



FCC RADIO TEST REPORT

FCC ID : IHDT56XL1
Equipment : Mobile 5G MOD
Brand Name : Motorola
Model Name : MD1005G
Applicant : Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL
60654 USA
Manufacturer : Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL
60654 USA
Standard : 47 CFR Part 2, 22(H), 24(E), 27

The product was received on Sep. 05, 2018 and testing was started from Oct. 11, 2018 and completed on Nov. 06, 2018. We, SPORTON INTERNATIONAL INC., 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.

Approved by: Jones Tsai

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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



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History of this test report

Report No.	Version	Description	Issued Date
FG890514C	01	Initial issue of report	Dec. 24, 2018
FG890514C	02	Add summary table of Conducted Band Edge in appendix A.	Jan. 03, 2019

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)	Pass	
	§27.50 (b)(10)	Effective Radiated Power (Band 13)		
	§24.232 (c)	Equivalent Isotropic Radiated Power (Band 2)		
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (Band 4) (Band 66)		
3.3	§24.232 (d)	Peak-to-Average Ratio	Pass	-
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 (h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 13) (Band 66)	Pass	-
3.6	§2.1051 §22.917 (a) §24.238 (a) §27.53 (c)(2) §27.53 (h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 13) (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 (h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 13) (Band 66)	Pass	Under limit 19.66 dB at 1559.000 MHz
Remark: Not required means after assessing, test items are not necessary to carry out.				

**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: Natasha Hsieh



1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile 5G MOD
Brand Name	Motorola
Model Name	MD1005G
FCC ID	IHDT56XL1
IMEI Code	Conduction : 355567090009993 Radiation : 355567090009738
EUT supports Radios application	LTE/5G NR
HW Version	DVT2
EUT Stage	Identical Prototype

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

Specification of Accessories	
USB Cable 1	Brand Name : Motorola
	Model Name : SC18C46623

Supported Unit Used in Test Configuration and System	
AC Adapter 1	Brand Name : Motorola
	Model Name : SC-22
	Manufacturer : Chenyang
AC Adapter 2	Brand Name : Motorola
	Model Name : SC-51
	Manufacturer : Salom
Mobile Phone	Brand Name : Motorola
	FCC ID : IHDT56XJ1

1.2 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 66: 1710.7 MHz ~ 1779.3 MHz
Rx Frequency	LTE Band 2: 1930.7 MHz ~ 1989.3 MHz LTE Band 4: 2110.7 MHz ~ 2154.3 MHz LTE Band 5: 869.7 MHz ~ 893.3 MHz LTE Band 13: 748.5 MHz ~ 753.5 MHz LTE Band 66: 2110.7 MHz ~ 2199.3 MHz
Bandwidth	LTE Band 2: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 5: 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 13: 5MHz / 10MHz LTE Band 66: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 2: 23.99 dBm LTE Band 4: 23.96 dBm LTE Band 5: 23.81 dBm LTE Band 13: 23.49 dBm LTE Band 66: 23.99 dBm
Antenna Type	Fixed Internal Antenna
Antenna Gain	LTE Band 2: -2.7 dBi LTE Band 4: -3.5 dBi LTE Band 5: -7.8 dBi LTE Band 13: -7.3 dBi LTE Band 66: -3.5 dBi
Type of Modulation	QPSK / 16QAM / 64QAM

1.3 Modification of EUT

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



1.4 Emission Designator

LTE Band 2		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	1850.7 ~ 1909.3	1M10G7D	-	0.1268	1M09W7D	-	0.1069	1M10W7D	-	0.0855
3	1851.5 ~ 1908.5	2M73G7D	-	0.1265	2M73W7D	-	0.1069	2M73W7D	-	0.0857
5	1852.5 ~ 1907.5	4M48G7D	-	0.1346	4M51W7D	-	0.1054	4M50W7D	-	0.0863
10	1855.0 ~ 1905.0	9M05G7D	0.0109	0.1306	9M07W7D	-	0.1072	9M05W7D	-	0.0861
15	1857.5 ~ 1902.5	13M5G7D	-	0.1291	13M5W7D	-	0.1069	13M5W7D	-	0.0861
20	1860.0 ~ 1900.0	18M6G7D	-	0.1346	18M3W7D	-	0.1069	18M6W7D	-	0.0851
LTE 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	1M10G7D	-	0.1084	1M09W7D	-	0.0887	1M09W7D	-	0.0718
3	1711.5 ~ 1753.5	2M74G7D	-	0.1094	2M73W7D	-	0.0889	2M72W7D	-	0.0711
5	1712.5 ~ 1752.5	4M50G7D	-	0.1089	4M50W7D	-	0.0889	4M53W7D	-	0.0706
10	1715.0 ~ 1750.0	9M07G7D	0.0097	0.1109	9M07W7D	-	0.0891	9M05W7D	-	0.0706
15	1717.5 ~ 1747.5	13M5G7D	-	0.1096	13M5W7D	-	0.0889	13M5W7D	-	0.0708
20	1720.0 ~ 1745.0	18M5G7D	-	0.1112	18M5W7D	-	0.0889	18M4W7D	-	0.0718
LTE Band 5		QPSK			16QAM			64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
1.4	824.7 ~ 848.3	1M09G7D	-	0.0241	1M10W7D	-	0.0187	1M09W7D	-	0.0135
3	825.5 ~ 847.5	2M72G7D	-	0.0243	2M72W7D	-	0.0194	2M75W7D	-	0.0140
5	826.5 ~ 846.5	4M50G7D	-	0.0229	4M51W7D	-	0.0201	4M50W7D	-	0.0140
10	829.0 ~ 844.0	9M05G7D	0.0122	0.0243	9M05W7D	-	0.0194	9M05W7D	-	0.0147



LTE Band 13		QPSK			16QAM			64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
5	779.5 ~ 784.5	4M50G7D	-	0.0253	4M50W7D	-	0.0226	4M50W7D	-	0.0164
10	782.0	8M99G7D	0.0180	0.0254	9M05W7D	-	0.0212	9M05W7D	-	0.0165
LTE Band 66		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 ~ 1779.3	1M10G7D	-	0.1002	1M09W7D	-	0.0841	1M09W7D	-	0.0617
3	1711.5 ~ 1778.5	2M72G7D	-	0.1117	2M73W7D	-	0.0865	2M73W7D	-	0.0640
5	1712.5 ~ 1777.5	4M51G7D	-	0.1014	4M51W7D	-	0.0815	4M54W7D	-	0.0644
10	1715.0 ~ 1775.0	9M11G7D	0.0149	0.1062	9M05W7D	-	0.0887	9M03W7D	-	0.0656
15	1717.5 ~ 1772.5	13M5G7D	-	0.1072	13M5W7D	-	0.0887	13M6W7D	-	0.0670
20	1720.0 ~ 1770.0	18M5G7D	-	0.1119	18M5W7D	-	0.0889	18M4W7D	-	0.0662

1.5 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1190 and TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.
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

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

Test Site	SPORTON INTERNATIONAL INC.
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. 03CH12-HY

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

1.6 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), 24(E), 27
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP 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.



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.

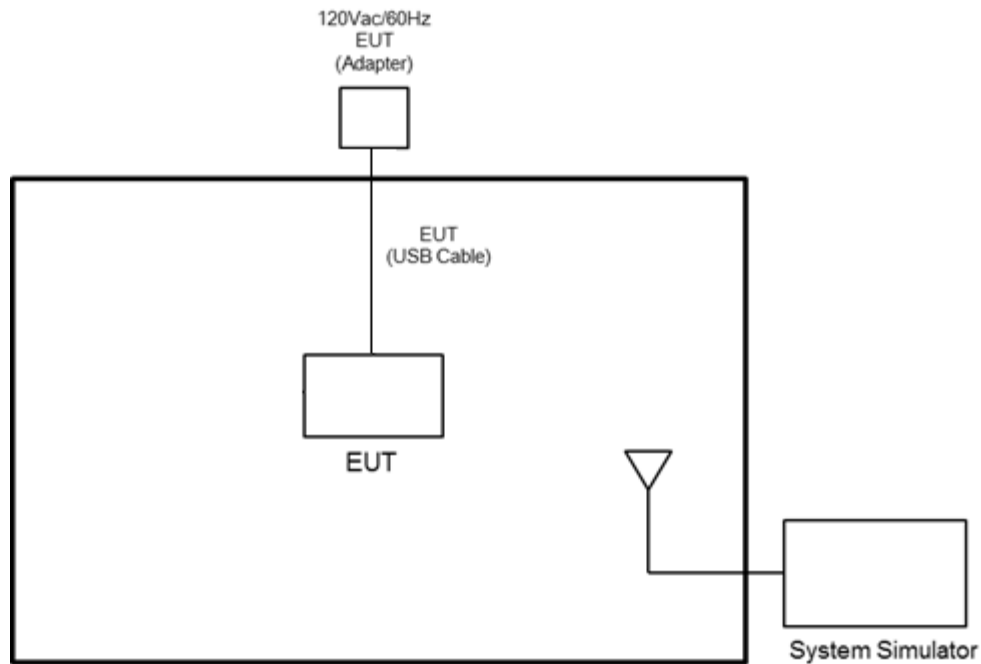
For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane for Band 2, 4 and 5, Y plane for Band 13 and 66) were recorded in this report.

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v
	66	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	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
	13	-	-		v	-	-	v	v	v	v		v	v	v	v
	66						v	v	v	v	v		v	v	v	v
26dB and 99% Bandwidth	2	v	v	v	v	v	v	v	v	v			v	v	v	v
	4	v	v	v	v	v	v	v	v	v			v	v	v	v
	5	v	v	v	v	-	-	v	v	v			v	v	v	v
	13	-	-	v	v	-	-	v	v	v			v	v	v	v
	66	v	v	v	v	v	v	v	v	v			v	v	v	v
Conducted Band Edge	2	v	v	v	v	v	v	v	v	v	v		v	v		v
	4	v	v	v	v	v	v	v	v	v	v		v	v		v
	5	v	v	v	v	-	-	v	v	v	v		v	v		v
	13	-	-	v	v	-	-	v	v	v	v		v	v		v
	66	v	v	v	v	v	v	v	v	v	v		v	v		v



Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Conducted Spurious Emission	2	v	v	v	v	v	v	v	v	v	v			v	v	v
	4	v	v	v	v	v	v	v	v	v	v			v	v	v
	5	v	v	v	v	-	-	v	v	v	v			v	v	v
	13	-	-	v	v	-	-	v	v	v	v			v	v	v
	66	v	v	v	v	v	v	v	v	v	v			v	v	v
Frequency Stability	2				v			v					v		v	
	4				v			v					v		v	
	5				v	-	-	v					v		v	
	13	-	-		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	v			v	v	v
	4	v	v	v	v	v	v	v	v	v	v			v	v	v
	5	v	v	v	v	-	-	v	v	v	v			v	v	v
	13	-	-	v	v	-	-	v	v	v	v			v	v	v
	66	v	v	v	v	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
	13	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. 4. All the radiated test cases were performed with Adapter 1.															

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.	LTE Base Station	Anritsu	MT8820C	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 :

$$\begin{aligned}
 \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\
 &= 4.2 + 10 = 14.2 \text{ (dB)}
 \end{aligned}$$

2.5 Frequency List of Low/Middle/High Channels

LTE Band 2 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	18700	18900	19100
	Frequency	1860	1880	1900
15	Channel	18675	18900	19125
	Frequency	1857.5	1880	1902.5
10	Channel	18650	18900	19150
	Frequency	1855	1880	1905
5	Channel	18625	18900	19175
	Frequency	1852.5	1880	1907.5
3	Channel	18615	18900	19185
	Frequency	1851.5	1880	1908.5
1.4	Channel	18607	18900	19193
	Frequency	1850.7	1880	1909.3

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

LTE Band 5 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	20450	20525	20600
	Frequency	829	836.5	844
5	Channel	20425	20525	20625
	Frequency	826.5	836.5	846.5
3	Channel	20415	20525	20635
	Frequency	825.5	836.5	847.5
1.4	Channel	20407	20525	20643
	Frequency	824.7	836.5	848.3

LTE Band 13 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	-	23230	-
	Frequency	-	782	-
5	Channel	23205	23230	23255
	Frequency	779.5	782	784.5

LTE Band 66 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	132072	132322	132572
	Frequency	1720	1745	1770
15	Channel	132047	132322	132597
	Frequency	1717.5	1745	1772.5
10	Channel	132022	132322	132622
	Frequency	1715	1745	1775
5	Channel	131997	132322	132647
	Frequency	1712.5	1745	1777.5
3	Channel	131987	132322	132657
	Frequency	1711.5	1745	1778.5
1.4	Channel	131979	132322	132665
	Frequency	1710.7	1745	1779.3

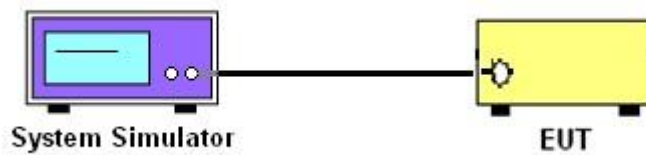
3 Conducted Test Items

3.1 Measuring Instruments

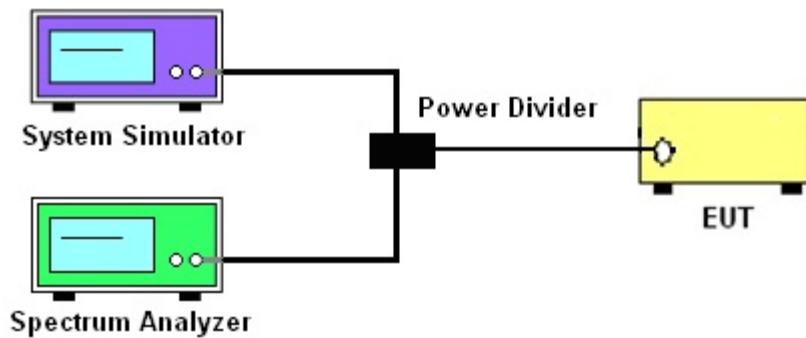
See list of measuring instruments of this test report.

3.1.1 Test Setup

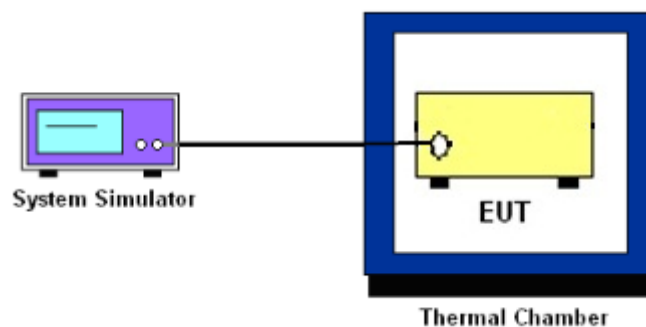
3.1.2 Conducted Output Power



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.

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

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

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

According to KDB 412172 D01 Power Approach,

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

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 FCC KDB 971168 D01 v03r01 Section 5.7.1

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 FCC KDB 971168 D01 v03r01 Section 4.2

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 (h)

For operations in the 1710 – 1755 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 6.0.

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 6.0.

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.

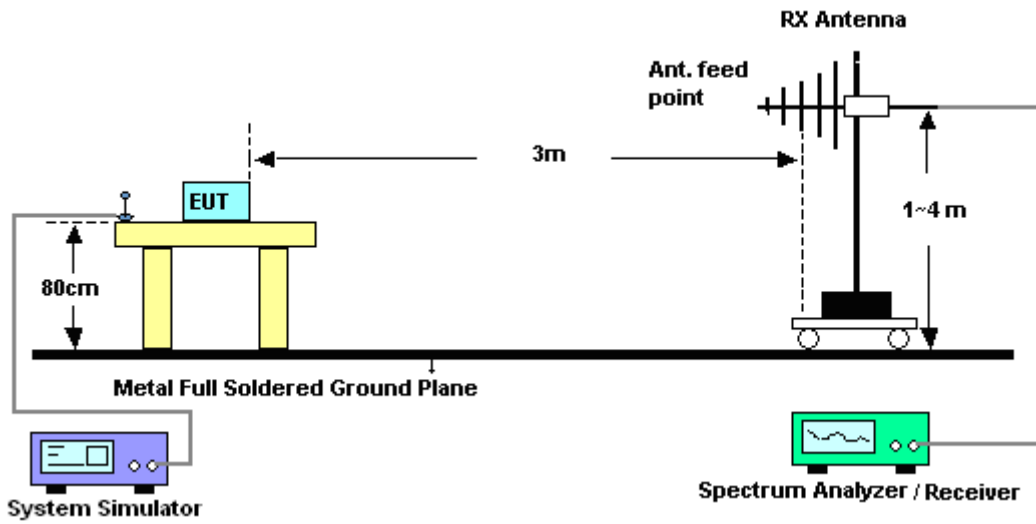
4 Radiated Test Items

4.1 Measuring Instruments

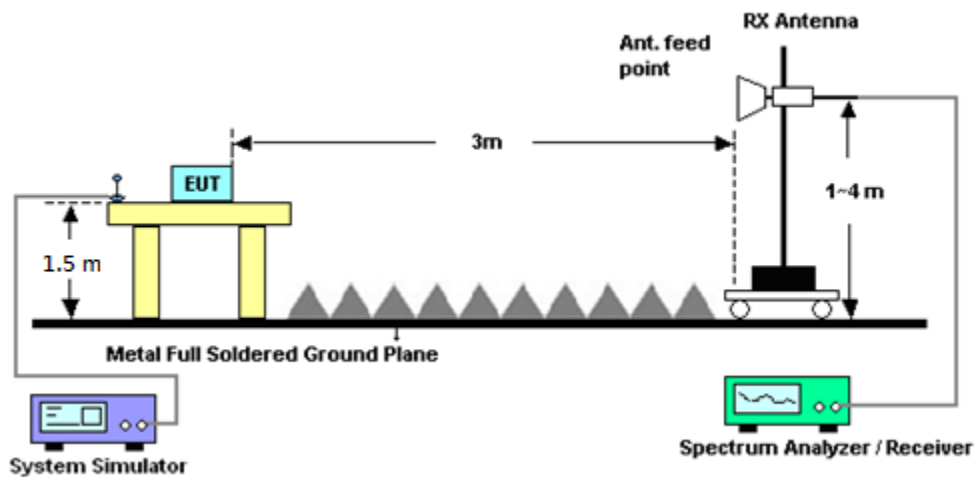
See list of measuring instruments of this test report.

4.1.1 Test Setup

For radiated test from 30MHz to 1GHz



For radiated test above 1GHz



4.1.2 Test Result of Radiated Test

Please refer to Appendix B.



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 5.8 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
LTE Base Station	Anritsu	MT8820C	6201432821	GSM/GPRS /WCDMA/LTE	Oct. 14, 2018	Oct. 14, 2018~ Nov. 06, 2018	Oct. 13, 2019	Conducted (TH05-HY)
Base Station (Measure)	Anritsu	MT8821C	6201664755	GSM / GPRS /WCDMA / LTE FDD/TDD with 44) /LTE-3CC DLCA,2CC ULCA	Mar. 26, 2018	Oct. 14, 2018~ Nov. 06, 2018	Mar. 25, 2019	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890094	1V~20V 0.5A~5A	Oct. 02, 2018	Oct. 14, 2018~ Nov. 06, 2018	Oct. 01, 2019	Conducted (TH05-HY)
Coupler	Warison	1-18GHz 20dB 25WSMA Directional Coupler	#B	1G~18GHz	Dec. 04, 2017	Oct. 14, 2018~ Nov. 06, 2018	Dec. 03, 2018	Conducted (TH05-HY)
Bilog Antenna	TESEQ	CBL 6111D&0080 2N1D01N-06	47020&06	30MHz to 1GHz	Nov. 20, 2017	Oct. 11, 2018~ Oct. 18, 2018	Nov. 19, 2018	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1328	1GHz ~ 18GHz	Oct. 20, 2017	Oct. 11, 2018~ Oct. 18, 2018	Oct. 19, 2018	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1522	1GHz ~ 18GHz	May 10, 2018	Oct. 11, 2018~ Oct. 18, 2018	May 09, 2019	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 26, 2018	Oct. 11, 2018~ Oct. 18, 2018	Mar. 25, 2019	Radiation (03CH12-HY)
Preamplifier	Keysight	83017A	MY5327014 8	1GHz~26.5GHz	Jan. 15, 2018	Oct. 11, 2018~ Oct. 18, 2018	Jan. 14, 2019	Radiation (03CH12-HY)
Preamplifier	MITEQ	AMF-7D-001 01800-30-10 P	1590074	1GHz~18GHz	May 21, 2018	Oct. 11, 2018~ Oct. 18, 2018	May 20, 2019	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 05, 2017	Oct. 11, 2018~ Oct. 18, 2018	Dec. 04, 2018	Radiation (03CH12-HY)
Spectrum Analyzer	Keysight	N9010A	MY5420048 5	10Hz ~ 44GHz	Oct. 31, 2017	Oct. 11, 2018~ Oct. 18, 2018	Oct. 30, 2018	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY15539/4	30M-18G	Mar. 14, 2018	Oct. 11, 2018~ Oct. 18, 2018	Mar. 13, 2019	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Oct. 20, 2017	Oct. 11, 2018~ Oct. 18, 2018	Oct. 19, 2018	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30M~40GHz	Oct. 20, 2017	Oct. 11, 2018~ Oct. 18, 2018	Oct. 19, 2018	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Oct. 11, 2018~ Oct. 18, 2018	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500 -B	N/A	1m~4m	N/A	Oct. 11, 2018~ Oct. 18, 2018	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Oct. 11, 2018~ Oct. 18, 2018	N/A	Radiation (03CH12-HY)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz ~ 40GHz	Nov. 27, 2017	Oct. 11, 2018~ Oct. 18, 2018	Nov. 26, 2018	Radiation (03CH12-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100390	20Hz~26.5GHz	Dec. 25, 2017	Oct. 11, 2018~ Oct. 18, 2018	Dec. 24, 2018	Radiation (03CH12-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	May 21, 2018	Oct. 11, 2018~ Oct. 18, 2018	May 20, 2019	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Oct. 11, 2018~ Oct. 18, 2018	N/A	Radiation (03CH12-HY)
Filter	Wainwright	WLJ4-1000- 1530-6000-4 0ST	SN3	1.53 GHz Lowpass	Mar. 21, 2018	Oct. 11, 2018~ Oct. 18, 2018	Mar. 20, 2019	Radiation (03CH12-HY)
Filter	Woken	WHKX8-527 2.5-6750-18 000-40ST	SN2	6.75G Highpass	Mar. 21, 2018	Oct. 11, 2018~ Oct. 18, 2018	Mar. 20, 2019	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCD1800/ 2000-20/40- 10SSK	SN1	LTE Band 25	Aug. 23, 2018	Oct. 11, 2018~ Oct. 18, 2018	Aug. 22, 2019	Radiation (03CH12-HY)
Notch Filter	Wainwright	WTRCD10-1 710-1785-20 -40-40SSK	SN1	1710-1785	May 22, 2018	Oct. 11, 2018~ Oct. 18, 2018	May 21, 2019	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCT/800/9 60-0.2/40-8S SK	SN11	GSM850	Aug. 23, 2018	Oct. 11, 2018~ Oct. 18, 2018	Aug. 22, 2019	Radiation (03CH12-HY)
Notch Filter	Wainwright	WRCT698/7 98-10/40 8SSK	SN1	AWS Band	Nov. 08, 2017	Oct. 11, 2018~ Oct. 18, 2018	Nov. 07, 2018	Radiation (03CH12-HY)

6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.10
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.20
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.70
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.99	23.73	23.75
20	1	49		23.72	23.68	23.62
20	1	99		23.89	23.70	23.59
20	50	0		22.92	22.90	22.90
20	50	24		22.85	22.82	22.85
20	50	50		22.80	22.78	22.76
20	100	0		22.87	22.84	22.83
20	1	0	16-QAM	22.96	22.94	22.86
20	1	49		22.96	22.75	22.99
20	1	99		22.98	22.91	22.95
20	50	0		21.89	21.86	21.90
20	50	24		21.85	21.79	21.80
20	50	50		21.85	21.72	21.79
20	100	0		21.83	21.77	21.79
20	1	0	64-QAM	22.00	21.99	21.85
20	1	49		21.99	21.72	22.00
20	1	99		21.88	21.95	21.94
20	50	0		20.90	20.92	20.97
20	50	24		20.79	20.78	20.89
20	50	50		20.83	20.79	20.76
20	100	0		20.76	20.76	20.82
15	1	0	QPSK	23.81	23.72	23.71
15	1	37		23.65	23.62	23.62
15	1	74		23.72	23.74	23.60
15	36	0		22.87	22.86	22.86
15	36	20		22.86	22.80	22.81
15	36	39		22.80	22.73	22.77
15	75	0		22.83	22.80	22.81
15	1	0	16-QAM	22.98	22.92	22.96
15	1	37		22.99	22.99	22.98
15	1	74		22.92	22.87	22.95
15	36	0		21.88	21.80	21.79
15	36	20		21.86	21.76	21.76
15	36	39		21.78	21.70	21.70
15	75	0		21.83	21.77	21.80
15	1	0	64-QAM	22.05	21.99	21.76
15	1	37		21.99	21.75	21.91
15	1	74		22.02	21.89	22.03
15	36	0		20.97	20.80	20.92
15	36	20		20.85	20.80	20.72
15	36	39		20.81	20.79	20.75
15	75	0		20.85	20.80	20.77



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.86	23.75	23.82
10	1	25		23.85	23.80	23.70
10	1	49		23.81	23.66	23.76
10	25	0		22.93	22.85	22.82
10	25	12		22.93	22.86	22.85
10	25	25		22.86	22.77	22.76
10	50	0		22.95	22.84	22.80
10	1	0	16-QAM	22.94	22.98	22.99
10	1	25		22.99	22.86	22.91
10	1	49		23.00	22.94	22.85
10	25	0		21.92	21.83	21.82
10	25	12		21.90	21.83	21.84
10	25	25		21.88	21.78	21.77
10	50	0		21.88	21.81	21.83
10	1	0	64-QAM	22.00	21.94	21.82
10	1	25		21.86	21.70	21.96
10	1	49		21.89	21.99	22.05
10	25	0		20.88	20.93	20.86
10	25	12		20.84	20.87	20.70
10	25	25		20.93	20.75	20.70
10	50	0		20.79	20.77	20.80
5	1	0	QPSK	23.63	23.23	23.47
5	1	12		23.99	23.64	23.49
5	1	24		23.98	23.80	22.55
5	12	0		22.92	22.97	22.92
5	12	7		22.99	22.87	22.98
5	12	13		22.95	22.84	22.93
5	25	0		22.99	22.98	22.91
5	1	0	16-QAM	22.86	22.88	22.75
5	1	12		21.99	21.89	22.29
5	1	24		22.93	22.63	22.51
5	12	0		21.96	21.95	21.90
5	12	7		21.97	21.94	21.92
5	12	13		21.98	21.84	21.91
5	25	0		21.90	21.81	21.80
5	1	0	64-QAM	22.06	21.93	21.90
5	1	12		21.93	21.75	21.94
5	1	24		22.05	21.96	21.95
5	12	0		20.93	20.94	20.88
5	12	7		20.80	20.77	20.80
5	12	13		20.86	20.72	20.69
5	25	0		20.81	20.83	20.78



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.61	23.15	23.22
3	1	8		23.29	23.49	22.92
3	1	14		23.72	23.47	23.07
3	8	0		22.74	22.49	22.65
3	8	4		22.72	22.59	22.74
3	8	7		22.73	22.60	22.53
3	15	0		22.76	22.65	22.62
3	1	0	16-QAM	22.66	22.90	22.62
3	1	8		22.26	22.93	22.52
3	1	14		22.99	22.78	22.55
3	8	0		21.90	21.52	21.80
3	8	4		21.74	21.63	21.40
3	8	7		21.81	21.62	21.55
3	15	0		21.75	21.56	21.71
3	1	0	64-QAM	22.03	21.87	21.83
3	1	8		22.03	21.68	21.95
3	1	14		21.97	21.90	21.85
3	8	0		20.92	20.96	20.87
3	8	4		20.84	20.89	20.76
3	8	7		20.82	20.82	20.83
3	15	0		20.77	20.87	20.74
1.4	1	0	QPSK	23.47	23.73	23.65
1.4	1	3		23.36	23.65	22.82
1.4	1	5		23.39	23.37	23.69
1.4	3	0		23.31	23.38	22.83
1.4	3	1		22.96	23.50	22.76
1.4	3	3		23.50	23.55	23.59
1.4	6	0		22.62	22.40	22.60
1.4	1	0	16-QAM	22.99	22.18	22.58
1.4	1	3		22.99	22.62	22.46
1.4	1	5		22.44	22.95	22.63
1.4	3	0		22.30	22.43	22.09
1.4	3	1		22.84	21.81	22.68
1.4	3	3		22.57	22.67	22.26
1.4	6	0		21.66	21.63	21.63
1.4	1	0	64-QAM	22.02	21.93	21.90
1.4	1	3		21.96	21.68	21.92
1.4	1	5		21.89	21.89	22.00
1.4	3	0		20.84	20.86	20.92
1.4	3	1		20.77	20.77	20.85
1.4	3	3		20.82	20.62	20.69
1.4	6	0		20.83	20.69	20.88



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.65	23.96	23.86
20	1	49		23.68	23.65	23.69
20	1	99		23.66	23.82	23.63
20	50	0		22.78	22.85	22.87
20	50	24		22.79	22.83	22.79
20	50	50		22.73	22.77	22.75
20	100	0		22.74	22.83	22.82
20	1	0	16-QAM	22.97	22.96	22.99
20	1	49		22.88	22.82	22.83
20	1	99		22.99	22.80	22.84
20	50	0		21.84	21.88	21.91
20	50	24		21.79	21.83	21.84
20	50	50		21.74	21.80	21.73
20	100	0		21.81	21.79	21.78
20	1	0	64-QAM	22.05	21.88	22.06
20	1	49		21.93	21.72	21.81
20	1	99		21.98	21.72	21.79
20	50	0		20.92	20.92	20.95
20	50	24		20.74	20.92	20.91
20	50	50		20.71	20.84	20.70
20	100	0		20.81	20.88	20.88
15	1	0	QPSK	23.74	23.90	23.77
15	1	37		23.66	23.70	23.63
15	1	74		23.68	23.81	23.60
15	36	0		22.86	22.89	22.89
15	36	20		22.87	22.90	22.84
15	36	39		22.78	22.83	22.80
15	75	0		22.78	22.87	22.82
15	1	0	16-QAM	22.99	22.99	22.99
15	1	37		22.99	22.97	22.99
15	1	74		22.96	22.99	22.99
15	36	0		21.84	21.89	21.86
15	36	20		21.83	21.88	21.86
15	36	39		21.80	21.79	21.79
15	75	0		21.83	21.86	21.82
15	1	0	64-QAM	21.92	21.98	21.90
15	1	37		21.88	21.89	21.85
15	1	74		22.00	21.80	21.94
15	36	0		20.92	20.89	20.95
15	36	20		20.74	20.75	20.90
15	36	39		20.80	20.75	20.65
15	75	0		20.85	20.86	20.71



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.74	23.85	23.81
10	1	25		23.64	23.95	23.74
10	1	49		23.64	23.69	23.63
10	25	0		22.78	22.87	22.82
10	25	12		22.74	22.88	22.83
10	25	25		22.76	22.81	22.77
10	50	0		22.79	22.81	22.80
10	1	0	16-QAM	23.00	22.99	22.99
10	1	25		22.86	22.99	22.99
10	1	49		22.88	22.99	22.85
10	25	0		21.77	21.87	21.83
10	25	12		21.78	21.87	21.85
10	25	25		21.77	21.80	21.81
10	50	0		21.80	21.87	21.85
10	1	0	64-QAM	21.98	21.99	21.91
10	1	25		21.91	21.87	21.90
10	1	49		21.93	21.77	21.79
10	25	0		20.90	20.93	20.90
10	25	12		20.69	20.74	20.94
10	25	25		20.65	20.72	20.63
10	50	0		20.85	20.88	20.80
5	1	0	QPSK	23.39	23.50	23.10
5	1	12		22.83	23.73	22.60
5	1	24		23.66	23.87	23.55
5	12	0		22.74	22.91	22.90
5	12	7		22.85	22.89	22.99
5	12	13		22.84	22.87	22.80
5	25	0		22.78	22.92	22.81
5	1	0	16-QAM	22.95	22.97	22.99
5	1	12		22.77	22.99	22.94
5	1	24		22.66	22.59	22.67
5	12	0		21.77	21.92	21.87
5	12	7		21.83	21.88	21.77
5	12	13		21.79	21.91	21.84
5	25	0		21.87	21.80	21.87
5	1	0	64-QAM	21.90	21.95	21.89
5	1	12		21.79	21.77	21.78
5	1	24		21.99	21.73	21.89
5	12	0		20.90	20.82	21.01
5	12	7		20.87	20.89	20.92
5	12	13		20.71	20.74	20.68
5	25	0		20.88	20.70	20.80



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.17	23.38	23.89
3	1	8		23.72	23.33	23.67
3	1	14		23.49	23.59	23.41
3	8	0		22.48	22.67	22.49
3	8	4		22.49	22.67	22.49
3	8	7		22.41	22.63	22.58
3	15	0		22.65	22.76	22.68
3	1	0	16-QAM	22.75	22.99	22.85
3	1	8		22.68	22.83	22.68
3	1	14		22.41	22.41	22.64
3	8	0		21.60	21.53	21.53
3	8	4		21.69	21.84	21.60
3	8	7		21.62	21.79	21.50
3	15	0		21.56	21.55	21.70
3	1	0	64-QAM	21.99	22.02	21.99
3	1	8		21.88	21.73	21.84
3	1	14		21.97	21.88	21.90
3	8	0		20.90	20.94	20.86
3	8	4		20.70	20.90	20.87
3	8	7		20.64	20.87	20.80
3	15	0		20.77	20.71	20.69
1.4	1	0	QPSK	23.85	23.76	23.54
1.4	1	3		23.34	23.07	22.61
1.4	1	5		23.20	23.69	23.41
1.4	3	0		23.41	23.10	23.16
1.4	3	1		23.30	23.12	23.37
1.4	3	3		23.29	23.39	23.25
1.4	6	0		22.53	22.50	22.51
1.4	1	0	16-QAM	22.44	22.80	22.70
1.4	1	3		22.58	22.42	22.98
1.4	1	5		22.90	22.86	22.27
1.4	3	0		22.13	22.42	22.18
1.4	3	1		22.22	22.47	22.32
1.4	3	3		22.52	22.51	22.22
1.4	6	0		21.52	21.64	21.54
1.4	1	0	64-QAM	21.89	21.95	22.06
1.4	1	3		21.93	21.92	21.88
1.4	1	5		21.94	21.81	21.77
1.4	3	0		20.75	20.81	20.96
1.4	3	1		20.89	20.84	20.83
1.4	3	3		20.79	20.72	20.71
1.4	6	0		20.88	20.82	20.86



LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.81	23.56	23.40
10	1	25		23.39	23.54	23.54
10	1	49		23.50	23.41	23.42
10	25	0		22.62	22.62	22.61
10	25	12		22.60	22.58	22.58
10	25	25		22.52	22.50	22.52
10	50	0		22.58	22.55	22.57
10	1	0	16-QAM	22.75	22.83	22.64
10	1	25		22.68	22.64	22.74
10	1	49		22.61	22.58	22.72
10	25	0		21.62	21.66	21.60
10	25	12		21.60	21.60	21.59
10	25	25		21.55	21.47	21.53
10	50	0		21.60	21.56	21.58
10	1	0	64-QAM	21.56	21.63	21.57
10	1	25		21.43	21.60	21.47
10	1	49		21.33	21.53	21.46
10	25	0		20.33	20.39	20.36
10	25	12		20.16	20.28	20.12
10	25	25		20.36	20.36	20.33
10	50	0		20.25	20.36	20.34
5	1	0	QPSK	23.32	22.51	22.88
5	1	12		23.30	23.54	22.28
5	1	24		23.54	23.43	23.21
5	12	0		22.53	22.54	22.54
5	12	7		22.69	22.52	22.55
5	12	13		22.59	22.53	22.48
5	25	0		22.59	22.57	22.60
5	1	0	16-QAM	22.34	22.59	22.99
5	1	12		22.99	22.34	21.47
5	1	24		22.40	22.57	21.44
5	12	0		21.57	21.46	21.65
5	12	7		21.63	21.63	21.70
5	12	13		21.52	21.52	21.50
5	25	0		21.59	21.50	21.59
5	1	0	64-QAM	21.28	21.36	21.25
5	1	12		21.31	21.41	21.35
5	1	24		21.26	21.33	21.31
5	12	0		20.24	20.39	20.21
5	12	7		20.24	20.41	20.29
5	12	13		20.37	20.39	20.19
5	25	0		20.34	20.47	20.30



LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.37	23.23	23.80
3	1	8		22.72	23.27	23.64
3	1	14		23.09	22.69	23.29
3	8	0		22.99	22.60	22.63
3	8	4		22.45	22.69	22.35
3	8	7		22.51	22.68	22.61
3	15	0		22.57	22.55	22.60
3	1	0	16-QAM	21.95	22.35	22.51
3	1	8		21.62	22.41	22.83
3	1	14		21.81	22.26	22.73
3	8	0		21.62	21.68	21.80
3	8	4		21.61	21.57	21.70
3	8	7		21.54	21.39	21.76
3	15	0		21.63	21.66	21.82
3	1	0	64-QAM	21.22	21.41	21.30
3	1	8		21.20	21.40	21.27
3	1	14		21.30	21.41	21.28
3	8	0		20.12	20.25	20.13
3	8	4		20.09	20.23	20.16
3	8	7		20.13	20.31	20.30
3	15	0		20.20	20.34	20.19
1.4	1	0	QPSK	22.45	23.31	23.39
1.4	1	3		22.61	23.64	23.73
1.4	1	5		22.82	23.32	22.22
1.4	3	0		23.30	23.29	23.34
1.4	3	1		23.77	23.53	23.48
1.4	3	3		23.35	23.30	23.44
1.4	6	0		22.19	22.31	22.40
1.4	1	0	16-QAM	21.80	22.53	21.89
1.4	1	3		21.52	22.68	22.62
1.4	1	5		22.41	22.67	22.49
1.4	3	0		22.01	21.76	22.32
1.4	3	1		22.58	22.43	21.96
1.4	3	3		22.08	22.02	22.55
1.4	6	0		21.37	21.44	21.48
1.4	1	0	64-QAM	21.09	21.25	21.20
1.4	1	3		21.06	21.19	21.09
1.4	1	5		21.06	21.26	21.16
1.4	3	0		20.95	21.10	20.96
1.4	3	1		21.13	21.15	21.15
1.4	3	3		21.01	21.03	20.92
1.4	6	0		20.05	20.12	20.01



LTE Band 13 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	-	23.49	-
10	1	25			23.32	
10	1	49			23.31	
10	25	0			22.61	
10	25	12			22.57	
10	25	25			22.48	
10	50	0			22.52	
10	1	0	16-QAM		22.72	
10	1	25			22.69	
10	1	49			22.50	
10	25	0			21.62	
10	25	12			21.58	
10	25	25			21.51	
10	50	0			21.52	
10	1	0	64-QAM		21.63	
10	1	25			21.61	
10	1	49			21.59	
10	25	0			20.51	
10	25	12			20.38	
10	25	25			20.39	
10	50	0			20.46	
5	1	0	QPSK	23.47	23.09	23.38
5	1	12		22.79	22.98	23.38
5	1	24		23.48	23.11	23.03
5	12	0		22.54	22.56	22.56
5	12	7		22.58	22.49	22.53
5	12	13		22.51	22.47	22.47
5	25	0		22.53	22.55	22.55
5	1	0	16-QAM	22.74	21.96	22.99
5	1	12		22.99	22.37	22.96
5	1	24		22.50	22.13	22.09
5	12	0		21.54	21.57	21.56
5	12	7		21.50	21.68	21.54
5	12	13		21.48	21.54	21.40
5	25	0		21.49	21.57	21.54
5	1	0	64-QAM	21.48	21.54	21.49
5	1	12		21.61	21.42	21.59
5	1	24		21.45	21.40	21.44
5	12	0		20.50	20.49	20.39
5	12	7		20.27	20.37	20.29
5	12	13		20.27	20.25	20.24
5	25	0		20.41	20.31	20.36



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.73	23.99	23.69
20	1	49		23.57	23.66	23.61
20	1	99		23.62	23.49	23.52
20	50	0		22.82	22.91	22.85
20	50	24		22.81	22.82	22.79
20	50	50		22.76	22.76	22.48
20	100	0		22.79	22.83	22.81
20	1	0	16-QAM	22.90	22.99	22.98
20	1	49		22.84	22.94	22.84
20	1	99		22.96	22.80	22.67
20	50	0		21.82	21.94	21.82
20	50	24		21.81	21.86	21.74
20	50	50		21.74	21.77	21.69
20	100	0		21.77	21.79	21.75
20	1	0	64-QAM	21.58	21.68	21.61
20	1	49		21.67	21.71	21.52
20	1	99		21.55	21.65	21.39
20	50	0		20.48	20.68	20.36
20	50	24		20.47	20.70	20.53
20	50	50		20.32	20.59	20.43
20	100	0		20.46	20.57	20.51
15	1	0	QPSK	23.69	23.80	23.71
15	1	37		23.68	23.59	23.35
15	1	74		23.58	23.68	23.44
15	36	0		22.77	22.86	22.81
15	36	20		22.80	22.84	22.71
15	36	39		22.79	22.73	22.34
15	75	0		22.74	22.86	22.62
15	1	0	16-QAM	22.97	22.98	22.95
15	1	37		22.77	22.85	22.20
15	1	74		22.85	22.94	22.68
15	36	0		21.74	21.87	21.77
15	36	20		21.75	21.85	21.79
15	36	39		21.69	21.78	21.45
15	75	0		21.75	21.81	21.74
15	1	0	64-QAM	21.54	21.76	21.55
15	1	37		21.55	21.66	21.60
15	1	74		21.50	21.69	21.40
15	36	0		20.33	20.60	20.45
15	36	20		20.49	20.55	20.50
15	36	39		20.35	20.53	20.29
15	75	0		20.48	20.61	20.47



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.59	23.76	23.71
10	1	25		23.59	23.71	23.19
10	1	49		23.55	23.55	23.34
10	25	0		22.67	22.82	22.61
10	25	12		22.69	22.78	22.42
10	25	25		22.65	22.71	22.32
10	50	0		22.69	22.77	22.48
10	1	0	16-QAM	22.82	22.96	22.94
10	1	25		22.86	22.98	22.64
10	1	49		22.77	22.87	22.73
10	25	0		21.70	21.81	21.70
10	25	12		21.66	21.77	21.58
10	25	25		21.64	21.75	21.40
10	50	0		21.73	21.80	21.56
10	1	0	64-QAM	21.45	21.65	21.50
10	1	25		21.57	21.67	21.62
10	1	49		21.52	21.57	21.47
10	25	0		20.31	20.49	20.46
10	25	12		20.47	20.53	20.47
10	25	25		20.40	20.48	20.36
10	50	0		20.49	20.51	20.46
5	1	0	QPSK	23.56	22.99	23.28
5	1	12		23.49	22.71	22.04
5	1	24		23.43	23.39	23.17
5	12	0		22.56	22.52	22.35
5	12	7		22.49	22.59	22.34
5	12	13		22.45	22.56	22.30
5	25	0		22.58	22.58	22.32
5	1	0	16-QAM	21.92	22.18	22.61
5	1	12		21.65	21.63	21.78
5	1	24		22.14	22.23	21.86
5	12	0		21.53	21.59	21.38
5	12	7		21.41	21.67	21.41
5	12	13		21.43	21.51	21.40
5	25	0		21.52	21.53	21.39
5	1	0	64-QAM	21.52	21.55	21.49
5	1	12		21.48	21.59	21.40
5	1	24		21.47	21.54	21.38
5	12	0		20.42	20.56	20.37
5	12	7		20.37	20.55	20.45
5	12	13		20.36	20.54	20.34
5	25	0		20.38	20.54	20.45

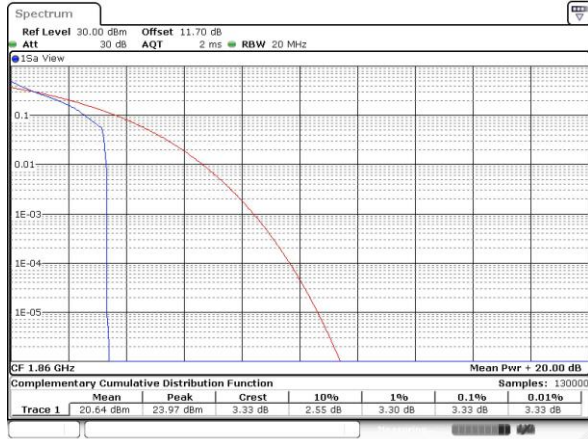


LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.68	23.98	22.80
3	1	8		23.46	23.06	23.25
3	1	14		23.18	23.37	23.17
3	8	0		22.56	22.57	22.26
3	8	4		22.37	22.56	22.29
3	8	7		22.71	22.59	22.22
3	15	0		22.40	22.69	22.29
3	1	0	16-QAM	22.87	21.83	22.37
3	1	8		22.82	22.37	21.23
3	1	14		21.88	22.50	22.58
3	8	0		21.47	21.64	21.38
3	8	4		21.66	21.83	21.42
3	8	7		21.53	21.38	21.41
3	15	0		21.39	21.56	21.40
3	1	0	64-QAM	21.42	21.53	21.43
3	1	8		21.40	21.56	21.53
3	1	14		21.45	21.55	21.37
3	8	0		20.36	20.40	20.30
3	8	4		20.48	20.51	20.48
3	8	7		20.40	20.48	20.40
3	15	0		20.38	20.58	20.38
1.4	1	0	QPSK	22.34	22.81	23.17
1.4	1	3		23.38	23.41	23.11
1.4	1	5		23.51	23.19	23.09
1.4	3	0		23.19	23.21	23.06
1.4	3	1		23.45	23.37	23.17
1.4	3	3		23.17	23.49	23.23
1.4	6	0		22.46	22.34	22.06
1.4	1	0	16-QAM	22.14	22.75	22.10
1.4	1	3		22.30	22.39	22.36
1.4	1	5		22.44	22.72	22.23
1.4	3	0		21.95	22.30	22.06
1.4	3	1		22.24	22.16	21.85
1.4	3	3		22.16	22.12	22.28
1.4	6	0		21.29	21.42	21.31
1.4	1	0	64-QAM	21.14	21.31	21.23
1.4	1	3		21.26	21.33	21.19
1.4	1	5		21.32	21.40	21.24
1.4	3	0		21.08	21.21	21.09
1.4	3	1		21.15	21.28	21.10
1.4	3	3		21.03	21.19	21.12
1.4	6	0		20.24	20.25	20.06

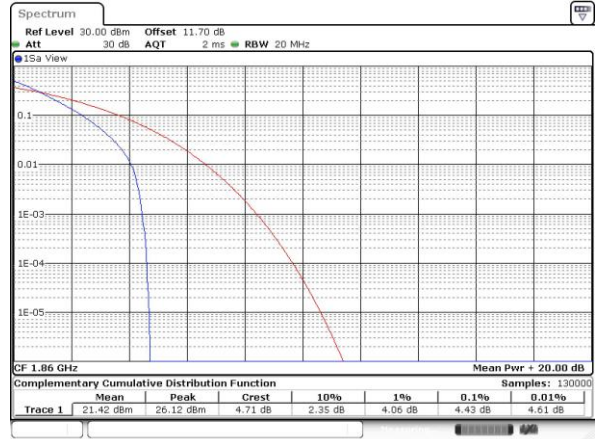
LTE Band 2

Peak-to-Average Ratio

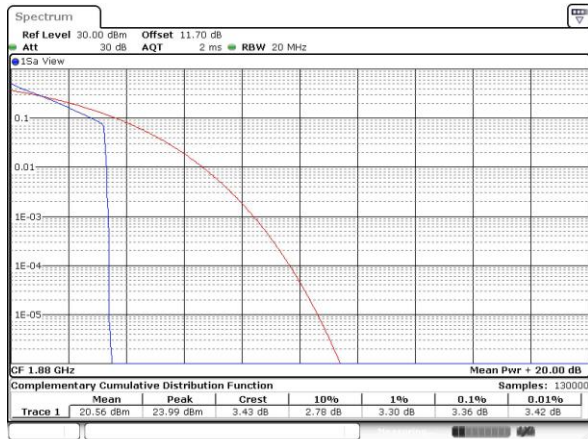
Mode	LTE Band 2 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.33	4.43	4.12	5.48	PASS
Middle CH	3.36	4.43	4.2	5.48	
Highest CH	3.33	4.49	4.12	5.45	
Mode	LTE Band 2 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	4.93	6.12	-	-	PASS
Middle CH	4.96	6.14	-	-	
Highest CH	4.93	6.17	-	-	

LTE Band 2 / 20MHz / QPSK
Lowest Channel / 1RB


Date: 14.OCT.2018 20:37:50

Lowest Channel / Full RB


Date: 14.OCT.2018 20:38:00

Middle Channel / 1RB


Date: 14.OCT.2018 20:38:09

Middle Channel / Full RB


Date: 14.OCT.2018 20:38:19

Highest Channel / 1RB


Date: 14.OCT.2018 20:38:29

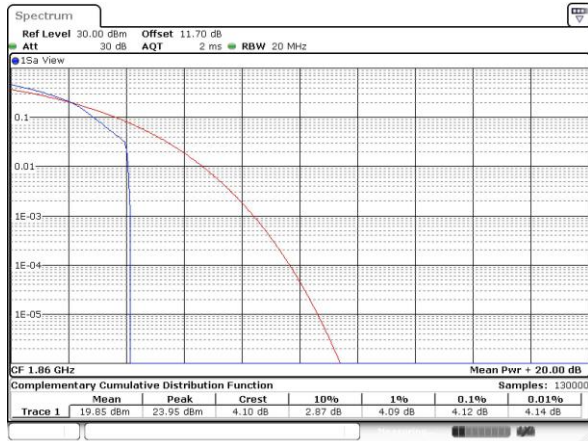
Highest Channel / Full RB


Date: 14.OCT.2018 20:38:39

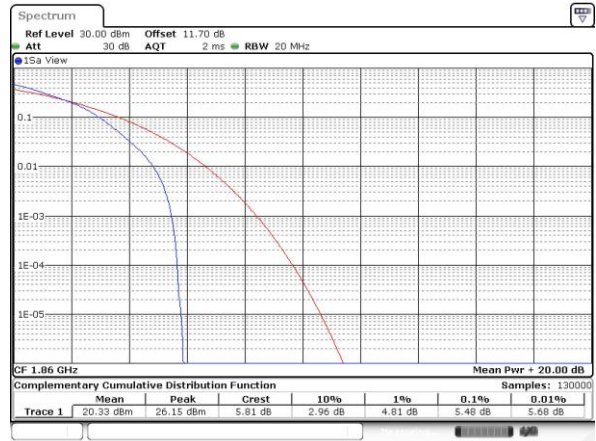


LTE Band 2 / 20MHz / 16QAM

Lowest Channel / 1RB



Lowest Channel / Full RB



Middle Channel / 1RB



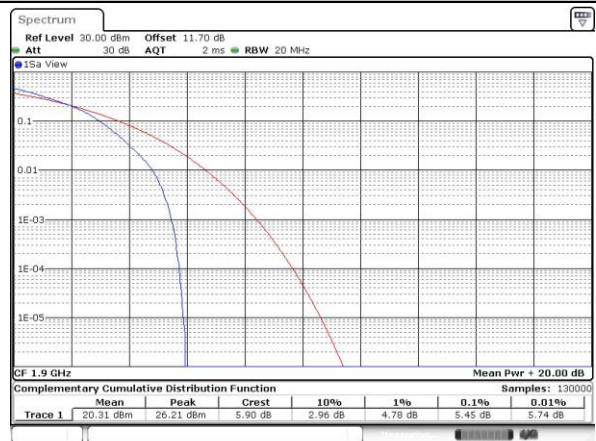
Middle Channel / Full RB



Highest Channel / 1RB



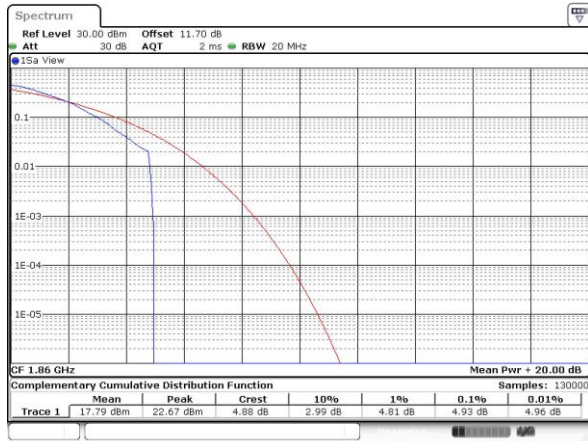
Highest Channel / Full RB



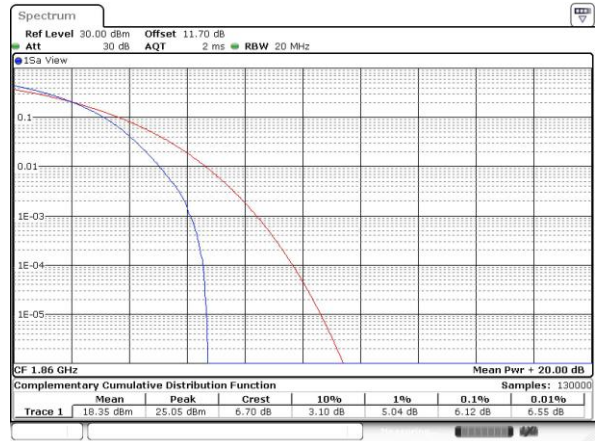


LTE Band 2 / 20MHz / 64QAM

Lowest Channel / 1RB



Lowest Channel / Full RB



Middle Channel / 1RB



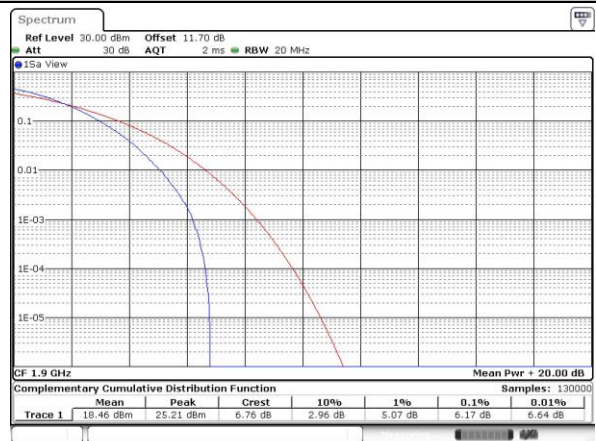
Middle Channel / Full RB



Highest Channel / 1RB



Highest Channel / Full RB



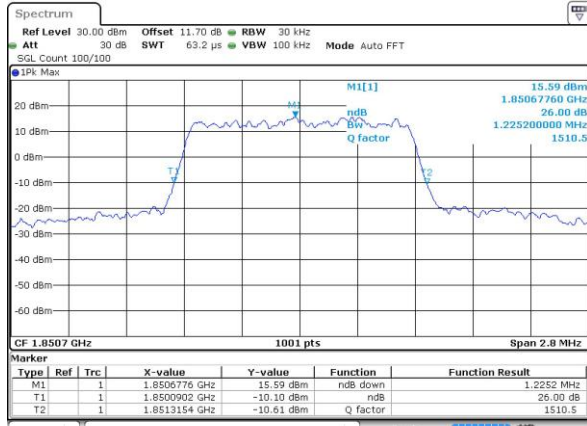
**26dB Bandwidth**

Mode	LTE Band 2 : 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	1.24	2.99	3.02	4.95	4.91	9.95	9.75	14.42	14.48	20.10	20.42
Middle CH	1.23	1.23	3.02	2.97	4.90	4.99	9.75	9.87	14.57	14.42	20.22	20.18
Highest CH	1.23	1.22	3.01	3.05	4.96	4.85	9.69	9.93	14.30	14.33	20.14	20.38
Mode	LTE Band 2 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.22	-	3.02	-	4.97	-	9.95	-	14.39	-	20.26	-
Middle CH	1.25	-	2.99	-	4.89	-	9.71	-	14.27	-	20.22	-
Highest CH	1.24	-	3.03	-	4.92	-	9.73	-	14.36	-	20.14	-



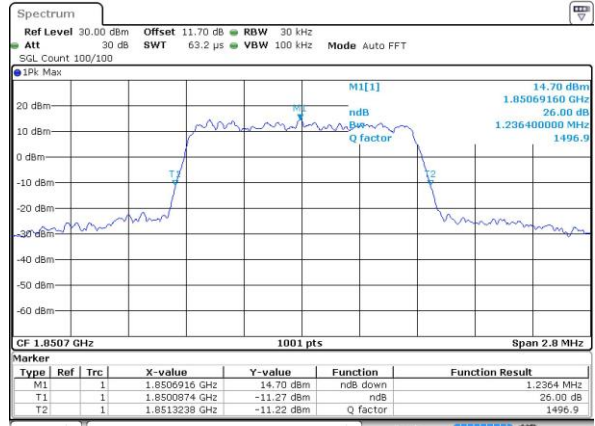
LTE Band 2

Lowest Channel / 1.4MHz / QPSK



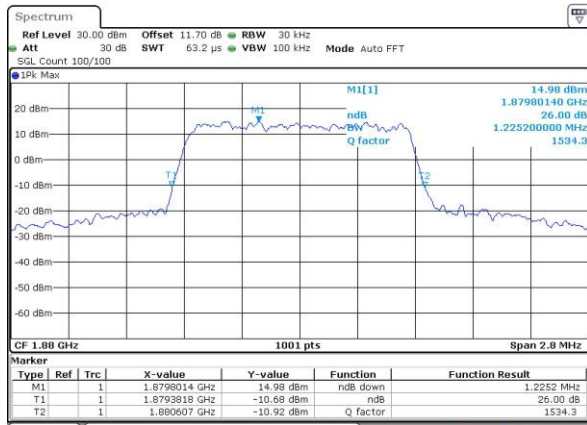
Date: 16.OCT.2018 00:35:23

Lowest Channel / 1.4MHz / 16QAM



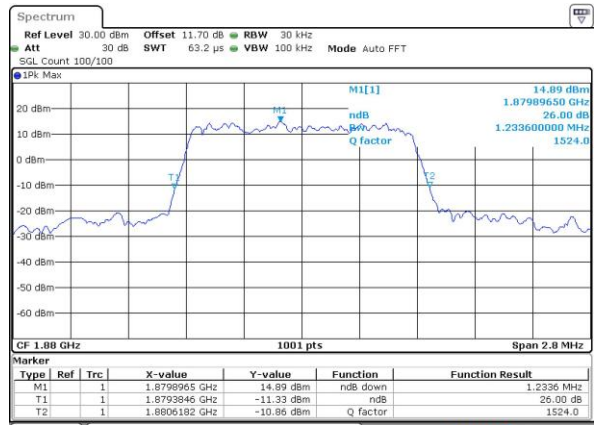
Date: 16.OCT.2018 00:35:35

Middle Channel / 1.4MHz / QPSK



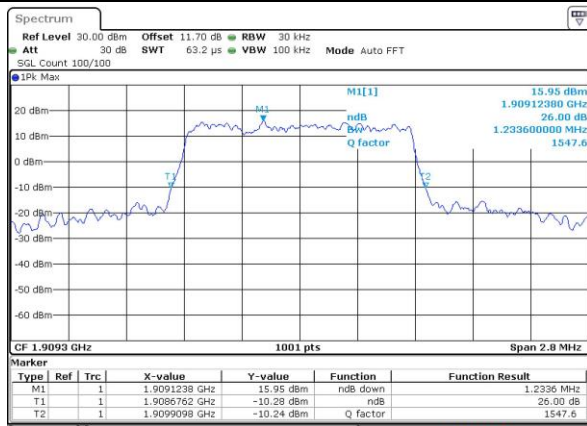
Date: 16.OCT.2018 00:42:30

Middle Channel / 1.4MHz / 16QAM



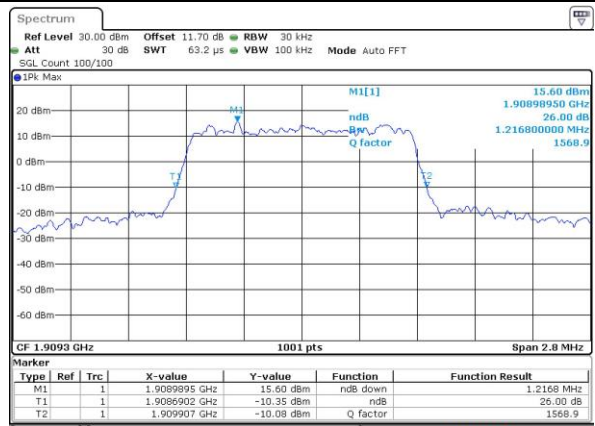
Date: 16.OCT.2018 00:42:42

Highest Channel / 1.4MHz / QPSK



Date: 16.OCT.2018 00:44:57

Highest Channel / 1.4MHz / 16QAM

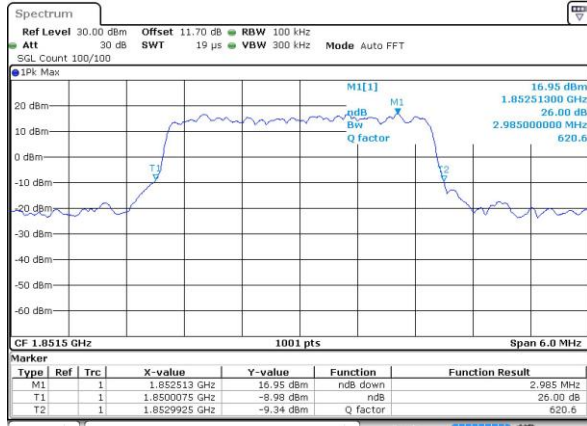


Date: 16.OCT.2018 00:45:08



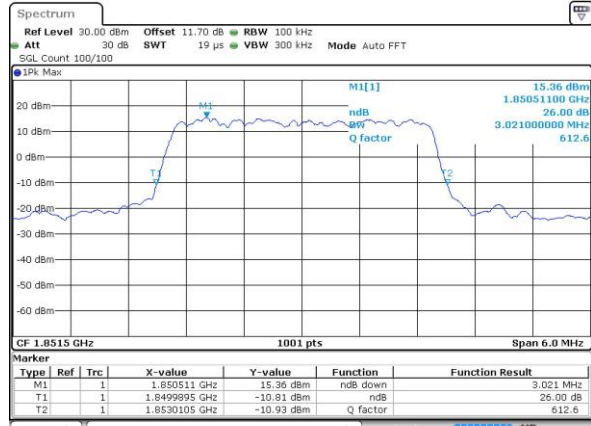
LTE Band 2

Lowest Channel / 3MHz / QPSK



Date: 14.OCT.2018 12:47:20

Lowest Channel / 3MHz / 16QAM



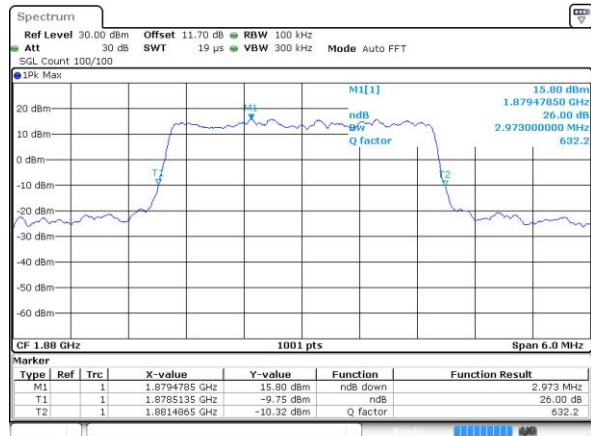
Date: 14.OCT.2018 12:47:32

Middle Channel / 3MHz / QPSK



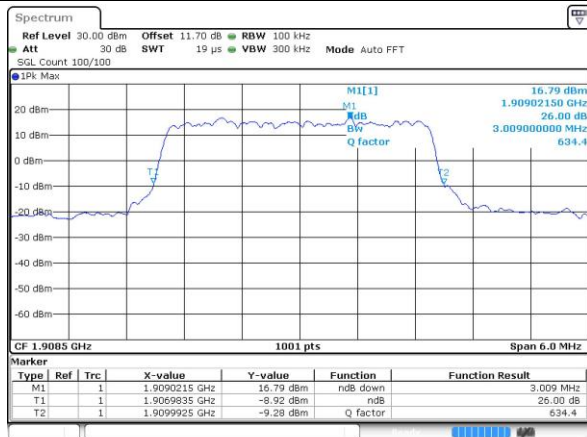
Date: 15.OCT.2018 09:27:15

Middle Channel / 3MHz / 16QAM



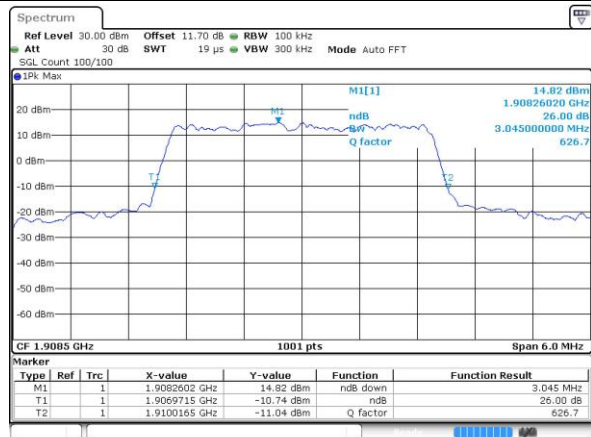
Date: 14.OCT.2018 12:54:39

Highest Channel / 3MHz / QPSK



Date: 14.OCT.2018 12:58:53

Highest Channel / 3MHz / 16QAM

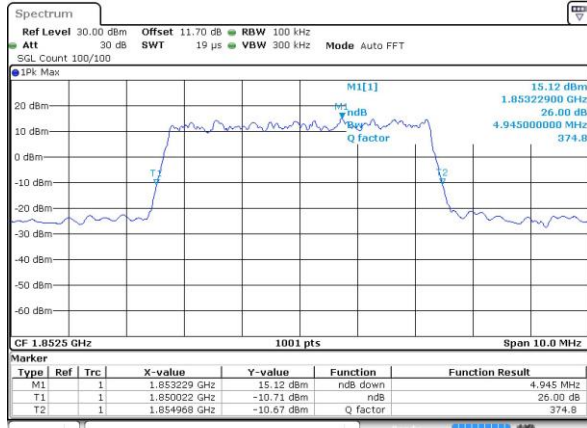


Date: 14.OCT.2018 12:57:05

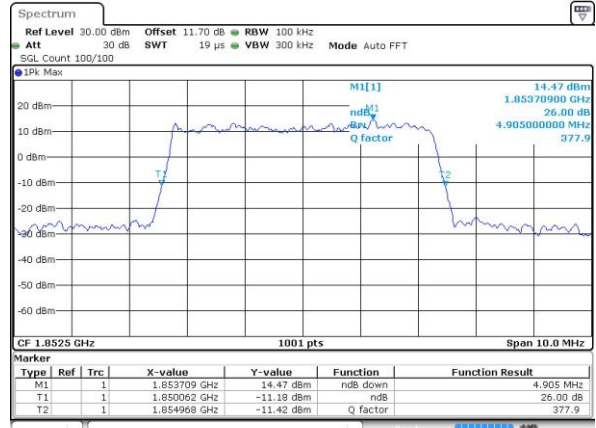


LTE Band 2

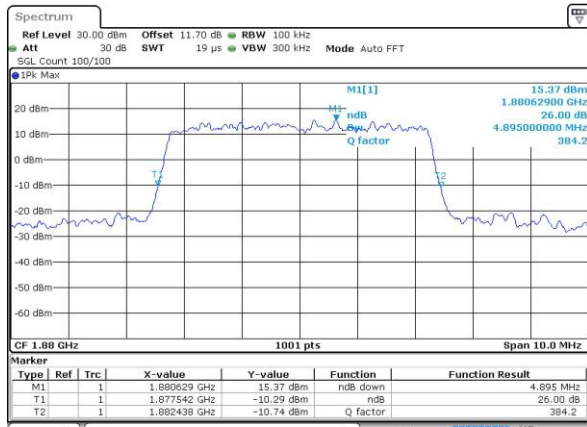
Lowest Channel / 5MHz / QPSK



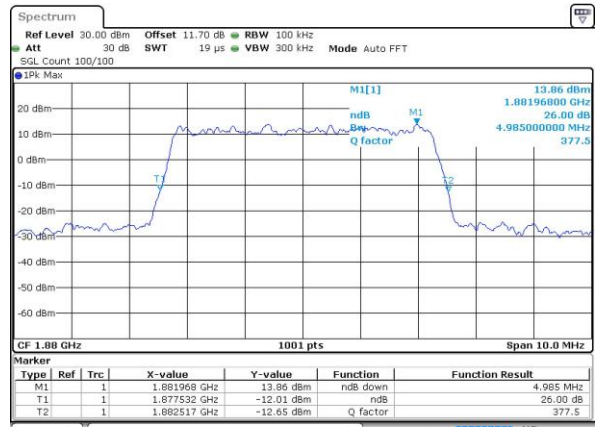
Lowest Channel / 5MHz / 16QAM



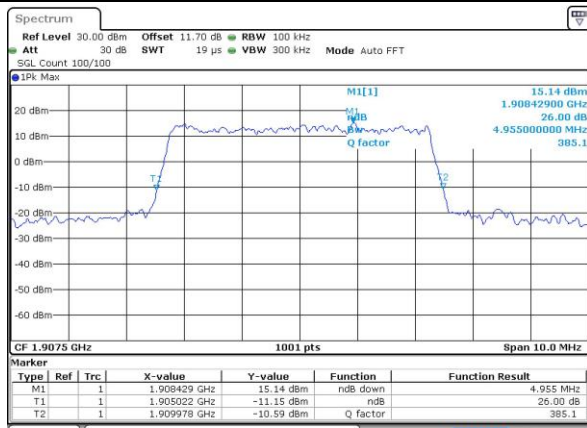
Middle Channel / 5MHz / QPSK



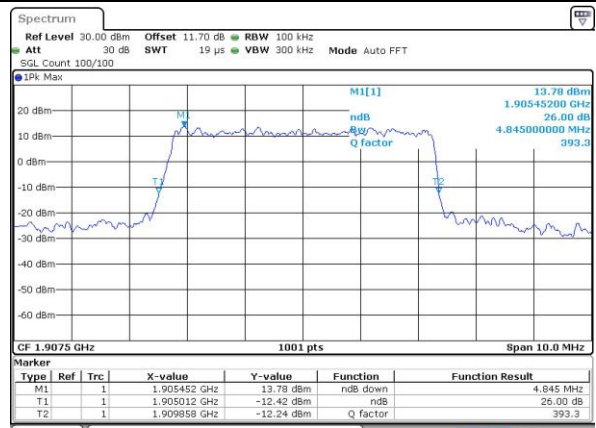
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



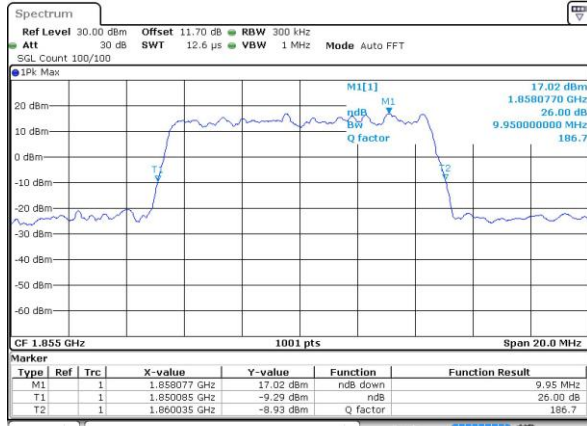
Highest Channel / 5MHz / 16QAM





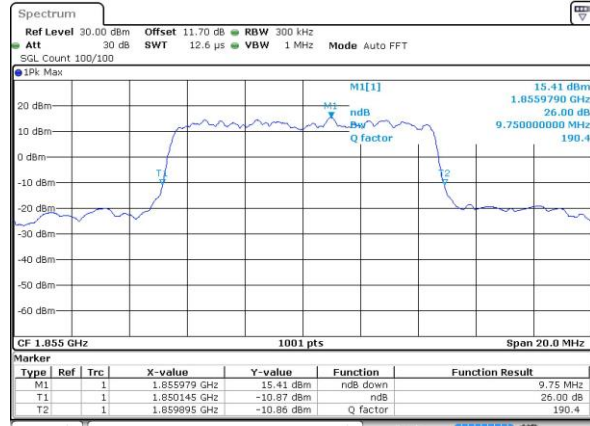
LTE Band 2

Lowest Channel / 10MHz / QPSK



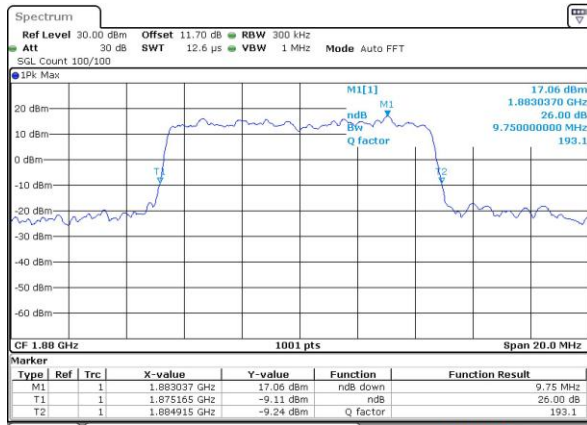
Date: 14.OCT.2018 13:20:39

Lowest Channel / 10MHz / 16QAM



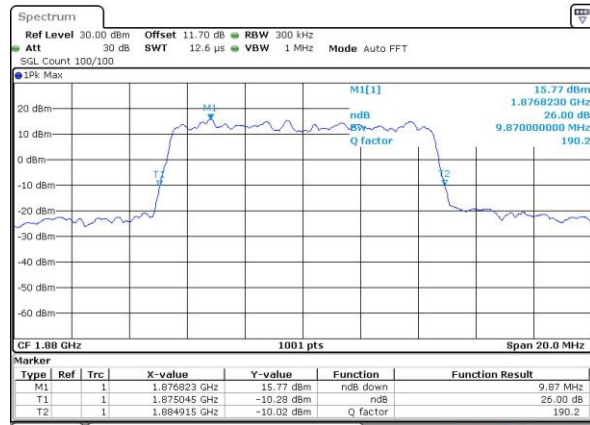
Date: 14.OCT.2018 13:20:50

Middle Channel / 10MHz / QPSK



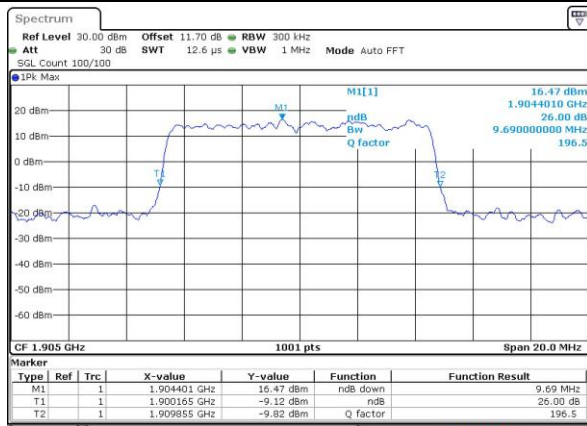
Date: 14.OCT.2018 13:27:46

Middle Channel / 10MHz / 16QAM



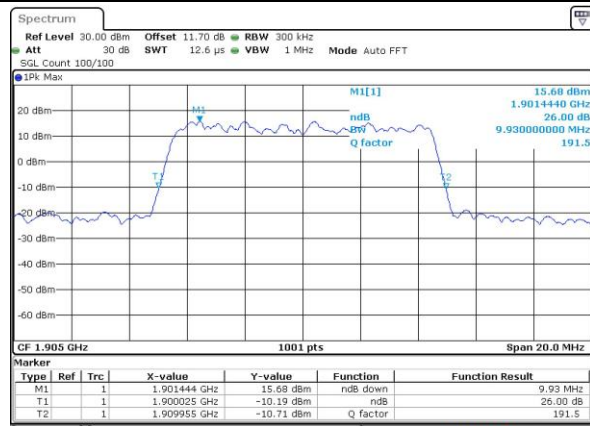
Date: 14.OCT.2018 13:27:57

Highest Channel / 10MHz / QPSK



Date: 14.OCT.2018 13:30:12

Highest Channel / 10MHz / 16QAM

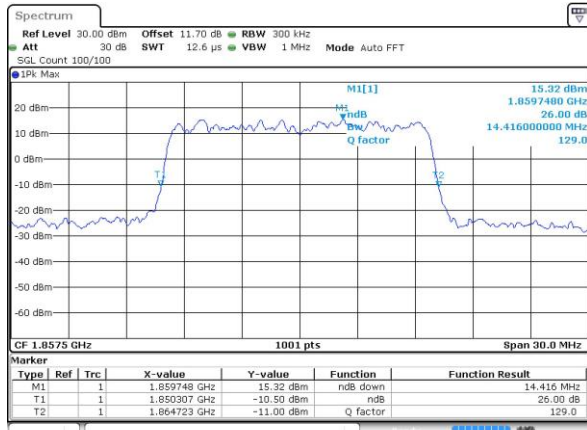


Date: 14.OCT.2018 13:30:24



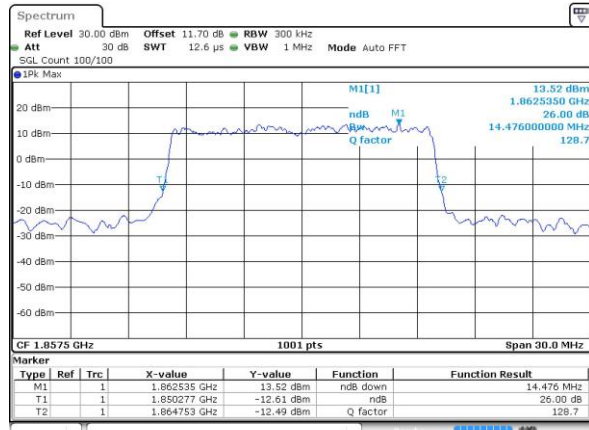
LTE Band 2

Lowest Channel / 15MHz / QPSK



Date: 14.OCT.2018 13:37:19

Lowest Channel / 15MHz / 16QAM



Date: 14.OCT.2018 13:37:30

Middle Channel / 15MHz / QPSK



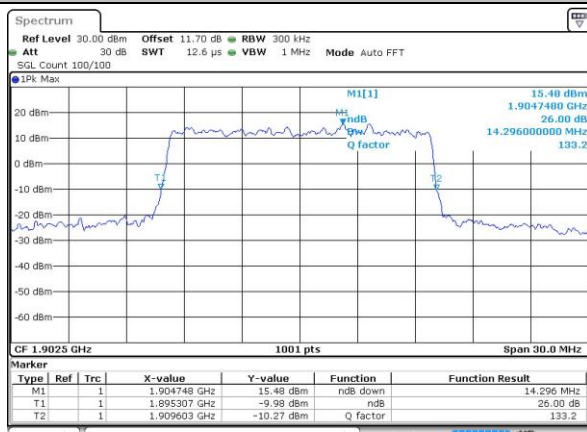
Date: 15.OCT.2018 09:32:20

Middle Channel / 15MHz / 16QAM



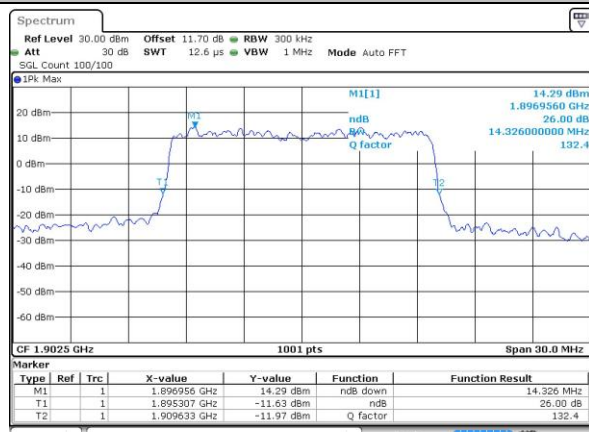
Date: 14.OCT.2018 13:44:37

Highest Channel / 15MHz / QPSK



Date: 14.OCT.2018 13:46:52

Highest Channel / 15MHz / 16QAM

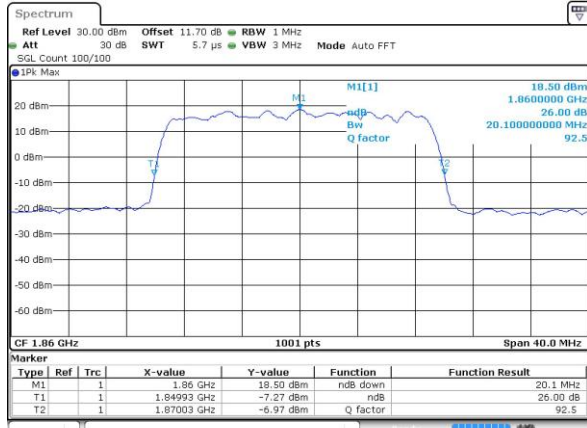


Date: 14.OCT.2018 13:47:04

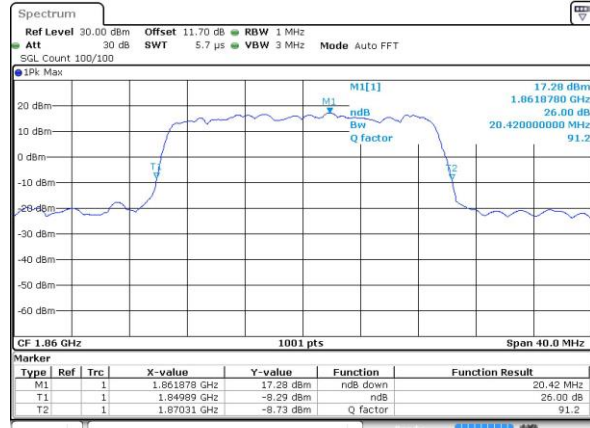


LTE Band 2

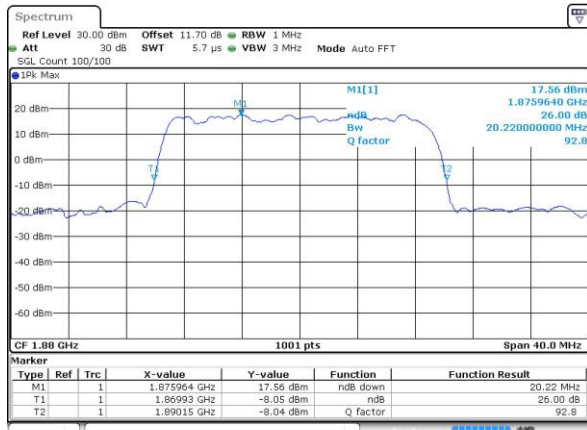
Lowest Channel / 20MHz / QPSK



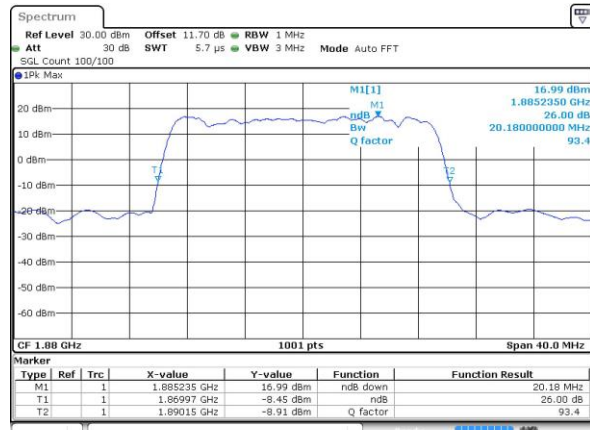
Lowest Channel / 20MHz / 16QAM



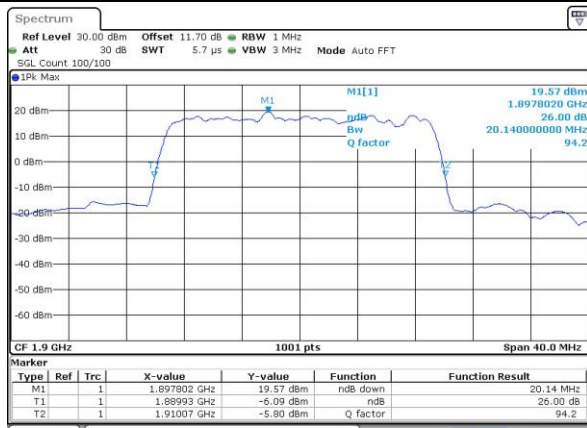
Middle Channel / 20MHz / QPSK



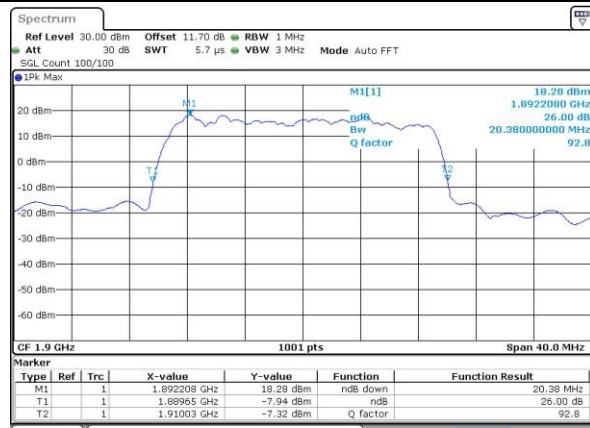
Middle Channel / 20MHz / 16QAM



Highest Channel / 20MHz / QPSK



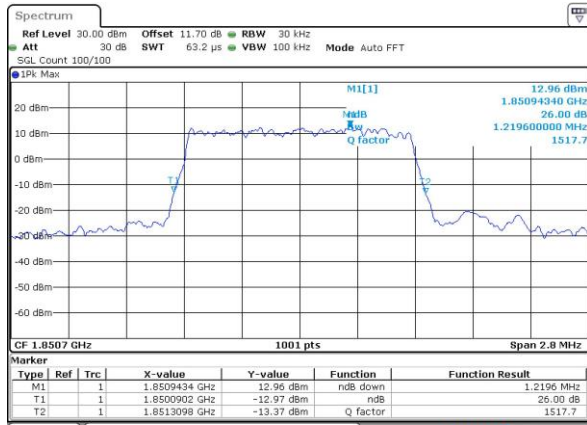
Highest Channel / 20MHz / 16QAM





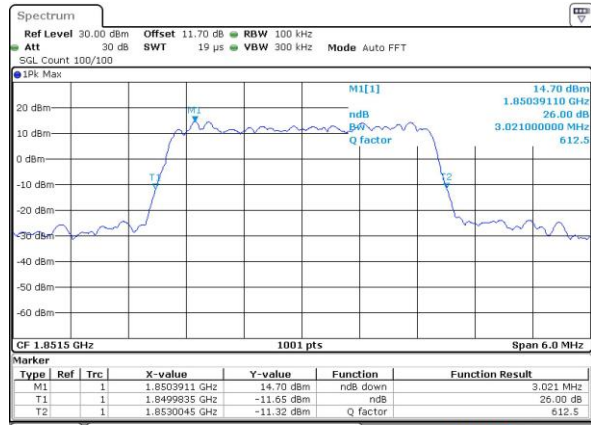
LTE Band 2

Lowest Channel / 1.4MHz / 64QAM



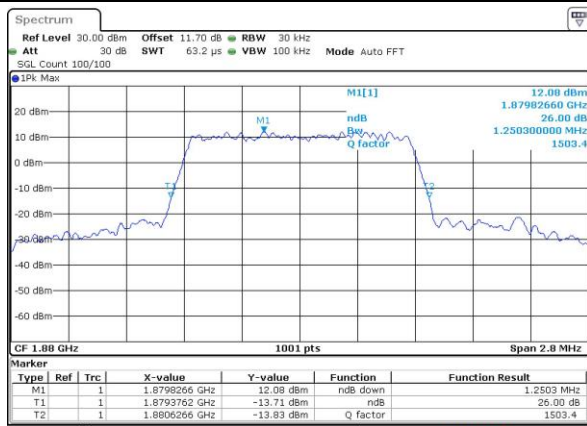
Date: 18.OCT.2018 18:40:58

Lowest Channel / 3MHz / 64QAM



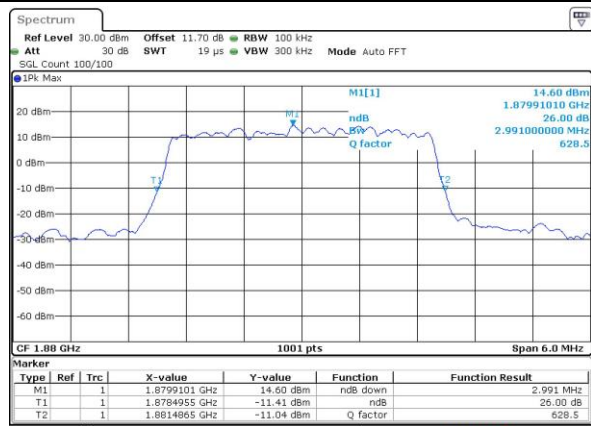
Date: 18.OCT.2018 18:21:22

Middle Channel / 1.4MHz / 64QAM



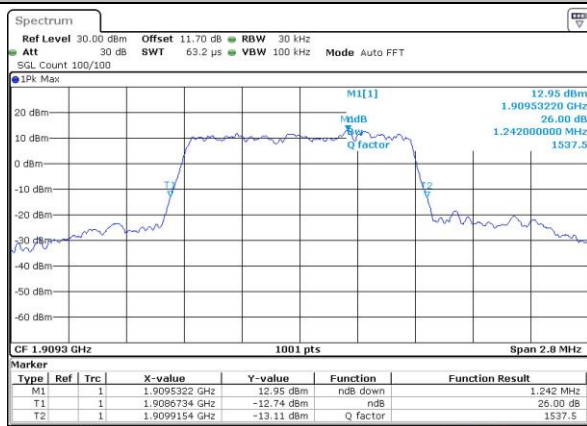
Date: 18.OCT.2018 17:45:19

Middle Channel / 3MHz / 64QAM



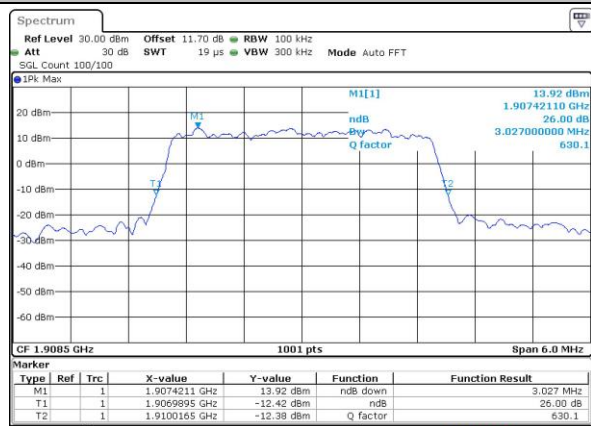
Date: 18.OCT.2018 18:24:06

Highest Channel / 1.4MHz / 64QAM



Date: 18.OCT.2018 17:46:22

Highest Channel / 3MHz / 64QAM

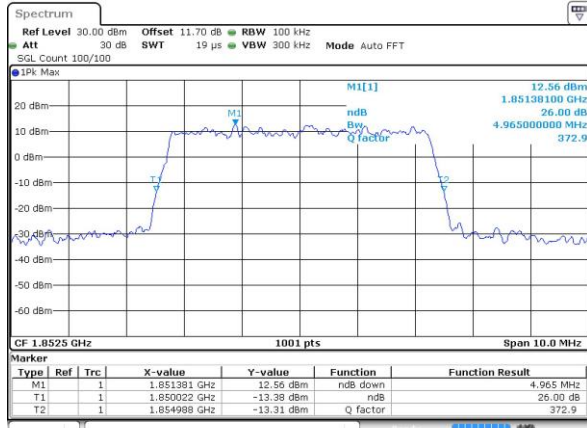


Date: 18.OCT.2018 18:25:09



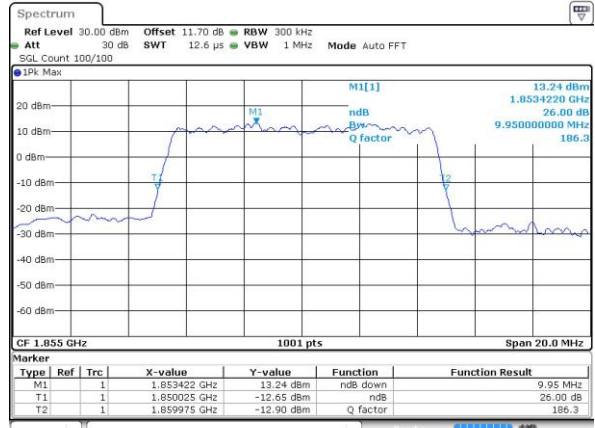
LTE Band 2

Lowest Channel / 5MHz / 64QAM



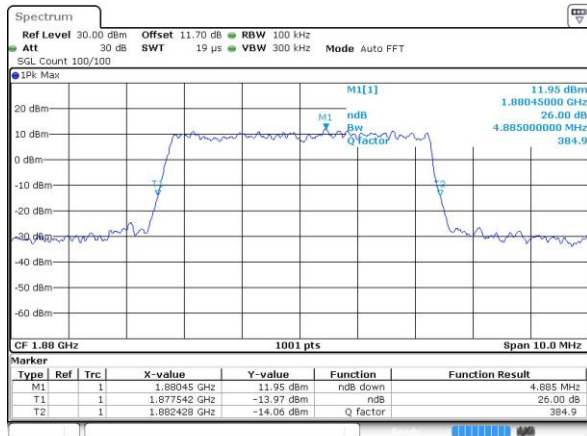
Date: 18.OCT.2018 16:27:53

Lowest Channel / 10MHz / 64QAM



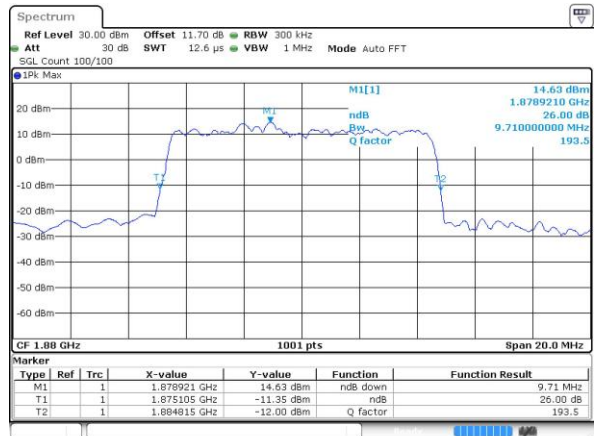
Date: 18.OCT.2018 16:51:42

Middle Channel / 5MHz / 64QAM



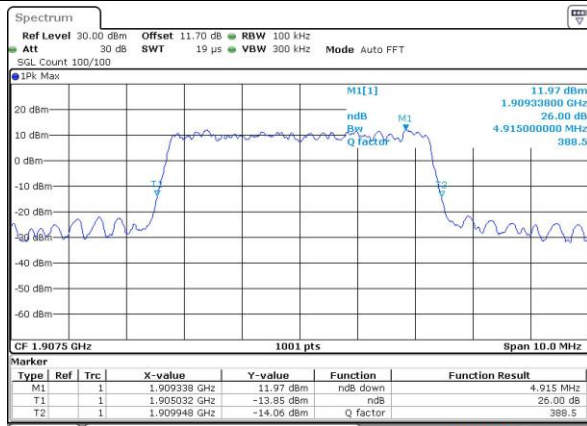
Date: 18.OCT.2018 16:47:54

Middle Channel / 10MHz / 64QAM



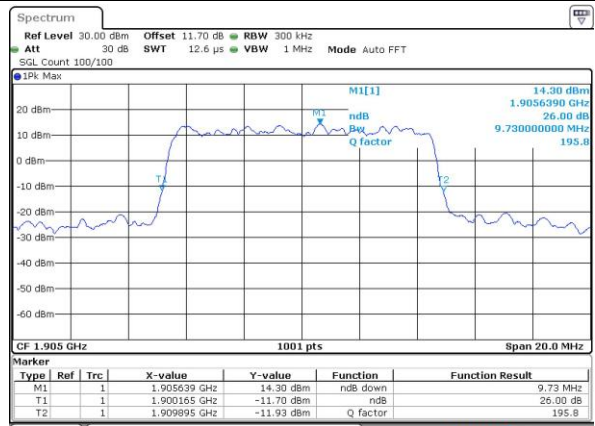
Date: 18.OCT.2018 16:54:25

Highest Channel / 5MHz / 64QAM



Date: 18.OCT.2018 16:48:58

Highest Channel / 10MHz / 64QAM

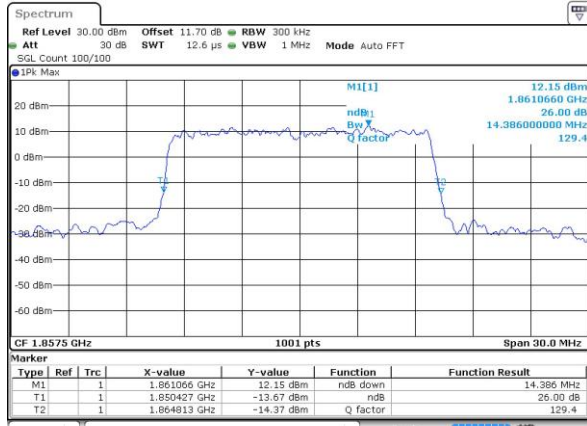


Date: 18.OCT.2018 16:55:28



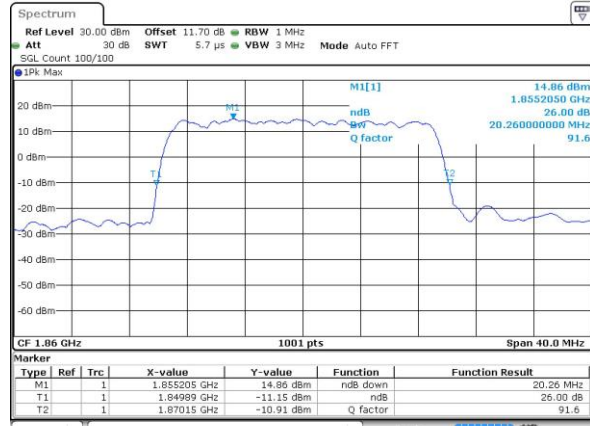
LTE Band 2

Lowest Channel / 15MHz / 64QAM



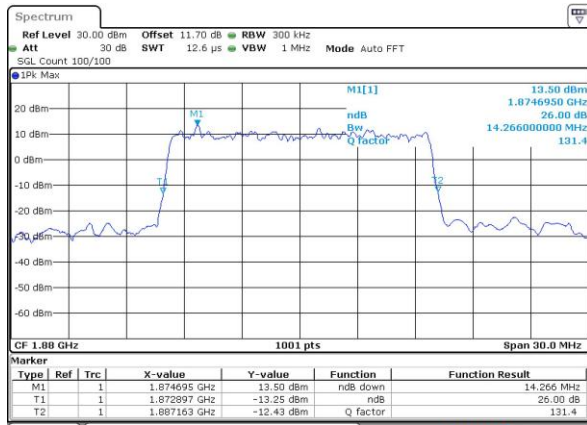
Date: 18.OCT.2018 16:58:12

Lowest Channel / 20MHz / 64QAM



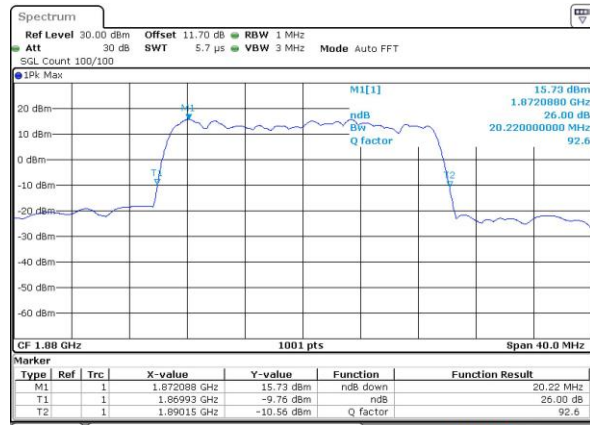
Date: 18.OCT.2018 17:04:43

Middle Channel / 15MHz / 64QAM



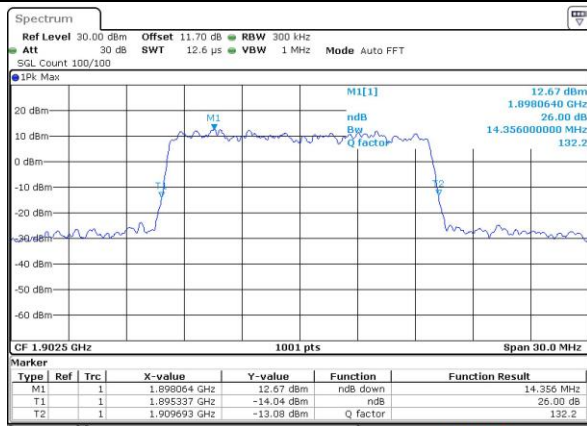
Date: 18.OCT.2018 17:00:56

Middle Channel / 20MHz / 64QAM



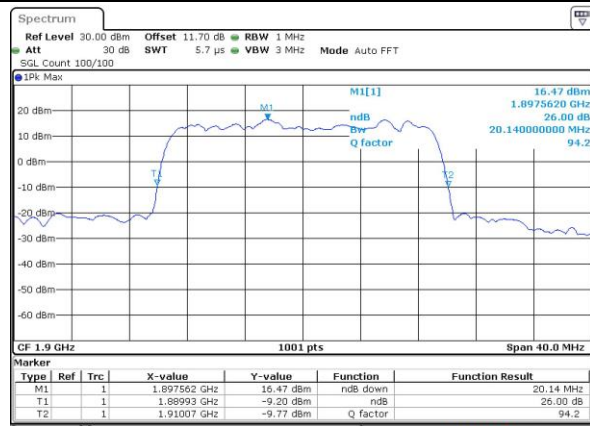
Date: 18.OCT.2018 17:07:27

Highest Channel / 15MHz / 64QAM



Date: 18.OCT.2018 17:01:59

Highest Channel / 20MHz / 64QAM



Date: 18.OCT.2018 17:08:30

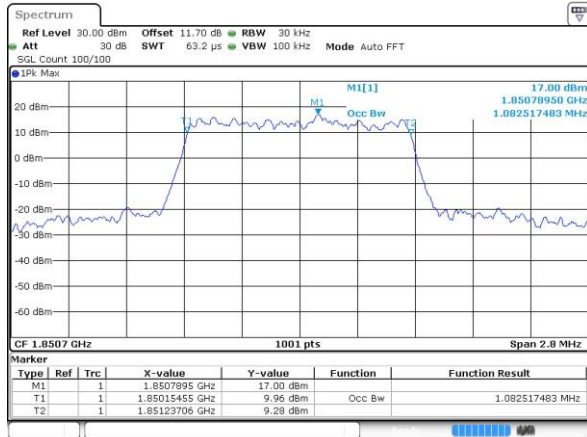
**Occupied Bandwidth**

Mode	LTE Band 2 : 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	1.08	1.09	2.72	2.73	4.48	4.49	9.03	9.07	13.43	13.4	18.38	18.34
Middle CH	1.09	1.09	2.73	2.73	4.48	4.51	9.03	9.03	13.4	13.43	18.62	18.26
Highest CH	1.1	1.09	2.72	2.72	4.48	4.49	9.05	9.03	13.46	13.49	18.42	18.3
Mode	LTE Band 2 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.09	-	2.73	-	4.49	-	8.99	-	13.46	-	18.42	-
Middle CH	1.09	-	2.70	-	4.48	-	9.05	-	13.46	-	18.62	-
Highest CH	1.10	-	2.73	-	4.50	-	8.99	-	13.43	-	18.42	-

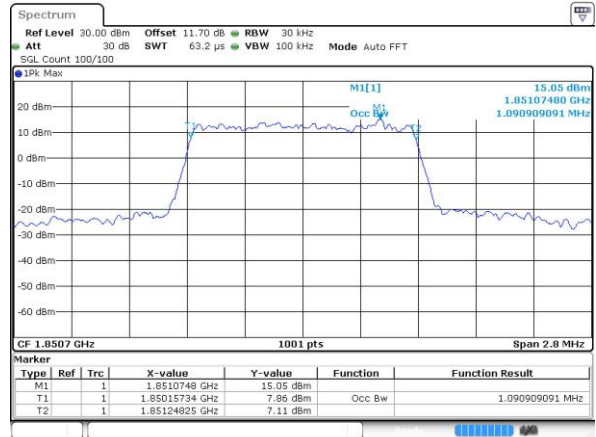


LTE Band 2

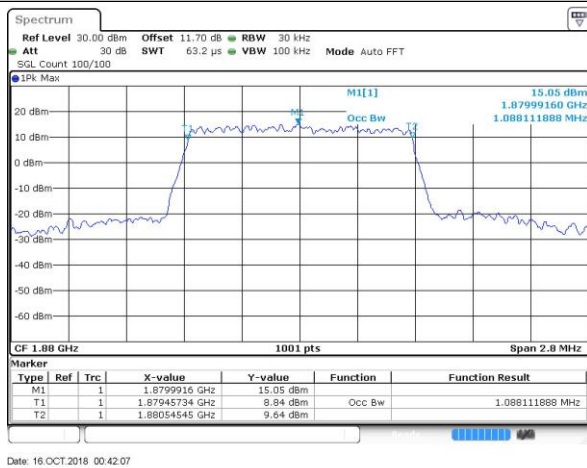
Lowest Channel / 1.4MHz / QPSK



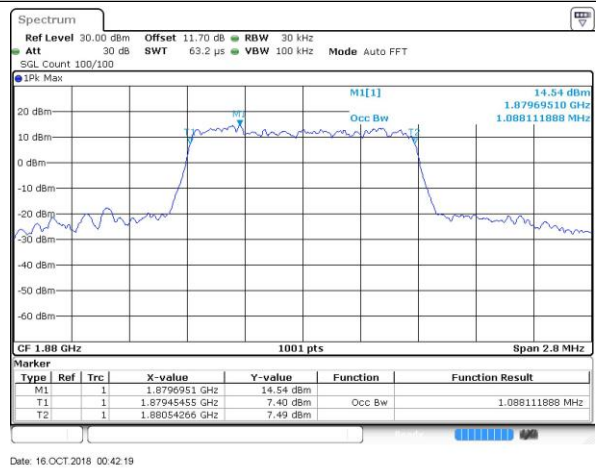
Lowest Channel / 1.4MHz / 16QAM



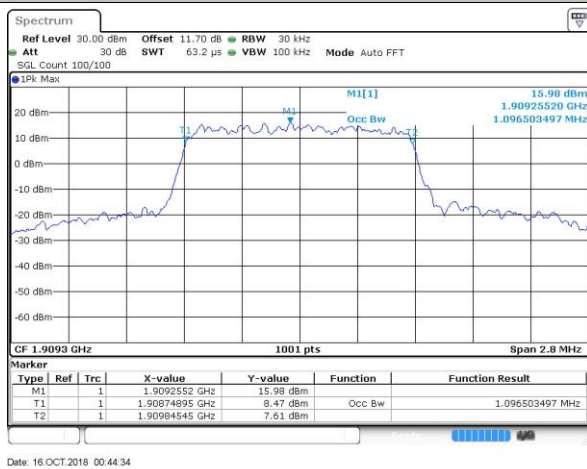
Middle Channel / 1.4MHz / QPSK



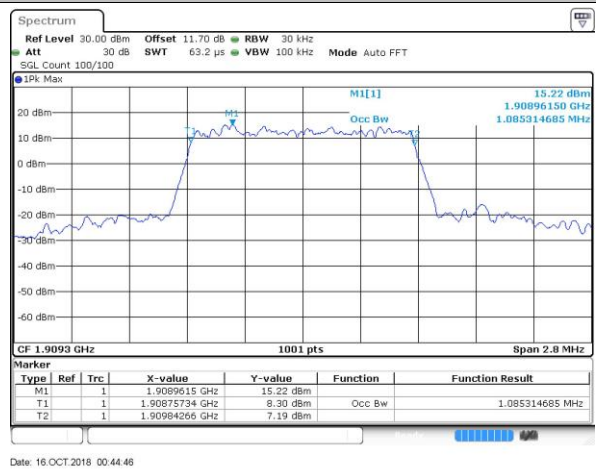
Middle Channel / 1.4MHz / 16QAM



Highest Channel / 1.4MHz / QPSK



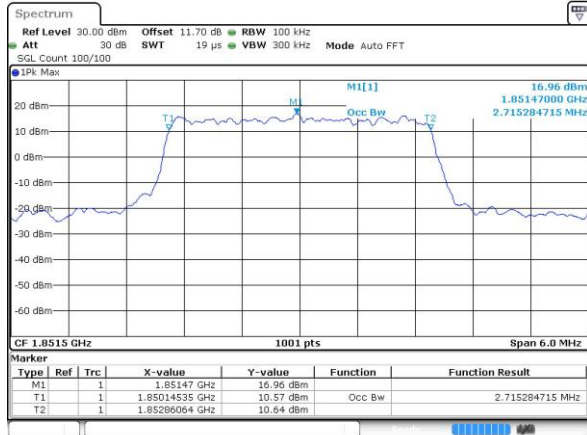
Highest Channel / 1.4MHz / 16QAM





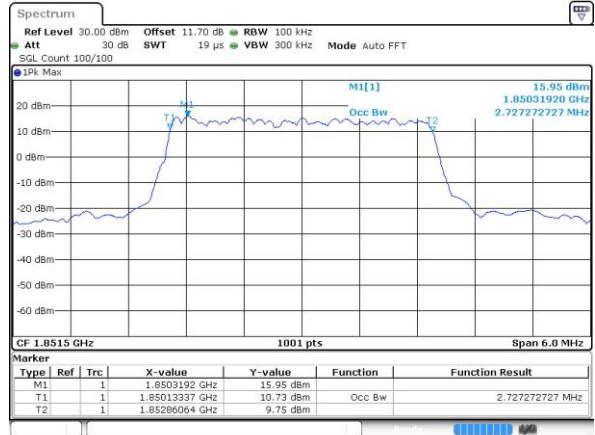
LTE Band 2

Lowest Channel / 3MHz / QPSK



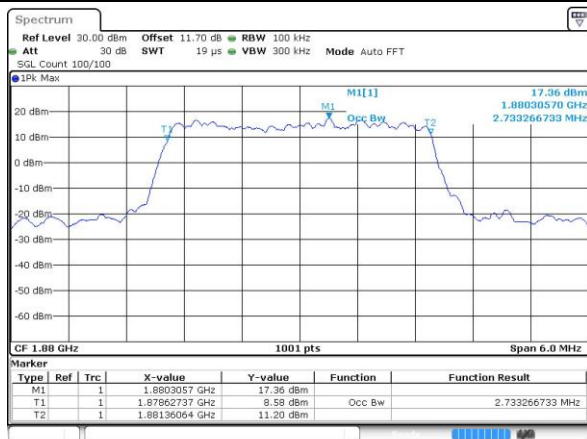
Date: 14.OCT.2018 12:46:57

Lowest Channel / 3MHz / 16QAM



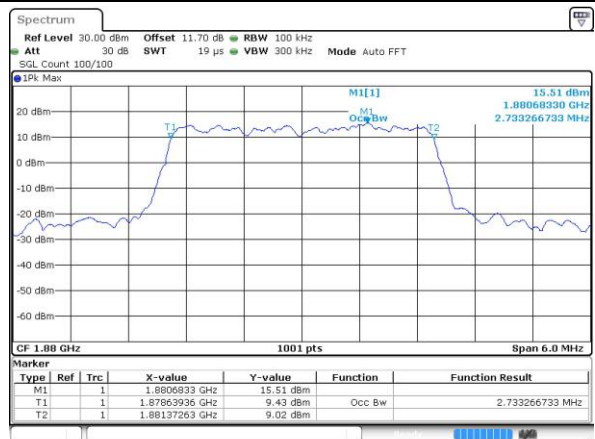
Date: 14.OCT.2018 12:47:09

Middle Channel / 3MHz / QPSK



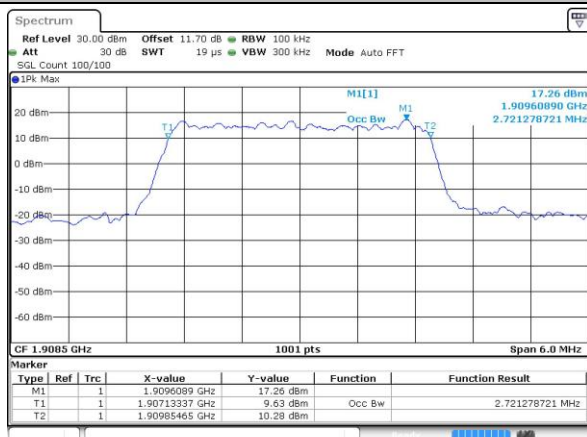
Date: 14.OCT.2018 12:54:05

Middle Channel / 3MHz / 16QAM



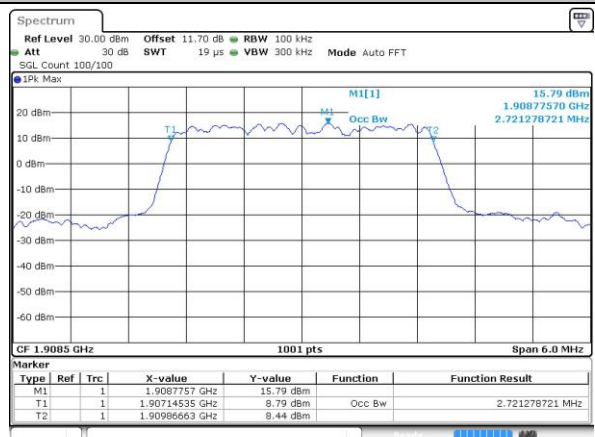
Date: 14.OCT.2018 12:54:16

Highest Channel / 3MHz / QPSK



Date: 14.OCT.2018 12:56:31

Highest Channel / 3MHz / 16QAM



Date: 14.OCT.2018 12:56:42