COMPLIANCE WORLDWIDE INC.
TEST REPORT 373-14

In Accordance with the Requirements of

FCC PART 15.247, SUBPART C
INDUSTRY CANADA RSS 210, ISSUE 8

Low Power License-Exempt Radio Communication Devices
Intentional Radiators

Issued to

Forsythe Technologies Worldwide
23924 Victory Blvd.
Woodland Hills, CA 91367
(818) 710-8694

for the

Rat Telemetry System
Pressure and Temperature Transceiver
Large Module Set

FCC ID: 2AC4C-AU430001LG
IC: 12302A-AU430001LG

Report Issued on August 29, 2014

Tested by

Brian F. Breault

Reviewed by

Larry K. Stillings

Table of Contents

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1. Scope

This test report certifies that the Forsythe Technologies Worldwide Inc. Rat Telemetry System Pressure and Temperature Transceiver, as tested, meets the FCC Part 15.247**,** and Industry Canada RSS 210, Issue 8 requirements. The scope of this test report is limited to the test sample provided by the client, only in as much as that sample represents other production units. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be required.

2. Product Details

2.1. Manufacturer: Forsythe Technologies Worldwide Inc.

2.2. Model Number: 430001-IMP-XX (XX denotes the parameter being measured)

2.3. Serial Number: N/A

2.4. Description: Pressure and Temperature Transceiver

2.5. Power Source: 3.6 volt Lithium Battery

Note: For production units, two 1.55 (3.1 VDC total) volt Silver Oxide batteries will be used. The 3.6 volt Lithium battery was installed in the sample unit to provide a long enough runtime to perform the testing. Output amplitude checks were made after each series of tests to ensure the device continued operating normally.

2.6. EMC Modifications: None

3. Product Configuration

3.1. Operational Characteristics & Software

Operating Instructions for Test

- The device under test is configured to begin transmitting a modulated signal when it is powered on. To power on the device, a magnet is removed from outside the case. The device transmits at a single frequency of 916.5 MHz.

3.2. EUT Hardware

Manufacturer	Model/Part # / Options	Serial Number	Input Voltage	Frq (Hz)	Description/Function
Forsythe Technologies Worldwide	Pressure and Temperature Transceiver	N/A	3.6	DC	Large module set

3.3. EUT CONNECTED Hardware

Manufacturer	Model	Serial Number	Description
None	N/A	N/A	

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3. Product Configuration continued

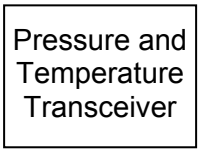
3.4. EUT Cables/Transducers

Manufacturer	Model/Part #	Len. (m)	Shield Y/N	Description/Function
None	N/A			

3.5. Support Equipment

Manufacturer	Model/Part # Options	Input Voltage	Input Freq	Description/Function
None				

3.6. Block Diagram



4. Measurements Parameters

4.1. Measurement Equipment Used to Perform Tests

Device	Manufacturer	Model No.	Serial No.	Cal Due	Cal Interval
EMI Test Receiver, 9kHz - 7GHz	Rohde & Schwarz	ESR7	101156	4/4/2015	2 yrs
Spectrum Analyzer	Rohde & Schwarz	FSV40	100899	6/6/2015	2 yrs
Microwave Preamp	Hewlett Packard	8449B	3008A01323	6/5/2015	2 yrs
Loop Antenna, Passive, 9 kHz to 30 MHz	EMCO	6512	9309-1139	8/28/2014	2 yrs
Biconilog Antenna, 30 MHz to 2000 MHz	Sunol Sciences	JB1	A050913	5/15/2015	2 yrs
Double Ridged Antenna, 1 - 18 GHz	ETS-Lindgren	3117	00143292	1/14/2015	2 yrs
1.8 to 9.2 GHz Bandpass Filter	Mini-Circuits	VHP-16	0341	2/4/15	1 yr

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4. Measurements Parameters (continued)

4.2. Measurement & Equipment Setup

Test Dates:	August 15th to 22th, 2014
Test Engineer:	Brian Breault
Normal Site Temperature (15 - 35°C):	21.7
Relative Humidity (20 -75%RH):	33%
Frequency Range:	30 kHz to 10 GHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	9 kHz – 150 kHz to 30 MHz 120 kHz– 30 MHz to 1 GHz 1 MHz – Above 1 GHz
EMI Receiver Avg Bandwidth:	30 kHz – 150 kHz to 30 MHz 300 kHz– 30 MHz to 1 GHz 3 MHz – Above 1 GHz
Detector Function:	Peak, QP - 150 kHz to 1 GHz Peak, Avg - Above 1 GHz Unless otherwise specified.

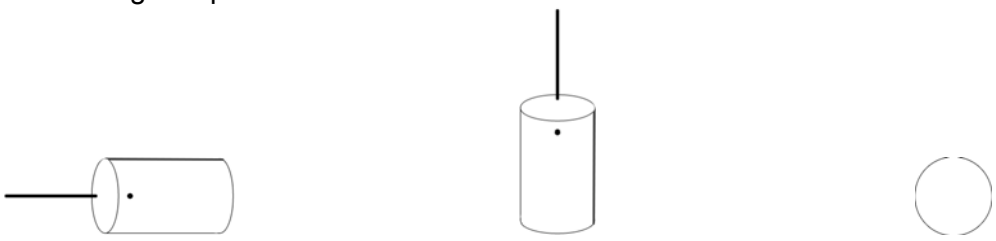
4.3. Measurement Procedures

Test measurements were made in accordance FCC Part 15.247, IC RSS-210 Annex II: Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5850 MHz, and 24.0 - 24.25 GHz.

The test procedures used to perform the measurements for this report are detailed in ANSI C63.10-2009.

In addition, the measurements were performed with the device in three orthogonal positions in accordance with ANSI C63.10-2009, sections 5.10.1, 6.3.2b, 6.4.4.1c, 6.5.4.1c, and 6.6.4.1c. In order to determine the three orthogonal positions on the cylindrically shaped device, a dot was placed at the top (antenna end) of the device opposite the antenna. This was designated the front of the device.

Three orthogonal positions:



X – Left “side” down
Front toward Antenna
at 0° azimuth

Y – Bottom down
. Front toward Antenna
at 0° azimuth

Z – Front up
Bottom toward Antenna
at 0° azimuth

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4. Measurements Parameters

4.4. Duty Cycle

The device under test was configured to run continuously at a duty cycle greater than 99%. The methodology used to determine the duty cycle is detailed in section 7.11.

4.5. Measurement Uncertainty

The following uncertainties are expressed for an expansion/coverage factor of K=2.

RF Frequency	$\pm$ 1x10^{-8}
Radiated Emission of Transmitter	$\pm$ 4.55 dB
Radiated Emission of Receiver	$\pm$ 4.55 dB
Temperature	$\pm$ 0.91^{o} C
Humidity	$\pm$ 5%

5. Choice of Equipment for Test Suits

5.1 Choice of Model

This test report is based on the test sample supplied by the manufacturer and is reported by the manufacturer to be equivalent to the production units.

5.2 Presentation

This test sample was tested complete with all required ancillary equipment. Refer to Section 3 of this report for product equipment configuration.

5.3 Choice of Operating Frequencies

The Forsythe Technologies Worldwide Inc. Rat Telemetry System Pressure and Temperature Transceiver, as tested, utilizes a single channel at 916.5 MHz.

5.4 Modes of Operation

The Forsythe Technologies Worldwide Inc. Rat Telemetry System Pressure and Temperature Transceiver transmitter module was configured for a single mode of operation only. This test mode configured the transmitter to operate at a duty cycle greater than 99%.

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6. Measurement Summary

Test Requirement	FCC Rule Reference	IC Rule Reference	Test Report Section	Result
Antenna Requirement	15.203	RSS-GEN 7.1.2	7.1	Compliant
Minimum 6 dB Bandwidth	15.247 (a) (2)	RSS-210 A8.2	7.2	Compliant
99% Bandwidth	N/A	RSS-GEN 4.6.1	7.3	Compliant
Maximum Peak Conducted Output Power	15.247 (b) (1)	RSS-210 A8.4 (4)	7.4	Compliant
Operation with directional antenna gains greater than 6 dBi	15.247 (b) (4)	RSS-GEN 7.1.2	7.5	Compliant
Spurious Radiated Emissions	15.247 (d)	RSS-GEN 4.9	7.6	Compliant
Unwanted Emissions into Non-Restricted Bands	15.247 (d)	RSS-210 A8.5	7.7	Compliant
Harmonic Emissions in the Restricted Bands of Operation	15.247 (d)	RSS-210 A8.9	7.8	Compliant
Lower and Upper Band Edge	15.247 (d)	RSS-210 A8.5	7.9	Compliant
Maximum Power Spectral Density	15.247(e)		7.10	Compliant
Duty Cycle	ANSI C63.10, § 5.10.5		7.11	Noted
Conducted Emissions	15.207	RSS-GEN	---	Not Required
Public Exposure to Radio Frequency Energy Levels	15.247(i) 1.1307 (b) (1)	RSS-GEN 5.5 RSS-102	7.12	Compliant

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7. Measurement Data

7.1. Antenna Requirement (15.203, RSS GEN 7.1.2)

Requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section.

Conclusion: The transmitter module utilizes a soldered in place whip antenna. The antenna is not user replaceable in a normal configuration and use.

7.2. Minimum 6 dB Bandwidth

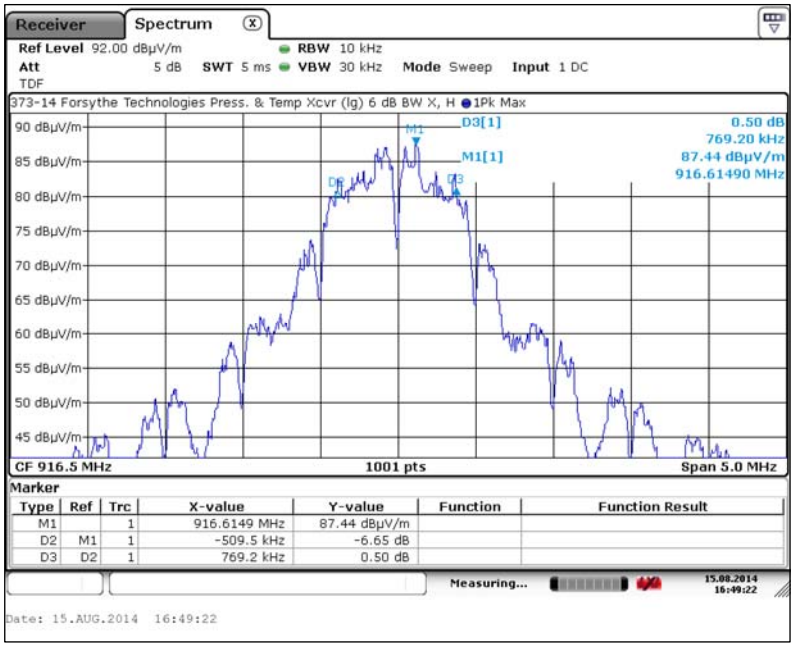
Requirement: (15.247 (a) (2), RSS 210 A8.2(a))
Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Procedure: This test was performed in accordance with the procedure detailed in ANSI C63.10:2009, section 6.9.1: Occupied bandwidth testing.

Conclusion: The device under test meets the minimum 500 kHz 6 dB bandwidth requirement.

Measurement Results - Minimum 6 dB Bandwidth

Frequency (MHz)	-6 dB Bandwidth (kHz)	Minimum -6 dB Bandwidth (kHz)	Result
916.5	769.2	> 500	Compliant



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7. Measurement Data (continued)

7.3. 99% Bandwidth (RSS 210)

Requirement: When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured.
The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth.

Procedure: This test was performed utilizing the automated 99% bandwidth function of the spectrum analyzer.

Conclusion: Compliant, for informational purposes only.

Measurement Results - 99% Bandwidth

Channel Frequency (MHz)	99% Power Bandwidth (MHz)
916.5	1.209

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7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power

Requirement: (15.247 (b) (3))
The maximum peak conducted output power of the intentional radiator shall not exceed the following: For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

Procedure: This test was performed in accordance with the procedure detailed in ANSI C63.10:2006, section 6.10.2.1 using a spectrum analyzer resolution bandwidth that is greater than the DUT 6 dB bandwidth.

Test Note[1]: The device under test does not facilitate conducted power measurements. Peak field strength measurements were taken and the results were then converted to units of power using the following formula:

$$P = \frac{(E \times d)^2}{(30 \times G)}$$

P = the power in Watts (power has been converted to milliwatts in the table).
E = the measured maximum field in V/m
G = the numeric gain of the transmitting antenna over an isotropic radiator.
d = the distance in meters of the field strength measurement.

[1] ANSI C63.10, section 7.8.2 Calculation of the peak output power of the EUT

Conclusion: The device under test meets the required maximum peak conducted output power level of 1 Watt.

Measurement Results – Maximum Peak Conducted Output Power

Freq.	Peak Field Strength	Distance	Antenna Gain[1]		Measured Output Power	Output Power Limit	Result
(MHz)	(dBµV/m)	(m)	(dBi)	(numeric)	(mW)	(mW)	
916.50	94.88	3.0	-2.00	0.631	1.46	1000.0	Compliant

[1] Provided by the product manufacturer.

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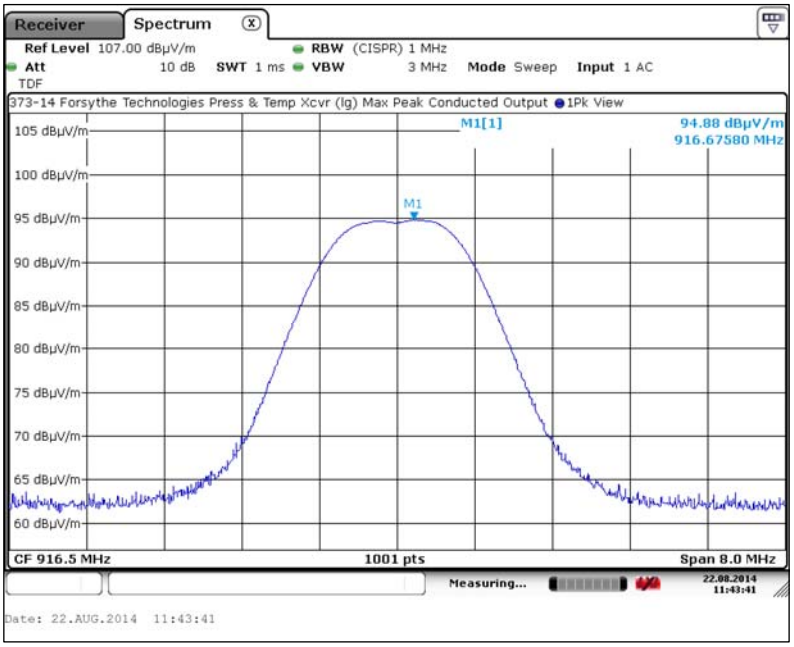
7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power (continued)



7.5. Operation with directional antenna gains greater than 6 dBi (15.247 (b)(4))

Requirement: If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of FCC Part 15.247, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Systems operating in the 2400 – 2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Conclusion: The fixed antenna has a gain of -2.0 dBi. An adjustment in the peak power output of the DUT related to antenna gain was not necessary.

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7. Measurement Data (continued)

7.6. Transmitter Spurious Radiated Emissions (30 kHz to 1 GHz)

Requirement: (15.209) The Emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency Range (MHz)	Distance (Meters)	Limit (dBµV/m)[1]
0.009 to 0.490	3	128.5 to 93.8
0.490 to 1.705	3	73.8 to 63.0
1.705 to 30	3	69.5
30 to 88	3	40.0
88 to 216	3	43.5
216 to 960	3	46.0
>960	3	54.0

[1] Measurements in the 9 to 90 kHz, 110 to 490 kHz and above 1000 MHz ranges employ an average detector. Otherwise a quasi-peak detector is used.

Procedure: This test was performed in accordance with the procedure detailed in ANSI C63.10:2009, section 6.3: Radiated emissions testing—general requirements and FCC 47 CFR Part 15.209: Radiated Emission Limits; General Requirements.

Test measurements were made in accordance with ANSI C63.4-2009, Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz.

Test Note: The measurements were performed with the device in three orthogonal positions in accordance with ANSI C63.10-2009, sections 5.10.1, 6.3.2b, 6.4.4.1c, 6.5.4.1c, and 6.6.4.1c. Reference section 4.3 of this report for additional information.

Conclusion: The Emissions from the DUT did not exceed the field strength levels specified in the above table.

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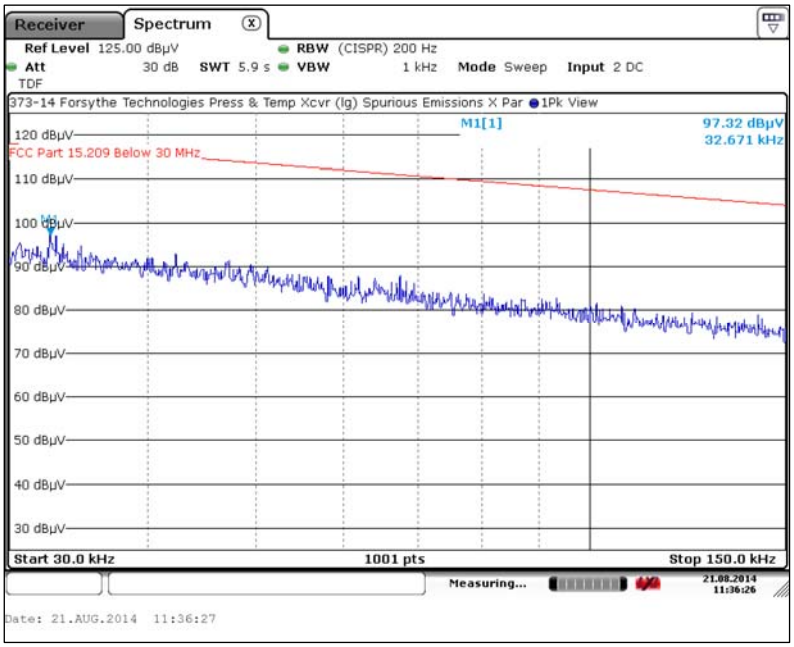
7. Measurement Data (continued)

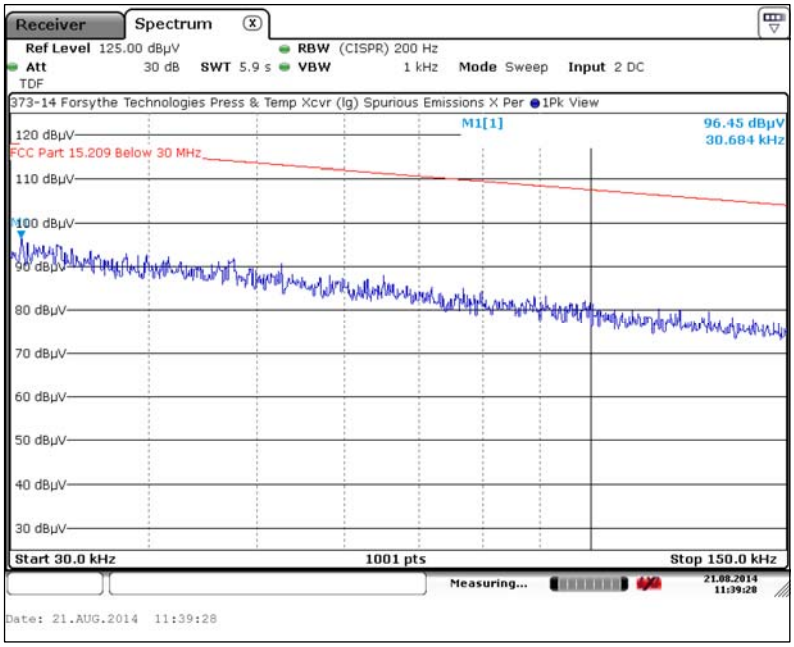
7.6. Transmitter Spurious Radiated Emissions (150 kHz to 26 GHz)

7.6.1. Spurious Radiated Emissions (30 kHz – 150 kHz) Test Results

Measurement Results – X Orientation, Parallel Antenna



Measurement Results – X Orientation, Perpendicular Antenna



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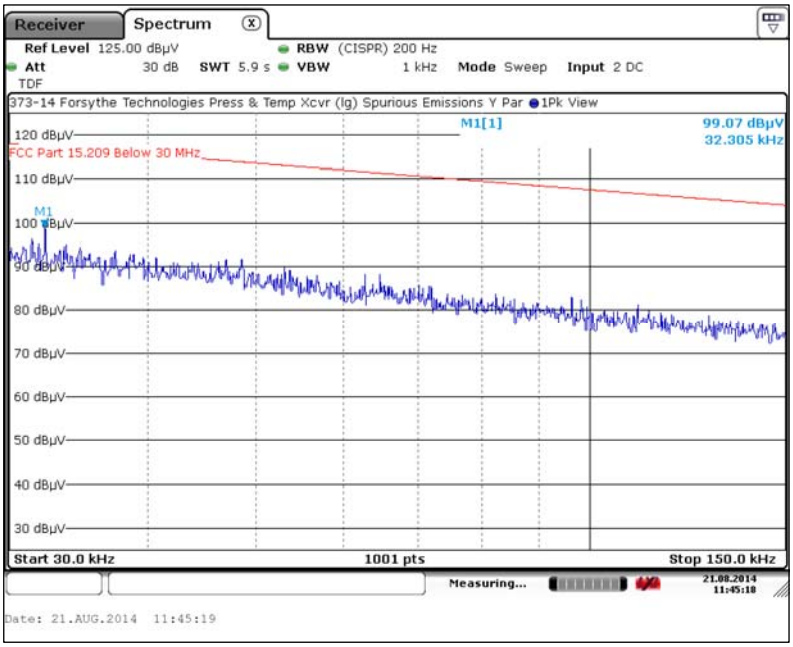
7. Measurement Data (continued)

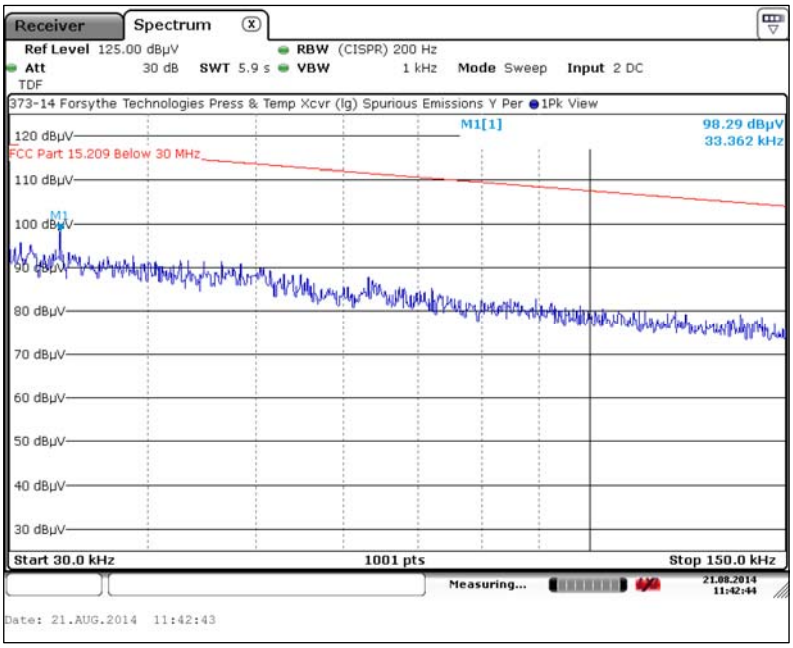
7.6. Transmitter Spurious Radiated Emissions (150 kHz to 26 GHz)

7.6.2. Spurious Radiated Emissions (30 kHz – 150 kHz) Test Results

Measurement Results – Y Orientation, Parallel Antenna



Measurement Results – Y Orientation, Perpendicular Antenna



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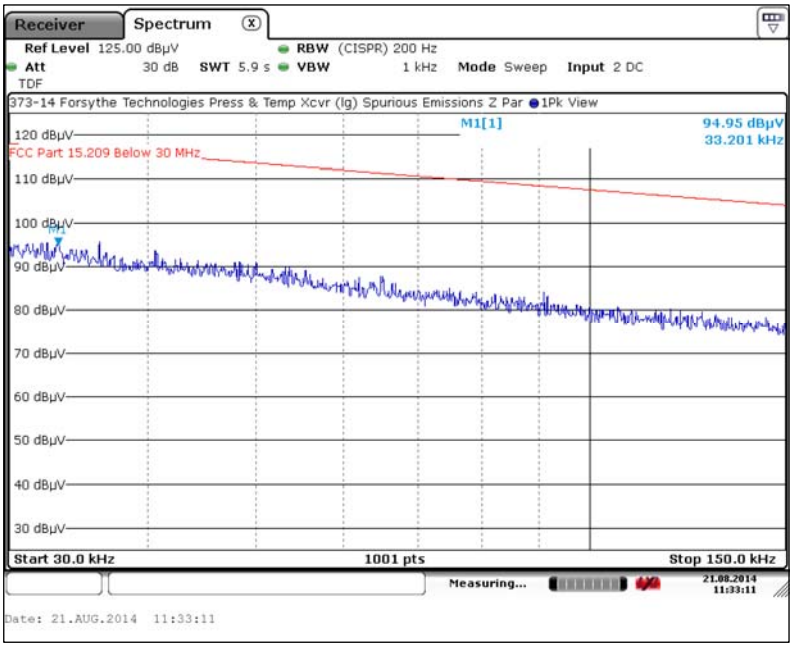
7. Measurement Data (continued)

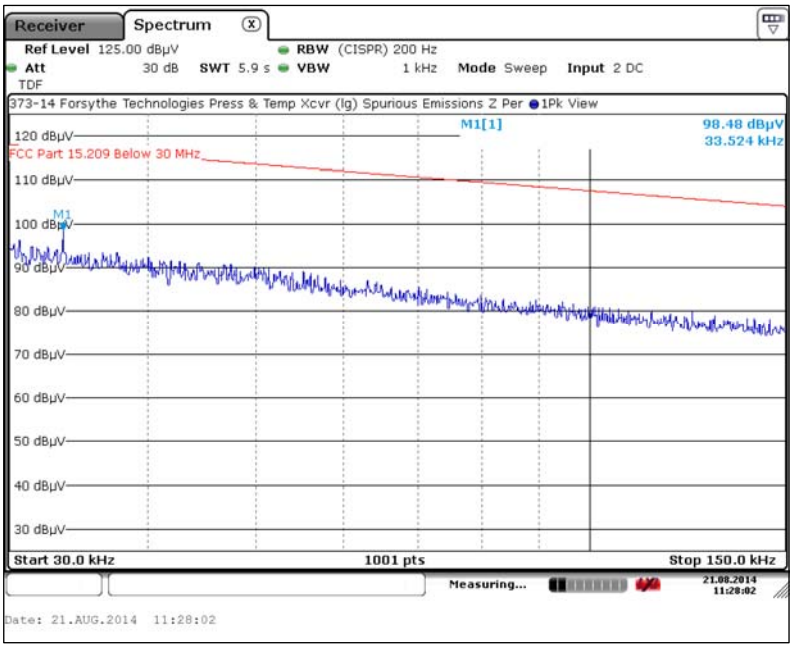
7.6. Transmitter Spurious Radiated Emissions (150 kHz to 26 GHz)

7.6.3. Spurious Radiated Emissions (30 kHz – 150 kHz) Test Results

Measurement Results – Z Orientation, Parallel Antenna



Measurement Results – Z Orientation, Perpendicular Antenna



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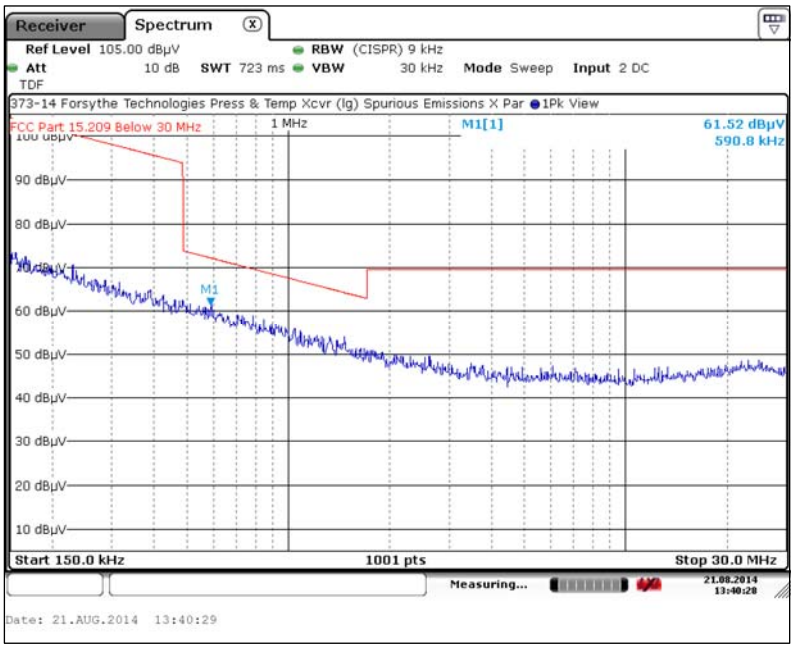
7. Measurement Data (continued)

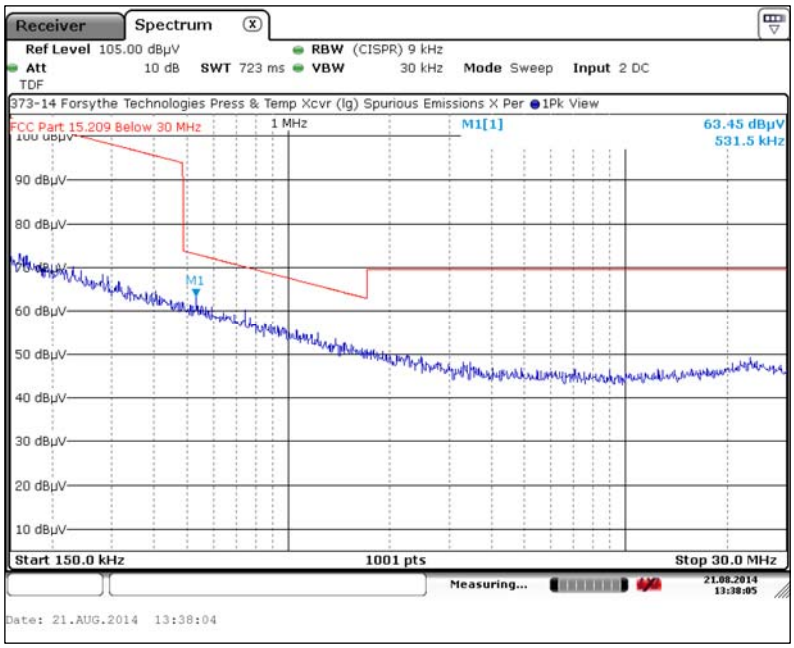
7.6. Transmitter Spurious Radiated Emissions (150 kHz to 26 GHz)

7.6.4. Spurious Radiated Emissions (150 kHz – 30 MHz) Test Results

Measurement Results – X Orientation, Parallel Antenna



Measurement Results – X Orientation, Perpendicular Antenna



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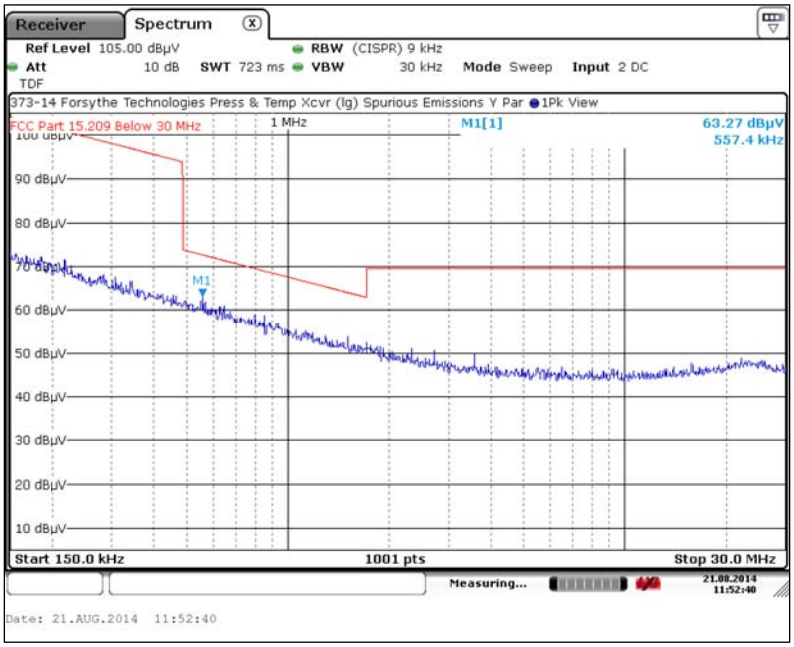
7. Measurement Data (continued)

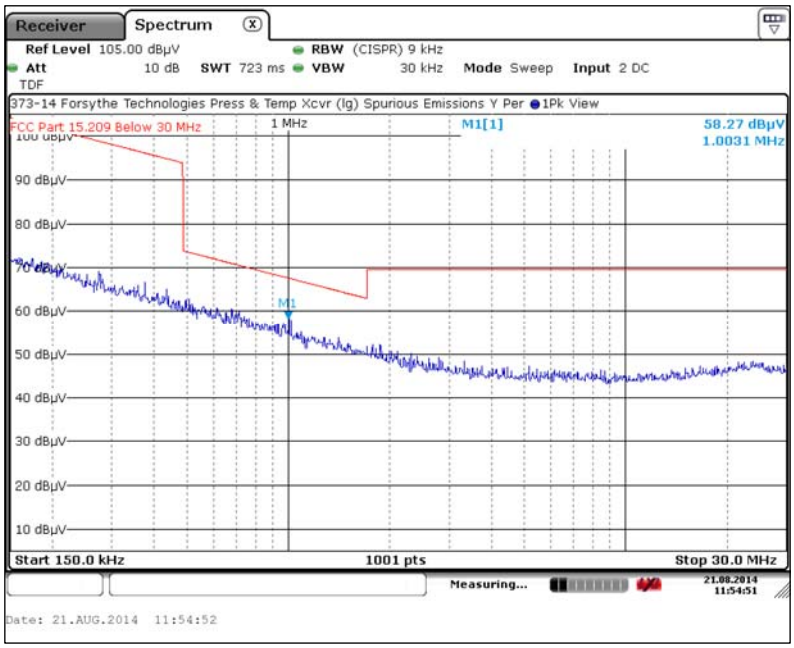
7.6. Transmitter Spurious Radiated Emissions (150 kHz to 26 GHz)

7.6.5. Spurious Radiated Emissions (150 kHz – 30 MHz) Test Results

Measurement Results – Y Orientation, Parallel Antenna



Measurement Results – Y Orientation, Perpendicular Antenna



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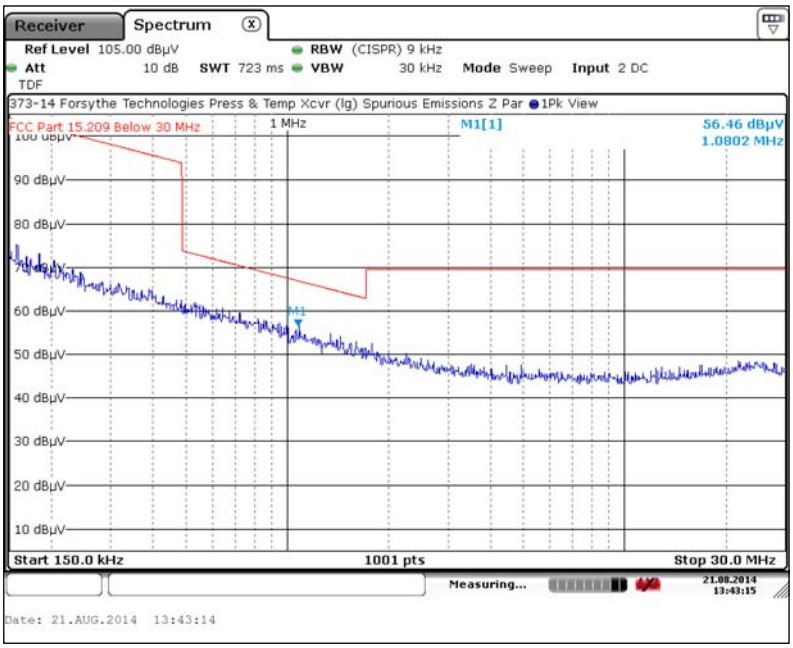
7. Measurement Data (continued)

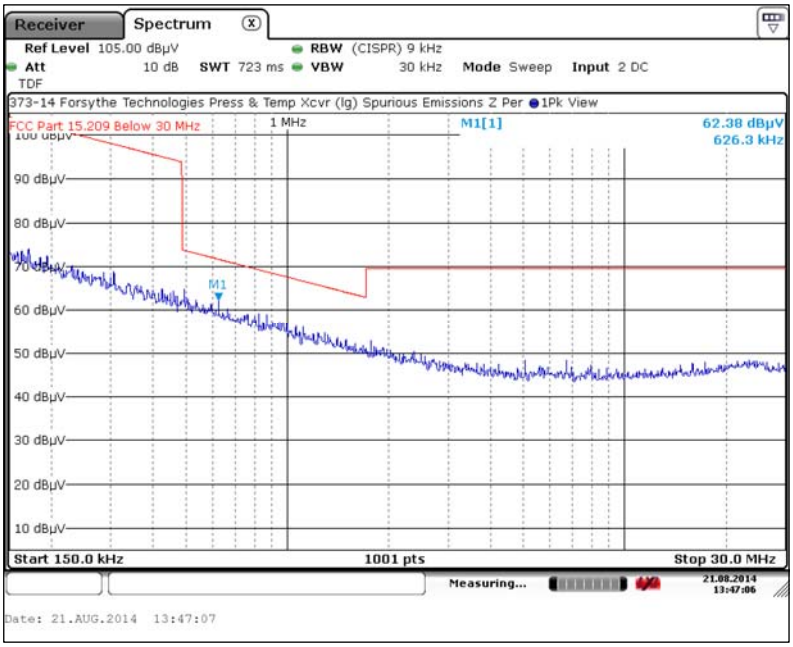
7.6. Transmitter Spurious Radiated Emissions (150 kHz to 26 GHz)

7.6.6. Spurious Radiated Emissions (150 kHz – 30 MHz) Test Results

Measurement Results – Z Orientation, Parallel Antenna



Measurement Results – Z Orientation, Perpendicular Antenna



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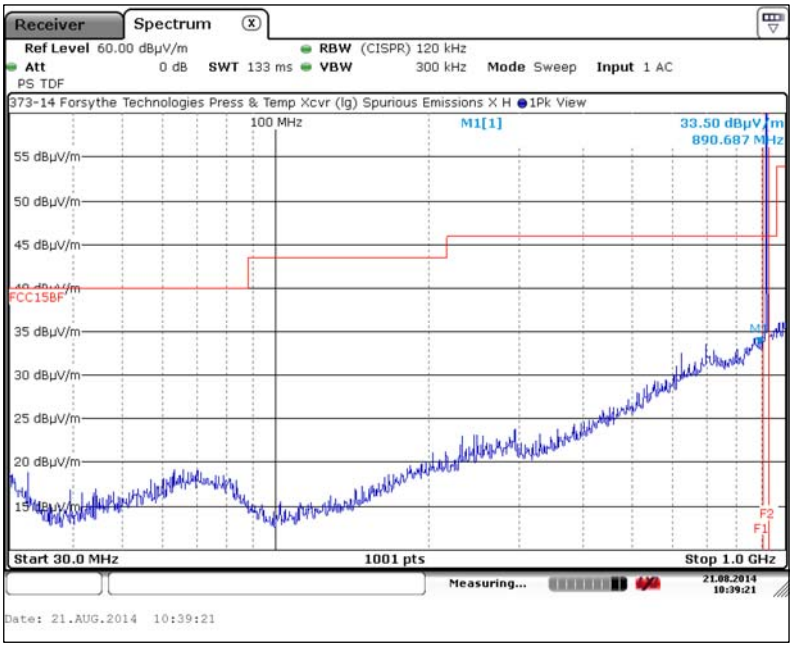
7. Measurement Data (continued)

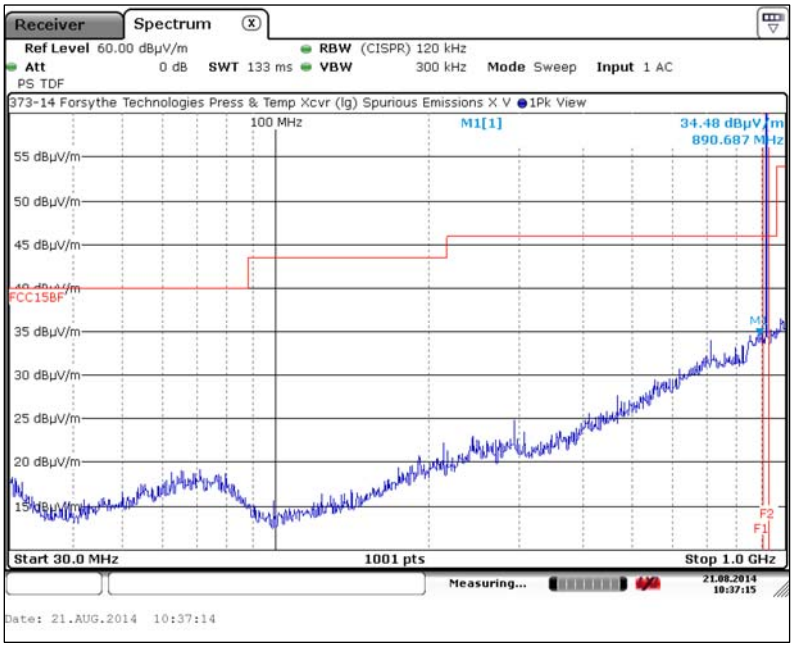
7.6. Transmitter Spurious Radiated Emissions (150 kHz to 26 GHz)

7.6.7. Spurious Radiated Emissions (30 kHz – 1 GHz) Test Results

Measurement Results – X Orientation, Horizontal Antenna



Measurement Results – X Orientation, Vertical Antenna



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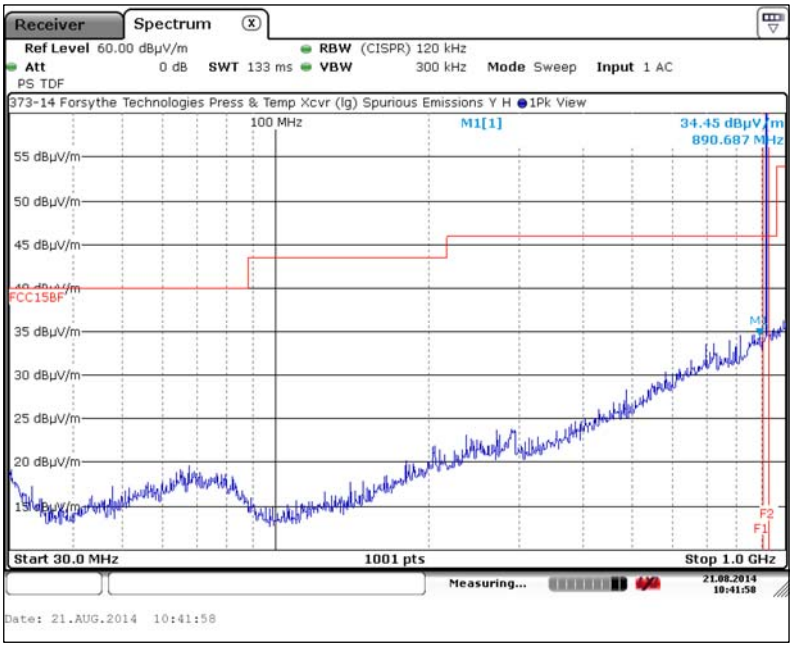
7. Measurement Data (continued)

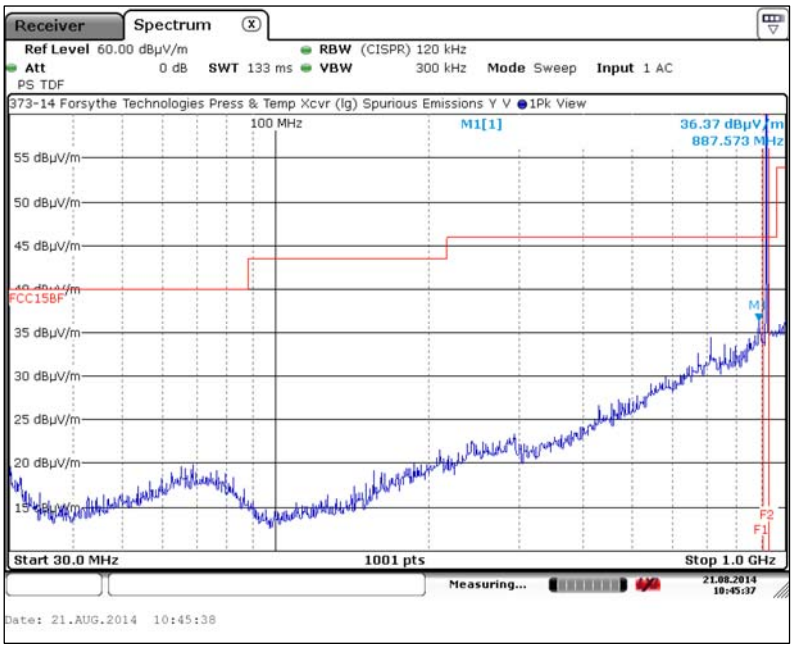
7.6. Transmitter Spurious Radiated Emissions (150 kHz to 26 GHz)

7.6.8. Spurious Radiated Emissions (30 kHz – 1 GHz) Test Results

Measurement Results – Y Orientation, Horizontal Antenna



Measurement Results – Y Orientation, Vertical Antenna



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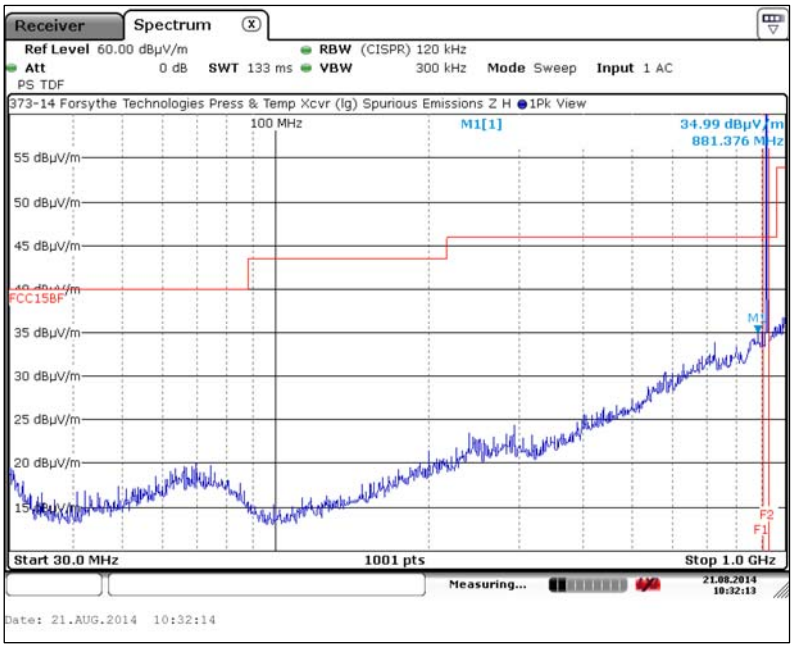
7. Measurement Data (continued)

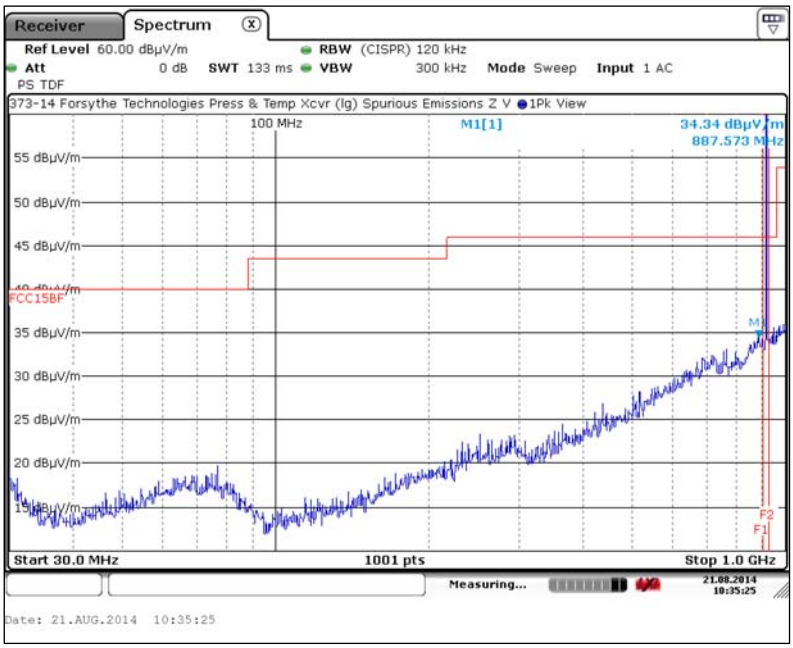
7.6. Transmitter Spurious Radiated Emissions (150 kHz to 26 GHz)

7.6.9. Spurious Radiated Emissions (30 kHz – 1 GHz) Test Results

Measurement Results – Z Orientation, Horizontal Antenna



Measurement Results – Z Orientation, Vertical Antenna



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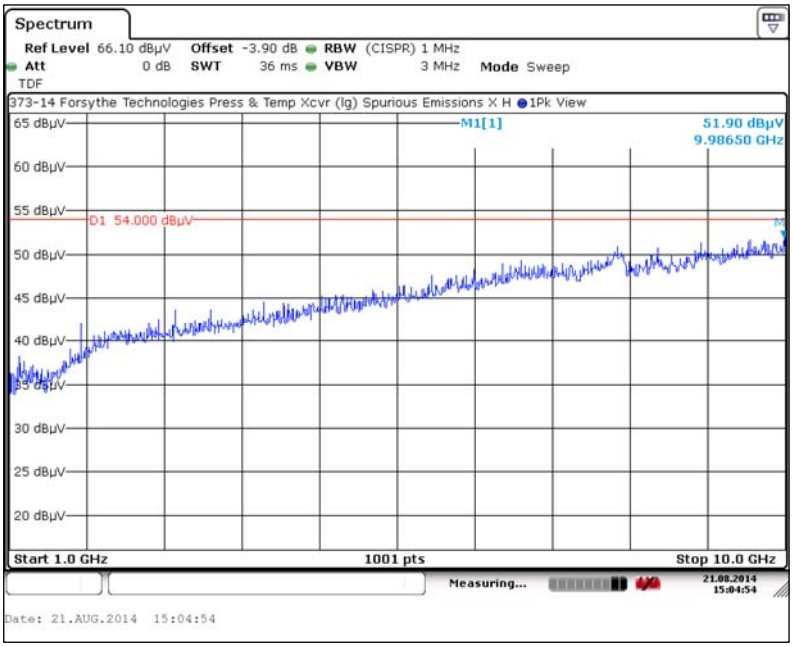
7. Measurement Data (continued)

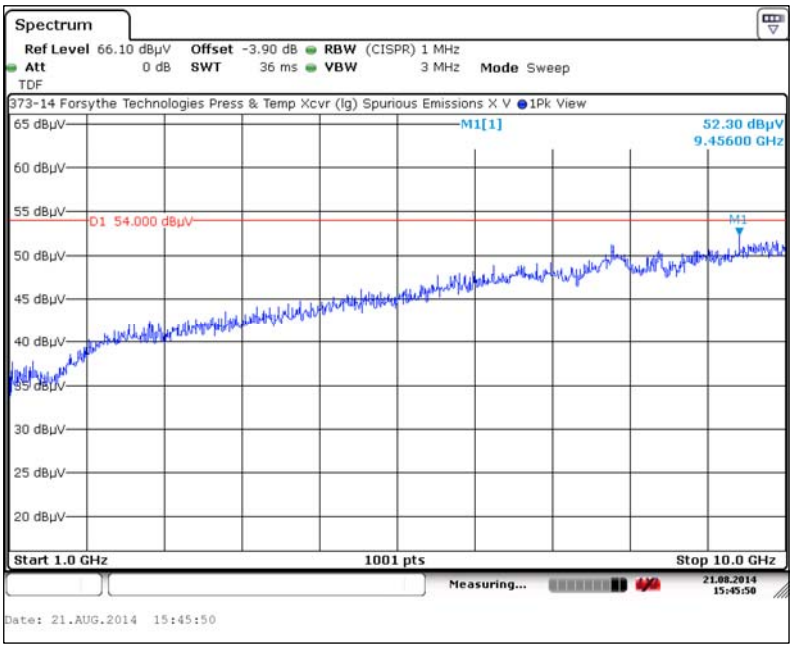
7.6. Transmitter Spurious Radiated Emissions (150 kHz to 26 GHz)

7.6.10. Spurious Radiated Emissions (1 GHz – 10 GHz) Test Results

Measurement Results – X Orientation, Horizontal Antenna



Measurement Results – X Orientation, Vertical Antenna



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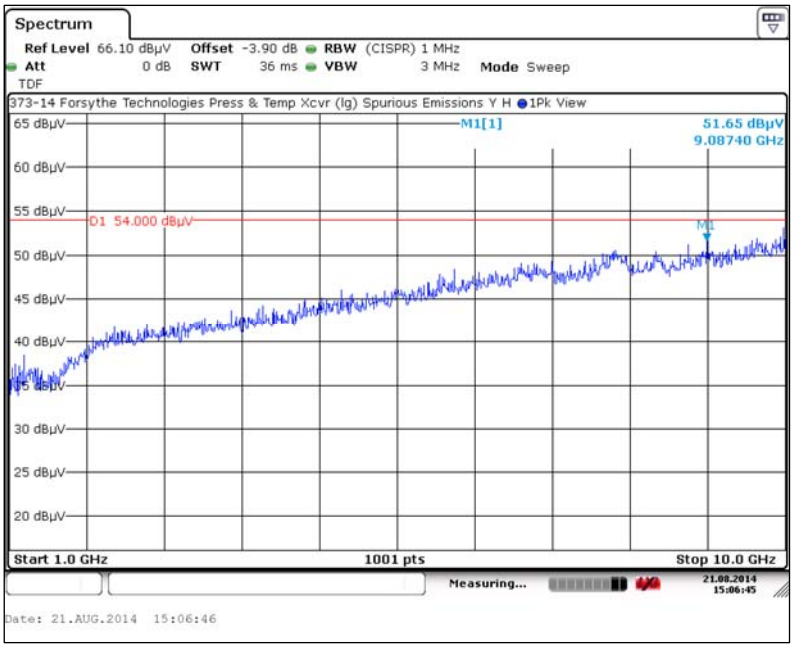
7. Measurement Data (continued)

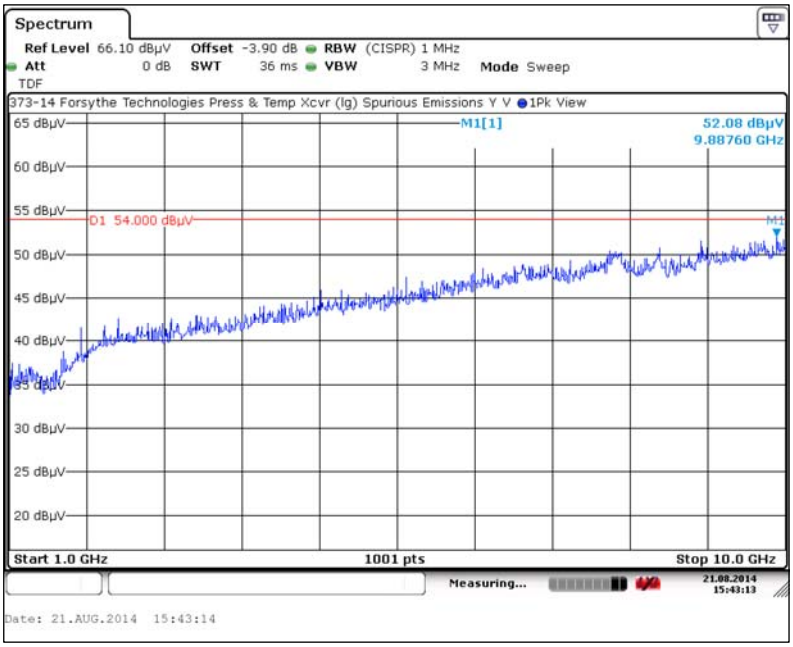
7.6. Transmitter Spurious Radiated Emissions (150 kHz to 26 GHz)

7.6.11. Spurious Radiated Emissions (1 GHz – 10 GHz) Test Results

Measurement Results – Y Orientation, Horizontal Antenna



Measurement Results – Y Orientation, Vertical Antenna



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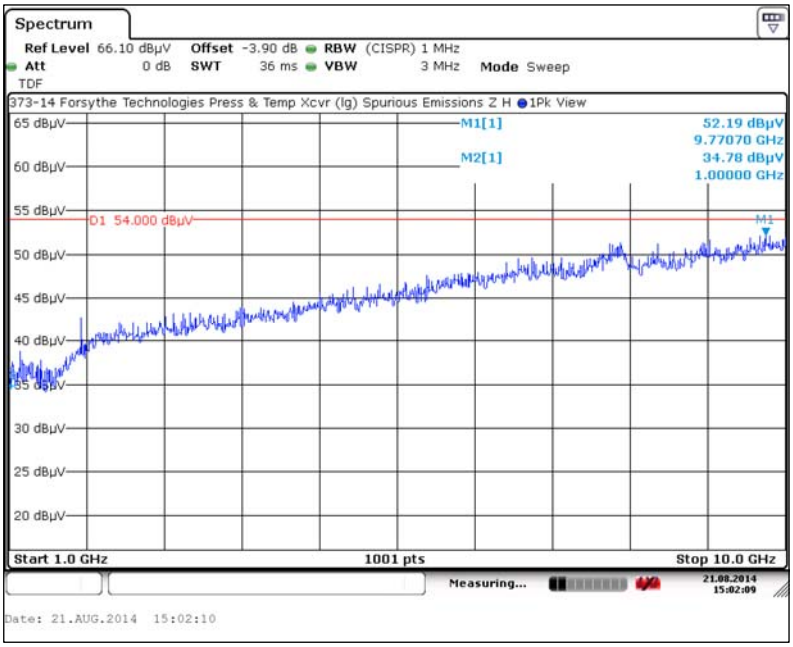
7. Measurement Data (continued)

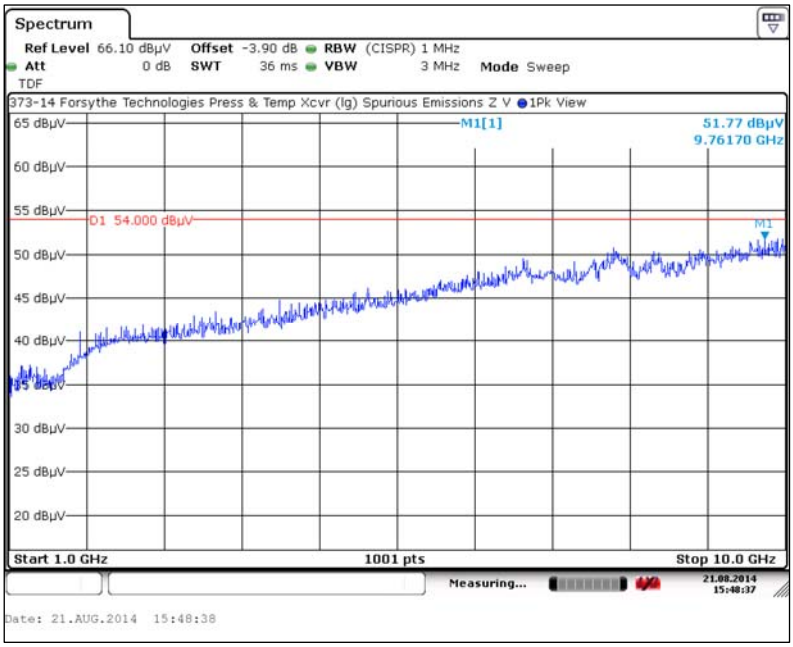
7.6. Transmitter Spurious Radiated Emissions (150 kHz to 26 GHz)

7.6.12. Spurious Radiated Emissions (1 GHz – 10 GHz) Test Results

Measurement Results – Z Orientation, Horizontal Antenna



Measurement Results – Z Orientation, Vertical Antenna



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7. Measurement Data (continued)

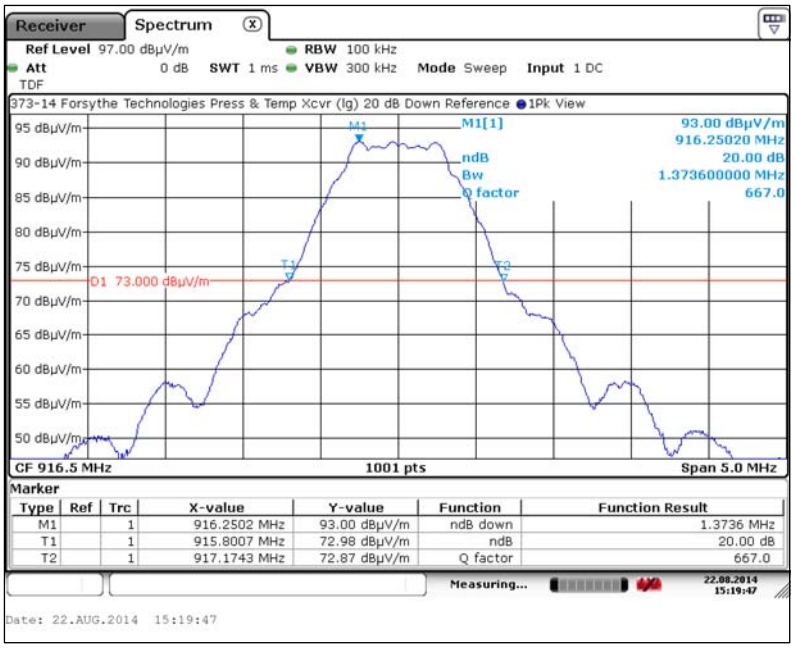
7.7. Emissions in Non-Restricted Frequency Bands (15.247(d))

Requirement: 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. Attenuation below the general limits specified in Section 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(c)).

Procedure: The procedure detailed in publication 558074 D01 - DTS Measurement Guidance v03r02, June 5, 2014, section 11: *Emissions in non-restricted frequency bands* was used to perform the following measurements.

Test Note: The reference level measurement represent the worst case DUT orientation, turntable azimuth and receive antenna polarity.

Reference Level Measurement



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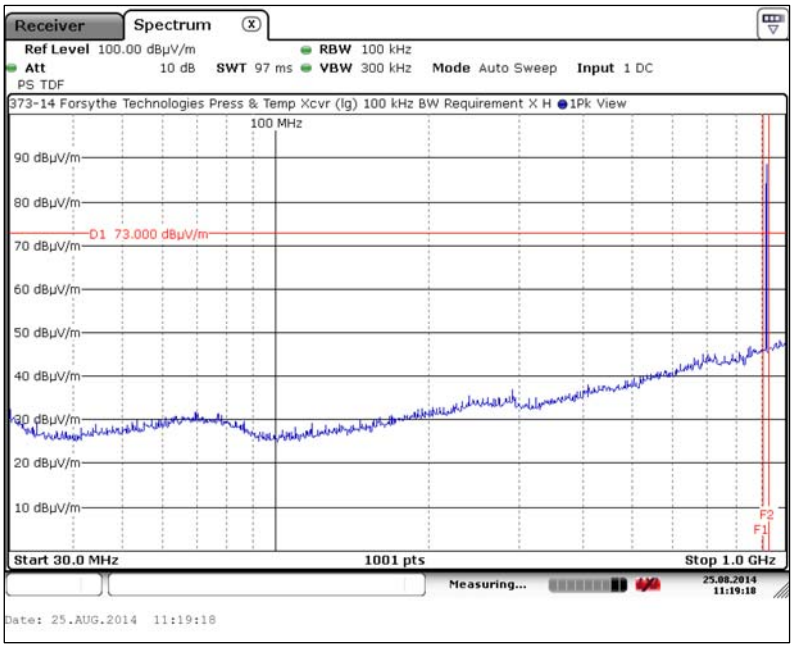
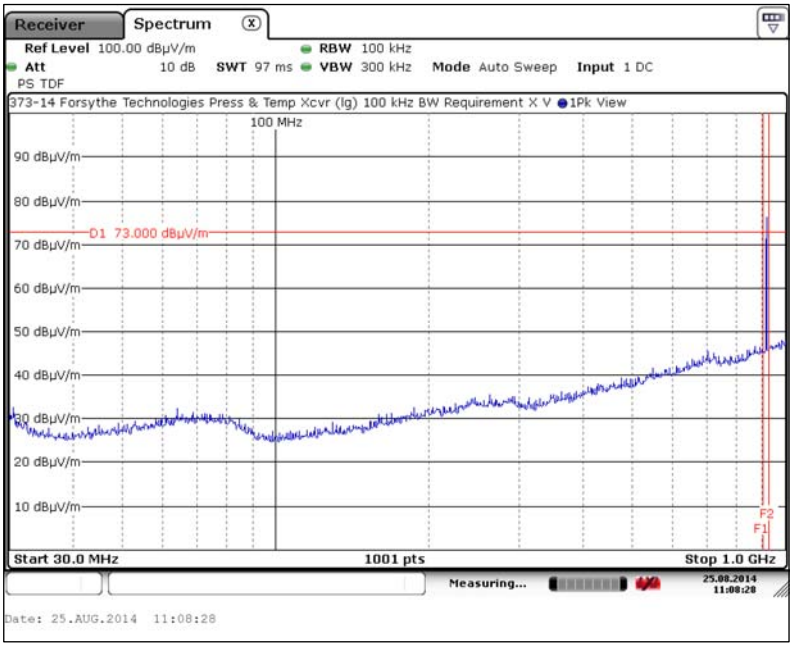
7. Measurement Data (continued)

7.7. Emissions in Non-Restricted Frequency Bands (15.247(d))

7.7.1. 30 MHz to 1000 MHz - X Orientation, Horizontal



7.7.2. 30 MHz to 1000 MHz - X Orientation, Vertical



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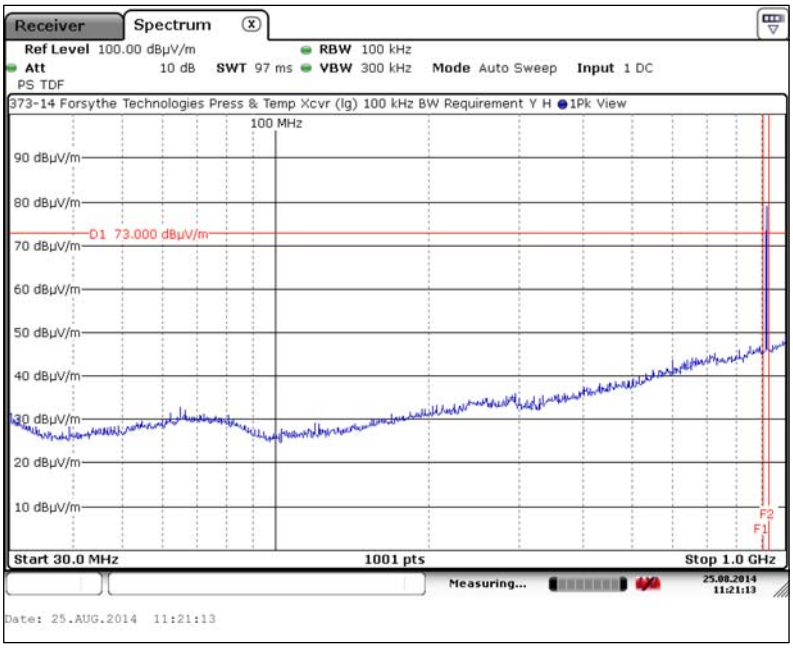
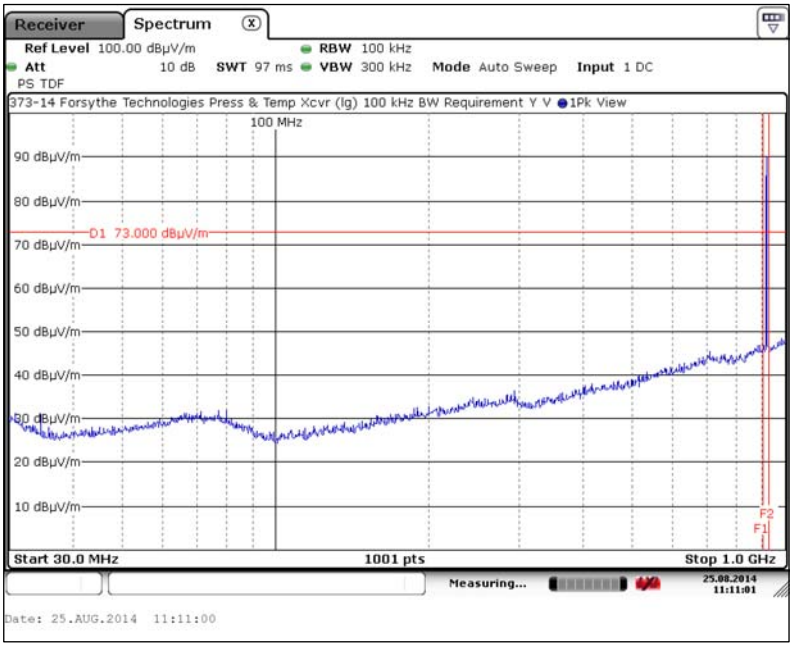
7. Measurement Data (continued)

7.7. Emissions in Non-Restricted Frequency Bands (15.247(d))

7.7.3. 30 MHz to 1000 MHz - Y Orientation, Horizontal



7.7.4. 30 MHz to 1000 MHz - Y Orientation, Vertical



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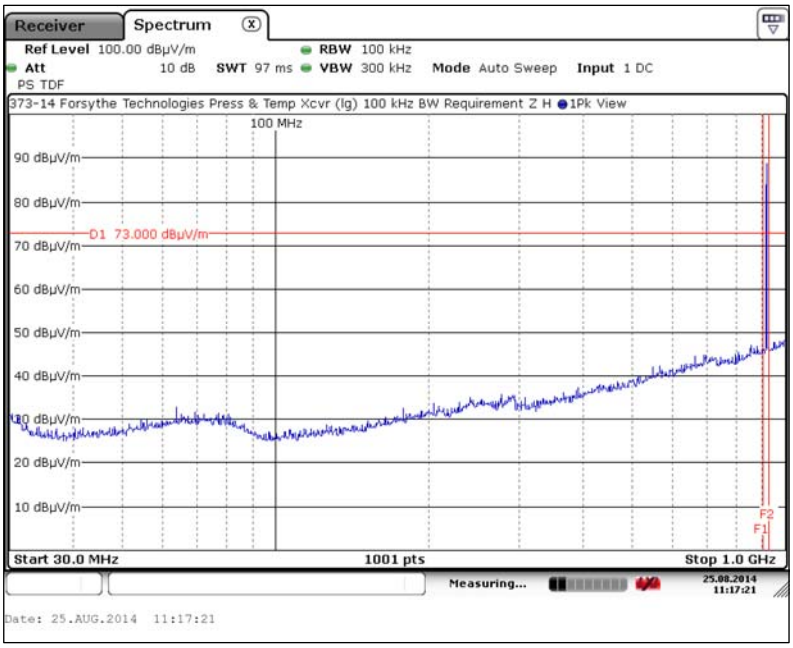
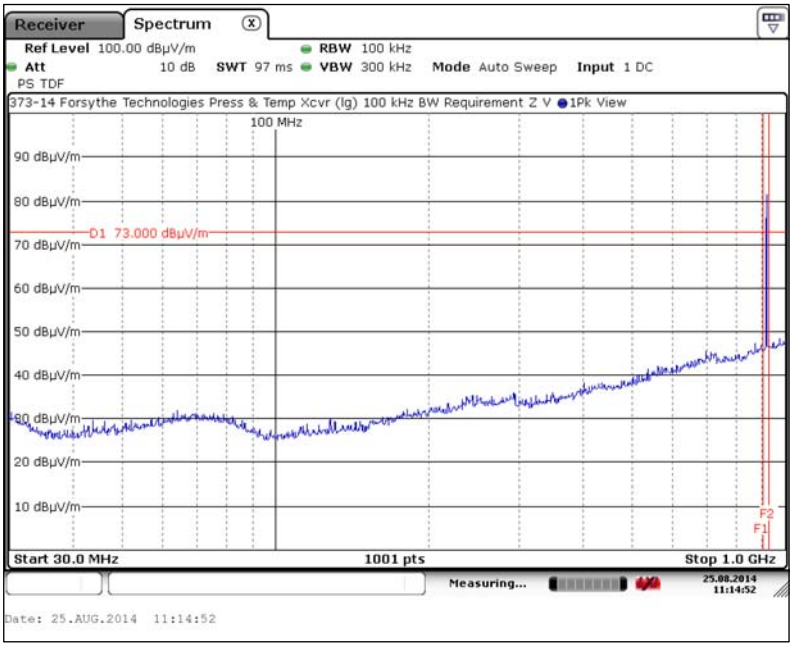
7. Measurement Data (continued)

7.7. Emissions in Non-Restricted Frequency Bands (15.247(d))

7.7.5. 30 MHz to 1000 MHz - Z Orientation, Horizontal



7.7.6. 30 MHz to 1000 MHz - Z Orientation, Vertical



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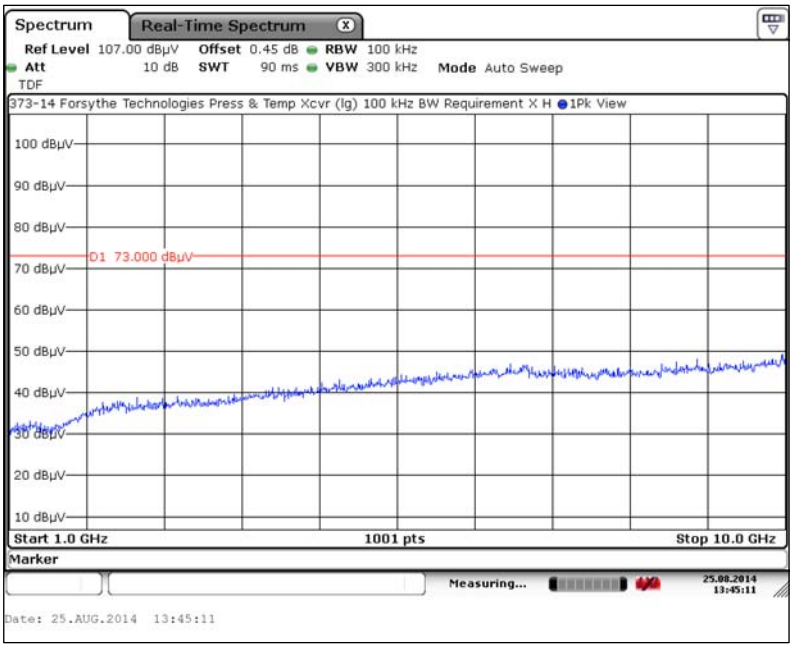
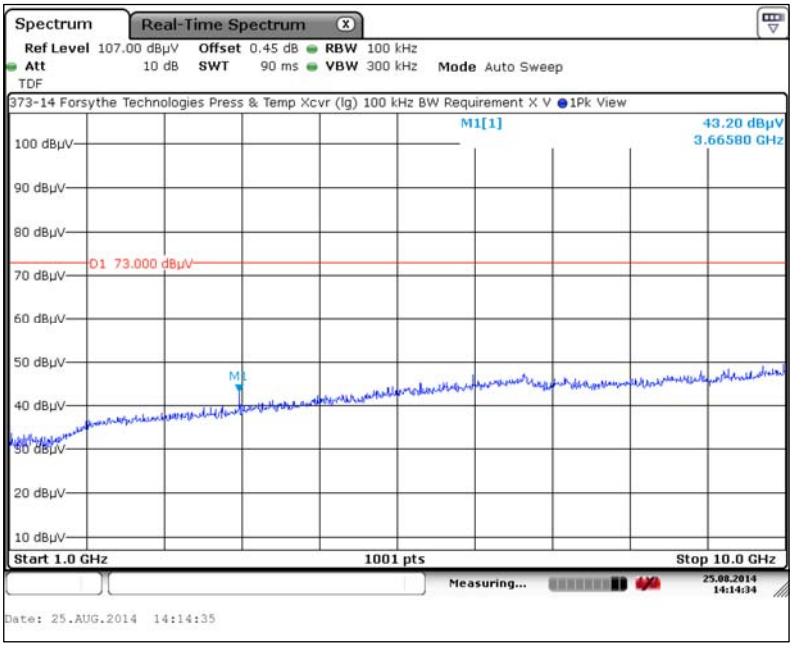
7. Measurement Data (continued)

7.7. Emissions in Non-Restricted Frequency Bands (15.247(d))

7.7.7. 1 GHz to 10 GHz - X Orientation, Horizontal



7.7.5. 1 GHz to 10 GHz - X Orientation, Vertical



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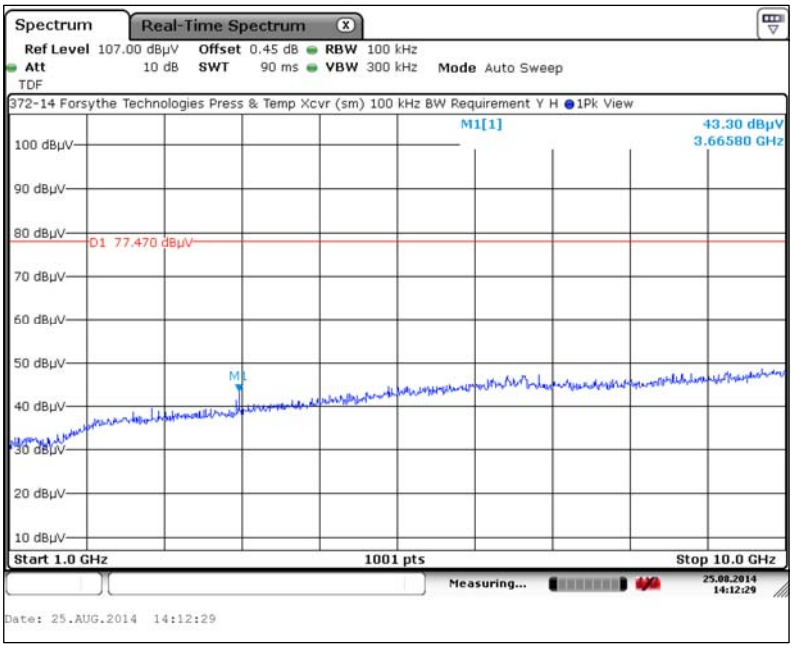
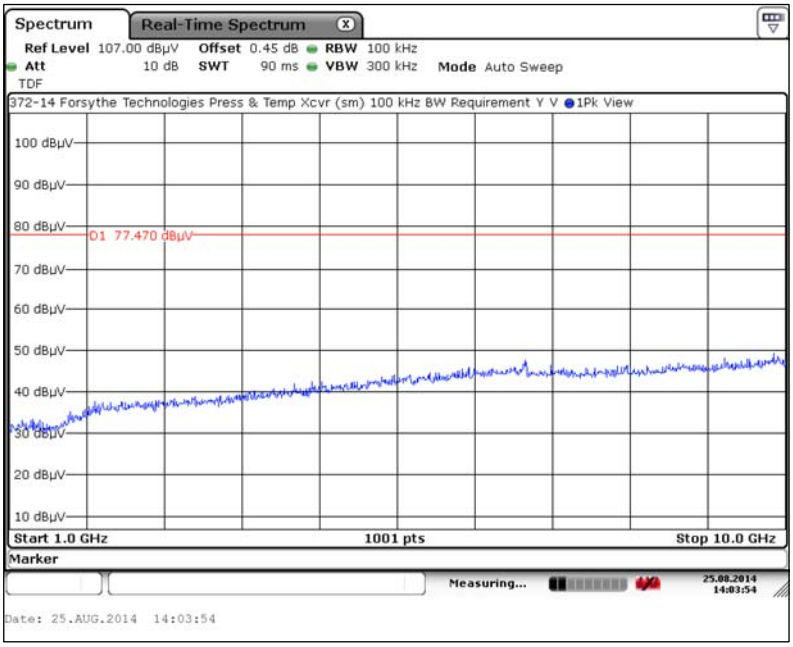
7. Measurement Data (continued)

7.7. Emissions in Non-Restricted Frequency Bands (15.247(d))

7.7.9. 1 GHz to 10 GHz - Y Orientation, Horizontal



7.7.10. 1 GHz to 10 GHz - Y Orientation, Vertical



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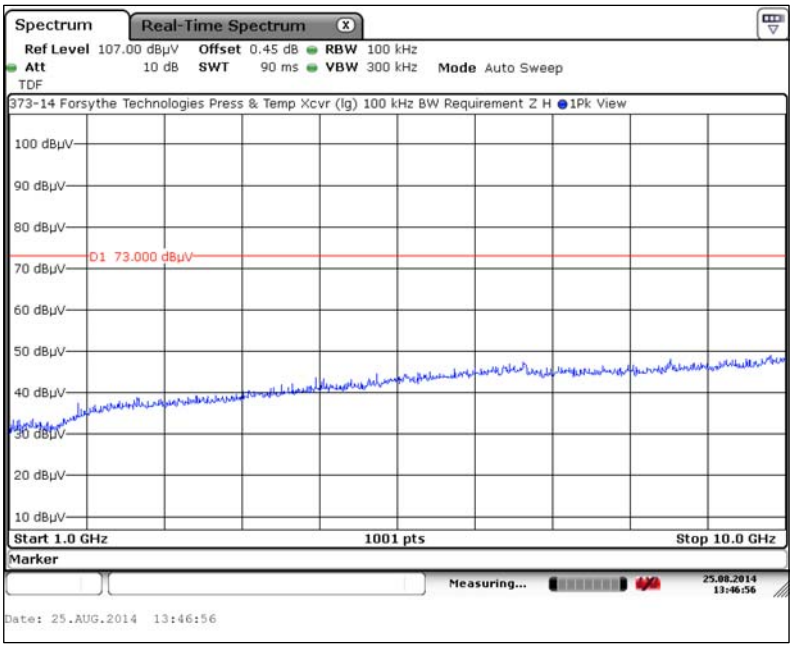
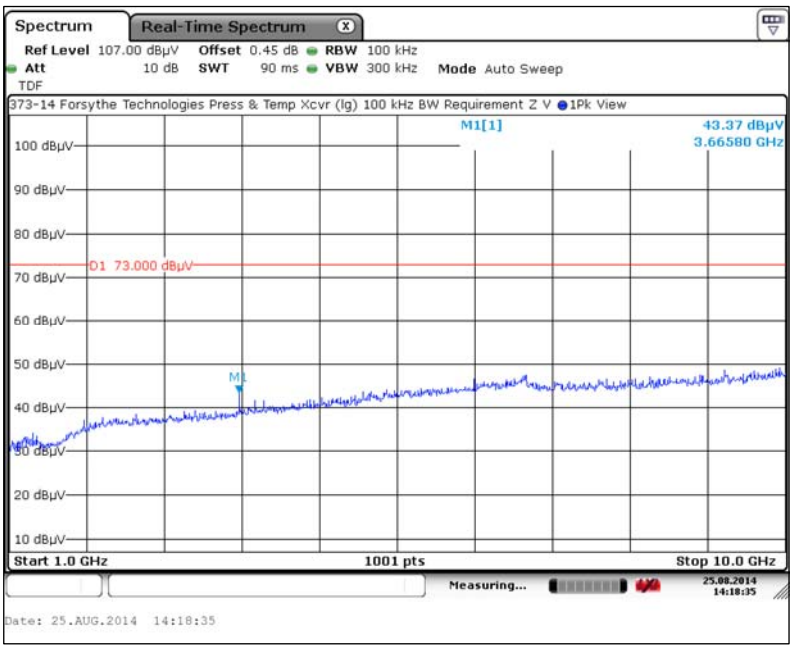
7. Measurement Data (continued)

7.7. Emissions in Non-Restricted Frequency Bands (15.247(d))

7.7.11. 1 GHz to 10 GHz - Z Orientation, Horizontal



7.7.12. 1 GHz to 10 GHz - Z Orientation, Vertical



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7. Measurement Data (continued)

7.8. Harmonic Emissions in the Restricted Bands of Operation

Measurement Results – Harmonic Emissions

Freq. (MHz)	Measured Field Strength (dBµV/m)		Duty Cycle CF (dB)[1]	Adjusted Average Field Strn. (dBµV/m)[1]	Limit (dBµV/m)		Margin (dBµV/m)		Antenna Polarity (H/V)	Result
	Peak	Average			Peak	Average	Peak	Average		
2749.5	47.45	34.13	0.00	34.13	74.00	54.00	-26.55	-19.87	H	Compliant
3666.0	49.56	36.85	0.00	36.85	74.00	54.00	-24.44	-17.15	H	Compliant
4582.5	51.51	38.56	0.00	38.56	74.00	54.00	-22.49	-15.44	H	Compliant
7332.0	53.90	40.41	0.00	40.41	74.00	54.00	-20.10	-13.59	H	Compliant
8248.5	55.13	40.85	0.00	40.85	74.00	54.00	-18.87	-13.15	V	Compliant
9165.0	56.17	42.59	0.00	42.59	74.00	54.00	-17.83	-11.41	V	Compliant

[1] Duty cycle correction factors were not used because the duty cycle is 100%.

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7. Measurement Data (continued)

7.9. Band Edge Measurements (15.247 d))

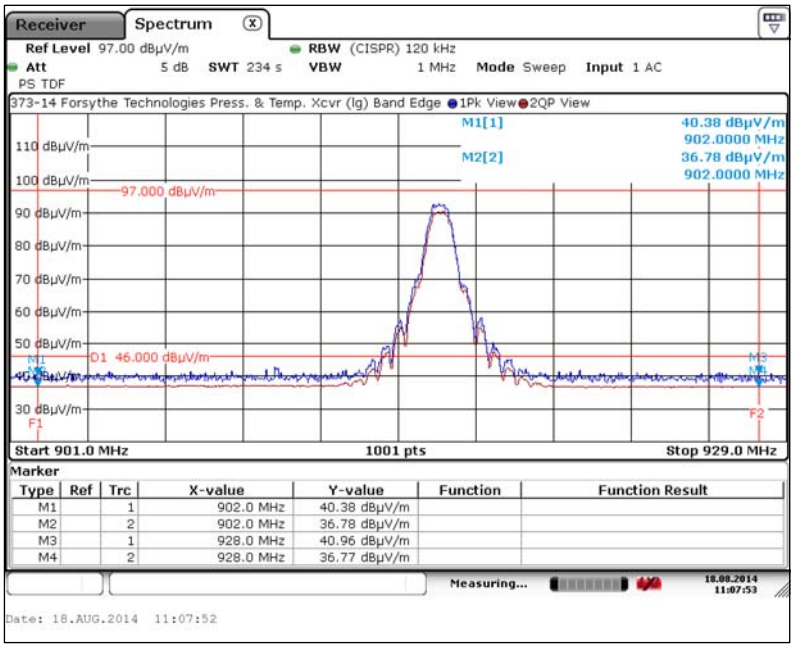
Requirement: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that 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. Attenuation below the general limits specified in Section 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(c)).

Procedure: ANSI C63.10:2009, section 6.9.2: Band-edge testing was referenced for this measurement.

Test Notes: For additional out of band measurements, reference section 7.7 of this test report.

Measurement Results - Lower and Upper Band Edges

Band Edge Frequency	Field Strength (dBµV/m)		FCC Part 15.209 Limit (dBµV/m)		Margin (dBµV/m)		Result
(MHz)	Peak	Quasi-Peak	Peak	Quasi-Peak	Peak	Quasi-Peak	
902	40.38	36.78	66.00	46.00	-25.62	-9.22	Compliant
928	40.96	36.77	66.00	46.00	-25.04	-9.23	Compliant



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7. Measurement Data (continued)

7.10. Maximum Power Spectral Density (15.247(e))

Requirement: For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Procedure: FCC OET 558074 D01, DTS Measurement Guidance v03r02, June 5, 2014, section 10.2: Method PKPSD (peak PSD) was referenced for this measurement.

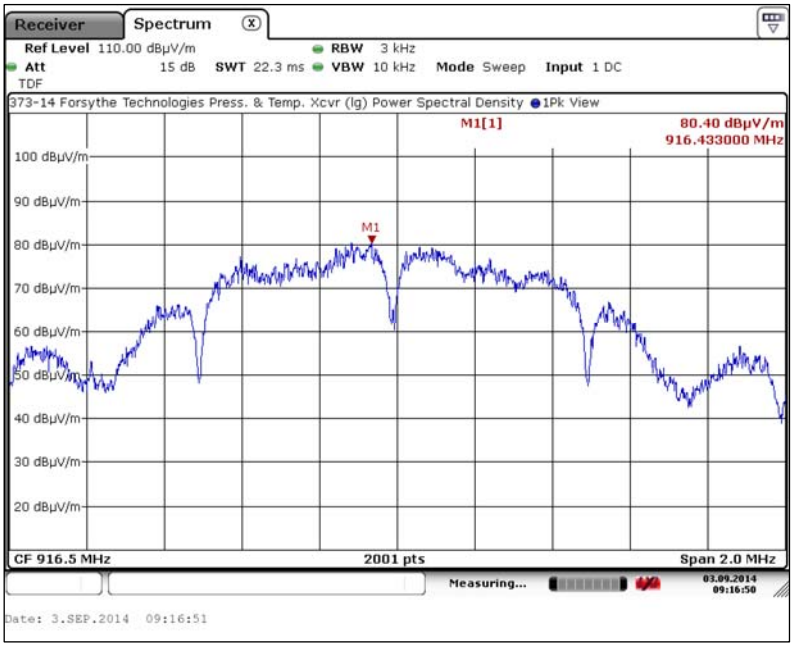
Test Note: Reference section 7.4 of this report for the method used to convert the field strength measurement to power.

Conclusion: The DUT meets the required power spectral density.

Measurement Results – Power Spectral Density

Frequency	Radiated Peak PSD	Distance	Antenna Gain[1]		Power Spectral Density	
(MHz)	(dBµV/m)	Meters	(dBi)	(numeric)	(mW)	(dBm)
916.50	80.40	3.0	-2.00	0.631	0.05	-12.8

Frequency	Measured Frequency	Power Spectral Density	Limit	Margin	Result
(MHz)	(MHz)	(dBm)	(dBm)	(dB)	
916.50	916.4330	-12.83	8	-20.83	Compliant



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7. Measurement Data (continued)

7.11. Duty Cycle Calculations (ANSI C63.10-2009, Section 7.5)

Requirement: When the average value of the pulsed emissions from a DUT must be determined, the average can be found by measuring the peak pulse amplitude and determining the duty cycle correction factor of the pulse modulation. The duty cycle correction factor δ may be expressed in dB as in the following equation:

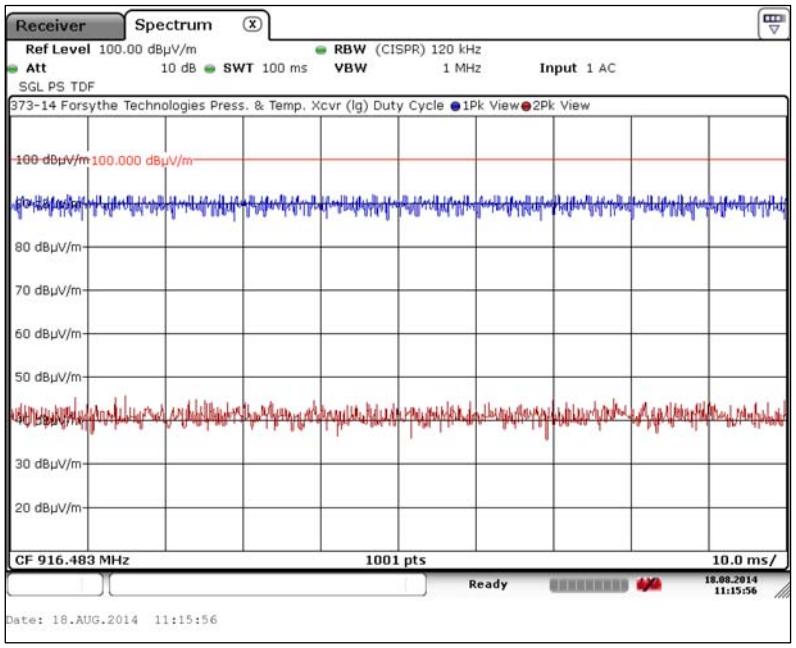
$$\delta\ (dB) = 20_{logdB}\ (\delta)$$

This correction factor can then be applied to the peak pulse amplitude to find the average emission. This correction is applied for all emissions including the fundamental and harmonics.

Test Notes:
1. The DUT duty cycle under normal operating conditions was at or near 100%.
2. The lower trace on the plot is the analyzer noise floor (transmitter off).

Duty Cycle for the Device as Tested

Channel Frequency (MHz)	Total Time On per 100 ms Period (ms)	Percentage of Time On per 100 ms Period (Fraction)	Duty Cycle Correction Factor (dB)	Maximum Allowed Duty Cycle Correction Factor (dB)	Applied Duty Cycle
916.50	100.000	1	0.000	-20	0.000



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7. Measurement Data (continued)

7.12. Public Exposure to Radio Frequency Energy Levels (15.247(i) (1.1307 (b)(1)) RSS-GEN 5.5, RSS 102)

Requirement: Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. Devices are subject to the radio frequency radiation exposure requirements specified in 47CFR 1.1307(b), FCC 47 CFR 2.1091 and 47 CFR 2.1093, as appropriate. All equipment shall be considered to operate in a ''general population/uncontrolled'' environment.

Procedure: The power density is calculated from the peak field strength and device antenna gain:

$$PD = \frac{OP + AG}{(4 \times \pi \times d^2)}$$

PD Power Density	mW/cm^2
OP DUT Output Power	dBm
AG DUT Antenna Gain	dBi
d MPE Distance	cm

Conclusion: The device under test is meets radio frequency radiation exposure requirements specified in 47CFR 1.1307(b), § 2.1091 and § 2.1093.

Power Calculated from Peak Field Strength

Frequency	Peak Field Strength	Distance	Antenna Gain[1]	Measured Output Power
(MHz)	(dBµV/m)	(m)	(dBi)	(mW)
916.50	94.88	3.0	-2.0	1.46

[1] Data provided by product manufacturer.

Power Density

Freq.	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Gain (dBi)	Power Density		Limit (mW/cm2)	Result
				(mW/cm2)	(W/m2)		
	(1)	(2)	(3)	(4)		(5)	
916.50	20.0	1.65	-2.0	0.00018359	0.00183591	1	Compliant

1. Reference CFR 2.1093(b): For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.
2. Taken from column 5 of the first table and converted to dBm.
3. Data supplied by the client.
4. Power density is calculated from field strength measurement and antenna gain.
5. Reference CFR 1.1310, Table 1: Limits for Maximum Permissible Exposure (MPE), Section (B): Limits for General Population/Uncontrolled Exposure.

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8. Test Setup Photographs

8.1. Radiated Emissions - Front:

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8. Test Setup Photographs

8.2. Radiated Emissions Rear - Below 30 MHz

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8. Test Setup Photographs

8.3. Radiated Emissions Rear – 30 MHz to 1 GHz

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8. Test Setup Photographs

8.4. Radiated Emissions Front - Above 1 GHz

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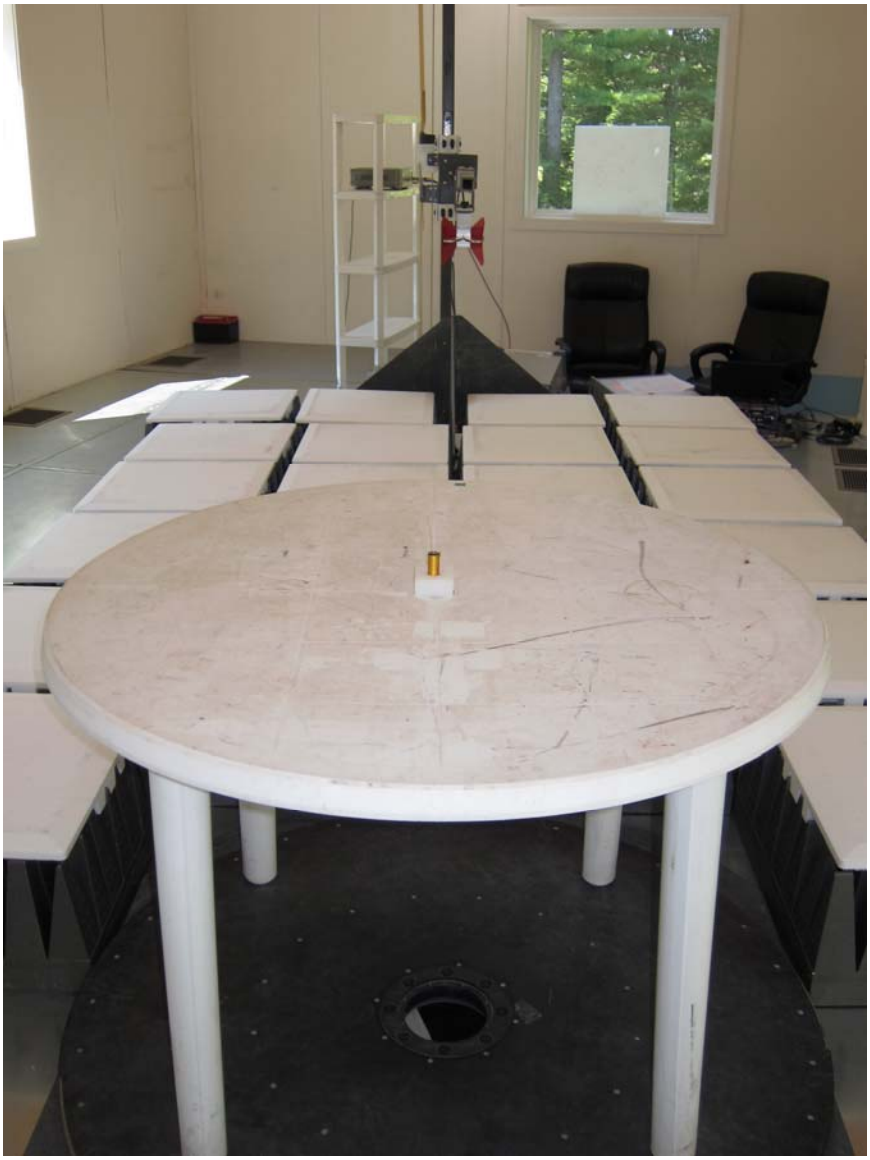
8. Test Setup Photographs

8.4. Radiated Emissions Rear - Above 1 GHz



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9. Test Site Description

Compliance Worldwide is located at 357 Main Street in Sandown, New Hampshire. The test sites at Compliance Worldwide are used for conducted and radiated emissions testing in accordance with Federal Communications Commission (FCC), Industry Canada, and Voluntary Control Council Interference (VCCI) standards. A description of the test sites is on file with the FCC (registration number 96392), Industry Canada (file number IC 3023A-1), and VCCI (Member number 3168), Registration numbers C-3673, G-167, R-3305 & T-1809.

Compliance Worldwide is also designated as a Phase 1 CAB under APEC-MRA (US0132) for Australia/New Zealand AS/NZS CISPR 22, Chinese-Taipei (Taiwan) BSMI CNS 13438 and Korea (RRA) KN 22.

The radiated emissions test site is a 3 and 10 meter enclosed open area test site (OATS). Personnel, support equipment and test equipment are located in the basement beneath the OATS ground plane.

The conducted emissions site is part of a 16' x 20' x 12' ferrite tile chamber and uses one of the walls for the vertical ground plane required by EN 55022.

Both sites are designed to test products or systems 1.5 meters W x 1.5 meters L x 2.0 meters H, floor standing or table top.

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