

FCC TEST REPORT

(PART 90)

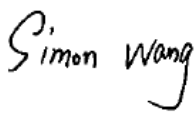
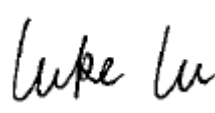
Applicant:	DataRemote Incorporated
Address:	18001 Old Cutler Rd. Suite 600, Miami, FL 33157

Manufacturer or Supplier	DataRemote Incorporated
Address	18001 Old Cutler Rd. Suite 600, Miami, FL 33157
Product	Cellular Backup Router
Brand Name	DATAREMOTE
Model Name	90X1
FCC ID	2AJLF-90X1
Date of tests	Jul. 17, 2023 ~ Aug. 25, 2023

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

☒ FCC Part 90, Subpart R, S ☒ 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: Aug. 25, 2023	Date: Aug. 25, 2023

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Test Report No.: W7L-P23070006RF06

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P23070006RF06	Original release	Aug. 25, 2023

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 90 & Part 2		
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT
§2.1046 §90.542(a) §90.635(b)	Conducted Output Power	See Note1
	Equivalent Radiated Power	Compliance
§2.1055 §90.213	Frequency Stability	See Note1
§2.1049 §90.209	Occupied Bandwidth	See Note1
§2.1051 §90.691	Emission Masks	See Note1
§2.1051 §90.691	Conducted Spurious Emissions	See Note1
§2.1053 §90.691	Radiated Spurious Emissions	Compliance See Note2

Note:

1. Please refer to the module report SEWA2204000008RG01(FCC ID: XMR2022RM520NGL), but the data of ERP is recalculated and showed in this report.
2. For Inter-CA band, the report only show the worst mode RSE data of original module report, because the antenna type of module and EUT is all the same, and the power of single LTE band is larger than that in CA, so single LTE band can cover the RSE risk of CA part.

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
Radiated emissions (9KHz~30MHz)	±2.68dB
Radiated emissions & Radiated Power (30MHz~1GHz)	±4.98dB
Radiated emissions & Radiated Power (1GHz ~6GHz)	±4.70dB
Radiated emissions (6GHz ~18GHz)	±4.60dB
Radiated emissions (18GHz ~40GHz)	±4.12dB
Conducted Output power	±2.06dB

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

1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Mar. 28,23	Mar. 27,24
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.14,23	May.13,24
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.03,22	Sep.02,23
Bilog Antenna	ETS-LINDGRE N	3143B	00161965	Feb. 18,23	Feb. 17,24
Horn Antenna	ETS-LINDGRE N	3117	00168692	Feb. 18,23	Feb. 17,24
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K- SG/QMS-00361	15433	Sep.04, 22	Sep.03, 23
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 14,23	Feb. 13,24
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May. 06,23	May. 05,24
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.12,23	May.11,24
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 17,23	Feb.16,24
3m Semi-anechoic Chamber	ETS-LINDGRE N	9m*6m*6m	Euroshieldpn- CT0001143-121 6	May. 19,23	May. 18,26
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	JS1120	3.1.36	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	50HF-010-SMA	May. 06,23	May. 05,24
Power Meter	Anritsu	ML2495A	1506002	Feb. 14,23	Feb. 13,24
Power Sensor	Anritsu	MA2411B	1339352	Feb. 14,23	Feb. 13,24
Temperature Chamber	ESPEC	SH-242	93000855	May. 06,23	May. 05,24
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 14,23	Feb. 13,24
Base station R&S CMW500	Rohde&Schwa rz	CMW500	153085	May.12,23	May.11,24
DC Source	Kikusui/JP	PMX18-5A	N/A	Aug. 12,22	Aug. 11,23
DC Source	Kikusui/JP	PMX18-5A	N/A	Aug. 11,23	Aug. 10,24

- 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	Cellular Backup Router	
BRAND NAME	DATAREMOTE	
MODEL NAME	90X1	
NOMINAL VOLTAGE	19Vdc(adapter or host equipment) 11.1Vdc (Li-ion, battery)	
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM, 64QAM, 256QAM
FREQUENCY RANGE	LTE Band 14 Channel Bandwidth: 5MHz	790.5MHz ~ 795.5MHz
	LTE Band 14 Channel Bandwidth: 10MHz	793MHz
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	814.7MHz ~ 823.3MHz
	LTE Band 26 (Channel Bandwidth: 3MHz)	815.5MHz ~ 822.5MHz
	LTE Band 26 (Channel Bandwidth: 5MHz)	816.5MHz ~ 821.5MHz
	LTE Band 26 (Channel Bandwidth: 10MHz)	819MHz
EMISSION DESIGNATOR	LTE Band 14 Channel Bandwidth: 5MHz	QPSK: 4M48G7D
		16QAM: 4M48W7D
		64QAM: 4M48W7D
		256QAM: 4M48W7D
	LTE Band 14 Channel Bandwidth: 10MHz	QPSK: 8M93G7D
		16QAM: 8M94W7D
		64QAM: 8M94W7D
		256QAM: 8M94W7D
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	QPSK: 1M11G7D
		16QAM: 1M11W7D
		64QAM: 1M11W7D
		256QAM: 1M11W7D
	LTE Band 26 (Channel Bandwidth: 3MHz)	QPSK: 2M70G7D
		16QAM: 2M71W7D
		64QAM: 2M70W7D
		256QAM: 2M70W7D
	LTE Band 26 (Channel Bandwidth: 5MHz)	QPSK: 4M48G7D
		16QAM: 4M48W7D
		64QAM: 4M48W7D
		256QAM: 4M48W7D



**BUREAU
VERITAS**

Test Report No.: W7L-P23070006RF06

	LTE Band 26 (Channel Bandwidth: 10MHz)	QPSK: 8M93G7D
		16QAM: 8M93W7D
		64QAM: 8M93W7D
		256QAM: 8M94W7D
MAX. EIRP POWER	LTE Band 14 Channel Bandwidth: 5MHz	227.51mW
	LTE Band 14 Channel Bandwidth: 10MHz	220.8mW
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	208.45mW
	LTE Band 26 (Channel Bandwidth: 3MHz)	212.32mW
	LTE Band 26 (Channel Bandwidth: 5MHz)	230.14mW
	LTE Band 26 (Channel Bandwidth: 10MHz)	236.59mW
ANTENNA TYPE	Monopole Antenna with 0.94dBi gain for LTE B14/ LTE B26	
HW VERSION	1.0	
SW VERSION	1.0	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	Ethernet Cable: non-shielded cable, with w/o ferrite core, 1.5 meter	
	Phone Cable: non-shielded cable, with w/o ferrite core, 1.5 meter	
EXTREME TEMPERATURE	0-40 °C	
EXTREME VOLTAGE	3.6V - 24V	

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
LTE	1TX/1RX

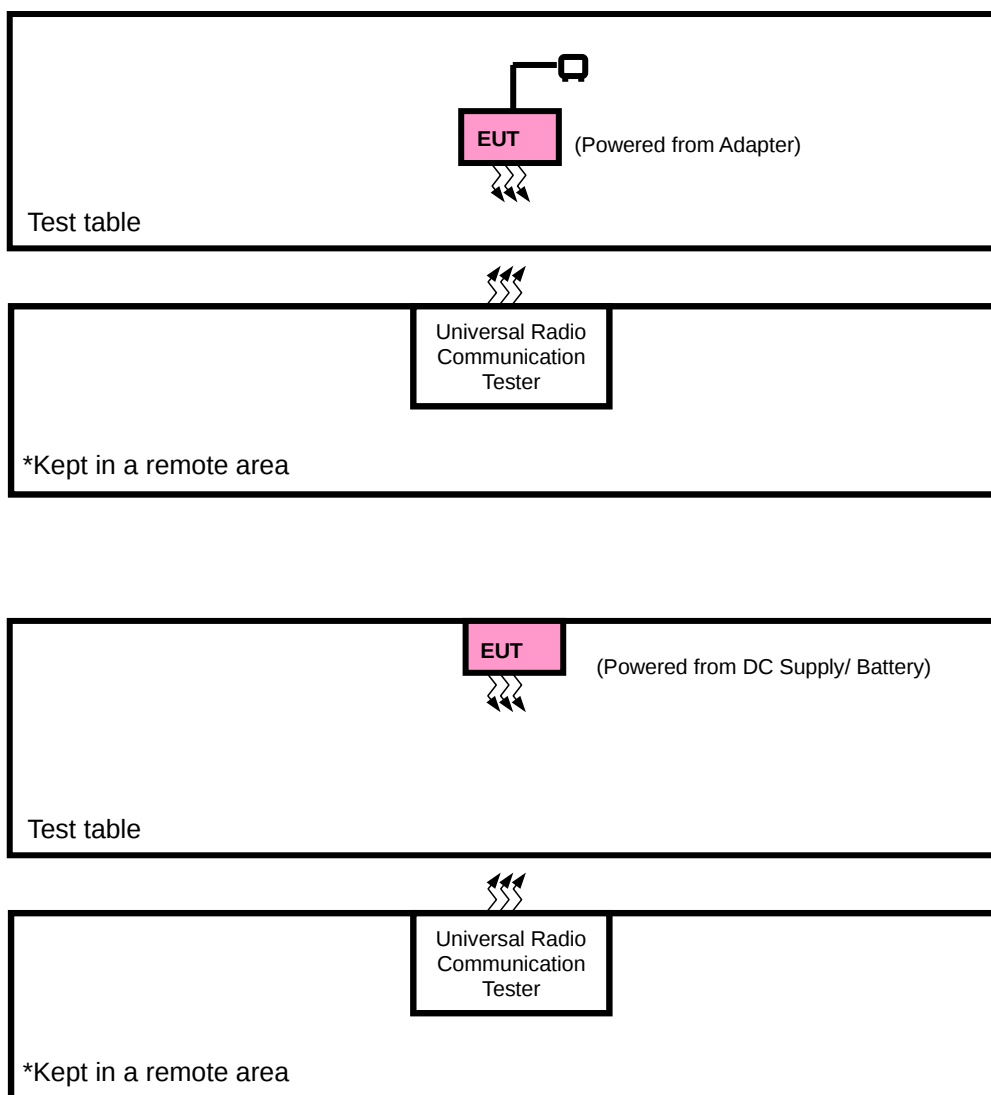
3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

List of Accessory:

ACCESSORIES	MANUFACTURER	MODEL	SPECIFICATION
AC Adapter	Moso Power Supply Technology Co., Ltd.	MS-V3420R190-0 65L0-US	I/P: 100-240Vac, 1.5A, O/P: 19Vdc, 3.42A
Battery	EVE ENERGY CO., LTD.	DRI18650-3S6P	Capacity : 10.8Vdc, 15300mAh
Ethernet Cable	Wujiang Eksong Electronics Co., LTD.	HQ01-C727	Signal Line,1.5meter
Phone Cable	Wujiang Eksong Electronics Co., LTD.	HQ01-C697	Signal Line,1.5meter

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 DESCRIPTION OF TEST MODES

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

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + Adapter + USB Cable with LTE link
B	EUT + DC Supply with LTE link

LTE BAND 14 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	23305 to 23355	23305, 23330, 23355	5MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		23330	23330	10MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	23305 to 23355	23305, 23330, 23355	5MHz	QPSK	1 RB / 0 RB Offset
		23330	23330	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 26 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	26697 to 26783	26740	1.4MHz	QPSK	1 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK	1 RB / 0 RB Offset
		26715 to 26765	26740	5MHz	QPSK	1 RB / 0 RB Offset
		26740	26740	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.

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP(ERP)	24deg. C, 60%RH	DC 19V By Adapter	Jace Hu
RADIATED EMISSION	23deg. C, 70%RH	DC19V By Adapter	Jace Hu

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 90

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

47 CFR 90.542(a)(6)

Control stations and mobile stations transmitting in the 758–768 MHz band and the 788–798 MHz band are limited to 30 watts ERP.

47 CFR 90.542(a)(7)

Portable stations (hand-held devices) transmitting in the 758–768 MHz band and the 788–798 MHz band are limited to 3 watts ERP.

Per FCC Part 90.635(a)(b)

The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

3.1.2 TEST PROCEDURES

EIRP / ERP 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);

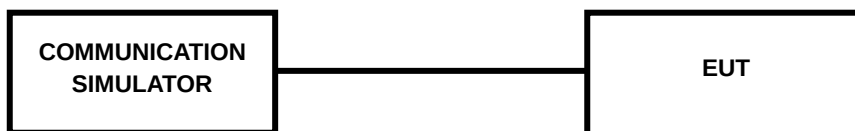
L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB

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

ERP

LTE BAND 14

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23305	790.5	24.65	0.94	23.44	220.8	3
23330	793	24.78	0.94	23.57	227.51	3
23355	795.5	24.62	0.94	23.41	219.28	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23305	790.5	24.32	0.94	23.11	204.64	3
23330	793	24.18	0.94	22.97	198.15	3
23355	795.5	24.13	0.94	22.92	195.88	3

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23305	790.5	23.53	0.94	22.32	170.61	3
23330	793	23.23	0.94	22.02	159.22	3
23355	795.5	23.21	0.94	22	158.49	3

CHANNEL BANDWIDTH: 5MHz 256QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23305	790.5	20.24	0.94	19.03	79.98	3
23330	793	20.25	0.94	19.04	80.17	3
23355	795.5	20.15	0.94	18.94	78.34	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
23330	793	24.65	0.94	23.44	220.8	3
-	-	-	-	-	-	-

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
23330	793	24.34	0.94	23.13	205.59	3
-	-	-	-	-	-	-

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
23330	793	23.31	0.94	22.1	162.18	3
-	-	-	-	-	-	-

CHANNEL BANDWIDTH: 10MHz 256QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
23330	793	20.16	0.94	18.95	78.52	3
-	-	-	-	-	-	-

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

LTE BAND 26

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	23.38	0.94	22.17	164.82	100
26740	819	23.47	0.94	22.26	168.27	100
26783	823.3	24.4	0.94	23.19	208.45	100

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	23.57	0.94	22.36	172.19	100
26740	819	23.61	0.94	22.4	173.78	100
26783	823.3	23.66	0.94	22.45	175.79	100

CHANNEL BANDWIDTH: 1.4MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	23.4	0.94	22.19	165.58	100
26740	819	22.7	0.94	21.49	140.93	100
26783	823.3	22.74	0.94	21.53	142.23	100

CHANNEL BANDWIDTH: 1.4MHz 256QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	19.56	0.94	18.35	68.39	100
26740	819	19.62	0.94	18.41	69.34	100
26783	823.3	19.63	0.94	18.42	69.5	100

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

LTE BAND 26

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	23.36	0.94	22.15	164.06	100
26740	819	23.54	0.94	22.33	171	100
26775	822.5	24.37	0.94	23.16	207.01	100

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	23.49	0.94	22.28	169.04	100
26740	819	23.6	0.94	22.39	173.38	100
26775	822.5	24.48	0.94	23.27	212.32	100

CHANNEL BANDWIDTH: 3MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	22.52	0.94	21.31	135.21	100
26740	819	22.69	0.94	21.48	140.6	100
26775	822.5	23.52	0.94	22.31	170.22	100

CHANNEL BANDWIDTH: 3MHz 256QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	19.5	0.94	18.29	67.45	100
26740	819	19.62	0.94	18.41	69.34	100
26775	822.5	20.44	0.94	19.23	83.75	100

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

LTE BAND 26

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	24.83	0.94	23.62	230.14	100
26740	819	24.35	0.94	23.14	206.06	100
26765	821.5	24.52	0.94	23.31	214.29	100

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	24.29	0.94	23.08	203.24	100
26740	819	24.37	0.94	23.16	207.01	100
26765	821.5	24.51	0.94	23.3	213.8	100

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	23.42	0.94	22.21	166.34	100
26740	819	23.36	0.94	22.15	164.06	100
26765	821.5	23.56	0.94	22.35	171.79	100

CHANNEL BANDWIDTH: 5MHz 256QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	20.36	0.94	19.15	82.22	100
26740	819	20.52	0.94	19.31	85.31	100
26765	821.5	20.58	0.94	19.37	86.5	100

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

LTE BAND 26

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
26740	819	24.95	0.94	23.74	236.59	100
-	-	-	-	-	-	-

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
26740	819	24.43	0.94	23.22	209.89	100
-	-	-	-	-	-	-

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
26740	819	23.48	0.94	22.27	168.66	100
-	-	-	-	-	-	-

CHANNEL BANDWIDTH: 10MHz 256QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
26740	819	20.61	0.94	19.4	87.1	100
-	-	-	-	-	-	-

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

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

(1) The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm

(2) For operations in the 763–775 MHz and 793–805 MHz bands, all emissions including harmonics in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

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

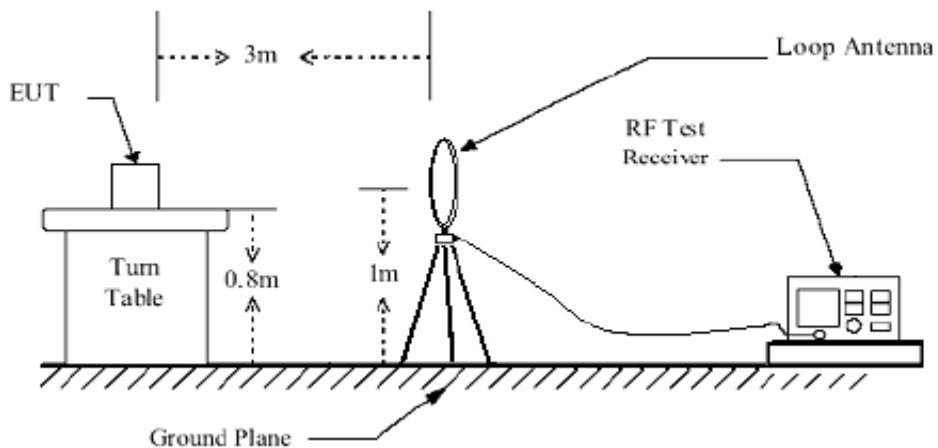
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.2.3 DEVIATION FROM TEST STANDARD

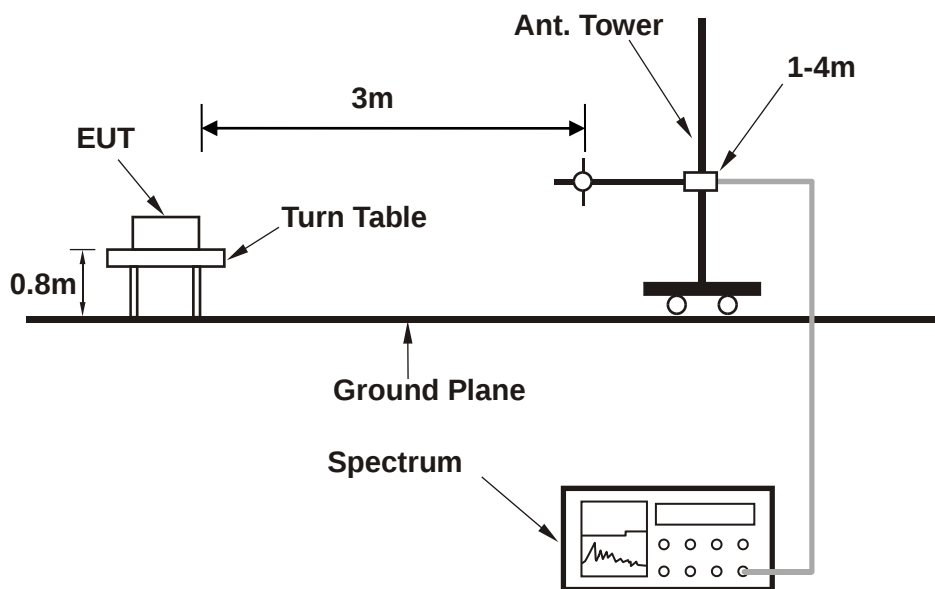
No deviation

3.2.4 TEST SETUP

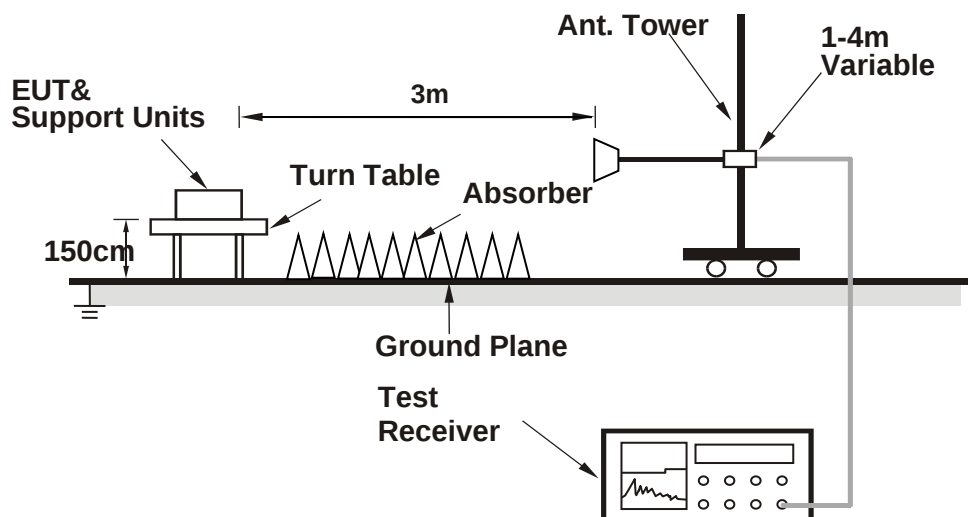
<Below 30MHz>



< Frequency Range 30MHz~1GHz >



< Frequency Range above 1GHz >



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

3.2.5 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

BELOW 1GHz WORST-CASE DATA

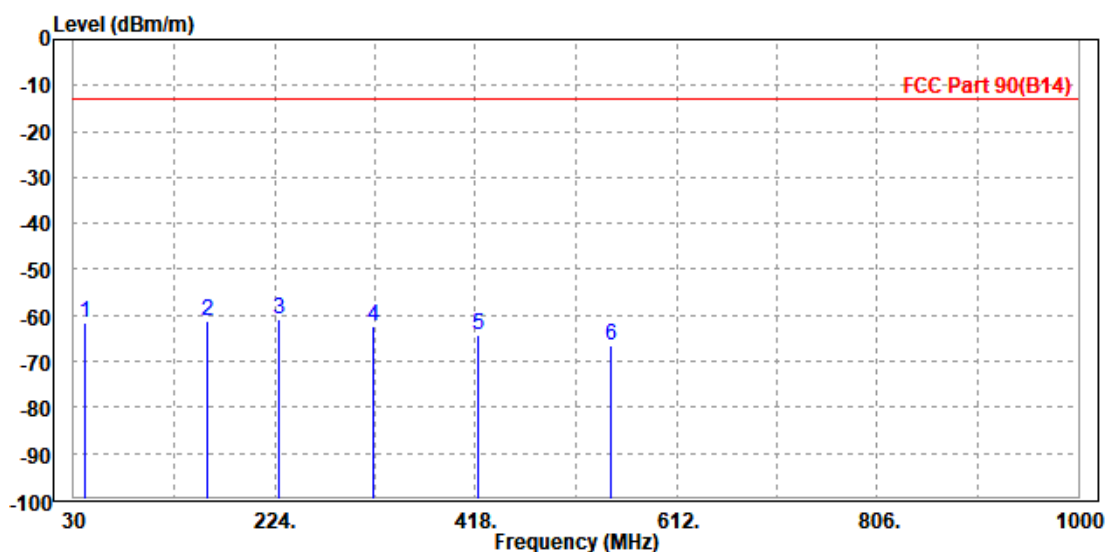
30 MHz – 1GHz data:

LTE Band 14:

CHANNEL BANDWIDTH: 5MHz / QPSK

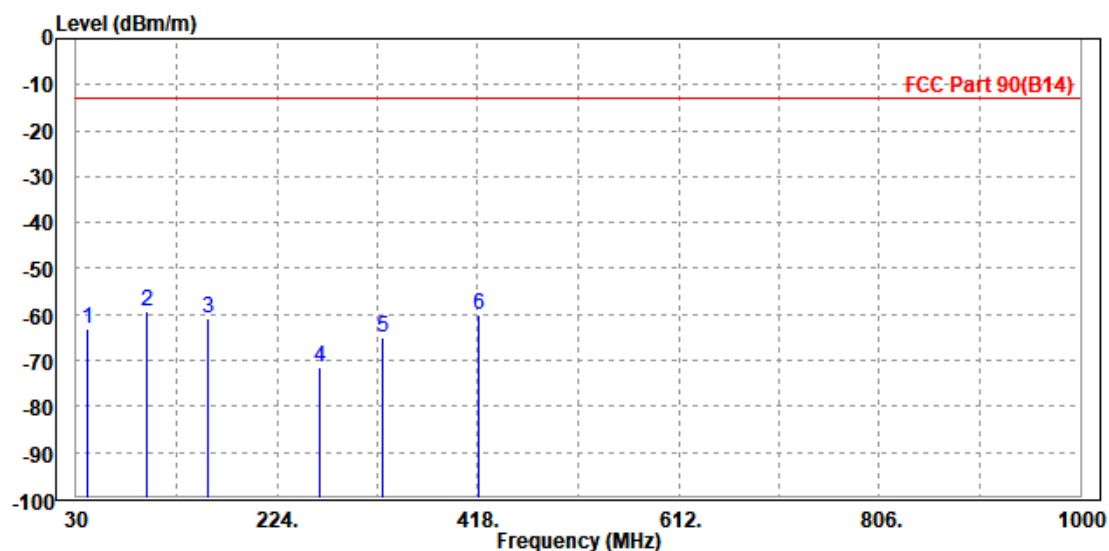
MODE	TX channel 23305	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace HU		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	40.670	-61.77	-45.38	-13.00	-48.77	-16.39	Peak	Horizontal
2	159.010	-61.37	-45.20	-13.00	-48.37	-16.17	Peak	Horizontal
3 PP	227.880	-60.84	-46.75	-13.00	-47.84	-14.09	Peak	Horizontal
4	319.060	-62.18	-50.18	-13.00	-49.18	-12.00	Peak	Horizontal
5	420.910	-64.09	-54.44	-13.00	-51.09	-9.65	Peak	Horizontal
6	547.980	-66.62	-60.39	-13.00	-53.62	-6.23	Peak	Horizontal



MODE	TX channel 23305	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace HU		
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	40.670	-63.03	-38.11	-13.00	-50.03	-24.92	Peak	Vertical
2 PP	98.870	-59.25	-51.83	-13.00	-46.25	-7.42	Peak	Vertical
3	158.040	-60.74	-43.66	-13.00	-47.74	-17.08	Peak	Vertical
4	265.710	-71.35	-58.63	-13.00	-58.35	-12.72	Peak	Vertical
5	326.820	-65.04	-54.71	-13.00	-52.04	-10.33	Peak	Vertical
6	418.970	-59.98	-51.15	-13.00	-46.98	-8.83	Peak	Vertical



ABOVE 1GHz

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

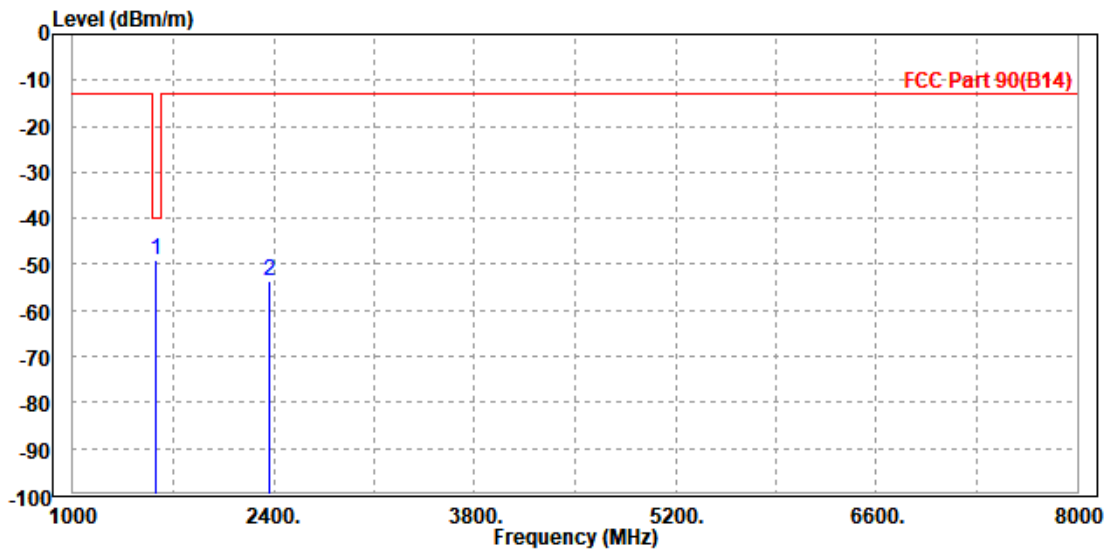
LTE B14

CHANNEL BANDWIDTH: 5MHz / QPSK

CH23305

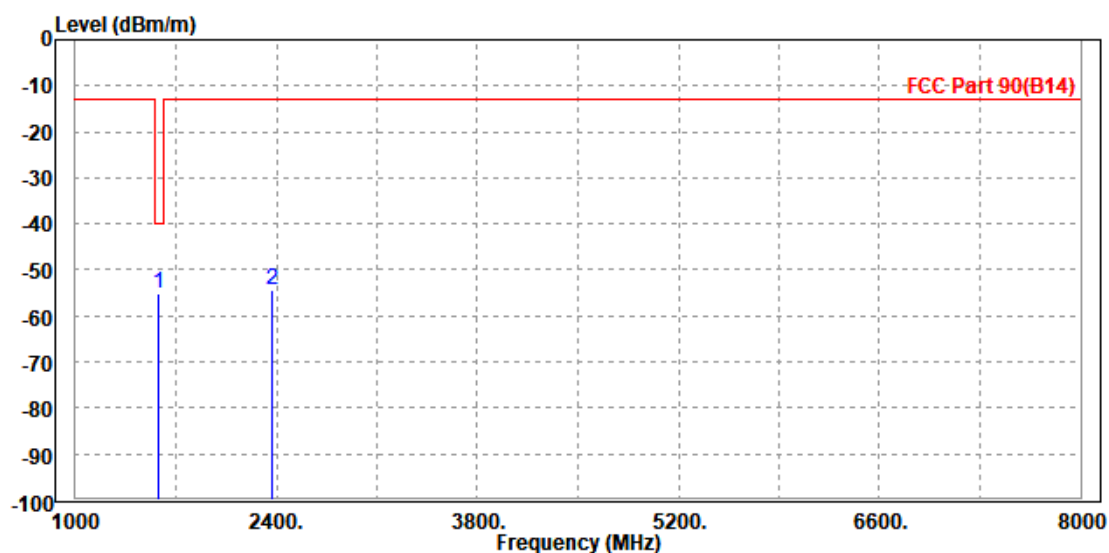
MODE	TX channel 23305	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1581.000	-48.93	-49.16	-40.00	-8.93	0.23	Peak	Horizontal
2	2371.500	-53.44	-58.41	-13.00	-40.44	4.97	Peak	Horizontal



MODE	TX channel 23305	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

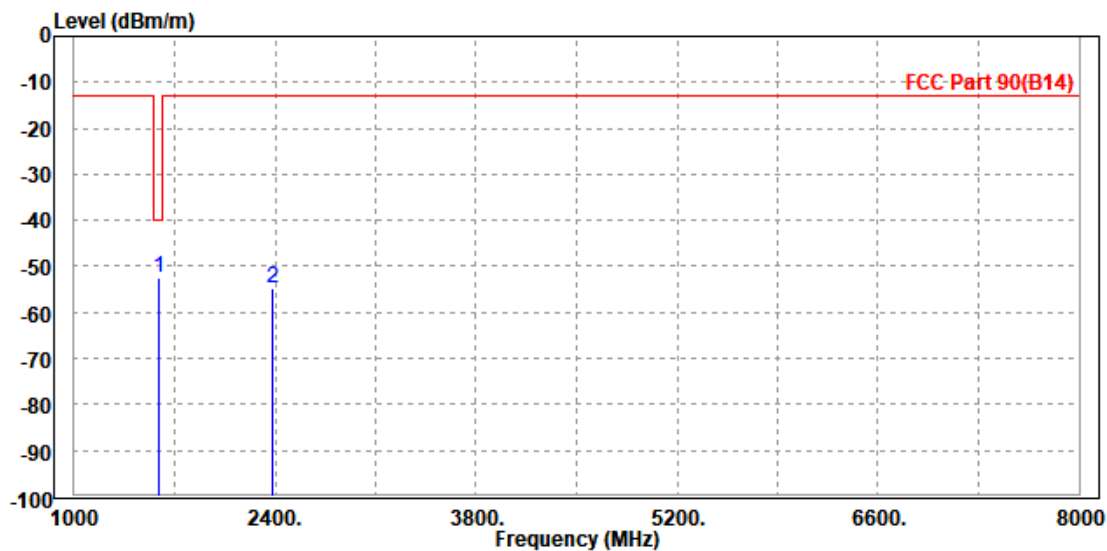
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1581.000	-55.26	-55.81	-40.00	-15.26	0.55	Peak	Vertical
2	2372.000	-54.41	-59.00	-13.00	-41.41	4.59	Peak	Vertical



CH23330

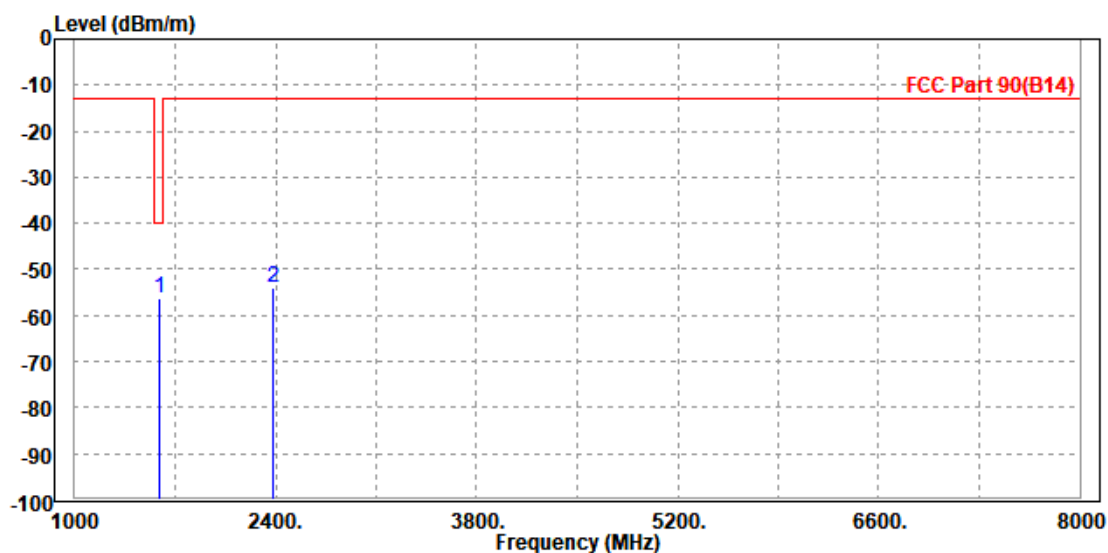
MODE	TX channel 23330	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1586.000	-52.46	-52.73	-40.00	-12.46	0.27	Peak	Horizontal
2	2379.000	-54.66	-59.66	-13.00	-41.66	5.00	Peak	Horizontal



MODE	TX channel 23330	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

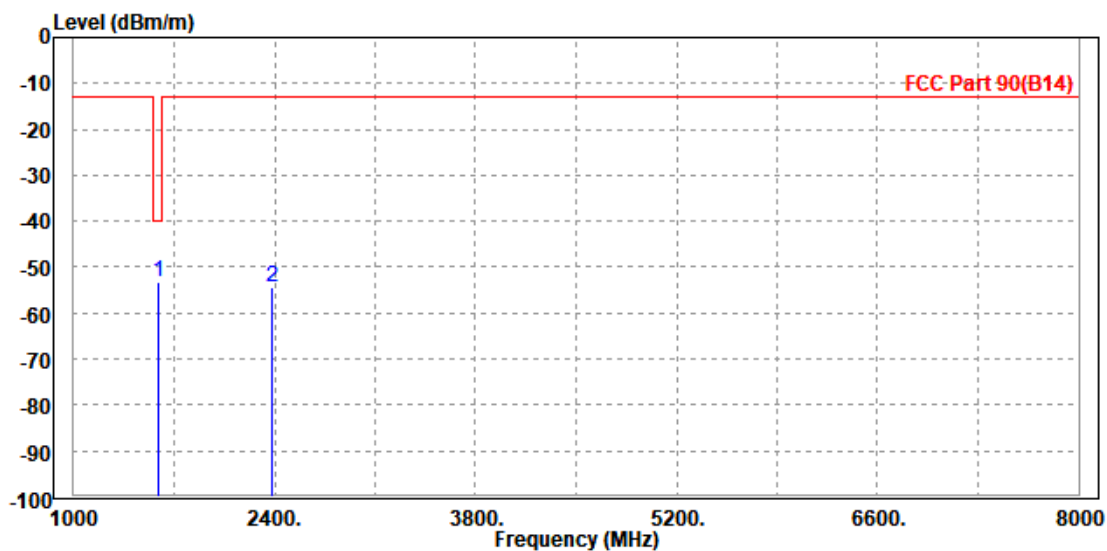
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1588.000	-56.34	-56.94	-40.00	-16.34	0.60	Peak	Vertical
2	2379.000	-54.03	-58.64	-13.00	-41.03	4.61	Peak	Vertical



CH23355

MODE	TX channel 23355	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
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	1591.000	-53.40	-53.71	-40.00	-13.40	0.31	Peak	Horizontal
2		2386.000	-54.54	-59.56	-13.00	-41.54	5.02	Peak	Horizontal

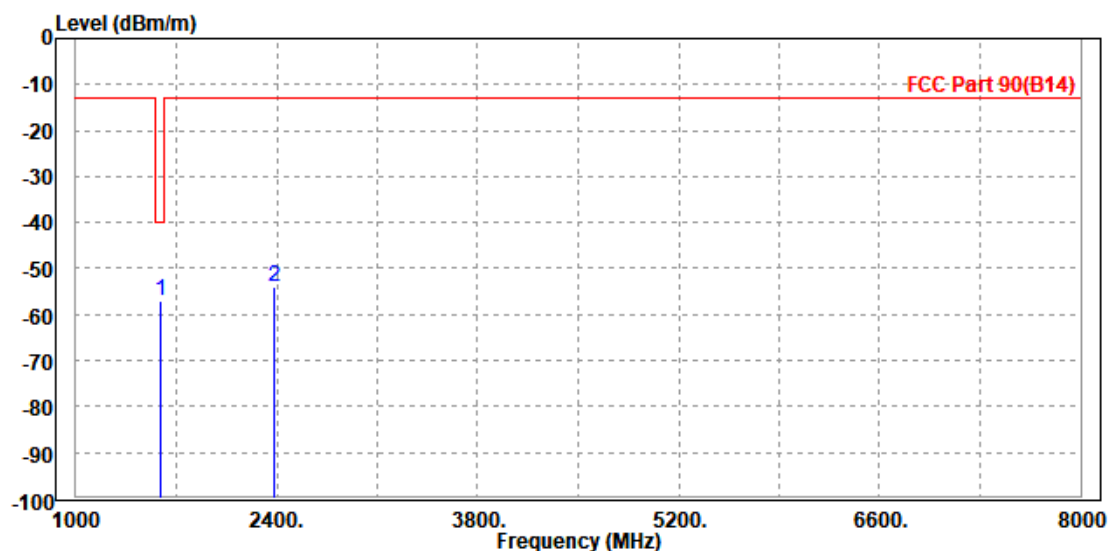




Test Report No.: W7L-P23070006RF06

MODE	TX channel 23355	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
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	1588.000	-56.87	-57.47	-40.00	-16.87	0.60	Peak	Vertical
2	2386.500	-54.07	-58.70	-13.00	-41.07	4.63	Peak	Vertical

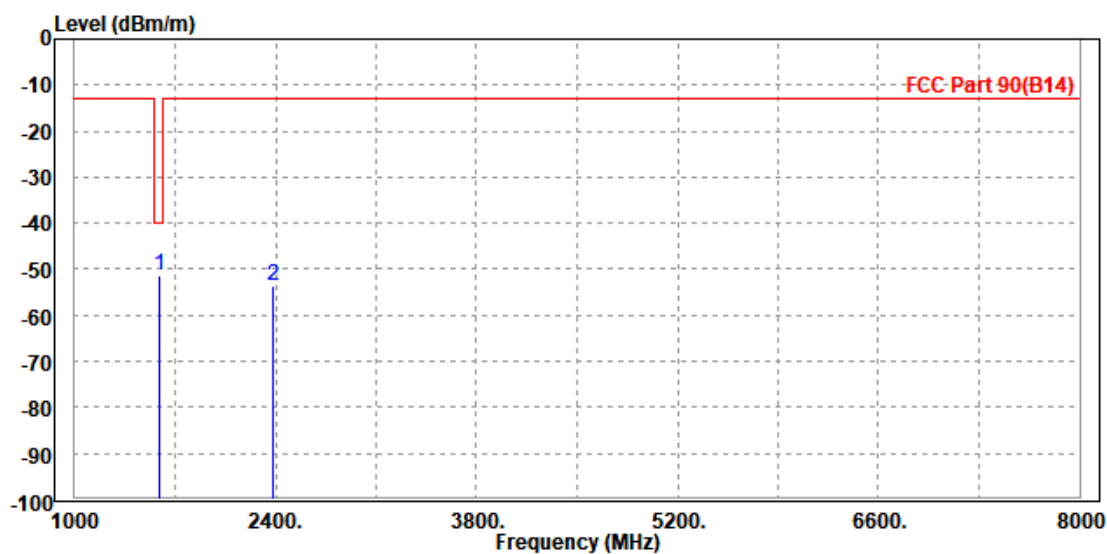


CHANNEL BANDWIDTH: 10MHz / QPSK

CH23330

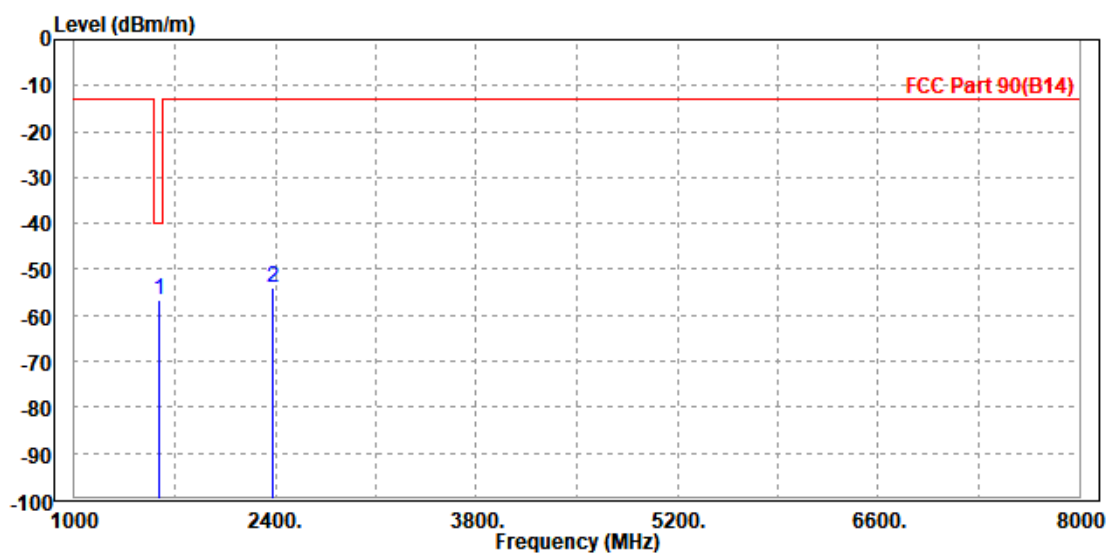
MODE	TX channel 23330	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1588.000	-51.45	-51.74	-40.00	-11.45	0.29	Peak	Horizontal
2	2379.000	-53.43	-58.43	-13.00	-40.43	5.00	Peak	Horizontal



MODE	TX channel 23330	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
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	1586.000	-56.61	-57.20	-40.00	-16.61	0.59	Peak	Vertical
2	2379.000	-54.08	-58.69	-13.00	-41.08	4.61	Peak	Vertical

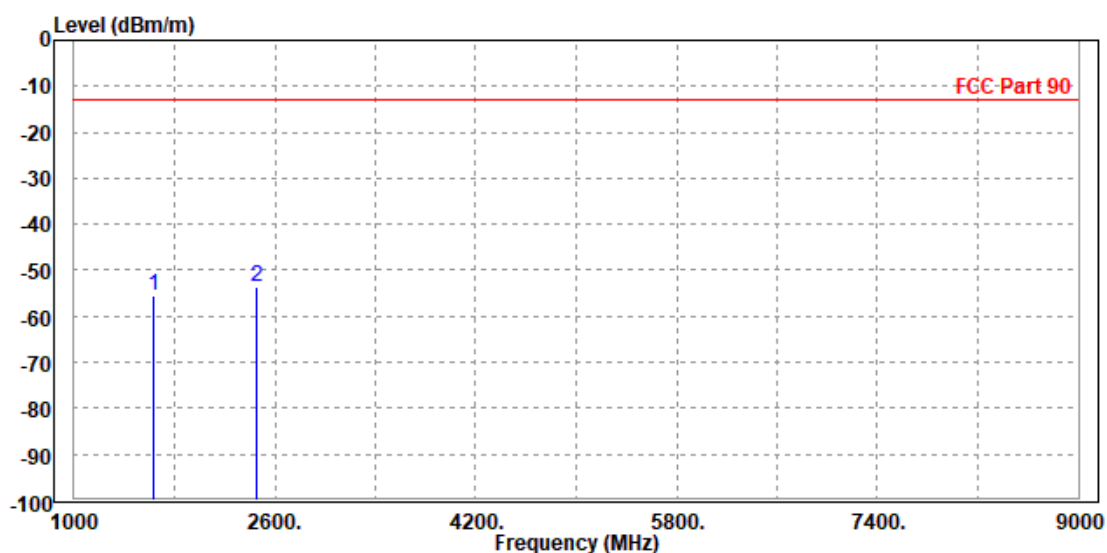


LTE BAND 26

CHANNEL BANDWIDTH: 1.4MHz / QPSK

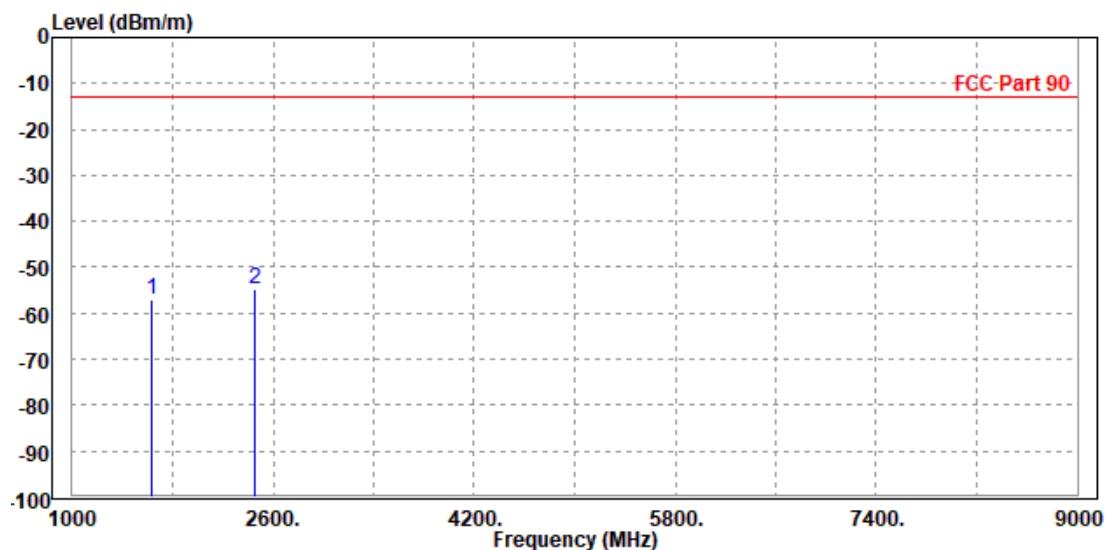
MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1640.000	-55.63	-56.34	-13.00	-42.63	0.71	Peak	Horizontal
2 PP	2457.000	-53.58	-58.86	-13.00	-40.58	5.28	Peak	Horizontal



MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
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	1638.000	-57.14	-58.10	-13.00	-44.14	0.96	Peak	Vertical
2 PP	2456.000	-54.57	-59.39	-13.00	-41.57	4.82	Peak	Vertical





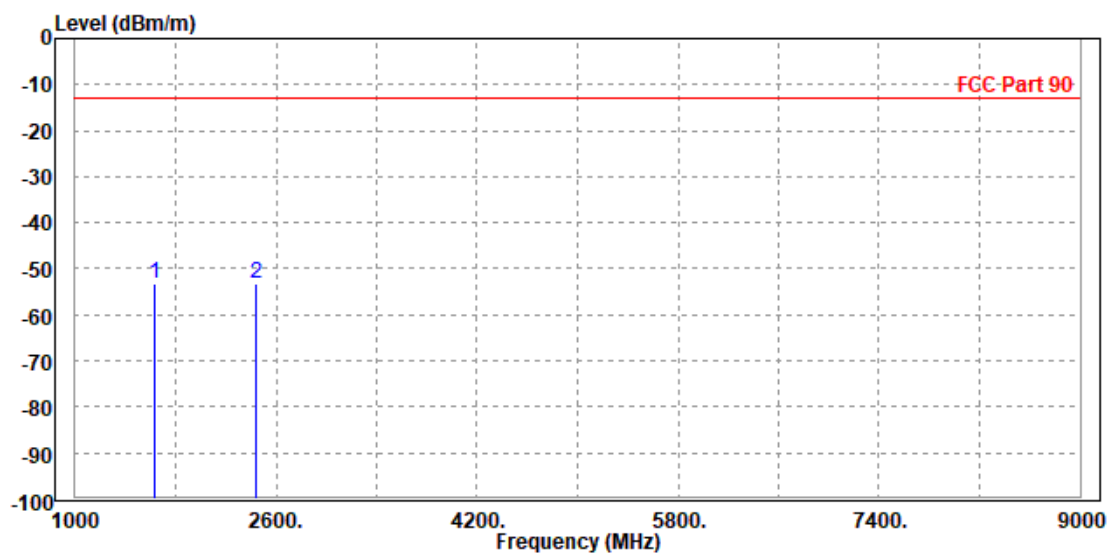
Test Report No.: W7L-P23070006RF06

CHANNEL BANDWIDTH: 3MHz / QPSK

CH26705

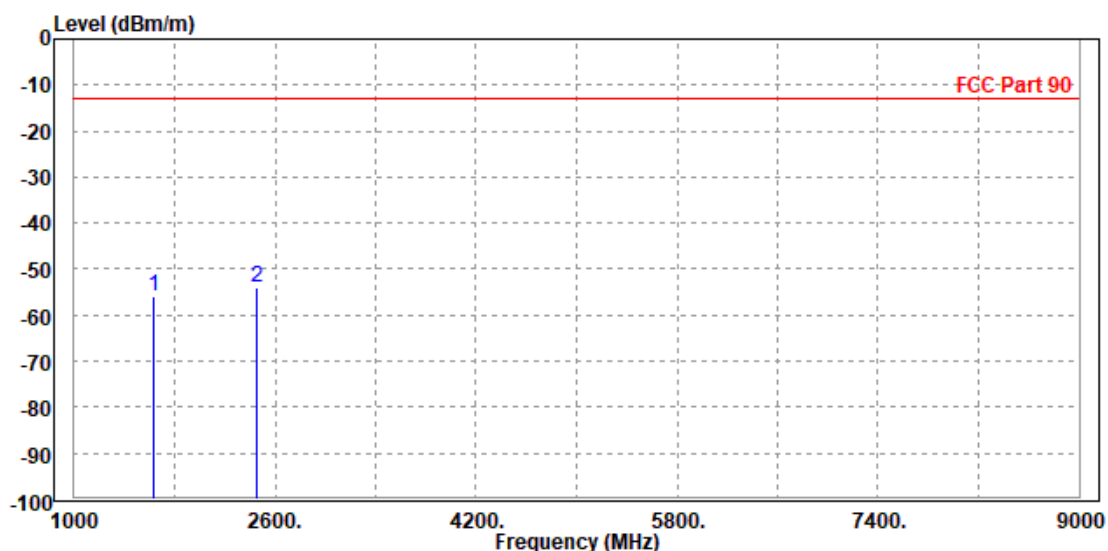
MODE	TX channel 26705	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1632.000	-53.12	-53.76	-13.00	-40.12	0.64	Peak	Horizontal
2	2446.500	-53.13	-58.37	-13.00	-40.13	5.24	Peak	Horizontal



MODE	TX channel 26705	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

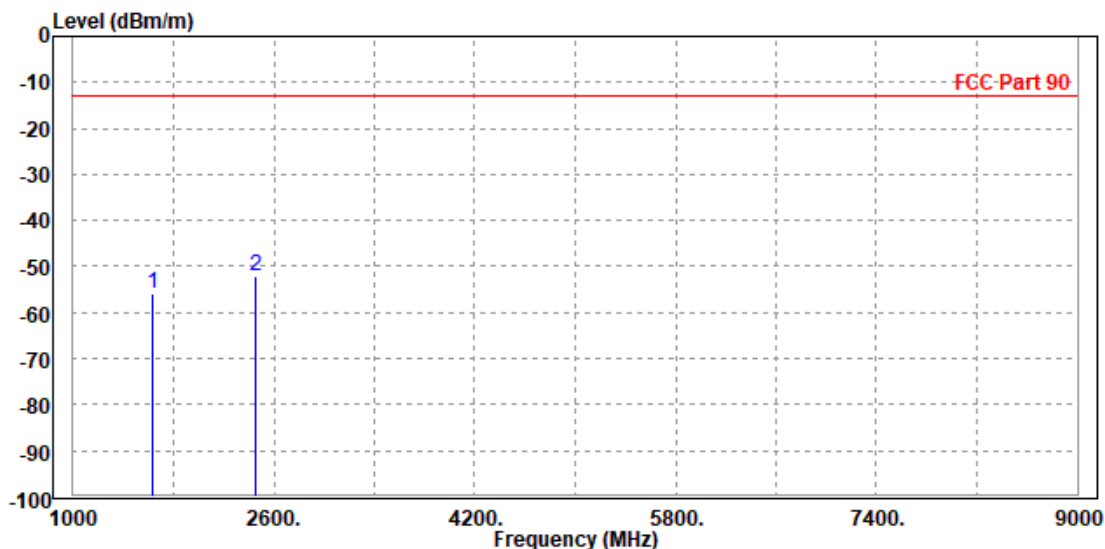
	Freq	Level	Read Level	Limit	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1631.000	-55.75	-56.66	-13.00	-42.75	0.91	Peak	Vertical
2 PP	2448.000	-53.84	-58.64	-13.00	-40.84	4.80	Peak	Vertical



CH26740

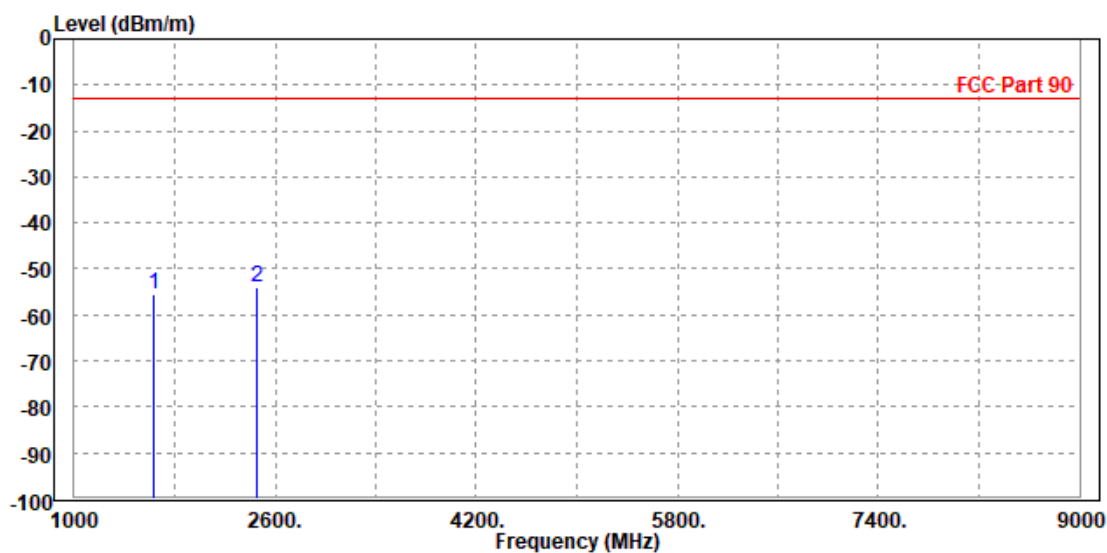
MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1638.000	-55.89	-56.58	-13.00	-42.89	0.69	Peak	Horizontal
2 PP	2456.000	-51.99	-57.27	-13.00	-38.99	5.28	Peak	Horizontal



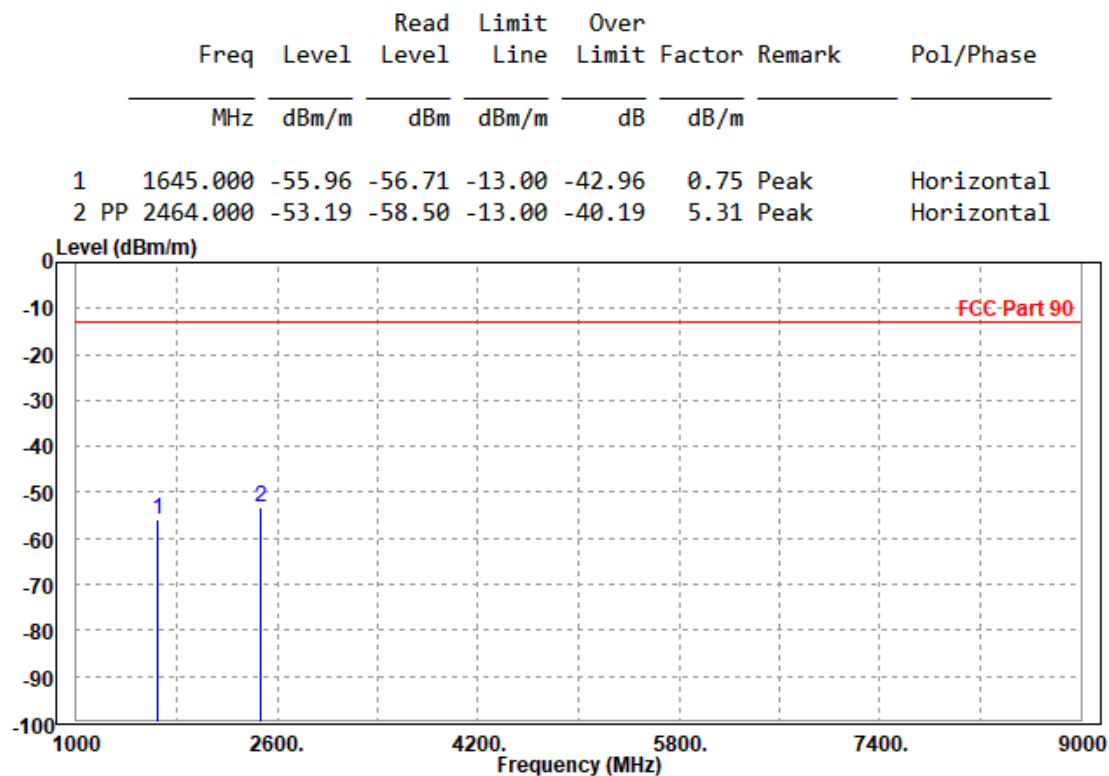
MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1640.000	-55.62	-56.60	-13.00	-42.62	0.98	Peak	Vertical
2 PP	2457.000	-54.13	-58.95	-13.00	-41.13	4.82	Peak	Vertical



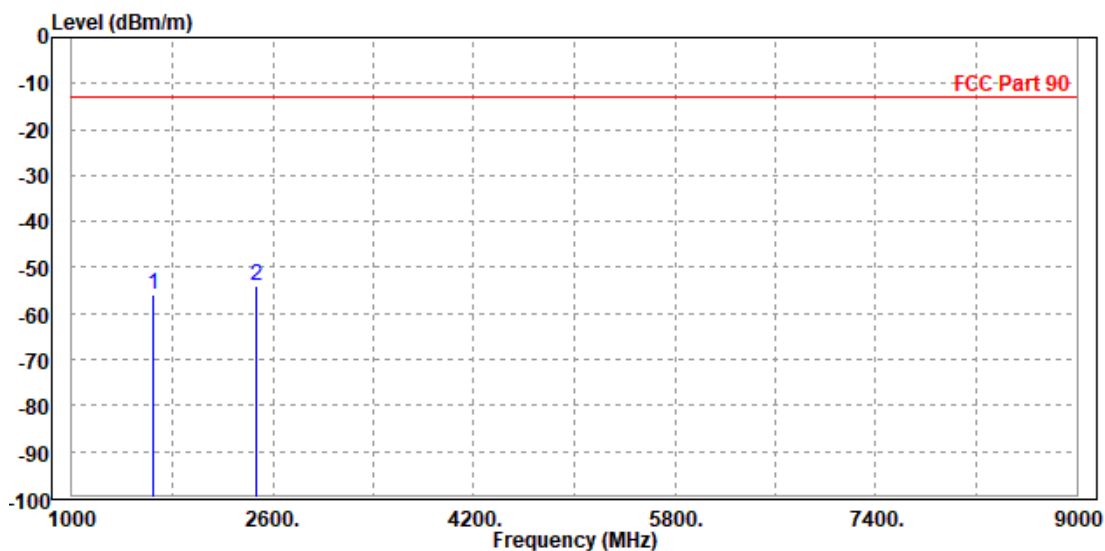
CH26775

MODE	TX channel 26775	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			



MODE	TX channel 26775	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1648.000	-56.07	-57.11	-13.00	-43.07	1.04	Peak	Vertical
2 PP	2467.500	-54.04	-58.89	-13.00	-41.04	4.85	Peak	Vertical



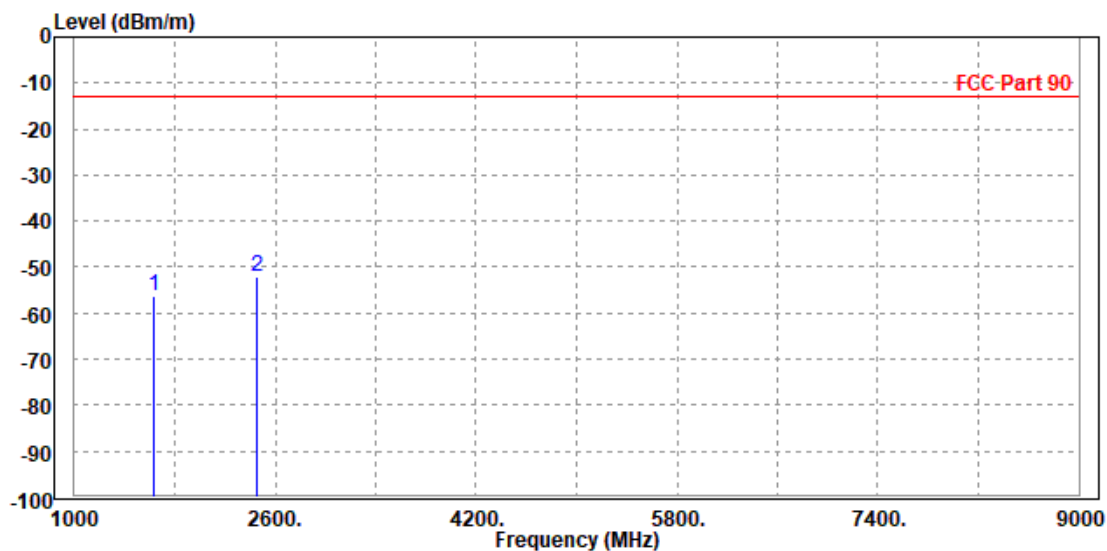


Test Report No.: W7L-P23070006RF06

CHANNEL BANDWIDTH: 5MHz / QPSK

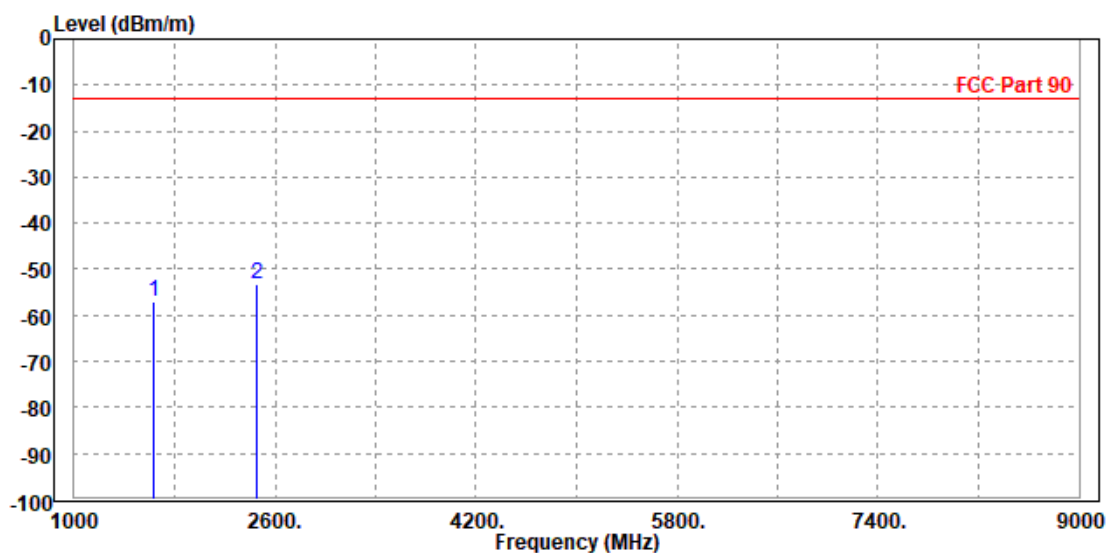
MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1640.000	-56.20	-56.91	-13.00	-43.20	0.71	Peak	Horizontal
2 PP	2457.000	-51.94	-57.22	-13.00	-38.94	5.28	Peak	Horizontal



MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
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	1640.000	-56.94	-57.92	-13.00	-43.94	0.98	Peak	Vertical
2 PP	2457.000	-53.36	-58.18	-13.00	-40.36	4.82	Peak	Vertical



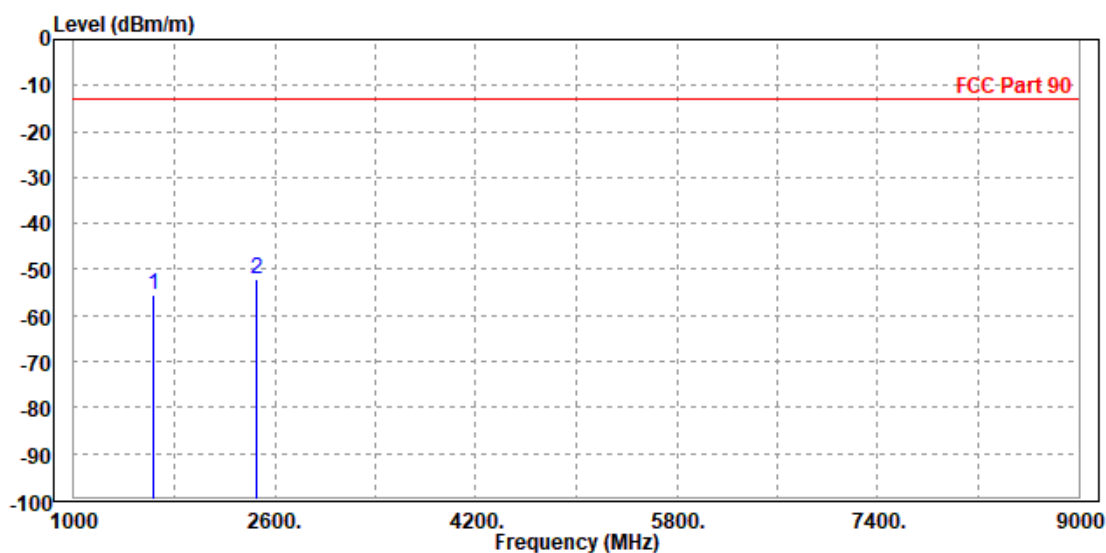


Test Report No.: W7L-P23070006RF06

CHANNEL BANDWIDTH: 10MHz / QPSK

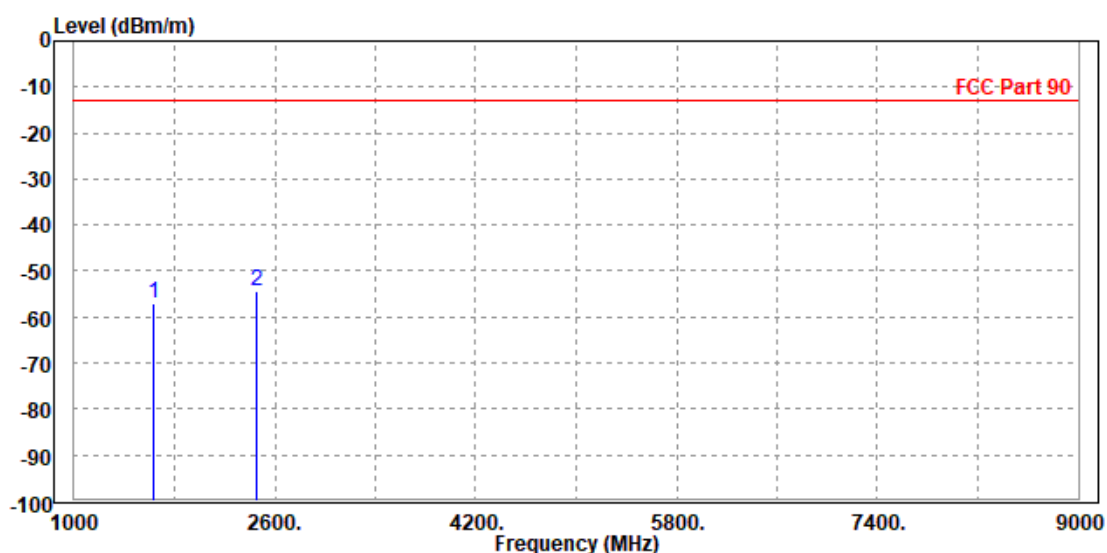
MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1640.000	-55.68	-56.39	-13.00	-42.68	0.71	Peak	Horizontal
2 PP	2457.000	-52.17	-57.45	-13.00	-39.17	5.28	Peak	Horizontal



MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
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	1638.000	-57.13	-58.09	-13.00	-44.13	0.96	Peak	Vertical
2 PP	2456.000	-54.27	-59.09	-13.00	-41.27	4.82	Peak	Vertical





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4 INFORMATION ON THE TESTING LABORATORIES

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

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

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Email: customerservice.sw@bureauveritas.com

Web Site: www.adt.com.tw

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



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5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

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

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