TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: Enfora Enabler IIE
EDG0208 and EDG0208-01

To: FCC Part 22: 2008 (Subpart H), FCC Part 24: 2008 (Subpart E),
RSS 132 Issue 2 September 2005 and RSS-133 Issue 4 February 2008

Test Report Serial No:
RFI/RPT4/RP73005JD01A

Supersedes Test Report Serial No:
RFI/RPT3/RP73005JD01A

This Test Report Is Issued Under The Authority Of Brian Watson, Operations Director:	 **pp**
Checked By: Tony Henriques 	**Report Copy No: PDF01**
Issue Date: 27 January 2009	**Test Dates: 01 July 2008 to 14 July 2008 and 07 November 2008 and 12 January 2009**

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1. Customer Information

Company Name:	Enfora Inc.
Address:	251 Renner Parkway Richardson Texas TX 75080

2. Equipment Under Test (EUT)

2.1. Identification of Equipment Under Test (EUT)

Description:	GSM/GPRS module (mounted on a development board)
Brand Name:	Enfora Enabler IIE
Model Name or Number:	EDG0208 EDG0208-01
IMEI Number:	011669000000058
Serial Number:	SIM Test-03
FCC ID Number:	MIVEDG0208
Industry Canada ID Number:	4160A-EDG0208

Description:	AC-DC PSU (supply to development board)
Brand Name:	CUI Inc
Model Name:	Switching Power Adaptor
Model Number:	DSA-15P-05 US 050100
Part Number:	EPS050200U-P7P-DB
Cable Length and Type:	2.0 metre / 2-Core
Connected to Port	DC input

2.2. Description of EUT

The equipment under test was a GSM/GPRS/EDGE module mounted on a development board.

2.3. Modifications Incorporated in EUT

During the course of testing the EUT was not modified.

2.4. Support Equipment

A development board was used to mount the EUT during testing. The development board used an integral antenna with a stated max gain of 0.5dBi for GSM850 and 3.0 dBi for GSM1900 and was used to communicate via a wireless link to a GSM system simulator.

2.5. Additional Information Related to Testing

Power Supply Requirement:	Module; Vnom 3.7 V DC, Vmin 3.5 VDC, Vmax 3.9 VDC
Type of Unit:	Transceiver
Channel Spacing:	0.2 MHz
Modulation Type:	GMSK, 8PSK
Data Rate:	270 kbit/s

FCC Part 22

Transmit Frequency Range:	824 MHz to 849 MHz		
Transmit Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	128	824.2
	Middle	189	836.4
	Top	251	848.8
Receive Frequency Range:	869 MHz to 894 MHz		
Receive Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	128	869.2
	Middle	189	881.4
	Top	251	893.8
Maximum Conducted Power Output:	33.9 dBm		

FCC Part 24

Transmit Frequency Range:	1850 MHz to 1910 MHz		
Transmit Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	512	1850.2
	Middle	660	1879.8
	Top	810	1909.8
Receive Frequency Range:	1930 MHz to 1990 MHz		
Receive Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	512	1930.2
	Middle	660	1959.8
	Top	810	1989.8
Maximum Conducted Power Output:	29.9 dBm		

3. Test Specification, Methods and Procedures

Reference:	FCC Part 22: 2008 Subpart H (Cellular Radiotelephone Service)
Title:	Code of Federal Regulations, Part 22 (47CFR22) Personal Communication Services.

Reference:	FCC Part 24: 2008 Subpart E (Broadband PCS)
Title:	Code of Federal Regulations, Part 24 (47CFR24) Personal Communication Services.

Reference:	RSS-GEN Issue 2 June 2007
Title:	General Requirements and Information for the Certification of Radiocommunication Equipment

Reference:	RSS-132 Issue 2 Sep 2005
Title:	Cellular Telephones Employing New Technologies Operating in the Bands 824-849 MHz and 869-894 MHz

Reference:	RSS-133 Issue 4 Feb 2008
Title:	2 GHz Personal Communications Services

Reference:	SRSP-510 Issue 4 Feb 2008
Title:	Technical Requirements for Personal Communications Services in the Bands 1850-1915 MHz and 1930-1995 MHz

Reference:	SRSP-503 Issue 6 Jun 2003
Title:	Technical Requirements for Cellular Radiotelephone Systems Operating in the Bands 824 – 849 MHz and 869 – 894 MHz

3.1. Methods and Procedures

The methods and procedures used were as detailed in:

ANSI/TIA-603-B-2003
Land Mobile Communications Equipment, Measurements and performance Standards

ANSI C63.2 (1987)
Title: American National Standard for Instrumentation - Electromagnetic noise and field strength.

ANSI C63.4 (2003)
Title: American National Standard Methods of Measurement of Electromagnetic Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

ANSI C63.5 (1988)
Title: American National Standard for the Calibration of antennas used for Radiated Emission measurements in Electromagnetic Interference (EMI) control.

ANSI C63.7 (1988)
Title: American National Standard Guide for Construction of Open Area Test Sites for performing Radiated Emission Measurements.

CISPR 16-1: (1999)
Title: Specification For Radio Disturbance and Immunity Measuring Apparatus and Methods. Part 1: Radio Disturbance and Immunity Measuring Apparatus.

3.2. Definition of Measurement Equipment

The measurement equipment used complied with the requirements of the standards referenced in the methods & procedures Section above. Appendix 1 contains a list of the test equipment used.

4. Deviations from the Test Specification

There were no deviations from the test specification.

5. Operation of the EUT during Testing

5.1. Operating Modes

The EUT was tested in the following operating modes, unless otherwise stated.

- Connected to a GSM test system simulator, operating in GSM/GPRS or EDGE transceiver mode.
- Transmitter Modes:
  Testing was performed at full power on the top, middle and bottom channels of the assigned frequency block.
- Radiated Emissions were performed on the operating mode that exhibited the highest output power i.e. GSM mode.
- Output power, Occupied bandwidth and Band edge emissions was performed on all channels using all modulation schemes to improve compliance confidence.
- The frequency tolerance over voltage variations was performed by varying the DC voltage directly to the module.
- Receiver/Idle Modes:
  Testing was performed with call terminated from the GSM test system simulator and the equipment left in its Idle mode.

5.2. Configuration and Peripherals

The EUT was tested in the following configuration unless otherwise stated:

- Tests were performed with the EUT mounted on the supplied development board powered using AC-DC PSU model EPA-101MU-05A.

6. Summary of Test Results

FCC Part 22 and RS 132

Range of Measurements	FCC Reference	IC RSS Reference	Port Type	Result
Receiver/Idle AC Conducted Spurious Emissions	15.107	RSS-Gen 7.2.2	AC Mains Input	Complied
Receiver/Idle Radiated Emissions	15.109	RSS-Gen 4.10/6.0 RSS-132 4.6	Enclosure	Complied
Transmitter Carrier Output Power	2.1046(a)/22.913	RSS-132 4.4 SRSP-503 5.1.3	*Antenna Terminals	Complied
Transmitter Frequency Stability (Temperature & Voltage Variation)	22.355	RSS-132 4.3 RSS Gen 4.7	*Antenna Terminals	Complied
Transmitter Occupied Bandwidth	2.1049	RSS-Gen 4.6.1	*Antenna Terminals	Complied
Transmitter Out of Band Radiated Emissions	2.1053/22.917	RSS-132 4.5	Antenna	Complied
Transmitter Band Edge Radiated Emissions	2.1053/22.917	RSS-132 4.5	Antenna	Complied

***Note: This is an access point on the EUT provided by the manufacturer for the purpose of this test.**

Summary of Test Results (continued)

FCC Part 24 and RS-133

Range of Measurements	FCC Reference	IC RSS Reference	Port Type	Result
Idle Mode AC Conducted Spurious Emissions	15.107	RSS-Gen 7.2.2	AC Mains Input	Complied
Idle Mode Radiated Spurious Emissions	15.109	RSS-Gen 4.10/6.0 RSS-133 6.6	Enclosure	Complied
Transmitter Carrier Output Power	2.1046(a)/24.232	RSS-133 6.4 SRSP-510 5.1.2	*Antenna Terminals	Complied
Transmitter Frequency Stability (Temperature & Voltage Variation)	24.235	RSS-133 6.3 RSS Gen 4.7	*Antenna Terminals	Complied
Transmitter Occupied Bandwidth	24.238	RSS-Gen 4.6.1	*Antenna Terminals	Complied
Transmitter Out of Band Radiated Emissions	2.1053/24.238	RSS-133 6.5	Antenna	Complied
Transmitter Band Edge Radiated Emissions	2.1053/24.238	RSS-133 6.5	Antenna	Complied

***Note: This is an access point on the EUT provided by the manufacturer for the purpose of this test.**

6.1. Location of Tests

All the measurements described in this report were performed at the premises of RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.

6.2. Site Registration Numbers

FCC: 209735

IC: 3245C-1

7. Measurements, Examinations and Derived Results

7.1. General Comments

This Section contains test results only.

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to Section 8 for details of measurement uncertainties.

7.2. Test Results – FCC Part 22 (Subpart H) and RSS-132

7.2.1. Receiver/Idle Mode AC Conducted Spurious Emissions (9 kHz to 30 MHz)

Ambient Temperature: 23ºC Relative Humidity: 44%

Tests were performed using the test methods detailed in ANSI C63.4 Section 7.

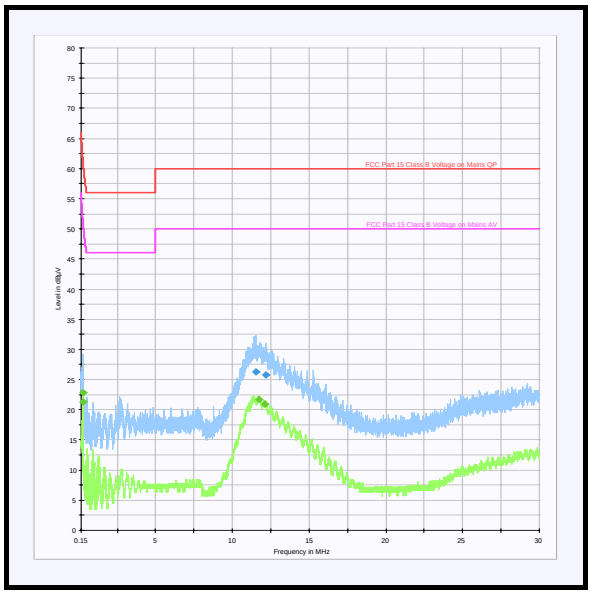
Quasi-Peak Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
11.510000	Live	26.3	60.0	33.7	Complied
12.178000	Live	25.7	60.0	34.3	Complied

Average Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.254000	Live	22.9	51.6	28.7	Complied
0.258000	Live	21.3	51.5	30.2	Complied
11.718000	Live	21.7	50.0	28.3	Complied
12.106000	Live	20.9	50.0	29.1	Complied

Receiver/Idle Mode AC Conducted Spurious Emissions (Continued)



Note: This plot is a pre-scan and for indication purposes only. For final measurements, see accompanying tables.

7.2.2. Receiver/Idle Mode Radiated Spurious Emissions

Ambient Temperature: 21ºC to 23ºC Relative Humidity: 41% to 53%

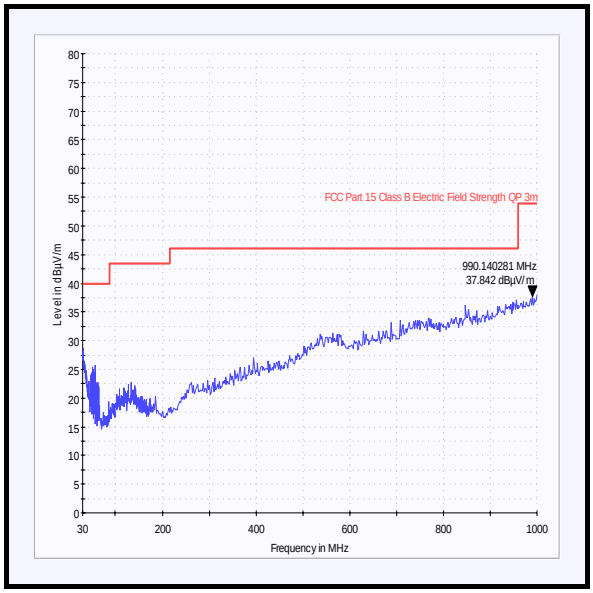
Tests were performed using the test methods detailed in ANSI C63.4 Section 8.

Electric Field Strength Measurements (Frequency Range: 30 to 1000 MHz)

Frequency (MHz)	Antenna Polarity	Peak Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
990.140	Vertical	37.8	54.0	16.2	Complied

Note(s):

1. No spurious emissions were detected above the noise floor of the measuring receiver; therefore, the highest peak noise floor reading of the measuring receiver was recorded as shown in the table above.



7.2.3. Receiver/Idle Mode Radiated Spurious Emissions

Electric Field Strength Measurements (Frequency Range: 1 to 6 GHz)

Highest Peak Level

Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Peak Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
3.695391	Vertical	40.7	2.6	43.3	54.0	10.7	Complied

Note(s):

1. No spurious emissions were detected above the noise floor of the measuring receiver, therefore, the highest peak noise floor reading of the measuring receiver was recorded as shown in the table above.
The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit.

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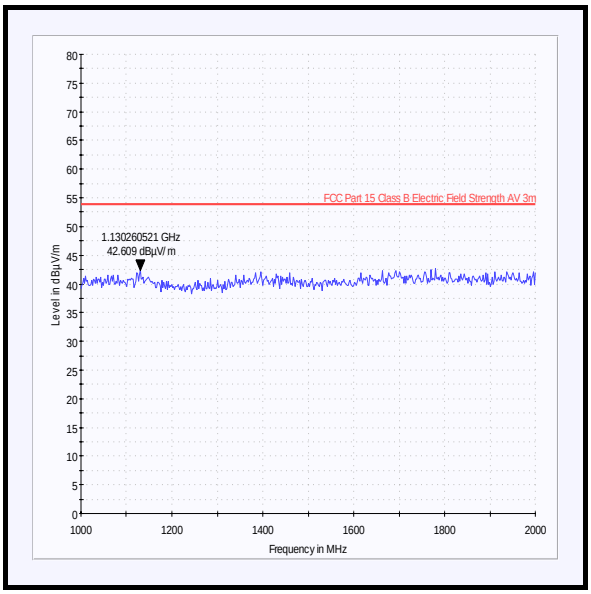
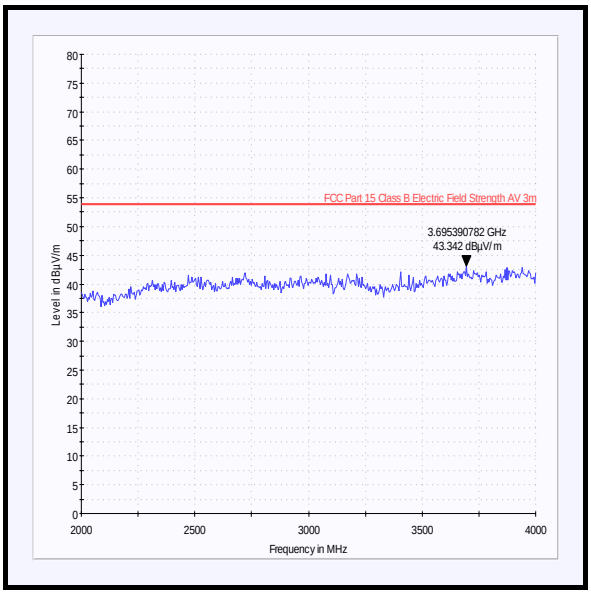
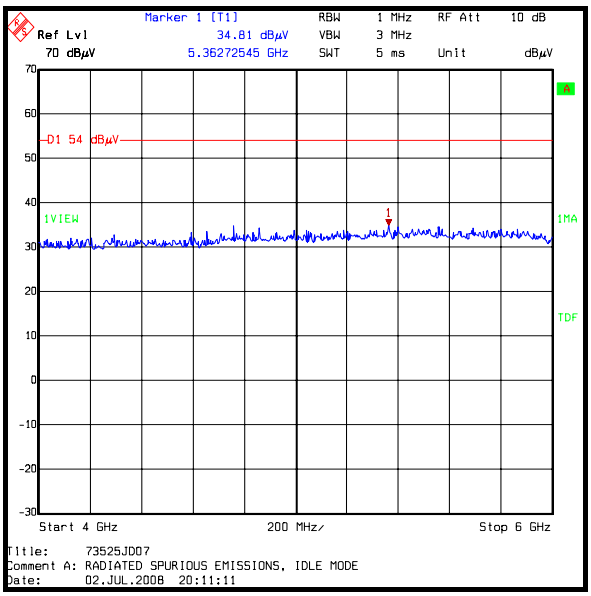
Receiver/Idle Mode Radiated Spurious Emissions (Continued)







Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

7.2.4. Transmitter Carrier Output Power

Ambient Temperature: 24ºC Relative Humidity: 21%

Tests were performed using the test methods detailed in ANSI TIA-603-C-2004 referencing FCC CFR Part 2.

Results: GSM

Channel	Frequency (MHz)	Conducted RF O/P Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	824.2	33.5	38.4	4.9	Complied
Middle	836.6	33.9	38.4	4.5	Complied
Top	848.8	33.5	38.4	4.9	Complied

Results: GPRS

Channel	Frequency (MHz)	Conducted RF O/P Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	824.2	33.4	38.4	5.0	Complied
Middle	836.6	33.4	38.4	5.0	Complied
Top	848.8	33.1	38.4	5.3	Complied

Results: EDGE

Channel	Frequency (MHz)	Conducted RF O/P Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	824.2	33.3	38.4	5.1	Complied
Middle	836.6	33.6	38.4	4.8	Complied
Top	848.8	33.5	38.4	4.9	Complied

7.2.5. Transmitter Frequency Stability (Temperature Variation)

Ambient Temperature: 20ºC Relative Humidity: 68%

Tests were performed using the test methods detailed in ANSI TIA-603-C-2004 referencing FCC CFR Part 2.

Bottom Channel (824.2 MHz)

Temperature (°C)	Measured Frequency (MHz)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)	Margin (ppm)	Result
-30	824.200015	15	0.02	2.5	2.48	Complied
-20	824.200024	24	0.03	2.5	2.47	Complied
-10	824.200019	19	0.02	2.5	2.48	Complied
0	824.200032	32	0.04	2.5	2.46	Complied
10	824.200012	12	0.01	2.5	2.49	Complied
20	824.200030	30	0.04	2.5	2.46	Complied
30	824.200023	23	0.03	2.5	2.47	Complied
40	824.200033	33	0.04	2.5	2.46	Complied
50	824.200030	30	0.04	2.5	2.46	Complied

Top Channel (848.8 MHz)

Temperature (°C)	Measured Frequency (MHz)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)	Margin (ppm)	Result
-30	848.800029	29	0.03	2.5	2.47	Complied
-20	848.800021	21	0.02	2.5	2.48	Complied
-10	848.800016	16	0.02	2.5	2.48	Complied
0	848.800028	28	0.03	2.5	2.47	Complied
10	848.800022	22	0.03	2.5	2.47	Complied
20	848.800015	15	0.02	2.5	2.48	Complied
30	848.800044	44	0.05	2.5	2.45	Complied
40	848.800034	34	0.04	2.5	2.41	Complied
50	848.800037	37	0.04	2.5	2.41	Complied

7.2.6. Transmitter Frequency Stability (Voltage Variation)

Ambient Temperature: 21ºC Relative Humidity: 66%

Tests were performed using the test methods detailed in ANSI TIA-603-C-2004 referencing FCC CFR Part 2.

Bottom Channel (824.2 MHz)

Supply Voltage (V)	Measured Frequency (MHz)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)	Margin (ppm)	Result
3.5	824.200030	30	0.04	2.5	2.46	Complied
3.9	824.200036	36	0.04	2.5	2.46	Complied

Top Channel (848.8 MHz)

Supply Voltage (V)	Measured Frequency (MHz)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)	Margin (ppm)	Result
3.5	848.800025	25	0.03	2.5	2.47	Complied
3.9	848.800034	34	0.04	2.5	2.41	Complied

7.2.7. Transmitter Occupied Bandwidth

Ambient Temperature: 22ºC Relative Humidity: 37%

The 99% occupied bandwidth was measured using the channel bandwidth function of the R&S spectrum analyser referencing FCC CFR Part 2.

Results: GPRS

Mode/Channel	Frequency (MHz)	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth (kHz)
Bottom	824.2	5.0	20.0	238.076
Middle	836.4	5.0	20.0	236.873
Top	848.8	5.0	20.0	238.076

Results: GSM

Mode/Channel	Frequency (MHz)	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth (kHz)
Bottom	824.2	5.0	20.0	241.683
Middle	836.4	5.0	20.0	238.076
Top	848.8	5.0	20.0	241.683

Results: EDGE

Mode/Channel	Frequency (MHz)	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth (kHz)
Bottom	824.2	5.0	20.0	238.076
Middle	836.4	5.0	20.0	238.076
Top	848.8	5.0	20.0	238.076

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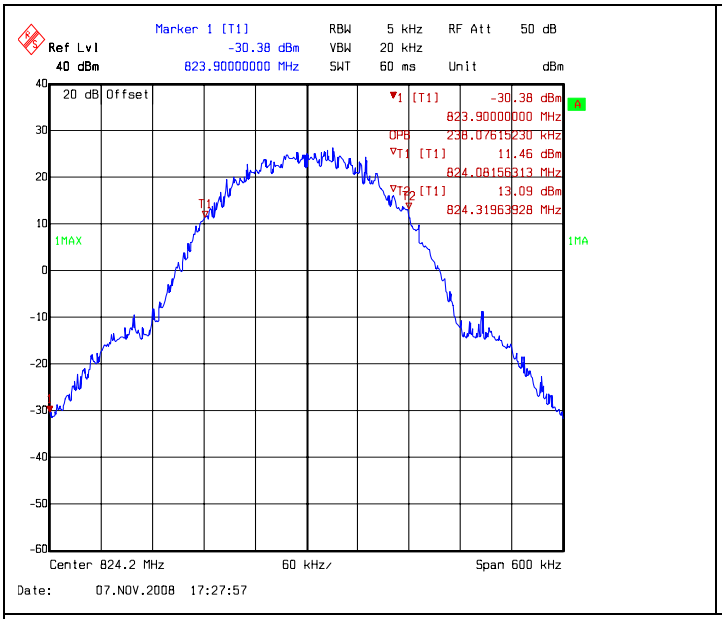
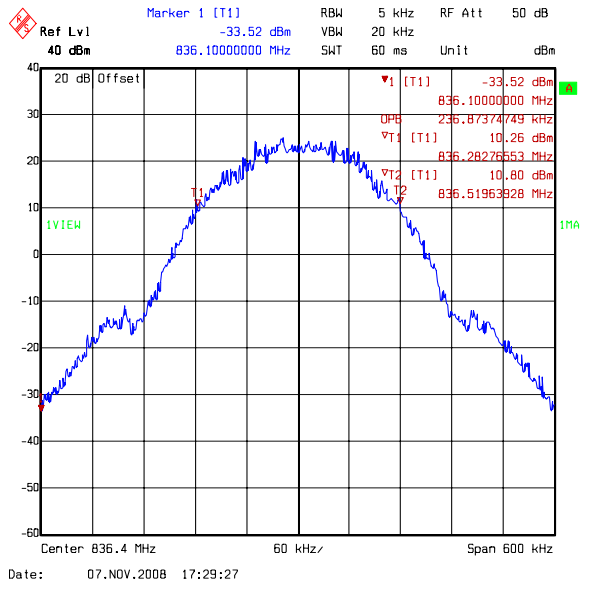
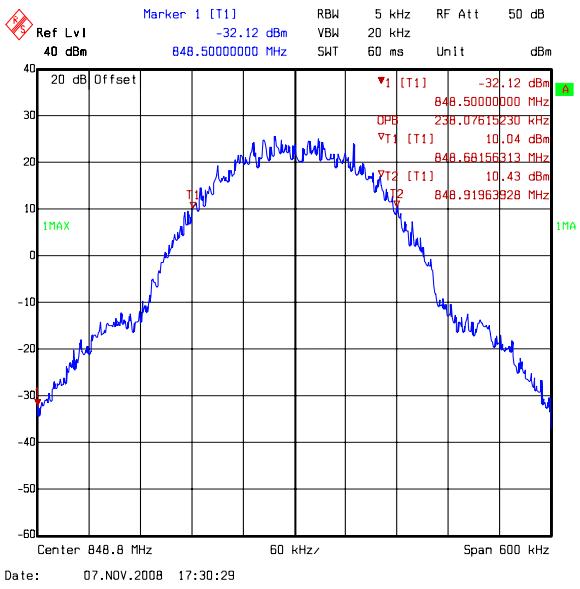
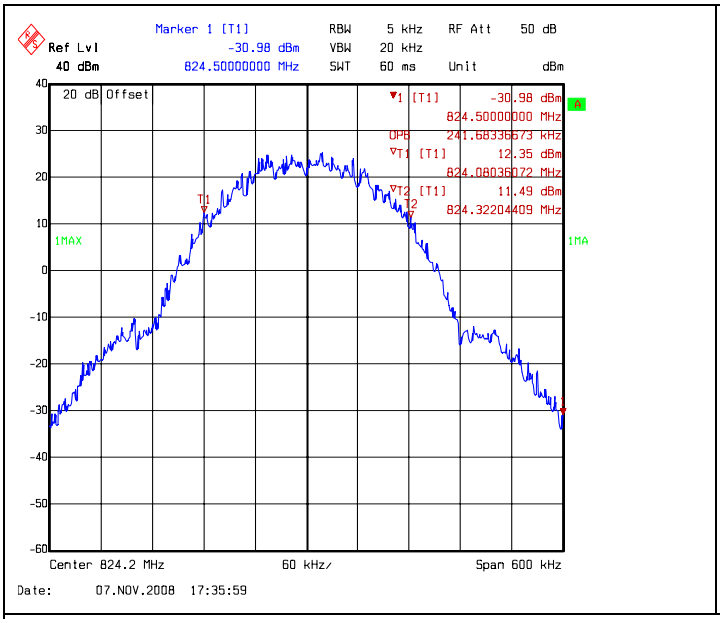
Mode - GPRS

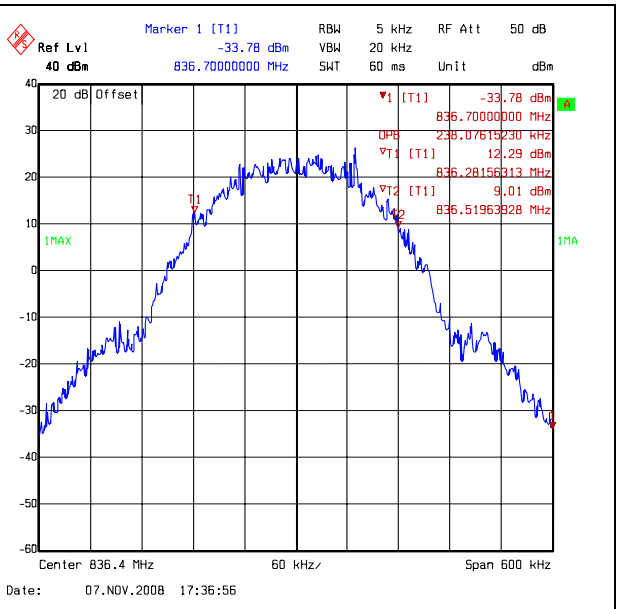


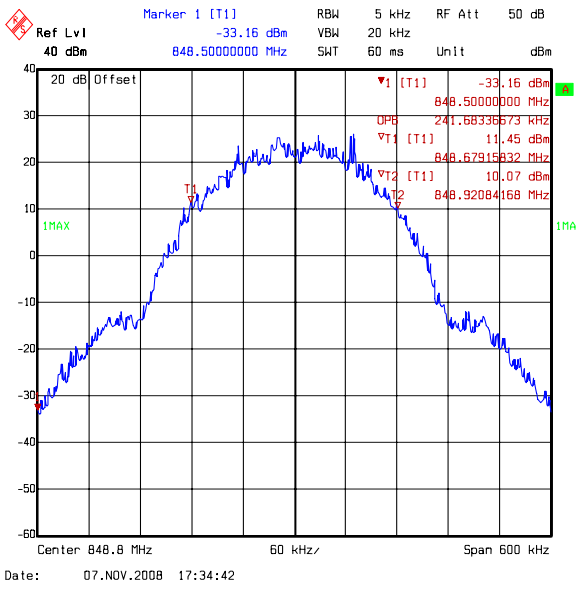




Mode - GSM


Marker 1 [T1]
Ref Lvl
40 dBm
-30.98 dBm
824.50000000 MHz
RBW 5 kHz
VBW 20 kHz
SWT 60 ms
RF Att 50 dB
Unit dBm
20 dB Offset
T1 [T1] -30.98 dBm
824.50000000 MHz
OPB 241.68336673 kHz
T1 [T1] 12.35 dBm
824.08036072 MHz
T2 [T1] 11.49 dBm
824.32204409 MHz
1MAX
1MA
Center 824.2 MHz
60 kHz/
Span 600 kHz
Date: 07.NOV.2008 17:35:59


Marker 1 [T1]
Ref Lvl
40 dBm
-33.78 dBm
836.70000000 MHz
RBW 5 kHz
VBW 20 kHz
SWT 60 ms
RF Att 50 dB
Unit dBm
20 dB Offset
T1 [T1] -33.78 dBm
836.70000000 MHz
OPB 238.07615230 kHz
T1 [T1] 12.29 dBm
836.28156313 MHz
T2 [T1] 9.01 dBm
836.51963928 MHz
1MAX
1MA
Center 836.4 MHz
60 kHz/
Span 600 kHz
Date: 07.NOV.2008 17:36:56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Ref Lvl
40 dBm
-33.16 dBm
848.50000000 MHz
RBW 5 kHz
VBW 20 kHz
SWT 60 ms
RF Att 50 dB
Unit dBm
20 dB Offset
T1 [T1] -33.16 dBm
848.50000000 MHz
OPB 241.68336673 kHz
T1 [T1] 11.45 dBm
848.67915832 MHz
T2 [T1] 10.07 dBm
848.92084168 MHz
1MAX
1MA
Center 848.8 MHz
60 kHz/
Span 600 kHz
Date: 07.NOV.2008 17:34:42

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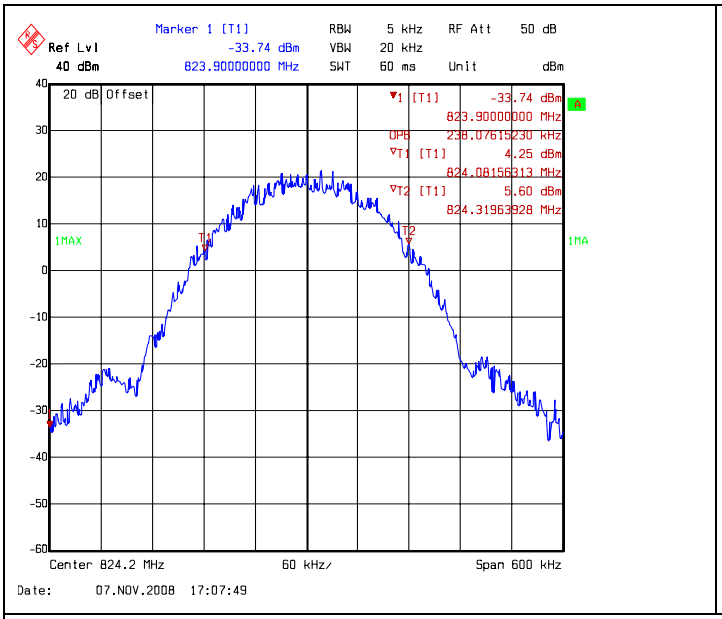
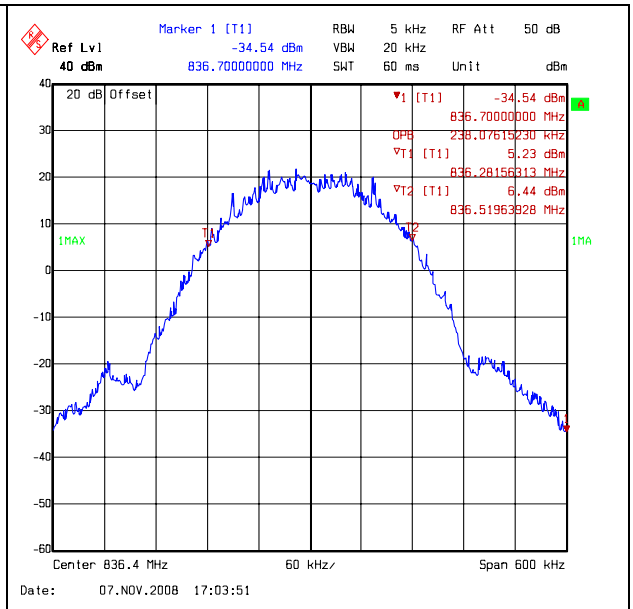
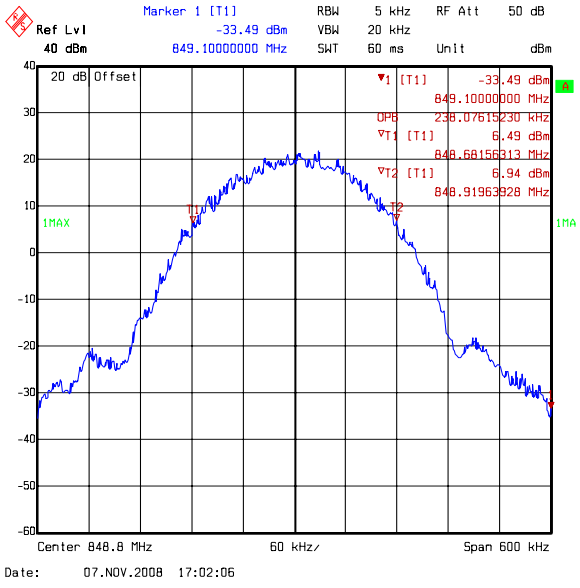
Mode - EDGE







7.2.8. Transmitter Out of Band Radiated Emissions

Ambient Temperature: 22ºC to 23ºC Relative Humidity: 45% to 53%

Tests were performed using the test methods detailed in ANSI TIA-603-C-2004 referencing FCC CFR Part 2.

Bottom Channel

Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1648.421	-39.2	-13.0	26.2	Complied

Middle Channel

Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1672.815	-38.2	-13.0	25.2	Complied

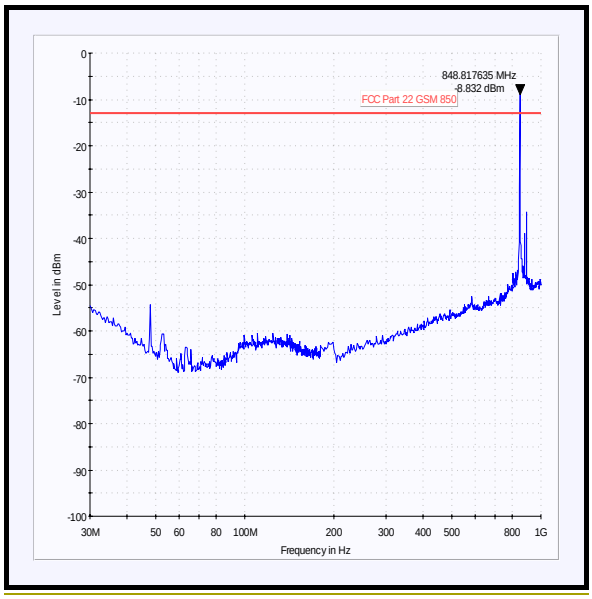
Top Channel

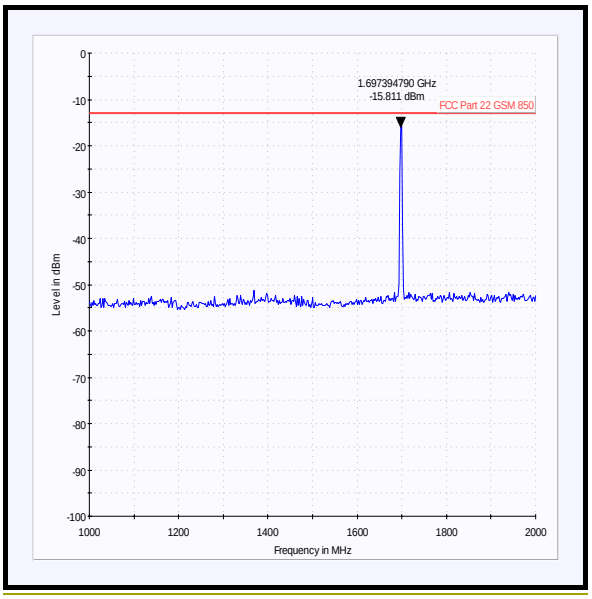
Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1697.609	-37.7	-13.0	24.7	Complied

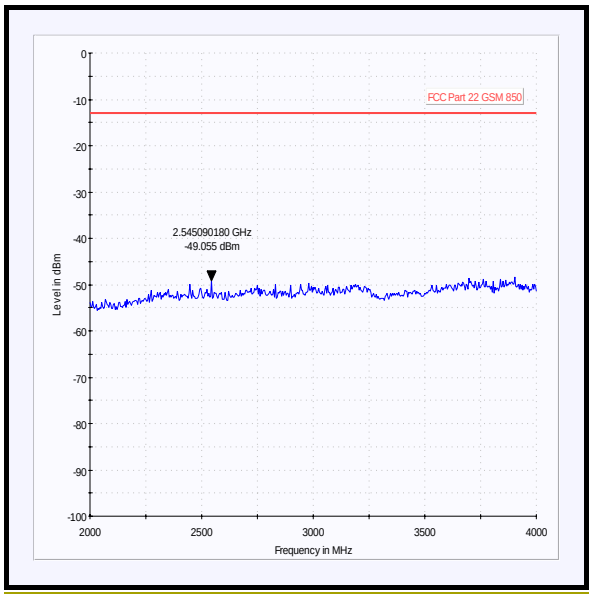
Note(s):

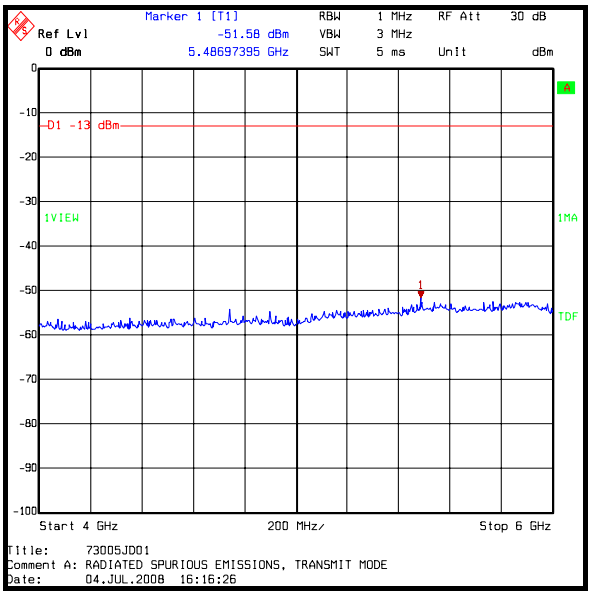
1. No other spurious emissions were detected within 20dB of the limit.

Transmitter Out of Band Radiated Emissions (Continued)



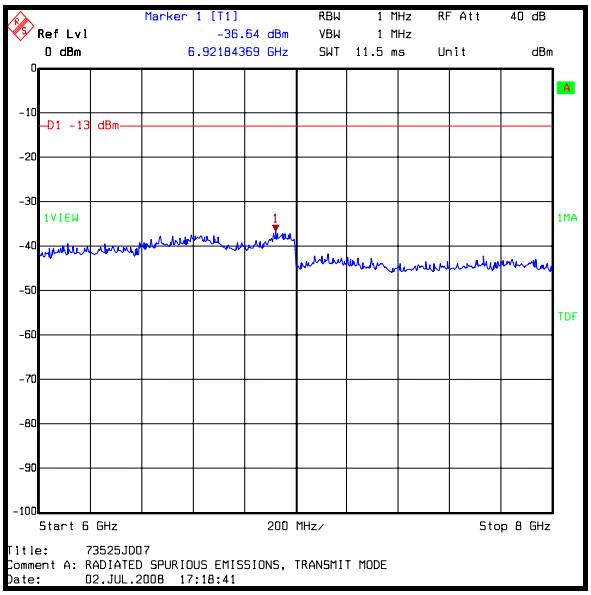


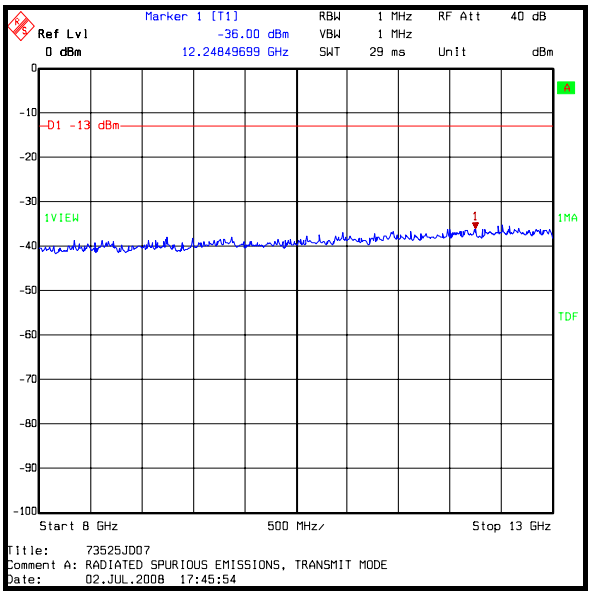




Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.
Note: The emission shown at 848.817 MHz is the fundamental transmit frequency.

Transmitter Out of Band Radiated Emissions (Continued)





Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

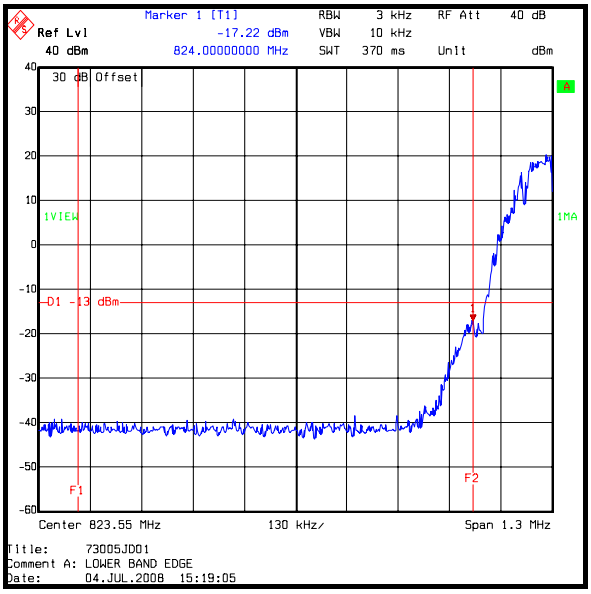
7.2.9. Transmitter Radiated Emissions at Band Edges

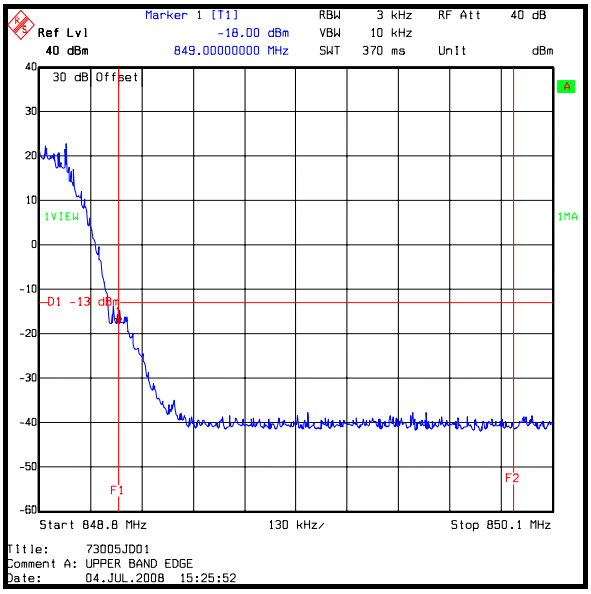
Ambient Temperature: 23ºC Relative Humidity: 35%

Tests were performed using the test methods detailed in ANSI TIA-603-C-2004 referencing FCC CFR Parts 2 and 22.917.

Bottom & Top Band Edges - GSM

Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
824	-17.2	-13.0	4.2	Complied
849	-18.0	-13.0	5.0	Complied



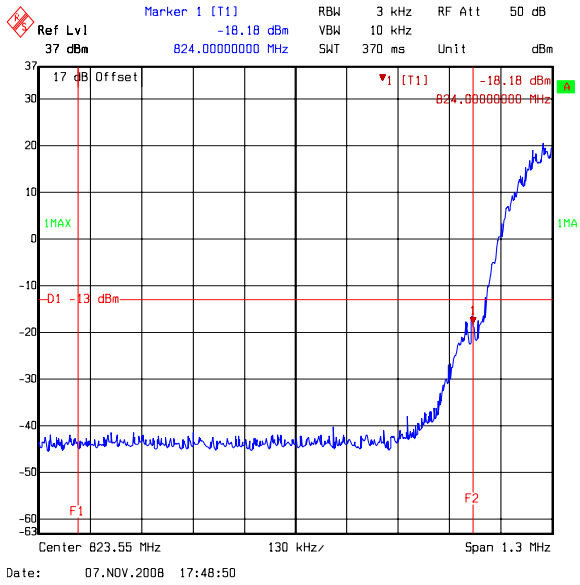


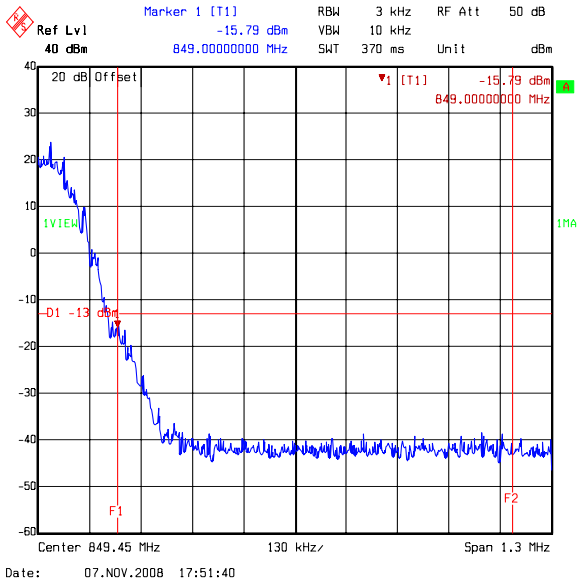
Test of: Enfora Enabler IIE
EDG0208 and EDG0208-01

To: FCC Part 22: 2008 (Subpart H), FCC Part 24: 2008 (Subpart E),
RSS 132 Issue 2 September 2005 and RSS-133 Issue 4 February 2008

Bottom & Top Band Edges - GPRS

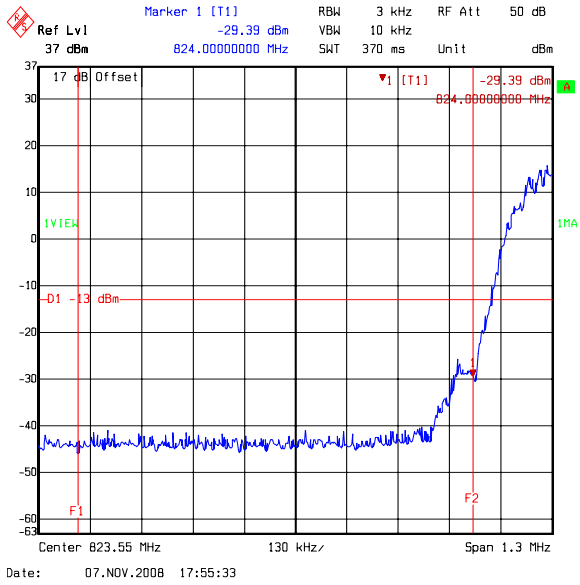
Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
824	-18.2	-13.0	5.2	Complied
849	-15.8	-13.0	2.8	Complied

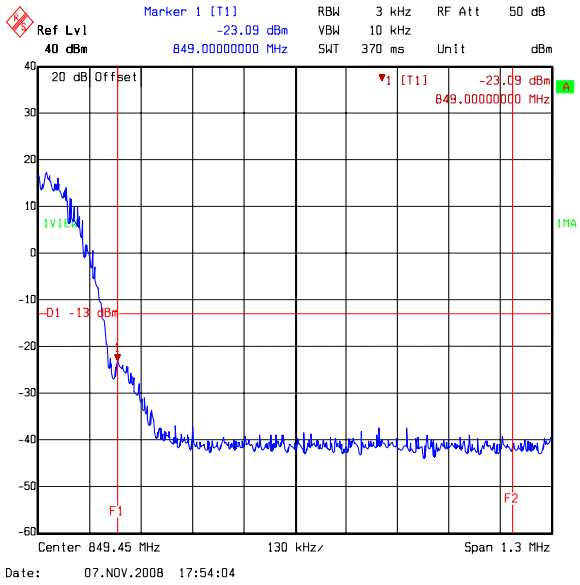




Bottom & Top Band Edges - EDGE

Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
824	-29.4	-13.0	16.4	Complied
849	-23.1	-13.0	10.1	Complied





7.3. Test Results – FCC Part 24 (Subpart E) and RSS-133

7.3.1. Idle Mode AC Conducted Spurious Emissions (9 kHz to 30 MHz)

Ambient Temperature: 23ºC Relative Humidity: 44%

Tests were performed using the test methods detailed in ANSI C63.4 Section 7.

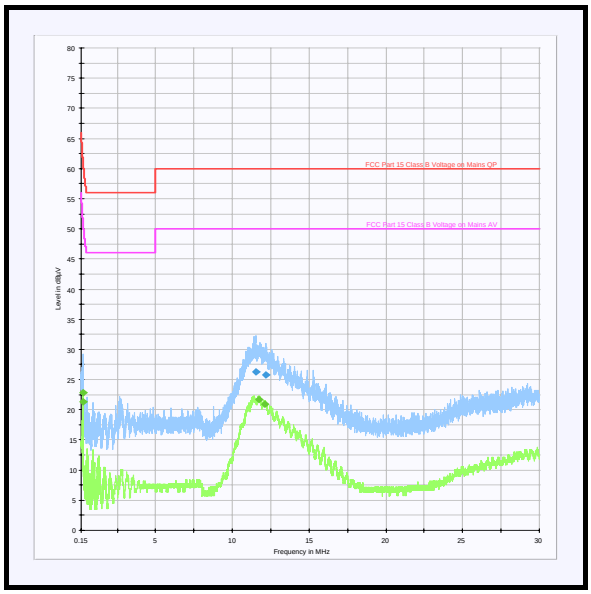
Quasi-Peak Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
11.510000	Live	26.3	60.0	33.7	Complied
12.178000	Live	25.7	60.0	34.3	Complied

Average Detector Measurements on Live and Neutral Lines

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.254000	Live	22.9	51.6	28.7	Complied
0.258000	Live	21.3	51.5	30.2	Complied
11.718000	Live	21.7	50.0	28.3	Complied
12.106000	Live	20.9	50.0	29.1	Complied

Idle Mode AC Conducted Spurious Emissions (Continued) – Class B: Section 15.107



7.3.2. Idle Radiated Spurious Emissions

Ambient Temperature: 23ºC Relative Humidity: 44%

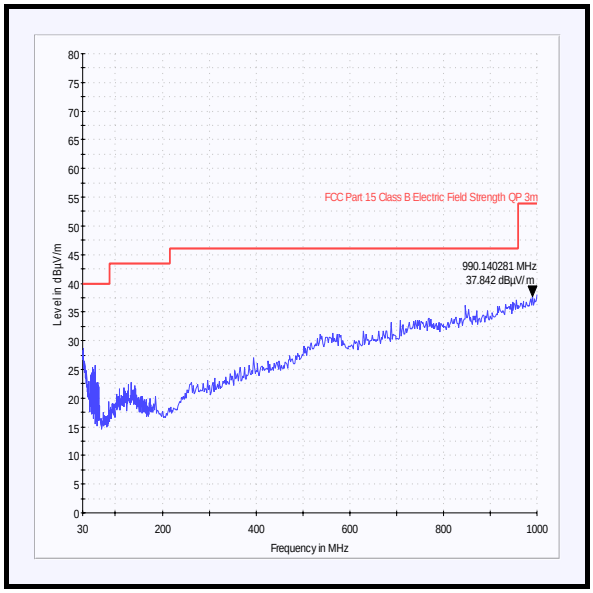
Tests were performed using the test methods detailed in ANSI C63.4 Section 8.

Electric Field Strength Measurements (Frequency Range: 30 to 1000 MHz)

Frequency (MHz)	Antenna Polarity	Peak Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
990.140	Vertical	37.8	54.0	16.2	Complied

Note(s):

1. No spurious emissions were detected above the noise floor of the measuring receiver; therefore, the highest peak noise floor reading of the measuring receiver was recorded as shown in the table above.



7.3.3. Idle Mode Radiated Spurious Emissions (Continued)

Ambient Temperature: 18ºC to 23ºC Relative Humidity: 41% to 49%

Electric Field Strength Measurements (Frequency Range: 1 to 13 GHz)

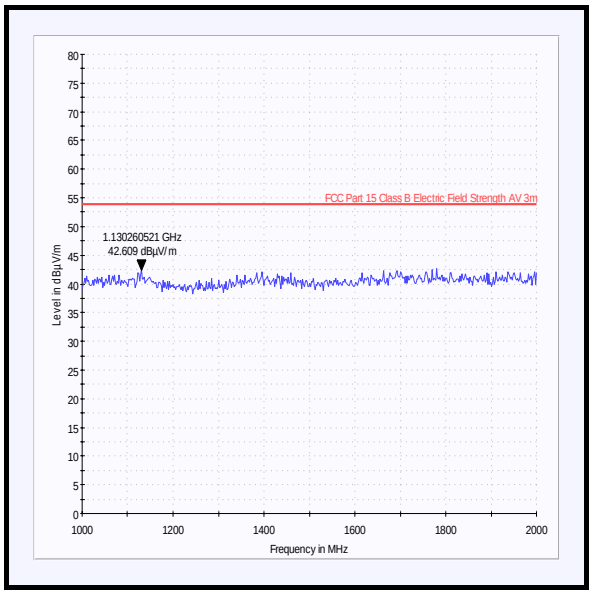
Highest Peak Level:

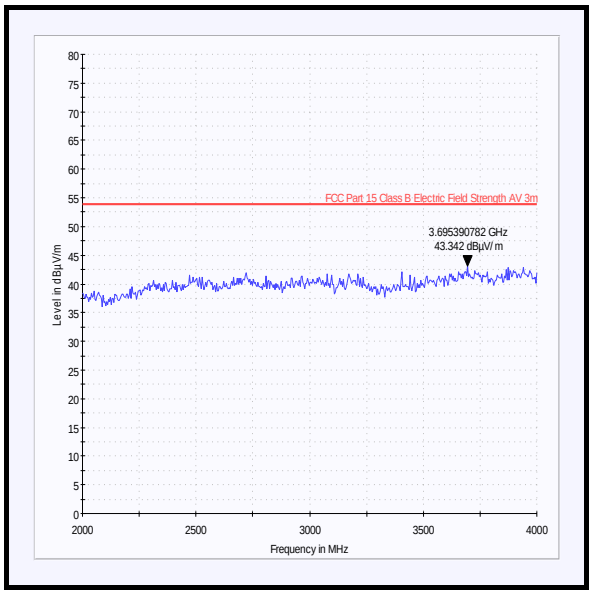
Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Peak Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
12.378757	Vertical	29.7	14.8	44.5	54.0	9.5	Complied

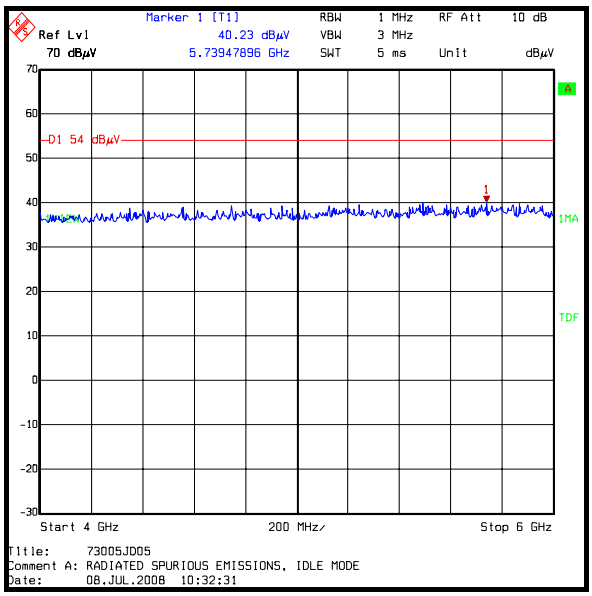
Note(s):

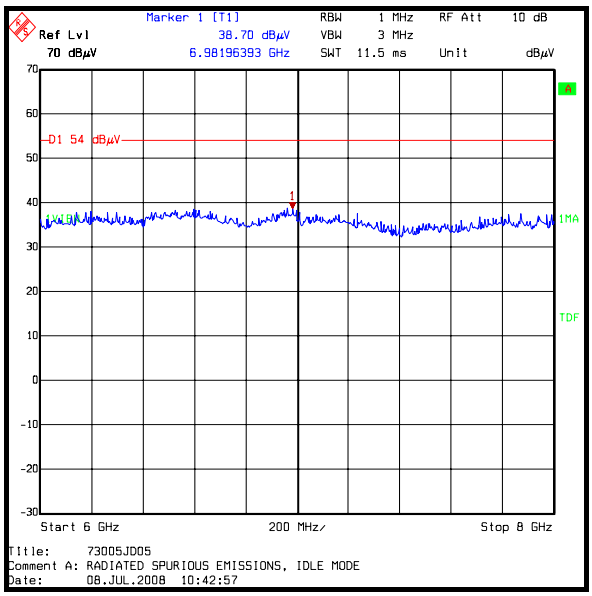
1. No spurious emissions were detected above the noise floor of the measuring receiver, therefore, the highest peak noise floor reading of the measuring receiver was recorded as shown in the table above. The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit.

Receiver Radiated Spurious Emissions (Continued)

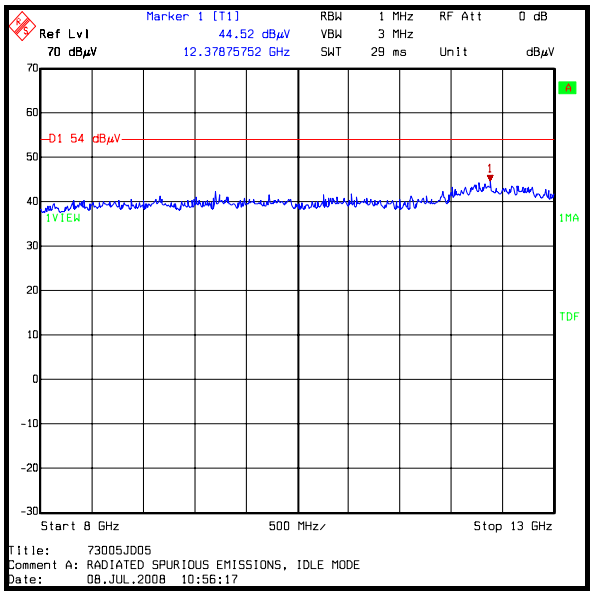








Idle Mode Radiated Spurious Emissions (Continued)



7.3.4. Transmitter Carrier Output Power

Ambient Temperature: 24ºC Relative Humidity: 21%

Tests were performed using the test methods detailed in ANSI TIA-603-C-2004 referencing FCC CFR Part 2.

Results: GSM

Channel	Frequency (MHz)	Conducted RF O/P Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	1850.2	29.3	33.0	3.7	Complied
Middle	1879.8	29.0	33.0	4.0	Complied
Top	1909.8	29.9	33.0	3.1	Complied

Results: GPRS

Channel	Frequency (MHz)	Conducted RF O/P Power (dBm)	ERP Limit (dBm)	Margin (dB)	Result
Bottom	1850.2	28.5	33.0	4.5	Complied
Middle	1879.8	28.8	33.0	4.5	Complied
Top	1909.8	29.1	33.0	3.9	Complied

Results: EDGE

Channel	Frequency (MHz)	Conducted RF O/P Power (dBm)	ERP Limit (dBm)	Margin (dB)	Result
Bottom	1850.2	28.6	33.0	4.4	Complied
Middle	1879.8	28.9	33.0	4.1	Complied
Top	1909.8	29.3	33.0	3.7	Complied

7.3.5. Transmitter Frequency Stability (Temperature Variation)

Ambient Temperature: 20ºC Relative Humidity: 68%

Tests were performed using the test methods detailed in ANSI TIA-603-C-2004 referencing FCC CFR Part 2.

Bottom Channel (1850.2 MHz)

Temperature (ºC)	Frequency Error (Hz)	Measured Frequency (MHz)	Lower Band Edge Limit (MHz)	Margin (MHz)	Result
-30	26	1850.200026	1850.0	0.200026	Complied
-20	23	1850.200023	1850.0	0.200023	Complied
-10	18	1850.200018	1850.0	0.200018	Complied
0	28	1850.200028	1850.0	0.200028	Complied
10	9	1850.200009	1850.0	0.200009	Complied
20	25	1850.200025	1850.0	0.200025	Complied
30	21	1850.200021	1850.0	0.200021	Complied
40	28	1850.200028	1850.0	0.200028	Complied
50	33	1850.200033	1850.0	0.200033	Complied

Top Channel (1909.8 MHz)

Temperature (ºC)	Frequency Error (Hz)	Measured Frequency (MHz)	Upper Band Edge Limit (MHz)	Margin (MHz)	Result
-30	22	1909.800022	1910.0	0.199978	Complied
-20	32	1909.800032	1910.0	0.199968	Complied
-10	28	1909.800028	1910.0	0.199972	Complied
0	12	1909.800012	1910.0	0.199988	Complied
10	20	1909.800020	1910.0	0.199980	Complied
20	21	1909.800021	1910.0	0.199919	Complied
30	27	1909.800027	1910.0	0.199973	Complied
40	32	1909.800032	1910.0	0.199968	Complied
50	38	1909.800038	1910.0	0.199962	Complied

7.3.6. Transmitter Frequency Stability (Voltage Variation)

Ambient Temperature: 20ºC Relative Humidity: 68%

Tests were performed using the test methods detailed in ANSI TIA-603-C-2004 referencing FCC CFR Part 2.

Bottom Channel (1850.2 MHz)

Supply Voltage (V)	Frequency Error (Hz)	Measured Frequency (MHz)	Lower Band Edge Limit (MHz)	Margin (MHz)	Result
3.5	32	1850.200032	1850	0.200032	Complied
3.9	28	1850.200028	1850	0.200028	Complied

Top Channel (1909.8 MHz)

Supply Voltage (V)	Frequency Error (Hz)	Measured Frequency (MHz)	Lower Band Edge Limit (MHz)	Margin (MHz)	Result
3.5	36	1909.800036	1910	0.199964	Complied
3.9	42	1909.800042	1910	0.199958	Complied

7.3.7. Transmitter Occupied Bandwidth

Ambient Temperature: 21ºC Relative Humidity: 40%

The 99% occupied bandwidth was measured using the channel bandwidth function of the R&S spectrum analyser referencing FCC CFR Part 2.

Results: GSM

Channel	Frequency (MHz)	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth (kHz)
Bottom	1850.2	5.0	20.0	240.481
Middle	1879.8	5.0	20.0	240.481
Top	1909.8	5.0	20.0	240.481

Results: GPRS

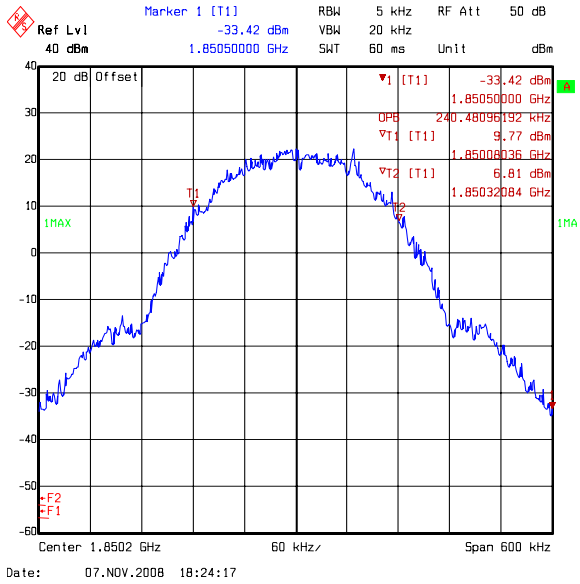
Channel	Frequency (MHz)	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth (kHz)
Bottom	1850.2	5.0	20.0	239.279
Middle	1879.8	5.0	20.0	239.279
Top	1909.8	5.0	20.0	239.279

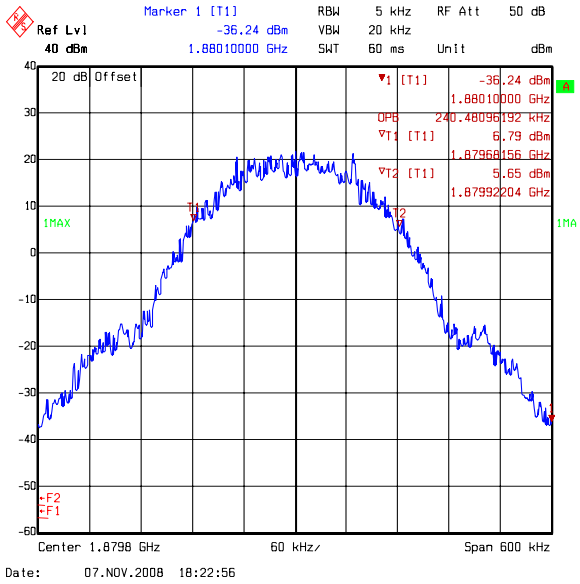
Results: EDGE

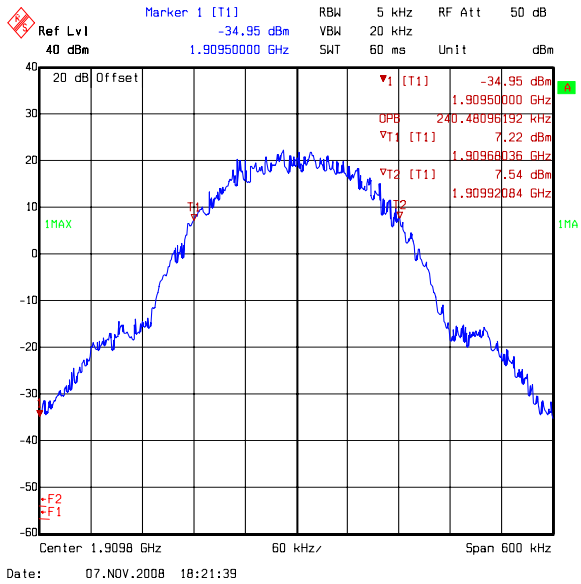
Channel	Frequency (MHz)	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth (kHz)
Bottom	1850.2	5.0	20.0	235.671
Middle	1879.8	5.0	20.0	236.874
Top	1909.8	5.0	20.0	233.267

Transmitter Occupied Bandwidth (Continued)

Mode - GSM



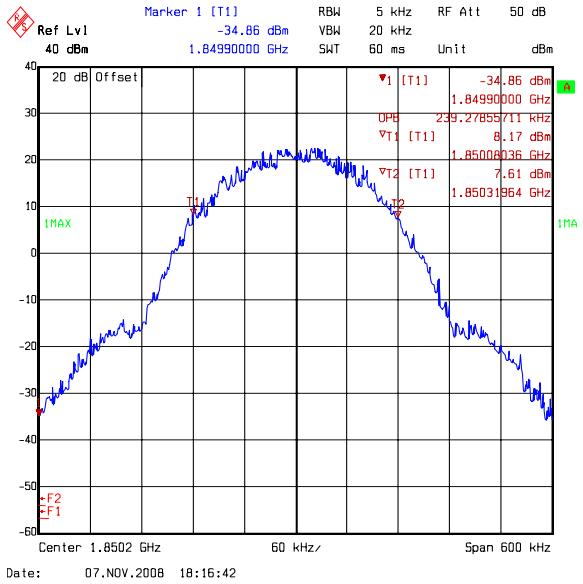


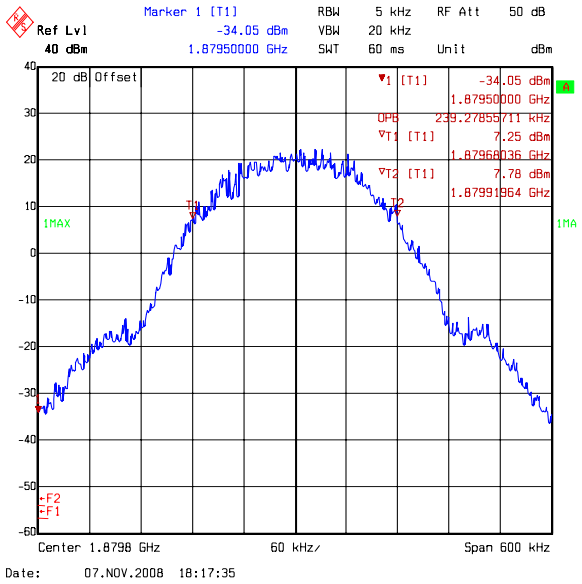


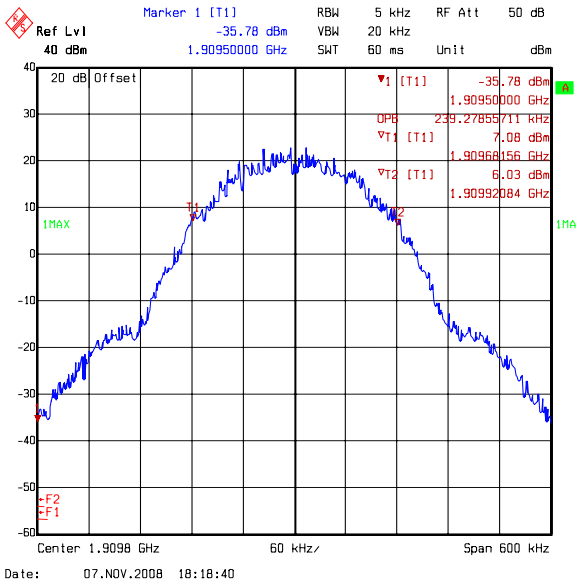
Test of: Enfora Enabler IIE
EDG0208 and EDG0208-01

To: FCC Part 22: 2008 (Subpart H), FCC Part 24: 2008 (Subpart E),
RSS 132 Issue 2 September 2005 and RSS-133 Issue 4 February 2008

Mode - GPRS



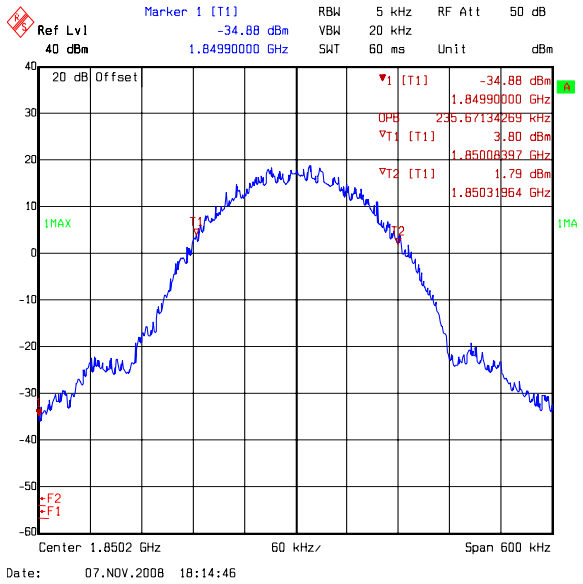


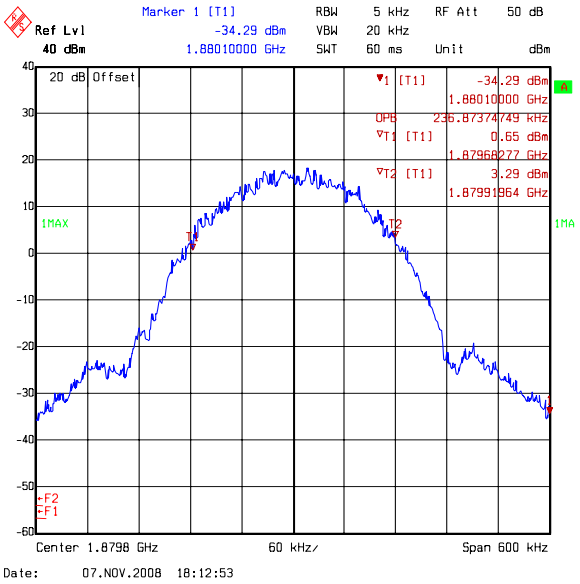


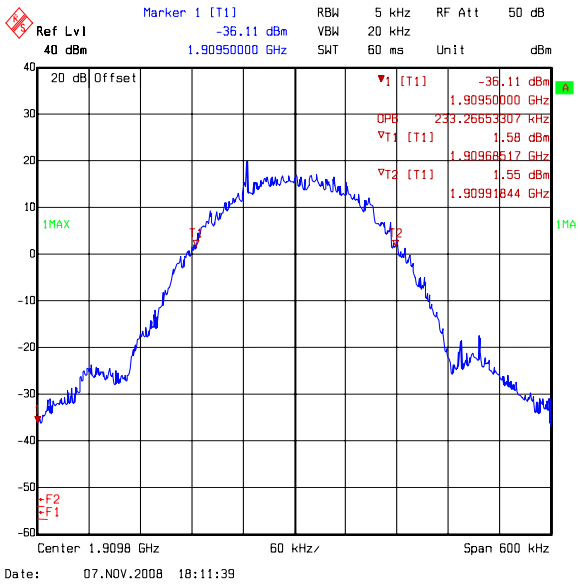
Test of: Enfora Enabler IIE
EDG0208 and EDG0208-01

To: FCC Part 22: 2008 (Subpart H), FCC Part 24: 2008 (Subpart E),
RSS 132 Issue 2 September 2005 and RSS-133 Issue 4 February 2008

Mode - EDGE







7.3.8. Transmitter Out of Band Radiated Emissions

Ambient Temperature: 18ºC to 23ºC Relative Humidity: 41% to 53%

Tests were performed using the test methods detailed in ANSI TIA-603-C-2004 referencing FCC CFR Parts 2 and 24.238.

Bottom Channel

Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
3700.408	-31.5	-13.0	18.5	Complied

Middle Channel

Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
3759.600	-29.1	-13.0	16.1	Complied

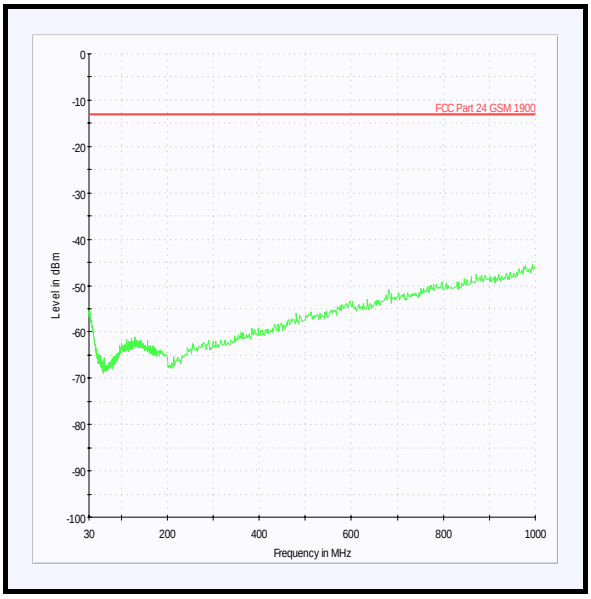
Top Channel

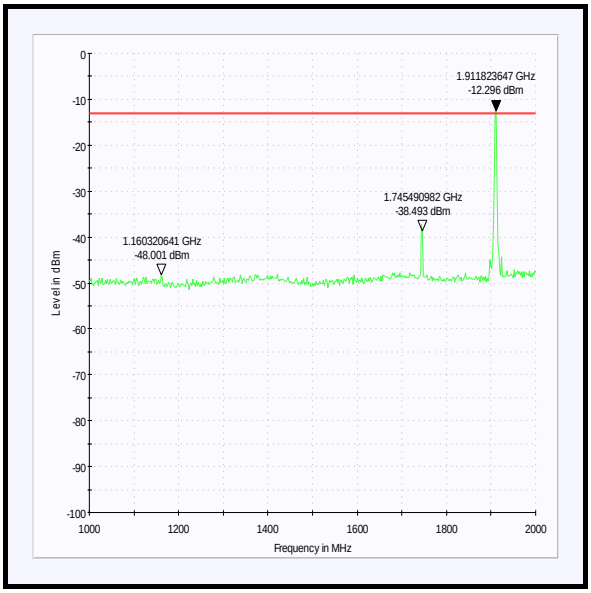
Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
3819.616	-31.5	-13.0	18.5	Complied

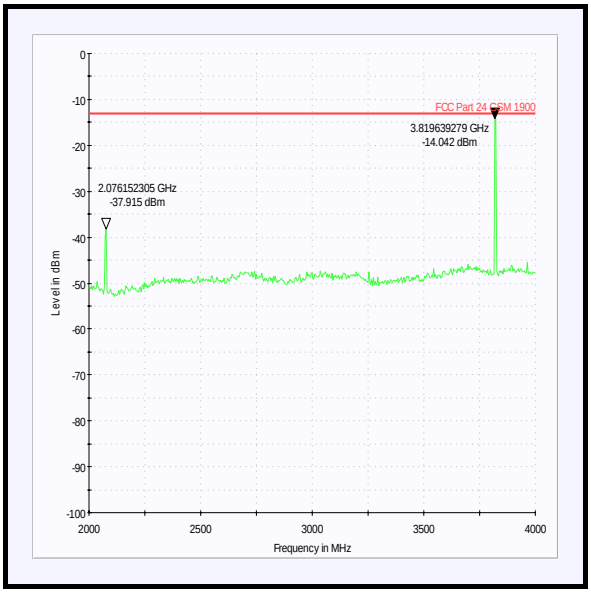
Note(s):

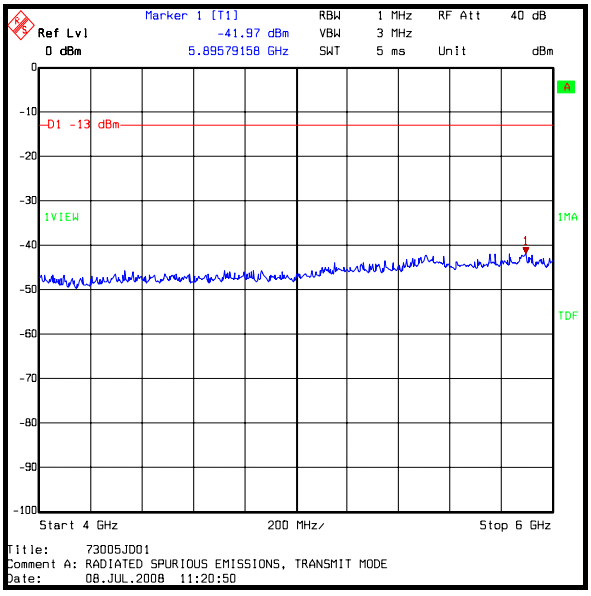
1. The emission shown at 1911.824 MHz in the plots below is the fundamental transmit frequency.
2. No other spurious emissions were detected within 20dB of the limit.

Transmitter Out of Band Radiated Emissions (Continued) : Section 2.1053/24.238

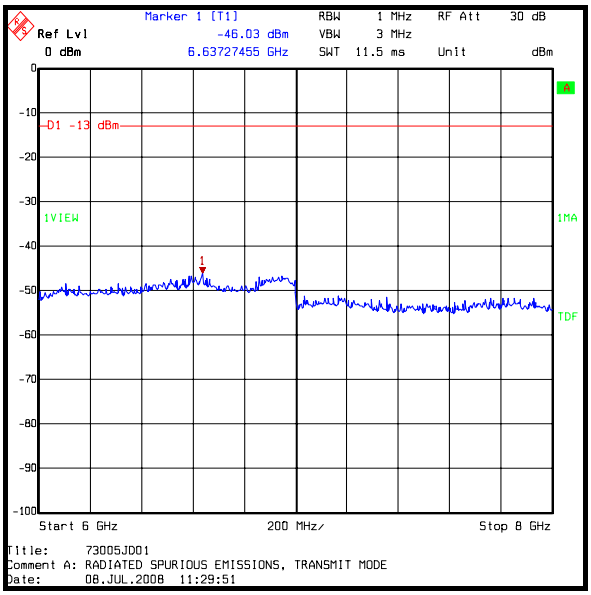


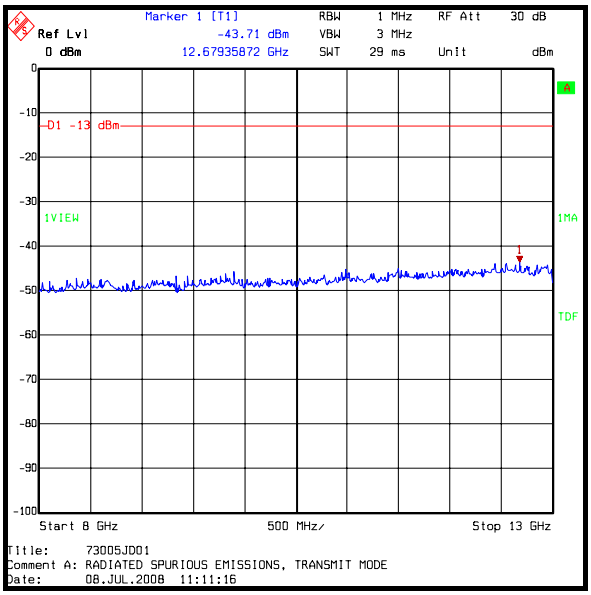


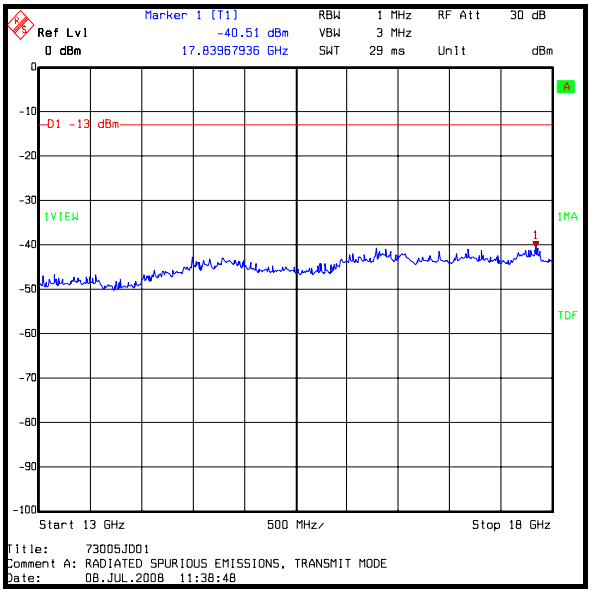


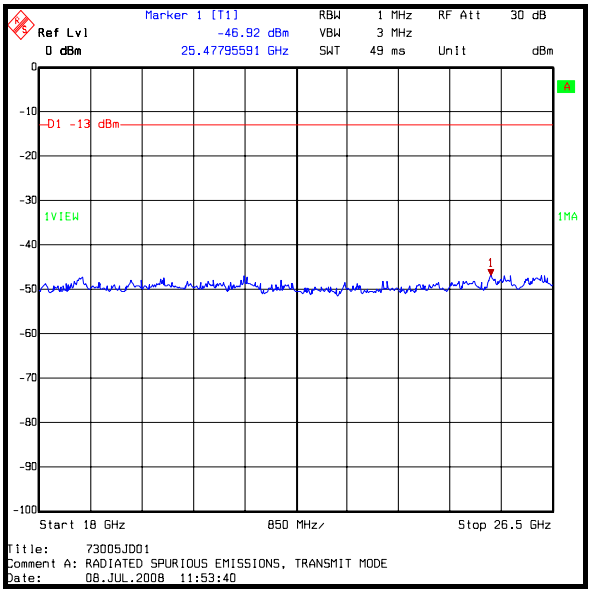


Transmitter Out of Band Radiated Emissions (Continued) : Section 2.1053/24.238









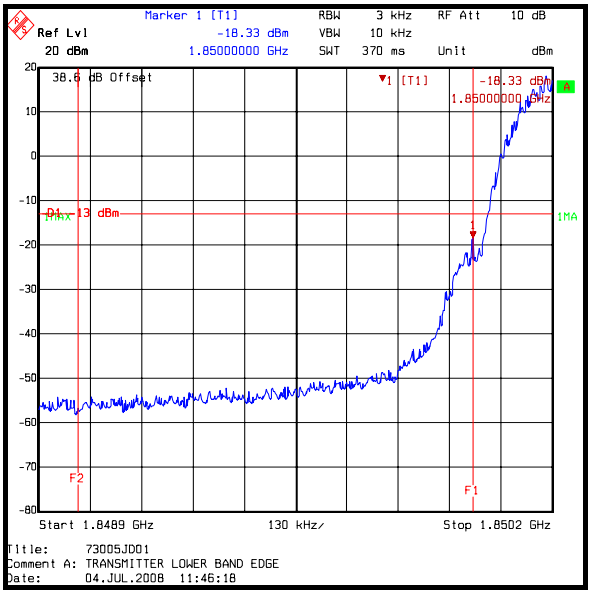
7.3.9. Transmitter Radiated Emissions at Band Edges

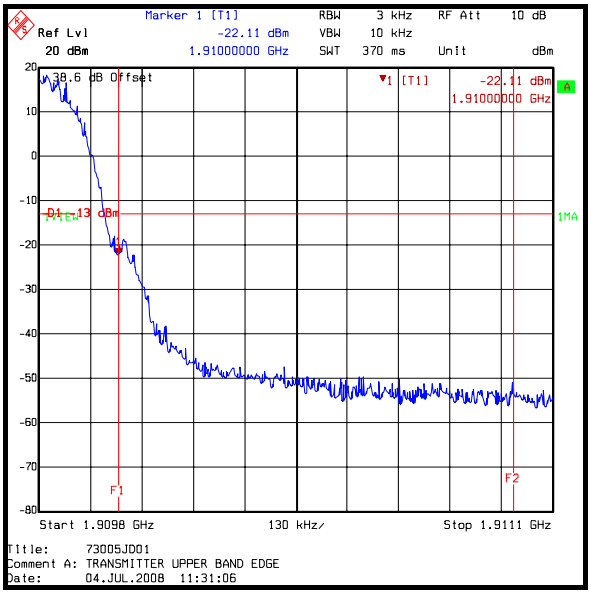
Ambient Temperature: 22ºC Relative Humidity: 44%

Tests were performed using the test methods detailed in ANSI TIA-603-C-2004 referencing FCC CFR Parts 2 and 24.238.

Bottom & Top Band Edges - GSM

Frequency (MHz)	Spurious Emission (dBm)	Limit (dBm)	Margin (dB)	Result
1850	-18.3	-13.0	5.3	Complied
1910	-22.1	-13.0	9.1	Complied



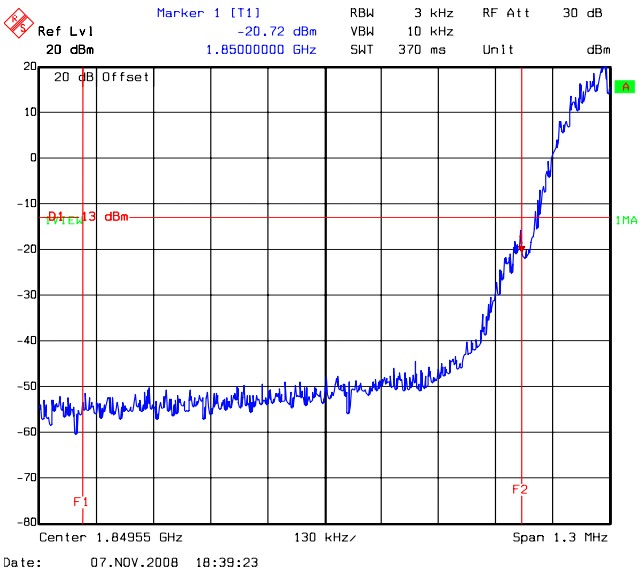


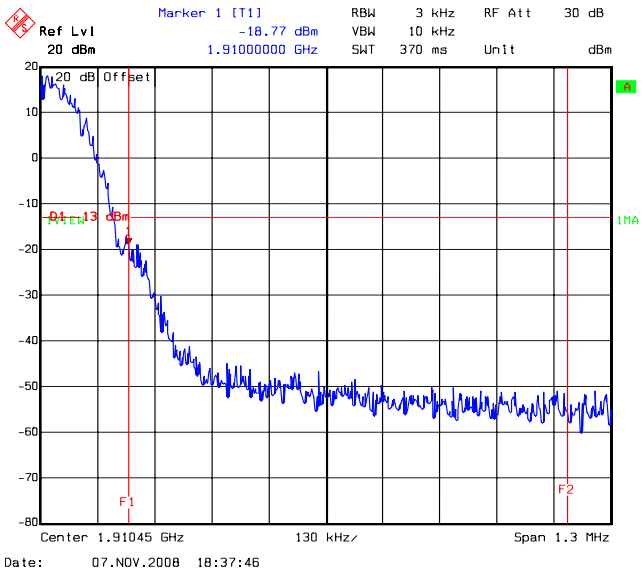
Test of: Enfora Enabler IIE
EDG0208 and EDG0208-01

To: FCC Part 22: 2008 (Subpart H), FCC Part 24: 2008 (Subpart E),
RSS 132 Issue 2 September 2005 and RSS-133 Issue 4 February 2008

Bottom & Top Band Edges - GPRS

Frequency (MHz)	Spurious Emission (dBm)	Limit (dBm)	Margin (dB)	Result
1850	-20.7	-13.0	7.7	Complied
1910	-18.8	-13.0	5.8	Complied



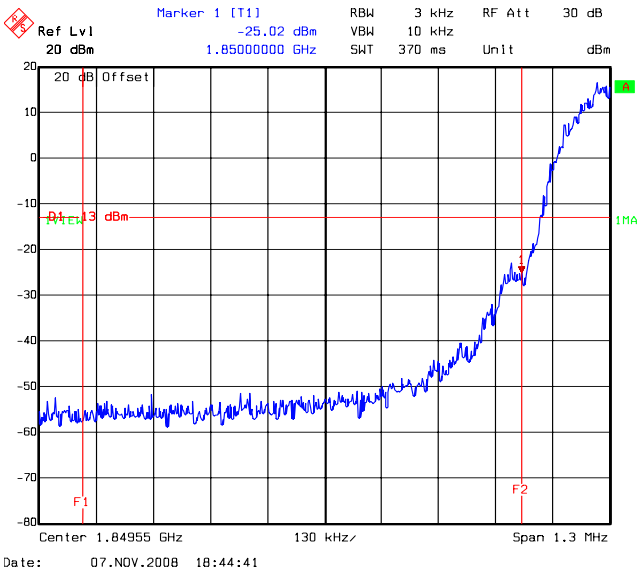


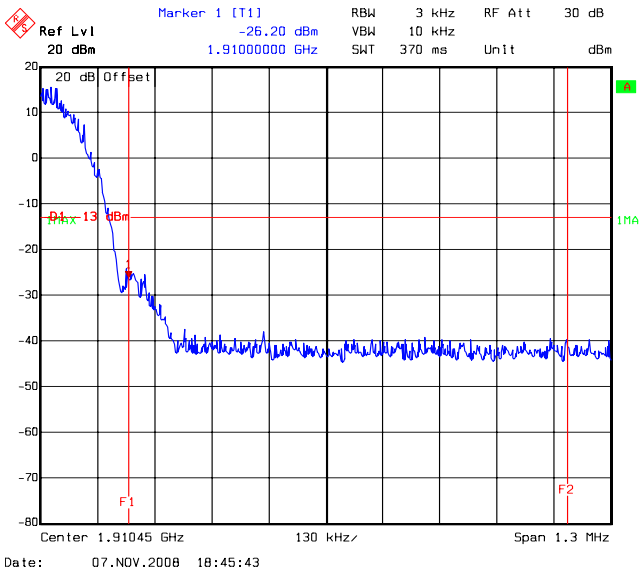
Test of: Enfora Enabler IIE
EDG0208 and EDG0208-01

To: FCC Part 22: 2008 (Subpart H), FCC Part 24: 2008 (Subpart E),
RSS 132 Issue 2 September 2005 and RSS-133 Issue 4 February 2008

Bottom & Top Band Edges - EDGE

Frequency (MHz)	Spurious Emission (dBm)	Limit (dBm)	Margin (dB)	Result
1850	-25.0	-13.0	12.0	Complied
1910	-26.2	-13.0	13.2	Complied





8. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently, the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor, such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	±3.72 dB
Carrier Output Power	Not applicable	95%	±0.28 dB
Frequency Stability	Not applicable	95%	±11.4 ppm
Occupied Bandwidth	824 to 849 MHz	95%	±11.4 ppm
Radiated Spurious Emissions	30 MHz to 1000 MHz	95%	±4.64 dB
Radiated Spurious Emissions	1 GHz to 26 GHz	95%	±2.94 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty, the published guidance of the appropriate accreditation body is followed.

Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (months)
A028	Antenna	Eaton	91888-2	304	08 Jun 2006	36
A031	Antenna	Eaton	91889-2	557	08 Jun 2006	36
A059	Antenna	EMCO	3146	8902-2378	07 Feb 2008	12
A1069	Single Phase LISN	Rohde & Schwarz	ESH3-Z5	837469/012	07 Mar 2008	12
A1096	Directional Coupler	MIDISCO	MDC6223W20	None	Calibrated before use	-
A1829	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100671	16 Jan 2008	12
A1830	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100668	16 Jan 2008	12
A1852	Attenuator	AS	6200-20dB	00202	Calibrated before use	-
A253	Antenna	Flann Microwave	12240-20	128	17 Nov 2006	36
A254	Antenna	Flann Microwave	14240-20	139	17 Nov 2006	36
A255	Antenna	Flann Microwave	16240-20	519	17 Nov 2006	36
A256	Antenna	Flann Microwave	18240-20	400	17 Nov 2006	36
A436	Antenna	Flann Microwave	20240-20	330	24 Apr 2006	36
A490	Antenna	Chase	CBL6111A	1590	07 Feb 2008	12
A649	Single Phase LISN	Rohde & Schwarz	ESH3-Z5	825562/008	07 Mar 2008	12
E013	Environmental Chamber	Sanyo	ATMOS chamber	None	Calibrated before use	-
M1093	Communications Test Set	Willtek	4202S	0513018	Calibration not required	-
M1124	Spectrum Analyser	Rohde & Schwarz	ESIB26	100046K	19 Feb 2008	12
M1138	CMU 200	Rohde & Schwarz	CMU200	836202/093	Calibration not required	-
M1140	Radiocomms Analyser	Anritsu	MT8820A	6K0000647	Calibration not required	-
M1242	Spectrum Analyser	Rohde & Schwarz	FSEM30	845986/022	29 Nov 2007 (Refer to note 1)	12
M1249	Thermometer	Fluke	52II	88800049	09 Jul 2008	12
M1263	Test Receiver	Rohde & Schwarz	ESIB7	100265	06 Feb 2008	12
M1269	Multimeter	Fluke	179	90250210	09 Apr 2008	12
M1379	Test Receiver	Rohde and Schwarz	ESIB7	100330	02 Aug 2007 (Refer to note 1)	12

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (months)
S0539	Power Supply Unit	Kikusui	PCR 1000L	13010170	Calibrated before use	-
S202	3m OATS	RFI	2	N/A	28 Jan 2008	12
K0002	3m RSE Chamber	RFI	N/A	N/A	26 Aug 2008	12

NB In accordance with UKAS requirements, all the measurement equipment is on a calibration schedule.

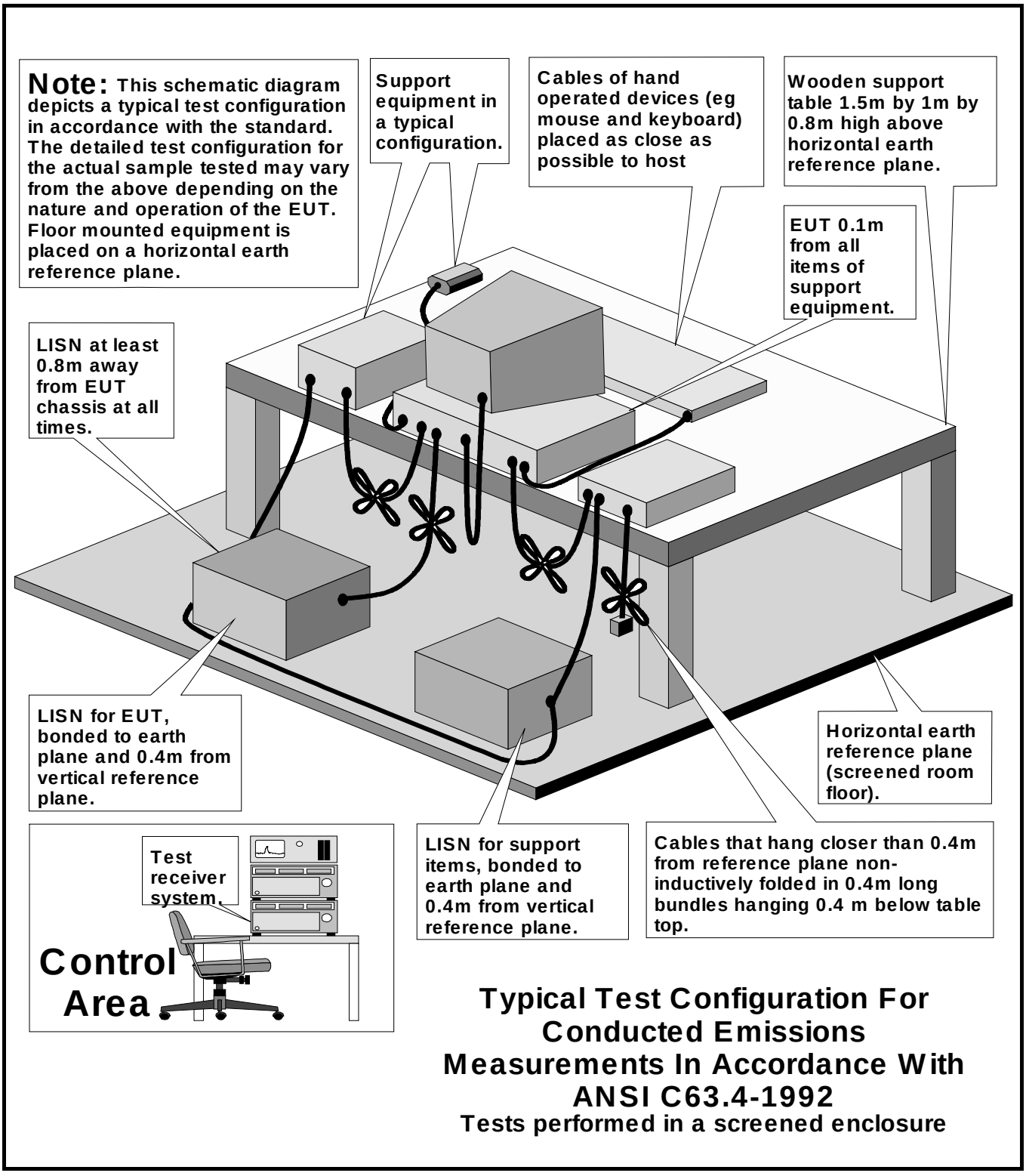
Note 1: This instrument was used for the testing that was performed in July and was therefore within its calibration period.

Appendix 2. Test Configuration Drawings

This appendix contains the following drawings:

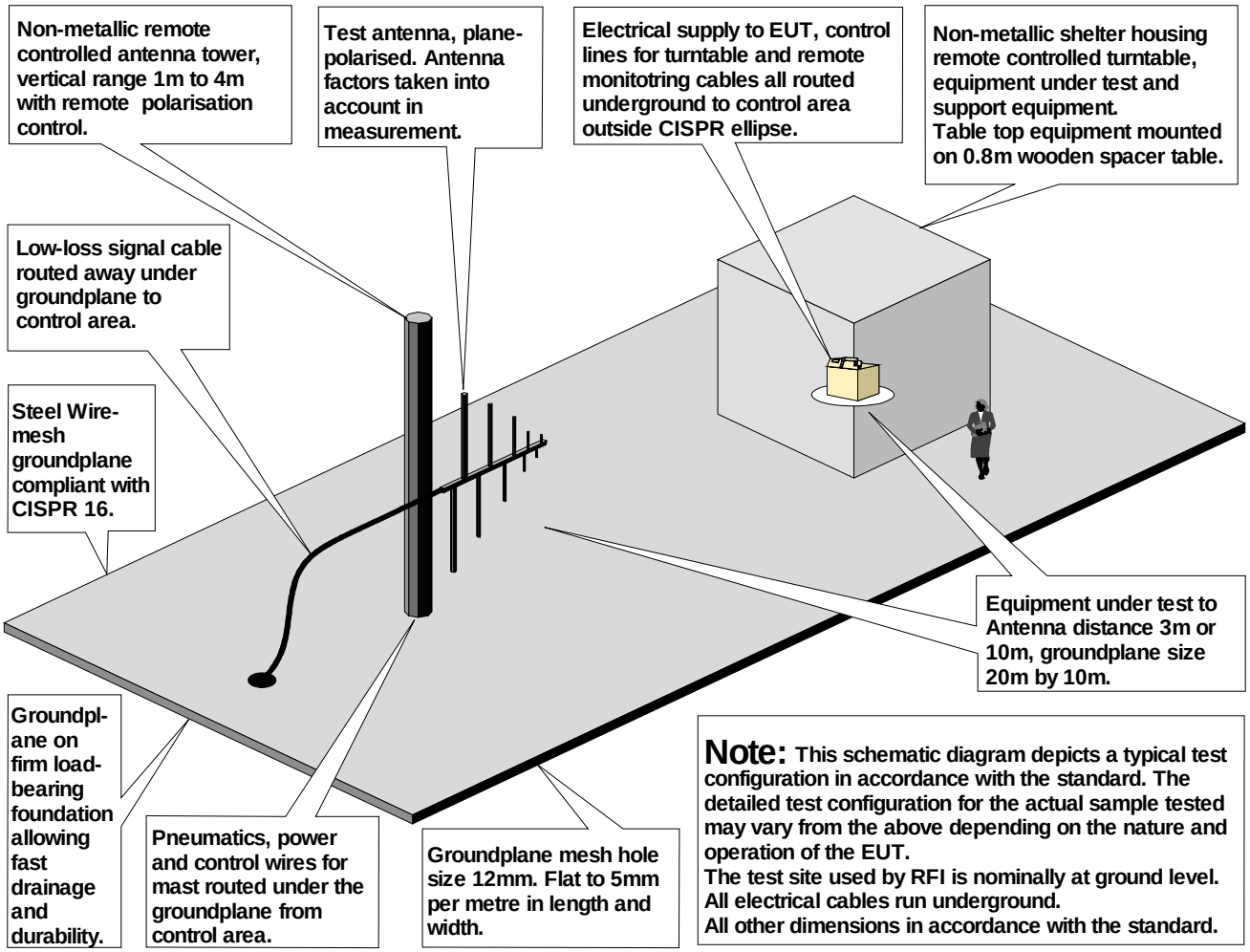
Drawing Reference Number	Title
DRG\73005TD01\EMICON	Test configuration for measurement of conducted emissions.
DRG\73005TD01\EMIRAD	Test configuration for measurement of radiated emissions.

DRG\73005TD01\EMICON



Typical Test Configuration For Conducted Emissions Measurements In Accordance With ANSI C63.4-1992
Tests performed in a screened enclosure

DRG\73005TD01\EMIRAD



Note: This schematic diagram depicts a typical test configuration in accordance with the standard. The detailed test configuration for the actual sample tested may vary from the above depending on the nature and operation of the EUT.
The test site used by RFI is nominally at ground level.
All electrical cables run underground.
All other dimensions in accordance with the standard.

Test Configuration For Radiated Emissions Measurements

Reflection-free area: >60m by 52m (CISPR ellipse)
Groundplane Earthed
Control room outside CISPR ellipse