

FCC /ISED Test Report

Product Name : Module
Trade Name : AirPrime
Model No. : WP7611
FCC ID. : N7NWP76B
IC ID. : 2417C-WP76B

Applicant : SIERRA WIRELESS HONG KONG LIMITED
Address : 6/F Enterprise Place, No.5 Science Park West Avenue, Hong
Kong Science Park, Shatin, New Territories, Hong Kong

Date of Receipt : May 24, 2019
Issued Date : Oct. 25, 2019
Report No. : 1950376R-HPUSP50V00-A
Report Version : V1.0



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Test Report Certification

Issued Date: Oct. 25, 2019

Report No.: 1950376R-HPUSP50V00-A



Product Name : Module
Applicant : SIERRA WIRELESS HONG KONG LIMITED
Address : 6/F Enterprise Place, No.5 Science Park West Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong
Manufacturer : SIERRA WIRELESS HONG KONG LIMITED
Address : 6/F Enterprise Place, No.5 Science Park West Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong
Trade Name : AirPrime
Model No. : WP7611
FCC ID. : N7NWP76B
IC ID. : 2417C-WP76B
EUT Voltage : DC 3.7V
Testing Voltage : DC 3.7V
Applicable Standard : FCC CFR Title 47 Part 22 Subpart H
FCC CFR Title 47 Part 24 Subpart E
FCC CFR Title 47 Part 27 Subpart M
Industry Canada RSS-GEN Issue 5
Industry Canada RSS-132 Issue 3
Industry Canada RSS-133 Issue 6
Industry Canada RSS-139 Issue 3
ANSI/TIA-603-E-2016
Test Lab : Hsin Chu Laboratory
Test Result : Complied

Documented By :



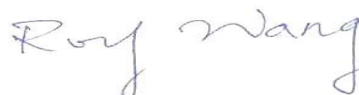
(Carol Tsai / Senior Engineering Adm. Specialist)

Tested By :



(Max Chang / Engineer)

Approved By :



(Roy Wang / Director)

Revision History

Report No.	Version	Description	Issued Date
1950376R-HPUSP50V00-A	V1.0	Initial issue of report	Oct. 25, 2019

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1. General Information

1.1. EUT Description

Product Name	Module
Trade Name	AirPrime
Model No.	WP7611
Tx Frequency Range/ Channel number	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	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	WCDMA: QPSK (Uplink); HSDPA: QPSK (Uplink); HSUPA: QPSK (Uplink)
HW Version	1.0
FW Version	Acc to ATI9
IMEI No.	35588210

Antenna Information	
MFR. / Model.	Pulse Electronics, Inc. / SPDA24617_3900
Antenna Type	Dipole Antenna
Antenna Gain	Band 2/4: 3.66 dBi Band 5: 1.58 dBi

Accessories Information	
Antenna	2set

Note:

1. The EUT description is from the customer declaration.
2. This WP7611 support WCDMA Band 2/4/5 and LTE Band 2/4/5/12/13/25/26/66/71.

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:

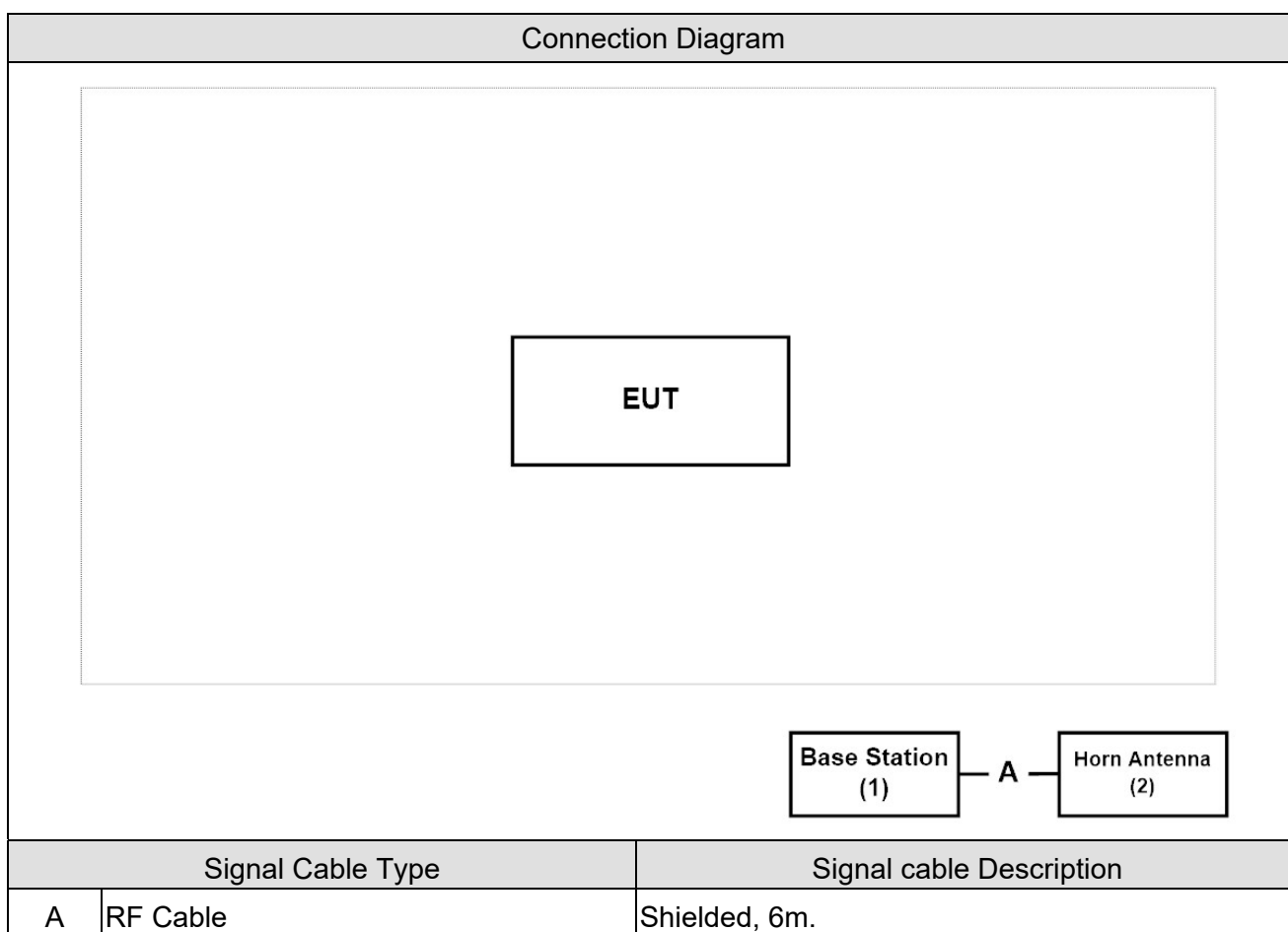
Test Mode
Mode 1: WCDMA Band 2
Mode 2: WCDMA Band 4
Mode 3: WCDMA Band 5

1.3. Tested System Details

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

Product	Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1 Base Station	R&S	CMW500	106071	DoC	Non-Shielded, 1.8m two ferrite cores bonded
2 Horn Antenna	Schwarzbeck	BBHA 9120D	1640	DoC	--

1.4. Configuration of Tested System



1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.4.
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.
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:

Note: Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

For WCDMA Band 2

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

Performed Item	FCC Rule	IC Rule	Limit	Result
RF Output Power	§2.1033 §2.1046 §24.232	§6.4	< 2 Watts	Pass
Occupied Bandwidth	§2.1049	RSS-GEN §4.2	N/A	Pass
Peak To Average Ratio	§24.232(d)	§6.4	$\leq$ 13dB	Pass
Conducted Band Edge	§27.238	§6.5	< -13dBm	Pass
Spurious Emission	§2.1053 §24.238	§6.5	< -13dBm	Pass
Frequency Stability	§2.1055 §24.235	§6.3	< 2.5 ppm	Pass

For WCDMA Band 4**(FCC Part 27 Subpart M, Industry Canada RSS-139, Issue 3, Industry Canada RSS-GEN)**

Performed Item	FCC Rule	IC Rule	Limit	Result
RF Output Power	§2.1046 § 27.50(h)(2)	§6.5	< 1 Watts EIRP	Pass
Occupied Bandwidth	§ 2.1049 § 27.53(l)(6)	RSS - Gen §6.6	N/A	Pass
Peak To Average Ratio	§27.50(b)	§6.5	≤ 13dB	Pass
Conducted Band Edge	§ 2.1051 §27.53(l)(4)(6)	§6.6	< -13 dBm	Pass
Spurious Emission	§ 2.1051 §27.53(l)(4)(6)	§6.6	< -25 dBm	Pass
Frequency Stability	§2.1055(a)(l) § 27.54	§6.4	< 2.5 ppm	Pass

For WCDMA Band 5**(FCC Part 22 Subpart H, Industry Canada RSS-132, Issue 3, Industry Canada RSS-GEN)**

Performed Item	FCC Rule	IC Rule	Limit	Result
RF Output Power	§2.1033 §2.1046 §22.913	§5.4	< 7 Watts	Pass
Occupied Bandwidth	§2.1049	RSS-GEN §4.2	N/A	Pass
Peak To Average Ratio	§22.913(d)	§5.4	≤ 13dB	Pass
Conducted Band Edge	§22.917	§5.5	< -13dBm	Pass
Spurious Emission	§2.1053 §22.917	§5.5	< -13dBm	Pass
Frequency Stability	§2.1055 §22.335	§5.3	< 2.5 ppm	Pass

2.2. Test Environment

Items	Test Item	Required (IEC 68-1)	Actual	Test Site
Temperature (°C)	RF Output Power	15-35	23	3
Humidity (%RH)		25-75	52	
Barometric pressure (mbar)		860-1060	950-1000	
Temperature (°C)	Occupied Bandwidth	15-35	23	3
Humidity (%RH)		25-75	52	
Barometric pressure (mbar)		860-1060	950-1000	
Temperature (°C)	Peak To Average Ratio	15-35	23	3
Humidity (%RH)		25-75	52	
Barometric pressure (mbar)		860-1060	950-1000	
Temperature (°C)	Conducted Band Edge	15-35	23	3
Humidity (%RH)		25-75	52	
Barometric pressure (mbar)		860-1060	950-1000	
Temperature (°C)	Spurious Emission	15-35	23	2/3
Humidity (%RH)		25-75	52	
Barometric pressure (mbar)		860-1060	950-1000	
Temperature (°C)	Frequency Stability	15-35	23	3
Humidity (%RH)		25-75	52	
Barometric pressure (mbar)		860-1060	950-1000	

Note: Test Site information refers to Laboratory Information.

Laboratory Information

USA : FCC Registration Number: TW3024

Canada : IC Registration Number: 22397-1 / 22397-2 / 22397-3

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 test sites as below:

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2.3. List of Test Equipment

RF Output Power / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/12/21	2019/12/20
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Wireless Conn. Tseter	R&S	CMW500	157118	2019/08/08	2020/08/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15

Occupied Bandwidth / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/12/21	2019/12/20
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Wireless Conn. Tseter	R&S	CMW500	157118	2019/08/08	2020/08/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15

Peak To Average Ratio / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/12/21	2019/12/20
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Wireless Conn. Tseter	R&S	CMW500	157118	2019/08/08	2020/08/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15

Conducted Band Edge / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/12/21	2019/12/20
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Wireless Conn. Tseter	R&S	CMW500	157118	2019/08/08	2020/08/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15

Conducted Spurious Emissions / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/12/21	2019/12/20
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Wireless Conn. Tseter	R&S	CMW500	157118	2019/08/08	2020/08/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15

Radiated Spurious Emissions / CB4-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Horn Antenna	Schwarzbeck	BBHA 9120D	639	2019/05/28	2020/05/27
Bilog Antenna	Teseq	CBL6112D	23191	2019/06/17	2020/06/16
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/12/21	2019/12/20
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Signal Analyzer	R&S	FSVA40	101455	2018/11/05	2019/11/04
Horn Antenna	Schwarzbeck	BBHA 9170	202	2019/01/16	2020/01/15
Pre-Amplifier	DEKRA	AP-400C	201801231	2018/12/05	2019/12/04
Pre-Amplifier	EMCI	EMC11830I	980366	2018/12/21	2019/12/20
Horn Antenna	Schwarzbeck	BBHA 9120D	01656	2018/10/17	2019/10/16
Pre-Amplifier	DEKRA	AP-025C	201801236	2019/02/18	2020/02/17
Signal Analyzer	R&S	FSV40	101435	2019/07/08	2020/07/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15
Wireless Conn. Tseter	R&S	CMW500	157118	2019/08/08	2020/08/07
Coaxial Cable(23.5m)	Suhner	SF102_SF104_SF106	CB4_1	2018/08/21	2019/08/20
EMI system	DEKRA	Version 1.0	CB4-H	NA	NA

Frequency Stability / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/12/21	2019/12/20
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Wireless Conn. Tseter	R&S	CMW500	157118	2019/08/08	2020/08/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15

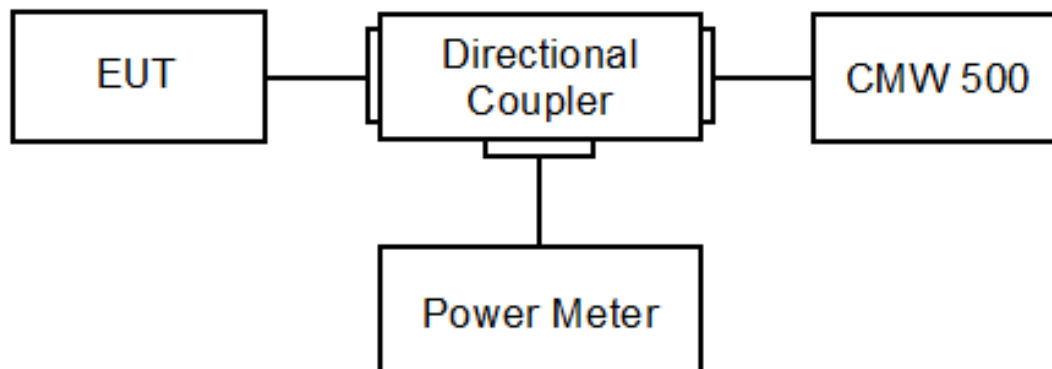
Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2.4. Measurement Uncertainty

Test Item	Uncertainty
RF Output Power	± 1.27 dB
Occupied Bandwidth	± 10 Hz
Peak To Average Ratio	In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13dB.
Conducted Band Edge	± 1.2 dB
Spurious Emissions	The measurement uncertainty is defined as ± 1.27 dB for Conducted Measurement. The measurement uncertainty is defined as ± 3.2 dB for Radiated Measurement.
Frequency Stability	± 10 Hz

3. RF Output Power

3.1. Test Setup



3.2. Test Procedure

- The RF output of the transmitter was connected to base station simulator.
- 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.
- Set EUT at maximum average power by base station simulator.
- Measure lowest, middle, and highest channels for each bandwidth and different modulation.

Effective Isotropic Radiated Power = Conducted Power(dBm) + Antenna Gain(dBi)

Effective Radiated Power = Conducted Power(dBm) + Antenna Gain(dBi) - 2.15dB

The conversion of dBm to watts is given by the formula:

$$P_{(W)} = 1W \times \frac{10^{\left(\frac{P_{(dBm)}}{10}\right)}}{1000} = 10^{((P_{(dBm)} - 30)/10)}$$

3.3. Test Method

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause 5.2.4

ANSI C63.26-2015 Sub-clause 5.2.4.2

3.4. Test Result

Product	Module		
Test Item	RF Output Power		
Test Mode	Mode 1: WCDMA Band 2 Mode 2: WCDMA Band 4 Mode 3: WCDMA Band 5		
Date of Test	2019/08/01	Test Site	SR10-H

Band	Channel	Lower Limit (dBm)	Upper Limit (dBm)	Actual Result (dBm)
2	Low	21.5	24	23.53
	Middle	21.5	24	23.84
	High	21.5	24	23.82
4	Low	21.5	24	23.65
	Middle	21.5	24	23.74
	High	21.5	24	23.30
5	Low	21.5	24	23.32
	Middle	21.5	24	23.33
	High	21.5	24	23.29

Product	Module		
Test Item	RF Output Power		
Test Mode	Mode 1: WCDMA Band 2		
Date of Test	2019/08/01	Test Site	SR10-H

Test Mode	Frequency (MHz)	Reading Level (dBm)	Antenna Gain (dBi) ^(note)	Measure Level (dBm)	Measure Level (W)	Limit (W) EIRP
RMC	1852.4	23.53	3.66	27.190	0.524	2
	1880.0	23.84	3.66	27.500	0.562	2
	1907.6	23.82	3.66	27.480	0.560	2
HSUPA	1852.4	22.13	3.66	25.790	0.379	2
	1880.0	22.28	3.66	25.940	0.393	2
	1907.6	22.18	3.66	25.840	0.384	2
HSDPA	1852.4	22.57	3.66	26.230	0.420	2
	1880.0	22.74	3.66	26.400	0.437	2
	1907.6	22.73	3.66	26.390	0.436	2
Voice	1852.4	23.40	3.66	27.060	0.508	2
	1880.0	23.44	3.66	27.100	0.513	2
	1907.6	23.35	3.66	27.010	0.502	2

Note: Measure Level (EIRP) = Reading Level (dBm) + Antenna Gain (dBi)

Product	Module		
Test Item	RF Output Power		
Test Mode	Mode 2: WCDMA Band 4		
Date of Test	2019/08/01	Test Site	SR10-H

Test Mode	Frequency (MHz)	Reading Level (dBm)	Antenna Gain (dBi) ^(note)	Measure Level (dBm)	Measure Level (W)	Limit (W) EIRP
RMC	1712.4	23.65	3.66	27.310	0.538	1
	1732.6	23.74	3.66	27.400	0.550	1
	1752.6	23.30	3.66	26.960	0.497	1
HSUPA	1712.4	21.93	3.66	25.590	0.362	1
	1732.6	22.05	3.66	25.710	0.372	1
	1752.6	21.76	3.66	25.420	0.348	1
HSDPA	1712.4	22.44	3.66	26.100	0.407	1
	1732.6	22.64	3.66	26.300	0.427	1
	1752.6	22.24	3.66	25.900	0.389	1
Voice	1712.4	23.32	3.66	26.980	0.499	1
	1732.6	23.54	3.66	27.200	0.525	1
	1752.6	23.24	3.66	26.900	0.490	1

Note: Measure Level (ERP) = Reading Level (dBm) + Antenna Gain (dBi)

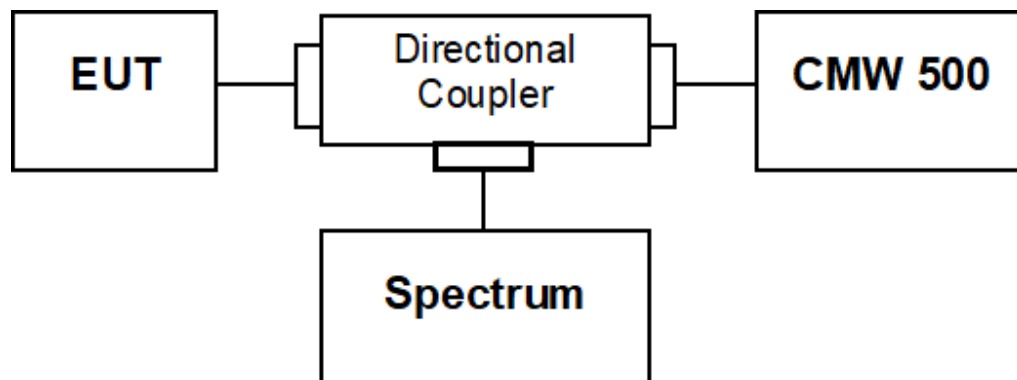
Product	Module		
Test Item	RF Output Power		
Test Mode	Mode 3: WCDMA Band 5		
Date of Test	2019/08/01	Test Site	SR10-H

Test Mode	Frequency (MHz)	Reading Level (dBm)	Antenna Gain (dBi) ^(note)	Measure Level (dBm)	Measure Level (W)	Limit (W) ERP
RMC	826.4	23.32	1.58	22.750	0.188	7
	836.6	23.33	1.58	22.760	0.189	7
	846.6	23.29	1.58	22.720	0.187	7
HSUPA	826.4	21.85	1.58	21.280	0.134	7
	836.6	21.86	1.58	21.290	0.135	7
	846.6	21.79	1.58	21.220	0.132	7
HSDPA	826.4	22.37	1.58	21.800	0.151	7
	836.6	22.41	1.58	21.840	0.153	7
	846.6	22.35	1.58	21.780	0.151	7
Voice	826.4	23.01	1.58	22.440	0.175	7
	836.6	23.03	1.58	22.460	0.176	7
	846.6	23.02	1.58	22.450	0.176	7

Note: Measure Level (ERP) = Reading Level (dBm) + Antenna Gain (dBi) -2.15

4. Occupied Bandwidth

4.1. Test Setup



4.2. 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 26 dB bandwidth and 99% occupied bandwidth of the low & middle & high channel for the highest RF powers were measured.

4.3. Test Method

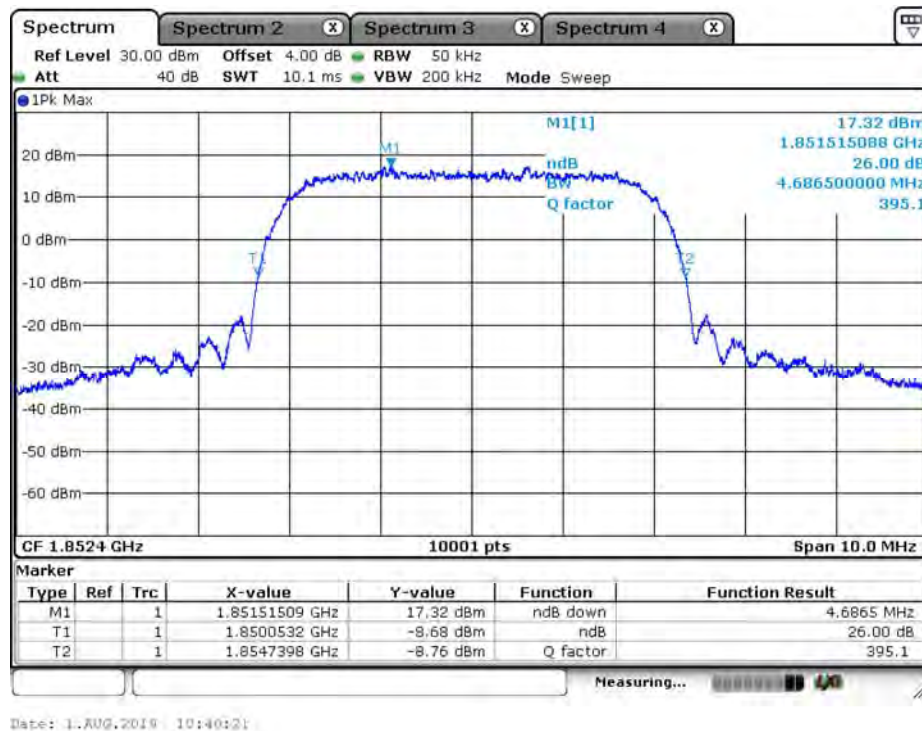
KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause 4.2 & 4.3
ANSI C63.26-2015 Sub-clause 5.4.3 & 5.4.4

4.4. Test Result

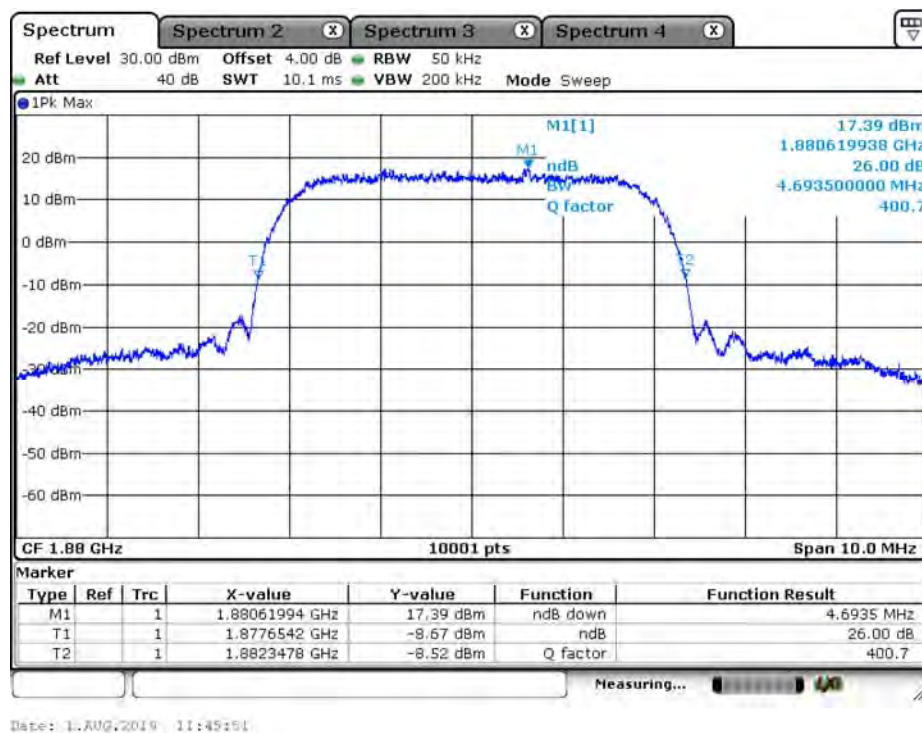
Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: WCDMA Band 2		
Date of Test	2019/08/01	Test Site	SR10-H

Modulation	Channel	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
			26dB BW	99% BW	
RMC	9262	1852.4	4.686	4.117	N/A
	9400	1880	4.693	4.123	N/A
	9538	1907.6	4.696	4.121	N/A
HSUPA	9262	1852.4	4.667	4.121	N/A
	9400	1880	4.637	4.119	N/A
	9538	1907.6	4.657	4.128	N/A
HSDPA	9262	1852.4	4.643	4.125	N/A
	9400	1880	4.646	4.119	N/A
	9538	1907.6	4.662	4.121	N/A

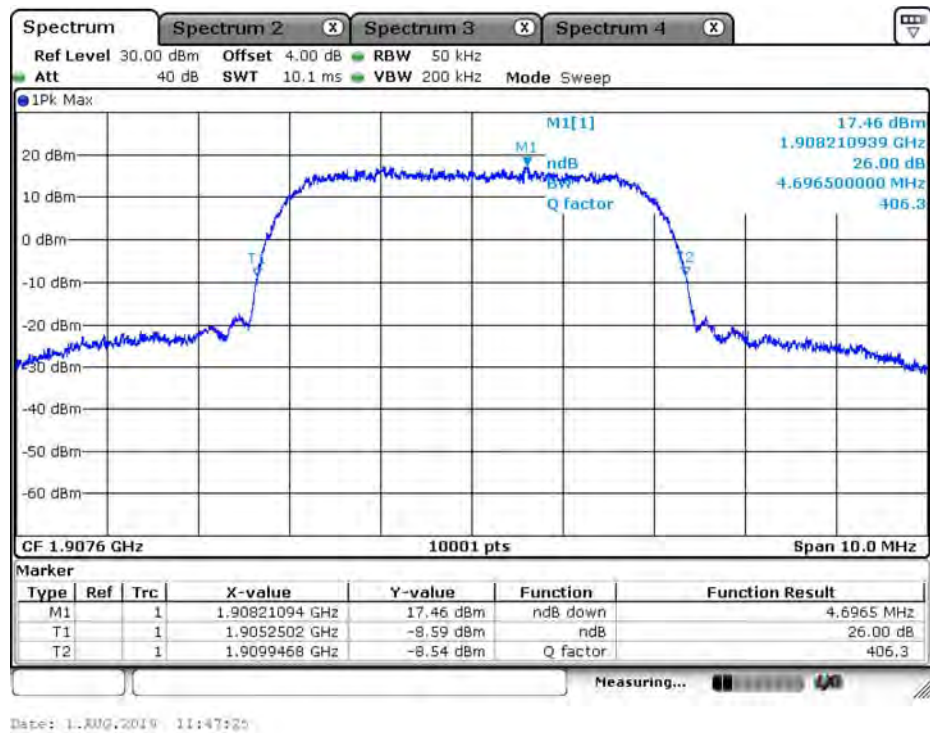
WCDMA_Band 2_RMC_1852.4MHz_26dB BW



WCDMA_Band 2_RMC_1880.0MHz_26dB BW



WCDMA_Band 2_RMC_1907.6MHz_26dB BW

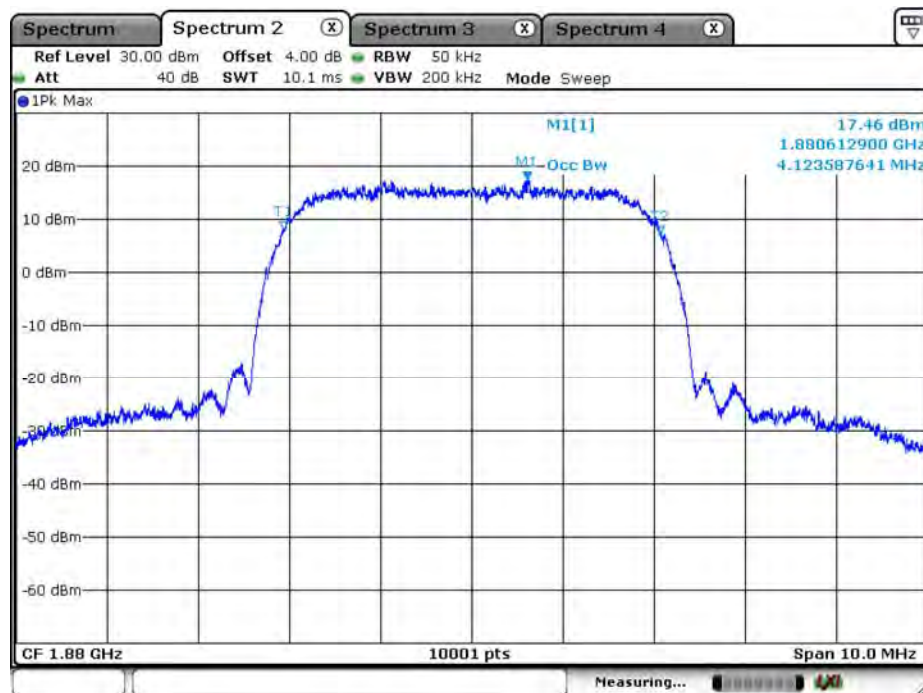


WCDMA_Band 2_RMC_1852.4MHz_99% BW



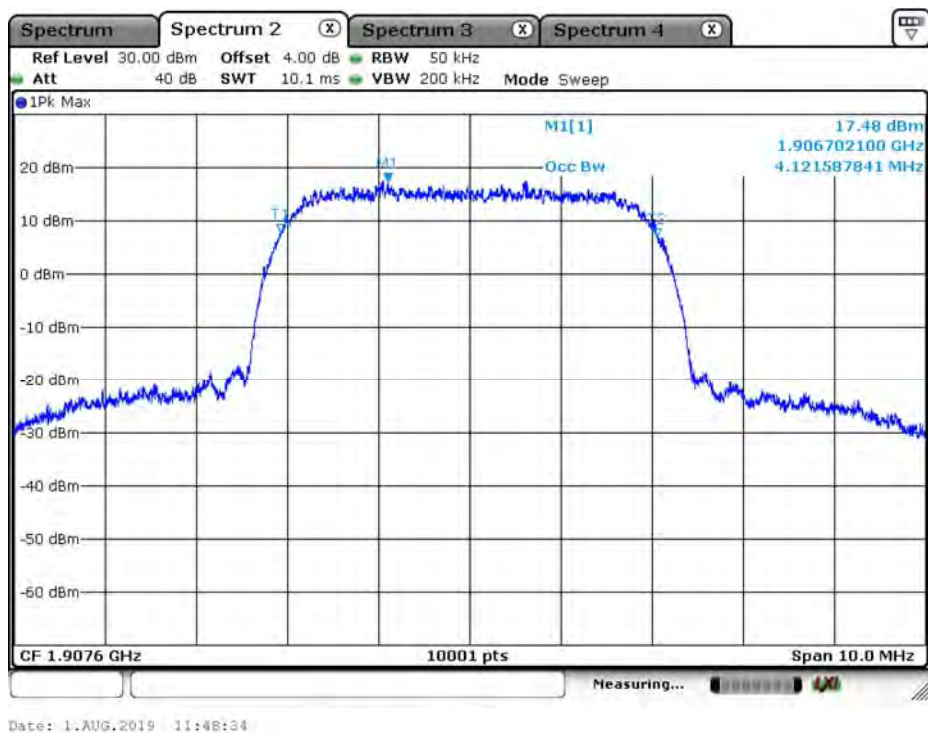
Date: 1.AUG.2019 10:41:27

WCDMA_Band 2_RMC_1880.0MHz_99% BW

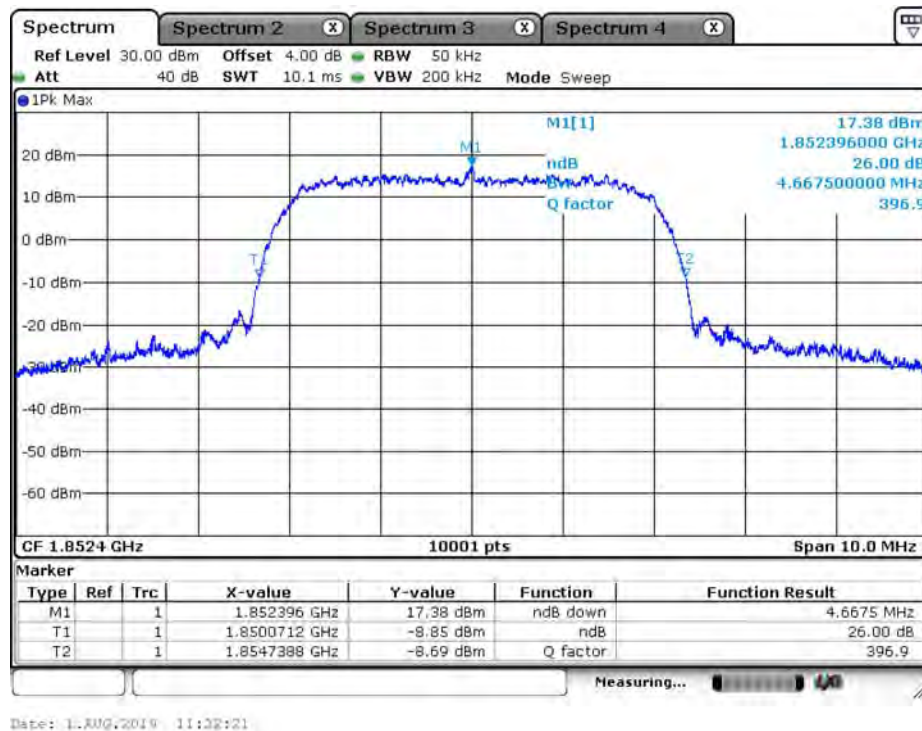


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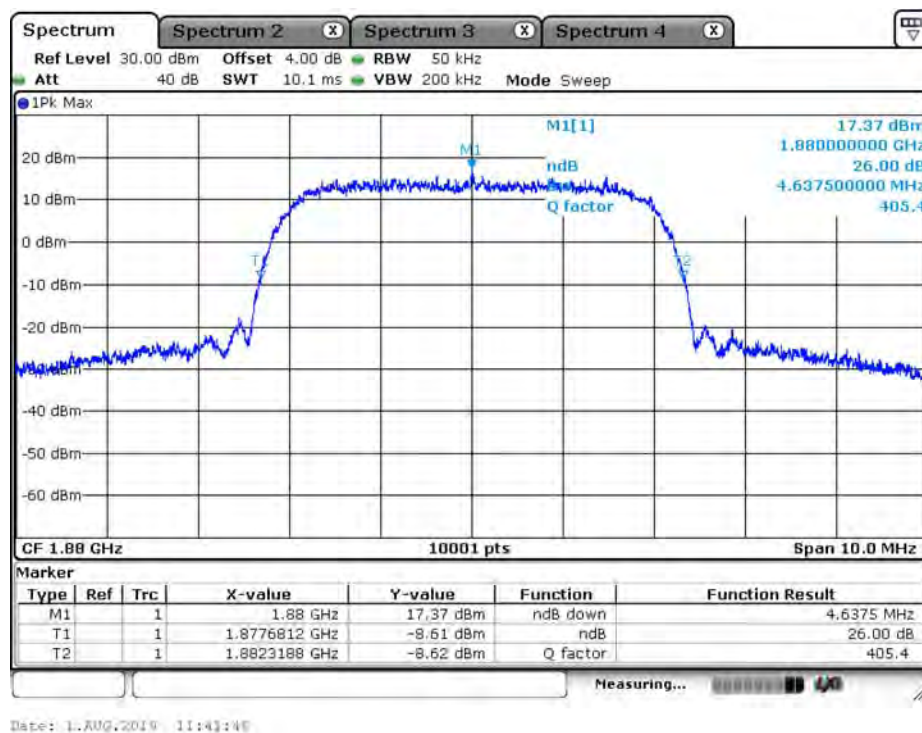
WCDMA_Band 2_RMC_1907.6MHz_99% BW



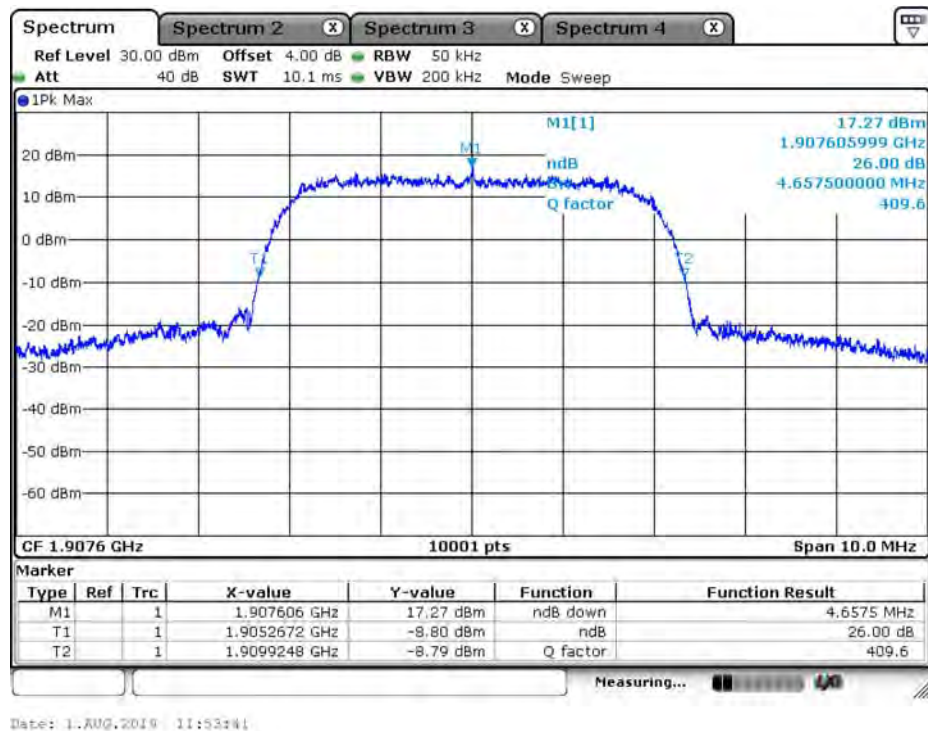
WCDMA_Band 2_HSUPA_1852.4MHz_26dB BW



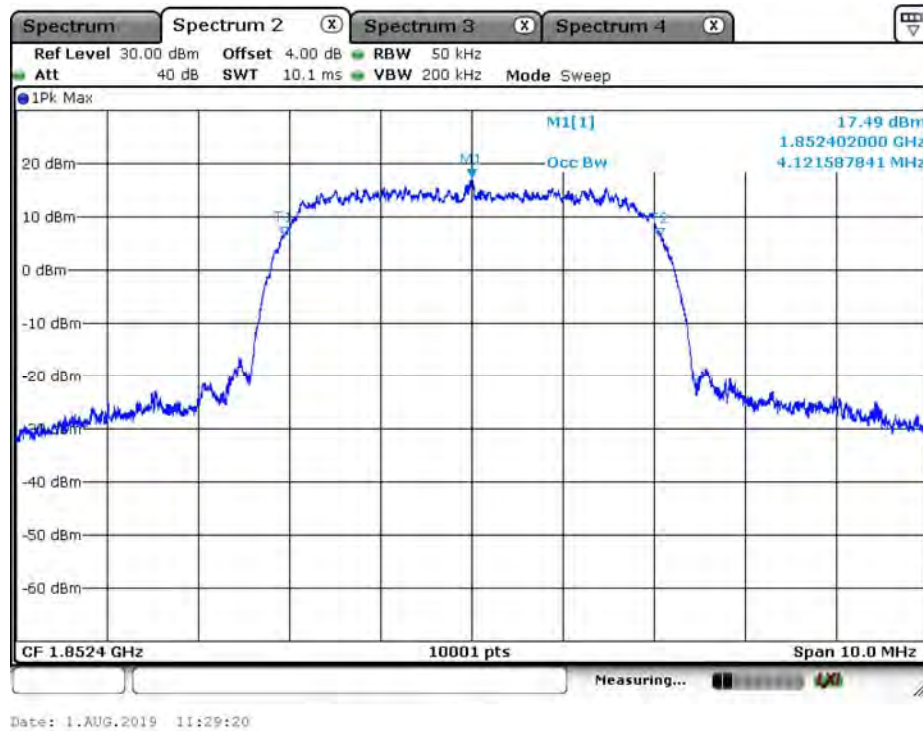
WCDMA_Band 2_HSUPA_1880.0MHz_26dB BW



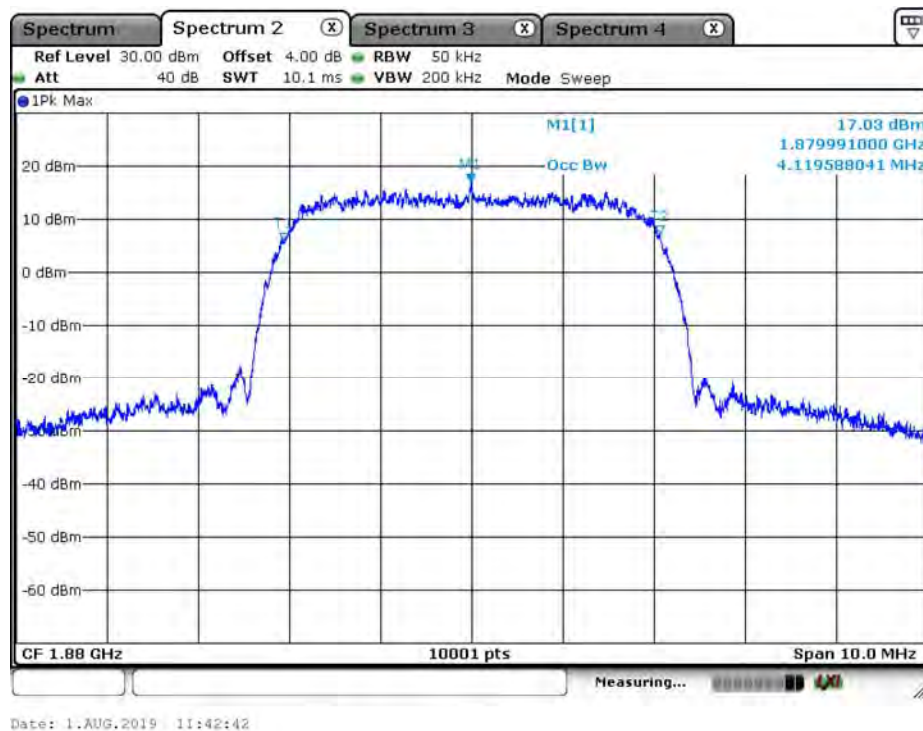
WCDMA_Band 2_HSUPA_1907.6MHz_26dB BW



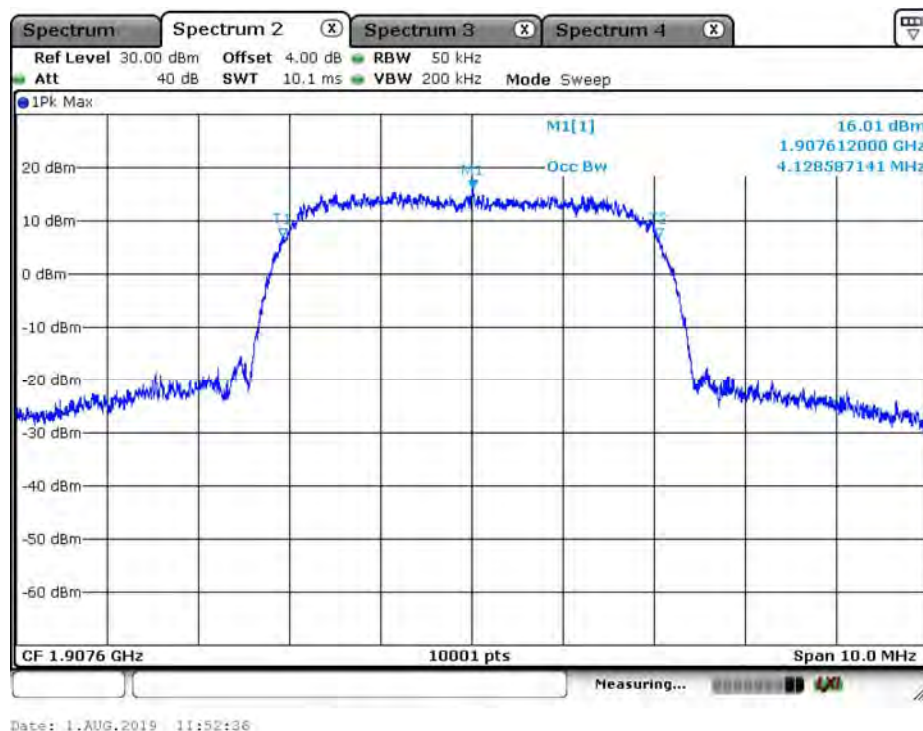
WCDMA_Band 2_HSUPA_1852.4MHz_99% BW



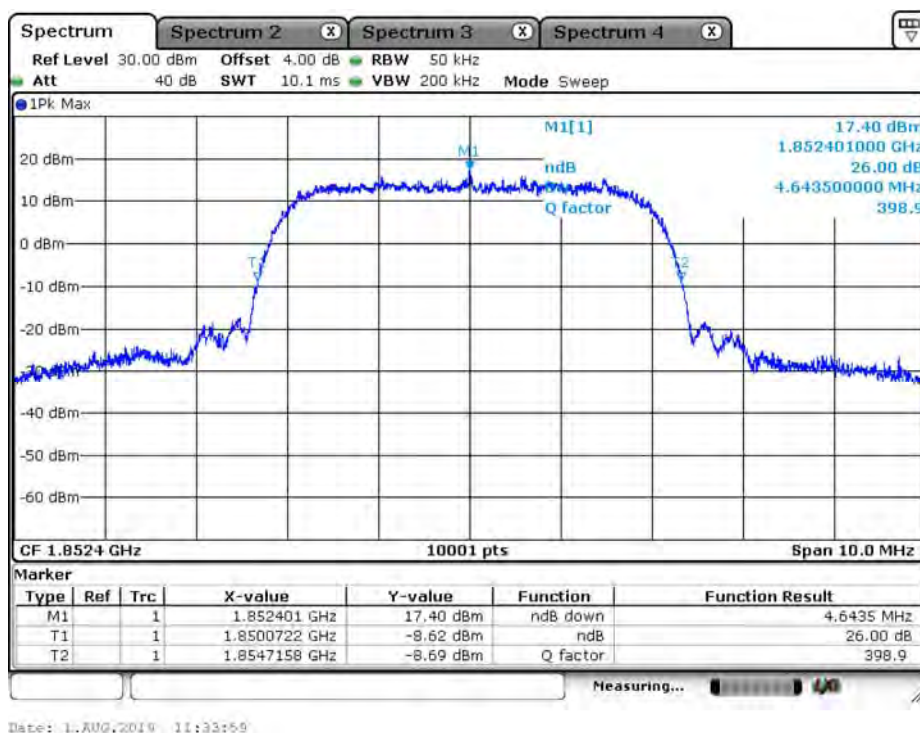
WCDMA_Band 2_HSUPA_1880.0MHz_99% BW



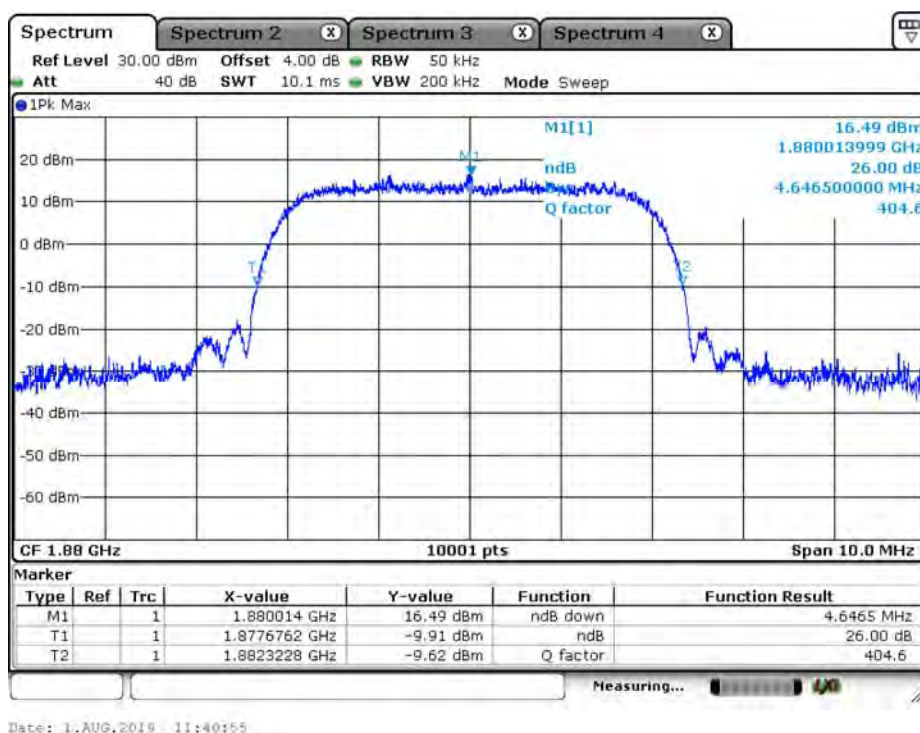
WCDMA_Band 2_HSUPA_1907.6MHz_99% BW



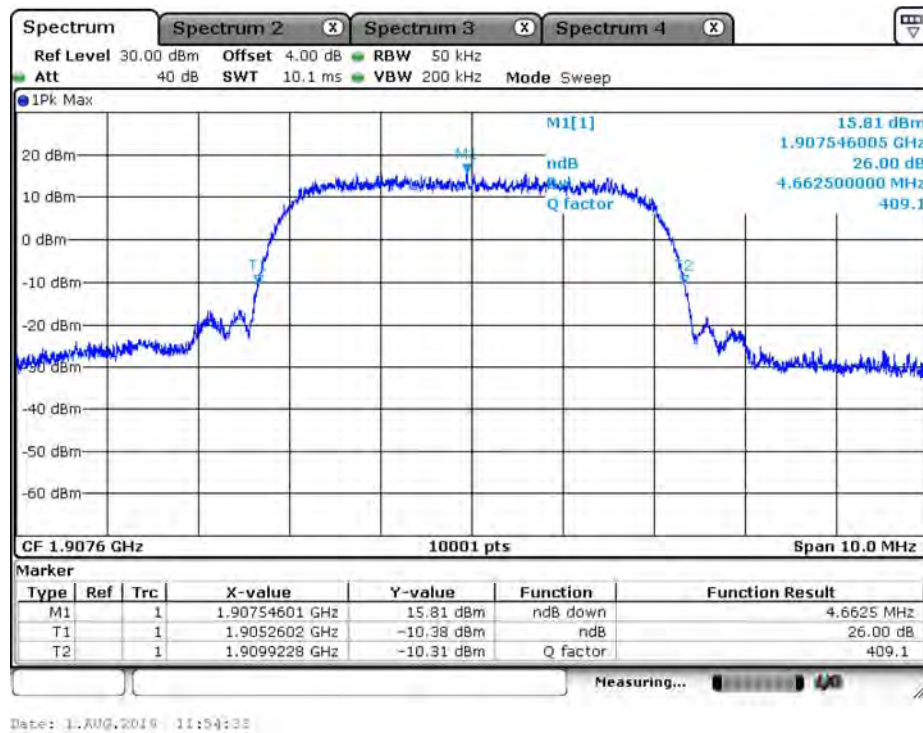
WCDMA_Band 2_HSDPA_1852.4MHz_26dB BW



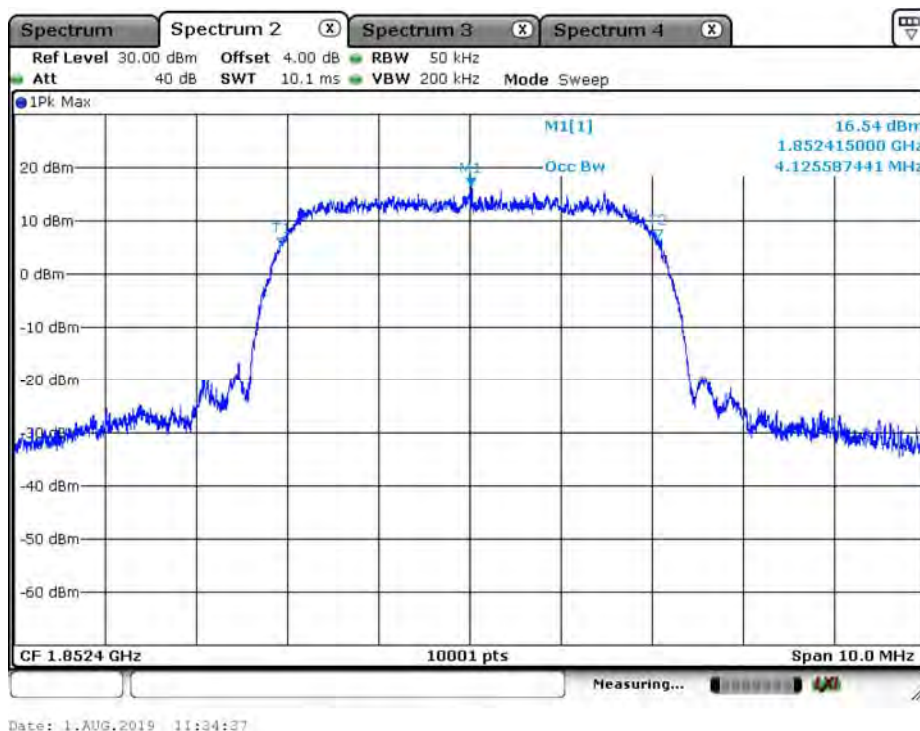
WCDMA_Band 2_HSDPA_1880.0MHz_26dB BW



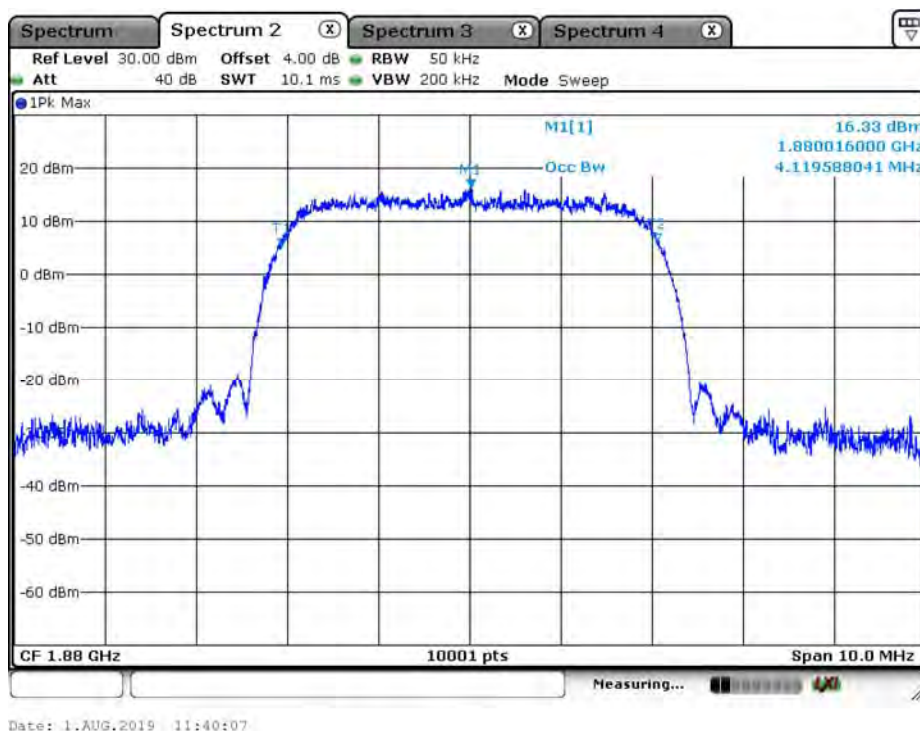
WCDMA_Band 2_HSDPA_1907.6MHz_26dB BW



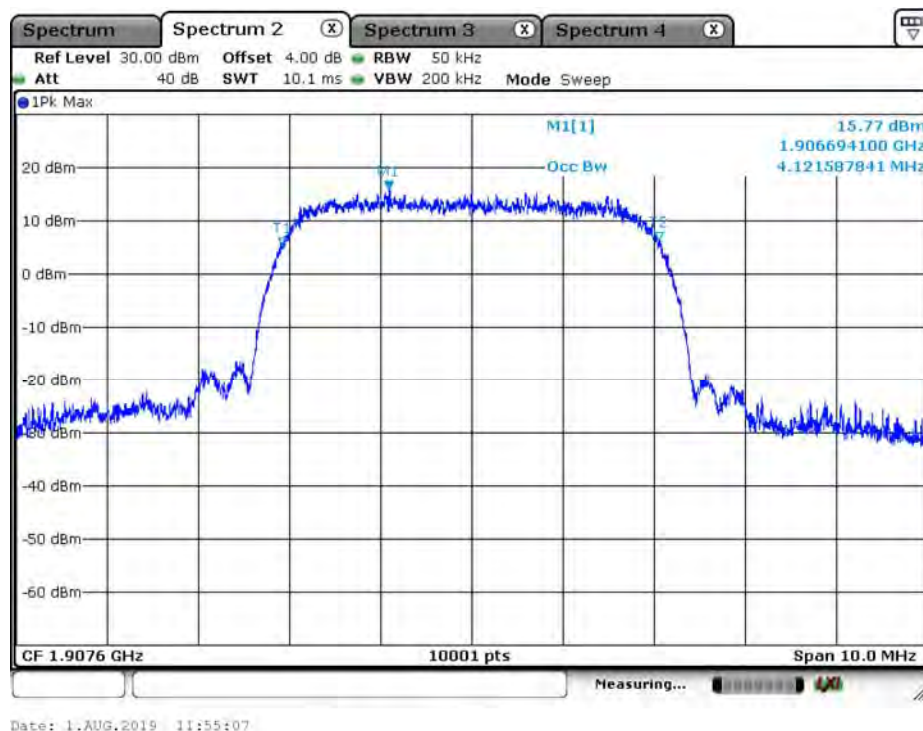
WCDMA_Band 2_HSDPA_1852.4MHz_99% BW



WCDMA_Band 2_HSDPA_1880.0MHz_99% BW



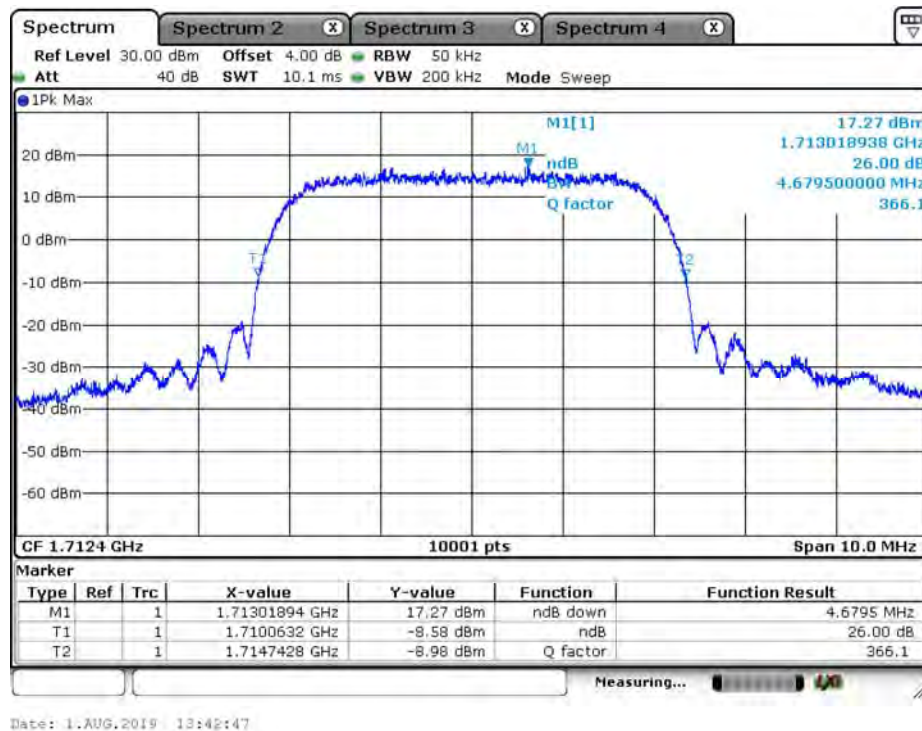
WCDMA_Band 2_HSDPA_1907.6MHz_99% BW



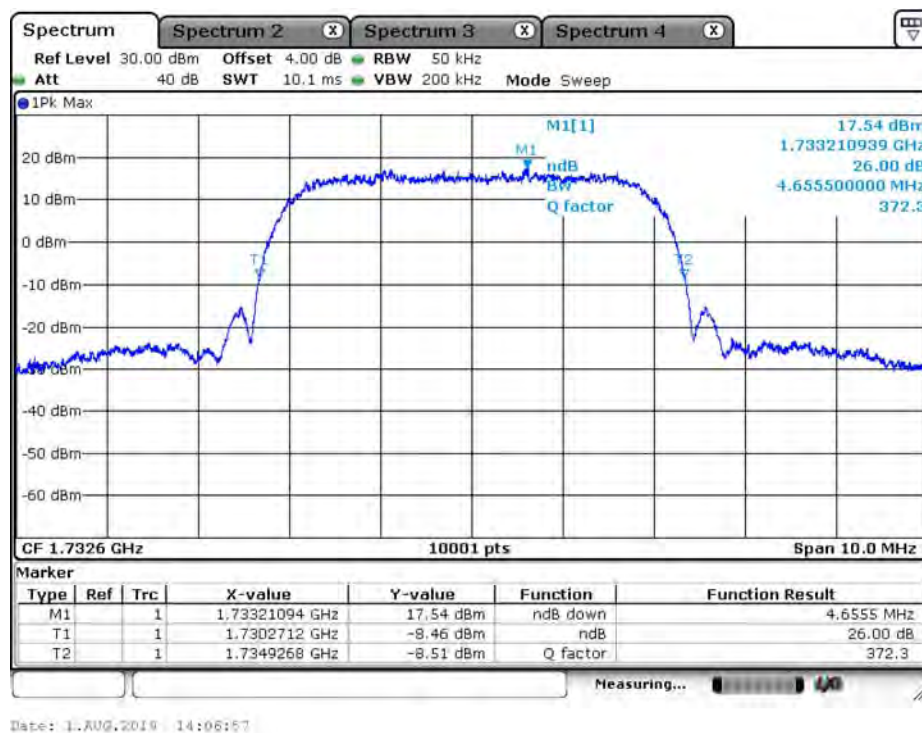
Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 2: WCDMA Band 4		
Date of Test	2019/08/01	Test Site	SR10-H

Modulation	Channel	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
			26dB BW	99% BW	
RMC	1312	1712.4	4.679	4.117	N/A
	1413	1732.6	4.655	4.117	N/A
	1513	1752.6	4.682	4.120	N/A
HSUPA	1312	1712.4	4.667	4.112	N/A
	1413	1732.6	4.666	4.129	N/A
	1513	1752.6	4.643	4.125	N/A
HSDPA	1312	1712.4	4.660	4.121	N/A
	1413	1732.6	4.643	4.116	N/A
	1513	1752.6	4.630	4.123	N/A

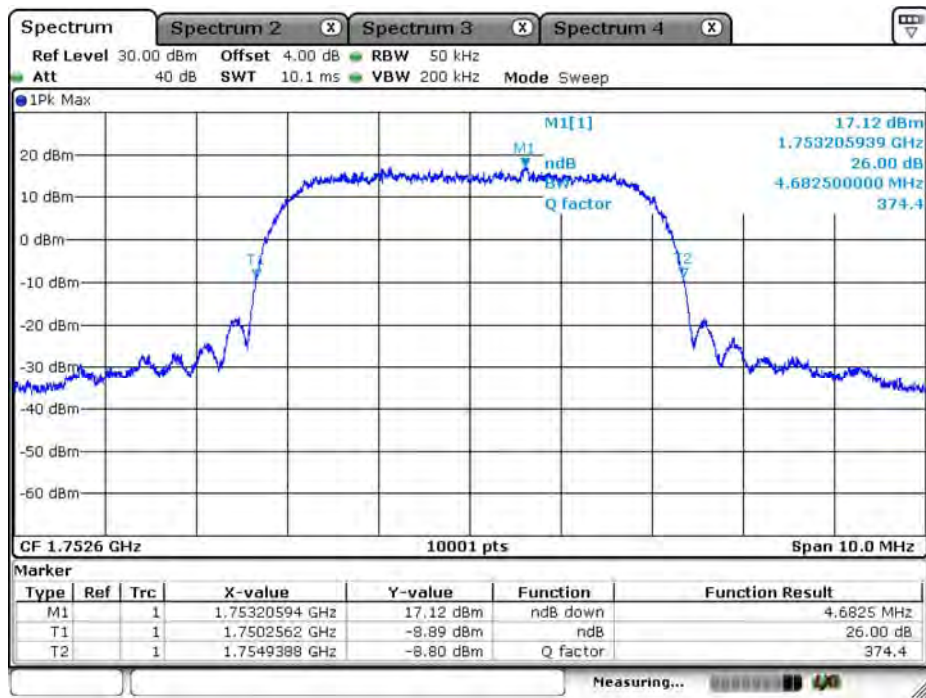
WCDMA_Band 4_RMC_1712.4MHz_26dB BW



WCDMA_Band 4_RMC_1732.6MHz_26dB BW

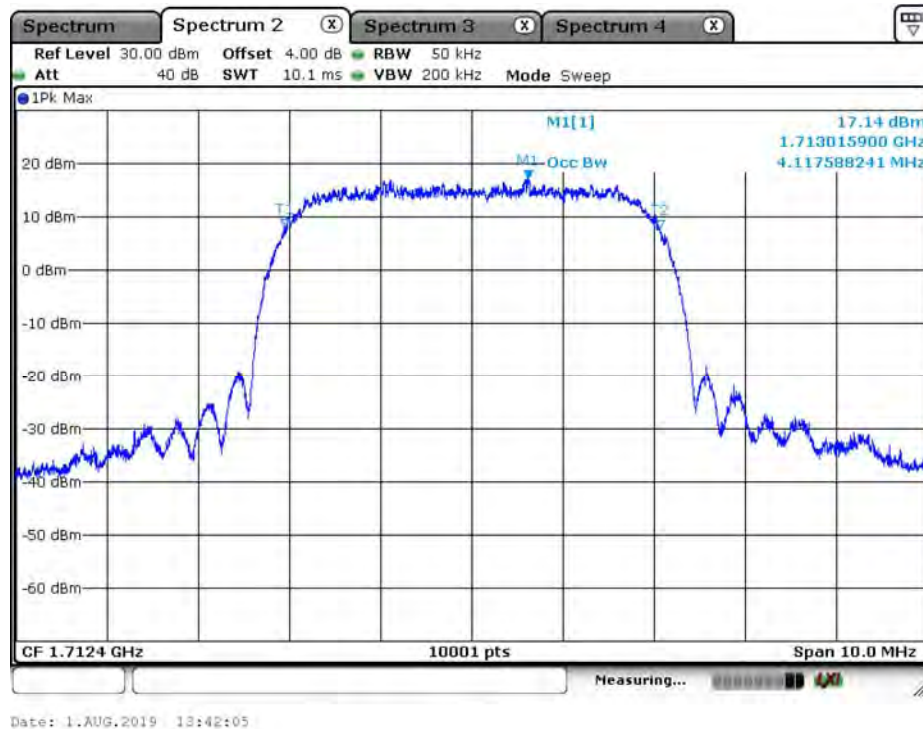


WCDMA_Band 4_RMC_1752.6MHz_26dB BW

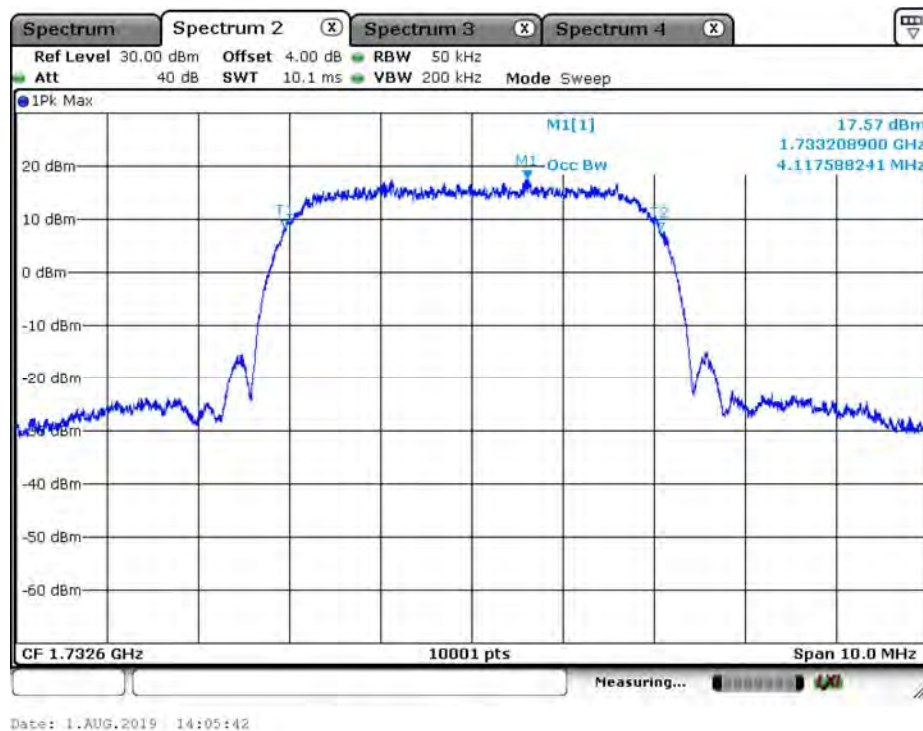


Date: 1.AUG.2019 14:08:10

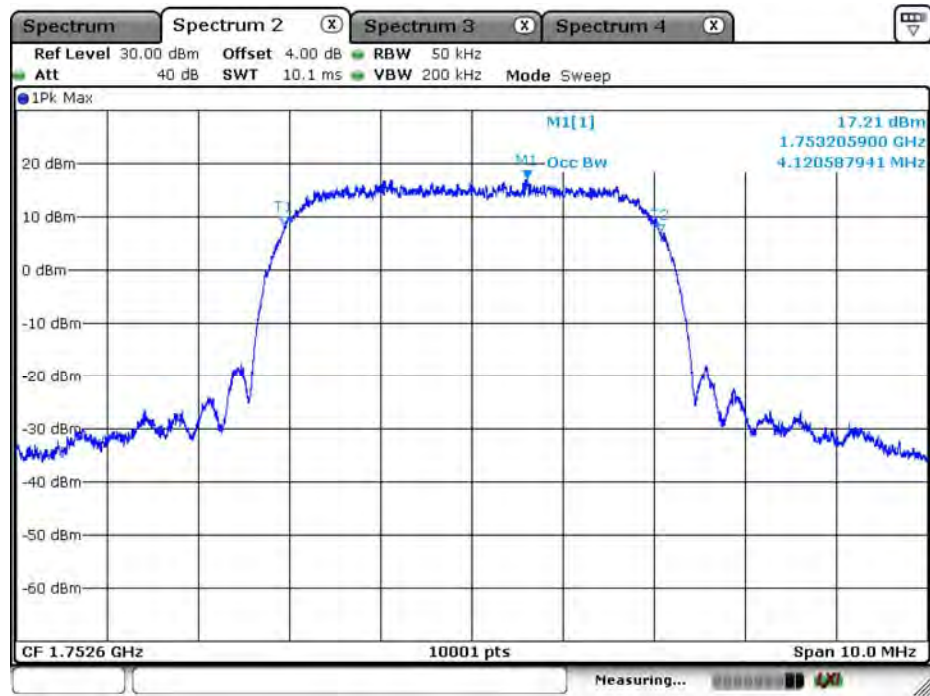
WCDMA_Band 4_RMC_1712.4MHz_99% BW



WCDMA_Band 4_RMC_1732.6MHz_99% BW

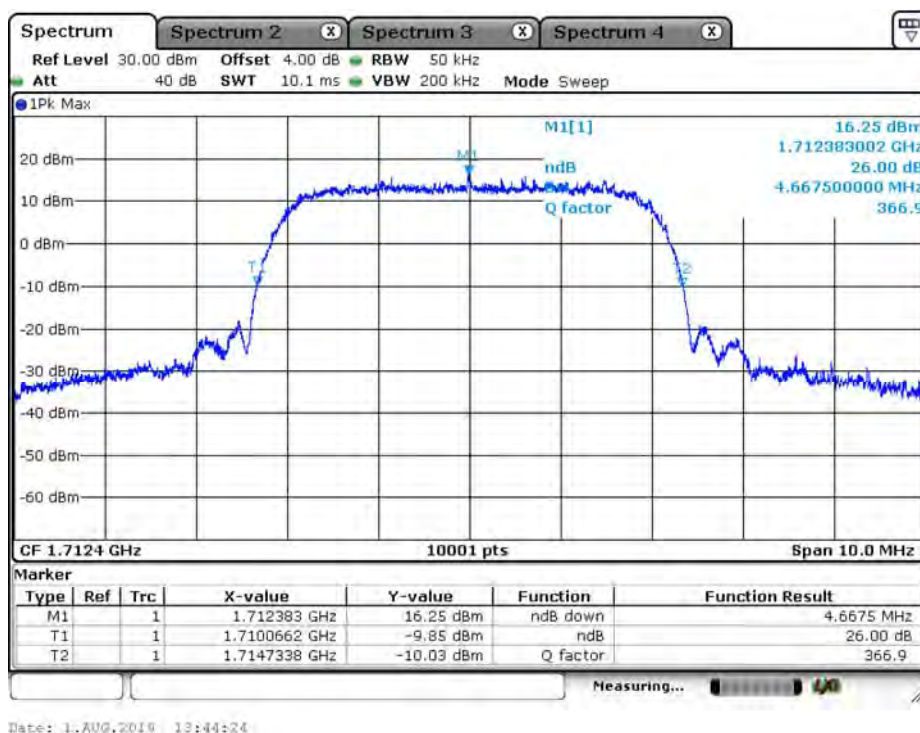


WCDMA_Band 4_RMC_1752.6MHz_99% BW

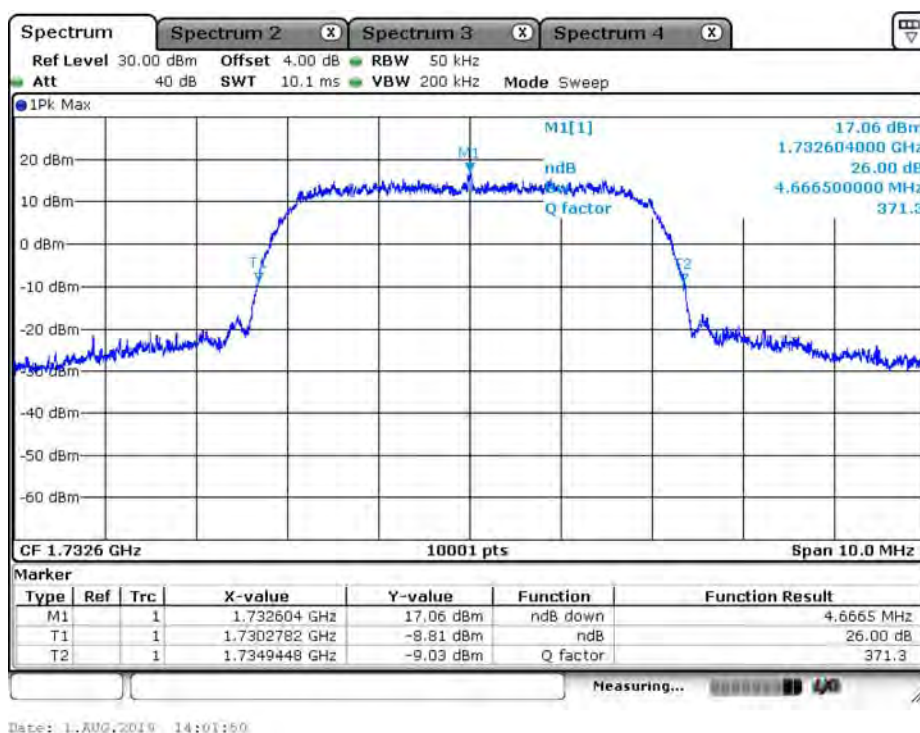


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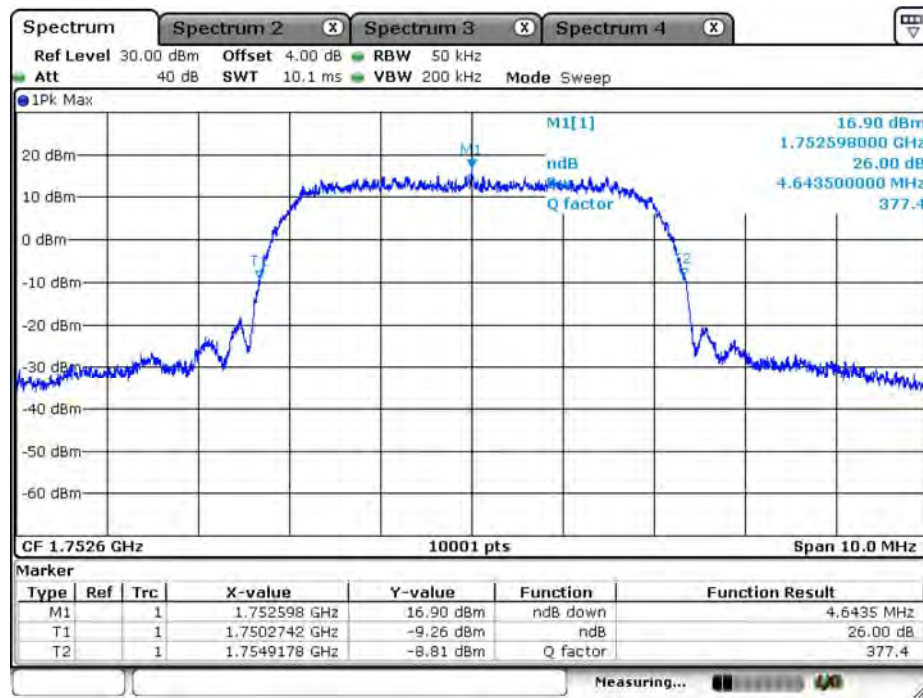
WCDMA_Band 4_HSUPA_1712.4MHz_26dB BW



WCDMA_Band 4_HSUPA_1732.6MHz_26dB BW

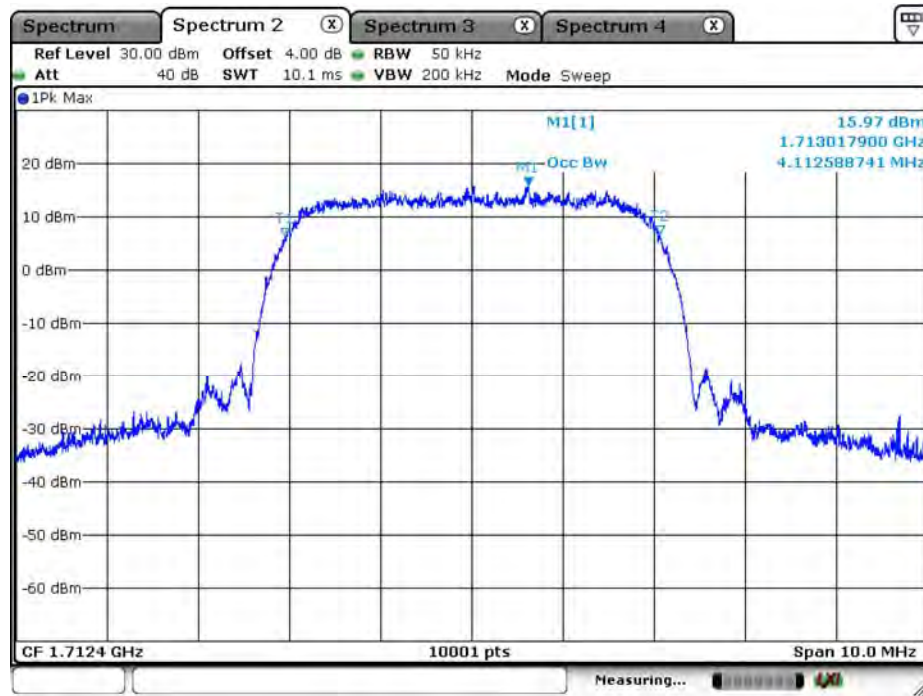


WCDMA_Band 4_HSUPA_1752.6MHz_26dB BW



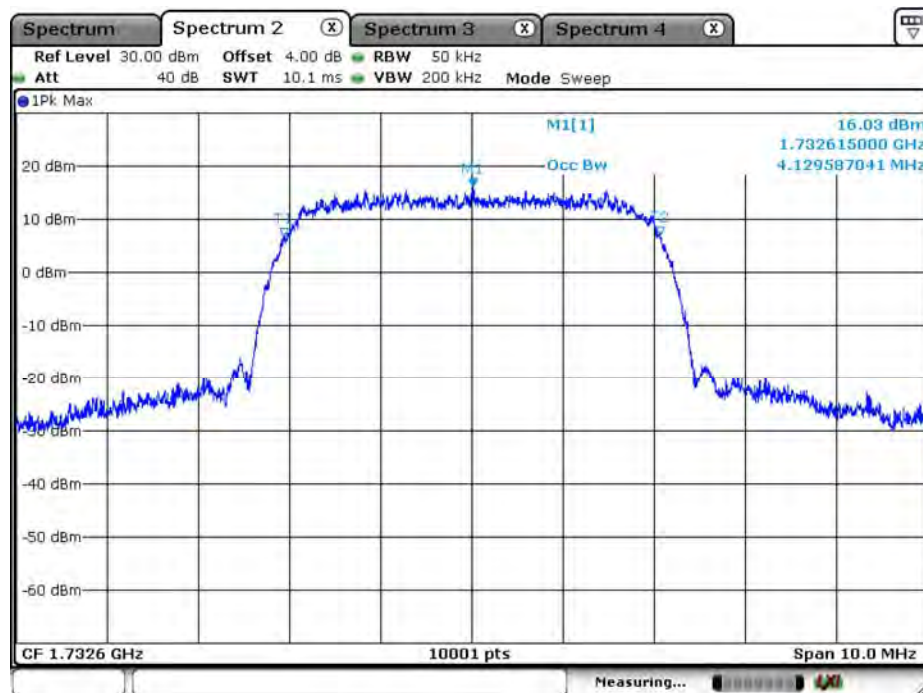
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WCDMA_Band 4_HSUPA_1712.4MHz_99% BW



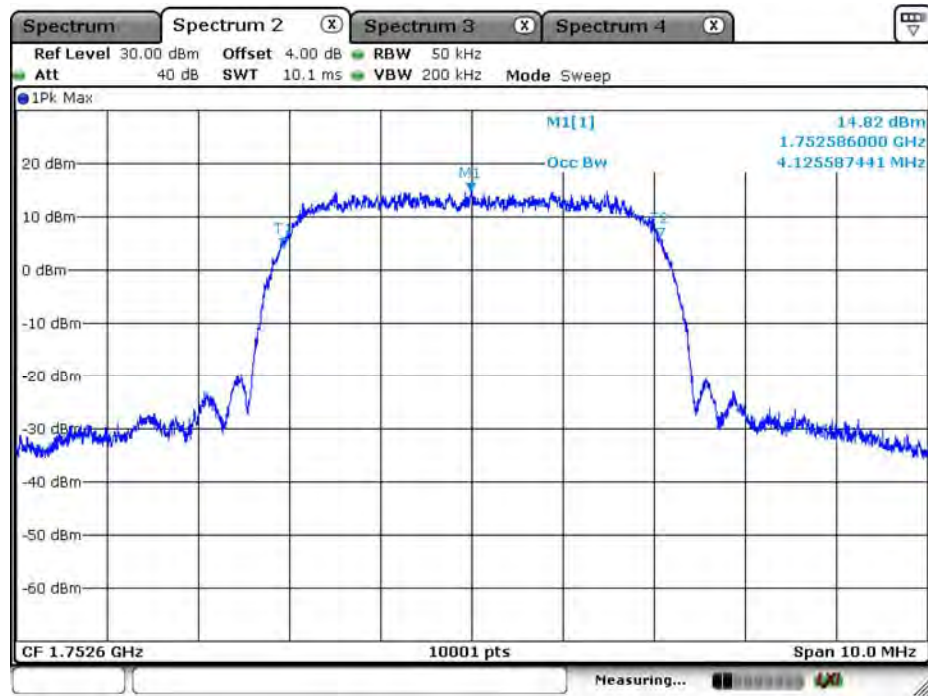
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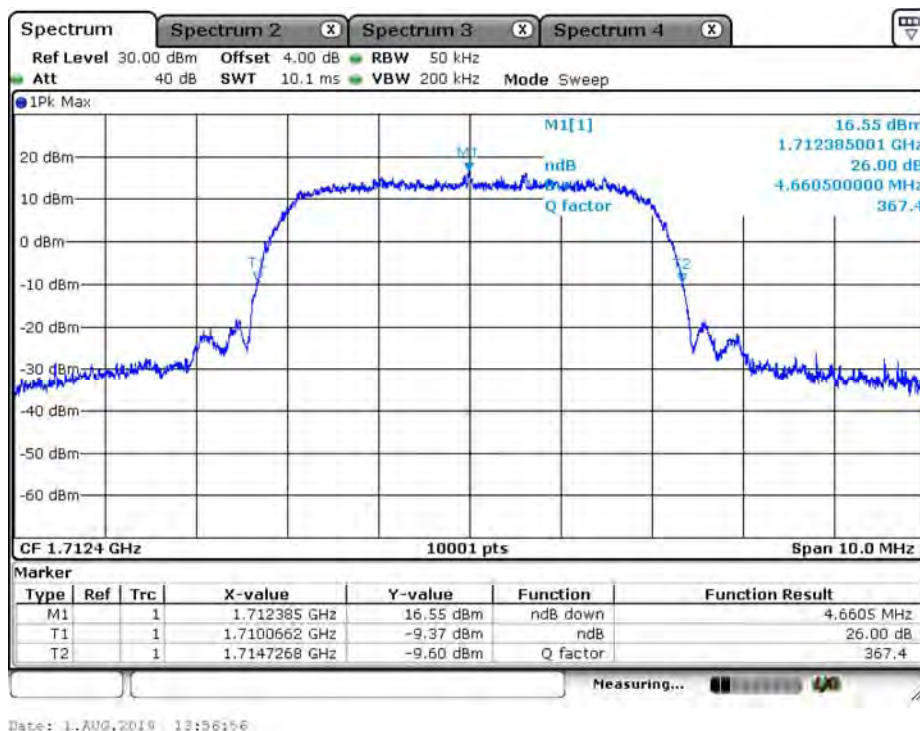
Date: 1.AUG.2019 14:02:45

WCDMA_Band 4_HSUPA_1752.6MHz_99% BW

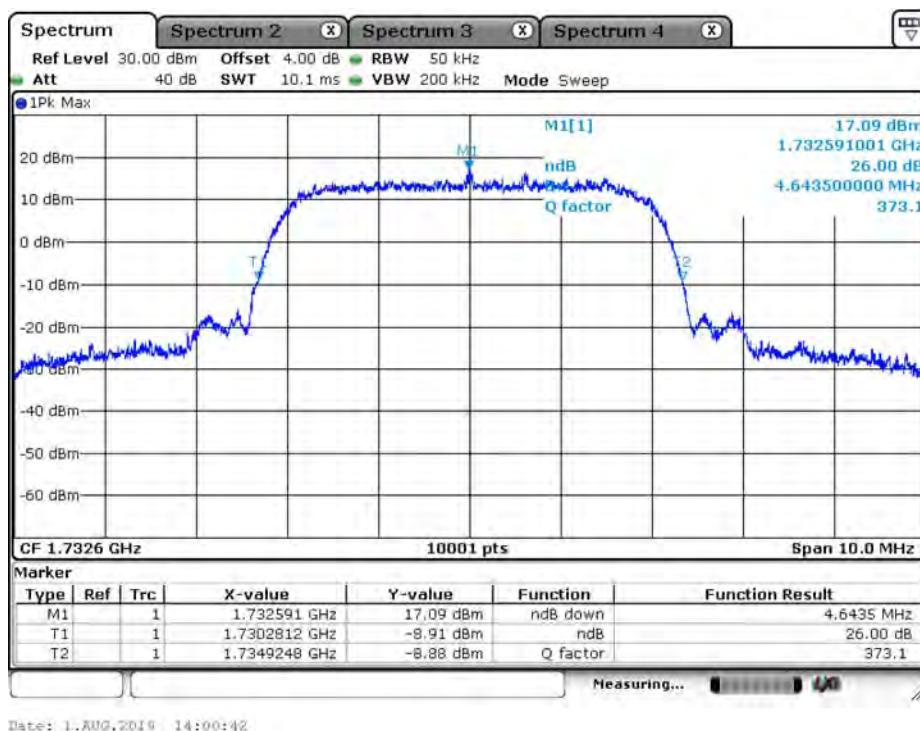


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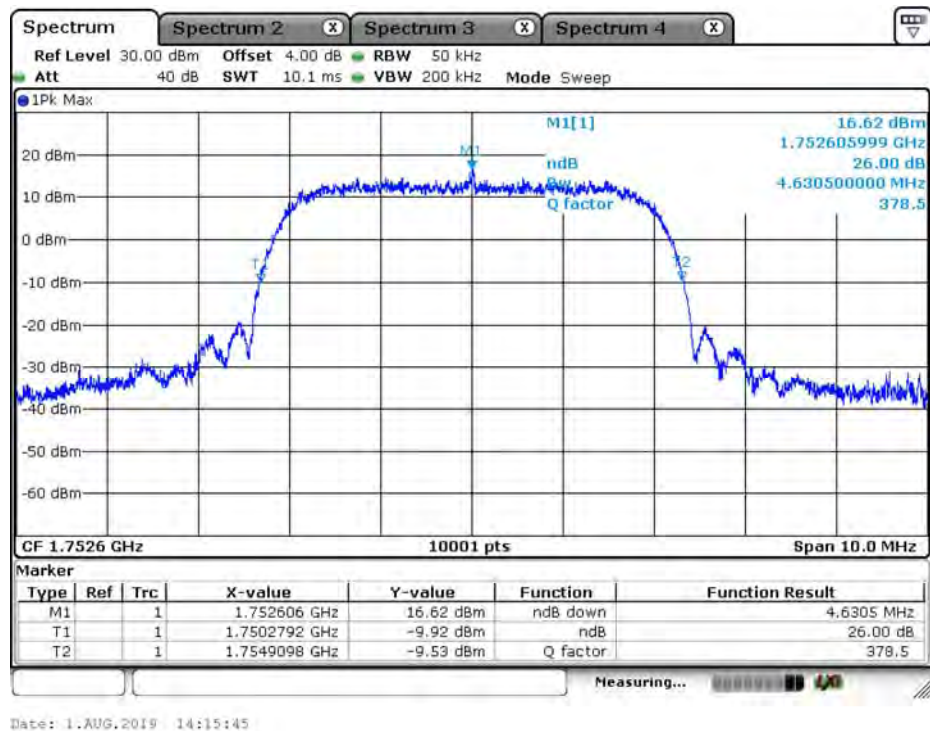
WCDMA_Band 4_HSDPA_1712.4MHz_26dB BW



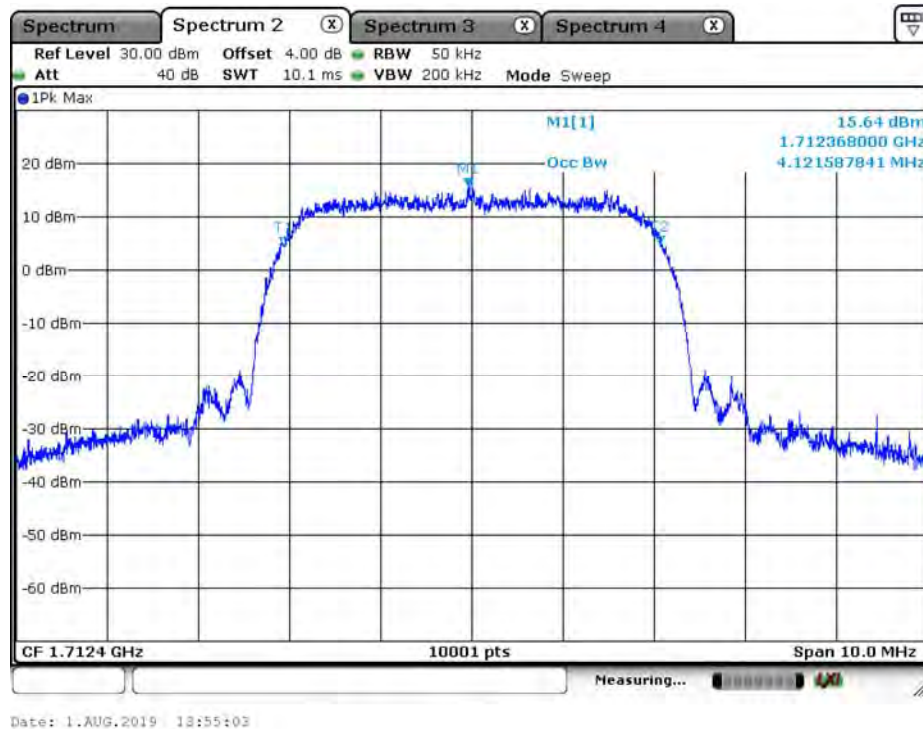
WCDMA_Band 4_HSDPA_1732.6MHz_26dB BW



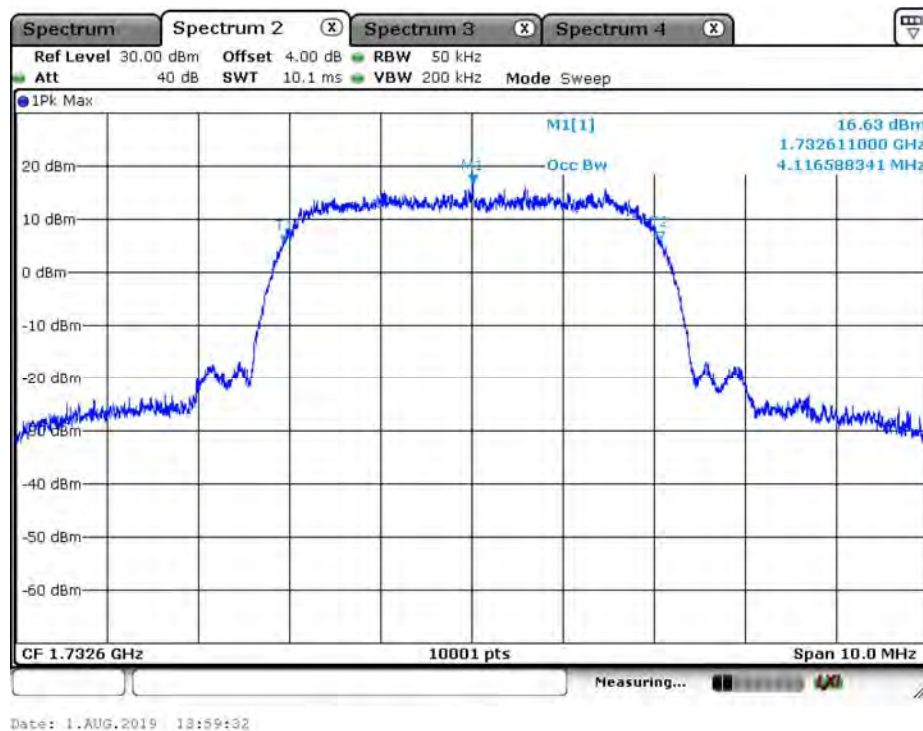
WCDMA_Band 4_HSDPA_1752.6MHz_26dB BW



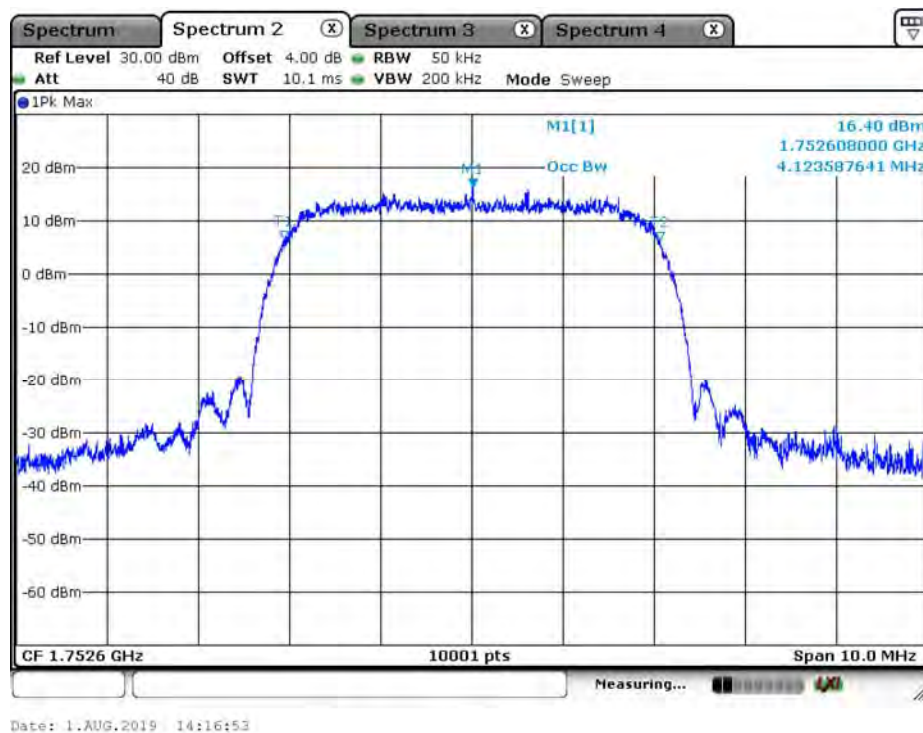
WCDMA_Band 4_HSDPA_1712.4MHz_99% BW



WCDMA_Band 4_HSDPA_1732.6MHz_99% BW



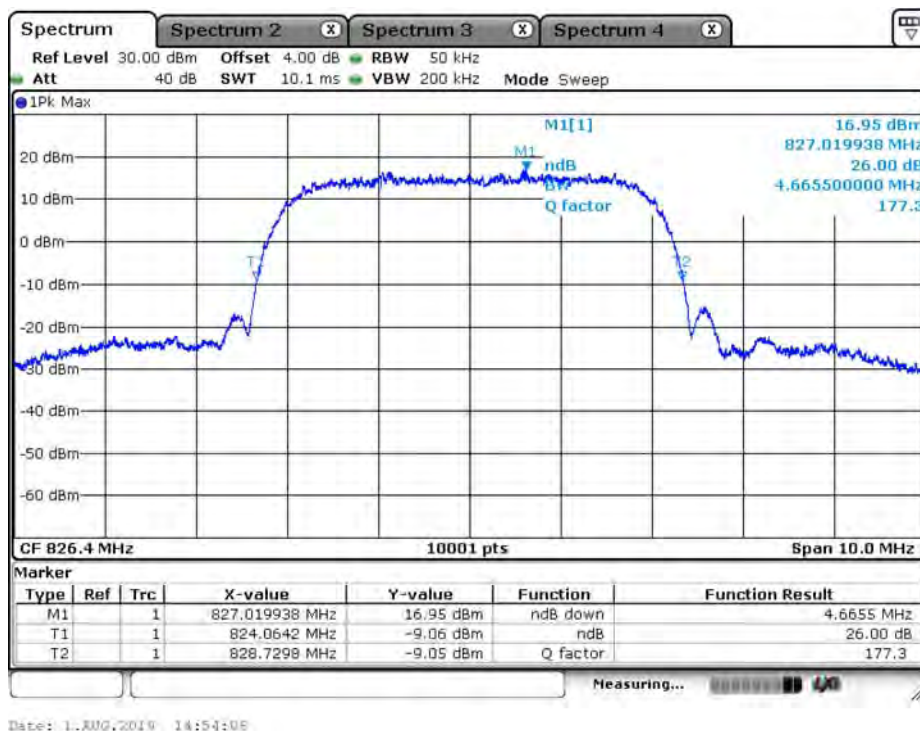
WCDMA_Band 4_HSDPA_1752.6MHz_99% BW



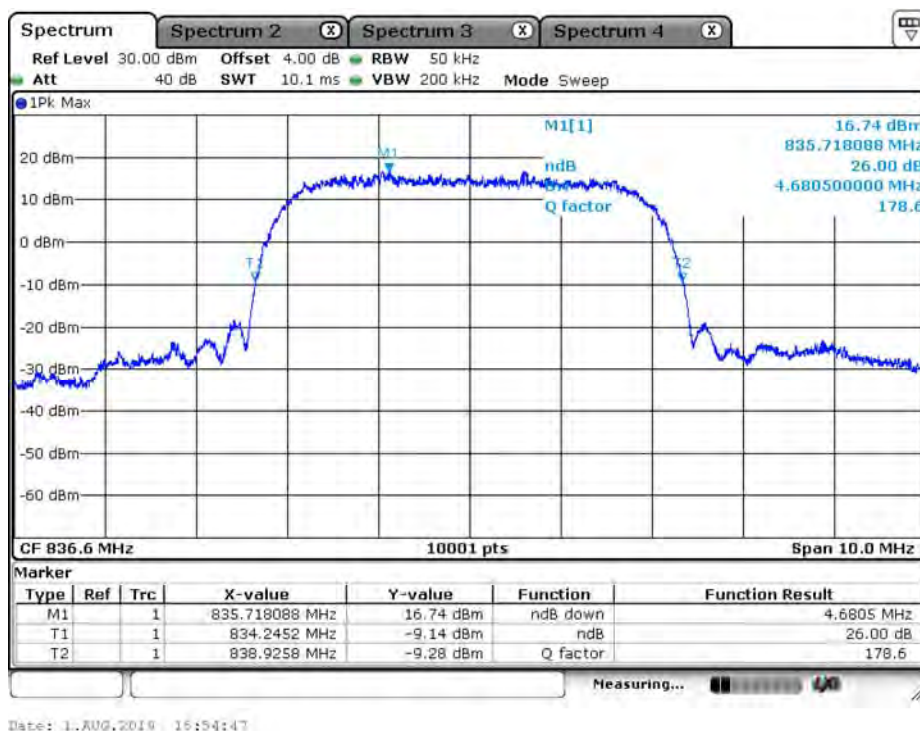
Product	Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 3: WCDMA Band 5		
Date of Test	2019/08/01	Test Site	SR10-H

Modulation	Channel	Frequency (MHz)	Measure Level (MHz)		Limit (MHz)
			26dB BW	99% BW	
RMC	4132	826.4	4.665	4.125	N/A
	4183	836.6	4.680	4.118	N/A
	4233	846.6	4.668	4.093	N/A
HSUPA	4132	826.4	4.738	4.160	N/A
	4183	836.6	4.675	4.163	N/A
	4233	846.6	4.652	4.134	N/A
HSDPA	4132	826.4	4.660	4.154	N/A
	4183	836.6	4.744	4.171	N/A
	4233	846.6	4.669	4.126	N/A

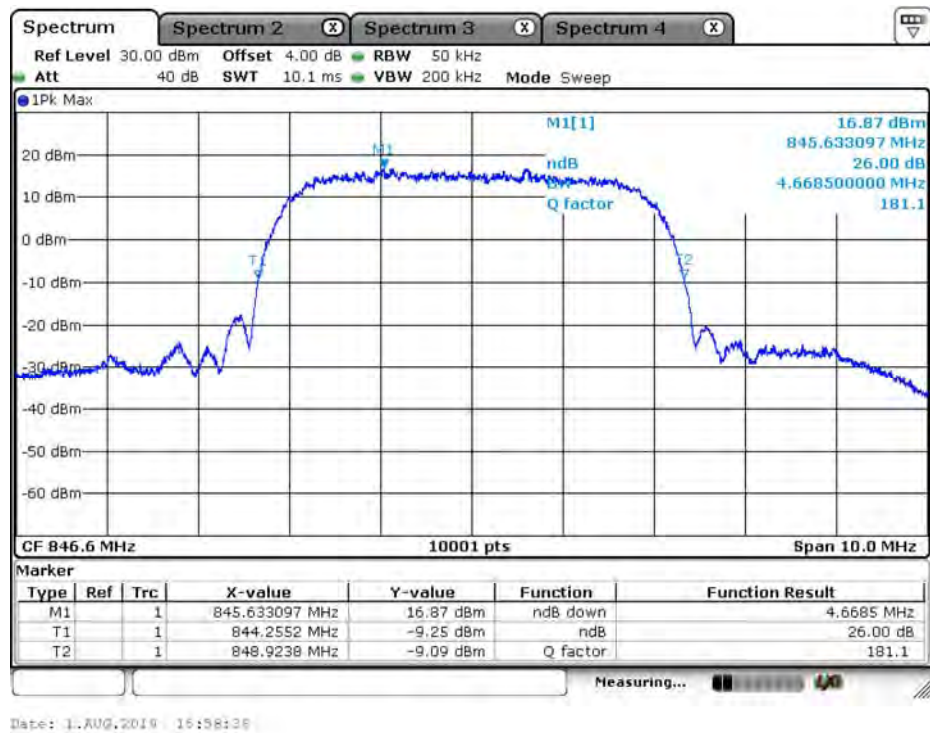
WCDMA_Band 5_RMC_826.4MHz_26dB BW



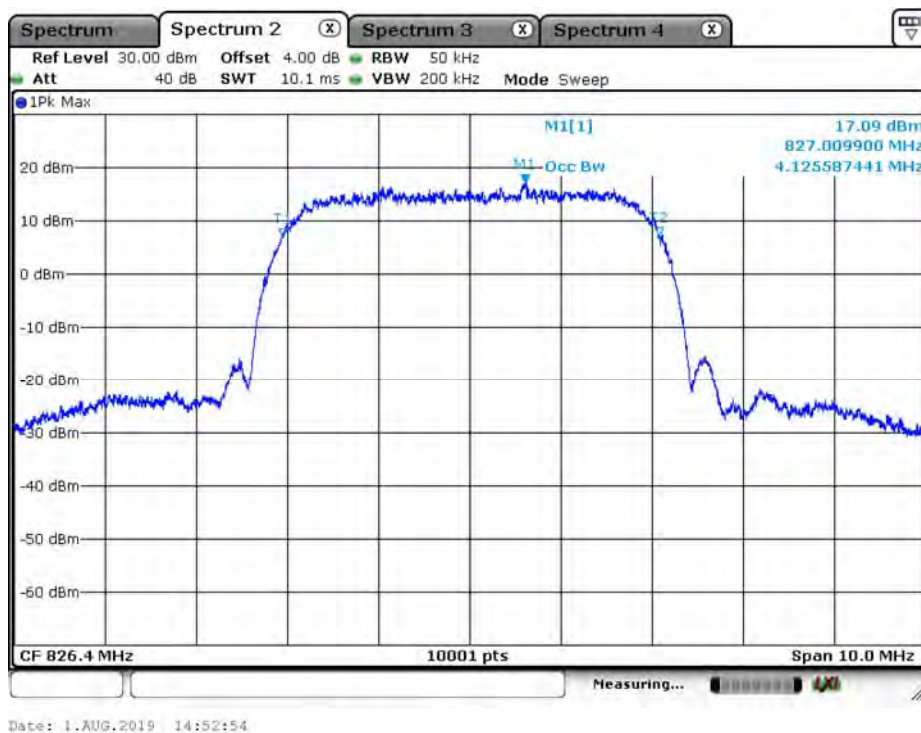
WCDMA_Band 5_RMC_836.6MHz_26dB BW



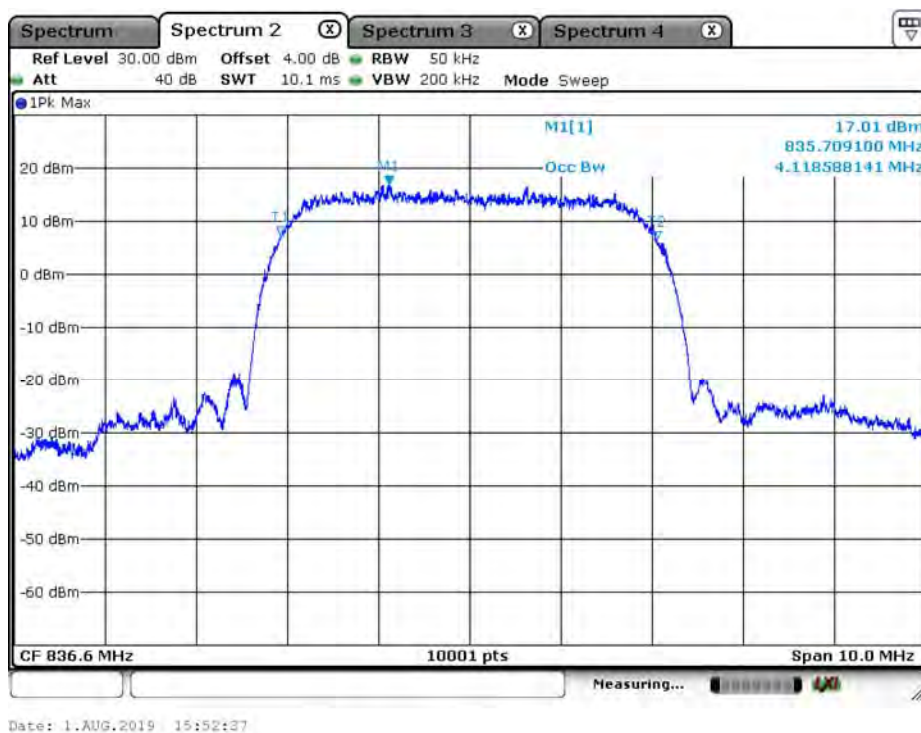
WCDMA_Band 5_RMC_846.6MHz_26dB BW



WCDMA_Band 5_RMC_826.4MHz_99% BW



WCDMA_Band 5_RMC_836.6MHz_99% BW

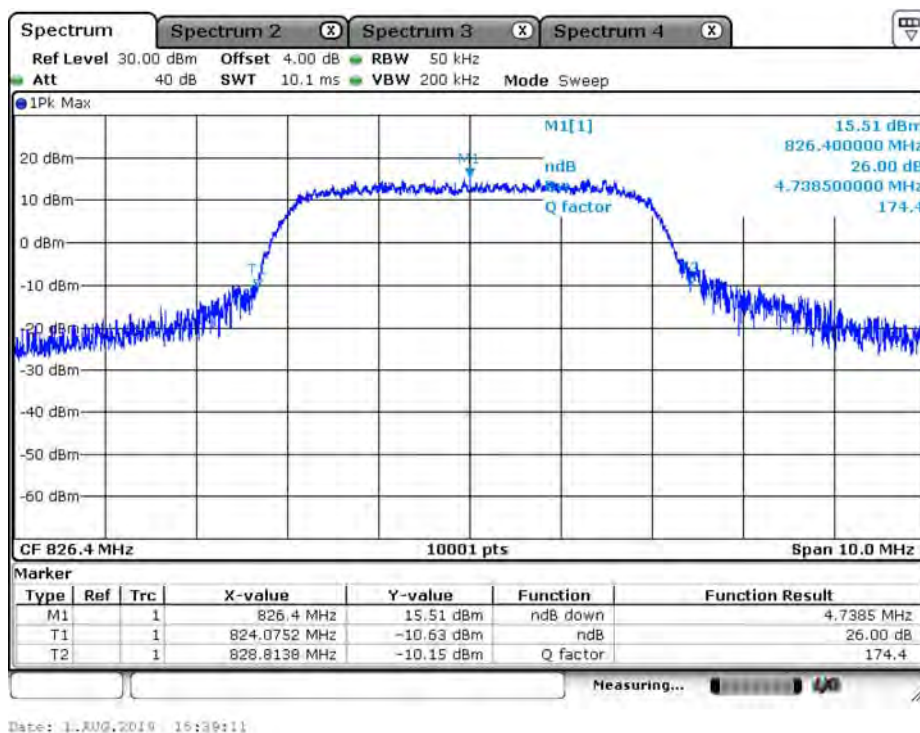


WCDMA_Band 5_RMC_846.6MHz_99% BW

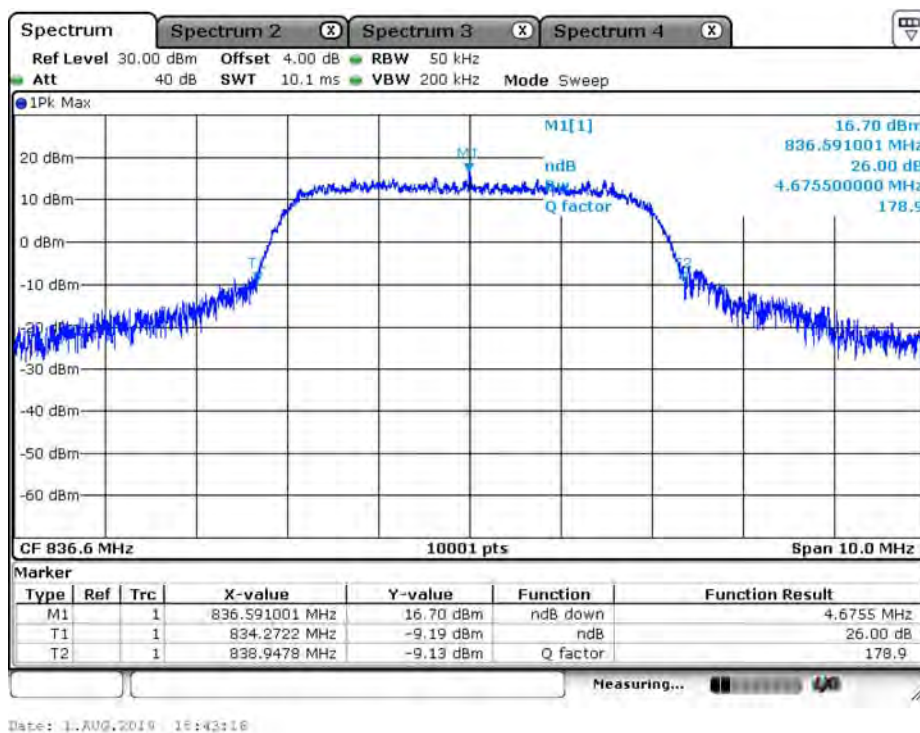


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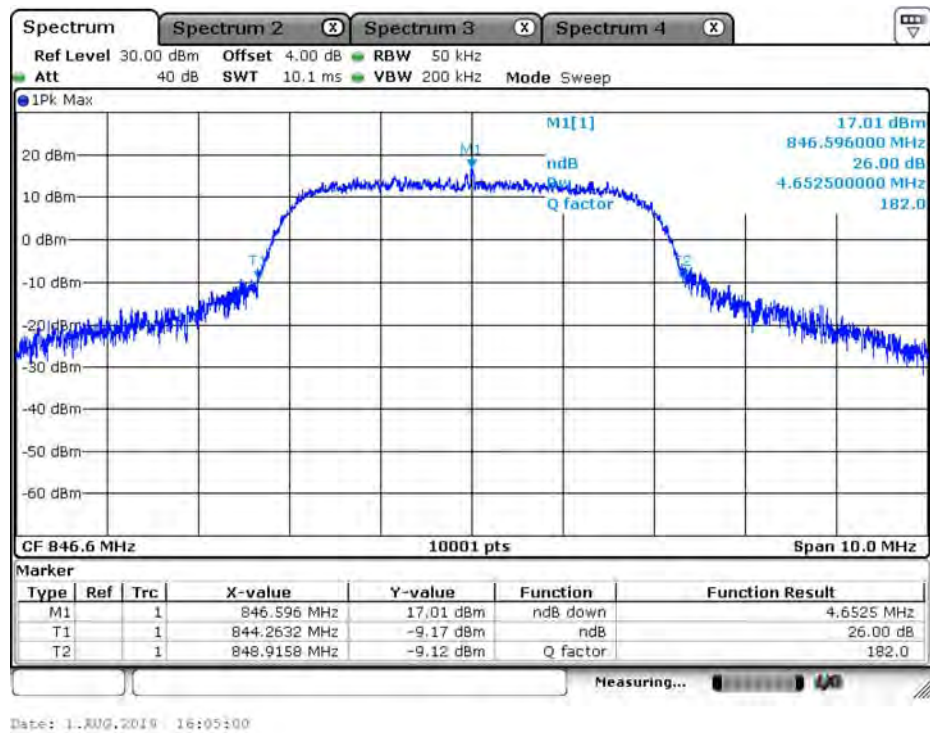
WCDMA_Band 5_HSUPA_826.4MHz_26dB BW



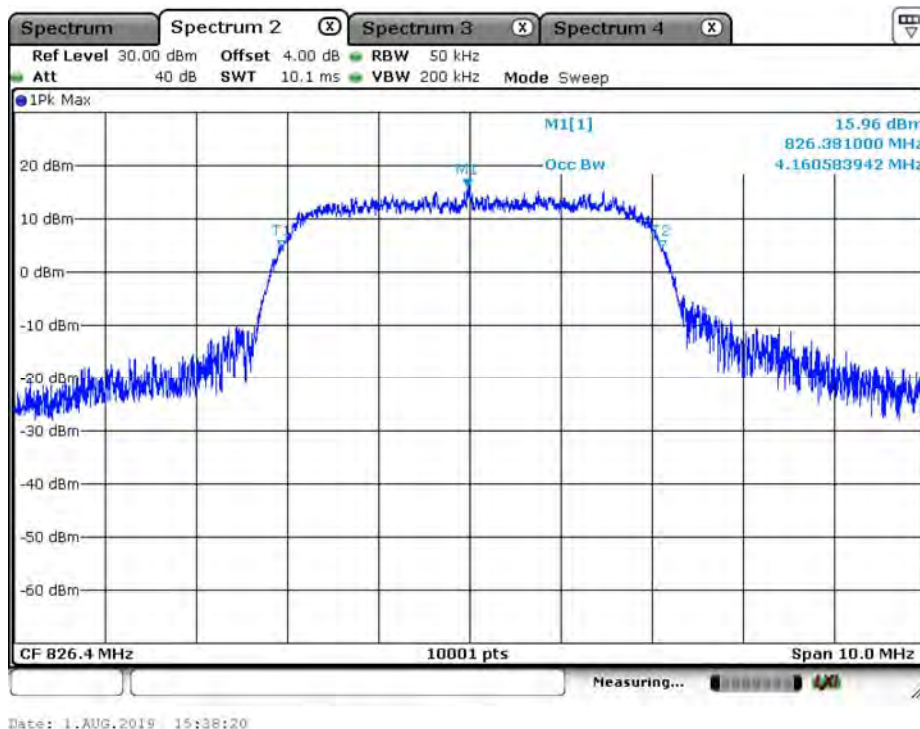
WCDMA_Band 5_HSUPA_836.6MHz_26dB BW



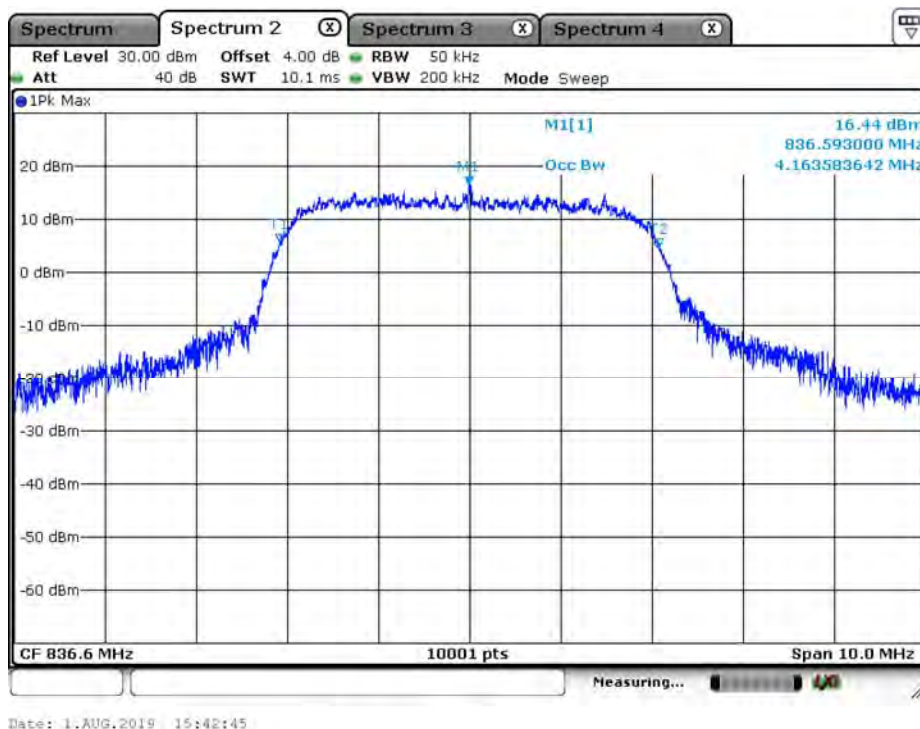
WCDMA_Band 5_HSUPA_846.6MHz_26dB BW



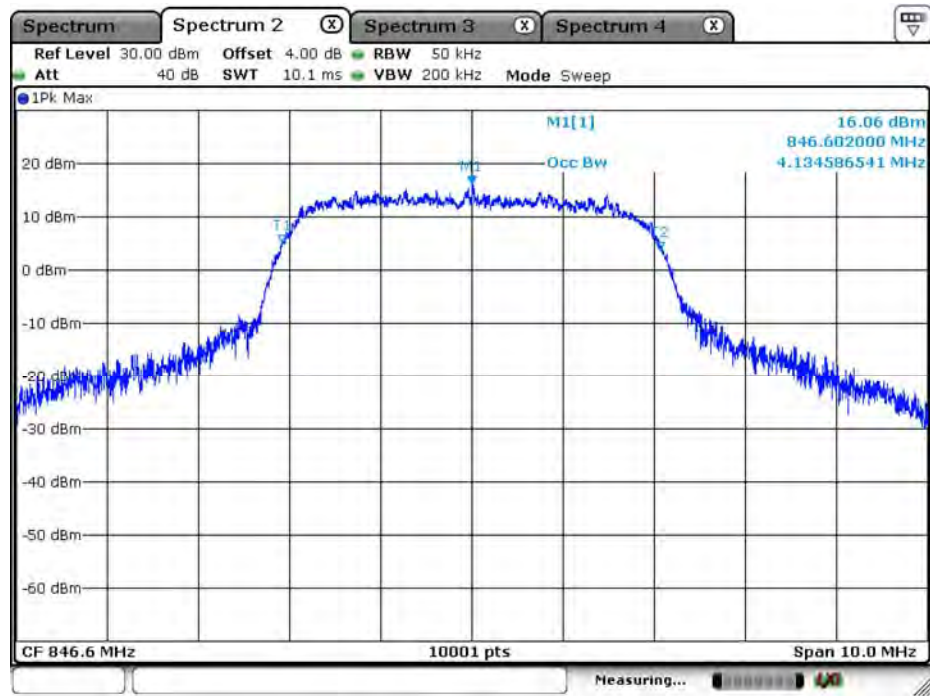
WCDMA_Band 5_HSUPA_826.4MHz_99% BW



WCDMA_Band 5_HSUPA_836.6MHz_99% BW

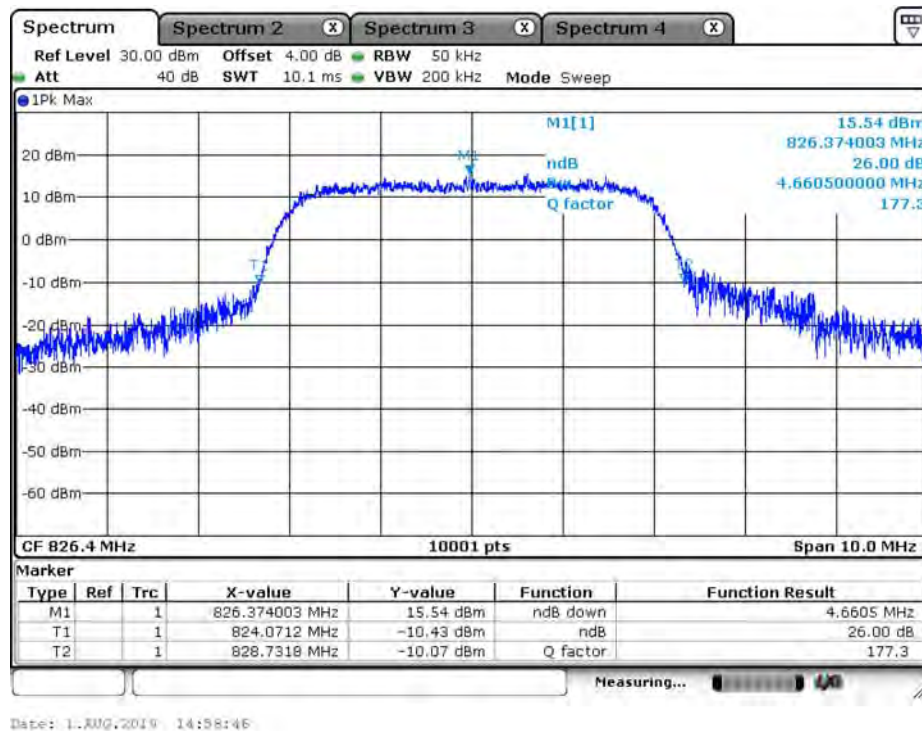


WCDMA_Band 5_HSUPA_846.6MHz_99% BW

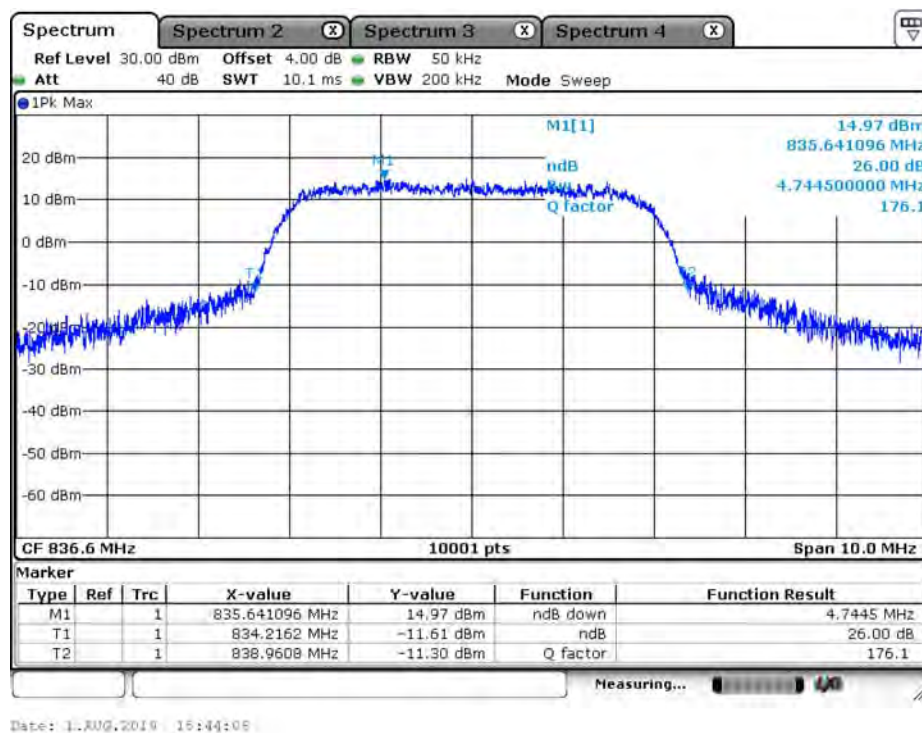


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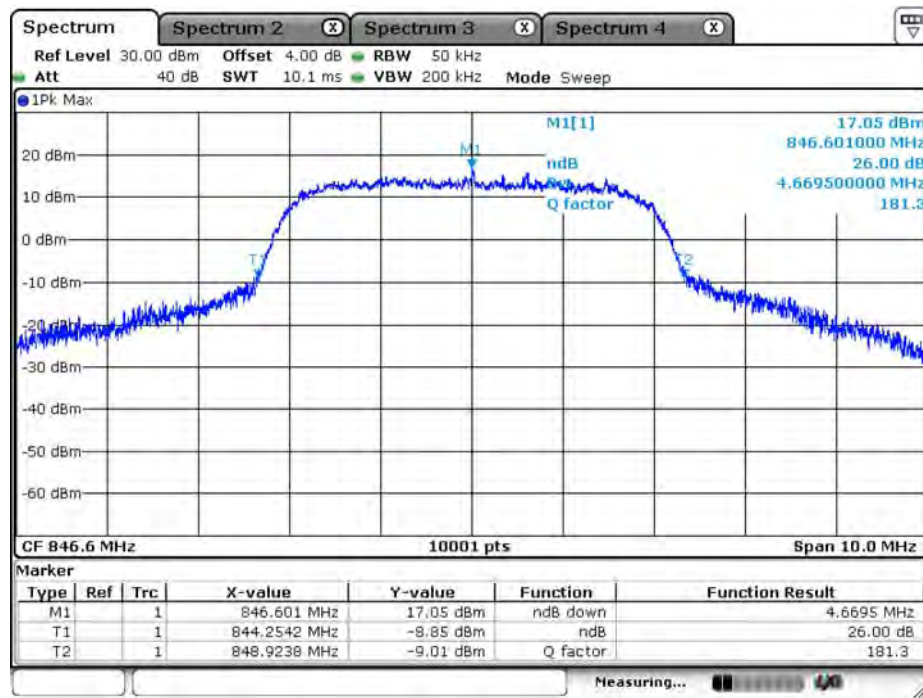
WCDMA_Band 5_HSDPA_826.4MHz_26dB BW



WCDMA_Band 5_HSDPA_836.6MHz_26dB BW

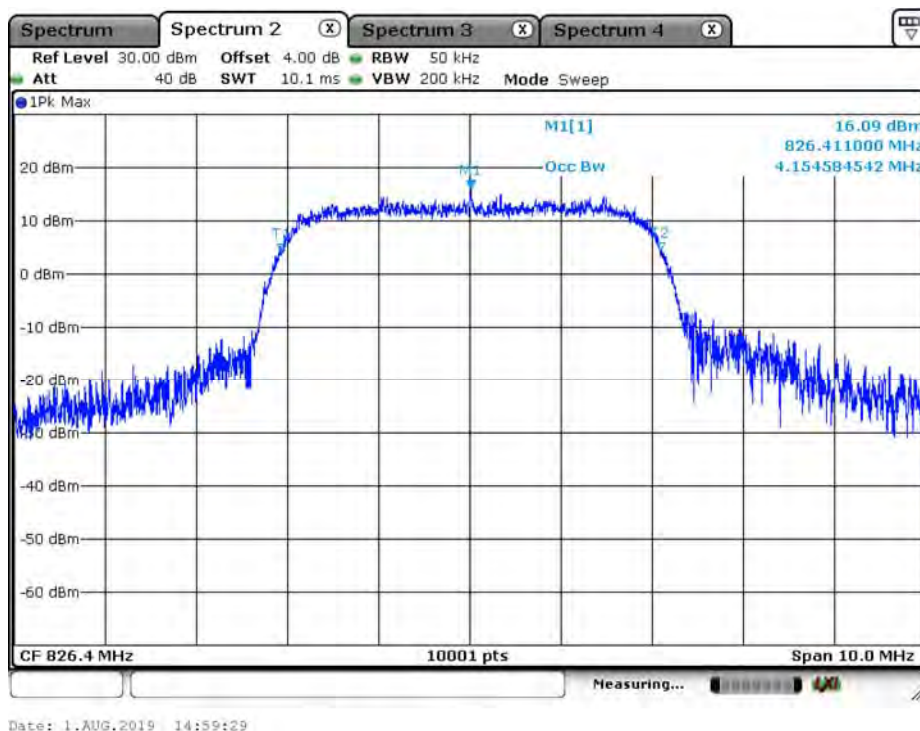


WCDMA_Band 5_HSDPA_846.6MHz_26dB BW

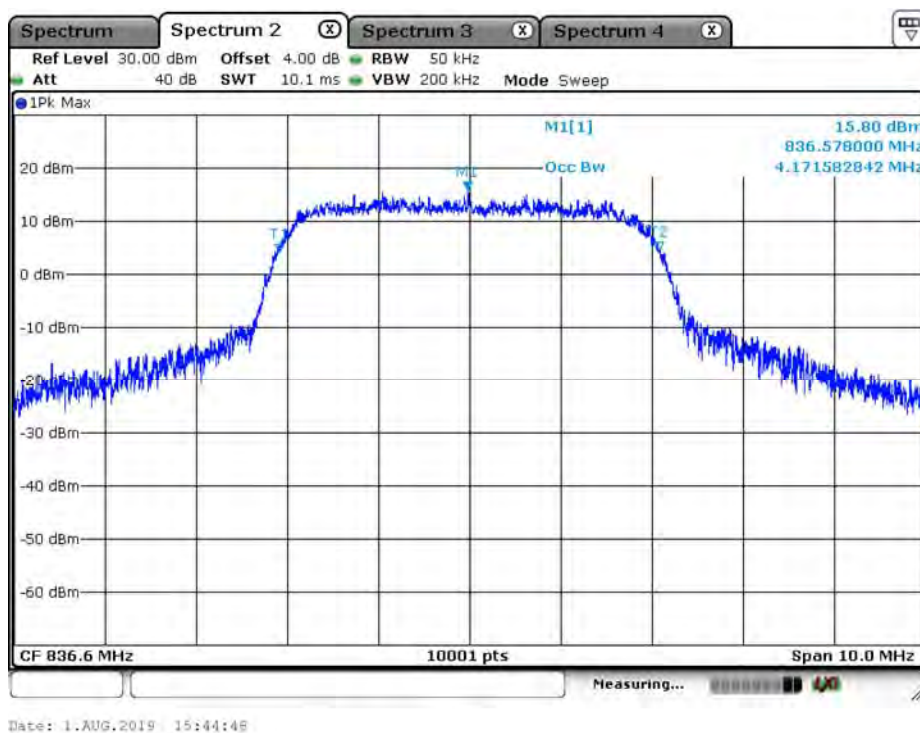


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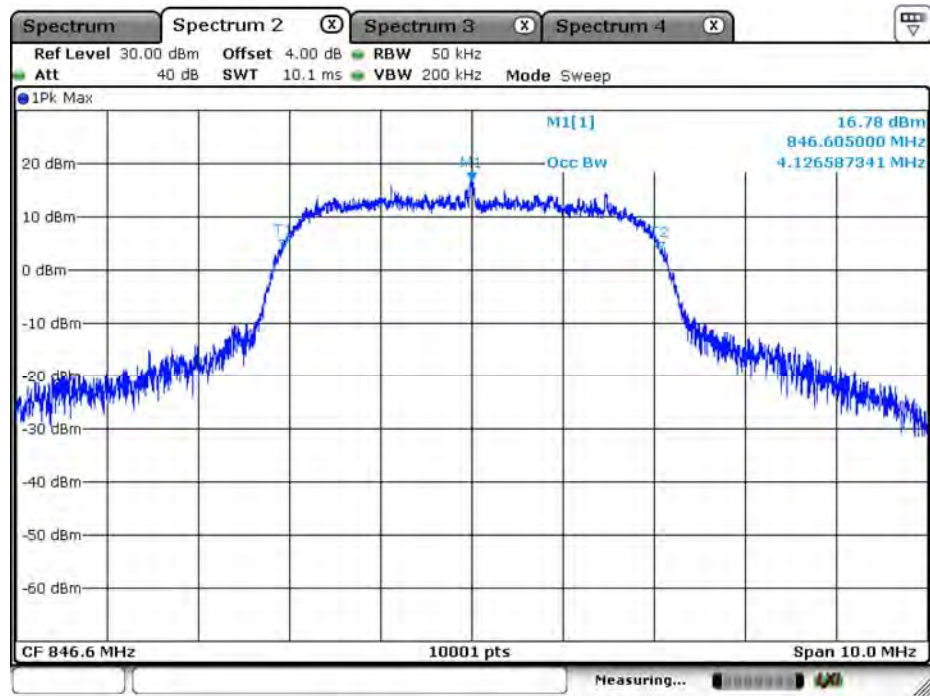
WCDMA_Band 5_HSDPA_826.4MHz_99% BW



WCDMA_Band 5_HSDPA_836.6MHz_99% BW



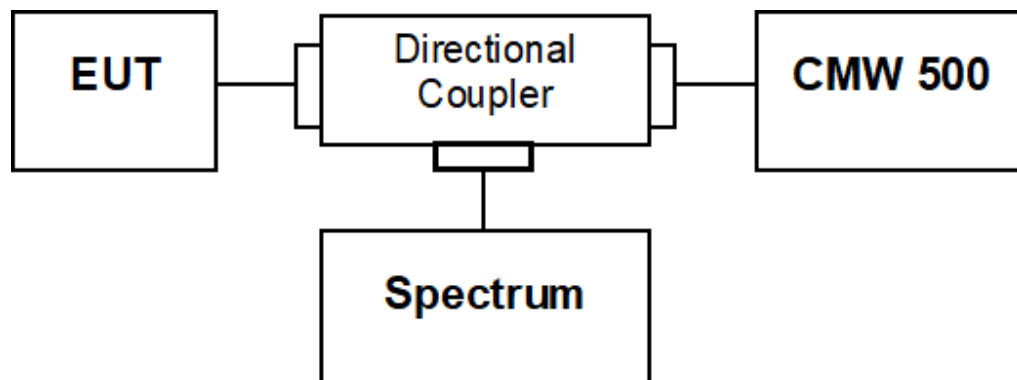
WCDMA_Band 5_HSDPA_846.6MHz_99% BW



Date: 1.AUG.2019 16:02:25

5. Peak To Average Ratio

5.1. Test Setup



5.2. Test Procedure

1. Set resolution/measurement bandwidth $\geq$ 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 %.

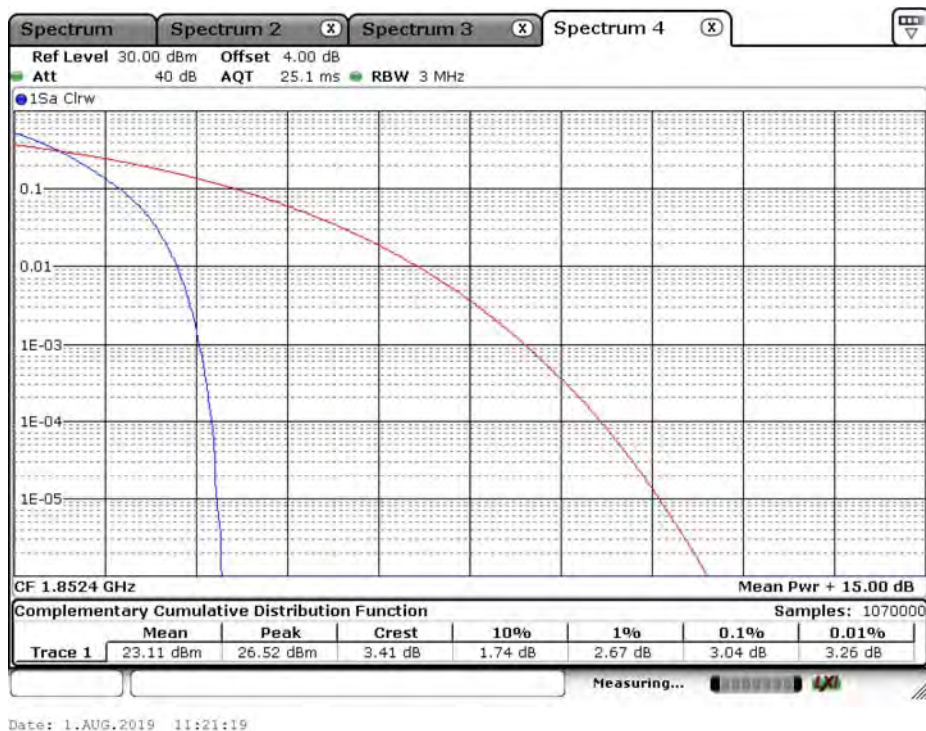
5.3. Test Method

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause 5.7.2
ANSI C63.26-2015 Sub-clause 5.2.3.4

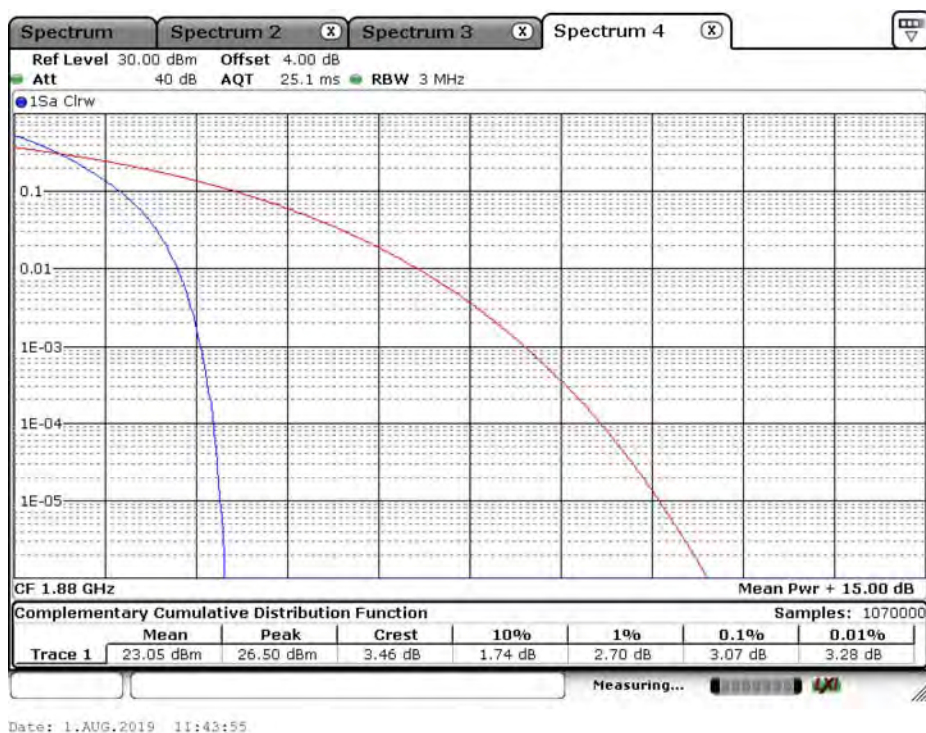
5.4. Test Result

Product	Module		
Test Item	Peak To Average Ratio		
Test Mode	Mode 1: WCDMA Band 2		
Date of Test	2019/08/01	Test Site	SR10-H

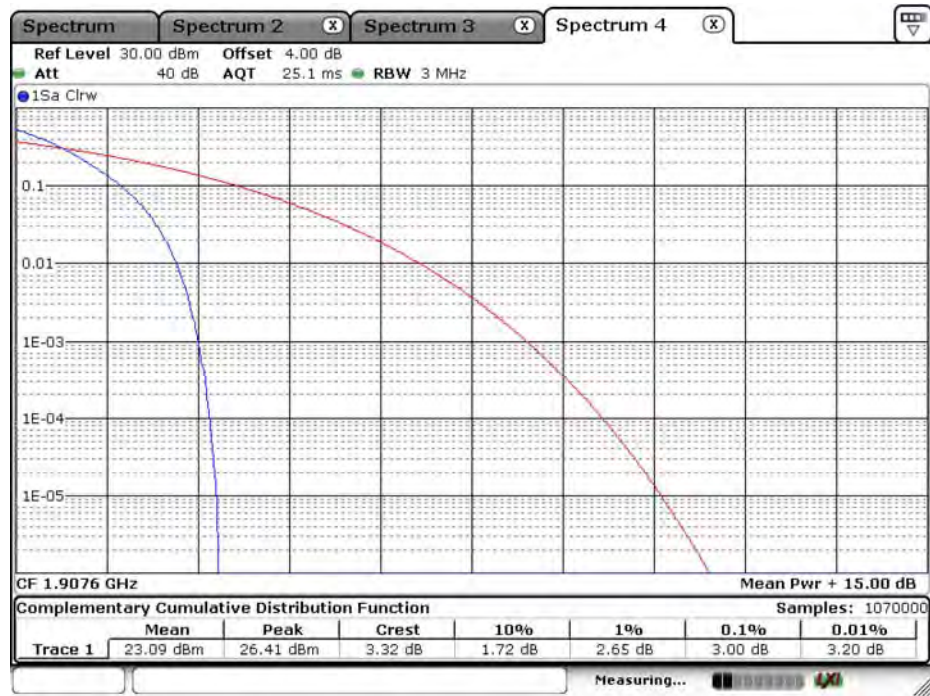
WCDMA_Band 2_RMC_1852.4MHz



WCDMA_Band 2_RMC_1880.0MHz

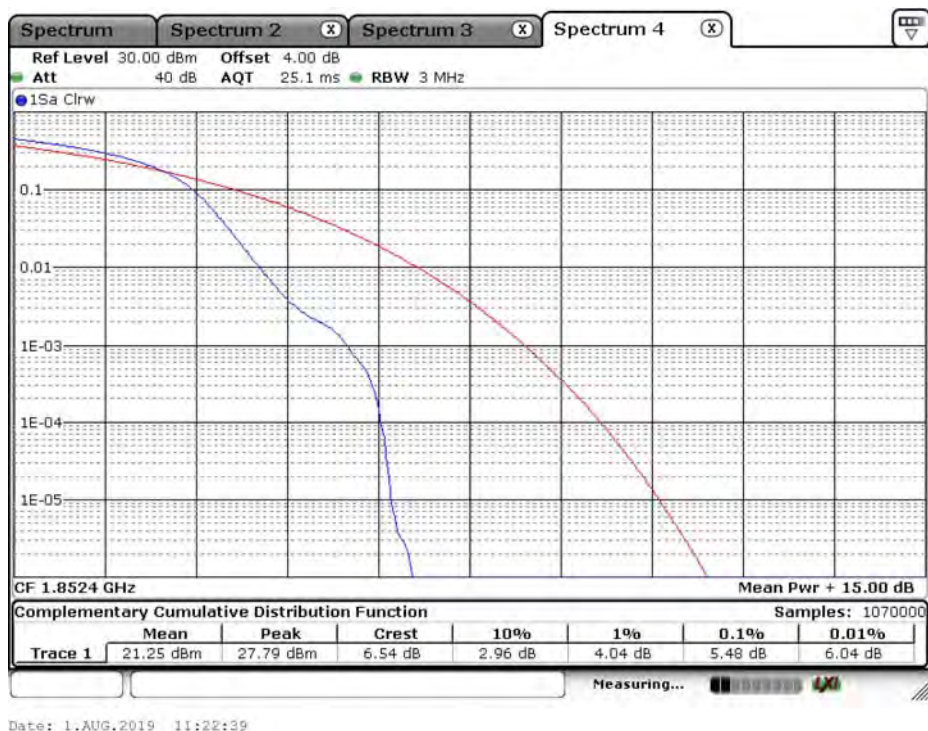


WCDMA_Band 2_RMC_1907.6MHz

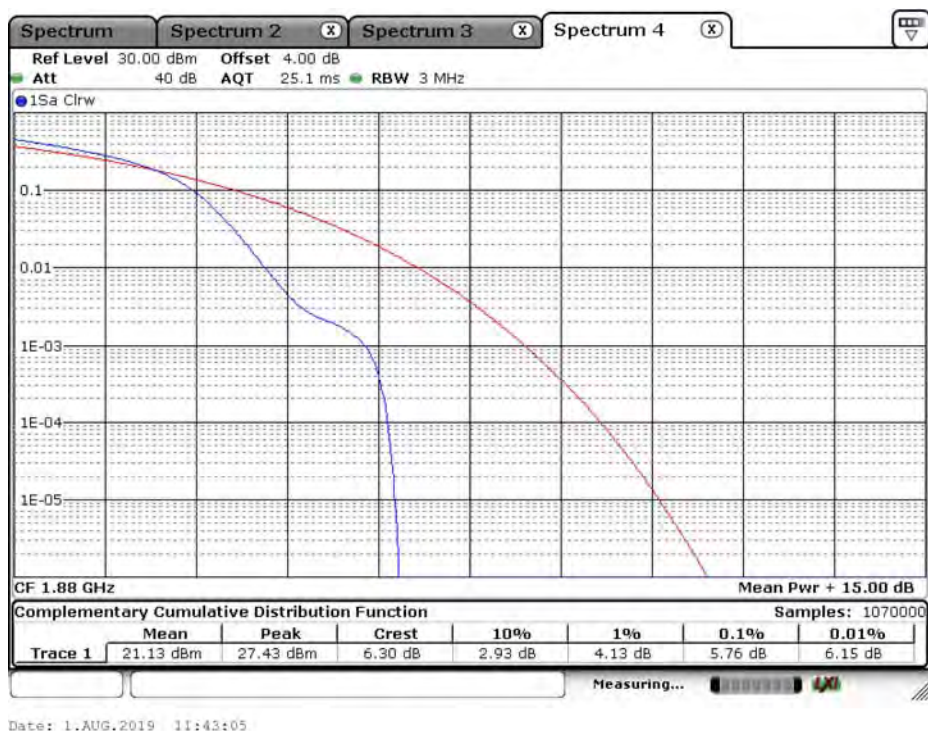


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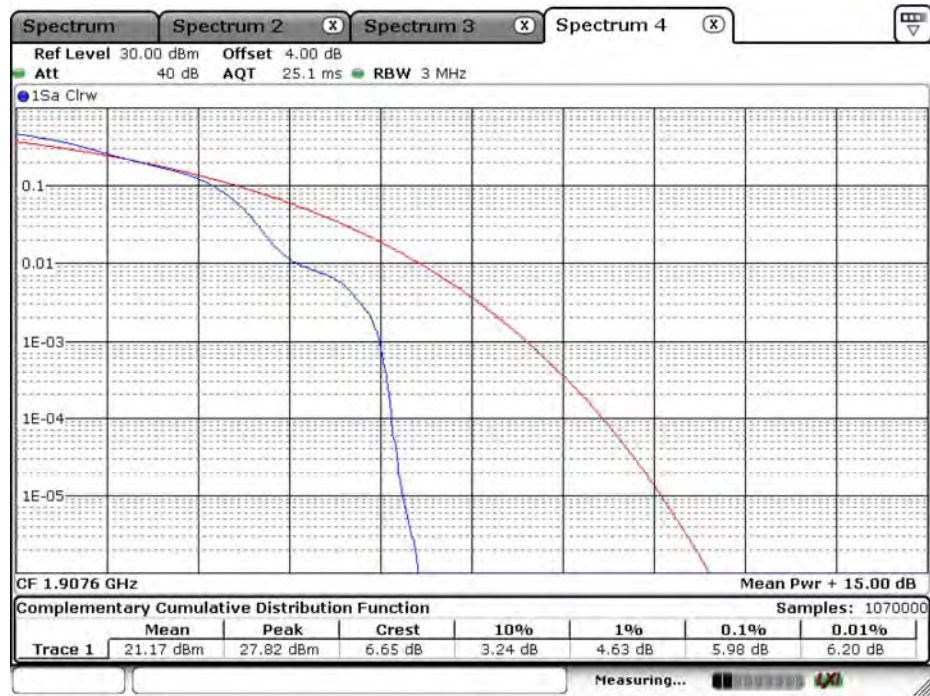
WCDMA_Band 2_HSUPA_1852.4MHz



WCDMA_Band 2_HSUPA_1880.0MHz



WCDMA_Band 2_HSUPA_1907.6MHz

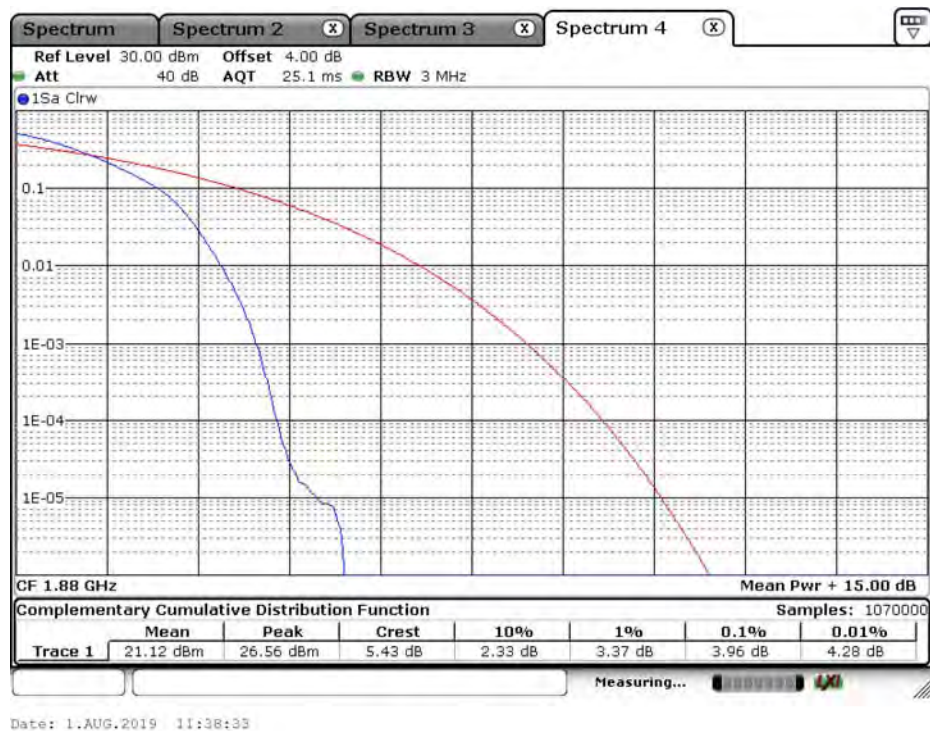


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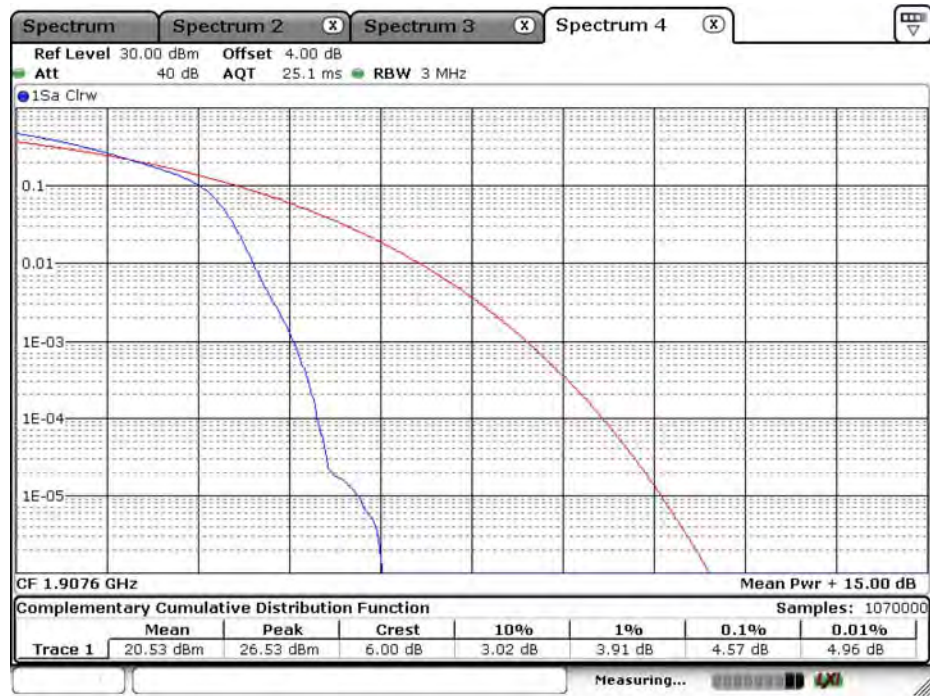
WCDMA_Band 2_HSDPA_1852.4MHz



WCDMA_Band 2_HSDPA_1880.0MHz



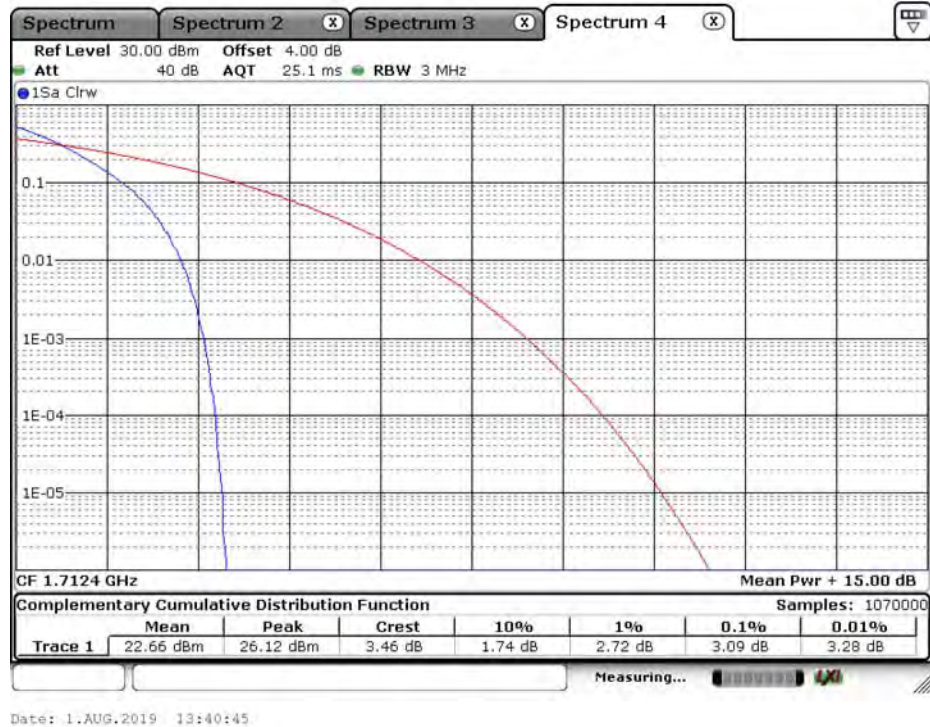
WCDMA_Band 2_HSDPA_1907.6MHz



Date: 1.AUG.2019 11:57:55

Product	Module		
Test Item	Peak To Average Ratio		
Test Mode	Mode 2: WCDMA Band 4		
Date of Test	2019/08/01	Test Site	SR10-H

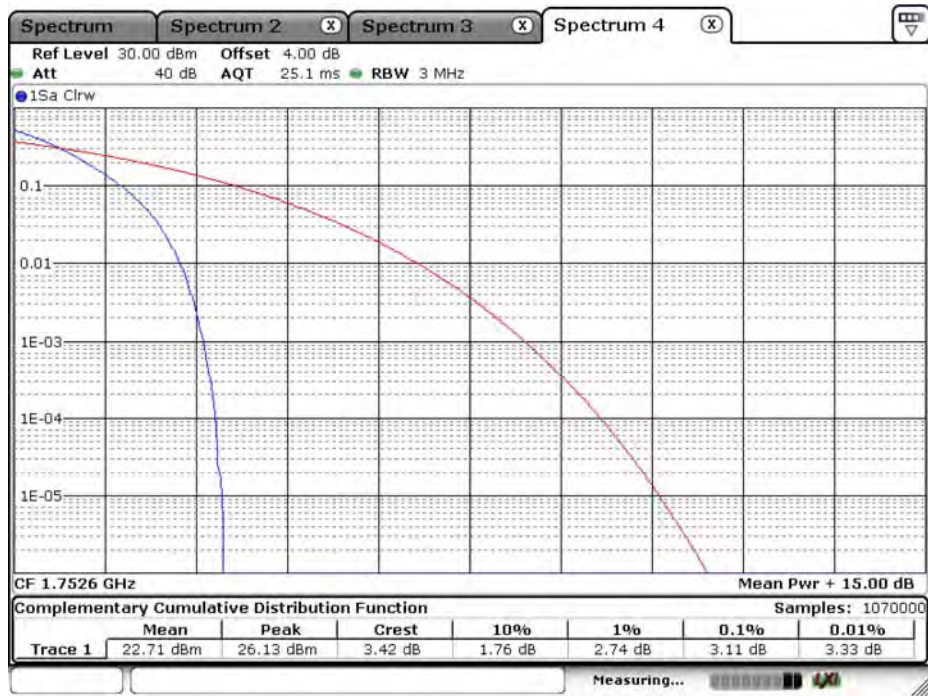
WCDMA_Band 4_RMC_1712.4MHz



WCDMA_Band 4_RMC_1732.6MHz



WCDMA_Band 4_RMC_1752.6MHz

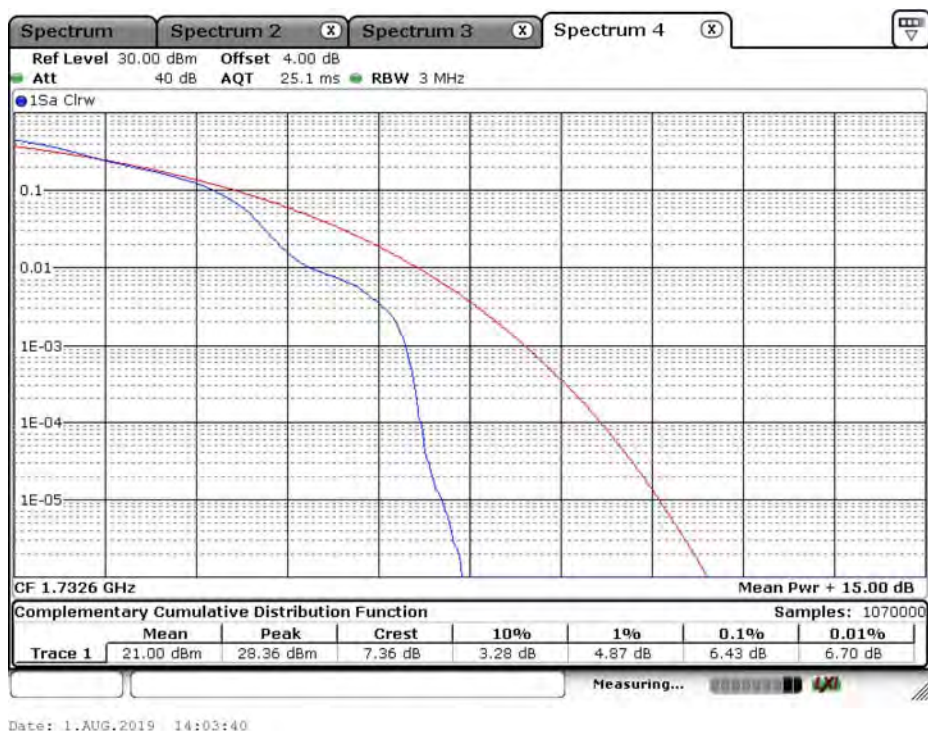


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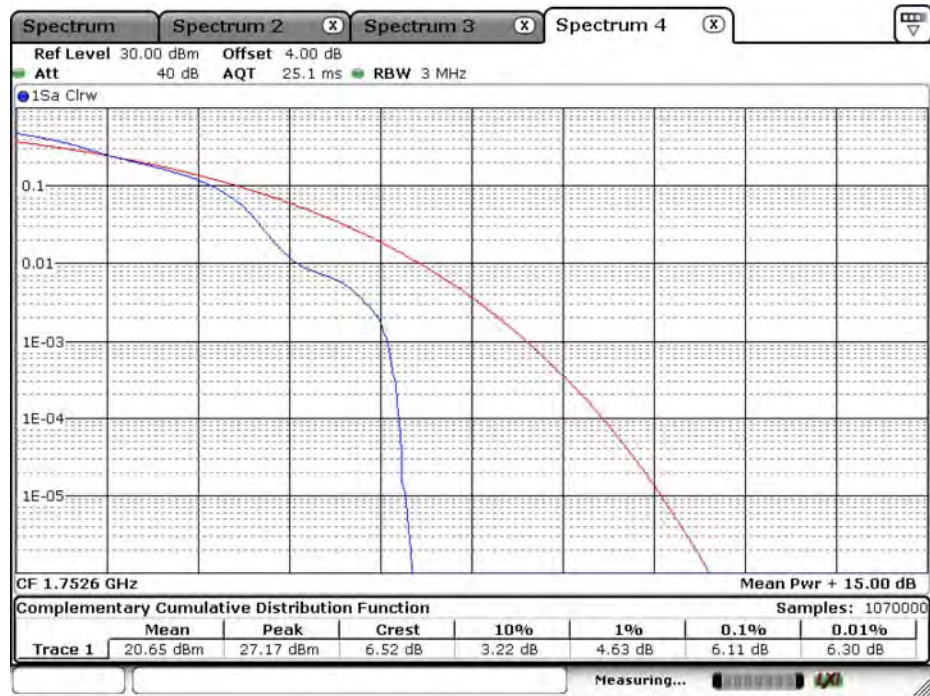
WCDMA_Band 4_HSUPA_1712.4MHz



WCDMA_Band 4_HSUPA_1732.6MHz

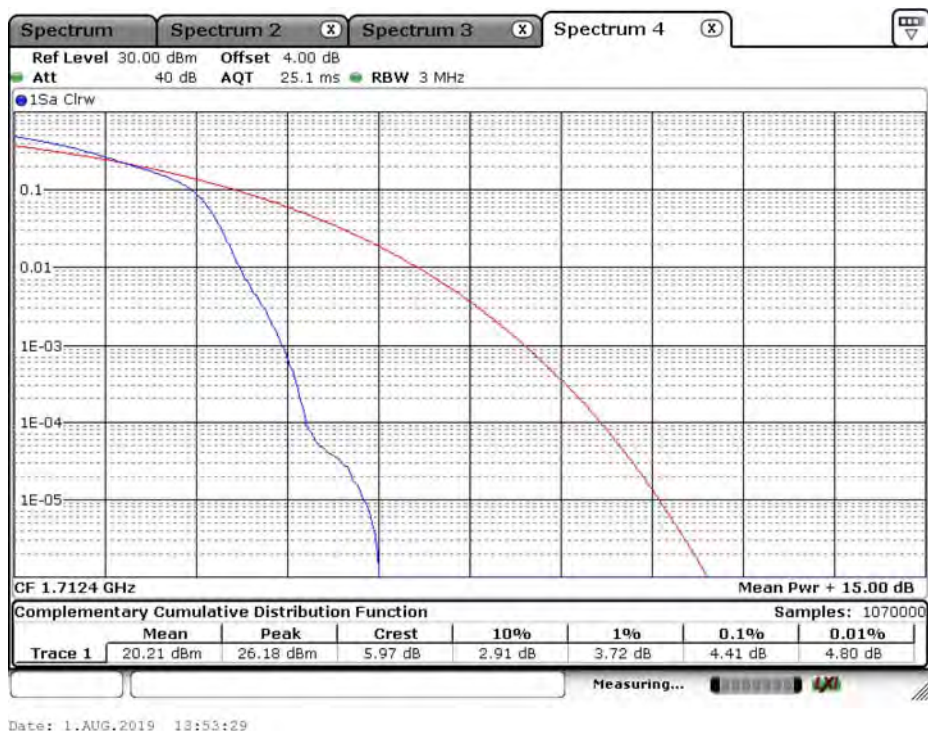


WCDMA_Band 4_HSUPA_1752.6MHz



Date: 1.AUG.2019 14:12:22

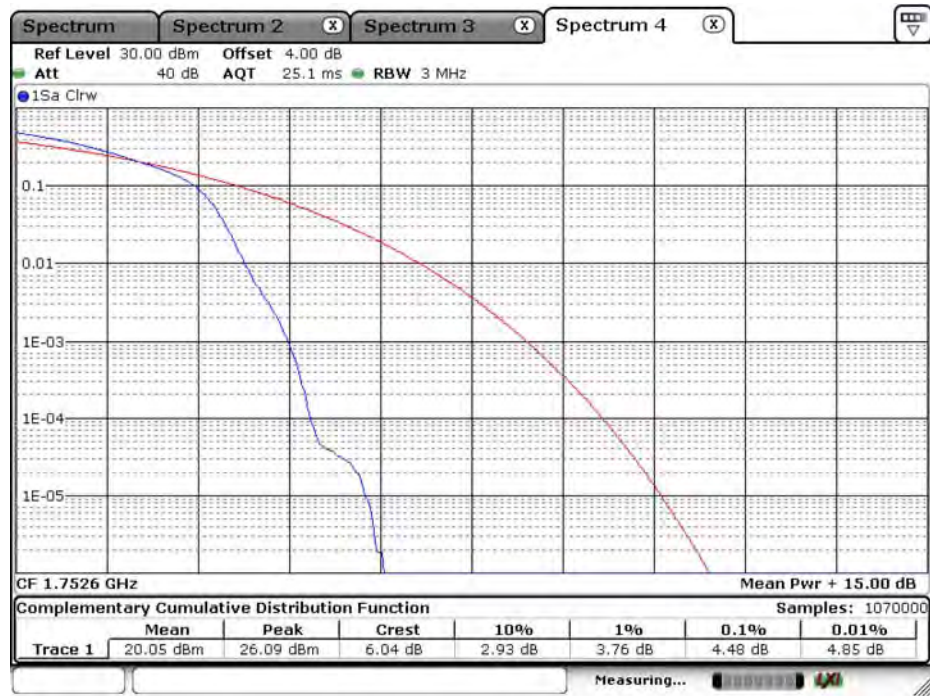
WCDMA_Band 4_HSDPA_1712.4MHz



WCDMA_Band 4_HSDPA_1732.6MHz



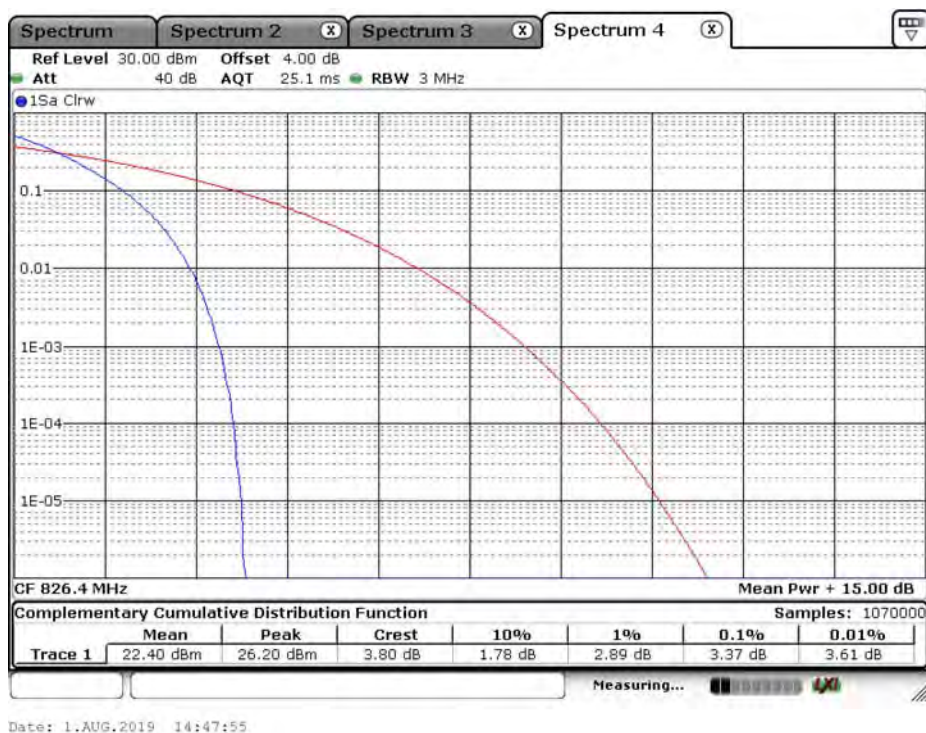
WCDMA_Band 4_HSDPA_1752.6MHz



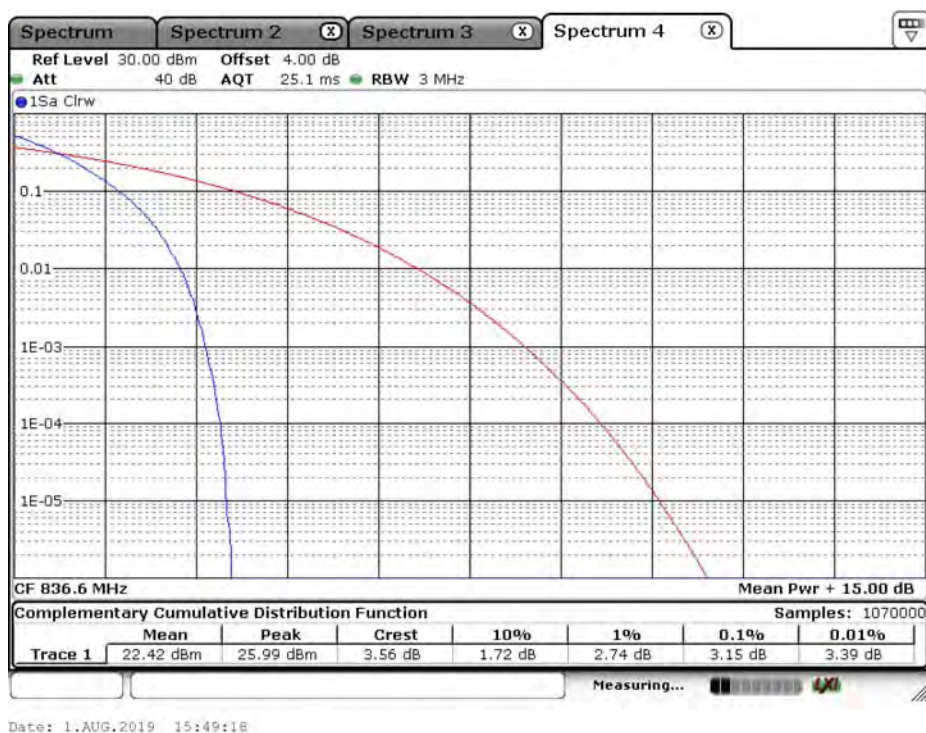
Date: 1.AUG.2019 14:18:15

Product	Module		
Test Item	Peak To Average Ratio		
Test Mode	Mode 3: WCDMA Band 5		
Date of Test	2019/08/01	Test Site	SR10-H

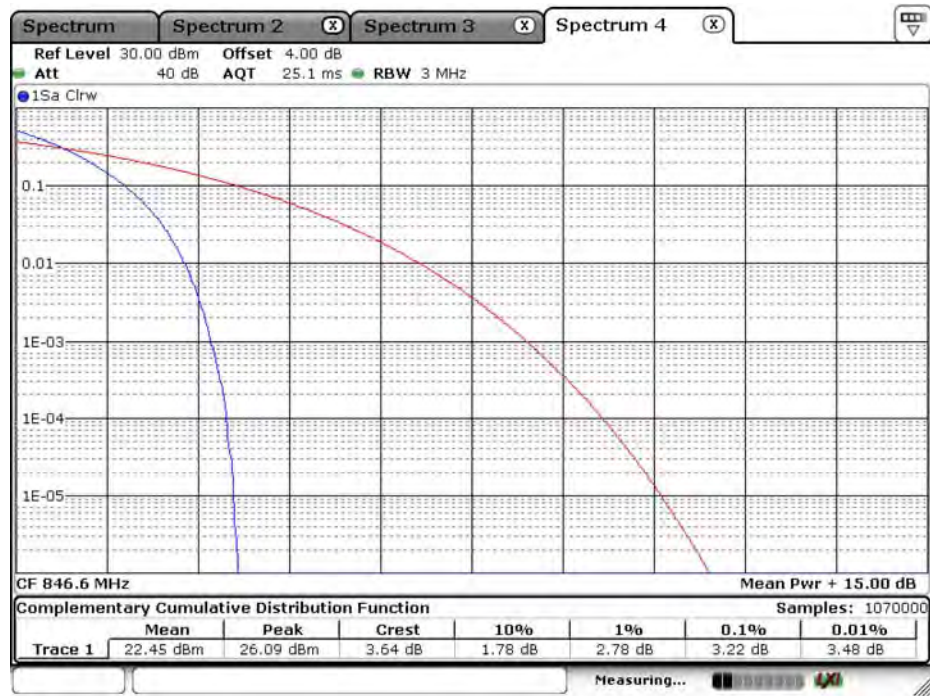
WCDMA_Band 5_RMC_826.4MHz



WCDMA_Band 5_RMC_836.6MHz



WCDMA_Band 5_RMC_846.6MHz

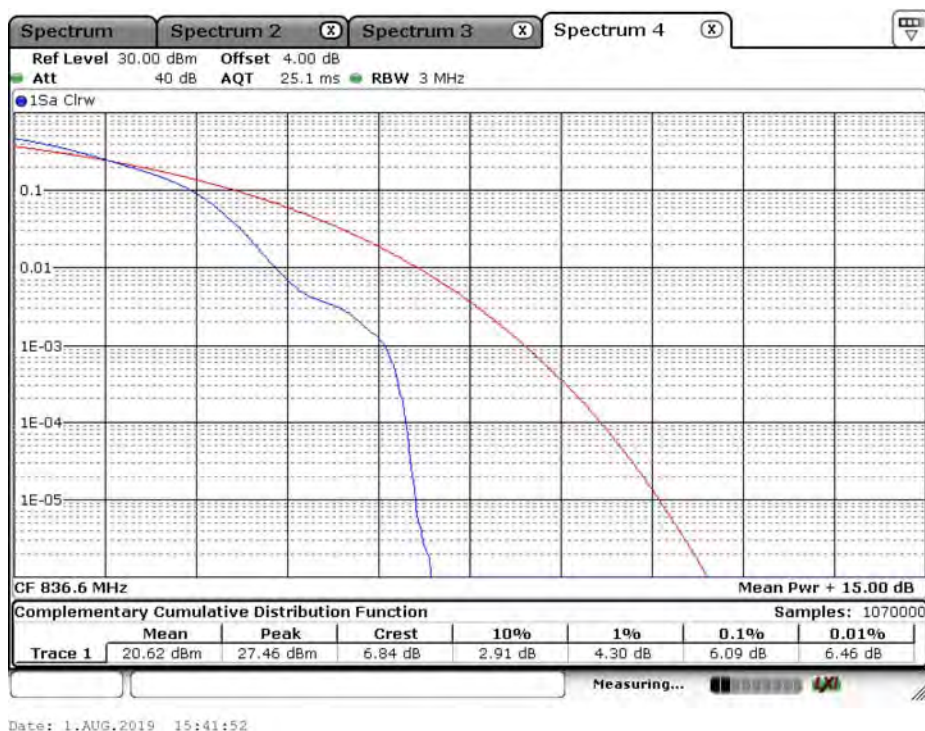


Date: 1.AUG.2019 15:55:56

WCDMA_Band 5_HSUPA_826.4MHz



WCDMA_Band 5_HSUPA_836.6MHz



WCDMA_Band 5_HSUPA_846.6MHz

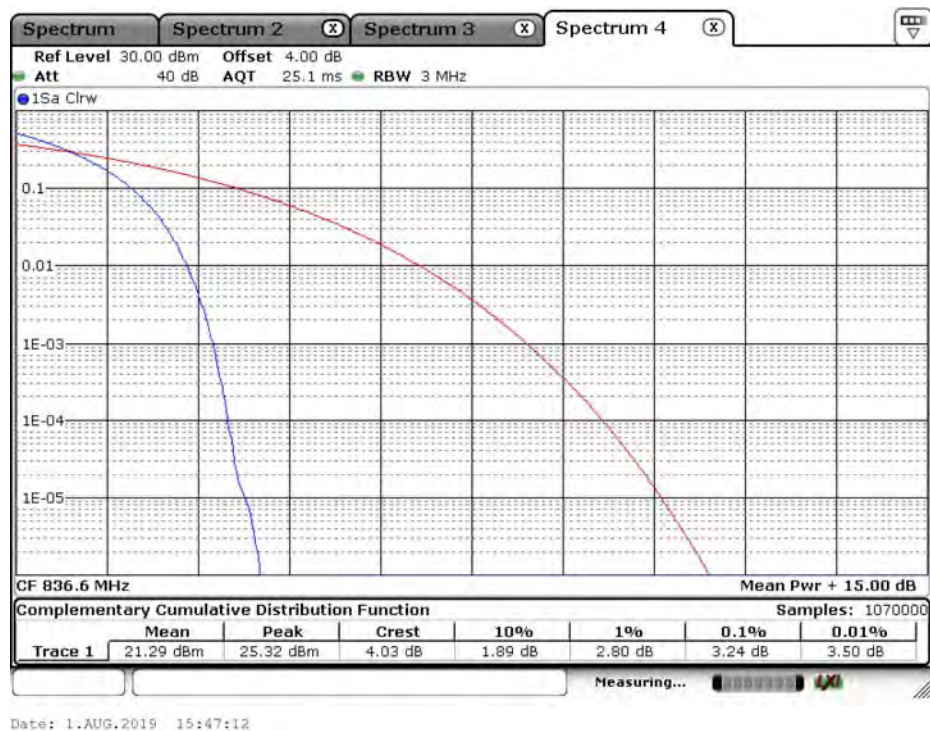


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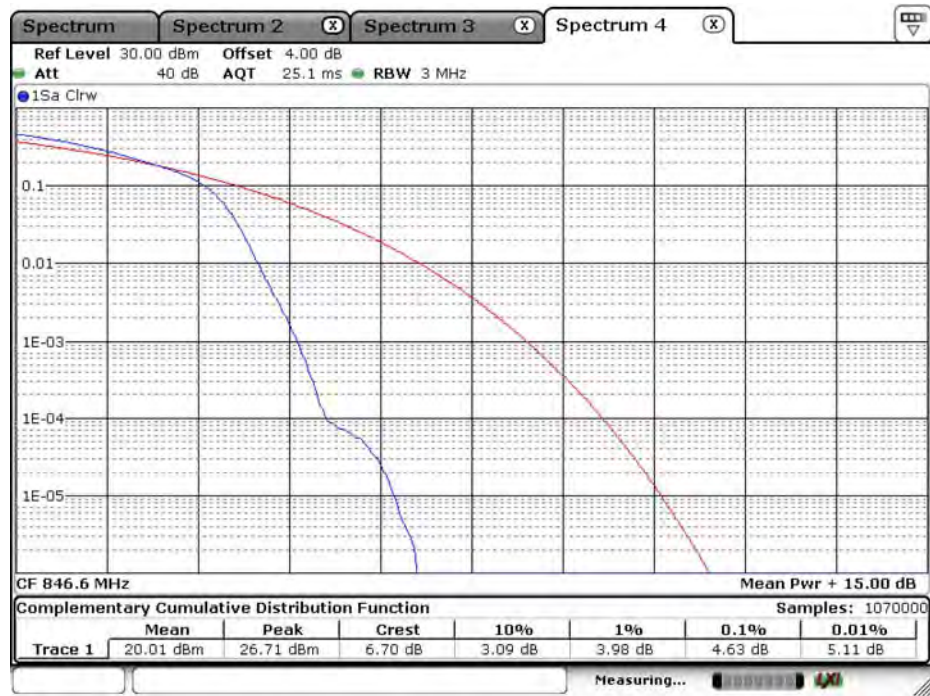
WCDMA_Band 5_HSDPA_826.4MHz



WCDMA_Band 5_HSDPA_836.6MHz



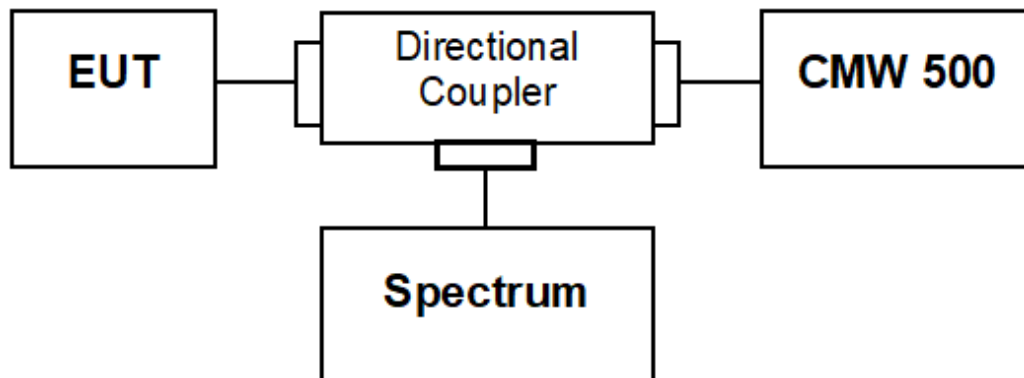
WCDMA_Band 5_HSDPA_846.6MHz



Date: 1.AUG.2019 15:48:12

6. Conducted Band Edge

6.1. Test Setup



6.2. 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.

6.3. Test Method

Conducted Spurious Measurement:

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause 6.1

ANSI C63.26: 2015 Sub-clause 5.7

Radiated Spurious Measurement:

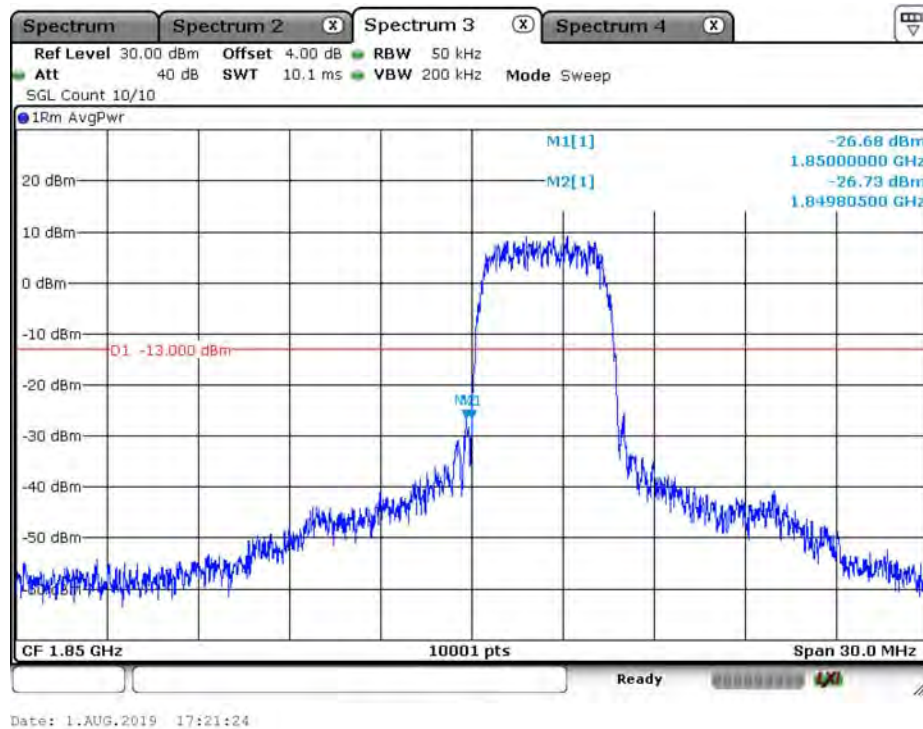
KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause 5.8

ANSI C63.26: 2015 Sub-clause 5.5.3.2

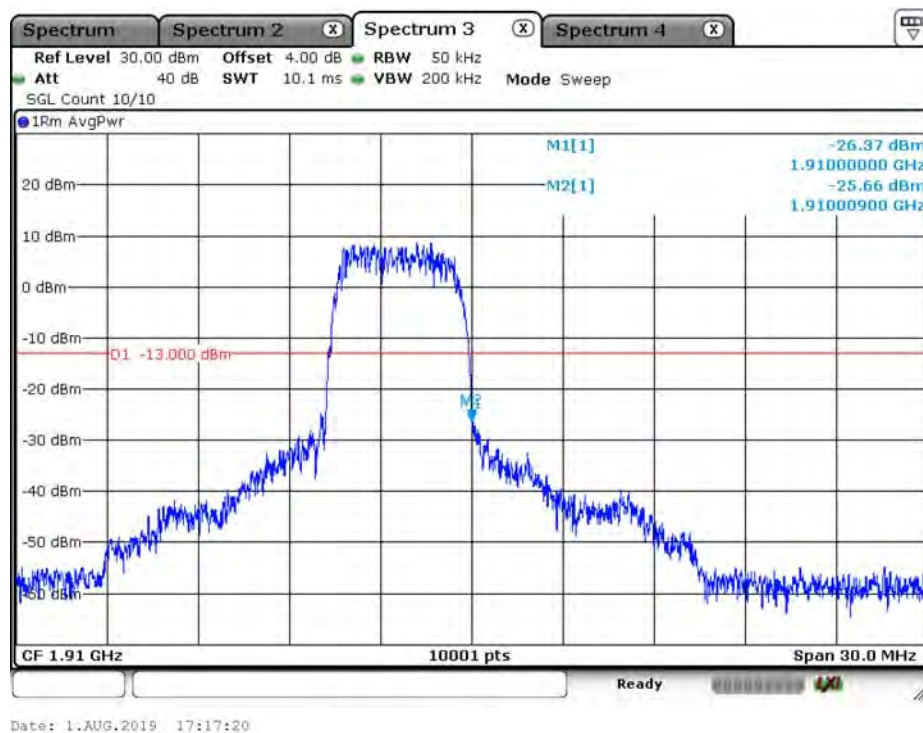
6.4. Test Result

Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 1: WCDMA Band 2		
Date of Test	2019/08/01	Test Site	SR10-H

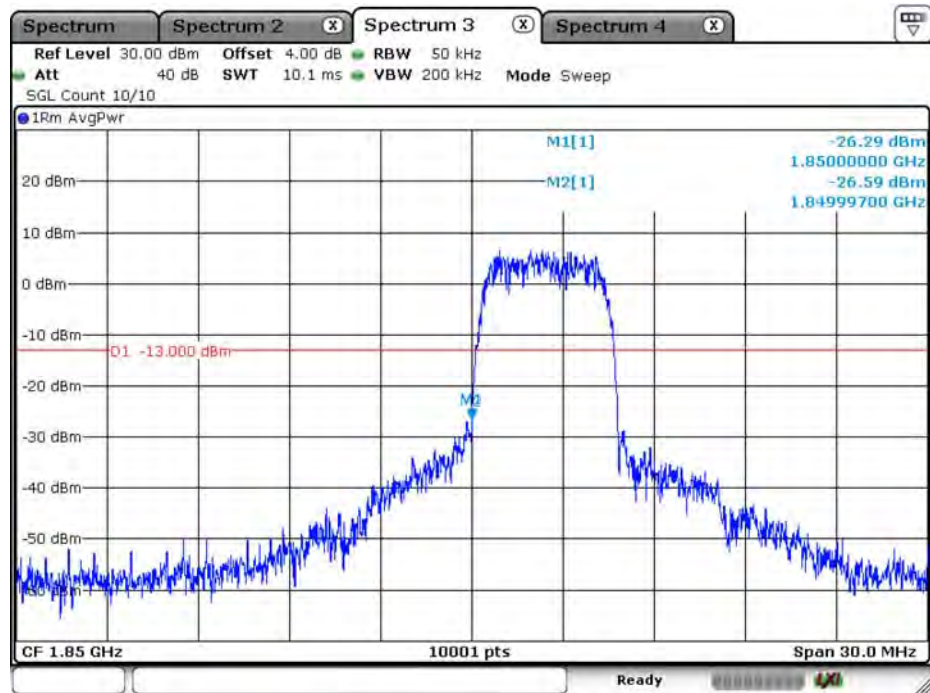
WCDMA_Band2_RMC_1852.4



WCDMA_Band2_RMC_1907.6

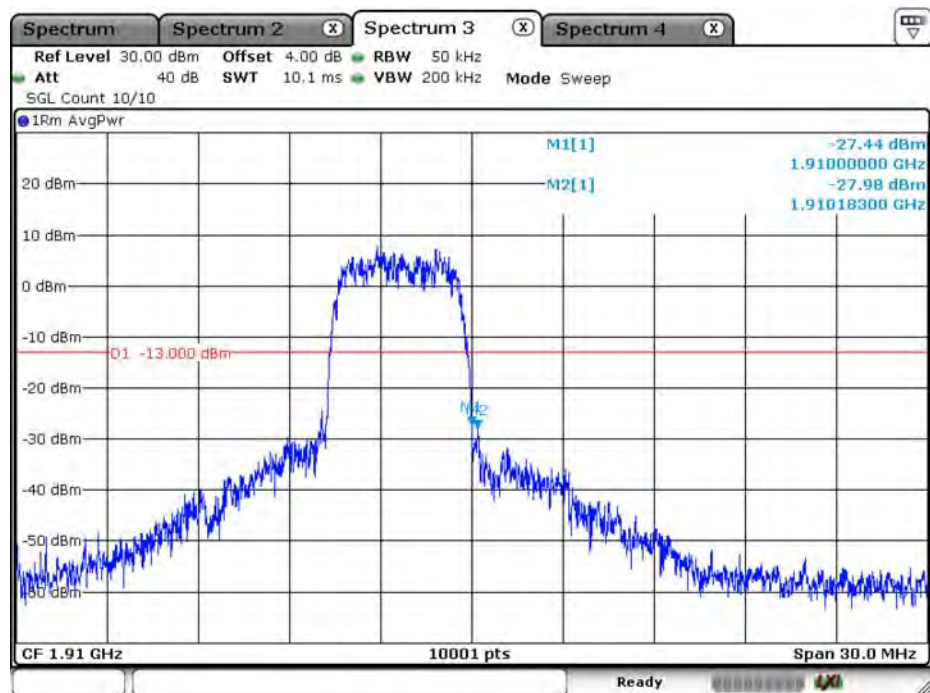


WCDMA_Band2_HSUPA_1852.4



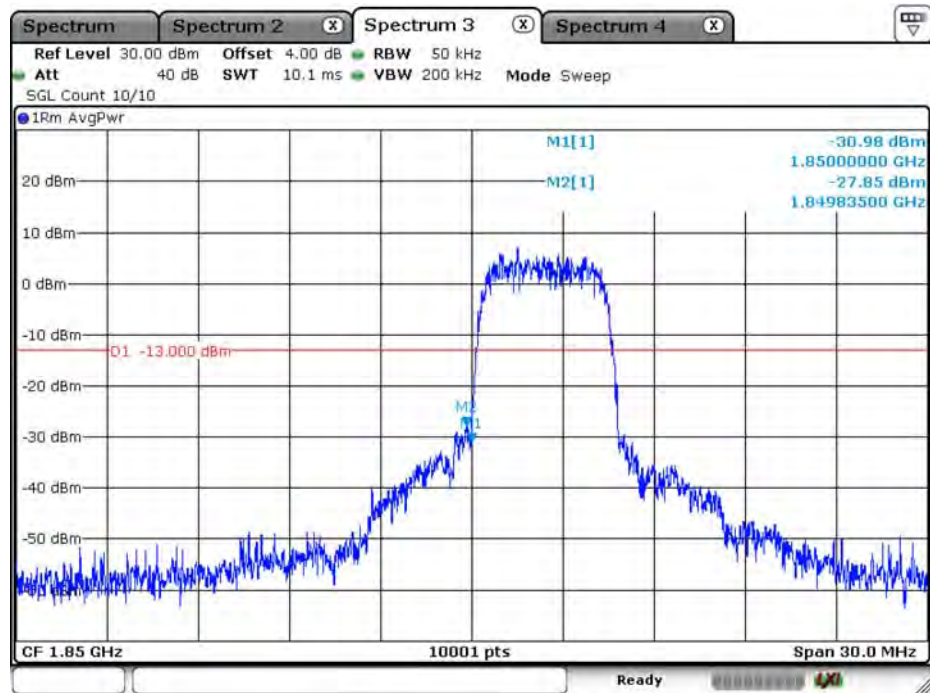
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WCDMA_Band2_HSUPA_1907.6



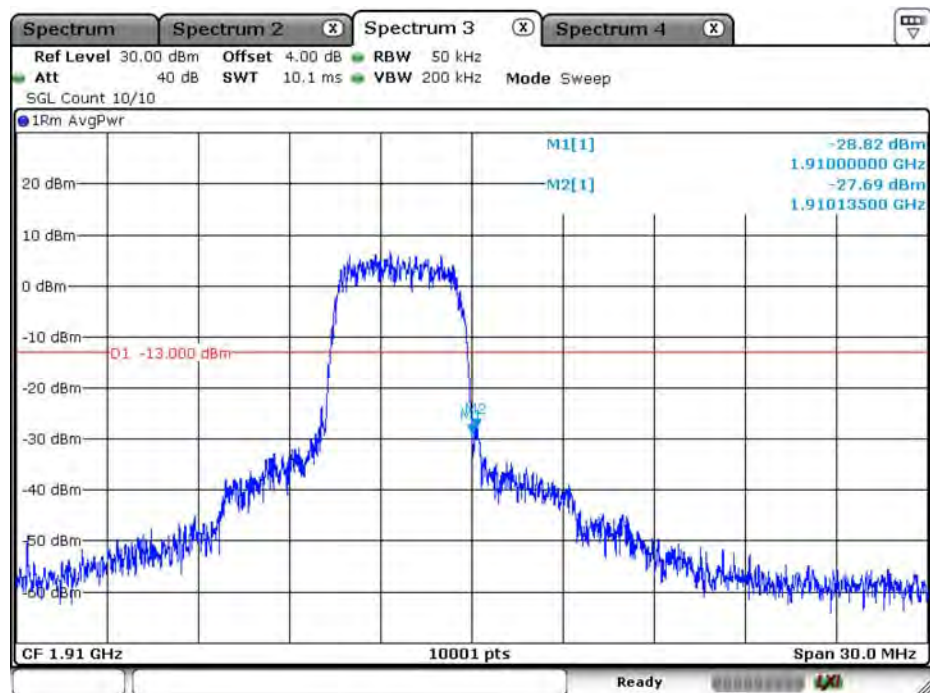
Date: 1.AUG.2019 17:18:02

WCDMA_Band2_HSDPA_1852.4



Date: 1.AUG.2019 17:19:46

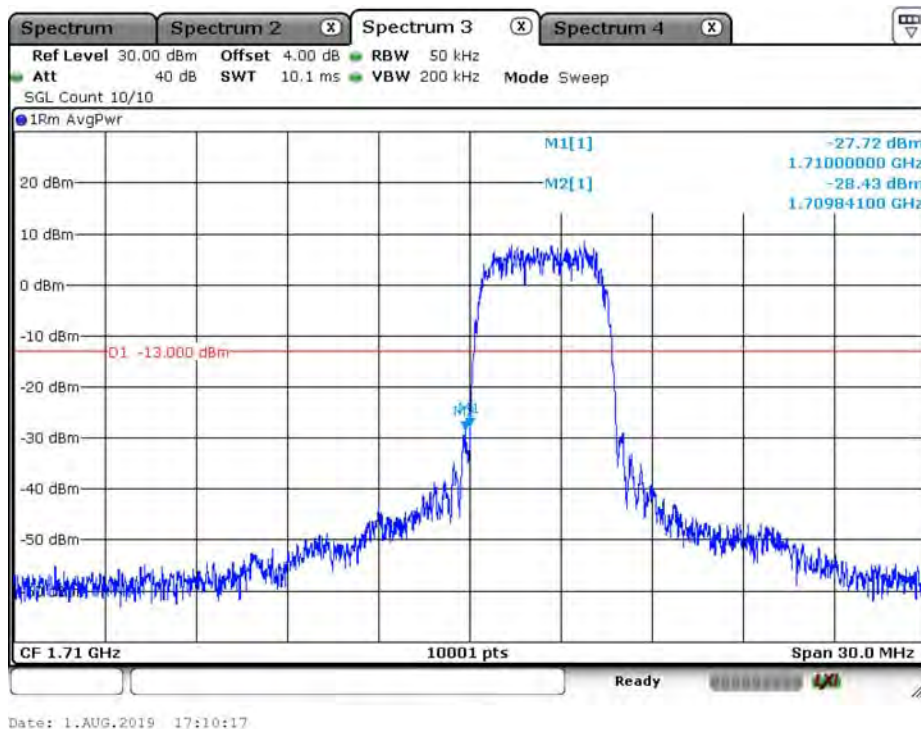
WCDMA_Band2_HSDPA_1907.6



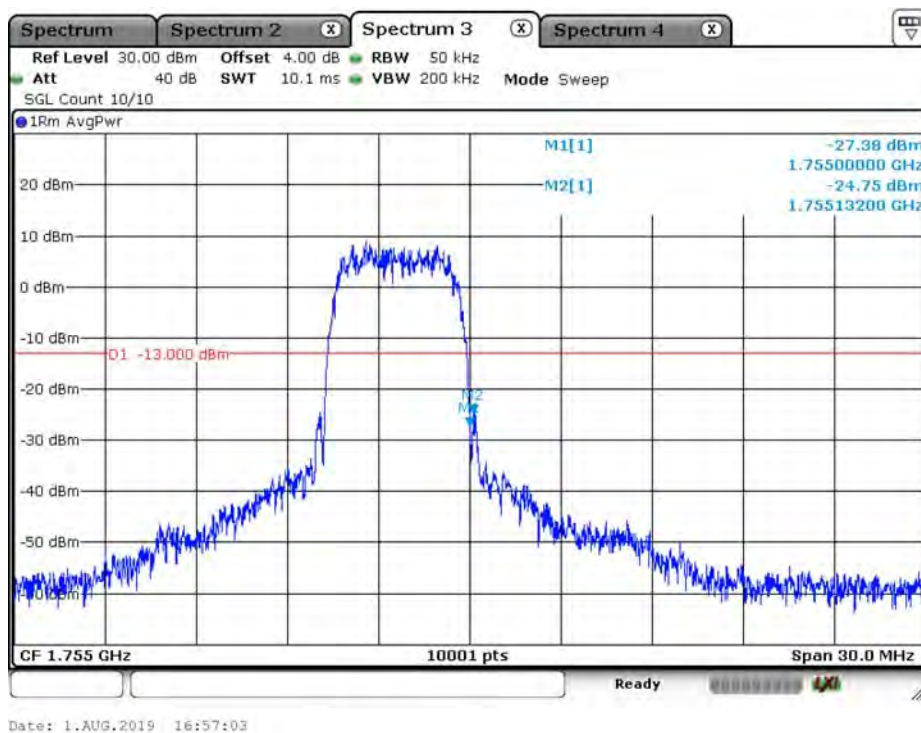
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Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 2: WCDMA Band 4		
Date of Test	2019/08/01	Test Site	SR10-H

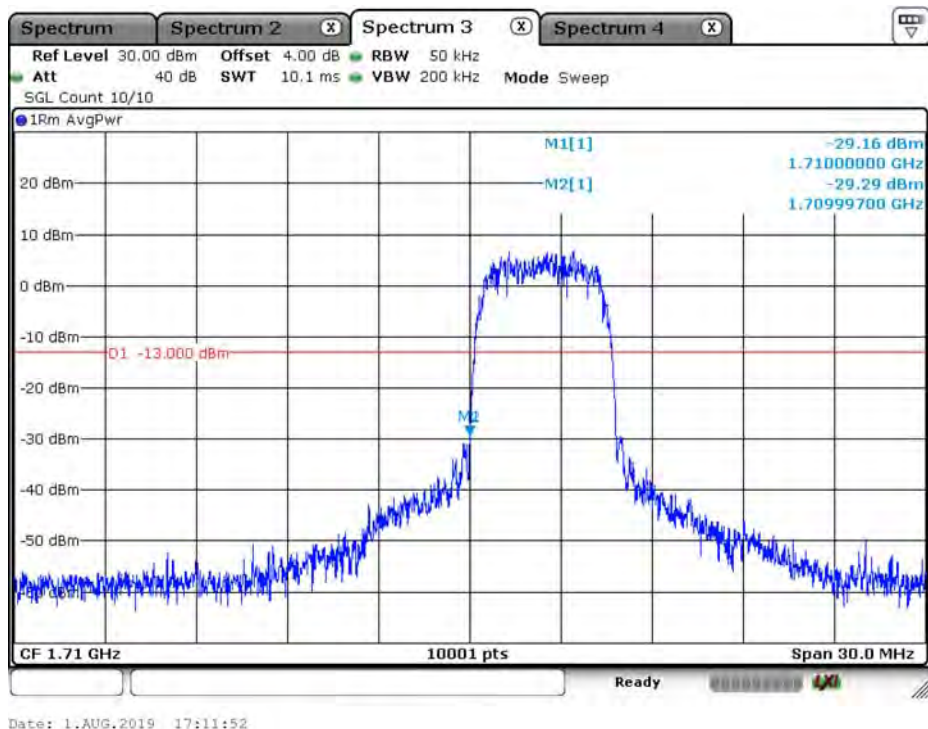
WCDMA_Band4_RMC_1712.4



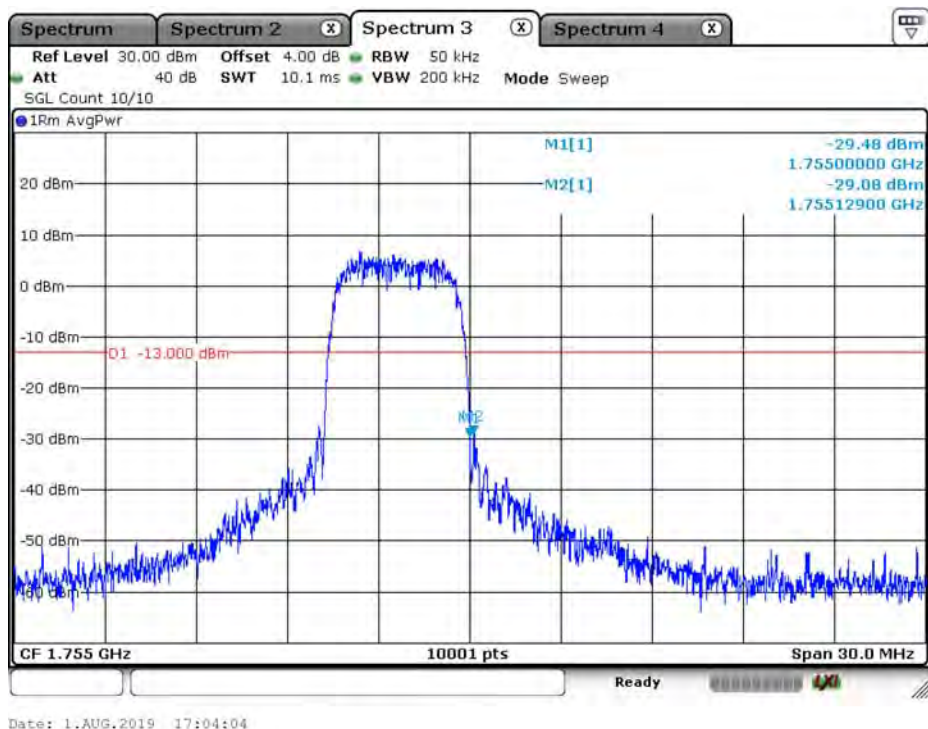
WCDMA_Band4_RMC_1752.6



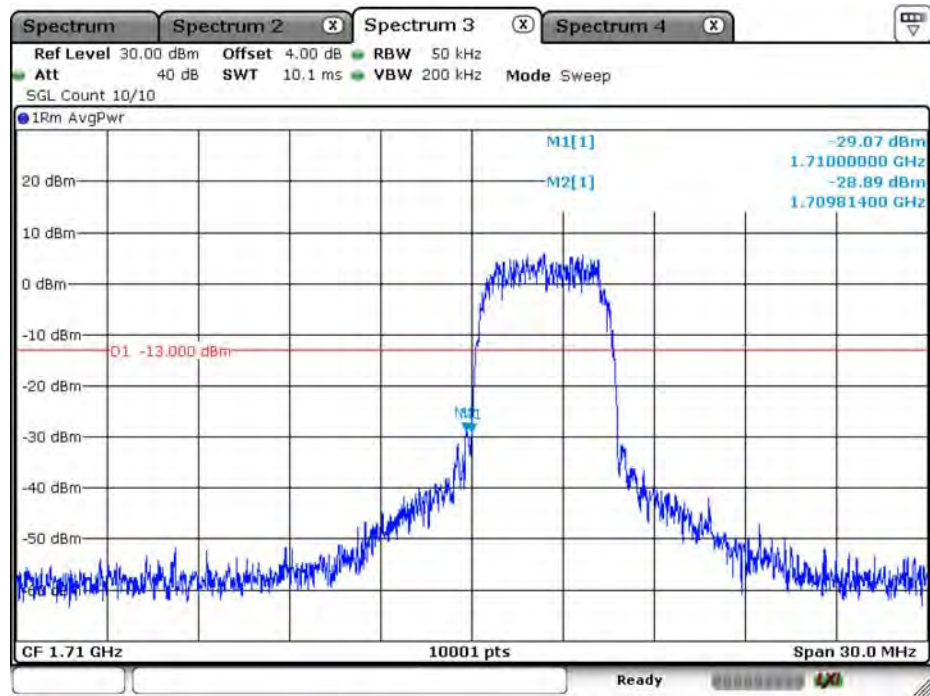
WCDMA_Band4_HSUPA_1712.4



WCDMA_Band4_HSUPA_1752.6

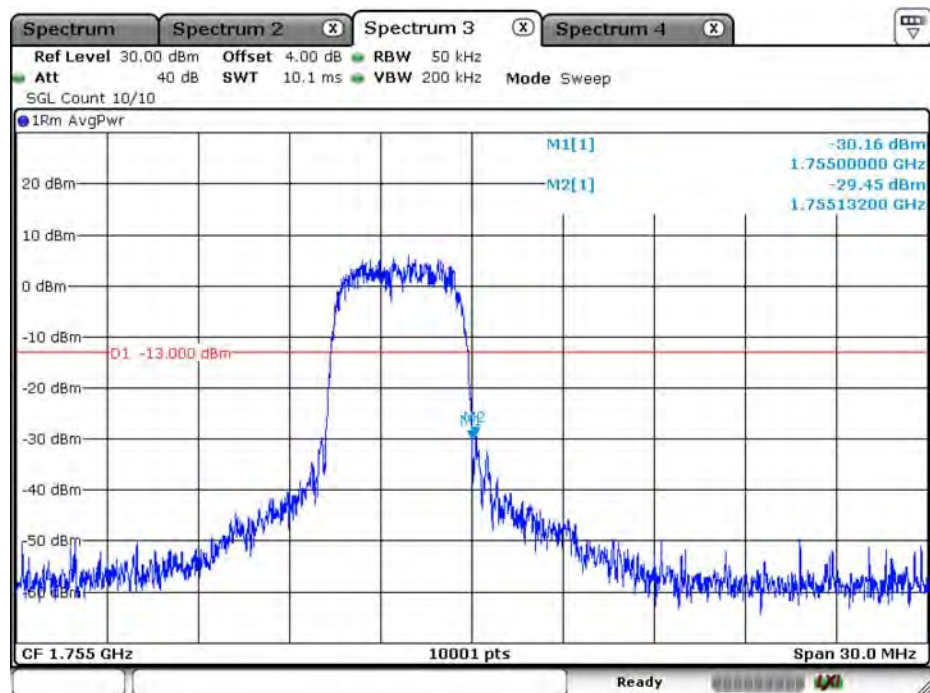


WCDMA_Band4_HSDPA_1712.6



Date: 1.AUG.2019 17:10:56

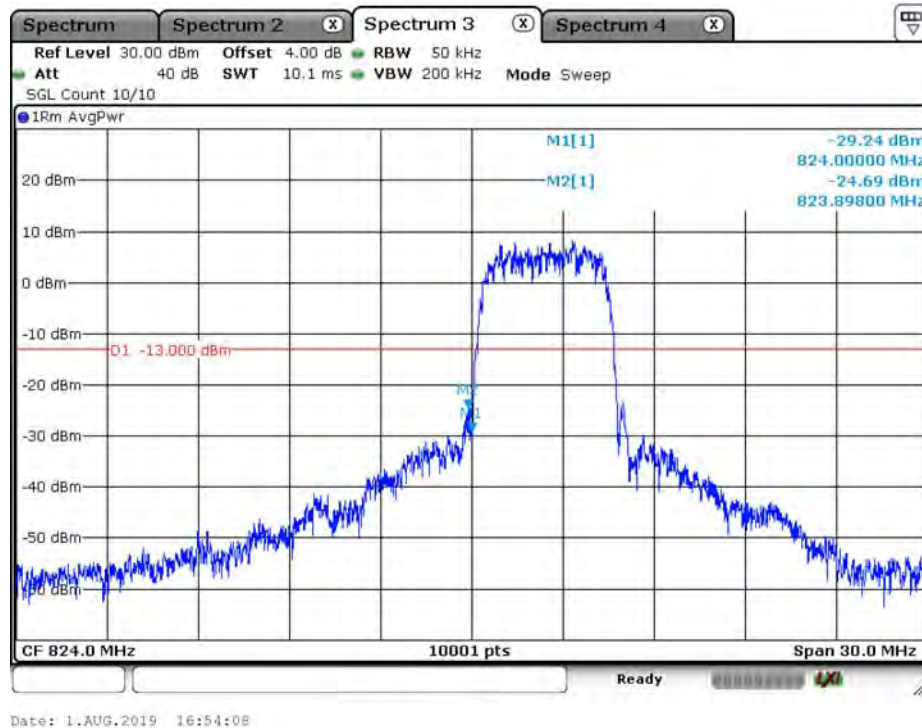
WCDMA_Band4_HSDPA_1752.6



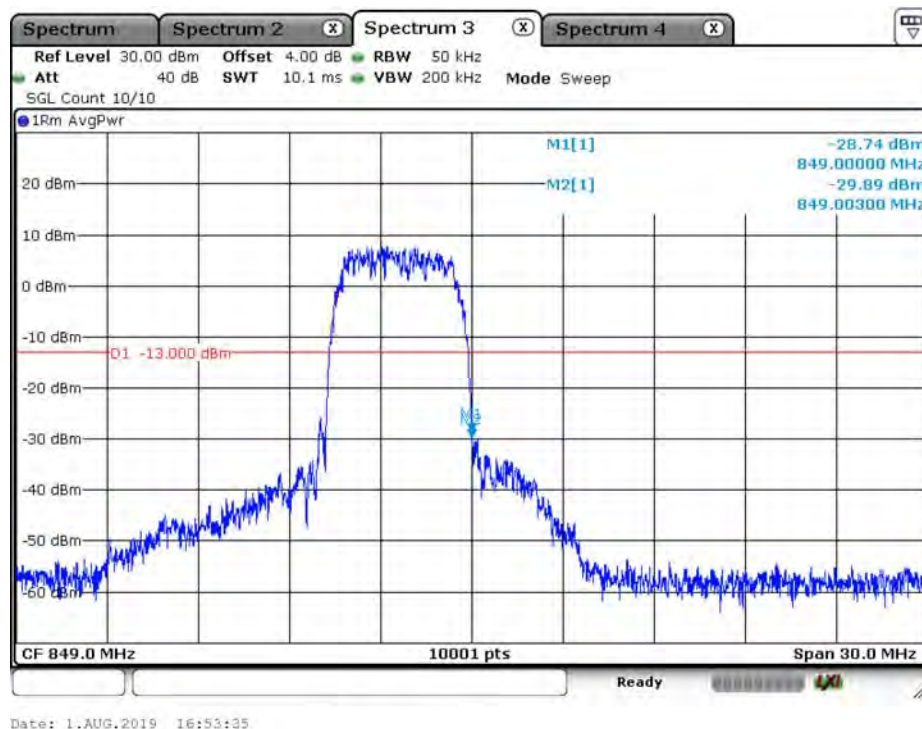
Date: 1.AUG.2019 17:04:32

Product	Module		
Test Item	Conducted Band Edge		
Test Mode	Mode 3: WCDMA Band 5		
Date of Test	2019/08/01	Test Site	SR10-H

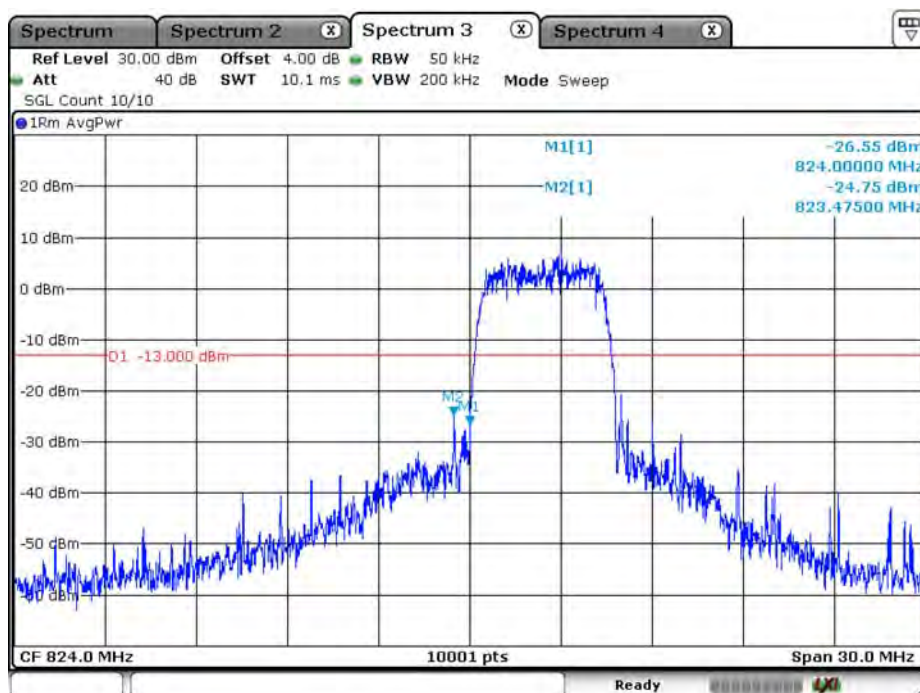
WCDMA_Band5_RMC_826.4



WCDMA_Band5_RMC_846.6

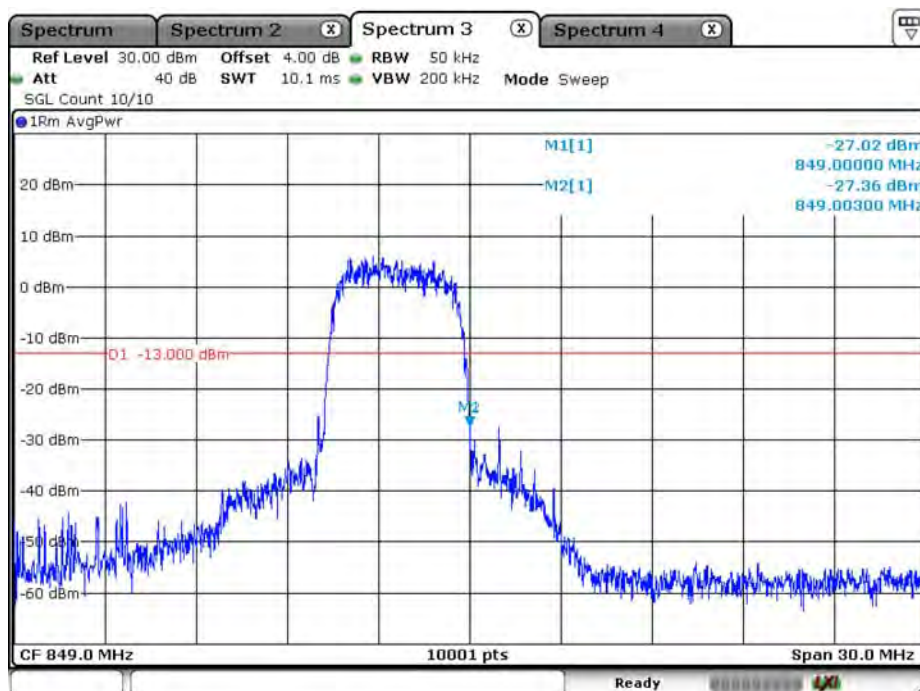


WCDMA_Band5_HSUPA_826.4



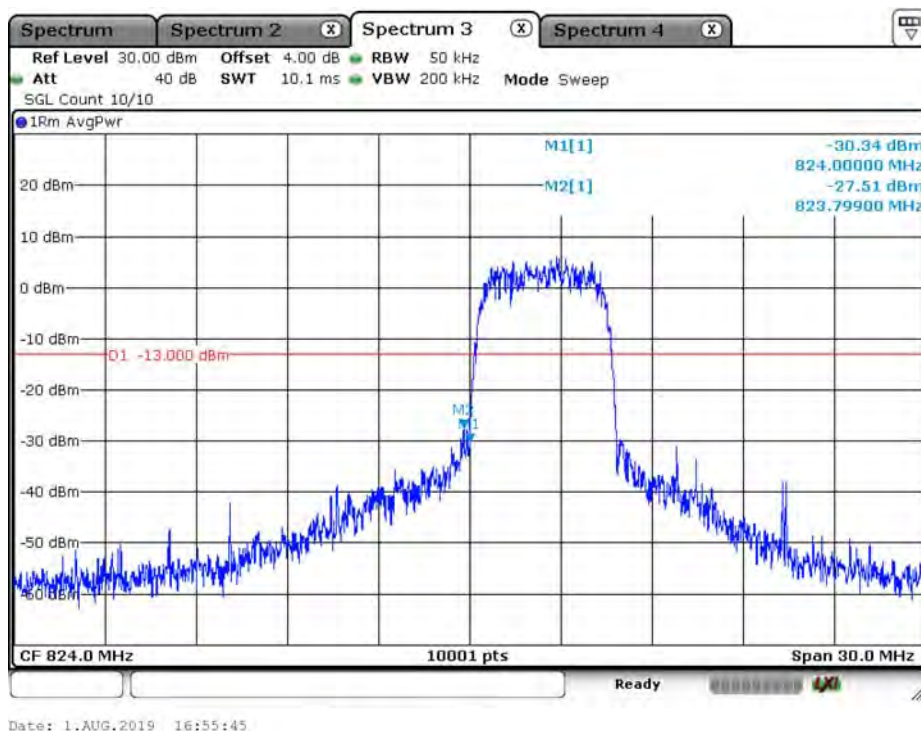
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WCDMA_Band5_HSUPA_846.6

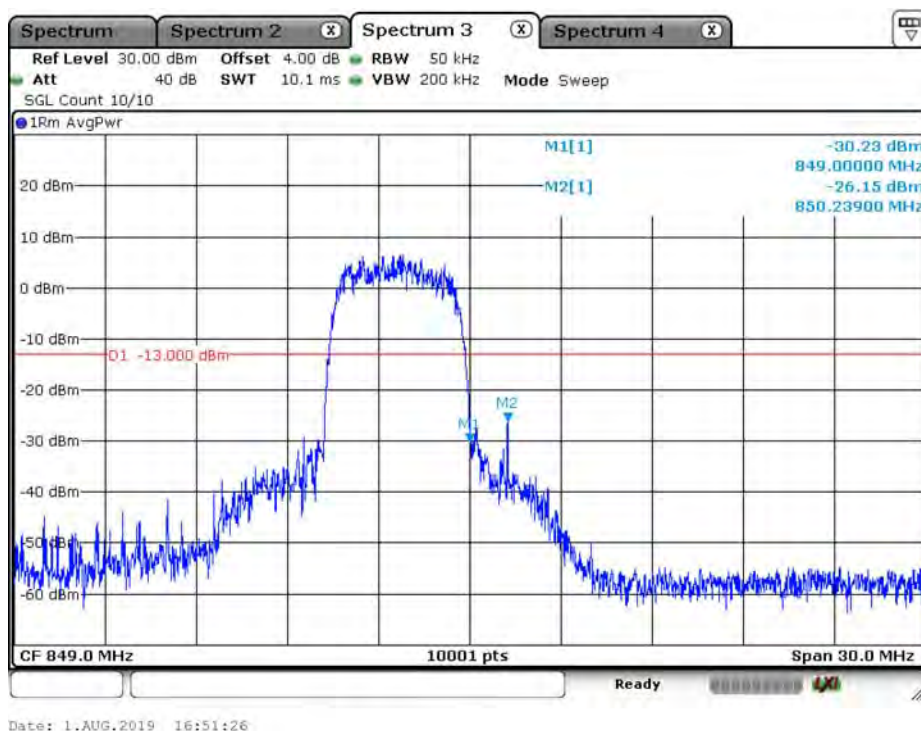


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WCDMA_Band5_HSDPA_826.4



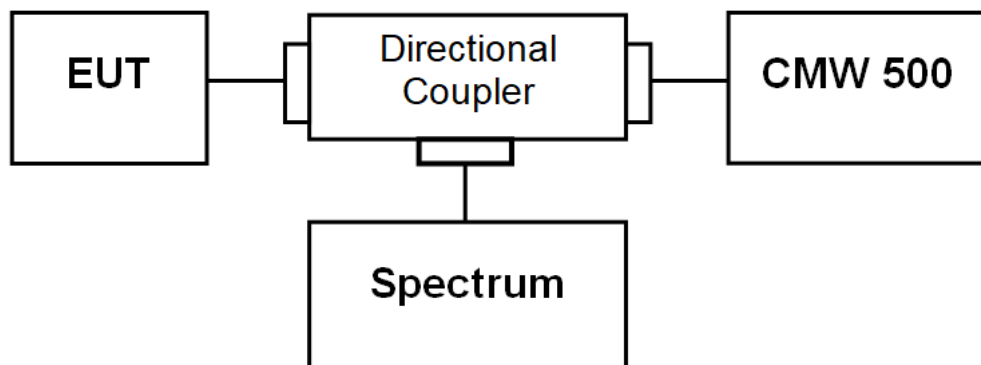
WCDMA_Band5_HSDPA_846.6



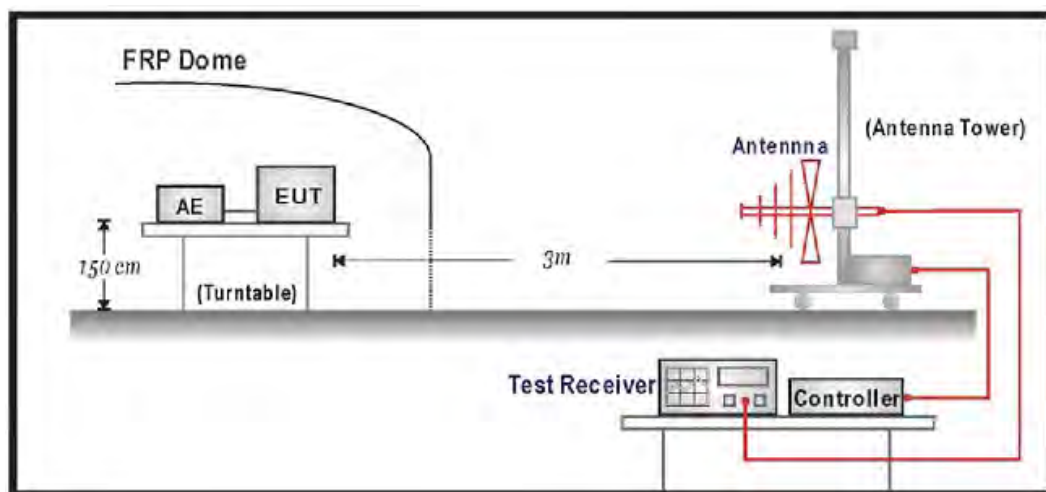
7. Spurious Emission

7.1. Test Setup

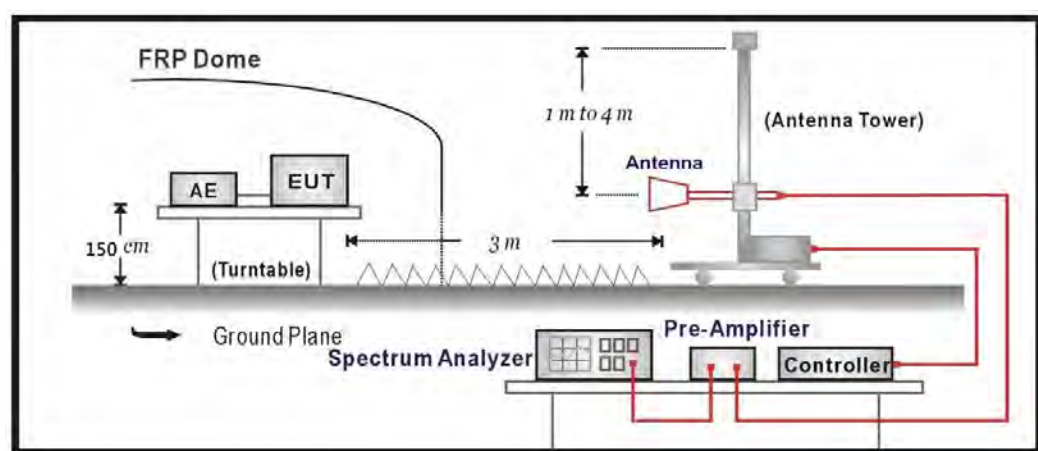
Conducted Spurious Measurement (below 1GHz)



Radiated Spurious Measurement (below 1GHz)



Radiated Spurious Measurement (above 1GHz)



7.2. 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 CMW500 by a Directional Couple.
- c) EUT Communicate with CMW500, then selects 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 10th harmonic.

Radiated Spurious Measurement:

- a) The EUT was placed on a rotatable wooden table with 1.5 meter above ground.
- b) The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
- c) The table was rotated 360 degrees to determine the position of the highest spurious emission.
- d) 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.
- e) Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 1MHz, Sweep 500ms, Taking the record of maximum spurious emission.
- f) A horn antenna was substituted in place of the EUT and was driven by a signal generator.
- g) Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
- h) Taking the record of output power at antenna port
- i) Repeat step 7 to step 8 for another polarization.
- j) $EIRP = SG - \text{Cable loss} + \text{Antenna Gain}$

7.3. Test Method

Conducted Spurious Measurement:

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause 6.1
ANSI C63.26-2015 Sub-clause 5.7

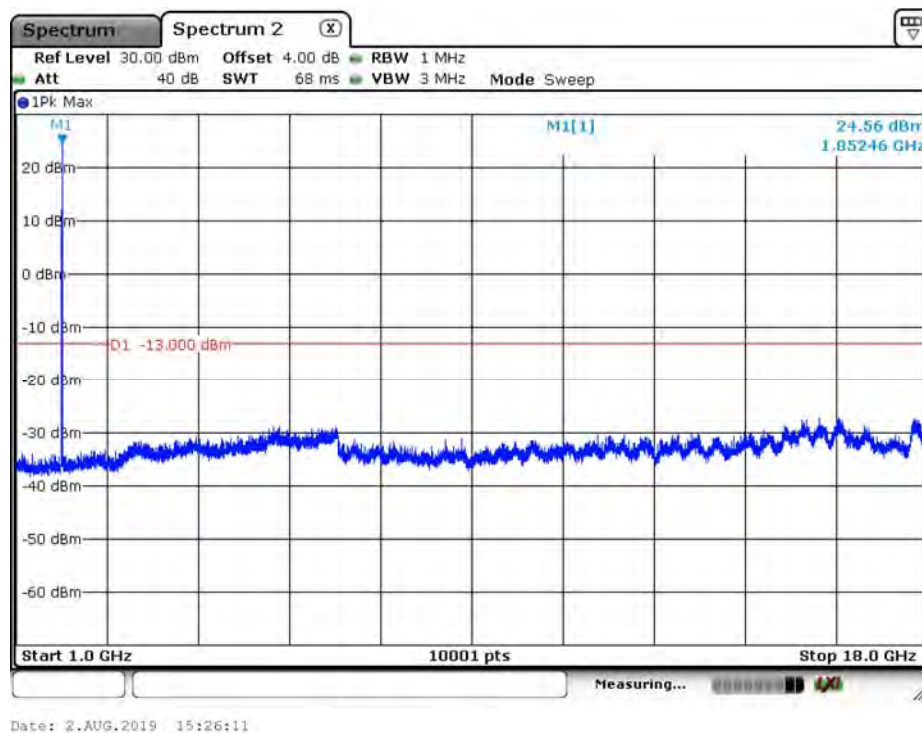
Radiated Spurious Measurement:

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause 5.8
ANSI C63.26-2015 Sub-clause 5.5.3.2

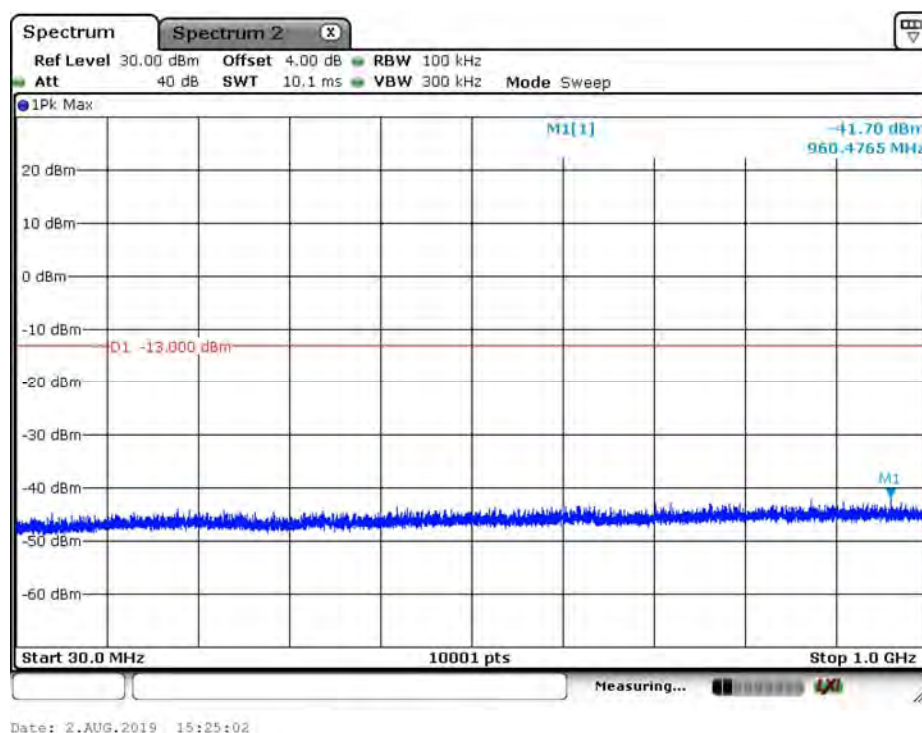
7.4. Test Result

Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 1: WCDMA Band 2		
Date of Test	2019/08/02	Test Site	SR10-H

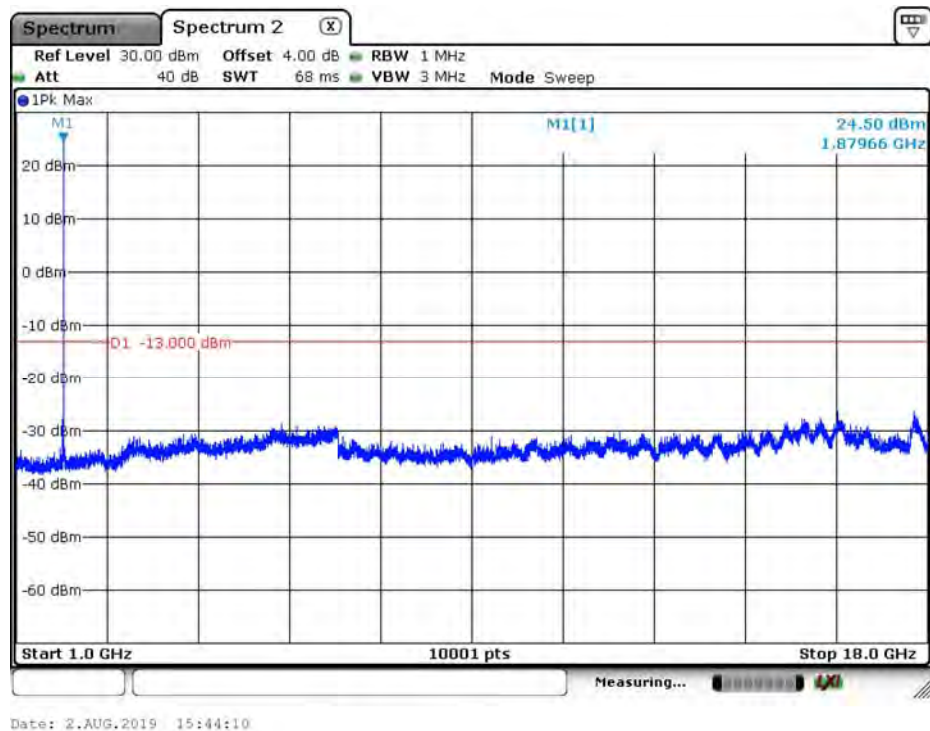
WCDMA_Band 2_RMC_1852.4MHz_above 1G



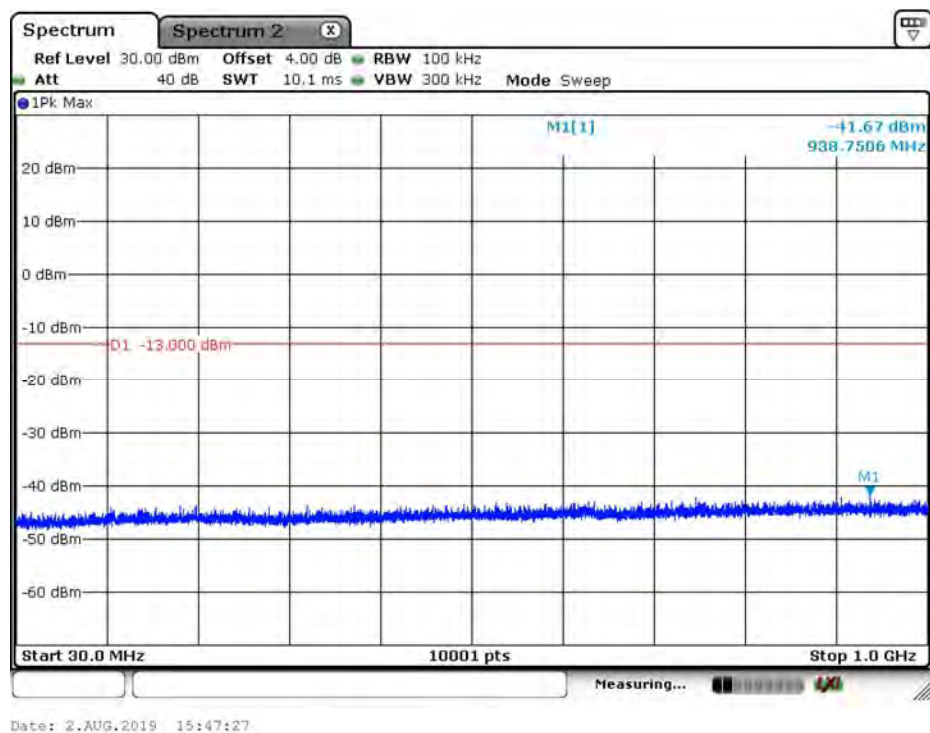
WCDMA_Band 2_RMC_1852.4MHz_under 1G



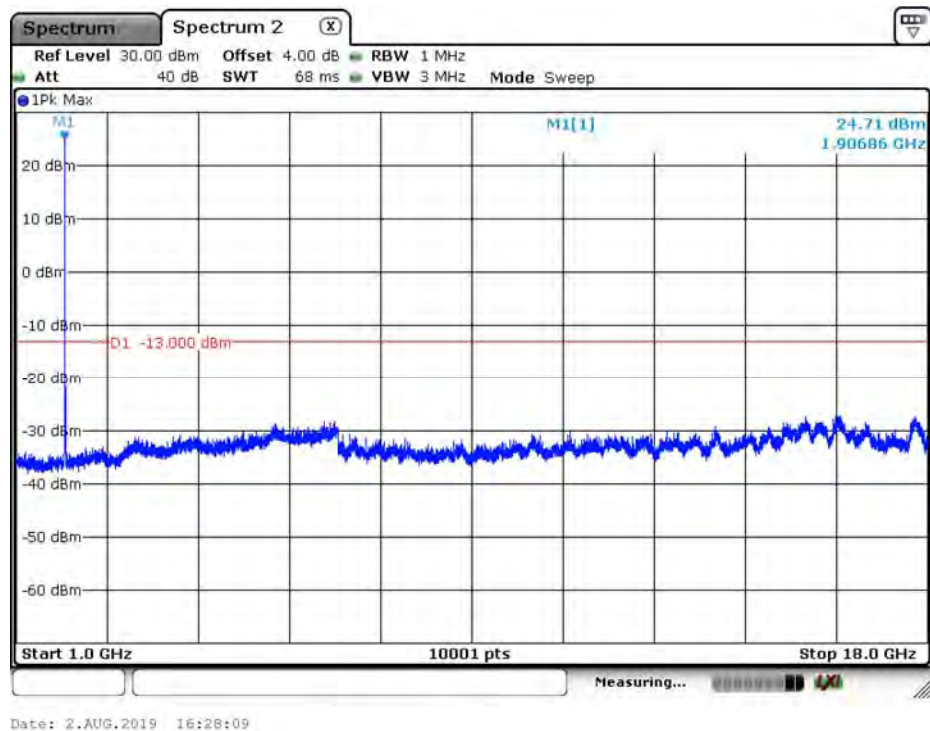
WCDMA_Band 2_RMC_1880.0MHz_above 1G



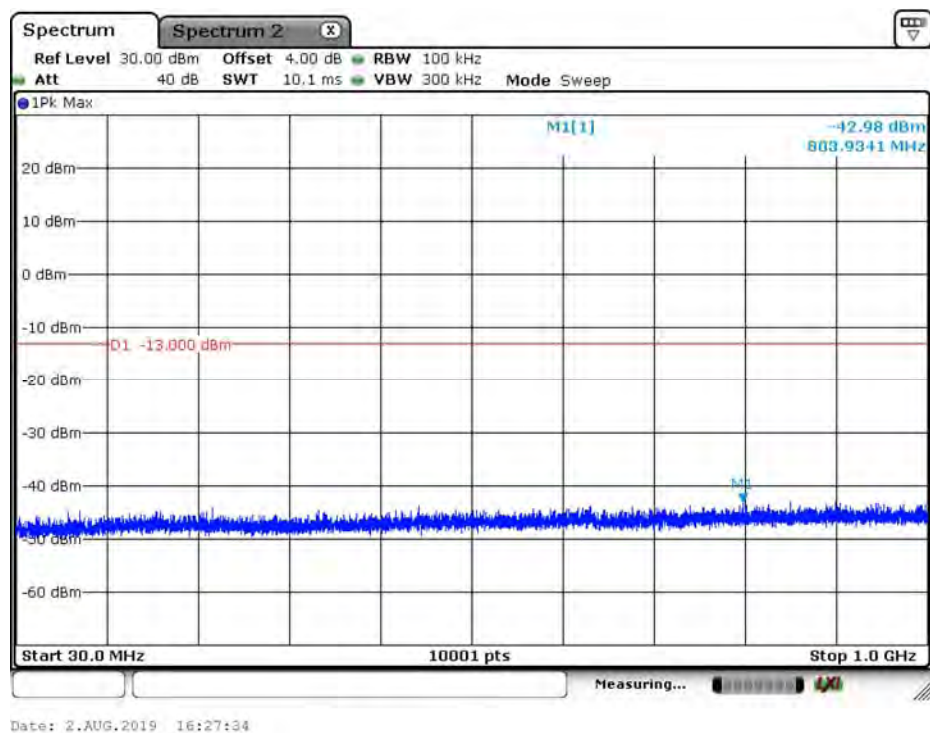
WCDMA_Band 2_RMC_1880.0MHz_under 1G



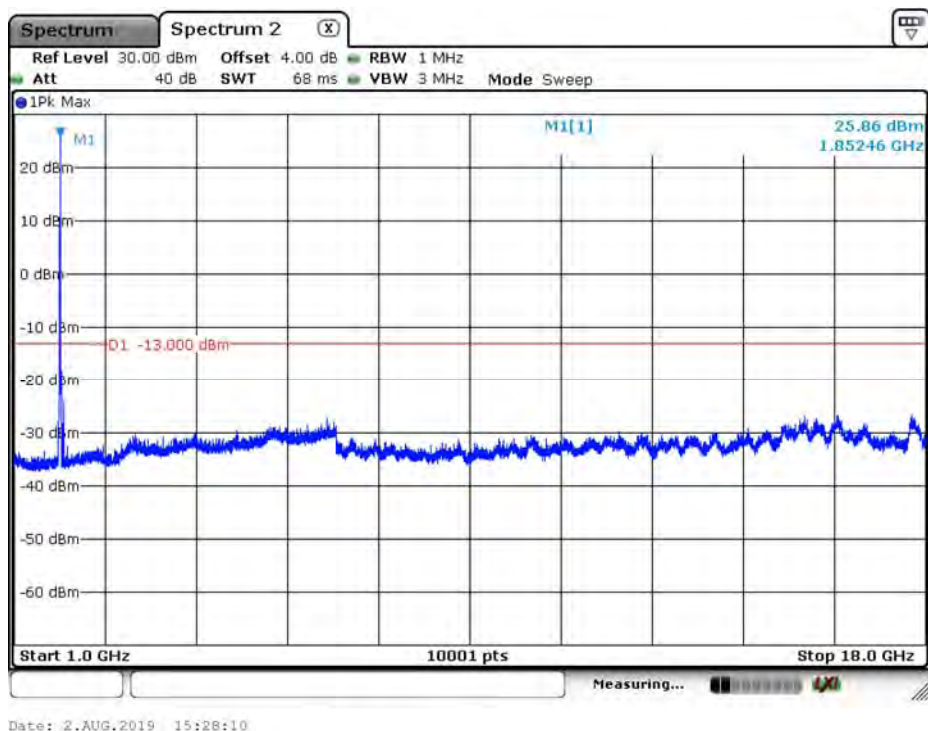
WCDMA_Band 2_RMC_1907.6MHz_above 1G



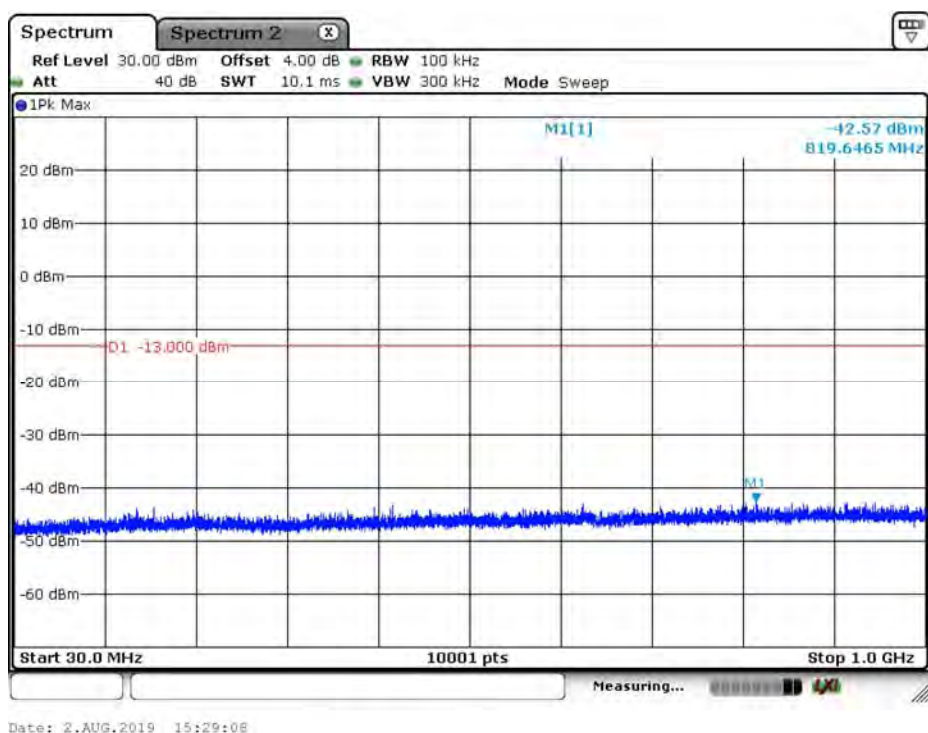
WCDMA_Band 2_RMC_1907.6MHz_under 1G



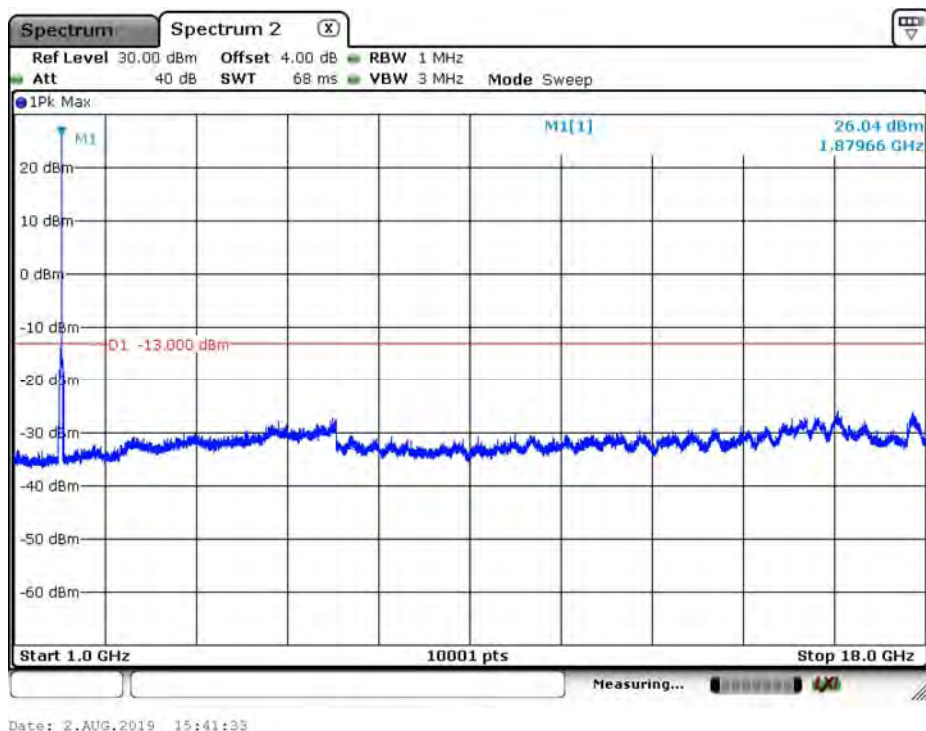
WCDMA_Band 2_HSUPA_1852.4MHz_above 1G



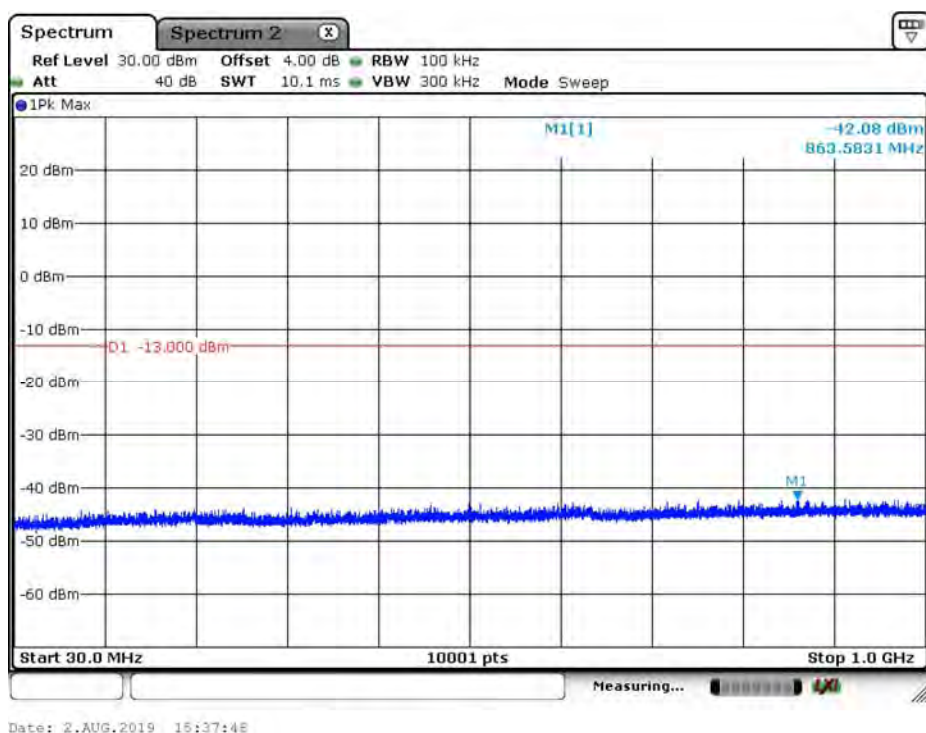
WCDMA_Band 2_HSUPA_1852.4MHz_under 1G



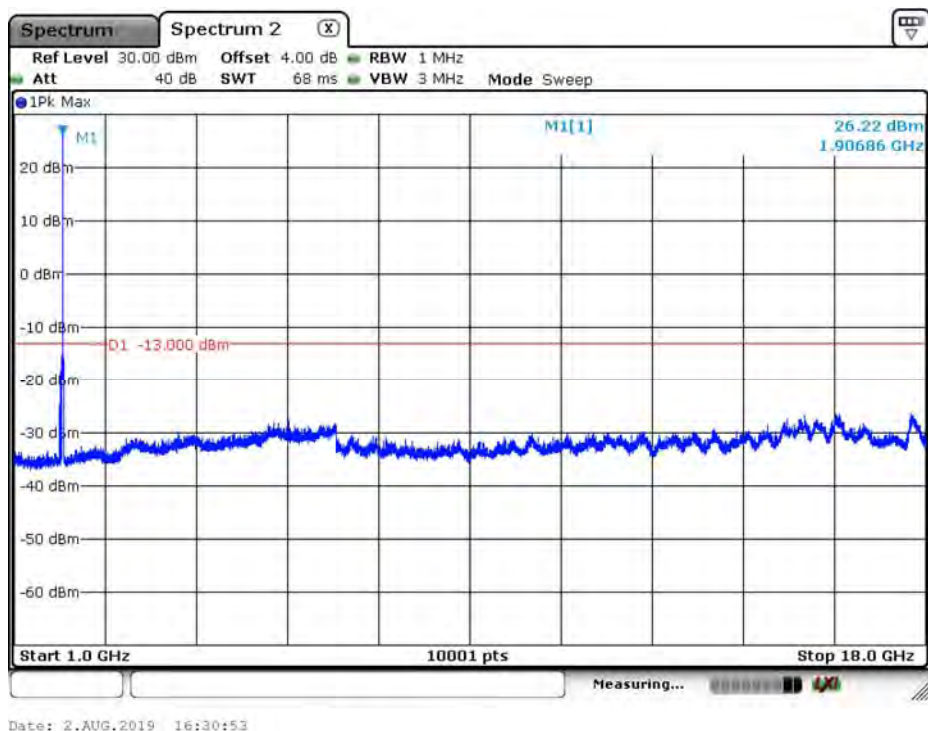
WCDMA_Band 2_HSUPA_1880.0MHz_above 1G



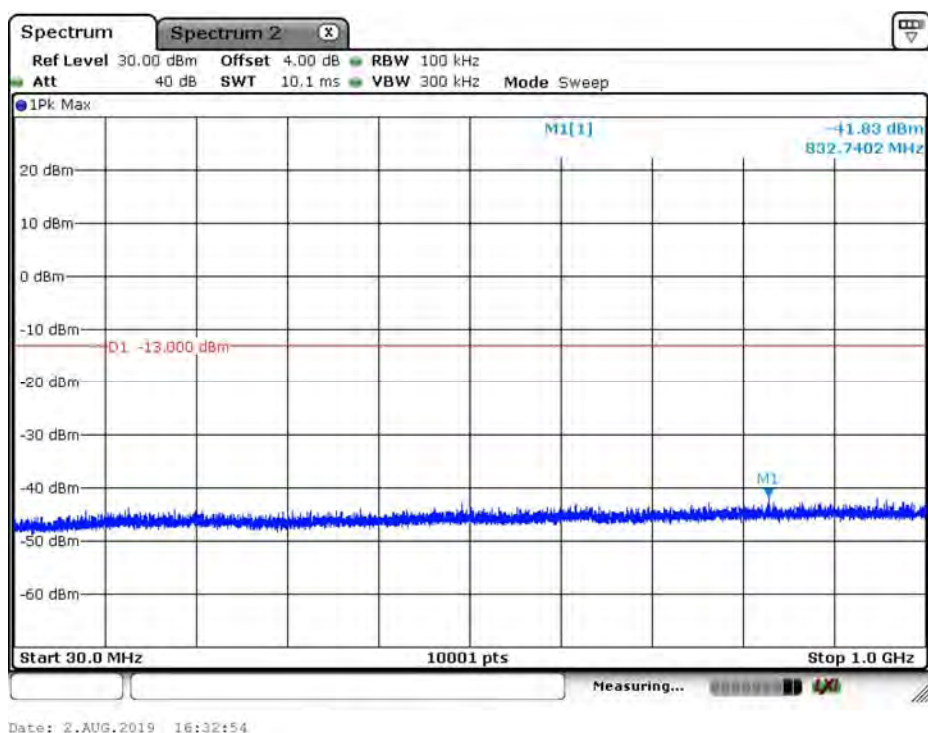
WCDMA_Band 2_HSUPA_1880.0MHz_under 1G



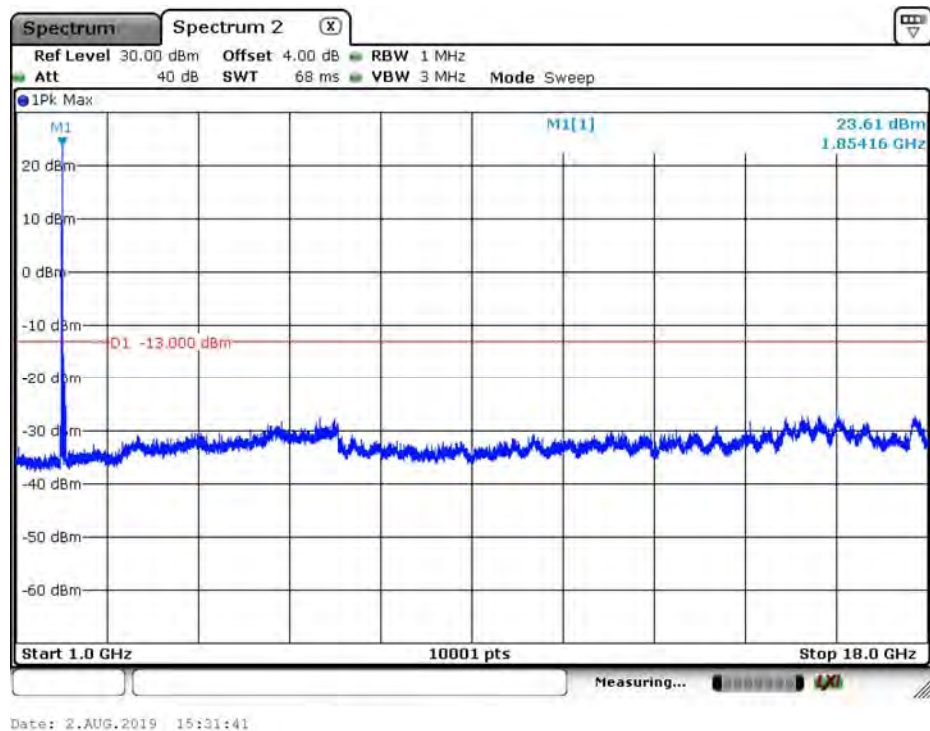
WCDMA_Band 2_HSUPA_1907.6MHz_above 1G



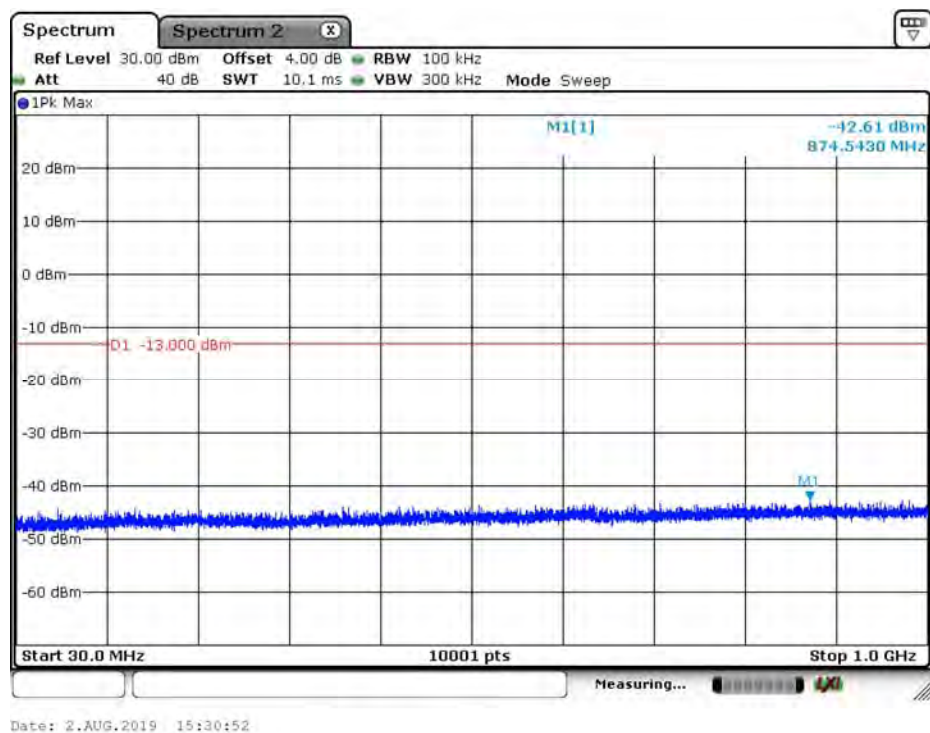
WCDMA_Band 2_HSUPA_1907.6MHz_under 1G



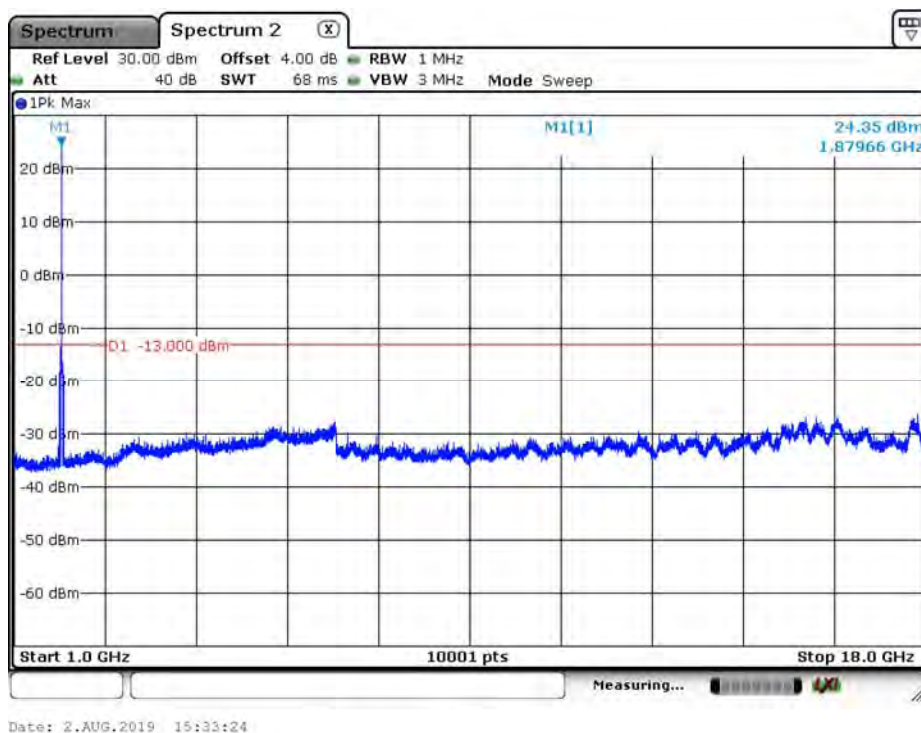
WCDMA_Band 2_HSDPA_1852.4MHz_above 1G



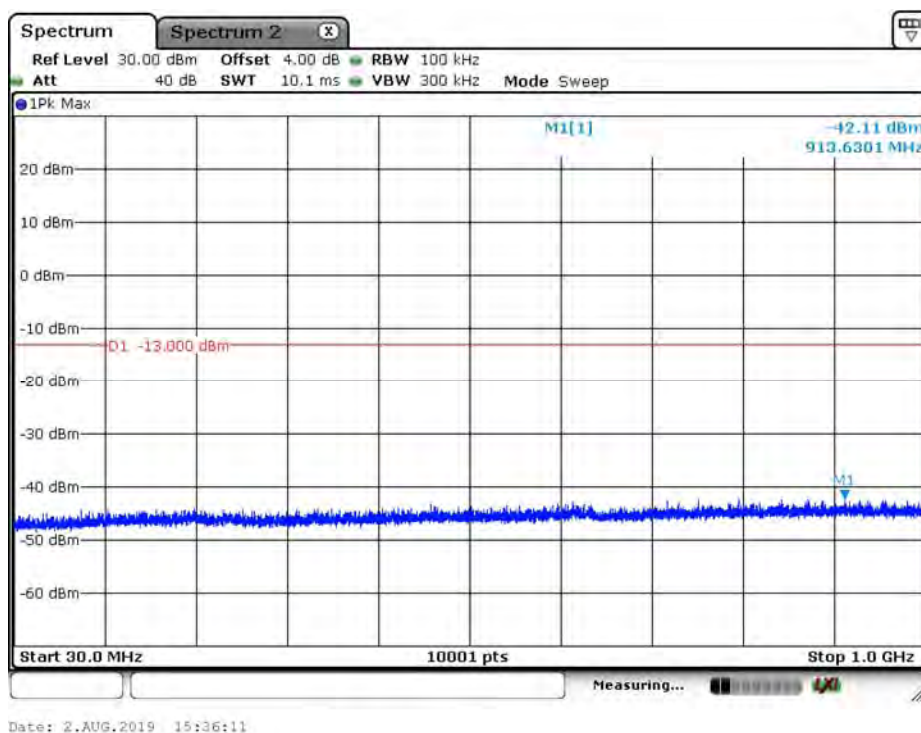
WCDMA_Band 2_HSDPA_1852.4MHz_under 1G



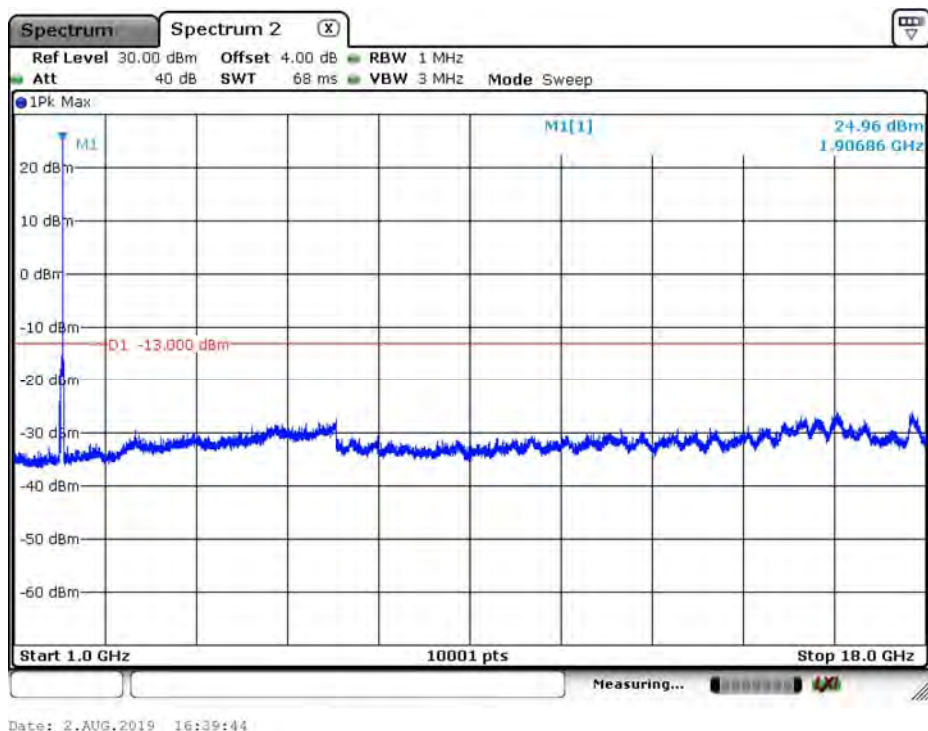
WCDMA_Band 2_HSDPA_1880.0MHz_above 1G



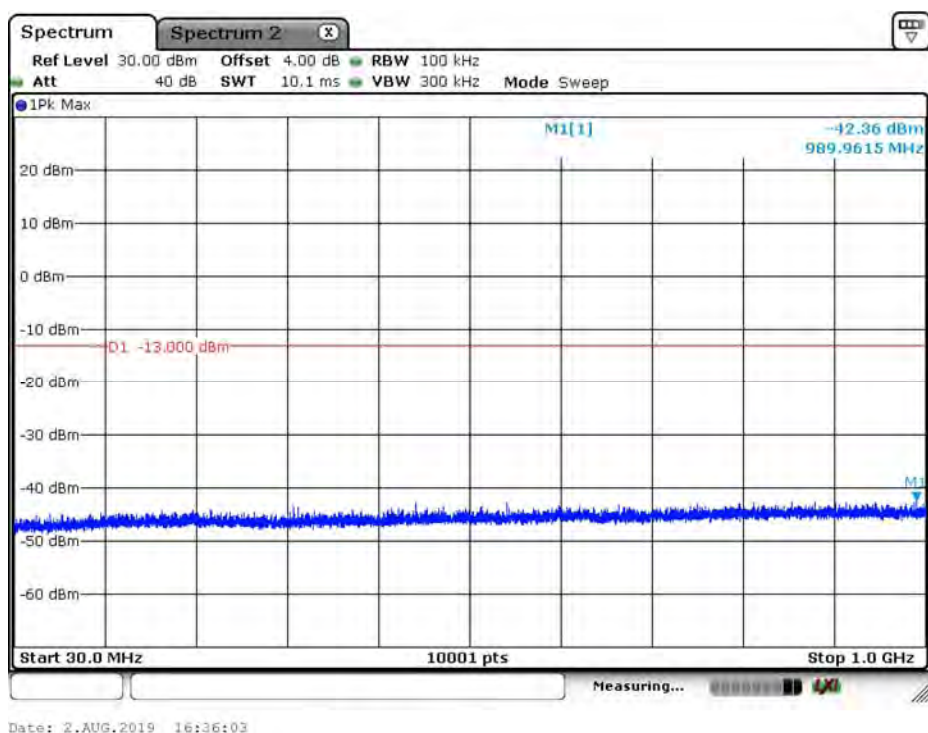
WCDMA_Band 2_HSDPA_1880.0MHz_under 1G



WCDMA_Band 2_HSDPA_1907.6MHz_above 1G

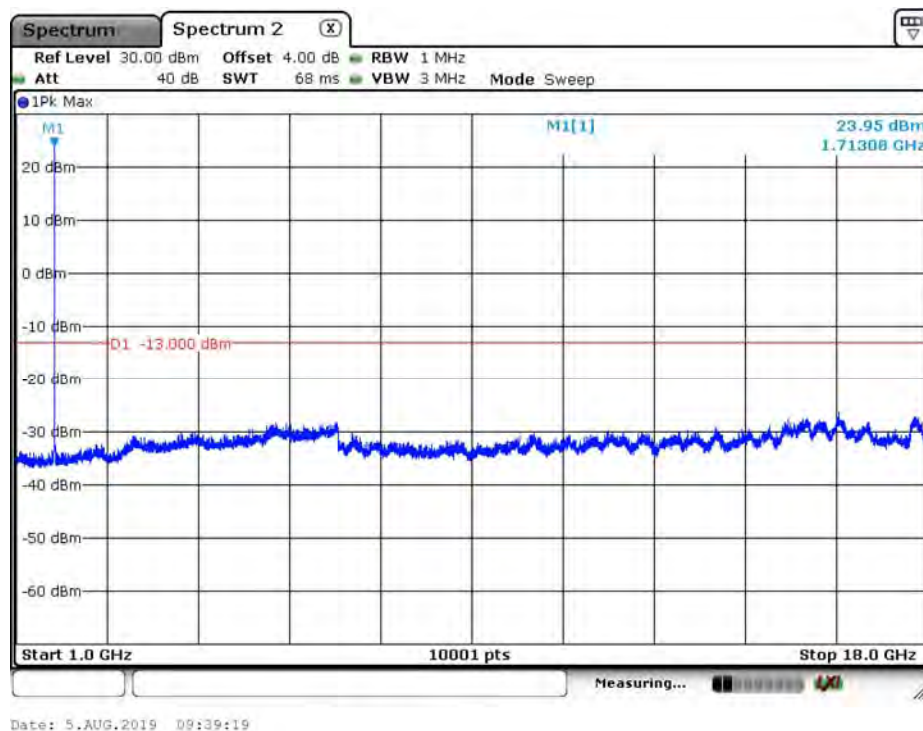


WCDMA_Band 2_HSDPA_1907.6MHz_under 1G

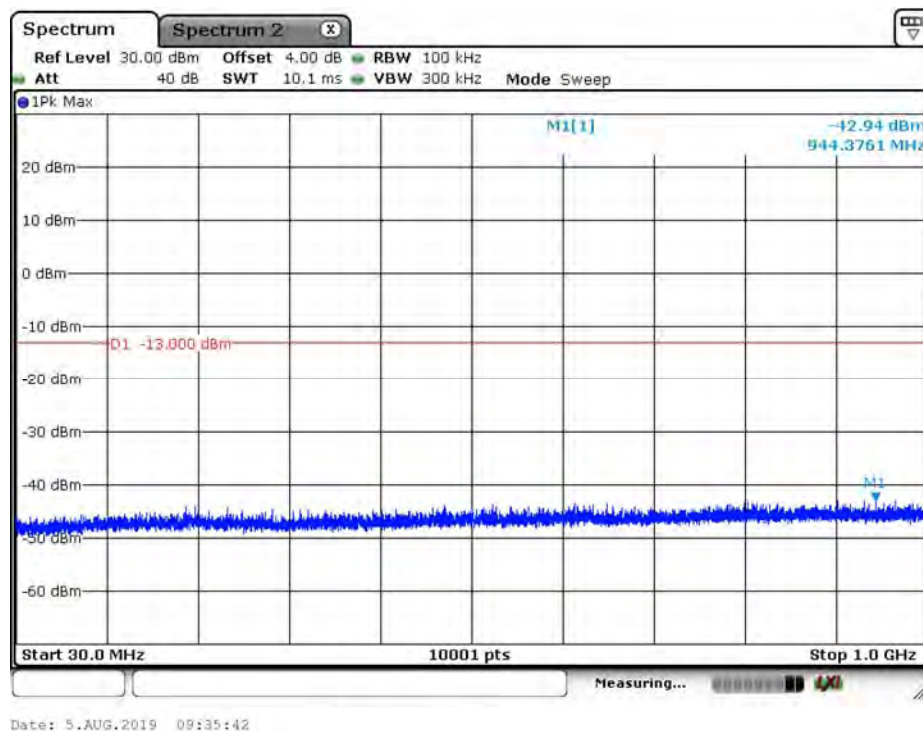


Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 2: WCDMA Band 4		
Date of Test	2019/08/05	Test Site	SR10-H

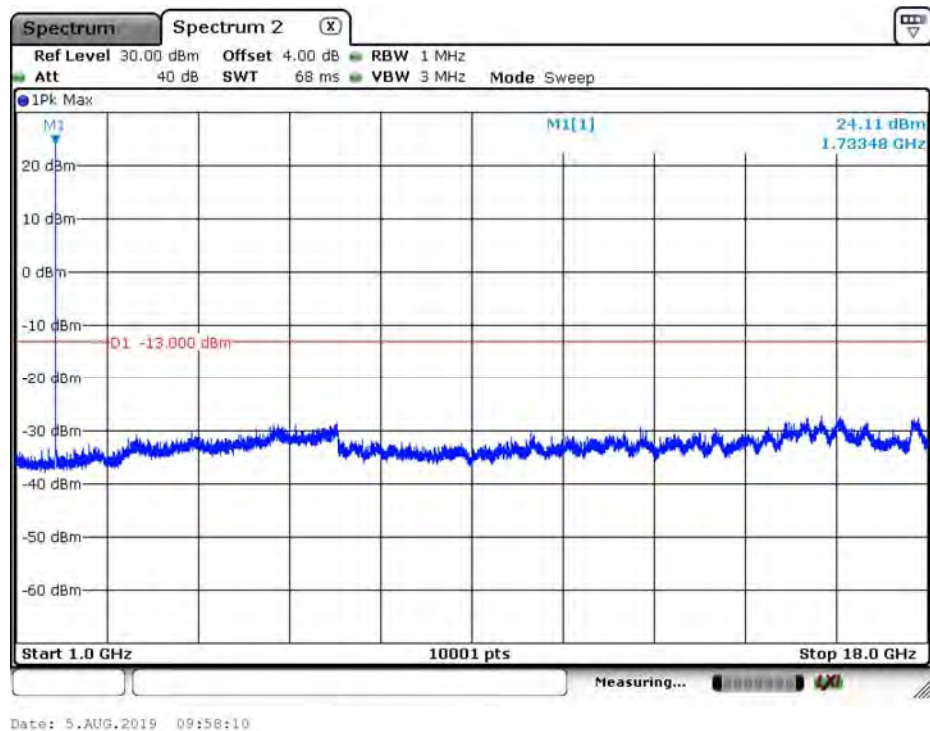
WCDMA_Band 4_RMC_1712.4MHz_above 1G



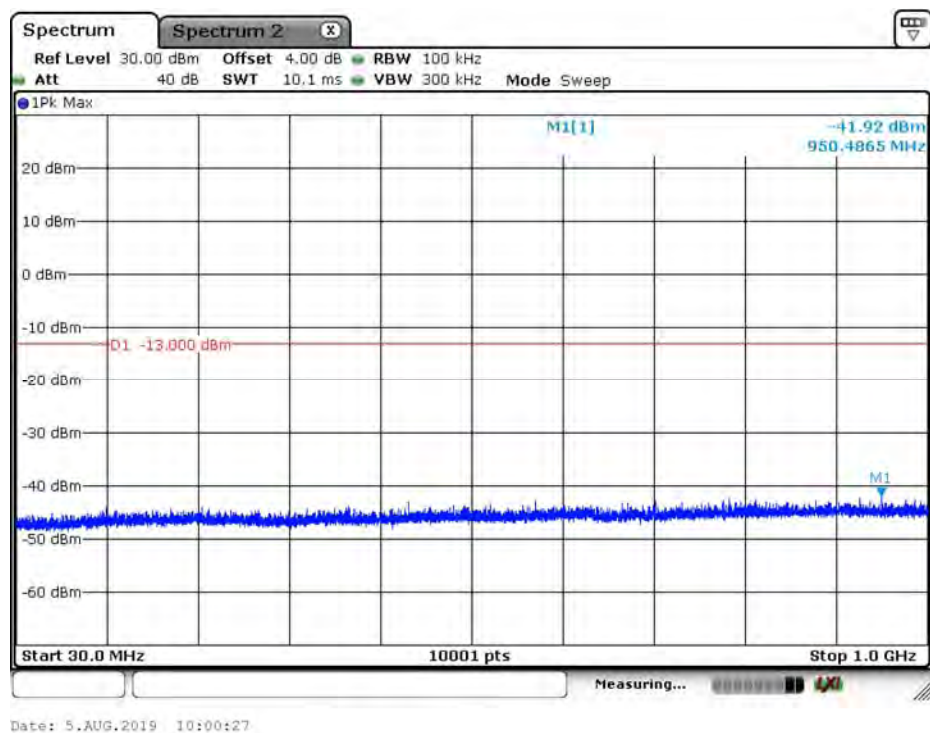
WCDMA_Band 4_RMC_1712.4MHz_under 1G



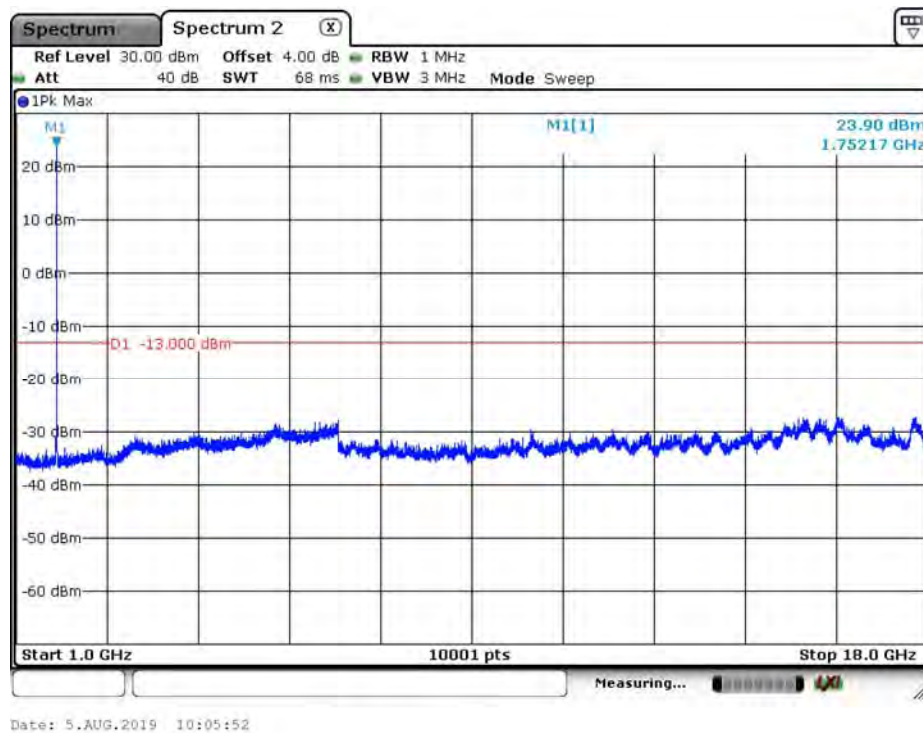
WCDMA_Band 4_RMC_1732.6MHz_above 1G



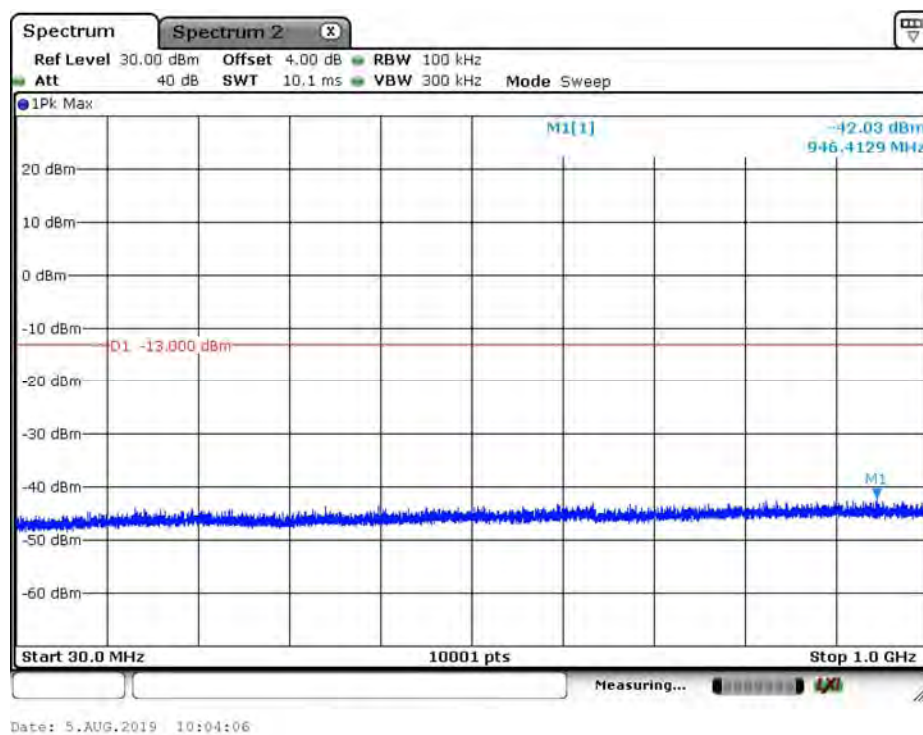
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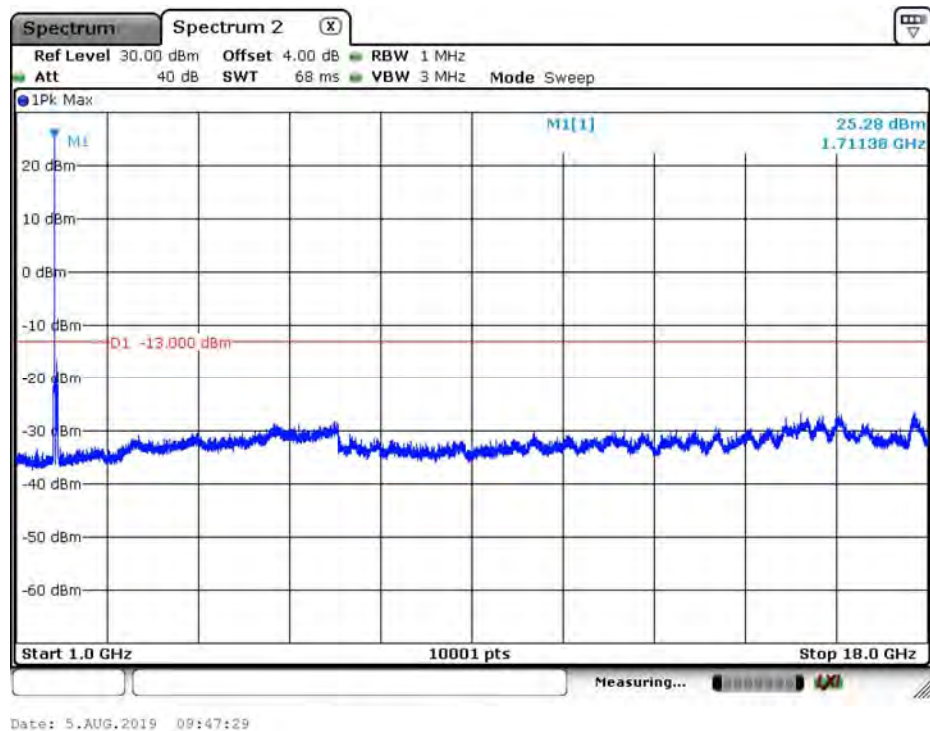
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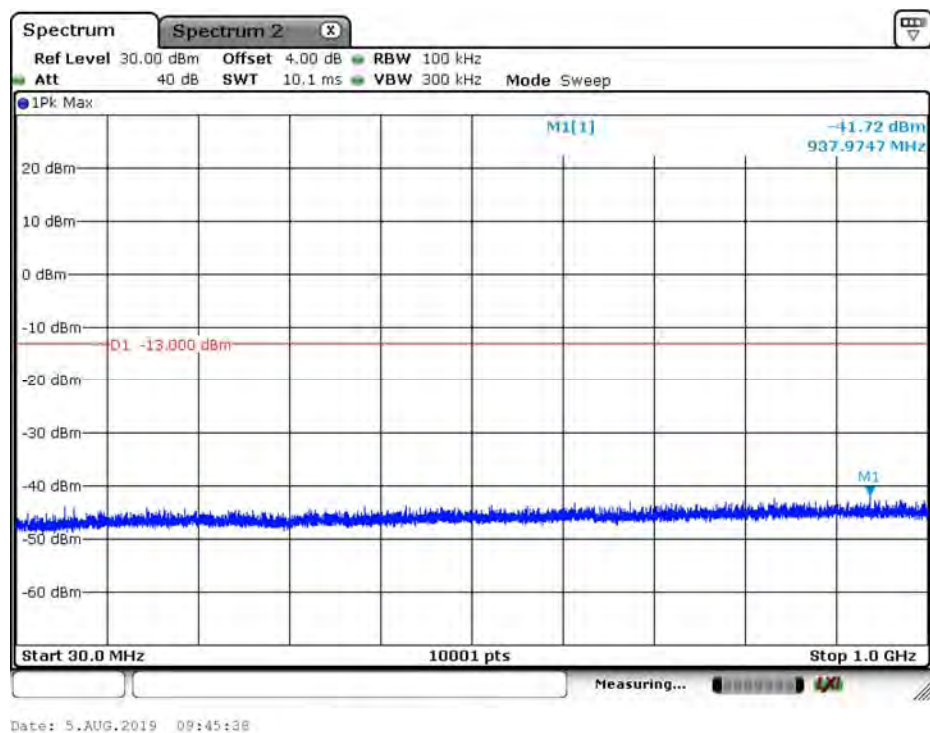
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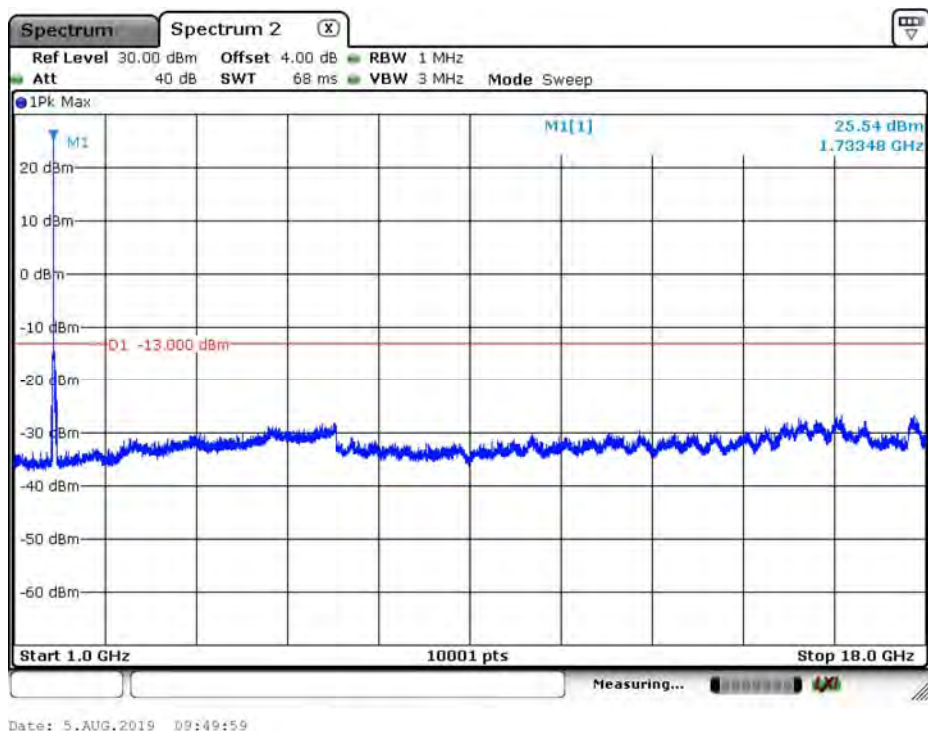
WCDMA_Band 4_HSUPA_1712.4MHz_above 1G



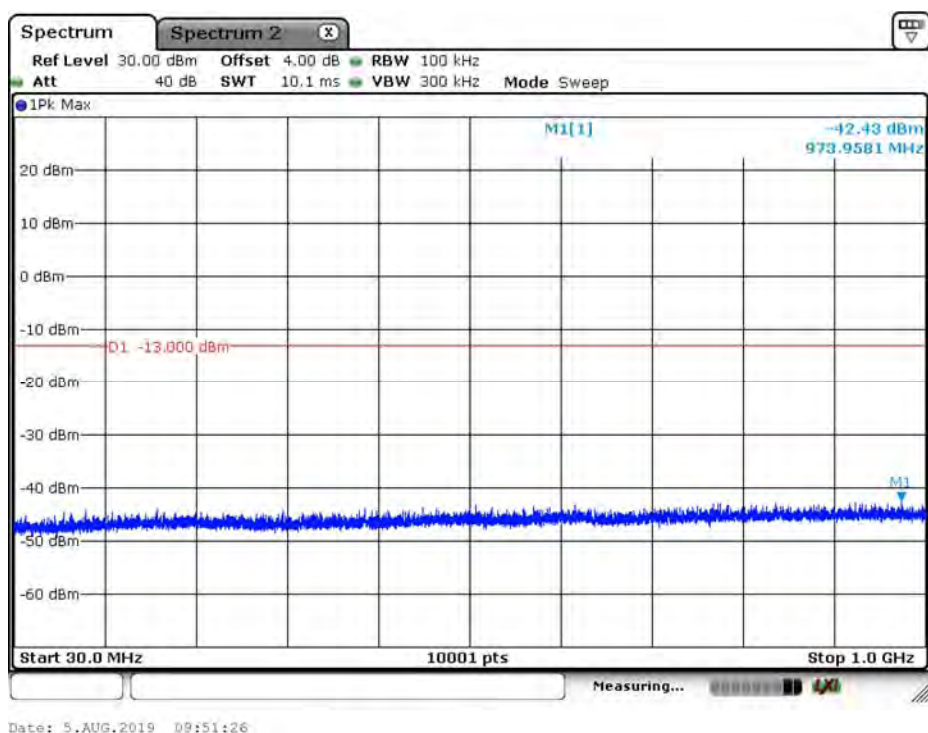
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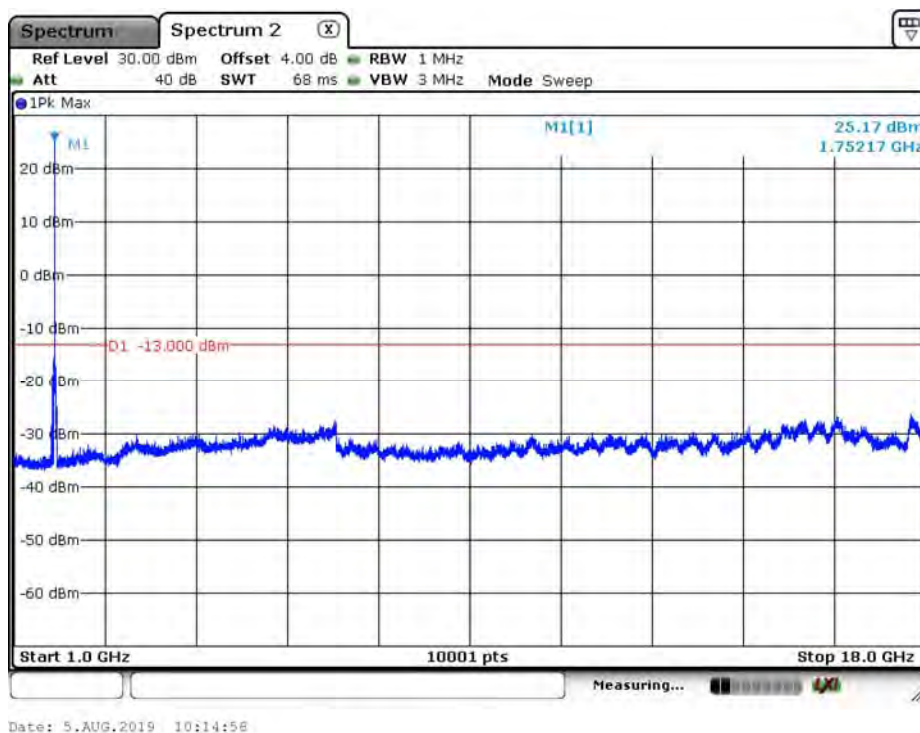
WCDMA_Band 4_HSUPA_1732.6MHz_above 1G



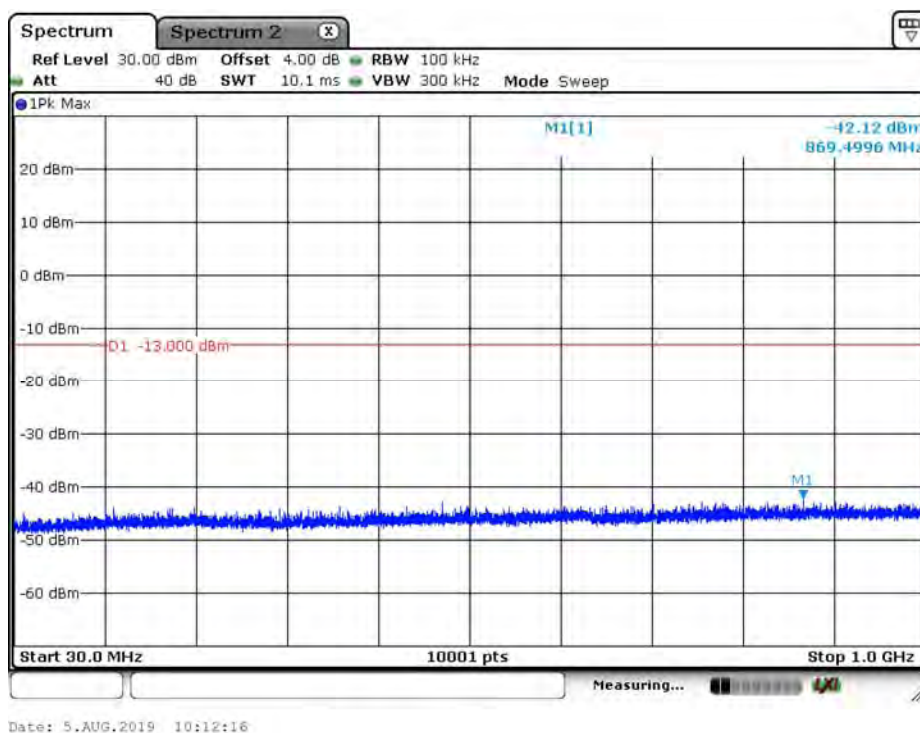
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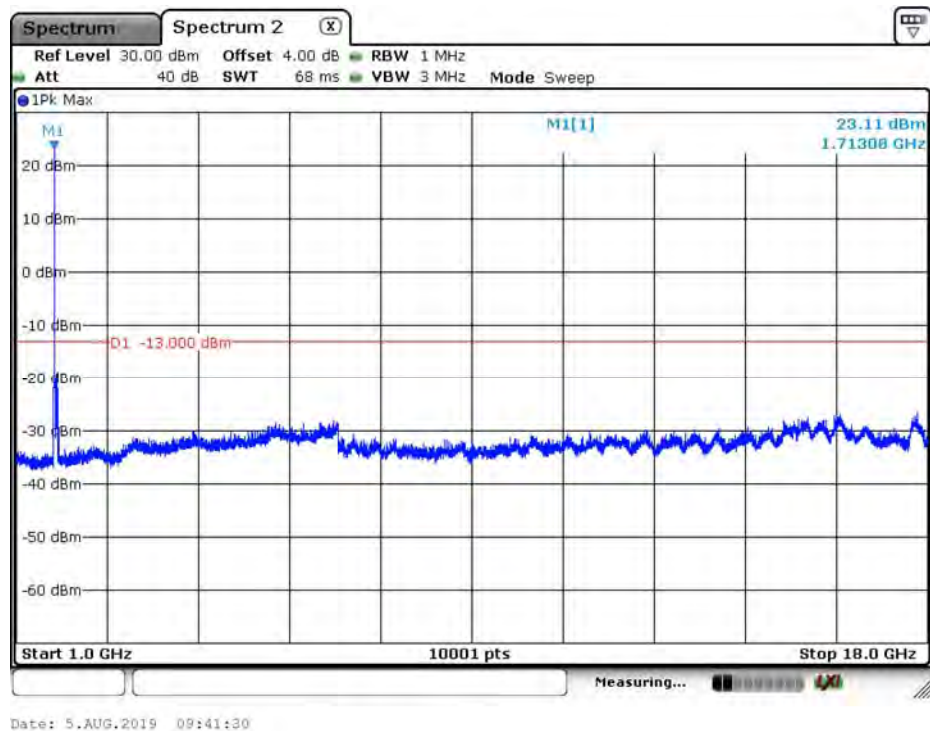
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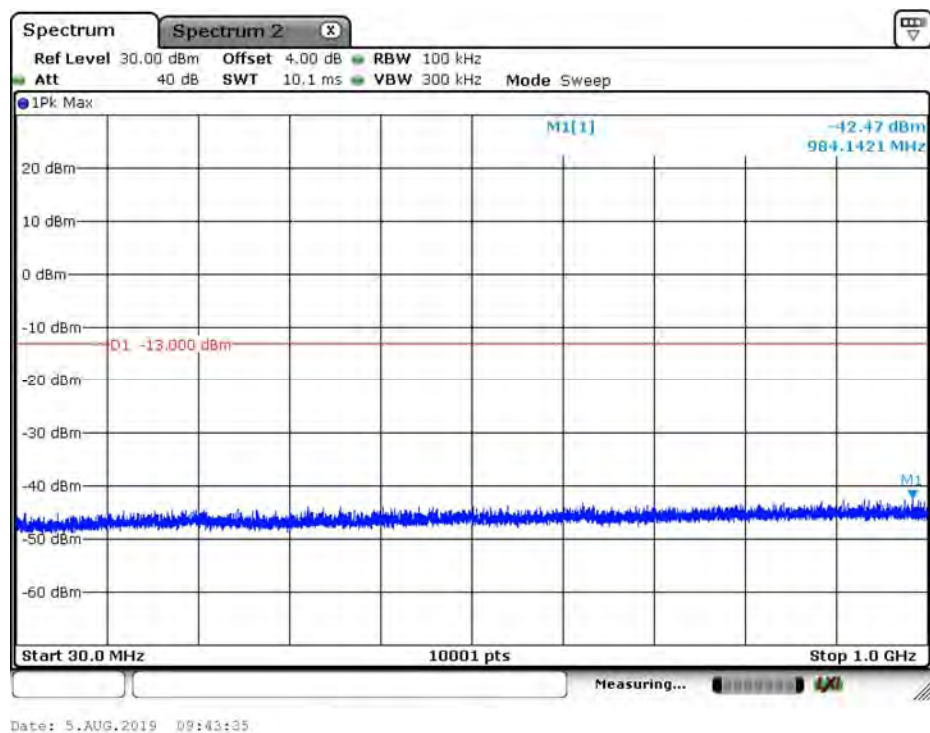
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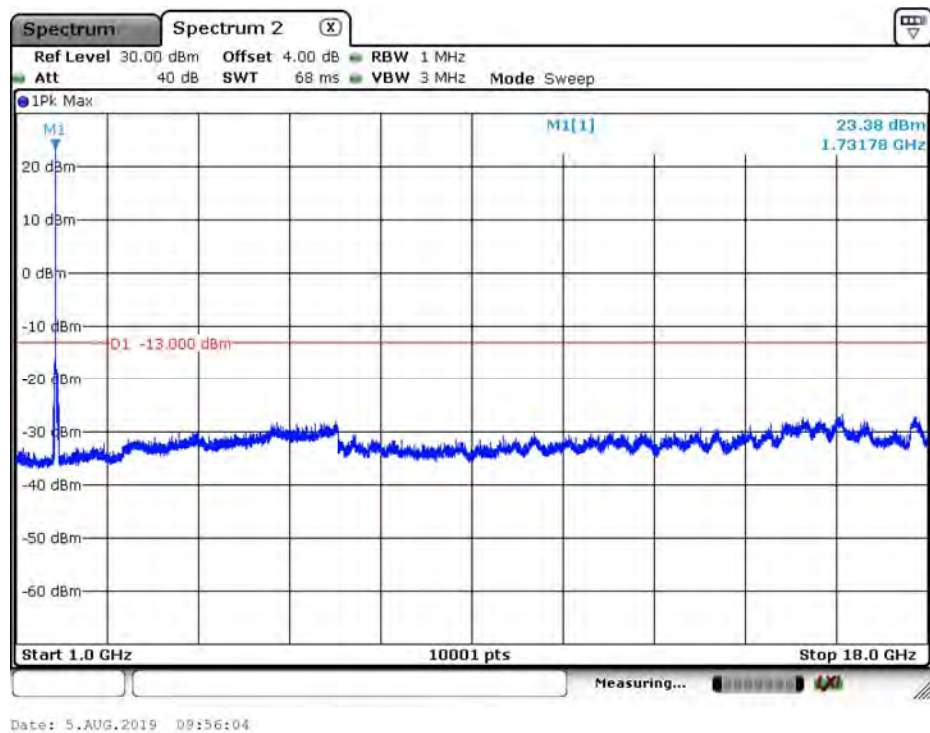
WCDMA_Band 4_HSDPA_1712.4MHz_above 1G



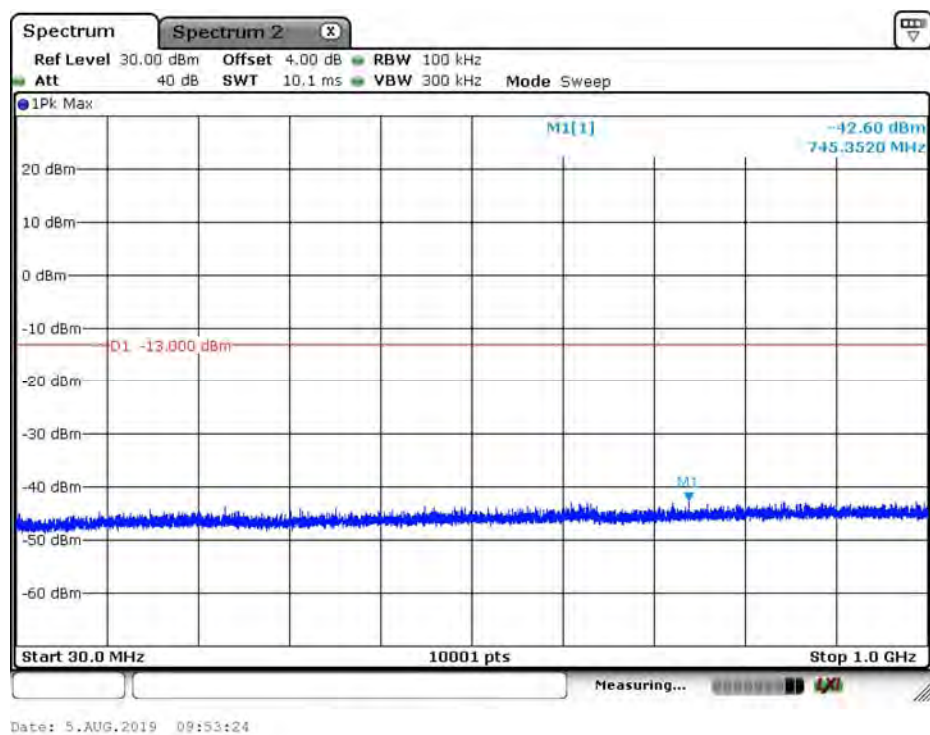
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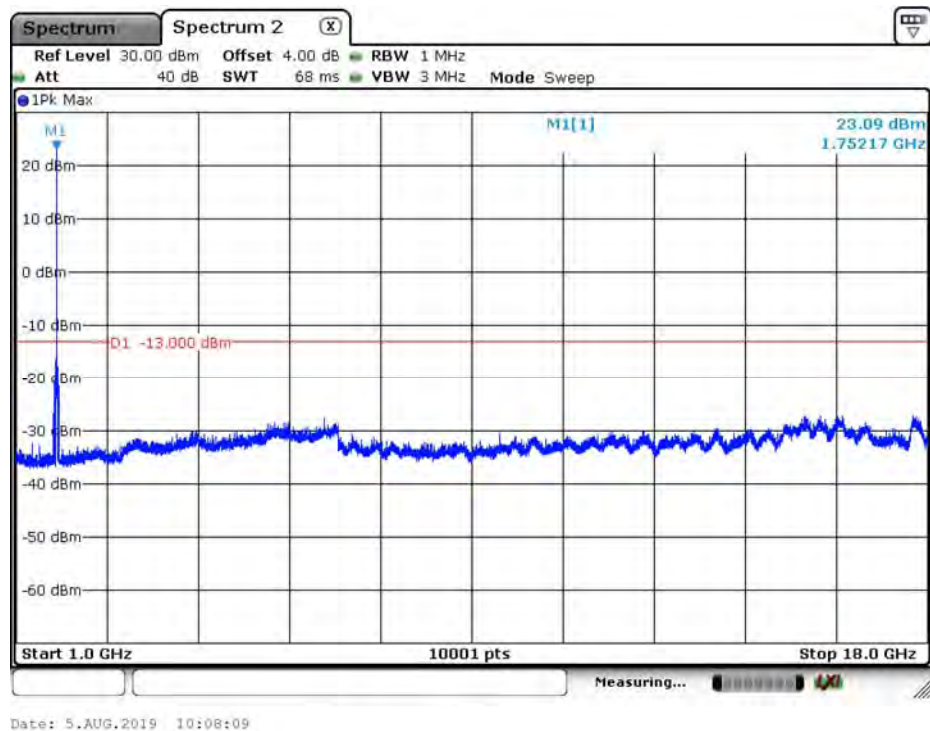
WCDMA_Band 4_HSDPA_1732.6MHz_above 1G



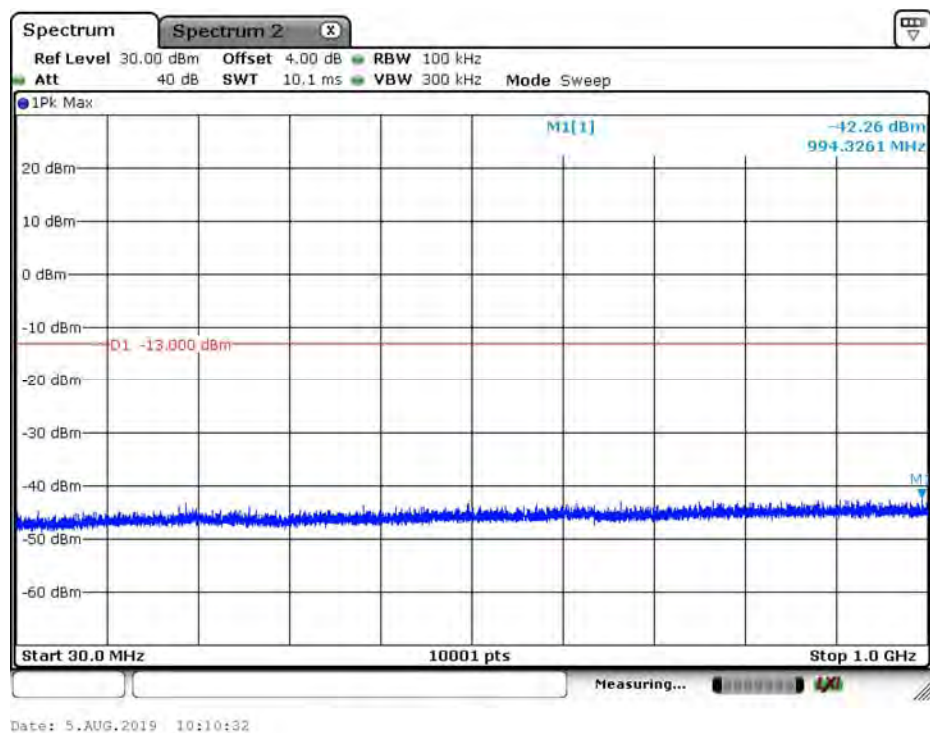
WCDMA_Band 4_HSDPA_1732.6MHz_under 1G



WCDMA_Band 4_HSDPA_1752.6MHz_above 1G

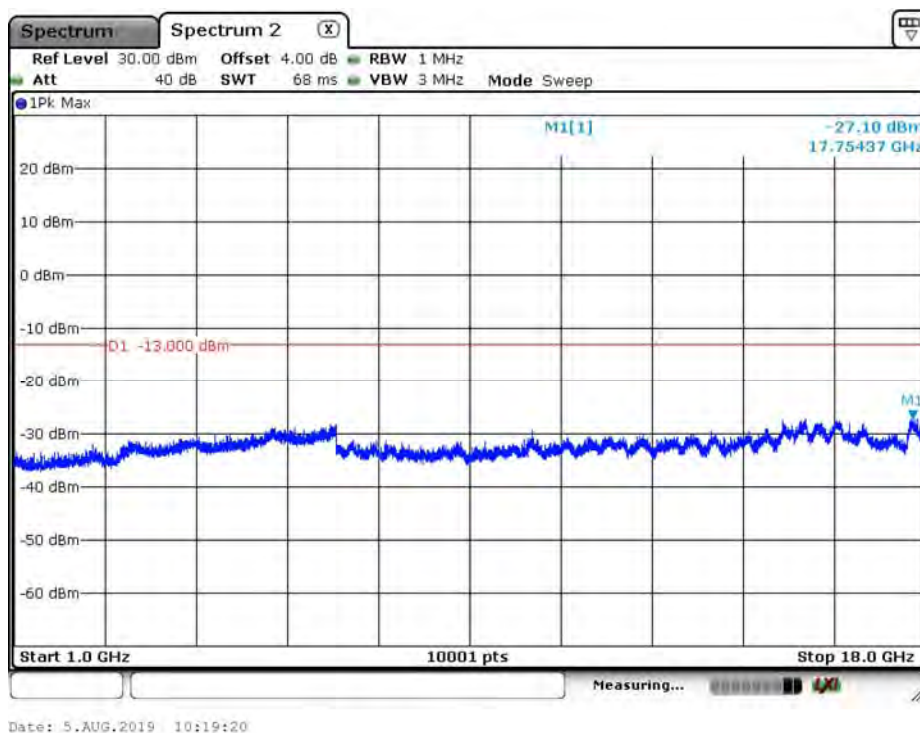


WCDMA_Band 4_HSDPA_1752.6MHz_under 1G

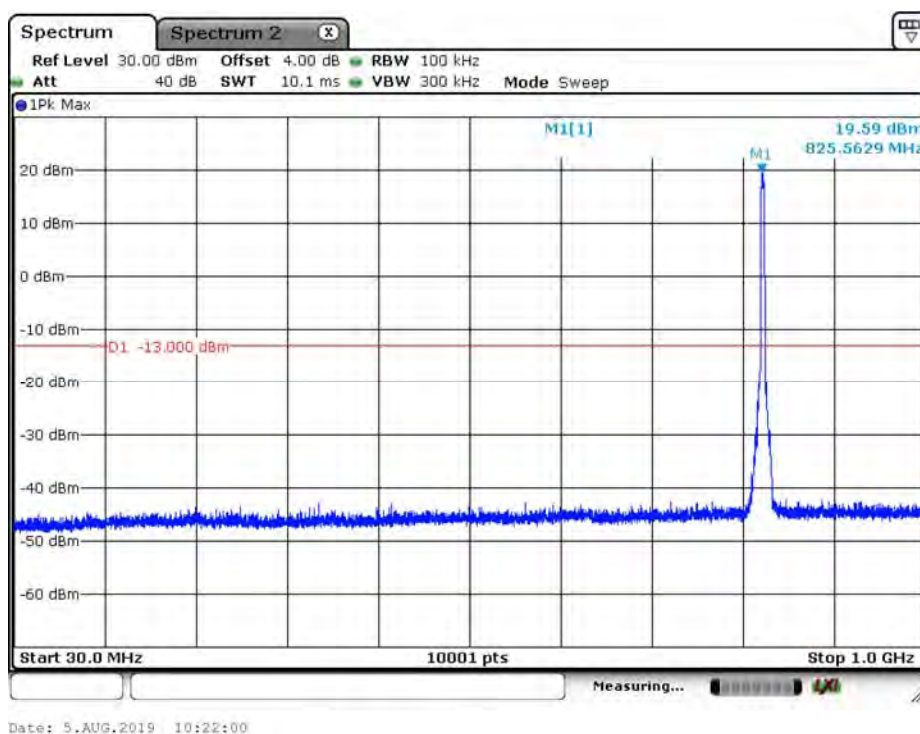


Product	Module		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 3: WCDMA Band 5		
Date of Test	2019/08/05	Test Site	SR10-H

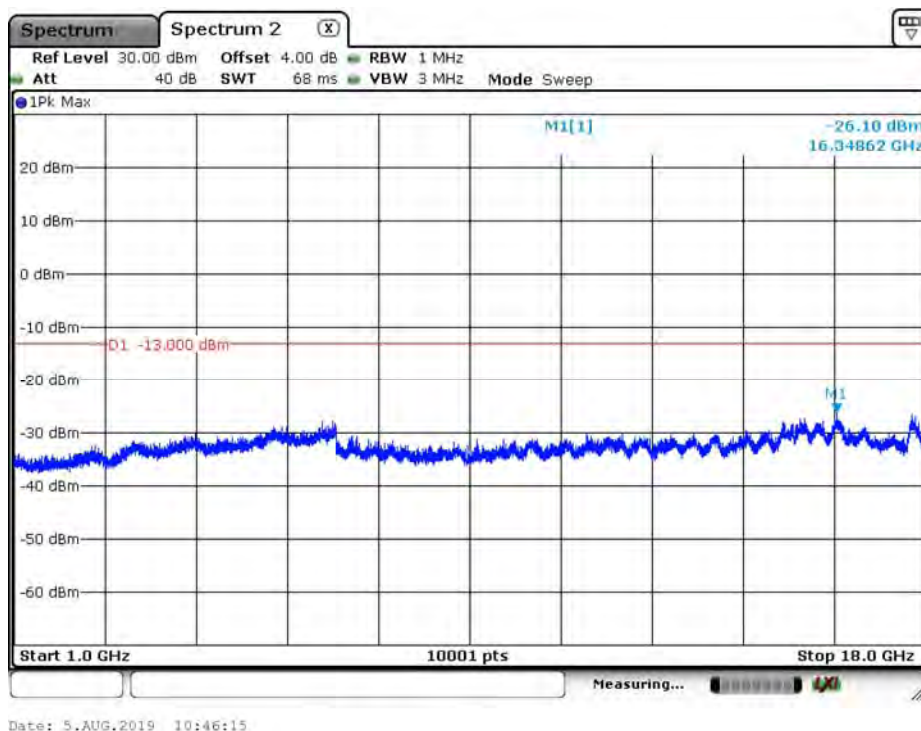
WCDMA_Band 5_RMC_826.4MHz_above 1G



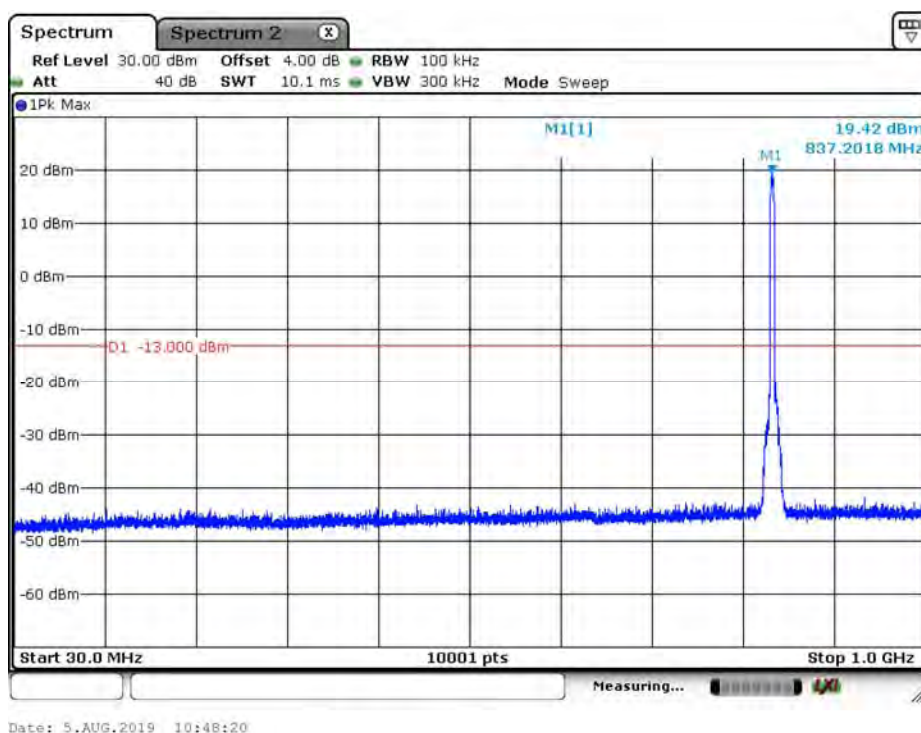
WCDMA_Band 5_RMC_826.4MHz_under 1G



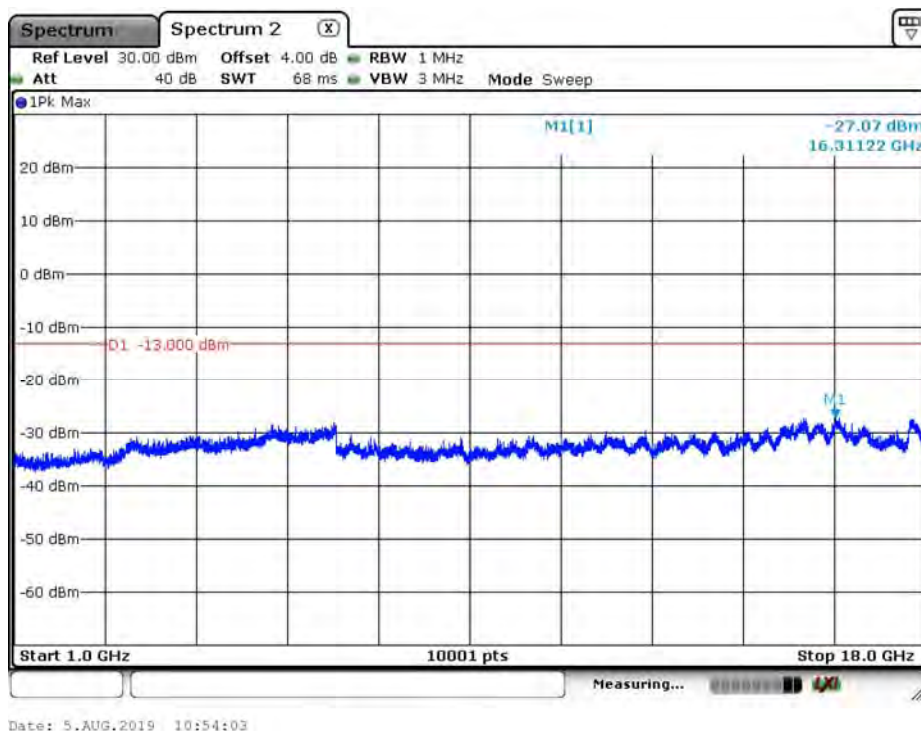
WCDMA_Band 5_RMC_836.6MHz_above 1G



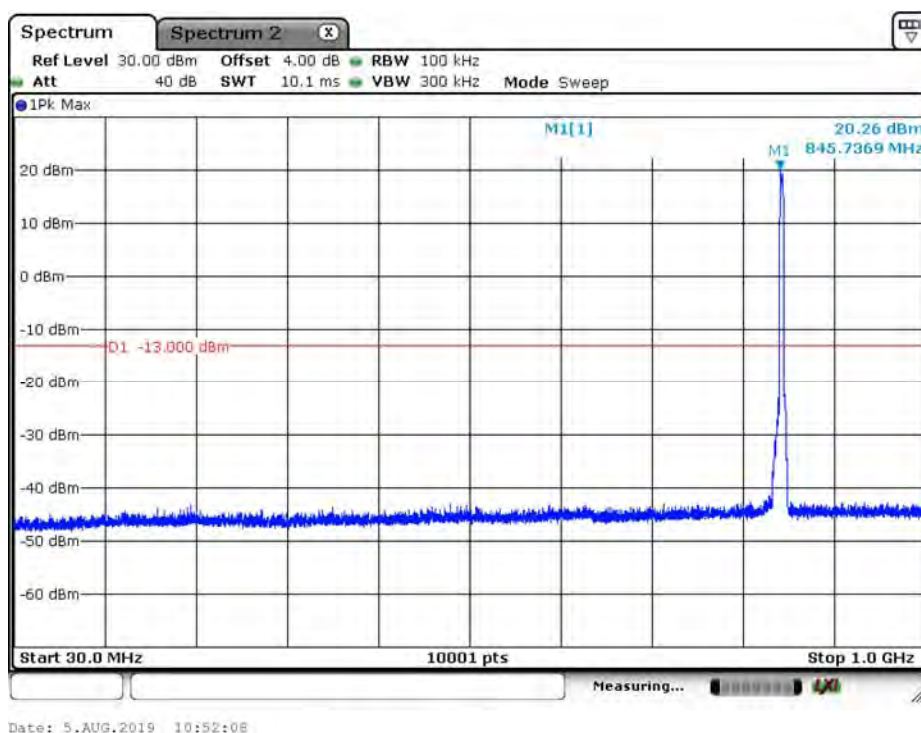
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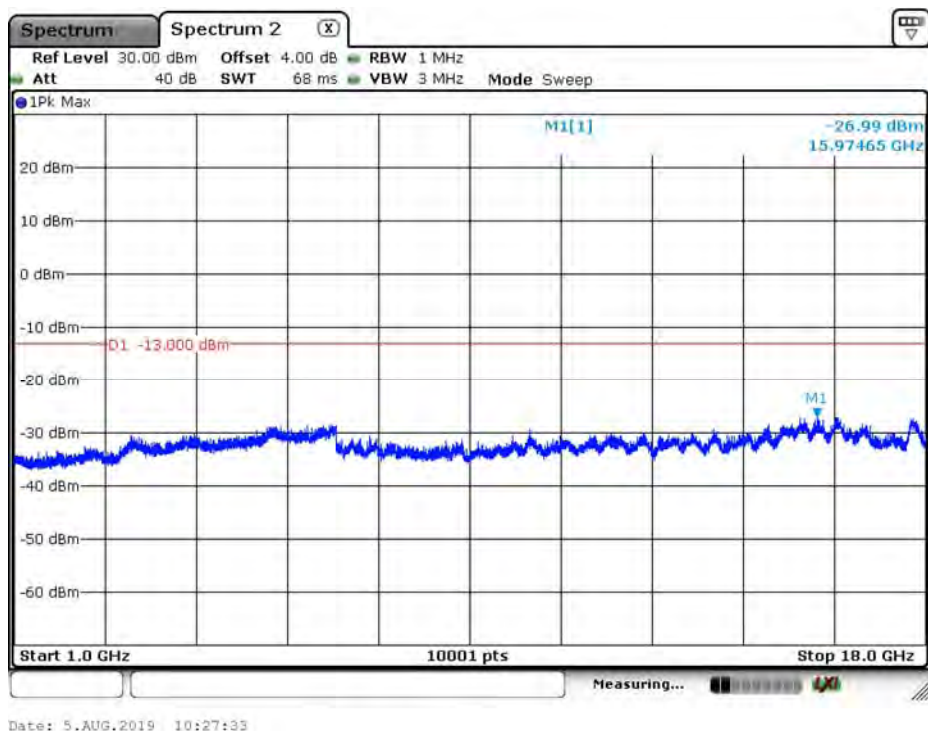
WCDMA_Band 5_RMC_846.6MHz_above 1G



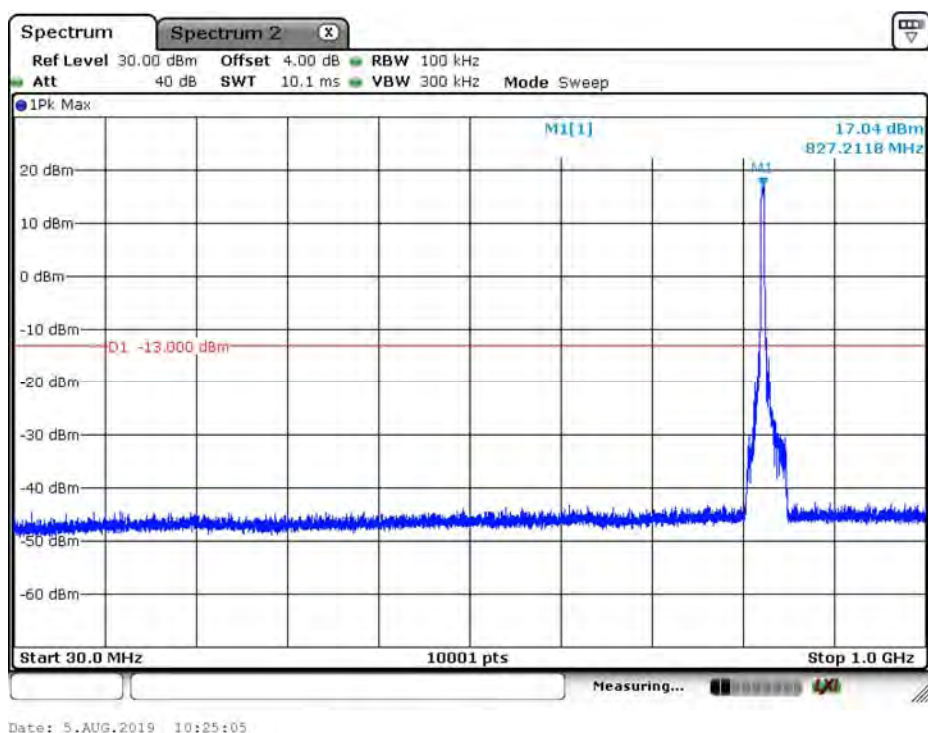
WCDMA_Band 5_RMC_846.6MHz_under 1G



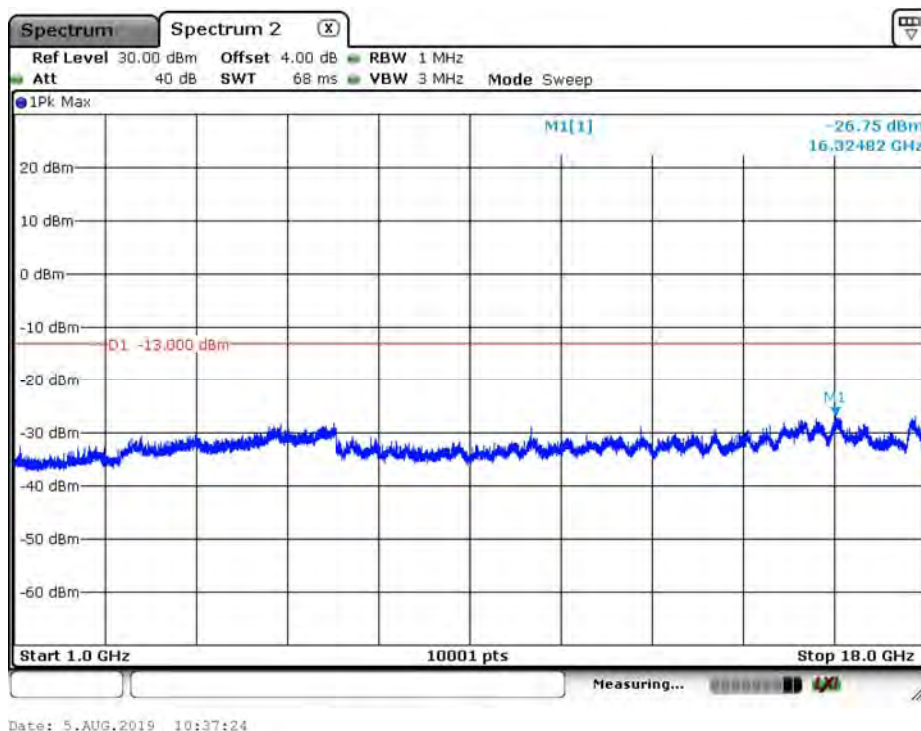
WCDMA_Band 5_HSUPA_826.4MHz_above 1G



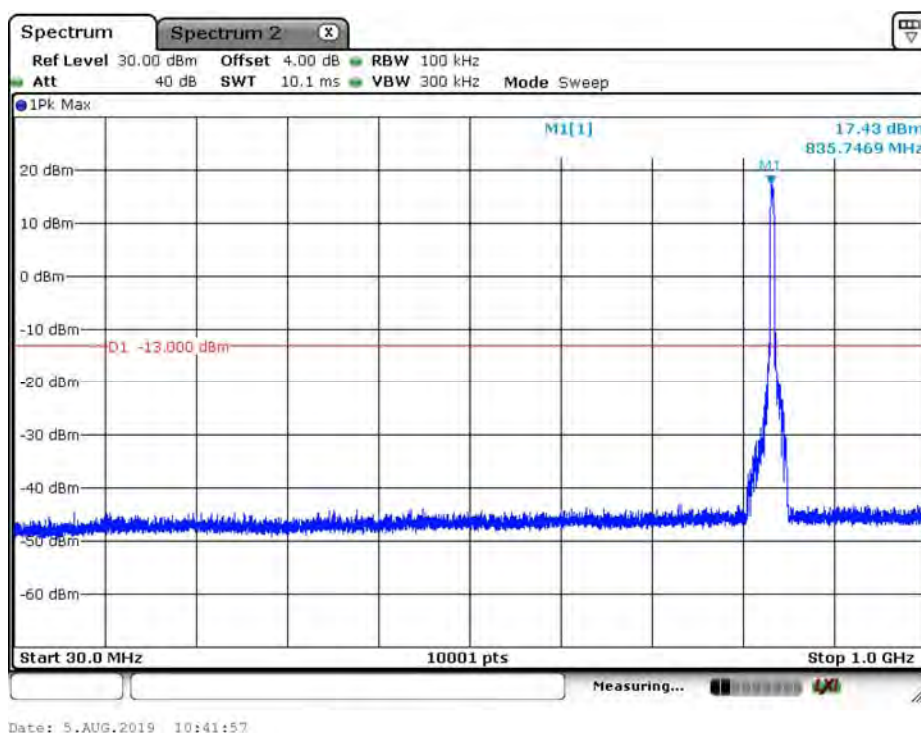
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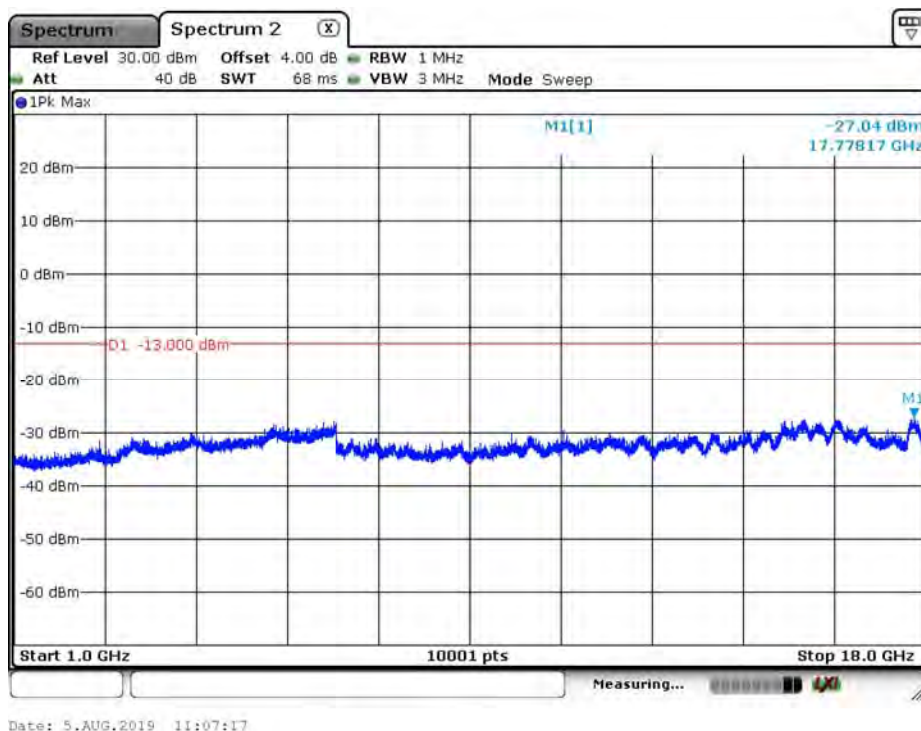
WCDMA_Band 5_HSUPA_836.6MHz_above 1G



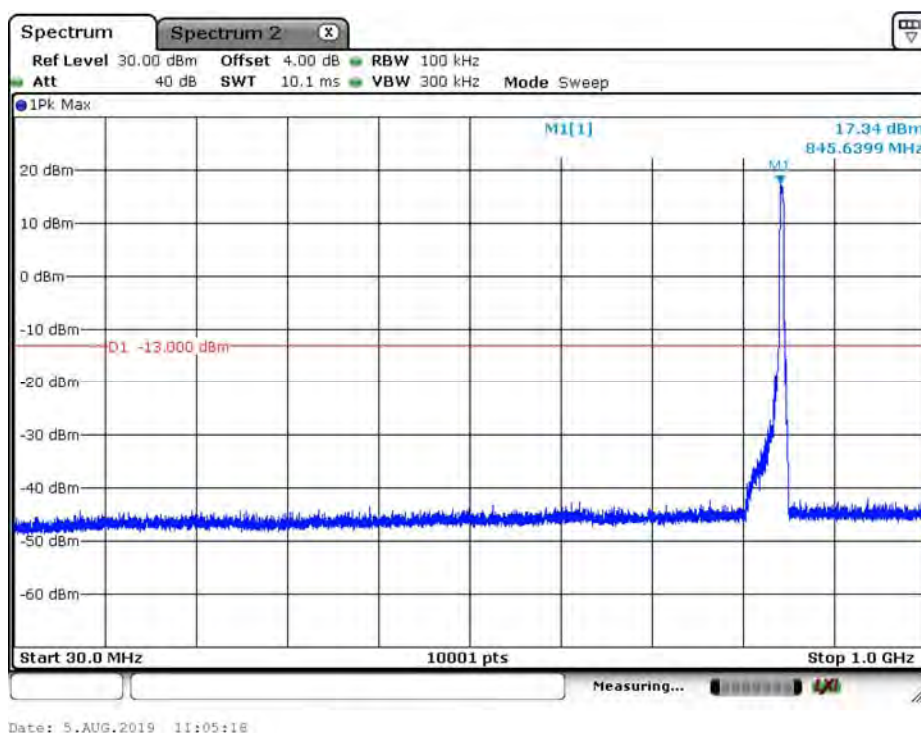
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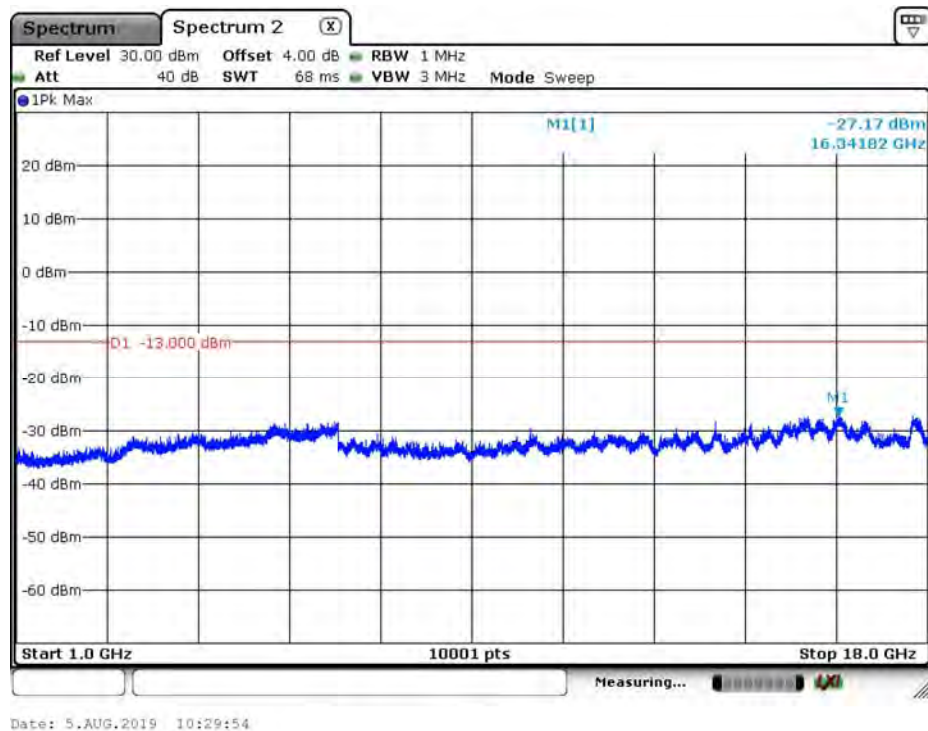
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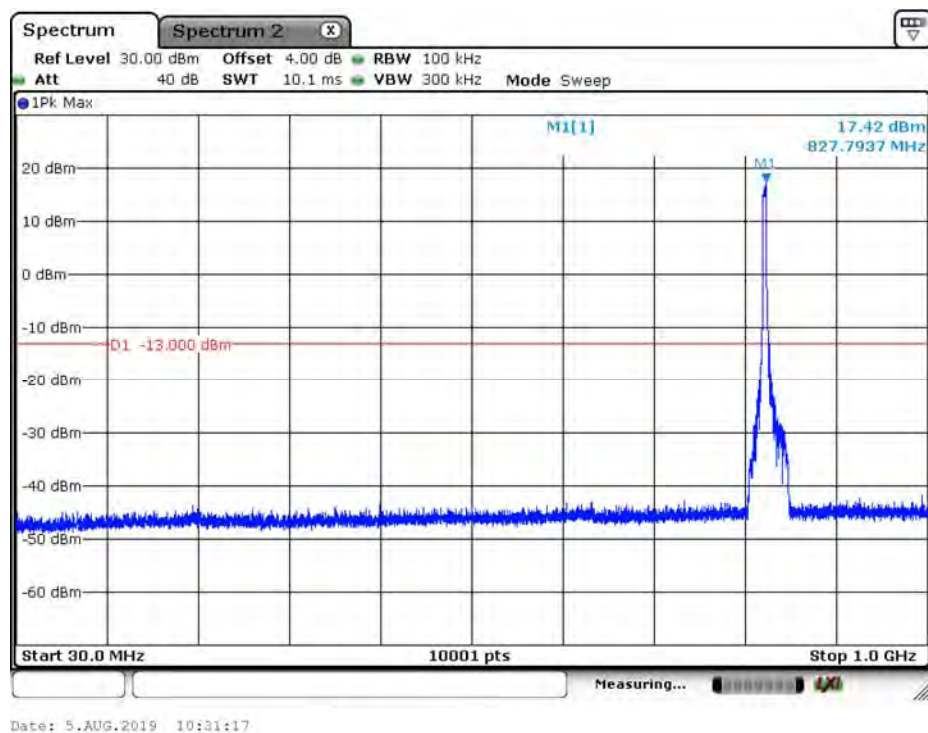
WCDMA_Band 5_HSUPA_846.6MHz_under 1G



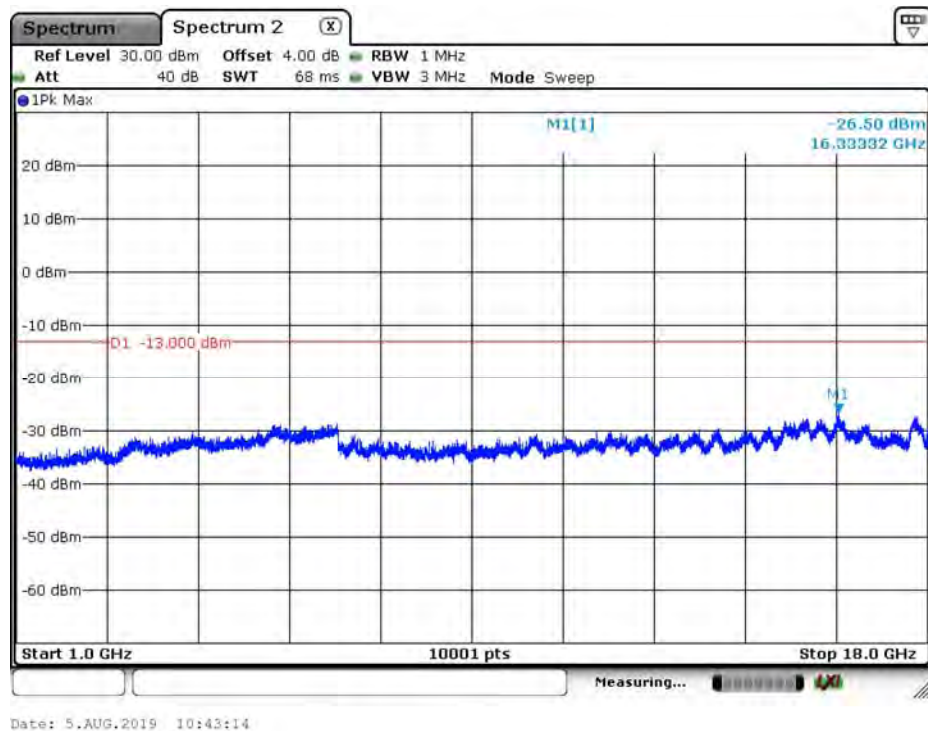
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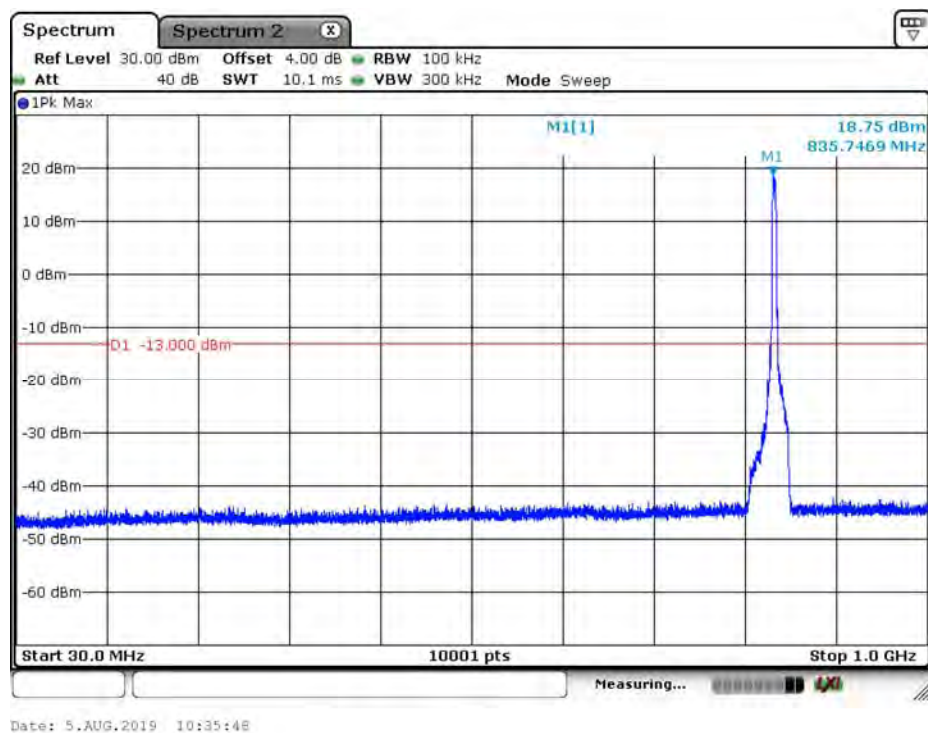
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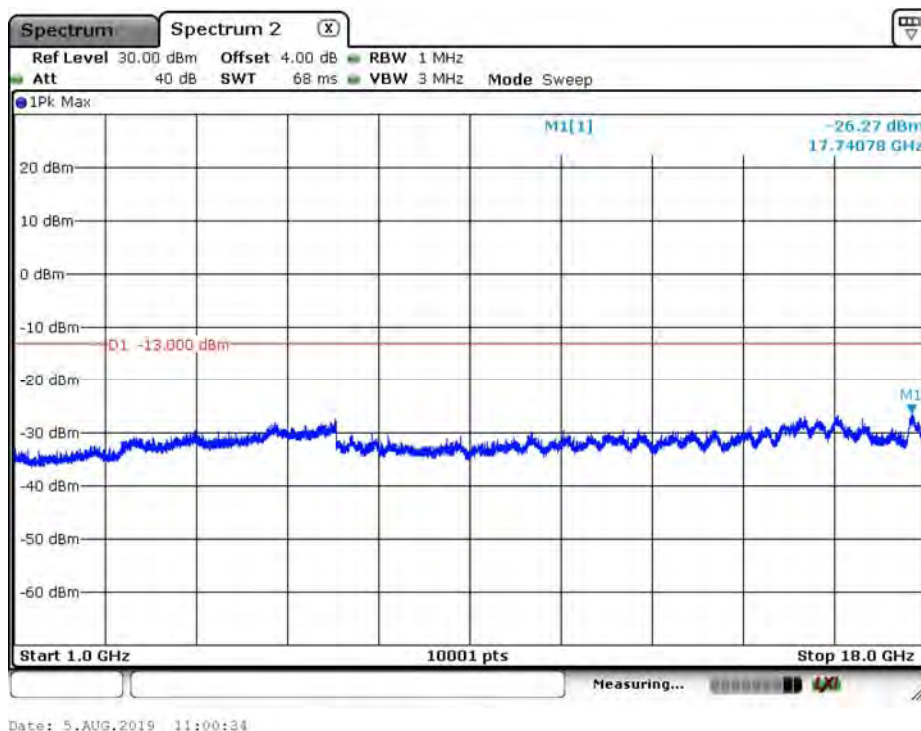
WCDMA_Band 5_HSDPA_836.6MHz_above 1G



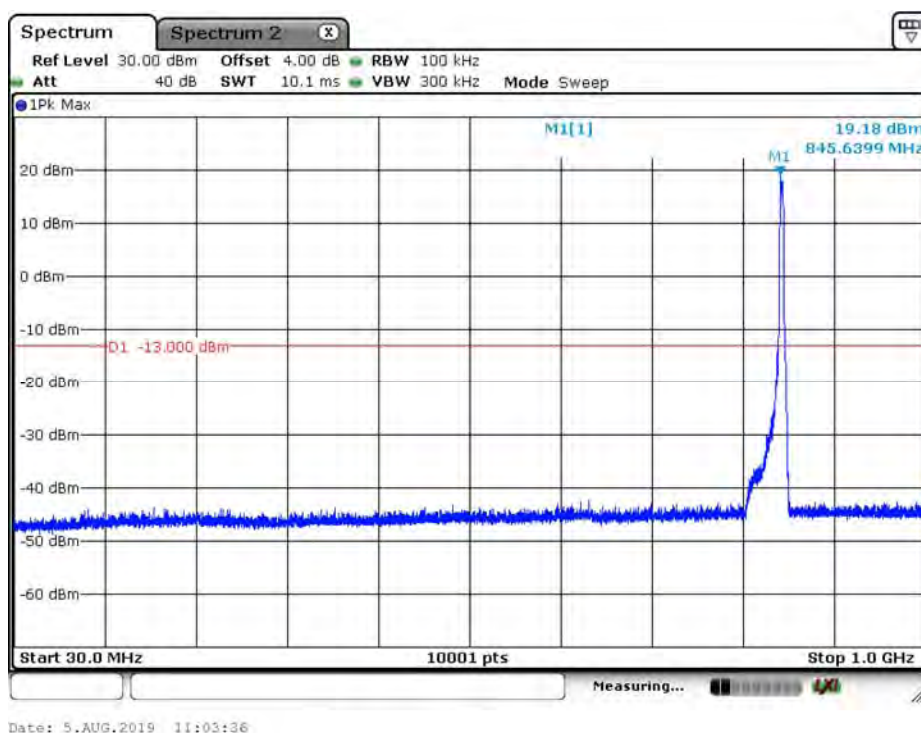
WCDMA_Band 5_HSDPA_836.6MHz_under 1G



WCDMA_Band 5_HSDPA_846.6MHz_above 1G



WCDMA_Band 5_HSDPA_846.6MHz_under 1G



Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 1: WCDMA Band 2		
Date of Test	2019/08/13	Test Site	CB4-H

CH 9262_RMC

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3704.800	-49.42	-13	-36.42	-57.51	12.61	4.51
	5557.200	-38.21	-13	-25.21	-45.66	13.12	5.67
	7409.600	-37.38	-13	-24.38	-42.09	11.31	6.60
	9262.000	-37.92	-13	-24.92	-42.53	11.82	7.21
	11114.400	-34.28	-13	-21.28	-38.00	11.68	7.96
	12966.800	-32.86	-13	-19.86	-37.84	13.62	8.64
V	3704.800	-49.32	-13	-36.32	-57.41	12.61	4.51
	5557.200	-37.32	-13	-24.32	-44.77	13.12	5.67
	7409.600	-30.80	-13	-17.80	-35.51	11.31	6.60
	9262.000	-32.44	-13	-19.44	-37.05	11.82	7.21
	11114.400	-33.51	-13	-20.51	-37.23	11.68	7.96
	12966.800	-32.60	-13	-19.60	-37.58	13.62	8.64

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 9262_HSUPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3704.800	-49.31	-13	-36.31	-57.40	12.61	4.51
	5557.200	-40.02	-13	-27.02	-47.47	13.12	5.67
	7409.600	-38.28	-13	-25.28	-42.99	11.31	6.60
	9262.000	-39.09	-13	-26.09	-43.70	11.82	7.21
	11114.400	-33.57	-13	-20.57	-37.29	11.68	7.96
	12966.800	-33.06	-13	-20.06	-38.04	13.62	8.64
V	3704.800	-49.37	-13	-36.37	-57.46	12.61	4.51
	5557.200	-39.58	-13	-26.58	-47.03	13.12	5.67
	7409.600	-31.65	-13	-18.65	-36.36	11.31	6.60
	9262.000	-34.05	-13	-21.05	-38.66	11.82	7.21
	11114.400	-33.57	-13	-20.57	-37.29	11.68	7.96
	12966.800	-32.77	-13	-19.77	-37.75	13.62	8.64

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 9262_HSDPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3704.800	-49.41	-13	-36.41	-57.50	12.61	4.51
	5557.200	-38.87	-13	-25.87	-46.32	13.12	5.67
	7409.600	-37.66	-13	-24.66	-42.37	11.31	6.60
	9262.000	-38.96	-13	-25.96	-43.57	11.82	7.21
	11114.400	-33.78	-13	-20.78	-37.50	11.68	7.96
	12966.800	-33.31	-13	-20.31	-38.29	13.62	8.64
V	3704.800	-48.97	-13	-35.97	-57.06	12.61	4.51
	5557.200	-38.56	-13	-25.56	-46.01	13.12	5.67
	7409.600	-31.40	-13	-18.40	-36.11	11.31	6.60
	9262.000	-33.45	-13	-20.45	-38.06	11.82	7.21
	11114.400	-33.71	-13	-20.71	-37.43	11.68	7.96
	12966.800	-32.68	-13	-19.68	-37.66	13.62	8.64

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 9400_RMC

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3760.000	-50.88	-13	-37.88	-58.95	12.60	4.54
	5640.000	-40.93	-13	-27.93	-48.33	13.10	5.70
	7520.000	-38.51	-13	-25.51	-43.13	11.24	6.61
	9400.000	-37.88	-13	-24.88	-42.38	11.79	7.29
	11280.000	-33.16	-13	-20.16	-37.02	11.92	8.06
	13160.000	-31.35	-13	-18.35	-35.97	13.33	8.70
V	3760.000	-51.08	-13	-38.08	-59.15	12.60	4.54
	5640.000	-40.76	-13	-27.76	-48.16	13.10	5.70
	7520.000	-31.66	-13	-18.66	-36.28	11.24	6.61
	9400.000	-32.76	-13	-19.76	-37.26	11.79	7.29
	11280.000	-33.41	-13	-20.41	-37.27	11.92	8.06
	13160.000	-30.09	-13	-17.09	-34.71	13.33	8.70

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 9400_HSUPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3760.000	-51.02	-13	-38.02	-59.09	12.60	4.54
	5640.000	-42.40	-13	-29.40	-49.80	13.10	5.70
	7520.000	-39.71	-13	-26.71	-44.33	11.24	6.61
	9400.000	-39.22	-13	-26.22	-43.72	11.79	7.29
	11280.000	-33.06	-13	-20.06	-36.92	11.92	8.06
	13160.000	-31.23	-13	-18.23	-35.85	13.33	8.70
V	3760.000	-51.62	-13	-38.62	-59.69	12.60	4.54
	5640.000	-42.85	-13	-29.85	-50.25	13.10	5.70
	7520.000	-34.12	-13	-21.12	-38.74	11.24	6.61
	9400.000	-36.35	-13	-23.35	-40.85	11.79	7.29
	11280.000	-33.84	-13	-20.84	-37.70	11.92	8.06
	13160.000	-30.84	-13	-17.84	-35.46	13.33	8.70

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 9400_HSDPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3760.000	-51.07	-13	-38.07	-59.14	12.60	4.54
	5640.000	-42.54	-13	-29.54	-49.94	13.10	5.70
	7520.000	-39.02	-13	-26.02	-43.64	11.24	6.61
	9400.000	-38.92	-13	-25.92	-43.42	11.79	7.29
	11280.000	-33.56	-13	-20.56	-37.42	11.92	8.06
	13160.000	-31.58	-13	-18.58	-36.20	13.33	8.70
V	3760.000	-51.52	-13	-38.52	-59.59	12.60	4.54
	5640.000	-42.21	-13	-29.21	-49.61	13.10	5.70
	7520.000	-33.77	-13	-20.77	-38.39	11.24	6.61
	9400.000	-34.95	-13	-21.95	-39.45	11.79	7.29
	11280.000	-33.76	-13	-20.76	-37.62	11.92	8.06
	13160.000	-31.11	-13	-18.11	-35.73	13.33	8.70

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 9538_RMC

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3815.200	-48.71	-13	-35.71	-56.75	12.60	4.57
	5722.800	-39.54	-13	-26.54	-46.89	13.08	5.73
	7630.400	-38.52	-13	-25.52	-43.16	11.24	6.60
	9538.000	-37.13	-13	-24.13	-41.57	11.79	7.35
	11445.600	-34.73	-13	-21.73	-38.73	12.15	8.15
	13353.200	-30.59	-13	-17.59	-34.83	13.00	8.76
V	3815.200	-50.53	-13	-37.53	-58.57	12.60	4.57
	5722.800	-38.26	-13	-25.26	-45.61	13.08	5.73
	7630.400	-32.79	-13	-19.79	-37.43	11.24	6.60
	9538.000	-33.07	-13	-20.07	-37.51	11.79	7.35
	11445.600	-34.08	-13	-21.08	-38.08	12.15	8.15
	13353.200	-30.91	-13	-17.91	-35.15	13.00	8.76

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 9538_HSUPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3815.200	-48.44	-13	-35.44	-56.48	12.60	4.57
	5722.800	-41.05	-13	-28.05	-48.40	13.08	5.73
	7630.400	-39.28	-13	-26.28	-43.92	11.24	6.60
	9538.000	-38.62	-13	-25.62	-43.06	11.79	7.35
	11445.600	-33.82	-13	-20.82	-37.82	12.15	8.15
	13353.200	-30.97	-13	-17.97	-35.21	13.00	8.76
V	3815.200	-50.13	-13	-37.13	-58.17	12.60	4.57
	5722.800	-40.22	-13	-27.22	-47.57	13.08	5.73
	7630.400	-33.04	-13	-20.04	-37.68	11.24	6.60
	9538.000	-34.71	-13	-21.71	-39.15	11.79	7.35
	11445.600	-34.19	-13	-21.19	-38.19	12.15	8.15
	13353.200	-30.60	-13	-17.60	-34.84	13.00	8.76

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 9538_HSDPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3815.200	-48.57	-13	-35.57	-56.61	12.60	4.57
	5722.800	-39.87	-13	-26.87	-47.22	13.08	5.73
	7630.400	-38.69	-13	-25.69	-43.33	11.24	6.60
	9538.000	-38.21	-13	-25.21	-42.65	11.79	7.35
	11445.600	-33.42	-13	-20.42	-37.42	12.15	8.15
	13353.200	-30.77	-13	-17.77	-35.01	13.00	8.76
V	3815.200	-50.46	-13	-37.46	-58.50	12.60	4.57
	5722.800	-39.19	-13	-26.19	-46.54	13.08	5.73
	7630.400	-32.02	-13	-19.02	-36.66	11.24	6.60
	9538.000	-33.50	-13	-20.50	-37.94	11.79	7.35
	11445.600	-34.30	-13	-21.30	-38.30	12.15	8.15
	13353.200	-30.95	-13	-17.95	-35.19	13.00	8.76

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 2: WCDMA Band 4		
Date of Test	2019/08/13	Test Site	CB4-H

CH 1312_RMC

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3424.800	-47.27	-13	-34.27	-55.36	12.45	4.36
	5137.200	-44.64	-13	-31.64	-52.03	12.78	5.39
	6849.600	-39.82	-13	-26.82	-45.28	11.83	6.37
	8562.000	-40.15	-13	-27.15	-45.10	11.87	6.91
	10274.400	-36.27	-13	-23.27	-40.50	11.85	7.62
	11986.800	-34.46	-13	-21.46	-39.39	13.15	8.22
V	3424.800	-47.11	-13	-34.11	-55.20	12.45	4.36
	5137.200	-43.11	-13	-30.11	-50.50	12.78	5.39
	6849.600	-30.64	-13	-17.64	-36.10	11.83	6.37
	8562.000	-39.46	-13	-26.46	-44.41	11.87	6.91
	10274.400	-35.98	-13	-22.98	-40.21	11.85	7.62
	11986.800	-33.82	-13	-20.82	-38.75	13.15	8.22

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 1312_HSUPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3424.800	-47.49	-13	-34.49	-55.58	12.45	4.36
	5137.200	-45.52	-13	-32.52	-52.91	12.78	5.39
	6849.600	-42.68	-13	-29.68	-48.14	11.83	6.37
	8562.000	-40.33	-13	-27.33	-45.28	11.87	6.91
	10274.400	-36.09	-13	-23.09	-40.32	11.85	7.62
	11986.800	-33.90	-13	-20.90	-38.83	13.15	8.22
V	3424.800	-47.31	-13	-34.31	-55.40	12.45	4.36
	5137.200	-44.15	-13	-31.15	-51.54	12.78	5.39
	6849.600	-33.30	-13	-20.30	-38.76	11.83	6.37
	8562.000	-38.97	-13	-25.97	-43.92	11.87	6.91
	10274.400	-36.01	-13	-23.01	-40.24	11.85	7.62
	11986.800	-33.95	-13	-20.95	-38.88	13.15	8.22

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 1312_HSDPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3424.800	-47.57	-13	-34.57	-55.66	12.45	4.36
	5137.200	-45.10	-13	-32.10	-52.49	12.78	5.39
	6849.600	-41.74	-13	-28.74	-47.20	11.83	6.37
	8562.000	-40.81	-13	-27.81	-45.76	11.87	6.91
	10274.400	-36.03	-13	-23.03	-40.26	11.85	7.62
	11986.800	-33.40	-13	-20.40	-38.33	13.15	8.22
V	3424.800	-47.21	-13	-34.21	-55.30	12.45	4.36
	5137.200	-42.18	-13	-29.18	-49.57	12.78	5.39
	6849.600	-31.77	-13	-18.77	-37.23	11.83	6.37
	8562.000	-38.81	-13	-25.81	-43.76	11.87	6.91
	10274.400	-36.21	-13	-23.21	-40.44	11.85	7.62
	11986.800	-33.72	-13	-20.72	-38.65	13.15	8.22

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 1413_RMC

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3465.200	-45.93	-13	-32.93	-54.08	12.53	4.38
	5197.800	-42.42	-13	-29.42	-49.83	12.84	5.43
	6930.400	-42.63	-13	-29.63	-47.90	11.73	6.46
	8663.000	-41.74	-13	-28.74	-46.66	11.87	6.95
	10395.600	-36.31	-13	-23.31	-40.37	11.75	7.69
	12128.200	-34.44	-13	-21.44	-39.53	13.35	8.26
V	3465.200	-44.82	-13	-31.82	-52.97	12.53	4.38
	5197.800	-40.23	-13	-27.23	-47.64	12.84	5.43
	6930.400	-33.71	-13	-20.71	-38.98	11.73	6.46
	8663.000	-40.16	-13	-27.16	-45.08	11.87	6.95
	10395.600	-36.08	-13	-23.08	-40.14	11.75	7.69
	12128.200	-34.35	-13	-21.35	-39.44	13.35	8.26

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 1413_HSUPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3465.200	-46.45	-13	-33.45	-54.60	12.53	4.38
	5197.800	-43.03	-13	-30.03	-50.44	12.84	5.43
	6930.400	-42.86	-13	-29.86	-48.13	11.73	6.46
	8663.000	-41.29	-13	-28.29	-46.21	11.87	6.95
	10395.600	-36.23	-13	-23.23	-40.29	11.75	7.69
	12128.200	-34.87	-13	-21.87	-39.96	13.35	8.26
V	3465.200	-45.54	-13	-32.54	-53.69	12.53	4.38
	5197.800	-41.60	-13	-28.60	-49.01	12.84	5.43
	6930.400	-35.20	-13	-22.20	-40.47	11.73	6.46
	8663.000	-39.77	-13	-26.77	-44.69	11.87	6.95
	10395.600	-36.71	-13	-23.71	-40.77	11.75	7.69
	12128.200	-34.85	-13	-21.85	-39.94	13.35	8.26

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 1413_HSDPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3465.200	-46.34	-13	-33.34	-54.49	12.53	4.38
	5197.800	-43.06	-13	-30.06	-50.47	12.84	5.43
	6930.400	-42.38	-13	-29.38	-47.65	11.73	6.46
	8663.000	-41.44	-13	-28.44	-46.36	11.87	6.95
	10395.600	-36.43	-13	-23.43	-40.49	11.75	7.69
	12128.200	-34.82	-13	-21.82	-39.91	13.35	8.26
V	3465.200	-45.31	-13	-32.31	-53.46	12.53	4.38
	5197.800	-41.24	-13	-28.24	-48.65	12.84	5.43
	6930.400	-34.50	-13	-21.50	-39.77	11.73	6.46
	8663.000	-39.89	-13	-26.89	-44.81	11.87	6.95
	10395.600	-36.77	-13	-23.77	-40.83	11.75	7.69
	12128.200	-34.94	-13	-21.94	-40.03	13.35	8.26

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 1513_RMC

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3505.200	-50.32	-13	-37.32	-58.52	12.61	4.41
	5257.800	-43.41	-13	-30.41	-50.84	12.90	5.48
	7010.400	-39.19	-13	-26.19	-44.29	11.64	6.54
	8763.000	-40.81	-13	-27.81	-45.70	11.88	6.98
	10515.600	-35.03	-13	-22.03	-38.94	11.66	7.75
	12268.200	-34.83	-13	-21.83	-40.07	13.54	8.30
V	3505.200	-50.00	-13	-37.00	-58.20	12.61	4.41
	5257.800	-40.45	-13	-27.45	-47.88	12.90	5.48
	7010.400	-28.64	-13	-15.64	-33.74	11.64	6.54
	8763.000	-39.87	-13	-26.87	-44.76	11.88	6.98
	10515.600	-34.99	-13	-21.99	-38.90	11.66	7.75
	12268.200	-34.46	-13	-21.46	-39.70	13.54	8.30

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 1513_HSUPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3505.200	-49.52	-13	-36.52	-57.72	12.61	4.41
	5257.800	-44.83	-13	-31.83	-52.26	12.90	5.48
	7010.400	-40.77	-13	-27.77	-45.87	11.64	6.54
	8763.000	-40.85	-13	-27.85	-45.74	11.88	6.98
	10515.600	-34.68	-13	-21.68	-38.59	11.66	7.75
	12268.200	-34.11	-13	-21.11	-39.35	13.54	8.30
V	3505.200	-49.70	-13	-36.70	-57.90	12.61	4.41
	5257.800	-42.39	-13	-29.39	-49.82	12.90	5.48
	7010.400	-30.98	-13	-17.98	-36.08	11.64	6.54
	8763.000	-39.89	-13	-26.89	-44.78	11.88	6.98
	10515.600	-35.21	-13	-22.21	-39.12	11.66	7.75
	12268.200	-34.62	-13	-21.62	-39.86	13.54	8.30

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 1513_HSDPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	3505.200	-49.82	-13	-36.82	-58.02	12.61	4.41
	5257.800	-44.62	-13	-31.62	-52.05	12.90	5.48
	7010.400	-40.35	-13	-27.35	-45.45	11.64	6.54
	8763.000	-41.67	-13	-28.67	-46.56	11.88	6.98
	10515.600	-35.51	-13	-22.51	-39.42	11.66	7.75
	12268.200	-34.38	-13	-21.38	-39.62	13.54	8.30
V	3505.200	-49.63	-13	-36.63	-57.83	12.61	4.41
	5257.800	-41.96	-13	-28.96	-49.39	12.90	5.48
	7010.400	-29.33	-13	-16.33	-34.43	11.64	6.54
	8763.000	-39.77	-13	-26.77	-44.66	11.88	6.98
	10515.600	-35.38	-13	-22.38	-39.29	11.66	7.75
	12268.200	-34.78	-13	-21.78	-40.02	13.54	8.30

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

Product	Module		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 3: WCDMA Band 5		
Date of Test	2019/08/13	Test Site	CB4-H

CH 4132_RMC

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	1652.800	-52.99	-13	-39.99	-59.30	9.30	2.99
	2479.200	-51.97	-13	-38.97	-58.87	10.59	3.69
	3305.600	-54.02	-13	-41.02	-61.94	12.19	4.27
	4132.000	-52.05	-13	-39.05	-59.92	12.62	4.75
	4958.400	-48.41	-13	-35.41	-55.79	12.65	5.27
	5784.800	-46.96	-13	-33.96	-54.27	13.06	5.75
V	1652.800	-48.98	-13	-35.98	-55.29	9.30	2.99
	2479.200	-51.44	-13	-38.44	-58.34	10.59	3.69
	3305.600	-54.05	-13	-41.05	-61.97	12.19	4.27
	4132.000	-52.08	-13	-39.08	-59.95	12.62	4.75
	4958.400	-48.44	-13	-35.44	-55.82	12.65	5.27
	5784.800	-46.99	-13	-33.99	-54.30	13.06	5.75

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 4132_HSUPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	1652.800	-53.75	-13	-40.75	-60.06	9.30	2.99
	2479.200	-53.53	-13	-40.53	-60.43	10.59	3.69
	3305.600	-54.14	-13	-41.14	-62.06	12.19	4.27
	4132.000	-52.17	-13	-39.17	-60.04	12.62	4.75
	4958.400	-48.53	-13	-35.53	-55.91	12.65	5.27
	5784.800	-47.08	-13	-34.08	-54.39	13.06	5.75
V	1652.800	-50.13	-13	-37.13	-56.44	9.30	2.99
	2479.200	-53.60	-13	-40.60	-60.50	10.59	3.69
	3305.600	-54.17	-13	-41.17	-62.09	12.19	4.27
	4132.000	-52.20	-13	-39.20	-60.07	12.62	4.75
	4958.400	-48.56	-13	-35.56	-55.94	12.65	5.27
	5784.800	-47.11	-13	-34.11	-54.42	13.06	5.75

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 4132_HSDPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	1652.800	-54.19	-13	-41.19	-60.50	9.30	2.99
	2479.200	-52.23	-13	-39.23	-59.13	10.59	3.69
	3305.600	-54.11	-13	-41.11	-62.03	12.19	4.27
	4132.000	-52.14	-13	-39.14	-60.01	12.62	4.75
	4958.400	-48.50	-13	-35.50	-55.88	12.65	5.27
	5784.800	-47.05	-13	-34.05	-54.36	13.06	5.75
V	1652.800	-49.07	-13	-36.07	-55.38	9.30	2.99
	2479.200	-52.65	-13	-39.65	-59.55	10.59	3.69
	3305.600	-54.08	-13	-41.08	-62.00	12.19	4.27
	4132.000	-52.11	-13	-39.11	-59.98	12.62	4.75
	4958.400	-48.47	-13	-35.47	-55.85	12.65	5.27
	5784.800	-47.02	-13	-34.02	-54.33	13.06	5.75

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 4183_RMC

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	1673.200	-54.57	-13	-41.57	-60.92	9.36	3.01
	2509.800	-52.73	-13	-39.73	-59.64	10.62	3.71
	3346.400	-54.22	-13	-41.22	-62.20	12.28	4.30
	4183.000	-51.62	-13	-38.62	-59.46	12.62	4.78
	5019.600	-48.20	-13	-35.20	-55.56	12.67	5.31
	5856.200	-47.39	-13	-34.39	-54.66	13.04	5.77
V	1673.200	-54.03	-13	-41.03	-60.38	9.36	3.01
	2509.800	-52.89	-13	-39.89	-59.80	10.62	3.71
	3346.400	-54.19	-13	-41.19	-62.17	12.28	4.30
	4183.000	-51.59	-13	-38.59	-59.43	12.62	4.78
	5019.600	-48.17	-13	-35.17	-55.53	12.67	5.31
	5856.200	-47.36	-13	-34.36	-54.63	13.04	5.77

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 4183_HSUPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	1673.200	-56.13	-13	-43.13	-62.48	9.36	3.01
	2509.800	-54.76	-13	-41.76	-61.67	10.62	3.71
	3346.400	-54.10	-13	-41.10	-62.08	12.28	4.30
	4183.000	-51.50	-13	-38.50	-59.34	12.62	4.78
	5019.600	-48.08	-13	-35.08	-55.44	12.67	5.31
	5856.200	-47.27	-13	-34.27	-54.54	13.04	5.77
V	1673.200	-55.73	-13	-42.73	-62.08	9.36	3.01
	2509.800	-54.10	-13	-41.10	-61.01	10.62	3.71
	3346.400	-54.07	-13	-41.07	-62.05	12.28	4.30
	4183.000	-51.47	-13	-38.47	-59.31	12.62	4.78
	5019.600	-48.05	-13	-35.05	-55.41	12.67	5.31
	5856.200	-47.24	-13	-34.24	-54.51	13.04	5.77

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 4183_HSDPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	1673.200	-56.34	-13	-43.34	-62.69	9.36	3.01
	2509.800	-55.03	-13	-42.03	-61.94	10.62	3.71
	3346.400	-54.13	-13	-41.13	-62.11	12.28	4.30
	4183.000	-51.53	-13	-38.53	-59.37	12.62	4.78
	5019.600	-48.11	-13	-35.11	-55.47	12.67	5.31
	5856.200	-47.30	-13	-34.30	-54.57	13.04	5.77
V	1673.200	-55.61	-13	-42.61	-61.96	9.36	3.01
	2509.800	-54.89	-13	-41.89	-61.80	10.62	3.71
	3346.400	-54.16	-13	-41.16	-62.14	12.28	4.30
	4183.000	-51.56	-13	-38.56	-59.40	12.62	4.78
	5019.600	-48.14	-13	-35.14	-55.50	12.67	5.31
	5856.200	-47.33	-13	-34.33	-54.60	13.04	5.77

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 4233_RMC

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	1693.200	-52.64	-13	-39.64	-59.03	9.42	3.03
	2539.800	-50.52	-13	-37.52	-57.46	10.67	3.73
	3386.400	-53.80	-13	-40.80	-61.84	12.36	4.33
	4233.000	-51.61	-13	-38.61	-59.42	12.63	4.82
	5079.600	-48.14	-13	-35.14	-55.52	12.73	5.35
	5926.200	-46.84	-13	-33.84	-54.07	13.02	5.79
V	1693.200	-48.99	-13	-35.99	-55.38	9.42	3.03
	2539.800	-50.32	-13	-37.32	-57.26	10.67	3.73
	3386.400	-53.83	-13	-40.83	-61.87	12.36	4.33
	4233.000	-51.64	-13	-38.64	-59.45	12.63	4.82
	5079.600	-48.17	-13	-35.17	-55.55	12.73	5.35
	5926.200	-46.87	-13	-33.87	-54.10	13.02	5.79

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

CH 4233_HSUPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	1693.200	-53.63	-13	-40.63	-60.02	9.42	3.03
	2539.800	-54.69	-13	-41.69	-61.63	10.67	3.73
	3386.400	-53.92	-13	-40.92	-61.96	12.36	4.33
	4233.000	-51.73	-13	-38.73	-59.54	12.63	4.82
	5079.600	-48.26	-13	-35.26	-55.64	12.73	5.35
	5926.200	-46.96	-13	-33.96	-54.19	13.02	5.79
V	1693.200	-52.25	-13	-39.25	-58.64	9.42	3.03
	2539.800	-55.24	-13	-42.24	-62.18	10.67	3.73
	3386.400	-53.95	-13	-40.95	-61.99	12.36	4.33
	4233.000	-51.76	-13	-38.76	-59.57	12.63	4.82
	5079.600	-48.29	-13	-35.29	-55.67	12.73	5.35
	5926.200	-46.99	-13	-33.99	-54.22	13.02	5.79

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

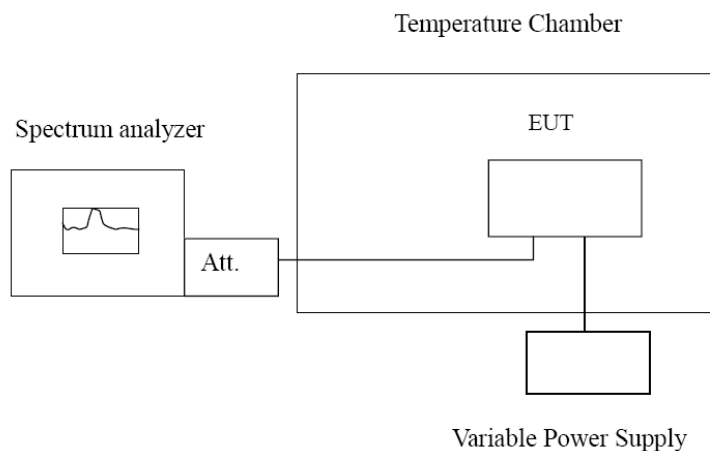
CH 4233_HSDPA

Antenna Polarity	Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Margin (dB)	SG Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)
H	1693.200	-54.57	-13	-41.57	-60.96	9.42	3.03
	2539.800	-55.87	-13	-42.87	-62.81	10.67	3.73
	3386.400	-53.89	-13	-40.89	-61.93	12.36	4.33
	4233.000	-51.70	-13	-38.70	-59.51	12.63	4.82
	5079.600	-48.23	-13	-35.23	-55.61	12.73	5.35
	5926.200	-46.93	-13	-33.93	-54.16	13.02	5.79
V	1693.200	-51.06	-13	-38.06	-57.45	9.42	3.03
	2539.800	-54.60	-13	-41.60	-61.54	10.67	3.73
	3386.400	-53.86	-13	-40.86	-61.90	12.36	4.33
	4233.000	-51.67	-13	-38.67	-59.48	12.63	4.82
	5079.600	-48.20	-13	-35.20	-55.58	12.73	5.35
	5926.200	-46.90	-13	-33.90	-54.13	13.02	5.79

Emission Level=SG(Signal Generator) Level+Antenna Gain-Cable Loss.

8. Frequency Stability

8.1. Test Setup



8.2. 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°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

Frequency Stability under Voltage Variations:

Set chamber temperature to 20°C. 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 ($\pm 15\%$) and endpoint, record the maximum frequency change.

8.3. Test Method

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause 9

ANSI C63.26-2015 Sub-clause 5.6

8.4. Test Result

Product	Module		
Test Item	Frequency Stability		
Test Mode	Mode 1: WCDMA Band 2		
Date of Test	2019/08/01	Test Site	SR10-H

WCDMA Band 2 – 1852.4MHz

Voltage

Voltage (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
4.26	19	-0.0103
3.70	-32	0.0173
3.15	-42	0.0227

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	9	-0.0049
-20	-29	0.0157
-10	4	-0.0022
0	-23	0.0124
10	-25	0.0135
20	-24	0.0130
30	-39	0.0211
40	8	-0.0043
50	1	-0.0005
60	11	-0.0059
70	10	-0.0054

WCDMA Band 2 – 1880MHz

Voltage

Voltage (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
4.26	12	-0.0064
3.70	10	-0.0053
3.15	-30	0.0160

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	15	-0.0080
-20	22	-0.0117
-10	-18	0.0096
0	4	-0.0021
10	-37	0.0197
20	-21	0.0112
30	-13	0.0069
40	-18	0.0096
50	-6	0.0032
60	4	-0.0022
70	8	-0.0043

WCDMA Band 2 – 1907.6MHz

Voltage

Voltage (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
4.26	23	-0.0121
3.70	-7	0.0037
3.15	-37	0.0194

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-21	0.0110
-20	-20	0.0105
-10	5	-0.0026
0	-23	0.0121
10	-20	0.0105
20	16	-0.0084
30	-33	0.0173
40	-20	0.0105
50	3	-0.0016
60	5	-0.0027
70	3	-0.0016

Product	Module		
Test Item	Frequency Stability		
Test Mode	Mode 2: WCDMA Band 4		
Date of Test	2019/08/01	Test Site	SR10-H

WCDMA Band 4 – 1712.4MHz

Voltage

Voltage (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
4.26	-7	0.0041
3.70	-42	0.0245
3.15	-26	0.0152

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-3	0.0018
-20	-5	0.0029
-10	-21	0.0123
0	-23	0.0134
10	-4	0.0023
20	-15	0.0088
30	-20	0.0117
40	9	-0.0053
50	22	-0.0128
60	15	-0.0088
70	-11	0.0064

WCDMA Band 4 – 1732.6MHz

Voltage

Voltage (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
4.26	14	-0.0081
3.70	24	-0.0139
3.15	14	-0.0081

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	16	-0.0092
-20	11	-0.0063
-10	7	-0.0040
0	-10	0.0058
10	4	-0.0023
20	-1	0.0006
30	8	-0.0046
40	8	-0.0046
50	7	-0.0040
60	5	-0.0029
70	3	-0.0017

WCDMA_Band 4_1752.6MHz

Voltage

Voltage (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
4.26	20.00	-0.0114
3.70	21.00	-0.0120
3.15	-22.00	0.0126

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-1	0.0006
-20	1	-0.0006
-10	-36	0.0205
0	21	-0.0120
10	20	-0.0114
20	-22	0.0126
30	4	-0.0023
40	-26	0.0148
50	-35	0.0200
60	11	-0.0063
70	3	-0.0017

Product	Module		
Test Item	Frequency Stability		
Test Mode	Mode 3: WCDMA Band 5		
Date of Test	2019/08/01	Test Site	SR10-H

WCDMA_Band 5_826.4MHz

Voltage

Voltage (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
4.26	5	-0.0061
3.70	-34	0.0411
3.15	-10	0.0121

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-13	0.0157
-20	-28	0.0339
-10	25	-0.0303
0	-32	0.0387
10	16	-0.0194
20	-34	0.0411
30	-28	0.0339
40	-29	0.0351
50	-30	0.0363
60	19	-0.0230
70	24	-0.0290

WCDMA_Band 5_836.6MHz

Voltage

Voltage (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
4.26	-22	0.0263
3.70	-37	0.0443
3.15	-28	0.0335

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-27	0.0323
-20	24	-0.0287
-10	-29	0.0347
0	-27	0.0323
10	-36	0.0431
20	8	-0.0096
30	1	-0.0012
40	-34	0.0407
50	14	-0.0168
60	21	-0.0254
70	-21	0.0254

WCDMA_Band 5_846.6MHz

Voltage

Voltage (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
4.26	1	-0.0012
3.70	18	-0.0215
3.15	-4	0.0048

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	24	-0.0287
-20	-24	0.0287
-10	3	-0.0036
0	-36	0.0430
10	-4	0.0048
20	4	-0.0048
30	-29	0.0346
40	-35	0.0418
50	-35	0.0418
60	-23	0.0278
70	24	-0.0290