	1	0	22.03	22.41	22.43	1
		1	7	21.90	22.18	22.30	1
		1	14	21.48	21.75	21.89	1
		8	0	20.71	20.98	21.12	2
		8	3	20.90	21.20	21.31	2
		8	7	20.78	20.99	21.13	2
		15	0	20.71	20.94	21.05	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 131997	Mid CH 132322	High CH 132647	MPR
				Frequency 1712.5MHz	Frequency 1745MHz	Frequency 1777.5MHz	
66/ 5	QPSK	1	0	22.80	23.04	23.10	0
		1	12	23.02	23.26	23.37	0
		1	24	22.68	22.95	23.07	0
		12	0	21.94	22.23	22.35	1
		12	6	21.61	21.96	21.97	1
		12	13	21.76	22.05	22.22	1
		25	0	21.78	22.08	22.14	1
	16QAM	1	0	22.04	22.37	22.43	1
		1	12	21.87	22.21	22.29	1
		1	24	21.48	21.75	21.88	1
		12	0	20.71	20.96	21.09	2
		12	6	20.87	21.24	21.27	2
		12	13	20.73	21.01	21.16	2
		25	0	20.71	20.95	21.02	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 132022	Mid CH 132322	High CH 132622	MPR
				Frequency 1715MHz	Frequency 1745MHz	Frequency 1775MHz	
66/ 10	QPSK	1	0	22.77	23.07	23.10	0
		1	24	23.02	23.26	23.38	0
		1	49	22.65	22.99	23.03	0
		25	0	21.95	22.22	22.38	1
		25	12	21.67	21.90	21.97	1
		25	25	21.74	22.02	22.21	1
		50	0	21.83	22.08	22.11	1
	16QAM	1	0	22.04	22.34	22.39	1
		1	24	21.92	22.17	22.32	1
		1	49	21.48	21.76	21.85	1
		25	0	20.73	20.94	21.15	2
		25	12	20.91	21.18	21.32	2
		25	25	20.72	21.02	21.13	2
		50	0	20.75	20.94	21.06	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 132072	Mid CH 132322	High CH 132572	MPR
				Frequency 1720MHz	Frequency 1745MHz	Frequency 1770MHz	
66/ 15	QPSK	1	0	22.84	23.07	23.07	0
		1	37	23.00	23.31	23.33	0
		1	74	22.71	23.02	23.04	0
		36	0	21.92	22.23	22.39	1
		36	19	21.68	21.95	21.97	1
		36	39	21.72	22.03	22.21	1
		75	0	21.83	22.06	22.16	1
	16QAM	1	0	22.08	22.41	22.39	1
		1	37	21.91	22.18	22.32	1
		1	74	21.44	21.81	21.87	1
		36	0	20.77	20.94	21.16	2
		36	19	20.85	21.22	21.28	2
		36	39	20.77	21.00	21.16	2
		75	0	20.76	20.97	20.99	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 132072	Mid CH 132322	High CH 132572	MPR
				Frequency 1720MHz	Frequency 1745MHz	Frequency 1770MHz	
66/ 20	QPSK	1	0	22.85	23.11	23.15	0
		1	50	23.04	23.34	23.39	0
		1	99	22.73	23.03	23.08	0
		50	0	21.98	22.28	22.40	1
		50	25	21.69	21.97	22.02	1
		50	50	21.80	22.10	22.23	1
		100	0	21.84	22.10	22.19	1
	16QAM	1	0	22.11	22.42	22.45	1
		1	50	21.95	22.23	22.34	1
		1	99	21.50	21.83	21.90	1
		50	0	20.79	21.02	21.17	2
		50	25	20.93	21.26	21.33	2
		50	50	20.80	21.06	21.18	2
		100	0	20.77	21.02	21.07	2

LTE Band 71

Band/BW	Modulation	RB Size	RB Offset	Low CH 133147	Mid CH 133247	High CH 133447	MPR
				Frequency 665.5MHz	Frequency 675.5MHz	Frequency 695.5MHz	
71/ 5	QPSK	1	0	22.76	22.52	22.92	0
		1	12	22.87	22.63	23.08	0
		1	24	22.40	22.19	22.65	0
		12	0	21.54	21.35	21.81	1
		12	6	21.62	21.49	21.84	1
		12	13	21.68	21.49	22.00	1
		25	0	21.62	21.44	21.84	1
	16QAM	1	0	22.14	21.99	22.39	1
		1	12	22.32	22.18	22.40	1
		1	24	22.29	22.08	22.35	1
		12	0	20.54	20.31	20.78	2
		12	6	20.49	20.38	20.75	2
		12	13	20.57	20.37	20.86	2
		25	0	20.50	20.26	20.67	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 133172	Mid CH 133272	High CH 133172	MPR
				Frequency 668MHz	Frequency 678MHz	Frequency 693MHz	
71/ 10	QPSK	1	0	22.73	22.55	22.92	0
		1	24	22.87	22.63	23.09	0
		1	49	22.37	22.23	22.61	0
		25	0	21.55	21.34	21.84	1
		25	12	21.68	21.43	21.84	1
		25	25	21.66	21.46	21.99	1
		50	0	21.67	21.44	21.81	1
	16QAM	1	0	22.14	21.96	22.35	1
		1	24	22.37	22.14	22.43	1
		1	49	22.29	22.09	22.32	1
		25	0	20.56	20.29	20.84	2
		25	12	20.53	20.32	20.80	2
		25	25	20.56	20.38	20.83	2
		50	0	20.54	20.25	20.71	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 133197	Mid CH 133297	High CH 133397	MPR
				Frequency 670.5MHz	Frequency 680.5MHz	Frequency 690.5MHz	
71/ 15	QPSK	1	0	22.80	22.55	22.89	0
		1	37	22.85	22.68	23.04	0
		1	74	22.43	22.26	22.62	0
		36	0	21.52	21.35	21.85	1
		36	19	21.69	21.48	21.84	1
		36	39	21.64	21.47	21.99	1
		75	0	21.67	21.42	21.86	1
	16QAM	1	0	22.18	22.03	22.35	1
		1	37	22.36	22.15	22.43	1
		1	74	22.25	22.14	22.34	1
		36	0	20.60	20.29	20.85	2
		36	19	20.47	20.36	20.76	2
		36	39	20.61	20.36	20.86	2
		75	0	20.55	20.28	20.64	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 133222	Mid CH 133322	High CH 133372	MPR
				Frequency 673MHz	Frequency 683MHz	Frequency 688MHz	
71/ 20	QPSK	1	0	22.81	22.59	22.97	0
		1	50	22.89	22.71	23.10	0
		1	99	22.45	22.27	22.66	0
		50	0	21.58	21.40	21.86	1
		50	25	21.70	21.50	21.89	1
		50	50	21.72	21.54	22.01	1
		100	0	21.68	21.46	21.89	1
	16QAM	1	0	22.21	22.04	22.41	1
		1	50	22.40	22.20	22.45	1
		1	99	22.31	22.16	22.37	1
		50	0	20.62	20.37	20.86	2
		50	25	20.55	20.40	20.81	2
		50	50	20.64	20.42	20.88	2
		100	0	20.56	20.33	20.72	2

EIRP

LTE BAND 4

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19957	1710.7	22.87	5.54	28.41	693.43	1
20175	1732.5	22.47	5.54	28.01	632.41	1
20393	1754.3	22.68	5.54	28.22	663.74	1

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19957	1710.7	21.41	5.54	26.95	495.45	1
20175	1732.5	20.97	5.54	26.51	447.71	1
20393	1754.3	21.3	5.54	26.84	483.06	1

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19965	1711.5	22.89	5.54	28.43	696.63	1
20175	1732.5	22.49	5.54	28.03	635.33	1
20385	1753.5	22.67	5.54	28.21	662.22	1

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19965	1711.5	21.3	5.54	26.84	483.06	1
20175	1732.5	20.98	5.54	26.52	448.75	1
20385	1753.5	20.21	5.54	25.75	375.84	1

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19975	1712.5	22.9	5.54	28.44	698.23	1
20175	1732.5	22.44	5.54	27.98	628.06	1
20375	1752.5	22.68	5.54	28.22	663.74	1

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19975	1712.5	21.31	5.54	26.85	484.17	1
20175	1732.5	20.94	5.54	26.48	444.63	1
20375	1752.5	21.18	5.54	26.72	469.89	1

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	22.87	5.54	28.41	693.43	1
20175	1732.5	22.47	5.54	28.01	632.41	1
20350	1750	22.68	5.54	28.22	663.74	1

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	21.31	5.54	26.85	484.17	1
20175	1732.5	20.91	5.54	26.45	441.57	1
20350	1750	21.14	5.54	26.68	465.59	1

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20025	1717.5	22.94	5.54	28.48	704.69	1
20175	1732.5	22.47	5.54	28.01	632.41	1
20325	1747.5	22.65	5.54	28.19	659.17	1

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20025	1717.5	21.35	5.54	26.89	488.65	1
20175	1732.5	20.98	5.54	26.52	448.75	1
20325	1747.5	21.14	5.54	26.68	465.59	1

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	22.95	5.54	28.49	706.32	1
20175	1732.5	22.51	5.54	28.05	638.26	1
20300	1745	22.73	5.54	28.27	671.43	1

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	21.38	5.54	26.92	492.04	1
20175	1732.5	20.99	5.54	26.53	449.78	1
20300	1745	21.2	5.54	26.74	472.06	1

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 12

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23017	699.7	24.18	5.54	27.57	571.48	3
23095	707.5	24.47	5.54	27.86	610.94	3
23173	715.3	24.08	5.54	27.47	558.47	3

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23017	699.7	23.21	5.54	26.6	457.09	3
23095	707.5	23.48	5.54	26.87	486.41	3
23173	715.3	23.11	5.54	26.5	446.68	3

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23025	700.5	24.2	5.54	27.59	574.12	3
23095	707.5	24.49	5.54	27.88	613.76	3
23165	714.5	24.07	5.54	27.46	557.19	3

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23025	700.5	23.18	5.54	26.57	453.94	3
23095	707.5	23.51	5.54	26.9	489.78	3
23165	714.5	23.09	5.54	26.48	444.63	3

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23035	701.5	24.21	5.54	27.6	575.44	3
23095	707.5	24.44	5.54	27.83	606.74	3
23155	713.5	24.08	5.54	27.47	558.47	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23035	701.5	23.16	5.54	26.55	451.86	3
23095	707.5	23.54	5.54	26.93	493.17	3
23155	713.5	23.08	5.54	26.47	443.61	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23060	704	24.26	5.54	27.65	582.10	3
23095	707.5	24.51	5.54	27.9	616.60	3
23130	711	24.13	5.54	27.52	564.94	3

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23060	704	23.23	5.54	26.62	459.2	3
23095	707.5	23.56	5.54	26.95	495.45	3
23130	711	23.13	5.54	26.52	448.75	3

REMARKS: ERP Output Power (dBm) = ERP (dBm) -2.15(dB).



**BUREAU
VERITAS**

Test Report No.: W7L-P21090018RF06

LTE BAND 66

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131979	1710.7	23.01	5.54	28.55	716.14	1
132322	1745	23.28	5.54	28.82	762.08	1
132665	1779.3	23.38	5.54	28.92	779.83	1

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131979	1710.7	22.06	5.54	27.6	575.44	1
132322	1745	22.35	5.54	27.89	615.18	1
132665	1779.3	22.4	5.54	27.94	622.3	1

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131987	1711.5	22.97	5.54	28.51	709.58	1
132322	1745	23.29	5.54	28.83	763.84	1
132657	1778.5	23.37	5.54	28.91	778.04	1

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131987	1711.5	22.03	5.54	27.57	571.48	1
132322	1745	22.41	5.54	27.95	623.73	1
132657	1778.5	22.43	5.54	27.97	626.61	1

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131997	1712.5	23.02	5.54	28.56	717.79	1
132322	1745	23.26	5.54	28.8	758.58	1
132647	1777.5	23.37	5.54	28.91	778.04	1

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
C	1712.5	22.04	5.54	27.58	572.8	1
132322	1745	22.37	5.54	27.91	618.02	1
132647	1777.5	22.43	5.54	27.97	626.61	1

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132022	1715	23.02	5.54	28.56	717.79	1
132322	1745	23.26	5.54	28.8	758.58	1
132622	1775	23.38	5.54	28.92	779.83	1

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132022	1715	22.04	5.54	27.58	572.8	1
132322	1745	22.34	5.54	27.88	613.76	1
132622	1775	22.39	5.54	27.93	620.87	1

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132047	1717.5	23	5.54	28.54	714.50	1
132322	1745	23.31	5.54	28.85	767.36	1
132597	1772.5	23.33	5.54	28.87	770.90	1

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132047	1715	22.08	5.54	27.62	578.1	1
132322	1745	22.41	5.54	27.95	623.73	1
132622	1775	22.39	5.54	27.93	620.87	1

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132072	1720	23.04	5.54	28.58	721.11	1
132322	1745	23.34	5.54	28.88	772.68	1
132572	1770	23.39	5.54	28.93	781.63	1

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132072	1720	22.11	5.54	27.65	582.1	1
132322	1745	22.42	5.54	27.96	625.17	1
132572	1770	22.45	5.54	27.99	629.51	1

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

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CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133147	665.5	22.87	5.54	26.26	422.67	1
133247	675.5	22.63	5.54	26.02	399.94	1
133447	695.5	23.08	5.54	26.47	443.61	1

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133147	665.5	22.32	5.54	25.71	372.39	1
133247	675.5	22.18	5.54	25.57	360.58	1
133447	695.5	22.4	5.54	25.79	379.31	1

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133172	668	22.87	5.54	26.26	422.67	1
133272	678	22.63	5.54	26.02	399.94	1
133422	693	23.09	5.54	26.48	444.63	1

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133172	668	22.37	5.54	25.76	376.7	1
133272	678	22.14	5.54	25.53	357.27	1
133422	693	22.43	5.54	25.82	381.94	1

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133197	670.5	22.85	5.54	26.24	420.73	1
133297	680.5	22.68	5.54	26.07	404.58	1
133397	690.5	23.04	5.54	26.43	439.54	1

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133197	670.5	22.36	5.54	25.75	375.84	1
133297	680.5	22.15	5.54	25.54	358.1	1
133397	690.5	22.43	5.54	25.82	381.94	1

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133222	673	22.89	5.54	26.28	424.62	1
133322	683	22.71	5.54	26.1	407.38	1
133372	688	23.1	5.54	26.49	445.66	1

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133222	673	22.4	5.54	25.79	379.31	1
133322	683	22.2	5.54	25.59	362.24	1
133372	688	22.45	5.54	25.84	383.71	1

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

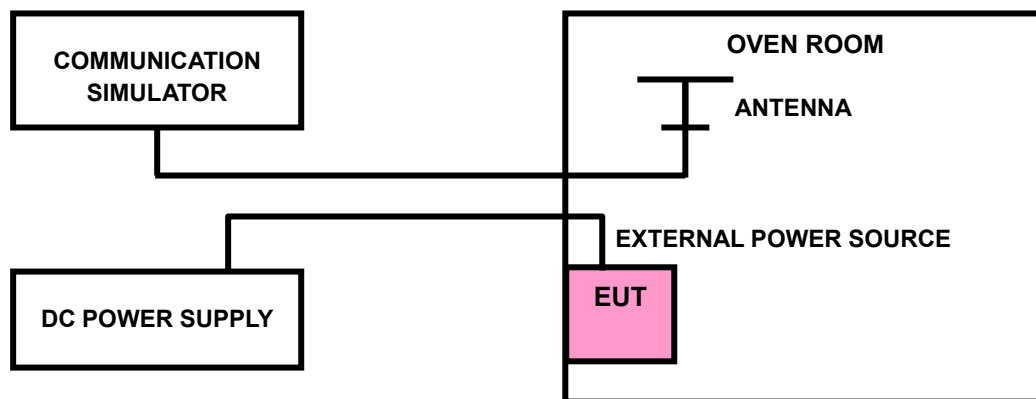
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

- 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.
- 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.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ 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





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3.2.4 TEST RESULTS

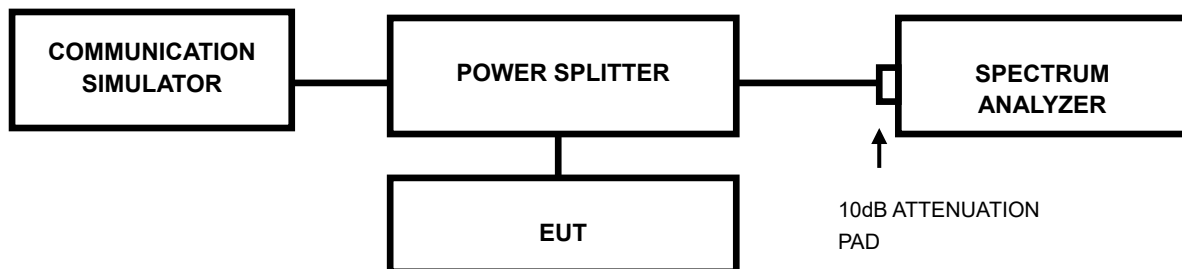
Please Refer to Appendix A Of this test report.

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

- The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.



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3.3.4 TEST RESULTS

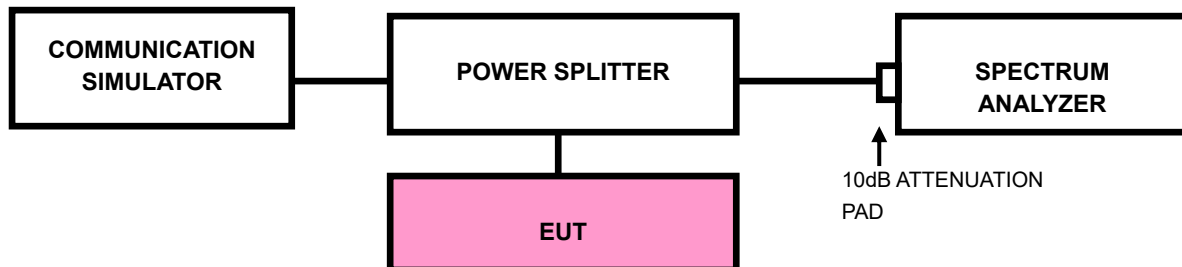
Please Refer to Appendix A Of this test report.

3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

According to FCC 27.53(m)(4) specified that For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. For mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed.

3.4.2 TEST SETUP



3.4.3 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 35MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz (Channel bandwidth 5MHz).
- d. The center frequency of spectrum is the band edge frequency and span is 50MHz. RBW of the spectrum is 200kHz and VBW of the spectrum is 1MHz (Channel bandwidth 10MHz).
- e. The center frequency of spectrum is the band edge frequency and span is 60MHz. RBW of the spectrum is 300kHz and VBW of the spectrum is 1MHz (Channel bandwidth 15MHz).
- f. The center frequency of spectrum is the band edge frequency and span is 80MHz. RBW of the spectrum is 500kHz and VBW of the spectrum is 2MHz (Channel bandwidth 20MHz).
- g. Record the max trace plot into the test report.



Test Report No.: W7L-P21090018RF06

3.4.4 TEST RESULTS

Please Refer to Appendix A Of this test report.

3.5 CONDUCTED SPURIOUS EMISSIONS

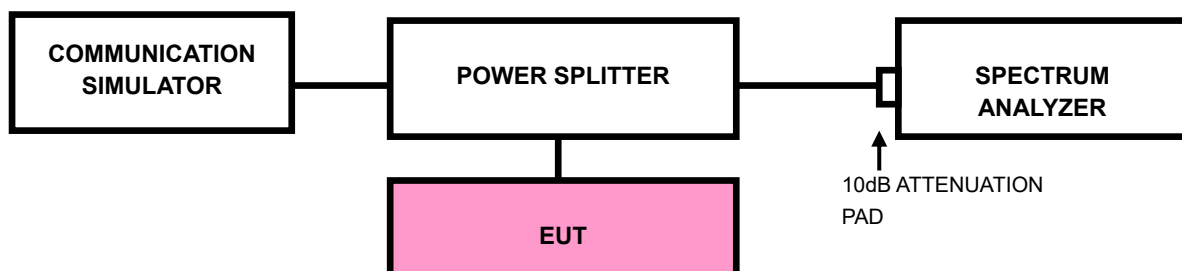
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $55 + 10 \log_{10}(P)$ dB. The limit of emission is equal to -25dBm.

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 30MHz~27GHz for LTE Band 7 & 30MHz~26.2GHz for LTE Band 38, 30MHz~27GHz for LTE Band 41. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz are used for conducted emission measurement.

3.5.3 TEST SETUP





Test Report No.: W7L-P21090018RF06

3.5.4 TEST RESULTS

Please Refer to Appendix A Of this test report.

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 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 $55 + 10 \log_{10}(P)$ dB. The limit of emission is equal to -25dBm.

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

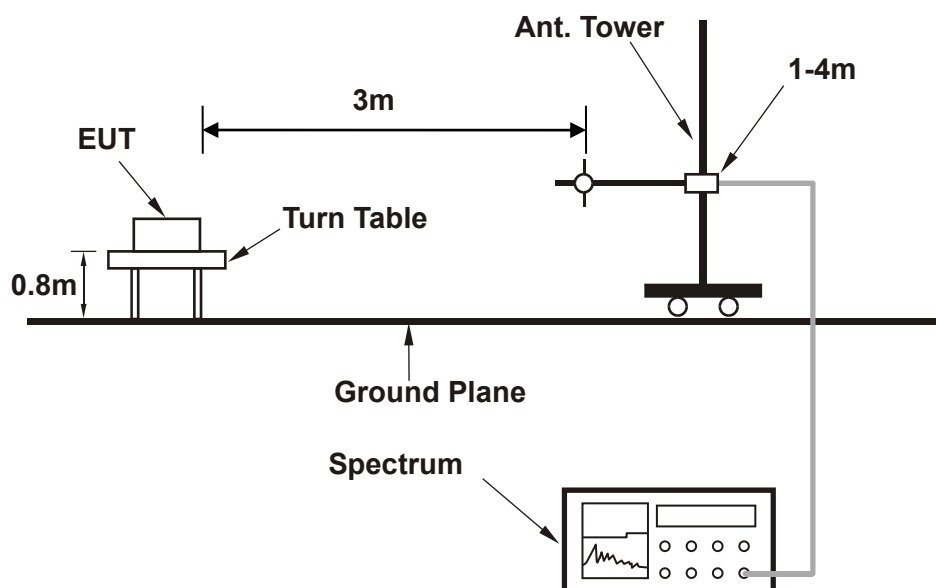
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

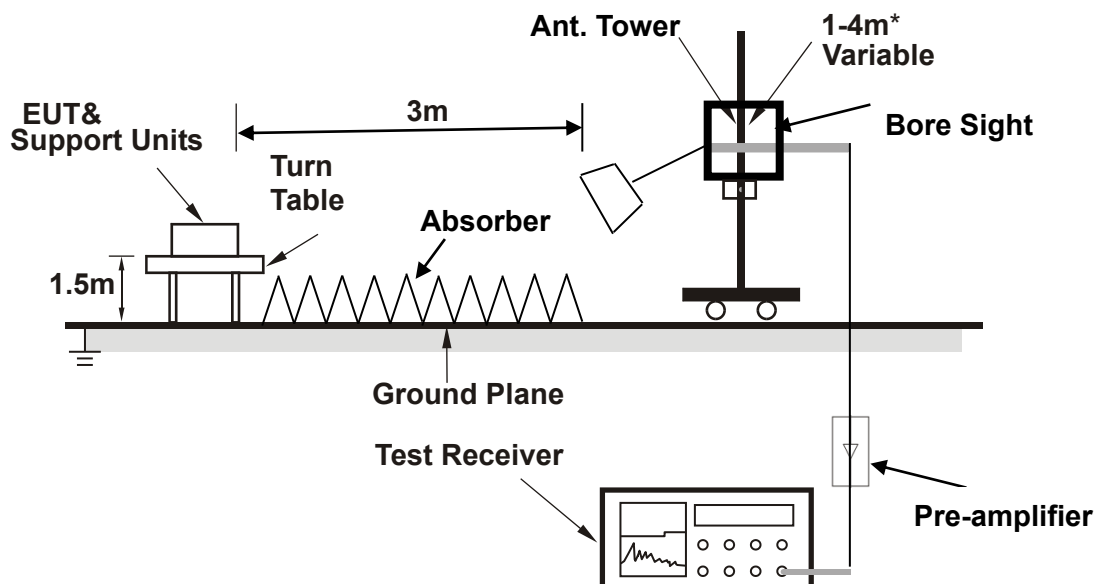
No deviation

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

Note: The emission in the range of 9KHz-30MHz was tested 20db below the limit, the data not recorded in the sheet.

BELOW 1GHz WORST-CASE DATA

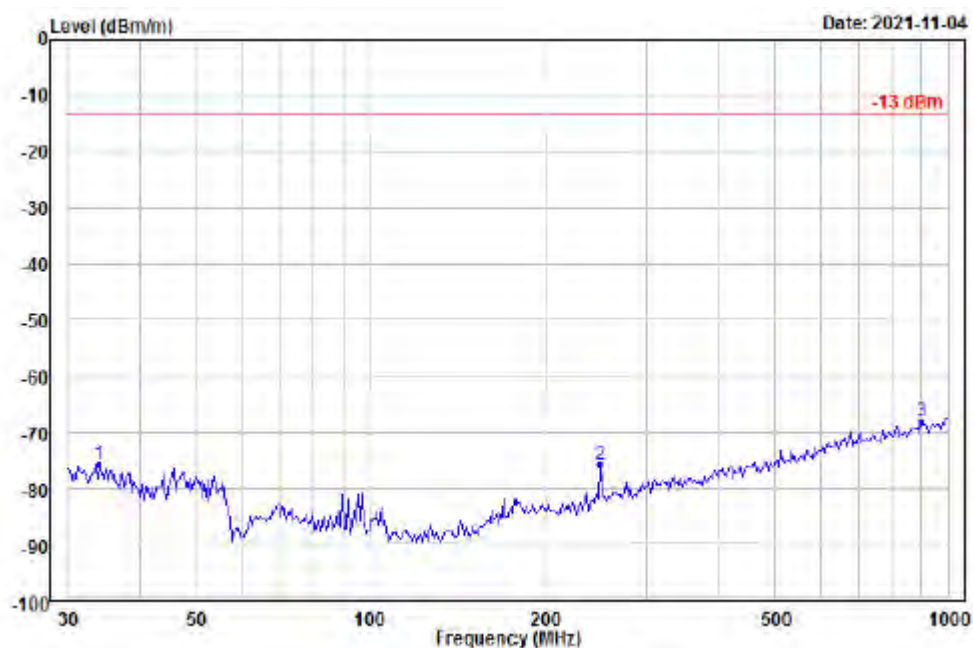
30 MHz – 1GHz data:

LTE Band 66

CHANNEL BANDWIDTH: 20MHz / QPSK

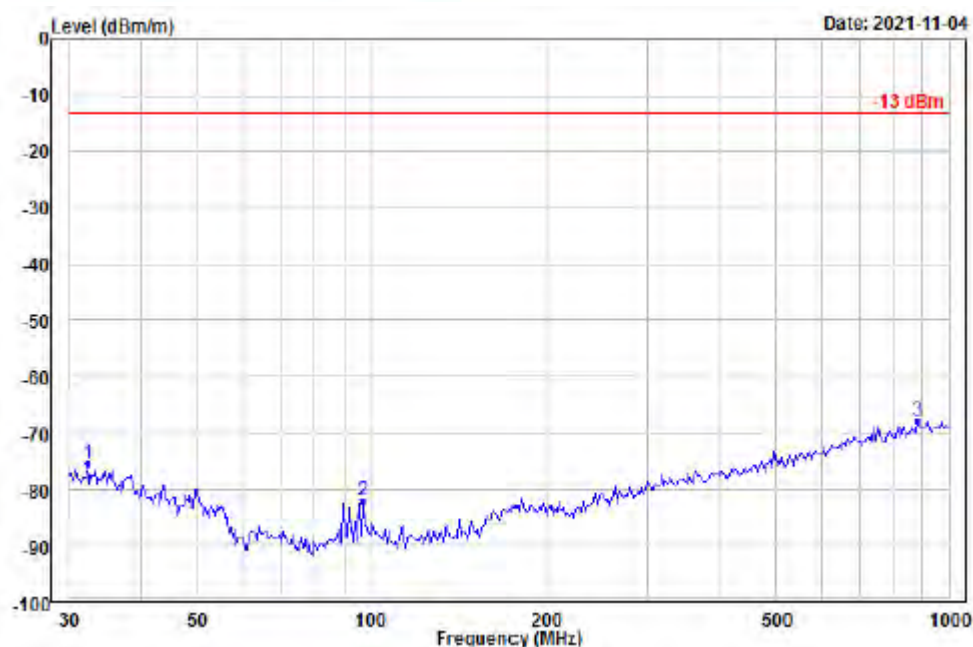
MODE	TX channel 132322	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remarks
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	34.045	-80.42	23.28	28.81	0.00	10.32	-75.63	-13.00	-62.63	---	---	Peak
2	250.486	-76.39	17.63	28.10	0.00	11.13	-75.73	-13.00	-62.73	---	---	Peak
3 PP	899.958	-81.93	30.30	28.89	0.00	12.37	-68.15	-13.00	-55.15	---	---	Peak



MODE	TX channel 132322	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	32.411	-80.20	23.28	28.81	0.00	10.27	-75.46	-13.00	-62.46	---	---	Peak
2	97.002	-75.49	11.60	28.67	0.00	10.62	-81.94	-13.00	-68.94	---	---	Peak
3 PP	881.184	-81.43	30.12	28.94	0.00	12.33	-67.92	-13.00	-54.92	---	---	Peak





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Test Report No.: W7L-P21090018RF06

ABOVE 1GHz

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

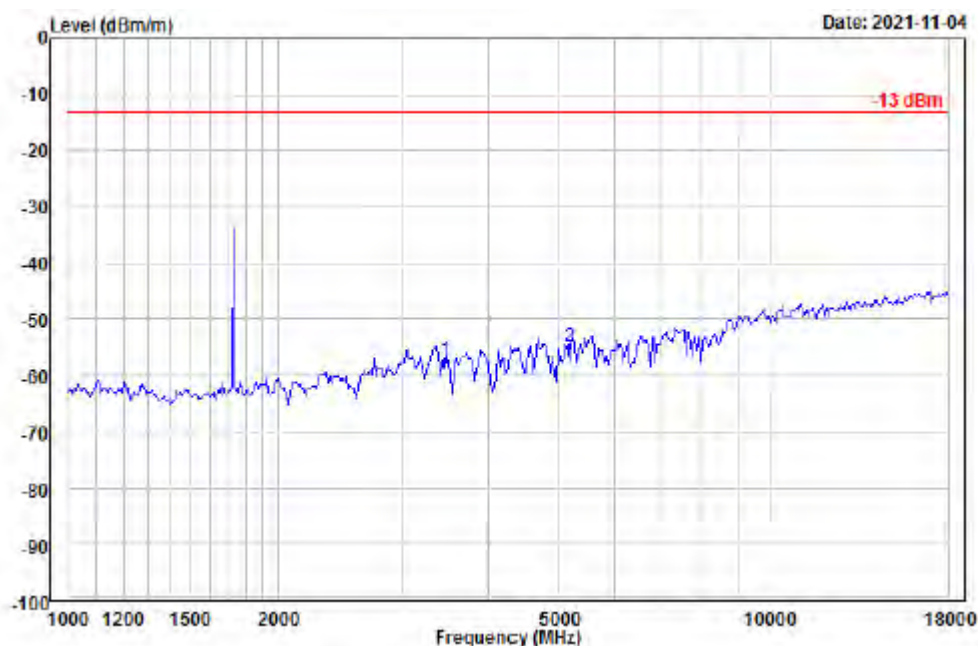
LTE Band 4

CHANNEL BANDWIDTH: 1.4MHz / QPSK

CH 20175

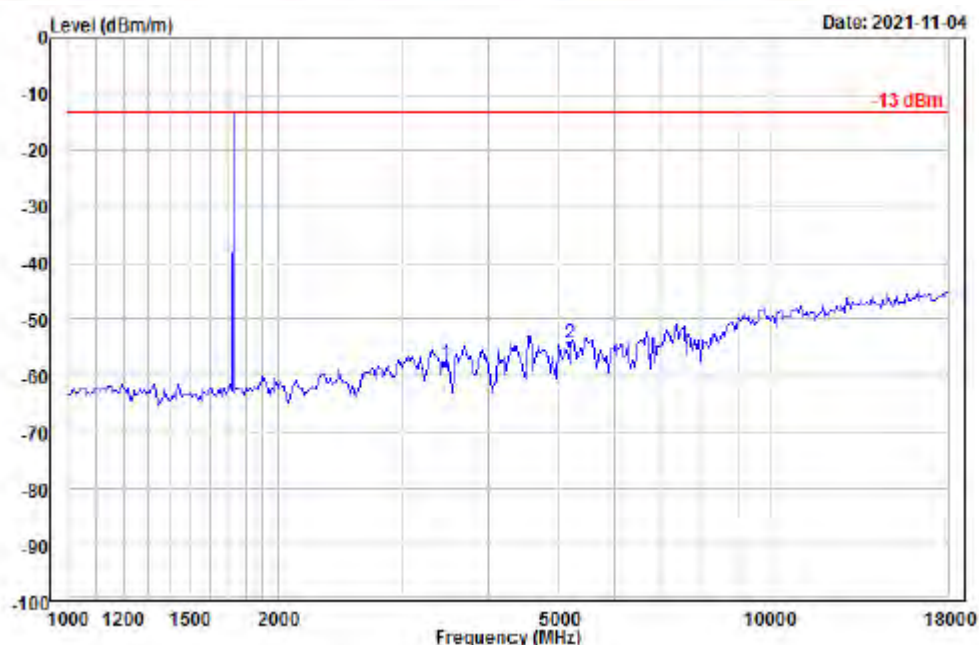
MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3465.000	-63.94	33.41	46.78	0.00	19.99	-57.32	-13.00	-44.32	---	---	Peak
2 PP	5197.500	-64.98	34.94	46.24	0.00	21.55	-54.73	-13.00	-41.73	---	---	Peak



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3465.000	-64.52	33.41	46.78	0.00	19.99	-57.90	-13.00	-44.90	---	---	Peak
2 PP	5197.500	-64.47	34.94	46.24	0.00	21.55	-54.22	-13.00	-41.22	---	---	Peak





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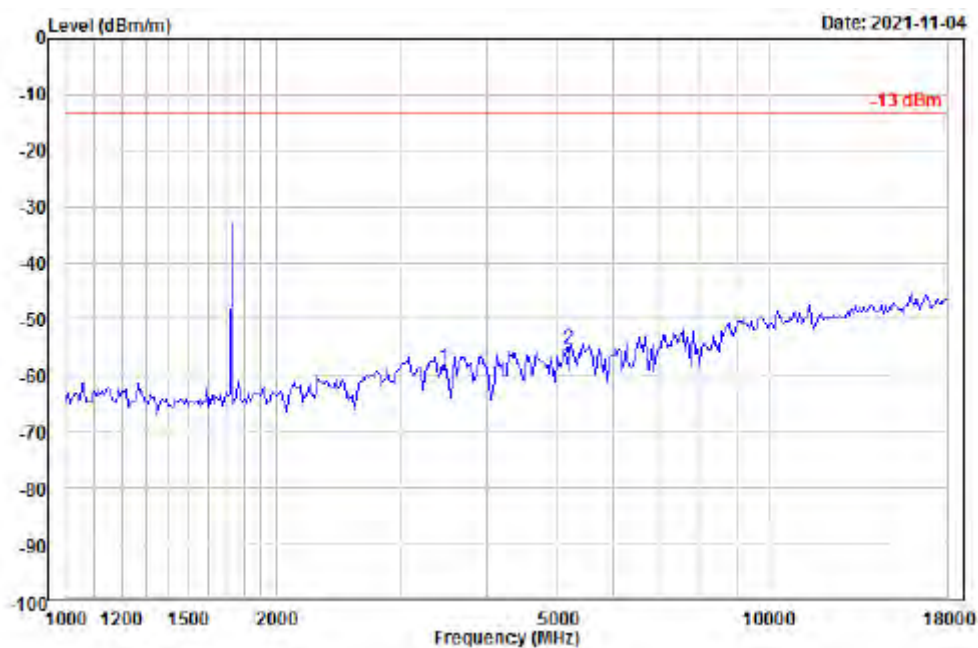
Test Report No.: W7L-P21090018RF06

CHANNEL BANDWIDTH: 3MHz / QPSK

CH 20175

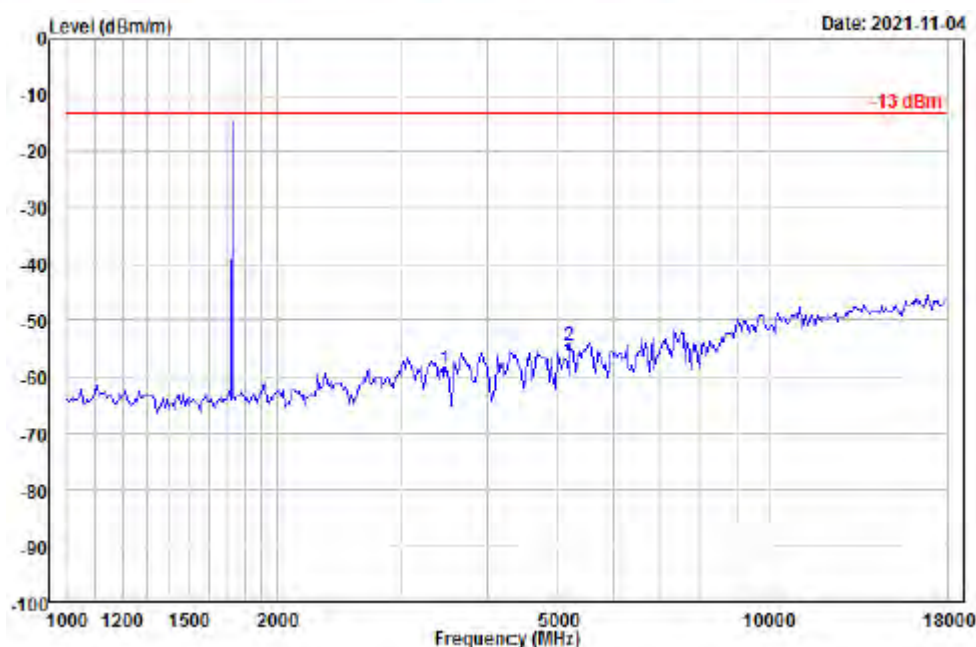
MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3465.000	-65.20	33.41	46.78	0.00	19.99	-58.58	-13.00	-45.58	---	---	Peak
2 PP	5197.500	-65.63	34.94	46.24	0.00	21.55	-55.38	-13.00	-42.38	---	---	Peak



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rema
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3465.888	-65.16	33.41	46.78	0.00	19.99	-58.54	-13.88	-45.54	---	---	Peak
2 PP	5197.588	-64.81	34.94	46.24	0.00	21.55	-54.56	-13.00	-41.56	---	---	Peak





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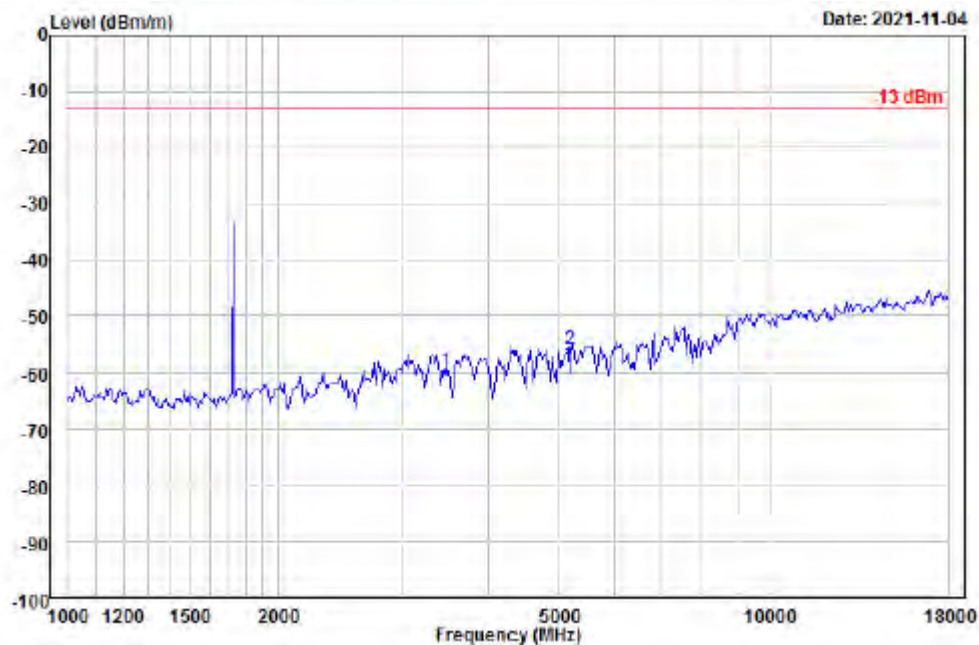
Test Report No.: W7L-P21090018RF06

CHANNEL BANDWIDTH: 5MHz / QPSK

CH 20175

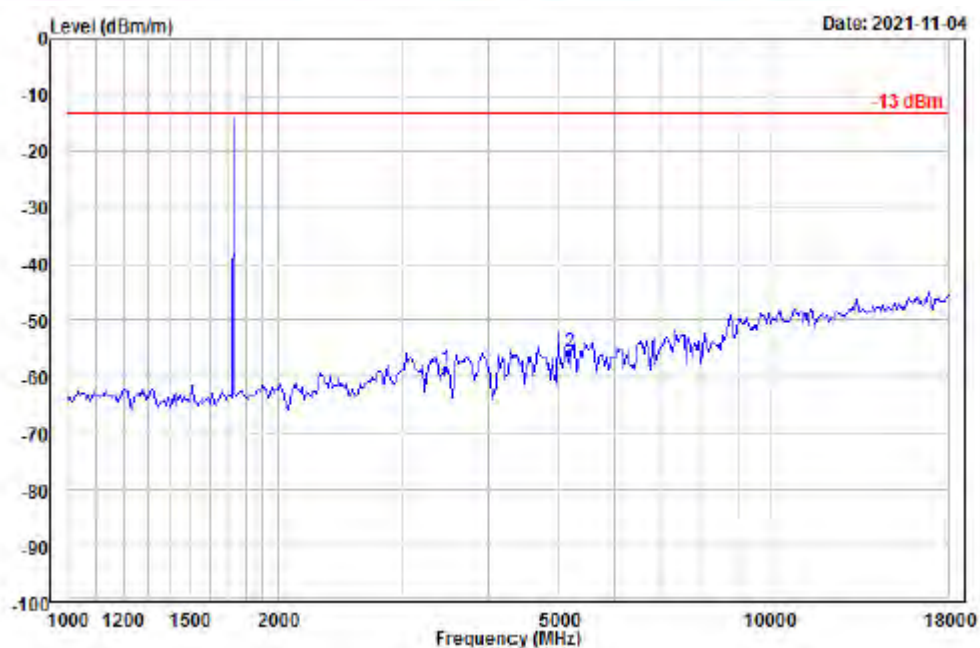
MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rem
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3465.000	-66.40	33.41	46.78	0.00	19.99	-59.78	-13.00	-46.78	---	---	Peak
2 PP	5197.500	-66.09	34.94	46.24	0.00	21.55	-55.84	-13.00	-42.84	---	---	Peak



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3465.000	-65.09	33.41	46.78	0.00	19.99	-58.47	-13.00	-45.47	---	---	Peak
2 PP	5197.500	-65.92	34.94	46.24	0.00	21.55	-55.67	-13.00	-42.67	---	---	Peak





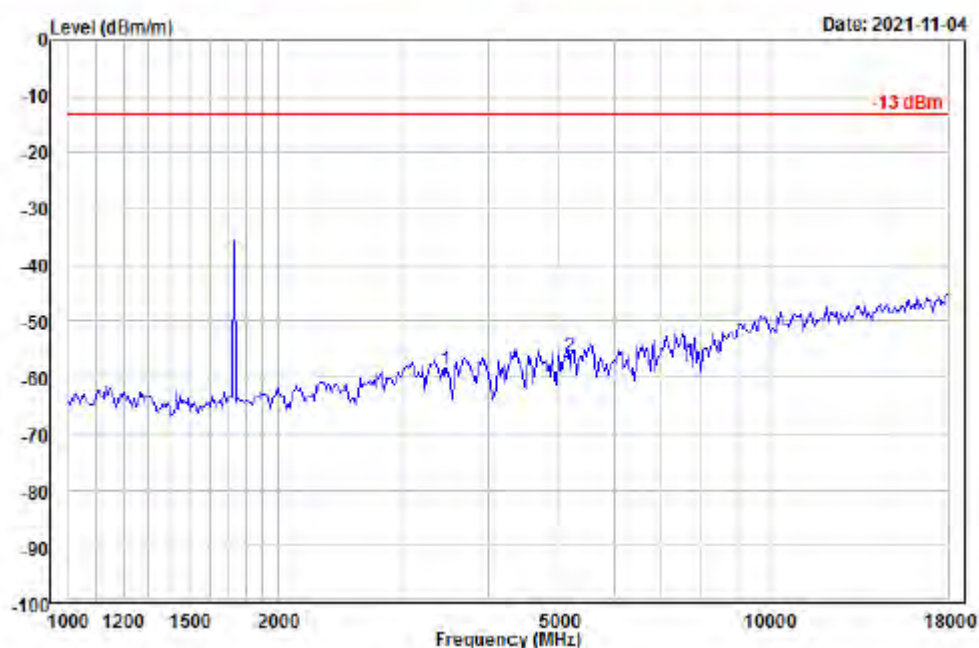
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Test Report No.: W7L-P21090018RF06

CHANNEL BANDWIDTH: 10MHz / QPSK

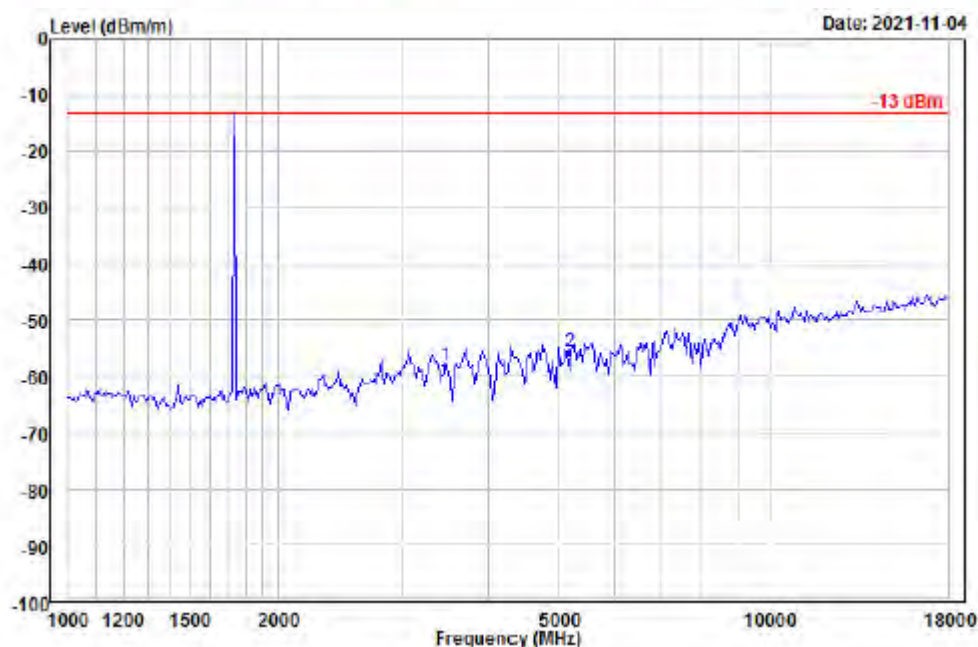
MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3465.000	-65.12	33.41	46.78	0.00	19.99	-58.50	-13.00	-45.50	---	---	Peak
2 PP	5197.500	-66.44	34.94	46.24	0.00	21.55	-56.19	-13.00	-43.19	---	---	Peak



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Read Freq	Ant Level	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rema	
	MHz	dBm	dB/m	dB	dB	dBm/m	dBm/m	dB	cm	deg		
1	3465.000	-64.59	33.41	46.78	0.00	19.99	-57.97	-13.00	-44.97	---	---	Peak
2 PP	5197.500	-65.73	34.94	46.24	0.00	21.55	-55.48	-13.00	-42.48	---	---	Peak





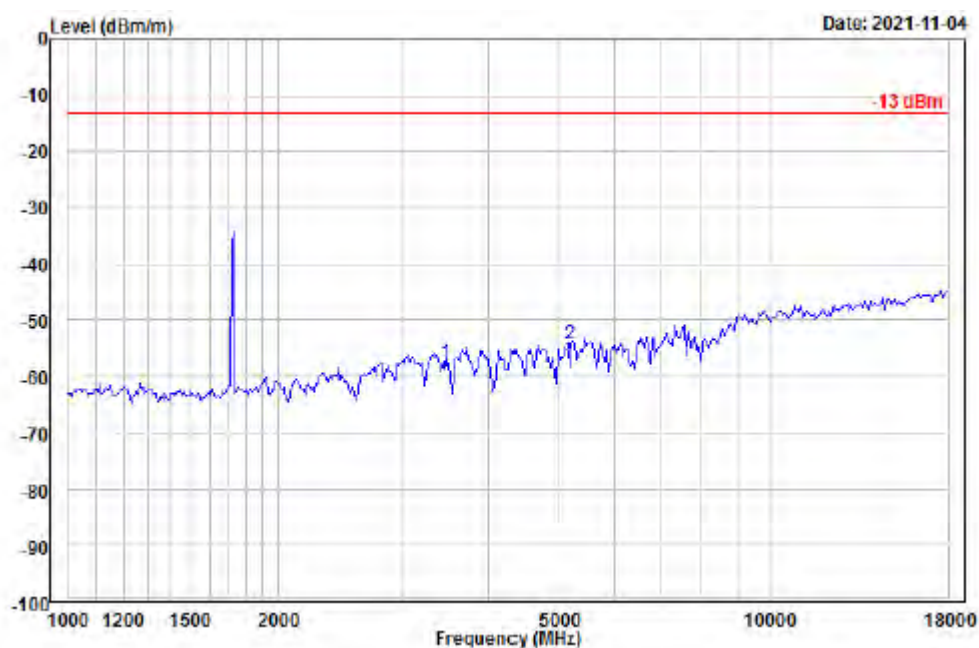
**BUREAU
VERITAS**

Test Report No.: W7L-P21090018RF06

CHANNEL BANDWIDTH: 15MHz / QPSK

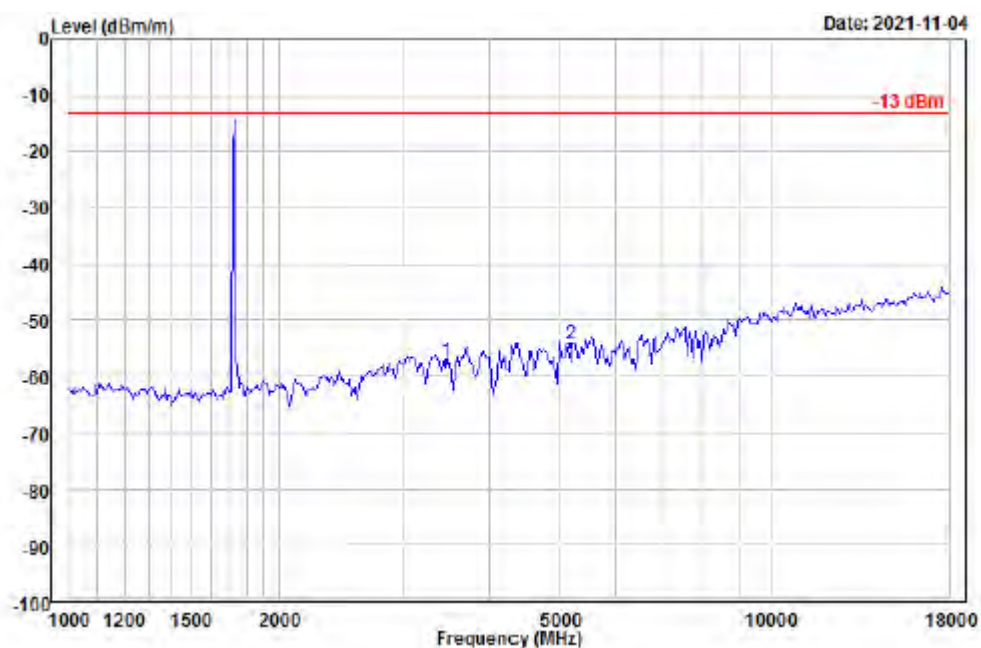
MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rema
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3465.000	-64.03	33.41	46.78	0.00	19.99	-57.41	-13.00	-44.41	---	---	Peak
2 PP	5197.500	-64.48	34.94	46.24	0.00	21.55	-54.23	-13.00	-41.23	---	---	Peak



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3465.000	-63.75	33.41	46.78	0.00	19.99	-57.13	-13.00	-44.13	---	---	Peak
2 PP	5197.500	-64.58	34.94	46.24	0.00	21.55	-54.33	-13.00	-41.33	---	---	Peak





**BUREAU
VERITAS**

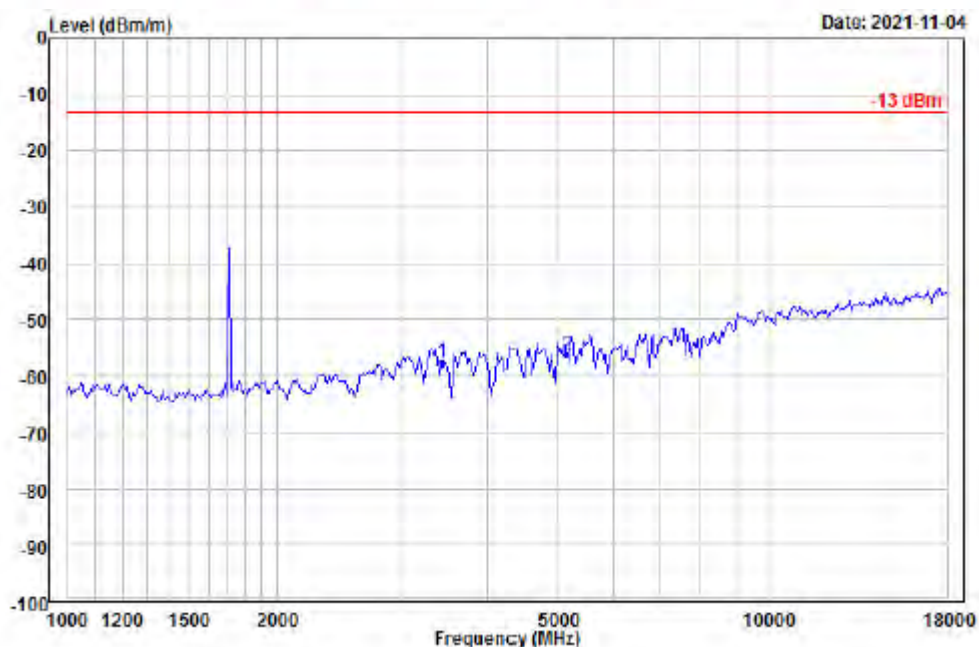
Test Report No.: W7L-P21090018RF06

CHANNEL BANDWIDTH: 20MHz / QPSK

CH 20050

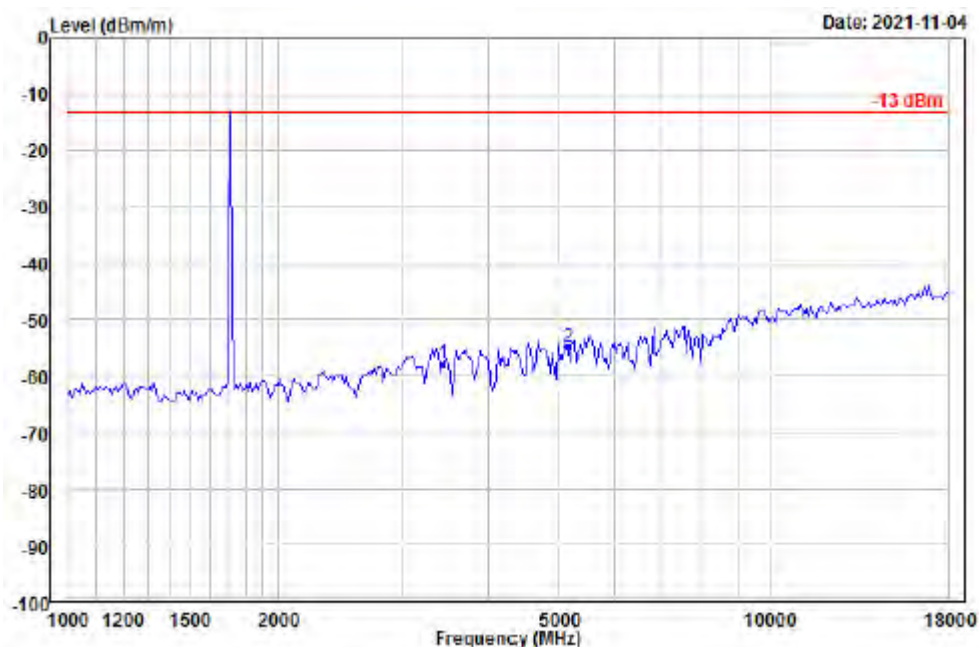
MODE	TX channel 20050	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rema
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3440.000	-63.98	33.41	46.84	0.00	19.96	-57.45	-13.00	-44.45	---	---	Peak
2 PP	5160.000	-66.30	34.89	46.31	0.00	21.52	-56.20	-13.00	-43.20	---	---	Peak



MODE	TX channel 20050	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rem
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3440.000	-64.26	33.41	46.84	0.00	19.96	-57.73	-13.00	-44.73	---	---	Peak
2 PP	5160.000	-64.79	34.89	46.31	0.00	21.52	-54.69	-13.00	-41.69	---	---	Peak





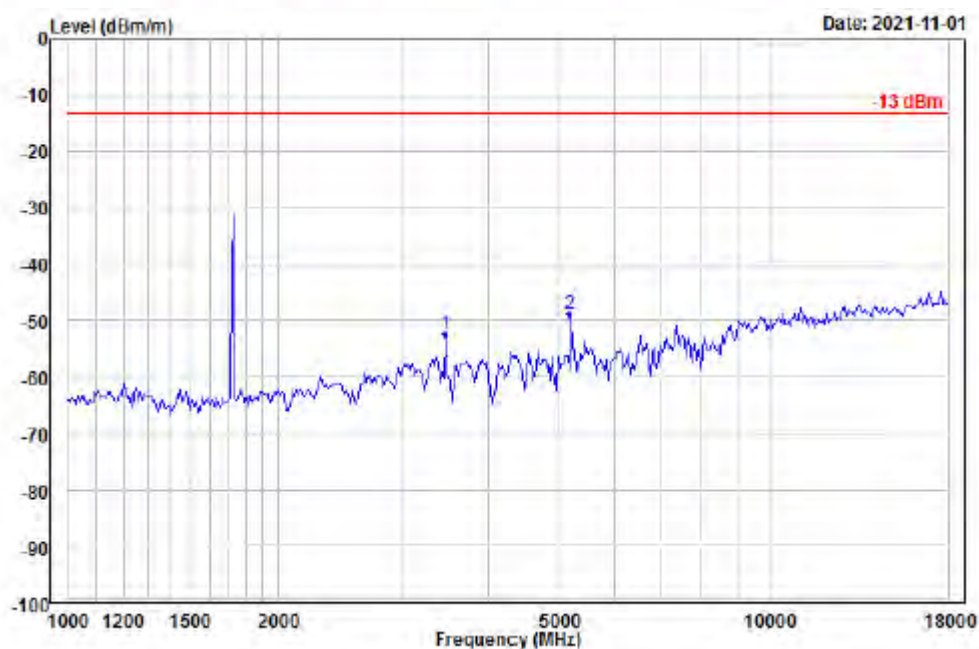
**BUREAU
VERITAS**

Test Report No.: W7L-P21090018RF06

CH 20175

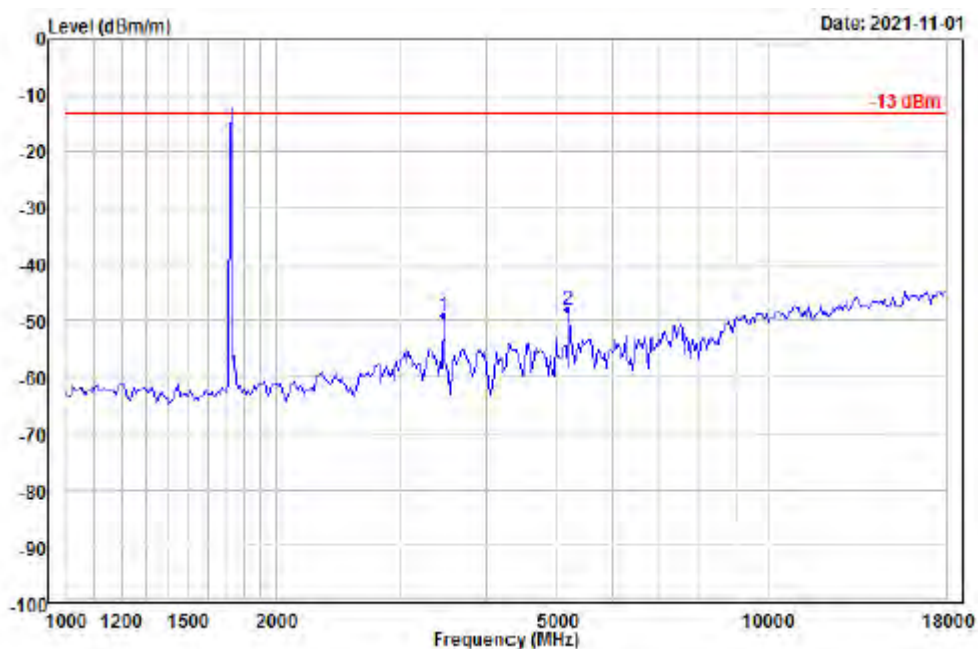
MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rem
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3465.000	-58.94	33.41	46.78	0.00	19.99	-52.32	-13.00	-39.32	---	---	Peak
2 PP	5197.500	-58.90	34.94	46.24	0.00	21.55	-48.65	-13.00	-35.65	---	---	Peak



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3465.000	-55.72	33.41	46.78	0.00	19.99	-49.10	-13.00	-36.10	---	---	Peak
2 PP	5197.500	-58.22	34.94	46.24	0.00	21.55	-47.97	-13.00	-34.97	---	---	Peak





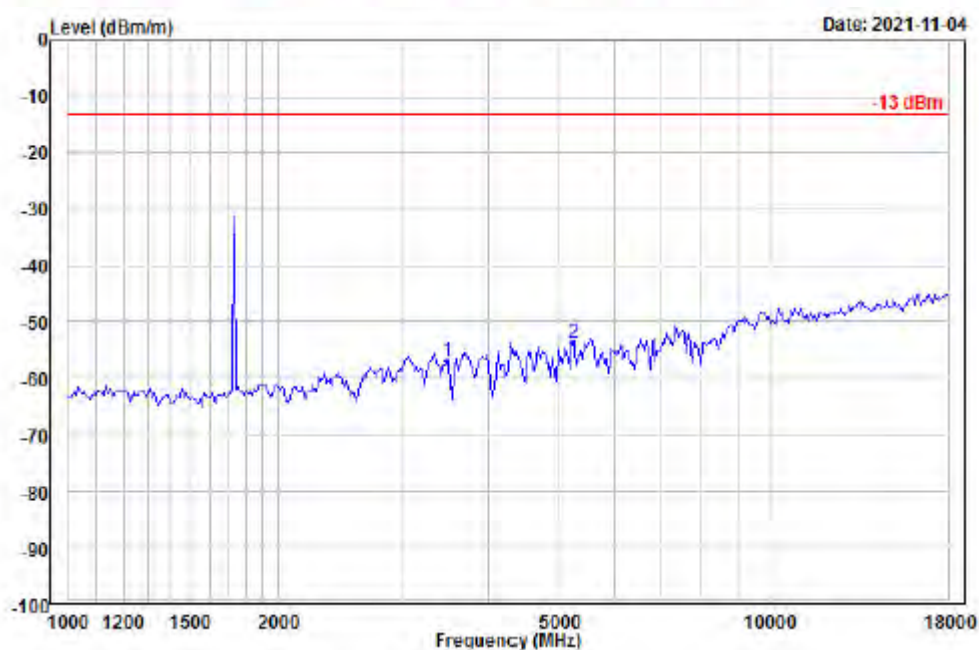
**BUREAU
VERITAS**

Test Report No.: W7L-P21090018RF06

CH 20300

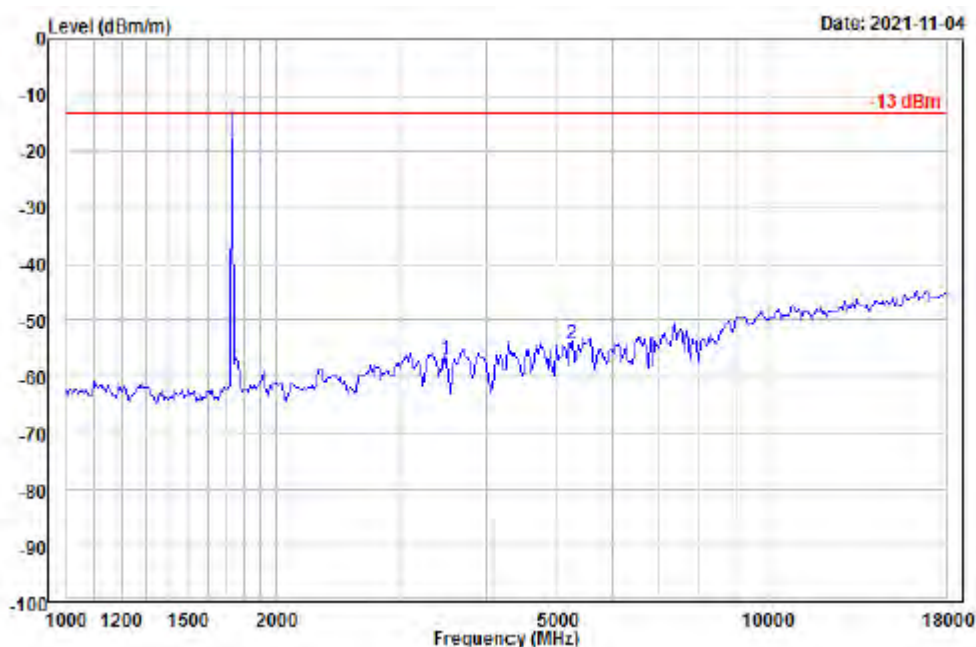
MODE	TX channel 20300	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rema
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3490.000	-63.79	33.40	46.72	0.00	20.03	-57.08	-13.00	-44.08	---	---	Peak
2 PP	5235.000	-64.14	34.98	46.18	0.00	21.64	-53.70	-13.00	-40.70	---	---	Peak



MODE	TX channel 20300	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rem
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3490.000	-63.72	33.40	46.72	0.00	20.03	-57.01	-13.00	-44.01	---	---	Peak
2 PP	5235.000	-64.68	34.98	46.18	0.00	21.64	-54.24	-13.00	-41.24	---	---	Peak

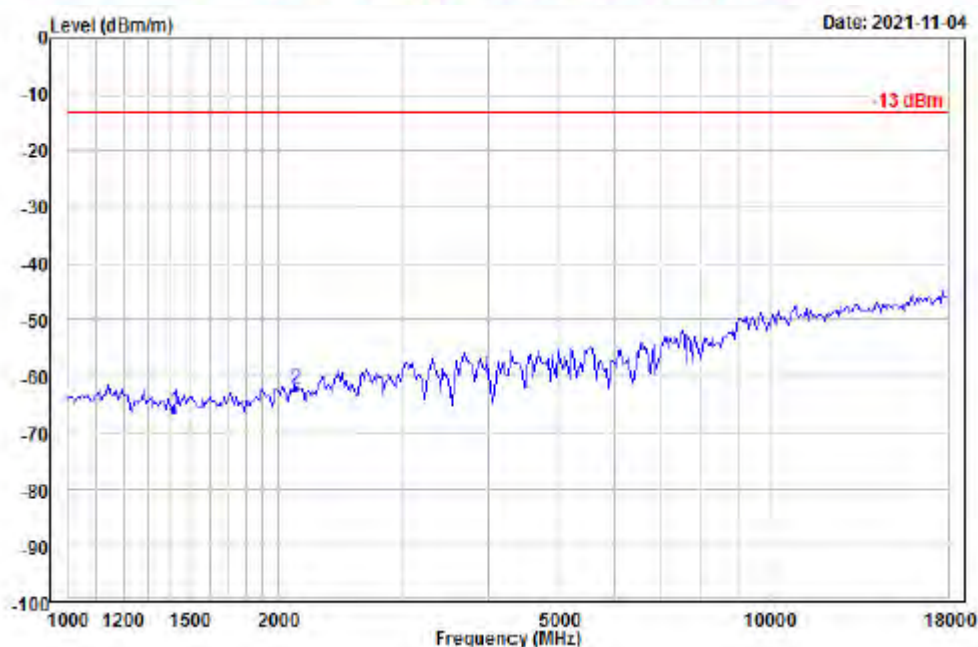


LTE BAND 12

CHANNEL BANDWIDTH: 1.4MHz / QPSK

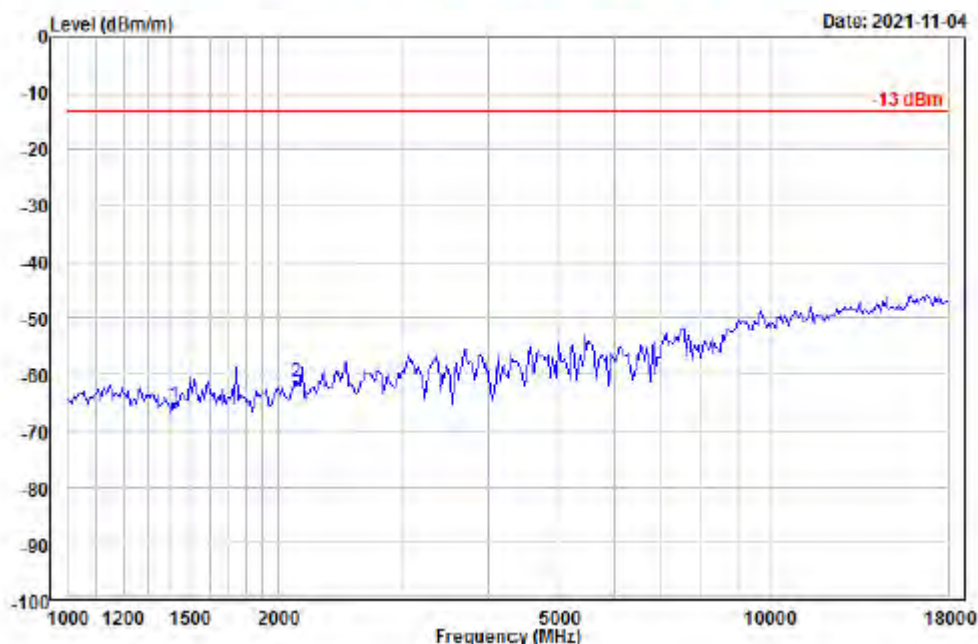
MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Read Freq	Ant Level	Preamp Factor	Aux Factor	Cable Loss	Limit Level	Over Limit	APos	TPos	Rema
	MHz	dBm	dB/m	dB	dB	dBm/m	dBm/m	dB	cm	deg
1	1415.000	-64.98	29.44	47.61	0.00	17.32	-65.83	-13.00	-52.83	---
2 PP	2122.500	-64.50	31.94	47.87	0.00	18.38	-62.05	-13.00	-49.05	---



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

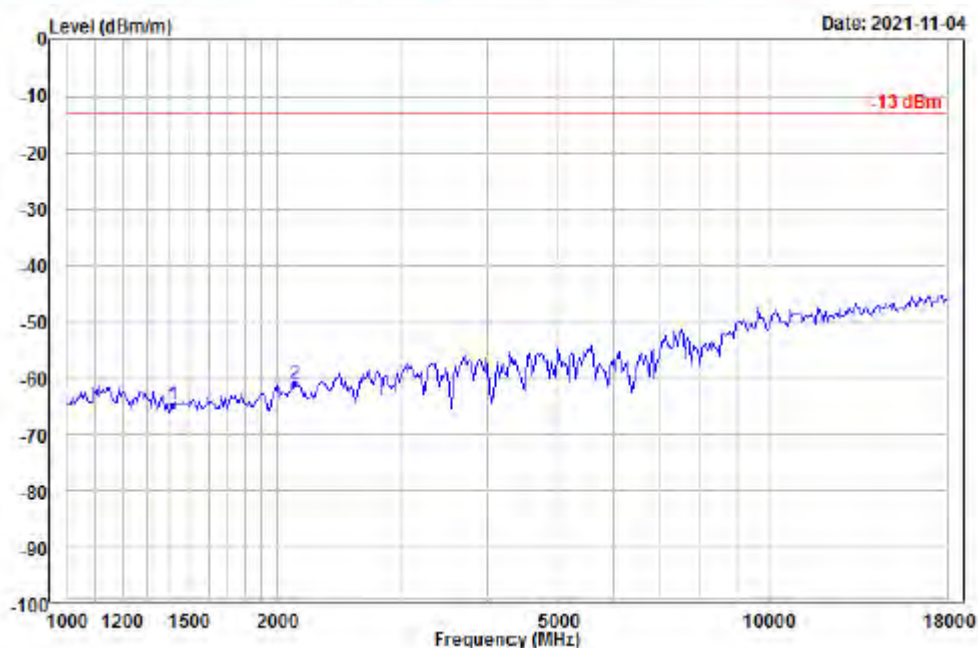
	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1415.000	-64.58	29.44	47.61	0.00	17.32	-65.43	-13.00	-52.43	---	---	Peak
2 PP	2122.500	-63.80	31.94	47.87	0.00	18.38	-61.35	-13.00	-48.35	---	---	Peak



CHANNEL BANDWIDTH: 3MHz / QPSK

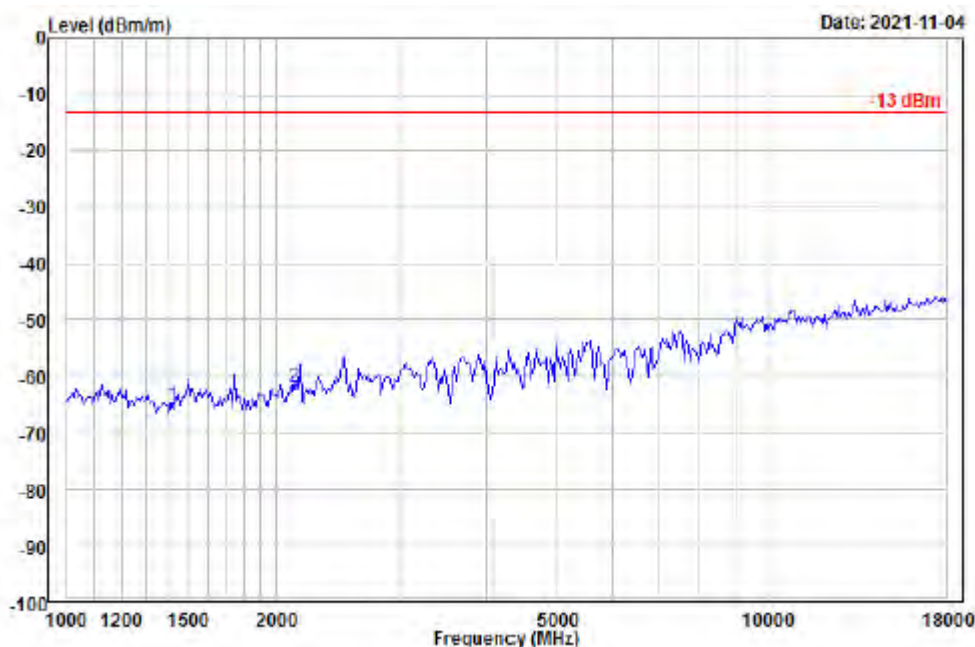
MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Read	Ant	Preamp	Aux	Cable		Limit	Over	APos	TPos	
	Freq	Level	Factor	Factor	Factor	Loss	Level	Line	Limit			Rema
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1415.000	-63.92	29.44	47.61	0.00	17.32	-64.77	-13.00	-51.77	---	---	Peak
2 PP	2122.500	-63.57	31.94	47.87	0.00	18.38	-61.12	-13.00	-48.12	---	---	Peak



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

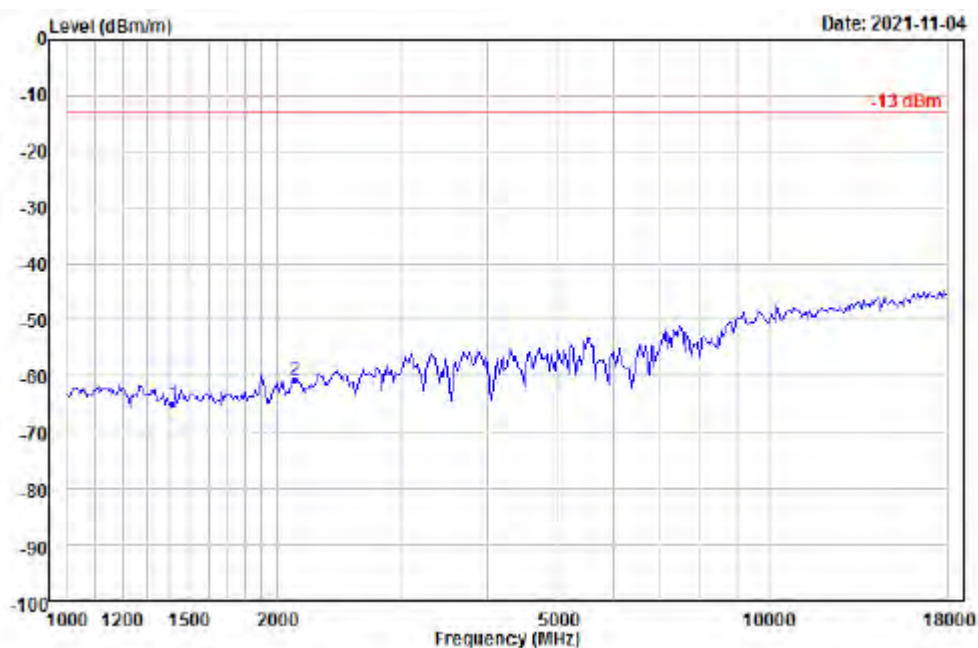
	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1415.000	-64.26	29.44	47.61	0.00	17.32	-65.11	-13.00	-52.11	---	---	Peak
2 PP	2122.500	-64.29	31.94	47.87	0.00	18.38	-61.84	-13.00	-48.84	---	---	Peak



CHANNEL BANDWIDTH: 5MHz / QPSK

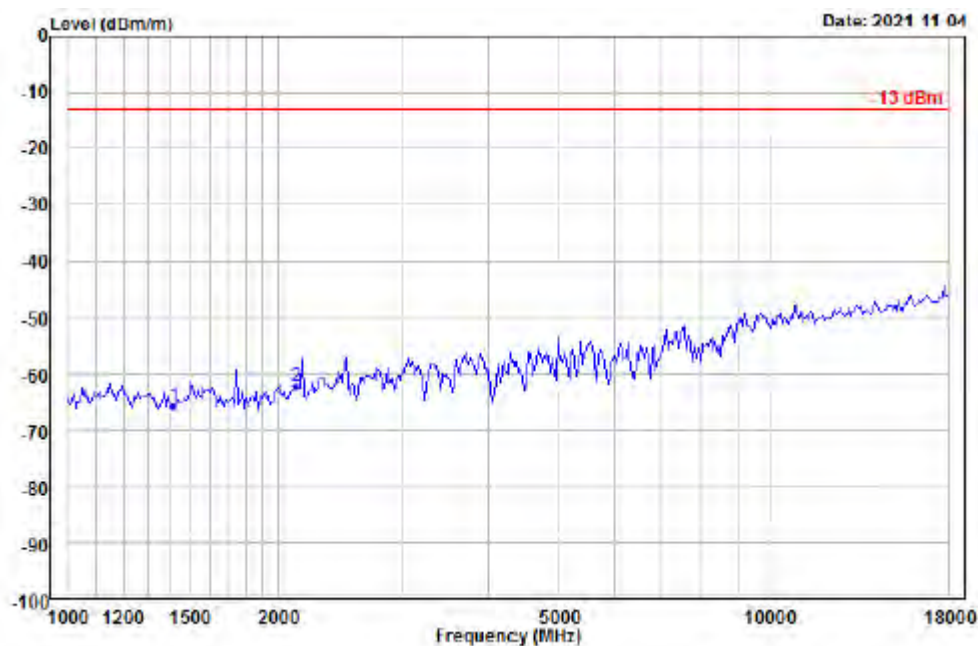
MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit	Over Limit	APos	TPos	Rema
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1415.000	-64.30	29.44	47.61	0.00	17.32	-65.15	-13.00	-52.15	---	---	Peak
2 PP	2122.500	-63.10	31.94	47.87	0.00	18.38	-68.65	-13.00	-47.65	---	---	Peak



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamplifier Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remarks
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1415.000	-64.90	29.44	47.61	0.00	17.32	-65.75	-13.00	-52.75	---	---	Peak
2 PP	2122.500	-64.55	31.94	47.87	0.00	18.38	-62.10	-13.00	-49.10	---	---	Peak

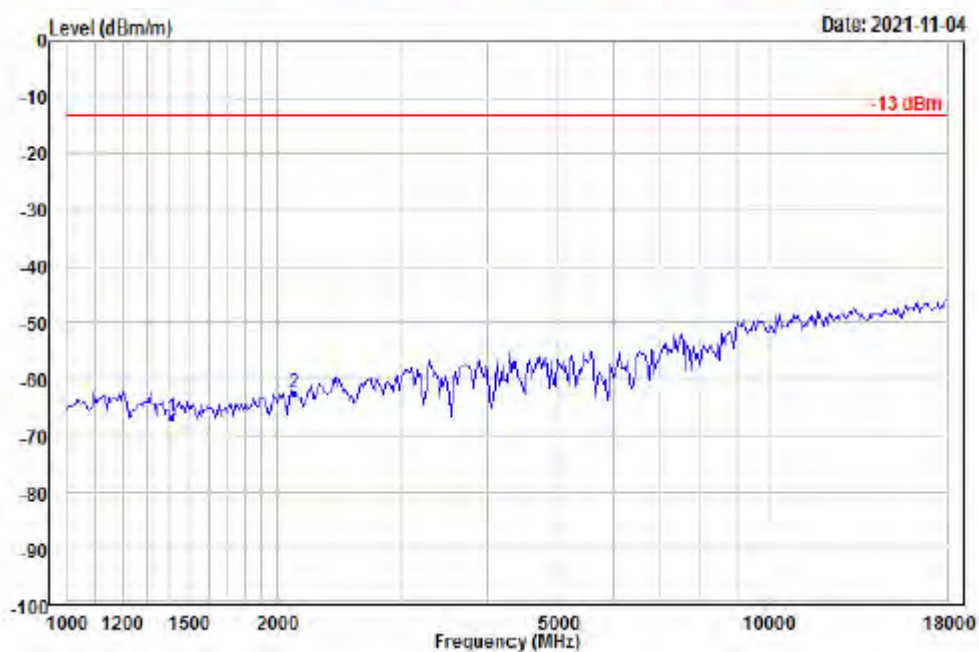


CHANNEL BANDWIDTH: 10MHz / QPSK

CH23060

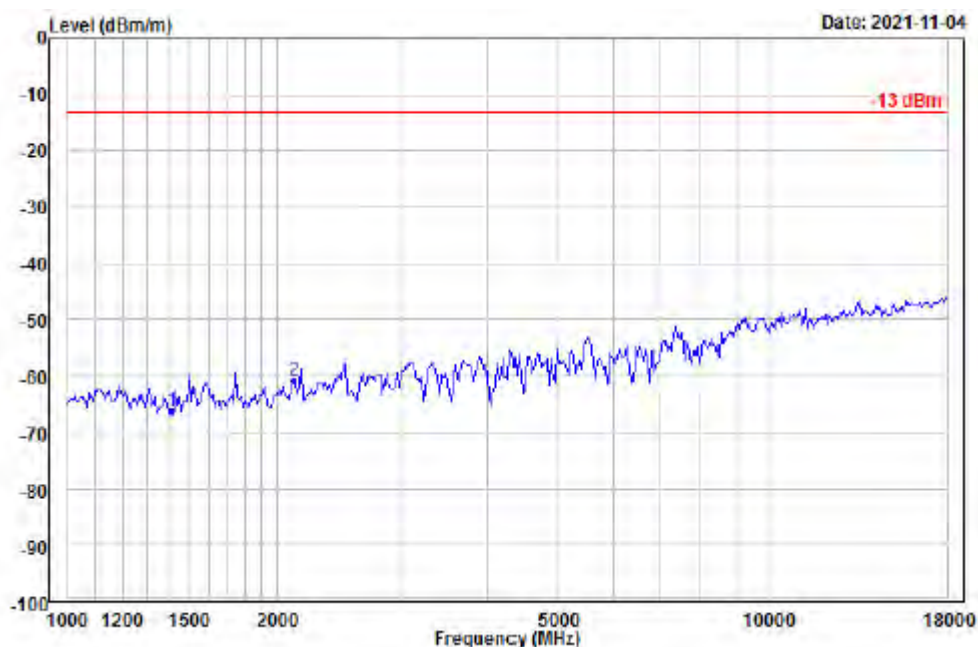
MODE	TX channel 23060	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1408.000	-65.97	29.41	47.60	0.00	17.31	-66.85	-13.00	-53.85	---	---	Peak
2 PP	2112.000	-64.76	31.91	47.87	0.00	18.38	-62.34	-13.00	-49.34	---	---	Peak



MODE	TX channel 23060	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

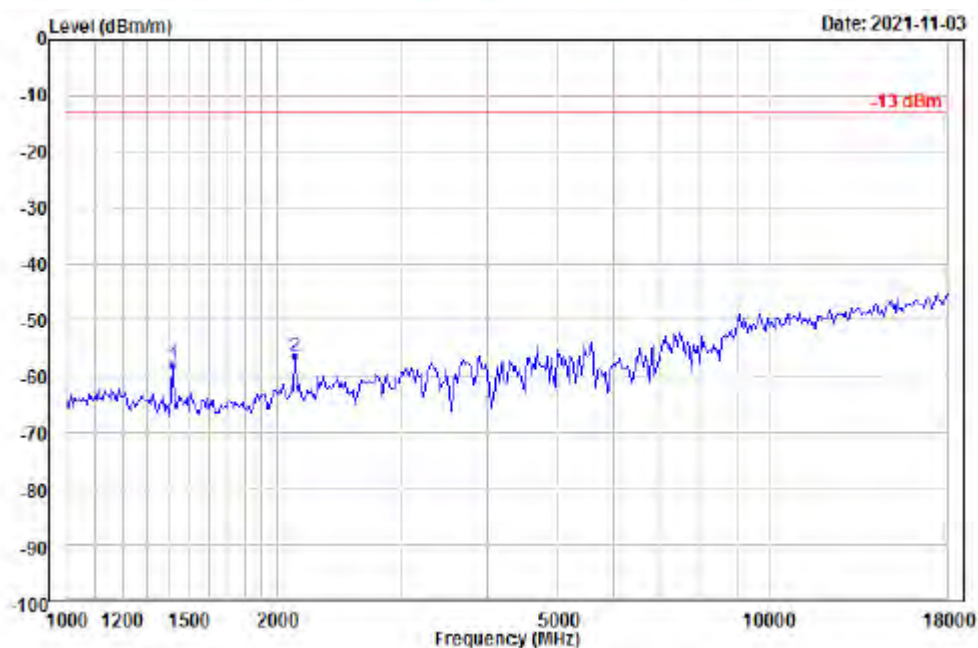
	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rem:
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1408.000	-65.35	29.41	47.60	0.00	17.31	-66.23	-13.00	-53.23	---	---	Peak
2 PP	2112.000	-63.12	31.91	47.87	0.00	18.38	-60.70	-13.00	-47.70	---	---	Peak



CH23095

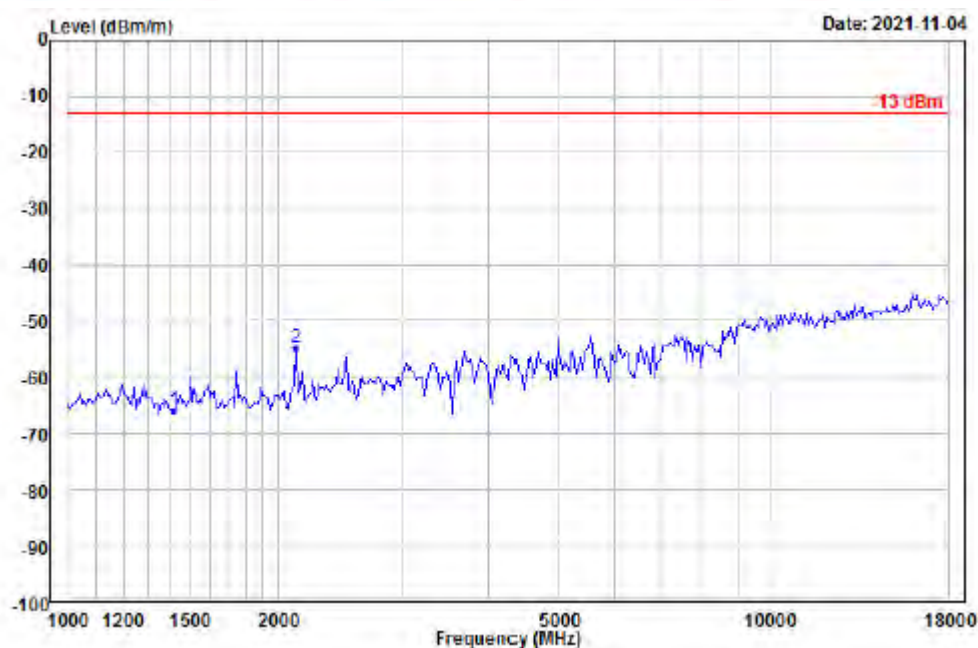
MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit	Over	APos	TPos	Rem
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1415.000	-57.22	29.44	47.61	0.00	17.32	-58.07	-13.00	-45.07	---	---	Peak
2 PP	2122.500	-58.84	31.94	47.87	0.00	18.38	-56.39	-13.00	-43.39	---	---	Peak



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rem
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1415.000	-65.22	29.44	47.61	0.00	17.32	-66.07	-13.00	-53.07	---	---	Peak
2 PP	2122.500	-57.28	31.94	47.87	0.00	18.38	-54.83	-13.00	-41.83	---	---	Peak





**BUREAU
VERITAS**

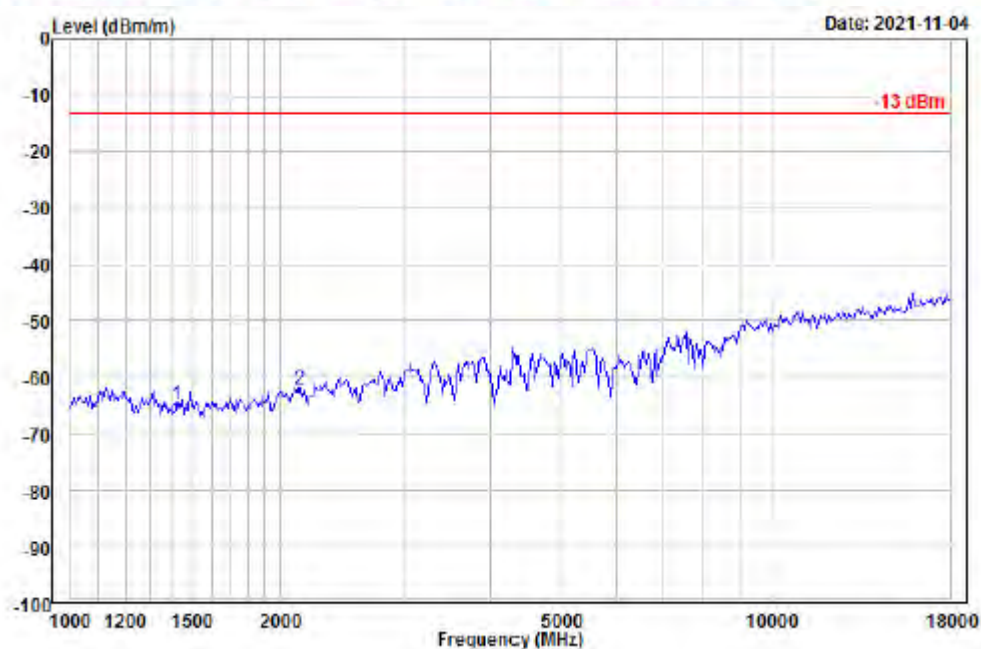
Test Report No.: W7L-P21090018RF06

CH23130

CH20100

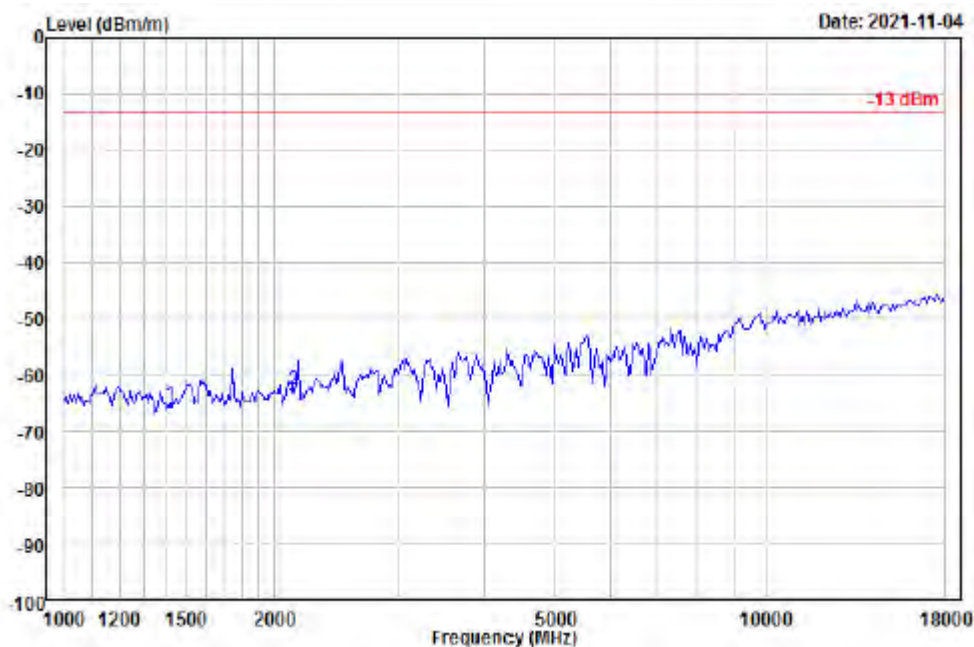
MODE	TX channel 23130	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamplifier Factor	Aux Factor	Cable Loss	Level	Limit	Over Limit	APos	TPos	Remarks
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1422.000	-63.94	29.47	47.63	0.00	17.33	-64.77	-13.00	-51.77	---	---	Peak
2 PP	2133.000	-64.65	31.97	47.88	0.00	18.37	-62.19	-13.00	-49.19	---	---	Peak



MODE	TX channel 23130	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamplifier Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	1422.000	-64.67	29.47	47.63	0.00	17.33	-65.50	-13.00	-52.50	---	---	Peak
2 PP	2133.000	-65.24	31.97	47.88	0.00	18.37	-62.78	-13.00	-49.78	---	---	Peak

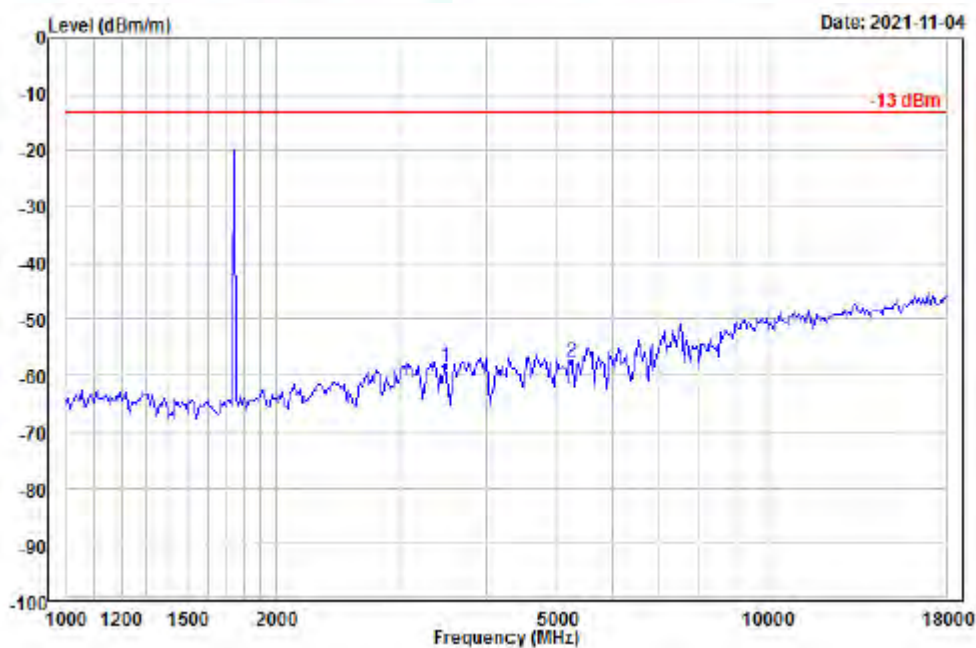


LTE B66

CHANNEL BANDWIDTH: 1.4MHz / QPSK

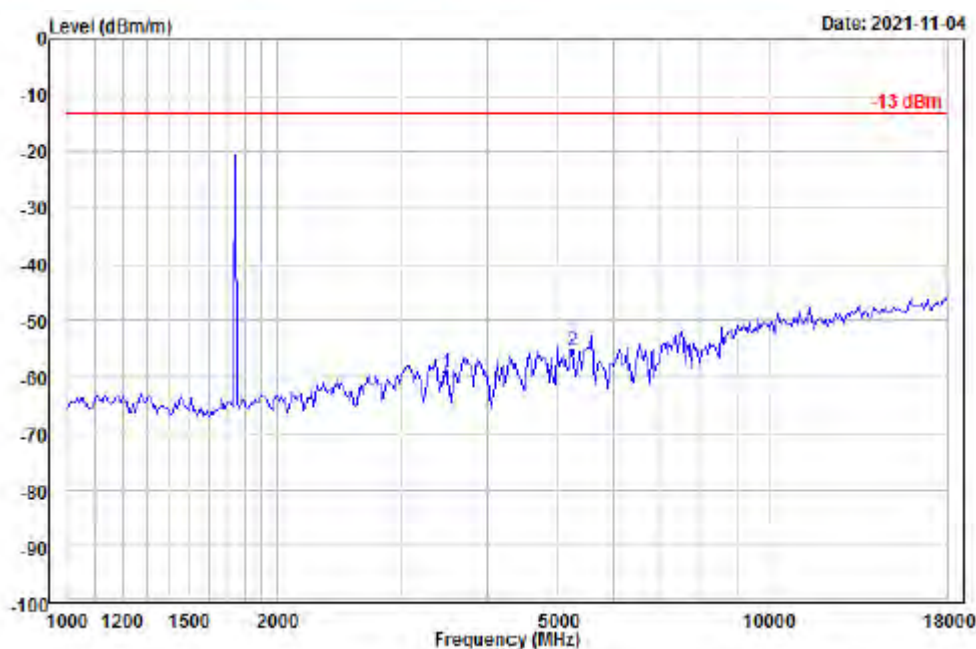
MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preampl Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rem
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3490.000	-65.11	33.40	46.72	0.00	20.03	-58.40	-13.00	-45.40	---	---	Peak
2 PP	5235.000	-68.05	34.98	46.18	0.00	21.64	-57.61	-13.00	-44.61	---	---	Peak



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

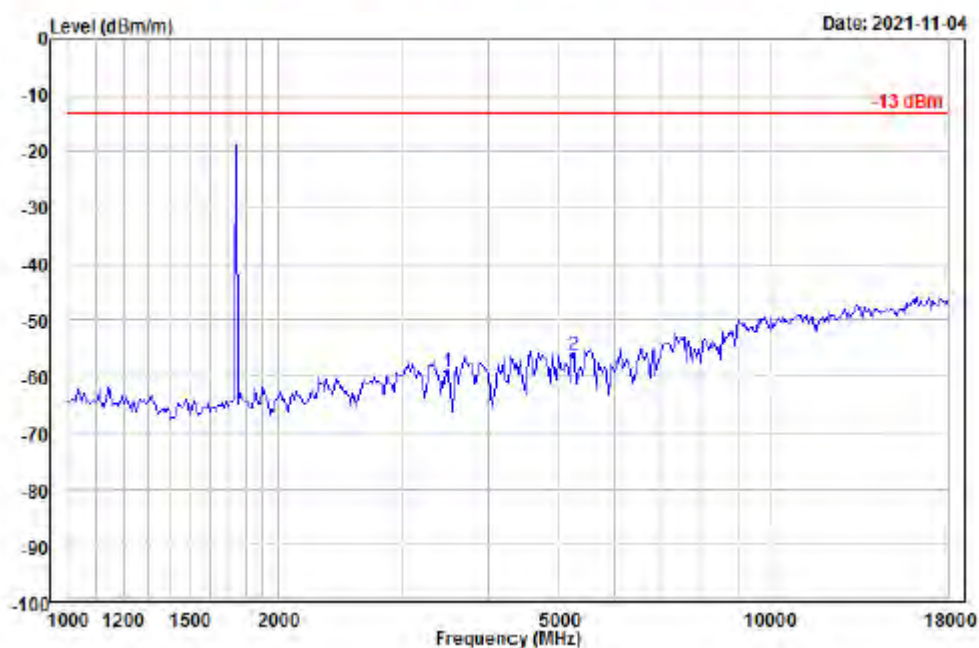
	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rem
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3490.000	-65.97	33.40	46.72	0.00	20.03	-59.26	-13.00	-46.26	---	---	Peak
2 PP	5235.000	-65.75	34.98	46.18	0.00	21.64	-55.31	-13.00	-42.31	---	---	Peak



CHANNEL BANDWIDTH: 3MHz / QPSK

MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Remz
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3490.000	-65.82	33.40	46.72	0.00	20.03	-59.11	-13.00	-46.11	---	---	Peak
2 PP	5235.000	-66.56	34.98	46.18	0.00	21.64	-56.12	-13.00	-43.12	---	---	Peak



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Ant Factor	Preamp Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	APos	TPos	Rema
	MHz	dBm	dB/m	dB	dB	dB	dBm/m	dBm/m	dB	cm	deg	
1	3490.000	-65.08	33.40	46.72	0.00	20.03	-58.37	-13.00	-45.37	---	---	Peak
2 PP	5235.000	-66.31	34.98	46.18	0.00	21.64	-55.87	-13.00	-42.87	---	---	Peak

