

**FCC 47 CFR PART 27 SUBPART C, L
(Class II Permissive Change)**

For

Radio Module

Model No.: EM7565-9

Trade Name: DURABOOK

Issued to

**TWINHEAD INTERNATIONAL CORP.
11F, No. 550, Rueiguang Rd., Neihu, Taipei, Taiwan 114, R.O.C.**

Issued by

Compliance Certification Services Inc.

Wugu Laboratory

**No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)**

<http://www.ccsrf.com>

Issued Date: March 26, 2018



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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
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01	April 27, 2018	1.Revise TIA 603-D: 2010 to TIA 603-E: 2016.	P.27, P.35	Doris Chu

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1. TEST RESULT CERTIFICATION

Applicant: TWINHEAD INTERNATIONAL CORP.
11F, No. 550, Rueiguang Rd., Neihu, Taipei, Taiwan 114, R.O.C.

Manufacturer: TWINHEAD INTERNATIONAL CORP.
11F, No. 550, Rueiguang Rd., Neihu, Taipei, Taiwan 114, R.O.C.

Equipment Under Test: Radio Module

Trade Name: DURABOOK

Model: EM7565-9

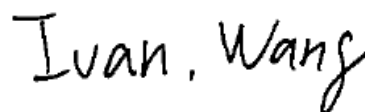
Date of Test: March 14 ~ 15, 2018

APPLICABLE STANDARDS	
Standard	TEST RESULT
FCC Part 27, Subpart C, L, FCC Part 2	No non-compliance noted

The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by

Tested by

Sam Chuang
Manager
Compliance Certification Services Inc.

Ivan Wang
Assistant Engineer
Compliance Certification Services Inc.

2. EUT DESCRIPTION

Product	Radio Module	
Model No.	DURABOOK	
Model Discrepancy	EM7565-9	
Trade Name	All the model number was just for marketing purpose only.	
Received Date	December 21, 2017	
Power Supply	Power form Adapter FSP / FSP065-REBN2 I/P: 100-240VAC, 50-60Hz, 1.5A O/P: 19VDC, 3.42A	
Modulation Technology	LTE Band 66	QPSK, 16QAM
	LTE Band 13	QPSK, 16QAM
	LTE Band 4	QPSK, 16QAM
Frequency Range	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 13 Channel Bandwidth: 5MHz	779.5MHz ~ 784.5MHz
	LTE Band 13 Channel Bandwidth: 10MHz	782MHz
	LTE Band 4 Channel Bandwidth: 1.4MHz	1710.7MHz ~1754.2MHz
	LTE Band 4 Channel Bandwidth: 3MHz	1711.5MHz ~ 1753.4MHz
	LTE Band 4 Channel Bandwidth: 5MHz	1712.5MHz ~1752.5MHz
	LTE Band 4 Channel Bandwidth: 10MHz	1715.0MHz ~1750.0MHz
	LTE Band 4 Channel Bandwidth: 15MHz	1717.5MHz ~ 1747.5MHz
	LTE Band 4 Channel Bandwidth: 20MHz	1720MHz ~1745MHz

<p>Antenna Gain</p>	<p>Monopole Antenna Sinbon Technology Co., Ltd LTE Band 4: P/N: 22+600761+00 (Main) / 0.71dBi 22+600762+00 (Aux) / 2.15dBi LTE Band 13: P/N: 22+600761+00 (Main) / 0.8dBi 22+600762+00 (Aux) / 2.08dBi LTE Band 66: P/N: 22+600761+00 (Main) / 0.71dBi 22+600762+00 (Aux) / 2.15dBi</p>
<p>Class II Permissive Change</p>	<p>1. The subject approved module is being used in a specific host. [Product: Fully-Rugged Tablet PC, brand name/model: DURABOOK / X11XXXXXX(X=0~9,A~Z,a~z,Blank), U11XXXXXX(X=0~9,A~Z,a~z,Blank), R11(R5)]. 2. Power reduction per tune-up procedure is applied in order to comply with exposure requirements. 3. The product only installs a WLAN module [X11XXXXXX(X=0~9,A~Z,a~z,Blank), U11XXXXXX(X=0~9,A~Z,a~z,Blank), R11(R5)]</p>

Remark:

1. Client consigns only one sample to test (model number: X11BK). Therefore, the testing Lab. just guarantees the unit, which has been tested.

3. TEST METHODOLOGY

3.1 DESCRIPTION OF TEST TYPE

The EUT had been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting mode was programmed.

LTE Band 4: 1710MHz ~ 1755MHz

Three channels had been tested for each channel bandwidth.

Channel Bandwidth	1.4MHz		3MHz		5MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low channel (L)	19957	1710.7	19965	1711.5	19975	1712.5
Middle channel (M)	20175	1732.5	20175	1732.5	20175	1732.5
High channel (H)	20393	1754.3	20384	1753.4	20375	1752.5
Channel Bandwidth	10MHz		15MHz		20MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low channel (L)	20000	1715.0	20025	1717.5	20000	1715.0
Middle channel (M)	20175	1732.5	20175	1732.5	20175	1732.5
High channel (H)	20350	1750.0	20325	1747.5	20350	1750.0

LTE Band 13: 777 MHz ~ 787 MHz

Three channels had been tested for each channel bandwidth.

Channel	5MHz		10MHz	
	Channel	Frequency(MHz)	Channel	Frequency(MHz)
Low CH	23205	779.5	-	-
Middle CH	23230	752.0	23230	782.0
High CH	23255	784.5	-	-

LTE Band 66: 1710 MHz ~ 1780 MHz

Three channels had been tested for each channel bandwidth.

Channel Bandwidth	5MHz		10MHz		15MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low channel (L)	131997	1712.5	132022	1715	132047	1717.5
Middle channel (M)	132322	1745	132322	1745	132322	1745
High channel (H)	132647	1777.5	132622	1775	132597	1772.5
Channel Bandwidth	20MHz					
	Channel	Frequency (MHz)				
Low channel (L)	132072	1720				
Middle channel (M)	132322	1745				
High channel (H)	132572	1770				

For test mode:

The conducted power be measured in 1, 50% and 100% RB allocation, offset to upper edge, centered and lower edge of the channel bandwidth of each required channel.

	QPSK	Worst Mode	16QAM	Worst Mode
Band 4	1.4M	1 RB ALLOCATED AT THE UPPER EDGE	1.4M	1 RB ALLOCATED AT THE LOWER EDGE
	5M	1 RB ALLOCATED AT THE UPPER EDGE	5M	1 RB ALLOCATED AT THE CENTERED
	10M	1 RB ALLOCATED AT THE UPPER EDGE	10M	1 RB ALLOCATED AT THE UPPER EDGE
	20M	1 RB ALLOCATED AT THE UPPER EDGE	20M	1 RB ALLOCATED AT THE LOWER EDGE
Band 13	5M	1 RB ALLOCATED AT THE UPPER EDGE	1.4M	1 RB ALLOCATED AT THE LOWER EDGE
	10M	1 RB ALLOCATED AT THE UPPER EDGE	5M	1 RB ALLOCATED AT THE UPPER EDGE
Band 66	5M	1 RB ALLOCATED AT THE UPPER EDGE	5M	1 RB ALLOCATED AT THE CENTERED
	10M	1 RB ALLOCATED AT THE UPPER EDGE	10M	1 RB ALLOCATED AT THE UPPER EDGE
	20M	1 RB ALLOCATED AT THE UPPER EDGE	20M	1 RB ALLOCATED AT THE LOWER EDGE

3.2 The worst mode of measurement

LTE – Band 4

Radiated Emission Measurement	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Voltage/Hz	230V /50Hz
Test Mode	Mode 1: EUT Power by Adapter
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4
Position	<input type="checkbox"/> Placed in fixed position. <input checked="" type="checkbox"/> Placed in fixed position at X-Plane (E2-Plane) <input type="checkbox"/> Placed in fixed position at Y-Plane (E1-Plane) <input type="checkbox"/> Placed in fixed position at Z-Plane (H-Plane)

Remark:

1. The worst mode was record in this test report.
2. The EUT pre-scanned in three axis ,X,Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (X-Plane) were recorded in this report.

LTE – Band 13

Radiated Emission Measurement	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Voltage/Hz	230V /50Hz
Test Mode	Mode 1: EUT Power by Adapter
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4
Position	<input type="checkbox"/> Placed in fixed position. <input type="checkbox"/> Placed in fixed position at X-Plane (E2-Plane) <input type="checkbox"/> Placed in fixed position at Y-Plane (E1-Plane) <input checked="" type="checkbox"/> Placed in fixed position at Z-Plane (H-Plane)

Remark:

1. The worst mode was record in this test report.
2. The EUT pre-scanned in three axis ,X,Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (Z-Plane) were recorded in this report.

LTE – Band 66

Radiated Emission Measurement	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Voltage/Hz	230V /50Hz
Test Mode	Mode 1: EUT Power by Adapter
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4
Position	<input type="checkbox"/> Placed in fixed position. <input type="checkbox"/> Placed in fixed position at X-Plane (E2-Plane) <input checked="" type="checkbox"/> Placed in fixed position at Y-Plane (E1-Plane) <input type="checkbox"/> Placed in fixed position at Z-Plane (H-Plane)

Remark:

1. The worst mode was record in this test report.
2. The EUT pre-scanned in three axis ,X,Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case (Y-Plane) were recorded in this report.

4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

Remark: Each piece of equipment is scheduled for calibration once a year.

Wugu 966 Chamber A					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Signal Analyzer	Agilent	E4407B	MY44212686	04/07/2017	04/06/2018
Pre-Amplifier	EMEC	EM01M62G	60570	08/01/2017	07/31/2018
Bilog Antenna	Sunol Sciences	JB3	A030105	06/20/2017	06/19/2018
Horn Antenna	EMCO	3115	9602-4659	06/22/2017	06/21/2018
Pre-Amplifier	Anritsu	MH648A	M89145	06/27/2017	06/26/2018
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
WiFi signal cable	HUBER SUHNER	SUCOFLEX 104PEA	23452	07/31/2017	07/30/2018
Filter	N/A	800-1G	N/A	N/A	N/A
Filter	N/A	1800-2000	N/A	N/A	N/A
Radio Communication Analyzer	Anritsu	MT-8820C	6201240043	07/11/2017	07/10/2018
Wireless Communication Test Set	Anritsu	8960	MY48363204	07/26/2017	07/25/2018

4.3 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
Powerline Conducted Emission	N/A
3M Semi Anechoic Chamber / 30M~200M	+/- 4.0138
3M Semi Anechoic Chamber / 200M~1000M	+/- 3.9483
3M Semi Anechoic Chamber / 1G~8G	+/- 2.5975
3M Semi Anechoic Chamber / 8G~18G	+/- 2.6112
3M Semi Anechoic Chamber / 18G~26G	+/- 2.7389
3M Semi Anechoic Chamber / 26G~40G	+/- 2.9683

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

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

- No.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.
- No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan, R.O.C
- No.81-1, Lane 210, Bade 2nd Rd., Lujhu Township, Taoyuan County 33841, Taiwan, R.O.C

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix I for the actual connections between EUT and support equipment.

6.2 SUPPORT EQUIPMENT

No	Equipment	Brand	Model	Series No.	FCC ID	Data Cable
	N/A					

Remark:

1. *All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.*
2. *Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

7. TEST PROCEDURE AND RESULT

7.1 OUTPUT POWER MEASUREMENT

TEST PROCEDURES

CONDUCTED POWER MEASUREMENT:

1. The transmitter output power was connected to the call box.
2. Set EUT at maximum output power via call box.
3. Set Call box at lowest, middle and highest channels for each band and modulation.

TEST RESULTS
LTE Band 4

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average Power (dBm)	Average Power (W)
4	1.4	19957	1710.7	QPSK	1	0	0	23.3	0.2138
					1	2	0	23.1	0.2042
					1	5	0	23.2	0.2089
					3	0	1	22.4	0.1738
					3	1	1	22.3	0.1698
					3	2	1	22.3	0.1698
					6	0	1	22.3	0.1698
				16QAM	1	0	1	22.4	0.1738
					1	2	1	22.1	0.1622
					1	5	1	22.2	0.1660
					3	0	2	21.4	0.1380
					3	1	2	21.2	0.1318
					3	2	2	21.2	0.1318
					6	0	2	21.3	0.1349
		20175	1732.5	QPSK	1	0	0	22.7	0.1862
					1	2	0	22.5	0.1778
					1	5	0	22.5	0.1778
					3	0	1	21.7	0.1479
					3	1	1	21.6	0.1445
					3	2	1	21.5	0.1413
					6	0	1	21.7	0.1479
				16QAM	1	0	1	21.8	0.1514
					1	2	1	21.5	0.1413
					1	5	1	21.6	0.1445
					3	0	2	20.7	0.1175
					3	1	2	20.6	0.1148
					3	2	2	20.6	0.1148
					6	0	2	20.7	0.1175
		20392	1754.2	QPSK	1	0	0	22.9	0.1950
					1	2	0	22.8	0.1905
1	5				0	22.5	0.1778		
3	0				1	21.8	0.1514		
3	1				1	21.8	0.1514		
3	2				1	21.6	0.1445		
6	0				1	21.7	0.1479		
16QAM	1			0	1	21.8	0.1514		
	1			2	1	21.8	0.1514		
	1			5	1	21.5	0.1413		
	3			0	2	20.8	0.1202		
	3			1	2	20.8	0.1202		
	3			2	2	20.7	0.1175		
	6			0	2	20.8	0.1202		

LTE Band 4

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average Power (dBm)	Average Power (W)	
4	3	19965	1711.5	QPSK	1	0	0	23.3	0.2138	
					1	7	0	23.1	0.2042	
					1	14	0	23.2	0.2089	
					8	0	1	22.4	0.1738	
					8	4	1	22.3	0.1698	
					8	7	1	22.3	0.1698	
					15	0	1	22.3	0.1698	
				16QAM	1	0	1	22.4	0.1738	
					1	7	1	22.1	0.1622	
					1	14	1	22.2	0.1660	
					8	0	2	21.4	0.1380	
					8	4	2	21.2	0.1318	
					8	7	2	21.2	0.1318	
					15	0	2	21.3	0.1349	
		20175	1732.5	QPSK	1732.5	1	0	0	22.8	0.1905
						1	7	0	22.6	0.1820
						1	14	0	22.6	0.1820
						8	0	1	21.8	0.1514
						8	4	1	21.7	0.1479
						8	7	1	21.6	0.1445
						15	0	1	21.8	0.1514
				16QAM	1	0	1	21.9	0.1549	
					1	7	1	21.6	0.1445	
					1	14	1	21.7	0.1479	
					8	0	2	20.8	0.1202	
					8	4	2	20.7	0.1175	
					8	7	2	20.7	0.1175	
					15	0	2	20.8	0.1202	
		20384	1753.4	QPSK	1753.4	1	0	0	22.9	0.1950
						1	7	0	22.8	0.1905
1	14					0	22.5	0.1778		
8	0					1	21.8	0.1514		
8	4					1	21.8	0.1514		
8	7					1	21.6	0.1445		
15	0					1	21.7	0.1479		
16QAM	1			0	1	21.8	0.1514			
	1			7	1	21.8	0.1514			
	1			14	1	21.5	0.1413			
	8			0	2	20.8	0.1202			
	8			4	2	20.8	0.1202			
	8			7	2	20.7	0.1175			
	15			0	2	20.8	0.1202			

LTE Band 4

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average Power (dBm)	Average Power (W)
4	5	19975	1712.5	QPSK	1	0	0	23.4	0.2188
					1	12	0	23.2	0.2089
					1	24	0	23.3	0.2138
					12	0	1	22.5	0.1778
					12	6	1	22.4	0.1738
					12	11	1	22.4	0.1738
					25	0	1	22.4	0.1738
				16QAM	1	0	1	22.5	0.1778
					1	12	1	22.2	0.1660
					1	24	1	22.3	0.1698
					12	0	2	21.5	0.1413
					12	6	2	21.3	0.1349
					12	11	2	21.3	0.1349
					25	0	2	21.4	0.1380
		20175	1732.5	QPSK	1	0	0	22.8	0.1905
					1	12	0	22.6	0.1820
					1	24	0	22.6	0.1820
					12	0	1	21.8	0.1514
					12	6	1	21.7	0.1479
					12	11	1	21.6	0.1445
					25	0	1	21.8	0.1514
				16QAM	1	0	1	21.9	0.1549
					1	12	1	21.6	0.1445
					1	24	1	21.7	0.1479
					12	0	2	20.8	0.1202
					12	6	2	20.7	0.1175
					12	11	2	20.7	0.1175
					25	0	2	20.8	0.1202
		20375	1752.5	QPSK	1	0	0	23.0	0.1995
					1	12	0	22.9	0.1950
1	24				0	22.6	0.1820		
12	0				1	21.9	0.1549		
12	6				1	21.9	0.1549		
12	11				1	21.7	0.1479		
25	0				1	21.8	0.1514		
16QAM	1			0	1	21.9	0.1549		
	1			12	1	21.9	0.1549		
	1			24	1	21.6	0.1445		
	12			0	2	20.9	0.1230		
	12			6	2	20.9	0.1230		
	12			11	2	20.8	0.1202		
	25			0	2	20.9	0.1230		

LTE Band 4

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average Power (dBm)	Average Power (W)
4	10	20000	1715.0	QPSK	1	0	0	23.4	0.2188
					1	24	0	23.2	0.2089
					1	49	0	23.3	0.2138
					25	0	1	22.5	0.1778
					25	12	1	22.4	0.1738
					25	24	1	22.4	0.1738
					50	0	1	22.4	0.1738
				16QAM	1	0	1	22.5	0.1778
					1	24	1	22.2	0.1660
					1	49	1	22.3	0.1698
					25	0	2	21.5	0.1413
					25	12	2	21.3	0.1349
					25	24	2	21.3	0.1349
					50	0	2	21.4	0.1380
		20175	1732.5	QPSK	1	0	0	22.9	0.1950
					1	24	0	22.7	0.1862
					1	49	0	22.7	0.1862
					25	0	1	21.9	0.1549
					25	12	1	21.8	0.1514
					25	24	1	21.7	0.1479
					50	0	1	21.9	0.1549
				16QAM	1	0	1	22.0	0.1585
					1	24	1	21.7	0.1479
					1	49	1	21.8	0.1514
					25	0	2	20.9	0.1230
					25	12	2	20.8	0.1202
					25	24	2	20.8	0.1202
					50	0	2	20.9	0.1230
		20350	1750.0	QPSK	1	0	0	23.0	0.1995
					1	24	0	22.9	0.1950
1	49				0	22.6	0.1820		
25	0				1	21.9	0.1549		
25	12				1	21.9	0.1549		
25	24				1	21.7	0.1479		
50	0				1	21.8	0.1514		
16QAM	1			0	1	21.9	0.1549		
	1			24	1	21.9	0.1549		
	1			49	1	21.6	0.1445		
	25			0	2	20.9	0.1230		
	25			12	2	20.9	0.1230		
	25			24	2	20.8	0.1202		
	50			0	2	20.9	0.1230		

LTE Band 4

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average Power (dBm)	Average Power (W)
4	15	20025	1717.5	QPSK	1	0	0	23.5	0.2239
					1	37	0	23.3	0.2138
					1	74	0	23.4	0.2188
					36	0	1	22.6	0.1820
					36	18	1	22.5	0.1778
					36	35	1	22.5	0.1778
					75	0	1	22.5	0.1778
				16QAM	1	0	1	22.6	0.1820
					1	37	1	22.3	0.1698
					1	74	1	22.4	0.1738
					36	0	2	21.6	0.1445
					36	18	2	21.4	0.1380
					36	35	2	21.4	0.1380
					75	0	2	21.5	0.1413
		20175	1732.5	QPSK	1	0	0	22.9	0.1950
					1	37	0	22.7	0.1862
					1	74	0	22.7	0.1862
					36	0	1	21.9	0.1549
					36	18	1	21.8	0.1514
					36	35	1	21.7	0.1479
					75	0	1	21.9	0.1549
				16QAM	1	0	1	22.0	0.1585
					1	37	1	21.7	0.1479
					1	74	1	21.8	0.1514
					36	0	2	20.9	0.1230
					36	18	2	20.8	0.1202
					36	35	2	20.8	0.1202
					75	0	2	20.9	0.1230
		20325	1747.5	QPSK	1	0	0	23.1	0.2042
					1	37	0	23.0	0.1995
1	74				0	22.7	0.1862		
36	0				1	22.0	0.1585		
36	18				1	22.0	0.1585		
36	35				1	21.8	0.1514		
75	0				1	21.9	0.1549		
16QAM	1			0	1	22.0	0.1585		
	1			37	1	22.0	0.1585		
	1			74	1	21.7	0.1479		
	36			0	2	21.0	0.1259		
	36			18	2	21.0	0.1259		
	36			35	2	20.9	0.1230		
	75			0	2	21.0	0.1259		

LTE Band 4

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average Power (dBm)	Average Power (W)		
4	20	20050	1720.0	QPSK	1	0	0	23.5	0.2239		
					1	49	0	23.3	0.2138		
					1	99	0	23.4	0.2188		
					50	0	1	22.6	0.1820		
					50	24	1	22.5	0.1778		
					50	49	1	22.5	0.1778		
				16QAM	100	0	1	22.5	0.1778		
					1	0	1	22.6	0.1820		
					1	49	1	22.3	0.1698		
					1	99	1	22.4	0.1738		
					50	0	2	21.6	0.1445		
					50	24	2	21.4	0.1380		
		20175	1732.5	QPSK	1732.5	QPSK	50	49	2	21.4	0.1380
							50	0	2	21.4	0.1380
							50	24	2	21.4	0.1380
							100	0	2	21.5	0.1413
							1	0	0	23.0	0.1995
							1	49	0	22.8	0.1905
				16QAM	1	99	0	22.8	0.1905		
					50	0	1	22.0	0.1585		
					50	24	1	21.9	0.1549		
					50	49	1	21.8	0.1514		
					100	0	1	22.0	0.1585		
					1	0	1	22.1	0.1622		
		20300	1745.0	QPSK	1745.0	QPSK	1	49	1	21.8	0.1514
							1	99	1	21.9	0.1549
							50	0	2	21.0	0.1259
							50	24	2	20.9	0.1230
							50	49	2	20.9	0.1230
							100	0	2	21.0	0.1259
16QAM	1			0	0	23.1	0.2042				
	1			49	0	23.0	0.1995				
	1			99	0	22.7	0.1862				
	50			0	1	22.0	0.1585				
	50			24	1	22.0	0.1585				
	50			49	1	21.8	0.1514				
16QAM	100	0	1	21.9	0.1549						
	1	0	1	22.0	0.1585						
	1	49	1	22.0	0.1585						
	1	99	1	21.7	0.1479						
	50	0	2	21.0	0.1259						
	50	24	2	21.0	0.1259						
50	49	2	20.9	0.1230							
100	0	2	21.0	0.1259							

LTE Band 13

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Average Power (dBm)	Average Power (W)
13	5	23205	779.5	QPSK	1	0	0	23.0	0.1995
					1	12	0	22.6	0.1820
					1	24	0	22.5	0.1778
					12	0	1	22.0	0.1585
					12	6	1	21.7	0.1479
					12	11	1	21.5	0.1413
					25	0	1	21.6	0.1445
				16QAM	1	0	1	22.1	0.1622
					1	12	1	21.6	0.1445
					1	24	1	21.6	0.1445
					12	0	2	21.0	0.1259
					12	6	2	20.7	0.1175
					12	11	2	20.6	0.1148
					25	0	2	20.7	0.1175
		23230	752.0	QPSK	1	0	0	23.1	0.2042
					1	12	0	22.7	0.1862
					1	24	0	22.6	0.1820
					12	0	1	22.1	0.1622
					12	6	1	21.8	0.1514
					12	11	1	21.6	0.1445
					25	0	1	21.7	0.1479
				16QAM	1	0	1	22.2	0.1660
					1	12	1	21.7	0.1479
					1	24	1	21.7	0.1479
					12	0	2	21.1	0.1288
					12	6	2	20.8	0.1202
					12	11	2	20.7	0.1175
					25	0	2	20.6	0.1148
		23255	784.5	QPSK	1	0	0	23.1	0.2042
					1	12	0	22.7	0.1862
1	24				0	22.6	0.1820		
12	0				1	22.1	0.1622		
12	6				1	21.8	0.1514		
12	11				1	21.6	0.1445		
25	0				1	21.7	0.1479		
16QAM	1			0	1	22.2	0.1660		
	1			12	1	21.7	0.1479		
	1			24	1	21.7	0.1479		
	12			0	2	21.1	0.1288		
	12			6	2	20.8	0.1202		
	12			11	2	20.7	0.1175		
	25			0	2	20.6	0.1148		

LTE Band 13

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average Power (dBm)	Average Power (W)
13	10	23230	782.0	QPSK	1	0	0	23.2	0.2089
					1	24	0	22.8	0.1905
					1	49	0	22.7	0.1862
					25	0	1	22.2	0.1660
					25	12	1	21.9	0.1549
					25	24	1	21.7	0.1479
					50	0	1	21.8	0.1514
				16QAM	1	0	1	22.3	0.1698
					1	24	1	21.8	0.1514
					1	49	1	21.8	0.1514
					25	0	2	21.2	0.1318
					25	12	2	20.9	0.1230
					25	24	2	20.8	0.1202
					50	0	2	20.7	0.1175

LTE Band 66

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average Power (dBm)	Average Power (W)
66	5	131997	1712.5	QPSK	1	0	0	22.9	0.1950
					1	12	0	22.7	0.1862
					1	24	0	22.7	0.1862
					12	0	1	21.9	0.1549
					12	6	1	21.8	0.1514
					12	11	1	21.7	0.1479
					25	0	1	21.9	0.1549
				16QAM	1	0	1	22.0	0.1585
					1	12	1	21.7	0.1479
					1	24	1	21.8	0.1514
					12	0	2	20.9	0.1230
					12	6	2	20.8	0.1202
					12	11	2	20.8	0.1202
					25	0	2	20.9	0.1230
		132322	1745.0	QPSK	1	0	0	23.1	0.2042
					1	12	0	23.0	0.1995
					1	24	0	22.9	0.1950
					12	0	1	22.2	0.1660
					12	6	1	22.0	0.1585
					12	11	1	21.9	0.1549
					25	0	1	22.2	0.1660
				16QAM	1	0	1	22.2	0.1660
					1	12	1	22.1	0.1622
					1	24	1	21.9	0.1549
					12	0	2	21.2	0.1318
					12	6	2	21.0	0.1259
					12	11	2	21.0	0.1259
					25	0	2	21.1	0.1288
		132647	1777.5	QPSK	1	0	0	22.9	0.1950
					1	12	0	22.9	0.1950
1	24				0	22.6	0.1820		
12	0				1	21.9	0.1549		
12	6				1	21.9	0.1549		
12	11				1	21.7	0.1479		
25	0				1	21.8	0.1514		
16QAM	1			0	1	21.9	0.1549		
	1			12	1	21.9	0.1549		
	1			24	1	21.6	0.1445		
	12			0	2	20.9	0.1230		
	12			6	2	20.9	0.1230		
	12			11	2	20.8	0.1202		
	25			0	2	20.9	0.1230		

LTE Band 66

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average Power (dBm)	Average Power (W)
66	10	132022	1715.0	QPSK	1	0	0	22.9	0.1950
					1	24	0	22.7	0.1862
					1	49	0	22.7	0.1862
					25	0	1	21.9	0.1549
					25	12	1	21.8	0.1514
					25	24	1	21.7	0.1479
					50	0	1	21.9	0.1549
				16QAM	1	0	1	22.0	0.1585
					1	24	1	21.7	0.1479
					1	49	1	21.8	0.1514
					25	0	2	20.9	0.1230
					25	12	2	20.8	0.1202
					25	24	2	20.8	0.1202
					50	0	2	20.9	0.1230
		132322	1745.0	QPSK	1	0	0	23.1	0.2042
					1	24	0	23.0	0.1995
					1	49	0	22.9	0.1950
					25	0	1	22.2	0.1660
					25	12	1	22.0	0.1585
					25	24	1	21.9	0.1549
					50	0	1	22.2	0.1660
				16QAM	1	0	1	22.2	0.1660
					1	24	1	22.1	0.1622
					1	49	1	21.9	0.1549
					25	0	2	21.2	0.1318
					25	12	2	21.0	0.1259
					25	24	2	21.0	0.1259
					50	0	2	21.1	0.1288
		132622	1775.0	QPSK	1	0	0	22.9	0.1950
					1	24	0	22.9	0.1950
1	49				0	22.6	0.1820		
25	0				1	21.9	0.1549		
25	12				1	21.9	0.1549		
25	24				1	21.7	0.1479		
50	0				1	21.8	0.1514		
16QAM	1			0	1	21.9	0.1549		
	1			24	1	21.9	0.1549		
	1			49	1	21.6	0.1445		
	25			0	2	20.9	0.1230		
	25			12	2	20.9	0.1230		
	25			24	2	20.8	0.1202		
	50			0	2	20.9	0.1230		

LTE Band 66

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average Power (dBm)	Average Power (W)
66	15	132047	1717.5	QPSK	1	0	0	23.0	0.1995
					1	37	0	22.8	0.1905
					1	74	0	22.8	0.1905
					36	0	1	22.0	0.1585
					36	18	1	21.9	0.1549
					36	35	1	21.8	0.1514
					75	0	1	22.0	0.1585
				16QAM	1	0	1	22.1	0.1622
					1	37	1	21.8	0.1514
					1	74	1	21.9	0.1549
					36	0	2	21.0	0.1259
					36	18	2	20.9	0.1230
					36	35	2	20.9	0.1230
					75	0	2	21.0	0.1259
		132322	1745.0	QPSK	1	0	0	23.2	0.2089
					1	37	0	23.1	0.2042
					1	74	0	23.0	0.1995
					36	0	1	22.3	0.1698
					36	18	1	22.1	0.1622
					36	35	1	22.0	0.1585
					75	0	1	22.3	0.1698
				16QAM	1	0	1	22.3	0.1698
					1	37	1	22.2	0.1660
					1	74	1	22.0	0.1585
					36	0	2	21.3	0.1349
					36	18	2	21.1	0.1288
					36	35	2	21.1	0.1288
					75	0	2	21.2	0.1318
		132597	1772.5	QPSK	1	0	0	23.0	0.1995
					1	37	0	23.0	0.1995
1	74				0	22.7	0.1862		
36	0				1	22.0	0.1585		
36	18				1	22.0	0.1585		
36	35				1	21.8	0.1514		
75	0				1	21.9	0.1549		
16QAM	1			0	1	22.0	0.1585		
	1			37	1	22.0	0.1585		
	1			74	1	21.7	0.1479		
	36			0	2	21.0	0.1259		
	36			18	2	21.0	0.1259		
	36			35	2	20.9	0.1230		
	75			0	2	21.0	0.1259		

LTE Band 66

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average Power (dBm)	Average Power (W)
66	20	132072	1720.0	QPSK	1	0	0	23.0	23
					1	49	0	22.8	22.8
					1	99	0	22.8	22.8
					50	0	1	22.0	22
					50	24	1	21.9	21.9
					50	49	1	21.8	21.8
				16QAM	100	0	1	22.0	22
					1	0	1	22.1	22.1
					1	49	1	21.8	21.8
					1	99	1	21.9	21.9
					50	0	2	21.0	21
					50	24	2	20.9	20.9
		132322	1745.0	QPSK	1	0	0	23.2	23.2
					1	49	0	23.1	23.1
					1	99	0	23.0	23
					50	0	1	22.3	22.3
					50	24	1	22.1	22.1
					50	49	1	22.0	22
				16QAM	100	0	1	22.3	22.3
					1	0	1	22.3	22.3
					1	49	1	22.2	22.2
					1	99	1	22.0	22
					50	0	2	21.3	21.3
					50	24	2	21.1	21.1
		132572	1770.0	QPSK	50	49	2	21.1	21.1
					50	0	1	21.9	21.9
					100	0	1	21.9	21.9
					1	0	0	23.0	23
					1	49	0	23.0	23
					1	99	0	22.7	22.7
16QAM	50			0	1	22.0	22		
	50			24	1	22.0	22		
	50			49	1	21.8	21.8		
	1			0	1	22.0	22		
	1			49	1	22.0	22		
	1			99	1	21.7	21.7		
	50	0	2	21.0	21				
	50	24	2	21.0	21				
	50	49	2	20.9	20.9				
	100	0	2	21.0	21				
	100	0	2	21.0	21				
	100	0	2	21.0	21				

7.2 ERP & EIRP MEASUREMENT

LIMIT

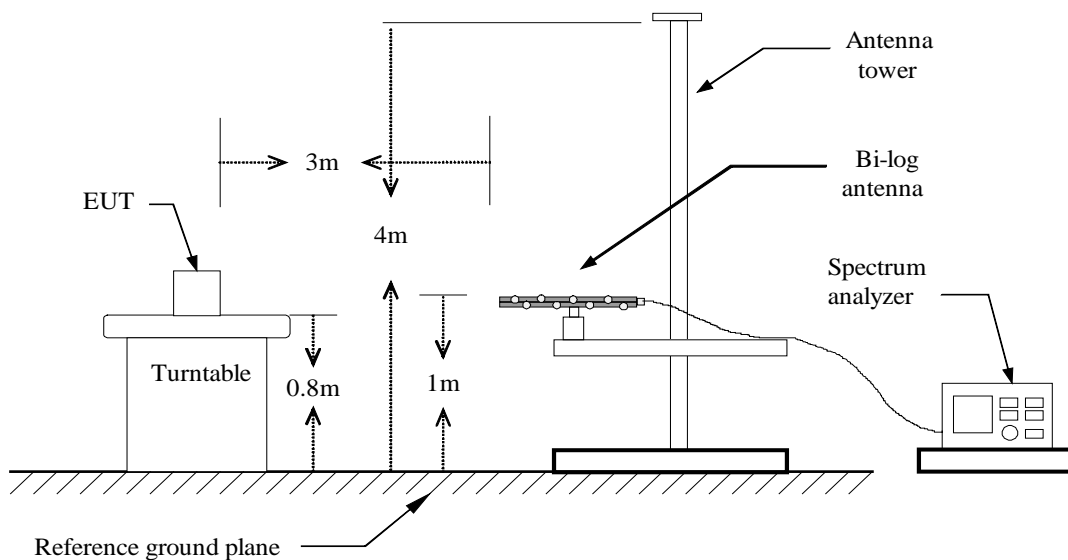
According to FCC §2.1046

FCC 27.50 (c) (10): The portable stations (hand-held devices) in the 600MHz uplink band and the 698-746MHz band, and fixed and mobile stations in the 600MHz uplink band are limited to 3 Watts ERP.

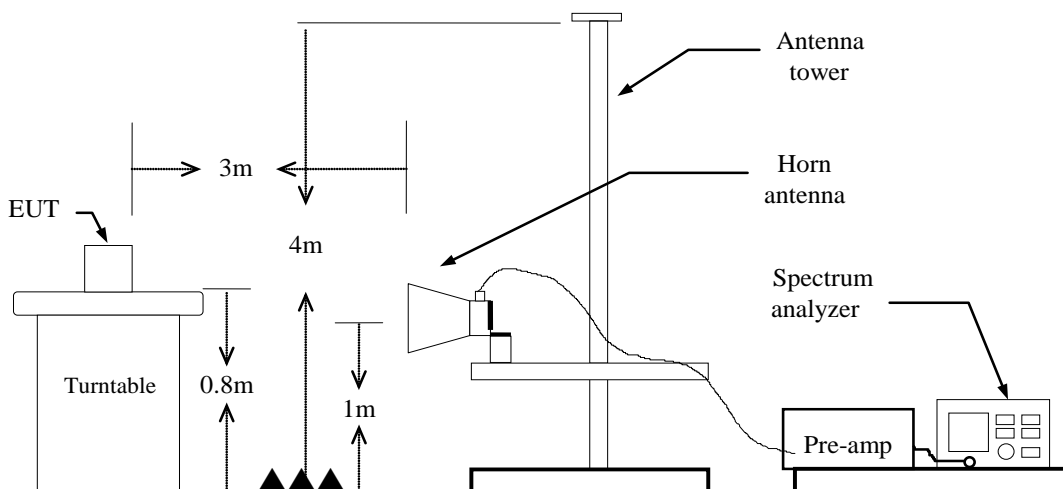
FCC 27.50 (d) (4): Fixed, mobile, and portable (handheld)stations operating in the 1710-1755MHz band and mobile and portable stations operating in the 1695-1710MHz and 1755-1780MHz bands are limited to 1 watt EIRP.

Test Configuration

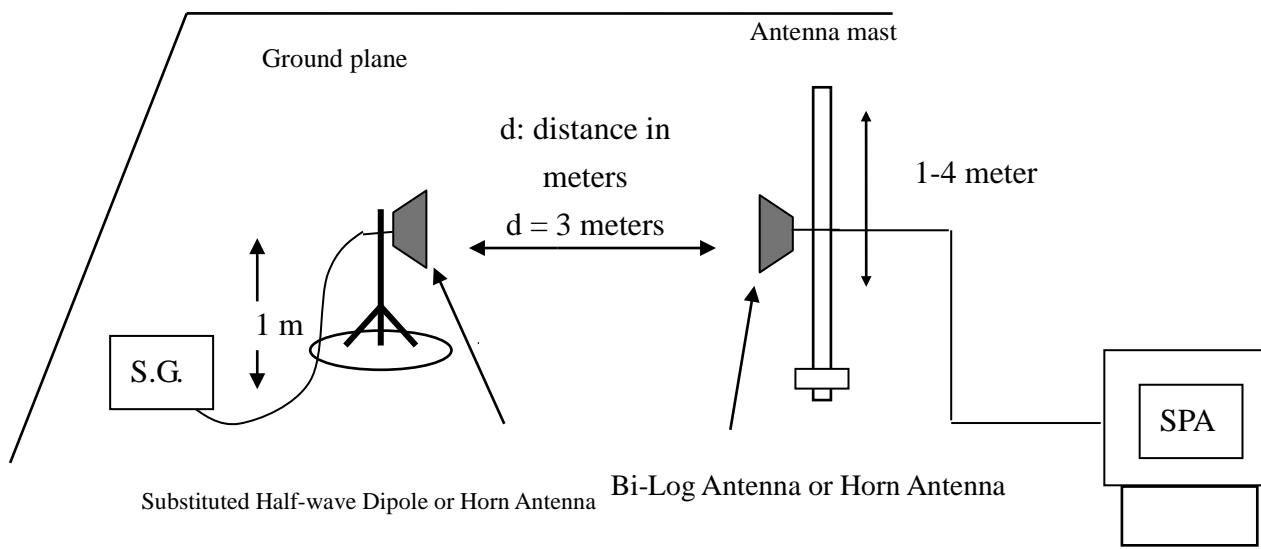
Below 1 GHz



Above 1 GHz



For Substituted Method Test Set-UP



TEST PROCEDURE

1. The EUT was placed on a non-conductive rotating platform (0.8m for below 1G and above 1G) in a semi-chamber. The radiated emission at the fundamental frequency was measured at 3m and SA with RMS detector per section 5, KDB 971168 D01.
2. During the measurement, the call box parameters were set to get the maximum output power of the EUT. The maximum emission was recorded from spectrum analyzer power level (LVL) from 360 degrees rotation of turntable and the test antenna raised and lowered over a range from 1m to 4m in both horizontally and vertically polarized orientations.
3. EIRP was measured method according to TIA 603-E: 2016. The EUT was replaced by the substitution antenna at same location, and then record the maximum Analyzer reading through raised and lowered the test antenna.

$$ERP = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)} - 2.15$$

$$EIRP = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)}$$

TEST RESULTS

No non-compliance noted.

LTE Band 4

BW: 1.4MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
4	1.4	Lowest	QPSK	1	0	14.80	0.030	22.48	0.177
		Middle		1	0	12.50	0.017	22.62	0.182
		Highest		1	0	15.06	0.032	23.59	0.228
		Lowest	16 QAM	1	0	12.66	0.018	22.60	0.182
		Middle		1	0	10.25	0.010	20.94	0.124
		Highest		1	0	12.35	0.017	24.60	0.288

BW: 3MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
4	3	Lowest	QPSK	1	0	14.59	0.028	22.57	0.180
		Middle		1	0	13.99	0.025	21.41	0.138
		Highest		1	0	15.35	0.034	23.16	0.207
		Lowest	16 QAM	1	0	14.93	0.031	22.60	0.182
		Middle		1	0	14.62	0.029	20.94	0.124
		Highest		1	0	15.17	0.032	23.44	0.220

BW: 5MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
4	5	Lowest	QPSK	1	0	14.35	0.027	22.48	0.177
		Middle		1	0	14.45	0.027	21.50	0.141
		Highest		1	0	14.69	0.029	22.91	0.195
		Lowest	16 QAM	1	0	14.96	0.031	22.35	0.171
		Middle		1	0	14.67	0.029	21.09	0.128
		Highest		1	0	15.17	0.032	22.60	0.182

BW: 10MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
4	10	Lowest	QPSK	1	0	14.69	0.029	22.45	0.175
		Middle		1	0	13.78	0.023	21.60	0.144
		Highest		1	0	14.95	0.031	23.16	0.207
		Lowest	16 QAM	1	0	14.88	0.030	22.36	0.172
		Middle		1	0	14.52	0.028	21.79	0.151
		Highest		1	0	15.16	0.032	22.23	0.167

BW: 15MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
4	15	Lowest	QPSK	1	0	14.69	0.029	22.54	0.179
		Middle		1	0	14.25	0.026	21.67	0.146
		Highest		1	0	14.44	0.027	22.59	0.181
		Lowest	16 QAM	1	0	14.85	0.030	22.29	0.169
		Middle		1	0	14.36	0.027	21.83	0.152
		Highest		1	0	14.60	0.028	21.51	0.141

BW: 20MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
4	20	Lowest	QPSK	1	0	14.69	0.029	22.18	0.165
		Middle		1	0	14.70	0.029	21.50	0.141
		Highest		1	0	13.36	0.021	21.19	0.131
		Lowest	16 QAM	1	0	14.76	0.029	22.69	0.185
		Middle		1	0	14.72	0.029	22.31	0.170
		Highest		1	0	13.56	0.022	20.09	0.102

LTE Band 13

BW: 5MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
13	5	Lowest	QPSK	1	0	29.06	0.805	23.66	0.232
		Middle		1	0	29.79	0.952	24.65	0.291
		Highest		1	0	29.79	0.952	26.06	0.403
		Lowest	16 QAM	1	0	29.72	0.937	24.37	0.273
		Middle		1	0	29.79	0.952	25.01	0.317
		Highest		1	0	29.70	0.933	24.40	0.275

BW: 10MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
13	10	Middle	QPSK	1	0	29.20	0.831	24.27	0.267
		Middle	16 QAM	1	0	29.21	0.833	12.93	0.019

LTE Band 66

BW: 5MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
66	5	Lowest	QPSK	1	0	25.90	0.389	25.95	0.393
		Middle		1	0	26.57	0.453	25.87	0.386
		Highest		1	0	26.98	0.498	25.89	0.388
		Lowest	16 QAM	1	0	25.64	0.366	25.01	0.317
		Middle		1	0	26.63	0.460	25.01	0.317
		Highest		1	0	26.39	0.435	25.70	0.371

BW: 10MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
66	10	Lowest	QPSK	1	0	25.92	0.390	25.95	0.393
		Middle		1	0	26.48	0.444	25.86	0.385
		Highest		1	0	26.92	0.492	25.75	0.375
		Lowest	16 QAM	1	0	25.48	0.353	25.38	0.361
		Middle		1	0	26.85	0.484	26.01	0.399
		Highest		1	0	26.46	0.442	25.67	0.369

BW: 15MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
66	15	Lowest	QPSK	1	0	25.96	0.394	26.04	0.401
		Middle		1	0	26.66	0.368	26.14	0.411
		Highest		1	0	26.57	0.453	25.71	0.372
		Lowest	16 QAM	1	0	26.31	0.427	26.32	0.428
		Middle		1	0	26.91	0.490	26.16	0.413
		Highest		1	0	27.27	0.533	25.68	0.369

BW: 20MHz / RB=1, RB Offset=0

Band	BW (MHz)	Channel	Mode	UL RB Allocation	UL RB offset	Vertical		Horizontal	
						EIRP (dBm)	EIRP (W)	EIRP (dBm)	EIRP (W)
66	20	Lowest	QPSK	1	0	25.90	0.389	25.99	0.397
		Middle		1	0	26.59	0.456	26.26	0.422
		Highest		1	0	26.27	0.423	25.40	0.346
		Lowest	16 QAM	1	0	26.01	0.399	26.09	0.322
		Middle		1	0	28.03	0.635	26.27	0.423
		Highest		1	0	26.23	0.419	25.35	0.342

7.3 RADIATED EMISSION MEASUREMENT

LIMITS

FCC §27.53(h), Band 4 & Band 66

General protection levels. Except as otherwise specified below, for operations in the 1710-1755MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

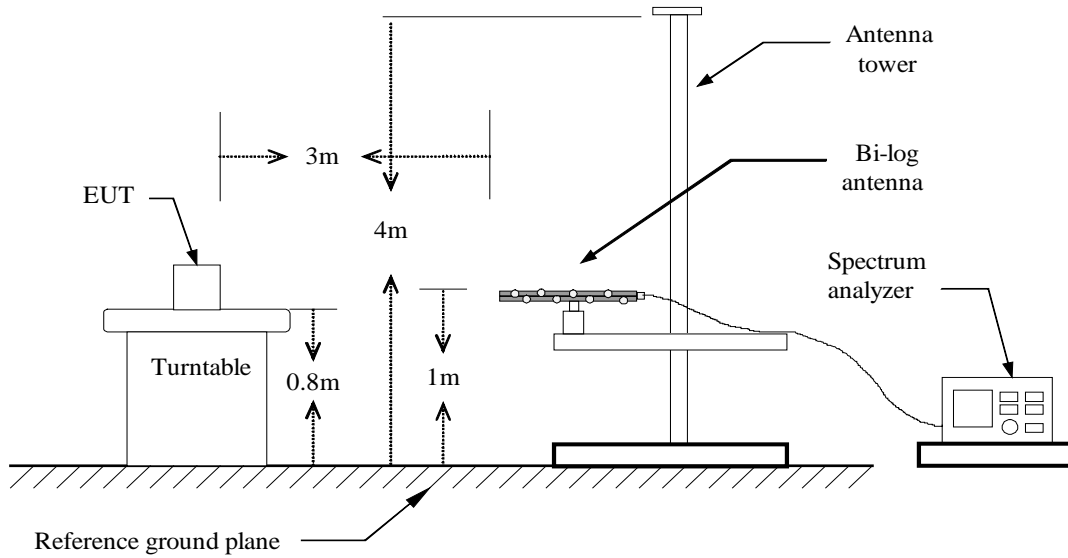
27.53(c)(2), Band 13

For operations in the 600 MHz band and the 698-746MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

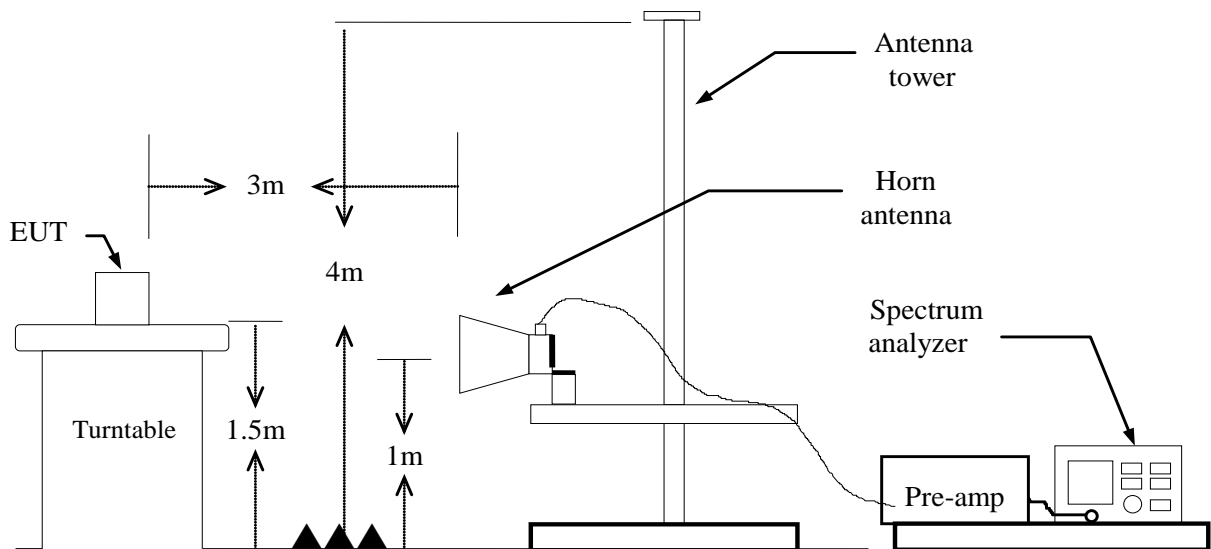
Limit Line: -13dBm

Test Configuration

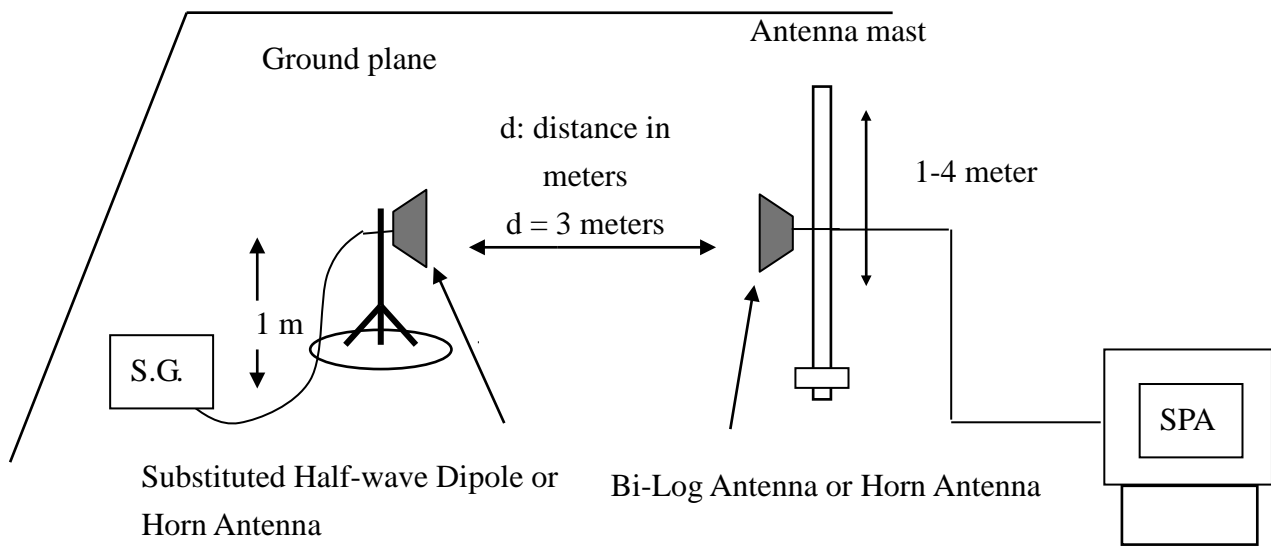
Below 1 GHz



Above 1 GHz



Substituted Method Test Set-up



TEST PROCEDURES

1. According to KDB 971168 D01. Section 5.8 and TIA 603-E: 2016 Section 2.2.12.
2. The EUT was placed on a turntable
 - (1) Below 1G : 0.8m
 - (2) Above 1G : 0.8m
 - (3) EUT set 3m from the receiving antenna
 - (4) The table was rotated 360 degrees of the highest spurious emission to determine the position.
3. Set the spectrum analyzer , RBW=1MHz, VBW=3MHz.
4. A horn antenna was driven by a signal generator.
5. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission

$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable (dB)}$$

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)}$$

Test Results

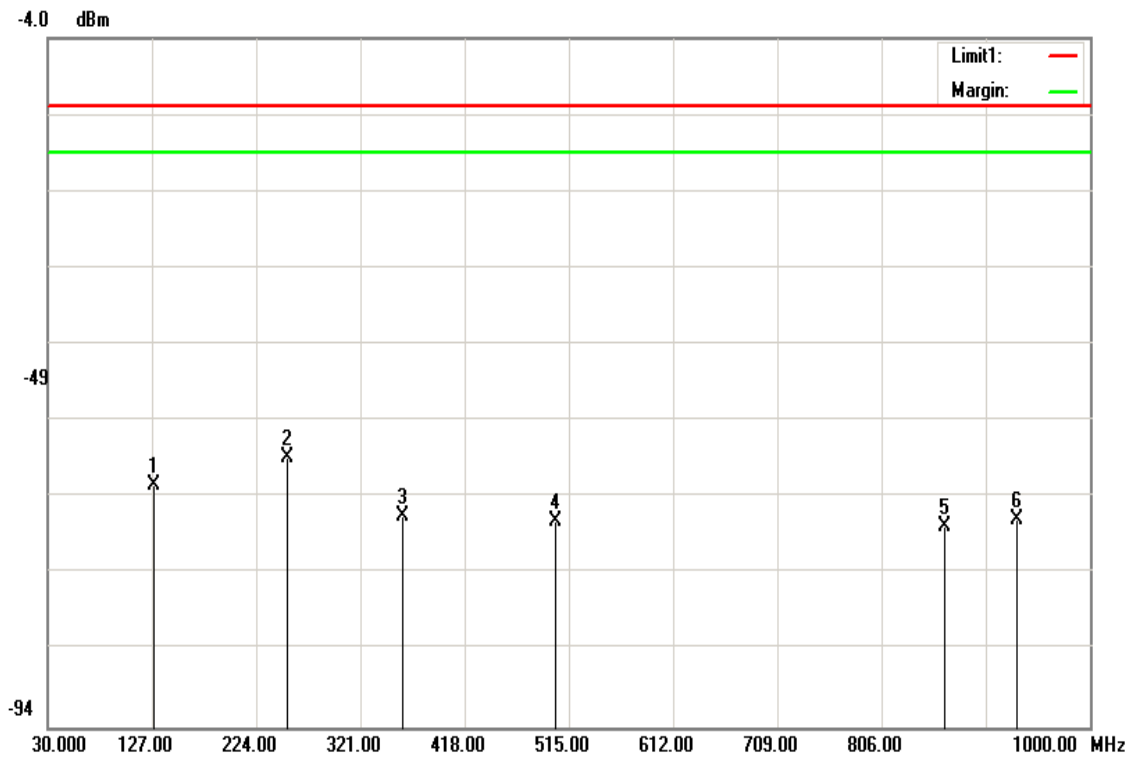
Below 1GHz

LTE Band 4 / BW: 20MHz / QPSK / RB =1, RB Offset = 0

Operation Mode: Tx / Mid CH **Test Date:** March 14, 2018

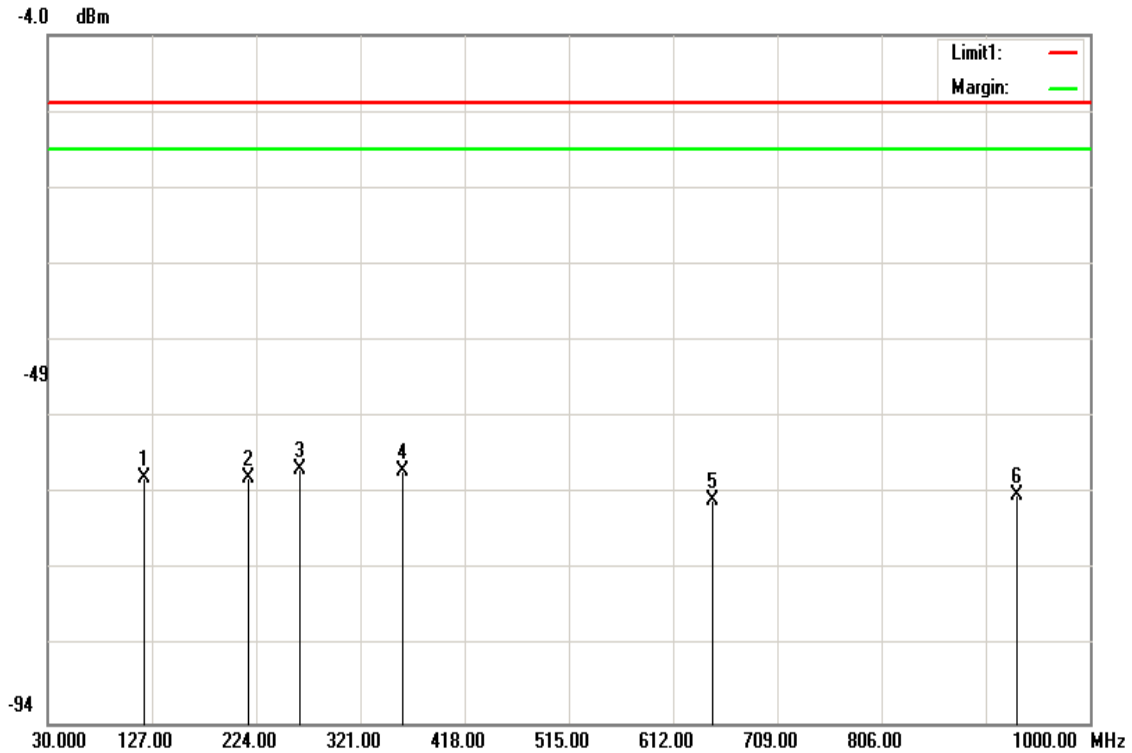
Temperature: 23°C **Tested by:** Ivan Wang

Humidity: 51% RH **Polarity:** Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
129.4250	-63.32	1.04	-62.28	-13.00	-49.28	V
253.1000	-66.17	7.37	-58.80	-13.00	-45.80	V
359.8000	-73.58	7.14	-66.44	-13.00	-53.44	V
502.8750	-74	6.8	-67.20	-13.00	-54.20	V
864.2000	-69	1.25	-67.75	-13.00	-54.75	V
932.1000	-68.22	1.36	-66.86	-13.00	-53.86	V

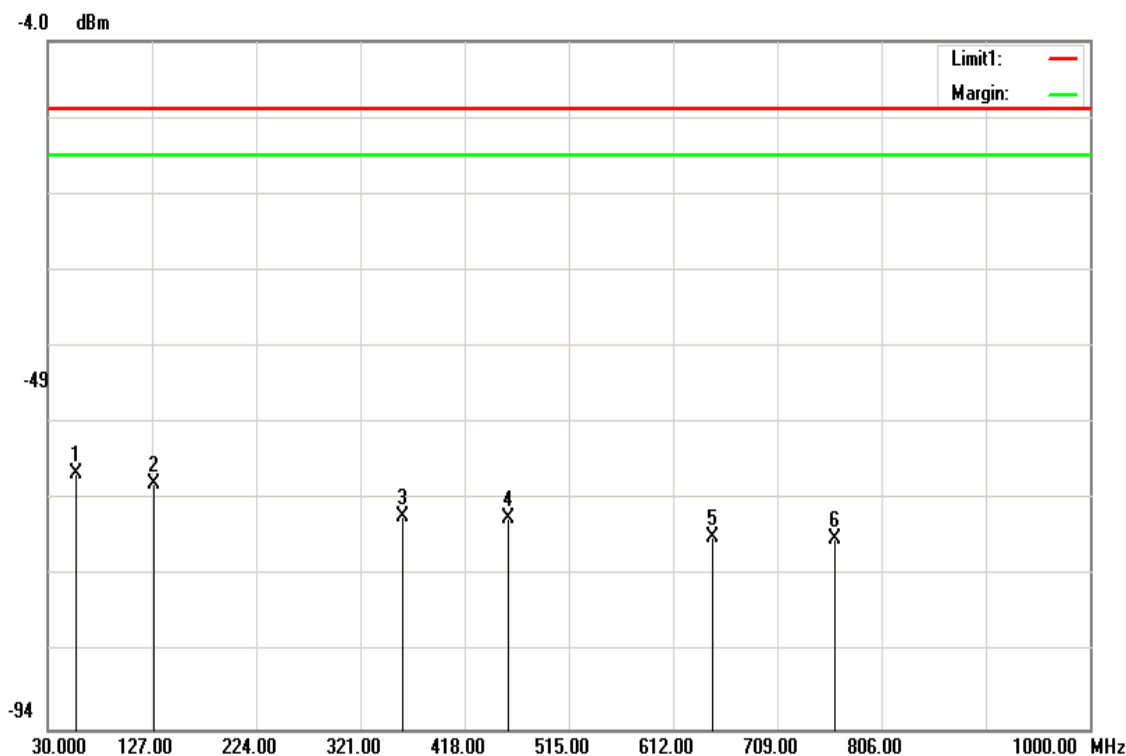
Operation Mode: Tx / Mid CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
119.7250	-62.8	0.89	-61.91	-13.00	-48.91	H
216.7250	-67.23	5.2	-62.03	-13.00	-49.03	H
265.2250	-68.16	7.25	-60.91	-13.00	-47.91	H
359.8000	-68.08	7.14	-60.94	-13.00	-47.94	H
648.3750	-66.07	1.2	-64.87	-13.00	-51.87	H
932.1000	-65.5	1.36	-64.14	-13.00	-51.14	H

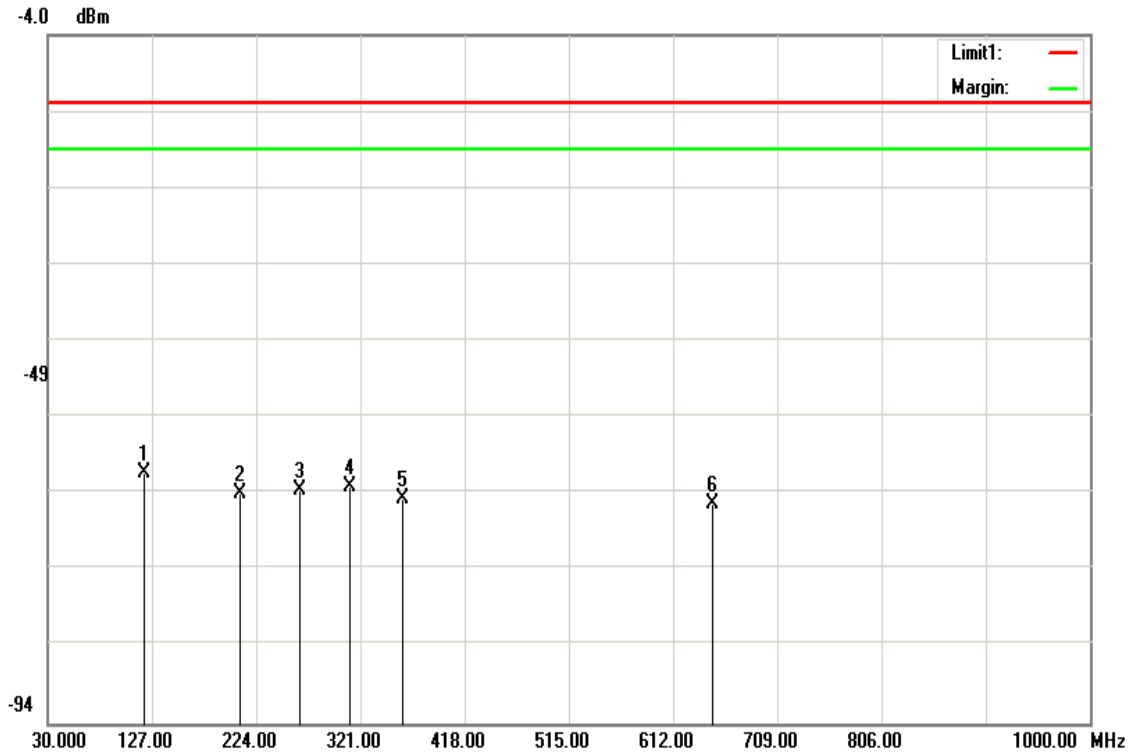
LTE Band 4 / BW: 20MHz / 16QAM / RB =1, RB Offset = 0

Operation Mode: Tx / Mid CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
56.6750	-59.03	-1.63	-60.66	-13.00	-47.66	V
129.4250	-62.91	1.04	-61.87	-13.00	-48.87	V
359.8000	-73.43	7.14	-66.29	-13.00	-53.29	V
459.2250	-73.42	7	-66.42	-13.00	-53.42	V
648.3750	-70.08	1.2	-68.88	-13.00	-55.88	V
762.3500	-70.68	1.58	-69.10	-13.00	-56.10	V

Operation Mode: Tx / Mid CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Hor.

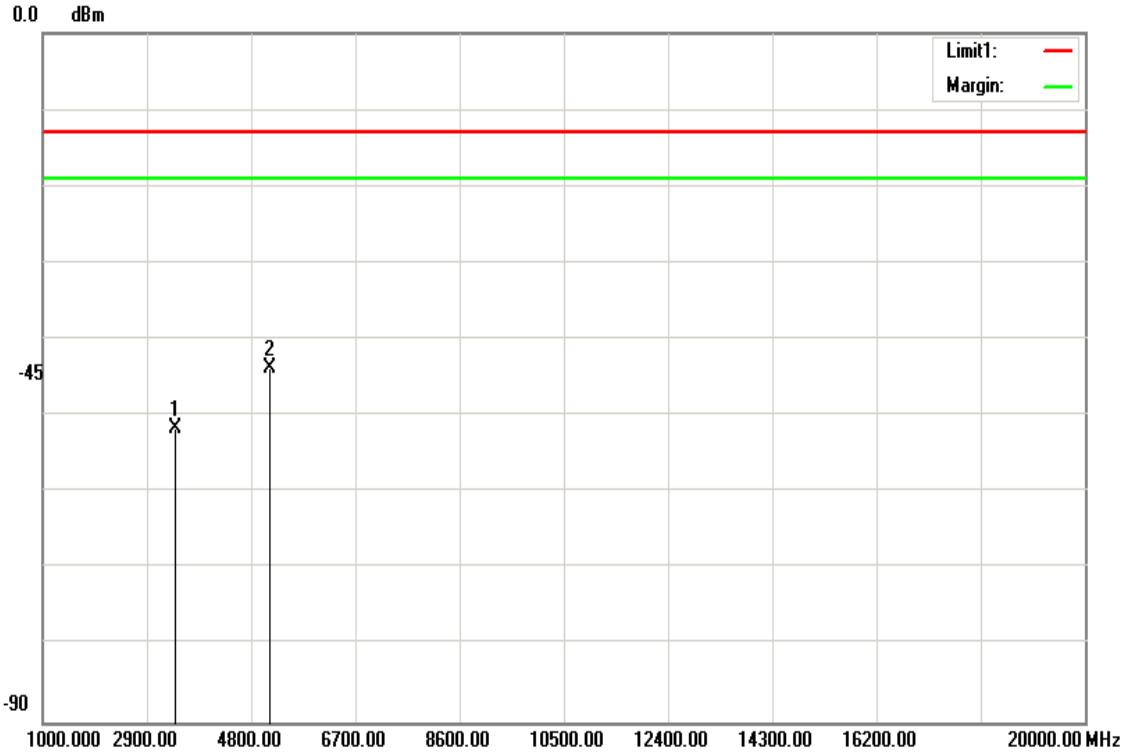


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
119.7250	-62.15	0.89	-61.26	-13.00	-48.26	H
209.4500	-68.59	4.72	-63.87	-13.00	-50.87	H
265.2250	-70.77	7.25	-63.52	-13.00	-50.52	H
311.3000	-69.92	6.95	-62.97	-13.00	-49.97	H
359.8000	-71.87	7.14	-64.73	-13.00	-51.73	H
648.3750	-66.58	1.2	-65.38	-13.00	-52.38	H

Above 1GHz

LTE Band 4 / BW: 20MHz / QPSK RB =1, RB Offset = 0

Operation Mode: Tx / Low CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Ver.

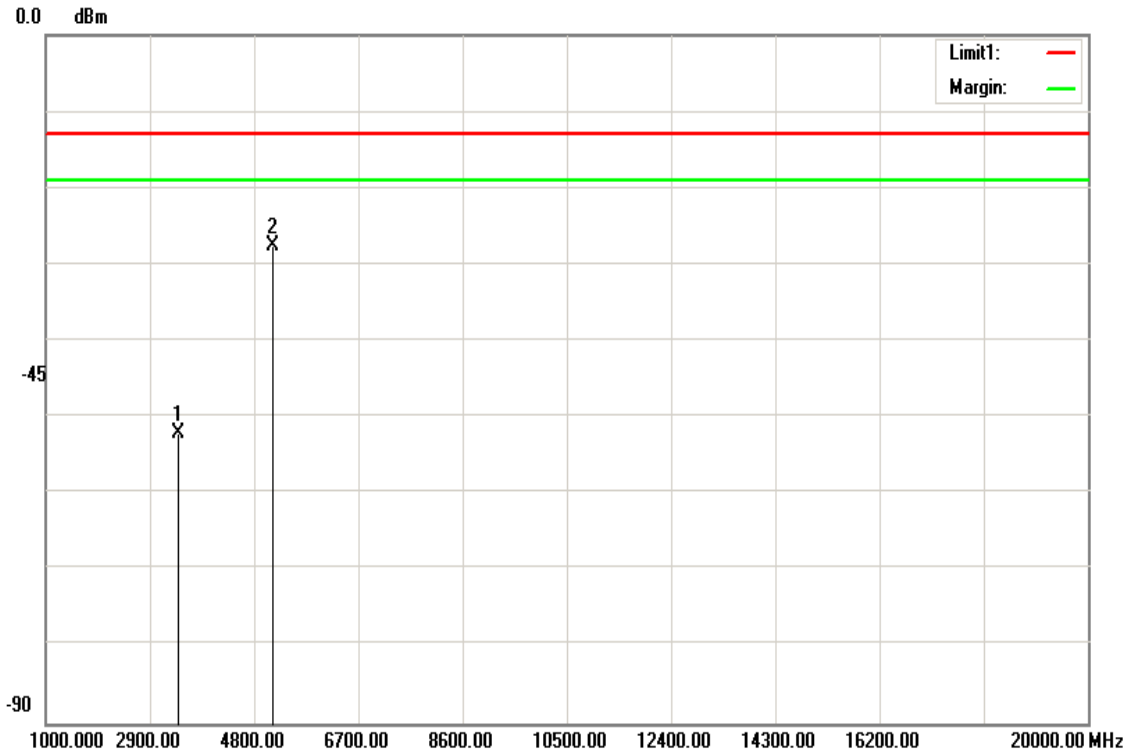


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3422.000	-63.9	12.3	-51.60	-13.00	-38.60	V
5130.000	-56.27	12.6	-43.67	-13.00	-30.67	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / Low CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Hor.

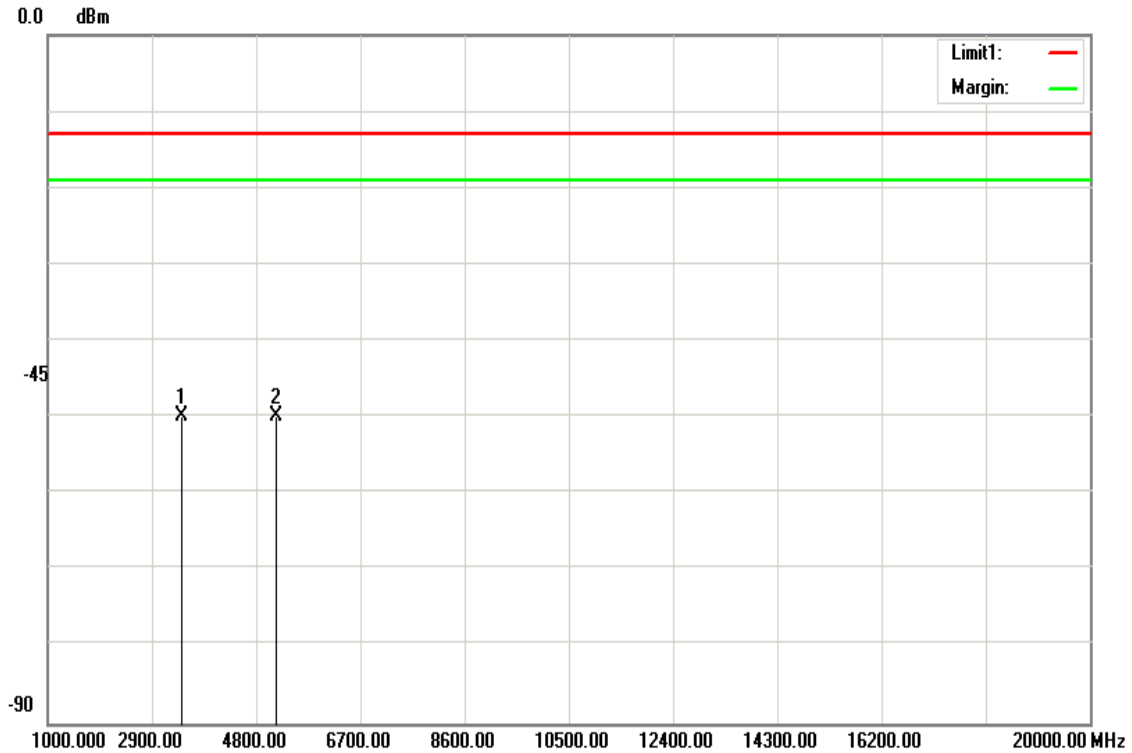


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3422.000	-64.34	12.3	-52.04	-13.00	-39.04	H
5130.000	-40.24	12.6	-27.64	-13.00	-14.64	H
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / Mid CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Ver.

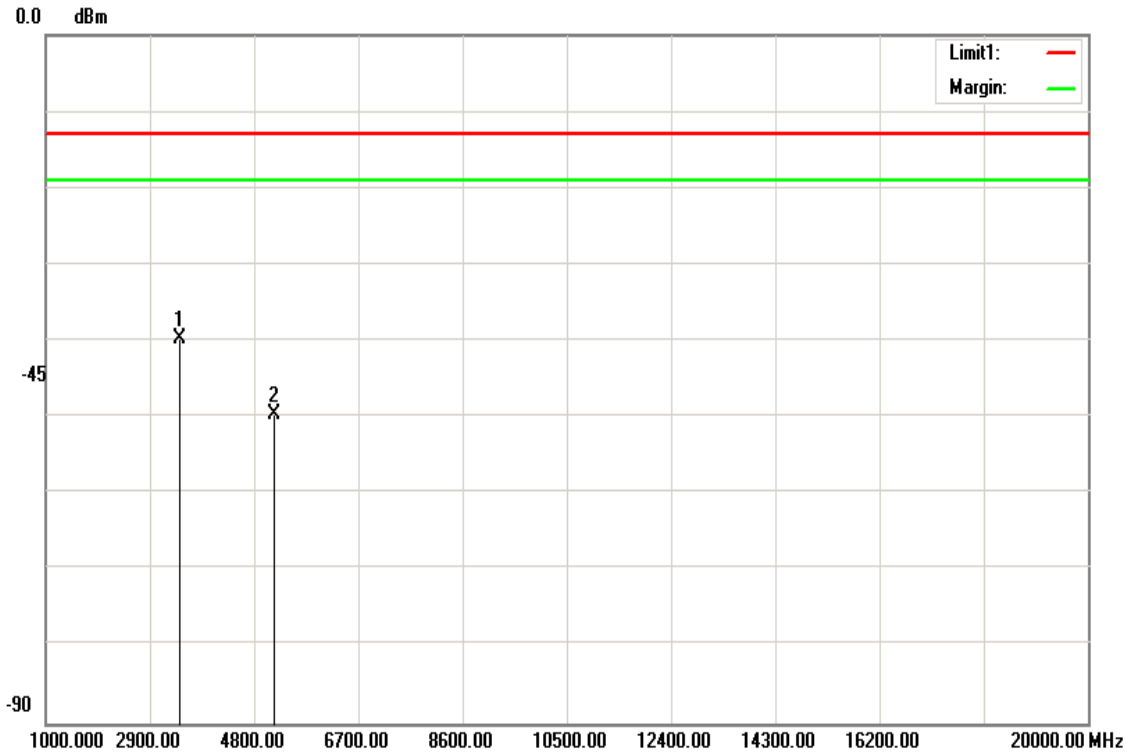


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3450.000	-62.17	12.37	-49.80	-13.00	-36.80	V
5172.000	-62.42	12.64	-49.78	-13.00	-36.78	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / Mid CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Hor.

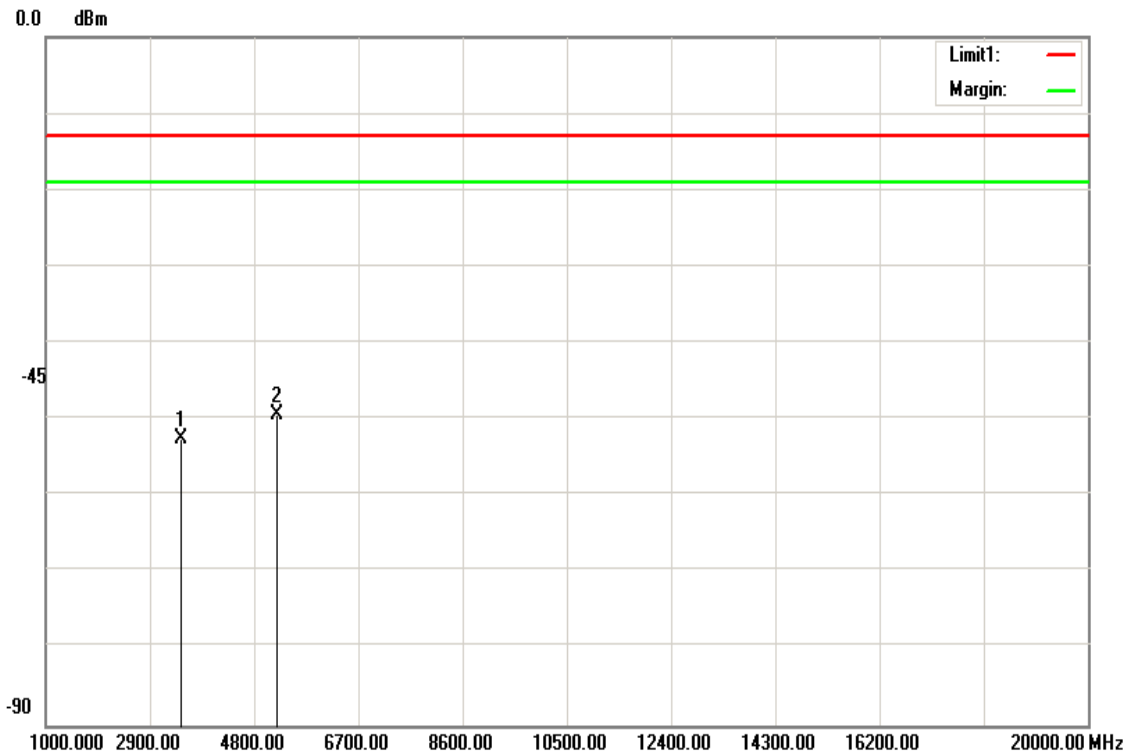


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3450.000	-51.99	12.37	-39.62	-13.00	-26.62	H
5172.000	-62.17	12.64	-49.53	-13.00	-36.53	H
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / High CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Ver.

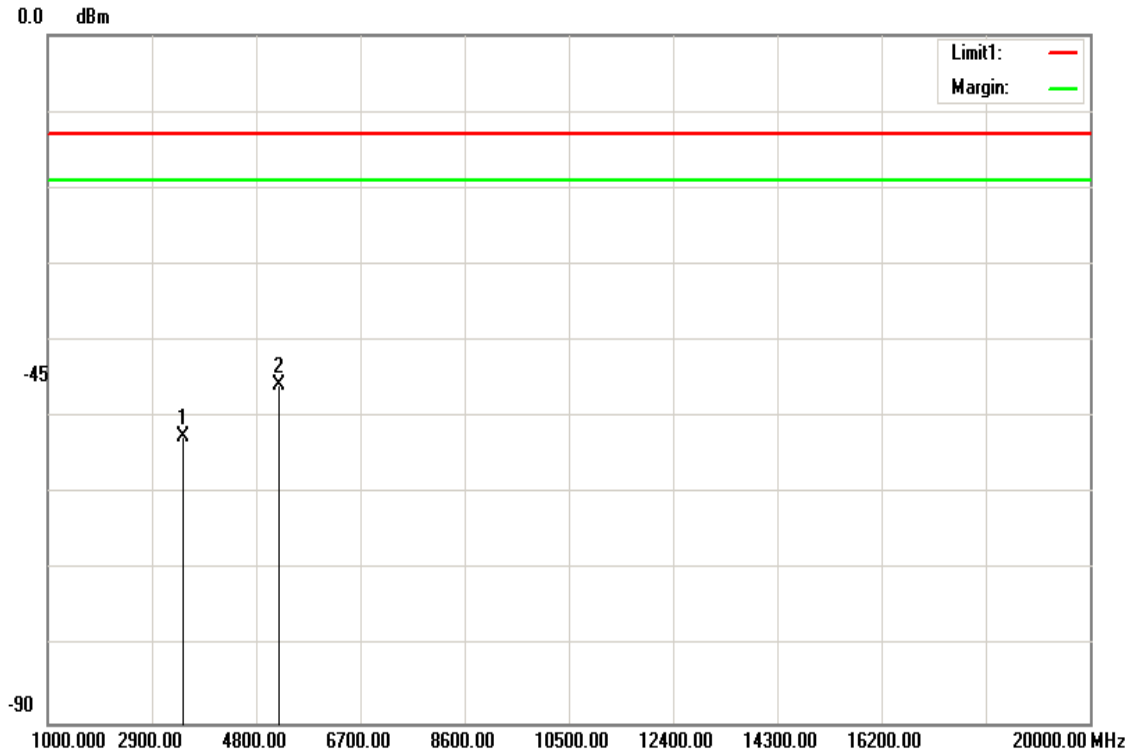


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3471.000	-65.04	12.42	-52.62	-13.00	-39.62	V
5207.000	-62.13	12.67	-49.46	-13.00	-36.46	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / High CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Hor.



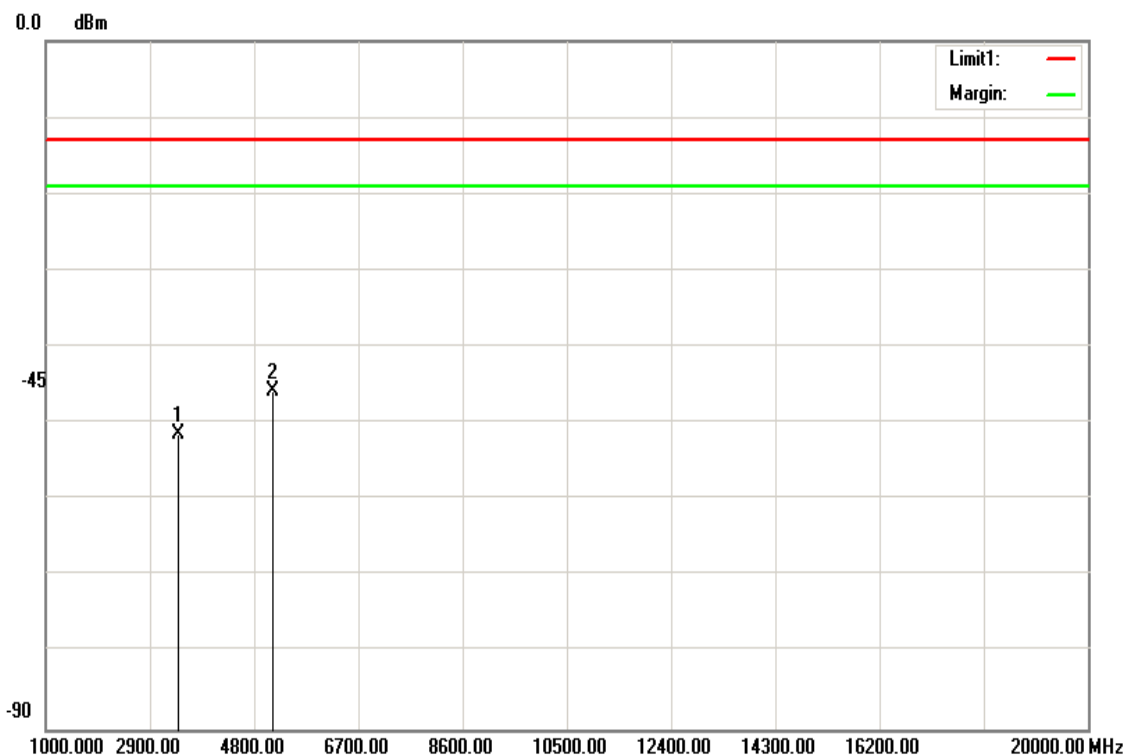
Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3471.000	-64.99	12.42	-52.57	-13.00	-39.57	H
5207.000	-58.39	12.67	-45.72	-13.00	-32.72	H
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

LTE Band 4 / BW: 20MHz / 16QAM / RB =1, RB Offset = 0

Operation Mode: Tx / Low CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Ver.

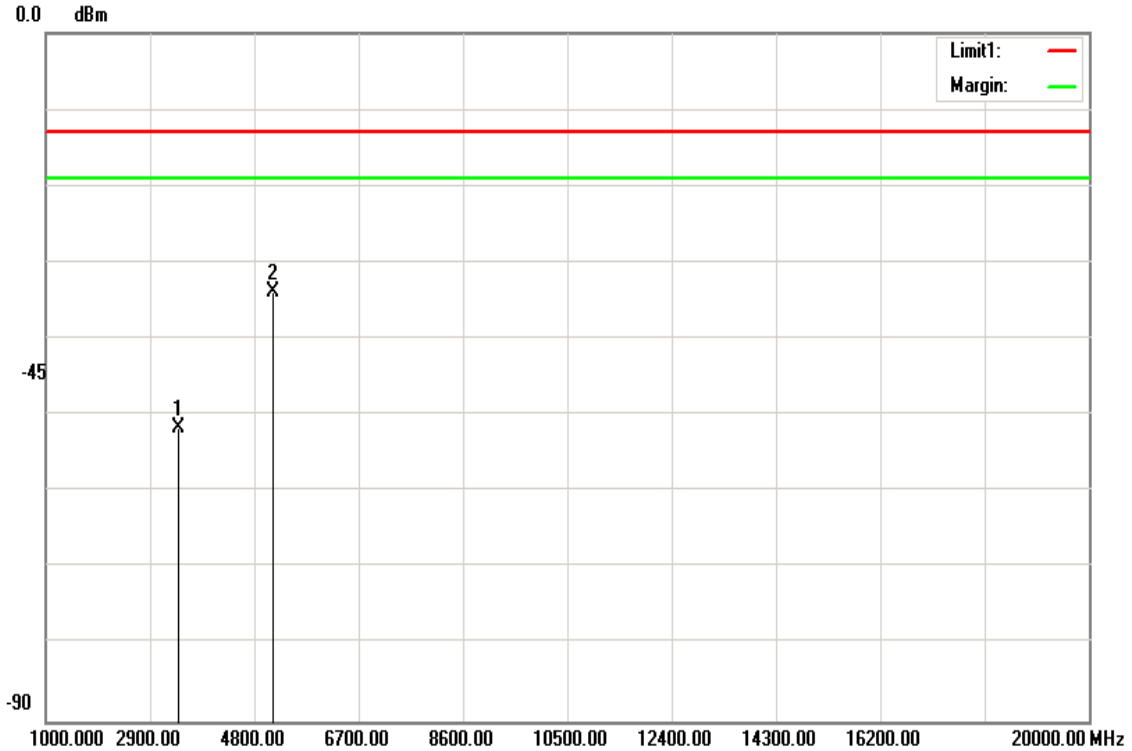


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3422.000	-63.73	12.3	-51.43	-13.00	-38.43	V
5130.000	-58.4	12.6	-45.80	-13.00	-32.80	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / Low CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Hor.

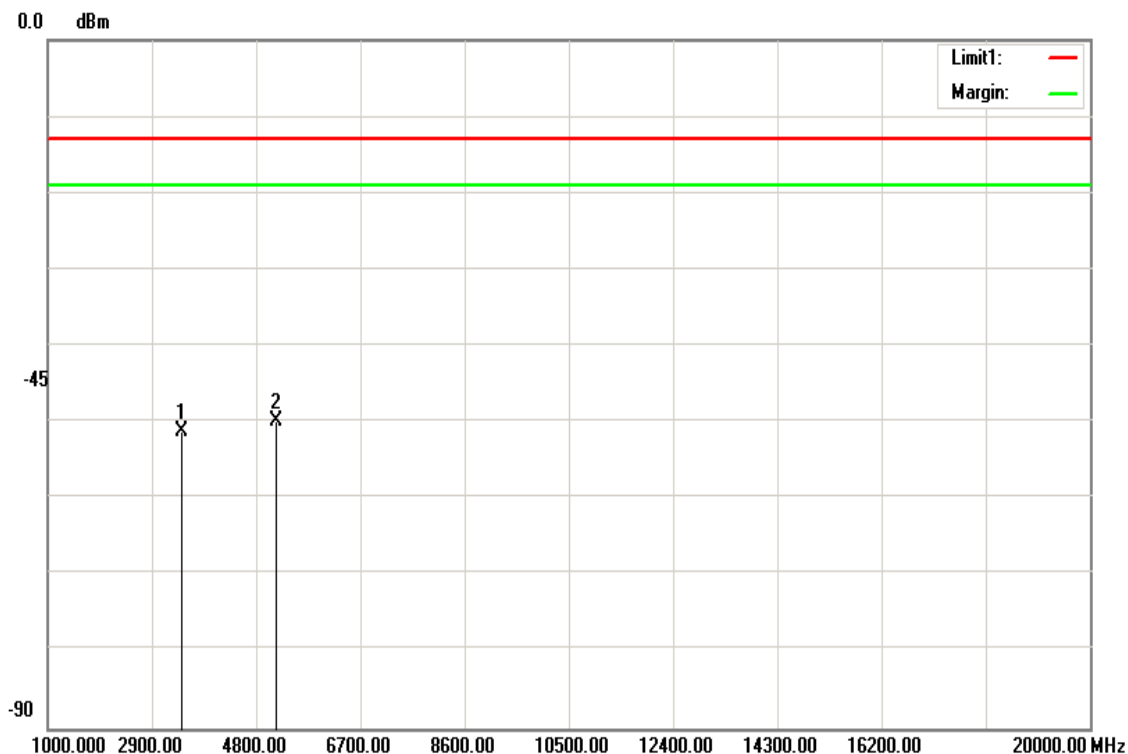


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3422.000	-63.83	12.3	-51.53	-13.00	-38.53	H
5130.000	-46.46	12.6	-33.86	-13.00	-20.86	H
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / Mid CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Ver.

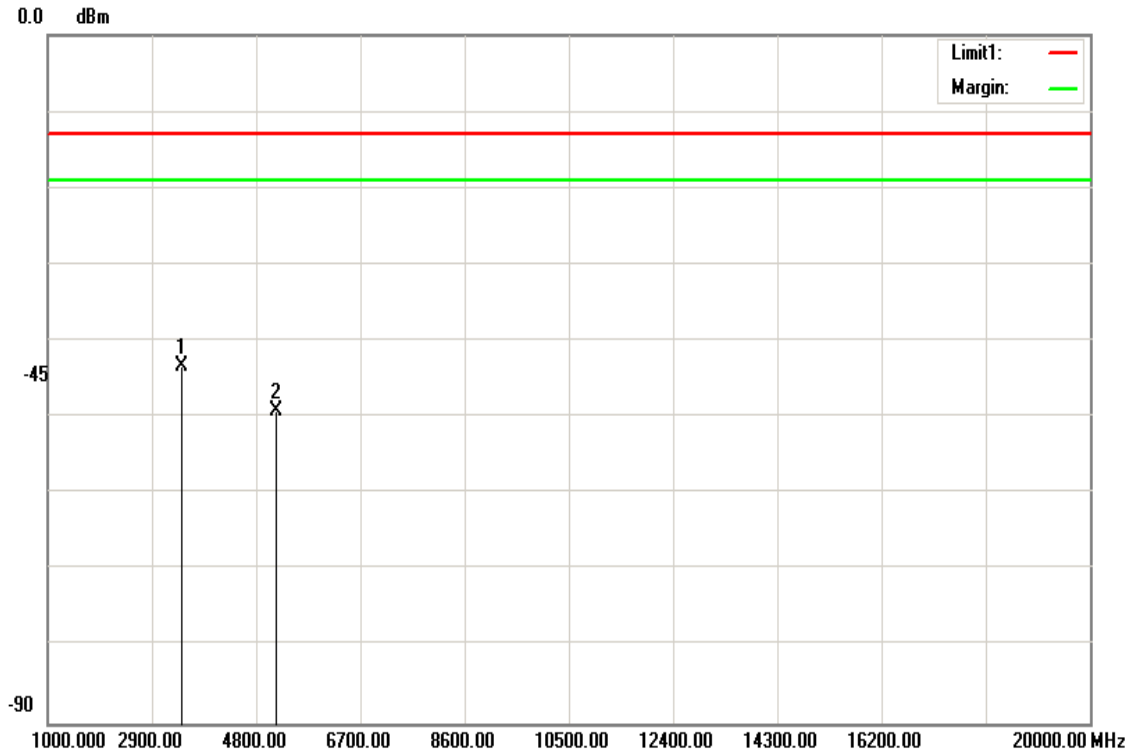


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3450.000	-63.51	12.37	-51.14	-13.00	-38.14	V
5172.000	-62.49	12.64	-49.85	-13.00	-36.85	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / Mid CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3450.000	-55.7	12.37	-43.33	-13.00	-30.33	H
5172.000	-61.78	12.64	-49.14	-13.00	-36.14	H
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / High CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Ver.

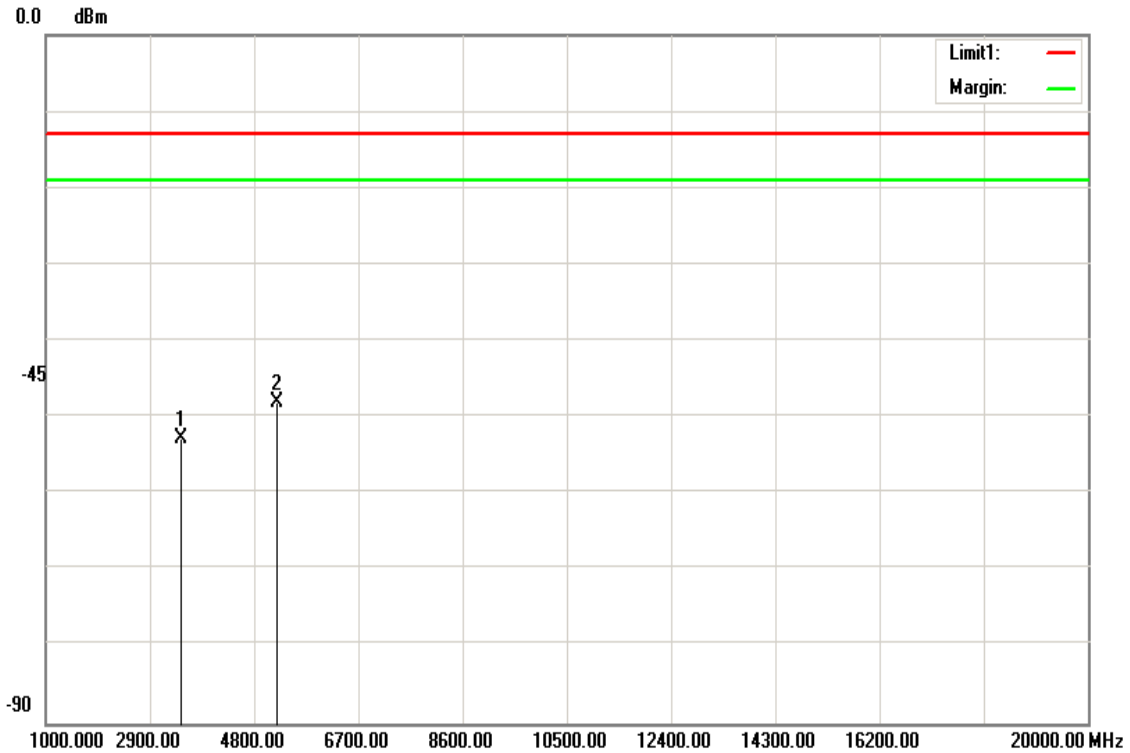


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3471.000	-65.17	12.42	-52.75	-13.00	-39.75	V
5207.000	-59.69	12.67	-47.02	-13.00	-34.02	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / High CH **Test Date:** March 14, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3471.000	-65.11	12.42	-52.69	-13.00	-39.69	H
5207.000	-60.61	12.67	-47.94	-13.00	-34.94	H
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Results

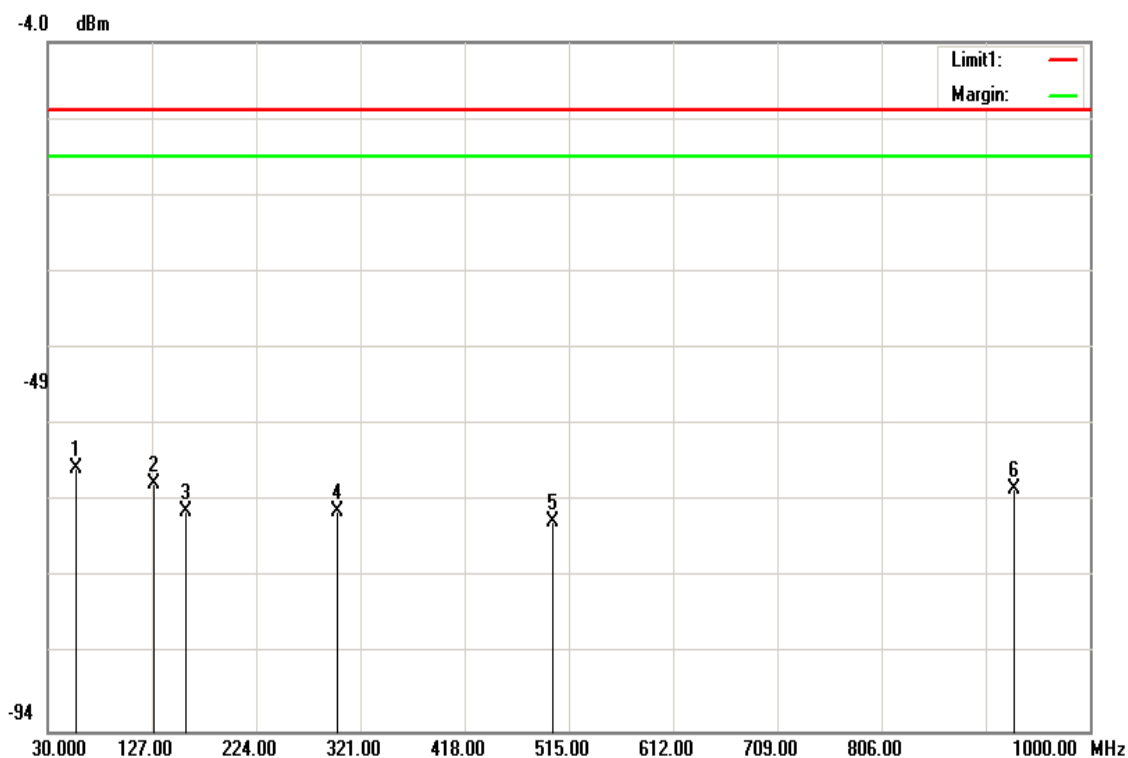
Below 1GHz

LTE Band 13 / BW: 10MHz / QPSK / RB =1, RB Offset = 0

Operation Mode: Tx / Mid CH **Test Date:** March 15, 2018

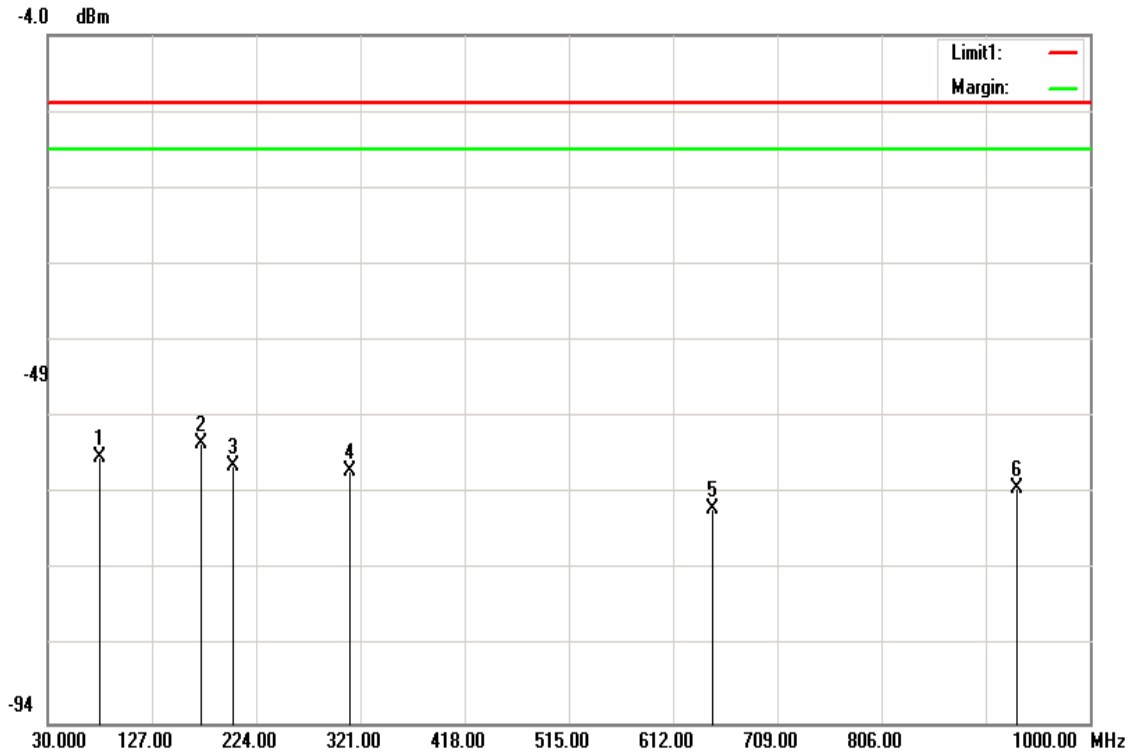
Temperature: 21°C **Tested by:** Ivan Wang

Humidity: 52% RH **Polarity:** Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
56.6750	-58.03	-1.63	-59.66	-13.00	-46.66	V
129.4250	-62.7	1.04	-61.66	-13.00	-48.66	V
158.5250	-64.77	-0.47	-65.24	-13.00	-52.24	V
299.1750	-72.3	6.91	-65.39	-13.00	-52.39	V
500.4500	-73.49	6.8	-66.69	-13.00	-53.69	V
929.6750	-63.77	1.37	-62.40	-13.00	-49.40	V

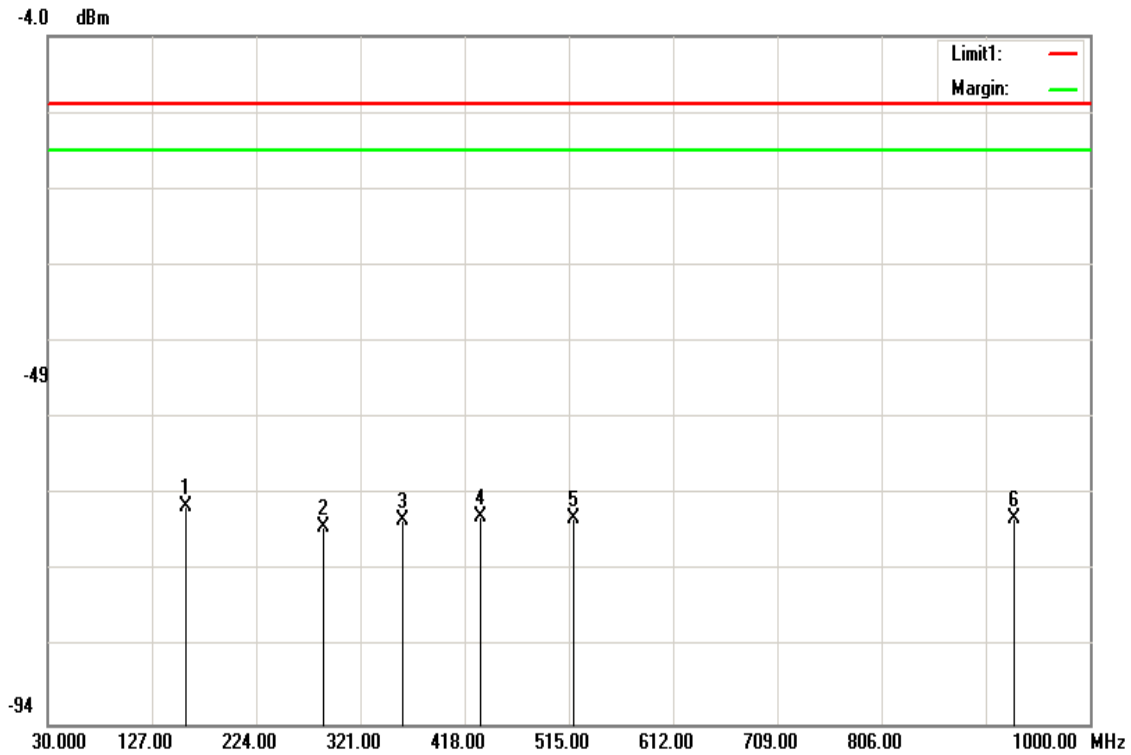
Operation Mode: Tx / Mid CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
78.5000	-59.69	0.53	-59.16	-13.00	-46.16	H
173.0750	-59.82	2.47	-57.35	-13.00	-44.35	H
202.1750	-64.5	4.24	-60.26	-13.00	-47.26	H
311.3000	-67.89	6.95	-60.94	-13.00	-47.94	H
648.3750	-67.18	1.2	-65.98	-13.00	-52.98	H
932.1000	-64.75	1.36	-63.39	-13.00	-50.39	H

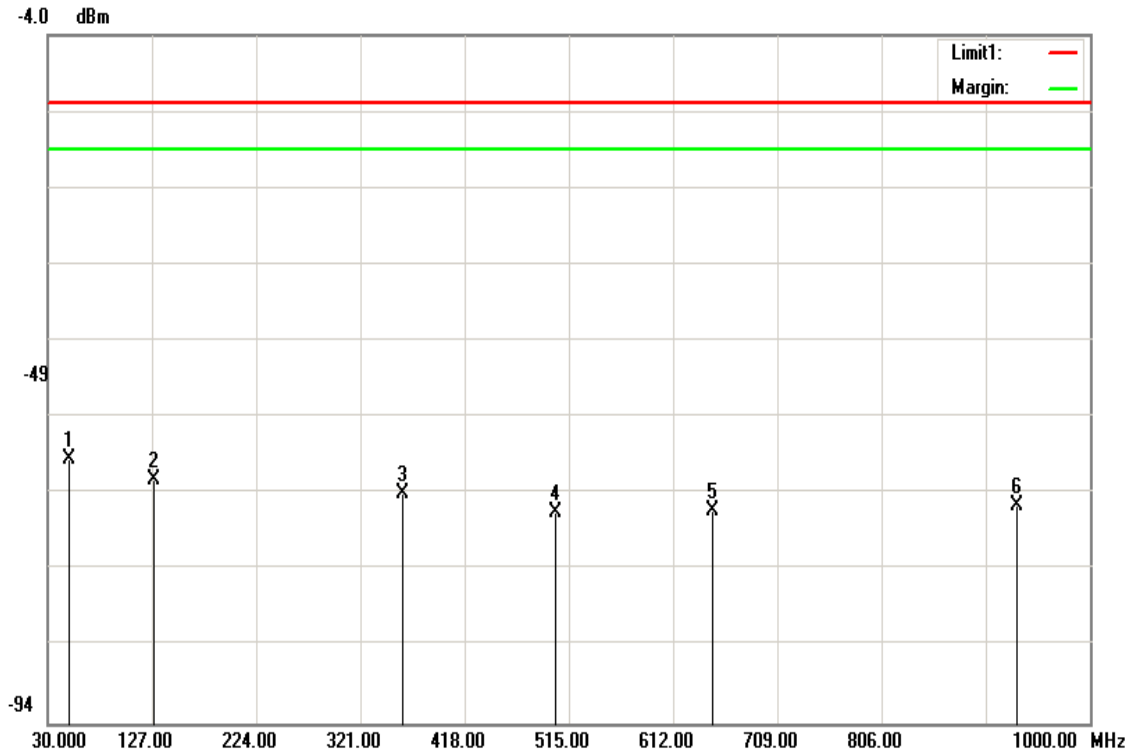
LTE Band 13 / BW: 10MHz / 16QAM / RB =1, RB Offset = 0

Operation Mode: Tx / Mid CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
158.5250	-65.16	-0.47	-65.63	-13.00	-52.63	V
287.0500	-75.23	7.03	-68.20	-13.00	-55.20	V
359.8000	-74.5	7.14	-67.36	-13.00	-54.36	V
432.5500	-73.99	7.14	-66.85	-13.00	-53.85	V
519.8500	-73.89	6.82	-67.07	-13.00	-54.07	V
929.6750	-68.51	1.37	-67.14	-13.00	-54.14	V

Operation Mode: Tx / Mid CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
49.4000	-56.84	-2.56	-59.40	-13.00	-46.40	H
129.4250	-63.2	1.04	-62.16	-13.00	-49.16	H
359.8000	-71.03	7.14	-63.89	-13.00	-50.89	H
502.8750	-73.24	6.8	-66.44	-13.00	-53.44	H
648.3750	-67.49	1.2	-66.29	-13.00	-53.29	H
932.1000	-66.84	1.36	-65.48	-13.00	-52.48	H

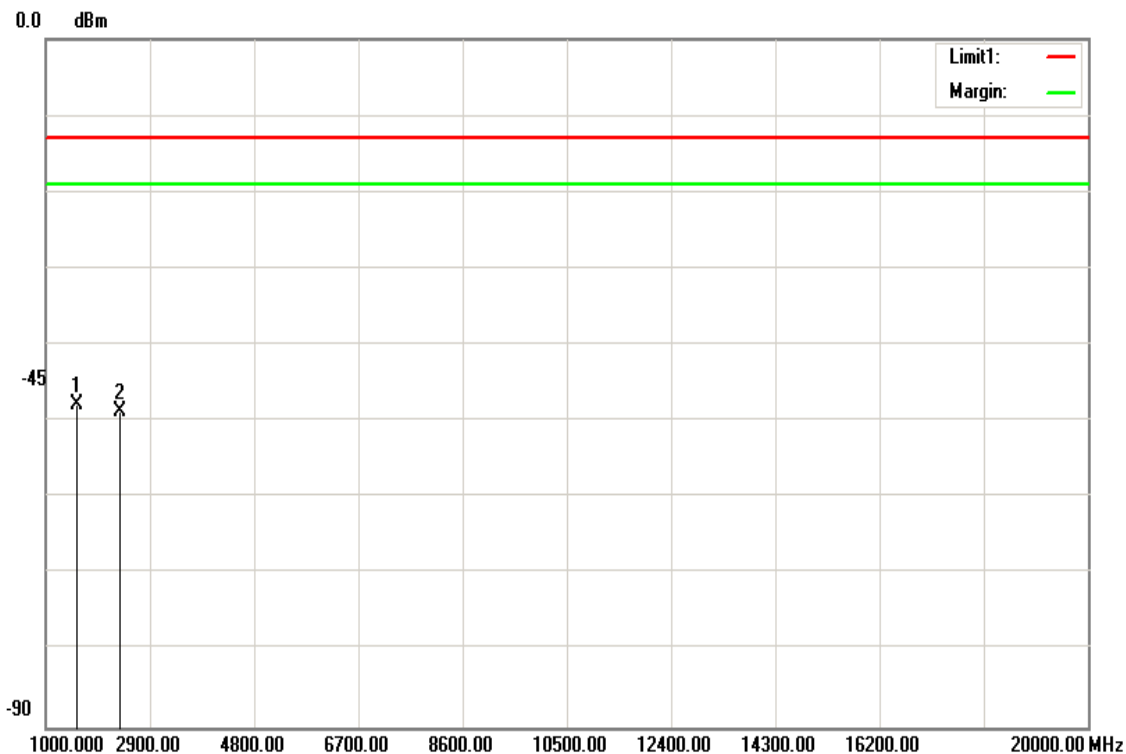
Above 1GHz

LTE Band 13 / BW: 10MHz / QPSK RB =1, RB Offset = 0

Operation Mode: Tx / Mid CH Test Date: March 15, 2018

Temperature: 21°C Tested by: Ivan Wang

Humidity: 52% RH Polarity: Ver.

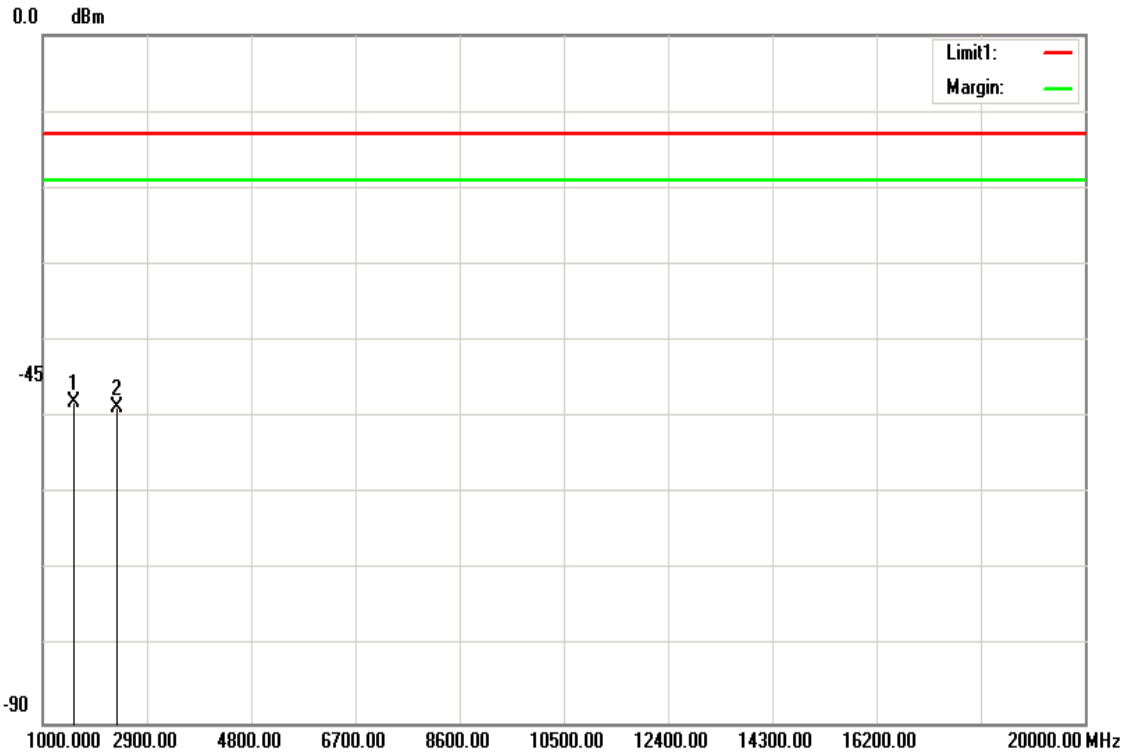


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1564.000	-49.33	1.52	-47.81	-13.00	-34.81	V
2346.000	-50.39	1.74	-48.65	-13.00	-35.65	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / Mid CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1564.000	-49.45	1.52	-47.93	-13.00	-34.93	H
2346.000	-50.54	1.74	-48.80	-13.00	-35.80	H
N/A						

Remark:

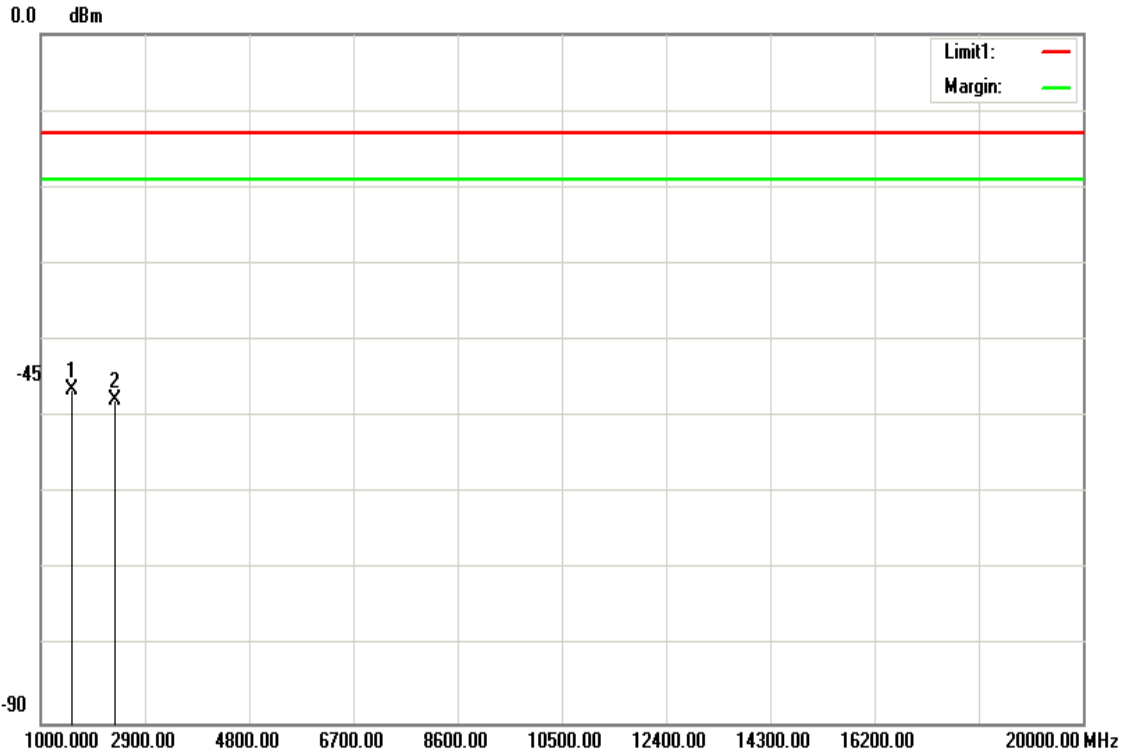
- Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

LTE Band 13 / BW: 10MHz / 16QAM RB =1, RB Offset = 0

Operation Mode: Tx / Mid CH **Test Date:** March 15, 2018

Temperature: 21°C **Tested by:** Ivan Wang

Humidity: 52% RH **Polarity:** Ver.

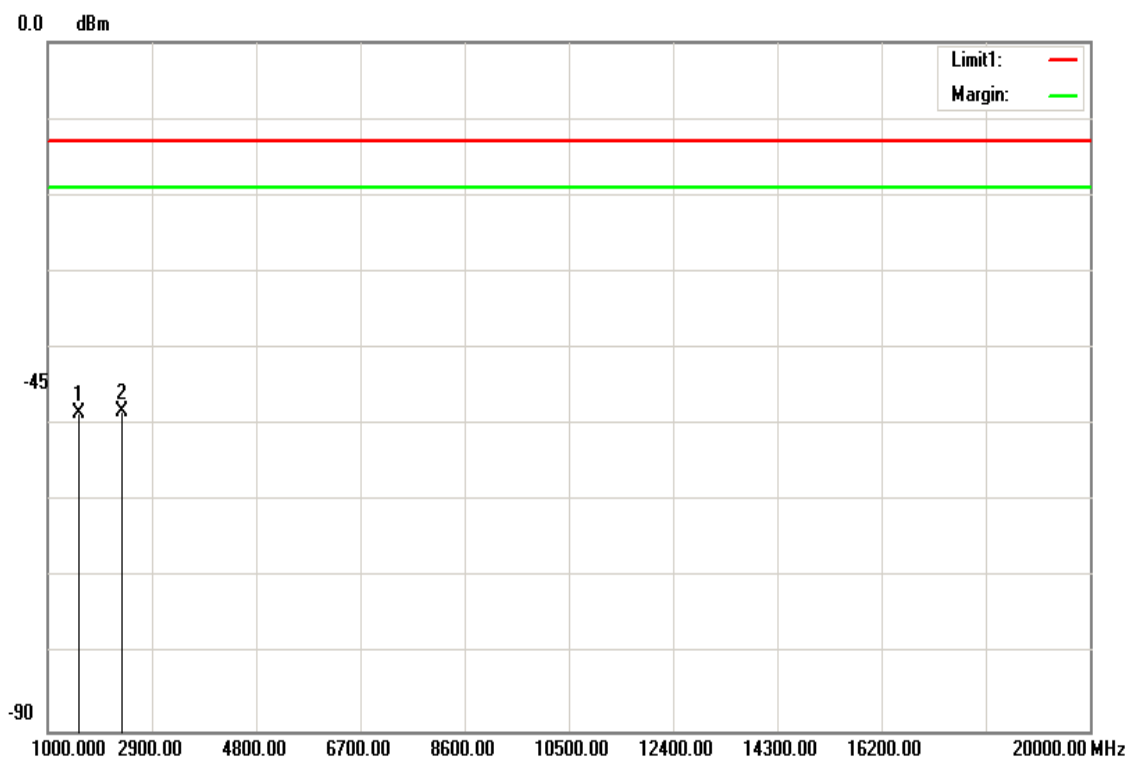


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1564.000	-47.95	1.52	-46.43	-13.00	-33.43	V
2346.000	-49.62	1.74	-47.88	-13.00	-34.88	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Mode: Tx / Mid CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Hor.



requeency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1564.000	-49.93	1.52	-48.41	-13.00	-35.41	H
2346.000	-49.99	1.74	-48.25	-13.00	-35.25	H
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Results

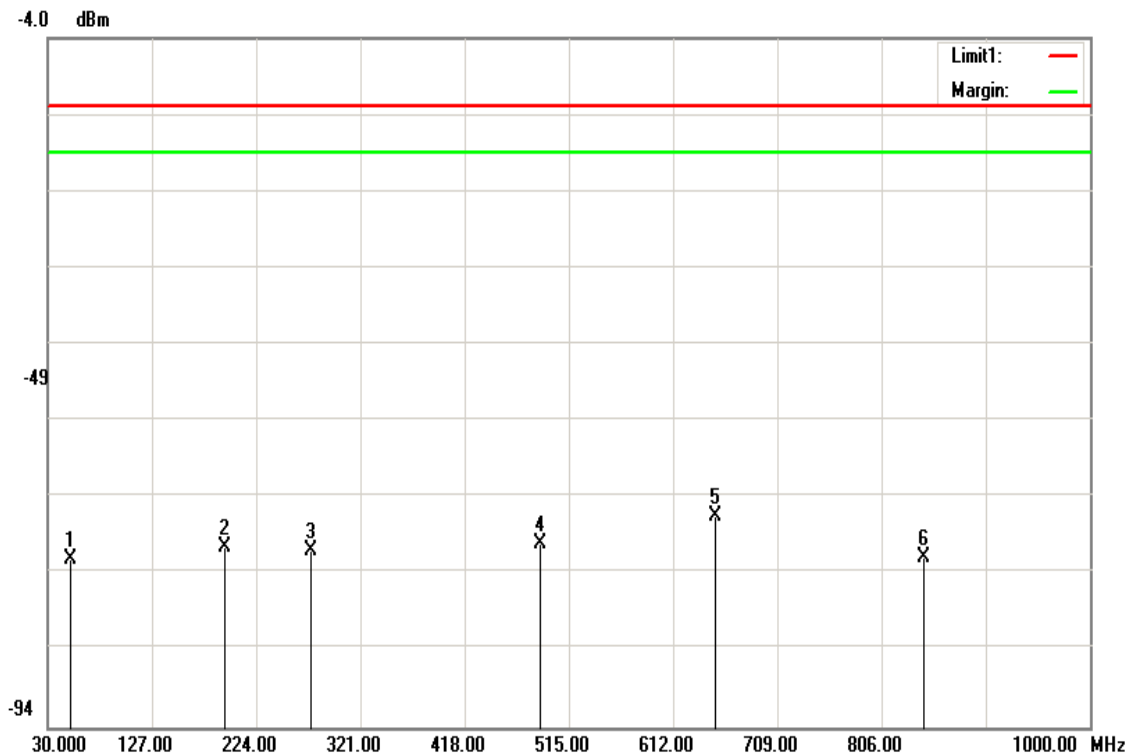
Below 1GHz

LTE Band 66 / BW: 20MHz / QPSK / RB =1, RB Offset = 0

Operation Mode: Tx / Mid CH **Test Date:** March 15, 2018

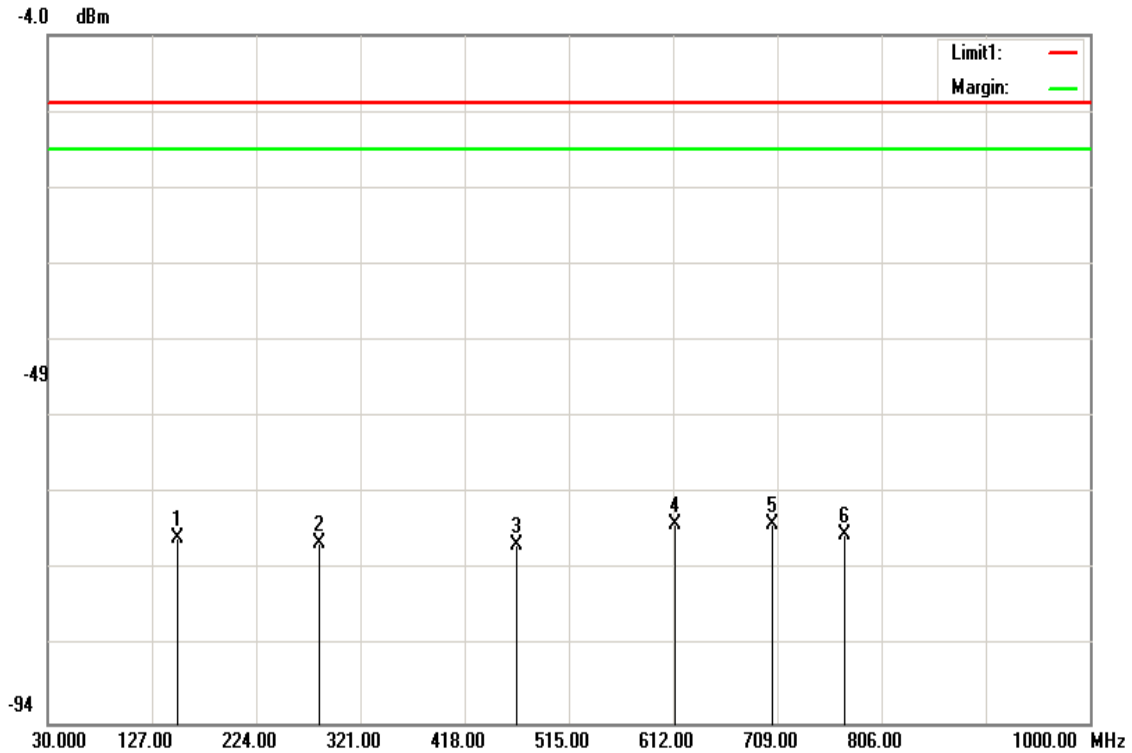
Temperature: 23°C **Tested by:** Ivan Wang

Humidity: 51% RH **Polarity:** Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
51.8250	-69.99	-2.12	-72.11	-13.00	-59.11	V
194.9000	-74.56	4.1	-70.46	-13.00	-57.46	V
274.9250	-78.07	7.15	-70.92	-13.00	-57.92	V
488.3250	-76.79	6.86	-69.93	-13.00	-56.93	V
650.8000	-67.81	1.3	-66.51	-13.00	-53.51	V
844.8000	-72.97	1.18	-71.79	-13.00	-58.79	V

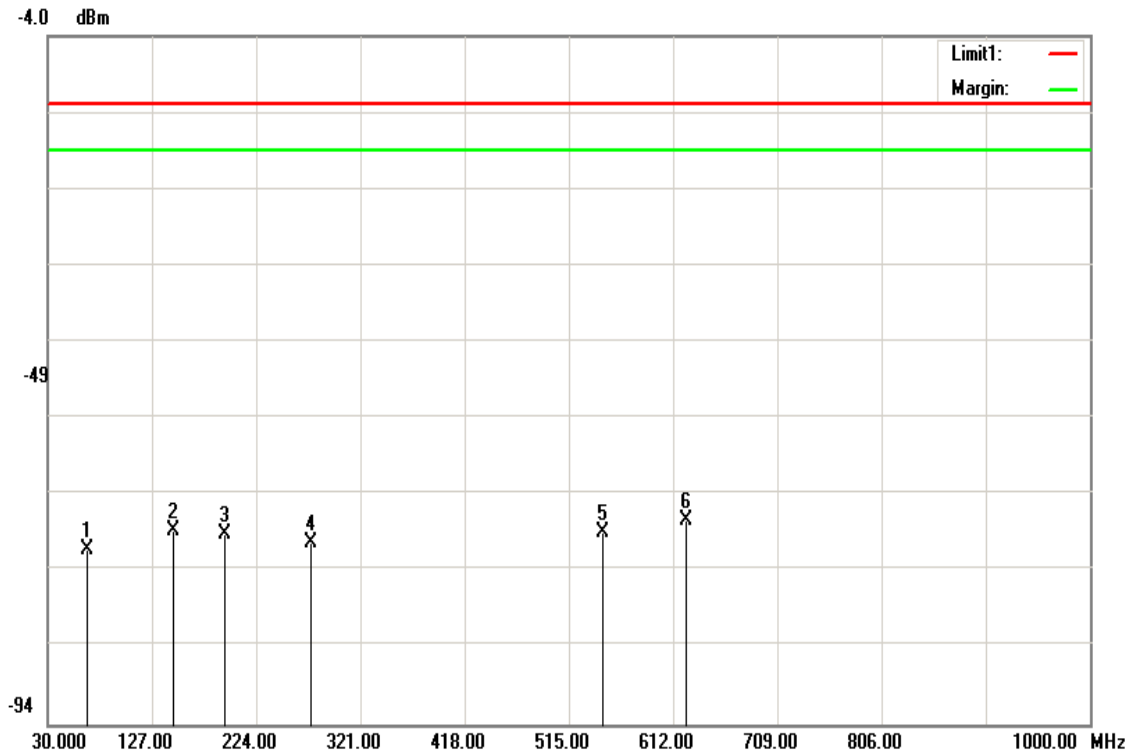
Operation Mode: Tx / Mid CH **Test Date:** March 15, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
151.2500	-69.89	0.19	-69.70	-13.00	-56.70	H
282.2000	-77.64	7.08	-70.56	-13.00	-57.56	H
466.5000	-77.76	6.97	-70.79	-13.00	-57.79	H
614.4250	-67.16	-0.75	-67.91	-13.00	-54.91	H
704.1500	-69.95	2.02	-67.93	-13.00	-54.93	H
772.0500	-70.81	1.5	-69.31	-13.00	-56.31	H

LTE Band 66 / BW: 20MHz / 16QAM / RB =1, RB Offset = 0

Operation Mode: Tx / Mid CH **Test Date:** March 15, 2018
Temperature: 23°C **Tested by:** Ivan Wang
Humidity: 51% RH **Polarity:** Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
66.3750	-71.04	-0.03	-71.07	-13.00	-58.07	V
146.4000	-69.41	0.62	-68.79	-13.00	-55.79	V
194.9000	-73.16	4.1	-69.06	-13.00	-56.06	V
274.9250	-77.48	7.15	-70.33	-13.00	-57.33	V
546.5250	-75.81	6.85	-68.96	-13.00	-55.96	V
624.1250	-67.14	-0.2	-67.34	-13.00	-54.34	V

Operation Mode: Tx / Mid CH

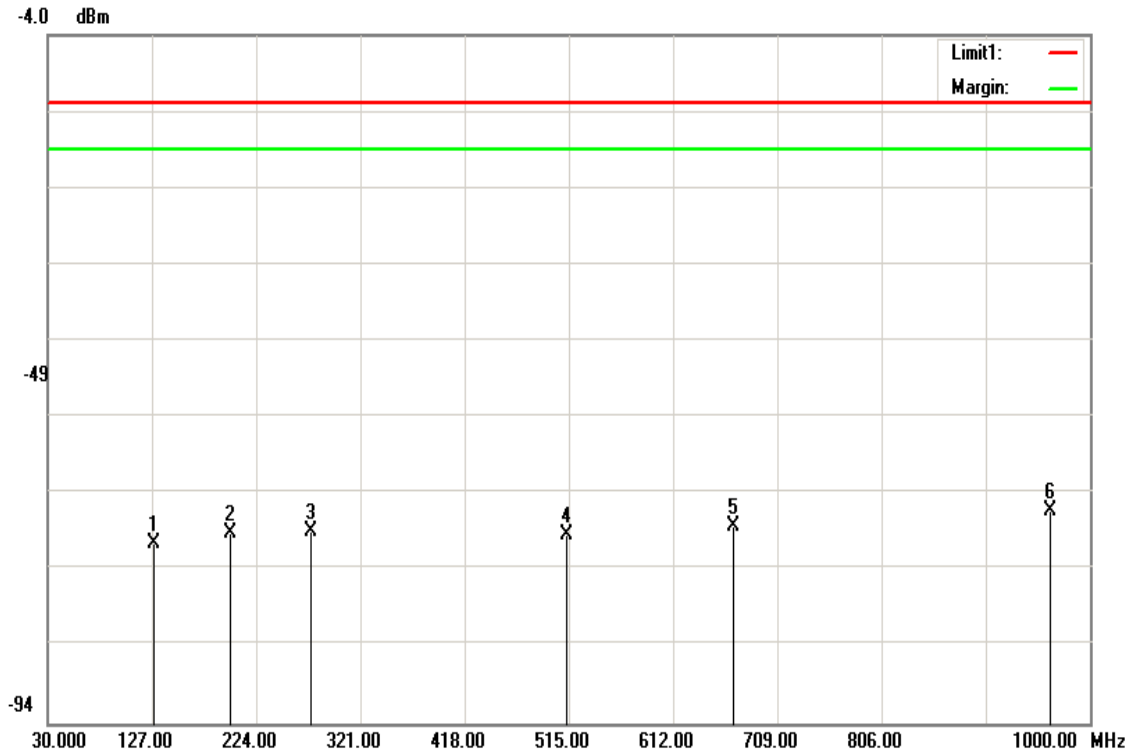
Test Date: March 15, 2018

Temperature: 23°C

Tested by: Ivan Wang

Humidity: 51% RH

Polarity: Hor.

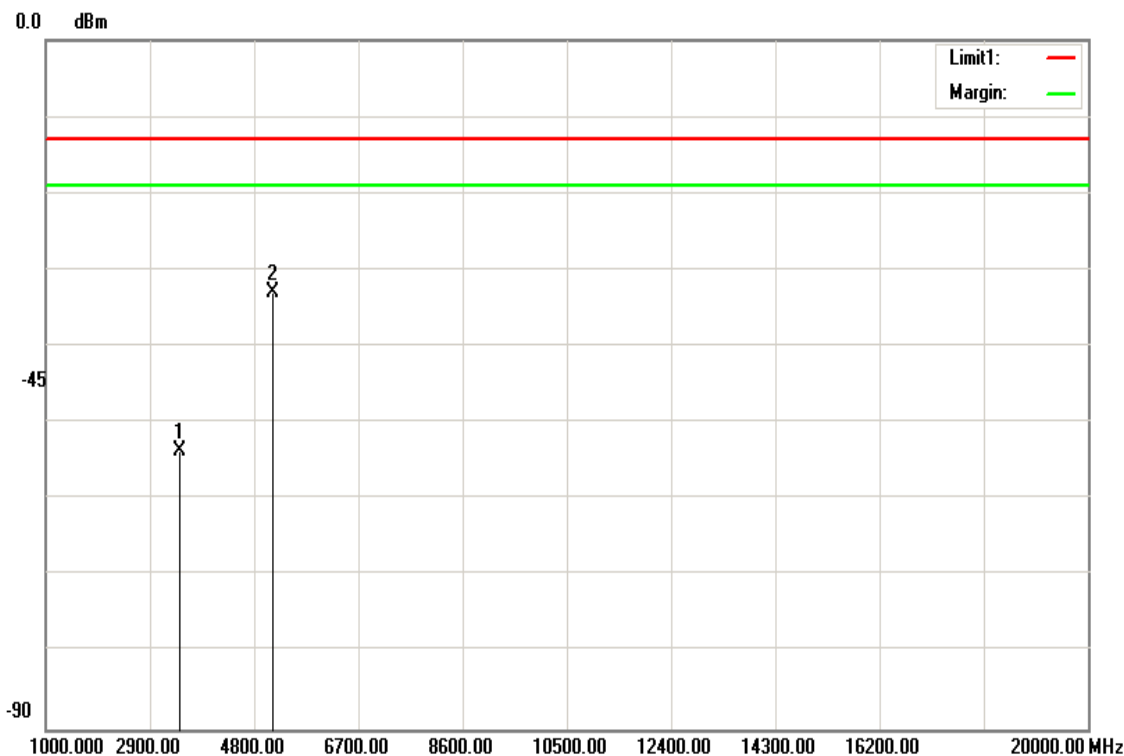


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
129.4250	-71.47	1.04	-70.43	-13.00	-57.43	H
199.7500	-73.3	4.1	-69.20	-13.00	-56.20	H
274.9250	-76.15	7.15	-69.00	-13.00	-56.00	H
512.5750	-76.07	6.81	-69.26	-13.00	-56.26	H
667.7750	-69.86	1.56	-68.30	-13.00	-55.30	H
963.6250	-69.06	2.75	-66.31	-13.00	-53.31	H

Above 1GHz

LTE Band 66 / BW: 20MHz / QPSK RB =1, RB Offset = 0

Operation Mode: Tx / Low CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Ver.

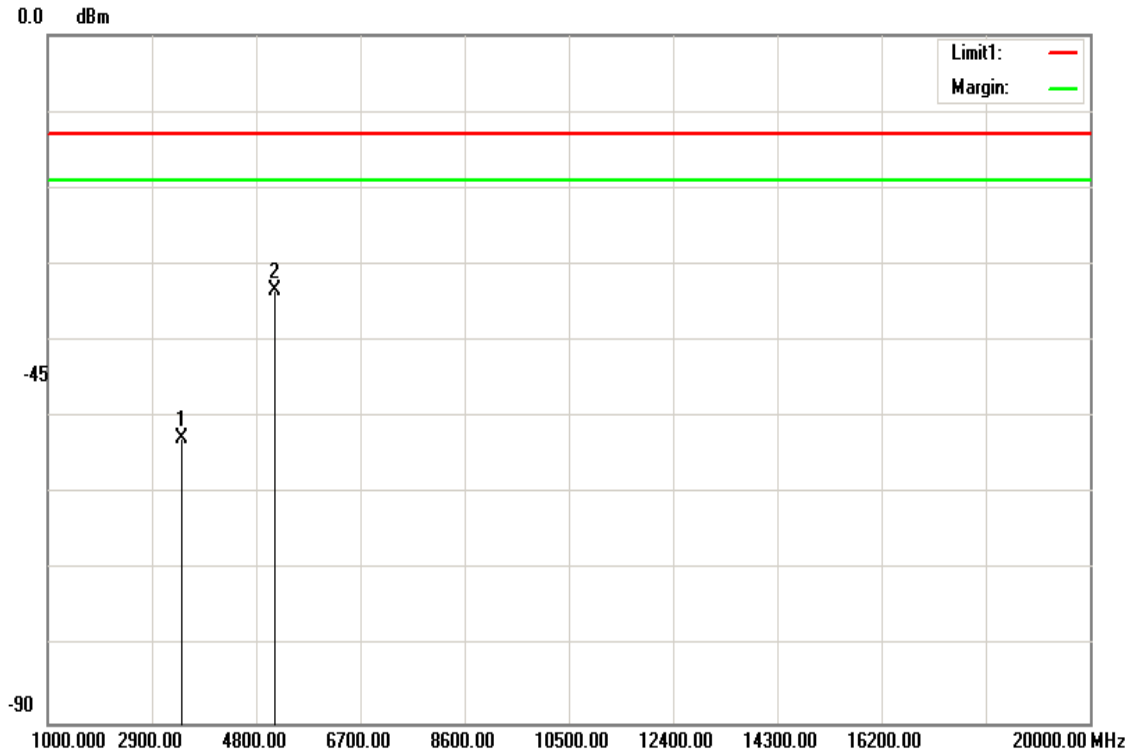


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3440.000	-66	12.34	-53.66	-13.00	-40.66	V
5130.000	-45.62	12.6	-33.02	-13.00	-20.02	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / Low CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Hor.

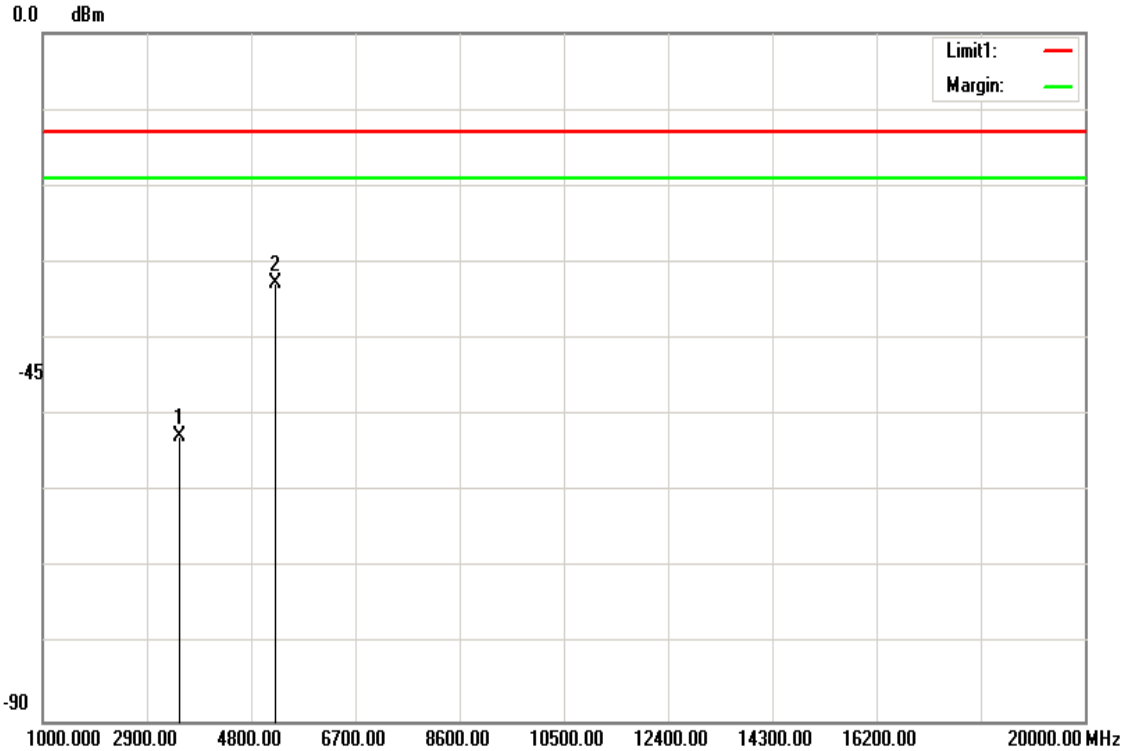


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3440.000	-65.19	12.34	-52.85	-13.00	-39.85	H
5130.000	-46.02	12.6	-33.42	-13.00	-20.42	H
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / Mid CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Ver.

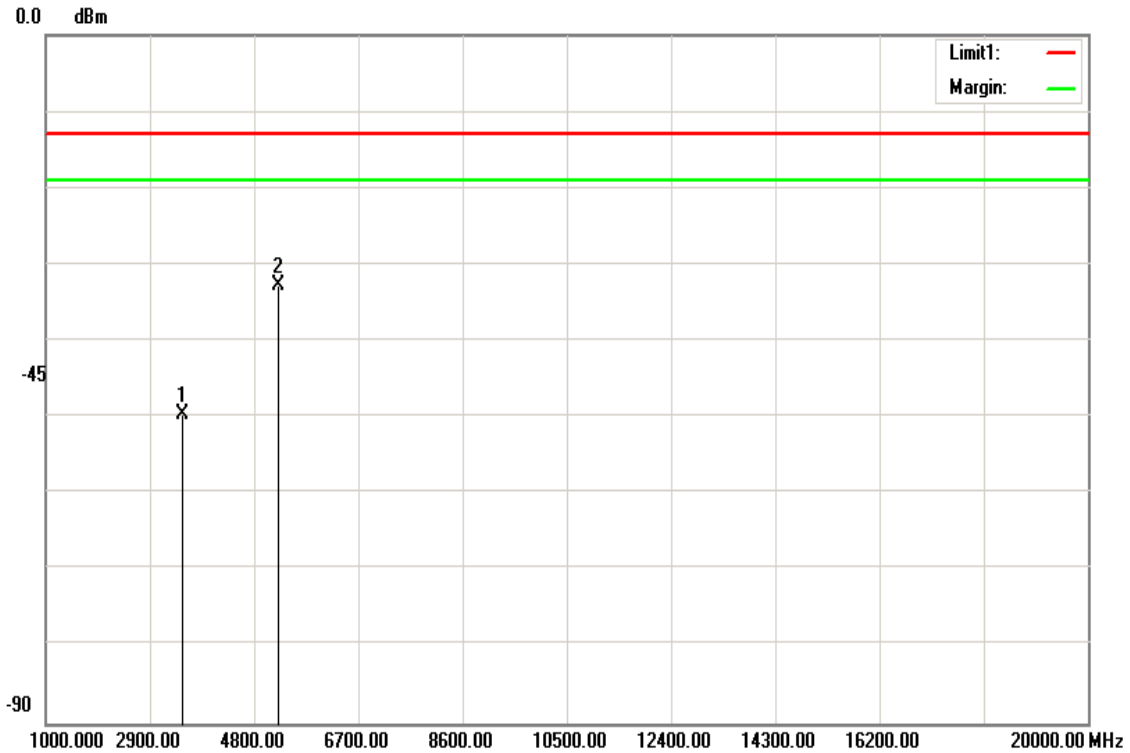


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3485.000	-65.27	12.46	-52.81	-13.00	-39.81	V
5235.000	-45.34	12.69	-32.65	-13.00	-19.65	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / Mid CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Hor.

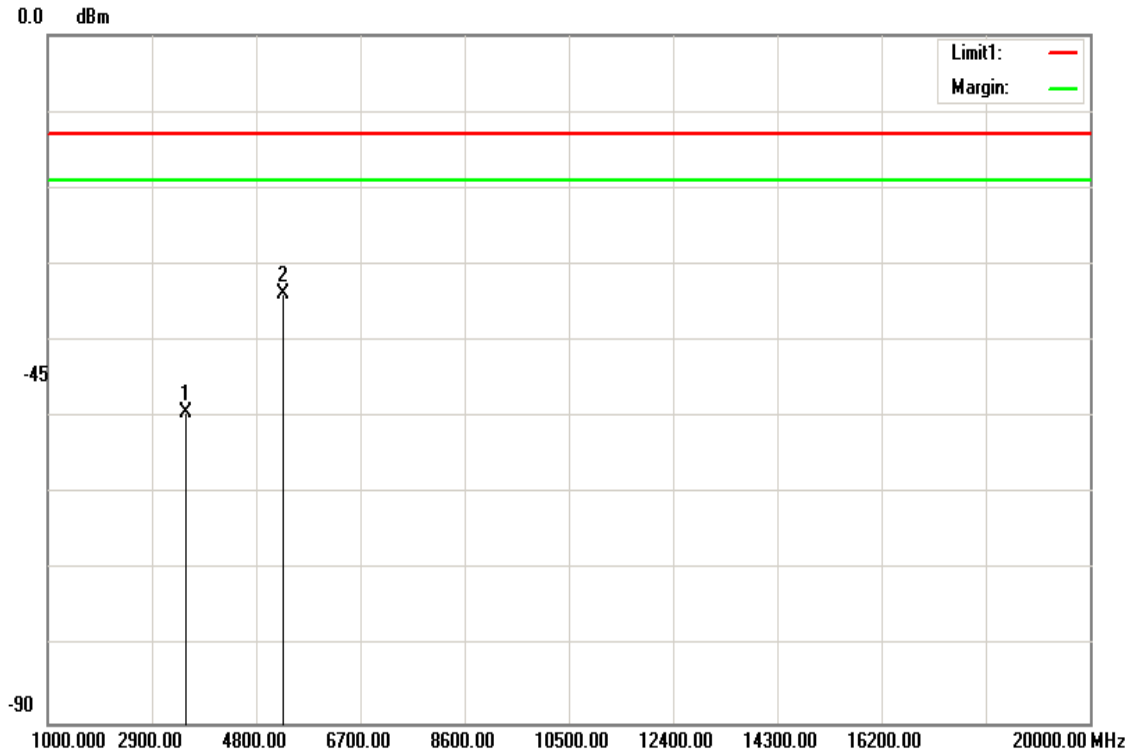


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3485.000	-62.03	12.46	-49.57	-13.00	-36.57	H
5235.000	-45.44	12.69	-32.75	-13.00	-19.75	H
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / High CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Ver.

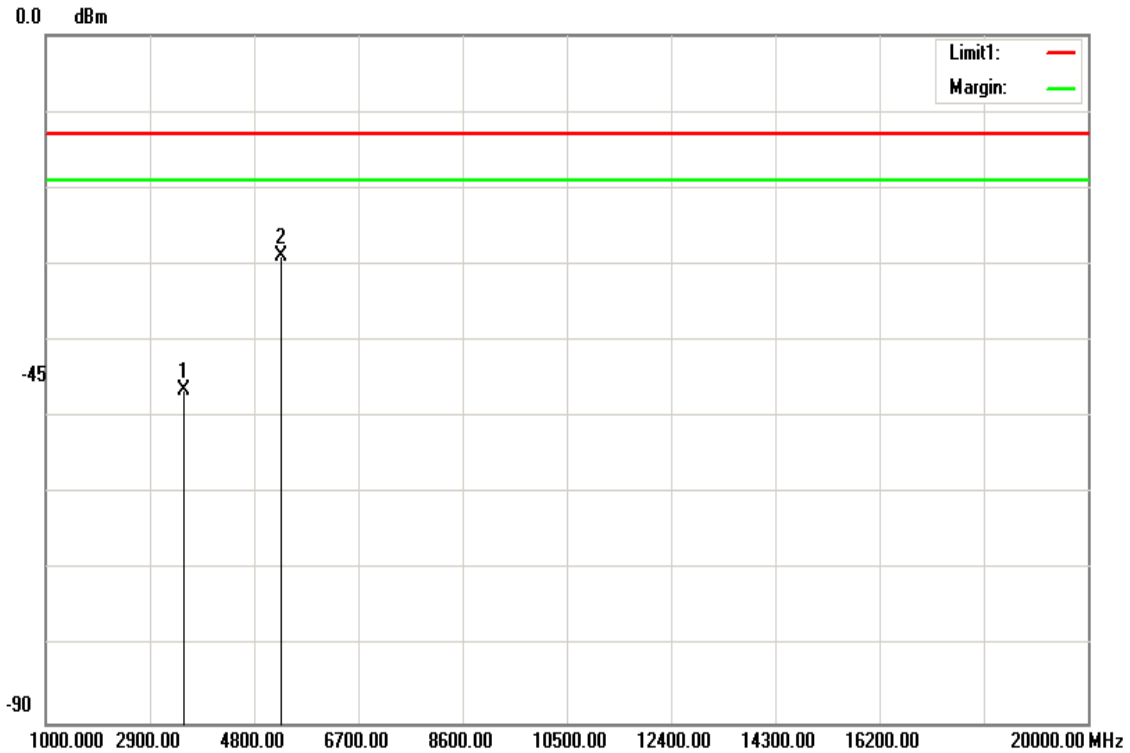


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3520.000	-61.93	12.5	-49.43	-13.00	-36.43	V
5287.000	-46.58	12.73	-33.85	-13.00	-20.85	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / High CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Hor.



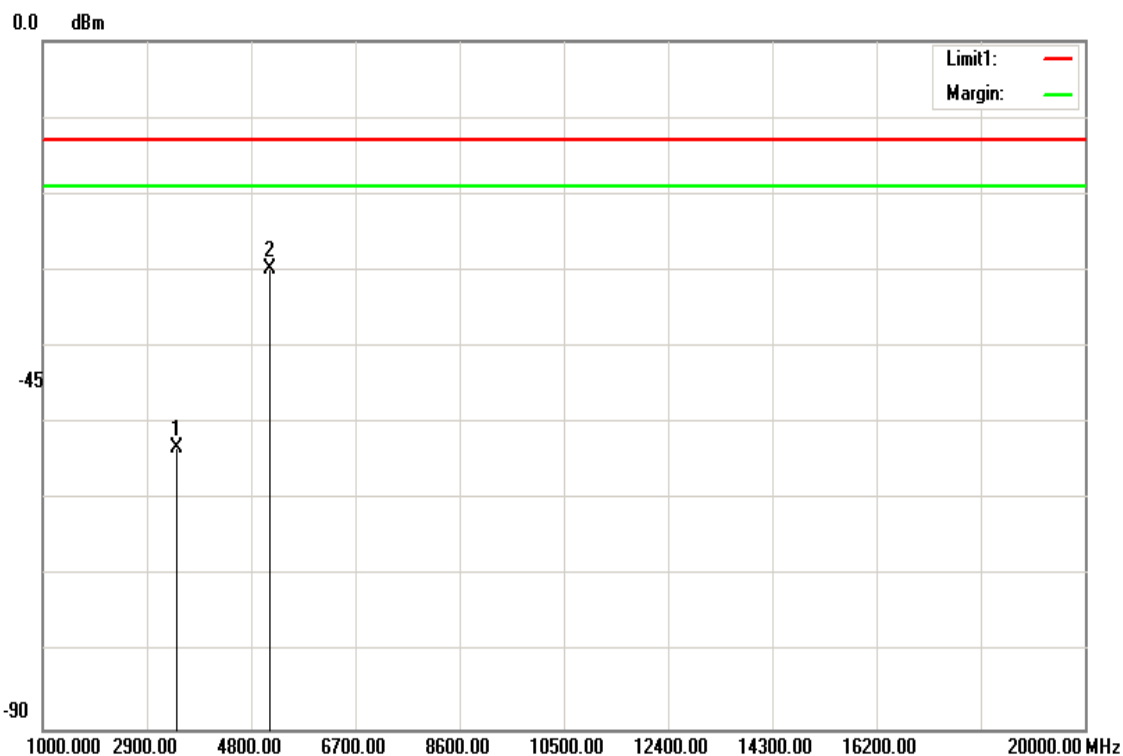
Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3520.000	-59.07	12.5	-46.57	-13.00	-33.57	H
5287.000	-41.6	12.73	-28.87	-13.00	-15.87	H
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

LTE Band 66 / BW: 20MHz / 16QAM / RB =1, RB Offset = 0

Operation Mode: Tx / Low CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Ver.

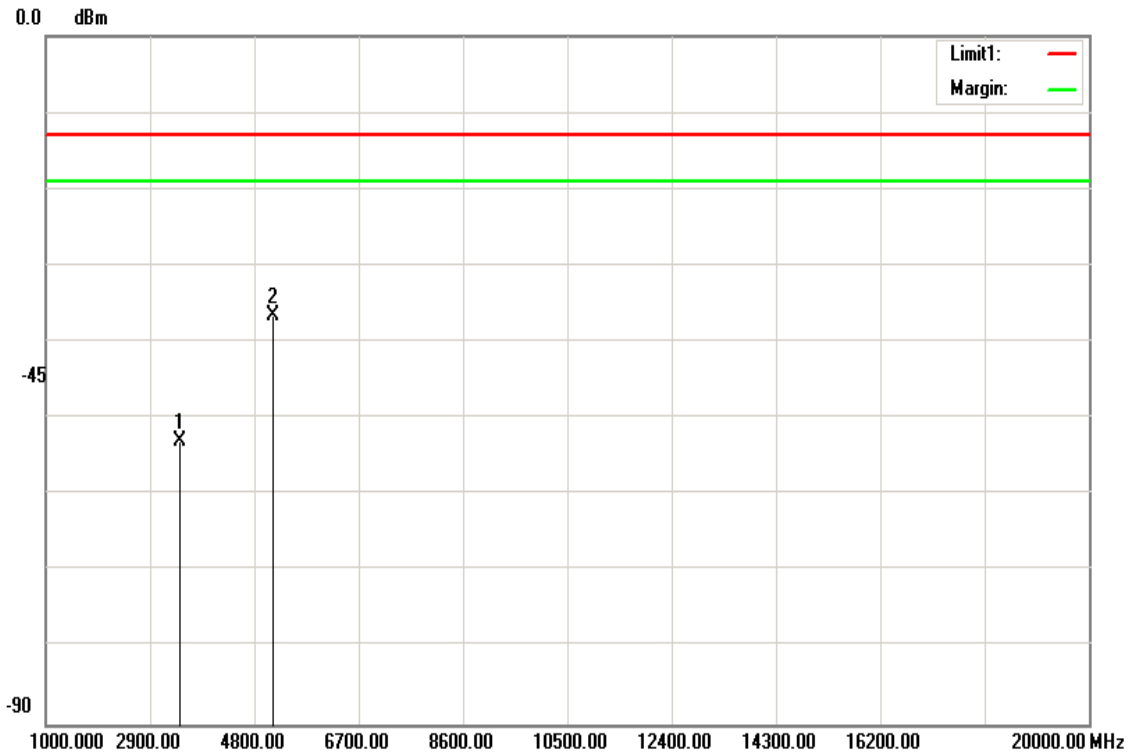


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3440.000	-65.44	12.34	-53.10	-13.00	-40.10	V
5130.000	-42.49	12.6	-29.89	-13.00	-16.89	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / Low CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Hor.

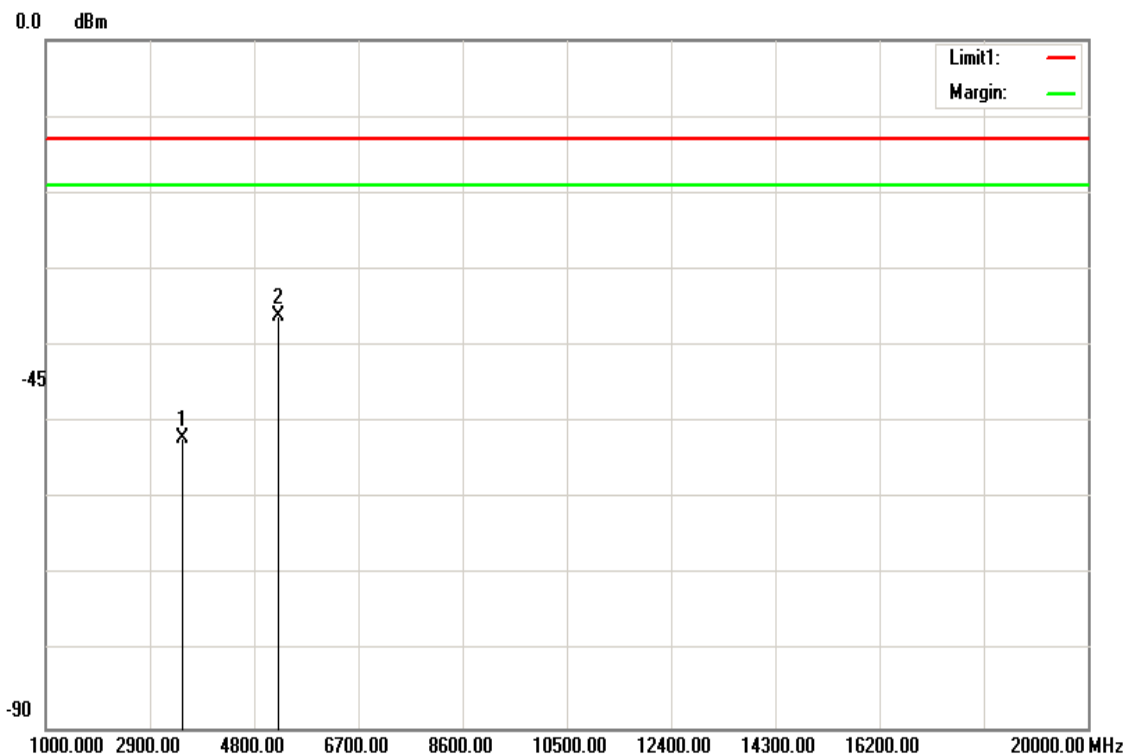


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3440.000	-65.27	12.34	-52.93	-13.00	-39.93	H
5130.000	-49.18	12.6	-36.58	-13.00	-23.58	H
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / Mid CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Ver.

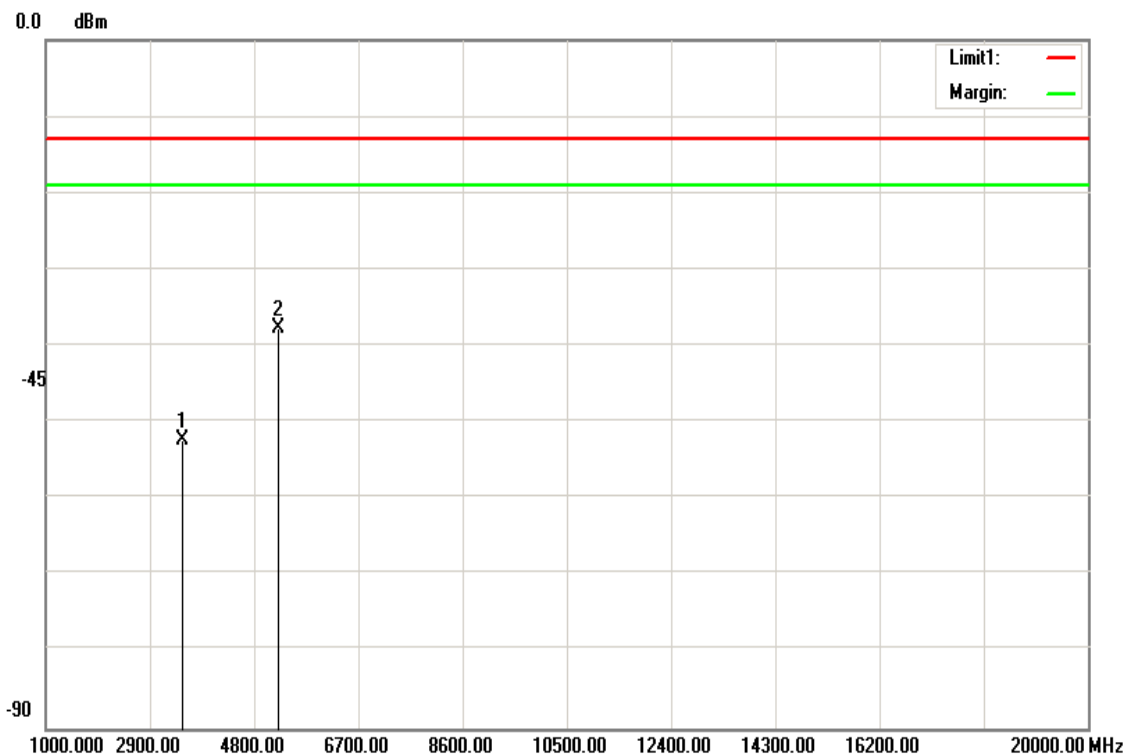


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3485.000	-64.58	12.46	-52.12	-13.00	-39.12	V
5235.000	-48.88	12.69	-36.19	-13.00	-23.19	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / Mid CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Hor.

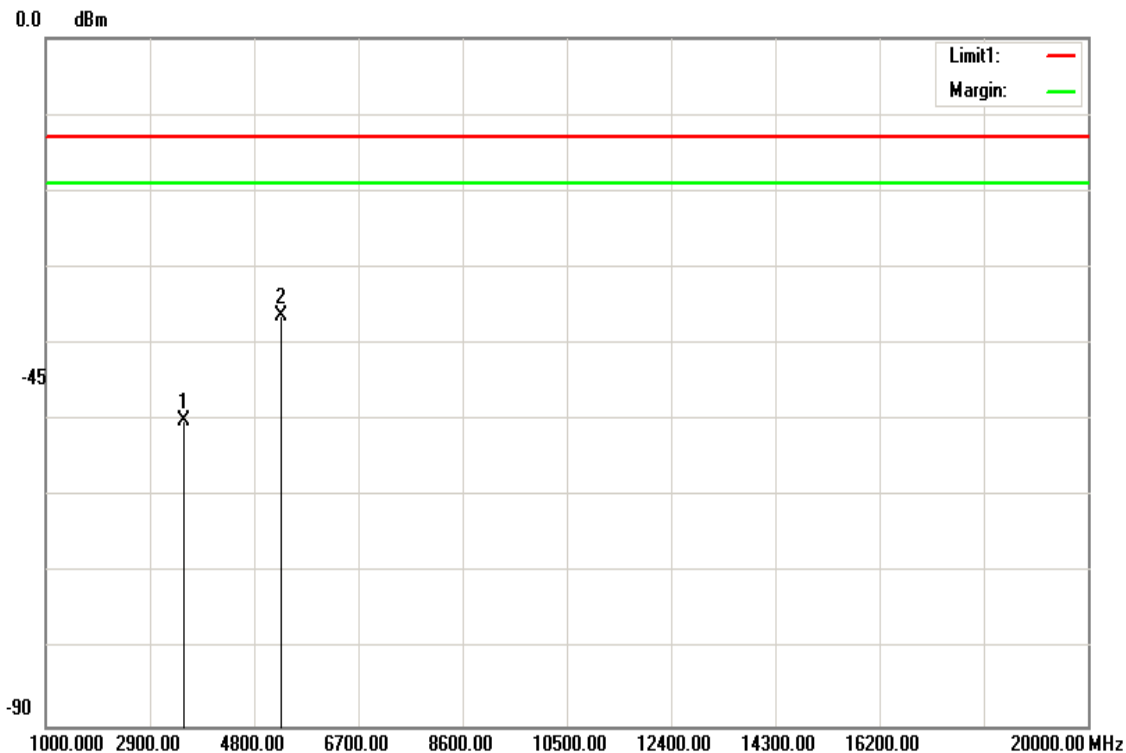


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3485.000	-64.78	12.46	-52.32	-13.00	-39.32	H
5235.000	-50.44	12.69	-37.75	-13.00	-24.75	H
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / High CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Ver.

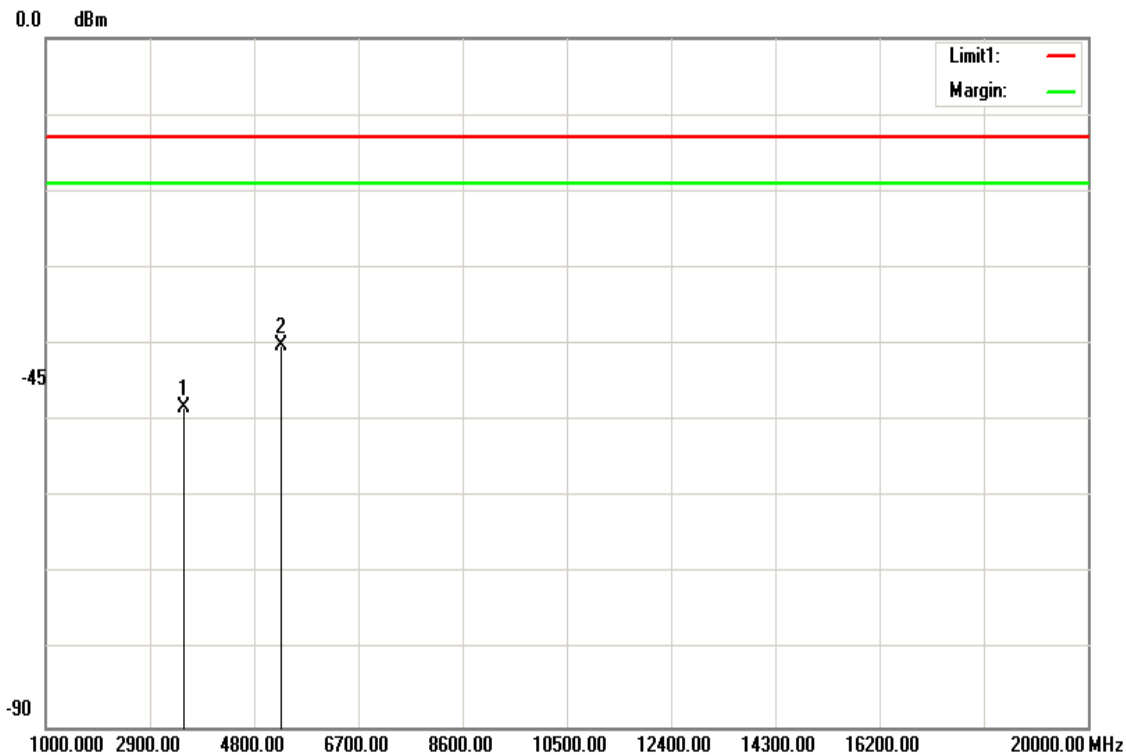


Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3520.000	-62.46	12.5	-49.96	-13.00	-36.96	V
5287.000	-49.14	12.73	-36.41	-13.00	-23.41	V
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Operation Mode: Tx / High CH **Test Date:** March 15, 2018
Temperature: 21°C **Tested by:** Ivan Wang
Humidity: 52% RH **Polarity:** Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3520.000	-60.67	12.5	-48.17	-13.00	-35.17	H
5287.000	-52.82	12.73	-40.09	-13.00	-27.09	H
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.