Test of SpectraLink 602X Wireless Telephone

To: FCC 47 CFR Part15.247 & IC RSS-210

Test Report Serial No.: POLY02-Rev A

TEST REPORT

FROM

Test of SpectraLink 602X Wireless Telephone

To FCC 47 CFR Part15.247 & IC RSS-210

Test Report Serial No.: POLY02-Rev A

This report supersedes: None

Manufacturer: SpectraLink Corporation
5755 Central Avenue
Boulder
Colorado 80301, USA

Product Function: 915 MHz Wireless IP Phone

Copy No: pdf **Issue Date:** 12th June '08

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
Fax: +1 (925) 462-0306
www.micomlabs.com

ACCREDITED
CERTIFICATE #2381.01

MiCOM Labs is an ISO 17025 Accredited Testing Laboratory

This page has been left intentionally blank

TABLE OF CONTENTS

ACCREDITATION, LISTINGS & RECOGNITION

MiCOM Labs, Inc. an accredited laboratory complies with the international standard BS 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

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 18 June 2005*).

Presented this 26th day of February 2008.

President
For the Accreditation Council
Certificate Number 2381.01
Valid to November 30, 2009

AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION
CORPORATE SEAL 1978 DISTRICT OF COLUMBIA
A2LA

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

LISTINGS

MiCOM Labs test facilities are listed by the following organizations;

North America

United States of America
Federal Communications Commission (FCC) Listing #: 102167

Canada
Industry Canada (IC) Listing #: 4143A

RECOGNITION

APEC MRA (Asia-Pacific Economic Community Mutual Recognition Agreement)

Conformity Assessment Body (CAB) – MiCOM Labs

Test data generated by MiCOM Labs is accepted in the following countries under the APEC MRA.

Country	Recognition Body	Phase	CAB Identification No.
Australia	Australian Communications and Media Authority (ACMA)	I	US0159
Hong Kong	Office of the Telecommunication Authority (OFTA)	I	
Korea	Ministry of Information and Communication Radio Research Laboratory (RRL)	I	
Singapore	Infocomm Development Authority (IDA)	I	
Taiwan	Directorate General of Telecommunications (DGT) Bureau of Standards, Metrology and Inspection (BSMI)	I I	

DOCUMENT HISTORY

Document History		
Revision	**Date**	**Comments**
Draft		
Rev A	12th June '08	Initial Release

1. TEST RESULT CERTIFICATE

Manufacturer:	SpectraLink Corporation 5755 Central Avenue Boulder Colorado 80301, USA	Tested By:	MiCOM Labs, Inc. 440 Boulder Court Suite 200 Pleasanton California, 94566, USA
EUT:	915 MHz Wireless IP Phone	Telephone:	+1 925 462 0304
Model:	602X	Fax:	+1 925 462 0306
S/N:	Conducted: 907350556, Radiated: 907351559		
Test Date(s):	24th May - 2nd June '08	Website:	www.micomlabs.com

STANDARD(S)	TEST RESULTS
FCC 47 CFR Part15.247 & IC RSS-210	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.

ACCREDITED

CERTIFICATE #2381.01

Approved & Released for MiCOM Labs, Inc. by:

Graeme Grieve
Quality Manager MiCOM Labs,

Gordon Hurst
President & CEO MiCOM Labs, Inc.

2. REFERENCES AND MEASUREMENT UNCERTAINTY

2.1. Normative References

Ref.	Publication	Year	Title
(i)	FCC 47 CFR Part 15.247	2007	Code of Federal Regulations
(ii)	Industry Canada RSS-210	Issue 7 June 2007	Low Power License-Exempt Radiocommunication Devices (All Frequency Bands)
(iii)	Industry Canada RSS-Gen	Issue 2 June 2007	General Requirements and Information for the Certification of Radiocommunication Equipment.
(iv)	ANSI C63.4	2003	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)	CISPR 22/ EN 55022	1997 1998	Limits and Methods of Measurements of Radio Disturbance Characteristics of Information Technology Equipment
(vi)	M 3003	Edition 1 Dec. 1997	Expression of Uncertainty and Confidence in Measurements
(vii)	LAB34	Edition 1 Aug 2002	The expression of uncertainty in EMC Testing
(viii)	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
(ix)	A2LA	14th September 2005	Reference to A2LA Accreditation Status – A2LA Advertising Policy

2.2. 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.

3. PRODUCT DETAILS AND TEST CONFIGURATIONS

3.1. Technical Details

Details	Description
Purpose:	Test of the SpectraLink 602X Wireless Telephone to FCC Part 15.247 and Industry Canada RSS-210 regulations
Applicant:	SpectraLink Corporation 5755 Central Avenue Boulder Colorado 80301, USA
Manufacturer:	As Applicant
Laboratory performing the tests:	MiCOM Labs, Inc. 440 Boulder Court, Suite 200 Pleasanton, California 94566 USA
Test report reference number:	POLY02-Rev A
Date EUT received:	2nd May 2008
Standard(s) applied:	FCC 47 CFR Part15.247 & IC RSS-210
Dates of test (from - to):	24th May - 2nd June '08
No of Units Tested:	Two (1xConducted and 1xRadiated Testing)
Type of Equipment:	915 MHz Wireless IP Phone
Manufacturers Trade Name:	602X
Model:	602X
Location for use:	Indoor
Antenna:	Internal
Declared Frequency Range(s):	902 - 928 MHz
Declared Nominal Output Power:	+20 dBm
EUT Modes of Operation:	FHSS (Frequency Hopping Spread Spectrum)
Transmit/Receive Operation:	Transceiver, Simplex
Rated Input Voltage and Current:	Battery: 4.2 Vdc, 1.6Ah
Operating Temperature Range:	Client declared range : 0ºC to +50ºC
Frequency Stability:	Client declared : ±20ppm
EUT Dimensions:	5.4” x 2.0” x 0.9”
EUT Weight :	4.8 oz
Primary function of equipment:	Wireless IP Phone

3.2. Scope of Test Program

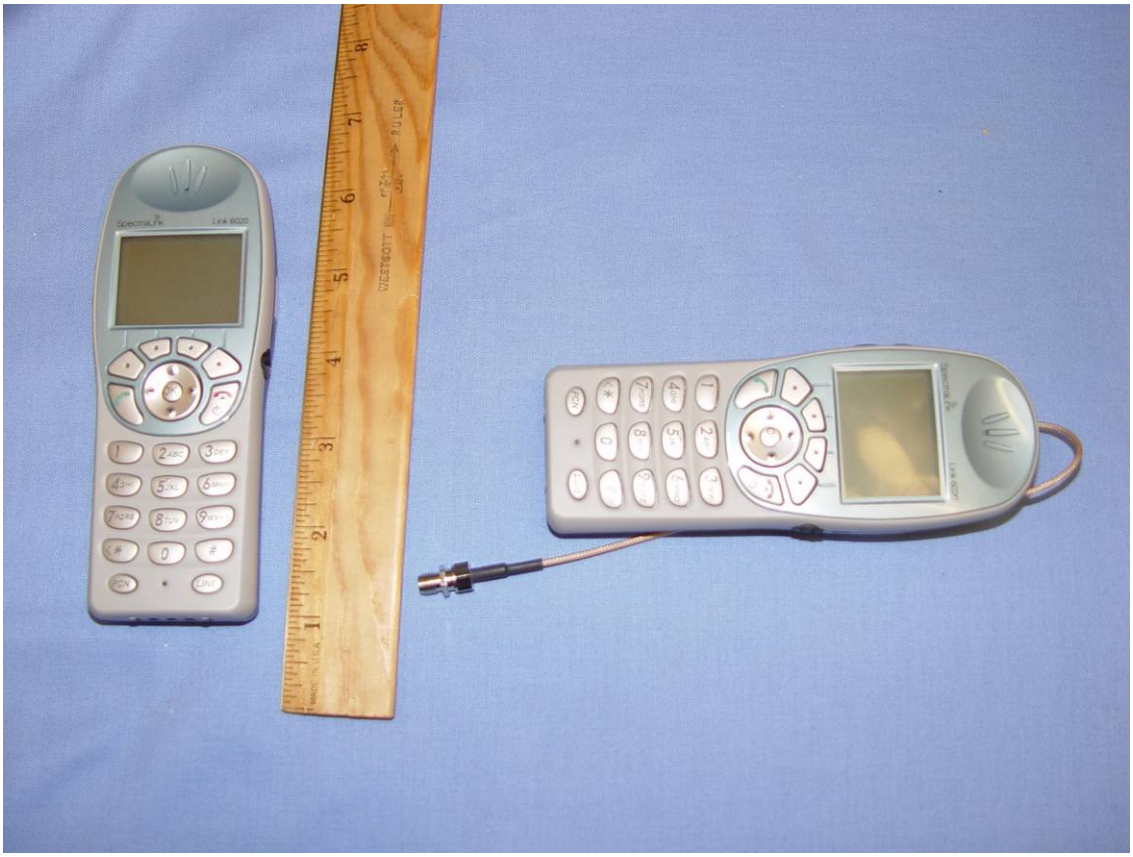
The scope of the test program was to test the SpectraLink 602X Wireless Telephone in the frequency ranges 902 - 928 MHz against FCC 47 CFR Part 15.247 and Industry Canada RSS-210 specifications for radiated and conducted emissions for intentional radiators. The intentional radiator was tested in a simulated typical installation to demonstrate compliance with the stated standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of the EUT, orientation of the power and I/O cabling, antenna search height and antenna polarization.

Every effort was made to perform an impartial test using appropriate test equipment of known calibration.

The SpectraLink 602X Wireless Telephone (EUT) reader is a Frequency Hoping Spread Spectrum (FHSS) transceiver. The EUT required modification to bring it into compliance, see Section 3.7 “Equipment Modifications”.

SpectraLink 915 MHz Wireless IP Phone 602X



SpectraLink 915 MHz Wireless IP Phone 602X

SpectraLink 915 MHz Wireless IP Phone 602X Miscellaneous

3.3. Equipment Model(s) and Serial Number(s)

Type (EUT/ Support)	Equipment Description (Including Brand Name)	Mfr	Model No.	Serial No.
EUT	915 MHz Wireless IP Phone (used for conducted testing)	SpectraLink	602X	907350556
EUT	915 MHz Wireless IP Phone (used for radiated testing)	SpectraLink	602X	907351559
EUT	Standard battery pack	SpectraLink	BPL100	None
Support	12Vdc, 0.5A	SpectraLink	DCS100	None
Support	PSU 120Vac 60Hz 0.22A Output +12 Vdc 0.55A	Hon-Kwang	HK-L106-U120	39-1250-66

3.4. Antenna Details

1. Integral antenna, Gain 0 dBi

3.5. Cabling and I/O Ports

Number and type of I/O ports

1. NONE

3.6. Test Configurations

Test configurations

Operating Channel	Frequencies (MHz)
0	902.4817
26	914.7370
52	927.4826

3.7. Equipment Modifications

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

1. Radiated Emissions 30M-1GHz (Section 5.1.9)

   Problem

   EUT failed Class B radiated emissions 30M-1GHz

   Solution
   Client Change;

   The change was to include a coupling cap from the 2nd LO to the RF mixer in the TX chain. This provides a drive level change to the 2nd LO at the mixer. This also provides a better mixer termination for any mixer generated harmonics. The end result is a reduction of the spurious emission on antenna and compliance with Class B.

3.8. Deviations from the Test Standard

The following deviations from the test standard were required in order to complete the test program:

1. NONE

3.9. Subcontracted Testing or Third Party Data

The following tests were performed by a MiCOM Labs approved test facility;-

1. NONE

4. TEST SUMMARY

List of Measurements

The following table represents the list of measurements required under the **FCC CFR47 Part 15.247**, **Industry Canada RSS-210** and **Industry Canada RSS-Gen.**

Section(s)	Test Items	Description	Condition	Result	Test Report Section
15.247(a)(1) **A8.1**	20 dB BW	20 dB BW	Conducted	Complies	5.1.1
15.247(a)(1) **A8.1**	Transmitter Channels	Channel Spacing	Conducted	Complies	5.1.2
15.247(a)(1) **A8.1**	Transmitter Channels	Number of Channels	Conducted	Complies	5.1.3.1
		Channel Occupancy	Conducted	Complies	5.1.3.2
15.247(b)(2) **A8.4**	Output Power	Transmit Power	Conducted	Complies	5.1.4
15.247(i) **5.5**	Maximum Permissible Exposure	Exposure to radio frequency energy levels	Conducted	Complies	5.1.5
15.247(d) **A8.5**	Conducted Spurious Emissions	Band Edge	Conducted	Complies	5.1.6
		Spurious Emissions Transmitter (1 to 10 GHz)	Conducted	Complies	

List of Measurements

The following table represents the list of measurements required under the **FCC CFR47 Part 15.247**, **Industry Canada RSS-210** and **Industry Canada RSS-Gen.**

Section(s)	Test Items	Description	Condition	Result	Test Report Section
15.247(d) **15.205** **15.209** **A8.5** **2.2** **2.6** **4.9**	Transmitter Radiated Spurious Emissions (above 1GHz)	Transmitter	Radiated	Complies	5.1.7
4.10 **§7.2.3**		Standby	Radiated	Complies	5.1.8
15.247(d) **15.205** **15.209** **A8.5** **2.2** **2.6**	Radiated Emissions below 1 GHz		Radiated	Complies (Class B)	*5.1.9*
15.207 **7.2.2**	Conducted	AC Wireline Conducted Emissions	Conducted	Complies (Class B)	*5.1.10*

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 3.7 - Equipment Modifications highlights the equipment modifications that were required to bring the product into compliance with the above test matrix*

5. TEST RESULTS

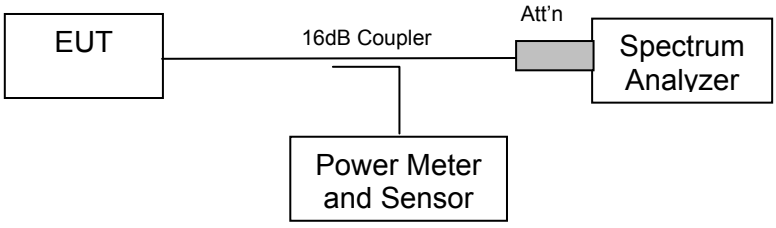
5.1. Device Characteristics

5.1.1. 20 dB Bandwidth

FCC, Part 15 Subpart C §15.247(a)(1)
Industry Canada RSS-210 §A8.1

Test Procedure
The 20 dB bandwidth is measured with a spectrum analyzer connected to the antenna terminal, while the EUT is operating in transmission mode at the appropriate center frequency and modulation.

Test Measurement Set up



Measurement set up for 20 dB bandwidth test

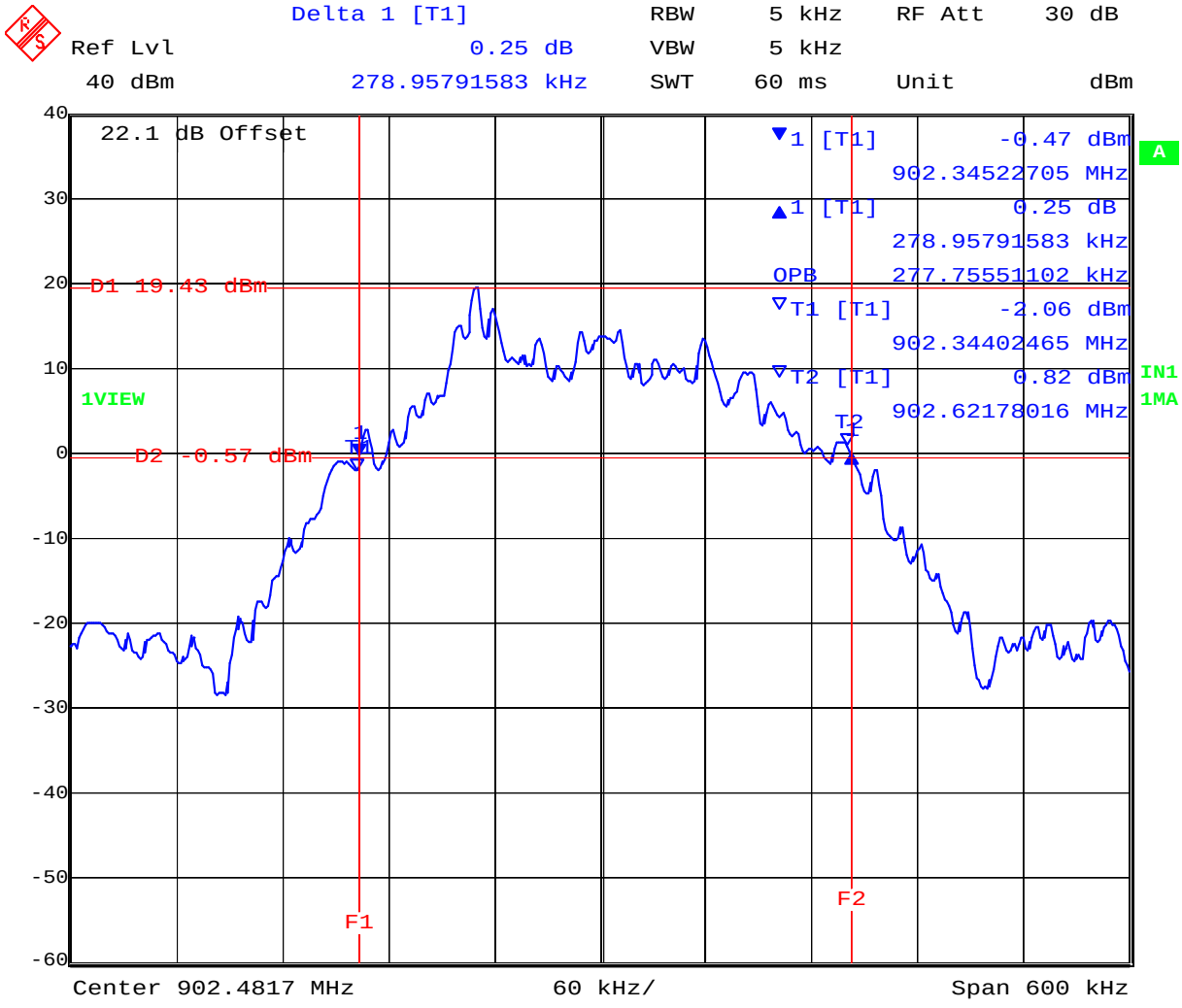
Test Results for 20 dB Bandwidth

Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

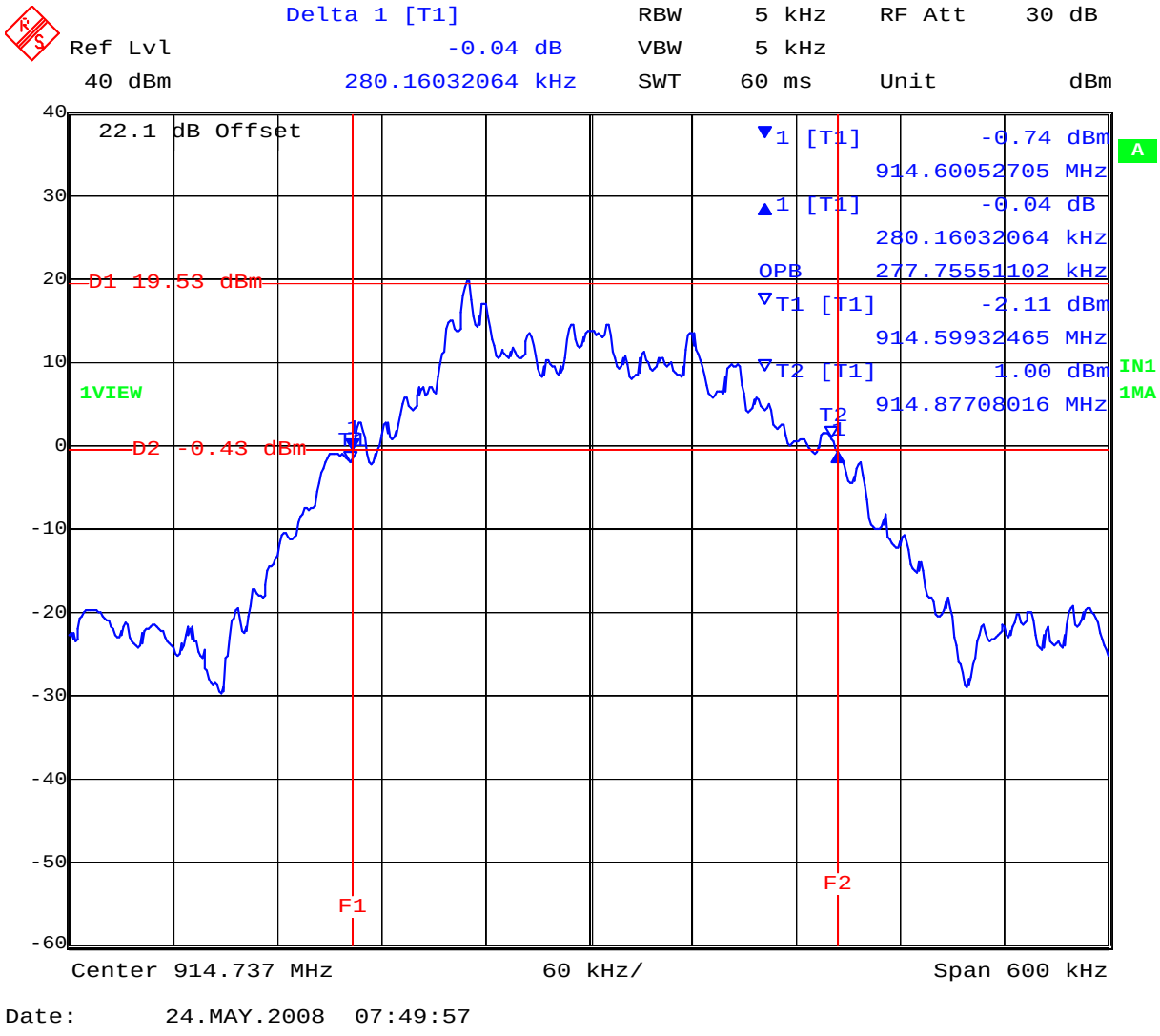
TABLE OF RESULTS

Channel #	Center Frequency (MHz)	20 dB Bandwidth (kHz)	99% Bandwidth (kHz)	Specification (kHz)
0	902.4817	278.958	277.756	<500
26	914.7370	280.160	277.756	
52	927.4826	278.958	276.553	

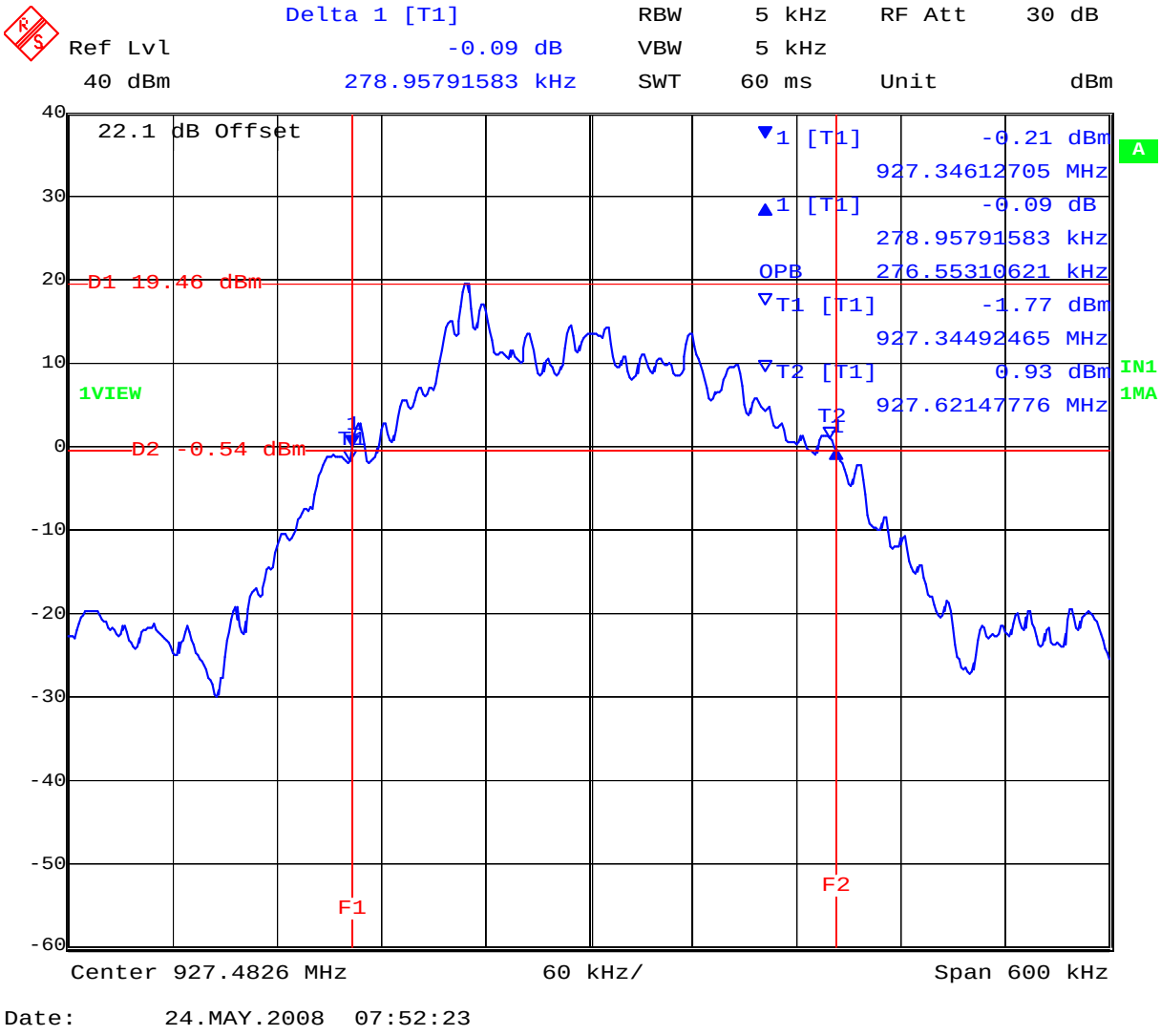
CH 0 902.4817 MHz 20 dB Bandwidth



CH 26 914.7370 MHz 20 dB Bandwidth



CH 52 927.4826 MHz 20 dB Bandwidth



Date: 24.MAY.2008 07:52:23

Specification

Limits

FCC §15.247 (a)(1)
Industry Canada RSS-210 §8.1

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

Laboratory Measurement Uncertainty for Spectrum Measurement

Measurement uncertainty	±2.81 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-03 'Measurement of RF Spectrum Mask'	0158, 0193, 0252, 0313, 0314, 0070, 0116, 0117

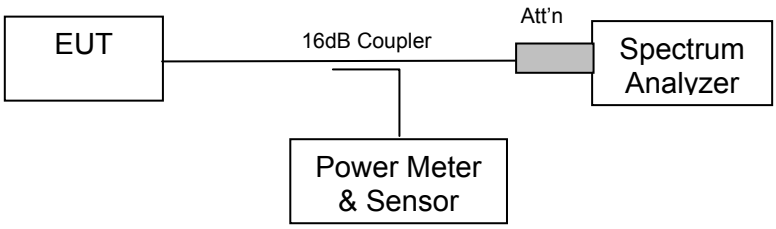
5.1.2. Transmitter Channels - Channel Spacing

FCC, Part 15 Subpart C §15.247(a)(1)
Industry Canada RSS-210 §8.1(2)

Test Procedure

The channel spacing is measured with a spectrum analyzer connected to the antenna terminal, while the EUT is operating in transmission mode at the appropriate center frequency and modulation.

Test Measurement Set up



Measurement set up for Channel Spacing Test

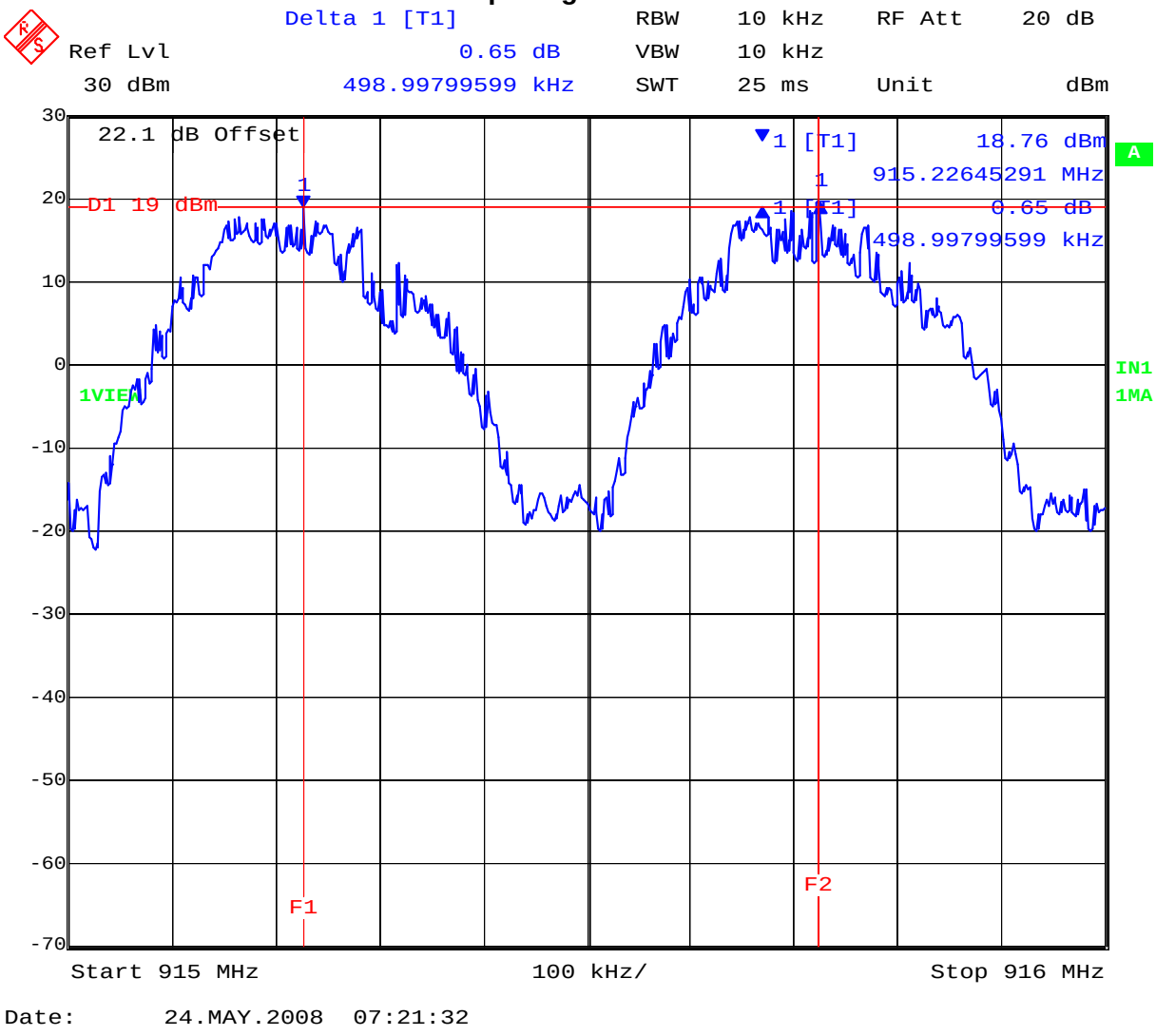
Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

TABLE OF RESULTS

Channel(s)	Channel Spacing (KHz)	Specification
27-28	498.998	Greater than maximum 20 dB Bandwidth

Maximum 20 dB bandwidth = 280.160 kHz

Channel Spacing for CH 27 – CH 28



Specification for Channel Spacing

Limits

FCC §15.247 (a)(1)
Industry Canada RSS-210 §A8.1(2)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Laboratory Uncertainty for Frequency Measurements

Measurement uncertainty	±0.86ppm

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-02 'Frequency Measurement"	0078, 0134, 0158, 0184, 0193, 0250,0252 0310, 0312.

5.1.3. Transmitter Channels

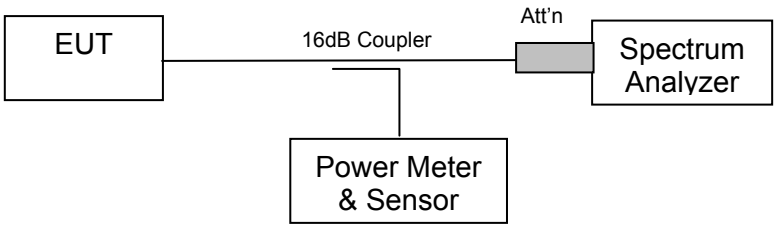
5.1.3.1. Number of Channels

FCC, Part 15 Subpart C §15.247(a)(1)
Industry Canada RSS-210 §A8.1

Test Procedure

The number of channels and channel occupancy is measured with a spectrum analyzer connected to the antenna terminal, while the EUT is operating in transmission mode at the appropriate center frequency and modulation.

Test Measurement Set up



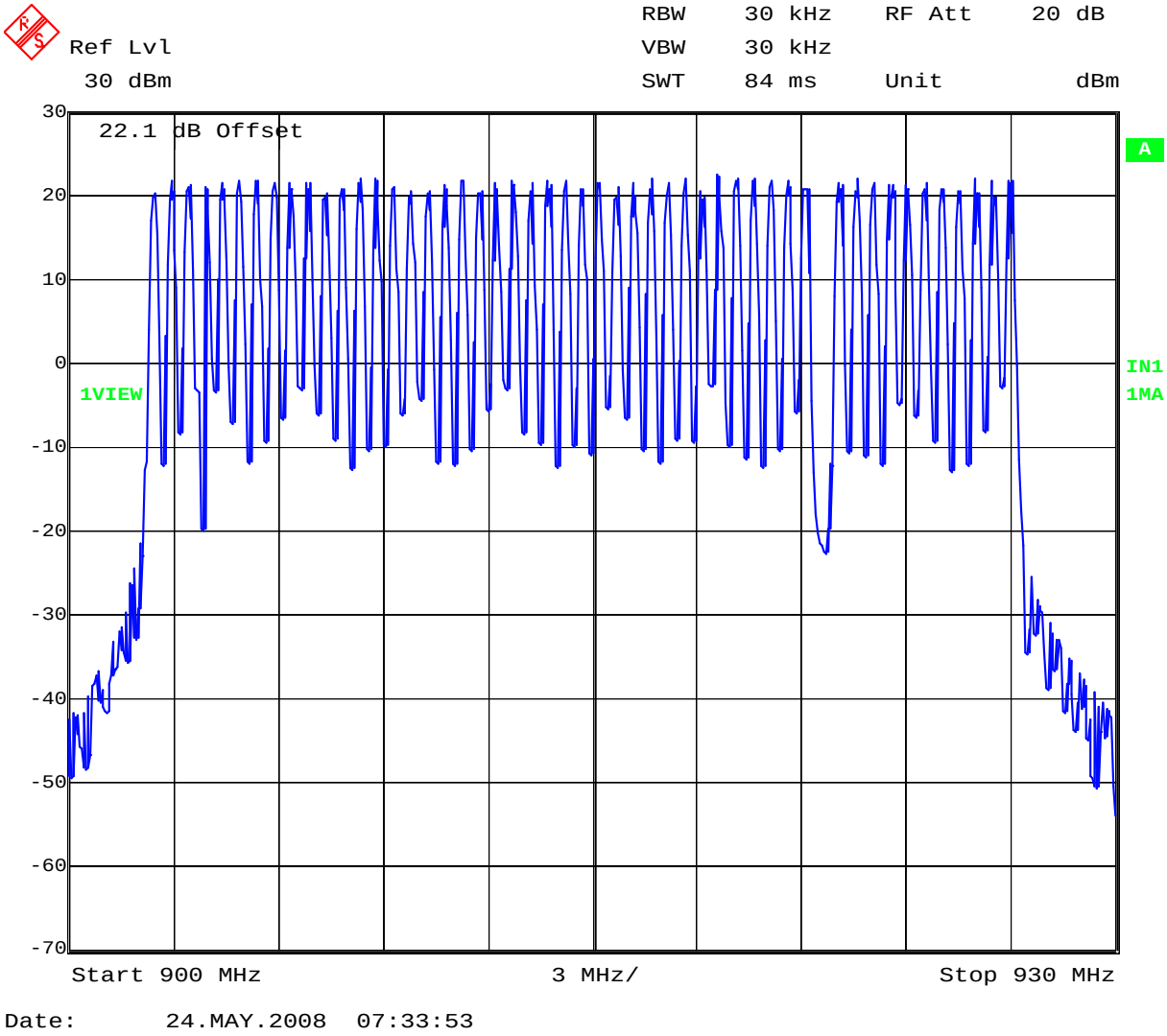
Test set up to measure the number of channels and channel occupancy

Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

TABLE OF RESULTS

Number of Channels	Specification
52	Minimum of 50 hopping channels

Number of Transmission Channels



5.1.3.2. Channel Occupancy

FCC, Part 15 Subpart C §15.247(a)(1)
Industry Canada RSS-210 §A8.1

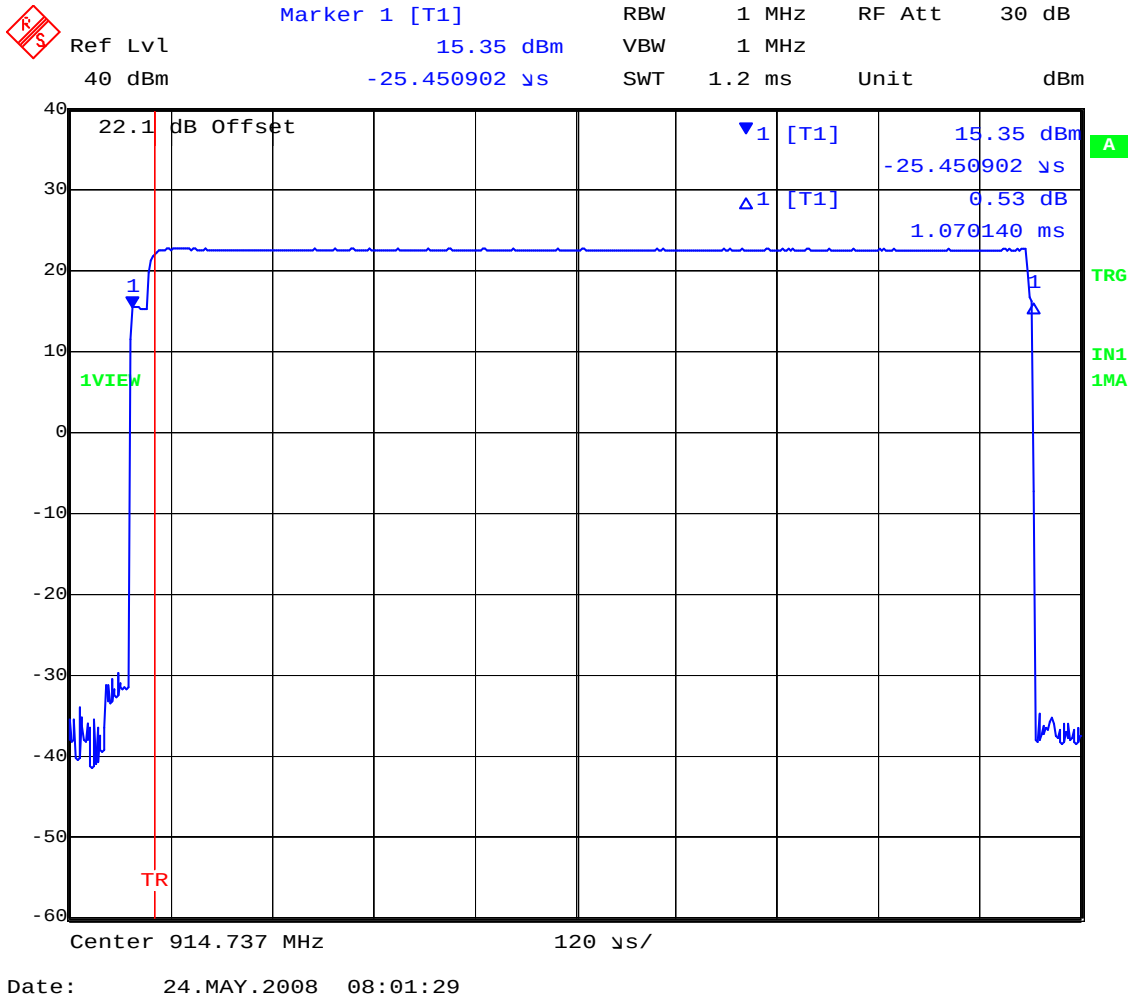
Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

Channel Dwell Time

TABLE OF RESULTS

Channel #	Center Frequency (MHz)	Channel Dwell Time (single channel) (mSecs)
26	914.7370	1.07

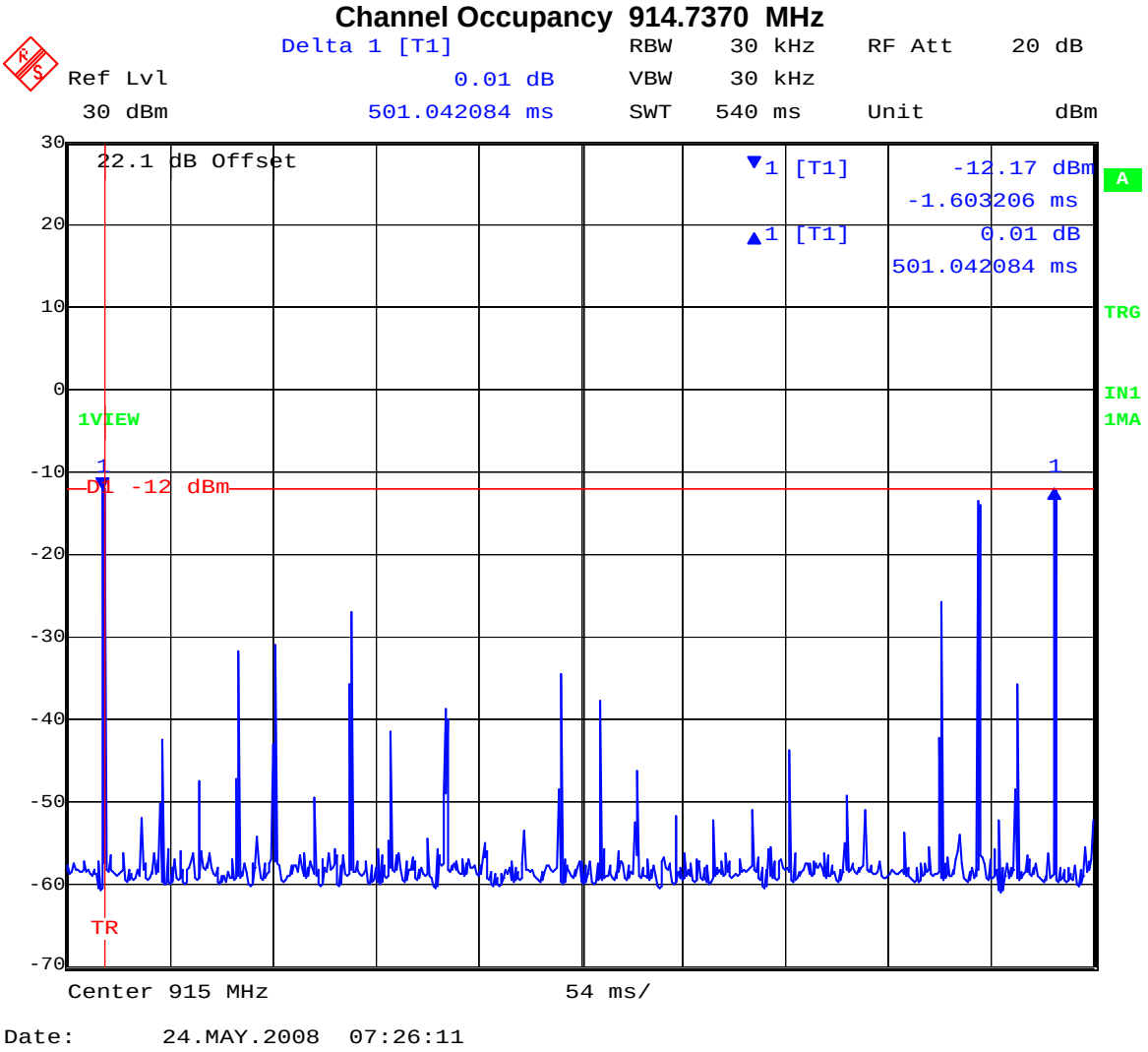
Channel dwell time Ch 26 914.7370 MHz



Channel Occupancy

TABLE OF RESULTS

Channel #	Center Frequency (MHz)	Channel Occupancy within 10 Second Period (mSeconds)
24	914.7370	501.042



Specification for Number of Channels and Channel Occupancy

Limits

FCC, Part 15 Subpart C §15.247(a)(1)
Industry Canada RSS-210 §A8.1

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

Laboratory Uncertainty for Frequency Measurements

Measurement uncertainty	±0.86ppm

Traceability

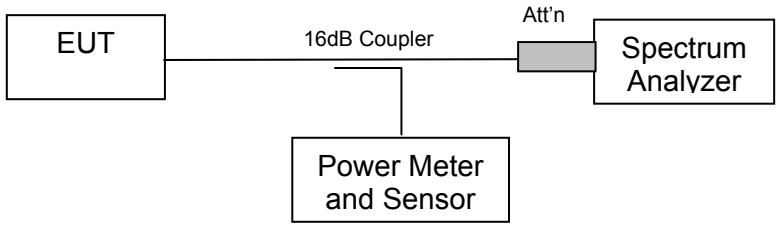
Method	Test Equipment Used
Measurements were made per work instruction WI-02 'Frequency Measurement"	0078, 0134, 0158, 0184, 0193, 0250, 0252 0310, 0312.

5.1.4. Output Power

FCC, Part 15 Subpart C §15.247(b)(2)
Industry Canada RSS-210 §A8.4

Test Procedure
The transmitter terminal of EUT was set for CW (continuous wave) operation and connected to the input of the power meter which was calibrated to measure power. The value of measured power including antenna cable loss was reported.

Test Measurement Set up



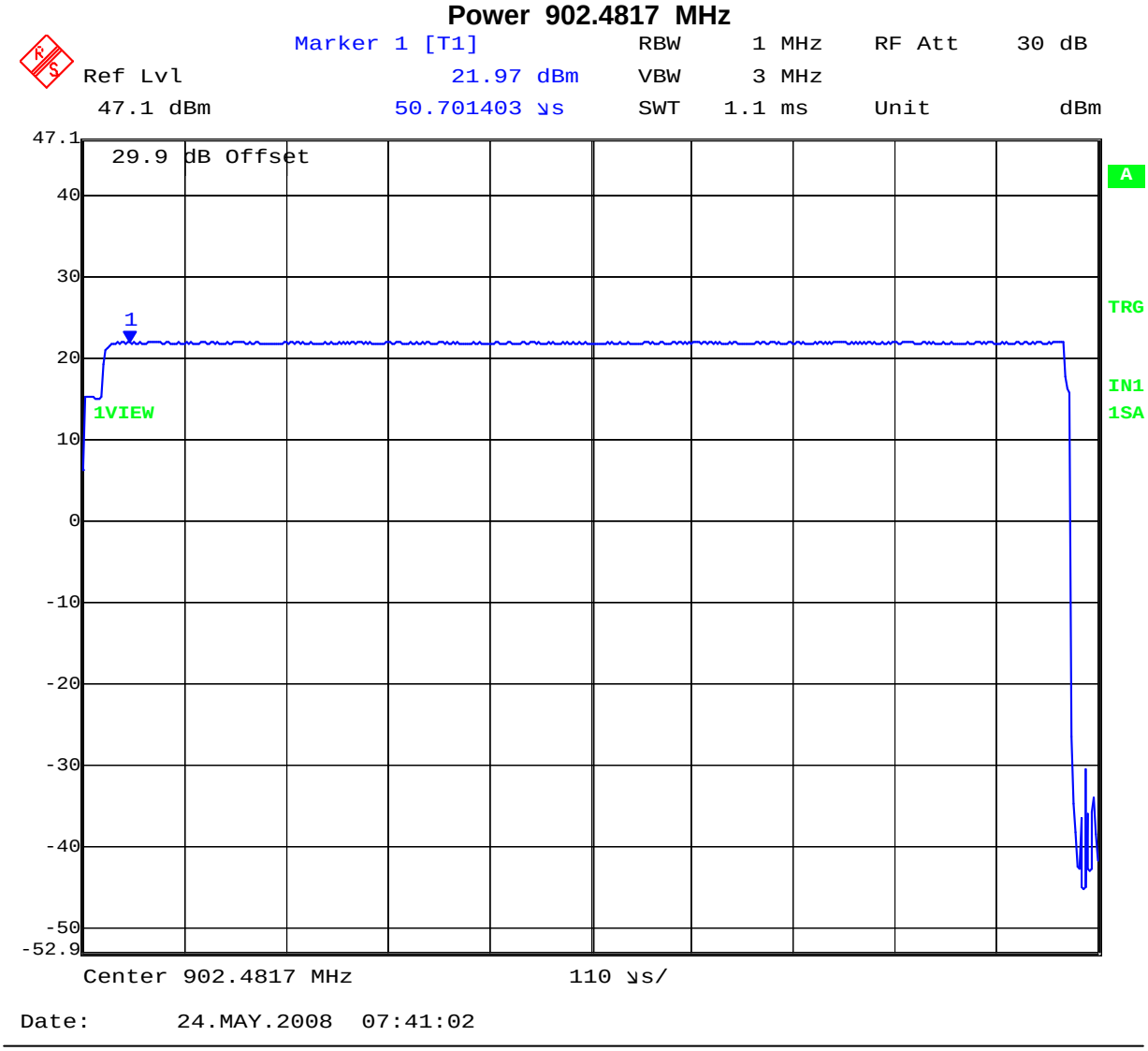
Measurement set up for Transmitter Output Power

Measurement Results for Output Power

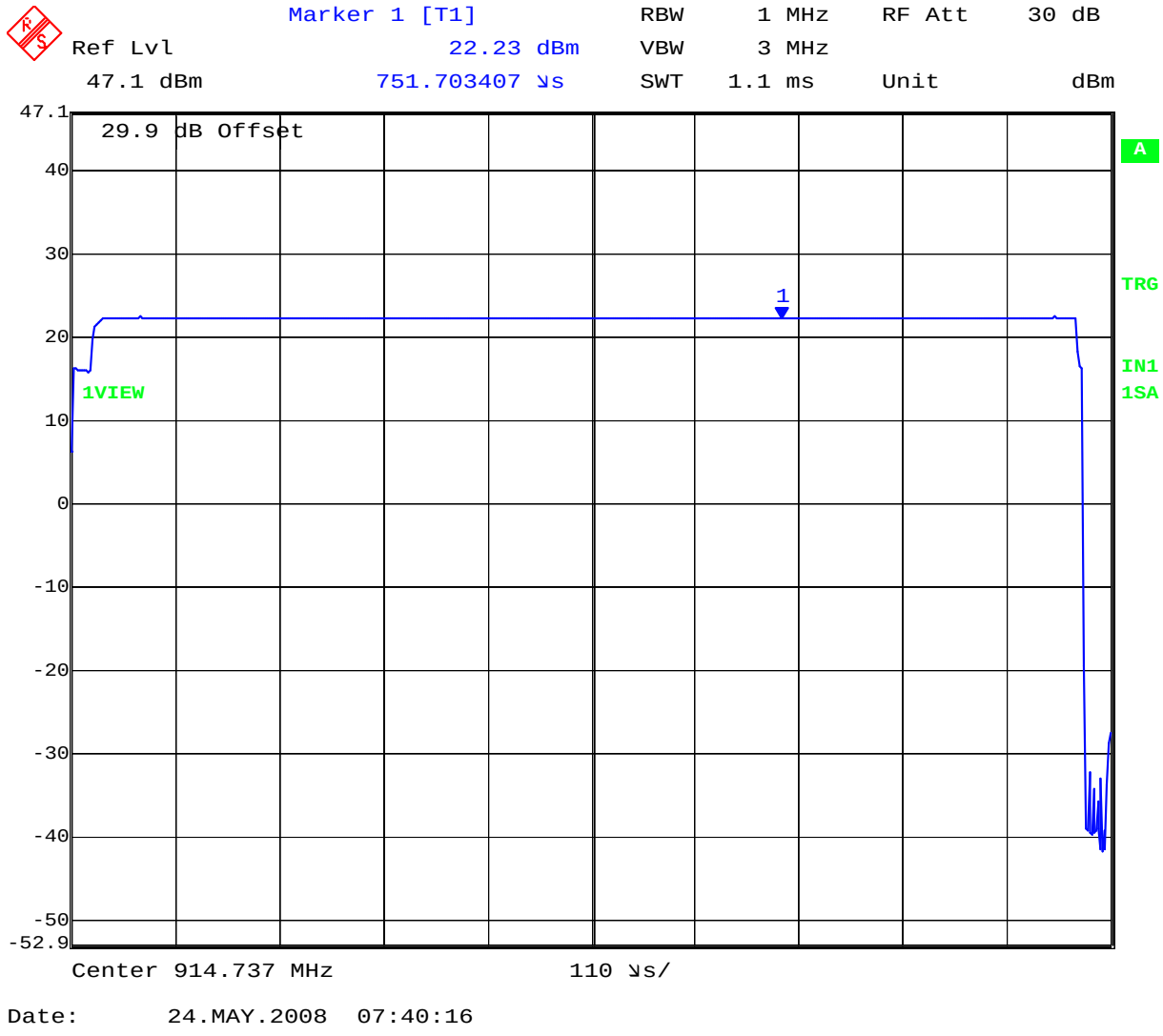
Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

TABLE OF RESULTS

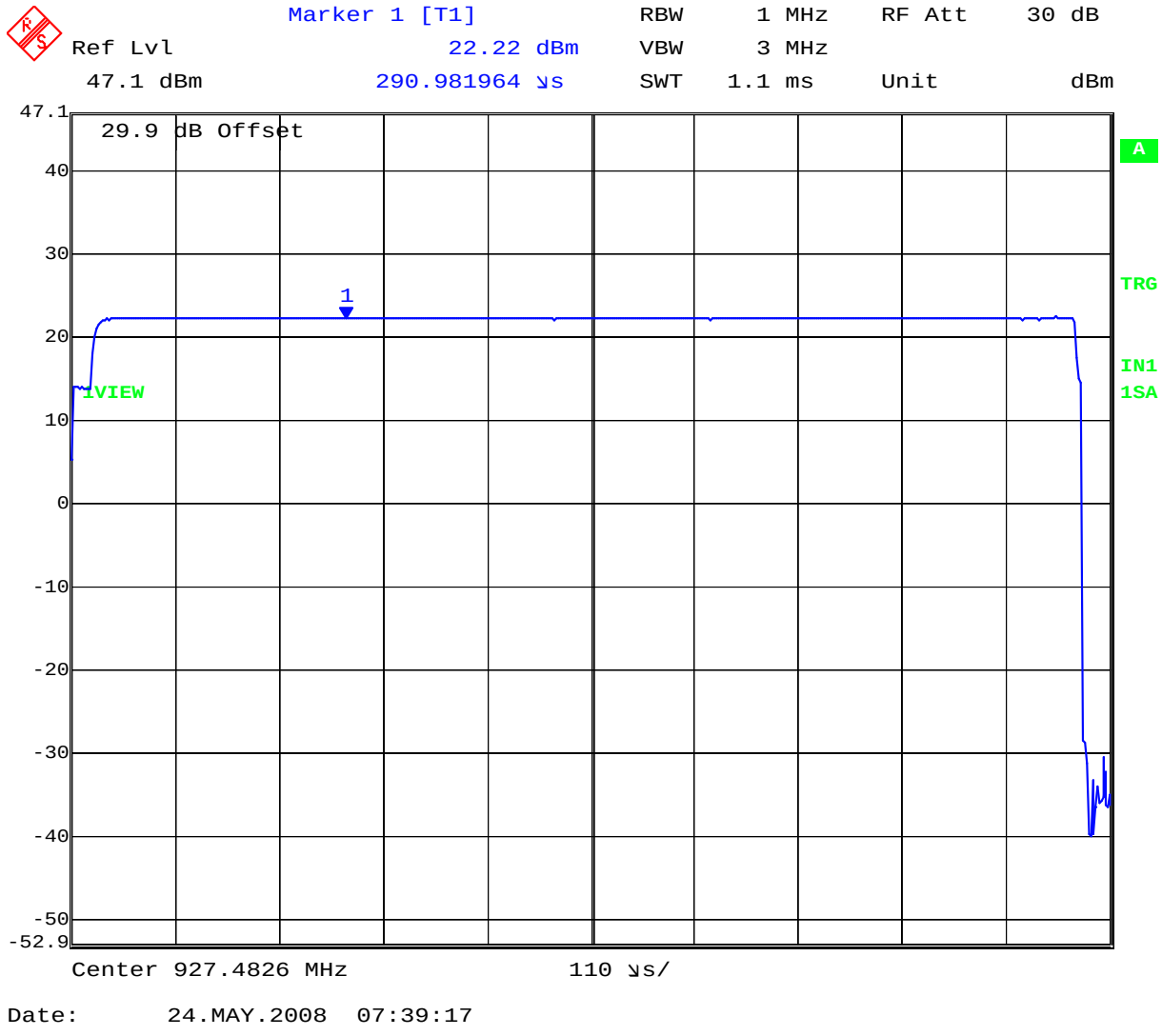
Channel #	Center Frequency (MHz)	Average Power (dBm)
0	902.4817	+21.97
26	914.7370	+22.23
52	927.4826	+22.22



Power 914.7370 MHz



Power 927.4826 MHz



Specification

Limits

FCC, Part 15 Subpart C §15.247 (b)(2) The maximum output power of the intentional radiator shall not exceed the following:
(2) For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

Industry Canada RSS-210 §A8.4
For frequency hopping systems operating in the 902 - 928 MHz band, the maximum peak conducted power output power is not to succeed 1.0 W if the hopset uses 50 or more hopping channels and 0.25 W if the hopset uses less than 50 hopping channels.

Laboratory Measurement Uncertainty for Power Measurements

Measurement uncertainty	±1.33 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-01 'Measuring RF Output Power'	0158, 0193, 0252, 0313, 0314, 0070, 0116, 0117

5.1.5. Maximum Permissible Exposure

FCC, Part 15 Subpart C §15.247(i)
Industry Canada RSS-Gen §5.5

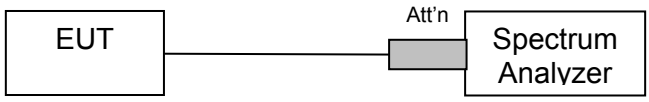
SAR report exists for this product, report #: R0601092S

5.1.6. Conducted Spurious Emissions Transmitter

FCC, Part 15 Subpart C §15.247(d)
Industry Canada RSS-210 §A8.5

Test Procedure
Conducted emissions were measured at a limit of 20 dB below the highest in-band spectral density measured with a spectrum analyzer connected to the antenna terminal. Emissions at the band edge were measured and recorded. Measurements were made while EUT was operating in transmit mode of operation at the appropriate center frequency.

Test Measurement Set up



Band-edge measurement test configuration

Measurement Results of Conducted Spurious Emissions

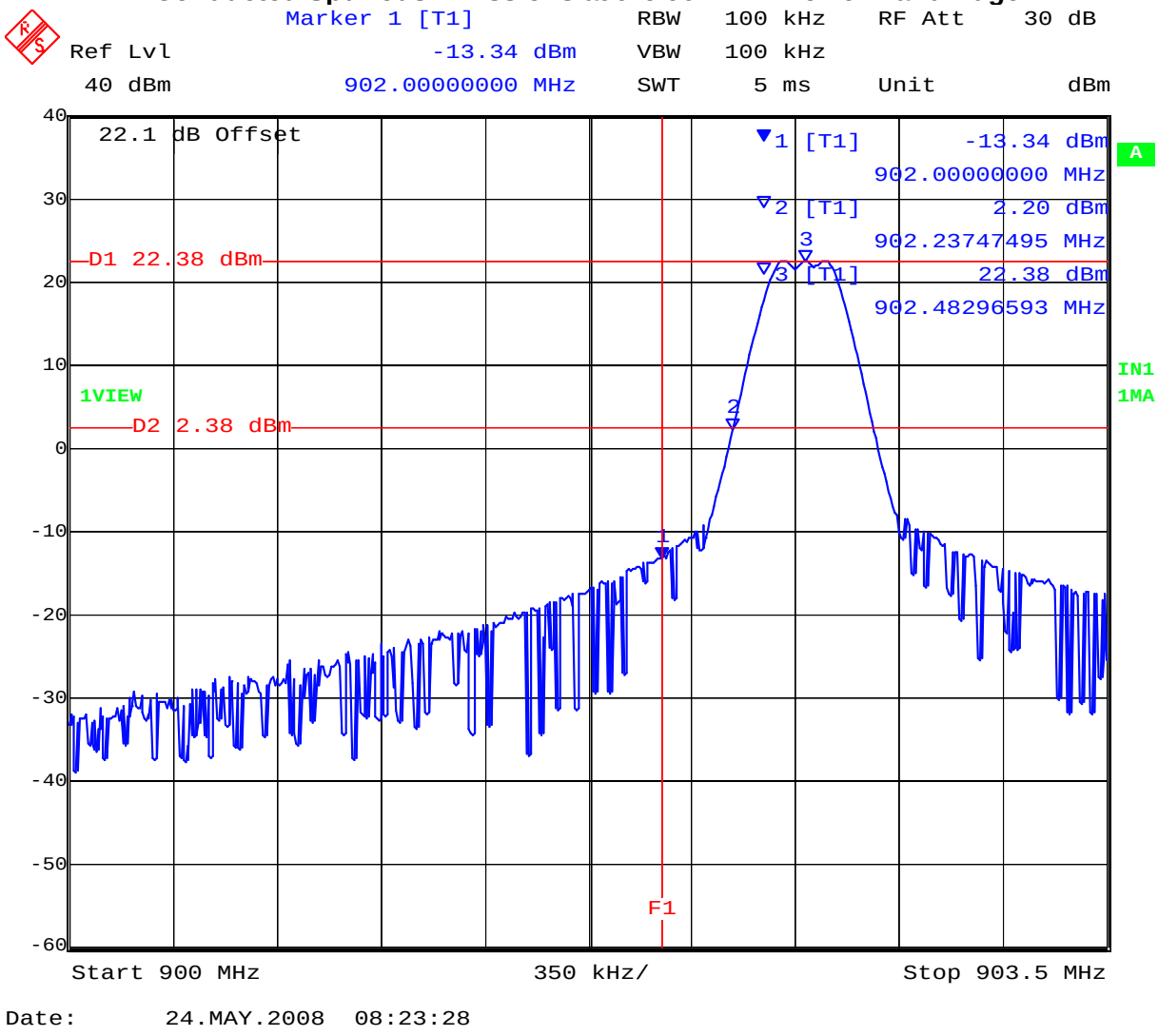
Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

Conducted Band-Edge Results

TABLE OF RESULTS

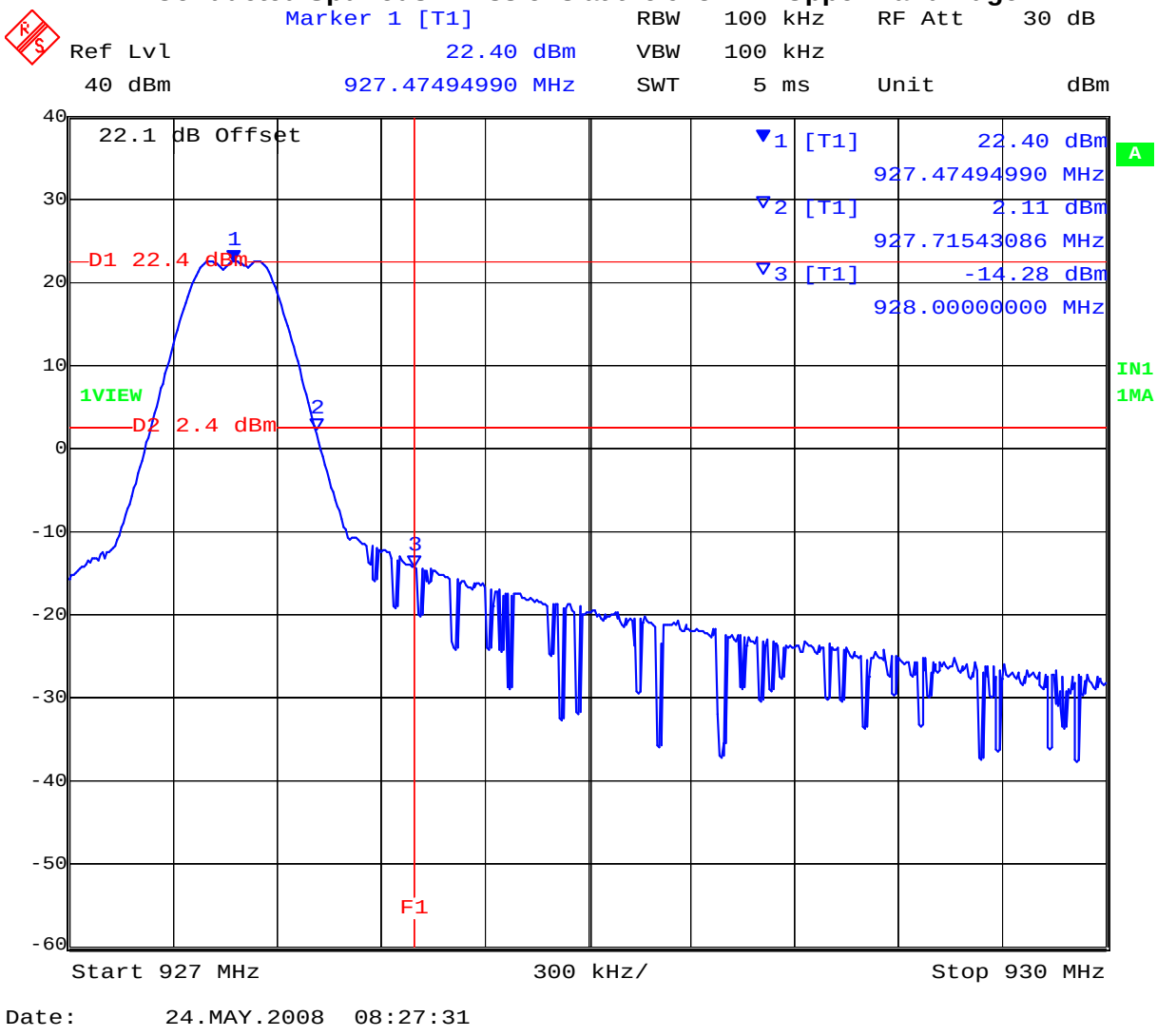
Channel #	Center Frequency (MHz)	Band-edge Frequency (MHz)	Limit (dBm)	Amplitude @ Band-edge (dBm)	Margin (dB)
0	902.4817	902.0	+2.38	-13.34	-16.72
52	927.4826	928.0	+2.40	-14.28	-16.68

Conducted Spurious Emissions at the 902 MHz Lower Band Edge



Date: 24.MAY.2008 08:23:28

Conducted Spurious Emissions at the 928 MHz Upper Band Edge



Spurious Emissions (30 – 10,000 MHz)

Conducted spurious emissions (30 – 10,000 MHz) are provided indicated by the following matrix. Measurements were performed with the transmitter tuned to the channel closest to the band-edge being measured. All emissions were maximized during measurement. Limits which were derived from the band-edge measurements provided below are drawn on each plot.

TABLE OF RESULTS

Channel Centre Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Maximum Emission Observed (dBm)	Limit (dBm)	Margin (dB)
902.4817	30	10,000	-3.23	+2.07	-5.30

The emission breaking the limit line is the carrier.

Conducted Transmitter Spurious Emissions
Channel 902.4817 MHz 30 to 10,000 MHz

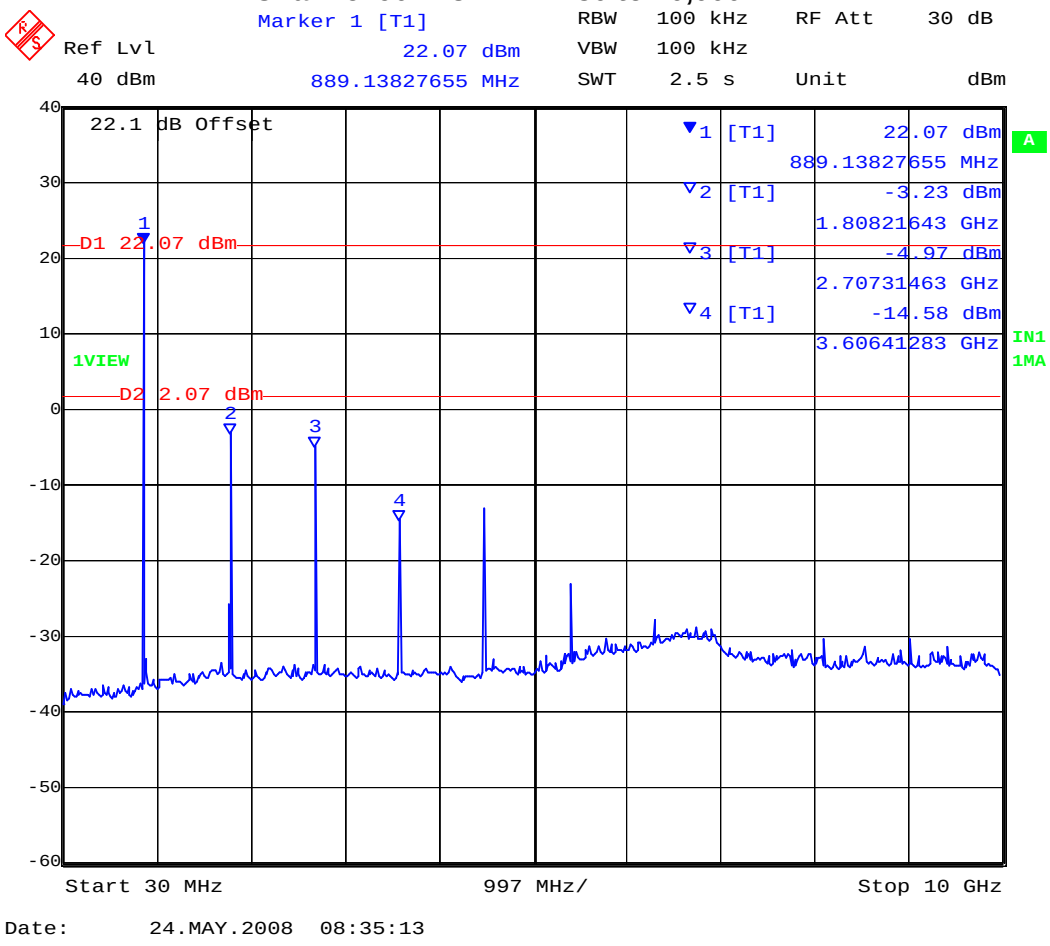


TABLE OF RESULTS

Channel Centre Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Maximum Emission Observed (dBm)	Limit (dBm)	Margin (dB)
914.7370	30	10,000	-4.27	+2.19	-6.46

The emission breaking the limit line is the carrier.

Conducted Transmitter Spurious Emissions

Channel 914.7370 MHz 30 to 10 MHz

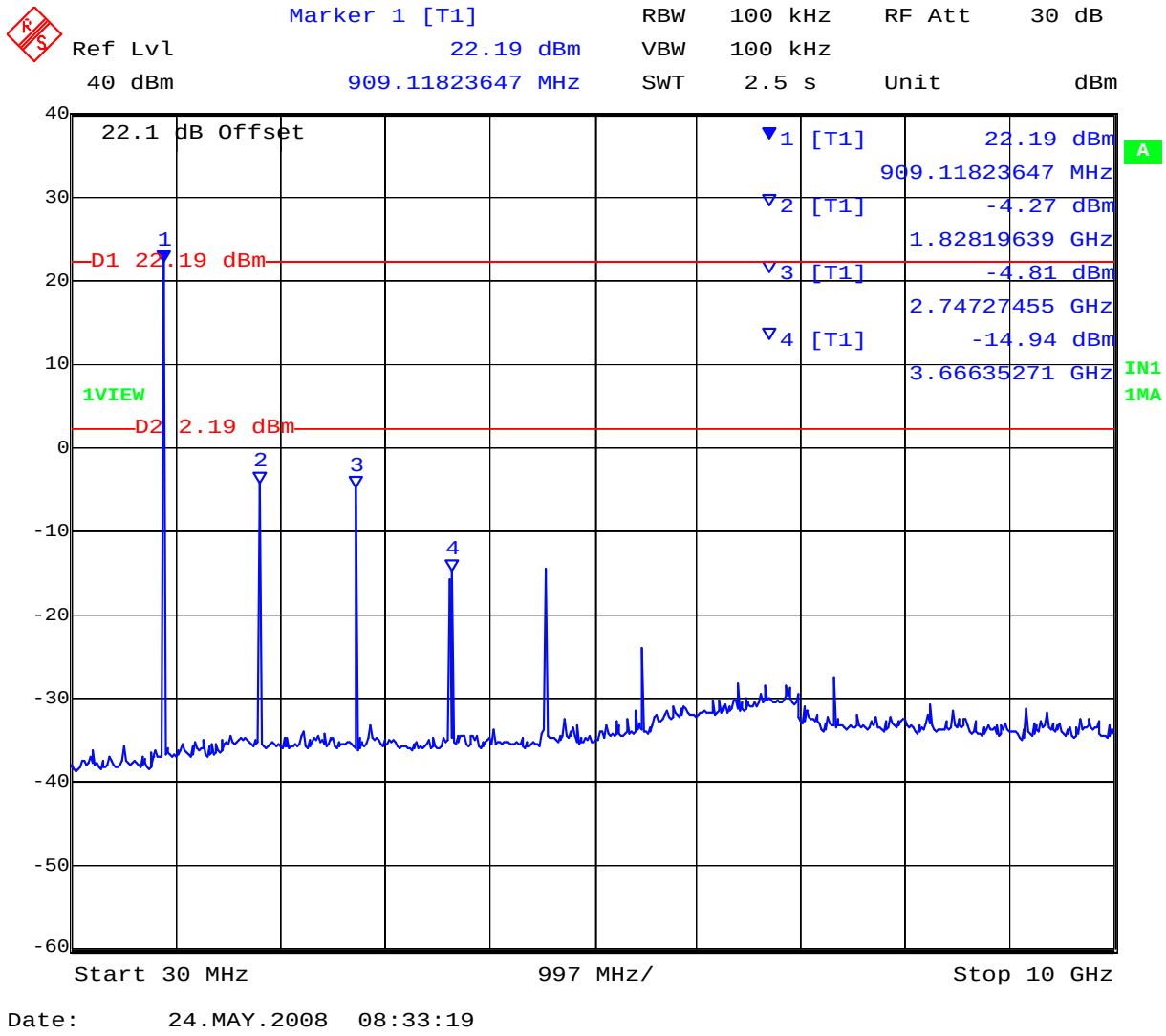


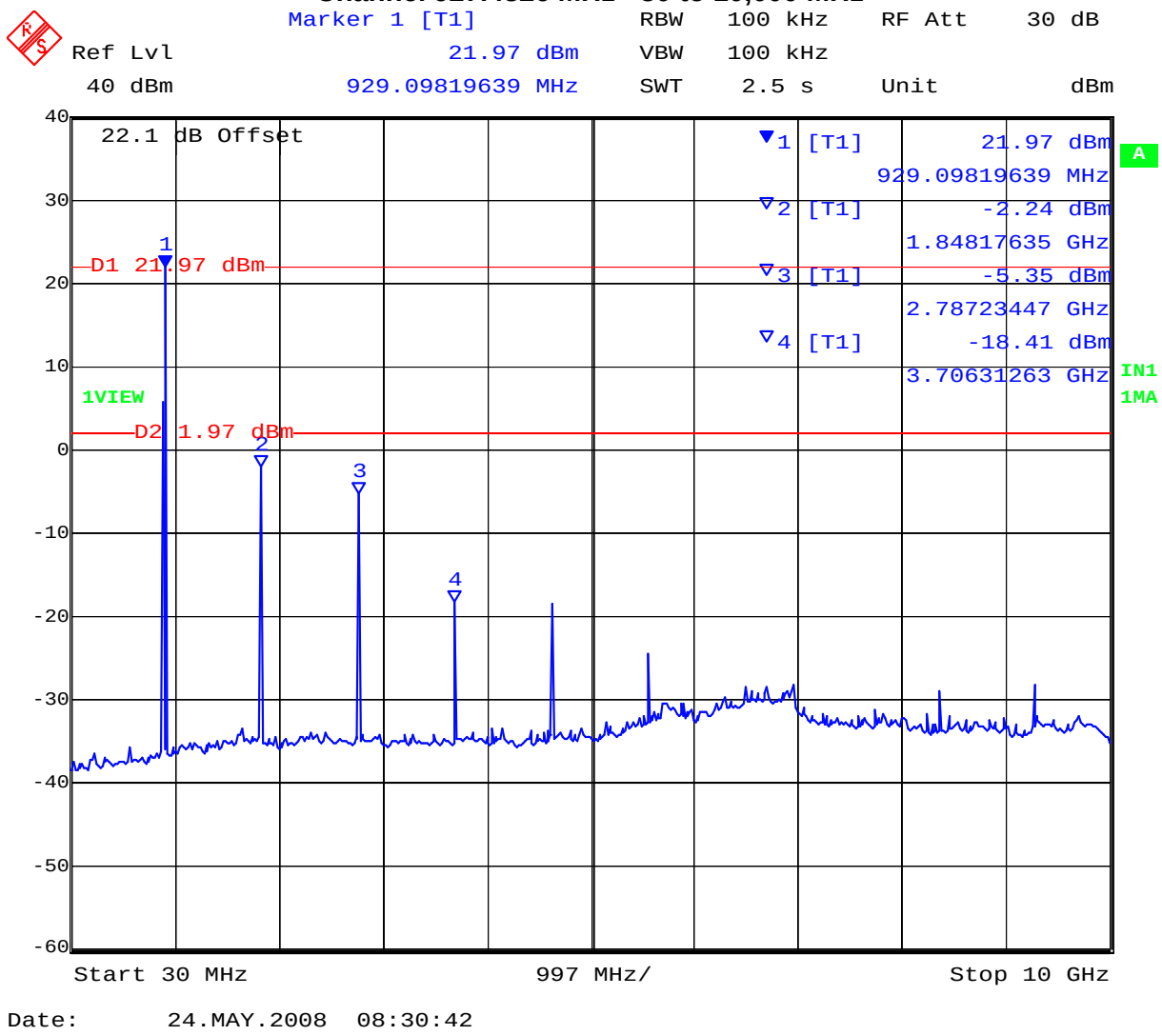
TABLE OF RESULTS

Channel Centre Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Maximum Emission Observed (dBm)	Limit (dBm)	Margin (dB)
927.4826	30	10,000	-2.24	+1.97	-4.21

The emission breaking the limit line is the carrier.

Conducted Transmitter Spurious Emissions

Channel 927.4826 MHz - 30 to 10,000 MHz



Specification

Limits Band-Edge

Lower Limit Band-edge	Upper Limit Band-edge	Limit below highest level of desired power
902 MHz	928 MHz	≥ 20 dB

FCC, Part 15 Subpart C §15.247(d)

Industry Canada RSS-210 §A.5

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 a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

Laboratory Measurement Uncertainty for Conducted Spurious Emissions

Measurement uncertainty	±2.37 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-05 'Measurement of Spurious Emissions'	0088, 0158, 0193, 0252, 0313, 0314, 0070, 0116, 0117.

5.1.7. Transmitter Radiated Spurious Emissions (above 1 GHz)

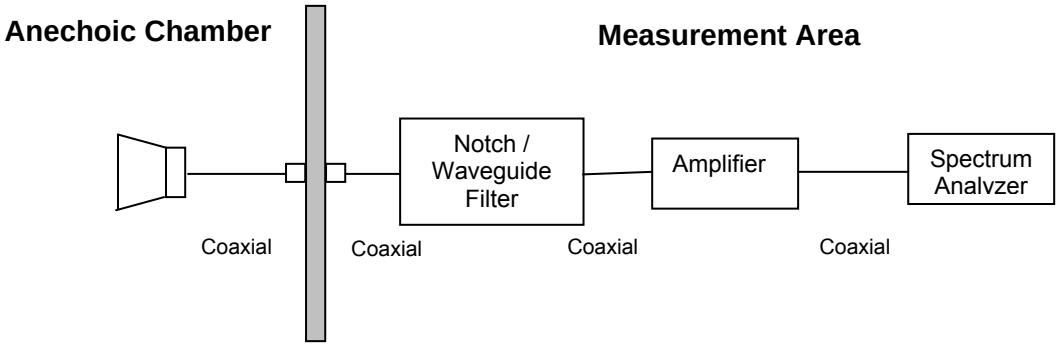
FCC, Part 15 Subpart C §15.247(d)
Industry Canada RSS-210 §A8.5

Test Procedure

Radiated emissions above 1 GHz are measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarities. The emissions are recorded and maximized as a function of azimuth by rotation through 360° with a spectrum analyzer in peak hold mode. Depending on the frequency band spanned a notch filter was used to remove the fundamental frequency (1-2 GHz), A high-pass filter was used to remove the fundamental 2 – 10 GHz. The highest emissions relative to the limit are listed for each frequency spanned.

All measurements on any frequency or frequencies over 1 MHz are based on the use of measurement instrumentation employing an average detector function. All measurements above 1 GHz were performed using a minimum resolution bandwidth of 1 MHz.

Test Measurement Set up



Measurement set up for Radiated Emission Test

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
where: 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

For 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

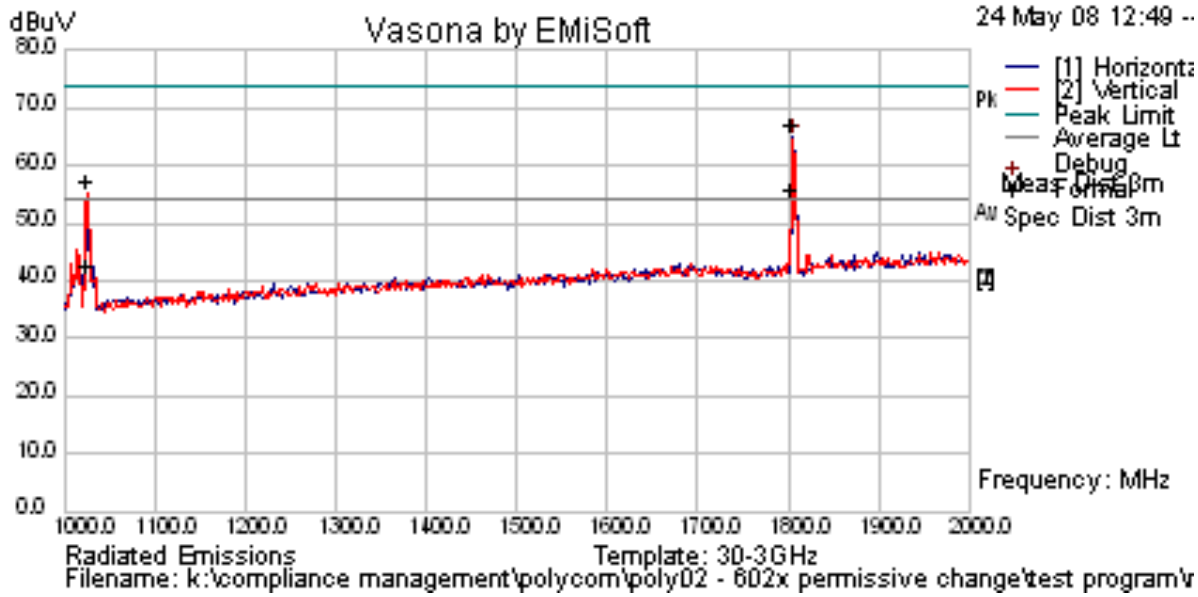
Radiated Spurious Emissions above 1 GHz

Ambient conditions.
Temperature: 17 to 23°C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

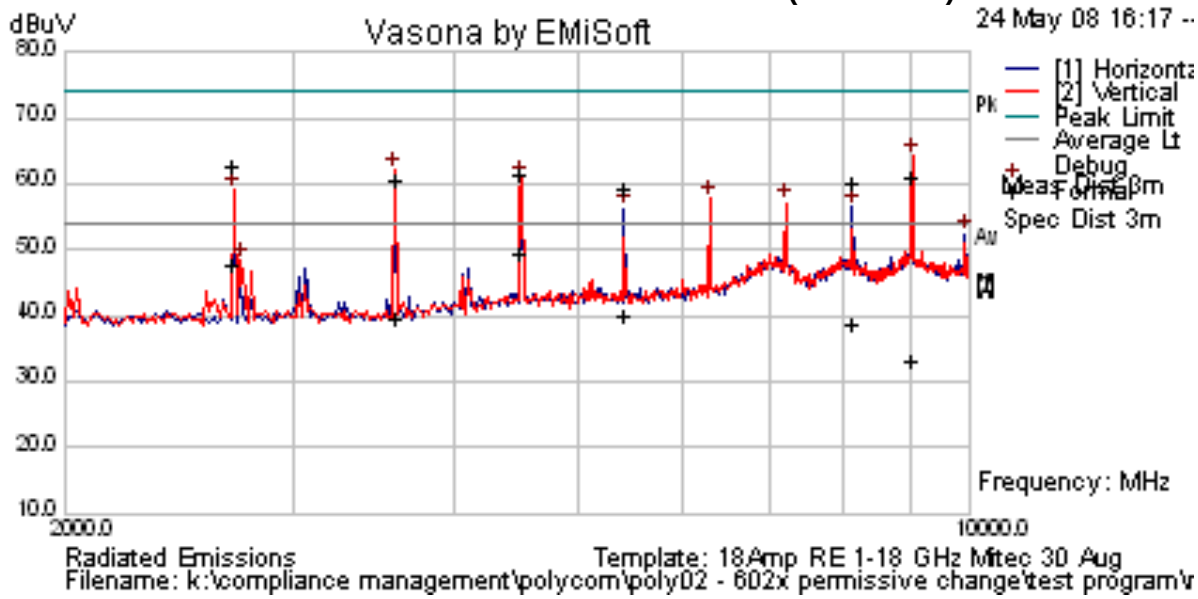
Channel 0 – 902.4817 MHz

TABLE OF RESULTS

Ch 0 Radiated Emissions Above 1 GHz (1 – 2 GHz)



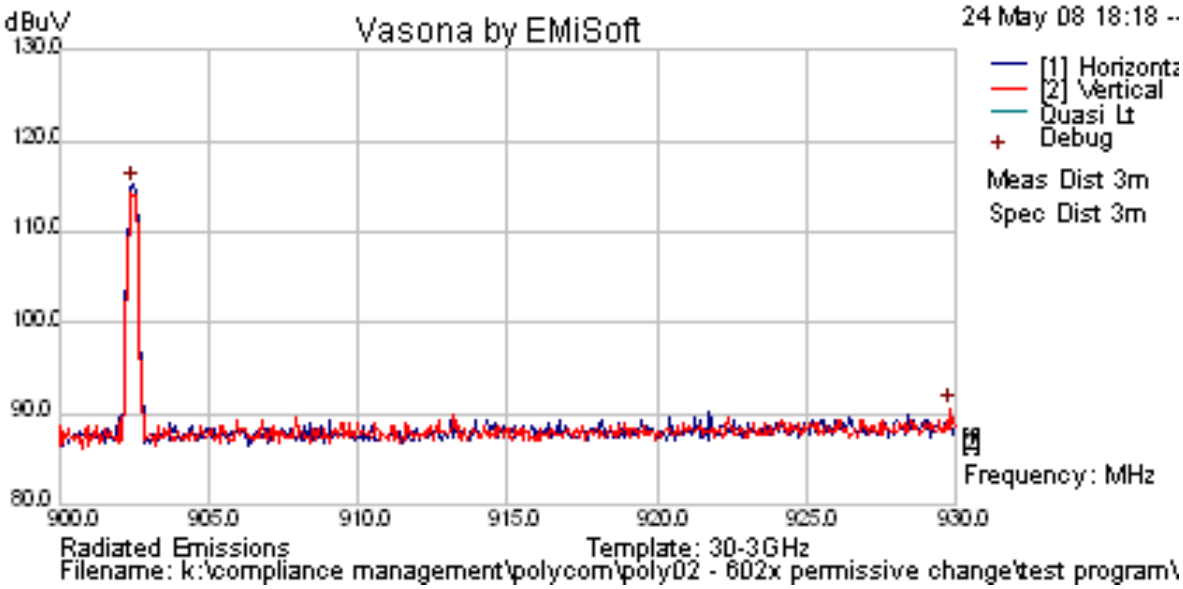
Ch 0 Radiated Emissions Above 1 GHz (2 – 10 GHz)



Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
902.4817				115.07	Peak Emission	V					N/A	Peak
1025.92	68.69	7.75	-18.94	57.5	Peak Max	V	100	107	74	-16.5	Pass	
1025.92	53.85	7.75	-18.94	42.67	Average Max	H	134	324	54	-11.33	Pass	
9025.1	54.89	6.21	0.03	61.13	Peak Max	H	100	190	74	-12.87	Pass	
9025.1	26.87	6.21	0.03	33.11	Average Max	V	100	77	54	-20.89	Pass	
3609.852	68.06	3.67	-11.09	60.63	Peak Max	V	113	194	74	-13.37	Pass	
3609.852	47.23	3.67	-11.09	39.8	Average Max	H	130	331	54	-14.2	Pass	
4512.352	66.05	4.18	-8.77	61.47	Peak Max	V	124	67	74	-12.53	Pass	
4512.352	53.9	4.18	-8.77	49.32	Average Max	V	124	67	54	-4.68	Pass	
2707.479	70.42	3.17	-10.94	62.65	Peak Max	V	100	323	74	-11.35	Pass	
2707.479	55.38	3.17	-10.94	47.61	Average Max	V	100	323	54	-6.39	Pass	
8122.198	55.28	5.67	-0.87	60.08	Peak Max	H	103	49	74	-13.92	Pass	
8122.198	33.83	5.67	-0.87	38.63	Average Max	H	103	49	54	-15.37	Pass	
5414.83	63.08	4.62	-8.43	59.27	Peak Max	V	136	98	74	-14.73	Pass	
5414.83	43.74	4.62	-8.43	39.93	Average Max	H	132	228	54	-14.07	Pass	
1804.922	71.1	9.73	-13.66	67.18	Peak Max	V	110	122	115.07	-47.89	Pass	NRB

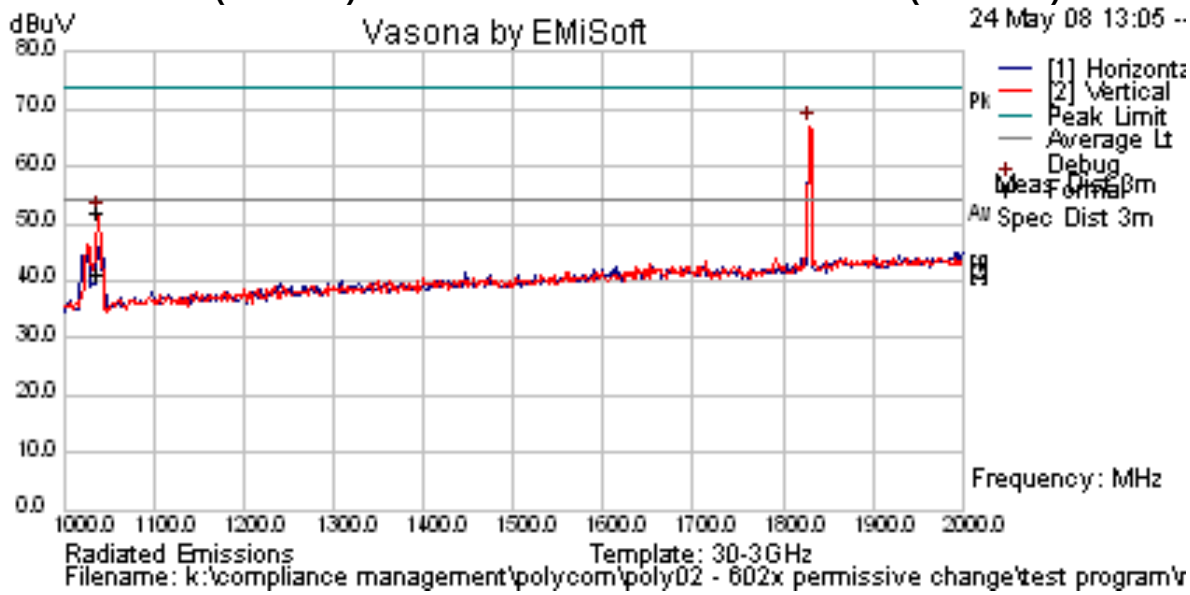
Peak – Peak Emission
NRB – Non-restricted band emission

Ch 0 902.4817 MHz Peak Emission = 115.07dBµV/m

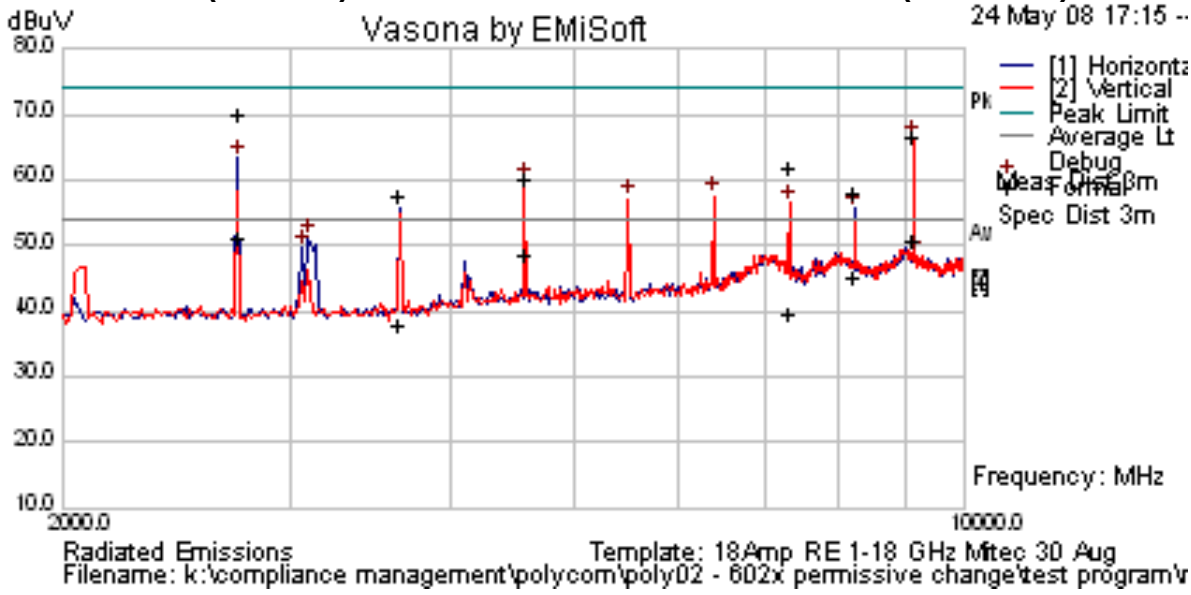


CHANNEL 26

Ch 26 (914.7370) MHz Radiated Emissions Above 1 GHz (1 – 2 GHz)



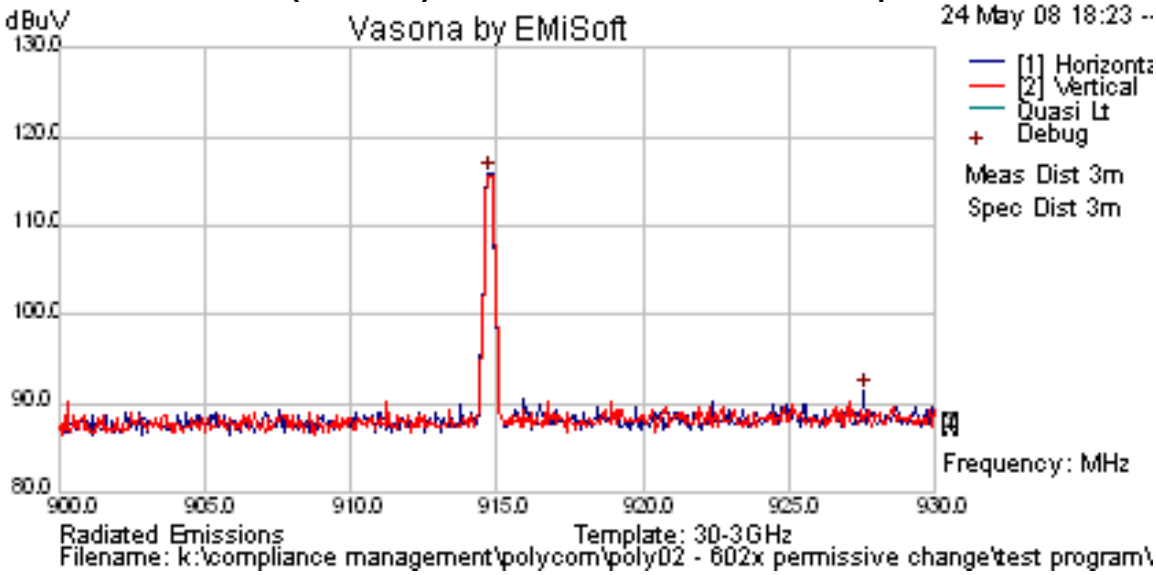
Ch 26 (914.7370) MHz Radiated Emissions Above 1 GHz (2 – 10 GHz)



Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
914.7370				115.79	Peak Emission	V					N/A	Peak
9147.41	60.85	6.22	-0.23	66.84	Peak Max	V	100	168	74	-7.16	Pass	
9147.41	44.94	6.22	-0.23	50.92	Average Max	V	100	168	54	-3.08	Pass	
2744.136	77.82	3.19	-11.01	70	Peak Max	H	100	118	74	-4.00	Pass	
2744.136	58.88	3.19	-11.01	51.06	Average Max	H	100	118	54	-2.94	Pass	
4573.792	64.64	4.24	-8.71	60.16	Peak Max	V	137	89	74	-13.84	Pass	
4573.792	53.28	4.24	-8.71	48.8	Average Max	V	137	89	54	-5.20	Pass	
7317.79	59.18	5.44	-2.87	61.76	Peak Max	V	136	164	74	-12.24	Pass	
7317.79	37.08	5.44	-2.87	39.66	Average Max	V	136	164	54	-14.34	Pass	
3659.402	64.76	3.7	-10.9	57.56	Peak Max	V	112	173	74	-16.44	Pass	
3659.402	45.05	3.7	-10.9	37.85	Average Max	V	112	173	54	-16.15	Pass	
8232.02	53.42	5.74	-1.18	57.97	Peak Max	H	100	164	74	-16.03	Pass	
8232.02	40.46	5.74	-1.18	45.02	Average Max	H	100	164	54	-8.98	Pass	
1038.063	63.21	7.78	-18.99	52	Peak Max	V	142	98	74	-22.00	Pass	
1038.063	52.36	7.78	-18.99	41.14	Average Max	H	191	326	54	-12.86	Pass	
1829.659	70.79	9.81	-13.48	67.12	Peak [Scan]	V	100	0	115.79	-48.67	Pass	NRB

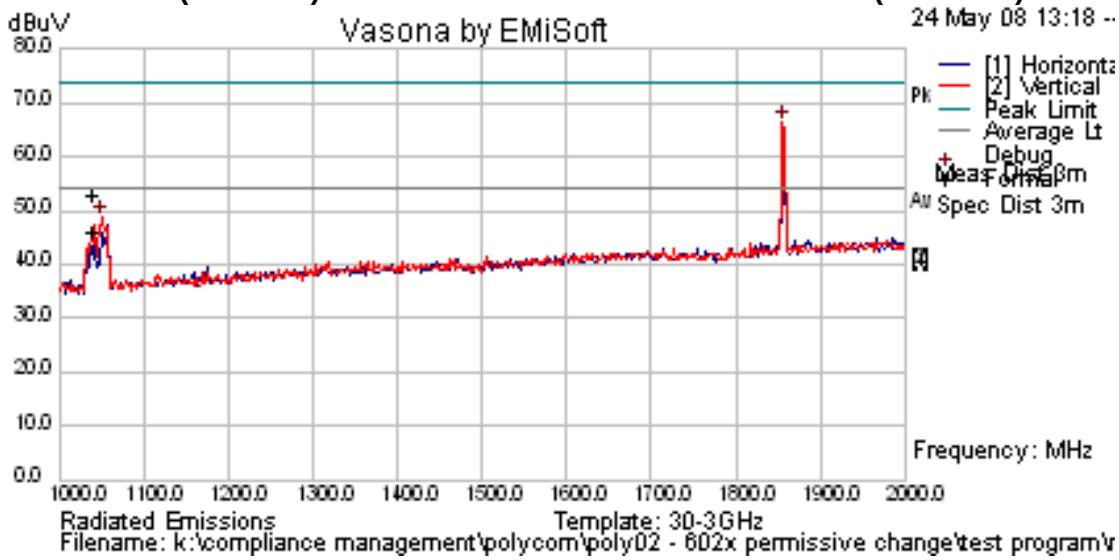
Peak – Peak Emission
NRB – Non-restricted band emission

Ch 26 (914.7370) MHz Peak Emission = 115.79dBµV/m

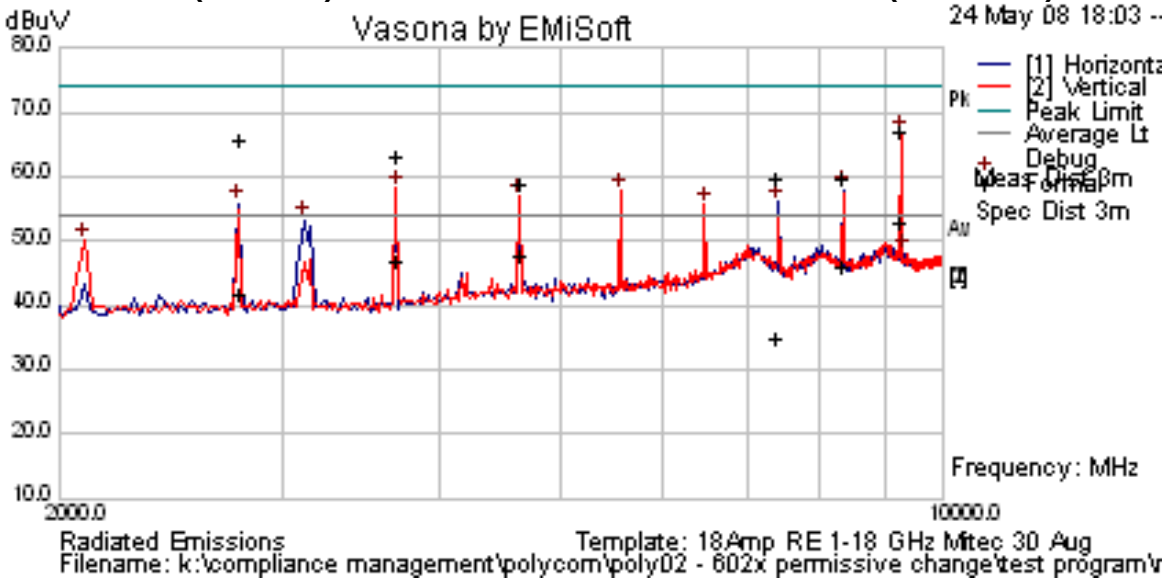


CHANNEL 52

Ch 52 (927.4826) MHz Radiated Emissions Above 1 GHz (1 – 2 GHz)



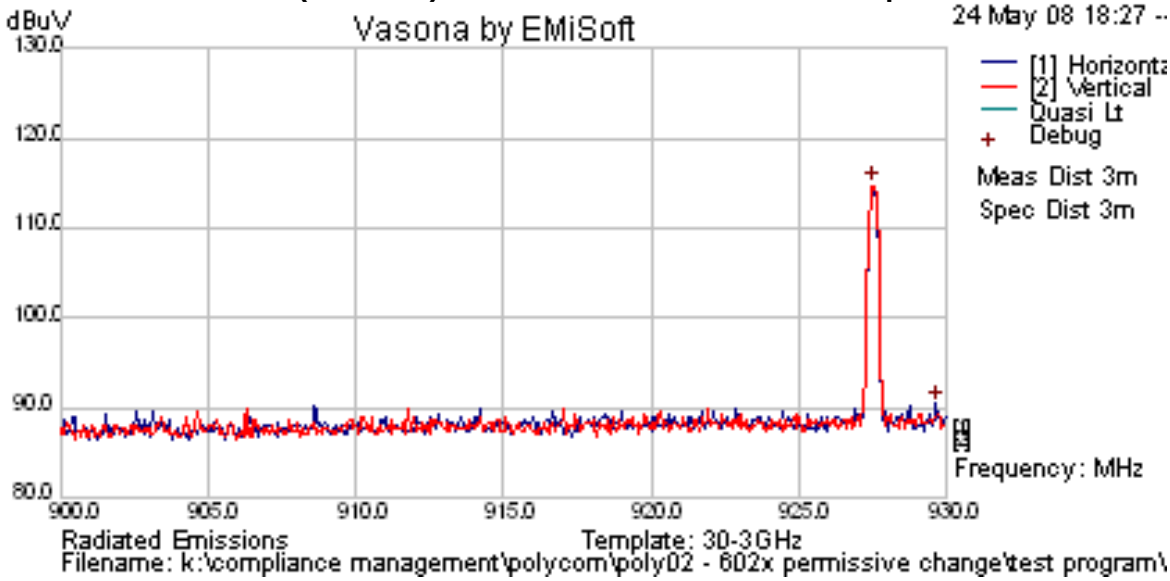
Ch 52 (927.4826) MHz Radiated Emissions Above 1 GHz (2 – 10 GHz)



Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
927.4826				114.72	Peak Emission	V					N/A	Peak
3709.985	70.28	3.73	-10.77	63.25	Peak Max	V	119	200	74	-10.75	Pass	
3709.985	54.09	3.73	-10.77	47.05	Average Max	V	119	200	54	-6.95	Pass	
8347.166	55.54	5.81	-1.56	59.79	Peak Max	V	103	214	74	-14.21	Pass	
8347.166	41.87	5.81	-1.56	46.11	Average Max	V	103	214	54	-7.89	Pass	
4637.5	63.34	4.3	-8.69	58.95	Peak Max	V	151	77	74	-15.05	Pass	
4637.5	52.12	4.3	-8.69	47.73	Average Max	V	151	77	54	-6.27	Pass	
7419.731	57.73	5.46	-3.42	59.78	Peak Max	H	117	286	74	-14.22	Pass	
7419.731	32.76	5.46	-3.42	34.81	Average Max	V	98	71	54	-19.19	Pass	
2782.395	73.34	3.22	-10.95	65.61	Peak Max	V	103	156	74	-8.39	Pass	
2782.395	49.29	3.22	-10.95	41.56	Average Max	H	115	84	54	-12.44	Pass	
9274.618	61.54	6.23	-0.59	67.18	Peak Max	V	98	205	74	-6.82	Pass	
9274.618	47.28	6.23	-0.59	52.92	Average Max	V	98	205	54	-1.08	Pass	
1040.256	64.26	7.78	-19.03	53.01	Peak Max	H	129	30	74	-20.99	Pass	
1040.256	57.25	7.78	-19.03	46	Average Max	H	129	30	54	-8.00	Pass	
1855.711	69.9	9.88	-13.45	66.33	Peak Max	V	100	0	114.72	-48.39	Pass	NRB

Peak – Peak Emission
NRB – Non-restricted band emission

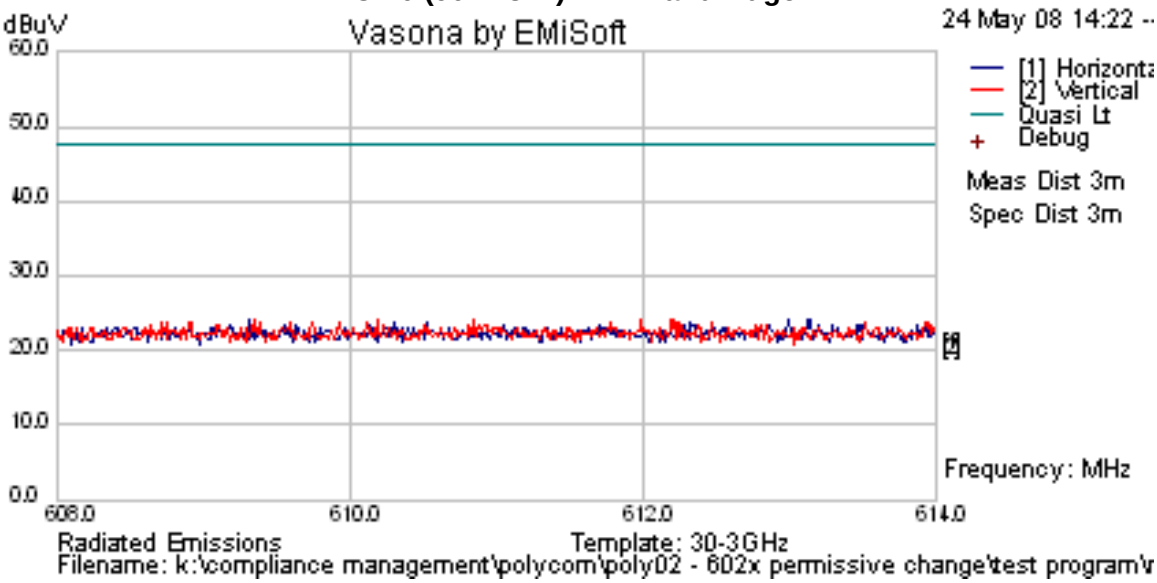
Ch 52 (927.4826) MHz Peak Emission = 114.72dBµV/m



BAND-EDGE

Channel 0 – 902.4817 MHz

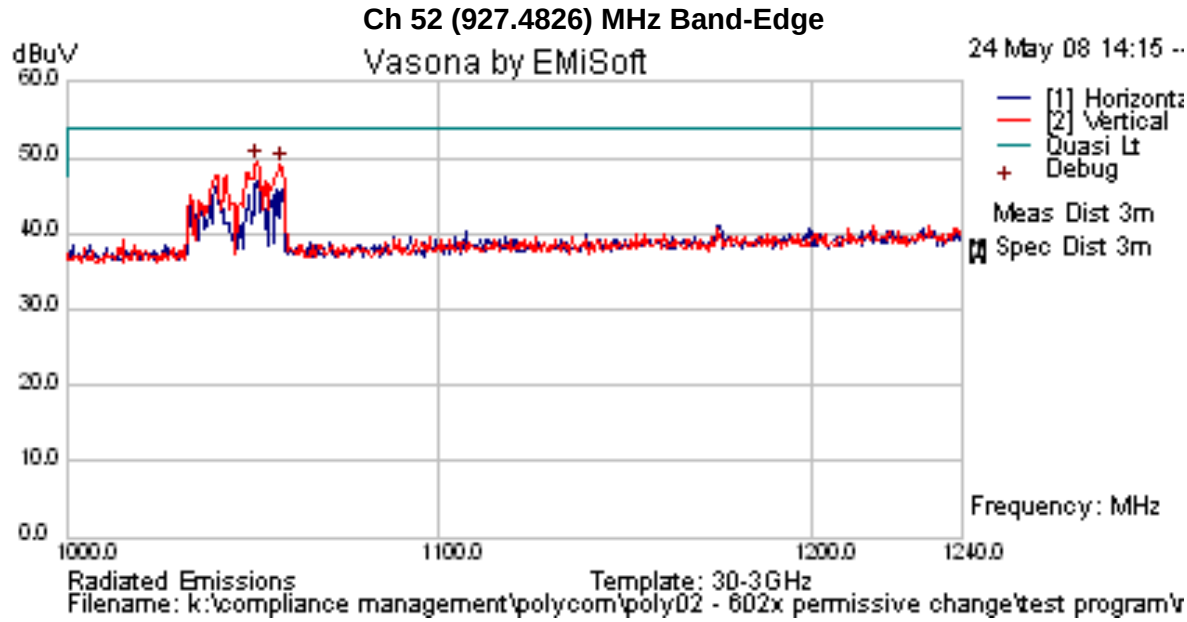
Ch 0 (902.4817) MHz Band-Edge



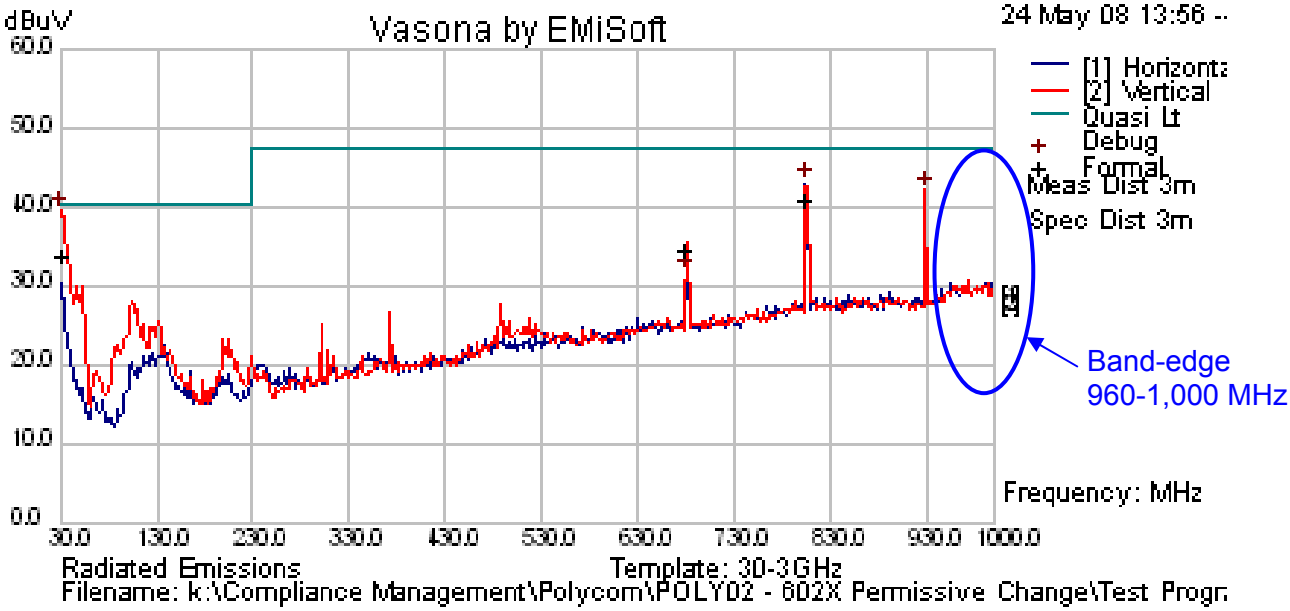
No band-edge emissions in the range 608 – 614 MHz when transmitting on Channel 0

Band-edge Emissions

Channel 52 – 927.4826 MHz



Channel 52 Digital Emissions 0.03 – 1 GHz



Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1040.256	64.26	7.78	-19.03	53.01	Peak Max	H	129	30	74	-20.99	Pass	
1040.256	57.25	7.78	-19.03	46	Average Max	H	129	30	54	-8.0	Pass	

FCC, Part 15 Subpart C §15.247(d)
Industry Canada RSS-210 §A8.5

Specification

FCC Part 15 Subpart C §15.247(d)

Industry Canada §A8.5

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 a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

Laboratory Measurement Uncertainty for Radiated Emissions

Measurement uncertainty	+5.6/ -4.5 dB

Traceability

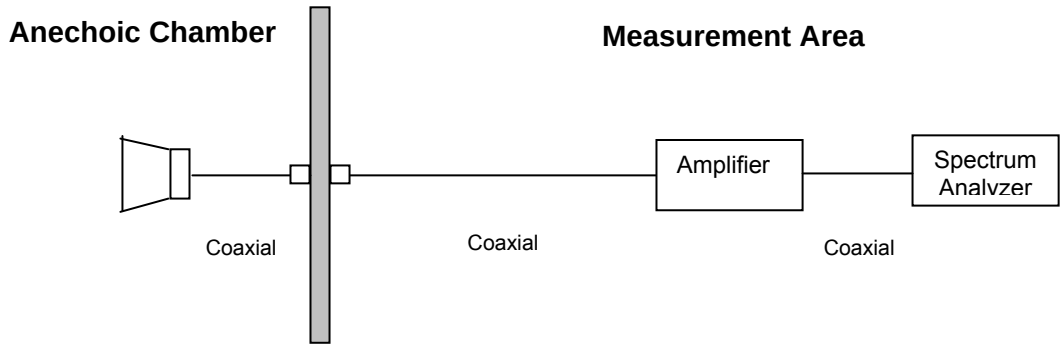
Method	Test Equipment Used
Measurements were made per work instruction WI-03 'Measurement of Radiated Emissions'	0088, 0158, 0134, 0304, 0311, 0315, 0310, 0312

5.1.8. Receiver Radiated Spurious Emissions

Industry Canada RSS-Gen §7.2.3

Test Procedure
Receiver emissions were measured on the device on the mid channel. The EUT was placed in Receiver mode and emissions were measured 0.03 – 10 GHz.

Test Measurement Set up



Spurious emissions test configuration

Measurement Results of Stand –By Spurious Emissions

Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

Receiver Spurious Emissions 1 - 10 GHz

Receiver Spurious Emissions 1 – 10 GHz

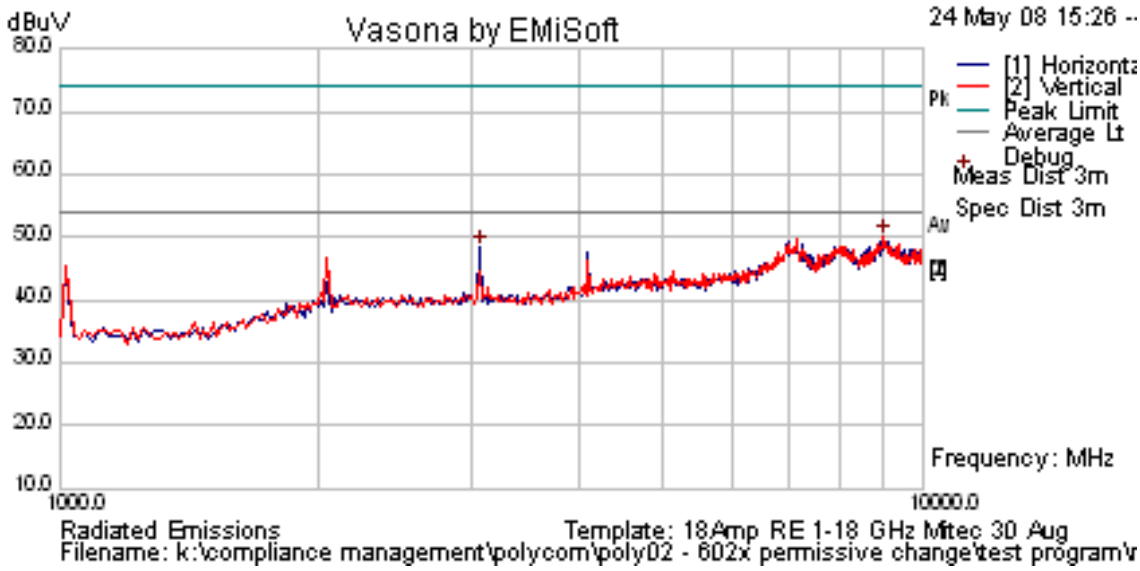


TABLE OF RESULTS –

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail
3074.148	55.81	3.41	-10.98	48.24	Peak Max	H	129	330	74	-25.76	Pass
9026.052	43.91	6.21	0.02	50.14	Peak Max	V	100	0	74	-23.86	Pass
3074.148	48.13	3.41	-10.98	40.56	Average Max	H	129	330	54	-13.44	Pass
9026.052	35.91	6.21	0.02	42.14	Average Max	V	100	0	54	-11.86	Pass

Specification
Antenna Conducted Measurement
Industry Canada RSS-Gen §7.2.3

If the device has a detachable antenna of known antenna impedance, then the antenna conducted method is permitted in lieu of a radiated measurement.
Receiver spurious emissions at any discrete frequency shall not exceed 2 nanowatts (-57 dBm) in the band 30-1000 MHz, or 5 nanowatts (-53 dBm) above 1 GHz.

Laboratory Measurement Uncertainty for Conducted Spurious Emissions

Measurement uncertainty	±2.37 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-05 'Measurement of Spurious Emissions'	0088, 0158, 0193, 0252, 0313, 0314, 0070, 0116, 0117.

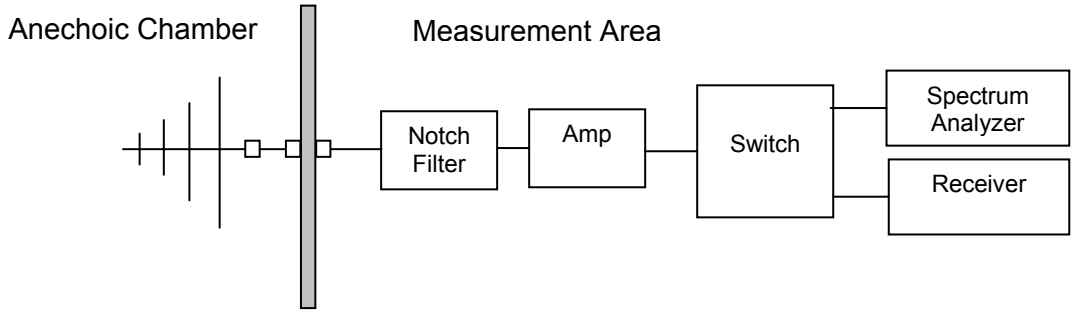
5.1.9. Radiated Spurious Emissions (30M-1 GHz)

FCC, Part 15 Subpart C §15.247(d), §15.205, 15.209
Industry Canada RSS-210 §A8.5, 2.2, 2.6.

Test Procedure
Preliminary radiated emissions were measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarity. The emissions are recorded with a CISPR compliant spectrum analyzer in peak hold mode. Emissions closest to the limits are measured in the quasi-peak mode with the tuned receiver using a bandwidth of 120 kHz. Only the highest emissions relative to the limit are listed. A photograph of the test set-up in the anechoic chamber in Section 6 Test Set-Up Photographs.

A notch filter with >70 dB of rejection was used to remove the fundamental frequency.

Test Measurement Set up



Field Strength Calculation
The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. In this test facility, the Antenna Factor, Cable Loss, and Amplifier Gains are loaded into the Rohde & Schwarz Receiver and the corrected field strength can be read directly on the receiver.

$$FS = R + AF + CORR$$

where:

FS = Field Strength
R = Measured Receiver Input Amplitude
AF = Antenna Factor
CORR = Correction Factor = CL – AG + NFL
CL = Cable Loss
AG = Amplifier Gain

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

FS = 51.5 + 8.5 + 1.3 - 26.0 +1 = 36.3dBμV/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 = 100μV/m
48 dBμV/m = 250μV/m

Measurement Results for Radiated Emissions (0.03 – 1 GHz)

Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

Radiated Emissions Below 1 GHz (Class B)

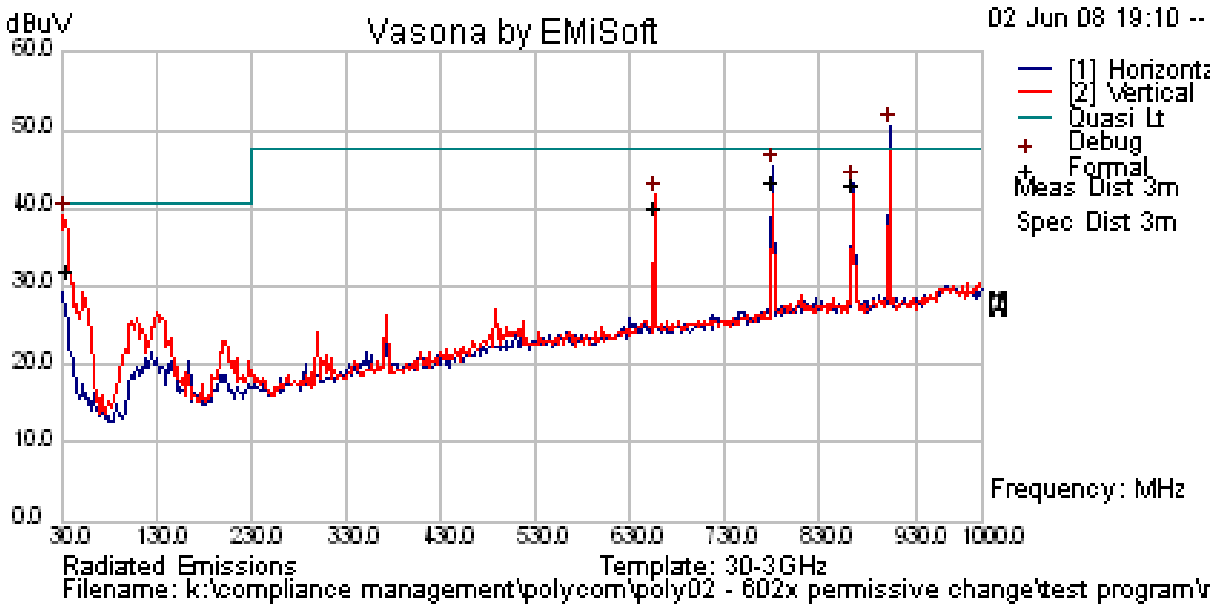
TABLE OF RESULTS –DIGITAL EMISSIONS 0.03 – 1 GHz

Channel 902.4817 MHz

EUT Transmitting Maximum Output Power

Phone orientation vertical in charging cradle with power supply unit

Channel 0 Digital Emissions 0.03 – 1 GHz



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
34.72	46.92	3.47	-18.4	32	Quasi Max	V	128	69	40.5	-8.5	Pass
779.019[1]	57.69	7.05	-21.5	43.24	Quasi Max	V	110	52	47.5	-4.26	Pass
864.112	56.42	7.21	-20.67	42.97	Quasi Max	H	167	11	47.5	-4.53	Pass
655.785	56.39	6.55	-22.89	40.05	Quasi Max	V	99	201	47.5	-7.45	Pass

NOTE[1]: see Section 3.7 Equipment Modifications

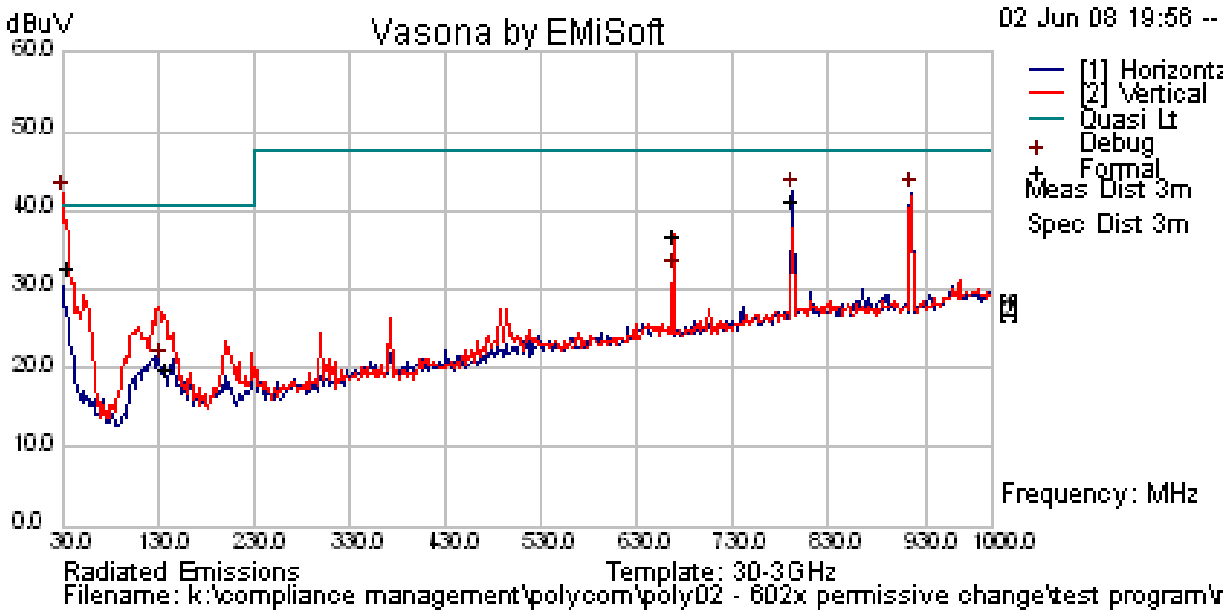
TABLE OF RESULTS – DIGITAL EMISSIONS 0.03 – 1 GHz

Channel 914.7370 MHz

EUT Transmitting Maximum Output Power

Phone orientation vertical in charging cradle with power supply unit

Channel 26 Digital Emissions 0.03 – 1 GHz



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
34.89	47.75	3.48	-18.56	32.67	Quasi Max	V	98	89	40.5	-7.83	-7.83
791.264[1]	55.32	7.13	-21.43	41.01	Quasi Max	H	98	37	47.5	-6.49	-6.49
667.618	53.19	6.58	-22.95	36.82	Quasi Max	V	98	216	47.5	-10.68	-10.68
139.242	44.18	4.42	-28.84	19.76	Quasi Max	V	110	77	40.5	-20.74	-20.74

NOTE[1]: see Section 3.7 Equipment Modifications

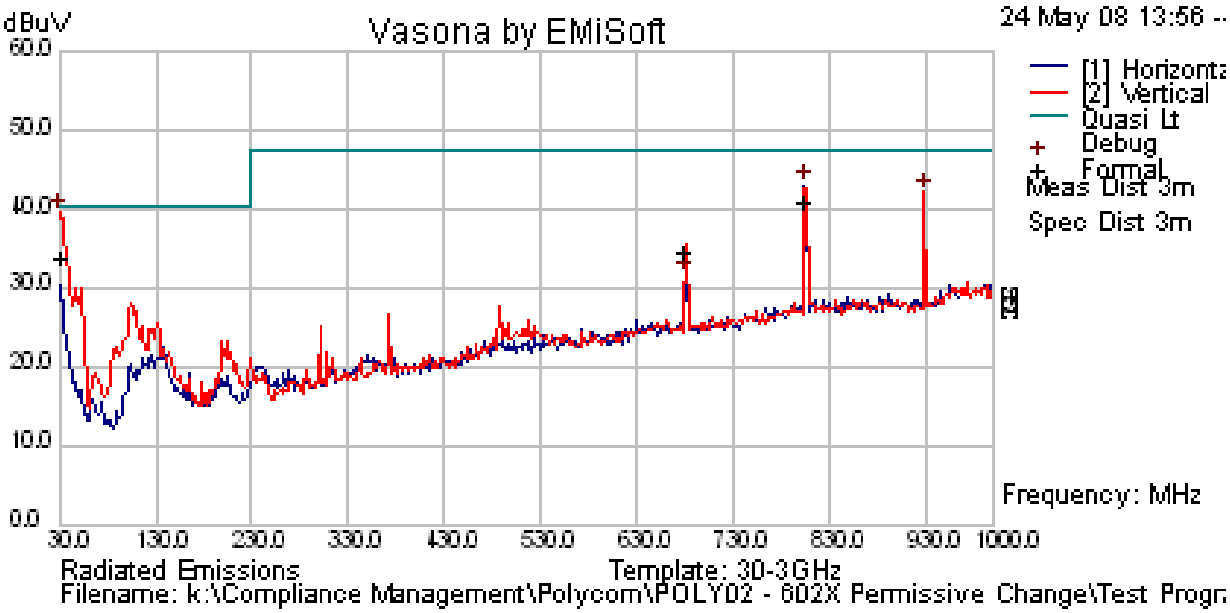
TABLE OF RESULTS – DIGITAL EMISSIONS 0.03 – 1 GHz

Channel 927.4826 MHz

EUT Transmitting Maximum Output Power

Phone orientation vertical in charging cradle with power supply unit

Channel 52 Digital Emissions 0.03 – 1 GHz



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
34.609	48.63	3.47	-18.29	33.81	Quasi Max	V	101	18	40.5	-6.69	Pass
804.008	55	7.18	-21.16	41.02	Quasi Max	H	183	9	47.5	-6.48	Pass
680.359	51.09	6.62	-22.9	34.81	Quasi Max	V	98	167	47.5	-12.69	Pass

Specification

Limits

§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.

§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.

§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.

§15.209 (a) and **RSS-Gen §2.2** Limit Matrix

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 Radiated Emissions

Measurement uncertainty	+5.6/ -4.5 dB

Traceability

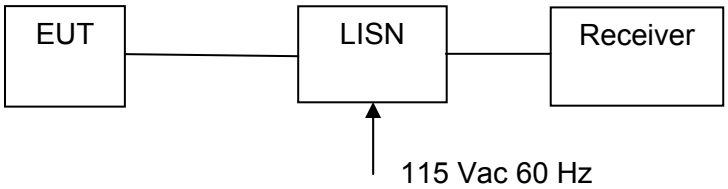
Method	Test Equipment Used
Measurements were made per work instruction WI-03 'Measurement of Radiated Emissions'	0088, 0158, 0134, 0304, 0311, 0315, 0310, 0312, 0341

5.1.10. AC Wireline Conducted Emissions (150 kHz – 30 MHz)

FCC, Part 15 Subpart C §15.207
Industry Canada RSS-Gen §7.2.2

Test Procedure
The EUT is configured in accordance with ANSI C63.4. The conducted emissions are measured in a shielded room with a spectrum analyzer in peak hold in the first instance. Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation. The highest emissions relative to the limit are listed.

Test Measurement Set up



Measurement set up for AC Wireline Conducted Emissions Test

Measurement Results for AC Wireline Conducted Emissions (150 kHz – 30 MHz)

Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

Radio Parameters:
Transmitting on Channel 26. Channel 914.7370 MHz

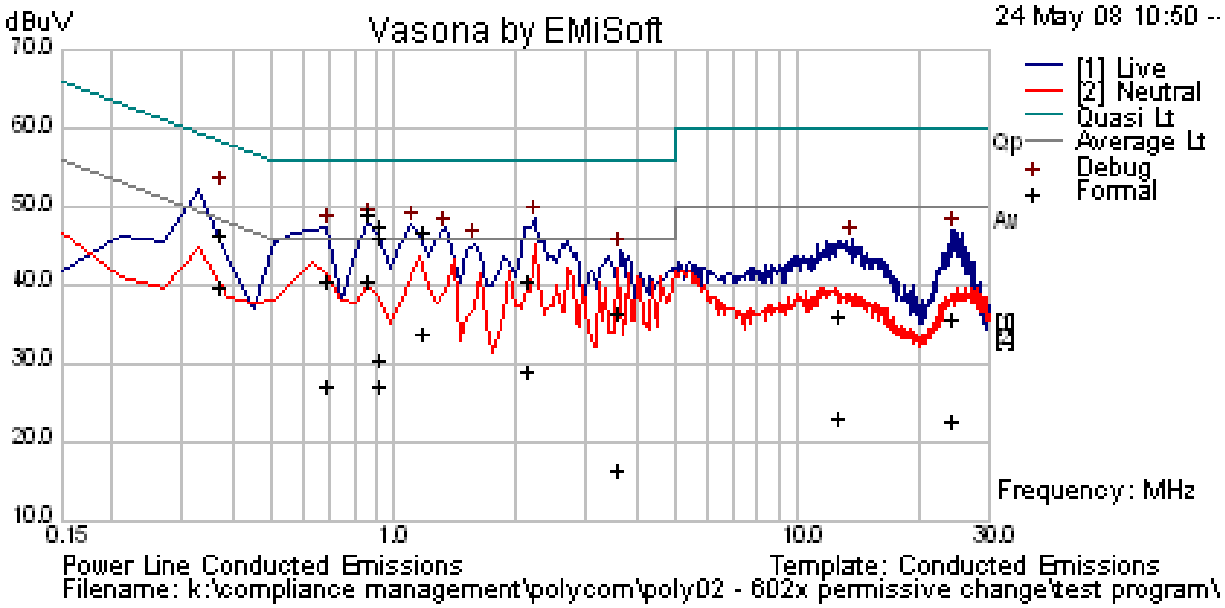
Transmit Power: Full Power

TABLE OF RESULTS

115 Vac 60 Hz

Freq (MHz)	Line	Peak (dBµV)	QP (dBµV)	QP Limit (dBµV)	QP Margin (dB)	Ave. (dBµV)	Ave. Limit (dBµV)	Ave. Margin (dB)
0.375	Live	52.27	44.66	58.38	-13.73	38.09	48.38	-10.3
2.182	Live	48.52	38.86	56	-17.14	27.14	46	-18.86
0.874	Live	48.03	47.13	56	-8.87	38.7	46	-7.3
1.186	Live	47.84	45	56	-11	31.94	46	-14.06
0.686	Live	47.32	38.72	56	-17.28	25.54	46	-20.46
0.931	Live	47.84	45.93	56	-10.07	28.86	46	-17.14

ac/dc Converter Conducted Emissions (150 kHz – 30 MHz)



Specification

Limit

§15.207 (a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μΩ line impedance stabilization network (LISN), see §15.207 (a) matrix below. Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

RSS-Gen §7.2.2
The radio frequency voltage that is conducted back into the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in the table below. The tighter limit applies at the frequency range boundaries.

§15.207 (a) and **RSS-Gen §7.2.2** Limit Matrix
The lower limit applies at the boundary between frequency ranges

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency

Laboratory Measurement Uncertainty for Conducted Emissions

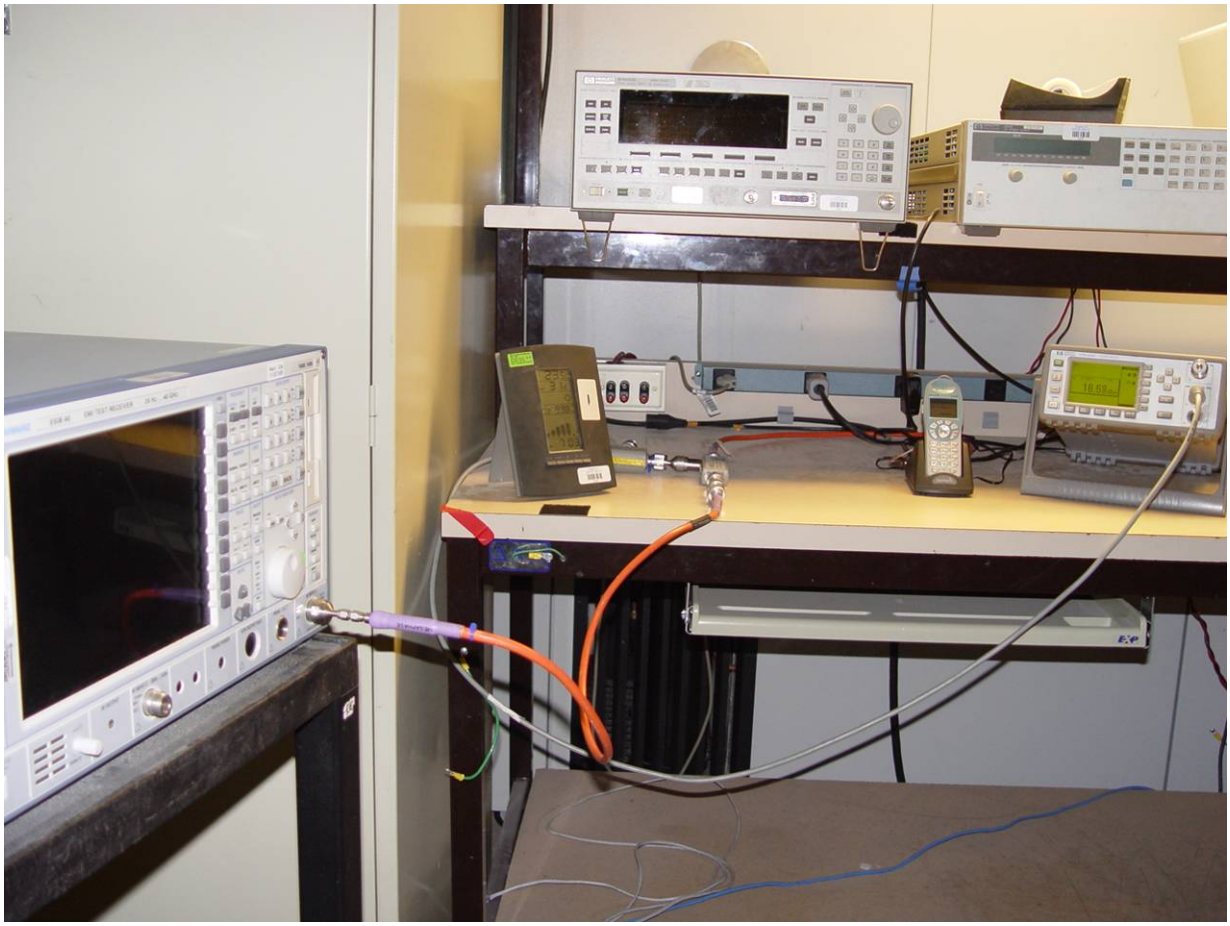
Measurement uncertainty	±2.64 dB

Traceability

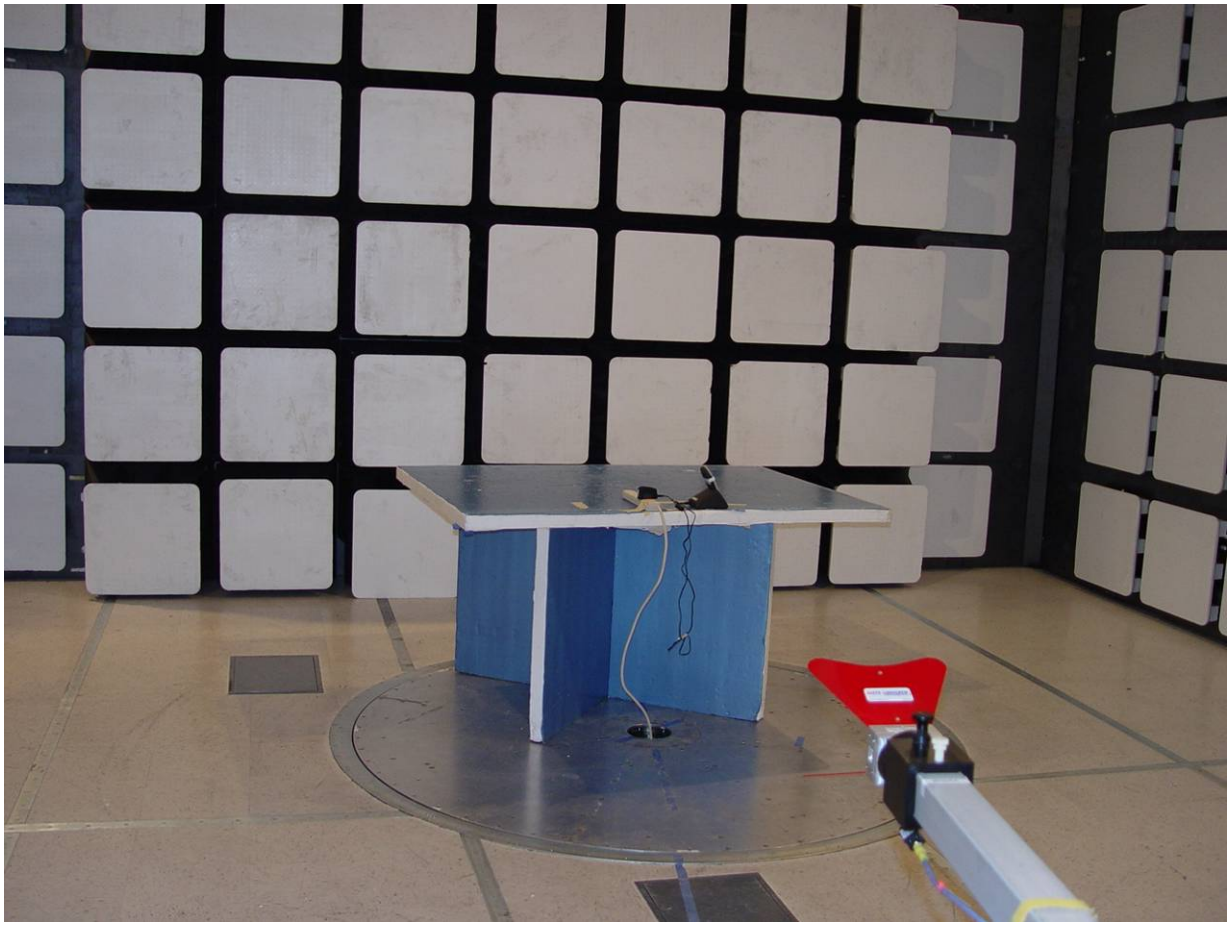
Method	Test Equipment Used
Measurements were made per Sanmina work instruction	0190, 0193

6. PHOTOGRAPHS

6.1. General Measurement Test Set-up

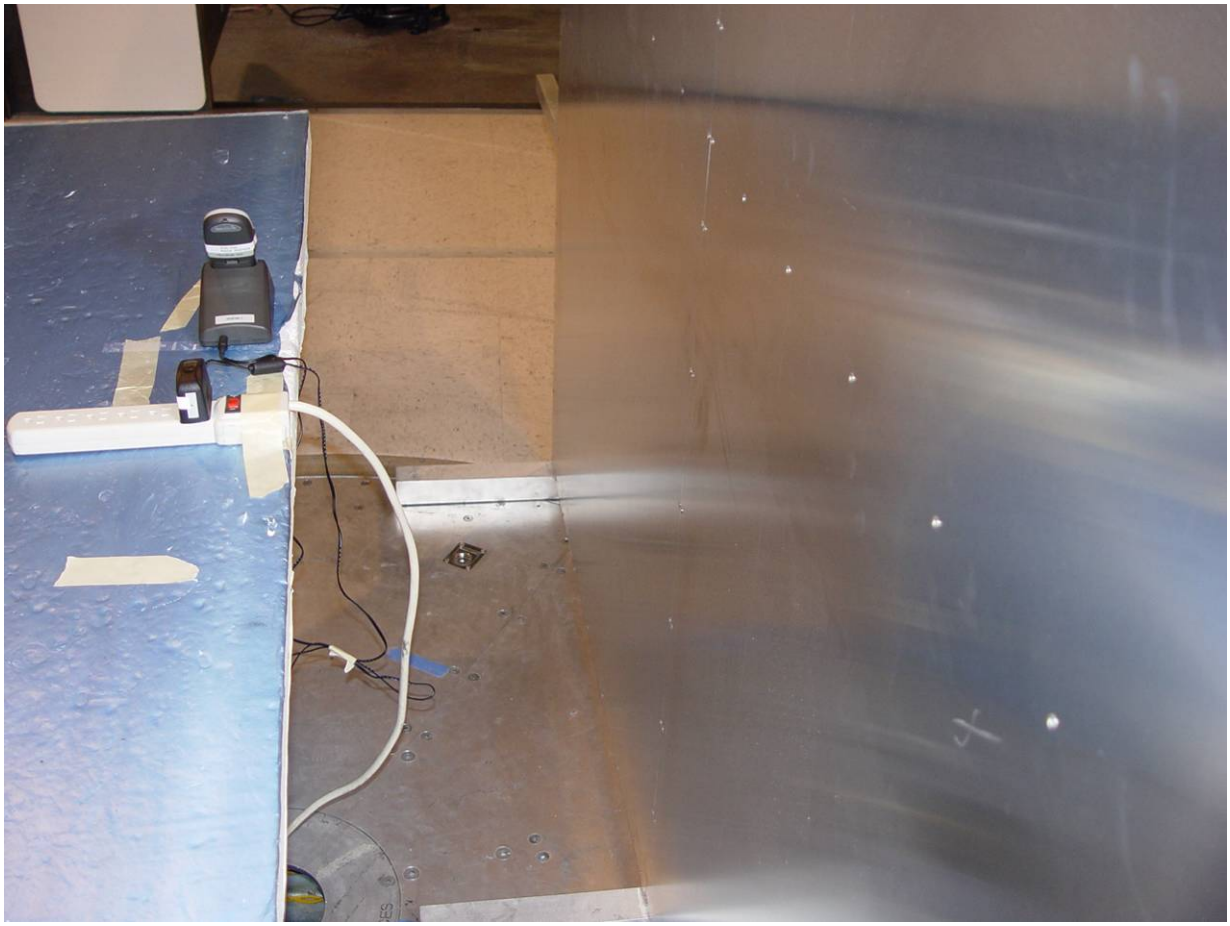


6.2. Radiated Emissions >1 GHz



6.3. Radiated Emissions <1 GHz

6.4. AC Wireline Conducted Emissions (150 kHz – 30 MHz)



7. TEST EQUIPMENT DETAILS

Asset #	Instrument	Manufacturer	Part #	Serial #
0088	Spectrum Analyzer	Hewlett Packard	8564E	3410A00141
0104	1-18GHz Horn Antenna	The Electro-Mechanics Company	3115	9205-3882
0134	Amplifier	Com Power	PA 122	181910
0158	Barometer /Thermometer	Control Co.	4196	E2846
0193	EMI Receiver	Rhode & Schwartz	ESI 7	838496/007
0252	SMA Cable	Megaphase	Sucoflex 104	None
0310	2m SMA Cable	Micro-Coax	UFA210A-0-0787-3G03G0	209089-001
0312	3m SMA Cable	Micro-Coax	UFA210A-1-1181-3G0300	209092-001
0313	Coupler	Hewlett Packard	86205A	3140A01285
0314	30dB N-Type Attenuator	ARRA	N9444-30	1623
0070	Power Meter	Hewlett Packard	437B	3125U11552
0116	Power Sensor	Hewlett Packard	8485A	3318A19694
0117	Power Sensor	Hewlett Packard	8487D	3318A00371
0184	Pulse Limiter	Rhode & Schwartz	ESH3Z2	357.8810.52
0190	LISN	Rhode & Schwartz	ESH3Z5	836679/006
0293	BNC Cable	Megaphase	1689 1GVT4	15F50B001
0307	BNC Cable	Megaphase	1689 1GVT4	15F50B002
0341	902-928 MHz Notch Filter	EWT	EWT-14-0199	H1

440 Boulder Court, Suite 200
Pleasanton, CA 94566, USA
Tel: 1.925.462.0304
Fax: 1.925.462.0306
www.micomlabs.com