

Report No.: FG9O1525-01B



FCC RADIO TEST REPORT

FCC ID : PY7-88421C

Equipment : GSM/WCDMA/LTE Phone with BT, DTS/UNII

a/b/g/n/ac, GPS and NFC

Brand Name : Sony

Applicant : Sony Mobile Communications Inc.

4-12-3 Higashi-Shinagawa, Shinagawa-ku,

Tokyo, 140-0002, Japan

Manufacturer : Sony Mobile Communications Inc.

4-12-3 Higashi-Shinagawa, Shinagawa-ku,

Tokyo, 140-0002, Japan

Standard : 47 CFR Part 2, 22(H), 27

The product was received on Nov. 13, 2019 and testing was started from Dec. 19, 2019 and completed on Jan. 21, 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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.

Louis Wu

Approved by: Louis Wu

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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

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Report Version

: 01

Report Template No.: BU5-FGLTE Version 2.4

History of this test report

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Report No.	Version	Description	Issued Date
FG9O1525-01B	01	Initial issue of report	Feb. 20, 2020

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Summary of Test Result

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Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark	
	§2.1046	Conducted Output Power	Reporting only		
	§22.913 (a)(2)	Effective Radiated Power (Band 5)			
3.2	§27.50 (c)(10)	Effective Radiated Power (Band 12)	Pass	-	
	§27.50 (h)(2)	Equivalent Isotropic Radiated Power (Band 41)	Pass		
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (Band 4)			
3.3	§27.50 (d)(5)	Peak-to-Average Ratio	Pass	-	
3.4	§2.1049	Occupied Bandwidth	Reporting only	-	
3.5	§2.1051 §22.917 (a) §27.53 (g) §27.53 (h)	Conducted Band Edge Measurement (Band 4) (Band 5) (Band 12)	Pass	-	
	§2.1051 §27.53 (m)(4)	Conducted Band Edge Measurement (Band 41)			
3.6	§2.1051 §22.917 (a) §27.53 (g) §27.53 (h)	Conducted Spurious Emission (Band 4) (Band 5) (Band 12)	Pass	-	
	§2.1051 §27.53 (m)(4)	Conducted Spurious Emission (Band 41)			
3.7	§2.1055 §22.355 §27.54	Frequency Stability Temperature & Voltage	Pass	-	
4.2	§2.1053 §22.917 (a) §27.53 (g) §27.53 (h)	Radiated Spurious Emission (Band 4) (Band 5) (Band 12)	Pass	Under limit 14.47 dB at	
	§2.1051 §27.53 (m)(4)	Radiated Spurious Emission (Band 41)		10620.000 MH:	

Remark: The FCC ID: PY7-45077R and FCC ID: PY7-88421C are HW identical, the difference is only SW, and each supported bands are handled by only SW. Only LTE Band 4 and Band 41 are added in this report. The other test results are referenced from FCC ID: PY7-45077R, Sporton Report No: FG9O1524-02B.

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: Ann Lee

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1 General Description

1.1 Product Feature of Equipment Under Test

GSM/WCDMA/LTE, Bluetooth, DTS/UNII a/b/g/n/ac, NFC, and GNSS.

Product Specification subjective to this standard							
Antenna Type		Inverted-F Type Antenna					

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EUT Information List									
HW Version	SW Version	S/N	Performed Test Item						
	0.89	BH95003GJB	Conducted Measurement						
А	2.2	BH950060JL	Radiated Spurious Emission						
	0.89	BH95004WJB	ERP/EIRP Test						

Accessory List						
AC Adomtor	Model Name : UCH20					
AC Adapter	S/N: 3515W45302495					
F I	Model Name : STH40D					
Earphone	S/N:N/A					
HOD Calala	Model Name : UCB20					
USB Cable	S/N:N/A					

Note:

- 1. Above EUT list used are electrically identical per declared by manufacturer.
- 2. Above the accessories list are used to exercise the EUT during test, and the serial number of each type of accessories is listed in each section of this report.
- 3. For other wireless features of this EUT, test report will be issued separately.

1.2 Modification of EUT

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

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1.3 Emission Designator

L	TE Band 4		QPSK			16QAM			64QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)		
1.4	1710.7~1754.3	1M09G7D	-	0.1002	1M09W7D	-	0.0973	1M09W7D	-	0.0762		
3	1711.5~1753.5	2M72G7D	-	0.0995	2M73W7D	-	0.0971	2M73W7D	-	0.0757		
5	1712.5~1752.5	4M51G7D	-	0.0991	4M50W7D	-	0.0973	4M50W7D	-	0.0759		
10	1715.0~1750.0	9M05G7D	0.0043	0.1007	9M03W7D	-	0.0973	9M09W7D	-	0.0764		
15	1717.5~1747.5	13M5G7D	-	0.1009	13M5W7D	-	0.0975	13M5W7D	-	0.0771		
20	1720.0~1745.0	17M9G7D	-	0.1012	17M9W7D	-	0.0979	17M9W7D	-	0.0766		
Ľ	TE Band 41	Band 41 QPS			16QAM							
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)		
5	2547.5~2652.5	4M55G7D	-	0.1637	4M51W7D	-	0.1324	4M52W7D	-	0.1007		
10	2550.0~2650.0	9M03G7D	0.0043	0.1585	9M05W7D	-	0.1355	9M05W7D	-	0.1054		
15	2552.5~2647.5	13M5G7D	-	0.1690	13M5W7D	-	0.1358	13M5W7D	-	0.1014		
20	2555.0~2645.0	17M8G7D	-	0.1629	17M9W7D	-	0.1337	17M9W7D	-	0.0998		

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1.4 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.						
Test Site No.	TH05-HY						
Test Engineer	Chester Chen						
Temperature	23~24 ℃						
Relative Humidity	55~58 %						

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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, and Chuan Chu						
Temperature	22.3~25.3 ℃						
Relative Humidity	55.7~61.9 %						

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

FCC Designation No.: TW1190 and TW0007

1.5 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
- 47 CFR Part 2, 22(H), 27
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

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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.

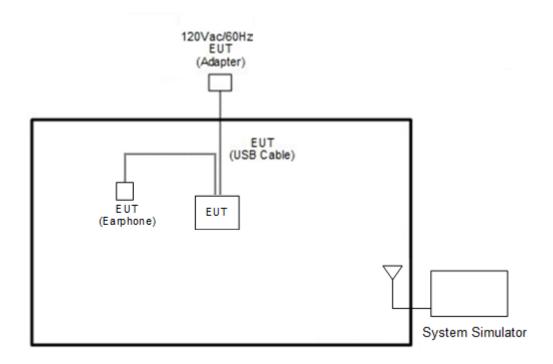
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For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.

		Bandwidth (MHz)					Modulation			RB#			Test Channel			
Test Items	Band	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	М	Н
Max.	4	v	v	v	v	v	v	v	v	v	v	٧	v	٧	v	v
Output Power	41	-	•	v	v	v	v	v	v	v	٧	v	v	٧	v	v
Peak-to-Av	4						v	v	v	v	>		v	>	v	v
erage Ratio	41	-	•				v	v	v	v	>		v	>	v	v
26dB and 99%	4	v	v	v	v	v	v	v	v	v			v	v	v	v
Bandwidth	41	-	-	v	v	v	v	v	v	v			v	v	v	v
Conducted	4	v	٧	v	v	v	v	v	v	v	v		٧	٧		v
Band Edge	41	-	-	v	v	v	v	v	v	v	v		v	v		v
Conducted Spurious	4	v	v	v	v	٧	v	v	v	v	v			٧	v	v
Emission	41	-	-	v	v	v	v	v	v	v	v			v	v	v
Frequency	4				V			v					V		v	
Stability	41	-	-		v			v					v		v	
E.I.R.P	4	v	v	v	v	v	v	v	v	v	v	v	v	٧	v	v
LiliXii	41	-	-	v	v	v	v	v	v	v	v	v		v	v	v
Radiated Spurious	4						W	orst Case	•					v	v	v
Emission	41						W	orst Case	•					v	v	v
Remark	 The mark "v" means that this configuration is chosen for testing The mark "-" means that this bandwidth is not supported. 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. 						nder									

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2.2 Connection Diagram of Test System



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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	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	R&S	CMU 200	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 (dB)

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2.5 Frequency List of Low/Middle/High Channels

	LTE Band 4 Channel and Frequency List									
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest						
20	Channel	20050	20175	20300						
20	Frequency	1720	1732.5	1745						
45	Channel	20025	20175	20325						
15	Frequency	1717.5	1732.5	1747.5						
40	Channel	20000	20175	20350						
10	Frequency	1715	1732.5	1750						
F	Channel	19975	20175	20375						
5	Frequency	1712.5	1732.5	1752.5						
	Channel	19965	20175	20385						
3	Frequency	1711.5	1732.5	1753.5						
4.4	Channel	19957	20175	20393						
1.4	Frequency	1710.7	1732.5	1754.3						

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	LTE Band 41 2545MHz ~ 26	55MHz Channel ar	nd Frequency List	
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	40240	40690	41140
20	Frequency	2555.0	2600.0	2645.0
15	Channel	40215	40690	41165
15	Frequency	2552.5	2600.0	2647.5
10	Channel	40190	40690	41190
10	Frequency	2550.0	2600.0	2650.0
5	Channel	40165	40690	41215
5	Frequency	2547.5	2600.0	2652.5

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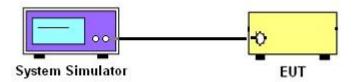
3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of this test report.

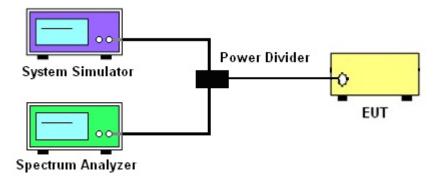
3.1.1 Test Setup

3.1.2 Conducted Output Power

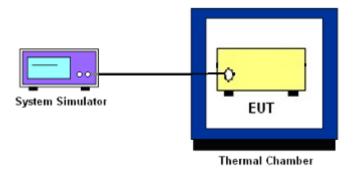


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3.1.3 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted Band-Edge and Conducted Spurious Emission



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

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3.2 Conducted Output Power and EIRP

3.2.1 Description of the Conducted Output Power Measurement and 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.

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The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 41

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

According to KDB 412172 D01 Power Approach,

 $EIRP = P_T + G_T - L_C$, ERP = EIRP - 2.15, 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 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.

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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.

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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.

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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.

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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.
- 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.
- 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.

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3.5 Conducted Band Edge

3.5.1 Description of Conducted Band Edge Measurement

27.53 (h)

For operations in the 1710 - 1755 MHz band, the FCC limit is $43 + 10\log_{10}(P[Watts])$ dB below the transmitter power P(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.

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27.53(m)(4)

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

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 >= 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.
- 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)

For LTE Band 41

The other 40 dB, and 55 dB have additionally applied same calculation above.

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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.

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For LTE Band 41

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 55 + 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.
- 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 + 10log(P)dB below the transmitter power P(Watts)

For LTE Band 41

The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

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3.7 Frequency Stability

3.7.1 Description of Frequency Stability Measurement

27.54

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

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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±5° 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.

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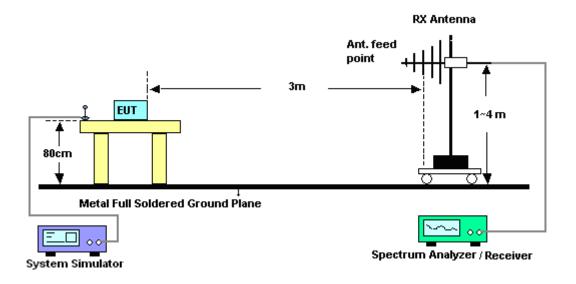
4 Radiated Test Items

4.1 Measuring Instruments

See list of measuring instruments of this test report.

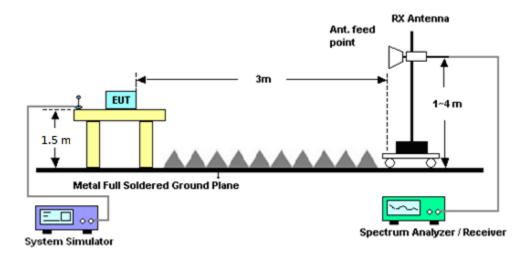
4.1.1 Test Setup

For radiated test from 30MHz to 1GHz



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For radiated test above 1GHz



4.1.2 Test Result of Radiated Test

Please refer to Appendix B.

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4.2 Radiated Spurious Emission Measurement

4.2.1 Description of Radiated Spurious Emission Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E.

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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 41

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 55 + 10 log (P) dB.

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.

- 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.
- The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

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

For LTE Band 41

The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

EIRP (dBm) = S.G. Power - Tx Cable Loss + Tx Antenna Gain

ERP (dBm) = EIRP - 2.15

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5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Dec. 26, 2019	Jan. 01, 2020~ Jan. 21, 2020	Dec. 25, 2020	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	41912 & 05	30MHz~1GHz	Feb. 12, 2019	Jan. 01, 2020~ Jan. 21, 2020	Feb 11, 2020	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120D	9120D-1328	1GHz ~ 18GHz	Nov. 14, 2019	Jan. 01, 2020~ Jan. 21, 2020	Nov. 13, 2020	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120D	9120D-1522	1GHz ~ 18GHz	Sep. 19, 2019	Jan. 01, 2020~ Jan. 21, 2020	Sep. 18, 2020	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917058 4	18GHz ~ 40GHz	Dec. 10, 2019	Jan. 01, 2020~ Jan. 21, 2020	Dec. 09, 2020	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917025 1	18GHz- 40GHz	Nov. 26, 2019	Jan. 01, 2020~ Jan. 21, 2020	Nov. 25, 2020	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 25, 2019	Jan. 01, 2020~ Jan. 21, 2020	Mar. 24, 2020	Radiation (03CH12-HY)
Preamplifier	Jet-Power	JPA00101800- 30-10P	1601180002	1GHz~18GHz	Aug. 01, 2019	Jan. 01, 2020~ Jan. 21, 2020	Jul. 01, 2020	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 13, 2019	Jan. 01, 2020~ Jan. 21, 2020	Dec. 12, 2020	Radiation (03CH12-HY)
Preamplifier	Agilent	8449B	3008A02375	1GHz~26.5GHz	May 27, 2019	Jan. 01, 2020~ Jan. 21, 2020	May 26, 2020	Radiation (03CH12-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290045	20MHz~8.4GHz	Jan. 19, 2019	Jan. 01, 2020~ Jan. 17, 2020	Jan. 18, 2020	Radiation (03CH12-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290045	20MHz~8.4GHz	Jan. 18, 2020	Jan. 18, 2020~ Jan. 21, 2020	Jan. 17, 2021	Radiation (03CH12-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	10Hz~44GHz	Mar. 19, 2019	Jan. 01, 2020~ Jan. 21, 2020	Mar. 18, 2020	Radiation (03CH12-HY)
Signal Generator	Rohde & Schwarz	SMB100A	101107	100kHz~40GHz	Aug. 27, 2019	Jan. 01, 2020~ Jan. 21, 2020	Aug. 26, 2020	Radiation (03CH12-HY)
Hygrometer	TECPEL	DTM-303B	TP161243	N/A	May 11, 2019	Jan. 01, 2020~ Jan. 21, 2020	May 10, 2020	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCG1710/1 755-1690/1775 -45/7SS	SN2	AWS Band	Nov. 05, 2019	Jan. 01, 2020~ Jan. 21, 2020	Nov. 04, 2020	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCT2500/25 70-10/40-10SS K	SN1 R	LTE Band 7	Aug. 22, 2019	Jan. 01, 2020~ Jan. 21, 2020	Aug. 21, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30M-18G	Mar. 13, 2019	Jan. 01, 2020~ Jan. 21, 2020	Mar. 12, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Feb. 26, 2019	Jan. 01, 2020~ Jan. 21, 2020	Feb. 25, 2020	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30M~40GHz	Feb. 26, 2019	Jan. 01, 2020~ Jan. 21, 2020	Feb. 25, 2020	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Jan. 01, 2020~ Jan. 21, 2020	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jan. 01, 2020~ Jan. 21, 2020	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jan. 01, 2020~ Jan. 21, 2020	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Jan. 01, 2020~ Jan. 21, 2020	N/A	Radiation (03CH12-HY)

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Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Base Station (Measure)	Anritsu	MT8821C	6201664755	GSM / GPRS /WCDMA / LTE FDD/TDD with 44) /LTE-3CC DLCA,2CC ULCA	Mar. 03, 2019	Dec. 19, 2019~ Jan. 21, 2020	Mar. 02, 2020	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 15, 2019	Dec. 19, 2019~ Jan. 21, 2020	Nov. 14, 2020	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-40°C~90°C	Sep. 02, 2019	Dec. 19, 2019~ Jan. 21, 2020	Sep. 01, 2020	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890089	1V~20V 0.5A~5A	Feb. 21, 2019	Dec. 19, 2019~ Jan. 21, 2020	Feb. 20, 2020	Conducted (TH05-HY)
Coupler	Woken	20dB 20W SMA Coupler	WRTA4WAM 2B2	0.4-26.5GHz	Jan. 14, 2019	Dec. 19, 2019	Jan. 13, 2020	Conducted (TH05-HY)
Coupler	Warison	20dB 25W SMA Directional Coupler	#A	1-18GHz	Jan. 13, 2020	Jan. 21, 2020	Jan. 12, 2021	Conducted (TH05-HY)
Hygrometer	TECPEL	HTC-1	2	N/A	Mar. 05, 2019	Dec. 19, 2019~ Jan. 21, 2020	Mar. 04, 2020	Conducted (TH05-HY)

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6 Uncertainty of Evaluation

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

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

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

Measuring Uncertainty for a Level of	2 62
Confidence of 95% (U = 2Uc(y))	3.62

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

Measuring Uncertainty for a Level of	4.06
Confidence of 95% (U = 2Uc(y))	4.00

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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 4 Maximum Average Power [dBm]									
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest			
20	1	0		21.76	21.73	21.79			
20	1	49		21.82	21.74	21.97			
20	1	99		21.65	21.70	21.87			
20	50	0	QPSK	21.31	21.27	21.34			
20	50	24		21.24	21.33	21.35			
20	50	50		21.21	21.27	21.47			
20	100	0		21.24	21.27	21.37			
20	1	0		21.63	21.62	21.67			
20	1	49		21.70	21.67	21.83			
20	1	99		21.54	21.60	21.76			
20	50	0	16-QAM	20.45	20.36	20.43			
20	50	24		20.34	20.42	20.50			
20	50	50		20.31	20.37	20.58			
20	100	0		20.32	20.35	20.44			
20	1	0		20.54	20.51	20.60			
20	1	49		20.64	20.53	20.76			
20	1	99		20.46	20.47	20.69			
20	50	0	64-QAM	19.45	19.36	19.44			
20	50	24		19.35	19.44	19.49			
20	50	50		19.30	19.37	19.58			
20	100	0		19.34	19.35	19.46			
15	1	0		21.79	21.80	21.85			
15	1	37		21.83	21.80	21.96			
15	1	74		21.69	21.76	21.92			
15	36	0	QPSK	21.37	21.29	21.41			
15	36	20		21.38	21.32	21.53			
15	36	39		21.27	21.29	21.51			
15	75	0		21.25	21.31	21.36			
15	1	0		21.66	21.63	21.61			
15	1	37		21.73	21.66	21.81			
15	1	74		21.57	21.59	21.68			
15	36	0	16-QAM	20.45	20.41	20.38			
15	36	20		20.50	20.42	20.50			
15	36	39		20.37	20.38	20.61			
15	75	0		20.34	20.41	20.47			
15	1	0		20.59	20.57	20.56			
15	1	37		20.65	20.60	20.79			
15	1	74		20.46	20.52	20.70			
15	36	0	64-QAM	19.48	19.42	19.51			
15	36	20		19.54	19.45	19.65			
15	36	39		19.39	19.42	19.64			
15	75	0		19.34	19.41	19.48			



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	LTE Band 4 Maximum Average Power [dBm]									
BW [MHz]	BW [MHz] RB Size RB Offset Mod Lowest Middle Highest									
10	1	0		21.81	21.82	21.95				
10	1	25		21.86	21.84	21.91				
10	1	49		21.81	21.79	21.86				
10	25	0	QPSK	21.36	21.36	21.44				
10	25	12		21.39	21.36	21.46				
10	25	25		21.38	21.33	21.39				
10	50	0		21.38	21.33	21.41				
10	1	0		21.69	21.72	21.80				
10	1	25		21.72	21.68	21.80				
10	1	49		21.71	21.66	21.74				
10	25	0	16-QAM	20.46	20.41	20.54				
10	25	12		20.49	20.47	20.56				
10	25	25		20.47	20.43	20.50				
10	50	0		20.48	20.43	20.51				
10	1	0		20.60	20.63	20.75				
10	1	25		20.65	20.61	20.73				
10	1	49		20.64	20.60	20.69				
10	25	0	64-QAM	19.47	19.42	19.55				
10	25	12		19.51	19.48	19.58				
10	25	25		19.49	19.43	19.52				
10	50	0		19.49	19.46	19.53				
5	1	0		21.79	21.81	21.87				
5	1	12		21.84	21.82	21.88				
5	1	24		21.78	21.76	21.84				
5	12	0	QPSK	21.37	21.33	21.44				
5	12	7	-	21.39	21.40	21.45				
5	12	13		21.34	21.33	21.40				
5	25	0		21.34	21.35	21.38				
5	1	0		21.65	21.63	21.76				
5	1	12		21.70	21.67	21.80				
5	1	24		21.66	21.64	21.75				
5	12	0	16-QAM	20.46	20.43	20.52				
5	12	7		20.49	20.48	20.56				
5	12	13		20.44	20.45	20.54				
5	25	0		20.44	20.40	20.49				
5	1	0		20.62	20.61	20.72				
5	1	12		20.64	20.60	20.71				
5	1	24		20.60	20.56	20.68				
5	12	0	64-QAM	19.51	19.49	19.60				
5	12	7		19.54	19.50	19.63				
5	12	13		19.49	19.49	19.59				
5	25	0		19.45	19.42	19.53				

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	LTE Band 4 Maximum Average Power [dBm]									
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest				
3	1	0		21.78	21.79	21.88				
3	1	8		21.82	21.80	21.90				
3	1	14		21.79	21.76	21.86				
3	8	0	QPSK	21.31	21.33	21.43				
3	8	4	QPSK _	21.34	21.33	21.43				
3	8	7		21.34	21.32	21.39				
3	15	0		21.33	21.35	21.40				
3	1	0		21.63	21.61	21.75				
3	1	8		21.68	21.65	21.79				
3	1	14		21.65	21.58	21.71				
3	8	0	16-QAM	20.46	20.45	20.55				
3	8	4		20.50	20.49	20.62				
3	8	7		20.49	20.45	20.55				
3	15	0		20.45	20.41	20.51				
3	1	0		20.57	20.56	20.70				
3	1	8		20.63	20.60	20.71				
3	1	14		20.59	20.56	20.67				
3	8	0	64-QAM	19.47	19.46	19.56				
3	8	4		19.50	19.51	19.62				
3	8	7		19.51	19.45	19.55				
3	15	0		19.45	19.41	19.51				
1.4	1	0		21.60	21.74	21.83				
1.4	1	3		21.70	21.82	21.91				
1.4	1	5		21.59	21.73	21.84				
1.4	3	0	QPSK	21.64	21.74	21.86				
1.4	3	1		21.68	21.82	21.93				
1.4	3	3		21.65	21.77	21.87				
1.4	6	0		21.13	21.28	21.38				
1.4	1	0		21.48	21.60	21.71				
1.4	1	3		21.57	21.70	21.80				
1.4	1	5		21.47	21.61	21.70				
1.4	3	0	16-QAM	21.27	21.35	21.54				
1.4	3	1		21.32	21.45	21.56				
1.4	3	3		21.29	21.39	21.53				
1.4	6	0		20.30	20.41	20.54				
1.4	1	0		20.42	20.55	20.66				
1.4	1	3		20.50	20.59	20.74				
1.4	1	5		20.40	20.53	20.64				
1.4	3	0	64-QAM	20.42	20.52	20.65				
1.4	3	1		20.46	20.57	20.68				
1.4	3	3		20.39	20.53	20.63				
1.4	6	0		19.24	19.38	19.47				

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	LTE Band 41 Maximum Average Power [dBm]									
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest				
20	1	0		24.18	24.19	24.25				
20	1	49		24.16	24.21	24.29				
20	1	99		24.24	24.17	24.31				
20	50	0	QPSK	22.32	22.44	22.26				
20	50	24	QPSK	22.31	22.33	22.26				
20	50	50		22.29	22.30	22.24				
20	100	0		22.31	22.25	22.20				
20	1	0		23.26	23.39	23.38				
20	1	49		23.24	23.32	23.45				
20	1	99		23.33	23.30	23.37				
20	50	0	16-QAM	21.32	21.46	21.38				
20	50	24		21.41	21.44	21.35				
20	50	50		21.41	21.45	21.42				
20	100	0		21.39	21.23	21.33				
20	1	0		22.00	22.05	22.16				
20	1	49		22.00	21.99	22.18				
20	1	99		22.10	22.15	22.11				
20	50	0	64-QAM	20.30	20.37	20.38				
20	50	24		20.40	20.46	20.35				
20	50	50		20.39	20.38	20.41				
20	100	0		20.39	20.24	20.33				
15	1	0		24.21	24.32	24.47				
15	1	37		24.18	24.35	24.41				
15	1	74		24.38	24.44	24.42				
15	36	0	QPSK	22.21	22.31	22.34				
15	36	20	_	22.21	22.41	22.31				
15	36	39		22.27	22.27	22.26				
15	75	0		22.30	22.25	22.32				
15	1	0		23.27	23.29	23.52				
15	1	37		23.24	23.28	23.44				
15	1	74		23.44	23.42	23.44				
15	36	0	16-QAM	21.27	21.29	21.39				
15	36	20		21.30	21.47	21.41				
15	36	39		21.32	21.39	21.37				
15	75	0		21.41	21.36	21.44				
15	1	0		22.02	22.10	22.25				
15	1	37		21.99	22.06	22.16				
15	1	74		22.15	22.11	22.17				
15	36	0	64-QAM	20.28	20.51	20.44				
15	36	20		20.32	20.52	20.46				
15	36	39		20.38	20.35	20.41				
15	75	0		20.40	20.33	20.50				

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	LTE Band 41 Maximum Average Power [dBm]										
BW [MHz]	BW [MHz] RB Size RB Offset Mod Lowest Middle Highest										
10	1	0		24.19	24.05	24.15					
10	1	25		23.99	24.10	24.13					
10	1	49		24.01	24.18	24.14					
10	25	0	QPSK	22.08	22.25	22.23					
10	25	12		22.13	22.12	22.24					
10	25	25		22.08	22.17	22.23					
10	50	0		22.12	22.28	22.27					
10	1	0		23.28	23.34	23.51					
10	1	25		23.24	23.45	23.49					
10	1	49		23.26	23.37	23.47					
10	25	0	16-QAM	21.24	21.35	21.44					
10	25	12		21.24	21.40	21.45					
10	25	25		21.22	21.38	21.41					
10	50	0		21.19	21.32	21.41					
10	1	0		22.15	22.27	22.42					
10	1	25		22.17	22.24	22.39					
10	1	49		22.16	22.15	22.35					
10	25	0	64-QAM	20.25	20.44	20.49					
10	25	12		20.28	20.46	20.52					
10	25	25		20.26	20.31	20.43					
10	50	0		20.21	20.24	20.41					
5	1	0		24.29	24.24	24.33					
5	1	12		24.28	24.28	24.33					
5	1	24		24.24	24.15	24.25					
5	12	0	QPSK	22.28	22.38	22.30					
5	12	7	-	22.33	22.24	22.39					
5	12	13		22.29	22.36	22.35					
5	25	0		22.26	22.38	22.28					
5	1	0		23.33	23.37	23.40					
5	1	12		23.37	23.41	23.38					
5	1	24		23.37	23.29	23.36					
5	12	0	16-QAM	21.33	21.35	21.44					
5	12	7		21.37	21.34	21.45					
5	12	13		21.35	21.28	21.37					
5	25	0		21.37	21.24	21.46					
5	1	0		22.10	22.09	22.22					
5	1	12		22.14	22.17	22.20					
5	1	24		22.13	22.02	22.19					
5	12	0	64-QAM	20.39	20.30	20.42					
5	12	7		20.40	20.48	20.50					
5	12	13		20.39	20.33	20.49					
5	25	0		20.39	20.51	20.54					

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LTE Band 4

Peak-to-Average Ratio

Mode		LTE Band 4 / 20MHz					
Mod.	QP	SK	16	QAM	Limit: 13dB		
RB Size	1RB	Full RB	1RB	Full RB	Result		
Lowest CH	3.74	4.55	5.22	5.83			
Middle CH	3.68	4.43	5.25	5.71	PASS		
Highest CH	3.54	4.55	5.19	5.86]		
Mode		LTE Band	4 / 20MHz				
Mod.	64C	AM			Limit: 13dB		
RB Size	1RB	Full RB			Result		
Lowest CH	6.70	6.46	-	-			
Middle CH	6.26	6.38	-	-	PASS		
Highest CH	6.26	6.43	-	-			

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LTE Band 4 / 20MHz / QPSK Lowest Channel / 1RB Lowest Channel / Full RB Ref Level 30.00 dBm Att 30 dB Samples: 13000 0.1% 0.01% 3.74 dp 2.77 dp Middle Channel / 1RB Middle Channel / Full RB **Highest Channel / 1RB Highest Channel / Full RB** Samples: 130000

1% 0.1% 0.01%
3.88 dB 4.55 dB 4.84 dB | Samples: 130000 | 1% | 0.1% | 0.01% | | 3.45 dB | 3.54 dB | 3.57 dB

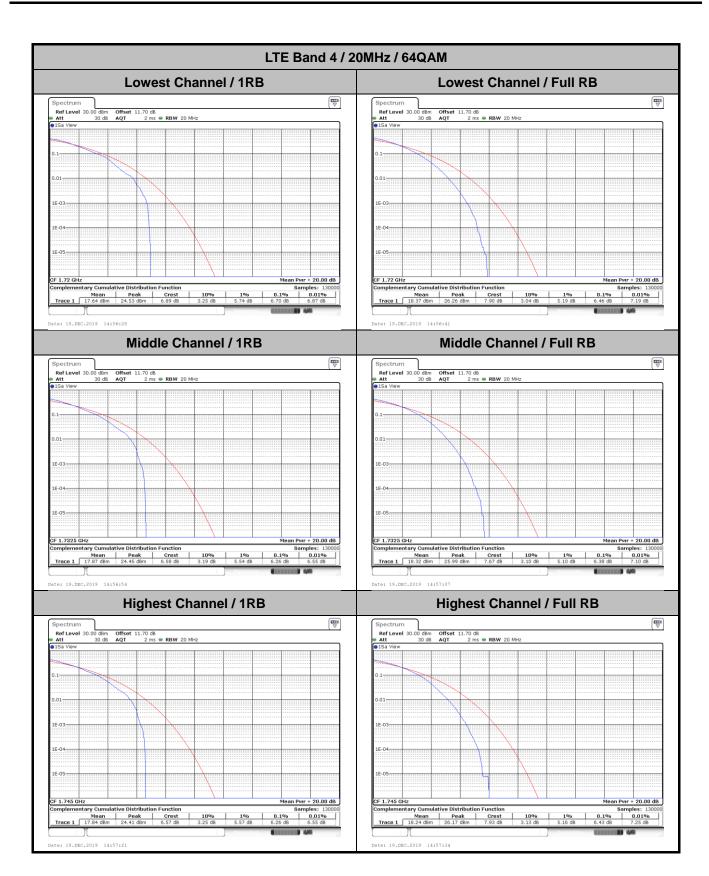
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LTE Band 4 / 20MHz / 16QAM Lowest Channel / 1RB Lowest Channel / Full RB Ref Level 30.00 dBm Att 30 dB Ref Level 30.0 Att Samples: 13000 0.1% 0.01% Middle Channel / 1RB Middle Channel / Full RB **Highest Channel / 1RB Highest Channel / Full RB** | Samples: 130000 | 1% | 0.1% | 0.01% | | 5.10 dB | 5.19 dB | 5.25 dB | Samples: 130000 1% 0.1% 0.01% 4.99 dB 5.86 dB 6.46 dB

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26dB Bandwidth

Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.23	1.23	3.00	3.05	4.96	4.88	9.87	9.75	14.30	14.33	18.66	19.06
Middle CH	1.23	1.22	3.02	3.05	4.84	4.92	9.97	9.79	14.27	14.21	18.90	18.86
Highest CH	1.23	1.23	2.99	3.03	4.88	4.90	9.71	9.83	14.33	14.27	18.82	18.70
Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.23	-	2.99	-	4.86	-	9.97	-	14.18	-	19.18	-
Middle CH	1.23	-	3.02	-	4.91	-	9.79	-	14.45	-	18.90	-
Highest CH	1.22	-	3.02	-	4.87	-	9.89	-	14.15	-	19.10	-

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LTE Band 4 Lowest Channel / 1.4MHz / QPSK Lowest Channel / 1.4MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB = RBW 30 kHz ■ Att 30 dB SWT 63.2 μs = VBW 100 kHz Mode Auto FFT SGL Count 100/100 © 19° Max M1[1] 14.54 dB 14.03 dBr 10 dBm 1386 1389. -10 dBm--20 dBm--30 dBn 30 dBm--50 dBm-
 X-value
 Y-value
 Function

 1.7108818 GHz
 14.54 dBm
 nd8 down

 1.710079 GHz
 -11.29 dBm
 nd8

 1.7113126 GHz
 -11.56 dBm
 Q factor

 X-value
 Y-value
 Function

 1.7105937 GHz
 14.03 dBm
 ndB down

 1.7100846 GHz
 -11.59 dBm
 ndB

 1.7113154 GHz
 -11.99 dBm
 Q factor
 Type Ref Trc Type Ref Trc Middle Channel / 1.4MHz / QPSK Middle Channel / 1.4MHz / 16QAM SGL Count 100/100 14.43 dBr 1.73261190 GH 26.00 d 1.228000000 MH 1411. 14.30 dBn 1.73264550 GH 26.00 dl 1.222400000 MH 1417. -20 dBm--20 dBm--30 dBm-40 dBm -50 dBm-CF 1.7325 GHz Span 2.8 MHz Span 2.8 MHz Y-value 2 14.30 dBm 2 -11.39 dBm 2 -11.78 dBm Type | Ref | Trc | X-value 1.7326119 GHz 1.7318846 GHz 1.7331126 GHz X-value 1.7326455 GHz 1.7318958 GHz 1.7331182 GHz Function m ndB down Date: 19.DEC.2019 11:58:58 Highest Channel / 1.4MHz / QPSK Highest Channel / 1.4MHz / 16QAM 00 dBm Offset 30 dB SWT 11.70 dB **Θ RBW** 30 kHz 63.2 μs **Θ VBW** 100 kHz **Mode** Auto FFT 11.70 dB **RBW** 30 kHz 63.2 μs **VBW** 100 kHz **Mode** Auto FFT SGL Count 100/100 15.50 dBn 1.75437550 GH: 26.00 df 1.230800000 MH: 1425.4 M1[1] 14.26 dBn 1.75410980 GH 20 dBm 26.00 di 1.230800000 MH 0 dBm--20 dBm--20 dBn 40 dBm 50 dBm -50 dBm-CF 1.7543 GHz CF 1.7543 GHz Function Result
1.2308 MHz
26.00 dB
1425.2
 X-value
 Y-value
 Function

 1.7543755 GHz
 15.50 dBm
 nd8 down

 1.753679 GHz
 -10.83 dBm
 nd8

 1.7549098 GHz
 -10.78 dBm
 Q factor

 X-value
 Y-value
 Function

 1.7541098 GHz
 14.26 dBm
 ndB down

 1.7536874 GHz
 -11.88 dBm
 ndB

 1.7549182 GHz
 -11.73 dBm
 Q factor
 Type Ref Trc Type Ref Trc Function Result 1,2308 MHz

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LTE Band 4 Lowest Channel / 3MHz / QPSK Lowest Channel / 3MHz / 16QAM 16,23 dB 15.31 dBr 570 -10 dBm-30 d8n -30 dBm 40 dBm -50 dBm-
 X-value
 Y-value
 Function

 1.7121713 GHz
 15.31 dBm
 nd8 down

 1.7099655 GHz
 -10.72 dBm
 nd8

 1.7130105 GHz
 -10.91 dBm
 Q factor
 Type Ref Trc Type Ref Trc Middle Channel / 3MHz / QPSK Middle Channel / 3MHz / 16QAM 15.70 dB 1.73158890 GF 1.73158890 GF 26.00 d 3.015000000 MF 574. CF 1.7325 GHz Span 6.0 MHz Span 6.0 MHz Y-value 2 14.74 dBm 2 -11.58 dBm 2 -10.95 dBm Type | Ref | Trc | Function n ndB down Date: 19.DEC.2019 12:29:05 Highest Channel / 3MHz / QPSK Highest Channel / 3MHz / 16QAM Ref Level 30. Offset 11.70 dB ● RBW 100 kHz SWT 19 µs ● VBW 300 kHz Mode Auto FFT Att 30 dB
SGL Count 100/100
1Pk Max 15.65 dB 1.75393760 GF 15.17 dBr 1.75460890 GH 20 dBm dBm--10 dBm -50 dBm -50 dBm-CF 1.7535 GHz CF 1.7535 GHz Span 6.0 MHz
 X-value
 Y-value
 Function

 1.7546089 GHz
 15.17 dBm
 nd8 down
 Type Ref Trc Type | Ref | Trc | Function Result Function Result 1.7520015 GHz 1.7550345 GHz

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LTE Band 4 Lowest Channel / 5MHz / QPSK Lowest Channel / 5MHz / 16QAM 13.45 dBr M1[1] 13.95 dB M1[1] 10 dBm 345 351. -10 dBm--30,dBm 40 dBm -50 dBm-Function Result 4.875 MHz 26.00 dB 351.4
 X-value
 Y-value
 Function

 1.711481 GHz
 13.95 dBm
 ndB down

 1.709993 GHz
 -12.25 dBm
 ndB

 1.714948 GHz
 -12.04 dBm
 Q factor

 X-value
 Y-value
 Function

 1.713169 GHz
 13.45 dBm
 ndB down

 1.710082 GHz
 -12.87 dBm
 ndB

 1.714958 GHz
 -12.17 dBm
 Q factor
 Type Ref Trc Middle Channel / 5MHz / QPSK Middle Channel / 5MHz / 16QAM Count 100/100 14.06 dB 1.73090200 GF 26.00 c 4.835000000 MF -20 dBm-40 dBm CF 1.7325 GHz Span 10.0 MHz Span 10.0 MHz Y-value 2 13.09 dBm 2 -13.09 dBm 2 -12.91 dBm
 Y-value
 Function

 14.06 dBm
 ndB down

 -11.93 dBm
 ndB

 -12.34 dBm
 Q factor
 Type | Ref | Trc | Function ndB down Highest Channel / 5MHz / QPSK Highest Channel / 5MHz / 16QAM 00 dBm Offset 30 dB SWT .70 dB • RBW 100 kHz 19 µs • VBW 300 kHz Mode Auto FFT SGL Count 100/100 12.76 dBn 1.75059200 14.23 dBn 1.75373900 GH 20 dBm 26.00 di dBm--20 dBn 40 dBm -50 dBm CF 1.7525 GHz Function Result 4.895 MHz 26.00 dB 357.6
 X-value
 Y-value
 Function

 1.753739 GHz
 14.23 dBm
 ndB down

 1.750062 GHz
 -11.57 dBm
 ndB

 1.754938 GHz
 -11.69 dBm
 Q factor
 Type Ref Trc Function Result 4.875 MHz

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LTE Band 4 Lowest Channel / 10MHz / QPSK Lowest Channel / 10MHz / 16QAM 15.15 dB 15.89 dBr 10 dBm 173 175. -10 dBm-30 dBm -50 dBm-
 X-value
 Y-value
 Function

 1.714361 GHz
 15.89 dBm
 ndB down

 1.710205 GHz
 -9.05 dBm
 ndB

 1.719955 GHz
 -9.99 dBm
 Q factor
 Middle Channel / 10MHz / QPSK Middle Channel / 10MHz / 16QAM Offset 11.70 dB ● RBW 300 kHz SWT 12.6 µs ● VBW 1 MHz Mode Auto FFT 15.27 dBi 1.7347180 GF 26.00 d 9.970000000 MF 174. 15.02 dBn 1.7293830 GH 26.00 di 9.790000000 MH -20 dBm-30 dB 40 dBm CF 1.7325 GHz Span 20.0 MHz Span 20.0 MHz Y-value 2 15.02 dBm 2 -10.34 dBm 2 -11.21 dBm Type Ref Trc Type | Ref | Trc | Function m ndB down Function ndB down Highest Channel / 10MHz / QPSK Highest Channel / 10MHz / 16QAM SGL Count 100/100 00 dBm Offset 30 dB SWT 11.70 dB • RBW 300 kHz 12.6 µs • VBW 1 MHz Mode Auto FFT 11.70 dB **RBW** 300 kHz 12.6 μs **VBW** 1 MHz **Mode** Auto FFT 14.98 dBn 1.7469030 GH 20 dBm 26.00 di dBm-40 dBm -50 dBm CF 1.75 GH:
 X-value
 Y-value
 Function

 1.746903 GHz
 14.98 dBm
 ndB down

 1.745145 GHz
 -10.35 dBm
 ndB

 1.754855 GHz
 -10.79 dBm
 Q factor
 Type Ref Trc **Function Result** Function Result

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LTE Band 4 Lowest Channel / 15MHz / QPSK Lowest Channel / 15MHz / 16QAM M1[1] 14.28 dB 12.59 dBr 10 dBm 120 120. -10 dBm--30 dBm -30 dBm 40 dBm -50 dBm-
 X-value
 Y-value
 Function

 1.721996 GHz
 14.28 dBm
 nd8 down

 1.710277 GHz
 -11.28 dBm
 nd8

 1.724573 GHz
 -12.22 dBm
 Q factor

 X-value
 Y-value
 Function

 1.720557 GHz
 12.59 dBm
 nd8 down

 1.710427 GHz
 -14.05 dBm
 nd8

 1.724753 GHz
 -13.62 dBm
 Q factor
 Type Ref Trc Date: 19.DEC.2019 13:50:47 Middle Channel / 15MHz / QPSK Middle Channel / 15MHz / 16QAM Count 100/100 15.00 dBr 1.7304320 GH 26.00 d 14.266000000 MH 121. 13.80 dBn 1.7291730 GH 26.00 dl 14.206000000 MH 121. -20 dBm-40 dBm-CF 1.7325 GHz Span 30.0 MHz Span 30.0 MHz Y-value 2 13.80 dBm 2 -12.92 dBm 2 -11.92 dBm
 Y-value
 Function

 15.00 dBm
 ndB down

 -10.18 dBm
 ndB

 -11.17 dBm
 Q factor
 Type | Ref | Trc | Function ndB down Highest Channel / 15MHz / QPSK Highest Channel / 15MHz / 16QAM 00 dBm Offset 30 dB SWT 11.70 dB • RBW 300 kHz 12.6 µs • VBW 1 MHz Mode Auto FFT 11.70 dB **RBW** 300 kHz 12.6 μs **VBW** 1 MHz **Mode** Auto FFT SGL Count 100/100 15.54 dBn 1.7415360 GH M1[1] 13.90 dBr 1.7421650 GH 20 dBm dBm-40 dBm -50 dBm-CF 1.7475 GHz Function Result

14.266 MHz

26.00 dB

122.1
 X-value
 Y-value
 Function

 1.741536 GHz
 15.54 dBm
 nd8 down

 1.740427 GHz
 -9.48 dBm
 nd8

 1.754753 GHz
 -10.00 dBm
 Q factor
 | Marker | Trype | Ref | Trc | X-value | Y-value | Function | | M1 | 1 | 1.742105 GHz | 13.90 dBm | ndB down | | 11 | 1 | 1.740427 GHz | 13.90 dBm | ndB | | 12 | 1 | 1.754693 GHz | -12.15 dBm | Q factor | | Type Ref Trc Function Result 14.326 MHz

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LTE Band 4 Lowest Channel / 20MHz / QPSK Lowest Channel / 20MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB = RBW 300 kHz = Att 30 dB SWT 18.9 μs = VBW 1 MHz Mode Auto FFT SGL Count 100/100 Φ 1Pk Max 13.37 dB 12.27 dBr 10 dBm -10 dBm--30 dBm An diam -50 dBm-
 X-value
 Y-value
 Function

 1.714685 GHz
 13.37 dBm
 ndB down

 1.710689 GHz
 -12.11 dBm
 ndB

 1.729351 GHz
 -13.14 dBm
 Q factor
 | X-value | Y-value | Function | 1.722677 GHz | 12.27 dBm | nd8 down | 1.710529 GHz | -14.16 dBm | nd8 | 1.72959 GHz | -14.18 dBm | Q factor | Middle Channel / 20MHz / QPSK Middle Channel / 20MHz / 16QAM Count 100/100 13.74 dBr 1.7344980 GH 26.00 d 18.901000000 MH 91. 13.07 dBn 1.7301820 GH 26.00 dl 18.861000000 MH 91. -20 dBm-CF 1.7325 GHz Span 40.0 MHz Span 40.0 MHz X-value 1.734498 GHz 1.72295 GHz 1.741851 GHz
 Y-value
 Function

 2
 13.74 dBm
 ndB down

 2
 -12.77 dBm
 ndB

 z
 -13.07 dBm
 Q factor
 Type | Ref | Trc | Function ndB down Date: 19.DEC.2019 14:29:19 Highest Channel / 20MHz / QPSK Highest Channel / 20MHz / 16QAM SGL Count 100/100 00 dBm Offset 30 dB SWT 11.70 dB • RBW 300 kHz 18.9 µs • VBW 1 MHz Mode Auto FFT 11.70 dB **RBW** 300 kHz 18.9 μs **VBW** 1 MHz **Mode** Auto FFT 13.46 dBn 1.7421630 GH M1[1] M1[1] 13.14 dBn 1.7422430 GH 20 dBm dBm--20 dBm--20 dBr 40 dBm -50 dBm-CF 1.745 GH Function Result 18.821 MHz 26.00 dB 92.6 Function Result 18.701 MHz 26.00 dB 93.2
 X-value
 Y-value
 Function

 1.742163 GHz
 13.46 dBm
 nd8 down

 1.735609 GHz
 -13.71 dBm
 nd8

 1.754431 GHz
 -12.53 dBm
 Q factor
 | Marker | Trope | Ref | Trc | X-value | Y-value | Function | | Mil | 1 | 1.742243 GHz | 13.14 dBm | ndB down | | 11 | 1 | 1.732599 GHz | 11.18 dBm | ndB | | 12 | 1 | 1.754391 GHz | -13.32 dBm | Q factor | | Type Ref Trc

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LTE Band 4 Lowest Channel / 1.4MHz / 64QAM Lowest Channel / 3MHz / 64QAM 12.56 dB M1[1] 14,67 dBr 10 dBm 1396 573. -10 dBm--10 dBm 30.dBm 40 dBm -50 dBm-
 X-value
 Y-value
 Function

 1.7106489 GHz
 14.67 dBm
 ndB down

 1.7100075 GHz
 -11.27 dBm
 ndB

 1.7129925 GHz
 -11.38 dBm
 Q factor
 Type Ref Trc Type Ref Trc Middle Channel / 1.4MHz / 64QAM Middle Channel / 3MHz / 64QAM 12.96 dBi 1.73230700 GF 26.00 d 1.225200000 MF 1413. 14.30 dBn 1.73168480 GH 26.00 dl 3.021000000 MH 573. -20 dBm-40 dBm CF 1.7325 GHz Span 2.8 MHz Span 6.0 MHz
 Y-value
 Function

 2
 12.96 dBm
 ndB down

 2
 -13.19 dBm
 ndB

 z
 -12.69 dBm
 Q factor
 X-value 1.7316848 GHz 1.7309955 GHz 1.7340165 GHz Type | Ref | Trc | Date: 19.DEC.2019 12:44:26 Highest Channel / 1.4MHz / 64QAM Highest Channel / 3MHz / 64QAM 00 dBm Offset 30 dB SWT 11.70 dB **Θ RBW** 30 kHz 63.2 μs **Θ VBW** 100 kHz **Mode** Auto FFT .70 dB • RBW 100 kHz 19 µs • VBW 300 kHz Mode Auto FFT SGL Count 100/100 1Pk Max SGL Count 100/100 1Pk Max 12.51 dBn 1.75452940 GH M1[1] 14.61 dBn 1.75240910 GH 20 dBm dBm--20 dBr 40 dBm -50 dBm CF 1.7535 GHz Function Result

3.015 MHz
26.00 dB
581.2
 X-value
 Y-value
 Function

 1.7545294 GHz
 12.51 dBm
 ndB down

 1.7536902 GHz
 -13.54 dBm
 ndB

 1.7549126 GHz
 -13.88 dBm
 Q factor
 Type Ref Trc
 X-value
 Y-value
 Function

 1.7524091 GHz
 14.61 dBm
 nd8 down

 1.7520075 GHz
 -11.33 dBm
 nd8

 1.7550225 GHz
 -11.73 dBm
 Q factor
 Type Ref Trc Function Result

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LTE Band 4 Lowest Channel / 5MHz / 64QAM Lowest Channel / 10MHz / 64QAM M1[1] 14.91 dBr 353 171. -10 dBm--30 dBm -50 dBm-Type Ref Trc Middle Channel / 5MHz / 64QAM Middle Channel / 10MHz / 64QAM 14.29 dBn 1.7319410 GH 26.00 di 9.790000000 MH 40 dBm-CF 1.7325 GHz Span 10.0 MHz Span 20.0 MHz Type | Ref | Trc | Function n ndB down Date: 19.DEC.2019 13:44:33 Highest Channel / 5MHz / 64QAM Highest Channel / 10MHz / 64QAM Offset 11.70 dB ● RBW 300 kHz SWT 12.6 µs ● VBW 1 MHz Mode Auto FFT Att 30 dB
SGL Count 100/100
1Pk Max 12.37 dB 1.75371900 GF 12.97 dBr 1.7473630 GH dBm--50 dBm -50 dBm CF 1.7525 GHz CF 1.75 GHz Span 10.0 MHz
 X-value
 Y-value
 Function

 1.747363 GHz
 12.97 dBm
 nd8 down

 1.745145 GHz
 -12.54 dBm
 nd8

 1.755035 GHz
 -12.69 dBm
 Q factor
 X-value 1.753719 GHz 1.750052 GHz 1.754918 GHz Type | Ref | Trc | Function Result Type | Ref | Trc | Function Result

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LTE Band 4 Lowest Channel / 15MHz / 64QAM Lowest Channel / 20MHz / 64QAM Ref Level 30.00 dBm Offset 11.70 dB = RBW 300 kHz = Att 30 dB SWT 18.9 μs = VBW 1 MHz Mode Auto FFT SGL Count 100/100 Φ 1Pk Max M1[1] 11.32 dBr 10 dBm 89. 121 -10 dBm--10 dBm -30, dBm oon dBm Type Ref Trc Middle Channel / 15MHz / 64QAM Middle Channel / 20MHz / 64QAM SGL Count 100/100 12.25 dBr 1.7313610 GH 26.00 d 14.446000000 MH 119. 12.10 dBn 1.7292230 GH 26.00 dl 18.901000000 MH 91. -20 dBm-CF 1.7325 GHz Span 30.0 MHz Span 40.0 MHz Type | Ref | Trc | Y-value 12.25 dBm -13.48 dBm -13.91 dBm Type Ref Trc Function m ndB down Function ndB down Date: 19.DEC.2019 14:44:40 Highest Channel / 15MHz / 64QAM Highest Channel / 20MHz / 64QAM SGL Count 100/100 00 dBm Offset 30 dB SWT 11.70 dB • RBW 300 kHz 12.6 µs • VBW 1 MHz Mode Auto FFT 11.70 dB **Θ RBW** 300 kHz 18.9 μs **Θ VBW** 1 MHz **Mode** Auto FFT 11.98 dBn 1.7448630 GH M1[1] M1[1] 11.28 dBn 1.7394460 GH 20 dBm 0 dBm--20 dBr 40 dBm--50 dBm-CF 1.745 GH Function Result 19.101 MHz 26.00 dB 91.1

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Function Result 14,146 MHz

 X-value
 Y-value
 Function

 1.744863 GHz
 11.98 dBm
 nd8 down

 1.740427 GHz
 -14.77 dBm
 nd8

 1.754573 GHz
 -14.36 dBm
 Q factor

Type Ref Trc

Occupied Bandwidth

Mode	LTE Band 4 : 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	1.08	2.71	2.73	4.47	4.50	9.03	9.03	13.46	13.49	17.90	17.94
Middle CH	1.08	1.09	2.70	2.72	4.49	4.50	9.05	8.99	13.43	13.46	17.94	17.78
Highest CH	1.09	1.09	2.72	2.70	4.51	4.48	9.03	9.01	13.52	13.46	17.90	17.90
Mode	LTE Band 4 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.09	-	2.73	-	4.50	-	9.03	-	13.46	-	17.82	-
Middle CH	1.09	-	2.72	-	4.50	-	8.97	-	13.37	-	17.86	-
Highest CH	1.09	-	2.73	-	4.47	-	9.09	-	13.43	-	17.90	-

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LTE Band 4 Lowest Channel / 1.4MHz / QPSK Lowest Channel / 1.4MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB = RBW 30 kHz ■ Att 30 dB SWT 63.2 μs = VBW 100 kHz Mode Auto FFT SGL Count 100/100 © 19° Max 14.12 dBr 1.71041190 GH 1.088111888 MH 14.18 dBr 10 dBm--10 dBm--10 dBm -20 dBm--30 d8m--30-dBm-40 dBm 50 dBm--50 dBm--60 dBm -60 dBm-CF 1.7107 GHz
 X-value
 Y-value
 Function
 Function Result

 1.710413 GHz
 14.12 dBm
 1.710473 GHz
 1.82 dBm

 1.71016734 GHz
 8.42 dBm
 Occ Bw
 1.088111

 1.71124545 GHz
 8.69 dBm
 Occ Bw
 1.088111

 Note | New Person
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.7105599 6Hz
 1.4.18 dBm
 1.12 dBm
 1.17105794 GHz
 6.94 dBm
 0cc 8w
 1.08251

 T2
 1
 1.71123986 GHz
 7.14 dBm
 0cc 8w
 1.08251
 Type Ref Trc Middle Channel / 1.4MHz / QPSK Middle Channel / 1.4MHz / 16QAM SGL Count 100/100 1Pk Max SGL Count 100/100 1Pk Max dBm--20 dBm--20 dBm--30 dBm--30 dBm 40 dBm -40 dBm--50 dBm -50 dBm CF 1.7325 GHz 1001 pts Span 2.8 MHz 1001 pts Span 2.8 MHz
 X-value
 Y-value
 Function

 1.7325727 GHz
 14.78 dBm
 14.78 dBm

 1.7319734 GHz
 8.88 dBm
 Occ Bw

 1.73303986 GHz
 9.18 dBm
 Type | Ref | Trc | Function Result Function Result 1.082517483 MHz 1.090909091 MHz Date: 19.DEC.2019 11:58:32 Highest Channel / 1.4MHz / QPSK Highest Channel / 1.4MHz / 16QAM au.00 dBm Offset : 30 dB sWT SGL Count 100/100 11.70 dB • RBW 30 kHz 63.2 µs • VBW 100 kHz Mode Auto FFT SGL Count 100/100 14.58 dBn 1.75459090 GH 1.088111888 MH 13.56 dBn 1.75430280 GHz 1.090909091 MHz M1[1] 20 dBm dBm--10 dBm--20 dBm--20 dBn 40 dBm -50 dBm -50 dBm-CF 1.7543 GHz CF 1.7543 GHz Span 2.8 MHz
 X-Value
 Y-value
 Function
 Function Result

 1.7545909 GHz
 14.53 dBm

 1.75375734 GHz
 6.61 dBm
 OCC BW
 1.088111

 1.75496454 GHz
 6.60 dBm
 Type Ref Trc 1.088111888 MHz 1.090909091 MHz

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LTE Band 4 Lowest Channel / 3MHz / QPSK Lowest Channel / 3MHz / 16QAM 15.55 dBr 1.71141610 GH 2.709290700 MV 15.22 dBr 10 dBm -10 dBm--10 dBm -20 dBm-30 dBp 40 dBm -50 dBm--60 dBm -60 dBm-
 X-value
 Y-value
 Function
 Function Result

 1.711450 GHz
 15.55 dBm
 15.55 dBm
 1.7104595 6Hz
 9.54 dBm
 Occ BW
 2.70929

 1.71285465 GHz
 9.44 dBm
 Occ BW
 2.70929

 Molecular
 Yvel Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.710535 GHz
 15.22 d8m
 15.22 d8m

 T1
 1
 1.7103337 GHz
 8.87 d8m
 Occ Bw

 T2
 1
 1.71286663 GHz
 8.52 d8m
 Occ Bw
 Type Ref Trc Date: 19.DEC.2019 12:20:08 Middle Channel / 3MHz / QPSK Middle Channel / 3MHz / 16QAM
 Ref Level
 30.00 dBm
 Offset
 11.70 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 Count 100/100 -20 dBm-40 dBm -50 dBm-CF 1.7325 GHz 1001 pts Span 6.0 MHz 1001 pts Span 6.0 MHz
 X-value
 Y-value
 Function

 1.733501 GHz
 16.7z dBm
 16.7z dBm

 1.73114535 GHz
 10.55 dBm
 Occ Bw

 1.73384865 GHz
 9.83 dBm

 rc
 X-value
 Y-value
 Function

 1
 1.7313132 GHz
 14.80 dBm

 1
 1.73144535 GHz
 7.75 dBm
 Occ Bw

 1
 1.73386064 GHz
 6.36 dBm
 Occ Bw
 Type | Ref | Trc | Type Ref Trc Function Result **Function Result** 2.703296703 MHz 2.715284715 MHz Highest Channel / 3MHz / QPSK Highest Channel / 3MHz / 16QAM 00 dBm Offset 30 dB SWT 11.70 dB • RBW 100 kHz 19 µs • VBW 300 kHz Mode Auto FFT SGL Count 100/100 1Pk Max M1[1] 15.42 dBn 1.75412340 GH 2.715284715 MH 20 dBm dBm--10 dBm -20 dBm--20 dBr 40 dBm -50 dBm-CF 1.7535 GHz CF 1.7535 GHz Span 6.0 MHz
 X-value
 Y-value
 Function
 Function Result

 1.7541234 GHz
 15.42 dBm
 1.75213936 GHz
 9.02 dBm
 Occ Bw
 2.715284

 1.759489465 GHz
 8.92 dBm
 Occ Bw
 2.715284
 Type Ref Trc 2.715284715 MHz 2.703296703 MHz

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LTE Band 4 Lowest Channel / 5MHz / QPSK Lowest Channel / 5MHz / 16QAM M1[1] 10 dBm--10 dBm--10 dBm -20 dBm--39 dBm/\ -30 dBm-40 dBm-50 dBm -50 dBm--60 dBm -60 dBm-Type Ref Trc Date: 19.DEC.2019 13:00:15 Middle Channel / 5MHz / QPSK Middle Channel / 5MHz / 16QAM
 Ref Level
 30.00 dBm
 Offset
 11.70 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 13.47 dBi 1.73239000 GF 4.485514486 MF -20 dBm--20 dBm--30 dBm-40 dBm--50 dBm CF 1.7325 GHz 1001 pts Span 10.0 MHz 1001 pts Span 10.0 MHz
 X-value
 Y-value
 Function

 1.73239 GHz
 13.47 dBm

 1.7302522 GHz
 8.87 dBm
 Occ Bw

 1.7347378 GHz
 9.08 dBm

 X-value
 Y-value
 Function

 1.730292 GHz
 12.46 dBm
 0.00 dBm

 1.7302423 GHz
 9.36 dBm
 Occ Bw

 1.7347378 GHz
 9.10 dBm
 Type | Ref | Trc | Type Ref Trc Function Result Function Result 4.485514486 MHz 4.495504496 MHz Date: 19.DEC.2019 13:08:44 Highest Channel / 5MHz / QPSK Highest Channel / 5MHz / 16QAM SGL Count 100/100 1Pk Max 13.60 dBn 1.75382900 GH 4.475524476 MH M1[1] 14.02 dBn 1.75242000 GH: 4.505494505 MH: 20 dBm dBm--20 dBm--20 dBn 40 dBm -50 dBm -50 dBm-CF 1.7525 GHz CF 1.7525 GHz Span 10.0 MHz
 Marker
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.75242 GHz
 14.02 dBm
 1.02 dBm
 1.15242 GHz
 1.02 dBm
 0.00 dBm
 4.505494

 T2
 1
 1.7547478 GHz
 9.18 dBm
 0.00 dBm
 4.505494
 4.505494505 MHz 4.475524476 MHz

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LTE Band 4 Lowest Channel / 10MHz / QPSK Lowest Channel / 10MHz / 16QAM 15.86 dBr 1.7176570 GH 9.030969031 MH 14.70 dBn 1.7182570 GH .030969031 MH 10 dBm -10 dBm--10 dBm -20 dBm--30 dBm 40 dBm 50 dBm -50 dBm--60 dBm -60 dBm-
 X-value
 Y-value
 Function
 Function Result

 1.717657 GHz
 15.88 dbm
 9.03096

 1.7105945 GHz
 9.61 dbm
 Occ Bw
 9.03096

 1.7195355 GHz
 10.32 dbm
 Occ Bw
 9.03096
 Middle Channel / 10MHz / QPSK Middle Channel / 10MHz / 16QAM -20 dBm--20 dBm--30 dBm -30 dBm--40 dBm 40 dBm--50 dBm CF 1.7325 GHz 1001 pts Span 20.0 MHz 1001 pts Span 20.0 MHz Type | Ref | Trc | Function Result Function Result 9.050949051 MHz 8.991008991 MHz Date: 19.DEC.2019 13:28:46 Highest Channel / 10MHz / QPSK Highest Channel / 10MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB RBW 300 kHz

Att 30 db SWT 12.6 µs VBW 1 MHz Mode Auto FFT

SGL Count 100/100

1Pk Max 16.46 dBn 1.7533570 GH 9.010989011 MH 15.33 dBn 1.7535760 GH 9.030969031 MH 20 dBm dBm--10 dBm--20 dBm--20 dBn an dam-40 dBm -50 dBm -50 dBm-CF 1.75 GH CF 1.75 GHz Span 20.0 MHz
 Marker
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.753576 GHz
 15.33 dBm
 9.27 dBm
 Occ Bw
 9.030969

 T1
 1
 1.7544945 GHz
 9.27 dBm
 Occ Bw
 9.030969

 T2
 1
 1.7545155 GHz
 9.84 dBm
 9.84 dBm
 9.030969031 MHz 9.010989011 MHz

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LTE Band 4 Lowest Channel / 15MHz / QPSK Lowest Channel / 15MHz / 16QAM 14.93 dB M1[1] 14.06 dBr 10 dBm -10 dBm--10 dBm -20 dBm--30 dBm 30 dBm-40 dBm--50 dBm--60 dBm-
 X-value
 Y-value
 Function
 Function Result

 1.724003 GHz
 14.93 dBm
 1.7106167 GHz
 8.39 dBm
 Occ Bw
 13.456543

 1.7242732 GHz
 10.04 dBm
 Occ Bw
 13.456543
 Date: 19.DEC.2019 13:50:20 Middle Channel / 15MHz / QPSK Middle Channel / 15MHz / 16QAM SGL Count 100/100 1Pk Max SGL Count 100/100 14.10 dBi 1.7346580 GF 13.426573427 MF 12.89 dBn 1.7262960 GH 13.456543457 MH -20 dBm--20 dBm-40 dBm -50 dBm CF 1.7325 GHz 1001 pts Span 30.0 MHz 1001 pts Span 30.0 MHz
 X-value
 Y-value
 Function

 1.734658 GHz
 14.10 dBm
 0.00 dBm

 1.7257567 GHz
 9.65 dBm
 0cc Bw

 1.7391833 GHz
 8.55 dBm
 0.00 dBm
 Type | Ref | Trc | Function Result Function Result 13.426573427 MHz 13.456543457 MHz Date: 19.DEC.2019 13:58:49 Highest Channel / 15MHz / QPSK Highest Channel / 15MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB • RBW 300 kHz

• Att 30 db • SWT 12.6 µs • VBW 1 MHz Mode Auto FFT

• SGL Count 100/100

• IPk Max M1[1] 14.28 dBn 1.7427650 GH 13.516483516 MH 13.18 dBn 1.7417760 GH 13.456543457 MH 20 dBm dBm--10 dBm -20 dBm--20 dBr 40 dBm -50 dBm -50 dBm-CF 1.7475 GHz Span 30.0 MHz
 Marker
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.742765 GHz
 14.28 dBm
 1.22 dBm
 1.1 dBm
 1.1 dBm
 1.1 dBm
 1.1 dBm
 0 cc Bw
 13.516483

 T2
 1
 1.7542732 GHz
 10.45 dBm
 0 cc Bw
 13.516483
 13.516483516 MHz 13.456543457 MHz

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 Marker
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.737489 GHz
 13.23 dbm
 5.23 dbm
 1.1
 1.1
 1.1
 1.1
 1.1
 1.1
 1.1
 1.1
 1.1
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LTE Band 4 Lowest Channel / 20MHz / QPSK Lowest Channel / 20MHz / 16QAM 12.74 dBn 1.7213190 GH 17.942057942 MH M1[1] 10 dBm--10 dBm--10 dBm -20 dBm--30 dBm 40 dBm mm ≇n dBm--50 dBm--60 dBm-
 X-value
 Y-value
 Function
 Function Result

 1.725974 GHz
 12.70 dbm
 1.7111290 GHz
 6.88 dbm
 Occ Bw
 17.902097

 1.721030 GHz
 9.47 dbm
 Occ Bw
 17.902097
 Middle Channel / 20MHz / QPSK Middle Channel / 20MHz / 16QAM SGL Count 100/100 1Pk Max SGL Count 100/100 13.04 dBi 1.7264660 GF 17.942057942 MF 13.54 dBn 1.7291030 GH 17.782217782 MH dBm--20 dBm--20 dBm-40 dBm -50 dBm CF 1.7325 GHz 1001 pts Span 40.0 MHz 1001 pts Span 40.0 MHz
 X-value
 Y-value
 Function

 1.726466 GHz
 13.04 dBm
 0cc Bw

 1.723509 GHz
 8.01 dBm
 0cc Bw

 1.741451 GHz
 8.53 dBm
 Type | Ref | Trc | Function Result **Function Result** 17.942057942 MHz 17.782217782 MHz Date: 19.DEC.2019 14:28:53 Highest Channel / 20MHz / QPSK Highest Channel / 20MHz / 16QAM SGL Count 100/100

Pk Max 11.70 dB **RBW** 300 kHz 18.9 μs **VBW** 1 MHz **Mode** Auto FFT 12.58 dBn 1.7369280 GH 17.902097902 MH M1[1] 13.23 dBn 1.7374880 GH 17.902097902 MH M1[1] 20 dBm dBm--10 dBm -20 dBm--20 dBn 40 dBm 40 dBm -50 dBm -50 dBm-CF 1.745 GHz Span 40.0 MHz

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17.902097902 MHz

17.902097902 MHz

LTE Band 4 Lowest Channel / 1.4MHz / 64QAM Lowest Channel / 3MHz / 64QAM Ref Level 30.00 dBm
Att 30 dB
SGL Count 100/100 10 dBm -10 dBm -10 dBm -20 dBm -30 dBm-40 dBm-40 dBm -60 dBm 1001 pts CF 1.7107 GHz CF 1.7115 GHz X-value 1.7109042 GHz 1.71016014 GHz 1.71124545 GHz Y-value 14.38 dBm 8.21 dBm 7.83 dBm Type Ref Trc Function Function Result Type Ref Trc Date: 19.DEC.2019 12:39:58 Middle Channel / 1.4MHz / 64QAM Middle Channel / 3MHz / 64QAM 0 dBm Offset 11.70 dB • RBW 100 kHz 30 dB SWT 19 µs • VBW 300 kHz Mode Auto FFT SGL Count 100/100 1Pk Max 14.27 dBn 1.73354300 GH 2.721278721 MH 12.47 dBi 1.73213360 GF 1.093706294 MF dBm--10 dBm -50 dBm-CF 1.7325 GHz Span 2.8 MHz
 X-value
 Y-value
 Function

 1.7321336 GHz
 12.47 dBm

 1.73195455 GHz
 7.03 dBm
 Occ Bw

 1.73304825 GHz
 5.55 dBm

 Marker
 Function

 Type
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.733549 GHz
 14.27 dBm
 1

 T1
 1
 1.73145453 GHz
 8.43 dBm
 Occ Bw

 T2
 1
 1.73366663 GHz
 8.44 dBm
 0cc Bw
 Type | Ref | Trc | Function Result Function Result 1.093706294 MHz 2.721278721 MHz Highest Channel / 1.4MHz / 64QAM Highest Channel / 3MHz / 64QAM Ref Level 30.00 dBm Offset 11.70 dB = RBW 100 kHz Att SGL Count 100/100 SWY 19 µs = VBW 300 kHz Mode Auto FFT SGL Count 100/100 12.83 dBr 1.75410700 GH 1.085314685 MH 14.03 dBn 1.75408740 GH 2.727272727 MH M1[1] M1E11 -10 dBm -10 dBm Span 2.8 MHz CF 1.7535 GHz
 Type
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.754107 GHz
 12.83 dBm

 Type
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.7540874 GHz
 14.03 dBm
 Function Result 12.83 dBm 6.96 dBm Occ Bw 6.50 dBm 8.00 dBm Occ Bw 7.19 dBm 1.085314685 MHz 2.727272727 MHz

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LTE Band 4 Lowest Channel / 5MHz / 64QAM Lowest Channel / 10MHz / 64QAM 11.62 dBr 1.71237000 GH 4.495504496 MH 13.40 dBn 1.7176970 GH 9.030969031 MH M1[1] M1[1] 10 dBm--10 dBm--10 dBm -20 dBm-30 dam> -30 dBm-40 dBm -50 dBm--60 dBm -60 dBm-Type Ref Trc Middle Channel / 5MHz / 64QAM Middle Channel / 10MHz / 64QAM
 Ref Level
 30.00 dBm
 Offset
 11.70 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 SGL Count 100/100 11.94 dBr 1.73180100 GF 4.495504496 MF dBm--20 dBm--20 dBm--30 dBm--40 dBm--50 dBm CF 1.7325 GHz 1001 pts Span 10.0 MHz 1001 pts Span 20.0 MHz | Y-value | Function |
| 2 | 11.94 dBm |
| 2 | 7.57 dBm | Occ Bw |
| 2 | 7.20 dBm | Type | Ref | Trc | X-value 1.731801 GHz 1.7302522 GHz 1.7347478 GHz Function Result Function Result 4.495504496 MHz 8.971028971 MHz Date: 19.DEC.2019 13:44:20 Highest Channel / 5MHz / 64QAM Highest Channel / 10MHz / 64QAM Ref Level 30.00 dBm Offset 11.70 dB • RBW 300 kHz

• Att 30 db • SWT 12.6 µs • VBW 1 MHz Mode Auto FFT

• SGL Count 100/100

• IPk Max SGL Count 100/100 13.39 dBn 1.7504400 GH 9.090909091 MH M1[1] 12.44 dBn 1.75325900 GH: 4.465534466 MH: 20 dBm dBm--10 dBm -20 dBm--20 dBn 40 dBm 40 dBm -50 dBm -50 dBm-CF 1.7525 GHz CF 1.75 GHz Span 10.0 MHz
 Marker
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.753295 GHz
 12.44 dBm
 12.44 dBm
 11.75222 GHz
 6.91 dBm
 Occ BW
 4.465534

 T2
 1
 1.7547378 GHz
 8.10 dBm
 Occ BW
 4.465534
 4.465534466 MHz 9.090909091 MHz

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