

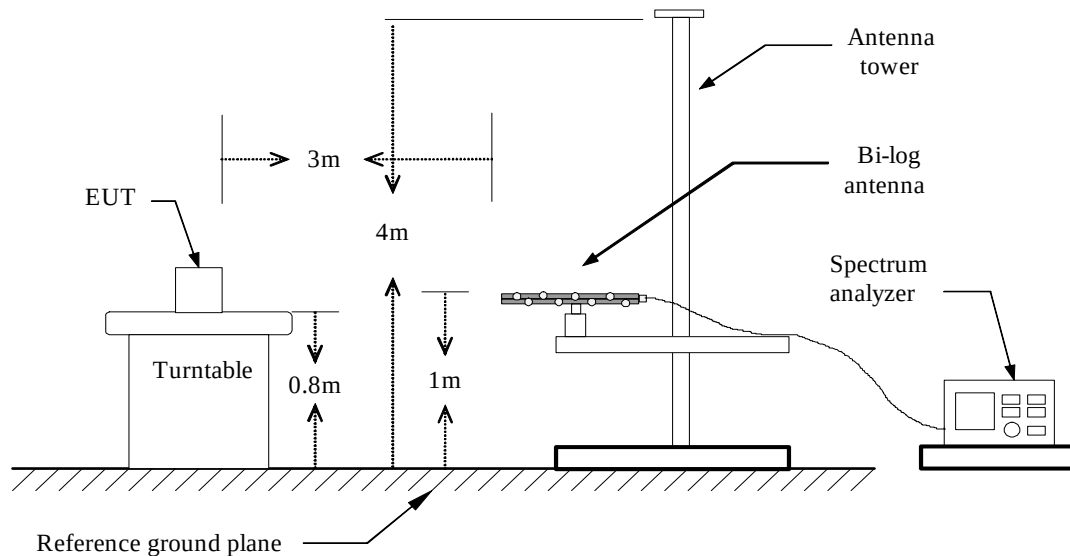
7.8 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

LIMIT

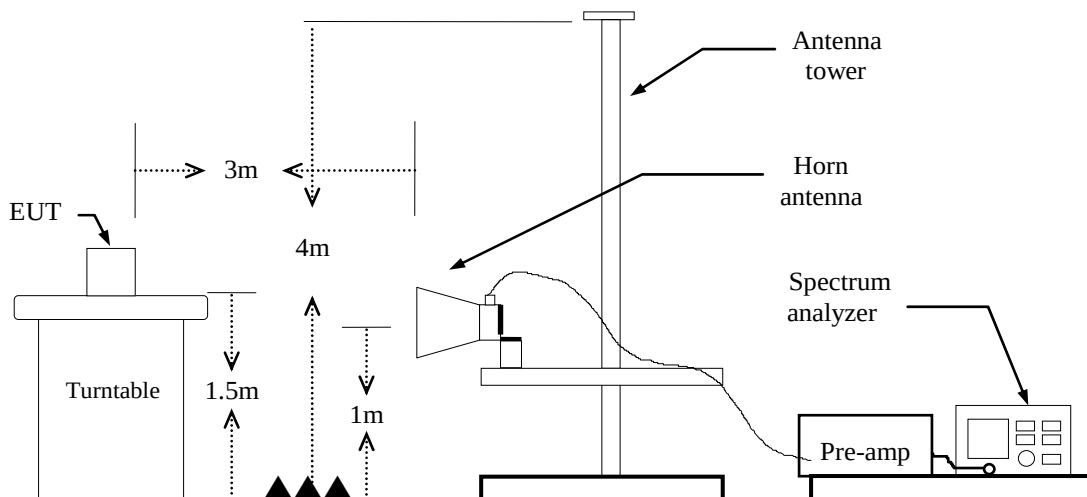
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm

Test Configuration

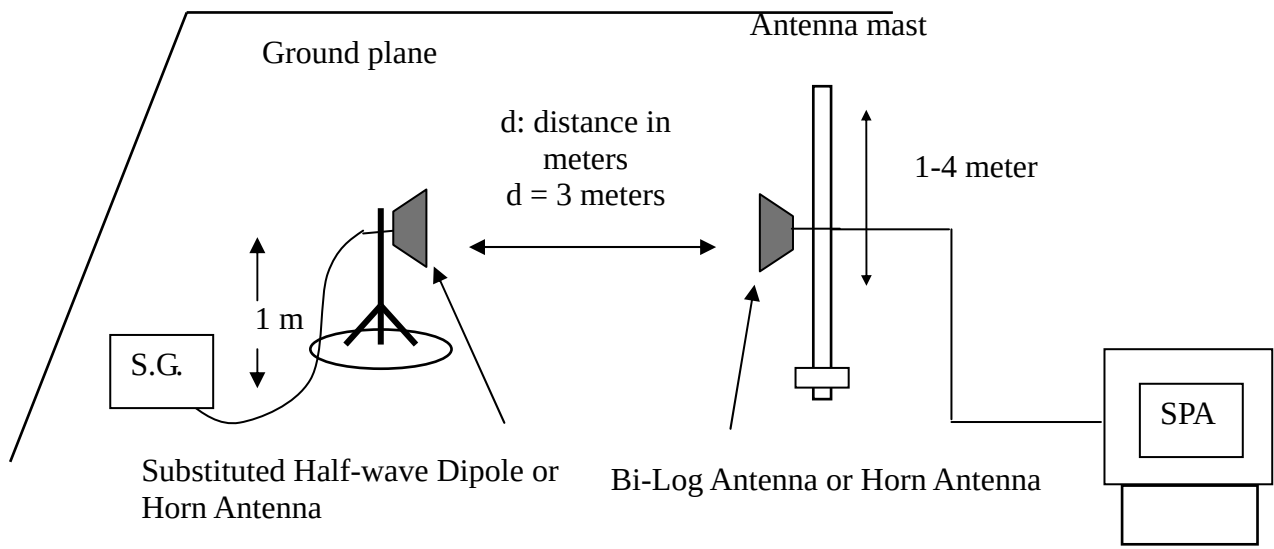
Below 1 GHz



Above 1 GHz



Substituted Method Test Set-up



TEST PROCEDURE

1. The EUT was placed on a turntable
 - (1) Below 1G : 0.8m
 - (2) Above 1G : 1.5m
 - (3) EUT set 3m from the receiving antenna
 - (4) The table was rotated 360 degrees of the highest spurious emission to determine the position.
2. Set the spectrum analyzer , RBW=1MHz, VBW=3MHz.
3. A horn antenna was driven by a signal generator.
4. 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

Refer to the attached tabular data sheets.

Test Results**Below 1GHz****LTE Band 5 / BW: 10MHz / QPSK / RB =1, RB Offset = 0****Operation Mode:** Tx / Mid CH**Test Date:**

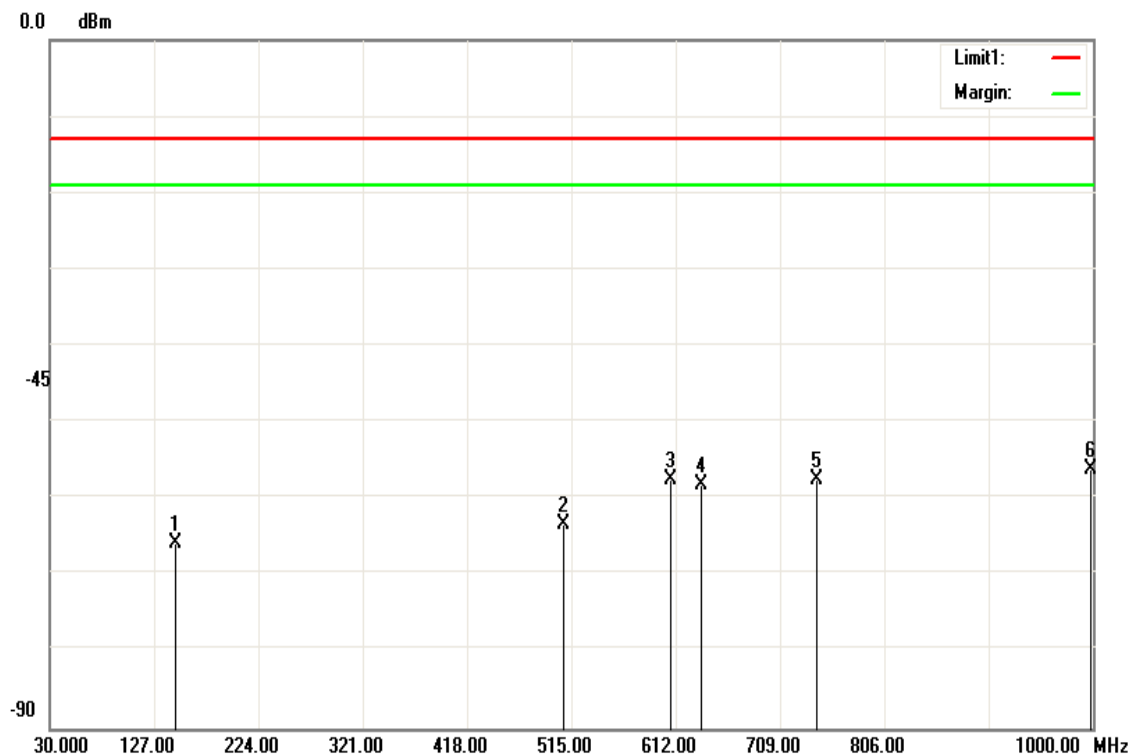
April 12, 2017

Temperature: 22.1°C**Tested by:**

Timmy Wang

Humidity: 50% RH**Polarity:**

Ver.



Frequency (MHz)	S.G. (dBm)	Ant. Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
147.3700	-66.35	0.54	-65.81	-13.00	-52.81	V
508.2100	-70.15	6.81	-63.34	-13.00	-50.34	V
607.1500	-56.25	-1.17	-57.42	-13.00	-44.42	V
635.2800	-58.59	0.45	-58.14	-13.00	-45.14	V
742.9500	-59.26	1.72	-57.54	-13.00	-44.54	V
998.0600	-62.5	6.39	-56.11	-13.00	-43.11	V

Operation Mode: Tx / Mid CH

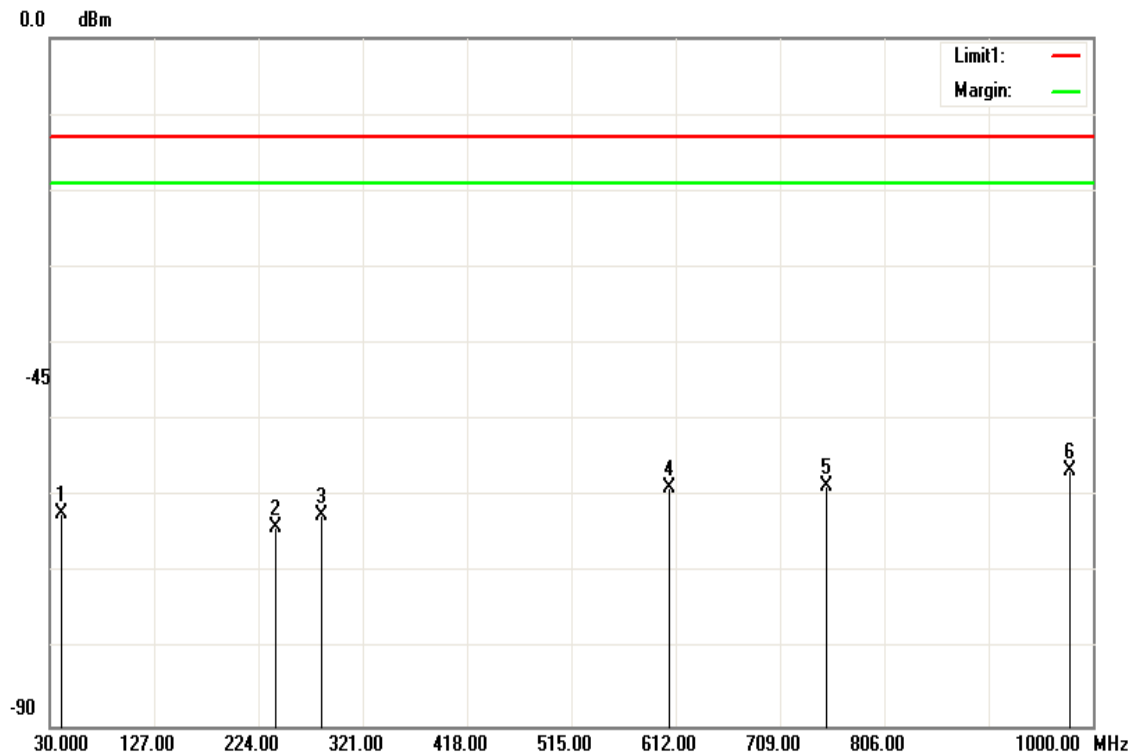
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
40.6700	-56.39	-5.71	-62.10	-13.00	-49.10	H
240.4900	-70.85	6.77	-64.08	-13.00	-51.08	H
282.2000	-69.6	7.08	-62.52	-13.00	-49.52	H
606.1800	-57.58	-1.23	-58.81	-13.00	-45.81	H
752.6500	-60.2	1.65	-58.55	-13.00	-45.55	H
978.6600	-60.92	4.34	-56.58	-13.00	-43.58	H

LTE Band 5 / BW: 10MHz / 16QAM / RB =1, RB Offset = 0

Operation Mode: Tx / Mid CH

Test Date:

April 12, 2017

Temperature: 22.1°C

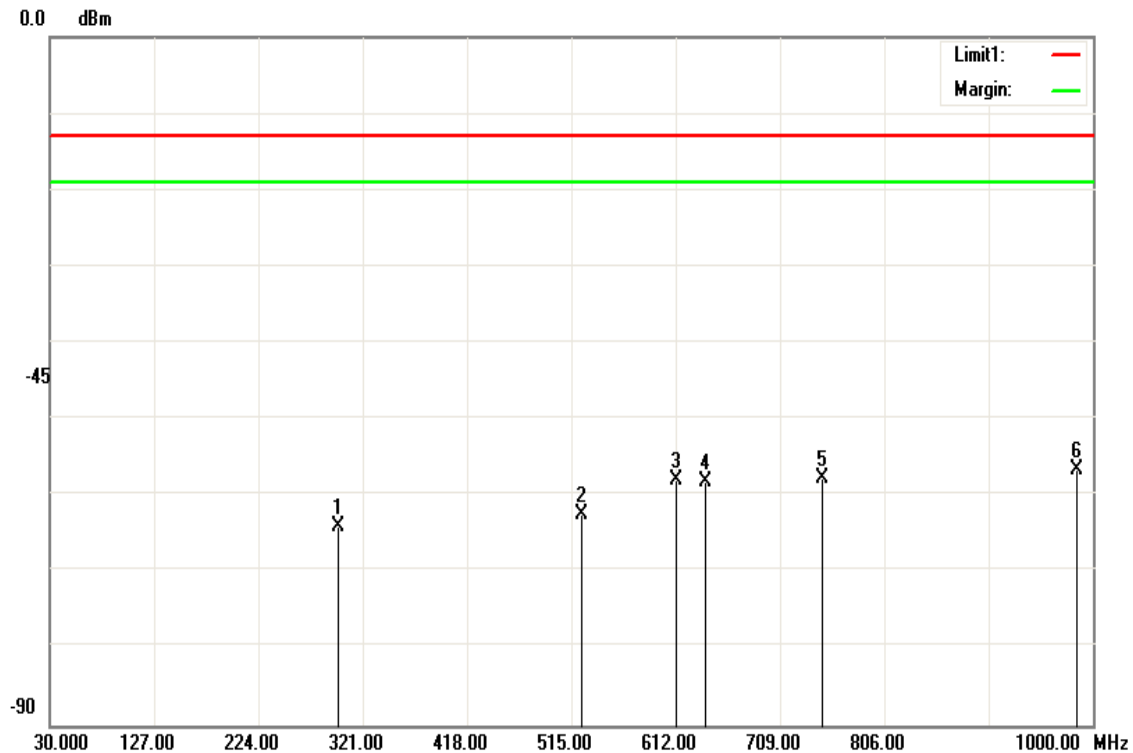
Tested by:

Timmy Wang

Humidity: 50% RH

Polarity:

Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
297.7200	-70.86	6.92	-63.94	-13.00	-50.94	V
524.7000	-69.36	6.82	-62.54	-13.00	-49.54	V
612.0000	-57.04	-0.89	-57.93	-13.00	-44.93	V
640.1300	-58.8	0.72	-58.08	-13.00	-45.08	V
748.7700	-59.4	1.68	-57.72	-13.00	-44.72	V
985.4500	-61.67	5.06	-56.61	-13.00	-43.61	V

Operation Mode: Tx / Mid CH I

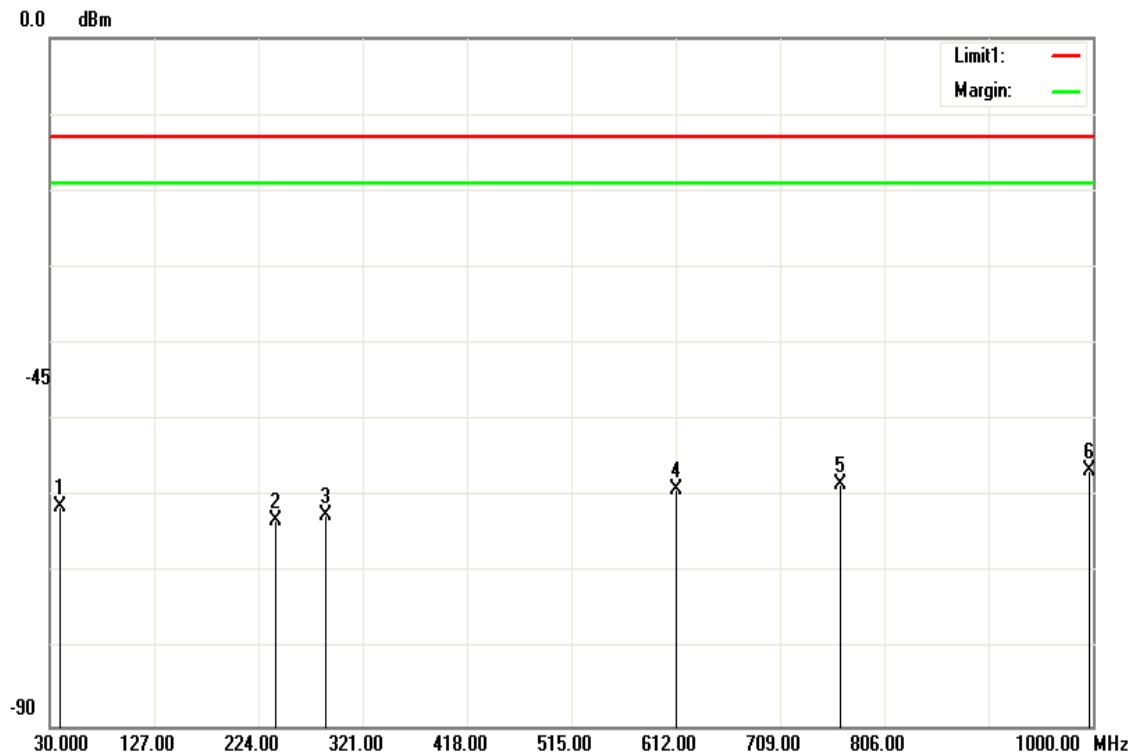
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
39.7000	-55.31	-5.91	-61.22	-13.00	-48.22	H
240.4900	-69.98	6.77	-63.21	-13.00	-50.21	H
286.0800	-69.38	7.04	-62.34	-13.00	-49.34	H
612.0000	-58.17	-0.89	-59.06	-13.00	-46.06	H
765.2600	-59.94	1.55	-58.39	-13.00	-45.39	H
996.1200	-62.67	6.19	-56.48	-13.00	-43.48	H

Above 1GHz**LTE Band 5 / BW: 10 MHz / QPSK / RB =1, RB Offset = 0****Operation Mode:** Tx / Low CH**Test Date:**

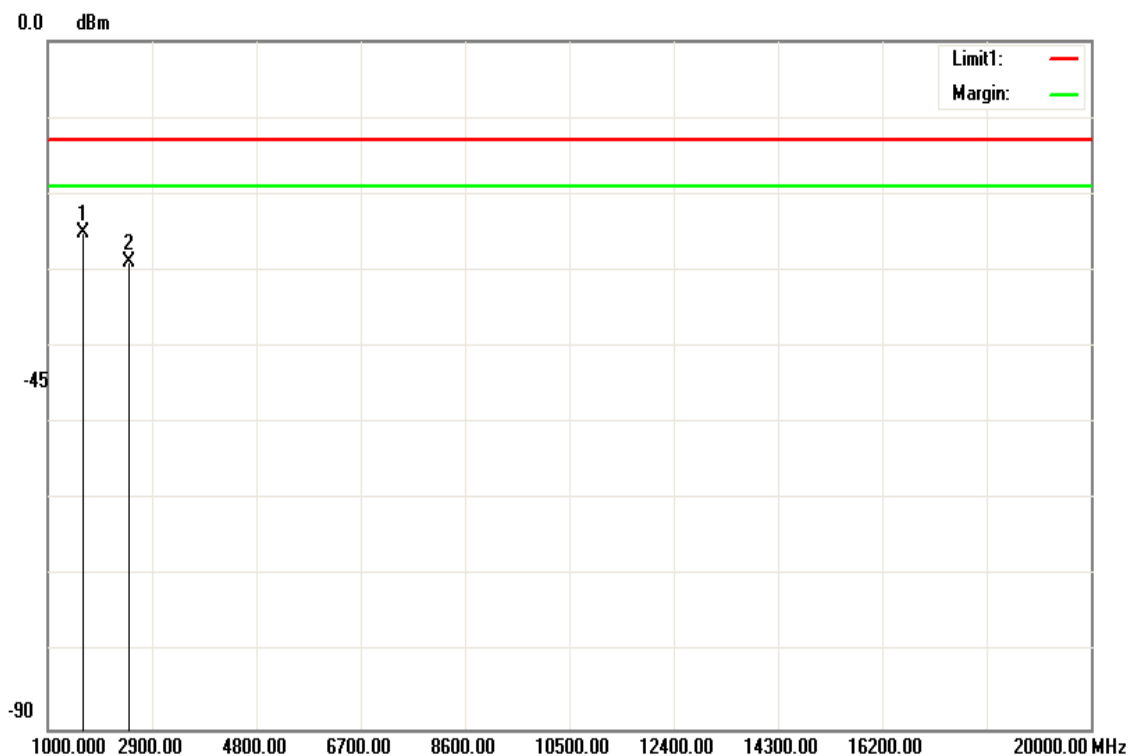
April 12, 2017

Temperature: 22.1°C**Tested by:**

Timmy Wang

Humidity: 50% RH**Polarity:**

Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1651.000	-26.51	1.52	-24.99	-13.00	-11.99	V
2477.000	-30.74	1.83	-28.91	-13.00	-15.91	V
N/A						

Remark:

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

Operation Mode: Tx / Low CH

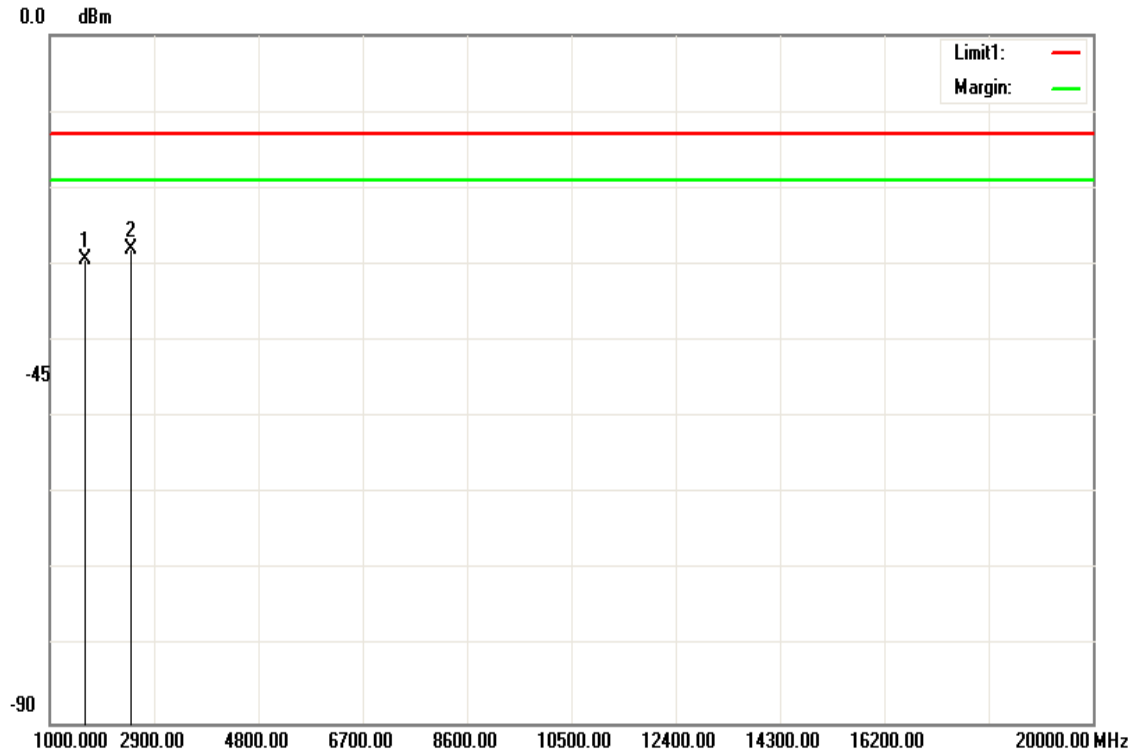
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1651.000	-30.89	1.52	-29.37	-13.00	-16.37	H
2477.000	-29.74	1.83	-27.91	-13.00	-14.91	H
N/A						

Remark:

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

Operation Mode: Tx / Mid CH

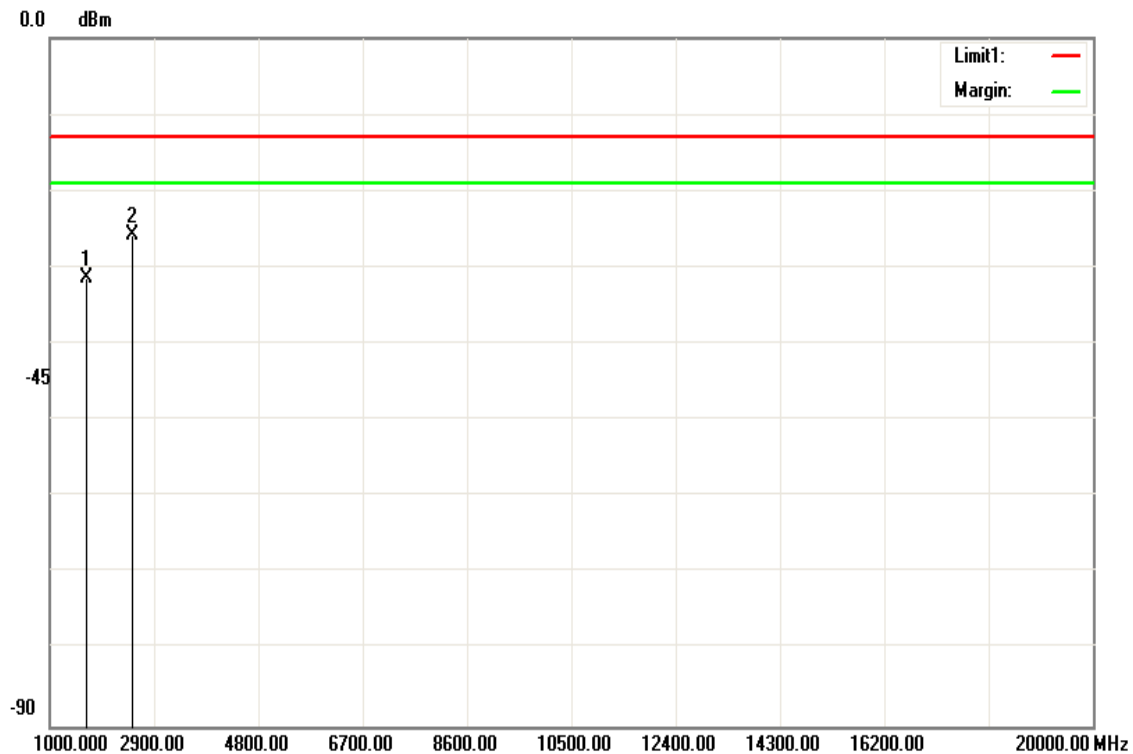
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1665.000	-32.93	1.52	-31.41	-13.00	-18.41	V
2498.000	-27.61	1.85	-25.76	-13.00	-12.76	V
N/A						

Remark:

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

Operation Mode: Tx / Mid CH

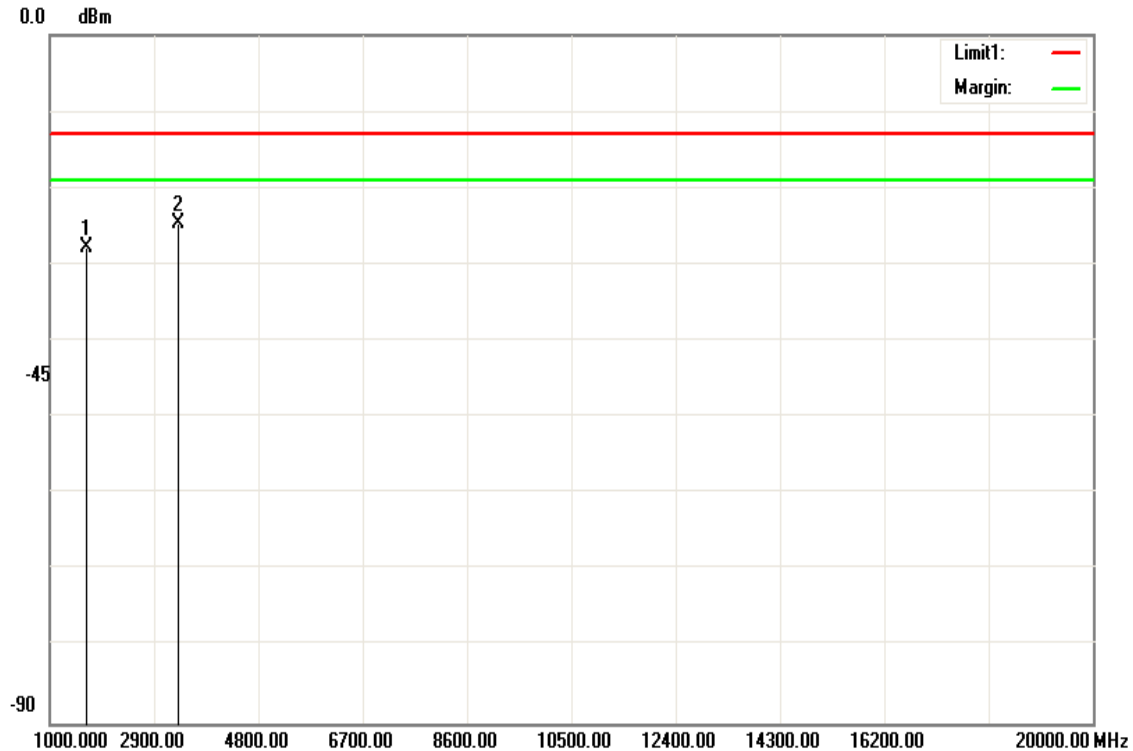
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1665.000	-29.34	1.52	-27.82	-13.00	-14.82	H
3331.000	-36.6	12.06	-24.54	-13.00	-11.54	H
N/A						

Remark:

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

Operation Mode: Tx / High CH

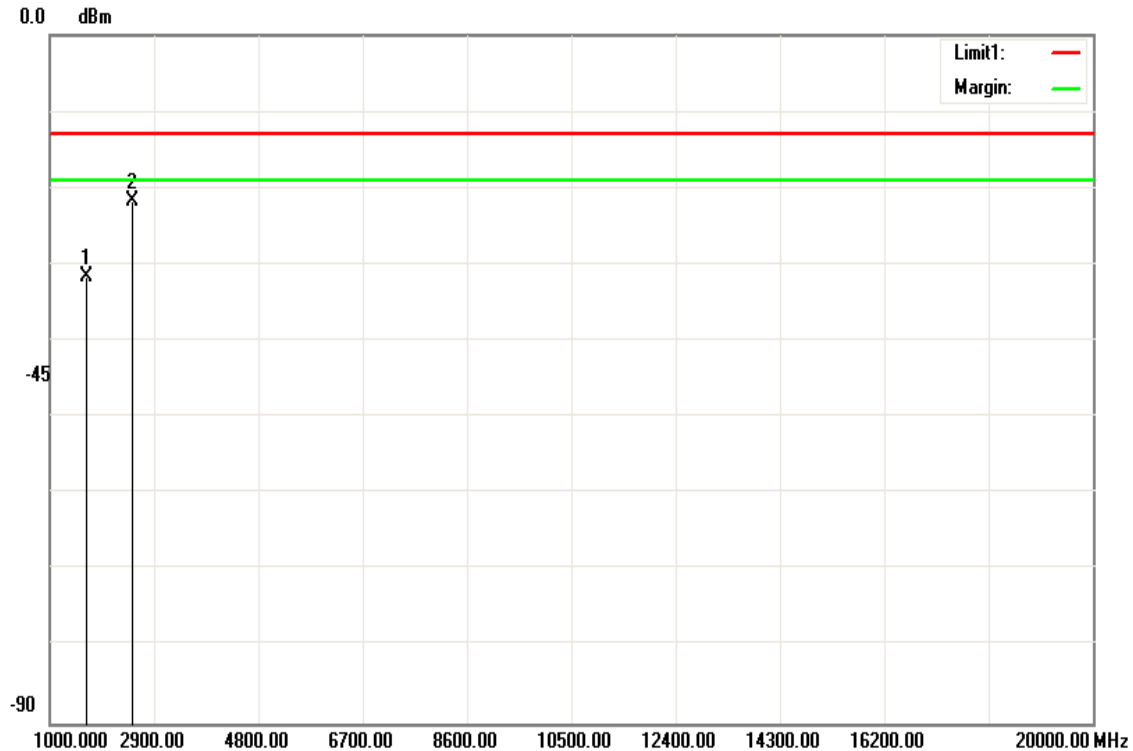
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1679.000	-33.23	1.52	-31.71	-13.00	-18.71	V
2519.000	-23.84	2.21	-21.63	-13.00	-8.63	V
N/A						

Remark:

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

Operation Mode: Tx / High CH

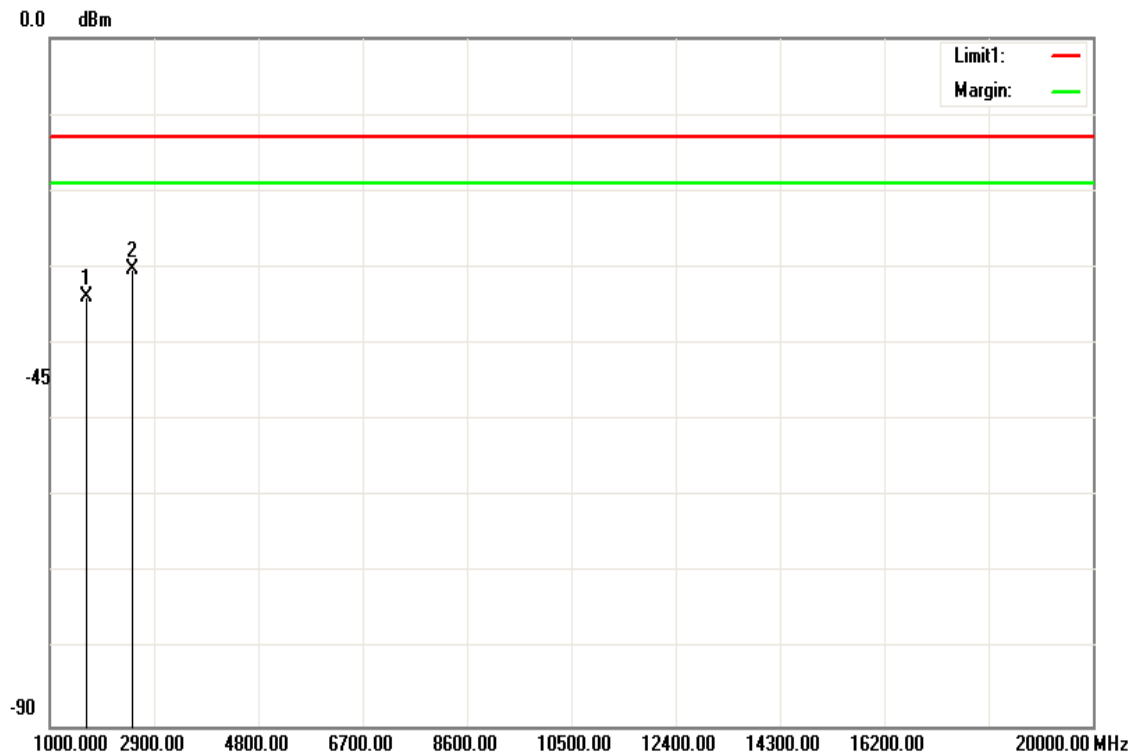
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1679.000	-35.41	1.52	-33.89	-13.00	-20.89	H
2519.000	-32.44	2.21	-30.23	-13.00	-17.23	H
N/A						

Remark:

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

LTE Band 5 / BW: 10MHz / 16QAM / RB =1, RB Offset = 0**Operation Mode:** Tx / Low CH**Test Date:**

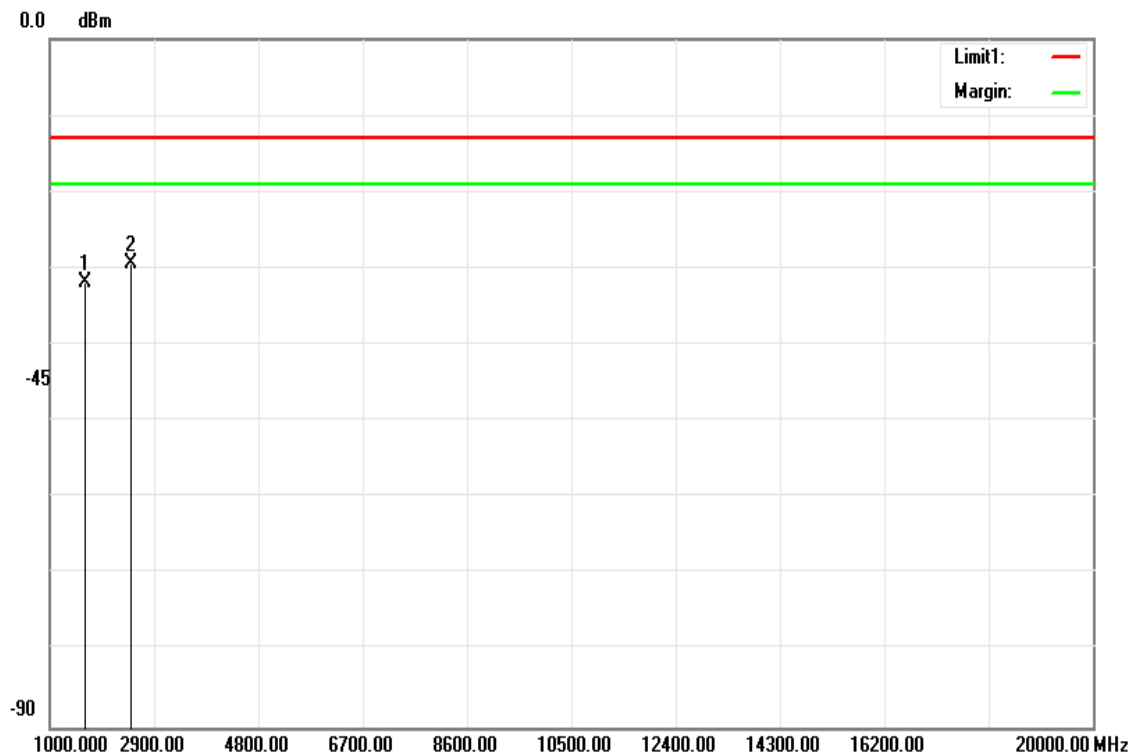
April 12, 2017

Temperature: 22.1°C**Tested by:**

Timmy Wang

Humidity: 50% RH**Polarity:**

Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1651.000	-33.4	1.52	-31.88	-13.00	-18.88	V
2477.000	-31.3	1.83	-29.47	-13.00	-16.47	V
N/A						

Remark:

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

Operation Mode: Tx / Low CH

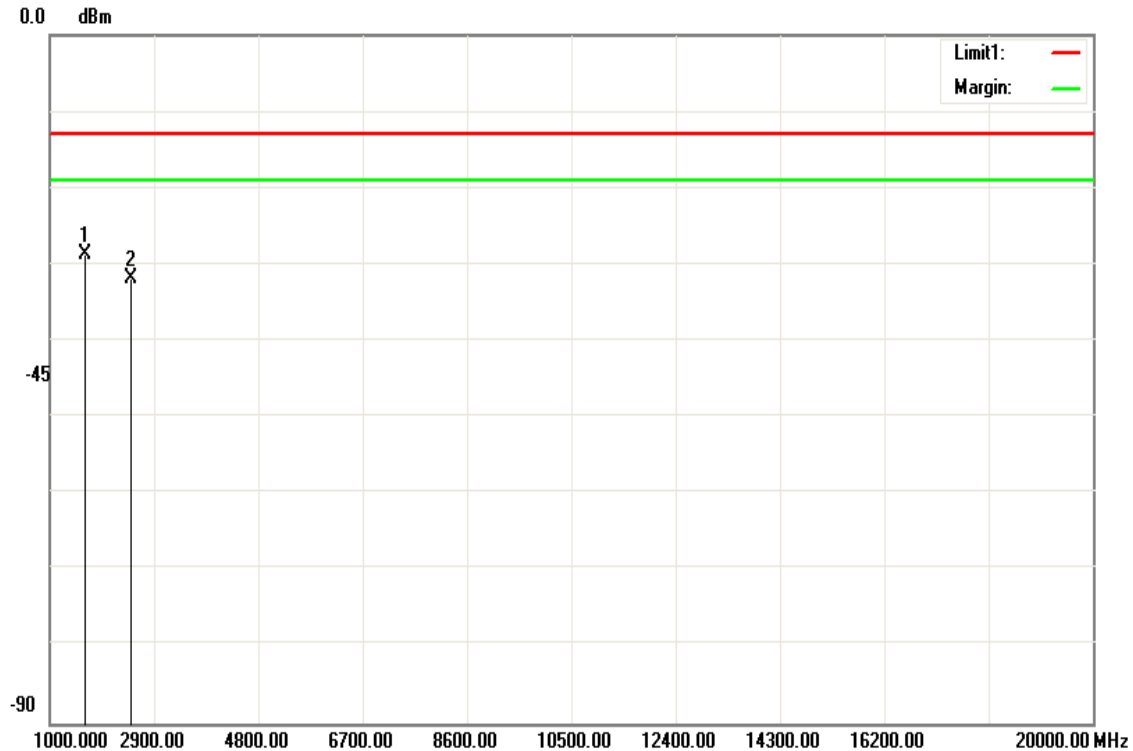
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1651.000	-30.14	1.52	-28.62	-13.00	-15.62	H
2477.000	-33.73	1.83	-31.90	-13.00	-18.90	H
N/A						

Remark:

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

Operation Mode: Tx / Mid CH

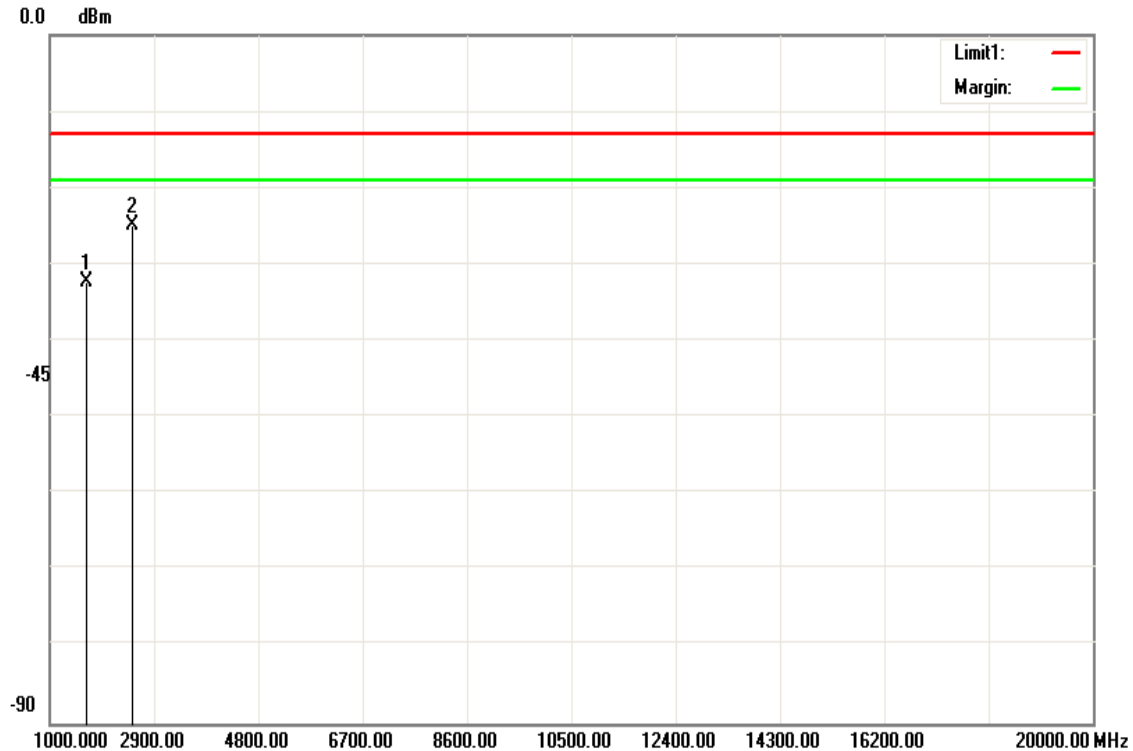
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1665.000	-33.75	1.52	-32.23	-13.00	-19.23	V
2498.000	-26.65	1.85	-24.80	-13.00	-11.80	V
N/A						

Remark:

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

Operation Mode: Tx / Mid CH

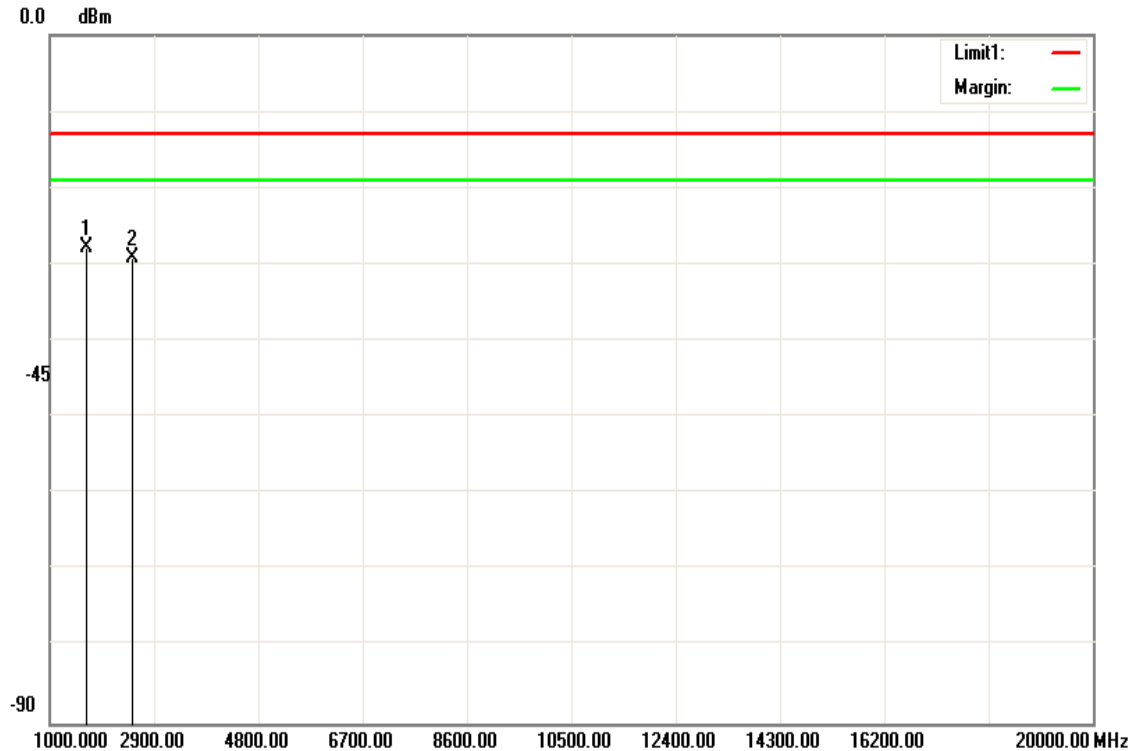
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1665.000	-29.36	1.52	-27.84	-13.00	-14.84	H
2498.000	-31.07	1.85	-29.22	-13.00	-16.22	H
N/A						

Remark:

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

Operation Mode: Tx / High CH

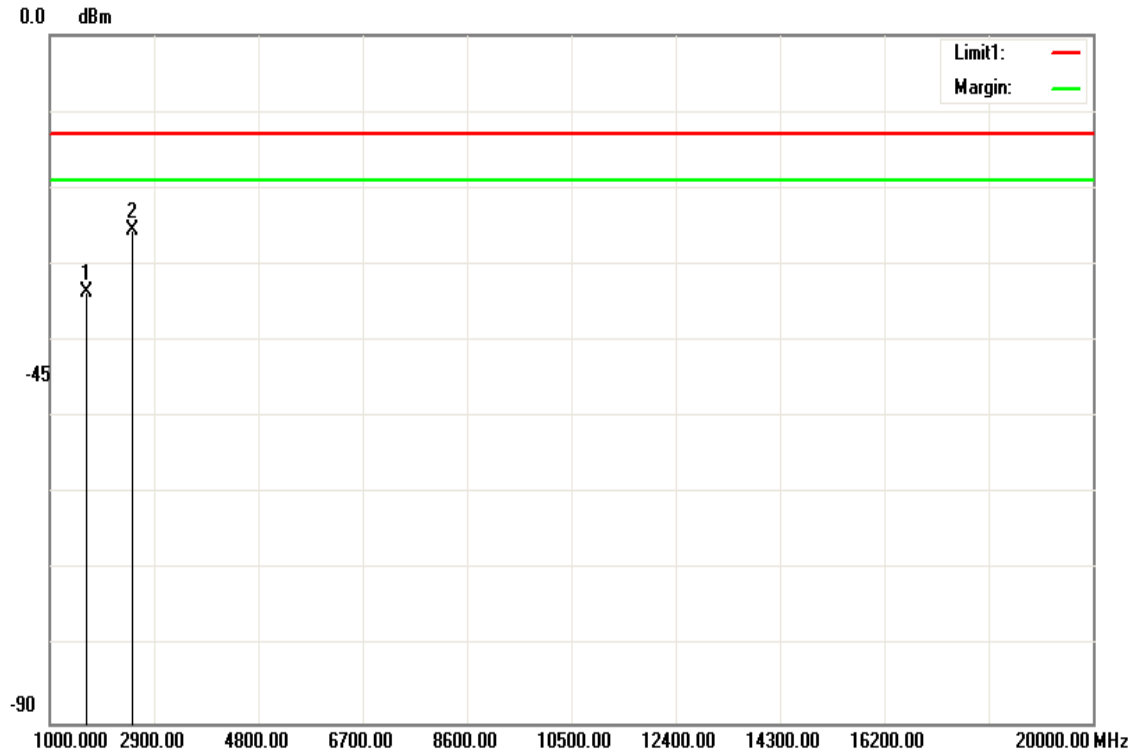
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1679.000	-35.18	1.52	-33.66	-13.00	-20.66	V
2519.000	-27.67	2.21	-25.46	-13.00	-12.46	V
N/A						

Remark:

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

Operation Mode: Tx / High CH

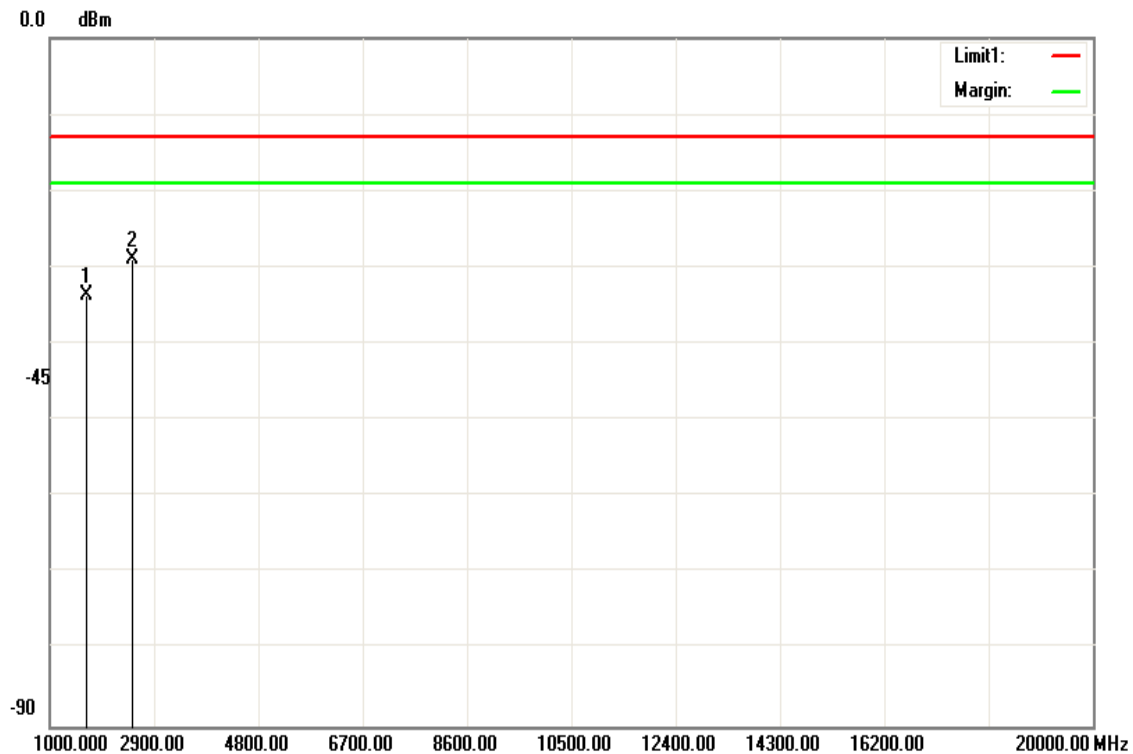
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

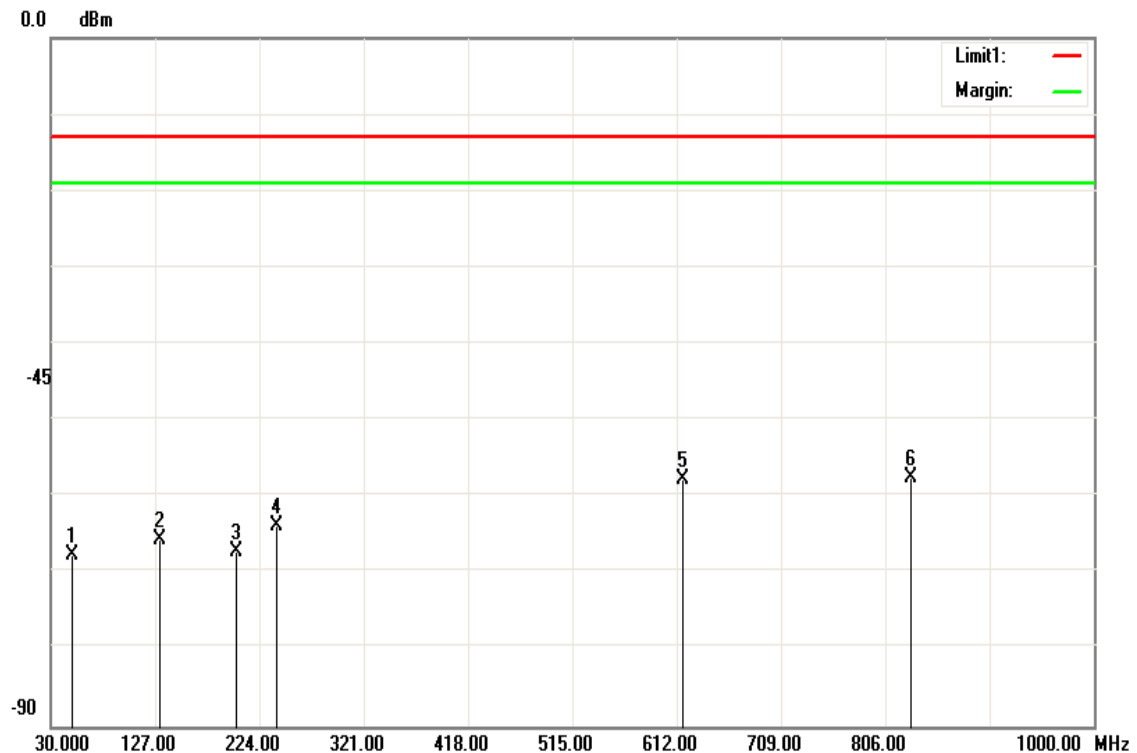
Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
1679.000	-35.06	1.52	-33.54	-13.00	-20.54	H
2519.000	-31.04	2.21	-28.83	-13.00	-15.83	H
N/A						

Remark:

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

Test Results**Below 1GHz****LTE Band 2 / BW: 20MHz / QPSK / RB =1, RB Offset = 0****Operation Mode:** Tx / Mid CH**Test Date:** April 12, 2017**Temperature:** 22.1°C**Tested by:** Timmy Wang**Humidity:** 50% RH**Polarity:** Ver.

Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
49.4000	-64.95	-2.56	-67.51	-13.00	-54.51	V
131.8500	-66.62	1.08	-65.54	-13.00	-52.54	V
202.6600	-71.5	4.28	-67.22	-13.00	-54.22	V
240.4900	-70.56	6.77	-63.79	-13.00	-50.79	V
617.8200	-57.08	-0.56	-57.64	-13.00	-44.64	V
830.2500	-58.67	1.22	-57.45	-13.00	-44.45	V

Operation Mode: Tx / Mid CH

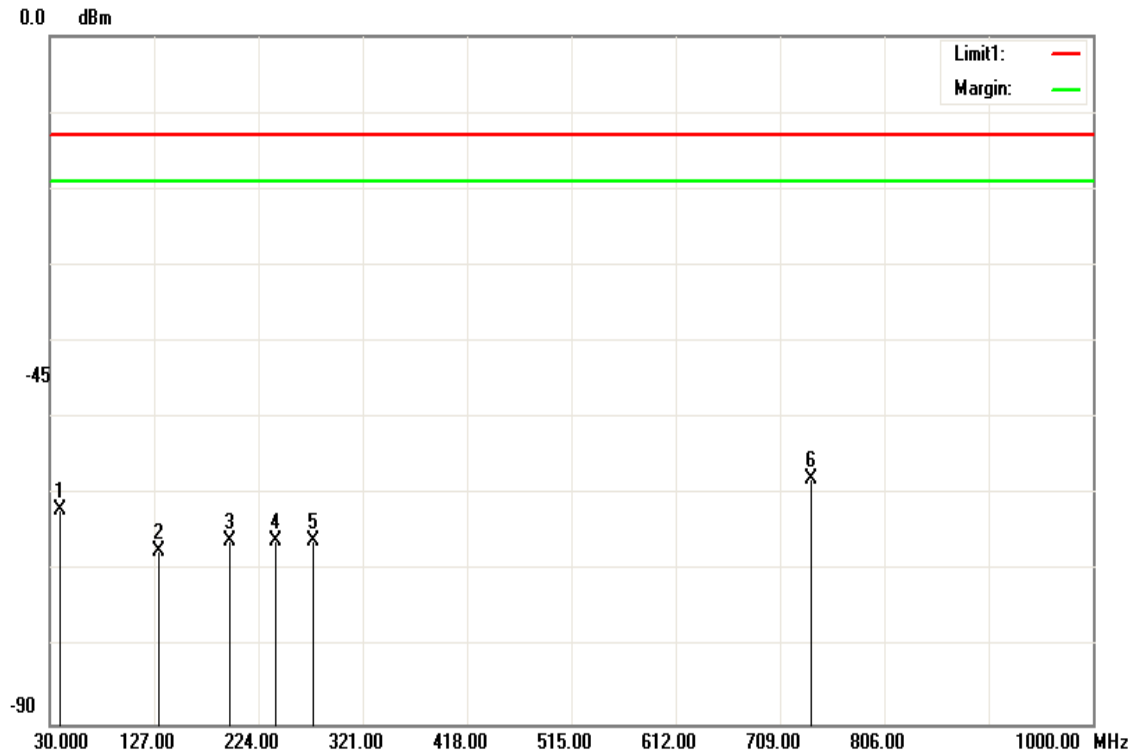
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
39.7000	-56.05	-5.91	-61.96	-13.00	-48.96	H
130.8800	-68.43	1.06	-67.37	-13.00	-54.37	H
196.8400	-70.06	4.1	-65.96	-13.00	-52.96	H
240.4900	-72.77	6.77	-66.00	-13.00	-53.00	H
275.4100	-73.25	7.15	-66.10	-13.00	-53.10	H
738.1000	-59.6	1.76	-57.84	-13.00	-44.84	H

LTE Band 2 / BW: 20MHz / 16QAM / RB =1, RB Offset = 0

Operation Mode: Tx / Mid CH

Test Date:

April 12, 2017

Temperature: 22.1°C

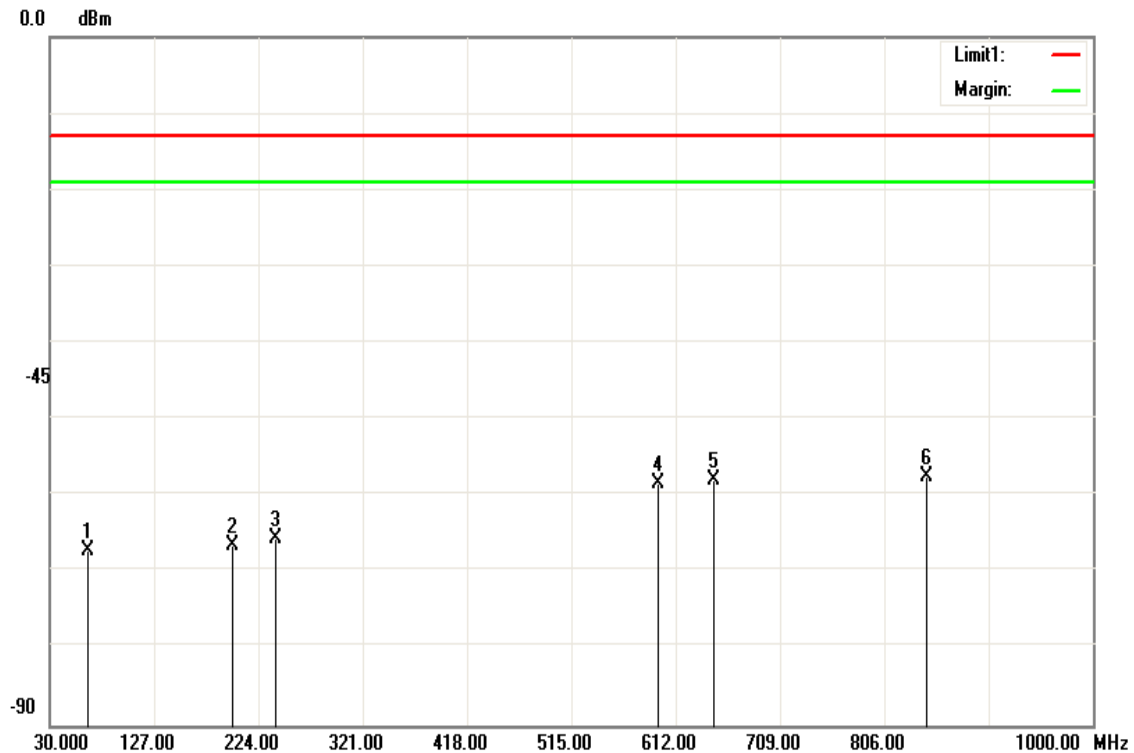
Tested by:

Timmy Wang

Humidity: 50% RH

Polarity:

Ver.



Frequency (MHz)	S.G. (dBm)	Ant. Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
65.8900	-67.06	-0.12	-67.18	-13.00	-54.18	V
199.7500	-70.65	4.1	-66.55	-13.00	-53.55	V
240.4900	-72.25	6.77	-65.48	-13.00	-52.48	V
595.5100	-57.64	-0.82	-58.46	-13.00	-45.46	V
647.8900	-59.21	1.17	-58.04	-13.00	-45.04	V
844.8000	-58.57	1.18	-57.39	-13.00	-44.39	V

Operation Mode: Tx / Mid CH

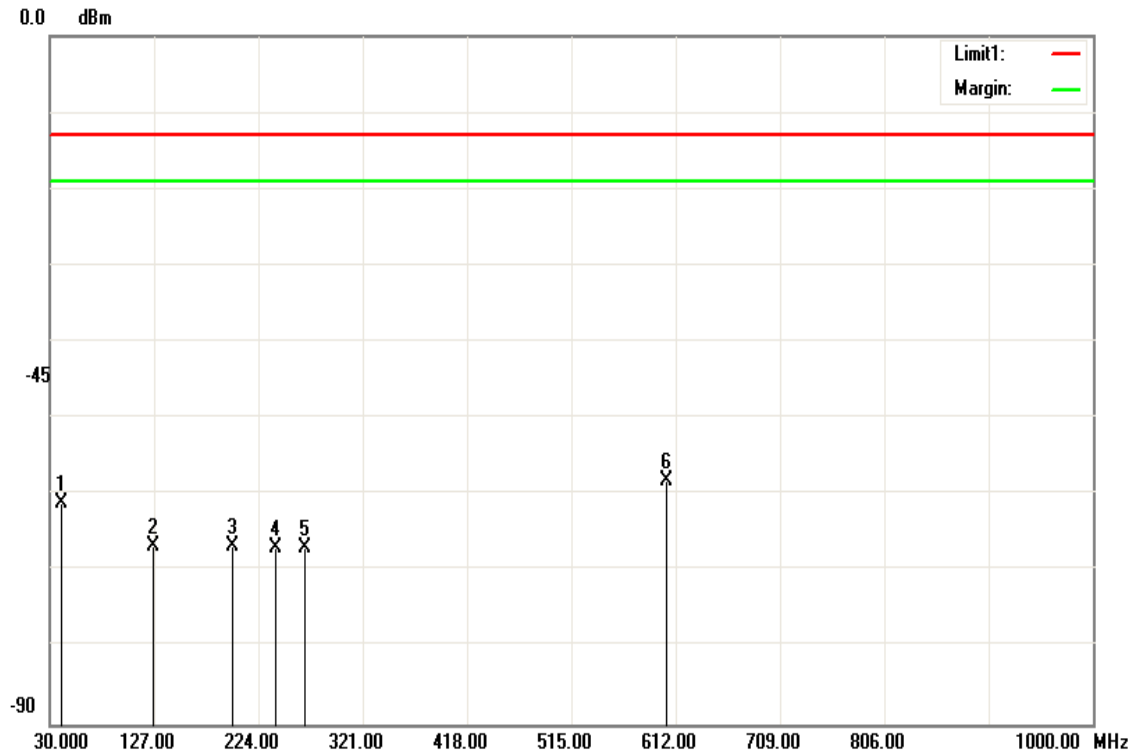
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant. Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
40.6700	-55.39	-5.71	-61.10	-13.00	-48.10	H
126.0300	-67.65	0.99	-66.66	-13.00	-53.66	H
199.7500	-70.79	4.1	-66.69	-13.00	-53.69	H
240.4900	-73.81	6.77	-67.04	-13.00	-54.04	H
266.6800	-74.23	7.23	-67.00	-13.00	-54.00	H
603.2700	-56.74	-1.39	-58.13	-13.00	-45.13	H

Above 1GHz**LTE Band 2 / BW: 20MHz / QPSK RB =1, RB Offset = 0****Operation Mode:** Tx / Low CH**Test Date:**

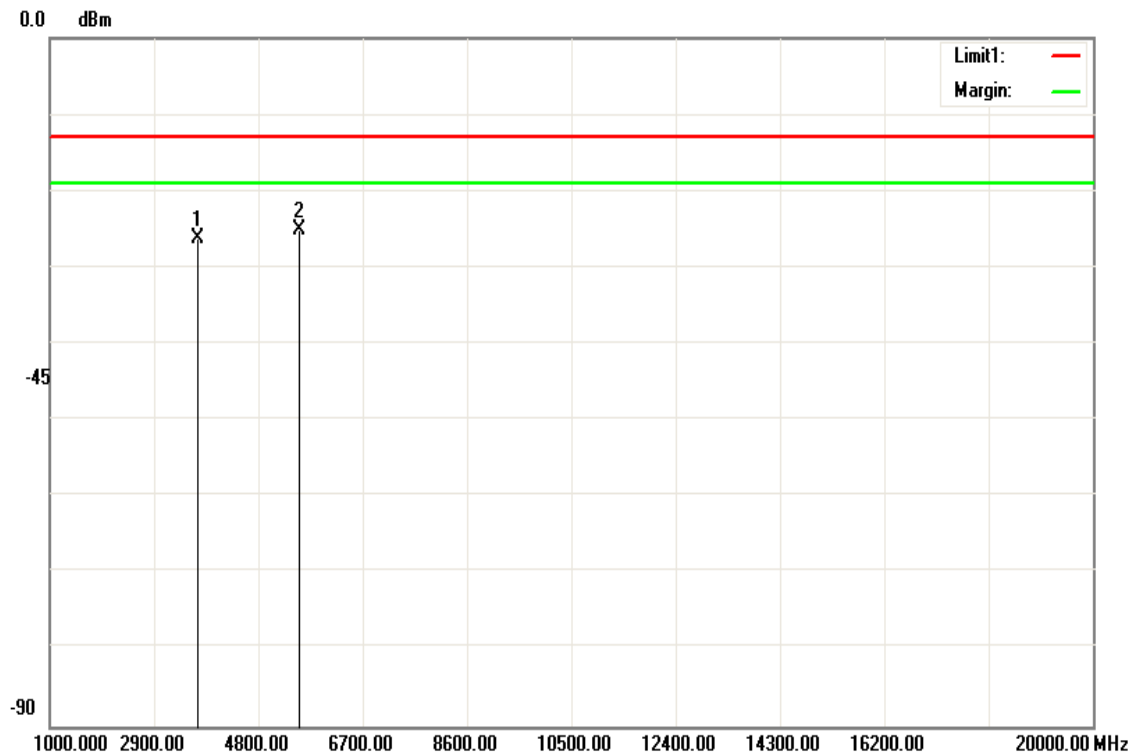
April 12, 2017

Temperature: 22.1°C**Tested by:**

Timmy Wang

Humidity: 50% RH**Polarity:**

Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3702.000	-38.77	12.54	-26.23	-13.00	-13.23	V
5557.000	-37.9	12.88	-25.02	-13.00	-12.02	V
N/A						

Remark:

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

Operation Mode: Tx / Low CH

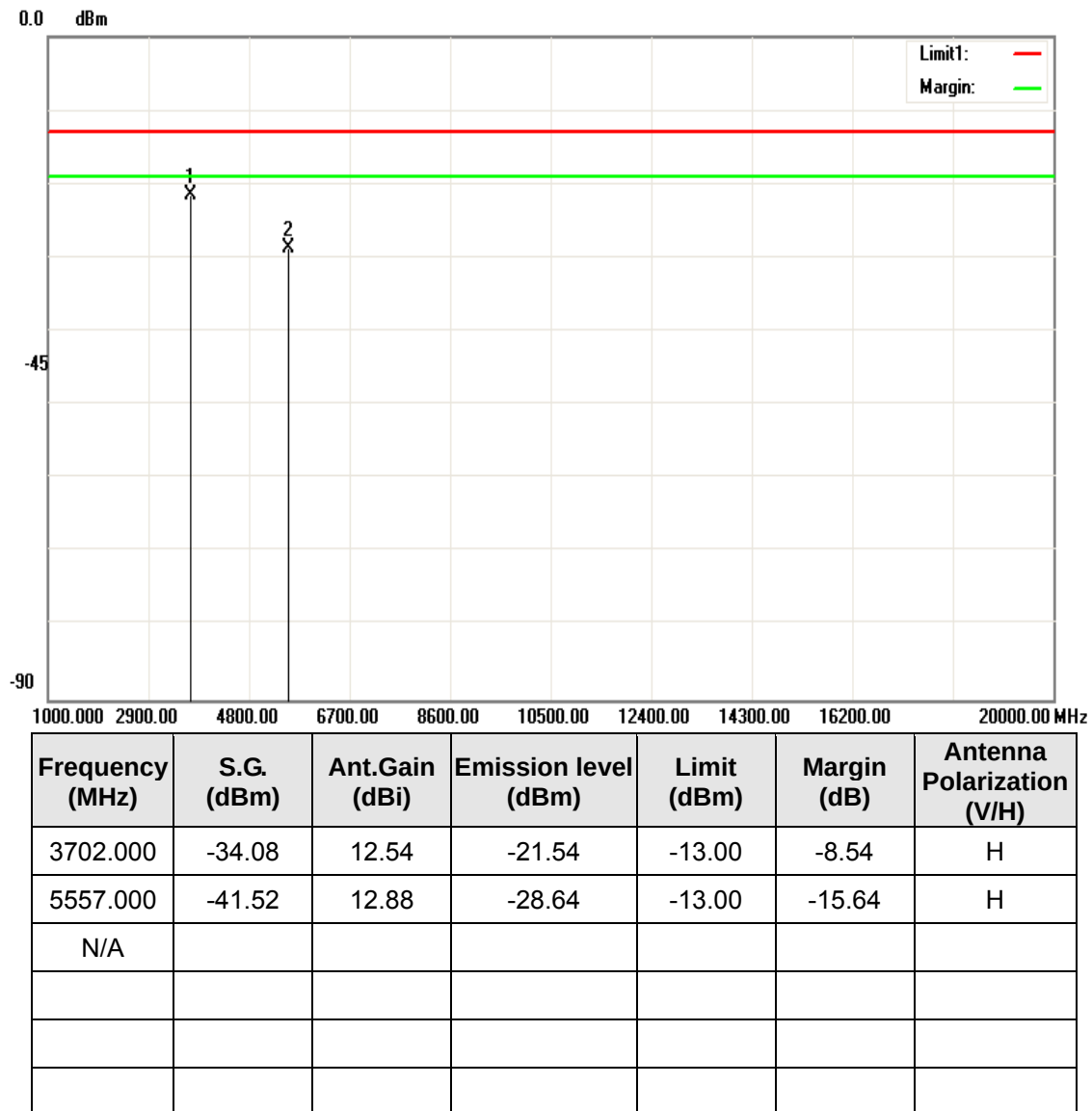
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.

**Remark:**

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

Operation Mode: Tx / Mid CH

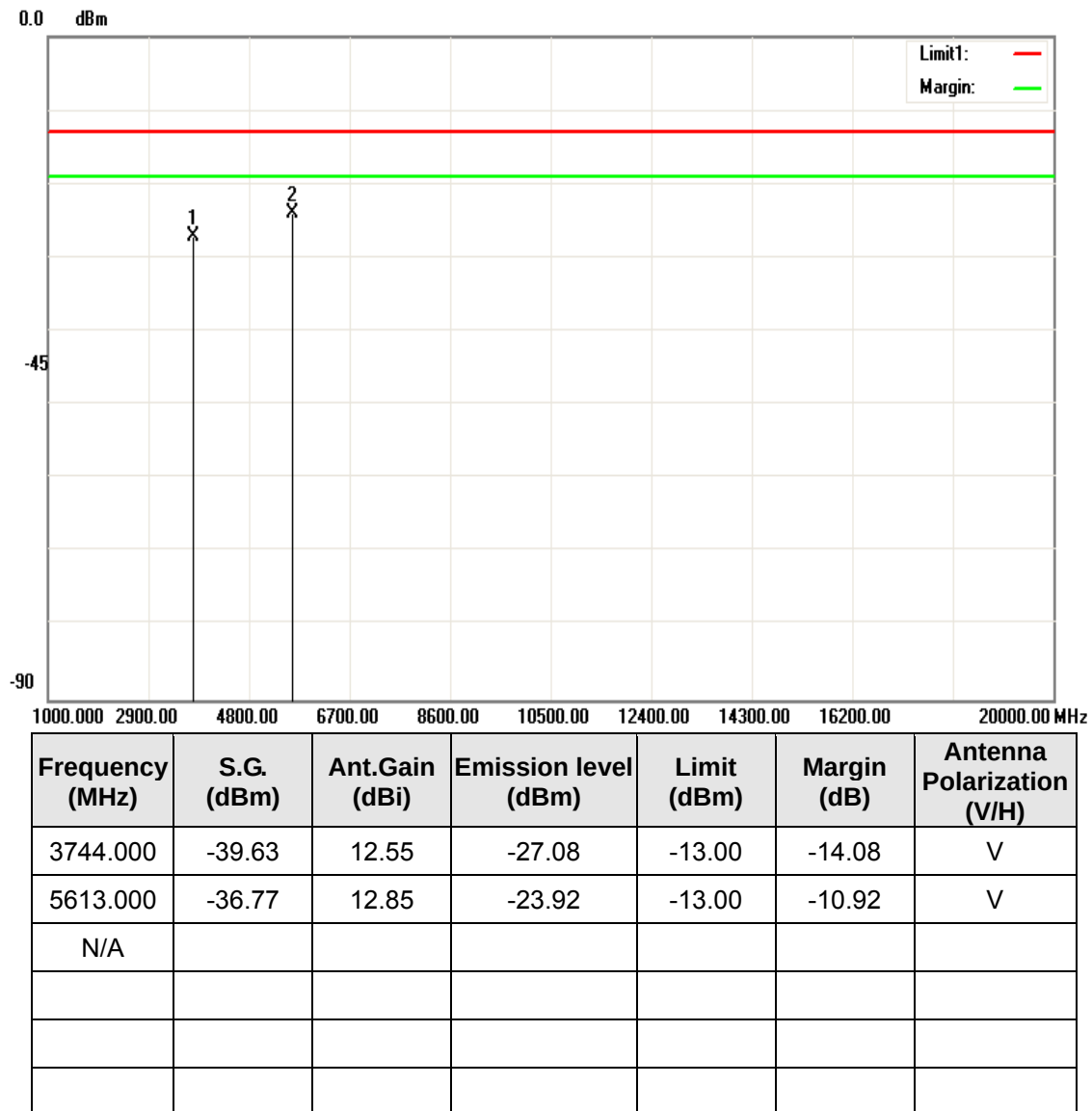
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Ver.

**Remark:**

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

Operation Mode: Tx / Mid CH

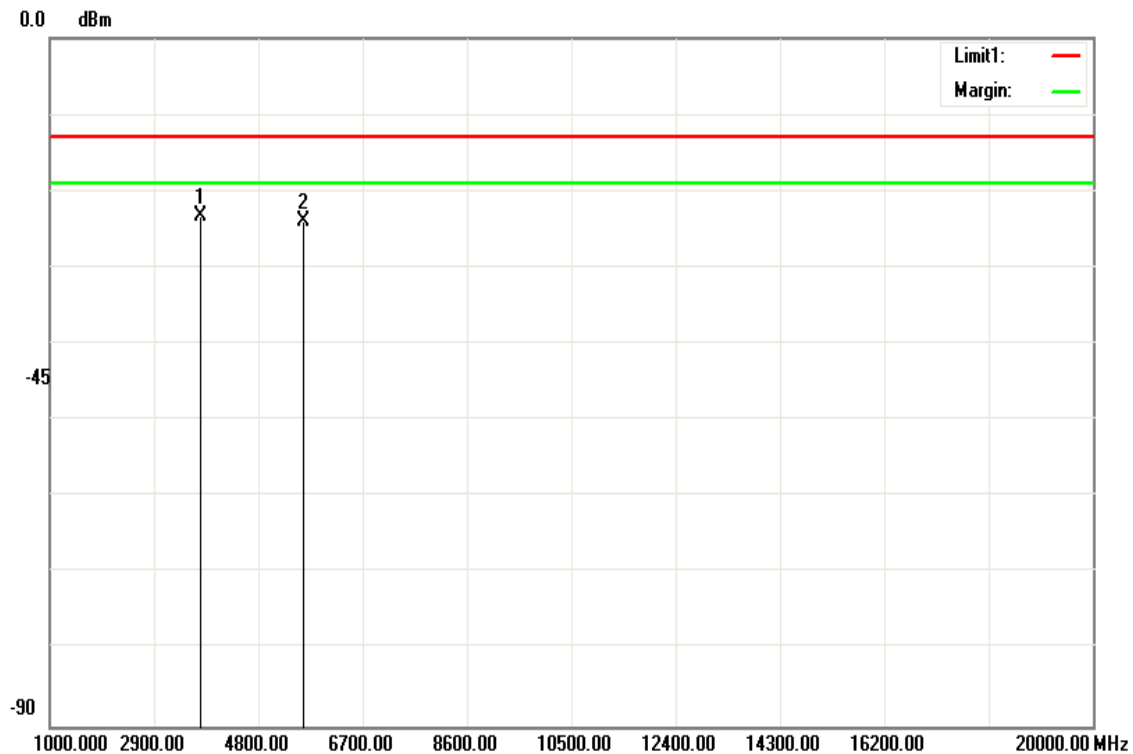
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3744.000	-35.93	12.55	-23.38	-13.00	-10.38	H
5613.000	-36.75	12.85	-23.90	-13.00	-10.90	H
N/A						

Remark:

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

Operation Mode: Tx / High CH

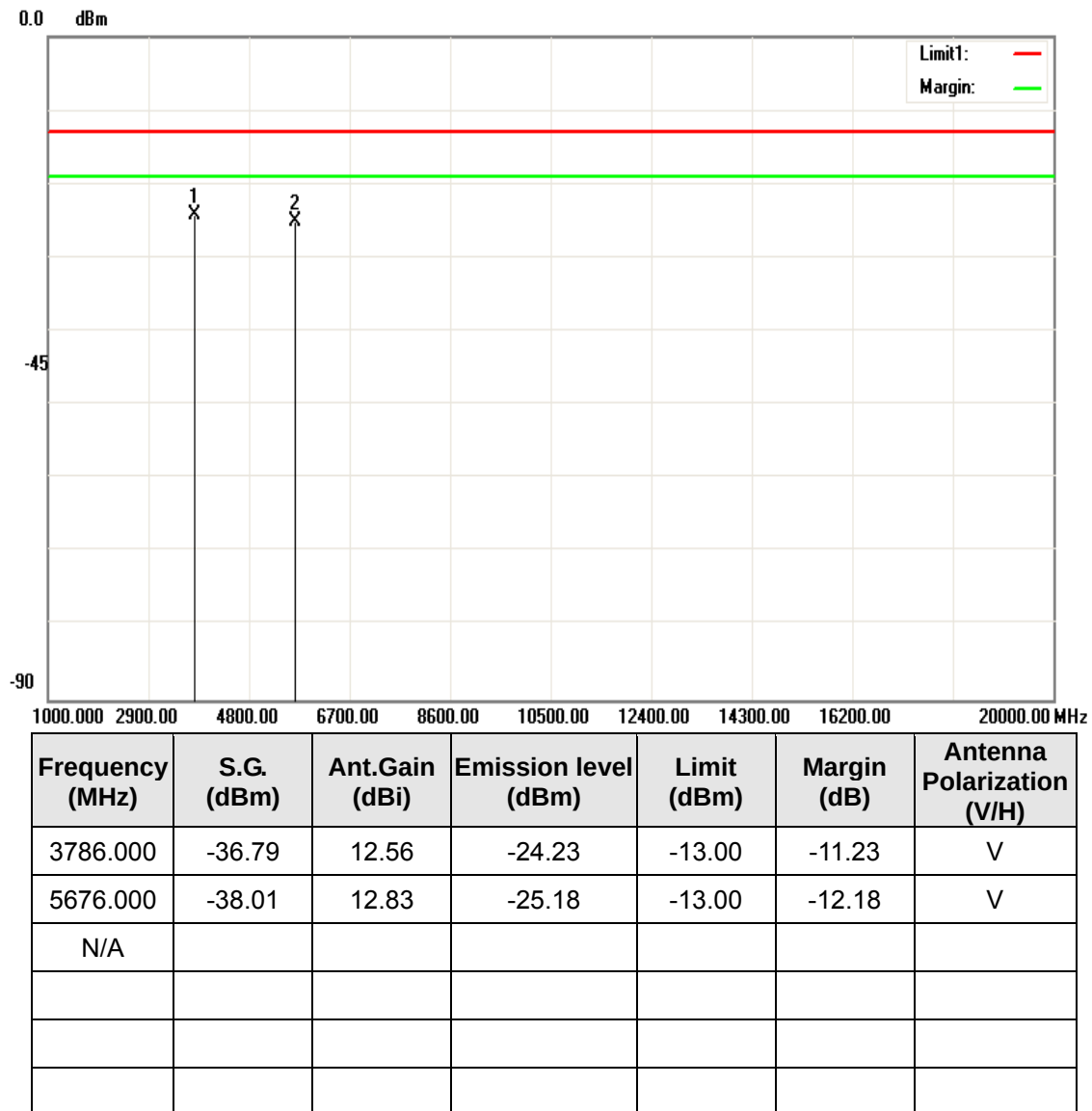
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Ver.

**Remark:**

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

Operation Mode: Tx / High CH

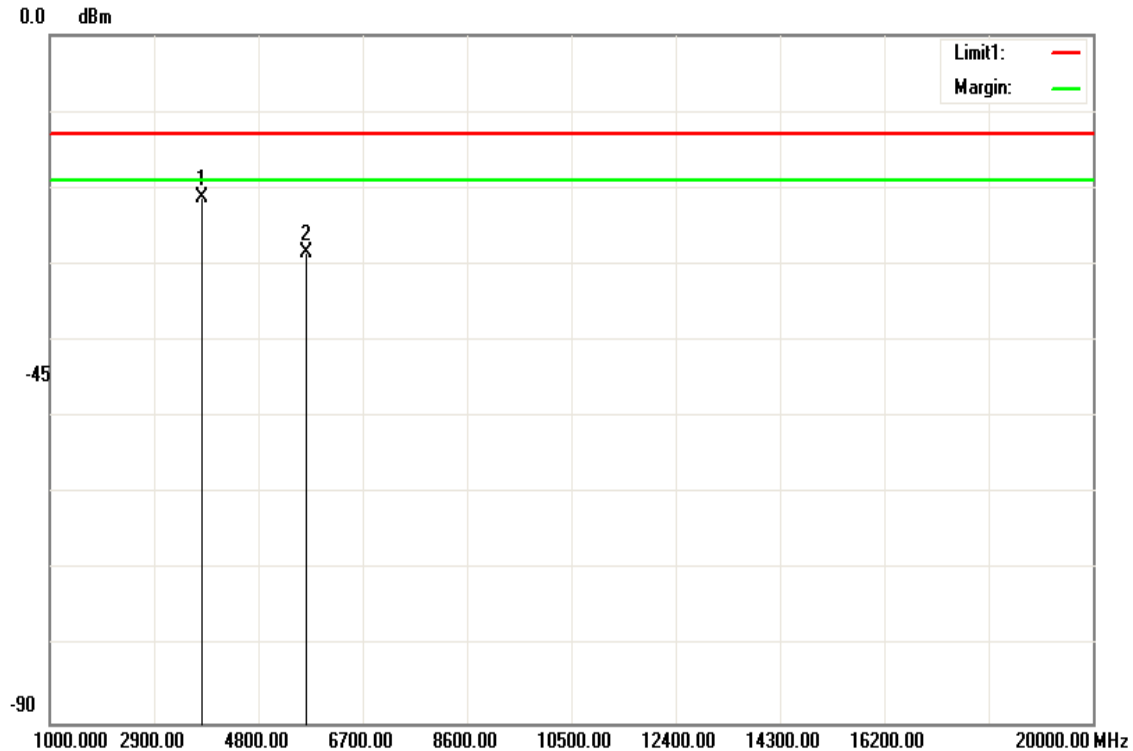
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3786.000	-33.75	12.56	-21.19	-13.00	-8.19	H
5676.000	-41.19	12.83	-28.36	-13.00	-15.36	H
N/A						

Remark:

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

LTE Band 2 / BW: 20MHz / 16QAM / RB =1, RB Offset = 0

Operation Mode: Tx / Low CH

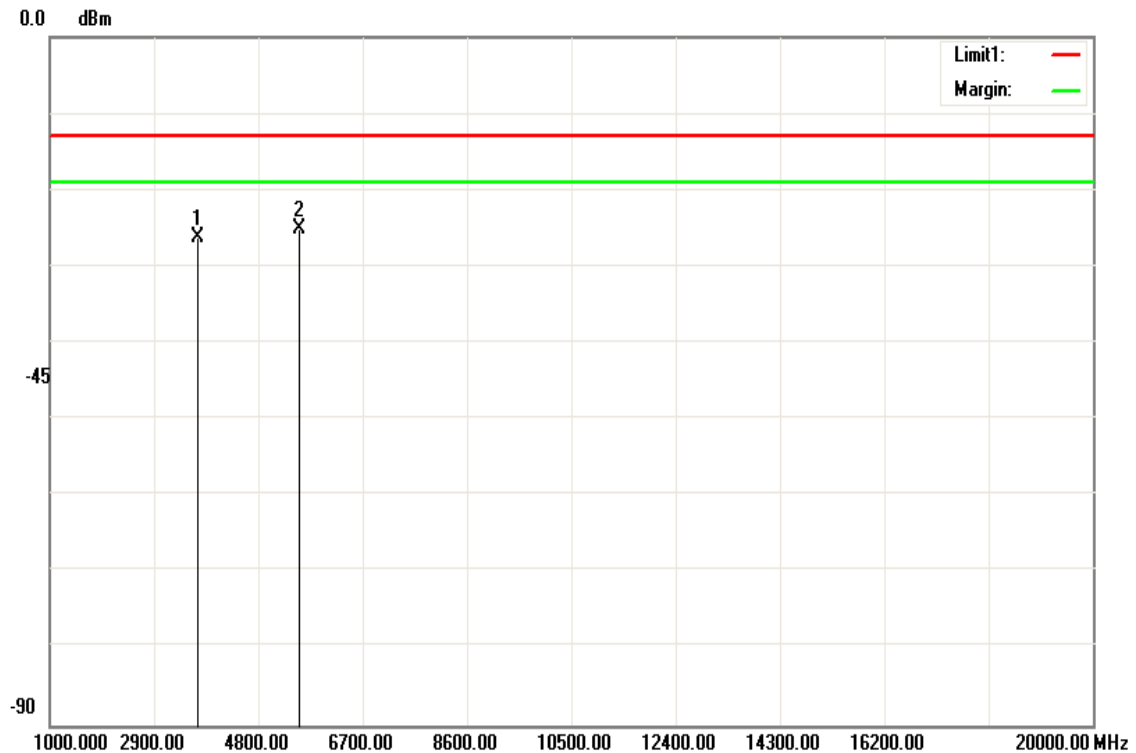
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3702.000	-38.77	12.54	-26.23	-13.00	-13.23	V
5557.000	-37.9	12.88	-25.02	-13.00	-12.02	V
N/A						

Remark:

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

Operation Mode: Tx / Low CH

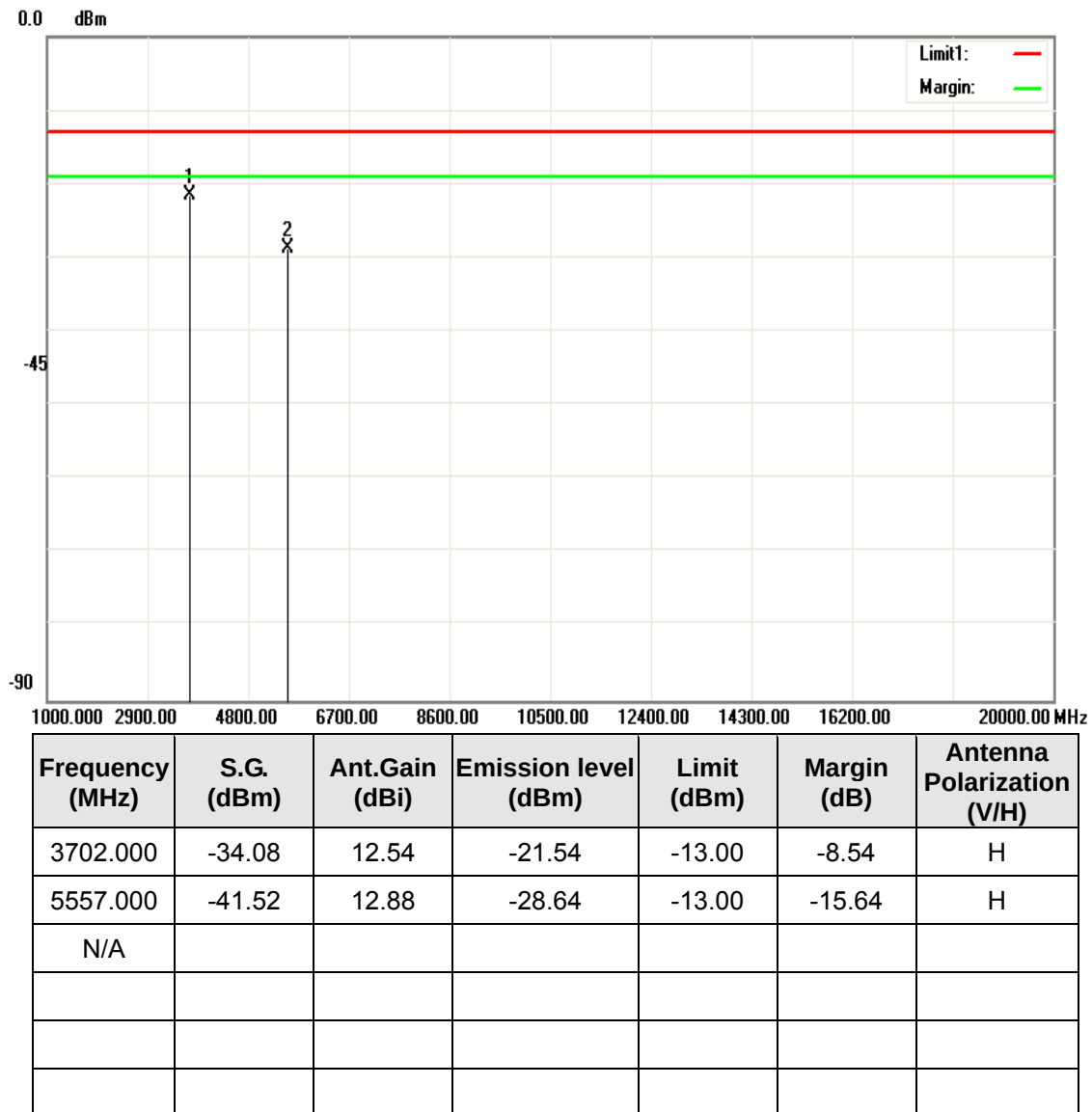
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.

**Remark:**

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

Operation Mode: Tx / Mid CH

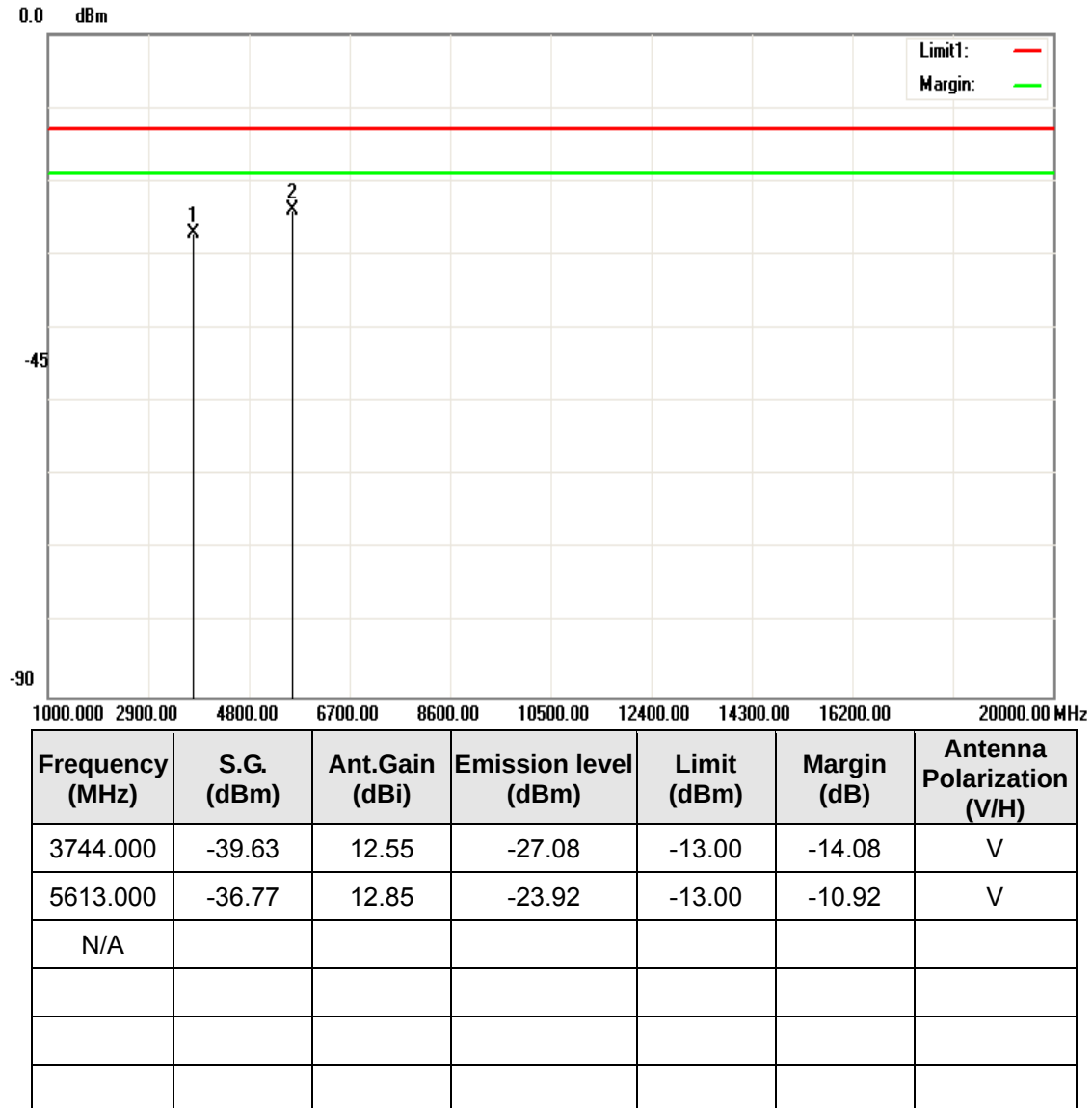
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Ver.

**Remark:**

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

Operation Mode: Tx / Mid CH

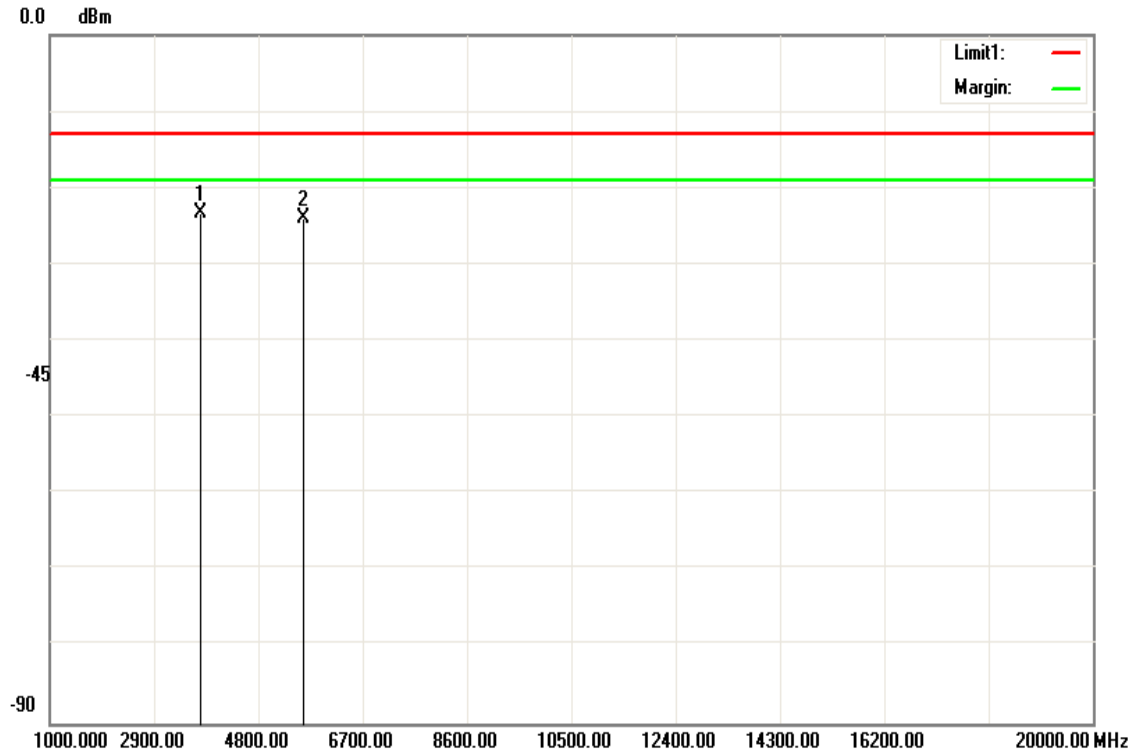
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3744.000	-35.93	12.55	-23.38	-13.00	-10.38	H
5613.000	-36.75	12.85	-23.90	-13.00	-10.90	H
N/A						

Remark:

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

Operation Mode: Tx / High CH

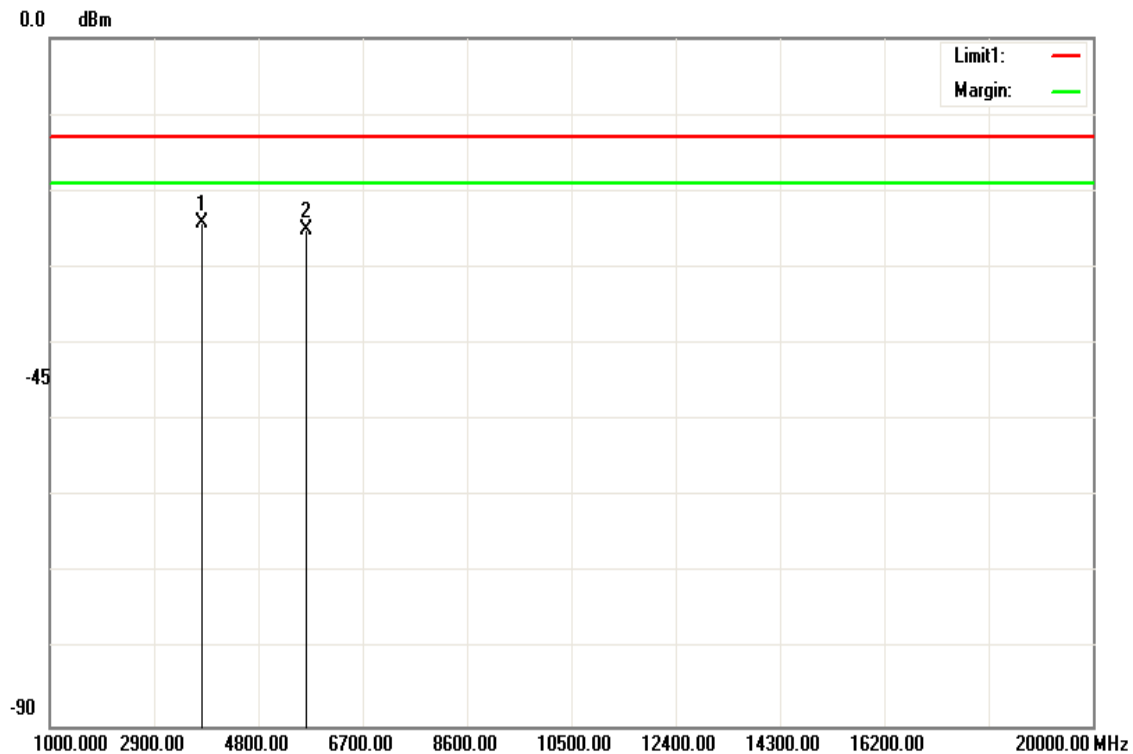
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Ver.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3786.000	-36.79	12.56	-24.23	-13.00	-11.23	V
5676.000	-38.01	12.83	-25.18	-13.00	-12.18	V
N/A						

Remark:

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

Operation Mode: Tx / High CH

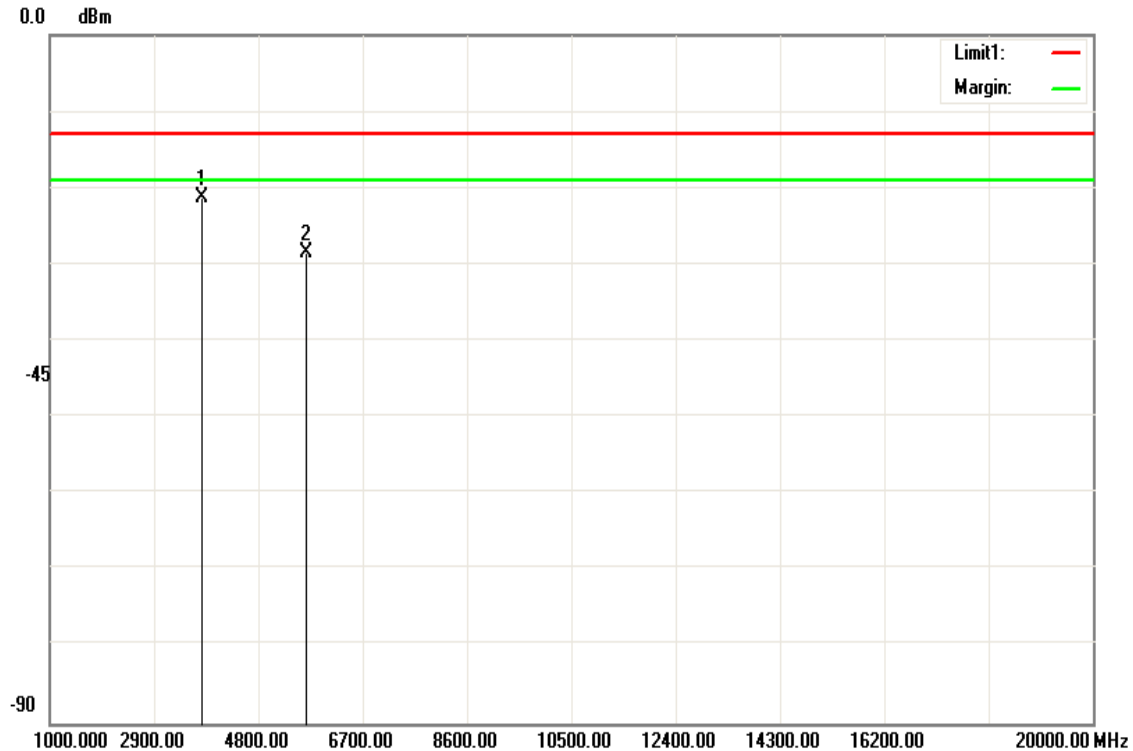
Test Date: April 12, 2017

Temperature: 22.1°C

Tested by: Timmy Wang

Humidity: 50% RH

Polarity: Hor.



Frequency (MHz)	S.G. (dBm)	Ant.Gain (dBi)	Emission level (dBm)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
3786.000	-33.75	12.56	-21.19	-13.00	-8.19	H
5676.000	-41.19	12.83	-28.36	-13.00	-15.36	H
N/A						

Remark:

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