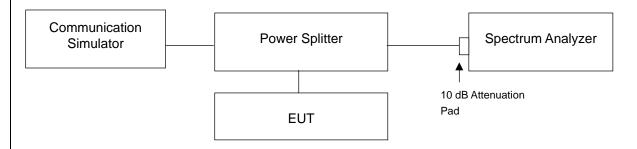


4.7 Conducted Spurious Emissions

4.7.1 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 -13 dBm.

4.7.2 Test Setup

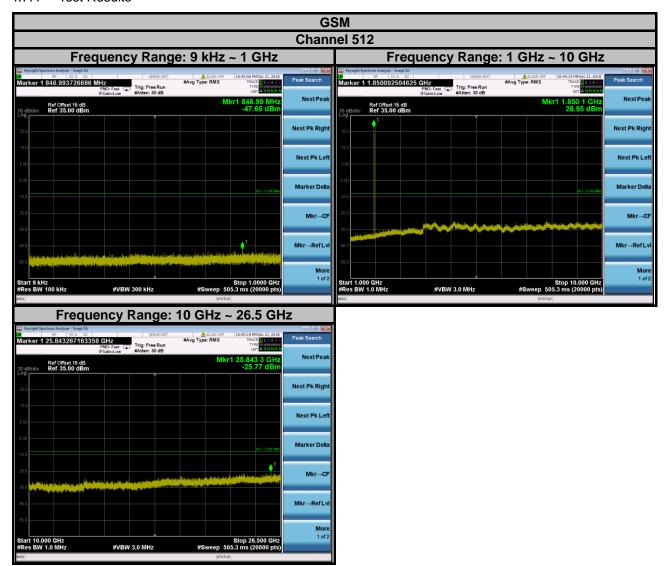


4.7.3 Test Procedure

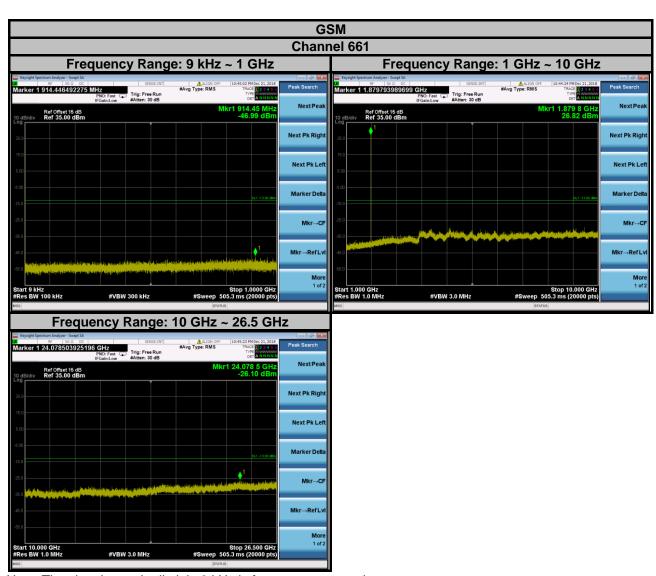
- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- b. Measuring frequency range is from 9 kHz to 1 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 100 kHz and VBW = 300 kHz is used for conducted emission measurement.
- c. Measuring frequency range is from 1 GHz to 26.5 GHz / 27 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.



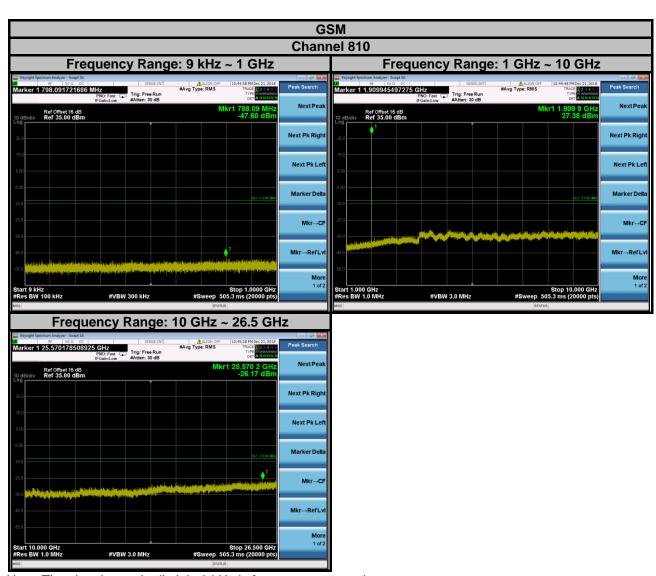
4.7.4 Test Results



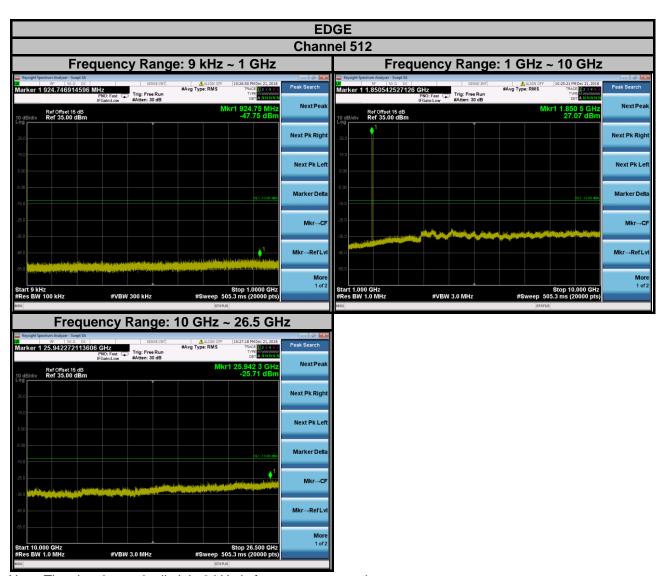




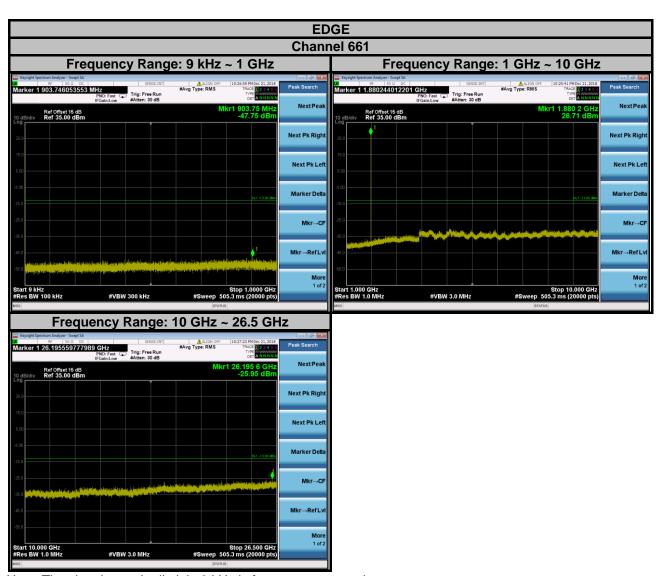




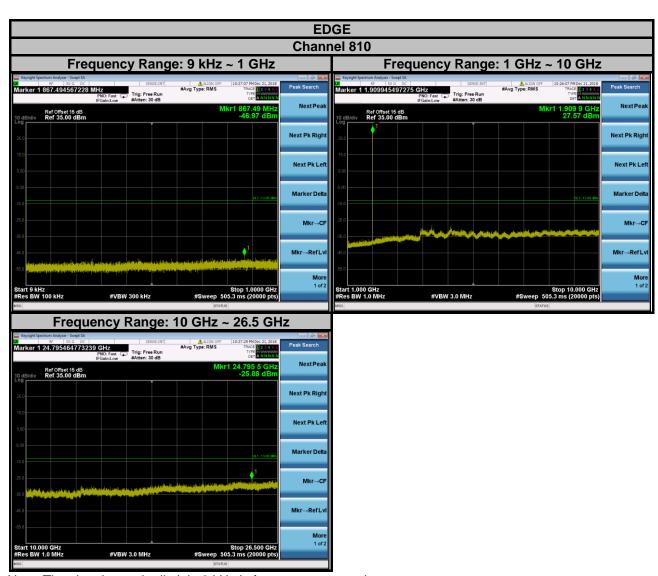




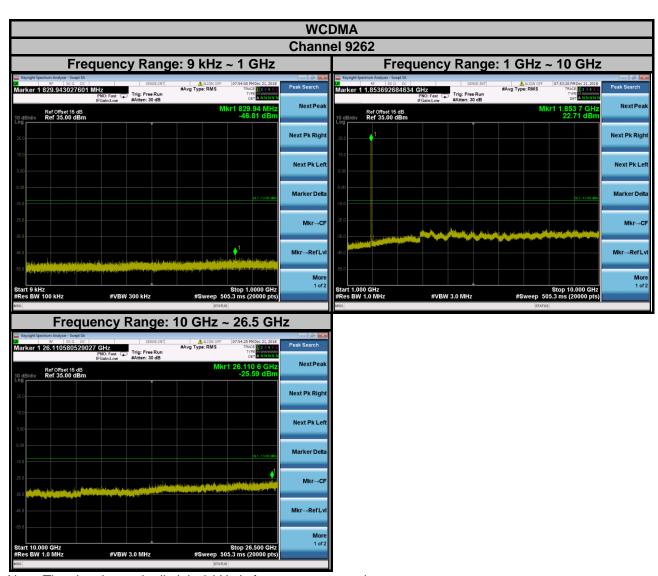




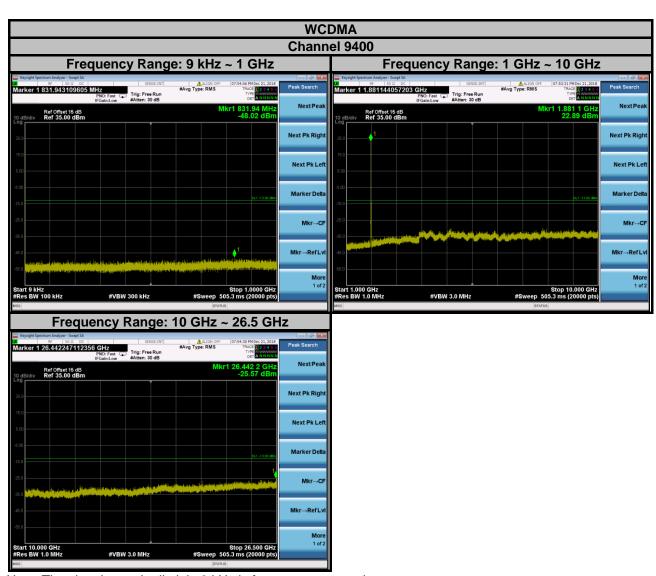




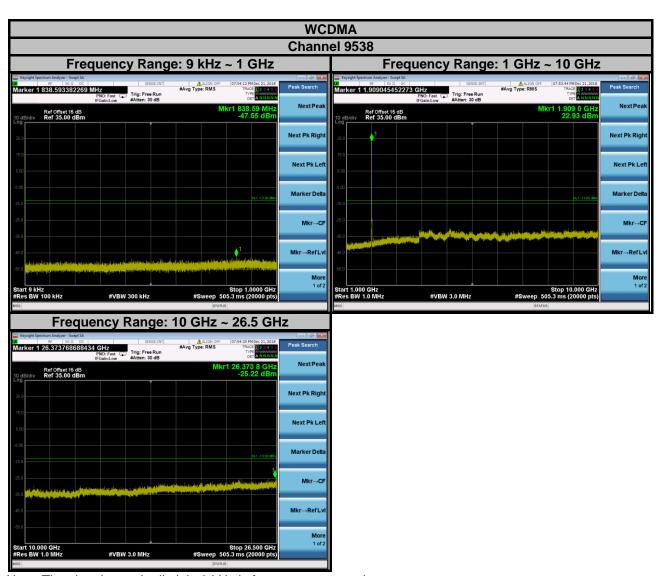




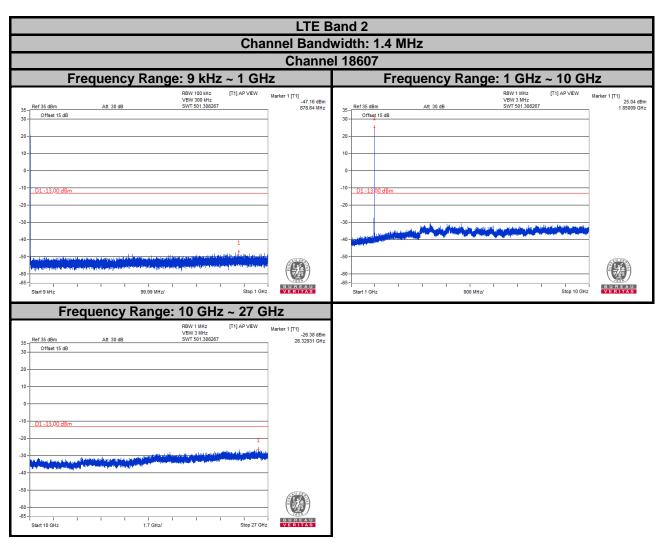




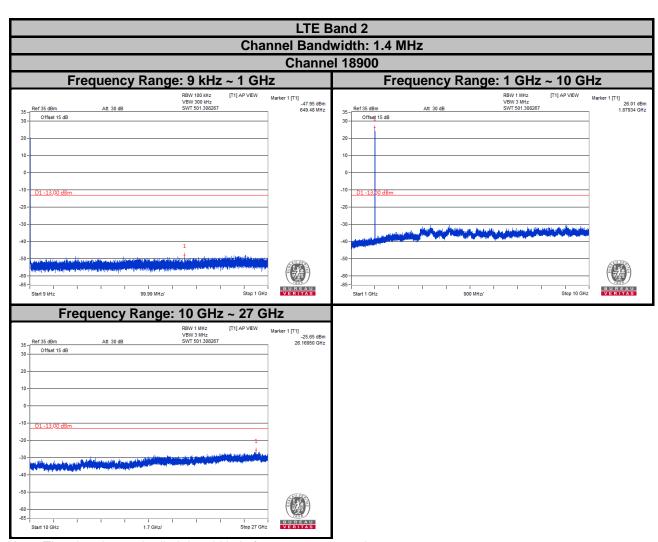




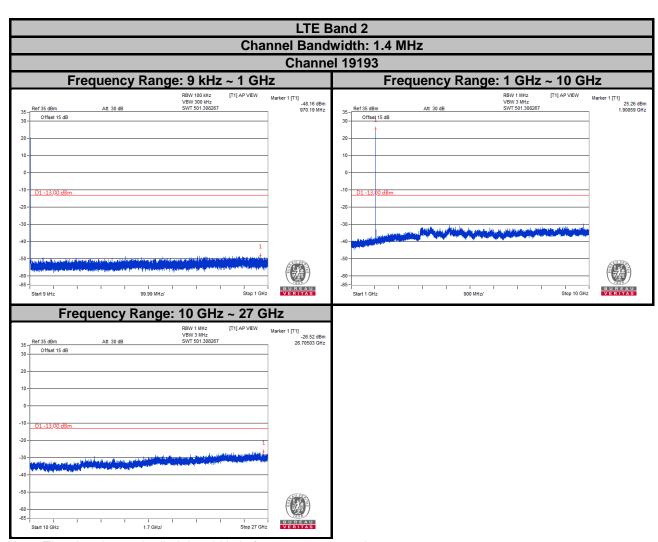




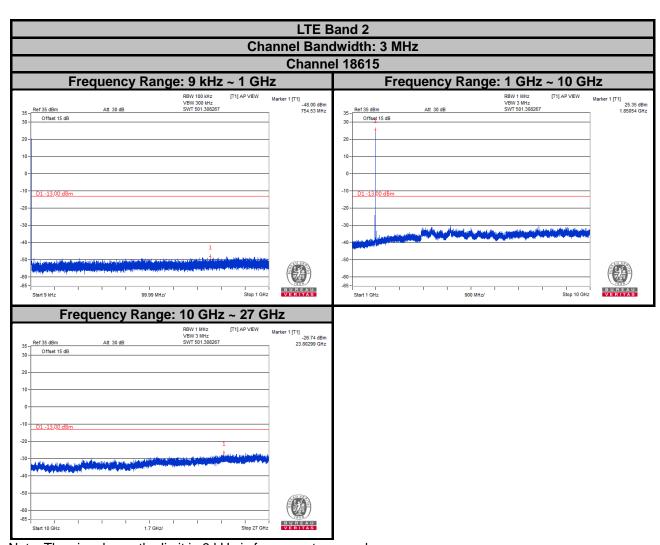




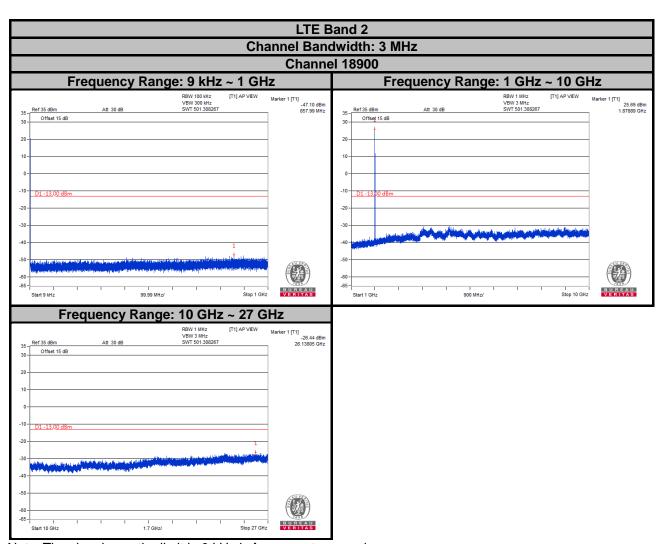




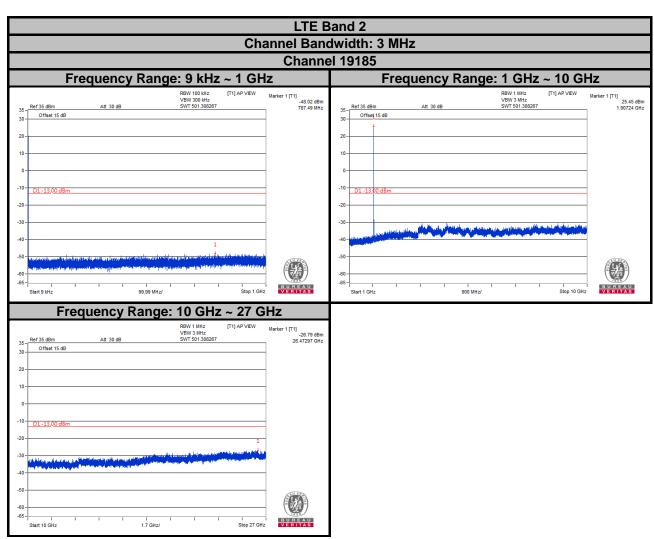




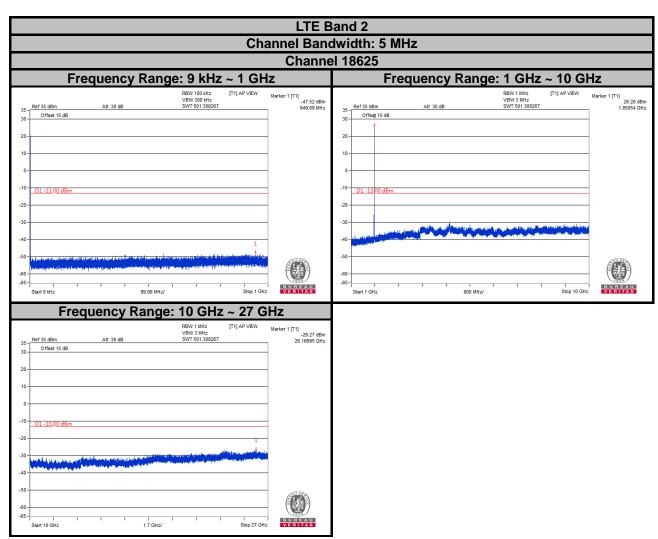




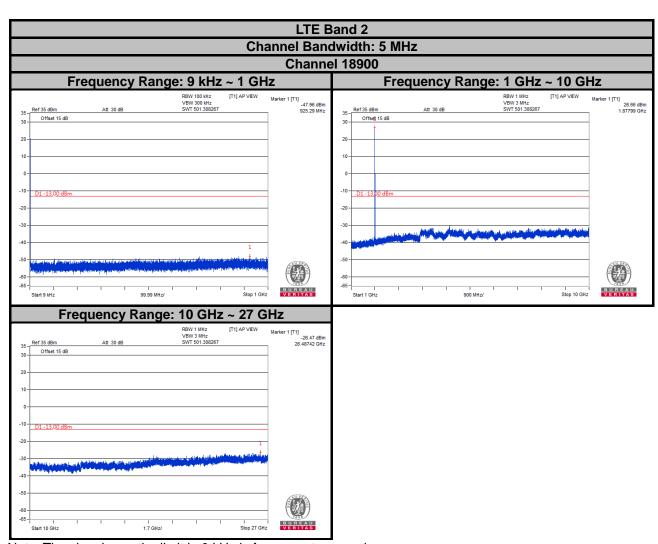




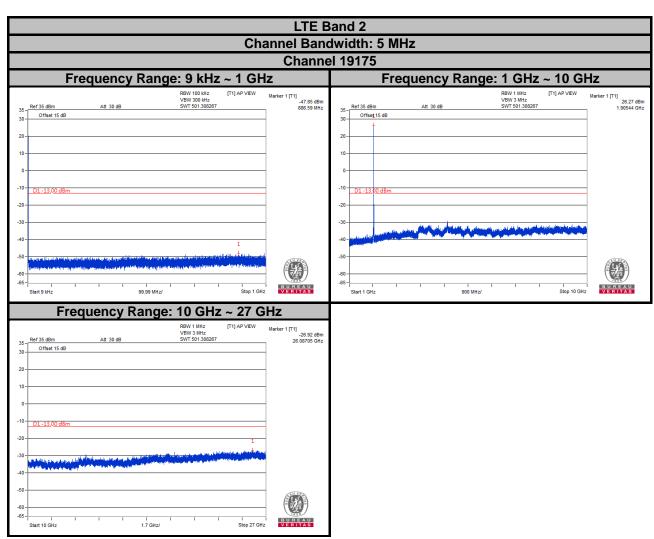




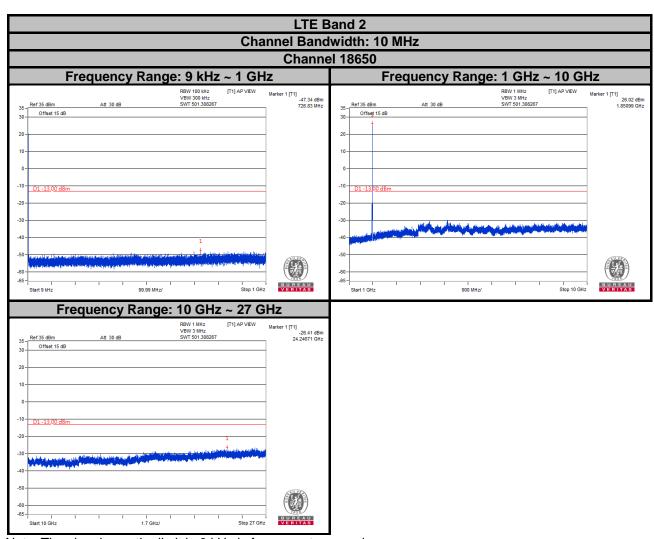




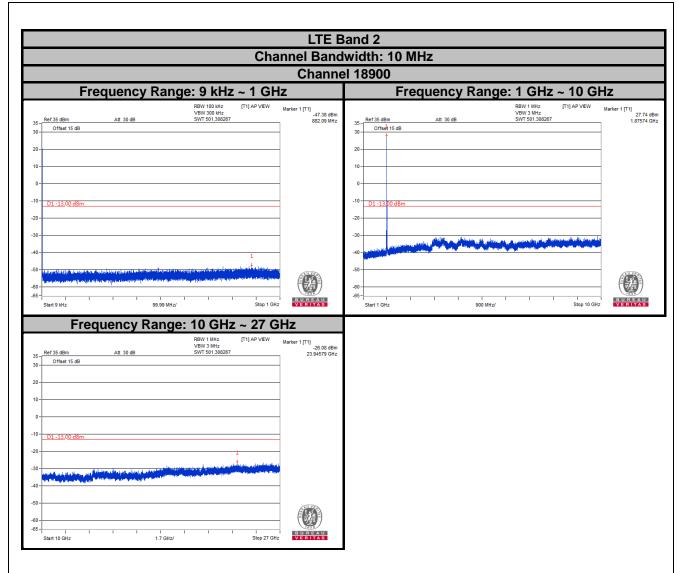




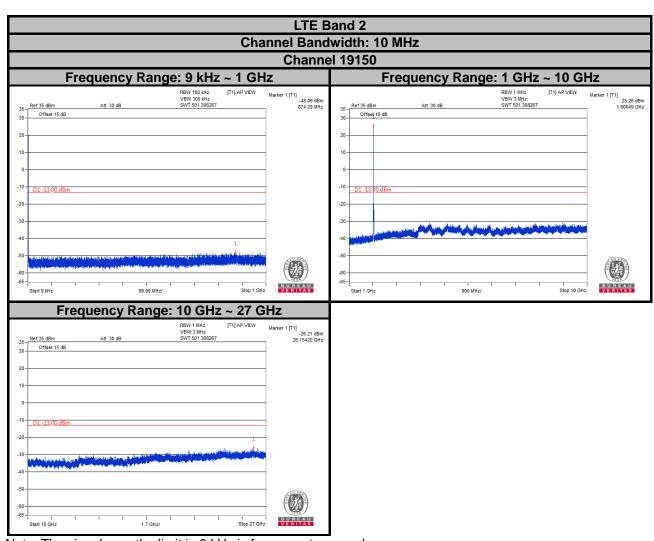




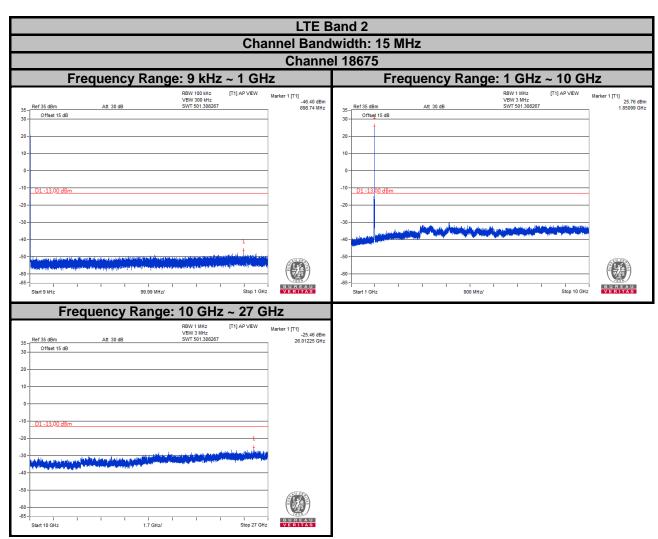




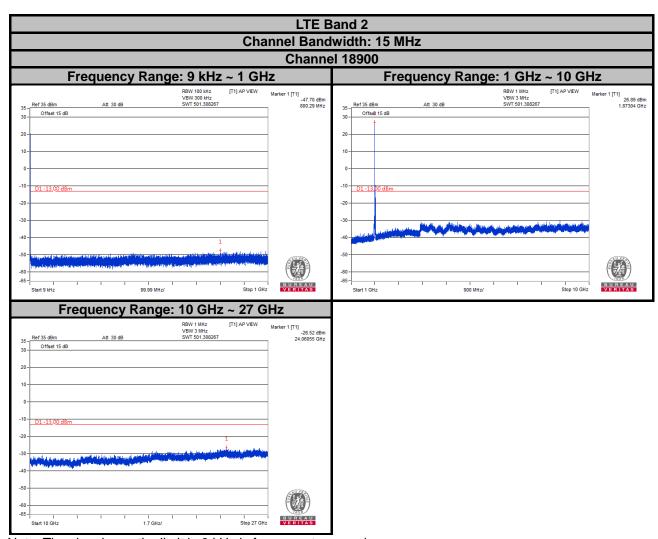




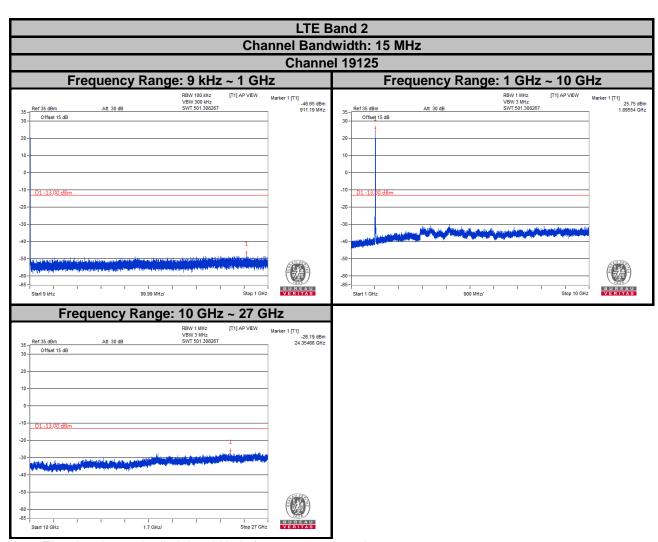




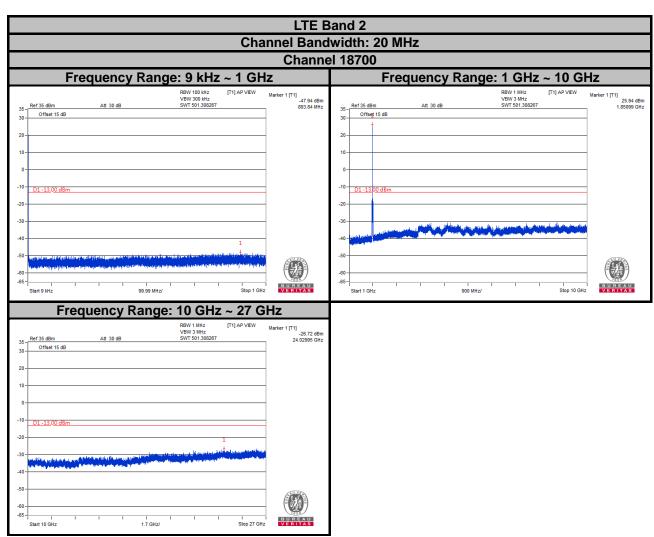




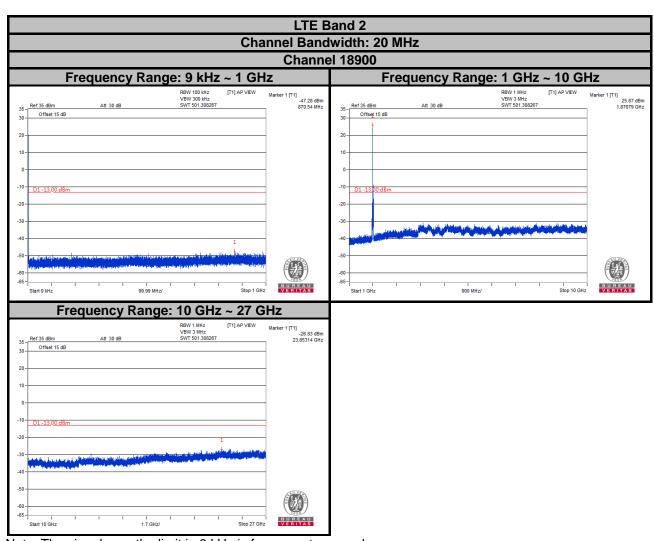




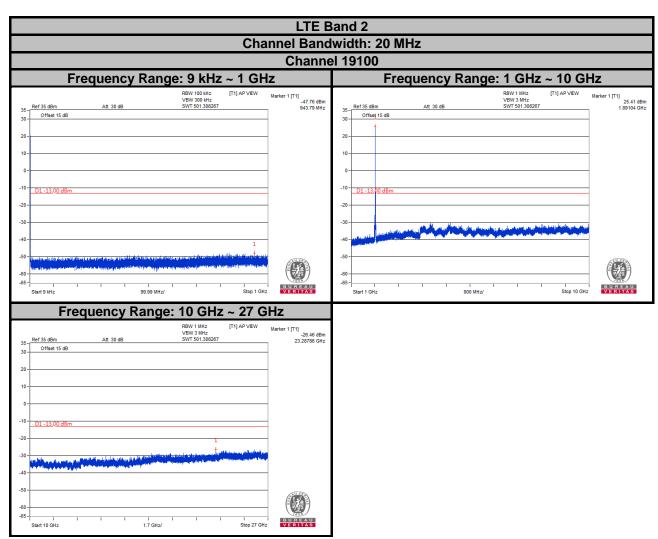














4.8 Radiated Emission Measurement

4.8.1 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 is equal to -13 dBm.

4.8.2 Test Procedure

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) 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 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- c. EIRP = Output power level of S.G TX cable loss + Antenna gain of substitution horn.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power 2.15 dB.

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

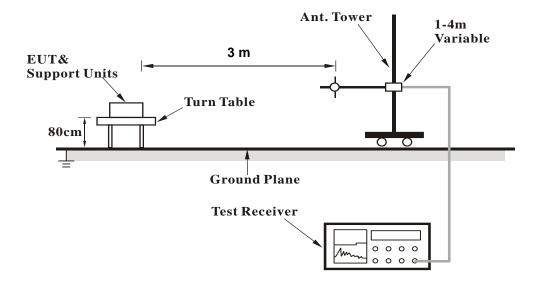
4.8.3 Deviation from Test Standard

No deviation.

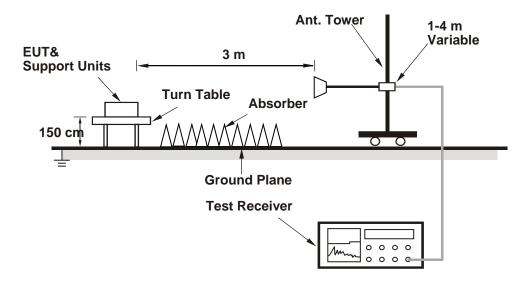


4.8.4 Test Setup

<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).



4.8.5 Test Results

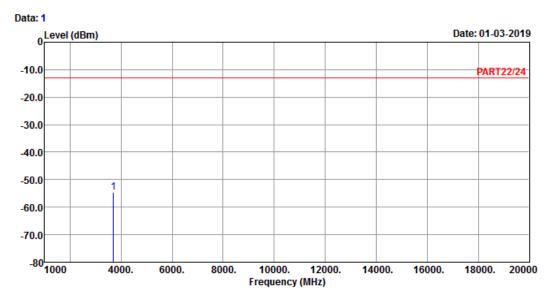
GSM:

Low Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan



A D T



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : GPRS 1900 Link_L-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

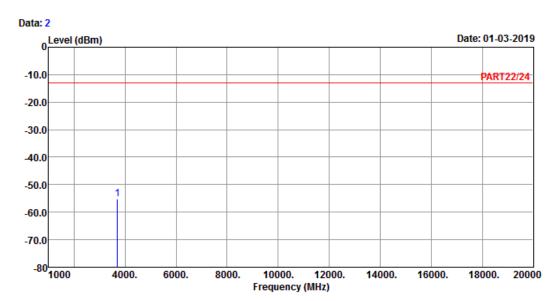
MHz dBm dBm dB dB dB

1 pp 3700.40 -54.53 -47.60 -13.00 -41.53 -6.93 Peak



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Site : 966 Chamber 5 Condition: PART22/24 VERTICAL Remark : GPRS 1900 Link_L-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

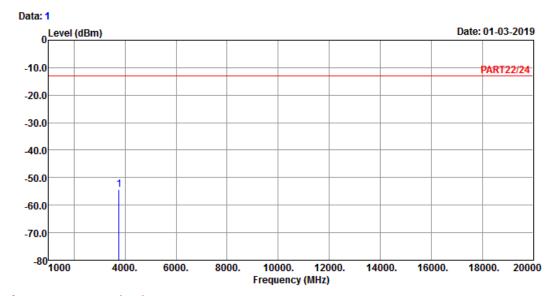
1 pp 3700.40 -55.25 -48.32 -13.00 -42.25 -6.93 Peak



Middle Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : GPRS 1900 Link_M-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

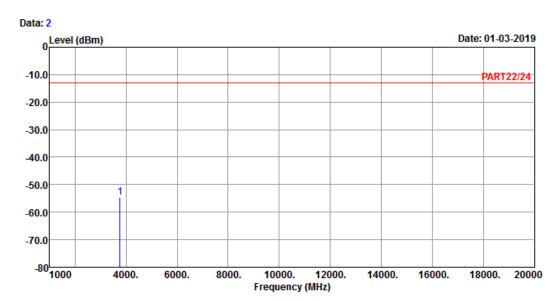
MHz dBm dBm dBm dB dB

1 pp 3760.00 -54.30 -47.65 -13.00 -41.30 -6.65 Peak



Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5 Condition: PART22/24 VERTICAL Remark : GPRS 1900 Link_M-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

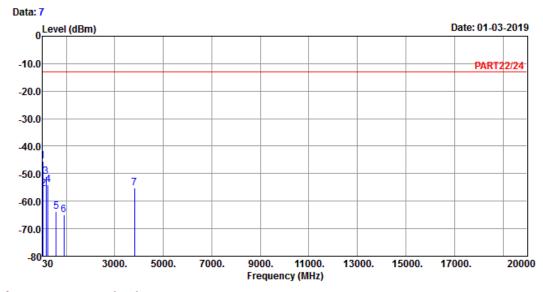
1 pp 3760.00 -54.61 -47.96 -13.00 -41.61 -6.65 Peak



High Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : GPRS 1900 Link_H-CH

Tested by: Jisyong Wang

Read Limit Over
Freq Level Level Line Limit Factor Remark

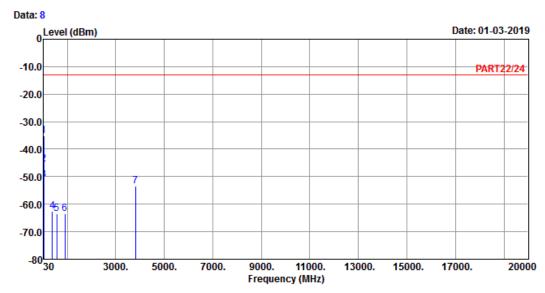
MHz dBm dBm dBm dB dB

1 pp	30.00	-45.49	-45.87	-13.00	-32.49	0.38 Peak
2	53.28	-55.46	-49.65	-13.00	-42.46	-5.81 Peak
3	163.86	-51.01	-45.89	-13.00	-38.01	-5.12 Peak
4	260.86	-54.14	-47.93	-13.00	-41.14	-6.21 Peak
5	594.54	-63.66	-62.67	-13.00	-50.66	-0.99 Peak
6	904.94	-65.00	-65.69	-13.00	-52.00	0.69 Peak
7	3819.60	-55.29	-48.89	-13.00	-42.29	-6.40 Peak



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Site : 966 Chamber 5 Condition: PART22/24 VERTICAL Remark : GPRS 1900 Link_H-CH

Tested by: Jisyong Wang

1 pp

3

Read Limit 0ver Line Limit Factor Remark Freq Level Level MHz dBm dBm dBm dB dB 30.00 -35.20 -35.58 -13.00 -22.20 0.38 Peak -2.07 Peak 34.85 -45.53 -43.46 -13.00 -32.53 -0.94 Peak 42.61 -51.10 -50.16 -13.00 -38.10 383.08 -62.48 -56.44 -13.00 -49.48 -6.04 Peak 569.32 -63.50 -61.46 -13.00 -50.50 -2.04 Peak 907.85 -63.45 -64.21 -13.00 -50.45 0.76 Peak

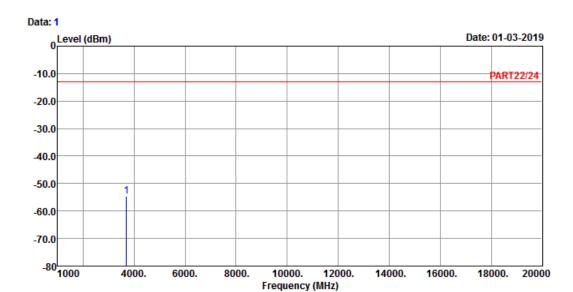
3819.60 -53.55 -47.15 -13.00 -40.55 -6.40 Peak



EDGE: Low Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : EDGE 1900 Link_L-CH

Tested by: Jisyong Wang

Read Limit Over

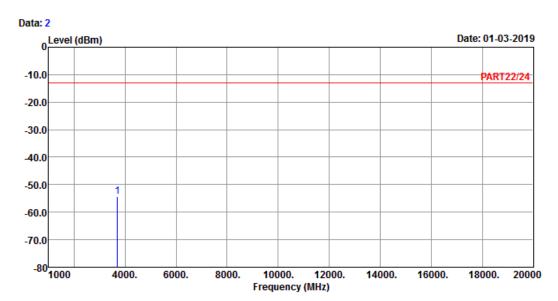
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB dB

1 pp 3700.40 -54.50 -47.57 -13.00 -41.50 -6.93 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL Remark : EDGE 1900 Link_L-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

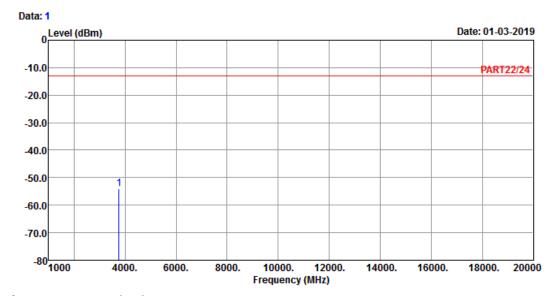
1 pp 3700.40 -54.33 -47.40 -13.00 -41.33 -6.93 Peak



Middle Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : EDGE 1900 Link_M-CH

Tested by: Jisyong Wang

Read Limit Over

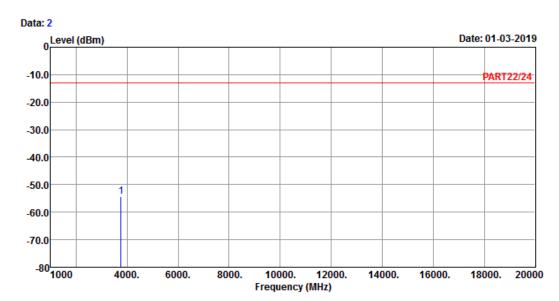
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 pp 3760.00 -54.04 -47.39 -13.00 -41.04 -6.65 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL Remark : EDGE 1900 Link_M-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

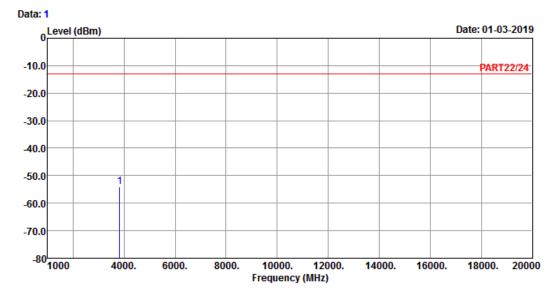
1 pp 3760.00 -54.46 -47.81 -13.00 -41.46 -6.65 Peak



High Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : EDGE 1900 Link_H-CH

Tested by: Jisyong Wang

Read Limit Over

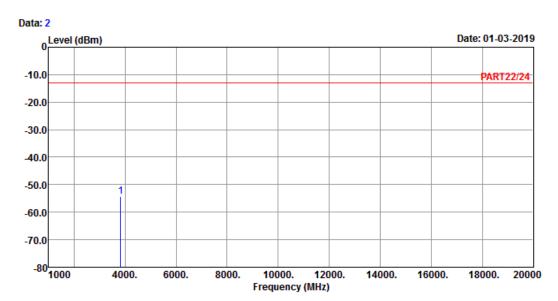
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 pp 3819.60 -54.16 -47.76 -13.00 -41.16 -6.40 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL Remark : EDGE 1900 Link_H-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

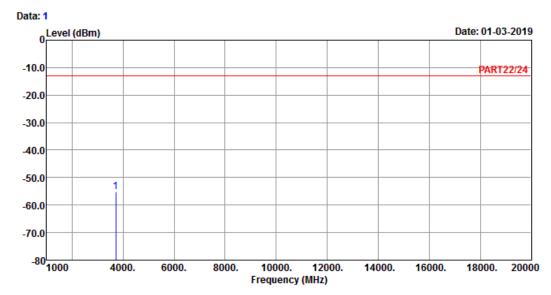
1 pp 3819.60 -54.32 -47.92 -13.00 -41.32 -6.40 Peak



WCDMA: Low Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL
Remark : WCDMA Band 2 Link_L-CH

Tested by: Jisyong Wang

Read Limit Over

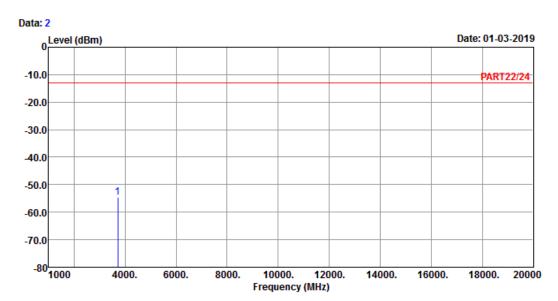
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB dB

1 pp 3704.80 -55.35 -48.42 -13.00 -42.35 -6.93 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL Remark : WCDMA Band 2 Link_L-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

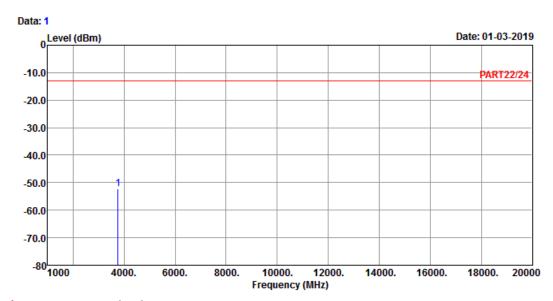
1 pp 3704.80 -54.71 -47.78 -13.00 -41.71 -6.93 Peak



Middle Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL
Remark : WCDMA Band 2 Link_M-CH

Tested by: Jisyong Wang

Read Limit Over

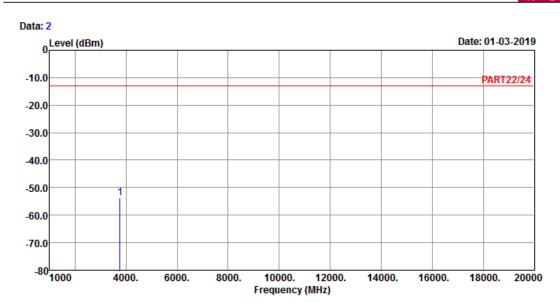
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 pp 3760.00 -52.16 -45.51 -13.00 -39.16 -6.65 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL Remark : WCDMA Band 2 Link_M-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

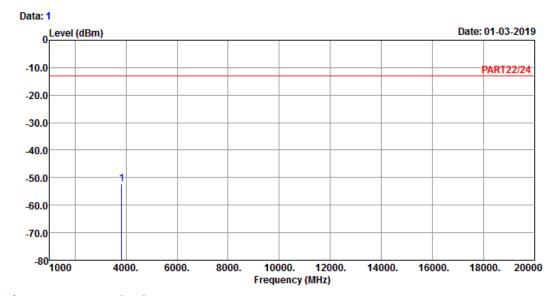
1 pp 3760.00 -53.81 -47.16 -13.00 -40.81 -6.65 Peak



High Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL
Remark : WCDMA Band 2 Link_H-CH

Tested by: Jisyong Wang

Read Limit Over

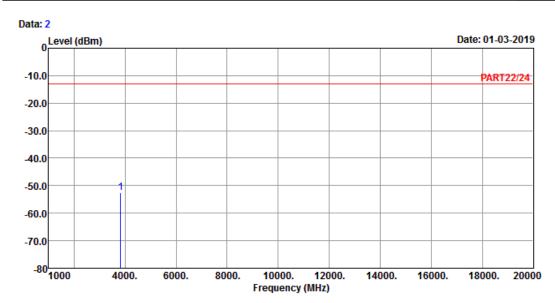
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 3815.20 -52.11 -45.71 -13.00 -39.11 -6.40 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL Remark : WCDMA Band 2 Link_H-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 pp 3815.20 -52.61 -46.21 -13.00 -39.61 -6.40 Peak



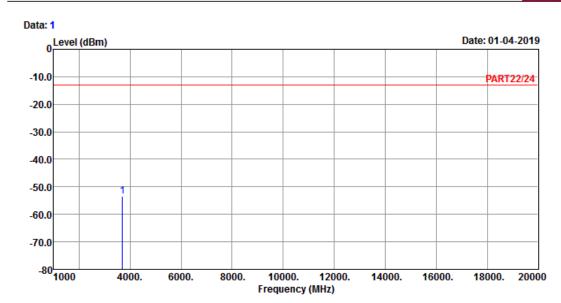
LTE Band 2

Channel Bandwidth: 1.4 MHz / QPSK

Low Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : LTE Band 2 QPSK_1.4M Link_L-CH

Tested by: Jisyong Wang

Read Limit Over

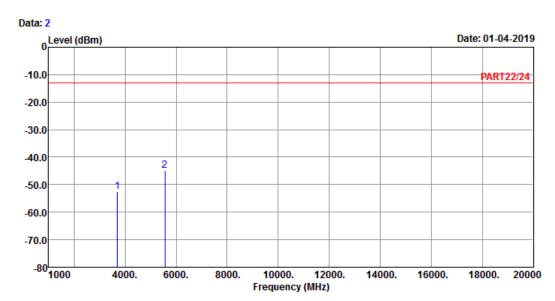
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 pp 3701.40 -53.52 -46.59 -13.00 -40.52 -6.93 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL

Remak : LTE Band 2 QPSK_1.4M Link_L-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

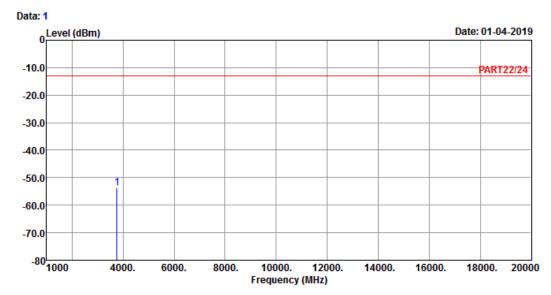
1 3701.40 -52.53 -45.60 -13.00 -39.53 -6.93 Peak 2 pp 5552.10 -44.90 -43.00 -13.00 -31.90 -1.90 Peak



Middle Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : LTE Band 2 QPSK_1.4M Link_M-CH

Tested by: Jisyong Wang

Read Limit Over

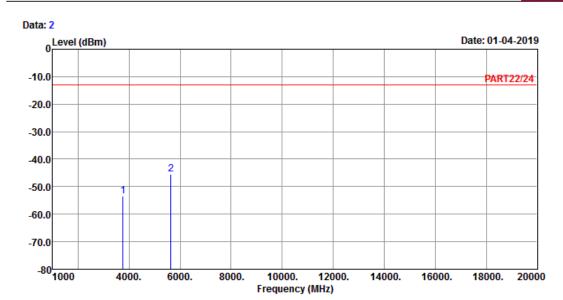
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 pp 3760.00 -53.87 -47.27 -13.00 -40.87 -6.60 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL

Remak : LTE Band 2 QPSK_1.4M Link_M-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

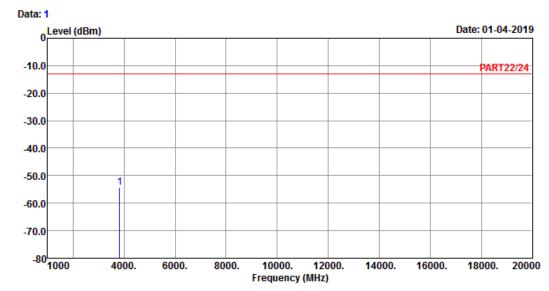
1 3760.00 -53.36 -46.71 -13.00 -40.36 -6.65 Peak 2 pp 5640.00 -45.46 -43.60 -13.00 -32.46 -1.86 Peak



High Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : LTE Band 2 QPSK_1.4M Link_H-CH

Tested by: Jisyong Wang

Read Limit Over

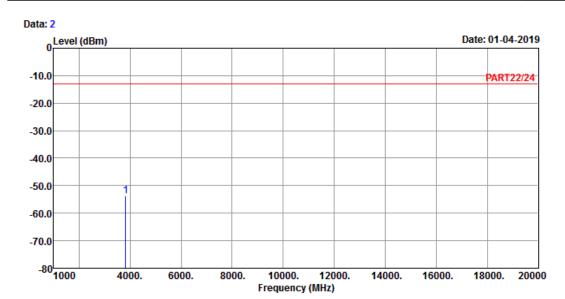
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 3818.60 -54.31 -47.91 -13.00 -41.31 -6.40 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL

Remak : LTE Band 2 QPSK_1.4M Link_H-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 pp 3818.60 -53.70 -47.30 -13.00 -40.70 -6.40 Peak

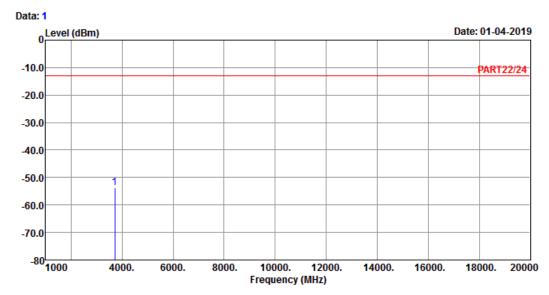


Channel Bandwidth: 5 MHz / QPSK

Low Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : LTE Band 2 QPSK_5M Link_L-CH

Tested by: Jisyong Wang

Read Limit Over

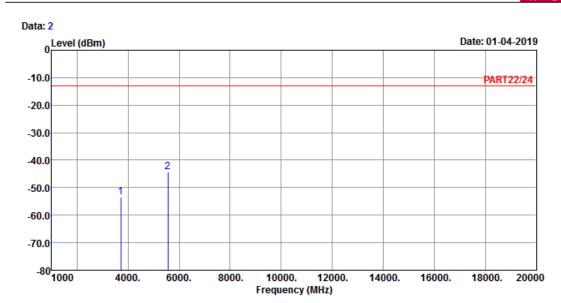
Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 3705.00 -53.61 -46.68 -13.00 -40.61 -6.93 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL

Remak : LTE Band 2 QPSK_5M Link_L-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

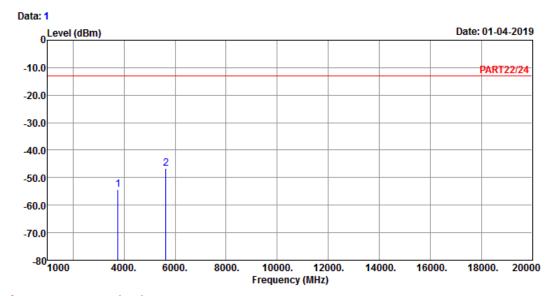
1 3705.00 -53.53 -46.60 -13.00 -40.53 -6.93 Peak 2 pp 5557.50 -44.24 -42.33 -13.00 -31.24 -1.91 Peak



Middle Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : LTE Band 2 QPSK_5M Link_M-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

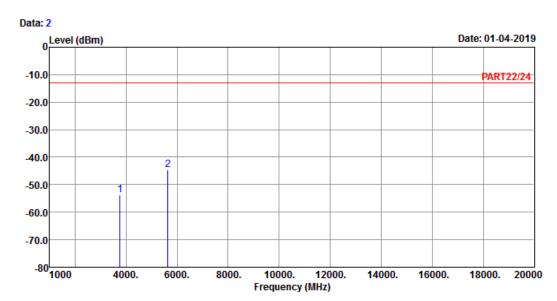
MHz dBm dBm dBm dB dB

3760.00 -54.25 -47.60 -13.00 -41.25 -6.65 Peak

2 pp 5640.00 -46.61 -44.75 -13.00 -33.61 -1.86 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL

Remak : LTE Band 2 QPSK_5M Link_M-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

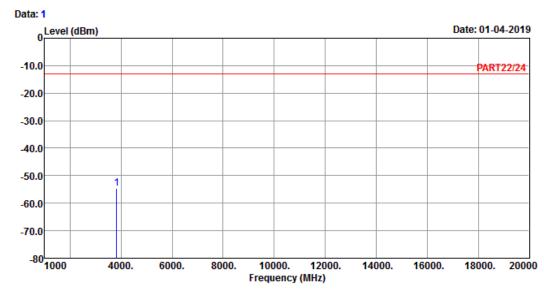
1 3760.00 -53.86 -47.21 -13.00 -40.86 -6.65 Peak 2 pp 5640.00 -44.61 -42.75 -13.00 -31.61 -1.86 Peak



High Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : LTE Band 2 QPSK_5M Link_H-CH

Tested by: Jisyong Wang

Read Limit Over

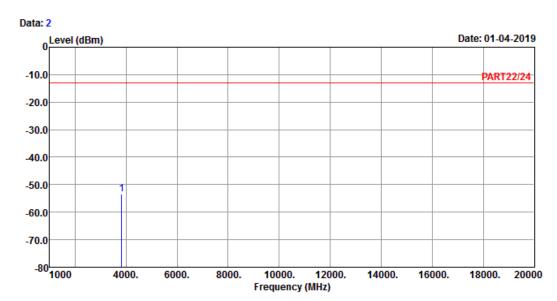
Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 3815.00 -54.60 -48.20 -13.00 -41.60 -6.40 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL

Remak : LTE Band 2 QPSK_5M Link_H-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 pp 3815.00 -53.44 -47.04 -13.00 -40.44 -6.40 Peak

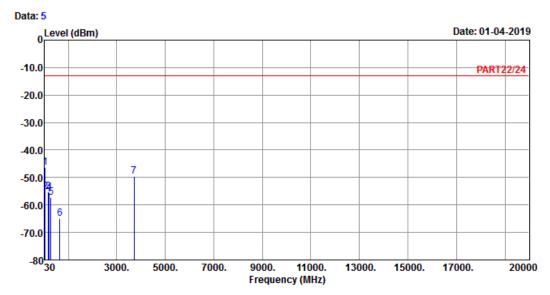


Channel Bandwidth: 20 MHz / QPSK

Low Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : LTE Band 2 QPSK_20M Link_L-CH

Tested by: Jisyong Wang

Read Limit Over

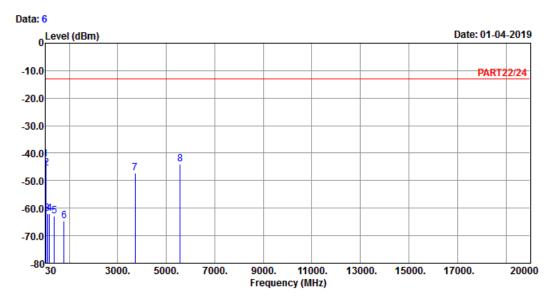
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB dB

1 pp	44.55	-46.42	-44.43	-13.00	-33.42	-1.99 Peak	
2	53.28	-55.18	-49.37	-13.00	-42.18	-5.81 Peak	
3	178.41	-55.24	-48.18	-13.00	-42.24	-7.06 Peak	
4	218.18	-55.47	-48.19	-13.00	-42.47	-7.28 Peak	
5	286.08	-57.34	-50.61	-13.00	-44.34	-6.73 Peak	
6	646.92	-64.93	-64.05	-13.00	-51.93	-0.88 Peak	
7	3720.00	-49.45	-42.63	-13.00	-36.45	-6.82 Peak	







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL

Remak : LTE Band 2 QPSK_20M Link_L-CH

Tested by: Jisyong Wang

Read Limit Over Freq Level Level Line Limit Factor Remark

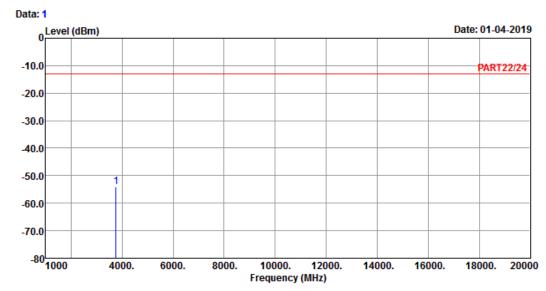
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	30.00	-42.23	-42.61	-13.00	-29.23	0.38	Peak
2	44.55	-45.35	-43.36	-13.00	-32.35	-1.99	Peak
3	95.96	-62.10	-51.32	-13.00	-49.10	-10.78	Peak
4	178.41	-61.87	-54.81	-13.00	-48.87	-7.06	Peak
5	387.93	-63.02	-57.00	-13.00	-50.02	-6.02	Peak
6	791.45	-64.52	-65.28	-13.00	-51.52	0.76	Peak
7	3720.00	-47.29	-40.47	-13.00	-34.29	-6.82	Peak
Q	5580 00	_11 07	_//2 15	_13 00	_31 07	_1 92	Dook



Middle Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : LTE Band 2 QPSK_20M Link_M-CH

Tested by: Jisyong Wang

Read Limit Over

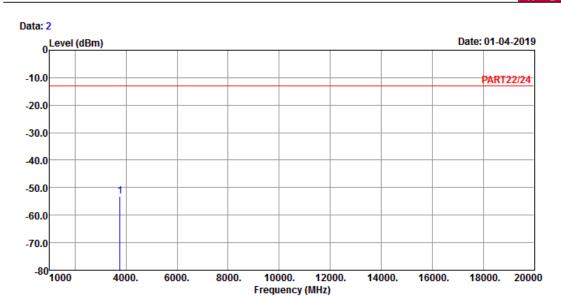
Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 3760.00 -54.12 -47.47 -13.00 -41.12 -6.65 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL

Remak : LTE Band 2 QPSK_20M Link_M-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

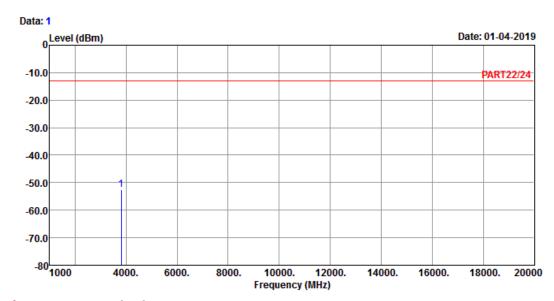
1 pp 3760.00 -53.27 -46.62 -13.00 -40.27 -6.65 Peak



High Channel

Bureau Veritas Consumer Products Services Ltd., Taoyuan





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : LTE Band 2 QPSK_20M Link_H-CH

Tested by: Jisyong Wang

Read Limit Over

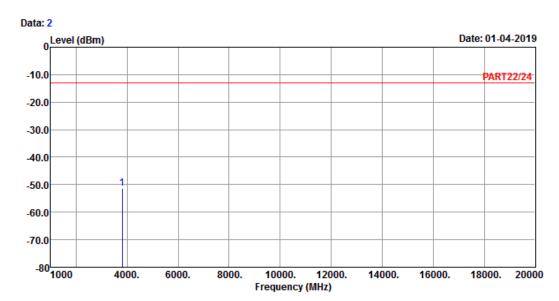
Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 3800.00 -52.62 -46.19 -13.00 -39.62 -6.43 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL

Remak : LTE Band 2 QPSK_20M Link_H-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 pp 3800.00 -51.38 -44.95 -13.00 -38.38 -6.43 Peak



5 Pictures of Test Arrangements						
Please refer to the attached file (Test Setup Photo).						



Appendix - Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

Hsin Chu EMC/RF/Telecom Lab

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Fax: 886-3-6668323

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

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Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas.com

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

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