

FCC TEST REPORT (PART 24)



Applicant:	Fibocom Wireless Inc.
Address:	5/F, Tower A, Technology Building II, 1057 Nanhai Avenue, Shenzhen, China

Manufacturer or Supplier:	Fibocom Wireless Inc.
Address:	5/F, Tower A, Technology Building II, 1057 Nanhai Avenue, Shenzhen, China
Product:	LTE Module
Brand Name:	Fibocom
Model Name:	L860-GL
FCC ID:	ZMOL860GLD
Date of tests:	Mar. 19, 2019 ~ Apr. 10, 2019

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

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

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

Prepared by Roger Li Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
	
Date: Apr. 10, 2019	Date: Apr. 10, 2019

This report is governed by, and incorporates by reference, CPS Conditions of Service as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1 SUMMARY OF TEST RESULTS.....	5
1.1 MEASUREMENT UNCERTAINTY	5
1.2 TEST SITE AND INSTRUMENTS	6
2 GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 CONFIGURATION OF SYSTEM UNDER TEST	8
2.3 DESCRIPTION OF SUPPORT UNITS	8
2.4 TEST ITEM AND TEST CONFIGURATION	9
2.5 EUT OPERATING CONDITIONS	11
2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS	11
3 TEST TYPES AND RESULTS.....	12
3.1 OUTPUT POWER MEASUREMENT	12
3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT	12
3.1.2 TEST PROCEDURES	12
3.1.3 TEST SETUP	13
3.1.4 TEST RESULTS	14
3.2 FREQUENCY STABILITY MEASUREMENT	26
3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT	26
3.2.2 TEST PROCEDURE.....	26
3.2.3 TEST SETUP.....	26
3.2.4 TEST RESULTS	26
3.3 OCCUPIED BANDWIDTH MEASUREMENT	27
3.3.1 TEST PROCEDURES	27
3.3.2 TEST SETUP.....	27
3.3.3 TEST RESULTS	27
3.4 BAND EDGE MEASUREMENT	28
3.4.1 LIMITS OF BAND EDGE MEASUREMENT.....	28
3.4.2 TEST SETUP.....	28
3.4.3 TEST PROCEDURES	28
3.4.4. TEST RESULTS.....	29
3.5 CONDUCTED SPURIOUS EMISSIONS	30
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT.....	30
3.5.2 TEST PROCEDURE.....	30
3.5.3 TEST SETUP.....	30
3.5.4 TEST RESULTS	30
3.6 RADIATED EMISSION MEASUREMENT	31
3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT	31
3.6.2 TEST PROCEDURES	31
3.6.3 DEVIATION FROM TEST STANDARD	31
3.6.4 TEST SETUP	32
3.6.5 TEST RESULTS	34
3.7 PEAK TO AVERAGE RATIO	52
3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT.....	52
3.7.2 TEST SETUP.....	52
3.7.3 TEST PROCEDURES	52
3.7.4 TEST RESULTS	52



Test Report No.: RF190318W003-9

4	INFORMATION ON THE TESTING LABORATORIES	53
5	APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	54



Test Report No.: RF190318W003-9

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF190318W003-9	Original release	Apr. 10, 2019

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 24 & Part 2			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
2.1046 24.232	Equivalent Isotropic Radiated Power	PASS	Meet the requirement of limit.
2.1055 24.235	Frequency Stability	N/A	See Note
2.1049 24.238(b)	Occupied Bandwidth	N/A	See Note
24.232(d)	Peak to average ratio	N/A	See Note
24.238(b)	Band Edge Measurements	N/A	See Note
2.1051 24.238	Conducted Spurious Emissions	N/A	See Note
2.1053 24.238	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -24.20dB at 46.79MHz.

Note: Please refer to test report SZEM180500437001.

1.1 MEASUREMENT UNCERTAINTY

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

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

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



1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Feb. 26, 19	Feb. 25, 20
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 26, 19	Feb. 25, 20
Bilog Antenna 1	ETS-LINDGREN	3143B	00161964	Feb. 26, 19	Feb. 25, 20
Bilog Antenna 2	ETS-LINDGREN	3143B	00161965	Feb. 26, 19	Feb. 25, 20
Horn Antenna 1	ETS-LINDGREN	3117	00168728	Feb. 26, 19	Feb. 25, 20
Horn Antenna 2	ETS-LINDGREN	3117	00168692	Nov. 30, 18	Nov. 29, 19
Loop antenna	Daze	ZN30900A	0708	Oct. 23, 18	Oct. 22, 19
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40 -K-SG/QMS-00 361	15433	Nov. 21, 18	Nov. 20, 19
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 26, 19	Feb. 25, 20
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jul. 09, 18	Jul. 08, 19
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jul. 09, 18	Jul. 08, 19
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Jul. 09, 18	Jul. 08, 19
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn- CT0001143-1216	Feb. 26, 19	Feb. 25, 20
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated _V7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SM A	1505	Jul. 09, 18	Jul. 08, 19
Power Meter	Anritsu	ML2495A	1506002	Feb. 26, 19	Feb. 25, 20
Power Sensor	Anritsu	MA2411B	1339352	Feb. 26, 19	Feb. 25, 20
Humid & Temp Programmable Tester	Juyi	ITH-120-45-CP -AR	IAA1504-001	Jul. 09, 18	Jul. 08, 19
MXG Analog Microwave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 26, 19	Feb. 25, 20

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

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

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

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

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

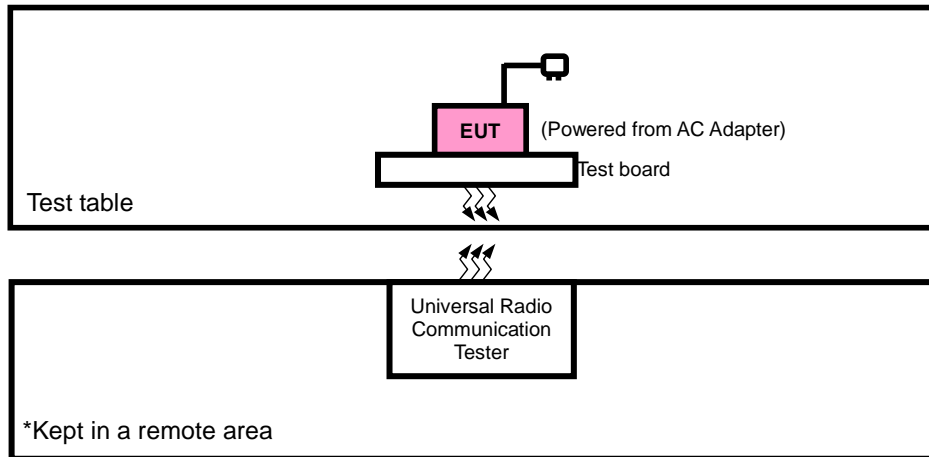
PRODUCT	LTE Module	
MODEL NAME	L860-GL	
POWER SUPPLY	DC 3.3V	
MODULATION TYPE	LTE : QPSK, 16QAM, 64QAM	
FREQUENCY RANGE	LTE Band 25 Channel Bandwidth: 1.4MHz	1850.7MHz ~ 1914.3MHz
	LTE Band 25 Channel Bandwidth: 3MHz	1851.5MHz ~ 1913.5MHz
	LTE Band 25 Channel Bandwidth: 5MHz	1852.5MHz ~ 1912.5MHz
	LTE Band 25 Channel Bandwidth: 10MHz	1855.0MHz ~ 1910.0MHz
	LTE Band 25 Channel Bandwidth: 15MHz	1857.5MHz ~ 1912.5MHz
	LTE Band 25 Channel Bandwidth: 20MHz	1860.0MHz ~ 1905.0MHz
MAX. EIRP POWER	LTE Band 25 Channel Bandwidth: 1.4MHz	277mW
	LTE Band 25 Channel Bandwidth: 3MHz	274mW
	LTE Band 25 Channel Bandwidth: 5MHz	277mW
	LTE Band 25 Channel Bandwidth: 10MHz	281mW
	LTE Band 25 Channel Bandwidth: 15MHz	276mW
	LTE Band 25 Channel Bandwidth: 20MHz	249mW
ANTENNA TYPE	External antenna with 5dBi gain	
HW VERSION	V1.2	
SW VERSION	18600.5006.00.31.00.02	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	N/A	

NOTE:

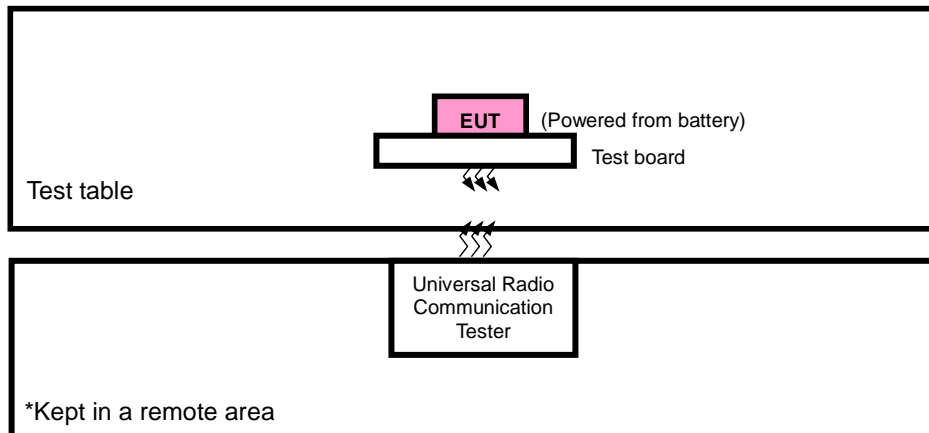
1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



FOR CONDUCTED & E.I.R.P. TEST





2.3 DESCRIPTION OF SUPPORT UNITS

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

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

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

NOTE:

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

2.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports

The worst case in 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
-	EUT with WCDMA or LTE link

LTE BAND 25

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
EIRP	26047 to 26683	26047, 26340, 26683	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
	26055 to 26675	26055, 26340, 26675	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
	26065 to 26665	26065, 26340, 26665	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
	26090 to 26640	26090, 26340, 26640	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
	26115 to 26615	26115, 26340, 26615	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
	26140 to 26590	26140, 26340, 26590	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
RADIATED EMISSION	26047 to 26683	26340	1.4MHz	QPSK	1 RB / 0 RB Offset
	26055 to 26675	26340	3MHz	QPSK	1 RB / 0 RB Offset
	26065 to 26665	26340	5MHz	QPSK	1 RB / 0 RB Offset
	26090 to 26640	26090, 26340, 26640	10MHz	QPSK	1 RB / 0 RB Offset
	26115 to 26615	26340	15MHz	QPSK	1 RB / 0 RB Offset
	26140 to 26590	26340	20MHz	QPSK	1 RB / 0 RB Offset

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

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP	25deg. C, 57%RH	DC 3.3V	Rose Ma
RADIATED EMISSION	23deg. C, 70%RH	DC 3.3V	Rose Ma

2.5 EUT OPERATING CONDITIONS

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

2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC 47 CFR Part 2

FCC 47 CFR Part 24

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

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

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile and portable stations are limited to 2 watts EIRP.

3.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 10MHz for LTE mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step b. Record the power level of S.G
- d. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$

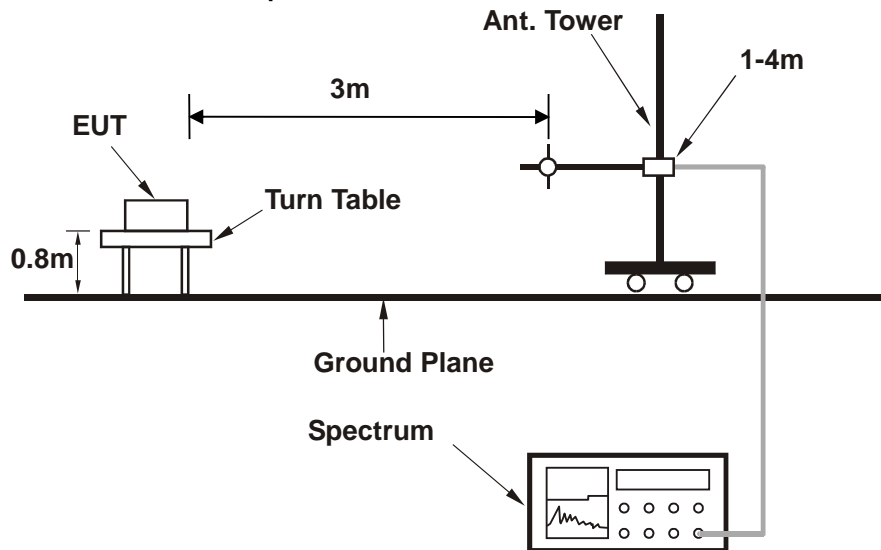
CONDUCTED POWER MEASUREMENT:

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.

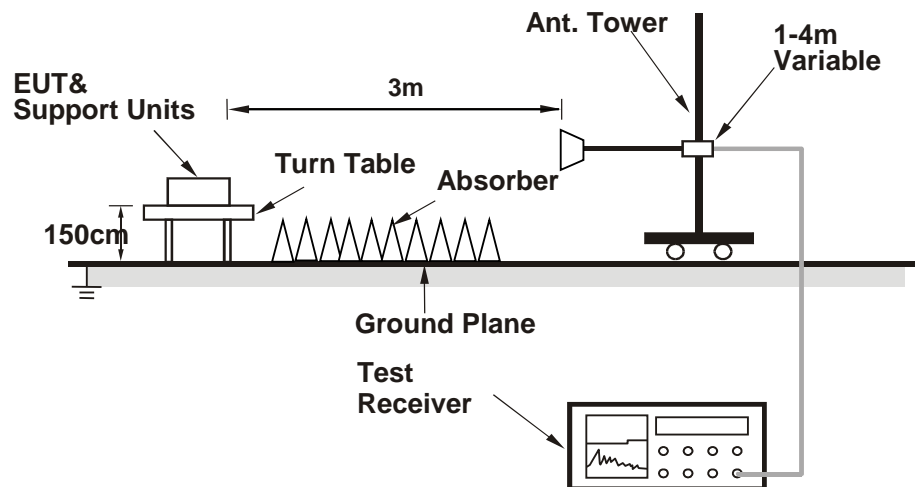
3.1.3 TEST SETUP

EIRP / ERP Measurement:

<Radiated Emission below or equal 1 GHz>

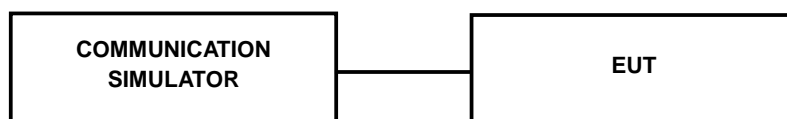


<Radiated Emission above 1 GHz>



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

CONDUCTED POWER MEASUREMENT:



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

LTE Band 25							
BW	Modulation	RB Size	RB Offset	Low CH 26047	Mid CH 26340	High CH 26683	3GPP MPR (dB)
				Frequency 1850.7 MHz	Frequency 1880 MHz	Frequency 1914.3 MHz	
1.4MHz	QPSK	1	0	23.22	23.15	22.98	0
		1	2	22.96	22.89	22.72	0
		1	5	22.90	22.83	22.66	0
		3	0	22.16	22.09	21.92	1
		3	1	21.99	21.92	21.75	1
		3	3	22.00	21.93	21.76	1
		6	0	22.05	21.98	21.81	1
	16QAM	1	0	22.35	22.28	22.11	1
		1	2	22.23	22.16	21.99	1
		1	5	22.19	22.12	21.95	1
		3	0	21.16	21.09	20.92	2
		3	1	21.14	21.07	20.90	2
		3	3	21.12	21.05	20.88	2
		6	0	21.05	20.98	20.81	2
	64QAM	1	0	21.34	21.27	21.10	2
		1	2	21.22	21.15	20.98	2
		1	5	21.19	21.12	20.95	2
		3	0	21.32	21.25	21.08	3
		3	1	21.20	21.13	20.96	3
		3	3	21.17	21.10	20.93	3
		6	0	20.02	19.95	19.78	3

LTE Band 25							
BW	Modulation	RB Size	RB Offset	Low CH 26055	Mid CH 26340	High CH 26675	3GPP MPR (dB)
				Frequency 1851.5 MHz	Frequency 1880 MHz	Frequency 1913.5 MHz	
3MHz	QPSK	1	0	23.25	23.18	23.01	0
		1	7	22.99	22.92	22.75	0
		1	14	22.93	22.86	22.69	0
		8	0	22.17	22.10	21.93	1
		8	3	22.00	21.93	21.76	1
		8	7	22.01	21.94	21.77	1
		15	0	22.06	21.99	21.82	1
	16QAM	1	0	22.38	22.31	22.14	1
		1	7	22.26	22.19	22.02	1
		1	14	22.22	22.15	21.98	1
		8	0	21.18	21.11	20.94	2
		8	3	21.16	21.09	20.92	2
		8	7	21.14	21.07	20.90	2
		15	0	21.07	21.00	20.83	2
	64QAM	1	0	21.37	21.30	21.13	2
		1	7	21.25	21.18	21.01	2
		1	14	21.22	21.15	20.98	2
		8	0	20.20	20.13	19.96	3
		8	3	20.17	20.10	19.93	3
		8	7	20.15	20.08	19.91	3
		15	0	20.05	19.98	19.81	3

LTE Band 25							
BW	Modulation	RB Size	RB Offset	Low CH 26065	Mid CH 26340	High CH 26665	3GPP MPR (dB)
				Frequency 1852.5 MHz	Frequency 1880 MHz	Frequency 1912.5 MHz	
5MHz	QPSK	1	0	23.28	23.21	23.04	0
		1	12	23.02	22.95	22.78	0
		1	24	22.96	22.89	22.72	0
		12	0	22.20	22.13	21.96	1
		12	6	22.03	21.96	21.79	1
		12	13	22.04	21.97	21.80	1
		25	0	22.09	22.02	21.85	1
	16QAM	1	0	22.41	22.34	22.17	1
		1	12	22.29	22.22	22.05	1
		1	24	22.25	22.18	22.01	1
		12	0	21.21	21.14	20.97	2
		12	6	21.19	21.12	20.95	2
		12	13	21.17	21.10	20.93	2
		25	0	21.10	21.03	20.86	2
	64QAM	1	0	21.40	21.33	21.16	2
		1	12	21.28	21.21	21.04	2
		1	24	21.25	21.18	21.01	2
		12	0	20.23	20.16	19.99	3
		12	6	20.20	20.13	19.96	3
		12	13	20.18	20.11	19.94	3
		25	0	20.08	20.01	19.84	3

LTE Band 25							
BW	Modulation	RB Size	RB Offset	Low CH 26090	Mid CH 26340	High CH 26640	3GPP MPR (dB)
				Frequency 1855 MHz	Frequency 1880 MHz	Frequency 1910 MHz	
10MHz	QPSK	1	0	23.30	23.23	23.06	0
		1	24	23.04	22.97	22.80	0
		1	49	22.98	22.91	22.74	0
		25	0	22.22	22.15	21.98	1
		25	12	22.05	21.98	21.81	1
		25	25	22.06	21.99	21.82	1
		50	0	22.11	22.04	21.87	1
	16QAM	1	0	22.43	22.36	22.19	1
		1	24	22.31	22.24	22.07	1
		1	49	22.27	22.20	22.03	1
		25	0	21.23	21.16	20.99	2
		25	12	21.21	21.14	20.97	2
		25	25	21.19	21.12	20.95	2
		50	0	21.12	21.05	20.88	2
	64QAM	1	0	21.42	21.35	21.18	2
		1	24	21.30	21.23	21.06	2
		1	49	21.27	21.20	21.03	2
		25	0	20.25	20.18	20.01	3
		25	12	20.22	20.15	19.98	3
		25	25	20.20	20.13	19.96	3
		50	0	20.10	20.03	19.86	3

LTE Band 25							
BW	Modulation	RB Size	RB Offset	Low CH 26115	Mid CH 26340	High CH 26615	3GPP MPR (dB)
				Frequency 1857.5 MHz	Frequency 1880 MHz	Frequency 1907.5 MHz	
15MHz	QPSK	1	0	23.33	23.26	23.09	0
		1	37	23.07	23.00	22.83	0
		1	74	23.01	22.94	22.77	0
		36	0	22.25	22.18	22.01	1
		36	19	22.08	22.01	21.84	1
		36	39	22.09	22.02	21.85	1
		75	0	22.14	22.07	21.90	1
	16QAM	1	0	22.46	22.39	22.22	1
		1	37	22.34	22.27	22.10	1
		1	74	22.30	22.23	22.06	1
		36	0	21.26	21.19	21.02	2
		36	19	21.24	21.17	21.00	2
		36	39	21.22	21.15	20.98	2
		75	0	21.15	21.08	20.91	2
	64QAM	1	0	21.45	21.38	21.21	2
		1	37	21.33	21.26	21.09	2
		1	74	21.30	21.23	21.06	2
		36	0	20.28	20.21	20.04	3
		36	19	20.25	20.18	20.01	3
		36	39	20.23	20.16	19.99	3
		75	0	20.13	20.06	19.89	3

LTE Band 25							
BW	Modulation	RB Size	RB Offset	Low CH 26140	Mid CH 26340	High CH 26590	3GPP MPR (dB)
				Frequency 1860 MHz	Frequency 1880 MHz	Frequency 1905 MHz	
20MHz	QPSK	1	0	23.38	23.31	23.14	0
		1	50	23.12	23.05	22.88	0
		1	99	23.06	22.99	22.82	0
		50	0	22.30	22.23	22.06	1
		50	25	22.13	22.06	21.89	1
		50	50	22.14	22.07	21.90	1
		100	0	22.19	22.12	21.95	1
	16QAM	1	0	22.51	22.44	22.27	1
		1	50	22.39	22.32	22.15	1
		1	99	22.35	22.28	22.11	1
		50	0	21.31	21.24	21.07	2
		50	25	21.29	21.22	21.05	2
		50	50	21.27	21.20	21.03	2
		100	0	21.20	21.13	20.96	2
	64QAM	1	0	21.50	21.43	21.26	2
		1	50	21.38	21.31	21.14	2
		1	99	21.35	21.28	21.11	2
		50	0	20.33	20.26	20.09	3
		50	25	20.30	20.23	20.06	3
		50	50	20.28	20.21	20.04	3
		100	0	20.18	20.11	19.94	3



**BUREAU
VERITAS**

Test Report No.: RF190318W003-9

EIRP POWER (dBm)

LTE BAND 25

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26047	1850.7	-26.41	43.83	17.42	55.21	H	2
26340	1880.0	-24.90	43.57	18.68	73.71	H	2
26683	1914.3	-25.72	44.40	18.68	73.76	H	2
26047	1850.7	-23.03	46.41	23.38	217.82	V	2
26340	1880.0	-22.64	47.07	24.43	277.33	V	2
26683	1914.3	-22.96	45.99	23.03	200.91	V	2

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26047	1850.7	-27.28	43.83	16.55	45.19	H	2
26340	1880.0	-25.83	43.57	17.75	59.50	H	2
26683	1914.3	-26.68	44.40	17.72	59.13	H	2
26047	1850.7	-23.90	46.41	22.51	178.28	V	2
26340	1880.0	-23.57	47.07	23.50	223.87	V	2
26683	1914.3	-23.92	45.99	22.07	161.06	V	2

CHANNEL BANDWIDTH: 1.4MHz 64QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26047	1850.7	-27.78	43.83	16.05	40.27	H	2
26340	1880.0	-26.63	43.57	16.95	49.49	H	2
26683	1908.3	-27.38	44.40	17.02	50.33	H	2
26047	1850.7	-24.00	46.41	22.41	174.22	V	2
26340	1880.0	-24.27	47.07	22.80	190.55	V	2
26683	1908.3	-24.22	45.99	21.77	150.31	V	2

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26055	1851.5	-26.39	43.82	17.43	55.31	H	2
26340	1880.0	-24.96	43.57	18.62	72.69	H	2
26675	1913.5	-25.67	44.38	18.70	74.20	H	2
26055	1851.5	-23.01	46.45	23.44	220.85	V	2
26340	1880.0	-22.70	47.07	24.37	273.53	V	2
26675	1913.5	-22.91	45.95	23.04	201.37	V	2

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26055	1851.5	-27.46	43.82	16.36	43.23	H	2
26340	1880.0	-25.85	43.57	17.73	59.22	H	2
26675	1913.5	-26.66	44.38	17.71	59.07	H	2
26055	1851.5	-24.08	46.45	22.37	172.62	V	2
26340	1880.0	-23.59	47.07	23.48	222.84	V	2
26675	1913.5	-23.90	45.95	22.05	160.32	V	2

CHANNEL BANDWIDTH: 3MHz 64QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26055	1851.5	-27.96	43.82	15.86	38.53	H	2
26340	1880.0	-26.65	43.57	16.93	49.26	H	2
26675	1913.5	-27.36	44.38	17.01	50.28	H	2
26055	1851.5	-24.18	46.45	22.27	168.69	V	2
26340	1880.0	-24.29	47.07	22.78	189.67	V	2
26675	1913.5	-24.20	45.95	21.75	149.62	V	2

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26065	1852.5	-26.45	43.83	17.37	54.63	H	2
26340	1880.0	-24.91	43.57	18.67	73.54	H	2
26665	1912.5	-25.62	44.37	18.75	74.95	H	2
26065	1852.5	-23.07	46.46	23.39	218.42	V	2
26340	1880.0	-22.65	47.07	24.42	276.69	V	2
26665	1912.5	-22.86	45.90	23.04	201.37	V	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26065	1852.5	-27.28	43.83	16.54	45.12	H	2
26340	1880.0	-25.93	43.57	17.65	58.14	H	2
26665	1912.5	-26.72	44.37	17.65	58.18	H	2
26065	1852.5	-23.90	46.46	22.56	180.43	V	2
26340	1880.0	-23.67	47.07	23.40	218.78	V	2
26665	1912.5	-23.96	45.90	21.94	156.31	V	2

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26065	1852.5	-27.78	43.83	16.04	40.22	H	2
26340	1880.0	-26.73	43.57	16.85	48.36	H	2
26665	1912.5	-27.42	44.37	16.95	49.52	H	2
26065	1852.5	-24.00	46.46	22.46	176.32	V	2
26340	1880.0	-24.37	47.07	22.70	186.21	V	2
26665	1912.5	-24.26	45.90	21.64	145.88	V	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26090	1855.0	-26.26	43.86	17.60	57.50	H	2
26340	1880.0	-24.85	43.57	18.73	74.56	H	2
26640	1910.0	-25.49	44.32	18.83	76.33	H	2
26090	1855.0	-22.88	46.28	23.40	218.68	V	2
26340	1880.0	-22.59	47.07	24.48	280.54	V	2
26640	1910.0	-22.73	45.88	23.15	206.73	V	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26090	1855.0	-27.41	43.86	16.45	44.13	H	2
26340	1880.0	-25.95	43.57	17.63	57.88	H	2
26640	1910.0	-26.65	44.32	17.67	58.44	H	2
26090	1855.0	-24.03	46.28	22.25	167.80	V	2
26340	1880.0	-23.69	47.07	23.38	217.77	V	2
26640	1910.0	-23.89	45.88	21.99	158.27	V	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26090	1855.0	-27.91	43.86	15.95	39.33	H	2
26340	1880.0	-26.75	43.57	16.83	48.14	H	2
26640	1910.0	-27.35	44.32	16.97	49.74	H	2
26090	1855.0	-24.13	46.28	22.15	163.98	V	2
26340	1880.0	-24.39	47.07	22.68	185.35	V	2
26640	1910.0	-24.19	45.88	21.69	147.71	V	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26115	1857.5	-26.27	43.99	17.72	59.13	H	2
26340	1880.0	-24.92	43.57	18.66	73.37	H	2
26615	1907.5	-25.56	44.19	18.63	72.88	H	2
26115	1857.5	-22.89	45.93	23.04	201.23	V	2
26340	1880.0	-22.66	47.07	24.41	276.06	V	2
26615	1907.5	-22.80	45.89	23.09	203.75	V	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26115	1857.5	-27.13	43.99	16.86	48.51	H	2
26340	1880.0	-25.79	43.57	17.79	60.05	H	2
26615	1907.5	-26.41	44.19	17.78	59.92	H	2
26115	1857.5	-23.75	45.93	22.18	165.08	V	2
26340	1880.0	-23.53	47.07	23.54	225.94	V	2
26615	1907.5	-23.65	45.89	22.24	167.53	V	2

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26115	1857.5	-27.63	43.99	16.36	43.23	H	2
26340	1880.0	-26.59	43.57	16.99	49.95	H	2
26615	1907.5	-27.11	44.19	17.08	51.00	H	2
26115	1857.5	-23.85	45.93	22.08	161.32	V	2
26340	1880.0	-24.23	47.07	22.84	192.31	V	2
26615	1907.5	-23.95	45.89	21.94	156.35	V	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26140	1860.0	-26.85	43.50	16.65	46.18	H	2
26340	1880.0	-25.37	43.57	18.21	66.15	H	2
26590	1905.0	-26.14	43.99	17.85	60.98	H	2
26140	1860.0	-23.47	45.57	22.10	162.18	V	2
26340	1880.0	-23.11	47.07	23.96	248.89	V	2
26590	1905.0	-23.38	45.92	22.54	179.56	V	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26140	1860.0	-27.78	43.50	15.72	37.28	H	2
26340	1880.0	-26.44	43.57	17.14	51.70	H	2
26590	1905.0	-26.97	43.99	17.02	50.37	H	2
26140	1860.0	-24.40	45.57	21.17	130.92	V	2
26340	1880.0	-24.18	47.07	22.89	194.54	V	2
26590	1905.0	-24.21	45.92	21.71	148.32	V	2

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
26140	1860.0	-28.28	43.50	15.22	33.23	H	2
26340	1880.0	-27.24	43.57	16.34	43.00	H	2
26590	1905.0	-27.67	43.99	16.32	42.87	H	2
26140	1860.0	-24.50	45.57	21.07	127.94	V	2
26340	1880.0	-24.88	47.07	22.19	165.58	V	2
26590	1905.0	-24.51	45.92	21.41	138.42	V	2

REMARKS: 1. EIRP Output Power (dBm) = SPA LVL (dBm) + Correction Factor (dB).

2. Correction factor (dB) = Free Space Loss + Antenna Factor + Cable Loss

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

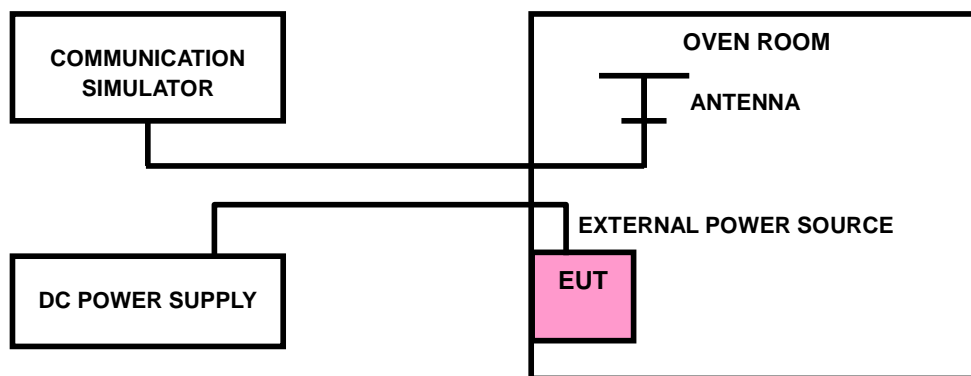
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

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



3.2.4 TEST RESULTS

Please refer to section 8 of Appendix B in test report SZEM180500437001.

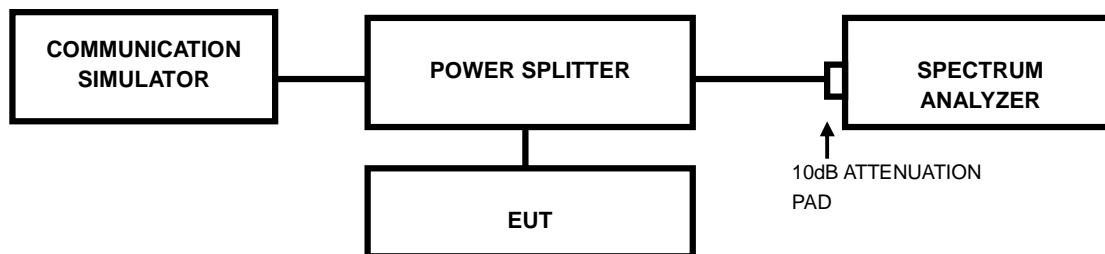


3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 TEST PROCEDURES

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

3.3.2 TEST SETUP



3.3.3 TEST RESULTS

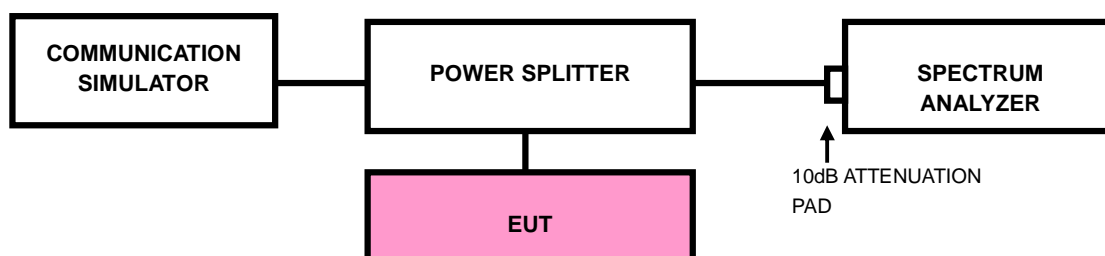
Please refer to section 4 of Appendix B in test report SZEM180500437001.

3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 20kHz and VBW of the spectrum is 100 kHz. (LTE bandwidth 1.4MHz)
- The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 30kHz and VBW of the spectrum is 100kHz. (LTE bandwidth 3MHz)
- The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 50kHz and VBW of the spectrum is 200kHz. (LTE bandwidth 5MHz)
- The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz. (LTE bandwidth 10MHz)
- The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 200kHz and VBW of the spectrum is



- 1MHz. (LTE bandwidth 15MHz)
- g. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 200kHz and VBW of the spectrum is 1MHz. (LTE bandwidth 20MHz)
- h. Record the max trace plot into the test report.

3.4.4 TEST RESULTS

Please refer to section 5 of Appendix B in test report SZEM180500437001.

3.5 CONDUCTED SPURIOUS EMISSIONS

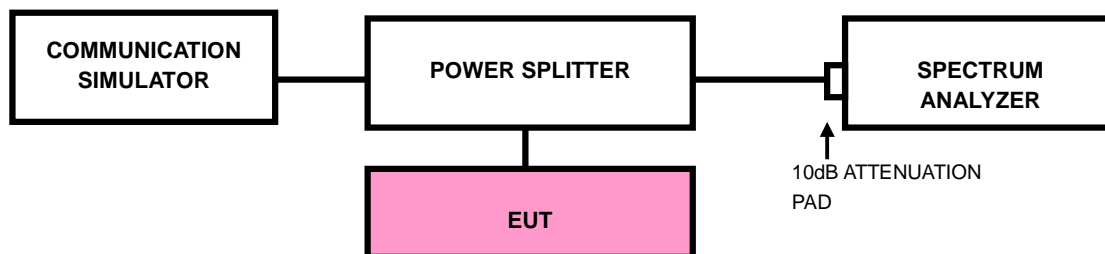
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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

3.5.2 TEST PROCEDURE

- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 9 kHz to 19.1GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

3.5.3 TEST SETUP



3.5.4 TEST RESULTS

Please refer to section 6 of Appendix B in test report SZEM180500437001.

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

3.6.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step a. Record the power level of S.G
- c. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$

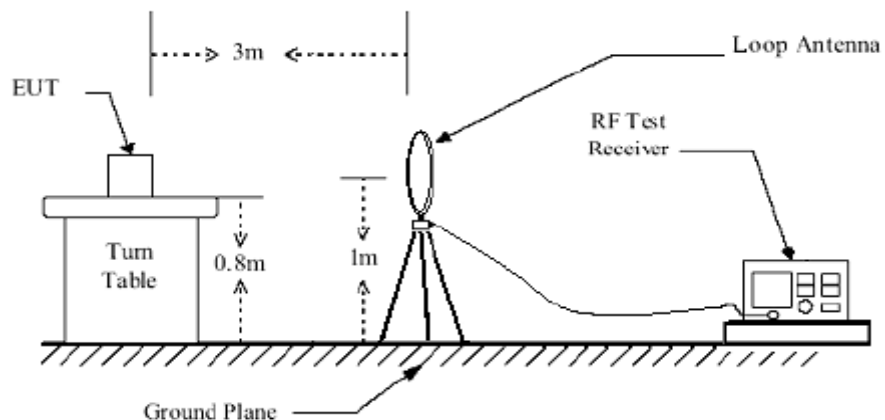
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.6.3 DEVIATION FROM TEST STANDARD

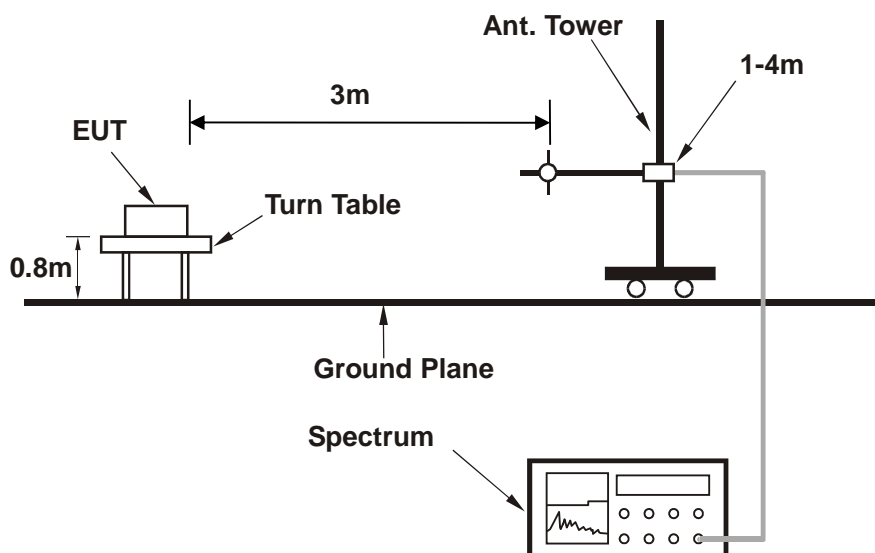
No deviation

3.6.4 TEST SETUP

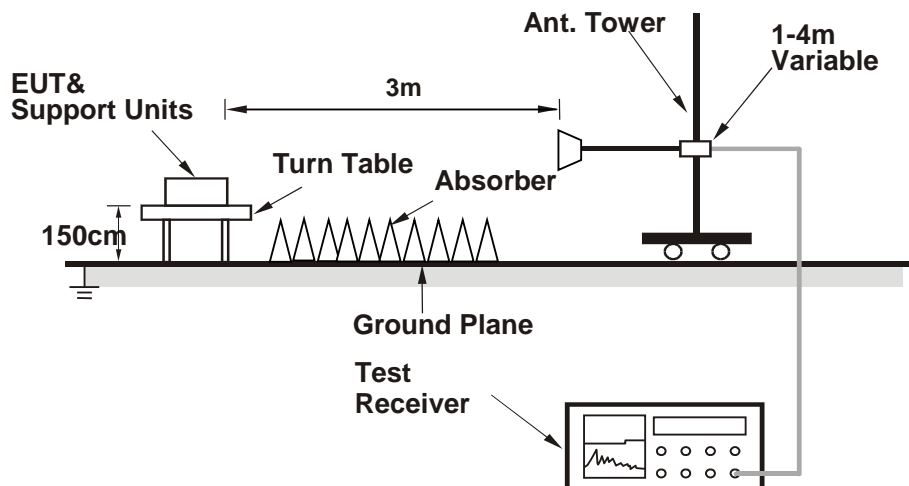
<Below 30MHz>



< Frequency Range 30MHz~1GHz >



< Frequency Range above 1GHz >



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



3.6.5 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

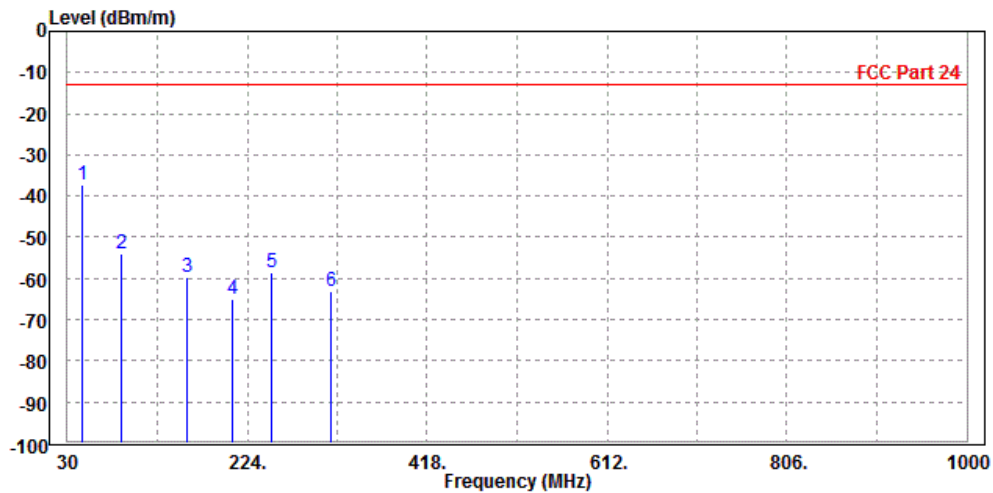
9 KHz – 30 MHz data: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

30 MHz – 1GHz data:

LTE Band 25:

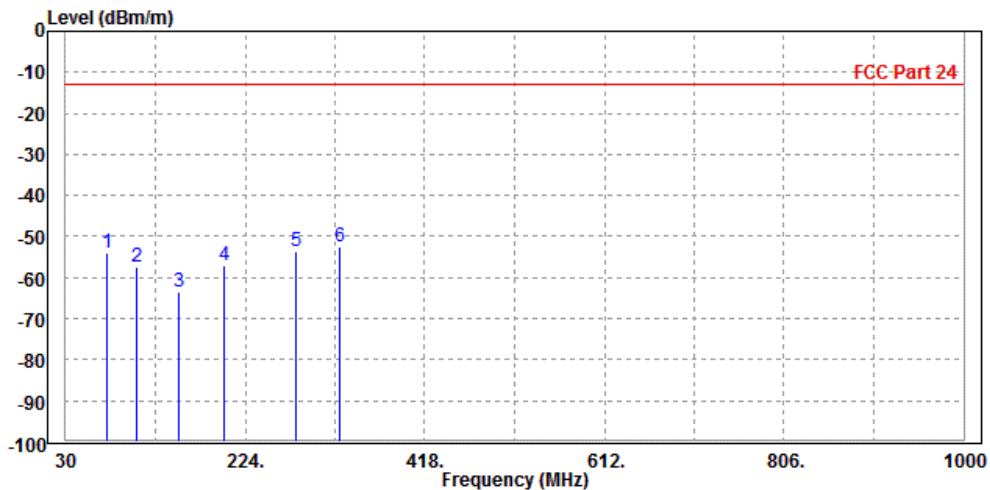
MODE	TX channel 26340	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	46.790	-37.20	-43.26	-13.00	-24.20	6.06	Peak	Horizontal
2		87.630	-54.11	-45.39	-13.00	-41.11	-8.72	Peak	Horizontal
3		158.370	-59.84	-41.26	-13.00	-46.84	-18.58	Peak	Horizontal
4		208.570	-64.93	-47.86	-13.00	-51.93	-17.07	Peak	Horizontal
5		249.670	-58.41	-42.13	-13.00	-45.41	-16.28	Peak	Horizontal
6		314.840	-63.18	-49.87	-13.00	-50.18	-13.31	Peak	Horizontal



MODE	TX channel 26340	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	74.210	-53.87	-40.54	-13.00	-40.87	-13.33	Peak	Vertical
2	106.350	-57.39	-45.88	-13.00	-44.39	-11.51	Peak	Vertical
3	152.340	-63.67	-47.85	-13.00	-50.67	-15.82	Peak	Vertical
4	201.520	-57.00	-46.34	-13.00	-44.00	-10.66	Peak	Vertical
5	278.610	-53.51	-42.12	-13.00	-40.51	-11.39	Peak	Vertical
6 PP	326.870	-52.47	-41.27	-13.00	-39.47	-11.20	Peak	Vertical





ABOVE 1GHz DATA

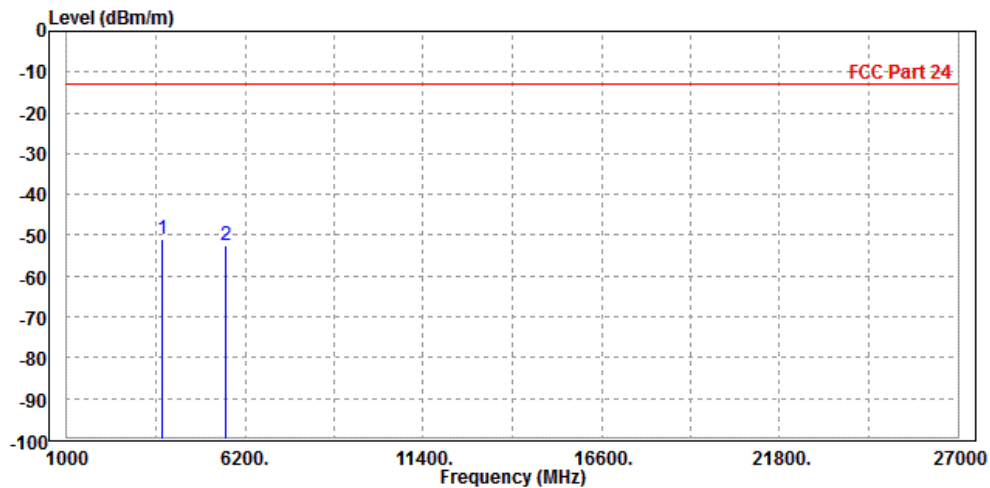
Note: For higher frequency, the emission is too low to be detected.

LTE Band 25

CHANNEL BANDWIDTH: 1.4MHz / QPSK

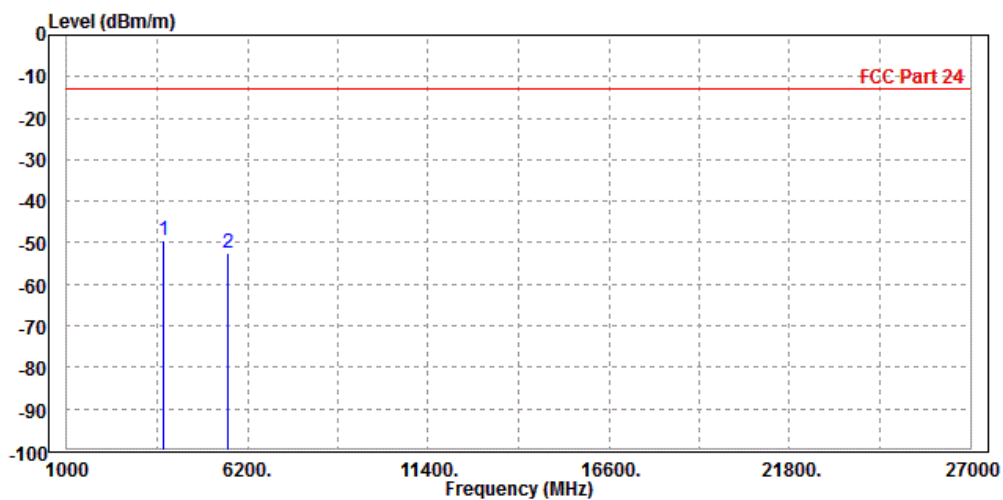
MODE	TX channel 26340	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3765.000	-50.83	-54.27	-13.00	-37.83	3.44	Peak	Horizontal
2		5647.500	-52.36	-61.49	-13.00	-39.36	9.13	Peak	Horizontal



MODE	TX channel 26340	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

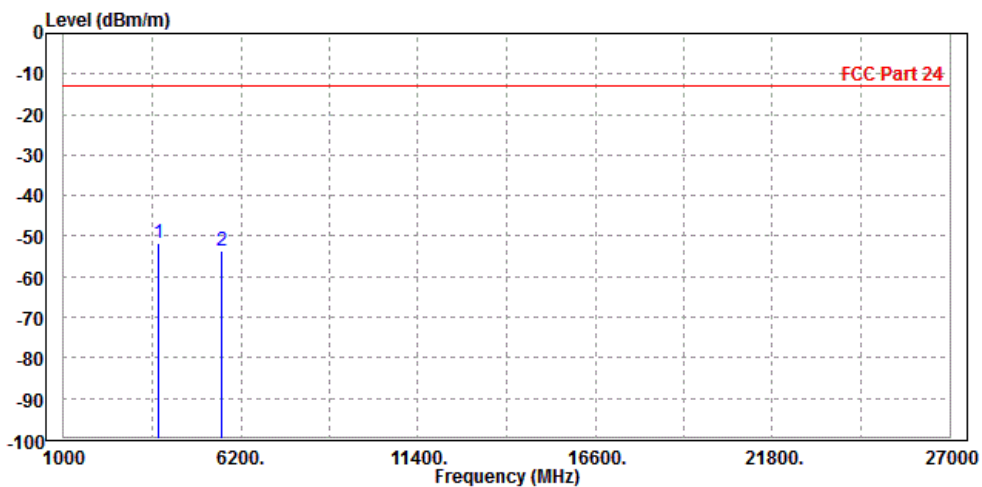
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3765.000	-49.56	-53.46	-13.00	-36.56	3.90	Peak	Vertical
2	5647.500	-52.51	-60.78	-13.00	-39.51	8.27	Peak	Vertical



CHANNEL BANDWIDTH: 3MHz / QPSK

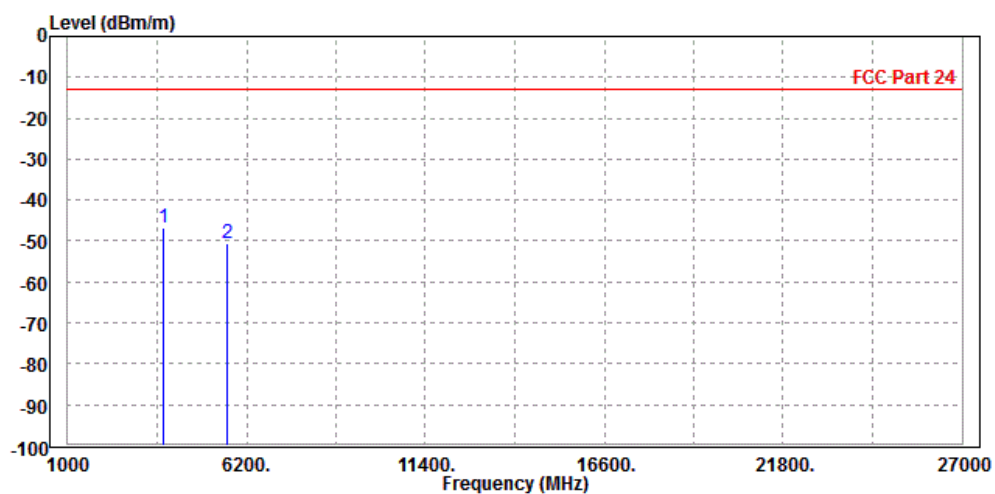
MODE	TX channel 26340	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3765.000	-51.79	-55.23	-13.00	-38.79	3.44	Peak	Horizontal
2	5647.500	-53.45	-62.58	-13.00	-40.45	9.13	Peak	Horizontal



MODE	TX channel 26340	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

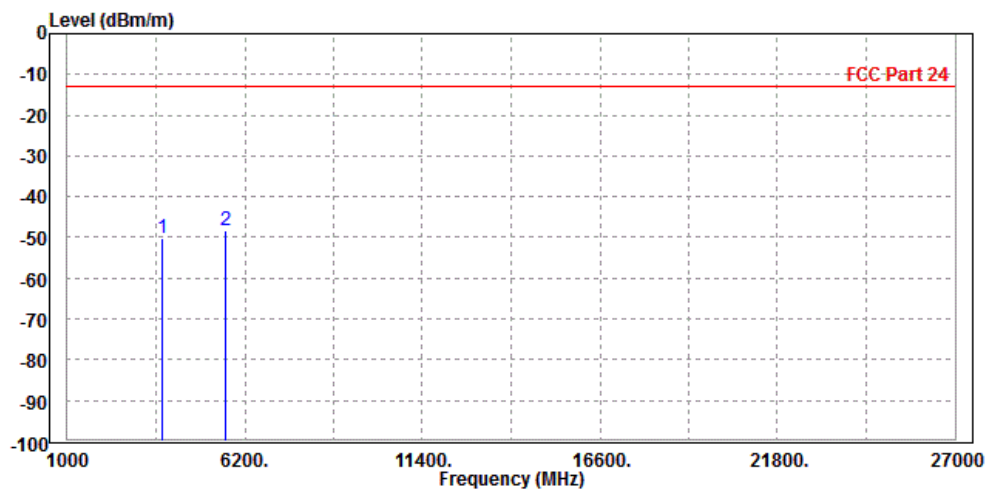
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3765.000	-46.74	-50.64	-13.00	-33.74	3.90	Peak	Vertical
2	5647.500	-50.75	-59.02	-13.00	-37.75	8.27	Peak	Vertical



CHANNEL BANDWIDTH: 5MHz / QPSK

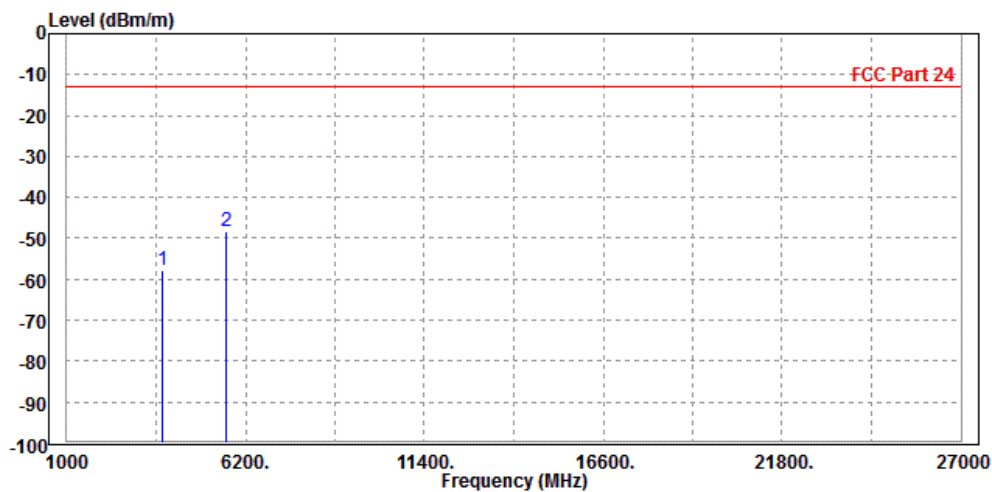
MODE	TX channel 26340	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3765.000	-50.23	-53.67	-13.00	-37.23	3.44	Peak	Horizontal
2 PP	5647.500	-48.31	-57.44	-13.00	-35.31	9.13	Peak	Horizontal



MODE	TX channel 26340	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3765.000	-57.66	-61.56	-13.00	-44.66	3.90	Peak	Vertical
2 PP	5647.500	-48.22	-56.49	-13.00	-35.22	8.27	Peak	Vertical





**BUREAU
VERITAS**

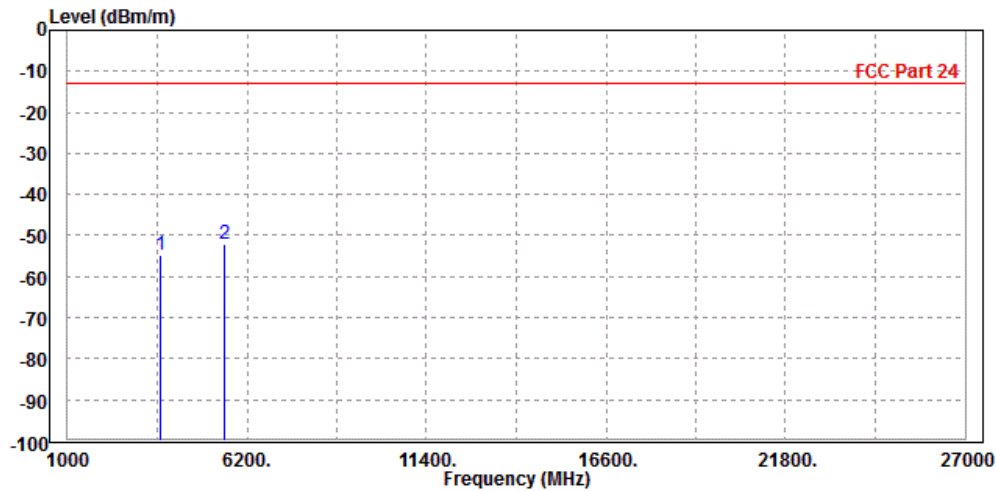
Test Report No.: RF190318W003-9

CHANNEL BANDWIDTH: 10MHz / QPSK

CH 26090

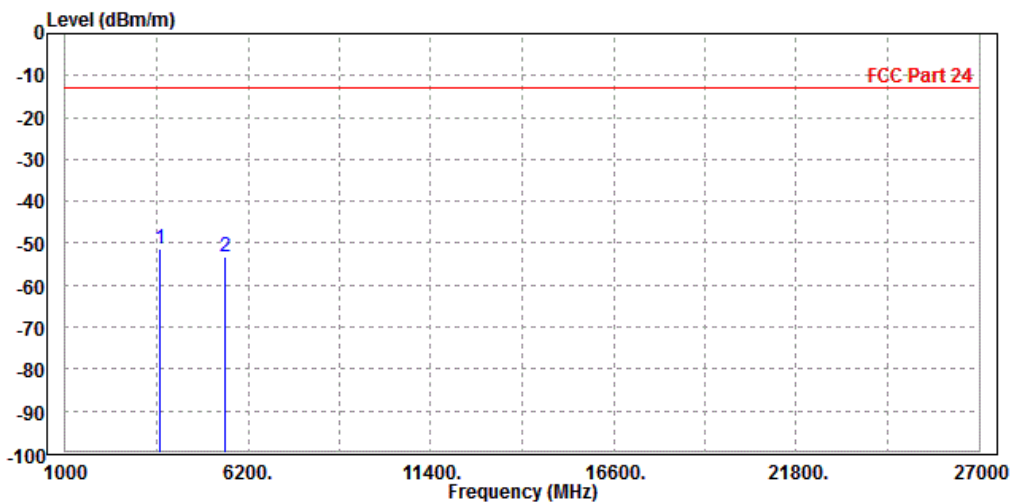
MODE	TX channel 26090	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3710.000	-54.67	-57.84	-13.00	-41.67	3.17	Peak	Horizontal
2 PP	5565.000	-52.19	-61.23	-13.00	-39.19	9.04	Peak	Horizontal



MODE	TX channel 26090	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

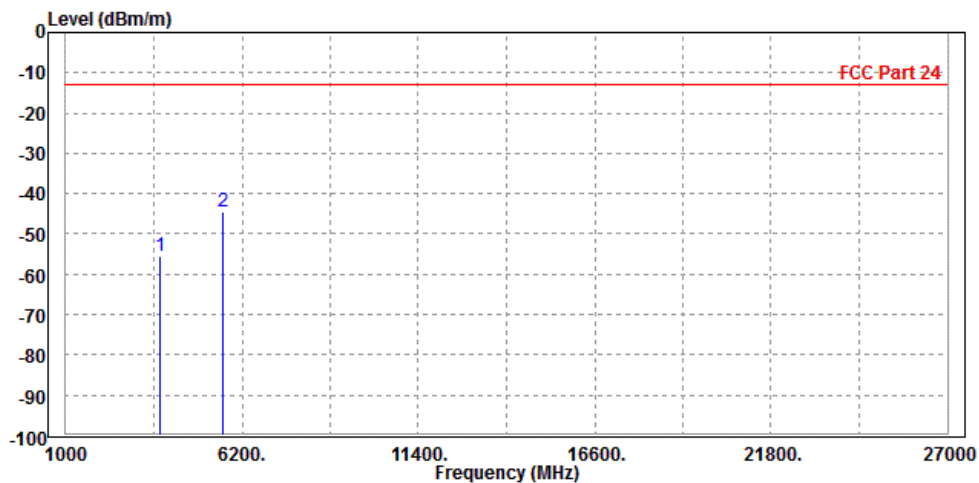
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3710.000	-51.30	-54.93	-13.00	-38.30	3.63	Peak	Vertical
2	5565.000	-53.14	-61.24	-13.00	-40.14	8.10	Peak	Vertical



CH 26340

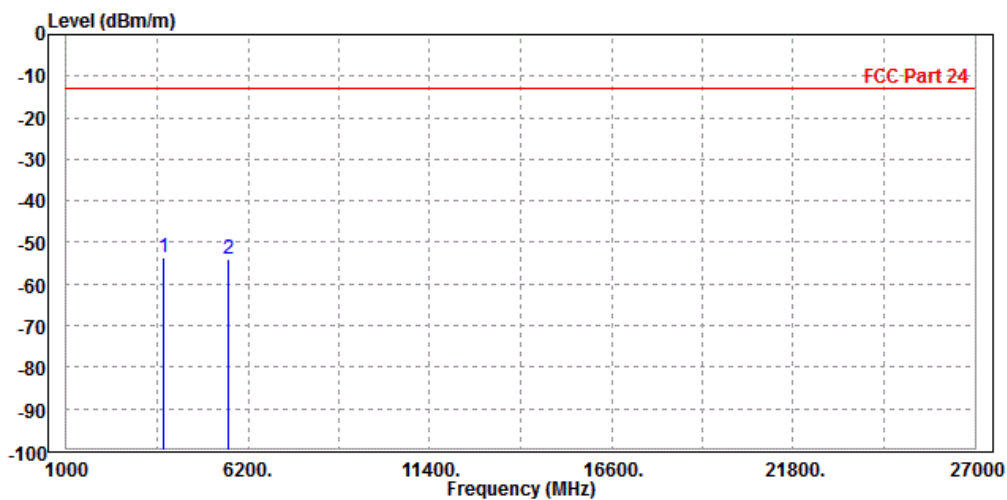
MODE	TX channel 26340	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3765.000	-55.53	-58.97	-13.00	-42.53	3.44	Peak	Horizontal
2 PP	5647.500	-44.43	-53.56	-13.00	-31.43	9.13	Peak	Horizontal



MODE	TX channel 26340	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

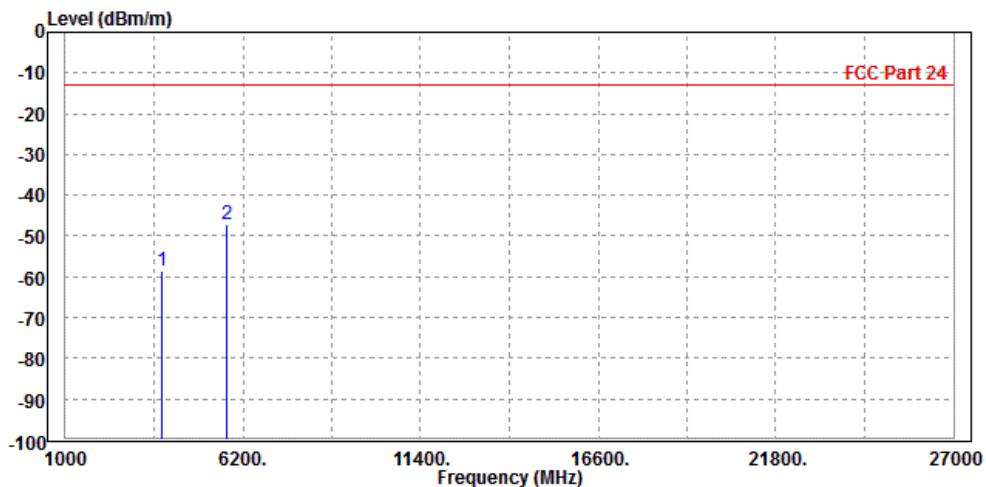
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3765.000	-53.46	-57.36	-13.00	-40.46	3.90	Peak	Vertical
2	5647.500	-54.05	-62.32	-13.00	-41.05	8.27	Peak	Vertical



CH 26640

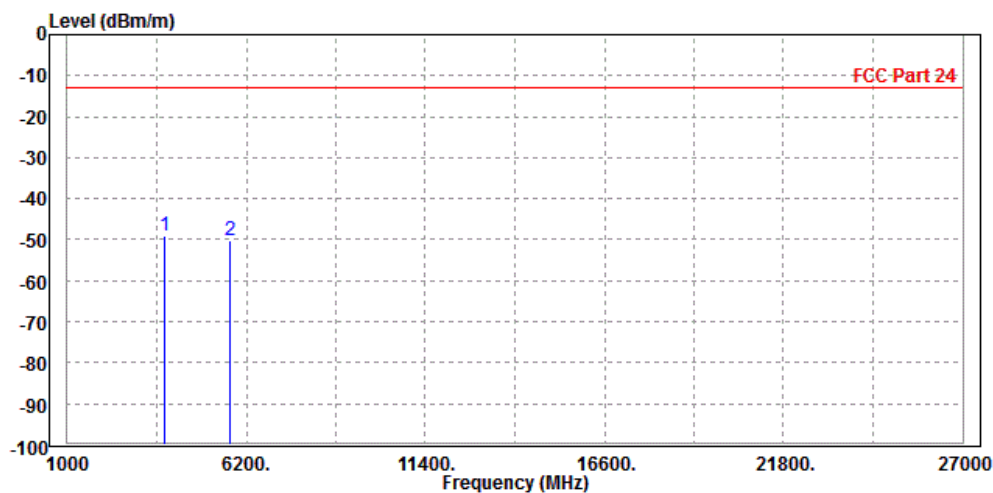
MODE	TX channel 26640	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3820.000	-58.44	-62.14	-13.00	-45.44	3.70	Peak	Horizontal
2 PP	5730.000	-47.17	-56.39	-13.00	-34.17	9.22	Peak	Horizontal



MODE	TX channel 26640	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3820.000	-49.09	-53.27	-13.00	-36.09	4.18	Peak	Vertical
2	5730.000	-50.04	-58.48	-13.00	-37.04	8.44	Peak	Vertical





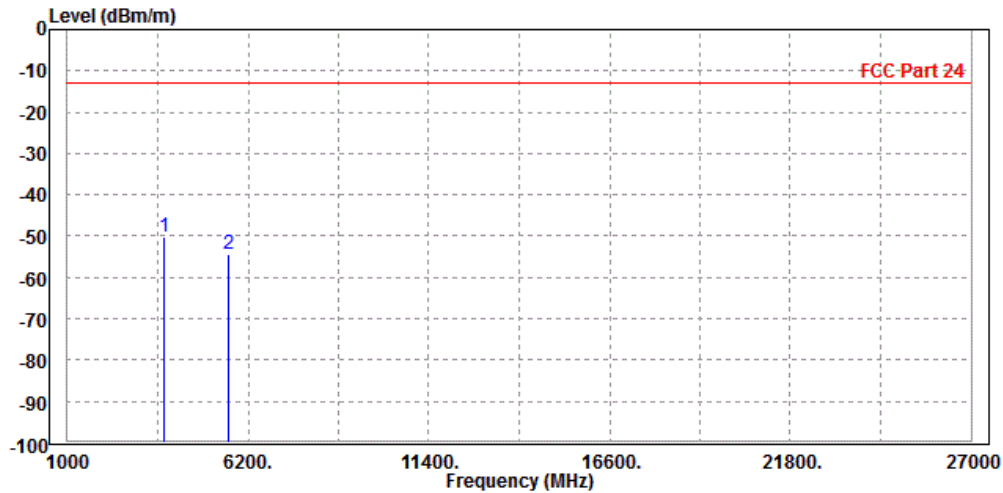
**BUREAU
VERITAS**

Test Report No.: RF190318W003-9

CHANNEL BANDWIDTH: 15MHz / QPSK

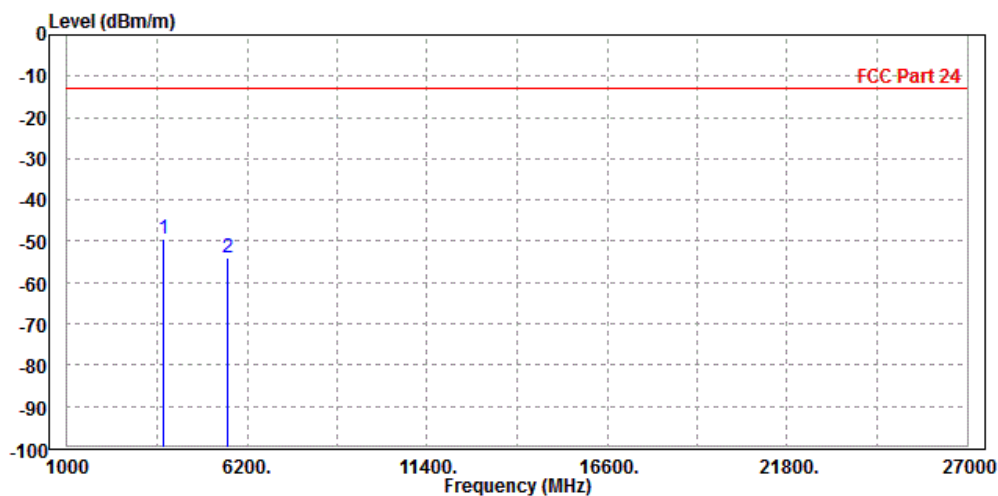
MODE	TX channel 26340	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3765.000	-50.23	-53.67	-13.00	-37.23	3.44	Peak	Horizontal
2	5647.500	-54.41	-63.54	-13.00	-41.41	9.13	Peak	Horizontal



MODE	TX channel 26340	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

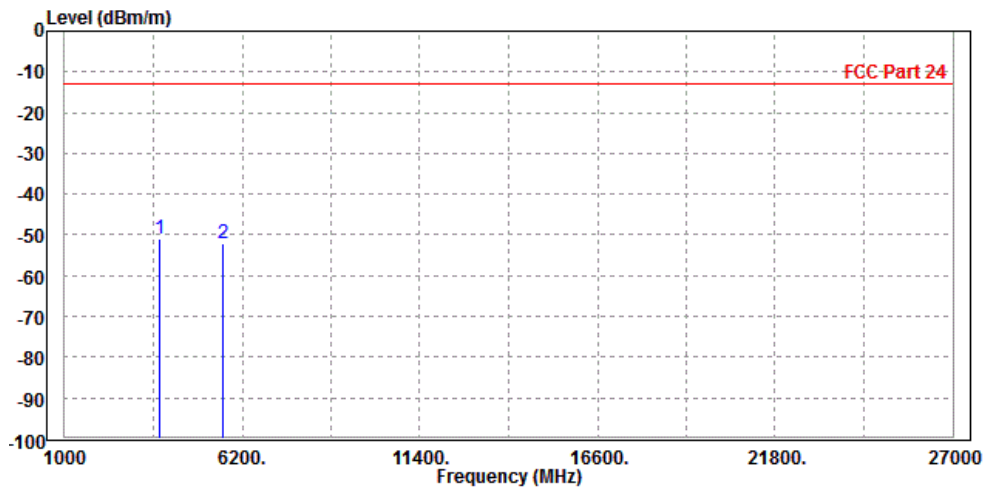
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3765.000	-49.53	-53.43	-13.00	-36.53	3.90	Peak	Vertical
2	5647.500	-53.87	-62.14	-13.00	-40.87	8.27	Peak	Vertical



CHANNEL BANDWIDTH: 20MHz / QPSK

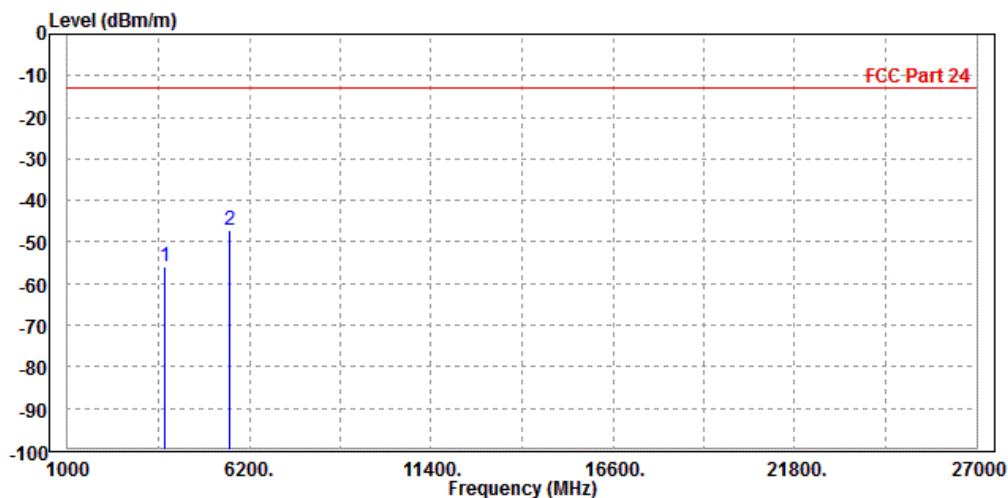
MODE	TX channel 26340	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3765.000	-50.87	-54.31	-13.00	-37.87	3.44	Peak	Horizontal
2	5647.500	-51.92	-61.05	-13.00	-38.92	9.13	Peak	Horizontal



MODE	TX channel 26340	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.3V
TESTED BY	Rose Ma		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3765.000	-55.71	-59.61	-13.00	-42.71	3.90	Peak	Vertical
2 PP	5647.500	-47.07	-55.34	-13.00	-34.07	8.27	Peak	Vertical

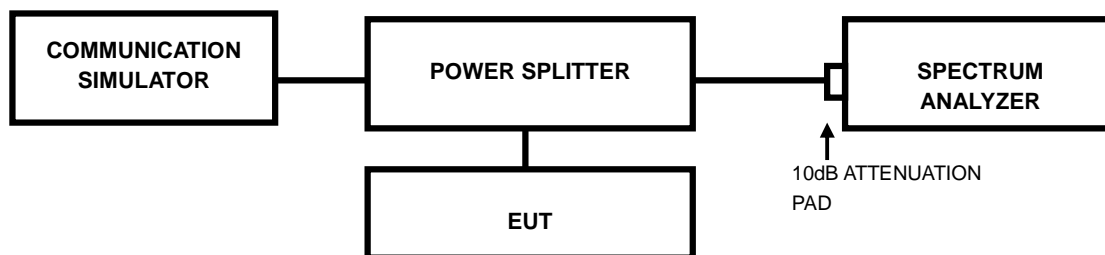


3.7 PEAK TO AVERAGE RATIO

3.7.1 LIMITS OF peak to average ratio MEASUREMENT

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

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

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

3.7.4 TEST RESULTS

Please refer to section 2 of Appendix B in test report SZEM180500437001.



Test Report No.: RF190318W003-9

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:

Shenzhen EMC/RF Lab:

Tel: +86-755-88696566

Fax: +86-755-88696577

Email: customerservice.dg@cn.bureauveritas.com

Web Site: www.adt.com.tw

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



Test Report No.: RF190318W003-9

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

No any modifications are made to the EUT by the lab during the test.

---END---