



Product Service

---

**Choose certainty.  
Add value.**

# Report On

FCC and Industry Canada Testing of the  
Symbol Technologies Inc STB3578 Cradle  
In accordance with FCC CFR 47 Part 15C  
and Industry Canada RSS-210

COMMERCIAL-IN-CONFIDENCE

FCC ID: H9PSTB3578  
IC ID: 1549D-STB3578

Document 75912884 Report 05 Issue 2

June 2011



Product Service

TUV Product Service Ltd, Octagon House, Concorde Way, Segensworth North,  
Fareham, Hampshire, United Kingdom, PO15 5RL  
Tel: +44 (0) 1489 558100. Website: [www.tuvps.co.uk](http://www.tuvps.co.uk)

COMMERCIAL-IN-CONFIDENCE

**REPORT ON**

FCC and Industry Canada Testing of the  
Symbol Technologies Inc STB3578 Cradle  
In accordance with FCC CFR 47 Part 15C  
and Industry Canada RSS-210

Document 75912884 Report 05 Issue 2

June 2011

**PREPARED FOR**

Symbol Technologies Inc  
One Motorola Plaza  
Holtsville  
NY  
11742-1300  
USA

**PREPARED BY**

  
**M Whiting**  
Project Manager

**APPROVED BY**

  
**M Jenkins**  
Authorised Signatory

**DATED**

24 June 2011


**This report has been up-issued to Issue 2 to include Conducted Emissions results.**

---

**ENGINEERING STATEMENT**

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 15C and RSS-210. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

  
**G Lawler**





## CONTENTS

Section	Page No
<b>1</b>	<b>REPORT SUMMARY ..... 3</b>
1.1	Introduction ..... 4
1.2	Brief Summary of Results ..... 5
1.3	Application Form ..... 6
1.4	Product Information ..... 8
1.5	Test Conditions ..... 9
1.6	Deviations From the Standard ..... 9
1.7	Modification Record ..... 9
<b>2</b>	<b>TEST DETAILS ..... 10</b>
2.1	Conducted Emissions ..... 11
2.2	EIRP Peak Power ..... 14
2.3	Radiated Emissions (Enclosure Port) ..... 18
2.4	Band Edge Emissions ..... 28
<b>3</b>	<b>TEST EQUIPMENT USED ..... 31</b>
3.1	Test Equipment Used ..... 32
3.2	Measurement Uncertainty ..... 33
<b>4</b>	<b>ACCREDITATION, DISCLAIMERS AND COPYRIGHT ..... 34</b>
4.1	Accreditation, Disclaimers and Copyright ..... 35



Product Service

## **SECTION 1**

### **REPORT SUMMARY**

FCC and Industry Canada Testing of the  
Symbol Technologies Inc STB3578 Cradle  
In accordance with FCC CFR 47 Part 15C  
and Industry Canada RSS-210



## 1.1 INTRODUCTION

The information contained in this report is intended to show verification of Symbol Technologies Inc STB3578 Cradle to the requirements of FCC CFR 47 Part 15C and Industry Canada RSS-210.

Objective	To perform FCC Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	Symbol Technologies Inc
Manufacturing Description	Cradle
Model Number(s)	STB3578
Serial Number(s)	MXA5GP13 MXA5GP07
Software Version	Rev A
Hardware Version	Rev A
Number of Samples Tested	Two
Non Test Variant	FLB3578
Test Specification/Issue/Date	FCC CFR 47 Part 15C: 2010 Industry Canada RSS-210 Issue 8:2010 Industry Canada RSS-GEN Issue 3:2010
Incoming Release Date	Application Form 08 June 2011
Disposal Reference Number Date	Held Pending Disposal Not Applicable Not Applicable
Order Number Date	NP5308873 19 October 2010
Start of Test	05 June 2011
Finish of Test	22 June 2011
Name of Engineer(s)	G Lawler D West
Related Document(s)	ANSI C63.4: 2003



## 1.2 BRIEF SUMMARY OF RESULTS

A brief summary of results for each configuration, in accordance with FCC CFR 47 Part 15C and Industry Canada RSS-210 and RSS-GEN is shown below.

Configuration 1: STB3578							
Section	Spec Clause		Test Description	Mode	Mod State	Result	Base Standard
	FCC	IC					
2.1	15.207	RSS-GEN 7.2.2	Conducted Emissions	2402MHz Tx		N/A	ANSI C63.4
				2441MHz Tx	0	Pass	
				2480MHz Tx		N/A	
2.2	15.247 (b)(4)	A8.4(4)	EIRP Peak Power	2402MHz Tx	0	Pass	ANSI C63.4
				2441MHz Tx	0	Pass	
				2480MHz Tx	0	Pass	
2.3	15.247(d)	A8.2 (a)	Radiated Emissions (Enclosure Port)	2402MHz Tx	0	Pass	ANSI C63.4
				2441MHz Tx	0	Pass	
				2480MHz Tx	0	Pass	
2.4	15.247 (d)	A8.5, 2.2	Band Edge Measurements	2402MHz Tx	0	Pass	ANSI C63.4
				2441MHz Tx		N/A	
				2480MHz Tx	0	Pass	

N/A – Not Applicable



### 1.3 APPLICATION FORM

EQUIPMENT DESCRIPTION						
Model Name/Number		STB3578				
Part Number						
Technical Description (Please provide a brief description of the intended use of the equipment)		This device is a hand held bar code reader using a Bluetooth radio to communicate to the charging cradle. The device uses a Broadcom Bluetooth radio capable of EDR transfer rates. The Bluetooth profiles will include Cradle, SPP, HID, profiles.				
POWER SOURCE						
<input type="checkbox"/> AC mains AC supply frequency (Hz) VAC Max Current Hz		State voltage    <input type="checkbox"/> Single phase <input type="checkbox"/> Three phase And / Or <input checked="" type="checkbox"/> External DC supply Nominal voltage                      14 V                      Max Current                      1.5                      A Extreme upper voltage                      V Extreme lower voltage                      V Battery <input type="checkbox"/> Nickel Cadmium <input type="checkbox"/> Lead acid (Vehicle regulated) <input type="checkbox"/> Alkaline <input type="checkbox"/> Leclanche <input type="checkbox"/> Lithium <input type="checkbox"/> Other Details : Volts nominal End point voltage as quoted by equipment manufacturer                      5-14                      V				
FREQUENCY INFORMATION						
Frequency Range		2400 to 2483.5 MHz				
Channel Spacing (where applicable)						
Test Frequencies*		Bottom	2402	MHz	Channel Number (if applicable)	0
		Middle	2441	MHz	Channel Number (if applicable)	39
		Top	2480	MHz	Channel Number (if applicable)	78
If alternate test modes are available resulting in different test frequencies please specify which mode is applicable:						
POWER CHARACTERISTICS						
Maximum TX power		0.1 W				
Minimum TX power		W (if variable)				
Is transmitter intended for :						
Continuous duty				<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Intermittent duty				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
If intermittent state DUTY CYCLE						
Transmitter ON		seconds				
Transmitter OFF		seconds				



Product Service

ANTENNA CHARACTERISTICS			
<input type="checkbox"/>	Antenna connector	State impedance	Ohm
<input checked="" type="checkbox"/>	Temporary antenna connector	State impedance	50 Ohm
<input checked="" type="checkbox"/>	Integral antenna	Gain	2.5 dBi

MODULATION CHARACTERISTICS	
<input type="checkbox"/> Amplitude	<input checked="" type="checkbox"/> Frequency
<input type="checkbox"/> Phase	<input type="checkbox"/> Other (please provide details):
Can the transmitter operate un-modulated? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

CLASS OF EMISSION USED
ITU designation or Class of Emission:
1
(if applicable) 2
(if applicable) 3
If more than three classes of emission, list separately:

EXTREME CONDITIONS					
Extreme test voltages (Max)	14	V	Extreme test voltages (Min)	5	V
Nominal DC Voltage	9	V	DC Maximum Current	1.5	A
Maximum temperature	50	°C	Minimum temperature	0	°C

I hereby declare that I am entitled to sign on behalf of the applicant and that the information supplied is correct and complete.

Signature:  Name: Zhang XinJian

Position held: Regulatory Manager Date: 2011-06-08





Product Service

## **1.4 PRODUCT INFORMATION**

### **1.4.1 Technical Description**

The Equipment Under Test (EUT) was a Symbol Technologies Inc STB3578 Cradle. A full technical description can be found in the manufacturer's documentation.

### **1.4.2 Test Configuration**

#### Configuration 1: STB3578

The EUT was configured in accordance with FCC CFR 47 Part 15 and Industry Canada RSS-210.

### **1.4.3 Modes of Operation**

Modes of operation of each EUT during testing were as follows:

Mode 1 - 2402MHz Tx

Mode 2 - 2441MHz Tx

Mode 3 - 2480MHz Tx

Testing was performed in the worst case. The worst case was deemed as the packet type which produced the highest level of conducted average power. This packet type was 2DH5

Information on the specific test modes utilised are detailed in the test procedure for each individual test.



Product Service

## **1.5 TEST CONDITIONS**

For all tests the EUT was set up in accordance with the relevant test standard and to represent typical operating conditions. Tests were applied with the EUT situated in a shielded enclosure or test laboratories as appropriate.

The EUT was powered from Symbol Technologies Inc AC Power Supply DCH4-050MV-0301 for all testing.

FCC Accreditation  
90987 Octagon House, Fareham Test Laboratory

Industry Canada Accreditation  
IC2932B-1 Octagon House, Fareham Test Laboratory

## **1.6 DEVIATIONS FROM THE STANDARD**

No deviations from the applicable test standards or test plan were made during testing.

## **1.7 MODIFICATION RECORD**

No modifications were made to the EUT during testing.



Product Service

## **SECTION 2**

### **TEST DETAILS**

FCC and Industry Canada Testing of the  
Symbol Technologies Inc STB3578 Cradle  
In accordance with FCC CFR 47 Part 15C  
and Industry Canada RSS-210



Product Service

**2.1 CONDUCTED EMISSIONS****2.1.1 Specification Reference**

FCC CFR 47 Part 15C, Clause 15.207  
Industry Canada RSS-GEN, Clause 7.2.2

**2.1.2 Equipment Under Test**

STB3578 Cradle, S/N: MXA5GP07

**2.1.3 Date of Test and Modification State**

22 June 2011 - Modification State 0

**2.1.4 Test Equipment Used**

The major items of test equipment used for the above tests are identified in Section 3.1.

**2.1.5 Test Method and Operating Modes**

The test was applied in accordance with the test method requirements of ANSI C63.4.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 2

**2.1.6 Environmental Conditions**

22 June 2011

Ambient Temperature 20.3°C

Relative Humidity 52.6%



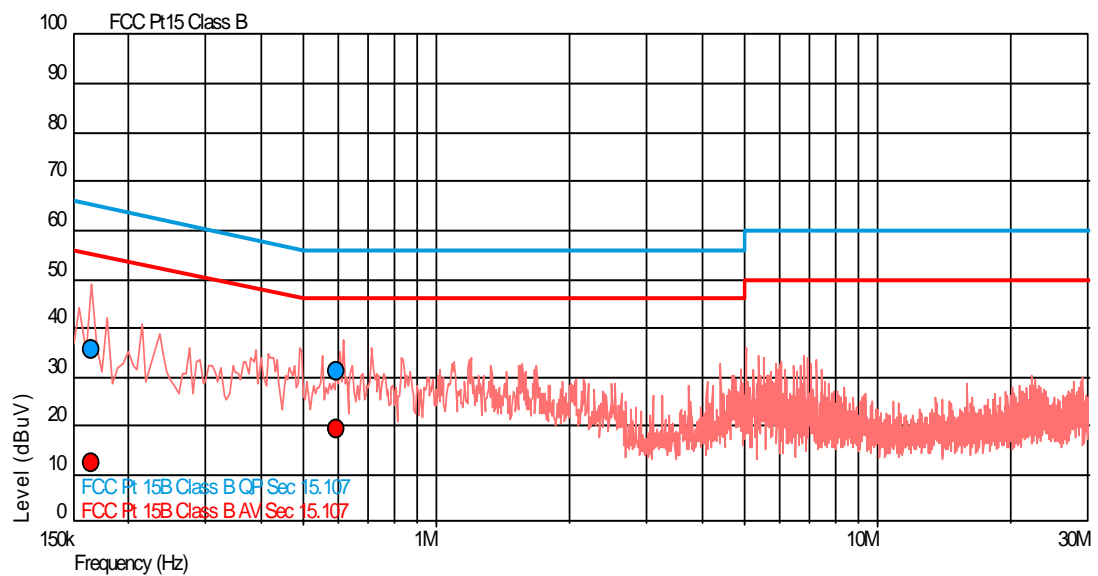
### 2.1.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C and Industry Canada RSS-GEN for Conducted Emissions.

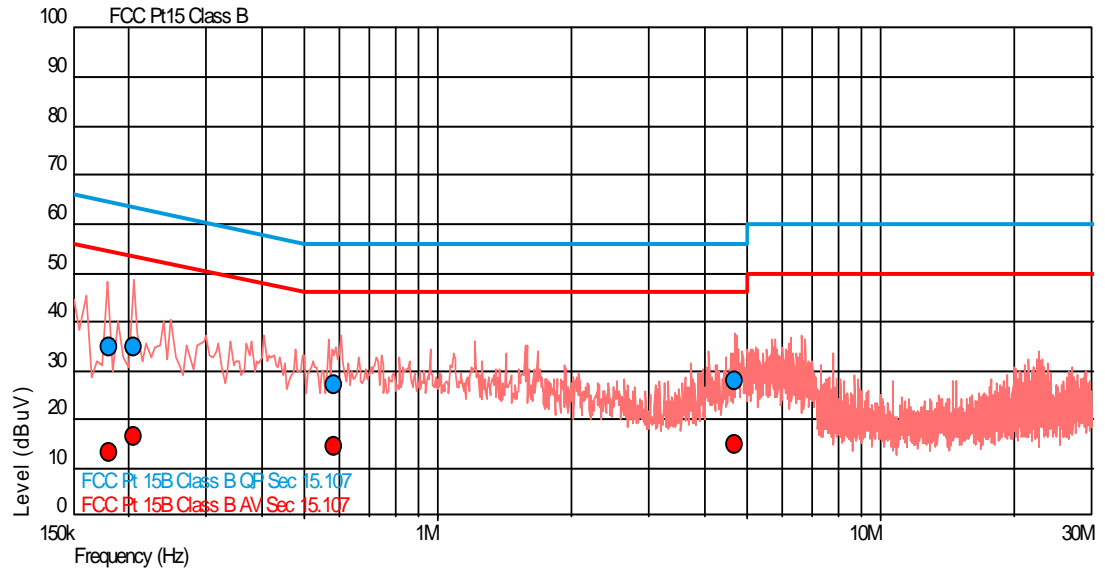
The test results are shown below.

#### Configuration 1 - Mode 1

#### Live Line



Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.165	35.4	65.2	-29.8	12.4	55.2	-42.8
0.594	31.2	56.0	-24.8	19.3	46.0	-26.7

Neutral Line

Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.180	34.6	64.5	-29.8	13.1	54.5	-41.4
0.205	34.6	63.4	-28.8	16.5	53.4	-36.9
0.582	26.9	56.0	-29.1	14.6	46.0	-31.4
4.693	27.9	56.0	-28.1	15.0	46.0	-31.0



Product Service

**2.2 EIRP PEAK POWER****2.2.1 Specification Reference**

FCC CFR 47 Part 15C, Clause 15.247 (b)(4)  
Industry Canada RSS-210, Clause A8.4 (4)

**2.2.2 Equipment Under Test**

STB3578 Cradle, S/N: MXA5GP13

**2.2.3 Date of Test and Modification State**

05 June 2011 - Modification State 0

**2.2.4 Test Equipment Used**

The major items of test equipment used for the above tests are identified in Section 3.1.

**2.2.5 Test Method and Operating Modes**

The test was applied in accordance with the test method requirements of ANSI C63.4.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1  
                          - Mode 2  
                          - Mode 3

**2.2.6 Environmental Conditions**

05 June 2011

Ambient Temperature 20.0°C

Relative Humidity 47.0%



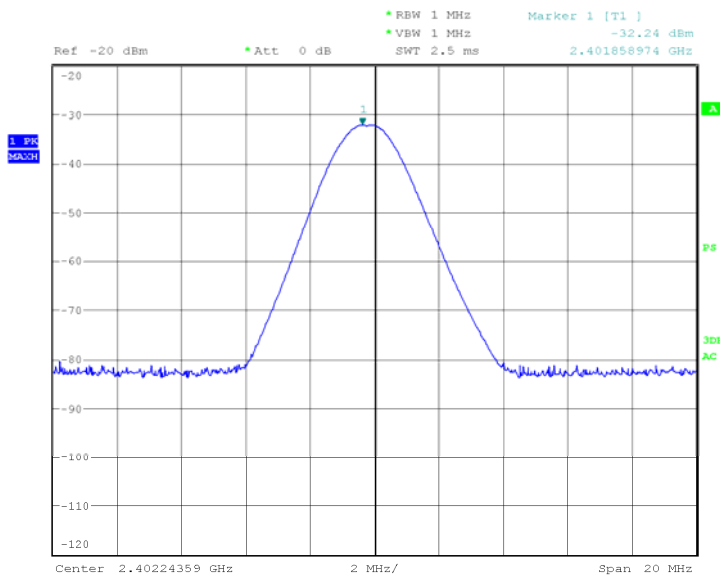
## 2.2.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C and Industry Canada RSS-210 for EIRP Peak Power.

The test results are shown below.

### Configuration 1 - Mode 1

Freq GHz	Result EIRP dBm	Limit EIRP dBm	Result EIRP mW	Limit EIRP mW
2.402	9.9	36.0	9.772	4000



Date: 5.JUN.2011 07:36:57

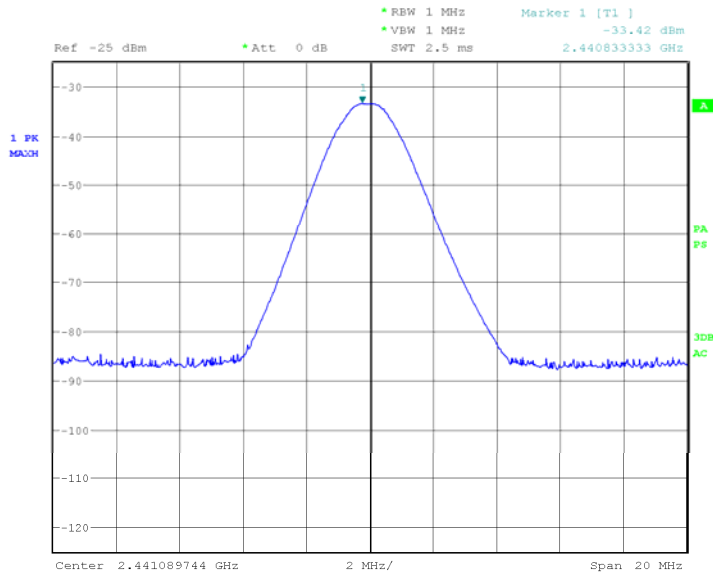




Product Service

Configuration 1 - Mode 2

Freq GHz	Result EIRP dBm	Limit EIRP dBm	Result EIRP mW	Limit EIRP mW
2.441	8.5	36.0	7.079	4000



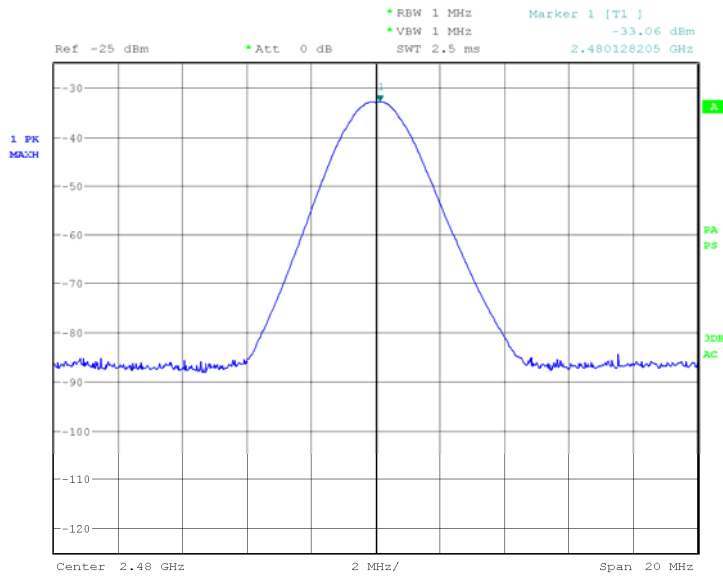
Date: 5.JUN.2011 08:40:42



Product Service

Configuration 1 - Mode 3

Freq GHz	Result EIRP dBm	Limit EIRP dBm	Result EIRP mW	Limit EIRP mW
2.480	8.1	36.0	6.457	4000



Date: 5.JUN.2011 08:49:06



Product Service

## **2.3 RADIATED EMISSIONS (ENCLOSURE PORT)**

### **2.3.1 Specification Reference**

FCC CFR 47 Part 15C, Clause 15.247 (d)  
Industry Canada RSS-210, Clause A8.2 (a)

### **2.3.2 Equipment Under Test**

STB3578 Cradle, S/N: MXA5GP13

### **2.3.3 Date of Test and Modification State**

05 June 2011 - Modification State 0

### **2.3.4 Test Equipment Used**

The major items of test equipment used for the above tests are identified in Section 3.1.

### **2.3.5 Test Method and Operating Modes**

The test was applied in accordance with the test method requirements of ANSI C63.4.

A preliminary profile of the Spurious Radiated Emissions was obtained by operating the EUT on a remotely controlled turntable within a semi-anechoic chamber. Measurements of emissions from the EUT were obtained with the Measurement Antenna in both Horizontal and Vertical Polarisations. The profiling produced a list of the worst-case emissions together with the EUT azimuth and antenna polarisation.

Using the information from the preliminary profiling of the EUT, the list of emissions was then confirmed or updated under Alternative Open Site conditions. Emission levels were maximised by adjusting the antenna height, antenna polarisation and turntable azimuth.

Emissions within the restricted bands defined in 15.205 were measured in accordance with 15.209. Emissions measured below 1GHz employed a quasi peak detector, in accordance with 15.35(a). Emissions measured above 1GHz employed an average detector as defined in 15.35(b). The peak level of the emission was also measured to ensure that a difference of 20dB from the average level was not exceeded, as defined in 15.35(b). Emissions identified within the range 30MHz – 1GHz were then formally measured using a CISPR Quasi-Peak detector. Other emissions from 30MHz to 25GHz excluding the restricted bands were measured using a peak detector.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1  
                          - Mode 2  
                          - Mode 3



### 2.3.6 Environmental Conditions

05 June 2011

Ambient Temperature 20.0°C

Relative Humidity 47.0%

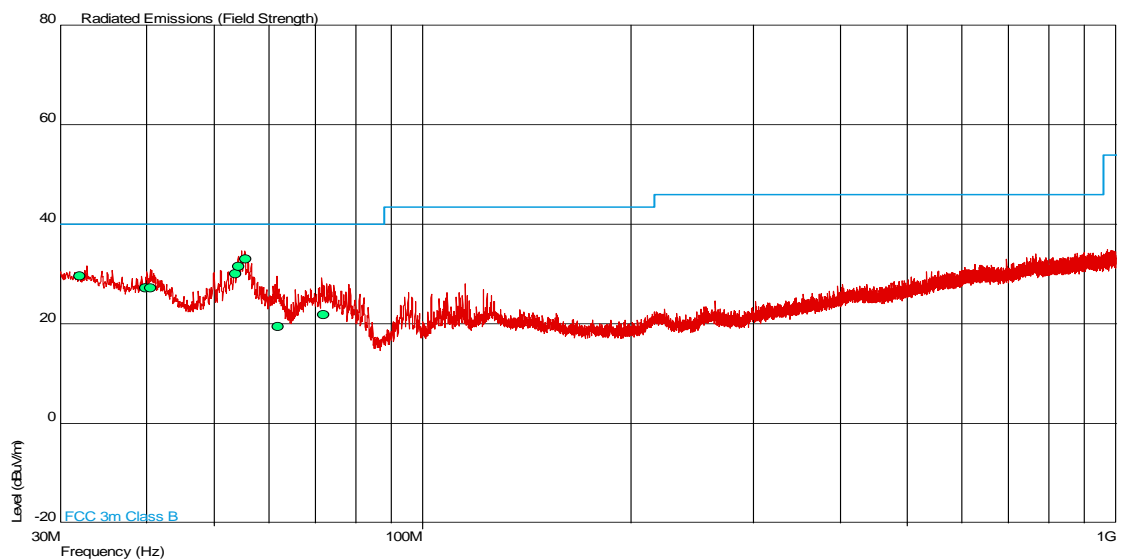
### 2.3.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C and Industry Canada RSS-210 for Radiated Emissions (Enclosure Port).

The test results are shown below.

Configuration 1 - Mode 1

30MHz to 1GHz

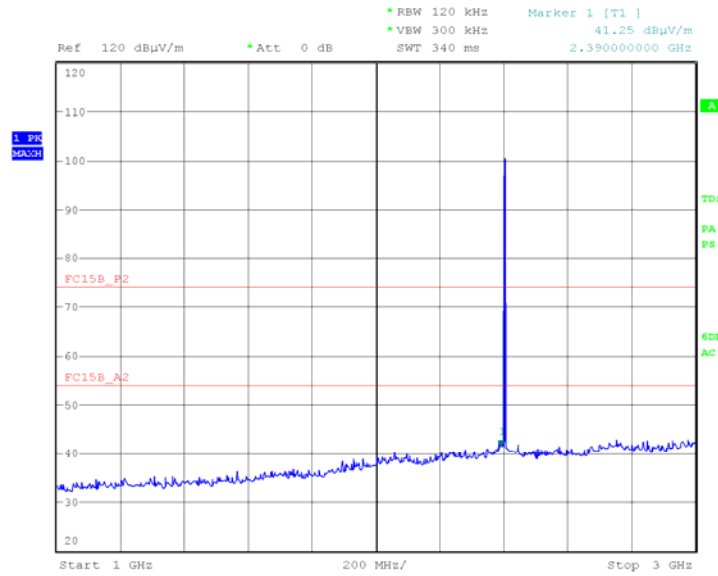


Frequency (MHz)	QP Level (dBμV/m)	QP Level (μV/m)	QP Limit (dBμV/m)	QP Limit (μV/m)	QP Margin (dBμV/m)	QP Margin (μV/m)	Angle (Deg)	Height (m)	Polarity
32.043	29.7	30.5	40.0	100	-10.3	69.5	76	1.69	Vertical
39.872	27.2	22.9	40.0	100	-12.8	77.1	360	1.00	Vertical
40.468	27.3	23.2	40.0	100	-12.7	76.8	131	1.00	Vertical
53.734	30.0	31.6	40.0	100	-10.0	68.4	26	1.00	Vertical
54.347	31.6	38.0	40.0	100	-8.4	62.0	360	1.00	Vertical
55.549	33.1	45.2	40.0	100	-6.9	54.8	292	1.00	Vertical
61.797	19.4	9.3	40.0	100	-20.6	90.7	99	2.52	Vertical
71.892	21.9	12.4	40.0	100	-18.1	87.6	240	1.00	Vertical



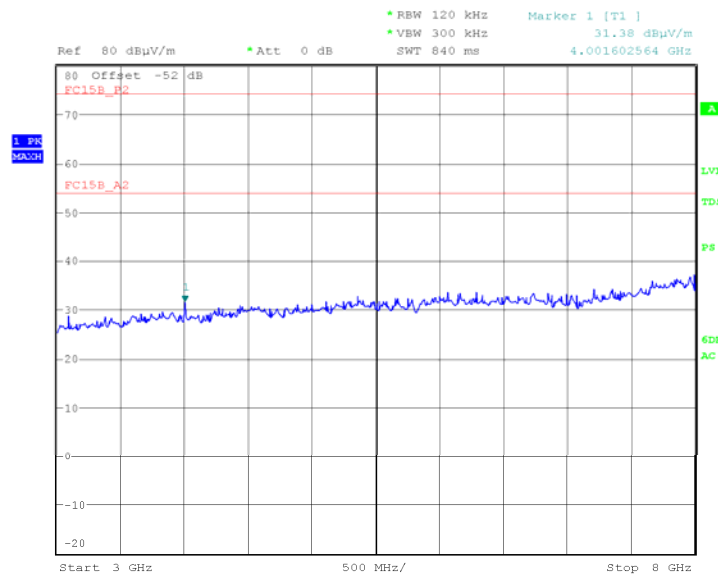
Product Service

### 1GHz to 3GHz



Date: 5.JUN.2011 08:09:00

### 3GHz to 8GHz

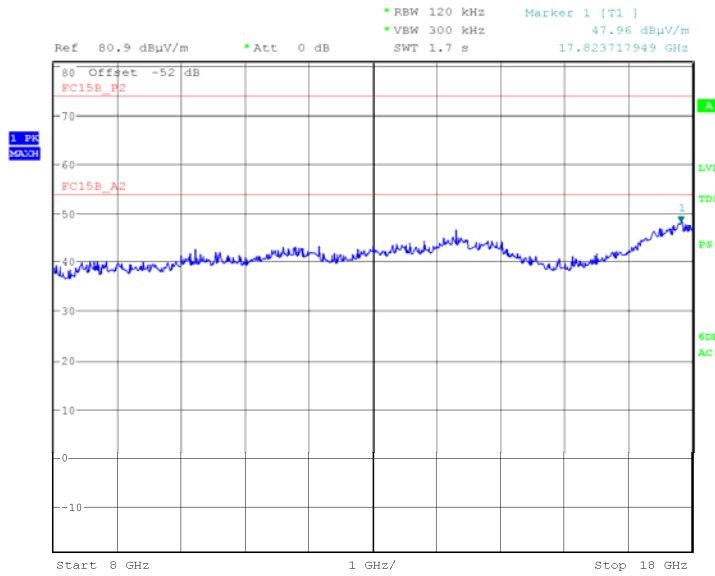


Date: 5.JUN.2011 10:08:25



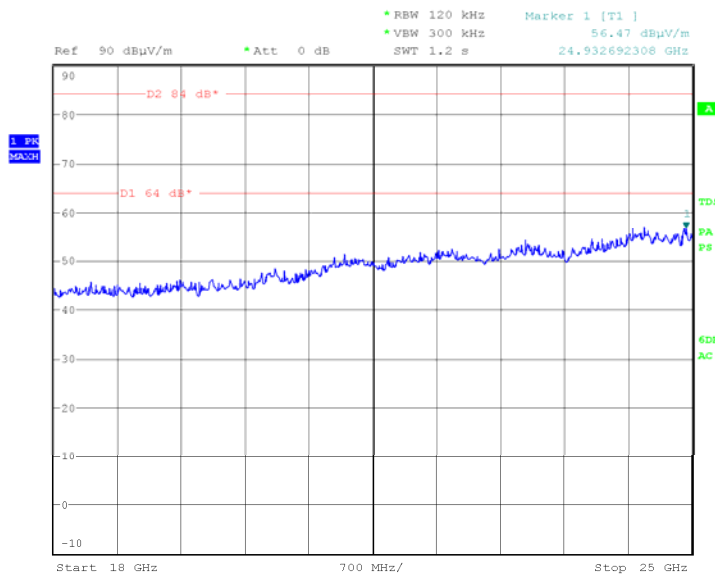
Product Service

### 8GHz to 18GHz



Date: 5.JUN.2011 11:56:58

### 18GHz to 25GHz

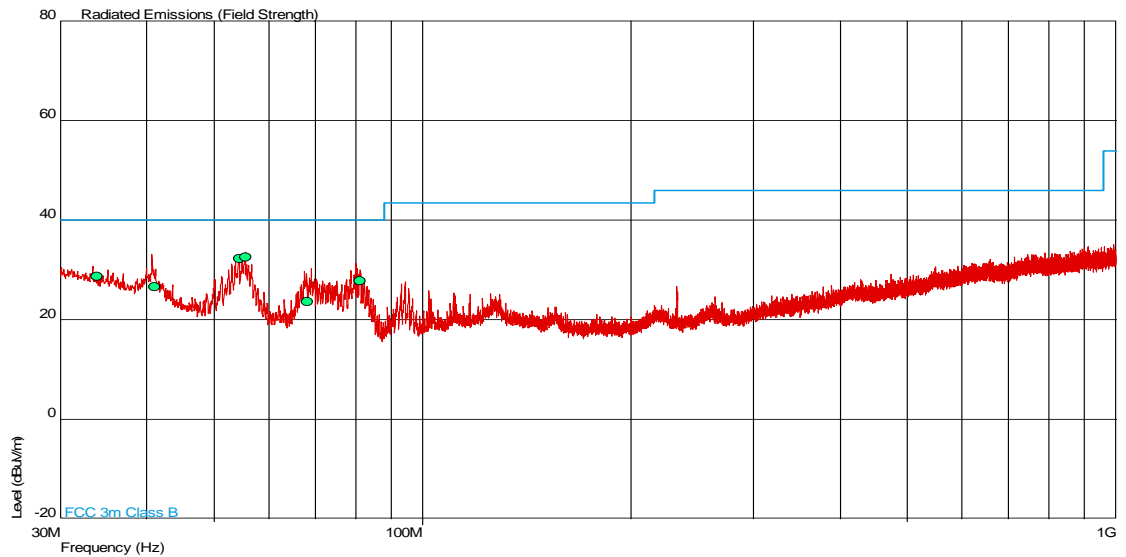


Date: 5.JUN.2011 12:26:41



### Configuration 1 - Mode 2

### 30MHz to 1GHz

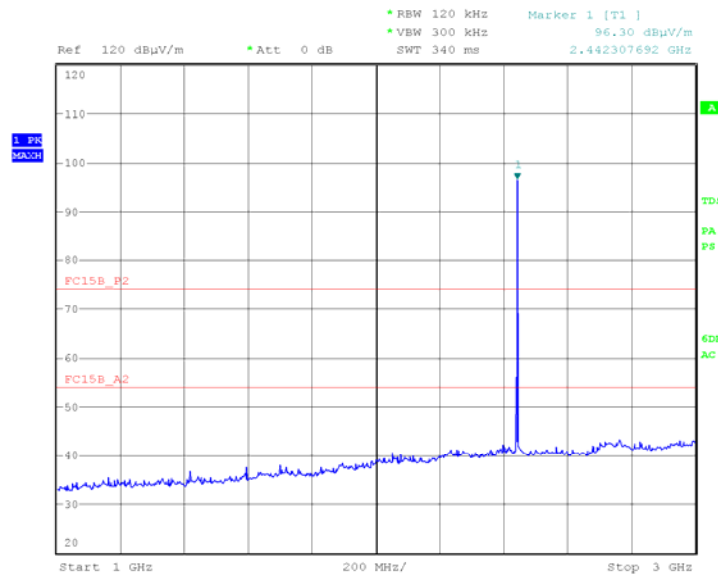


Frequency (MHz)	QP Level (dBμV/m)	QP Level (μV/m)	QP Limit (dBμV/m)	QP Limit (μV/m)	QP Margin (dBμV/m)	QP Margin (μV/m)	Angle (Deg)	Height (m)	Polarity
33.859	28.8	27.5	40.0	100	-11.2	72.5	360	1.00	Horizontal
41.011	26.6	21.4	40.0	100	-13.4	78.6	152	1.00	Vertical
54.371	32.4	41.7	40.0	100	-7.6	58.3	328	1.00	Vertical
55.574	32.5	42.2	40.0	100	-7.5	57.8	33	1.00	Vertical
68.160	23.6	15.1	40.0	100	-16.4	84.9	219	1.00	Vertical
81.275	27.8	24.5	40.0	100	-12.2	75.5	277	1.00	Vertical



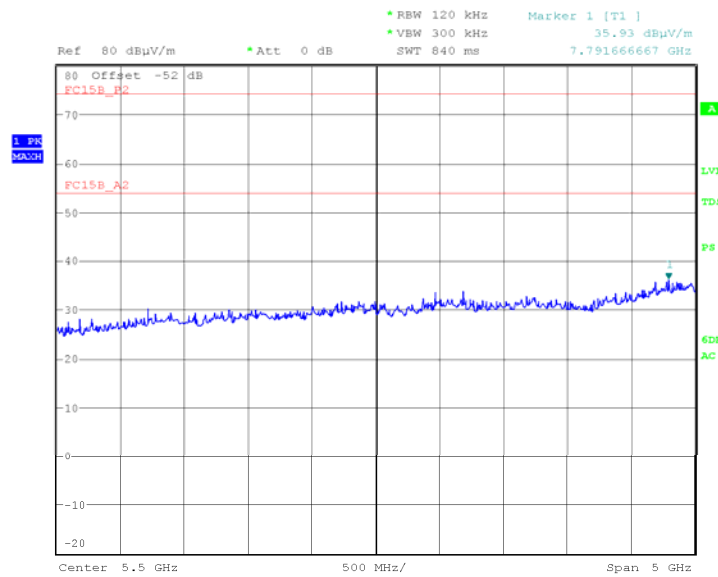
Product Service

### 1GHz to 3GHz



Date: 5.JUN.2011 08:31:39

### 3GHz to 8GHz



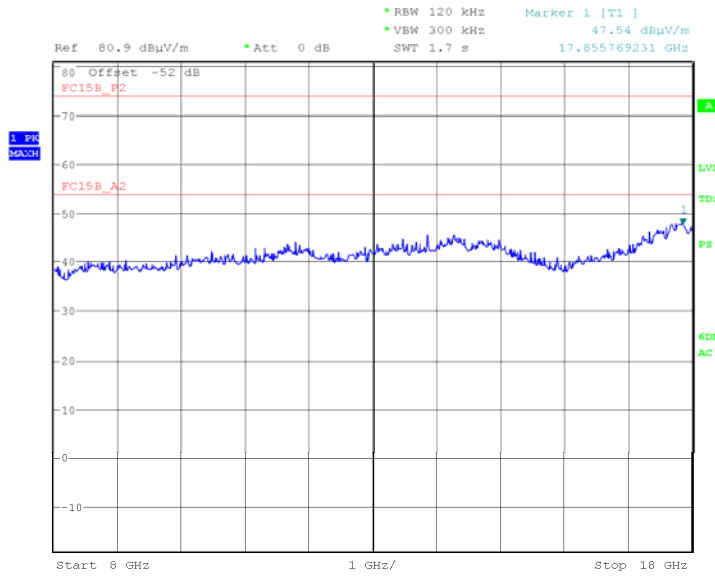
Date: 5.JUN.2011 10:16:54





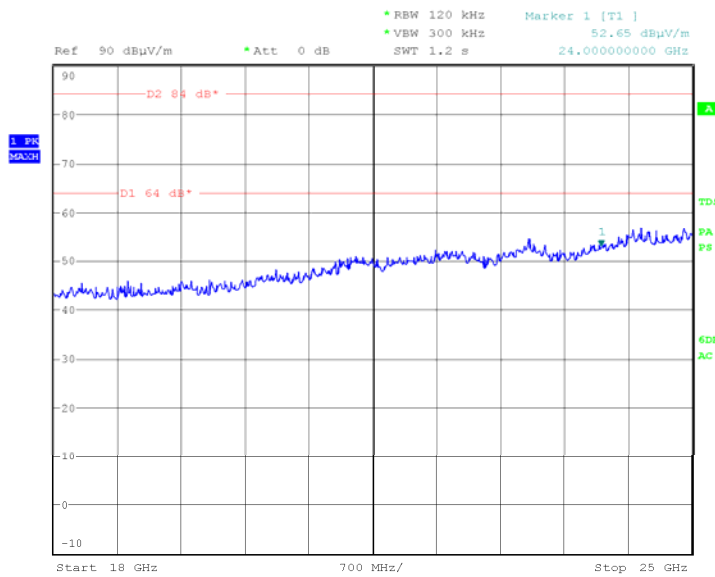
Product Service

### 8GHz to 18GHz



Date: 5.JUN.2011 11:30:09

### 18GHz to 25GHz

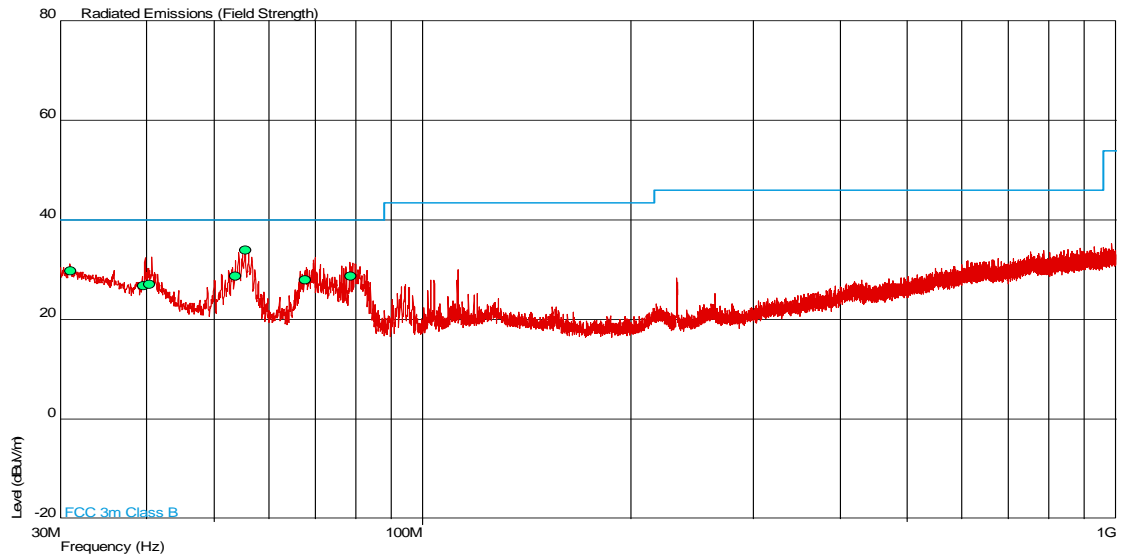


Date: 5.JUN.2011 12:36:09

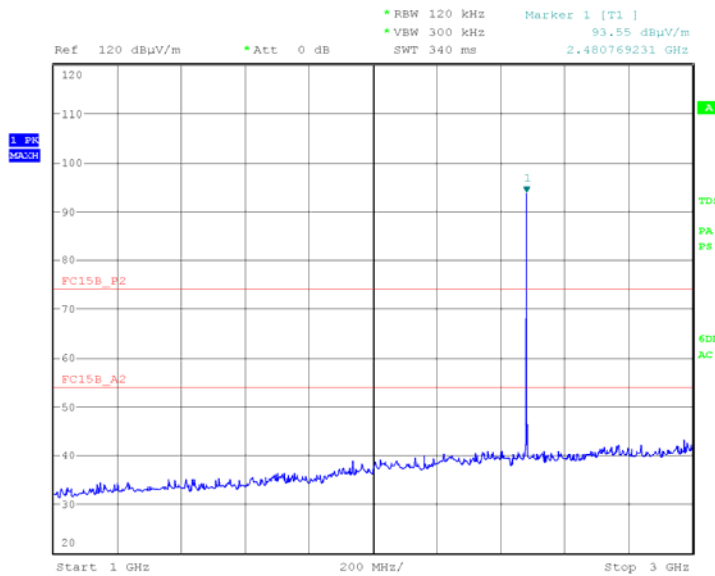


### Configuration 1 - Mode 3

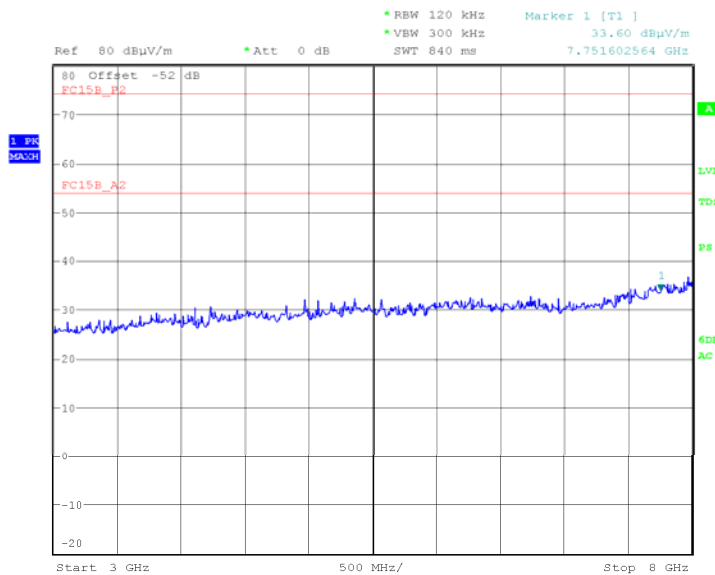
### 30MHz to 1GHz



Frequency (MHz)	QP Level (dBμV/m)	QP Level (μV/m)	QP Limit (dBμV/m)	QP Limit (μV/m)	QP Margin (dBμV/m)	QP Margin (μV/m)	Angle (Deg)	Height (m)	Polarity
31.040	29.8	30.9	40.0	100	-10.2	69.1	83	1.00	Horizontal
39.604	26.8	21.9	40.0	100	-13.2	78.1	106	1.00	Vertical
40.394	27.0	22.4	40.0	100	-13.0	77.6	71	1.00	Vertical
53.812	28.7	27.2	40.0	100	-11.3	72.8	101	1.00	Vertical
55.587	34.0	50.1	40.0	100	-6.0	49.9	329	1.00	Vertical
67.757	27.9	24.8	40.0	100	-12.1	75.2	0	1.00	Vertical
78.926	28.8	27.5	40.0	100	-11.2	72.5	258	1.00	Vertical

1GHz to 3GHz

Date: 5.JUN.2011 09:05:36

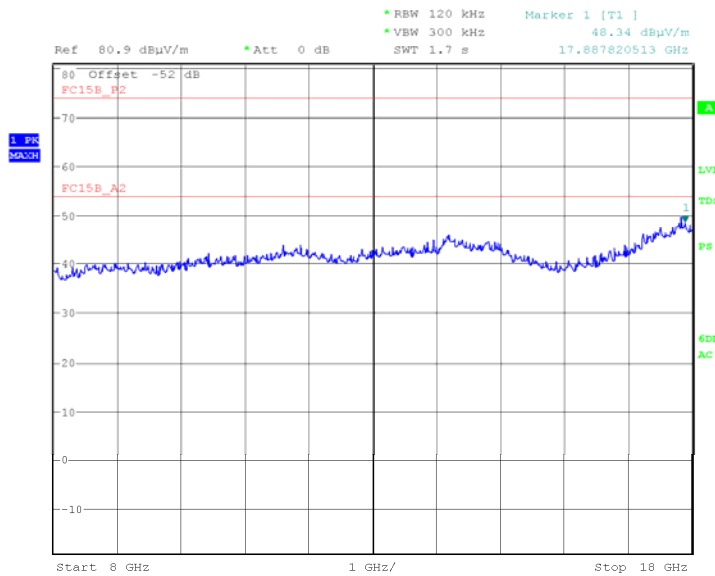
3GHz to 8GHz

Date: 5.JUN.2011 10:26:04



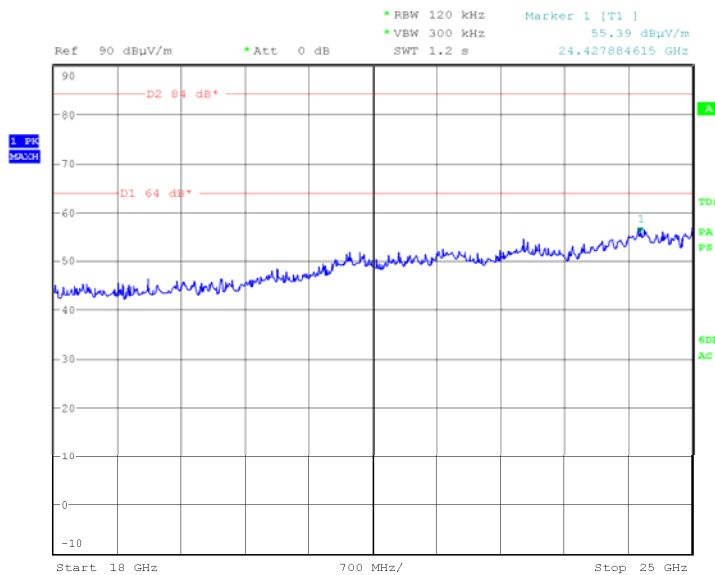
Product Service

## 8GHz to 18GHz



Date: 5.JUN.2011 11:09:16

## 18GHz to 25GHz



Date: 5.JUN.2011 12:43:06



Product Service

**2.4 BAND EDGE EMISSIONS****2.4.1 Specification Reference**

FCC CFR 47 Part 15C, Clause 15.247 (d)  
Industry Canada RSS-210, Clause A8.5, 2.2

**2.4.2 Equipment Under Test**

STB3578 Cradle, S/N: MXA5GP13

**2.4.3 Date of Test and Modification State**

05 June 2011 - Modification State 0

**2.4.4 Test Equipment Used**

The major items of test equipment used for the above tests are identified in Section 3.1.

**2.4.5 Test Method and Operating Modes**

The test was applied in accordance with the test method requirements of ANSI C63.4.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1  
                          - Mode 3

**2.4.6 Environmental Conditions**

05 June 2011

Ambient Temperature 20.0°C

Relative Humidity 47.0%



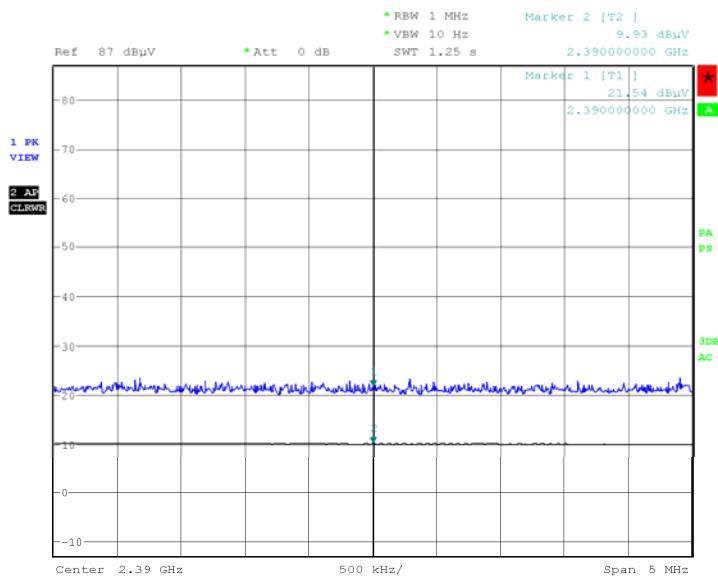
## 2.4.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C and Industry Canada RSS-210 for Band Edge Emissions.

The test results are shown below.

### Configuration 1 - Mode 1

Freq in GHz	Polarisation	Final Peak dB $\mu$ V/m	Peak Limit dB $\mu$ V/m	Final Average dB $\mu$ V/m	Average Limit dB $\mu$ V/m
2.402	Horizontal	47.0	74.0	23.2	54.0



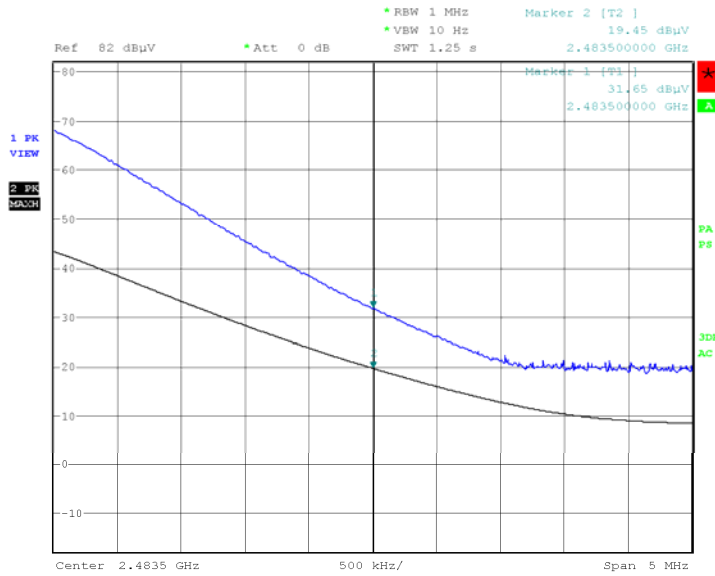
Date: 5.JUN.2011 07:44:38



Product Service

Configuration 1 - Mode 3

Freq in GHz	Polarisation	Final Peak dBμV/m	Peak Limit dBμV/m	Final Average dBμV/m	Average Limit dBμV/m
2.480	Horizontal	45.5	74.0	20.4	54.0



Date: 5.JUN.2011 08:55:51



Product Service

## **SECTION 3**

### **TEST EQUIPMENT USED**





Product Service

### 3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
<b>Section 2.1 - Conducted Emissions</b>					
Single Phase LISN	Rohde & Schwarz	ESH3-Z5	1674	12	10-Sep-2011
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	1777	12	19-Nov-2011
LISN	Rohde & Schwarz	ESH3-Z5	1820	12	5-May-2011
EMI Test Receiver	Rohde & Schwarz	ESIB26	2028	12	17-Sep-2011
<b>Section 2.2, 2.3 and 2.4 – EIRP Peak Power, Radiated Emissions (Enclosure Port) and Band Edge Emissions</b>					
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	235	12	12-Nov-2011
Antenna (Bilog)	Schaffner	CBL6143	287	24	19-Jan-2012
DRG	EMCO	3115	793	12	14-Aug-2011
Antenna (Double Ridge Guide)	Q-Par Angus Ltd	QSH 180K	1511	24	2-Aug-2012
Pre-Amplifier	Phase One	PS04-0086	1533	12	15-Sep-2011
Pre-Amplifier	Phase One	PS04-0087	1534	12	22-Sep-2011
Mast Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Turntable/Mast Controller	EMCO	2090	1607	-	TU
4GHz HPF	Sematron	F-100-4000-5-R	2245	-	TU
Amplifier (1 - 8GHz)	Phase One	PS06-0060	3175	12	2-Jul-2011
Signal Generator: 10MHz to 20GHz	Rohde & Schwarz	SMR20	3475	12	20-Dec-2011
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	9-Sep-2011

TU – Traceability Unscheduled

O/P Mon – Output monitored using calibrated equipment.



### 3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

Test Discipline	Frequency / Parameter	MU
Radiated Emissions, Bilog Antenna, AOATS	30MHz to 1GHz Amplitude	5.1dB*
Radiated Emissions, Horn Antenna, AOATS	1GHz to 40GHz Amplitude	6.3dB*
Conducted Emissions, LISN	150kHz to 30MHz Amplitude	3.2dB*
Conducted Emissions, ISN	150kHz to 30MHz Amplitude	2.1dB
Substitution Antenna, Radiated Field	30MHz to 18GHz Amplitude	2.6dB
Discontinuous Interference	150kHz to 30MHz Amplitude	3.0dB*
Interference Power	30MHz to 300MHz Amplitude	3.0dB*
Radiated E-Field Susceptibility	10MHz to 6GHz Test Amplitude	2.0dB†
Conducted Susceptibility RF	50kHz to 1000MHz Amplitude	3.1dB•
	EM Clamp Method of Test	1.2dB•
	CDN Method of Test	1.1dB•
	BCI Clamp Method of Test	1.2dB•
Conducted Susceptibility LF	DC to 150kHz	1.0%†
Power Frequency Magnetic Field	50Hz/60Hz Amplitude	0.45%
Magnetic Emissions	9kHz to 30MHz Amplitude	3.4dB*
Magnetic Field/Flux iaw EN 50366	10Hz to 400kHz	2.64%
Harmonics and Flicker	The test was applied using proprietary equipment that meets the requirements of EN 61000-3-2 and EN 61000-3-3	—
Mains Voltage Variations and Interrupts	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11	—
Fast Transient Burst	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	—
Electrostatic Discharge	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-2	—
Surge	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-5	—
Vehicle Transients	The test was applied using proprietary equipment that meets the requirements of ISO 7637-1 and 2	—
Compass Safe Distance	Azimuth Accuracy	0.10°
Channel Occupancy/Separation	19.1kHz	N/A
Maximum Output Power	Not Applicable	±0.5dB
Number of Channels	Not Applicable	N/A
20dB Bandwidth	19.1kHz	±0.5dB

Worst case error for both Time and Frequency measurement 12 parts in 10<sup>6</sup>.

- \* In accordance with CISPR 16-4-2
- † In accordance with UKAS Lab 34
- In accordance with EN61000-4-6



Product Service

## **SECTION 4**

### **ACCREDITATION, DISCLAIMERS AND COPYRIGHT**



Product Service

#### 4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



This report relates only to the actual item/items tested.

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation.

Results of tests not covered by our UKAS Accreditation Schedule are marked NUA  
(Not UKAS Accredited).

This report must not be reproduced, except in its entirety, without the written permission of  
TÜV SÜD Product Service Limited

© 2011 TÜV SÜD Product Service Limited