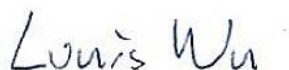


FCC RADIO TEST REPORT

FCC ID : COFNCT8101
Equipment : Infinitracker
Brand Name : Infinitracker
Model Name : NCT-8101
Applicant : Universal Global Scientific Industrial Co., Ltd.
141, Lane 351, Sec. 1, Taiping Road., Tsaotuen,
Nantou 54261, Taiwan
Manufacturer : Universal Global Scientific Industrial Co., Ltd.
141, Lane 351, Sec. 1, Taiping Road., Tsaotuen,
Nantou 54261, Taiwan
Standard : FCC 47 CFR Part 2, 22(H), 24(E), 27

The product was received on May 25, 2020 and testing was started from Jun. 30, 2020 and completed on Aug. 04, 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

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
1 General Description	5
1.1 Product Feature of Equipment Under Test.....	5
1.2 Modification of EUT	5
1.3 Testing Location	5
1.4 Applicable Standards.....	6
2 Test Configuration of Equipment Under Test	7
2.1 Test Mode.....	7
2.2 Connection Diagram of Test System.....	9
2.3 Support Unit used in test configuration and system	9
2.4 Measurement Results Explanation Example.....	9
2.5 Frequency List of Low/Middle/High Channels	10
3 Conducted Test Items.....	12
3.1 Measuring Instruments	12
3.2 Conducted Output Power and ERP/EIRP	13
3.3 Peak-to-Average Ratio	14
3.4 Occupied Bandwidth.....	15
3.5 Conducted Band Edge	16
3.6 Conducted Spurious Emission	18
3.7 Frequency Stability	19
4 Radiated Test Items	20
4.1 Measuring Instruments	20
4.2 Radiated Spurious Emission	22
5 List of Measuring Equipment.....	23
6 Uncertainty of Evaluation	24
Appendix A. Test Results of Conducted Test	
Appendix B. Test Results of ERP/EIRP and Radiated Test	
Appendix C. Test Setup Photographs	



History of this test report

Report No.	Version	Description	Issued Date
FG052301B	01	Initial issue of report	Aug. 21, 2020



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Reporting only	-
	§22.913 (a)(2)	Effective Radiated Power (Band 5) (Band 26)	Pass	
	§27.50 (b)(10) §27.50 (c)(10)	Effective Radiated Power (Band 12) (Band 13) (Band 17)		
	§24.232 (c)	Equivalent Isotropic Radiated Power (Band 2) (Band 25)		
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (Band 4) (Band 66)		
3.3	§24.232 (d) §27.50 (d)(5)	Peak-to-Average Ratio	Reporting only	-
3.4	§2.1049	Occupied Bandwidth	Reporting only	-
3.5	§2.1051 §22.917 (a) §24.238 (a) §27.53 (c)(2)(4) §27.53 (g) §27.53 (h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 17) (Band 25) (Band 26) (Band 66)	Pass	-
3.6	§2.1051 §22.917 (a) §24.238 (a) §27.53 (c)(2) §27.53 (g) §27.53 (h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 17) (Band 25) (Band 26) (Band 66)	Pass	-
3.7	§2.1055 §22.355 §24.235 §27.54	Frequency Stability Temperature & Voltage	Pass	-
4.2	§2.1053 §22.917 (a) §24.238 (a) §27.53 (c)(2) §27.53 (f) §27.53 (g)	Radiated Spurious Emission (Band 2) (Band 5) (Band 12) (Band 13) (Band 17) (Band 25) (Band 26) (Band 66)	Pass	Under limit 11.41 dB at 1564.000 MHz

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: Dara Chiu



1 General Description

1.1 Product Feature of Equipment Under Test

LTE, Bluetooth, and GNSS

Product Specification subjective to this standard	
Antenna Type	WWAN: PCB Antenna Bluetooth: Chip Antenna GPS: Patch Antenna

1.2 Modification of EUT

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

1.3 Testing Location

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. TH05-HY
Test Engineer	Benjamin Lin
Temperature	23~25°C
Relative Humidity	20~55%

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. 03CH13-HY
Test Engineer	Daniel Lee, Jacky, and Wilson Wu
Temperature	22.5~23.8°C
Relative Humidity	48.4~53.9%

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

FCC Designation No.: TW1190 and TW0007



1.4 Applicable Standards

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

- ♦ ANSI C63.26-2015
- ♦ ANSI / TIA-603-E
- ♦ FCC 47 CFR Part 2, 22(H), 24(E), 27
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.

Remark:

1. 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.



2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

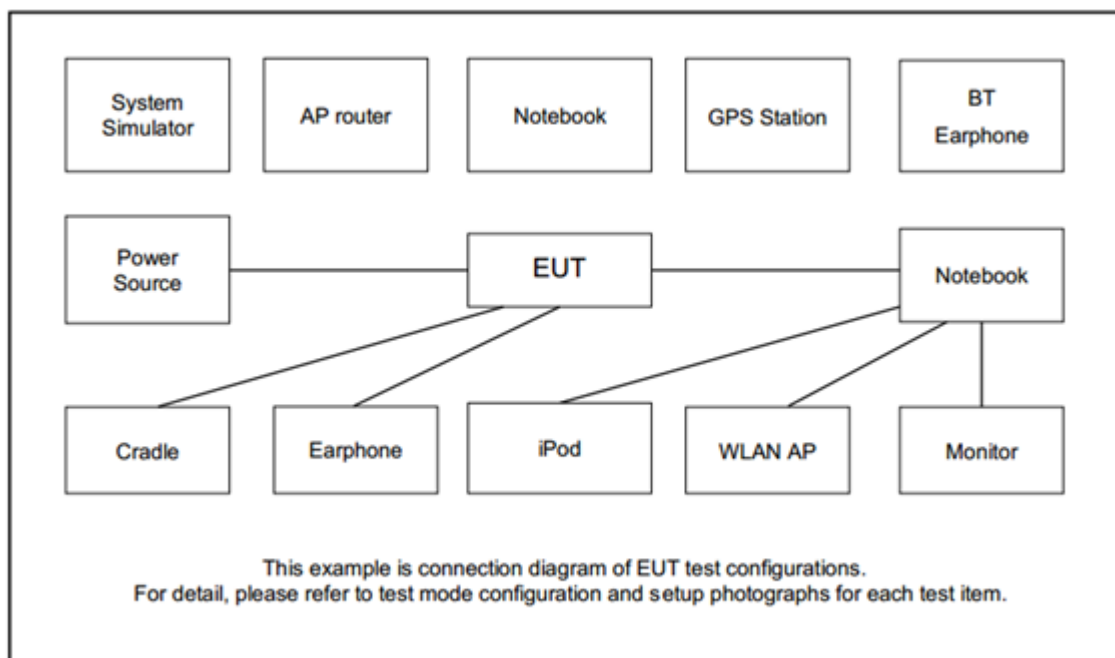
For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X Plane for Band 2, 4, 17, and 25; Y Plane for Band 13 and 66; Z Plane for Band 5, 12, and 26) were recorded in this report.

Test Items	LTE -NB1 Band	Subcarrier (kHz)		Modulation		Tone@		Test Channel		
		3.75	15	BPSK	QPSK	1	Full	L	M	H
Max. Output Power	2	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	v	v	v	v	v
	12	v	v	v	v	v	v	v	v	v
	13	v	v	v	v	v	v	v	v	v
	17	v	v	v	v	v	v	v	v	v
	25	v	v	v	v	v	v	v	v	v
	26	v	v	v	v	v	v	v	v	v
	66	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	2		v	v	v	v	v	v	v	v
	4		v	v	v	v	v	v	v	v
	5		v	v	v	v	v	v	v	v
	12		v	v	v	v	v	v	v	v
	13		v	v	v	v	v	v	v	v
	17		v	v	v	v	v	v	v	v
	25		v	v	v	v	v	v	v	v
	26		v	v	v	v	v	v	v	v
	66		v	v	v	v	v	v	v	v
26dB and 99% Bandwidth	2		v		v		v	v	v	v
	4		v		v		v	v	v	v
	5		v		v		v	v	v	v
	12		v		v		v	v	v	v
	13		v		v		v	v	v	v
	17		v		v		v	v	v	v
	25		v		v		v	v	v	v
	26		v		v		v	v	v	v
	66		v		v		v	v	v	v
Conducted Band Edge	2	v	v	v	v	v	v	v		v
	4	v	v	v	v	v	v	v		v
	5	v	v	v	v	v	v	v		v
	12	v	v	v	v	v	v	v		v
	13	v	v	v	v	v	v	v		v
	17	v	v	v	v	v	v	v		v
	25	v	v	v	v	v	v	v		v
	26	v	v	v	v	v	v	v		v
	66	v	v	v	v	v	v	v		v



Test Items	LTE -NB1 Band	Subcarrier (kHz)		Modulation		Tone@		Test Channel		
		3.75	15	BPSK	QPSK	1	Full	L	M	H
Conducted Spurious Emission	2	v	v	v	v	v		v	v	v
	4	v	v	v	v	v		v	v	v
	5	v	v	v	v	v		v	v	v
	12	v	v	v	v	v		v	v	v
	13	v	v	v	v	v		v	v	v
	17	v	v	v	v	v		v	v	v
	25	v	v	v	v	v		v	v	v
	26	v	v	v	v	v		v	v	v
	66	v	v	v	v	v		v	v	v
Frequency Stability	2		v	v			v		v	
	5		v	v			v		v	
	12		v	v			v		v	
	13		v	v			v		v	
	17		v	v			v		v	
	25		v	v			v		v	
	26		v	v			v		v	
	66		v	v			v		v	
E.R.P / E.I.R.P	2	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	v	v	v	v	v
	12	v	v	v	v	v	v	v	v	v
	13	v	v	v	v	v	v	v	v	v
	17	v	v	v	v	v	v	v	v	v
	25	v	v	v	v	v	v	v	v	v
	26	v	v	v	v	v	v	v	v	v
	66	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	2	Worst Case						v	v	v
	4	Worst Case						v	v	v
	5	Worst Case						v	v	v
	12	Worst Case						v	v	v
	13	Worst Case						v	v	v
	17	Worst Case						v	v	v
	25	Worst Case						v	v	v
	26	Worst Case						v	v	v
	66	Worst Case						v	v	v
Remark	1. The mark "v " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.									

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	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 EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

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

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Example :

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

$$= 4.2 + 10 = 14.2 \text{ (dB)}$$

2.5 Frequency List of Low/Middle/High Channels

LTE-NB1 Band 2 Channel and Frequency List			
Channel/Frequency(MHz)	Lowest	Middle	Highest
Channel	18601	18900	19199
Frequency	1850.1	1880.0	1909.9

LTE-NB1 Band 4 Channel and Frequency List			
Channel/Frequency(MHz)	Lowest	Middle	Highest
Channel	19951	20175	20399
Frequency	1710.1	1732.5	1754.9

LTE-NB1 Band 5 Channel and Frequency List			
Channel/Frequency(MHz)	Lowest	Middle	Highest
Channel	20401	20525	20649
Frequency	824.1	836.5	848.9

LTE-NB1 Band 12 Channel and Frequency List			
Channel/Frequency(MHz)	Lowest	Middle	Highest
Channel	23011	23095	23178
Frequency	699.1	707.5	715.8

LTE-NB1 Band 13 Channel and Frequency List			
Channel/Frequency(MHz)	Lowest	Middle	Highest
Channel	23181	23230	23279
Frequency	777.1	782.0	786.9

LTE-NB1 Band 17 Channel and Frequency List			
Channel/Frequency(MHz)	Lowest	Middle	Highest
Channel	23732	23790	23848
Frequency	704.2	710.0	715.8



LTE-NB1 Band 25 Channel and Frequency List			
Channel/Frequency(MHz)	Lowest	Middle	Highest
Channel	26041	26365	26689
Frequency	1850.1	1882.5	1914.9

LTE-NB1 Band 26 Channel and Frequency List			
Channel/Frequency(MHz)	Lowest	Middle	Highest
Channel	26792	26915	27038
Frequency	824.2	836.5	848.8

LTE-NB1 Band 66 Channel and Frequency List			
Channel/Frequency(MHz)	Lowest	Middle	Highest
Channel	131973	132322	132671
Frequency	1710.1	1745.0	1779.9

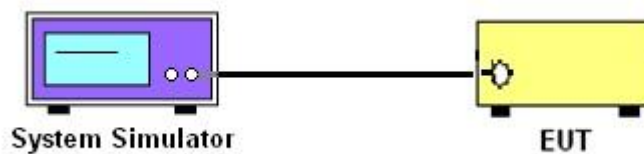
3 Conducted Test Items

3.1 Measuring Instruments

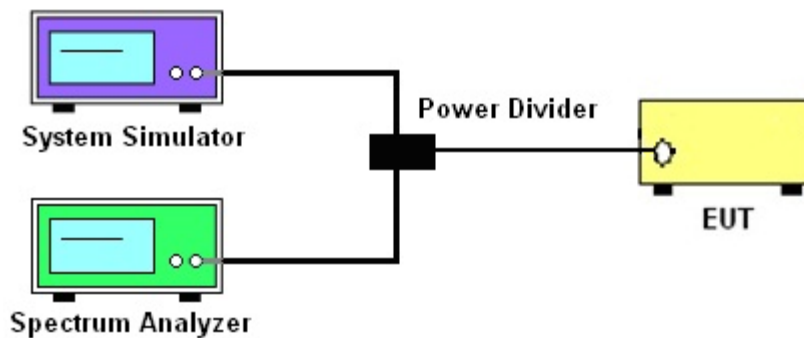
See list of measuring instruments of this test report.

3.1.1 Test Setup

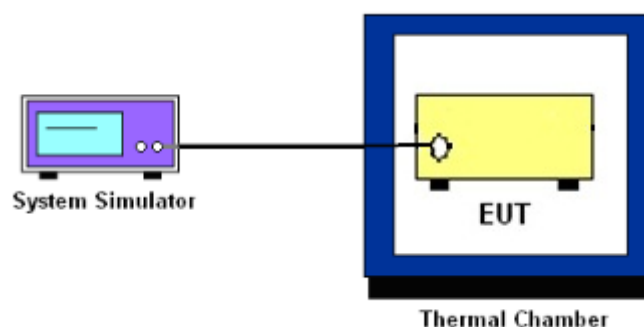
3.1.2 Conducted Output Power



3.1.3 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted Band-Edge and Conducted Spurious Emission



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.



3.2 Conducted Output Power and ERP/EIRP

3.2.1 Description of the Conducted Output Power Measurement and ERP/EIRP Measurement

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

The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 5 and Band 26.

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 12 and Band 13 and Band 17.

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2 and Band 25.

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4 and Band 66.

According to KDB 412172 D01 Power Approach,

$EIRP = PT + GT - LC$, $ERP = EIRP - 2.15$, where

PT = transmitter output power in dBm

GT = gain of the transmitting antenna in dBi

LC = 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 the 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.



3.3 Peak-to-Average Ratio

3.3.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.3.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.2.6

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.
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.



3.4 Occupied Bandwidth

3.4.1 Description of Occupied Bandwidth Measurement

The 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.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.4.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.4.3 (26dB) and Section 5.4.4 (99OB)

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
3. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
4. Set the detection mode to peak, and the trace mode to max hold.
5. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.
(this is the reference value)
6. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
7. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
8. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.



3.5 Conducted Band Edge

3.5.1 Description of Conducted Band Edge Measurement

22.917(a)

For operations in the 824 – 849 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

24.238 (a)

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53 (c)

For operations in the 776-788 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100 kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. In addition, the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least $65 + 10 \log_{10} p(\text{watts})$, dB, for mobile and portable equipment.

27.53 (g)

For operations in the 600MHz band and 698 -746 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

27.53 (h)

For operations in the 1710 – 1755 MHz band, 1755-1780 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.



3.5.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
3. Set RBW $\geq$ 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
5. Set spectrum analyzer with RMS detector.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. Checked that all the results comply with the emission limit line.

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)

3.6 Conducted Spurious Emission

3.6.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of 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.

3.6.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

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. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
6. Set spectrum analyzer with RMS detector.
7. Taking the record of maximum spurious emission.
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
9. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)

3.7 Frequency Stability

3.7.1 Description of Frequency Stability Measurement

22.355

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.

24.235 & 27.54

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

3.7.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was set up in the thermal chamber and connected with the system simulator.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. 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.

3.7.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was placed in a temperature chamber at $20\pm 5^{\circ}\text{C}$ and connected with the system simulator.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

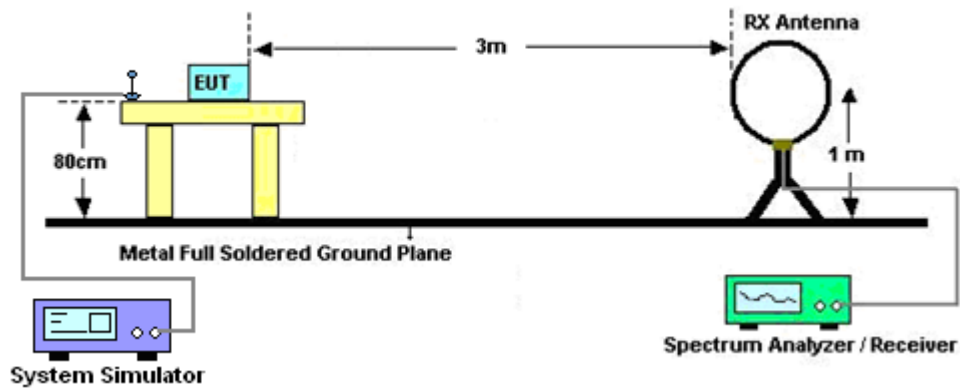
4 Radiated Test Items

4.1 Measuring Instruments

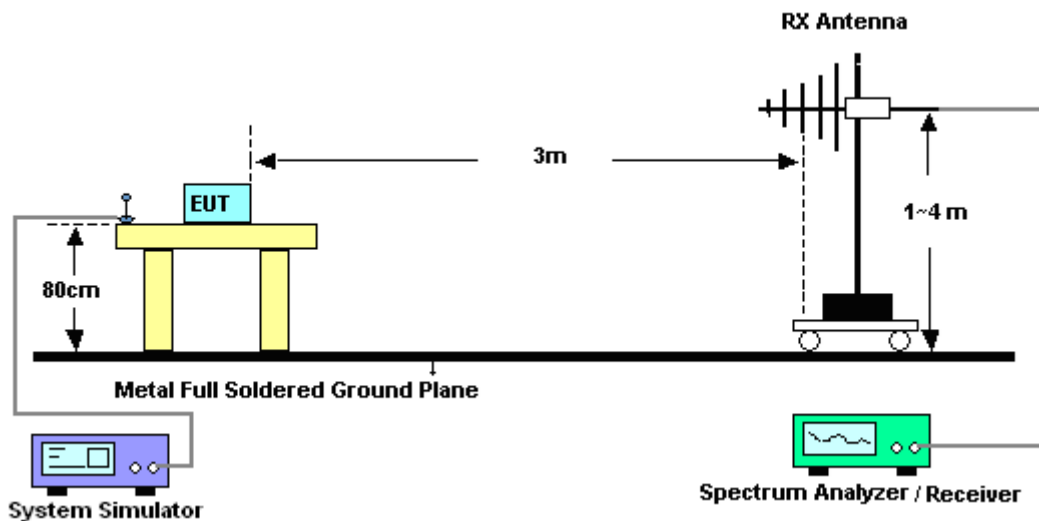
See list of measuring instruments of this test report.

4.1.1 Test Setup

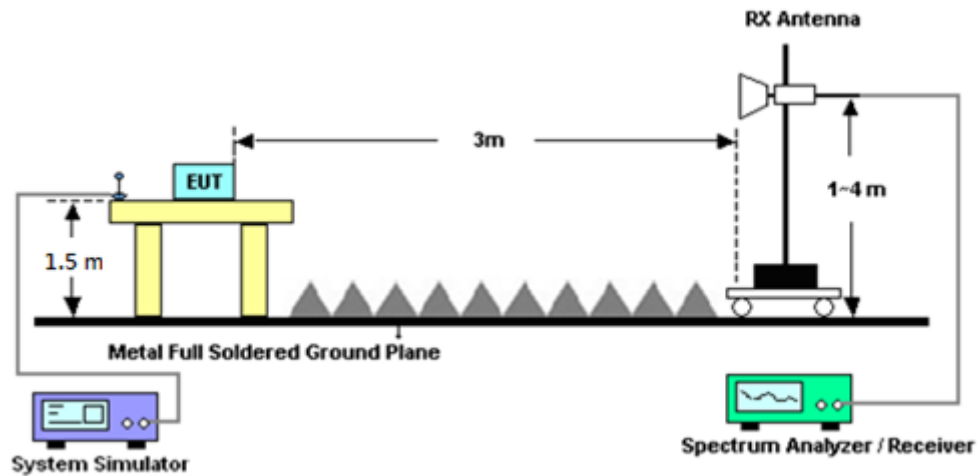
For radiated emissions below 30MHz



For radiated test from 30MHz to 1GHz



For radiated test above 1GHz



4.1.2 Test Result of Radiated Test

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.

4.2 Radiated Spurious Emission

4.2.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. 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 $43 + 10 \log (P)$ dB.

For LTE Band 13

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.2.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI / TIA-603-E Section 2.2.12.

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. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Base Station (Measure)	Anritsu	MT8821C	6201664755	2/3/4G/LTE FDD/TDD with 44)/LTE-3C C DLCA/2CC ULCA, CatM1/NB1/NB 2	Jul. 16, 2020	Jul. 18, 2020 ~ Aug. 03, 2020	Jul. 15, 2021	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101908	10Hz~40GHz	May 13, 2020	Jul.18, 2020~ Aug.03, 2020	May 12, 2021	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-40℃~90℃	Sep. 02, 2019	Jul.18, 2020~ Aug.03, 2020	Sep. 01, 2020	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890094	1V~20V 0.5A~5A	Oct. 09, 2019	Jul.18, 2020~ Aug.03, 2020	Oct. 08, 2020	Conducted (TH05-HY)
Coupler	Warison	20dB 25W SMA Directional Coupler	#A	1-18GHz	Jan. 13, 2020	Jul.18, 2020~ Aug.03, 2020	Jan. 12, 2021	Conducted (TH05-HY)
Amplifier	Sonoma-Instrument	310 N	187282	9KHz~1GHz	Dec. 17, 2019	Jun. 30, 2020~ Aug. 04, 2020	Dec. 16, 2020	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	40103&07	30MHz to 1GHz	Apr. 29, 2020	Jun. 30, 2020~ Aug. 04, 2020	Apr. 28, 2021	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1212	1GHz~18GHz	May 20, 2020	Jun. 30, 2020~ Aug. 04, 2020	May 19, 2021	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 19, 2020	Jun. 30, 2020~ Aug. 04, 2020	May 18, 2021	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY53270147	1GHz~26.5GHz	Oct. 28, 2019	Jun. 30, 2020~ Aug. 04, 2020	Oct. 27, 2020	Radiation (03CH13-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	Aug. 27, 2019	Jun. 30, 2020~ Aug. 04, 2020	Aug. 26, 2020	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	10Hz~44GHz	Mar. 20, 2020	Jun. 30, 2020~ Aug. 04, 2020	Mar. 19, 2021	Radiation (03CH13-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Jun. 30, 2020~ Aug. 04, 2020	N/A	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jun. 30, 2020~ Aug. 04, 2020	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jun. 30, 2020~ Aug. 04, 2020	N/A	Radiation (03CH13-HY)
Software	Audix	E3 6.2009-8-24	RK-000992	N/A	N/A	Jun. 30, 2020~ Aug. 04, 2020	N/A	Radiation (03CH13-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 13, 2019	Jun. 30, 2020~ Aug. 04, 2020	Dec. 12, 2020	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0030/126E	30M-18G	Feb. 12, 2020	Jun. 30, 2020~ Aug. 04, 2020	Feb. 11, 2021	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	804793/4	30M-18G	Feb. 12, 2020	Jun. 30, 2020~ Aug. 04, 2020	Feb. 11, 2021	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Feb. 25, 2020	Jun. 30, 2020~ Aug. 04, 2020	Feb. 24, 2021	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170980	18GHz~40GHz	Jan. 10, 2020	Jun. 30, 2020~ Aug. 04, 2020	Jan. 09, 2021	Radiation (03CH13-HY)
Filter	Wainwright	WHKX12-2700 -3000-18000-6 0SS	SN2	3GHz High Pass Filter	Jul. 13, 2020	Jun. 30, 2020~ Aug. 04, 2020	Jul. 12, 2021	Radiation (03CH13-HY)
Filter	Wainwright	WHKX12-1080 -1200-15000-6 0SS	SN1	1.2GHz High Pass Filter	Mar. 18, 2020	Jun. 30, 2020~ Aug. 04, 2020	Mar. 17, 2021	Radiation (03CH13-HY)
Hygrometer	TECEPIL	DTM-303A	TP190075	N/A	Apr. 23, 2020	Jun. 30, 2020~ Aug. 04, 2020	Apr. 22, 2021	Radiation (03CH13-HY)

6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.21
---	------

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

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

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.99
---	------



Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE-NB1 Band 2 Maximum Average Power [dBm]					
Sub-carrier Spacing [kHz]	Mod	Number of Tones	Lowest	Middle	Highest
3.75	BPSK	1T0	22.43	22.34	22.27
3.75		1T47	22.37	22.32	22.23
3.75	QPSK	1T0	22.49	22.38	22.25
3.75		1T47	22.36	22.33	22.22
15	BPSK	1T0	22.44	22.33	22.18
15		1T11	22.43	22.32	22.19
15	QPSK	1T0	22.43	22.36	22.18
15		1T11	22.45	22.35	22.20
15		12T0	20.65	20.36	20.18

LTE-NB1 Band 25 Maximum Average Power [dBm]					
Sub-carrier Spacing [kHz]	Mod	Number of Tones	Lowest	Middle	Highest
3.75	BPSK	1T0	22.63	22.62	22.19
3.75		1T47	22.54	22.58	22.21
3.75	QPSK	1T0	22.58	22.56	22.16
3.75		1T47	22.62	22.50	22.13
15	BPSK	1T0	22.56	22.61	22.13
15		1T11	22.56	22.57	22.11
15	QPSK	1T0	22.56	22.52	22.12
15		1T11	22.59	22.59	22.12
15		12T0	20.60	20.81	20.21

LTE-NB1 Band 4 Maximum Average Power [dBm]					
Sub-carrier Spacing [kHz]	Mod	Number of Tones	Lowest	Middle	Highest
3.75	BPSK	1T0	22.80	22.84	22.78
3.75		1T47	22.76	22.74	22.77
3.75	QPSK	1T0	22.85	22.89	22.76
3.75		1T47	22.86	22.81	22.82
15	BPSK	1T0	22.84	22.84	22.80
15		1T11	22.83	22.83	22.79
15	QPSK	1T0	22.86	22.85	22.82
15		1T11	22.86	22.85	22.84
15		12T0	20.99	20.93	20.83



LTE-NB1 Band 5 Maximum Average Power [dBm]					
Sub-carrier Spacing [kHz]	Mod	Number of Tones	Lowest	Middle	Highest
3.75	BPSK	1T0	22.93	22.76	22.61
3.75		1T47	22.87	22.70	22.59
3.75	QPSK	1T0	22.92	22.74	22.64
3.75		1T47	22.86	22.69	22.64
15	BPSK	1T0	22.84	22.73	22.62
15		1T11	22.81	22.77	22.60
15	QPSK	1T0	22.79	22.74	22.59
15		1T11	22.88	22.75	22.62
15		12T0	20.81	20.99	20.51

LTE-NB1 Band 12 Maximum Average Power [dBm]					
Sub-carrier Spacing [kHz]	Mod	Number of Tones	Lowest	Middle	Highest
3.75	BPSK	1T0	22.81	22.76	22.80
3.75		1T47	22.83	22.75	22.72
3.75	QPSK	1T0	22.78	22.80	22.78
3.75		1T47	22.82	22.82	22.73
15	BPSK	1T0	22.99	22.70	22.84
15		1T11	22.97	22.69	22.82
15	QPSK	1T0	23.00	22.71	22.84
15		1T11	23.00	22.71	22.84
15		12T0	21.13	20.92	20.78

LTE-NB1 Band 13 Maximum Average Power [dBm]					
Sub-carrier Spacing [kHz]	Mod	Number of Tones	Lowest	Middle	Highest
3.75	BPSK	1T0	23.00	22.94	22.99
3.75		1T47	22.94	22.90	22.96
3.75	QPSK	1T0	22.95	22.97	22.99
3.75		1T47	22.86	22.84	22.88
15	BPSK	1T0	22.95	22.88	22.85
15		1T11	22.99	22.92	22.87
15	QPSK	1T0	22.96	22.96	22.87
15		1T11	22.92	22.80	22.75
15		12T0	20.78	20.84	21.63



LTE-NB1 Band 17 Maximum Average Power [dBm]					
Sub-carrier Spacing [kHz]	Mod	Number of Tones	Lowest	Middle	Highest
3.75	BPSK	1T0	22.99	22.86	22.96
3.75		1T47	22.95	22.89	22.88
3.75	QPSK	1T0	22.98	22.98	22.96
3.75		1T47	22.92	22.89	22.92
15	BPSK	1T0	22.97	22.94	22.97
15		1T11	22.96	22.93	22.91
15	QPSK	1T0	22.99	22.89	22.99
15		1T11	22.99	22.89	22.92
15		12T0	20.98	20.83	20.81

LTE-NB1 Band 26 Maximum Average Power [dBm]					
Sub-carrier Spacing [kHz]	Mod	Number of Tones	Lowest	Middle	Highest
3.75	BPSK	1T0	22.99	22.86	22.72
3.75		1T47	22.93	22.85	22.73
3.75	QPSK	1T0	23.00	22.90	22.71
3.75		1T47	22.93	22.88	22.69
15	BPSK	1T0	22.97	22.80	22.72
15		1T11	22.97	22.86	22.69
15	QPSK	1T0	22.99	22.78	22.71
15		1T11	22.99	22.87	22.68
15		12T0	21.27	20.85	20.96

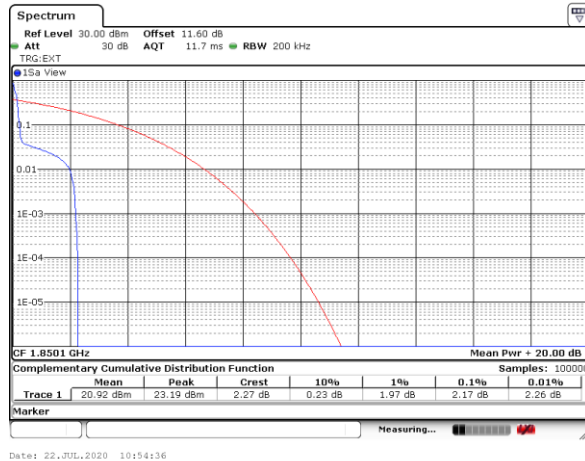
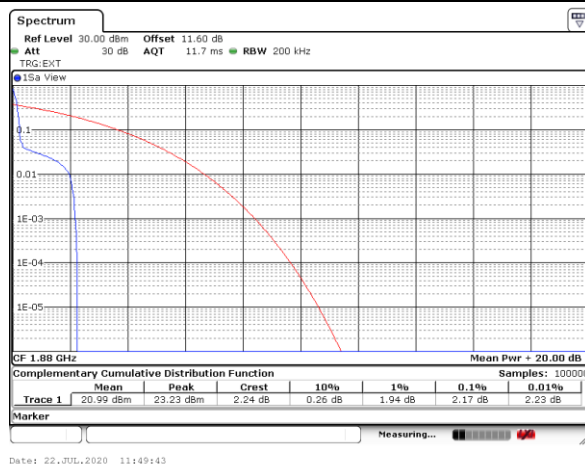
LTE-NB1 Band 66 Maximum Average Power [dBm]					
Sub-carrier Spacing [kHz]	Mod	Number of Tones	Lowest	Middle	Highest
3.75	BPSK	1T0	22.88	22.89	22.74
3.75		1T47	22.82	22.82	22.80
3.75	QPSK	1T0	22.85	22.88	22.78
3.75		1T47	22.82	22.90	22.71
15	BPSK	1T0	22.92	22.88	22.79
15		1T11	22.90	22.86	22.81
15	QPSK	1T0	22.95	22.92	22.80
15		1T11	22.91	22.87	22.83
15		12T0	20.97	20.89	20.79



LTE Band 2

Peak-to-Average Ratio

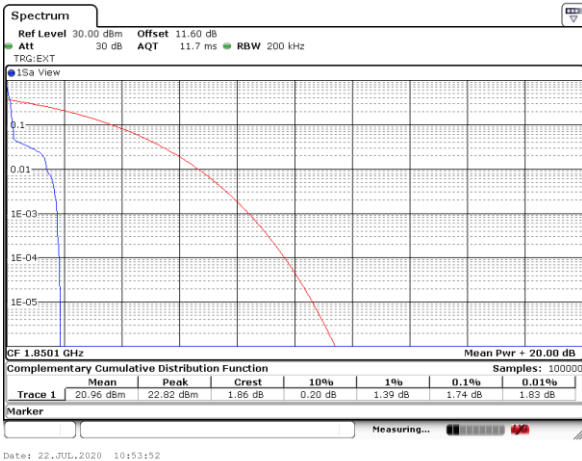
Mode	LTE Band 2 / 15kHz			
Mod.	BPSK	QPSK		Limit: 13dB
T Size	1T	1T	Full T	Result
Lowest CH	2.17	1.74	4.00	PASS
Middle CH	2.17	1.71	3.86	
Highest CH	2.17	1.71	3.83	

LTE Band 2 / 15kHz / BPSK
Lowest Channel / 1T

Middle Channel/ 1T

Highest Channel/ 1T

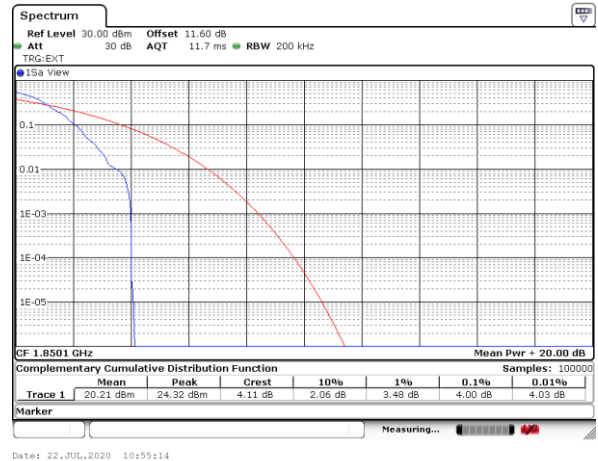



LTE Band 2 / 15k / QPSK

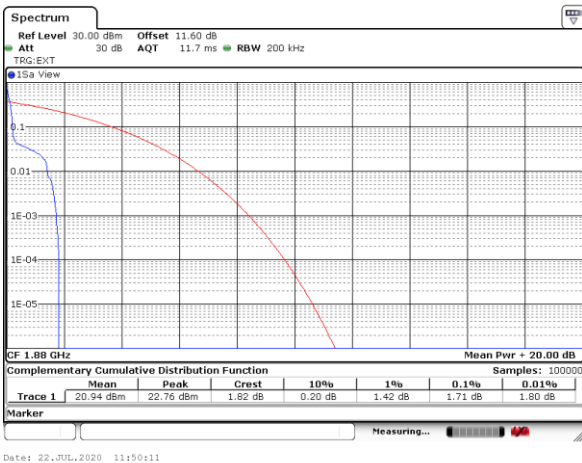
Lowest Channel / 1T



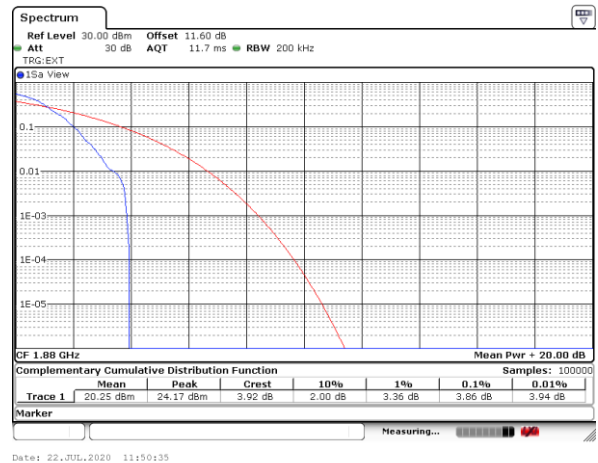
Lowest Channel / Full T



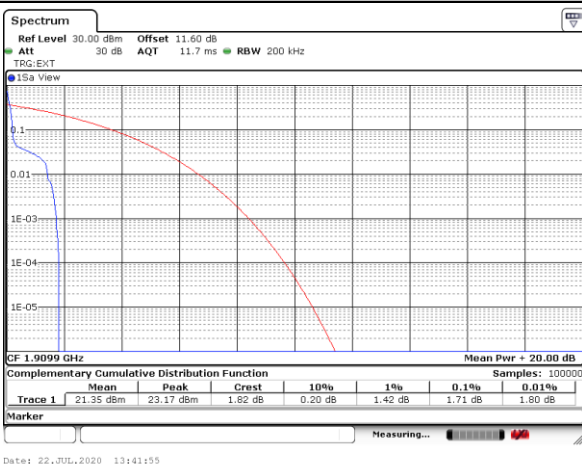
Middle Channel/ 1T



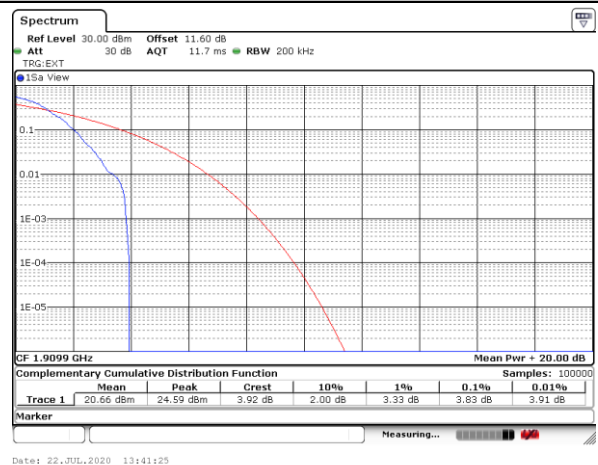
Middle Channel / Full T



Highest Channel/ 1T



Highest Channel / Full T



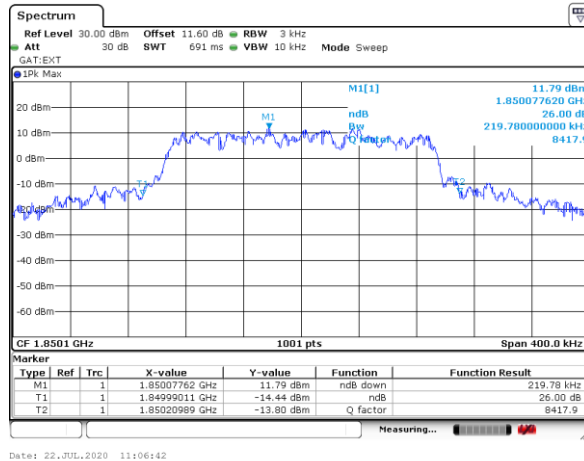
**26dB Bandwidth**

Mode	LTE Band 2 : 26dB(kHz)
Subcarrier Spacing	15k
Mod.	QPSK
Lowest CH	219.78
Middle CH	284.92
Highest CH	198.20

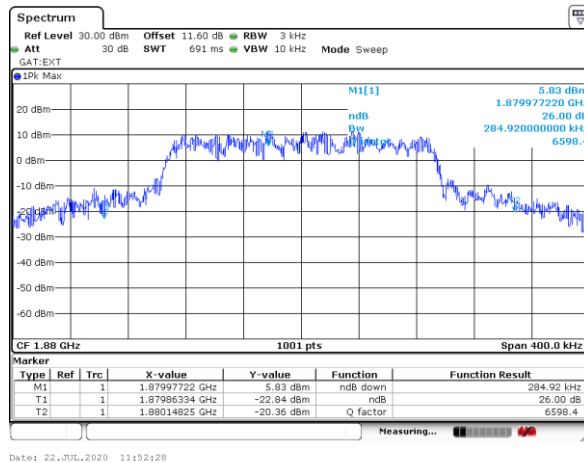


LTE Band 2

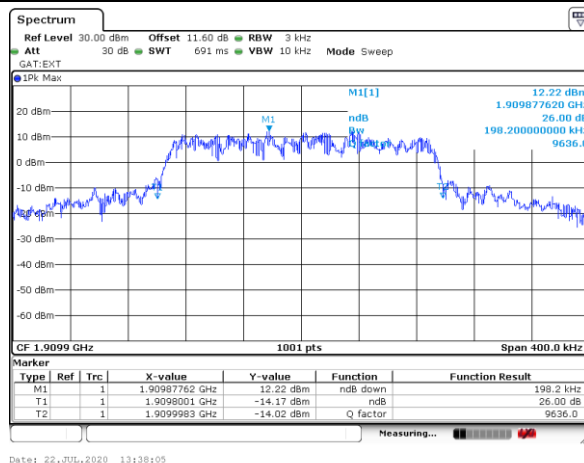
Lowest Channel / 15kHz / QPSK



Middle Channel / 15kHz / QPSK



Highest Channel / 15kHz / QPSK



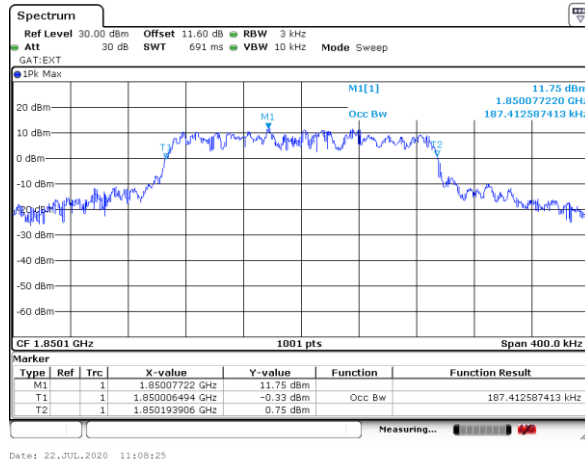
**Occupied Bandwidth**

Mode	LTE Band 2 : OB(kHz)
Subcarrier Spacing	15k
Mod.	QPSK
Lowest CH	187.41
Middle CH	188.21
Highest CH	187.81

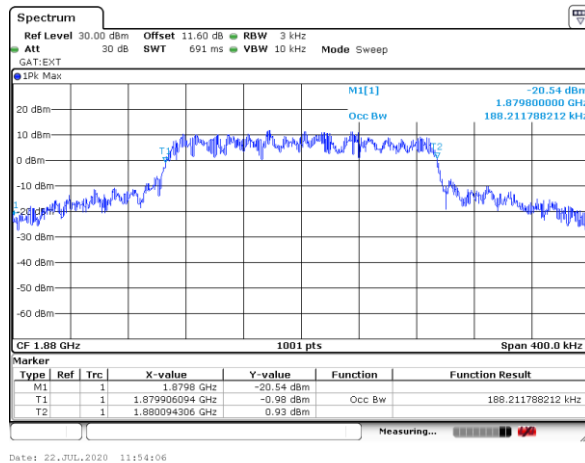


LTE Band 2

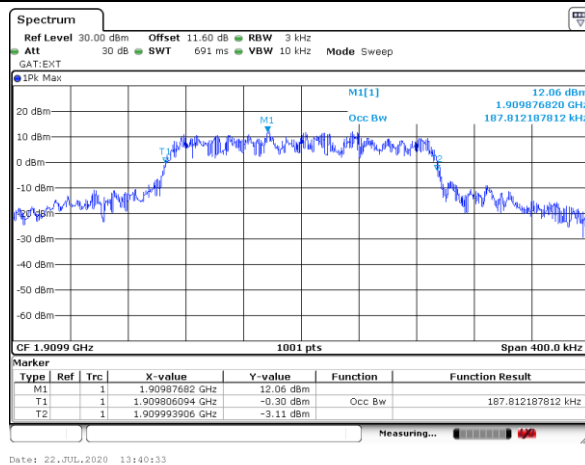
Lowest Channel / 15kHz / QPSK

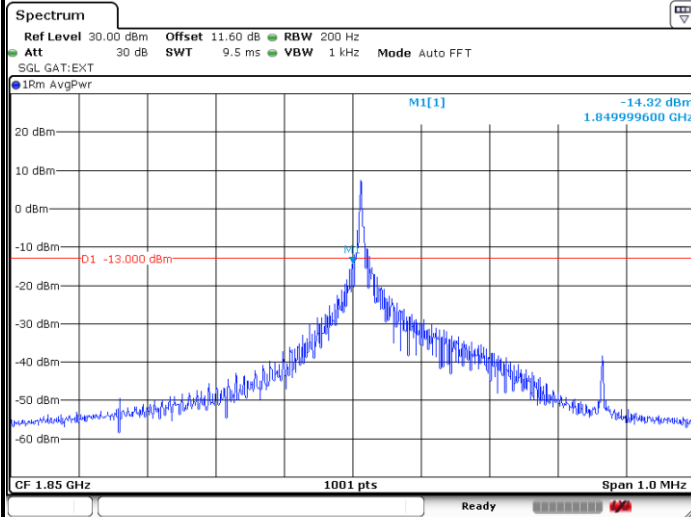
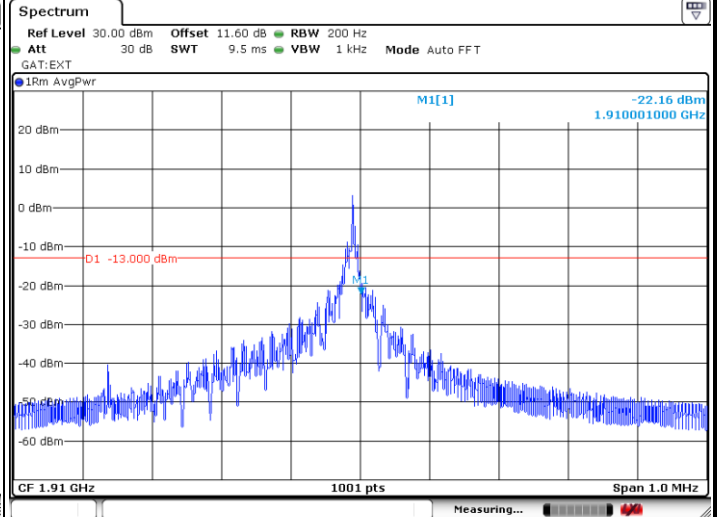
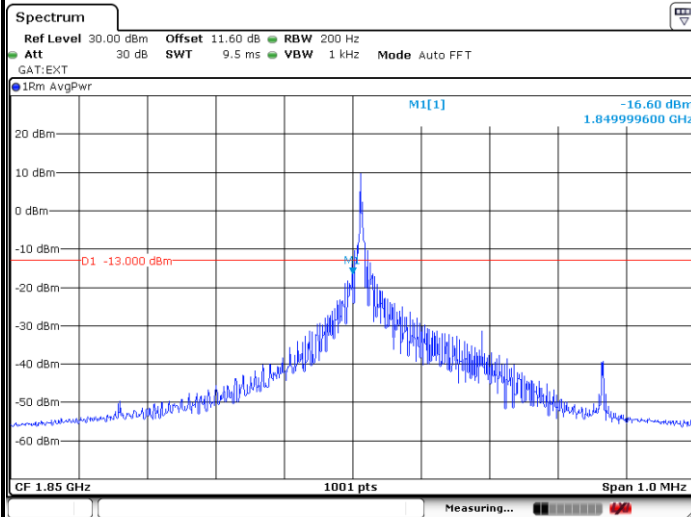
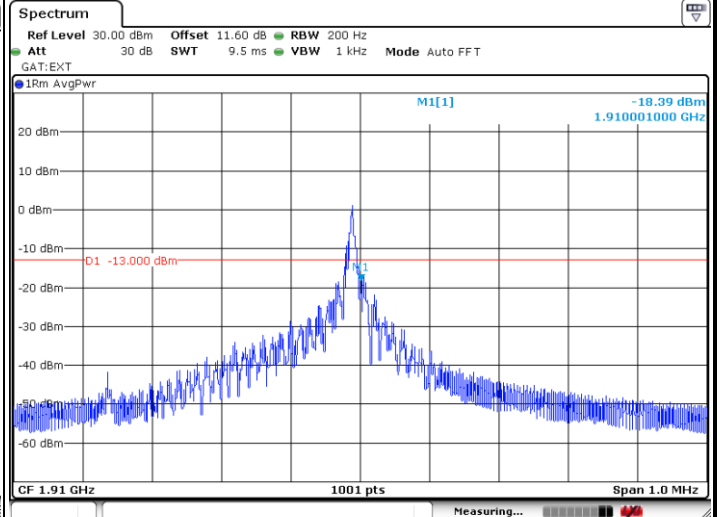


Middle Channel / 15kHz / QPSK



Highest Channel / 15kHz / QPSK

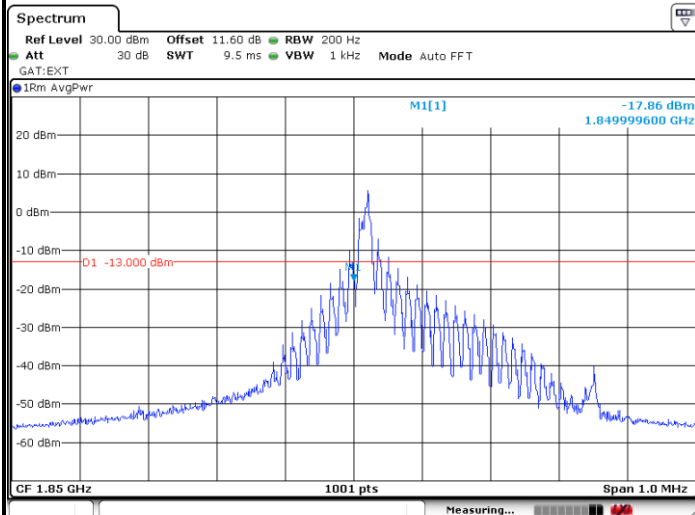


**Conducted Band Edge****LTE Band 2 / 3.75kHz / BPSK****Lowest Band Edge / 1 T****Highest Band Edge / 1 T****LTE Band 2 / 3.75kHz / QPSK****Lowest Band Edge / 1 T****Highest Band Edge / 1 T**



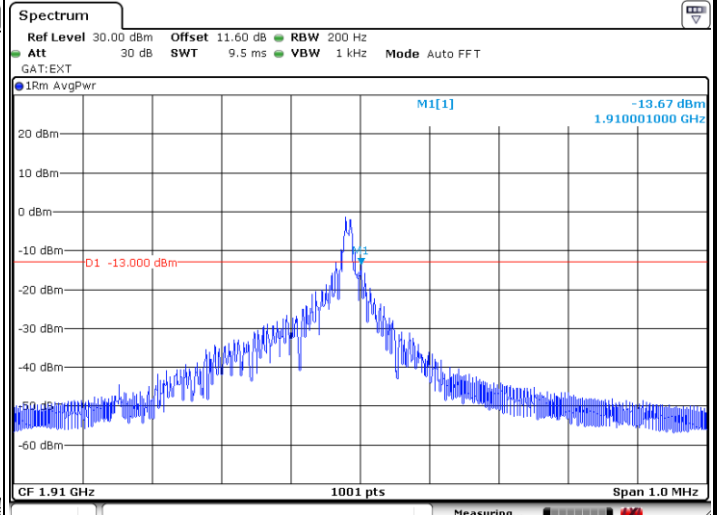
LTE Band 2 / 15kHz / BPSK

Lowest Band Edge / 1 T



Date: 22.JUL.2020 11:30:25

Highest Band Edge / 1 T

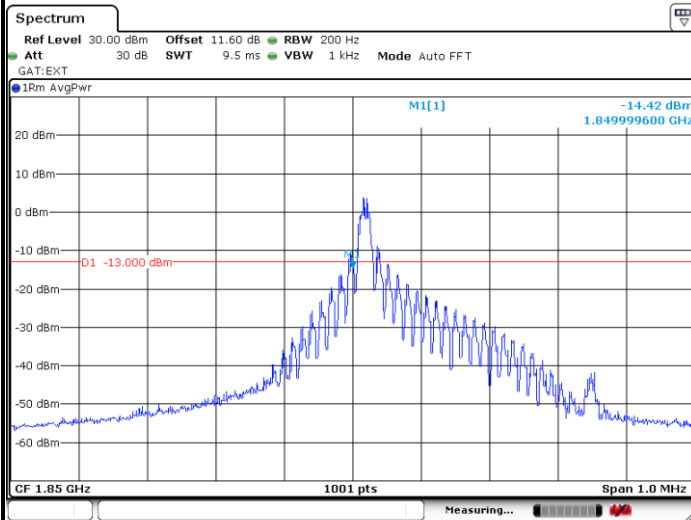


Date: 22.JUL.2020 13:48:55

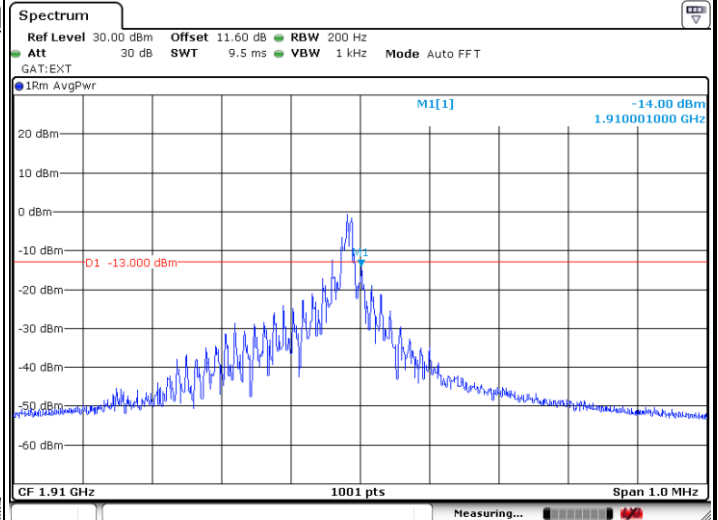


LTE Band 2 / 15kHz / QPSK

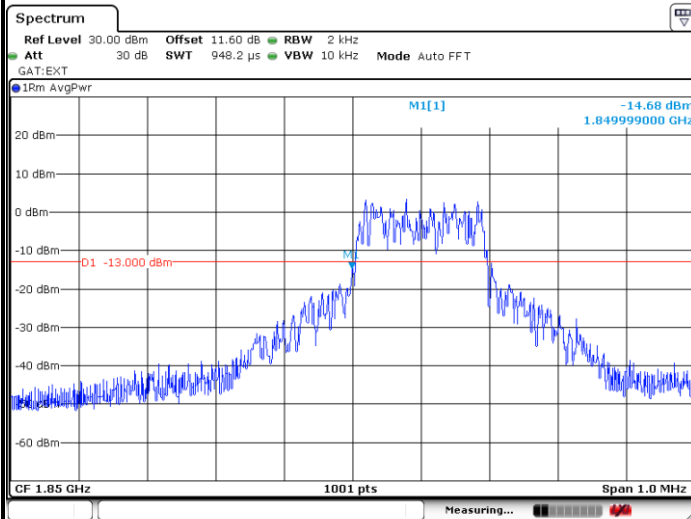
Lowest Band Edge / 1 T



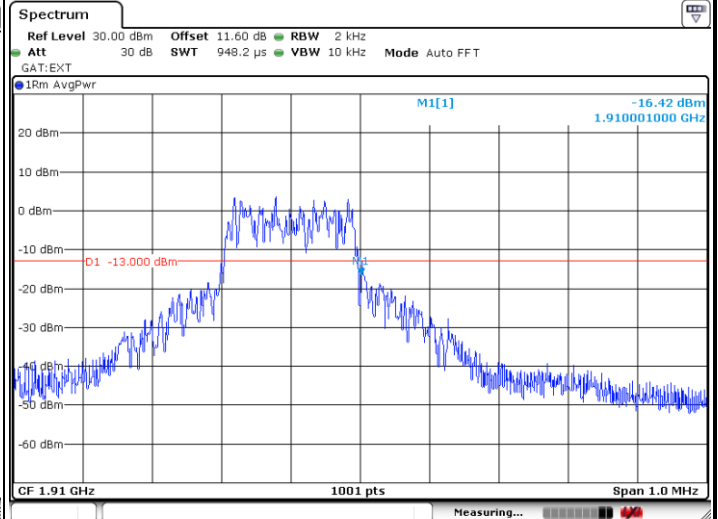
Highest Band Edge / 1 T



Lowest Band Edge / Full T



Lowest Band Edge / Full T

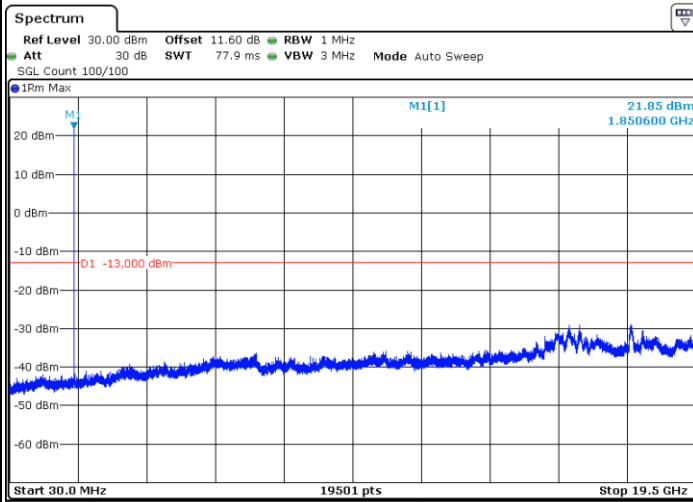




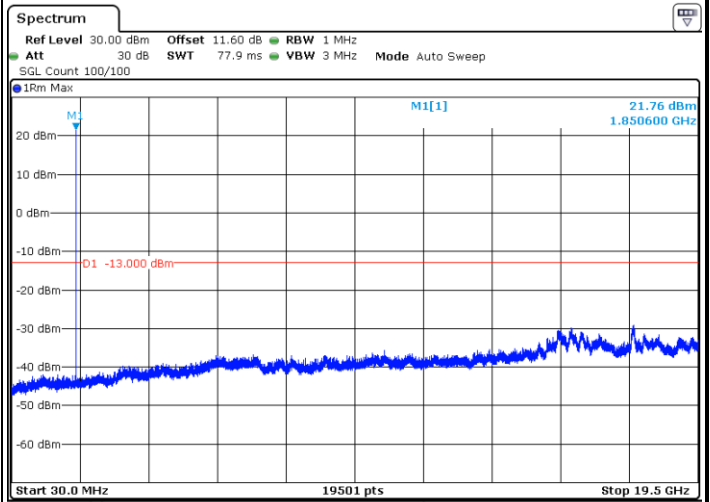
Conducted Spurious Emission

LTE Band 2 / 3.75kHz

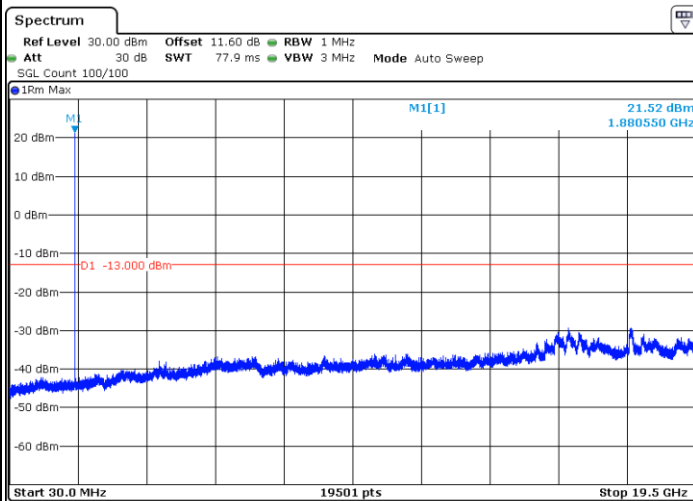
Lowest Channel / BPSK



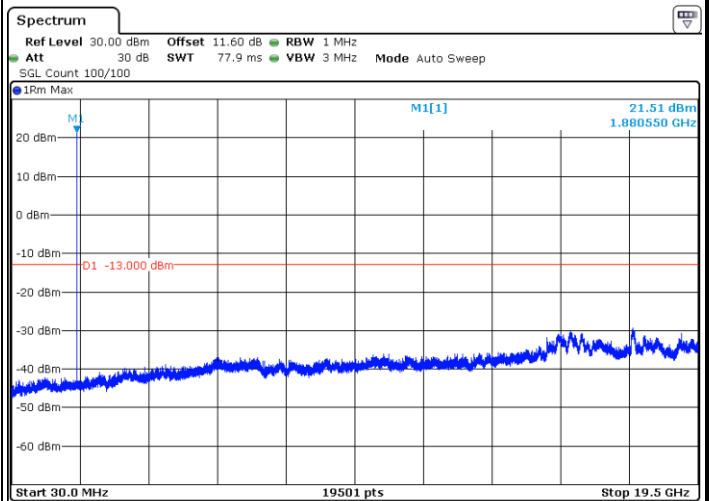
Lowest Channel / QPSK



Middle Channel / BPSK



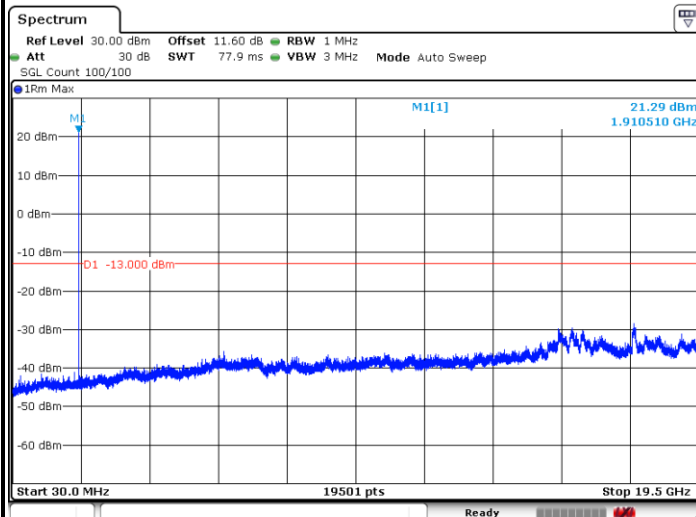
Middle Channel / QPSK





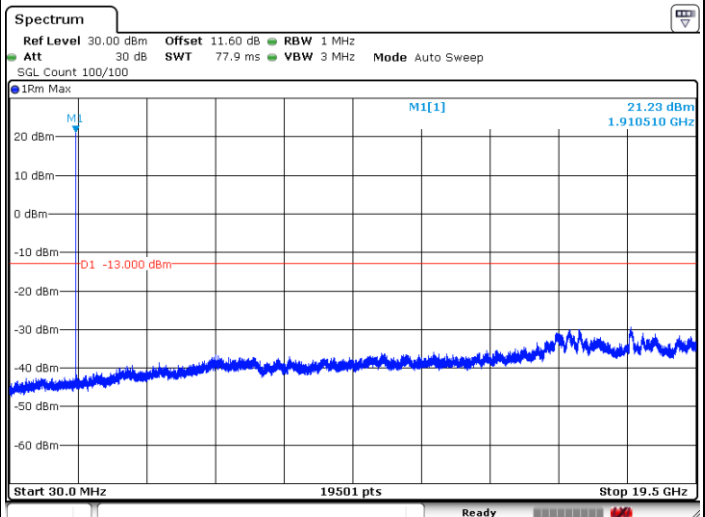
LTE Band 2 / 3.75kHz

Highest Channel / BPSK



Date: 22.JUL.2020 14:02:37

Highest Channel / QPSK

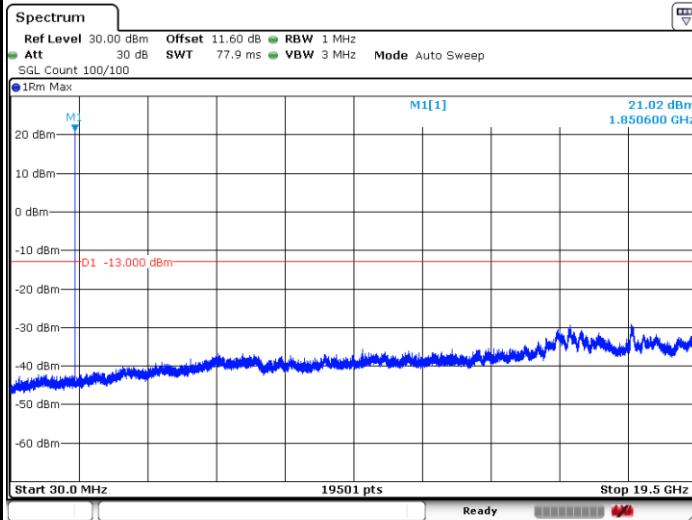


Date: 22.JUL.2020 14:04:33

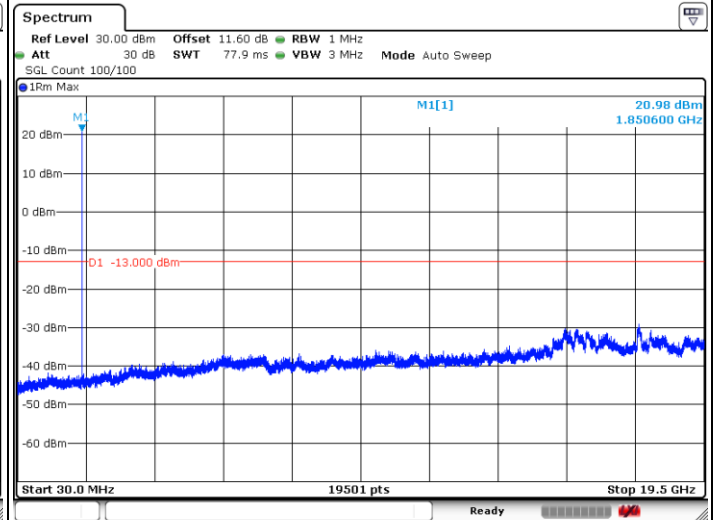


LTE Band 2 / 15kHz

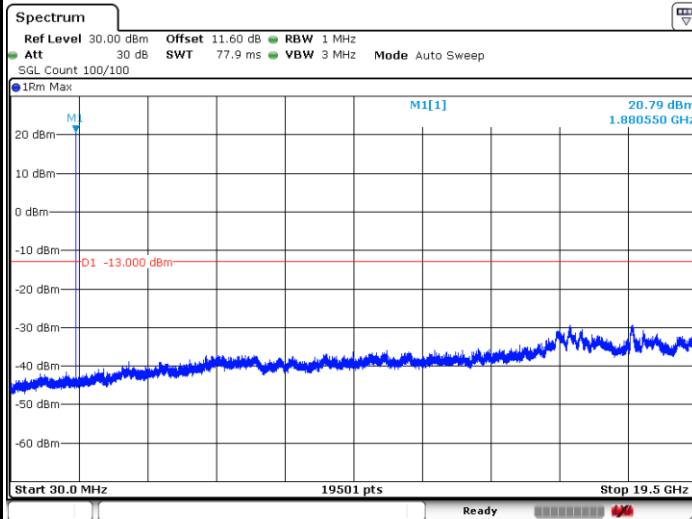
Lowest Channel / BPSK



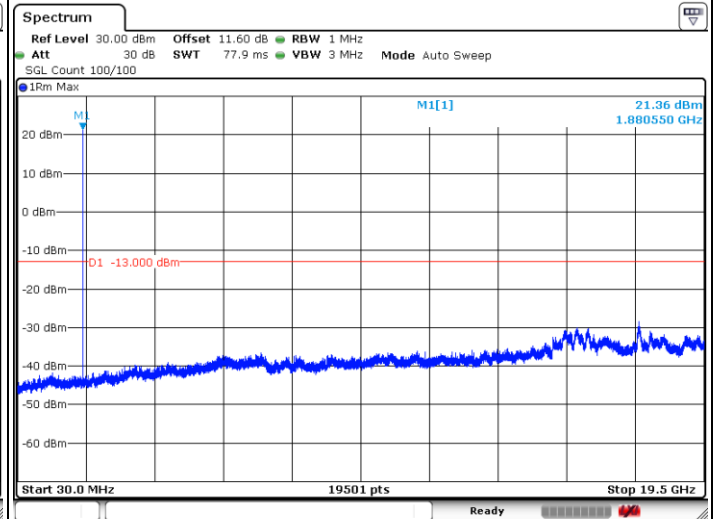
Lowest Channel / QPSK



Middle Channel / BPSK



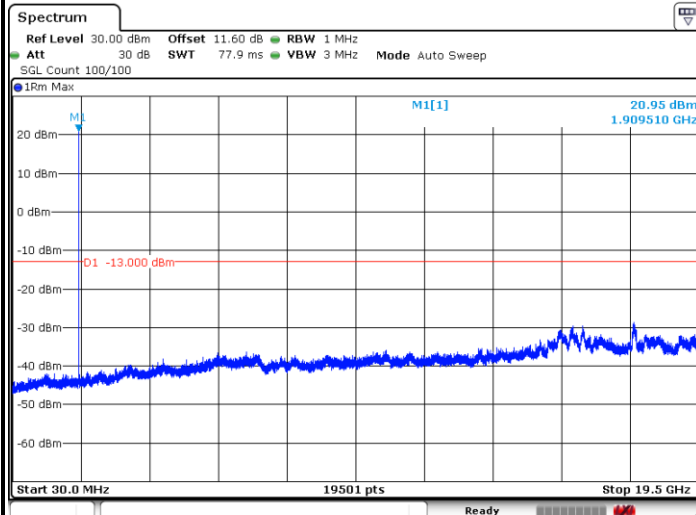
Middle Channel / QPSK



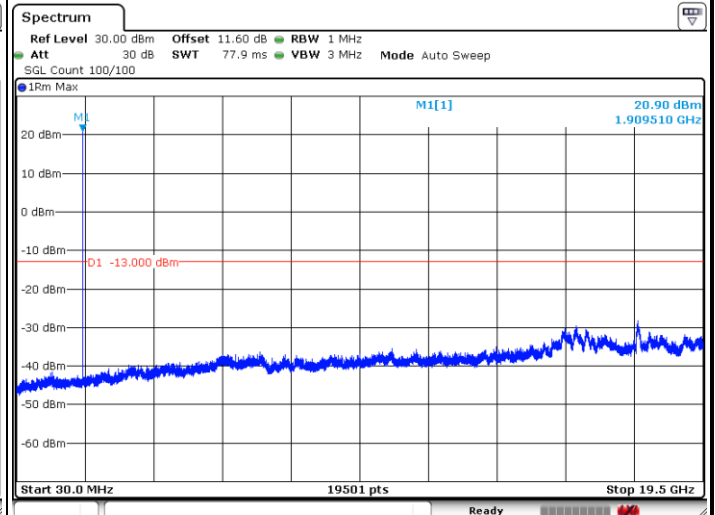


LTE Band 2 / 15kHz

Highest Channel / BPSK



Highest Channel / QPSK



Frequency Stability

Test Conditions		LTE Band 2 (BPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 15kHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0098	PASS
40	Normal Voltage	0.0021	
30	Normal Voltage	0.0007	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0036	
0	Normal Voltage	0.0026	
-10	Normal Voltage	0.0012	
-20	Normal Voltage	0.0012	
-30	Normal Voltage	0.0092	
20	Maximum Voltage	0.0015	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0024	

Note:

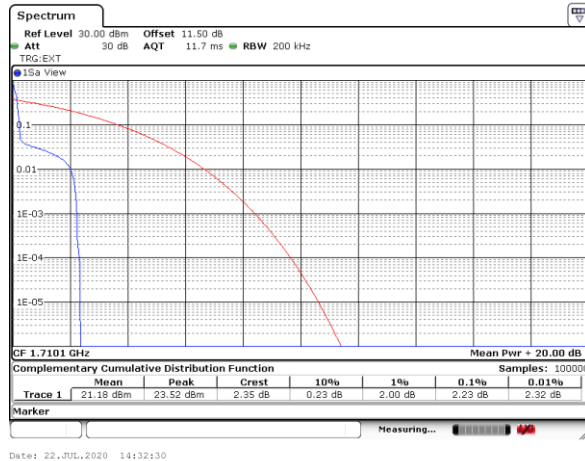
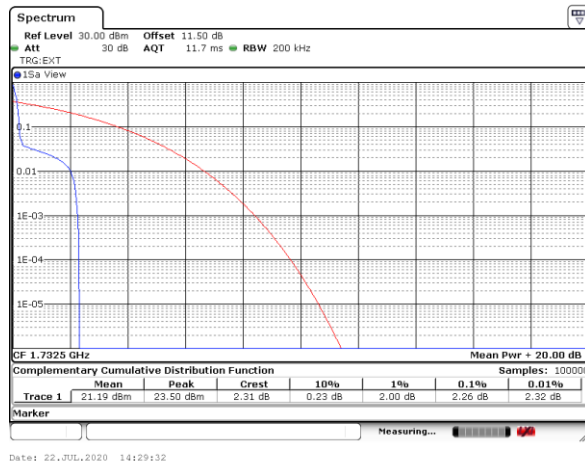
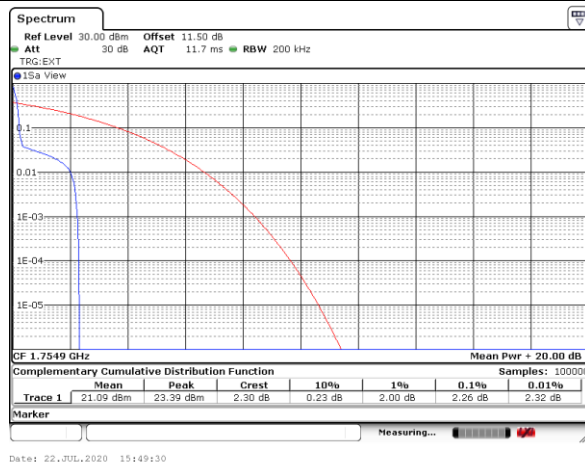
1. Normal Voltage =3.6 V. ; Battery End Point (BEP) =3.3 V. ; Maximum Voltage =3.7 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



LTE Band 4

Peak-to-Average Ratio

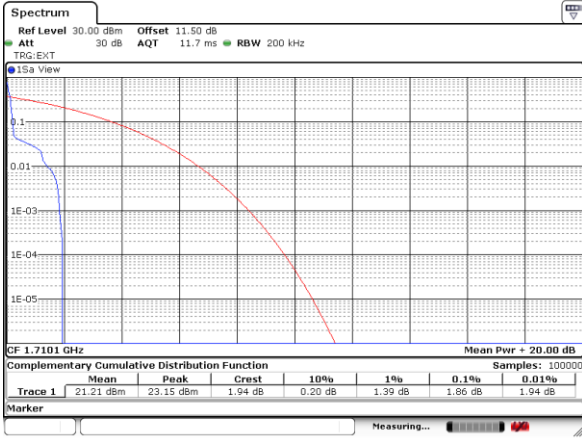
Mode	LTE Band 4 / 15kHz			
Mod.	BPSK	QPSK		Limit: 13dB
T Size	1T	1T	Full T	Result
Lowest CH	2.23	1.86	4.38	PASS
Middle CH	2.26	1.86	4.41	
Highest CH	2.26	1.86	4.35	

LTE Band 4 / 15kHz / BPSK
Lowest Channel / 1T

Middle Channel/ 1T

Highest Channel/ 1T


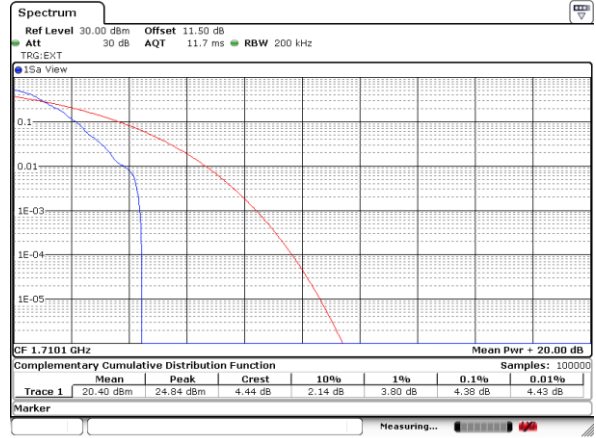


LTE Band 4 / 15kHz / QPSK

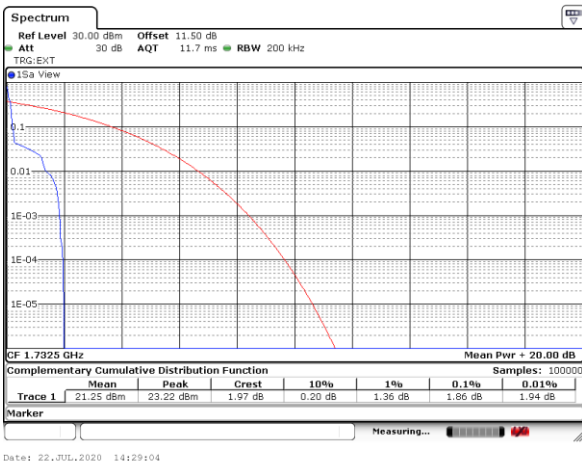
Lowest Channel / 1T



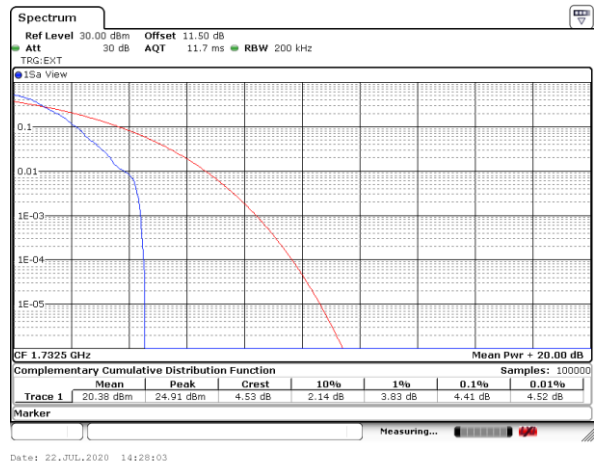
Lowest Channel / Full T



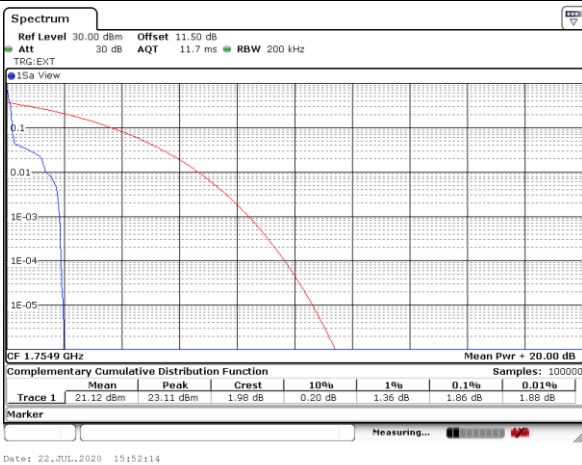
Middle Channel/ 1T



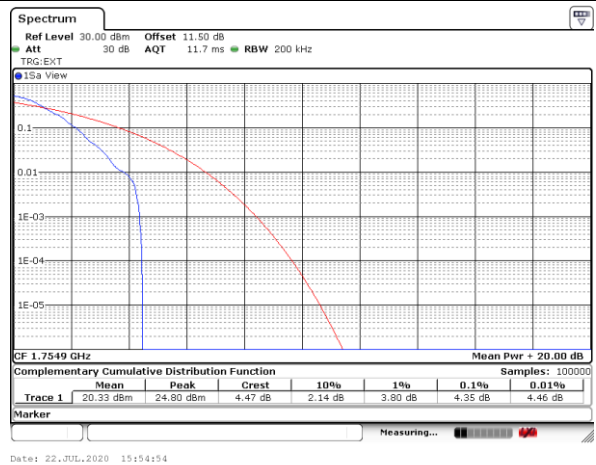
Middle Channel / Full T



Highest Channel/ 1T



Highest Channel / Full T



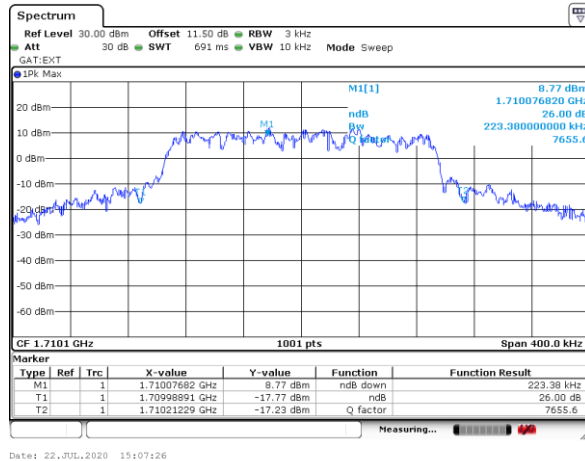
**26dB Bandwidth**

Mode	LTE Band 4 : 26dB(kHz)
Subcarrier Spacing	15k
Mod.	QPSK
Lowest CH	223.38
Middle CH	208.99
Highest CH	207.39

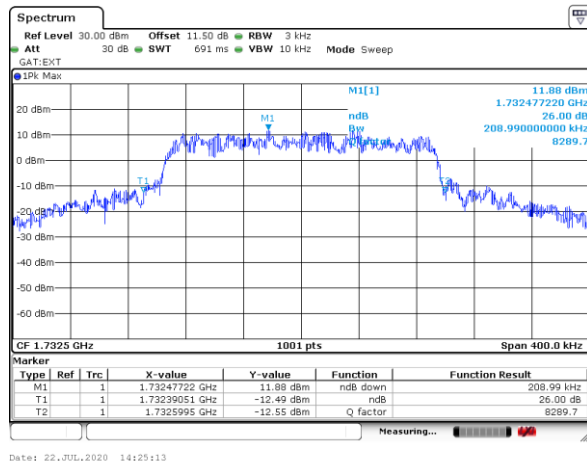


LTE Band 4

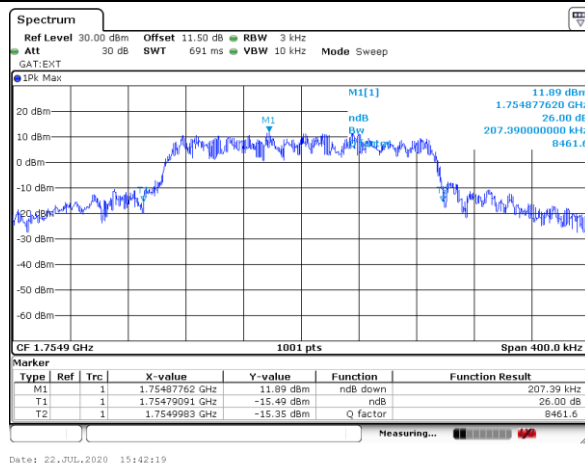
Lowest Channel / 15kHz / QPSK



Middle Channel / 15kHz / QPSK



Highest Channel / 15kHz / QPSK



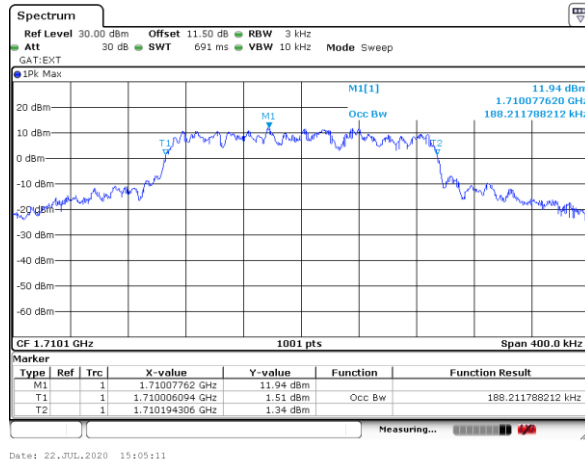
**Occupied Bandwidth**

Mode	LTE Band 4 : OB(kHz)
Subcarrier Spacing	15k
Mod.	QPSK
Lowest CH	188.21
Middle CH	187.41
Highest CH	187.01

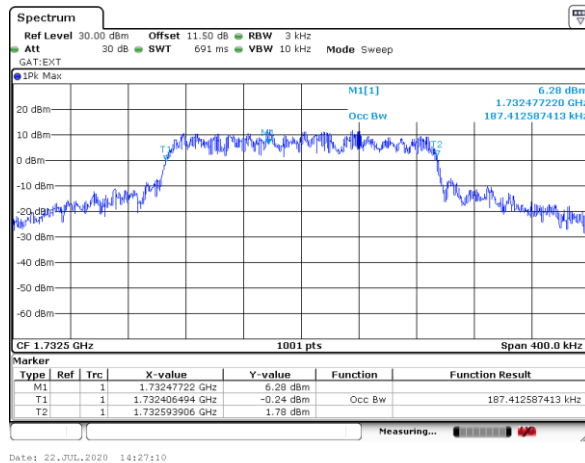


LTE Band 4

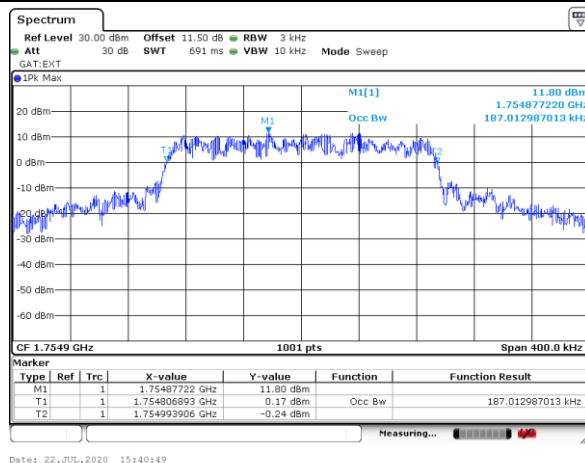
Lowest Channel / 15kHz / QPSK

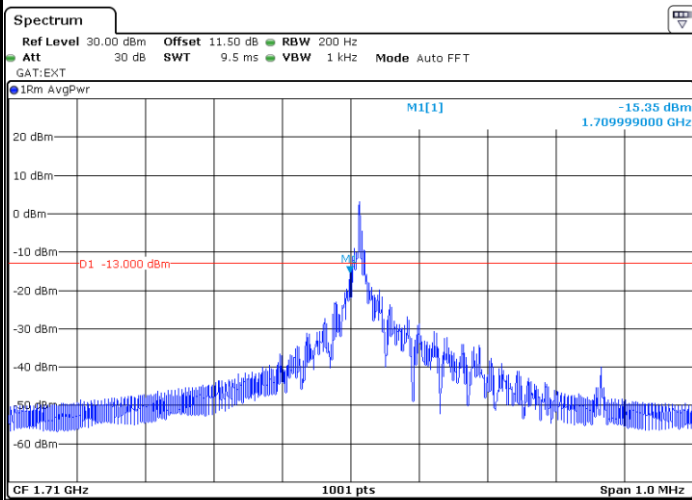
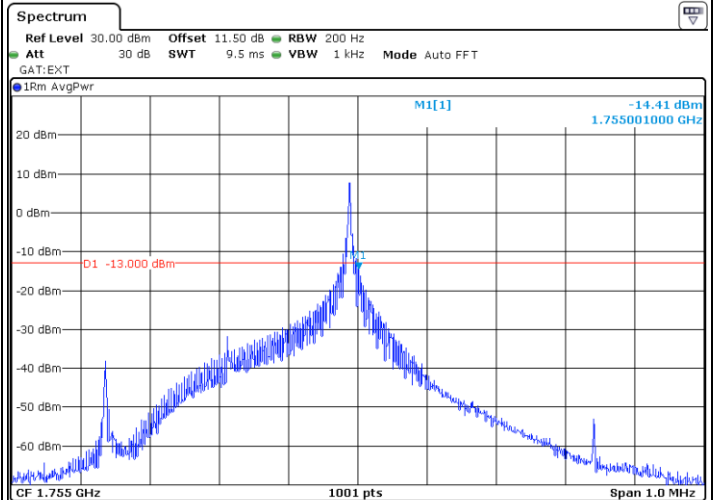
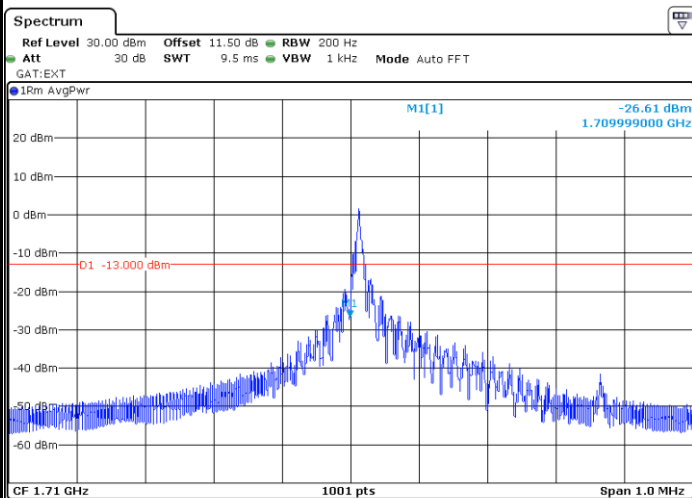
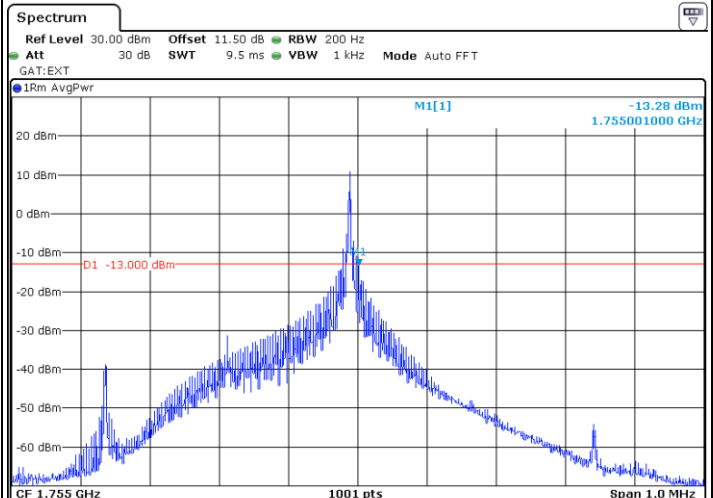


Middle Channel / 15kHz / QPSK



Highest Channel / 15kHz / QPSK

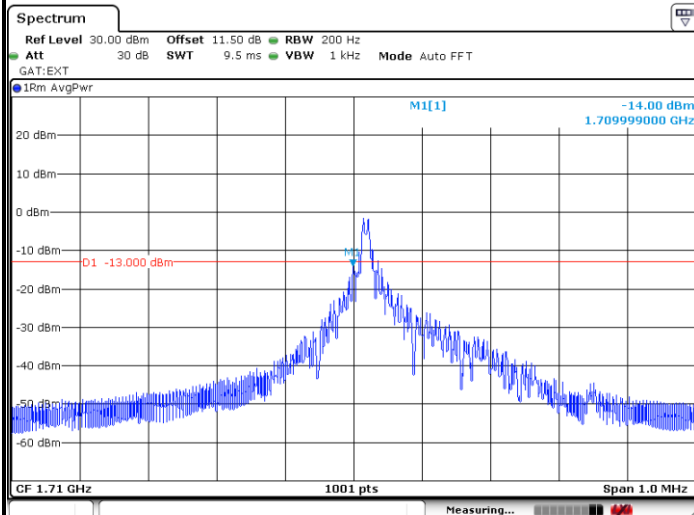


**Conducted Band Edge****LTE Band 4 / 3.75kHz / BPSK****Lowest Band Edge / 1 T****Highest Band Edge / 1 T****LTE Band 4 / 3.75kHz / QPSK****Lowest Band Edge / 1 T****Highest Band Edge / 1 T**



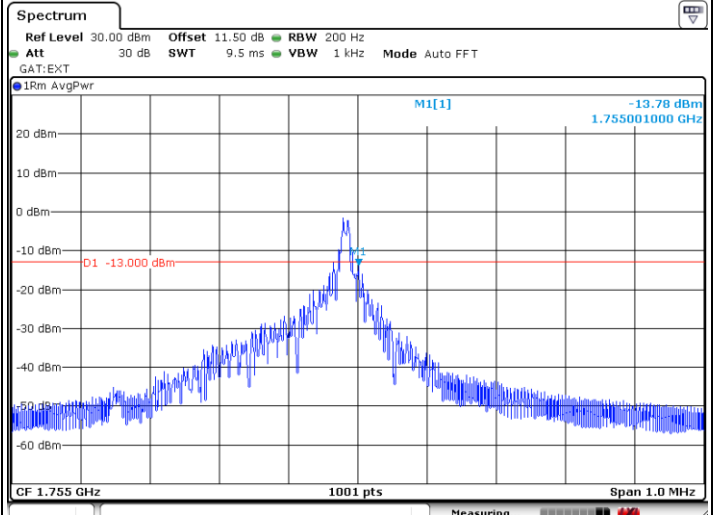
LTE Band 4 / 15kHz / BPSK

Lowest Band Edge / 1 T



Date: 22.JUL.2020 15:11:56

Highest Band Edge / 1 T

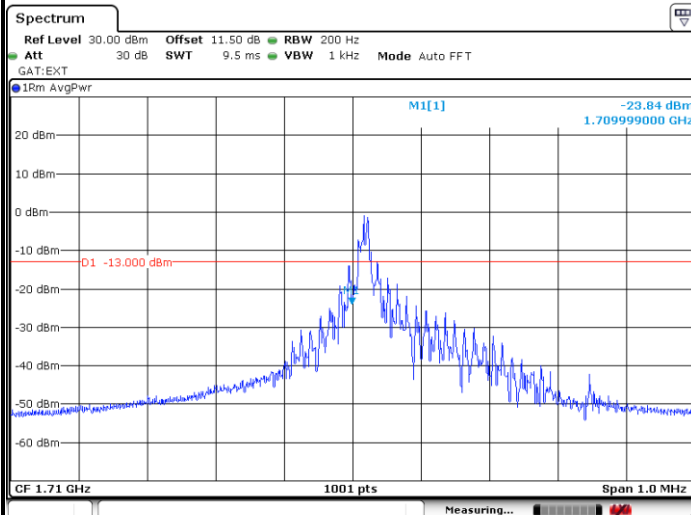


Date: 22.JUL.2020 15:33:03

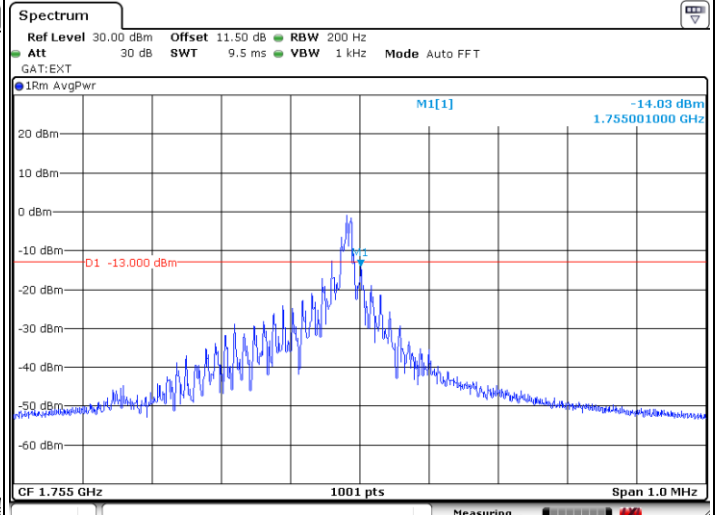


LTE Band 4 / 15kHz / QPSK

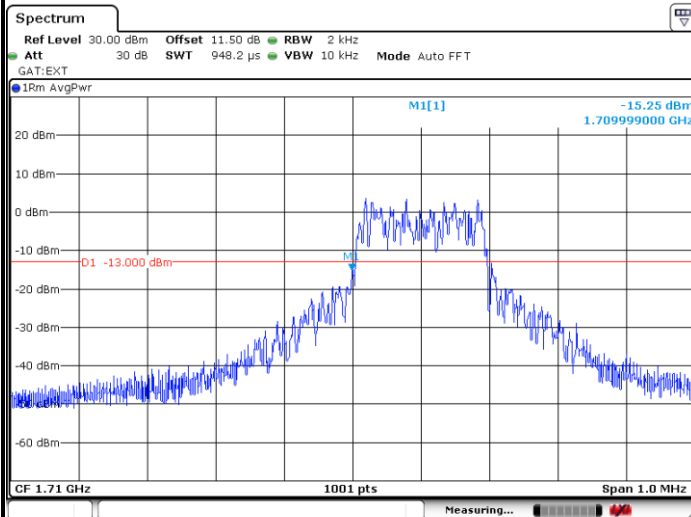
Lowest Band Edge / 1 T



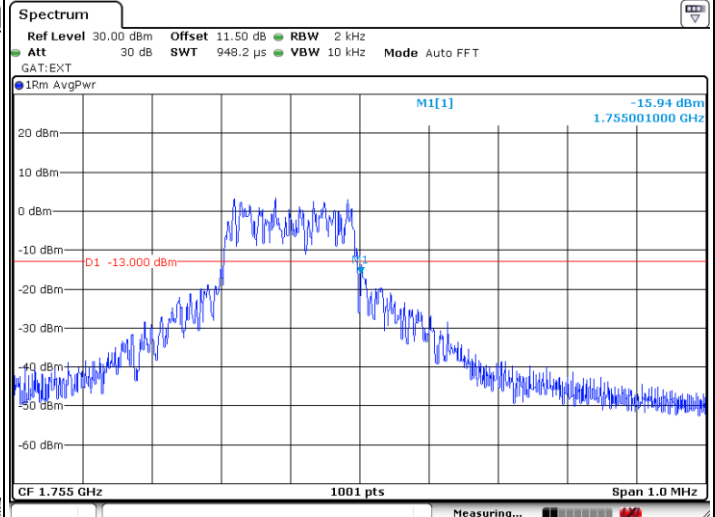
Highest Band Edge / 1 T



Lowest Band Edge / Full T



Highest Band Edge / Full T

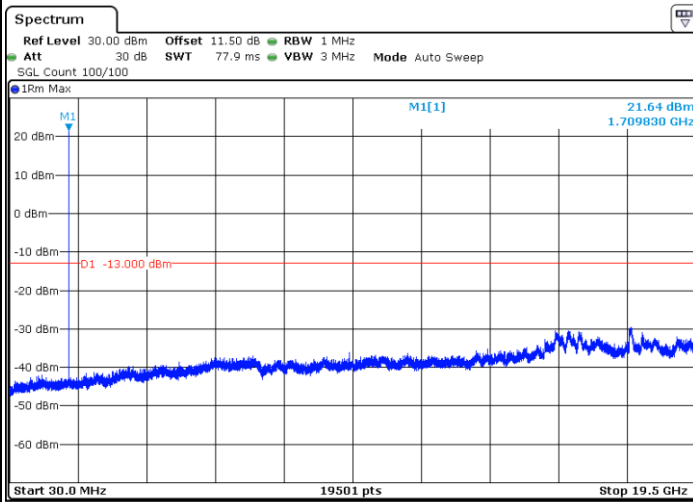




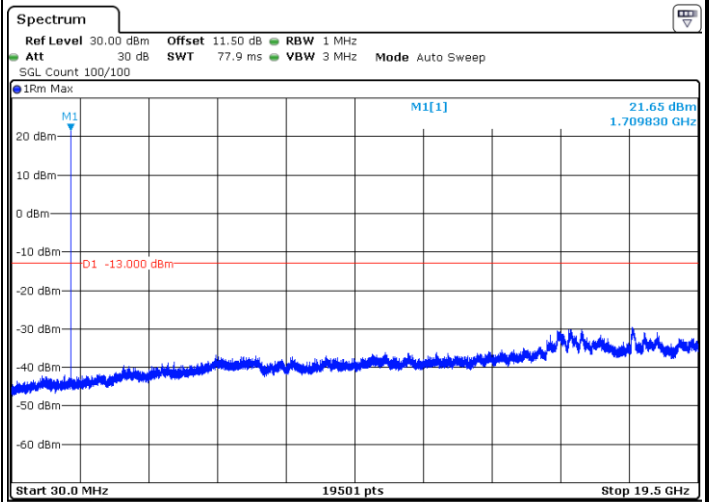
Conducted Spurious Emission

LTE Band 4 / 3.75kHz

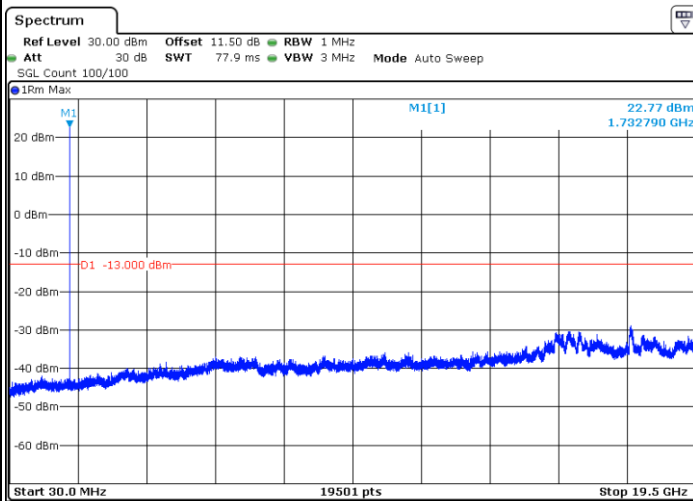
Lowest Channel / BPSK



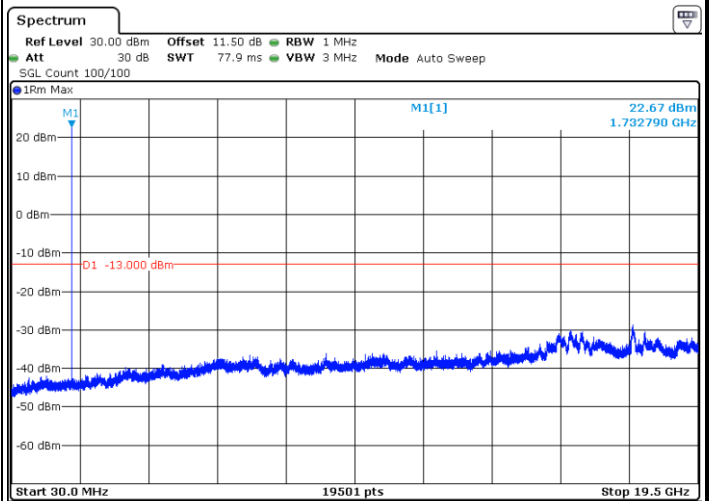
Lowest Channel / QPSK



Middle Channel / BPSK



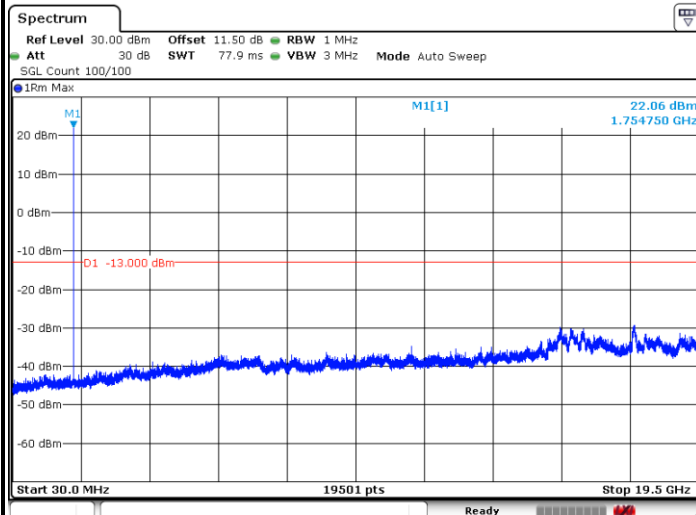
Middle Channel / QPSK



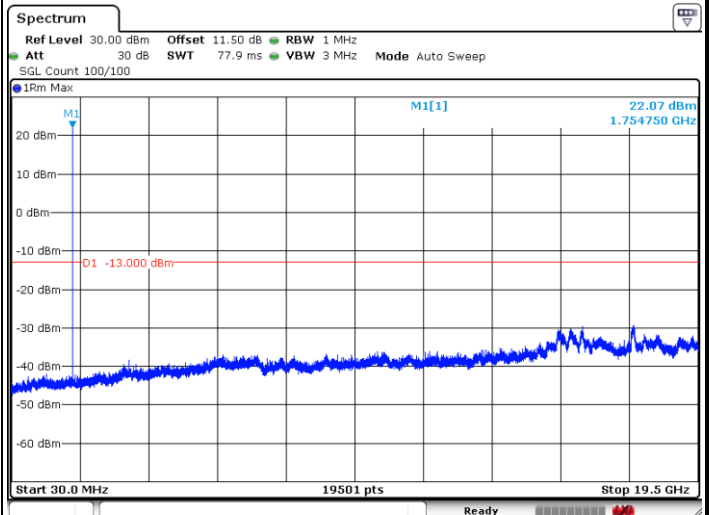


LTE Band 4 / 3.75kHz

Highest Channel / BPSK



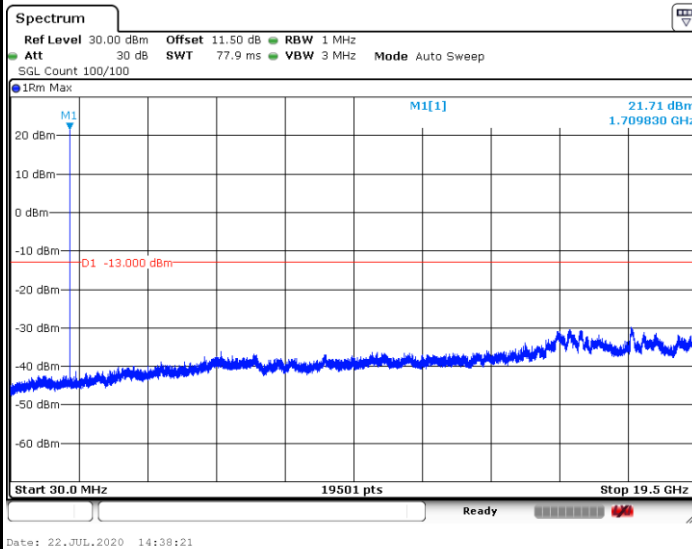
Highest Channel / QPSK



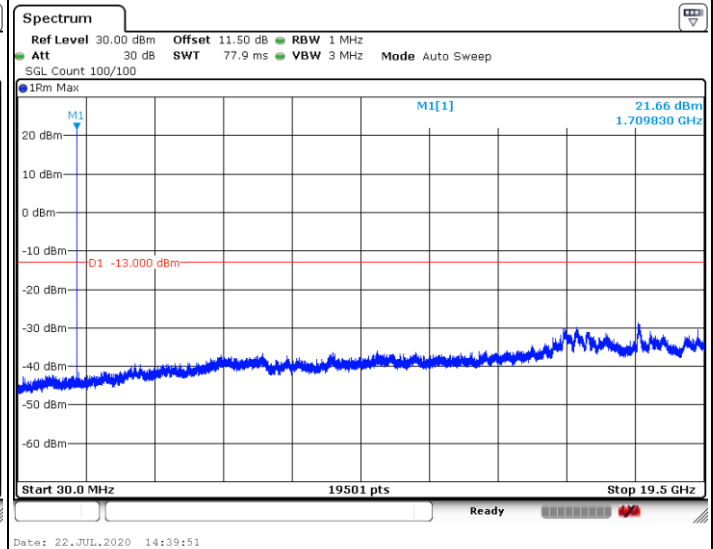


LTE Band 4 / 15kHz

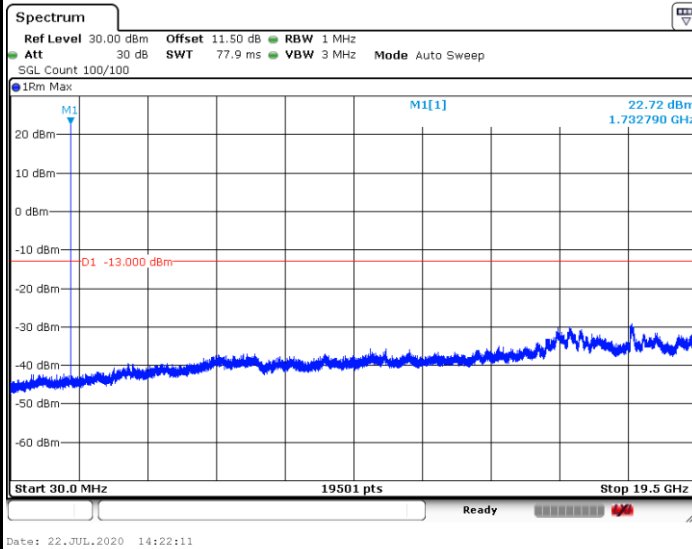
Lowest Channel / BPSK



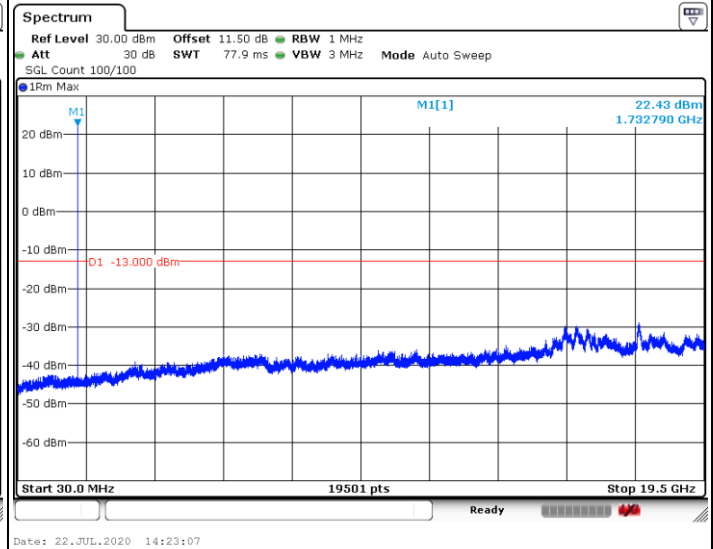
Lowest Channel / QPSK



Middle Channel / BPSK



Middle Channel / QPSK

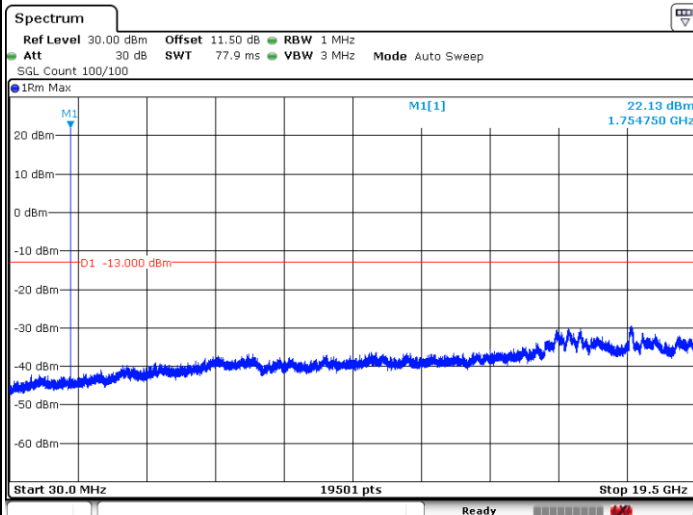




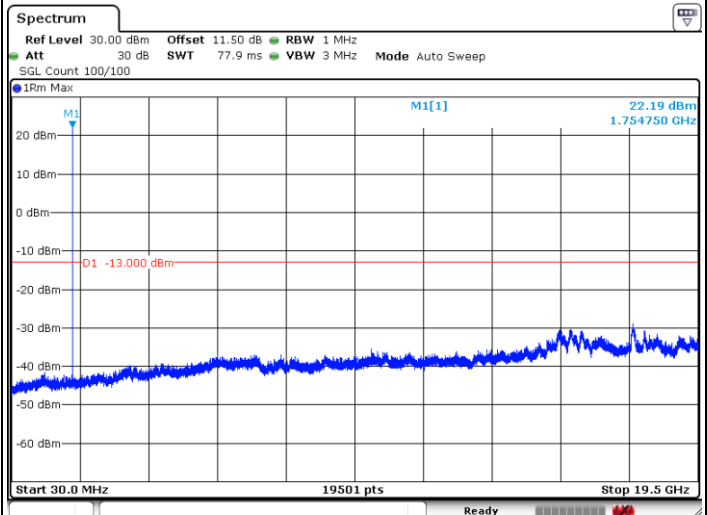
LTE Band 4 / 15kHz

Highest Channel / BPSK

Highest Channel / QPSK



Date: 22.JUL.2020 15:45:59



Date: 22.JUL.2020 15:44:06

Frequency Stability

Test Conditions		LTE Band 4 (BPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 15kHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0020	PASS
40	Normal Voltage	0.0102	
30	Normal Voltage	0.0016	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0006	
0	Normal Voltage	0.0031	
-10	Normal Voltage	0.0044	
-20	Normal Voltage	0.0084	
-30	Normal Voltage	0.0068	
20	Maximum Voltage	0.0062	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0059	

Note:

1. Normal Voltage =3.6 V. ; Battery End Point (BEP) =3.3 V. ; Maximum Voltage =3.7 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



LTE Band 5

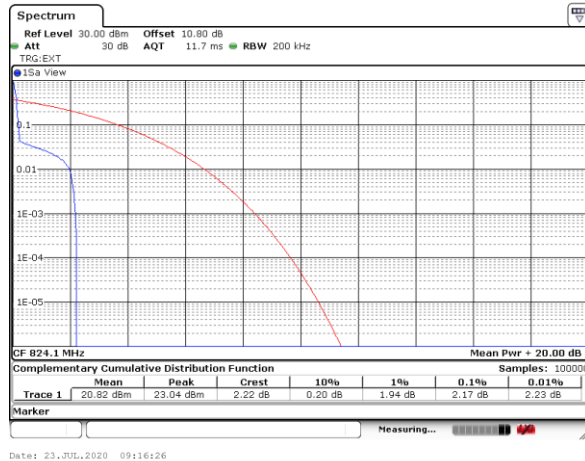
Peak-to-Average Ratio

Mode	LTE Band 5 / 15kHz			
Mod.	BPSK	QPSK		Limit: 13dB
T Size	1T	1T	Full T	Result
Lowest CH	2.17	1.68	3.71	PASS
Middle CH	2.17	1.71	3.86	
Highest CH	2.20	1.74	3.94	

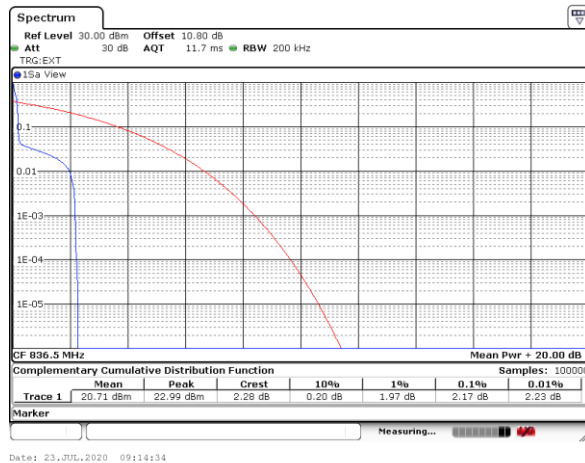


LTE Band 5 / 15kHz / BPSK

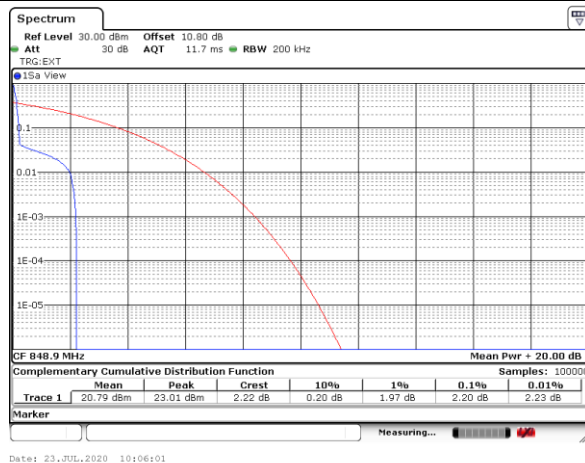
Lowest Channel / 1T

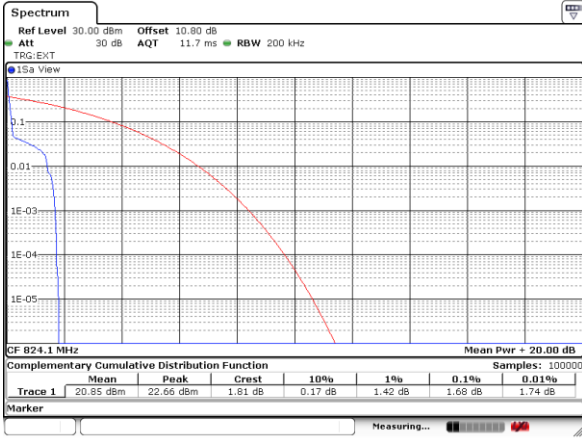
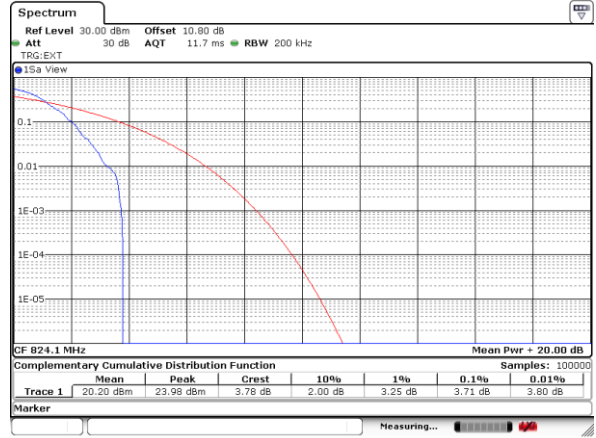
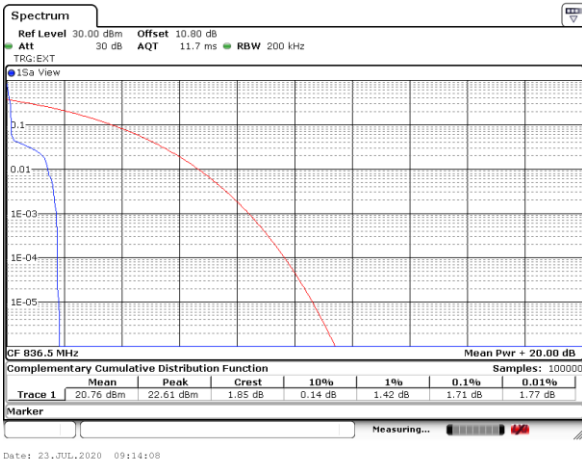
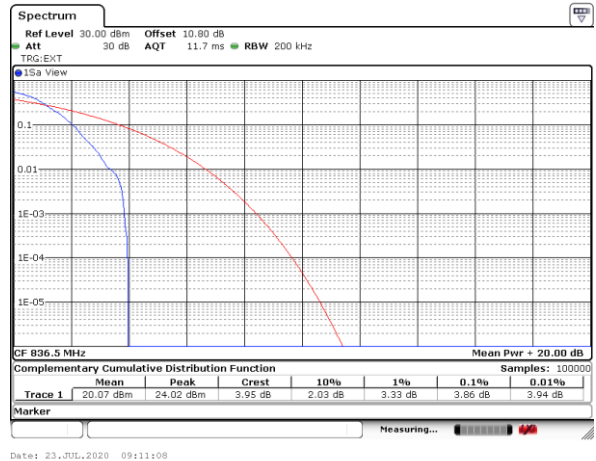
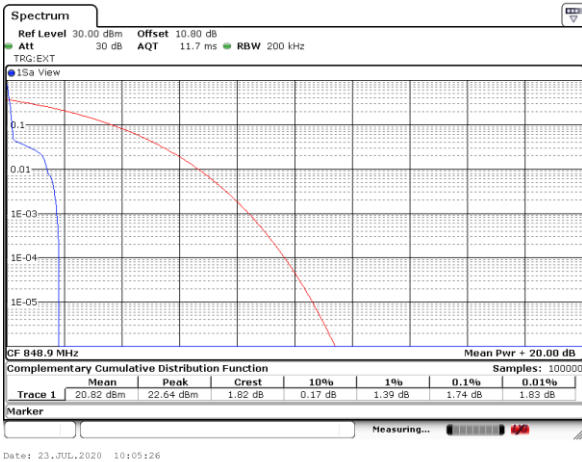
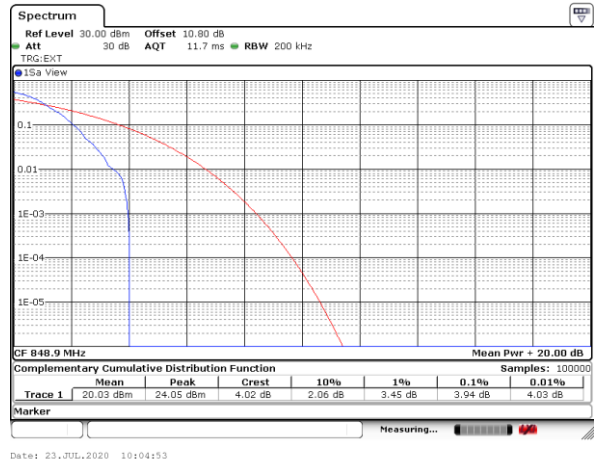


Middle Channel/ 1T



Highest Channel/ 1T



LTE Band 5 / 15kHz / QPSK
Lowest Channel / 1T

Lowest Channel / Full T

Middle Channel/ 1T

Middle Channel / Full T

Highest Channel/ 1T

Highest Channel / Full T




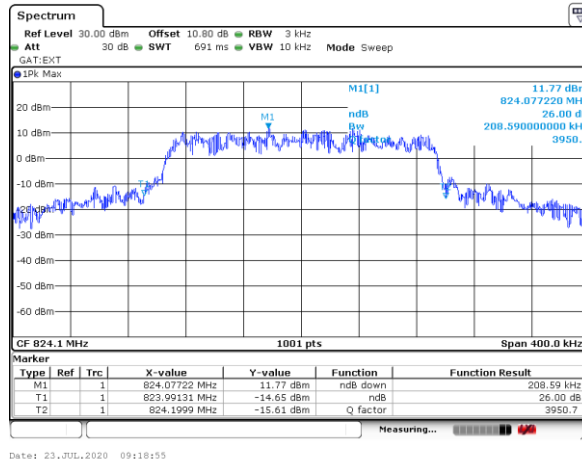
26dB Bandwidth

Mode	LTE Band 5 : 26dB(kHz)
Subcarrier Spacing	15k
Mod.	QPSK
Lowest CH	208.59
Middle CH	208.99
Highest CH	218.58

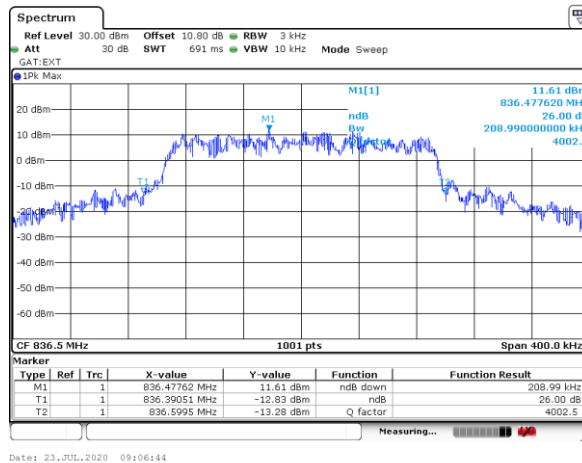


LTE Band 5

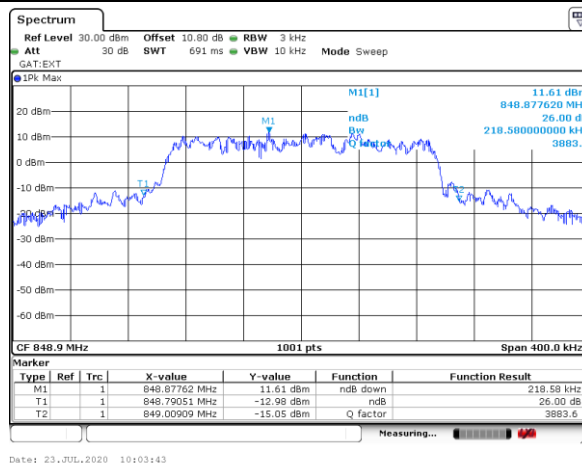
Lowest Channel / 15kHz / QPSK



Middle Channel / 15kHz / QPSK



Highest Channel / 15kHz / QPSK





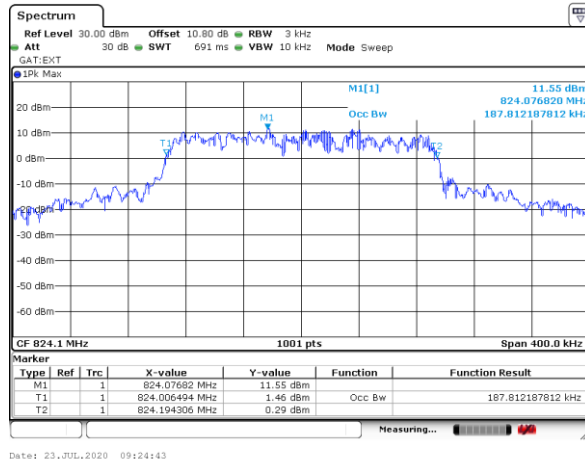
Occupied Bandwidth

Mode	LTE Band 5 : OB(kHz)
Subcarrier Spacing	15k
Mod.	QPSK
Lowest CH	187.81
Middle CH	187.01
Highest CH	187.41

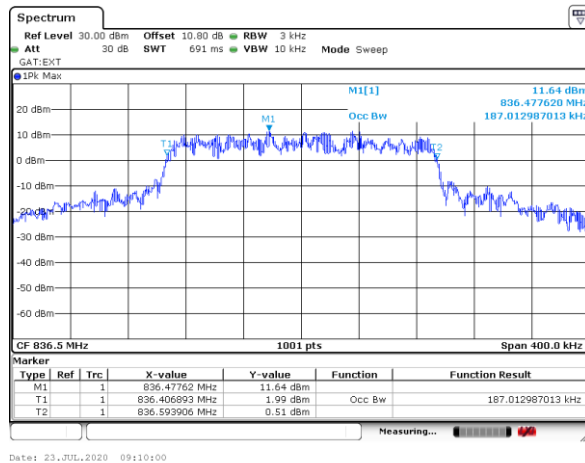


LTE Band 5

Lowest Channel / 15kHz / QPSK



Middle Channel / 15kHz / QPSK



Highest Channel / 15kHz / QPSK

