



**MOBILE DEVICES BUSINESS
PRODUCT SAFETY AND COMPLIANCE
EMC LABORATORY**

EMC TEST REPORT

Test Report Number – 23784-1

Report Date – June 30, 2010

The test results contained herein relate only to the model(s) identified. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics.

As the responsible EMC Engineer, I hereby declare that the equipment tested as specified in this report conforms to the requirements indicated.

Signature: 

Name: Thanigaiselvan Palaniswami

Title: EMC Engineer

Date: June 30, 2010

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THIS REPORT MUST NOT BE USED TO CLAIM PRODUCT ENDORSEMENT BY A2LA OR ANY AGENCY OF THE U.S. GOVERNMENT.

A2LA Certificate Number: 2518-02

Test Report Details..... 3

Applicable Standards..... 3

Summary of Testing..... 4

General and Special Conditions..... 4

Equipment and Cable Configurations 5

Measurement Procedures and Data 6

OCCUPIED BANDWIDTH..... 6

SPURIOUS EMISSIONS AT ANTENNA TERMINALS..... 21

Test Report Details

Tests Performed By: Motorola Mobile Devices business (MDb)
 Product Safety and Compliance Group
 600 North US Hwy 45
 Libertyville, IL 60048
 PH (847) 523-6167 Fax (847) 523-4538
 Motorola MDb FRN: 0004321311
 FCC Registration Number: 316588
 Industry Canada Number: 109O-1

Tests Requested By: Motorola Inc.
 Mobile Devices Business
 600 North US Hwy 45
 Libertyville, IL 60048

Product Type: Cellular Phone

Signaling Capability: GSM 850 & 1900, EDGE 850 & 1900, WCDMA 850
 &1900, Bluetooth, WLAN

FCC ID: IHDT56LU1

Serial Numbers: LBSA410039, LBSA410023

Testing Complete Date: June 30, 2010

Applicable Standards

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J as well as the following parts:

- X Part 2
- X Part 22 Subpart H - Public Mobile Services
- X Part 24 Subpart E – Personal Communications Services

Applicable Standards: ANSI 63.4 2003, ANSI/TIA-603-C-2004, RSS-132 Issue 2, RSS-133 Issue 5

Summary of Testing

Test #	Test Name	Pass/Fail
1	Occupied Bandwidth	Pass
2	Spurious Emissions at Antenna Terminal	Pass

Test #	Test Name	Margin with respect to the Limit
1	Occupied Bandwidth	See Plots
2	Spurious Emissions at Antenna Terminal	See results

The margin with respect to the limit is the minimum margin for all modes and bands.

General and Special Conditions

The EUT was tested using a fully charged battery when applicable. Where a battery could not be used due to the need for a controlled variation of input voltage, an external power supply was utilized.

All testing was done in an indoor controlled environment. The temperature and the relative humidity were maintained within the ANSI C63.4 2003 Standard requirements during the entire duration of testing.

Equipment and Cable Configurations

The EUT was tested in a stand-alone configuration that is representative of typical use.

Manufacturer	Equipment Type	Model No.	Serial Number	Calibration Due Date
Hewlett Packard	EMC Analyzer	E7405A	US39440191	11/03/10
Agilent	Spectrum Analyzer	N9020A	US46470586	12/18/11
Hewlett Packard	Signal Generator	83623B	3844A00935	4/24/11
Attenuator	Weinschel	AS-6	6675	NCR
Attenuator	Weinschel	AS-6	6677	NCR

All test equipment was within their calibration date during the time of testing. When equipment went out of calibration during testing it was replaced using a similar piece of calibrated equipment. All these equipments are listed in the equipment list.

Measurement Procedures and Data

OCCUPIED BANDWIDTH

Measurement Procedure

The RF output port of the equipment under test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. The amplitude of the spectrum analyzer is corrected for the attenuator and any other applicable losses. The analyzer is set for Peak Detector and each trace is set for Max Hold. For all testing the EUT was powered through the computer’s USB port.

The middle channel within the designated frequency block was measured. For digital modulation, the lower and upper band edge plots are displayed.

Measurement Results

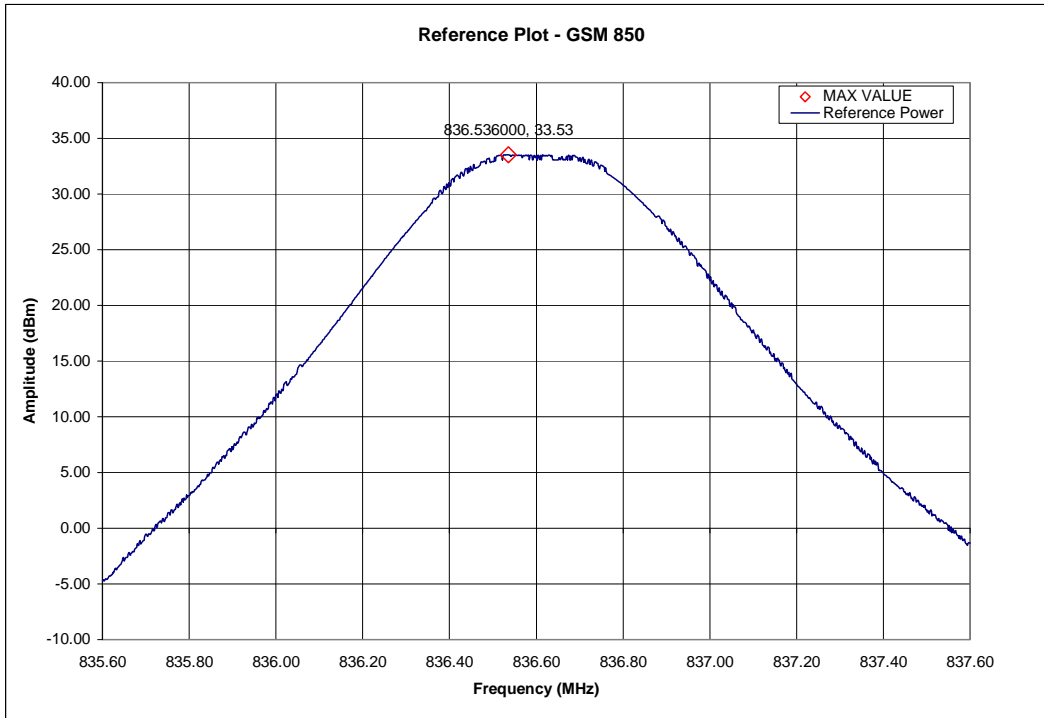
Attached

Plot	Equipment Settings					
	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Sweep Points (#)	Trace Mode	Detector	Samples (≥#)
Reference Plot - GSM 850	300	Auto	1001	Max Hold	Peak	30
Lower Band Edge - GSM and EDGE 850	1	Auto	2004	Max Hold	Peak	30
Upper Band Edge - GSM and EDGE 850	1	Auto	2004	Max Hold	Peak	30
Reference Plot - GSM 1900	300	Auto	1001	Max Hold	Peak	30
Lower Band Edge - GSM and EDGE 1900	1	Auto	2004	Max Hold	Peak	30
Upper Band Edge - GSM and EDGE 1900	1	Auto	2004	Max Hold	Peak	30

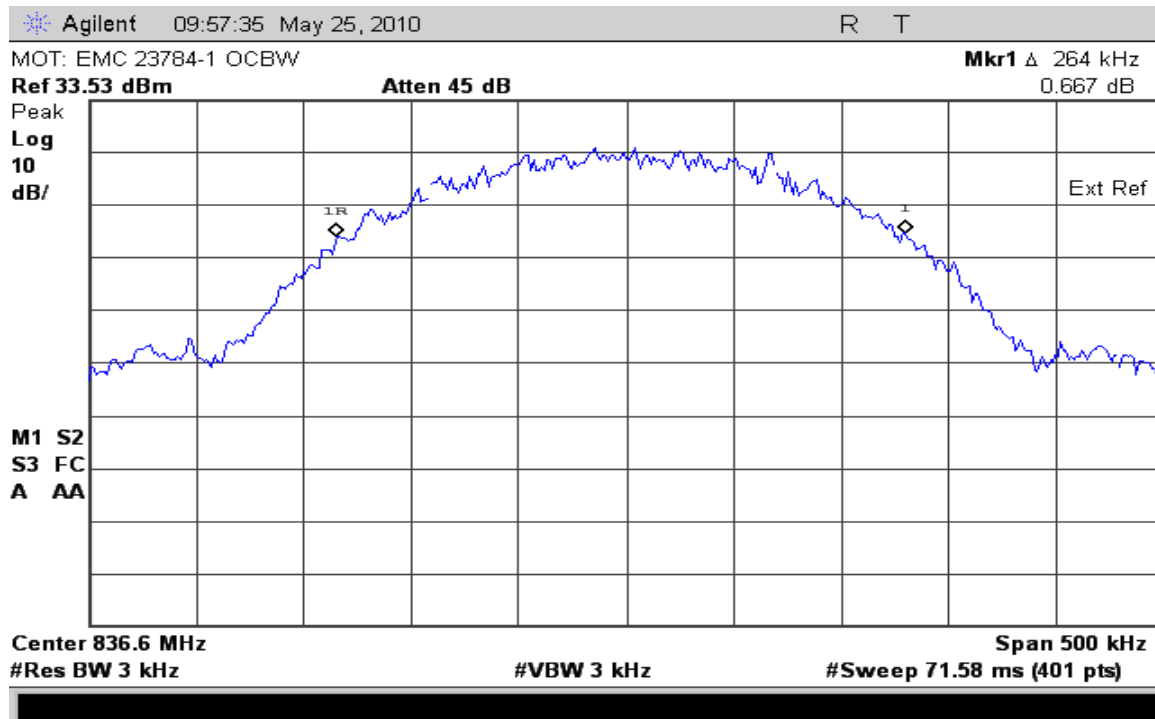
- Notes: 1) When the video bandwidth is set to Auto the video bandwidth self adjusts for ³ the resolution bandwidth.
 2) The plotted data shown for the band edge measurements is representative of data taken with a true 3 kHz resolution bandwidth filter. The raw data was taken using a 1 kHz resolution bandwidth and was integrated to produce a response representative of data taken using a true 3 kHz resolution bandwidth filter.

Measurement Results – GSM 850

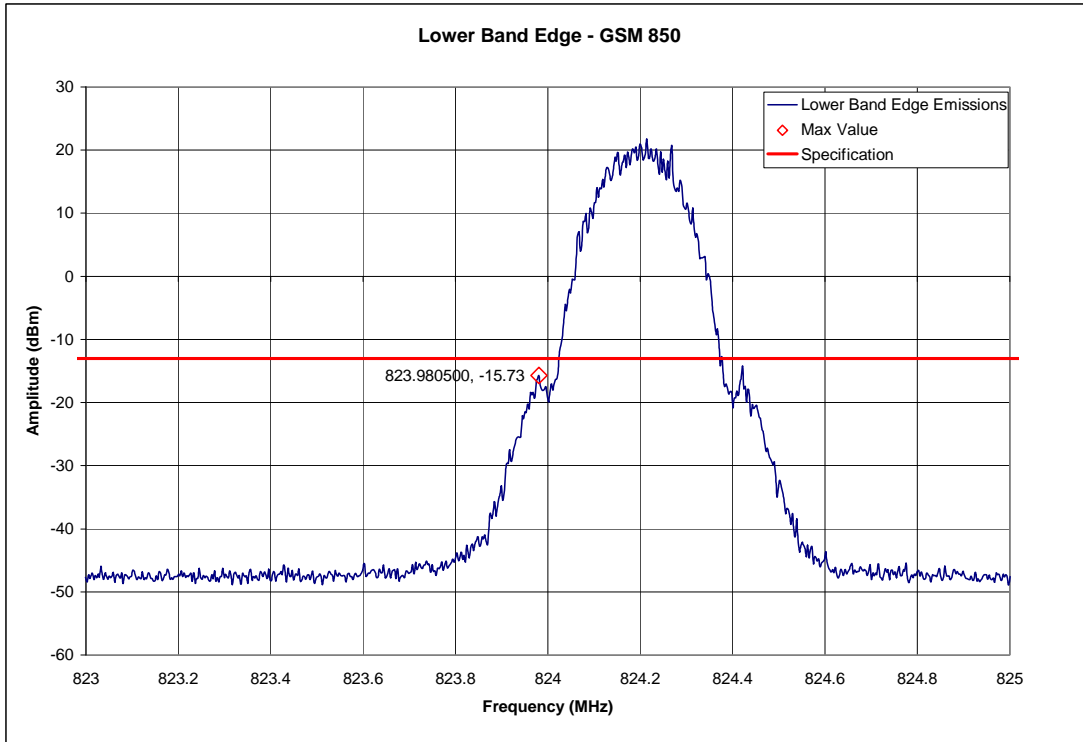
GSM 850 – Reference Level Plot – Channel 190 (836.60 MHz)



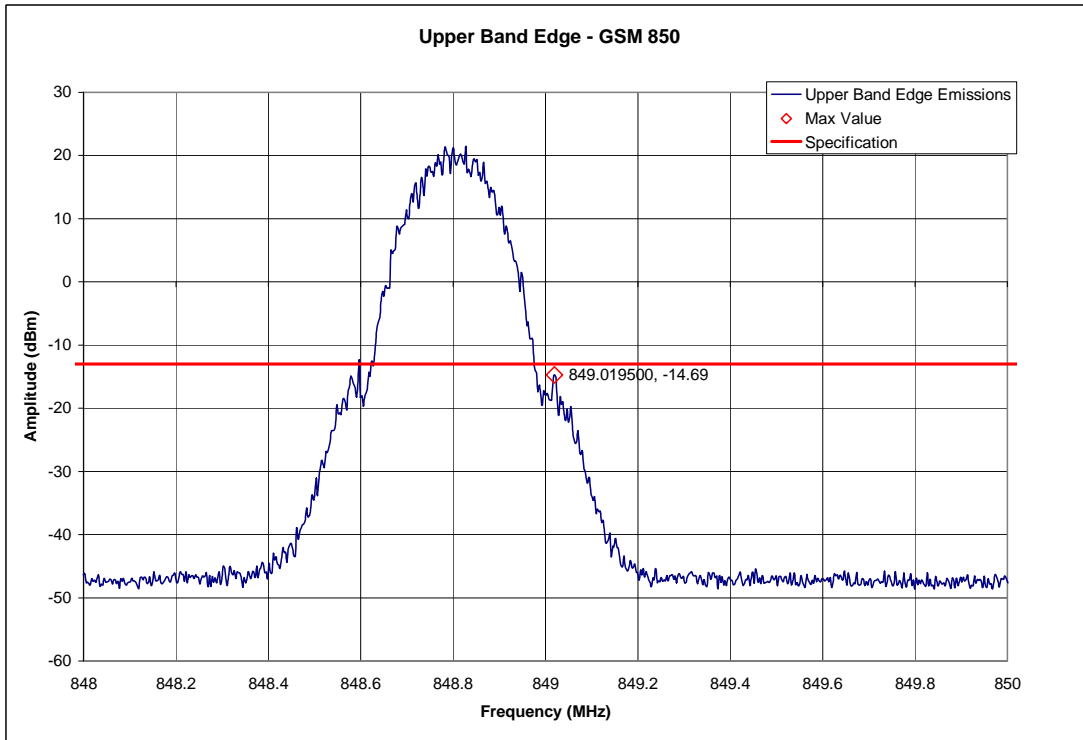
GSM 850 – Channel 190 (836.60 MHz) – Occupied Bandwidth



GSM 850 – Lower Band Edge – Channel 128 (824.2 MHz)

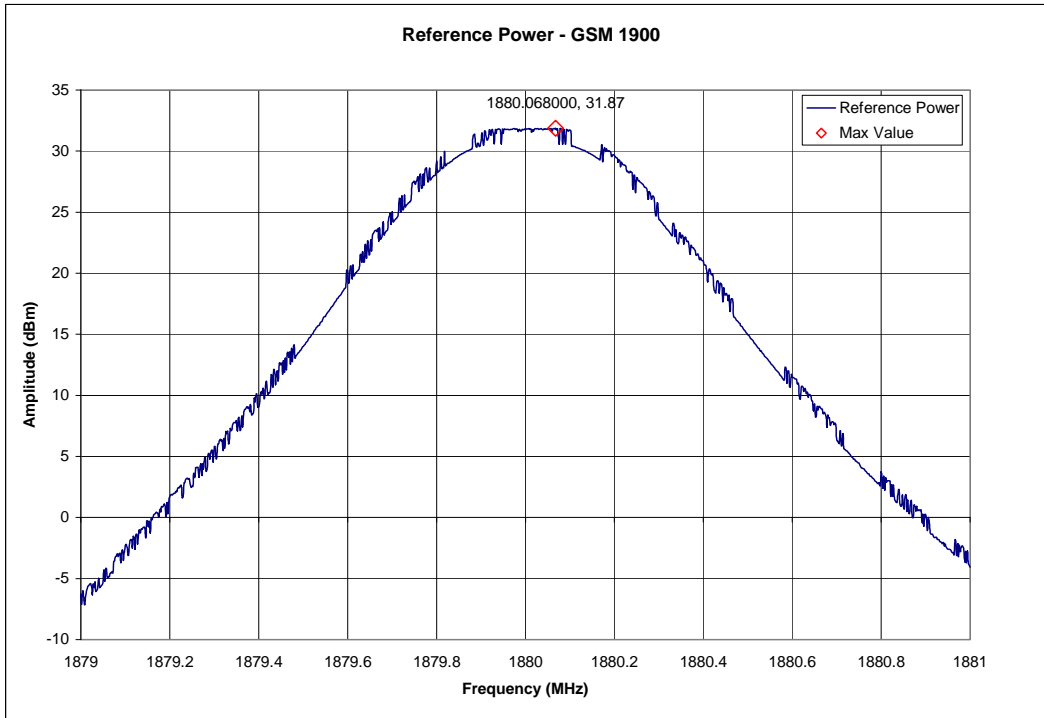


GSM 850 – Upper Band Edge – Channel 251 (848.8 MHz)

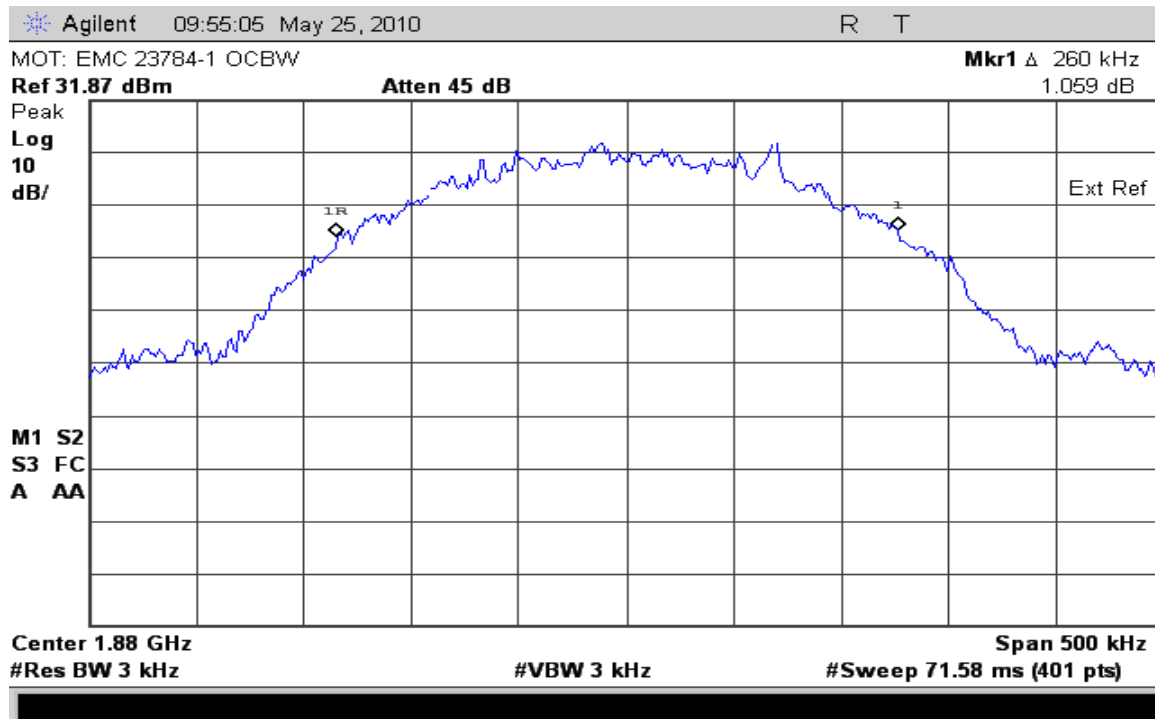


Measurement Results – GSM 1900

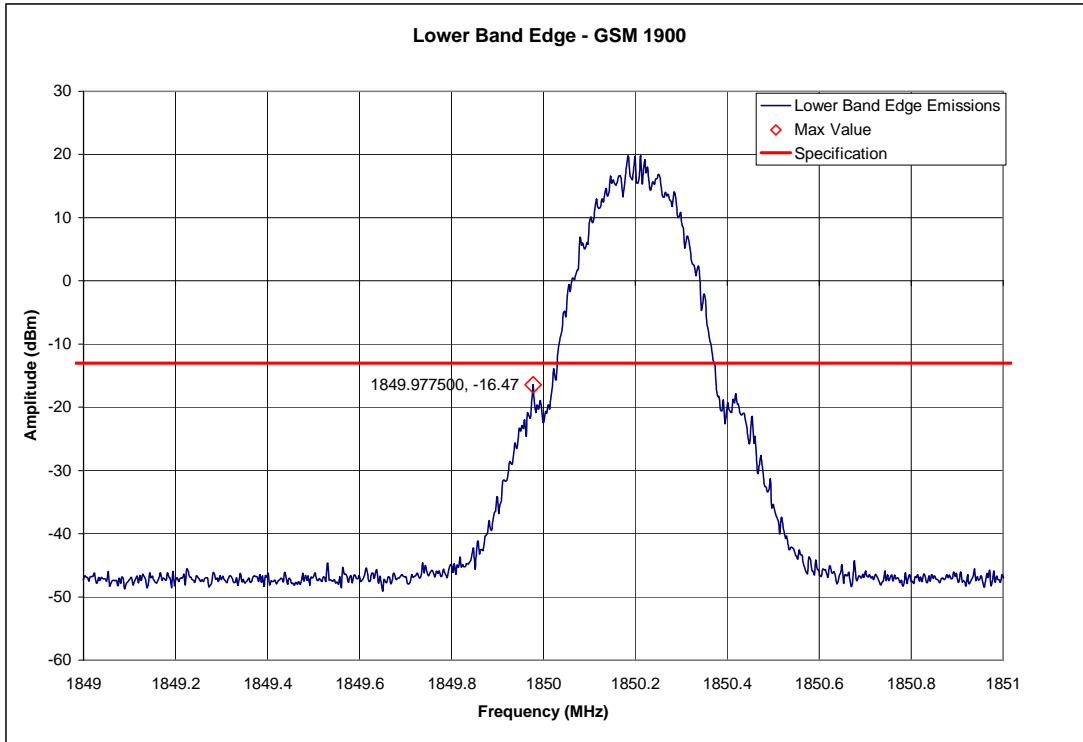
GSM 1900 – Reference Level Plot – Channel 661 (1880.00 MHz)



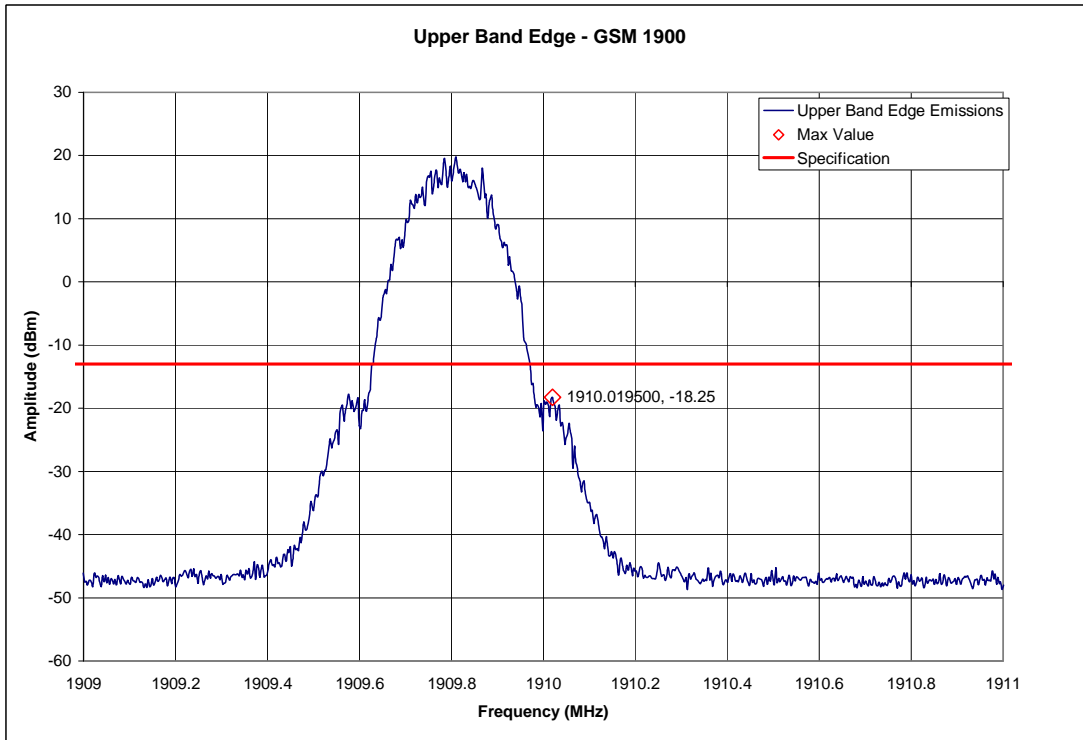
GSM 1900 – Channel 661 (1880.00 MHz) – Occupied Bandwidth



GSM 1900 – Lower Band Edge – Channel 512 (1850.2 MHz)

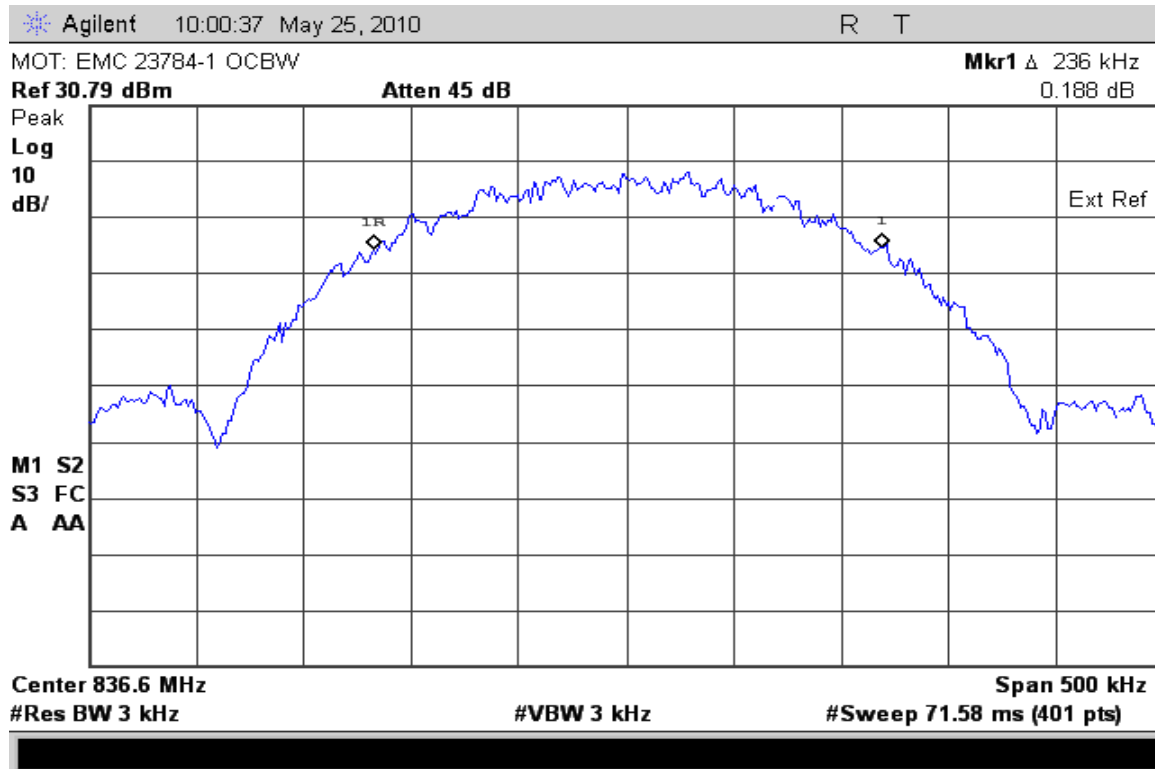


GSM 1900 – Upper Band Edge – Channel 810 (1909.8 MHz)

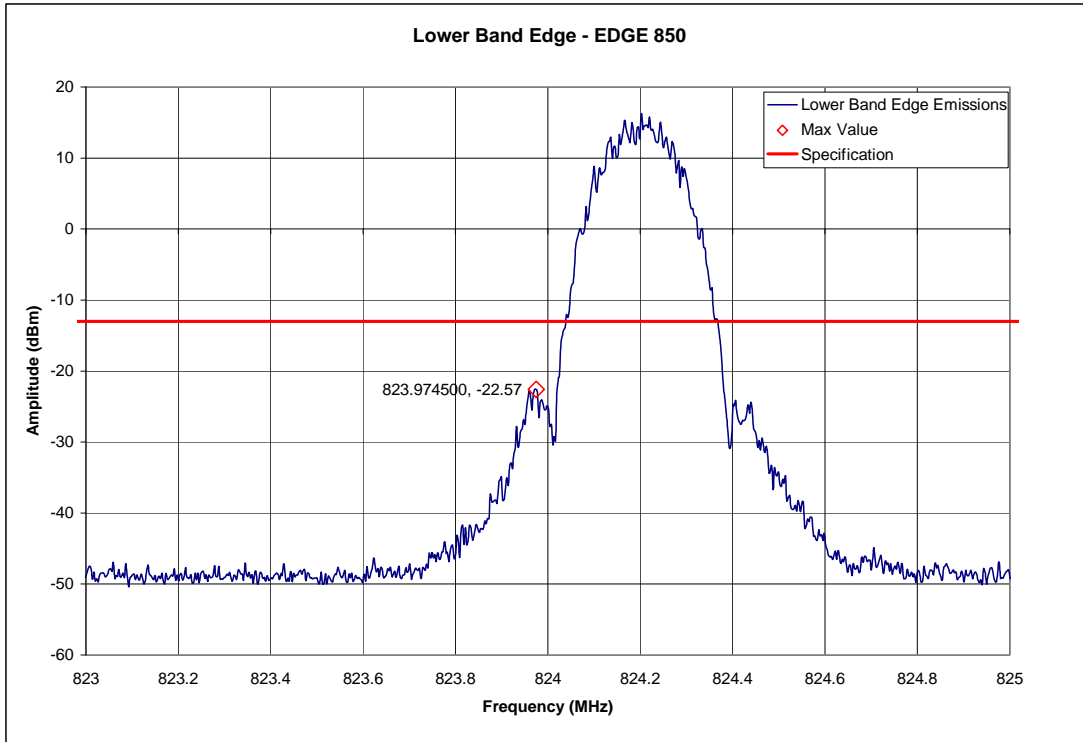


Measurement Results – EDGE 850

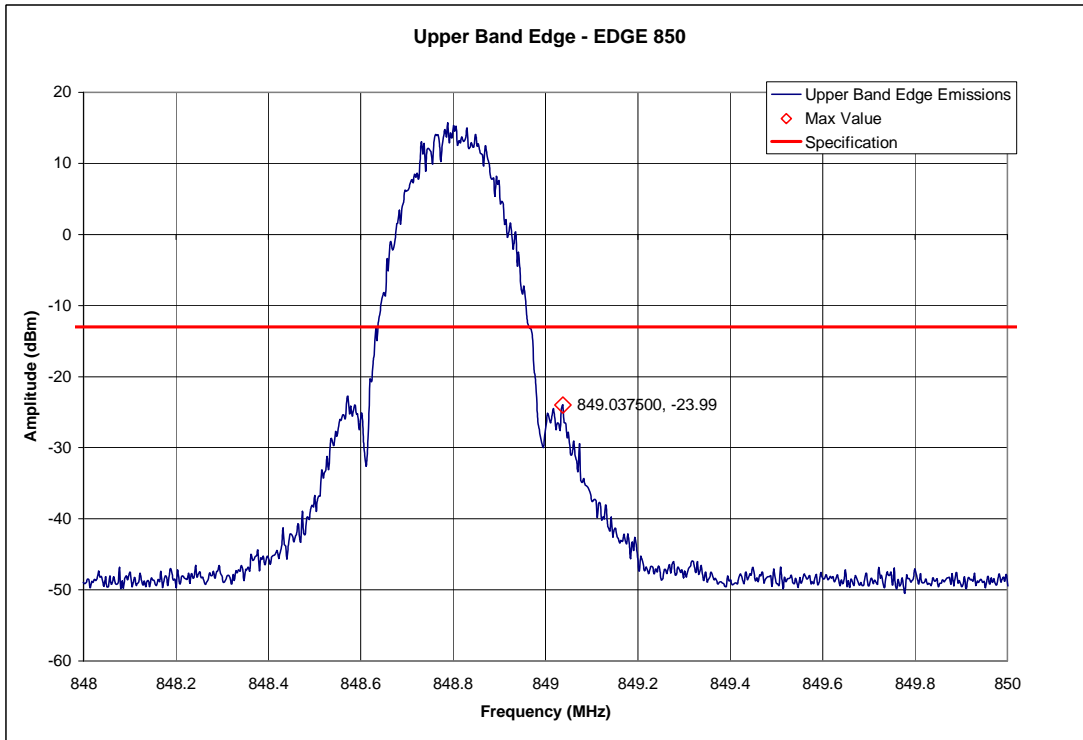
EDGE 850 – Channel 190 (836.60 MHz) – Occupied Bandwidth



EDGE 850 – Lower Band Edge – Channel 128 (824.2 MHz)

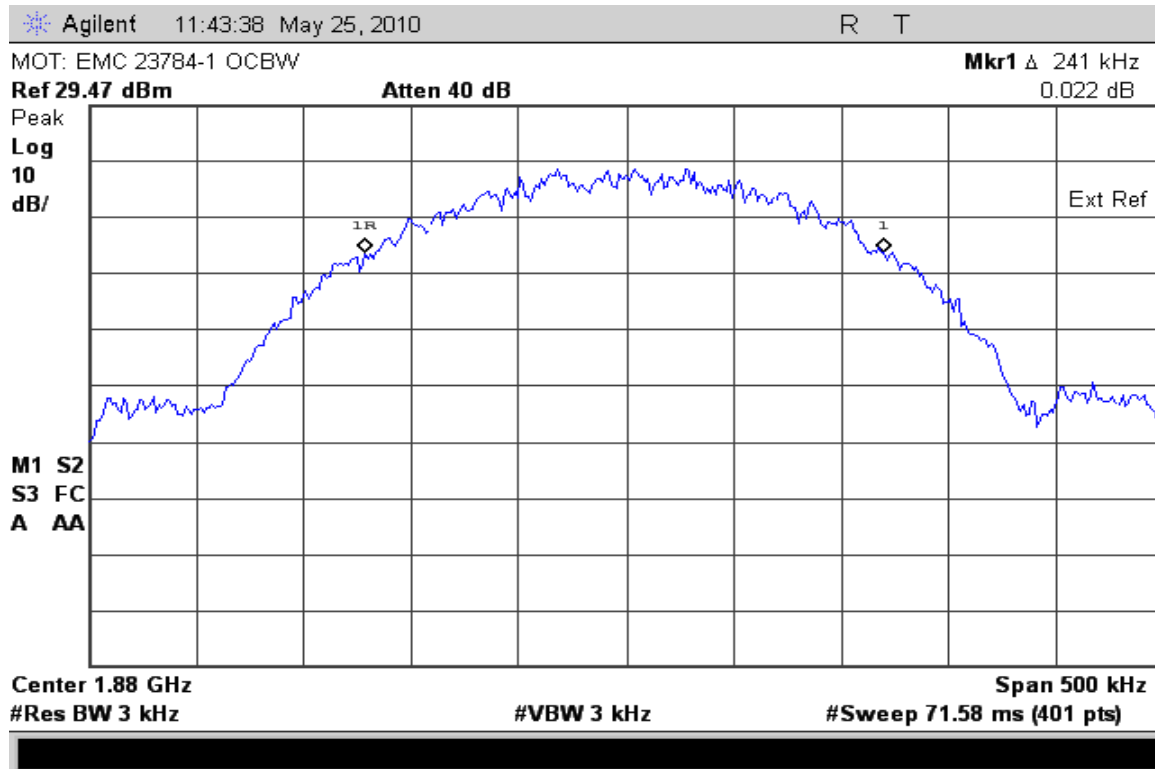


EDGE 850 – Upper Band Edge – Channel 251 (848.8 MHz)

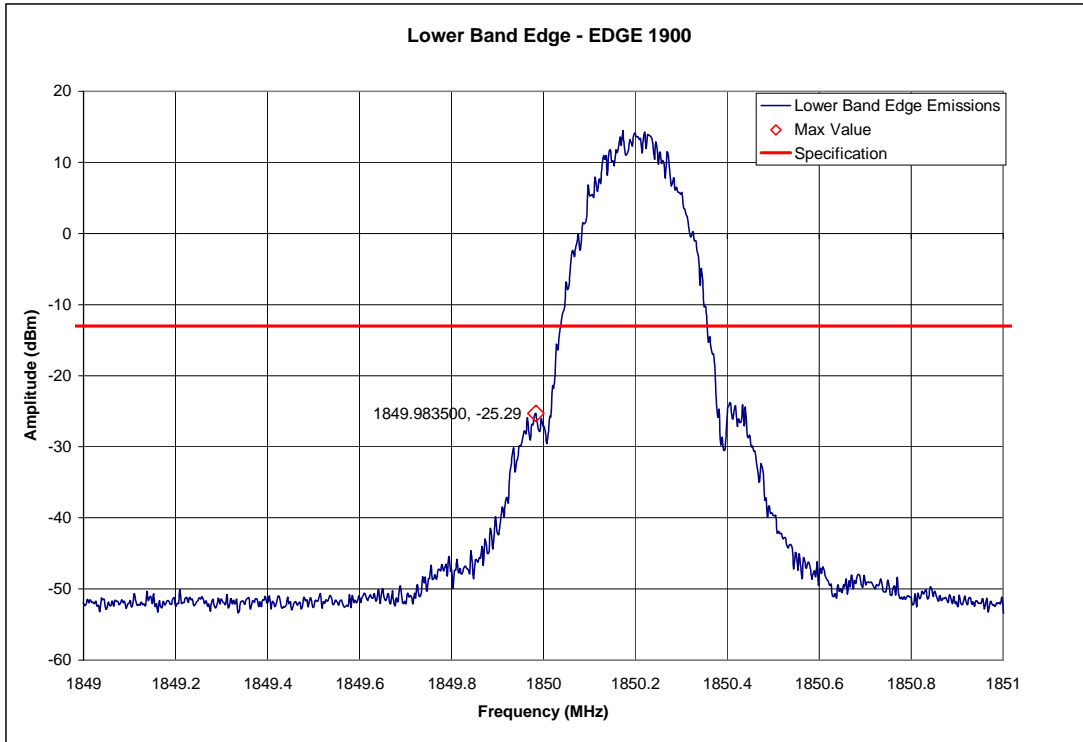


Measurement Results – EDGE 1900

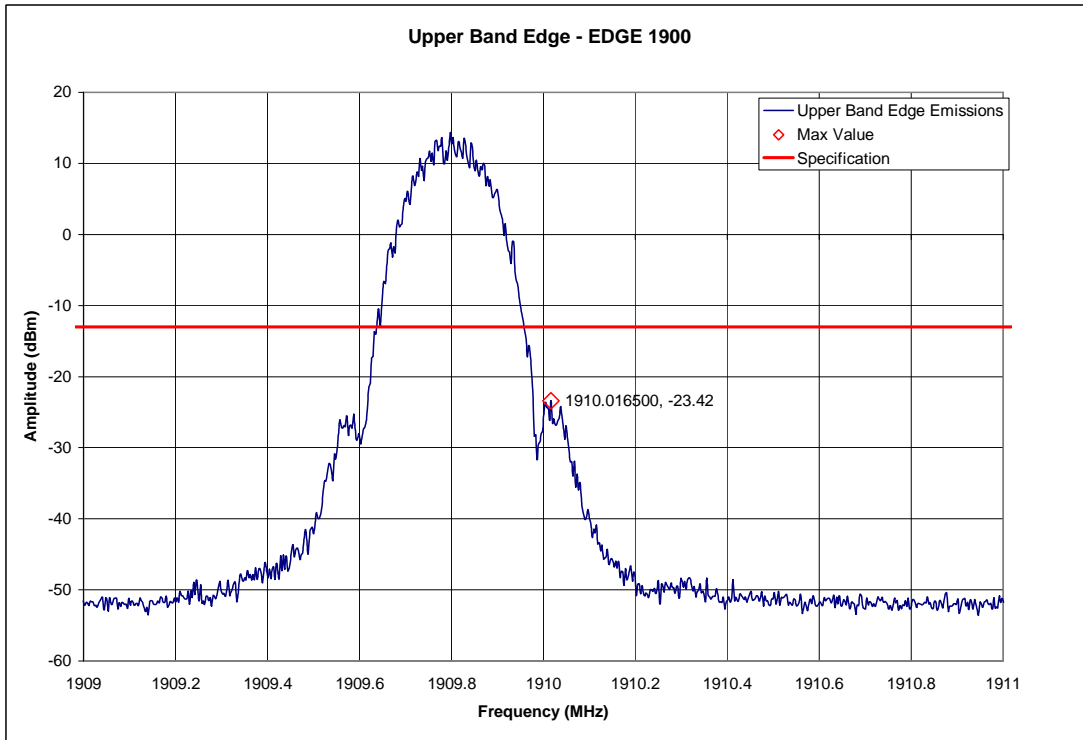
EDGE 1900 – Channel 661 (1880.00 MHz) – Occupied Bandwidth



EDGE 1900 – Lower Band Edge – Channel 512 (1850.2 MHz)

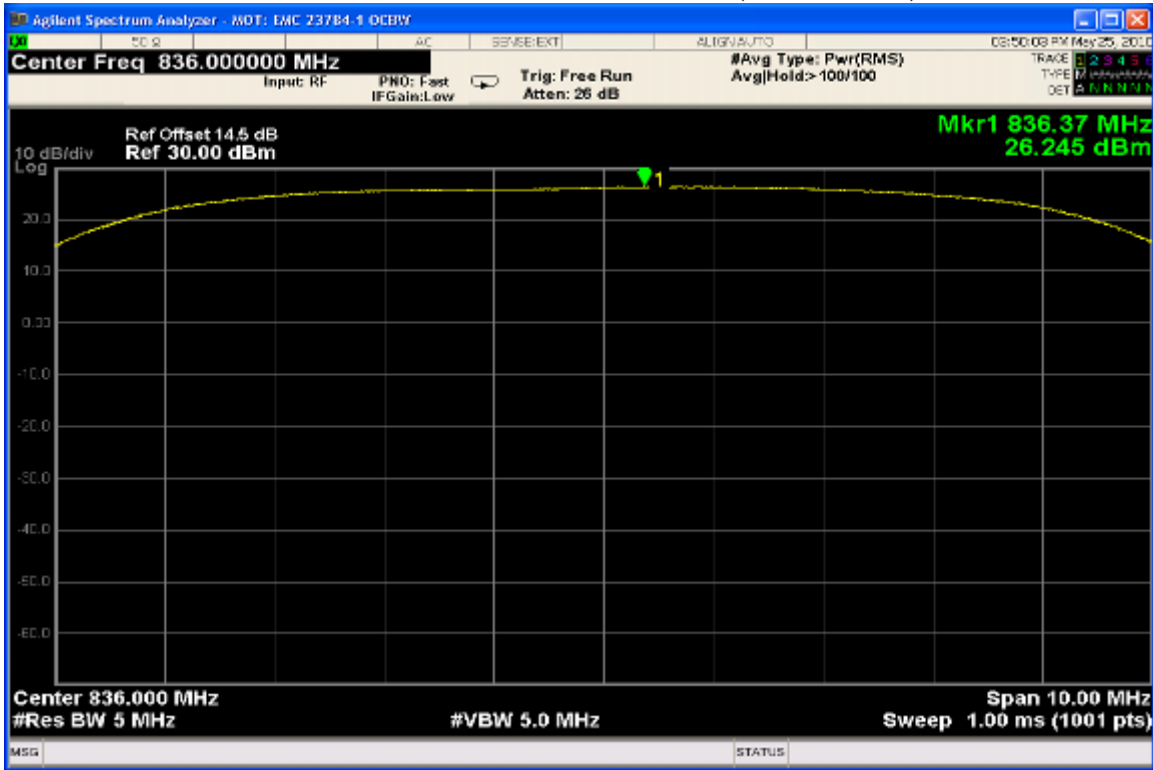


EDGE 1900 – Upper Band Edge – Channel 810 (1909.8 MHz)

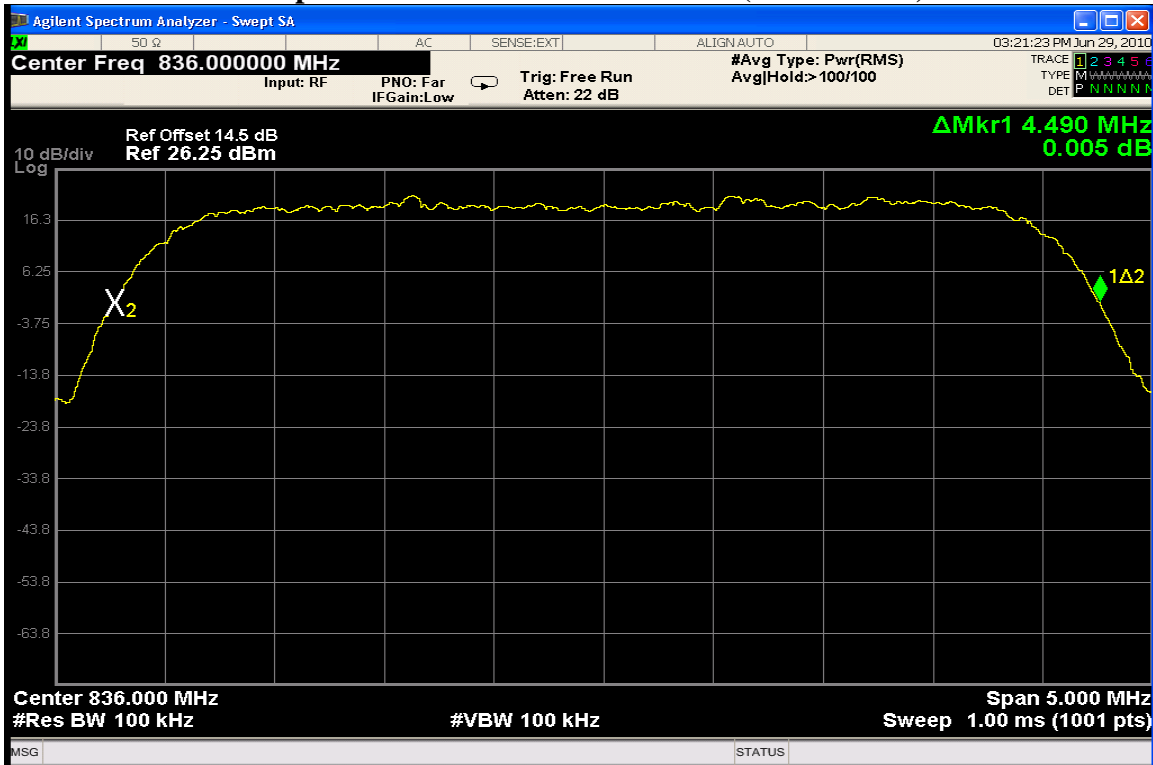


Measurement Results – WCDMA 850

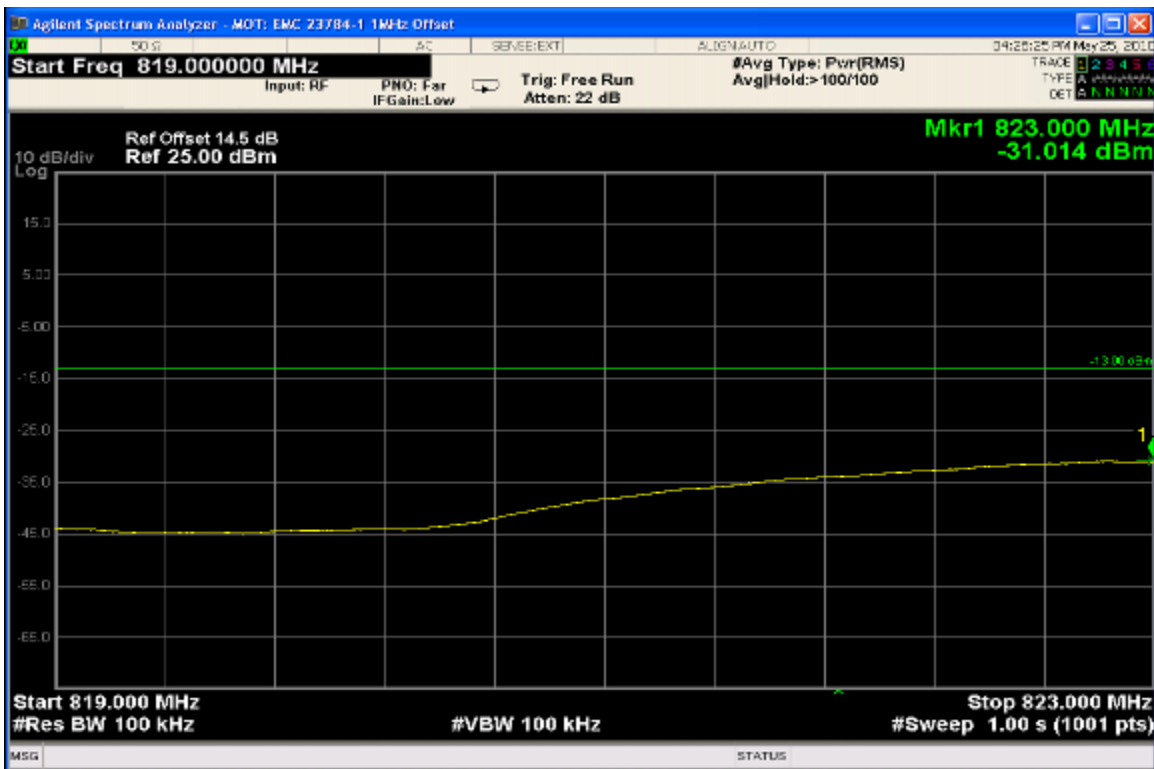
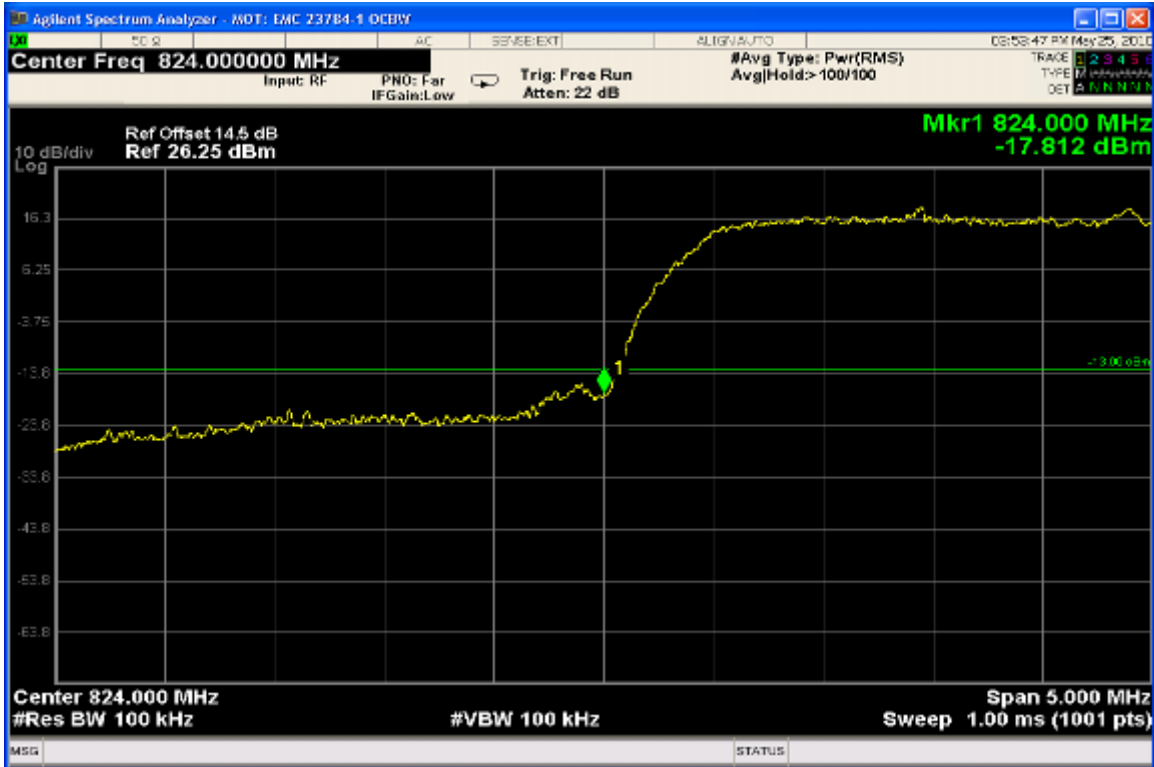
WCDMA 850 – Reference Level Plot – Channel 4180 (836.00 MHz)



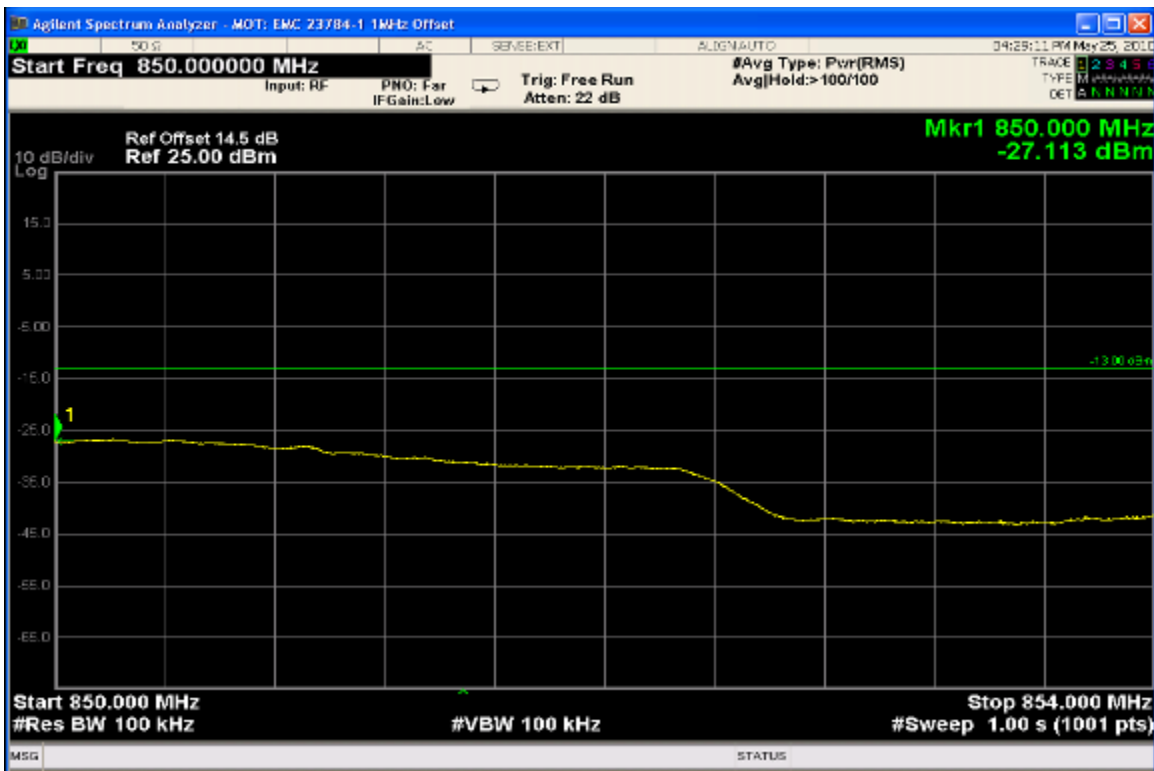
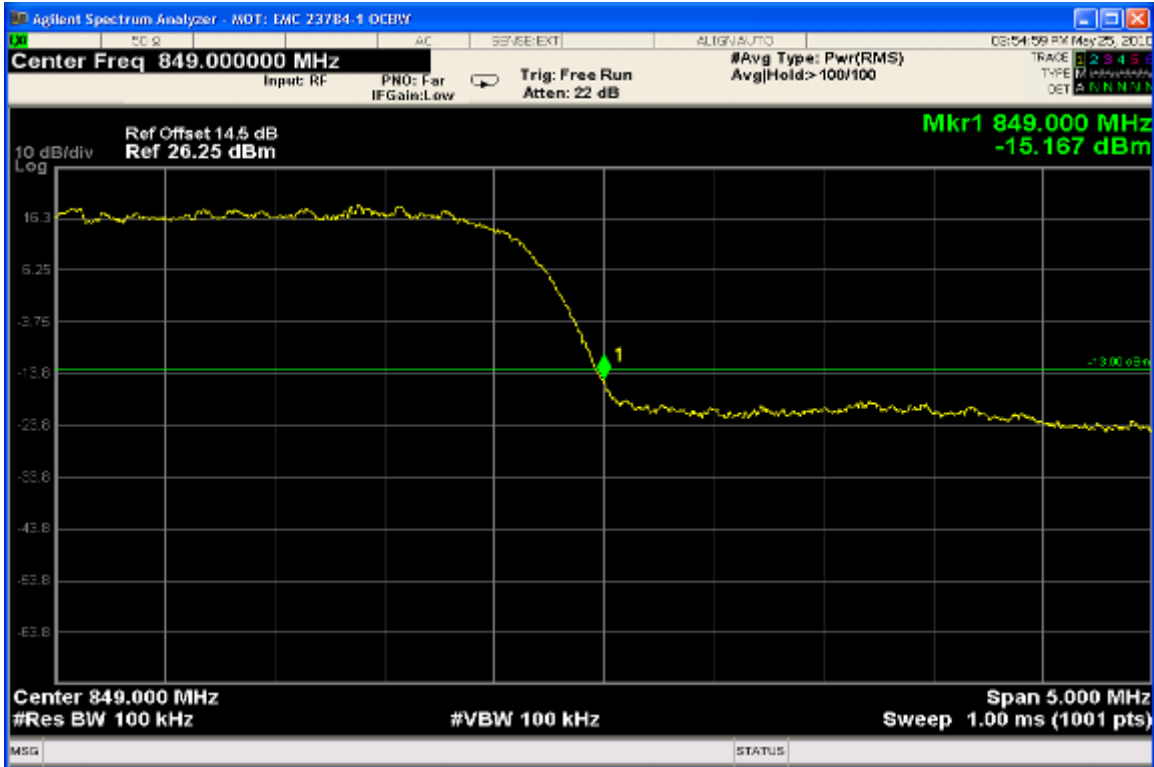
WCDMA 850 – Occupied Bandwidth – Channel 4180 (836.00 MHz)



WCDMA 850 – Lower Band Edge – Channel 4132 (826.40 MHz)

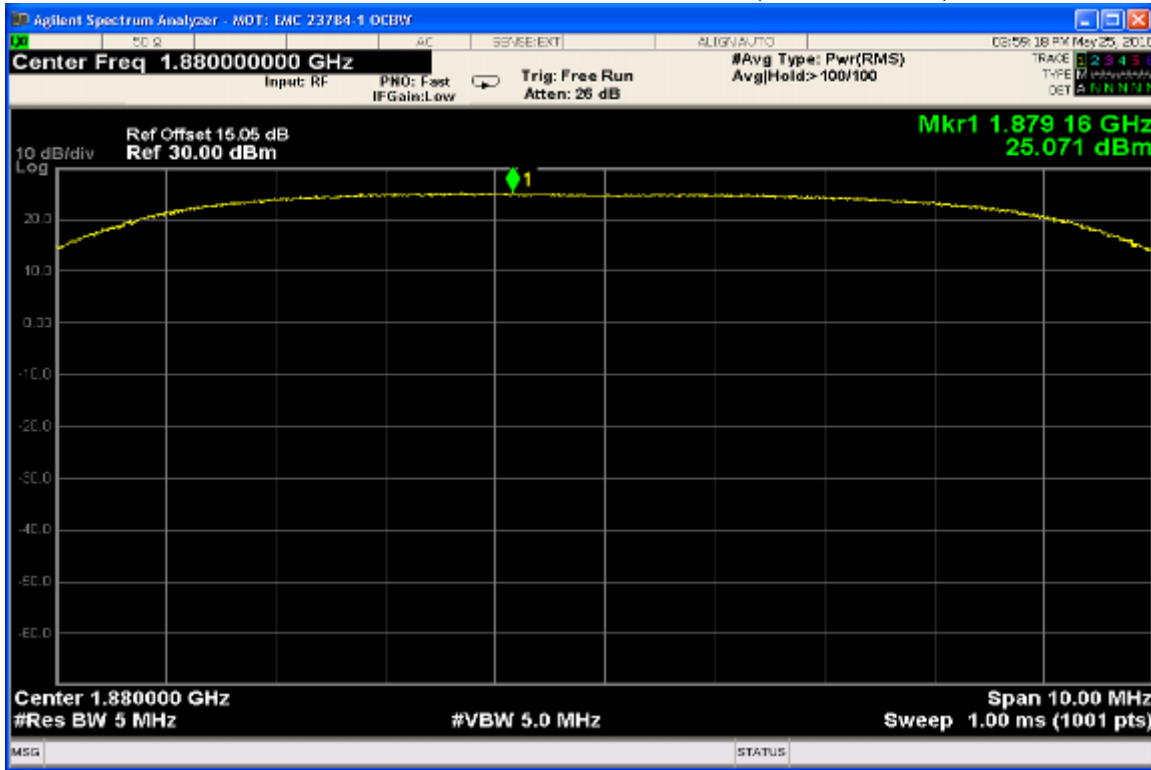


WCDMA 850 – Upper Band Edge – Channel 4233 (846.60 MHz)

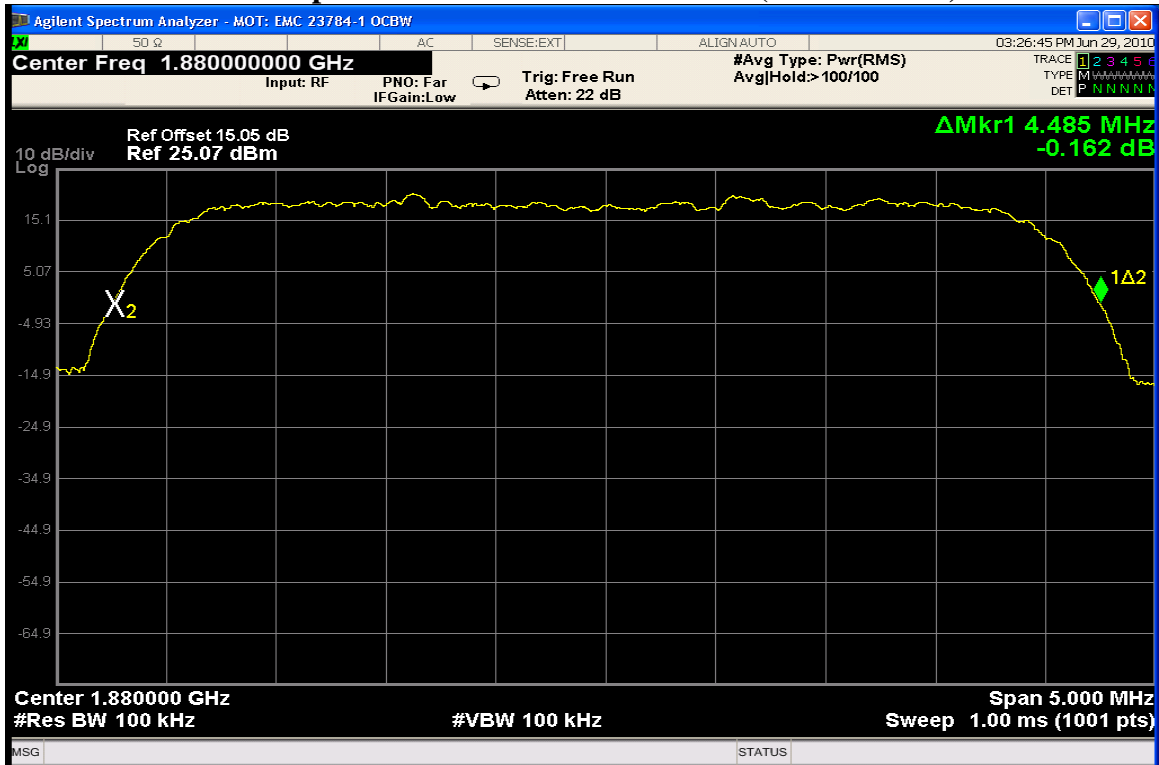


Measurement Results – WCDMA 1900

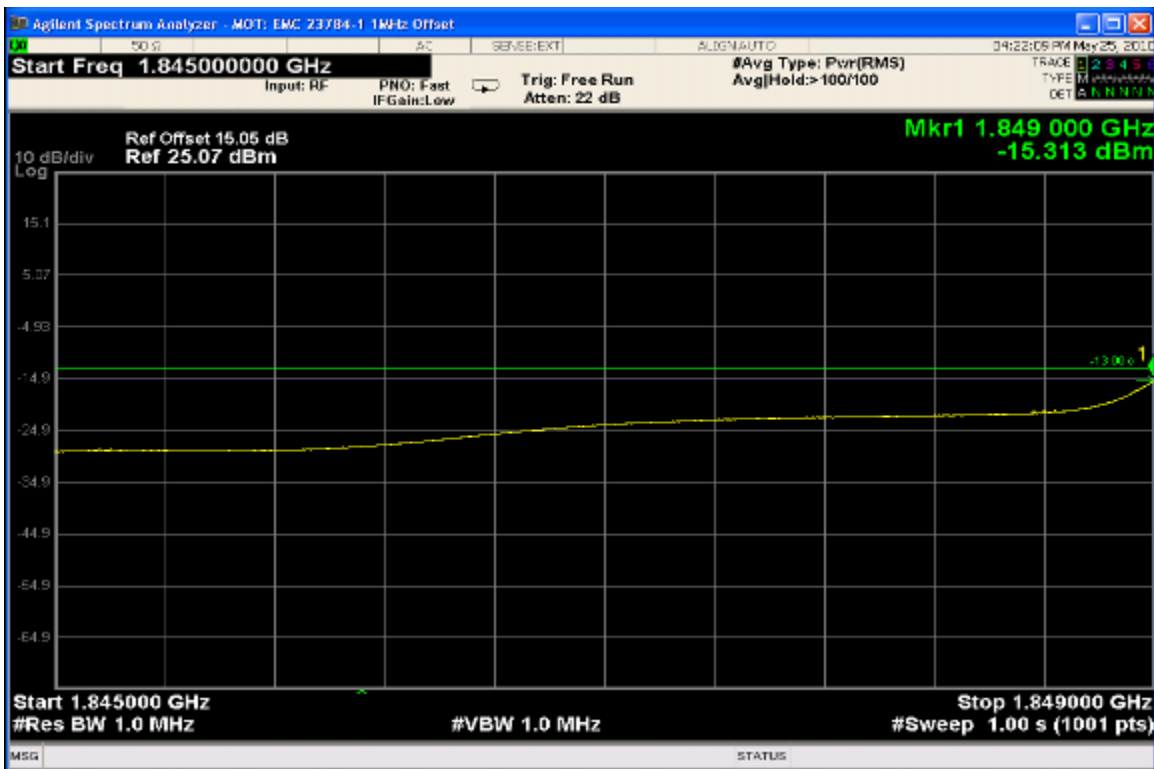
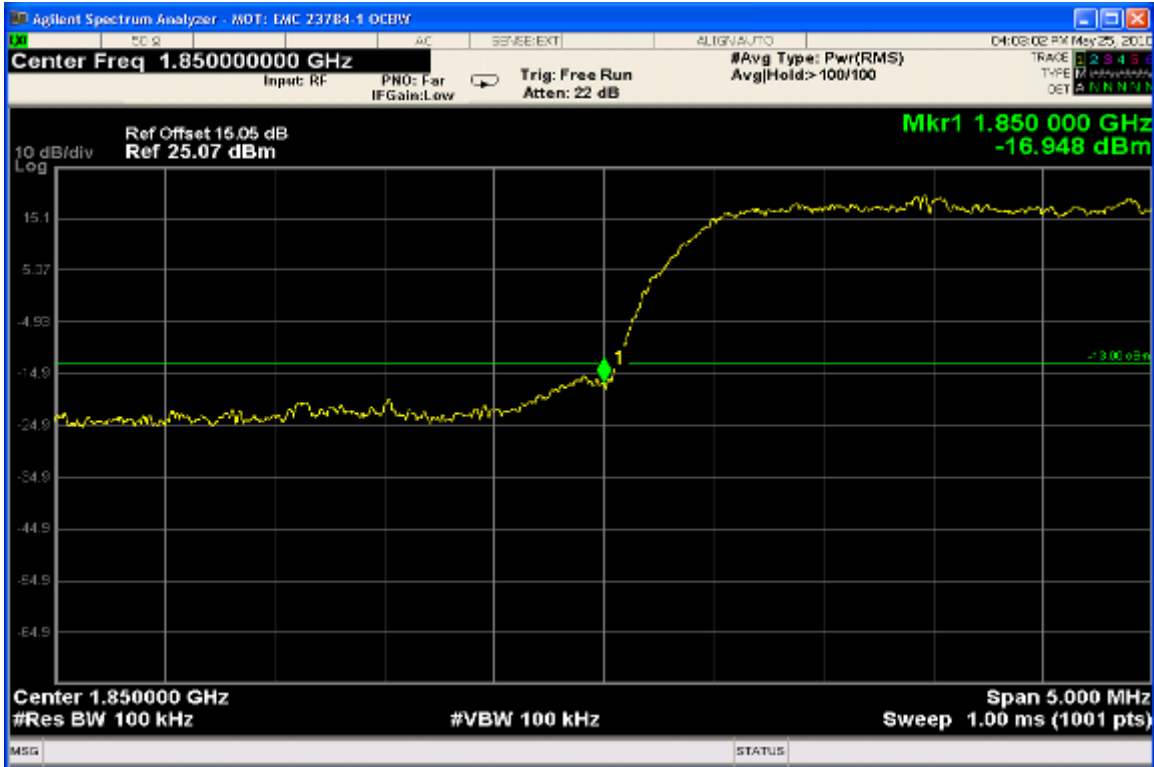
WCDMA 1900 – Reference Level Plot – Channel 9400 (1880.00 MHz)



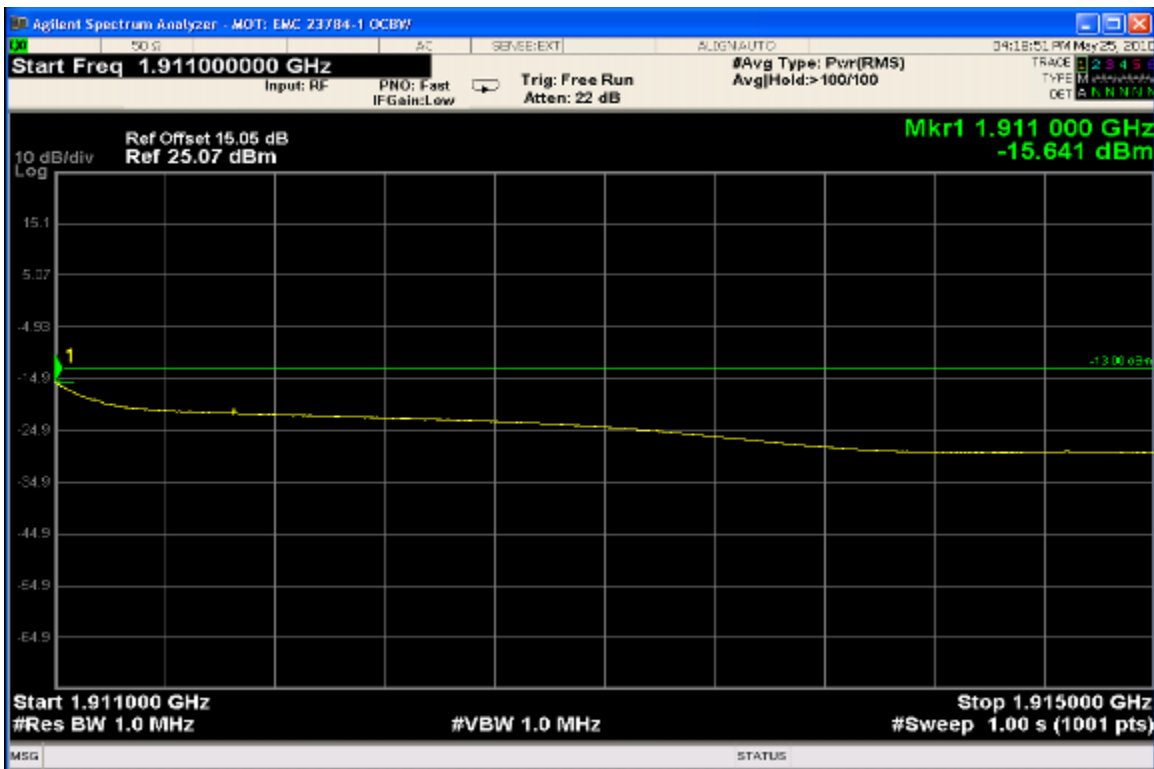
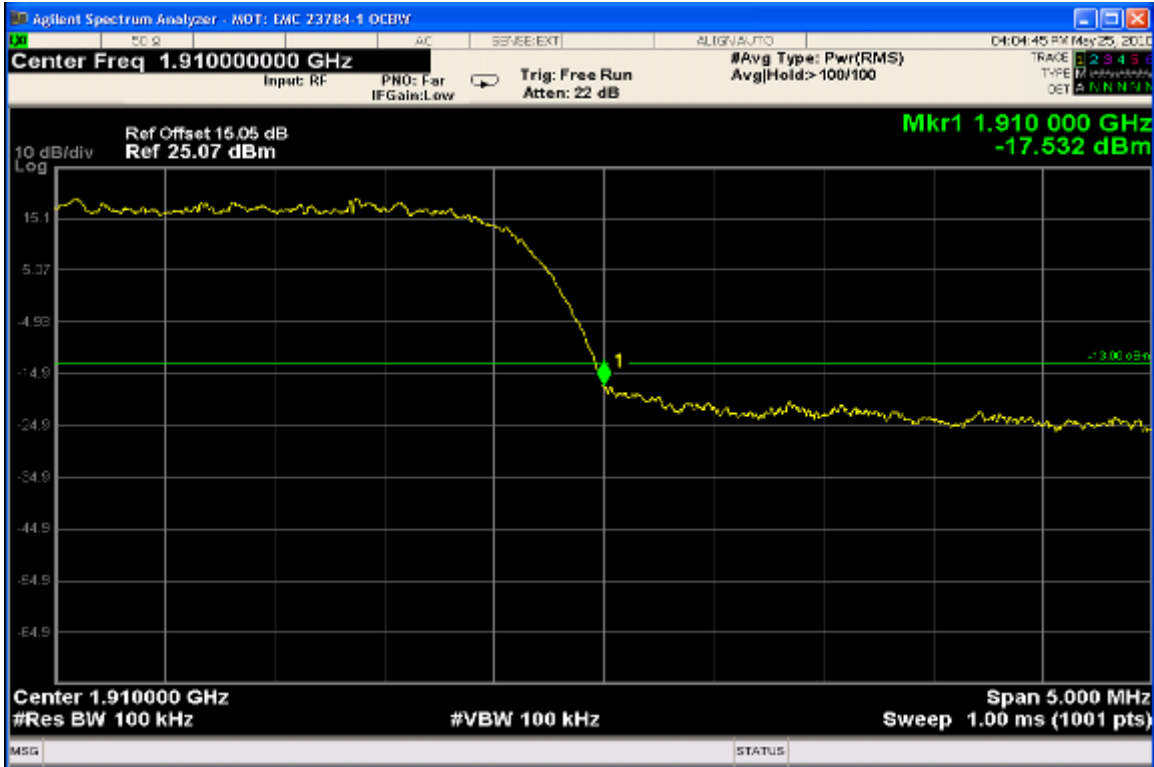
WCDMA 1900 – Occupied Bandwidth – Channel 9400 (1880.00 MHz)



WCDMA 1900 – Lower Band Edge – Channel 9262 (1852.40 MHz)



WCDMA 1900 – Upper Band Edge – Channel 9538 (1907.60 MHz)



SPURIOUS EMISSIONS AT ANTENNA TERMINALS**Measurement Procedure**

The RF output port of the Equipment Under Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. For all testing the EUT was powered through the computer's USB.

The spectrum was investigated from the lowest frequency signal generated, without going below 9 kHz, up to at least the tenth harmonic of the fundamental or 40 GHz, whichever is lower.

The spectrum analyzer settings were as follows:

Units	dBm
Divisions	10 dB
Detector	Peak Detector
Resolution Bandwidth	1 MHz
Video Bandwidth (AVG)	Auto
Sweep Time	Auto

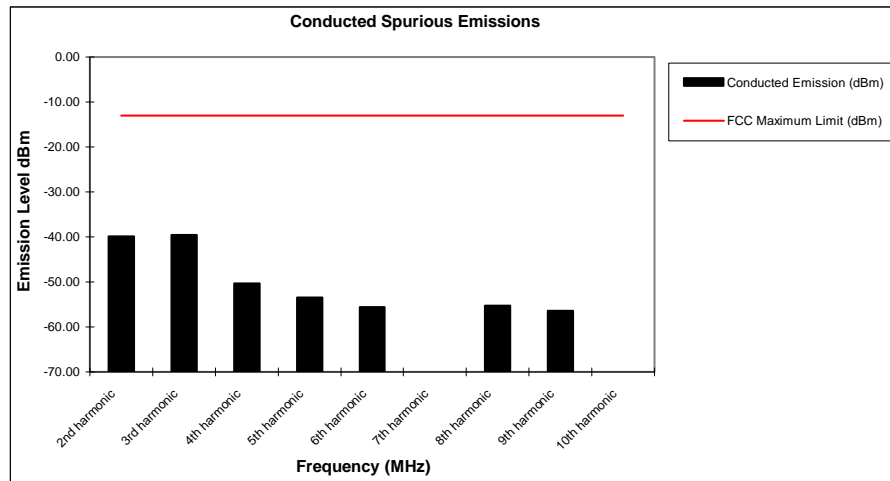
Measurement Results

Attached

Measurement Results – GSM 850

Conducted Spurious and Harmonic Emissions

Harmonic of Fundamental	FCC Maximum Limit (dBm)	Conducted Emission (dBm)
2nd harmonic	-13	-39.94
3rd harmonic	-13	-39.53
4th harmonic	-13	-50.36
5th harmonic	-13	-53.44
6th harmonic	-13	-55.62
7th harmonic	-13	*
8th harmonic	-13	-55.33
9th harmonic	-13	-56.39
10th harmonic	-13	*



Notes:

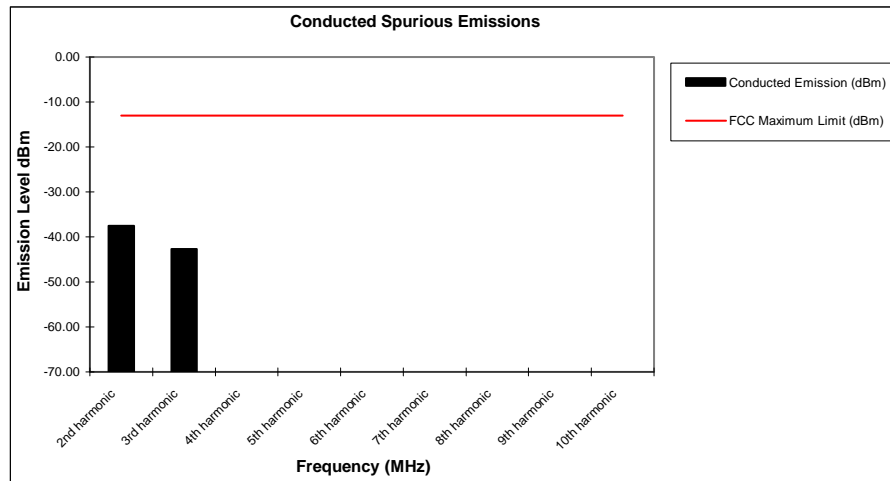
1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
3. The Spectrum was investigated from 9 kHz to the tenth harmonic of the fundamental.

The margin with respect to the limit is the minimum margin for all modes and bands.

Measurement Results – GSM 1900

Conducted Spurious and Harmonic Emissions

Harmonic of Fundamental	FCC Maximum Limit (dBm)	Conducted Emission (dBm)
2nd harmonic	-13	-37.49
3rd harmonic	-13	-42.75
4th harmonic	-13	*
5th harmonic	-13	*
6th harmonic	-13	*
7th harmonic	-13	*
8th harmonic	-13	*
9th harmonic	-13	*
10th harmonic	-13	*



Notes:

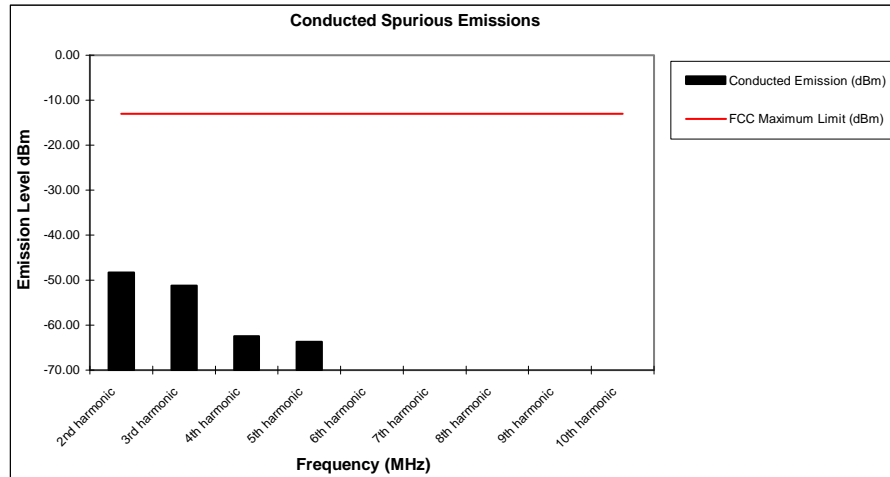
1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
3. The Spectrum was investigated from 9 kHz to the tenth harmonic of the fundamental.

The margin with respect to the limit is the minimum margin for all modes and bands.

Measurement Results – EDGE 850

Conducted Spurious and Harmonic Emissions

Harmonic of Fundamental	FCC Maximum Limit (dBm)	Conducted Emission (dBm)
2nd harmonic	-13	-48.30
3rd harmonic	-13	-51.22
4th harmonic	-13	-62.46
5th harmonic	-13	-63.70
6th harmonic	-13	*
7th harmonic	-13	*
8th harmonic	-13	*
9th harmonic	-13	*
10th harmonic	-13	*



Notes:

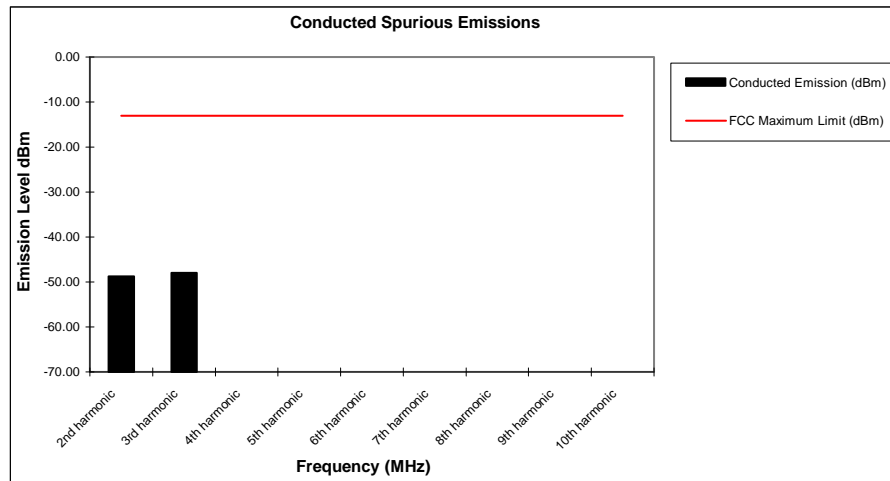
1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
3. The Spectrum was investigated from 9 kHz to the tenth harmonic of the fundamental.

The margin with respect to the limit is the minimum margin for all modes and bands.

Measurement Results – EDGE 1900

Conducted Spurious and Harmonic Emissions

Harmonic of Fundamental	FCC Maximum Limit (dBm)	Conducted Emission (dBm)
2nd harmonic	-13	-48.79
3rd harmonic	-13	-47.96
4th harmonic	-13	*
5th harmonic	-13	*
6th harmonic	-13	*
7th harmonic	-13	*
8th harmonic	-13	*
9th harmonic	-13	*
10th harmonic	-13	*



Notes:

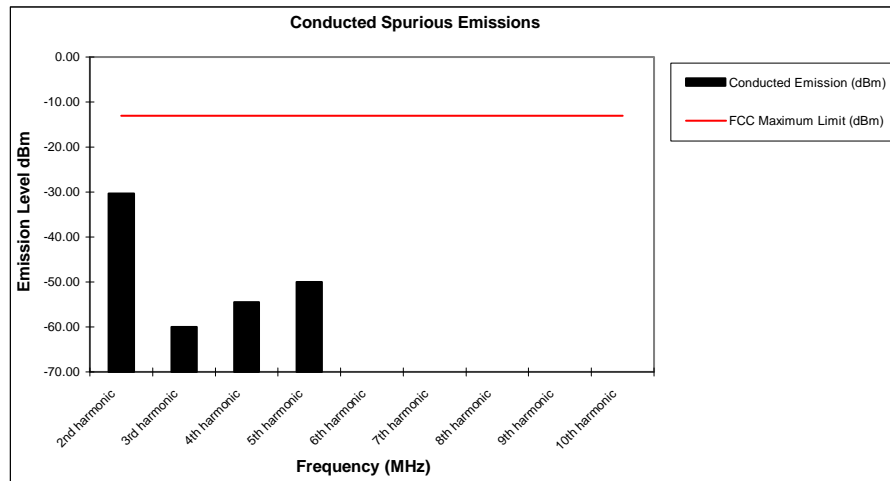
1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
3. The Spectrum was investigated from 9 kHz to the tenth harmonic of the fundamental.

The margin with respect to the limit is the minimum margin for all modes and bands.

Measurement Results – WCDMA 850

Conducted Spurious and Harmonic Emissions

Harmonic of Fundamental	FCC Maximum Limit (dBm)	Conducted Emission (dBm)
2nd harmonic	-13	-30.30
3rd harmonic	-13	-59.95
4th harmonic	-13	-54.54
5th harmonic	-13	-50.03
6th harmonic	-13	*
7th harmonic	-13	*
8th harmonic	-13	*
9th harmonic	-13	*
10th harmonic	-13	*



Notes:

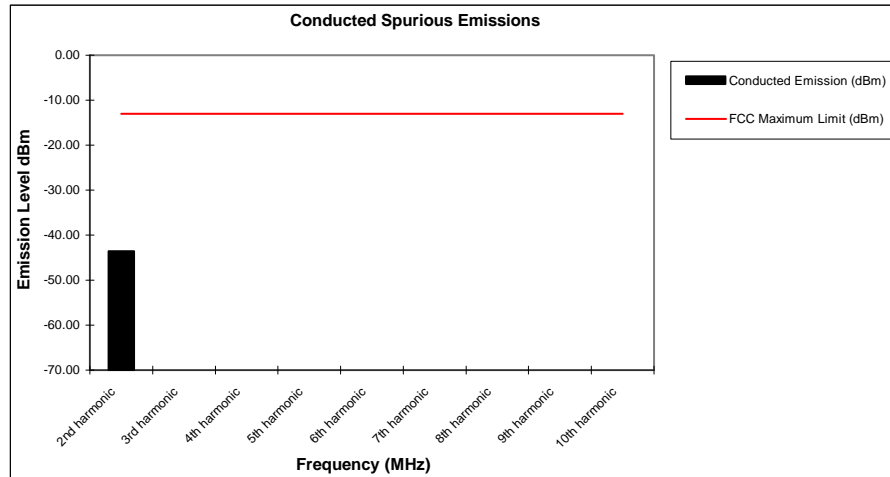
1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
3. The Spectrum was investigated from 9 kHz to the tenth harmonic of the fundamental.

The margin with respect to the limit is the minimum margin for all modes and bands.

Measurement Results – WCDMA 1900

Conducted Spurious and Harmonic Emissions

Harmonic of Fundamental	FCC Maximum Limit (dBm)	Conducted Emission (dBm)
2nd harmonic	-13	-43.54
3rd harmonic	-13	*
4th harmonic	-13	*
5th harmonic	-13	*
6th harmonic	-13	*
7th harmonic	-13	*
8th harmonic	-13	*
9th harmonic	-13	*
10th harmonic	-13	*



Notes:

1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
3. The Spectrum was investigated from 9 kHz to the tenth harmonic of the fundamental.

The margin with respect to the limit is the minimum margin for all modes and bands.

End of Test Report