FCC RF Test Report

APPLICANT	:	Acer Incorporated
EQUIPMENT	:	Smart HandHeld
BRAND NAME	:	Acer
MODEL NAME	:	S56
MARKETING NAME	:	Liquid Jade S
FCC ID	:	HLZDMS56
STANDARD	:	47 CFR Part 2, 24(E), 27(L), 27(M), 27(H)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Sep. 24, 2014 and testing was completed on Nov. 29, 2014. We, SPORTON INTERNATIONAL (KUNSHAN) 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 (KUNSHAN) INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory
2627

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APPENDIX A. SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG492402B	Rev. 01	Initial issue of report	Jan. 06, 2015

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	RSS-Gen(4.8) RSS-130(4.4) RSS-133 (6.4) RSS-139 (6.4) RSS-199 (4.4)	Conducted Output Power	Reporting Only	PASS	-
3.2	§24.232(d)	RSS-130(4.4) RSS-133 (6.4) RSS-139 (6.4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.3	§27.50(b)(10) §27.50(c)(10) §27.50(c)(9)	N/A	Effective Radiated Power (Band 17)	ERP < 3 Watt	PASS	-
	§24.232(c) §27.50(h)(2)	RSS-133 (6.4) SRSP-510(5.1.2) RSS-199 (4.4)	Equivalent Isotropic Radiated Power (Band 2) (Band 7)	EIRP < 2Watt		
	§27.50(d)(4)	RSS-139 (6.4) SRSP-513(5.1.2)	Equivalent Isotropic Radiated Power (Band 4)	EIRP < 1Watt		
3.4	§2.1049 §24.238(b) §27.53(h)(3) §27.53(m)(6)	RSS-GEN(4.6.1) RSS-130 (3.1) RSS-133 (3.1) RSS-139 (3.1) RSS-199 (4.2)	Occupied Bandwidth & 26dB Bandwidth	Reporting Only	PASS	-

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.5	§2.1051 §24.238(a) §27.53(g) §27.53(h)	RSS-GEN(4.9) RSS-133 (6.5.1) RSS-130(4.6) RSS-139 (6.5)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 17)	< 43+10log10(P[Watt])	PASS	-
	§2.1051 §27.53(m)(4)	RSS-GEN(4.9) RSS-199 (4.5)	Conducted Band Edge Measurement (Band 7)	< 5MHz: -10 dBm 5 MHz~6MHz or 26dB(BW): -13 dBm ≥6MHz or 26dB(BW): -25 dBm		
3.6	§2.1051 §24.238(a) §27.53(g) §27.53(h)	RSS-GEN(4.9) RSS-133 (6.5.1) RSS-130(4.6) RSS-139 (6.5)	Conducted Spurious Emission (Band 2) (Band 4) (Band 17)	< 43+10log$_{10}$(P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	RSS-GEN(4.9) RSS-199 (4.5)	Conducted Spurious Emission (Band 7)	< 55+10log10(P[Watts])		
3.7	§2.1053 §24.238(a) §27.53(g) §27.53(h)	RSS-GEN(4.9) RSS-133 (6.5.1) RSS-130(4.6) RSS-139 (6.5)	Radiated Spurious Emission (Band 2) (Band 4) (Band 17)	< 43+10log$_{10}$(P[Watts])	PASS	Under limit 3.11 dB at 5613.270 MHz
	§2.1053 §27.53(m)(4)	RSS-GEN(4.9) RSS-199 (4.5)	Radiated Spurious Emission (Band 7)	< 55+10log$_{10}$(P[Watts])		
3.8	§2.1055 §24.235 §27.54	RSS-GEN(4.7) RSS-133(6.3) RSS-130(4.3) RSS-139 (6.3) RSS-199 (4.3)	Frequency Stability Temperature & Voltage	within authorized band	PASS	-

1 General Description

1.1 Applicant

Acer Incorporated
8F., No. 88, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 22181, Taiwan (R.O.C)

1.2 Manufacturer

Shanghai Sunrise Simcom Limited
No. 888, Shengli Rd., Qingpu, Shanghai, P.R.China 201700

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart HandHeld
Brand Name	Acer
Model Name	S56
Marketing Name	Liquid Jade S
FCC ID	HLZDMS56
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/HSPA+(Downlink Only)/ LTE/WLAN 2.4GHz 802.11b/g/n HT20/HT40/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

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 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz
Rx Frequency	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 7 : 5MHz/ 10MHz / 15MHz / 20MHz LTE Band 17 : 5MHz / 10MHz
Maximum Output Power to Antenna	LTE Band 2 : 22.22 dBm LTE Band 4 : 21.99 dBm LTE Band 7 : 22.81 dBm LTE Band 17 : 21.75 dBm
Antenna Type	PIFA Antenna
Type of Modulation	QPSK / 16QAM

1.5 Modification of EUT

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

1.6 Maximum ERP/EIRP Power, Frequency Tolerance, and Emission Designator

FCC Rule	System	Type of Modulation	BW	Emission Designator	Frequency Tolerance (ppm)	Maximum ERP/EIRP
Part 24E	LTE Band 2	QPSK	1.4 MHz	1M10G7D	-	0.3354 W
Part 24E	LTE Band 2	16QAM	1.4 MHz	1M10W7D	-	0.2754 W
Part 24E	LTE Band 2	QPSK	3 MHz	2M73G7D	-	0.3379 W
Part 24E	LTE Band 2	16QAM	3 MHz	2M73W7D	-	0.2711 W
Part 24E	LTE Band 2	QPSK	5 MHz	4M51G7D	-	0.2776 W
Part 24E	LTE Band 2	16QAM	5 MHz	4M51W7D	-	0.2535 W
Part 24E	LTE Band 2	QPSK	10 MHz	9M07G7D	0.0098 ppm	0.2893 W
Part 24E	LTE Band 2	16QAM	10 MHz	9M05W7D	-	0.2397 W
Part 24E	LTE Band 2	QPSK	15 MHz	13M5G7D	-	0.2737 W
Part 24E	LTE Band 2	16QAM	15 MHz	13M5W7D	-	0.2146 W
Part 24E	LTE Band 2	QPSK	20 MHz	18M4G7D	-	0.2556 W
Part 24E	LTE Band 2	16QAM	20 MHz	18M5W7D	-	0.2368 W
Part 27L	LTE Band 4	QPSK	1.4 MHz	1M09G7D	-	0.1968 W
Part 27L	LTE Band 4	16QAM	1.4 MHz	1M10W7D	-	0.1737 W
Part 27L	LTE Band 4	QPSK	3 MHz	2M73G7D	-	0.1984 W
Part 27L	LTE Band 4	16QAM	3 MHz	2M72W7D	-	0.1777 W
Part 27L	LTE Band 4	QPSK	5MHz	4M52G7D	-	0.2179 W
Part 27L	LTE Band 4	16QAM	5MHz	4M51W7D	-	0.1844 W
Part 27L	LTE Band 4	QPSK	10MHz	9M07G7D	0.0107 ppm	0.2201 W
Part 27L	LTE Band 4	16QAM	10MHz	9M03W7D	-	0.1849 W
Part 27L	LTE Band 4	QPSK	15MHz	13M5G7D	-	0.2221 W
Part 27L	LTE Band 4	16QAM	15MHz	13M5W7D	-	0.1834 W
Part 27L	LTE Band 4	QPSK	20MHz	18M4G7D	-	0.2218 W
Part 27L	LTE Band 4	16QAM	20MHz	18M5W7D	-	0.1843 W

FCC Rule	System	Type of Modulation	BW	Emission Designator	Frequency Tolerance	Maximum ERP/EIRP
Part 27M	LTE Band 7	QPSK	5MHz	4M52G7D	-	0.1305 W
Part 27M	LTE Band 7	16QAM	5MHz	4M51W7D	-	0.1079 W
Part 27M	LTE Band 7	QPSK	10MHz	9M11G7D	0.0014 ppm	0.1373 W
Part 27M	LTE Band 7	16QAM	10MHz	9M07W7D	-	0.1184 W
Part 27M	LTE Band 7	QPSK	15MHz	13M5G7D	-	0.1400 W
Part 27M	LTE Band 7	16QAM	15MHz	13M5W7D	-	0.1092 W
Part 27M	LTE Band 7	QPSK	20MHz	18M4G7D	-	0.1322 W
Part 27M	LTE Band 7	16QAM	20MHz	18M4W7D	-	0.1119 W
Part 27H	LTE Band 17	QPSK	5MHz	4M53G7D	-	0.0659 W
Part 27H	LTE Band 17	16QAM	5MHz	4M52W7D	-	0.0561 W
Part 27H	LTE Band 17	QPSK	10MHz	9M09G7D	0.0079 ppm	0.0583 W
Part 27H	LTE Band 17	16QAM	10MHz	9M01W7D	-	0.0569 W

1.7 Testing Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.		
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958		
Test Site No.	**Sporton Site No.**		**FCC/IC Registration No.**
	TH01-KS	03CH01-KS	149928/4086E-1

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755-3320-2398	
Test Site No.	**Sporton Site No.**	**FCC/IC Registration No.**
	03CH01-SZ	831040/4086F-1

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, 24(E), 27(L), 27(M), 27(H)
- ANSI / TIA / EIA-603-C-2004
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r01
- IC RSS-130 Issue1
- IC RSS-133 Issue 6
- IC RSS-139 Issue 2
- IC RSS-199 Issue 1
- NOTICE 2012-DRS0126

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. Per the section 2.2.3 of Notice of 2012-DRS0126, " Receivers Excluded from Industry Canada Requirements", only radiocommunication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to Industry Canada requirements.

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.

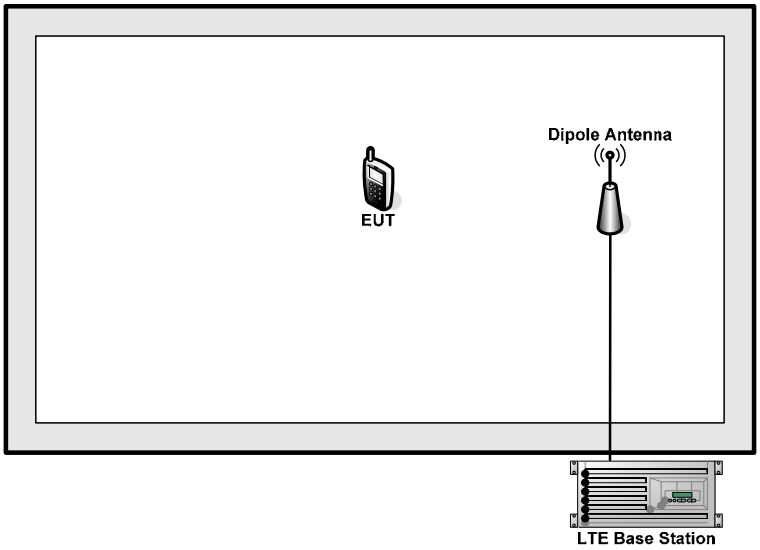
Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

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	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v
	17	-	-	v	v	-	-	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	2						v	v	v	v		v	v	v	v
	4						v	v	v	v		v	v	v	v
	7	-	-				v	v	v	v		v	v	v	v
	17	-	-		v	-	-	v	v	v		v	v	v	v
26dB and 99% Bandwidth	2	v	v	v	v	v	v	v	v			v	v	v	v
	4	v	v	v	v	v	v	v	v			v	v	v	v
	7	-	-	v	v	v	v	v	v			v	v	v	v
	17	-	-	v	v	-	-	v	v			v	v	v	v
Conducted Band Edge	2	v	v	v	v	v	v	v	v	v		v	v		v
	4	v	v	v	v	v	v	v	v	v		v	v		v
	7	-	-	v	v	v	v	v	v	v		v	v		v
	17	-	-	v	v	-	-	v	v	v		v	v		v

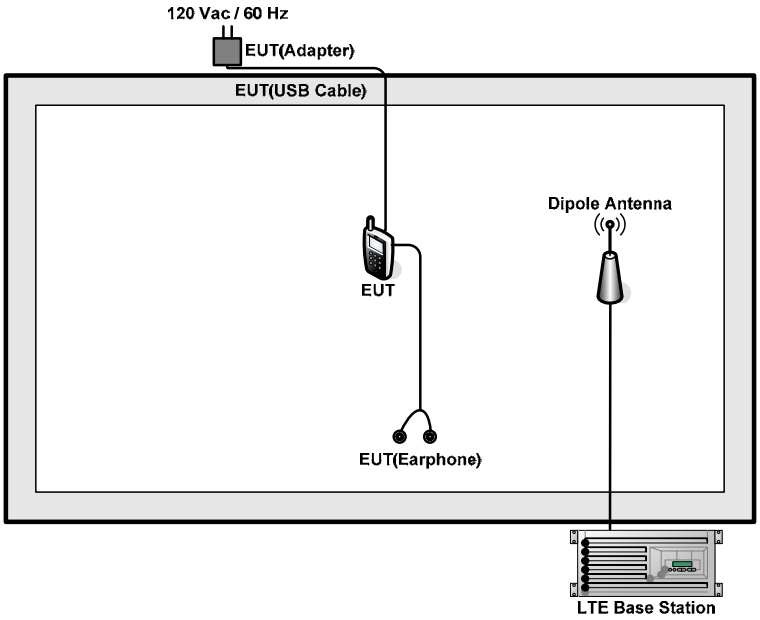
Test Items	Band	Bandwidth (MHz)						Modulation		RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	M	H
Conducted Spurious Emission	2	v	v	v	v	v	v	v	v	v			v	v	v
	4	v	v	v	v	v	v	v	v	v			v	v	v
	7	-	-	v	v	v	v	v	v	v			v	v	v
	17	-	-	v	v	-	-	v	v	v			v	v	v
Frequency Stability	2				v			v				v		v	
	4				v			v				v		v	
	7	-	-		v			v				v		v	
	17	-	-		v	-	-	v				v		v	
E.R.P./ E.I.R.P.	2	v	v	v	v	v	v	v	v	v			v	v	v
	4	v	v	v	v	v	v	v	v	v			v	v	v
	7	-	-	v	v	v	v	v	v	v			v	v	v
	17	-	-	v	v	-	-	v	v	v			v	v	v
Radiated Spurious Emission	2	v	v	v	v	v	v	v		v			v	v	v
	4	v	v	v	v	v	v	v		v			v	v	v
	7	-	-	v	v	v	v	v		v			v	v	v
	17	-	-	v	v	-	-	v		v			v	v	v
Note	1. The mark “v” means that this configuration is chosen for testing 2. The mark “-” means that this bandwidth is not supported. 3. For 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. 4. 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

For 27(L)



For 24(E)/27(M)/27(H)



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GWINSTEK	GPS-3030D	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 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.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 6 dB.

Example :

Offset(dB) = RF cable loss(dB) = 6 (dB)

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

A LTE base station 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.

3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup

3.1.5 Test Result of Conducted Output Power

<LTE Band 2 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**18700**	**18900**	**19100**
Frequency (MHz)				**1860**	**1880**	**1900**
20	QPSK	1	0	22.17	22.22	22.19
20	QPSK	1	49	21.97	22.15	22.02
20	QPSK	1	99	21.94	22.15	22.18
20	QPSK	50	0	22.15	22.21	22.18
20	QPSK	50	24	22.14	22.13	22.14
20	QPSK	50	49	22.06	22.11	22.14
20	QPSK	100	0	22.08	22.12	22.06
20	16QAM	1	0	21.45	21.20	21.19
20	16QAM	1	49	21.46	21.62	21.43
20	16QAM	1	99	21.21	21.38	21.42
20	16QAM	50	0	20.15	20.25	20.15
20	16QAM	50	24	20.11	20.20	20.14
20	16QAM	50	49	20.08	20.17	20.15
20	16QAM	100	0	20.09	20.17	20.12
Channel				**18675**	**18900**	**19125**
Frequency (MHz)				**1857.5**	**1880**	**1902.5**
15	QPSK	1	0	22.03	22.16	22.07
15	QPSK	1	37	22.01	22.02	22.18
15	QPSK	1	74	22.11	22.09	22.08
15	QPSK	36	0	22.10	22.11	22.13
15	QPSK	36	18	22.10	22.11	22.13
15	QPSK	36	37	22.07	22.11	22.17
15	QPSK	75	0	22.03	22.10	22.14
15	16QAM	1	0	21.30	21.60	21.53
15	16QAM	1	37	21.60	21.29	21.55
15	16QAM	1	74	21.18	21.26	21.01
15	16QAM	36	0	20.11	20.20	20.17
15	16QAM	36	18	20.11	20.18	20.16
15	16QAM	36	37	20.09	20.16	20.17
15	16QAM	75	0	20.04	20.15	20.16

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**18650**	**18900**	**19150**
Frequency (MHz)				**1855**	**1880**	**1905**
10	QPSK	1	0	21.95	22.12	22.12
10	QPSK	1	24	22.04	22.05	22.07
10	QPSK	1	49	21.97	21.98	22.08
10	QPSK	25	0	22.02	22.09	22.07
10	QPSK	25	12	22.02	22.03	22.11
10	QPSK	25	24	22.01	22.07	22.09
10	QPSK	50	0	22.01	22.07	22.11
10	16QAM	1	0	21.21	21.24	21.26
10	16QAM	1	24	21.04	21.55	21.23
10	16QAM	1	49	21.39	21.58	21.00
10	16QAM	25	0	19.99	20.11	20.13
10	16QAM	25	12	20.05	20.09	20.08
10	16QAM	25	24	20.08	20.12	20.15
10	16QAM	50	0	20.00	20.06	20.14
Channel				**18625**	**18900**	**19175**
Frequency (MHz)				**1852.5**	**1880**	**1907.5**
5	QPSK	1	0	21.94	22.01	22.08
5	QPSK	1	12	21.93	22.01	22.16
5	QPSK	1	24	22.06	22.11	22.12
5	QPSK	12	0	22.03	22.06	22.10
5	QPSK	12	6	22.05	22.10	22.11
5	QPSK	12	11	22.02	22.09	22.09
5	QPSK	25	0	22.00	22.06	22.13
5	16QAM	1	0	21.16	21.62	21.55
5	16QAM	1	12	21.17	21.63	21.54
5	16QAM	1	24	21.48	21.21	21.51
5	16QAM	12	0	20.11	20.18	20.14
5	16QAM	12	6	20.05	20.12	20.13
5	16QAM	12	11	20.03	20.20	20.18
5	16QAM	25	0	20.02	20.09	20.12

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**18615**	**18900**	**19185**
Frequency (MHz)				**1851.5**	**1880**	**1908.5**
3	QPSK	1	0	21.90	22.00	22.02
3	QPSK	1	7	21.87	22.10	22.14
3	QPSK	1	14	22.03	22.02	21.99
3	QPSK	8	0	22.00	22.05	22.04
3	QPSK	8	4	22.00	22.09	22.13
3	QPSK	8	7	22.02	22.07	22.09
3	QPSK	15	0	21.98	22.09	22.08
3	16QAM	1	0	21.29	21.48	21.10
3	16QAM	1	7	21.13	21.25	21.22
3	16QAM	1	14	20.89	21.17	21.35
3	16QAM	8	0	20.02	20.15	20.21
3	16QAM	8	4	20.02	20.19	20.20
3	16QAM	8	7	20.03	20.13	20.19
3	16QAM	15	0	20.07	20.10	20.05
Channel				**18607**	**18900**	**19193**
Frequency (MHz)				**1850.7**	**1880**	**1909.3**
1.4	QPSK	1	0	21.87	22.01	21.98
1.4	QPSK	1	2	21.99	22.11	22.12
1.4	QPSK	1	5	21.90	21.96	21.99
1.4	QPSK	3	0	21.96	22.06	22.07
1.4	QPSK	3	1	21.94	22.07	22.11
1.4	QPSK	3	2	21.96	22.05	22.08
1.4	QPSK	6	0	21.98	22.03	22.10
1.4	16QAM	1	0	21.34	21.17	21.21
1.4	16QAM	1	2	21.23	21.61	21.15
1.4	16QAM	1	5	21.05	21.46	20.95
1.4	16QAM	3	0	20.96	21.01	21.16
1.4	16QAM	3	1	21.00	21.10	21.08
1.4	16QAM	3	2	20.91	21.06	21.07
1.4	16QAM	6	0	20.13	20.15	20.26

<LTE Band 4 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**20050**	**20175**	**20300**
Frequency (MHz)				**1720**	**1732.5**	**1745**
20	QPSK	1	0	21.89	21.99	21.86
20	QPSK	1	49	21.80	21.63	21.75
20	QPSK	1	99	21.76	21.61	21.65
20	QPSK	50	0	21.83	21.88	21.82
20	QPSK	50	24	21.80	21.75	21.75
20	QPSK	50	49	21.77	21.68	21.68
20	QPSK	100	0	21.73	21.79	21.75
20	16QAM	1	0	20.92	20.95	20.83
20	16QAM	1	49	20.91	20.86	20.67
20	16QAM	1	99	20.95	21.11	21.13
20	16QAM	50	0	19.66	19.75	19.76
20	16QAM	50	24	19.81	19.71	19.70
20	16QAM	50	49	20.17	19.64	19.66
20	16QAM	100	0	19.38	19.69	19.71
Channel				**20025**	**20175**	**20325**
Frequency (MHz)				**1717.5**	**1732.5**	**1747.5**
15	QPSK	1	0	21.88	21.49	21.78
15	QPSK	1	37	21.82	21.97	21.70
15	QPSK	1	74	21.67	21.67	21.66
15	QPSK	36	0	21.86	21.82	21.77
15	QPSK	36	18	21.84	21.74	21.74
15	QPSK	36	37	21.80	21.72	21.70
15	QPSK	75	0	21.81	21.79	21.75
15	16QAM	1	0	20.89	21.28	21.18
15	16QAM	1	37	21.23	20.67	21.15
15	16QAM	1	74	20.88	20.82	20.59
15	16QAM	36	0	19.85	19.76	19.80
15	16QAM	36	18	19.82	19.75	19.73
15	16QAM	36	37	19.76	19.69	19.75
15	16QAM	75	0	19.77	19.75	19.74

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**20000**	**20175**	**20350**
Frequency (MHz)				**1715**	**1732.5**	**1750**
10	QPSK	1	0	21.83	21.70	21.93
10	QPSK	1	24	21.77	21.78	21.57
10	QPSK	1	49	21.66	21.70	21.71
10	QPSK	25	0	21.81	21.77	21.71
10	QPSK	25	12	21.76	21.74	21.69
10	QPSK	25	24	21.75	21.73	21.67
10	QPSK	50	0	21.82	21.76	21.74
10	16QAM	1	0	21.35	20.93	20.67
10	16QAM	1	24	21.02	20.97	21.08
10	16QAM	1	49	21.14	21.16	21.16
10	16QAM	25	0	19.76	19.76	19.74
10	16QAM	25	12	19.81	19.66	19.60
10	16QAM	25	24	19.74	19.76	19.75
10	16QAM	50	0	19.77	19.72	19.72
Channel				**19975**	**20175**	**20375**
Frequency (MHz)				**1712.5**	**1732.5**	**1752.5**
5	QPSK	1	0	21.75	21.77	21.64
5	QPSK	1	12	21.79	21.80	21.77
5	QPSK	1	24	21.73	21.90	21.71
5	QPSK	12	0	21.78	21.30	21.73
5	QPSK	12	6	21.77	21.69	21.76
5	QPSK	12	11	21.78	21.72	21.74
5	QPSK	25	0	21.75	21.68	21.69
5	16QAM	1	0	20.93	20.80	20.85
5	16QAM	1	12	20.96	20.90	20.90
5	16QAM	1	24	20.93	20.77	20.84
5	16QAM	12	0	19.82	19.78	19.76
5	16QAM	12	6	19.71	19.77	19.75
5	16QAM	12	11	19.82	19.70	19.74
5	16QAM	25	0	19.79	19.70	19.65

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**19965**	**20175**	**20385**
Frequency (MHz)				**1711.5**	**1732.5**	**1753.5**
3	QPSK	1	0	21.68	21.60	21.51
3	QPSK	1	7	21.81	21.75	21.10
3	QPSK	1	14	21.59	21.58	21.73
3	QPSK	8	0	21.80	21.74	21.70
3	QPSK	8	4	21.77	21.74	21.71
3	QPSK	8	7	21.78	21.71	21.70
3	QPSK	15	0	21.77	21.73	21.70
3	16QAM	1	0	20.65	20.68	20.81
3	16QAM	1	7	21.21	21.16	21.29
3	16QAM	1	14	21.14	20.81	21.06
3	16QAM	8	0	19.87	19.82	19.82
3	16QAM	8	4	19.86	19.78	19.78
3	16QAM	8	7	19.81	19.82	19.74
3	16QAM	15	0	19.89	19.80	19.72
Channel				**19957**	**20175**	**20393**
Frequency (MHz)				**1710.7**	**1732.5**	**1754.3**
1.4	QPSK	1	0	21.69	21.65	21.84
1.4	QPSK	1	2	21.79	21.74	21.76
1.4	QPSK	1	5	21.70	21.68	21.63
1.4	QPSK	3	0	21.77	21.72	21.70
1.4	QPSK	3	1	21.74	21.65	21.71
1.4	QPSK	3	2	21.78	21.66	21.70
1.4	QPSK	6	0	21.75	21.73	21.75
1.4	16QAM	1	0	21.12	20.81	20.60
1.4	16QAM	1	2	21.13	21.28	20.88
1.4	16QAM	1	5	20.92	20.79	21.06
1.4	16QAM	3	0	20.86	20.74	20.74
1.4	16QAM	3	1	20.66	20.61	20.58
1.4	16QAM	3	2	20.80	20.59	20.55
1.4	16QAM	6	0	19.96	19.78	19.73

<LTE Band 7 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**20850**	**21100**	**21350**
Frequency (MHz)				**2510**	**2535**	**2560**
20	QPSK	1	0	22.80	22.81	22.69
20	QPSK	1	49	22.54	22.50	22.59
20	QPSK	1	99	22.72	22.65	22.51
20	QPSK	50	0	22.78	22.80	22.63
20	QPSK	50	24	22.73	22.72	22.61
20	QPSK	50	49	22.75	22.72	22.62
20	QPSK	100	0	22.71	22.73	22.59
20	16QAM	1	0	21.72	21.62	21.94
20	16QAM	1	49	21.78	21.67	21.58
20	16QAM	1	99	21.80	21.79	22.02
20	16QAM	50	0	20.72	20.69	20.59
20	16QAM	50	24	20.74	20.61	20.54
20	16QAM	50	49	20.75	20.66	20.68
20	16QAM	100	0	20.68	20.60	20.56
Channel				**20825**	**21100**	**21375**
Frequency (MHz)				**2507.5**	**2535**	**2562.5**
15	QPSK	1	0	22.61	22.66	22.53
15	QPSK	1	37	22.75	22.68	22.67
15	QPSK	1	74	22.60	22.62	22.61
15	QPSK	36	0	22.73	22.65	22.64
15	QPSK	36	18	22.63	22.67	22.63
15	QPSK	36	37	22.74	22.64	22.66
15	QPSK	75	0	22.70	22.67	22.60
15	16QAM	1	0	21.94	21.65	21.75
15	16QAM	1	37	22.00	22.02	22.03
15	16QAM	1	74	21.62	21.71	21.51
15	16QAM	36	0	20.67	20.67	20.63
15	16QAM	36	18	20.65	20.64	20.67
15	16QAM	36	37	20.71	20.59	20.67
15	16QAM	75	0	20.66	20.66	20.66

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**20800**	**21100**	**21400**
Frequency (MHz)				**2505**	**2535**	**2565**
10	QPSK	1	0	22.70	22.69	22.59
10	QPSK	1	24	22.46	22.62	22.54
10	QPSK	1	49	22.44	22.62	22.52
10	QPSK	25	0	22.53	22.65	22.50
10	QPSK	25	12	22.69	22.62	22.57
10	QPSK	25	24	22.57	22.59	22.53
10	QPSK	50	0	22.46	22.68	22.56
10	16QAM	1	0	21.68	21.63	21.69
10	16QAM	1	24	21.58	21.84	21.87
10	16QAM	1	49	21.73	21.66	21.91
10	16QAM	25	0	20.62	20.64	20.56
10	16QAM	25	12	20.53	20.56	20.49
10	16QAM	25	24	20.46	20.57	20.57
10	16QAM	50	0	20.62	20.59	20.59
Channel				**20775**	**21100**	**21425**
Frequency (MHz)				**2502.5**	**2535**	**2567.5**
5	QPSK	1	0	22.51	22.60	22.47
5	QPSK	1	12	22.63	22.67	22.57
5	QPSK	1	24	22.48	22.51	22.51
5	QPSK	12	0	22.58	22.61	22.50
5	QPSK	12	6	22.59	22.66	22.55
5	QPSK	12	11	22.62	22.59	22.56
5	QPSK	25	0	22.52	22.60	22.54
5	16QAM	1	0	21.48	21.70	21.88
5	16QAM	1	12	21.48	21.92	21.63
5	16QAM	1	24	21.69	21.86	21.89
5	16QAM	12	0	20.53	20.81	20.59
5	16QAM	12	6	20.56	20.66	20.52
5	16QAM	12	11	20.56	20.57	20.53
5	16QAM	25	0	20.61	20.58	20.52

<LTE Band 17 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				**23780**	**23790**	**23800**
Frequency (MHz)				**709**	**710**	**711**
10	QPSK	1	0	21.60	21.75	21.65
10	QPSK	1	24	21.53	21.67	21.45
10	QPSK	1	49	21.57	21.64	21.46
10	QPSK	25	0	21.58	21.67	21.64
10	QPSK	25	12	21.53	21.61	21.56
10	QPSK	25	24	21.57	21.60	21.63
10	QPSK	50	0	21.54	21.63	21.61
10	16QAM	1	0	20.73	20.79	20.82
10	16QAM	1	24	20.86	20.84	21.01
10	16QAM	1	49	21.14	20.89	21.22
10	16QAM	25	0	19.71	19.64	19.66
10	16QAM	25	12	19.67	19.59	19.61
10	16QAM	25	24	19.67	19.70	19.63
10	16QAM	50	0	19.73	19.65	19.67
Channel				**23755**	**23790**	**23825**
Frequency (MHz)				**706.5**	**710**	**713.5**
5	QPSK	1	0	21.49	21.48	21.36
5	QPSK	1	12	21.63	21.58	21.51
5	QPSK	1	24	21.67	21.68	21.62
5	QPSK	12	0	21.62	21.64	21.59
5	QPSK	12	6	21.61	21.60	21.61
5	QPSK	12	11	21.66	21.59	21.55
5	QPSK	25	0	21.57	21.61	21.52
5	16QAM	1	0	20.91	20.97	20.64
5	16QAM	1	12	20.94	20.60	20.77
5	16QAM	1	24	21.14	20.98	20.79
5	16QAM	12	0	19.73	19.74	19.62
5	16QAM	12	6	19.76	19.80	19.73
5	16QAM	12	11	19.77	19.73	19.65
5	16QAM	25	0	19.62	19.69	19.58

Note: Maximum average power for LTE.

3.2 Peak-to-Average Ratio

3.2.1 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.

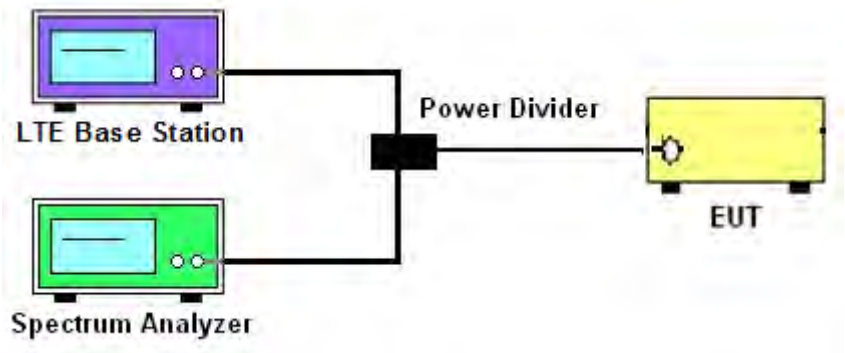
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The EUT was connected to spectrum and LTE base station via a power divider.
2. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
3. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
4. Record the deviation as Peak to Average Ratio.

3.2.4 Test Setup



3.2.5 Test Result of Peak-to-Average Ratio

LTE Band 2						
BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				18700	18900	19100
Frequency (MHz)				1860	1880	1900
20	QPSK	1	0	4.23	4.81	4.84
20	QPSK	100	0	4.64	4.96	4.81
20	16QAM	1	0	4.84	5.42	5.86
20	16QAM	100	0	5.88	5.97	6.00

LTE Band 4						
BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20050	20175	20300
Frequency (MHz)				1720	1732.5	1745
20	QPSK	1	0	4.67	5.45	5.10
20	QPSK	100	0	5.22	5.13	5.19
20	16QAM	1	0	6.26	6.67	6.06
20	16QAM	100	0	6.14	6.09	6.14

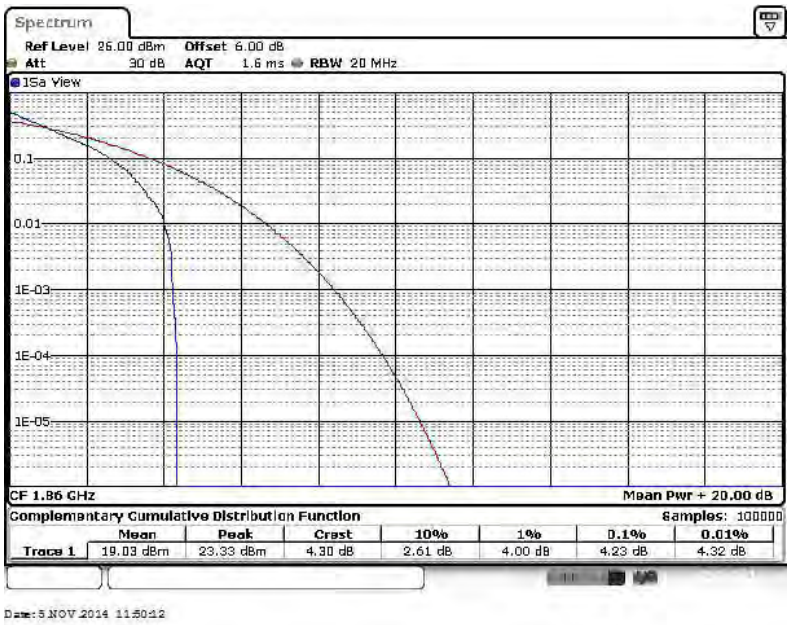
LTE Band 7						
BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20850	21100	21350
Frequency (MHz)				2510	2535	2560
20	QPSK	1	0	4.12	5.16	4.55
20	QPSK	100	0	4.72	4.93	5.39
20	16QAM	1	0	4.81	5.94	5.65
20	16QAM	100	0	5.88	6.00	6.29

LTE Band 17						
BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				23780	23790	23800
Frequency (MHz)				709	710	711
10	QPSK	1	0	4.26	4.96	4.96
10	QPSK	50	0	4.41	4.52	4.49
10	16QAM	1	0	5.30	5.94	5.65
10	16QAM	50	0	5.83	5.86	5.88

3.2.6 Peak to Average Power Ratio

Peak-to-Average Ratio on LTE Band 2

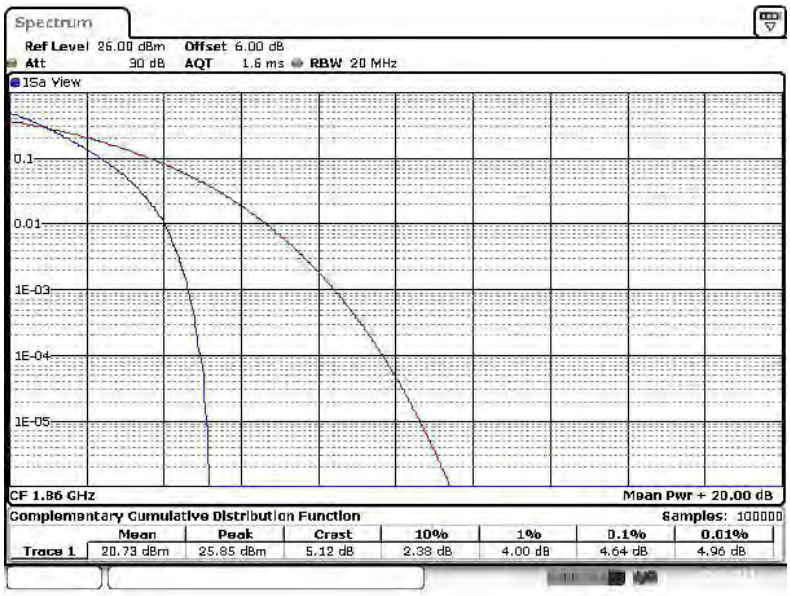
20MHz / QPSK in Ch. 18700 (1RB Size)



Date: 5.NOV.2014 11:50:12

Peak-to-Average Ratio on LTE Band 2

20MHz / QPSK in Ch. 18700 (100RB Size)



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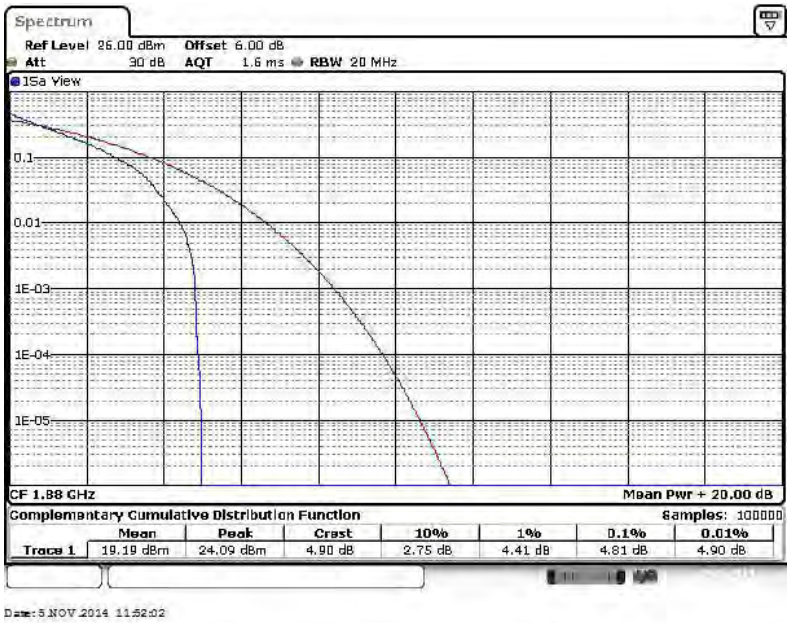
Peak-to-Average Ratio on LTE Band 2

20MHz / QPSK in Ch. 18900 (1RB Size)



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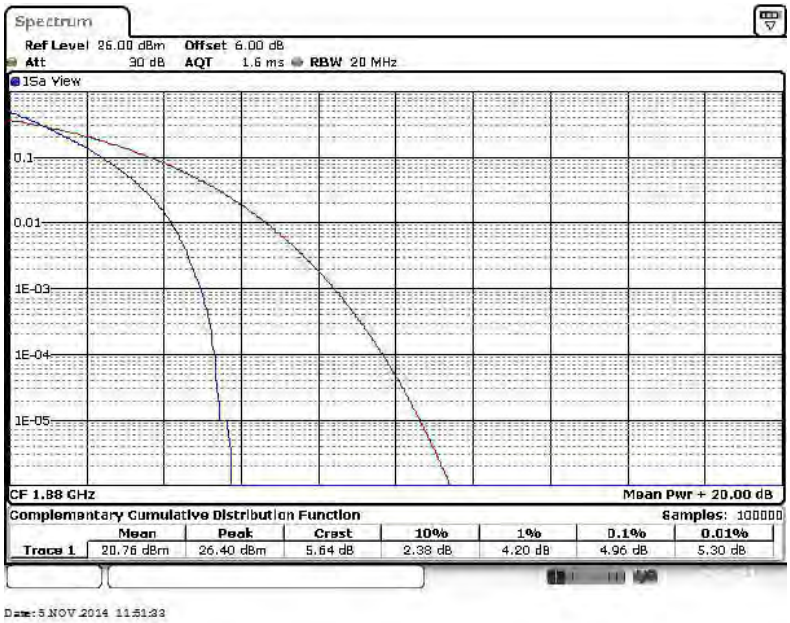
Peak-to-Average Ratio on LTE Band 2

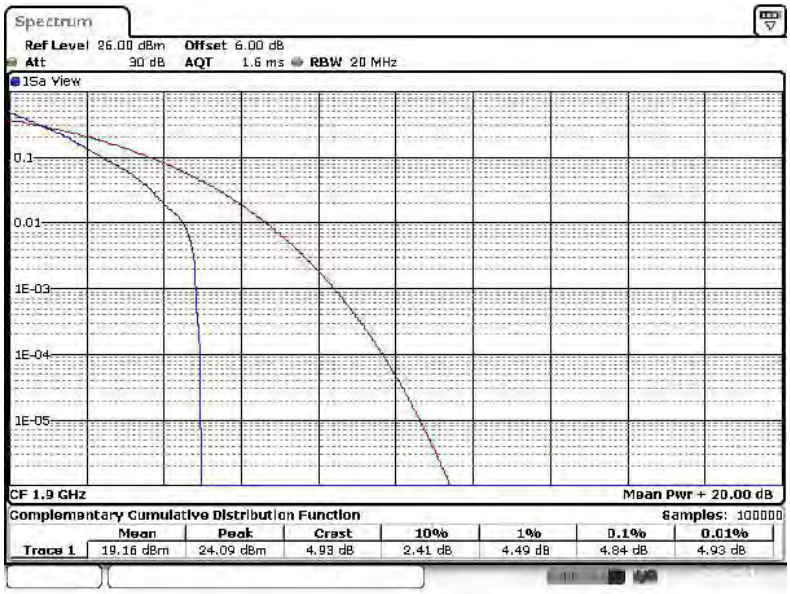
20MHz / QPSK in Ch. 18900 (100RB Size)



Date: 5.NOV.2014 11:51:33

Peak-to-Average Ratio on LTE Band 2

20MHz / QPSK in Ch. 19100 (1RB Size)



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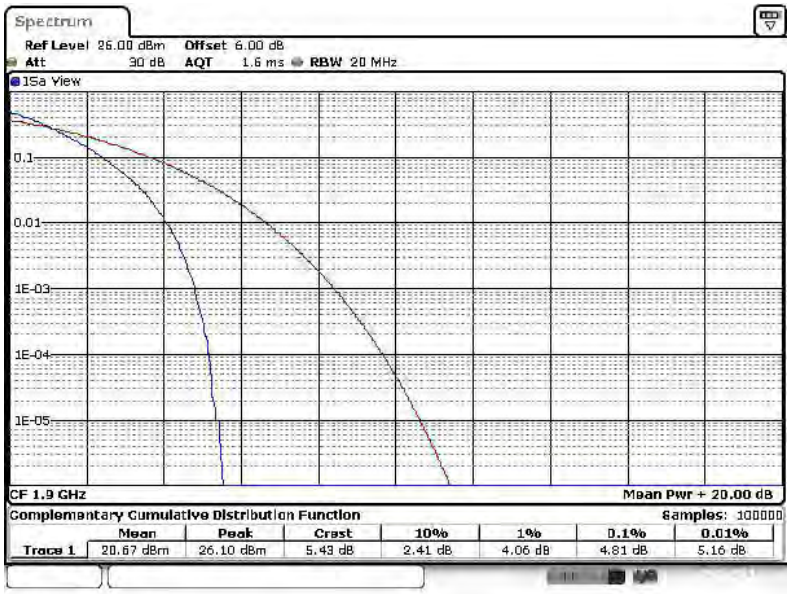
Peak-to-Average Ratio on LTE Band 2

20MHz / QPSK in Ch. 19100 (100RB Size)



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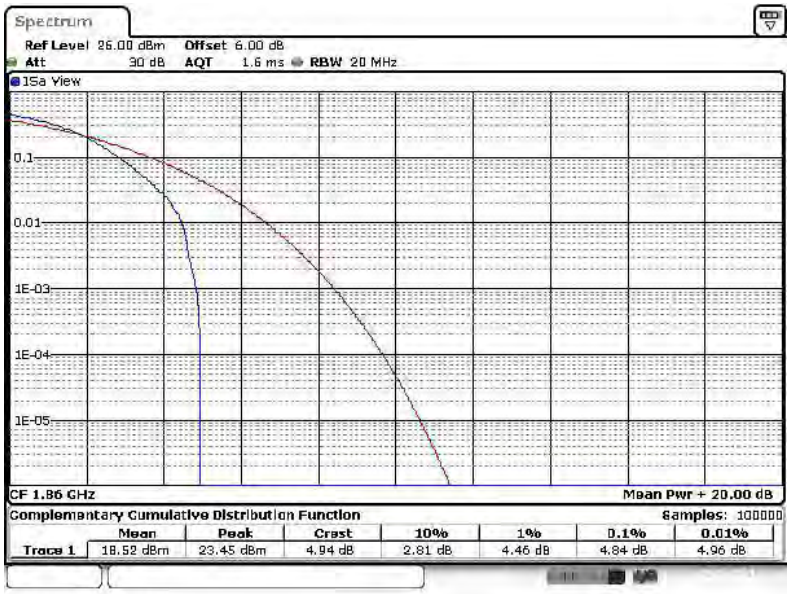
Peak-to-Average Ratio on LTE Band 2

20MHz / 16QAM in Ch. 18700 (1RB Size)



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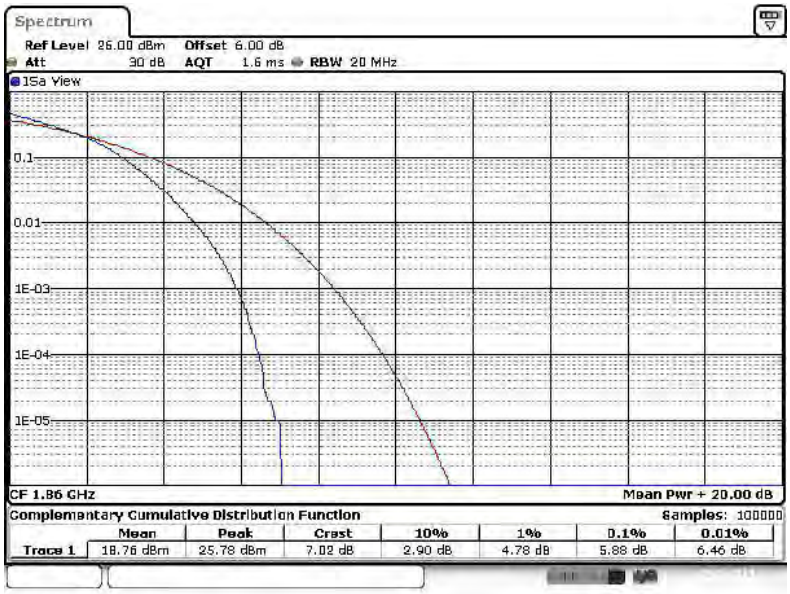
Peak-to-Average Ratio on LTE Band 2

20MHz / 16QAM in Ch. 18700 (100RB Size)



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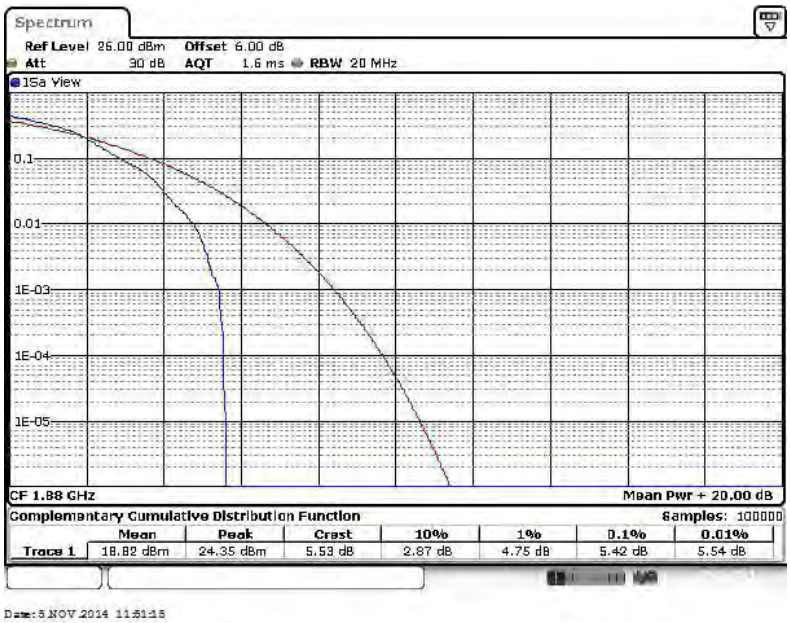
Peak-to-Average Ratio on LTE Band 2

20MHz / 16QAM in Ch. 18900 (1RB Size)



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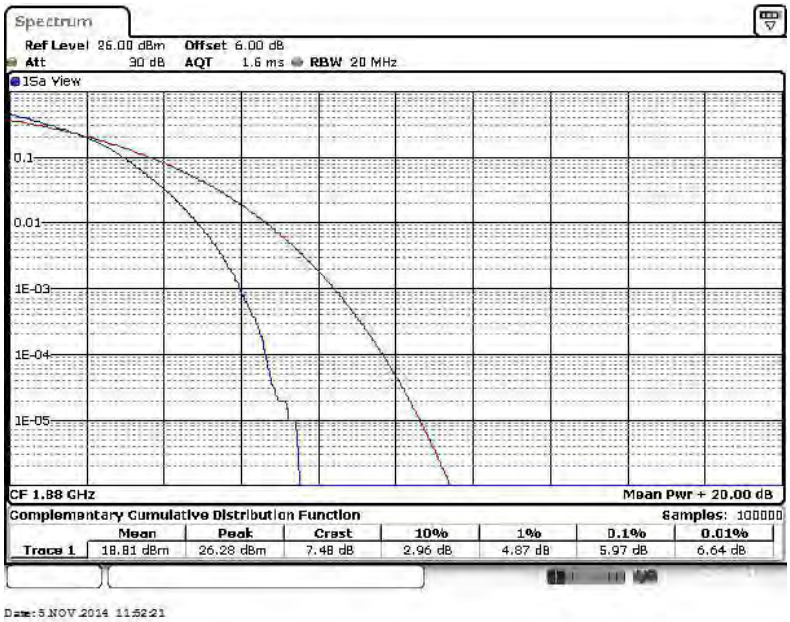
Peak-to-Average Ratio on LTE Band 2

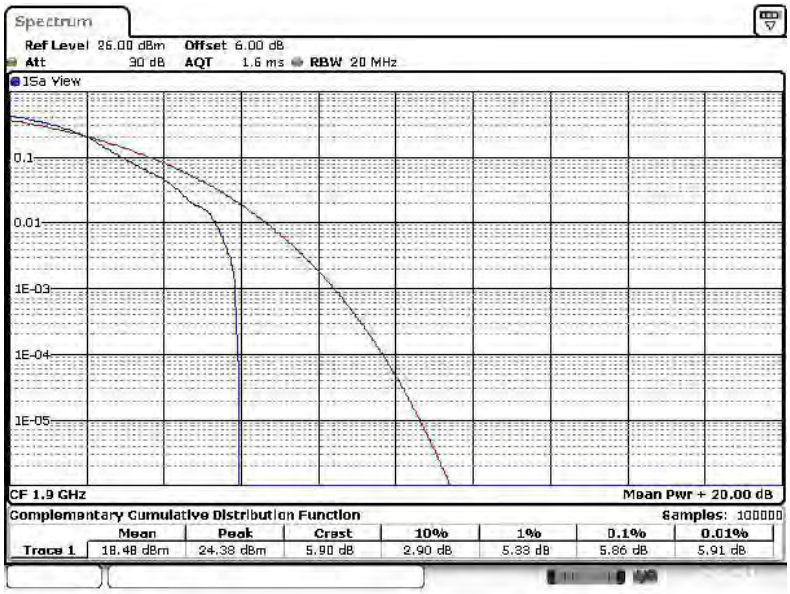
20MHz / 16QAM in Ch. 18900 (100RB Size)



Date:5.NOV.2014 11:52:21

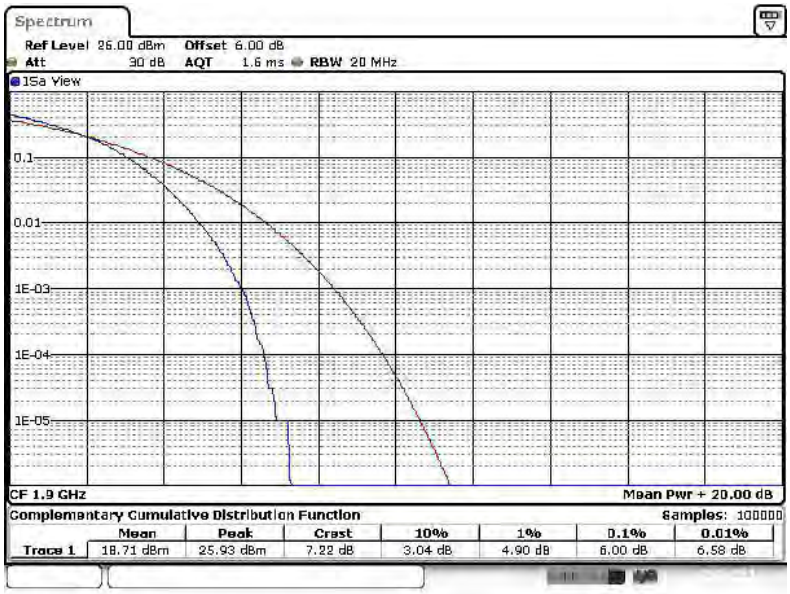
Peak-to-Average Ratio on LTE Band 2

20MHz / 16QAM in Ch. 19100 (1RB Size)



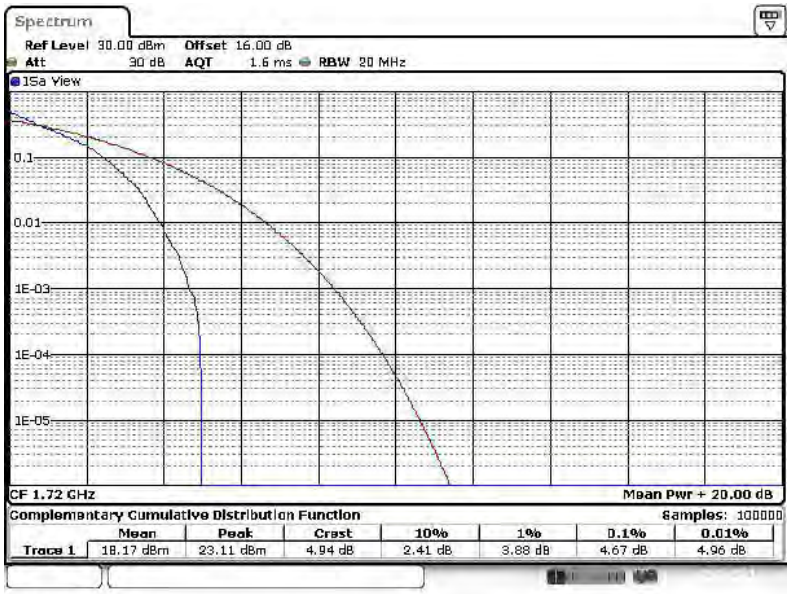
Peak-to-Average Ratio on LTE Band 2

20MHz / 16QAM in Ch. 19100 (100RB Size)



Peak-to-Average Ratio on LTE Band 4

20MHz / QPSK in Ch. 20050 (1RB Size)



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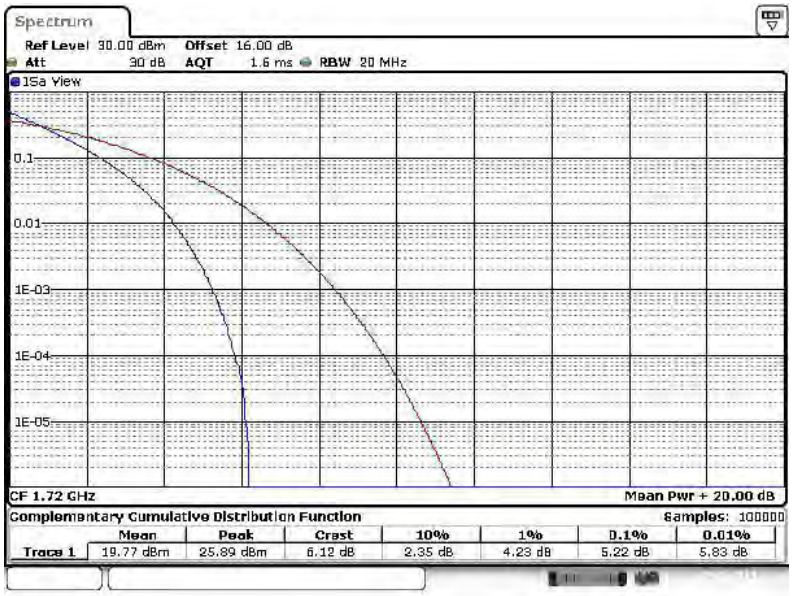
Peak-to-Average Ratio on LTE Band 4

20MHz / QPSK in Ch. 20050 (100RB Size)



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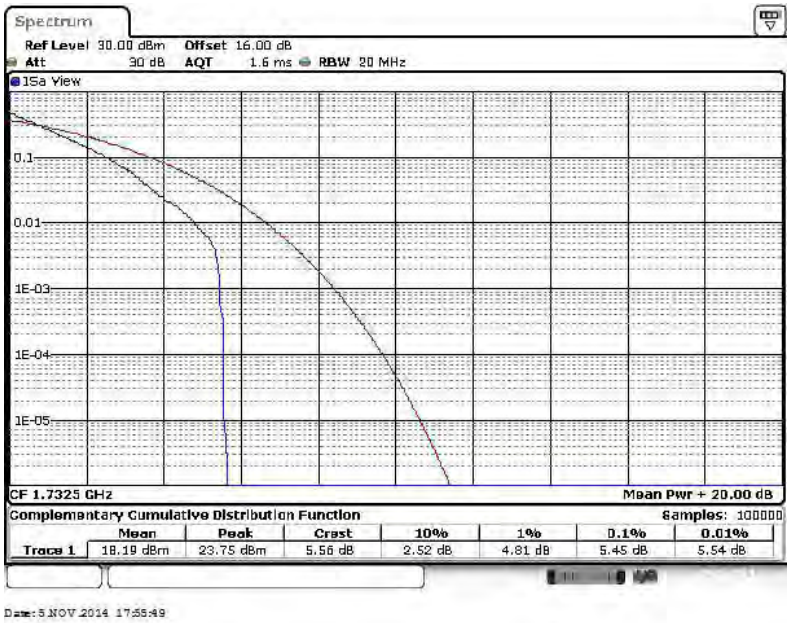
Peak-to-Average Ratio on LTE Band 4

20MHz / QPSK in Ch. 20175 (1RB Size)



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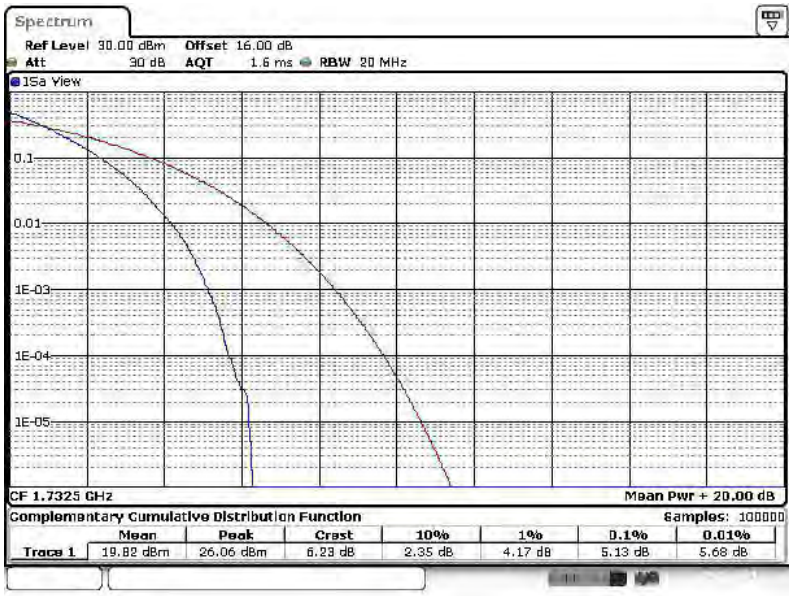
Peak-to-Average Ratio on LTE Band 4

20MHz / QPSK in Ch. 20175 (100RB Size)



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Peak-to-Average Ratio on LTE Band 4

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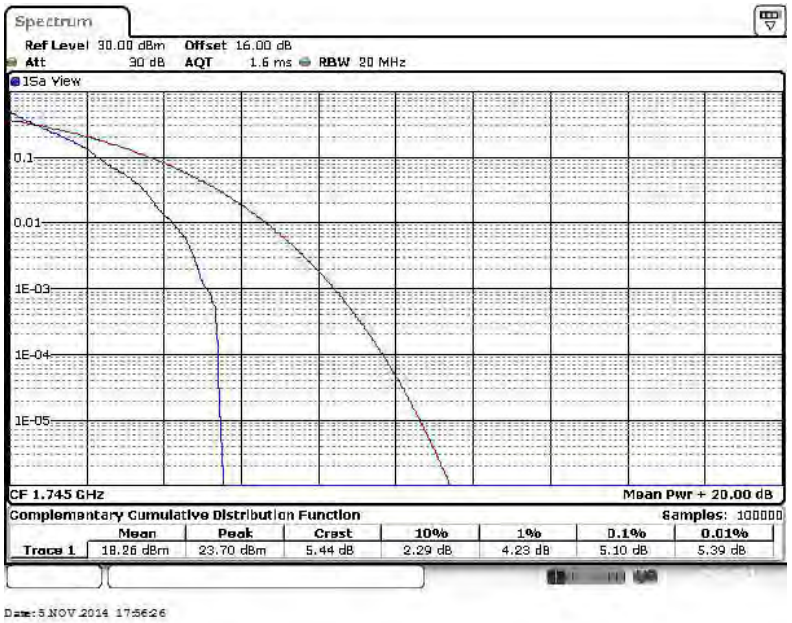

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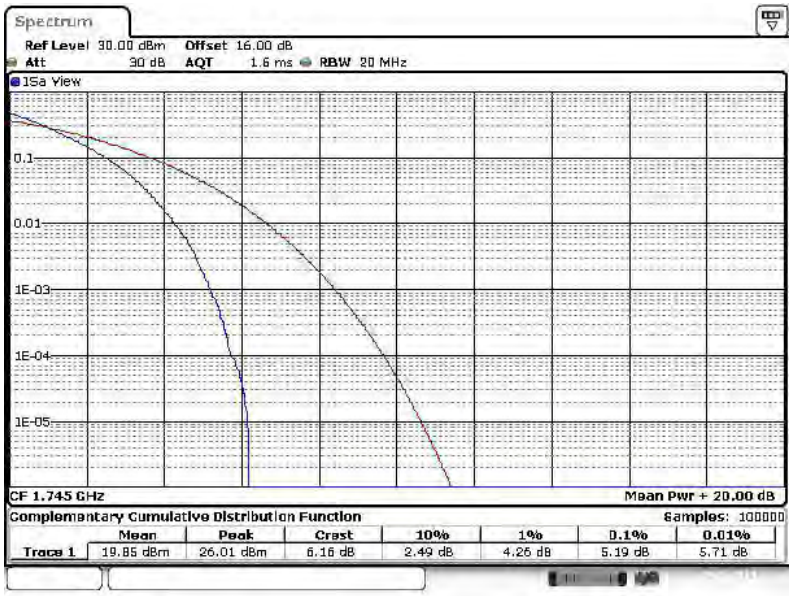
Peak-to-Average Ratio on LTE Band 4

20MHz / QPSK in Ch. 20300 (100RB Size)



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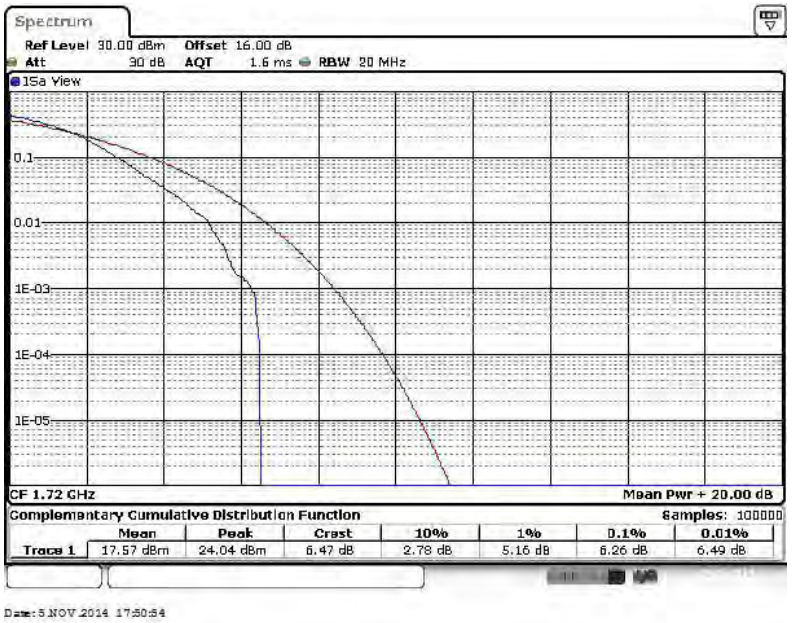
Peak-to-Average Ratio on LTE Band 4

20MHz / 16QAM in Ch. 20050 (1RB Size)



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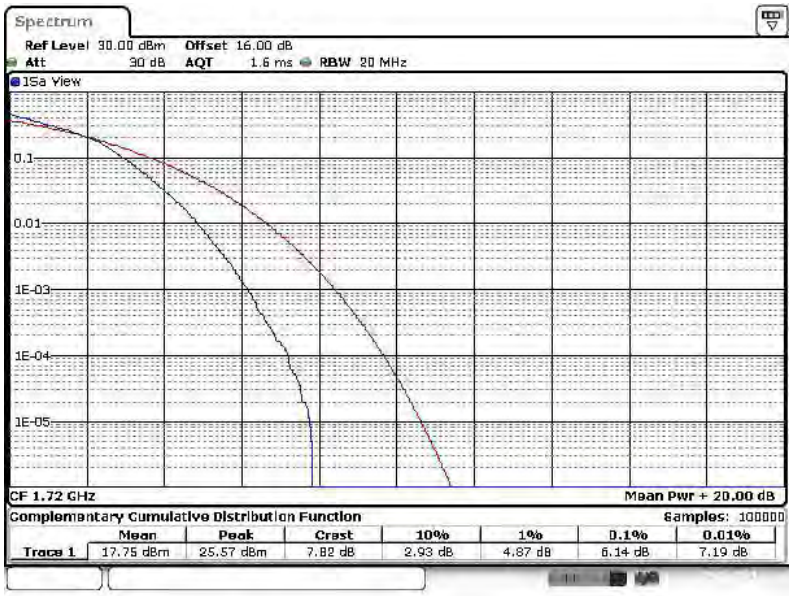
Peak-to-Average Ratio on LTE Band 4

20MHz / 16QAM in Ch. 20050 (100RB Size)



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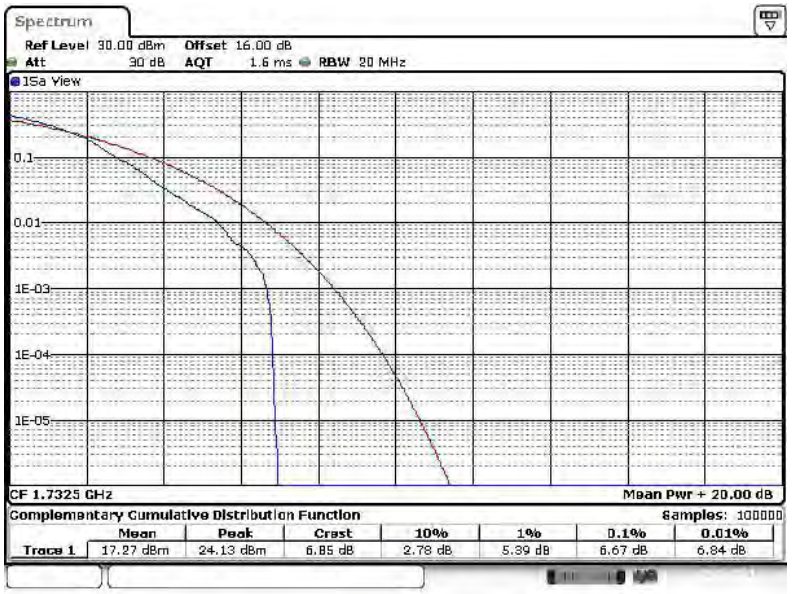
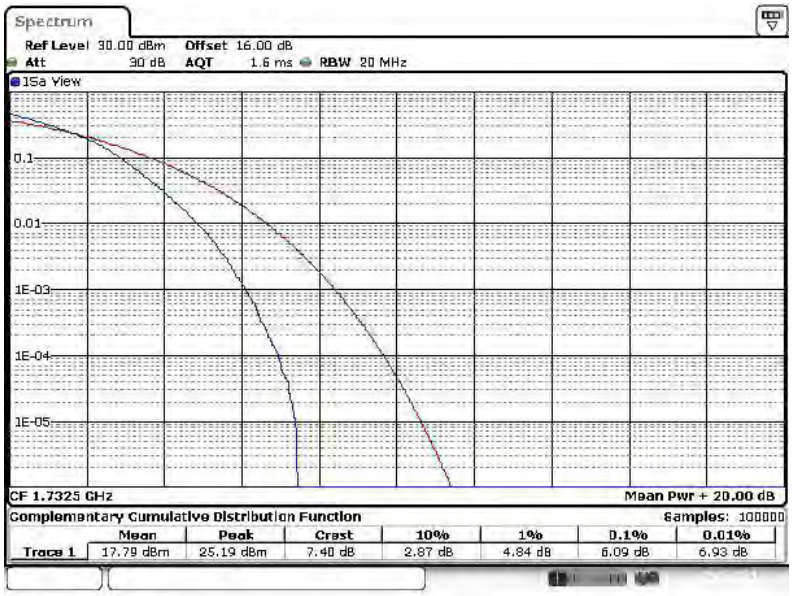
Peak-to-Average Ratio on LTE Band 4

20MHz / 16QAM in Ch. 20175 (1RB Size)



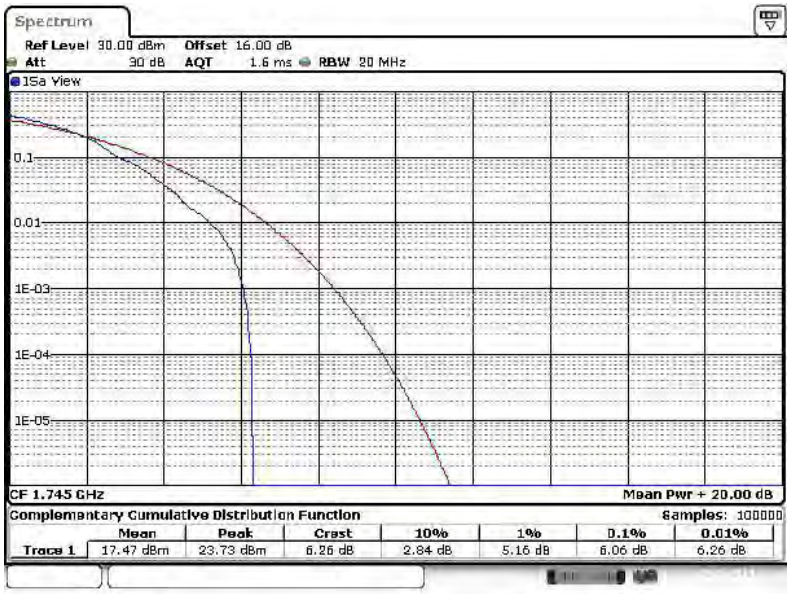
Peak-to-Average Ratio on LTE Band 4

20MHz / 16QAM in Ch. 20175 (100RB Size)



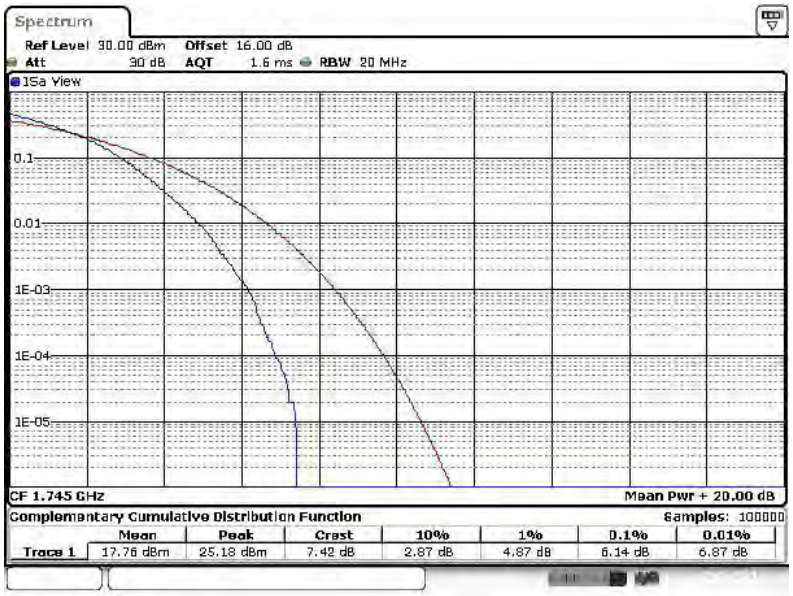
Peak-to-Average Ratio on LTE Band 4

20MHz / 16QAM in Ch. 20300 (1RB Size)



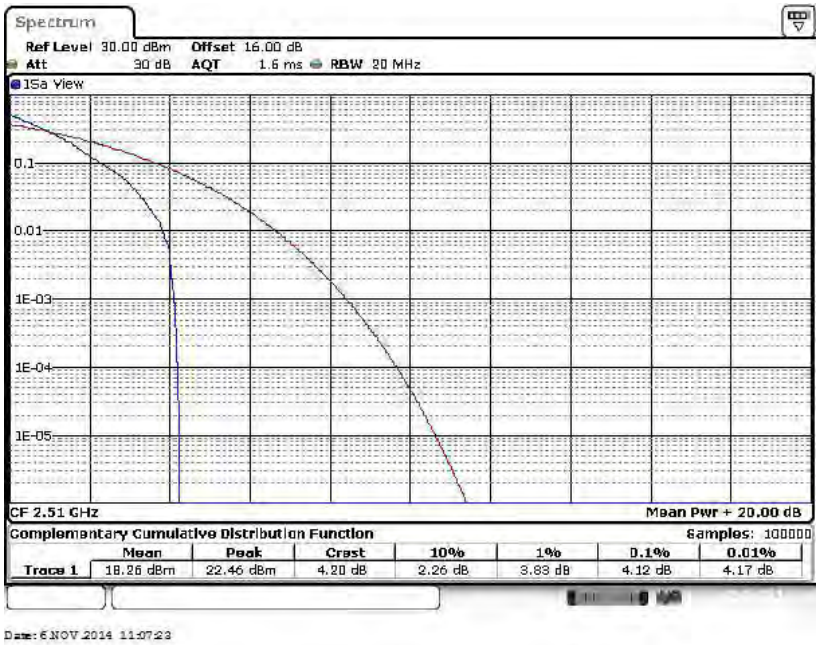
Peak-to-Average Ratio on LTE Band 4

20MHz / 16QAM in Ch. 20300 (100RB Size)



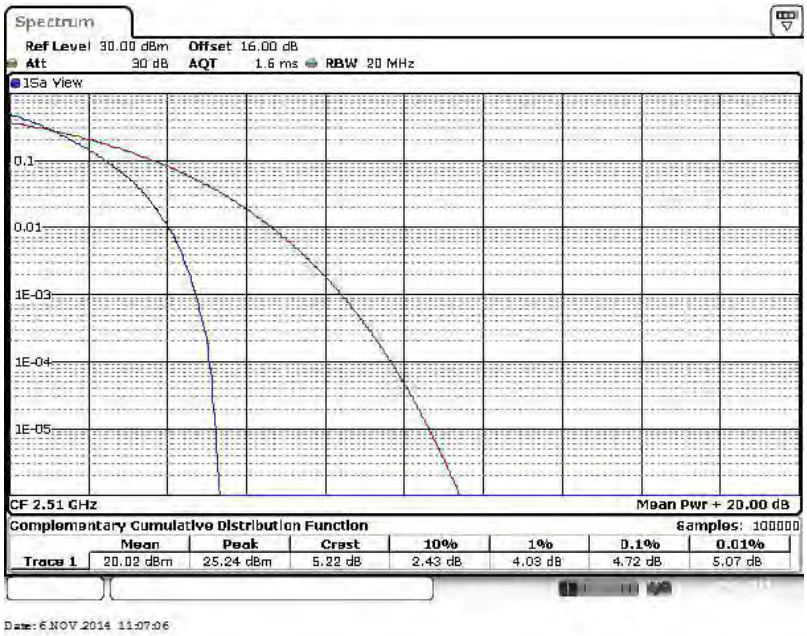
Peak-to-Average Ratio on LTE Band 7

20MHz / QPSK in Ch. 20850 (1RB Size)



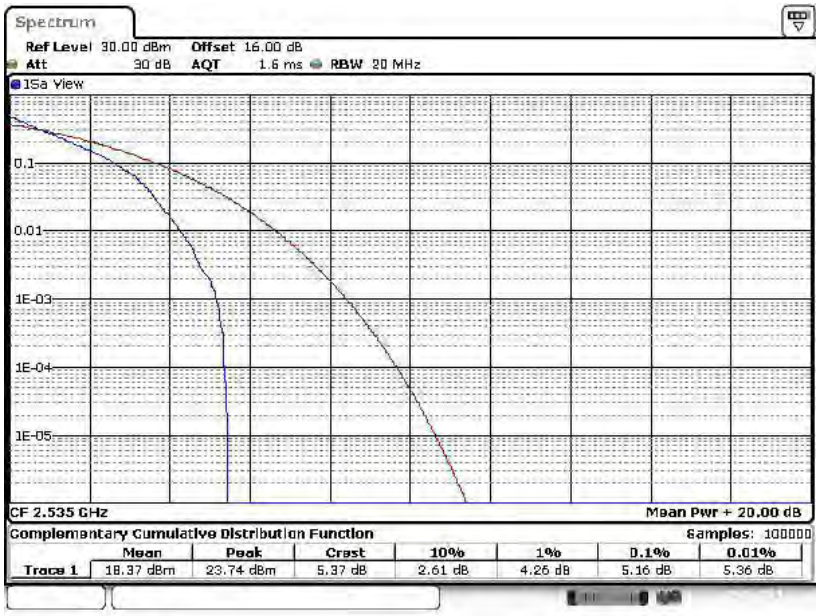
Peak-to-Average Ratio on LTE Band 7

20MHz / QPSK in Ch. 20850 (100RB Size)



Peak-to-Average Ratio on LTE Band 7

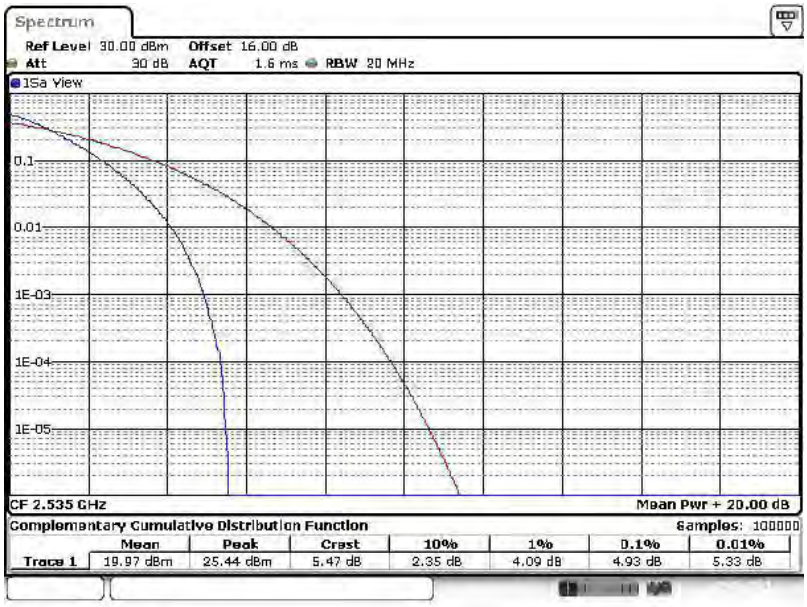
20MHz / QPSK in Ch. 21100 (1RB Size)



Date: 6.NOV.2014 11:08:31

Peak-to-Average Ratio on LTE Band 7

20MHz / QPSK in Ch. 21100 (100RB Size)



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Peak-to-Average Ratio on LTE Band 7

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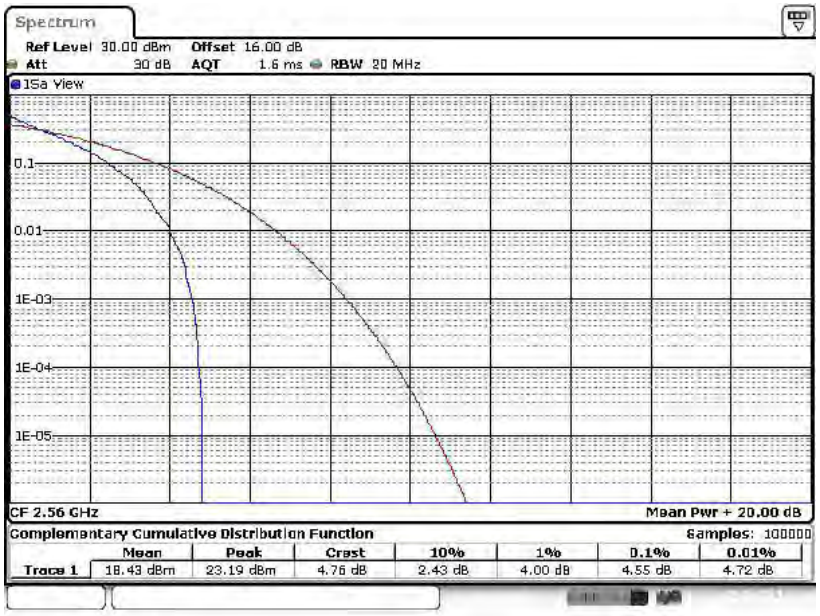
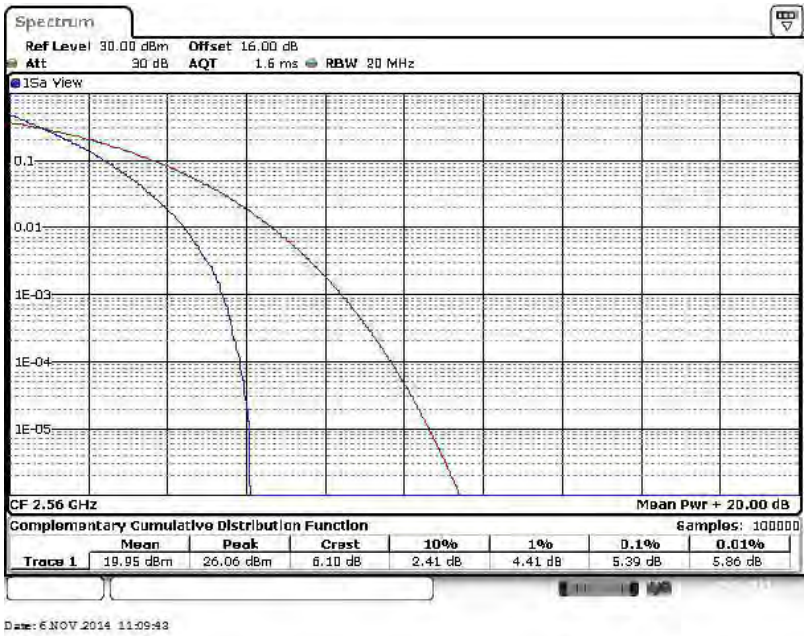


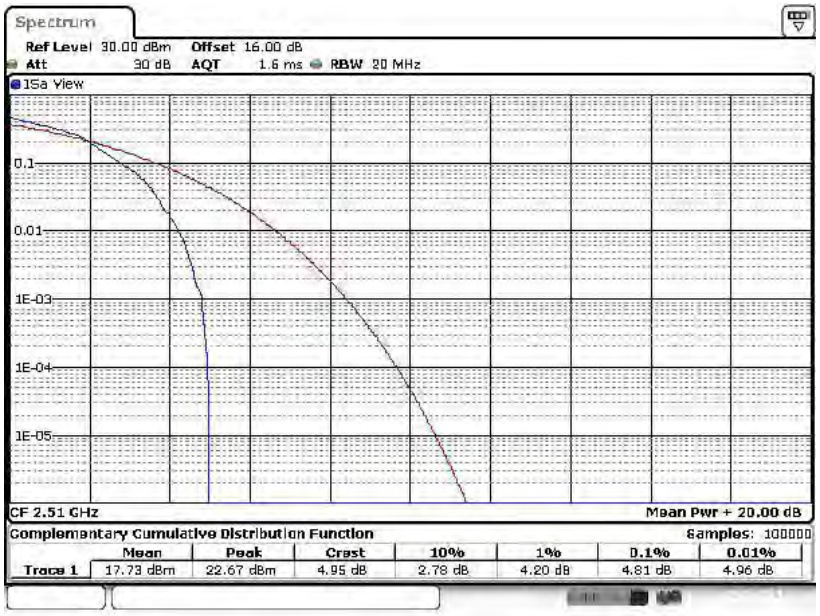
Peak-to-Average Ratio on LTE Band 7

20MHz / QPSK in Ch. 21350 (100RB Size)



Peak-to-Average Ratio on LTE Band 7

20MHz / 16QAM in Ch. 20850 (1RB Size)



Date: 6.NOV.2014 11:07:40

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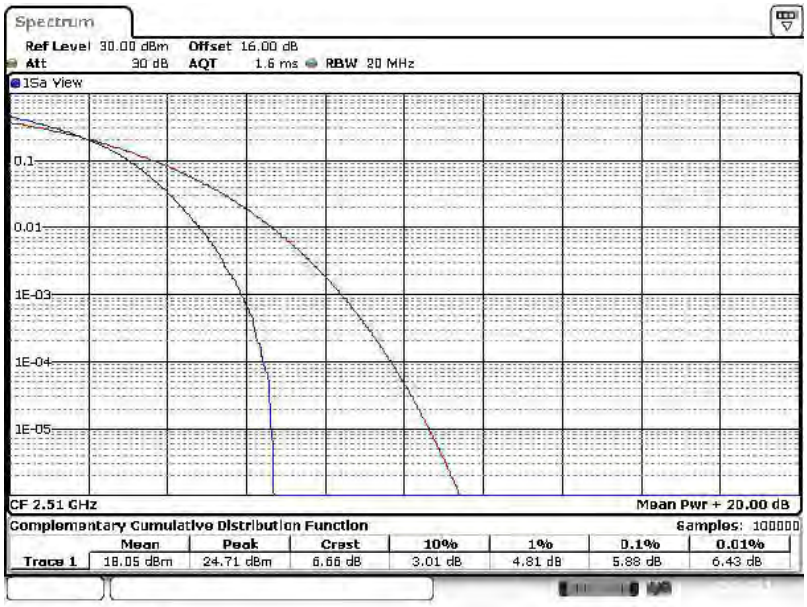

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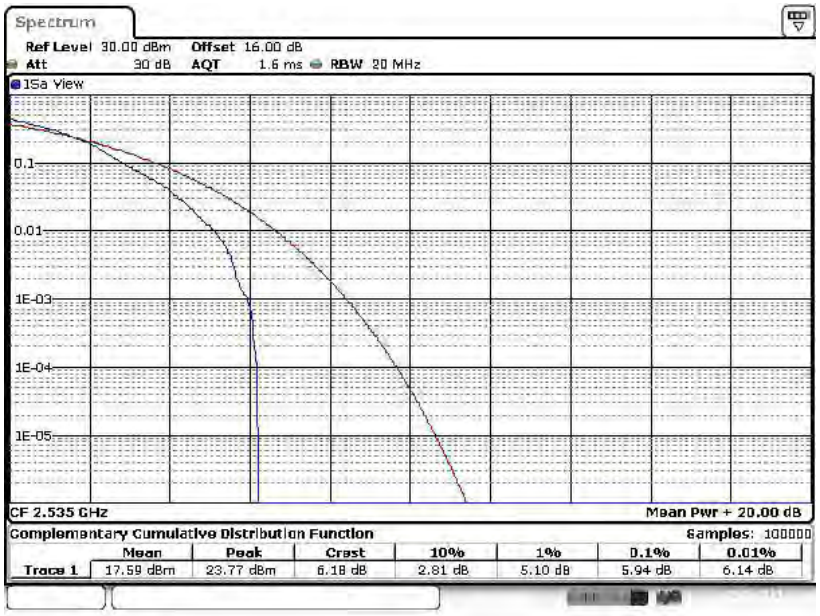
Peak-to-Average Ratio on LTE Band 7

20MHz / 16QAM in Ch. 21100 (1RB Size)



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Peak-to-Average Ratio on LTE Band 7

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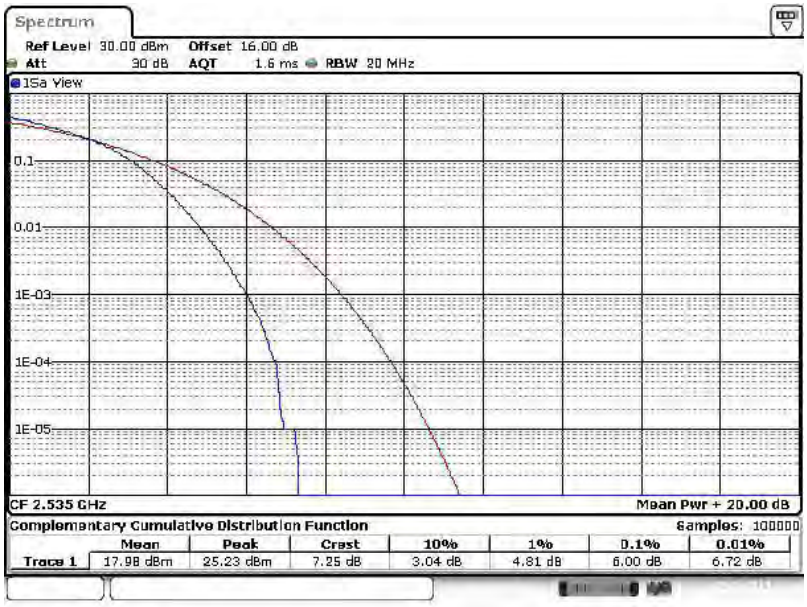

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Peak-to-Average Ratio on LTE Band 7

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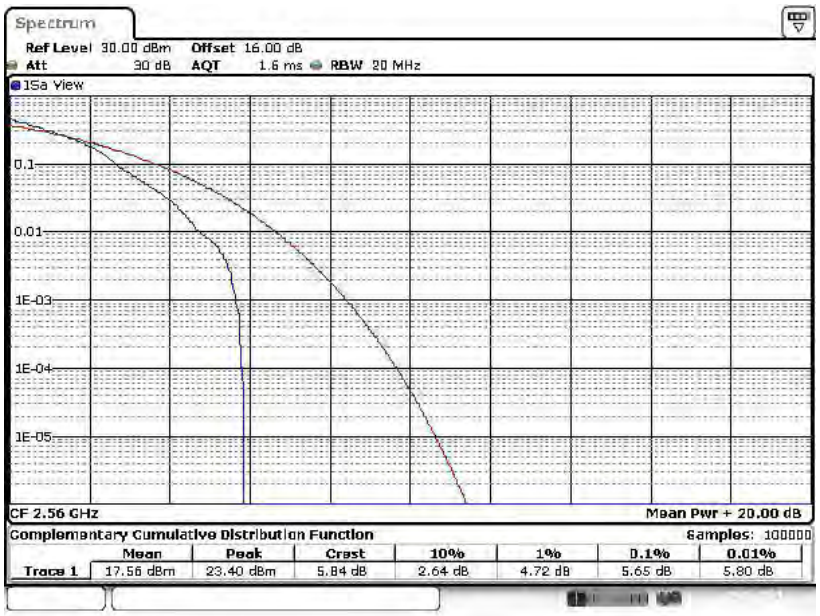
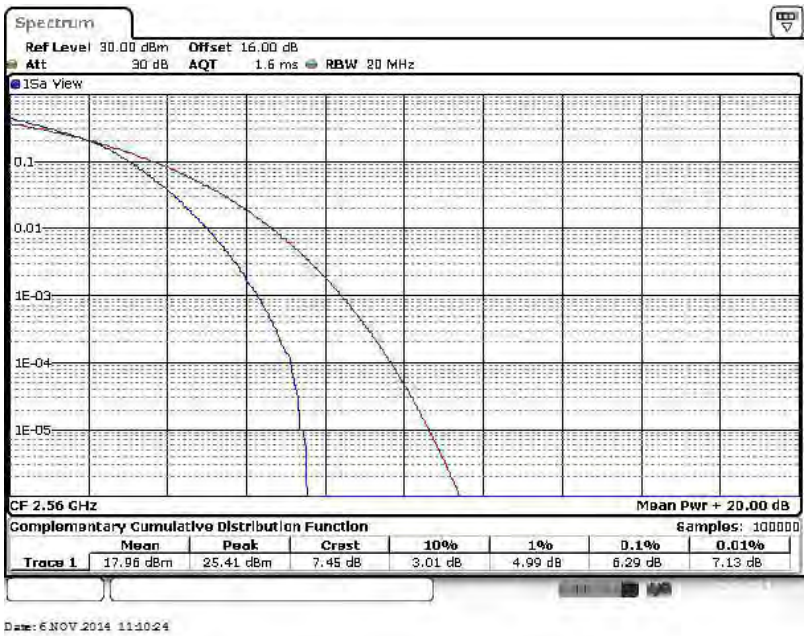


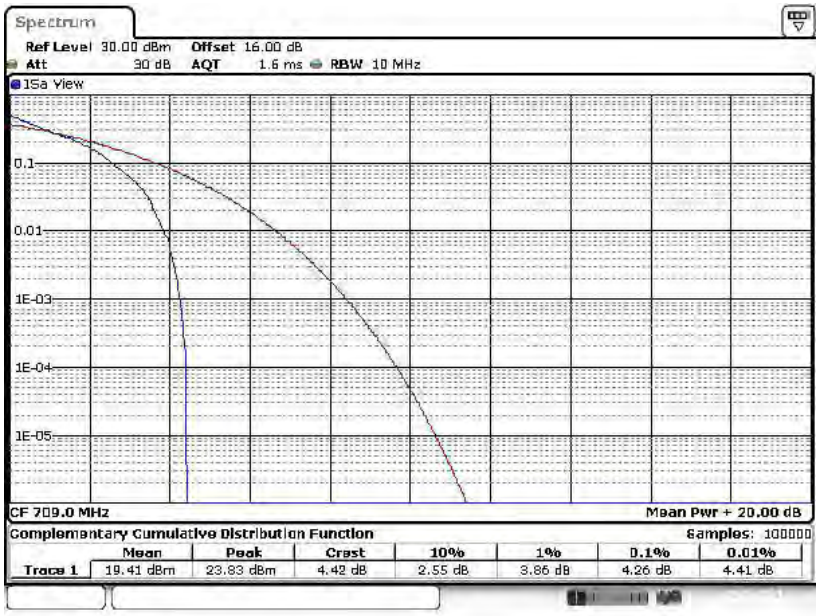
Peak-to-Average Ratio on LTE Band 7

20MHz / 16QAM in Ch. 21350 (100RB Size)



Peak-to-Average Ratio on LTE Band 17

10MHz / QPSK in Ch. 23780 (1RB Size)



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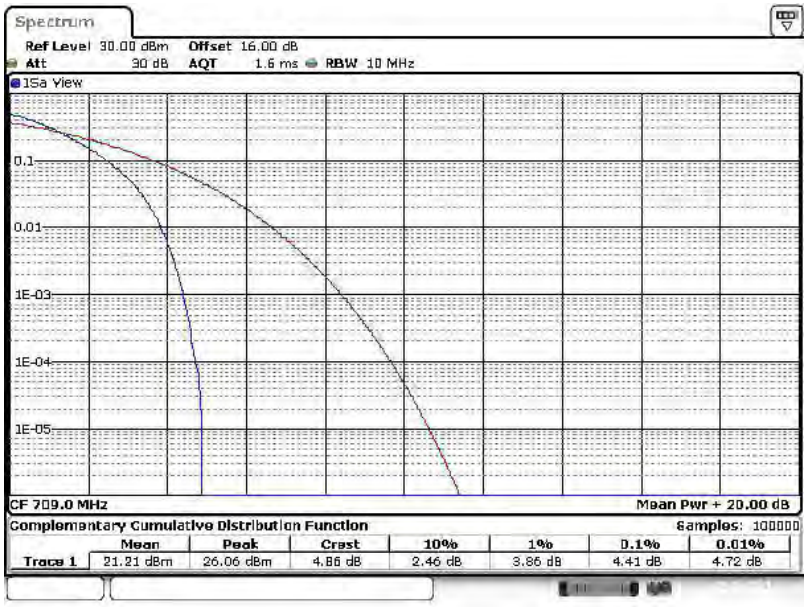
Peak-to-Average Ratio on LTE Band 17

10MHz / QPSK in Ch. 23780 (50RB Size)



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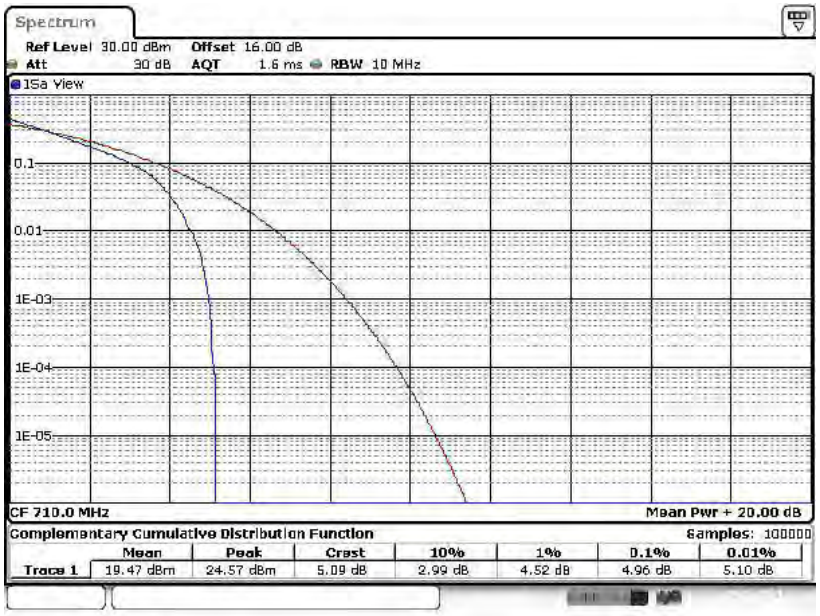
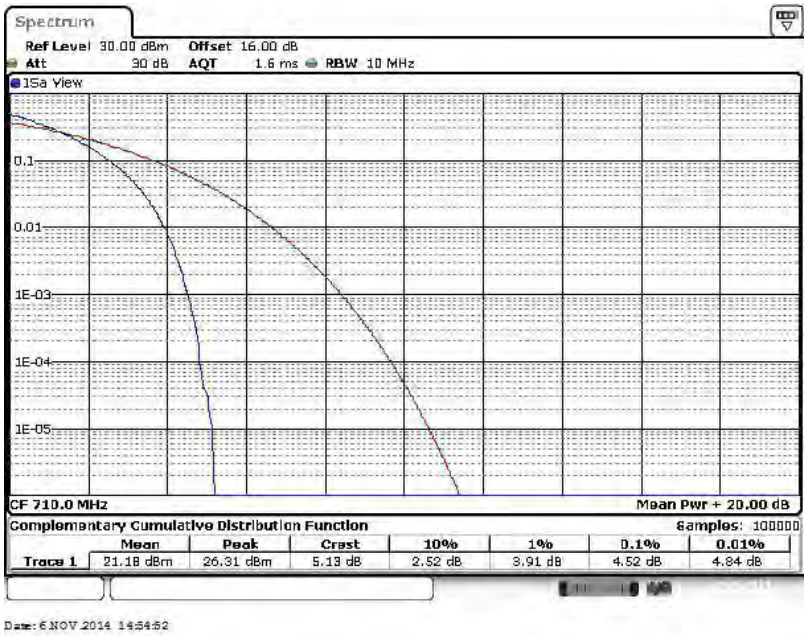
Peak-to-Average Ratio on LTE Band 17

10MHz / QPSK in Ch. 23790 (1RB Size)



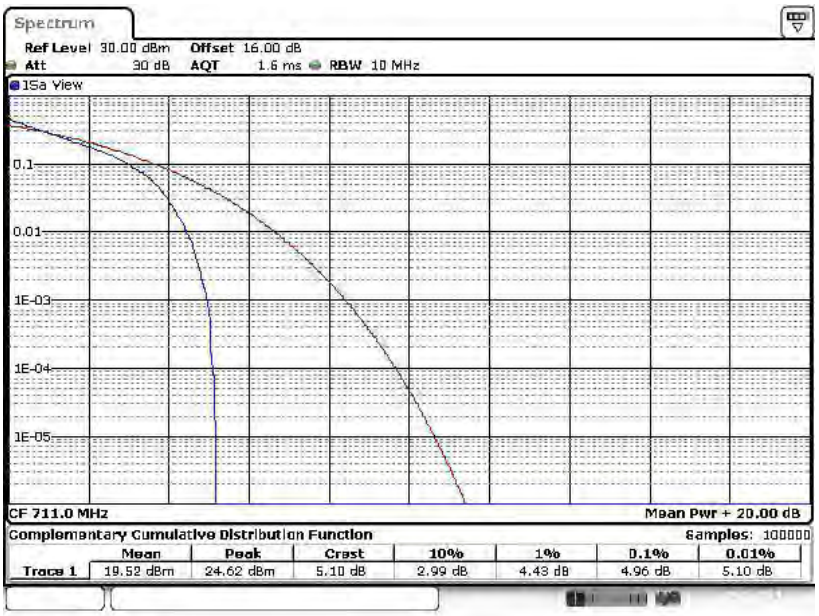
Peak-to-Average Ratio on LTE Band 17

10MHz / QPSK in Ch. 23790 (50RB Size)



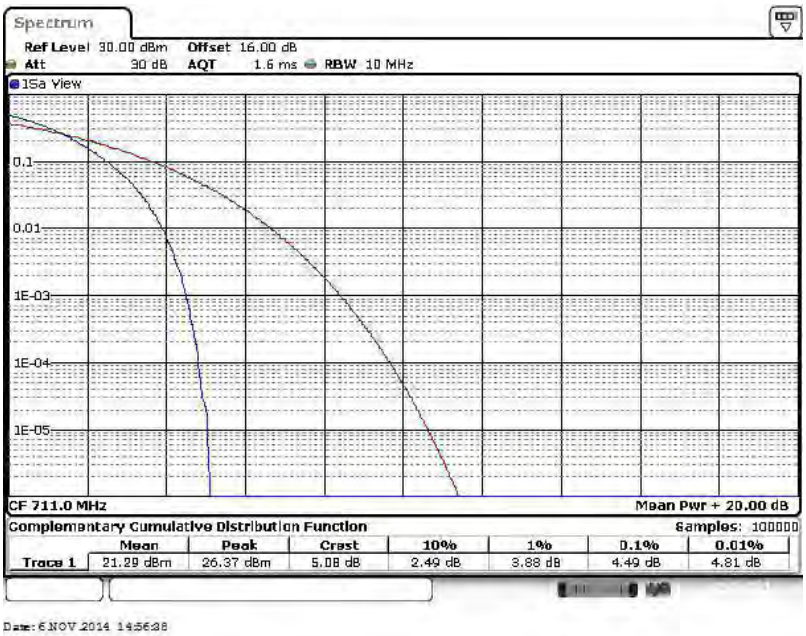
Peak-to-Average Ratio on LTE Band 17

10MHz / QPSK in Ch. 23800 (1RB Size)



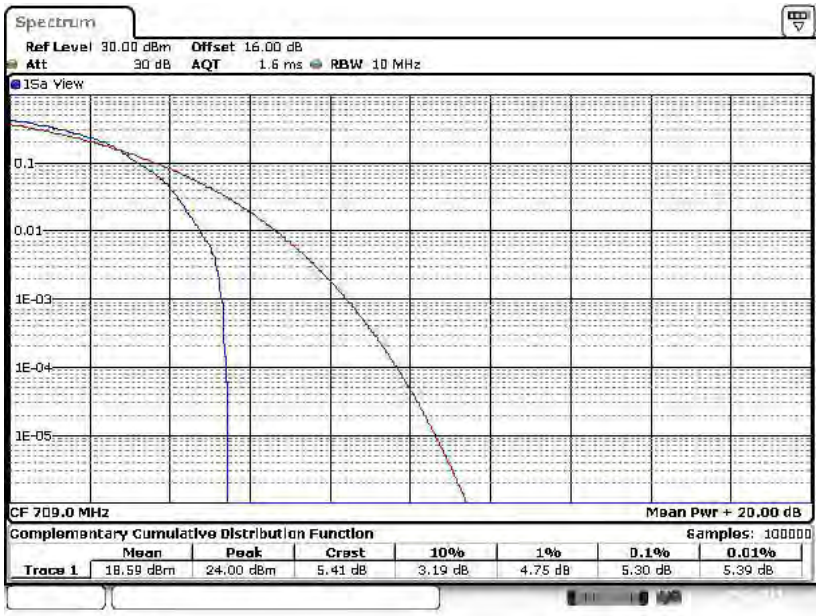
Peak-to-Average Ratio on LTE Band 17

10MHz / QPSK in Ch. 23800 (50RB Size)



Peak-to-Average Ratio on LTE Band 17

10MHz / 16QAM in Ch. 23780 (1RB Size)



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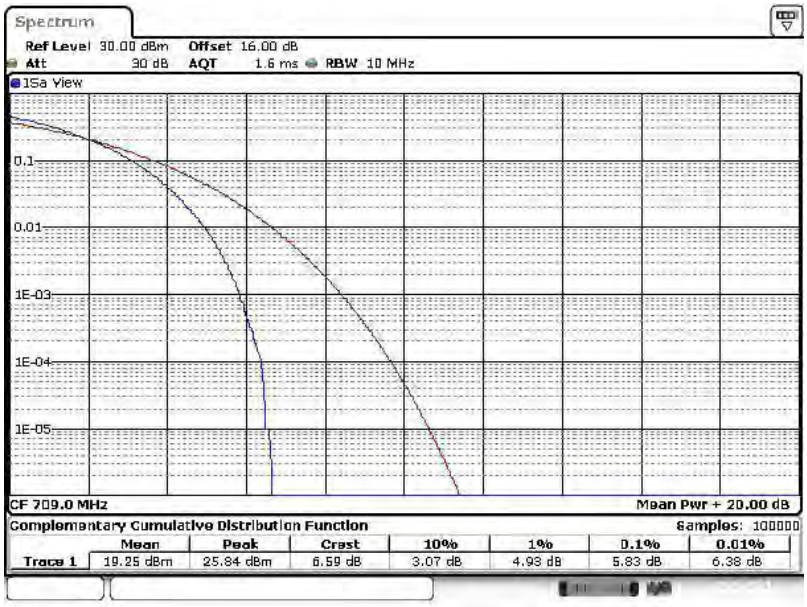
Peak-to-Average Ratio on LTE Band 17

10MHz / 16QAM in Ch. 23780 (50RB Size)



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Peak-to-Average Ratio on LTE Band 17

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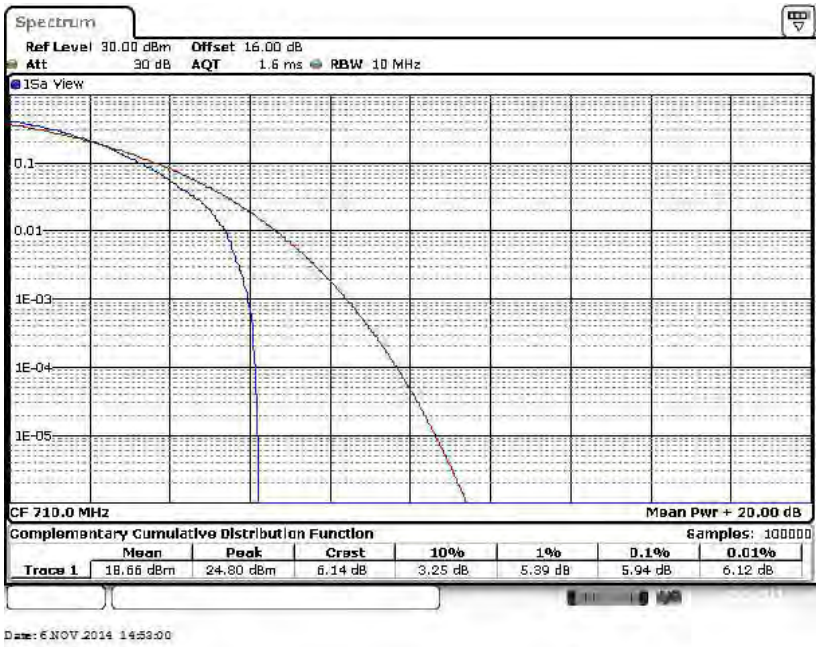
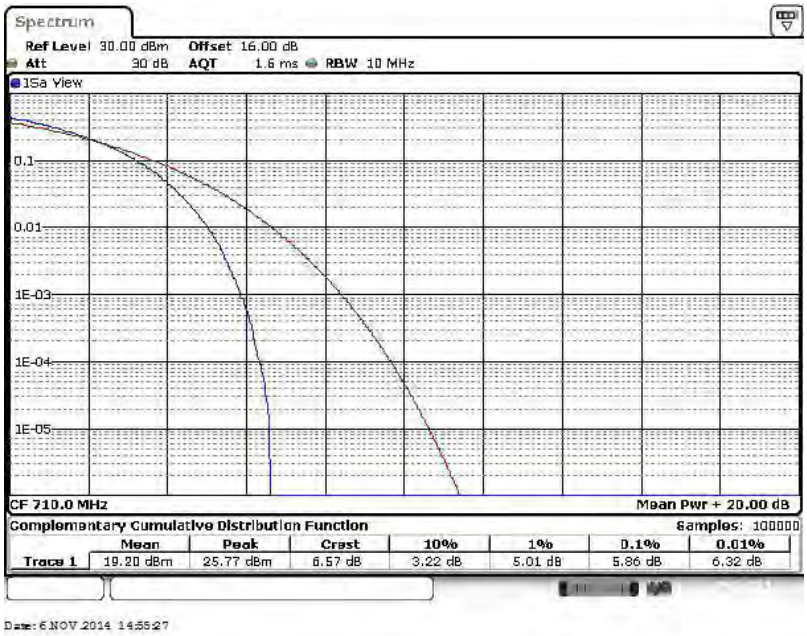


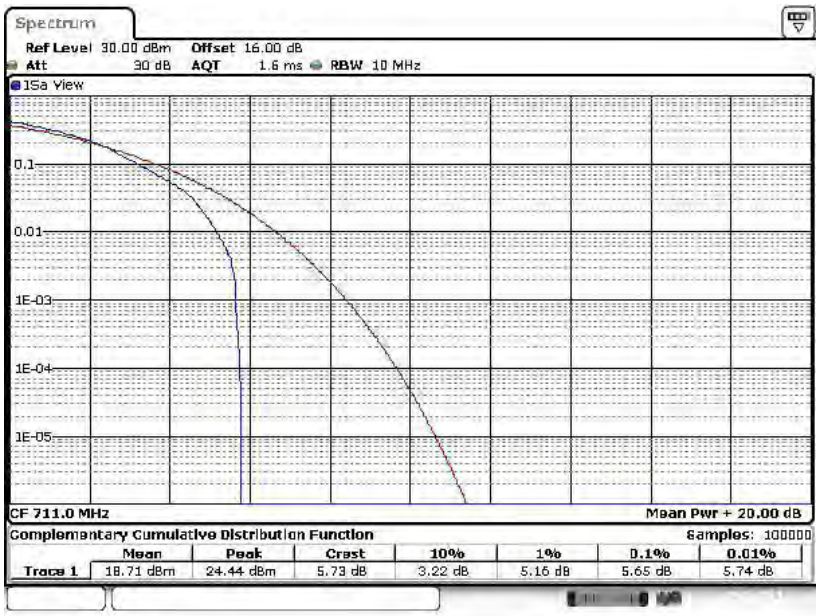
Peak-to-Average Ratio on LTE Band 17

10MHz / 16QAM in Ch. 23790 (50RB Size)



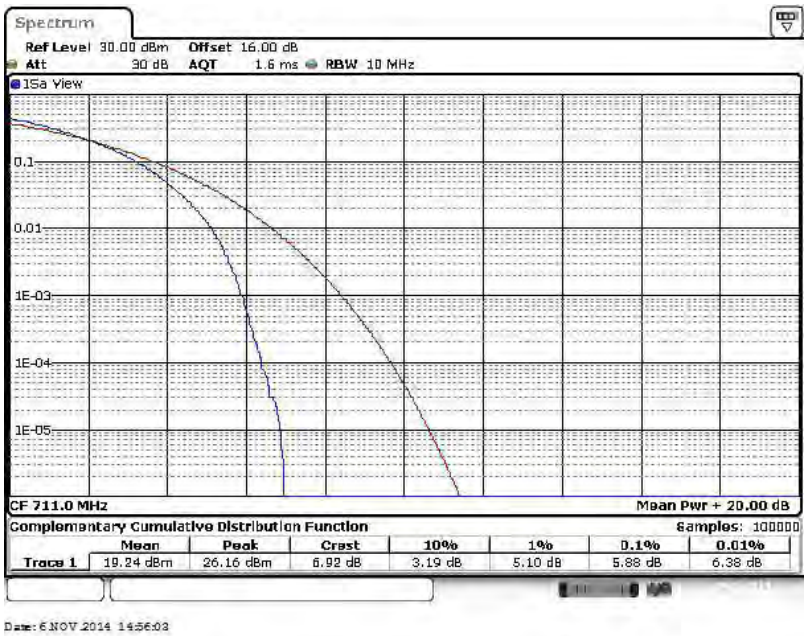
Peak-to-Average Ratio on LTE Band 17

10MHz / 16QAM in Ch. 23800 (1RB Size)



Peak-to-Average Ratio on LTE Band 17

10MHz / 16QAM in Ch. 23800 (50RB Size)



3.3 Effective Radiated Power and Equivalent Isotropic Radiated Power Measurement

3.3.1 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 v02r01. Mobile and portable (hand-held) stations operating are limited to average ERP of 3 watts with LTE band 17.

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 v02r01. Mobile and portable (hand-held) stations operating are limited to average EIRP of 2 watts with LTE band 2 / 7 and 1 watt with LTE band 4.

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

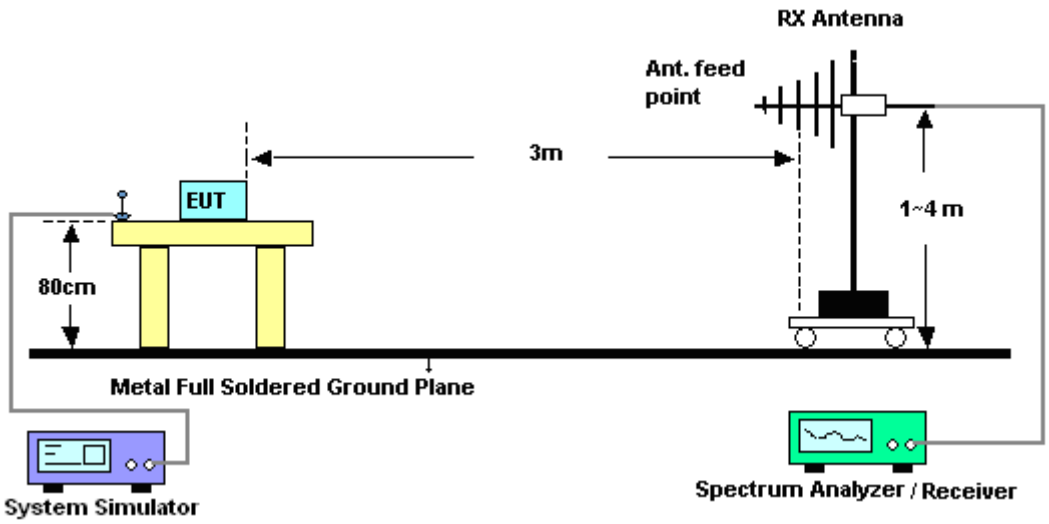
1. The EUT was placed on a non-conductive rotating platform 0.8 meters high in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RMS detector per section 5. of KDB 971168 D01.
2. During the measurement, the 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.
3. 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 + Correction factor and ERP = EIRP – 2.15.

4. The instrument settings (RBW, VBW, detector) for the ERP/EIRP measurements are as following table:

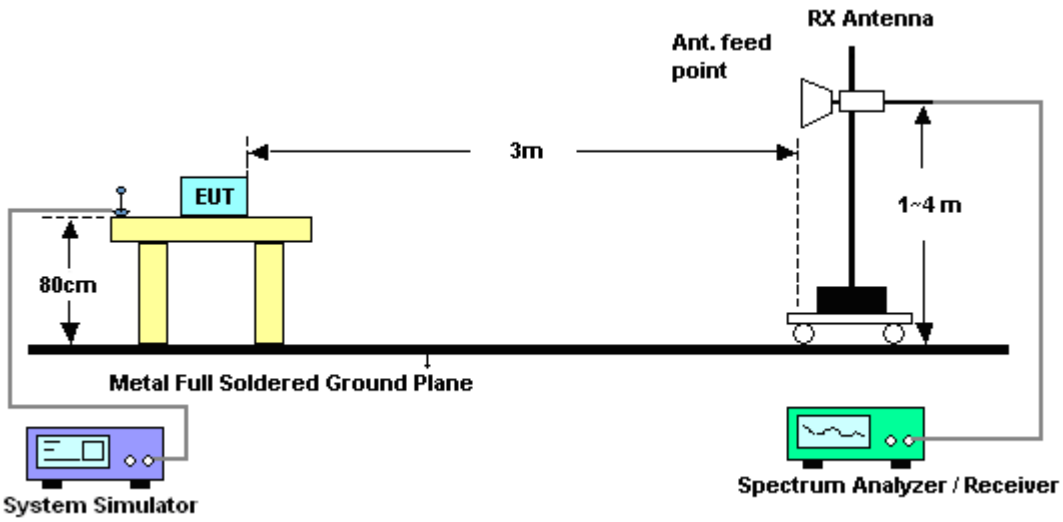
LTE						
LTE BW	1.4M	3M	5M	10M	15M	20M
Span	3MHz	6MHz	10MHz	20MHz	30MHz	40MHz
RBW	30kHz	100kHz	100kHz	300kHz	300kHz	300kHz
VBW	100kHz	300kHz	300kHz	1MHz	1MHz	1MHz
Detector	RMS	RMS	RMS	RMS	RMS	RMS
Trace	Average	Average	Average	Average	Average	Average
Average Type	Power	Power	Power	Power	Power	Power
Sweep Count	100	100	100	100	100	100

3.3.4 Test Setup

For Effective Radiated Power



For Equivalent Isotropic Radiated Power



3.3.5 Test Result of ERP/EIRP

LTE Band 2 Radiated Power EIRP for BW 1.4MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.7	-17.34	42.6	25.26	0.3354
1880	-18.38	42.89	24.51	0.2825
1909.3	-18.74	42.16	23.42	0.2198
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.7	-17.30	42.03	24.73	0.2968
1880	-17.99	42.35	24.36	0.2731
1909.3	-19.35	43.32	23.97	0.2496

LTE Band 2 Radiated Power EIRP for BW 1.4MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.7	-18.20	42.6	24.40	0.2754
1880	-19.10	42.89	23.79	0.2392
1909.3	-19.64	42.16	22.52	0.1788
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1850.7	-18.18	42.03	23.85	0.2429
1880	-18.75	42.35	23.60	0.2293
1909.3	-20.25	43.32	23.07	0.2027

LTE Band 2 Radiated Power EIRP for BW 3MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1851.5	-17.31	42.6	25.29	0.3379
1880	-18.09	42.89	24.80	0.3017
1908.5	-18.17	42.16	23.99	0.2504
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1851.5	-17.28	42.03	24.75	0.2987
1880	-17.83	42.35	24.52	0.2832
1908.5	-19.10	43.32	24.22	0.2643

LTE Band 2 Radiated Power EIRP for BW 3MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1851.5	-18.27	42.6	24.33	0.2711
1880	-19.17	42.89	23.72	0.2354
1908.5	-19.27	42.16	22.89	0.1944
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1851.5	-18.28	42.03	23.75	0.2373
1880	-18.81	42.35	23.54	0.2257
1908.5	-20.04	43.32	23.28	0.2128

LTE Band 2 Radiated Power EIRP for BW 5MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.5	-18.17	42.6	24.43	0.2776
1880	-19.49	42.89	23.40	0.2190
1907.5	-19.56	42.16	22.60	0.1819
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.5	-17.90	42.03	24.13	0.2587
1880	-18.88	42.35	23.47	0.2223
1907.5	-20.22	43.32	23.10	0.2044

LTE Band 2 Radiated Power EIRP for BW 5MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.5	-18.56	42.6	24.04	0.2535
1880	-19.73	42.89	23.16	0.2069
1907.5	-20.54	42.16	21.62	0.1453
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1852.5	-18.65	42.03	23.38	0.2178
1880	-19.68	42.35	22.67	0.1849
1907.5	-21.02	43.32	22.30	0.1699

LTE Band 2 Radiated Power EIRP for BW 10MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1855	-17.99	42.6	24.61	0.2893
1880	-19.33	42.89	23.56	0.2268
1905	-19.34	42.16	22.82	0.1914
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1855	-18.11	42.03	23.92	0.2469
1880	-18.87	42.35	23.48	0.2226
1905	-20.06	43.32	23.26	0.2118

LTE Band 2 Radiated Power EIRP for BW 10MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1855	-18.80	42.6	23.80	0.2397
1880	-19.92	42.89	22.97	0.1981
1905	-20.23	42.16	21.93	0.1560
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1855	-18.76	42.03	23.27	0.2123
1880	-19.53	42.35	22.82	0.1916
1905	-20.79	43.32	22.53	0.1790

LTE Band 2 Radiated Power EIRP for BW 15MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1857.5	-18.23	42.6	24.37	0.2737
1880	-19.30	42.89	23.59	0.2287
1902.5	-19.33	42.16	22.83	0.1917
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1857.5	-17.87	42.03	24.16	0.2608
1880	-18.73	42.35	23.62	0.2303
1902.5	-19.97	43.32	23.35	0.2164

LTE Band 2 Radiated Power EIRP for BW 15MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1857.5	-19.28	42.6	23.32	0.2146
1880	-20.44	42.89	22.45	0.1759
1902.5	-20.07	42.16	22.09	0.1618
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1857.5	-18.98	42.03	23.05	0.2020
1880	-19.67	42.35	22.68	0.1855
1902.5	-20.69	43.32	22.63	0.1831

LTE Band 2 Radiated Power EIRP for BW 20MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1860	-18.57	42.6	24.03	0.2531
1880	-19.24	42.89	23.65	0.2316
1900	-19.00	42.16	23.16	0.2069
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1860	-17.95	42.03	24.08	0.2556
1880	-18.61	42.35	23.74	0.2366
1900	-19.88	43.32	23.44	0.2210

LTE Band 2 Radiated Power EIRP for BW 20MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1860	-18.86	42.6	23.74	0.2368
1880	-20.02	42.89	22.87	0.1938
1900	-19.88	42.16	22.28	0.1689
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1860	-18.59	42.03	23.44	0.2209
1880	-19.38	42.35	22.97	0.1980
1900	-20.60	43.32	22.72	0.1870

LTE Band 4 Radiated Power EIRP for BW 1.4MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1710.7	-17.33	39.98	22.65	0.1842
1732.5	-17.79	40.73	22.94	0.1968
1754.3	-18.37	40.83	22.46	0.1763
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1710.7	-18.98	41.22	22.24	0.1673
1732.5	-18.73	41.41	22.68	0.1852
1754.3	-19.29	41.68	22.39	0.1734

LTE Band 4 Radiated Power EIRP for BW 1.4MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1710.7	-18.04	39.98	21.94	0.1563
1732.5	-18.52	40.73	22.21	0.1664
1754.3	-18.43	40.83	22.40	0.1737
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
1710.7	-19.73	41.22	21.49	0.1410
1732.5	-19.51	41.41	21.90	0.1547
1754.3	-19.31	41.68	22.37	0.1727

LTE Band 4 Radiated Power EIRP for BW 3MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1711.5	-17.37	39.98	22.61	0.1824
1732.5	-18.00	40.73	22.73	0.1875
1753.5	-17.85	40.83	22.98	0.1984
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1711.5	-19.07	41.22	22.15	0.1642
1732.5	-18.98	41.41	22.43	0.1751
1753.5	-18.78	41.68	22.90	0.1949

LTE Band 4 Radiated Power EIRP for BW 3MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1711.5	-17.92	39.98	22.06	0.1608
1732.5	-18.56	40.73	22.17	0.1646
1753.5	-18.33	40.83	22.50	0.1777
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1711.5	-19.32	41.22	21.90	0.1547
1732.5	-19.18	41.41	22.23	0.1672
1753.5	-19.24	41.68	22.44	0.1756

LTE Band 4 Radiated Power EIRP for BW 5MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.5	-17.11	39.98	22.87	0.1938
1732.5	-17.79	40.73	22.94	0.1970
1752.5	-17.74	40.83	23.09	0.2036
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.5	-18.50	41.22	22.72	0.1873
1732.5	-18.35	41.41	23.06	0.2023
1752.5	-18.30	41.68	23.38	0.2179

LTE Band 4 Radiated Power EIRP for BW 5MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.5	-17.88	39.98	22.10	0.1620
1732.5	-18.58	40.73	22.15	0.1640
1752.5	-18.38	40.83	22.45	0.1759
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1712.5	-19.26	41.22	21.96	0.1571
1732.5	-19.11	41.41	22.30	0.1697
1752.5	-19.02	41.68	22.66	0.1844

LTE Band 4 Radiated Power EIRP for BW 10MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1715	-17.02	39.98	22.96	0.1975
1732.5	-17.74	40.73	22.99	0.1989
1750	-17.62	40.83	23.21	0.2092
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1715	-18.44	41.22	22.78	0.1895
1732.5	-18.22	41.41	23.19	0.2086
1750	-18.25	41.68	23.43	0.2201

LTE Band 4 Radiated Power EIRP for BW 10MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1715	-17.78	39.98	22.20	0.1660
1732.5	-18.50	40.73	22.23	0.1670
1750	-18.38	40.83	22.45	0.1758
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1715	-19.22	41.22	22.00	0.1585
1732.5	-19.07	41.41	22.34	0.1716
1750	-19.01	41.68	22.67	0.1849

LTE Band 4 Radiated Power EIRP for BW 15MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1717.5	-17.05	39.98	22.93	0.1963
1732.5	-17.74	40.73	22.99	0.1993
1747.5	-18.03	40.83	22.80	0.1906
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1717.5	-18.43	41.22	22.79	0.1900
1732.5	-18.29	41.41	23.12	0.2051
1747.5	-18.21	41.68	23.47	0.2221

LTE Band 4 Radiated Power EIRP for BW 15MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1717.5	-17.81	39.98	22.17	0.1649
1732.5	-18.54	40.73	22.19	0.1655
1747.5	-18.46	40.83	22.37	0.1725
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1717.5	-19.20	41.22	22.02	0.1592
1732.5	-18.82	41.41	22.59	0.1815
1747.5	-19.05	41.68	22.63	0.1834

LTE Band 4 Radiated Power EIRP for BW 20MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1720	-17.01	39.98	22.97	0.1983
1732.5	-17.69	40.73	23.04	0.2013
1745	-17.83	40.83	23.00	0.1994
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1720	-18.40	41.22	22.82	0.1915
1732.5	-18.25	41.41	23.16	0.2068
1745	-18.22	41.68	23.46	0.2218

LTE Band 4 Radiated Power EIRP for BW 20MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1720	-17.76	39.98	22.22	0.1667
1732.5	-18.55	40.73	22.18	0.1651
1745	-18.63	40.83	22.20	0.1659
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
1720	-18.94	41.22	22.28	0.1690
1732.5	-19.07	41.41	22.34	0.1715
1745	-19.02	41.68	22.66	0.1843

LTE Band 7 Radiated Power EIRP for BW 5MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2502.5	-22.53	43.58	21.05	0.1272
2535	-22.95	43.84	20.89	0.1227
2567.5	-22.56	43.72	21.16	0.1305
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2502.5	-25.03	45.66	20.63	0.1157
2535	-25.67	46.02	20.35	0.1085
2567.5	-24.81	44.93	20.12	0.1028

LTE Band 7 Radiated Power EIRP for BW 5MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2502.5	-23.60	43.58	19.98	0.0995
2535	-23.84	43.84	20.00	0.1001
2567.5	-23.39	43.72	20.33	0.1079
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**EIRP (dBm)**	**EIRP (W)**
2502.5	-25.98	45.66	19.68	0.0929
2535	-26.36	46.02	19.66	0.0925
2567.5	-25.38	44.93	19.55	0.0902

LTE Band 7 Radiated Power EIRP for BW 10MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2505	-23.29	43.58	20.29	0.1069
2535	-23.78	43.84	20.06	0.1015
2565	-22.34	43.72	21.38	0.1373
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2505	-25.50	45.66	20.16	0.1039
2535	-26.29	46.02	19.73	0.0940
2565	-24.07	44.93	20.86	0.1219

LTE Band 7 Radiated Power EIRP for BW 10MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2505	-23.60	43.58	19.98	0.0994
2535	-23.71	43.84	20.13	0.1029
2565	-22.99	43.72	20.73	0.1184
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2505	-26.67	45.66	18.99	0.0792
2535	-26.30	46.02	19.72	0.0938
2565	-25.74	44.93	19.19	0.0830

LTE Band 7 Radiated Power EIRP for BW 15MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2507.5	-22.12	43.58	21.46	0.1400
2535	-23.26	43.84	20.58	0.1143
2562.5	-22.75	43.72	20.97	0.1250
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2507.5	-24.22	45.66	21.44	0.1393
2535	-25.35	46.02	20.67	0.1166
2562.5	-24.07	44.93	20.86	0.1218

LTE Band 7 Radiated Power EIRP for BW 15MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2507.5	-23.23	43.58	20.35	0.1085
2535	-23.46	43.84	20.38	0.1092
2562.5	-23.44	43.72	20.28	0.1067
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2507.5	-25.32	45.66	20.34	0.1082
2535	-26.23	46.02	19.79	0.0953
2562.5	-25.06	44.93	19.87	0.0970

LTE Band 7 Radiated Power EIRP for BW 20MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2510	-22.40	43.58	21.18	0.1312
2535	-23.40	43.84	20.44	0.1106
2560	-22.74	43.72	20.98	0.1253
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2510	-24.45	45.66	21.21	0.1322
2535	-25.57	46.02	20.45	0.1109
2560	-24.16	44.93	20.77	0.1193

LTE Band 7 Radiated Power EIRP for BW 20MHz / 16QMA				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2510	-23.09	43.58	20.49	0.1119
2535	-24.27	43.84	19.57	0.0907
2560	-23.53	43.72	20.19	0.1045
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (W)
2510	-25.18	45.66	20.48	0.1118
2535	-26.46	46.02	19.56	0.0904
2560	-24.94	44.93	19.99	0.0997

LTE Band 17 Radiated Power ERP for BW 5MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
706.5	-7.37	27.37	17.85	0.0609
710	-7.72	27.52	17.65	0.0582
713.5	-7.29	27.63	18.19	0.0659
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
706.5	-20.99	29.71	6.57	0.0045
710	-22.01	29.78	5.62	0.0036
713.5	-21.40	29.95	6.40	0.0044

LTE Band 17 Radiated Power ERP for BW 5MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
706.5	-8.32	27.37	16.90	0.0490
710	-8.42	27.52	16.95	0.0495
713.5	-7.99	27.63	17.49	0.0561
Vertical Polarization				
Frequency (MHz)	**LVL (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**ERP (W)**
706.5	-21.93	29.71	5.63	0.0037
710	-22.88	29.78	4.75	0.0030
713.5	-22.08	29.95	5.72	0.0037

LTE Band 17 Radiated Power ERP for BW 10MHz / QPSK				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
709	-7.62	27.37	17.60	0.0575
710	-7.71	27.52	17.66	0.0583
711	-7.83	27.63	17.65	0.0583
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
709	-21.62	29.71	5.94	0.0039
710	-21.32	29.78	6.31	0.0043
711	-21.34	29.95	6.46	0.0044

LTE Band 17 Radiated Power ERP for BW 10MHz / 16QAM				
Horizontal Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
709	-8.66	27.37	16.56	0.0453
710	-8.47	27.52	16.90	0.0490
711	-7.93	27.63	17.55	0.0569
Vertical Polarization				
Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	ERP (dBm)	ERP (W)
709	-23.15	29.71	4.41	0.0028
710	-22.66	29.78	4.97	0.0031
711	-21.99	29.95	5.81	0.0038

3.4 99% Occupied Bandwidth and 26dB Bandwidth Measurement

3.4.1 Description of 99% Occupied Bandwidth and 26dB Bandwidth Measurement

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

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

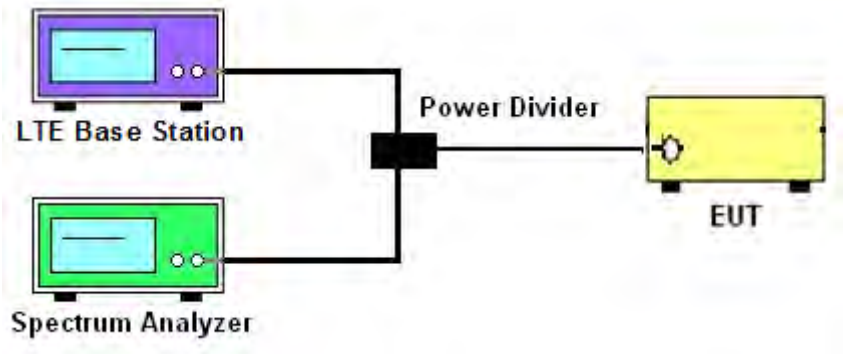
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

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

3.4.4 Test Setup



3.4.5 Test Result of 99% Occupied Bandwidth and 26dB Bandwidth

Modes	LTE Band 2											
BW / Mod.	1.4MHz / QPSK			1.4MHz / 16QAM			3MHz / QPSK			3MHz / 16QAM		
	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High
99% OBW (MHz)	1.094	1.097	1.099	1.097	1.097	1.099	2.721	2.721	2.733	2.727	2.715	2.721
26dB BW (MHz)	1.264	1.262	1.267	1.278	1.278	1.278	3.021	3.027	3.075	3.027	3.045	3.039
BW / Mod.	5MHz / QPSK			5MHz / 16QAM			10MHz / QPSK			10MHz / 16QAM		
	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High
99% OBW (MHz)	4.505	4.505	4.505	4.505	4.505	4.496	9.071	9.071	9.071	9.031	9.051	8.971
26dB BW (MHz)	5.095	5.095	5.075	5.055	5.085	5.075	9.870	10.010	10.090	9.990	9.990	9.970
BW / Mod.	15MHz / QPSK			15MHz / 16QAM			20MHz / QPSK			20MHz / 16QAM		
	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High
99% OBW (MHz)	13.457	13.487	13.487	13.487	13.457	13.457	18.422	18.342	18.382	18.382	18.501	18.462
26dB BW (MHz)	14.865	14.745	14.805	14.955	14.835	14.565	20.260	20.500	20.420	20.380	20.579	20.539

Modes	LTE Band 4											
BW / Mod.	1.4MHz / QPSK			1.4MHz / 16QAM			3MHz / QPSK			3MHz / 16QAM		
	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High
99% OBW (MHz)	1.094	1.094	1.094	1.097	1.099	1.097	2.727	2.721	2.727	2.721	2.721	2.715
26dB BW (MHz)	1.264	1.262	1.259	1.281	1.278	1.278	3.027	3.027	3.045	3.039	3.039	3.045
BW / Mod.	5MHz / QPSK			5MHz / 16QAM			10MHz / QPSK			10MHz / 16QAM		
	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High
99% OBW (MHz)	4.515	4.496	4.505	4.505	4.505	4.505	9.051	9.051	9.071	9.031	9.031	9.011
26dB BW (MHz)	5.095	5.105	5.105	5.075	5.065	5.075	9.990	10.090	9.990	9.930	9.990	9.950
BW / Mod.	15MHz / QPSK			15MHz / 16QAM			20MHz / QPSK			20MHz / 16QAM		
	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High
99% OBW (MHz)	13.516	13.487	13.487	13.457	13.457	13.457	18.422	18.382	18.342	18.462	18.302	18.422
26dB BW (MHz)	14.805	14.895	14.745	14.925	14.685	14.685	20.500	20.300	20.500	20.340	20.220	20.220

Modes	LTE Band 7											
BW / Mod.	5MHz / QPSK			5MHz / 16QAM			10MHz / QPSK			10MHz / 16QAM		
	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High
99% OBW (MHz)	4.515	4.505	4.505	4.505	4.496	4.505	9.111	9.031	9.051	9.011	9.071	9.031
26dB BW (MHz)	5.125	5.105	5.075	5.055	5.065	5.075	10.050	10.050	10.050	10.010	9.970	10.010
BW / Mod.	15MHz / QPSK			15MHz / 16QAM			20MHz / QPSK			20MHz / 16QAM		
	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High
99% OBW (MHz)	13.457	13.487	13.516	13.457	13.487	13.487	18.342	18.422	18.422	18.342	18.422	18.422
26dB BW (MHz)	14.925	14.745	14.895	14.625	14.625	14.745	20.340	20.380	20.420	20.340	20.380	20.579

Modes	LTE Band 17											
BW / Mod.	5MHz / QPSK			5MHz / 16QAM			10MHz / QPSK			10MHz / 16QAM		
	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High	Low	Mid.	High
99% OBW (MHz)	4.515	4.496	4.525	4.515	4.496	4.515	9.091	9.031	9.011	8.991	9.011	8.991
26dB BW (MHz)	5.075	5.085	5.065	5.105	5.045	5.095	9.990	9.950	9.970	9.910	9.890	9.930

Note:

The maximum RB configurations of the 99% Occupied Bandwidth and 26dB Bandwidth summary as below:

BW1.4MHz RB setting：RB Size 6, RB offset 0

BW3.0MHz RB setting：RB Size 15, RB offset 0

BW5.0MHz RB setting：RB Size 25, RB offset 0

BW10MHz RB setting：RB Size 50, RB offset 0

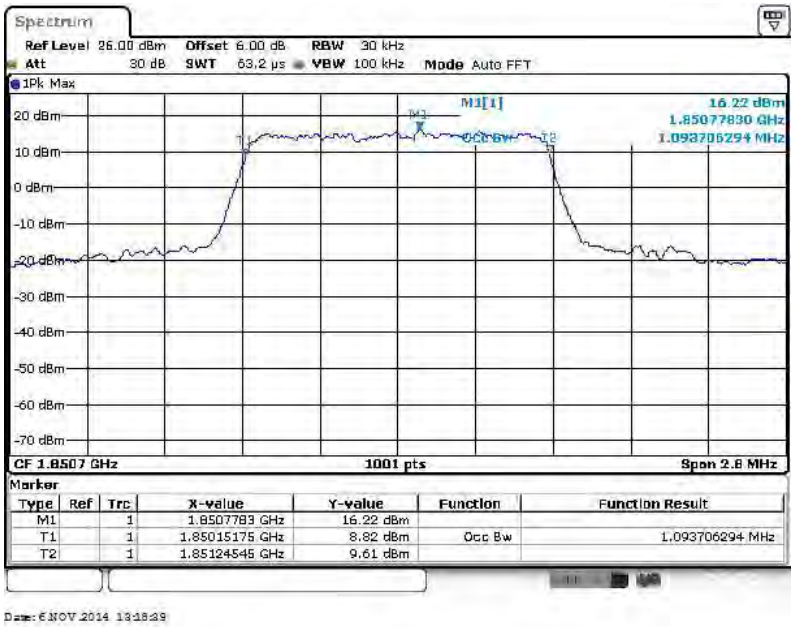
BW15MHz RB setting：RB Size 75, RB offset 0

BW20MHz RB setting：RB Size 100, RB offset 0

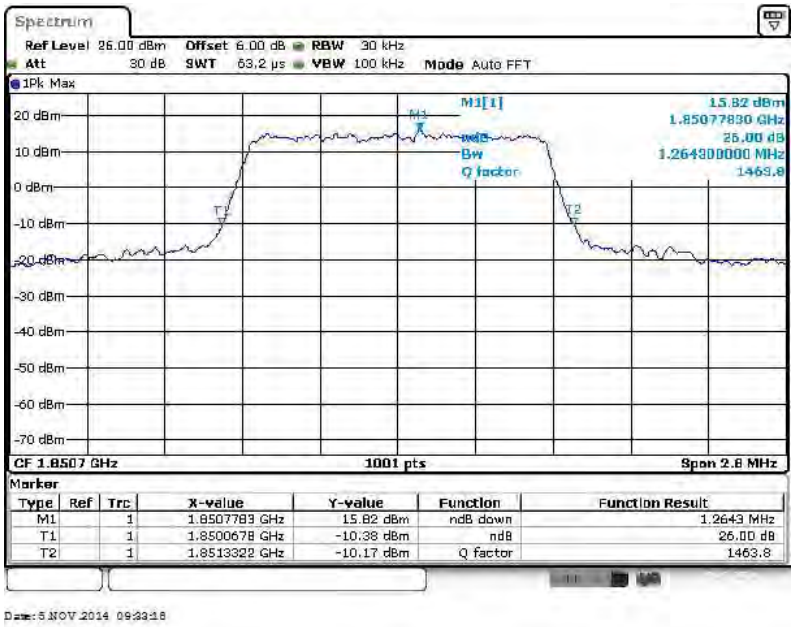
3.4.6 Test Result (Plots) of 99% Occupied Bandwidth and 26dB Bandwidth

Band :	LTE Band 2	BW / Mod. :	1.4MHz / QPSK

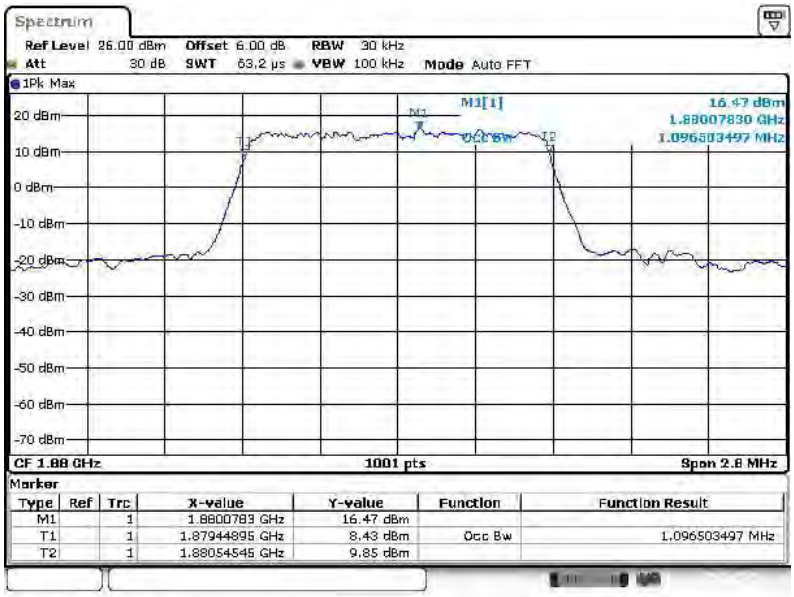
99% Occupied Bandwidth Plot on Channel 18607



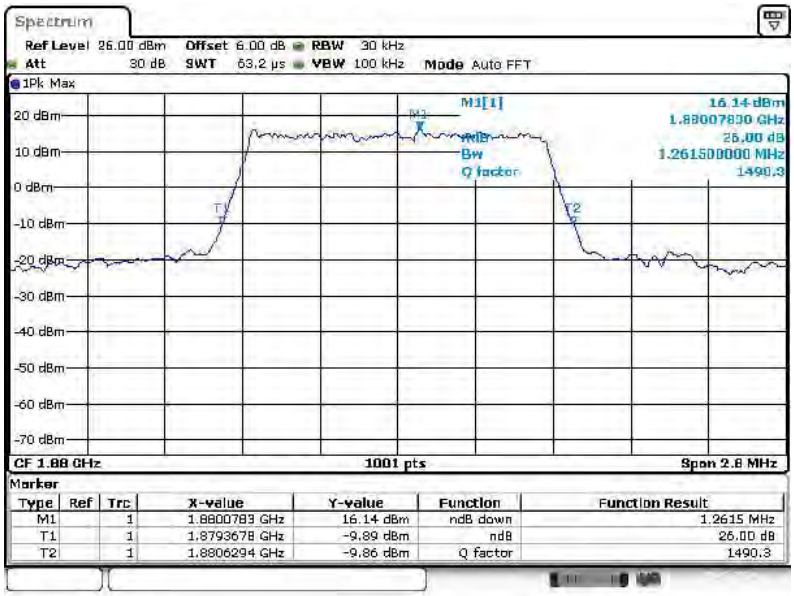
26dB Bandwidth Plot on Channel 18607



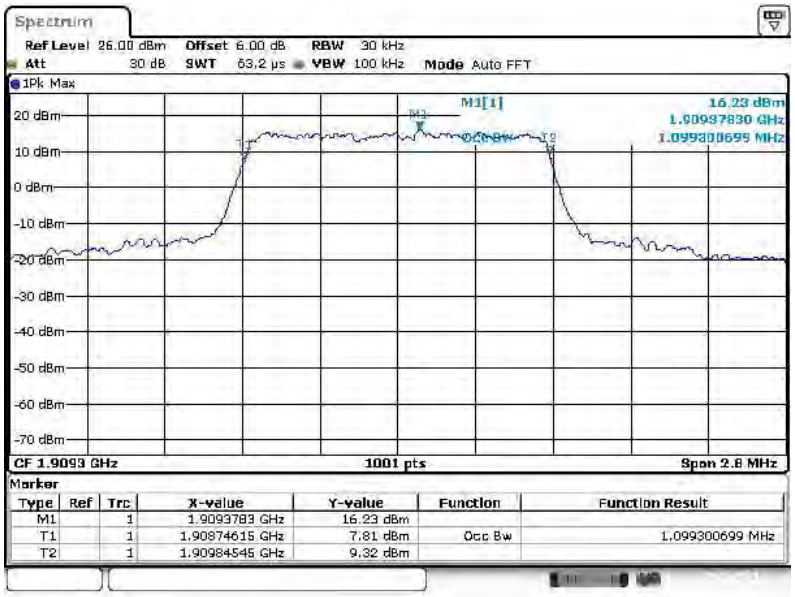
99% Occupied Bandwidth Plot on Channel 18900



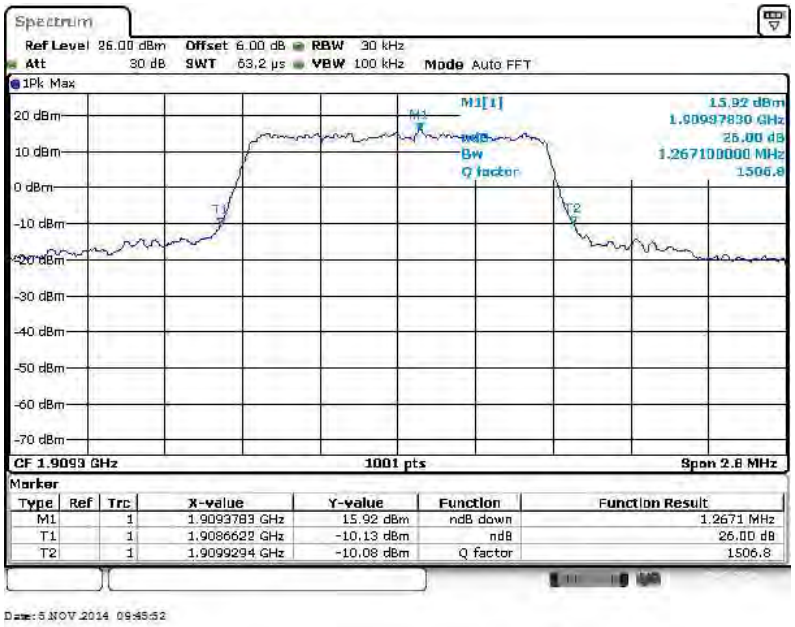
26dB Bandwidth Plot on Channel 18900



99% Occupied Bandwidth Plot on Channel 19193

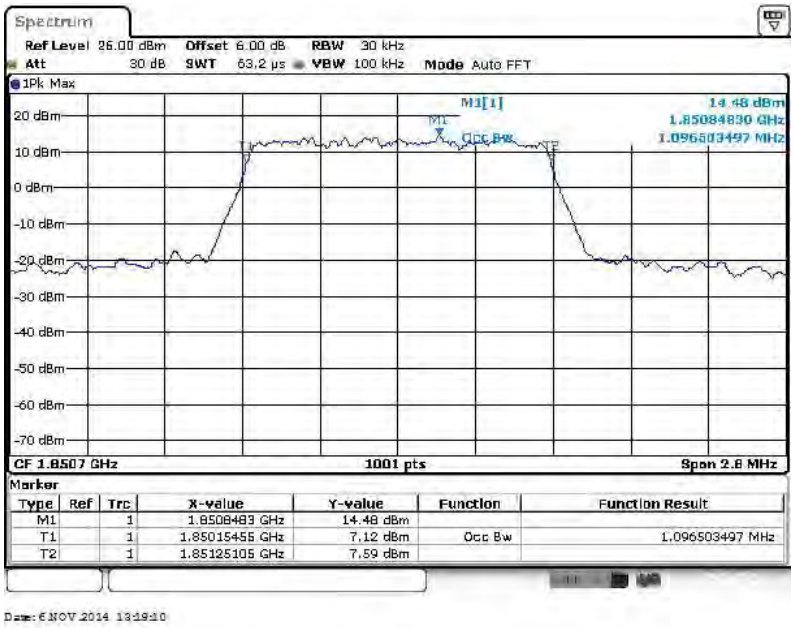


26dB Bandwidth Plot on Channel 19193

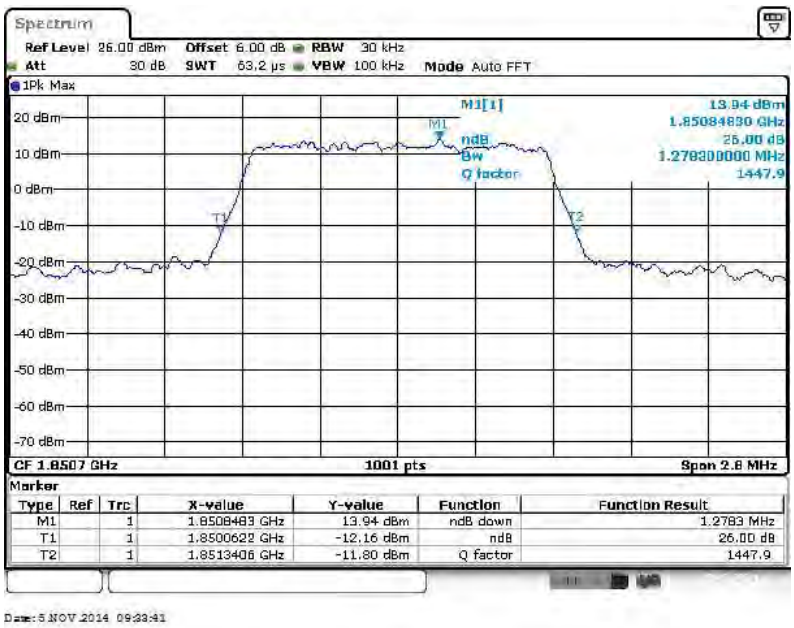


Band :	LTE Band 2	BW / Mod. :	1.4MHz / 16QAM

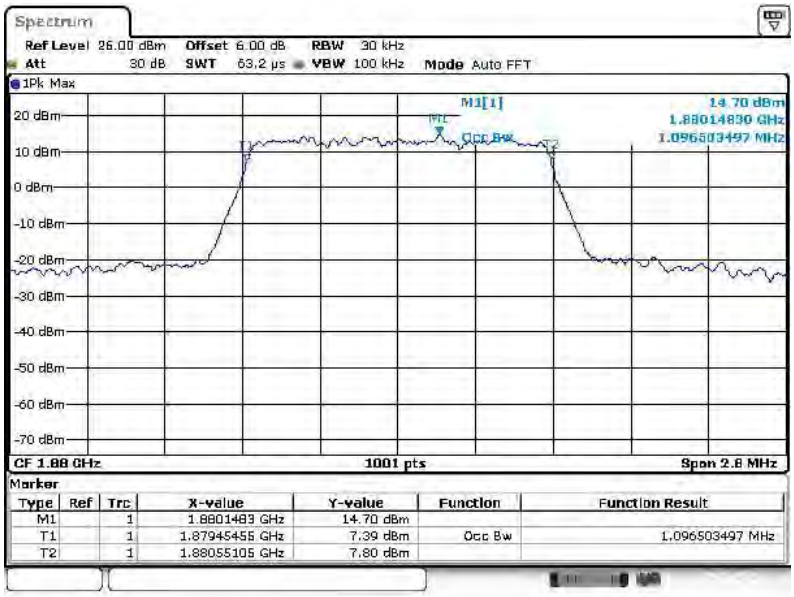
99% Occupied Bandwidth Plot on Channel 18607



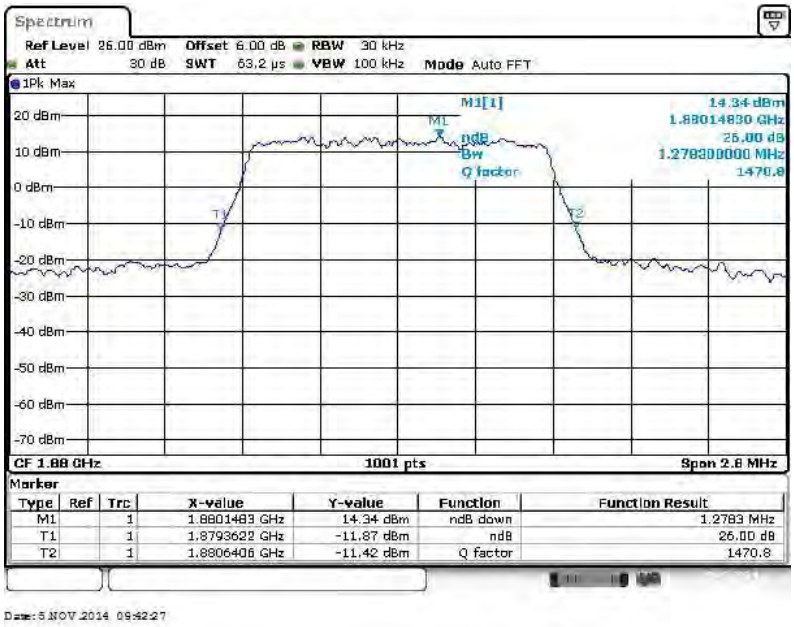
26dB Bandwidth Plot on Channel 18607



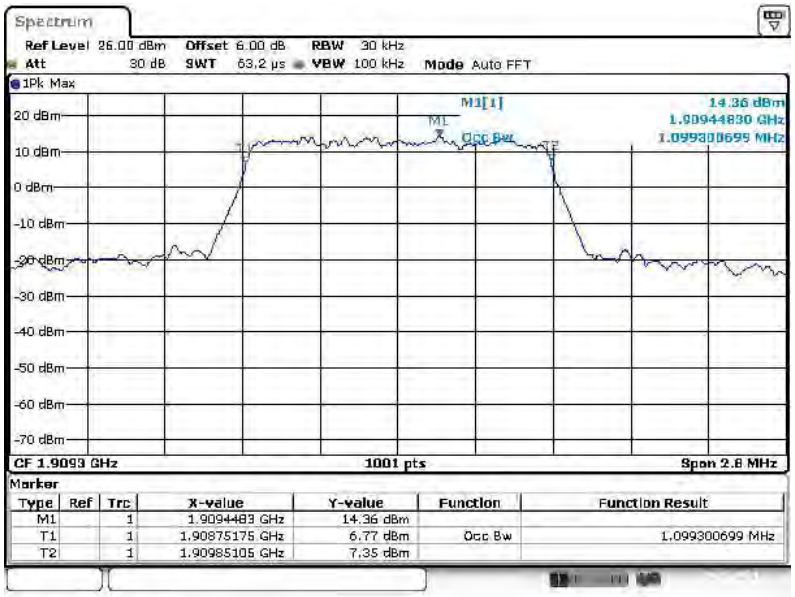
99% Occupied Bandwidth Plot on Channel 18900



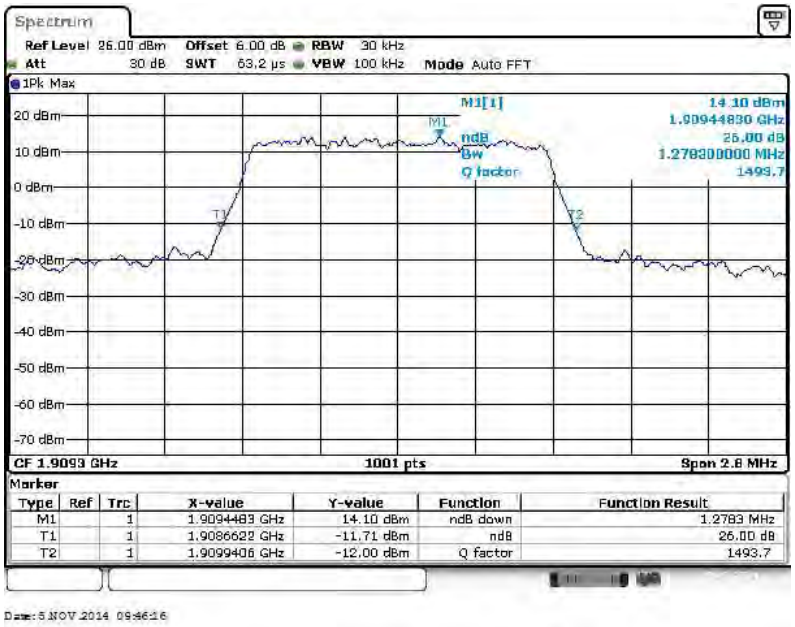
26dB Bandwidth Plot on Channel 18900



99% Occupied Bandwidth Plot on Channel 19193

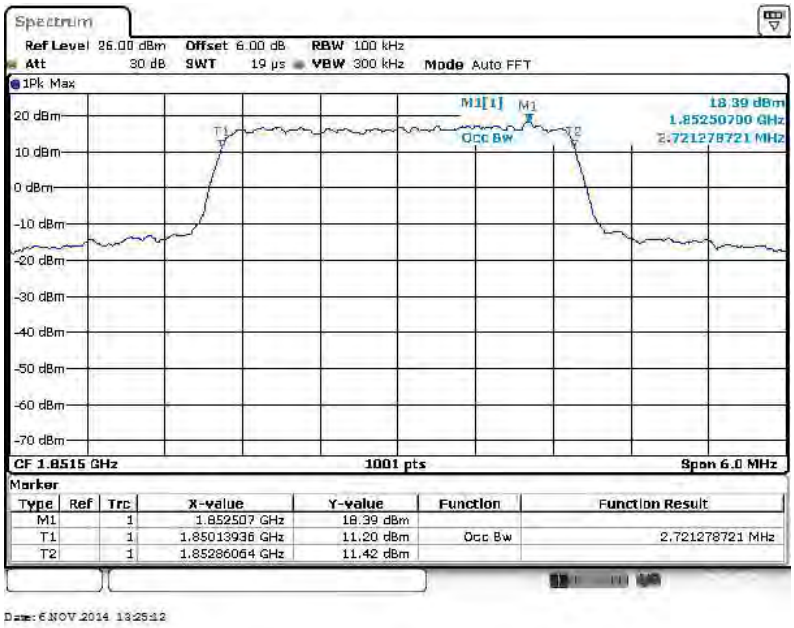


26dB Bandwidth Plot on Channel 19193

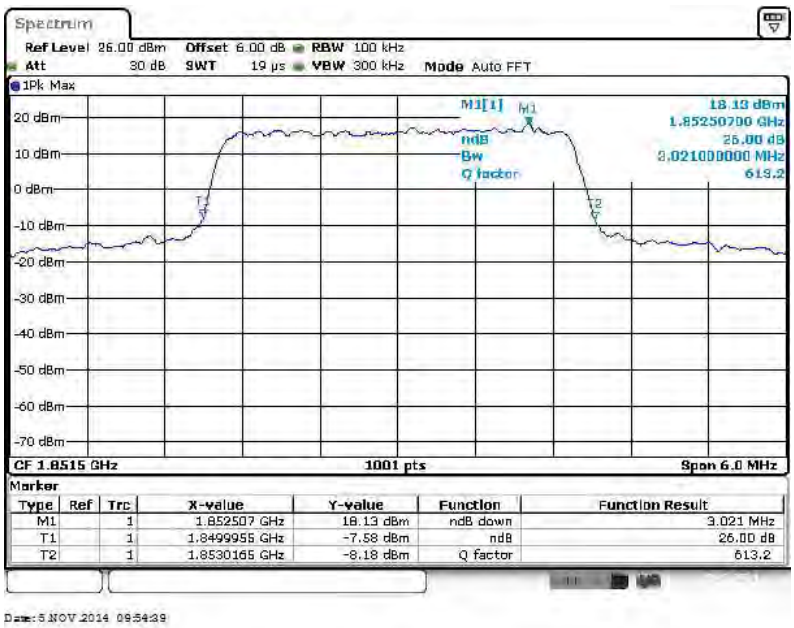


Band :	LTE Band 2	BW / Mod. :	3MHz / QPSK

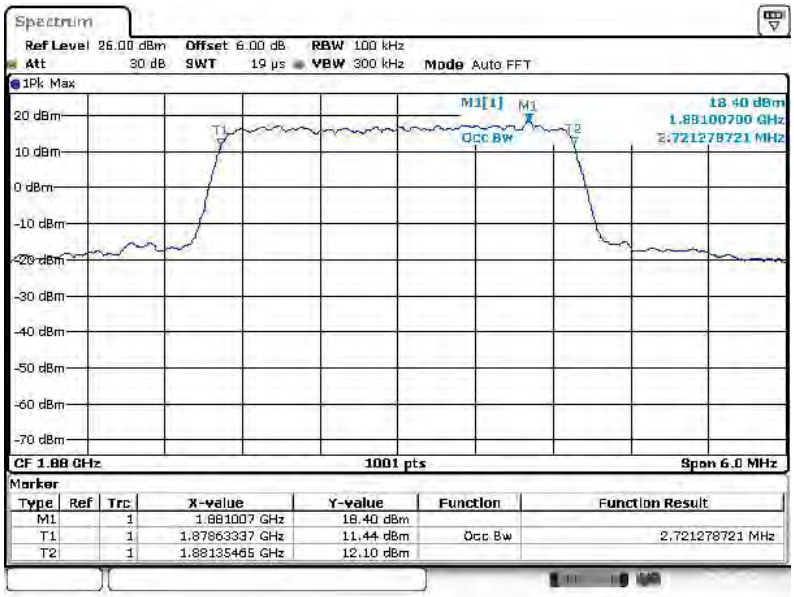
99% Occupied Bandwidth Plot on Channel 18615



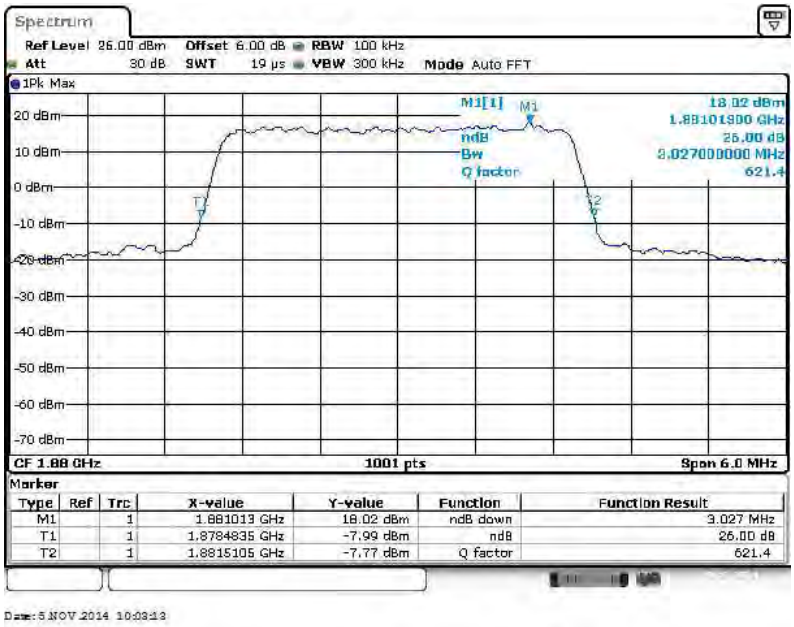
26dB Bandwidth Plot on Channel 18615



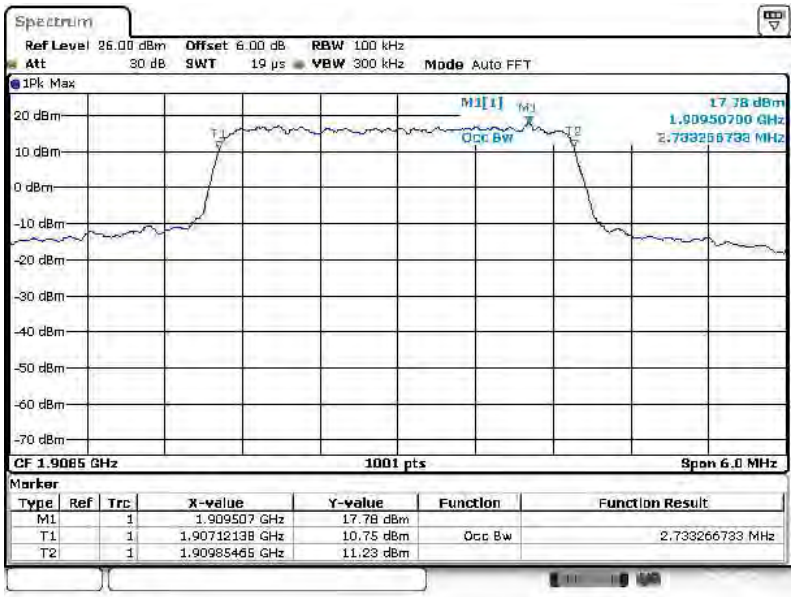
99% Occupied Bandwidth Plot on Channel 18900



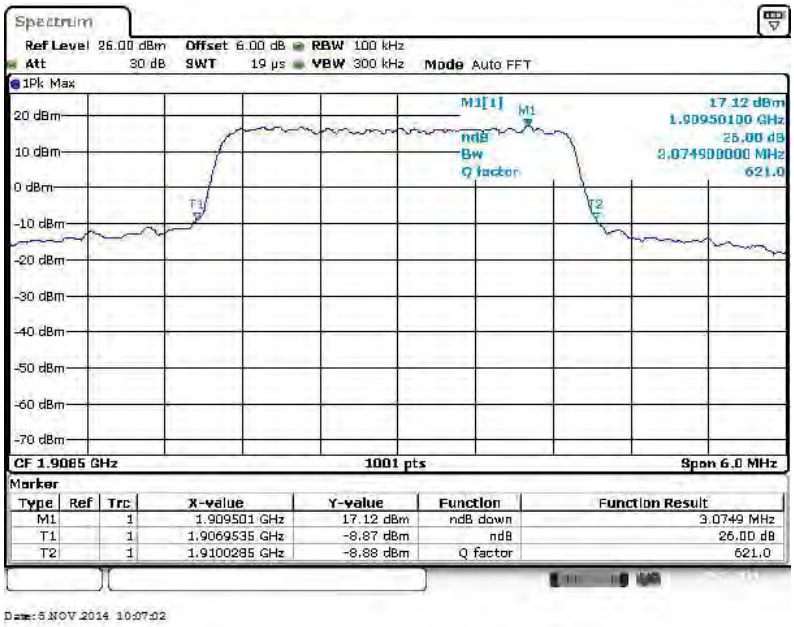
26dB Bandwidth Plot on Channel 18900



99% Occupied Bandwidth Plot on Channel 19185

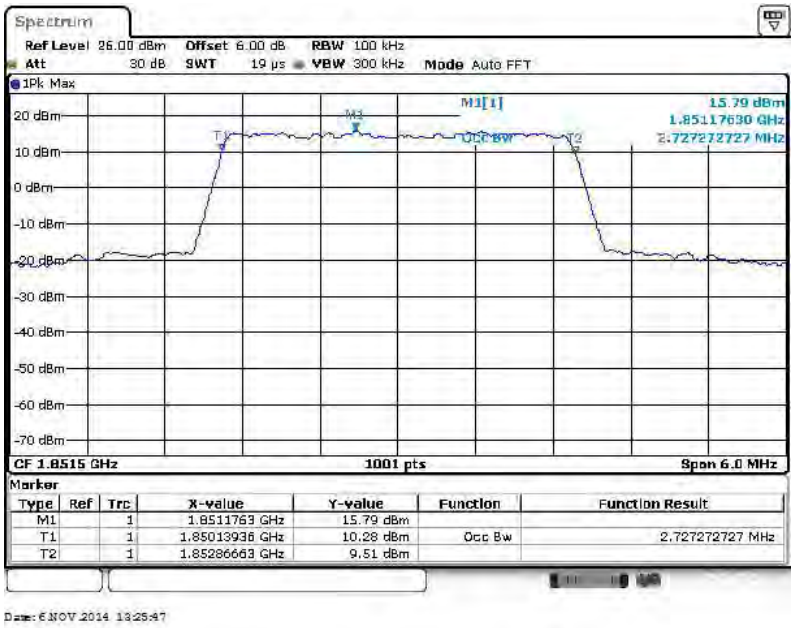


26dB Bandwidth Plot on Channel 19185

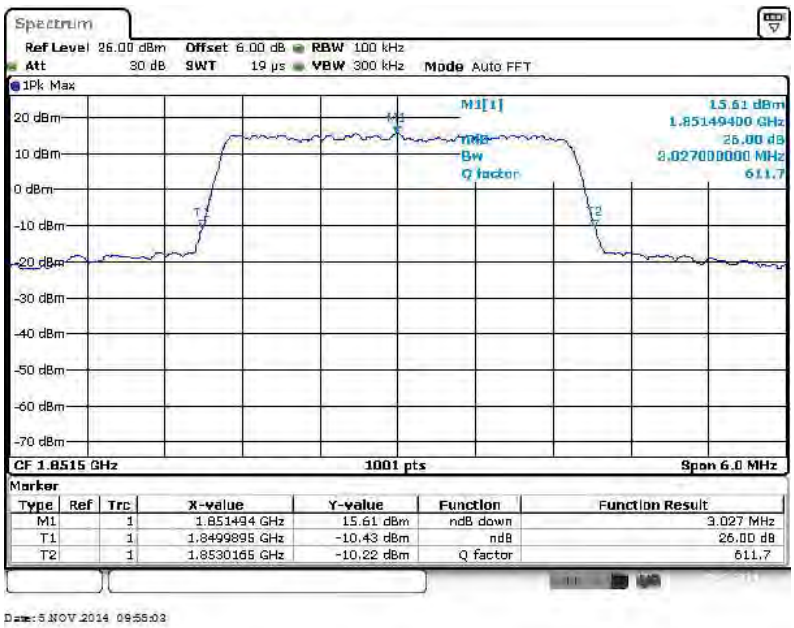


Band :	LTE Band 2	BW / Mod. :	3MHz / 16QAM

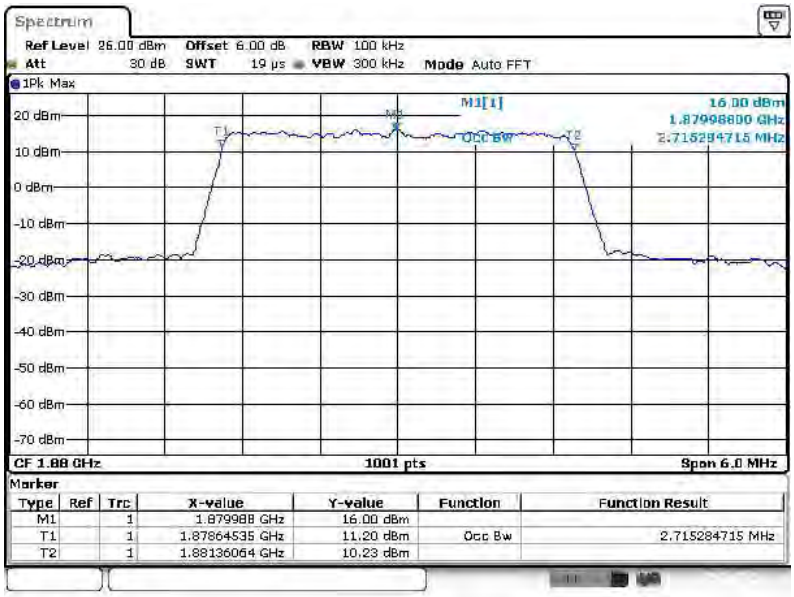
99% Occupied Bandwidth Plot on Channel 18615



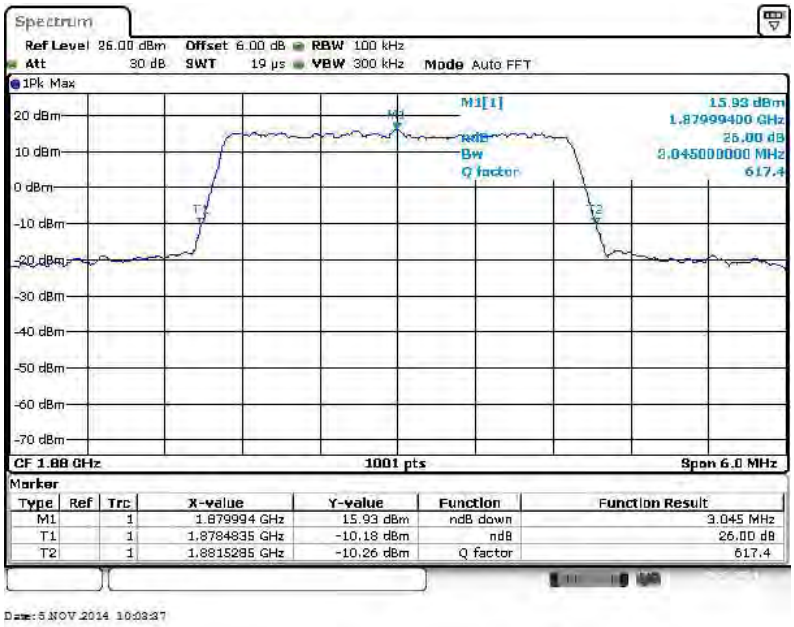
26dB Bandwidth Plot on Channel 18615



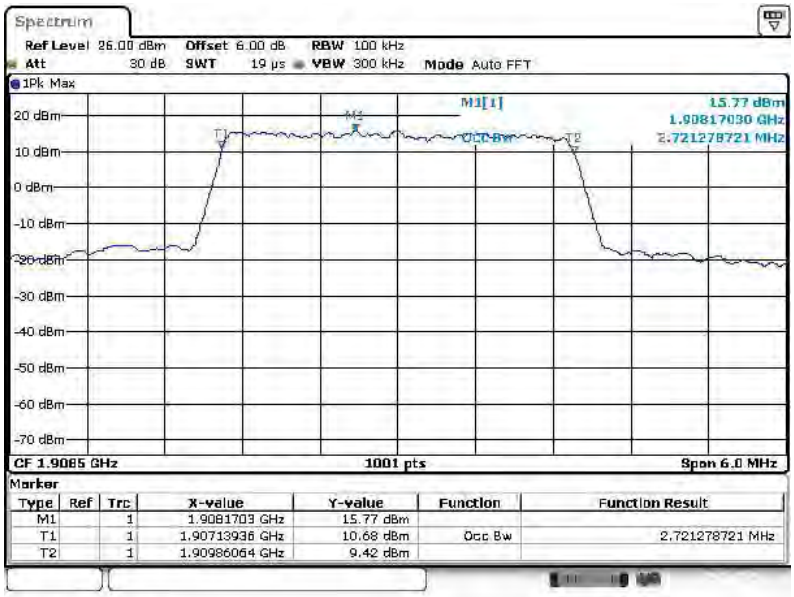
99% Occupied Bandwidth Plot on Channel 18900



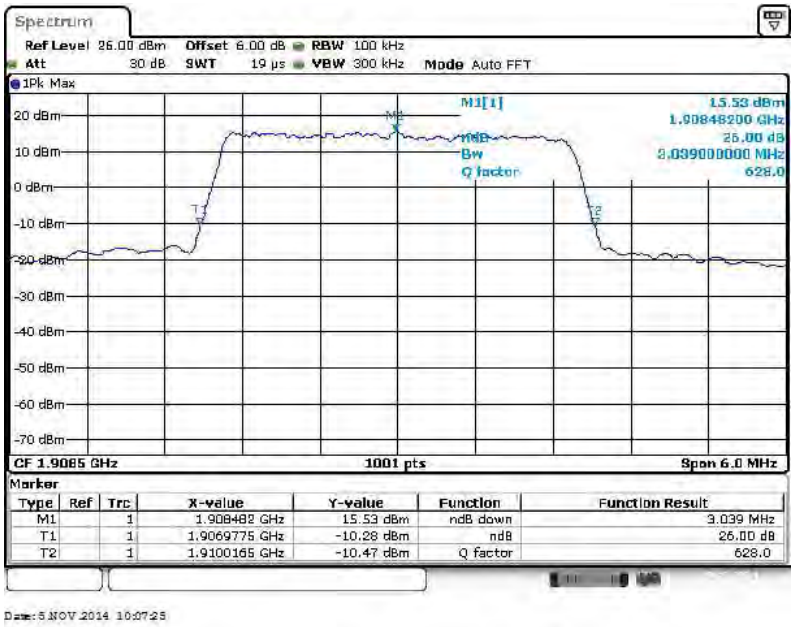
26dB Bandwidth Plot on Channel 18900



99% Occupied Bandwidth Plot on Channel 19185

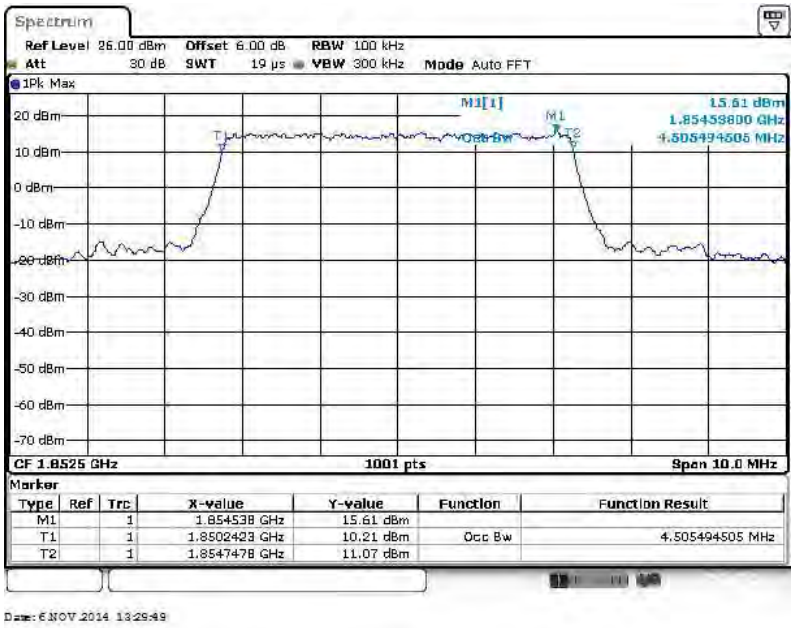


26dB Bandwidth Plot on Channel 19185

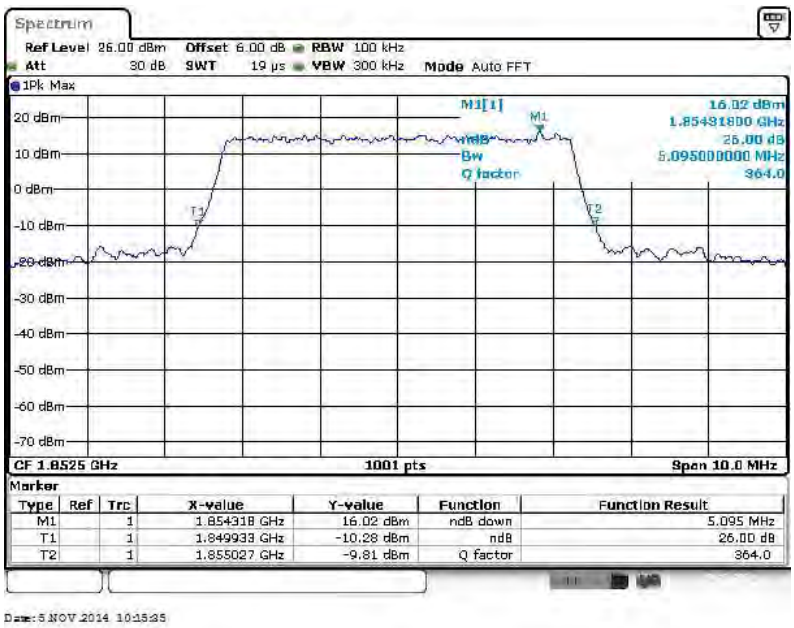


Band :	LTE Band 2	BW / Mod. :	5MHz / QPSK

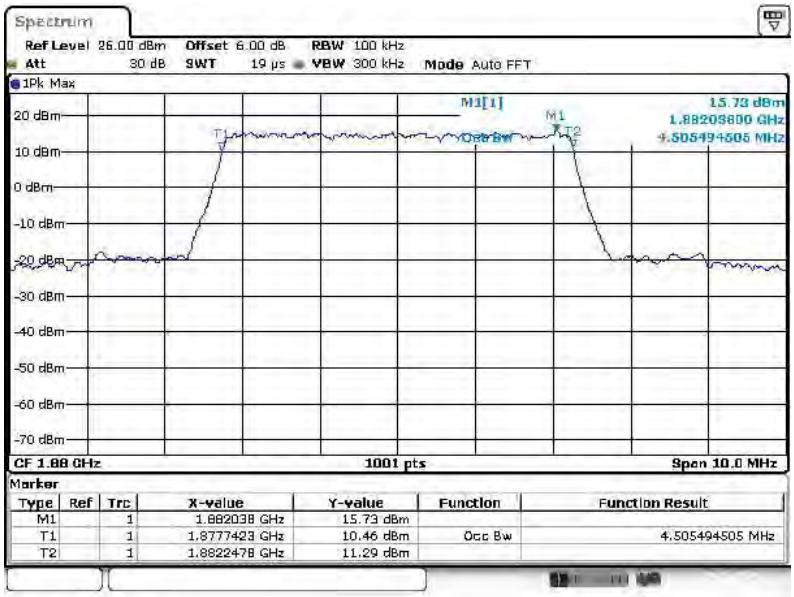
99% Occupied Bandwidth Plot on Channel 18625



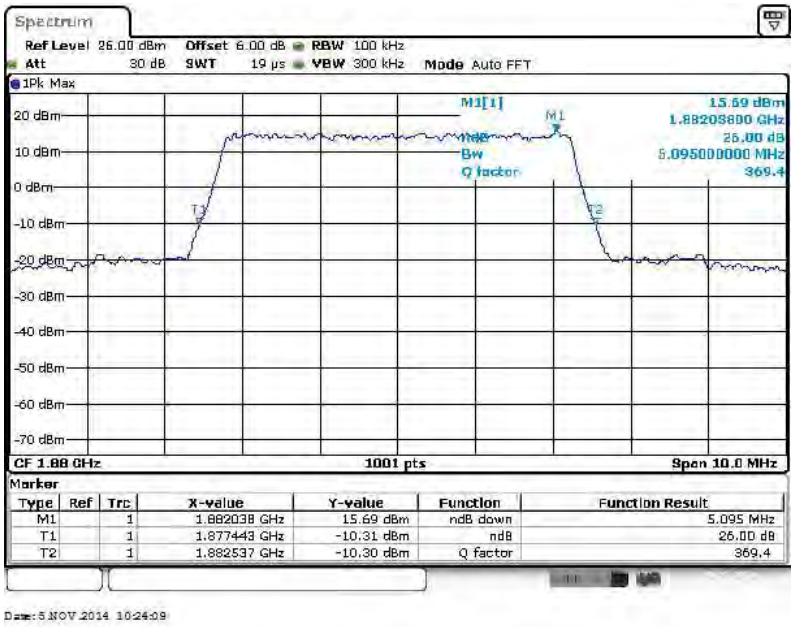
26dB Bandwidth Plot on Channel 18625



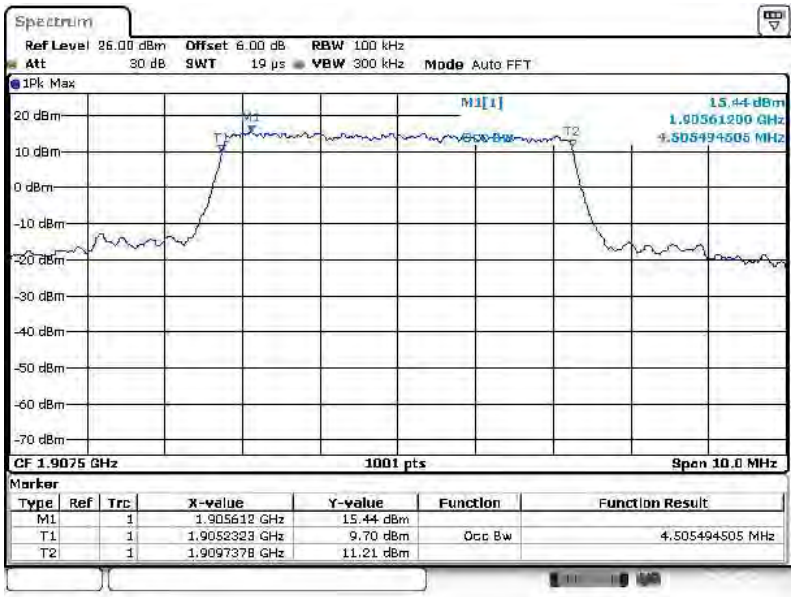
99% Occupied Bandwidth Plot on Channel 18900



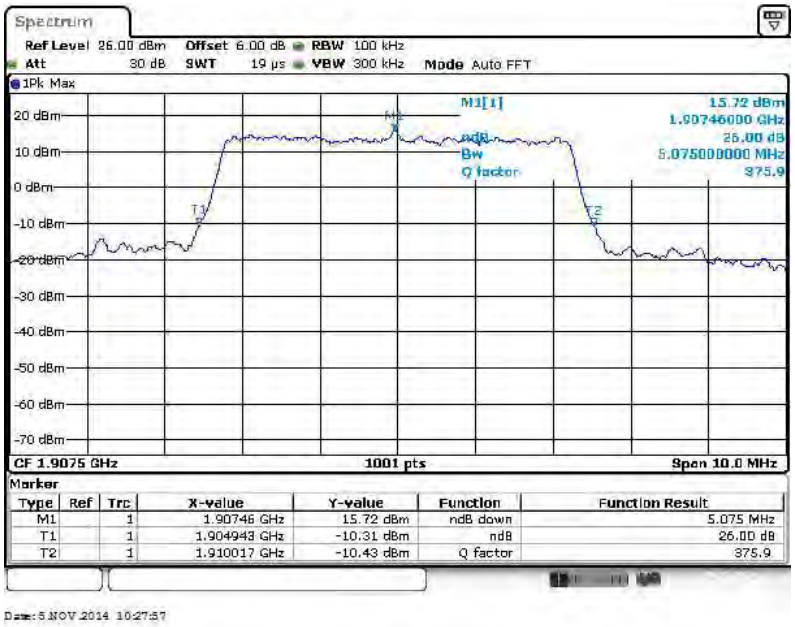
26dB Bandwidth Plot on Channel 18900



99% Occupied Bandwidth Plot on Channel 19175

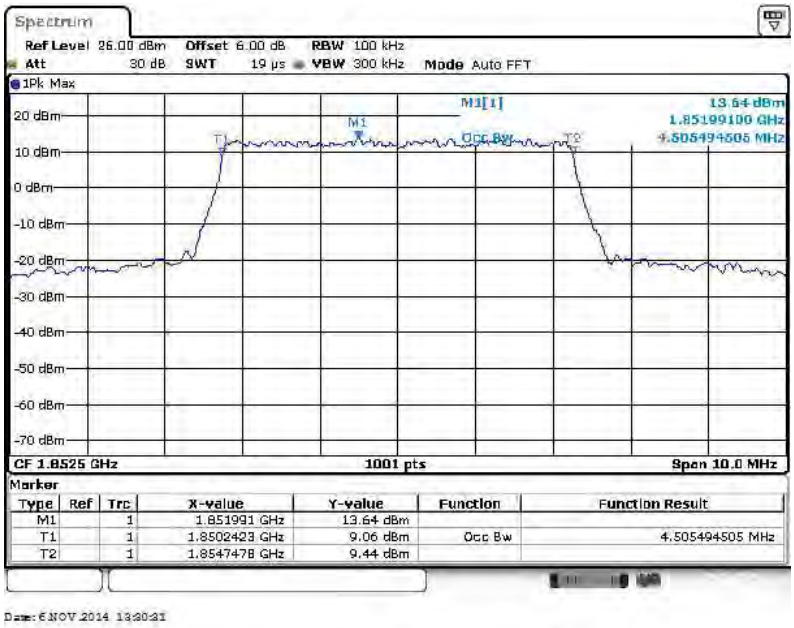


26dB Bandwidth Plot on Channel 19175

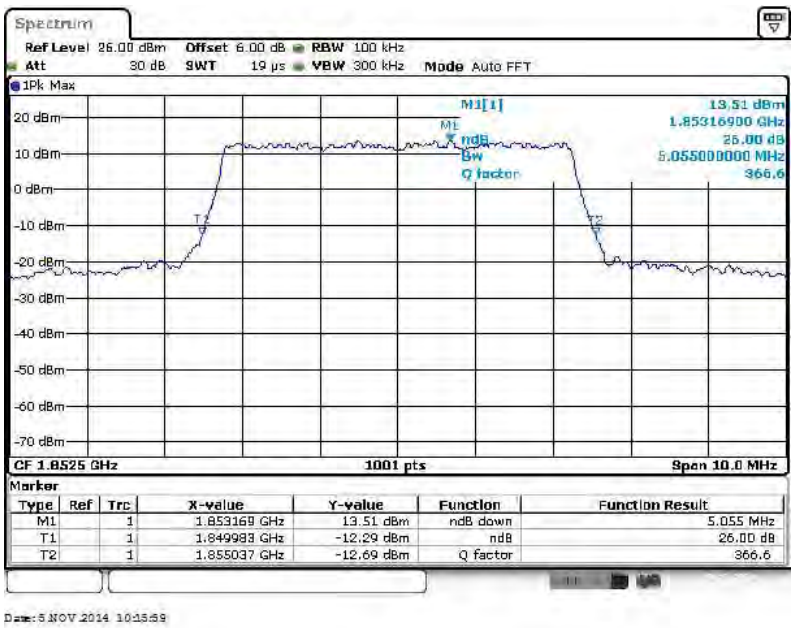


Band :	LTE Band 2	BW / Mod. :	5MHz / 16QAM

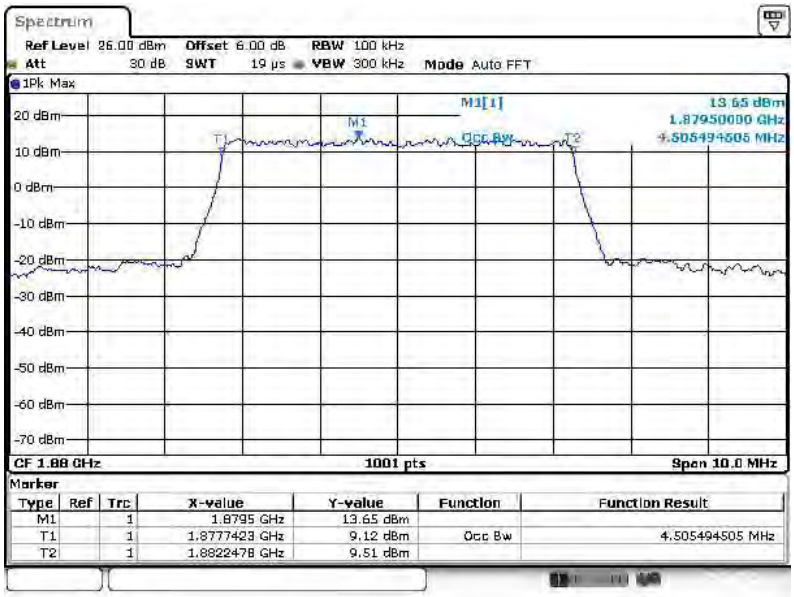
99% Occupied Bandwidth Plot on Channel 18625



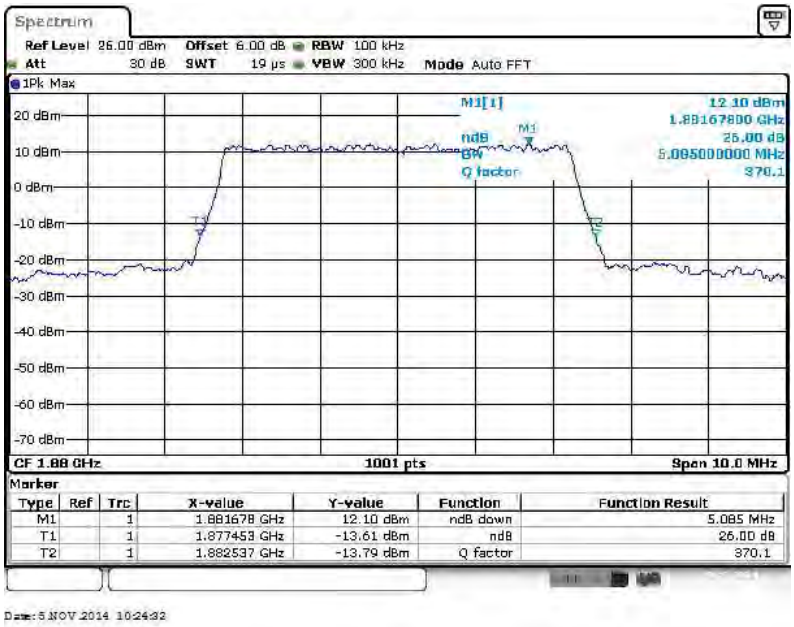
26dB Bandwidth Plot on Channel 18625



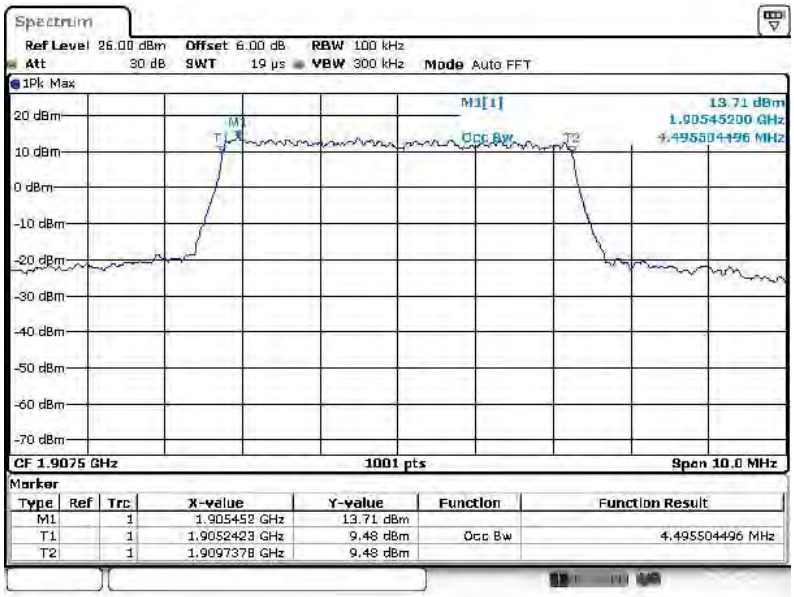
99% Occupied Bandwidth Plot on Channel 18900



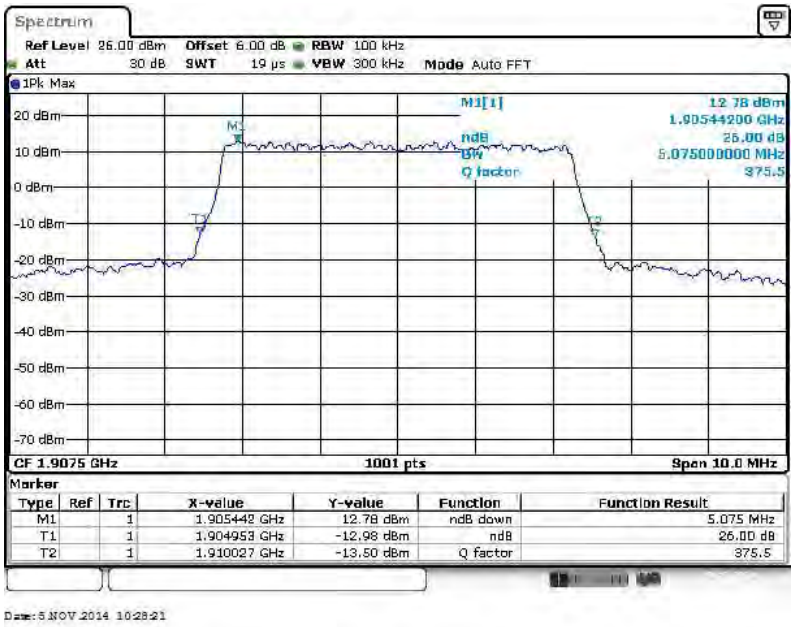
26dB Bandwidth Plot on Channel 18900



99% Occupied Bandwidth Plot on Channel 19175

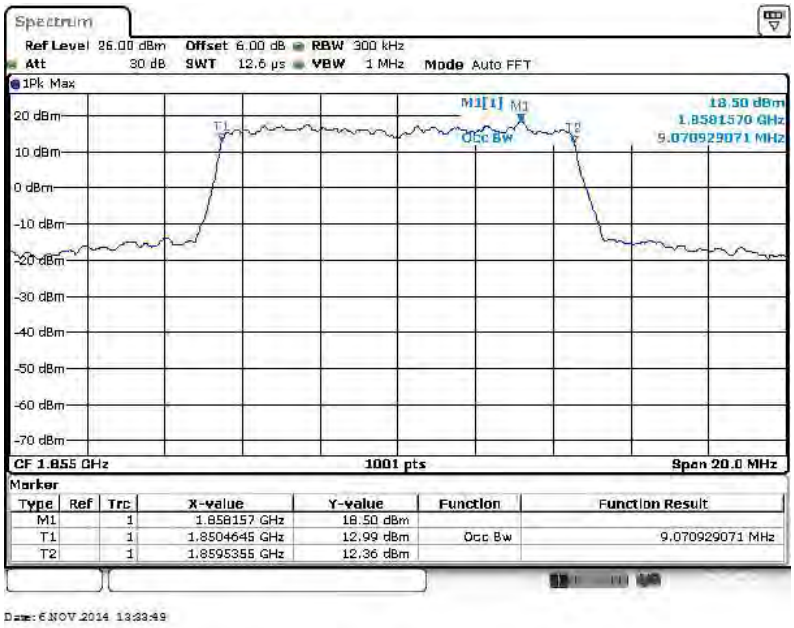


26dB Bandwidth Plot on Channel 19175

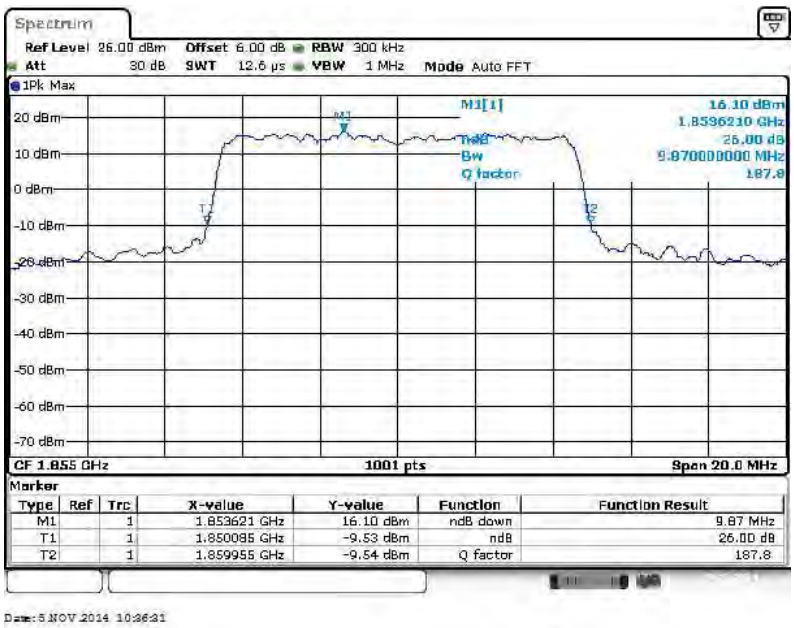


Band :	LTE Band 2	BW / Mod. :	10MHz / QPSK

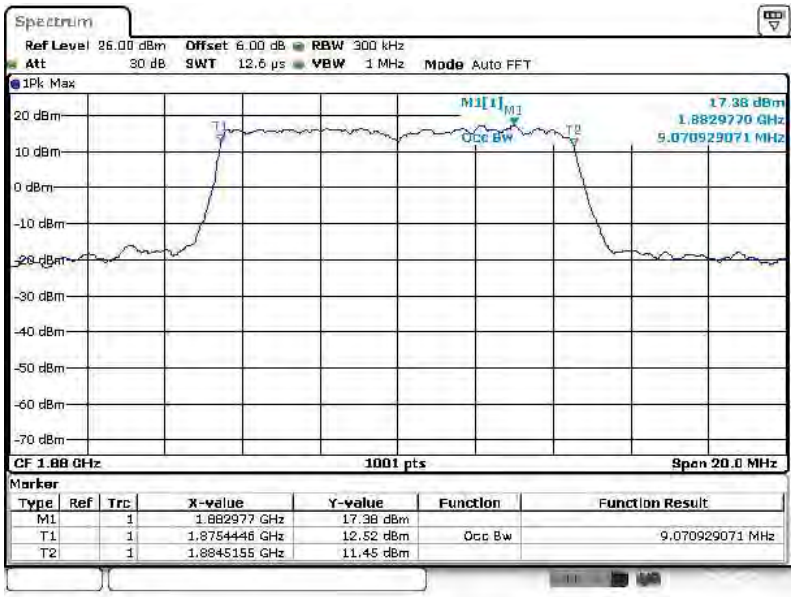
99% Occupied Bandwidth Plot on Channel 18650



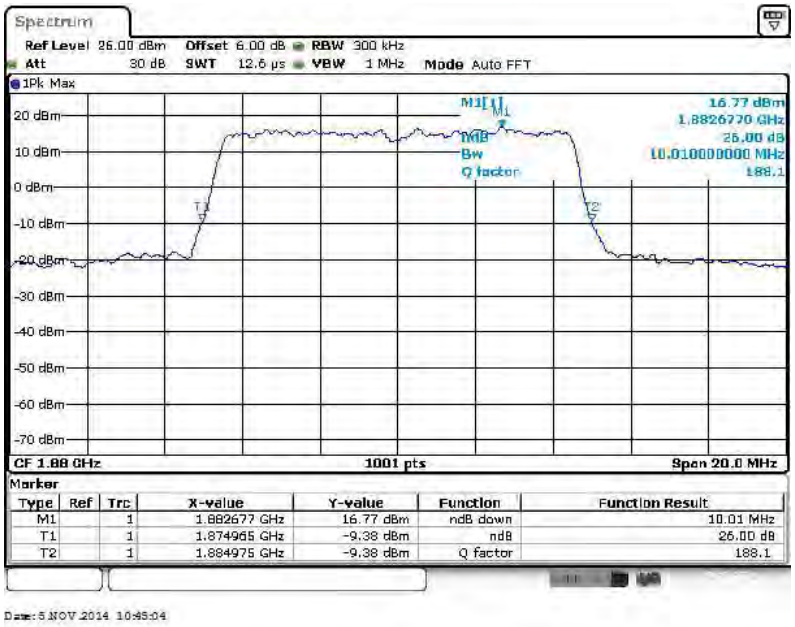
26dB Bandwidth Plot on Channel 18650



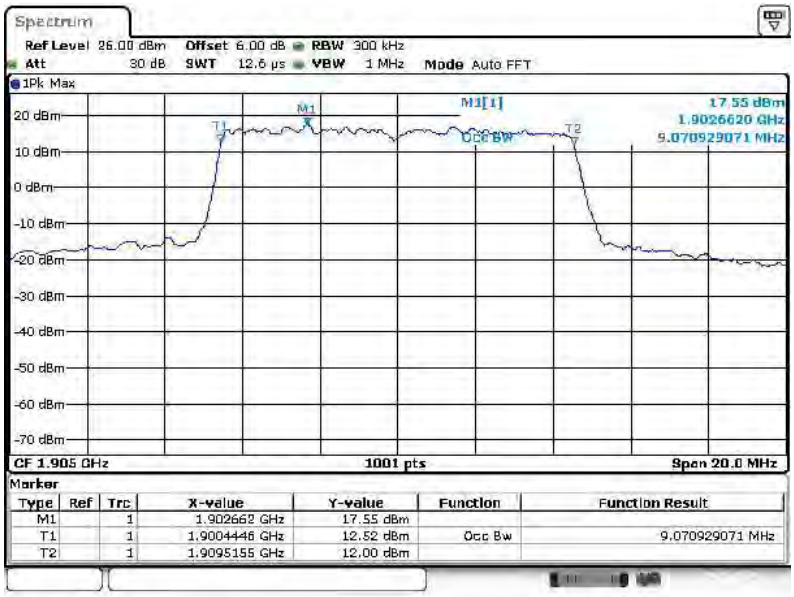
99% Occupied Bandwidth Plot on Channel 18900



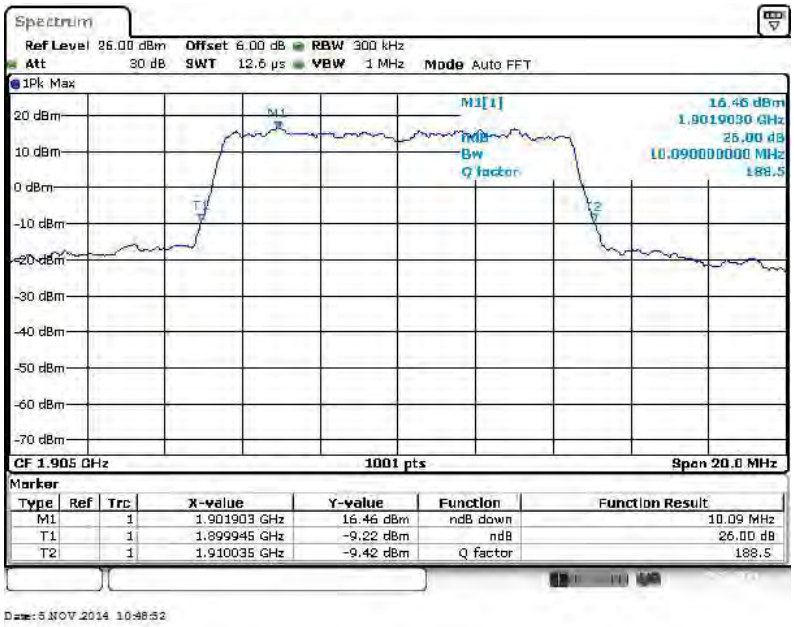
26dB Bandwidth Plot on Channel 18900



99% Occupied Bandwidth Plot on Channel 19150

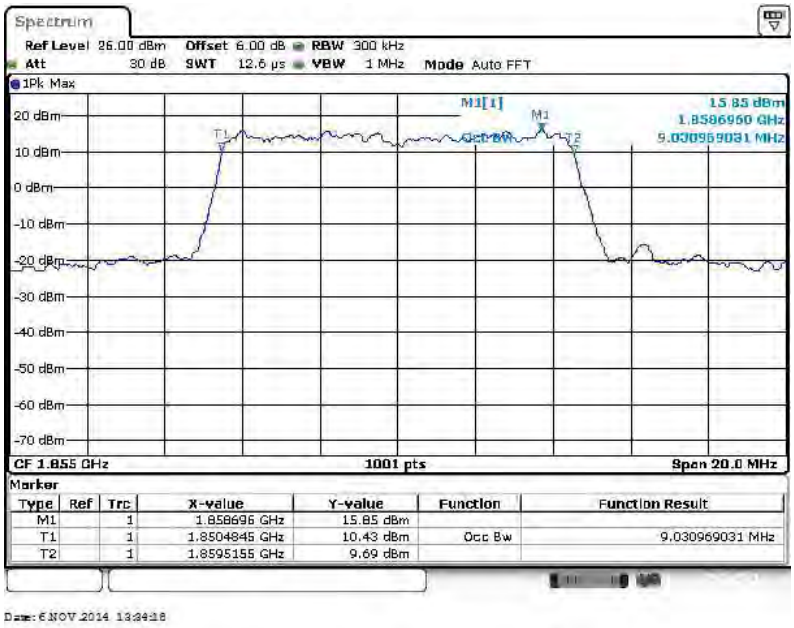


26dB Bandwidth Plot on Channel 19150

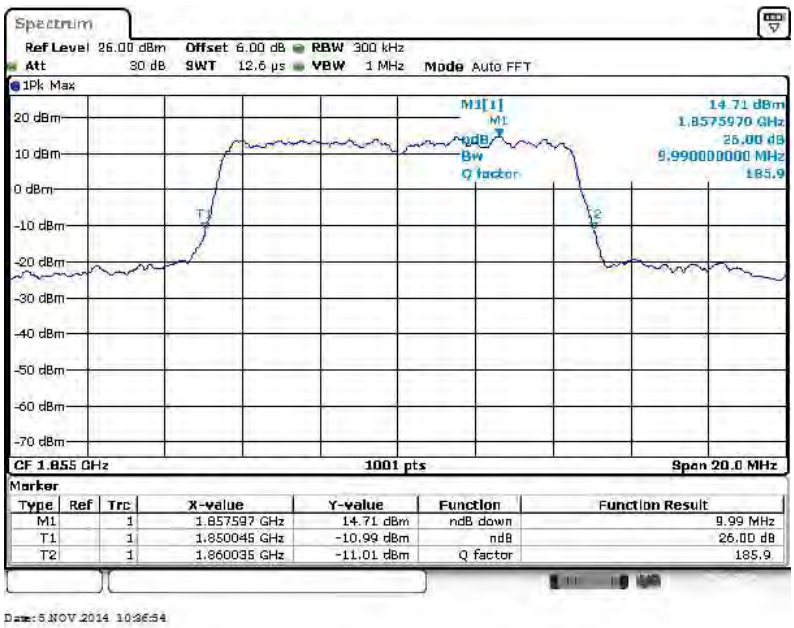


Band :	LTE Band 2	BW / Mod. :	10MHz / 16QAM

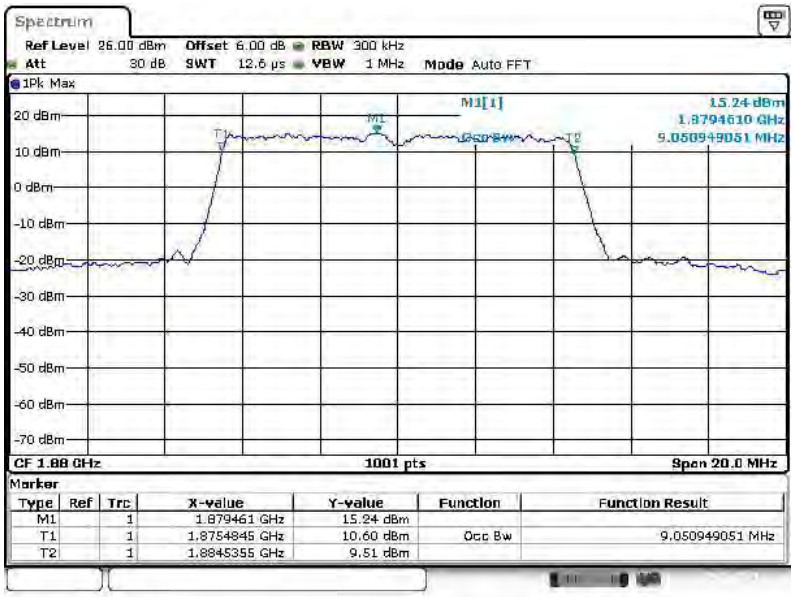
99% Occupied Bandwidth Plot on Channel 18650



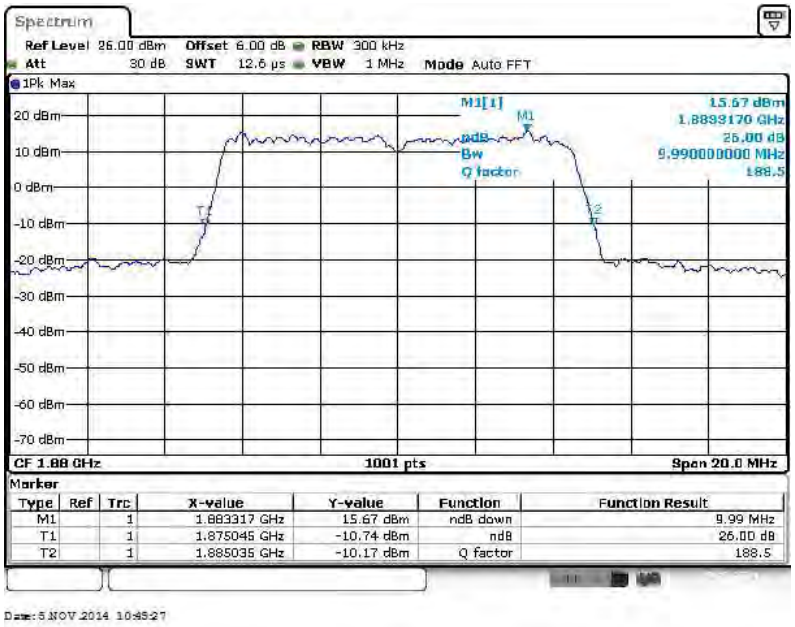
26dB Bandwidth Plot on Channel 18650



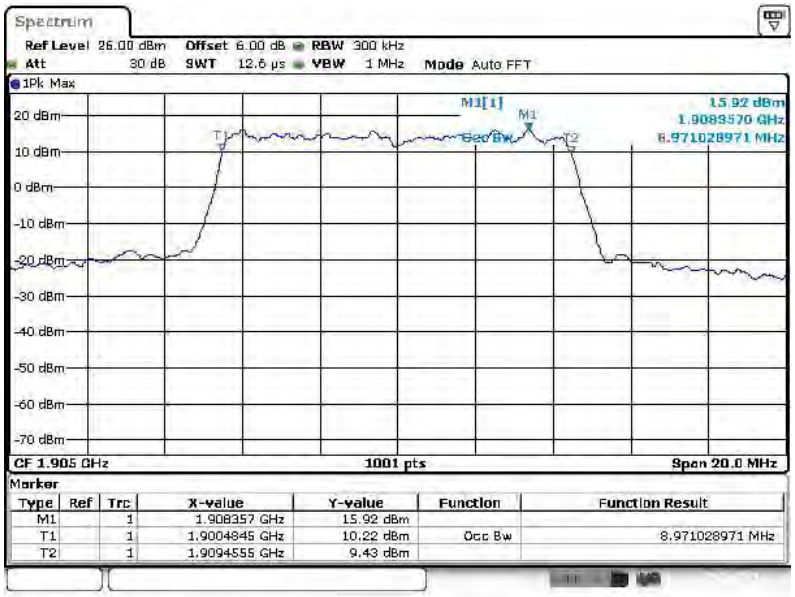
99% Occupied Bandwidth Plot on Channel 18900



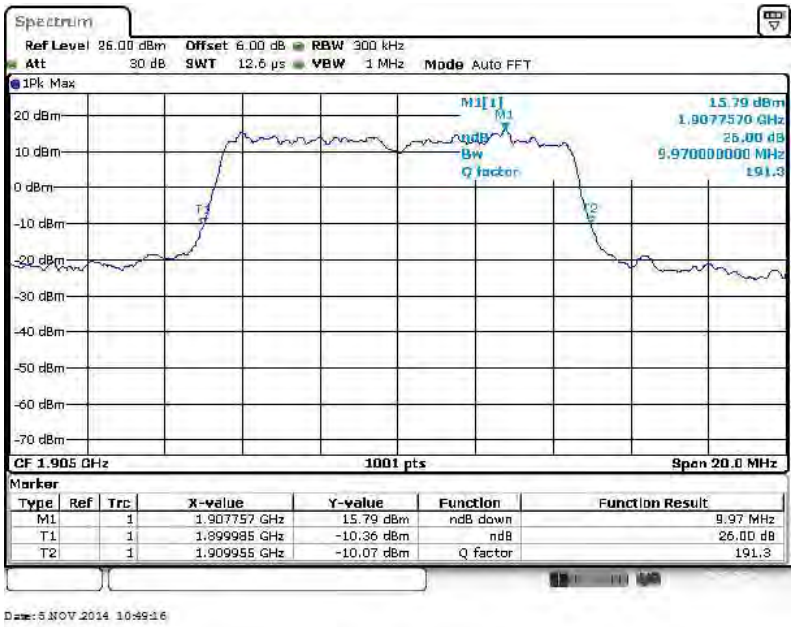
26dB Bandwidth Plot on Channel 18900



99% Occupied Bandwidth Plot on Channel 19150

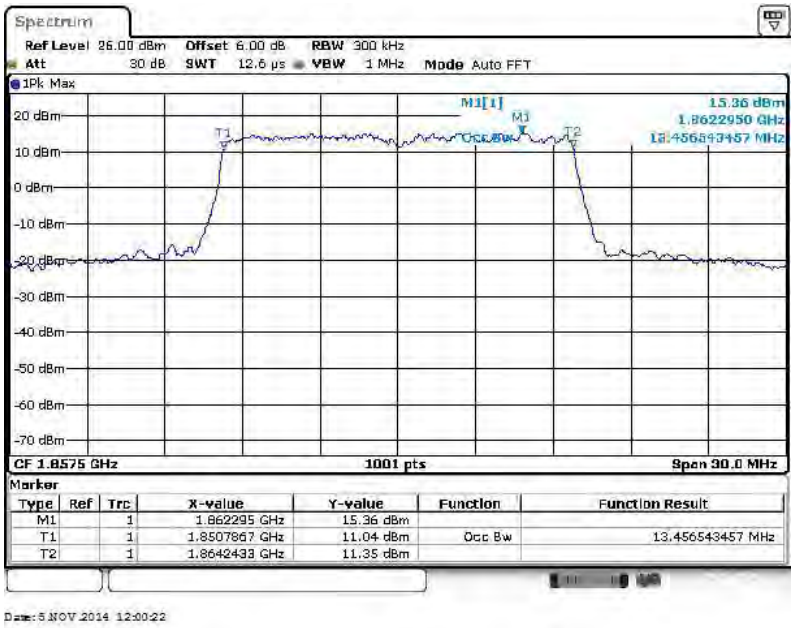


26dB Bandwidth Plot on Channel 19150

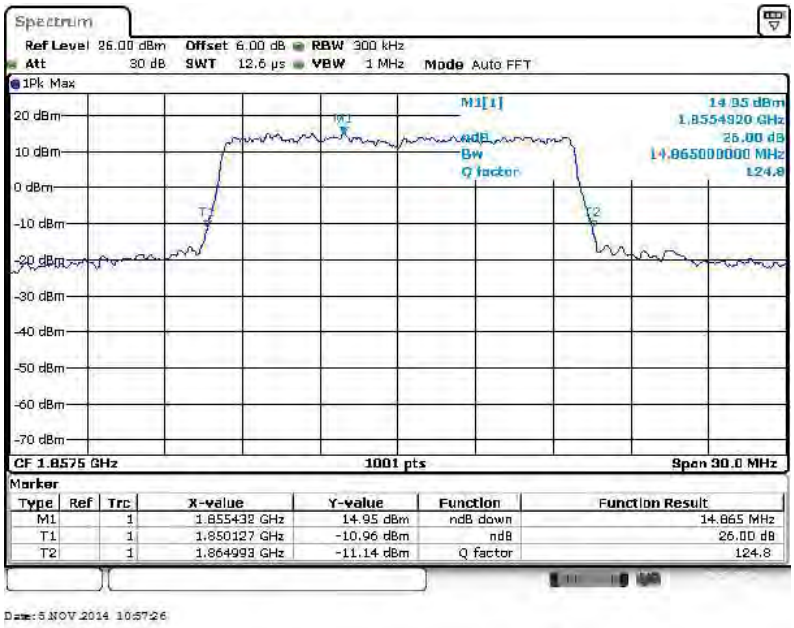


Band :	LTE Band 2	BW / Mod. :	15MHz / QPSK

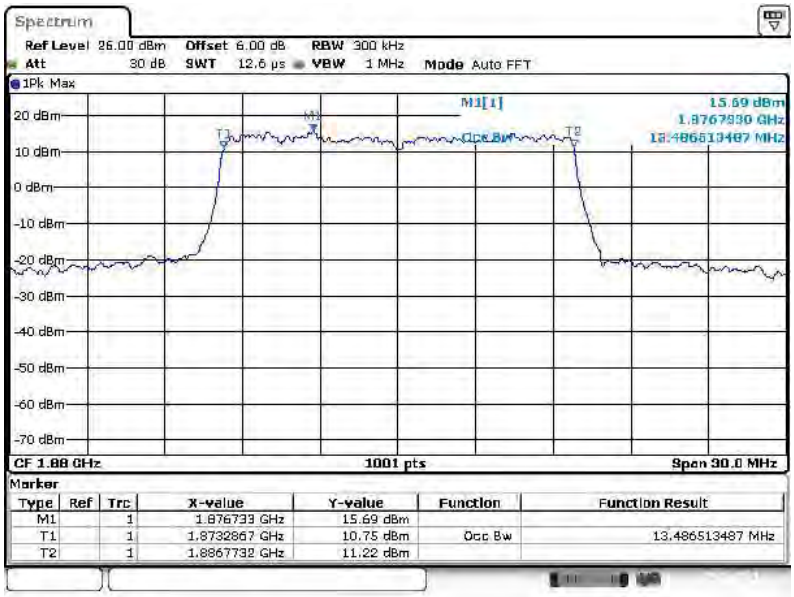
99% Occupied Bandwidth Plot on Channel 18675



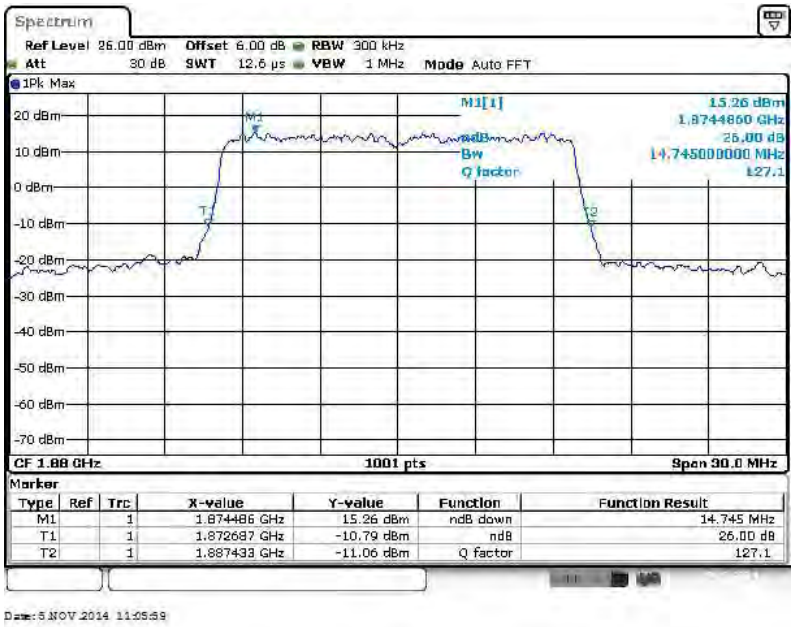
26dB Bandwidth Plot on Channel 18675



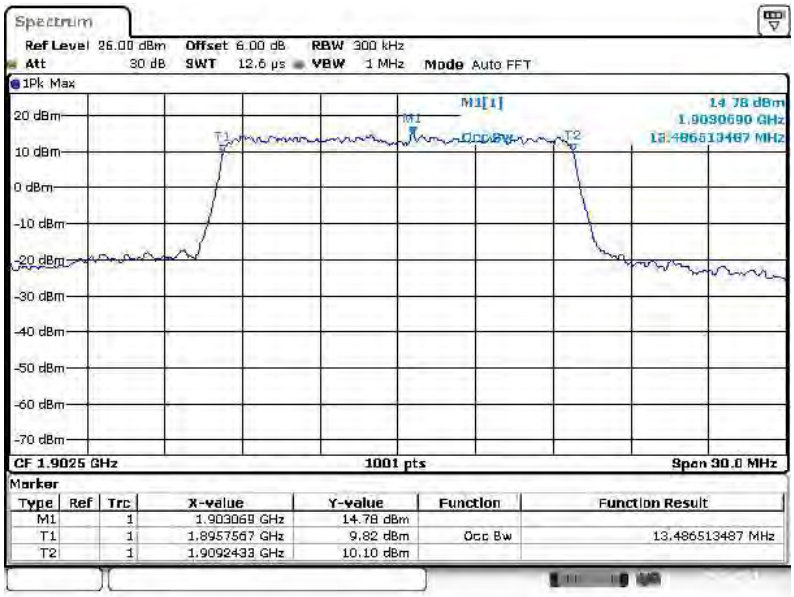
99% Occupied Bandwidth Plot on Channel 18900



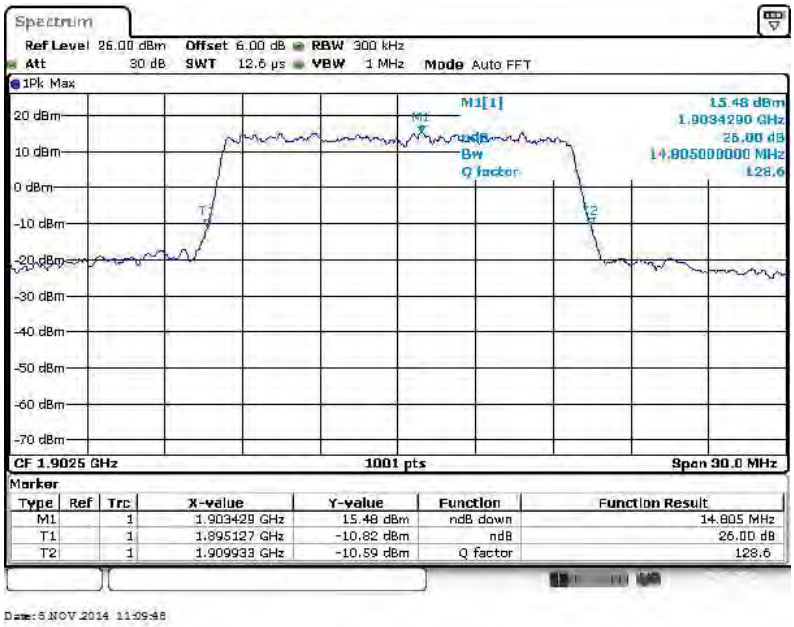
26dB Bandwidth Plot on Channel 18900



99% Occupied Bandwidth Plot on Channel 19125

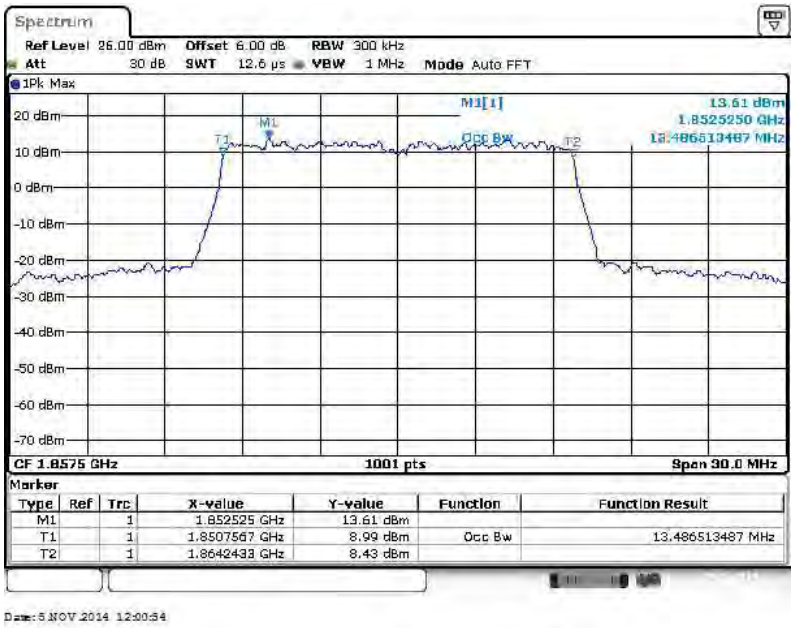


26dB Bandwidth Plot on Channel 19125

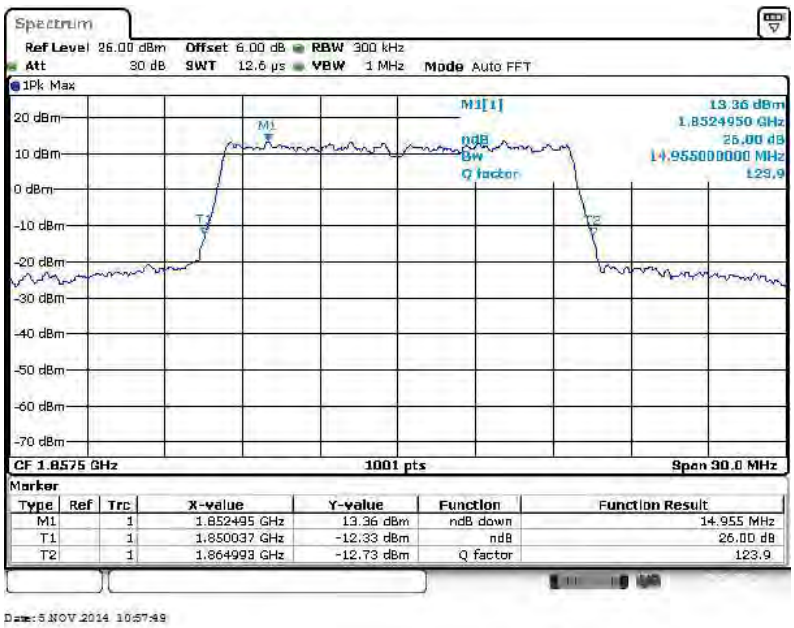


Band :	LTE Band 2	BW / Mod. :	15MHz / 16QAM

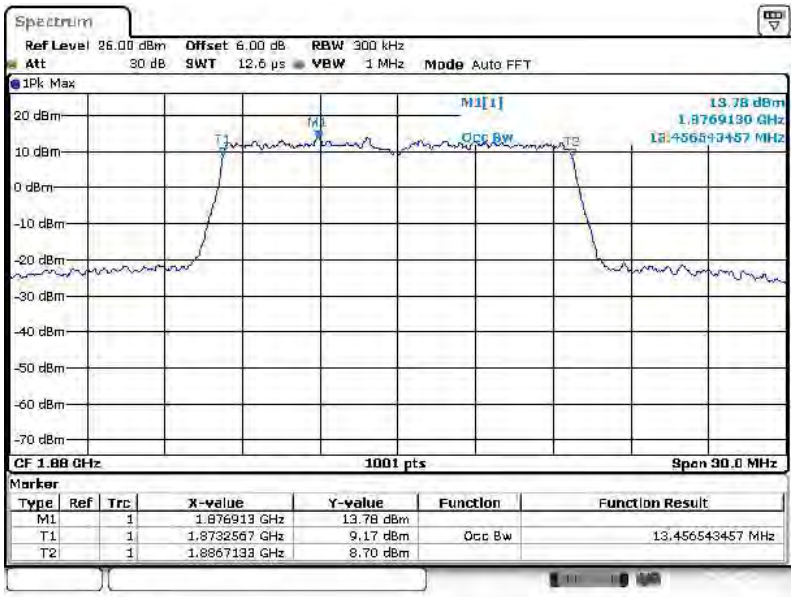
99% Occupied Bandwidth Plot on Channel 18675



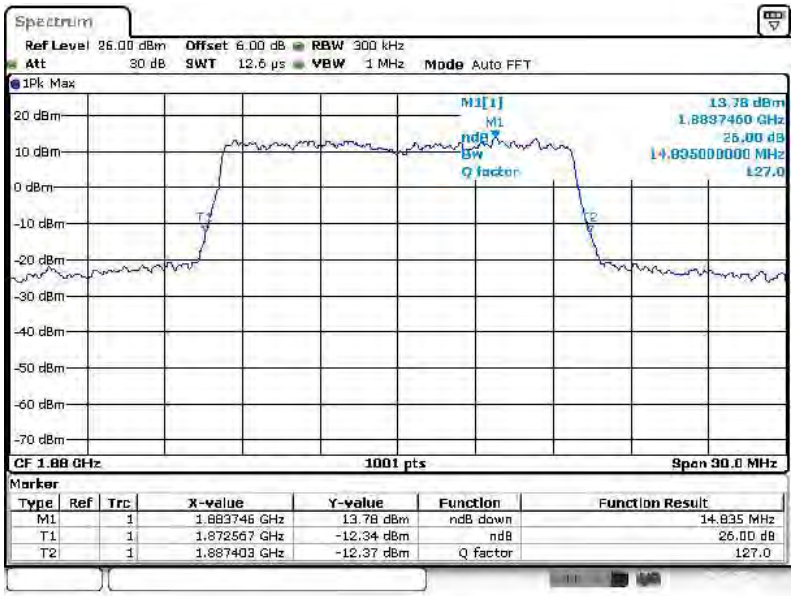
26dB Bandwidth Plot on Channel 18675



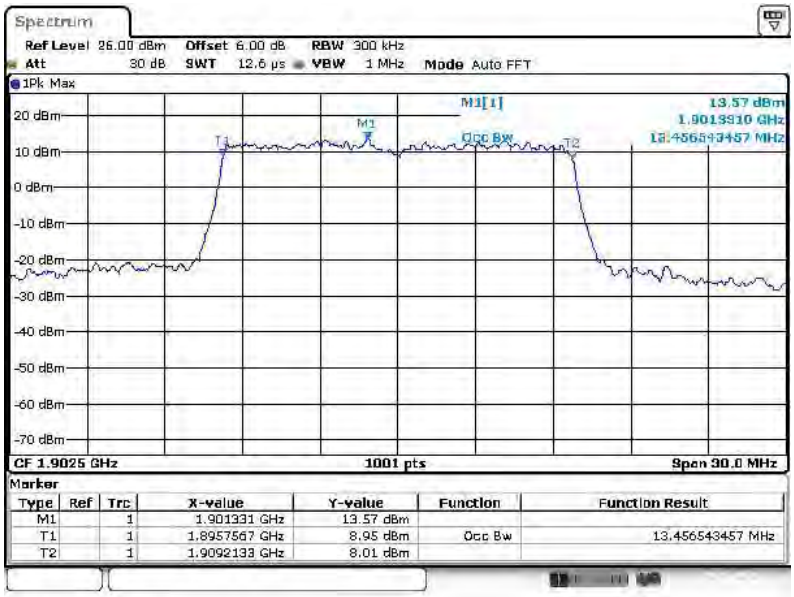
99% Occupied Bandwidth Plot on Channel 18900



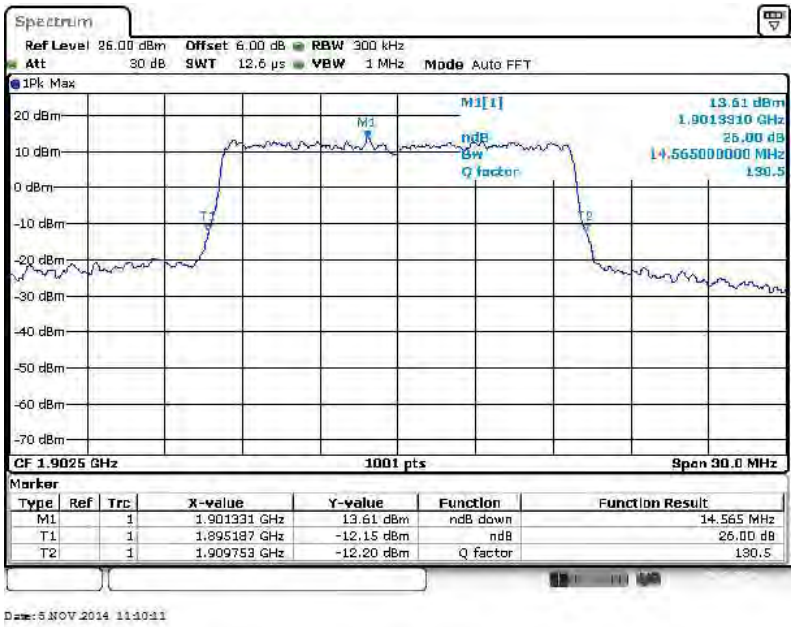
26dB Bandwidth Plot on Channel 18900



99% Occupied Bandwidth Plot on Channel 19125

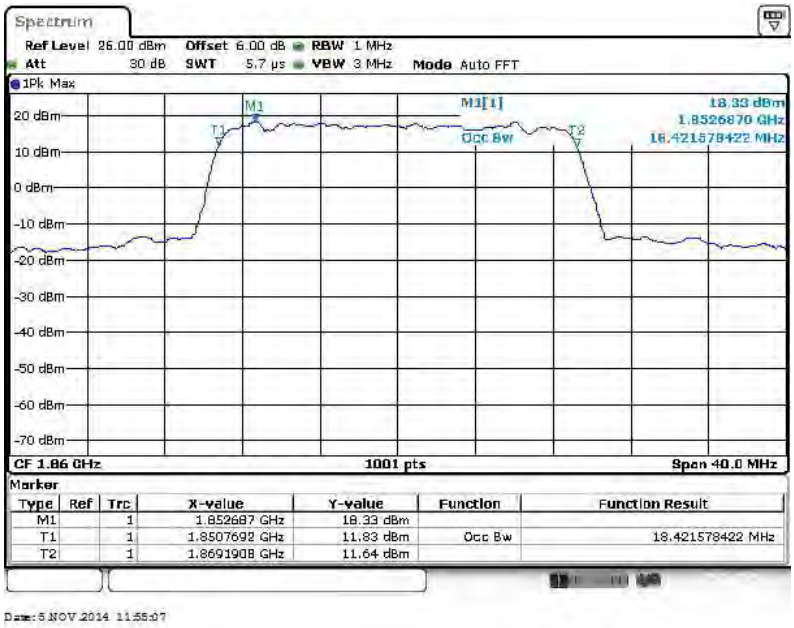


26dB Bandwidth Plot on Channel 19125

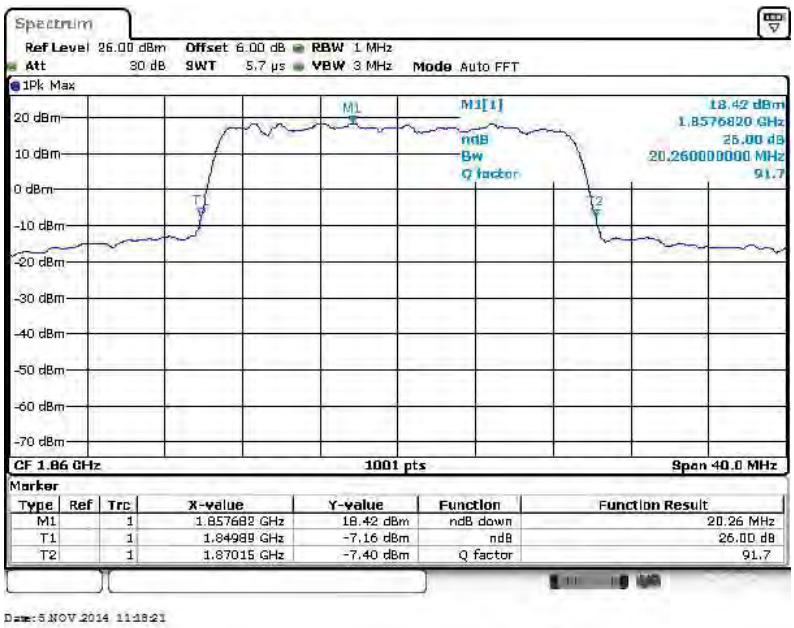


Band :	LTE Band 2	BW / Mod. :	20MHz / QPSK

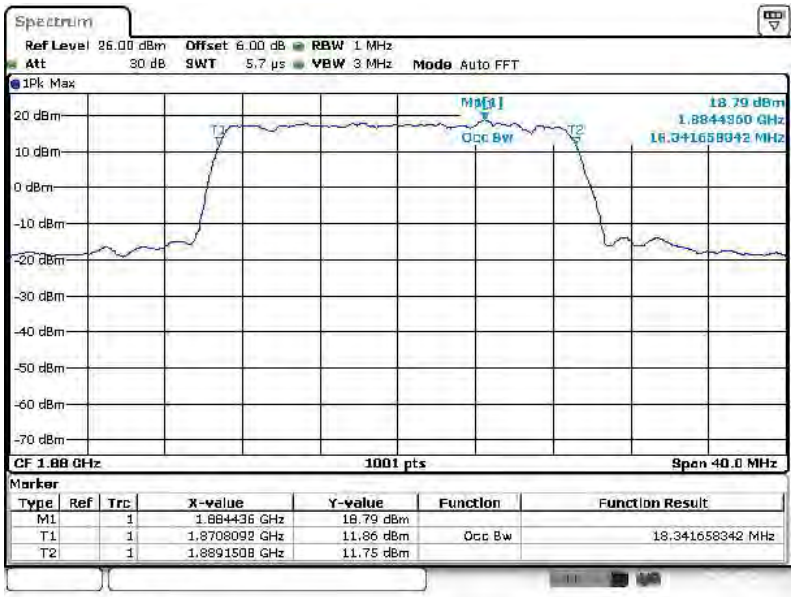
99% Occupied Bandwidth Plot on Channel 18700



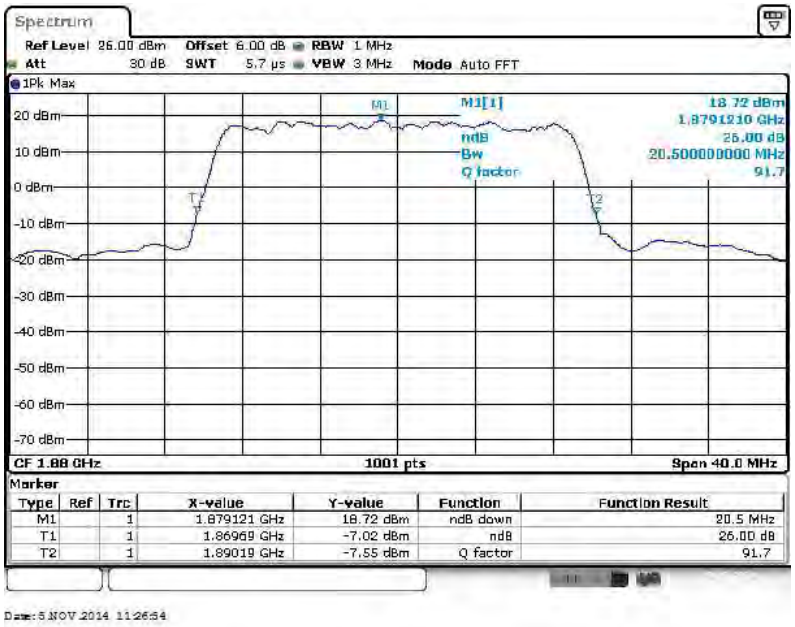
26dB Bandwidth Plot on Channel 18700



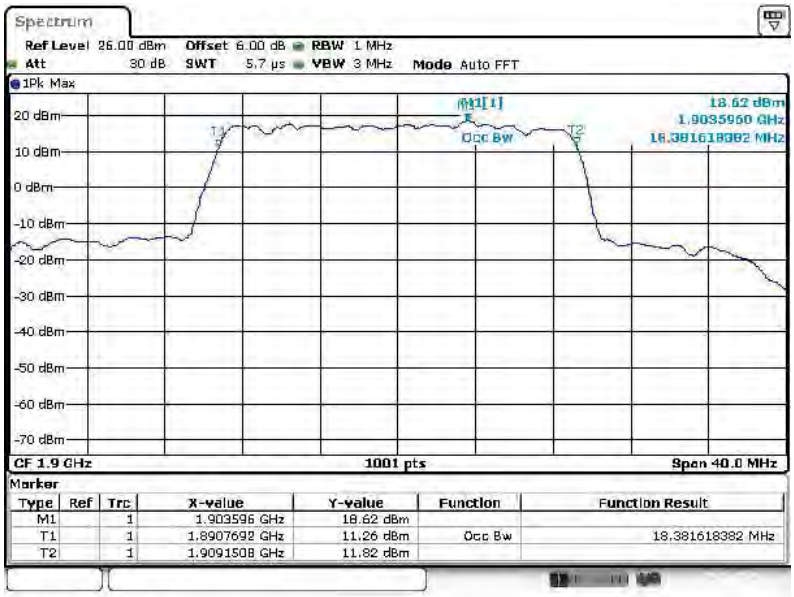
99% Occupied Bandwidth Plot on Channel 18900



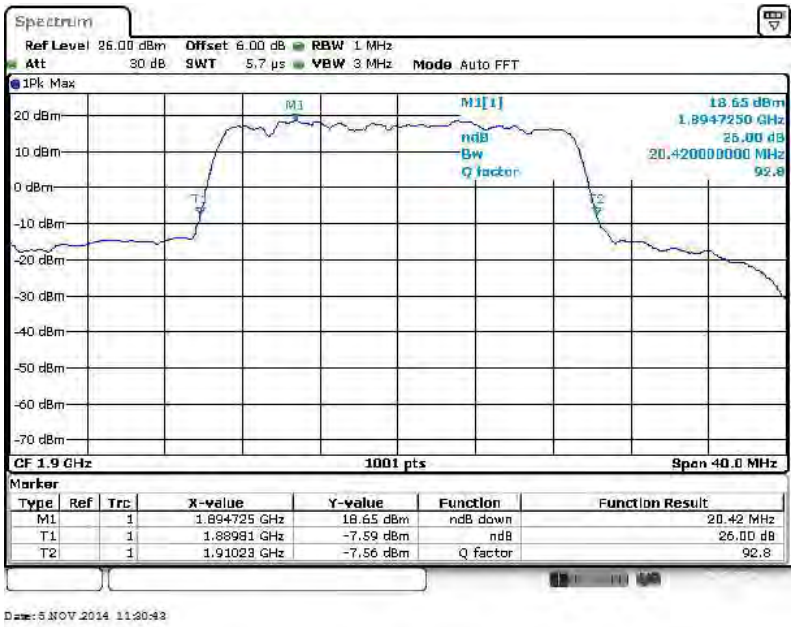
26dB Bandwidth Plot on Channel 18900



99% Occupied Bandwidth Plot on Channel 19100

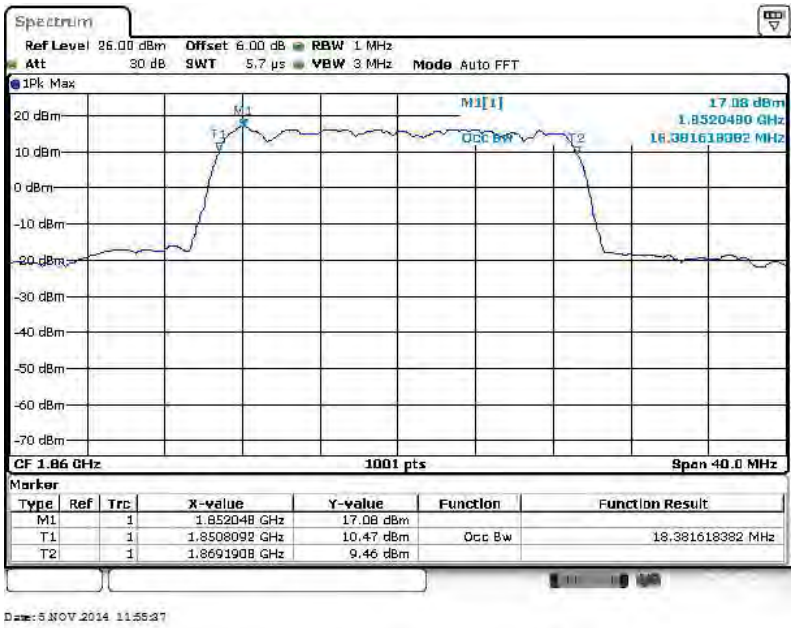


26dB Bandwidth Plot on Channel 19100

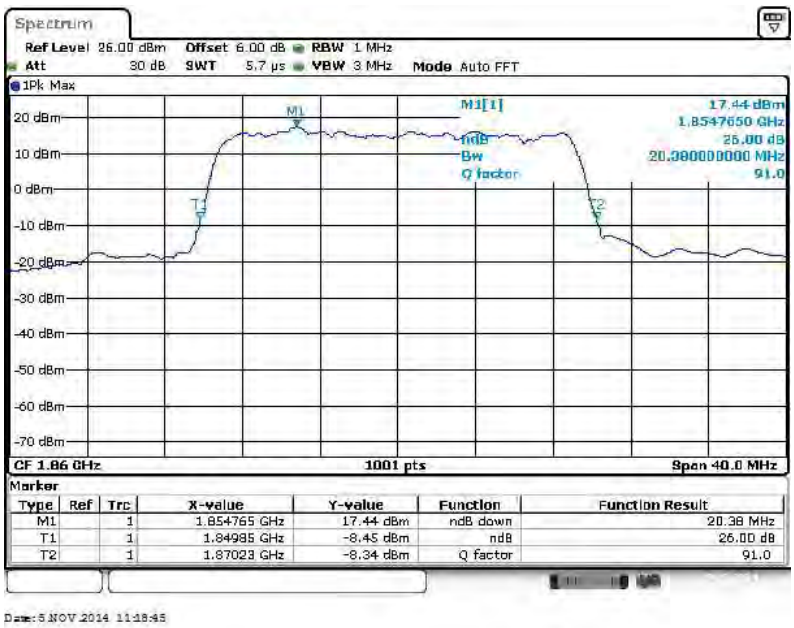


Band :	LTE Band 2	BW / Mod. :	20MHz / 16QAM

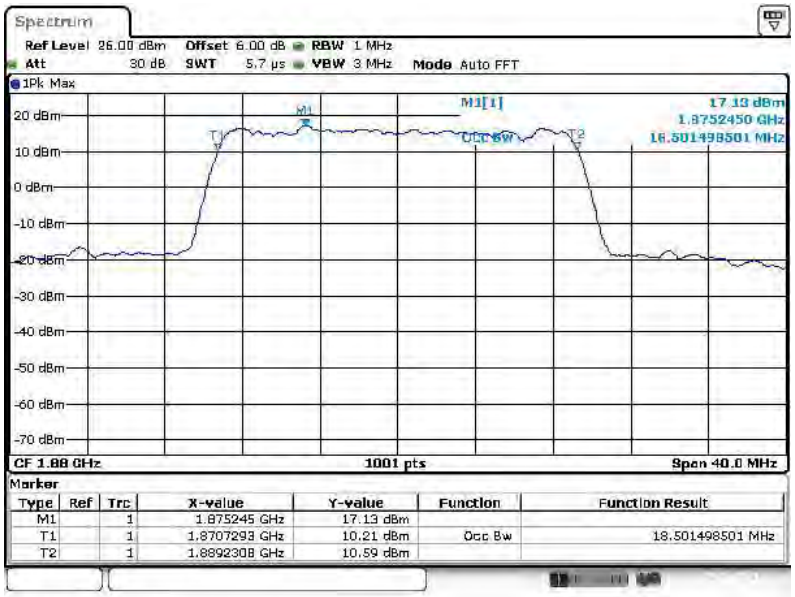
99% Occupied Bandwidth Plot on Channel 18700



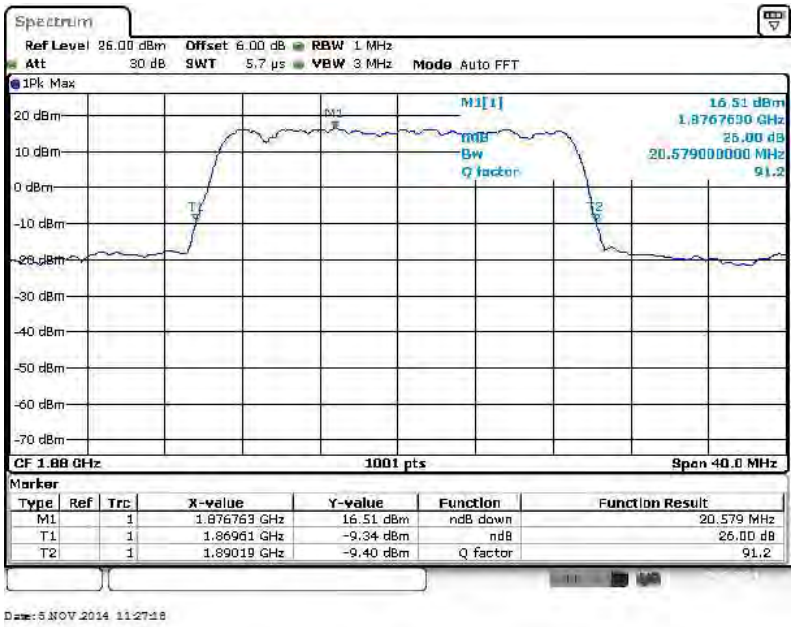
26dB Bandwidth Plot on Channel 18700



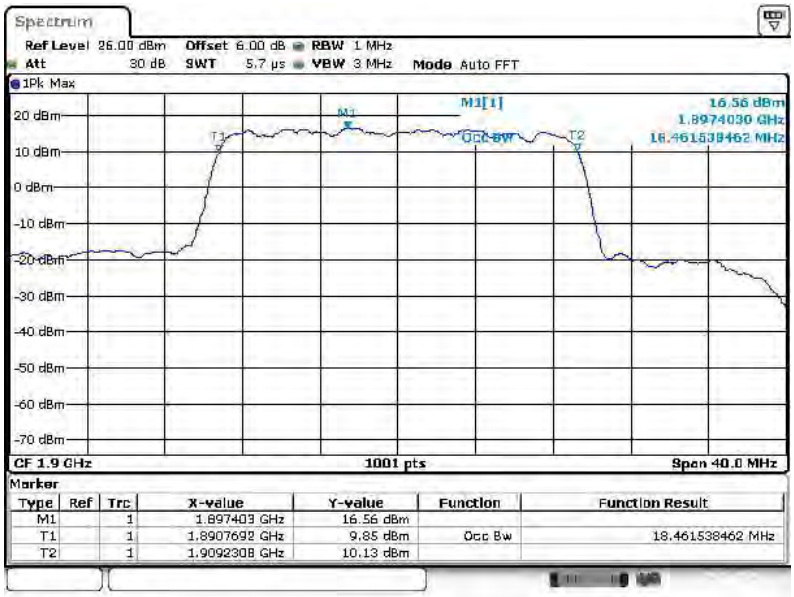
99% Occupied Bandwidth Plot on Channel 18900



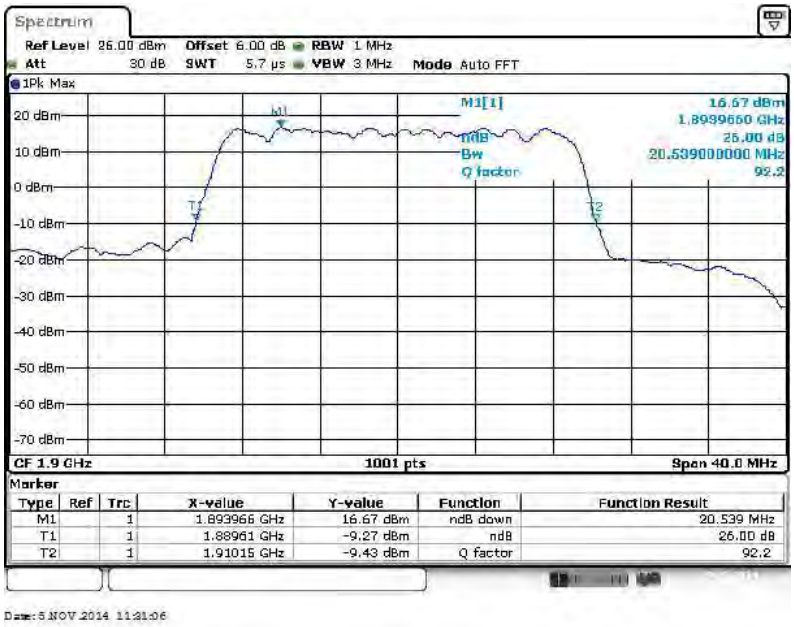
26dB Bandwidth Plot on Channel 18900



99% Occupied Bandwidth Plot on Channel 19100

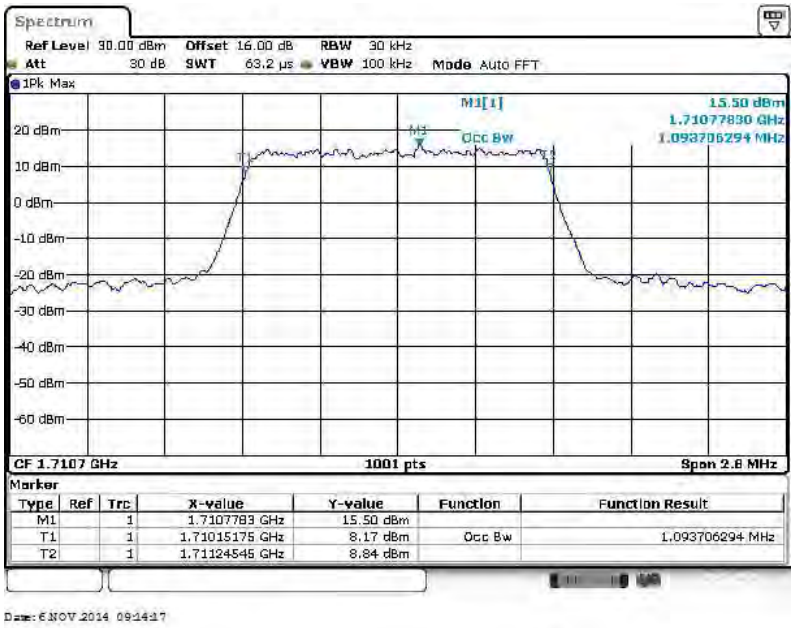


26dB Bandwidth Plot on Channel 19100

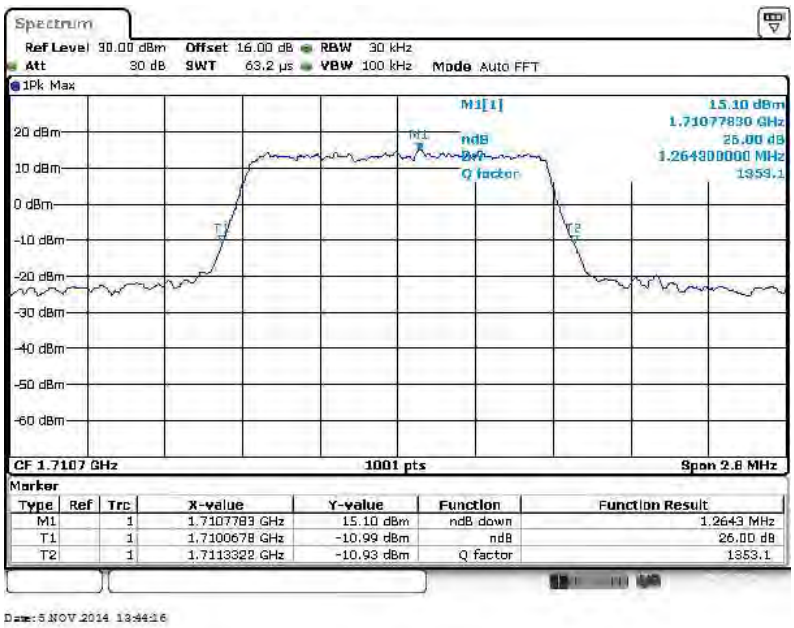


Band :	LTE Band 4	BW / Mod. :	1.4MHz / QPSK

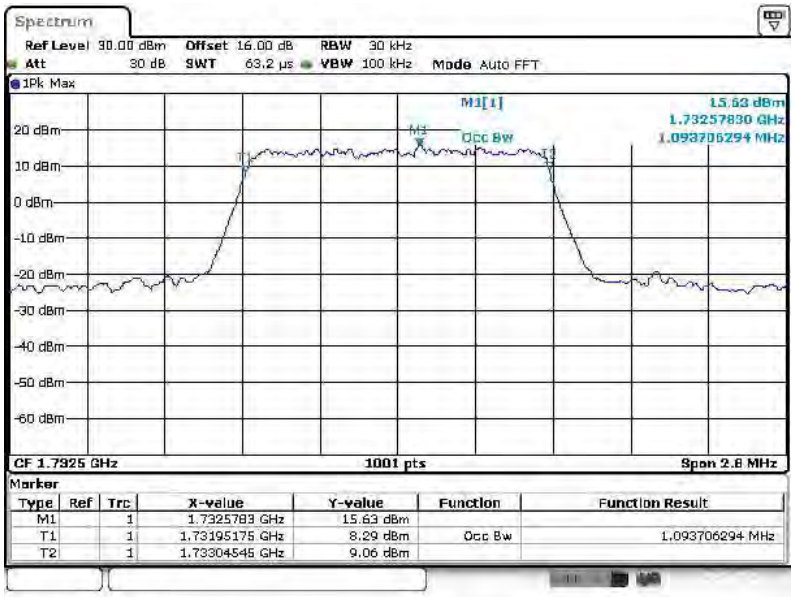
99% Occupied Bandwidth Plot on Channel 19957



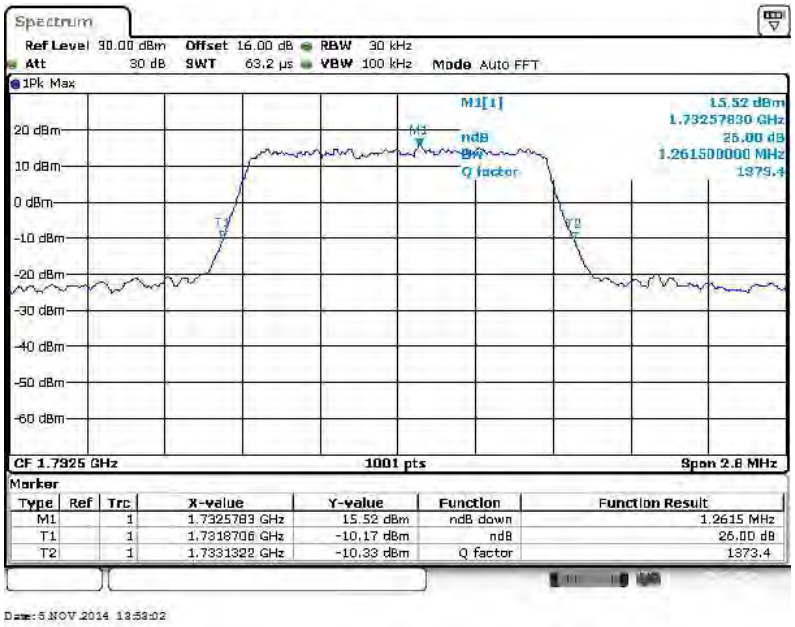
26dB Bandwidth Plot on Channel 19957



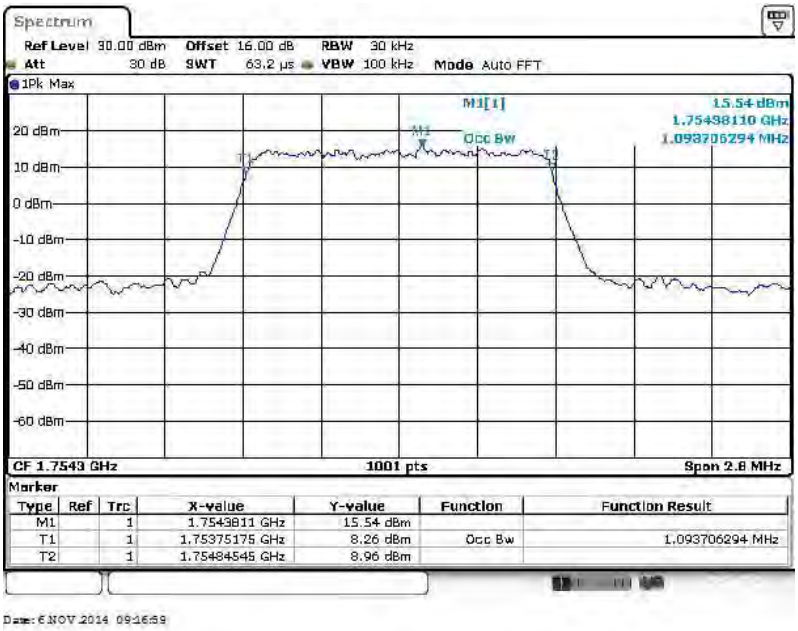
99% Occupied Bandwidth Plot on Channel 20175



26dB Bandwidth Plot on Channel 20175

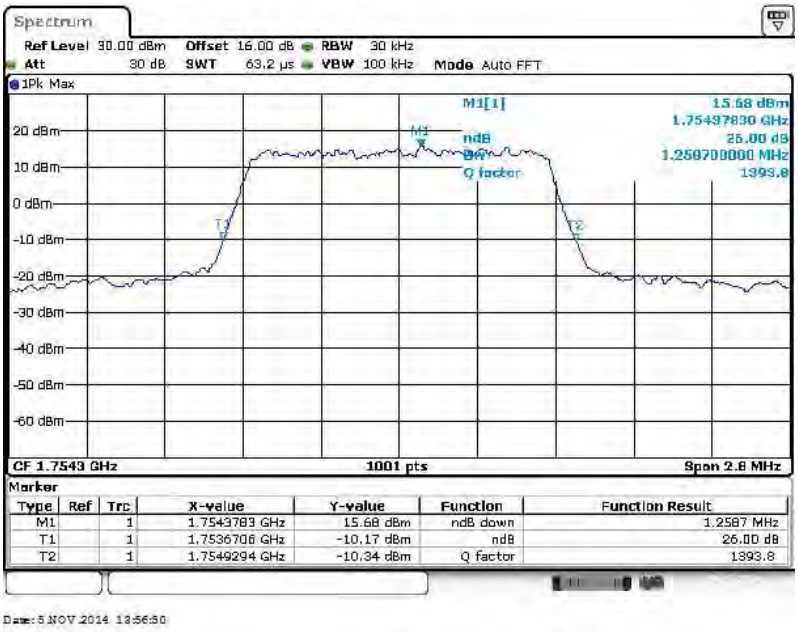


99% Occupied Bandwidth Plot on Channel 20393



Date: 6 NOV 2014 09:16:59

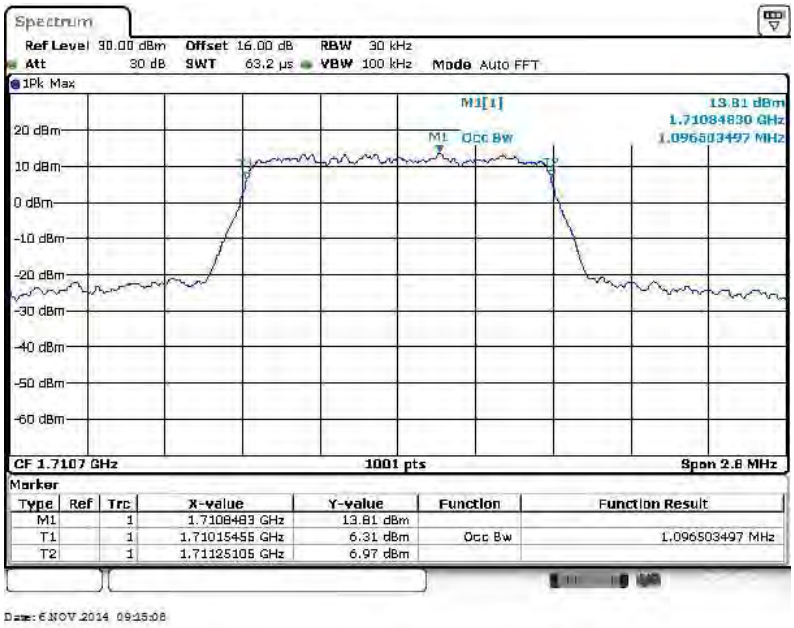
26dB Bandwidth Plot on Channel 20393



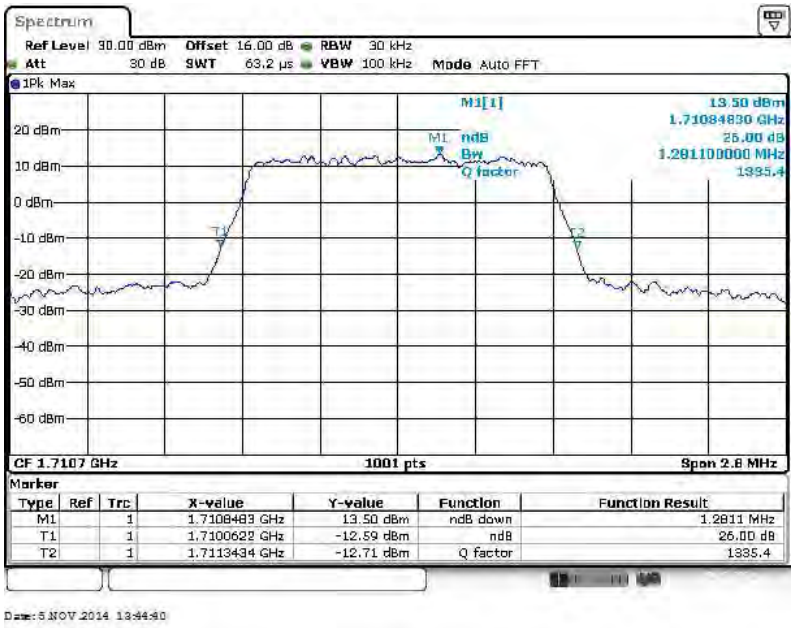
Date: 5 NOV 2014 13:56:50

Band :	LTE Band 4	BW / Mod. :	1.4MHz / 16QAM

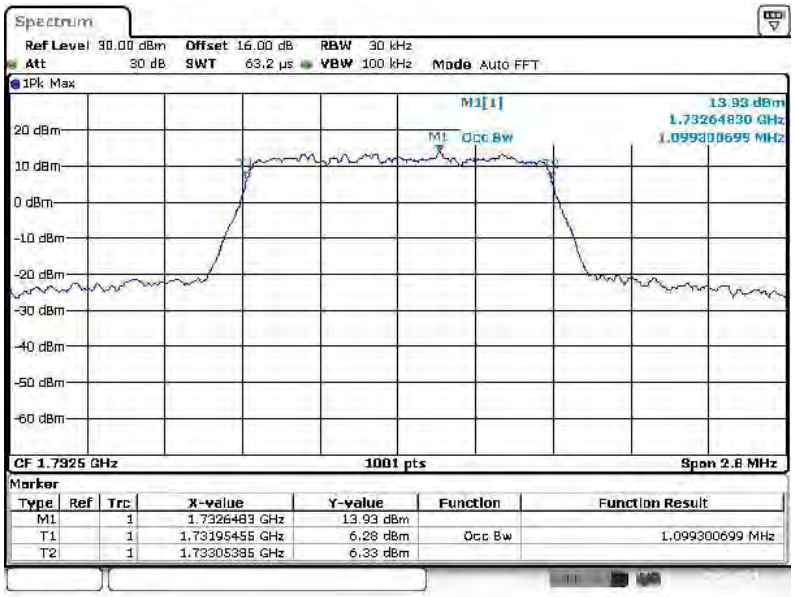
99% Occupied Bandwidth Plot on Channel 19957



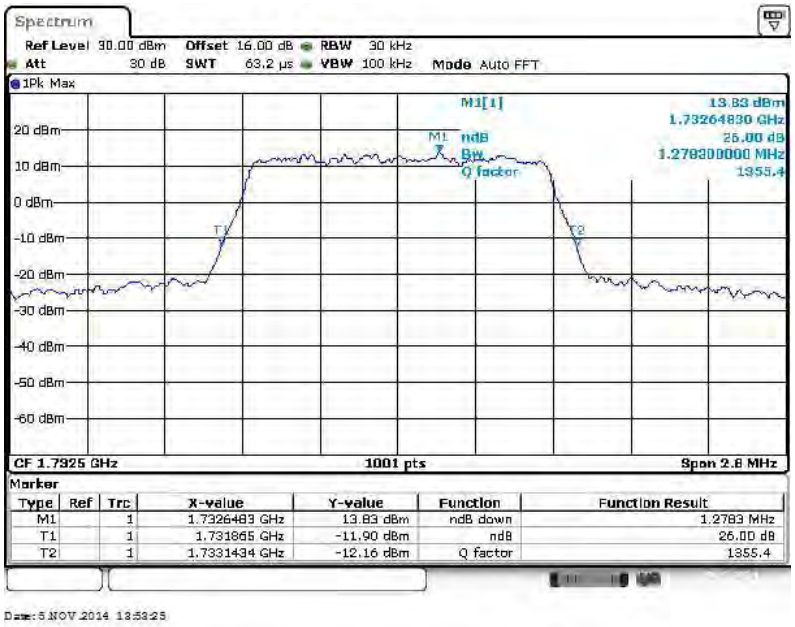
26dB Bandwidth Plot on Channel 19957



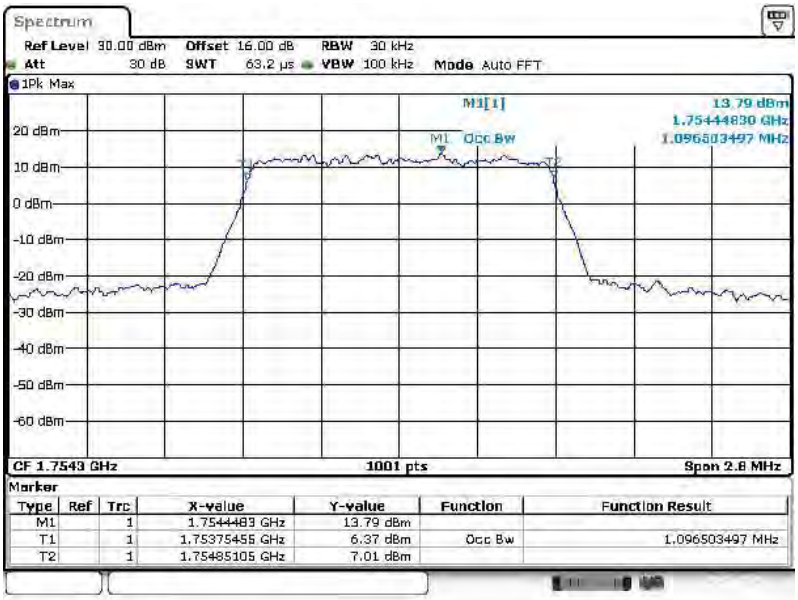
99% Occupied Bandwidth Plot on Channel 20175



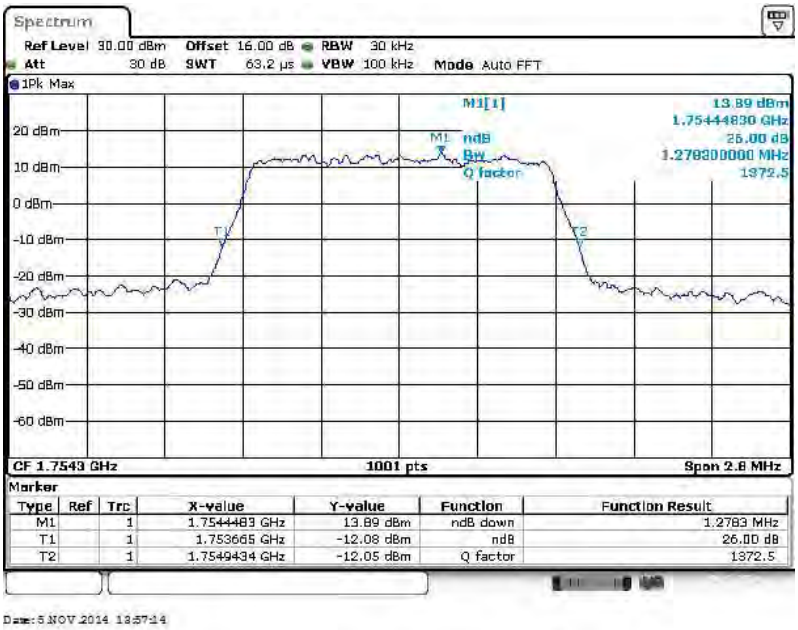
26dB Bandwidth Plot on Channel 20175



99% Occupied Bandwidth Plot on Channel 20393

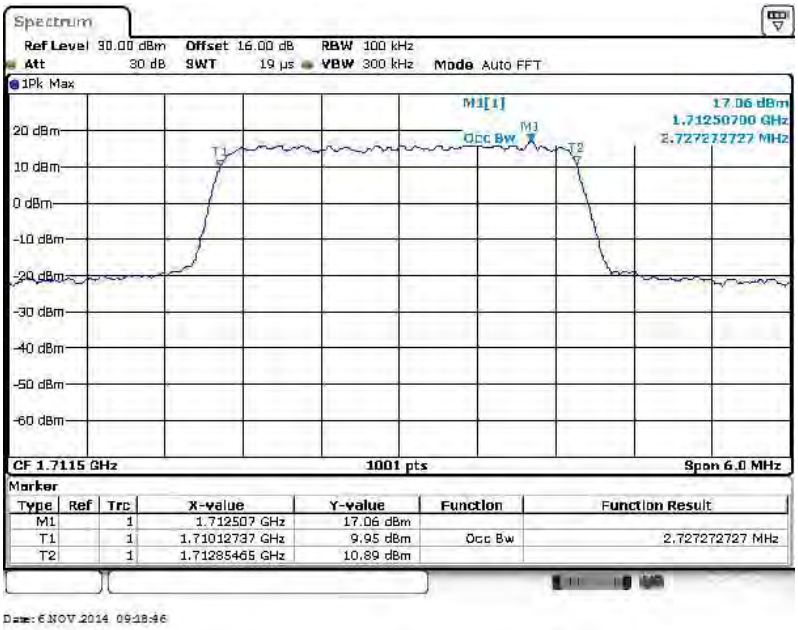


26dB Bandwidth Plot on Channel 20393

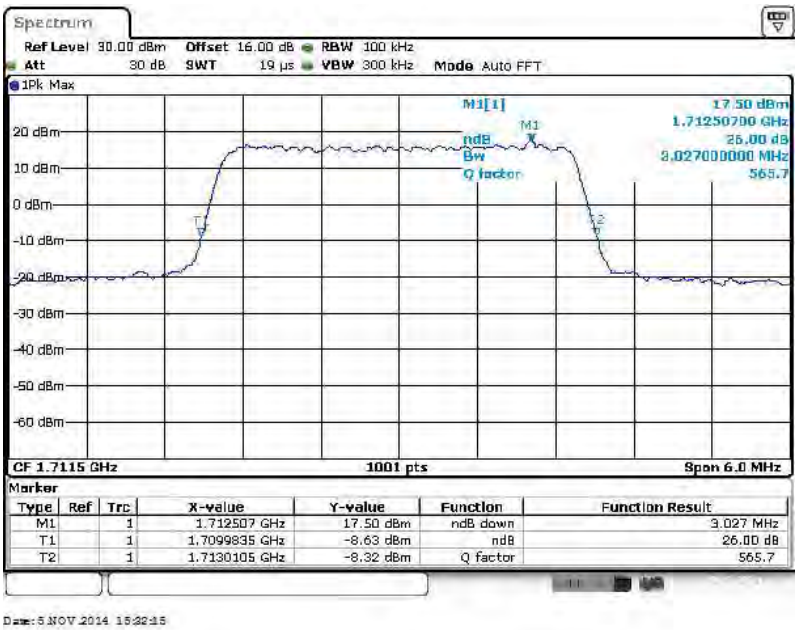


Band :	LTE Band 4	BW / Mod. :	3MHz / QPSK

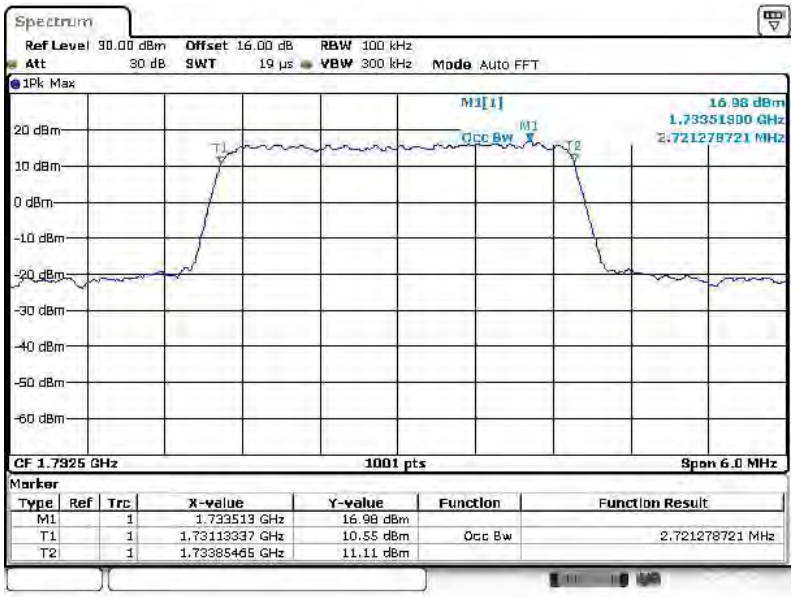
99% Occupied Bandwidth Plot on Channel 19965



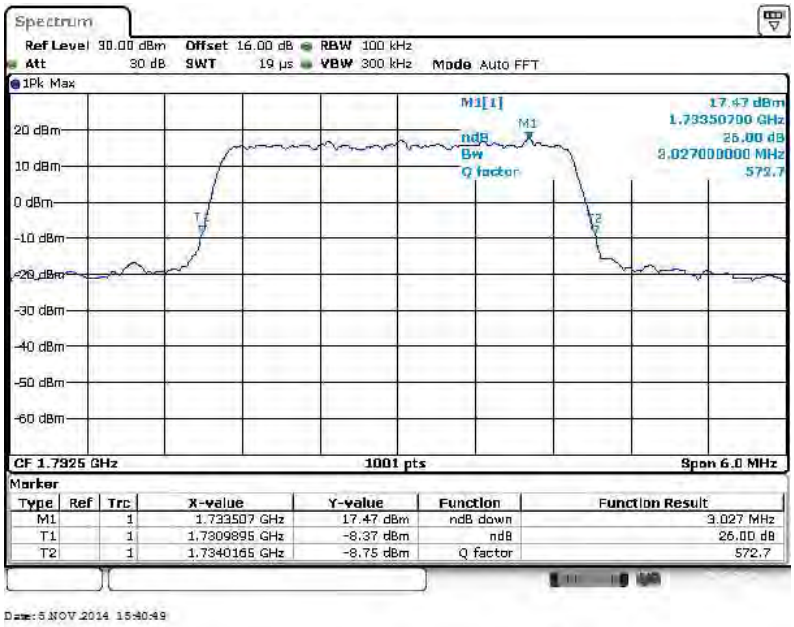
26dB Bandwidth Plot on Channel 19965



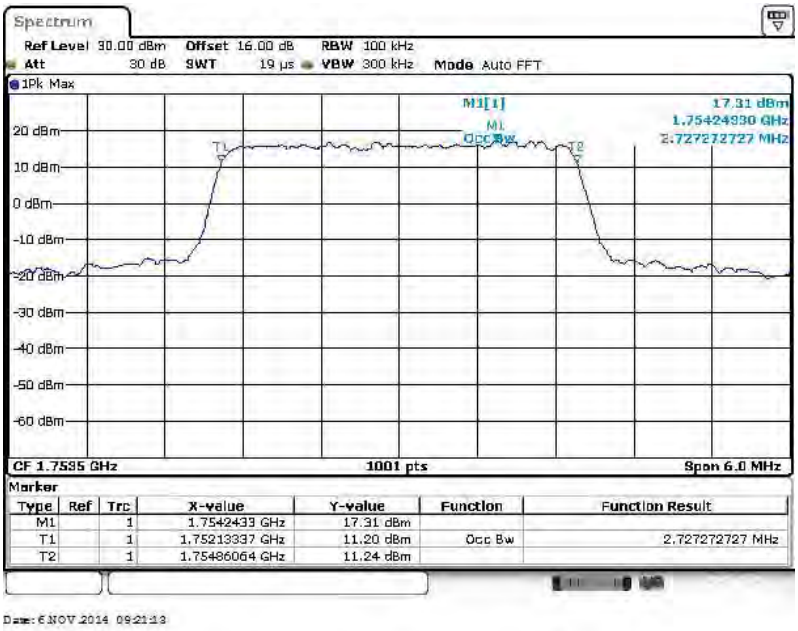
99% Occupied Bandwidth Plot on Channel 20175



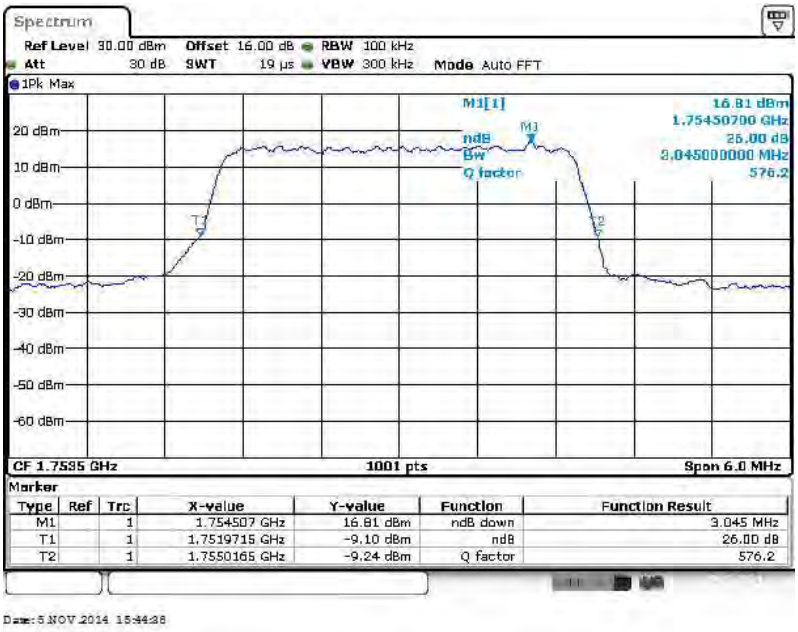
26dB Bandwidth Plot on Channel 20175



99% Occupied Bandwidth Plot on Channel 20385

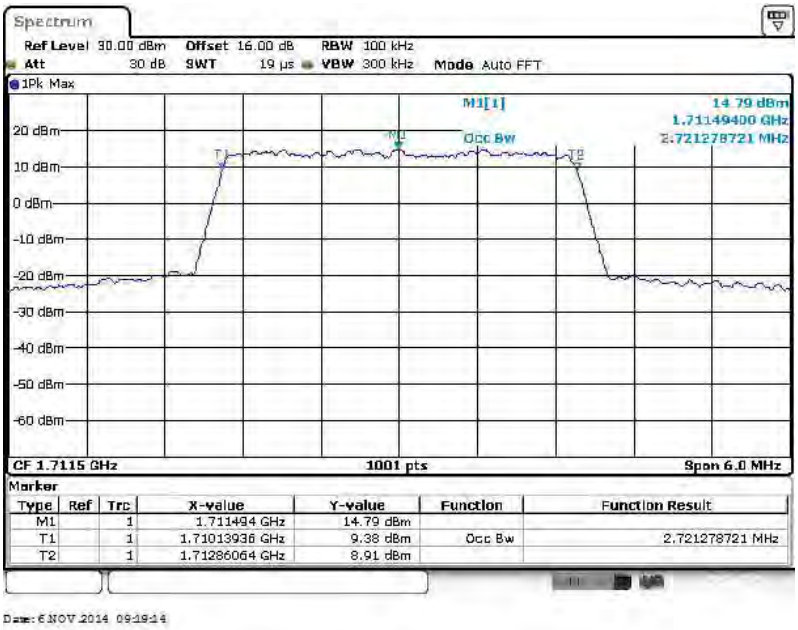


26dB Bandwidth Plot on Channel 20385

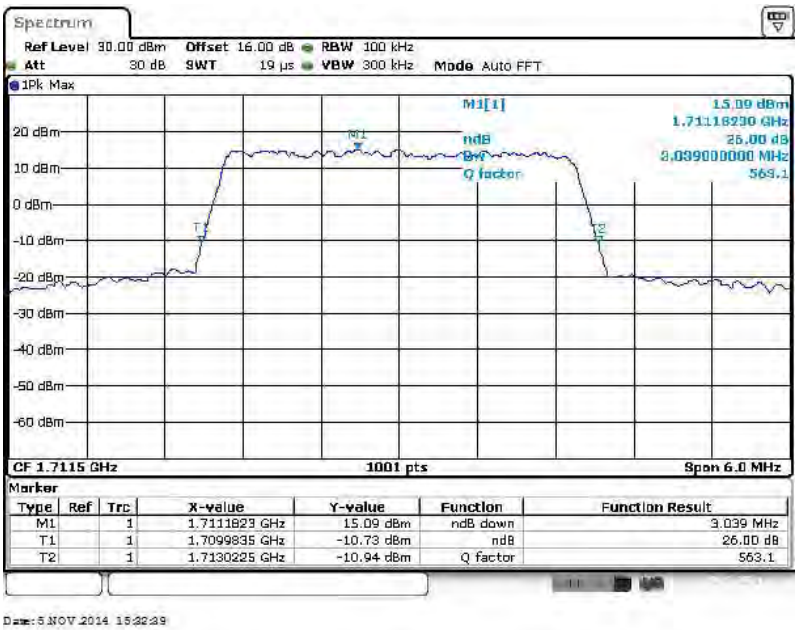


Band :	LTE Band 4	BW / Mod. :	3MHz / 16QAM

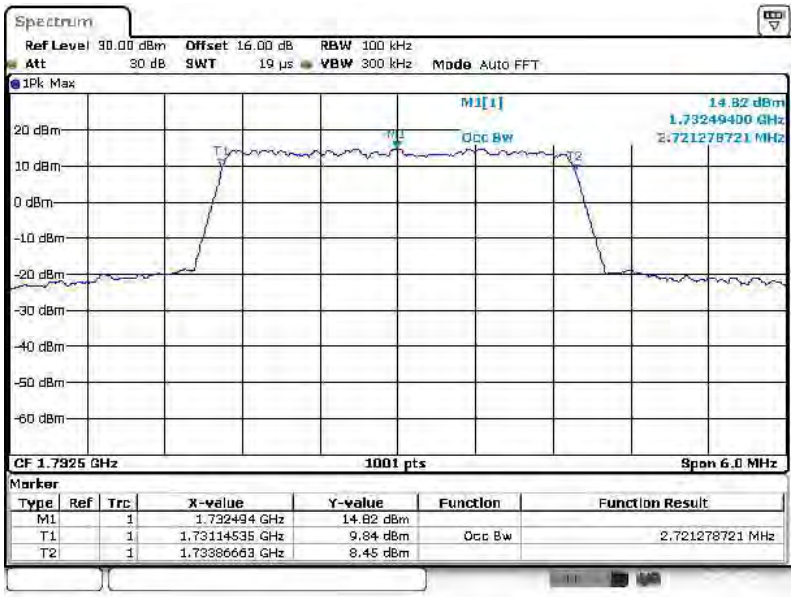
99% Occupied Bandwidth Plot on Channel 19965



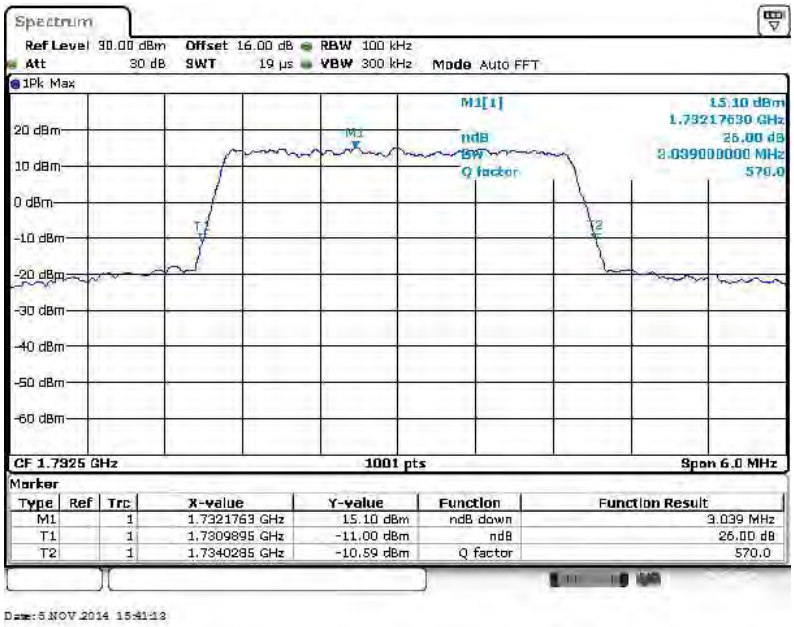
26dB Bandwidth Plot on Channel 19965



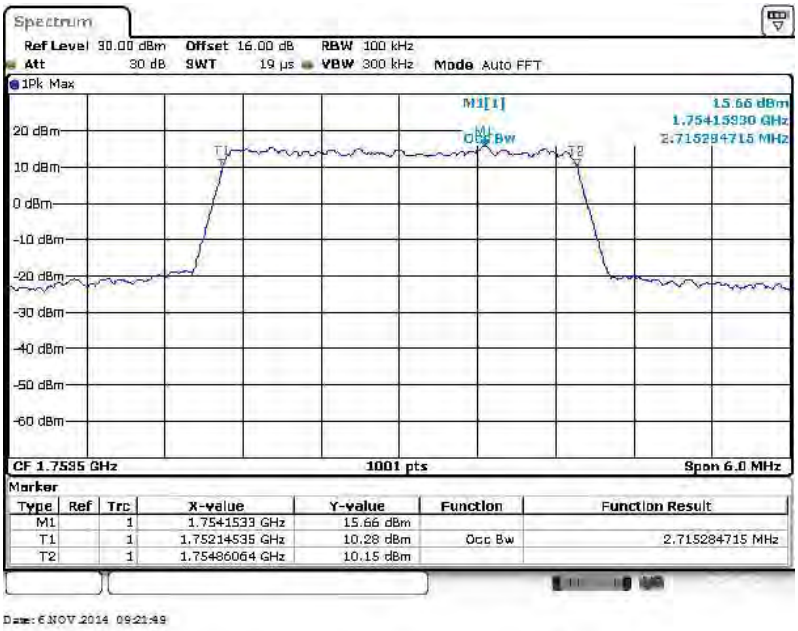
99% Occupied Bandwidth Plot on Channel 20175



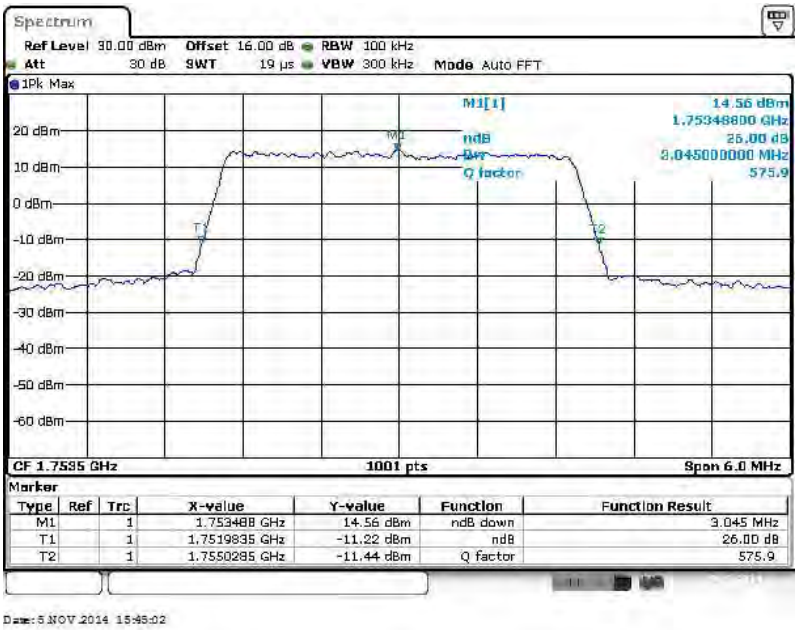
26dB Bandwidth Plot on Channel 20175



99% Occupied Bandwidth Plot on Channel 20385

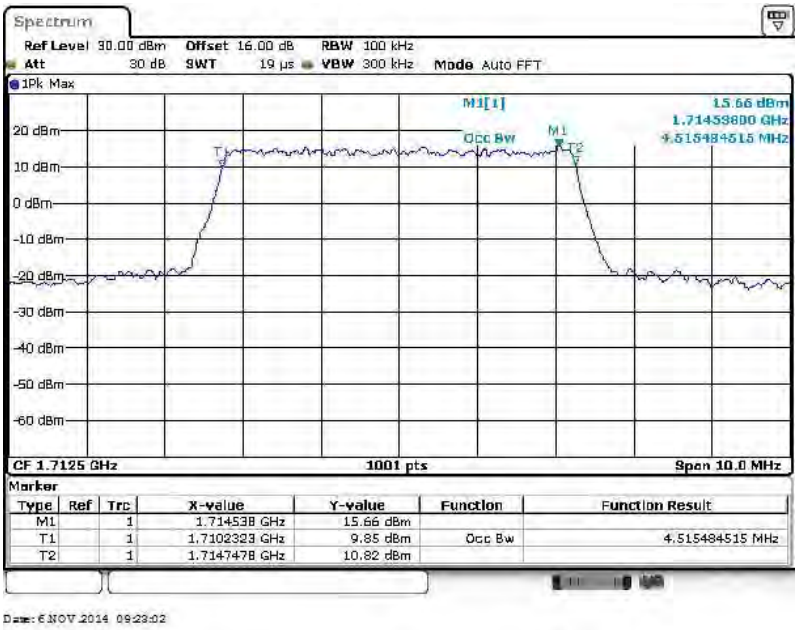


26dB Bandwidth Plot on Channel 20385

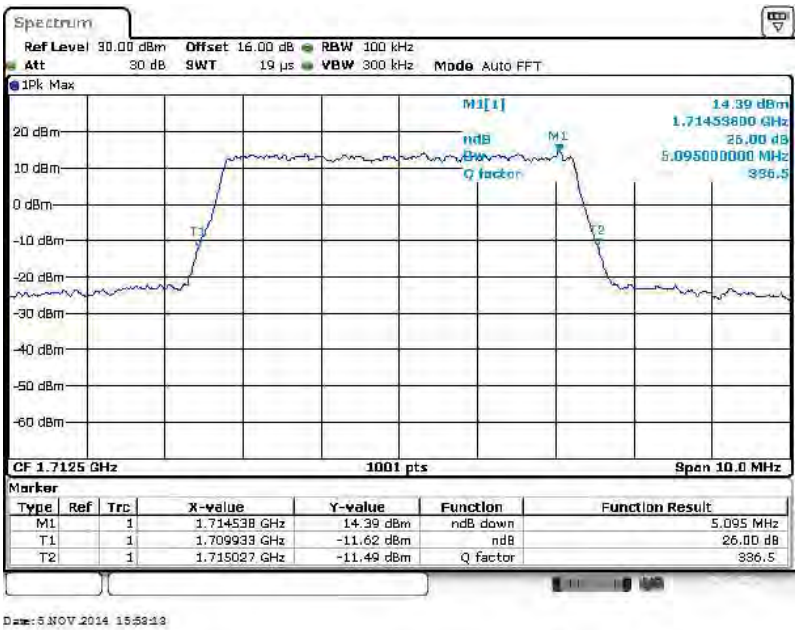


Band :	LTE Band 4	BW / Mod. :	5MHz / QPSK

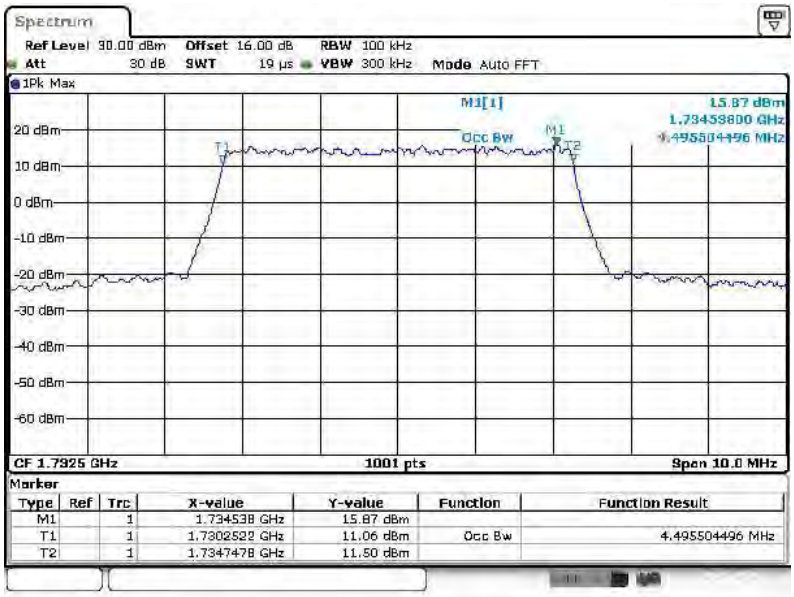
99% Occupied Bandwidth Plot on Channel 19975



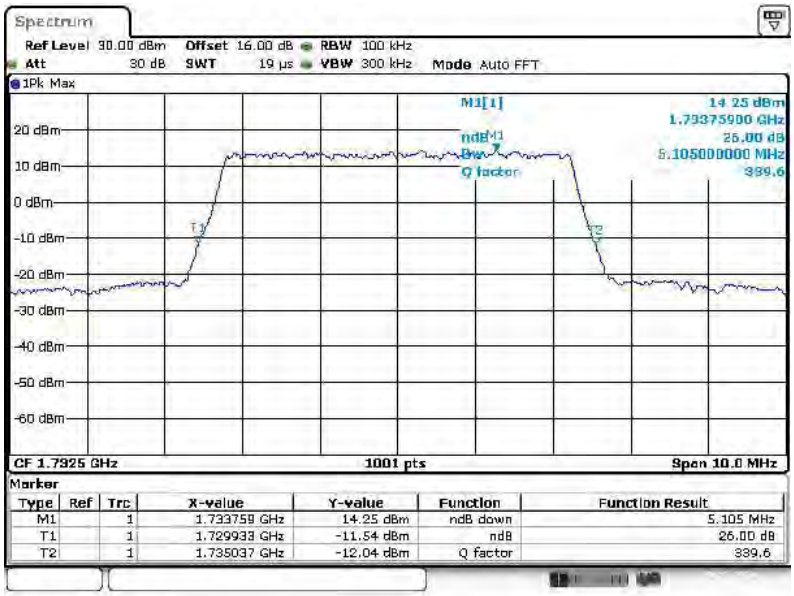
26dB Bandwidth Plot on Channel 19975



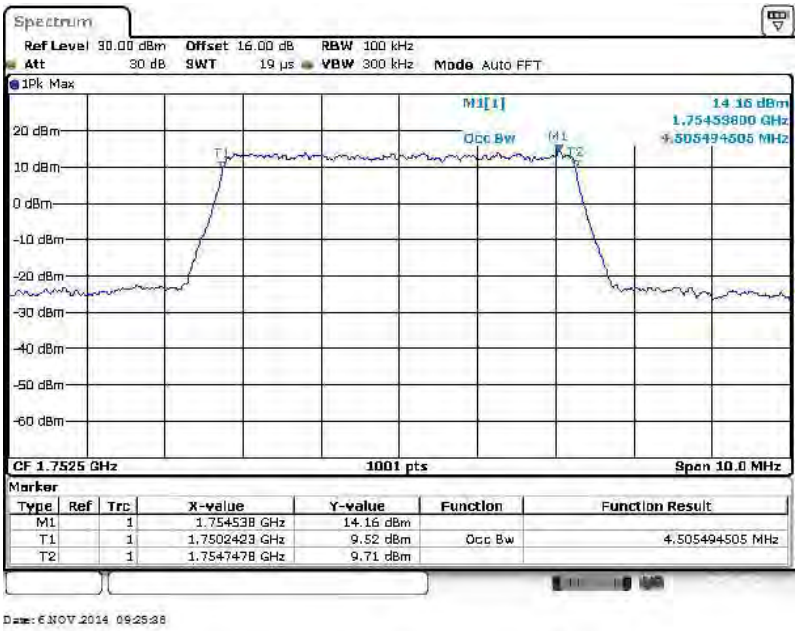
99% Occupied Bandwidth Plot on Channel 20175



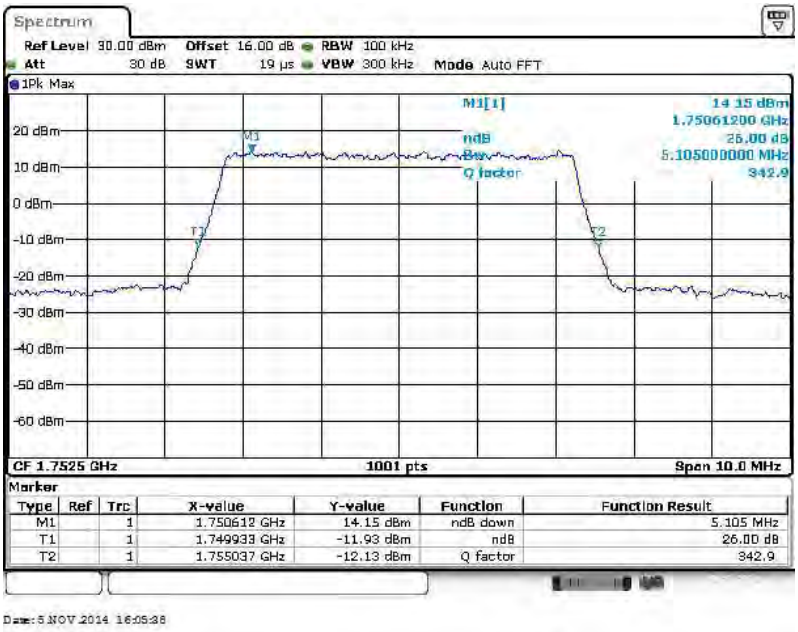
26dB Bandwidth Plot on Channel 20175



99% Occupied Bandwidth Plot on Channel 20375

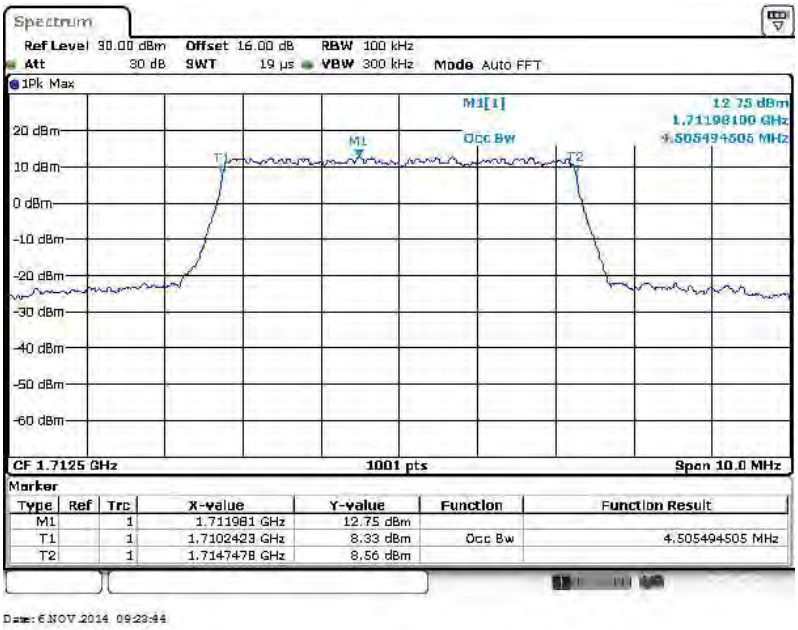


26dB Bandwidth Plot on Channel 20375

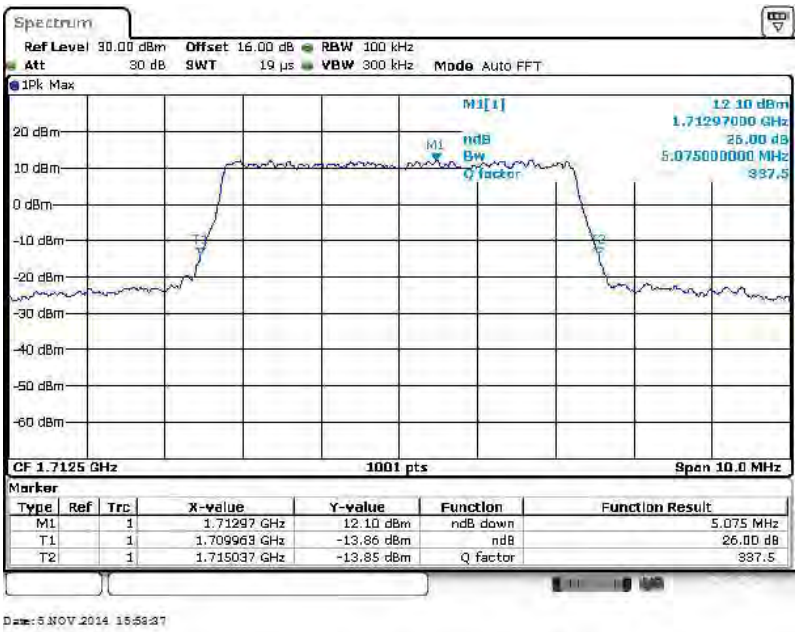


Band :	LTE Band 4	BW / Mod. :	5MHz / 16QAM

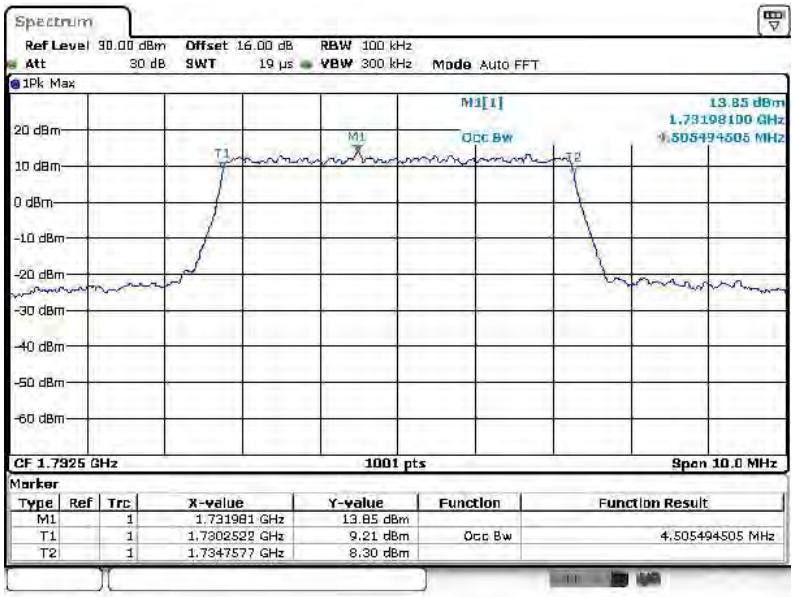
99% Occupied Bandwidth Plot on Channel 19975



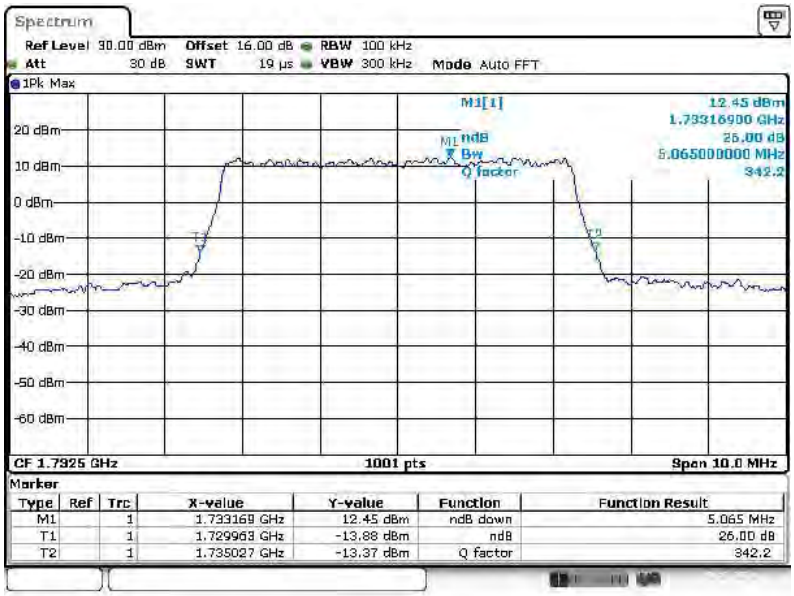
26dB Bandwidth Plot on Channel 19975



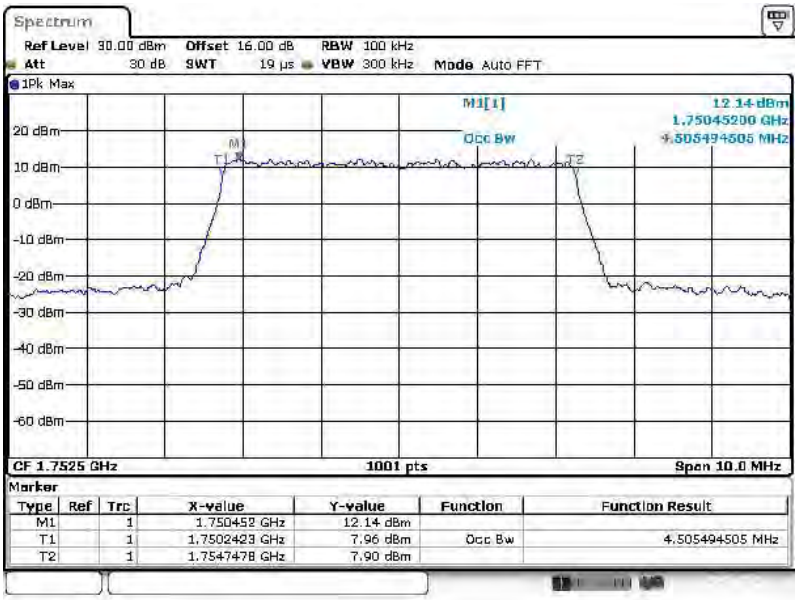
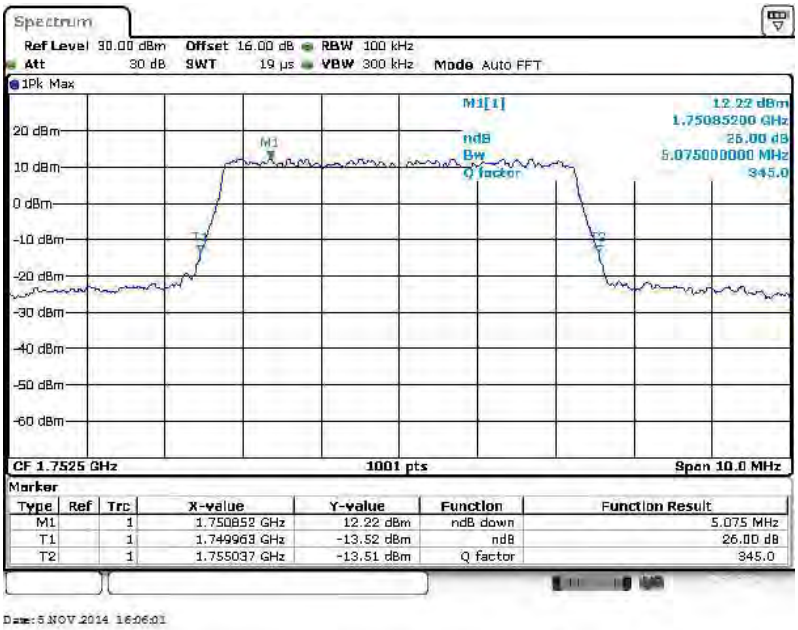
99% Occupied Bandwidth Plot on Channel 20175



26dB Bandwidth Plot on Channel 20175



99% Occupied Bandwidth Plot on Channel 20375



26dB Bandwidth Plot on Channel 20375