

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.

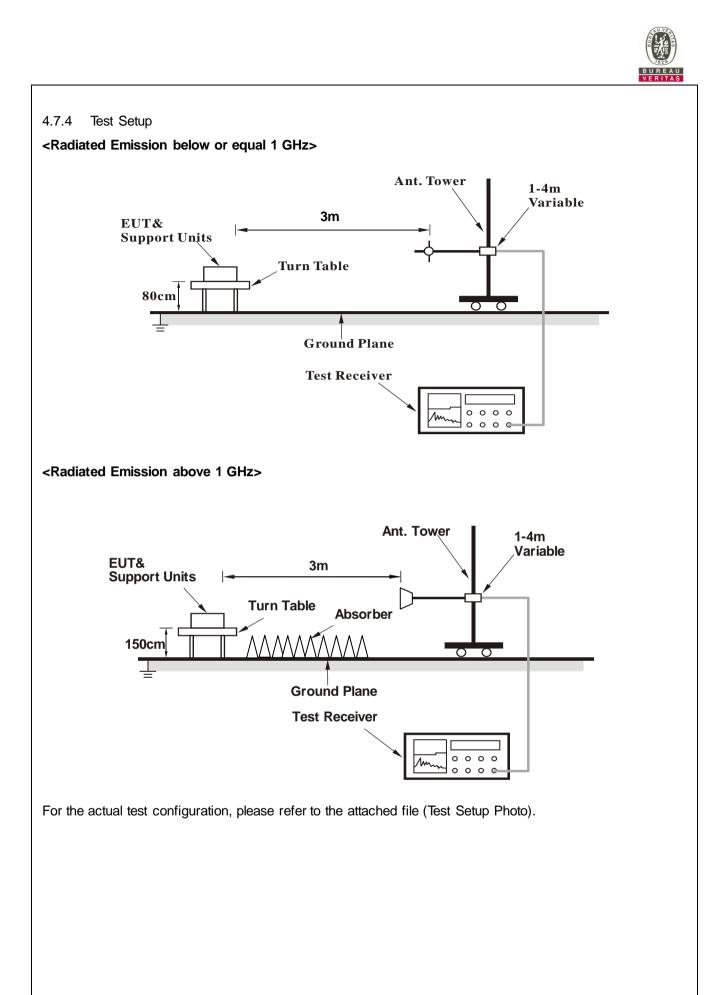
4.7.2 Test Procedure

- 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.

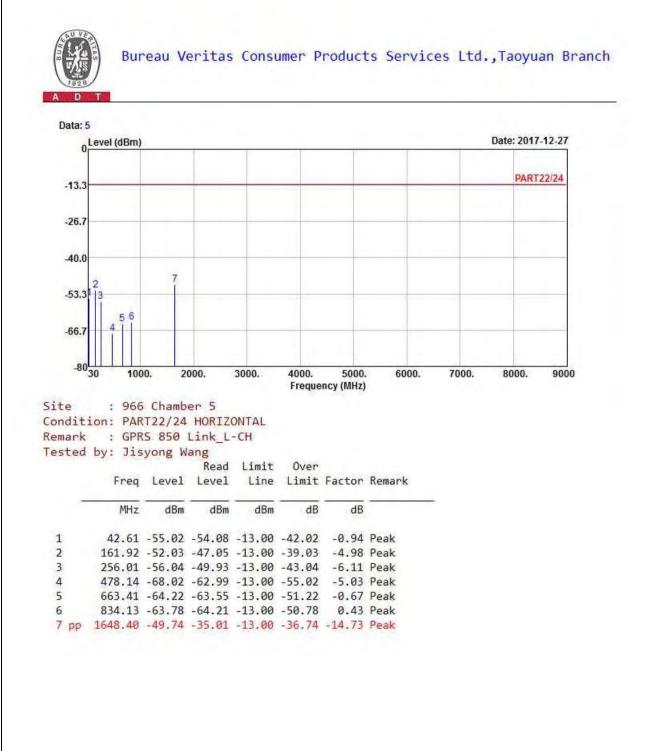




4.7.5 Test Results

GSM:

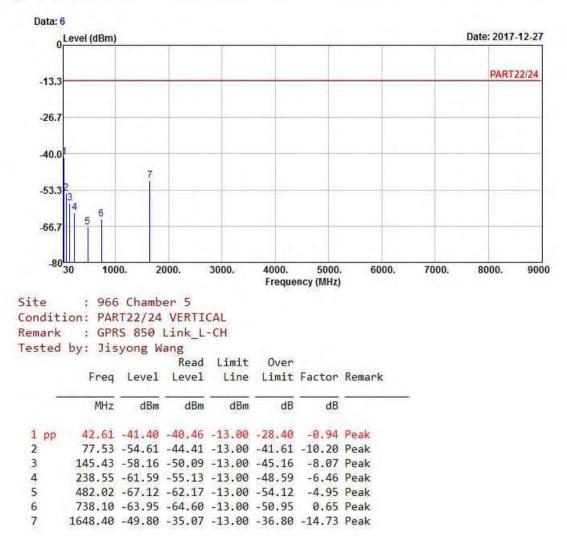
Low Channel







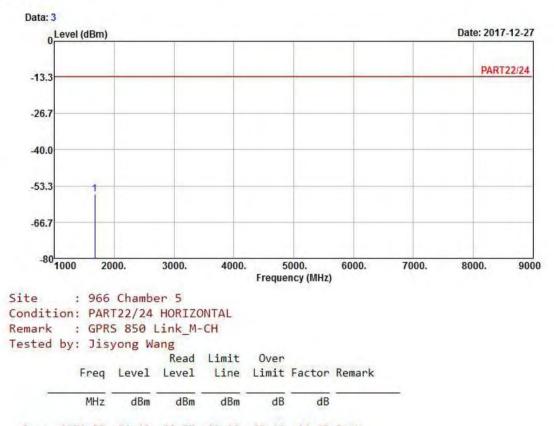
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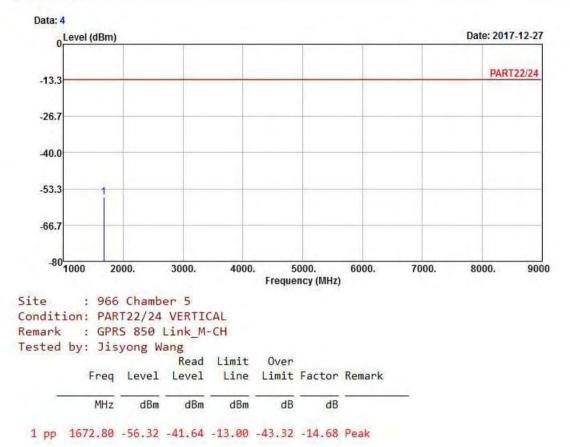


1 pp 1672.80 -56.45 -41.77 -13.00 -43.45 -14.68 Peak



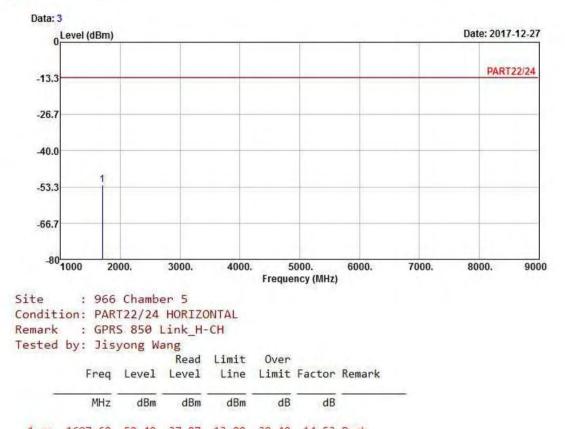


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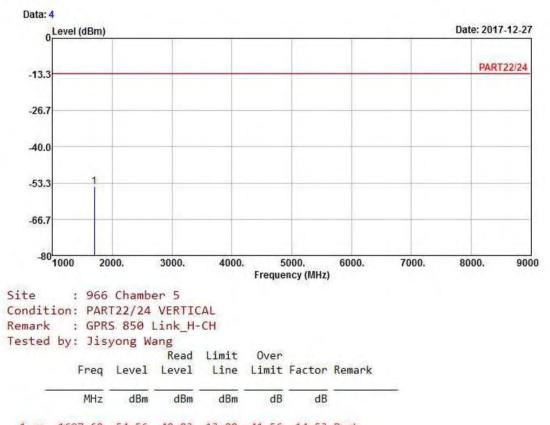


1 pp 1697.60 -52.40 -37.87 -13.00 -39.40 -14.53 Peak





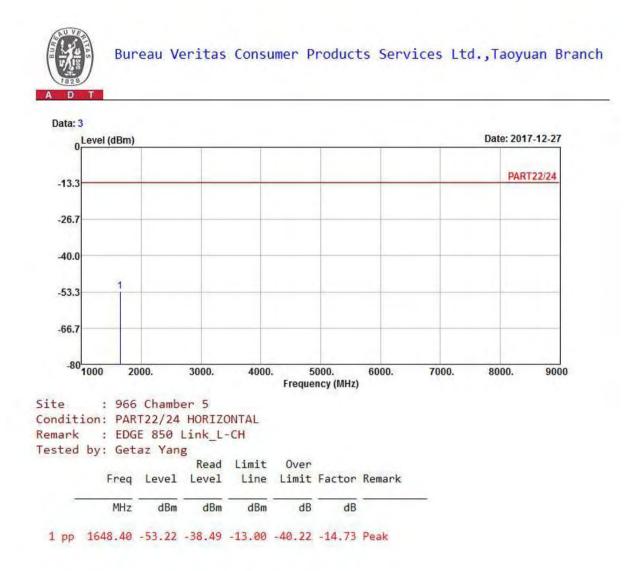
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1 pp 1697.60 -54.56 -40.03 -13.00 -41.56 -14.53 Peak



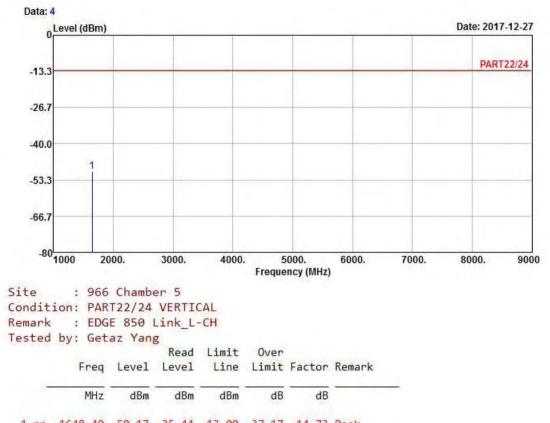
EDGE: Low Channel







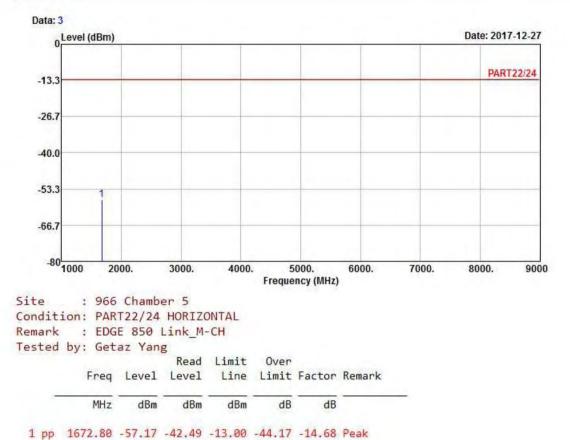
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1 pp 1648.40 -50.17 -35.44 -13.00 -37.17 -14.73 Peak



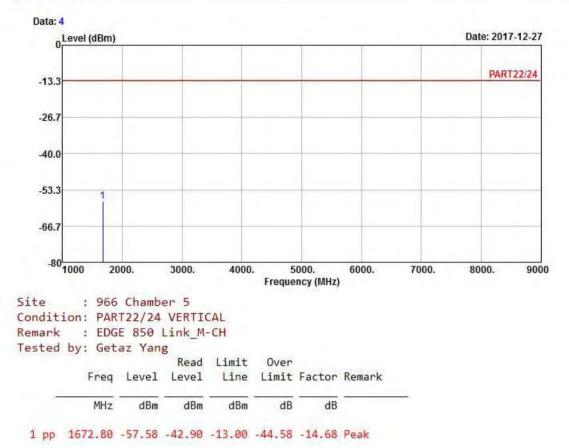






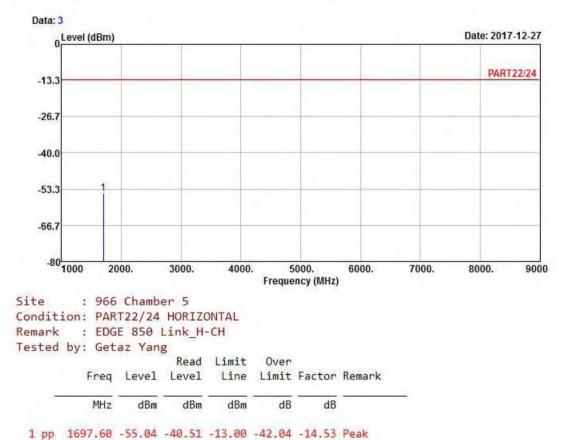


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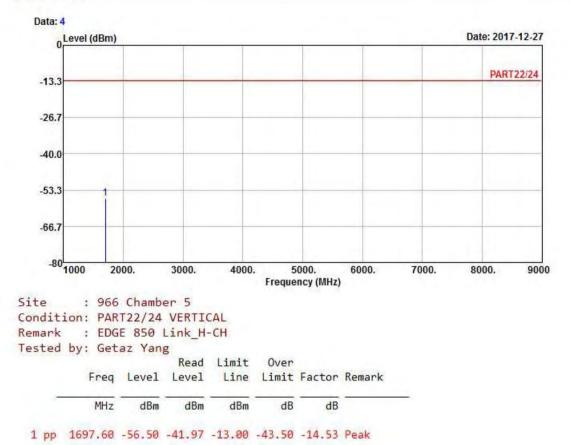






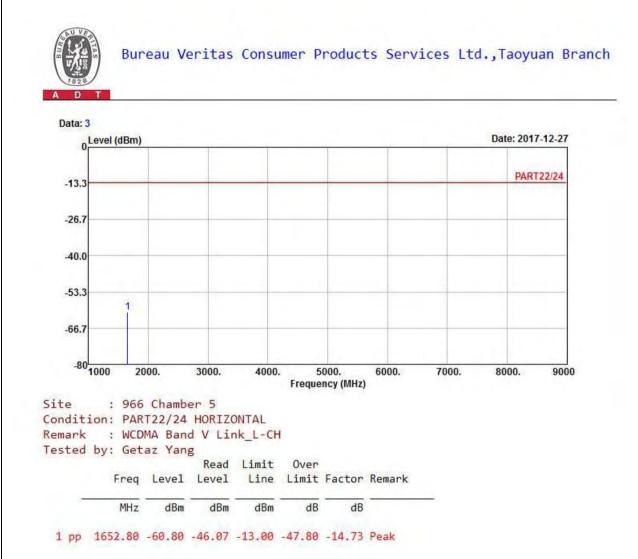


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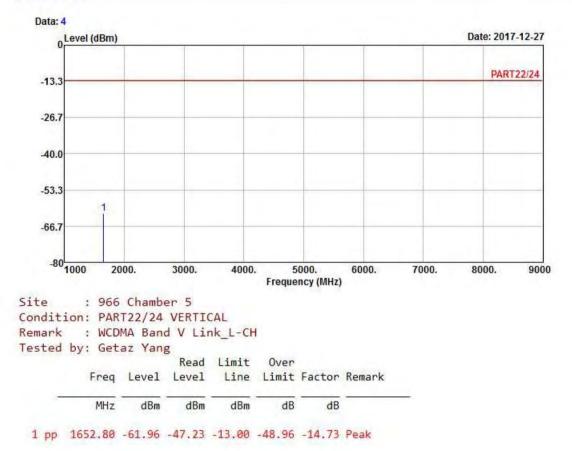
WCDMA: Low Channel







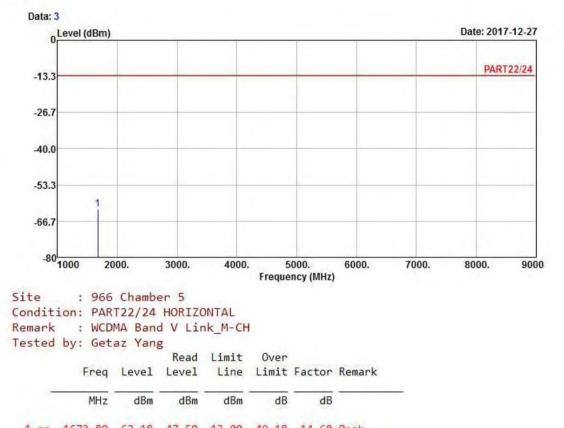
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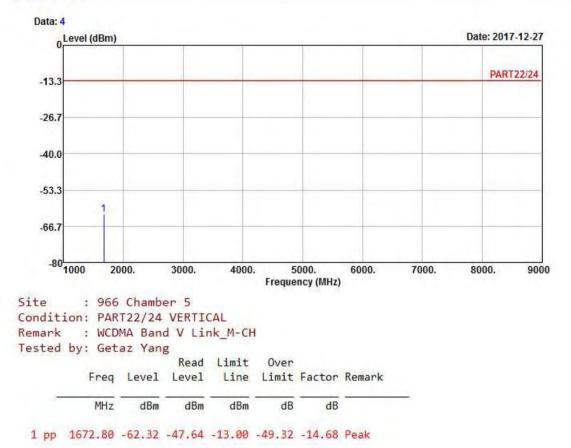


1 pp 1672.80 -62.18 -47.50 -13.00 -49.18 -14.68 Peak



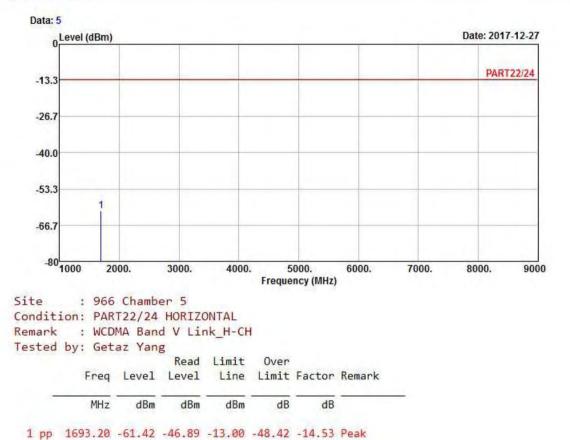


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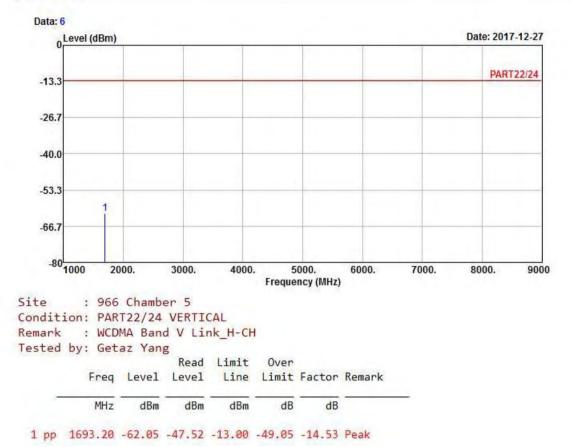






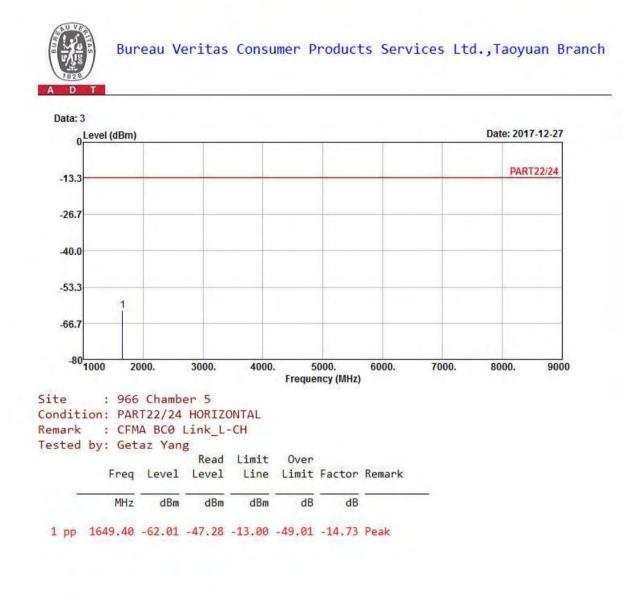


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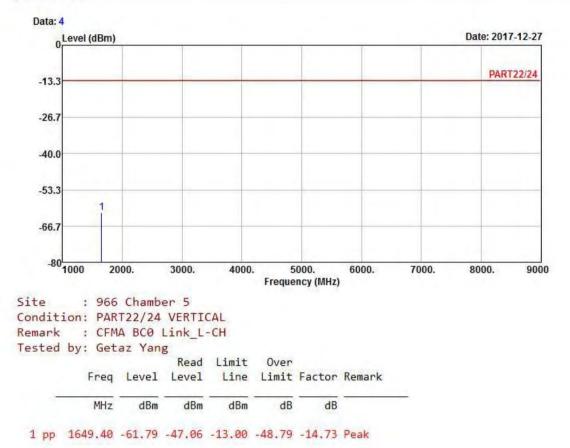
CDMA: Low Channel





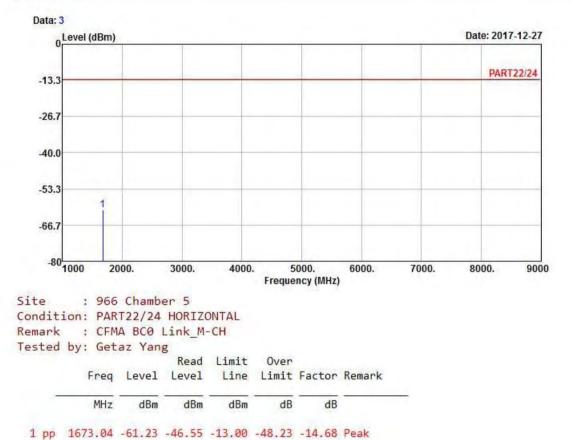


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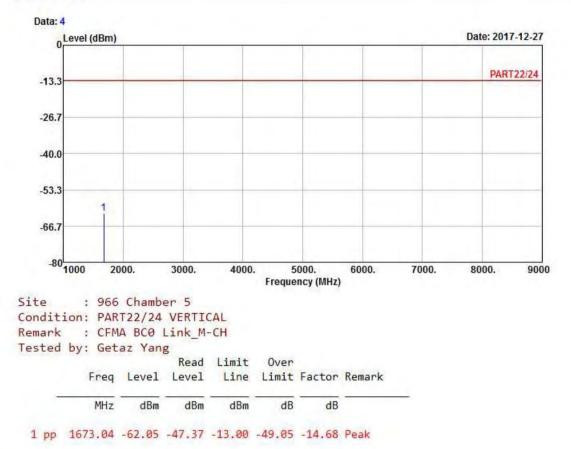






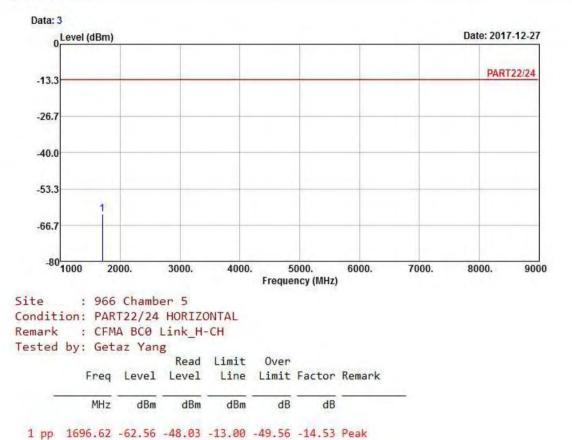


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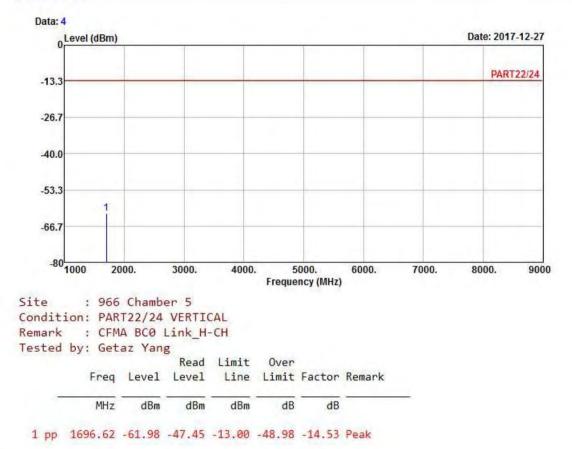






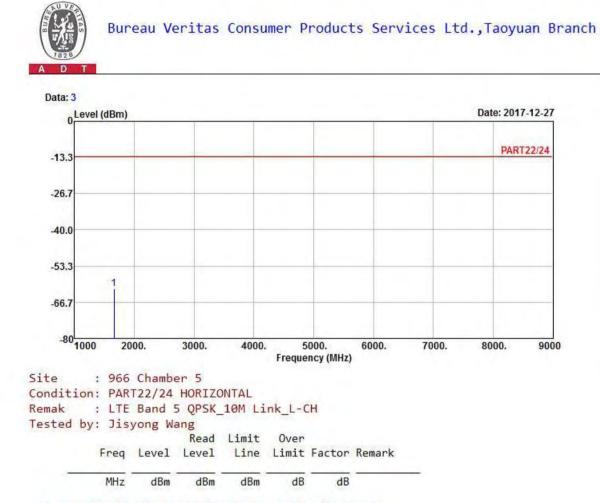


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LTE Band 5 Channel Bandwidth: 10 MHz / QPSK Low Channel

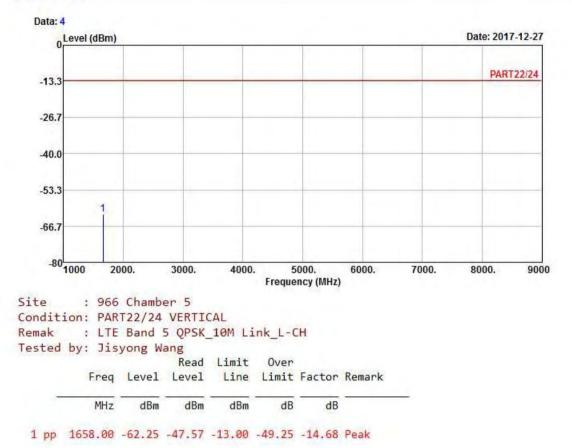


1 pp 1658.00 -61.57 -46.89 -13.00 -48.57 -14.68 Peak





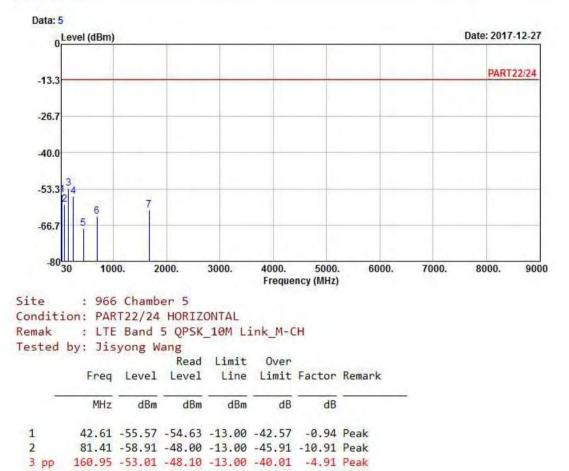
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252.13 -56.23 -50.20 -13.00 -43.23 -6.03 Peak

435.46 -67.85 -62.19 -13.00 -54.85 -5.66 Peak

695.42 -63.46 -63.29 -13.00 -50.46 -0.17 Peak

1673.00 -61.09 -46.41 -13.00 -48.09 -14.68 Peak

4

5

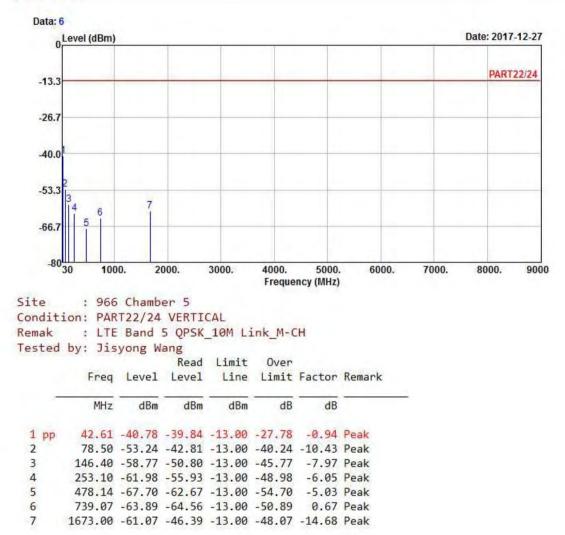
6

7





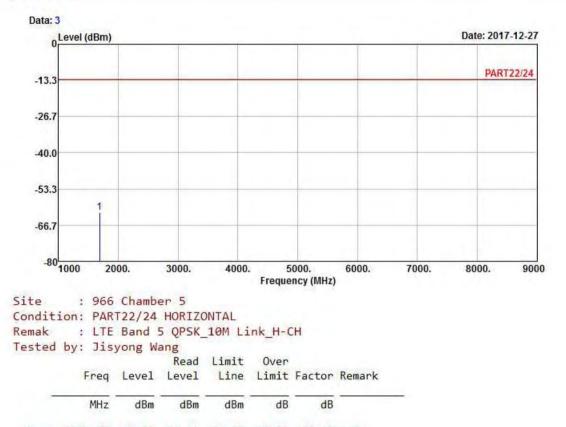
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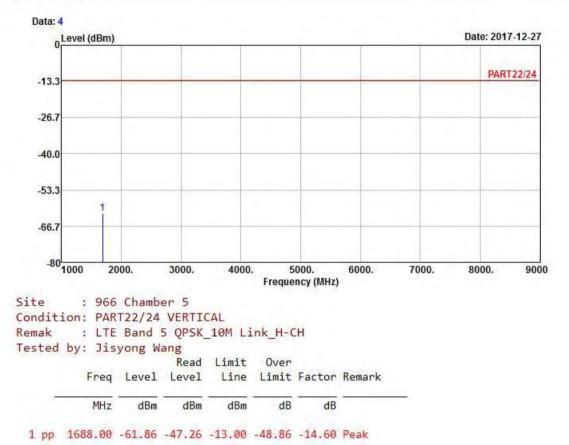


1 pp 1688.00 -62.01 -47.41 -13.00 -49.01 -14.60 Peak





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LTE Band 26 Channel Bandwidth: 15 MHz / QPSK Low Channel

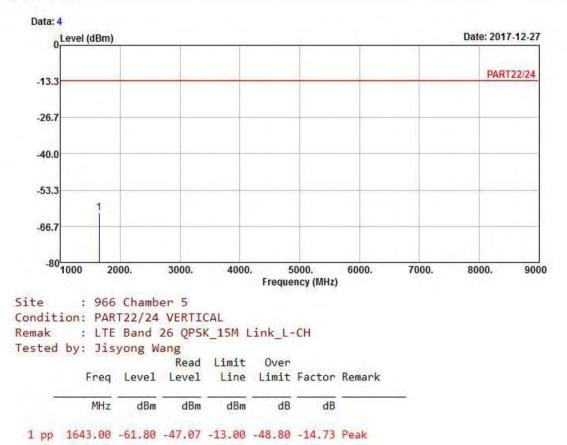


1 pp 1643.00 -62.02 -47.29 -13.00 -49.02 -14.73 Peak





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686.69 -63.71 -63.40 -13.00 -50.71 -0.31 Peak

1662.00 -60.31 -45.63 -13.00 -47.31 -14.68 Peak

932.10 -63.47 -64.84 -13.00 -50.47

45

6

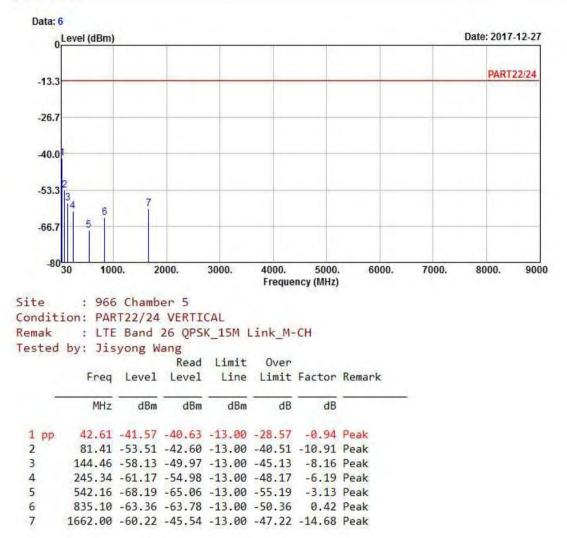
7

1.37 Peak





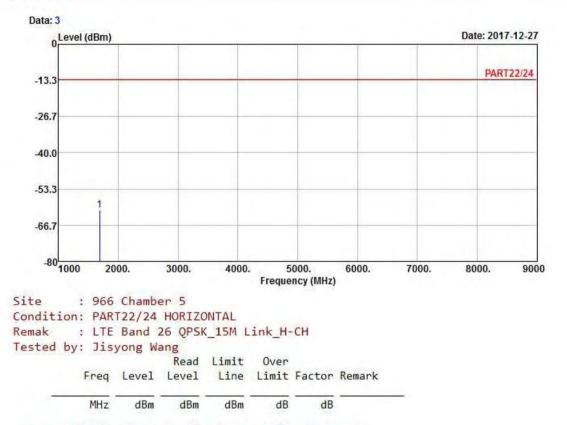
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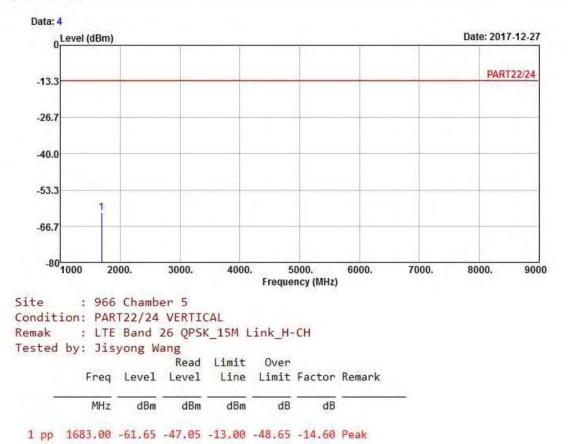


1 pp 1683.00 -61.07 -46.47 -13.00 -48.07 -14.60 Peak





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5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).



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.

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

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Hwa Ya EMC/RF/Safety Tel: 886-3-3183232 Fax: 886-3-3270892

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

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

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