



FCC RF Test Report

APPLICANT : VERTU Corporation Limited
EQUIPMENT : Cellular Telephone
BRAND NAME : VERTU
MODEL NAME : ASTER T
TYPE NAME : VM-01T
FCC ID : P7QVM-01T
STANDARD : 47 CFR Part 2, 22(H), 24(E), 27
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Sep. 26, 2014 and completely tested on Nov. 09, 2014. 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 / EIA-603-C-2004 and the testing has shown the tested sample to be in compliance with the applicable technical standards.

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

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG492650B	Rev. 01	Initial issue of report	Dec. 22, 2014

**SUMMARY OF TEST RESULT**

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
3.5	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049 §22.917(b) §24.238(b) §27.53(h)(3) §27.53(m)(6)	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §22.917(a) §24.238(a) §27.53(g) §27.53(m)(4)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 7) (Band 25) (Band 38) (Band 41)	< 43+10log10(P[Watts])	PASS	-



Report Section	FCC Rule	Description	Limit	Result	Remark
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(g)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 25)	$< 43+10\log_{10}(P[\text{Watts}])$	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7) (Band 38) (Band 41)	$< 55+10\log_{10}(P[\text{Watts}])$		
3.9	§2.1055 §22.355 §24.235 §27.54	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22 Within Authorized Band	PASS	
4.4	§22.913(a)(2)	Effective Radiated Power (Band 5)	ERP < 7 Watt	PASS	
	§24.232(c) §27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2)(Band 7) (Band 25) (Band 38) (Band 41)	EIRP < 2 Watt		
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4)	EIRP < 1 Watt		
4.5	§2.1053 §22.917(a) §24.238(a) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 25)	$< 43+10\log_{10}(P[\text{Watts}])$	PASS	Under limit 7.20 dB at 7488.000 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7) (Band 38) (Band 41)	$< 55+10\log_{10}(P[\text{Watts}])$		



1 General Description

1.1 Applicant

VERTU Corporation Limited

Beacon Hill Road, Church Crookham, Hampshire GU52 8DY, United Kingdom

1.2 Manufacturer

VERTU Corporation Limited

Beacon Hill Road, Church Crookham, Hampshire GU52 8DY, United Kingdom

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Cellular Telephone
Brand Name	VERTU
Model Name	ASTER T
FCC ID	P7QVM-01T
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/NFC WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth v4.0 EDR/LE
HW Version	F2
EUT Stage	Identical Prototype

List of Accessory:

Specification of Accessory		
AC Adapter	Brand Name	VERTU
	Model Name	AC-32V
Car Charger	Brand Name	VERTU
	Model Name	DC-30V
Battery	Brand Name	VERTU
	Model Name	BP-9V
Earphone 1	Brand Name	VERTU
	Model Name	WH-4V
Earphone 2	Brand Name	VERTU
	Model Name	WH-5V
Earphone 3	Brand Name	VERTU
	Model Name	HP-1V
Portable Power Charger	Brand Name	VERTU
	Model Name	DC-15V
USB Cable	Brand Name	VERTU
	Model Name	CA-225DV
Wireless charger	Brand Name	VERTU
	Model Name	AC-35V
Wireless Speaker	Brand Name	VERTU
	Model Name	SP-1V

1.4 Product Specification subjective to this standard

Product Specification subjective to this standard	
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 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 25 : 1850.7MHz ~ 1914.3 MHz LTE Band 38 : 2572.5MHz ~ 2617.5 MHz LTE Band 41 : 2503.5 MHz ~ 2682.5 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 7 : 2622.5MHz ~ 2687.5 MHz LTE Band 25 : 1930.7MHz ~ 1994.3 MHz LTE Band 38 : 2572.5MHz ~ 2617.5 MHz LTE Band 41 : 2503.5 MHz ~ 2682.5 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 7 : 5MHz/ 10MHz / 15MHz / 20MHz LTE Band 25 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 38 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 41 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 2 : 22.65 dBm LTE Band 4 : 22.91 dBm LTE Band 5 : 22.61 dBm LTE Band 7 : 24.00 dBm LTE Band 25 : 22.95 dBm LTE Band 38 : 22.95 dBm LTE Band 41 : 22.70 dBm
Type of Modulation	QPSK / 16QAM

1.5 Modification of EUT

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



1.6 Emission Designator

LTE Band 2		QPSK		16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1M11G7D	-	0.0929	1M11D7W	-	0.0695
3	2M72G7D	-	0.0883	2M73D7W	-	0.0668
5	4M50G7D	-	0.0885	4M50D7W	-	0.0675
10	9M08G7D	0.0112	0.0869	9M04D7W	-	0.0665
15	13M5G7D	-	0.0859	13M5D7W	-	0.0656
20	18M5G7D	-	0.0851	18M5D7W	-	0.0641
LTE Band 25		QPSK		16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1M11G7D	-	0.0971	1M11D7W	-	0.0767
3	2M71G7D	-	0.0946	2M71D7W	-	0.0748
5	4M50G7D	-	0.0933	4M49D7W	-	0.0743
10	9M04G7D	0.0015	0.0904	9M00D7W	-	0.0703
15	13M4G7D	-	0.0853	13M4D7W	-	0.0670
20	18M3G7D	-	0.0800	18M4D7W	-	0.0631
LTE Band 4		QPSK		16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1M11G7D	-	0.1153	1M11D7W	-	0.0889
3	2M73G7D	-	0.1127	2M74D7W	-	0.0873
5	4M50G7D	-	0.1122	4M50D7W	-	0.0869
10	9M08G7D	0.0008	0.1135	9M04D7W	-	0.0867
15	13M5G7D	-	0.1153	13M5D7W	-	0.0893
20	18M5G7D	-	0.1132	18M5D7W	-	0.0861



LTE Band 5		QPSK		16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
1.4	1M11G7D	-	0.0611	1M11D7W	-	0.0476
3	2M72G7D	-	0.0627	2M72D7W	-	0.0485
5	4M50G7D	-	0.0612	4M50D7W	-	0.0475
10	9M08G7D	0.0030	0.0585	9M04D7W	-	0.0452
LTE Band 7		QPSK		16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	4M50G7D	-	0.0841	4M50D7W	-	0.0741
10	9M10G7D	0.0027	0.0955	9M06D7W	-	0.0769
15	13M5G7D	-	0.0998	13M5D7W	-	0.0740
20	18M5G7D	-	0.0968	18M5D7W	-	0.0807
LTE Band 38		QPSK		16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	4M51G7D	-	0.0773	4M51D7W	-	0.0571
10	9M08G7D	0.0092	0.0746	9M06D7W	-	0.0562
15	13M5G7D	-	0.0753	13M5D7W	-	0.0538
20	18M6G7D	-	0.0748	18M5D7W	-	0.0504
LTE Band 41		QPSK		16QAM		
BW(MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	4M51G7D	-	0.0710	4M52D7W	-	0.0558
10	9M06G7D	0.0010	0.0673	9M10D7W	-	0.0550
15	13M5G7D	-	0.0687	13M5D7W	-	0.0538
20	18M5G7D	-	0.0671	18M5D7W	-	0.0535

1.7 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	
	TH02-HY	03CH07-HY

1.8 Applicable Standards

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

- ♦ 47 CFR Part 2, 22(H), 24(E), 27
- ♦ ANSI / TIA / EIA-603-C-2004
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v02r01
- ♦ KDB 648474 D03 Handset Wireless Chargers Battery Covers v01r02

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 v02r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Max. Output Power	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5	✓	✓	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	38	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	41	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Peak-to-Average Ratio	2						✓	✓	✓	✓		✓	✓	✓	✓
	4						✓	✓	✓	✓		✓	✓	✓	✓
	5				✓	-	-	✓	✓	✓		✓	✓	✓	✓
	7	-	-				✓	✓	✓	✓		✓	✓	✓	✓
	25						✓	✓	✓	✓		✓	✓	✓	✓
	38	-	-				✓	✓	✓	✓		✓	✓	✓	✓
	41	-	-				✓	✓	✓	✓		✓	✓	✓	✓
26dB and 99% Bandwidth	2	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
	5	✓	✓	✓	✓	-	-	✓	✓			✓	✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
	25	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
	38	-	-	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
	41	-	-	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓



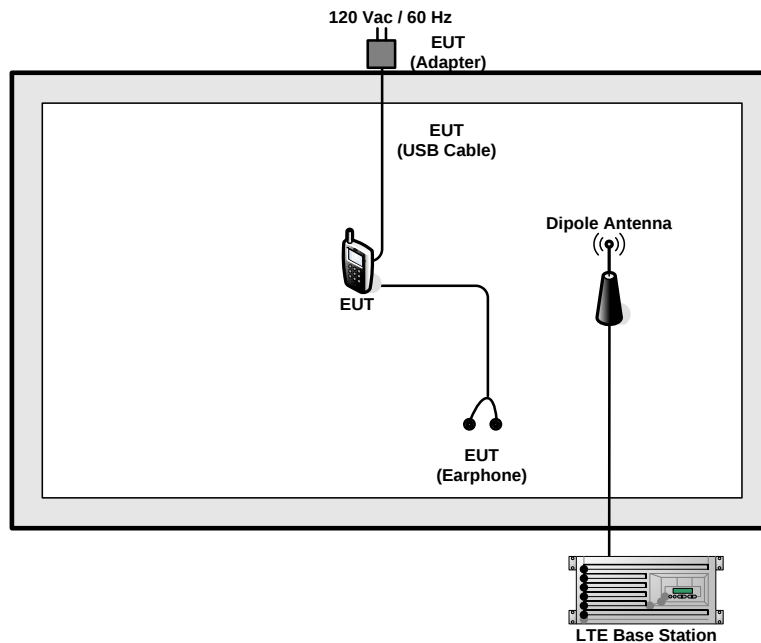
Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Conducted Band Edge	2	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
	5	✓	✓	✓	✓	-	-	✓	✓	✓		✓	✓		✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
	25	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
	38	-	-	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
	41	-	-	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
Conducted Spurious Emission	2	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	5	✓	✓	✓	✓	-	-	✓	✓	✓			✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	25	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	38	-	-	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	41	-	-	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
Frequency Stability	2				✓			✓				✓		✓	
	4				✓			✓				✓		✓	
	5				✓	-	-	✓				✓		✓	
	7	-	-		✓			✓				✓		✓	
	25				✓			✓				✓		✓	
	38	-	-		✓			✓				✓		✓	
	41	-	-		✓			✓				✓		✓	
E.R.P./ E.I.R.P.	2	✓					✓	✓	✓	✓			✓	✓	✓
	4	✓					✓	✓	✓	✓			✓	✓	✓
	5	✓			✓	-	-	✓	✓	✓			✓	✓	✓
	7	-	-	✓			✓	✓	✓	✓			✓	✓	✓
	25	✓					✓	✓	✓	✓			✓	✓	✓
	38	-	-	✓			✓	✓	✓	✓			✓	✓	✓
	41	-	-	✓			✓	✓	✓	✓			✓	✓	✓



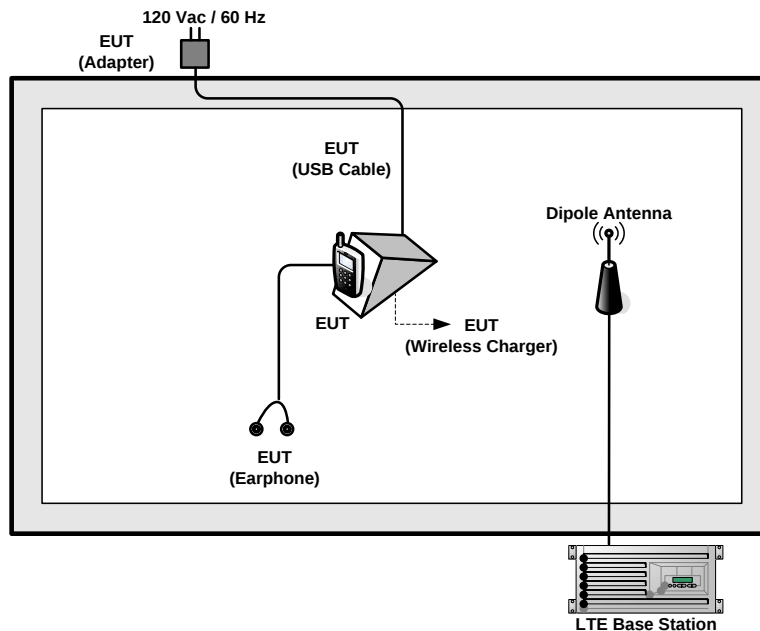
Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Radiated Spurious Emission	2	✓	✓	✓	✓	✓	✓	✓		✓			✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓		✓			✓	✓	✓
	5	✓	✓	✓	✓	-	-	✓		✓			✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓		✓			✓	✓	✓
	25	✓	✓	✓	✓	✓	✓	✓		✓			✓	✓	✓
	38	-	-	✓	✓	✓	✓	✓		✓			✓	✓	✓
	41 (WPC)	-	-	✓	✓	✓	✓	✓		✓			✓	✓	✓
Note	- The mark “✓” means that this configuration is chosen for testing - The mark “-” means that this bandwidth is not supported. - For E.R.P/E.I.R.P. measurement, the widest bandwidth of each band is chosen for testing due to highest conducted power. Besides, the lowest bandwidth of each band is also measured for reporting only. - The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.														

2.2 Connection Diagram of Test System

<EUT with Adapter Mode>



<EUT with WPC charging mode>



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m
2.	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 :

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

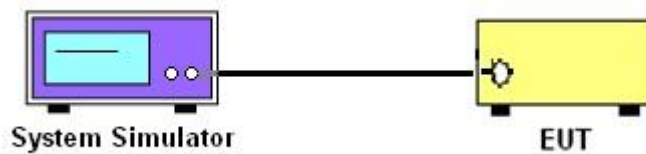
3 Conducted Test Items

3.1 Measuring Instruments

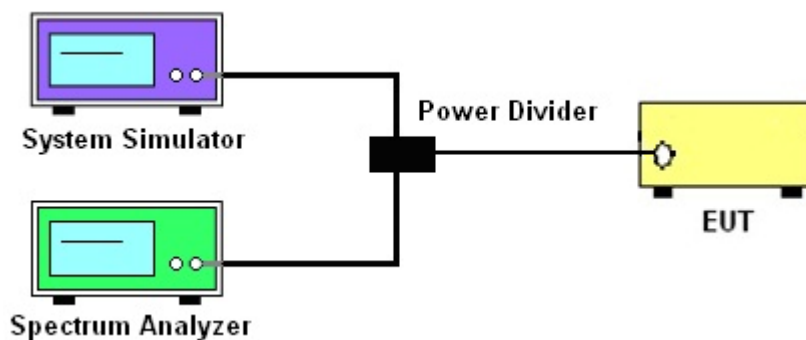
See list of measuring instruments of this test report.

3.2 Test Setup

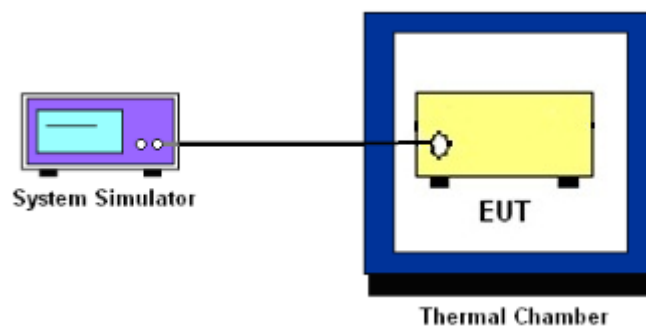
3.2.1 Conducted Output Power



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



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.



3.4 Conducted Output Power and ERP/EIRP

3.4.1 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.

3.4.2 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.



3.5 Peak-to-Average Ratio

3.5.1 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.

3.5.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r01 Section 5.7.1.
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.



3.6 Occupied Bandwidth

3.6.1 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.

3.6.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r01 Section 4.2.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.



3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

22.917(a) for Band 5

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 Band 2, 25

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 (h) for Band 4

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.

27.53(m)(4) for Band 7,41:

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 than $43 + 10 \log (P)$ 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.



3.7.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r01 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured. Set RBW $\geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Set spectrum analyzer with RMS detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. The limit line is derived from $43 + 10\log(P)\text{dB}$ below the transmitter power $P(\text{Watts})$
 $= P(\text{W}) - [43 + 10\log(P)] (\text{dB})$
 $= [30 + 10\log(P)] (\text{dBm}) - [43 + 10\log(P)] (\text{dB})$
 $= -13\text{dBm}.$

3.8 Conducted Spurious Emission

3.8.1 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.

For Band 7,41:

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.

3.8.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r01 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. 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.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
 $= -13$ dBm.
9. For Band 7, 41
The limit line is derived from $55 + 10\log(P)$ dB below the transmitter power P(Watts)

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

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.

3.9.2 Test Procedures for Temperature Variation

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.

3.9.3 Test Procedures for Voltage Variation

1. The testing follows FCC KDB 971168 v02r01 Section 9.0.
2. The EUT was placed in a temperature chamber at $25\pm 5^{\circ}\text{C}$ and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

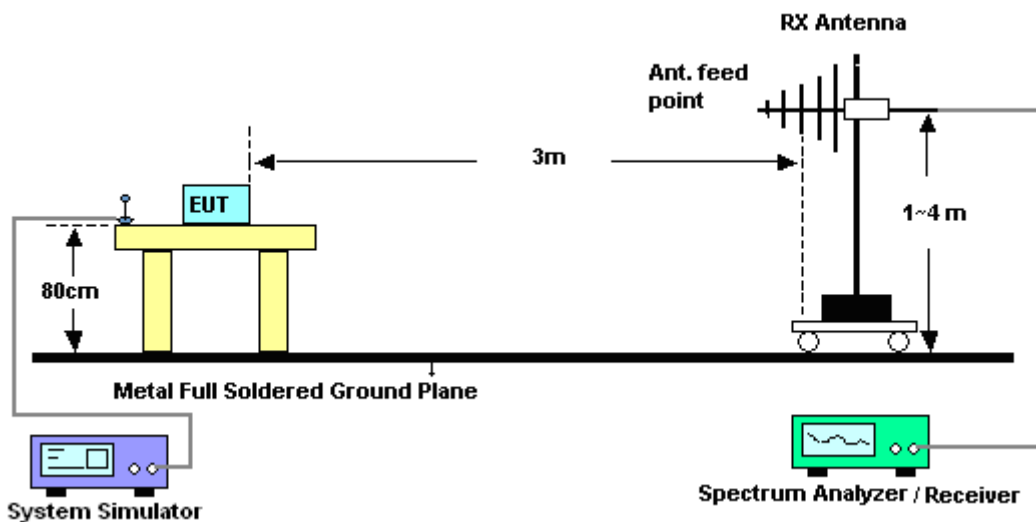
4 Radiated Test Items

4.1 Measuring Instruments

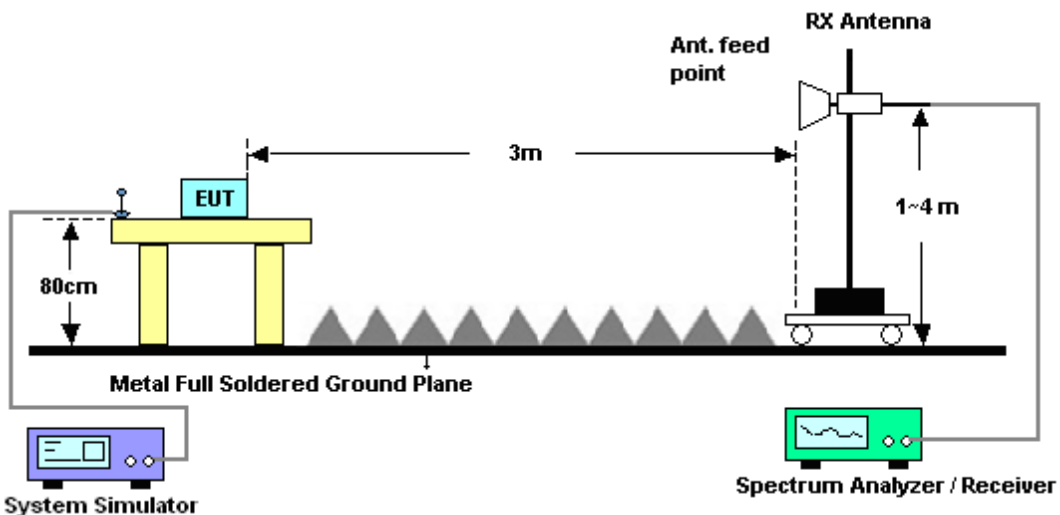
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Effective Radiated Power and Effective Isotropic Radiated Power

4.4.1 Description of the ERP/EIRP Measurement

Effective radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-C-2004, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v01r02. Mobile and portable (hand-held) stations operating are limited to average ERP of 7 watts with LTE band 5.

Equivalent isotropic radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-C-2004, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v01r02. Mobile and portable (hand-held) stations operating are limited to average EIRP of 2 watts with LTE band 2 / 25 / 7 / 38 / 41 and 1 watt with LTE band 4.

4.4.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r01 Section 5.2.1. (for CDMA/WCDMA), Section 5.2.2.2 (for GSM/GPRS/EDGE) and ANSI / TIA-603-C-2004 Section 2.2.17.
2. The EUT was placed on a non-conductive rotating platform 0.8 meters high in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RMS detector.
3. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power. The maximum emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
4. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (substitution antenna) at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, $EIRP = LVL + \text{Correction factor}$ and $ERP = EIRP - 2.15$.



4.5 Radiated Spurious Emission

4.5.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. 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 Band 7, 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.

4.5.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r01 Section 5.8 and ANSI / TIA-603-C-2004 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. 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.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. 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)
= $P(W) - [43 + 10\log(P)]$ (dB)
= $[30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
= -13dBm.

For Band 7,41:

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

12. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
13. ERP (dBm) = EIRP - 2.15



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 09, 2014	Oct. 25, 2014~ Nov. 07, 2014	Jun. 08, 2015	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Jul. 17, 2014	Oct. 25, 2014~ Nov. 07, 2014	Jul. 16, 2015	Conducted (TH02-HY)
LTE Base Station	Anritsu	MT8820C	6201026480	30MHz~2.7GHz SISO	Jan. 07, 2014	Oct. 25, 2014~ Nov. 07, 2014	Jan. 06, 2015	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV30	101749	10Hz ~ 30GHz	Feb. 10, 2014	Nov. 08, 2014~ Nov. 09, 2014	Feb. 09, 2015	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Sep. 27, 2014	Nov. 08, 2014~ Nov. 09, 2014	Sep. 26, 2015	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 19, 2014	Nov. 08, 2014~ Nov. 09, 2014	Aug. 18, 2015	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10 MHz ~ 1000MHz	Mar. 17, 2014	Nov. 08, 2014~ Nov. 09, 2014	Mar. 16, 2015	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1 GHz~26.5 GHz	Nov. 29, 2013	Nov. 08, 2014~ Nov. 09, 2014	Nov. 28, 2014	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Nov. 08, 2014~ Nov. 09, 2014	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	M-400-0	114/8000604/L	N/A	N/A	Nov. 08, 2014~ Nov. 09, 2014	N/A	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Oct. 02, 2014	Nov. 08, 2014~ Nov. 09, 2014	Oct. 01, 2015	Radiation (03CH07-HY)



6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.54
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.72
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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
1.4	1	0	QPSK	22.24	22.63	22.48
1.4	1	2		22.21	22.62	22.46
1.4	1	5		22.20	22.59	22.47
1.4	3	0		22.14	22.58	22.46
1.4	3	1		22.21	22.61	22.47
1.4	3	2		22.05	22.60	22.47
1.4	6	0		21.25	21.48	21.36
1.4	1	0	16-QAM	21.34	21.42	21.34
1.4	1	2		21.11	21.45	21.32
1.4	1	5		21.09	21.41	21.28
1.4	3	0		21.10	21.42	21.27
1.4	3	1		21.09	21.38	21.24
1.4	3	2		21.12	21.39	21.29
1.4	6	0		20.06	20.39	20.30
3	1	0	QPSK	22.18	22.56	22.45
3	1	7		22.17	22.51	22.41
3	1	14		22.17	22.52	22.40
3	8	0		21.11	21.44	21.35
3	8	4		21.14	21.42	21.29
3	8	7		21.17	21.48	21.28
3	15	0		21.17	21.49	21.32
3	1	0	16-QAM	21.03	21.37	21.28
3	1	7		21.07	21.38	21.26
3	1	14		21.04	21.39	21.25
3	8	0		20.14	20.49	20.37
3	8	4		20.13	20.50	20.41
3	8	7		20.16	20.46	20.34
3	15	0		20.12	20.43	20.36



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.25	22.60	22.46
5	1	12		22.10	22.54	22.40
5	1	24		22.20	22.58	22.39
5	12	0		21.16	21.40	21.35
5	12	6		21.11	21.40	21.31
5	12	11		21.16	21.49	21.30
5	25	0	16-QAM	21.16	21.48	21.31
5	1	0		21.04	21.41	21.17
5	1	12		21.04	21.37	21.25
5	1	24		21.05	21.40	21.22
5	12	0		20.15	20.44	20.41
5	12	6		20.13	20.45	20.37
5	12	11		20.12	20.48	20.41
5	25	0		20.12	20.44	20.36
10	1	0	QPSK	22.21	22.53	22.40
10	1	24		22.19	22.52	22.34
10	1	49		22.15	22.50	22.37
10	25	0		21.12	21.44	21.29
10	25	12		21.16	21.42	21.28
10	25	24		21.21	21.45	21.28
10	50	0	16-QAM	21.17	21.43	21.31
10	1	0		21.10	21.40	21.27
10	1	24		21.07	21.38	21.22
10	1	49		21.02	21.32	21.24
10	25	0		20.15	20.46	20.34
10	25	12		20.18	20.46	20.31
10	25	24		20.16	20.50	20.39
10	50	0		20.12	20.48	20.26



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.25	22.56	22.48
15	1	37		22.21	22.52	22.42
15	1	74		22.22	22.45	22.37
15	36	0		21.18	21.38	21.31
15	36	18		21.20	21.43	21.28
15	36	37		21.16	21.36	21.26
15	75	0		21.20	21.48	21.33
15	1	0	16-QAM	21.12	21.40	21.29
15	1	37		21.13	21.39	21.28
15	1	74		21.05	21.25	21.26
15	36	0		20.11	20.41	20.34
15	36	18		20.20	20.40	20.32
15	36	37		20.07	20.37	20.24
15	75	0		20.22	20.46	20.26
20	1	0	QPSK	22.27	22.65	22.45
20	1	49		22.22	22.49	22.44
20	1	99		22.11	22.45	22.39
20	50	0		21.25	21.54	21.34
20	50	24		21.20	21.43	21.33
20	50	49		21.21	21.38	21.25
20	100	0		21.26	21.44	21.30
20	1	0	16-QAM	21.96	21.35	21.27
20	1	49		21.05	21.40	21.26
20	1	99		21.88	21.27	21.23
20	50	0		20.19	20.44	20.38
20	50	24		20.11	20.45	20.31
20	50	49		20.13	20.41	20.28
20	100	0		20.26	20.46	20.31



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.24	22.94	22.50
1.4	1	2		22.12	22.89	22.48
1.4	1	5		22.20	22.84	22.25
1.4	3	0		22.12	22.92	22.38
1.4	3	1		22.21	22.87	22.44
1.4	3	2		22.23	22.91	22.42
1.4	6	0	16-QAM	21.24	21.84	21.50
1.4	1	0		21.36	21.77	21.73
1.4	1	2		21.52	21.76	21.79
1.4	1	5		21.49	21.65	21.61
1.4	3	0		21.20	21.77	21.55
1.4	3	1		21.30	21.75	21.57
1.4	3	2		21.33	21.75	21.57
1.4	6	0		20.36	20.74	20.65
3	1	0	QPSK	22.43	22.85	22.79
3	1	7		22.33	22.75	22.53
3	1	14		22.20	22.77	22.28
3	8	0		21.30	21.78	21.77
3	8	4		21.41	21.82	21.63
3	8	7		21.47	21.71	21.58
3	15	0	16-QAM	21.38	21.82	21.67
3	1	0		21.44	21.65	21.97
3	1	7		21.61	21.59	21.66
3	1	14		21.21	21.58	21.61
3	8	0		20.38	20.77	20.79
3	8	4		20.42	20.83	20.80
3	8	7		20.39	20.72	20.70
3	15	0		20.35	20.78	20.77



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.48	22.85	22.87
5	1	12		22.40	22.77	22.73
5	1	24		22.22	22.79	22.33
5	12	0		21.39	21.76	21.96
5	12	6		21.51	21.76	21.86
5	12	11		21.55	21.65	21.71
5	25	0		21.36	21.84	21.81
5	1	0	16-QAM	21.34	21.65	21.80
5	1	12		21.22	21.63	21.68
5	1	24		21.23	21.62	21.65
5	12	0		20.42	20.81	20.83
5	12	6		20.33	20.80	20.81
5	12	11		20.32	20.71	20.79
5	25	0		20.32	20.81	20.79
10	1	0	QPSK	22.55	22.91	22.91
10	1	24		22.35	22.88	22.89
10	1	49		22.50	22.73	22.39
10	25	0		21.39	21.81	21.97
10	25	12		21.39	21.80	21.88
10	25	24		21.40	21.73	21.84
10	50	0		21.38	21.88	21.85
10	1	0	16-QAM	21.36	21.77	21.71
10	1	24		21.28	21.74	21.74
10	1	49		21.34	21.59	21.72
10	25	0		20.39	20.82	20.90
10	25	12		20.37	20.85	20.84
10	25	24		20.37	20.74	20.82
10	50	0		20.36	20.85	20.82



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.68	22.90	22.87
15	1	37		22.54	22.82	22.86
15	1	74		22.67	22.77	22.40
15	36	0		21.44	21.78	21.89
15	36	18		21.47	21.82	21.85
15	36	37		21.58	21.76	21.84
15	75	0		21.48	21.87	21.78
15	1	0	16-QAM	21.42	21.75	21.68
15	1	37		21.32	21.63	21.66
15	1	74		21.51	21.59	21.67
15	36	0		20.38	20.72	20.81
15	36	18		20.41	20.77	20.85
15	36	37		20.50	20.73	20.81
15	75	0		20.41	20.82	20.83
20	1	0	QPSK	22.70	22.95	22.87
20	1	49		22.67	22.89	22.84
20	1	99		22.53	22.63	22.24
20	50	0		21.43	21.79	21.75
20	50	24		21.47	21.82	21.82
20	50	49		21.68	21.70	21.83
20	100	0		21.57	21.84	21.79
20	1	0	16-QAM	21.40	21.80	21.67
20	1	49		21.33	21.72	21.70
20	1	99		21.57	21.48	21.58
20	50	0		20.37	20.73	20.78
20	50	24		20.40	20.78	20.78
20	50	49		20.58	20.74	20.79
20	100	0		20.49	20.76	20.82



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.90	22.56	22.34
1.4	1	2		22.87	22.50	22.30
1.4	1	5		22.87	22.43	22.33
1.4	3	0		22.85	22.53	22.32
1.4	3	1		22.88	22.49	22.33
1.4	3	2		22.89	22.49	22.32
1.4	6	0	16-QAM	21.93	21.53	21.27
1.4	1	0		21.86	21.48	21.21
1.4	1	2		21.81	21.47	21.22
1.4	1	5		21.85	21.32	21.24
1.4	3	0		21.85	21.46	21.24
1.4	3	1		21.83	21.46	21.17
1.4	3	2		21.83	21.47	21.22
1.4	6	0		20.80	20.48	20.25
3	1	0	QPSK	22.85	22.51	22.33
3	1	7		22.75	22.38	22.22
3	1	14		22.76	22.37	22.29
3	8	0		21.87	21.54	21.30
3	8	4		21.94	21.49	21.23
3	8	7		21.84	21.39	21.20
3	15	0		21.90	21.53	21.26
3	1	0	16-QAM	21.81	21.39	21.24
3	1	7		21.69	21.28	21.13
3	1	14		21.68	21.30	21.19
3	8	0		20.94	20.56	20.42
3	8	4		20.92	20.59	20.36
3	8	7		20.80	20.47	20.31
3	15	0		20.89	20.52	20.26



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.83	22.46	22.31
5	1	12		22.74	22.35	22.21
5	1	24		22.65	22.35	22.26
5	12	0		21.91	21.54	21.33
5	12	6		21.77	21.50	21.27
5	12	11		21.81	21.36	21.21
5	25	0		21.86	21.50	21.25
5	1	0	16-QAM	21.77	21.38	21.13
5	1	12		21.69	21.28	21.24
5	1	24		21.63	21.30	21.18
5	12	0		20.91	20.58	20.41
5	12	6		20.83	20.57	20.41
5	12	11		20.82	20.48	20.34
5	25	0		20.81	20.61	20.31
10	1	0	QPSK	22.83	22.48	22.31
10	1	24		22.67	22.47	22.21
10	1	49		22.68	22.26	22.21
10	25	0		21.80	21.49	21.20
10	25	12		21.73	21.52	21.22
10	25	24		21.74	21.42	21.16
10	50	0		21.89	21.51	21.25
10	1	0	16-QAM	21.84	21.43	21.27
10	1	24		21.67	21.40	21.15
10	1	49		21.63	21.21	21.14
10	25	0		20.84	20.58	20.34
10	25	12		20.77	20.57	20.29
10	25	24		20.78	20.43	20.33
10	50	0		20.87	20.54	20.30



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.85	22.58	22.33
15	1	37		22.69	22.39	22.19
15	1	74		22.59	22.23	22.22
15	36	0		21.87	21.51	21.21
15	36	18		21.79	21.52	21.18
15	36	37		21.80	21.21	21.14
15	75	0		21.81	21.37	21.19
15	1	0	16-QAM	21.85	21.55	21.29
15	1	37		21.70	21.30	21.14
15	1	74		21.56	21.15	21.15
15	36	0		20.79	20.54	20.27
15	36	18		20.71	20.56	20.22
15	36	37		20.72	20.32	20.26
15	75	0		20.81	20.49	20.29
20	1	0	QPSK	22.91	22.68	22.31
20	1	49		22.67	22.48	22.26
20	1	99		22.35	22.20	22.17
20	50	0		21.82	21.63	21.21
20	50	24		21.81	21.51	21.22
20	50	49		21.68	21.23	21.15
20	100	0		21.80	21.46	21.18
20	1	0	16-QAM	21.83	21.64	21.30
20	1	49		21.69	21.38	21.22
20	1	99		21.32	21.13	21.11
20	50	0		20.81	20.66	20.30
20	50	24		20.82	20.55	20.25
20	50	49		20.70	20.36	20.22
20	100	0		20.80	20.57	20.28



LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.59	22.59	22.50
1.4	1	2		22.55	22.55	22.46
1.4	1	5		22.49	22.58	22.49
1.4	3	0		22.57	22.57	22.45
1.4	3	1		22.54	22.56	22.46
1.4	3	2		22.57	22.57	22.42
1.4	6	0	16-QAM	21.65	21.59	21.49
1.4	1	0		22.41	22.55	22.43
1.4	1	2		22.40	22.54	22.41
1.4	1	5		21.41	21.52	21.39
1.4	3	0		21.58	21.53	21.43
1.4	3	1		21.55	21.53	21.42
1.4	3	2		21.56	21.53	21.39
1.4	6	0		20.52	20.54	20.41
3	1	0	QPSK	22.55	22.55	22.43
3	1	7		22.43	22.52	22.39
3	1	14		22.52	22.52	22.42
3	8	0		21.62	21.59	21.48
3	8	4		21.49	21.61	21.44
3	8	7		21.58	21.61	21.47
3	15	0		21.65	21.59	21.48
3	1	0	16-QAM	21.50	21.49	21.42
3	1	7		21.36	21.45	21.33
3	1	14		21.46	21.48	21.35
3	8	0		20.67	20.61	20.52
3	8	4		20.55	20.65	20.54
3	8	7		20.63	20.62	20.53
3	15	0		20.60	20.59	20.49



LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.54	22.53	22.48
5	1	12		22.53	22.50	22.43
5	1	24		22.53	22.52	22.40
5	12	0		21.62	21.62	21.52
5	12	6		21.55	21.55	21.41
5	12	11		21.59	21.57	21.43
5	25	0		21.61	21.55	21.55
5	1	0	16-QAM	21.50	21.47	21.43
5	1	12		21.49	21.45	21.31
5	1	24		21.47	21.45	21.34
5	12	0		20.63	20.63	20.62
5	12	6		20.64	20.63	20.49
5	12	11		20.62	20.64	20.50
5	25	0		20.62	20.62	20.61
10	1	0	QPSK	22.53	22.61	22.52
10	1	24		22.51	22.53	22.50
10	1	49		22.50	22.54	22.39
10	25	0		21.59	21.59	21.60
10	25	12		21.61	21.57	21.60
10	25	24		21.58	21.55	21.55
10	50	0		21.64	21.66	21.63
10	1	0	16-QAM	22.47	22.59	22.49
10	1	24		22.45	22.48	22.48
10	1	49		22.33	22.49	22.34
10	25	0		20.63	20.61	20.62
10	25	12		20.63	20.61	20.62
10	25	24		20.61	20.64	20.60
10	50	0		20.62	20.60	20.62



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	23.51	22.78	23.19
5	1	12		23.39	22.68	23.13
5	1	24		23.45	22.63	23.18
5	12	0		22.51	21.71	22.23
5	12	6		22.47	21.79	22.23
5	12	11		22.52	21.84	22.26
5	25	0		22.53	21.78	22.25
5	1	0	16-QAM	22.73	21.91	22.38
5	1	12		22.68	21.96	22.42
5	1	24		22.78	22.05	22.47
5	12	0		21.56	20.76	21.28
5	12	6		21.54	20.83	21.28
5	12	11		21.57	20.88	21.31
5	25	0		21.58	20.83	21.30
10	1	0	QPSK	23.89	22.99	23.25
10	1	24		23.55	22.71	23.10
10	1	49		23.48	22.70	23.21
10	25	0		22.49	21.75	22.23
10	25	12		22.57	21.80	22.21
10	25	24		22.83	21.88	22.26
10	50	0		22.64	21.80	22.21
10	1	0	16-QAM	22.77	22.00	22.52
10	1	24		22.84	21.97	22.37
10	1	49		22.90	22.11	22.49
10	25	0		21.53	20.81	21.29
10	25	12		21.61	20.85	21.26
10	25	24		21.88	20.93	21.31
10	50	0		21.68	20.85	21.27



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	23.99	23.05	23.62
15	1	37		23.71	22.75	23.07
15	1	74		23.40	22.76	23.19
15	36	0		22.52	21.95	22.49
15	36	18		22.84	21.90	22.25
15	36	37		22.99	22.00	22.25
15	75	0		22.78	21.93	22.32
15	1	0	16-QAM	22.68	21.96	22.92
15	1	37		22.99	22.00	22.37
15	1	74		22.98	21.99	22.49
15	36	0		21.56	20.98	21.56
15	36	18		21.91	20.99	21.31
15	36	37		21.98	21.03	21.29
15	75	0		21.82	21.05	21.38
20	1	0	QPSK	24.00	23.13	23.41
20	1	49		23.49	22.69	23.31
20	1	99		23.57	22.71	22.98
20	50	0		22.51	22.00	22.63
20	50	24		22.96	22.01	22.46
20	50	49		23.00	22.03	22.17
20	100	0		22.72	22.00	22.35
20	1	0	16-QAM	22.44	22.00	22.71
20	1	49		22.99	22.02	22.65
20	1	99		22.88	22.41	22.28
20	50	0		21.52	21.02	21.69
20	50	24		21.99	21.03	21.53
20	50	49		21.98	21.04	21.22
20	100	0		21.75	21.05	21.39



LTE Band 38 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.44	22.61	22.89
5	1	12		22.41	22.60	22.87
5	1	24		22.40	22.52	22.87
5	12	0		21.58	21.73	22.13
5	12	6		21.58	21.74	22.12
5	12	11		21.57	21.82	22.11
5	25	0		21.56	21.66	22.11
5	1	0	16-QAM	21.44	21.58	21.97
5	1	12		21.43	21.68	21.98
5	1	24		21.43	21.70	22.01
5	12	0		20.67	20.79	21.09
5	12	6		20.62	20.75	21.04
5	12	11		20.68	20.85	21.12
5	25	0		20.72	20.78	21.20
10	1	0	QPSK	22.40	22.69	22.91
10	1	24		22.34	22.56	22.85
10	1	49		22.39	22.34	22.90
10	25	0		21.52	21.66	22.09
10	25	12		21.54	21.68	22.09
10	25	24		21.56	21.85	22.13
10	50	0		21.55	21.69	22.15
10	1	0	16-QAM	21.42	21.52	21.99
10	1	24		21.46	21.71	22.00
10	1	49		21.44	21.77	22.02
10	25	0		20.70	20.81	21.10
10	25	12		20.75	20.83	21.15
10	25	24		20.76	20.97	21.13
10	50	0		20.63	20.87	21.15



LTE Band 38 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.46	22.77	22.91
15	1	37		22.45	22.62	22.90
15	1	74		22.45	22.46	22.70
15	36	0		21.51	21.64	21.98
15	36	18		21.52	21.69	22.10
15	36	37		21.49	21.91	22.14
15	75	0		21.52	21.69	22.11
15	1	0	16-QAM	21.49	21.48	21.70
15	1	37		21.47	21.65	21.97
15	1	74		21.48	21.79	22.00
15	36	0		20.59	20.73	20.93
15	36	18		20.62	20.76	21.05
15	36	37		20.61	20.89	21.07
15	75	0		20.66	20.80	21.13
20	1	0	QPSK	22.50	22.66	22.95
20	1	49		22.40	22.58	22.82
20	1	99		22.29	22.33	22.53
20	50	0		21.49	21.62	21.97
20	50	24		21.55	21.73	22.13
20	50	49		21.54	21.94	22.14
20	100	0		21.52	21.73	22.00
20	1	0	16-QAM	21.46	21.38	21.69
20	1	49		21.47	21.66	21.99
20	1	99		21.58	21.79	22.04
20	50	0		20.62	20.57	21.13
20	50	24		20.68	20.76	21.28
20	50	49		20.65	21.11	21.32
20	100	0		20.65	20.82	21.02



LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.56	22.44	22.69
5	1	12		22.53	22.54	22.53
5	1	24		22.47	22.52	22.42
5	12	0		21.80	21.61	21.89
5	12	6		21.80	21.72	21.86
5	12	11		21.80	21.69	21.84
5	25	0		21.77	21.72	21.71
5	1	0	16-QAM	21.75	21.53	21.75
5	1	12		21.69	21.62	21.73
5	1	24		21.77	21.65	21.42
5	12	0		21.01	20.77	20.79
5	12	6		21.01	20.87	20.80
5	12	11		20.97	20.86	20.75
5	25	0		21.01	20.93	20.83
10	1	0	QPSK	22.54	22.38	22.58
10	1	24		22.49	22.51	22.61
10	1	49		22.54	22.48	22.52
10	25	0		21.80	21.60	21.83
10	25	12		21.73	21.75	21.88
10	25	24		21.83	21.69	21.78
10	50	0		21.75	21.73	21.88
10	1	0	16-QAM	21.76	21.55	21.75
10	1	24		21.74	21.62	21.82
10	1	49		21.77	21.66	21.72
10	25	0		20.99	20.85	20.92
10	25	12		21.04	20.95	20.91
10	25	24		21.04	20.93	20.87
10	50	0		20.97	20.88	20.78



LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.49	22.44	22.59
15	1	37		22.59	22.59	22.69
15	1	74		22.63	22.60	22.56
15	36	0		21.74	21.60	21.75
15	36	18		21.83	21.74	21.78
15	36	37		21.83	21.71	21.80
15	75	0		21.84	21.71	21.88
15	1	0	16-QAM	21.72	21.52	21.67
15	1	37		21.79	21.64	21.65
15	1	74		21.77	21.72	21.56
15	36	0		20.90	20.69	20.68
15	36	18		20.91	20.79	20.71
15	36	37		21.00	20.85	20.72
15	75	0		21.10	20.86	20.83
20	1	0	QPSK	22.70	22.56	22.67
20	1	49		22.57	22.55	22.66
20	1	99		22.55	22.50	22.59
20	50	0		21.84	21.59	21.79
20	50	24		21.82	21.72	21.76
20	50	49		21.84	21.74	21.85
20	100	0		21.76	21.74	21.79
20	1	0	16-QAM	21.71	21.52	21.62
20	1	49		21.74	21.62	21.85
20	1	99		21.70	21.81	21.63
20	50	0		21.00	20.75	20.78
20	50	24		21.02	20.87	20.73
20	50	49		20.98	20.86	20.82
20	100	0		20.94	20.86	20.80

**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	3.62	5.19	4.65	6.03	PASS
Middle CH	3.88	4.78	4.87	5.93	
Highest CH	4.78	5.26	5.42	6.06	

Mode	LTE Band 25 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	RB Size	Result
Lowest CH	-	-	-	-	PASS
Middle CH	-	-	-	-	
Highest CH	4.49	5	5.8	5.93	

Mode	LTE Band 4 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	RB Size	Result
Lowest CH	4.52	5.19	5.8	6.03	PASS
Middle CH	4.94	5.22	5.8	6.06	
Highest CH	4.9	5.22	5.67	6.06	

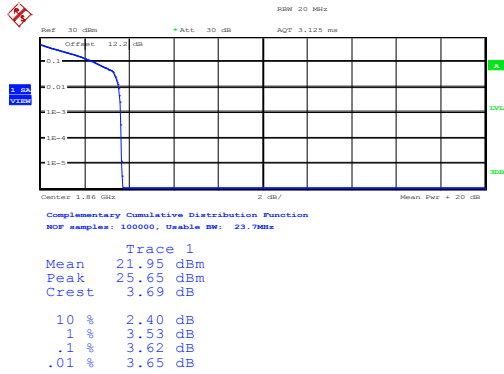
Mode	LTE Band 5 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	RB Size	Result
Lowest CH	4.33	5.38	5.48	6.06	PASS
Middle CH	4.62	5.42	5.38	6.09	
Highest CH	4.71	5.38	5.48	6.06	

Mode	LTE Band 7 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	RB Size	Result
Lowest CH	3.62	4.78	4.55	5.71	PASS
Middle CH	3.53	4.84	4.46	5.71	
Highest CH	3.56	4.81	4.52	5.71	

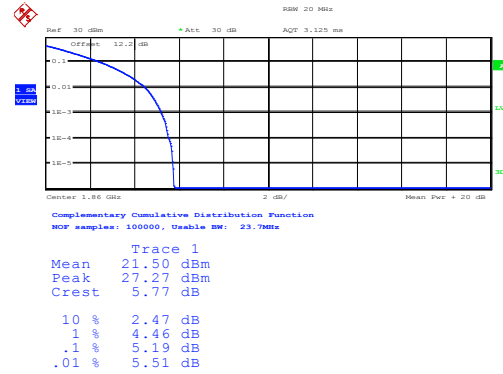


Mode	LTE Band 38 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	RB Size	Result
Lowest CH	7.02	7.66	6.60	7.92	PASS
Middle CH	6.92	7.08	7.37	7.82	
Highest CH	7.02	7.69	7.66	7.85	

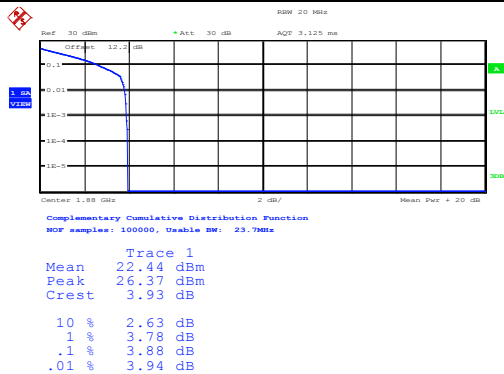
Mode	LTE Band 41 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	RB Size	Result
Lowest CH	6.41	7.4	7.18	7.98	PASS
Middle CH	7.15	7.66	7.92	8.04	
Highest CH	6.92	7.63	7.47	8.08	

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

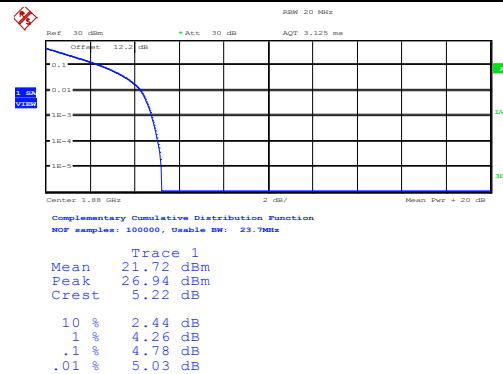
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Lowest Channel / Full RB

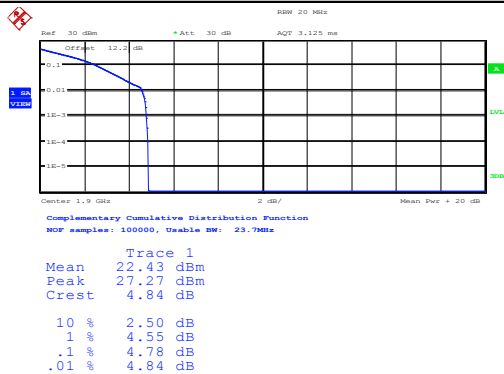
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Middle Channel / 1RB

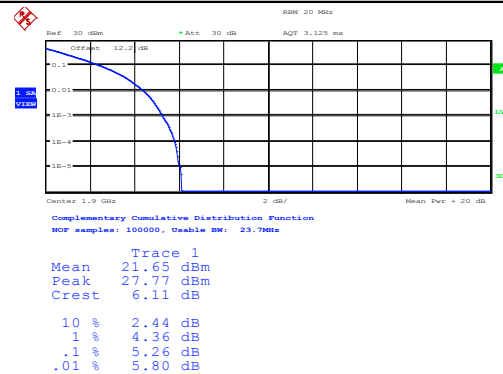
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Middle Channel / Full RB

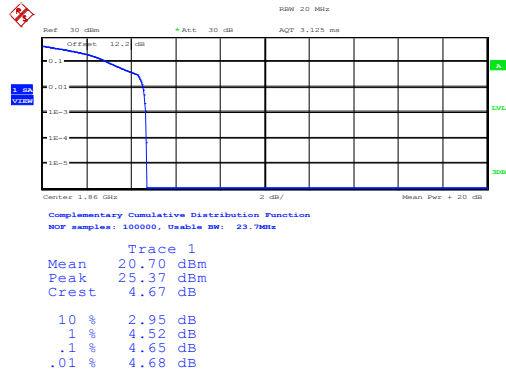
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Highest Channel / 1RB

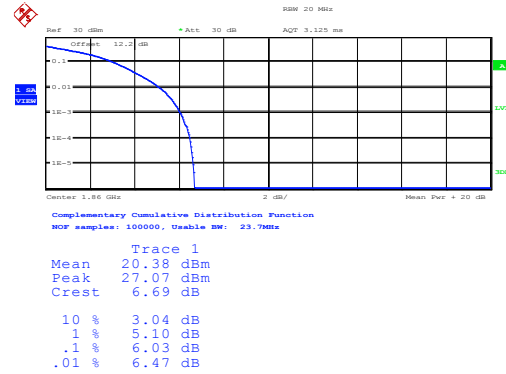
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Highest Channel / Full RB

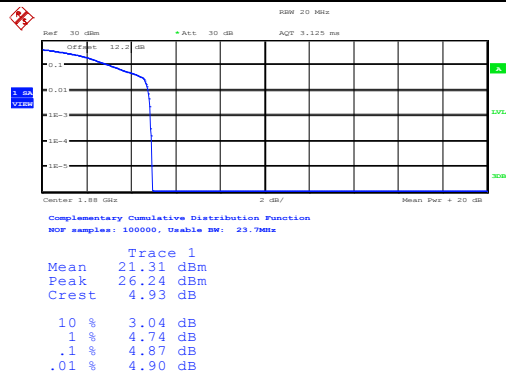
Date: 26.OCT.2014 08:47:30

**LTE Band 2 / 20MHz / 16QAM****Lowest Channel / 1RB**

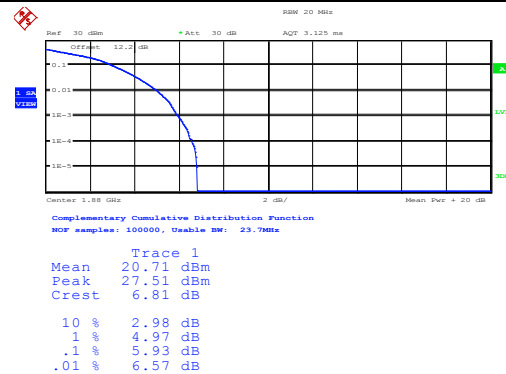
Date: 25.OCT.2014 09:29:54

Lowest Channel / Full RB

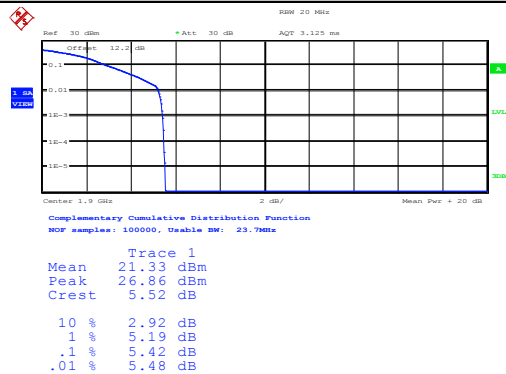
Date: 25.OCT.2014 09:30:06

Middle Channel / 1RB

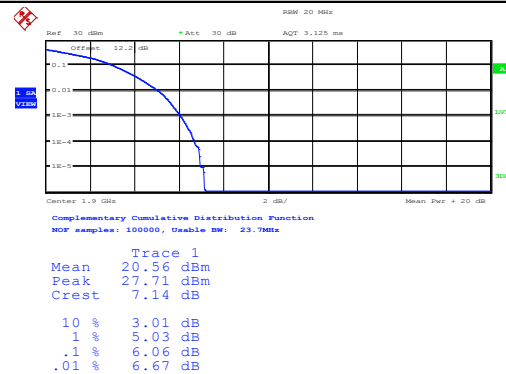
Date: 25.OCT.2014 09:30:18

Middle Channel / Full RB

Date: 25.OCT.2014 09:30:30

Highest Channel / 1RB

Date: 25.OCT.2014 09:30:44

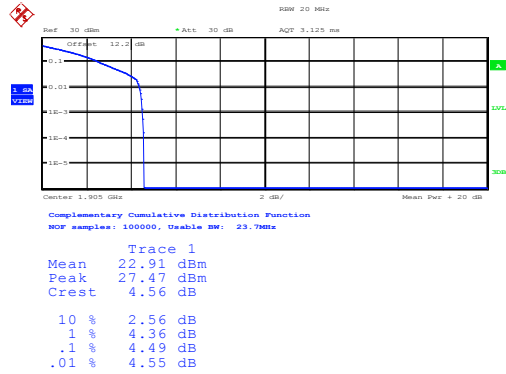
Highest Channel / Full RB

Date: 25.OCT.2014 09:30:56

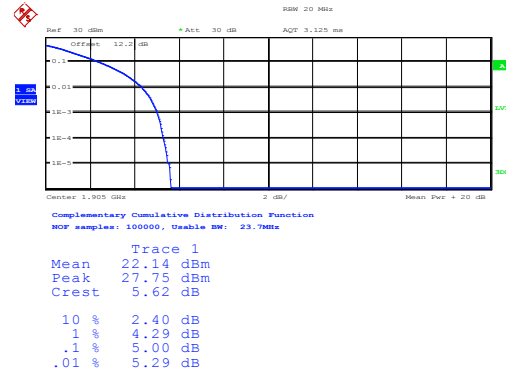


LTE Band 25 / 20MHz / QPSK

Highest Channel / 1RB

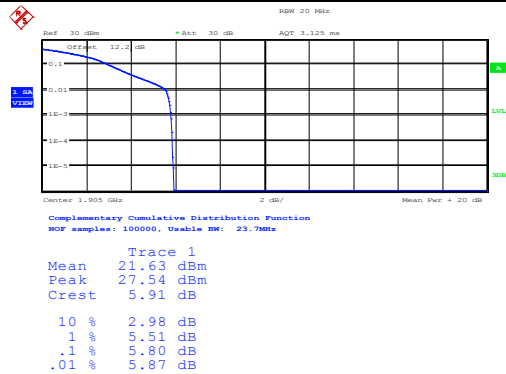


Highest Channel / Full RB

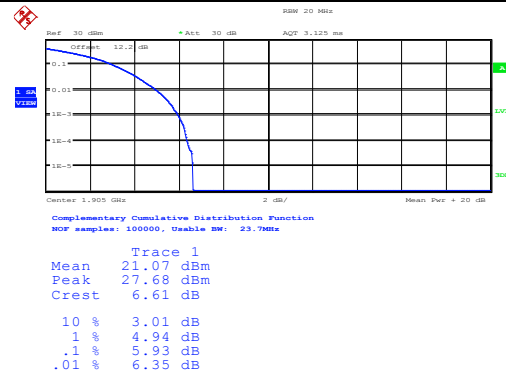


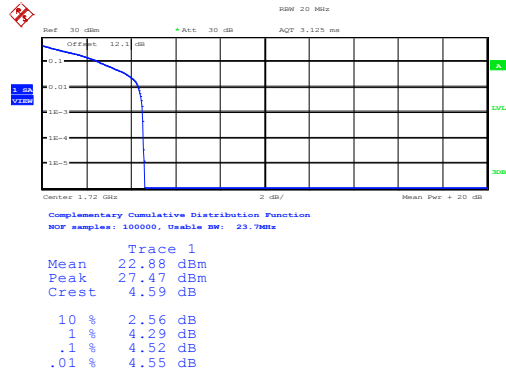
LTE Band 25 / 20MHz / 16QAM

Highest Channel / 1RB

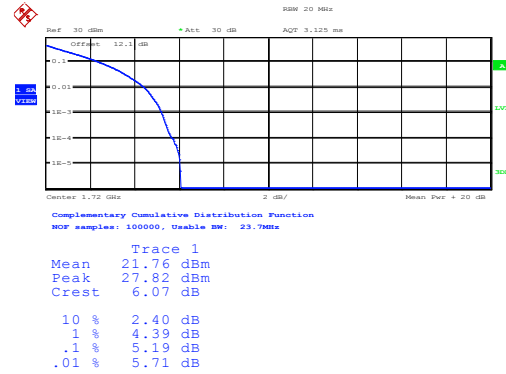


Highest Channel / Full RB

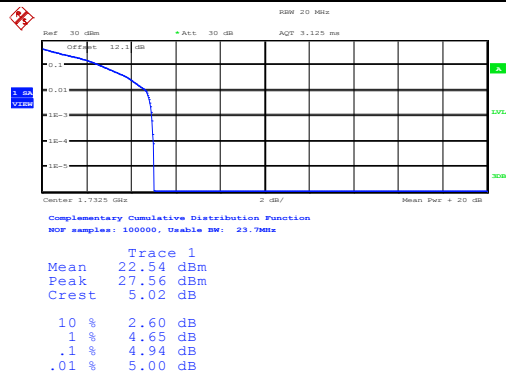


**LTE Band 4 / 20MHz / QPSK****Lowest Channel / 1RB**

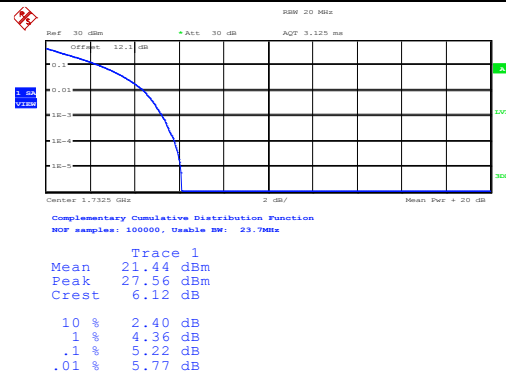
Date: 26.OCT.2014 10:59:05

Lowest Channel / Full RB

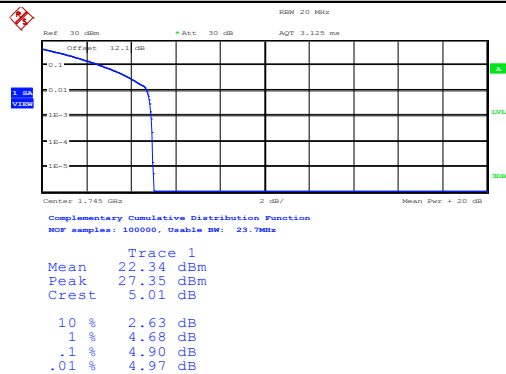
Date: 26.OCT.2014 11:00:12

Middle Channel / 1RB

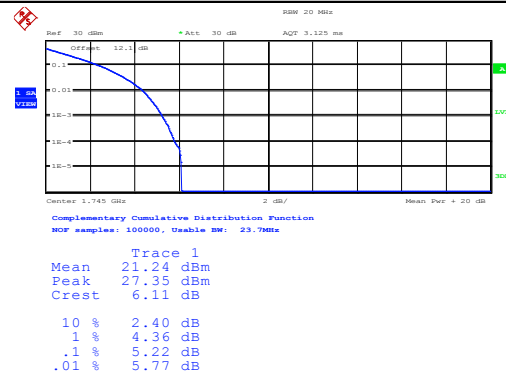
Date: 26.OCT.2014 11:00:30

Middle Channel / Full RB

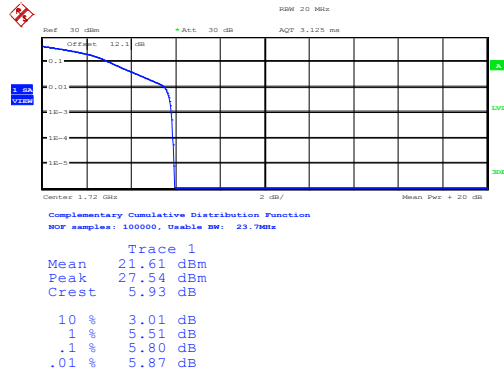
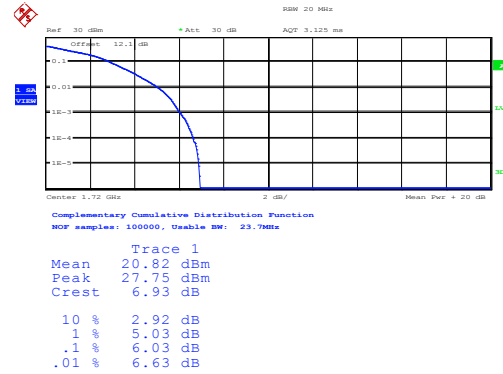
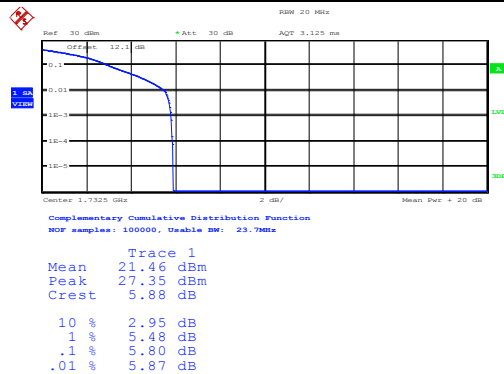
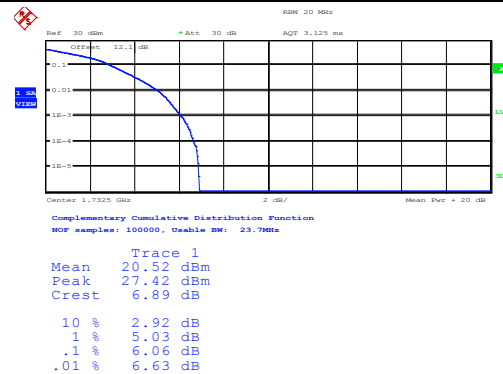
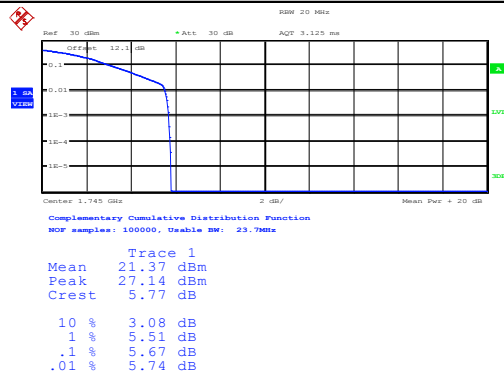
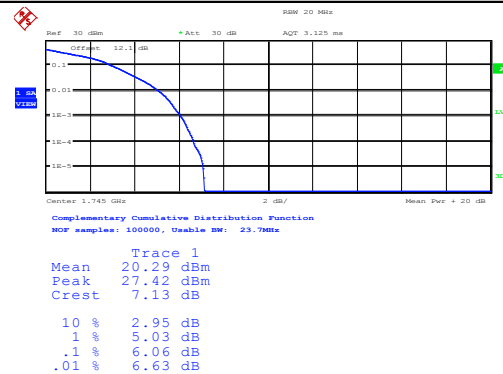
Date: 26.OCT.2014 11:01:45

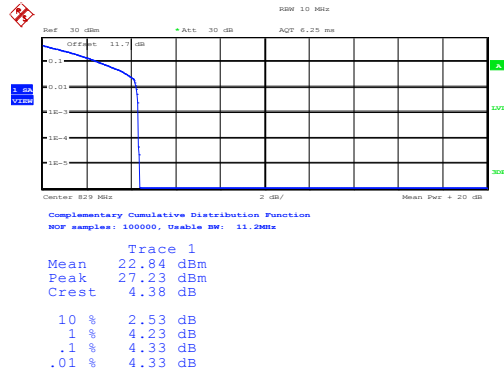
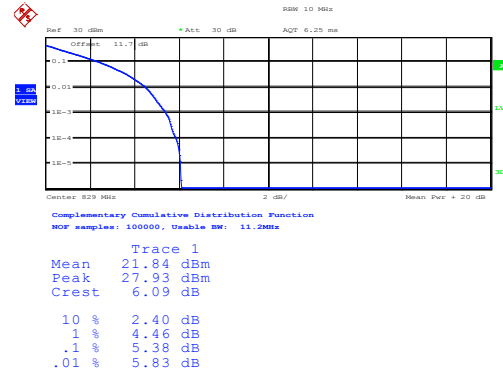
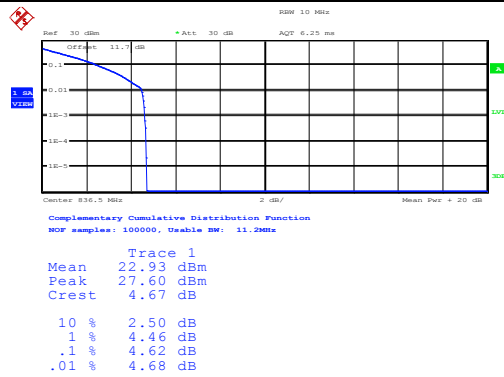
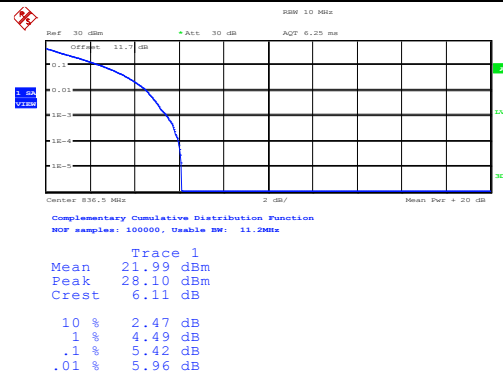
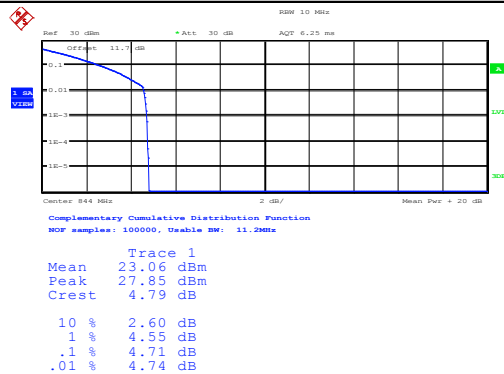
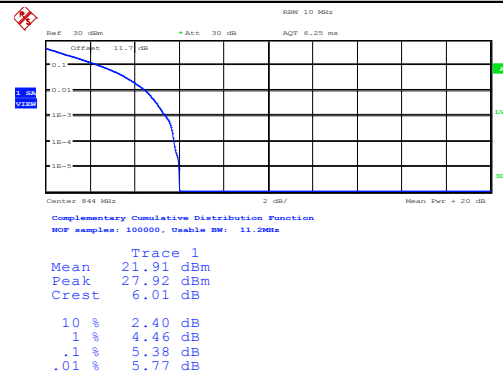
Highest Channel / 1RB

Date: 26.OCT.2014 11:02:56

Highest Channel / Full RB

Date: 26.OCT.2014 11:04:18

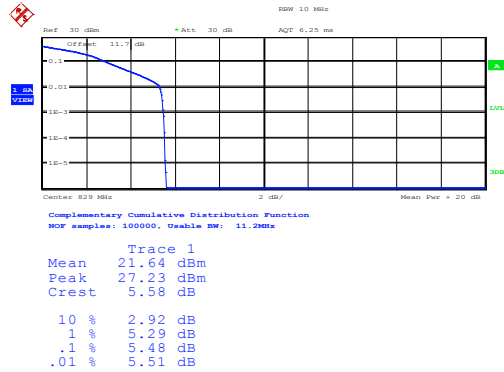
**LTE Band 4 / 20MHz / 16QAM****Lowest Channel / 1RB****Lowest Channel / Full RB****Middle Channel / 1RB****Middle Channel / Full RB****Highest Channel / 1RB****Highest Channel / Full RB**

**LTE Band 5 / 10MHz / QPSK****Lowest Channel / 1RB****Lowest Channel / Full RB****Middle Channel / 1RB****Middle Channel / Full RB****Highest Channel / 1RB****Highest Channel / Full RB**



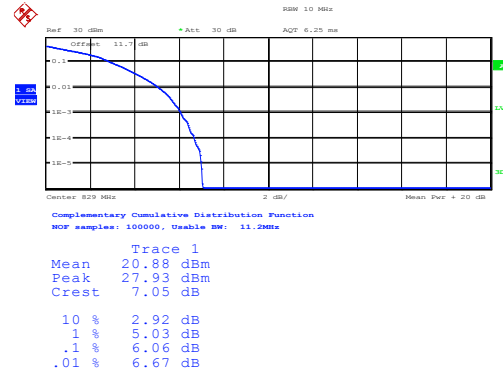
LTE Band 5 / 10MHz / 16QAM

Lowest Channel / 1RB



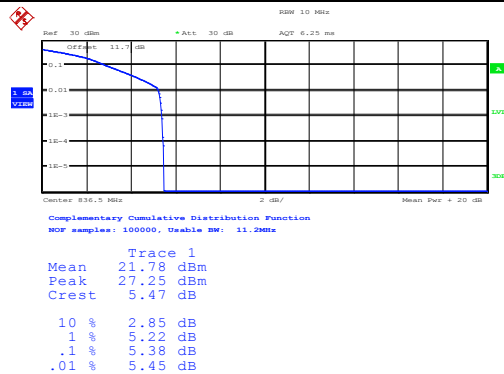
Date: 26.OCT.2014 14:36:55

Lowest Channel / Full RB



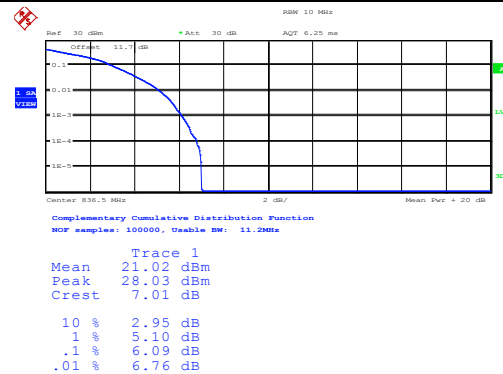
Date: 26.OCT.2014 14:38:41

Middle Channel / 1RB



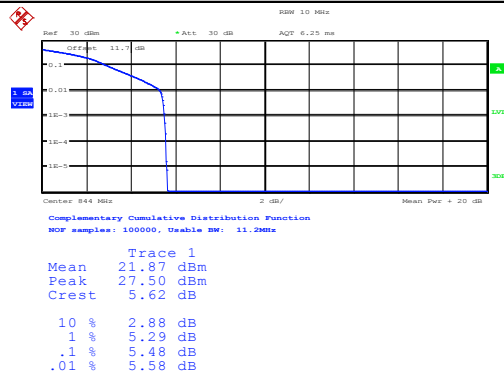
Date: 26.OCT.2014 14:38:58

Middle Channel / Full RB



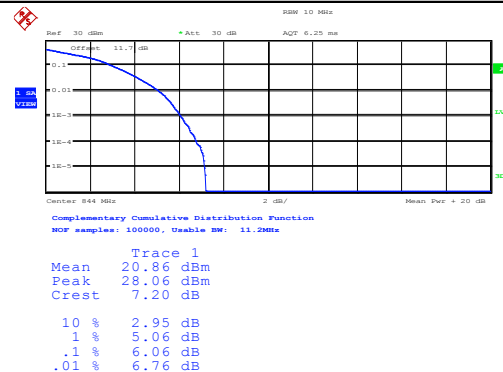
Date: 26.OCT.2014 14:41:17

Highest Channel / 1RB

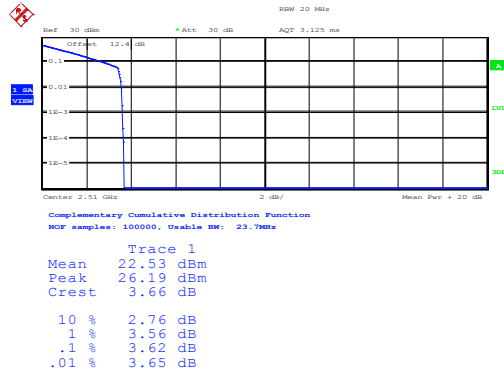


Date: 26.OCT.2014 14:41:41

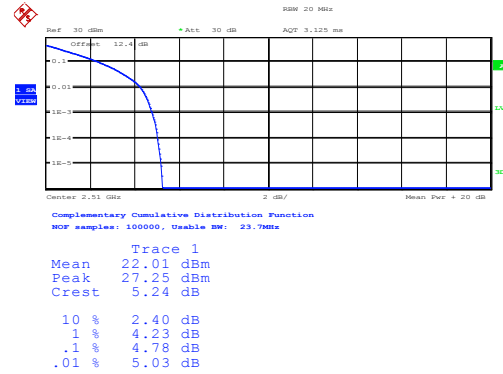
Highest Channel / Full RB



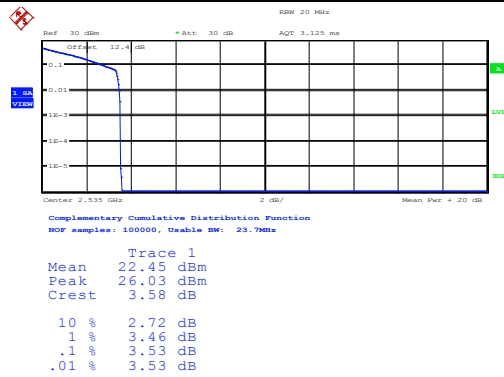
Date: 26.OCT.2014 14:42:09

**LTE Band 7 / 20MHz / QPSK****Lowest Channel / 1RB**

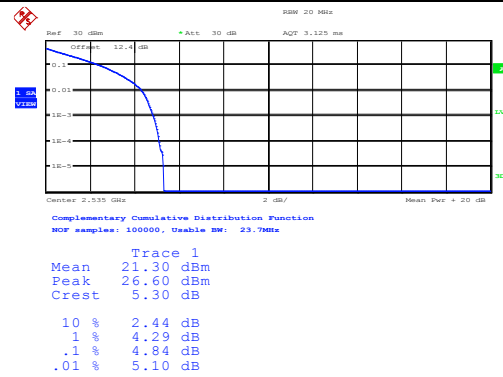
Date: 26.OCT.2014 17:17:53

Lowest Channel / Full RB

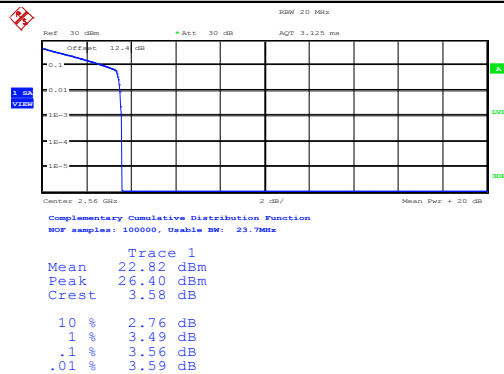
Date: 26.OCT.2014 17:18:11

Middle Channel / 1RB

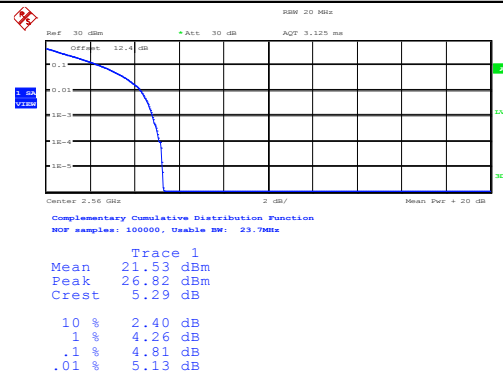
Date: 26.OCT.2014 17:18:38

Middle Channel / Full RB

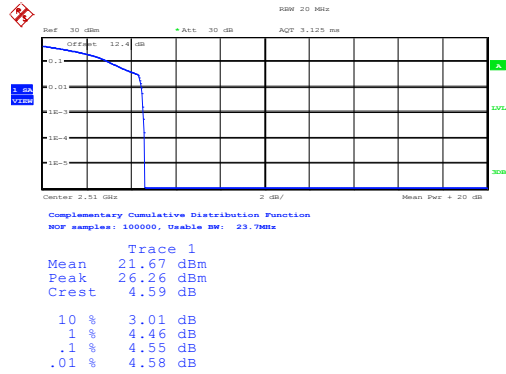
Date: 26.OCT.2014 17:19:03

Highest Channel / 1RB

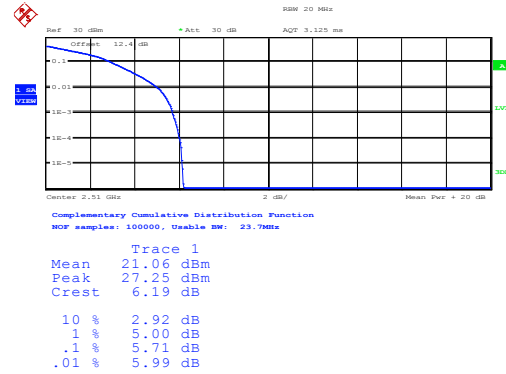
Date: 26.OCT.2014 17:19:25

Highest Channel / Full RB

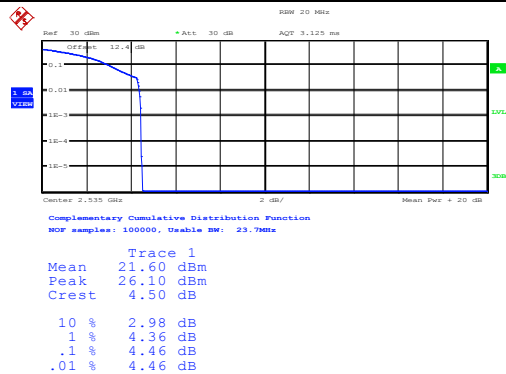
Date: 26.OCT.2014 17:20:37

**LTE Band 7 / 20MHz / 16QAM****Lowest Channel / 1RB**

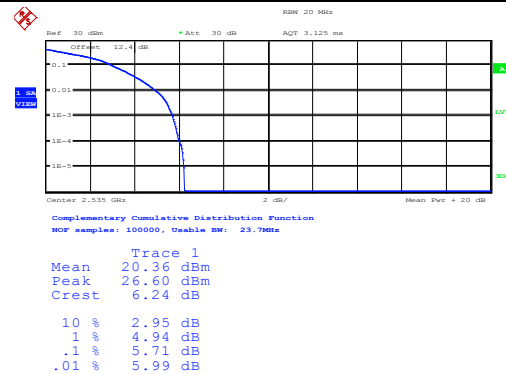
Date: 26.OCT.2014 17:13:13

Lowest Channel / Full RB

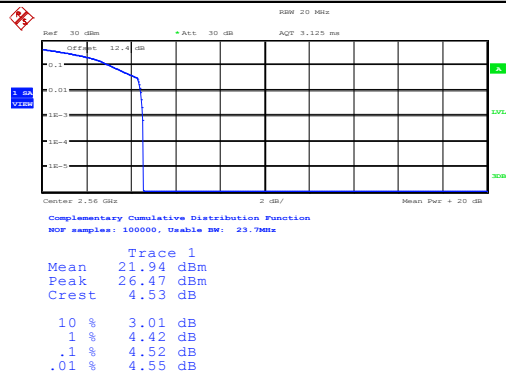
Date: 26.OCT.2014 17:13:57

Middle Channel / 1RB

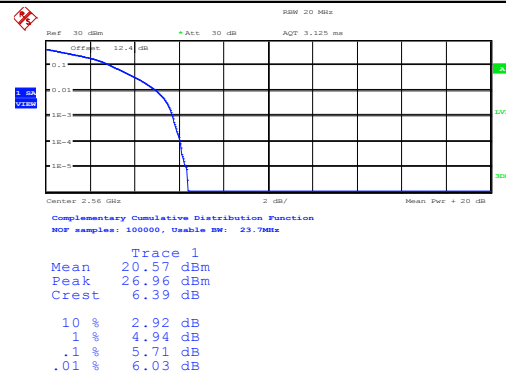
Date: 26.OCT.2014 17:14:25

Middle Channel / Full RB

Date: 26.OCT.2014 17:14:56

Highest Channel / 1RB

Date: 26.OCT.2014 17:15:40

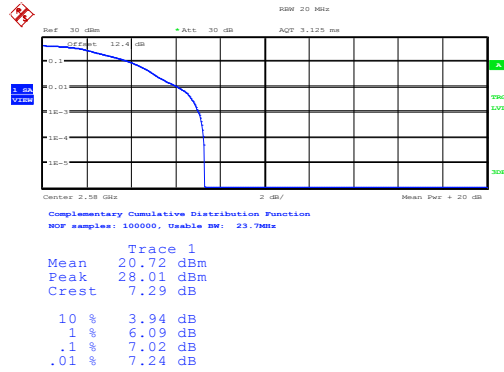
Highest Channel / Full RB

Date: 26.OCT.2014 17:17:02



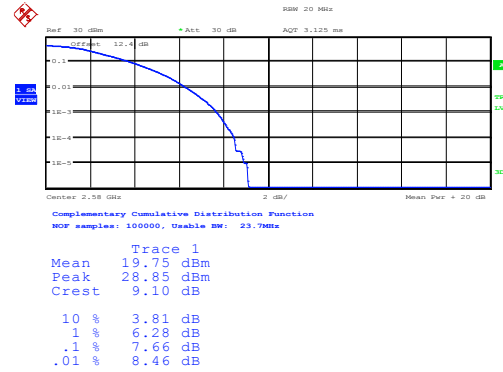
LTE Band 38 / 20MHz / QPSK

Lowest Channel / 1RB



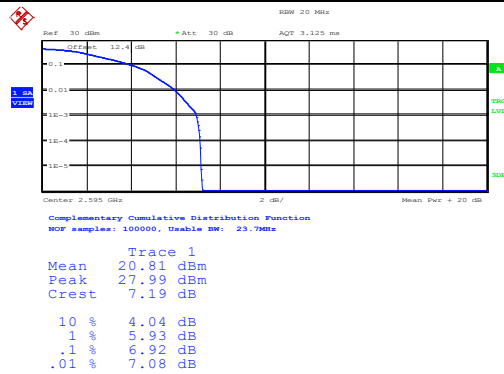
Date: 29.OCT.2014 09:41:30

Lowest Channel / Full RB



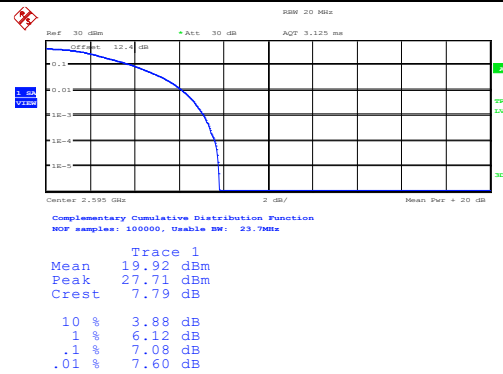
Date: 29.OCT.2014 09:39:53

Middle Channel / 1RB



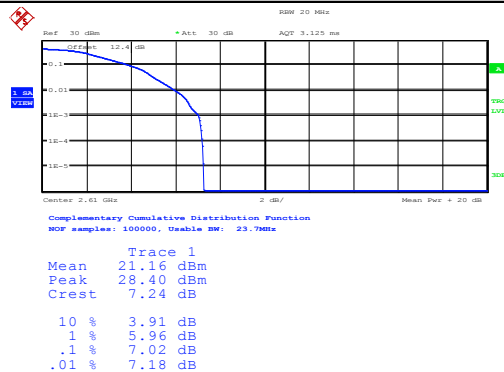
Date: 29.OCT.2014 09:36:42

Middle Channel / Full RB



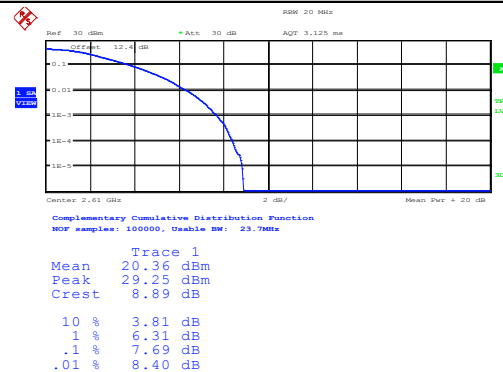
Date: 29.OCT.2014 09:39:16

Highest Channel / 1RB

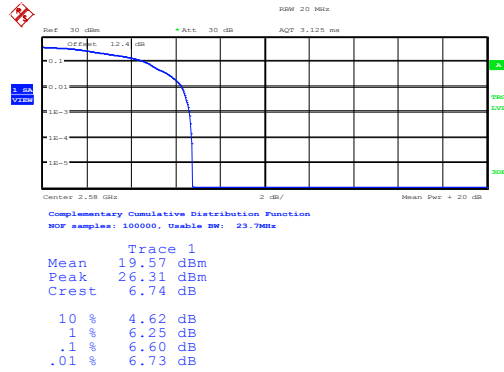


Date: 29.OCT.2014 09:35:57

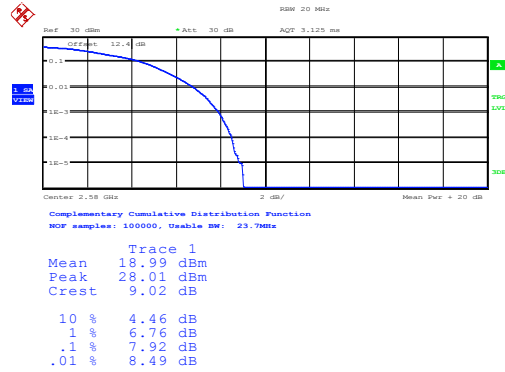
Highest Channel / Full RB



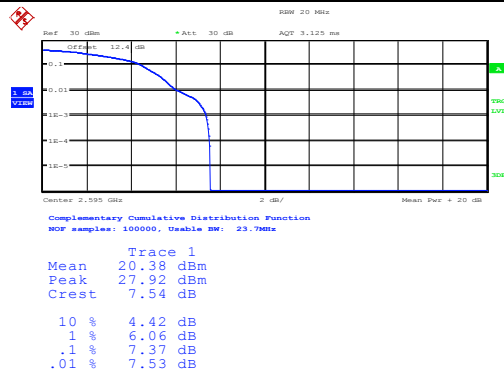
Date: 29.OCT.2014 09:33:21

**LTE Band 38 / 20MHz / 16QAM****Lowest Channel / 1RB**

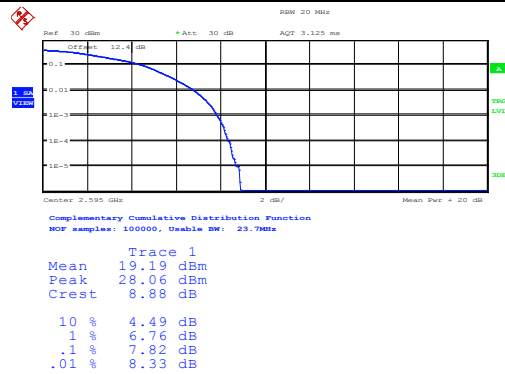
Date: 29.OCT.2014 09:40:43

Lowest Channel / Full RB

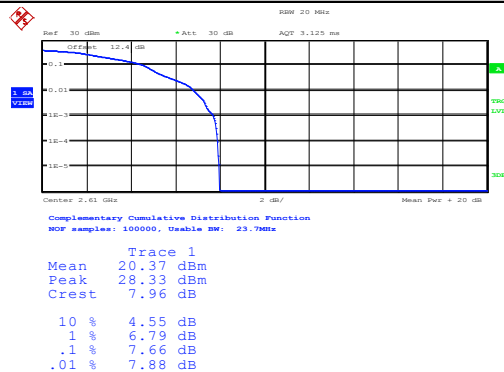
Date: 29.OCT.2014 09:40:13

Middle Channel / 1RB

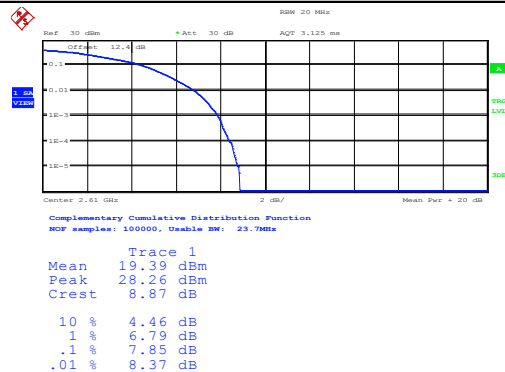
Date: 29.OCT.2014 09:37:09

Middle Channel / Full RB

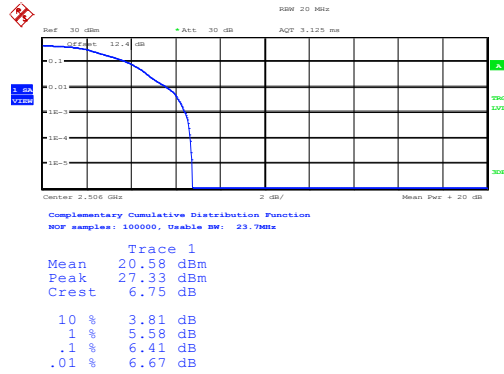
Date: 29.OCT.2014 09:38:04

Highest Channel / 1RB

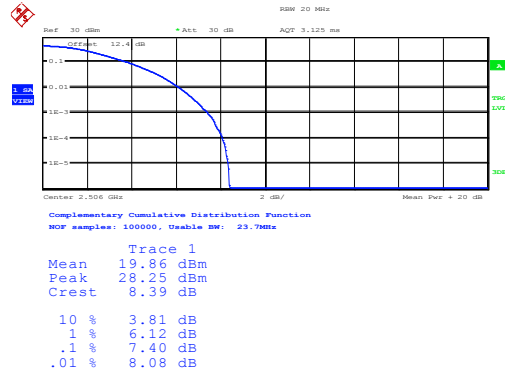
Date: 29.OCT.2014 09:35:31

Highest Channel / Full RB

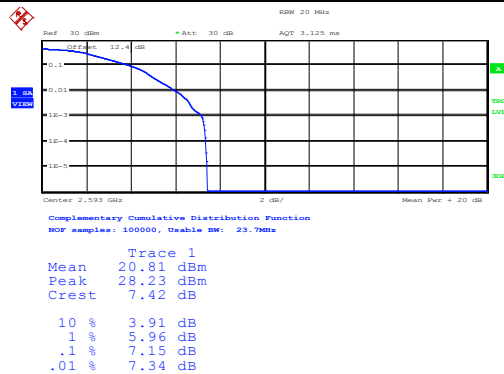
Date: 29.OCT.2014 09:34:44

**LTE Band 41 / 20MHz / QPSK****Lowest Channel / 1RB**

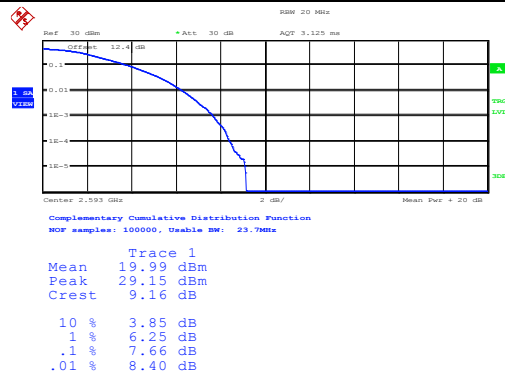
Date: 29.OCT.2014 09:42:46

Lowest Channel / Full RB

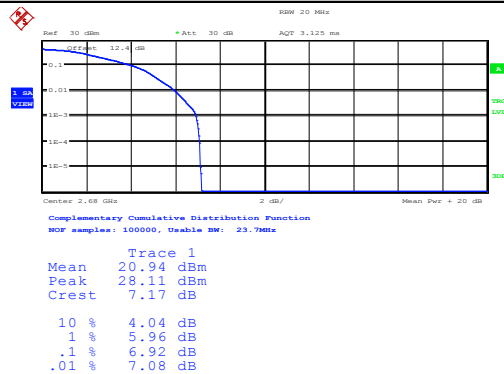
Date: 29.OCT.2014 09:44:54

Middle Channel / 1RB

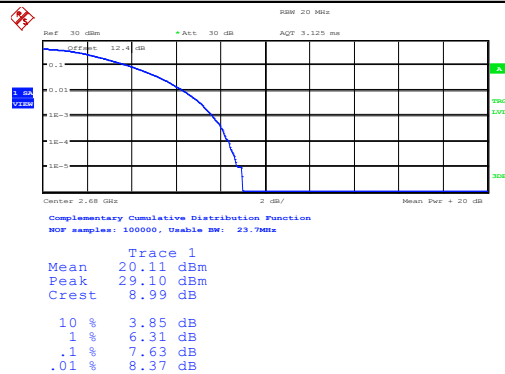
Date: 29.OCT.2014 09:47:46

Middle Channel / Full RB

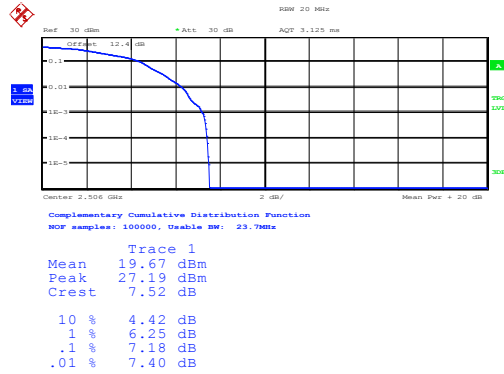
Date: 29.OCT.2014 09:45:52

Highest Channel / 1RB

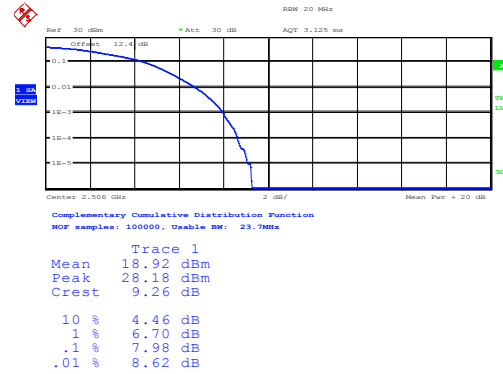
Date: 29.OCT.2014 09:48:24

Highest Channel / Full RB

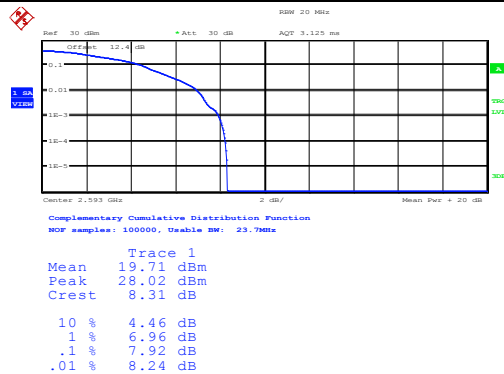
Date: 29.OCT.2014 09:59:49

**LTE Band 41 / 20MHz / 16QAM****Lowest Channel / 1RB**

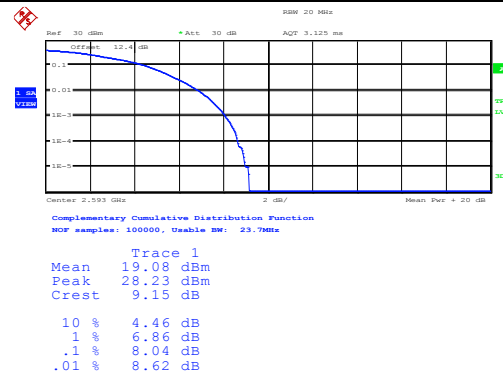
Date: 29.OCT.2014 09:43:24

Lowest Channel / Full RB

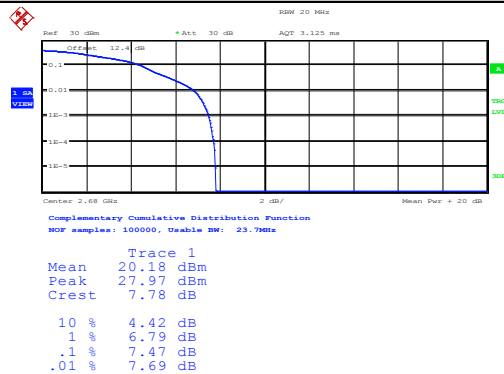
Date: 29.OCT.2014 09:44:26

Middle Channel / 1RB

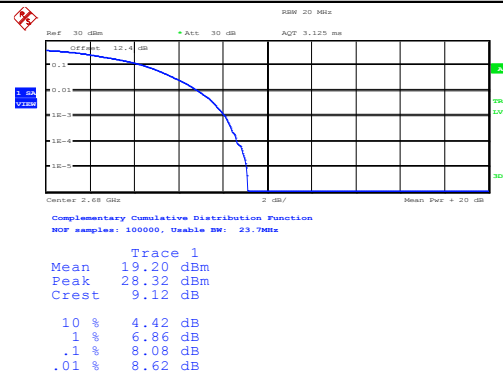
Date: 29.OCT.2014 09:47:14

Middle Channel / Full RB

Date: 29.OCT.2014 09:46:23

Highest Channel / 1RB

Date: 29.OCT.2014 09:49:45

Highest Channel / Full RB

Date: 29.OCT.2014 09:59:05

**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	1.3	1.31	3.04	3.03	4.9	4.91	10.02	10.04	14.7	14.7	21.2	20.96
Middle CH	1.3	1.29	3.05	3.04	5.01	4.92	10.1	10.02	14.7	14.7	21.16	21
Highest CH	1.28	1.28	3.03	3.01	4.98	4.93	10.02	10.06	14.79	14.73	21	20.84

Mode	LTE Band 25 : 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	-	-	-	-	-	-	-	-	-	-	-	-
Middle CH	-	-	-	-	-	-	-	-	-	-	-	-
Highest CH	1.29	1.26	3.02	3	4.93	4.91	10.06	10	14.67	14.7	20.92	20.84

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	1.29	1.28	3.04	3.04	4.98	4.89	10.06	10.06	14.7	14.73	21.08	20.92
Middle CH	1.28	1.3	3.02	3.03	5	4.95	10.06	10.04	14.7	14.64	21	20.92
Highest CH	1.3	1.28	3.02	3.03	5	4.98	10.02	10.04	14.64	14.67	21	20.92

Mode	LTE Band 5 : 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	1.29	1.28	3.03	3.02	4.92	4.91	10.16	10.02	-	-	-	-
Middle CH	1.27	1.29	3.01	3.02	4.88	4.89	10.02	10.04	-	-	-	-
Highest CH	1.27	1.28	3.02	3.04	4.94	4.9	10.14	10	-	-	-	-



Mode	LTE Band 7 : 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	-	-	-	-	4.98	4.98	10.06	10.06	14.67	14.52	21.16	20.92
Middle CH	-	-	-	-	4.92	4.94	10.08	10.06	14.76	14.73	21.24	20.88
Highest CH	-	-	-	-	4.96	4.94	10.16	10.08	14.7	14.73	21.04	21

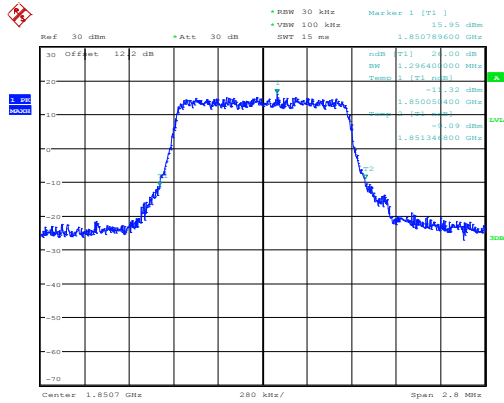
Mode	LTE Band 38 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.84	4.86	9.94	9.98	14.58	14.64	20.92	21.24
Middle CH	-	-	-	-	4.8	4.88	10.08	9.94	14.58	14.55	21	20.84
Highest CH	-	-	-	-	4.92	4.85	9.94	9.92	14.43	14.7	21	20.84

Mode	LTE Band 41 : 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	-	-	-	-	4.85	4.91	9.94	9.94	14.61	14.61	21	20.92
Middle CH	-	-	-	-	4.85	4.88	9.96	9.96	14.67	14.61	20.96	21
Highest CH	-	-	-	-	4.86	4.89	10	10.1	14.7	14.55	20.92	20.88



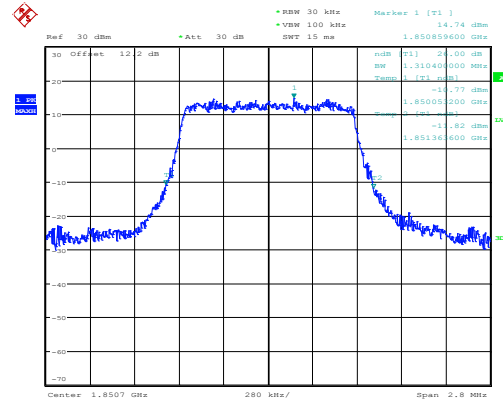
LTE Band 2

Lowest Channel / 1.4MHz / QPSK



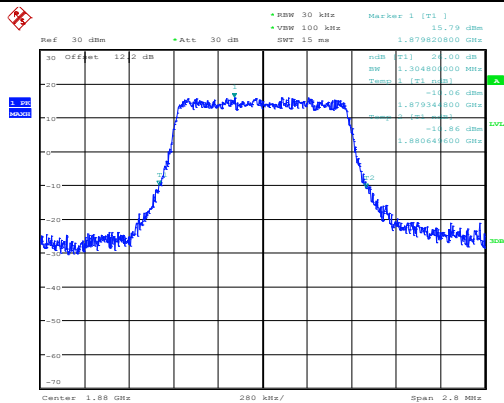
Date: 25.OCT.2014 07:33:11

Lowest Channel / 1.4MHz / 16QAM



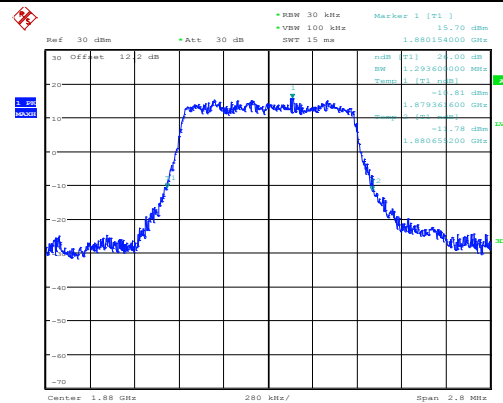
Date: 25.OCT.2014 07:33:23

Middle Channel / 1.4MHz / QPSK



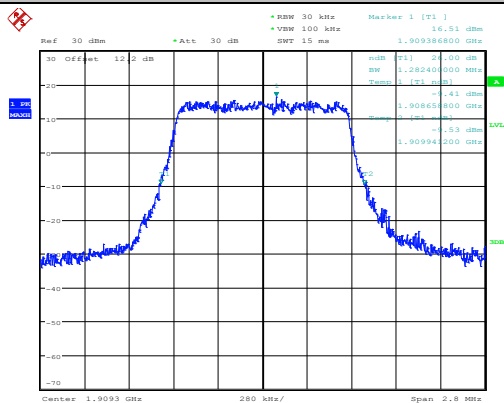
Date: 25.OCT.2014 07:40:58

Middle Channel / 1.4MHz / 16QAM



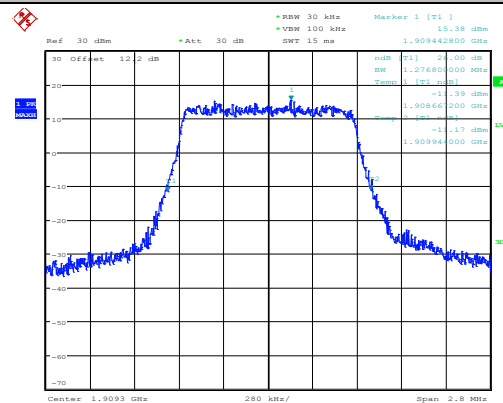
Date: 25.OCT.2014 07:41:11

Highest Channel / 1.4MHz / QPSK



Date: 25.OCT.2014 07:44:05

Highest Channel / 1.4MHz / 16QAM

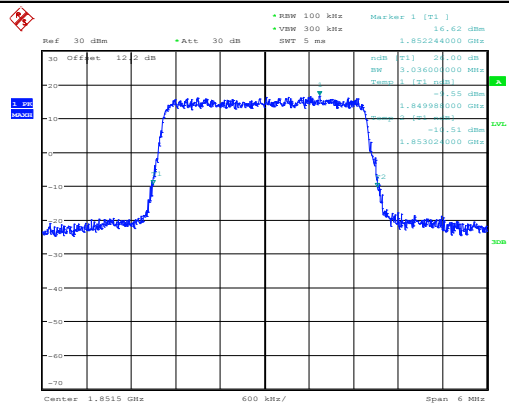


Date: 25.OCT.2014 07:44:17



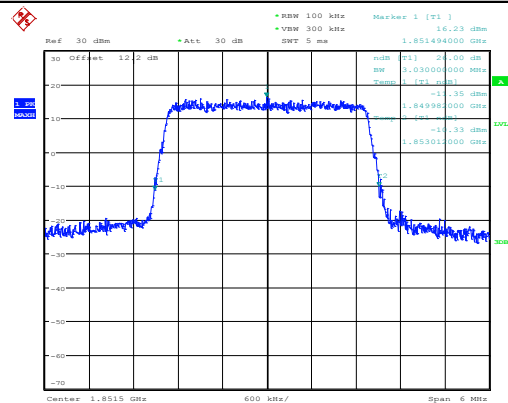
LTE Band 2

Lowest Channel / 3MHz / QPSK



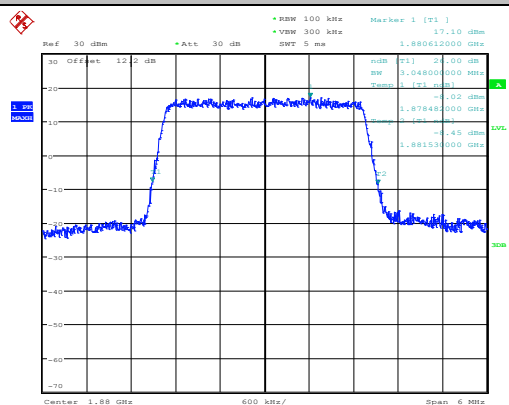
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Lowest Channel / 3MHz / 16QAM



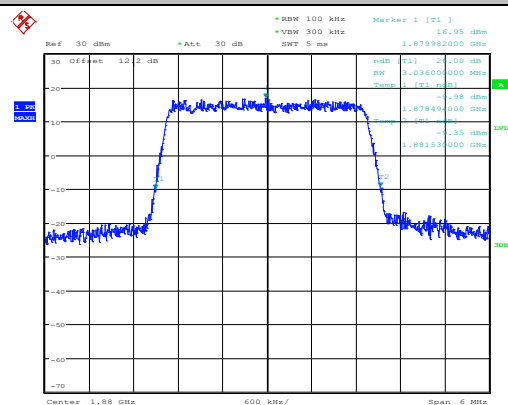
Date: 25.OCT.2014 07:56:11

Middle Channel / 3MHz / QPSK



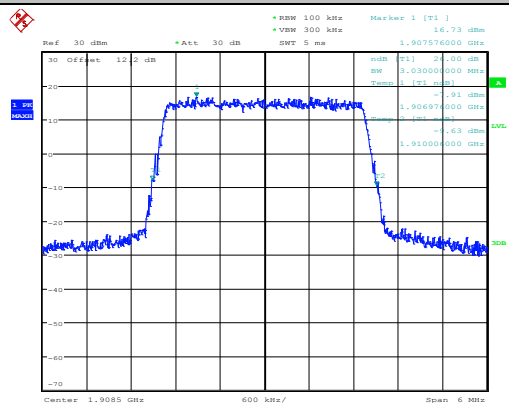
Date: 25.OCT.2014 08:03:45

Middle Channel / 3MHz / 16QAM



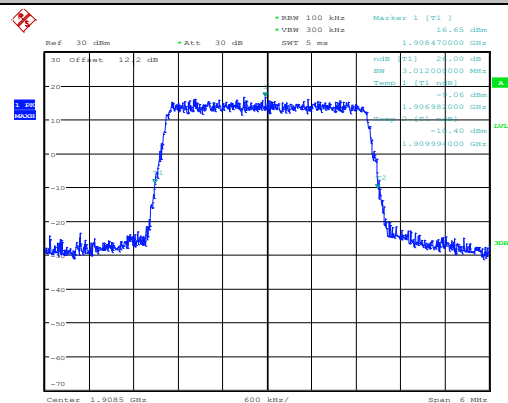
Date: 25.OCT.2014 08:03:58

Highest Channel / 3MHz / QPSK



Date: 25.OCT.2014 08:06:52

Highest Channel / 3MHz / 16QAM

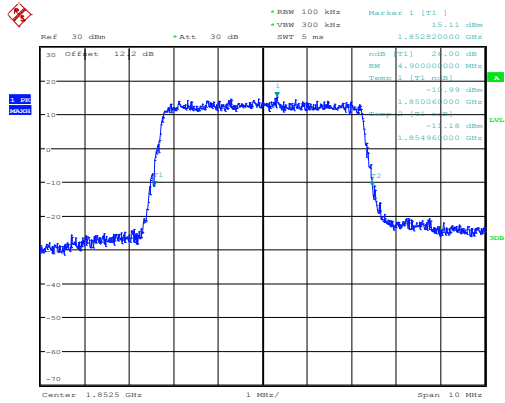


Date: 25.OCT.2014 08:07:05



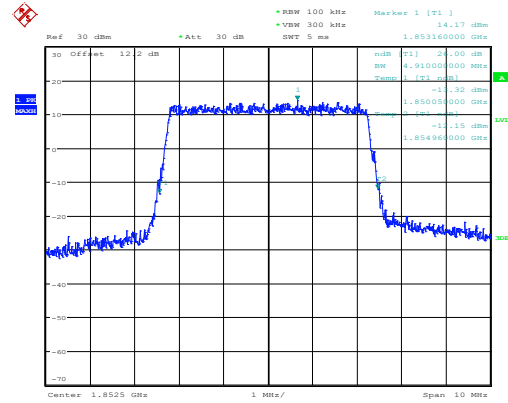
LTE Band 2

Lowest Channel / 5MHz / QPSK



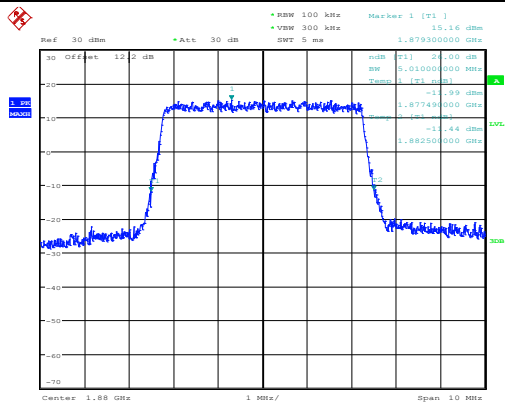
Date: 25.OCT.2014 08:14:39

Lowest Channel / 5MHz / 16QAM



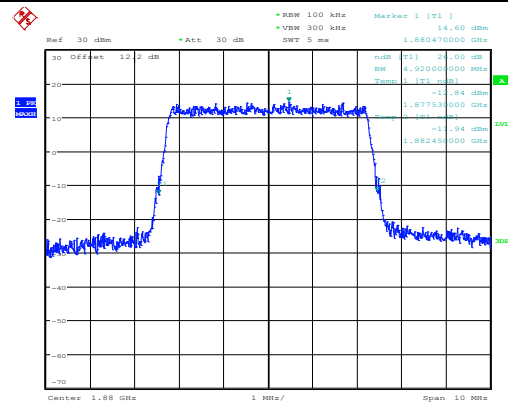
Date: 25.OCT.2014 08:14:51

Middle Channel / 5MHz / QPSK



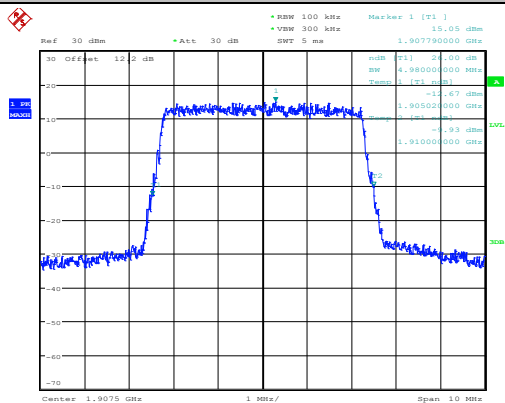
Date: 25.OCT.2014 08:22:32

Middle Channel / 5MHz / 16QAM



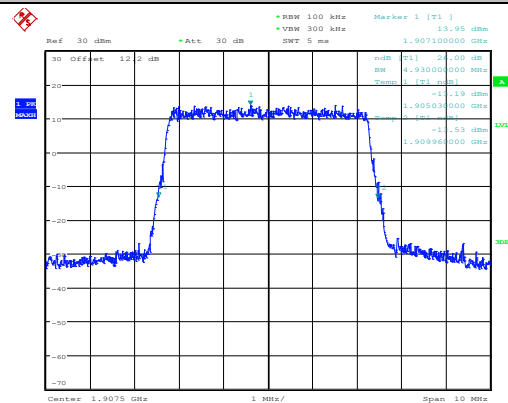
Date: 25.OCT.2014 08:22:45

Highest Channel / 5MHz / QPSK



Date: 25.OCT.2014 08:25:39

Highest Channel / 5MHz / 16QAM

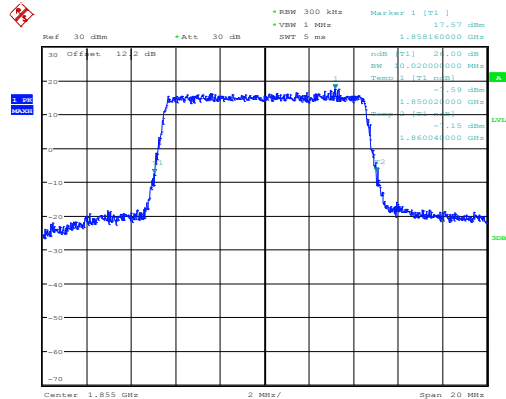


Date: 25.OCT.2014 08:25:52



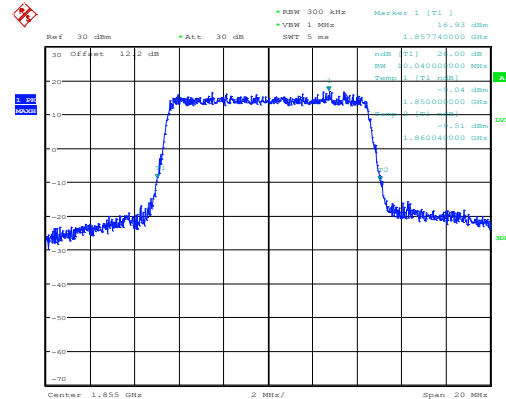
LTE Band 2

Lowest Channel / 10MHz / QPSK



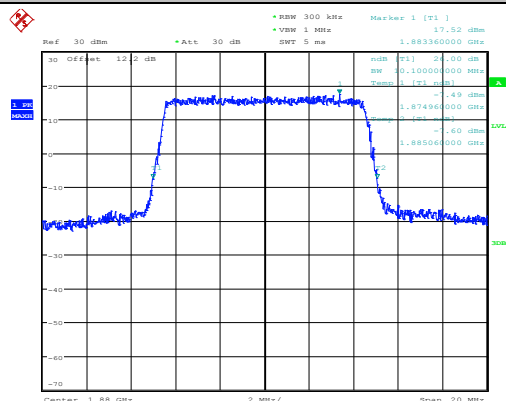
Date: 25.OCT.2014 08:33:26

Lowest Channel / 10MHz / 16QAM



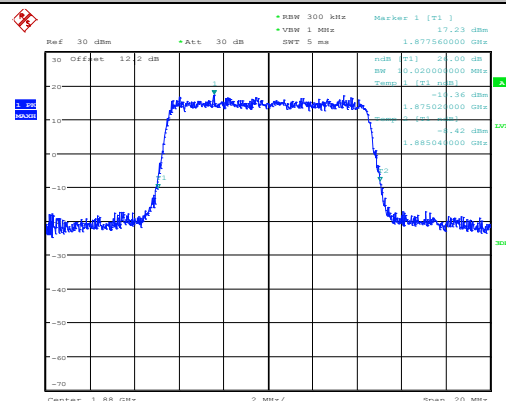
Date: 25.OCT.2014 08:33:39

Middle Channel / 10MHz / QPSK



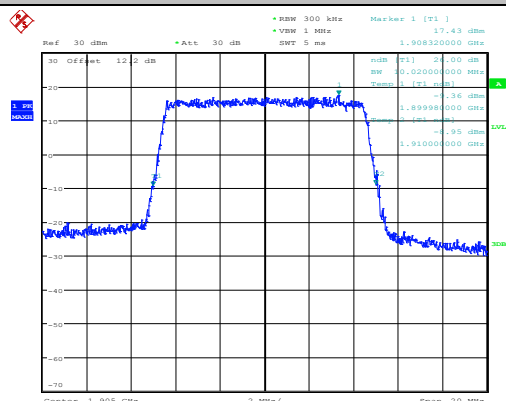
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Middle Channel / 10MHz / 16QAM



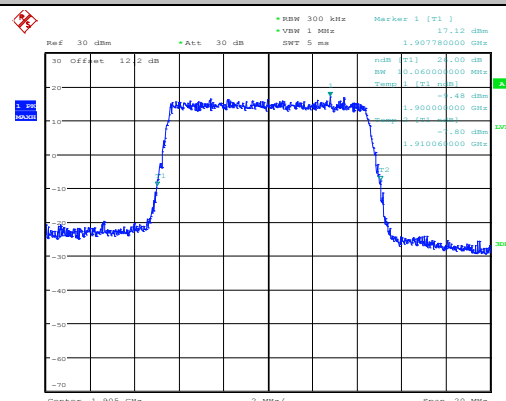
Date: 25.OCT.2014 08:41:25

Highest Channel / 10MHz / QPSK



Date: 25.OCT.2014 08:44:20

Highest Channel / 10MHz / 16QAM

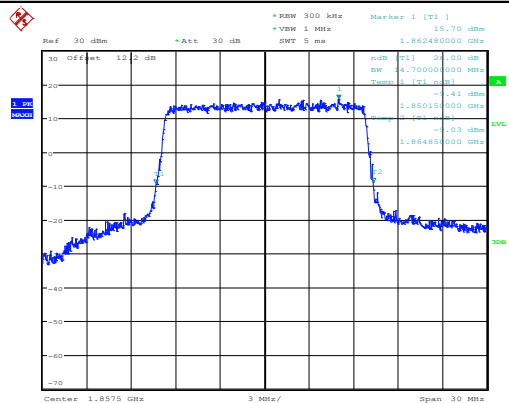


Date: 25.OCT.2014 08:44:32



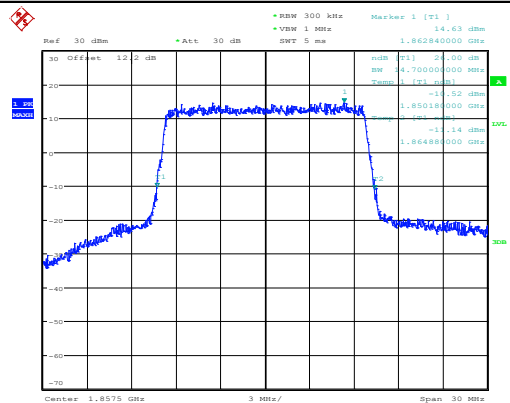
LTE Band 2

Lowest Channel / 15MHz / QPSK



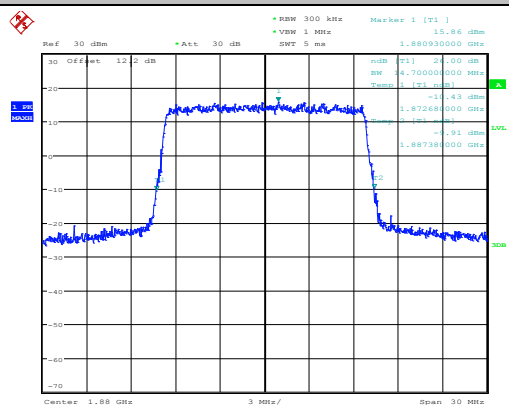
Date: 25.OCT.2014 08:52:10

Lowest Channel / 15MHz / 16QAM



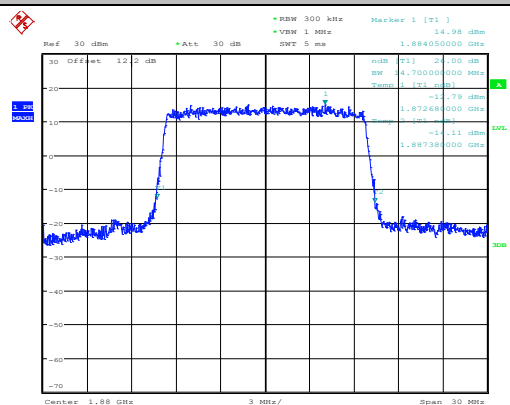
Date: 25.OCT.2014 08:52:23

Middle Channel / 15MHz / QPSK



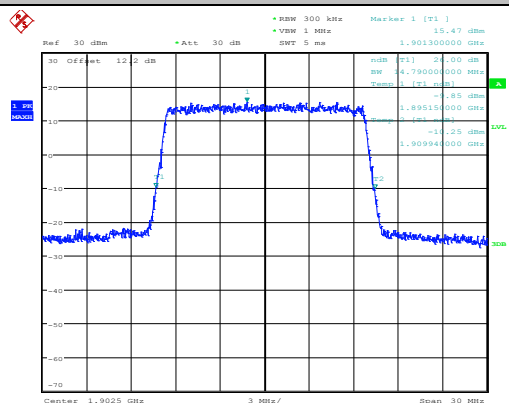
Date: 25.OCT.2014 08:59:56

Middle Channel / 15MHz / 16QAM



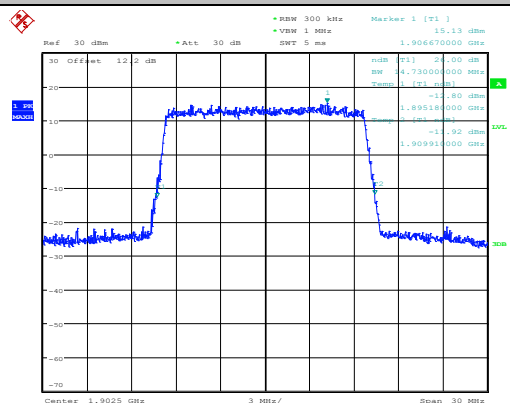
Date: 25.OCT.2014 09:00:08

Highest Channel / 15MHz / QPSK



Date: 25.OCT.2014 09:03:03

Highest Channel / 15MHz / 16QAM

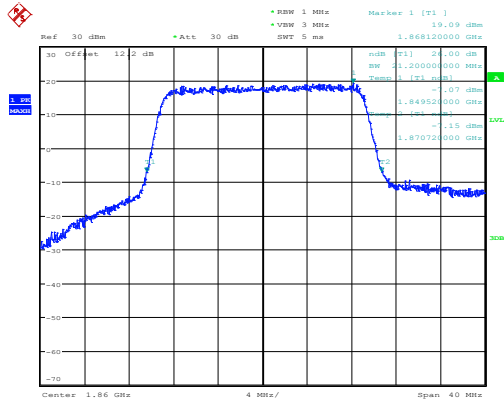


Date: 25.OCT.2014 09:03:15



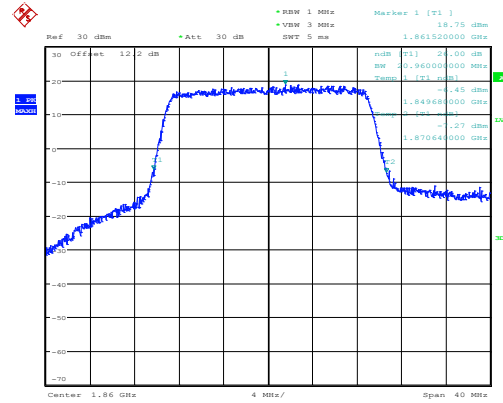
LTE Band 2

Lowest Channel / 20MHz / QPSK



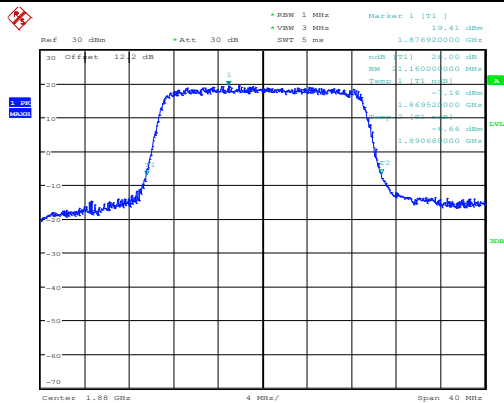
Date: 25.OCT.2014 09:10:49

Lowest Channel / 20MHz / 16QAM



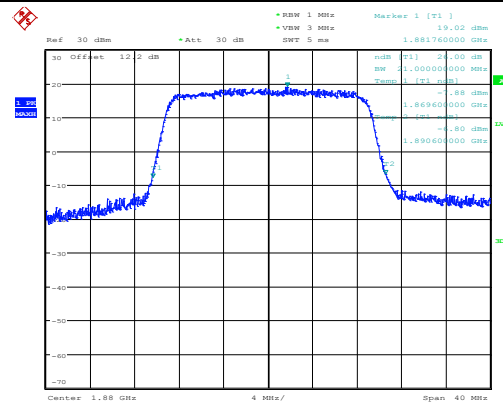
Date: 25.OCT.2014 09:11:02

Middle Channel / 20MHz / QPSK



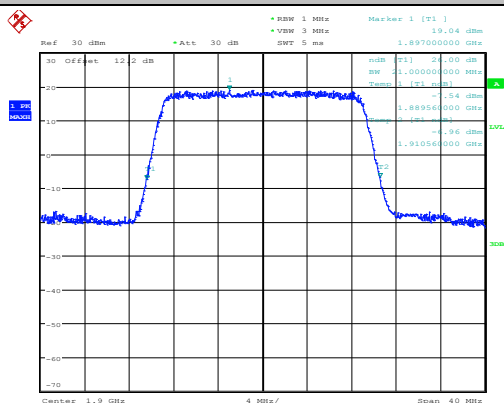
Date: 25.OCT.2014 09:18:36

Middle Channel / 20MHz / 16QAM



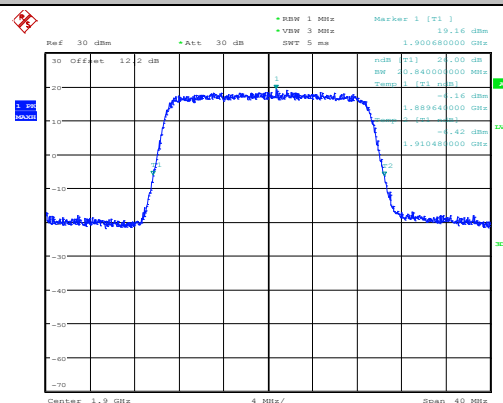
Date: 25.OCT.2014 09:18:48

Highest Channel / 20MHz / QPSK



Date: 25.OCT.2014 09:21:43

Highest Channel / 20MHz / 16QAM

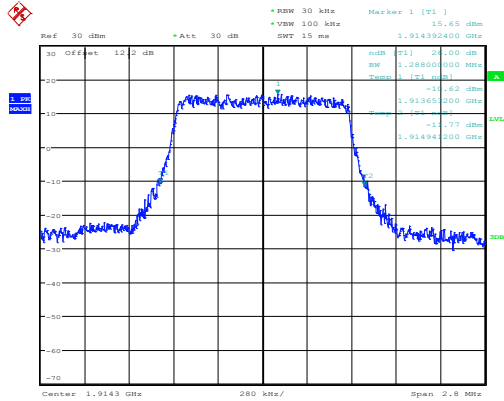


Date: 25.OCT.2014 09:21:55



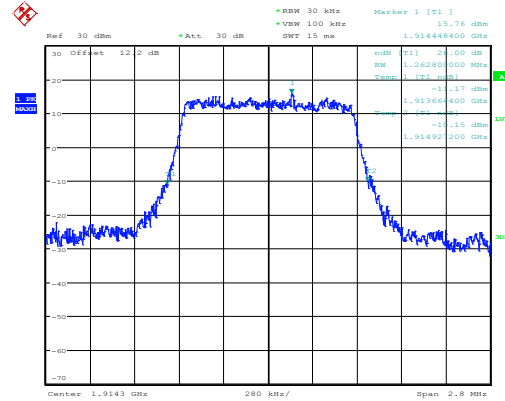
LTE Band 25

Highest Channel / 1.4MHz / QPSK



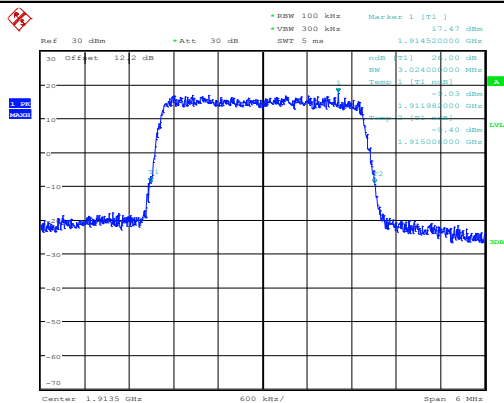
Date: 26.OCT.2014 11:23:08

Highest Channel / 1.4MHz / 16QAM



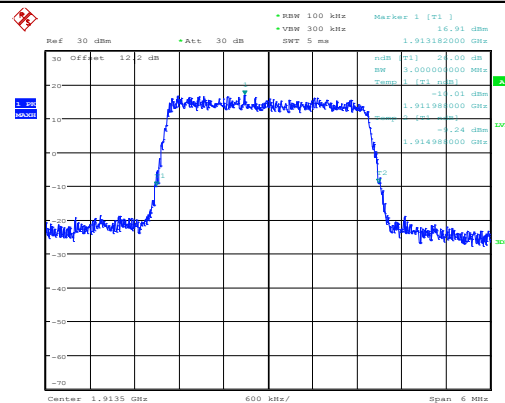
Date: 26.OCT.2014 11:22:55

Highest Channel / 3MHz / QPSK



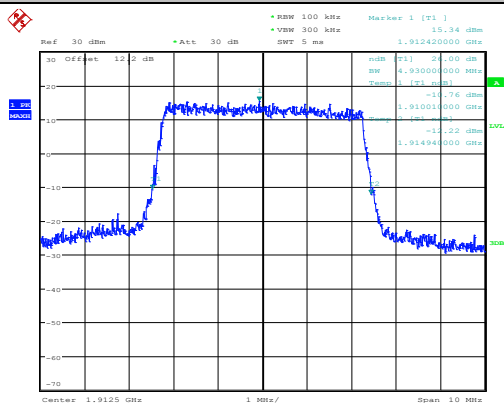
Date: 26.OCT.2014 11:33:12

Highest Channel / 3MHz / 16QAM



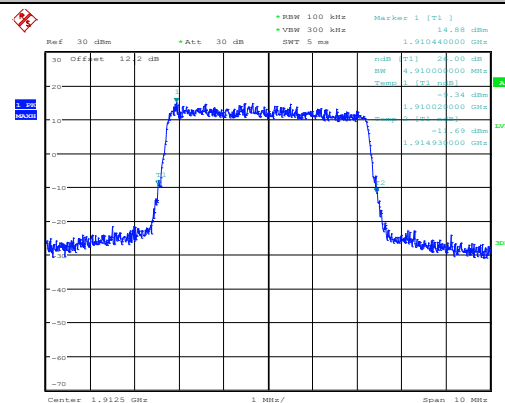
Date: 26.OCT.2014 11:32:57

Highest Channel / 5MHz / QPSK



Date: 26.OCT.2014 11:41:06

Highest Channel / 5MHz / 16QAM

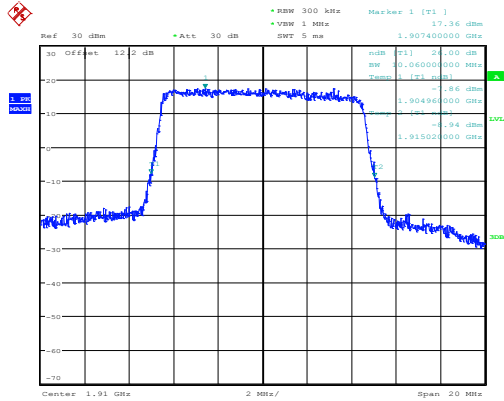


Date: 26.OCT.2014 11:40:53



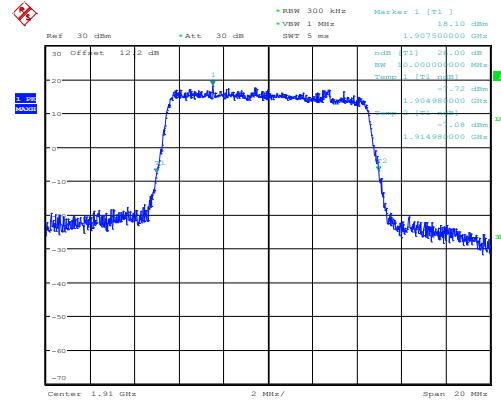
LTE Band 25

Highest Channel / 10MHz / QPSK



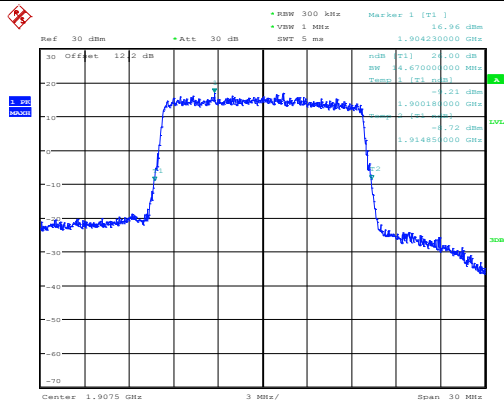
Date: 26.OCT.2014 11:48:59

Highest Channel / 10MHz / 16QAM



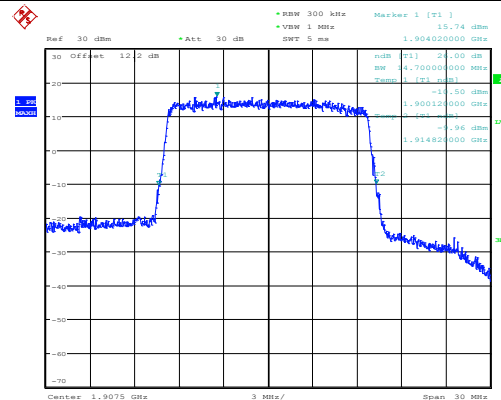
Date: 26.OCT.2014 11:48:46

Highest Channel / 15MHz / QPSK



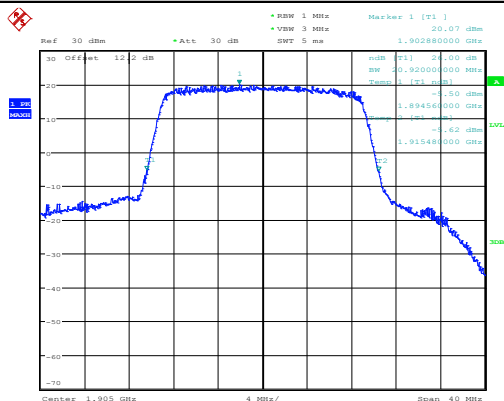
Date: 26.OCT.2014 12:31:56

Highest Channel / 15MHz / 16QAM



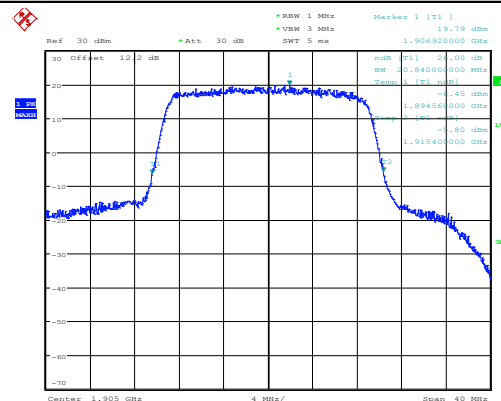
Date: 26.OCT.2014 12:31:43

Highest Channel / 20MHz / QPSK



Date: 26.OCT.2014 12:39:49

Highest Channel / 20MHz / 16QAM

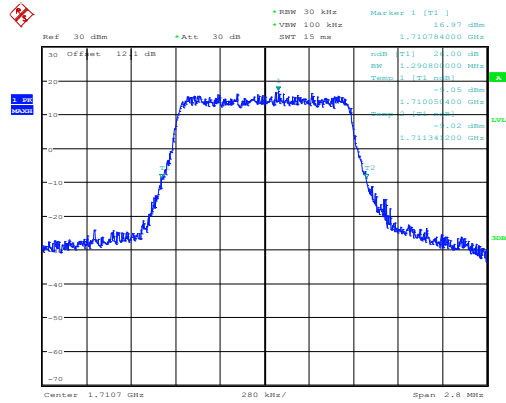


Date: 26.OCT.2014 12:39:36



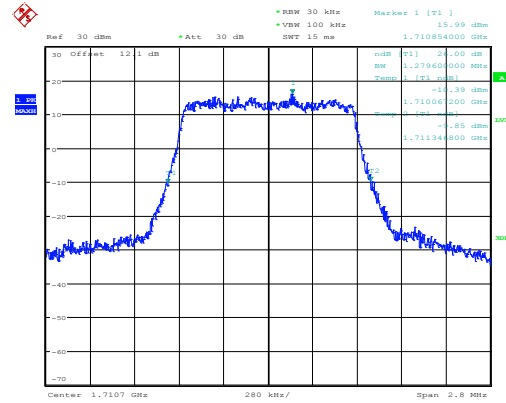
LTE Band 4

Lowest Channel / 1.4MHz / QPSK



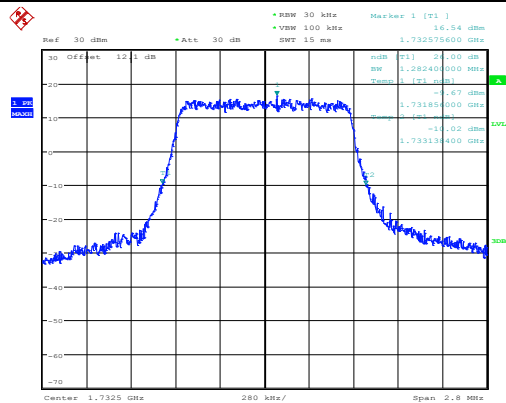
Date: 26.OCT.2014 08:54:47

Lowest Channel / 1.4MHz / 16QAM



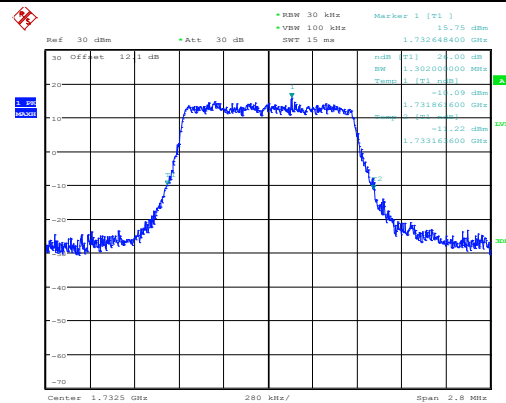
Date: 26.OCT.2014 08:55:00

Middle Channel / 1.4MHz / QPSK



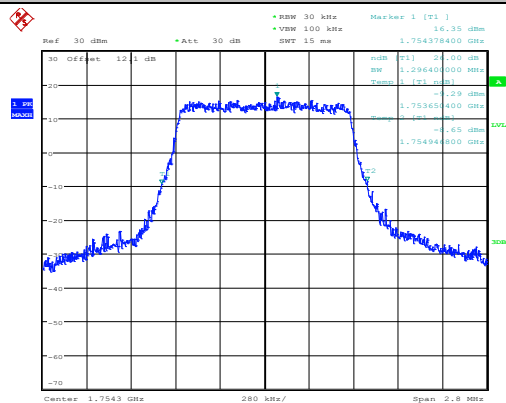
Date: 26.OCT.2014 09:02:33

Middle Channel / 1.4MHz / 16QAM



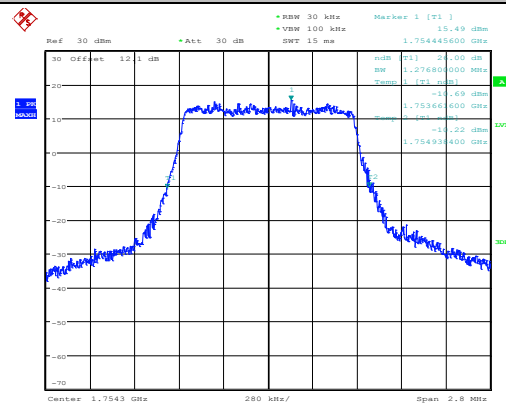
Date: 26.OCT.2014 09:02:46

Highest Channel / 1.4MHz / QPSK



Date: 26.OCT.2014 09:05:40

Highest Channel / 1.4MHz / 16QAM

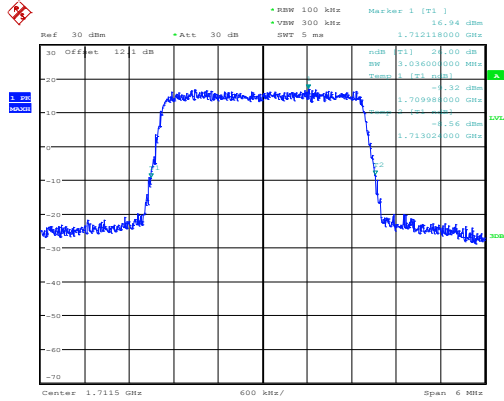


Date: 26.OCT.2014 09:05:52



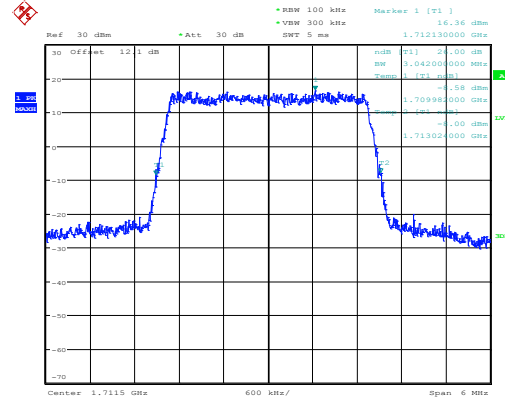
LTE Band 4

Lowest Channel / 3MHz / QPSK



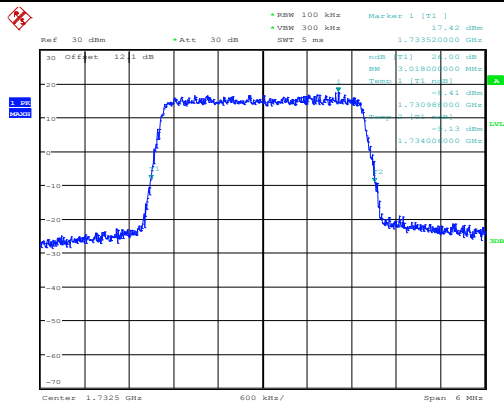
Date: 26.OCT.2014 09:15:03

Lowest Channel / 3MHz / 16QAM



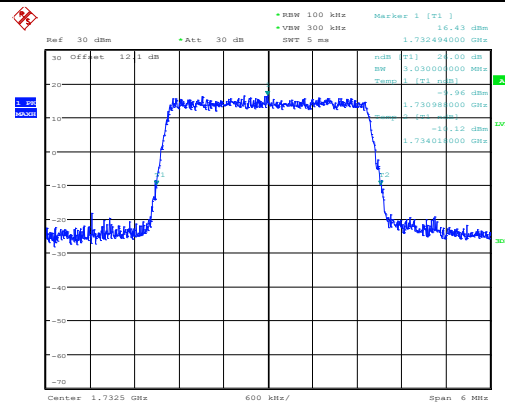
Date: 26.OCT.2014 09:15:16

Middle Channel / 3MHz / QPSK



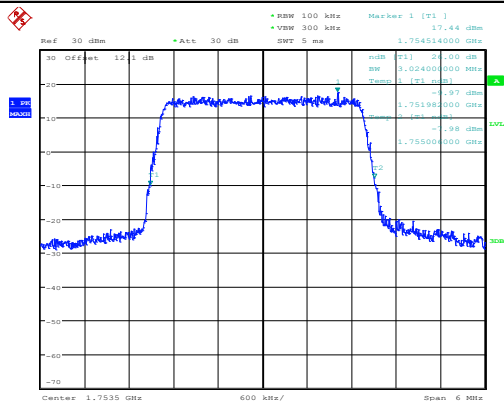
Date: 26.OCT.2014 09:22:50

Middle Channel / 3MHz / 16QAM



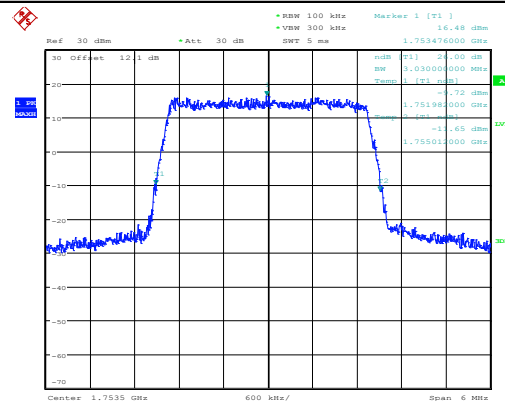
Date: 26.OCT.2014 09:23:02

Highest Channel / 3MHz / QPSK



Date: 26.OCT.2014 09:25:57

Highest Channel / 3MHz / 16QAM



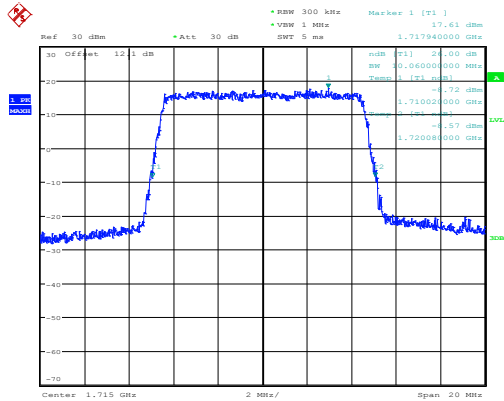
Date: 26.OCT.2014 09:26:09





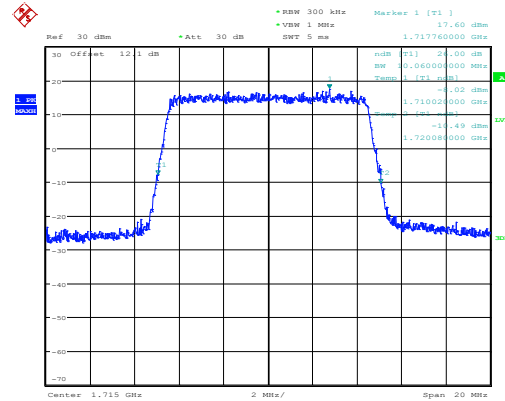
LTE Band 4

Lowest Channel / 10MHz / QPSK



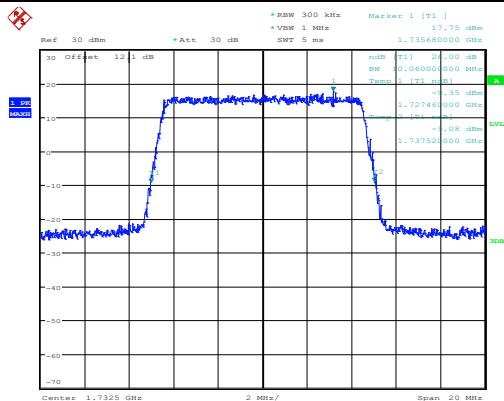
Date: 26.OCT.2014 09:52:35

Lowest Channel / 10MHz / 16QAM



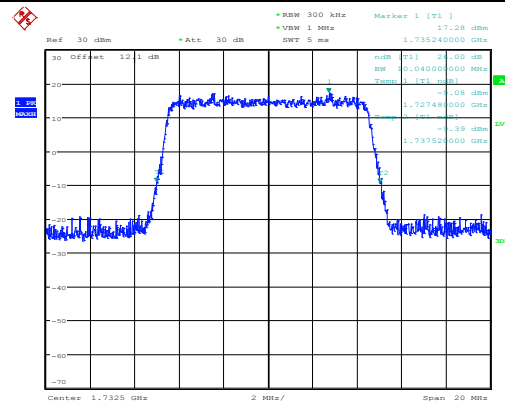
Date: 26.OCT.2014 09:52:48

Middle Channel / 10MHz / QPSK



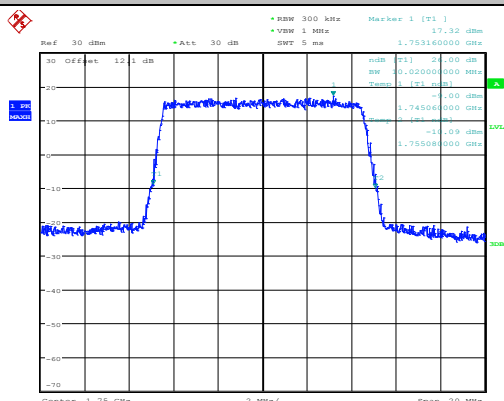
Date: 26.OCT.2014 10:00:22

Middle Channel / 10MHz / 16QAM



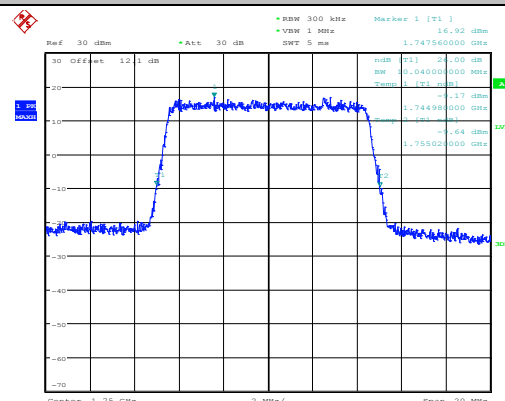
Date: 26.OCT.2014 10:00:35

Highest Channel / 10MHz / QPSK



Date: 26.OCT.2014 10:03:30

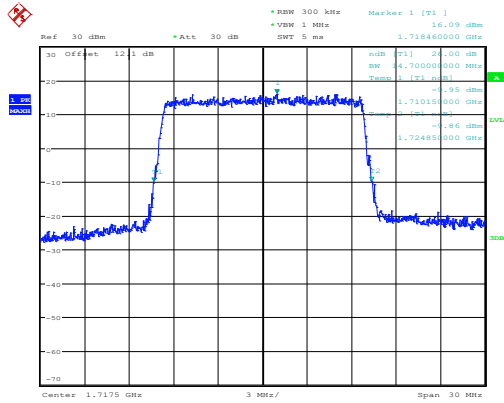
Highest Channel / 10MHz / 16QAM



Date: 26.OCT.2014 10:03:43

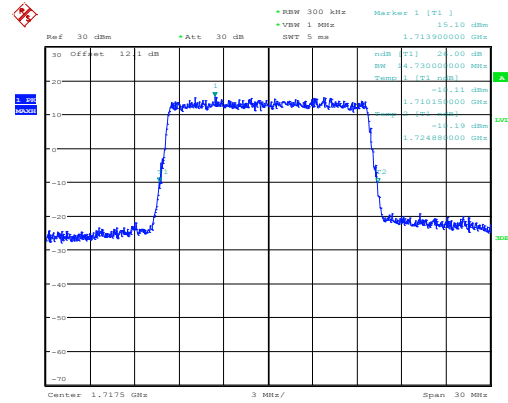
LTE Band 4

Lowest Channel / 15MHz / QPSK



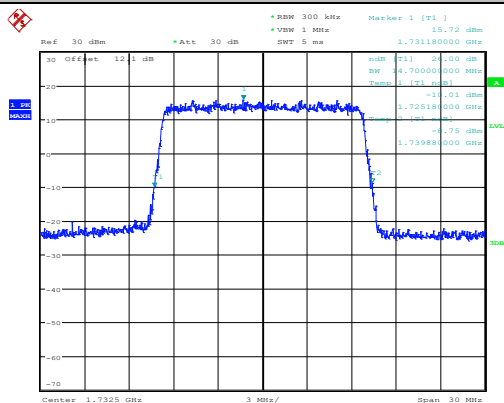
Date: 26.OCT.2014 10:11:22

Lowest Channel / 15MHz / 16QAM



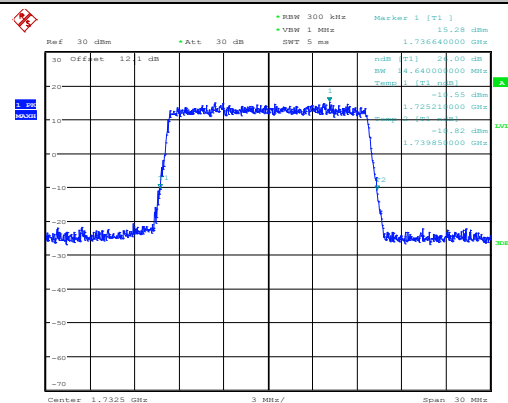
Date: 26.OCT.2014 10:11:35

Middle Channel / 15MHz / QPSK



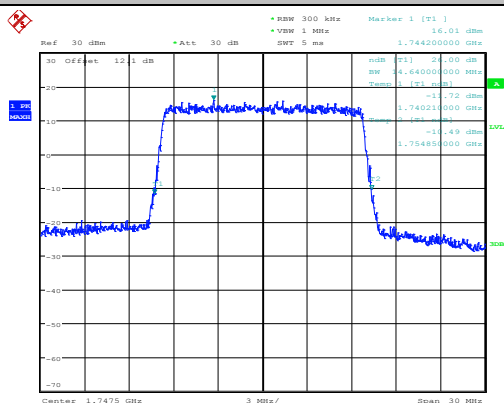
Date: 26.OCT.2014 10:19:09

Middle Channel / 15MHz / 16QAM



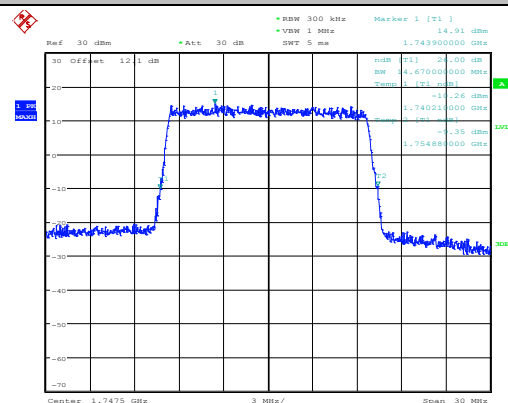
Date: 26.OCT.2014 10:19:22

Highest Channel / 15MHz / QPSK



Date: 26.OCT.2014 10:22:17

Highest Channel / 15MHz / 16QAM

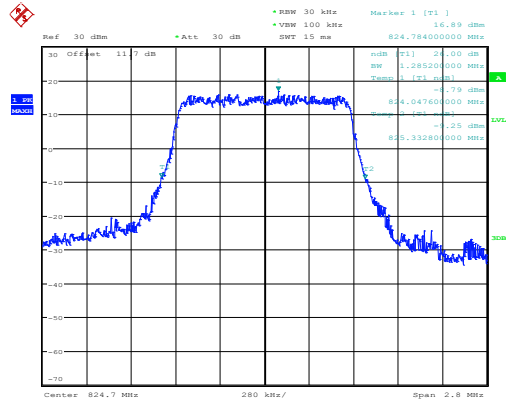


Date: 26.OCT.2014 10:22:30



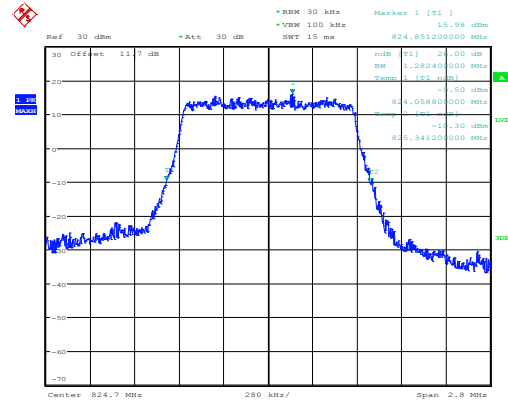
LTE Band 5

Lowest Channel / 1.4MHz / QPSK



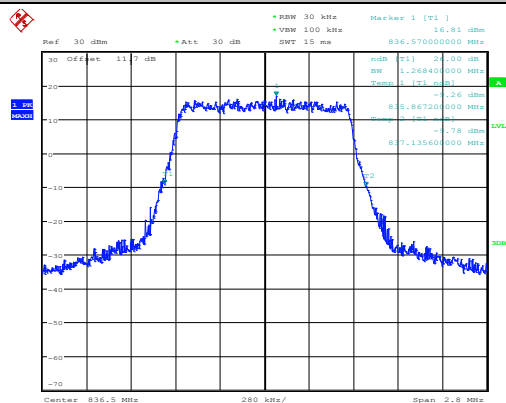
Date: 26.OCT.2014 13:06:20

Lowest Channel / 1.4MHz / 16QAM



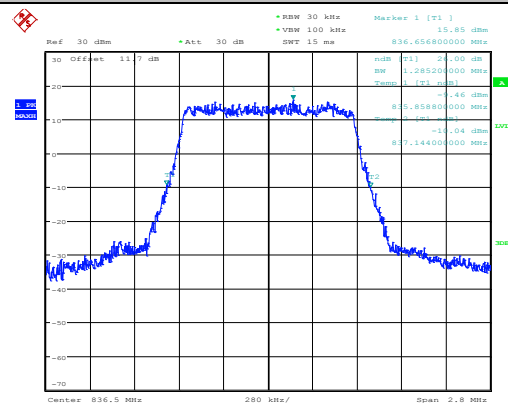
Date: 26.OCT.2014 13:06:07

Middle Channel / 1.4MHz / QPSK



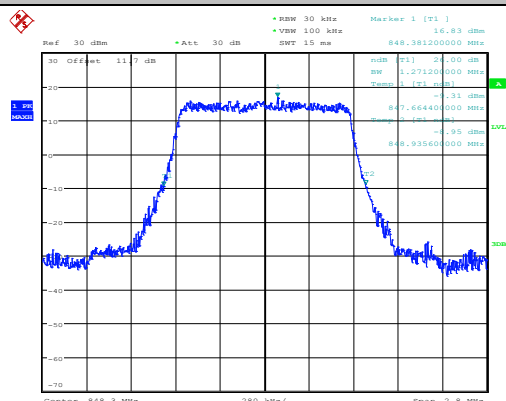
Date: 26.OCT.2014 13:13:54

Middle Channel / 1.4MHz / 16QAM



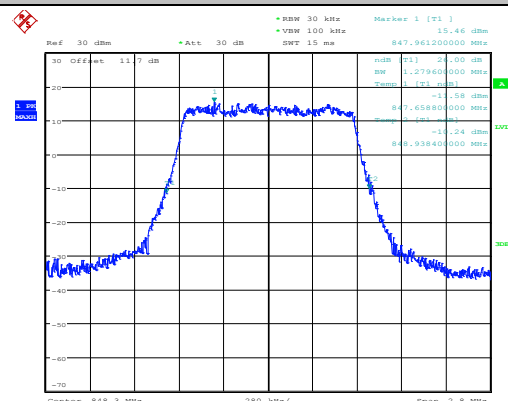
Date: 26.OCT.2014 13:14:07

Highest Channel / 1.4MHz / QPSK



Date: 26.OCT.2014 13:17:02

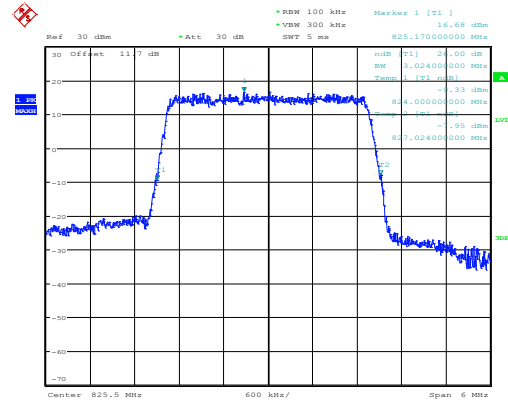
Highest Channel / 1.4MHz / 16QAM



Date: 26.OCT.2014 13:17:15

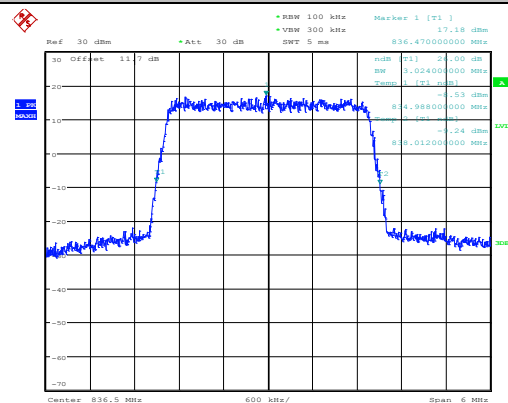


Lowest Channel / 3MHz / 16QAM



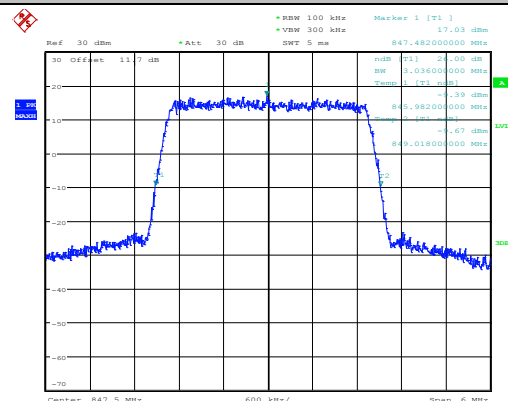
Date: 26.OCT.2014 13:26:13

Middle Channel /3MHz / 16QAM



Date: 26.OCT.2014 13:34:06

Highest Channel /3MHz / 16QAM

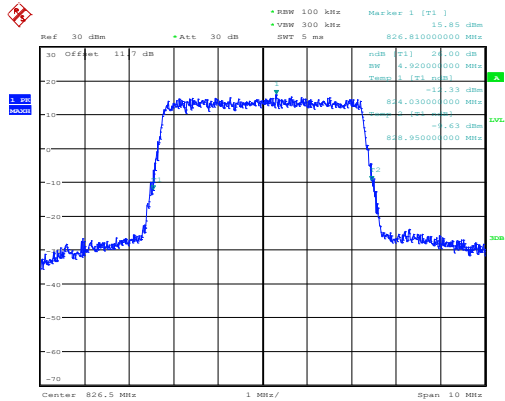


Date: 26.OCT.2014 13:37:14



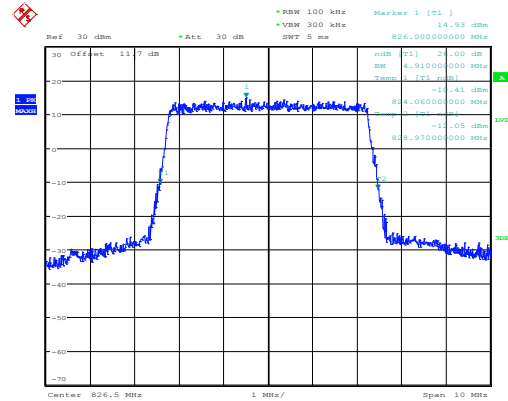
LTE Band 5

Lowest Channel / 5MHz / QPSK



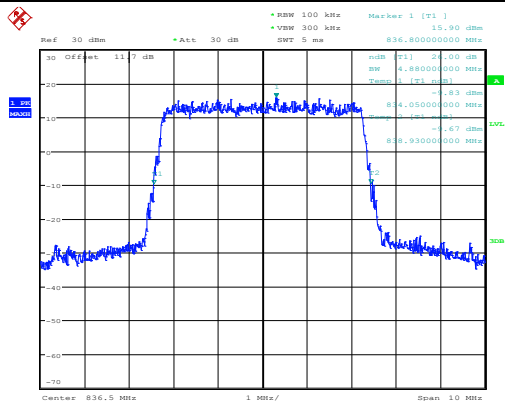
Date: 26.OCT.2014 13:44:54

Lowest Channel / 5MHz / 16QAM



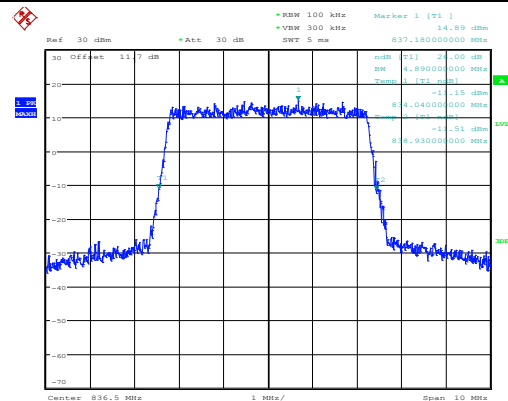
Date: 26.OCT.2014 13:45:07

Middle Channel / 5MHz / QPSK



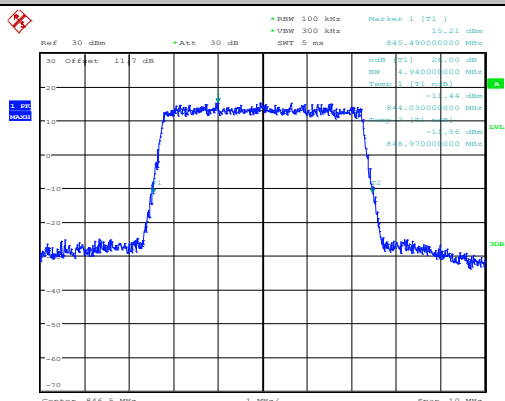
Date: 26.OCT.2014 13:52:41

Middle Channel / 5MHz / 16QAM



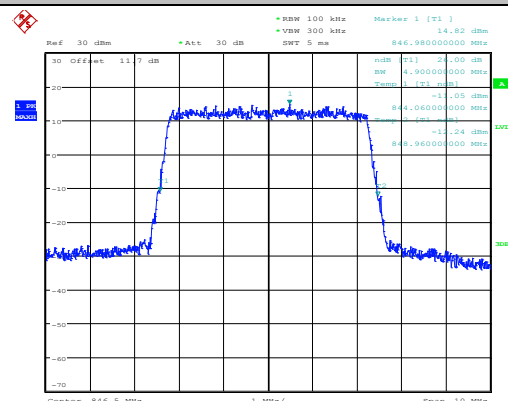
Date: 26.OCT.2014 13:52:54

Highest Channel / 5MHz / QPSK



Date: 26.OCT.2014 13:55:49

Highest Channel / 5MHz / 16QAM

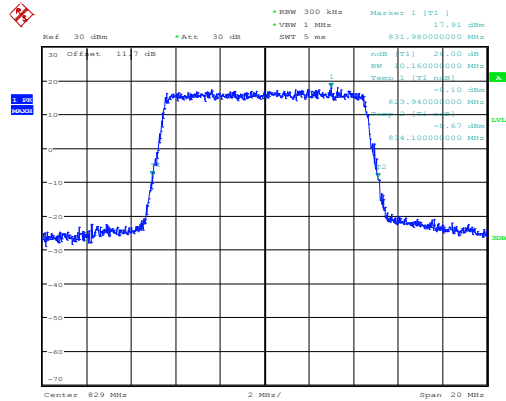


Date: 26.OCT.2014 13:56:02



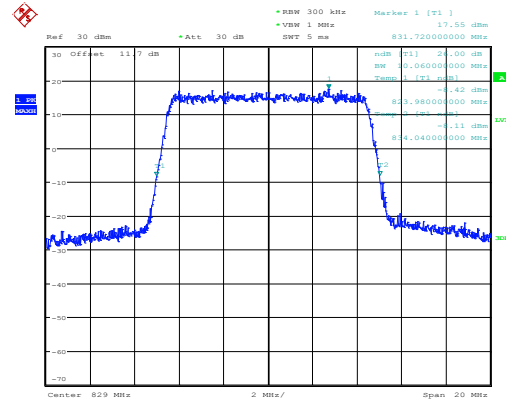
LTE Band 5

Lowest Channel / 10MHz / QPSK



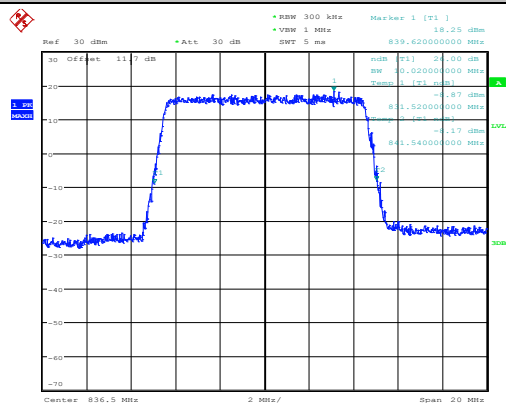
Date: 26.OCT.2014 14:03:42

Lowest Channel / 10MHz / 16QAM



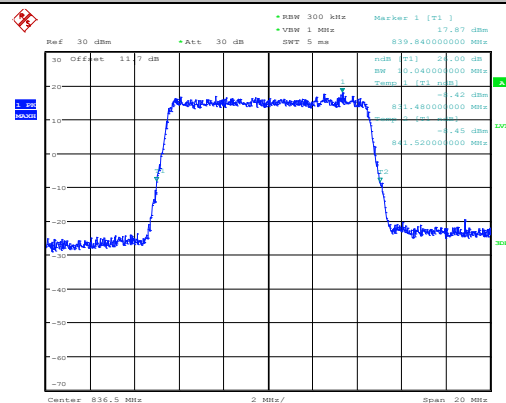
Date: 26.OCT.2014 14:03:55

Middle Channel / 10MHz / QPSK



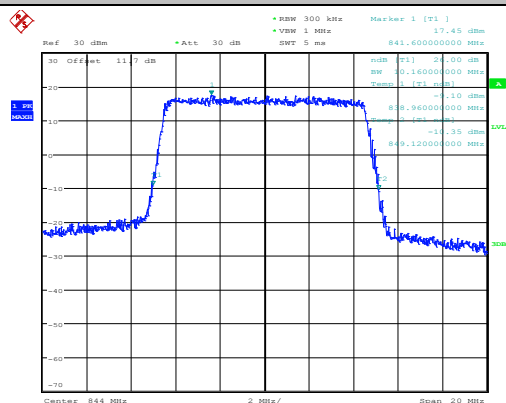
Date: 26.OCT.2014 14:11:30

Middle Channel / 10MHz / 16QAM



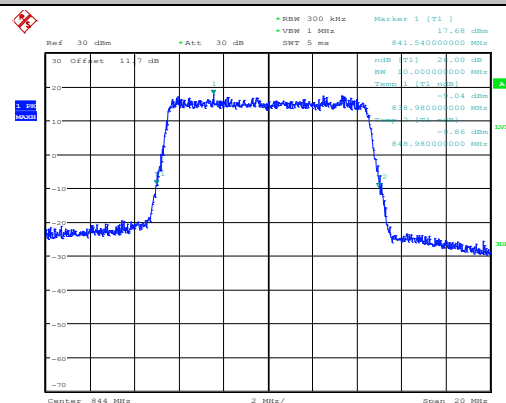
Date: 26.OCT.2014 14:11:43

Highest Channel / 10MHz / QPSK



Date: 26.OCT.2014 14:14:38

Highest Channel / 10MHz / 16QAM

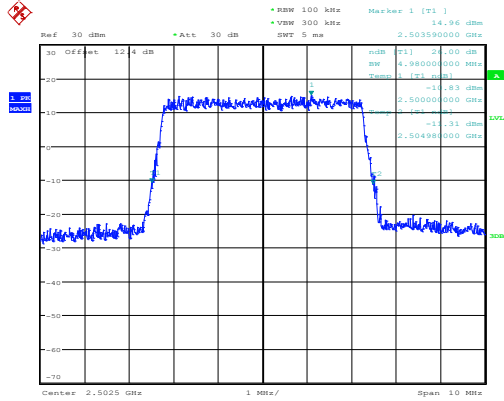


Date: 26.OCT.2014 14:14:51



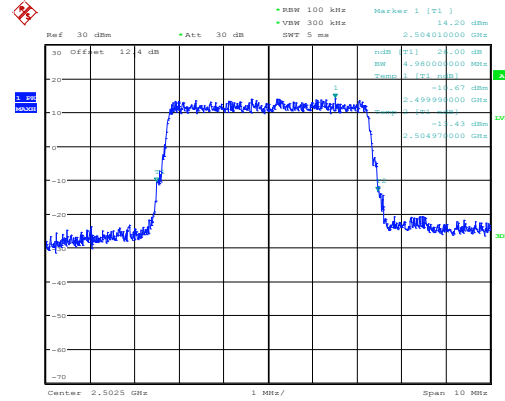
LTE Band 7

Lowest Channel / 5MHz / QPSK



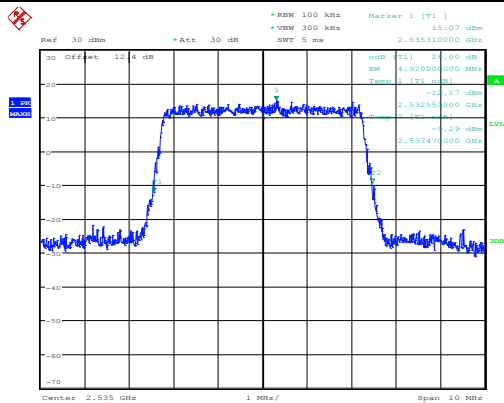
Date: 26.OCT.2014 15:35:45

Lowest Channel / 5MHz / 16QAM



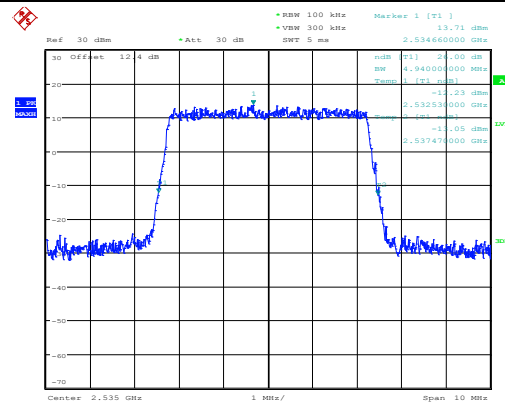
Date: 26.OCT.2014 15:35:58

Middle Channel / 5MHz / QPSK



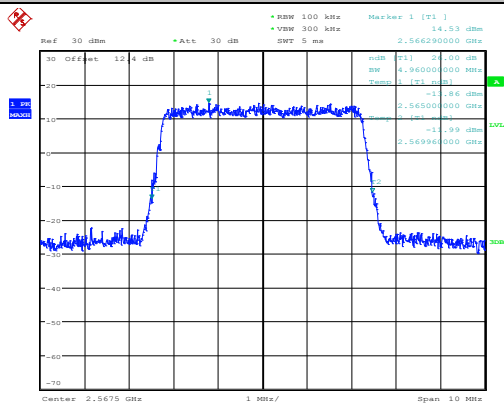
Date: 25.OCT.2014 09:56:17

Middle Channel / 5MHz / 16QAM



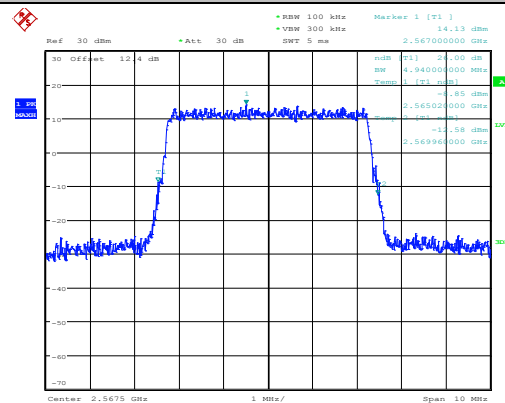
Date: 25.OCT.2014 09:56:30

Highest Channel / 5MHz / QPSK



Date: 25.OCT.2014 09:59:20

Highest Channel / 5MHz / 16QAM

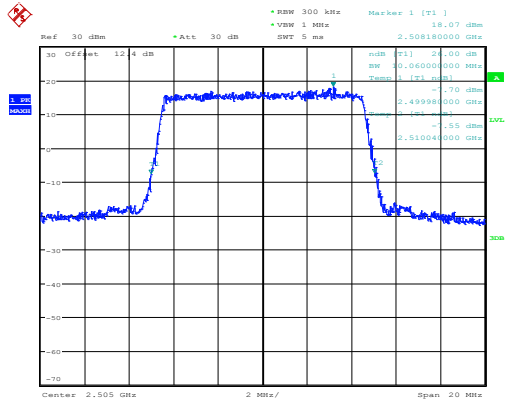


Date: 25.OCT.2014 09:59:32



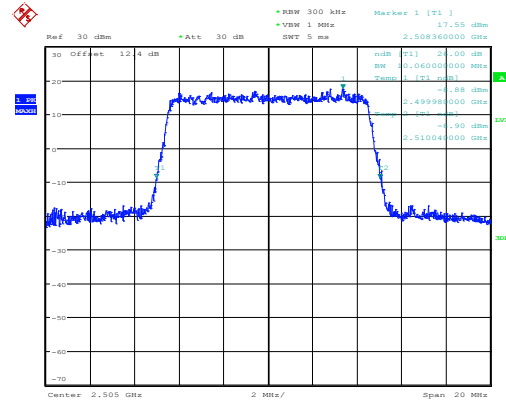
LTE Band 7

Lowest Channel / 10MHz / QPSK



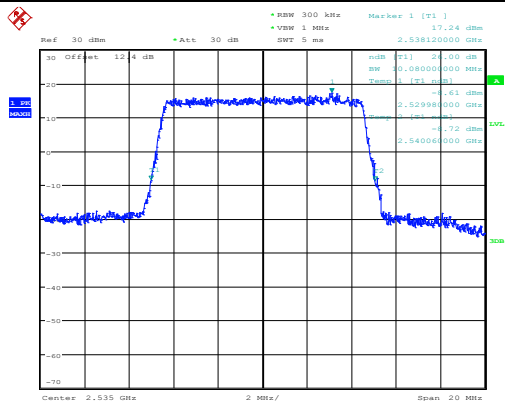
Date: 25.OCT.2014 10:06:59

Lowest Channel / 10MHz / 16QAM



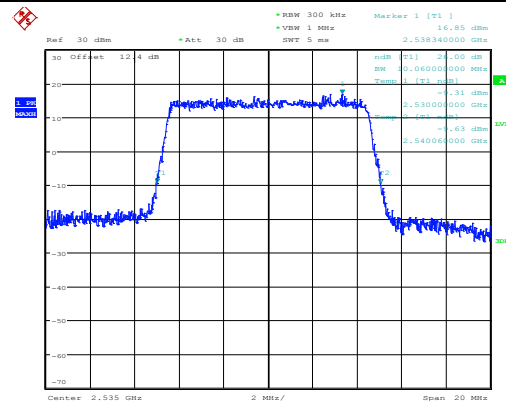
Date: 25.OCT.2014 10:07:11

Middle Channel / 10MHz / QPSK



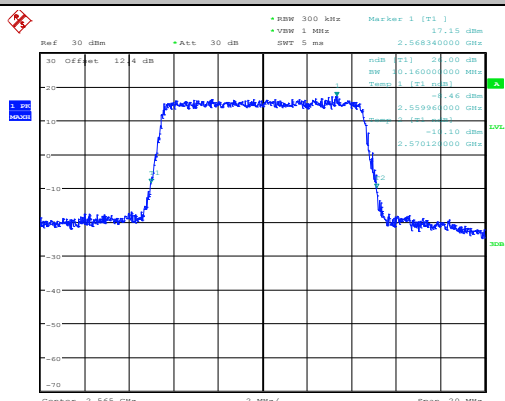
Date: 25.OCT.2014 10:14:38

Middle Channel / 10MHz / 16QAM



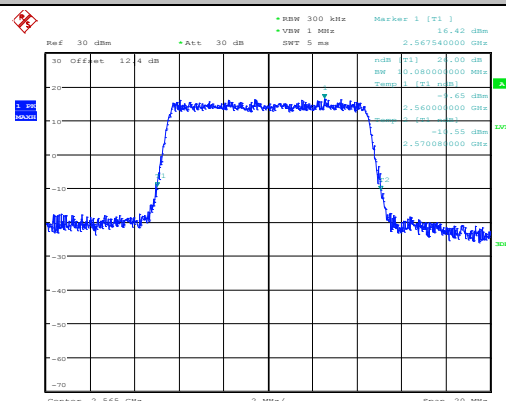
Date: 25.OCT.2014 10:14:50

Highest Channel / 10MHz / QPSK



Date: 25.OCT.2014 10:17:40

Highest Channel / 10MHz / 16QAM



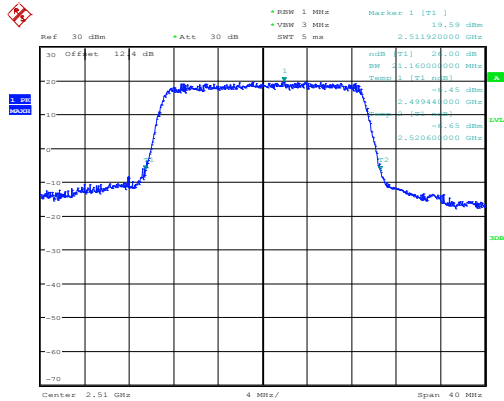
Date: 25.OCT.2014 10:17:52





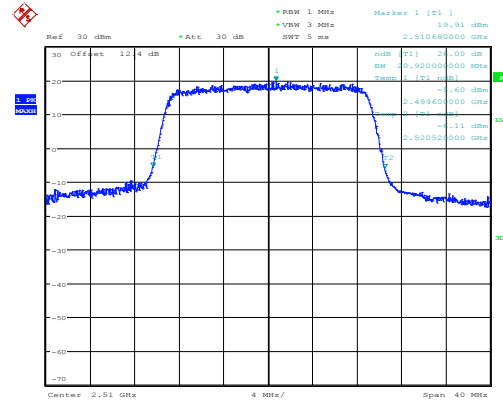
LTE Band 7

Lowest Channel / 20MHz / QPSK



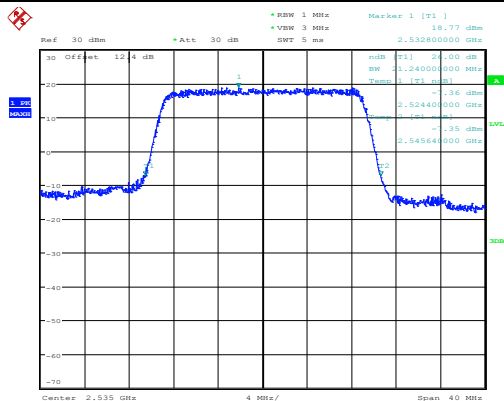
Date: 26.OCT.2014 17:02:32

Lowest Channel / 20MHz / 16QAM



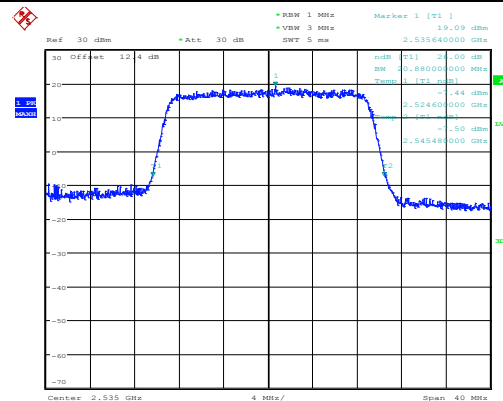
Date: 26.OCT.2014 17:02:45

Middle Channel / 20MHz / QPSK



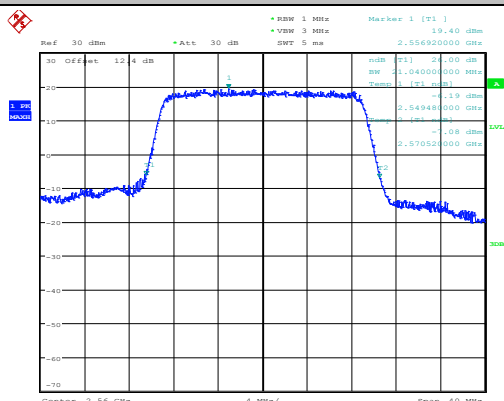
Date: 26.OCT.2014 17:05:38

Middle Channel / 20MHz / 16QAM



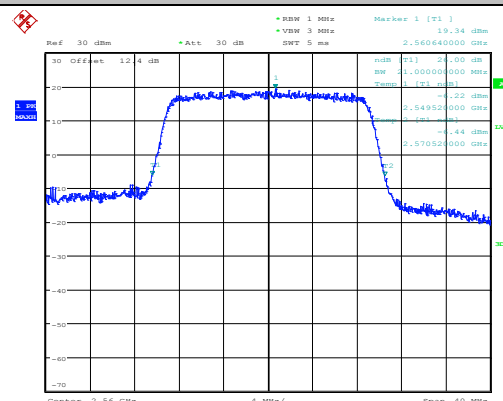
Date: 26.OCT.2014 17:05:51

Highest Channel / 20MHz / QPSK



Date: 26.OCT.2014 17:08:44

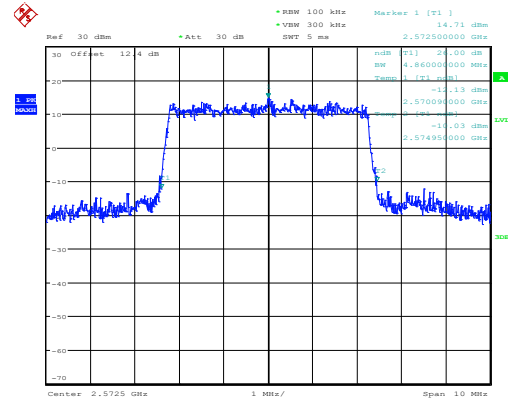
Highest Channel / 20MHz / 16QAM



Date: 26.OCT.2014 17:08:57

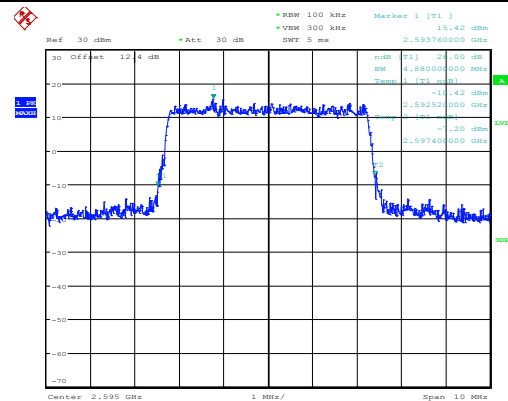


Lowest Channel / 5MHz / 16QAM



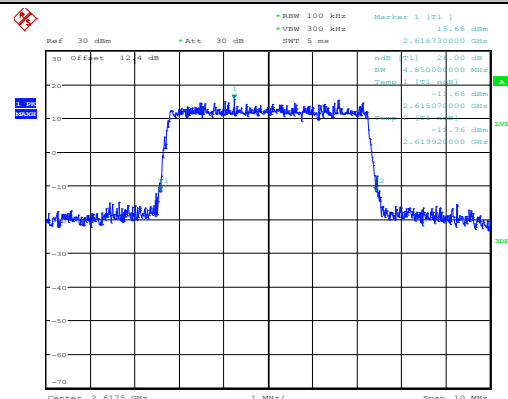
Date: 28.OCT.2014 17:46:49

Middle Channel / 5MHz / 16QAM



Date: 28.OCT.2014 17:58:03

Highest Channel / 5MHz / 16QAM

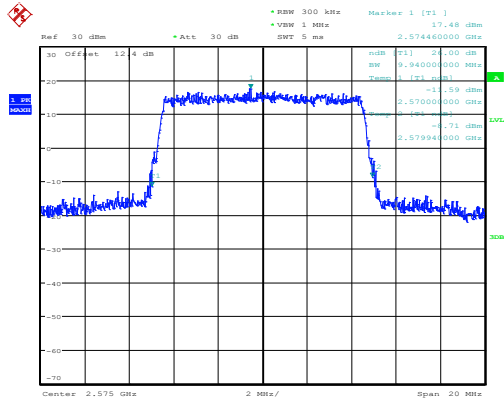


Date: 28.OCT.2014 17:55:22



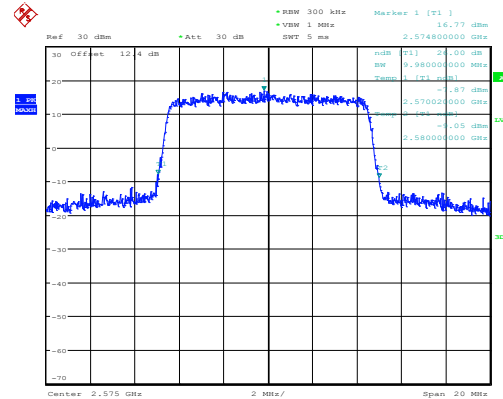
LTE Band 38

Lowest Channel / 10MHz / QPSK



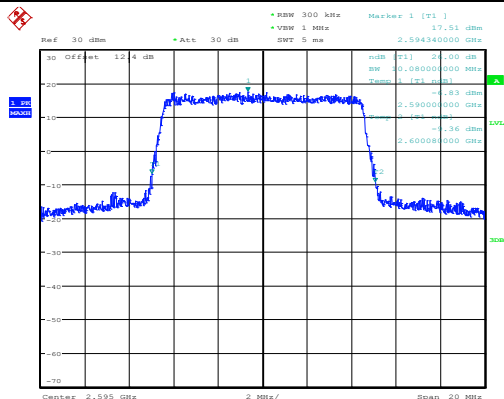
Date: 29.OCT.2014 09:17:37

Lowest Channel / 10MHz / 16QAM



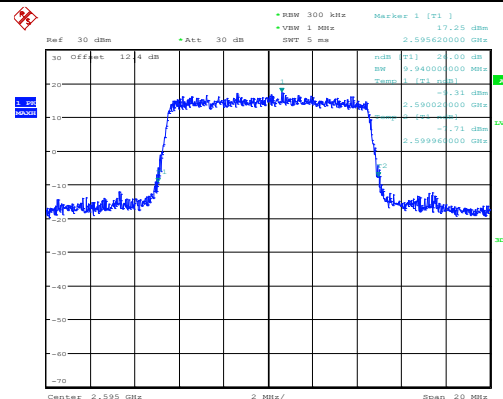
Date: 29.OCT.2014 09:18:05

Middle Channel / 10MHz / QPSK



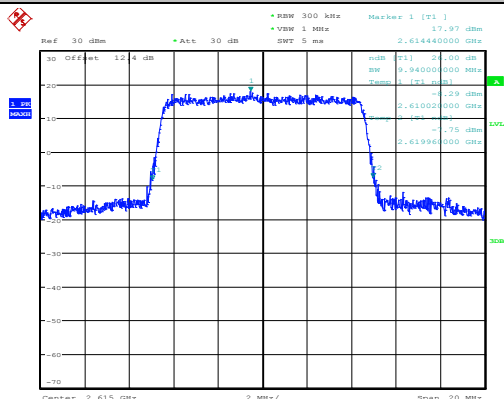
Date: 28.OCT.2014 18:36:01

Middle Channel / 10MHz / 16QAM



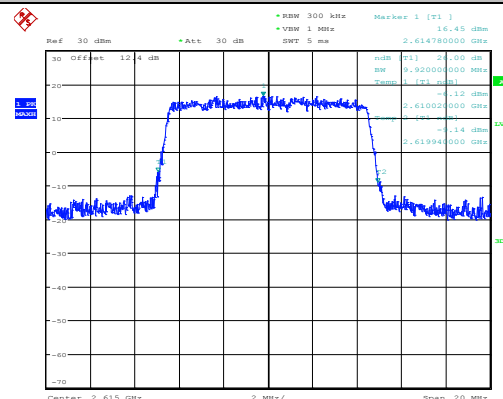
Date: 28.OCT.2014 18:35:26

Highest Channel / 10MHz / QPSK



Date: 29.OCT.2014 10:15:35

Highest Channel / 10MHz / 16QAM



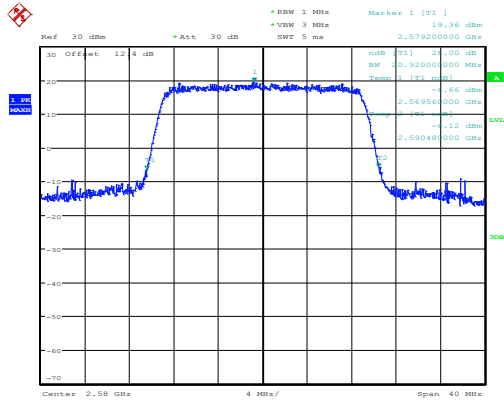
Date: 29.OCT.2014 09:18:50





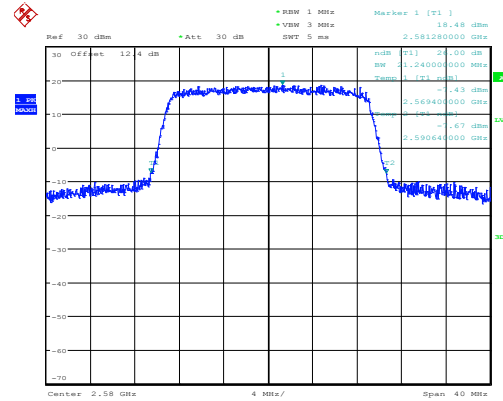
LTE Band 38

Lowest Channel / 20MHz / QPSK



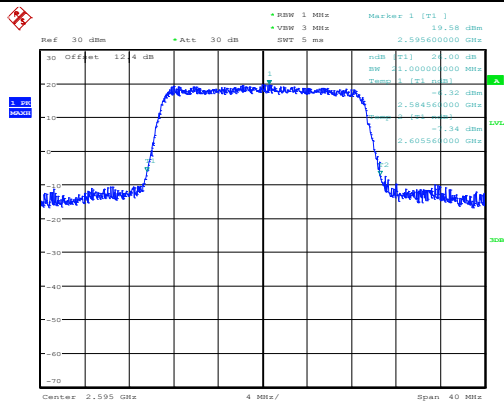
Date: 29.OCT.2014 09:25:45

Lowest Channel / 20MHz / 16QAM



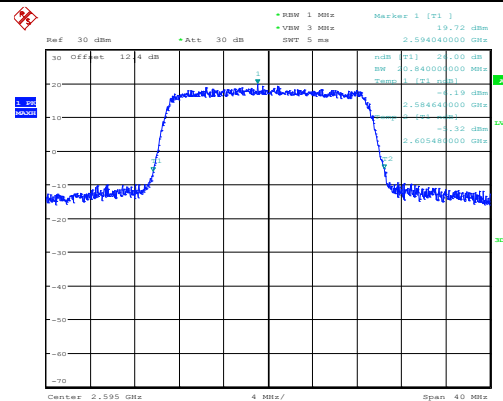
Date: 29.OCT.2014 09:26:23

Middle Channel / 20MHz / QPSK



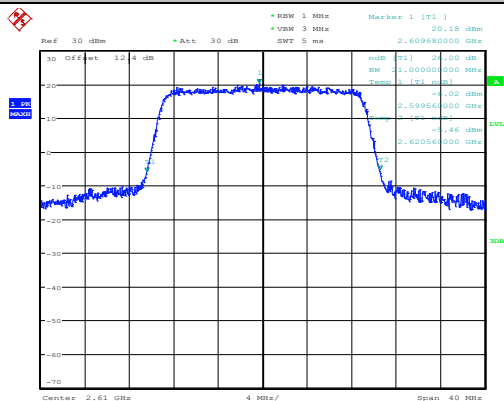
Date: 29.OCT.2014 09:25:06

Middle Channel / 20MHz / 16QAM



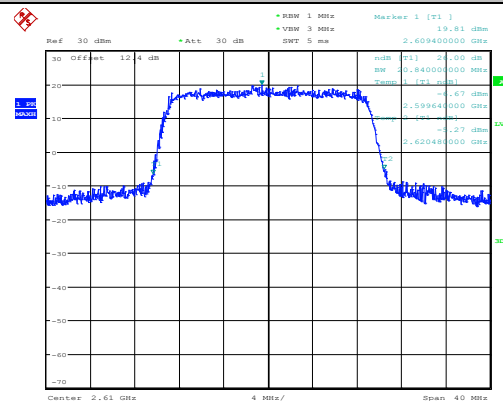
Date: 29.OCT.2014 09:24:29

Highest Channel / 20MHz / QPSK



Date: 29.OCT.2014 09:28:18

Highest Channel / 20MHz / 16QAM

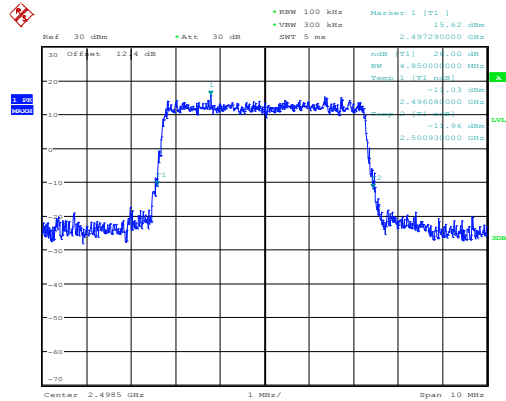


Date: 29.OCT.2014 09:27:33



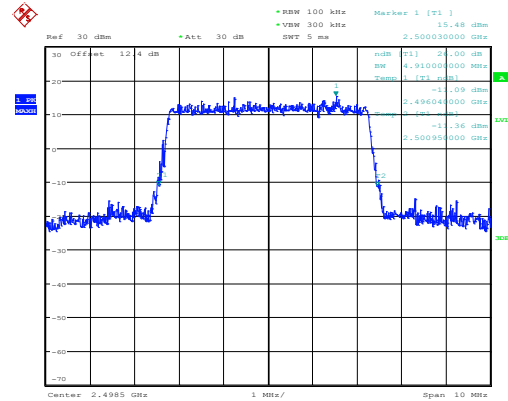
LTE Band 41

Lowest Channel / 5MHz / QPSK



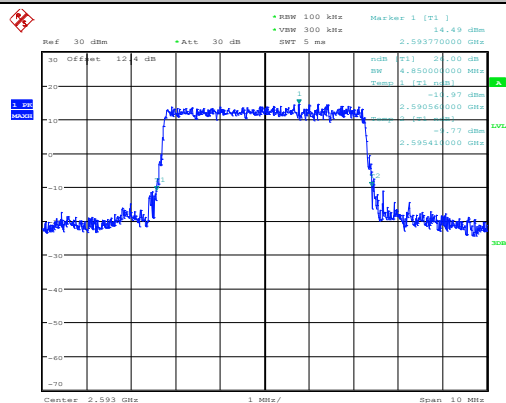
Date: 28.OCT.2014 15:45:54

Lowest Channel / 5MHz / 16QAM



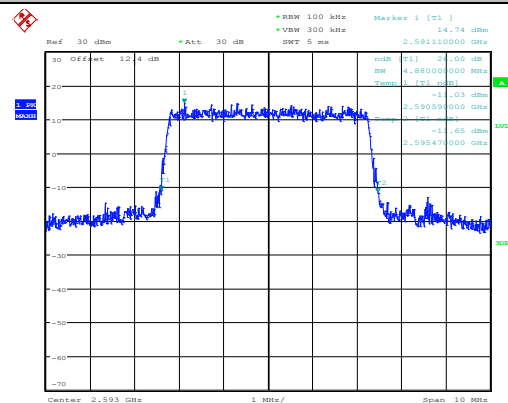
Date: 28.OCT.2014 15:46:19

Middle Channel / 5MHz / QPSK



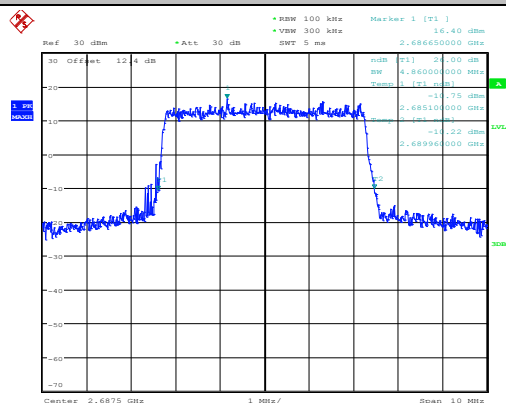
Date: 28.OCT.2014 15:47:15

Middle Channel / 5MHz / 16QAM



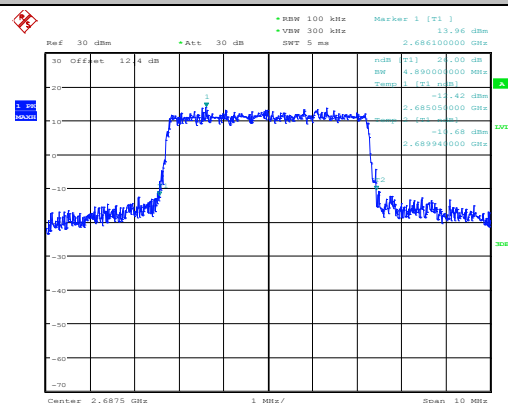
Date: 28.OCT.2014 15:47:41

Highest Channel / 5MHz / QPSK



Date: 28.OCT.2014 15:49:10

Highest Channel / 5MHz / 16QAM

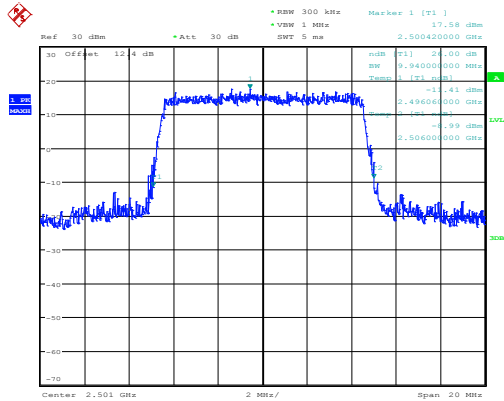


Date: 28.OCT.2014 15:48:35



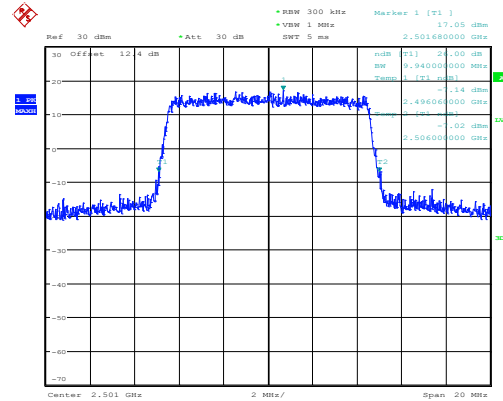
LTE Band 41

Lowest Channel / 10MHz / QPSK



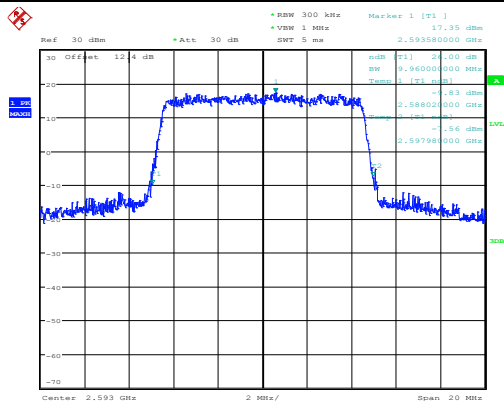
Date: 28.OCT.2014 15:51:12

Lowest Channel / 10MHz / 16QAM



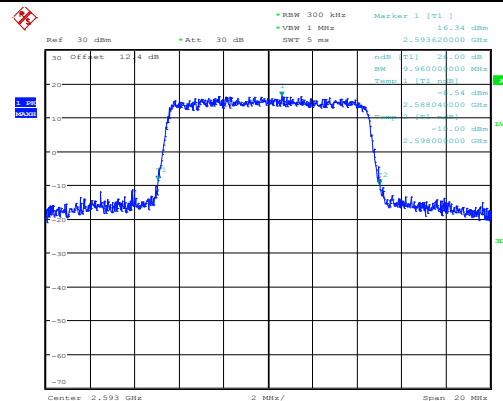
Date: 28.OCT.2014 15:51:45

Middle Channel / 10MHz / QPSK



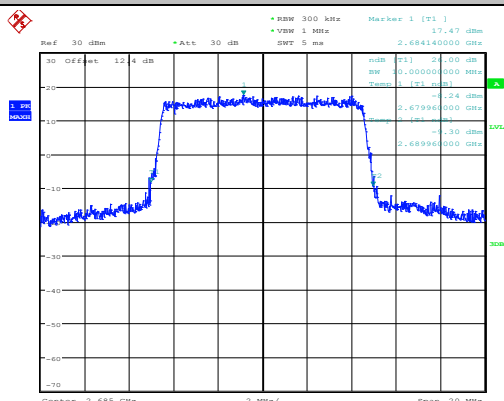
Date: 28.OCT.2014 15:52:51

Middle Channel / 10MHz / 16QAM



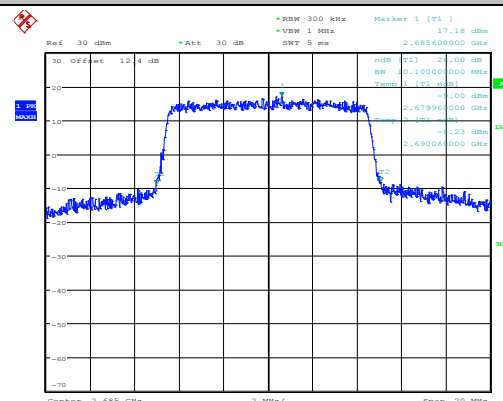
Date: 28.OCT.2014 15:52:21

Highest Channel / 10MHz / QPSK



Date: 28.OCT.2014 15:55:10

Highest Channel / 10MHz / 16QAM

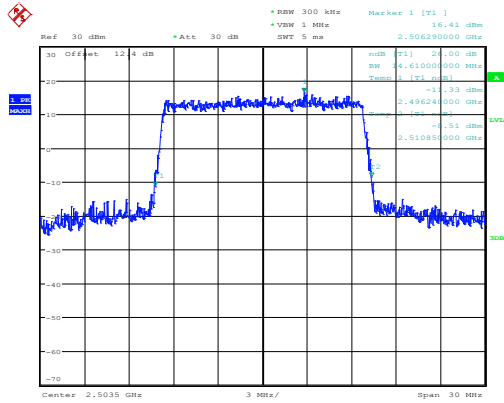


Date: 28.OCT.2014 15:55:45



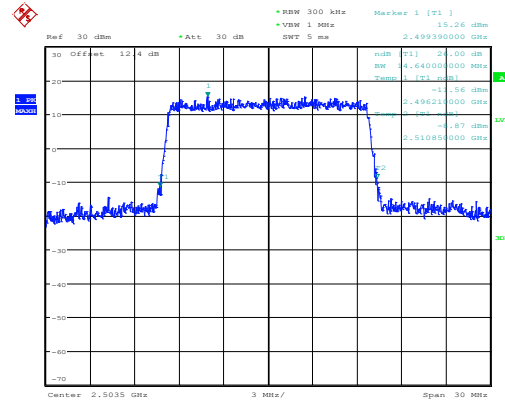
LTE Band 41

Lowest Channel / 15MHz / QPSK



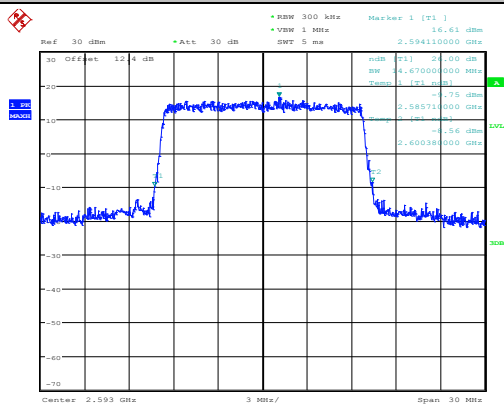
Date: 28.OCT.2014 15:57:02

Lowest Channel / 15MHz / 16QAM



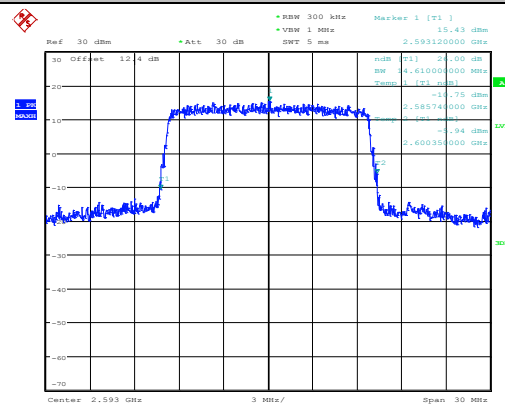
Date: 28.OCT.2014 15:57:34

Middle Channel / 15MHz / QPSK



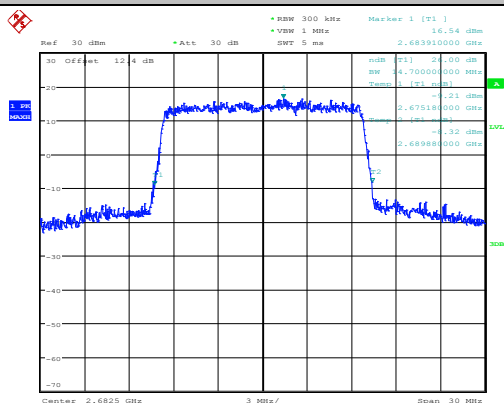
Date: 28.OCT.2014 15:58:46

Middle Channel / 15MHz / 16QAM



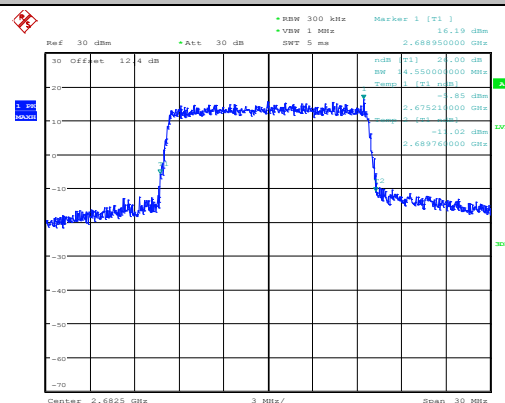
Date: 28.OCT.2014 15:58:12

Highest Channel / 15MHz / QPSK



Date: 28.OCT.2014 15:59:45

Highest Channel / 15MHz / 16QAM

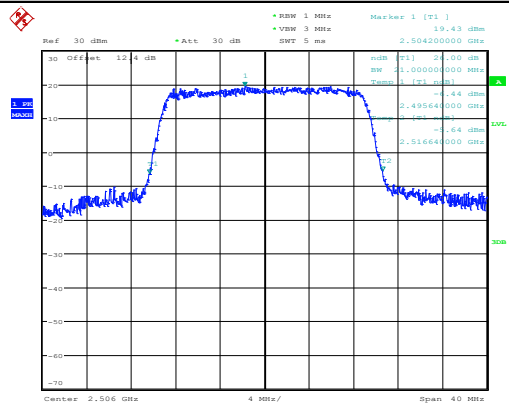


Date: 28.OCT.2014 16:00:24



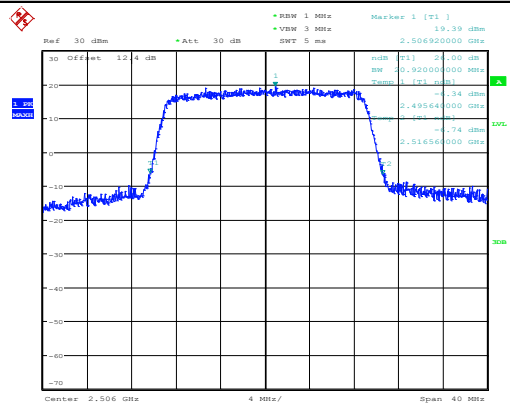
LTE Band 41

Lowest Channel / 20MHz / QPSK



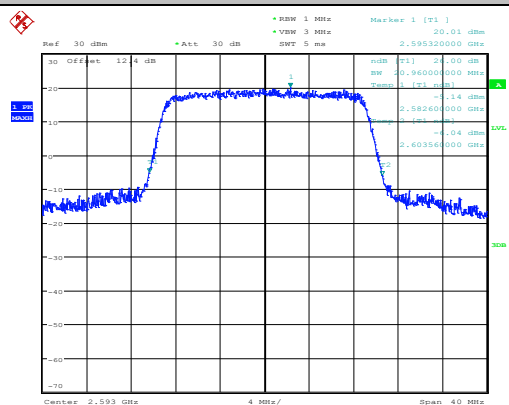
Date: 28.OCT.2014 16:01:26

Lowest Channel / 20MHz / 16QAM



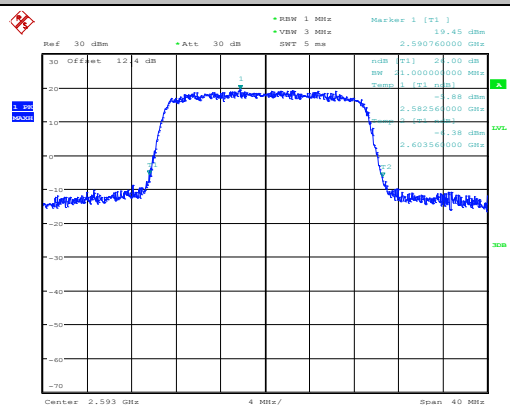
Date: 28.OCT.2014 16:02:06

Middle Channel / 20MHz / QPSK



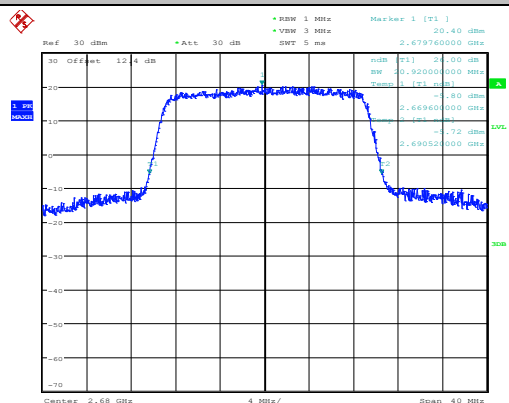
Date: 28.OCT.2014 16:03:19

Middle Channel / 20MHz / 16QAM



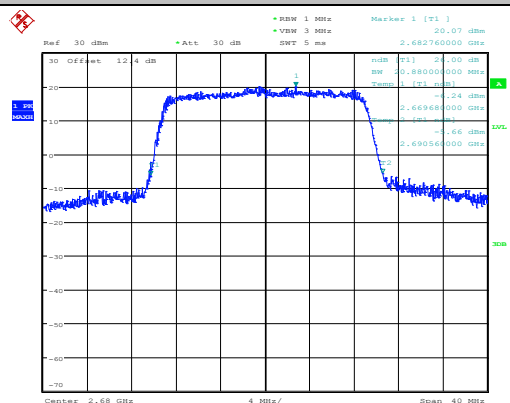
Date: 28.OCT.2014 16:02:48

Highest Channel / 20MHz / QPSK



Date: 28.OCT.2014 16:04:28

Highest Channel / 20MHz / 16QAM



Date: 28.OCT.2014 16:05:12