



# EMC

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Job Number:	2010119
Project Number:	10CA07446
File Number:	MC15404
Revision Date:	2010- 11-17
Model:	SDM-Series
FCC ID:	YUJ-PCB00116
Industry Canada ID:	9218A-PCB00116

## Electromagnetic Compatibility Test Report

For

### Hologic Inc

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Job Number: 2010119      File Number: MC15404  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

Page 2 of 48

## Test Report Details

Tests Performed By:	Underwriters Laboratories Inc.
	1285 Walt Whitman Rd.
	Melville, NY 11747
Tests Performed For:	Hologic Inc
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	Danbury, CT 06810
Applicant Contact:	Alan Rego
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Revision Test Report Date:	2010-11-17
Product Type:	RFID Tag (installed only in a Selenia Dimensions System Gantry)
Product standards	FCC Part 15, Subpart C, 15.225, RSS-210, RSS-GEN
Model Number:	SDM-00001 and SDM-05000
Sample Part Number:	ASY-01646
EUT Category:	Low Power RFID 13.56MHz
Testing Start Date:	2010-09-17
Date Testing Complete:	2010-11-05
<b>Overall Results:</b>	<b>Compliant</b>

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## Report Directory

1.0	G E N E R A L - Product Description.....	4
1.1	Equipment Description .....	5
1.2	Equipment Marking Plate .....	5
1.3	Device Configuration During Test .....	6
1.3.1	Equipment Used During Test:.....	6
1.3.2	Input/Output Ports:.....	6
1.3.3	EUT Internal Operating Frequencies: .....	7
1.3.4	Power Interface:.....	7
1.4	Block Diagram: .....	7
1.5	EUT Configurations .....	8
1.6	EUT Operation Modes.....	8
2.0	Summary .....	8
2.1	Deviations from standard test methods.....	8
2.2	Device Modifications Necessary for Compliance .....	9
2.3	Reference Standards .....	10
2.4	Results Summary .....	10
3.0	Calibration of Equipment Used for Measurement .....	11
4.0	EMISSIONS TEST RESULTS.....	12
4.1	Test Conditions and Results – MAINS TERMINAL – CONDUCTED EMISSIONS .....	13
4.2	Test Conditions and Results – Occupied Bandwidth .....	24
4.3	Test Conditions and Results – Frequency Stability .....	28
4.4	Test Conditions and Results – RADIATED EMISSIONS.....	31
	Accreditations and Authorizations .....	47

Job Number: 2010119 File Number: MC15404 Page 4 of 48  
Model Number: SDM-00001 and SDM-05000  
Client Name: Hologic Inc  
FCC ID: YUJ-PCB00116  
Industry Canada 9218A-PCB00116

#### Report Revision History

Revision Date	Description	Revised By	Revision Reviewed By
2010-11-17	Add modification schematic and pictorials, added a comment to clarify voltage utilized and add ANSI year.	Joseph Danisi	Bob DeLisi

## 1.0 GENERAL - Product Description

The model numbers depicted throughout the report was the actual sample that was evaluated. It is the manufacturers Hologic Inc. responsibility to assure all other model numbers within the SDM series perform as the sample actually tested. In addition, the RFID tag was evaluated by itself outside the host, which is the Selenia Dimension System (Gantry).

The Selenia Dimensions Full Field Mammography system consist of two major subsystems. The GANTRY and the ACQUISITION WORKSTATION or AWS.

The Gantry houses the X-ray tube, the image receptor and the compression device. The Gantry is the patient interface. An RFID transmitter is used in the compression device. This transmitter interrogates an RFID tag found in each of several types of mammography paddles that can be attached to the compression device. The "AWS" (Acquisition Work Station) houses the computer system which interfaces with the Gantry. The AWS is the interface used by the mammography technologist.

**All versions and Configurations of the Selenia Dimensions Full Field Mammography system use the same RFID circuit and same Gantry. There is no difference in the RFID operation between different configurations.**

A family of part numbers exist for the Selenia Dimensions product. The top level numbers are found on the product label. Top level part numbers are intended to identify a particular Selenia Dimensions configuration.

The part numbering structure is as follows for the Selenia Dimensions Systemt.

SDM-00001 is marketed as the Selenia Dimensions 8000.

This series is available configured for two dimensional conventional imaging, P/N SDM-00001-2D.

This series is available configured for three dimensional tomography imaging, P/N SDM-00001-3D.

The SDM-00001 series includes what we refer to as a "premium" AWS.

SDM-05000 is marketed as the Selenia Dimensions 5000.

This SDM-05000 series can be configured with different video displays.

This series is available configured for two dimensional conventional imaging, with an AWS with a 2MP color LCD display, P/N SDM-05000-2DC.

This series is available configured for two dimensional conventional imaging, with an AWS with a 2MP grayscale LCD display, P/N SDM-05000-2D2.

This series is available configured for two dimensional conventional imaging, with an AWS with a 3MP grayscale LCD display, P/N SDM-05000-2D3.

This series is available configured for three dimensional tomography imaging, with an AWS with a 2MP color LCD display, P/N SDM-05000-3DC.

This series is available configured for three dimensional tomography imaging, with an AWS with a 2MP grayscale LCD display, P/N SDM-05000-3D2.

This series is available configured for three dimensional tomography imaging, with an AWS with a 3MP grayscale LCD display, P/N SDM-05000-3D3.

Job Number: 2010119 File Number: MC15404 Page 5 of 48  
Model Number: SDM-00001 and SDM-05000  
Client Name: Hologic Inc  
FCC ID: YUJ-PCB00116  
Industry Canada 9218A-PCB00116

### 1.1 Equipment Description

The RFID is intended to communicate only to the paddle when attached to the machine. There is no intent to communicate to anything outside the machine. The RFID integrated circuit is manufactured by ST Microdevices. The part number is CRX14. It (The IC) is mounted on a custom designed printed circuit board that is enclosed in the compression assembly. The primary axis of the transmitted energy is directly towards the image receptor. This would be downward when the system is oriented in the CC position (Tube head at 12 o' clock).

Per FCC Part 2.1093 (C) this device is not required to undergo testing for radio-frequency radiation exposure.

Antenna description: It is a permanently attached to the RF circuit board and the transmit antenna type is a PCB trace antenna.

### 1.2 Equipment Marking Plate

Not provided at time of test

Job Number: 2010119      File Number: MC15404      Page 6 of 48  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

### 1.3 Device Configuration During Test

#### 1.3.1 Equipment Used During Test:

Use	Product Type	Manufacturer	Model	Comments
EUT	RFID Tag	Hologic Inc	Selenia Dimension RFID Tag	Selenia Dimensions System Gantry (SDM-series) RFID tag was evaluated outside Host.
AE	Power Supply	Hologic Inc	Prototype	None
AE	Text Fixture	Hologic Inc	Prototype	None
Note: <b>EUT</b> - Equipment Under Test, <b>AE</b> - Auxiliary/Associated Equipment, or <b>SIM</b> - Simulator (Not Subjected to Test)				

#### 1.3.2 Input/Output Ports:

Port #	Name	Type*	Cable Max. >3m (Y/N)	Cable Shielded (Y/N)	Comments
0	Enclosure	N/E	—	—	None
1	Mains	AC	NO	NO	None
2	wires	I/O	NO	NO	None
Note: AC = AC Power Port      DC = DC Power Port      N/E = Non-Electrical I/O = Signal Input or Output Port (Not Involved in Process Control) TP = Telecommunication Ports					

### 1.3.3 EUT Internal Operating Frequencies:

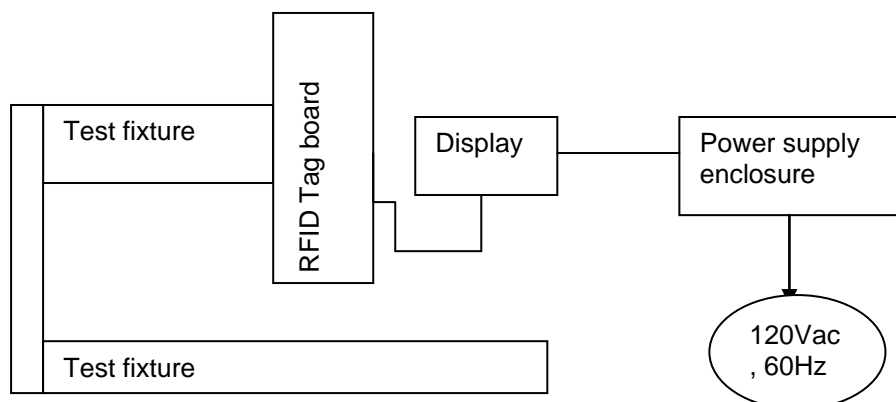
Frequency (MHz)	Description
13.56	Fundamental

### 1.3.4 Power Interface:

Mode # /Rated	Voltage (V)	Current (A)	Power (W)	Frequency (DC/AC-Hz)	Phases (#)	Comments
1	120Vac	-	-	60Hz	Single Phase	The voltage utilized is only to power the RFID Tag outside the host for test purposes only however, in a typically configuration it will receive its power from the host which is the Gantry input power requirements as outlined in the label information

### 1.4 Block Diagram:

The diagram below illustrates the configuration of the equipment above.



## 1.5 EUT Configurations

Mode #	Description
1	The RFID in the Selenia Dimensions Mammography System was configured by the manufacturer Hologic Inc. for identification of the compression paddle that is attached to the systems. When a paddle is attached and identified by the system, the information is used to make appropriate adjustments to system parameters. These include collimator opening adjustment and adjustments in compression thickness, if required due, to paddle offsets in height.

## 1.6 EUT Operation Modes

Mode #	Description
1	The fundamental frequency of the RFID is 13.56 MHZ. The tag is polled by the system software approximately every 500ms. The nominal distance is 2.5 mm. (RFID tag to antenna).

## 2.0 Summary

The tests listed in the Summary of Testing section of this report have been performed and the results recorded by Underwriters Laboratories Inc. in accordance with the procedures stated in each test requirement and specification. The applicant determined the list of tests performed were applicable to the Equipment Under Test. As a result, the subject product has been verified to comply or not comply as noted in the Summary of Testing with each test specification. The test results relate only to the items tested.

### 2.1 Deviations from standard test methods

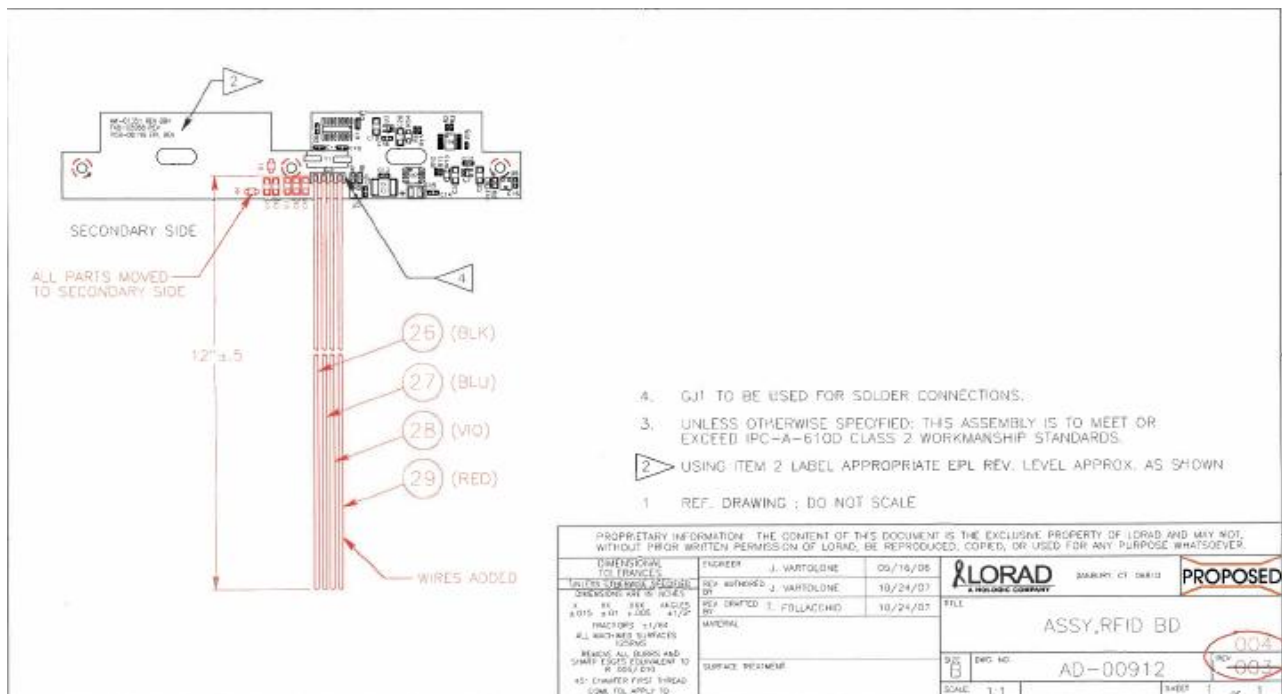
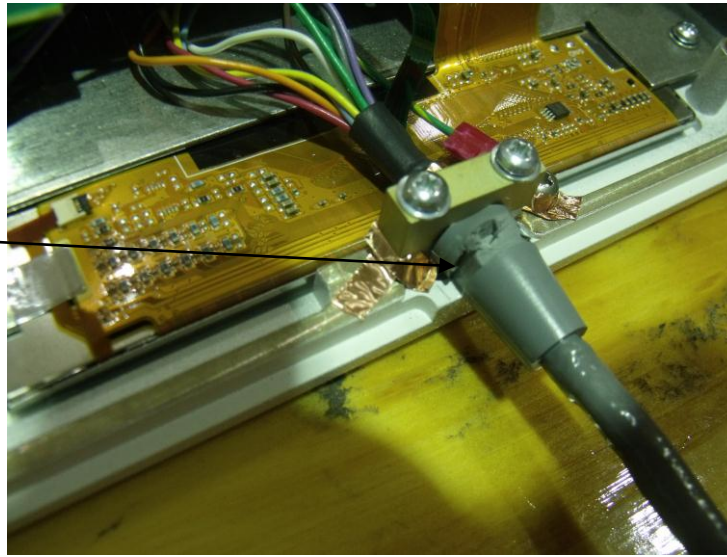
None
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## 2.2 Device Modifications Necessary for Compliance

Radiated Emissions: Modified RFID Interface Board drawing number: AD-00912 Rev. 004 added capacitors and ferrite beads at various locations and Improved grounding on affirm interconnect cable and display board.

Improved  
grounding



### 2.3 Reference Standards

Standard Number	Standard Name	Standard Date
CFR 47	FCC Part 15, Subpart C, 15.31, 15.35, 15.207 & 15.209, & 15.249	2009
CFR 47	FCC Part 15, Subpart B, Class B Radio Frequency Devices	2009
ICES-003, Issue 4	Spectrum Management and Telecommunications Policy Interference-Causing Equipment Standard: Digital Apparatus	2003
RSS- 210, Issue 7	Low-power License-exempt Radio communications Devices (All Frequency Bands): Category I Equipment sets out certification requirements for low-power license- exempt radio communication devices that are Category I equipment.	2007
RSS-GEN, Issue 2	General Requirements and Information for the Certification of Radio communication equipment.	2007

### 2.4 Results Summary

This product is considered Class B

Requirement – Test	Result (Compliant / Non-Compliant)*
Conducted Emissions - Mains	Compliant
Frequency Stability	Compliant
Frequency Stability vs Voltage variation	Compliant
Fundamental Frequency	Compliant
Radiated Emissions - General	Compliant
Radiated Emissions - Unintentional	Compliant
Occupied Bandwidth	Compliant

Job Number: 2010119 File Number: MC15404 Page 11 of 48  
Model Number: SDM-00001 and SDM-05000  
Client Name: Hologic Inc  
FCC ID: YUJ-PCB00116  
Industry Canada 9218A-PCB00116

Test Engineer:



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Lead Engineering Associate  
International EMC Services  
Conformity Assessment Services-

Reviewer:



Bob DeLisi (Ext.22452)  
Senior Staff Engineer  
International EMC Services  
Conformity Assessment Services

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### 3.0 Calibration of Equipment Used for Measurement

All test equipment and test accessories are calibrated on a regular basis. The maximum time between calibrations is one year or the manufacturers' recommendation, whichever is less.

All test equipment calibrations are traceable to the National Institute of Standards and Technology (NIST); therefore, all test data recorded in this report is traceable to NIST.

## 4.0 EMISSIONS TEST RESULTS

The emissions tests were performed according to following regulations:

----- United States -----

FCC Part 15, Subpart C, 15.207, 15.209, 15.215 & 15.225.	Code of Federal Regulations, Part 15, and Subpart C, Radio Frequency Devices: 2009.
FCC Part 15, Subpart B, 15.107 & 15.109	Code of Federal Regulations, Part 15, and Subpart B, Radio Frequency Devices: 2009.

----- Industry Canada -----

Radio Standards Specification 210, Issue 7	Low-power License-exempt Radio communications Devices (All Frequency Bands): Category I Equipment sets out certification requirements for low-power license- exempt radio communication devices that are Category I equipment. 2007
RSS-GEN, Issue 2	General Requirements and Information for the Certification of Radio communication <i>Equipment</i> .
ICES-003, Issue 4	Spectrum Management and Telecommunications Policy Interference-Causing Equipment Standard: Digital Apparatus. 2004

Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be verified at the time the test is conducted.

Ambient Temperature, °C	22.5 ± 2.5	Relative Humidity, %	45 ± 15	Barometric Pressure, mBar	950 ± 150
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### Measurement Uncertainty

Test	Uncertainty
Conducted Emissions	± 3.3, K=2
Radiated Emissions 30-200 MHz, Horizontal	± 3.1, K=2
Radiated Emissions 30-200MHz, Vertical	± 3.2, K=2
Radiated Emissions, 200-1000MHz, Horizontal	± 3.3, K=2
Radiated Emissions, 200-1000MHz, Vertical	± 4.0, K=2

### Sample Calculations

Radiated Field Strength and Conducted Emissions data contained within this report is calculated on the following basis:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Meter Reading (dBuV)} + \text{AF (dB/m)} - \text{Gain (dB)} + \text{Cable Loss (dB)} \\ \text{Conducted Voltage (dBuV)} &= \text{Meter Reading (dBuV)} + \text{Cable Loss (dB)} + \text{LISN IL (dB)} \\ \text{Conducted Current (dBuA)} &= \text{Meter Reading (dBuV)} + \text{Cable Loss (dB)} - \text{Transducer Factor (dBohms)} \end{aligned}$$

Job Number: 2010119      File Number: MC15404      Page 13 of 48  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

#### 4.1 Test Conditions and Results – MAINS TERMINAL – CONDUCTED EMISSIONS

Test Description	Measurements were made on a ground plane. All power was connected to the system through Artificial Mains Network (AMN). Conducted voltage measurements on mains lines were made at the output of the AMN.	
Basic Standard	FCC Part 15, Subpart C, 15.207	
UL LPG	80-EM-S0026	
	Frequency range on each side of line	Measurement Point
Fully configured sample scanned over the following frequency range	150kHz to 30MHz	Mains
<b>Limits - Class B</b>		
Frequency (MHz)	Limit (dB $\mu$ V)	
	Quasi-Peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50
Supplementary information: None		

Job Number: 2010119      File Number: MC15404      Page 14 of 48  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

**Table 1 Conducted Emissions EUT Configuration Settings**

Power Interface Mode #	EUT Configurations Mode #	EUT Operation Mode #
1	1	1
Supplementary information: None		

**Table 2 Conducted Emissions Test Equipment**

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal Date	Cal Due Date
Conducted Emissions – Shield Room					
Spectrum Analyzer	Agilent	E7402A	ME5B-123	2010-02-02	2011-02-02
LISN	Solar	9252-50-R-24-BNC	47367	2010-03-26	2011-03-31
Switch Driver	HP	11713A	44403	N/A	N/A
RF Switch Box	UL	2	44400	N/A	N/A
Measurement Software	UL	Version 9.3	44743	N/A	N/A
Temp/Humidity/Pressure Meter	Cole Parmer	99760-00	43736	2009-11-11	2010-11-11
Multimeter	Fluke	87V	64386	2010-03-16	2011-03-16

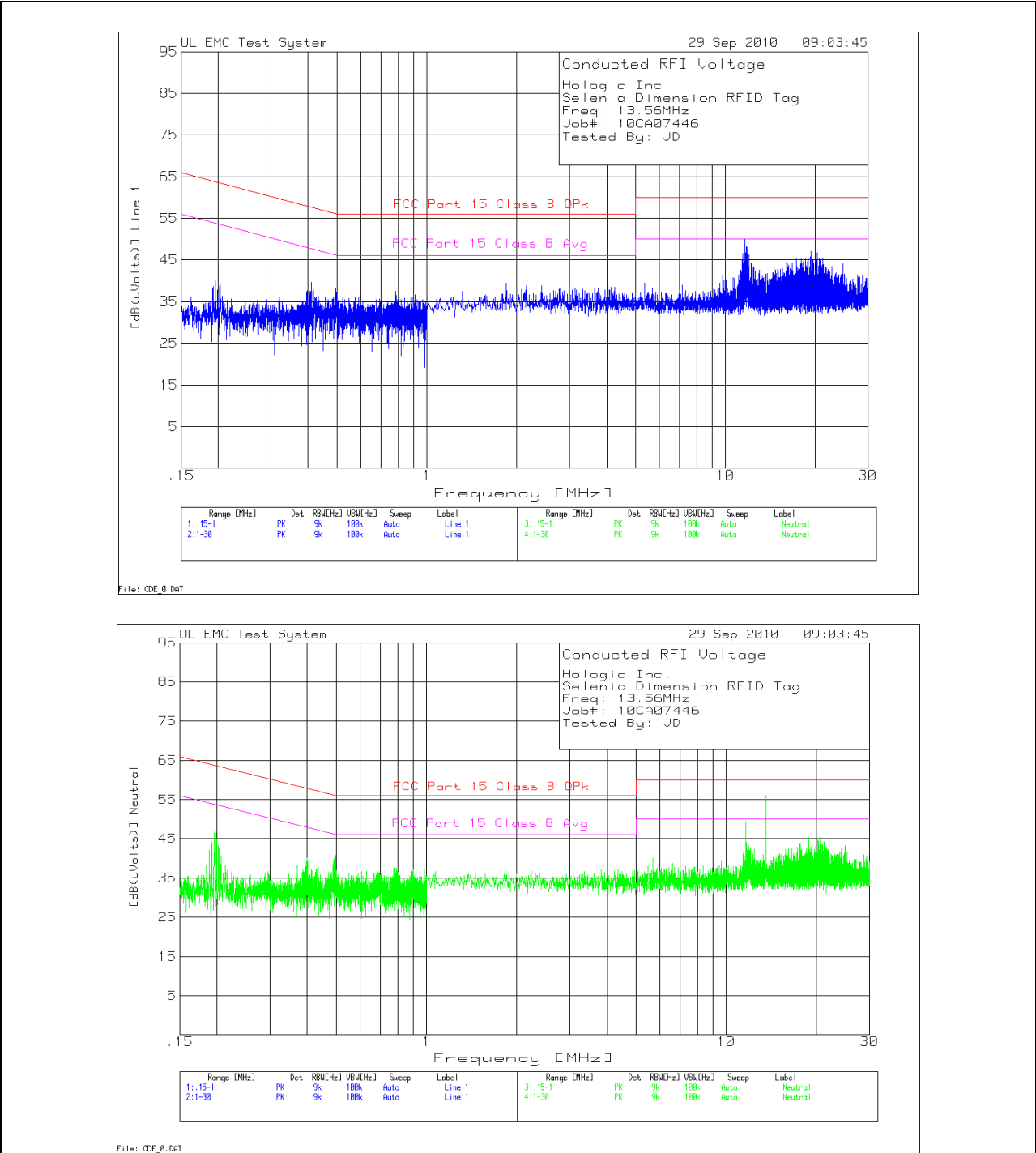
Job Number: 2010119 File Number: MC15404  
Model Number: SDM-00001 and SDM-05000  
Client Name: Hologic Inc  
FCC ID: YUJ-PCB00116  
Industry Canada 9218A-PCB00116

Page 15 of 48

**Figure 1 Test Setup for Conducted Emissions**



Figure 2 Conducted Emissions Graph





Job Number:	2010119	File Number:	MC15404	Page	17 of 48
Model Number:	SDM-00001 and SDM-05000				
Client Name:	Hologic Inc				
FCC ID:	YUJ-PCB00116				
Industry Canada	9218A-PCB00116				

### Table 3 Conducted Emissions Data Points

Hologic Inc.  
Selenia Dimension RFID Tag  
Freq: 13.56MHz  
Job#: 10CA07446  
Tested By: JD

Test No.	Meter Frequency [MHz]	Gain/Loss Reading [dB(uV)]	Transducer Factor [dB]	Level Factor [dB]	Limit:1 [dB(uVolts)]	2	3	4	5	6
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Line 1 .15 - 1MHz -----										
1	.19559	30.01 pk	10.1	0	40.11	63.8	53.8	-	-	-
				Margin [dB]	-23.69	-13.69	-	-	-	-
2	.41015	29.48 pk	10.1	0	39.58	57.6	47.6	-	-	-
				Margin [dB]	-18.02	-8.02	-	-	-	-
3	.49496	27.97 pk	10.1	0	38.07	56.1	46.1	-	-	-
				Margin [dB]	-18.03	-8.03	-	-	-	-

Line 1 1 - 30MHz -----										
4	11.39486	35.9 pk	10.6	0	46.5	60	50	-	-	-
				Margin [dB]	-13.5	-3.5	-	-	-	-
5	11.59741	39.36 pk	10.6	0	49.96	60	50	-	-	-
				Margin [dB]	-10.04	-.04	-	-	-	-
6	11.5106	33.87 pk	10.6	0	44.47	60	50	-	-	-
				Margin [dB]	-15.53	-5.53	-	-	-	-
7	11.69868	37.59 pk	10.6	0	48.19	60	50	-	-	-
				Margin [dB]	-11.81	-1.81	-	-	-	-
8	11.81442	37.4 pk	10.6	0	48	60	50	-	-	-
				Margin [dB]	-12	-2	-	-	-	-
9	11.88676	35.58 pk	10.6	0	46.18	60	50	-	-	-
				Margin [dB]	-13.82	-3.82	-	-	-	-
10	19.36643	36.11 pk	11	0	47.11	60	50	-	-	-
				Margin [dB]	-12.89	-2.89	-	-	-	-
11	20.32128	35.65 pk	11	0	46.65	60	50	-	-	-
				Margin [dB]	-13.35	-3.35	-	-	-	-
12	.19537	36.8 pk	10	0	46.8	63.8	53.8	-	-	-
				Margin [dB]	-17	-7	-	-	-	-

LIMIT 1: FCC Part 15 Class B QPk  
LIMIT 2: FCC Part 15 Class B Avg

PK - Peak detector  
QP - Quasi-Peak detector  
av - Linear average detector  
avlg - Average log detection  
AV - average detection  
CAV - CISPR average detection

Job Number:	2010119	File Number:	MC15404	Page	18 of 48
Model Number:	SDM-00001 and SDM-05000				
Client Name:	Hologic Inc				
FCC ID:	YUJ-PCB00116				
Industry Canada	9218A-PCB00116				

Hologic Inc.  
Selenia Dimension RFID Tag  
Freq: 13.56MHz  
Job#: 10CA07446  
Tested By: JD

Test No.	Meter Frequency [MHz]	Gain/Loss Reading [dB(uV)]	Transducer Factor [dB]	Level Factor [dB]	Limit:1 [uVolts]	2	3	4	5	6
----------	-----------------------	----------------------------	------------------------	-------------------	------------------	---	---	---	---	---

Neutral .15 - 1MHz -----										
12	.19537	36.8 pk	10	0	46.8	63.8	53.8	-	-	-
				Margin [dB]	-17	-7	-	-	-	-
13	.19898	36.42 pk	10	0	46.42	63.7	53.7	-	-	-
				Margin [dB]	-17.28	-7.28	-	-	-	-
14	.39807	29.97 pk	10.1	0	40.07	57.9	47.9	-	-	-
				Margin [dB]	-17.83	-7.83	-	-	-	-
15	.49327	30.22 pk	10.1	0	40.32	56.1	46.1	-	-	-
				Margin [dB]	-15.78	-5.78	-	-	-	-
16	.78628	27.47 pk	10.1	0	37.57	56	46	-	-	-
				Margin [dB]	-18.43	-8.43	-	-	-	-
Neutral 1 - 30MHz -----										
17	11.39486	31.38 pk	10.6	0	41.98	60	50	-	-	-
				Margin [dB]	-18.02	-8.02	-	-	-	-
18	11.59741	38.83 pk	10.6	0	49.43	60	50	-	-	-
				Margin [dB]	-10.57	-.57	-	-	-	-
19	11.69144	33.22 pk	10.6	0	43.82	60	50	-	-	-
				Margin [dB]	-16.18	-6.18	-	-	-	-
20	11.79995	33.98 pk	10.6	0	44.58	60	50	-	-	-
				Margin [dB]	-15.42	-5.42	-	-	-	-
21	11.87952	32.68 pk	10.6	0	43.28	60	50	-	-	-
				Margin [dB]	-16.72	-6.72	-	-	-	-
22	11.98803	31.42 pk	10.6	0	42.02	60	50	-	-	-
				Margin [dB]	-17.98	-7.98	-	-	-	-

LIMIT 1: FCC Part 15 Class B QPk  
LIMIT 2: FCC Part 15 Class B Avg

PK - Peak detector  
QP - Quasi-Peak detector  
av - Linear average detector  
avlg - Average log detection  
AV - average detection  
CAV - CISPR average detection  
RMS - RMS detection  
CRMS - CISPR RMS detection

Job Number:	2010119	File Number:	MC15404	Page	19 of 48
Model Number:	SDM-00001 and SDM-05000				
Client Name:	Hologic Inc				
FCC ID:	YUJ-PCB00116				
Industry Canada	9218A-PCB00116				

Hologic Inc.  
Selenia Dimension RFID Tag  
Freq: 13.56MHz  
Job#: 10CA07446  
Tested By: JD

Test No.	Meter Frequency [MHz]	Gain/Loss Reading [dB(uV)]	Transducer Factor [dB]	Level Factor	Limit:1 [dB(uVolts)]	2	3	4	5	6
23	12.07483	31.52 pk	10.6	0	42.12 60	50	-	-	-	-
				Margin [dB]	-17.88	-7.88	-	-	-	-
24	12.20504	30.33 pk	10.6	0	40.93 60	50	-	-	-	-
				Margin [dB]	-19.07	-9.07	-	-	-	-
25	13.56498	45.29 pk	10.8	0	56.09 60	50	-	-	-	-
				Margin [dB]	-3.91	6.09	-	-	-	-
26	20.18384	34.1 pk	11	0	45.1 60	50	-	-	-	-
				Margin [dB]	-14.9	-4.9	-	-	-	-
27	20.48042	34.4 pk	11	0	45.4 60	50	-	-	-	-
				Margin [dB]	-14.6	-4.6	-	-	-	-

LIMIT 1: FCC Part 15 Class B QPk  
LIMIT 2: FCC Part 15 Class B Avg

PK - Peak detector  
QP - Quasi-Peak detector  
av - Linear average detector  
avlg - Average log detection  
AV - average detection  
CAV - CISPR average detection  
RMS - RMS detection  
CRMS - CISPR RMS detection

Job Number:	2010119	File Number:	MC15404	Page	20 of 48
Model Number:	SDM-00001 and SDM-05000				
Client Name:	Hologic Inc				
FCC ID:	YUJ-PCB00116				
Industry Canada	9218A-PCB00116				

Hologic Inc.  
Selenia Dimension RFID Tag  
Freq: 13.56MHz  
Job#: 10CA07446  
Tested By: JD

Test	Meter	Gain/Loss	Transducer	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	[dB(uVolts)]						
[MHz]	[dB(uV)]	[dB]	[dB]							
=====										
Neutral 1 - 30MHz										
13.5612	46.21 qp	10.8	0	57.01	60	50	-	-	-	-
		Margin [dB]:		-2.99	7.01		-	-	-	-

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

- PK - Peak detector
- QP - Quasi-Peak detector
- av - Linear average detector
- avlg - average log detection
- AV - average detection
- CAV - CISPR average detection
- RMS - RMS detection
- CRMS - CISPR RMS detection

LIMIT 1: FCC Part 15 Class B QPk  
LIMIT 2: FCC Part 15 Class B Avg

Job Number: 2010119      File Number: MC15404      Page 21 of 48  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

Hologic Inc.  
 Selenia Dimension RFID Tag  
 Freq: 13.56MHz  
 Job#: 10CA07446  
 Tested By: JD

Test	Meter	Gain/Loss	Transducer	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	[dB(uVolts)]						
[MHz]	[dB(uV)]	[dB]	[dB]							

Line 1 .15 - 1MHz

.19559	15.66 AV	10.1	0	25.76	63.8	53.8	-	-	-	-
				Margin [dB]:	-38.04	-28.04	-	-	-	-
.41015	11.73 AV	10.1	0	21.83	57.6	47.6	-	-	-	-
				Margin [dB]:	-35.77	-25.77	-	-	-	-
.49496	12.88 AV	10.1	0	22.98	56.1	46.1	-	-	-	-
				Margin [dB]:	-33.12	-23.12	-	-	-	-

Line 1 1 - 30MHz

11.39486	36.49 AV	10.6	0	47.09	60	50	-	-	-	-
				Margin [dB]:	-12.91	-2.91	-	-	-	-
11.59741	38.91 AV	10.6	0	49.51	60	50	-	-	-	-
				Margin [dB]:	-10.49	-.49	-	-	-	-
11.5106	21.69 AV	10.6	0	32.29	60	50	-	-	-	-
				Margin [dB]:	-27.71	-17.71	-	-	-	-
11.69868	23.55 AV	10.6	0	34.15	60	50	-	-	-	-
				Margin [dB]:	-25.85	-15.85	-	-	-	-
11.81442	35.1 AV	10.6	0	45.7	60	50	-	-	-	-
				Margin [dB]:	-14.3	-4.3	-	-	-	-
11.88676	20.96 AV	10.6	0	31.56	60	50	-	-	-	-
				Margin [dB]:	-28.44	-18.44	-	-	-	-
19.36643	17.28 AV	11	0	28.28	60	50	-	-	-	-
				Margin [dB]:	-31.72	-21.72	-	-	-	-
20.32128	17.49 AV	11	0	28.49	60	50	-	-	-	-
				Margin [dB]:	-31.51	-21.51	-	-	-	-

PK - Peak detector  
 QP - Quasi-Peak detector  
 av - Linear average detector  
 avlg - average log detection  
 AV - average detection  
 CAV - CISPR average detection  
 RMS - RMS detection  
 CRMS - CISPR RMS detection

LIMIT 1: FCC Part 15 Class B QPk  
 LIMIT 2: FCC Part 15 Class B Avg

Job Number: 2010119 File Number: MC15404 Page 22 of 48  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

Hologic Inc.  
 Selenia Dimension RFID Tag  
 Freq: 13.56MHz  
 Job#: 10CA07446  
 Tested By: JD

Test	Meter	Gain/Loss	Transducer	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	[dB(uVolts)]						
[MHz]	[dB(uV)]	[dB]	[dB]							

#### Neutral .15 - 1MHz

.19537	22.13 AV	10	0	32.13	63.8	53.8	-	-	-	-
			Margin [dB]:		-31.67	-21.67	-	-	-	-
.19898	22.06 AV	10	0	32.06	63.7	53.7	-	-	-	-
			Margin [dB]:		-31.64	-21.64	-	-	-	-
.39807	16.94 AV	10.1	0	27.04	57.9	47.9	-	-	-	-
			Margin [dB]:		-30.86	-20.86	-	-	-	-
.49327	17.22 AV	10.1	0	27.32	56.1	46.1	-	-	-	-
			Margin [dB]:		-28.78	-18.78	-	-	-	-
.78628	13.67 AV	10.1	0	23.77	56	46	-	-	-	-
			Margin [dB]:		-32.23	-22.23	-	-	-	-

#### Neutral 1 - 30MHz

11.39486	30.32 AV	10.6	0	40.92	60	50	-	-	-	-
			Margin [dB]:		-19.08	-9.08	-	-	-	-
11.59741	35.27 AV	10.6	0	45.87	60	50	-	-	-	-
			Margin [dB]:		-14.13	-4.13	-	-	-	-
11.69144	20.96 AV	10.6	0	31.56	60	50	-	-	-	-
			Margin [dB]:		-28.44	-18.44	-	-	-	-
11.79995	32.26 AV	10.6	0	42.86	60	50	-	-	-	-
			Margin [dB]:		-17.14	-7.14	-	-	-	-
11.87952	19.16 AV	10.6	0	29.76	60	50	-	-	-	-
			Margin [dB]:		-30.24	-20.24	-	-	-	-
11.98803	21.47 AV	10.6	0	32.07	60	50	-	-	-	-
			Margin [dB]:		-27.93	-17.93	-	-	-	-

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

PK - Peak detector  
 QP - Quasi-Peak detector  
 av - Linear average detector  
 avlg - average log detection  
 AV - average detection  
 CAV - CISPR average detection  
 RMS - RMS detection  
 CRMS - CISPR RMS detection

LIMIT 1: FCC Part 15 Class B QPk  
 LIMIT 2: FCC Part 15 Class B Avg

Job Number: 2010119
Model Number: SDM-00001 and SDM-05000
Client Name: Hologic Inc
FCC ID: YUJ-PCB00116
Industry Canada 9218A-PCB00116

File Number: MC15404

Page 23 of 48

Hologic Inc.  
Selenia Dimension RFID Tag  
Freq: 13.56MHz  
Job#: 10CA07446  
Tested By: JD

Test	Meter	Gain/Loss	Transducer	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	[dB(uVolts)]						
[MHz]	[dB(uV)]	[dB]	[dB]							
12.07483	21.47 AV	10.6	0	32.07	60	50	-	-	-	-
			Margin [dB]:	-27.93	-17.93	-	-	-	-	-
12.20504	27.15 AV	10.6	0	37.75	60	50	-	-	-	-
			Margin [dB]:	-22.25	-12.25	-	-	-	-	-
13.56498	37.88 AV	10.8	0	48.68	60	50	-	-	-	-
			Margin [dB]:	-11.32	-1.32	-	-	-	-	-
20.18384	14.59 AV	11	0	25.59	60	50	-	-	-	-
			Margin [dB]:	-34.41	-24.41	-	-	-	-	-
20.48042	13.89 AV	11	0	24.89	60	50	-	-	-	-
			Margin [dB]:	-35.11	-25.11	-	-	-	-	-

NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

PK - Peak detector  
QP - Quasi-Peak detector  
av - Linear average detector  
avlg - average log detection  
AV - average detection  
CAV - CISPR average detection  
RMS - RMS detection  
CRMS - CISPR RMS detection

LIMIT 1: FCC Part 15 Class B QPk  
LIMIT 2: FCC Part 15 Class B Avg

## 4.2 Test Conditions and Results – Occupied Bandwidth

Test Description	Measurements were made in the laboratory environment. A Loop antenna tuned to the transmit frequency was attached to the input of a spectrum analyzer. The device was operated and the spectrum analyzer resolution bandwidth set per the appropriate standard.
Basic Standard	FCC Part 15 Subpart , Section 15.215
<b>Occupied Bandwidth</b>	

**Table 4 Occupied Bandwidth Configuration Settings**

Power Interface Mode #	EUT Configurations Mode #	EUT Operation Mode #
1	1	1
Supplementary information: None		

**Table 5 Occupied Bandwidth Spectrum Analyzer Settings**

Span (MHz)	Resolution Bandwidth (MHz)	Occupied Bandwidth Requirements	
		dBc	%
1	0.1	-20	99
Supplementary information: Span shall be wide enough to capture all products of the modulation process.			
(MHz)	Resolution Bandwidth (MHz)	Occupied Bandwidth Measurements	
		-20db	99%
13.56	0.1	100.2KHz	148.2KHz

**Table 6 Occupied Bandwidth Test Equipment**

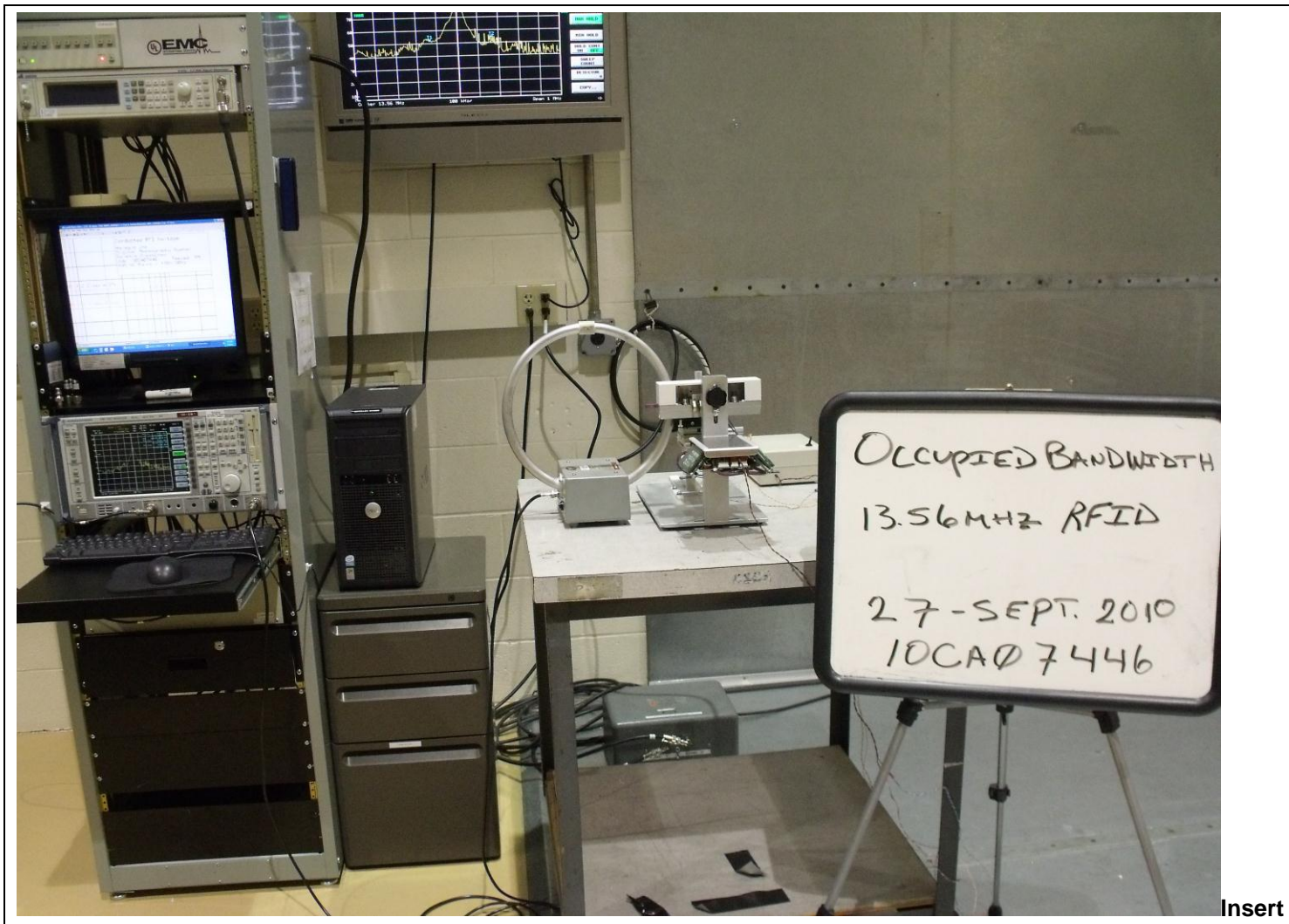
<b>Test Equipment Used</b>					
Description	Manufacturer	Model	Identifier	Cal Date	Cal due date
EMI Receiver	Rohde & Schwarz	ESIB26	ME5B-081	2010-01-12	2011-01-12
Active Loop Antenna	EMCO	6507	ME5A-288	2010-10-19	2011-10-19
Temp/Humidity/ Pressure Meter	Cole Parmer	99760-00	4268	2009-11-11	2010-11-11
Measurement Software	UL	Version 9.3	44740	N/A	N/A
Multimeter	Fluke	87V	64386	2010-03-16	2011-03-16



Job Number: 2010119 File Number: MC15404  
Model Number: SDM-00001 and SDM-05000  
Client Name: Hologic Inc  
FCC ID: YUJ-PCB00116  
Industry Canada 9218A-PCB00116

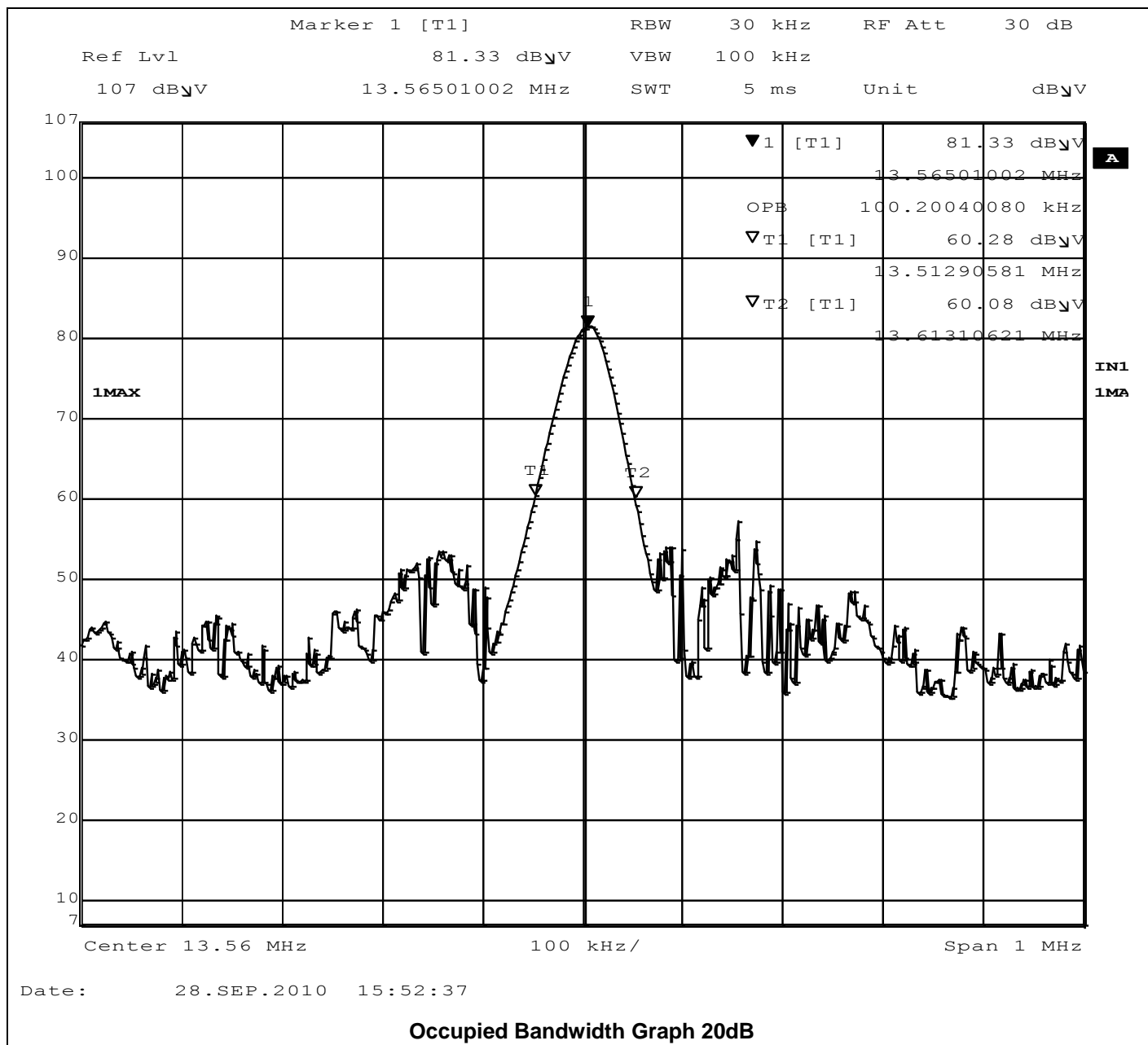
Page 25 of 48

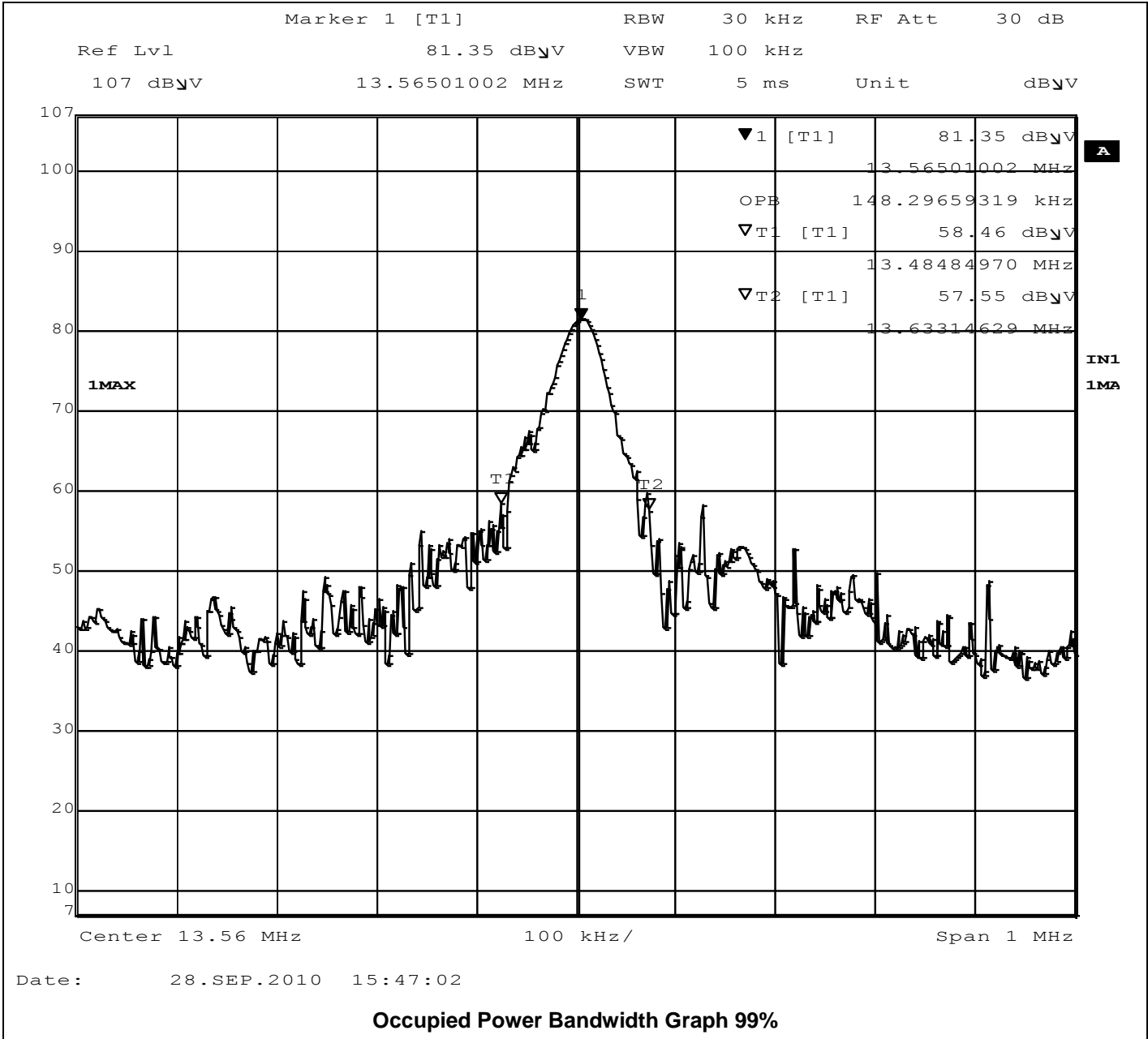
**Figure 3 Test Setup for Occupied Bandwidth**



Job Number: 2010119 File Number: MC15404 Page 26 of 48  
Model Number: SDM-00001 and SDM-05000  
Client Name: Hologic Inc  
FCC ID: YUJ-PCB00116  
Industry Canada 9218A-PCB00116

### Figure 4 Occupied Bandwidth Graph





#### 4.3 Test Conditions and Results – Frequency Stability

Test Description	For Temperature Frequency Stability, measurements were made with the product placed in an environmental chamber and the temperature varied from –20C to +50C at the normal supply voltage. The frequency drift of the fundamental frequency was measured with a spectrum analyzer.  For Power Supply Frequency Stability, measurements were made in a laboratory environment and the supply voltage varied from 85% to 115%. The ambient temperature was 20C.
Basic Standard	
<b>Frequency Stability Limits</b>	
+/- 0.01% of the Operating Frequency	

**Table 7 Frequency Stability Configuration Settings**

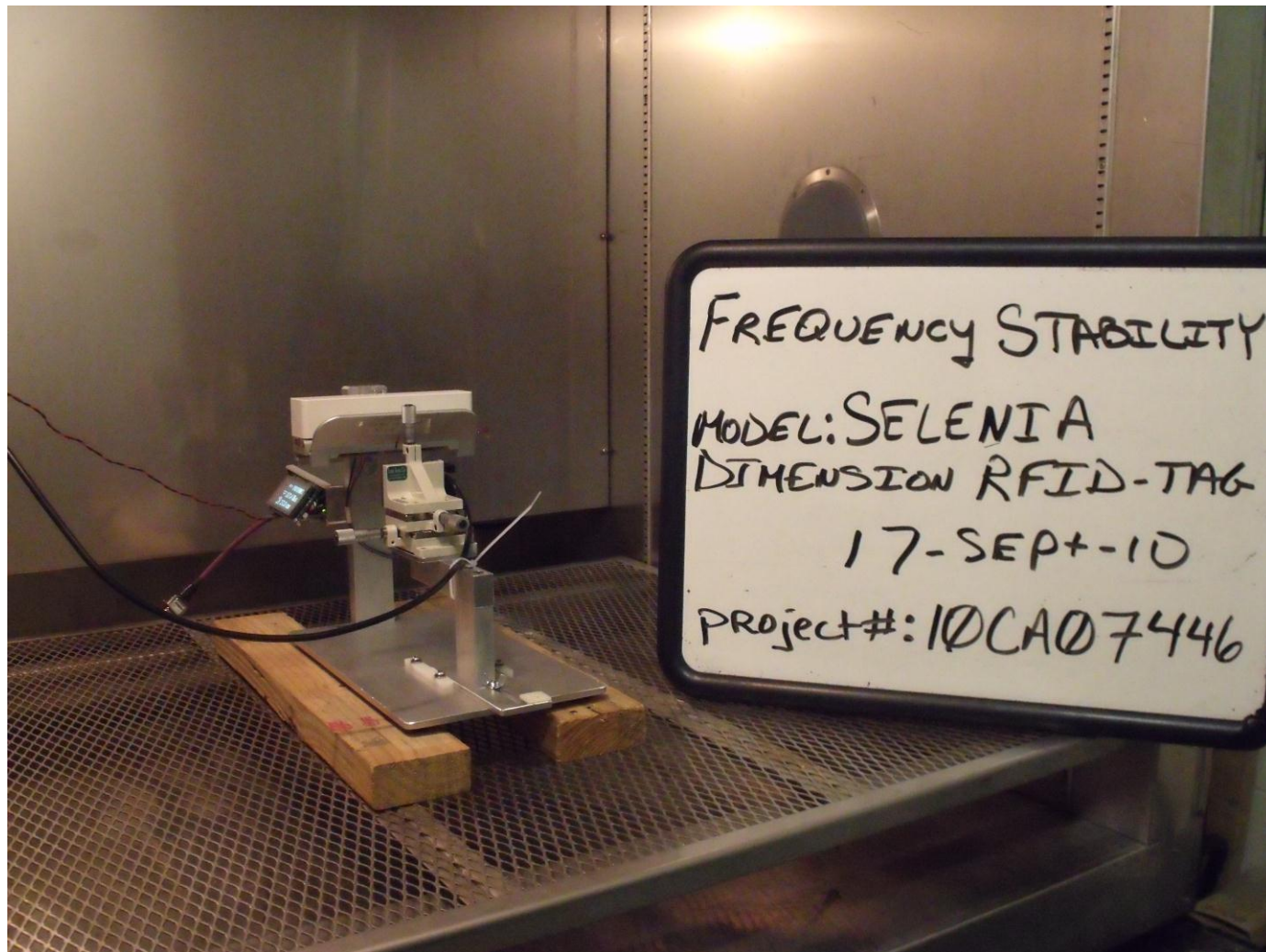
Power Interface Mode #	EUT Configurations Mode #	EUT Operation Mode #
1	1	1
Supplementary information: The EUT was directly connected to the spectrum analyzer through a temporary connector provided by the manufacturer.		

**Table 8 Frequency Stability Test Equipment**

<b>Test Equipment Used</b>					
Description	Manufacturer	Model	Identifier	Cal Date	Cal Due Date
Spectrum Analyzer	Agilent	E7405A	19695	2010-02-01	2011-02-01
Thermal Chamber	Thermotron	SE-1200L	6-302	2010-03-16	2011-03-16
Temp/Humidity/ Pressure Meter	Cole Parmer	99760-00	4268	2009-11-11	2010-11-11
Measurement Software	UL	Version 9.3	44740	N/A	N/A
Multimeter	Fluke	87V	64386	2010-03-16	2011-03-16
Power Analyzer	California Instruments	300-CTS-75	47973	2009-09-28	2010-09-28
AC Power Source	Pacific Power Source	360-AMX	ME7A-626	N/A	N/A

Job Number: 2010119 File Number: MC15404 Page 29 of 48  
Model Number: SDM-00001 and SDM-05000  
Client Name: Hologic Inc  
FCC ID: YUJ-PCB00116  
Industry Canada 9218A-PCB00116

**Figure 5 Test Setup for Frequency Stability**



**Table 9 Frequency Stability Data – Frequency vs. Temperature**

Test Condition		Test Result				
		Carrier Frequency (rated)	13.56MHz			
Temperature	Voltage (Vac)	Normal Conditions (MHz) (f)	Extreme Conditions (MHz) (fe)	Frequency Drift (Hz) (f-fe)	Lower Limit (MHz)	Upper Limit (MHz)
Tnom (+23.2C)	Vnom 120	13.56100	-	-	-	-
Tmax (+50°C)	Vnom 120	13.56100	13.56075	25	13.5596439	13.5623561
Tmin (-20°C)	Vnom 120	13.56100	13.56075	25	13.5596439	13.5623561
Maximum Drift (Hz)		25				

**Table 10 Frequency Stability Data – Frequency vs. Input Voltage**

Supply Voltage (Vac)	Frequency (MHz)	Drift (Hz)	Operating (Y/N)
102	13.56100	0	Y
138	13.56100	0	Y

#### 4.4 Test Conditions and Results – RADIATED EMISSIONS

Test Description	Measurements were made in a 10-meter semi-anechoic chamber that complies to CISPR 16/ANSI C63.4:2009. Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 10-meter. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in both horizontal and vertical polarities. Final measurements (quasi-peak or average as noted) were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4-meters. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable.		
Basic Standard		FCC Part 15, Subpart C, 15.209 & 15.225	
UL LPG		80-EM-S0029	
	Frequency range	Measurement Point	
Fully configured sample scanned over the following frequency range	0.009MHz – 1GHz	(3 meter measurement distance)	
Limits			
Frequency (MHz)	Limit (dBµV/m)		
	Quasi-Peak	Average	
	General Emissions	Fundamental	Spurious
0.009 – 0.490	128.5 – 93.8	-	-
0.490 – 1.705	73.8 – 63	-	-
1.705 – 30	69.5	-	-
30 – 88	40	-	-
88 – 216	43.5	-	-
216-960	46	-	
960-1000	54	-	-
13.56	-	124	
All Spurious emissions met the 15.209 limits	-	-	-
Supplementary information: Spurious limits are only applied against products of the transmitter. All other emissions must meet the general limits.			



Job Number: 2010119 File Number: MC15404 Page 32 of 48  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

**Table 11 Radiated Emissions EUT Configuration Settings**

Power Interface Mode #	EUT Configurations Mode #	EUT Operation Mode #
1	1	1
Supplementary information: None		

**Table 12 Radiated Emissions Test Equipment**

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal Date	Cal Due Date
60Hz-30MHz					
EMI Receiver	Rohde & Schwarz	ESIB40	34968	2010-02-09	2011-02-22
Active Loop Antenna	EMCO	6507	ME5A-288	2010-10-19	2011-10-19
Active Loop Antenna	EMCO	6507	ME5A-288	2009-10-19	2010-10-19
Switch Driver	HP	11713A	ME7A-627	N/A	N/A
System Controller	Sunol Sciences	SC99V	44396	N/A	N/A
Camera Controller	Panasonic	WV-CU254	44395	N/A	N/A
RF Switch Box	UL	1	44398	N/A	N/A
Measurement Software	UL	Version 9.3	44740	N/A	N/A
Temp/Humidity/Pressure Meter	Cole Parmer	99760-00	4268	2009-11-11	2010-11-11
30-1000MHz					
EMI Receiver	Rohde & Schwarz	ESIB40	34968	2010-02-09	2011-02-22
Bicon Antenna	Schaffner	VBA6106A	43441	2010-09-10	2011-09-10
Log-P Antenna	Schaffner	UPA6109	44068	2010-04-05	2011-04-05
Bias Tee	Miteq	AM-1523-7687	44392	N/A	N/A
Bias Tee	Miteq	AM-1523-7687	44393	N/A	N/A
Preamp	Miteq	AM-3A-000110-7687	44391	N/A	N/A
Preamp	Miteq	AM-3A-000110-7687	44394	N/A	N/A
Switch Driver	HP	11713A	ME7A-627	N/A	N/A
System Controller	Sunol Sciences	SC99V	44396	N/A	N/A
Camera Controller	Panasonic	WV-CU254	44395	N/A	N/A
RF Switch Box	UL	1	44398	N/A	N/A
Measurement Software	UL	Version 9.3	44740	N/A	N/A
Temp/Humidity/Pressure Meter	Cole Parmer	99760-00	4268	2009-11-11	2010-11-11
Multimeter	Fluke	83III	ME5B-305	2010-02-01	2011-02-01

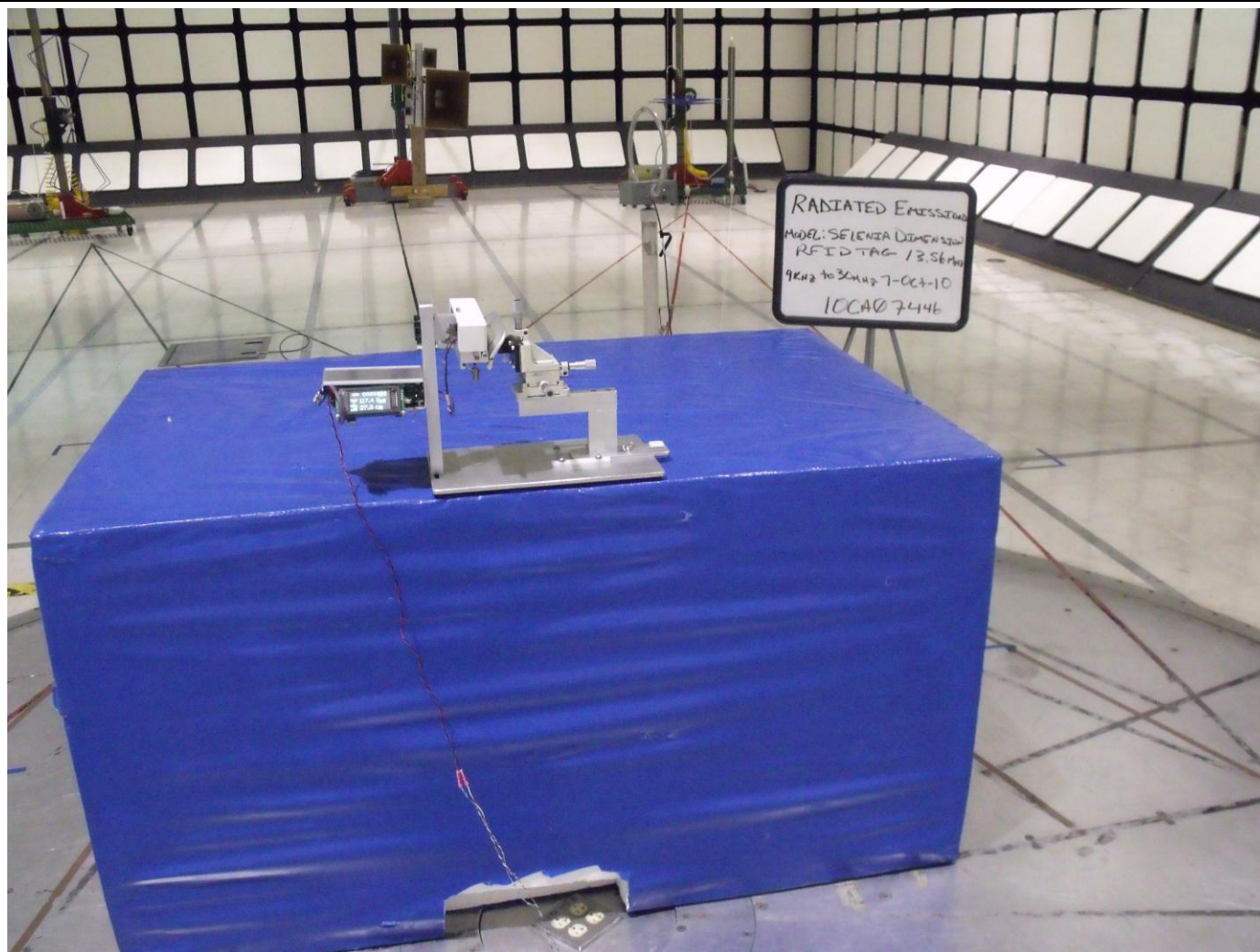


**Figure 6 Test setup for Radiated Emissions**



**9KHz to 30 MHz Vertical Polarity Front View**

Job Number: 2010119 File Number: MC15404 Page 34 of 48  
Model Number: SDM-00001 and SDM-05000  
Client Name: Hologic Inc  
FCC ID: YUJ-PCB00116  
Industry Canada 9218A-PCB00116

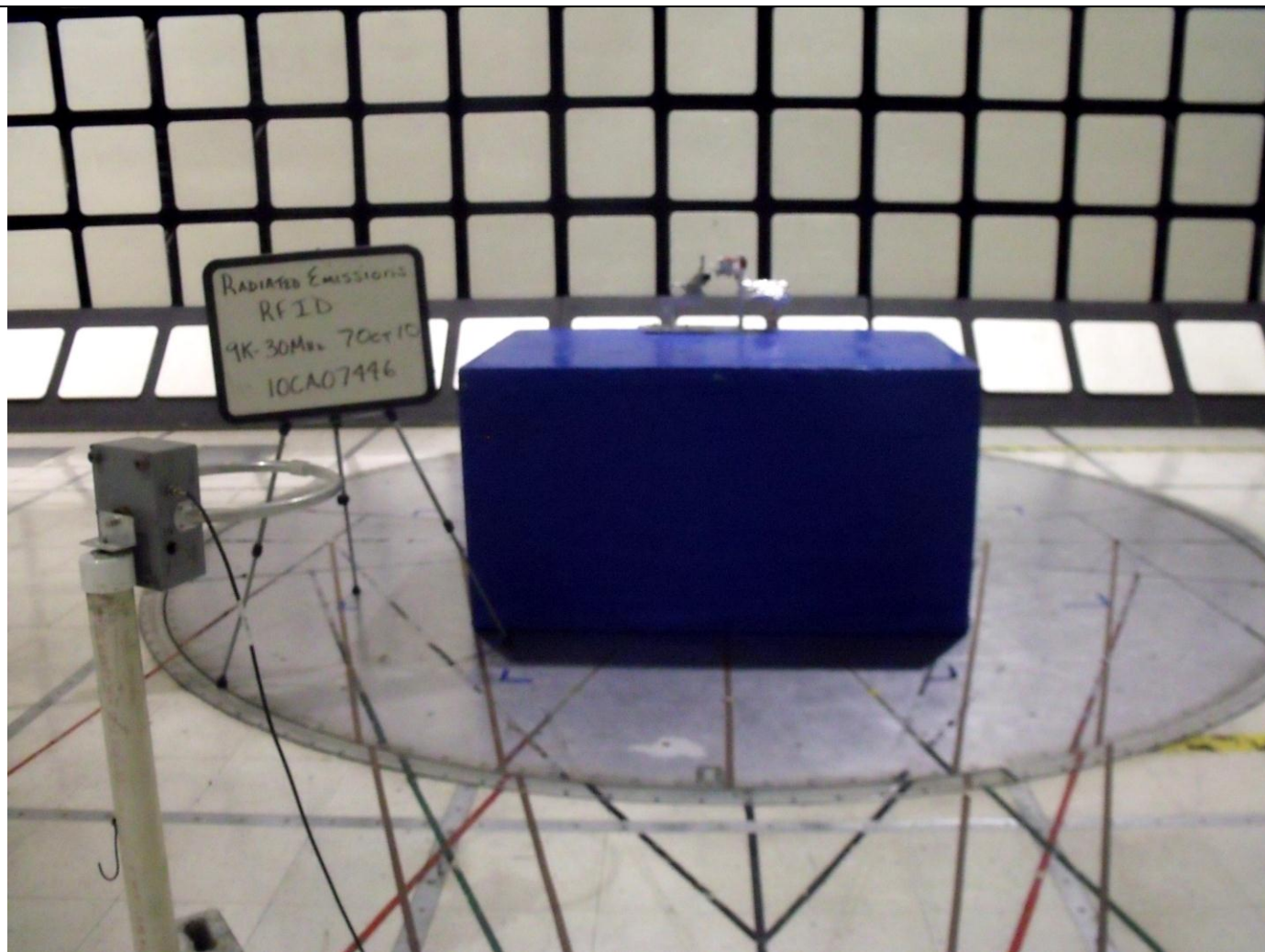


9KHz to 30 MHz Vertical Polarity Rear View



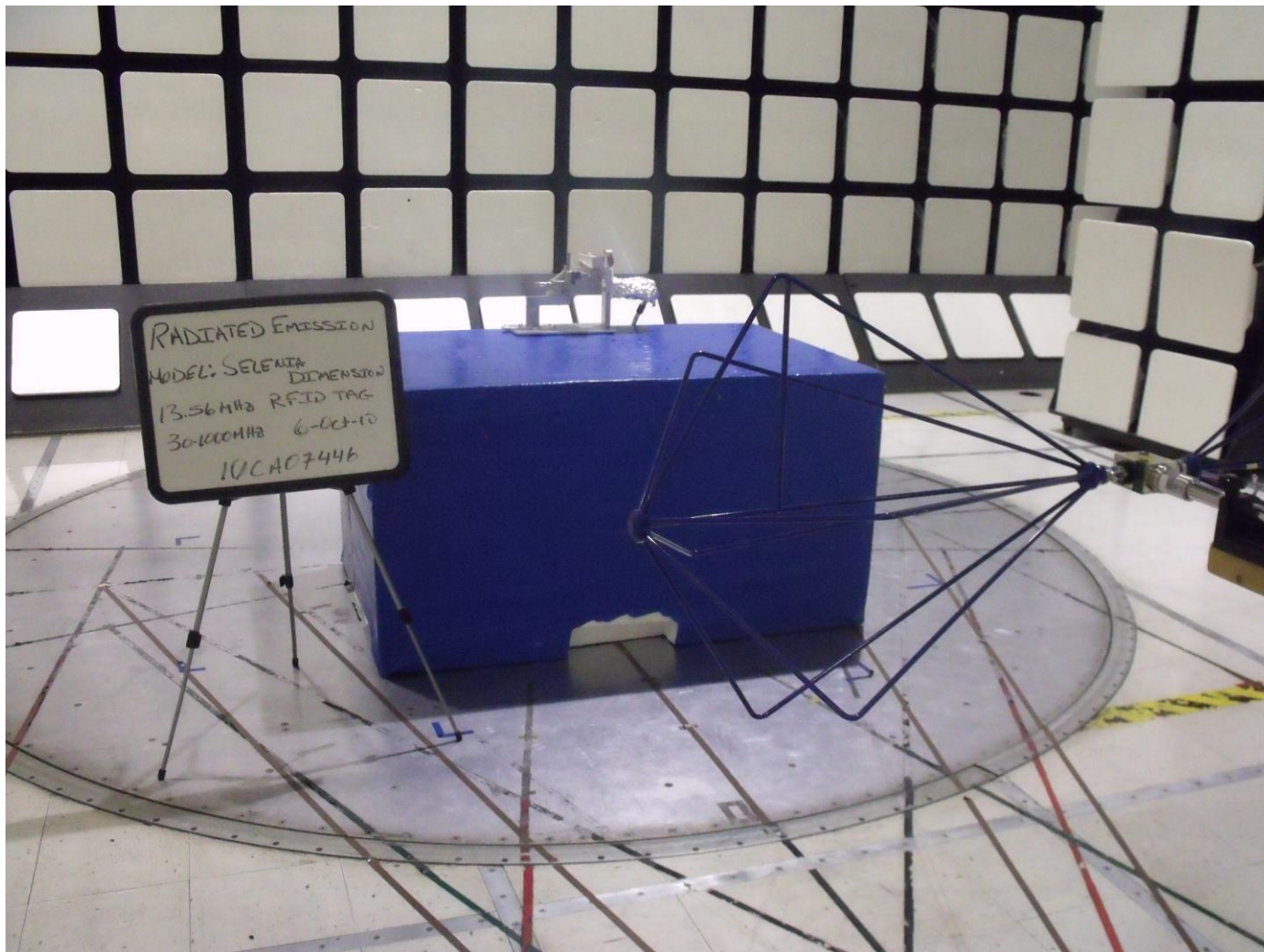
Job Number: 2010119 File Number: MC15404  
Model Number: SDM-00001 and SDM-05000  
Client Name: Hologic Inc  
FCC ID: YUJ-PCB00116  
Industry Canada 9218A-PCB00116

Page 35 of 48



9KHz to 30 MHz Horizontal Polarity Front View

**Figure 7: Test Setup for Radiated Emissions**

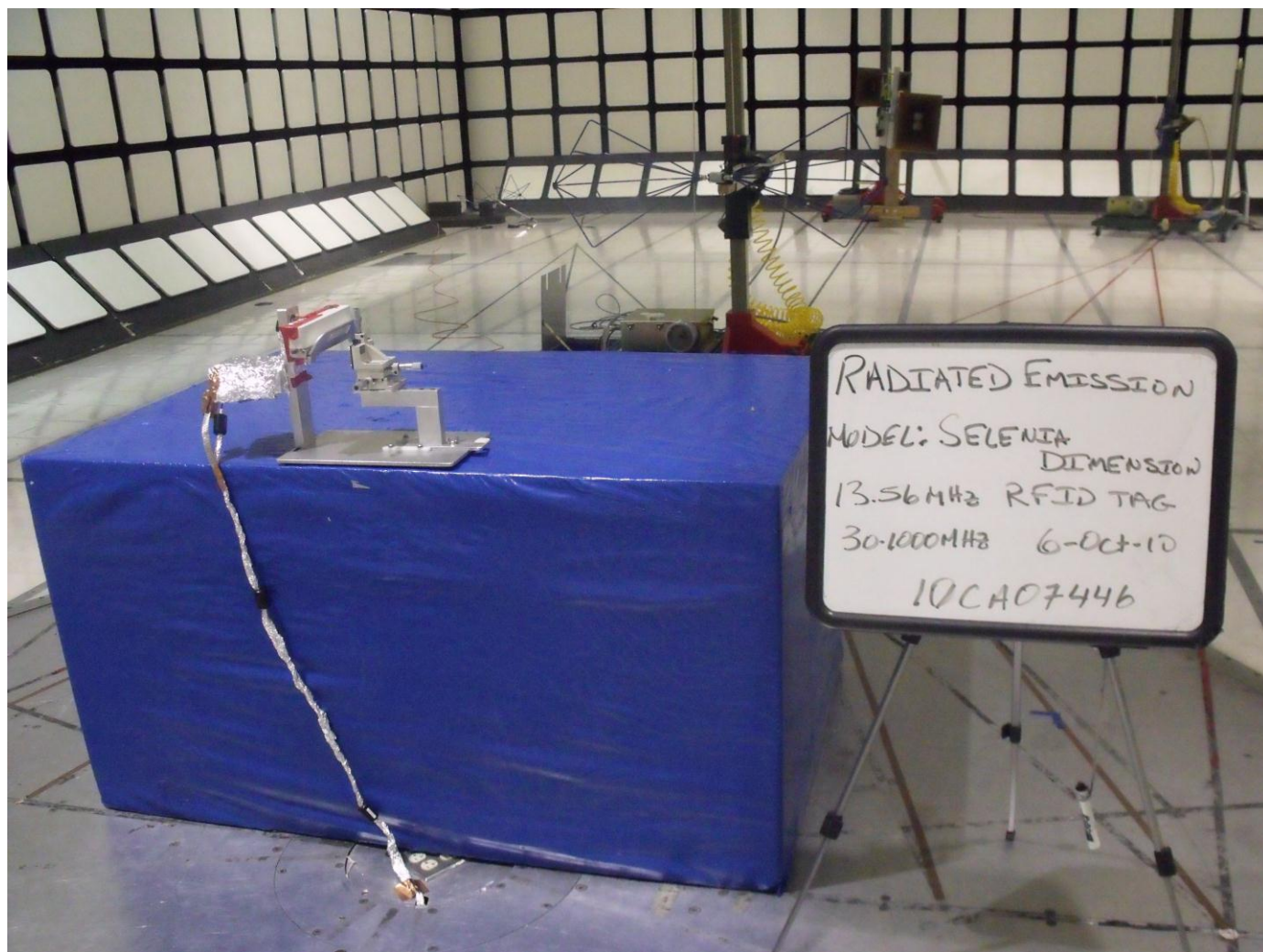


**Front View 30-1000MHz**



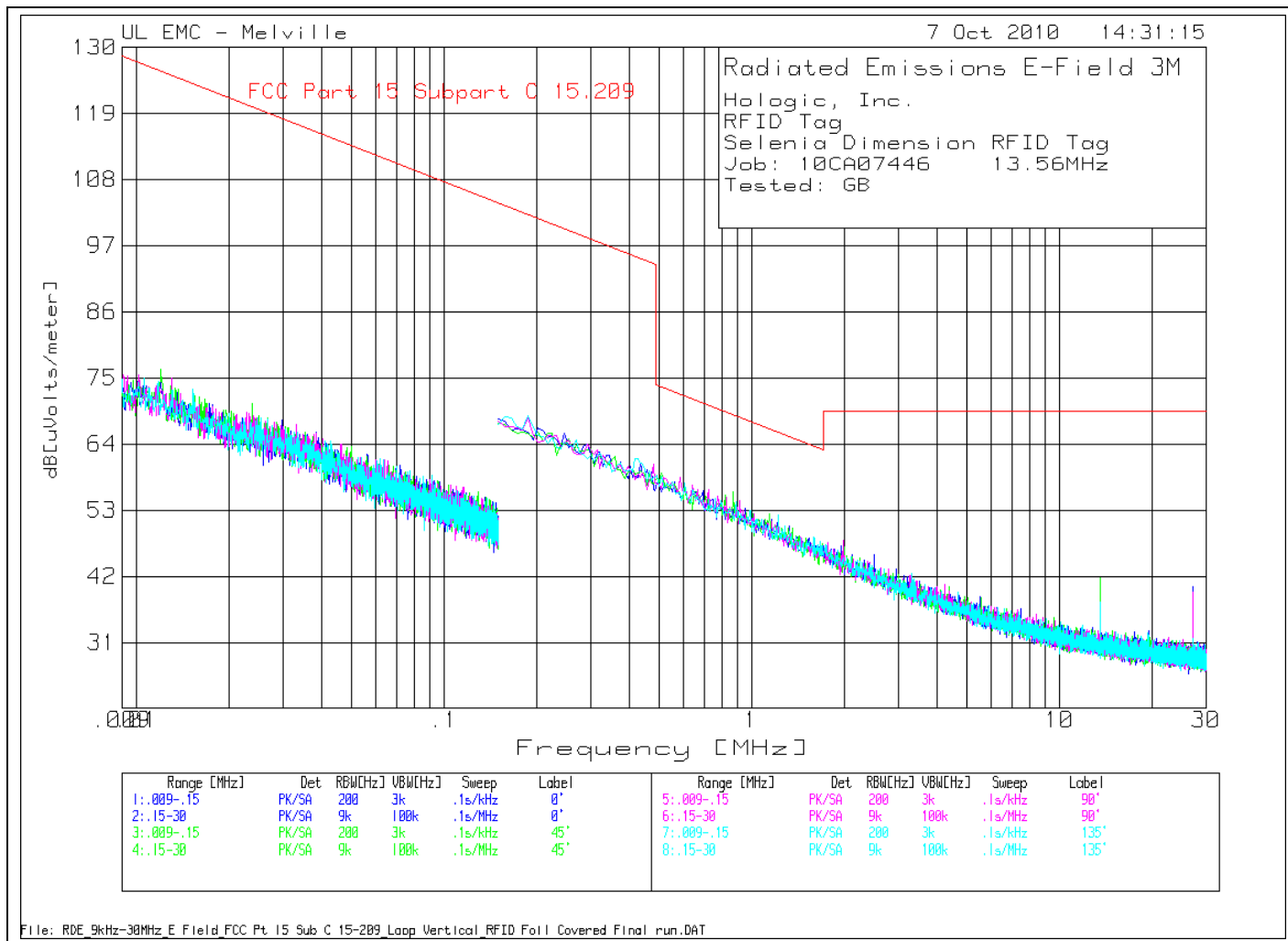
Job Number: 2010119 File Number: MC15404  
Model Number: SDM-00001 and SDM-05000  
Client Name: Hologic Inc  
FCC ID: YUJ-PCB00116  
Industry Canada 9218A-PCB00116

Page 37 of 48



**Rear View 30-1000MHz**

Figure 8 Radiated Emissions Graph



Job Number: 2010119 File Number: MC15404  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

Page 39 of 48

### Table 13 Radiated Emissions Data Points

Hologic, Inc.

RFID Tag

Selenia Dimension RFID Tag

Job: 10CA07446 13.56MHz

Tested: GB

Test No.	Meter Frequency [MHz]	Gain/Loss Reading [dB(uV)]	Transducer Factor [dB]	Level Factor [dB]	Limit:1	2	3	4	5	6
0° .009 - .15MHz -----										
1	.01199	44.6 pk	0	29.6	74.2	126	-	-	-	-
				Margin [dB]		-51.8	-	-	-	-
2	.07214	42.38 pk	0	18.1	60.48	110.4	-	-	-	-
				Margin [dB]		-49.92	-	-	-	-
45° .009 - .15MHz -----										
6	.01199	46.85 pk	0	29.6	76.45	126	-	-	-	-
				Margin [dB]		-49.55	-	-	-	-
7	.02378	46.58 pk	0	24.1	70.68	120.1	-	-	-	-
				Margin [dB]		-49.42	-	-	-	-
90° .009 - .15MHz -----										
11	.01301	46 pk	0	29	75	125.3	-	-	-	-
				Margin [dB]		-50.3	-	-	-	-
12	.03309	44.89 pk	0	22.3	67.19	117.2	-	-	-	-
				Margin [dB]		-50.01	-	-	-	-
135° .009 - .15MHz -----										
16	.01526	45.38 pk	0	27.7	73.08	123.9	-	-	-	-
				Margin [dB]		-50.82	-	-	-	-
17	.06198	43.14 pk	0	18.4	61.54	111.7	-	-	-	-
				Margin [dB]		-50.16	-	-	-	-

LIMIT 1: FCC Part 15 Subpart C 15.209

PK - Peak detector

QP - Quasi-Peak detector

av - Linear average detector

avlg - Average log detector

AV - Average detector

CAV - CISPR Average detector

RMS - RMS detection

CRMS - CISPR RMS detection

Job Number: 2010119 File Number: MC15404 Page 40 of 48  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

Hologic, Inc.  
 RFID Tag  
 Selenia Dimension RFID Tag  
 Job: 10CA07446 13.56MHz  
 Tested: GB

Test	Meter	Gain/Loss	Transducer	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	dB[uVolts/meter]						
[MHz]	[dB(uV)]	[dB]	[dB]							

0° .15 - 30MHz

13.5619	23.89 PK	.2	17.6	41.69	69.5	-	-	-	-	-
Azimuth: 112 Height:156 Horz				Margin [dB]:	-27.81	-	-	-	-	-

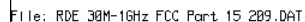
27.1217	19.2 QP	.3	17.7	37.2	69.5	-	-	-	-	-
Azimuth: 296 Height:119 Horz				Margin [dB]:	-32.3	-	-	-	-	-

LIMIT 1: FCC Part 15 Subpart C 15.209

PK - Peak detector  
 QP - Quasi-Peak detector  
 av - Linear average detector  
 avlg - Average log detector  
 AV - Average detector  
 CAV - CISPR Average detector  
 RMS - RMS detection  
 CRMS - CISPR RMS detection



### Figure 9: Radiated Emissions Graph



Job Number: 2010119 File Number: MC15404 Page 42 of 48  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

**Table 14: Radiated Emissions Data Points**

Hologic Inc.  
 Selenia Dimensions RFID Tag  
 Freq. 13.56MHz  
 Project #: 10CA07446  
 Tested By: JD

Test No.	Meter	Gain/Loss	Transducer	Level	Limit	1	2	3	4	5	6
	[MHz]	[dB(uV)]	[dB]	[dB]							
Horizontal 30 - 200MHz -----											
1	30	15.66 pk	.3	18.8	34.76	40	-	-	-	-	-
Azimuth:357 Height:400 Horz Margin [dB]						-5.24	-	-	-	-	-
2	39.6997	16.94 pk	.3	14.7	31.94	40	-	-	-	-	-
Azimuth:16 Height:400 Horz Margin [dB]						-8.06	-	-	-	-	-
3	40.7207	17.32 pk	.4	14.3	32.02	40	-	-	-	-	-
Azimuth:56 Height:400 Horz Margin [dB]						-7.98	-	-	-	-	-
4	45.1451	18.5 pk	.4	12.6	31.5	40	-	-	-	-	-
Azimuth:26 Height:400 Horz Margin [dB]						-8.5	-	-	-	-	-
5	47.1872	18.51 pk	.4	11.8	30.71	40	-	-	-	-	-
Azimuth:16 Height:400 Horz Margin [dB]						-9.29	-	-	-	-	-
6	50.9309	21.14 pk	.4	10.3	31.84	40	-	-	-	-	-
Azimuth:16 Height:400 Horz Margin [dB]						-8.16	-	-	-	-	-
7	51.7818	20.87 pk	.4	9.9	31.17	40	-	-	-	-	-
Azimuth:328 Height:400 Horz Margin [dB]						-8.83	-	-	-	-	-
8	122.0621	22.77 pk	.7	13.2	36.67	43.5	-	-	-	-	-
Azimuth:356 Height:200 Horz Margin [dB]						-6.83	-	-	-	-	-
9	135.6757	19.77 pk	.7	14.3	34.77	43.5	-	-	-	-	-
Azimuth:344 Height:102 Horz Margin [dB]						-8.73	-	-	-	-	-

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 RMS - RMS detection  
 CRMS - CISPR RMS detection

Job Number: 2010119 File Number: MC15404 Page 43 of 48  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

Hologic Inc.  
 Selenia Dimensions RFID Tag  
 Freq. 13.56MHz  
 Project #: 10CA07446  
 Tested By: JD

Test No.	Meter	Gain/Loss	Transducer	Level	Limit	1	2	3	4	5	6
[MHz]	[dB(uV)]	[dB]	[dB]								

Vertical 30 - 200MHz -----											
19	30	15.1 pk	.3	17.5	32.9	40	-	-	-	-	-
Azimuth:302 Height:100 Vert				Margin [dB]	-7.1	-	-	-	-	-	-
20	40.7207	18.64 pk	.4	12.8	31.84	40	-	-	-	-	-
Azimuth:122 Height:100 Vert				Margin [dB]	-8.16	-	-	-	-	-	-
21	50.5906	21.47 pk	.4	10.1	31.97	40	-	-	-	-	-
Azimuth:92 Height:100 Vert				Margin [dB]	-8.03	-	-	-	-	-	-
22	122.0621	19.95 pk	.7	13.6	34.25	43.5	-	-	-	-	-
Azimuth:62 Height:100 Vert				Margin [dB]	-9.25	-	-	-	-	-	-
23	135.6757	15.73 pk	.7	14.8	31.23	43.5	-	-	-	-	-
Azimuth:92 Height:100 Vert				Margin [dB]	-12.27	-	-	-	-	-	-
24	189.96	16.44 pk	.8	16.3	33.54	43.5	-	-	-	-	-
Azimuth:244 Height:100 Vert				Margin [dB]	-9.96	-	-	-	-	-	-

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 RMS - RMS detection  
 CRMS - CISPR RMS detection

Job Number: 2010119 File Number: MC15404 Page 44 of 48  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

Hologic Inc.  
 Selenia Dimensions RFID Tag  
 Freq. 13.56MHz  
 Project #: 10CA07446  
 Tested By: JD

Test No.	Meter	Gain/Loss	Transducer	Level	Limit	1	2	3	4	5	6
						Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Factor [dB]	dB[uVolts/meter]	

Horizontal 200 - 1000MHz -----											
10	216.8084	19.28 pk	.9	11.5	31.68	46	-	-	-	-	-
Azimuth:358 Height:100 Horz				Margin [dB]	-14.32		-	-	-	-	-
11	230.4152	17.49 pk	.9	11.6	29.99	46	-	-	-	-	-
Azimuth:130 Height:100 Horz				Margin [dB]	-16.01		-	-	-	-	-
12	271.2356	16.87 pk	.9	13.2	30.97	46	-	-	-	-	-
Azimuth:98 Height:100 Horz				Margin [dB]	-15.03		-	-	-	-	-
13	284.8424	22.34 pk	1.1	13.5	36.94	46	-	-	-	-	-
Azimuth:30 Height:100 Horz				Margin [dB]	-9.06		-	-	-	-	-
14	298.049	16.37 pk	1	13.8	31.17	46	-	-	-	-	-
Azimuth:17 Height:100 Horz				Margin [dB]	-14.83		-	-	-	-	-
15	311.6558	21.45 pk	1	13.9	36.35	46	-	-	-	-	-
Azimuth:325 Height:100 Horz				Margin [dB]	-9.65		-	-	-	-	-
16	325.2626	20.19 pk	1	14.5	35.69	46	-	-	-	-	-
Azimuth:226 Height:100 Horz				Margin [dB]	-10.31		-	-	-	-	-
17	352.4762	17.35 pk	1.1	15.6	34.05	46	-	-	-	-	-
Azimuth:291 Height:100 Horz				Margin [dB]	-11.95		-	-	-	-	-
18	393.2966	16.71 pk	1.1	16	33.81	46	-	-	-	-	-
Azimuth:291 Height:100 Horz				Margin [dB]	-12.19		-	-	-	-	-

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 RMS - RMS detection  
 CRMS - CISPR RMS detection

Job Number: 2010119 File Number: MC15404 Page 45 of 48  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

Hologic Inc.  
 Selenia Dimensions RFID Tag  
 Freq. 13.56MHz  
 Project #: 10CA07446  
 Tested By: JD

Test No.	Meter	Gain/Loss	Transducer	Level	Limit:1	2	3	4	5	6
[MHz]	[dB(uV)]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]

Vertical 200 - 1000MHz -----										
25	216.8084	16.03 pk	.9	11.3	28.23	46	-	-	-	-
Azimuth:51 Height:100 Vert				Margin [dB]	-17.77	-	-	-	-	-
26	230.4152	15.1 pk	.9	11.7	27.7	46	-	-	-	-
Azimuth:255 Height:100 Vert				Margin [dB]	-18.3	-	-	-	-	-
27	284.8424	18.85 pk	1.1	13.4	33.35	46	-	-	-	-
Azimuth:187 Height:199 Vert				Margin [dB]	-12.65	-	-	-	-	-
28	311.6558	18.69 pk	1	13.9	33.59	46	-	-	-	-
Azimuth:119 Height:199 Vert				Margin [dB]	-12.41	-	-	-	-	-
29	338.8694	16.2 pk	1	14.8	32	46	-	-	-	-
Azimuth:255 Height:100 Vert				Margin [dB]	-14	-	-	-	-	-
30	352.4762	16.02 pk	1.1	15.4	32.52	46	-	-	-	-
Azimuth:18 Height:100 Vert				Margin [dB]	-13.48	-	-	-	-	-
31	366.083	15.6 pk	1.1	15.2	31.9	46	-	-	-	-
Azimuth:323 Height:100 Vert				Margin [dB]	-14.1	-	-	-	-	-
32	406.9035	18.42 pk	1.1	16.1	35.62	46	-	-	-	-
Azimuth:17 Height:300 Vert				Margin [dB]	-10.38	-	-	-	-	-

LIMIT 1: FCC Part 15 Subpart C 15.209

PK - Peak detector

QP - Quasi-Peak detector

av - Linear average detector

avlg - Average log detector

AV - Average detector

CAV - CISPR Average detector

RMS - RMS detection

CRMS - CISPR RMS detection

Job Number: 2010119 File Number: MC15404 Page 46 of 48  
 Model Number: SDM-00001 and SDM-05000  
 Client Name: Hologic Inc  
 FCC ID: YUJ-PCB00116  
 Industry Canada 9218A-PCB00116

Hologic Inc.  
 Selenia Dimensions RFID Tag  
 Freq. 13.56MHz  
 Project #: 10CA07446  
 Tested By: JD

Test	Meter	Gain/Loss	Transducer	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	dB[uVolts/meter]						
[MHz]	[dB(uV)]	[dB]	[dB]							

Horizontal 30 - 200MHz

30	6.85 QP	.3	18.8	25.95	40	-	-	-	-	-
Azimuth: 118 Height:104 Horz				Margin [dB]:		-14.05	-	-	-	-

122.0366	15.49 QP	.7	13.2	29.39	43.5	-	-	-	-	-
Azimuth: 143 Height:329 Horz				Margin [dB]:		-14.11	-	-	-	-

LIMIT 1: FCC Part 15 Subpart C 15.209

PK - Peak detector  
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 AV - Average detector  
 CAV - CISPR Average detector  
 RMS - RMS detection  
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## Appendix A

### Accreditations and Authorizations



NVLAP Lab code: 100255-0

NVLAP: The National Institute of Standards and Technology (NIST) administers the National Voluntary Laboratory Accreditation Program (NVLAP). NVLAP is comprised of laboratory accreditation programs (LAPs) which are established on the basis of requests and demonstrated need. Each LAP includes specific calibration and/or test standards and related methods and protocols assembled to satisfy the unique needs for accreditation in a field of testing or calibration. NVLAP accredits public and private laboratories based on evaluation of their technical qualifications and competence to carry out specific calibrations or tests. Accreditation criteria are established in accordance with the U.S. Code of Federal Regulations (CFR, Title 15, Part 285), NVLAP Procedures and General Requirements, and encompass the requirements of ISO/IEC 17025. For a full scope listing see <http://ts.nist.gov/ts/htdocs/210/214/scopes/1002550.htm>



FCC: Details of the measurement facilities used for these tests have been filed with the Federal Communications Commission's Laboratory in Columbia, Maryland (Ref. No. 91040).



Industry Canada Industrie Canada

Industry of Canada: Accredited by Industry Canada for performance of radiated measurements. Our test site complies with RSP 100, Issue 7, Section 3.3. File #: IC 2181



VCCI: Accepted as an Associate Member to the VCCI. The measurement facilities detailed in this test report have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. Registration Nos.: (Radiated Emissions) R-797, (Conducted Emissions) C-832, C-83400, and C-81879 and (Conducted Emissions - Telecommunications Ports) T-1582 and T-1583.

Job Number: 2010119 File Number: MC15404 Page 48 of 48  
Model Number: SDM-00001 and SDM-05000  
Client Name: Hologic Inc  
FCC ID: YUJ-PCB00116  
Industry Canada 9218A-PCB00116



ICASA: ICASA (Independent Communications Authority of South Africa) has appointed UL as a Designated Test Laboratory to test Telecommunications equipment for type approval in compliance with CISPR 22 to assist in fulfilling its mandate under section 54(1) of the Telecommunications Act, 1996 (Act 103 of 1996).



NIST/CAB: Validated by the European Commission as a U.S. Conformity Assessment Body (CAB) of the U.S.-EU Mutual Recognition Agreement (MRA) for the Electromagnetic Compatibility - Council Directive 2004/108/EC, Annex III (2-3). Also validated for the Telecommunication Equipment-Council Directive 99/5/EC, Annex III and IV, Identification Number: 0983.

NIST/CAB: Provisioned to act as a U.S. Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the Asia Pacific Economic Cooperation (APEC) MRA between the American Institute in Taiwan (AIT) and the United States. Our laboratory is considered qualified to test equipment subject to the applicable EMC regulations of the Chinese Taipei Bureau of Standards, Metrology and Inspection (BSMI) which require testing to CNS 13438 (CISPR 22).

NIST/CAB: Recognized by the Infocomm Development Authority of Singapore (IDA) under the Asia Pacific Economic Cooperation Mutual Recognition Agreement (APEC MRA). Our laboratory is provisionally designated to act as a Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the APEC MRA. Our scope of designation includes IDA TS EMC (CISPR 22), IEC 61000-4-2, -4-3, -4-4, -4-5, and -4-6



# Compliance Certificate

**Company Name and Location:** Hologic Inc  
36 Appleridge Road, Danbury, CT 06810

**File Number:** MC15404

**Date of Report:** 2010-11-10

**Product Description:** RFID Tag (Selenia Dimensions System Gantry)

**Investigated in accordance with:** FCC Part 15, Subpart C, 15.225:2009, RSS-210:2007, RSS-GEN: 2007

**Model Designation:** SDM-Series, SDM-00001 and SDM-05000

**Serial Number:** 81010080041RM

**Project Number:** 10CA07446

A sample of the product described above has been investigated by Underwriters Laboratories Inc. in accordance with the requirements indicated above and has been found in compliance with those requirements as shown in the Test Report Ref. No. 10CA07446 which forms part of this Certificate. It is the responsibility of the company shown above that the products it produces are in compliance with the applicable requirements.

**The name of Underwriters Laboratories (UL), any abbreviation thereof, or any symbol shall not be used on or in connection with the product unless and until specifically authorized by UL.**

Tested by:



Reviewed by:



Any information and documentation involving UL Mark services are provided on behalf of Underwriters Laboratories (UL) or any authorized licensee of UL.