

#### 4.7 Radiated Emission Measurement

#### 4.7.1 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.

#### 4.7.2 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.P.R power 2.15 dBi.

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

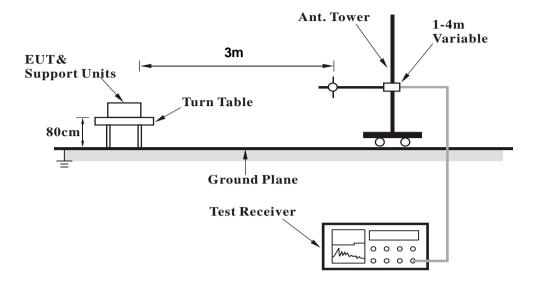
### 4.7.3 Deviation from Test Standard

No deviation.

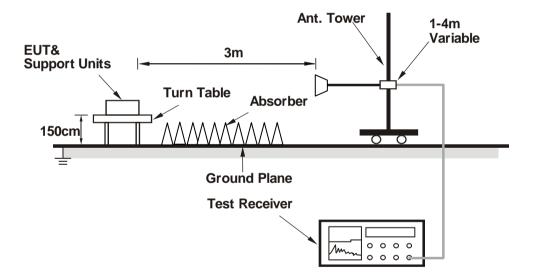


#### 4.7.4 Test Setup

#### <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).



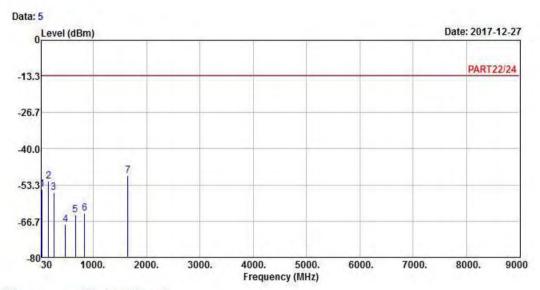
#### 4.7.5 Test Results

#### GSM:

#### **Low Channel**



### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

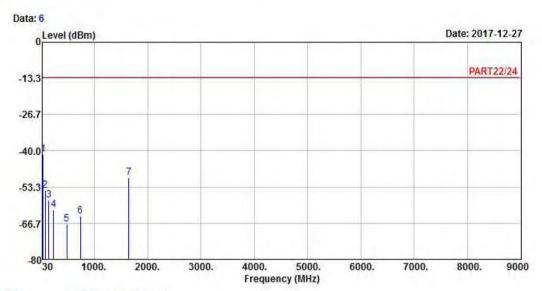
Condition: PART22/24 HORIZONTAL Remark : GPRS 850 Link\_L-CH

Tested by: Jisyong Wang

	Freq	Level	Read Level	Limit Line		Factor	Remark
-	MHz	dBm	dBm	dBm	dB	dB	
1	42.61	-55.02	-54.08	-13.00	-42.02	-0.94	Peak
2	161.92	-52.03	-47.05	-13.00	-39.03	-4.98	Peak
3	256.01	-56.04	-49.93	-13.00	-43.04	-6.11	Peak
4	478.14	-68.02	-62.99	-13.00	-55.02	-5.03	Peak
5	663.41	-64.22	-63.55	-13.00	-51.22	-0.67	Peak
6	834.13	-63.78	-64.21	-13.00	-50.78	0.43	Peak
7 pp	1648.40	-49.74	-35.01	-13.00	-36.74	-14.73	Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL Remark : GPRS 850 Link\_L-CH

Tested by: Jisyong Wang

6

Freq	Level	100 E-120 AV	Line		Factor	Remark
MHz	dBm	dBm	dBm	dB	dB	
42.61	-41.40	-40.46	-13.00	-28.40	-0.94	Peak
77.53	-54.61	-44.41	-13.00	-41.61	-10.20	Peak
145.43	-58.16	-50.09	-13.00	-45.16	-8.07	Peak
238.55	-61.59	-55.13	-13.00	-48.59	-6.46	Peak
482.02	-67.12	-62-17	-13.00	-54.12	-4.95	Peak

738.10 -63.95 -64.60 -13.00 -50.95 0.65 Peak

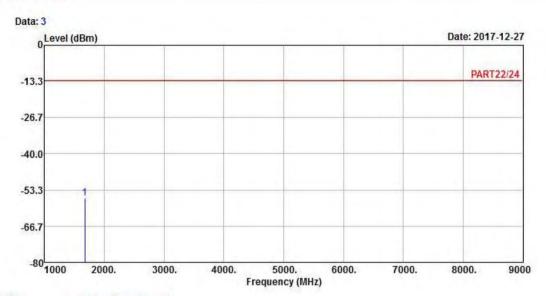
1648.40 -49.80 -35.07 -13.00 -36.80 -14.73 Peak



#### **Middle Channel**



### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : GPRS 850 Link\_M-CH

Tested by: Jisyong Wang

Read Limit Over

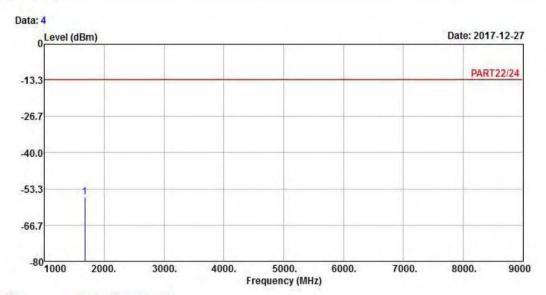
Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1672.80 -56.45 -41.77 -13.00 -43.45 -14.68 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL Remark : GPRS 850 Link M-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

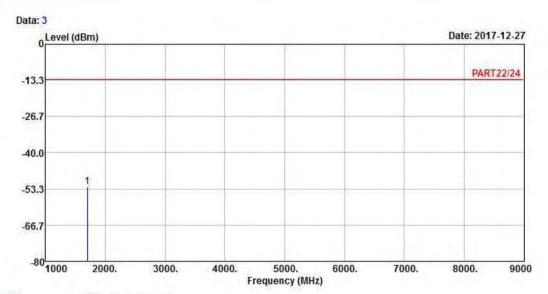
1 pp 1672.80 -56.32 -41.64 -13.00 -43.32 -14.68 Peak



#### **High Channel**



### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : GPRS 850 Link\_H-CH

Tested by: Jisyong Wang

Read Limit Over

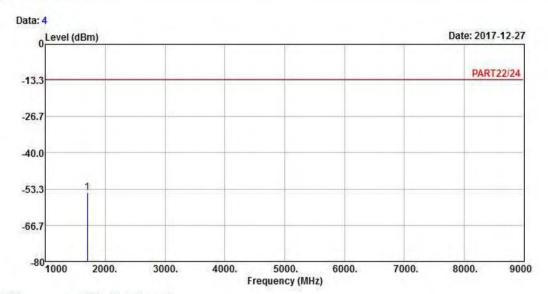
Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1697.60 -52.40 -37.87 -13.00 -39.40 -14.53 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL Remark : GPRS 850 Link H-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

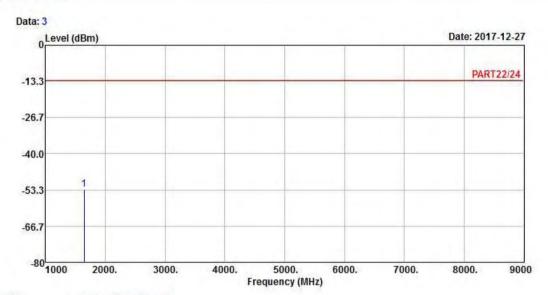
1 pp 1697.60 -54.56 -40.03 -13.00 -41.56 -14.53 Peak



# EDGE: Low Channel



# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : EDGE 850 Link\_L-CH

Tested by: Getaz Yang

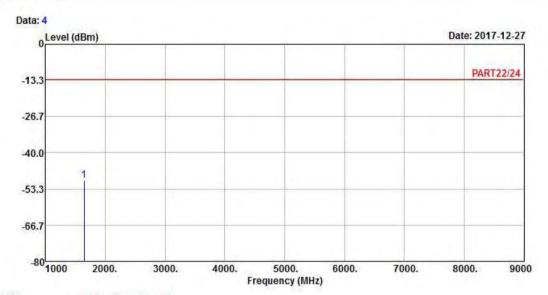
Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1648.40 -53.22 -38.49 -13.00 -40.22 -14.73 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL Remark : EDGE 850 Link\_L-CH

Tested by: Getaz Yang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

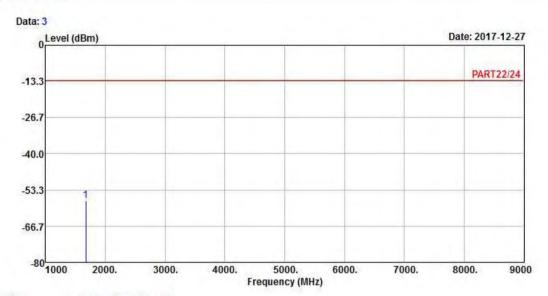
1 pp 1648.40 -50.17 -35.44 -13.00 -37.17 -14.73 Peak



#### **Middle Channel**



### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : EDGE 850 Link\_M-CH

Tested by: Getaz Yang

Read Limit Over

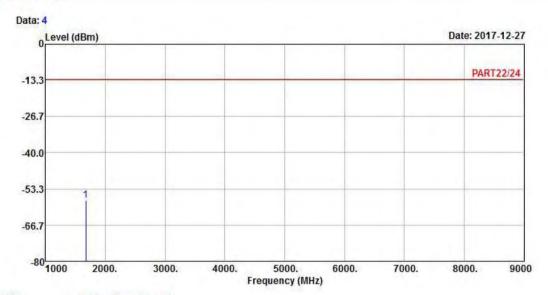
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 pp 1672.80 -57.17 -42.49 -13.00 -44.17 -14.68 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL Remark : EDGE 850 Link M-CH

Tested by: Getaz Yang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

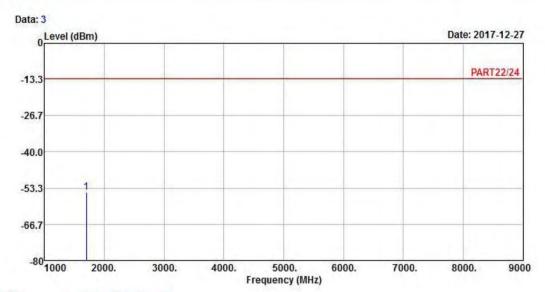
1 pp 1672.80 -57.58 -42.90 -13.00 -44.58 -14.68 Peak



#### **High Channel**



### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : EDGE 850 Link\_H-CH

Tested by: Getaz Yang

Read Limit Over

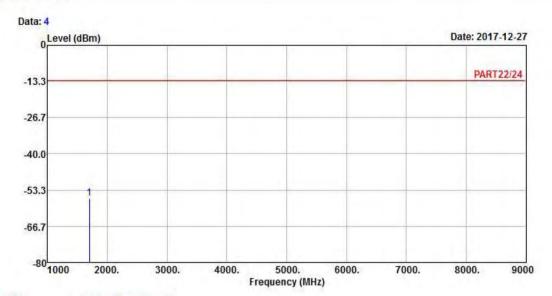
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1697.60 -55.04 -40.51 -13.00 -42.04 -14.53 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL Remark : EDGE 850 Link H-CH

Tested by: Getaz Yang

Read Limit Over

Freg Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

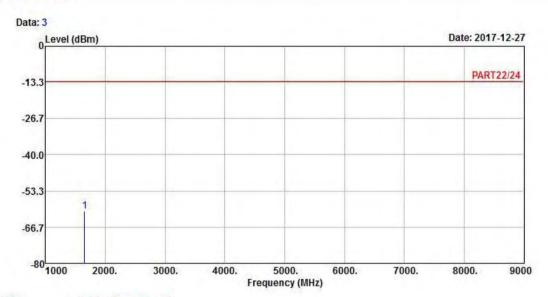
1 pp 1697.60 -56.50 -41.97 -13.00 -43.50 -14.53 Peak



### WCDMA: Low Channel



### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : WCDMA Band V Link\_L-CH

Tested by: Getaz Yang

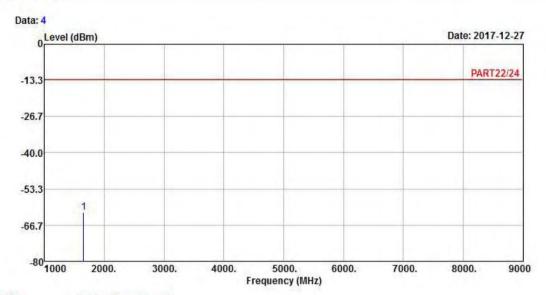
Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1652.80 -60.80 -46.07 -13.00 -47.80 -14.73 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL : WCDMA Band V Link L-CH

Tested by: Getaz Yang

Read Limit 0ver

Line Limit Factor Remark

dBm MHz dBm dBm dB dB

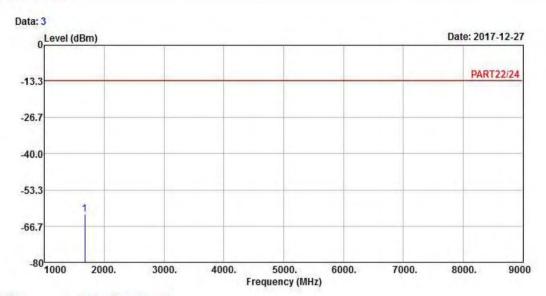
1 pp 1652.80 -61.96 -47.23 -13.00 -48.96 -14.73 Peak



#### **Middle Channel**



### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



: 966 Chamber 5

MHz

Condition: PART22/24 HORIZONTAL Remark : WCDMA Band V Link\_M-CH

dBm

Tested by: Getaz Yang

Read Limit Over

Freq Level Line Limit Factor Remark dBm

dB

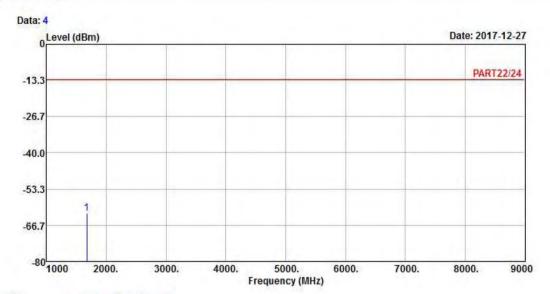
dB

1 pp 1672.80 -62.18 -47.50 -13.00 -49.18 -14.68 Peak

dBm







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL

: WCDMA Band V Link M-CH

Tested by: Getaz Yang

Read Limit 0ver

Freq Level Level Line Limit Factor Remark

dB dB MHz dBm dBm dBm

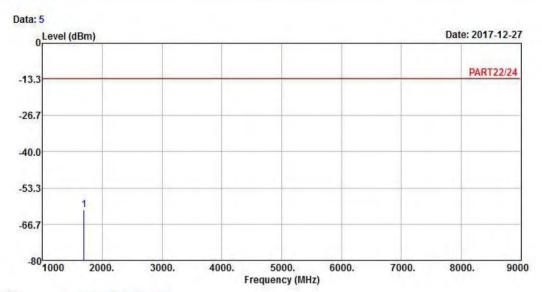
1 pp 1672.80 -62.32 -47.64 -13.00 -49.32 -14.68 Peak



#### **High Channel**



### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : WCDMA Band V Link\_H-CH

Tested by: Getaz Yang

Read Limit Over

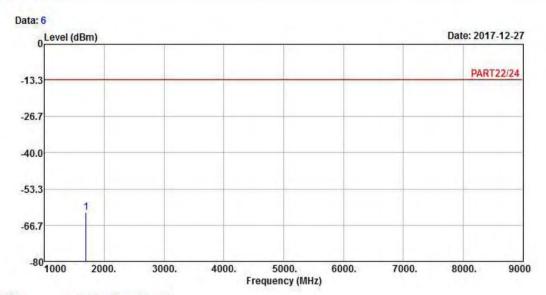
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 pp 1693.20 -61.42 -46.89 -13.00 -48.42 -14.53 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL
Remark : WCDMA Band V Link H-CH

Tested by: Getaz Yang

Read Limit Over

Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

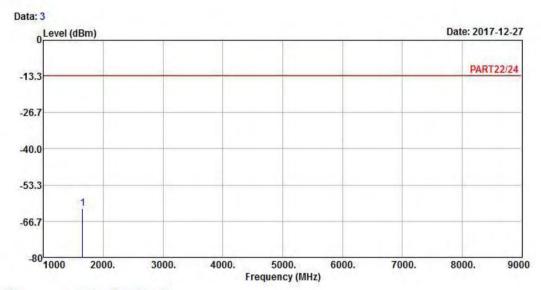
1 pp 1693.20 -62.05 -47.52 -13.00 -49.05 -14.53 Peak



### CDMA: Low Channel



# Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : CFMA BC0 Link\_L-CH

Tested by: Getaz Yang

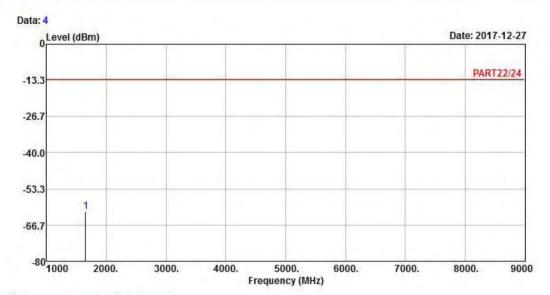
Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1649.40 -62.01 -47.28 -13.00 -49.01 -14.73 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL Remark : CFMA BC0 Link\_L-CH

Tested by: Getaz Yang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

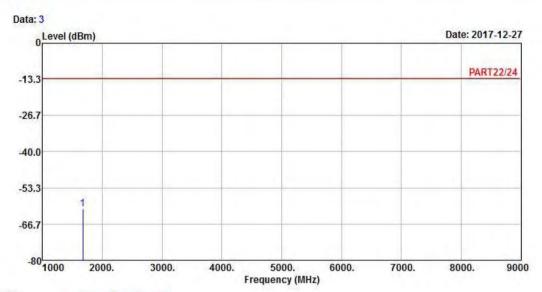
1 pp 1649.40 -61.79 -47.06 -13.00 -48.79 -14.73 Peak



#### **Middle Channel**



### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : CFMA BC0 Link\_M-CH

Tested by: Getaz Yang

Read Limit Over

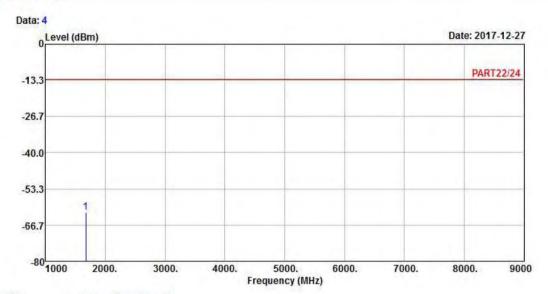
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

1 pp 1673.04 -61.23 -46.55 -13.00 -48.23 -14.68 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL Remark : CFMA BC0 Link M-CH

Tested by: Getaz Yang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

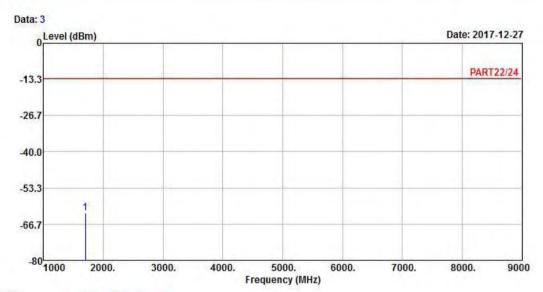
1 pp 1673.04 -62.05 -47.37 -13.00 -49.05 -14.68 Peak



#### **High Channel**



### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL Remark : CFMA BC0 Link\_H-CH

Tested by: Getaz Yang

Read Limit Over

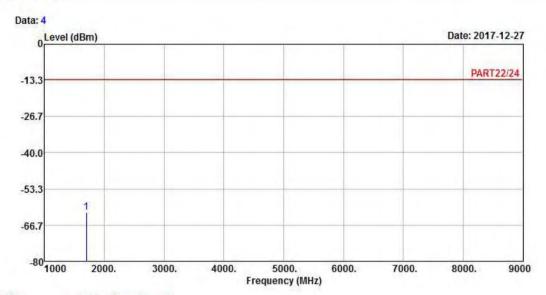
Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1696.62 -62.56 -48.03 -13.00 -49.56 -14.53 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL Remark : CFMA BC0 Link H-CH

Tested by: Getaz Yang

Read Limit Over

Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1696.62 -61.98 -47.45 -13.00 -48.98 -14.53 Peak



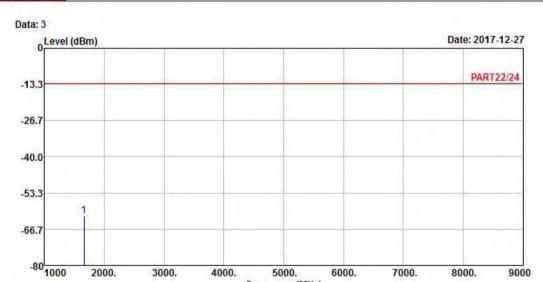
#### LTE Band 5

Channel Bandwidth: 10 MHz / QPSK

**Low Channel** 



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Frequency (MHz)

Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : LTE Band 5 QPSK\_10M Link\_L-CH

Tested by: Jisyong Wang

Read Limit Over

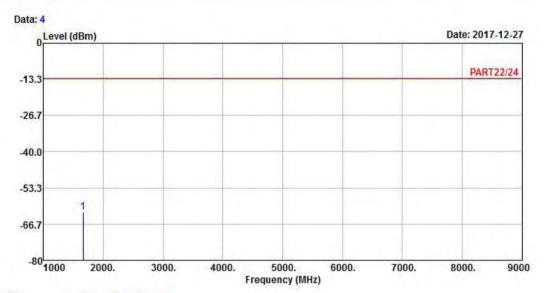
Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1658.00 -61.57 -46.89 -13.00 -48.57 -14.68 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL

Remak : LTE Band 5 QPSK\_10M Link\_L-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

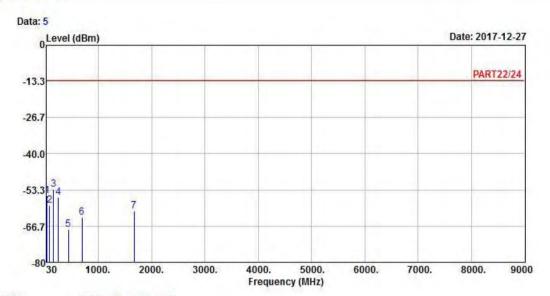
1 pp 1658.00 -62.25 -47.57 -13.00 -49.25 -14.68 Peak



#### **Middle Channel**



#### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Over

Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

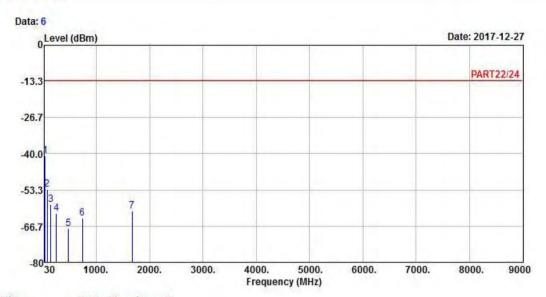
Remak : LTE Band 5 QPSK\_10M Link\_M-CH

Tested by: Jisyong Wang

Read Limit Freq Level Level Line Limit Factor Remark MHz dBm dBm dBm dB dB 1 42.61 -55.57 -54.63 -13.00 -42.57 -0.94 Peak 81.41 -58.91 -48.00 -13.00 -45.91 -10.91 Peak 2 3 pp 160.95 -53.01 -48.10 -13.00 -40.01 -4.91 Peak 252.13 -56.23 -50.20 -13.00 -43.23 -6.03 Peak 435.46 -67.85 -62.19 -13.00 -54.85 -5.66 Peak 6 695.42 -63.46 -63.29 -13.00 -50.46 -0.17 Peak 7 1673.00 -61.09 -46.41 -13.00 -48.09 -14.68 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL

Remak : LTE Band 5 QPSK\_10M Link\_M-CH

Tested by: Jisyong Wang

Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

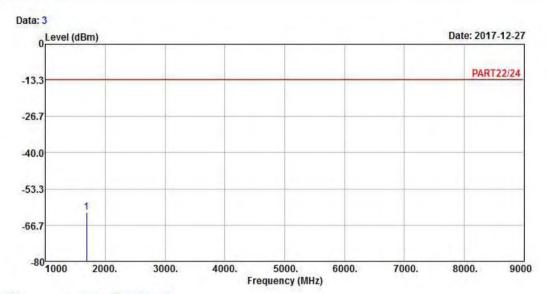
1 pp	42.61	-40.78	-39.84	-13.00	-27.78	-0.94	Peak
2	78.50	-53.24	-42.81	-13.00	-40.24	-10.43	Peak
3	146.40	-58.77	-50.80	-13.00	-45.77	-7.97	Peak
4	253.10	-61.98	-55.93	-13.00	-48.98	-6.05	Peak
5	478.14	-67.70	-62.67	-13.00	-54.70	-5.03	Peak
6	739.07	-63.89	-64.56	-13.00	-50.89	0.67	Peak
7	1673.00	-61.07	-46.39	-13.00	-48.07	-14.68	Peak



#### **High Channel**



### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : LTE Band 5 QPSK\_10M Link\_H-CH

Tested by: Jisyong Wang

Read Limit Over

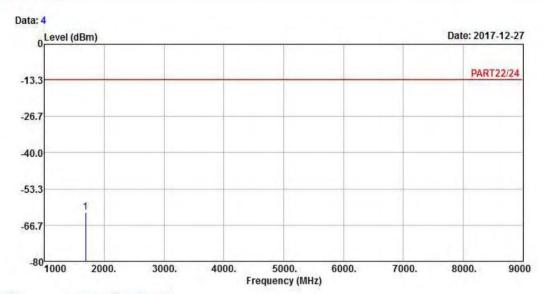
Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1688.00 -62.01 -47.41 -13.00 -49.01 -14.60 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL

Remak : LTE Band 5 QPSK\_10M Link\_H-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1688.00 -61.86 -47.26 -13.00 -48.86 -14.60 Peak



LTE Band 26

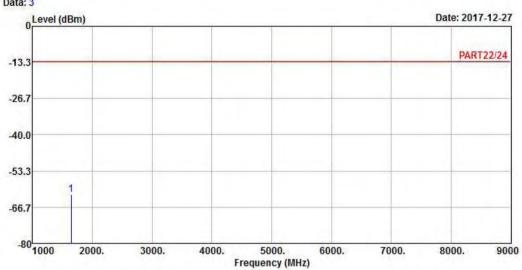
Channel Bandwidth: 15 MHz / QPSK

**Low Channel** 



Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch





Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : LTE Band 26 QPSK\_15M Link\_L-CH

Tested by: Jisyong Wang

Read Limit Over

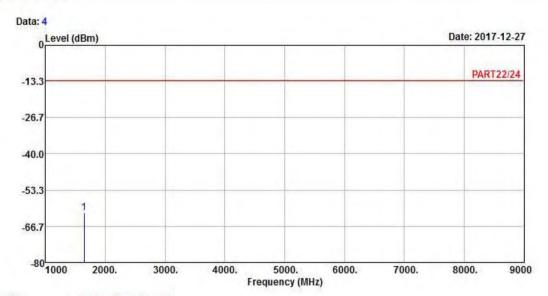
Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1643.00 -62.02 -47.29 -13.00 -49.02 -14.73 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL

Remak : LTE Band 26 QPSK\_15M Link\_L-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

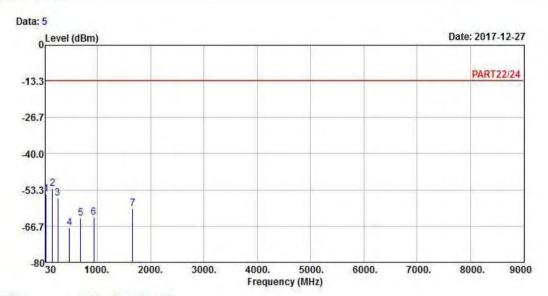
1 pp 1643.00 -61.80 -47.07 -13.00 -48.80 -14.73 Peak



#### **Middle Channel**



### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

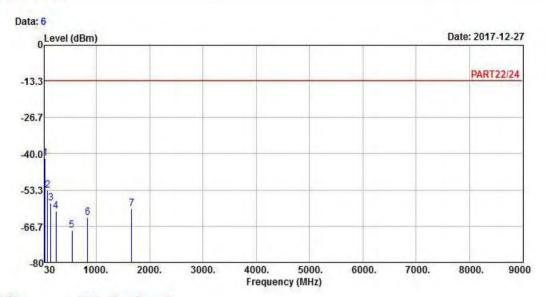
Remak : LTE Band 26 QPSK\_15M Link\_M-CH

Tested by: Jisyong Wang

Read Limit Over Freq Level Level Line Limit Factor Remark MHz dBm dBm dBm dB 42.61 -54.94 -54.00 -13.00 -41.94 -0.94 Peak 1 2 pp 159.98 -52.82 -47.98 -13.00 -39.82 -4.84 Peak 259.89 -56.29 -50.10 -13.00 -43.29 -6.19 Peak 3 479.11 -67.32 -62.31 -13.00 -54.32 -5.01 Peak 686.69 -63.71 -63.40 -13.00 -50.71 -0.31 Peak 6 932.10 -63.47 -64.84 -13.00 -50.47 1.37 Peak 7 1662.00 -60.31 -45.63 -13.00 -47.31 -14.68 Peak







Site : 966 Chamber 5 Condition: PART22/24 VERTICAL

Remak : LTE Band 26 QPSK\_15M Link\_M-CH

Tested by: Jisyong Wang

Read Limit Over
Freq Level Level Line Limit Factor Remark

MHz dBm dBm dBm dB dB

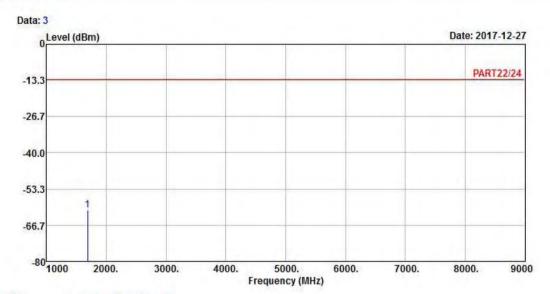
1 pp	42.61	-41.57	-40.63	-13.00	-28.57	-0.94	Peak	
2	81.41	-53.51	-42.60	-13.00	-40.51	-10.91	Peak	
3	144.46	-58.13	-49.97	-13.00	-45.13	-8.16	Peak	
4	245.34	-61.17	-54.98	-13.00	-48.17	-6.19	Peak	
5	542.16	-68.19	-65.06	-13.00	-55.19	-3.13	Peak	
6	835.10	-63.36	-63.78	-13.00	-50.36	0.42	Peak	
7	1662.00	-60.22	-45.54	-13.00	-47.22	-14.68	Peak	



#### **High Channel**



### Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch



Site : 966 Chamber 5

Condition: PART22/24 HORIZONTAL

Remak : LTE Band 26 QPSK\_15M Link\_H-CH

Tested by: Jisyong Wang

Read Limit Over

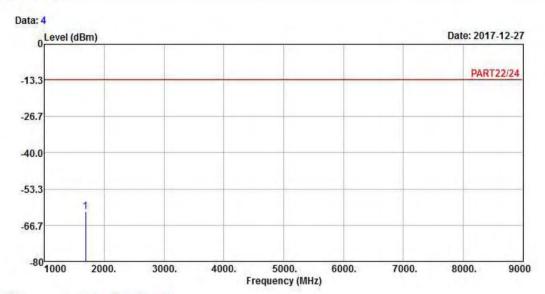
Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1683.00 -61.07 -46.47 -13.00 -48.07 -14.60 Peak







Site : 966 Chamber 5

Condition: PART22/24 VERTICAL

Remak : LTE Band 26 QPSK\_15M Link\_H-CH

Tested by: Jisyong Wang

Read Limit Over

Freq Level Line Limit Factor Remark

MHz dBm dBm dB dB

1 pp 1683.00 -61.65 -47.05 -13.00 -48.65 -14.60 Peak



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

Report No.: RF171130C26 Page No. 136 / 137 Report Format Version: 6.1.1



#### Appendix - Information on 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

Tel: 886-3-6668565

Fax: 886-3-6668323

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

Linko EMC/RF Lab

Tel: 886-2-26052180 Fax: 886-2-26051924

Hwa Ya EMC/RF/Safety

Tel: 886-3-3183232 Fax: 886-3-3270892

Email: <a href="mailto:service.adt@tw.bureauveritas.com">service.adt@tw.bureauveritas.com</a>
Web Site: <a href="mailto:www.bureauveritas-adt.com">www.bureauveritas-adt.com</a>

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

--- END ---