

Report No.: FG022521-02F



FCC RADIO TEST REPORT

FCC ID : A4RG025E

Equipment : Phone Model Name : G025E

Applicant : Google LLC

1600 Amphitheatre Parkway,

Mountain View, California, 94043 USA

Standard : FCC 47 CFR Part 2, and 90(S)

The product was received on Apr. 30, 2020 and testing was started from May 09, 2020 and completed on Jun. 19, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Louis Wu

Louis Wu

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

TEL: 886-3-327-3456 Page Number : 1 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

Table of Contents

Report No. : FG022521-02F

| His | tory o | of this test report | 3 |
|-----|--------|--|----|
| | | y of Test Result | |
| 1 | Gene | eral Description | 5 |
| | 1.1 | Feature of Equipment Under Test | 5 |
| | 1.2 | Product Specification of Equipment Under Test | |
| | 1.3 | Modification of EUT | |
| | 1.4 | Testing Site | 6 |
| | 1.5 | Applied Standards | 7 |
| 2 | Test | Configuration of Equipment Under Test | 8 |
| | 2.1 | Test Mode | 8 |
| | 2.2 | Connection Diagram of Test System | g |
| | 2.3 | Support Unit used in test configuration and system | g |
| | 2.4 | Measurement Results Explanation Example | g |
| | 2.5 | Frequency List of Low/Middle/High Channels | 10 |
| 3 | Cond | lucted Test Items | 11 |
| | 3.1 | Measuring Instruments | 11 |
| | 3.2 | Conducted Output Power Measurement and ERP Measurement | 12 |
| | 3.3 | Peak-to-Average Ratio | |
| | 3.4 | 99% Occupied Bandwidth and 26dB Bandwidth Measurement | 14 |
| | 3.5 | Emissions Mask Measurement | 15 |
| | 3.6 | Emissions Mask – Out Of Band Emissions Measurement | 16 |
| | 3.7 | Frequency Stability Measurement | 17 |
| | 3.8 | Field Strength of Spurious Radiation Measurement | 18 |
| 4 | List | of Measuring Equipment | 21 |
| 5 | Unce | ertainty of Evaluation | 22 |
| ۸n | nondi | v A. Tost Posults of Conducted Tost | |

Appendix A. Test Results of Conducted Test

Appendix B. Test Results of ERP and Radiated Test

TEL: 886-3-327-3456 : 2 of 22 Page Number FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

History of this test report

Report No. : FG022521-02F

| Report No. | Version | Description | Issued Date |
|--------------|---------|-------------------------|---------------|
| FG022521-02F | 01 | Initial issue of report | Jun. 29, 2020 |
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TEL: 886-3-327-3456 Page Number : 3 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

Summary of Test Result

Report No.: FG022521-02F

| Report Clause | Ref Std. Clause | Test Items | Result (PASS/FAIL) | Remark | |
|------------------|--------------------|---|-----------------------|---|--|
| 3.2 | §2.1046 §90.635 | Conducted Output Power and Effective Radiated Power | Pass | - | |
| 3.3 | - | Peak-to-Average Ratio | Reporting only | - | |
| 3.4 | §2.1049 §90.209 | Occupied Bandwidth and 26dB Bandwidth | Reporting only | - | |
| 3.5 | §2.1051 §90.691 | Emission masks – In-band emissions | Pass | - | |
| 3.6 | §2.1051 §90.691 | Emission masks – Out of band emissions | Pass | - | |
| 3.7 | §2.1055 §90.213 | Frequency Stability for Temperature & Voltage | Pass | - | |
| 3.8 | §2.1053 §90.691 | Field Strength of Spurious Radiation | Pass | Under limit 39.13 dB at 2470.000 MHz for Primary Antenna Under limit 40.88 dB at 2450.000 MHz for ASDIV Antenna | |

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Wii Chang Report Producer: Vivian Hsu

TEL: 886-3-327-3456 Page Number : 4 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

1 General Description

1.1 Feature of Equipment Under Test

| Product Feature | | | | | | |
|---------------------------------|---|--|--|--|--|--|
| Equipment | Phone | | | | | |
| Model Name | G025E | | | | | |
| FCC ID | A4RG025E | | | | | |
| EUT supports Radios application | CDMA/EV-DO/GSM/EGPRS/WCDMA/HSPA/LTE/5G NR/ NFC/GNSS WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE | | | | | |

Report No. : FG022521-02F

Remark: The above EUT's information was declared by manufacturer.

| EUT Information List | | | | | | | |
|----------------------|------------------------------|--|--|--|--|--|--|
| S/N | Performed Test Item | | | | | | |
| 04211FQCB00048 | Conducted Measurement ERP | | | | | | |
| 04241FQCB00320 | Radiated Spurious Emission | | | | | | |

1.2 Product Specification of Equipment Under Test

| Product Specification subjective to this standard | | | | | |
|---|---|--|--|--|--|
| Tx Frequency | 814.7 ~ 823.3 MHz | | | | |
| Rx Frequency | 859.7 ~ 868.3 MHz | | | | |
| Bandwidth | 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz | | | | |
| Maximum Output Power to Antenna | <primary antenna=""> 24.58 dBm</primary> | | | | |
| Maximum Output Power to Antenna | <asdiv antenna=""> 24.77 dBm</asdiv> | | | | |
| Antonno Typo | <primary antenna="">: PIFA Antenna type</primary> | | | | |
| Antenna Type | <a>ASDIV Antenna>: PIFA Antenna type | | | | |
| Type of Modulation | QPSK / 16QAM / 64QAM | | | | |

<Primary Antenna>

| Radio Tech | Band Number | Antenna name | Gain | | |
|------------|-------------|--------------|------|--|--|
| LTE | B26 | Ant 0 | -2.8 | | |

<ASDIV Antenna>

| Radio Tech | Band Number | Antenna name | Gain | | |
|------------|-------------|--------------|------|--|--|
| LTE | B26 | Ant 1 | -3.5 | | |

TEL: 886-3-327-3456 Page Number : 5 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

1.3 Modification of EUT

No modifications are made to the EUT during all test items.

1.4 Testing Site

| Test Site SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory | | | | | |
|---|--|--|--|--|--|
| Test Site Location | No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978 | | | | |
| Test Site No. | Sporton Site No. | | | | |
| rest Site No. | TH05-HY | | | | |
| Test Engineer | Luffy Lin | | | | |
| Temperature | 22~24°C | | | | |
| Relative Humidity | 51~55% | | | | |

Report No.: FG022521-02F

Note: The test site complies with ANSI C63.4 2014 requirement.

| Test Site | SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory | | | | |
|--------------------|--|--|--|--|--|
| Test Site Location | No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855 | | | | |
| Test Site No. | Sporton Site No. | | | | |
| rest site No. | 03CH12-HY | | | | |
| Test Engineer | Jack Cheng , Lance Chiang, Chuan Chu | | | | |
| Temperature | 20~26°C | | | | |
| Relative Humidity | 52~66% | | | | |

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: TW1190 and TW0007

TEL: 886-3-327-3456 Page Number : 6 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

1.5 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

Report No.: FG022521-02F

- FCC 47 CFR Part 2, 90
- ANSI / TIA-603-E
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- FCC KDB 414788 D01 Radiated Test Site v01r01
- Interim Guidance for Equipment Authorization of Devices with Channel Bandwidths Combined Across Two Contiguous Service Rule Allocations OET/Lab/EACB, June 6, 2013

Remark:

- All test items were verified and recorded according to the standards and without any deviation during the test.
- 2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
- 3. The TAF code is not including all the FCC KDB listed without accreditation.

TEL: 886-3-327-3456 Page Number : 7 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

2 Test Configuration of Equipment Under Test

2.1 Test Mode

During all testing, EUT is in link mode with base station emulator at maximum power level.

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z and Accessory. The worst cases (Primary Antenna: Y Plane; ASDIV Antenna: Z Plane) were recorded in this report.

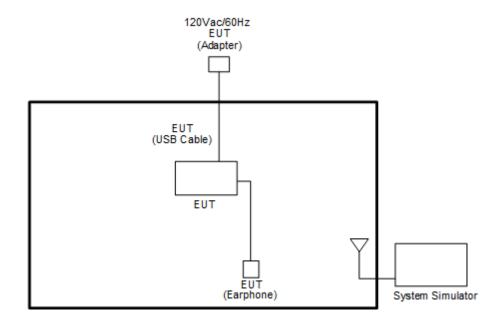
Report No.: FG022521-02F

Frequency range investigated for radiated emission is 30 MHz to 9000 MHz.

| Conducted | David | Bandwidth (MHz) | | | | | Modulation | | | RB# | | | Test Channel | | | |
|--|-------|-----------------|---|---|----|------|------------|-------------|-------|-------|----------|------|--------------|---|---|---|
| Test Cases | Band | 1.4 | 3 | 5 | 10 | 15 | 20 | QPSK | 16QAM | 64QAM | 1 | Half | Full | L | М | Н |
| Max. Output Power | 26 | ٧ | v | v | v | v | - | v | v | v | ٧ | v | ٧ | V | v | v |
| Peak-to-Average Ratio | 26 | | | | | v | - | ٧ | v | v | ٧ | | V | V | v | v |
| 26dB and 99% Bandwidth | 26 | v | v | V | v | v | - | > | v | v | | | v | V | v | v |
| Emission masks In-band emissions | 26 | ٧ | v | v | v | v | - | ٧ | v | v | > | | v | V | | v |
| Emission masks – Out of band emissions | 26 | v | v | v | v | v | - | ٧ | v | v | v | | | v | v | v |
| Frequency Stability | 26 | - | - | | v | v | - | v | v | v | | | v | v | v | |
| E.R.P. | 26 | | | | | v | - | > | v | v | > | | | V | v | v |
| Radiated Spurious Emission | 26 | | | | | | Wo | rst Case | | | | | | V | v | v |
| 1. The mark "v" means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. LTE Band26 transmit frequency for part22 rule is 824MHz-849MHz, for part90 rule is 814MHz-824MHz ERP over 15MHz bandwidth complies the ERP limit line of part22 rule, therefore ERP of the partial frequency spectrum which falls within part 22 also complies. 4. All the radiated test cases were performed with Adapter 1 and USB Cable 1. | | | | | | ЛHz. | | | | | | | | | | |

TEL: 886-3-327-3456 Page Number : 8 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

2.2 Connection Diagram of Test System



Report No.: FG022521-02F

2.3 Support Unit used in test configuration and system

| I | tem | Equipment | Trade Name | Model No. | FCC ID | Data Cable | Power Cord | |
|---|-----|------------------|------------|-----------|--------|------------|-------------------|--|
| | 1. | System Simulator | Anritsu | MT8821C | N/A | N/A | Unshielded, 1.8 m | |

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 4.2 dB and a 10dB attenuator.

Example:

 $Offset(dB) = RF \ cable \ loss(dB) + attenuator \ factor(dB).$

$$= 4.2 + 10 = 14.2 (dB)$$

TEL: 886-3-327-3456 Page Number : 9 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

2.5 Frequency List of Low/Middle/High Channels

| | LTE Band 26 Ch | annel and Frequen | cy List | |
|----------|------------------------|-------------------|---------|---------|
| BW [MHz] | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 15 | Channel | 26765 | - | - |
| 15 | Frequency | 821.5 | - | - |
| 10 | Channel | - | 26740 | - |
| 10 | Frequency | - | 819 | - |
| 5 | Channel | 26715 | 26740 | 26765 |
| 5 | Frequency | 816.5 | 819 | 821.5 |
| 3 | Channel | 26705 | 26740 | 26775 |
| 3 | Frequency | 815.5 | 819 | 822.5 |
| 1.4 | Channel | 26697 | 26740 | 26783 |
| 1.4 | Frequency | 814.7 | 819 | 823.3 |

Report No. : FG022521-02F

TEL: 886-3-327-3456 Page Number : 10 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

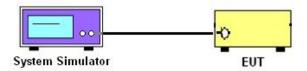
3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of this test report.

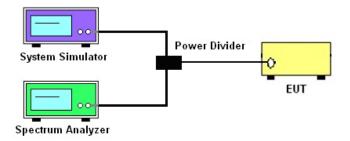
3.1.1 Test Setup

3.1.2 Conducted Output Power

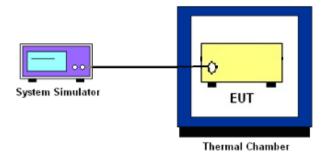


Report No.: FG022521-02F

3.1.3 Peak-to-Average Ratio, Occupied Bandwidth, Conducted Band-Edge, Emission Mask, Emissions Mask – Out Of Band Emissions, and Conducted Spurious Emission



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

TEL: 886-3-327-3456 Page Number : 11 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

3.2 Conducted Output Power Measurement and ERP Measurement

3.2.1 Description of the Conducted Output Power Measurement and ERP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

Report No.: FG022521-02F

The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 26.

According to KDB 412172 D01 Power Approach,

 $EIRP = P_T + G_T - L_C$, where

 P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.2.2 Test Procedures

- 1. The transmitter output port was connected to the system simulator.
- 2. Set EUT at maximum power through system simulator.
- 3. Select lowest, middle, and highest channels for each band and different modulation.
- 4. Measure and record the power level from the system simulator.

TEL: 886-3-327-3456 Page Number : 12 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

3.3 Peak-to-Average Ratio

3.3.1 Description of the PAR Measurement

Reporting only

3.3.2 Test Procedures

- 1. The EUT was connected to spectrum and system simulator via a power divider.
- 2. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.

Report No.: FG022521-02F

- 3. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
- 4. Record the deviation as Peak to Average Ratio.

TEL: 886-3-327-3456 Page Number : 13 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

3.4 99% Occupied Bandwidth and 26dB Bandwidth Measurement

3.4.1 Description of (Occupied) Bandwidth Limitations Measurement

The 99% occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

Report No.: FG022521-02F

The emission bandwidth is defined as the width of the signal between two points, located at the 2 sides of the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

3.4.2 Test Procedures

- 1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
- 2. The 26dB and 99% occupied bandwidth (BW) of the middle channel for the highest RF power with full RB sizes were measured.

TEL: 886-3-327-3456 Page Number : 14 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

3.5 Emissions Mask Measurement

3.5.1 Description of Emissions Mask Measurement

Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of FCC Part 90.691.(a)

Report No.: FG022521-02F

- (a) Out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:
- (1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 $\log_{10}(f/6.1)$ decibels or 50 + 10 $\log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.
- (2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + $10Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

3.5.2 Test Procedures

- 1. The EUT was connected to spectrum analyzer and base station via power divider.
- 2. The emissions mask of low and high channels for the highest RF powers were measured.
- 3. Set RBW and VBW 3 times of RBW to make the measurement with the spectrum analyzer's, and according to KDB 971168 D02 Misc Rev Approve License Devices v02r01 standards, set RBW = 300 Hz to make offsets less than 37.5 kHz from a channel edge, RBW = 100 kHz to make offsets greater than 37.5 kHz, that is allowed.
- 4. The test results were shown below plots with a correction offset factor including cable loss, insertion loss of power divider.

TEL: 886-3-327-3456 Page Number : 15 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

3.6 Emissions Mask - Out Of Band Emissions Measurement

3.6.1 Description of Conducted Emissions Out of band emissions measurement

The power of any emission FCC Part 90.691 (a)(2) on any frequency removed from the assigned frequency by out of the authorized bandwidth at least 43 + 10 log (P) dB. It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

Report No.: FG022521-02F

3.6.2 Test Procedures

- 1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. The middle channel for the highest RF power within the transmitting frequency was measured.
- 4. The conducted spurious emission for the whole frequency range was taken.
- 5. For testing below 1GHz, make the measurement with the spectrum analyzer's RBW = 100 kHz, VBW = 3MHz, taking the record of maximum spurious emission.
- 6. For testing above 1GHz, make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
- The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- 8. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

TEL: 886-3-327-3456 Page Number : 16 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

3.7 Frequency Stability Measurement

3.7.1 Description of Frequency Stability Measurement

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Report No.: FG022521-02F

3.7.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Procedures for Temperature Variation

- 1. The EUT was set up in the thermal chamber and connected with the base station.
- 2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized for three hours. Power was applied and the maximum change in frequency was recorded within one minute.
- 3. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.7.4 Test Procedures for Voltage Variation

- 1. The EUT was placed in a temperature chamber at 20±5° C and connected with the base station.
- The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
- 3. The variation in frequency was measured for the worst case.

TEL: 886-3-327-3456 Page Number : 17 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

3.8 Field Strength of Spurious Radiation Measurement

3.8.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. The power of any emission FCC Part 90.691 on any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

Report No.: FG022521-02F

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43+10log₁₀(P[Watts]) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

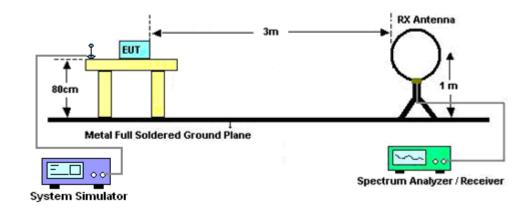
3.8.2 Test Procedures

- 1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
- 2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
- 3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
- 4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
- 5. For testing below 1GHz, make the measurement with the spectrum analyzer's RBW = 100 kHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
- 6. For testing above 1GHz, make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
- 7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
- 8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
- 9. Taking the record of output power at antenna port.
- 10. Repeat step 7 to step 8 for another polarization.
- 11. EIRP (dBm) = S.G. Power Tx Cable Loss + Tx Antenna Gain
- 12. ERP (dBm) = EIRP 2.15
- 13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- 14. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

TEL: 886-3-327-3456 Page Number : 18 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

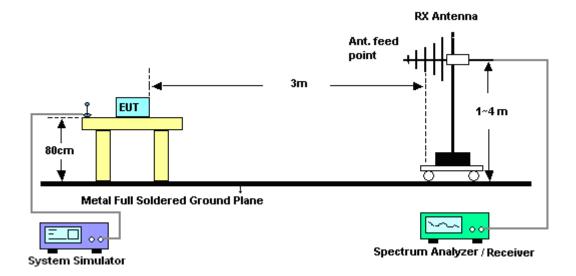
3.8.3 Test Setup

For radiated emissions below 30MHz



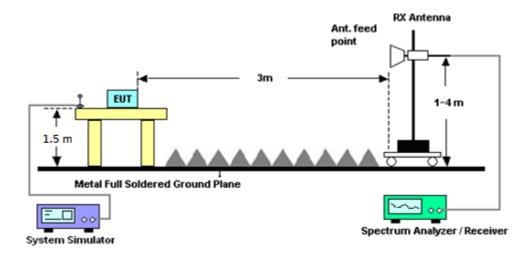
Report No. : FG022521-02F

For radiated test from 30MHz to 1GHz



TEL: 886-3-327-3456 Page Number : 19 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

For radiated test above 1GHz



Report No.: FG022521-02F

3.8.4 Test Result of Field Strength of Spurious Radiated

Please refer to Appendix B.

Note:

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

TEL: 886-3-327-3456 Page Number : 20 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

4 List of Measuring Equipment

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Test Date | Due Date | Remark |
|------------------------------|--------------------|---|-----------------|-------------------------------|---------------------|--------------------------------|---------------|--------------------------|
| LTE Base Station | Anritsu | MT8821C | 626200253 41 | - | Oct. 24, 2019 | May 13, 2020~ Jun. 19, 2020 | Oct. 23, 2020 | Conducted (TH05-HY) |
| Spectrum Analyzer | Rohde & Schwarz | FSV40 | 101397 | 10Hz~40GHz | Nov. 15, 2019 | May 13, 2020~ Jun. 19, 2020 | Nov. 14, 2020 | Conducted (TH05-HY) |
| Temperature Chamber | ESPEC | SH-641 | 92013720 | -40°C~90°C | Sep. 02, 2019 | May 13, 2020~ Jun. 19, 2020 | Sep. 01, 2020 | Conducted (TH05-HY) |
| Programmable Power Supply | GW Instek | PSS-2005 | EL890094 | 1V~20V 0.5A~5A | Oct. 09, 2019 | May 13, 2020~ Jun. 19, 2020 | Oct. 08, 2020 | Conducted (TH05-HY) |
| Coupler | Warison | 20dB 25W SMA Directional Coupler | #A | 1-18GHz | Jan. 13, 2020 | May 13, 2020~ Jun. 19, 2020 | Jan. 12, 2021 | Conducted (TH05-HY) |
| Loop Antenna | Rohde & Schwarz | HFH2-Z2 | 100315 | 9 kHz~30 MHz | Dec. 26, 2019 | May 09, 2020~ Jun. 17, 2020 | Dec. 25, 2020 | Radiation (03CH12-HY) |
| Bilog Antenna | TESEQ | CBL 6111D & 00800N1D01 N-06 | 37059 & 01 | 30MHz~1GHz | Oct. 12, 2019 | May 09, 2020~ Jun. 17, 2020 | Oct 11, 2020 | Radiation (03CH12-HY) |
| Horn Antenna | SCHWARZBE CK | BBHA 9120D | 9120D-132 8 | 1GHz ~ 18GHz | Nov. 14, 2019 | May 09, 2020~ Jun. 17, 2020 | Nov. 13, 2020 | Radiation (03CH12-HY) |
| Horn Antenna | SCHWARZBE CK | BBHA 9120D | 9120D-152 2 | 1GHz ~ 18GHz | Sep. 19, 2019 | May 09, 2020~ Jun. 17, 2020 | Sep. 18, 2020 | Radiation (03CH12-HY) |
| Preamplifier | COM-POWER | PA-103 | 161075 | 10MHz~1GHz | Mar. 25, 2020 | May 09, 2020~ Jun. 17, 2020 | Mar. 24, 2021 | Radiation (03CH12-HY) |
| Preamplifier | Jet-Power | JPA00101800 -30-10P | 160118000 2 | 1GHz~18GHz | Feb. 07, 2020 | May 09, 2020~ Jun. 17, 2020 | Feb. 06, 2021 | Radiation (03CH12-HY) |
| Preamplifier | Keysight | 83017A | MY532701 48 | 1GHz~26.5GHz | Dec. 20, 2019 | May 09, 2020~ Jun. 17, 2020 | Dec. 19, 2020 | Radiation (03CH12-HY) |
| Signal Analyzer | Agilent | N9010A | MY534701 18 | 10Hz~44GHz | Mar. 12, 2020 | May 09, 2020~ Jun. 17, 2020 | Mar. 11, 2021 | Radiation (03CH12-HY) |
| Signal Generator | Rohde & Schwarz | SMB100A | 101107 | 100kHz~40GHz | Aug. 27, 2019 | May 09, 2020~ Jun. 17, 2020 | Aug. 26, 2020 | Radiation (03CH12-HY) |
| Hygrometer | TECPEL | DTN-303B | TP140325 | N/A | Nov. 07, 2019 | May 09, 2020~ Jun. 17, 2020 | Nov. 06, 2020 | Radiation (03CH12-HY) |
| RF Cable | HUBER + SUHNER | SUCOFLEX 126E | 0058/126E | 30M-18G | Dec. 12, 2019 | May 09, 2020~ Jun. 17, 2020 | Dec. 11, 2020 | Radiation (03CH12-HY) |
| Controller | EMEC | EM1000 | N/A | Control Turn table & Ant Mast | N/A | May 09, 2020~ Jun. 17, 2020 | N/A | Radiation (03CH12-HY) |
| Antenna Mast | EMEC | AM-BS-4500- B | N/A | 1m~4m | N/A | May 09, 2020~ Jun. 17, 2020 | N/A | Radiation (03CH12-HY) |
| Turn Table | EMEC | TT2000 | N/A | 0~360 Degree | N/A | May 09, 2020~ Jun. 17, 2020 | N/A | Radiation (03CH12-HY) |
| Software | Audix | E3 6.2009-8-24 | RK-00098 9 | N/A | N/A | May 09, 2020~ Jun. 17, 2020 | N/A | Radiation (03CH12-HY) |

Report No. : FG022521-02F

TEL: 886-3-327-3456 Page Number : 21 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020

5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

| Measuring Uncertainty for a Level of | 2.24 |
|--------------------------------------|------|
| Confidence of 95% (U = 2Uc(y)) | 3.24 |

Report No. : FG022521-02F

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

| Measuring Uncertainty for a Level of | 3.62 |
|--------------------------------------|------|
| Confidence of 95% (U = 2Uc(y)) | 3.02 |

TEL: 886-3-327-3456 Page Number : 22 of 22 FAX: 886-3-328-4978 Issued Date : Jun. 29, 2020



Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

<Primary Antenna>

| <primary< th=""><th>/ Antenn</th><th></th><th>Pand 26 May</th><th>kimum Average Po</th><th>war [dDm]</th><th></th></primary<> | / Antenn | | Pand 26 May | kimum Average Po | war [dDm] | |
|---|----------|-----------|-------------|------------------|-----------|---------|
| DW FMI I-1 | DD Ci | | | | | Himbook |
| BW [MHz] 15 | RB Size | RB Offset | Mod | Lowest | Middle | Highest |
| 15 | 1 | 0 37 | - | 24.41 24.28 | - | - |
| 15 | 1 | | - | 24.26 | <u>-</u> | - |
| | 36 | 74 0 | QPSK | | | - |
| 15 | | 20 | QF3K | 23.45 | - | - |
| 15 | 36 | | - | 23.52 | - | - |
| 15 | 36 | 39 | - | 23.45 | - | - |
| 15 | 75 | 0 | | 23.52 | - | - |
| 15 | 1 | 0 | - | 23.71 | - | - |
| 15 | 1 | 37 | - | 23.63 | - | - |
| 15 | 1 | 74 | | 23.70 | - | - |
| 15 | 36 | 0 | 16-QAM | 22.47 | - | - |
| 15 | 36 | 20 | _ | 22.51 | - | - |
| 15 | 36 | 39 | _ | 22.47 | - | - |
| 15 | 75 | 0 | | 22.53 | - | - |
| 15 | 1 | 0 | _ | 22.58 | - | - |
| 15 | 1 | 37 | _ | 22.54 | - | - |
| 15 | 1 | 74 | _ | 22.58 | - | - |
| 15 | 36 | 0 | 64-QAM | 21.51 | - | - |
| 15 | 36 | 20 | <u>_</u> | 21.55 | - | - |
| 15 | 36 | 39 | <u>_</u> | 21.50 | - | - |
| 15 | 75 | 0 | | 21.54 | - | - |
| 10 | 1 | 0 | | - | 24.42 | - |
| 10 | 1 | 25 | | - | 24.38 | - |
| 10 | 1 | 49 | | - | 24.43 | • |
| 10 | 25 | 0 | QPSK | - | 23.48 | • |
| 10 | 25 | 12 | | - | 23.50 | - |
| 10 | 25 | 25 | | - | 23.53 | - |
| 10 | 50 | 0 | | - | 23.49 | - |
| 10 | 1 | 0 | | - | 23.77 | - |
| 10 | 1 | 25 | | - | 23.81 | - |
| 10 | 1 | 49 | | - | 23.79 | - |
| 10 | 25 | 0 | 16-QAM | - | 22.49 | - |
| 10 | 25 | 12 | | - | 22.50 | - |
| 10 | 25 | 25 | | - | 22.54 | - |
| 10 | 50 | 0 | | - | 22.46 | - |
| 10 | 1 | 0 | | - | 22.66 | - |
| 10 | 1 | 25 | | - | 22.73 | - |
| 10 | 1 | 49 | | - | 22.74 | - |
| 10 | 25 | 0 | 64-QAM | - | 21.56 | - |
| 10 | 25 | 12 | | - | 21.55 | - |
| 10 | 25 | 25 | | - | 21.56 | - |
| 10 | 50 | 0 | | - | 21.52 | - |



PORTON LAB. FCC RADIO TEST REPORT

| | | LTE | Band 26 Ma | ximum Average Po | ower [dBm] | |
|----------|---------|-----------|------------|------------------|------------|---------|
| BW [MHz] | RB Size | RB Offset | Mod | Lowest | Middle | Highest |
| 5 | 1 | 0 | | 24.58 | 24.40 | 24.49 |
| 5 | 1 | 12 | | 24.54 | 24.46 | 24.46 |
| 5 | 1 | 24 | | 24.39 | 24.49 | 24.40 |
| 5 | 12 | 0 | QPSK | 23.62 | 23.52 | 23.56 |
| 5 | 12 | 7 | | 23.62 | 23.58 | 23.52 |
| 5 | 12 | 13 | | 23.53 | 23.53 | 23.43 |
| 5 | 25 | 0 | | 23.59 | 23.49 | 23.50 |
| 5 | 1 | 0 | | 23.92 | 23.77 | 23.81 |
| 5 | 1 | 12 | | 23.80 | 23.76 | 23.69 |
| 5 | 1 | 24 | | 23.73 | 23.83 | 23.69 |
| 5 | 12 | 0 | 16-QAM | 22.65 | 22.55 | 22.52 |
| 5 | 12 | 7 | | 22.59 | 22.61 | 22.52 |
| 5 | 12 | 13 | | 22.53 | 22.50 | 22.45 |
| 5 | 25 | 0 | | 22.58 | 22.51 | 22.54 |
| 5 | 1 | 0 | | 22.82 | 22.72 | 22.70 |
| 5 | 1 | 12 | | 22.71 | 22.66 | 22.03 |
| 5 | 1 | 24 | | 22.64 | 22.67 | 21.90 |
| 5 | 12 | 0 | 64-QAM | 21.71 | 21.62 | 21.61 |
| 5 | 12 | 7 | | 21.70 | 21.64 | 21.03 |
| 5 | 12 | 13 | | 21.61 | 21.61 | 20.72 |
| 5 | 25 | 0 | | 21.62 | 21.52 | 21.16 |
| 3 | 1 | 0 | | 24.56 | 24.45 | 24.47 |
| 3 | 1 | 8 | | 24.58 | 24.54 | 24.39 |
| 3 | 1 | 14 | | 24.46 | 24.51 | 24.41 |
| 3 | 8 | 0 | QPSK | 23.63 | 23.52 | 23.41 |
| 3 | 8 | 4 | | 23.65 | 23.60 | 23.40 |
| 3 | 8 | 7 | | 23.57 | 23.50 | 23.44 |
| 3 | 15 | 0 | | 23.57 | 23.51 | 23.43 |
| 3 | 1 | 0 | | 23.92 | 23.76 | 23.78 |
| 3 | 1 | 8 | | 23.92 | 23.83 | 23.59 |
| 3 | 1 | 14 | | 23.77 | 23.84 | 23.70 |
| 3 | 8 | 0 | 16-QAM | 22.69 | 22.61 | 22.55 |
| 3 | 8 | 4 | | 22.66 | 22.64 | 22.51 |
| 3 | 8 | 7 | | 22.60 | 22.58 | 22.49 |
| 3 | 15 | 0 | | 22.64 | 22.53 | 22.49 |
| 3 | 1 | 0 | | 22.78 | 22.67 | 22.05 |
| 3 | 1 | 8 | | 22.79 | 22.75 | 21.73 |
| 3 | 1 | 14 | | 22.66 | 22.69 | 21.83 |
| 3 | 8 | 0 | 64-QAM | 21.72 | 21.58 | 20.80 |
| 3 | 8 | 4 | | 21.72 | 21.68 | 20.67 |
| 3 | 8 | 7 | | 21.63 | 21.59 | 20.74 |
| 3 | 15 | 0 | | 21.63 | 21.55 | 20.78 |



FCC RADIO TEST REPORT

| | | LTE | Band 26 Ma | ximum Average Po | wer [dBm] | |
|----------|---------|-----------|------------|------------------|-----------|---------|
| BW [MHz] | RB Size | RB Offset | Mod | Lowest | Middle | Highest |
| 1.4 | 1 | 0 | | 24.48 | 24.36 | 24.32 |
| 1.4 | 1 | 3 | | 24.52 | 24.47 | 24.34 |
| 1.4 | 1 | 5 | | 24.44 | 24.38 | 24.24 |
| 1.4 | 3 | 0 | QPSK | 24.50 | 24.39 | 24.33 |
| 1.4 | 3 | 1 | | 24.51 | 24.40 | 24.37 |
| 1.4 | 3 | 3 | | 24.47 | 24.41 | 24.35 |
| 1.4 | 6 | 0 | | 23.54 | 23.48 | 23.37 |
| 1.4 | 1 | 0 | | 23.87 | 23.69 | 23.60 |
| 1.4 | 1 | 3 | | 23.87 | 23.77 | 23.68 |
| 1.4 | 1 | 5 | | 23.79 | 23.71 | 23.60 |
| 1.4 | 3 | 0 | 16-QAM | 23.69 | 23.45 | 23.37 |
| 1.4 | 3 | 1 | | 23.71 | 23.51 | 23.45 |
| 1.4 | 3 | 3 | | 23.66 | 23.47 | 23.35 |
| 1.4 | 6 | 0 | | 22.61 | 22.57 | 22.47 |
| 1.4 | 1 | 0 | | 22.84 | 22.58 | 21.71 |
| 1.4 | 1 | 3 | | 22.82 | 22.68 | 21.82 |
| 1.4 | 1 | 5 | | 22.78 | 22.59 | 21.87 |
| 1.4 | 3 | 0 | 64-QAM | 22.73 | 22.57 | 21.72 |
| 1.4 | 3 | 1 | | 22.74 | 22.64 | 21.75 |
| 1.4 | 3 | 3 | | 22.69 | 22.60 | 21.88 |
| 1.4 | 6 | 0 | | 21.59 | 21.49 | 20.73 |

<ASDIV Antenna>

| <asdiv< th=""><th>Antenna</th><th></th><th>Band 26 Ma</th><th>ximum Average Po</th><th>wer [dRm]</th><th></th></asdiv<> | Antenna | | Band 26 Ma | ximum Average Po | wer [dRm] | |
|---|---------|-----------|------------|------------------|-----------|---------|
| BW [MHz] | RB Size | RB Offset | Mod | Lowest | Middle | Highest |
| 15 | 1 | 0 | | 24.58 | - | - |
| 15 | 1 | 37 | | 24.49 | - | - |
| 15 | 1 | 74 | | 24.56 | - | - |
| 15 | 36 | 0 | QPSK | 23.66 | - | - |
| 15 | 36 | 20 | | 23.70 | - | - |
| 15 | 36 | 39 | | 23.66 | - | - |
| 15 | 75 | 0 | | 23.69 | - | - |
| 15 | 1 | 0 | | 23.91 | - | - |
| 15 | 1 | 37 | | 23.85 | - | - |
| 15 | 1 | 74 | | 23.88 | - | - |
| 15 | 36 | 0 | 16-QAM | 22.68 | - | - |
| 15 | 36 | 20 | | 22.68 | - | - |
| 15 | 36 | 39 | | 22.67 | = | - |
| 15 | 75 | 0 | | 22.72 | = | - |
| 15 | 1 | 0 | | 22.77 | - | _ |
| 15 | 1 | 37 | | 22.74 | - | - |
| 15 | 1 | 74 | | 22.78 | - | - |
| 15 | 36 | 0 | 64-QAM | 21.68 | - | - |
| 15 | 36 | 20 | | 21.71 | - | - |
| 15 | 36 | 39 | | 21.70 | - | - |
| 15 | 75 | 0 | | 21.72 | - | - |
| 10 | 1 | 0 | | - | 24.60 | - |
| 10 | 1 | 25 | | - | 24.60 | - |
| 10 | 1 | 49 | | - | 24.62 | - |
| 10 | 25 | 0 | QPSK | - | 23.67 | - |
| 10 | 25 | 12 | | - | 23.71 | - |
| 10 | 25 | 25 | | - | 23.70 | - |
| 10 | 50 | 0 | | - | 23.65 | - |
| 10 | 1 | 0 | | - | 24.01 | - |
| 10 | 1 | 25 | | - | 24.01 | - |
| 10 | 1 | 49 | | - | 23.99 | - |
| 10 | 25 | 0 | 16-QAM | - | 22.71 | - |
| 10 | 25 | 12 | | - | 22.72 | - |
| 10 | 25 | 25 | | - | 22.74 | - |
| 10 | 50 | 0 | | - | 22.64 | - |
| 10 | 1 | 0 | | - | 22.79 | - |
| 10 | 1 | 25 | | - | 22.95 | - |
| 10 | 1 | 49 | | - | 22.91 | - |
| 10 | 25 | 0 | 64-QAM | - | 21.73 | - |
| 10 | 25 | 12 | | - | 21.74 | - |
| 10 | 25 | 25 | | - | 21.72 | - |
| 10 | 50 | 0 | | - | 21.69 | - |



FCC RADIO TEST REPORT

| | | LTF | Band 26 Ma | ximum Average Po | ower [dBm] | |
|----------|---------|-----------|------------|------------------|------------|---------|
| BW [MHz] | RB Size | RB Offset | Mod | Lowest | Middle | Highest |
| 5 | 1 | 0 | | 24.77 | 24.62 | 24.66 |
| 5 | 1 | 12 | | 24.70 | 24.69 | 24.63 |
| 5 | 1 | 24 | | 24.57 | 24.70 | 24.61 |
| 5 | 12 | 0 | QPSK | 23.79 | 23.71 | 23.76 |
| 5 | 12 | 7 | | 23.78 | 23.77 | 23.70 |
| 5 | 12 | 13 | | 23.71 | 23.72 | 23.61 |
| 5 | 25 | 0 | | 23.73 | 23.68 | 23.70 |
| 5 | 1 | 0 | | 24.08 | 23.94 | 24.00 |
| 5 | 1 | 12 | | 23.98 | 23.97 | 23.86 |
| 5 | 1 | 24 | | 23.92 | 24.01 | 23.86 |
| 5 | 12 | 0 | 16-QAM | 22.85 | 22.76 | 22.75 |
| 5 | 12 | 7 | | 22.77 | 22.77 | 22.73 |
| 5 | 12 | 13 | | 22.75 | 22.72 | 22.65 |
| 5 | 25 | 0 | | 22.76 | 22.69 | 22.71 |
| 5 | 1 | 0 | | 22.97 | 22.86 | 22.91 |
| 5 | 1 | 12 | | 22.88 | 22.88 | 22.22 |
| 5 | 1 | 24 | | 22.73 | 22.87 | 22.32 |
| 5 | 12 | 0 | 64-QAM | 21.88 | 21.82 | 21.61 |
| 5 | 12 | 7 | | 21.87 | 21.84 | 21.20 |
| 5 | 12 | 13 | | 21.77 | 21.79 | 21.07 |
| 5 | 25 | 0 | | 21.81 | 21.71 | 21.31 |
| 3 | 1 | 0 | | 24.73 | 24.64 | 24.66 |
| 3 | 1 | 8 | | 24.75 | 24.72 | 24.65 |
| 3 | 1 | 14 | | 24.60 | 24.68 | 24.60 |
| 3 | 8 | 0 | QPSK | 23.79 | 23.71 | 23.72 |
| 3 | 8 | 4 | | 23.79 | 23.79 | 23.70 |
| 3 | 8 | 7 | | 23.74 | 23.71 | 23.63 |
| 3 | 15 | 0 | | 23.75 | 23.71 | 23.68 |
| 3 | 1 | 0 | | 24.08 | 23.96 | 23.98 |
| 3 | 1 | 8 | | 24.10 | 24.03 | 23.94 |
| 3 | 1 | 14 | | 23.95 | 24.01 | 23.88 |
| 3 | 8 | 0 | 16-QAM | 22.85 | 22.78 | 22.74 |
| 3 | 8 | 4 | | 22.85 | 22.84 | 22.74 |
| 3 | 8 | 7 | | 22.79 | 22.78 | 22.68 |
| 3 | 15 | 0 | | 22.83 | 22.72 | 22.67 |
| 3 | 1 | 0 | | 22.94 | 22.86 | 22.29 |
| 3 | 1 | 8 | | 22.99 | 22.93 | 22.12 |
| 3 | 1 | 14 | | 22.85 | 22.89 | 22.26 |
| 3 | 8 | 0 | 64-QAM | 21.89 | 21.79 | 21.07 |
| 3 | 8 | 4 | | 21.89 | 21.86 | 21.07 |
| 3 | 8 | 7 | | 21.84 | 21.83 | 21.18 |
| 3 | 15 | 0 | | 21.84 | 21.74 | 21.16 |



| | | LTE | Band 26 Ma | ximum Average Po | wer [dBm] | |
|----------|---------|-----------|------------|------------------|-----------|---------|
| BW [MHz] | RB Size | RB Offset | Mod | Lowest | Middle | Highest |
| 1.4 | 1 | 0 | | 24.67 | 24.57 | 24.52 |
| 1.4 | 1 | 3 | | 24.73 | 24.68 | 24.57 |
| 1.4 | 1 | 5 | | 24.61 | 24.56 | 24.44 |
| 1.4 | 3 | 0 | QPSK | 24.69 | 24.58 | 24.52 |
| 1.4 | 3 | 1 | | 24.71 | 24.60 | 24.57 |
| 1.4 | 3 | 3 | | 24.64 | 24.59 | 24.51 |
| 1.4 | 6 | 0 | | 23.71 | 23.67 | 23.58 |
| 1.4 | 1 | 0 | | 23.99 | 23.88 | 23.83 |
| 1.4 | 1 | 3 | | 24.04 | 24.00 | 23.87 |
| 1.4 | 1 | 5 | | 23.93 | 23.91 | 23.77 |
| 1.4 | 3 | 0 | 16-QAM | 23.74 | 23.65 | 23.60 |
| 1.4 | 3 | 1 | | 23.78 | 23.71 | 23.65 |
| 1.4 | 3 | 3 | | 23.72 | 23.65 | 23.57 |
| 1.4 | 6 | 0 | | 22.81 | 22.81 | 22.68 |
| 1.4 | 1 | 0 | | 22.88 | 22.77 | 22.20 |
| 1.4 | 1 | 3 | | 22.95 | 22.91 | 22.37 |
| 1.4 | 1 | 5 | | 22.82 | 22.79 | 22.40 |
| 1.4 | 3 | 0 | 64-QAM | 22.89 | 22.78 | 22.16 |
| 1.4 | 3 | 1 | | 22.93 | 22.83 | 22.25 |
| 1.4 | 3 | 3 | | 22.84 | 22.78 | 22.36 |
| 1.4 | 6 | 0 | | 21.75 | 21.70 | 21.19 |

LTE Band 26

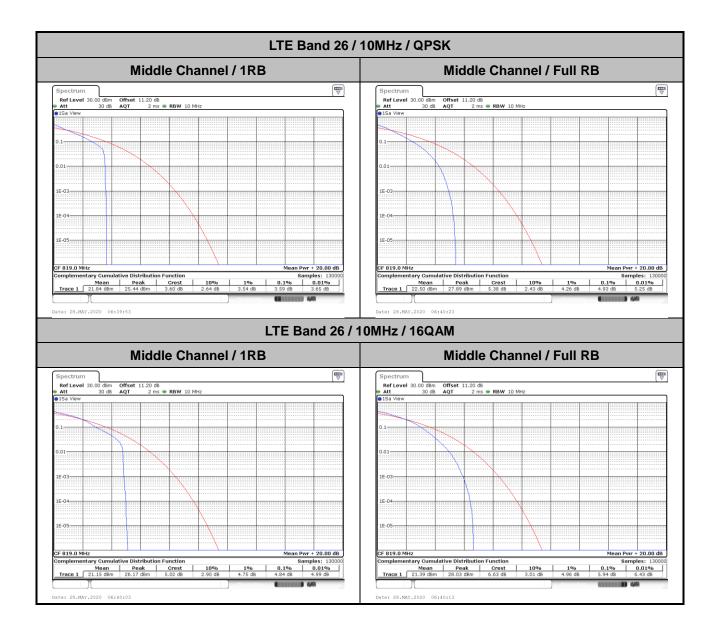
Peak-to-Average Ratio

| Mode | | LTE Band 26 / 10MHz | | | | | | | | |
|-----------------|-------------|---------------------|--------------|-------------|-----------------------|--|--|--|--|--|
| Mod. | QP | SK | 160 | Limit: 13dB | | | | | | |
| RB Size | 1RB Full RB | | 1RB | Full RB | Result | | | | | |
| Lowest CH | | | - | - | | | | | | |
| Middle CH | 3.59 | 4.93 | 4.84 | 5.94 | PASS | | | | | |
| Highest CH | - | - | - | - | | | | | | |
| Mode | | | | | | | | | | |
| 545 | | LI L Ballu i | 26 / 10MHz | | | | | | | |
| Mod. | 64C | AM | 207 TOWITIZ | | Limit: 13dB | | | | | |
| | 640 1RB | | 207 10101112 | | Limit: 13dB Result | | | | | |
| Mod. | | AM | - | - | | | | | | |
| Mod. RB Size | 1RB | PAM Full RB | - - | - | | | | | | |

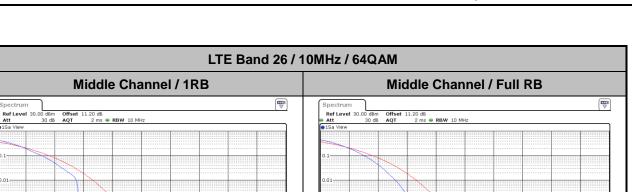
Report No. :FG022521-02F

TEL: 886-3-327-3456 Page Number : A26S-1 of 45

CC RADIO TEST REPORT Report No. :FG022521-02F



TEL: 886-3-327-3456 Page Number : A26S-2 of 45



CF 819.0 MHz

Report No.: FG022521-02F

TEL: 886-3-327-3456 Page Number : A26S-3 of 45 FAX: 886-3-328-4978

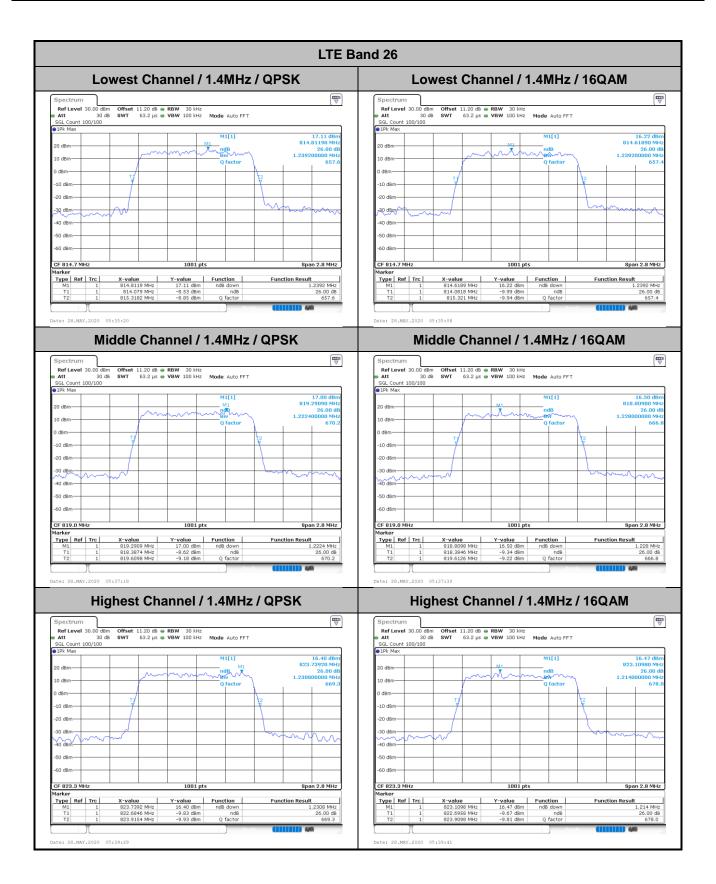
26dB Bandwidth

| Mode | | LTE Band 26 : 26dB BW(MHz) | | | | | | | | | | |
|------------|-------------|----------------------------|-------|-------|--------|----------|---------|--------|-------|-------|-----------|-------|
| BW | 1.4MHz 3MHz | | | | 5N | lHz | 101 | ЛHz | 15N | ИHz | IHz 20MHz | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Lowest CH | 1.24 | 1.24 | 3.02 | 3.04 | 4.88 | 4.95 | - | - | 14.30 | 14.48 | - | - |
| Middle CH | 1.22 | 1.23 | 2.99 | 3.03 | 4.81 | 4.85 | 9.75 | 9.65 | - | - | - | - |
| Highest CH | 1.23 | 1.21 | 2.97 | 2.97 | 4.92 | 4.92 | - | - | - | - | - | - |
| Mode | | | | | LTE Ba | and 26 : | 26dB BV | V(MHz) | | , | | |
| BW | 1.4 | ИНz | 3M | lHz | 5N | lHz | 101 | ЛHz | 15N | ИHz | 201 | ИHz |
| Mod. | 64QAM | | 64QAM | | 64QAM | | 64QAM | | 64QAM | | 64QAM | |
| Lowest CH | 1.23 | - | 3.01 | - | 4.91 | - | - | - | 14.33 | - | - | - |
| Middle CH | 1.21 | - | 3.00 | - | 4.86 | - | 9.89 | - | - | - | - | - |
| Highest CH | 1.23 | - | 3.01 | - | 4.82 | - | - | - | - | - | ı | - |

Report No. :FG022521-02F

TEL: 886-3-327-3456 Page Number : A26S-4 of 45

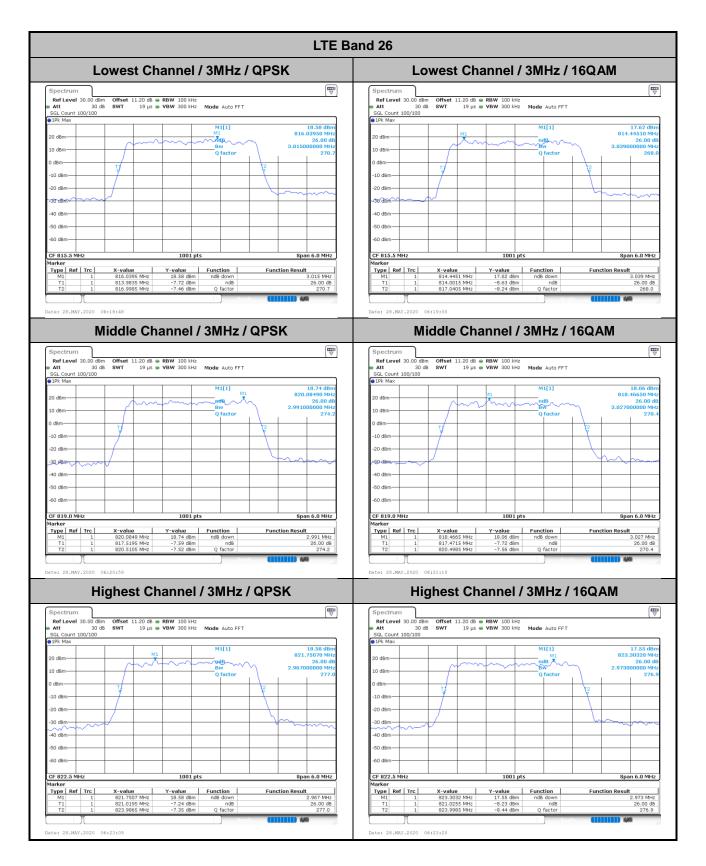
PORTON LAB. FCC RADIO TEST REPORT



Report No.: FG022521-02F

TEL: 886-3-327-3456 Page Number : A26S-5 of 45

Report No.: FG022521-02F



TEL: 886-3-327-3456 Page Number : A26S-6 of 45

-50 dBm

CF 821.5 MHz

 Marker
 Trc
 X-value
 Y-value
 Function

 M1
 1
 820.791 MHz
 16.73 dBm
 nd8 down

 T1
 1
 819.092 MHz
 -8.85 dBm
 nd8 down

 T2
 1
 823.978 MHz
 -9.39 dBm
 Q factor

LTE Band 26 Lowest Channel / 5MHz / QPSK Lowest Channel / 5MHz / 16QAM 16.79 dBn 817.38900 MH: 26.00 dE 4.875000000 MH: 15.62 dBr 10 dBm 167 165. -10 dBm--30 dBm--30/dBm--50 dBm--60 dBm Function Result 4.875 MHz 26.00 dB 167.7 Function Result 4,945 MHz 26,00 dB 165,4
 X-value
 Y-value
 Function

 817.719 MHz
 15.62 dbm
 nd8 down

 814.042 MHz
 -10.54 dbm
 nd8

 818.988 MHz
 -10.54 dbm
 Q factor
 Type Ref Trc Type Ref Trc
 X-value
 Y-value
 Function

 817.389 MHz
 16.79 dBm
 ndB down
 Middle Channel / 5MHz / QPSK Middle Channel / 5MHz / 16QAM **T** Count 100/100 15.97 dBi 819.63900 MF 26.00 d 4.805000000 MF 170. 15.22 dBn 818.59000 MH 26.00 dl 4.845000000 MH -20 dBm-40 dBm CF 819.0 MHz Span 10.0 MHz Span 10.0 MHz X-value Y-value 818.59 MHz 15.22 dBm 816.562 MHz -10.84 dBm 821.408 MHz -10.67 dBm
 Y-value
 Function

 2
 15.97 dBm
 ndB down

 2
 -9.79 dBm
 ndB

 z
 -9.69 dBm
 Q factor
 Type | Ref | Trc | Function ndB down Highest Channel / 5MHz / QPSK Highest Channel / 5MHz / 16QAM 00 dBm Offset 30 dB SWT .20 dB • RBW 100 kHz 19 µs • VBW 300 kHz Mode Auto FFT SGL Count 100/100 14.25 dBn 820.84100 MLI-M1[1] 16.73 dBn 820.79100 MH 26.00 di 4.915000000 MH dBm--10 dBm -20 dBm -20 dBr 40'dBm------

Report No.: FG022521-02F



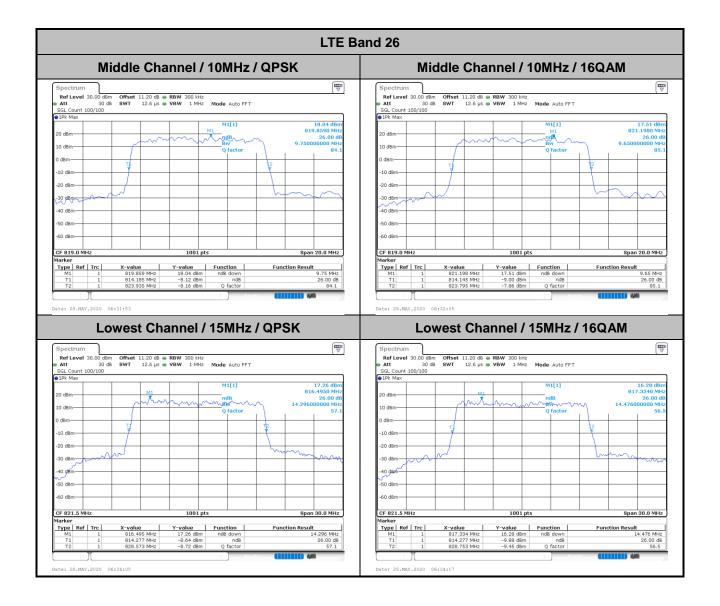
Function Result
4.915 MHz
26.00 dB
167.0

-50 dBm-

CF 821.5 MHz

Function Result

Report No.: FG022521-02F



TEL: 886-3-327-3456 Page Number : A26S-8 of 45

CF 823.3 MH

Type | Ref | Trc |

FAX: 886-3-328-4978

 X-value
 Y-value
 Function

 823.3107 MHz
 15.15 dBm
 nd8 down

 822.5902 MHz
 -10.96 dBm
 nd8

 823.9154 MHz
 -10.93 dBm
 Q factor

LTE Band 26 Lowest Channel / 1.4MHz / 64QAM Lowest Channel / 3MHz / 64QAM 14.51 dB 16.67 dBr 10 dBm 662 270. -10 dBm--20 dBm-40 dBm -50 dBm--60 dBm-Span 2.8 MHz
 X-value
 Y-value
 Function

 814.9881 MHz
 14.51 dBm
 ndB down

 814.0874 MHz
 -11.25 dBm
 ndB

 815.3182 MHz
 -11.55 dBm
 Q factor

 X-value
 Y-value
 Function

 814.5589 MHz
 16.67 dBm
 ndB down

 814.0195 MHz
 -9.20 dBm
 ndB

 817.0285 MHz
 -9.31 dBm
 Q factor
 Type Ref Trc Type Ref Trc Middle Channel / 1.4MHz / 64QAM Middle Channel / 3MHz / 64QAM
 Ref Level
 30.00 dBm
 Offset
 11.20 dB
 RBW
 100 kHz
 Mode
 Auto FFT

 att
 30 db
 SWT
 19 µs
 VBW
 300 kHz
 Mode
 Auto FFT

 SGL Count 100/100
 1Pk Max
 Mode
 Auto FFT
 14.93 dBr 818.65310 MH 26.00 d 1.208400000 MH 677. 00 MH 273. -20 dBm-40 dBm CF 819.0 MHz Span 2.8 MHz Span 6.0 MHz Type | Ref | Trc | Function n ndB down Function ndB down Date: 28.MAY.2020 06:09:32 Highest Channel / 1.4MHz / 64QAM Highest Channel / 3MHz / 64QAM 00 dBm Offset 30 dB SWT 11.20 dB **RBW** 30 kHz 63.2 μs **VBW** 100 kHz **Mode** Auto FFT SGL Count 100/100 SGL Count 100/100 91Pk Max 15.95 dBm 822.52400 MHz M1[1] 15.15 dBn 823.10700 MH 823.10700 MH 26.00 d 1.225200000 MH 671. 26.00 dl 3.009000000 MH 273. dBm--10 dBm -20 dBm -20 dBr 50 dBm -50 dBm-

Report No.: FG022521-02F

Function Result 1.2252 MHz CF 822.5 MHz

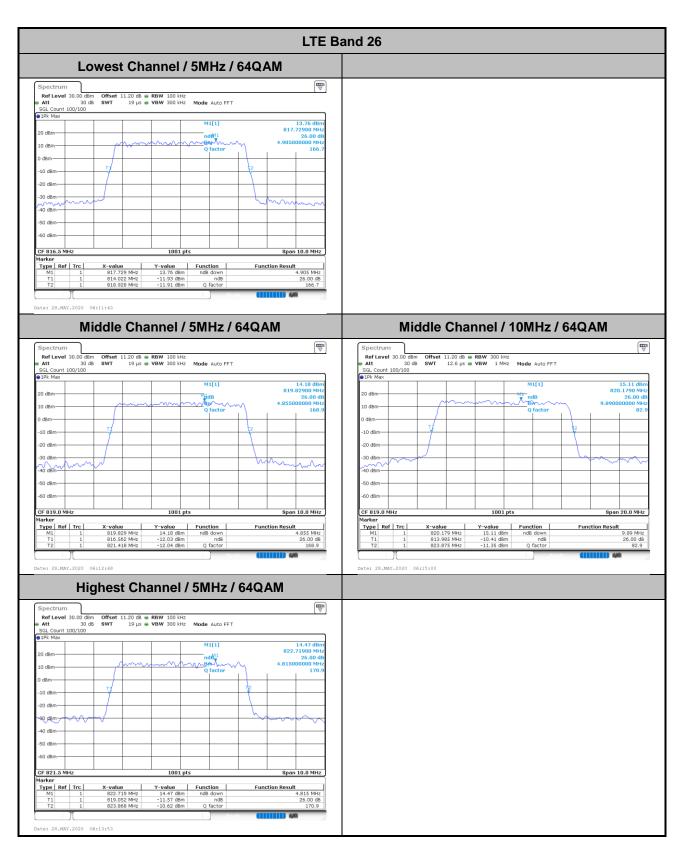
 Marker
 Trope
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 822.524 MHz
 15.95 dBm
 nd8 down

 T1
 1
 820.9995 MHz
 -10.26 dBm
 nd8

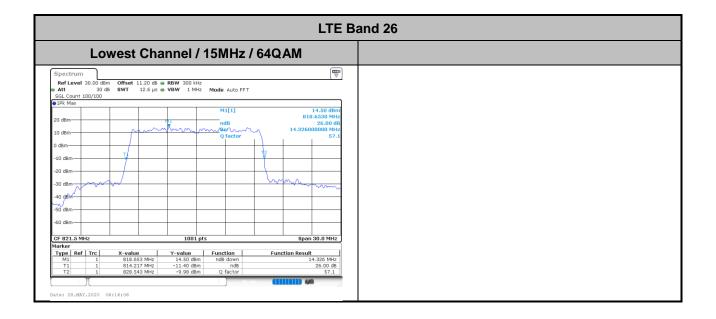
 T2
 1
 823.9965 MHz
 -9.93 dBm
 Q factor

Function Result



TEL: 886-3-327-3456 Page Number : A26S-10 of 45





TEL: 886-3-327-3456 Page Number: A26S-11 of 45

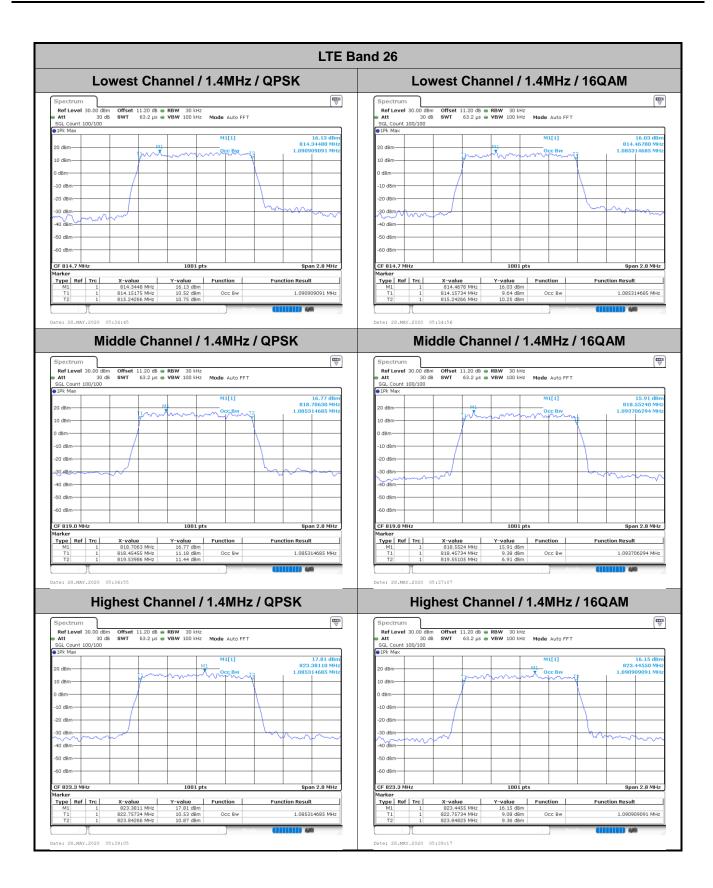
Occupied Bandwidth

| Mode | LTE Band 26 : 99%OBW(MHz) | | | | | | | | | | | |
|------------|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BW | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Lowest CH | 1.09 | 1.09 | 2.75 | 2.72 | 4.48 | 4.48 | - | - | 13.43 | 13.43 | - | - |
| Middle CH | 1.09 | 1.09 | 2.70 | 2.73 | 4.48 | 4.48 | 8.99 | 8.99 | - | - | - | - |
| Highest CH | 1.09 | 1.09 | 2.70 | 2.73 | 4.48 | 4.50 | - | - | - | - | - | - |
| Mode | LTE Band 26 : 99%OBW(MHz) | | | | | | | | | | | |
| BW | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| Mod. | 64QAM | | 64QAM | | 64QAM | | 64QAM | | 64QAM | | 64QAM | |
| Lowest CH | 1.09 | - | 2.72 | - | 4.49 | - | - | - | 13.49 | - | - | - |
| Middle CH | 1.09 | - | 2.73 | - | 4.49 | - | 9.03 | - | - | - | - | - |
| Highest CH | 1.09 | - | 2.72 | - | 4.50 | - | - | - | - | - | - | - |

Report No. :FG022521-02F

TEL: 886-3-327-3456 Page Number : A26S-12 of 45

FCC RADIO TEST REPORT



Report No.: FG022521-02F

TEL: 886-3-327-3456 Page Number : A26S-13 of 45

LTE Band 26 Lowest Channel / 3MHz / QPSK Lowest Channel / 3MHz / 16QAM 18.64 dB 17.73 dBn 815.32620 MH 2.721278721 MH 10 dBm -10 dBm -10 dBm -30 dBm 40 dBm -50 dBm-50 dBm -60 dBm -60 dBm-
 X-value
 Y-value
 Function
 Function Result

 815.3931 MHz
 18.64 dBm
 81.412737 MHz
 10.50 dBm
 Occ 8w
 2.74525

 816.87263 MHz
 10.90 dBm
 Occ 8w
 2.74525
 Type Ref Trc 2.721278721 MHz Middle Channel / 3MHz / QPSK Middle Channel / 3MHz / 16QAM
 Ref Level
 30.00 dBm
 Offset
 11.20 dB • RBW
 100 kHz

 Att
 30 dB
 SWT
 19 μs • VBW
 300 kHz
 Mode
 Auto FFT
 Count 100/100 -20 dBm -20 dBm--30 dBm-40 dBm -50 dBm-CF 819.0 MHz CF 819.0 MH 1001 pts Span 6.0 MHz Span 6.0 MHz 1001 pts
 X-value
 Y-value
 Function

 817.8252 MHz
 17.30 d8m
 Occ Bw

 817.64535 MHz
 11.09 d8m
 Occ Bw

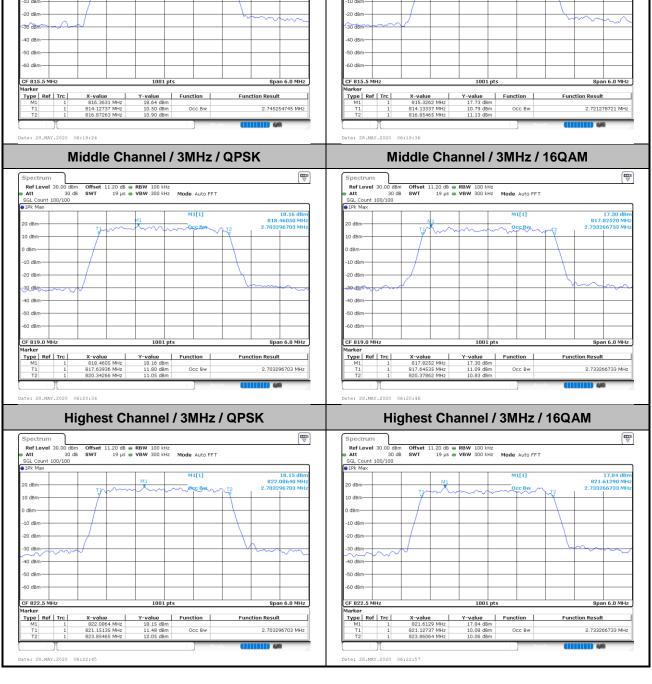
 820.37862 MHz
 10.83 d8m
 Type | Ref | Trc |
 X-value
 Y-value
 Function

 818.4605 MHz
 18.16 dBm
 817.63936 MHz

 817.63936 MHz
 11.80 dBm
 Occ Bw

 820.34266 MHz
 11.05 dBm
 Function Result **Function Result** 2.703296703 MHz 2.733266733 MHz Highest Channel / 3MHz / QPSK Highest Channel / 3MHz / 16QAM 00 dBm Offset 30 dB SWT 11.20 dB • RBW 100 kHz 19 µs • VBW 300 kHz Mode Auto FFT Ref Level 30.00 Att SGL Count 100/100 1Pk Max SGL Count 100/100 91Pk Max 18.15 dBn 822.08640 MH 2.703296703 MH 17.84 dBn 821.61290 MHz 2.733266733 MHz 20 dBm dBm--10 dBm--20 dBm--20 dBr 40 dBm -50 dBm -50 dBm-

Report No.: FG022521-02F



TEL: 886-3-327-3456 Page Number : A26S-14 of 45 FAX: 886-3-328-4978

-10 dBm

30 d8m

50 dBm -60 dBm

-20 dBm-

FCC RADIO TEST REPORT Report No.: FG022521-02F LTE Band 26 Lowest Channel / 5MHz / QPSK Lowest Channel / 5MHz / 16QAM 16.01 dBr 817.20900 MH 4.475524476 MH 15.48 dBn 816.17000 MH 4.475524476 MH 10 dBm--10 dBm--20 dBm-W/MM ABOT (URBUT 40 dBm--50 dBm--60 dBm-
 Marker
 Trc
 X-value
 Y-value
 Function

 M1
 1
 816.17 MHz
 15.48 dBm
 15.48 dBm
 0.00 dBm
 Type Ref Trc Middle Channel / 5MHz / QPSK Middle Channel / 5MHz / 16QAM
 Ref Level
 30.00 dBm
 Offset
 11.20 dB • RBW
 100 kHz

 Att
 30 dB
 SWT
 19 μs • VBW
 300 kHz
 Mode
 Auto FFT
 SGL Count 100/100 1Pk Max Count 100/100 dBm--20 dBm-40 dBm--50 dBm-CF 819.0 MH CF 819.0 MHz 1001 pts Span 10.0 MHz 1001 pts Span 10.0 MHz
 X-value
 Y-value
 Function

 818.91 MHz
 16.92 dBm

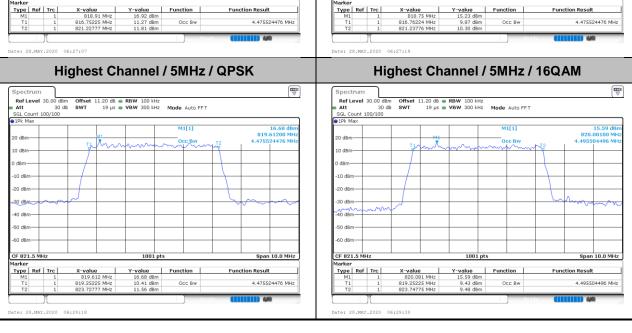
 816.75225 MHz
 11.27 dBm
 Occ Bw

 821.22777 MHz
 11.81 dBm

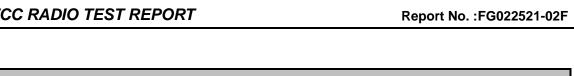
 X-value
 Y-value
 Function

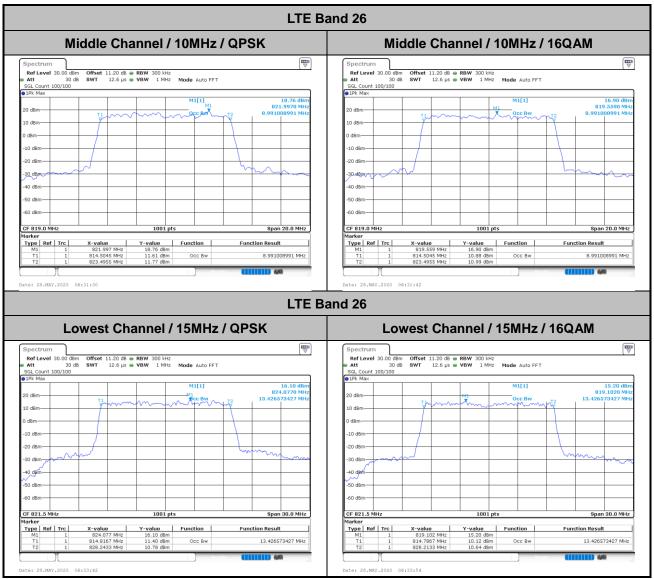
 818.75 MHz
 15.23 dBm
 SB16.7624 MHz
 9.87 dBm
 Occ Bw

 821.23776 MHz
 10.30 dBm
 Occ Bw
 Type Ref Trc Function Result **Function Result** 4.475524476 MHz 4.475524476 MHz

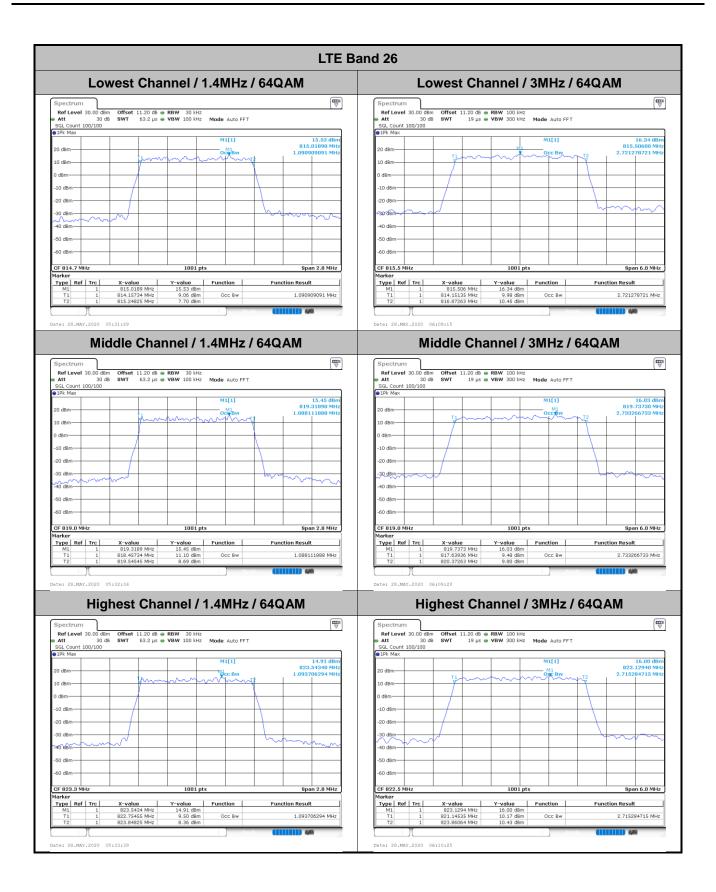


TEL: 886-3-327-3456 Page Number : A26S-15 of 45

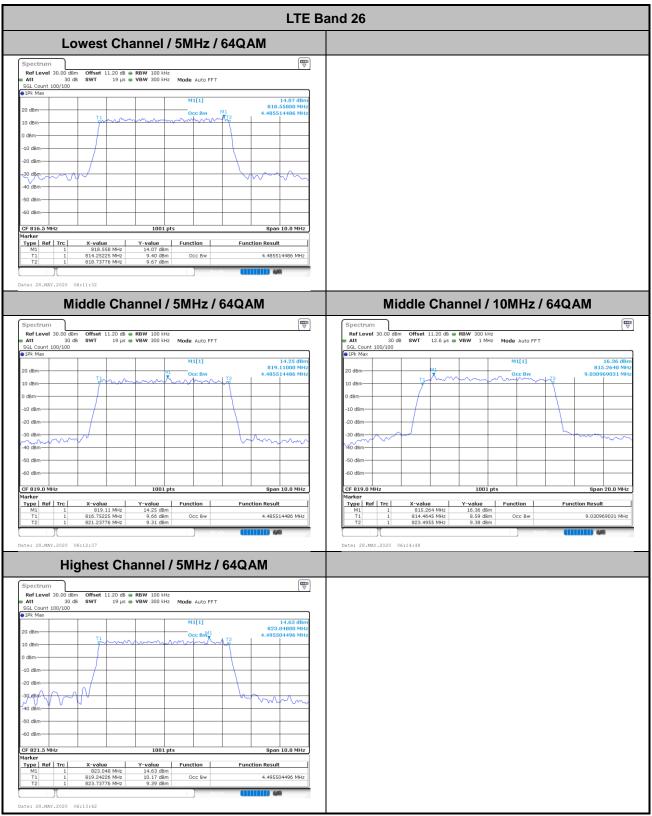




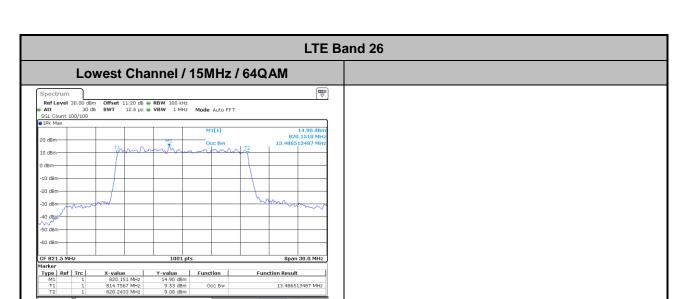
TEL: 886-3-327-3456 Page Number : A26S-16 of 45



TEL: 886-3-327-3456 Page Number : A26S-17 of 45



TEL: 886-3-327-3456 Page Number : A26S-18 of 45



13.486513487 MHz

Report No. :FG022521-02F

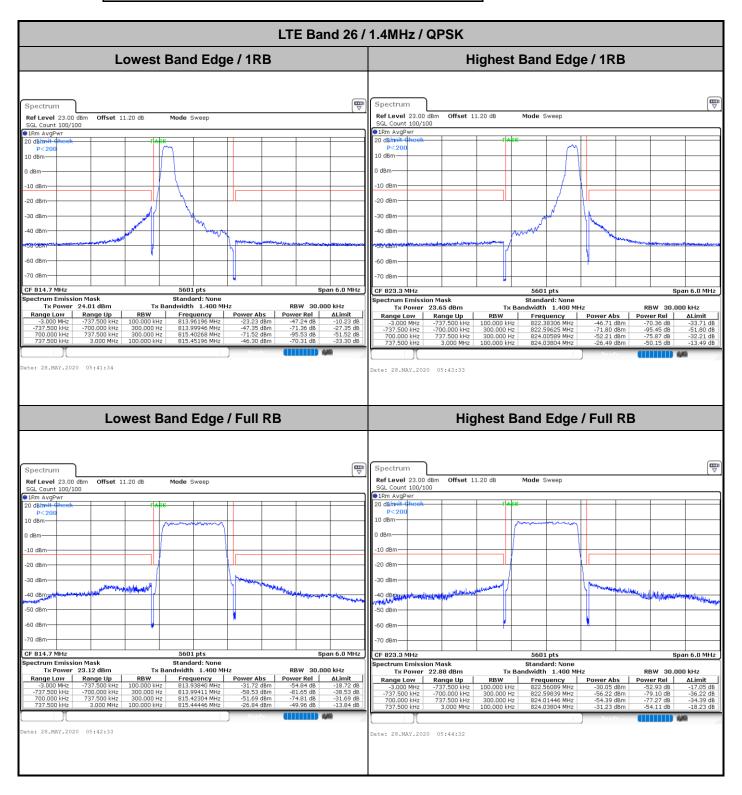
TEL: 886-3-327-3456 Page Number : A26S-19 of 45

FAX: 886-3-328-4978

Date: 28.MAY.2020 06:15:55

Emission masks – In-band emissions

Report No.: FG022521-02F



TEL: 886-3-327-3456 Page Number : A26S-20 of 45

LTE Band 26 / 1.4MHz / 16QAM Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm Offset 11.20 dB Mode Sweep Ref Level 23.00 Offset 11.20 dB Mode Sweep Count 100/100 AvgPwr SGL Count 100/100 20 dBr 20 dBm 5601 pts CF 814.7 MHz 5601 pts Span 6.0 MHz CF 823.3 MHz pectrum Emission Mask
Tx Power 23.65 dBm
Range Low Range Up Spectrum Emission Mask Standard: None ndwidth 1.400 MHz Tx Power 23.29 dBm

Range Low Range Up

-3.000 MHz -737.500 ki RBW 30.000 kHz Frequency 813.94268 MHz 813.98768 MHz 815.41875 MHz 815.48838 MHz Frequency 822.51590 MHz ΔLimit ate: 28.MAY.2020 05:42:03 Lowest Band Edge / Full RB **Highest Band Edge / Full RB** Spectrum Ref Level 23.00 dBm Offset 11.20 dB SGL Count 100/100 Mode Sweep Ref Level 23.00 dBm Offset 11.20 dB Mode Sweep SGL Count 100/100 ●1Rm AvgPwr Span 6.0 MHz CF 823.3 MHz 5601 pts ectrum Emission Mask Standard: None Tx Bandwidth 1.400 MHz Standard: None Tx Bandwidth 1.400 MHz Tx Power 22.22 dBm

Range Low Range Up

-3.000 MHz -73.7 500 M RBW 30.000 kHz | Power Rel | ALimit | -54.64 dB | -19.39 dB | -79.09 dB | -36.84 dB | -74.07 dB | -31.81 dB | -50.21 dB | -14.96 dB | Range Low Range Up Frequency Power Abs te: 28.MAY.2020 05:43:03 Date: 28.MAY.2020 05:45:02

Report No.: FG022521-02F

TEL: 886-3-327-3456 Page Number : A26S-21 of 45

LTE Band 26 / 1.4MHz / 64QAM Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm Offset 11.20 dB Mode Sweep Ref Level 23.00 Offset 11.20 dB Mode Sweep Count 100/100 AvgPwr SGL Count 100/100 20 dBn 20 dBm CF 814.7 MHz 5601 pts Span 6.0 MHz CF 823.3 MHz pectrum Emission Mask
Tx Power 21.22 dBm
Range Low Range Up Spectrum Emission Mask Standard: None ndwidth 1.400 MHz Tx Power 22.02 dBm

Range Low Range Up

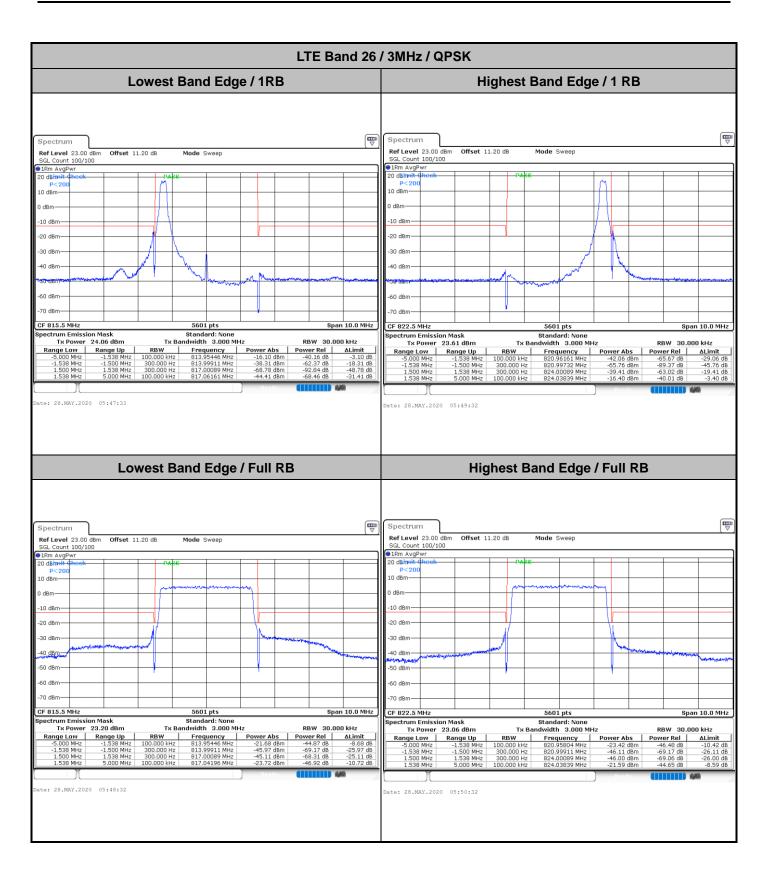
-3.000 MHz -737.500 ki Frequency 813.95447 MHz 813.99411 MHz 815.42304 MHz 815.98545 MHz Frequency 822.42913 MHz 822.59946 MHz 824.00804 MHz 824.04553 MHz ΔLimit ate: 28.MAY.2020 05:45:32 Lowest Band Edge / Full RB **Highest Band Edge / Full RB** Spectrum Ref Level 23.00 dBm Offset 11.20 dB SGL Count 100/100 Mode Sweep Ref Level 23.00 dBm Offset 11.20 dB Mode Sweep SGL Count 100/100 ●1Rm AvgPwr Span 6.0 MHz CF 823.3 MHz 5601 pts ectrum Emission Mask Tx Power 21.01 dBm Standard: None Tx Bandwidth 1.400 MHz Standard: None Tx Bandwidth 1.400 MHz Tx Power 21.06 dBm

Range Low Range Up

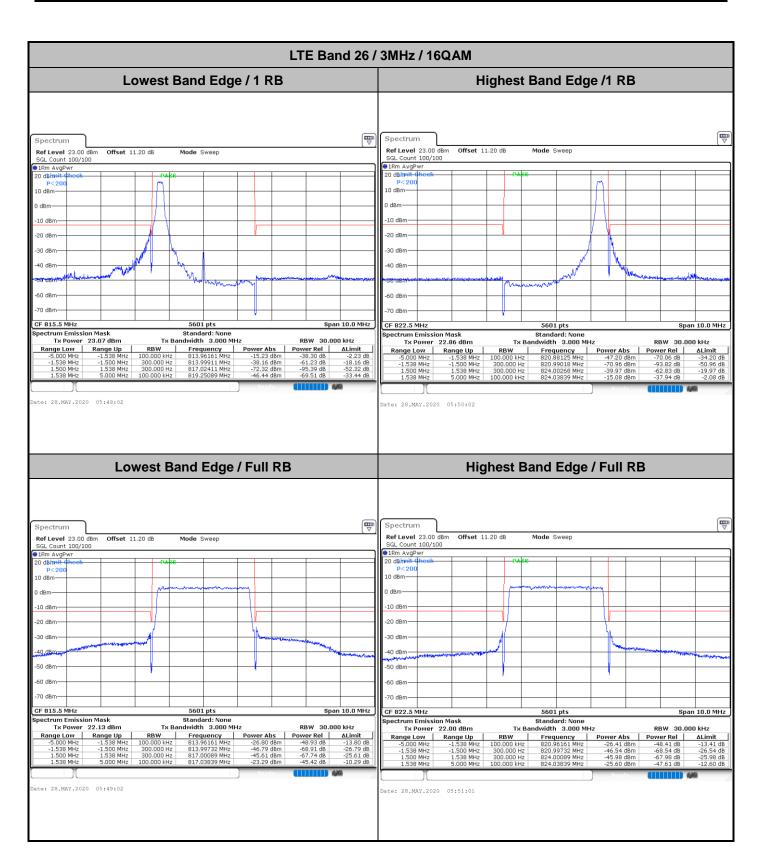
-3.000 MHz -737 500 M RBW 30.000 kHz Range Low Range Up Frequency Power Abs te: 28.MAY.2020 05:46:01 Date: 28.MAY.2020 05:47:01

Report No.: FG022521-02F

TEL: 886-3-327-3456 Page Number : A26S-22 of 45



TEL: 886-3-327-3456 Page Number : A26S-23 of 45



TEL: 886-3-327-3456 Page Number : A26S-24 of 45

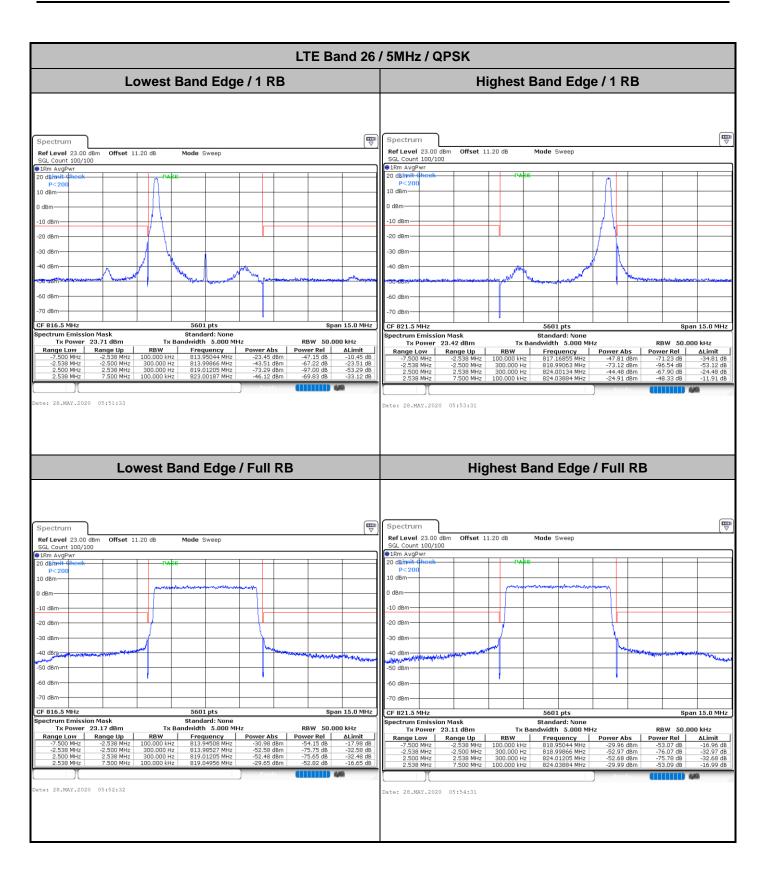
LTE Band 26 / 3MHz / 64QAM Lowest Band Edge / 1 RB Highest Band Edge /1 RB Spectrum Ref Level 23.00 dBm Offset 11.20 dB Mode Sweep Ref Level 23.00 Offset 11.20 dB Mode Sweep Count 100/100 AvgPwr SGL Count 100/100 20 dBr 20 dBm Span 10.0 MHz 5601 pts CF 815.5 MHz 5601 pts Span 10.0 MHz Standard: None lwidth 3.000 MHz RBW 30.000 kHz 813.96161 MHz 813.99911 MHz ∆Limit ate: 28.MAY.2020 06:01:31 Lowest Band Edge / Full RB **Highest Band Edge / Full RB** Spectrum Ref Level 23.00 dBm Offset 11.20 dB Ref Level 23.00 dBm Offset 11.20 dB SGL Count 100/100 Mode Sweep Mode Sweep SGL Count 100/100 1Rm AvgPwr Span 10.0 MHz CF 822.5 MHz 5601 pts ectrum Emission Mask Tx Power 21.27 dBm Standard: None Tx Bandwidth 3.000 MHz ectrum Emission Mask Standard: None Tx Bandwidth 3.000 MHz Tx Power 21.20 dBm

Range Low Range Up

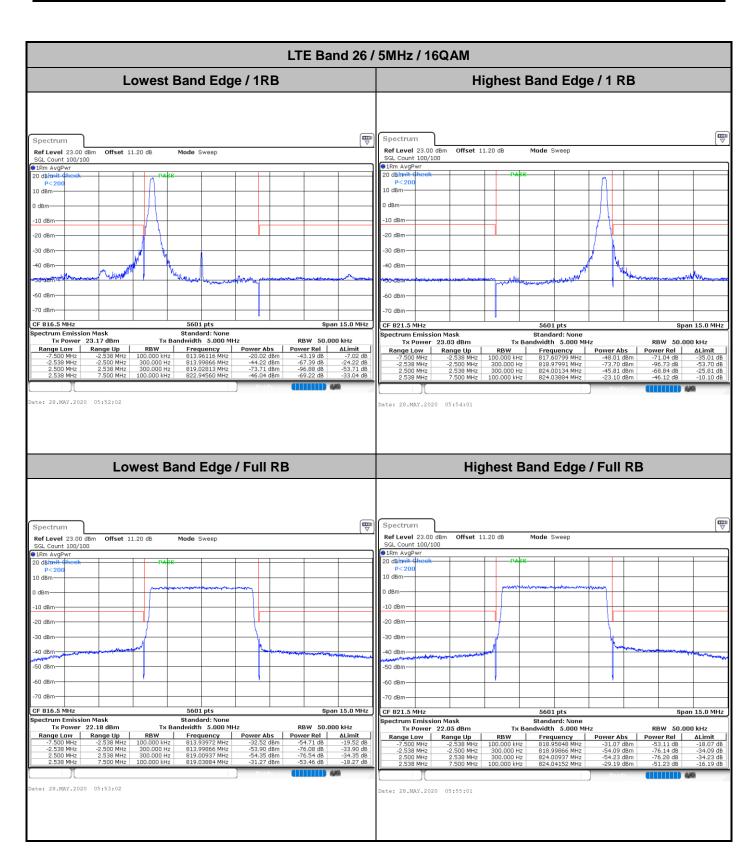
-5.000 MHz -1.538 MH RBW 30.000 kHz Range Up Frequency Power Abs te: 28.MAY.2020 06:02:01 Date: 28.MAY.2020 06:03:01

Report No.: FG022521-02F

TEL: 886-3-327-3456 Page Number : A26S-25 of 45



TEL: 886-3-327-3456 Page Number : A26S-26 of 45



TEL: 886-3-327-3456 Page Number : A26S-27 of 45