

**COMPLIANCE WORLDWIDE INC.
TEST REPORT 556-13**

In Accordance with the Requirements of
FCC CFR 47 Part 95, Subpart H
Low Power Licensed Radio Communication Devices
Wireless Medical Telemetry Service Transceiver
In the bands 1395-1400 and 1427-1432 MHz

Issued to
Philips Medical Systems
3000 Minuteman Drive
Andover, MA 01810
978-659-2800

for the
Philips Telemetry System
MX40 Patient Worn Monitor
1.4 GHz CTS Radio

FCC ID: PQC-MX40SH1C4

Report Issued on January 16, 2014

Tested by



Brian F. Breault

Reviewed by



Larry K. Stillings

This test report shall not be reproduced, except in full, without written permission from Compliance Worldwide, Inc.

Table of Contents

1. Scope.....	3
2. Product Details.....	3
2.1. Manufacturer	3
2.2. Model Number	3
2.3. Serial Number.....	3
2.4. Description.....	3
2.5. Power Source	3
2.6. EMC Modifications.....	3
3. Product Configuration	3
3.1. Operational Characteristics & Software.....	3
3.2. EUT Hardware	4
3.3. EUT Hardware/Software/Firmware Revision Level	4
3.4. EUT Cables/Transducers	4
3.5. Support Equipment.....	4
3.6. Support Equipment Cables/Transducers.....	4
3.7. Miscellaneous.....	4
3.8. Block Diagram	5
4. Measurements Parameters.....	6
4.1. Measurement Equipment Used to Perform Test	6
4.2. Measurement & Equipment Setup.....	6
4.3. Measurement Procedure	6
4.4. Measurement Uncertainty	7
5. Choice of Equipment for Test Suits	7
5.1. Choice of Model.....	7
5.2. Presentation	7
5.3. Choice of Operating Frequencies	7
5.4. Modulation Scheme	8
6. Measurement Summary.....	8
7. Measurement Data	9
7.1. Emissions Bandwidth	9
7.2. Radiated Field Strength of Fundamental.....	11
7.3. Effective Radiated Power (ERP)	14
7.4. Undesired Emissions.....	15
7.4.1. Band Edge	16
7.4.2. Combined Worst Case Radiated Field Strength of Harmonics	20
7.4.3. General Spurious Emissions.....	21
7.5. Frequency Stability	22
7.6. RF Safety.....	26
8. Test Site Description.....	27
Appendix A (Undesired Emissions Prescreen Data)	28

1. Scope

This test report certifies that the 1.4 GHz Philips IntelliVue Patient Worn Monitor, MX40, as tested, meets the Federal Communications Commission CFR 47, PART 95 requirement. 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: Philips Medical Systems

2.2 Model Number: MX40

2.3 Serial Number: US014Z1318

2.4 Description of EUT: The MX40 Patient Worn Monitor is a body worn patient monitor for ECG and SpO2 measurements. The device has a touch screen display which can display patient waveforms and/or numeric values locally or transmitted via several possible radio links to the hospital wireless network, a wireless bedside monitor, or to a CTS network for display on the IntelliVue Information Center. The device is capable of transmitting in the WMTS bands, 1395 MHz to 1400 MHz and 1427 MHz to 1432 MHz. The PWM will be configured with a 1.4 GHz CTS radio for this test plan.

2.5 Power Source: DC 3 volts – Three 1.5 VDC Alkaline AA Batteries (Regulated)

2.6 EMC Modifications: None

3. Product Configuration

3.1. Operational Characteristics & Software

The MX40 provides a link from itself to the Access Point/Wireless Infrastructure and the Hospital LAN. The patient data is received by the IntelliVue Access Point and transmitted over the wireless LAN infrastructure to the IntelliVue Central Station. The performance of the MX40 will be monitored on the Philips IntelliVue Information Center (PIIC) display, i.e. the Central Station. The system should maintain smooth scrolling patient waveforms and constant numeric readouts.

3. Product Configuration (continued)
3.2. EUT Hardware

Blk Diag #	Manufactr	Model/Part # / Options	Serial Number	Input Voltage	Frq (Hz)	Description/Function
1	Philips	MX40-1C4	US014Z1318	3 V	DC	Patient Worn Monitor w/1.4 GHz WMTS radio

3.3. EUT Hardware/Software/Firmware Revision Level

Diag Blk #	EUT Model#	PCA#	Description	HW	SW	FW
1	MX40		1.4 GHz CTS radio		A.02.54	A.00.26

3.4. EUT Cables/Transducers

Blk Diag Ltr	Manufacturer	Model/Part #	Length (m)	Shield Y/N	Description/Function
A	Philips	989803171871	0.8	Y	SpO2 connector/ECG lead set- 6 leads

3.5. Support Equipment

Diag Blk #	Manufacturer	Model/Part # Options	Serial Number	Input Voltage	Input Frq.	Description/Function
2	Philips	ITS4843A/862228	RO71000231	48	DC	1.4 GHz Access Point
3	SMC	108DT	8300030900037	100-240	50-60	Sync Box
4	PowerDSine	ITS4845A (6506)	P06451223000004A00	100-240	50-60	Power-over-Ethernet hub
5	Proxim	7560-05AG	756005AG-35200536	100-240	50-60	Access Point Controller
6	Cisco	WS-C2950C-24	FOC1034Z2FU	100-240	50-60	LAN switch
7	Philips	170S8FB/27	AU3A0809006103	100-240	50-60	Display
8	Philips (HP)	M3154B	2UA610JXKJ	100-240	50-60	InbteilliVue Information Center
*	Hewlett Packard	C3758-60201	E03633YLUS-C	NA	NA	Keyboard
*	Hewlett Packard	417441-002	None	NA	NA	Mouse

Note: Blk Diag #'s 2, 4, 5, 6 and 11 were configured for this test.

* These items do not appear in the block diagram.

3.6. Support Equipment Cables/Transducers

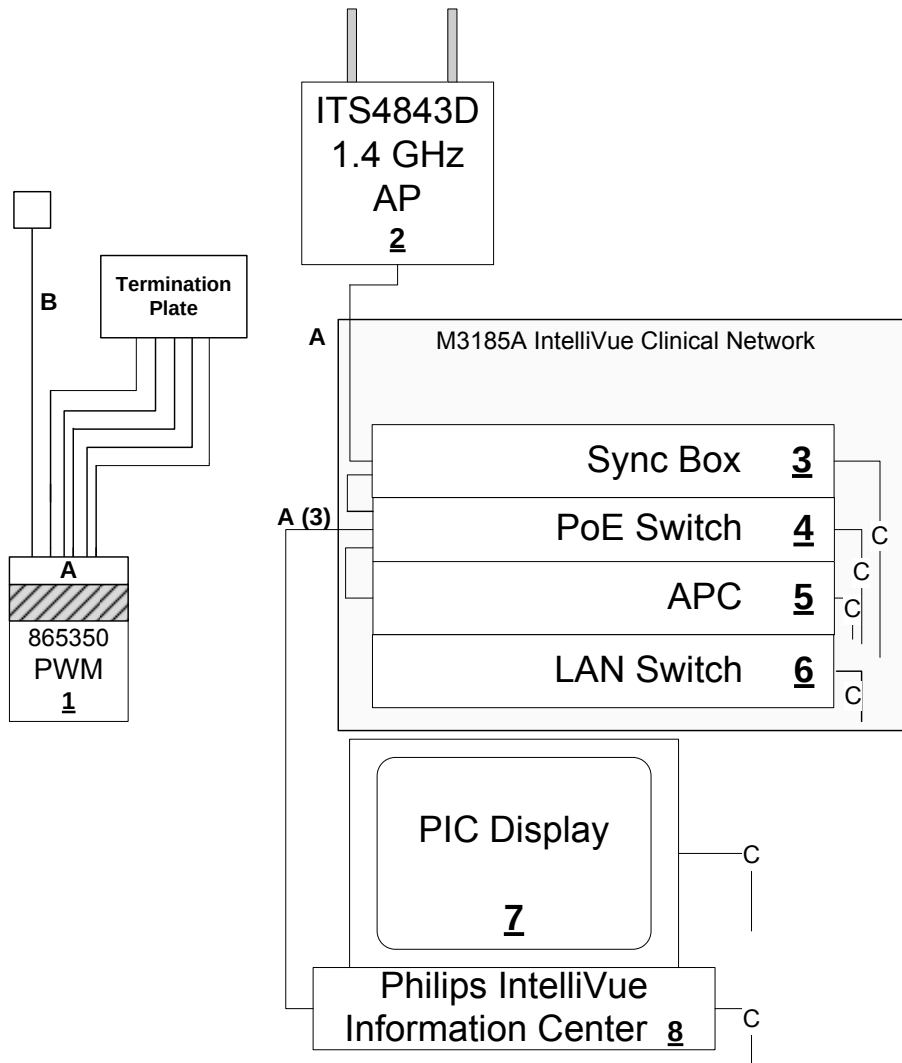
Blk Diag Ltr	Manufacturer	Model/Part #	Length (m)	Shield Y/N	Description/Function
C	NA	NA	Various	N	Cat 5 LAN cables

3.7. Miscellaneous

Manufacturer	Model/Part #	Description/Function
Eveready	NA	AA batteries

3. Product Configuration (continued)

3.8. Block Diagram



Note: Blk Diag #'s 2, 4, 5, 6 and 11 were configured as support equipment for this test.

4. Measurements Parameters

4.1. Measurement Equipment Used to Perform Tests

Comment [B1]: Cal Interval?

Device	Manufacturer	Model No.	Serial No.	Cal	Cal Due
EMI Test Receiver, 9kHz - 7GHz	Rohde & Schwarz	ESR7	101156	2 years	4/4/2015
Spectrum Analyzer	Rohde & Schwarz	FSV40	100899	2 years	6/6/2015
Spectrum Analyzer	Hewlett Packard	8546A	3650A00360	2 years	6/13/2014
Microwave Preamp	Hewlett Packard	8449B	3008A01323	2 years	6/5/2015
Loop Antenna, Passive, 9 kHz to 30 MHz	EMCO	6512	9309-1139	2 years	8/28/2014
Biconilog Antenna, 30 MHz to 2000 MHz	Sunol Sciences	JB1	A050913	1 year	5/15/2014
Double Ridged Antenna, 1 - 18 GHz	ETS-Lindgren	3117	00143292	2 years	1/14/2015
Horn Antenna, 18 - 40 GHz	Com-Power	AH-840	03075	2 years	8/27/2014
High Pass Filter, 2500 to 18000 MHz	Micro-Tronics	HPM50110	070	2 years	6/7/2014
DMM / Temperature Meter	Fluke	187	79690058	1 year	2/22/2014
Signal Generator, 100 kHz to 40 GHz	Rohde & Schwarz	SMB 100A	175352	2 years	5/14/2014
Compact Digital Barometer	Control Company	4195	ID236	2 years	2/25/2015
Thermal Chamber	Assoc. Testing Labs	SLHU-1-CRLC	N/A	Not Required	Not Required

4.2. Measurement & Equipment Setup

Test Dates: Dec.10, 2013 to Jan. 6, 2014
 Test Engineer: Cody Merry/Brian Breault
 Normal Site Temperature (15 - 35°C): 21.7
 Relative Humidity (20 -75%RH): 33%
 Frequency Range: 30 MHz to 15 GHz
 Measurement Distance: 3 Meters
 EMI Receiver IF Bandwidth: 120 kHz - 30 MHz to 1 GHz
 1 MHz - Above 1 GHz
 EMI Receiver Avg Bandwidth: 300 kHz - 30 MHz to 1 GHz
 3 MHz - Above 1 GHz
 Detector Function: Peak, QP - 30 MHz to 1 GHz
 Peak, Avg - Above 1 GHz
 Unless otherwise specified.

4.3. Measurement Procedure

All references to CFR 47 PART 95, Subpart H - Wireless Medical Telemetry Service (WMTS) - refer to the 2010 edition.

The test methods used to generate the data in this test report is in accordance with FCC 47 CFR Part 95:2012 and ANSI C63.10:2009, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices. In addition, FCC OET 971168 D01: Measurement Guidance for Certification of Licensed Digital Transmitters was used as a reference for test measurements.

4. Measurements Parameters

4.3. Measurement Procedure (continued)

In accordance with ANSI C63.10, section 6.4.6, the device under test was rotated through three orthogonal axes to determine which attitude produced the highest emission relative to the limit. The attitude that produced the highest emission relative to the limit was used for all radiated emission measurements. For this test report, the three orthogonal axes are defined as follows:

X-Axis	Horizontal on left edge. Front of unit is facing the antenna at 0° turntable azimuth.
Y-Axis	Top of device faces up. Front of unit is facing the antenna at 0° turntable azimuth.
Z-Axis	Front of device faces up. Bottom edge of the unit is facing the antenna at 0° turntable azimuth.

4.4. Measurement Uncertainty

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

RF Frequency	$\pm 1 \times 10^{-8}$
Radiated Emission of Transmitter	± 4.55 dB
Radiated Emission of Receiver	± 4.55 dB
Temperature	$\pm 0.91^{\circ}$ 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 MX40 1.4 GHz Patient Worn Monitor operates on a total of 6 channels:

WMTS Channel Frequencies in the Band 1395 to 1400MHz		
Channel 1	1395.9MHz	Primary WMTS Channel
Channel 2	1397.5MHz	Primary WMTS Channel
Channel 3	1399.1MHz	Primary WMTS Channel
WMTS Channel Frequencies in the Band 1427 to 1432MHz		
Channel 4	1427.9MHz	Primary WMTS Channel
Channel 5	1429.5MHz	Secondary Channel, only available if not in use
Channel 6	1431.1MHz	Secondary Channel, only available if not in use

The choice of operating frequencies selected for the testing outlined in this report was based on the lowest and highest operating frequencies in each of the two bands utilized by the device under test. Selected were channels 1 (1395.9 MHz), 3 (1399.1 MHz), 4 (1427.9 MHz) and 6 (1431.1 MHz).

5. Choice of Equipment for Test Suits (continued)
5.4. Modulation Scheme

The modulation scheme used by the MX40 1.4 GHz Patient Worn Monitor is GFSK. This information is supplied by the manufacturer.

6. Measurement Summary

Transmitter Test Requirement	FCC Requirement	Test Report Section	Result	Comment
Product Labeling	95.1109(b)	N/A	N/A	See exhibits FCC label sample and label location.
Specific Frequencies or Frequency Range(s) Used	95.1111(a)(1)	5.3	Compliant	
Emission Type	95.1115(c)	N/A	N/A	Transmits Data and ECG Waveforms
Channel Use	95.1115(d)	5.3	N/A	Reference Part 2.106 (2)(1) 1427-1432 MHz: Wireless Medical Telemetry Band
Modulation Scheme	95.1111(a)(2)	5.4	Compliant	
Occupied Bandwidth	95.1111(a)(2)	7.1	Compliant	
Radiated Field Strength of Fundamental	95.1115(a)(2)	7.2	Compliant	
Effective Radiated Power (ERP)	95.1111(a)(3)	7.3	Compliant	
Band Edge Measurements	95.1115(b)(2)	7.4	Compliant	
Radiated Field Strength of Harmonics	95.1115(b)(2)	7.4	Compliant	
Undesired Emissions	95.1115(b)(1) 95.1115(b)(2)	7.4	Compliant	
Frequency Stability	95.1115(e)	7.5	Compliant	
Conducted Emissions	N/A	N/A	N/A	Battery Operated Device
RF Safety	95.1125	7.6	Compliant	

7. Measurement Data (continued)

7.1. Emissions Bandwidth (95.633(e)(3))

Requirement: Emission bandwidth will be determined by measuring the width of the signal between points, one below the carrier center frequency and one above the carrier center frequency, that are 20 dB down relative to the maximum level of the modulated carrier. Compliance with the emission bandwidth limit is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth of approximately equal to 1.0% of the emission bandwidth of the device under measurement.

Result: The measurement data is detailed in the table and plots in this section of the report.

Channel	Freq (MHz)	Emission Bandwidth (MHz)	Channel	Freq (MHz)	Emission Bandwidth (MHz)
1	1395.9	1.182	4	1427.9	1.176
3	1399.1	1.174	6	1431.1	1.180

7.1.1. Channel 1, 1395.9 MHz



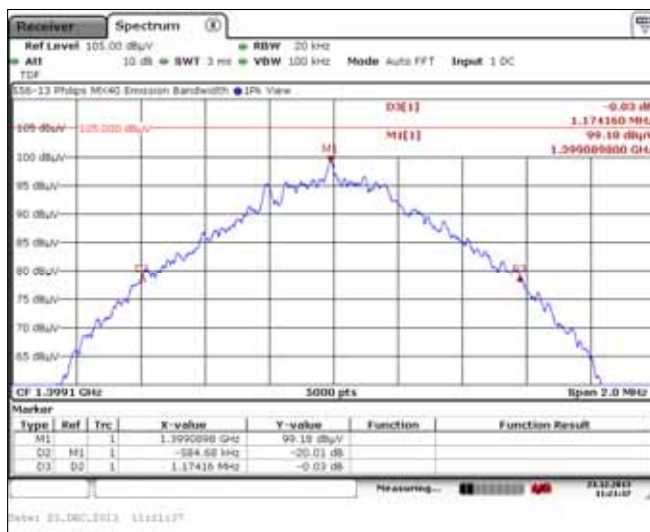
Test Number: 556-13

Issue Date: 1/16/2013

7. Measurement Data (continued)

7.1. Emissions Bandwidth (95.633(e)(3)) (continued)

7.1.2. Channel 3, 1399.1 MHz



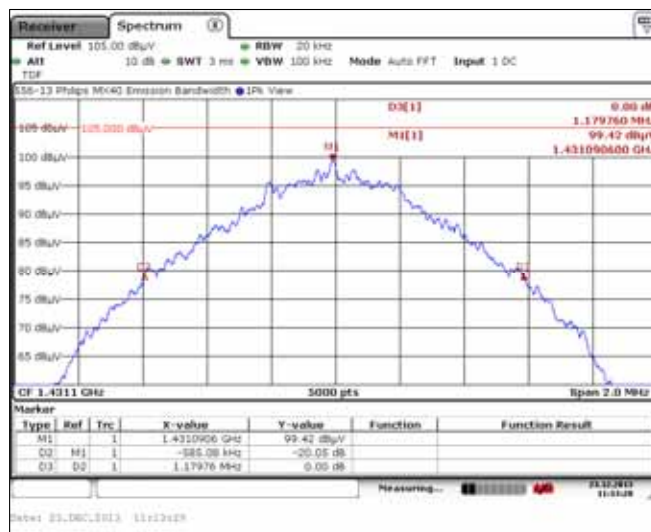
7.1.3. Channel 4, 1427.9 MHz



7. Measurement Data (continued)

7.1. Emissions Bandwidth (95.633(e)(3)) (continued)

7.1.4. Channel 6, 1431.1 MHz



7.2. Radiated Field Strength of Fundamental (95.1115(a)(2))

Requirement: In the 1395–1400 MHz and 1427–1429.5 MHz bands, the maximum allowable field strength is 740 mV/m (117.4 dBμV/m), as measured at a distance of 3 meters, using measuring equipment with a linear averaging detector and a 1 MHz measurement bandwidth.

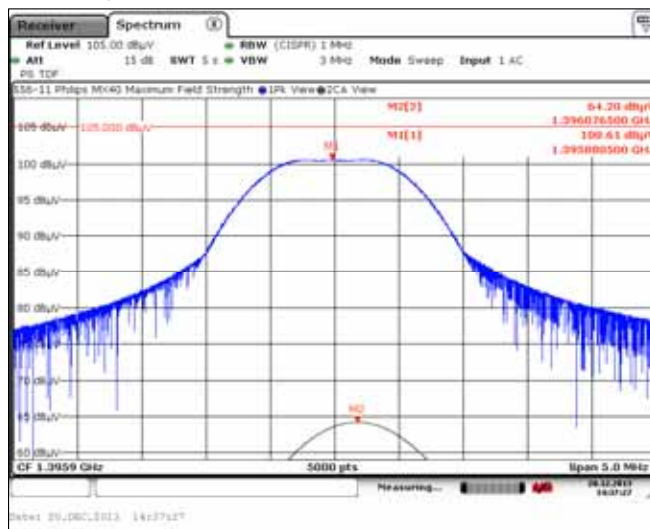
Results: The measured channels meet the required limits defined by FCC Part 95.1115(a)(2).

Channel	Freq (MHz)	Field Strength (dBμV/m)		Limit (dBμV/m)		Peak Margin (dB)	Average Margin (dB)	Result
		Peak	Average	Peak	Average			
1	1395.9	100.61	64.20	137.4	117.4	-36.8	-53.2	Compliant
3	1399.1	100.48	64.19	137.4	117.4	-36.9	-53.2	Compliant
4	1427.9	100.50	64.02	137.4	117.4	-36.9	-53.4	Compliant
6	1431.1	100.70	63.96	137.4	117.4	-36.7	-53.4	Compliant

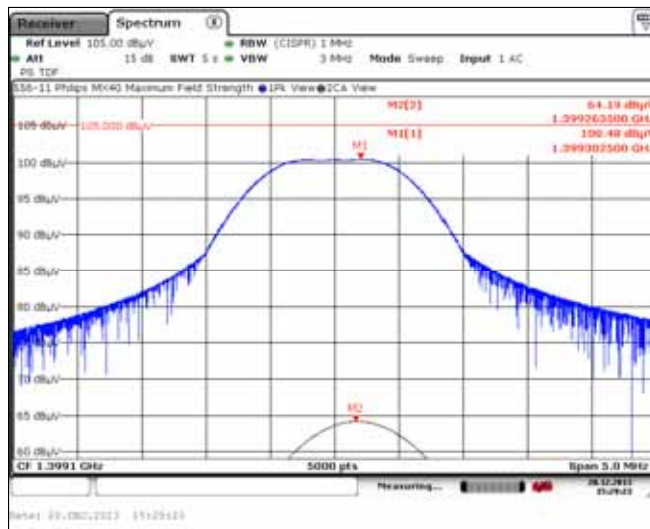
7. Measurement Data (continued)

7.2. Radiated Field Strength of Fundamental (95.1115(a)(2)) (continued)

7.2.1. Channel 1, 1395.9 MHz



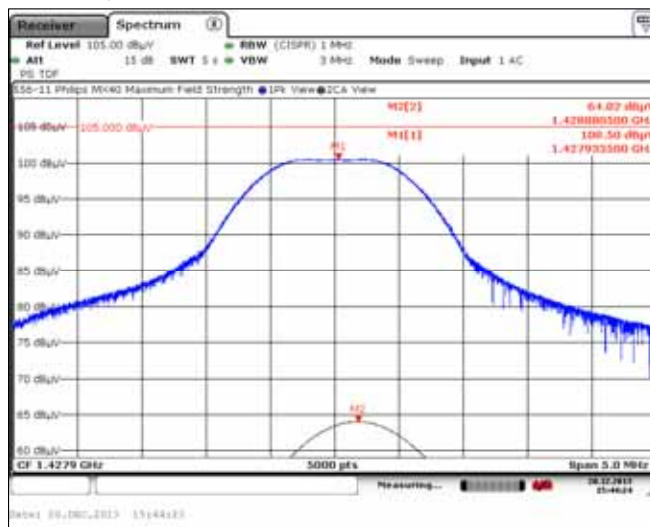
7.2.2. Channel 3 1399.1 MHz



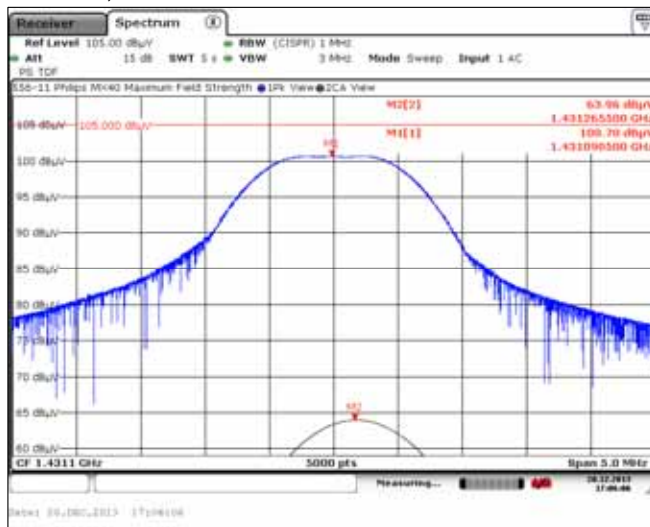
7. Measurement Data (continued)

7.2. Radiated Field Strength of Fundamental (95.115(a)(2)) (continued)

7.2.3. Channel 4, 1427.9 MHz



7.2.4. Channel 6, 1431.1 MHz



7. Measurement Data (continued)

7.3. Effective Radiated Power (ERP) (95.1111(a)(3))

Requirement: FCC Part 95, Section 95.1111(a)(3) requires the disclosure of the effective radiated power of the device under test. The device under test cannot be readily opened and the provisions for a conducted measurement are not available. For this reason, the effective radiated power of the device under test was calculated from the field strength measurements taken in Section 7.2 of the test report using the following formulas:

$$\text{EIRP} = E_{\text{Meas}} + 20\log(d_{\text{Meas}}) - 104.8 \quad (1)$$

$$\text{ERP} = \text{EIRP} - 2.15 \text{ dB} \quad (2)$$

EIRP Equivalent Isotropically Radiated Power, in dBm.

E_{Meas} Radiated field strength of the emission at the measurement distance, in dBμV/m

d_{Meas} is the measurement distance, in m

ERP Equivalent Radiated Power, in dBm.

(1) ANSI C63.10, Section 9.5

(2) FCC OET 412172 - Determining ERP and EIRP, Section 1.4.4.

Channel	Freq (MHz)	EIRP (dBm) Based on Field Strength		ERP (dBm) Based on Field Strength	
		Peak	Average	Peak	Average
1	1395.9	5.45	-30.96	3.30	-33.11
3	1399.1	5.32	-30.97	3.17	-33.12
4	1427.9	5.34	-31.14	3.19	-33.29
6	1431.1	5.54	-31.20	3.39	-33.35

7. Measurement Data (continued)**7.4. Undesired Emissions****Out of Band Emissions below 960 MHz (95.1115(b)(1))**

- Requirement:** Out-of-band emissions below 960 MHz are limited to 200 microvolts/meter (46 dB μ V/m), as measured at a distance of 3 meters, using measuring instrumentation with a CISPR quasi-peak detector.
- Procedure:** Test measurements were made in accordance with ANSI C63.10, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.
- The device under test was prescreened in three orthogonal positions to determine the worst case emissions in accordance with ANSI C63.10, Section 6.4.6. The test data detailed in this test report represents the worst case orientation.
- Test Note:** Measurements were made from 9 kHz to 30 MHz as detailed in FCC OET 971168 D01, section 8.0; Frequency Spectrum to be Investigated. The FCC Part 15.209 limit was selected for reference in the part of the spectrum. This data can be found in Appendix A, Plots 1 to 48.
- Results:** 9 kHz to 960 MHz – There were no emissions of concern found in this part of the spectrum. See Appendix A, plots 1 through 72 for emissions details.

Out of Band Emissions above 960 MHz (95.1115(b)(2))

- Requirement:** Out-of-band emissions above 960 MHz are limited to 500 microvolts/meter (54 dB μ V/m), as measured at a distance of 3 meters, using measuring instrumentation with an averaging detector and a 1 MHz measurement bandwidth.
- Procedure:** Test measurements were made in accordance with ANSI C63.10, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.
- The device under test was prescreened in three orthogonal positions to determine the worst case emissions in accordance with ANSI C63.10, Section 6.4.6. The test data detailed in this test report represents the worst case orientation.
- Results:** Compliant. See Sections 7.4.1, 7.4.2 and 7.4.3 And Appendix A, pages 63 to 98 for emissions details.

7. Measurement Data (continued)
7.4. Undesired Emissions (continued)
7.4.1. Band Edge

Requirement: §95.1115(b)(2) Out-of-band emissions above 960 MHz are limited to 500 microvolts per meter (54 dB μ V/m) as measured at a distance of 3 meters, using measuring equipment with a linear averaging detector and a 1 MHz measurement bandwidth.

The device under test was prescreened in three orthogonal positions to determine the worst case emissions in accordance with ANSI C63.10, Section 6.4.6. The test data detailed in this test report represents the worst case orientation.

Test Note: Band edge measurements were made using the procedure detailed in the FCC Office of Engineering and Technology (FCC OET) Publication Number 913591.

FCC OET Publication Number 913591 Calculator

Channel	Freq. (MHz)	Field Strength (dB μ V/m)		Band Edge		Corrected Band Edge & Worst Case Out of Band (dB μ V/m)	
		Peak	Average	Freq. (MHz)	30 kHz Offset (dB)	Peak	Average
1	1395.9	100.61	64.20	1395	40.44	60.17	23.76
3	1399.1	100.48	64.19	1400	40.88	59.60	23.31
4	1427.9	100.50	64.02	1427	40.60	59.90	23.42
6	1431.1	100.70	63.96	1432	39.48	61.22	24.48

Notes: 1 – Peak and average field strength values taken from section 7.2 of this report.
 2 – Delta values from plots on following pages
 Delta values are subtracted from peak & average values

Corrected Measurement Results

Channel	Freq. (MHz)	Field Strength (dB μ V/m)		Limit (dB μ V/m)		Margin (dB μ V/m)		Result
		Peak	Average	Peak	Average	Peak	Average	
1 LBE	1395	60.17	23.76	74	54	-13.83	-30.24	Compliant
3 UBE	1400	59.60	23.31	74	54	-14.40	-30.69	Compliant
4 LBE	1427	59.90	23.42	74	54	-14.10	-30.58	Compliant
6 UBE	1430	61.22	24.48	74	54	-12.78	-29.52	Compliant

7. Measurement Data (continued)

7.4. Undesired Emissions (continued)

7.4.1. Band Edge (continued)

7.4.1.1. Channel 1, 1395.9 MHz Offset Measurement



7.4.1.2. Channel 3, 1399.1 MHz Offset Measurement



7. Measurement Data (continued)

7.4. Undesired Emissions (continued)

7.4.1. Band Edge (continued)

7.4.1.3. Channel 4, 1427.9 MHz Offset Measurement



7.4.1.4. Channel 6, 1431.1 MHz Offset Measurement



7. Measurement Data (continued)

7.4. Undesired Emissions (continued)

7.4.2. Combined Worst Case Radiated Field Strength of Harmonics

Test Note: For each harmonic emission, three orthogonal positions at both antenna polarities were investigated. This table represents the worst case of each harmonic frequency.

Freq. (MHz)	Field Strength (dBμV/m)		Limit (dBμV/m)		Margin (dBμV/m)		Antenna Polarity (H/V)	Result
	Peak	Average	Peak	Average	Peak	Average		
2791.8	45.35	32.58	74.00	54.00	-28.65	-21.42	V	Compliant
2798.2	46.01	32.85	74.00	54.00	-27.99	-21.15	H	Compliant
2855.8	46.26	32.41	74.00	54.00	-27.74	-21.59	H	Compliant
2862.2	46.60	32.93	74.00	54.00	-27.40	-21.07	V	Compliant
4187.7	47.69	34.41	74.00	54.00	-26.31	-19.59	H	Compliant
4197.3	47.60	34.59	74.00	54.00	-26.40	-19.41	V	Compliant
4283.7	48.27	36.65	74.00	54.00	-25.73	-17.35	H	Compliant
4293.3	48.35	34.97	74.00	54.00	-25.65	-19.03	V	Compliant
5583.6	54.93	36.51	74.00	54.00	-19.07	-17.49	V	Compliant
5596.4	50.22	36.87	74.00	54.00	-23.78	-17.13	H	Compliant
5711.6	52.36	36.65	74.00	54.00	-21.64	-17.35	H	Compliant
5724.4	50.14	36.99	74.00	54.00	-23.86	-17.01	V	Compliant
6979.5	52.84	38.85	74.00	54.00	-21.16	-15.15	V	Compliant
6995.5	52.54	39.03	74.00	54.00	-21.46	-14.97	H	Compliant
7139.5	52.21	38.41	74.00	54.00	-21.79	-15.59	V	Compliant
7155.5	51.59	38.17	74.00	54.00	-22.41	-15.83	H	Compliant
8375.4	51.51	38.65	74.00	54.00	-22.49	-15.35	H	Compliant
8394.6	52.17	38.64	74.00	54.00	-21.83	-15.36	H	Compliant
8567.4	52.35	38.78	74.00	54.00	-21.65	-15.22	V	Compliant
8586.6	52.61	39.56	74.00	54.00	-21.39	-14.44	H	Compliant
9771.3	58.75	40.77	74.00	54.00	-15.25	-13.23	V	Compliant
9793.7	57.58	41.19	74.00	54.00	-16.42	-12.81	H	Compliant
9995.3	57.87	41.43	74.00	54.00	-16.13	-12.57	V	Compliant
10017.7	59.09	42.65	74.00	54.00	-14.91	-11.35	V	Compliant
11167.2	56.79	43.15	74.00	54.00	-17.21	-10.85	H	Compliant
11192.8	56.65	43.52	74.00	54.00	-17.35	-10.48	H	Compliant
11423.2	56.55	44.25	74.00	54.00	-17.45	-9.75	V	Compliant
11448.8	56.75	43.44	74.00	54.00	-17.25	-10.56	V	Compliant
12563.1	58.22	44.93	74.00	54.00	-15.78	-9.07	H	Compliant
12591.9	58.82	44.79	74.00	54.00	-15.18	-9.21	H	Compliant
12851.1	57.96	44.29	74.00	54.00	-16.04	-9.71	V	Compliant
12879.9	57.59	44.70	74.00	54.00	-16.41	-9.30	V	Compliant
13959.0	60.68	46.87	74.00	54.00	-13.32	-7.13	H	Compliant
13991.0	60.35	46.69	74.00	54.00	-21.10	-13.57	H	Compliant
14279.0	60.96	46.94	74.00	54.00	-20.22	-12.63	H	Compliant
14311.0	60.68	47.51	74.00	54.00	-19.07	-11.78	V	Compliant

7. Measurement Data (continued)

7.4. Undesired Emissions (continued)

7.4.3. General Spurious Emissions

Note: There were no emissions of concern found from 9 kHz to 960 MHz.

DUT Ch.	DUT Axis ¹	Frequency (MHz)	Field Strength (dBμV/m)		Limit (dBμV/m)		Margin (dBμV/m)		Ant. Pol. (H/V)	Ant. Ht. (cm)	TT Pos. (deg)
			Peak	Average	Peak	Average	Peak	Average			
Ch 3	Z-Axis	1290.285	54.51	28.88	74.00	54.00	-19.49	-25.12	V	100	60
Ch 3	Y-Axis	1464.468	57.80	40.82	74.00	54.00	-16.20	-13.18	H	119	173
Ch 1	Y-Axis	1496.330	50.71	29.12	74.00	54.00	-23.29	-24.88	H	113	340
Ch 1	Y-Axis	8852.574	55.82	38.37	74.00	54.00	-18.18	-15.63	H	133	271
Ch 1	Z-Axis	8576.043	55.19	37.97	74.00	54.00	-18.81	-16.03	V	133	277
Ch 1	Z-Axis	8375.039	53.57	36.98	74.00	54.00	-20.43	-17.02	V	131	42
Ch 1	X-Axis	9771.363	57.41	39.33	74.00	54.00	-16.59	-14.67	V	130	263
Ch 1	Y-Axis	1928.170	63.58	38.85	74.00	54.00	-10.42	-15.15	V	124	246
Ch 3	Y-Axis	8801.431	56.57	40.13	74.00	54.00	-17.43	-13.87	H	136	112
Ch 4	X-Axis	2413.855	48.50	35.29	74.00	54.00	-25.50	-18.71	V	113	124
Ch 6	Z-Axis	2051.654	48.57	40.81	74.00	54.00	-25.43	-13.19	V	125	0
Ch 3	X-Axis	5596.421	53.79	36.72	74.00	54.00	-20.21	-17.28	H	142	288
Ch 3	Z-Axis	1932.251	49.34	31.72	74.00	54.00	-24.66	-22.28	H	131	163
Ch 3	X-Axis	1334.053	49.94	29.41	74.00	54.00	-24.06	-24.59	V	132	70
Ch 6	Y-Axis	1502.534	46.72	29.00	74.00	54.00	-27.28	-25.00	H	127	355

7. Measurement Data
7.5. Frequency Stability (95.628(d))

Requirement: Manufacturers of wireless medical telemetry devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all of the manufacturer's specified conditions.

Test Note: Measurements were made in accordance with the procedure detailed in ANSI C63.10, Section 6.8.1 - Frequency stability with respect to ambient temperature.

Result: Stability is maintained to ± 100 ppm over the range of 0 to 40 degrees Celsius.

7.5.1. Channel 1 (1395.9 MHz), Ambient = 22.1°C

Temp °C	Time	Meas Freq.	Limit (Allowable Range)		Freq. Offset (MHz)	Result
		(MHz)	F _{MIN} (MHz)	F _{MAX} (MHz)		
Ambient	N/A	1395.8903	N/A		N/A	N/A
+40	Startup	1395.9116	1395.7507	1396.0299	0.0213	Compliant
	2 Minutes	1395.8897	1395.7507	1396.0299	0.0006	Compliant
	5 Minutes	1395.8872	1395.7507	1396.0299	0.0031	Compliant
	10 Minutes	1395.8880	1395.7507	1396.0299	0.0023	Compliant
+30	Startup	1395.9343	1395.7507	1396.0299	0.0440	Compliant
	2 Minutes	1395.8761	1395.7507	1396.0299	0.0142	Compliant
	5 Minutes	1395.8989	1395.7507	1396.0299	0.0086	Compliant
	10 Minutes	1395.8986	1395.7507	1396.0299	0.0083	Compliant
+20	Startup	1395.8379	1395.7507	1396.0299	0.0524	Compliant
	2 Minutes	1395.9007	1395.7507	1396.0299	0.0104	Compliant
	5 Minutes	1395.9105	1395.7507	1396.0299	0.0202	Compliant
	10 Minutes	1395.9159	1395.7507	1396.0299	0.0256	Compliant
+10	Startup	1395.8946	1395.7507	1396.0299	0.0043	Compliant
	2 Minutes	1395.8810	1395.7507	1396.0299	0.0093	Compliant
	5 Minutes	1395.9135	1395.7507	1396.0299	0.0232	Compliant
	10 Minutes	1395.9139	1395.7507	1396.0299	0.0236	Compliant
0	Startup	1395.9134	1395.7507	1396.0299	0.0231	Compliant
	2 Minutes	1395.9096	1395.7507	1396.0299	0.0193	Compliant
	5 Minutes	1395.9169	1395.7507	1396.0299	0.0266	Compliant
	10 Minutes	1395.8880	1395.7507	1396.0299	0.0023	Compliant

7. Measurement Data (continued)
7.5. Frequency Stability (95.628(d)) (continued)

Requirement: Manufacturers of wireless medical telemetry devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all of the manufacturer's specified conditions.

Test Note: Measurements were made in accordance with the procedure detailed in ANSI C63.10, Section 6.8.1 - Frequency stability with respect to ambient temperature.

Result: Stability is maintained to ± 100 ppm over the range of 0 to 40 degrees Celsius.

7.5.2. Channel 3 (1399.1 MHz), Ambient = 22.1°C

Temp °C	Time	Meas Freq.	Limit (Allowable Range)		Freq. Offset (MHz)	Result
		(MHz)	F _{MIN} (MHz)	F _{MAX} (MHz)		
Ambient	N/A	1399.0759	N/A		N/A	N/A
+40	Startup	1399.0912	1398.9360	1399.2158	0.0153	Compliant
	2 Minutes	1399.0973	1398.9360	1399.2158	0.0214	Compliant
	5 Minutes	1399.1070	1398.9360	1399.2158	0.0311	Compliant
	10 Minutes	1399.1126	1398.9360	1399.2158	0.0367	Compliant
+30	Startup	1399.1186	1398.9360	1399.2158	0.0427	Compliant
	2 Minutes	1399.0944	1398.9360	1399.2158	0.0185	Compliant
	5 Minutes	1399.0909	1398.9360	1399.2158	0.0150	Compliant
	10 Minutes	1399.1101	1398.9360	1399.2158	0.0342	Compliant
+20	Startup	1399.1133	1398.9360	1399.2158	0.0374	Compliant
	2 Minutes	1399.0940	1398.9360	1399.2158	0.0181	Compliant
	5 Minutes	1399.0966	1398.9360	1399.2158	0.0207	Compliant
	10 Minutes	1399.0999	1398.9360	1399.2158	0.0240	Compliant
+10	Startup	1399.0847	1398.9360	1399.2158	0.0088	Compliant
	2 Minutes	1399.1217	1398.9360	1399.2158	0.0457	Compliant
	5 Minutes	1399.0954	1398.9360	1399.2158	0.0195	Compliant
	10 Minutes	1399.1298	1398.9360	1399.2158	0.0539	Compliant
0	Startup	1399.0799	1398.9360	1399.2158	0.0040	Compliant
	2 Minutes	1399.1025	1398.9360	1399.2158	0.0266	Compliant
	5 Minutes	1399.0589	1398.9360	1399.2158	0.0170	Compliant
	10 Minutes	1399.1081	1398.9360	1399.2158	0.0322	Compliant

7. Measurement Data (continued)
7.5. Frequency Stability (95.628(d)) (continued)

Requirement: Manufacturers of wireless medical telemetry devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all of the manufacturer's specified conditions.

Test Note: Measurements were made in accordance with the procedure detailed in ANSI C63.10, Section 6.8.1 - Frequency stability with respect to ambient temperature.

Result: Stability is maintained to ± 100 ppm over the range of 0 to 40 degrees Celsius.

7.5.3. Channel 4 (1427.9 MHz), Ambient = 22.1°C

Temp °C	Time	Meas Freq.	Limit (Allowable Range)		Freq. Offset (MHz)	Result
		(MHz)	F _{MIN} (MHz)	F _{MAX} (MHz)		
Ambient	N/A	1427.8966	N/A		N/A	N/A
+40	Startup	1427.8806	1427.7538	1428.0394	0.0160	Compliant
	2 Minutes	1427.8759	1427.7538	1428.0394	0.0207	Compliant
	5 Minutes	1427.9134	1427.7538	1428.0394	0.0168	Compliant
	10 Minutes	1427.9007	1427.7538	1428.0394	0.0041	Compliant
+30	Startup	1427.9138	1427.7538	1428.0394	0.0172	Compliant
	2 Minutes	1427.9106	1427.7538	1428.0394	0.0140	Compliant
	5 Minutes	1427.8824	1427.7538	1428.0394	0.0142	Compliant
	10 Minutes	1427.8873	1427.7538	1428.0394	0.0093	Compliant
+20	Startup	1427.9165	1427.7538	1428.0394	0.0199	Compliant
	2 Minutes	1427.9159	1427.7538	1428.0394	0.0193	Compliant
	5 Minutes	1427.8767	1427.7538	1428.0394	0.0199	Compliant
	10 Minutes	1427.8824	1427.7538	1428.0394	0.0142	Compliant
+10	Startup	1427.8974	1427.7538	1428.0394	0.0008	Compliant
	2 Minutes	1427.8929	1427.7538	1428.0394	0.0037	Compliant
	5 Minutes	1427.8733	1427.7538	1428.0394	0.0233	Compliant
	10 Minutes	1427.8941	1427.7538	1428.0394	0.0025	Compliant
0	Startup	1427.9100	1427.7538	1428.0394	0.0134	Compliant
	2 Minutes	1427.8749	1427.7538	1428.0394	0.0217	Compliant
	5 Minutes	1427.8929	1427.7538	1428.0394	0.0037	Compliant
	10 Minutes	1427.9098	1427.7538	1428.0394	0.0132	Compliant

7. Measurement Data (continued)

7.5. Frequency Stability (95.628(d)) (continued)

Requirement: Manufacturers of wireless medical telemetry devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all of the manufacturer's specified conditions.

Test Note: Measurements were made in accordance with the procedure detailed in ANSI C63.10, Section 6.8.1 - Frequency stability with respect to ambient temperature.

Result: Stability is maintained to ± 100 ppm over the range of 0 to 40 degrees Celsius.

7.5.4. Channel 6 (1431.1 MHz), Ambient = 22.1°C

Temp °C	Time	Meas Freq.	Limit (Allowable Range)		Freq. Offset (MHz)	Result
		(MHz)	F _{MIN} (MHz)	F _{MAX} (MHz)		
Ambient	N/A	1431.0933	N/A		N/A	N/A
+40	Startup	1431.1076	1430.9502	1431.2364	0.01430	Compliant
	2 Minutes	1431.0893	1430.9502	1431.2364	0.00400	Compliant
	5 Minutes	1431.0935	1430.9502	1431.2364	0.00020	Compliant
	10 Minutes	1431.1317	1430.9502	1431.2364	0.03840	Compliant
+30	Startup	1431.1138	1430.9502	1431.2364	0.02050	Compliant
	2 Minutes	1431.1161	1430.9502	1431.2364	0.02280	Compliant
	5 Minutes	1431.0851	1430.9502	1431.2364	0.00820	Compliant
	10 Minutes	1431.0761	1430.9502	1431.2364	0.01720	Compliant
+20	Startup	1431.0898	1430.9502	1431.2364	0.00350	Compliant
	2 Minutes	1431.0772	1430.9502	1431.2364	0.01610	Compliant
	5 Minutes	1431.0912	1430.9502	1431.2364	0.00210	Compliant
	10 Minutes	1431.0947	1430.9502	1431.2364	0.00140	Compliant
+10	Startup	1431.0825	1430.9502	1431.2364	0.01080	Compliant
	2 Minutes	1431.1131	1430.9502	1431.2364	0.01980	Compliant
	5 Minutes	1431.1007	1430.9502	1431.2364	0.00740	Compliant
	10 Minutes	1431.0870	1430.9502	1431.2364	0.00630	Compliant
0	Startup	1431.0883	1430.9502	1431.2364	0.00500	Compliant
	2 Minutes	1431.0772	1430.9502	1431.2364	0.01610	Compliant
	5 Minutes	1431.0999	1430.9502	1431.2364	0.00660	Compliant
	10 Minutes	1430.8302	1430.9502	1431.2364	0.26312	Compliant

7. Measurement Data (continued)

7.6. RF Safety (95.1125, 2.1093, 1.1307 (b)(1))

Requirement: Portable devices as defined in § 2.1093 of this chapter operating in the WMTS are subject to radio frequency radiation exposure requirements as specified in §§ 1.1307(b) and 2.1093 of this chapter.

For a 1-g SAR, the test exclusion result must be ≤ 3.0 .

Test Notes: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by the following formula:

$$\text{SAR Test Exclusion} = \frac{P_{\text{MAX}}}{d_{\text{MIN}}} \times \sqrt{f_{(\text{GHz})}} \quad (1)$$

P_{MAX} mW Maximum power of channel, including tune-up tolerance

d_{MIN} mm Minimum test separation distance, mm (≤ 50 mm)

$f_{(\text{GHz})}$ GHz $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz (>100 MHz and <6 GHz)

(1) FCC OET 447498 - Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

Result: The device under test meets the exclusion requirement detailed in FCC OET 447498.

Test Channel:	Ch1	Ch3	Ch4	Ch6
Input: P_{MAX}^1 (mW)	3.51	3.41	3.42	3.58
d_{MIN} (mm)	5.00	5.00	5.00	5.00
$f_{(\text{GHz})}$	1.396	1.399	1.428	1.431
Test Exclusion:	0.83	0.81	0.82	0.86
Limit Exemption:	3.00	3.00	3.00	3.00

¹ Taken from the table in Section 7.3 of this test report (converted to mW).

8. 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.

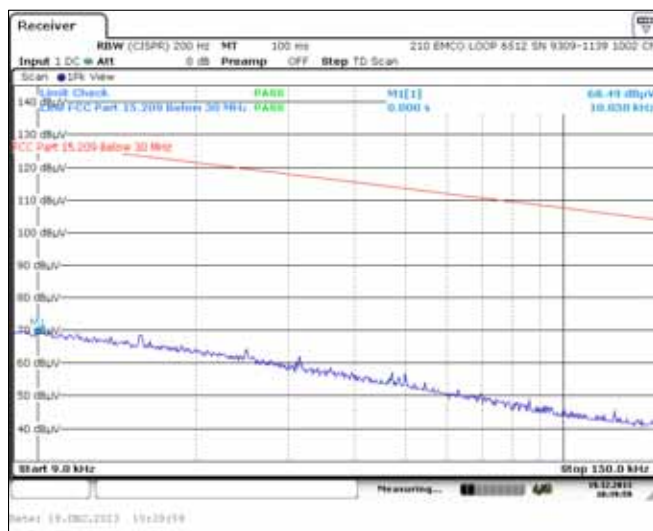
The conducted emissions site is part of a 16' x 20' x 12' ferrite tile chamber and uses one of the walls for the vertical ground plane required by EN 55022.

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.

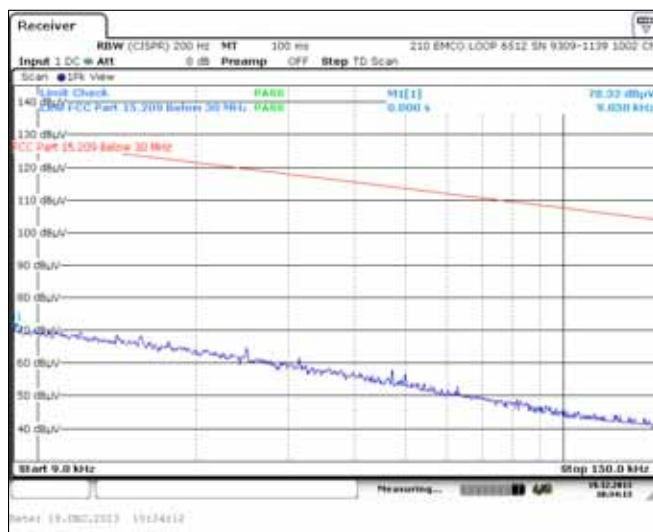
Appendix A

Undesired Emissions

Plot 1. Channel 1: 1395.9 MHz – X-Axis, 9 kHz to 150 kHz, GHz, Parallel Antenna



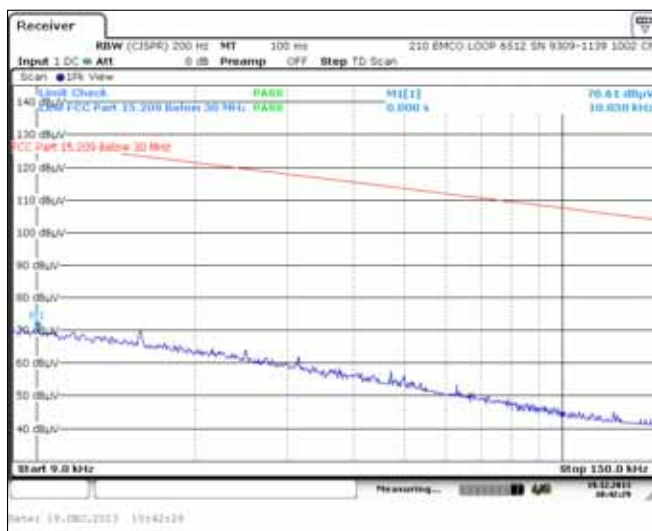
Plot 2. Channel 1: 1395.9 MHz - X-Axis, 9 kHz to 150 kHz, Perpendicular Antenna



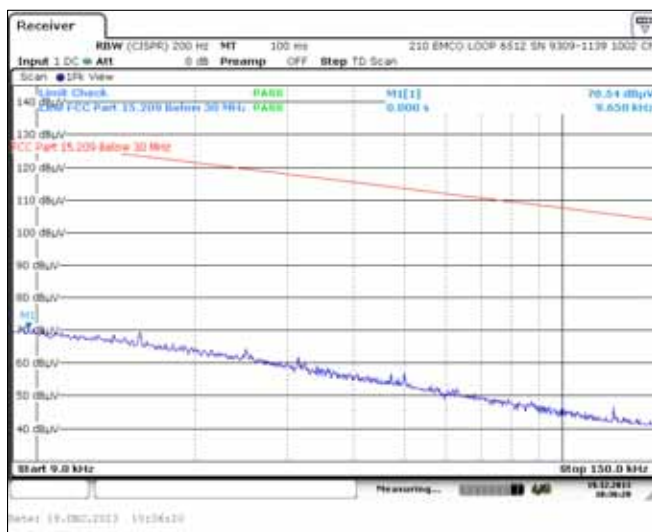
Appendix A

Undesired Emissions (continued)

Plot 3. Channel 1: 1395.9 MHz - Y-Axis, 9 kHz to 150 kHz, Parallel Antenna



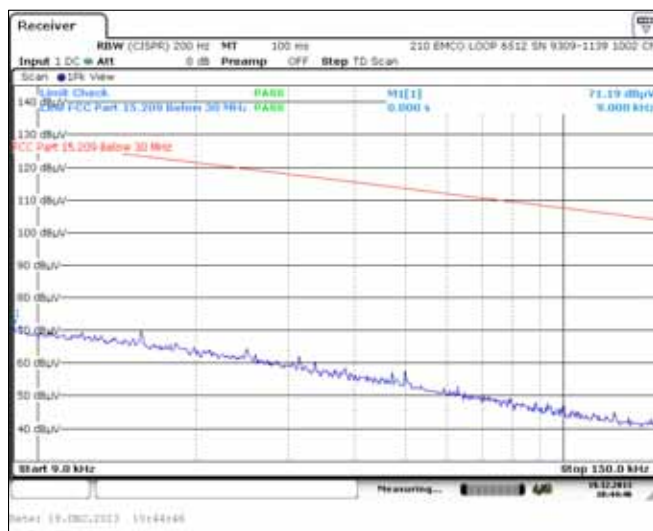
Plot 4. Channel 1: 1395.9 MHz - Y-Axis, 9 kHz to 150 kHz, Perpendicular Antenna



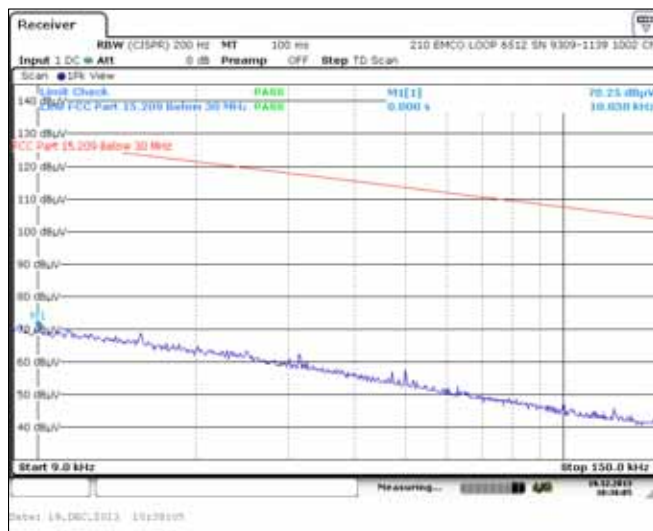
Appendix A

Undesired Emissions (continued)

Plot 5. Channel 1: 1395.9 MHz - Z-Axis, 9 kHz to 150 kHz, Parallel Antenna



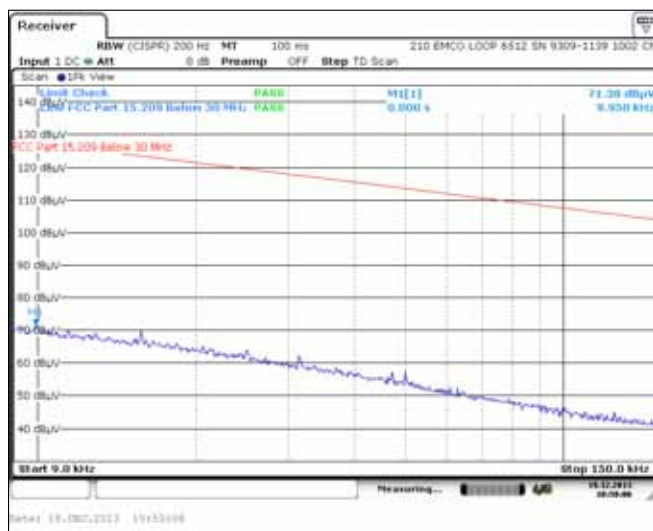
Plot 6. Channel 1: 1395.9 MHz - Z-Axis, 9 kHz to 150 kHz, Perpendicular Antenna



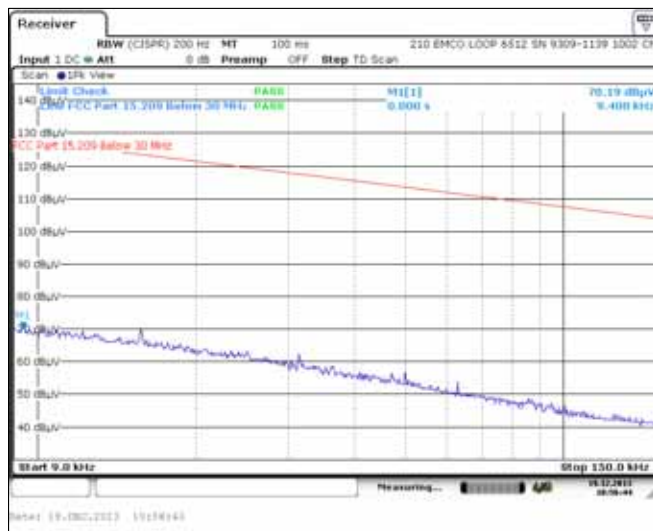
Appendix A

Undesired Emissions (continued)

Plot 7. Channel 3: 1399.1 MHz - X-Axis, 9 kHz to 150 kHz, Parallel Antenna



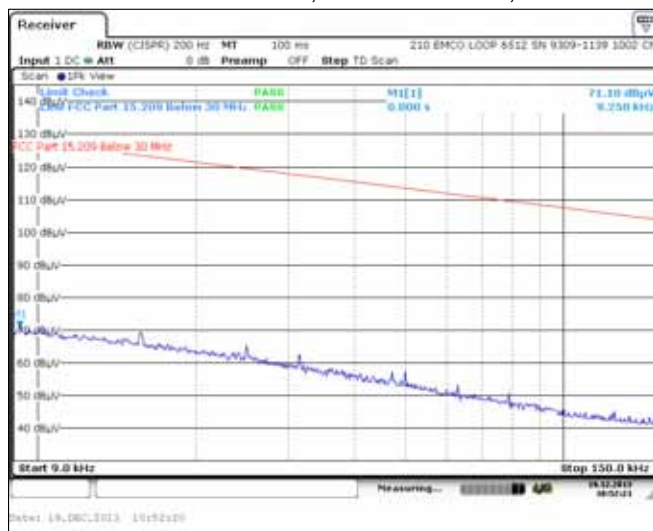
Plot 8. Channel 3: 1399.1 MHz - X-Axis, 9 kHz to 150 kHz, Perpendicular Antenna



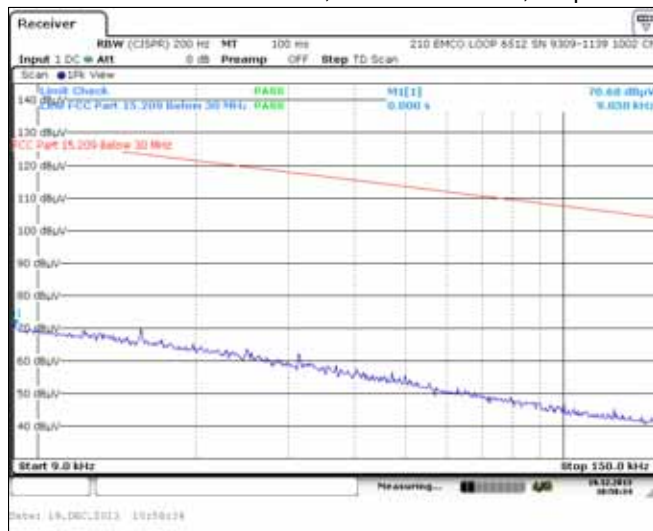
Appendix A

Undesired Emissions (continued)

Plot 9. Channel 3: 1399.1 MHz - Y-Axis, 9 kHz to 150 kHz, Parallel Antenna



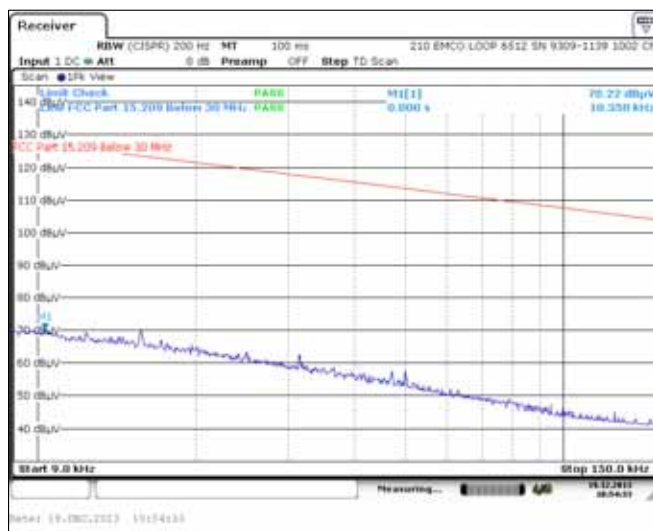
Plot 10. Channel 3: 1399.1 MHz - Y-Axis, 9 kHz to 150 kHz, Perpendicular Antenna



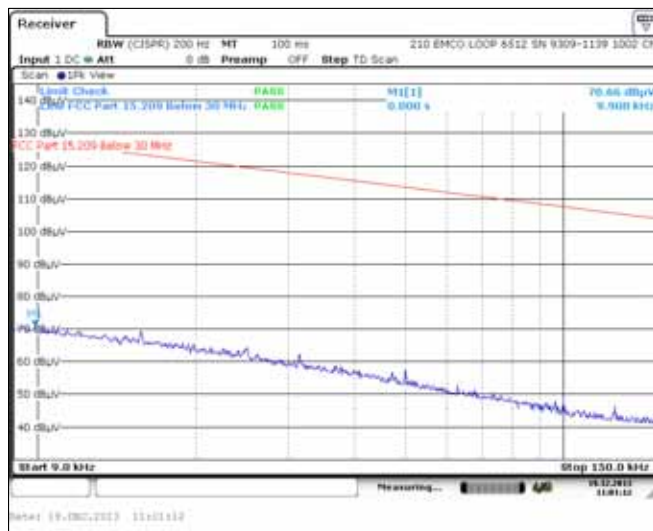
Appendix A

Undesired Emissions (continued)

Plot 11. Channel 3: 1399.1 MHz - Z-Axis, 9 kHz to 150 kHz, Parallel Antenna



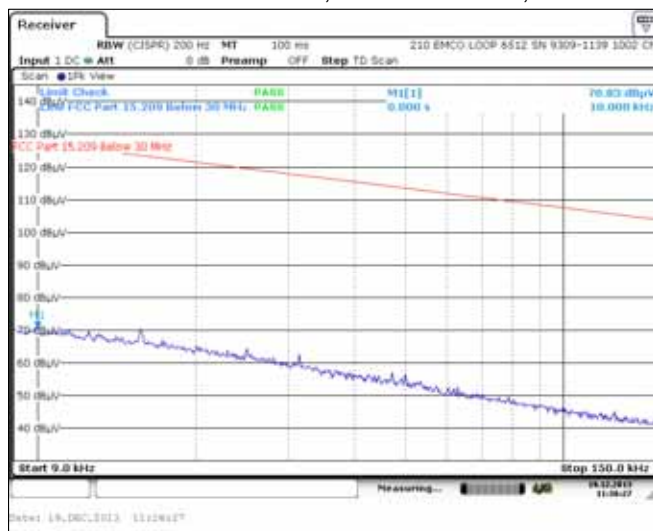
Plot 12. Channel 3: 1399.1 MHz - Z-Axis, 9 kHz to 150 kHz, Perpendicular Antenna



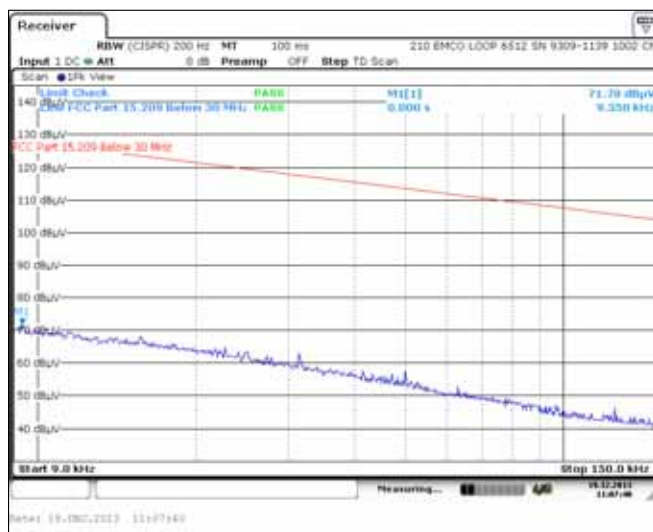
Appendix A

Undesired Emissions (continued)

Plot 13. Channel 4: 1427.9 MHz - X-Axis, 9 kHz to 150 kHz, Parallel Antenna



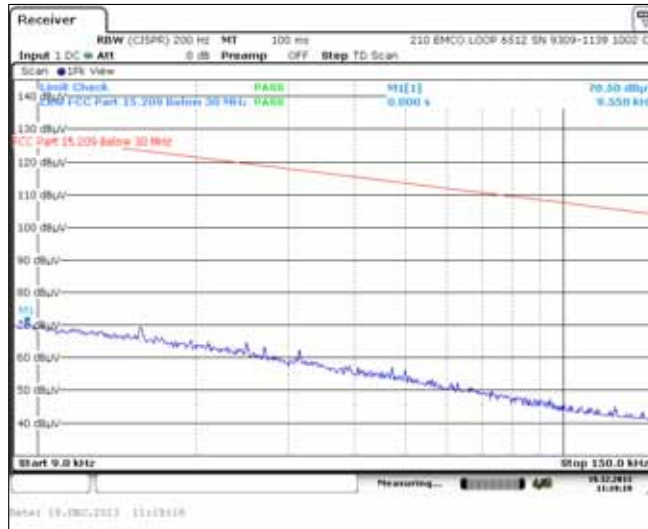
Plot 14. Channel 4: 1427.9 MHz - X-Axis, 9 kHz to 150 kHz, Perpendicular Antenna



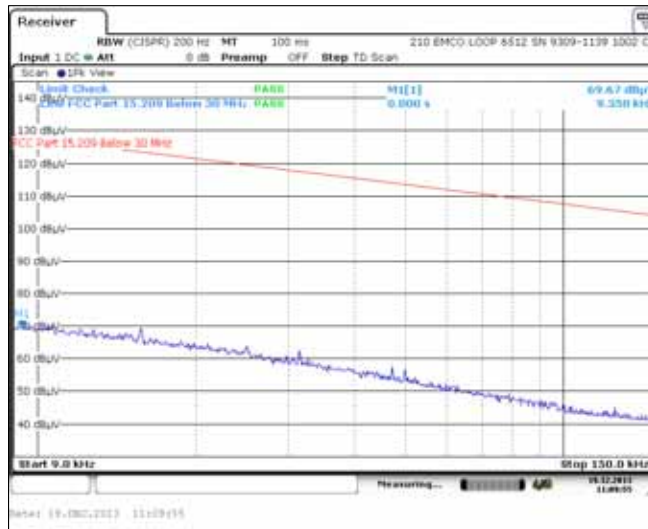
Appendix A

Undesired Emissions (continued)

Plot 15. Channel 4: 1427.9 MHz - Y-Axis, 9 kHz to 150 kHz, Parallel Antenna



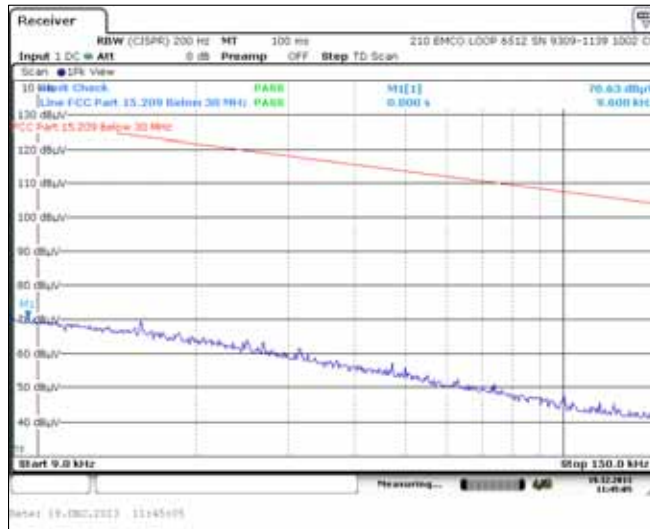
Plot 16. Channel 4: 1427.9 MHz - Y-Axis, 9 kHz to 150 kHz, Perpendicular Antenna



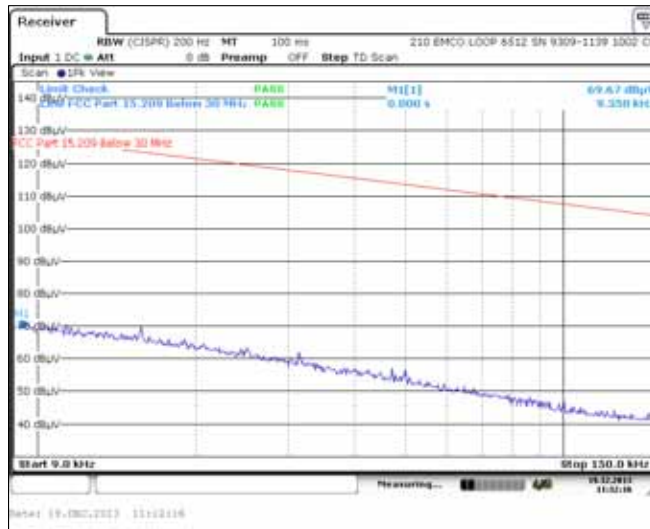
Appendix A

Undesired Emissions (continued)

Plot 17. Channel 4: 1427.9 MHz - Z-Axis, 9 kHz to 150 kHz, Parallel Antenna



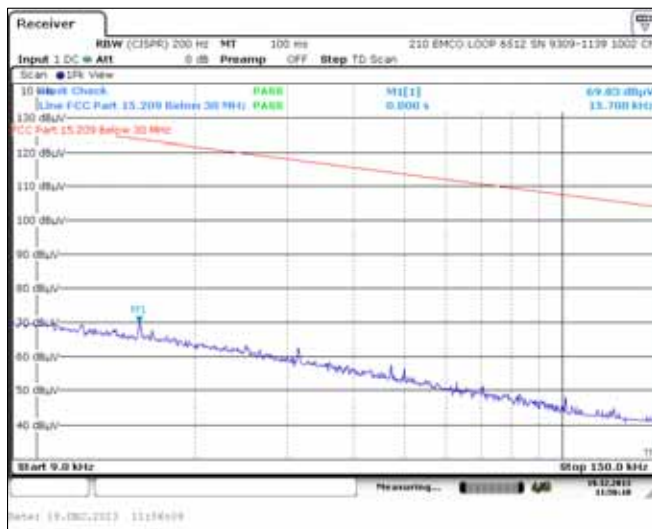
Plot 18. Channel 4: 1427.9 MHz - Z-Axis, 9 kHz to 150 kHz, Perpendicular Antenna



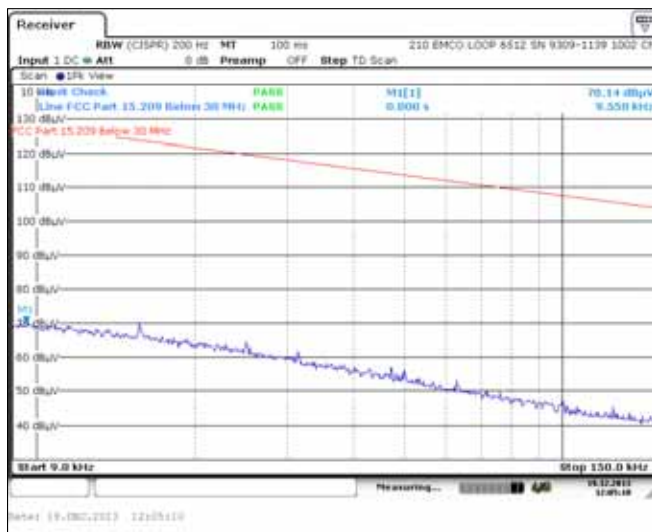
Appendix A

Undesired Emissions (continued)

Plot 19. Channel 6: 1431.1 MHz - X-Axis, 9 kHz to 150 kHz, Parallel Antenna



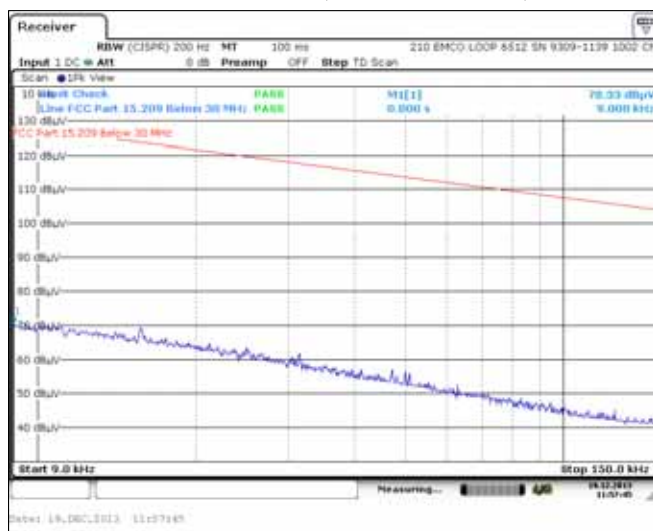
Plot 20. Channel 6: 1431.9 MHz - X-Axis, 9 kHz to 150 kHz, Perpendicular Antenna



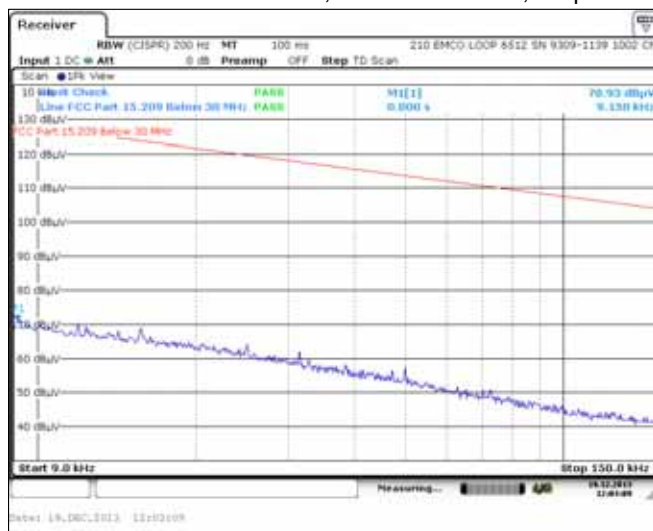
Appendix A

Undesired Emissions (continued)

Plot 21. Channel 6: 1431.9 MHz - Y-Axis, 9 kHz to 150 kHz, Parallel Antenna



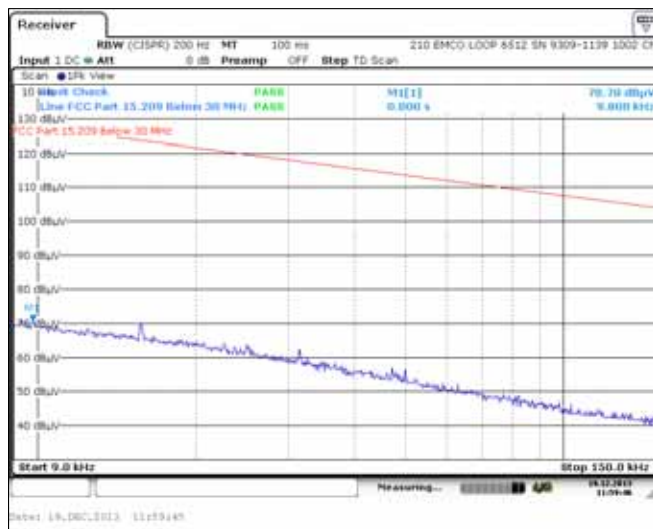
Plot 22. Channel 6: 1431.9 MHz - Y-Axis, 9 kHz to 150 kHz, Perpendicular Antenna



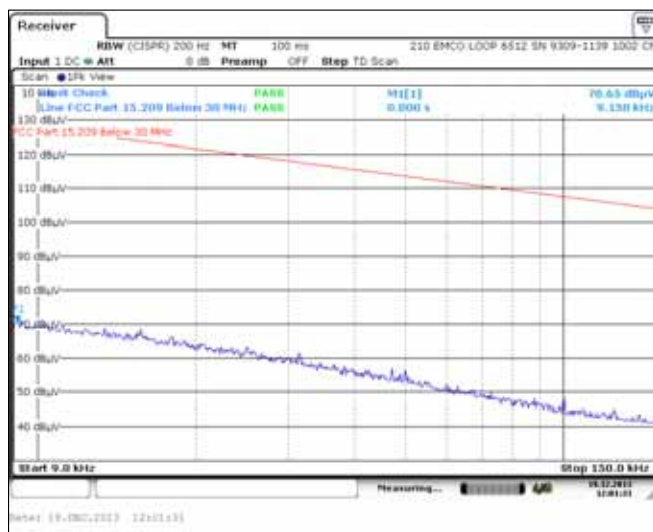
Appendix A

Undesired Emissions (continued)

Plot 23. Channel 6: 1431.9 MHz - Z-Axis, 9 kHz to 150 kHz, Parallel Antenna



Plot 24. Channel 6: 1431.9 MHz - Z-Axis, 9 kHz to 150 kHz, Perpendicular Antenna



Appendix A

Undesired Emissions (continued)

Plot 25. Channel 1: 1395.9 MHz – X-Axis, 150 kHz to 30 MHz, GHz, Parallel Antenna



Plot 26. Channel 1: 1395.9 MHz - X-Axis, 150 kHz to 30 MHz, Perpendicular Antenna



Appendix A

Undesired Emissions (continued)

Plot 27. Channel 1: 1395.9 MHz - Y-Axis, 150 kHz to 30 MHz, Parallel Antenna



Plot 28. Channel 1: 1395.9 MHz - Y-Axis, 150 kHz to 30 MHz, Perpendicular Antenna



Appendix A

Test Number: 556-13

Issue Date: 1/16/2013

Undesired Emissions (continued)

Plot 29. Channel 1: 1395.9 MHz - Z-Axis, 150 kHz to 30 MHz, Parallel Antenna



Plot 30. Channel 1: 1395.9 MHz - Z-Axis, 150 kHz to 30 MHz, Perpendicular Antenna



Appendix A

Undesired Emissions (continued)

Plot 31. Channel 3: 1399.1 MHz - X-Axis, 150 kHz to 30 MHz, Parallel Antenna



Plot 32. Channel 3: 1399.1 MHz - X-Axis, 150 kHz to 30 MHz, Perpendicular Antenna



Appendix A

Undesired Emissions (continued)

Plot 33. Channel 3: 1399.1 MHz - Y-Axis, 150 kHz to 30 MHz, Parallel Antenna



Plot 34. Channel 3: 1399.1 MHz - Y-Axis, 150 kHz to 30 MHz, Perpendicular Antenna



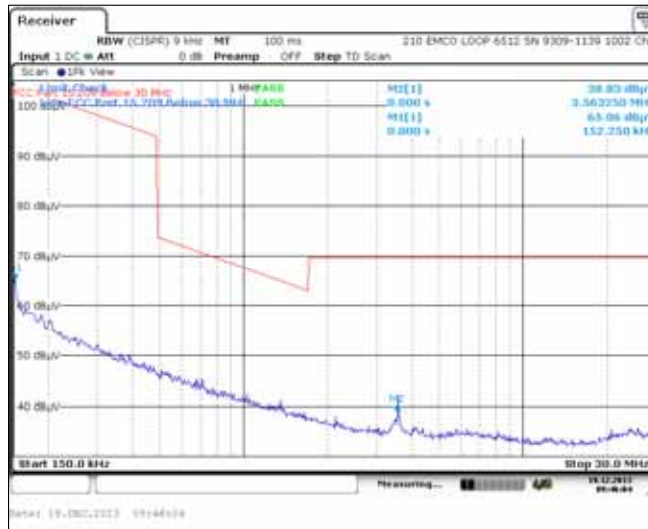
Test Number: 556-13

Issue Date: 1/16/2013

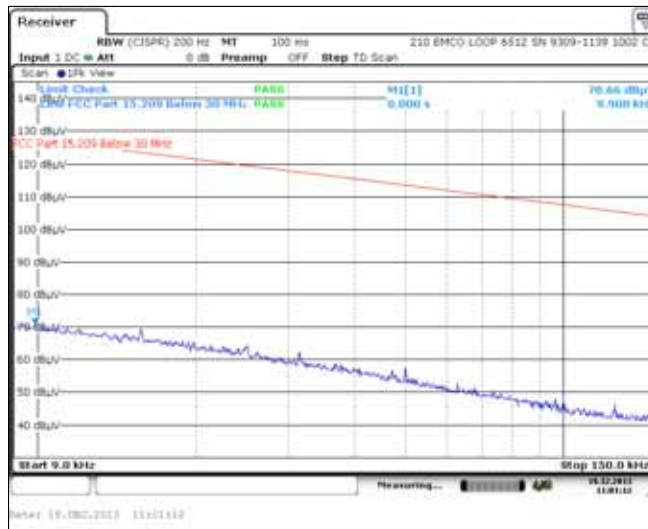
Appendix A

Undesired Emissions (continued)

Plot 35. Channel 3: 1399.1 MHz - Z-Axis, 150 kHz to 30 MHz, Parallel Antenna



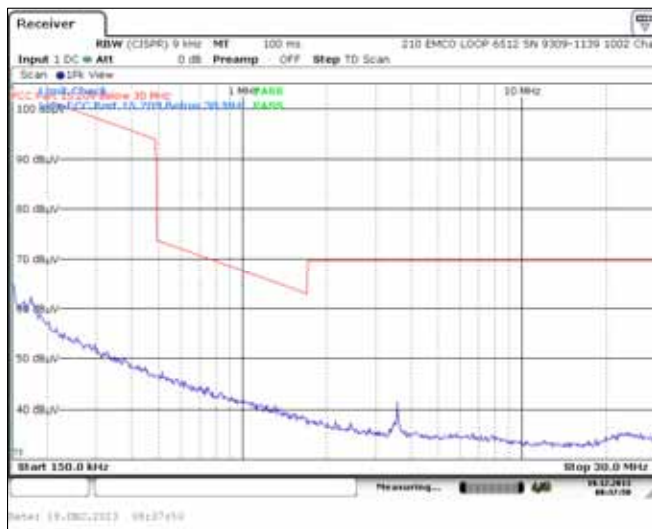
Plot 36. Channel 3: 1399.1 MHz - Z-Axis, 150 kHz to 30 MHz, Perpendicular Antenna



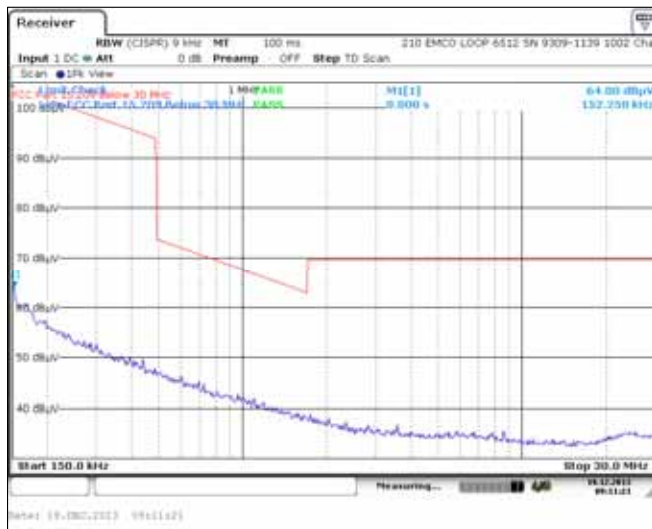
Appendix A

Undesired Emissions (continued)

Plot 37. Channel 4: 1427.9 MHz - X-Axis, 150 kHz to 30 MHz, Parallel Antenna



Plot 38. Channel 4: 1427.9 MHz - X-Axis, 150 kHz to 30 MHz, Perpendicular Antenna



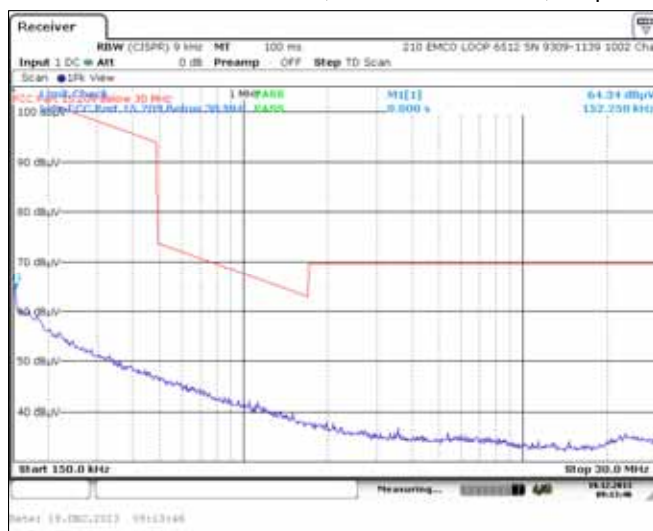
Appendix A

Undesired Emissions (continued)

Plot 39. Channel 4: 1427.9 MHz - Y-Axis, 150 kHz to 30 MHz, Parallel Antenna



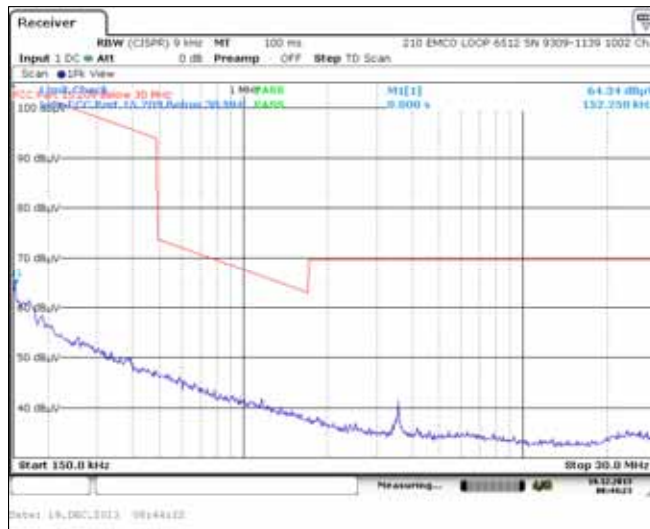
Plot 40. Channel 4: 1427.9 MHz - Y-Axis, 150 kHz to 30 MHz, Perpendicular Antenna



Appendix A

Undesired Emissions (continued)

Plot 41. Channel 4: 1427.9 MHz - Z-Axis, 150 kHz to 30 MHz, Parallel Antenna



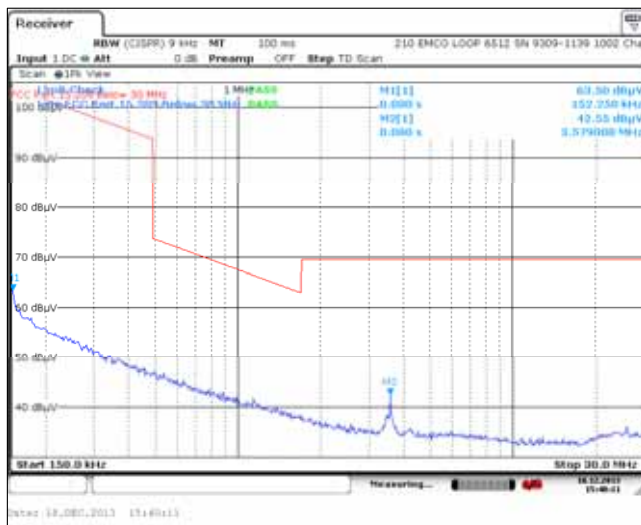
Plot 42. Channel 4: 1427.9 MHz - Z-Axis, 150 kHz to 30 MHz, Perpendicular Antenna



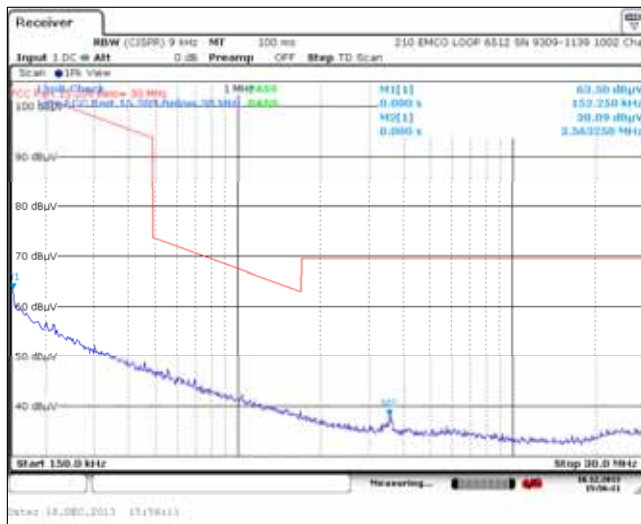
Appendix A

Undesired Emissions (continued)

Plot 43. Channel 6: 1431.1 MHz - X-Axis, 150 kHz to 30 MHz, Parallel Antenna



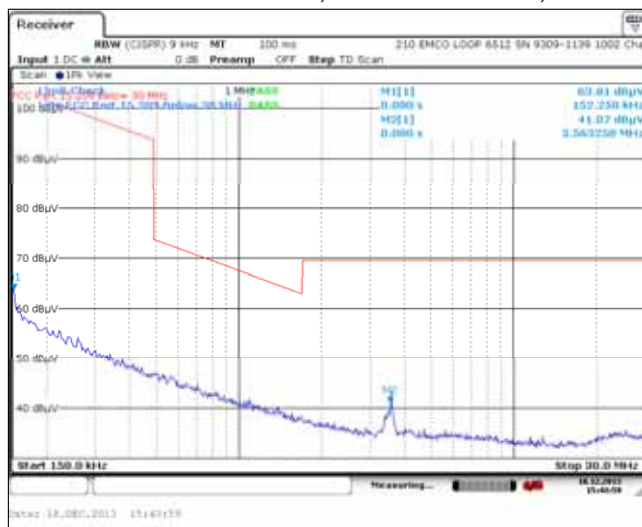
Plot 44. Channel 6: 1431.9 MHz - X-Axis, 150 kHz to 30 MHz, Perpendicular Antenna



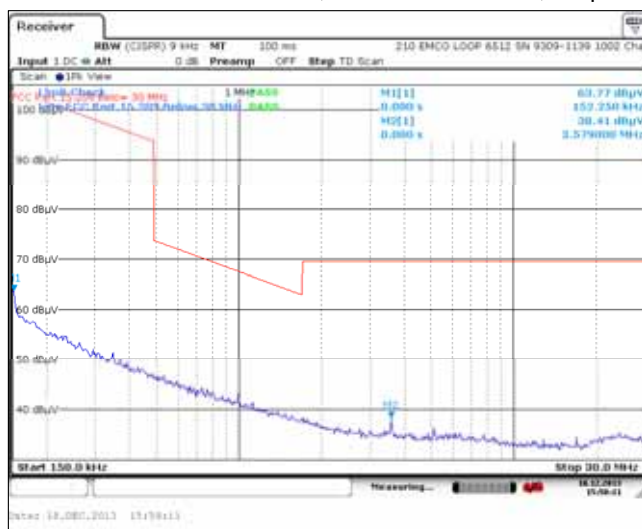
Appendix A

Undesired Emissions (continued)

Plot 45. Channel 6: 1431.9 MHz - Y-Axis, 150 kHz to 30 MHz, Parallel Antenna



Plot 46. Channel 6: 1431.9 MHz - Y-Axis, 150 kHz to 30 MHz, Perpendicular Antenna



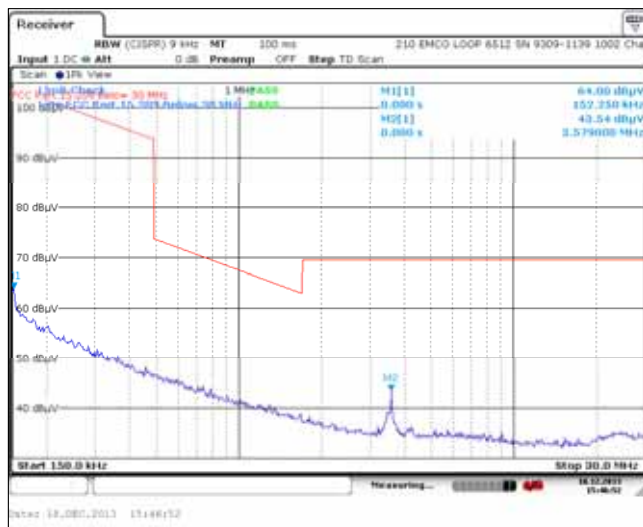
Test Number: 556-13

Issue Date: 1/16/2013

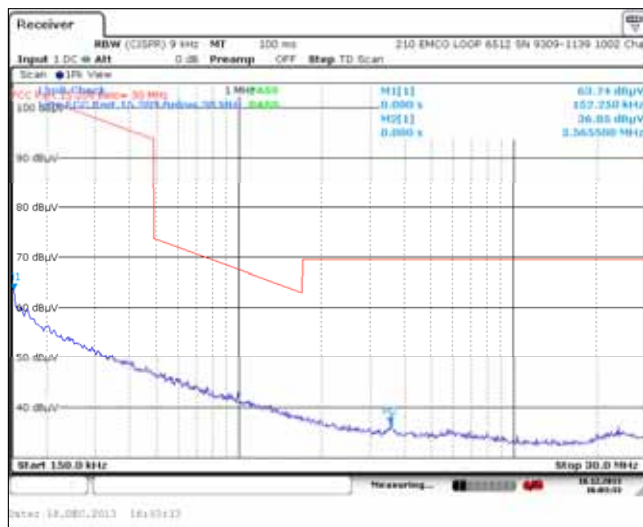
Appendix A

Undesired Emissions (continued)

Plot 47. Channel 6: 1431.9 MHz - Z-Axis, 150 kHz to 30 MHz, Parallel Antenna



Plot 48. Channel 6: 1431.9 MHz - Z-Axis, 150 kHz to 30 MHz, Perpendicular Antenna



Appendix A

Undesired Emissions (continued)

Plot 49. Channel 1: 1395.9 MHz - X-Axis, 30 MHz to 1 GHz, Horizontal Polarity



Plot 50. Channel 1: 1395.9 MHz - X-Axis, 30 MHz to 1 GHz, Vertical Polarity



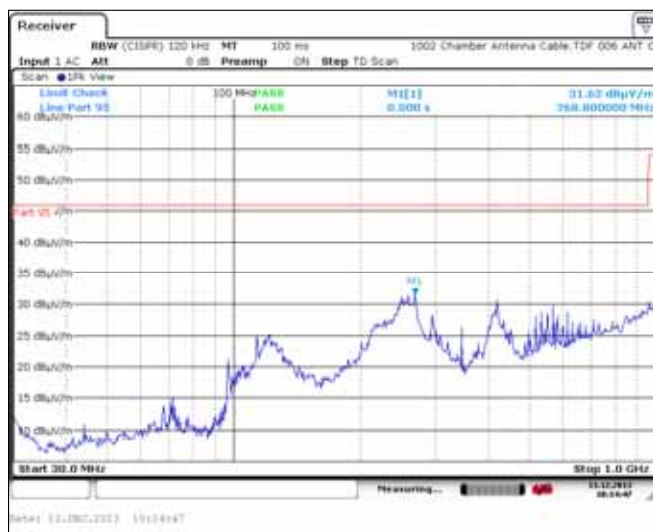
Appendix A

Undesired Emissions (continued)

Plot 51. Channel 1: 1395.9 MHz - Y-Axis, 30 MHz to 1 GHz, Horizontal Polarity



Plot 52. Channel 1: 1395.9 MHz - Y-Axis, 30 MHz to 1 GHz, Vertical Polarity



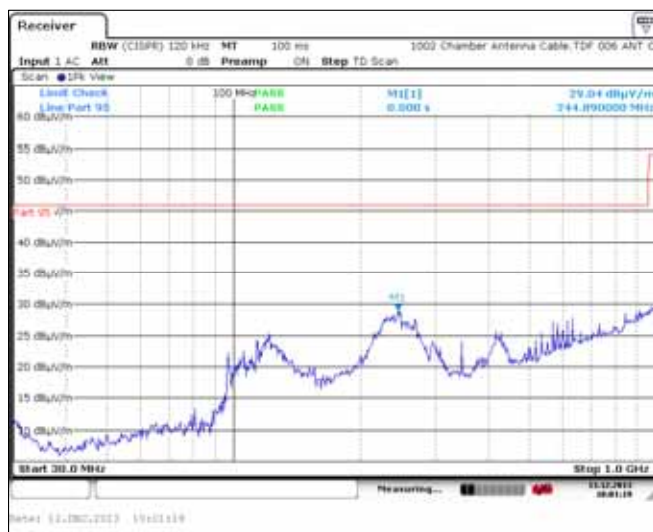
Appendix A

Undesired Emissions (continued)

Plot 53. Channel 1: 1395.9 MHz - Z-Axis, 30 MHz to 1 GHz, Horizontal Polarity



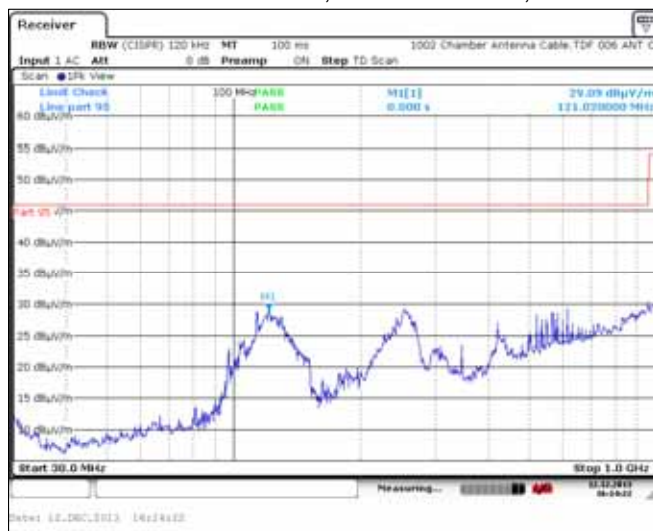
Plot 54. Channel 1: 1395.9 MHz - Z-Axis, 30 MHz to 1 GHz, Vertical Polarity



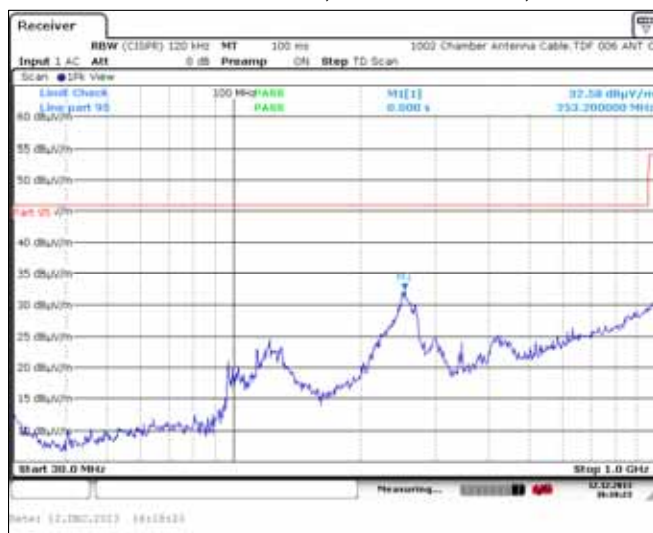
Appendix A

Undesired Emissions (continued)

Plot 55. Channel 3: 1399.1 MHz - X-Axis, 30 MHz to 1 GHz, Horizontal Polarity



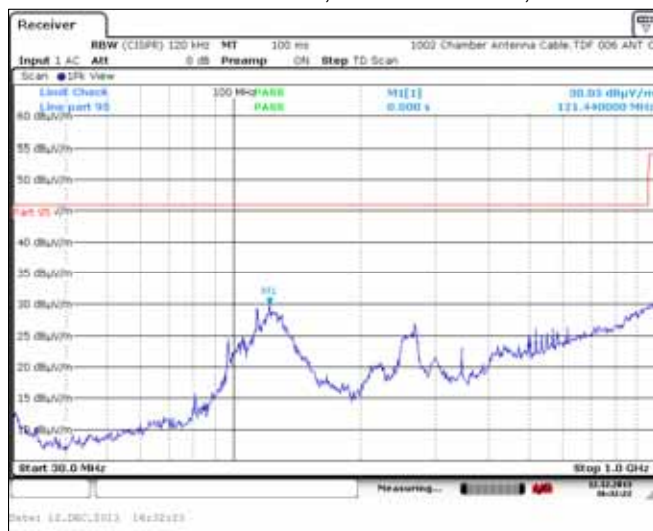
Plot 56. Channel 3: 1399.1 MHz - X-Axis, 30 MHz to 1 GHz, Vertical Polarity



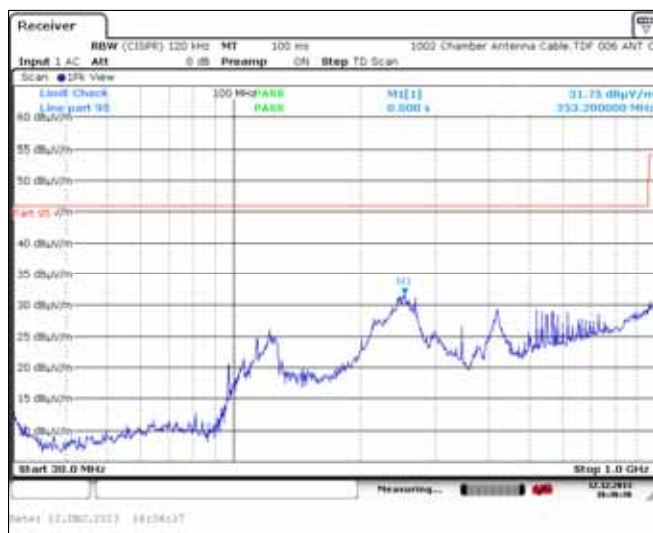
Appendix A

Undesired Emissions (continued)

Plot 57. Channel 3: 1399.1 MHz - Y-Axis, 30 MHz to 1 GHz, Horizontal Polarity



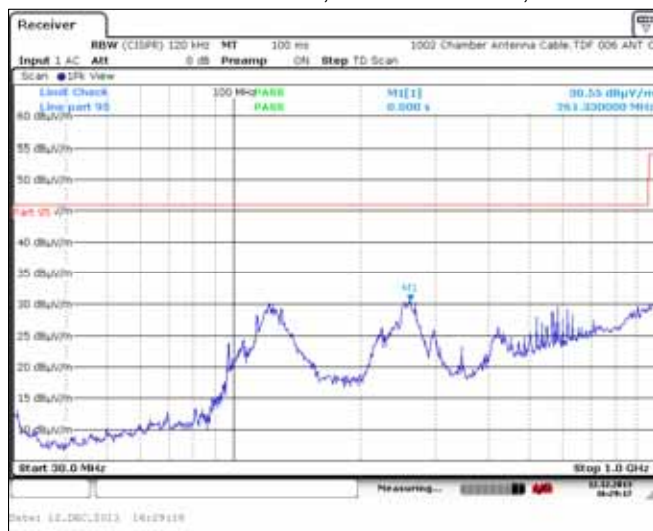
Plot 58. Channel 3: 1399.1 MHz - Y-Axis, 30 MHz to 1 GHz, Vertical Polarity



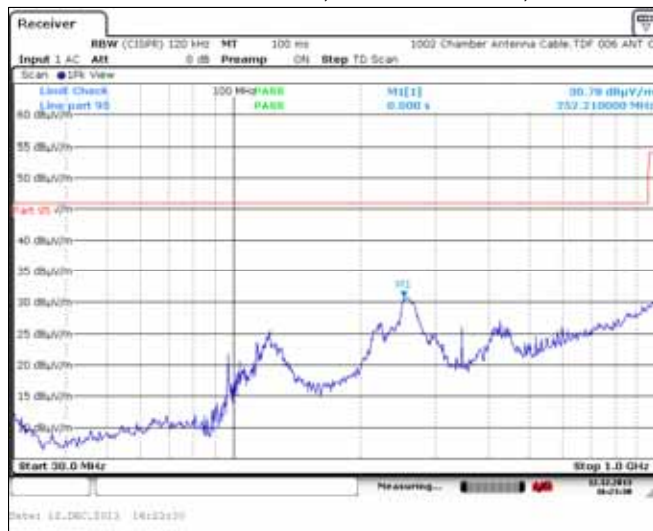
Appendix A

Undesired Emissions (continued)

Plot 59. Channel 3: 1399.1 MHz - Z-Axis, 30 MHz to 1 GHz, Horizontal Polarity



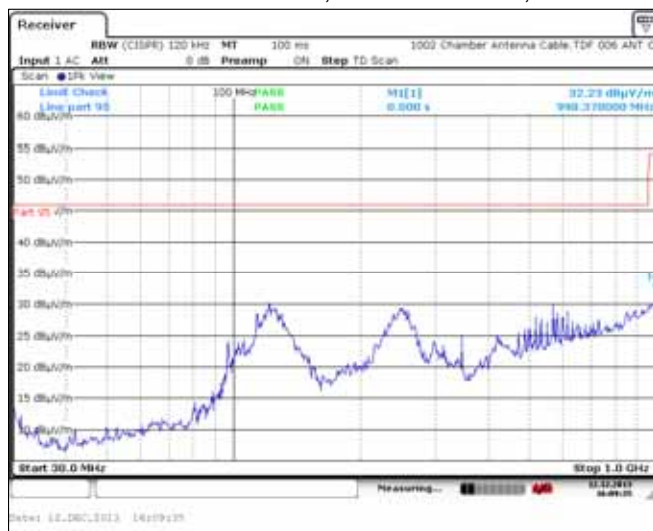
Plot 60. Channel 3: 1399.1 MHz - Z-Axis, 30 MHz to 1 GHz, Vertical Polarity



Appendix A

Undesired Emissions (continued)

Plot 61. Channel 4: 1427.9 MHz - X-Axis, 30 MHz to 1 GHz, Horizontal Polarity



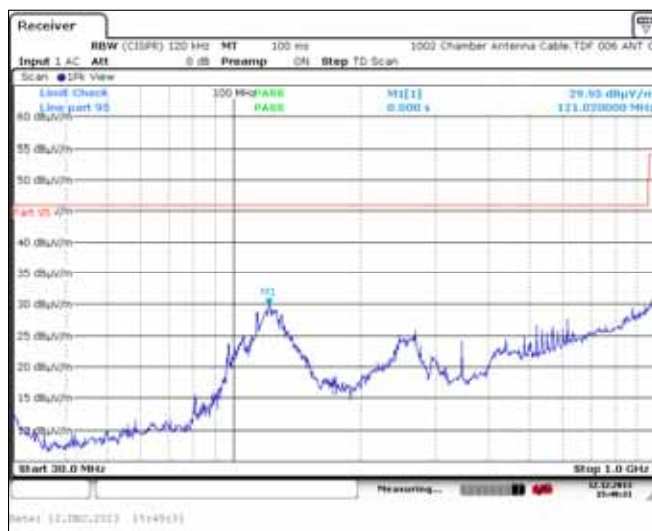
Plot 62. Channel 4: 1427.9 MHz - X-Axis, 30 MHz to 1 GHz, Vertical Polarity



Appendix A

Undesired Emissions (continued)

Plot 63. Channel 4: 1427.9 MHz - Y-Axis, 30 MHz to 1 GHz, Horizontal Polarity



Plot 64. Channel 4: 1427.9 MHz - Y-Axis, 30 MHz to 1 GHz, Vertical Polarity



Appendix A

Undesired Emissions (continued)

Plot 65. Channel 4: 1427.9 MHz - Z-Axis, 30 MHz to 1 GHz, Horizontal Polarity



Plot 66. Channel 4: 1427.9 MHz - Z-Axis, 30 MHz to 1 GHz, Vertical Polarity



Appendix A

Undesired Emissions (continued)

Plot 67. Channel 6: 1431.1 MHz - X-Axis, 30 MHz to 1 GHz, Horizontal Polarity



Plot 68. Channel 6: 1431.9 MHz - X-Axis, 30 MHz to 1 GHz, Vertical Polarity



Appendix A

Undesired Emissions (continued)

Plot 69. Channel 6: 1431.9 MHz - Y-Axis, 30 MHz to 1 GHz, Horizontal Polarity



Plot 70. Channel 6: 1431.9 MHz - Y-Axis, 30 MHz to 1 GHz, Vertical Polarity



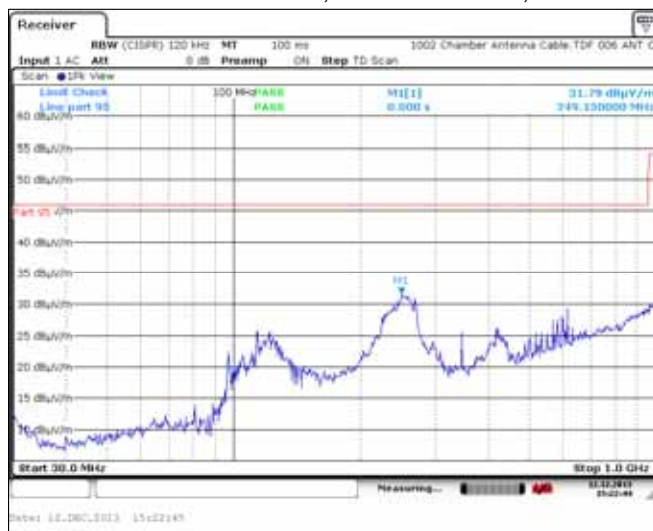
Appendix A

Undesired Emissions (continued)

Plot 71. Channel 6: 1431.9 MHz - Z-Axis, 30 MHz to 1 GHz, Horizontal Polarity



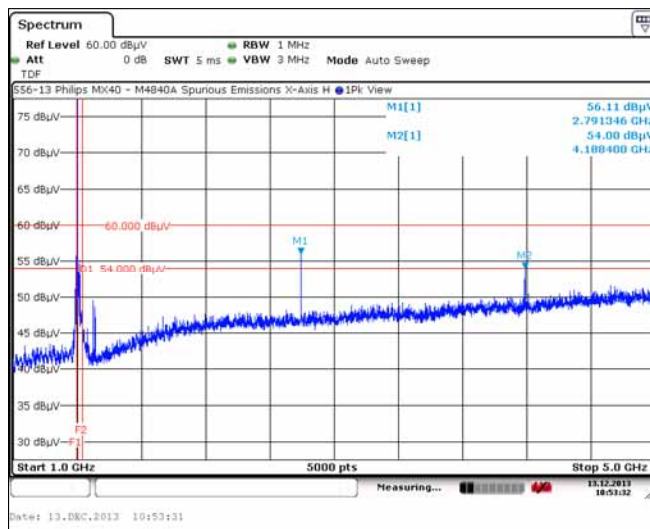
Plot 72. Channel 6: 1431.9 MHz - Z-Axis, 30 MHz to 1 GHz, Vertical Polarity



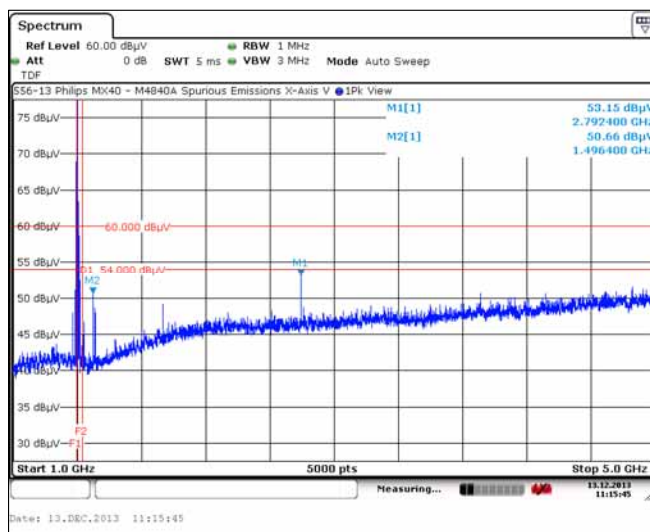
Appendix A

Undesired Emissions (continued)

Plot 73. Channel 1: 1395.9 MHz - X-Axis, 1 GHz to 5 GHz, Horizontal Polarity



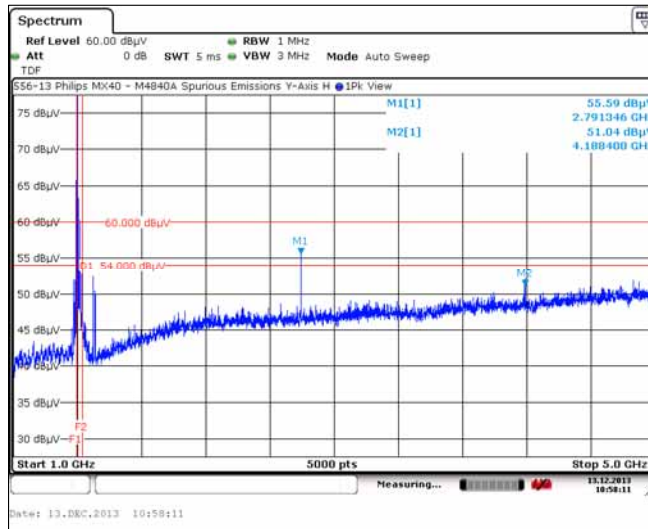
Plot 74. Channel 1: 1395.9 MHz - X-Axis, 1 GHz to 5 GHz, Vertical Polarity



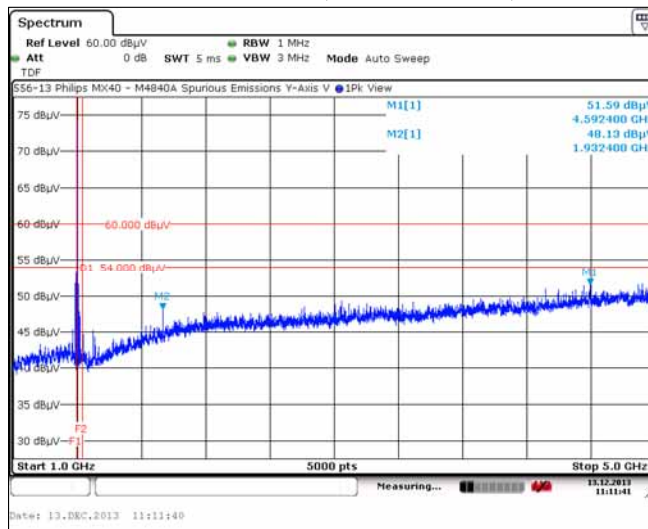
Appendix A

Undesired Emissions (continued)

Plot 75. Channel 1: 1395.9 MHz - Y-Axis, 1 GHz to 5 GHz, Horizontal Polarity



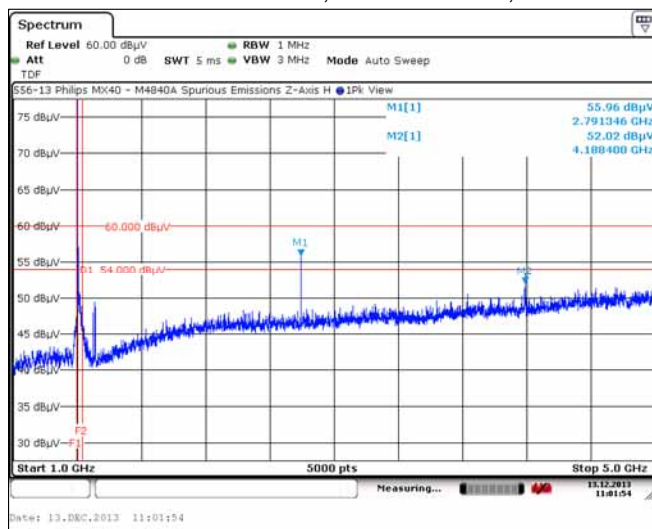
Plot 76. Channel 1: 1395.9 MHz - Y-Axis, 1 GHz to 5 GHz, Vertical Polarity



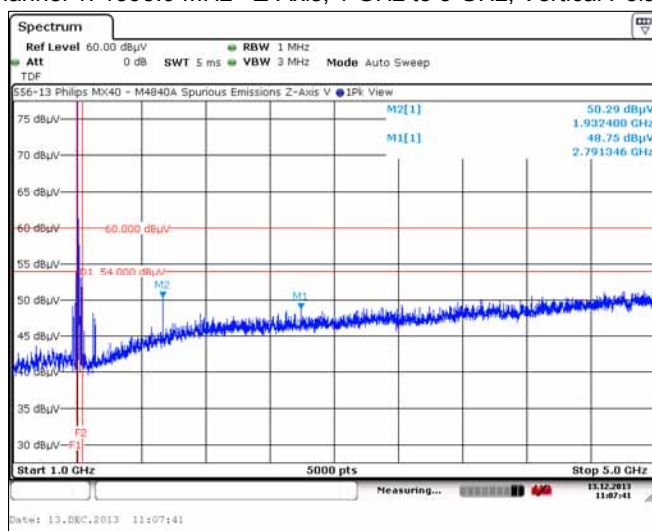
Appendix A

Undesired Emissions (continued)

Plot 77. Channel 1: 1395.9 MHz - Z-Axis, 1 GHz to 5 GHz, Horizontal Polarity



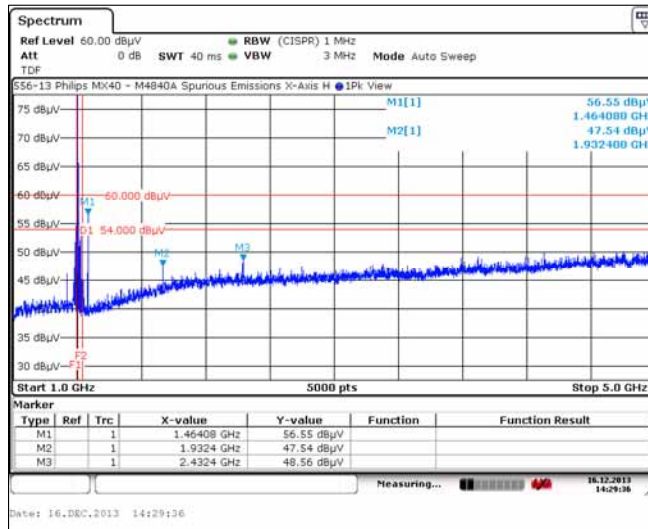
Plot 78. Channel 1: 1395.9 MHz - Z-Axis, 1 GHz to 5 GHz, Vertical Polarity



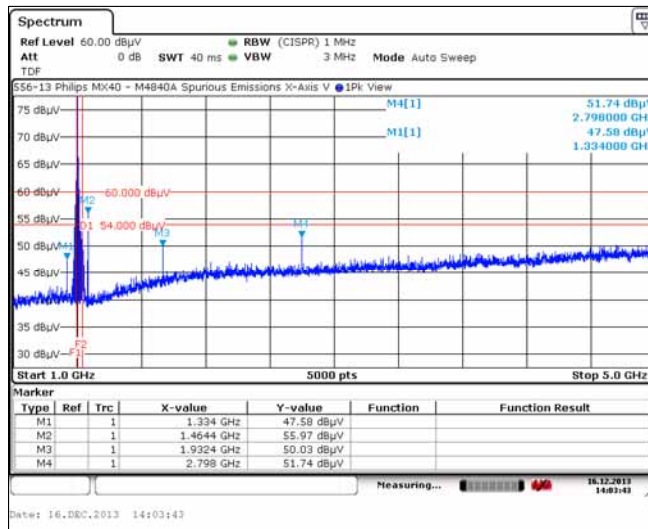
Appendix A

Undesired Emissions (continued)

Plot 79. Channel 3: 1399.1 MHz - X-Axis, 1 GHz to 5 GHz, Horizontal Polarity



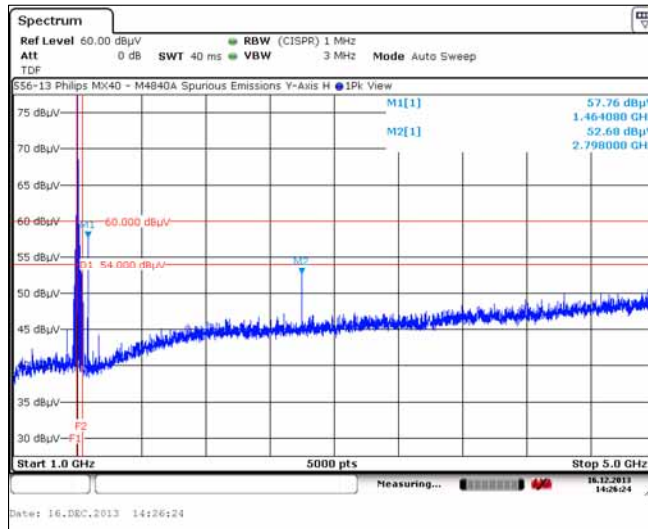
Plot 80. Channel 3: 1399.1 MHz - X-Axis, 1 GHz to 5 GHz, Vertical Polarity



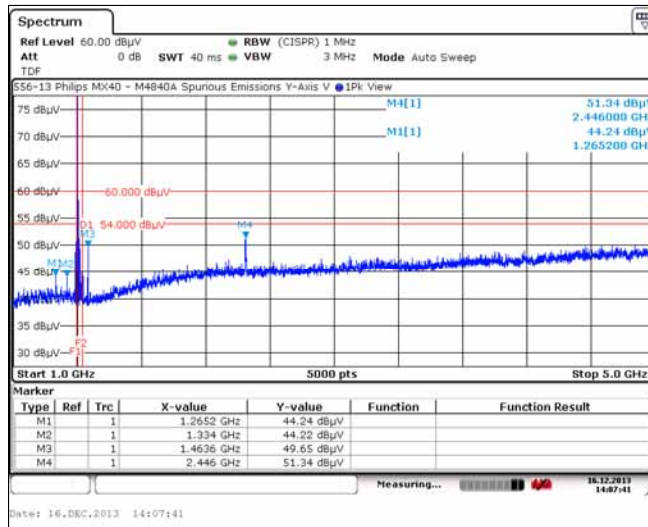
Appendix A

Undesired Emissions (continued)

Plot 81. Channel 3: 1399.1 MHz - Y-Axis, 1 GHz to 5 GHz, Horizontal Polarity



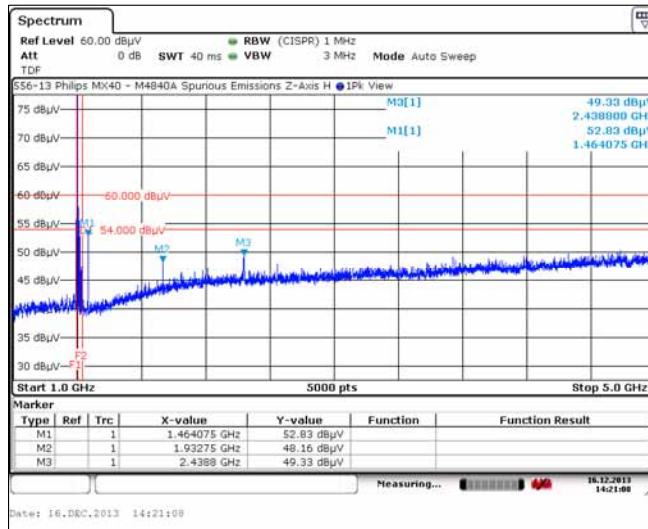
Plot 82. Channel 3: 1399.1 MHz - Y-Axis, 1 GHz to 5 GHz, Vertical Polarity



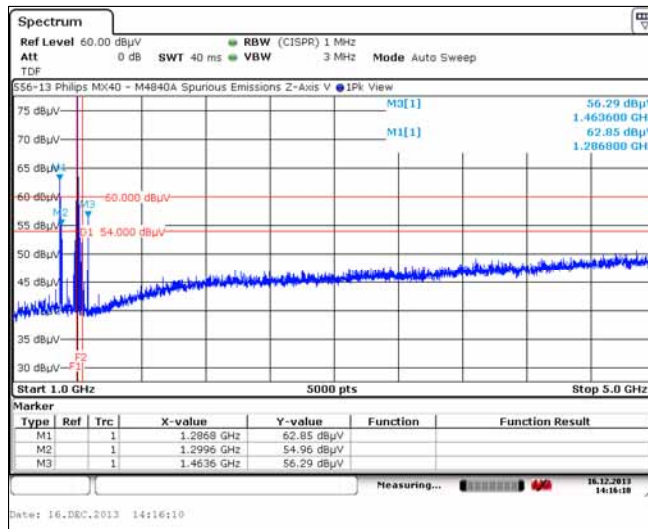
Appendix A

Undesired Emissions (continued)

Plot 83. Channel 3: 1399.1 MHz - Z-Axis, 1 GHz to 5 GHz, Horizontal Polarity



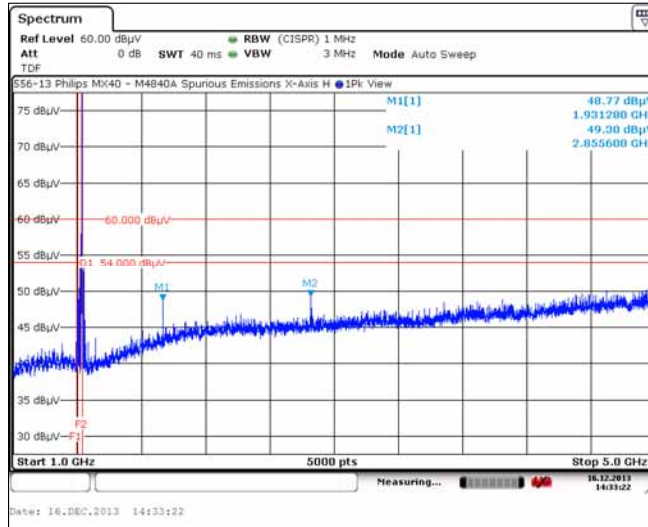
Plot 84. Channel 3: 1399.1 MHz - Z-Axis, 1 GHz to 5 GHz, Vertical Polarity



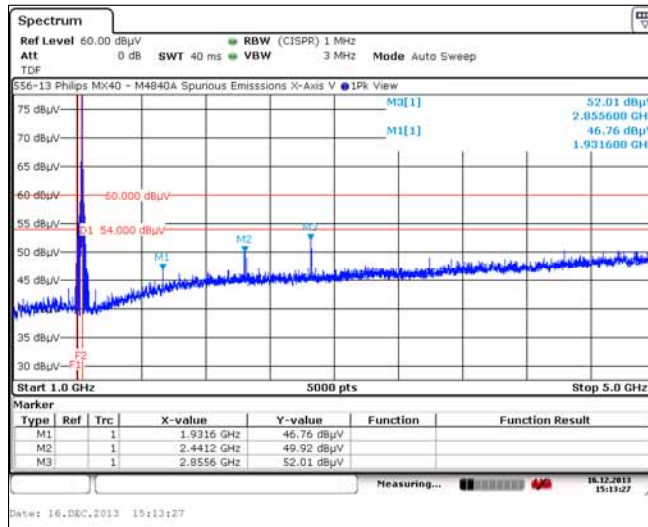
Appendix A

Undesired Emissions (continued)

Plot 85. Channel 4: 1427.9 MHz - X-Axis, 1 GHz to 5 GHz, Horizontal Polarity



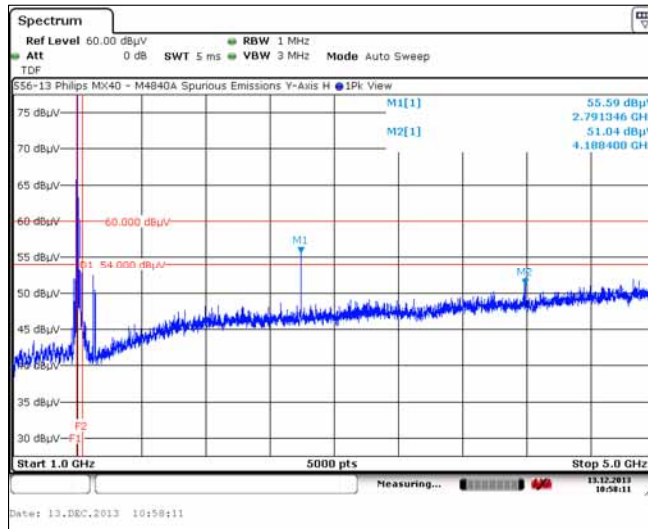
Plot 86. Channel 4: 1427.9 MHz - X-Axis, 1 GHz to 5 GHz, Vertical Polarity



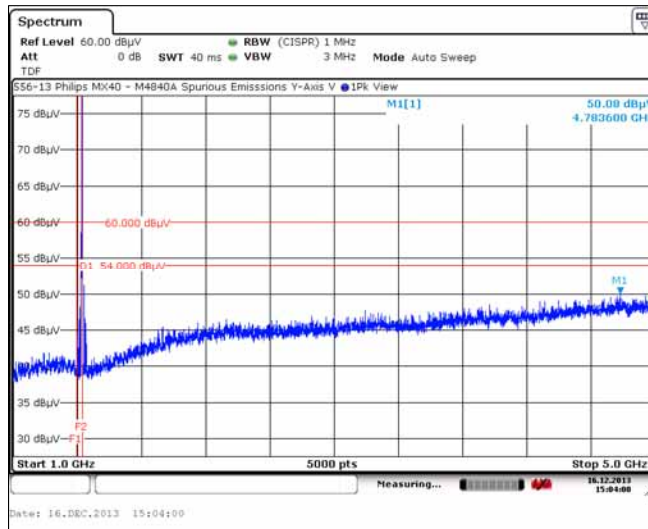
Appendix A

Undesired Emissions (continued)

Plot 87. Channel 4: 1427.9 MHz - Y-Axis, 1 GHz to 5 GHz, Horizontal Polarity



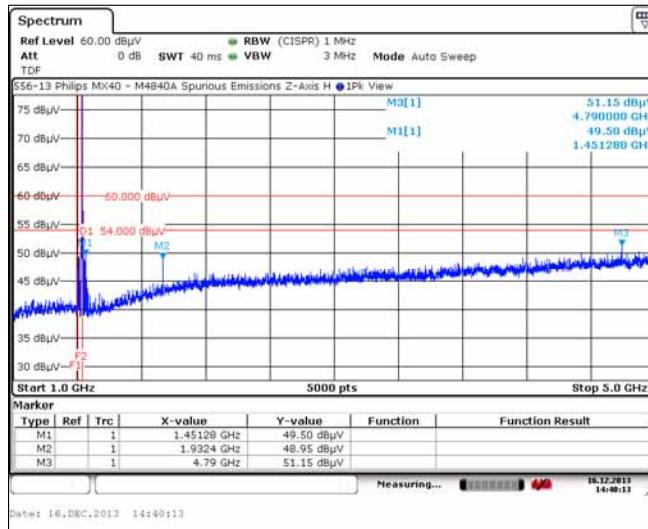
Plot 88. Channel 4: 1427.9 MHz - Y-Axis, 1 GHz to 5 GHz, Vertical Polarity



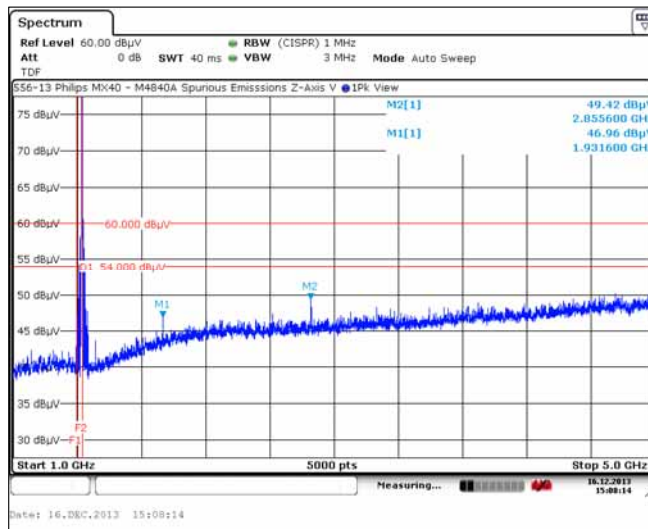
Appendix A

Undesired Emissions (continued)

Plot 89. Channel 4: 1427.9 MHz - Z-Axis, 1 GHz to 5 GHz, Horizontal Polarity



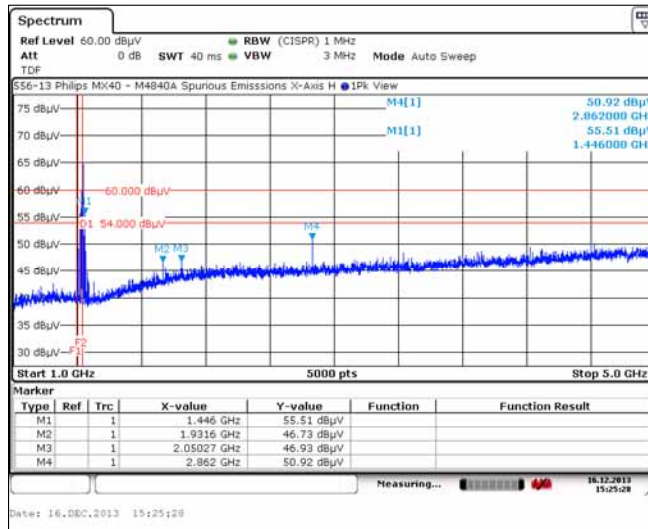
Plot 90. Channel 4: 1427.9 MHz - Z-Axis, 1 GHz to 5 GHz, Vertical Polarity



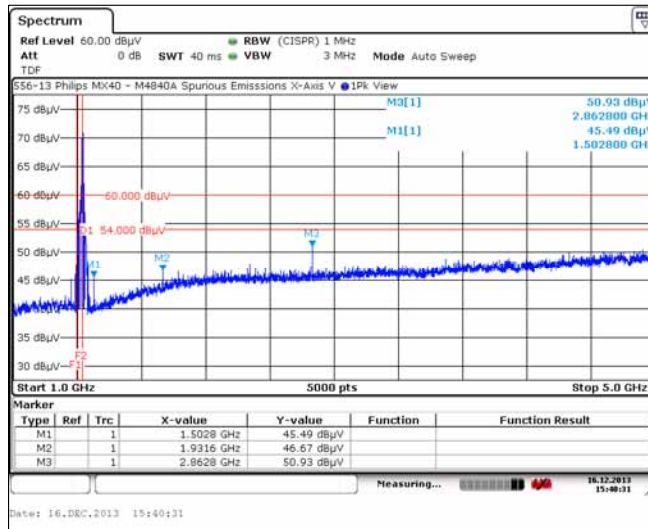
Appendix A

Undesired Emissions (continued)

Plot 91. Channel 6: 1431.1 MHz - X-Axis, 1 GHz to 5 GHz, Horizontal Polarity



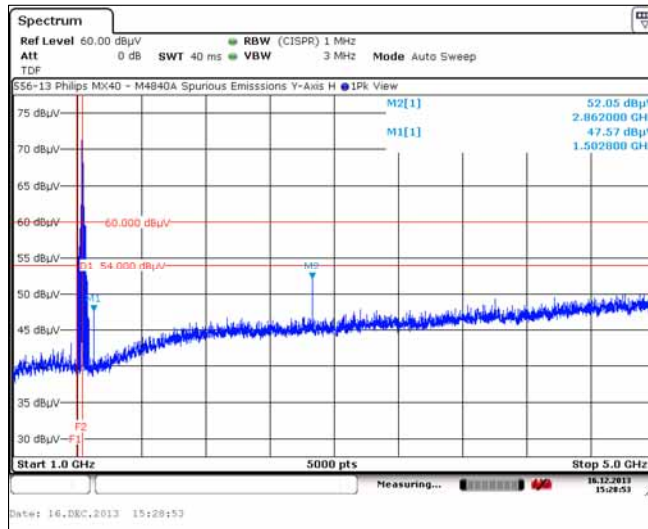
Plot 92. Channel 6: 1431.9 MHz - X-Axis, 1 GHz to 5 GHz, Vertical Polarity



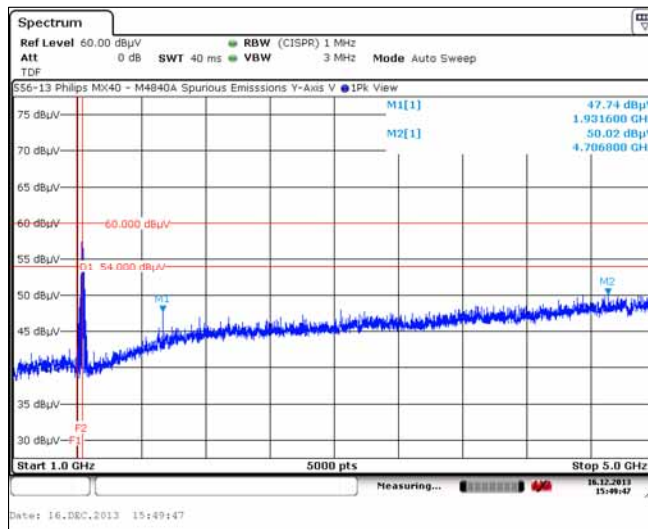
Appendix A

Undesired Emissions (continued)

Plot 93. Channel 6: 1431.9 MHz - Y-Axis, 1 GHz to 5 GHz, Horizontal Polarity



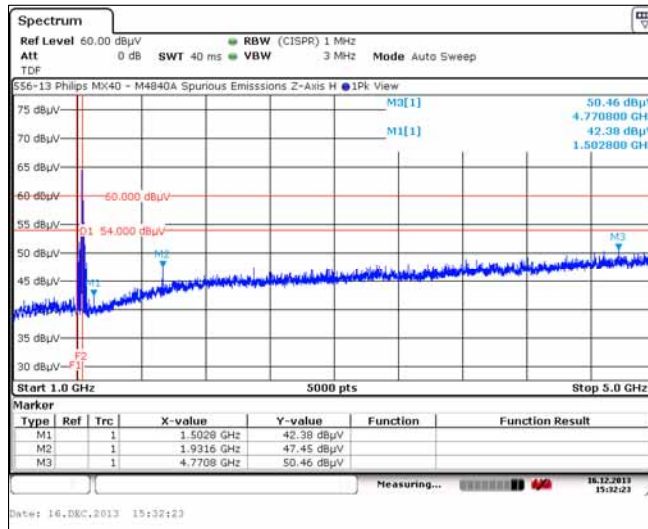
Plot 94. Channel 6: 1431.9 MHz - Y-Axis, 1 GHz to 5 GHz, Vertical Polarity



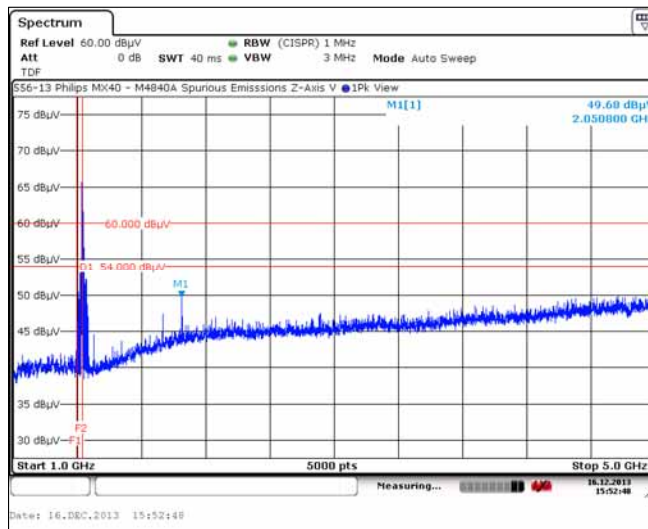
Appendix A

Undesired Emissions (continued)

Plot 95. Channel 6: 1431.9 MHz - Z-Axis, 1 GHz to 5 GHz, Horizontal Polarity



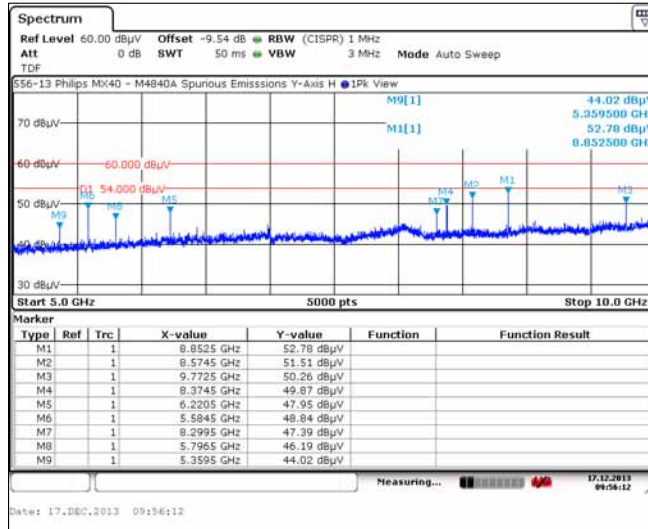
Plot 96. Channel 6: 1431.9 MHz - Z-Axis, 1 GHz to 5 GHz, Vertical Polarity



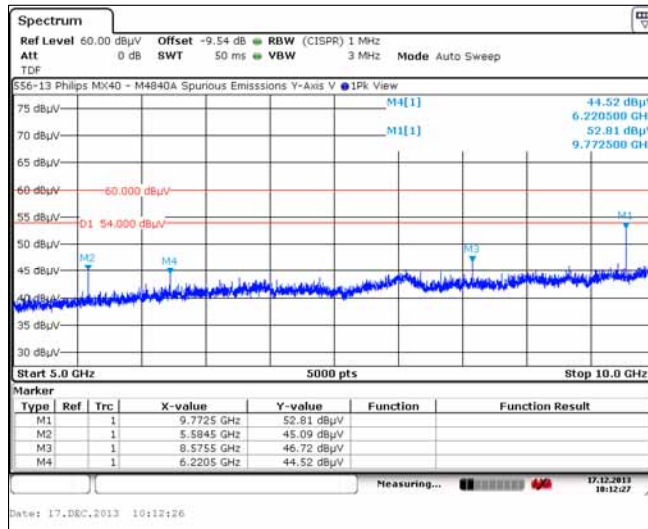
Appendix A

Undesired Emissions (continued)

Plot 99. Channel 1: 1395.9 MHz - Y-Axis, 5 GHz to 10 GHz, Horizontal Polarity



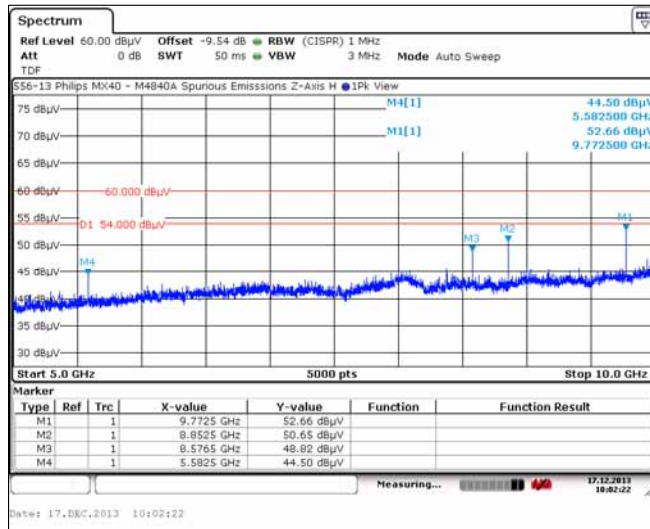
Plot 100. Channel 1: 1395.9 MHz - Y-Axis, 5 GHz to 10 GHz, Vertical Polarity



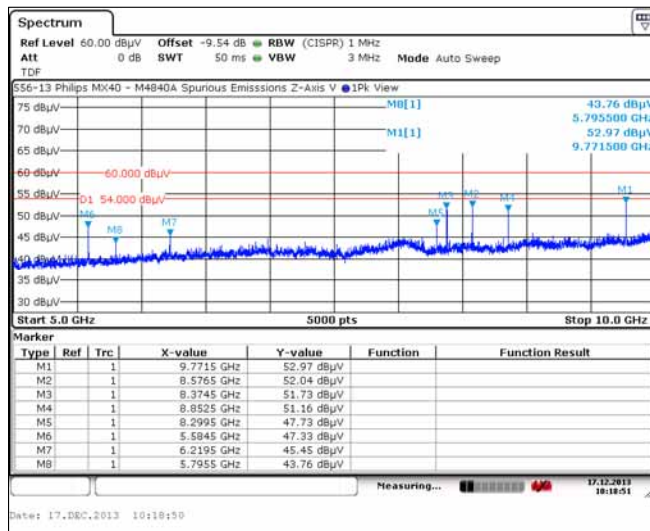
Appendix A

Undesired Emissions (continued)

Plot 101. Channel 1: 1395.9 MHz - Z-Axis, 5 GHz to 10 GHz, Horizontal Polarity



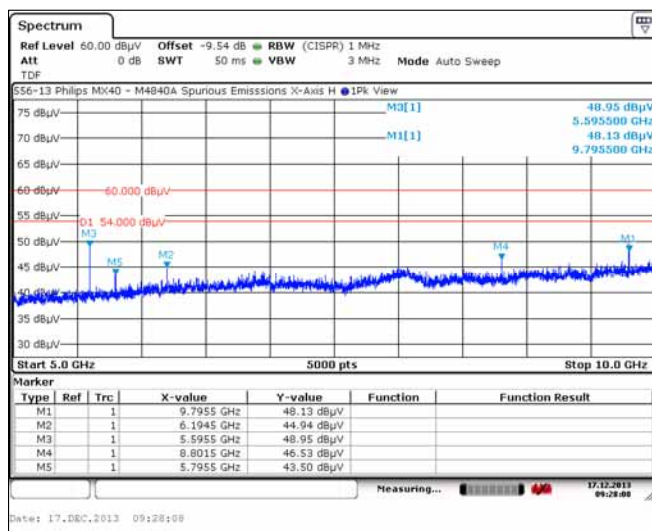
Plot 102. Channel 1: 1395.9 MHz - Z-Axis, 5 GHz to 10 GHz, Vertical Polarity



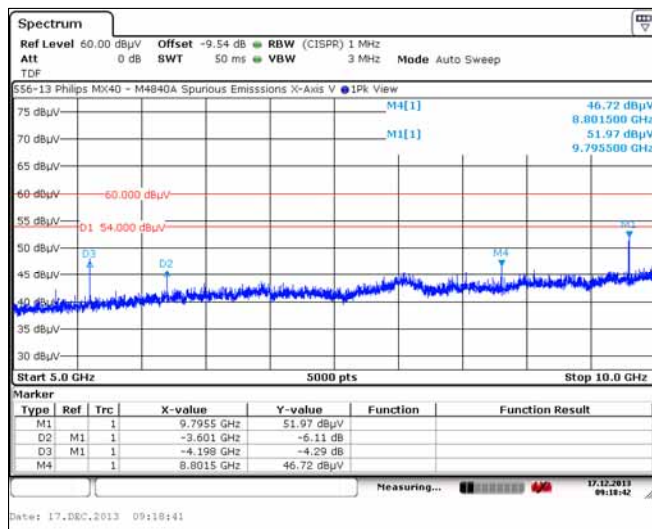
Appendix A

Undesired Emissions (continued)

Plot 103. Channel 3: 1399.1 MHz - X-Axis, 5 GHz to 10 GHz, Horizontal Polarity



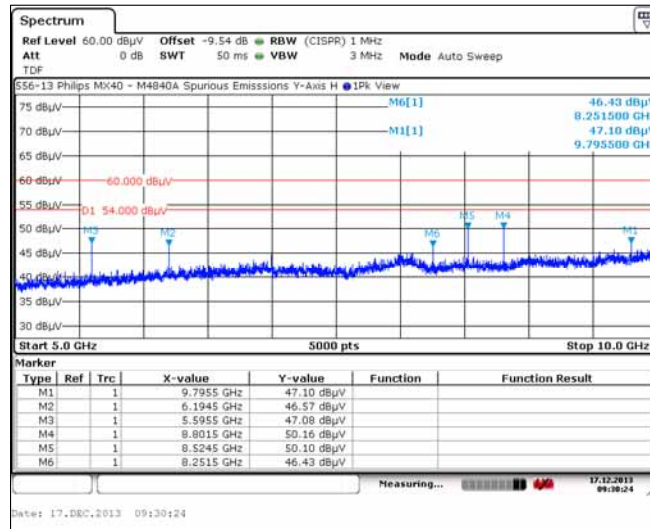
Plot 104. Channel 3: 1399.1 MHz - X-Axis, 5 GHz to 10 GHz, Vertical Polarity



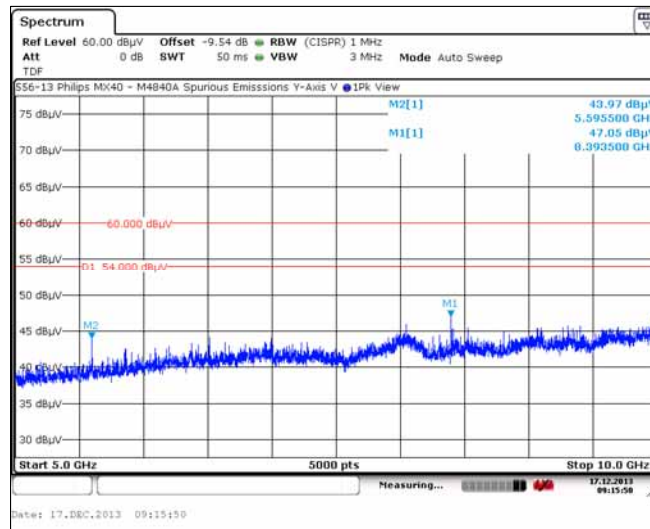
Appendix A

Undesired Emissions (continued)

Plot 105. Channel 3: 1399.1 MHz - Y-Axis, 5 GHz to 10 GHz, Horizontal Polarity



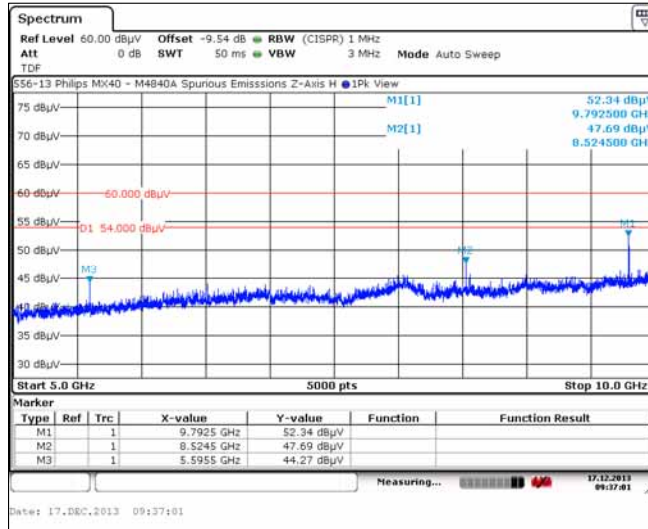
Plot 106. Channel 3: 1399.1 MHz - Y-Axis, 5 GHz to 10 GHz, Vertical Polarity



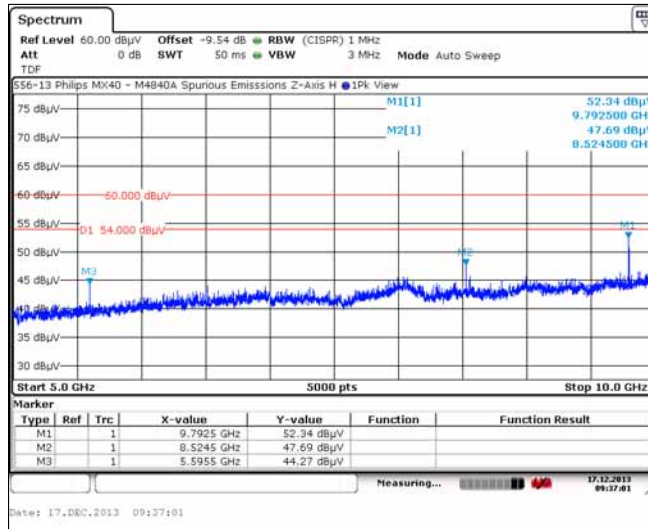
Appendix A

Undesired Emissions (continued)

Plot 107. Channel 3: 1399.1 MHz - Z-Axis, 5 GHz to 10 GHz, Horizontal Polarity



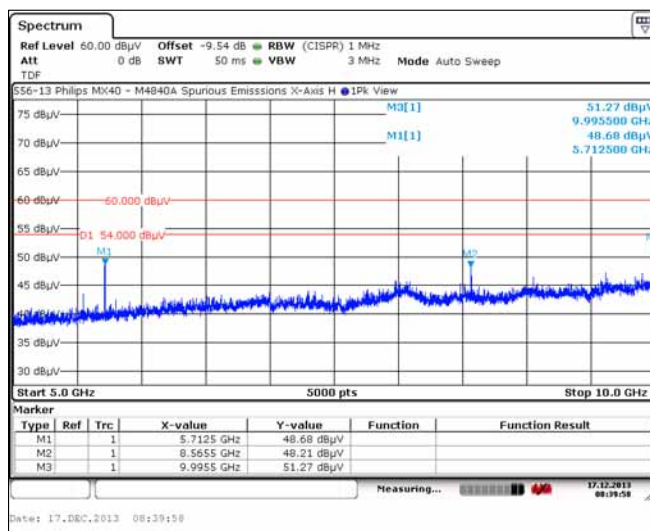
Plot 108. Channel 3: 1399.1 MHz - Z-Axis, 5 GHz to 10 GHz, Vertical Polarity



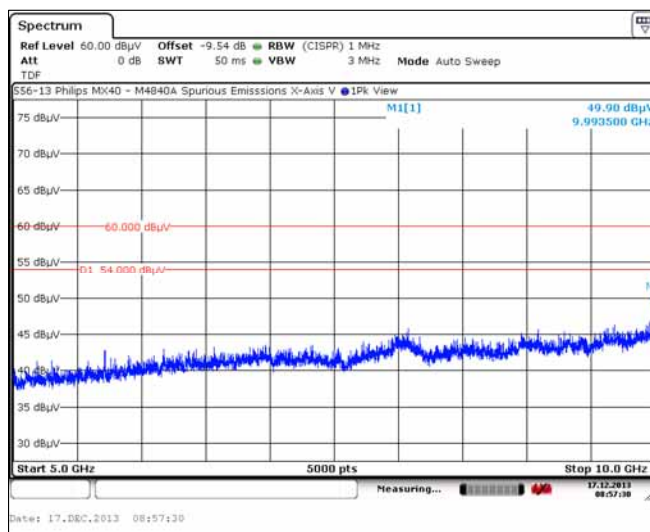
Appendix A

Undesired Emissions (continued)

Plot 109. Channel 4: 1427.9 MHz - X-Axis, 5 GHz to 10 GHz, Horizontal Polarity



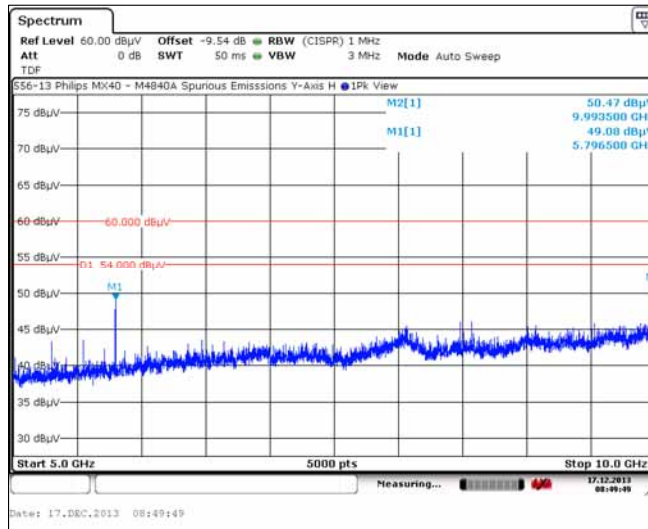
Plot 110. Channel 4: 1427.9 MHz - X-Axis, 5 GHz to 10 GHz, Vertical Polarity



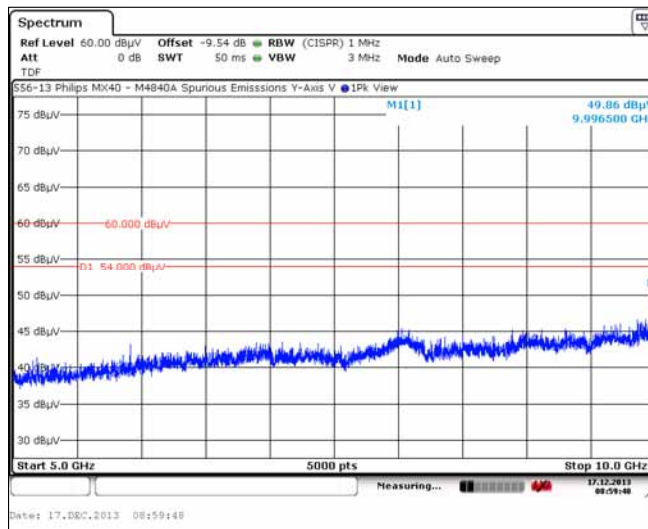
Appendix A

Undesired Emissions (continued)

Plot 111. Channel 4: 1427.9 MHz - Y-Axis, 5 GHz to 10 GHz, Horizontal Polarity



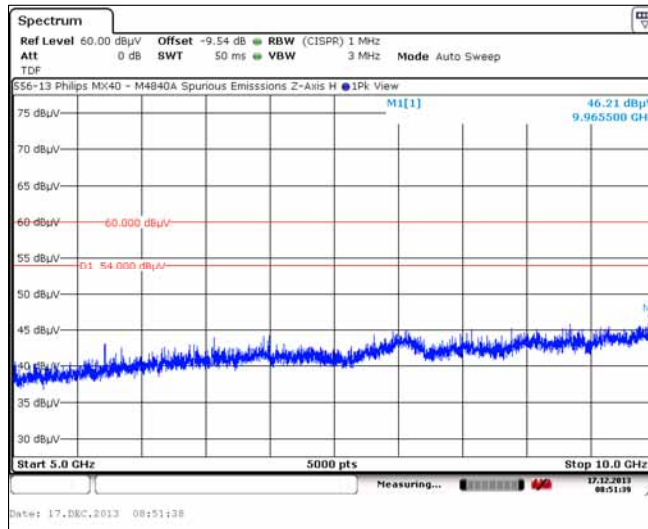
Plot 112. Channel 4: 1427.9 MHz - Y-Axis, 5 GHz to 10 GHz, Vertical Polarity



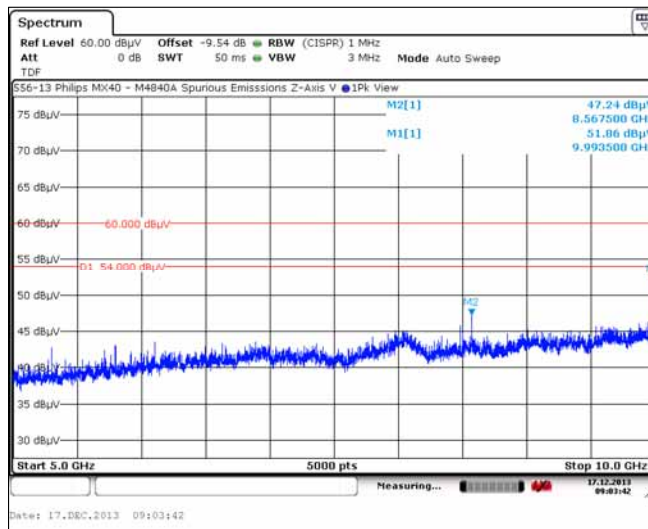
Appendix A

Undesired Emissions (continued)

Plot 113. Channel 4: 1427.9 MHz - Z-Axis, 5 GHz to 10 GHz, Horizontal Polarity



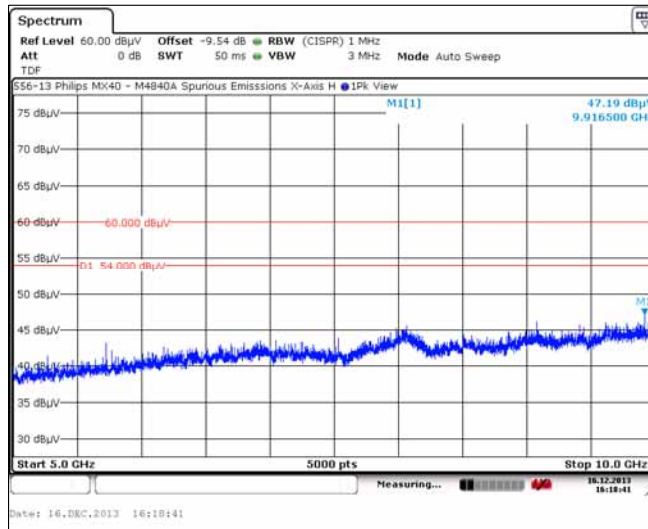
Plot 114. Channel 4: 1427.9 MHz - Z-Axis, 5 GHz to 10 GHz, Vertical Polarity



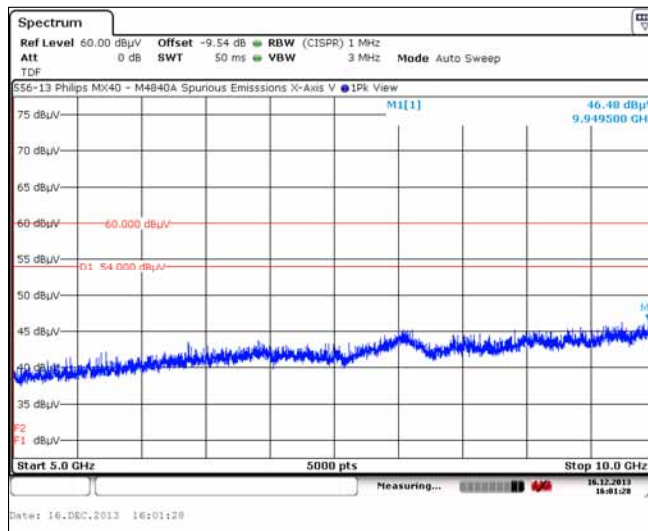
Appendix A

Undesired Emissions (continued)

Plot 115. Channel 6: 1431.1 MHz - X-Axis, 5 GHz to 10 GHz, Horizontal Polarity



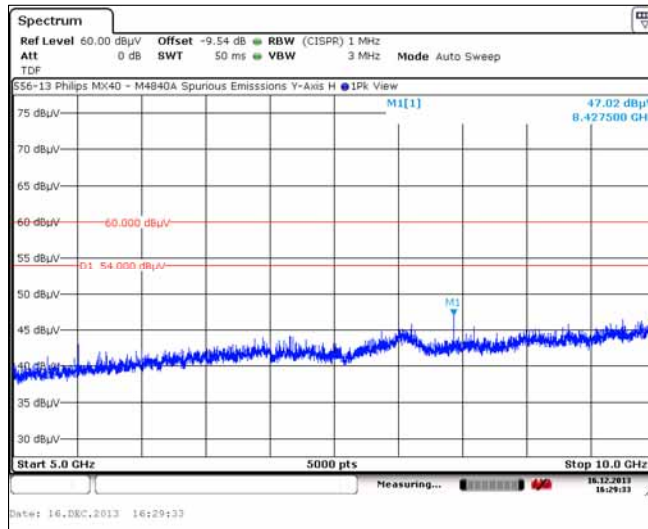
Plot 116. Channel 6: 1431.9 MHz - X-Axis, 5 GHz to 10 GHz, Vertical Polarity



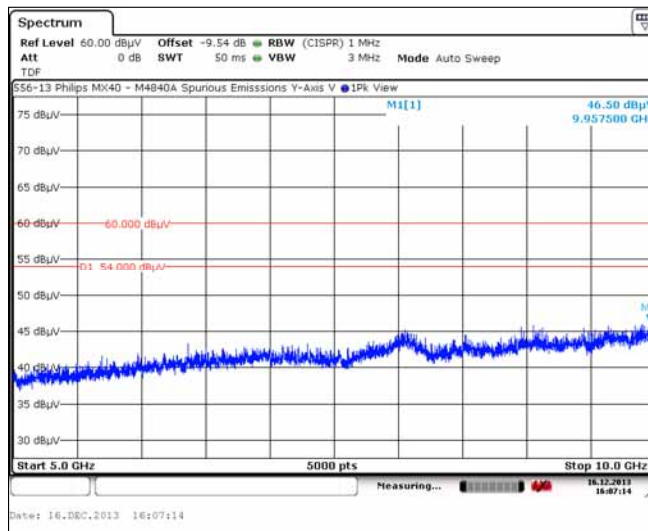
Appendix A

Undesired Emissions (continued)

Plot 117. Channel 6: 1431.9 MHz - Y-Axis, 5 GHz to 10 GHz, Horizontal Polarity



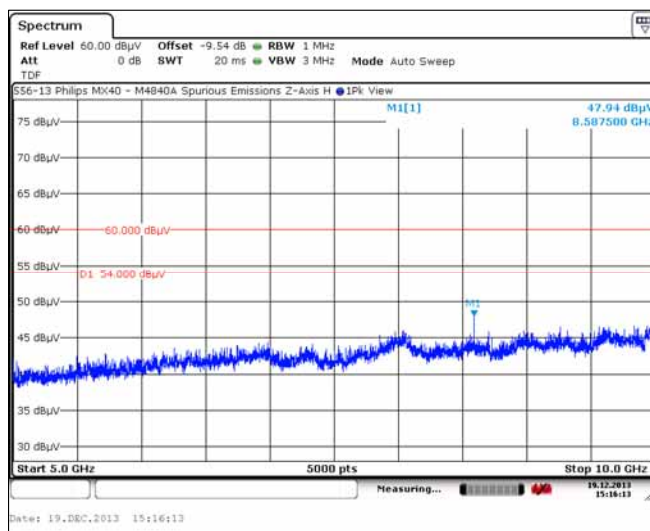
Plot 118. Channel 6: 1431.9 MHz - Y-Axis, 5 GHz to 10 GHz, Vertical Polarity



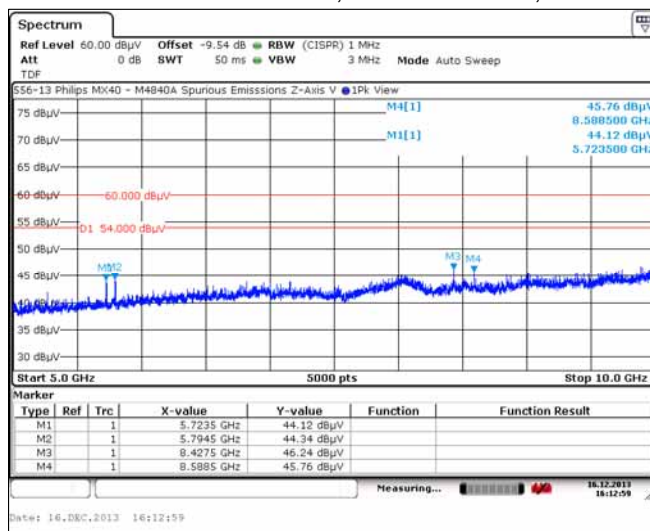
Appendix A

Undesired Emissions (continued)

Plot 119. Channel 6: 1431.9 MHz - Z-Axis, 5 GHz to 10 GHz, Horizontal Polarity



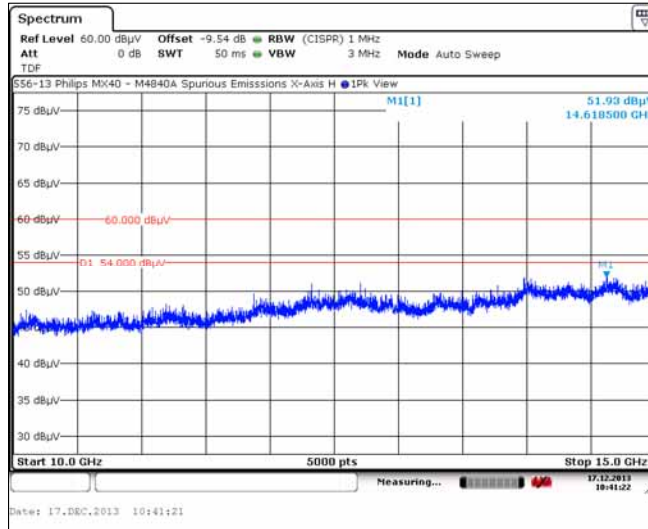
Plot 120. Channel 6: 1431.9 MHz - Z-Axis, 5 GHz to 10 GHz, Vertical Polarity



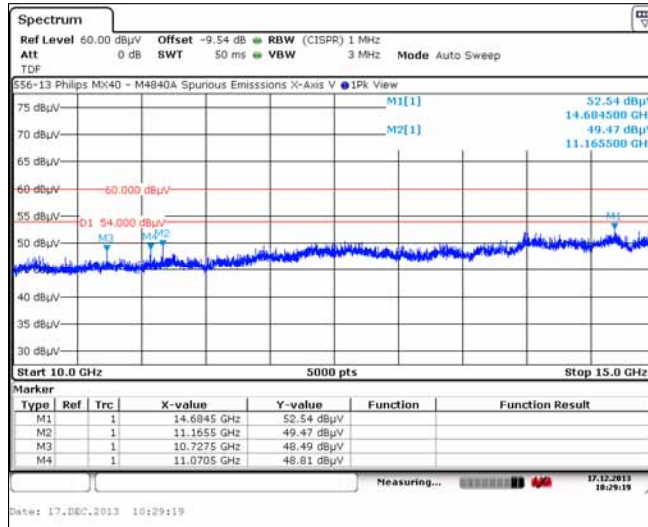
Appendix A

Undesired Emissions (continued)

Plot 121. Channel 1: 1395.9 MHz - X-Axis, 10 GHz to 15 GHz, Horizontal Polarity



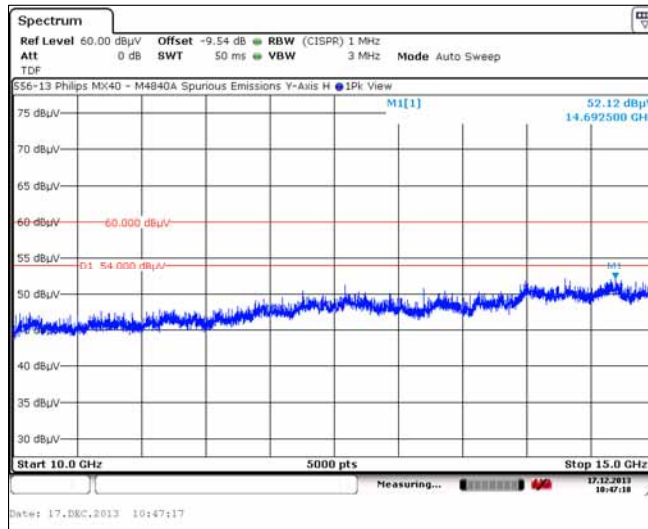
Plot 122. Channel 1: 1395.9 MHz - X-Axis, 10 GHz to 15 GHz, Vertical Polarity



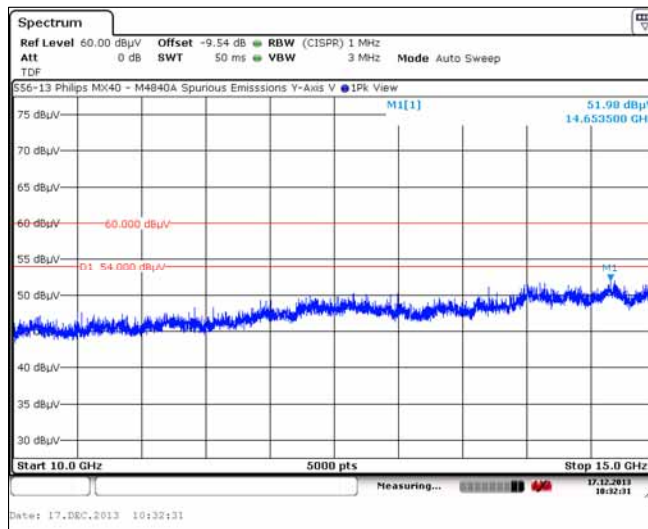
Appendix A

Undesired Emissions (continued)

Plot 123. Channel 1: 1395.9 MHz - Y-Axis, 10 GHz to 15 GHz, Horizontal Polarity



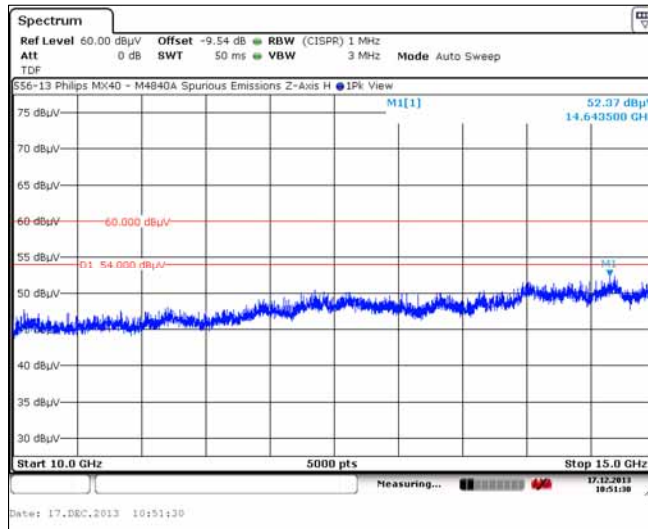
Plot 124. Channel 1: 1395.9 MHz - Y-Axis, 10 GHz to 15 GHz, Vertical Polarity



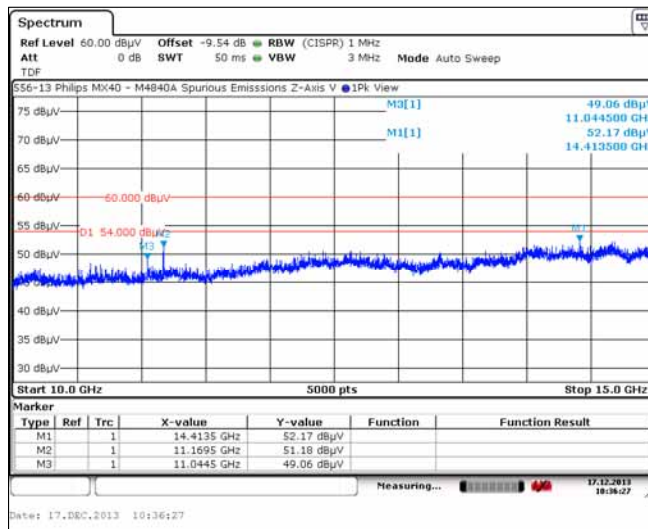
Appendix A

Undesired Emissions (continued)

Plot 125. Channel 1: 1395.9 MHz - Z-Axis, 10 GHz to 15 GHz, Horizontal Polarity



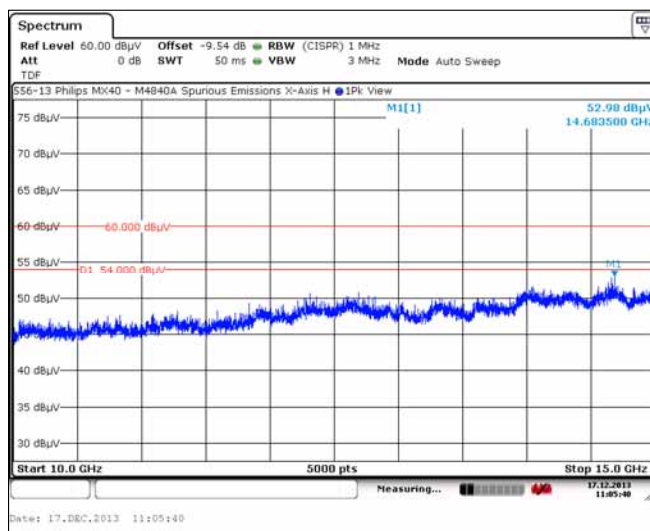
Plot 126. Channel 1: 1395.9 MHz - Z-Axis, 10 GHz to 15 GHz, Vertical Polarity



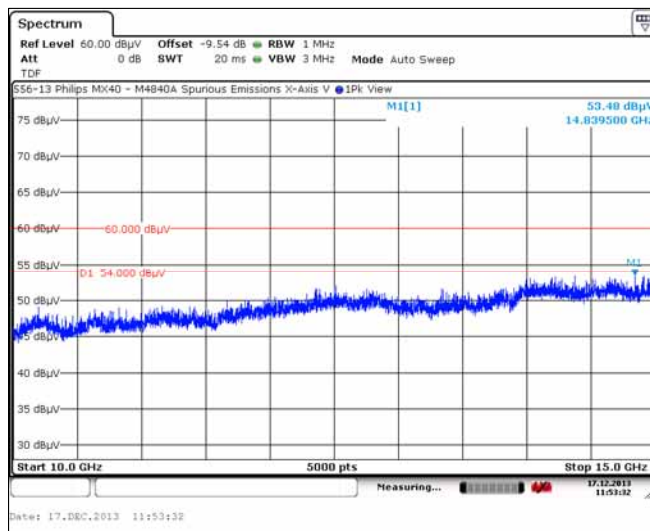
Appendix A

Undesired Emissions (continued)

Plot 127. Channel 3: 1399.1 MHz - X-Axis, 10 GHz to 15 GHz, Horizontal Polarity



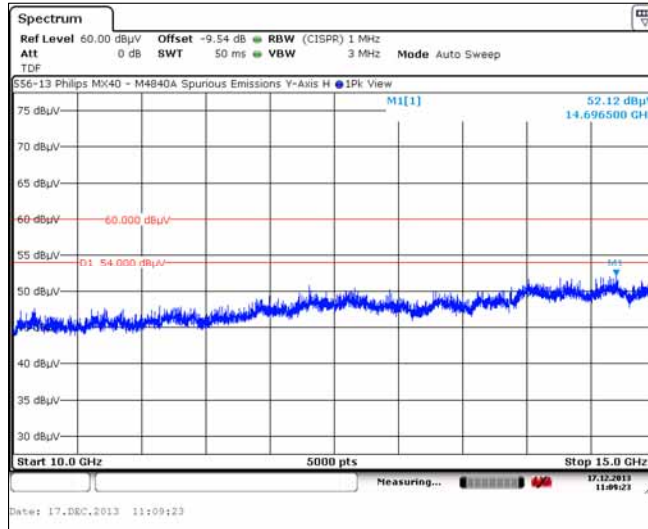
Plot 128. Channel 3: 1399.1 MHz - X-Axis, 10 GHz to 15 GHz, Vertical Polarity



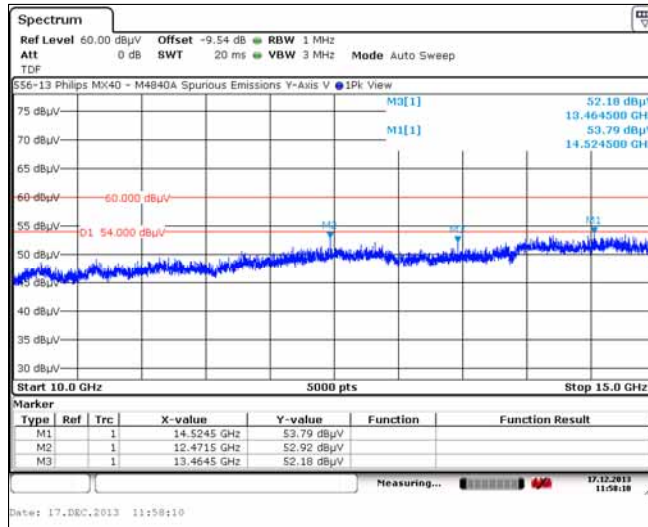
Appendix A

Undesired Emissions (continued)

Plot 129. Channel 3: 1399.1 MHz - Y-Axis, 10 GHz to 15 GHz, Horizontal Polarity



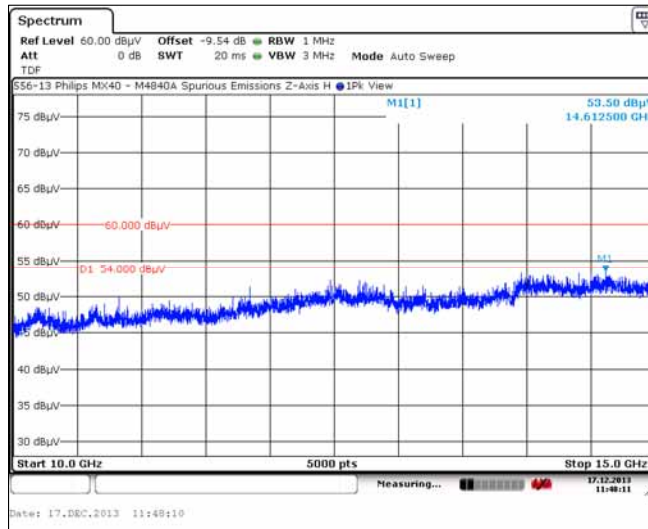
Plot 130. Channel 3: 1399.1 MHz - Y-Axis, 10 GHz to 15 GHz, Vertical Polarity



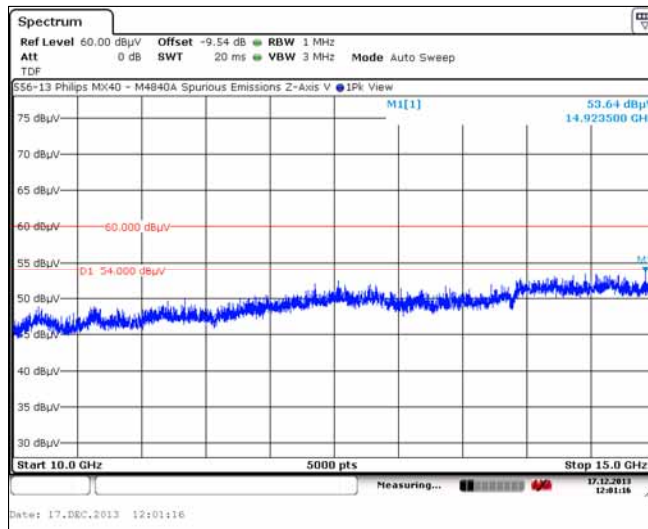
Appendix A

Undesired Emissions (continued)

Plot 131. Channel 3: 1399.1 MHz - Z-Axis, 10 GHz to 15 GHz, Horizontal Polarity



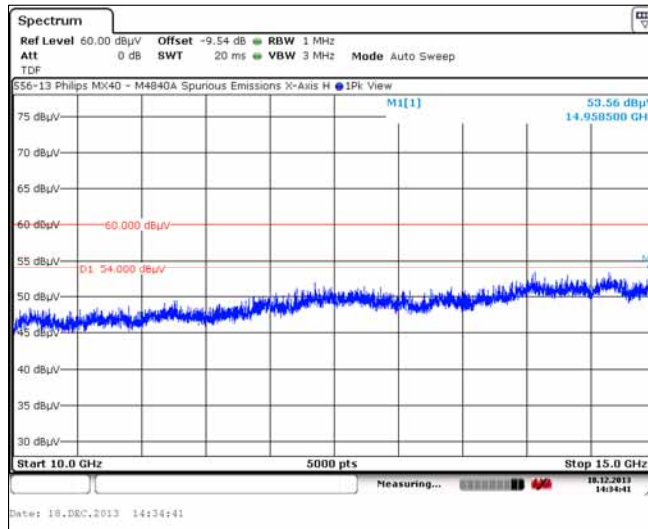
Plot 132. Channel 3: 1399.1 MHz - Z-Axis, 10 GHz to 15 GHz, Vertical Polarity



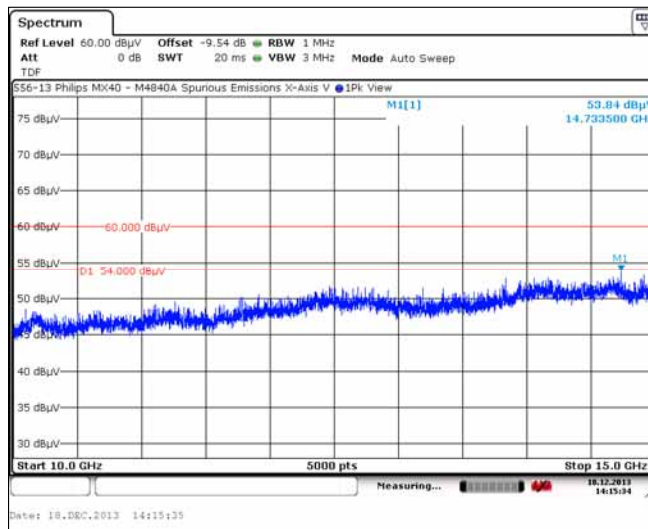
Appendix A

Undesired Emissions (continued)

Plot 133. Channel 4: 1427.9 MHz - X-Axis, 10 GHz to 15 GHz, Horizontal Polarity



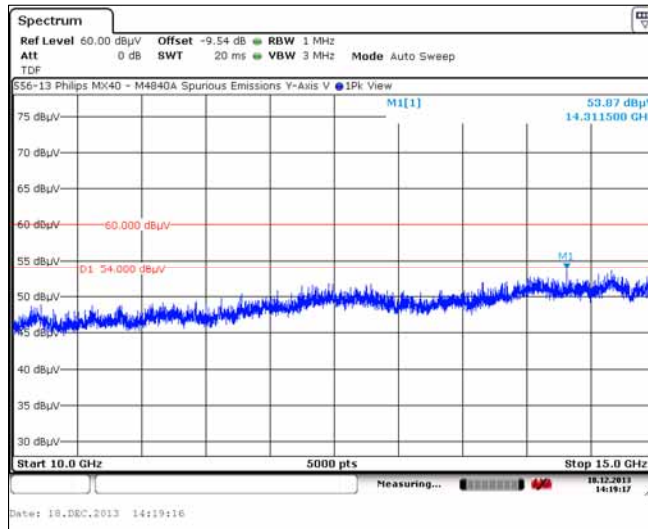
Plot 134. Channel 4: 1427.9 MHz - X-Axis, 10 GHz to 15 GHz, Vertical Polarity



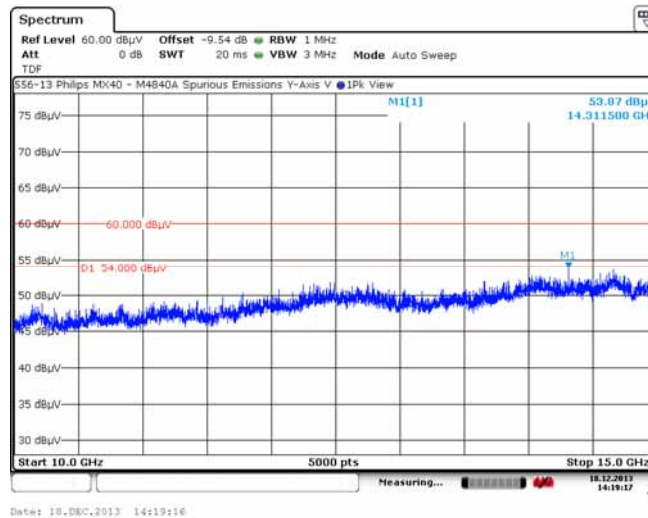
Appendix A

Undesired Emissions (continued)

Plot 135. Channel 4: 1427.9 MHz - Y-Axis, 10 GHz to 15 GHz, Horizontal Polarity



Plot 136. Channel 4: 1427.9 MHz - Y-Axis, 10 GHz to 15 GHz, Vertical Polarity



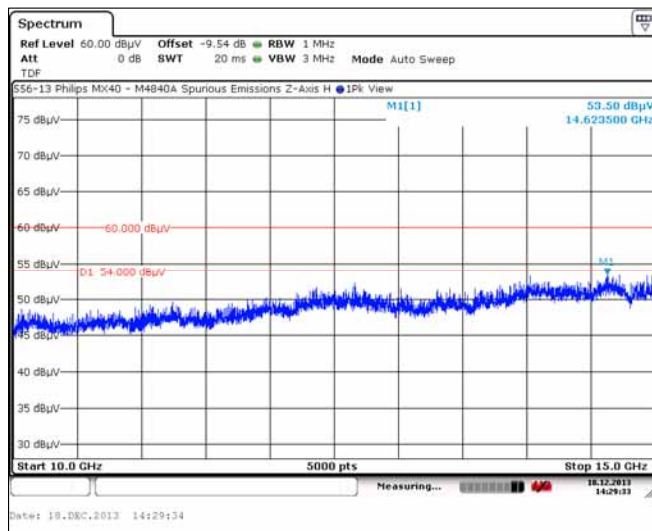
Appendix A

Test Number: 556-13

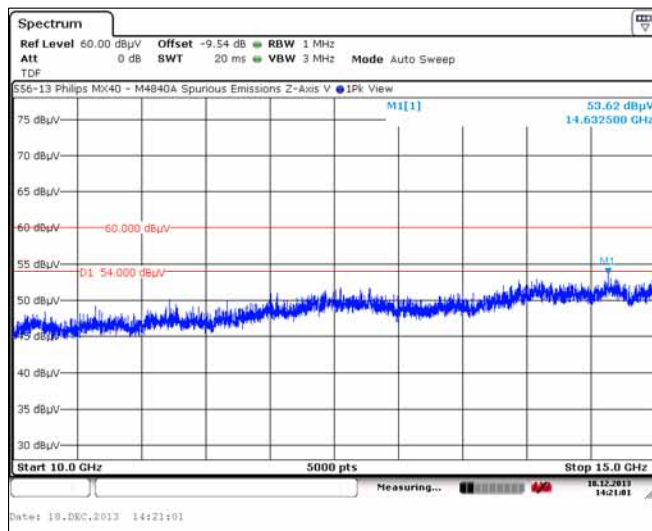
Issue Date: 1/16/2013

Undesired Emissions (continued)

Plot 137. Channel 4: 1427.9 MHz - Z-Axis, 10 GHz to 15 GHz, Horizontal Polarity



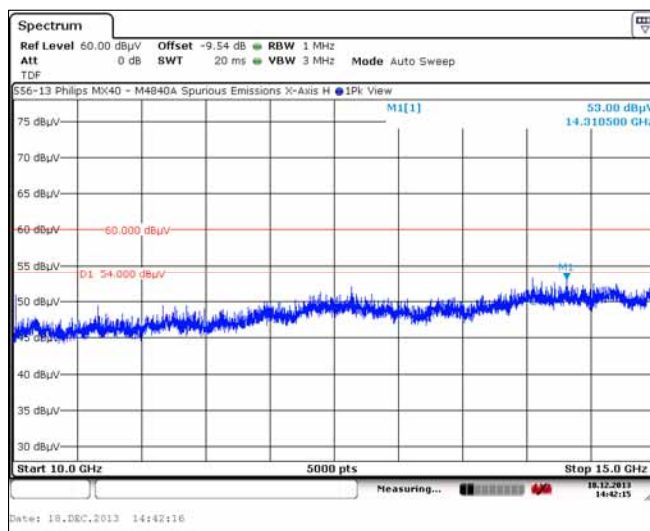
Plot 138. Channel 4: 1427.9 MHz - Z-Axis, 10 GHz to 15 GHz, Vertical Polarity



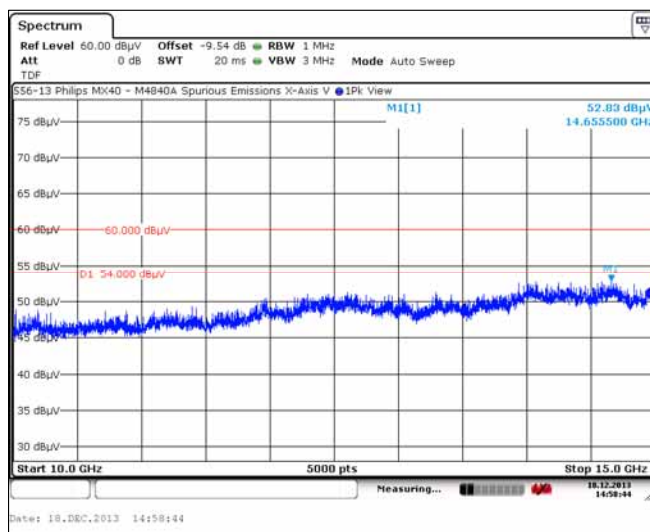
Appendix A

Undesired Emissions (continued)

Plot 139. Channel 6: 1431.1 MHz - X-Axis, 10 GHz to 15 GHz, Horizontal Polarity



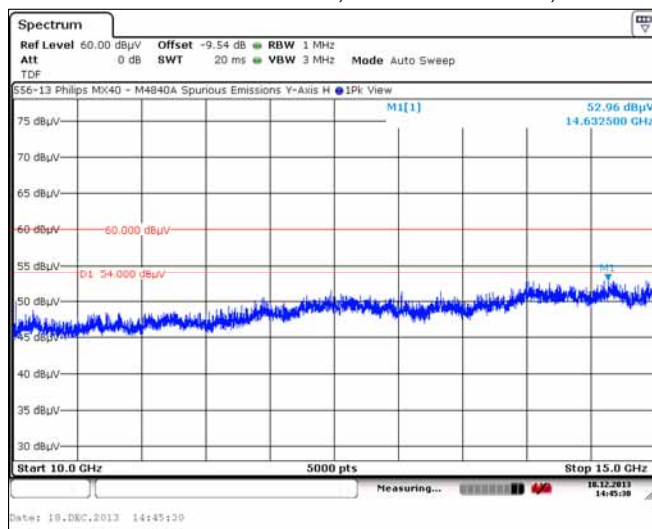
Plot 140. Channel 6: 1431.9 MHz - X-Axis, 10 GHz to 15 GHz, Vertical Polarity



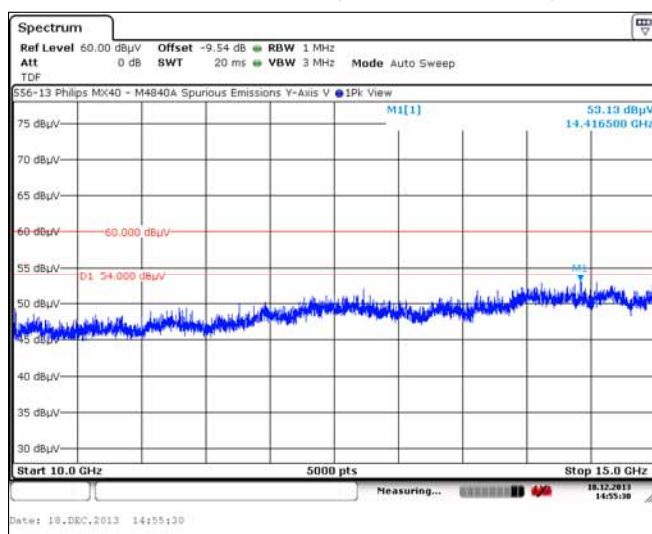
Appendix A

Undesired Emissions (continued)

Plot 141. Channel 6: 1431.9 MHz - Y-Axis, 10 GHz to 15 GHz, Horizontal Polarity



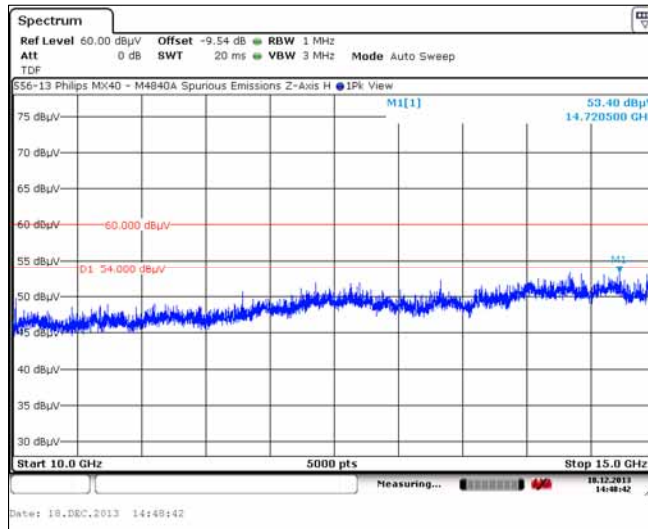
Plot 142. Channel 6: 1431.9 MHz - Y-Axis, 10 GHz to 15 GHz, Vertical Polarity



Appendix A

Undesired Emissions (continued)

Plot 143. Channel 6: 1431.9 MHz - Z-Axis, 10 GHz to 15 GHz, Horizontal Polarity



Plot 144. Channel 6: 1431.9 MHz - Z-Axis, 10 GHz to 15 GHz, Vertical Polarity

