Test of Carematix Inc. SGR Hub
Model Number 136

To: FCC CFR 47; Radio Collocation

Test Report Serial No.: CARE01-U1 Rev B

TEST REPORT

From

Test of: Carematix Inc. SGR HUB MODEL NUMBER 136

To: FCC 47 CFR Part 15, Collocation

Test Report Serial No.: CARE01-U1 Rev B

This report supersedes: CARE01-U1 Rev A

Applicant: Carematix Inc.
209 W. Jackson Blvd STE 800
Chicago, IL 60606
USA

Product Function: Wireless Hub

Copy No: pdf **Issue Date:** September 20th, 2011

This Test Report is Issued Under the Authority of;

MiCOM Labs, Inc.
440 Boulder Court, Suite 200
Pleasanton, CA 94566 USA
Phone: +1 (925) 462-0304
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www.micomlabs.com

ACCREDITED

TESTING CERTIFICATE #2381.01

MiCOM Labs is an ISO 17025 Accredited Testing Laboratory

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1 ACCREDITATION, LISTINGS & RECOGNITION

1.1 ACCREDITATION - TESTING

MiCOM Labs, Inc. is an accredited Electrical testing laboratory per the international standard EN ISO/IEC 17025. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.01. MiCOM Labs test schedule is available at the following URL; http://www.a2la.org/scopepdf/2381-01.pdf

ilac-MRA

A2LA World Class Accreditation

The American Association for Laboratory Accreditation

Accredited Laboratory

A2LA has accredited

MICOM LABS

Pleasanton, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 14th day of April 2010.

President & CEO
For the Accreditation Council
Certificate Number 2381.01
Valid to November 30, 2011

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

1.2 RECOGNITION

MiCOM Labs, Inc has widely recognized Electrical testing capabilities. Our international recognition includes Conformity Assessment Body designation by APEC MRA** countries. Our test reports are widely accepted for global type approvals.

Country	Recognition Body	Status	Phase	Identification No.
USA	Federal Communications Commission (FCC)	TCB	-	Listing #: 102167
Canada	Industry Canada (IC)	FCB	APEC MRA 2	Listing #: 4143A
Japan	MIC	CAB	APEC MRA 2	210
	VCCI	--	--	No. 2959
Europe	European Commission	NB	EU MRA	NB 2280
Australia	Australian Communications and Media Authority (ACMA)	CAB	APEC MRA 1	US0159
Hong Kong	Office of the Telecommunication Authority (OFTA)	CAB	APEC MRA 1	
Korea	Ministry of Information and Communication Radio Research Laboratory (RRL)	CAB	APEC MRA 1	
Singapore	Infocomm Development Authority (IDA)	CAB	APEC MRA 1	
Taiwan	National Communications Commission (NCC) Bureau of Standards, Metrology and Inspection (BSMI)	CAB	APEC MRA 1	
Vietnam	Ministry of Communication (MIC)	CAB	APEC MRA 1	

**APEC MRA – Asia Pacific Economic Community Mutual Recognition Agreement.
Is a recognition agreement under which test lab is accredited to regulatory standards of the APEC member countries.
Phase I - recognition for product testing
Phase II – recognition for both product testing and certification
N/A – Not Applicable

**EU MRA – European Union Mutual Recognition Agreement.
Is a recognition agreement under which test lab is accredited to regulatory standards of the EU member countries.

**NB – Notified Body

1.3 PRODUCT CERTIFICATION

MiCOM Labs, Inc. is an accredited Product Certification Body per the international standard EN ISO/IEC Guide 65. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.02. MiCOM Labs test schedule is available at the following URL; http://www.a2la.org/scopepdf/2381-02.pdf

The American Association for Laboratory Accreditation

World Class Accreditation

Accredited Product Certification Body

A2LA has accredited

MICOM LABS

Pleasanton, CA

for technical competence as a

Product Certification Body

This product certification body is accredited in accordance with the recognized International Standard ISO/IEC Guide 65:1996 *General requirements for bodies operating product certification systems*. This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system for a Telecommunications Certification Body (TCB) meeting FCC (U.S.), and IC (Canada) requirements.

Presented this 24th day of June 2010.

President & CEO
For the Accreditation Council
Certificate Number 2381.02
Valid to November 30, 2011

For the product certification schemes to which this accreditation applies, please refer to the organization's Product Certification Scope of Accreditation.

United States of America – Telecommunication Certification Body (TCB)
TCB Identifier – US0159

Industry Canada – Certification Body
CAB Identifier – US0159

Europe – Notified Body
Notified Body Identifier - 2280

Japan – Recognized Certification Body (RCB)
RCB Identifier - 210

2 DOCUMENT HISTORY

Document History		
Revision	**Date**	**Comments**
Draft		
Rev A	16th September 2011	Initial Release
Rev B	20th September 2011	Clarifications to sections 6.7 and 7.2.1 added.

3 TEST RESULT CERTIFICATE

Applicant:	Carematix Inc. 209 W. Jackson Blvd STE 800 Chicago, IL 60606 USA	Tested By:	MiCOM Labs, Inc. 440 Boulder Court Suite 200 Pleasanton, California 94566, USA
Product:	SGR Hub	Telephone:	+1 925 462 0304
Model No.:	MODEL NUMBER 136	Fax:	+1 925 462 0306
S/No's:	393230		
Date(s) Tested:	8/29/2011 - 8/30/2011	Website:	www.micomlabs.com

STANDARD(S)	TEST RESULTS
FCC CFR 47; Radio Collocation	EQUIPMENT COMPLIES

MiCOM Labs, Inc. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Notes:

1. This document reports conditions under which testing was conducted and the results of testing performed.
2. Details of test methods used have been recorded and kept on file by the laboratory.
3. Test results apply only to the item(s) tested.

Approved & Released for MiCOM Labs, Inc. by:

ACCREDITED
TESTING CERTIFICATE #2381.01

Graeme Grieve
Quality Manager MiCOM Labs, Inc.

Gordon Hurst
President & CEO MiCOM Labs, Inc.

4 REFERENCES AND MEASUREMENT UNCERTAINTY

4.1 Normative References

Ref.	Publication	Year	Title
i.	47 CFR Part 15	2010	Code of Federal Regulations, Title 47, Part 15 (47 CFR 15)
ii.	47 CFR Part 22H	2010	PART 22--PUBLIC MOBILE SERVICES
iii.	47 CFR Part 24E	2010	PART 24--PERSONAL COMMUNICATIONS SERVICES
iv.	ANSI C63.4	2009	American National Standards for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
v.	ICES-003	2004	Spectrum Management and Telecommunications Policy Interference-Causing Equipment Standard Digital Apparatus; Issue 4
vi.	CISPR 22/ EN 55022	2008 2006+A1:2007	Limits and Methods of Measurements of Radio Disturbance Characteristics of Information Technology Equipment
vii.	M 3003	Edition 1 Dec. 1997	Expression of Uncertainty and Confidence in Measurements
viii.	LAB34	Edition 1 Aug 2002	The expression of uncertainty in EMC Testing
ix.	ETSI TR 100 028	2001	Parts 1 and 2 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics
x.	A2LA	9TH June 2010	Reference to A2LA Accreditation Status – A2LA Advertising Policy

4.2 Test and Uncertainty Procedures

Conducted and radiated emission measurements were conducted in accordance with American National Standards Institute ANSI C63.4, listed in the Normative References section of this report.

Measurement uncertainty figures are calculated in accordance with ETSI TR 100 028 Parts 1 and 2.

Measurement uncertainties stated are based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95 % in accordance with UKAS document M 3003 listed in the Normative References section of this report.

5 TEST SUMMARY

List of Measurements: The following table represents the list of measurements required under FCC 47 CFR Part 15, Collocation.

Standard Section(s)	Test Description	Condition	Result	Test Report Section
FCC Part 15.109; 15.205, 15.209	Radiated (Digital) Emissions	Radiated	Compliant	7.1
FCC Part 15.205, 15.209; Part 22H; Part 24E	Transmitter Radiated Spurious Emissions; Collocation G2 radio module + Jennic radio module	Radiated	Compliant	7.2
FCC Part 1.1310	MPE calculations for collocated transmitters	Radiated	Compliant	7.3

Note 1: Test results reported in this document relate only to the items tested

Note 2: The required tests demonstrated compliance as per client declaration of test configuration, monitoring methodology and associated pass/fail criteria

Note 3: Section 6.7 Equipment Modifications highlights the equipment modifications that were required to bring the product into compliance with the above test matrix

6 PRODUCT DETAILS AND TEST CONFIGURATIONS

6.1 Test Program Scope

The scope of the test program was to test the Carematix Inc. SGR HUB MODEL NUMBER 136 Wireless Hub for compliance against FCC 47 CFR Part 15, Collocation of Antenna requirements.

Carematix is to include modules Jennic JN5148-001-M03 (FCC ID TYOJN5148M3) and Multitech MTSMC-G2 (FCC ID: AU792U09D24824) into their end product. Their device requires collocation of the wireless module antenna. (Collocation = antenna(s) for one transmitter located within 20cm of the other transmitter antennas)

Jennic JN5148-001-M03 (FCC ID TYOJN5148M3)

Equipment Class: Digital Transmission System
Notes: IEEE 802.15.4 Wireless Microcontroller
Modular Type: Single Modular

Multitech MTSMC-G2 (FCC ID: AU792U09D24824)

Equipment Class: PCS Licensed Transmitter
Notes: SocketModem GSM
Modular Type: Single Modular

The scope of the test program is to operate both transmitters simultaneously, and test the enclosure the device consisting of 2 certified devices such that they comply with all rule parts associated to each certified device.

APPLICANT: Carematix Inc. **PRODUCT:** SGR HUB MODEL NUMBER 136 Wireless Hub

6.2 EUT Details

Detail	Description
Purpose:	The scope of the test program was to test the Carematix Inc. SGR HUB MODEL NUMBER 136 Wireless Hub for compliance against FCC 47 CFR Part 15, Collocation of Antenna requirements.
Applicant:	Carematix Inc. 209 W. Jackson Blvd STE 800 Chicago, IL 60606 USA
Manufacturer:	Carematix Inc. 209 W. Jackson Blvd STE 800 Chicago, IL 60606 USA
Test Laboratory:	MiCOM Labs, Inc. 440 Boulder Court, Suite 200 Pleasanton, California 94566 USA
Test report reference number:	CARE01-U1 REV B
Date EUT received:	8/29/2011
Dates of test (from - to):	8/29/2011 - 8/30/2011
No of Units Tested:	One (1)
Product Name:	SGR HUB
Model No.:	MODEL NUMBER 136
Equipment Primary Function:	Wireless Hub
Installation type:	Mobile
Construction/Location for Use:	Mobile / Desktop use
Software/Firmware Release:	3.4
Hardware Release:	1
Rated Input Voltage and Current DC:	9V DC 1.66A
Operating Temperature Range ºC:	10 degrees C to 40 degrees C
Equipment Dimensions:	5.5" x 4" x 1.5"
Weight:	< 0.5 lbs

6.3 External A.C/D.C Power Adaptor

V-INFINTY switch Mode Power Supply utilized during testing.

Model: 3A-161WU09
P/N: EPS090166UH-P5P-SZ
Input: 100 - 240V A.C; 50-60Hz; 0.4A
Output: 9V D.C. 1.66A

6.4 Cabling and I/O Ports

The following is a description of the cable and input, output ports available on the EUT.

Type of I/O Ports	Description	Screened (y/n)	Length	Qty	Tested
Enclosure	Enclosure Port	N/A	N/A	1	Y
DC IN	9V DV Input	N	1m-3m	1	Y
Antenna	RF Output - SMA Antenna	N/A	N/A	1	N
Console - DB9	Serial Port	N	1m-3m	1	N

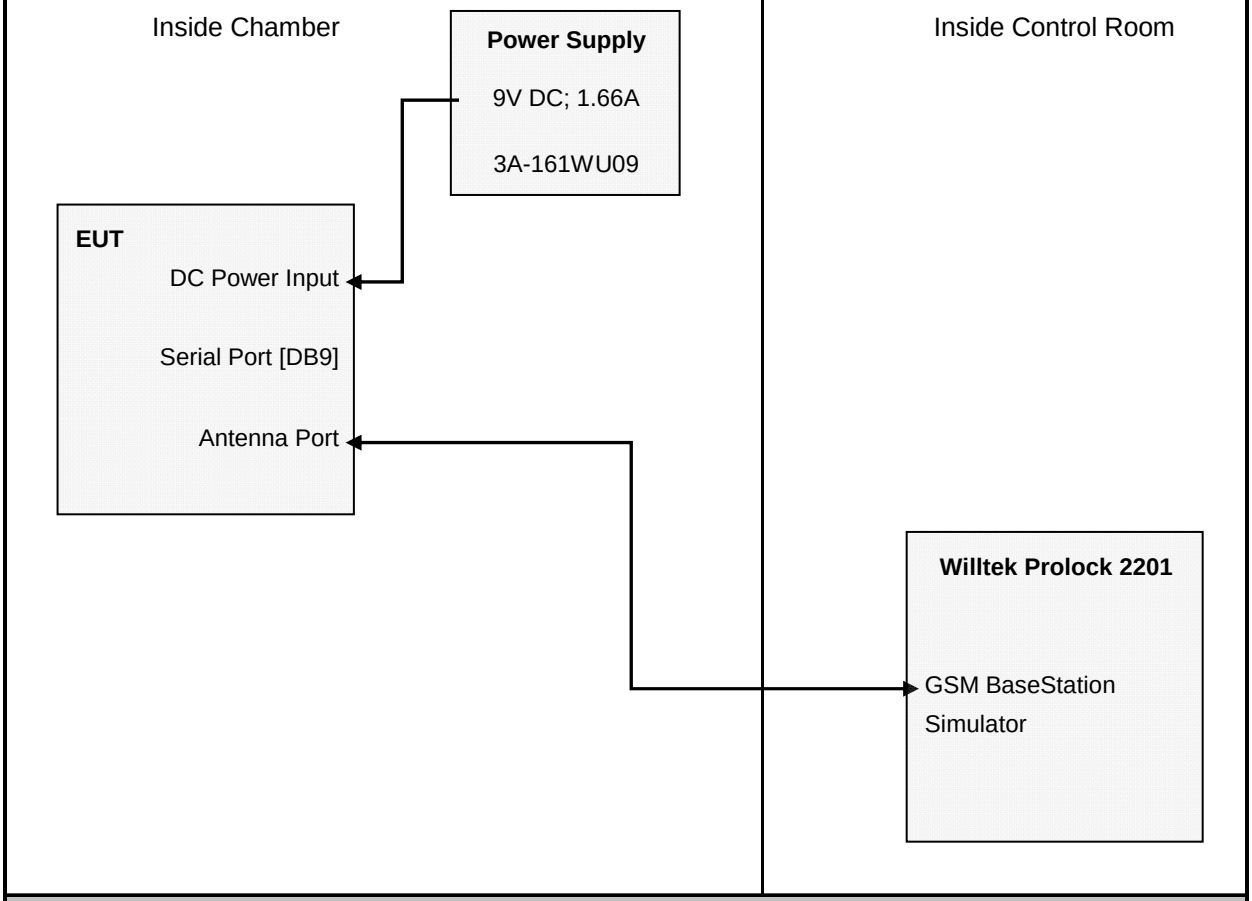
6.5 Equipment Details

The following is a description of EUT and supporting equipment used during the test program.

- SGR Hub model 136, 01.060.004-11
- Jennic DLL Control Board, 00.040.022-11
- TTL-232R-3V3 USB to TTL Serial Cable, 00.011.018-10
- Serial Cable
- Null Modem adaptor
- PC with Hyperterminal and USB port

6.6 Test Configurations

EUT Setup Diagram



Test Setup Description
Serial connections to control radio modules were disconnected before testing.

6.7 Equipment Modifications

The following modifications were required to bring the equipment into compliance:

- NONE

Please note: The RESET line was cut to allow the Jennic 2.4GHz radio to be controlled via evaluation software. This modification was not required to bring the product into compliance. It was performed to take the Jennic 2.4GHz radio out of reset and into an operational state.

6.8 Deviations from the Test Standard

- NONE

7 TEST RESULTS

7.1 Radiated Spurious Emissions – Digital Apparatus

Standard Reference

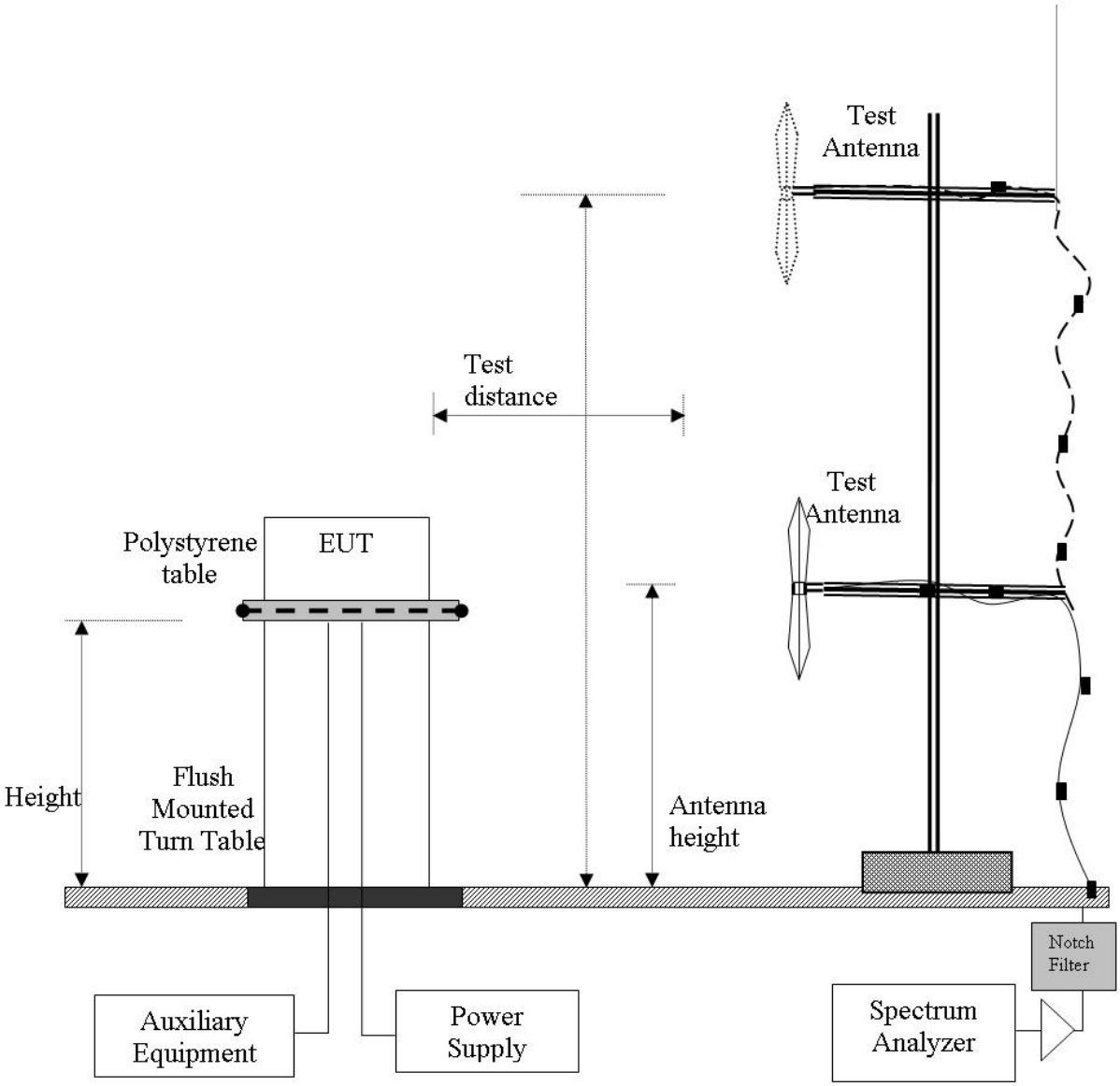
FCC, Part 15 Subpart B §15.109
Industry Canada ICES-003 §5
ANSI C63.4 2009

Test Procedure

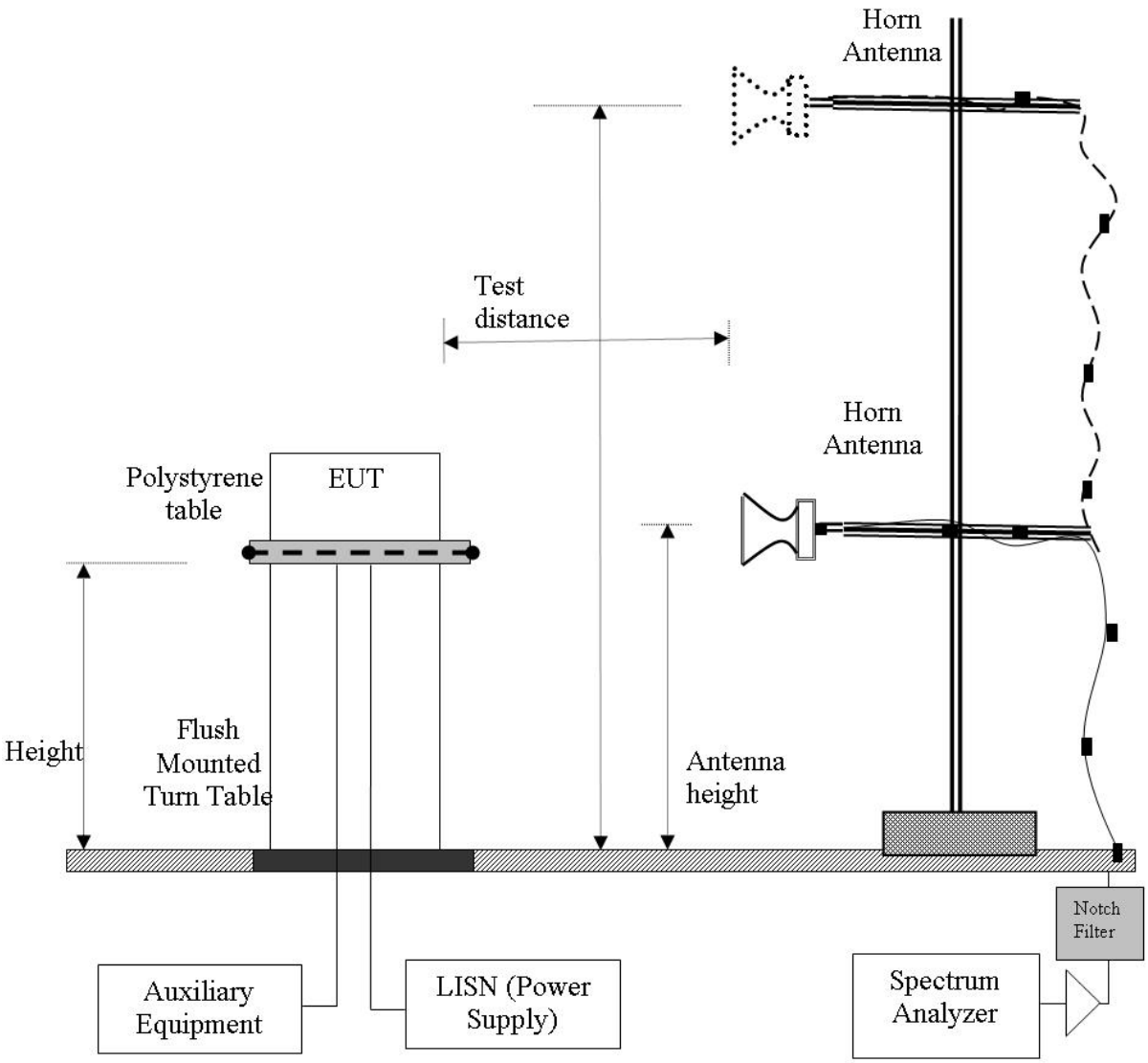
Testing was performed in a 3-meter semi-anechoic chamber. Preliminary radiated emissions were measured on every azimuth and with the receiving antenna in both horizontal and vertical polarizations. Preliminary emissions were recorded with in Spectrum Analyzer mode, using a maximum peak detector while in peak hold mode.

Emissions nearest the limits were chosen for maximization and formal measurement using a CISPR Compliant receiver. Emissions from 30 MHz – 1000 MHz are measured utilizing a CISPR compliant quasi-peak detector with a tuned receiver, using a bandwidth of 120 kHz. Emissions above 1000 MHz are measured utilizing a CISPR compliant average detector with a tuned receiver, using a bandwidth of 1 MHz. Only the highest emissions relative to the limit are listed.

Test Measurement Setup



Measurement setup for Radiated Emission Test < 1 GHz



Measurement setup for Radiated Emission Test > 1 GHz

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.

FS = R + AF + CORR – FO

FS = Field Strength
R = Measured Spectrum analyzer Input Amplitude
AF = Antenna Factor
FO = Distance Falloff Factor

CORR = Correction Factor = CL – AG + NFL

CL = Cable Loss
AG = Amplifier Gain
NFL = Notch Filter Loss or Waveguide Loss

Field Strength Calculation Example:

Given receiver input reading of 51.5 dBμV; Antenna Factor of 8.5 dB; Cable Loss of 1.3 dB; Falloff Factor of 0 dB, an Amplifier Gain of 26 dB and Notch Filter Loss of 1 dB. The Field Strength of the measured emission is:

FS = 51.5 + 8.5 + 1.3 - 26.0 +1 = 36.3 dBμV/m

Conversion between dBμV/m (or dBμV) and μV/m (or μV) are done as:

Level (dBμV/m) = 20 * Log (level (μV/m))

40 dBμV/m = 100 μV/m
48 dBμV/m = 250 μV/m

Specification

Radiated Spurious Emissions – Digital Apparatus

FCC, Part 15 Subpart B §15.109
A representative type or model of each digital apparatus shall be tested in accordance with the measurement methods described in FCC Part 15; Subpart A - General and FCC Subpart B – Unintentional Radiators.

Industry Canada ICES-003
A representative type or model of each digital apparatus shall be tested in accordance with the measurement method described in the publication referred to in Section 7.1 [Canadian Standards Association Standard CAN/CSA-CEI/IEC CISPR 22:02, "Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment."].

FCC, Part 15 Subpart B §15.109 Spurious Emissions Limits

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values.

Frequency (MHz)	Field Strength (µV/m) @ 3m	Measurement Distance (meters)	Field Strength (dBµV/m) @ 3m
30-88	100	3	40.0
88-216	150	3	43.5
216-960	200	3	46.0
Above 960	500	3	54.0

Field Strength of radiated emissions for a Class A digital device are as follows.

Frequency (MHz)	Field Strength (µV/m) @ 10m	Measurement Distance (meters)	Field Strength (dBµV/m) @ 3m
30-88	90	3	49.5
88-216	150	3	54.0
216-960	210	3	57.0
Above 960	300	3	60.0

ICES-003 §5 Spurious Emissions Limits

Class A Digital Device: The field intensity of radio noise emissions that are radiated from a Class A digital apparatus shall not exceed the limits specified in Table 5 of the publication referred to in Section 7.1, within the indicated frequency range.

Frequency range (MHz)	Quasi-peak limits dB(µV/m) @ 10m	Quasi-peak limits dB(µV/m) @ 3m
30 to 230	40	50.5
230 to 1000	47	57.5
Note 1	The lower limit shall apply at the transition frequency	
Note 2	Additional provisions may be required for cases where interference occurs	

Class B Digital Device: The field intensity of radio noise emissions that are radiated from a Class B digital apparatus shall not exceed the limits specified in Table 6 of the publication referred to in Section 7.1, within the indicated frequency range.

Frequency range (MHz)	Quasi-peak limits dB(µV/m) @ 10m	Quasi-peak limits dB(µV/m) @ 3m
30 to 230	30	40.5
230 to 1000	37	47.5
Note 1	The lower limit shall apply at the transition frequency.	
Note 2	Additional provisions may be required for cases where interference occurs	

Laboratory Measurement Uncertainty for Spectrum Measurement

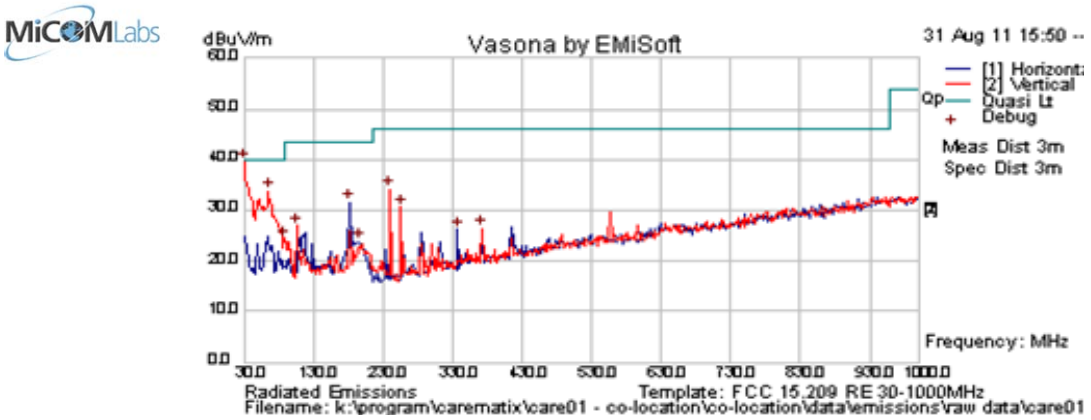
Measurement Uncertainty	+5.6/ -4.5 dB

Traceability

Method	Test Equipment Used
Work instruction WI-03	0088, 0158, 0134, 0304, 0311, 0315, 0310, 0312

7.1.1 Measurement Results - Digital Emissions below 1 GHz

Test Freq.	1909.8 MHz + 2445 MHz	**Engineer**	CSB
Variant	GSM 1900 + 2.4GHz Colocation	**Temp (ºC)**	26
Freq. Range	30 - 1000 MHz	**Rel. Hum.(%)**	32
Power Setting	Maximum Power	**Press. (mBars)**	1001
Antenna	50Ohm + Integral	**Duty Cycle (%)**	10% & 100%
Test Notes 1	Band stop filter placed in front of pream for 2.4Ghz transmitter. GSM antenna port terminated into 50Ohm cable, connect to Willtek 2201 Prolock		
Test Notes 2	GSM Power = 24.00 dBm + Cable loss (5.5dB)		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
30.221	41.8	3.4	-9.4	35.8	Quasi Peak	V	98	150	40.0	-4.2	Pass	
64.990	53.1	3.9	-23.2	33.8	Peak [Scan]	V	100	0	40.0	-6.2	Pass	
239.940	47.7	5.0	-18.5	34.2	Peak [Scan]	V	100	0	46	-11.8	Pass	
181.623	46.4	4.7	-19.5	31.5	Peak [Scan]	H	200	0	43.5	-12.0	Pass	
255.491	44.1	5.0	-18.6	30.6	Peak [Scan]	V	100	0	46	-15.4	Pass	
105.812	42.0	4.2	-19.2	27.0	Peak [Scan]	V	100	0	43.5	-16.5	Pass	
88.317	43.8	4.1	-23.5	24.3	Peak [Scan]	V	100	0	43.5	-19.2	Pass	
372.124	35.9	5.6	-15.0	26.4	Peak [Scan]	V	300	0	46	-19.6	Pass	
195.230	37.4	4.7	-18.3	23.8	Peak [Scan]	H	200	0	43.5	-19.7	Pass	
337.134	36.9	5.4	-16.0	26.3	Peak [Scan]	H	100	0	46	-19.8	Pass	

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	NRB = Non-Restricted Band. RB = Restricted Band.

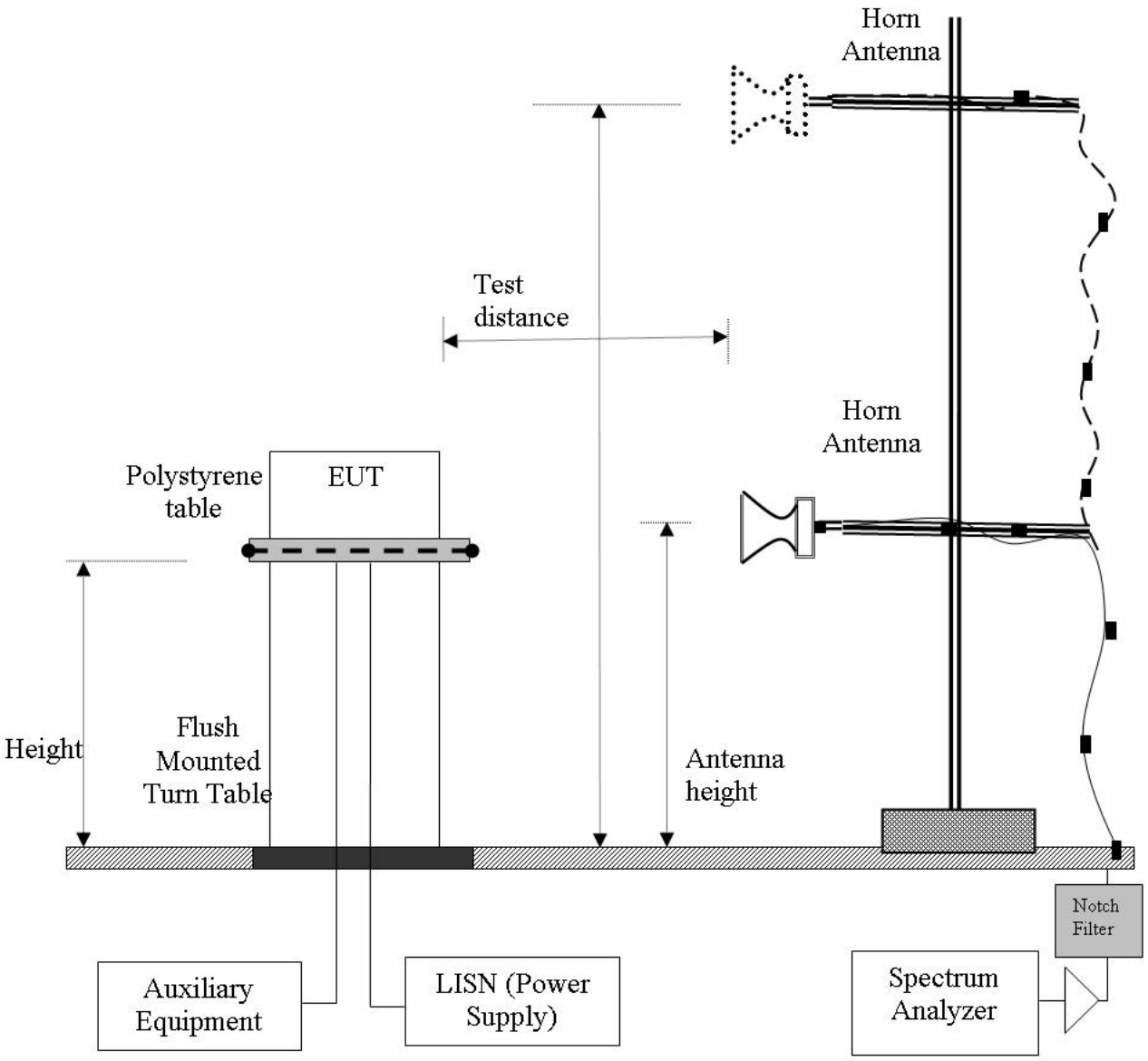
7.2 Radiated Spurious Emissions - Radio Collocation

Test Procedure

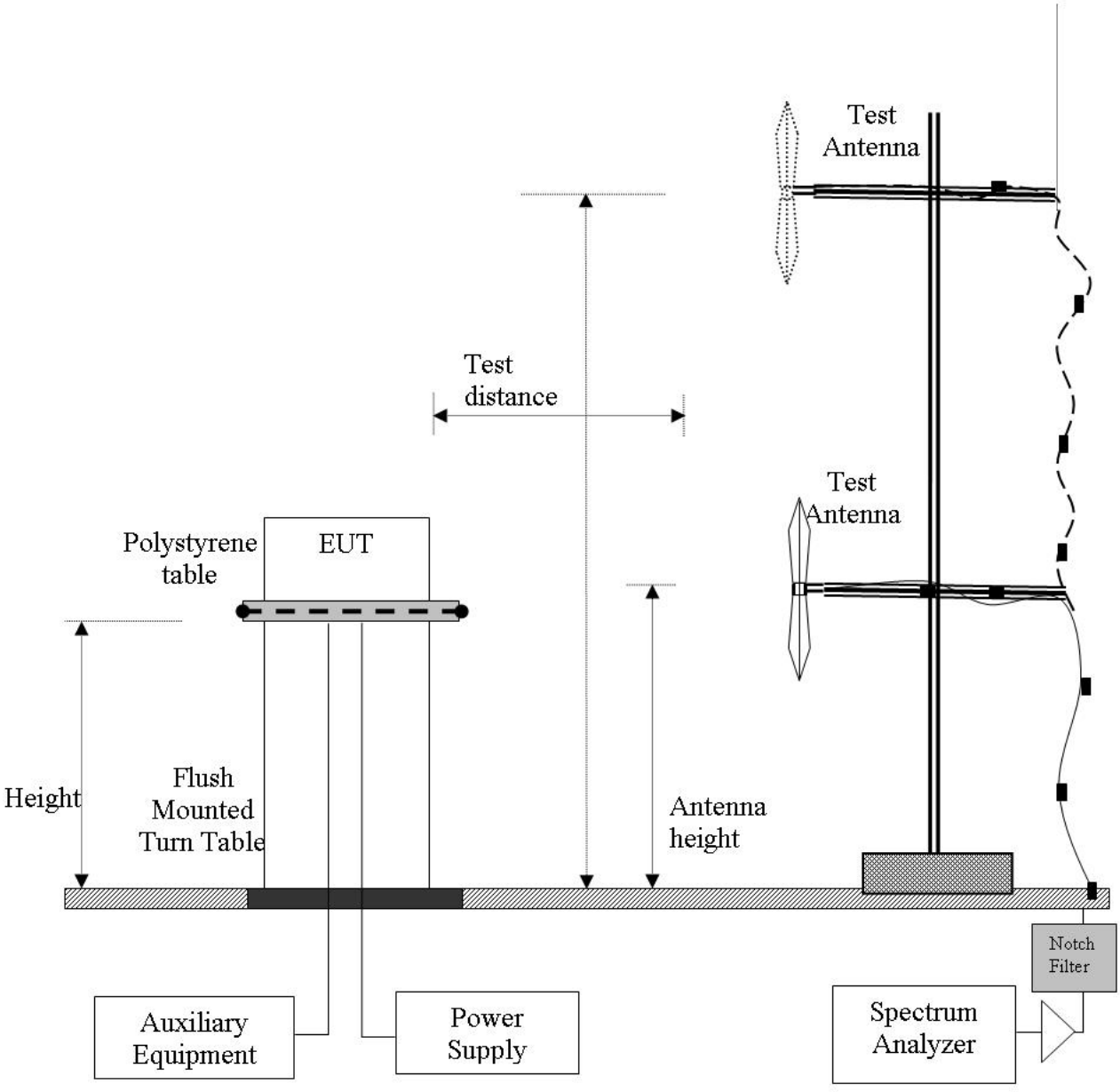
Testing was performed in a 3-meter anechoic chamber. Preliminary radiated emissions were measured on every azimuth and with the receiving antenna in both horizontal and vertical polarizations. Preliminary emissions were recorded with in Spectrum Analyzer mode, using a maximum peak detector while in peak hold mode.

Emissions nearest the limits were chosen for maximization and formal measurement using a CISPR Compliant receiver. Emissions above 1000 MHz are measured utilizing a CISPR compliant average detector with a tuned receiver, using a bandwidth of 1 MHz. Emissions from 30 MHz – 1000 MHz are measured utilizing a CISPR compliant quasi-peak detector with a tuned receiver, using a bandwidth of 120 kHz. Only the highest emissions relative to the limit are listed.

Radiated Emission Measurement Setup – Above 1 GHz



Radiated Emission Measurement Setup – Below 1 GHz



Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.

FS = R + AF + CORR – FO

FS = Field Strength
R = Measured Spectrum analyzer Input Amplitude
AF = Antenna Factor

CORR = Correction Factor = CL – AG + NFL

CL = Cable Loss
AG = Amplifier Gain
FO = Distance Falloff Factor
NFL = Notch Filter Loss or Waveguide Loss

Field Strength Calculation Example:

Given receiver input reading of 51.5 dBμV; Antenna Factor of 8.5 dB; Cable Loss of 1.3 dB; Falloff Factor of 0 dB, an Amplifier Gain of 26 dB and Notch Filter Loss of 1 dB. The Field Strength of the measured emission is:

FS = 51.5 + 8.5 + 1.3 - 26.0 +1 = 36.3 dBμV/m

Conversion between dBμV/m (or dBμV) and μV/m (or μV) are done as:

Level (dBμV/m) = 20 * Log (level (μV/m))

40 dBμV/m = 100 μV/m
48 dBμV/m = 250 μV/m

Specification FCC

Radiated Spurious Emissions

FCC §15.247(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section §15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(a)).

FCC §15.205 (a) Except as shown in paragraph (d) of 15.205 (a), only spurious emissions are permitted in any of the frequency bands listed.

FCC §15.205 (a) Except as shown in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

FCC §15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table.

Table 1: FCC 15.209 Spurious Emissions Limits

Frequency (MHz)	Field Strength (µV/m)	Field Strength (dBµV/m)	Measurement Distance (meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Specification IC

Receiver Radiated Spurious Emissions

Industry Canada RSS-Gen §4.10
The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tunable or local oscillator frequency, whichever is the higher, without exceeding 40 GHz.

RSS-Gen §6
If a radiated measurement is made, all spurious emissions shall comply with the limits of *Table 1: RSS-Gen §6 Spurious Emissions Limits.*

Table 1: RSS-Gen §6 Spurious Emissions Limits

Frequency (MHz)	Field Strength (µV/m)	Field Strength (dBµV/m)	Measurement Distance (meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Laboratory Measurement Uncertainty for Spectrum Measurement

Measurement Uncertainty	+5.6/ -4.5 dB

Traceability:

Method	Test Equipment Used
Work instruction WI-03	0088, 0158, 0134, 0304, 0311, 0315, 0310, 0312

7.2.1 Measurement Results: G2 + Jennic Radio Collocation

Test Plan:

1) Perform emissions below 1GHz to evaluate digital emissions of host device. (Results provided in section 7.1.1)
2) Test the device for spurious emissions with radio operating to each of the applicable procedures / limits for each module. (7.2.1.1)
3) Test the device for spurious emissions with both radios operating to access any inter-modulation / mixing of spurious frequencies. (7.2.1.2 / 7.2.1.3)
4) Investigate any new emissions that were not present on independent scans or that cannot be identified as harmonics of the transmitting fundamental.

Response per FCC:

The testing is such that you must turn both transmitters on, ie. both certified devices, and test the enclosure the device consisting of 2 certified devices such that they comply with all rule parts associated to each certified device. That is to say rule part 15.209 with both previously certified devices turn on and rule parts Part 22, Part 24 rules for the other device with both devices turned on."

Test Setup:
2.4GHz and GSM: GSM antenna connection terminated with 50 Ohm cable into Willtek 2201 Prolock. 2.4GHz using internal antenna. 2.4 GHz band stop filter in line before preamplifier.

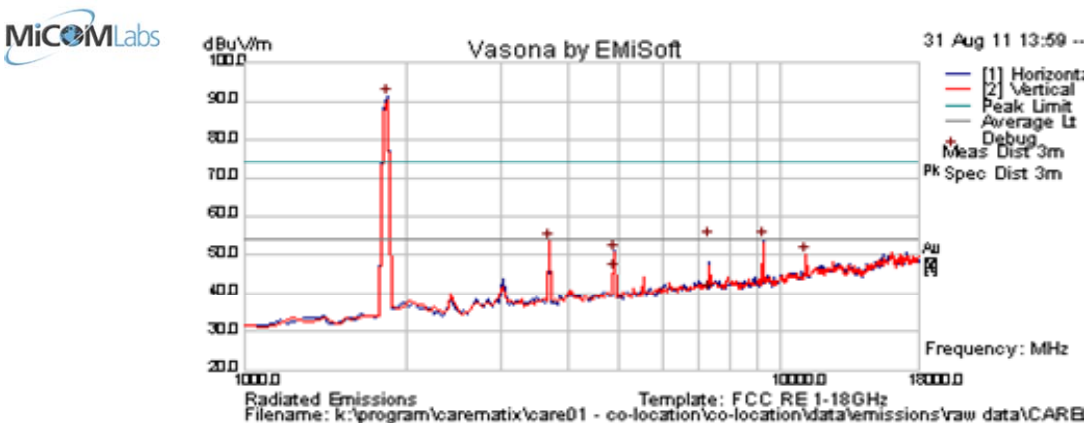
Since a band stop filter was used at 2.4 GHz, operation of the 2.4 GHz radio was verified before the beginning of test.

Results Summary:
No additional emissions due to inter-modulation or mixing of the spurious frequencies were witnessed during Collocation testing. All emissions meet the requirements of their respective FCC parts.

7.2.1.1 Comparison to applicable limits

Preliminary scan: Identification of radio emissions and comparison with FCC Part 15 limits for intentional radiators.

Test Freq.	1850.2 MHz + 2445 MHz	**Engineer**	CSB
Variant	GSM 1900 + 2.4GHz Colocation	**Temp (ºC)**	26
Freq. Range	1000 - 18000 MHz	**Rel. Hum.(%)**	32
Power Setting	Maximum Power	**Press. (mBars)**	1001
Antenna	50Ohm + Integral	**Duty Cycle (%)**	10% & 100%
Test Notes 1	Band stop filter placed in front of pream for 2.4Ghz transmitter. GSM antenna port terminated into 50Ohm cable, connect to Willtek 2201 Prolock		
Test Notes 2	GSM = 22.56 dBm + cable loss (5.5 dB)		



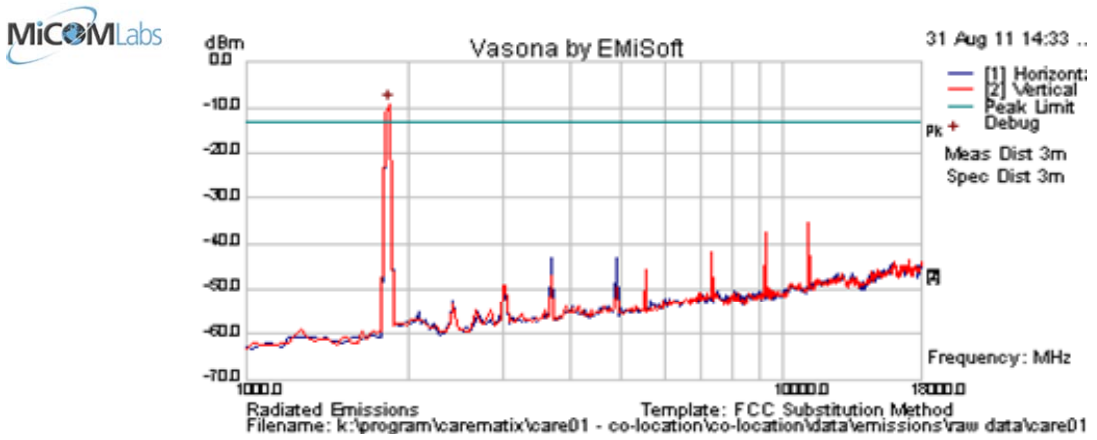
Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1850.230	101.5	2.7	-12.8	91.4	Peak [Scan]	H					N/A	FUND GSM
3700.401	60.9	3.7	-11.1	53.5	Peak [Scan]	V	100	0	54.0	N/A	Pass	GSM 2nd
4888.868	55.9	4.5	-10.0	50.5	Peak.	H	102	303	74	-23.5	Pass	2.4 Tx 2nd
4888.868	50.9	4.5	-10.0	45.4	Average	H	201	251	54	-8.6	Pass	2-4 Tx 2nd
7336.383	40.1	5.5	-5.3	40.2	Average	H	124	358	54	-13.8	Pass	2.4 Tx 3rd
7336.383	53.8	5.5	-5.3	53.9	Peak	H	98	266	74	-20.1	Pass	2.4 Tx 3rd
9251.202	51.1	6.2	-3.6	53.7	Peak [Scan]	H	100	0	54	N/A	Pass	GSM 5th
11119.154	46.1	6.9	-3.2	49.8	Peak [Scan]	H	102	303	54	N/A	Pass	GSM 6th

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	NRB = Non-Restricted Band. RB = Restricted Band.

Preliminary scan: Identification of radio emissions and comparison with FCC Part 22/24 limits for intentional radiators.

Test Freq.	1850.2 MHz + 2445 MHz	**Engineer**	CSB
Variant	GSM 1900 + 2.4GHz Colocation	**Temp (ºC)**	26
Freq. Range	1000 - 18000 MHz	**Rel. Hum.(%)**	32
Power Setting	Maximum Power	**Press. (mBars)**	1001
Antenna	50Ohm + Integral	**Duty Cycle (%)**	10% & 100%
Test Notes 1	Band stop filter placed in front of pream for 2.4Ghz transmitter. GSM antenna port terminated into 50Ohm c		
Test Notes 2	GSM = 22.56 dBm + cable loss (5.5 dB)		



Formally measured emission peaks

Frequency MHz	Raw dBm	Cable Loss	AF dB	Level dBm	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBm	Margin dB	Pass /Fail	Comments
1850.080	-12.1	2.7	0.3	-9.2	Peak [Scan]	V					N/A	FUND

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	NRB = Non-Restricted Band. RB = Restricted Band.

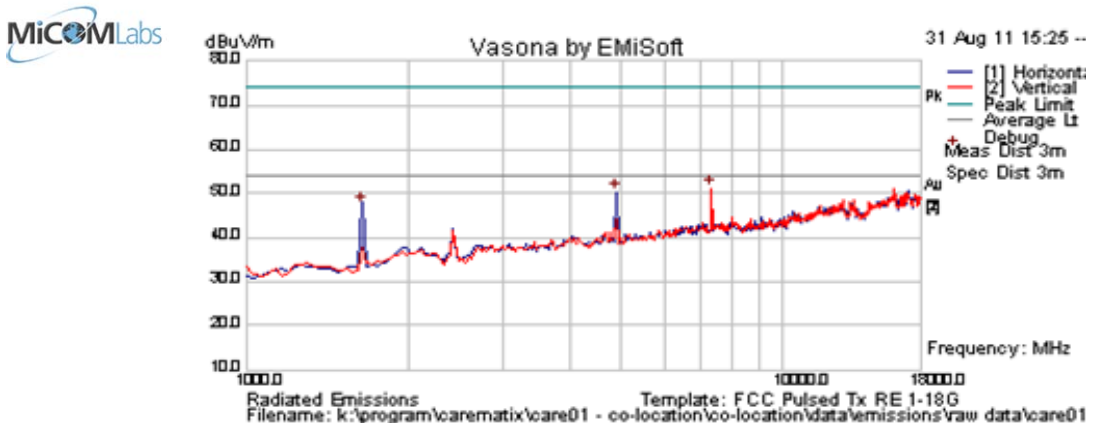
GSM radio emissions are well below the limits allowed for Part 22 and Part 24 devices. Evaluation's were made compared to FCC Part 15.209 radio limits.

Center channel of 2.4GHz radio was chosen so that 2nd and 3rd harmonics would fall within Part 15.205 restricted bands. Since GSM operation can occur in multiple bands, GSM frequencies were tested near low, middle, and high frequencies for each of the applicable bands.

7.2.1.2 GSM 850 Band + 2.4Ghz Radio

Only 2nd harmonic of GSM850 was present above the noise floor. Since emission was below emissions limit, no further investigation was done on GSM harmonic to the FCC Part 22/24 emissions limits. 2nd and 3rd harmonics for the 2.4Ghz transmitter are present and formally measured and compared to the FCC Part 15.209 emissions limits.

Test Freq.	824.2 MHz + 2445 MHz	**Engineer**	CSB
Variant	GSM 850 + 2.4GHz Colocation	**Temp (ºC)**	26
Freq. Range	1000 - 18000 MHz	**Rel. Hum.(%)**	32
Power Setting	Maximum Power	**Press. (mBars)**	1001
Antenna	50Ohm + Integral	**Duty Cycle (%)**	10% & 100%
Test Notes 1	Band stop filter placed in front of pream for 2.4Ghz transmitter. GSM antenna port terminated into 50Ohm cable, connect to Willtek 2201 Prolock		
Test Notes 2	27.79 dBm + cable loss (4.5dB)		

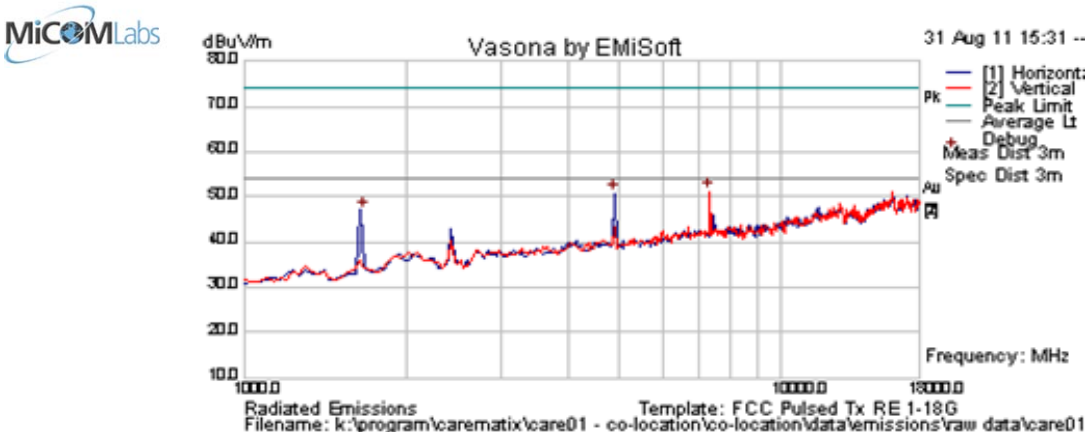


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1648.457	59.1	2.5	-14.3	47.3	Peak [Scan]	H				N/A	Pass	GSM 2nd
4888.868	55.9	4.5	-10.0	50.5	Peak.	H	102	303	74	-23.5	Pass	2.4 Tx 2nd
4888.868	50.9	4.5	-10.0	45.4	Average	H	201	251	54	-8.6	Pass	2-4 Tx 2nd
7336.383	40.1	5.5	-5.3	40.2	Average	H	124	358	54	-13.8	Pass	2.4 Tx 3rd
7336.383	53.8	5.5	-5.3	53.9	Peak	H	98	266	74	-20.1	Pass	2.4 Tx 3rd

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	NRB = Non-Restricted Band. RB = Restricted Band.

Test Freq.	835.6 MHz + 2445 MHz	**Engineer**	CSB
Variant	GSM 850 + 2.4GHz Colocation	**Temp (ºC)**	
Freq. Range	1000 - 18000 MHz	**Rel. Hum.(%)**	
Power Setting	Maximum Power	**Press. (mBars)**	
Antenna	50Ohm + Integral	**Duty Cycle (%)**	
Test Notes 1	Band stop filter placed in front of pream for 2.4Ghz transmitter. GSM antenna port terminated into 50Ohm cable, connect to Willtek 2201 Prolock		
Test Notes 2	GSM = 28.31 dBm + cable loss (4.5dB)		

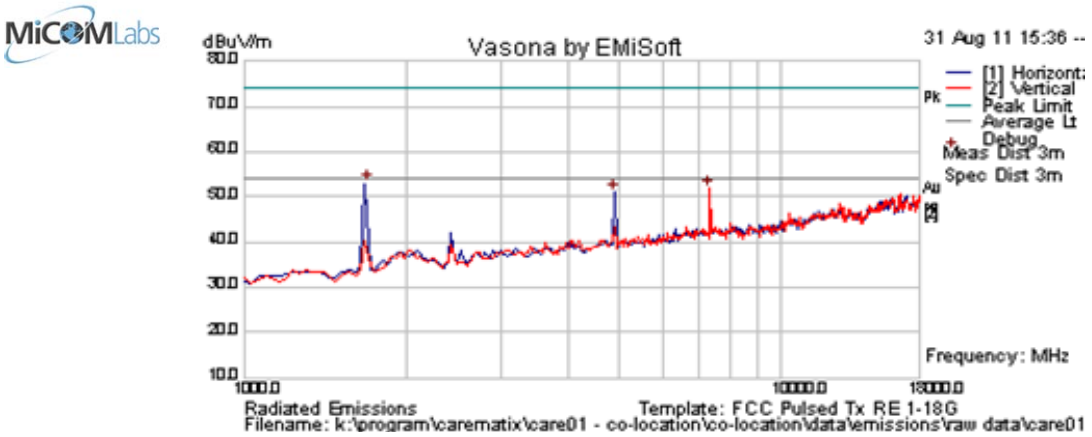


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1671.235	58.5	2.5	-14.2	46.8	Peak [Scan]	H				N/A	Pass	GSM 2nd
4888.868	55.9	4.5	-10.0	50.5	Peak.	H	102	303	74	-23.5	Pass	2.4 Tx 2nd
4888.868	50.9	4.5	-10.0	45.4	Average	H	201	251	54	-8.6	Pass	2-4 Tx 2nd
7336.383	40.1	5.5	-5.3	40.2	Average	H	124	358	54	-13.8	Pass	2.4 Tx 3rd
7336.383	53.8	5.5	-5.3	53.9	Peak	H	98	266	74	-20.1	Pass	2.4 Tx 3rd

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	NRB = Non-Restricted Band. RB = Restricted Band.

Test Freq.	848.8 MHz + 2445 MHz	**Engineer**	CSB
Variant	GSM 850 + 2.4GHz Colocation	**Temp (ºC)**	
Freq. Range	1000 - 18000 MHz	**Rel. Hum.(%)**	
Power Setting	Maximum Power	**Press. (mBars)**	
Antenna	50Ohm + Integral	**Duty Cycle (%)**	
Test Notes 1	Band stop filter placed in front of pream for 2.4Ghz transmitter. GSM antenna port terminated into 50Ohm cable, connect to Willtek 2201 Prolock		
Test Notes 2	GSM = 27.44 dBm + cable loss (4.5dB)		



Formally measured emission peaks

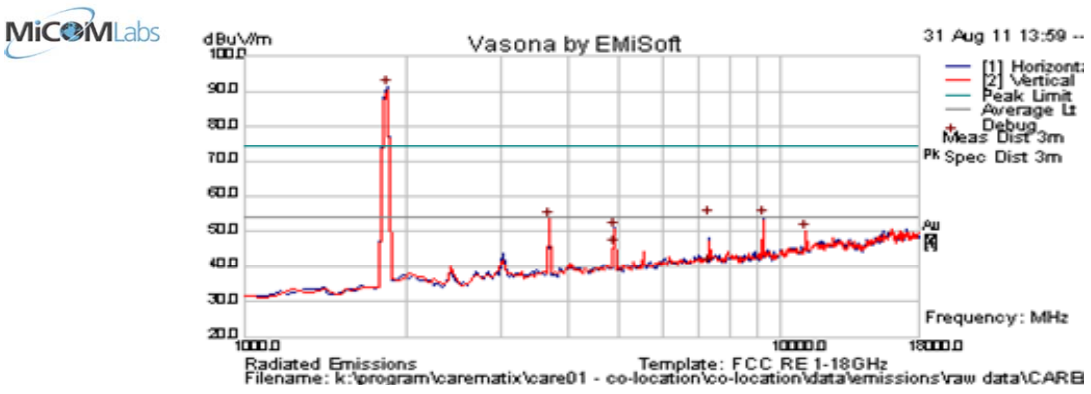
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1697.620	64.3	2.5	-14.0	52.8	Peak [Scan]	H				N/A	Pass	GSM 2nd
4888.868	55.9	4.5	-10.0	50.5	Peak.	H	102	303	74	-23.5	Pass	2.4 Tx 2nd
4888.868	50.9	4.5	-10.0	45.4	Average	H	201	251	54	-8.6	Pass	2-4 Tx 2nd
7336.383	40.1	5.5	-5.3	40.2	Average	H	124	358	54	-13.8	Pass	2.4 Tx 3rd
7336.383	53.8	5.5	-5.3	53.9	Peak	H	98	266	74	-20.1	Pass	2.4 Tx 3rd

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	NRB = Non-Restricted Band. RB = Restricted Band.

7.2.1.3 GSM 1900 Band + 2.4Ghz Radio

2nd and 3rd harmonics for the 2.4Ghz transmitter are present and formally measured and compared to the FCC Part 15.209 emissions limits. Harmonics for GSM1900 are visible. Based on preliminary testing and evaluation (Section 7.2.1.1), it was determined these emissions are greater than 20dB below the FCC Part 22/24 emissions limits, and therefore no additional evaluation was performed.

Test Freq.	1850.2 MHz + 2445 MHz	**Engineer**	CSB
Variant	GSM 1900 + 2.4GHz Colocation	**Temp (ºC)**	26
Freq. Range	1000 - 18000 MHz	**Rel. Hum.(%)**	32
Power Setting	Maximum Power	**Press. (mBars)**	1001
Antenna	50Ohm + Integral	**Duty Cycle (%)**	10% & 100%
Test Notes 1	Band stop filter placed in front of pream for 2.4Ghz transmitter. GSM antenna port terminated into 50Ohm cable, connect to Willtek 2201 Prolock		
Test Notes 2	GSM = 22.56 dBm + cable loss (5.5 dB)		

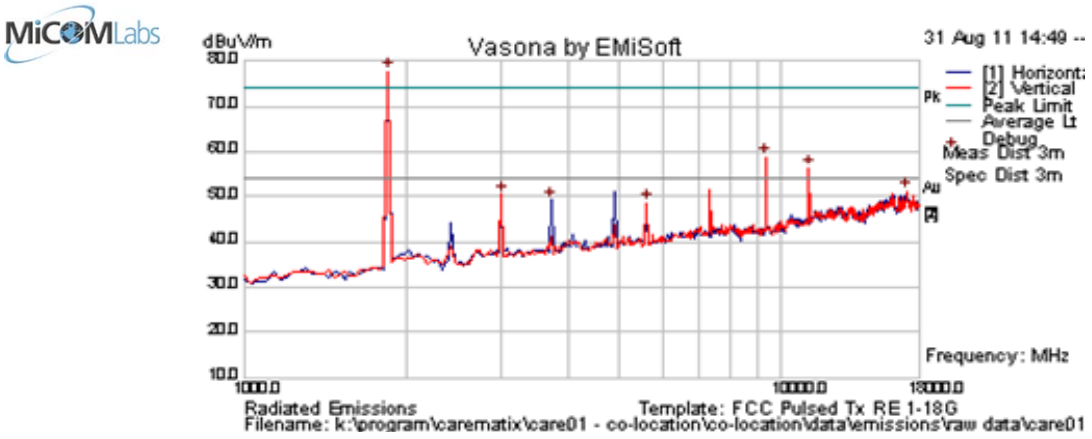


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1850.230	101.5	2.7	-12.8	91.4	Peak [Scan]	H					N/A	FUND GSM
3700.401	60.9	3.7	-11.1	53.5	Peak [Scan]	V	100	0	54.0	N/A	Pass	GSM 2nd
4888.868	55.9	4.5	-10.0	50.5	Peak.	H	102	303	74	-23.5	Pass	2.4 Tx 2nd
4888.868	50.9	4.5	-10.0	45.4	Average	H	201	251	54	-8.6	Pass	2-4 Tx 2nd
7336.383	40.1	5.5	-5.3	40.2	Average	H	124	358	54	-13.8	Pass	2.4 Tx 3rd
7336.383	53.8	5.5	-5.3	53.9	Peak	H	98	266	74	-20.1	Pass	2.4 Tx 3rd
9251.202	51.1	6.2	-3.6	53.7	Peak [Scan]	H	100	0	54	N/A	Pass	GSM 5th
11119.154	46.1	6.9	-3.2	49.8	Peak [Scan]	H	102	303	54	N/A	Pass	GSM 6th

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	NRB = Non-Restricted Band. RB = Restricted Band.

Test Freq.	1870.2 MHz + 2445 MHz	**Engineer**	CSB
Variant	GSM 1900 + 2.4GHz Colocation	**Temp (ºC)**	26
Freq. Range	1000 - 18000 MHz	**Rel. Hum.(%)**	32
Power Setting	Maximum Power	**Press. (mBars)**	1001
Antenna	50Ohm + Integral	**Duty Cycle (%)**	10% & 100%
Test Notes 1	Band stop filter placed in front of pream for 2.4Ghz transmitter. GSM antenna port terminated into 50Ohm cable, connect to Willtek 2201 Prolock		
Test Notes 2	GSM = 23.26 dBm + Cable Loss (5.5 dB)		

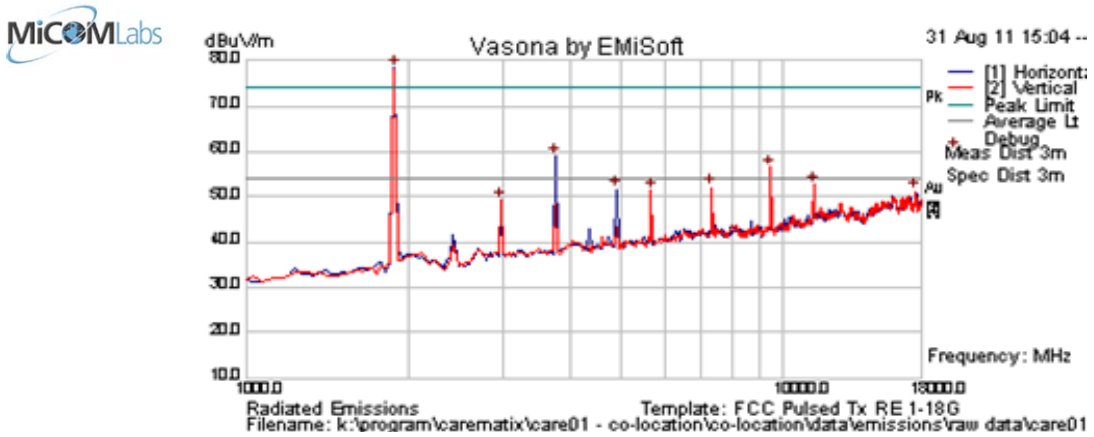


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1870.140	87.6	2.7	-12.5	77.8	Peak [Scan]	H				N/A	N/A	GSM FUND
3019.679	58.7	3.4	-11.6	50.4	Peak [Scan]	V				N/A	Pass	GSM
3740.401	56.5	3.8	-11.0	49.2	Peak [Scan]	H				N/A	Pass	GSM 2nd
5610.735	52.8	4.7	-9.0	48.5	Peak [Scan]	V				N/A	Pass	GSM 3rd
9351.283	55.8	6.2	-3.3	58.8	Peak [Scan]	V				N/A	Pass	GSM 5th
11221.473	52.1	6.9	-2.8	56.2	Peak [Scan]	V				N/A	Pass	GSM 6th
4888.868	55.9	4.5	-10.0	50.5	Peak.	H	102	303	74	-23.5	Pass	2.4 Tx 2nd
4888.868	50.9	4.5	-10.0	45.4	Average	H	201	251	54	-8.6	Pass	2-4 Tx 2nd
7336.383	40.1	5.5	-5.3	40.2	Average	H	124	358	54	-13.8	Pass	2.4 Tx 3rd
7336.383	53.8	5.5	-5.3	53.9	Peak	H	98	266	74	-20.1	Pass	2.4 Tx 3rd

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	NRB = Non-Restricted Band. RB = Restricted Band.

Test Freq.	1890.2 MHz + 2445 MHz	**Engineer**	CSB
Variant	GSM 1900 + 2.4GHz Colocation	**Temp (ºC)**	26
Freq. Range	1000 - 18000 MHz	**Rel. Hum.(%)**	32
Power Setting	Maximum Power	**Press. (mBars)**	1001
Antenna	50Ohm + Integral	**Duty Cycle (%)**	10% & 100%
Test Notes 1	Band stop filter placed in front of pream for 2.4Ghz transmitter. GSM antenna port terminated into 50Ohm cable, connect to Willtek 2201 Prolock		
Test Notes 2	GSM = 23.99 dBm + Cable Loss (5.5 dB)		

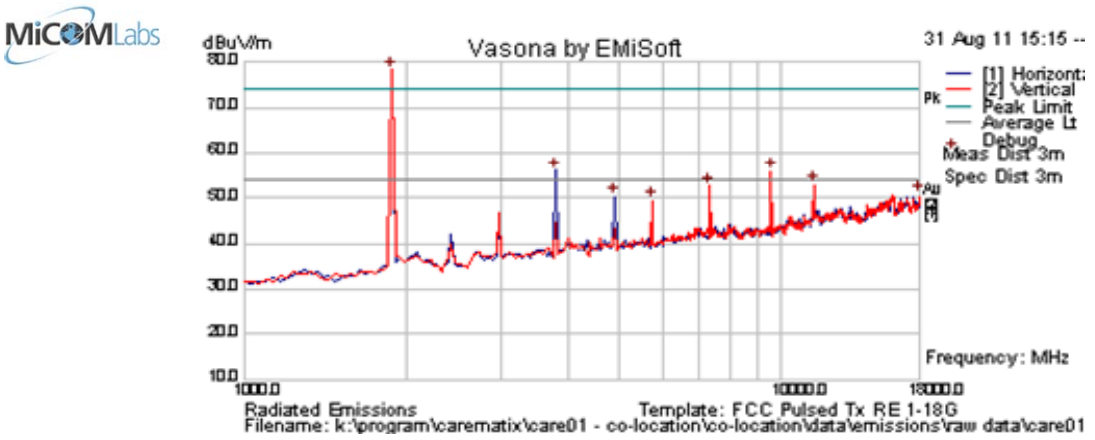


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1890.150	87.8	2.7	-12.2	78.3	Peak [Scan]	H				N/A	N/A	GSM FUN
2975.951904	57.6	3.4	-11.7	49.2	Peak [Scan]	V				N/A	Pass	GSM
3759.519	66.2	3.8	-10.9	59.0	Peak [Scan]	H				N/A	Pass	GSM 2nd
5670.701	55.4	4.7	-8.9	51.2	Peak [Scan]	V				N/A	Pass	GSM 3rd
9450.852	53.3	6.2	-3.1	56.5	Peak [Scan]	V				N/A	Pass	GSM 5th
11341.232	48.1	6.9	-2.4	52.6	Peak [Scan]	V				N/A	Pass	GSM 6th
4888.868	55.9	4.5	-10.0	50.5	Peak.	H	102	303	74	-23.5	Pass	2.4 Tx 2nd
4888.868	50.9	4.5	-10.0	45.4	Average	H	201	251	54	-8.6	Pass	2-4 Tx 2nd
7336.383	40.1	5.5	-5.3	40.2	Average	H	124	358	54	-13.8	Pass	2.4 Tx 3rd
7336.383	53.8	5.5	-5.3	53.9	Peak	H	98	266	74	-20.1	Pass	2.4 Tx 3rd

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	NRB = Non-Restricted Band. RB = Restricted Band.

Test Freq.	1909.8 MHz + 2445 MHz	**Engineer**	CSB
Variant	GSM 1900 + 2.4GHz Colocation	**Temp (ºC)**	26
Freq. Range	1000 - 18000 MHz	**Rel. Hum.(%)**	32
Power Setting	Maximum Power	**Press. (mBars)**	1001
Antenna	50Ohm + Integral	**Duty Cycle (%)**	10% & 100%
Test Notes 1	Band stop filter placed in front of pream for 2.4Ghz transmitter. GSM antenna port terminated into 50Ohm cable, connect to Willtek 2201 Prolock		
Test Notes 2	GSM Power = 24.45 dBm + cable loss (5.5 dB)		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
1909.649	87.6	2.7	-12.0	78.3	Peak [Scan]	V				N/A	N/A	GSM FUND
3819.479	63.0	3.8	-10.7	56.1	Peak [Scan]	H				N/A	Pass	GSM 2nd
5729.328	53.5	4.8	-8.9	49.3	Peak [Scan]	V				N/A	Pass	GSM 3rd
9548.868	52.9	6.3	-3.3	55.8	Peak [Scan]	V				N/A	Pass	GSM 5th
11459.068	48.0	6.8	-1.9	52.9	Peak [Scan]	V				N/A	Pass	GSM 6th
4888.868	55.9	4.5	-10.0	50.5	Peak.	H	102	303	74	-23.5	Pass	2.4 Tx 2nd
4888.868	50.9	4.5	-10.0	45.4	Average	H	201	251	54	-8.6	Pass	2-4 Tx 2nd
7336.383	40.1	5.5	-5.3	40.2	Average	H	124	358	54	-13.8	Pass	2.4 Tx 3rd
7336.383	53.8	5.5	-5.3	53.9	Peak	H	98	266	74	-20.1	Pass	2.4 Tx 3rd

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	NRB = Non-Restricted Band. RB = Restricted Band.

7.3 RF Exposure - Radio Collocation

Carematix is to include modules Jennic JN5148-001-M03 (FCC ID TYOJN5148M3) and Multitech MTSMC-G2 (FCC ID: AU792U09D24824) into their end product. Their device requires collocation of the wireless module antenna. (Collocation = antenna(s) for one transmitter located within 20cm of the other transmitter antennas)

Jennic JN5148-001-M03 (FCC ID TYOJN5148M3)

Output power = 3mW
Antenna Gain = 2.5dBi

Multitech MTSMC-G2 (FCC ID: AU792U09D24824)

Part 22H:Output Power GSM850 = 2 Watts
Highest measured ERP = (1.43 – 2.14) = 0.873 W
Antenna Gain = Unity

Part 24E:Output Power GSM1900 = 0.98 Watts
Highest measured ERP = (1.48 – 2.14) = 0.904.2 W
Antenna Gain = Unity

Please note: Highest measured ERP and EIRP was used for Maximum Permissible Exposure calculations.

MPE Results
MPE Limits
Below 1.5 GHz = 1.5 W ERP
Above 1.5 GHz = 3 W ERP

GSM850 - Highest calculated MPE was 58.2% of the limit
GSM1900 - Highest Calculated MPE was 30.1% of the limit
2.4GHz - Highest Calculated MPE was 0.1% of the limit

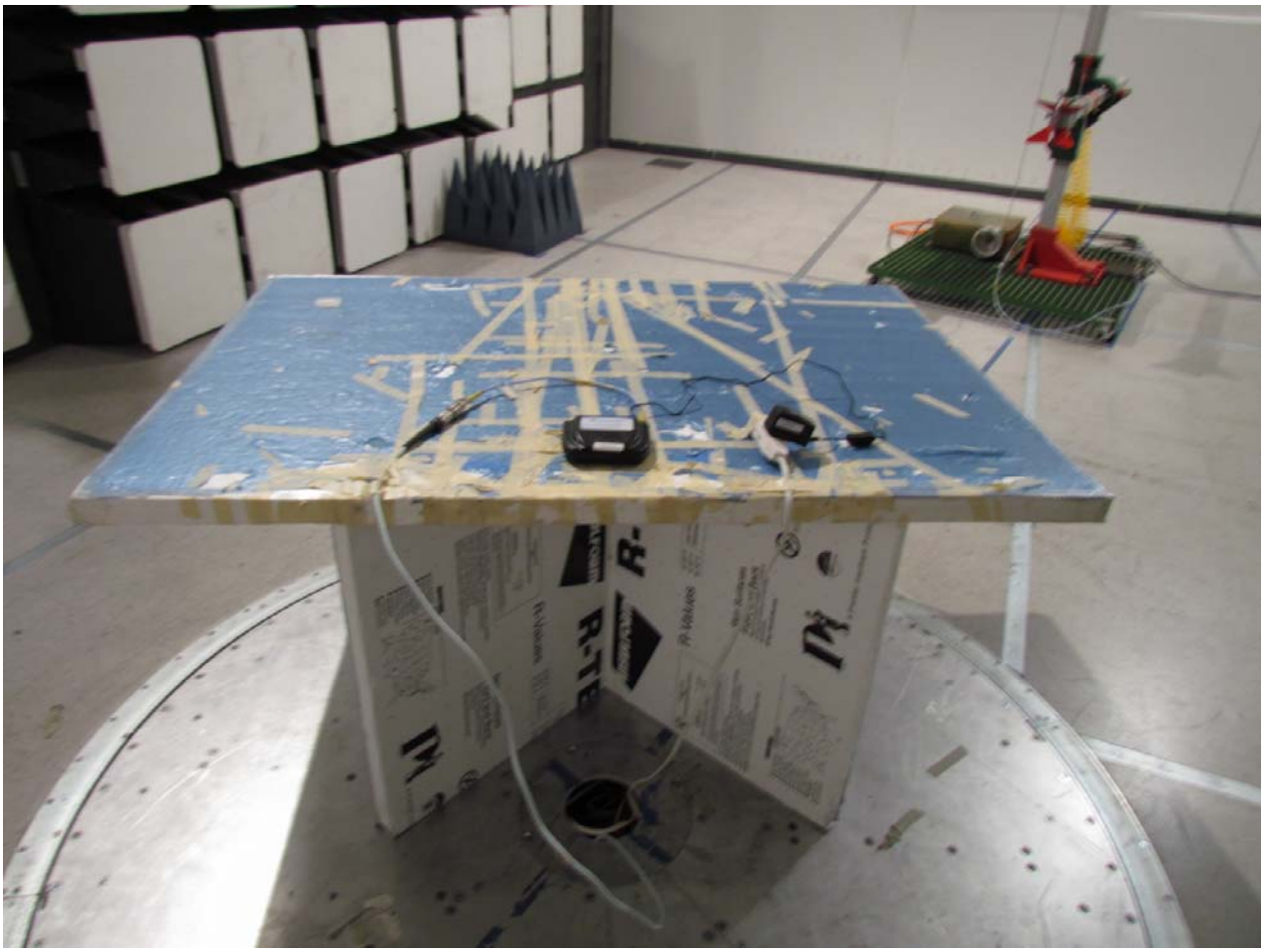
GSM850 + 2.4 GHz module total MPE = 58.2 + 0.1 = 58.3% of the limit
GSM1900 + 2.4 GHz module total MPE = 30.1 + 0.1 = 30.2% of the limit

As both the above are less than 100% of the limit the GSM850 and GSM1900 both comply with the regulations.

8 Photographs

8.1 Radiated Emission below 1 GHz

8.2 Radiated Emissions above 1 GHz



8.3 Auxiliary Equipment - Willtek Prolock 2201

9 TEST EQUIPMENT DETAILS

Asset #	Instrument	Manufacturer	Part #	Serial #	Calibration Due Date
0158	Barometer/ Thermometer	Control Co.	4196	E2844	8th Jan '12
0169	Power Meter	Boonton	4231A	53201/31916	3 Nov '11
0360	RF Signal Generator	Marconi	2051	119718/116	3 Nov '11
0177	Power Amplifier	Amplifier Research	150A1000	29274	N/A
0178	Power Amplifier	Amplifier Research	500A100A	29226	N/A
0180	Coupling Module	Schaffner	CDN 131	156	N/A
0181	Fast Transient/Burst Module	Schaffner	PNW 2225	200123 095SC	12 Nov '11
0184	Pulse limiter	Rhode & Schwartz	ESH3-Z2	357.8810.52	N/A
0338	Antenna (30M-3GHz)	Sunol Sciences	JB3	A052907	9 Nov '11
0188	Coupling/Decoupling Network	Amplifier Research	CDN AF4	9912073C	N/A
0189	Coupling/Decoupling Network	Amplifier Research	CDN S04	9912049C	N/A
0190	Line Impedance Stabilization Network	Rhode & Schwartz	ESH3Z5	836679/006	12 Nov '11
0193	EMI Receiver	Rhode & Schwartz	ESI 7	838496/007	29 Dec '11
0194	HV Impulse Module	Schaffner	PNW 2050	200112-021SC	12 Nov '11
0196	Isotropic Probe System	Wandel & Goltermann	EMC20	Y-0027/Z-0002	21 Nov '11
0199	ESD Simulation System	Schaffner	NSG435	3150	18 Nov '11
0202	Current Injection Clamp	Amplifier Research	F-120-9A	28896	N/A
0205	Coupling Assembly	Schaffner	CDN 117	254	N/A
0209	Current Monitor Probe	Amplifier Research	F-33-2	267	N/A
0210	Coupling/Decoupling Network	Amplifier Research	CDN M3	28892	N/A
0246	Power Sensor	Boonton	51011-EMC	31916	3 Nov '11
0276	Coupling Clamp	Schaffner	CDN 8014	15518	N/A
0277	Interference Test Set	Schaffner	NSG 2050	102	12 Nov '11
0287	Receiver	Rhode & Schwarz	ESIB40	100201	16 Nov '11
0354	AC Power Source	Schaffner	NSG 1007-3-240	58574	23 Oct '11
0356	Signal Conditioning Unit – Lumped Impedance	Schaffner	CCN 1000-1	72636	23 Oct '11
0351	ISN (Impedance Stabilization Network)	Teseq	ISN T8	24809	28 Dec '11
0360	RF Signal Generator	Marconi	2051	119718/116	3 Nov '11
0335	Horn Antenna	The Electro-Mechanics Company	3117	00066580	10 Nov '11

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