FCC Part 22H&24E&27M Test Report

Product Name	:	Module
Trade Name	:	AirPrime
Model No.	:	AR7582
FCC ID	:	N7NAR7582
IC	:	2417C-AR7582

Applicant	:	Sierra Wireless Inc.
Address	:	13811 Wireless Way, Richmond, BC, V6V 3A4 Canada

Date of Receipt	:	Feb. 21, 2017
Issued Date	:	Mar. 29, 2017
Report No.	:	1720509R-HPUSP49V00
Report Version	:	V1.0

Testing Laboratory
3024

Test Report Certification

Issued Date : Mar. 29, 2017
Report No. : 1720509R-HPUSP49V00

Product Name	:	Module
Applicant	:	Sierra Wireless Inc.
Address	:	13811 Wireless Way, Richmond, BC, V6V 3A4 Canada
Manufacturer	:	Sierra Wireless Inc.
Address	:	13811 Wireless Way, Richmond, BC, V6V 3A4 Canada
Model No.	:	AR7582
FCC ID	:	N7NAR7582
IC	:	2417C-AR7582
EUT Voltage	:	DC 3.7V
Testing Voltage	:	DC 3.7V
Trade Name	:	AirPrime
Applicable Standard	:	FCC CFR Title 47 Part 2, ANSI/TIA-603-D FCC Part22 Subpart H, FCC Part24 Subpart E FCC CFR Title 47 Part 27 Subpart M Industry Canada RSS-132, Issue 3 Industry Canada RSS-133, Issue 6 ANSI/TIA-603-D-2010 RSS Gen Issue 4 RSS 139 Issue 3
Test Lab	:	Hsin Chu Laboratory
Test Result	:	Complied

The test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd..

Documented By : Lyla Yang
(Lyla Yang / Engineering Adm. Assistant)

Tested By : JuBo Shen
(JuBo Shen / Senior Engineer)

Approved By : Roy Wang
(Roy Wang / Director)

Laboratory Information

We, **DEKRA Testing and Certification Co., Ltd.**, are an independent RF consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025 specified testing scopes:

Taiwan R.O.C.	**:**	**TAF, Accreditation Number: 3024**
USA	**:**	**FCC, Registration Number: 834100**
Canada	**:**	**IC, Submission No: 181665 / IC Registration Number: 22397-1 / 22397-2**

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:
http://www.dekra.com.tw/english/about/certificates.aspx?bval=5
The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site : http://www.dekra.com.tw/index_en.aspx
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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Revision History

Report No.	Version	Description	Issued Date
1720509R-HPUSP49V00	V1.0	Initial issue of report	Mar. 29, 2017

1. General Information

1.1. EUT Description

Product Name	Module
Model No.	AR7582
Trade Name	AirPrime
Tx Frequency Range/ Channel number	GSM 850: 824.2-848.8 MHz GSM 1900: 1850.2-1909.8 MHz WCDMA Band 2: 1852.4-1907.6 MHz WCDMA Band 4: 1712.4-1752.6 MHz WCDMA Band 5: 826.4-846.6 MHz
Rx Frequency Range/ Channel number	GSM 850: 869.2-893.8 MHz GSM 1900: 1930.2-1989.8 MHz WCDMA Band 2: 1932.4-1987.6 MHz WCDMA Band 4: 2112.4-2152.6 MHz WCDMA Band 5: 871.4-891.6 MHz
Type of Modulation	GPRS: GMSK; EGPRS: GMSK / 8PSK WCDMA: QPSK (Uplink); HSDPA: QPSK (Uplink)
HW Version	V1.0
SW Version	SWI9X28A_00.04.03.00.
IMEI No.	35872907

Antenna Information	
Product Name/Model No.	Pulse Electronics, Inc./SPDA24700/2700
Antenna Type	Dipole Antenna
Antenna Gain	2 dBi

Note:

This Module included GSM 850, DCS 1900, WCDMA Band 2, WCDMA Band 4 and WCDMA Band 5 transmitting and receiving function.

1.2. Mode of Operation

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: GPRS 850_Link
Mode 2: GPRS 1900_Link
Mode 3: EGPRS 850_Link
Mode 4: EGPRS 1900_Link
Mode 5: WCDMA Band 5_Link
Mode 6: WCDMA Band 5_HSUPA_Link
Mode 7: WCDMA Band 5_HSDPA_Link
Mode 8: WCDMA Band 2_Link
Mode 9: WCDMA Band 2_HSUPA_Link
Mode 10: WCDMA Band 2_HSDPA_Link
Mode 11: WCDMA Band4_Link
Mode 12: WCDMA Band4_HSUPA_Link
Mode 13: WCDMA Band4_HSDPA_Link

Note:

1. Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.
2. The maximum power level of GSM or GPRS mode for GMSK link, EDGE mode for 8PSK link, (The maximum power of GPRS and EGPRS of all multi-slot modes are GPRS-1slot and EGP RS-1slot.) RMC 12.2Kbps Mode for WCDMA band 5 & 2 & 4, only these modes were used for all tests.

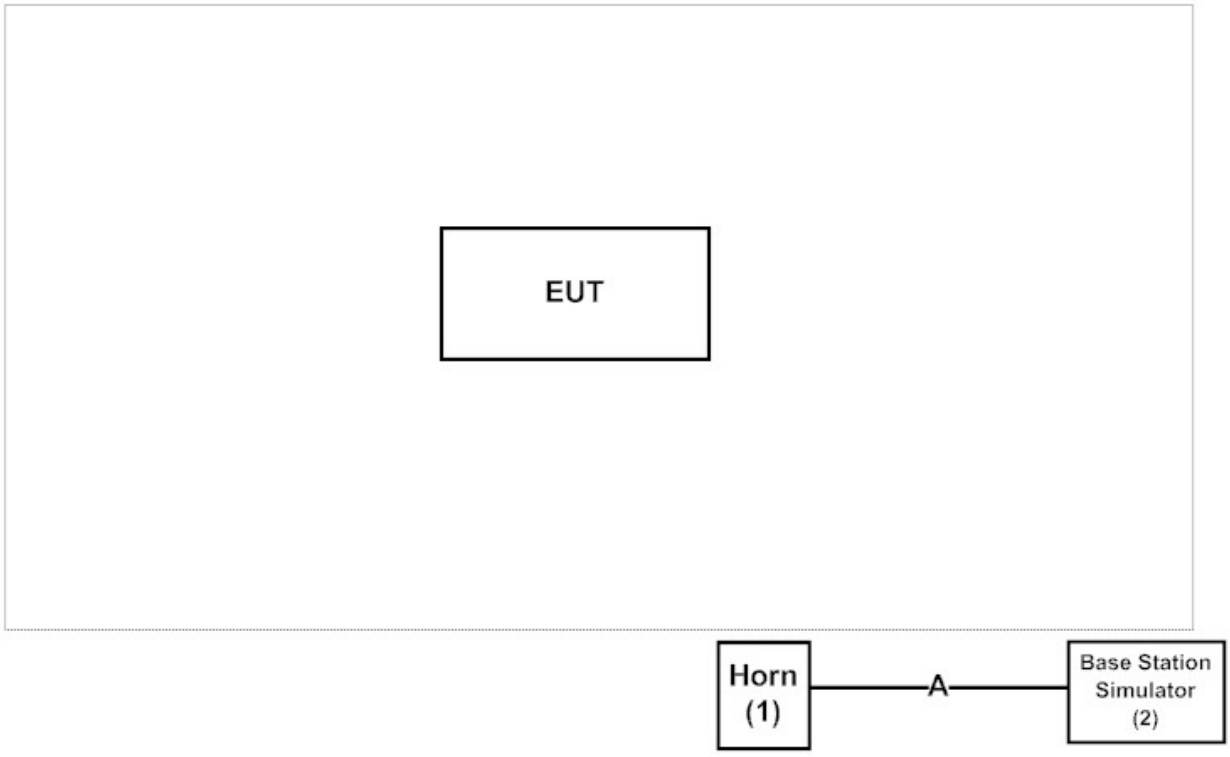
1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Horn	ELECTRO METRICS	EM-6961	103326	--
2	Base Station Simulator	JRC	NJZ-2000	ET00477	--

1.4. Configuration of Tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	RF Cable	Shielded, 2m.

1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.7.
2	Turn on the power of all equipment. Horn link with base station.
3	The EUT link with base station and it will continue receive the signal from WCDMA function.
4	Repeat the above procedure.

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

For GPRS850/EGPRS850/WCDMA Band5

(FCC Part 22 Subpart H, Industry Canada RSS-132, Issue 3, Industry Canada RSS-GEN)

Performed Item	FCC Rule	IC Rule	Limit	Result
Maximum Output Power	§2.1033 §2.1046 §22.913	§5.4	< 7 Watts	Pass
Equivalent Isotropic Radiated Power	§22.913	§5.4	< 7 Watts	Pass
Modulation characteristics	§2.1047	§5.2	N/A	Pass
Occupied Bandwidth	§2.1049	RSS-GEN §4.2	N/A	Pass
Conducted Band Edge Emissions	§22.917	§5.5	< -13dBm	Pass
Field Strength of Spurious Radiation	§2.1053 §§22.917	§5.5	< -13dBm	Pass
Frequency Stability Under Temperature & Voltage Variations	§2.1055 §22.335	§5.3	< 2.5 ppm	Pass

For GPRS1900/EGPRS1900/WCDMA Band2

(FCC Part 24 Subpart E, Industry Canada RSS-133, Issue 6, Industry Canada RSS-GEN)

Performed Item	FCC Rule	IC Rule	Limit	Result
Maximum Output Power	§2.1033 §2.1046 §24.232	§6.4	< 2 Watts	Pass
Equivalent Isotropic Radiated Power	§24.232	§6,4	< 2 Watts	Pass
Modulation characteristics	§2.1047	§6.2	N/A	Pass
Occupied Bandwidth	§2.1049	RSS-GEN §4.2	N/A	Pass
Conducted Band Edge Emissions	§27.238	§6.5	< -13dBm	Pass
Field Strength of Spurious Radiation	§2.1053 §24.238	§6.5	< -13dBm	Pass
Frequency Stability Under Temperature & Voltage Variations	§2.1055 §24.235	§6.3	< 2.5 ppm	Pass

For WCDMA Band4

(FCC CFR Title 47 Part 27 Subpart M, Industry Canada RSS-139, Issue 3, Industry Canada RSS-GEN)

Performed Item	FCC Rule	IC Rule	Limit	Result
Maximum Output Power	FCC PART 2.1046 and PART 27.50(h)(2)	RSS -139 §6.5	< 2.0 Watts EIRP	Pass
Equivalent Isotropic Radiated Power	PART 27.50(h)(2)	RSS -139 §6.5	< 2.0 Watts EIRP	Pass
Occupied Bandwidth	FCC PART 2.1049 and PART 27.53(l)(6)	RSS - Gen §6.6	N/A	Pass
Conducted Band Edge Emissions	FCC PART 2.1051 and PART 27.53(l)(4)(6)	RSS - 139 §6.6	< -13 dBm	Pass
Field Strength of Spurious Radiation	FCC PART 2.1051 and PART 27.53(l)(4)(6)	RSS - 139 §6.6	< -25 dBm	Pass
Frequency Stability Under Temperature & Voltage Variations	FCC PART 2.1055(a)(l) and PART 27.54	RSS - 139 §6.4	< 2.5 ppm	Pass

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	23
Humidity (%RH)	25-75	52
Barometric pressure (mbar)	860-1060	950-1000

3. Maximum Output Power and Effective Isotropic Radiated Power Measurement

3.1. Test Equipment

Peak Conducted Output Power / SR10-H

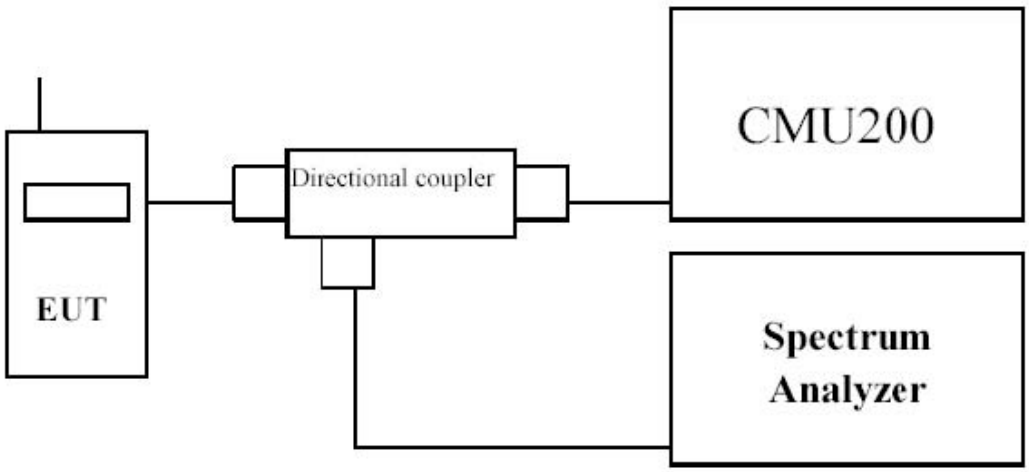
Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
High Speed Peak Power Meter Dual Input	Anritsu	ML2496A	1602004	2018/01/19
Multisystem UE Tester	Japan radio	NJZ-2000	ET00477	2017/09/19
Directional coupler	Agilent	778D	20402	2017/10/06

Peak Radiated Output Power / CB4-H

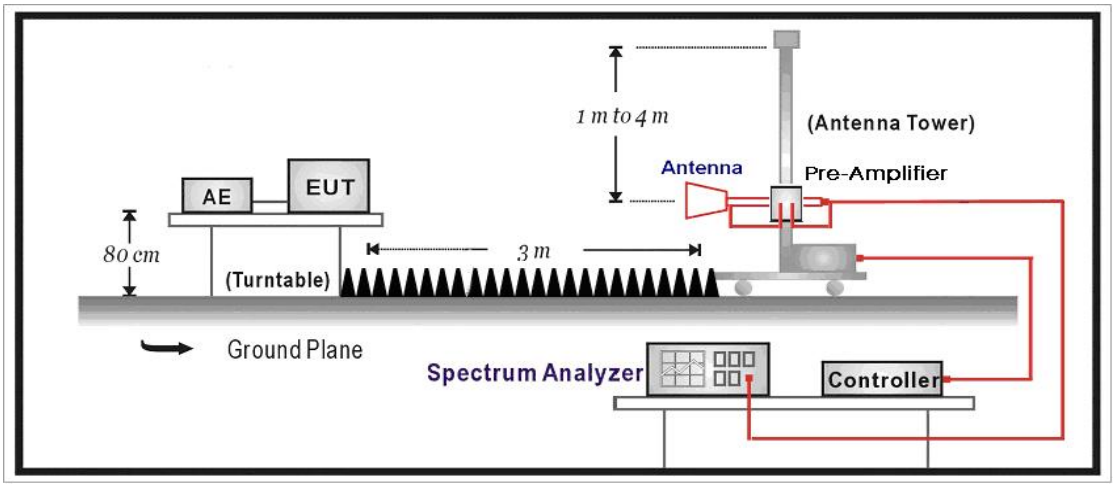
Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Bilog Antenna	Schaffner	CBL6112B	2891	2017/08/14
Horn Antenna	Schwarzbeck	BBHA 9120	D312	2017/10/25
Pre-Amplifier	EMCI	EMC0031835	980233	2018/02/02
Pre-Amplifier	Schwarzbeck	DBL-1840N506	013	2017/09/29
Pre-Amplifier	Miteq	JS41-001040000-58-5P	1573954	2017/10/04
Horn Antenna	Schwarzbeck	BBHA 9170	203	2017/08/28
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/01/05

3.2. Test Setup

Conducted Power Measurement:



Radiated Power Measurement:



3.3. Test Procedure

For Conducted Power Measurement:

a) The RF output of the transmitter was connected to base station simulator.
b) The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement..
c) Set EUT at maximum average power by base station simulator.
d) Measure lowest, middle, and highest channels for each bandwidth and different modulation.

For Effective Isotropic Radiated Power Measurement:

Radiated Power Measurement:

a) The EUT shall be placed at the specified height on a support, and in the position closest to normal use as declared by provider.
b) The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter
c) The output of the test antenna shall be connected to the measuring receiver.
d) The transmitter shall be switched on and the measuring receiver shall be tuned to the frequency of the transmitter under test.
e) The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.
f) The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
g) The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
h) The maximum signal level detected by the measuring receiver shall be noted.
i) The transmitter shall be replaced by a substitution antenna.
j) The substitution antenna shall be orientated for vertical polarization and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.
k) The substitution antenna shall be connected to a calibrated signal generator.
l) If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
m) The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
n) The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
o) The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.
p) The measure of the effective radiated power is the larger of the two levels recorded at the input to the substitution antenna, corrected for gain of the substitution antenna if necessary.
q) Test site anechoic chamber refer to ANSI C63.4: 2009.

3.4. Uncertainty

The measurement uncertainty is defined as for Conducted Power Measurement ± 1.2 dB, for Radiated Power Measurement ± 3.2 dB

3.5. Test Result

Product	Module		
Test Item	Maximum Output Power		
Date of Test	2017/03/20	Test Site	SR10-H

GPRS/EGPRS

Band	Channel No.	Frequency (MHz)	Modulation	Conducted Power (dBm)
GPRS850	128	824.2	GMSK	33.71
	190	836.6	GMSK	33.98
	251	848.8	GMSK	34.04
GPRS1900	512	1850.2	GMSK	30.23
	661	1880.0	GMSK	30.04
	810	1909.8	GMSK	30.28
EGPRS850	128	824.2	8PSK	27.01
	190	836.6	8PSK	27.17
	251	848.8	8PSK	27.11
EGPRS1900	512	1850.2	8PSK	25.12
	661	1880.0	8PSK	24.94
	810	1909.8	8PSK	24.91

Note: The maximum PAR for GPRS1900 is 8.5dB less than 13 dB, and the maximum PAR for EGPRS1900 is 8.4dB less than 13 dB.

WCDMA/HSUPA/HSDPA

Mode	Band V (850MHz) Channel			MPR
	Conducted Power (dBm)			
	4132	4182	4233	
WCDMA	24.45	24.58	24.52	N/A
HSUPA	22.82	22.85	22.84	0.0
HSDPA	23.38	23.42	23.46	0

Note: All conducted measurements are based on a RMS detector.

Mode	Band II (1900MHz) Channel			MPR
	Conducted Power (dBm)			
	9262	9400	9538	
WCDMA	23.44	23.14	23.23	N/A
HSUPA	21.83	21.56	21.61	0.0
HSDPA	22.33	22.12	22.19	0

Note: The maximum PAR for WCDMA Band II is 8.2dB less than 13 dB.

Mode	Band IV (2100MHz) Channel			MPR
	Conducted Power (dBm)			
	1312	1413	1513	
WCDMA	23.06	23.22	23.10	N/A
HSUPA	21.61	21.56	21.51	0.0
HSDPA	22.06	22.11	22.03	0

Product	Module		
Test Item	Effective Isotropic Radiated Power		
Date of Test	2017/03/10	Test Site	CB4-H

Radiated Power EIRP/ERP				
Band	Modulation	Freq. (MHz)	EIRP (dBm)	H/V
GPRS850	GMSK	824.2	34.156	H
		836.6	33.137	H
		848.8	32.633	H
		824.2	32.09	V
		836.6	30.506	V
		848.8	30.536	V
GPRS1900	GMSK	1850.2	28.197	H
		1880.0	26.826	H
		1909.8	25.971	H
		1850.2	30.673	V
		1880.0	26.792	V
		1909.8	29.949	V
EGPRS850	8PSK	824.2	32.584	H
		836.6	31.762	H
		848.8	31.122	H
		824.2	30.432	V
		836.6	29.101	V
		848.8	29.233	V
EGPRS1900	8PSK	1850.2	26.92	H
		1880.0	25.656	H
		1909.8	25.169	H
		1850.2	28.311	V
		1880.0	28.97	V
		1909.8	30.289	V

Radiated Power EIRP/ERP				
Band	Modulation	Freq. (MHz)	EIRP (dBm)	H/V
WCDMA Band 5	QPSK	826.4	28.869	H
		836.6	28.732	H
		846.6	28.26	H
		826.4	27.343	V
		836.6	25.939	V
		846.6	25.645	V
HSUPA Band 5	QPSK	826.4	29.479	H
		836.6	28.66	H
		846.6	29.855	H
		826.4	27.308	V
		836.6	26.4	V
		846.6	27.35	V
HSDPA Band 5	QPSK	826.4	28.253	H
		836.6	27.957	H
		846.6	28.5	H
		826.4	26.078	V
		836.6	25.201	V
		846.6	25.804	V

Radiated Power EIRP/ERP				
Band	Modulation	Freq. (MHz)	EIRP (dBm)	H/V
WCDMA Band 2	QPSK	1852.4	21.614	H
		1880.0	19.382	H
		1907.6	18.339	H
		1852.4	25.268	V
		1880.0	24.349	V
		1907.6	24.337	V
HSUPA Band 2	QPSK	1852.4	23.322	H
		1880.0	21.066	H
		1907.6	19.957	H
		1852.4	27.349	V
		1880.0	25.128	V
		1907.6	25.317	V
HSDPA Band 2	QPSK	1852.4	19.728	H
		1880.0	19.445	H
		1907.6	18.235	H
		1852.4	25.158	V
		1880.0	23.504	V
		1907.6	23.686	V

Radiated Power EIRP/ERP				
Band	Modulation	Freq. (MHz)	EIRP (dBm)	H/V
WCDMA Band 4	QPSK	1712.4	23.24	H
		1732.6	22.672	H
		1752.6	22.332	H
		1712.4	26.184	V
		1732.6	25.501	V
		1752.6	25.862	V
HSUPA Band 4	QPSK	1712.4	23.98	H
		1732.6	24.048	H
		1752.6	23.52	H
		1712.4	27.287	V
		1732.6	26.722	V
		1752.6	26.779	V
HSDPA Band 4	QPSK	1712.4	22.557	H
		1732.6	22.243	H
		1752.6	21.788	H
		1712.4	25.907	V
		1732.6	25.222	V
		1752.6	25.355	V

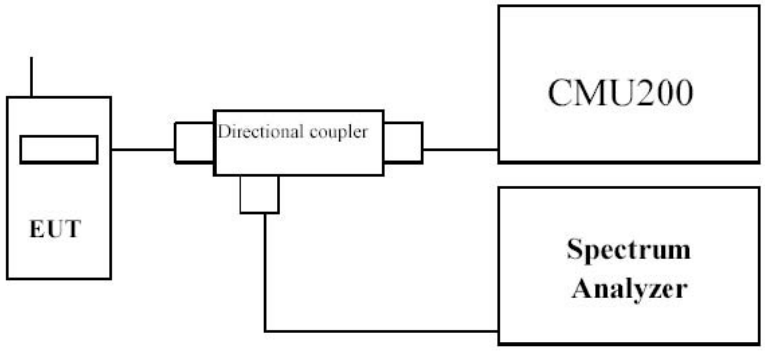
4. Modulation Characteristic

4.1. Test Equipment

Modulation Characteristic / SR10-H

Instrument	Manufacturer	Type No.	Serial No	Cal. Due Date
Signal & Spectrum Analyzer	R&S	FSVA40	101455	2017/11/27
Multisystem UE Tester	Japan radio	NJZ-2000	ET00477	2017/09/19
Directional coupler	Agilent	778D	20402	2017/10/06

4.2. Test Setup



4.3. Uncertainty

The measurement uncertainty is defined as 0.1%

4.4. Test Result

The modulation of GSM/WCDMA was verified and confirmed compliance with requirement.

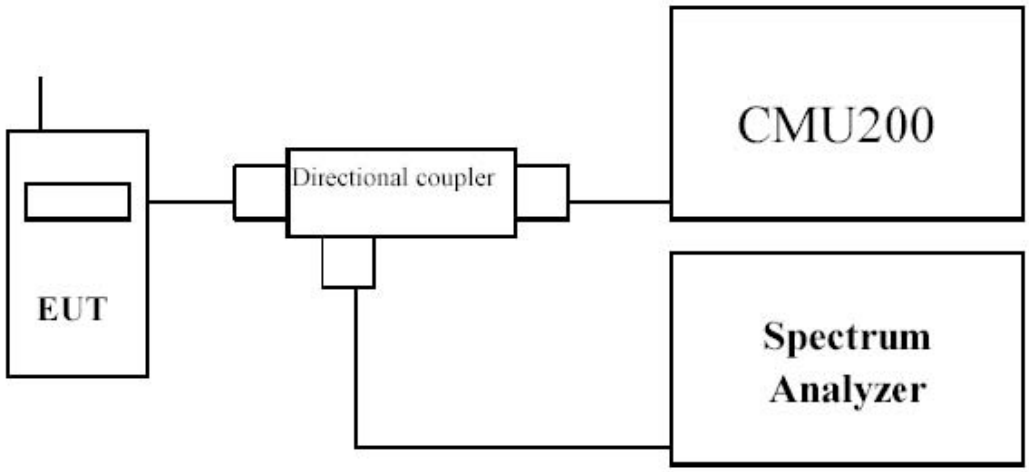
5. Occupied Bandwidth

5.1. Test Equipment

Occupied Bandwidth / SR10-H

Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Signal & Spectrum Analyzer	R&S	FSVA40	101455	2017/11/27
Multisystem UE Tester	Japan radio	NJZ-2000	ET00477	2017/09/19
Directional coupler	Agilent	778D	20402	2017/10/06

5.2. Test Setup



5.3. Test Procedure

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The 99% occupied bandwidth and 26 dB bandwidth of the low & middle & high channel for the highest RF powers were measured.

5.4. Uncertainty

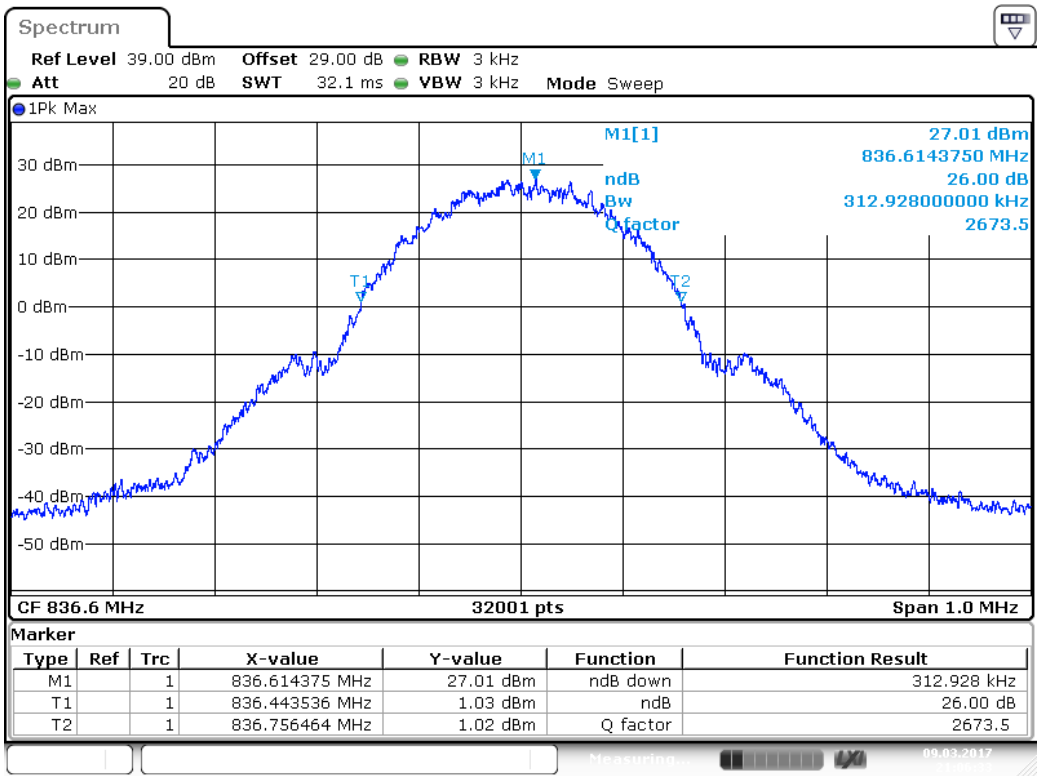
The measurement uncertainty is defined as ± 10 Hz

5.5. Test Result

Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: GPRS 850_Link		
Date of Test	2017/03/10	Test Site	SR10-H

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
128	824.20	0.313	0.244
190	836.60	0.313	0.241
251	848.80	0.315	0.243

Figure Channel 128 (824.20MHz) (-26dB BW)



Date: 9.MAR.2017 21:06:33

Figure Channel 128 (824.20MHz) (99% BW)

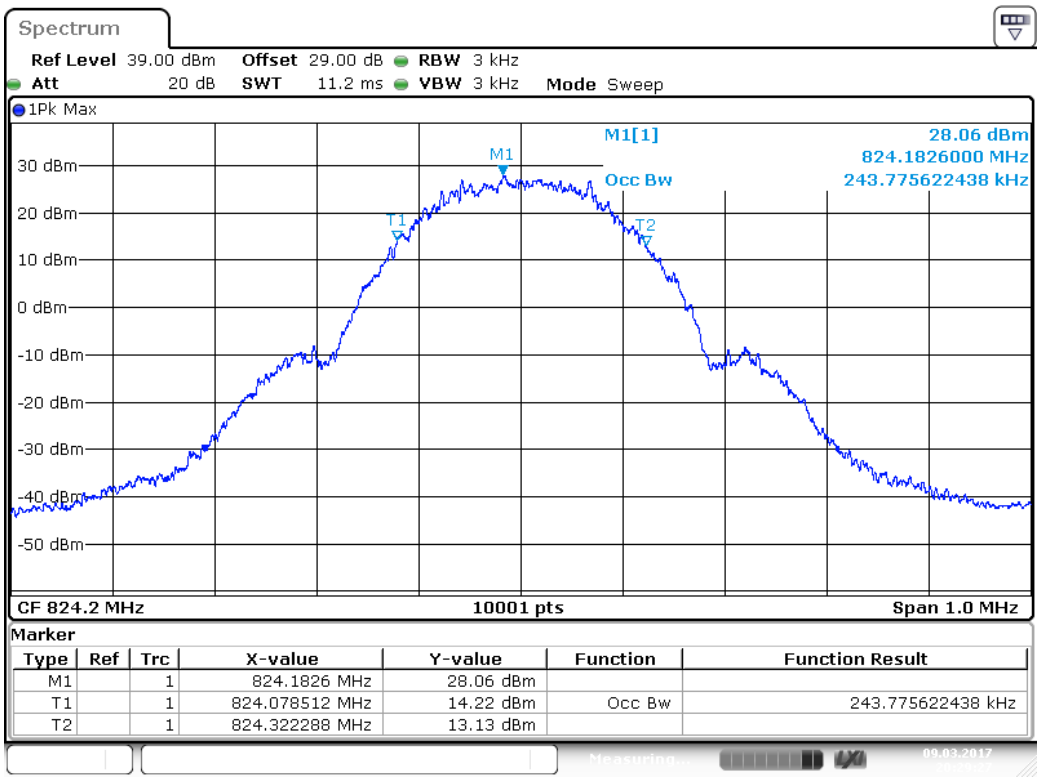


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Figure Channel 190 (836.60MHz) (-26dB BW)

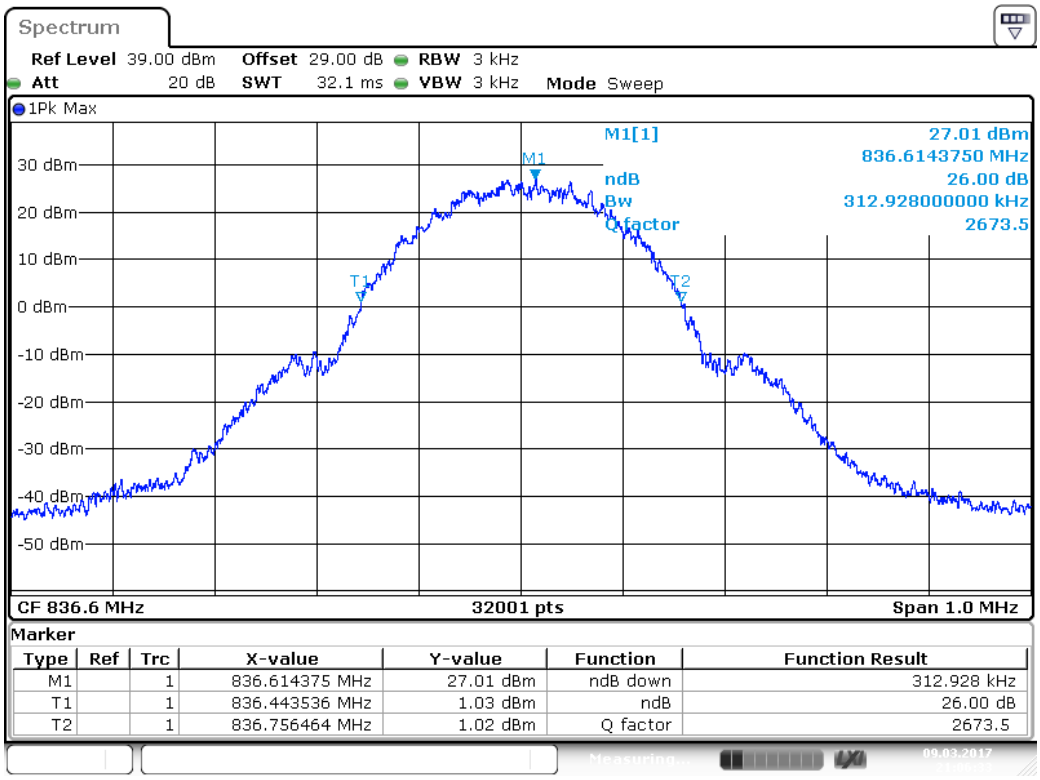

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Figure Channel 190 (836.60MHz) (99% BW)

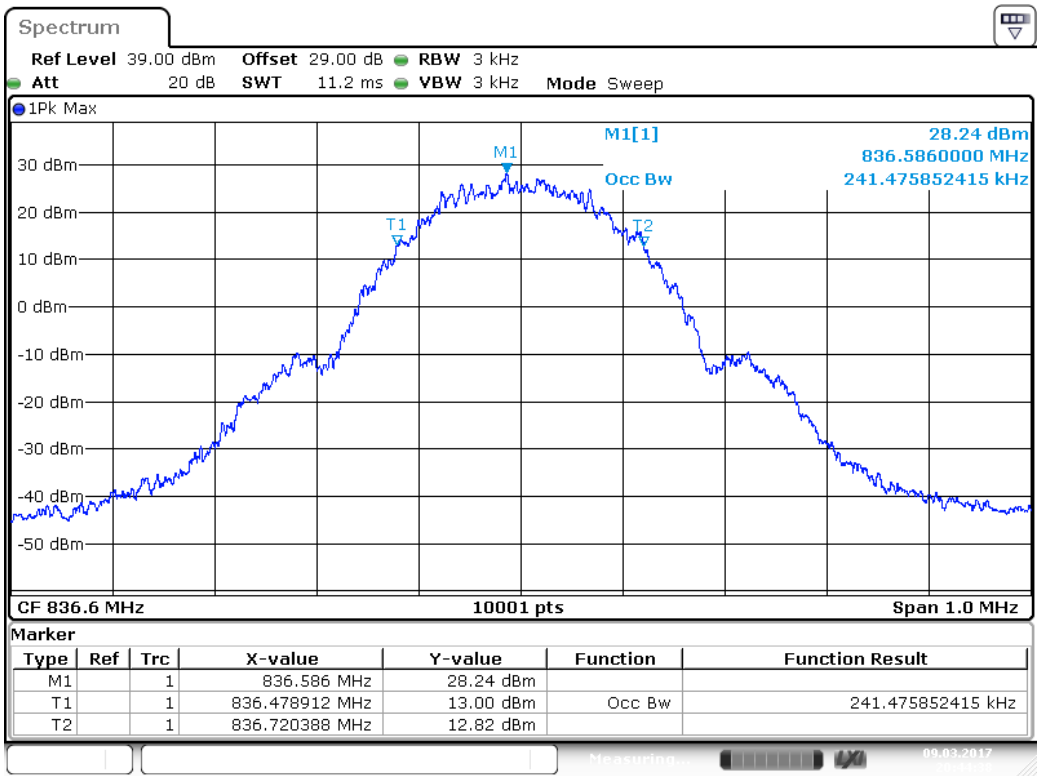

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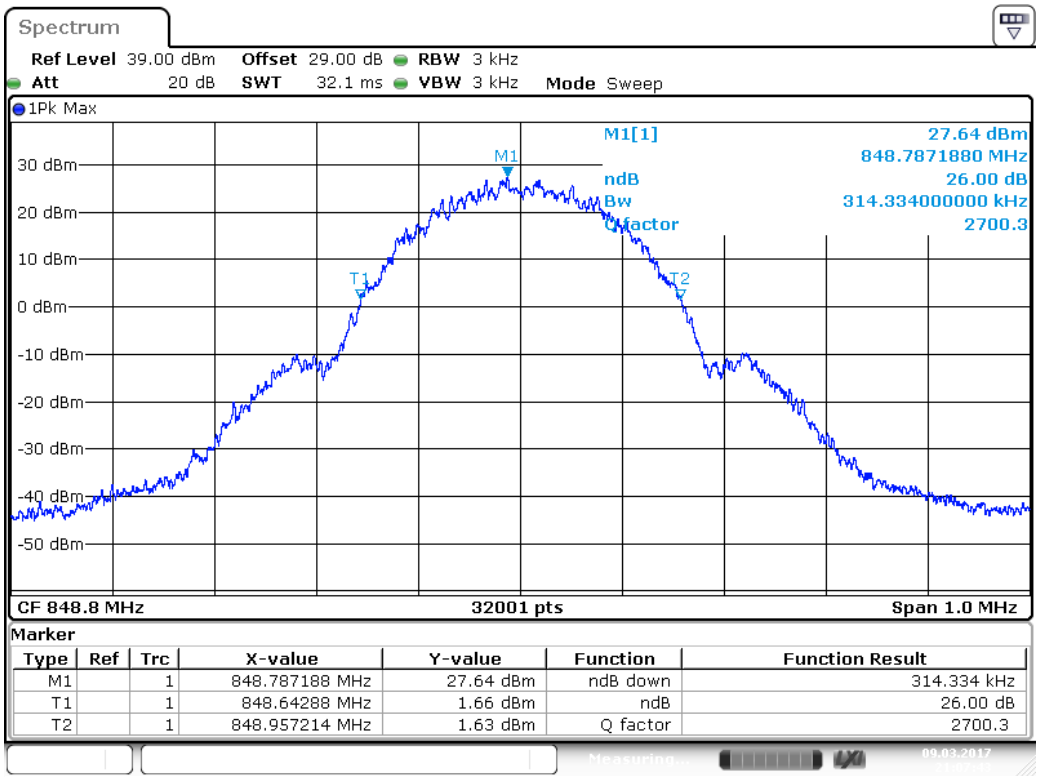
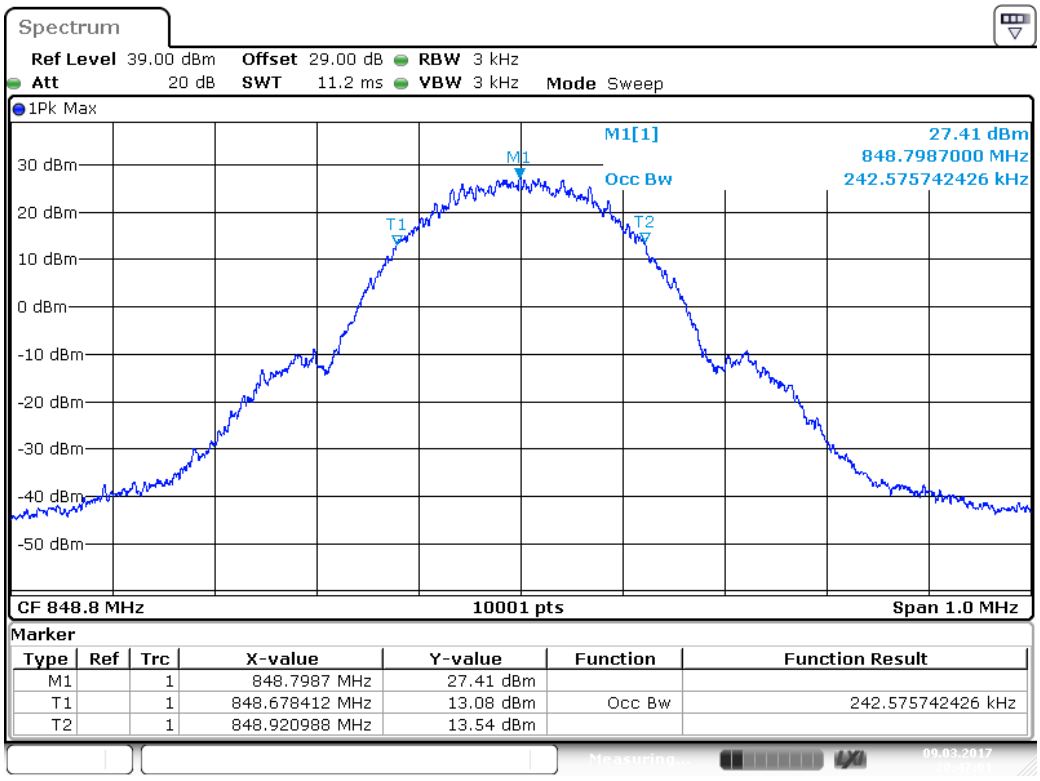
Figure Channel 251 (848.80MHz) (-26dB BW)



Date: 9.MAR.2017 21:07:42

Figure Channel 251 (848.80MHz) (99% BW)

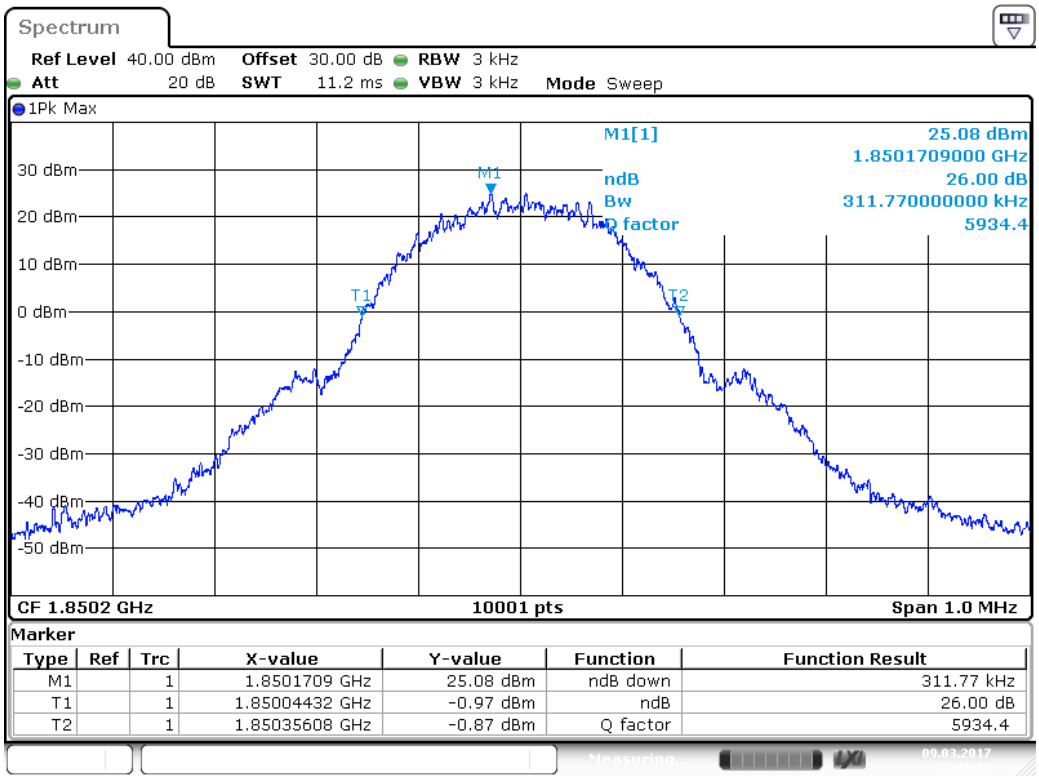


Date: 9.MAR.2017 20:47:02

Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 2: GPRS 1900_Link		
Date of Test	2017/03/10	Test Site	SR10-H

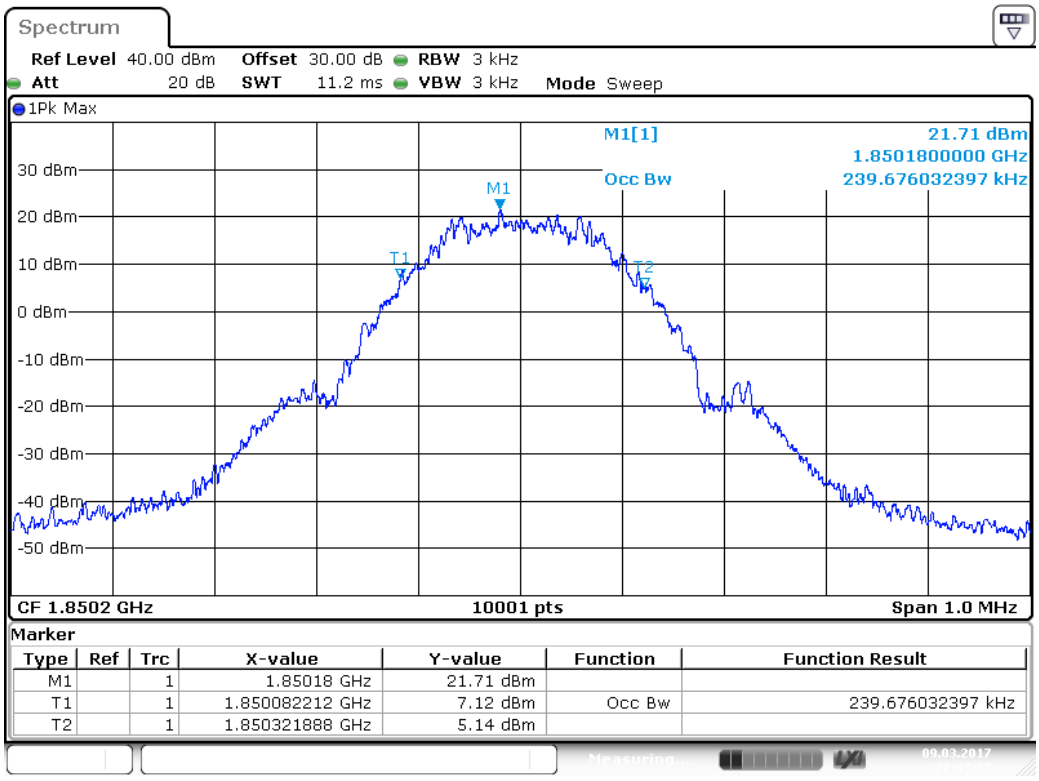
Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
512	1850.20	0.312	0.240
661	1880.00	0.313	0.244
810	1909.80	0.314	0.244

Figure Channel 512 (1850.20MHz) (-26dB BW)



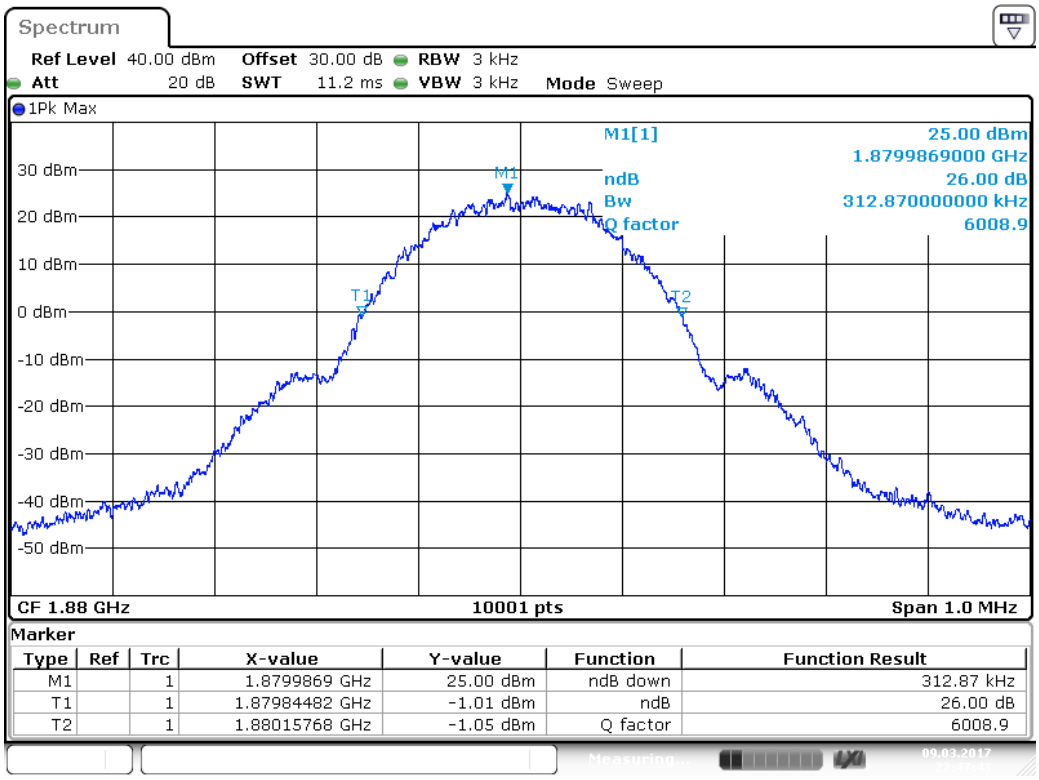
Date: 9.MAR.2017 22:48:15

Figure Channel 512 (1850.20MHz) (99% BW)



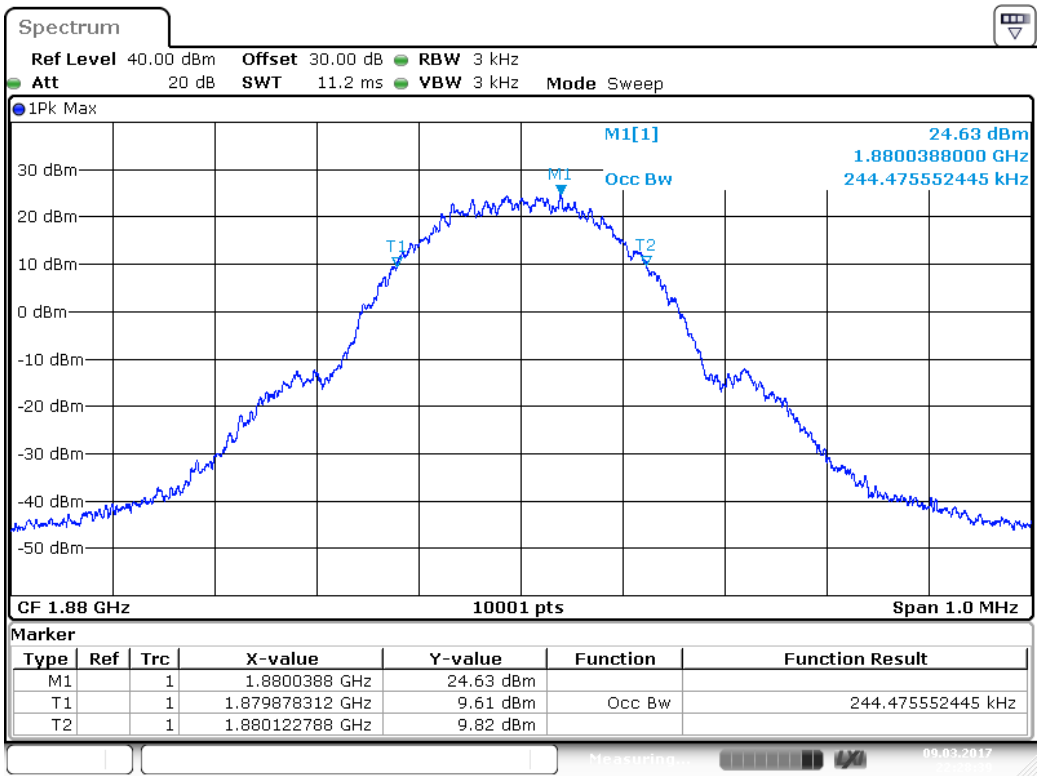
Date: 9.MAR.2017 22:43:37

Figure Channel 661 (1880.00MHz) (-26dB BW)



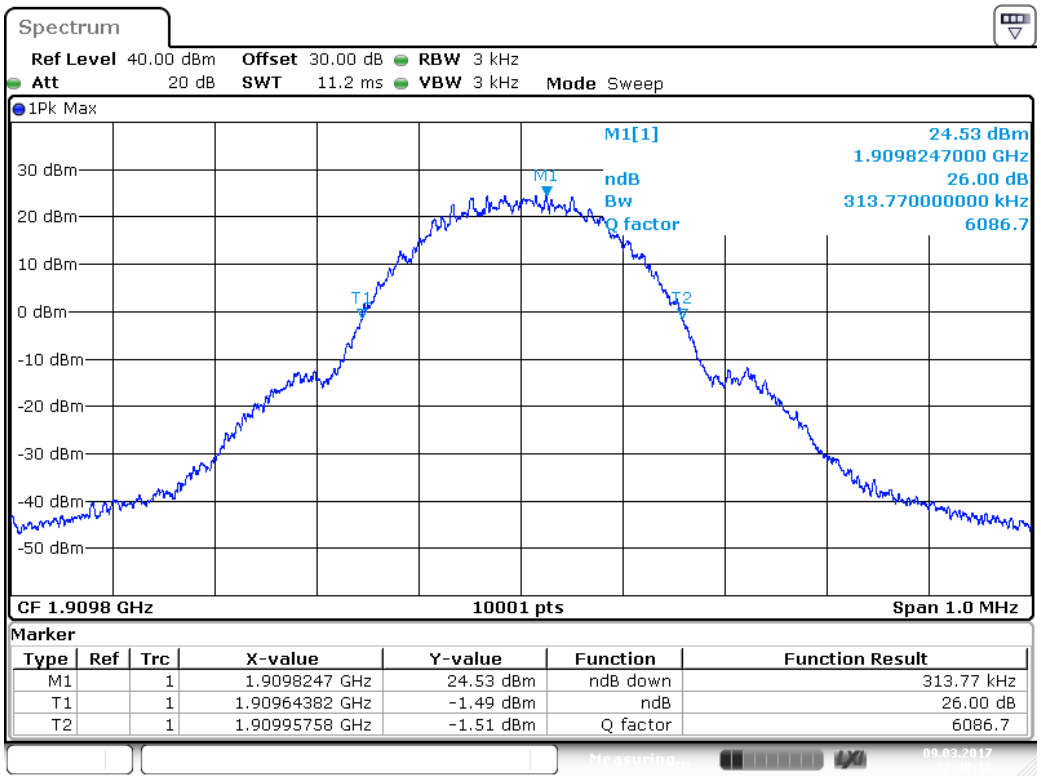
Date: 9.MAR.2017 22:47:43

Figure Channel 661 (1880.00MHz) (99% BW)



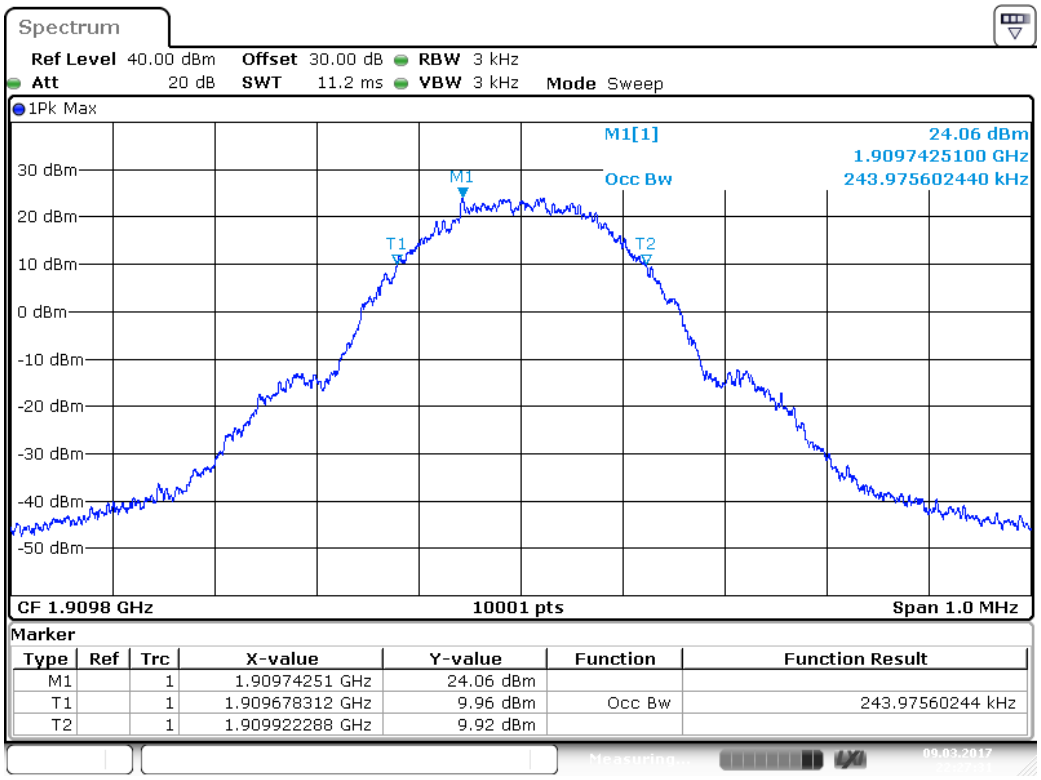
Date: 9.MAR.2017 22:28:39

Figure Channel 810 (1909.80MHz) (-26dB BW)



Date: 9.MAR.2017 22:49:17

Figure Channel 810 (1909.80MHz) (99% BW)

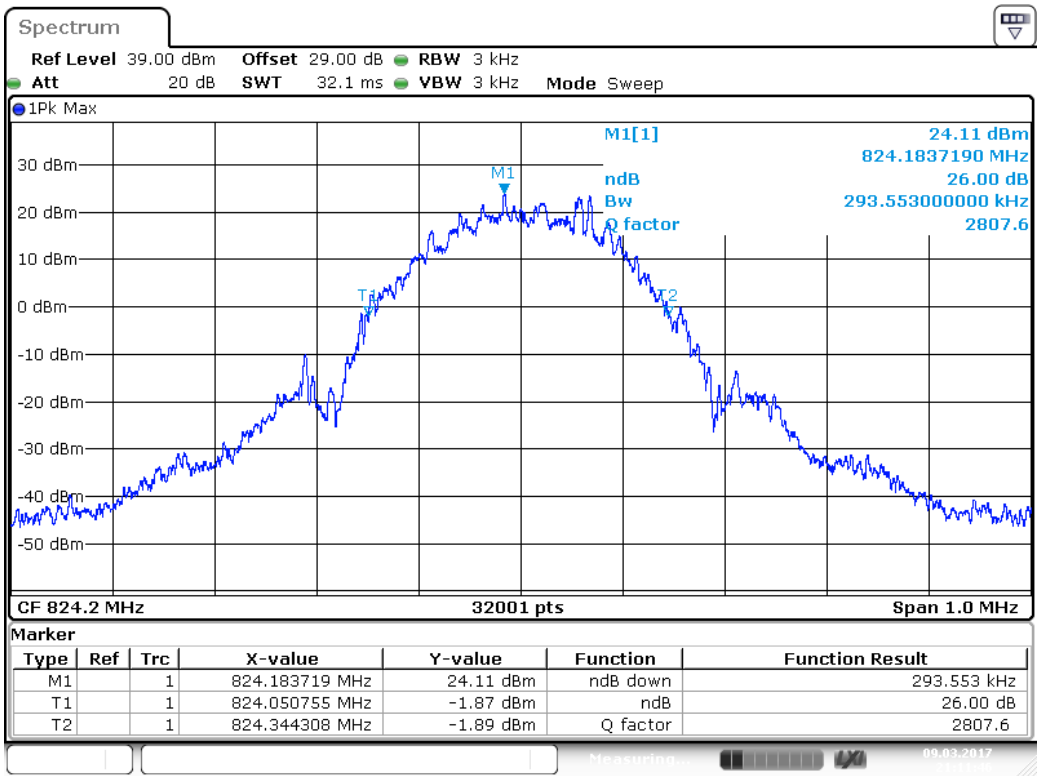


Date: 9.MAR.2017 22:27:31

Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 3: EGPRS 850_Link		
Date of Test	2017/03/10	Test Site	SR10-H

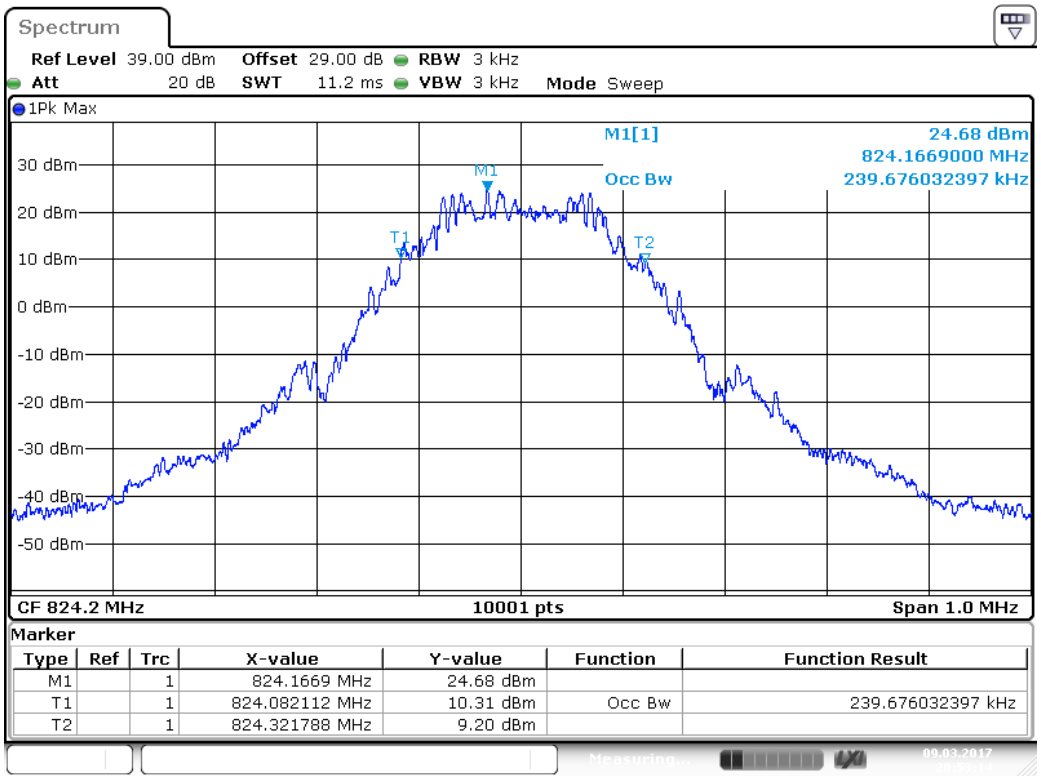
Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
128	824.20	0.294	0.240
189	836.60	0.295	0.235
251	848.80	0.294	0.234

Figure Channel 128 (824.20MHz) (-26dB BW)



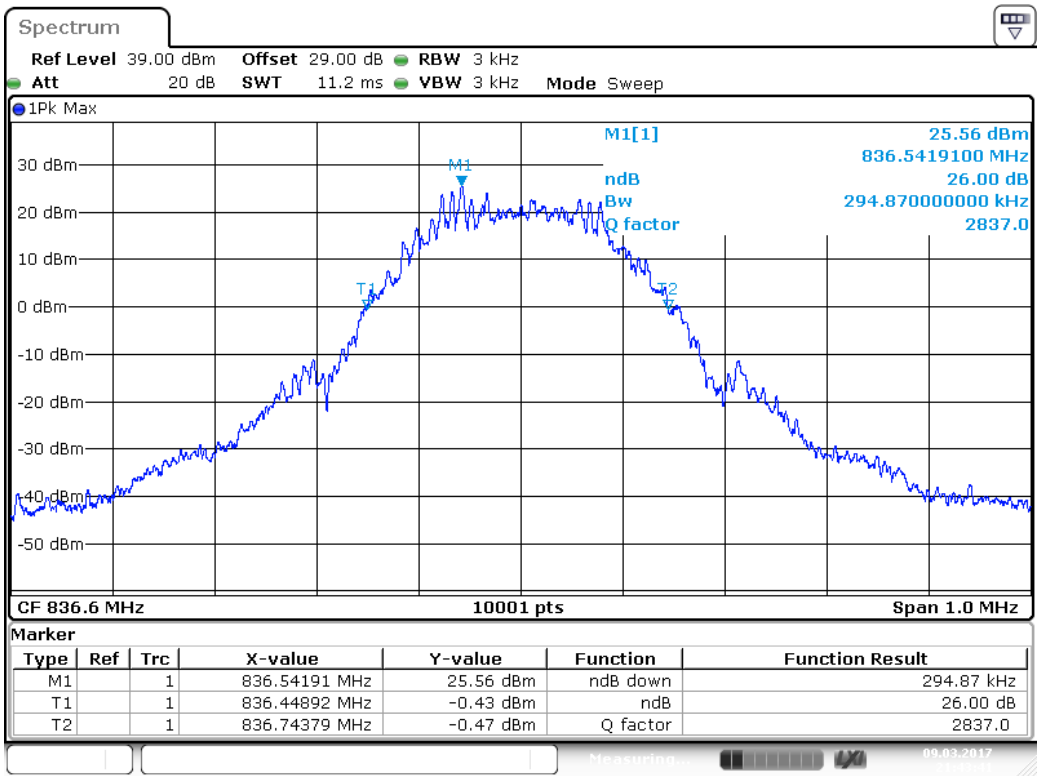
Date: 9.MAR.2017 21:11:46

Figure Channel 128 (824.20MHz) (99% BW)



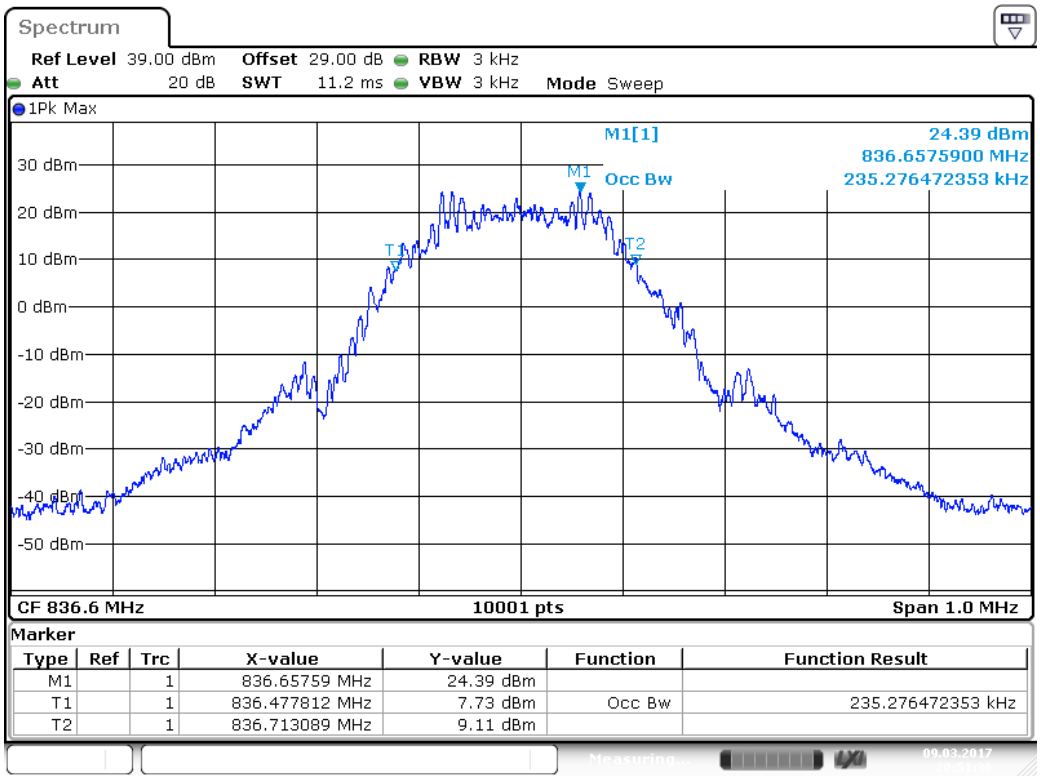
Date: 9.MAR.2017 20:53:14

Figure Channel 190 (836.60MHz) (-26dB BW)



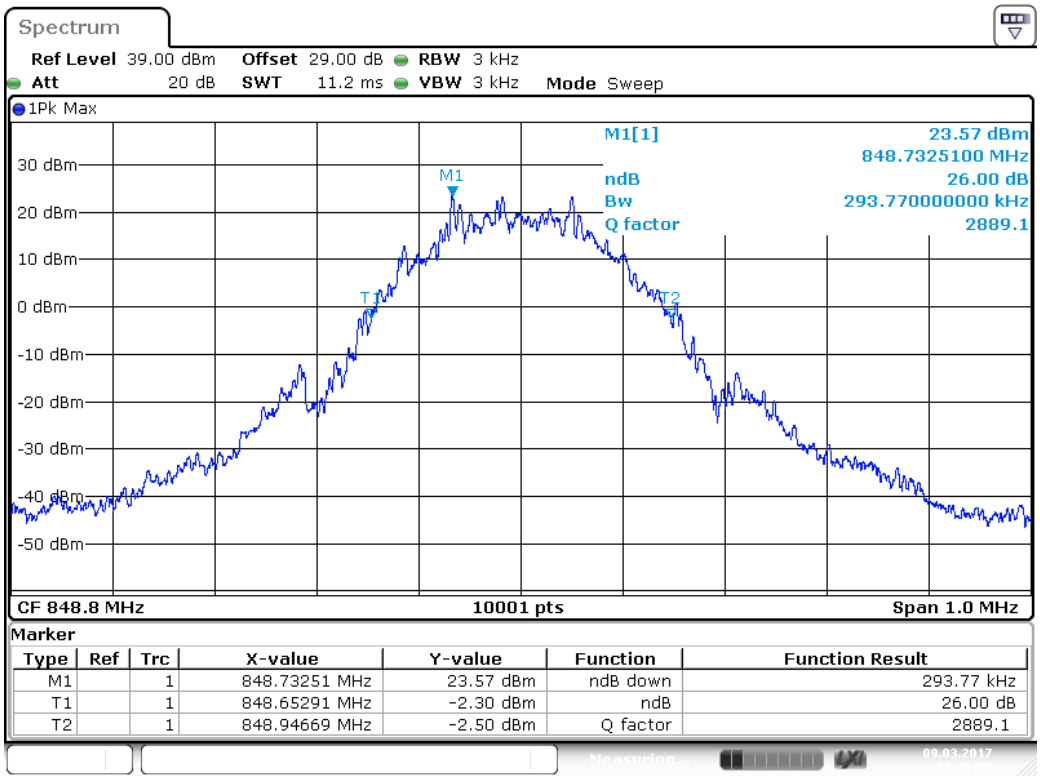
Date: 9.MAR.2017 21:43:42

Figure Channel 190 (836.60MHz) (99% BW)



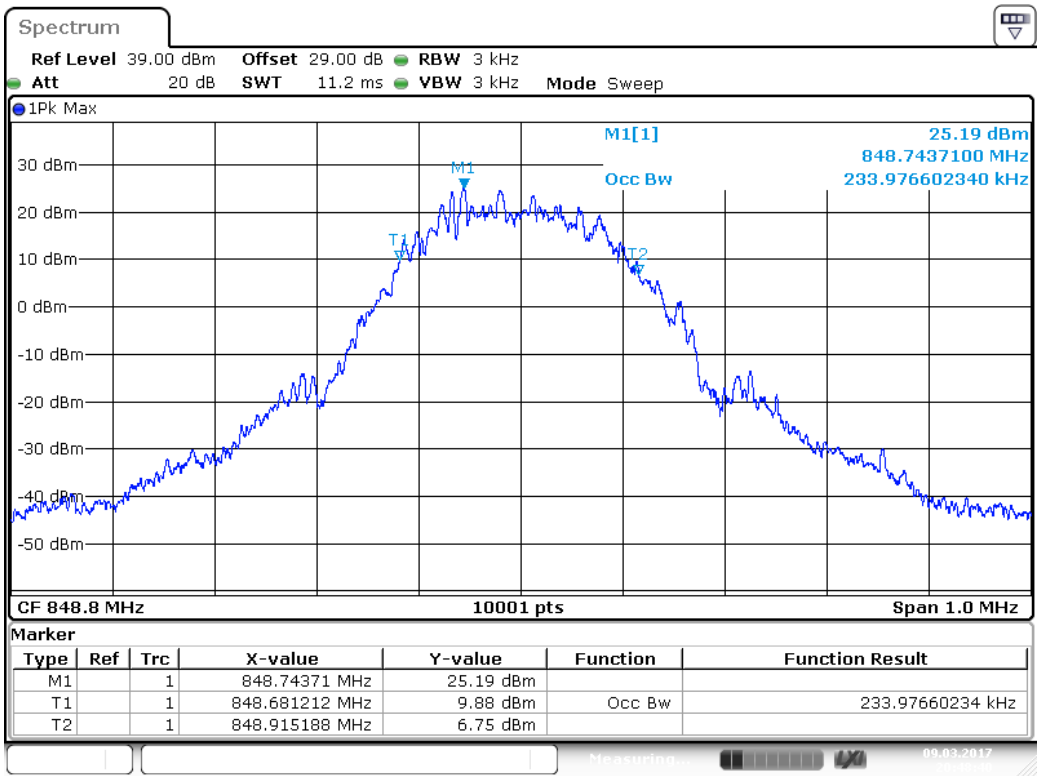
Date: 9.MAR.2017 20:51:36

Figure Channel 251 (848.80MHz) (-26dB BW)



Date: 9.MAR.2017 21:41:55

Figure Channel 251 (848.80MHz) (99% BW)

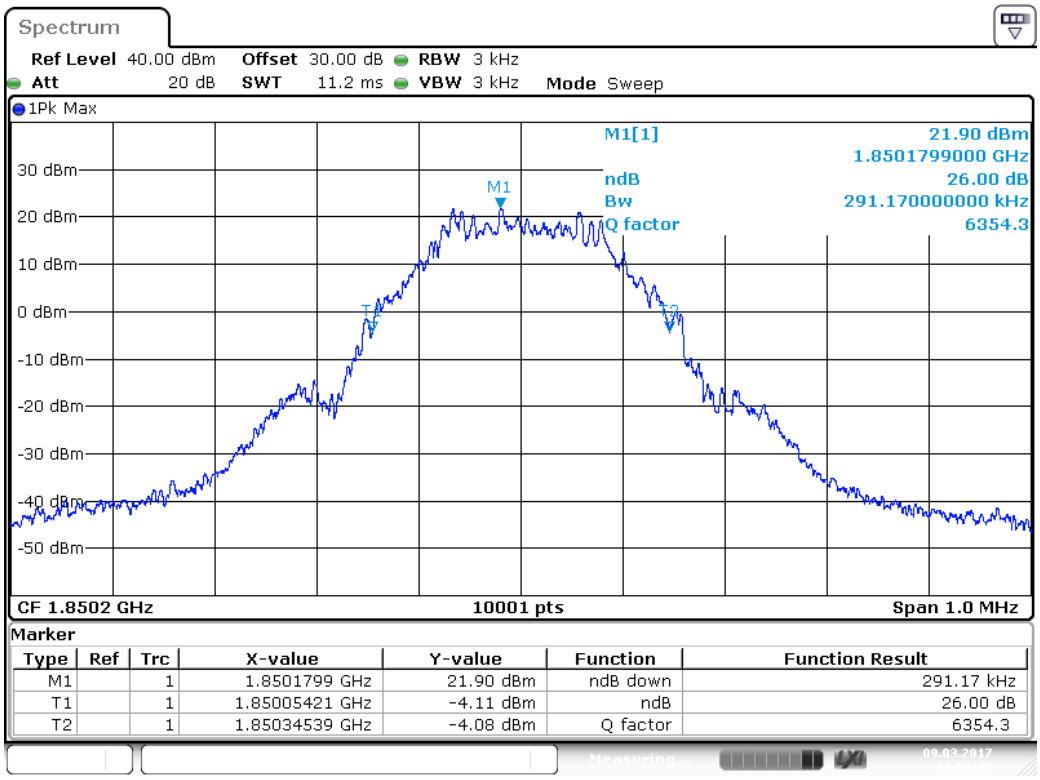


Date: 9.MAR.2017 20:48:40

Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 4: EGPRS 1900_Link		
Date of Test	2017/03/10	Test Site	SR10-H

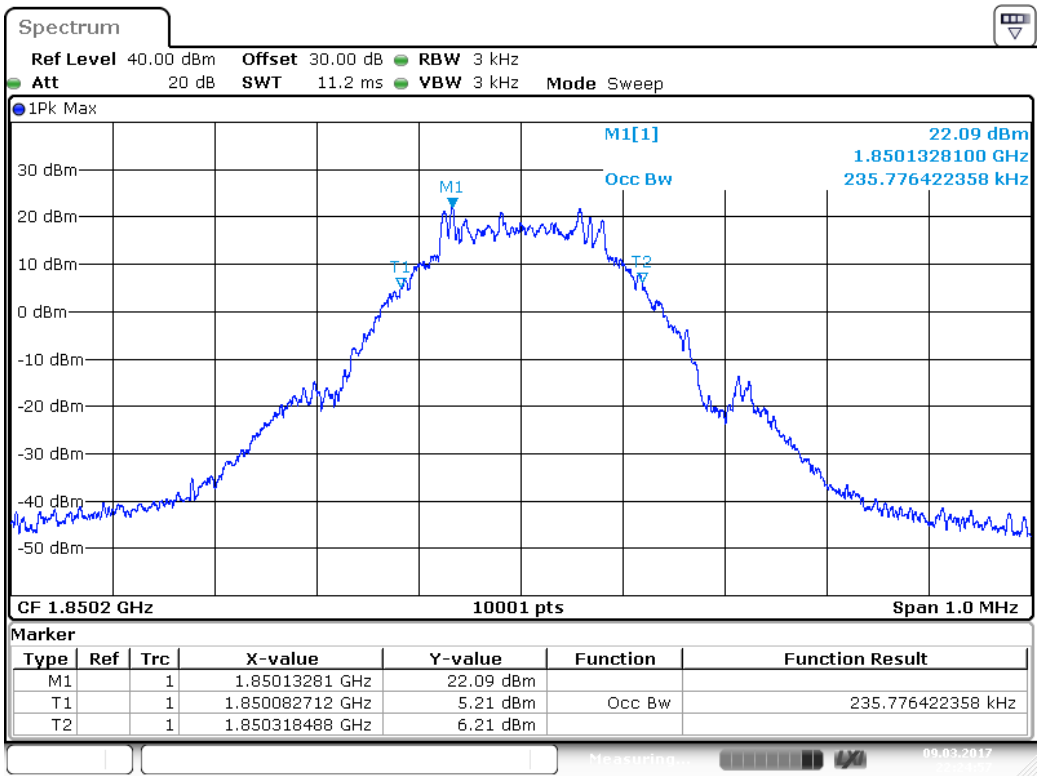
Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
512	1850.20	0.292	0.236
661	1880.00	0.292	0.237
810	1909.80	0.305	0.236

Figure Channel 512 (1850.20MHz) (-26dB BW)



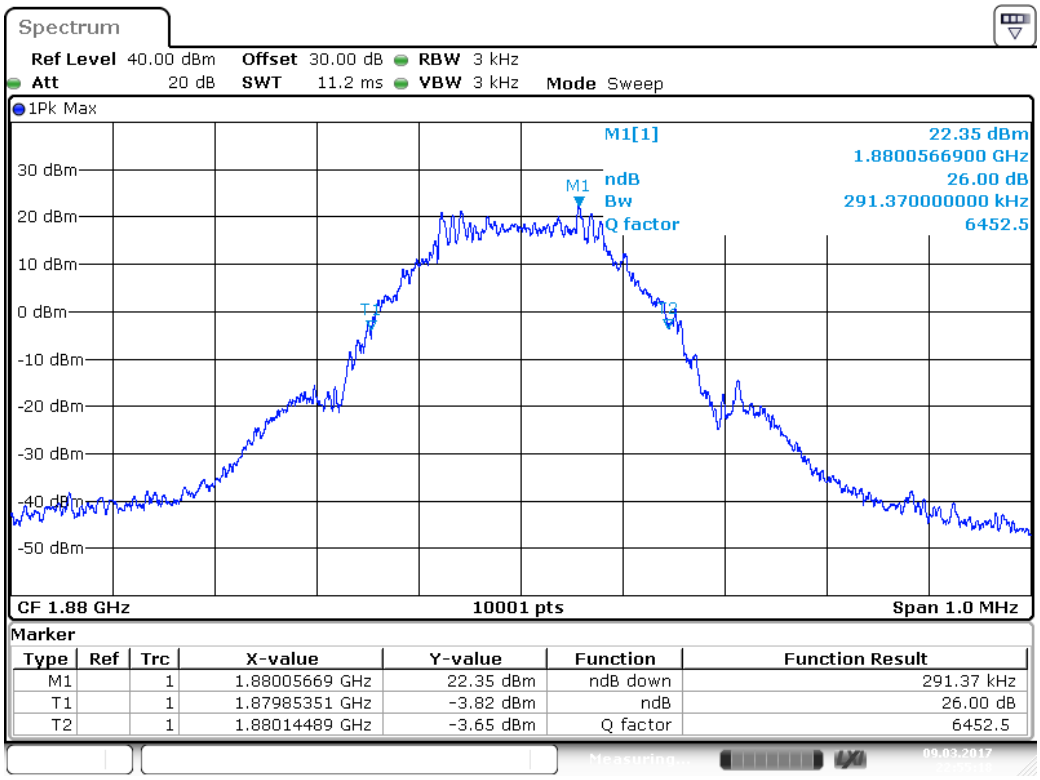
Date: 9.MAR.2017 22:56:22

Figure Channel 512 (1850.20MHz) (99% BW)



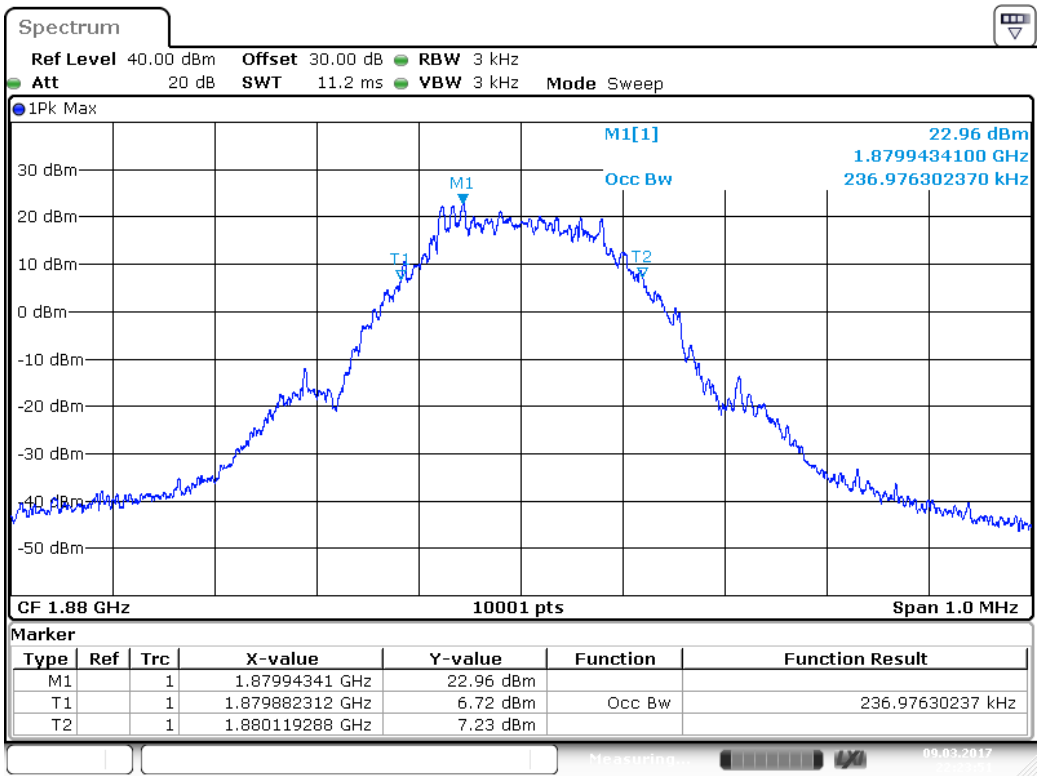
Date: 9.MAR.2017 22:24:57

Figure Channel 661 (1880.00MHz) (-26dB BW)



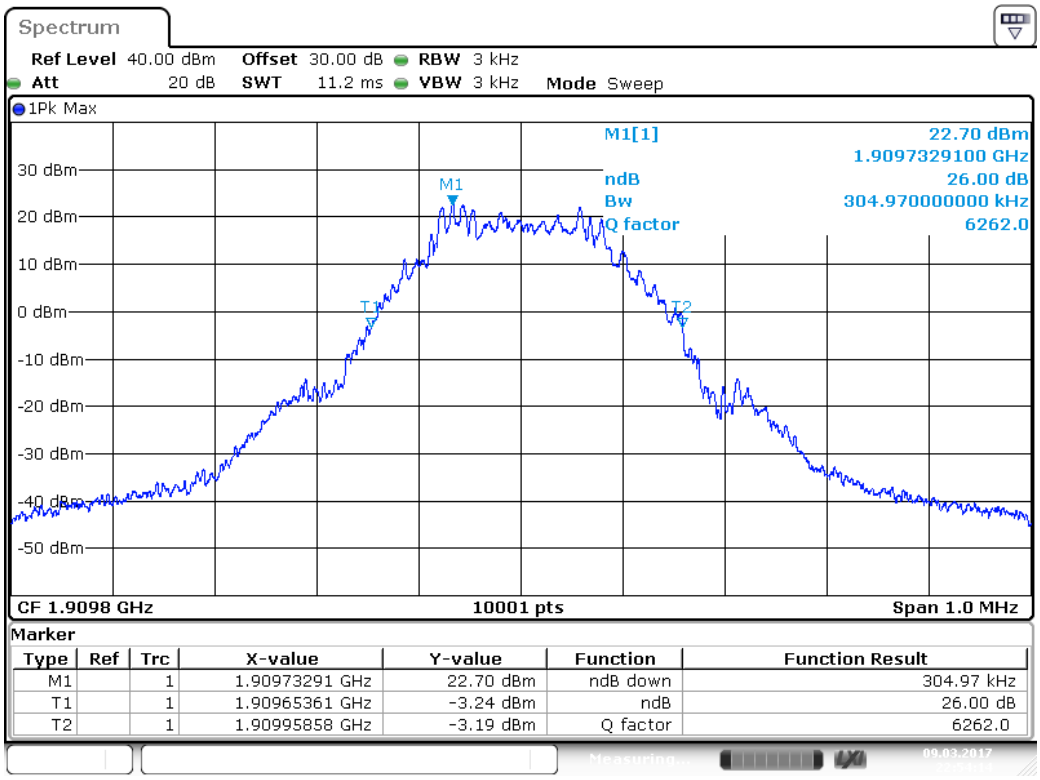
Date: 9.MAR.2017 22:55:18

Figure Channel 661 (1880.00MHz) (99% BW)



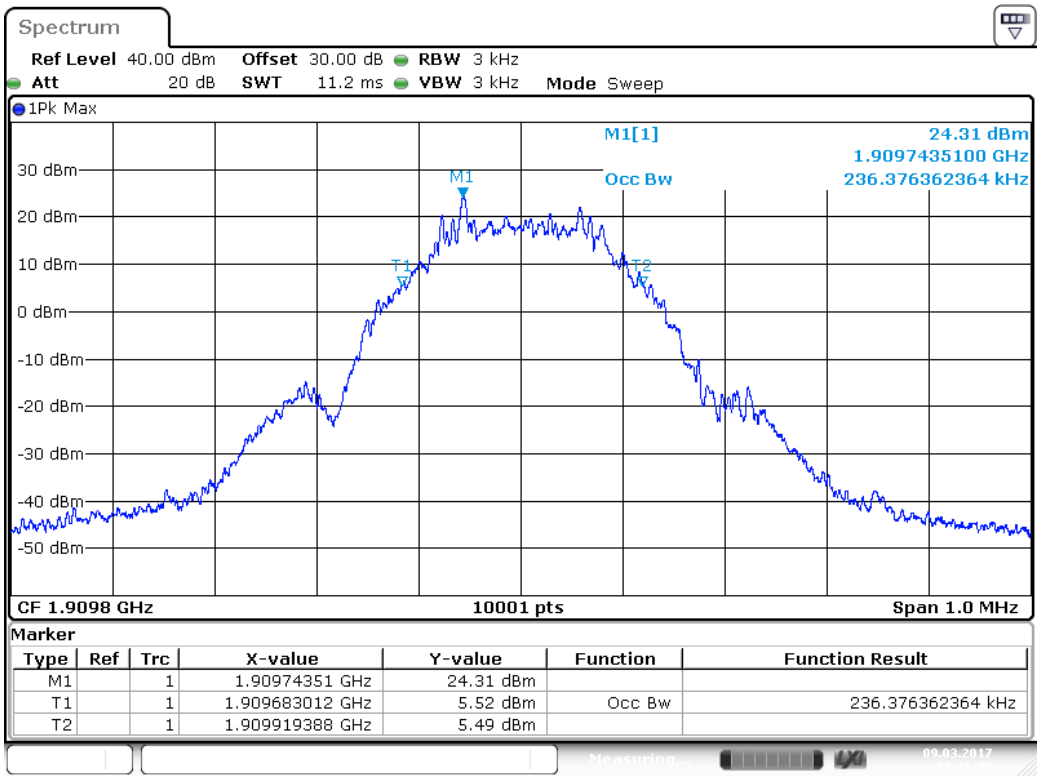
Date: 9.MAR.2017 22:23:51

Figure Channel 810 (1909.80MHz) (-26dB BW)



Date: 9.MAR.2017 22:54:14

Figure Channel 810 (1909.80MHz) (99% BW)

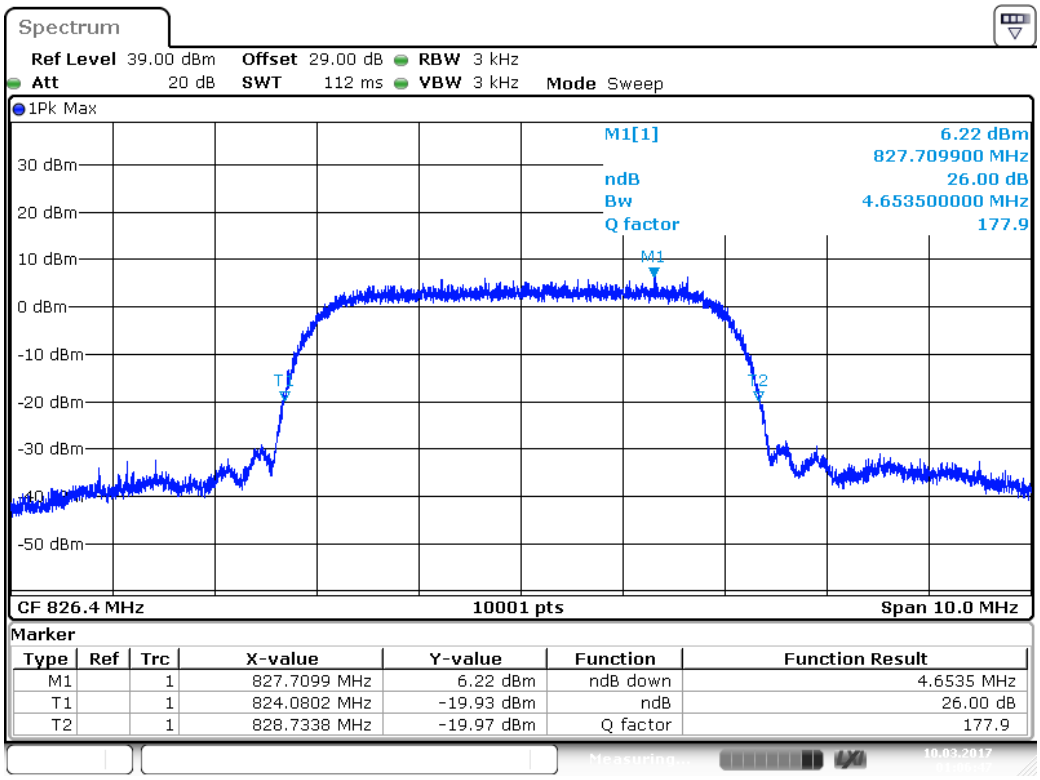


Date: 9.MAR.2017 22:26:21

Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 5: WCDMA Band 5_Link		
Date of Test	2017/03/10	Test Site	SR10-H

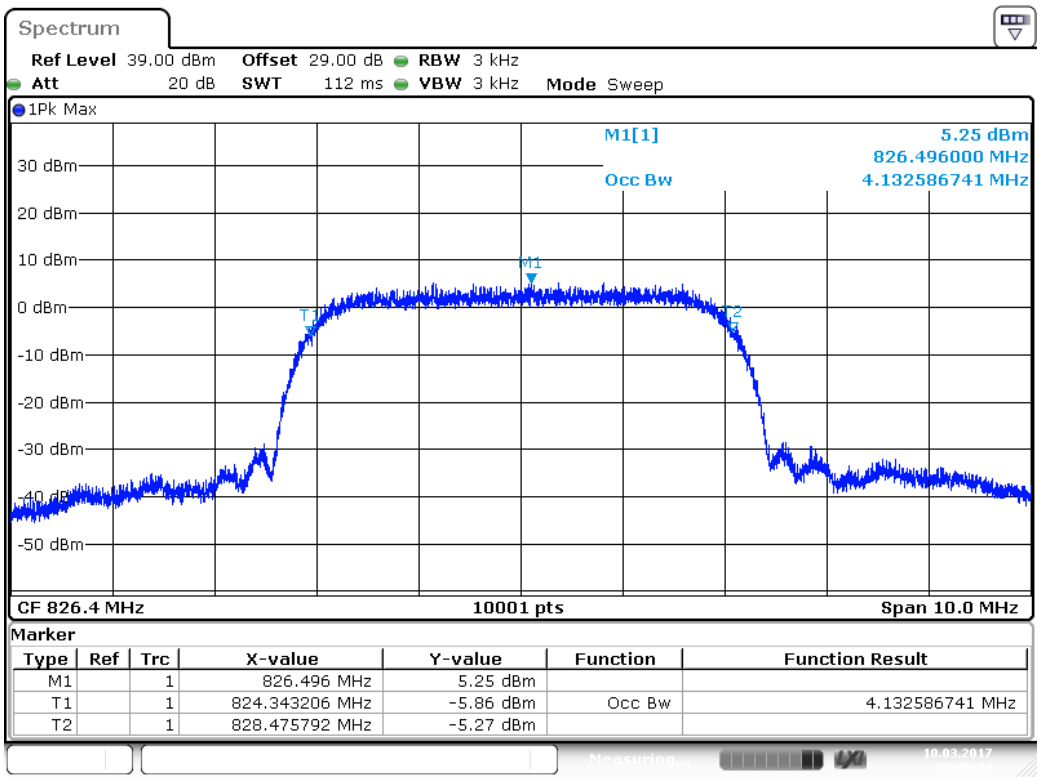
Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
4132	826.4	4.654	4.133
4182	836.6	4.695	4.174
4233	846.6	4.658	4.137

Figure Channel 4132 (826.40MHz) (-26dB BW)



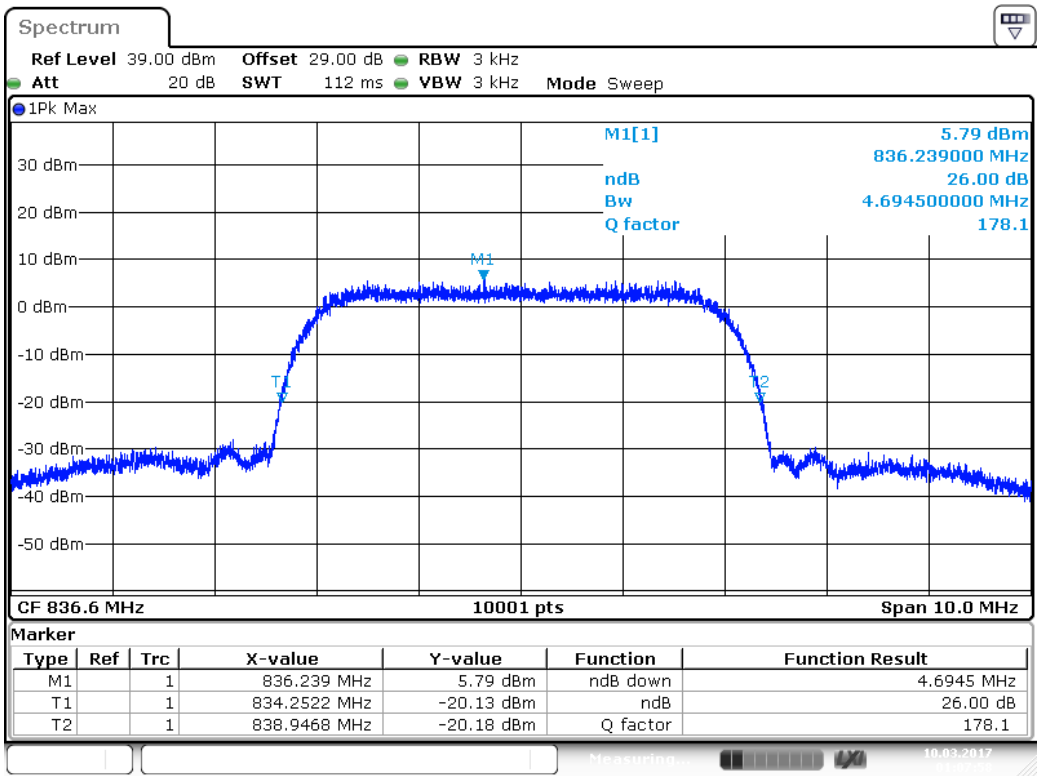
Date: 10.MAR.2017 01:06:47

Figure Channel 4132 (826.40MHz) (99% BW)



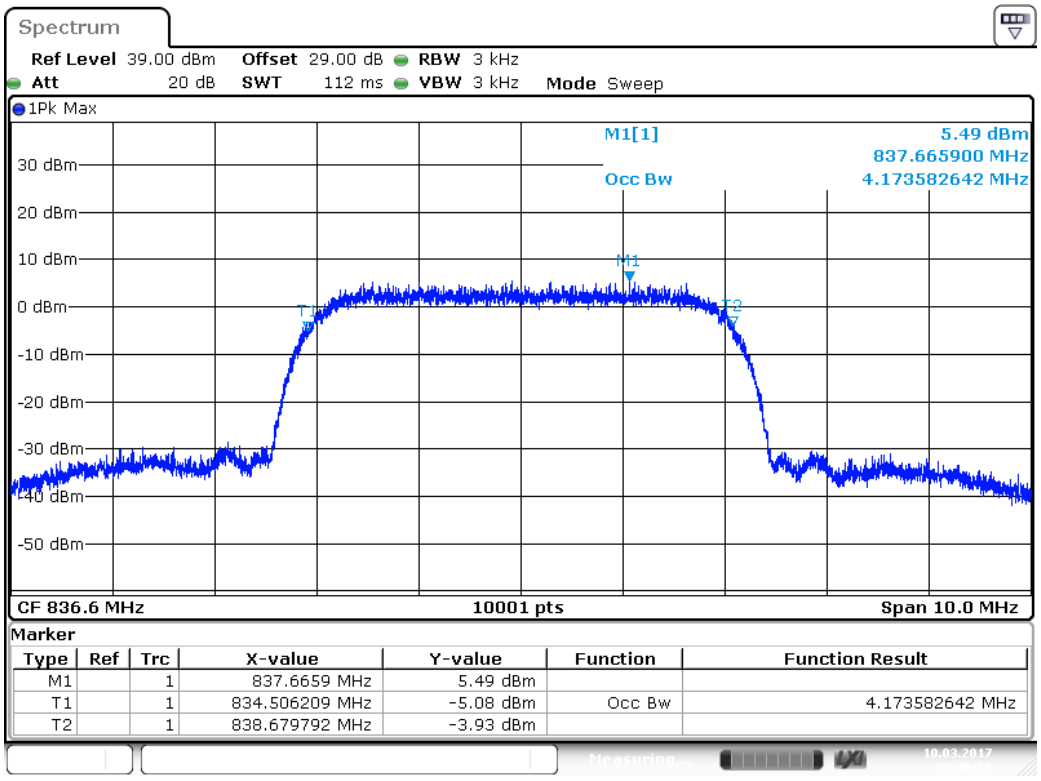
Date: 10.MAR.2017 00:49:35

Figure Channel 4182 (836.60MHz) (-26dB BW)



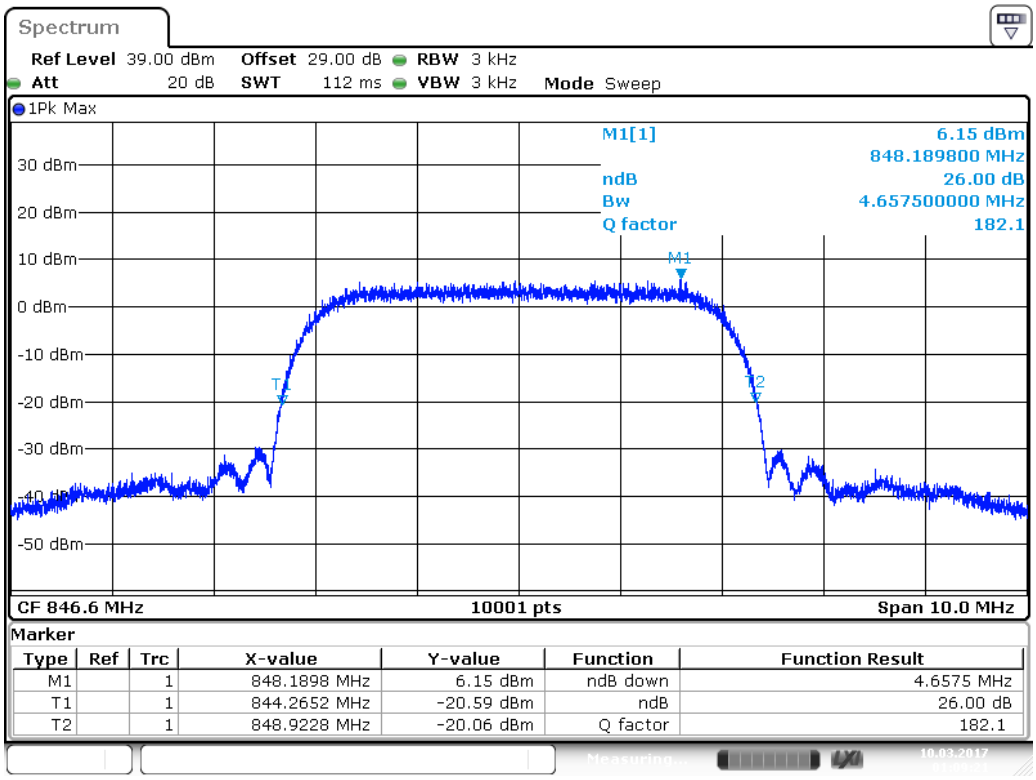
Date: 10.MAR.2017 01:07:58

Figure Channel 4182 (836.60MHz) (99% BW)



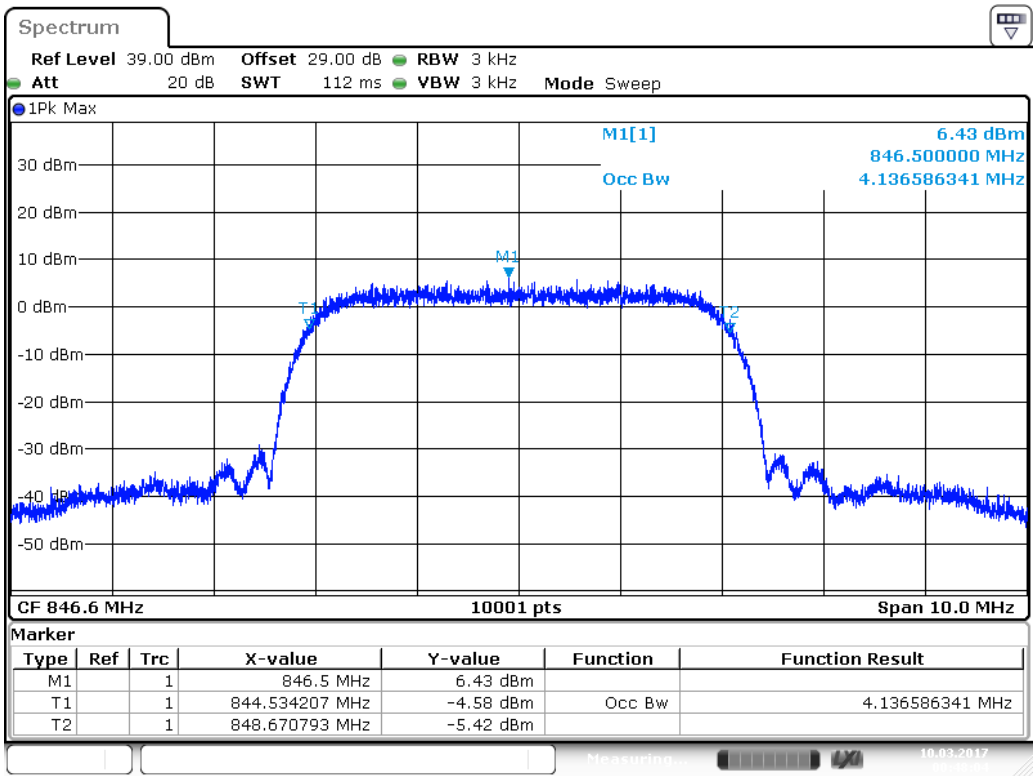
Date: 10.MAR.2017 00:48:56

Figure Channel 4233(846.60MHz) (-26dB BW)



Date: 10.MAR.2017 01:09:21

Figure Channel 4233(846.60MHz) (99% BW)

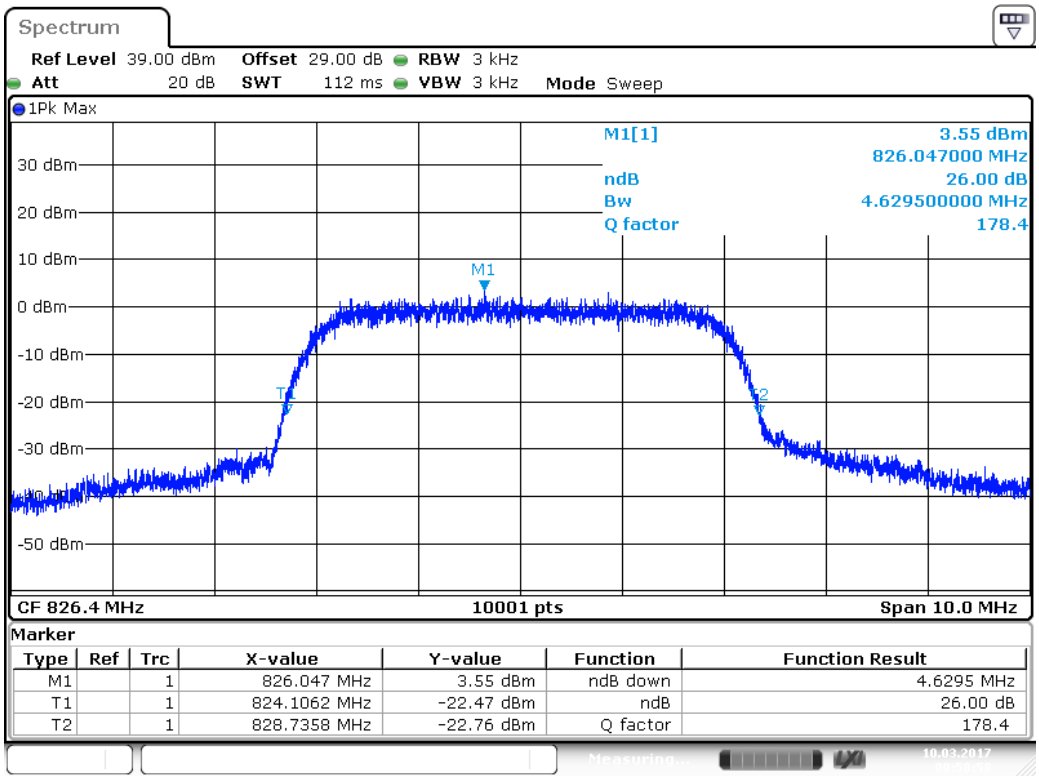


Date: 10.MAR.2017 00:48:04

Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 6: WCDMA Band 5_HSUPA_Link		
Date of Test	2017/03/10	Test Site	SR10-H

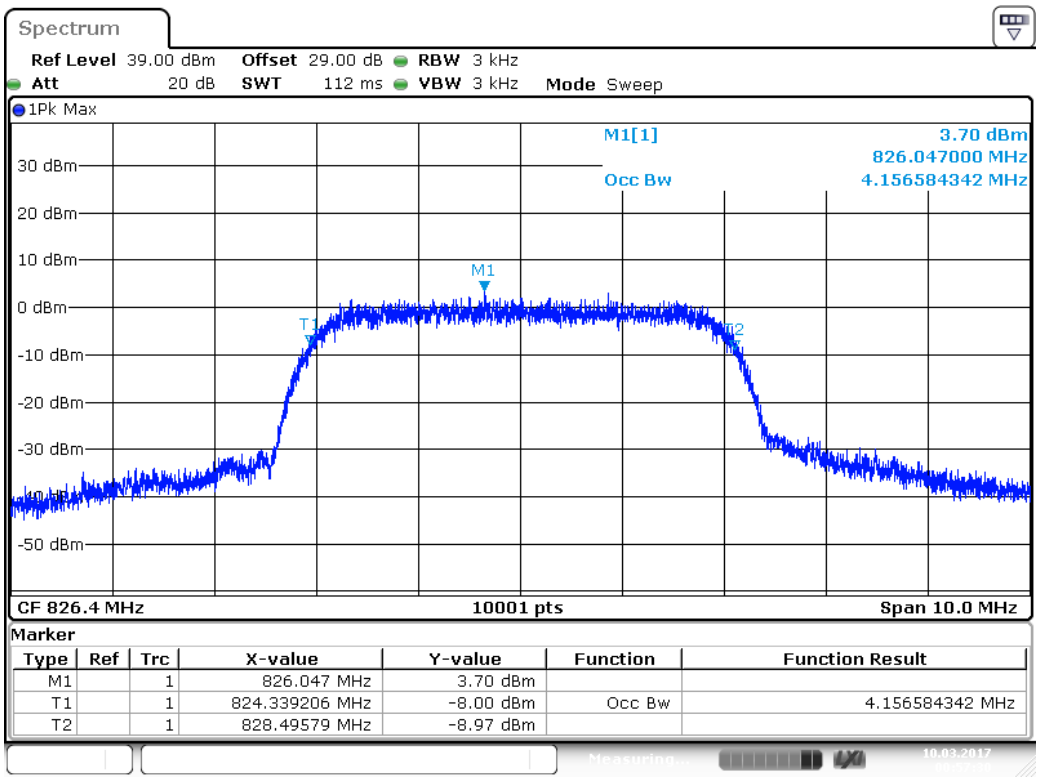
Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
4132	826.4	4.630	4.157
4182	836.6	4.638	4.165
4233	846.6	4.627	4.146

Figure Channel 4132 (826.40MHz) (-26dB BW)



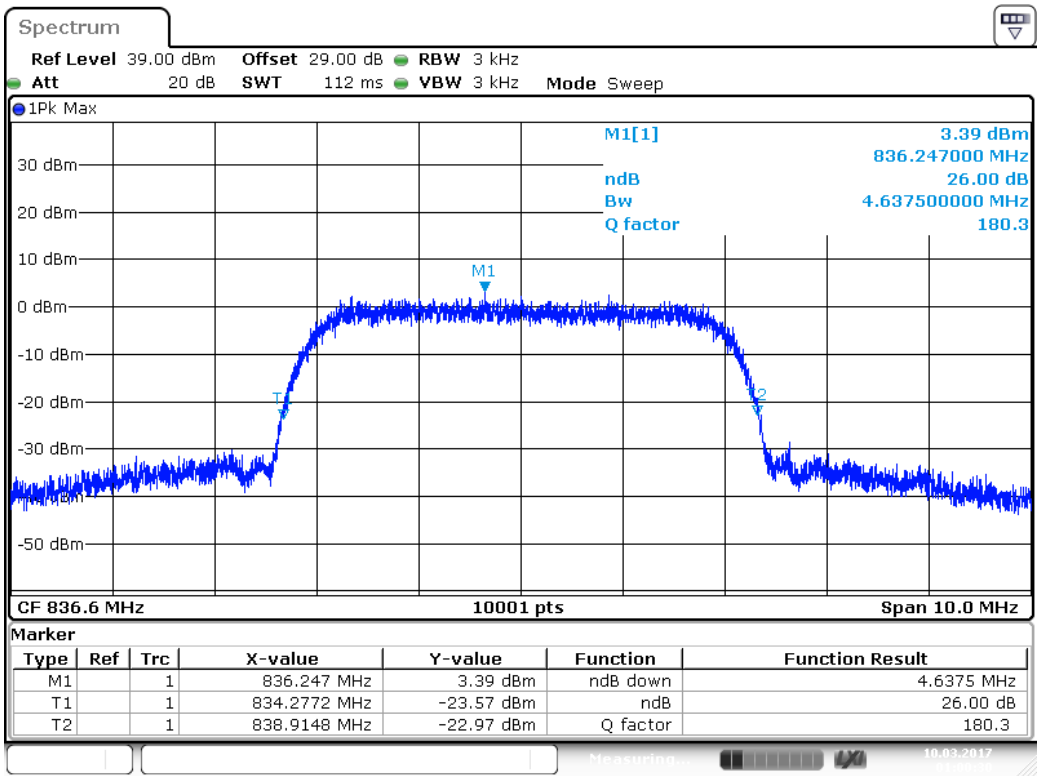
Date: 10.MAR.2017 00:58:59

Figure Channel 4132 (826.40MHz) (99% BW)



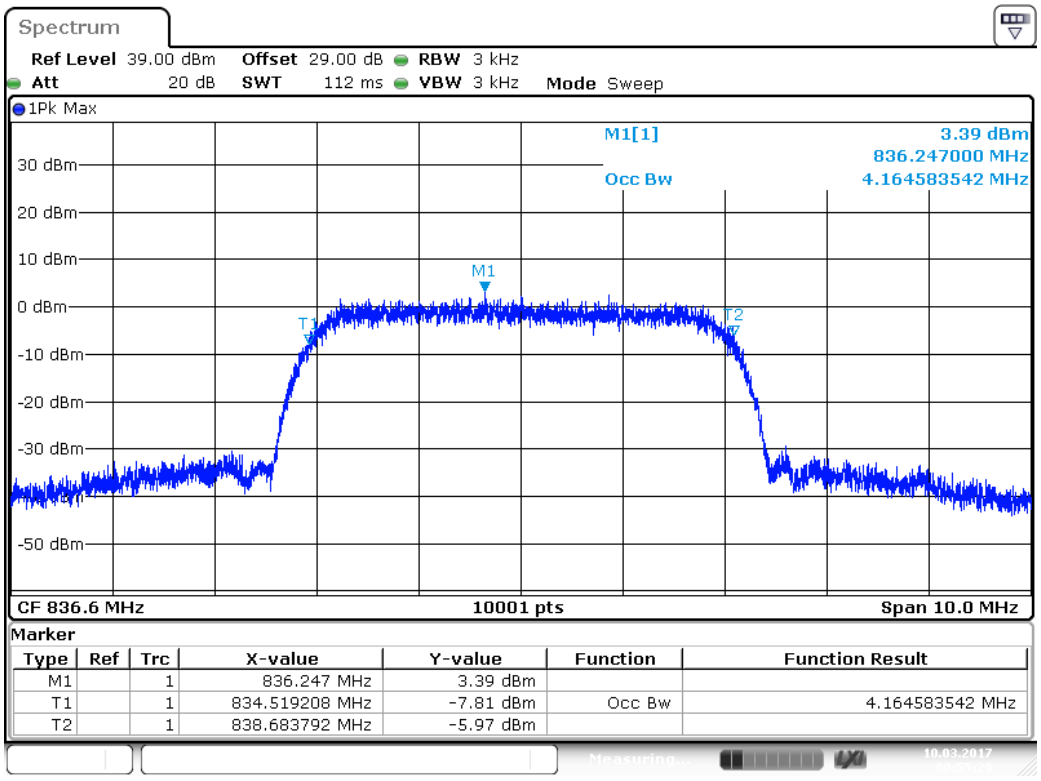
Date: 10.MAR.2017 00:57:30

Figure Channel 4182 (836.60MHz) (-26dB BW)



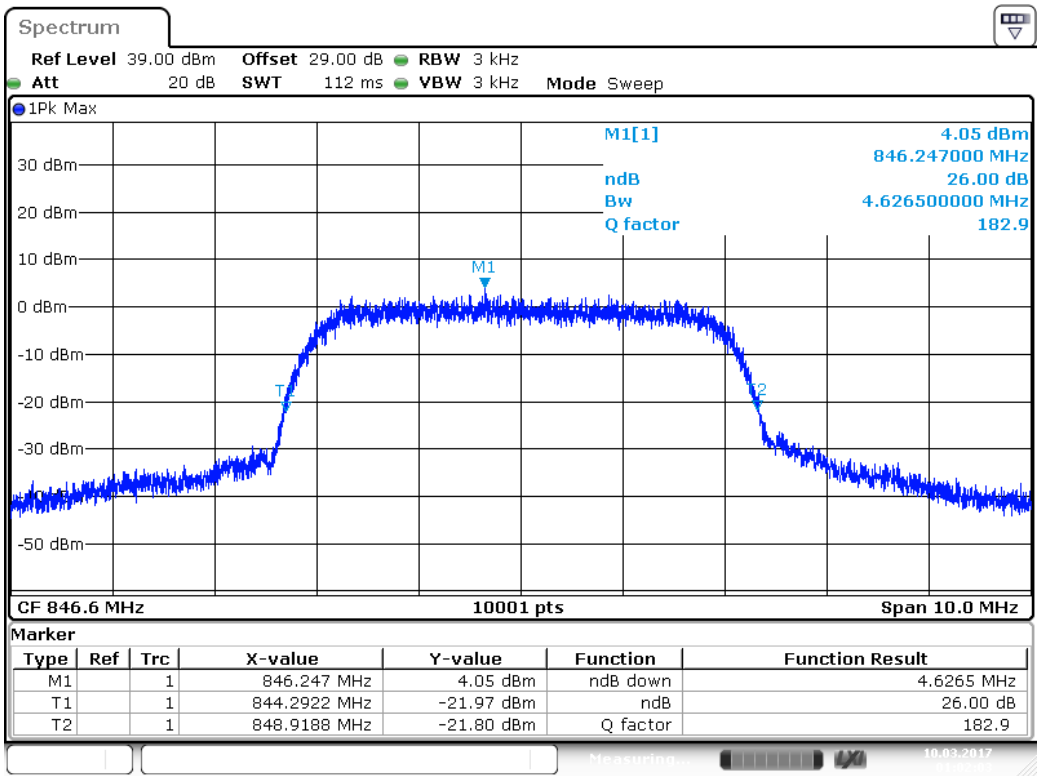
Date: 10.MAR.2017 01:00:30

Figure Channel 4182 (836.60MHz) (99% BW)



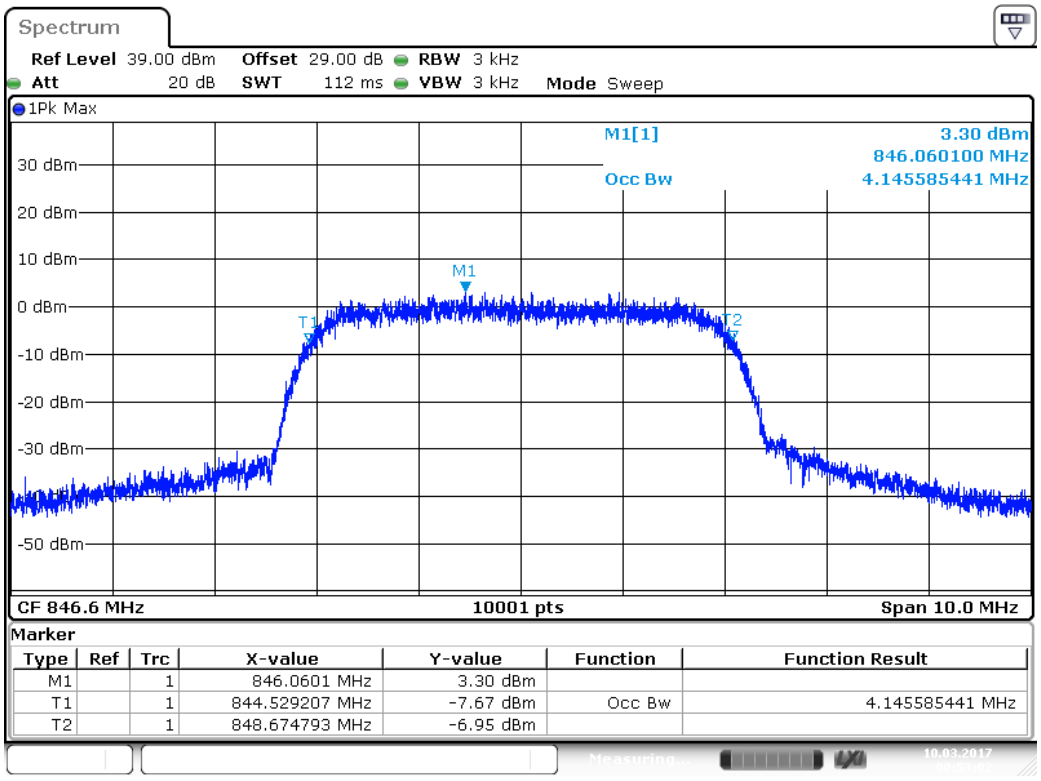
Date: 10.MAR.2017 00:55:29

Figure Channel 4233(846.60MHz) (-26dB BW)



Date: 10.MAR.2017 01:02:03

Figure Channel 4233(846.60MHz) (99% BW)

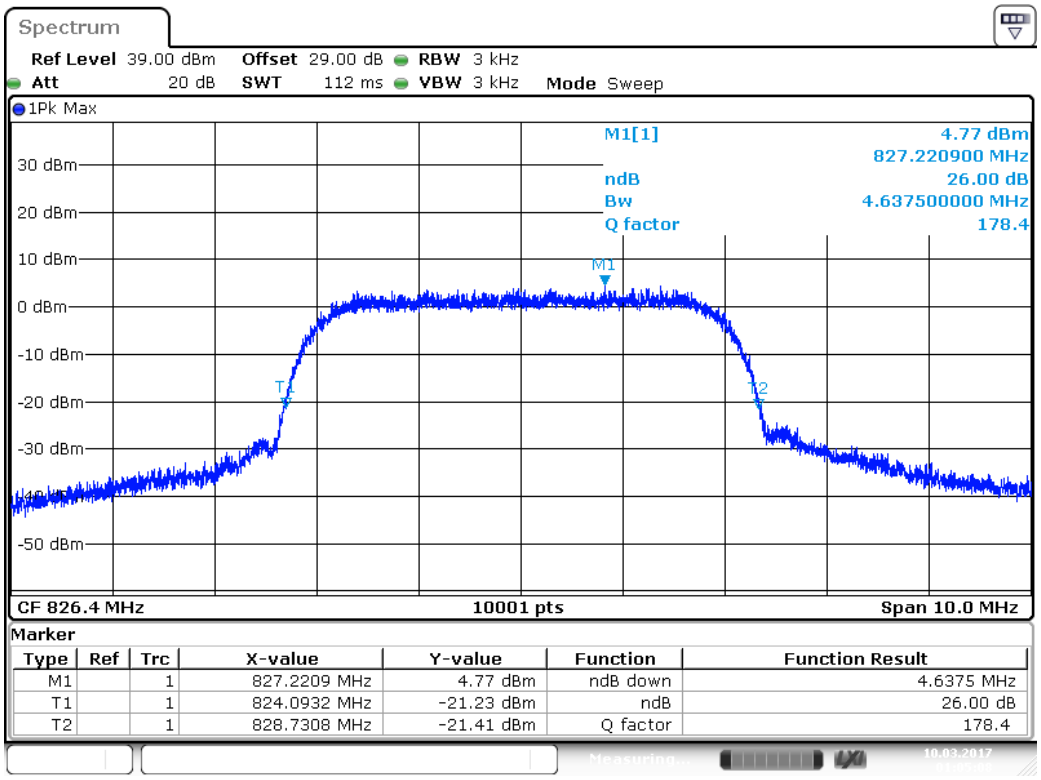


Date: 10.MAR.2017 00:53:02

Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 7: WCDMA Band 5_HSDPA_Link		
Date of Test	2017/03/10	Test Site	SR10-H

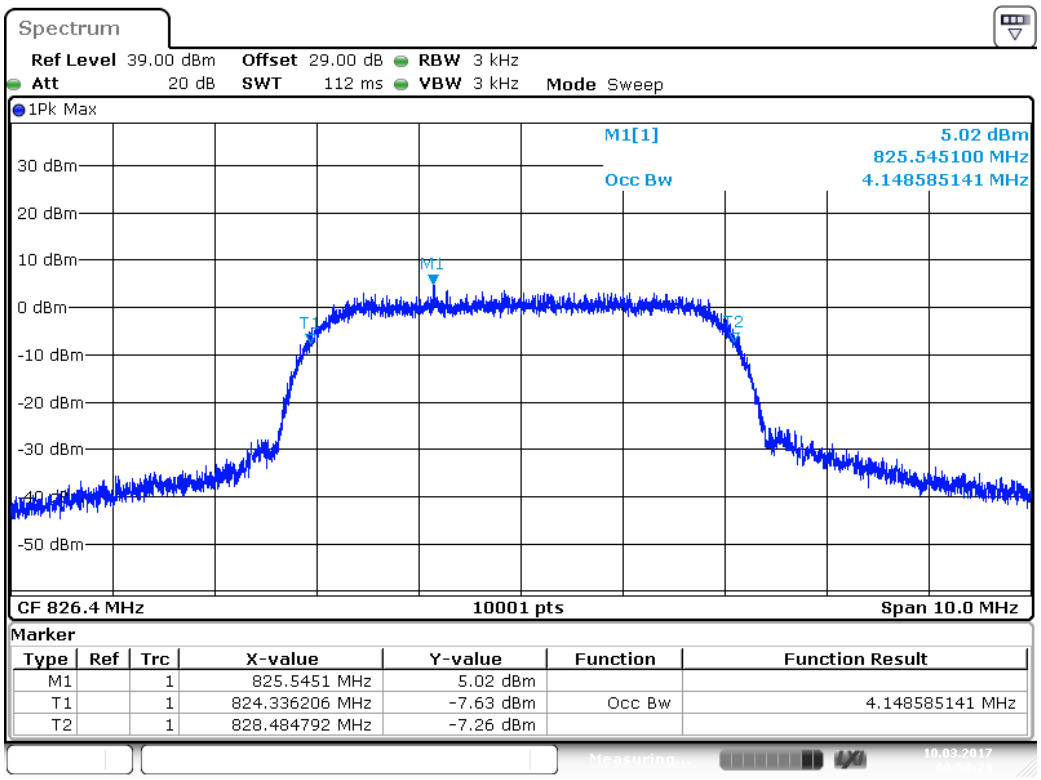
Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
4132	826.4	4.638	4.149
4182	836.6	4.677	4.155
4233	846.6	4.601	4.139

Figure Channel 4132 (826.40MHz) (-26dB BW)



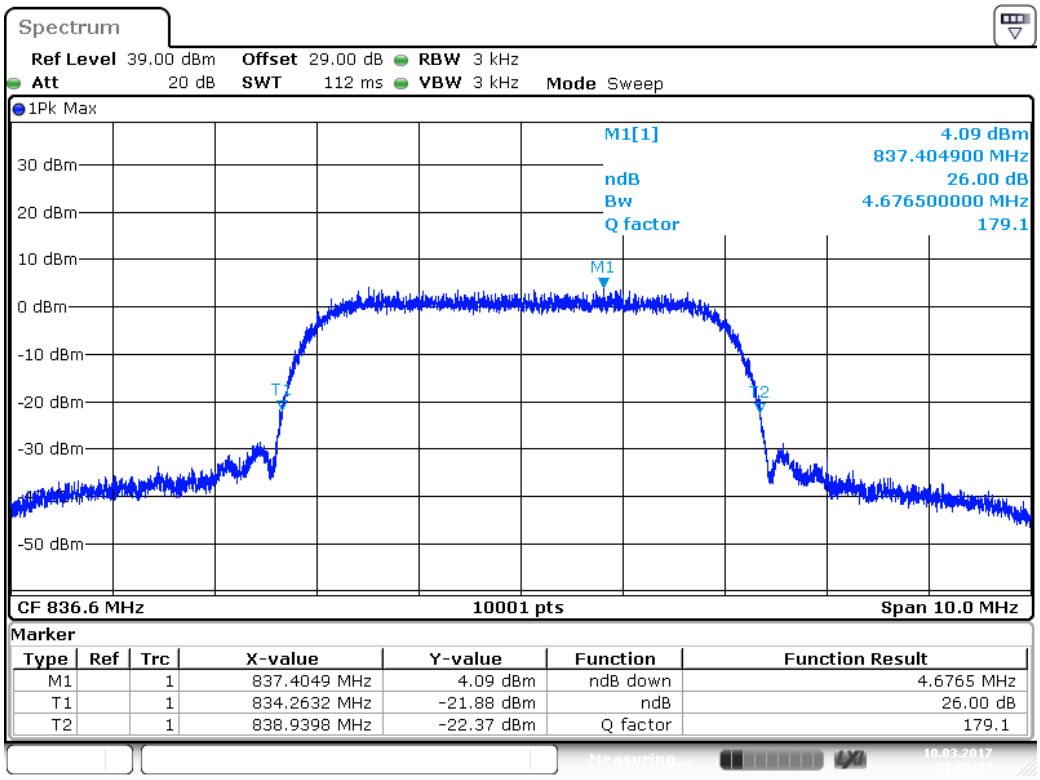
Date: 10.MAR.2017 01:05:08

Figure Channel 4132 (826.40MHz) (99% BW)



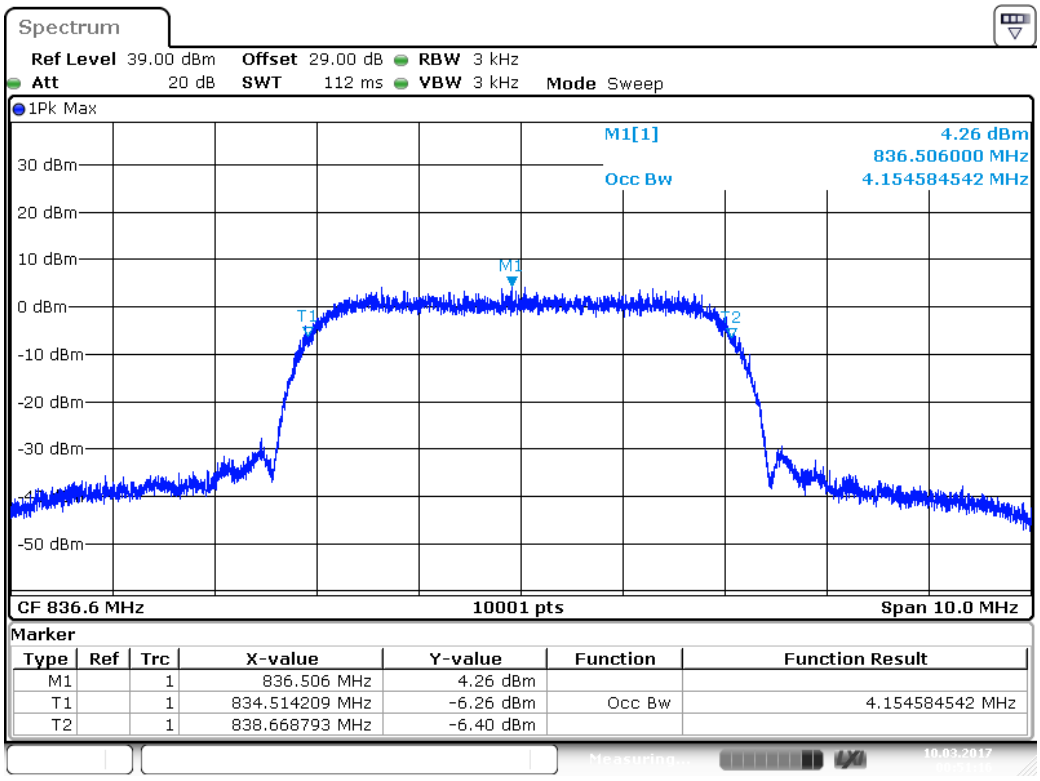
Date: 10.MAR.2017 00:50:24

Figure Channel 4182 (836.60MHz) (-26dB BW)



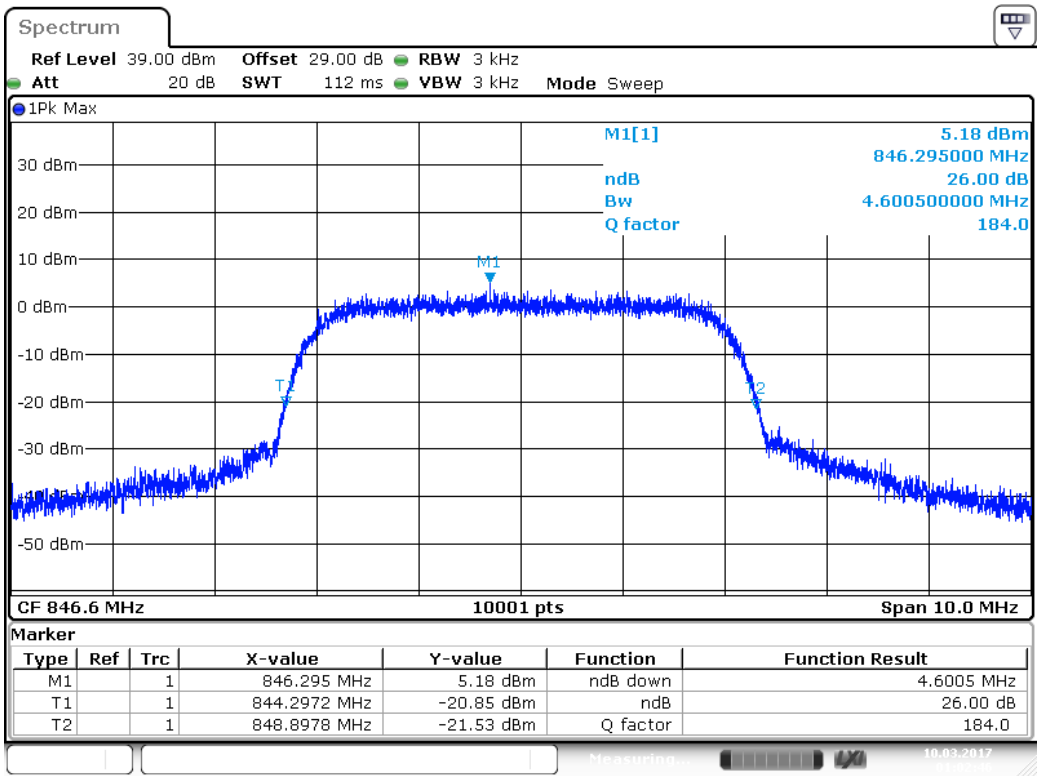
Date: 10.MAR.2017 01:03:37

Figure Channel 4182 (836.60MHz) (99% BW)



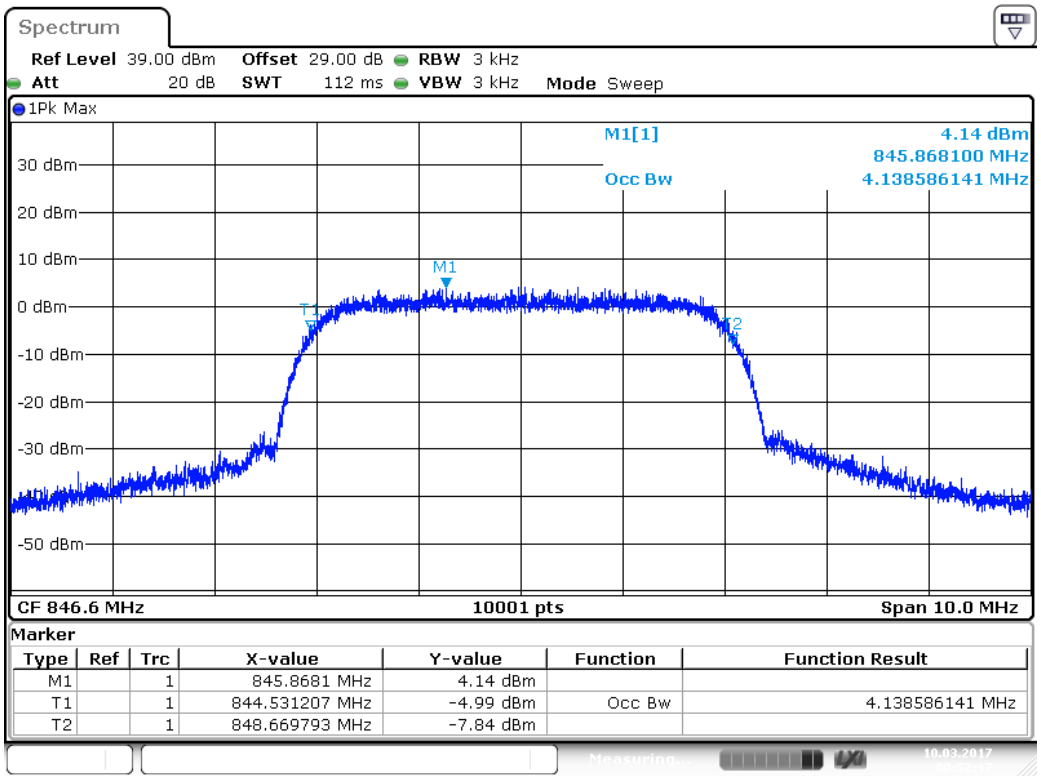
Date: 10.MAR.2017 00:51:16

Figure Channel 4233(846.60MHz) (-26dB BW)



Date: 10.MAR.2017 01:02:46

Figure Channel 4233(846.60MHz) (99% BW)

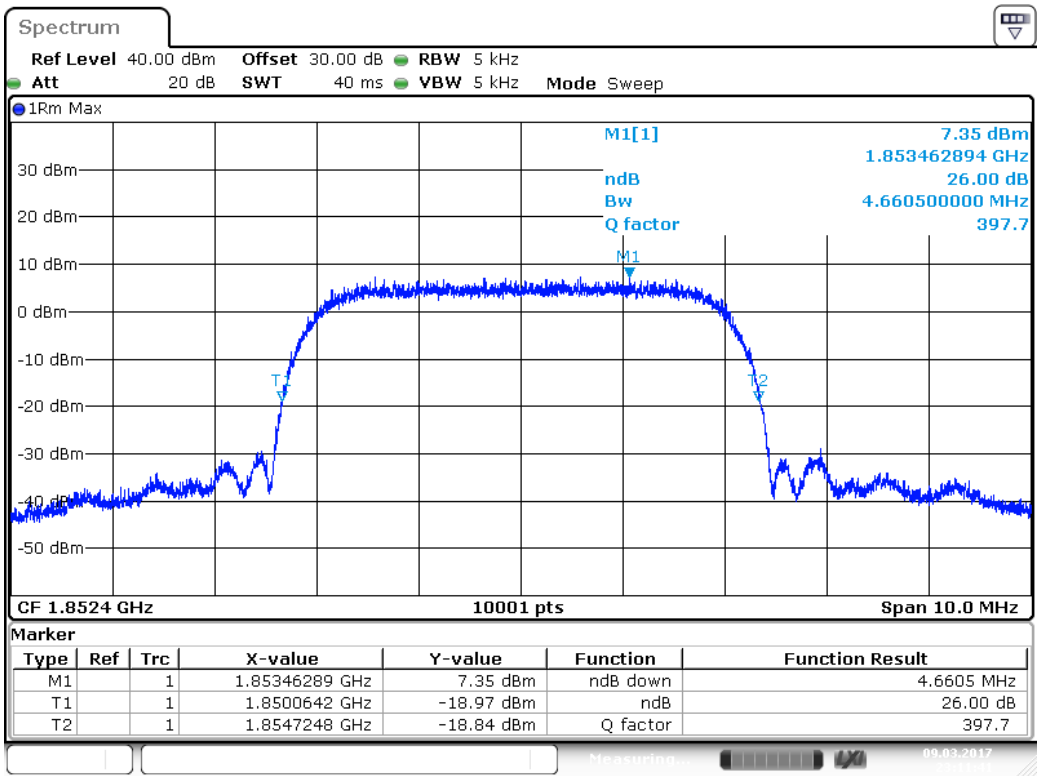


Date: 10.MAR.2017 00:52:16

Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 8: WCDMA Band 2_Link		
Date of Test	2017/03/10	Test Site	SR10-H

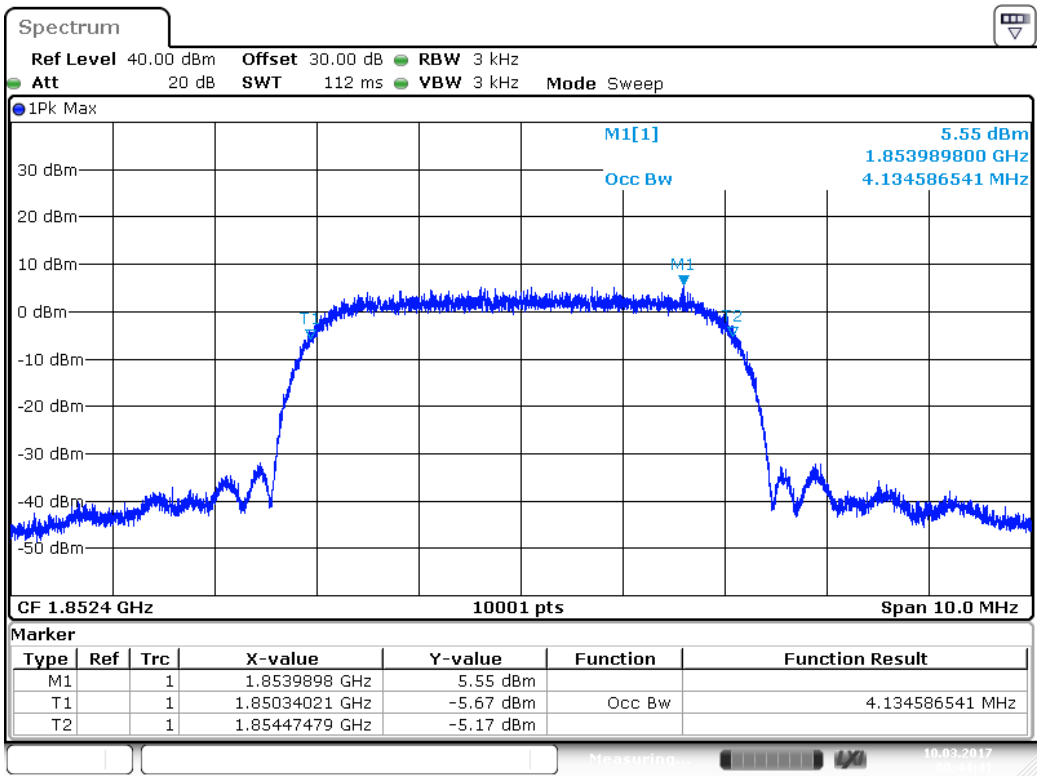
Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
9262	1852.4	4.661	4.135
9400	1880.0	4.668	4.136
9538	1907.6	4.671	4.138

Figure Channel 9262 (1852.40MHz) (-26dB BW)



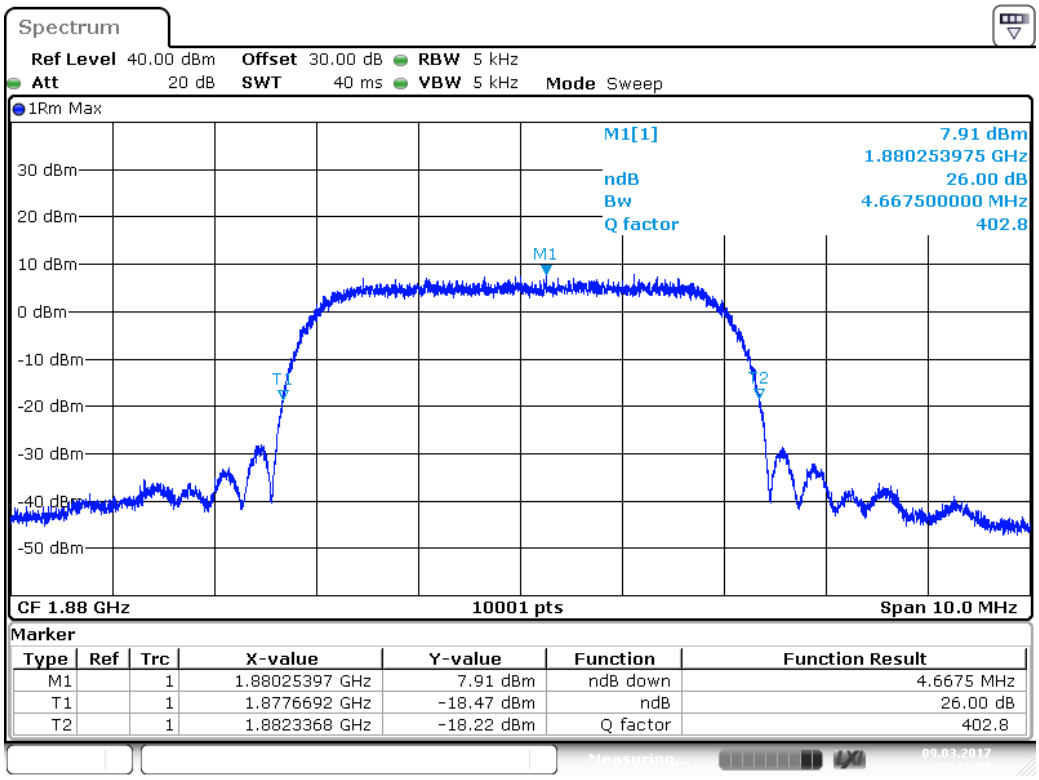
Date: 9.MAR.2017 23:11:41

Figure Channel 9262 (1852.40MHz) (99% BW)



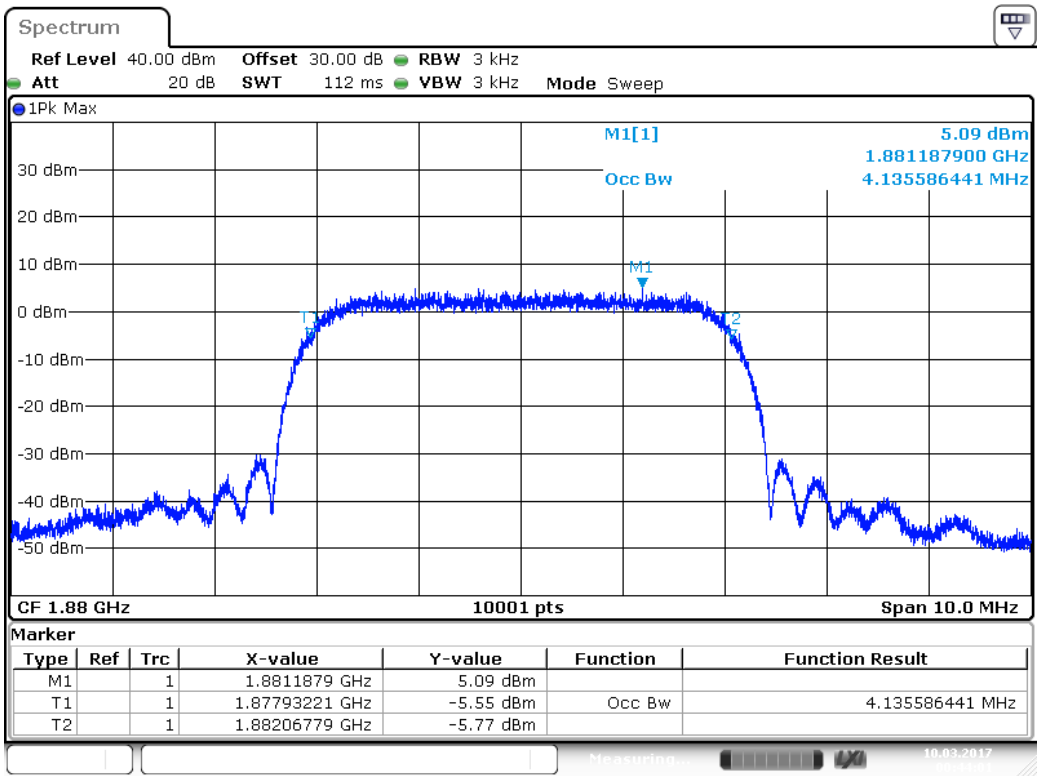
Date: 10.MAR.2017 00:44:41

Figure Channel 9400 (1880.0MHz) (-26dB BW)



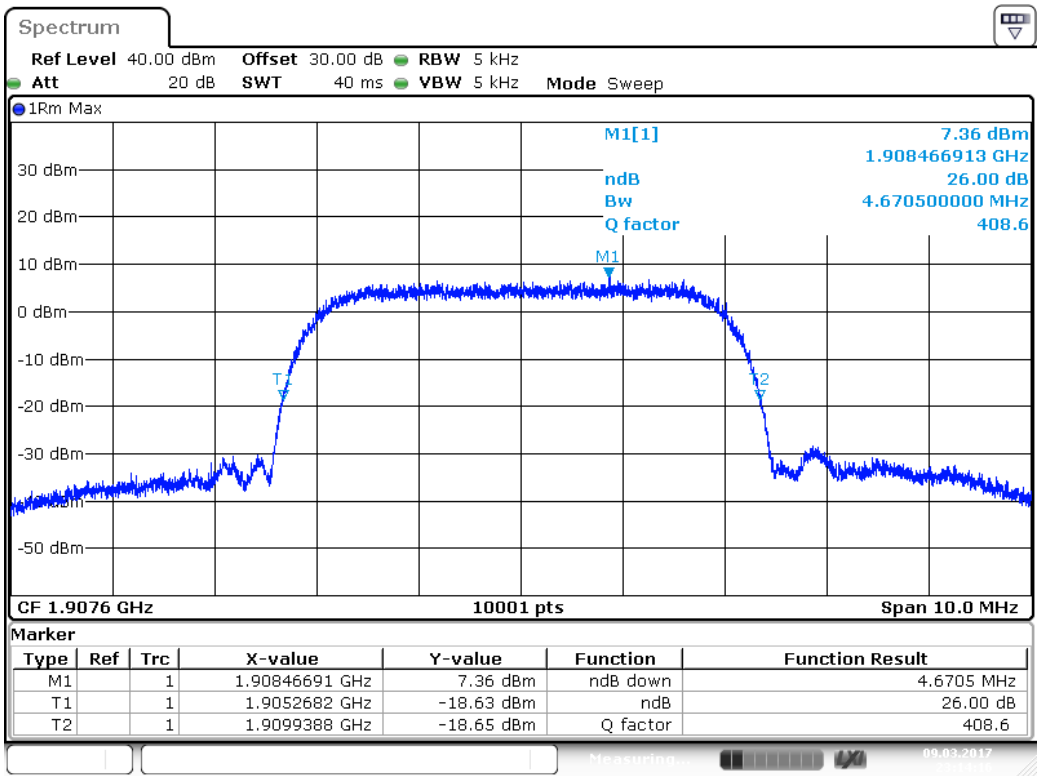
Date: 9.MAR.2017 23:13:08

Figure Channel 9400 (1880.0MHz) (99% BW)



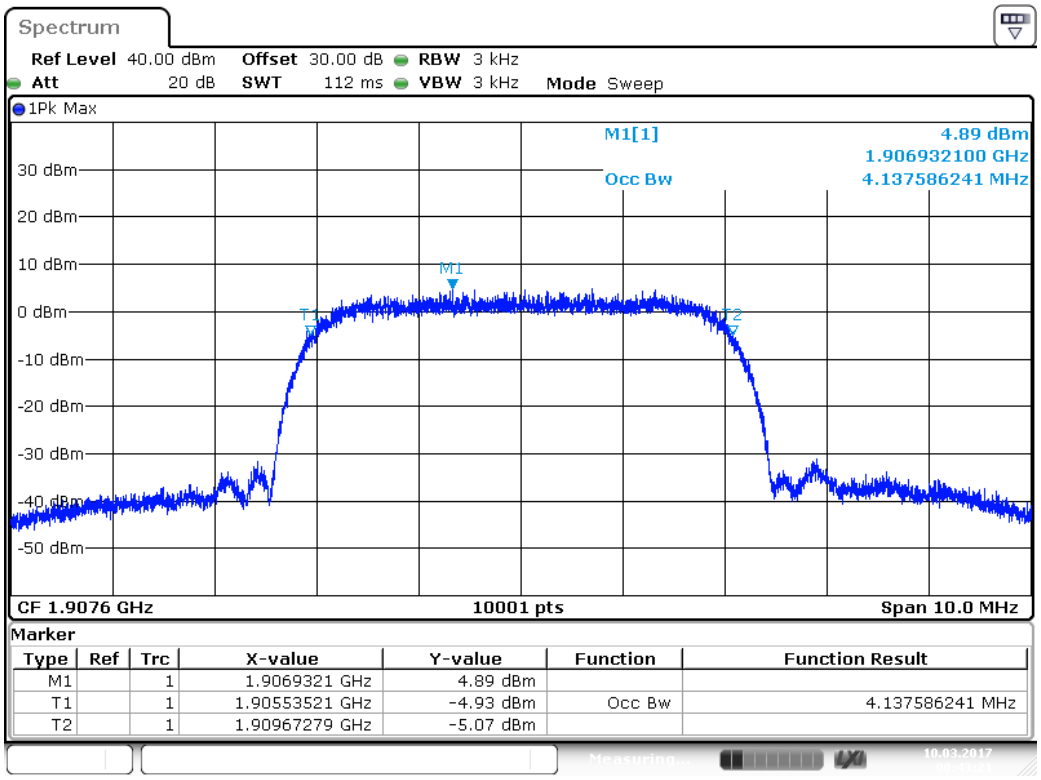
Date: 10.MAR.2017 00:44:01

Figure Channel 9538 (1907.60MHz) (-26dB BW)



Date: 9.MAR.2017 23:14:16

Figure Channel 9538 (1907.60MHz) (99% BW)

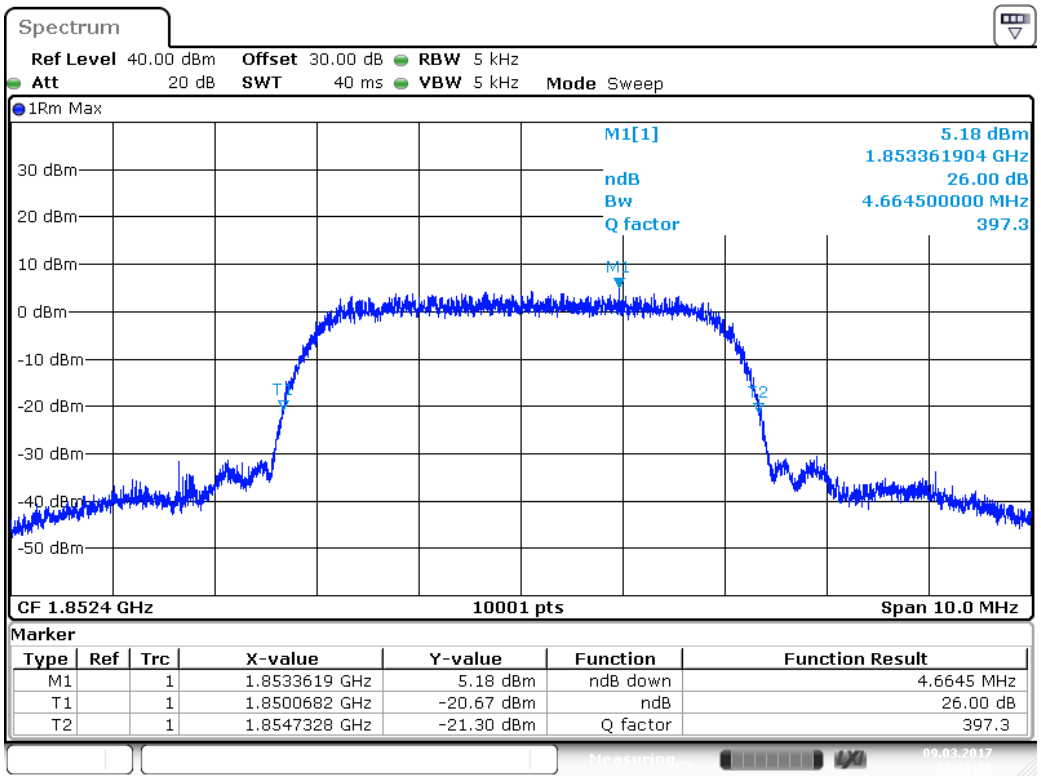


Date: 10.MAR.2017 00:43:22

Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 9: WCDMA Band 2_HSUPA_Link		
Date of Test	2017/03/10	Test Site	SR10-H

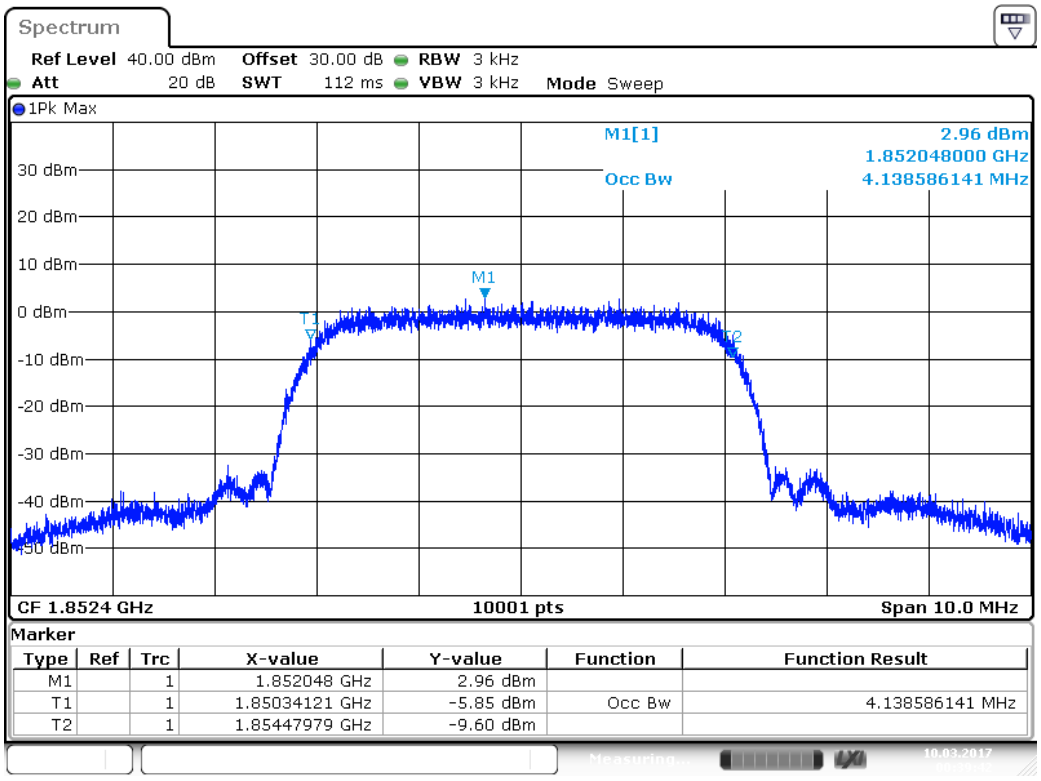
Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
9262	1852.4	4.665	4.139
9400	1880.0	4.664	4.138
9538	1907.6	4.651	4.139

Figure Channel 9262 (1852.40MHz) (-26dB BW)



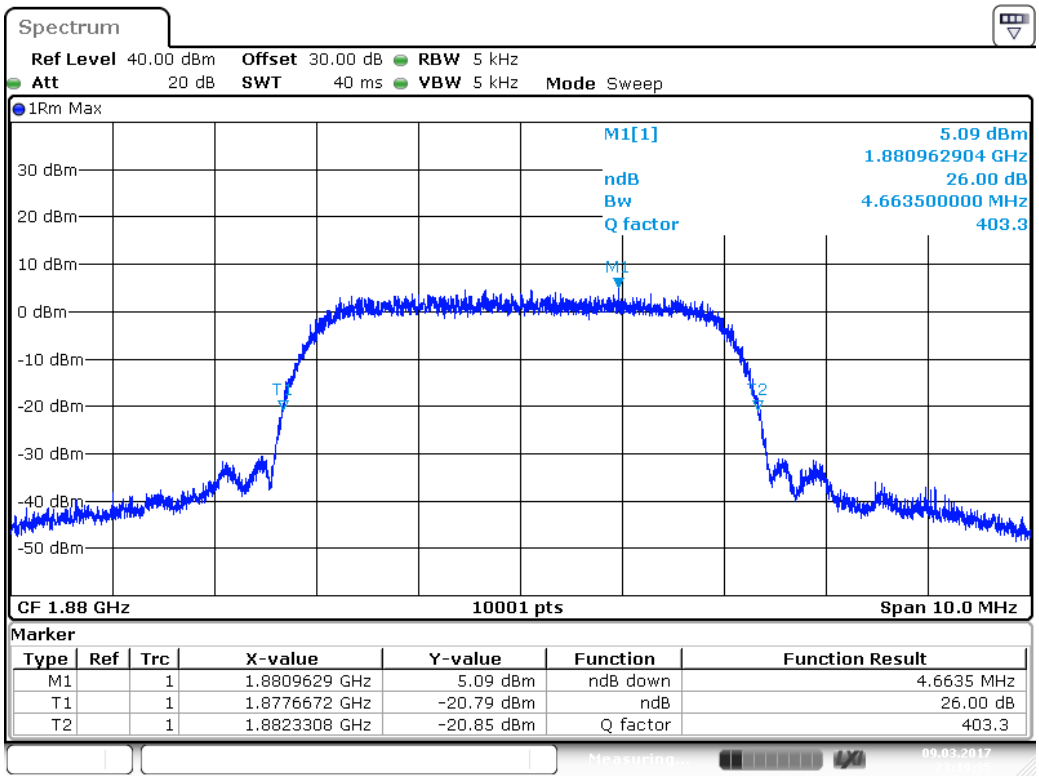
Date: 9.MAR.2017 23:21:16

Figure Channel 9262 (1852.40MHz) (99% BW)



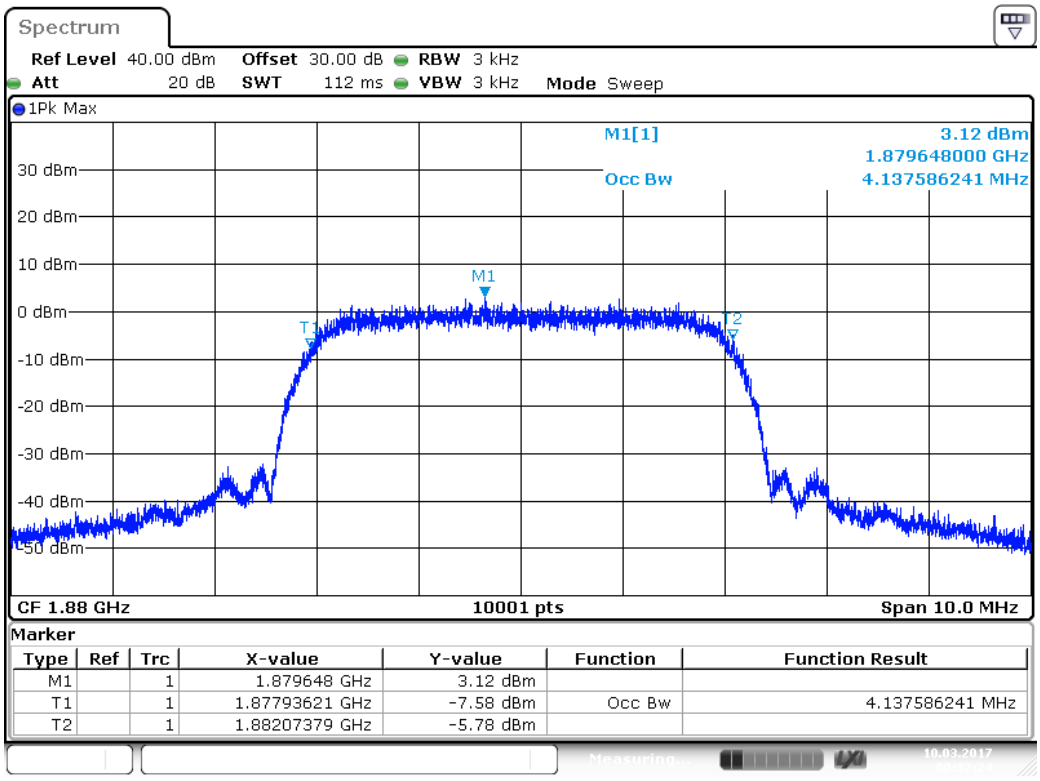
Date: 10.MAR.2017 00:39:43

Figure Channel 9400 (1880.0MHz) (-26dB BW)



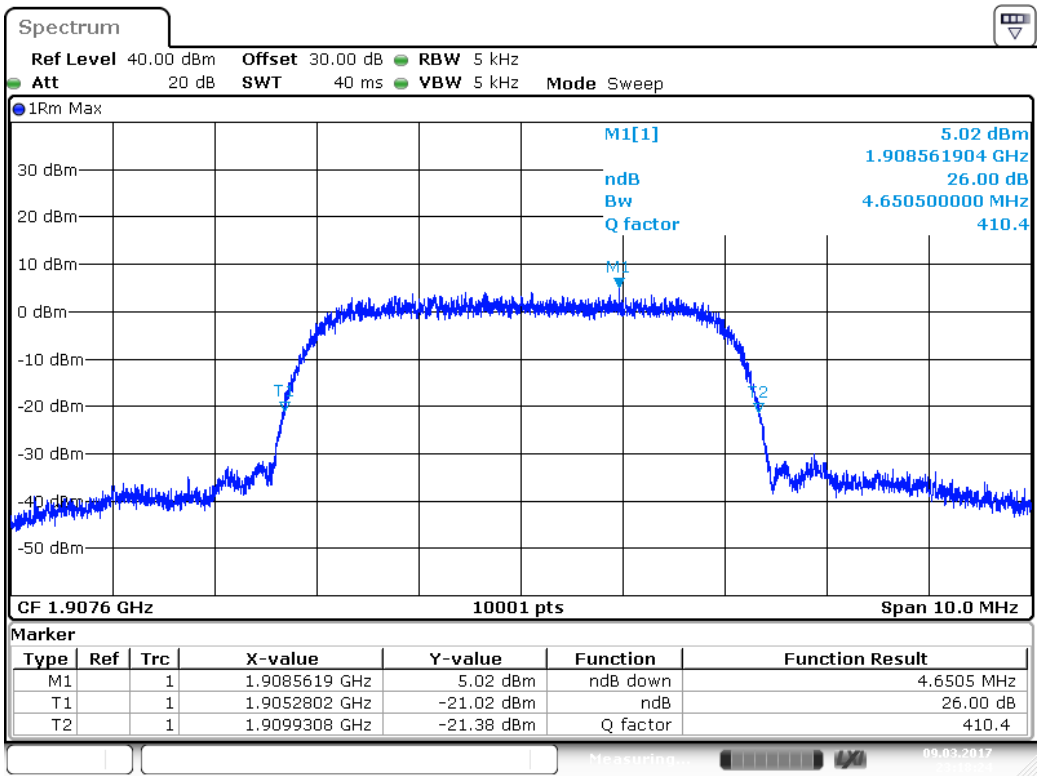
Date: 9.MAR.2017 23:19:35

Figure Channel 9400 (1880.0MHz) (99% BW)



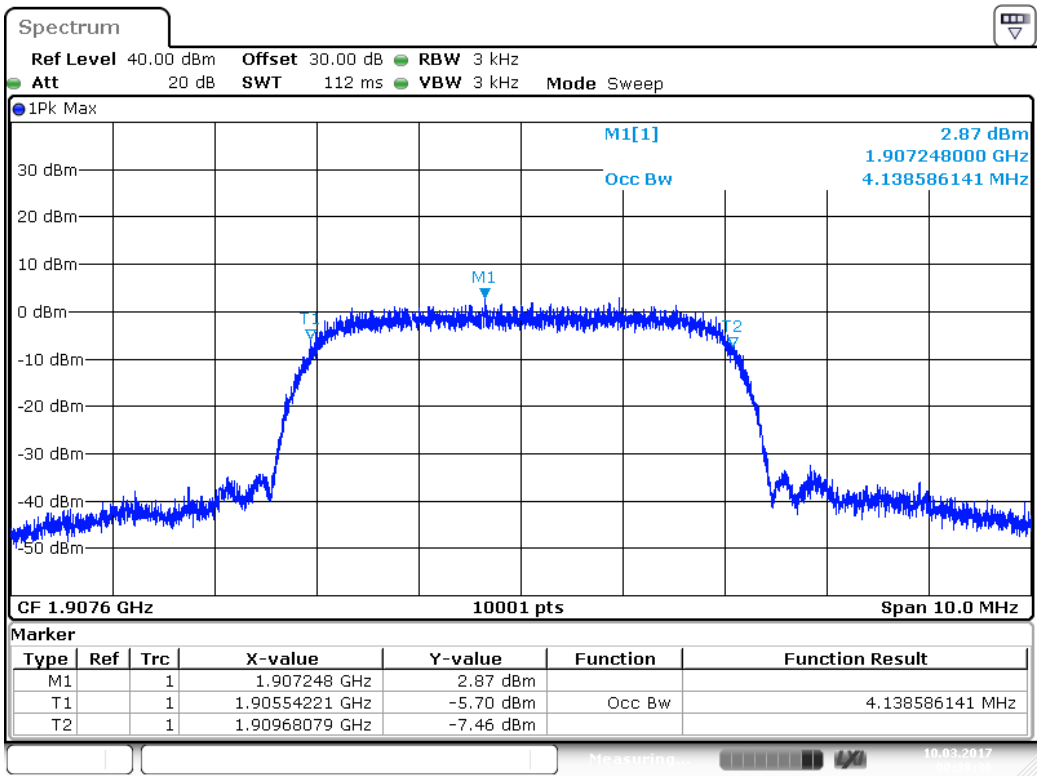
Date: 10.MAR.2017 00:37:24

Figure Channel 9538 (1907.60MHz) (-26dB BW)



Date: 9.MAR.2017 23:18:24

Figure Channel 9538 (1907.60MHz) (99% BW)

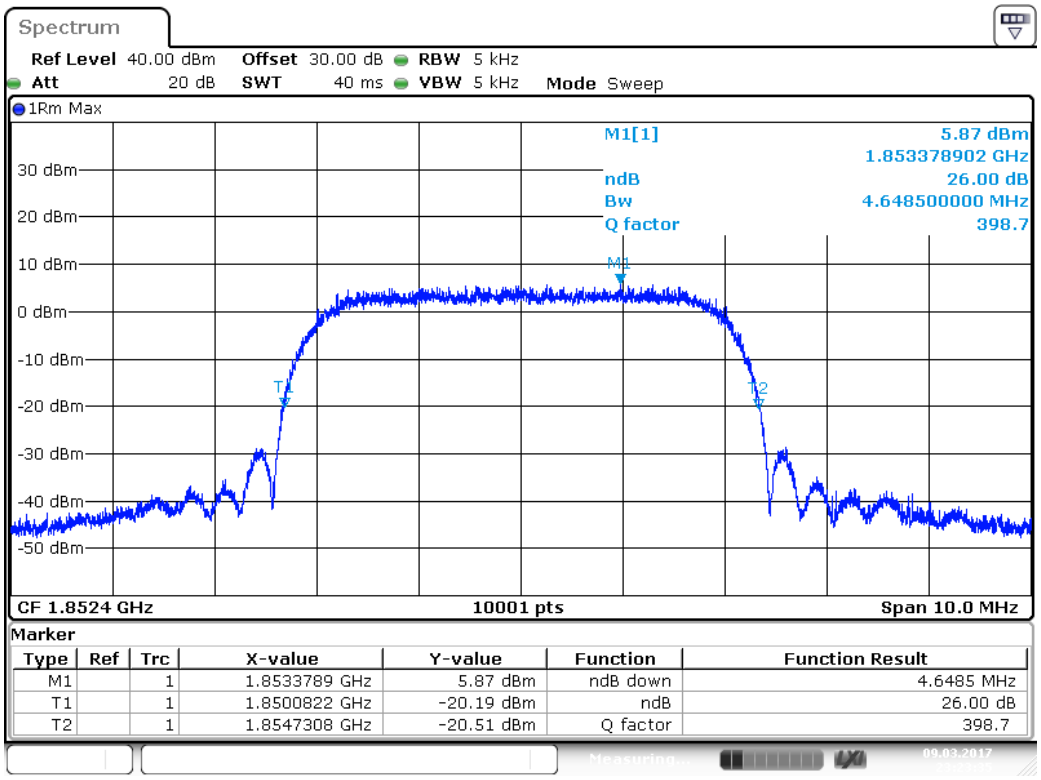


Date: 10.MAR.2017 00:38:37

Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 10: WCDMA Band 2_HSDPA_Link		
Date of Test	2017/03/10	Test Site	SR10-H

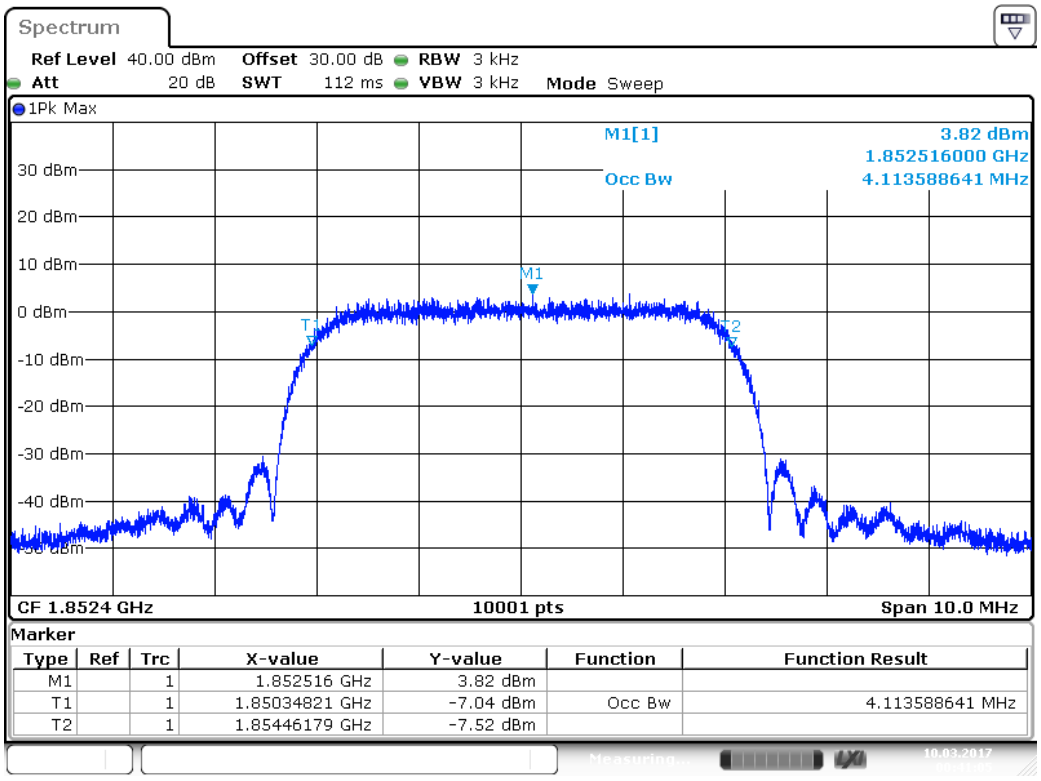
Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
9262	1852.4	4.649	4.114
9400	1880.0	4.654	4.129
9538	1907.6	4.659	4.134

Figure Channel 9262 (1852.40MHz) (-26dB BW)



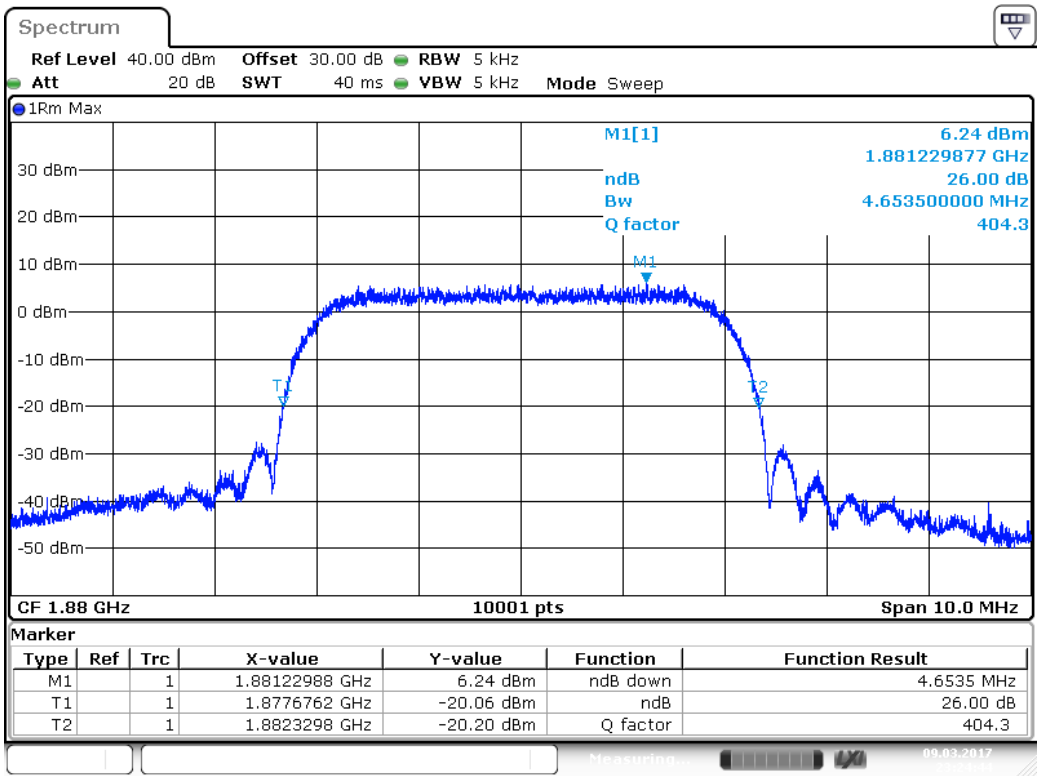
Date: 9.MAR.2017 23:23:35

Figure Channel 9262 (1852.40MHz) (99% BW)



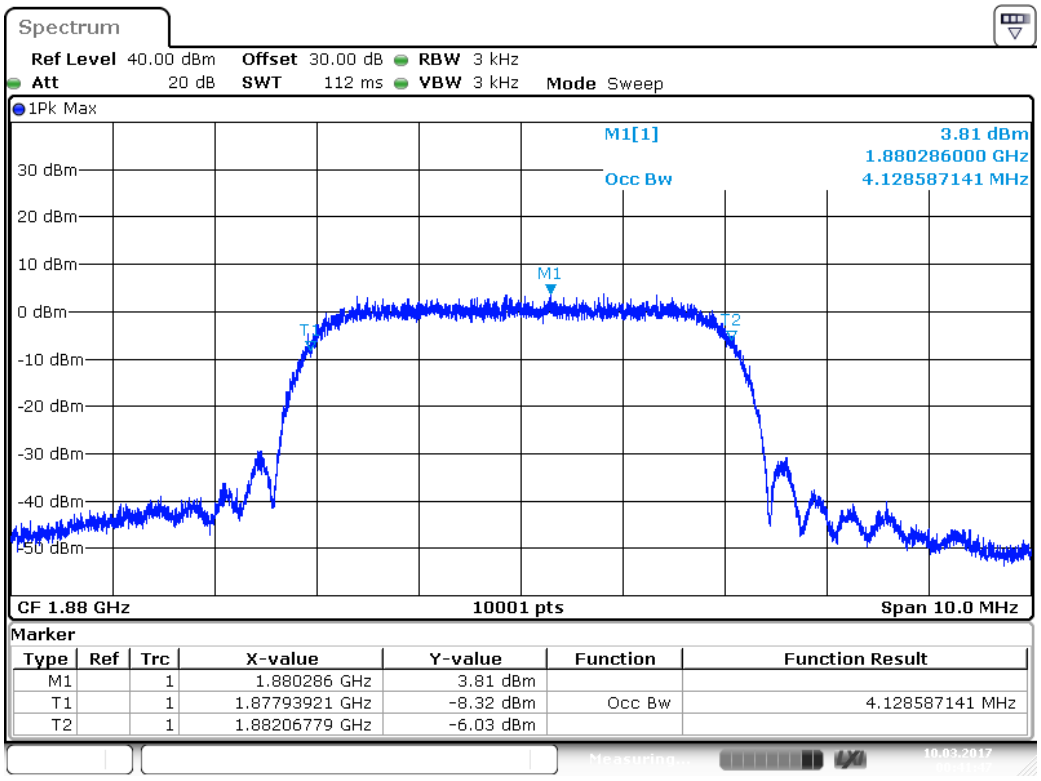
Date: 10.MAR.2017 00:41:05

Figure Channel 9400 (1880.0MHz) (-26dB BW)



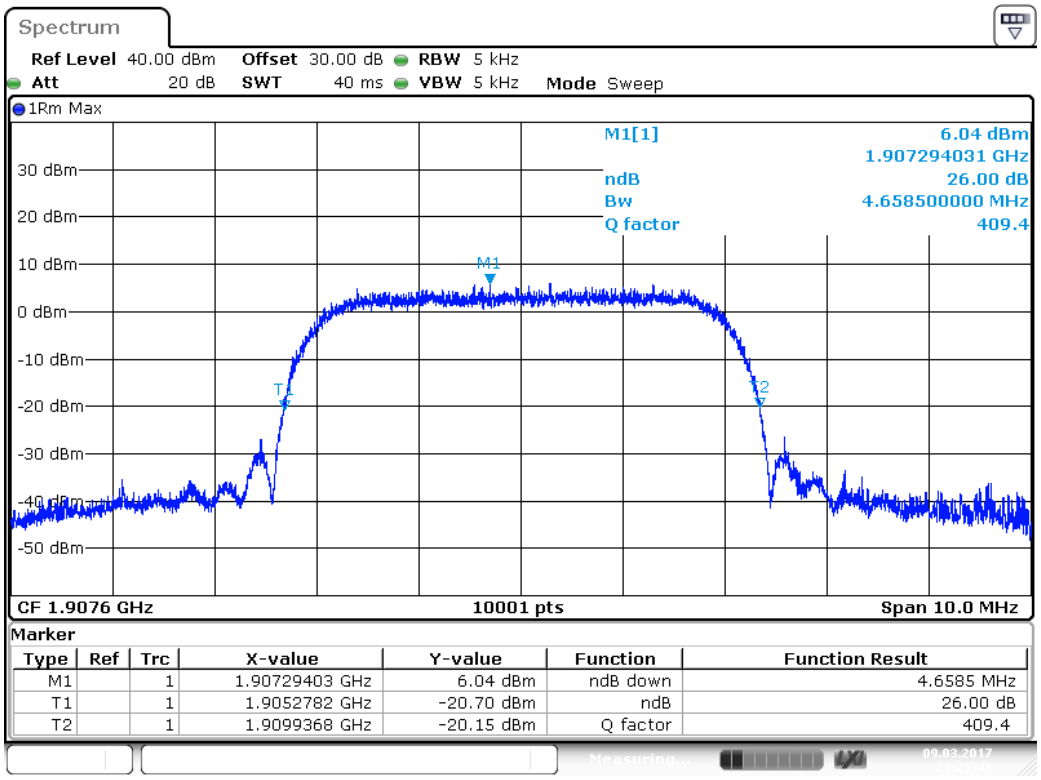
Date: 9.MAR.2017 23:24:44

Figure Channel 9400 (1880.0MHz) (99% BW)



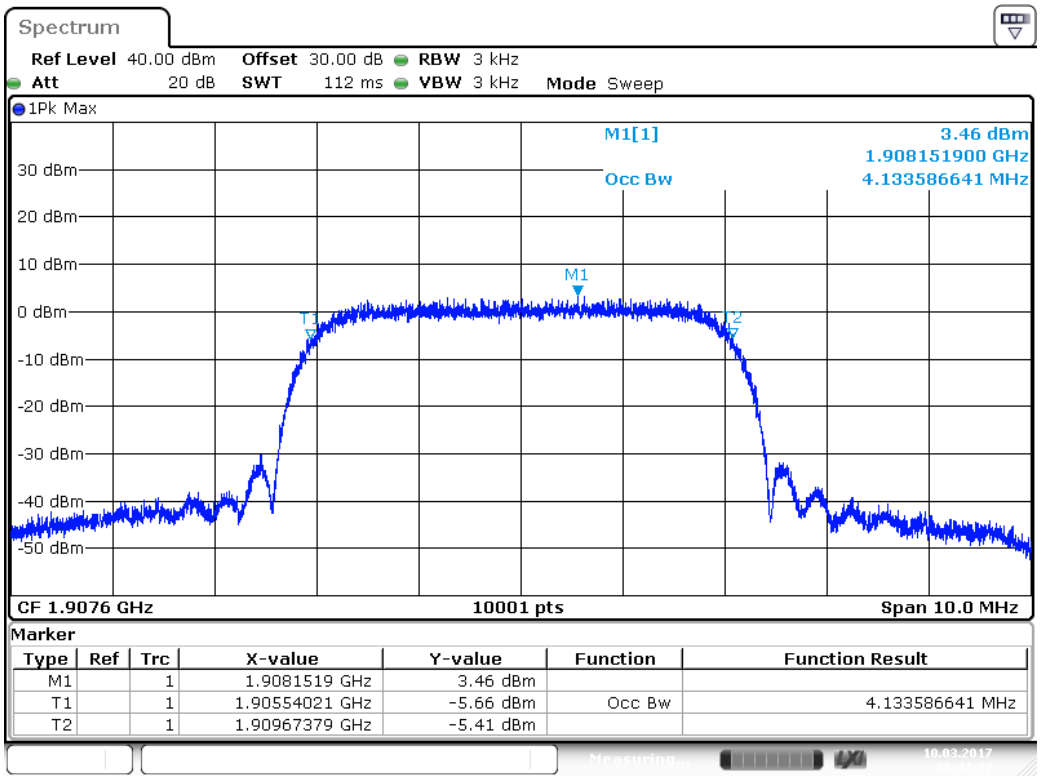
Date: 10.MAR.2017 00:41:47

Figure Channel 9538 (1907.60MHz) (-26dB BW)



Date: 9.MAR.2017 23:25:41

Figure Channel 9538 (1907.60MHz) (99% BW)

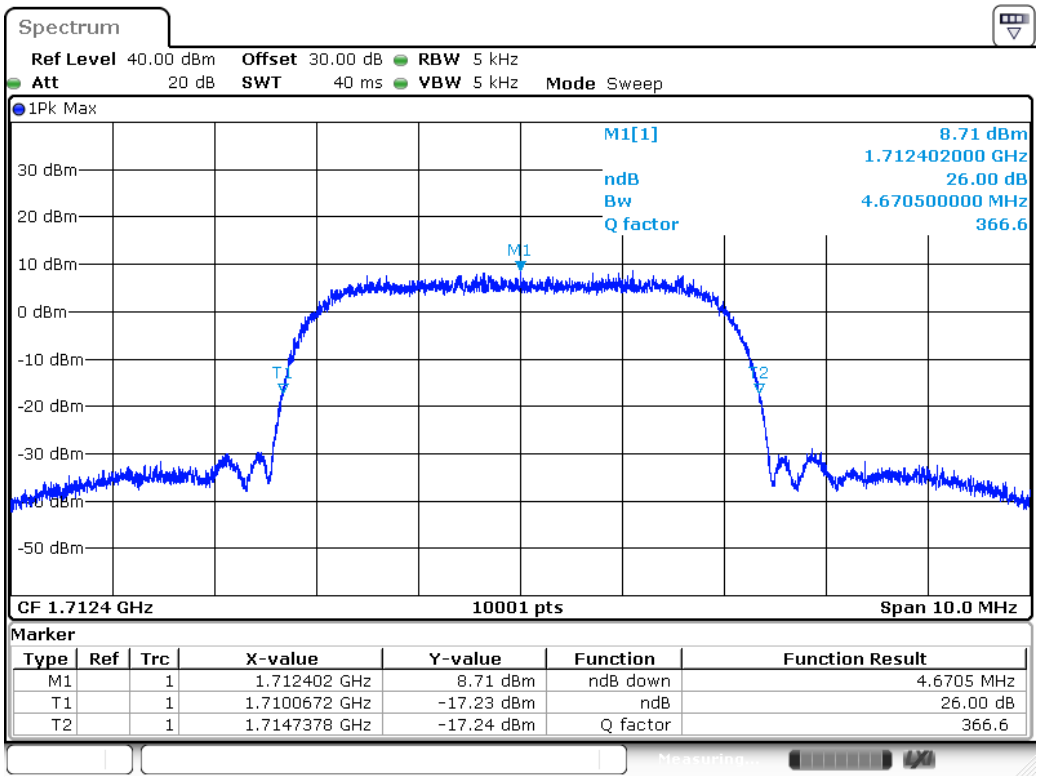


Date: 10.MAR.2017 00:42:36

Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 11: WCDMA Band4_Link		
Date of Test	2017/03/13	Test Site	SR10-H

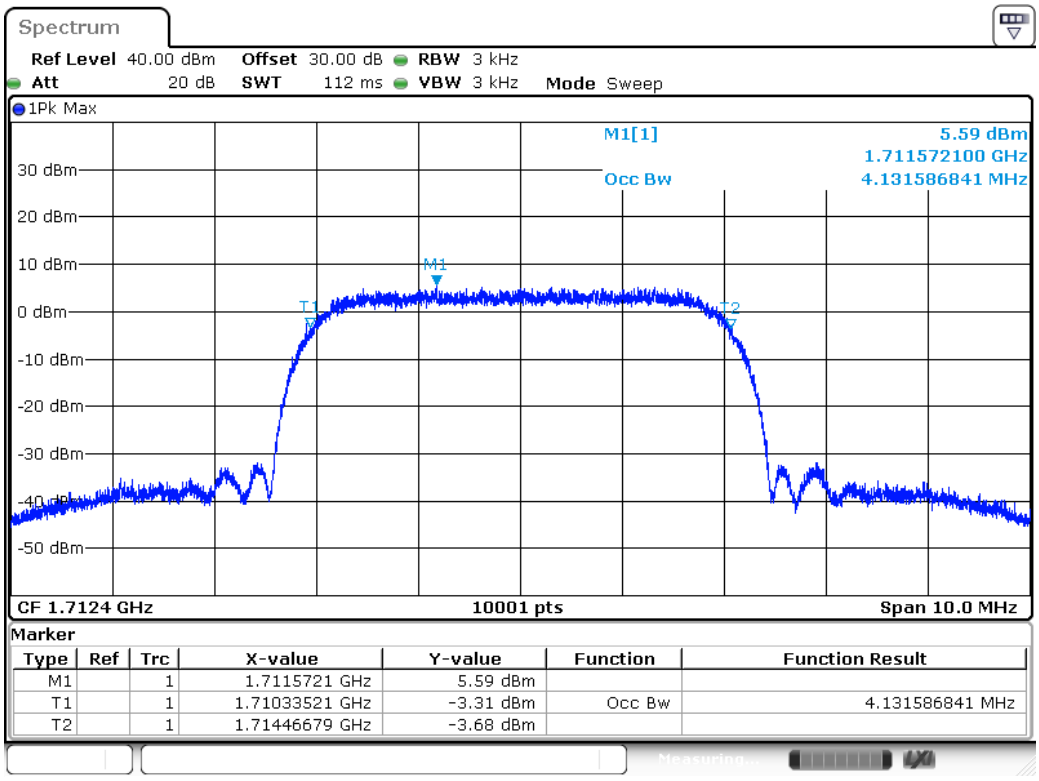
Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
1312	1712.4	4.671	4.132
1413	1732.6	4.668	4.133
1513	1752.6	4.688	4.139

Figure Channel 1312 (1712.4MHz)(-26dB BW)



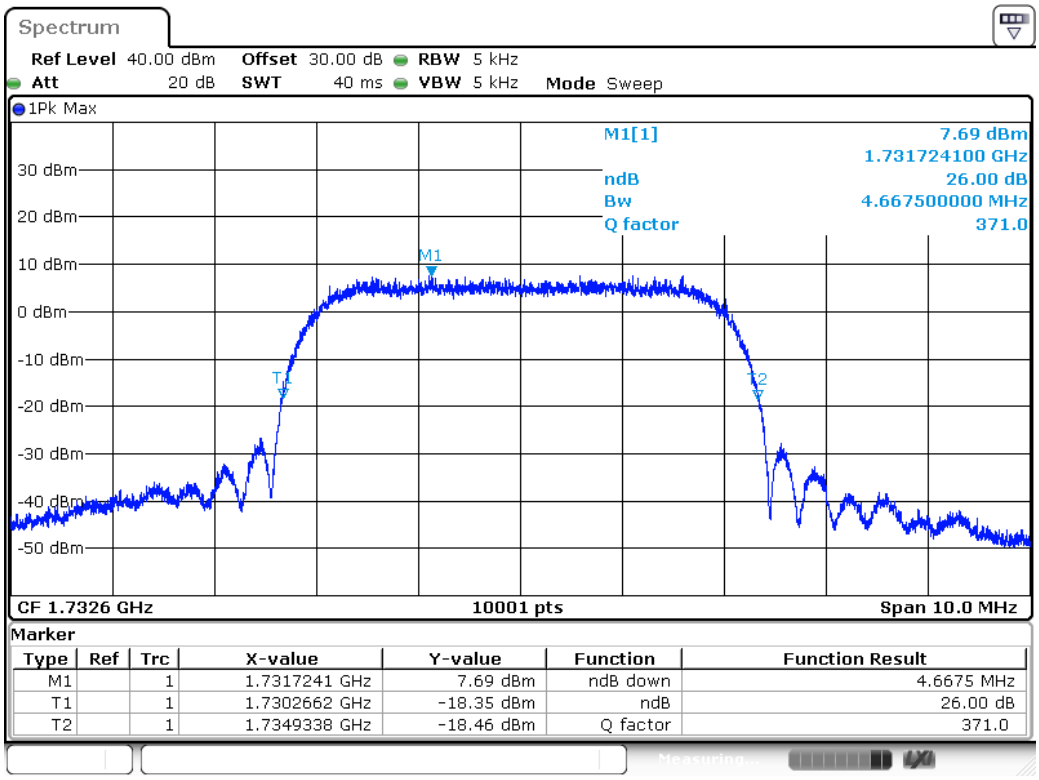
Date: 13.MAR.2017 21:08:57

Figure Channel 1312 (1712.4MHz)(99% BW)



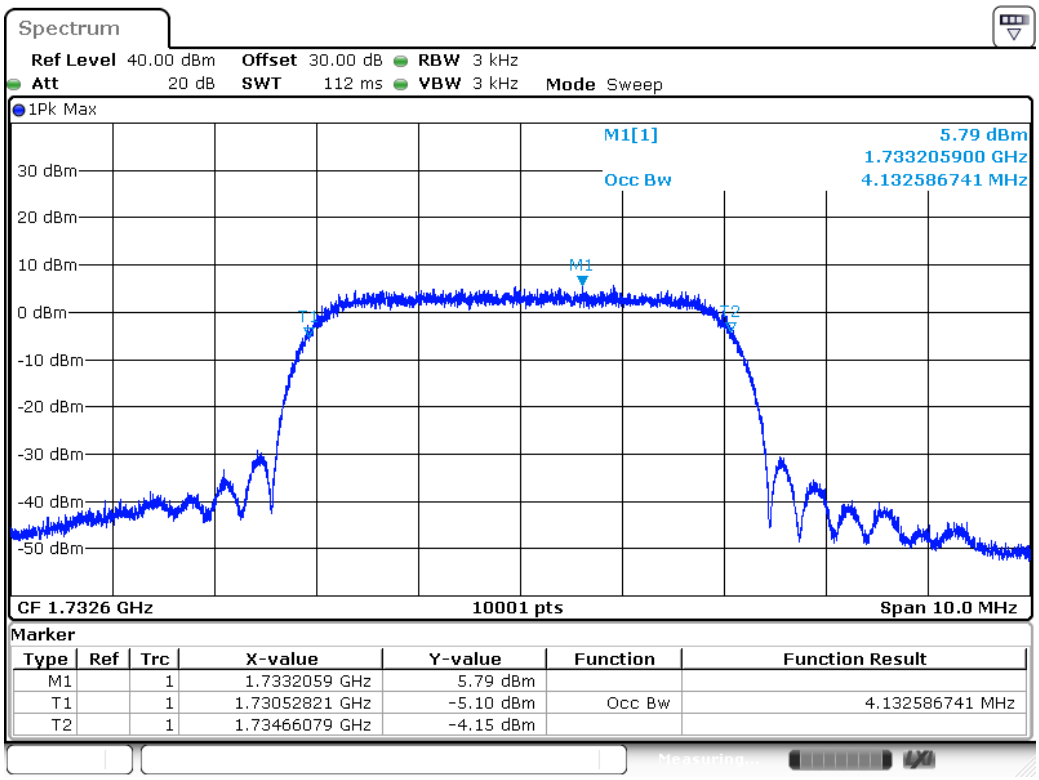
Date: 13.MAR.2017 20:43:45

Figure Channel 1413 (1732.6MHz)(-26dB BW)



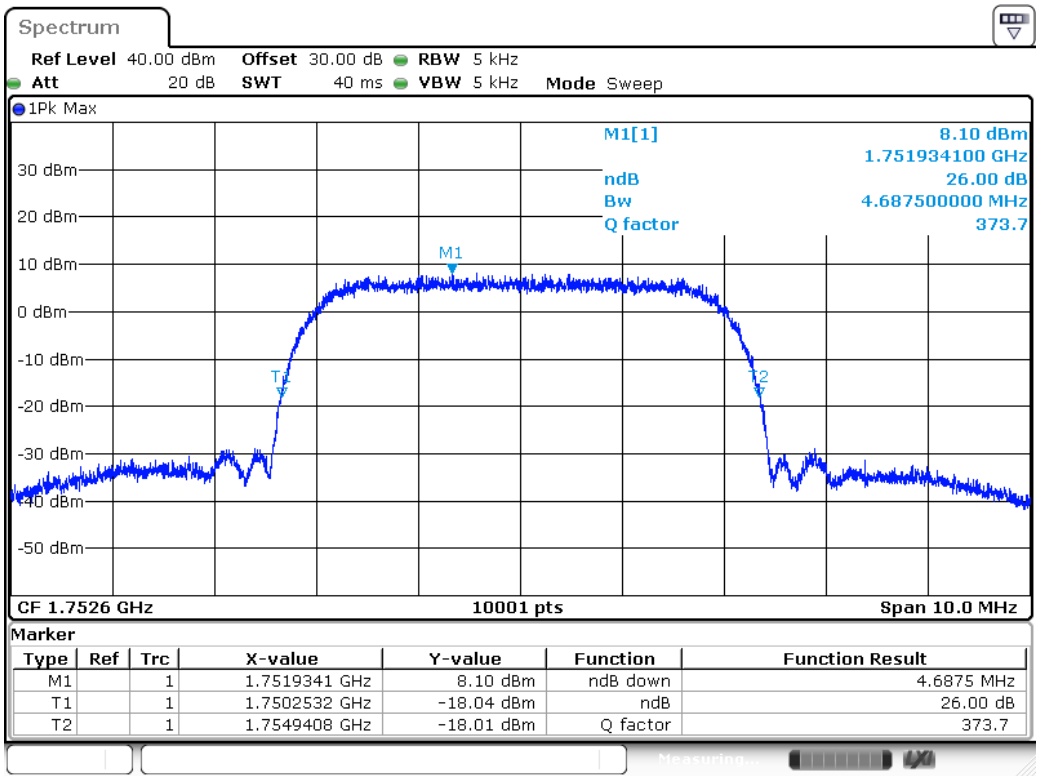
Date: 13.MAR.2017 21:07:56

Figure Channel 1413 (1732.6MHz)(99% BW)



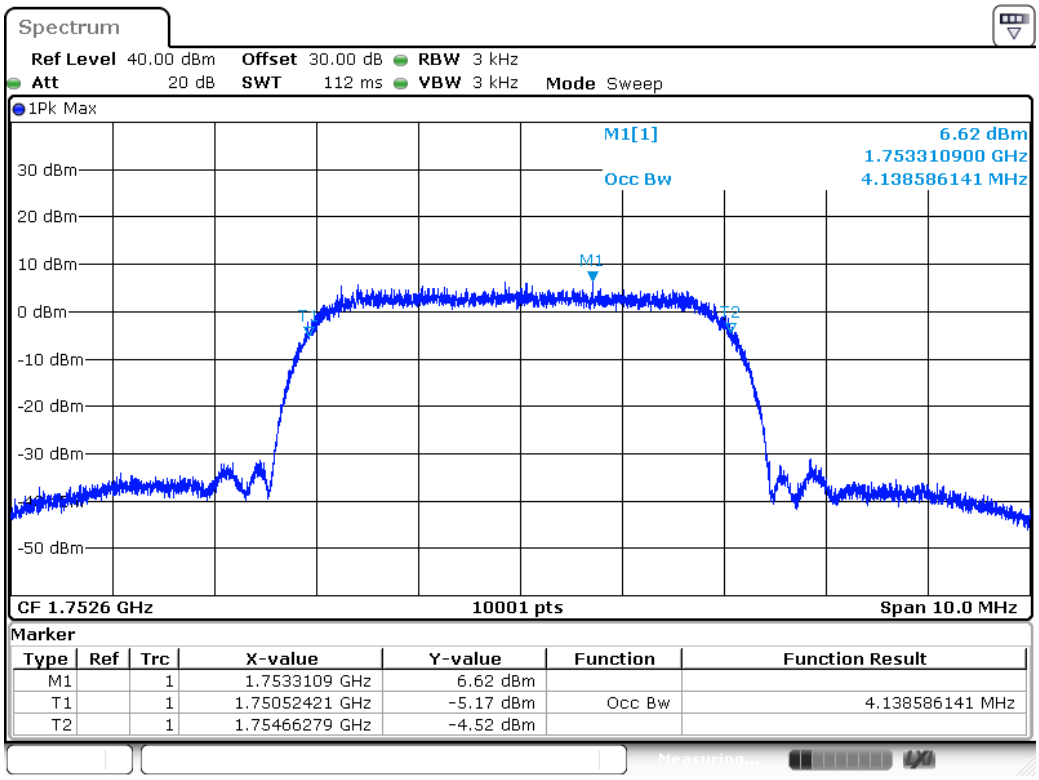
Date: 13.MAR.2017 20:45:36

Figure Channel 1513 (1752.6MHz)(-26dB BW)



Date: 13.MAR.2017 21:07:00

Figure Channel 1513 (1752.6MHz)(99% BW)

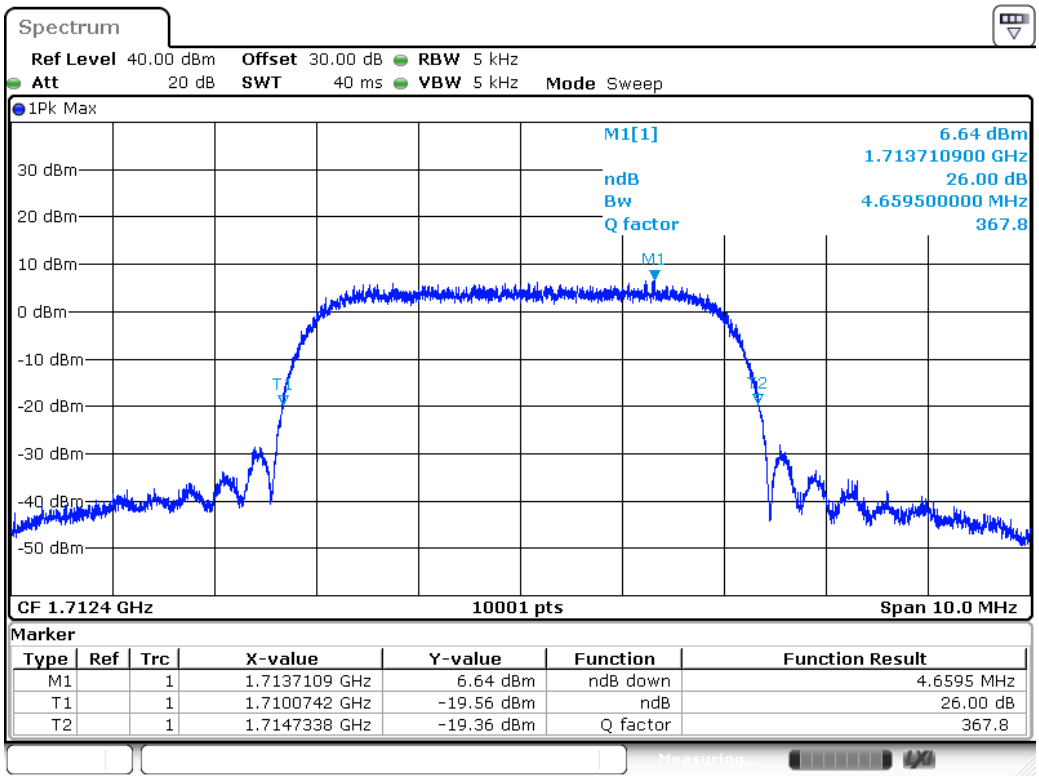


Date: 13.MAR.2017 20:46:41

Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 12: WCDMA Band4_HSUPA_Link		
Date of Test	2017/03/13	Test Site	SR10-H

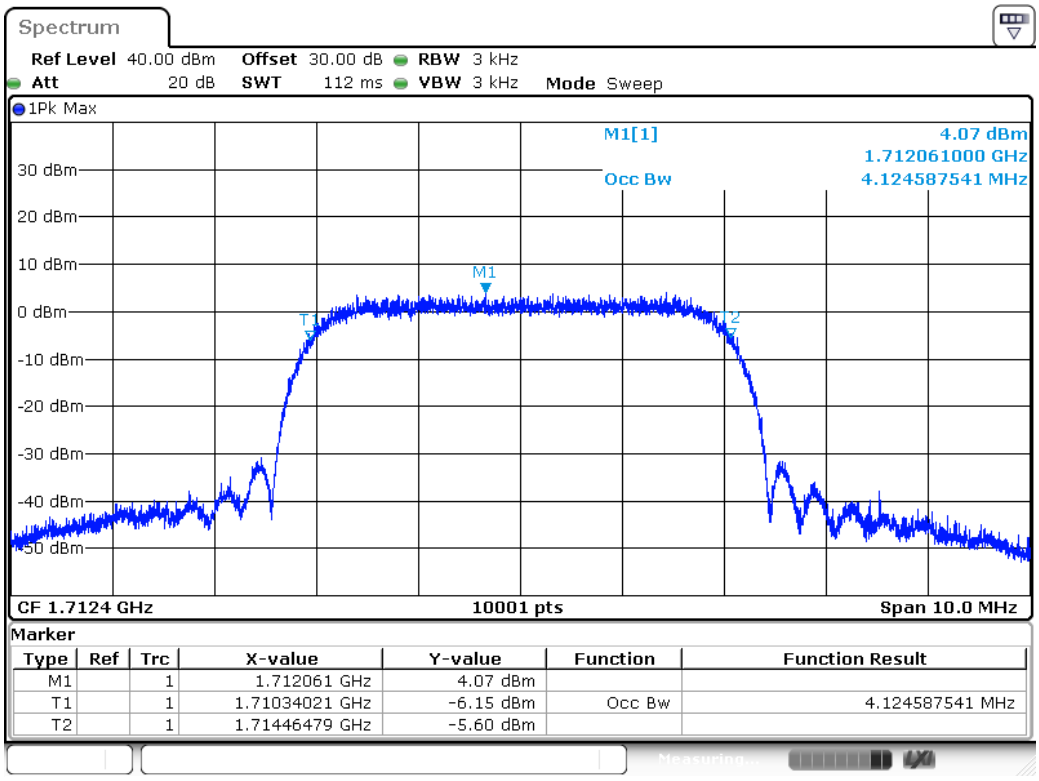
Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
1312	1712.4	4.660	4.125
1413	1732.6	4.645	4.134
1513	1752.6	4.660	4.125

Figure Channel 1312 (1712.4MHz)(-26dB BW)



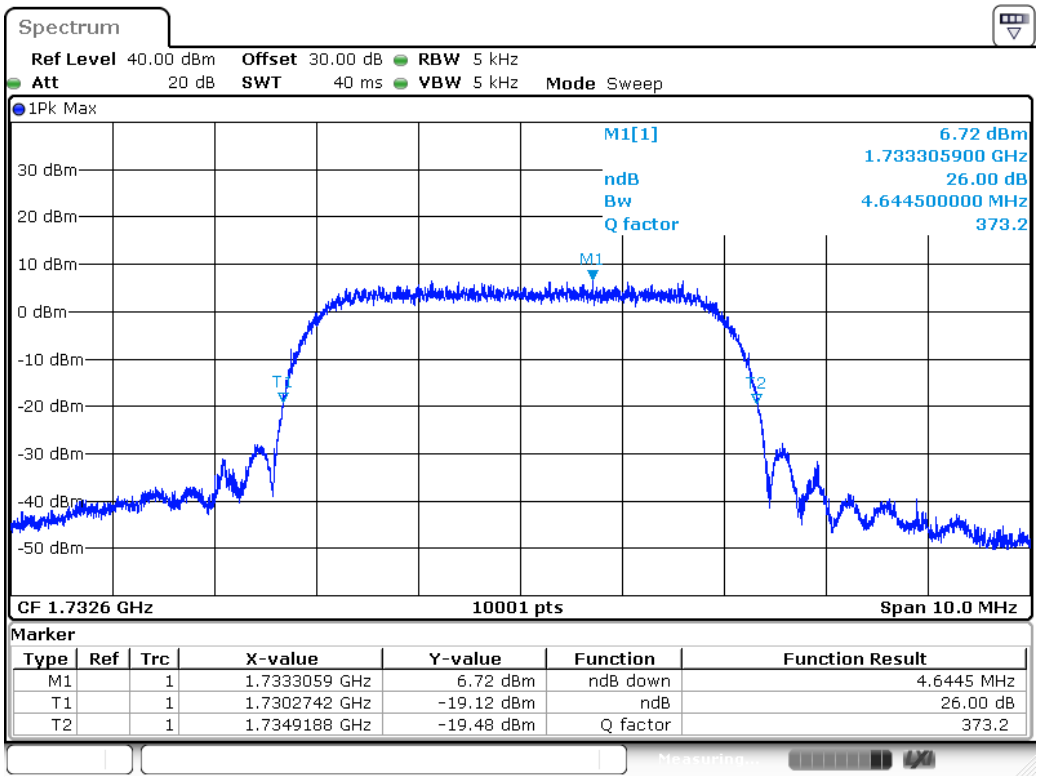
Date: 13.MAR.2017 21:02:38

Figure Channel 1312 (1712.4MHz)(99% BW)



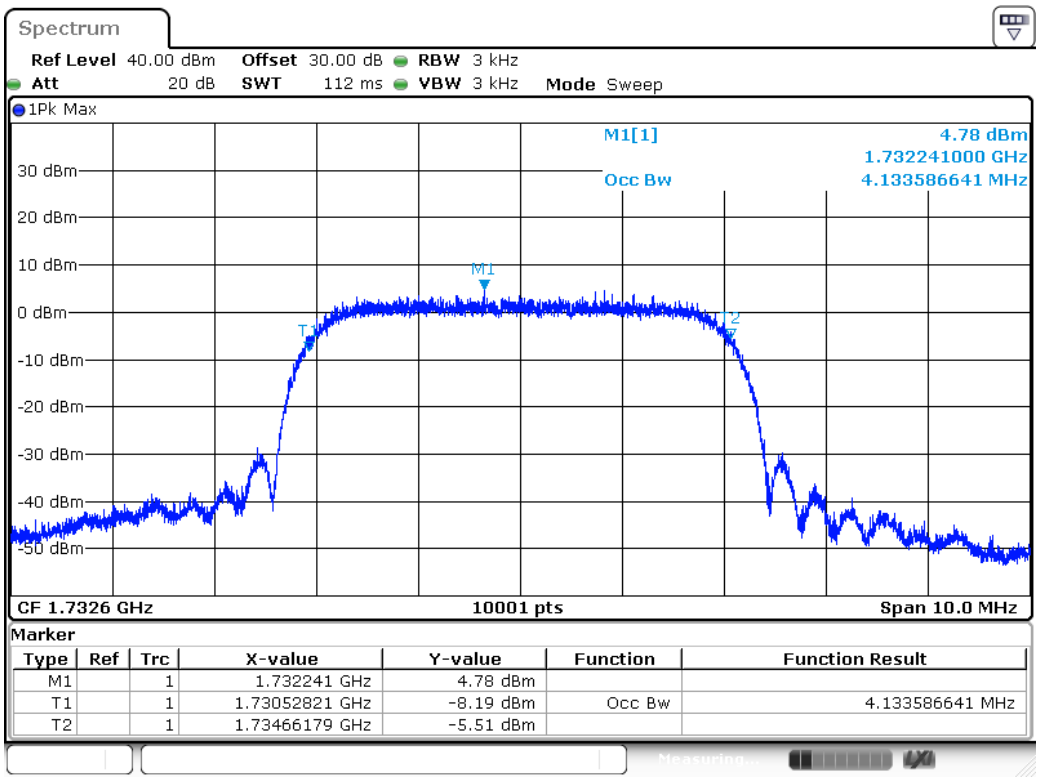
Date: 13.MAR.2017 20:51:30

Figure Channel 1413 (1732.6MHz)(-26dB BW)



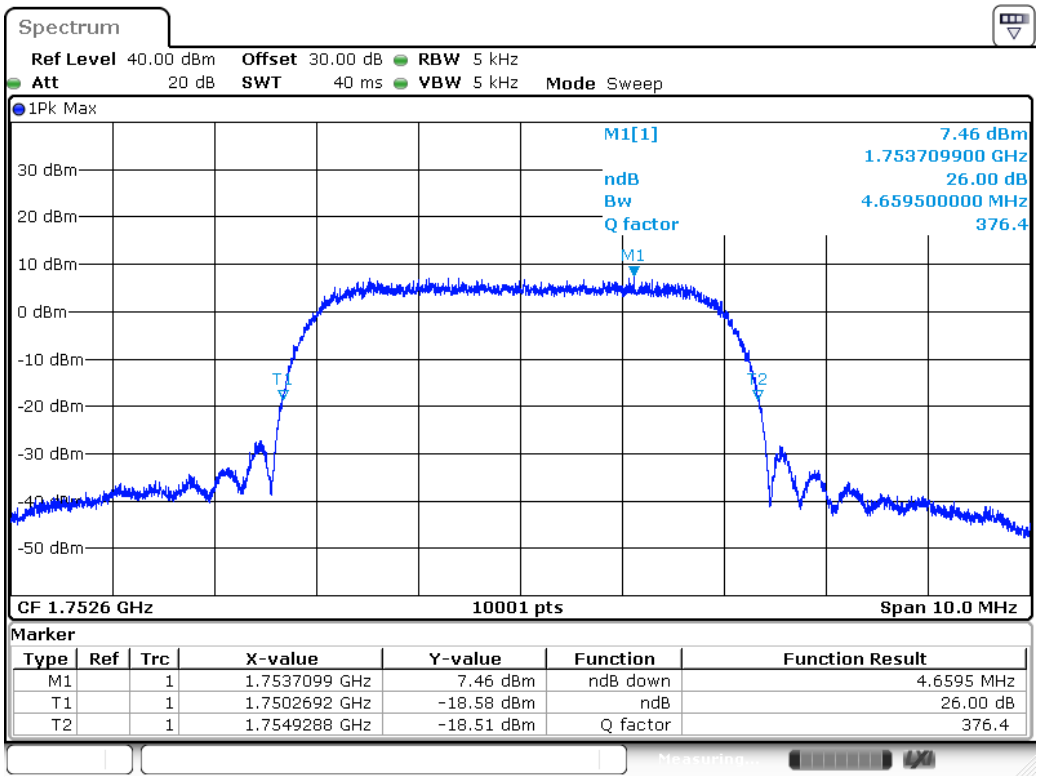
Date: 13.MAR.2017 21:01:36

Figure Channel 1413 (1732.6MHz)(99% BW)



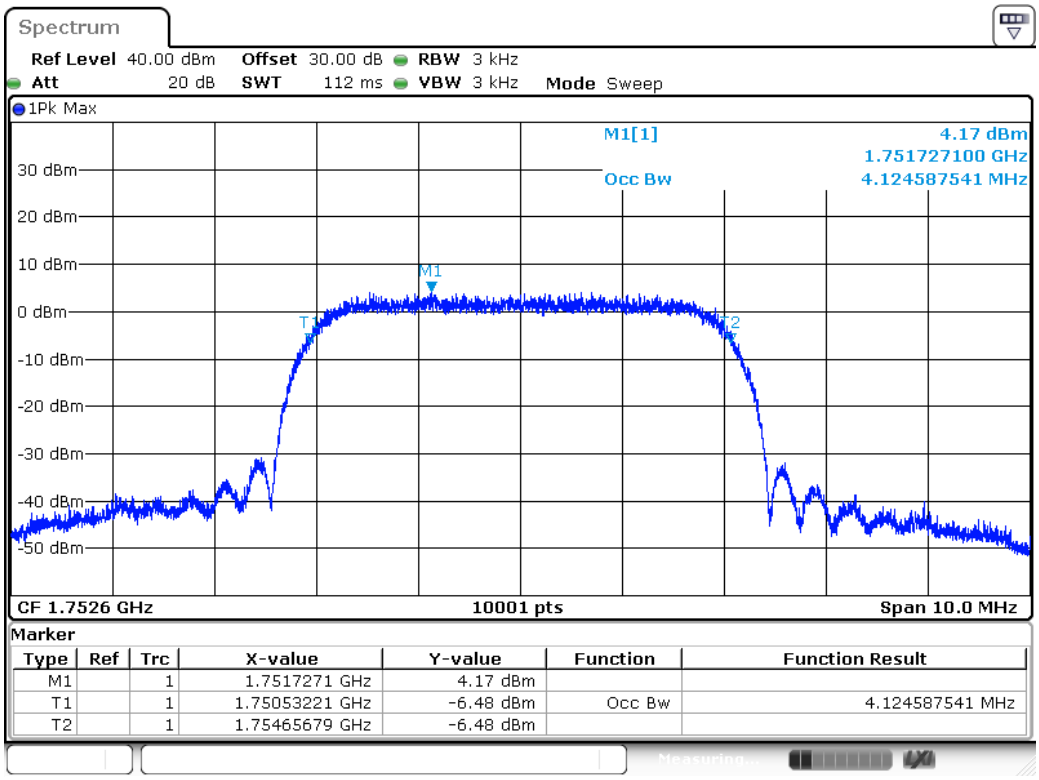
Date: 13.MAR.2017 20:52:32

Figure Channel 1513 (1752.6MHz)(-26dB BW)



Date: 13.MAR.2017 20:59:14

Figure Channel 1513 (1752.6MHz)(99% BW)

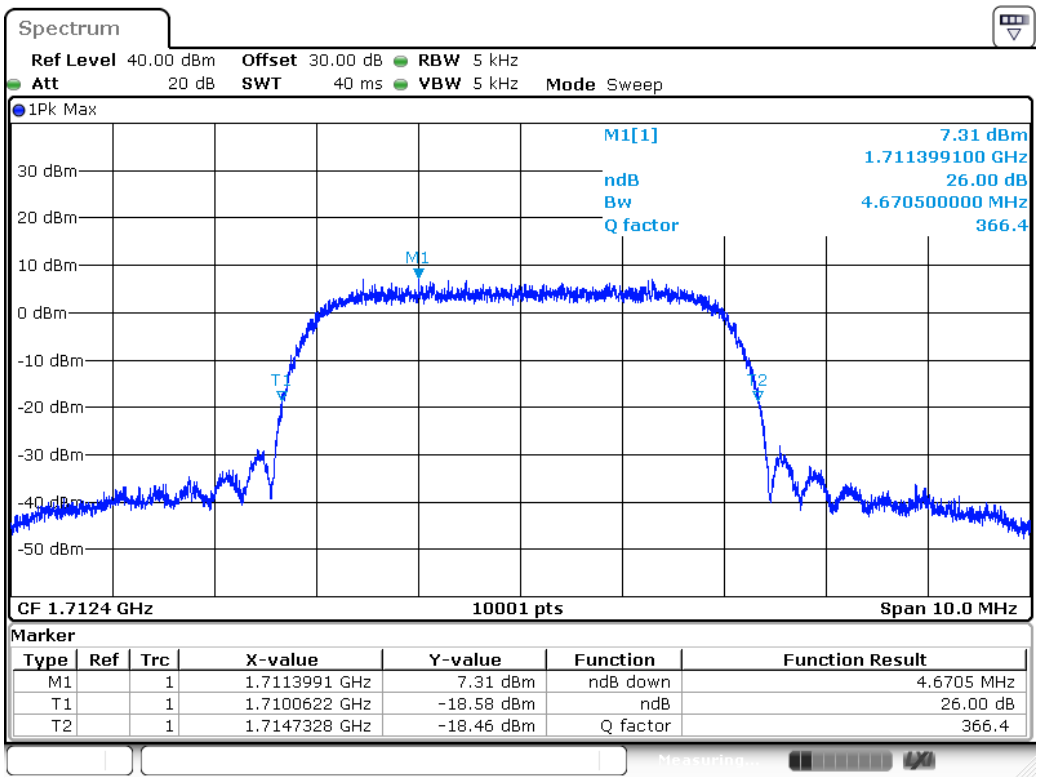


Date: 13.MAR.2017 20:53:42

Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 13: WCDMA Band4_HSDPA_Link		
Date of Test	2017/03/13	Test Site	SR10-H

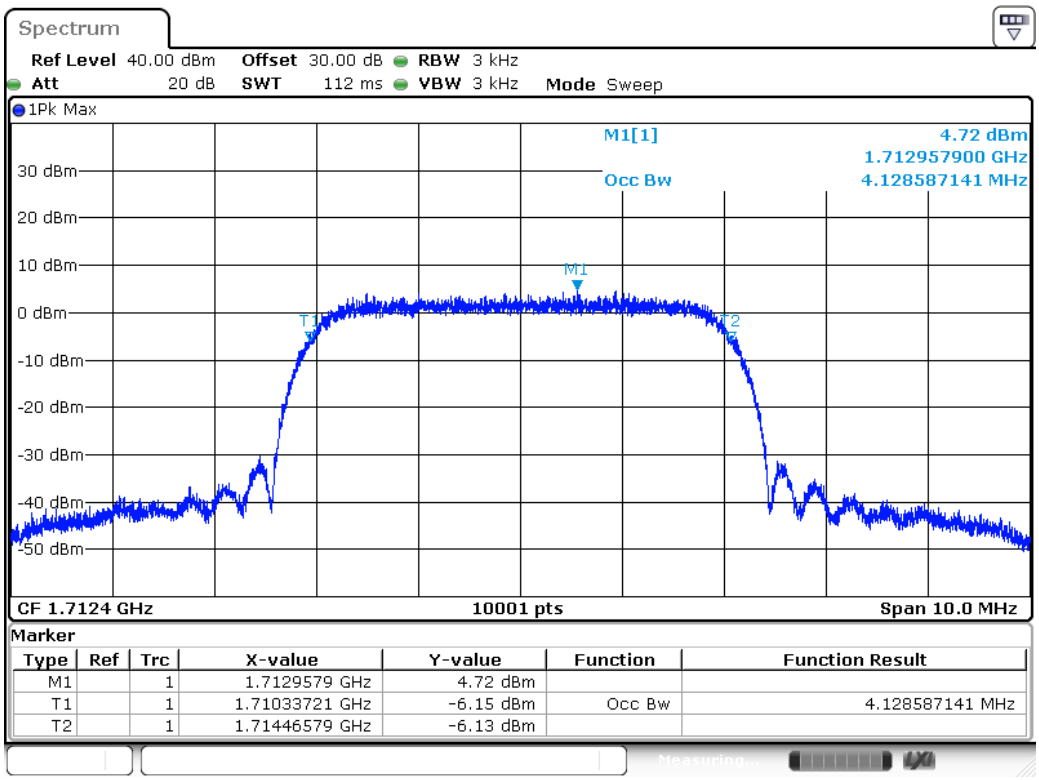
Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
1312	1712.4	4.671	4.129
1413	1732.6	4.650	4.129
1513	1752.6	4.645	4.136

Figure Channel 1312 (1712.4MHz)(-26dB BW)



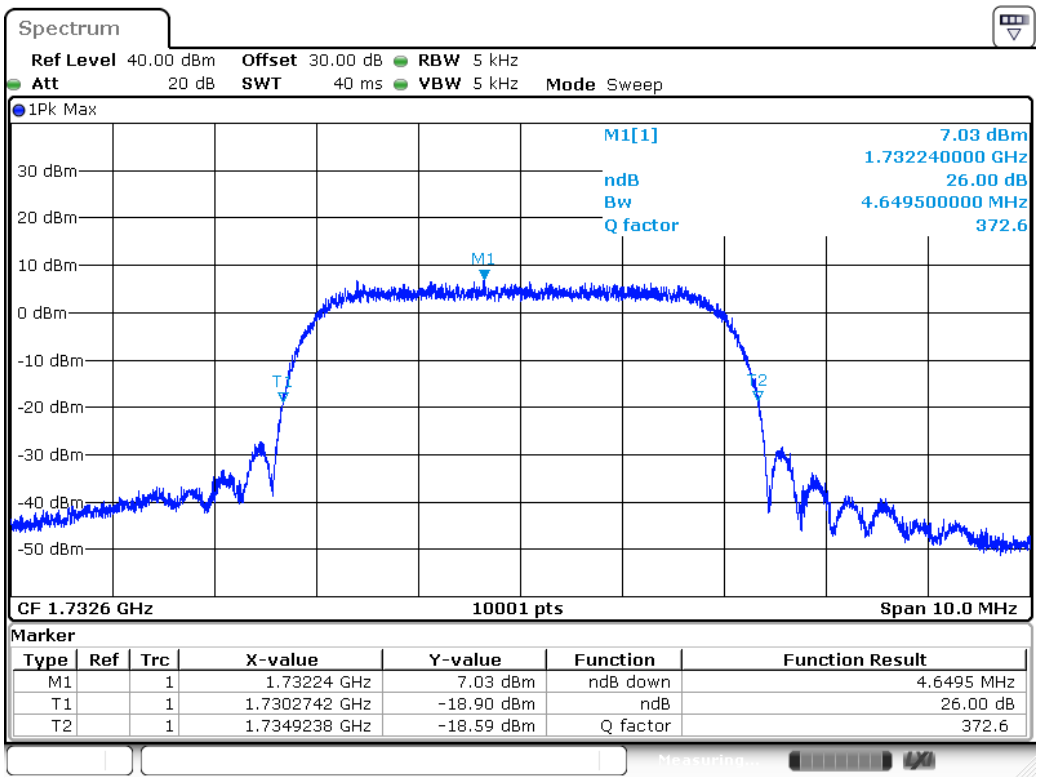
Date: 13.MAR.2017 21:03:35

Figure Channel 1312 (1712.4MHz)(99% BW)



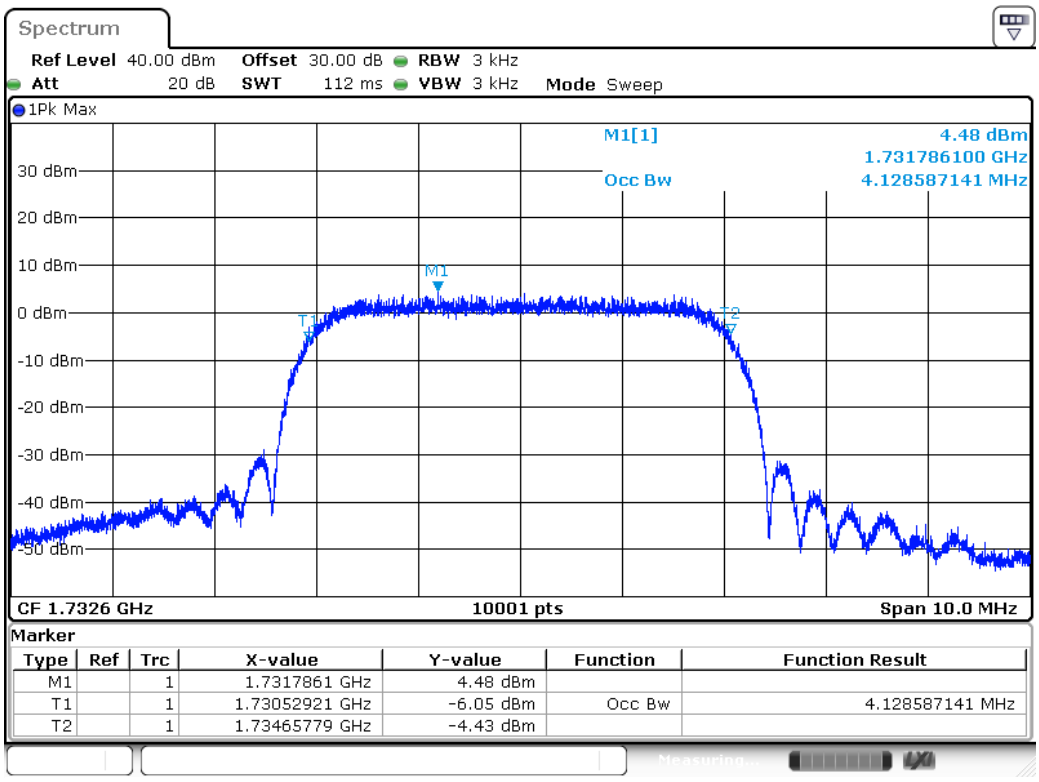
Date: 13.MAR.2017 20:50:07

Figure Channel 1413 (1732.6MHz)(-26dB BW)



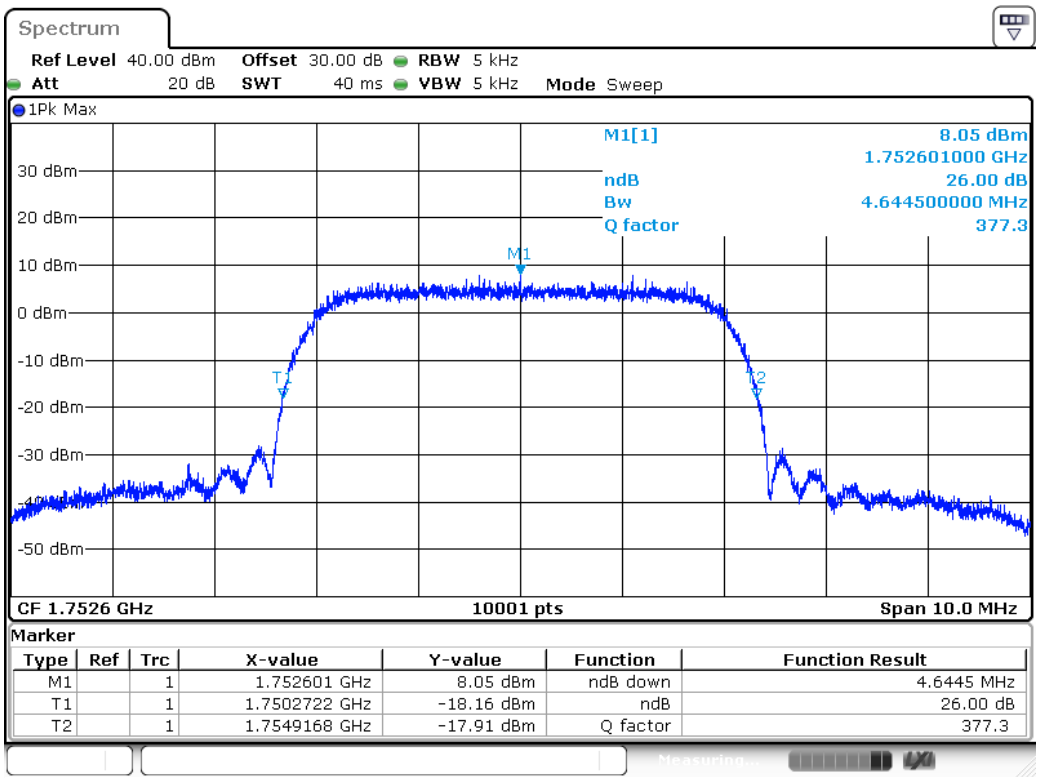
Date: 13.MAR.2017 21:04:41

Figure Channel 1413 (1732.6MHz)(99% BW)



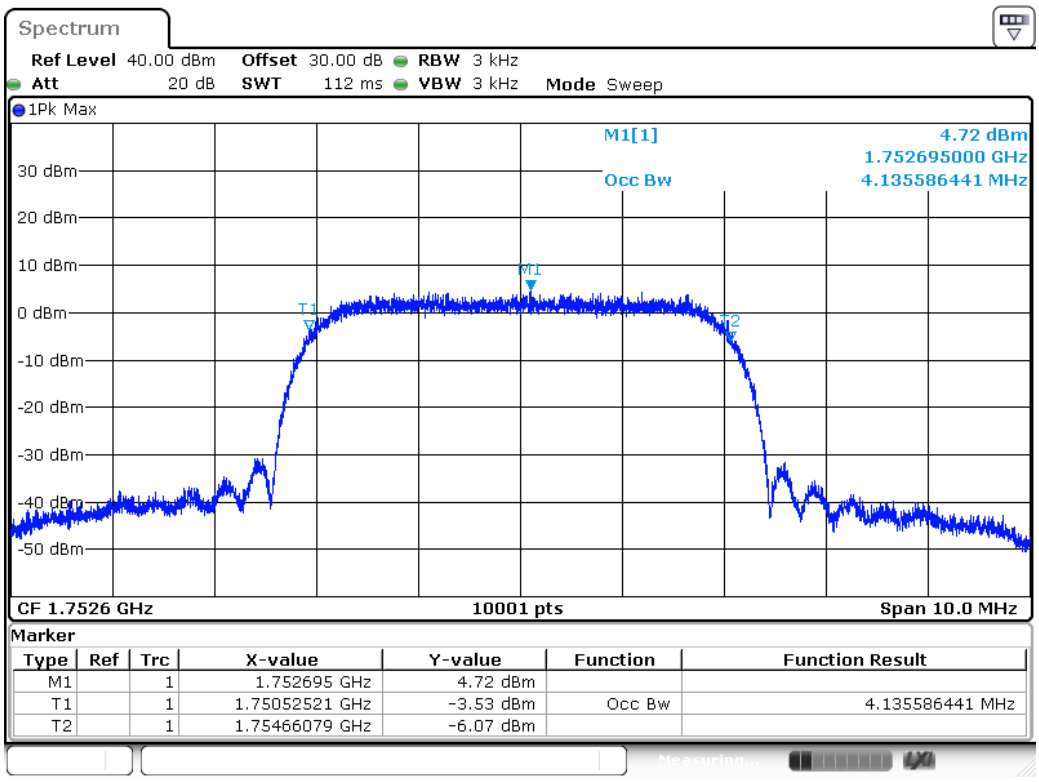
Date: 13.MAR.2017 20:49:15

Figure Channel 1513 (1752.6MHz)(-26dB BW)



Date: 13.MAR.2017 21:05:30

Figure Channel 1513 (1752.6MHz)(99% BW)



Date: 13.MAR.2017 20:48:17

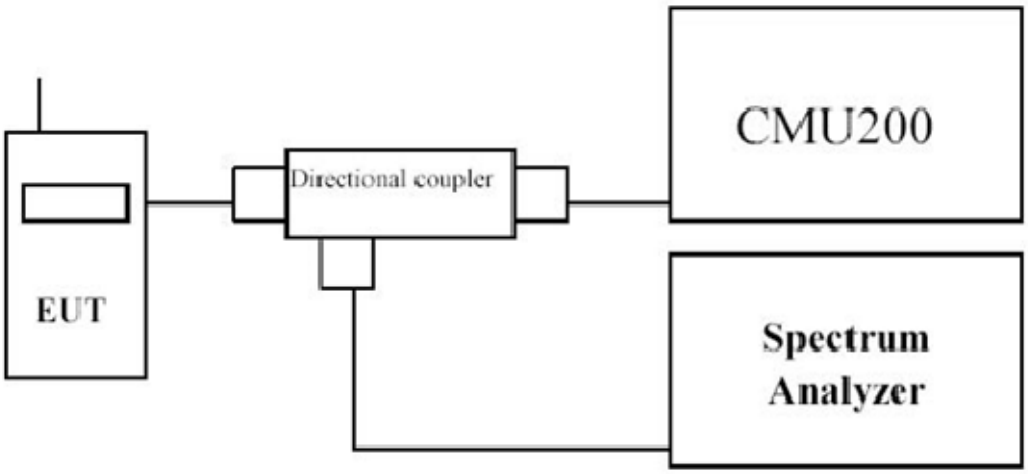
6. Peak To Average Ratio

6.1. Test Equipment

Peak To Average Ratio / SR10-H

Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Signal & Spectrum Analyzer	R&S	FSVA40	101455	2017/11/27
Multisystem UE Tester	Japan radio	NJZ-2000	ET00477	2017/09/19
Directional coupler	Agilent	778D	20402	2017/10/06

6.2. Test Setup



6.3. Test Procedure

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth.
2. Set the number of counts to a value that stabilizes the measured CCDF curve.
3. Record the maximum PAPR level associated with a probability of 0.1 %.

6.4. Uncertainty

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.

6.5. Test Result

Product	Module		
Test Item	Peak To Average Ratio		
Test Mode	Mode 11: WCDMA Band4_Link		
Date of Test	2017/03/13	Test Site	SR10-H

Channel No.	Frequency (MHz)	Peak To Average Ratio (dB)
1312	1712.4	7.54
1413	1732.6	8.75
1513	1752.6	7.55

Figure Channel 1312 (1712.4MHz)

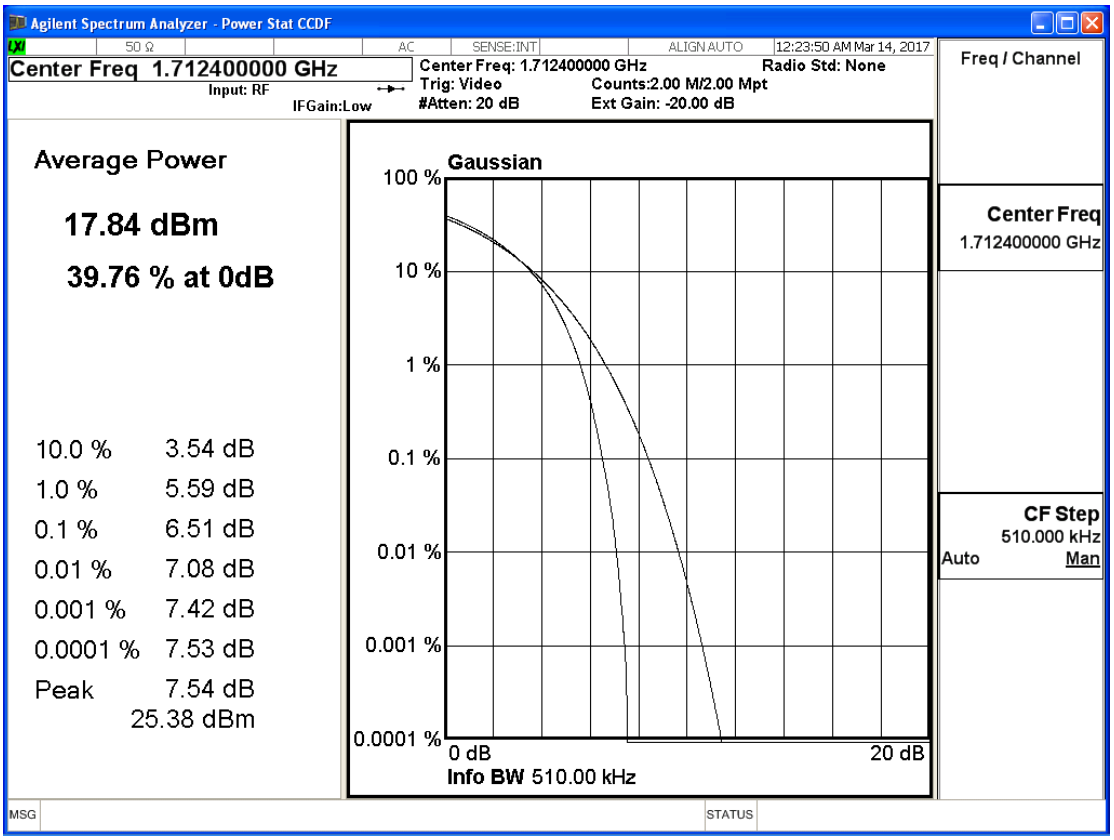


Figure Channel 1412 (1712.4MHz)

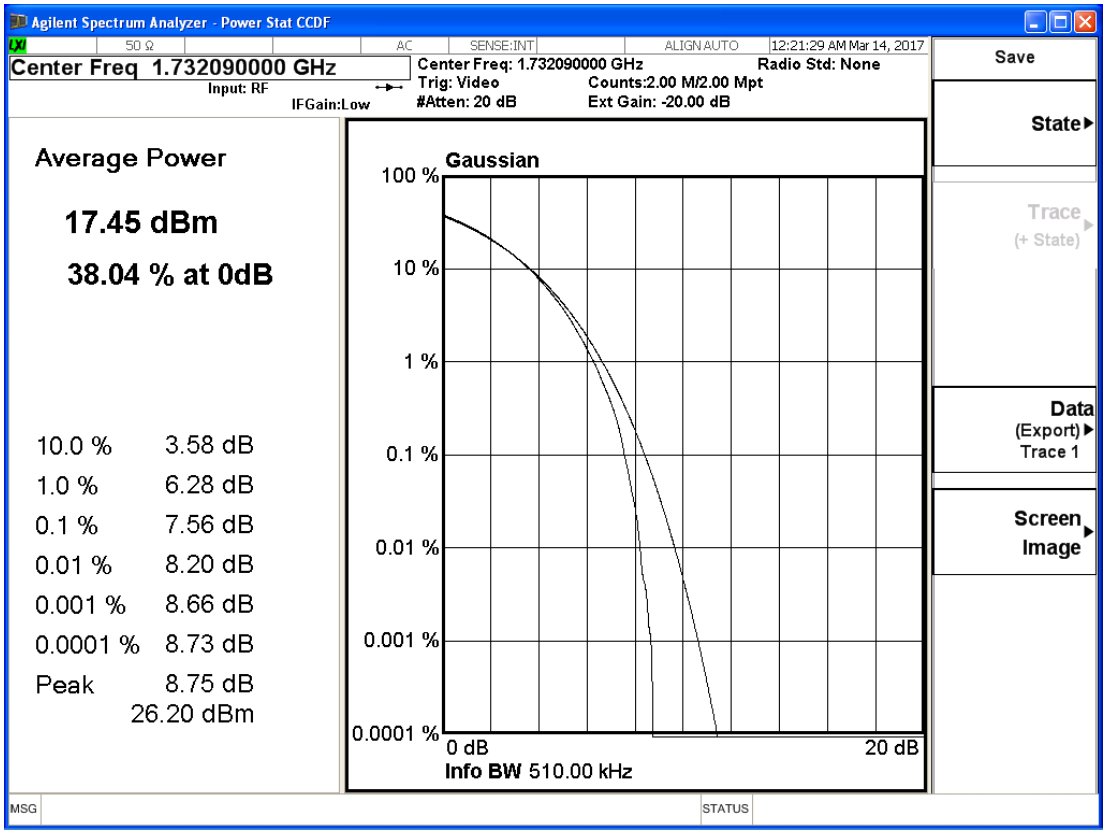
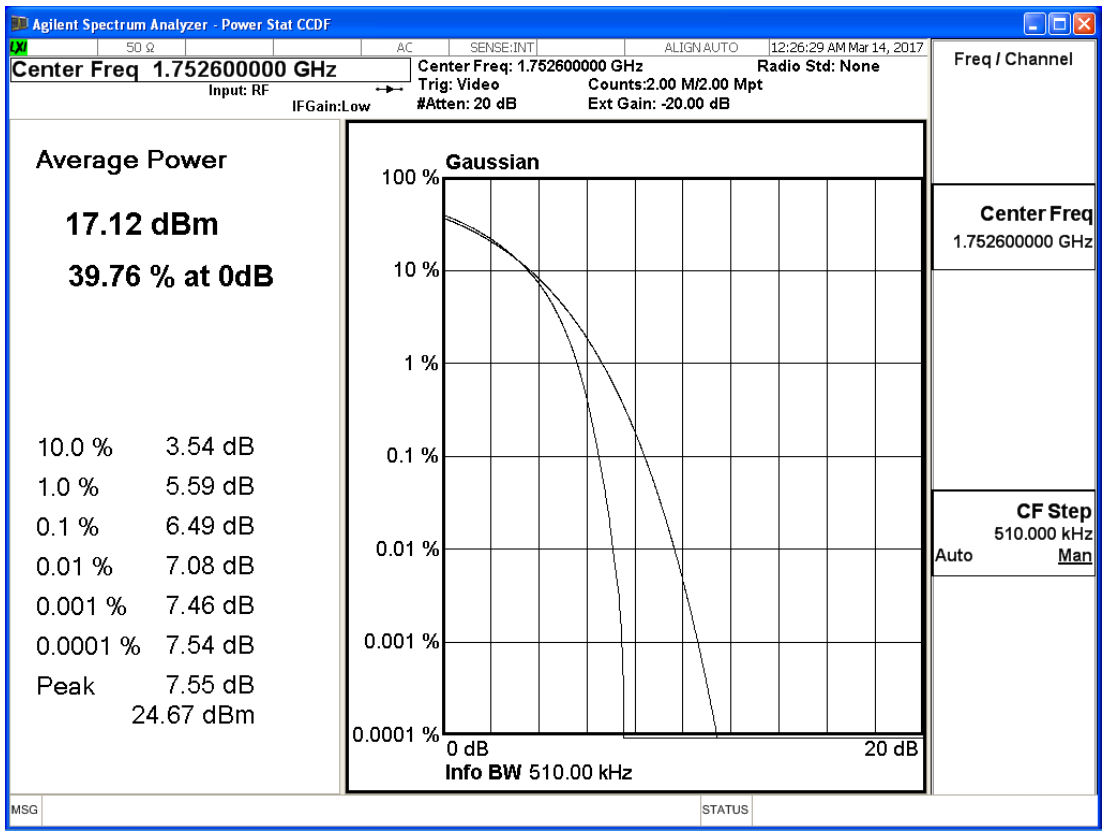


Figure Channel 1512 (1712.4MHz)



Product	Module		
Test Item	Peak To Average Ratio		
Test Mode	Mode 12: WCDMA Band4_HSUPA_Link		
Date of Test	2017/03/13	Test Site	SR10-H

Channel No.	Frequency(MHz)	Peak To Average Ratio (dB)
1312	1712.4	7.89
1413	1732.6	7.74
1513	1752.6	7.74

Figure Channel 1312 (1712.4MHz)

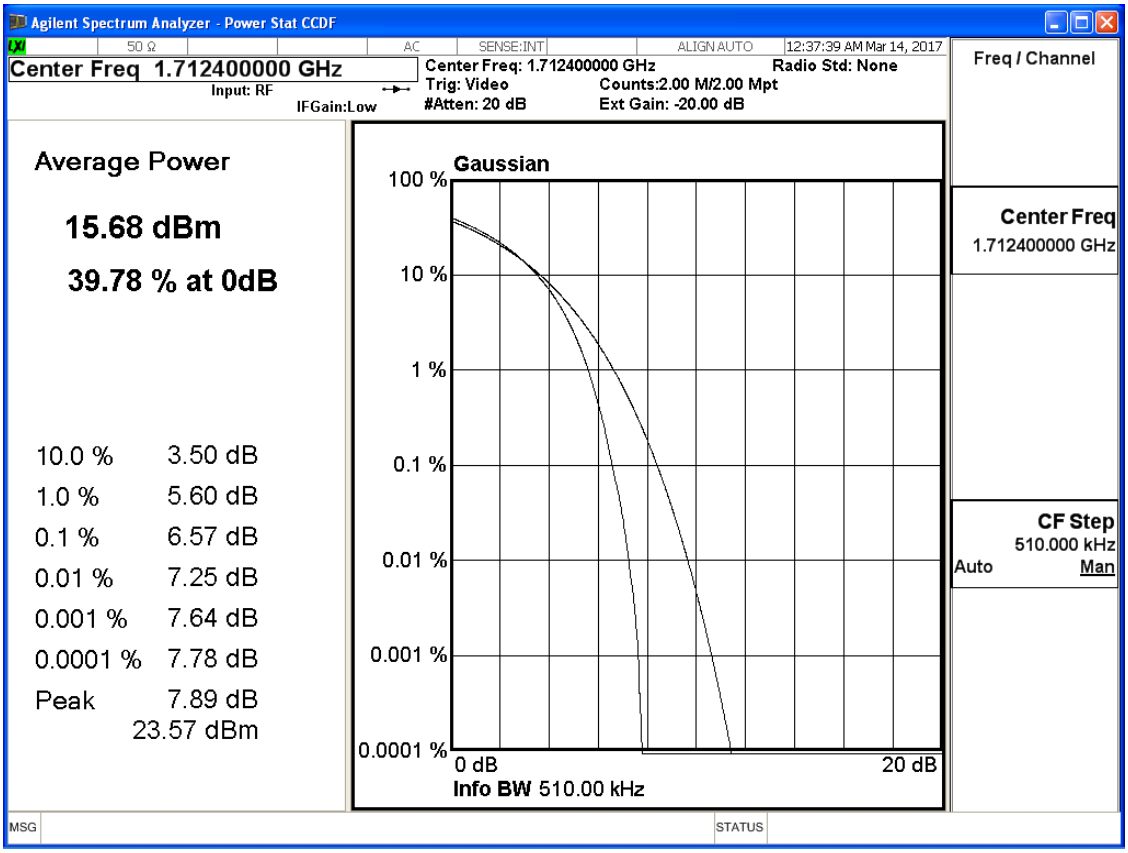


Figure Channel 1412 (1712.4MHz)

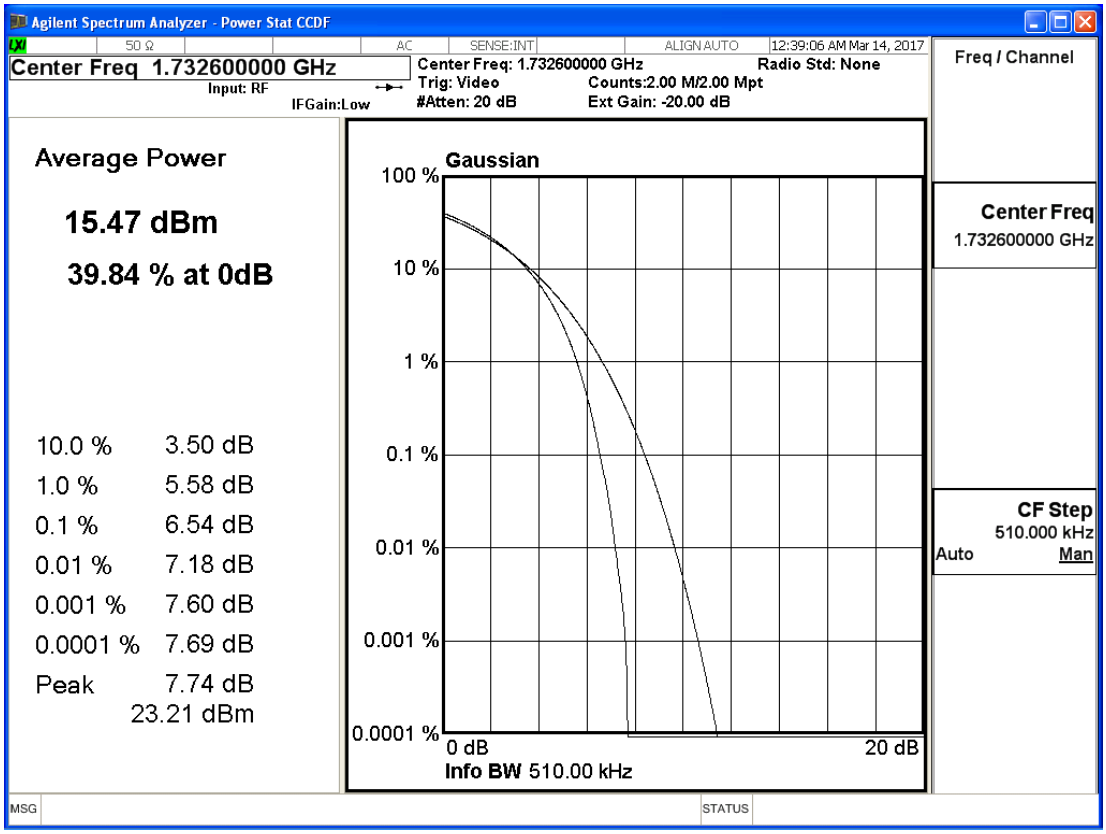
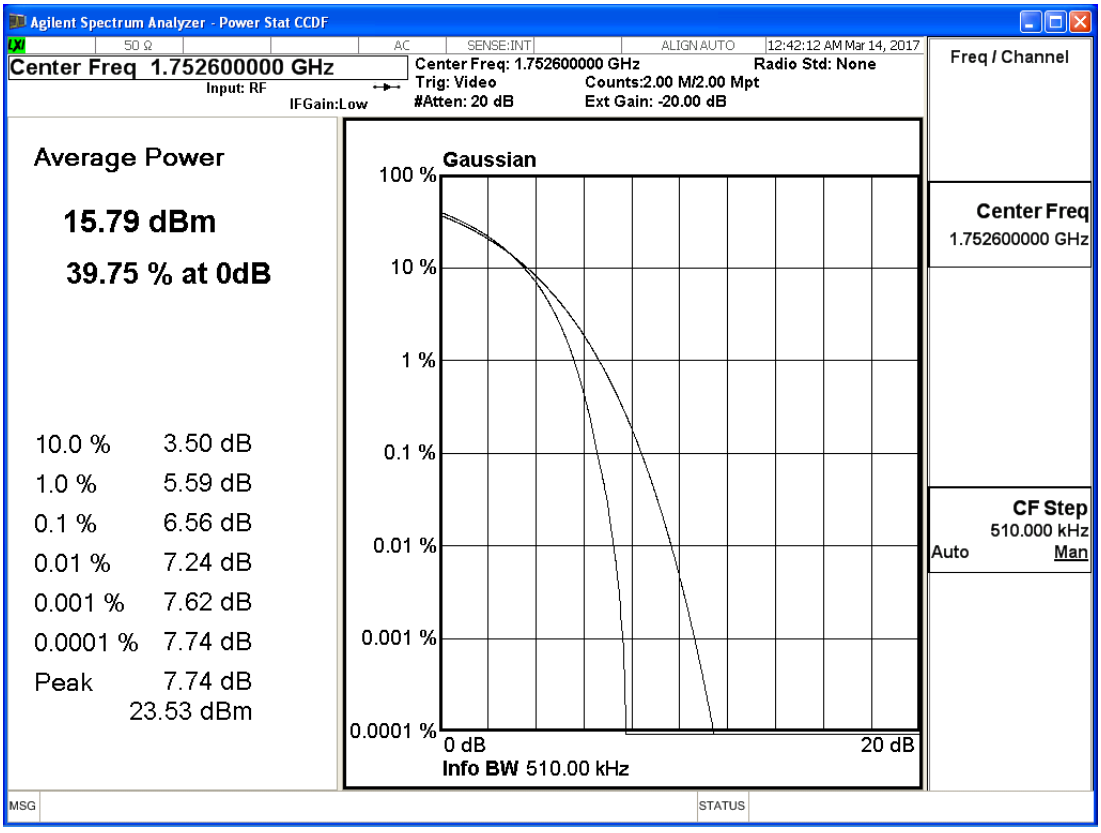


Figure Channel 1512 (1712.4MHz)



Product	Module		
Test Item	Peak To Average Ratio		
Test Mode	Mode 13: WCDMA Band4_HSDPA_Link		
Date of Test	2017/03/13	Test Site	SR10-H

Channel No.	Frequency(MHz)	Peak To Average Ratio (dB)
1312	1712.4	7.76
1413	1732.6	8.25
1513	1752.6	7.75

Figure Channel 1312 (1712.4MHz)

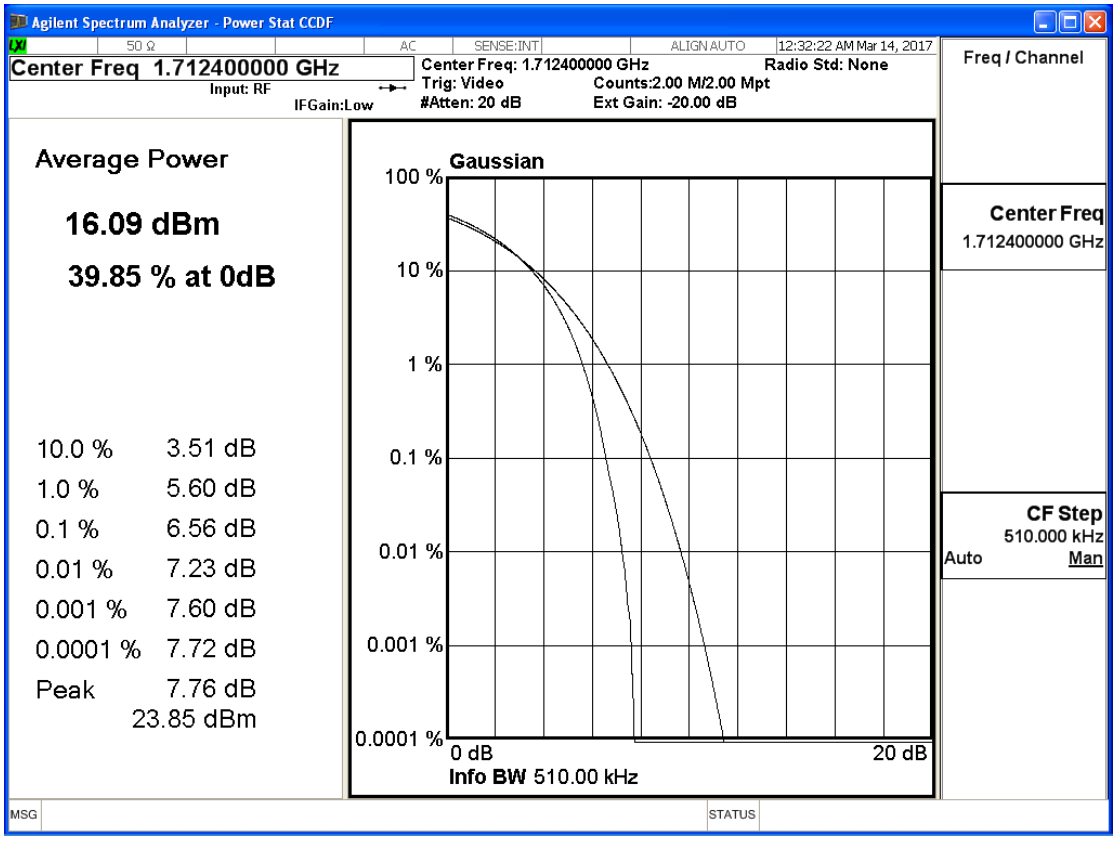


Figure Channel 1412 (1712.4MHz)

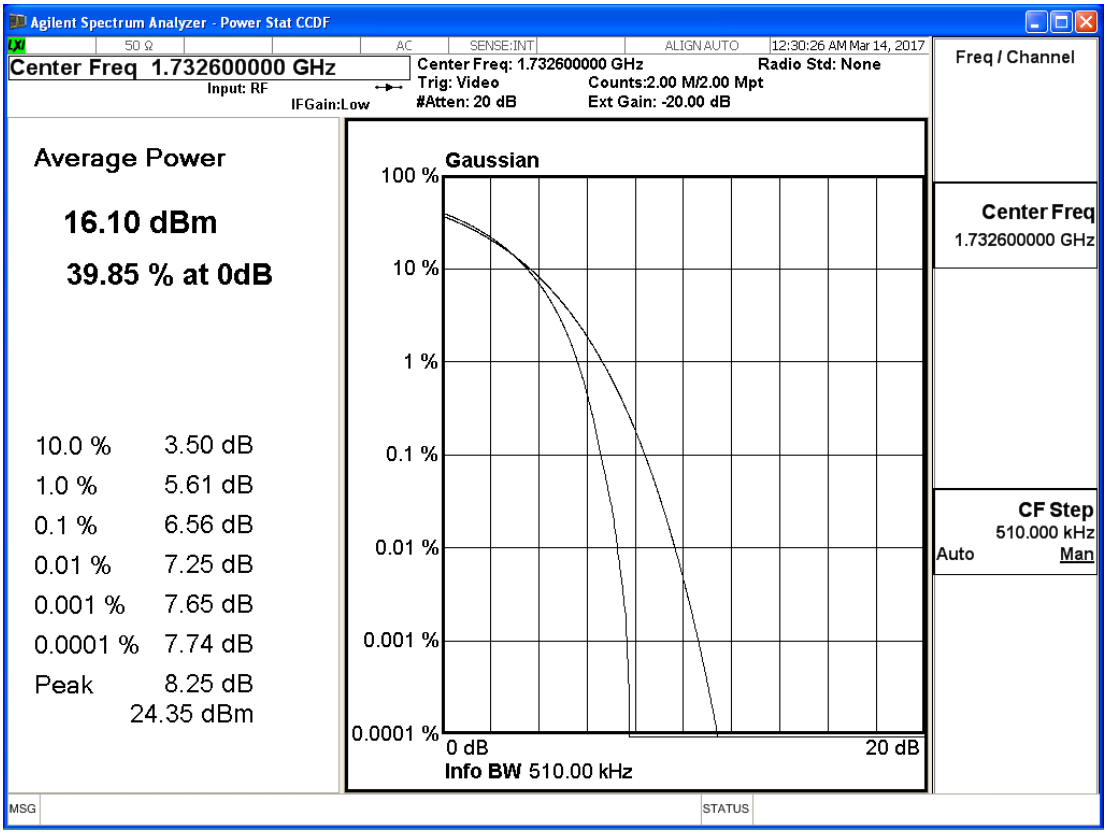
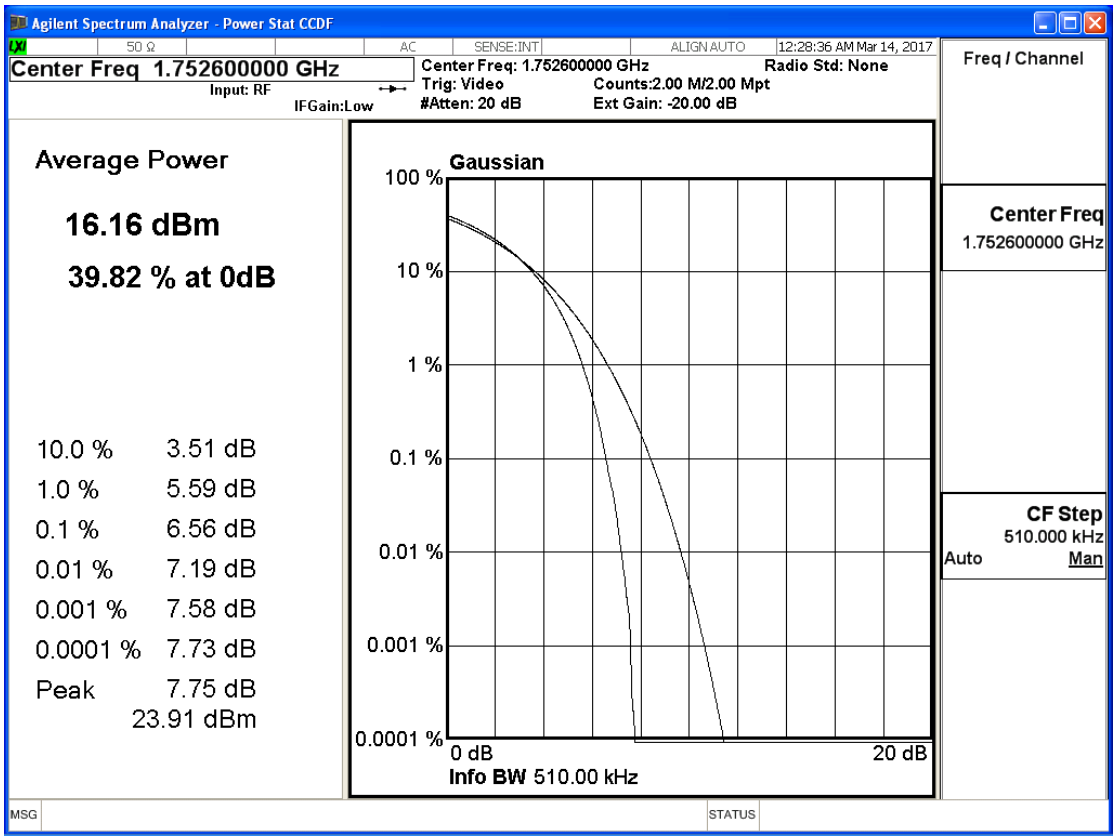


Figure Channel 1512 (1712.4MHz)



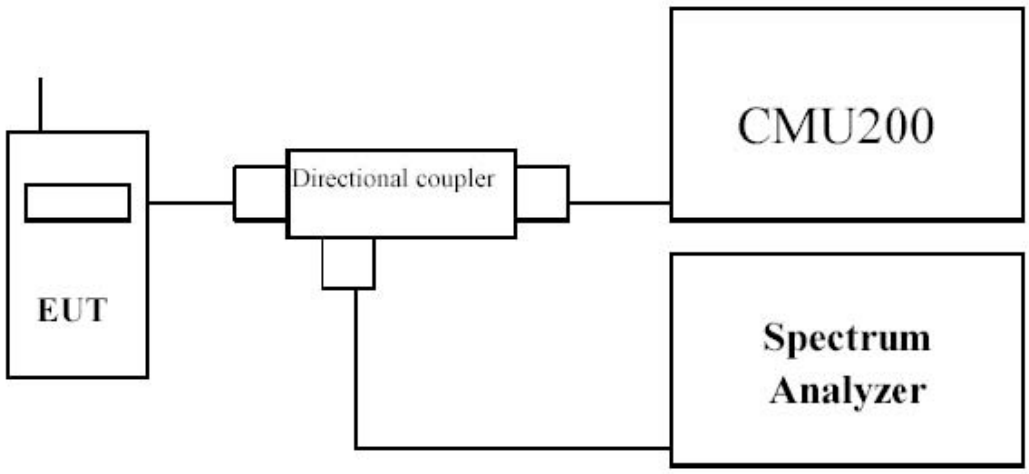
7. Conducted Band Edge

7.1. Test Equipment

Conducted Band Edge / SR10-H

Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Signal & Spectrum Analyzer	R&S	FSVA40	101455	2017/11/27
Multisystem UE Tester	Japan radio	NJZ-2000	ET00477	2017/09/19
Directional coupler	Agilent	778D	20402	2017/10/06

7.2. Test Setup



7.3. Test Procedure

1. The EUT was connected to spectrum analyzer and System Simulator via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The conducted spurious emission for the whole frequency range was taken.
4. In the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.

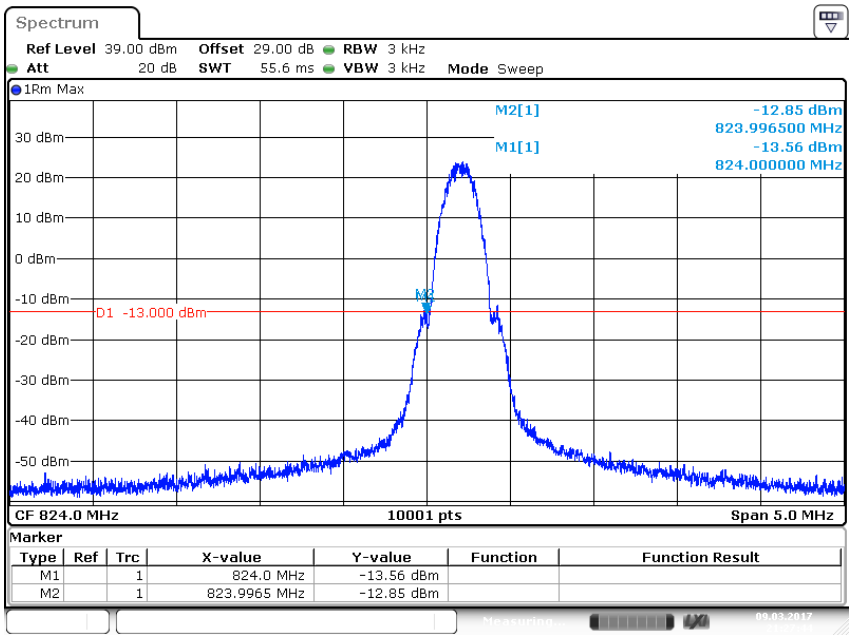
7.4. Uncertainty

The measurement uncertainty is defined as ± 1.2 dB.

7.5. Test Result

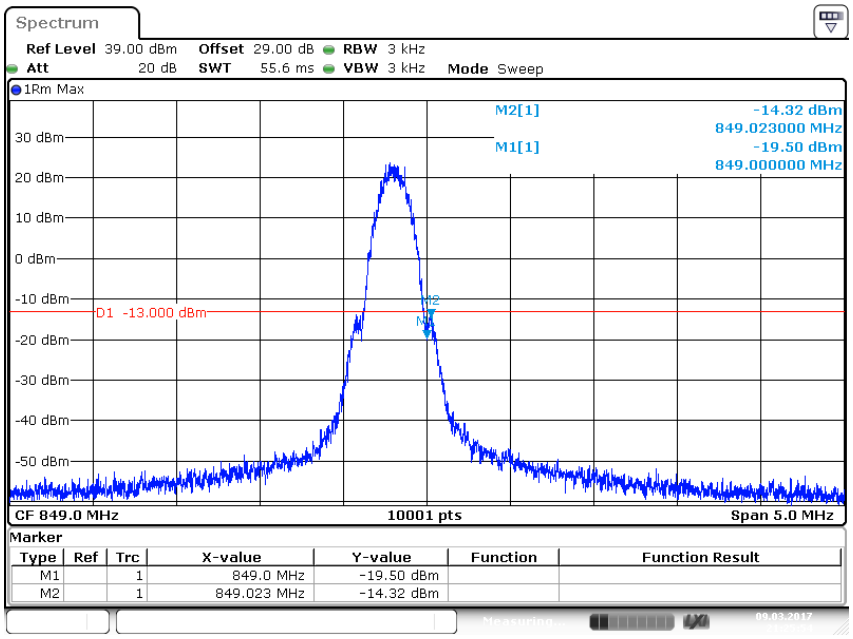
Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 1: GPRS 850_Link		
Date of Test	2017/03/09	Test Site	SR10-H

Figure Channel 128 (824.20MHz)



Date: 9.MAR.2017 21:27:45

Figure Channel 251 (848.80MHz)



Date: 9.MAR.2017 21:25:54

Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 2: GPRS 1900_Link		
Date of Test	2017/03/09	Test Site	SR10-H

Figure Channel 512 (1850.20MHz)

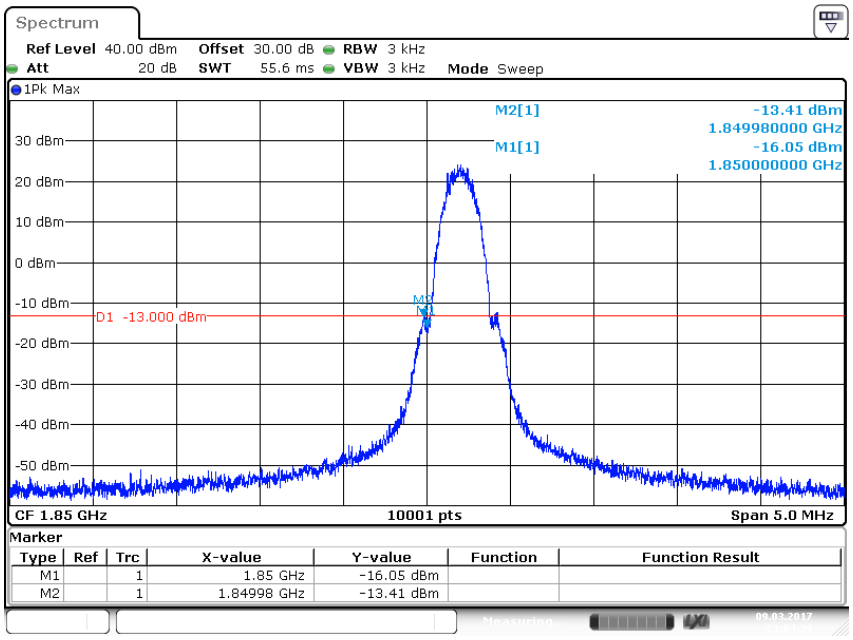
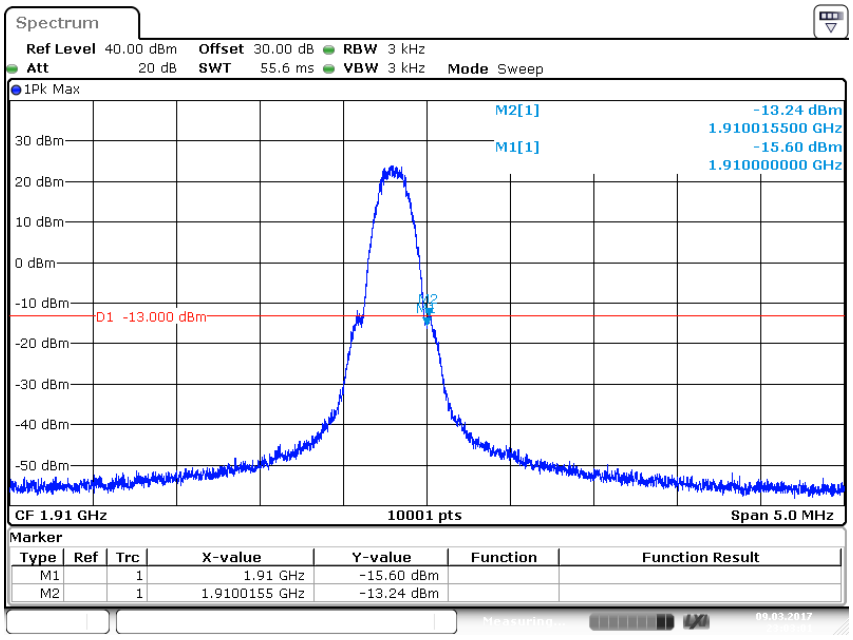
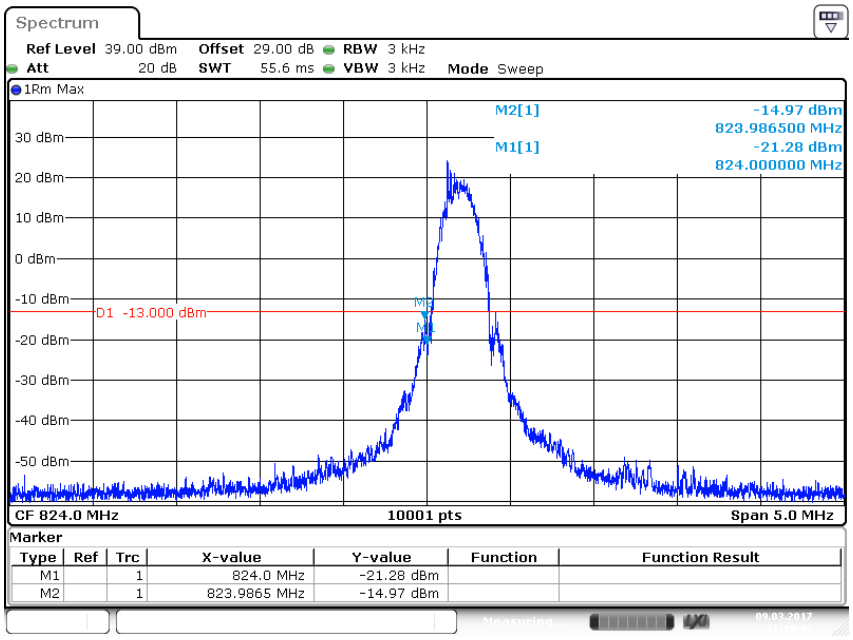


Figure Channel 810 (1909.80MHz)



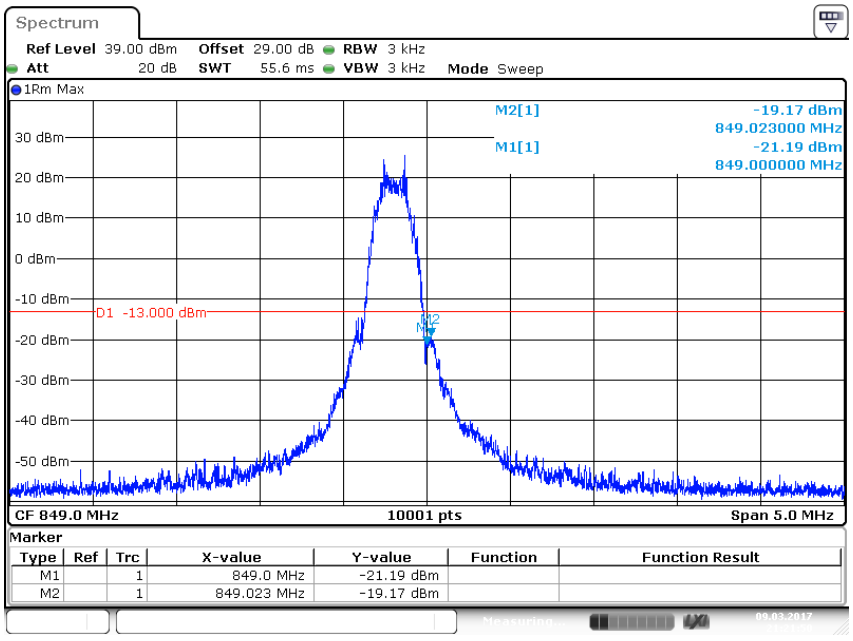
Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 3: EGPRS 850_Link		
Date of Test	2017/03/09	Test Site	SR10-H

Figure Channel 128 (824.20MHz)



Date: 9.MAR.2017 21:19:47

Figure Channel 251 (848.80MHz)



Date: 9.MAR.2017 21:21:50

Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 4: EGPRS 1900_Link		
Date of Test	2017/03/09	Test Site	SR10-H

Figure Channel 512 (1850.20MHz)

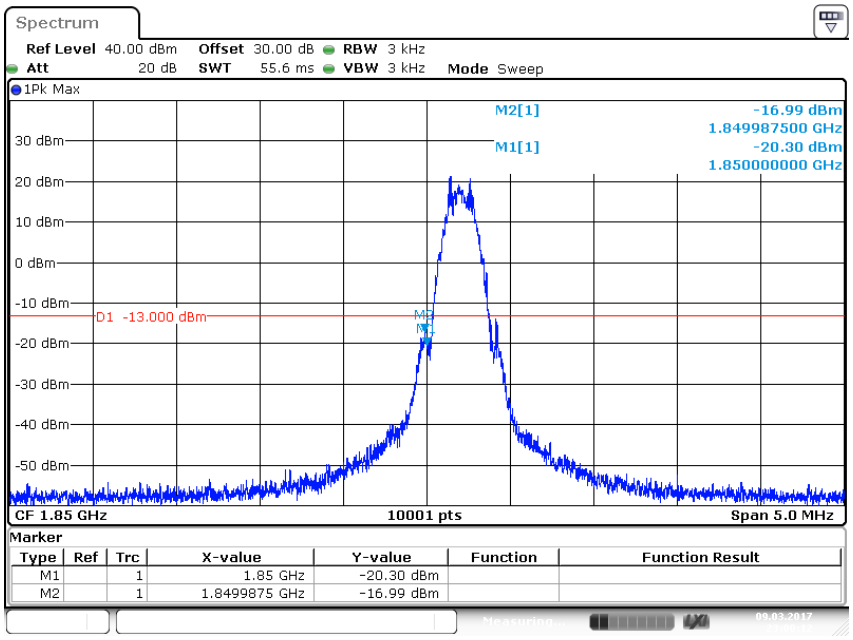
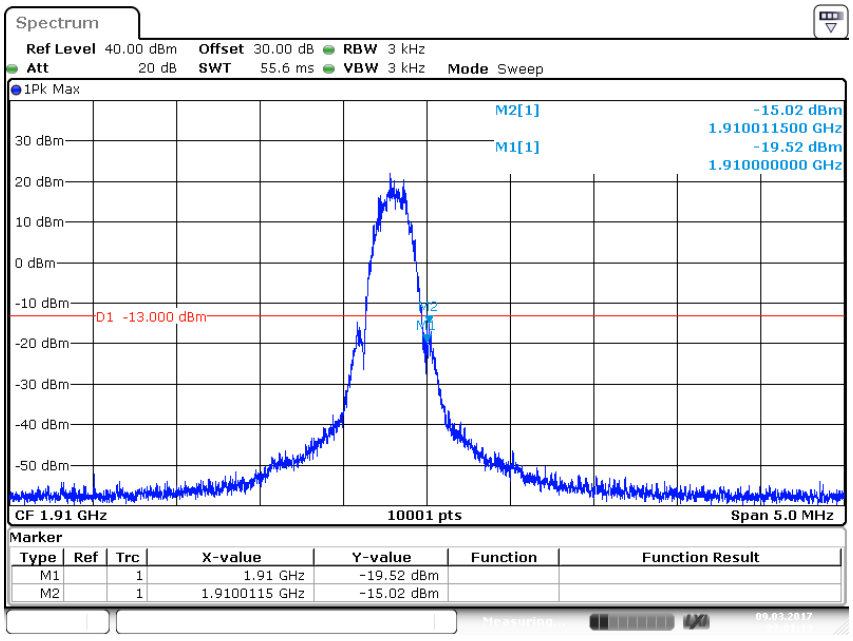
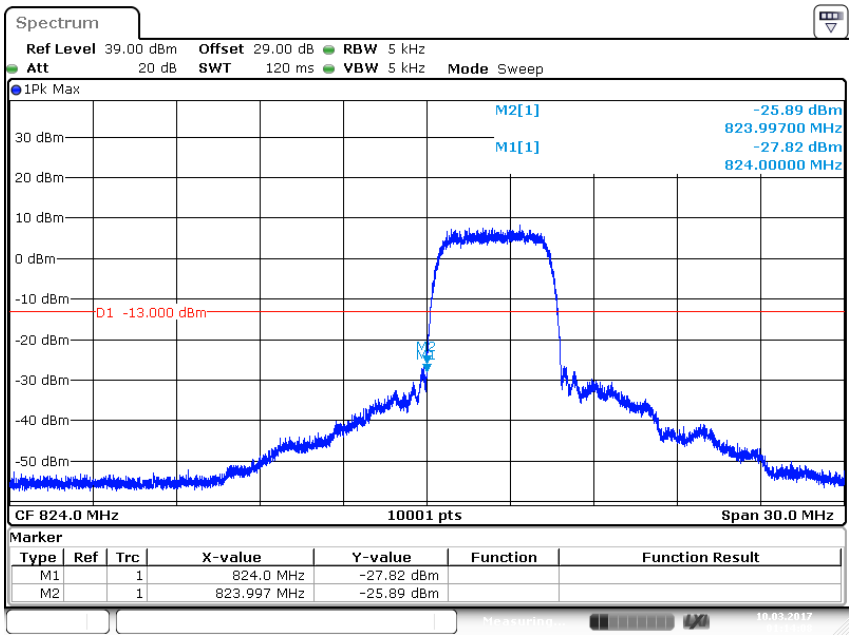


Figure Channel 810 (1909.80MHz)



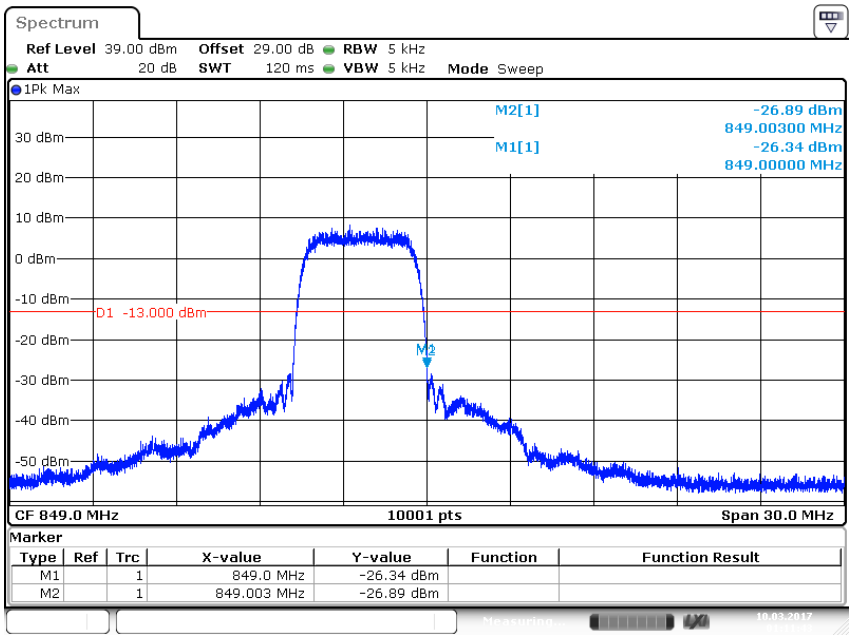
Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 5: WCDMA Band 5_Link		
Date of Test	2017/03/10	Test Site	SR10-H

Figure Channel 4132 (826.40MHz)



Date: 10.MAR.2017 01:14:08

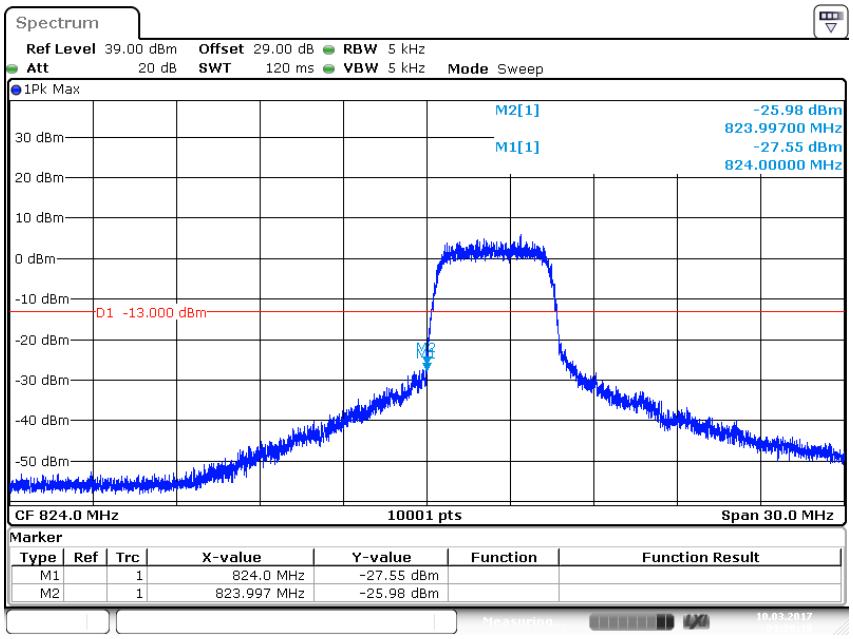
Figure Channel 251 (846.60MHz)



Date: 10.MAR.2017 01:11:43

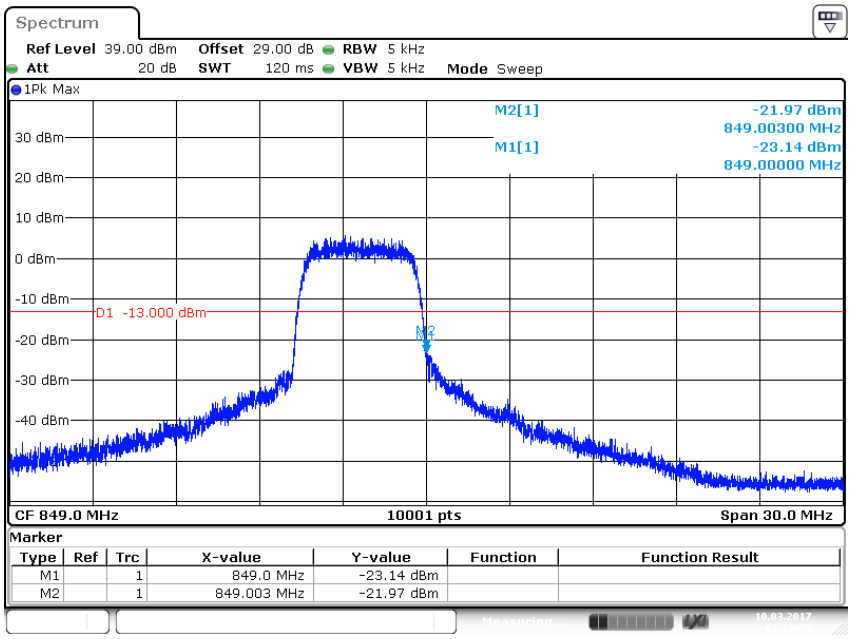
Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 6: WCDMA Band 5_HSUPA_Link		
Date of Test	2017/03/10	Test Site	SR10-H

Figure Channel 4132 (826.40MHz)



Date: 10.MAR.2017 01:20:10

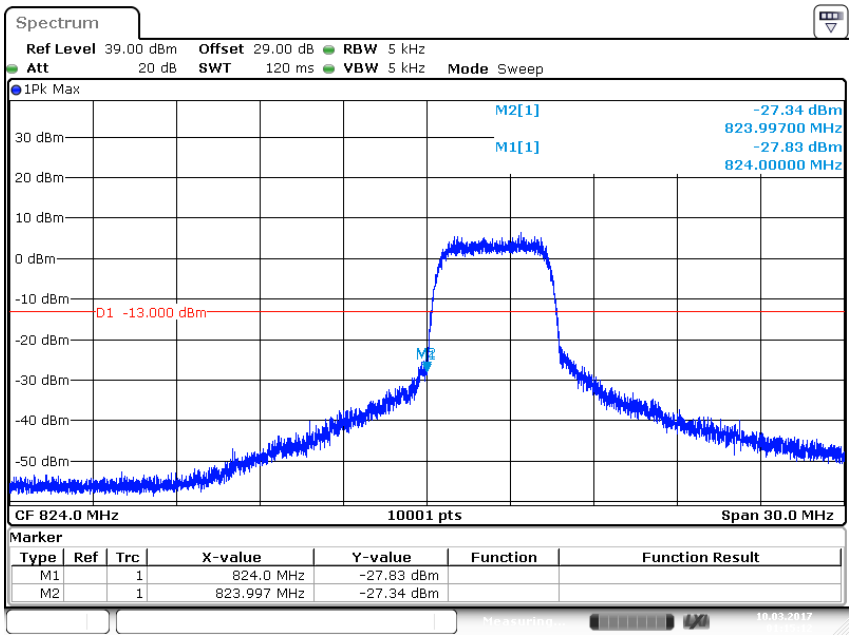
Figure Channel 251 (846.60MHz)



Date: 10.MAR.2017 01:18:36

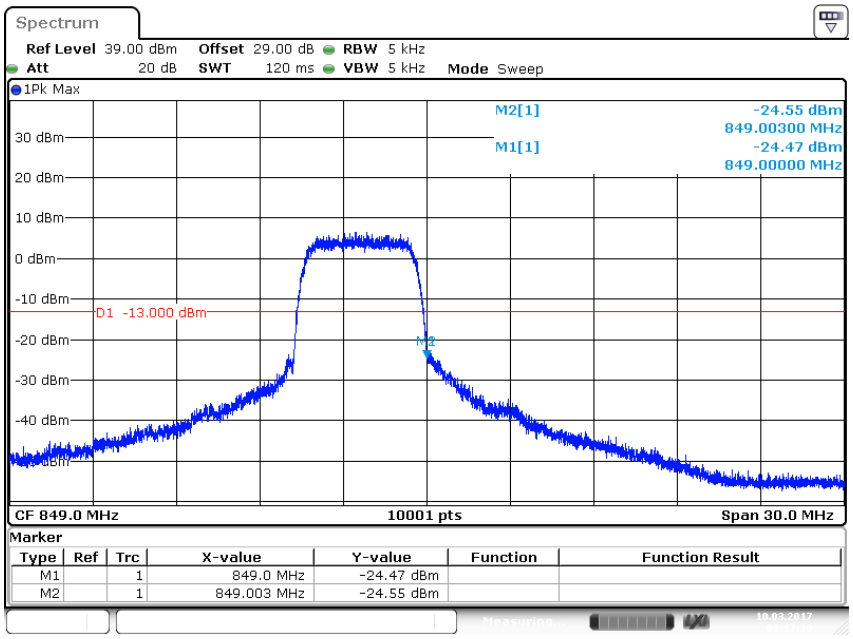
Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 7: WCDMA Band 5_HSDPA_Link		
Date of Test	2017/03/10	Test Site	SR10-H

Figure Channel 4132 (826.40MHz)



Date: 10.MAR.2017 01:15:11

Figure Channel 251 (846.60MHz)



Date: 10.MAR.2017 01:17:20

Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 8: WCDMA Band 2_Link		
Date of Test	2017/03/10	Test Site	SR10-H

Figure Channel 9262 (1852.40MHz)

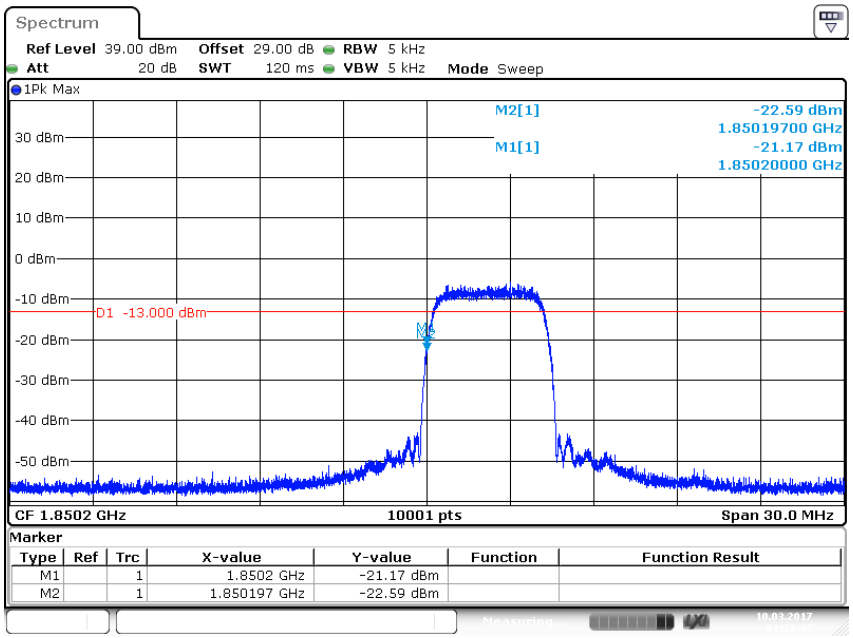
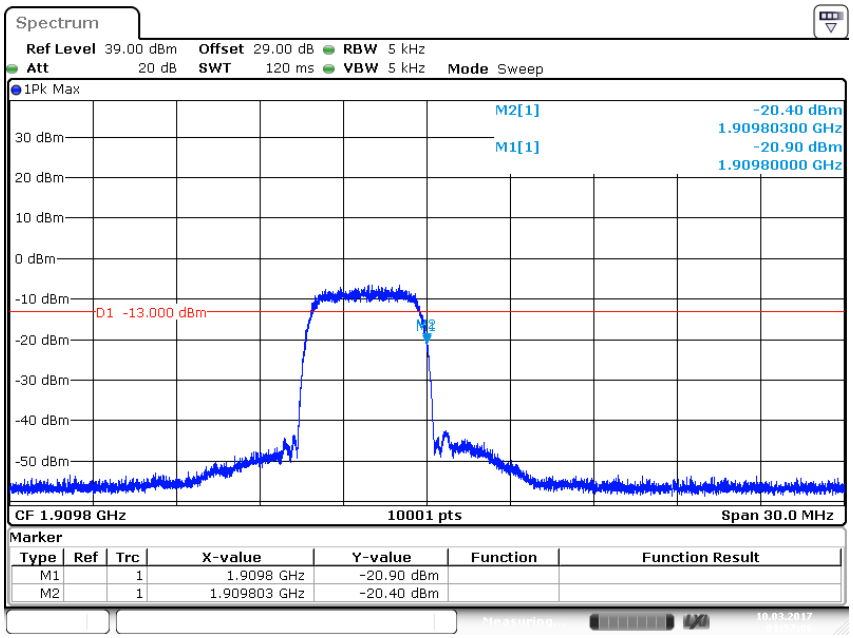
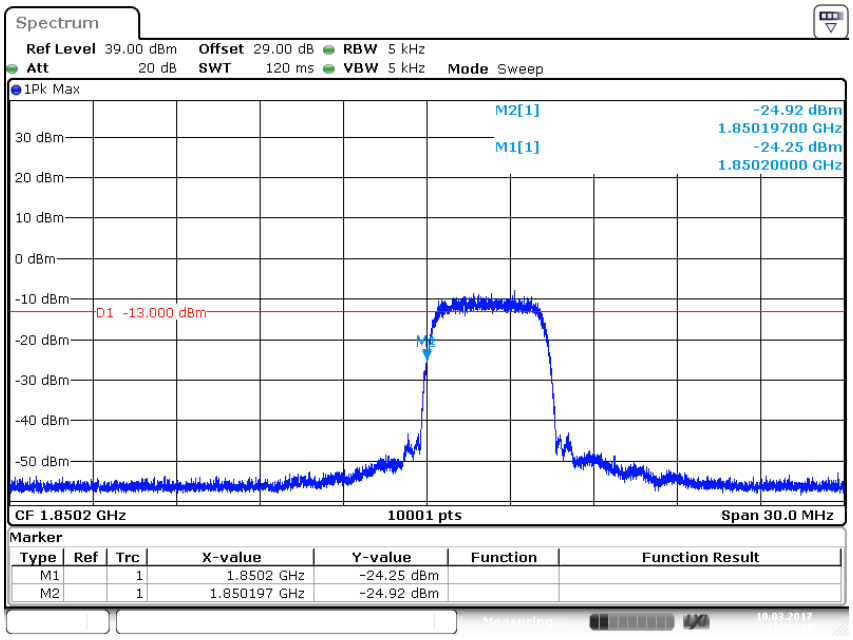


Figure Channel 9538 (1907.60MHz)



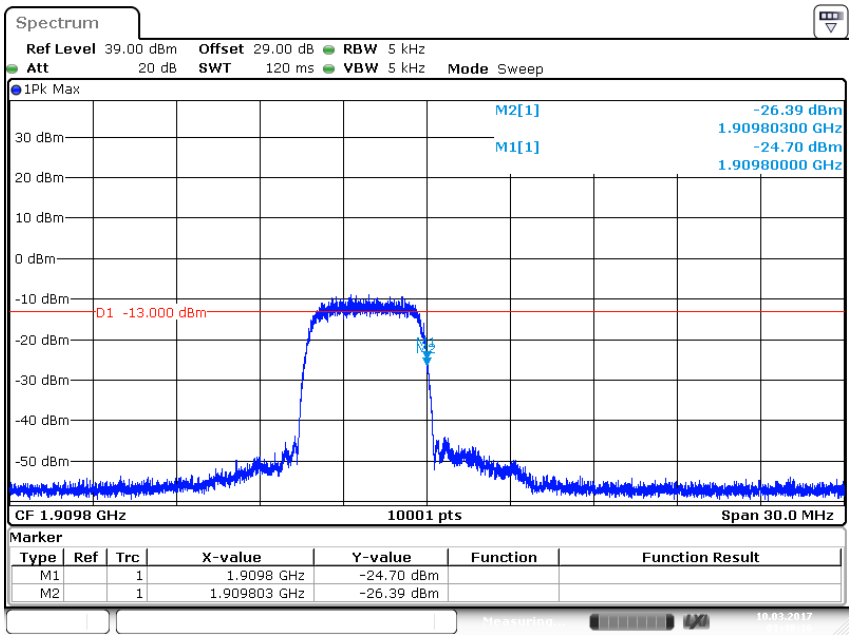
Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 9: WCDMA Band 2_HSUPA_Link		
Date of Test	2017/03/10	Test Site	SR10-H

Figure Channel 9262 (1852.40MHz)



Date: 10.MAR.2017 01:50:48

Figure Channel 9538 (1907.60MHz)



Date: 10.MAR.2017 01:48:17

Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 10: WCDMA Band 2_HSDPA_Link		
Date of Test	2017/03/10	Test Site	SR10-H

Figure Channel 9262 (1852.40MHz)

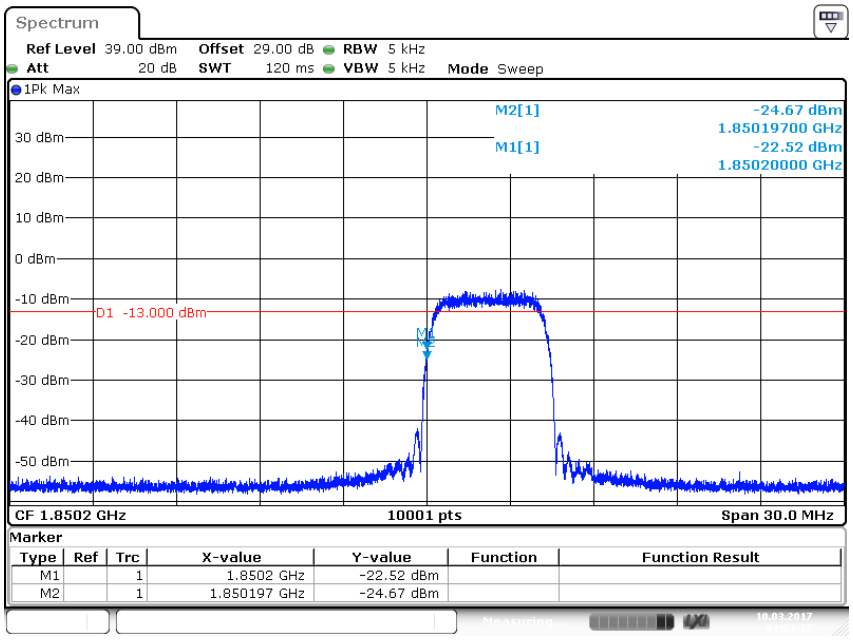
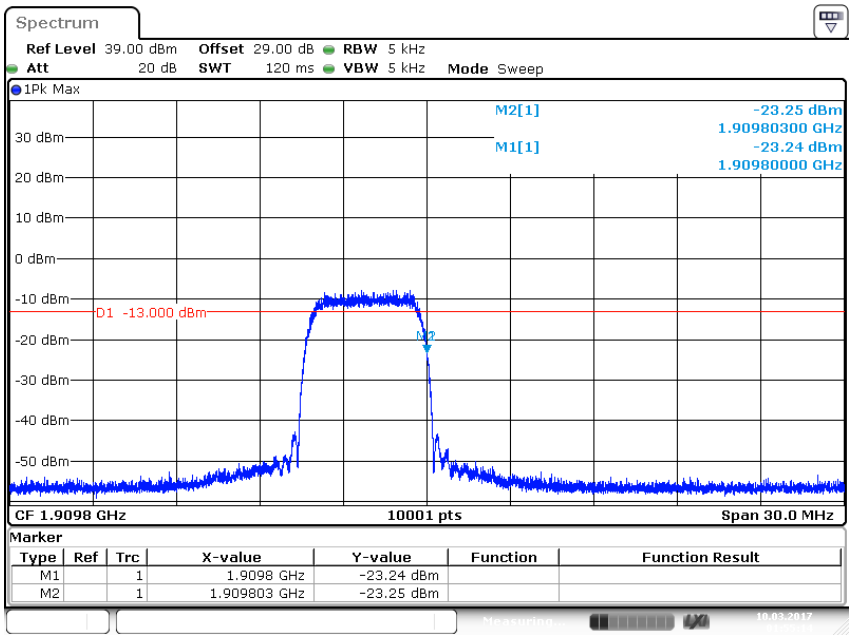


Figure Channel 9538 (1907.60MHz)



Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 11: WCDMA Band4_Link		
Date of Test	2017/03/13	Test Site	SR10-H

Figure Channel 1312 (1712.40MHz)

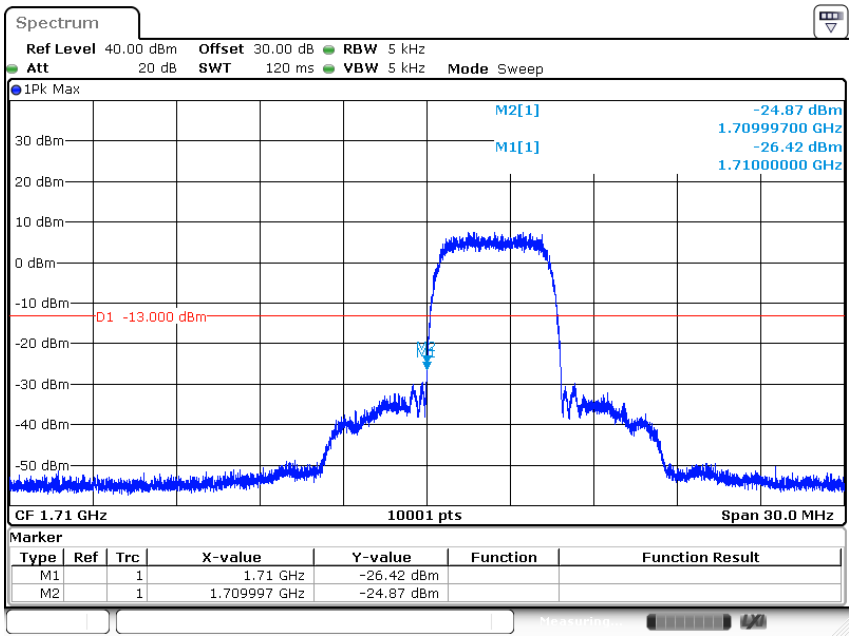
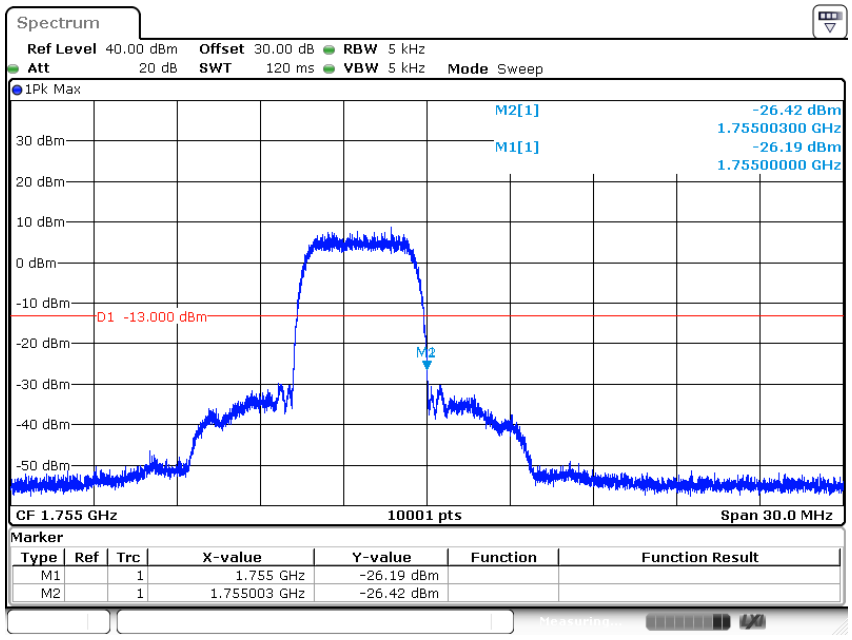


Figure Channel 1513 (1752.60MHz)



Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 12: WCDMA Band4_HSUPA_Link		
Date of Test	2017/03/13	Test Site	SR10-H

Figure Channel 1312 (1712.40MHz)

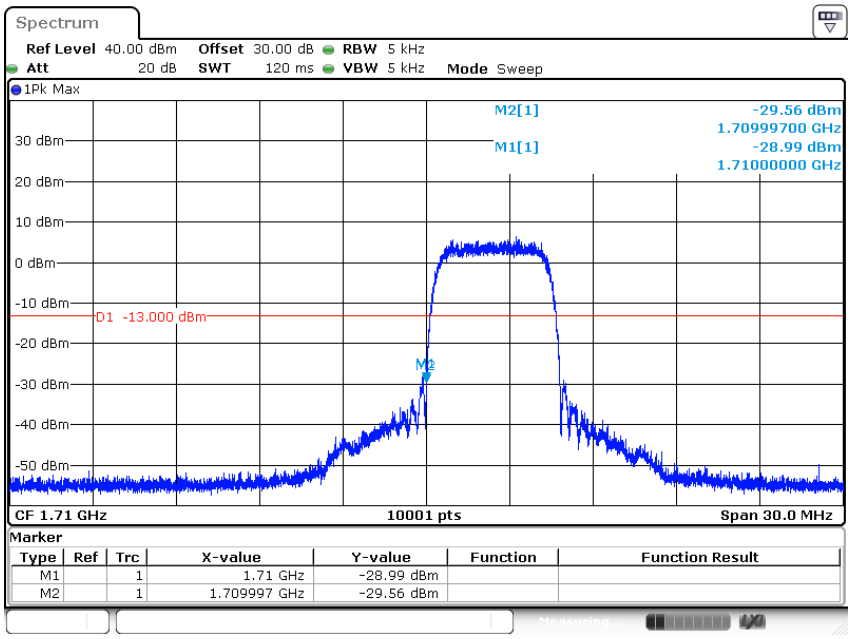
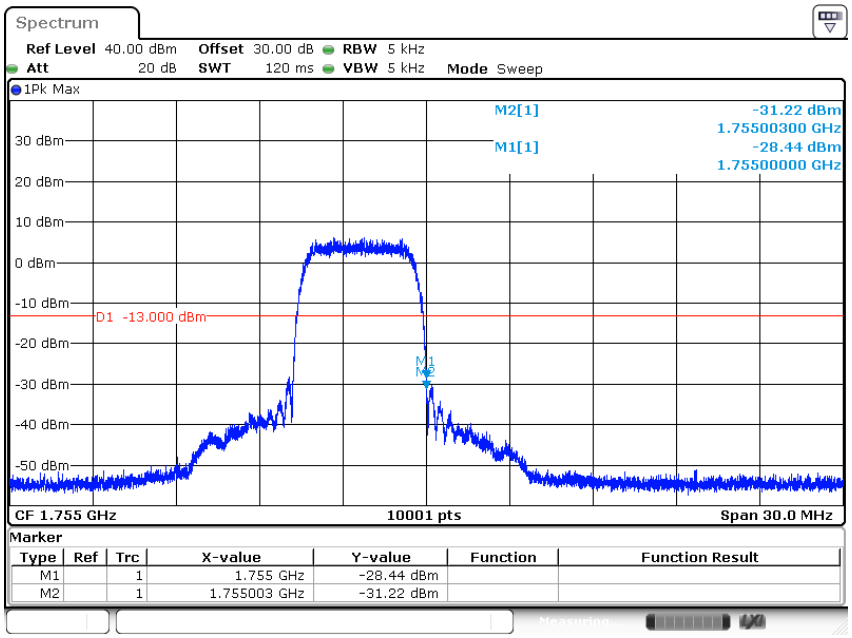


Figure Channel 1513 (1752.60MHz)



Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 13: WCDMA Band4_HSDPA_Link		
Date of Test	2017/03/13	Test Site	SR10-H

Figure Channel 1312 (1712.40MHz)

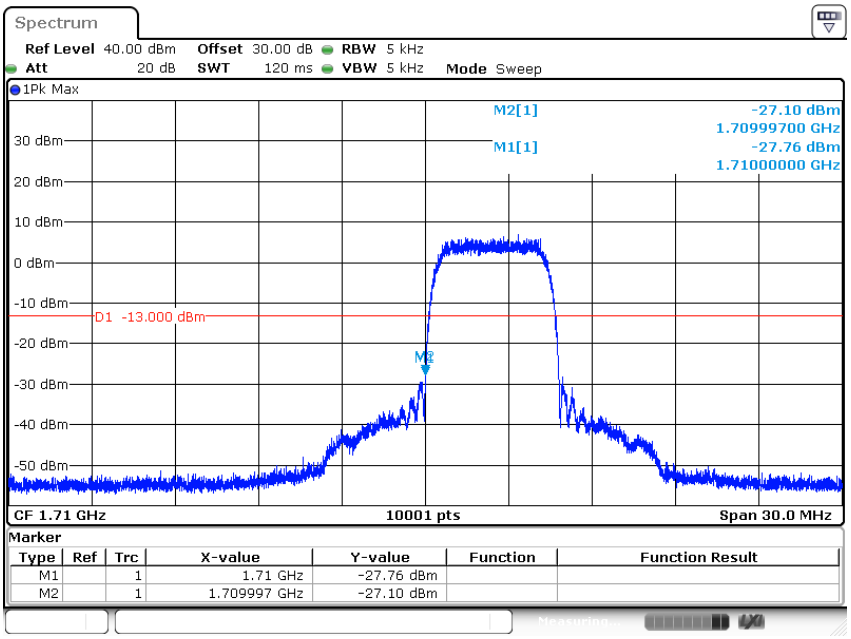
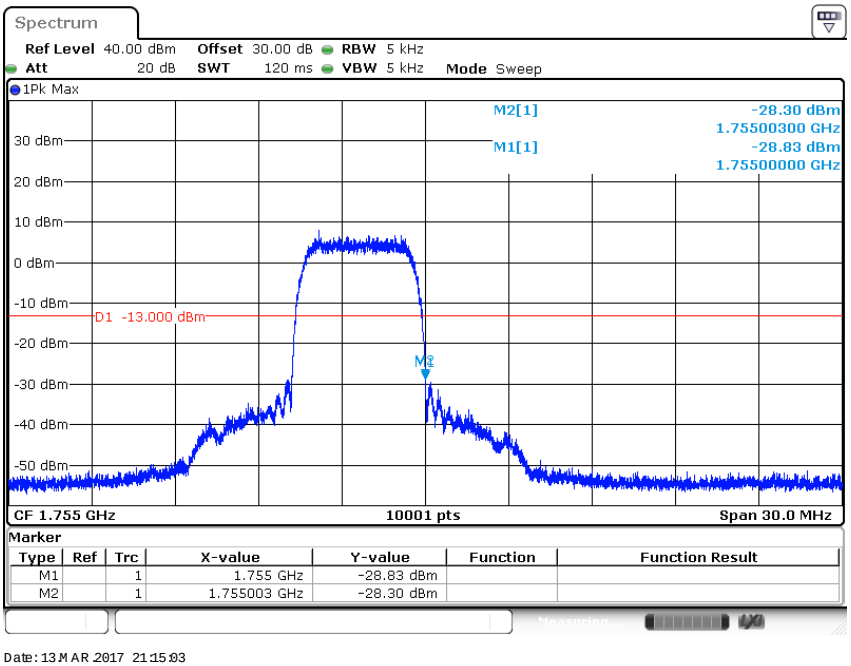


Figure Channel 1513 (1752.60MHz)



8. Spurious Emission

8.1. Test Equipment

Conducted Emission / SR10-H

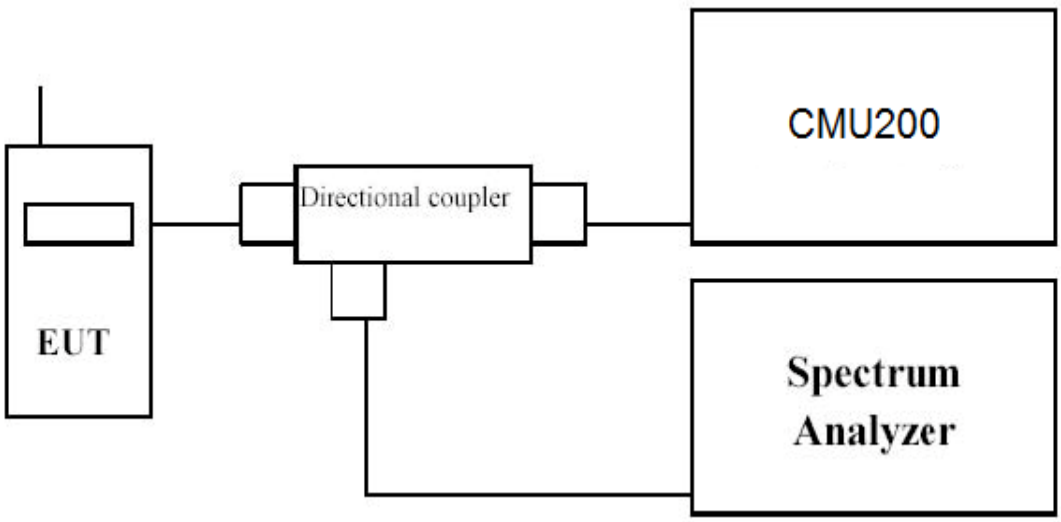
Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Signal & Spectrum Analyzer	R&S	FSVA40	101455	2017/11/27
Multisystem UE Tester	Japan radio	NJZ-2000	ET00477	2017/09/19
Directional coupler	Agilent	778D	20402	2017/10/06

Radiated Spurious Emission / CB4-H

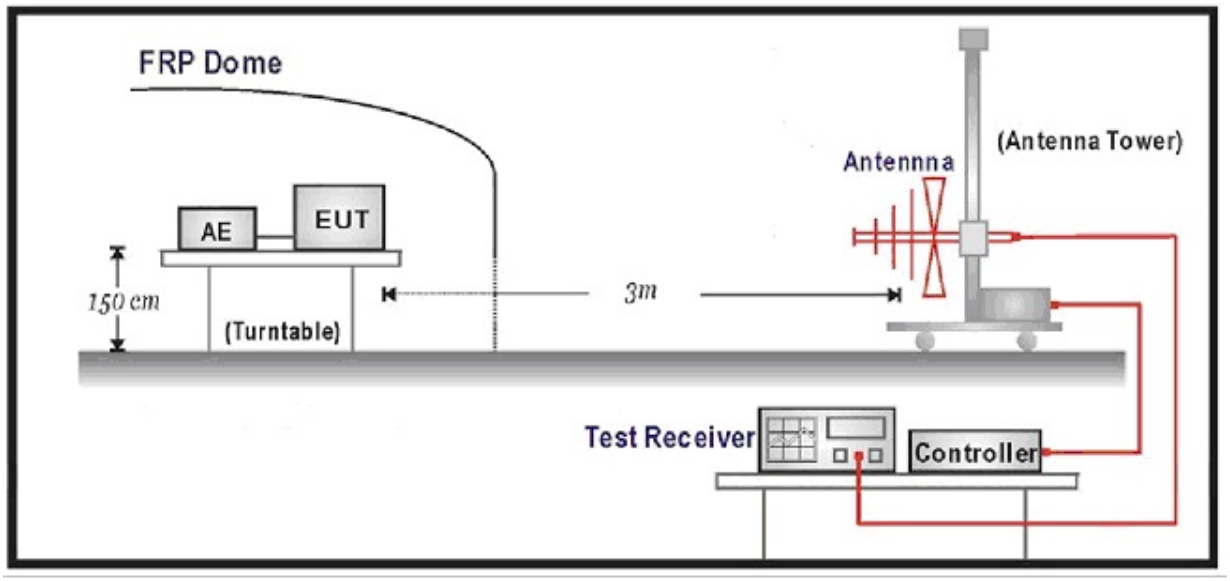
Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Test Receiver	R&S	ESCS 30	836858/022	2018/01/14
Multisystem UE Tester	Japan radio	NJZ-2000	ET00477	2017/09/19
Signal & Spectrum Analyzer	R&S	FSVA40	101455	2017/11/27
Pre-Amplifier	DEKRA	AP-025C	CHM-0706049	2017/12/18
Bilog Antenna	Schaffner	CBL6112B	2797	2017/08/14
Pre-Amplifier	EMCI	EMC0031835	980233	2018/02/02
Horn Antenna	Schwarzbeck	BBHA 9120	D639	2017/06/29

8.2. Test Setup

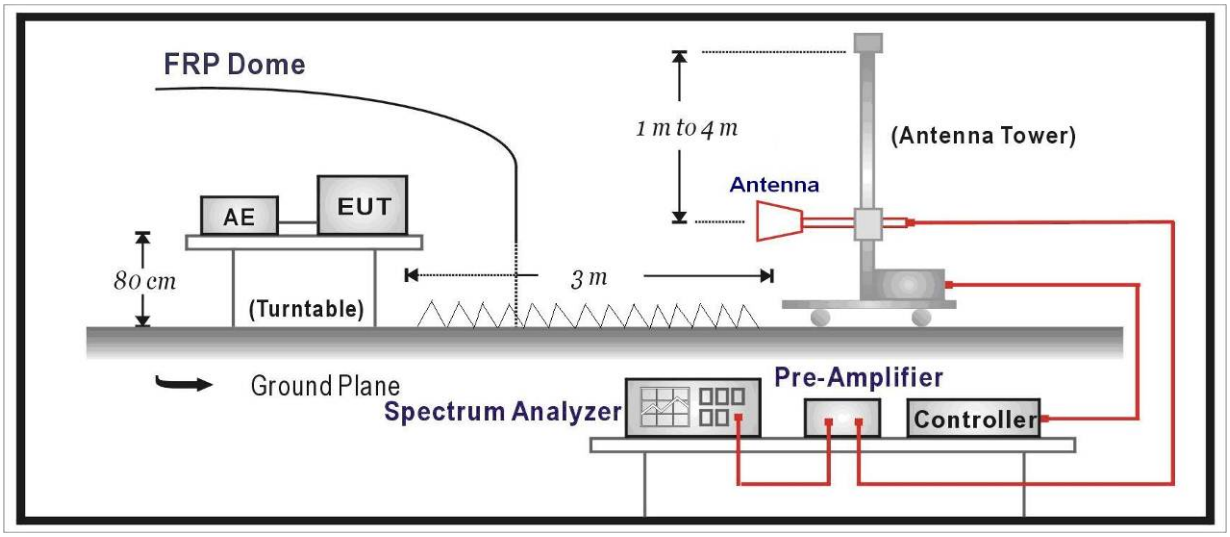
Conducted Spurious Measurement: below 1GHz



Radiated Spurious Measurement: below 1GHz



Radiated Spurious Measurement: above 1GHz



8.3. Test Procedure

Conducted Spurious Measurement:

a) Place the EUT on a bench and set it in transmitting mode.
b) Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMU200 by a Directional Couple.
c) EUT Communicate with CMU200, then select a channel for testing.
d) Add a correction factor to the display of spectrum, and then test.
e) The resolution bandwidth of the spectrum analyzer was set at 1 MHz, sufficient scans were taken to show the out of band Emission if any up to 10^{th} harmonic.

Radiated Spurious Measurement:

f) The EUT was placed on a rotatable wooden table with 1.5 meter above ground.
g) The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
h) The table was rotated 360 degrees to determine the position of the highest spurious emission.
i) The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
j) Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 1MHz, Sweep 500ms, Taking the record of maximum spurious emission.
k) A horn antenna was substituted in place of the EUT and was driven by a signal generator.
l) Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
m) Taking the record of output power at antenna port
n) Repeat step 7 to step 8 for another polarization.
o) EIRP = SG - Cable loss + Antenna Gain

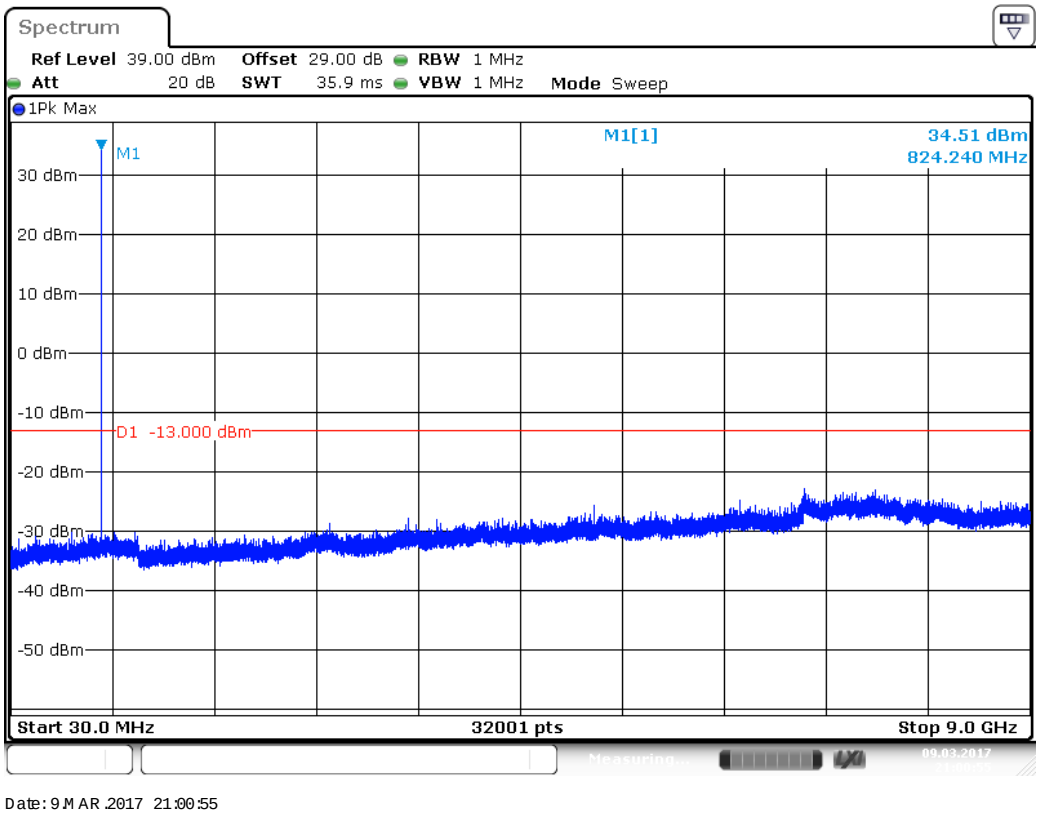
8.4. Uncertainty

The measurement uncertainty is defined as 3.2 dB for Radiated Power Measurement.

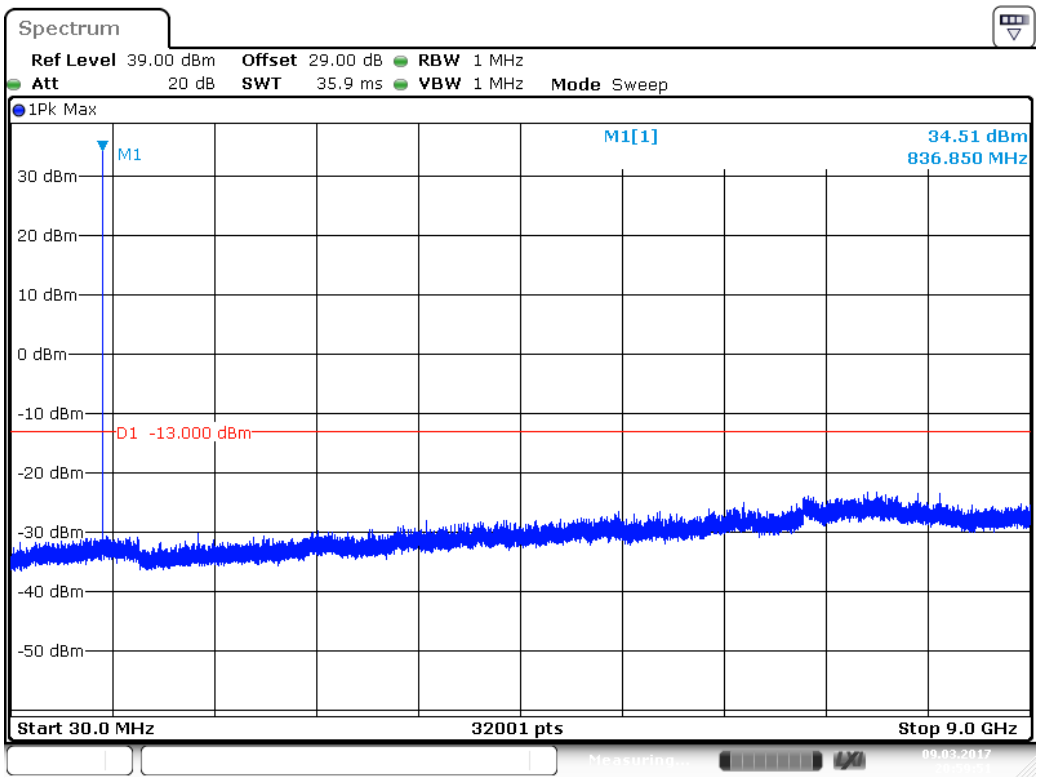
8.5. Test Result

Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 1: GPRS 850_Link		
Date of Test	2017/03/10	Test Site	SR10-H

Low Channel 128 (824.20MHz)

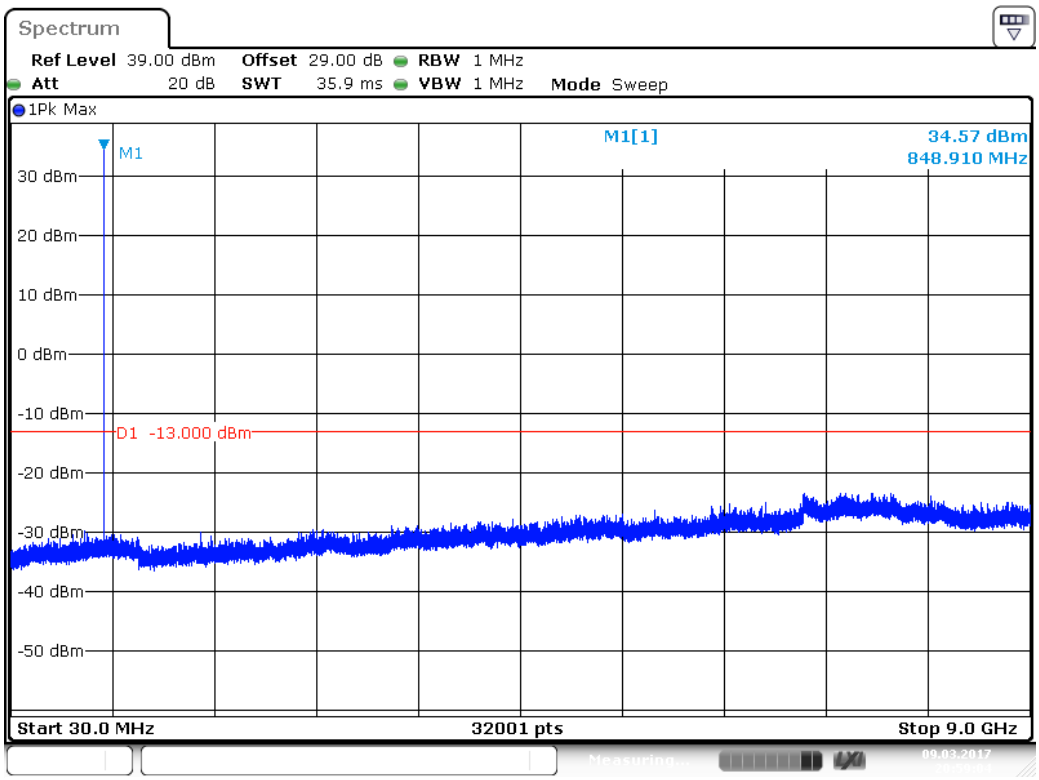


Mid Channel 190 (836.60MHz)



Date: 9.MAR.2017 20:59:51

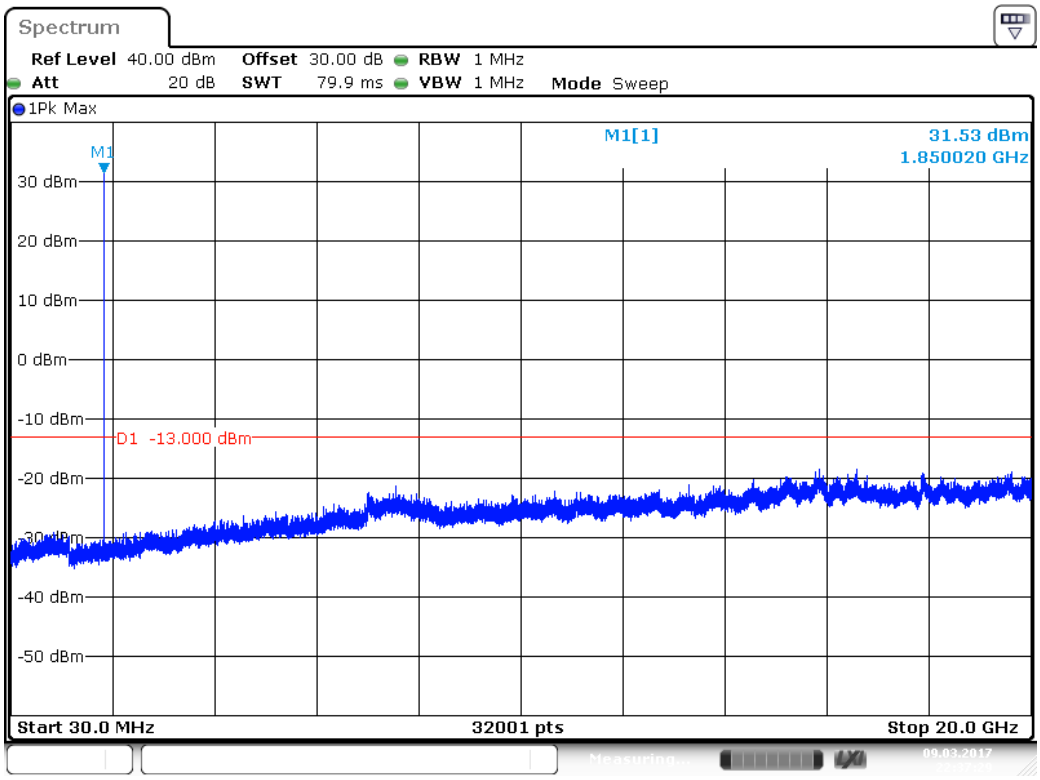
High Channel 251 (848.80MHz)



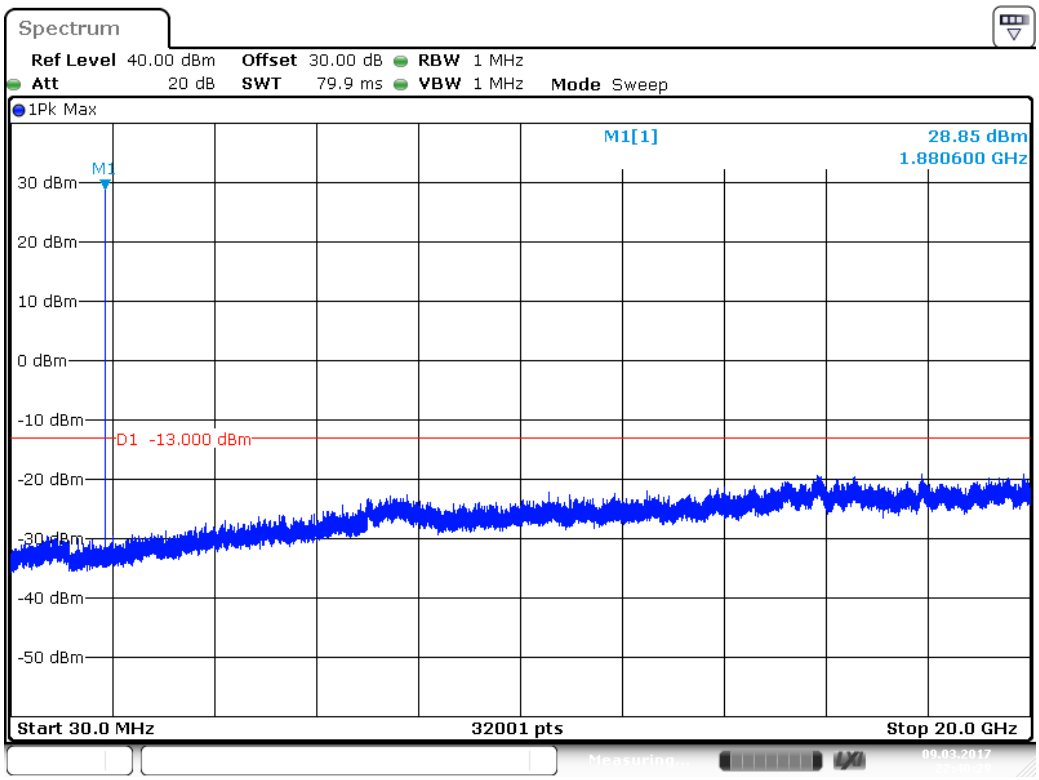
Date: 9.MAR.2017 20:59:04

Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 2: GPRS 1900_Link		
Date of Test	2017/03/09	Test Site	SR10-H

Low Channel 512 (1850.20MHz)

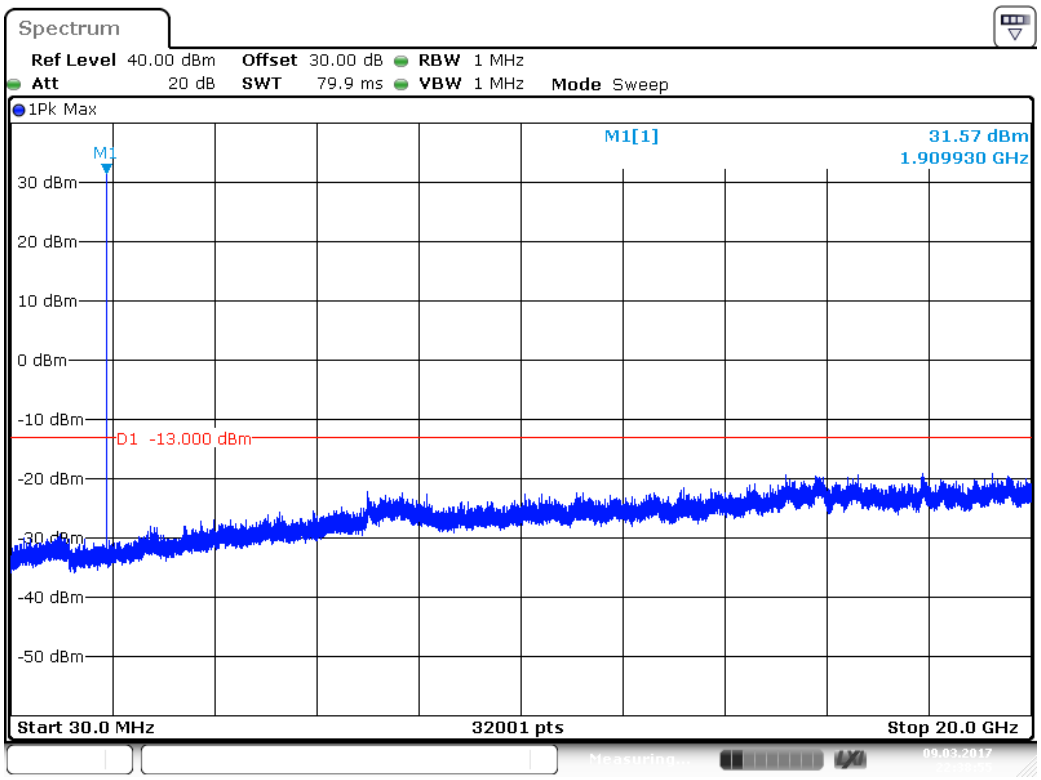


Mid Channel 661 (1880.00MHz)



Date: 9.MAR.2017 22:40:30

High Channel 810 (1909.80MHz)



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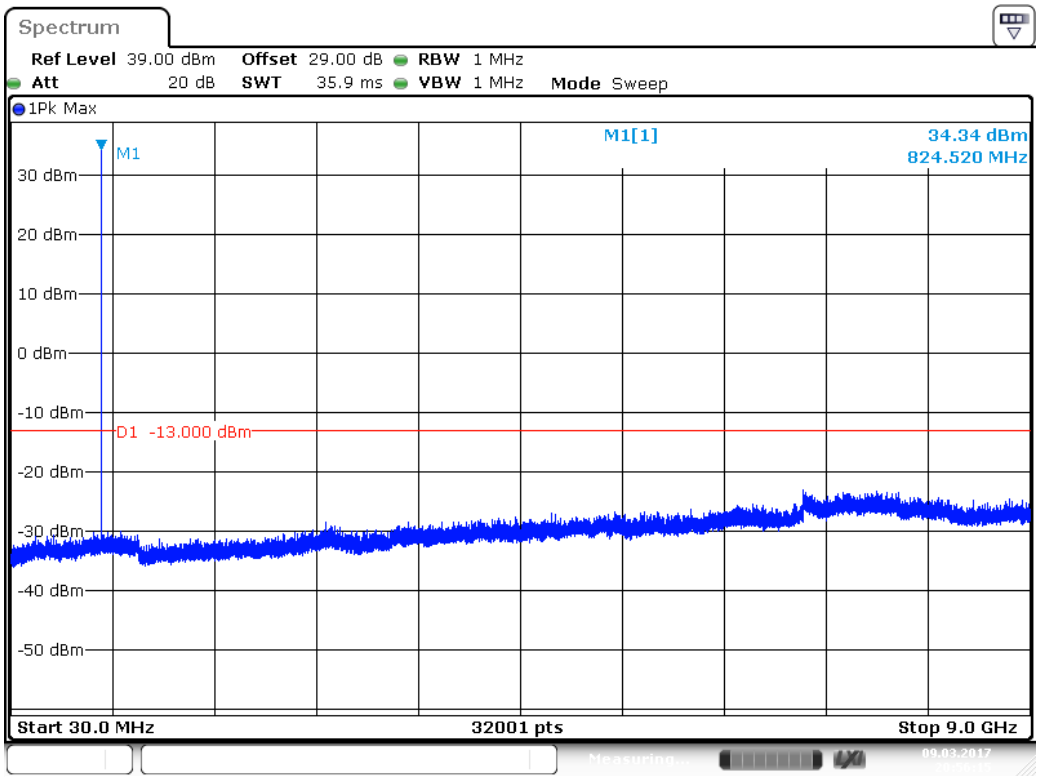
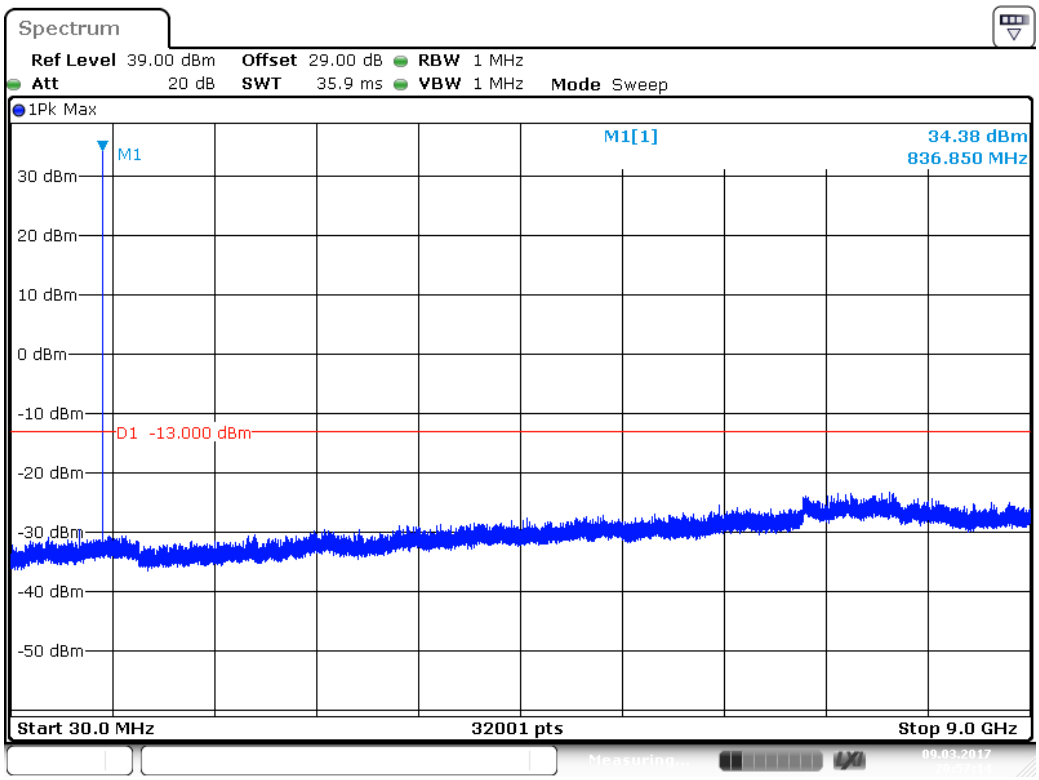
Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 3: EGPRS 850_Link		
Date of Test	2017/03/09	Test Site	SR10-H

Low Channel 128 (824.20MHz)

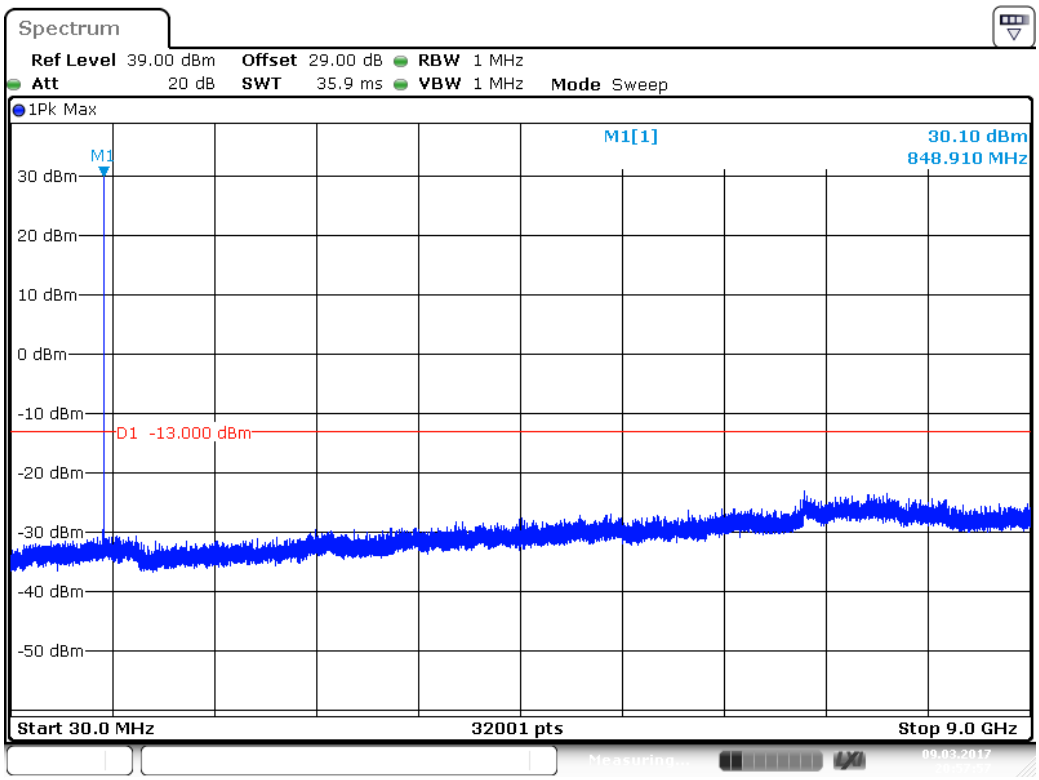


Mid Channel 190 (836.60MHz)



Date: 9.MAR.2017 20:57:14

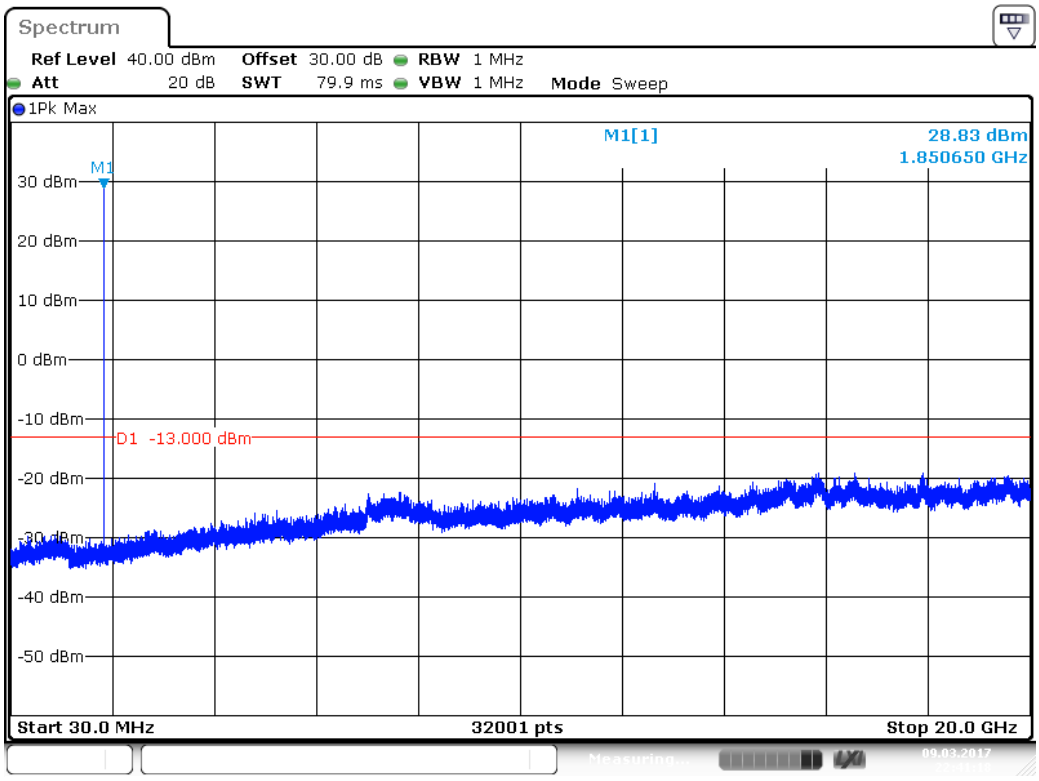
High Channel 251 (848.80MHz)



Date: 9.MAR.2017 20:57:58

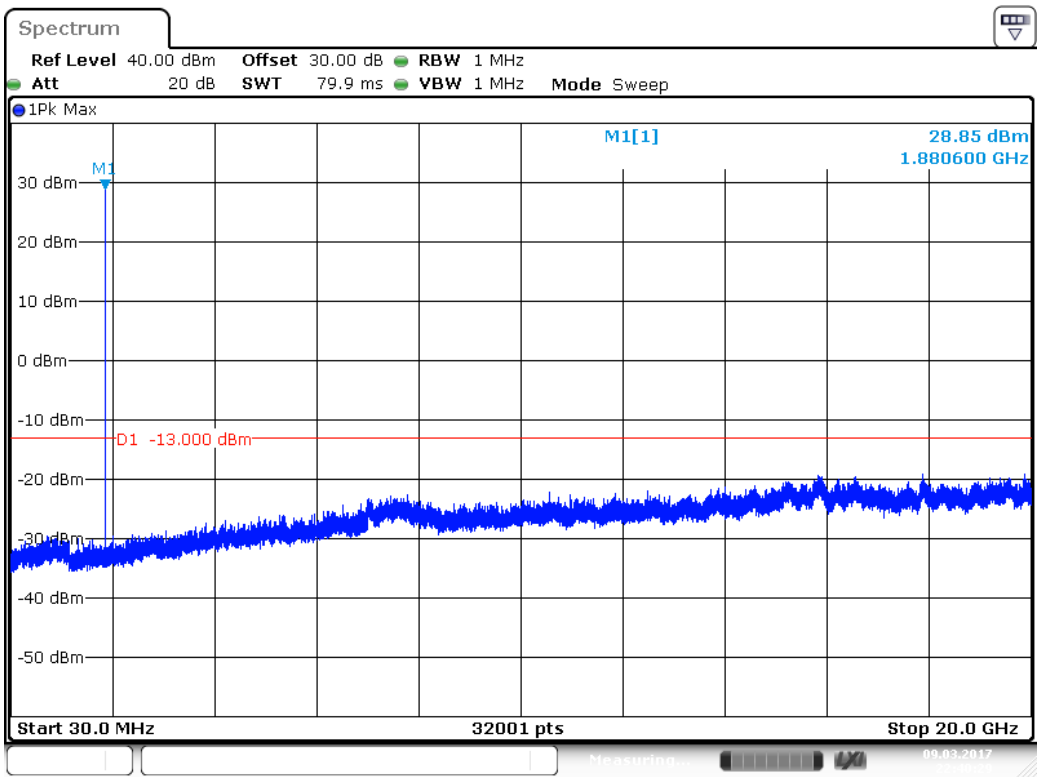
Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 4: EGPRS 1900_Link		
Date of Test	2017/03/09	Test Site	SR10-H

Low Channel 512 (1850.20MHz)



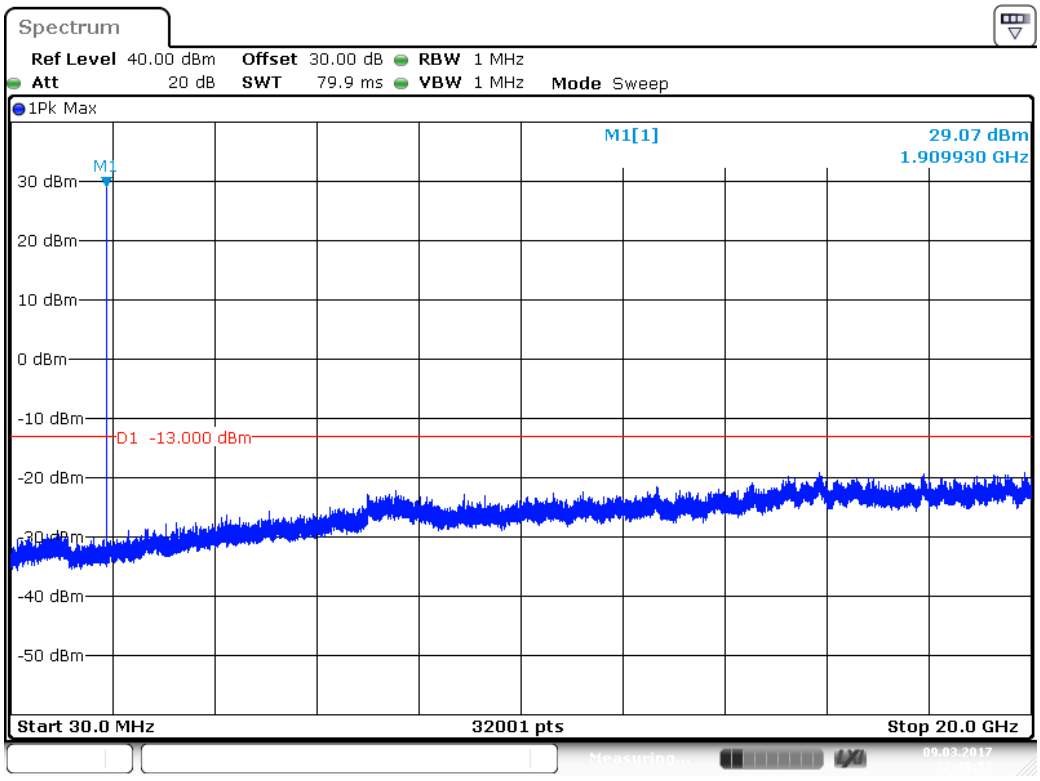
Date: 9.MAR.2017 22:41:19

Mid Channel 661 (1880.00MHz)



Date: 9.MAR.2017 22:40:30

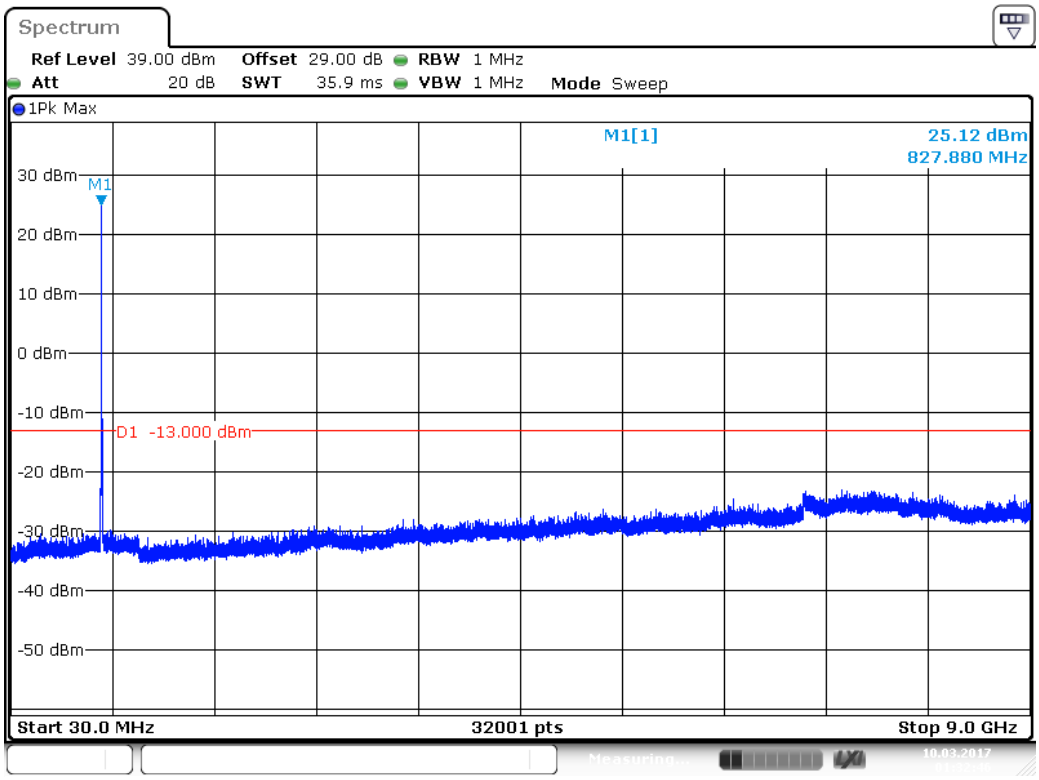
High Channel 810 (1909.80MHz)



Date: 9.MAR.2017 22:39:53

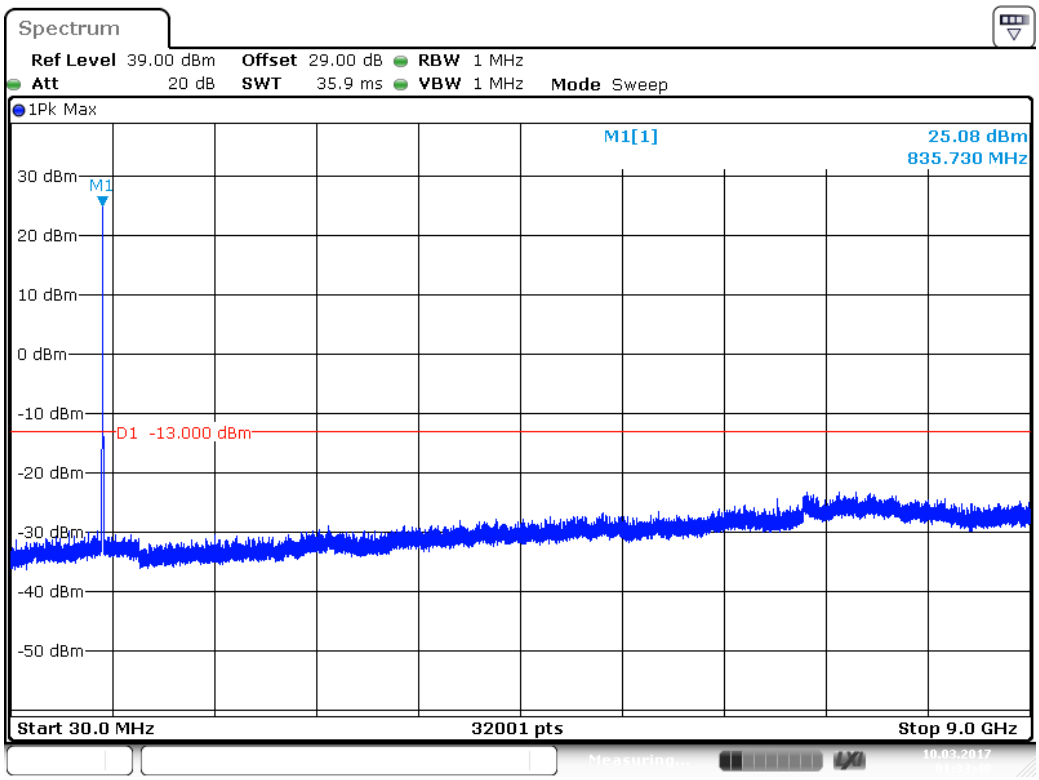
Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 5: WCDMA Band 5_Link		
Date of Test	2017/03/09	Test Site	SR10-H

Low Channel 4132 (826.40MHz)



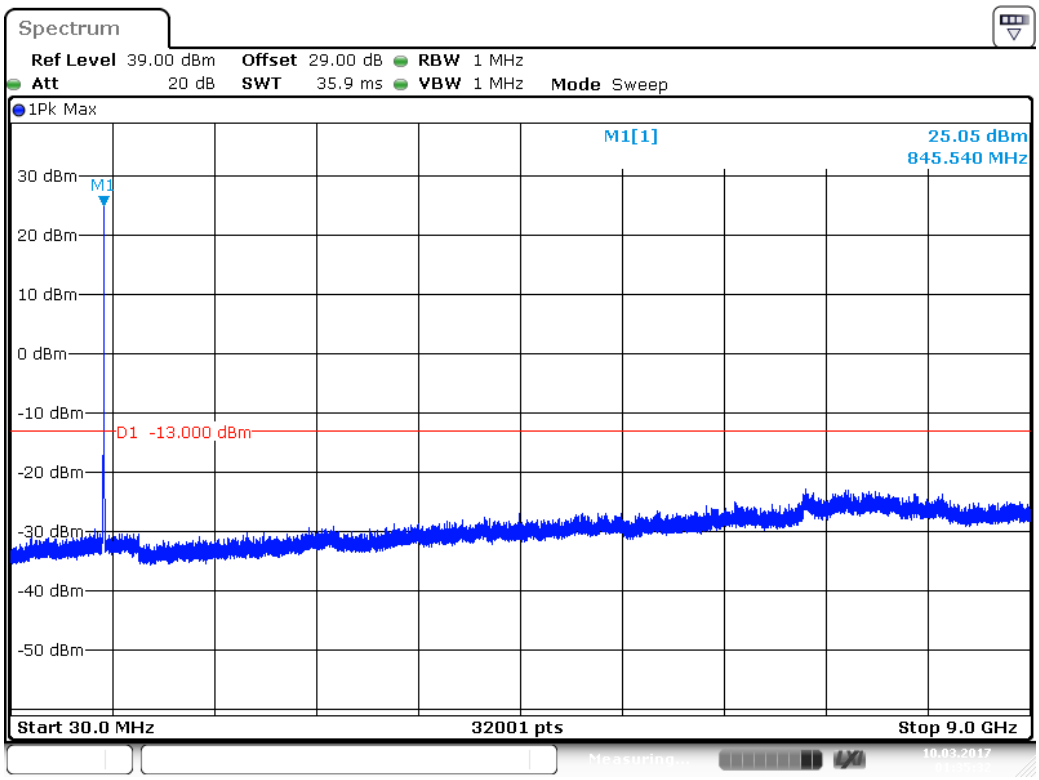
Date: 10.MAR.2017 01:32:47

Mid Channel 4182(836.60MHz)



Date: 10.MAR.2017 01:33:48

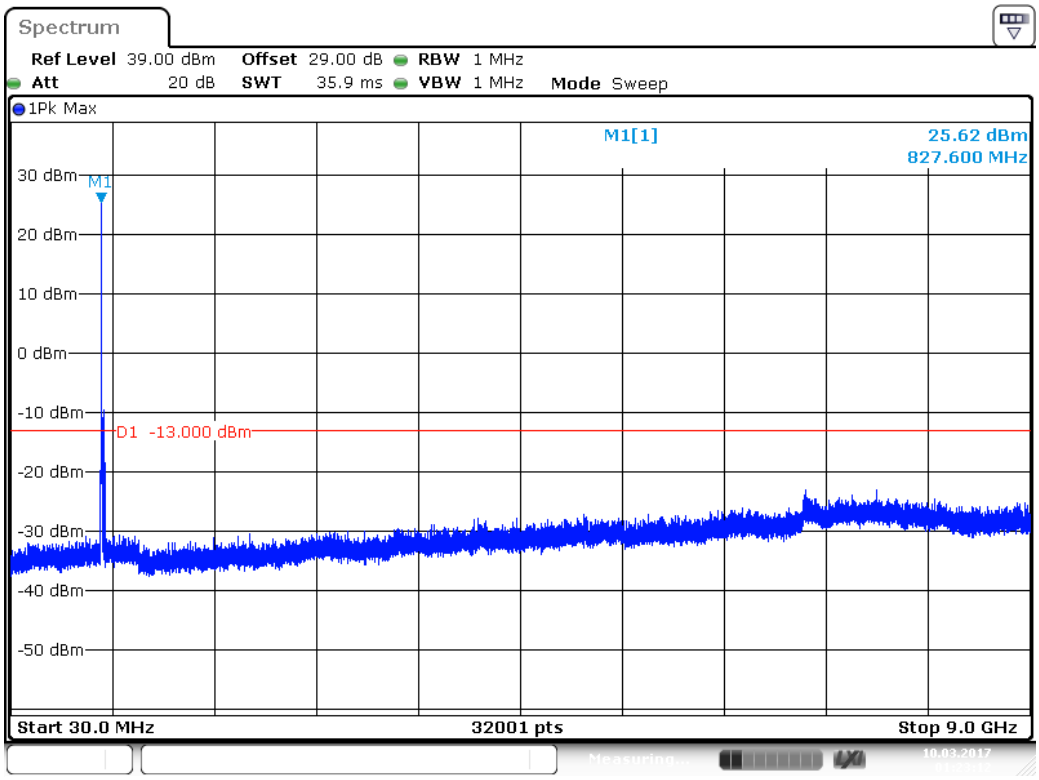
High Channel 4233(846.60MHz)



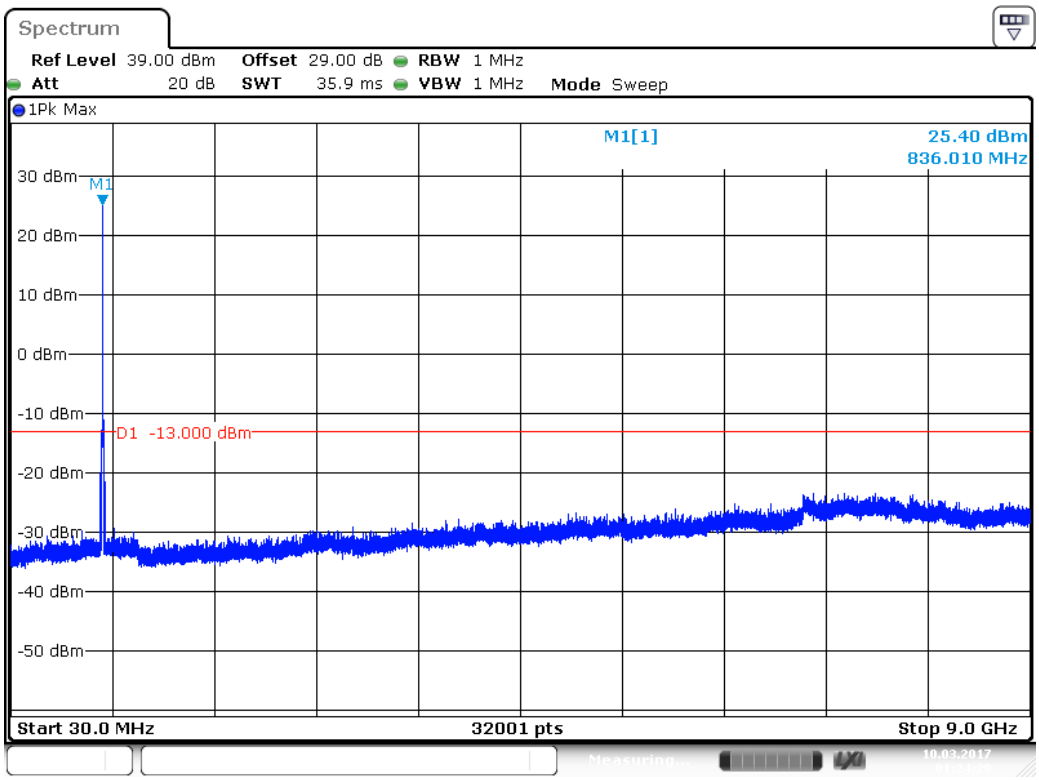
Date: 10.MAR.2017 01:35:32

Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 6: WCDMA Band 5_HSUPA_Link		
Date of Test	2017/03/09	Test Site	SR10-H

Low Channel 4132 (826.40MHz)

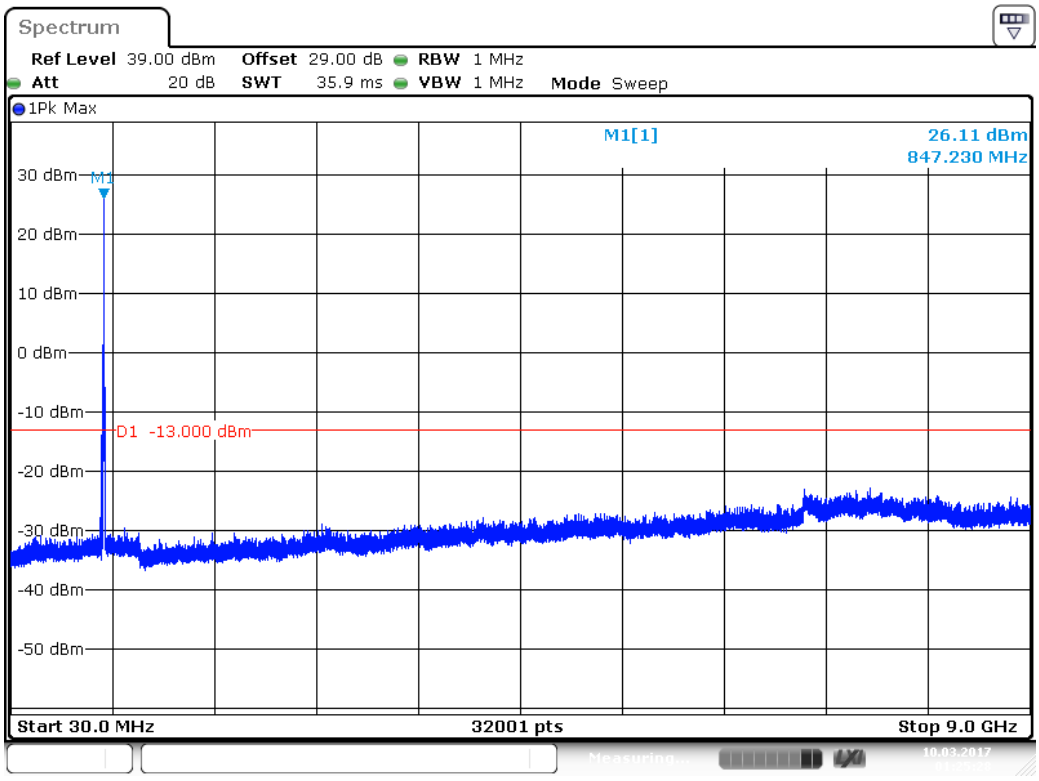


Mid Channel 4182 (836.60MHz)



Date: 10.MAR.2017 01:24:28

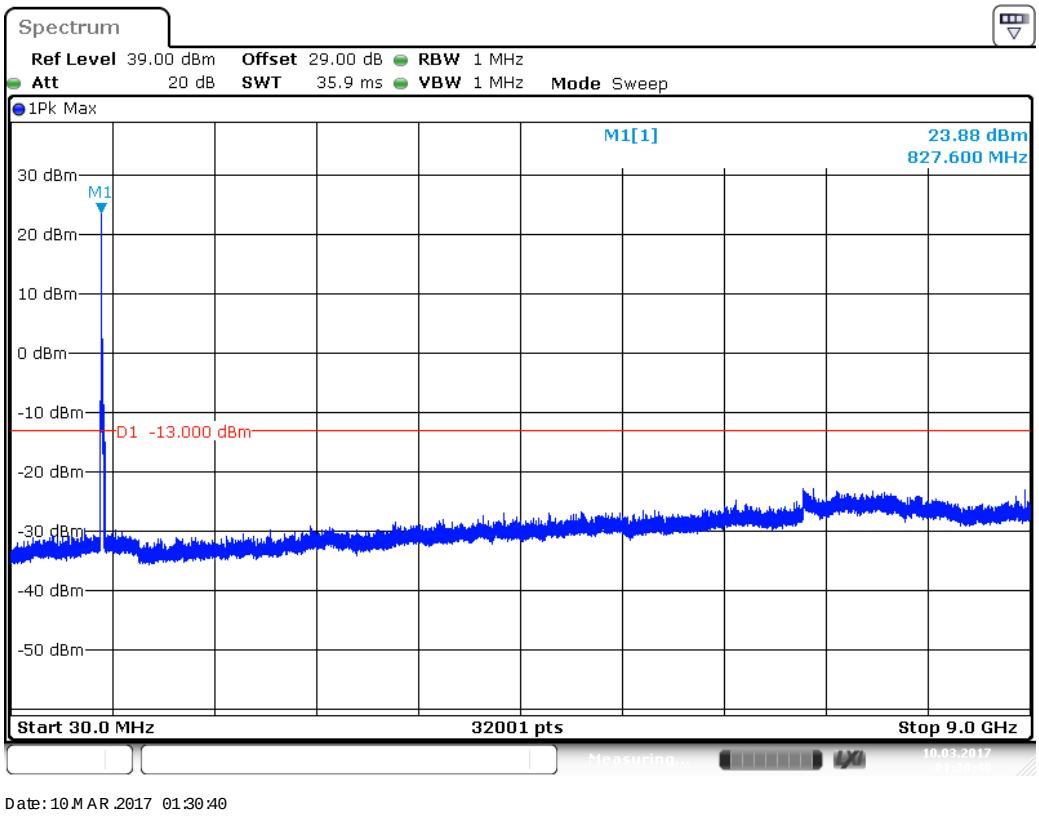
High Channel 4233 (846.60MHz)



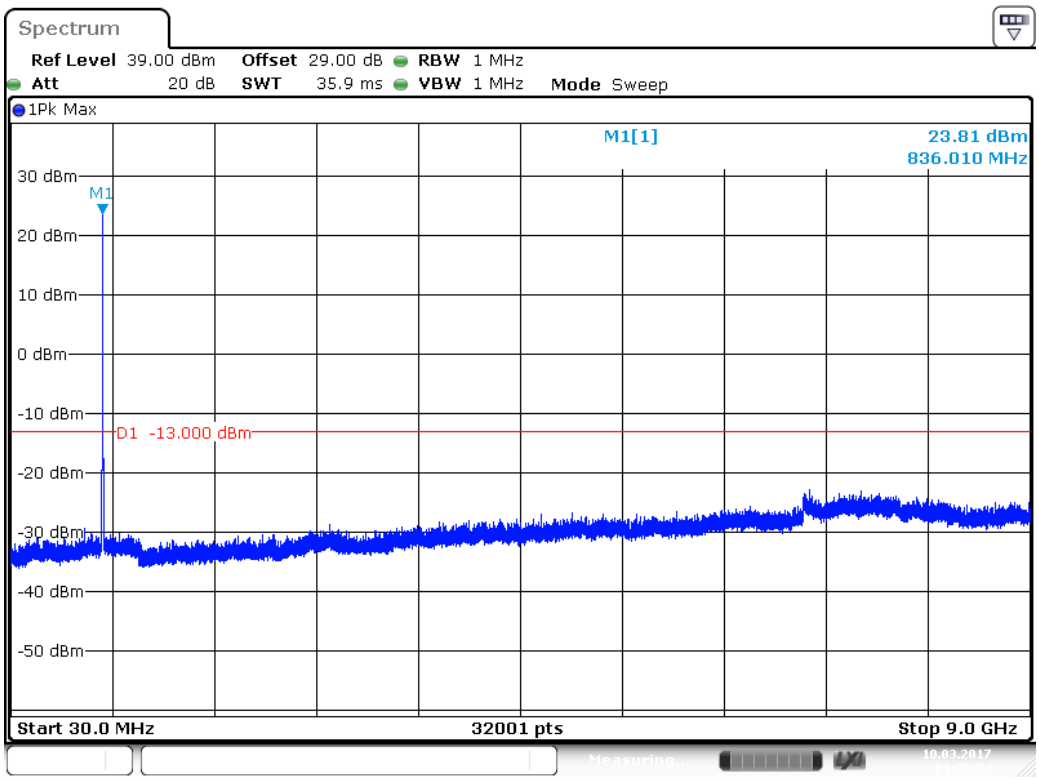
Date: 10.MAR.2017 01:25:28

Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 7: WCDMA Band 5_HSDPA_Link		
Date of Test	2017/03/09	Test Site	SR10-H

Low Channel 4132 (826.40MHz)

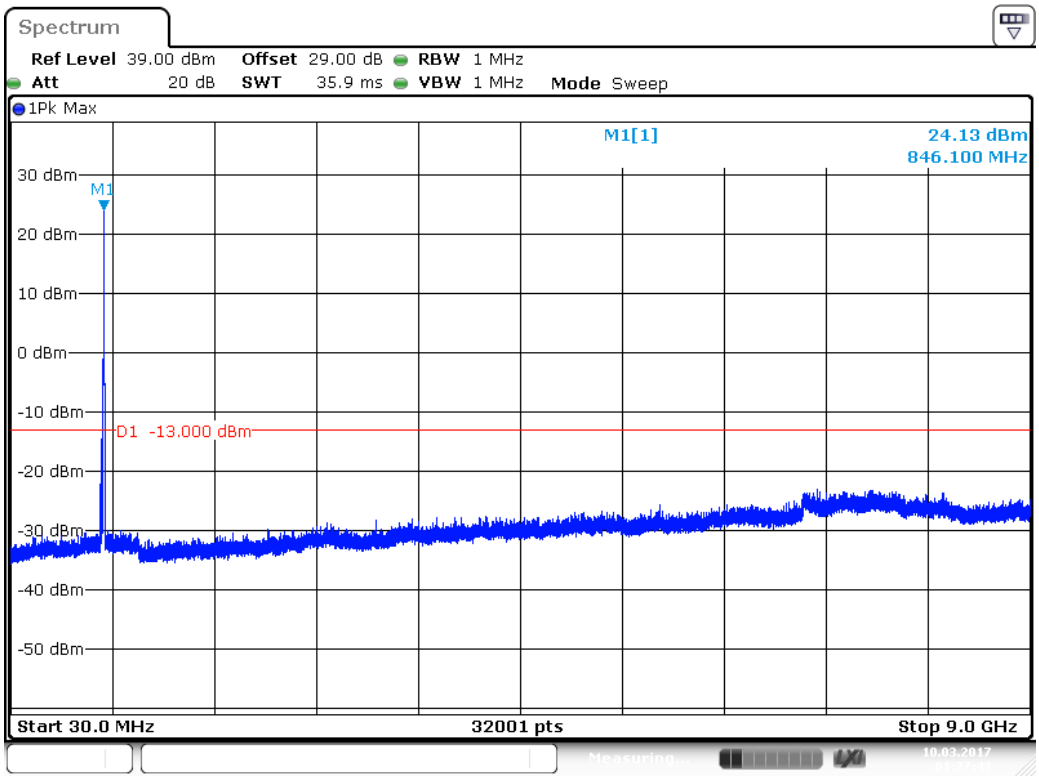


Mid Channel 4182 (836.60MHz)



Date: 10.MAR.2017 01:28:54

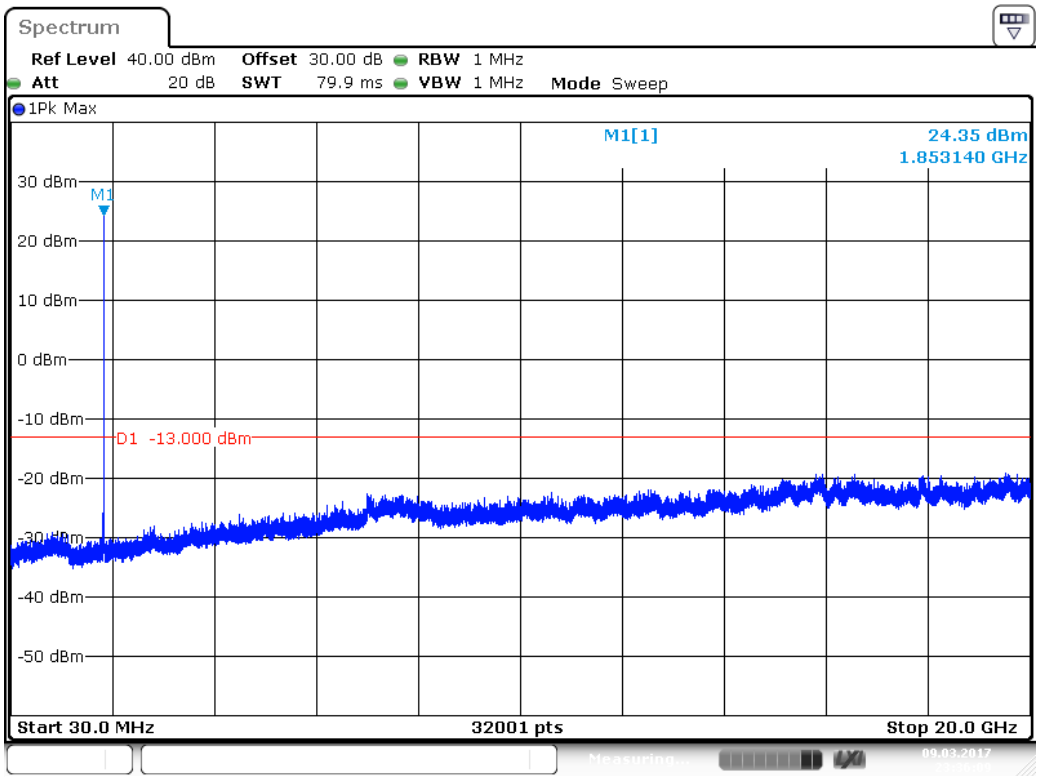
High Channel 4233 (846.60MHz)



Date: 10.MAR.2017 01:27:43

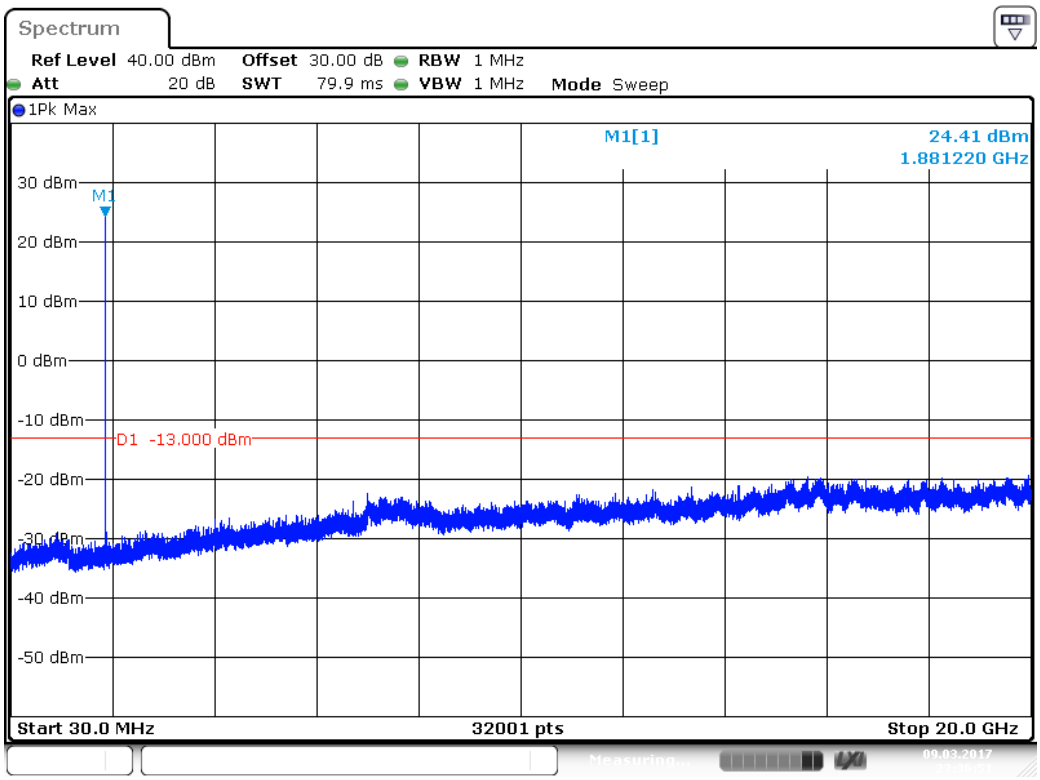
Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 8: WCDMA Band 2_Link		
Date of Test	2017/03/09	Test Site	SR10-H

Low Channel 9262 (1852.40MHz)



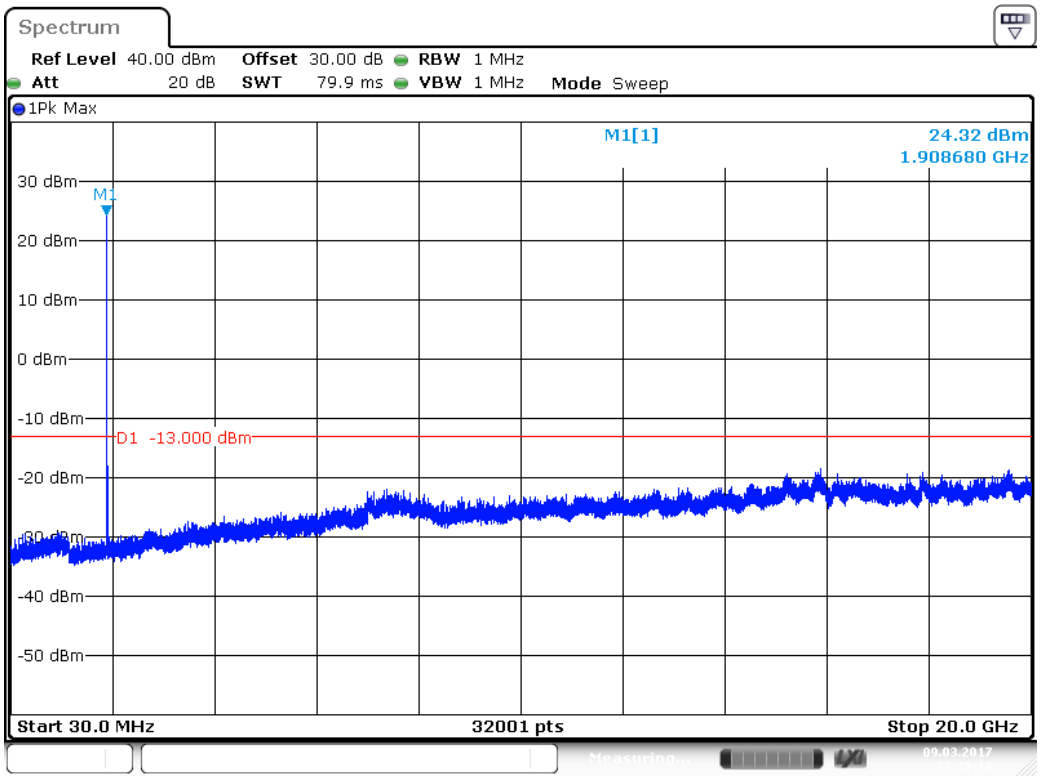
Date: 9.MAR.2017 23:36:09

Mid Channel 9400 (1880.00MHz)



Date: 9.MAR.2017 23:36:52

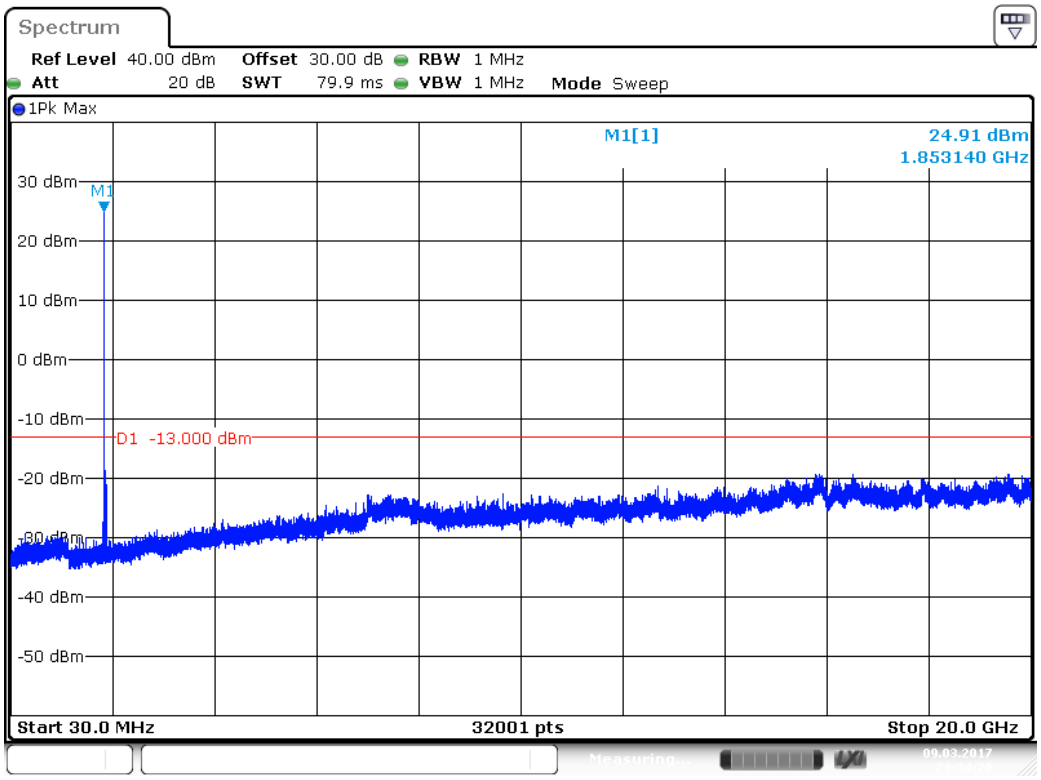
High Channel 9538 (1907.60MHz)



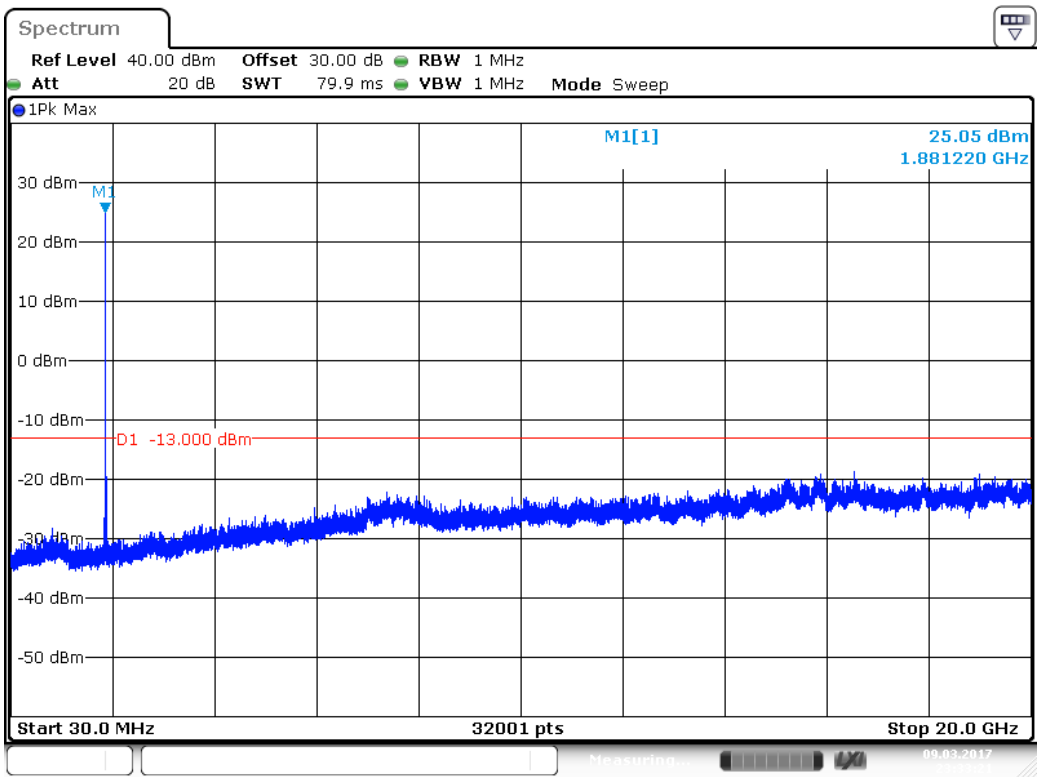
Date: 9.MAR.2017 23:38:10

Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 9: WCDMA Band 2_HSUPA_Link		
Date of Test	2017/03/09	Test Site	SR10-H

Low Channel 9262 (1852.40MHz)

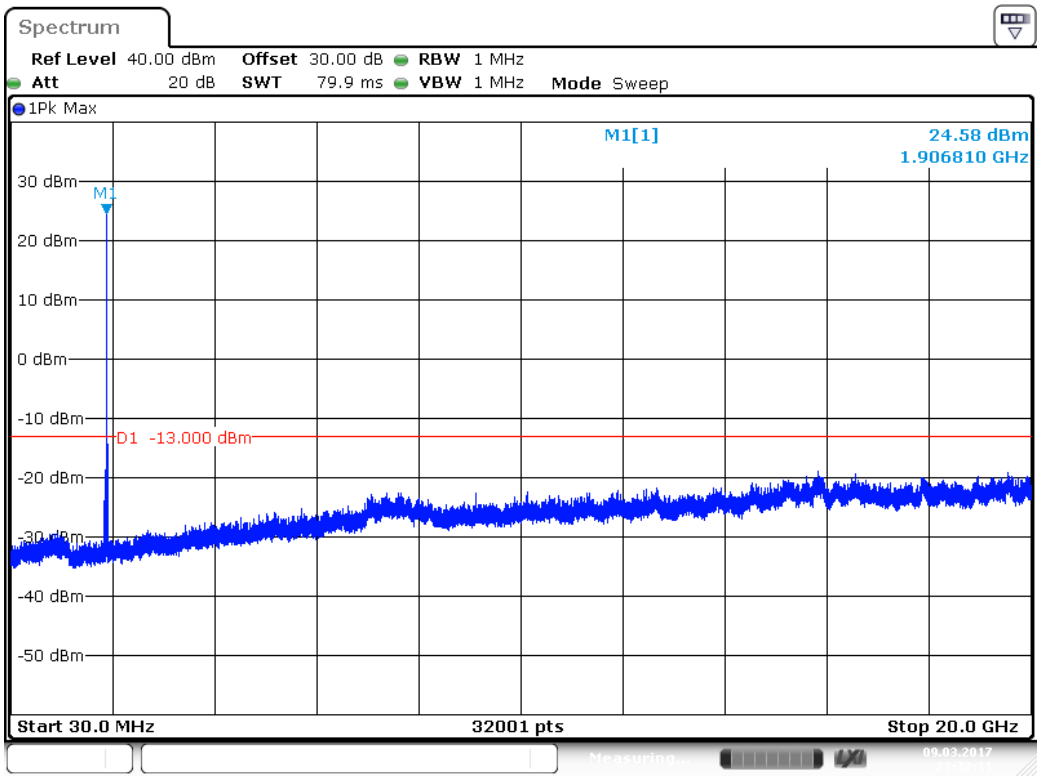


Mid Channel 9400 (1880.00MHz)



Date: 9.MAR.2017 23:33:21

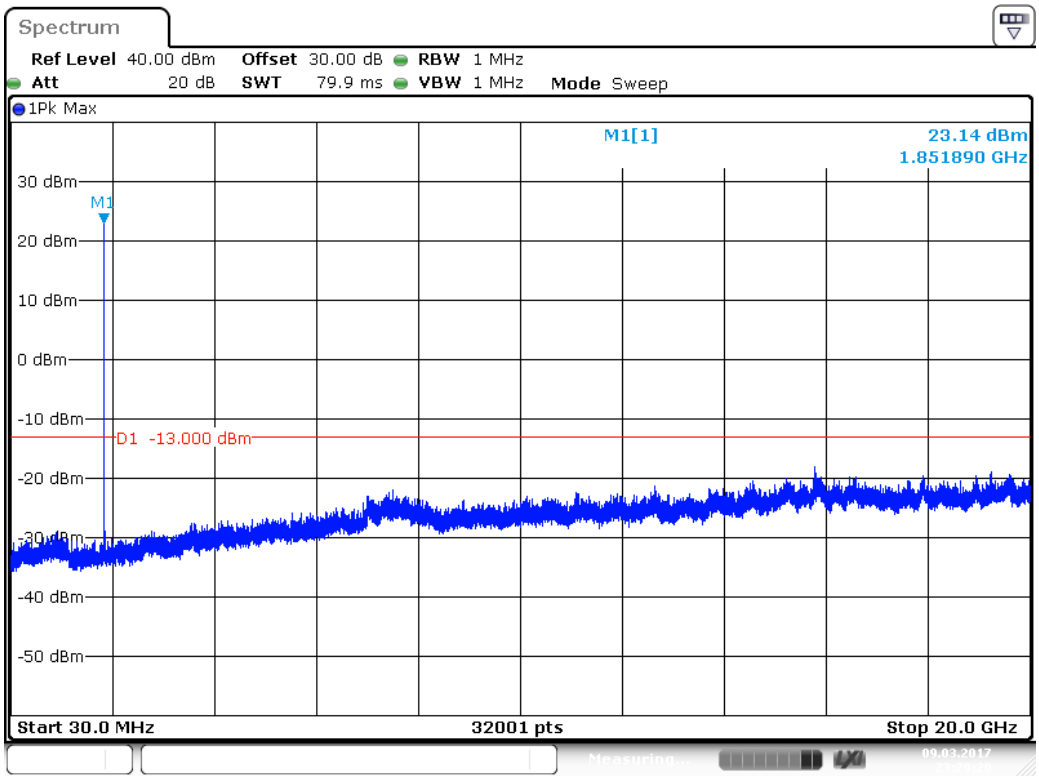
High Channel 9538 (1907.60MHz)



Date: 9.MAR.2017 23:32:12

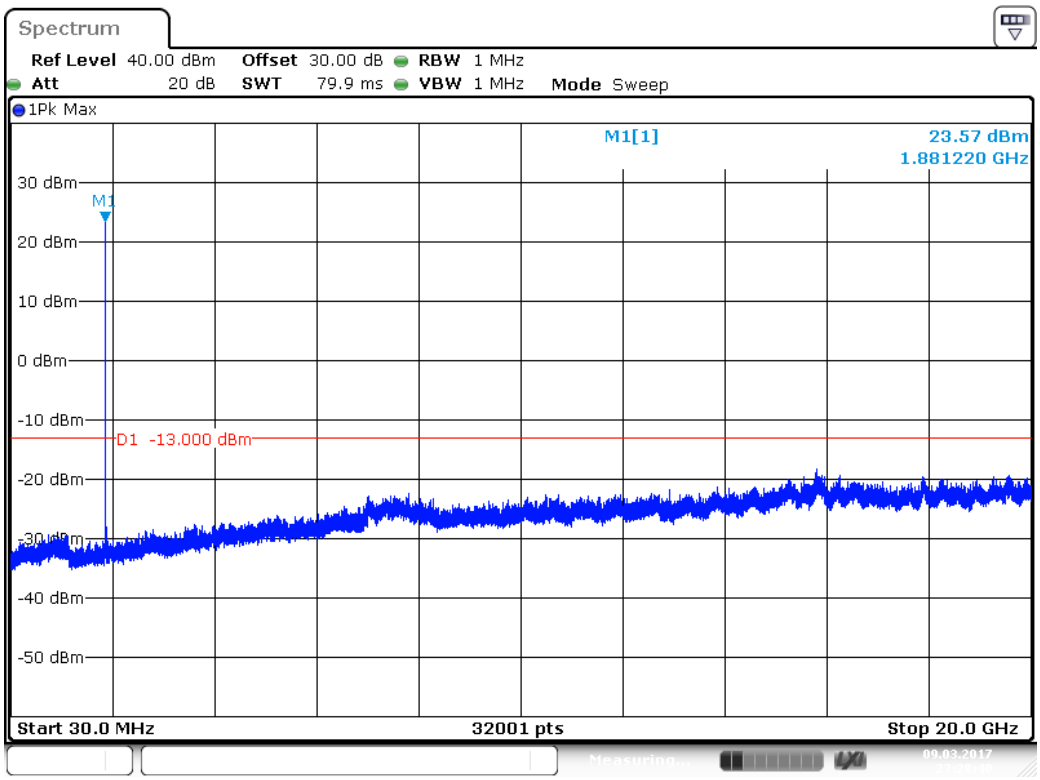
Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 10: WCDMA Band 2_HSDPA_Link		
Date of Test	2017/03/09	Test Site	SR10-H

Low Channel 9262 (1852.40MHz)



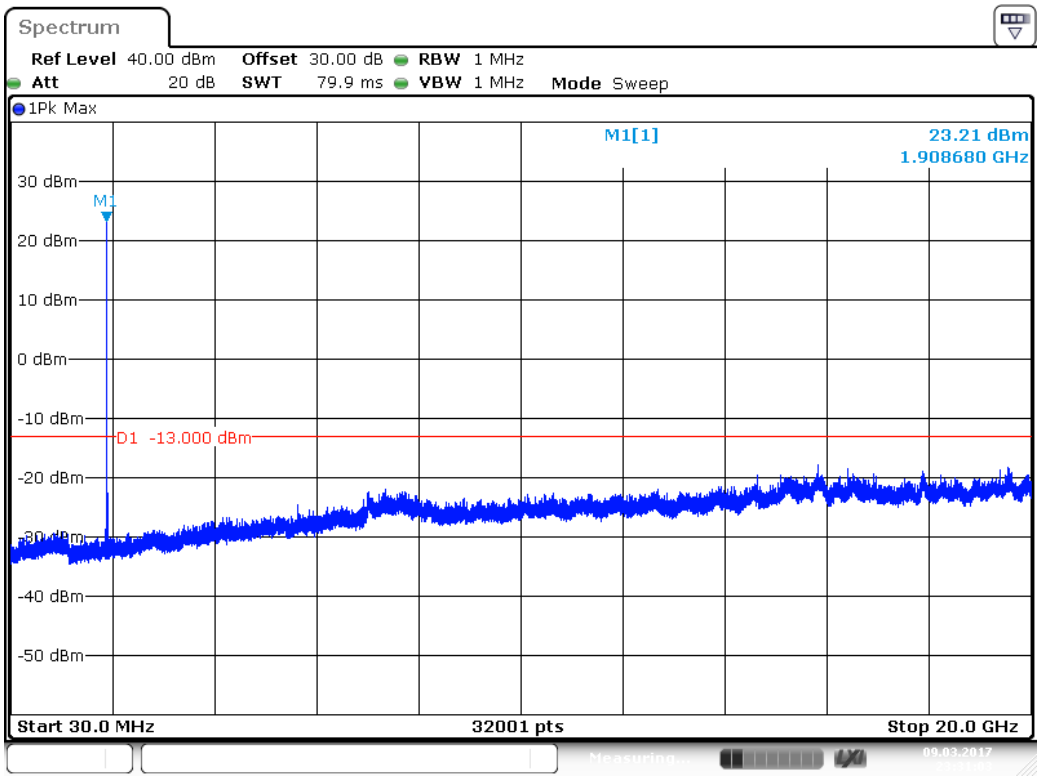
Date: 9.MAR.2017 23:29:21

Mid Channel 9400 (1880.00MHz)



Date: 9.MAR.2017 23:28:40

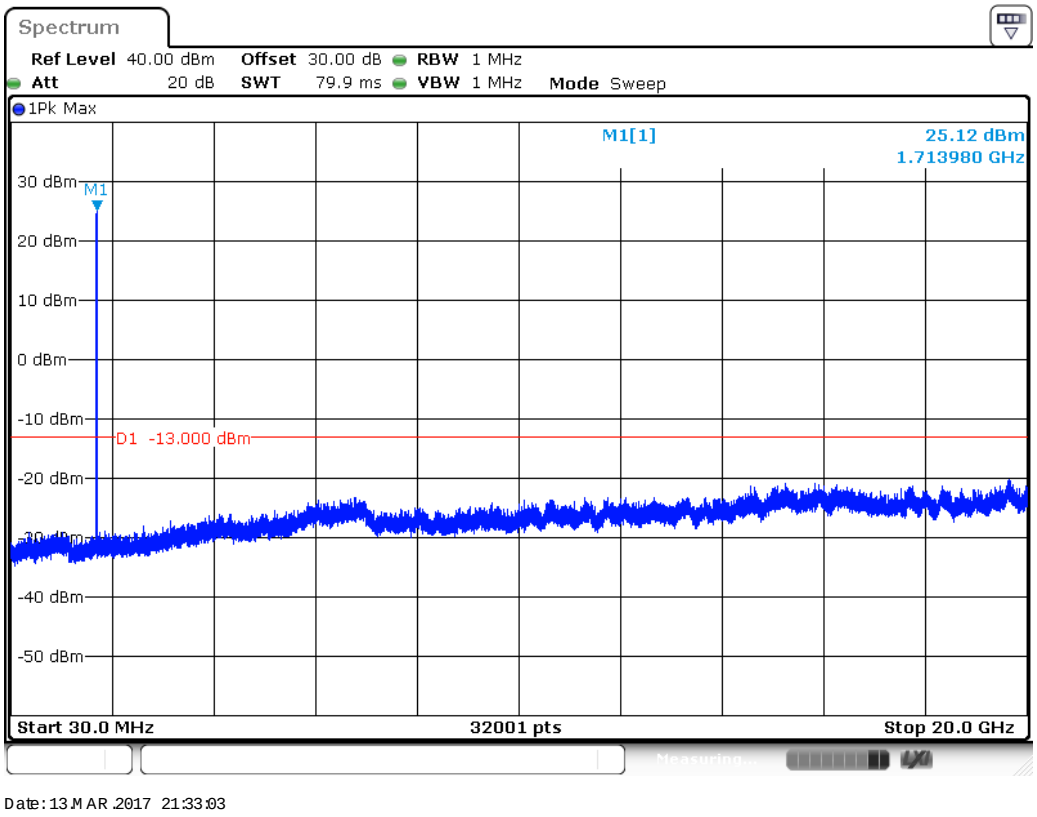
High Channel 9538 (1907.60MHz)



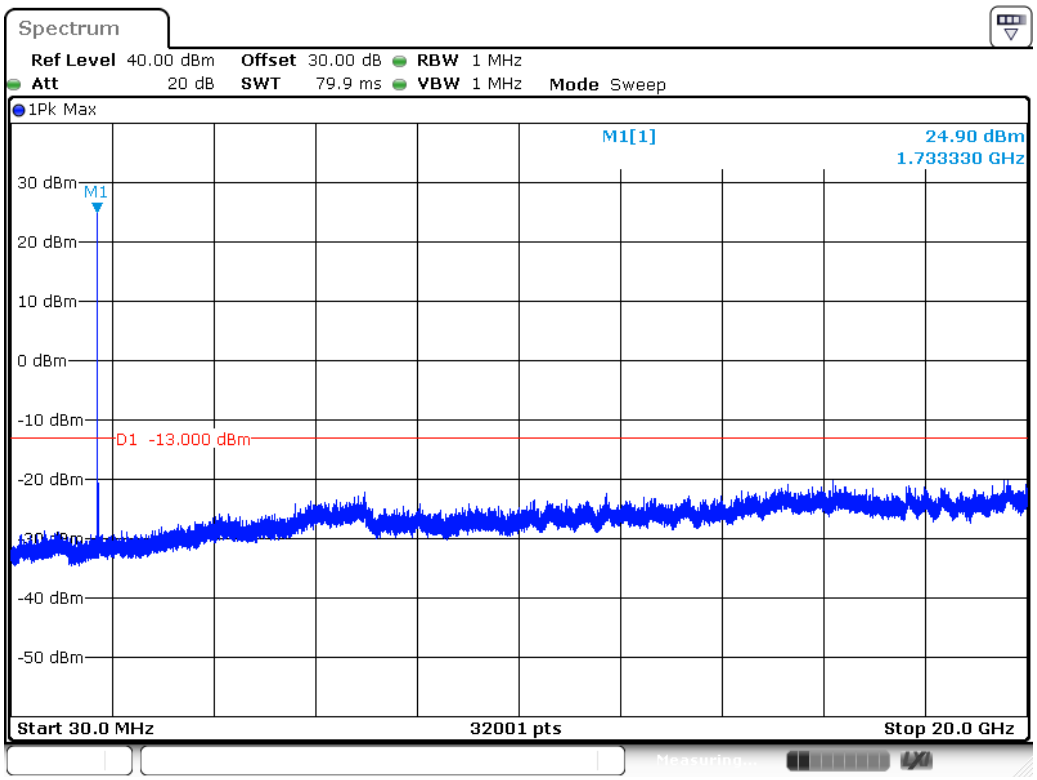
Date: 9.MAR.2017 23:31:04

Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 11: WCDMA Band4_Link		
Date of Test	2017/03/13	Test Site	SR10-H

Low Channel 1312 (1712.40MHz)

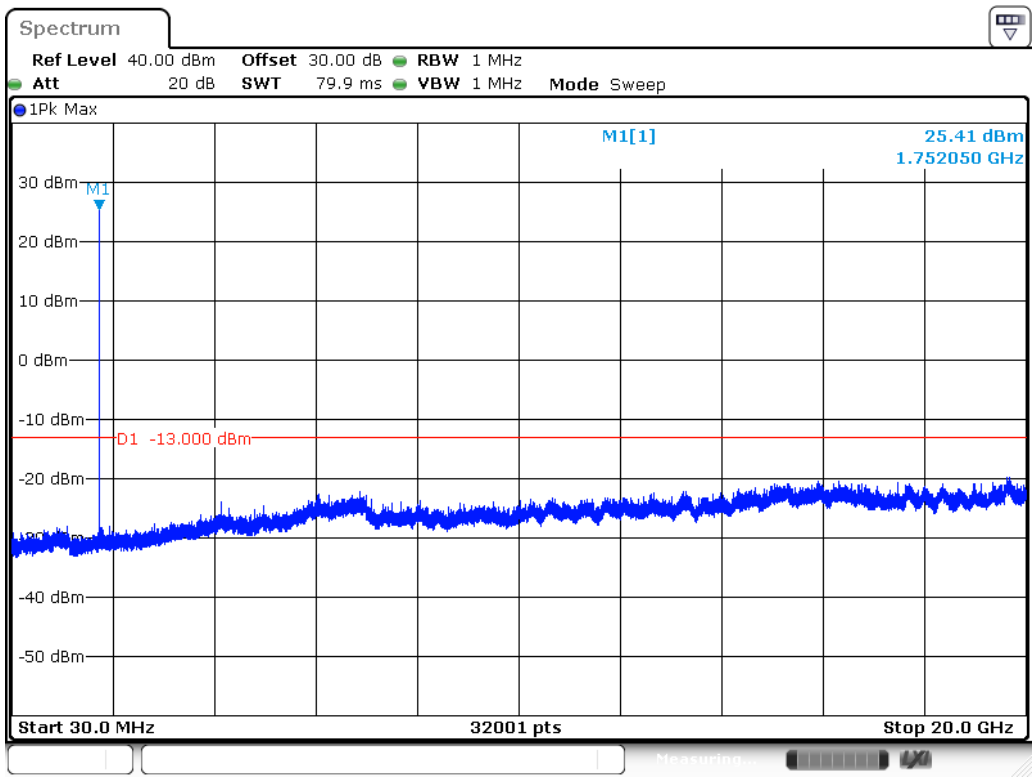


Mid Channel 1413 (1732.60MHz)



Date: 13.MAR.2017 21:32:16

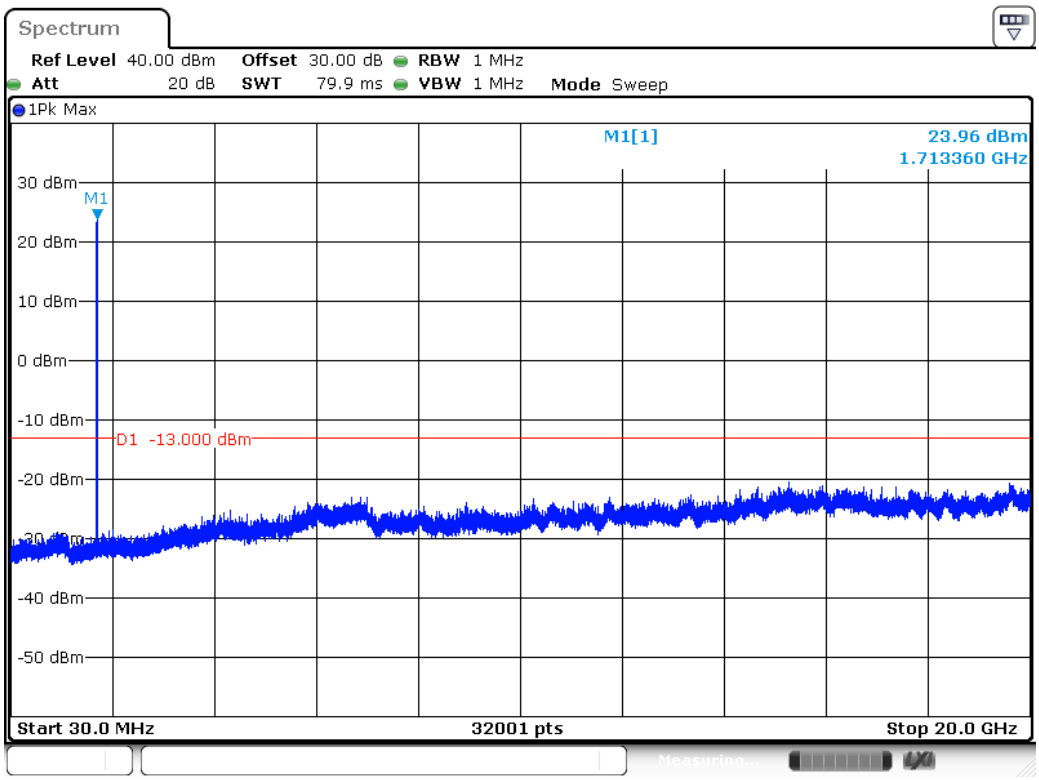
High Channel 1513 (1752.60MHz)



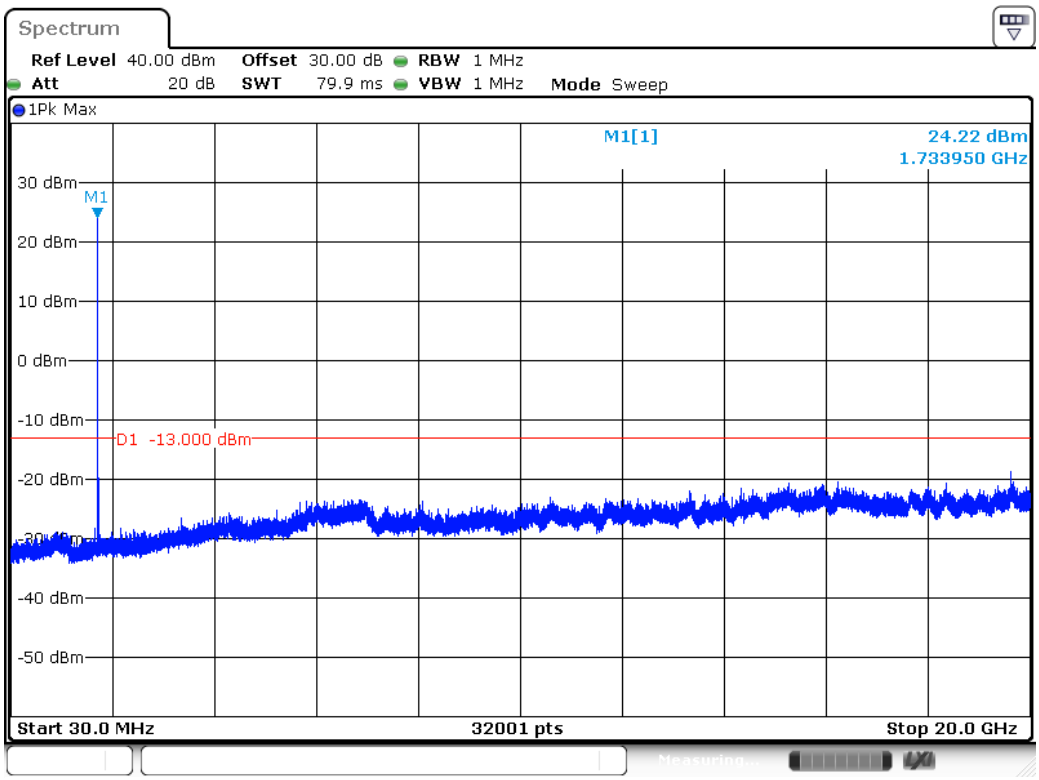
Date: 13.MAR.2017 21:31:28

Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 12: WCDMA Band4_HSUPA_Link		
Date of Test	2017/03/13	Test Site	SR10-H

Low Channel 1312 (1712.40MHz)

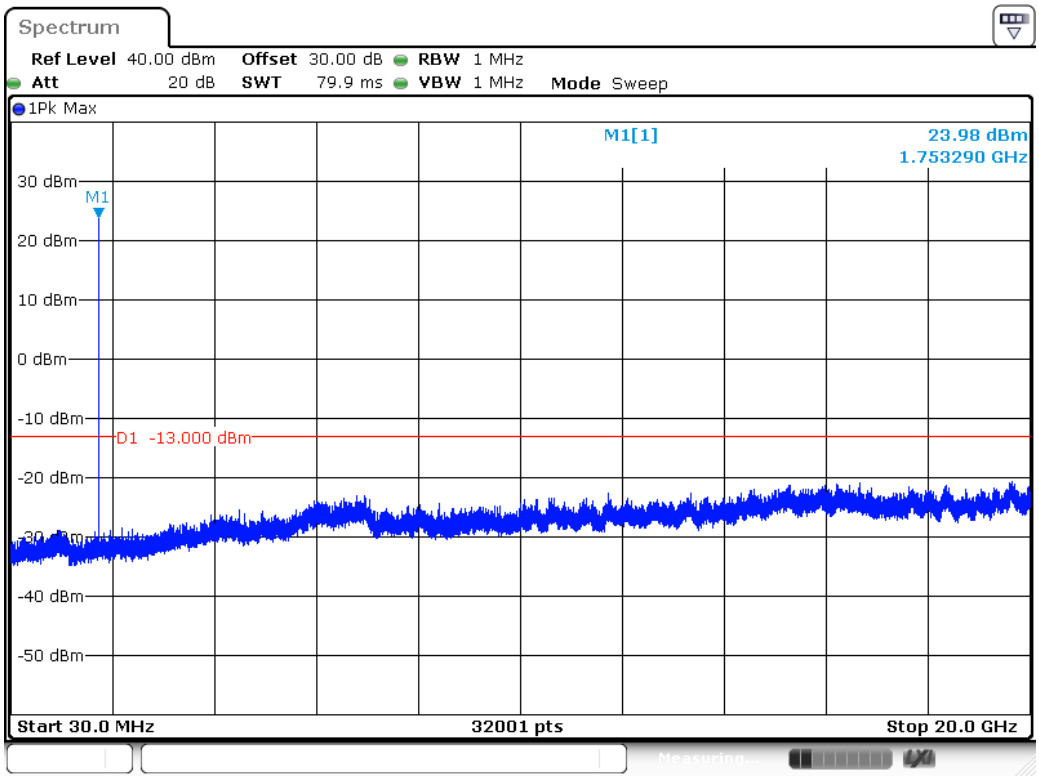


Mid Channel 1413 (1732.60MHz)



Date: 13.MAR.2017 21:23:35

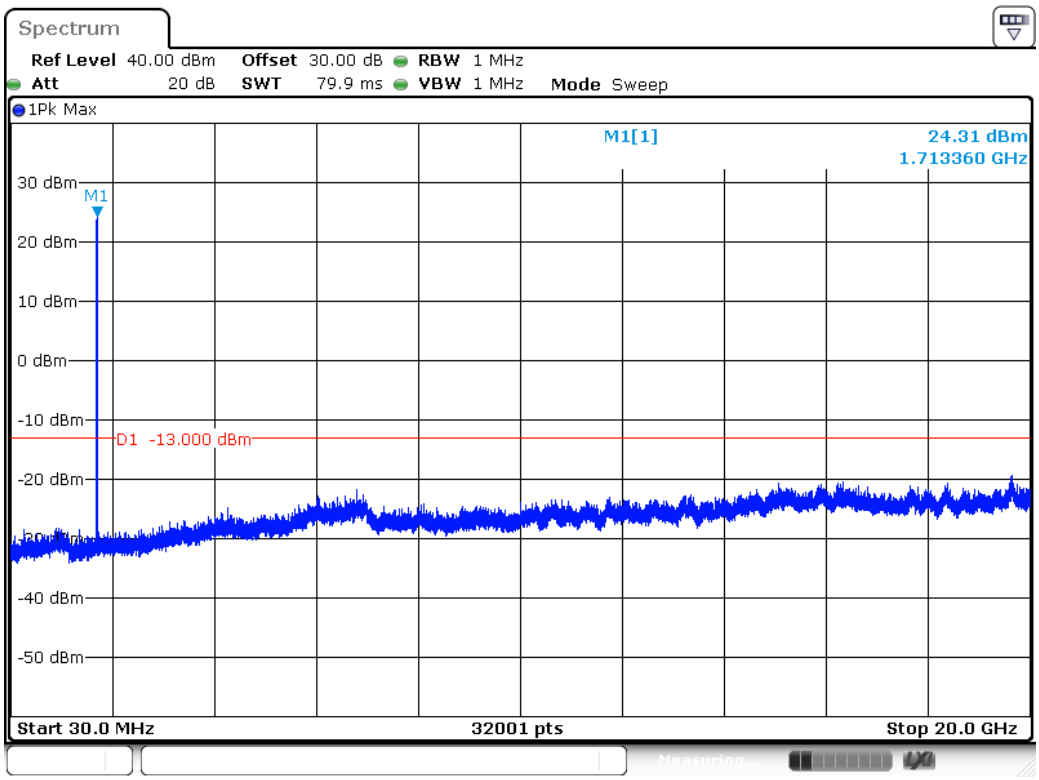
High Channel 1513 (1752.60MHz)



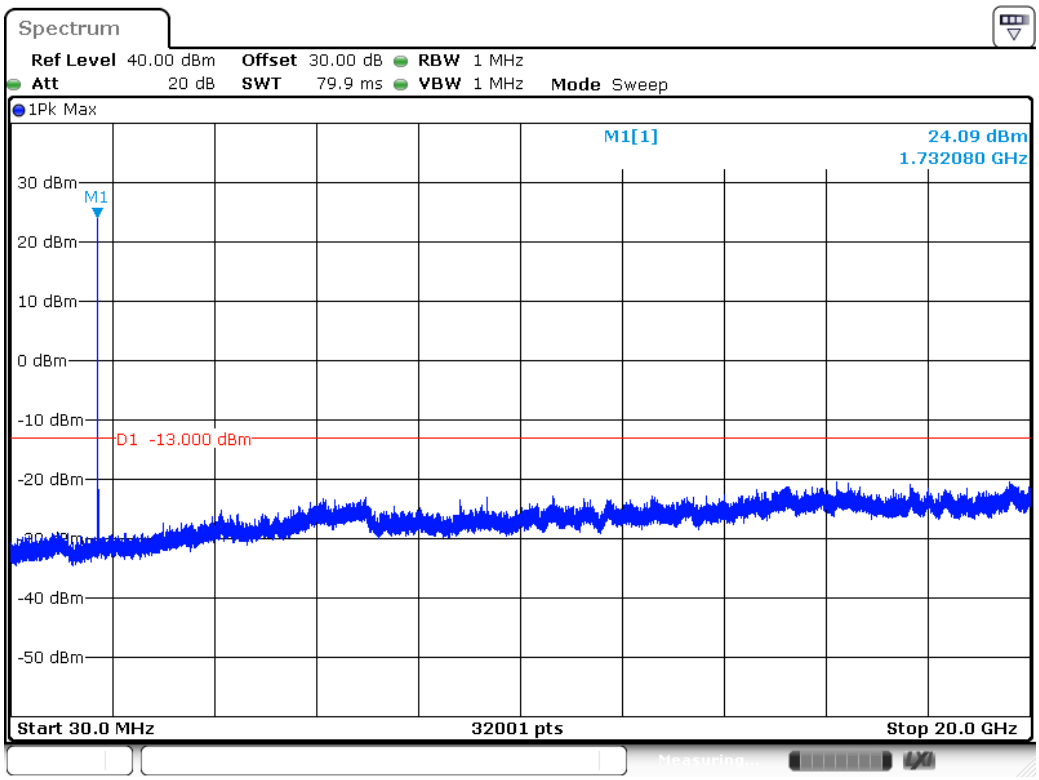
Date: 13.MAR.2017 21:22:14

Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 13: WCDMA Band4_HSDPA_Link		
Date of Test	2017/03/13	Test Site	SR10-H

Low Channel 1312 (1712.40MHz)

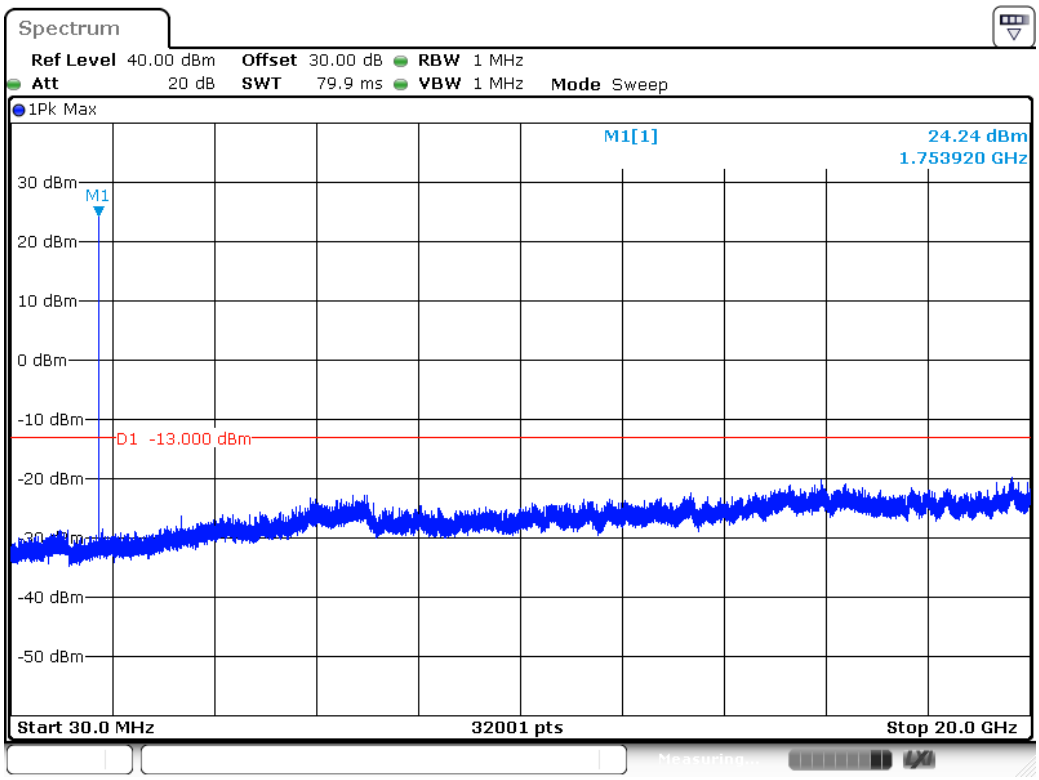


Mid Channel 1413 (1732.60MHz)



Date: 13.MAR.2017 21:27:30

High Channel 1513 (1752.60MHz)



Date: 13.MAR.2017 21:28:16

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 1: GPRS 850_Link		
Date of Test	2017/03/07	Test Site	CB4-H

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.20MHz)								
1648.4	-48.410	H	-47.416	2.790	8.745	-41.461	-13	-28.461
2472.6	-66.490	H	-62.514	3.437	10.556	-55.395	-13	-42.395
1648.4	-45.650	V	-45.850	2.790	8.745	-39.895	-13	-26.895
2472.6	-64.590	V	-61.420	3.437	10.556	-54.301	-13	-41.301
Middle Channel 190 (836.60MHz)								
1673.2	-52.280	H	-51.515	2.813	8.820	-45.508	-13	-32.508
2509	-65.170	H	-61.361	3.462	10.614	-54.209	-13	-41.209
1673.2	-51.210	V	-51.574	2.813	8.820	-45.567	-13	-32.567
2509.8	-59.460	V	-56.381	3.463	10.616	-49.228	-13	-36.228
High Channel 251 (848.80MHz)								
1697.6	-59.000	H	-58.461	2.835	8.893	-52.403	-13	-39.403
2546.4	-62.980	H	-59.135	3.489	10.674	-51.950	-13	-38.950
1697.6	-57.600	V	-58.125	2.835	8.893	-52.067	-13	-39.067
2546.4	-55.570	V	-52.381	3.489	10.674	-45.196	-13	-32.196

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 2: GPRS 1900_Link		
Date of Test	2017/03/07	Test Site	CB4-H

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.20MHz)								
3700.4	-61.050	H	-55.800	4.283	11.939	-48.144	-13	-35.144
5550.6	-66.410	H	-55.780	5.201	12.900	-48.081	-13	-35.081
3700.4	-63.730	V	-58.378	4.283	11.939	-50.722	-13	-37.722
5550.6	-65.760	V	-54.802	5.201	12.900	-47.103	-13	-34.103
Middle Channel 661 (1880.00MHz)								
3760	-63.370	H	-57.807	4.335	11.832	-50.310	-13	-37.310
5640	-66.050	H	-55.205	5.235	12.900	-47.540	-13	-34.540
3760	-66.040	V	-60.278	4.335	11.832	-52.781	-13	-39.781
5640	-67.170	V	-56.166	5.235	12.900	-48.501	-13	-35.501
High Channel 810 (1909.80MHz)								
3819.6	-65.530	H	-59.857	4.386	11.725	-52.518	-13	-39.518
5729.4	-68.420	H	-57.358	5.270	12.900	-49.728	-13	-36.728
3819.6	-65.960	V	-60.094	4.386	11.725	-52.755	-13	-39.755
5729.4	-66.890	V	-55.840	5.270	12.900	-48.210	-13	-35.210

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 3: EGPRS 850_Link		
Date of Test	2017/03/07	Test Site	CB4-H

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.20MHz)								
1648.4	-48.180	H	-47.186	2.790	8.745	-41.231	-13	-28.231
2472.6	-66.510	H	-62.534	3.437	10.556	-55.415	-13	-42.415
1648.4	-44.750	V	-44.950	2.790	8.745	-38.995	-13	-25.995
2472.6	-65.550	V	-62.380	3.437	10.556	-55.261	-13	-42.261
Middle Channel 190 (836.60MHz)								
1673.2	-51.690	H	-50.925	2.813	8.820	-44.918	-13	-31.918
2509.8	-65.120	H	-61.312	3.463	10.616	-54.159	-13	-41.159
1673.2	-51.390	V	-51.754	2.813	8.820	-45.747	-13	-32.747
2509.8	-59.310	V	-56.231	3.463	10.616	-49.078	-13	-36.078
High Channel 251 (848.80MHz)								
1697.6	-58.270	H	-57.731	2.835	8.893	-51.673	-13	-38.673
2546.4	-62.850	H	-59.005	3.489	10.674	-51.820	-13	-38.820
1697.6	-57.630	V	-58.155	2.835	8.893	-52.097	-13	-39.097
2546.4	-55.980	V	-52.791	3.489	10.674	-45.606	-13	-32.606

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 4: EGPRS 1900_Link		
Date of Test	2017/03/08	Test Site	CB4-H

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.20MHz)								
3700.4	-62.230	H	-56.980	4.283	11.939	-49.324	-13	-36.324
5550.6	-67.120	H	-74.819	5.201	12.900	-67.120	-13	-54.120
3700.4	-64.420	V	-59.068	4.283	11.939	-51.412	-13	-38.412
5550.6	-65.930	V	-54.972	5.201	12.900	-47.273	-13	-34.273
Middle Channel 661 (1880.00MHz)								
3760	-64.250	H	-58.687	4.335	11.832	-51.190	-13	-38.190
5640	-65.490	H	-54.645	5.235	12.900	-46.980	-13	-33.980
3760	-65.490	V	-59.728	4.335	11.832	-52.231	-13	-39.231
5640	-69.560	V	-58.556	5.235	12.900	-50.891	-13	-37.891
High Channel 810 (1909.80MHz)								
3819.6	-67.240	H	-61.567	4.386	11.725	-54.228	-13	-41.228
5729.4	-65.290	H	-54.228	5.270	12.900	-46.598	-13	-33.598
3819.6	-67.580	V	-61.714	4.386	11.725	-54.375	-13	-41.375
5729.4	-64.110	V	-53.060	5.270	12.900	-45.430	-13	-32.430

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 5: WCDMA Band 5_Link		
Date of Test	2017/03/08	Test Site	CB4-H

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 4132 (826.40MHz)								
1652.8	-50.010	H	-49.057	2.794	8.758	-43.093	-13	-30.093
2479.2	-63.970	H	-60.038	3.442	10.567	-52.913	-13	-39.913
1652.8	-47.220	V	-47.449	2.794	8.758	-41.485	-13	-28.485
2479.2	-59.730	V	-56.590	3.442	10.567	-49.465	-13	-36.465
Middle Channel 4182 (836.60MHz)								
1673.2	-51.410	H	-50.645	2.813	8.820	-44.638	-13	-31.638
2509.8	-63.020	H	-59.212	3.463	10.616	-52.059	-13	-39.059
1673.2	-49.330	V	-49.694	2.813	8.820	-43.687	-13	-30.687
2509.8	-58.710	V	-55.631	3.463	10.616	-48.478	-13	-35.478
High Channel 4233 (846.60MHz)								
1693.2	-49.170	H	-48.591	2.831	8.880	-42.542	-13	-29.542
2539.8	-63.600	H	-59.764	3.484	10.664	-52.584	-13	-39.584
1693.2	-48.270	V	-48.766	2.831	8.880	-42.717	-13	-29.717
2539.8	-59.610	V	-56.442	3.484	10.664	-49.262	-13	-36.262

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 6: WCDMA Band 5_HSUPA_Link		
Date of Test	2017/03/08	Test Site	CB4-H

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 4132 (826.40MHz)								
1652.8	-49.040	H	-48.087	2.794	8.758	-42.123	-13	-29.123
2479.2	-63.390	H	-59.458	3.442	10.567	-52.333	-13	-39.333
1652.8	-45.860	V	-46.089	2.794	8.758	-40.125	-13	-27.125
2479.2	-58.740	V	-55.600	3.442	10.567	-48.475	-13	-35.475
Middle Channel 4182 (836.60MHz)								
1673.2	-51.650	H	-50.885	2.813	8.820	-44.878	-13	-31.878
2509.8	-62.280	H	-58.472	3.463	10.616	-51.319	-13	-38.319
1673.2	-49.680	V	-50.044	2.813	8.820	-44.037	-13	-31.037
2509.8	-56.560	V	-53.481	3.463	10.616	-46.328	-13	-33.328
High Channel 4233 (846.60MHz)								
1693.2	-48.210	H	-47.631	2.831	8.880	-41.582	-13	-28.582
2539.8	-61.130	H	-57.294	3.484	10.664	-50.114	-13	-37.114
1693.2	-47.270	V	-47.766	2.831	8.880	-41.717	-13	-28.717
2539.8	-56.300	V	-52.772	3.484	10.664	-45.592	-13	-32.592

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 7: WCDMA Band 5_HSDPA_Link		
Date of Test	2017/03/08	Test Site	CB4-H

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 4132 (826.40MHz)								
1652.8	-50.860	H	-49.907	2.794	8.758	-43.943	-13	-30.943
2479.2	-64.460	H	-60.528	3.442	10.567	-53.403	-13	-40.403
1652.8	-47.530	V	-47.759	2.794	8.758	-41.795	-13	-28.795
2479.2	-60.430	V	-57.290	3.442	10.567	-50.165	-13	-37.165
Middle Channel 4182 (836.60MHz)								
1673.2	-52.040	H	-51.275	2.813	8.820	-45.268	-13	-32.268
2509.8	-65.210	H	-61.402	3.463	10.616	-54.249	-13	-41.249
1673.2	-50.040	V	-50.404	2.813	8.820	-44.397	-13	-31.397
2509.8	-60.650	V	-57.571	3.463	10.616	-50.418	-13	-37.418
High Channel 4233 (846.60MHz)								
1693.2	-49.080	H	-48.501	2.831	8.880	-42.452	-13	-29.452
2539.8	-63.760	H	-59.924	3.484	10.664	-52.744	-13	-39.744
1693.2	-48.390	V	-48.886	2.831	8.880	-42.837	-13	-29.837
2539.8	-59.980	V	-56.812	3.484	10.664	-49.632	-13	-36.632

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 8: WCDMA Band 2_Link		
Date of Test	2017/03/08	Test Site	CB4-H

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 9262 (1852.40MHz)								
3704.8	-66.670	H	-61.394	4.287	11.931	-53.750	-13	-40.750
5557.2	-69.890	H	-59.245	5.203	12.900	-51.548	-13	-38.548
3704.8	-66.270	V	-60.883	4.287	11.931	-53.239	-13	-40.239
5557.2	-67.950	V	-56.989	5.203	12.900	-49.292	-13	-36.292
Middle Channel 9400 (1880.00MHz)								
3760	-66.990	H	-61.427	4.335	11.832	-53.930	-13	-40.930
5640	-69.840	H	-58.995	5.235	12.900	-51.330	-13	-38.330
3760	-66.620	V	-60.858	4.335	11.832	-53.361	-13	-40.361
5640	-69.560	V	-58.556	5.235	12.900	-50.891	-13	-37.891
High Channel 9538 (1907.60MHz)								
3815.2	-65.320	H	-59.656	4.382	11.733	-52.305	-13	-39.305
5722.8	-67.930	H	-56.885	5.267	12.900	-49.252	-13	-36.252
3815.2	-66.280	V	-60.422	4.382	11.733	-53.071	-13	-40.071
5722.8	-66.760	V	-55.714	5.267	12.900	-48.081	-13	-35.081

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 9: WCDMA Band 2_HSUPA_Link		
Date of Test	2017/03/08	Test Site	CB4-H

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 9262 (1852.40MHz)								
3704.8	-62.830	H	-57.554	4.287	11.931	-49.910	-13	-36.910
5557.2	-69.980	H	-59.335	5.203	12.900	-51.638	-13	-38.638
3704.8	-61.340	V	-55.953	4.287	11.931	-48.309	-13	-35.309
5557.2	-69.040	V	-58.079	5.203	12.900	-50.382	-13	-37.382
Middle Channel 9400 (1880.00MHz)								
3760	-63.180	H	-57.617	4.335	11.832	-50.120	-13	-37.120
5640	-70.040	H	-59.195	5.235	12.900	-51.530	-13	-38.530
3760	-61.190	V	-55.428	4.335	11.832	-47.931	-13	-34.931
5640	-68.910	V	-57.906	5.235	12.900	-50.241	-13	-37.241
High Channel 9538 (1907.60MHz)								
3815.2	-62.440	H	-56.776	4.382	11.733	-49.425	-13	-36.425
5722.8	-70.070	H	-59.025	5.267	12.900	-51.392	-13	-38.392
3815.2	-60.240	V	-54.382	4.382	11.733	-47.031	-13	-34.031
5722.8	-67.550	V	-56.504	5.267	12.900	-48.871	-13	-35.871

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 10: WCDMA Band 2_HSDPA_Link		
Date of Test	2017/03/09	Test Site	CB4-H

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 9262 (1852.40MHz)								
3704.8	-63.920	H	-58.644	4.287	11.931	-51.000	-13	-38.000
5557.2	-69.500	H	-58.855	5.203	12.900	-51.158	-13	-38.158
3704.8	-63.050	V	-57.663	4.287	11.931	-50.019	-13	-37.019
5557.2	-68.290	V	-57.329	5.203	12.900	-49.632	-13	-36.632
Middle Channel 9400 (1880.00MHz)								
3760	-64.540	H	-58.977	4.335	11.832	-51.480	-13	-38.480
5640	-70.260	H	-59.415	5.235	12.900	-51.750	-13	-38.750
3760	-62.960	V	-57.198	4.335	11.832	-49.701	-13	-36.701
5640	-68.940	V	-57.936	5.235	12.900	-50.271	-13	-37.271
High Channel 9538 (1907.60MHz)								
3815.2	-62.570	H	-56.906	4.382	11.733	-49.555	-13	-36.555
5722.8	-69.570	H	-58.525	5.267	12.900	-50.892	-13	-37.892
3815.2	-64.920	V	-59.062	4.382	11.733	-51.711	-13	-38.711
5722.8	-67.880	V	-56.834	5.267	12.900	-49.201	-13	-36.201

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 11: WCDMA Band4_Link		
Date of Test	2017/03/08	Test Site	CB4-H

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 1312 (1712.40MHz)								
3424.8	-54.110	H	-50.041	4.066	12.104	-42.003	-13	-29.003
5137.2	-69.560	H	-59.648	5.037	12.247	-52.438	-13	-39.438
3424.8	-61.940	V	-58.150	4.066	12.104	-50.112	-13	-37.112
5137.2	-69.070	V	-58.863	5.037	12.247	-51.653	-13	-38.653
Middle Channel 1413 (1732.6MHz)								
3465.2	-58.360	H	-54.299	4.090	12.210	-46.179	-13	-33.179
5197.8	-69.410	H	-59.466	5.037	12.356	-52.147	-13	-39.147
3465.2	-63.370	V	-59.602	4.090	12.210	-51.482	-13	-38.482
5197.8	-69.760	V	-59.608	5.037	12.356	-52.289	-13	-39.289
High Channel 1513 (1752.6MHz)								
3505.2	-62.810	H	-58.725	4.114	12.291	-50.548	-13	-37.548
5257.8	-69.130	H	-59.147	5.037	12.464	-51.720	-13	-38.720
3505.2	-65.350	V	-61.548	4.114	12.291	-53.371	-13	-40.371
5257.8	-68.490	V	-58.365	5.037	12.464	-50.938	-13	-37.938

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 12: WCDMA Band4_HSUPA_Link		
Date of Test	2017/03/08	Test Site	CB4-H

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 1312 (1712.40MHz)								
3424.8	-51.640	H	-47.571	4.066	12.104	-39.533	-13	-26.533
5137.2	-66.350	H	-56.438	5.037	12.247	-49.228	-13	-36.228
3424.8	-59.450	V	-55.670	4.066	12.104	-47.632	-13	-34.632
5137.2	-64.780	V	-54.573	5.037	12.247	-47.363	-13	-34.363
Middle Channel 1413 (1732.6MHz)								
3465.2	-55.260	H	-51.199	4.090	12.210	-43.079	-13	-30.079
5197.8	-68.350	H	-58.406	5.037	12.356	-51.087	-13	-38.087
3465.2	-60.730	V	-56.962	4.090	12.210	-48.842	-13	-35.842
5197.8	-67.840	V	-57.688	5.037	12.356	-50.369	-13	-37.369
High Channel 1513 (1752.6MHz)								
3505.2	-59.110	H	-55.025	4.114	12.291	-46.848	-13	-33.848
5257.8	-67.800	H	-57.817	5.037	12.464	-50.390	-13	-37.390
3505.2	-63.540	V	-46.738	4.114	12.291	-38.561	-13	-25.561
5257.8	-66.300	V	-56.175	5.037	12.464	-48.748	-13	-35.748

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 13: WCDMA Band4_HSDPA_Link		
Date of Test	2017/03/08	Test Site	CB4-H

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 1312 (1712.40MHz)								
3424.8	-57.530	H	-53.461	4.066	12.104	-45.423	-13	-32.423
5137.2	-67.010	H	-57.098	5.037	12.247	-49.888	-13	-36.888
3424.8	-64.160	V	-60.380	4.066	12.104	-52.342	-13	-39.342
5137.2	-67.450	V	-57.243	5.037	12.247	-50.033	-13	-37.033
Middle Channel 1413 (1732.6MHz)								
3465.2	-60.340	H	-56.279	4.090	12.210	-48.159	-13	-35.159
5197.8	-68.980	H	-59.036	5.037	12.356	-51.717	-13	-38.717
3465.2	-65.450	V	-61.682	4.090	12.210	-53.562	-13	-40.562
5197.8	-68.670	V	-58.518	5.037	12.356	-51.199	-13	-38.199
High Channel 1513 (1752.6MHz)								
3505.2	-64.470	H	-60.385	4.114	12.291	-52.208	-13	-39.208
5257.8	-69.250	H	-59.267	5.037	12.464	-51.840	-13	-38.840
3505.2	-65.680	V	-61.878	4.114	12.291	-53.701	-13	-40.701
5257.8	-65.730	V	-55.605	5.037	12.464	-48.178	-13	-35.178

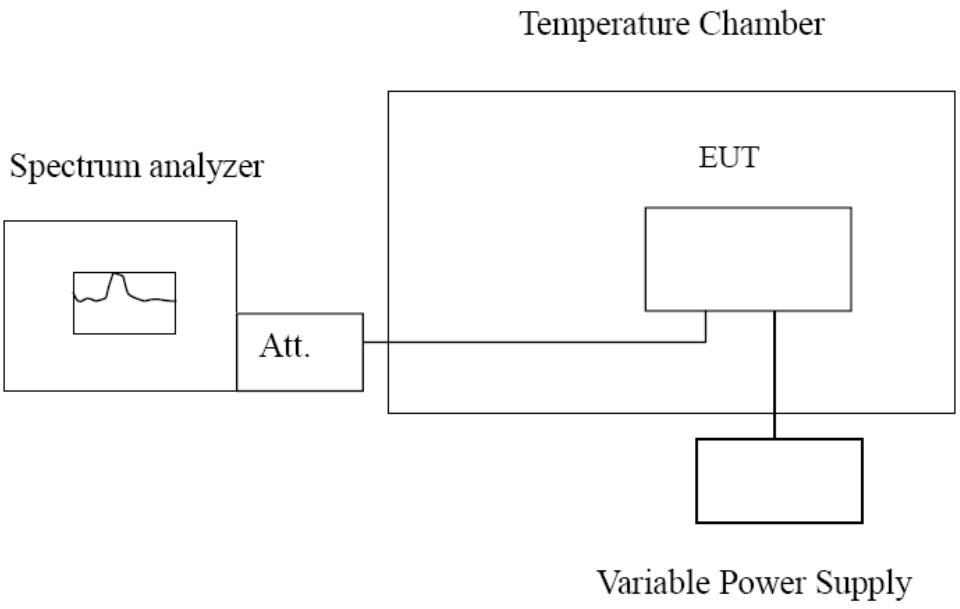
9. Frequency Stability Under Temperature & Voltage Variations

9.1. Test Equipment

Frequency Stability Under Temperature & Voltage Variations / SR10-H

Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/01/22
Temperature & Humidity Chamber	WIT	TH-1S-B	1082101	2018/01/18

9.2. Test Setup



9.3. Test Procedure

Frequency Stability Under Temperature Variations:

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20℃ operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30℃. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20℃. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.
Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, record the maximum frequency change.

9.4. Uncertainty

The measurement uncertainty is defined as ± 10 Hz.

9.5. Test Result

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 1: GPRS 850_Link		
Date of Test	2017/03/14	Test Site	SR10-H

824.2 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	-11.100	0.0135
3.7	-11.600	0.0141
3.4	-10.300	0.0125

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-26.100	0.0317
-20	-24.300	0.0295
-10	-22.200	0.0269
0	-17.500	0.0212
+10	-11.400	0.0138
+20	-6.800	0.0083
+30	-5.400	0.0066
+40	-6.100	0.0074
+50	6.200	-0.0075

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 1: GPRS 850_Link		
Date of Test	2017/03/14	Test Site	SR10-H

836.6 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	-9.600	0.0115
3.7	-10.400	0.0124
3.4	-11.900	0.0142

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-26.800	0.0320
-20	-23.500	0.0281
-10	-19.300	0.0231
0	-18.100	0.0216
+10	-11.500	0.0137
+20	-8.300	0.0099
+30	-4.800	0.0057
+40	-5.300	0.0063
+50	4.200	-0.0050

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 1: GPRS 850_Link		
Date of Test	2017/03/14	Test Site	SR10-H

848.8 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	-11.500	0.0135
3.7	-11.800	0.0139
3.4	-13.000	0.0153

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-25.900	0.0305
-20	-22.500	0.0265
-10	-21.400	0.0252
0	-15.700	0.0185
+10	-12.900	0.0152
+20	-9.200	0.0108
+30	6.500	-0.0077
+40	3.000	-0.0035
+50	1.800	-0.0021

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 2: GPRS 1900_Link		
Date of Test	2017/03/14	Test Site	SR10-H

1850.2 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	14.000	-0.0076
3.7	14.500	-0.0078
3.4	15.500	-0.0084

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-10.700	0.0058
-20	11.800	-0.0064
-10	12.800	-0.0069
0	19.200	-0.0104
+10	12.900	-0.0070
+20	14.800	-0.0080
+30	16.300	-0.0088
+40	20.900	-0.0113
+50	19.700	-0.0106

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 2: GPRS 1900_Link		
Date of Test	2017/03/14	Test Site	SR10-H

1880.0 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	-8.700	0.0046
3.7	10.500	-0.0056
3.4	9.000	-0.0048

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-11.300	0.0060
-20	10.300	-0.0055
-10	-14.300	0.0076
0	-16.800	0.0089
+10	9.300	-0.0049
+20	11.200	-0.0060
+30	11.400	-0.0061
+40	14.100	-0.0075
+50	16.500	-0.0088

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 2: GPRS 1900_Link		
Date of Test	2017/03/14	Test Site	SR10-H

1909.8 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	10.600	-0.0056
3.7	14.800	-0.0077
3.4	11.100	-0.0058

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-12.100	0.0063
-20	-14.100	0.0074
-10	9.000	-0.0047
0	13.200	-0.0069
+10	6.000	-0.0031
+20	10.600	-0.0056
+30	9.700	-0.0051
+40	12.100	-0.0063
+50	-7.300	0.0038

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 5: WCDMA Band 5_Link		
Date of Test	2017/03/14	Test Site	SR10-H

826.4 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	2.450	-0.0030
3.7	-2.830	0.0034
3.4	3.450	-0.0042

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-4.790	0.0058
-20	-5.580	0.0068
-10	-5.280	0.0064
0	-5.900	0.0071
+10	-5.570	0.0067
+20	2.610	-0.0032
+30	-2.550	0.0031
+40	-2.880	0.0035
+50	6.680	-0.0081

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 5: WCDMA Band 5_Link		
Date of Test	2017/03/14	Test Site	SR10-H

836.6 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	2.680	-0.0032
3.7	2.860	-0.0034
3.4	-3.150	0.0038

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	2.330	-0.0028
-20	-2.510	0.0030
-10	6.390	-0.0076
0	2.820	-0.0034
+10	-3.090	0.0037
+20	3.650	-0.0044
+30	2.880	-0.0034
+40	2.670	-0.0032
+50	-2.350	0.0028

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 5: WCDMA Band 5_Link		
Date of Test	2017/03/14	Test Site	SR10-H

846.6 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	-2.980	0.0035
3.7	-3.590	0.0042
3.4	-2.430	0.0029

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	4.420	-0.0052
-20	6.490	-0.0077
-10	5.610	-0.0066
0	5.400	-0.0064
+10	5.110	-0.0060
+20	-3.040	0.0036
+30	2.950	-0.0035
+40	3.070	-0.0036
+50	-3.800	0.0045

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 8: WCDMA Band 2_Link		
Date of Test	2017/03/14	Test Site	SR10-H

1852.4 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	-7.480	0.0040
3.7	-8.080	0.0044
3.4	-7.690	0.0042

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-10.690	0.0058
-20	-10.940	0.0059
-10	-10.650	0.0057
0	-11.770	0.0064
+10	-11.120	0.0060
+20	-5.780	0.0031
+30	-4.810	0.0026
+40	5.990	-0.0032
+50	6.770	-0.0037

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 8: WCDMA Band 2_Link		
Date of Test	2017/03/14	Test Site	SR10-H

1880.0 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	-6.840	0.0036
3.7	-5.640	0.0030
3.4	5.720	-0.0030

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-4.180	0.0022
-20	-4.910	0.0026
-10	5.920	-0.0031
0	5.310	-0.0028
+10	-4.870	0.0026
+20	-5.900	0.0031
+30	-4.480	0.0024
+40	-4.180	0.0022
+50	-5.410	0.0029

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 8: WCDMA Band 2_Link		
Date of Test	2017/03/14	Test Site	SR10-H

1907.6 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	-5.900	0.0031
3.7	-6.770	0.0035
3.4	-5.640	0.0030

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	9.740	-0.0051
-20	11.010	-0.0058
-10	12.530	-0.0066
0	12.310	-0.0065
+10	8.880	-0.0047
+20	-5.060	0.0027
+30	5.350	-0.0028
+40	-7.270	0.0038
+50	-9.070	0.0048

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 11: WCDMA Band4_Link		
Date of Test	2017/03/14	Test Site	SR10-H

1712.4 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error	Frequency Error(ppm)
4.2	7.550	-0.0044
3.7	7.930	-0.0046
3.4	7.500	-0.0044

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-22.020	0.0129
-20	-25.450	0.0149
-10	-25.110	0.0147
0	-24.970	0.0146
+10	-21.360	0.0125
+20	6.950	-0.0041
+30	-6.030	0.0035
+40	8.780	-0.0051
+50	14.030	-0.0082

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 11: WCDMA Band4_Link		
Date of Test	2017/03/14	Test Site	SR10-H

1732.6 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error	Frequency Error(ppm)
4.2	-4.150	0.0024
3.7	3.810	-0.0022
3.4	4.660	-0.0027

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	4.400	-0.0025
-20	4.330	-0.0025
-10	4.680	-0.0027
0	5.050	-0.0029
+10	5.250	-0.0030
+20	4.470	-0.0026
+30	-3.900	0.0023
+40	-4.760	0.0027
+50	4.150	-0.0024

Product	Module		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 11: WCDMA Band4_Link		
Date of Test	2017/03/14	Test Site	SR10-H

1752.6 MHz

Frequency Stability under Voltage

DC Voltage (V)	Frequency Error	Frequency Error(ppm)
4.2	-5.020	0.0029
3.7	-6.000	0.0034
3.4	-6.500	0.0037

Frequency Stability under Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	21.790	-0.0124
-20	29.160	-0.0166
-10	28.680	-0.0164
0	26.690	-0.0152
+10	22.050	-0.0126
+20	-5.960	0.0034
+30	6.490	-0.0037
+40	-8.660	0.0049
+50	-13.780	0.0079

The End