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# Report On

FCC CFR 47 Part 15C Testing of the  
Avantech Manufacture  
Attitude E310 Mobile Phone

COMMERCIAL-IN-CONFIDENCE

FCC ID: RXXAttitudeE310

Document 75904049 Report 02 Issue 1

July 2008



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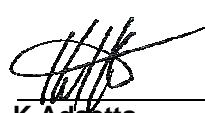
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**DATED**

10 July 2008

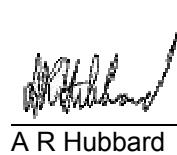
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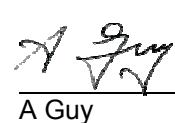
**ENGINEERING STATEMENT**

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. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineers:

  
**R A Blagg**

  
**A R Hubbard**

  
**A Guy**





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## **SECTION 1**

### **REPORT SUMMARY**

FCC CFR 47 Part 15C Testing of the  
Avantech Manufacture  
Attitude E310 Mobile Phone



## 1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Avantech Manufacture Attitude E310 Mobile Phone to the requirements of FCC CFR 47 Part 15C 2006.

Objective	To perform FCC CFR 47 Part 15 C Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	Avantech Manufacture
Model Number(s)	Attitude E310
Serial Number(s)	IMEI: 352455020004255 IMEI: 352455020004065
Software Version	Not supplied
Hardware Version	PR2
Number of Samples Tested	2
Test Specification/Issue/Date	FCC CFR 47 Part 15C 2006
Incoming Release Date	Declaration of Build Status 26 June 2008
Disposal Reference Number Date	Held Pending Disposal Not Applicable Not Applicable
Start of Test	01 July 2008
Finish of Test	05 July 2008
Name of Engineer(s)	A Guy A R Hubbard R A Blagg
Related Document(s)	FCC CFR 47 Part 15 2006



## 1.2 BRIEF SUMMARY OF RESULTS

A brief summary of results for each configuration, in accordance with FCC CFR 47 Part 15C: 2006, is shown below.

Configuration 1 - Mobile Handset with Battery						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
2.2	15.209, 15.247(d), 15.205	Radiated Emissions (Enclosure Port)	2402.0 MHz	0	Pass	FCC CFR 47 Part 15C
			2441.0 MHz	0	Pass	
			2480.0 MHz	0	Pass	

Configuration 2 - Mobile Handset with AC Adaptor						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
2.1	15.207 RSS-Gen, 7.2.2	Conducted Emissions (AC Power Port)	2402.0 MHz	0	Pass	FCC CFR 47 Part 15C
			2441.0 MHz	0	Pass	
			2480.0 MHz	0	Pass	

Configuration 3 - Mobile Handset with Battery Eliminator						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
2.3	15.247(b)(4)	Maximum Peak Output Power (Radiated)	2402.0 MHz	0	Pass	FCC CFR 47 Part 15C
			2441.0 MHz	0	Pass	
			2480.0 MHz	0	Pass	
2.4	15.247(a)(1)	20dB Bandwidth	2402.0 MHz	0	Pass	FCC CFR 47 Part 15C
			2441.0 MHz	0	Pass	
			2480.0 MHz	0	Pass	
2.5	15.247(a)	Channel Dwell Time (DH1)	2441.0 MHz	0	Pass	FCC CFR 47 Part 15C
2.6	15.247(a)	Channel Dwell Time (DH3)	2441.0 MHz	0	Pass	FCC CFR 47 Part 15C
2.7	15.247(a)	Channel Dwell Time (DH5)	2441.0 MHz	0	Pass	FCC CFR 47 Part 15C



Configuration 3 - Mobile Handset with Battery Eliminator						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
2.8	15.247(a)(1)	Channel Separation	Frequency Hopping	0	Pass	FCC CFR 47 Part 15C
2.9	15.247(a)(1)	Number of Hopping Channels	Frequency Hopping	0	Pass	FCC CFR 47 Part 15C
2.10	15.247(c)	Spurious Conducted Emissions	Frequency Hopping	0	Pass	FCC CFR 47 Part 15C
2.11	15.247(b) (1)	Maximum Peak Output Power (Conducted)	2402.0 MHz	0	Pass	FCC CFR 47 Part 15C
			2441.0 MHz	0	Pass	
			2480.0 MHz	0	Pass	

N/A – Not Applicable



## 1.3 DECLARATION OF BUILD STATUS

MAIN EUT	
<b>MANUFACTURING DESCRIPTION</b>	Cellular Mobile Phone Manufacturer
<b>MANUFACTURER</b>	Avantech Manufacture
<b>TYPE</b>	Cellular Mobile Phone
<b>SERIAL NUMBER</b>	IMEI: 352455020004255 IMEI: 352455020004065
<b>HARDWARE VERSION</b>	PR2
<b>SOFTWARE VERSION</b>	Not Supplied
<b>TRANSMITTER OPERATING RANGE</b>	Part 22 (824.2 – 848.8 MHZ), Part 24 (1850.2 – 1909.8 MHz)
<b>RECEIVER OPERATING RANGE</b>	Part 22 (869.2 – 893.8 MHZ), Part 24 (1930.2 – 1989.8 MHz)
<b>COUNTRY OF ORIGIN</b>	France
<b>INTERMEDIATE FREQUENCIES</b>	Direct Conversion
<b>ITU DESIGNATION OF EMISSION</b>	300KGXW
<b>HIGHEST INTERNALLY GENERATED FREQUENCY</b>	2480MHz
<b>OUTPUT POWER (W or dBm)</b>	32 dBm
<b>FCC ID</b>	RXXAttitudeE310
<b>TECHNICAL DESCRIPTION (a brief description of the intended use and operation)</b>	This product is the cellular mobile phone in 850/900/1800/1900 bands
BATTERY/POWER SUPPLY	
<b>MANUFACTURING DESCRIPTION</b>	Batterie's Manufacturer
<b>MANUFACTURER</b>	Xwoda
<b>TYPE</b>	Lithium Ion
<b>PART NUMBER</b>	BL2001
<b>VOLTAGE</b>	3.7 V
<b>COUNTRY OF ORIGIN</b>	China
ANCILLARIES (if applicable)	
<b>MANUFACTURING DESCRIPTION</b>	Main Adapter
<b>MANUFACTURER</b>	MLF
<b>TYPE</b>	DC 5 V
<b>PART NUMBER</b>	MLF-005W0500600-U
<b>COUNTRY OF ORIGIN</b>	China

Signature

Date

26 June 2008

Declaration of Build Status Serial Number 75904049/01



## 1.4 PRODUCT INFORMATION

### 1.4.1 Technical Description

The Equipment Under Test (EUT) was a Avantech Manufacture Attitude E310 Mobile Phone as shown in the photograph below. A full technical description can be found in the Manufacturers documentation.



Equipment Under Test



#### 1.4.2 Test Configuration

##### Configuration 1: UE & Battery

The EUT was configured in accordance with FCC CFR 47 Part 15C 2006.

##### Configuration 2: UE & AC Adaptor

The EUT was configured in accordance with FCC CFR 47 Part 15C 2006.

##### Configuration 3: UE & Battery Eliminator

The EUT was configured in accordance with FCC CFR 47 Part 15C 2006.

#### 1.4.3 Modes of Operation

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

Mode 1 - 2402 MHz Transmit

Mode 2 - 2441 MHz Transmit

Mode 3 - 2480 MHz Transmit

Mode 4 – Frequency Hopping

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



### 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, test laboratories or an open test area as appropriate.

The EUT was powered from an 110V AC Adaptor, Battery supply, or Battery Eliminator.

FCC Accreditation  
90987 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.



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## **SECTION 2**

### **TEST DETAILS**

FCC CFR 47 Part 15C Testing of the  
Avantech Manufacture  
Attitude E310 Mobile Phone



## 2.1 CONDUCTED EMISSIONS (AC POWER PORT)

### 2.1.1 Specification Reference

FCC CFR 47 Part 15C: 2006, Clause 15.207

### 2.1.2 Equipment Under Test

Attitude E310, IMEI: 352455020004255

### 2.1.3 Date of Test and Modification State

05 July 2008 - 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 FCC CFR 47 Part 15: 2006.

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

Configuration 2 - Mode 1  
- Mode 2  
- Mode 3

### 2.1.6 Environmental Conditions

05 July 2008

Ambient Temperature 21.4°C

Relative Humidity 44%

Atmospheric Pressure 1010mbar



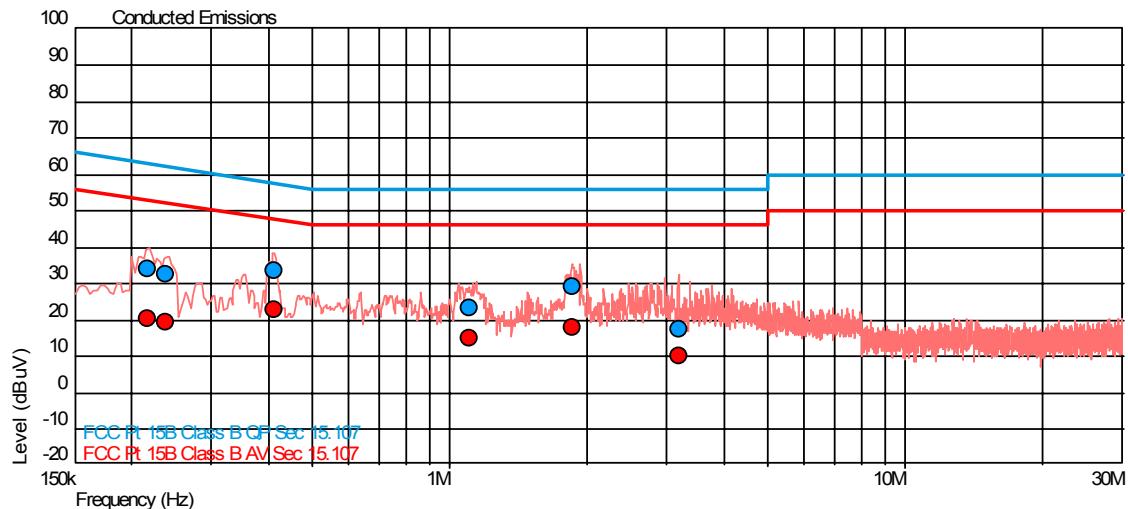
### 2.1.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C: 2006 for Conducted Emissions (AC Power Port).

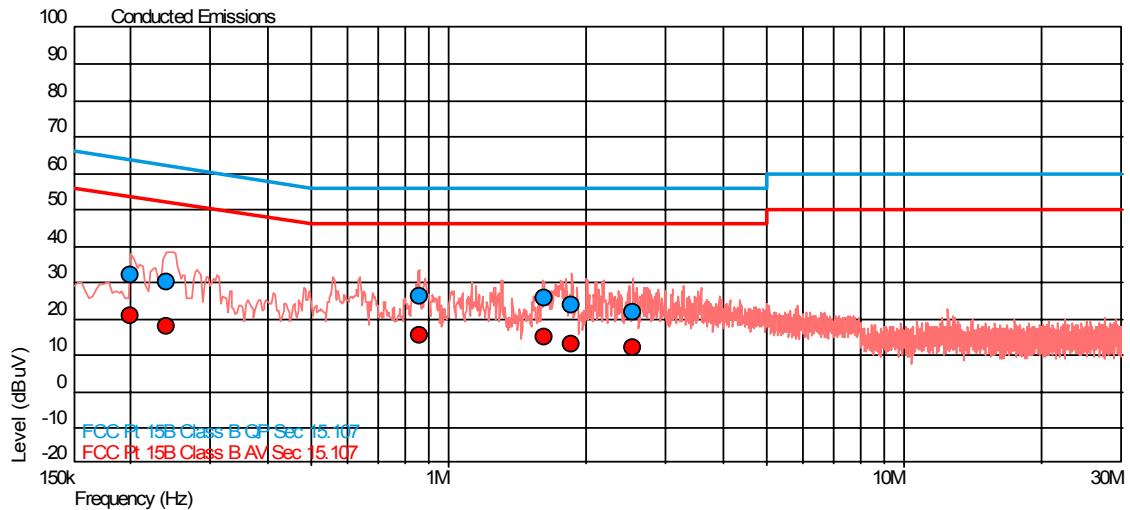
The test results are shown below.

Configuration 2 - Mode 1

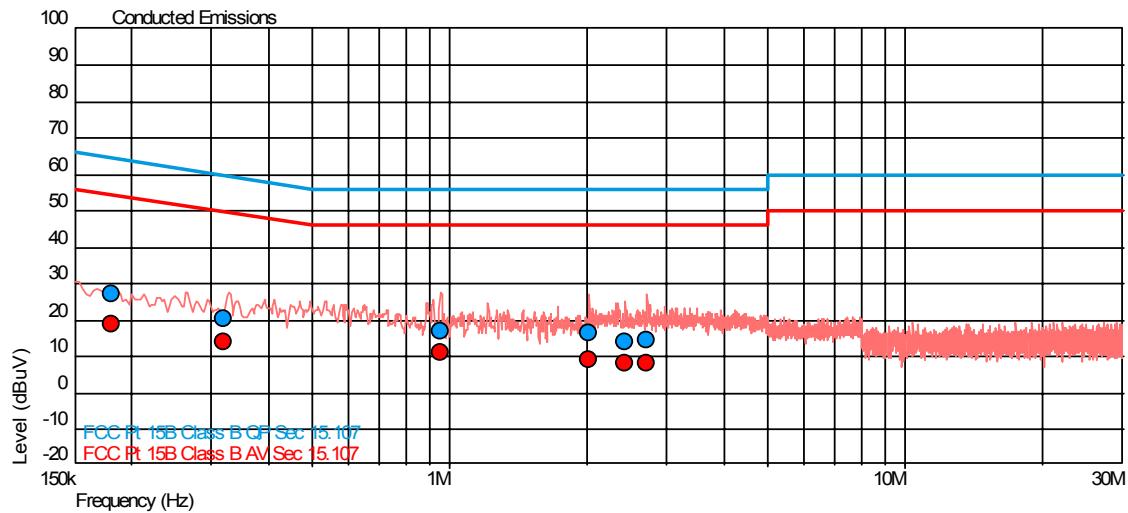
Live Line



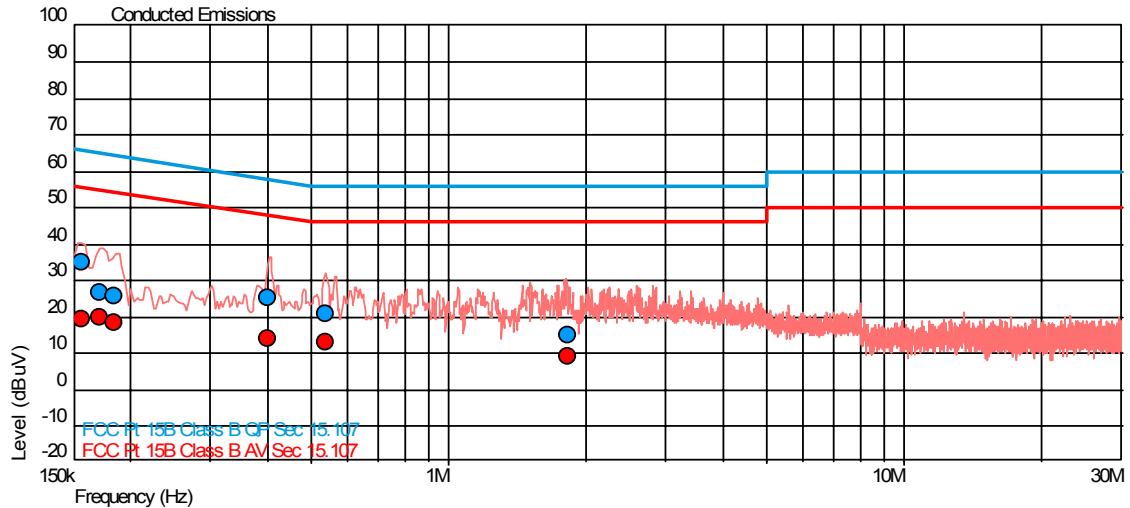
Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.218	34.1	62.9	-28.8	20.0	52.9	-32.9
0.238	32.5	62.2	-29.6	19.5	52.2	-32.7
0.413	33.2	57.6	-24.3	22.5	47.6	-25.1
1.100	22.9	56.0	-33.1	15.1	46.0	-30.9
1.850	29.2	56.0	-26.8	17.9	46.0	-28.1
3.172	17.2	56.0	-38.8	9.8	46.0	-36.2

Neutral Line

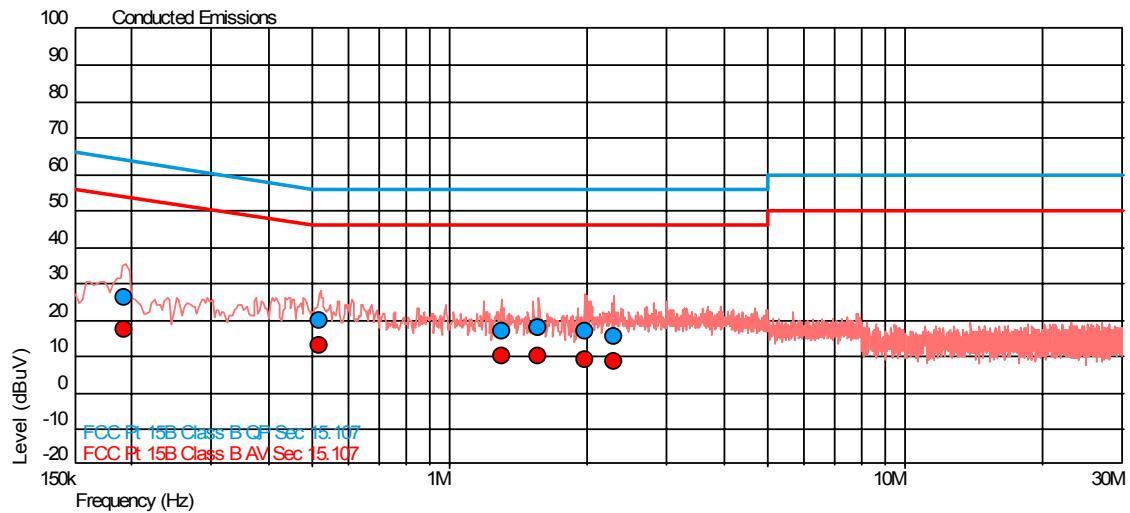
Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.200	32.0	63.6	-31.6	20.5	53.6	-33.1
0.239	30.1	62.1	-32.0	18.0	52.1	-34.1
0.860	26.2	56.0	-29.8	15.4	46.0	-30.6
1.615	25.5	56.0	-30.5	14.8	46.0	-31.2
1.864	23.7	56.0	-32.3	12.8	46.0	-33.2
2.532	21.6	56.0	-34.4	12.0	46.0	-34.0

Configuration 2 - Mode 2Live Line

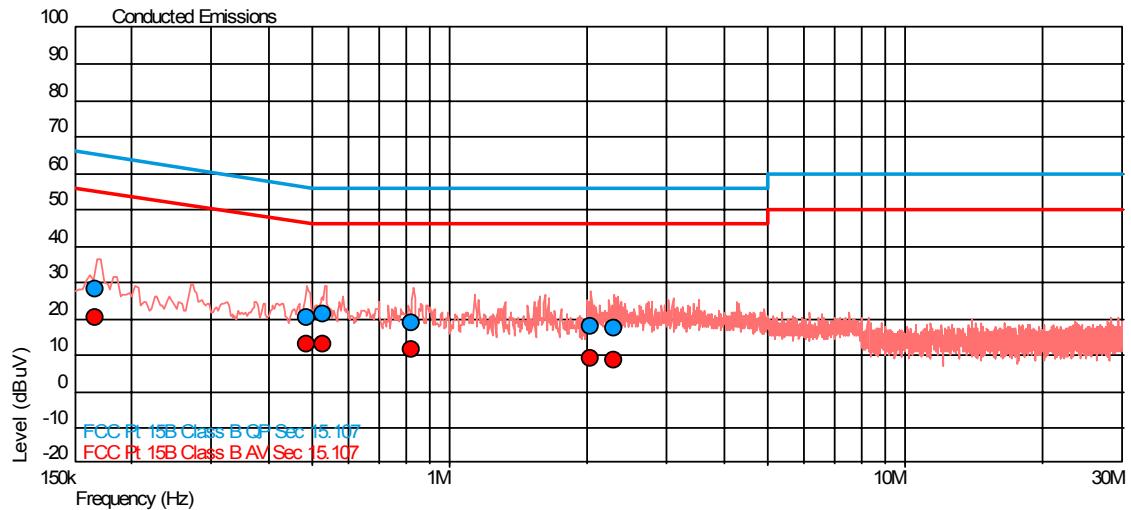
Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.181	26.9	64.5	-37.5	18.8	54.5	-35.7
0.319	20.2	59.7	-39.5	14.0	49.7	-35.7
0.952	17.0	56.0	-39.0	10.8	46.0	-35.2
2.019	16.3	56.0	-39.7	9.0	46.0	-37.0
2.416	14.1	56.0	-41.9	7.9	46.0	-38.1
2.710	14.4	56.0	-41.6	8.0	46.0	-38.0

Neutral Line

Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.156	34.8	65.7	-30.8	19.4	55.7	-36.2
0.172	26.7	64.9	-38.2	19.8	54.9	-35.1
0.185	25.8	64.3	-38.5	18.3	54.3	-36.0
0.402	25.1	57.8	-32.7	14.1	47.8	-33.7
0.537	20.9	56.0	-35.1	12.8	46.0	-33.2
1.817	14.9	56.0	-41.1	8.8	46.0	-37.2

Configuration 2 - Mode 3Live Line

Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.194	26.1	63.9	-37.7	17.3	53.9	-36.6
0.518	19.6	56.0	-36.4	12.9	46.0	-33.1
1.296	16.6	56.0	-39.4	10.1	46.0	-35.9
1.561	17.6	56.0	-38.4	10.0	46.0	-36.0
1.984	16.6	56.0	-39.4	9.2	46.0	-36.8
2.290	15.3	56.0	-40.7	8.5	46.0	-37.5

Neutral Line

Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.167	28.3	65.1	-36.8	20.1	55.1	-35.0
0.484	20.4	56.3	-35.8	13.0	46.3	-33.2
0.528	21.2	56.0	-34.8	12.9	46.0	-33.1
0.827	18.8	56.0	-37.2	11.5	46.0	-34.5
2.038	17.8	56.0	-38.2	8.9	46.0	-37.1
2.294	17.1	56.0	-38.9	8.5	46.0	-37.5



## 2.2 RADIATED EMISSIONS (ENCLOSURE PORT)

### 2.2.1 Specification Reference

FCC CFR 47 Part 15C: 2006, Clause 15.209, 15.247(d), 15.205

### 2.2.2 Equipment Under Test

Attitude E310, IMEI: 352455020004255

### 2.2.3 Date of Test and Modification State

04 July 2008 - 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 FCC CRF 47 Part 15: 2006.

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

	04 July 2008
Ambient Temperature	20.8 - 21.4°C
Relative Humidity	40 - 45%
Atmospheric Pressure	1009 - 1013mbar



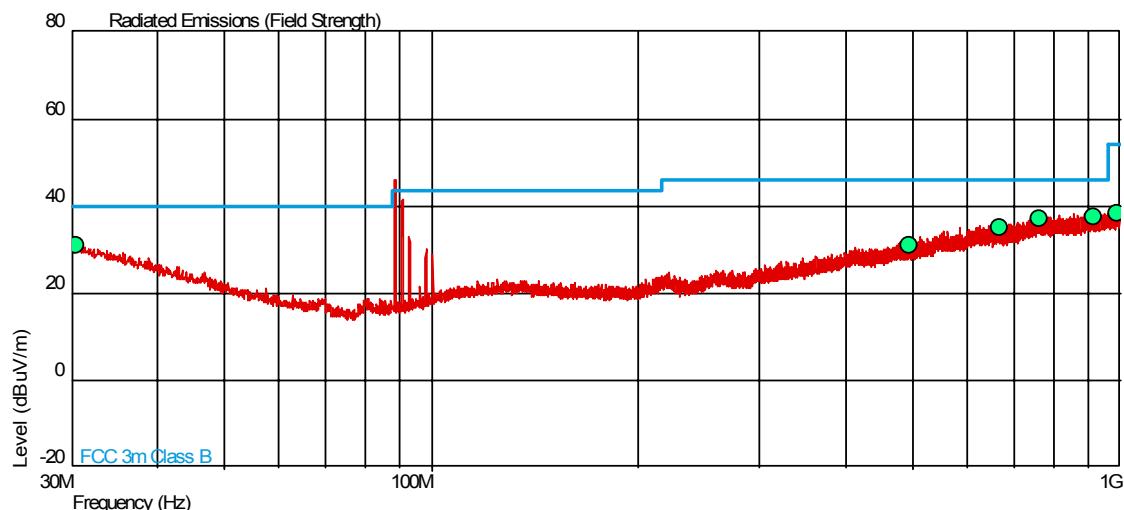
## 2.2.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C: 2006 for Radiated Emissions (Enclosure Port).

The test results are shown below.

Configuration 1 - Mode 1

30MHz to 1GHz



Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Angle(Deg)	Height(m)	Polarity
30.388	31.2	40.0	-8.8	0	1.00	Horizontal
493.272	31.1	46.0	-14.9	0	1.00	Horizontal
667.958	34.9	46.0	-11.1	0	1.00	Horizontal
762.155	37.0	46.0	-9.0	0	1.00	Vertical
913.994	37.7	46.0	-8.3	0	1.00	Vertical
989.329	38.5	54.0	-15.5	0	1.00	Horizontal

The frequencies from 88MHz to 100MHz are ambient frequencies

Configuration 1 - Mode 1

1GHz to 25GHz

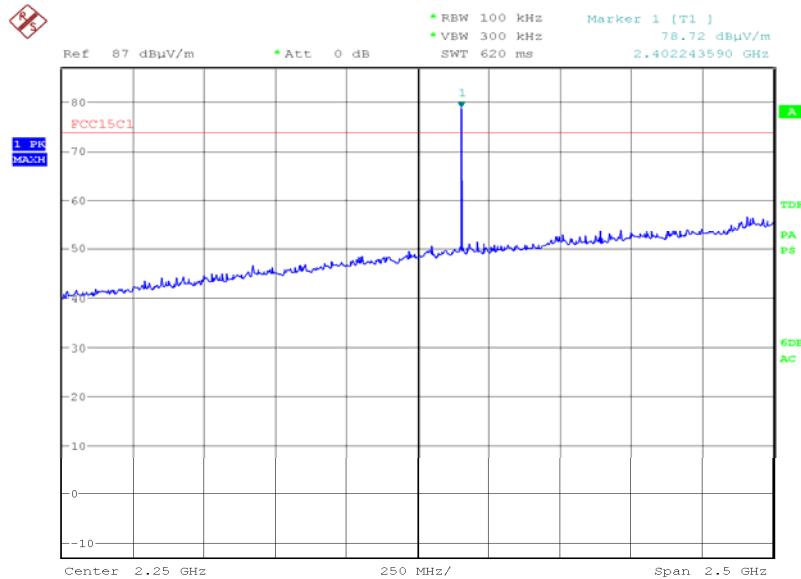
No emissions were detected above the receiver sensitivity level.  
Plots of the full range follow.



### Configuration 1 - Mode 1 Plots

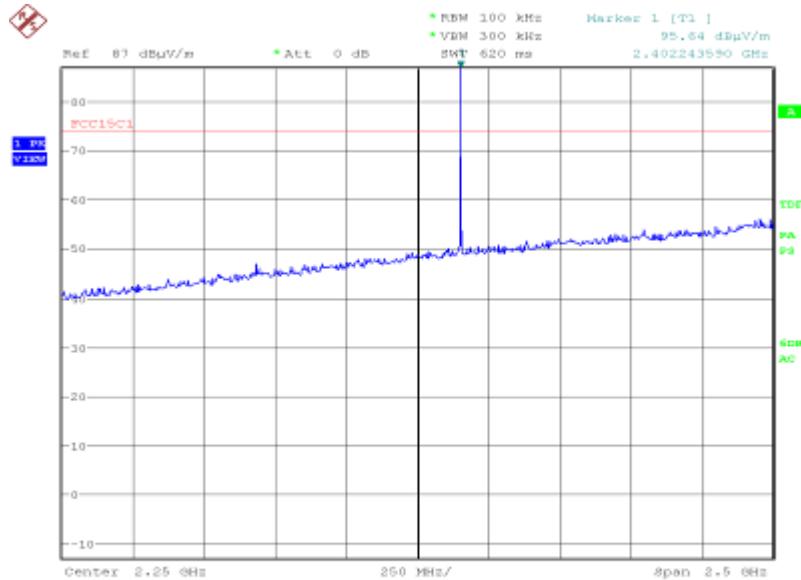
#### 1GHz to 3.5GHz

##### Vertical Polarity



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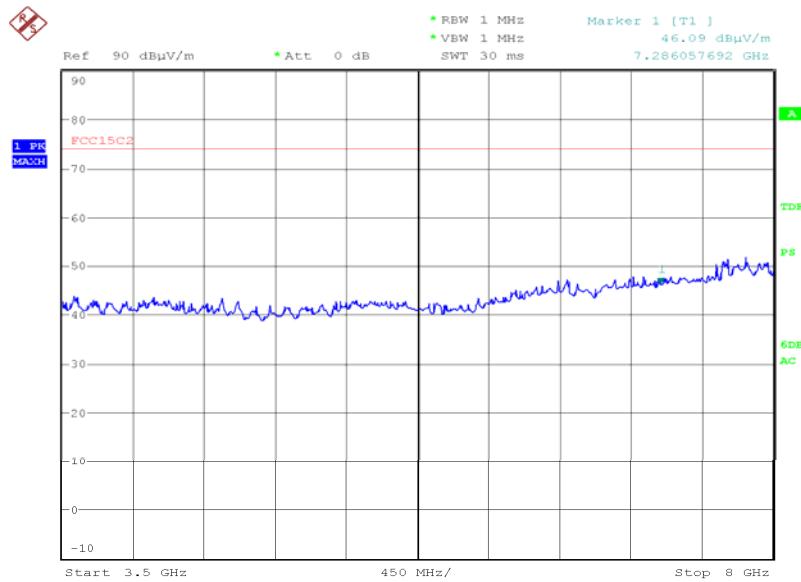
##### Horizontal Polarity



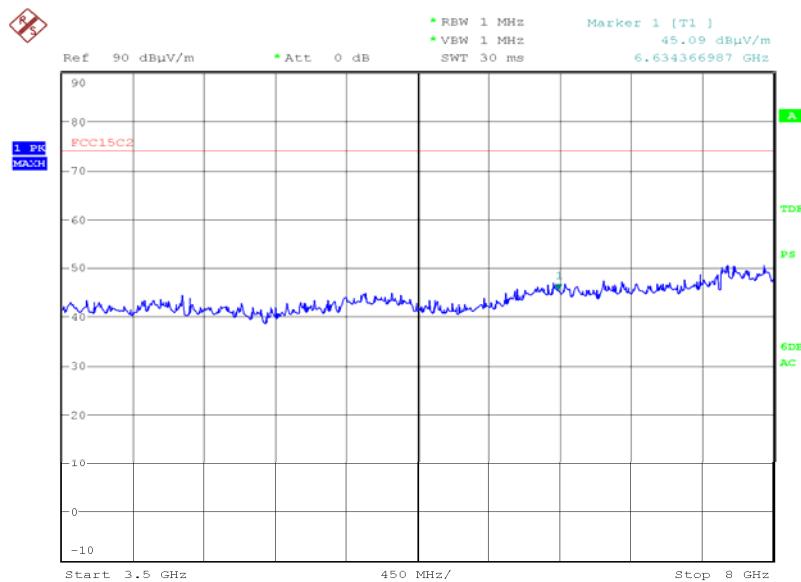
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Product Service

3.5GHz to 8GHzVertical Polarity

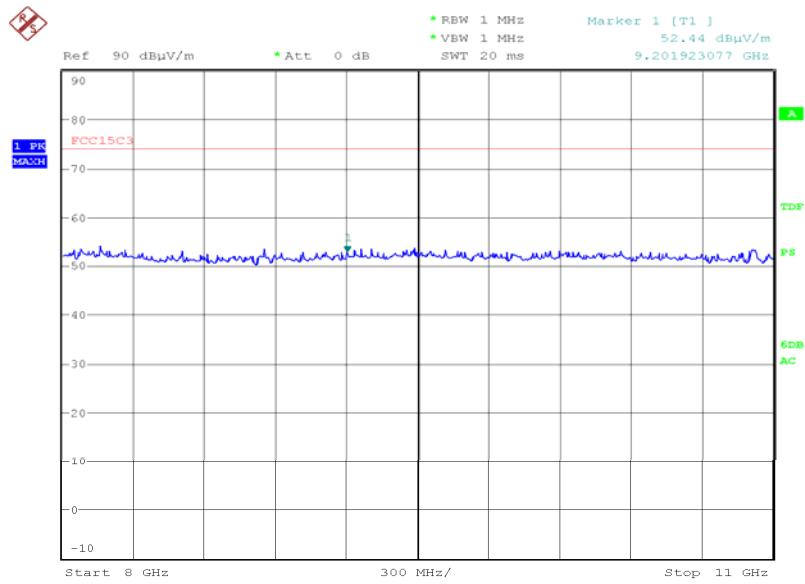
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Horizontal Polarity

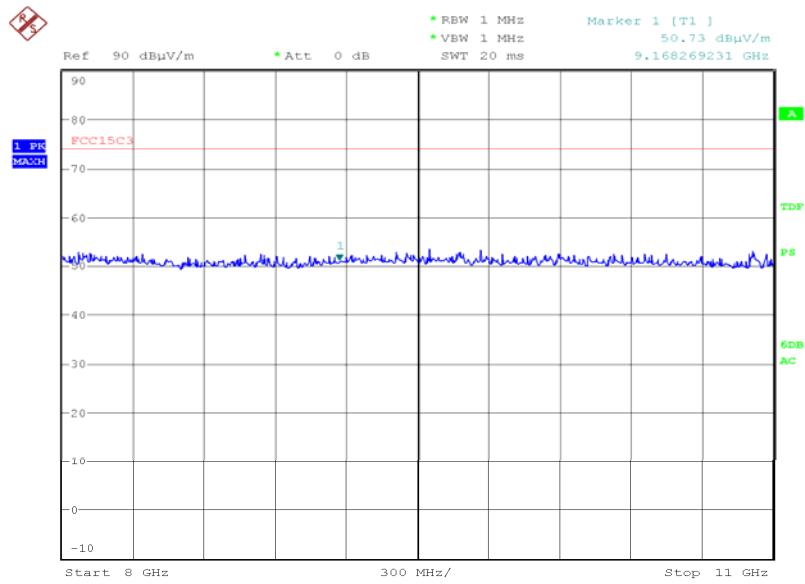
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Product Service

8GHz to 11GHzVertical Polarity

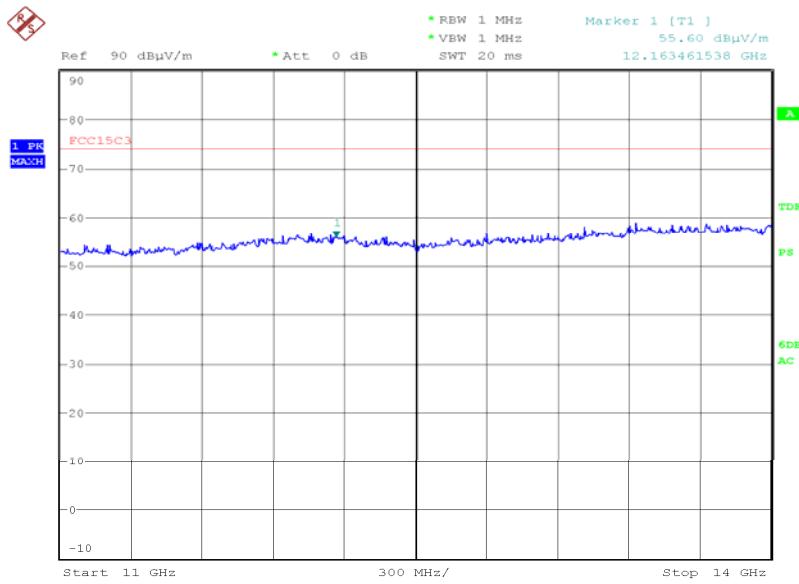
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Horizontal Polarity

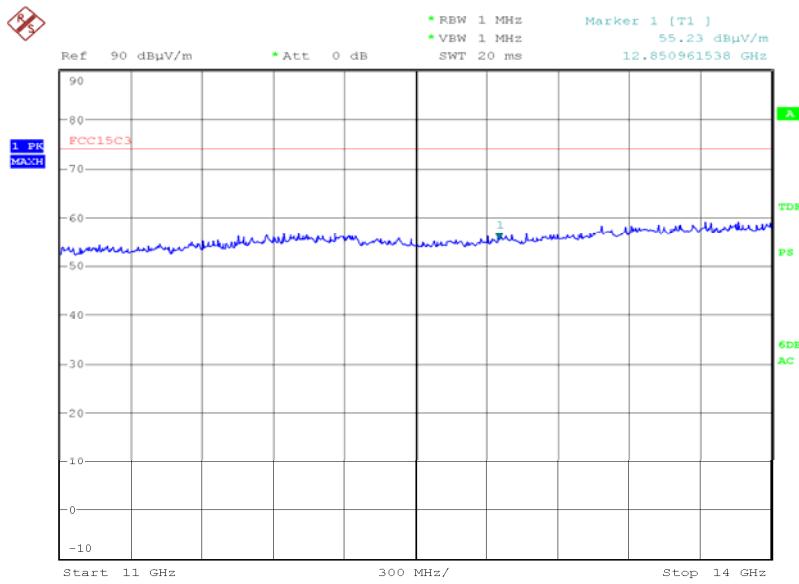
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Product Service

11GHz to 14GHzVertical Polarity

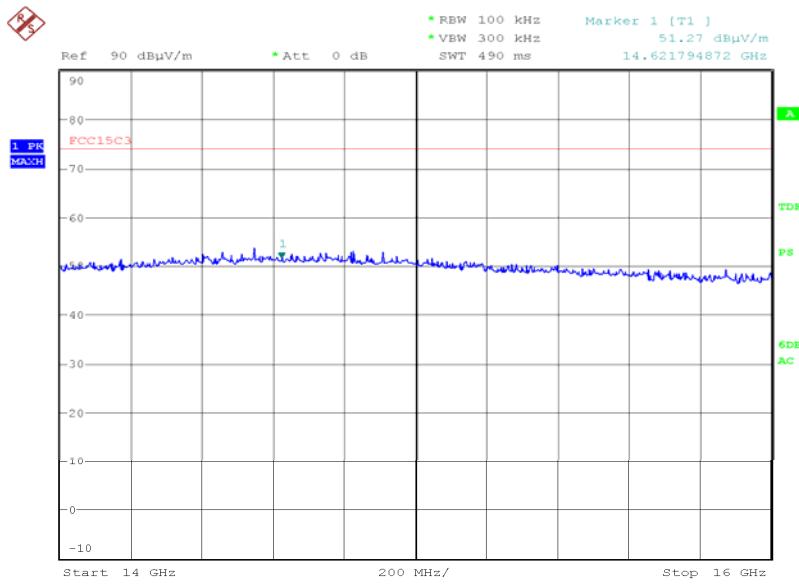
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Horizontal Polarity

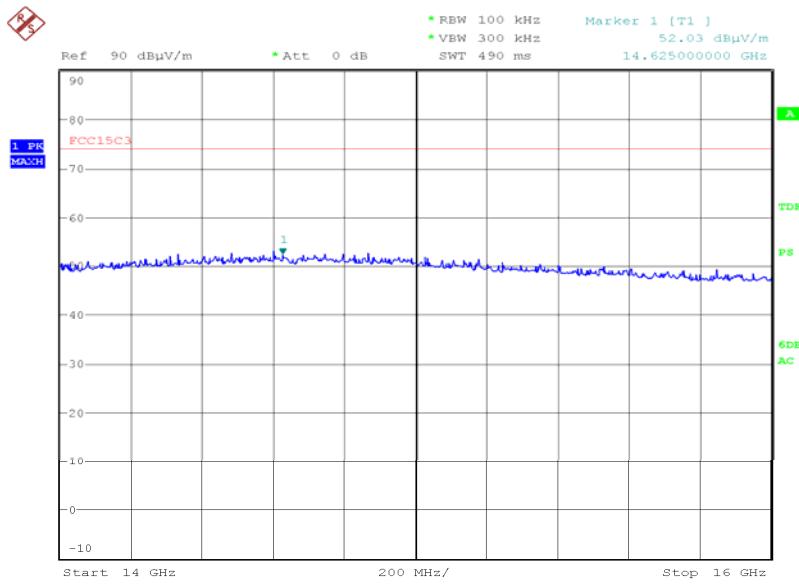
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Product Service

14GHz to 16GHzVertical Polarity

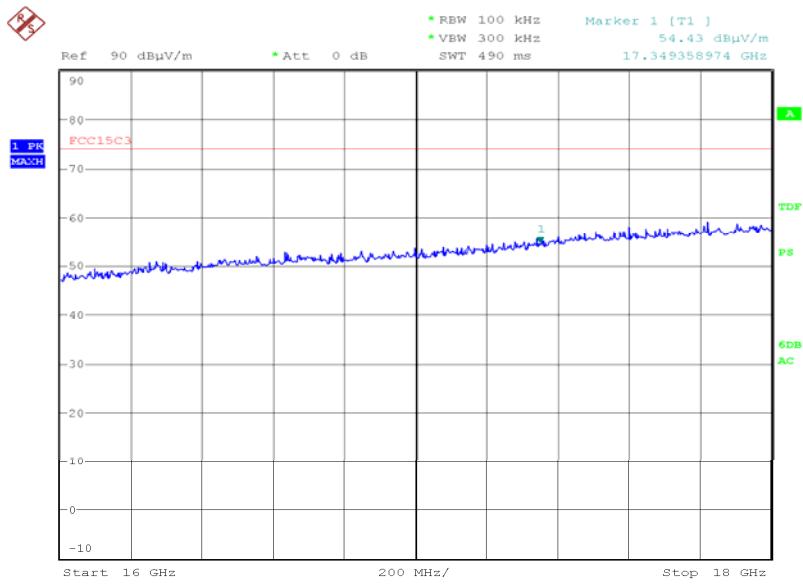
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Horizontal Polarity

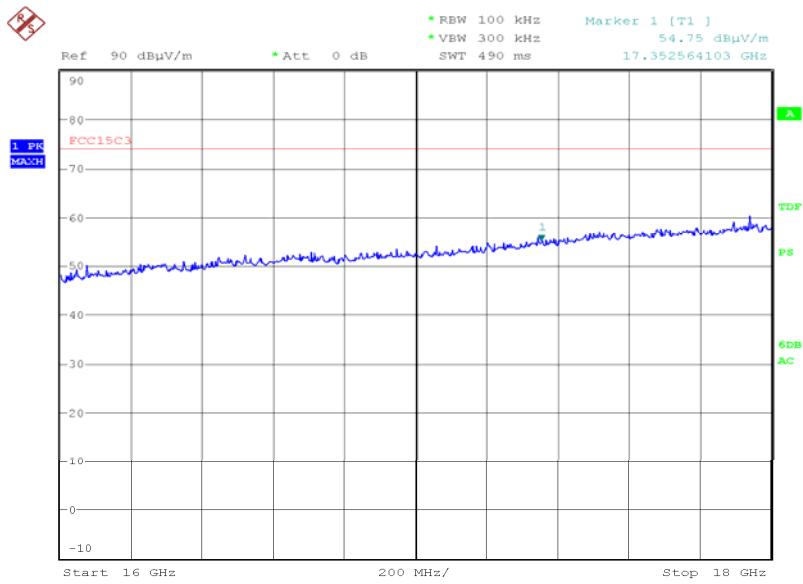
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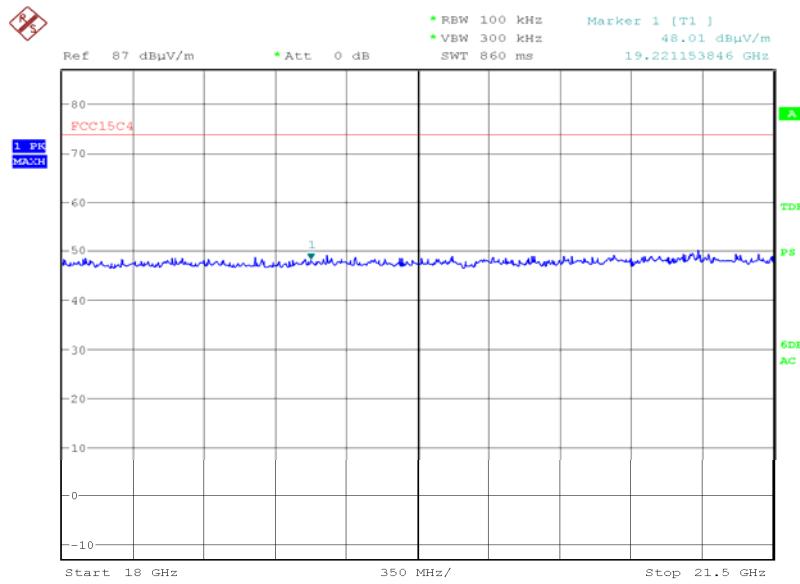
Product Service

16GHz to 18GHzVertical Polarity

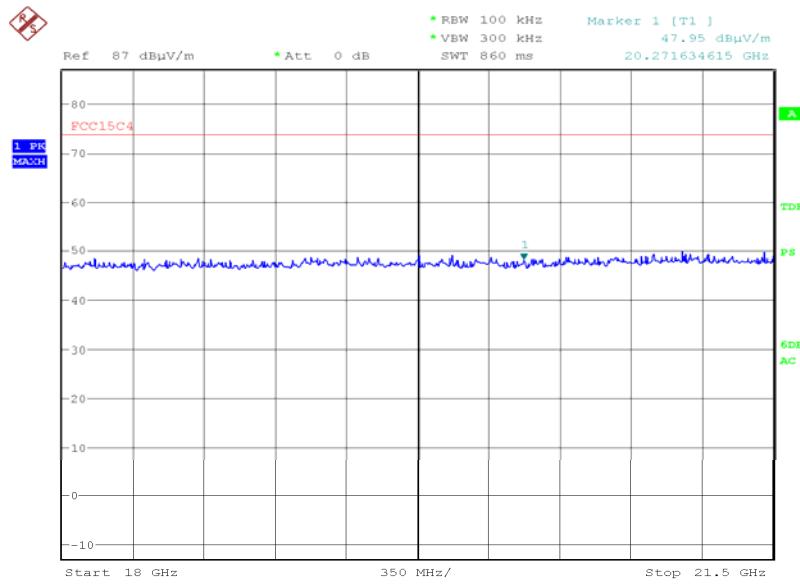
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Horizontal Polarity

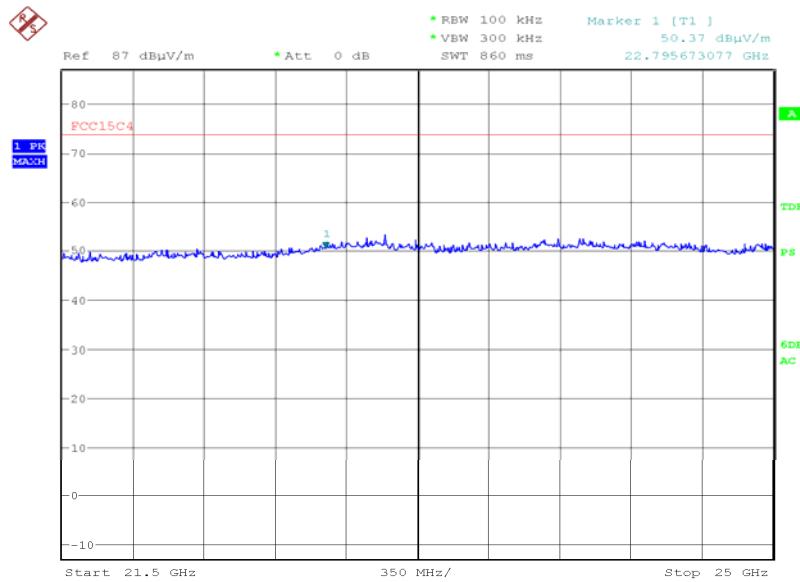
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18GHz to 21.5GHzVertical Polarity

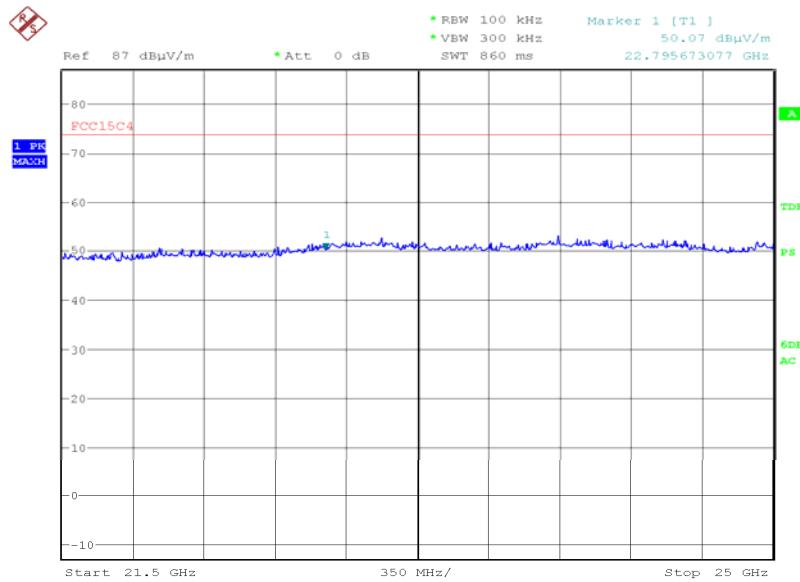
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Horizontal Polarity

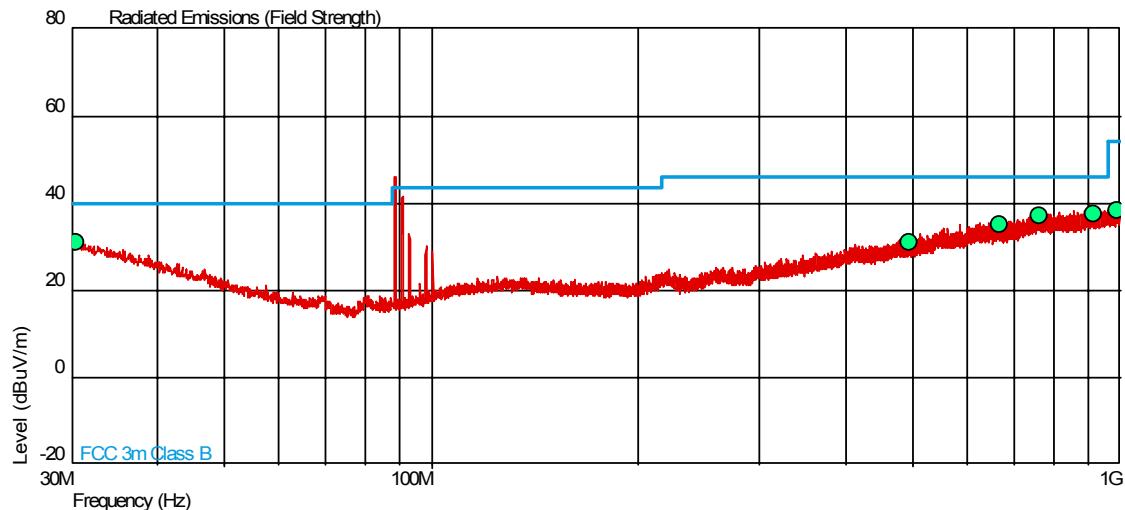
Date: 5.JUL.2008 18:11:52

21.5GHz to 25GHzVertical Polarity

Date: 5.JUL.2008 17:59:36

Horizontal Polarity

Date: 5.JUL.2008 18:09:38

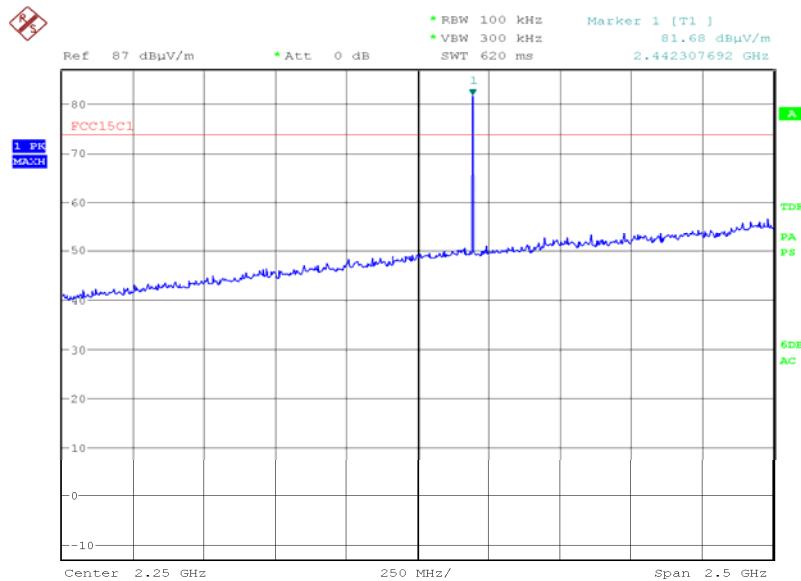
Configuration 1 - Mode 230MHz to 1GHz

Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Angle(Deg)	Height(m)	Polarity
30.388	31.2	40.0	-8.8	0	1.00	Horizontal
493.272	31.1	46.0	-14.9	0	1.00	Horizontal
667.958	34.9	46.0	-11.1	0	1.00	Horizontal
762.155	37.0	46.0	-9.0	0	1.00	Vertical
913.994	37.7	46.0	-8.3	0	1.00	Vertical
989.329	38.5	54.0	-15.5	0	1.00	Horizontal

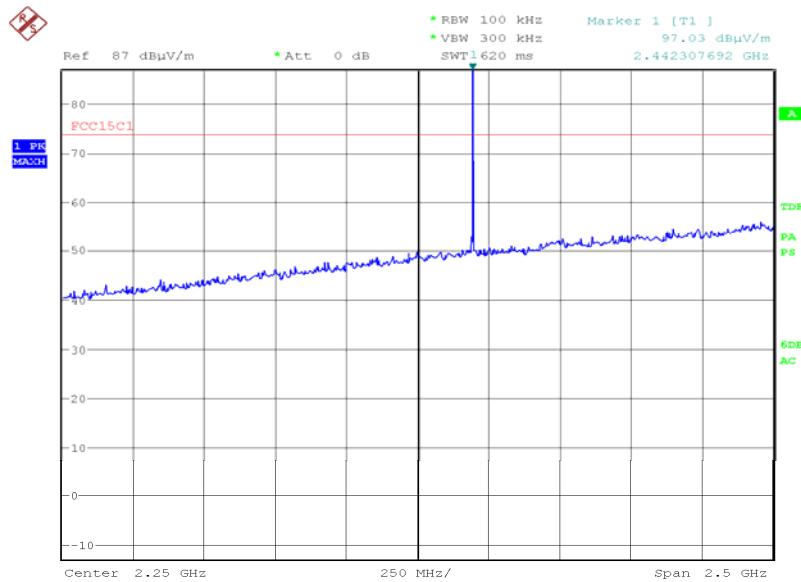
The frequencies from 88MHz to 100MHz are ambient frequencies

Configuration 1 - Mode 21GHz to 25GHz

No emissions were detected above the receiver sensitivity level.  
Plots of the full range follow.

Configuration 1 - Mode 21GHz to 3.5GHzVertical Polarity

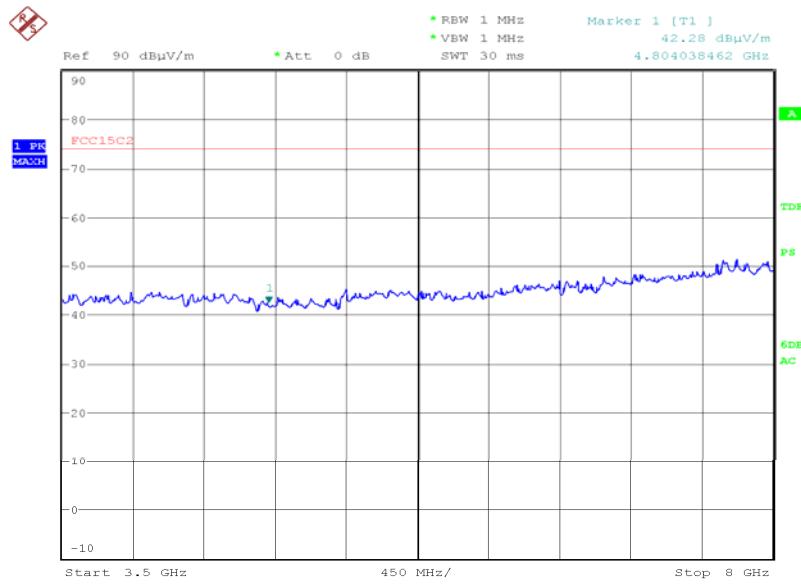
Date: 5.JUL.2008 01:00:27

Horizontal Polarity

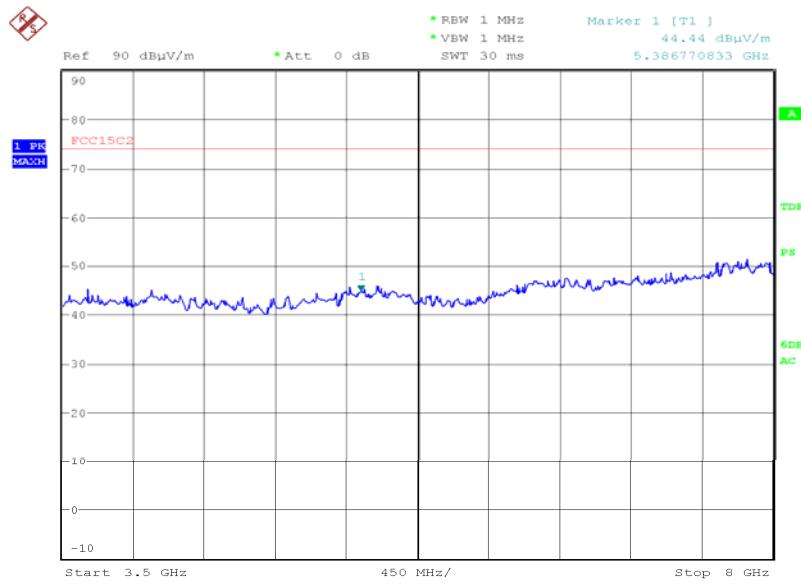
Date: 5.JUL.2008 01:04:09



Product Service

3.5GHz to 8GHzVertical Polarity

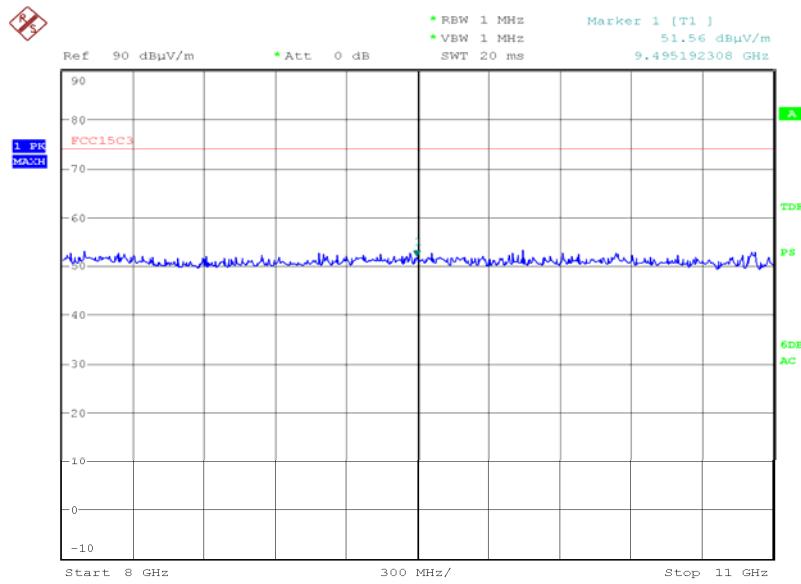
Date: 5.JUL.2008 02:41:33

Horizontal Polarity

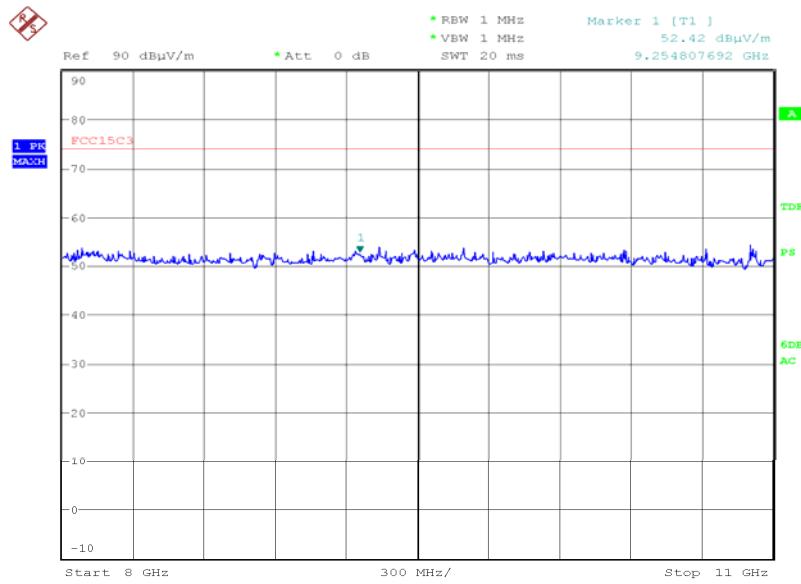
Date: 5.JUL.2008 03:04:13



Product Service

8GHz to 11GHzVertical Polarity

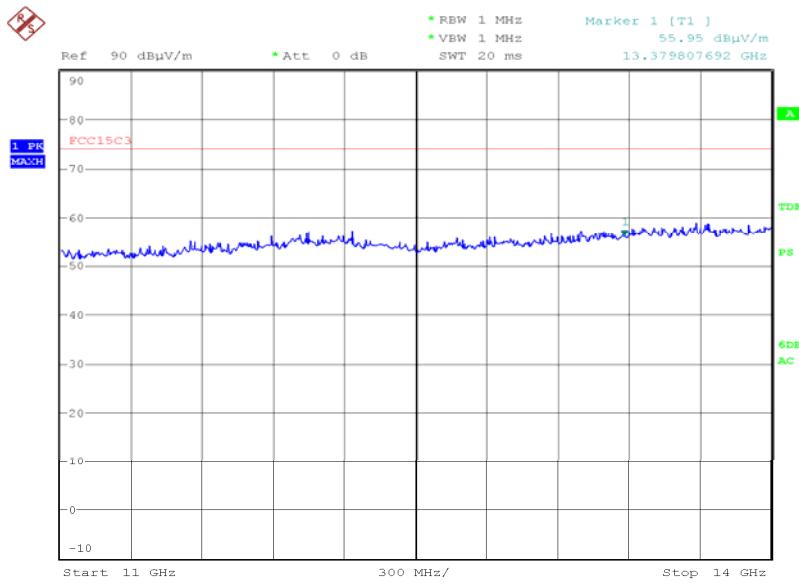
Date: 5.JUL.2008 04:21:47

Horizontal Polarity

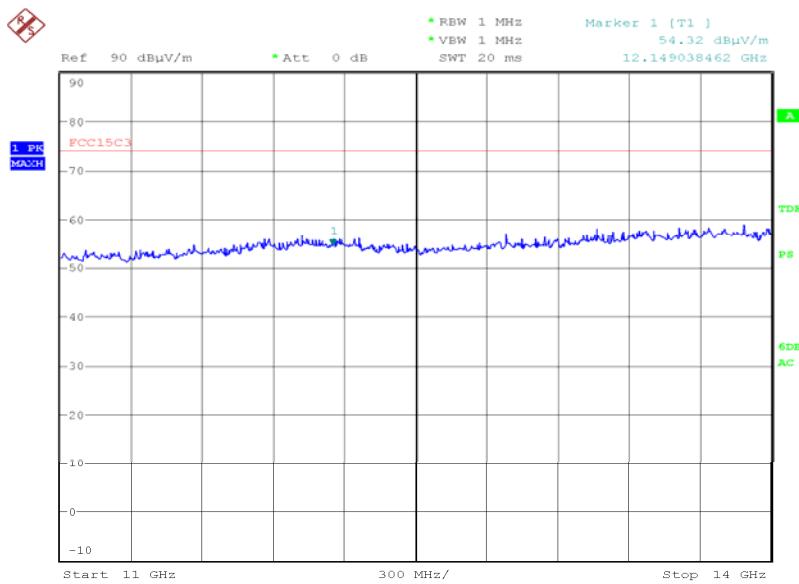
Date: 5.JUL.2008 04:09:46



Product Service

11GHz to 14GHzVertical Polarity

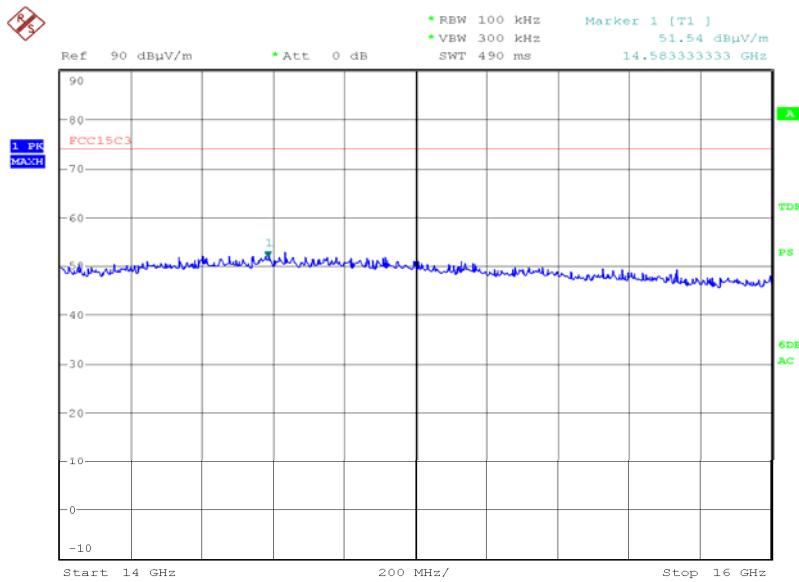
Date: 5.JUL.2008 04:21:00

Horizontal Polarity

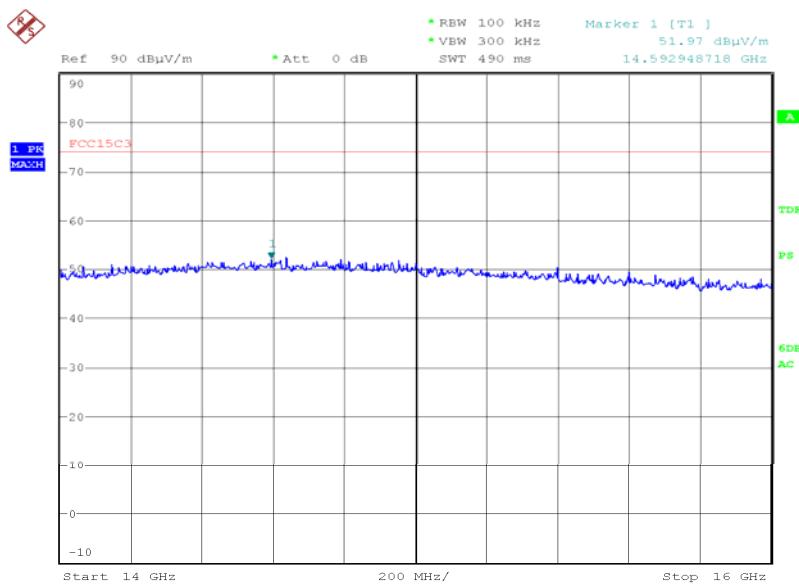
Date: 5.JUL.2008 04:10:37



Product Service

14GHz to 16GHzVertical Polarity

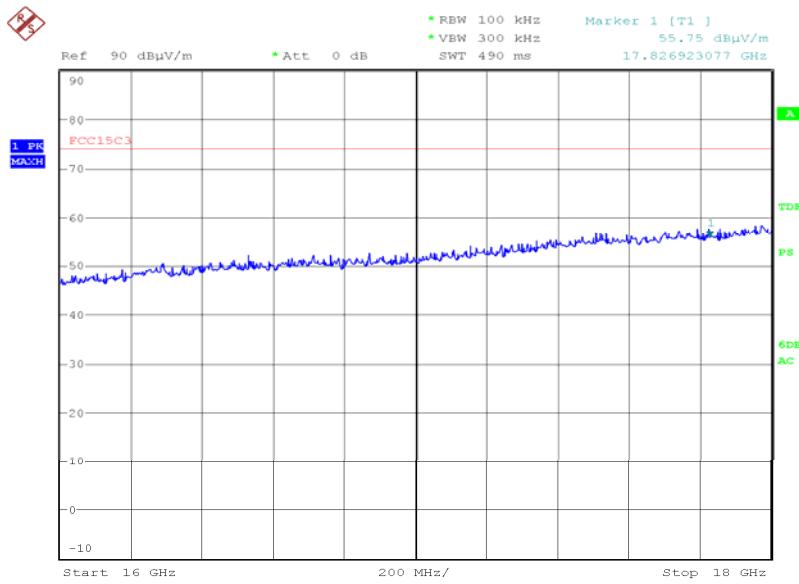
Date: 5.JUL.2008 04:20:01

Horizontal Polarity

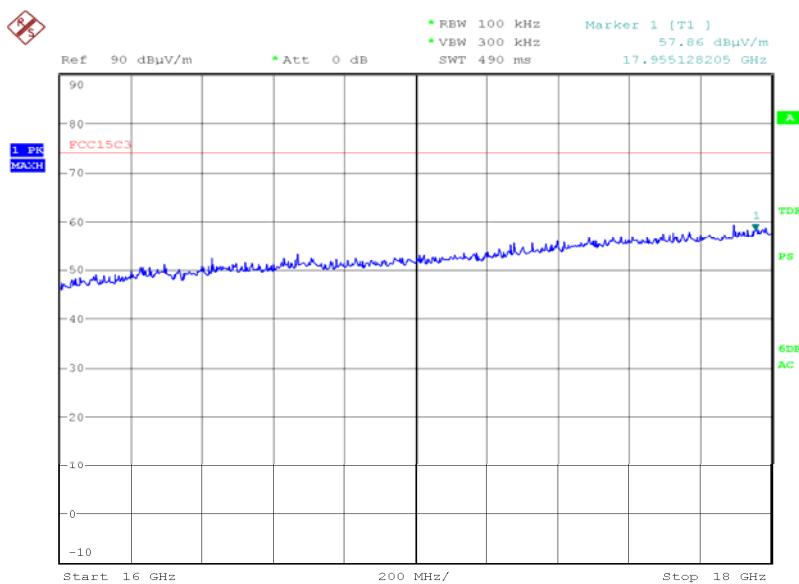
Date: 5.JUL.2008 04:11:12



Product Service

16GHz to 18GHzVertical Polarity

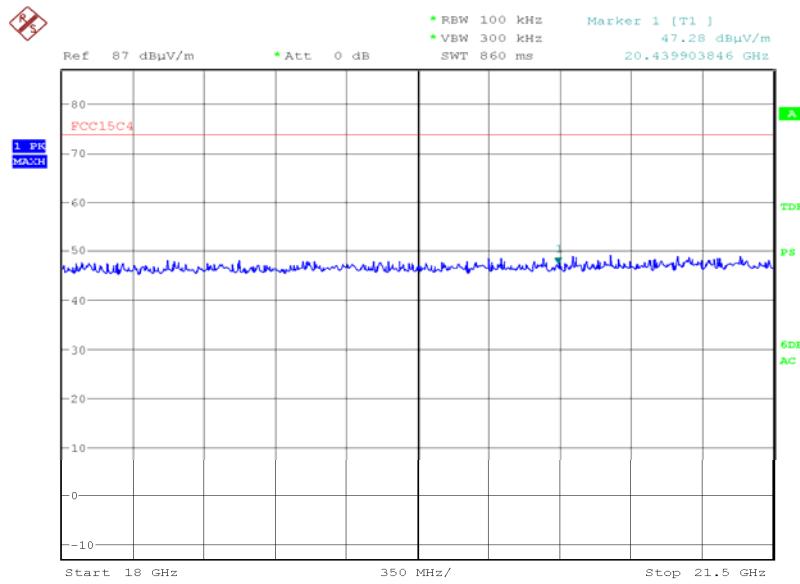
Date: 5.JUL.2008 04:19:26

Horizontal Polarity

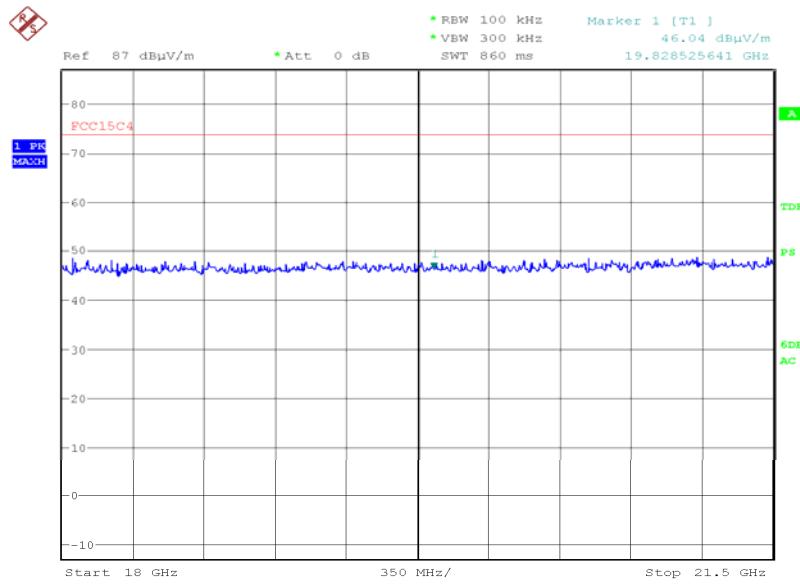
Date: 5.JUL.2008 04:12:15



Product Service

18GHz to 21.5GHzVertical Polarity

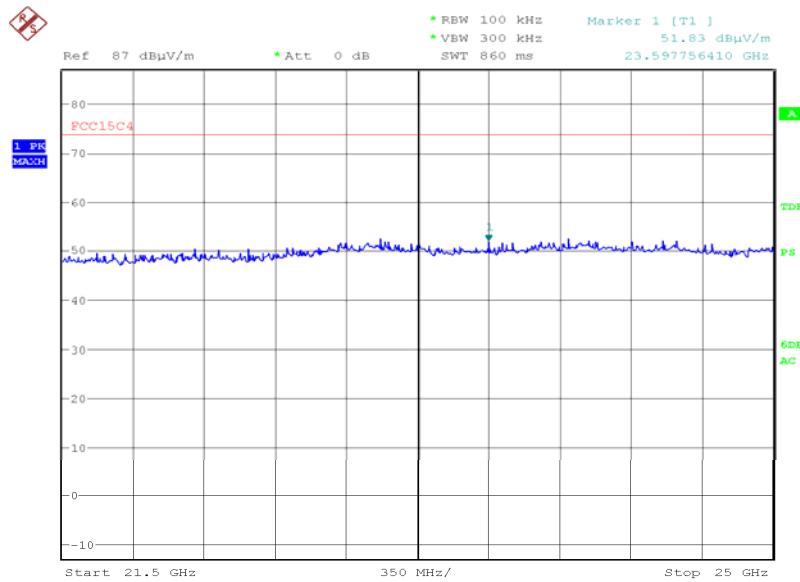
Date: 5.JUL.2008 18:28:21

Horizontal Polarity

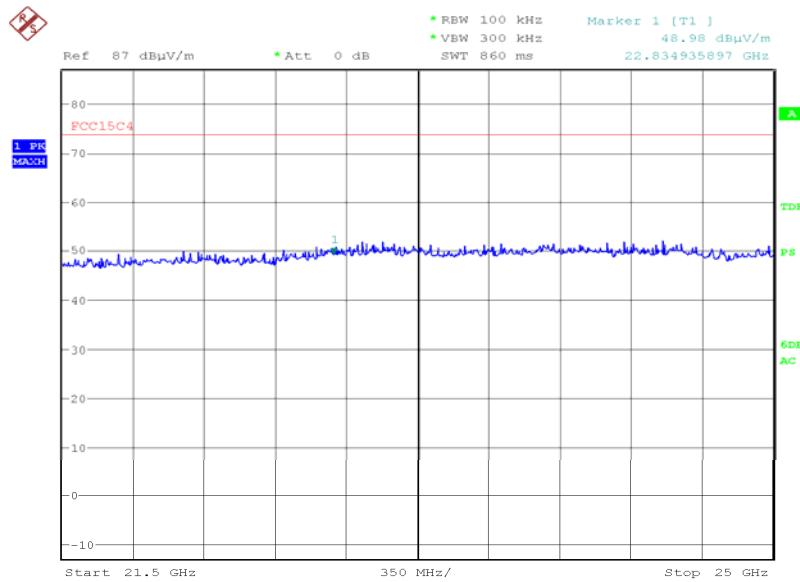
Date: 5.JUL.2008 18:28:50



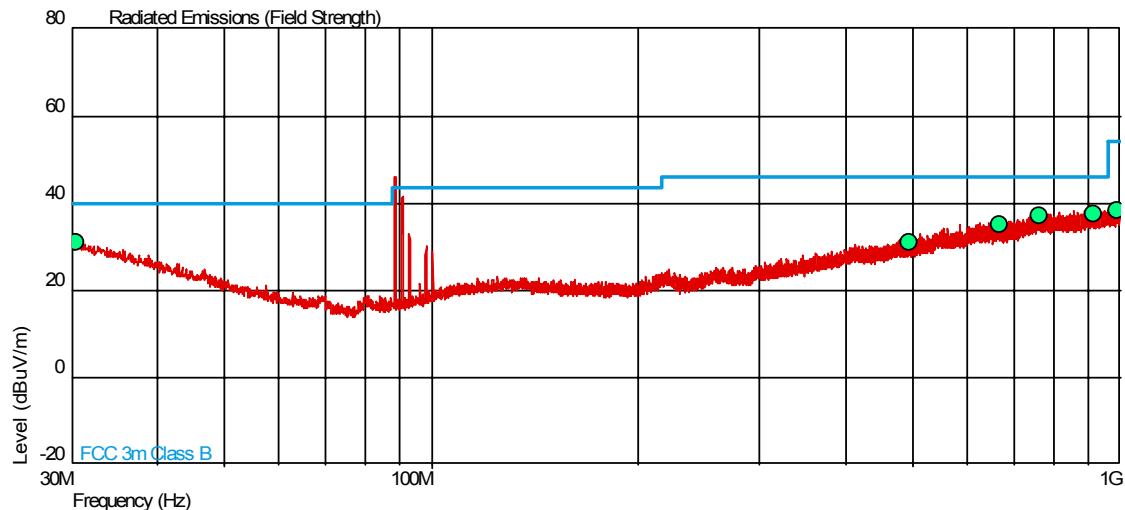
Product Service

21.5GHz to 25GHzVertical Polarity

Date: 5.JUL.2008 18:31:09

Horizontal Polarity

Date: 5.JUL.2008 18:29:28

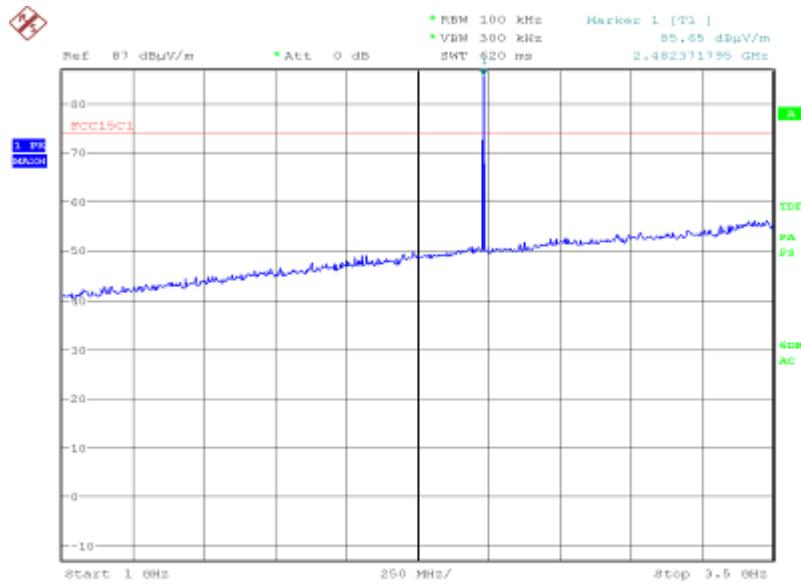
Configuration 1 - Mode 330MHz to 1GHz

Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Angle(Deg)	Height(m)	Polarity
30.388	31.2	40.0	-8.8	0	1.00	Horizontal
493.272	31.1	46.0	-14.9	0	1.00	Horizontal
667.958	34.9	46.0	-11.1	0	1.00	Horizontal
762.155	37.0	46.0	-9.0	0	1.00	Vertical
913.994	37.7	46.0	-8.3	0	1.00	Vertical
989.329	38.5	54.0	-15.5	0	1.00	Horizontal

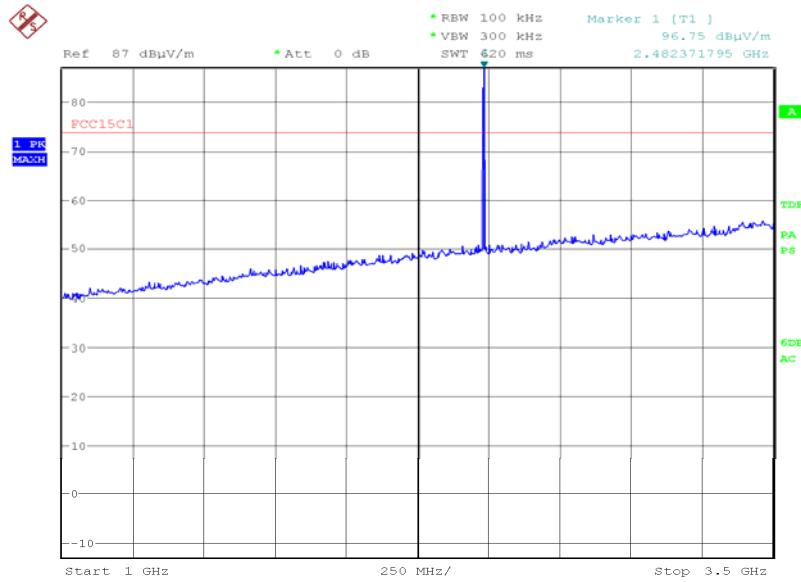
The frequencies from 88MHz to 100MHz are ambient frequencies

Configuration 1 - Mode 31GHz to 25GHz

No emissions were detected above the receiver sensitivity level.  
Plots of the full range follow.

Configuration 1 - Mode 31GHz to 3.5GHzVertical Polarity

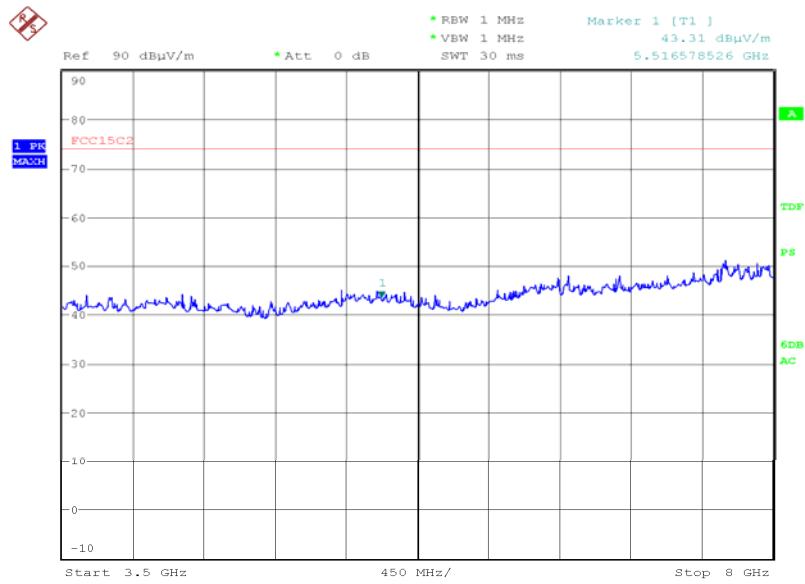
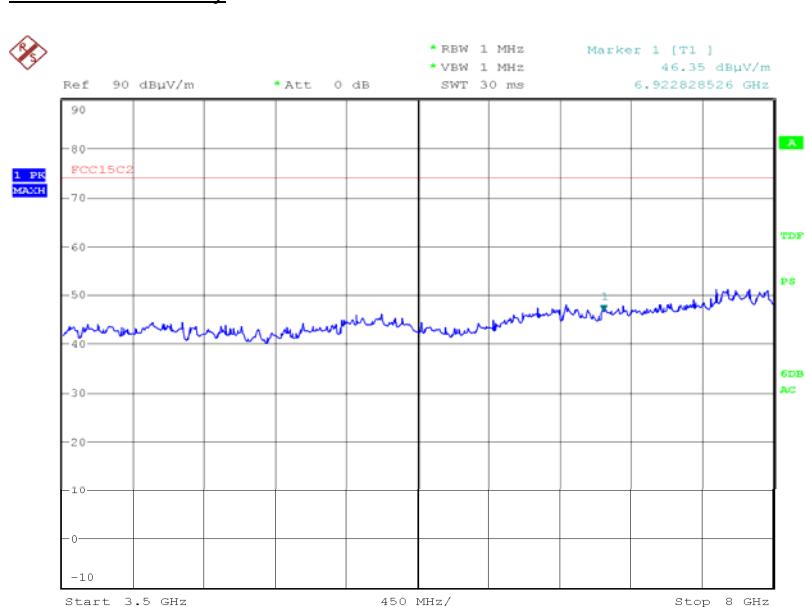
Date: 5.JUL.2008 01:39:40

Horizontal Polarity

Date: 5.JUL.2008 01:31:21

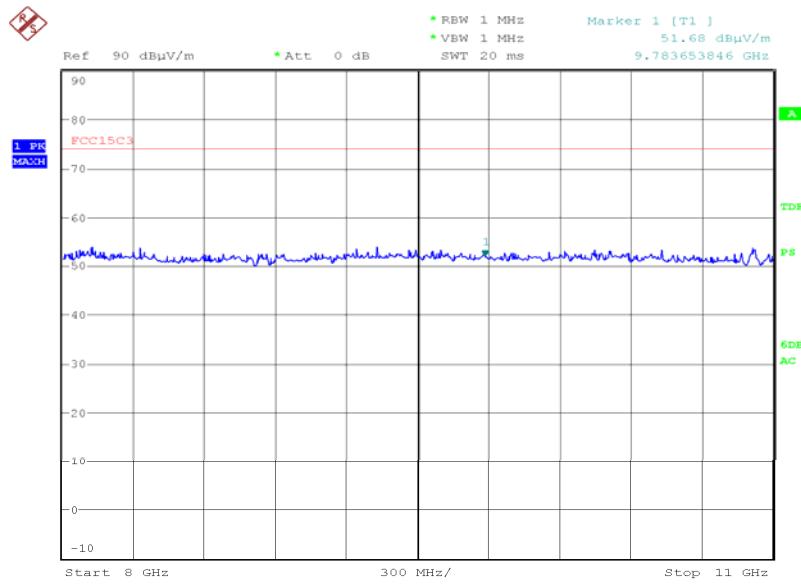


Product Service

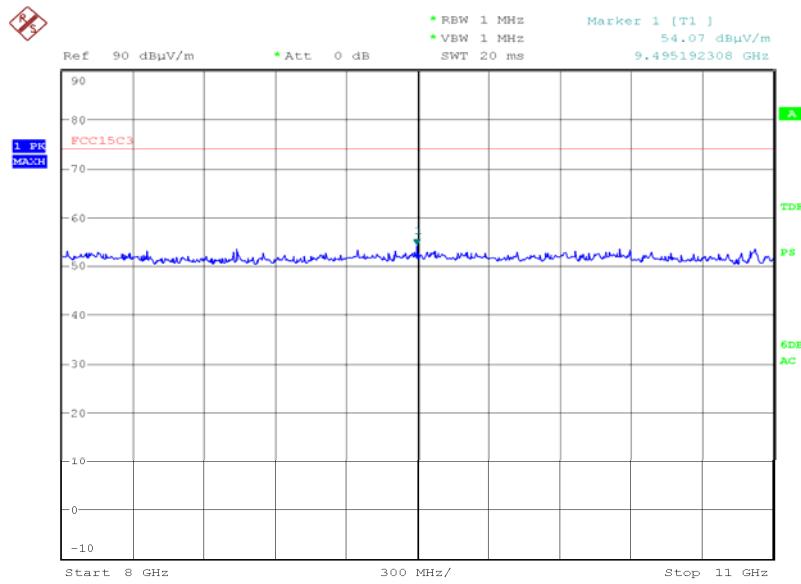
3.5GHz to 8GHzVertical PolarityHorizontal Polarity



Product Service

8GHz to 11GHzVertical Polarity

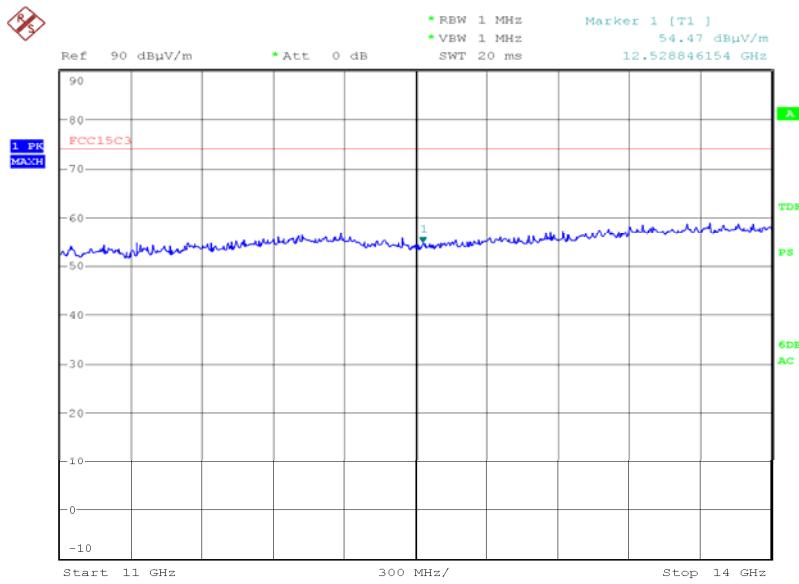
Date: 5.JUL.2008 03:38:26

Horizontal Polarity

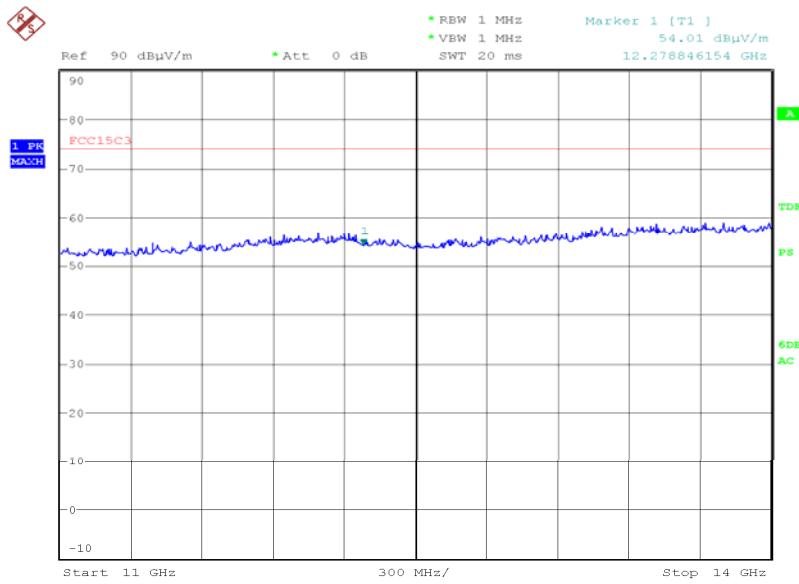
Date: 5.JUL.2008 03:20:49



Product Service

11GHz to 14GHzVertical Polarity

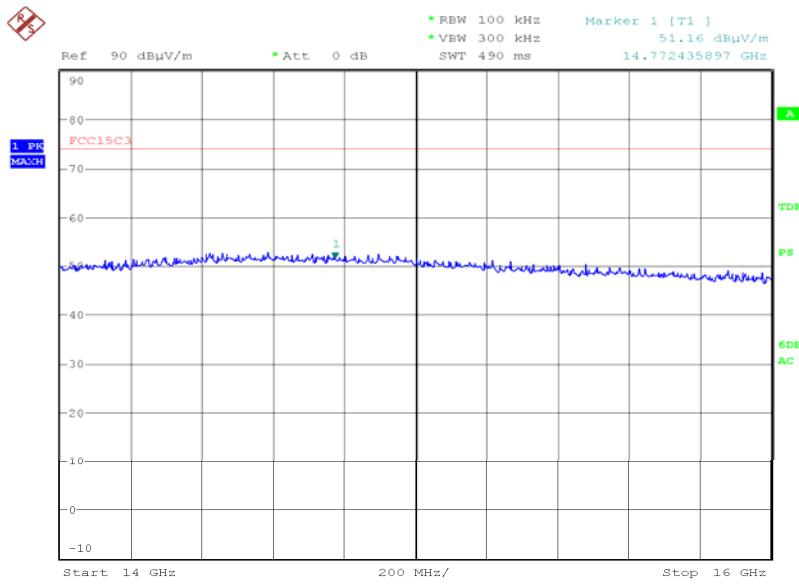
Date: 5.JUL.2008 03:36:07

Horizontal Polarity

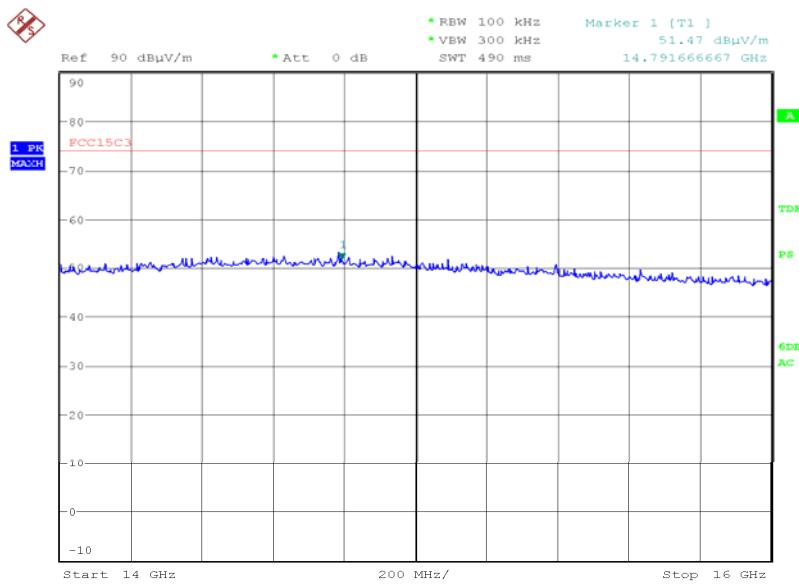
Date: 5.JUL.2008 03:23:10



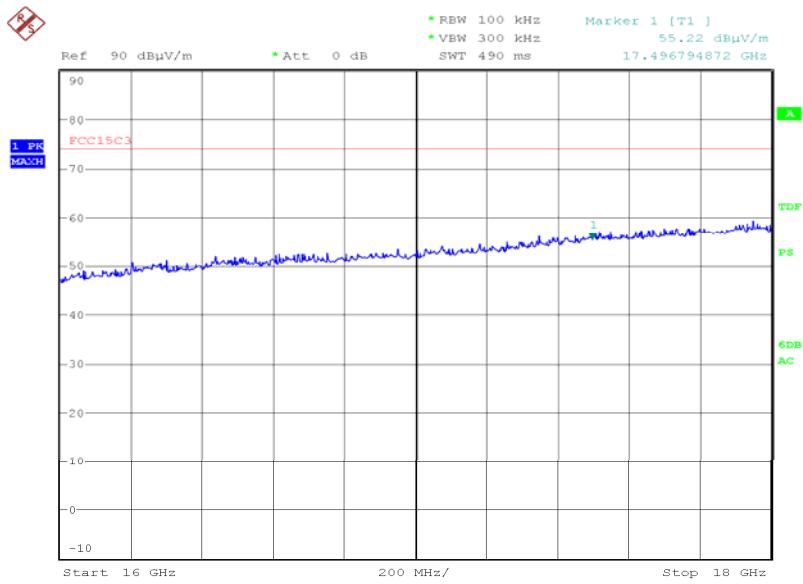
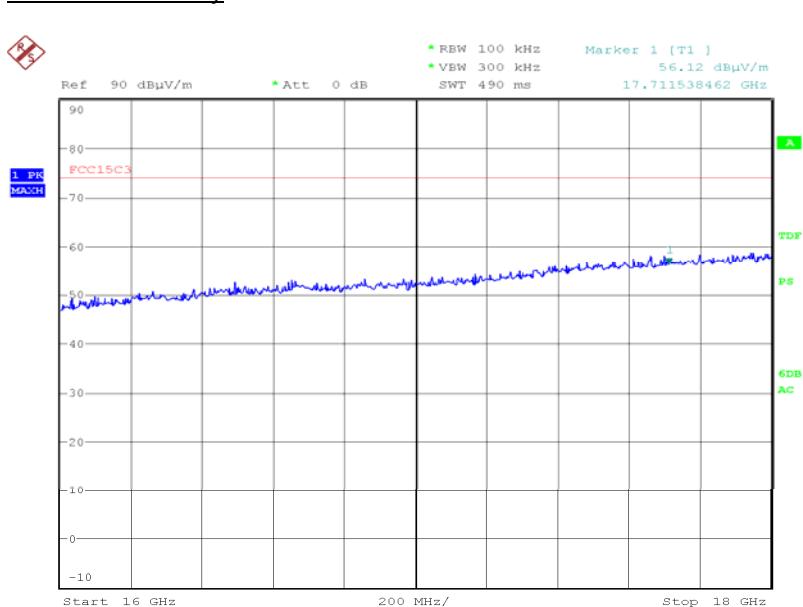
Product Service

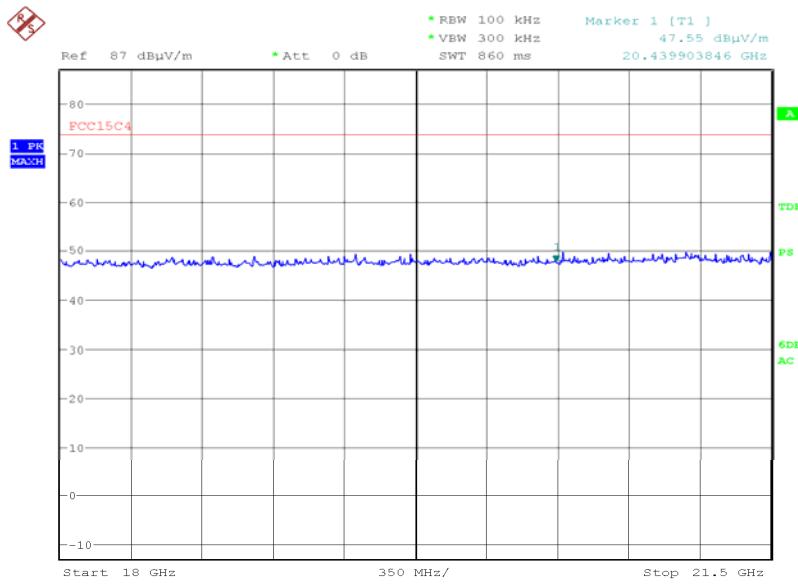
14GHz to 16GHzVertical Polarity

Date: 5.JUL.2008 03:33:59

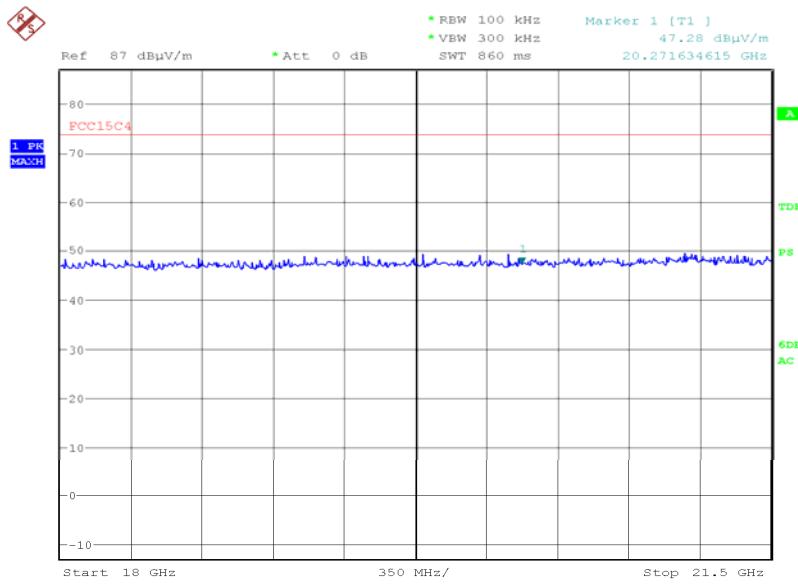
Horizontal Polarity

Date: 5.JUL.2008 03:25:12

16GHz to 18GHzVertical PolarityHorizontal Polarity

18GHz to 21.5GHzVertical Polarity

Date: 5.JUL.2008 18:27:18

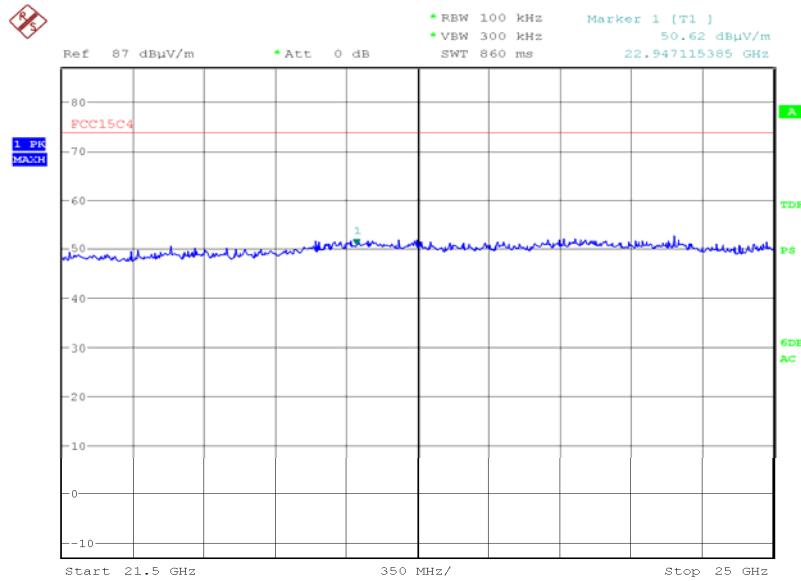
Horizontal Polarity

Date: 5.JUL.2008 18:14:26

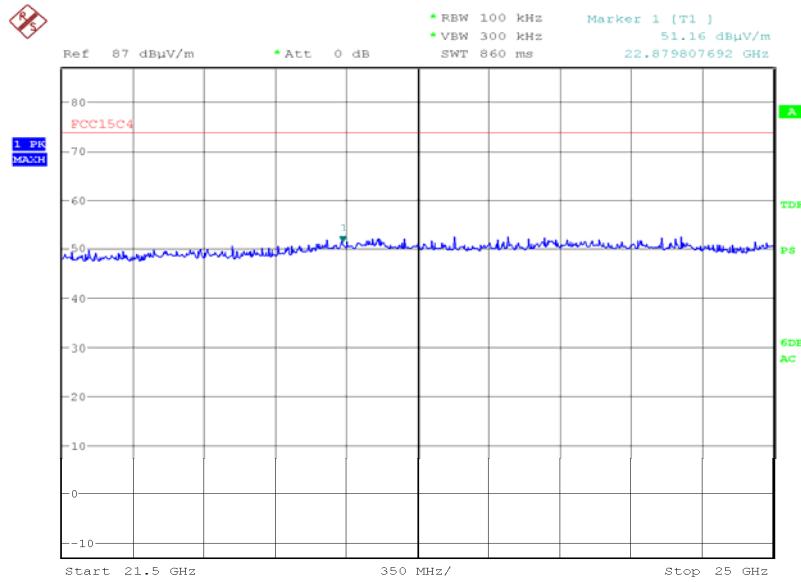


Product Service

21.5GHz to 25GHz  
Vertical Polarity



Date: 5.JUL.2008 18:20:46

Horizontal Polarity

Date: 5.JUL.2008 18:17:22



## 2.3 MAXIMUM PEAK OUTPUT POWER (RADIATED)

### 2.3.1 Specification Reference

FCC CFR 47 Part 15C: 2006, Clause 15.247(b)(4)

### 2.3.2 Equipment Under Test

Attitude E310, IMEI: 352455020004255

### 2.3.3 Date of Test and Modification State

04 July 2008 - 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 FCC CFR 47 Part 15: 2006.

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

	04 July 2008
Ambient Temperature	20.8°C
Relative Humidity	40%
Atmospheric Pressure	1009 mbar

### 2.3.7 Test Procedure

Test Performed in accordance with 15.247.



### 2.3.8 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C: 2006 for Maximum Peak Output Power.

The test results are shown below.

Frequency (MHz)	EIRP Result (dBm)	Limit (dBm)	EIRP Result (mW)	Limit (mW)
2.402	-3.90	36.0	0.407	4000
2.441	-1.00	36.0	0.794	4000
2.480	-0.40	36.0	0.912	4000

Limit	<4W or <+36dBm
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## 2.4 20dB BANDWIDTH

### 2.4.1 Specification Reference

FCC CFR 47 Part 15C: 2006, Clause 15.247 (a)(1)

### 2.4.2 Equipment Under Test

Attitude E310, IMEI: 352455020004065

### 2.4.3 Date of Test and Modification State

01 and 02 July 2008 – 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 FCC CFR 47 Part 15: 2006.

The EUT was transmitted at maximum power at all data rates via a cable to the Spectrum Analyser. The Analyser settings were adjusted to display the resultant trace on screen. The peak point of the trace was measured and the markers positioned to give the -20dBc points of the displayed spectrum.

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

Configuration 3 - Mode 1  
 - Mode 2  
 - Mode 3

### 2.4.6 Environmental Conditions

	01 July 2008	02 July 2008
Ambient Temperature	24.7°C	22.7°C
Relative Humidity	49.6%	53.4%

### 2.4.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C: 2006 for 20dB Bandwidth.

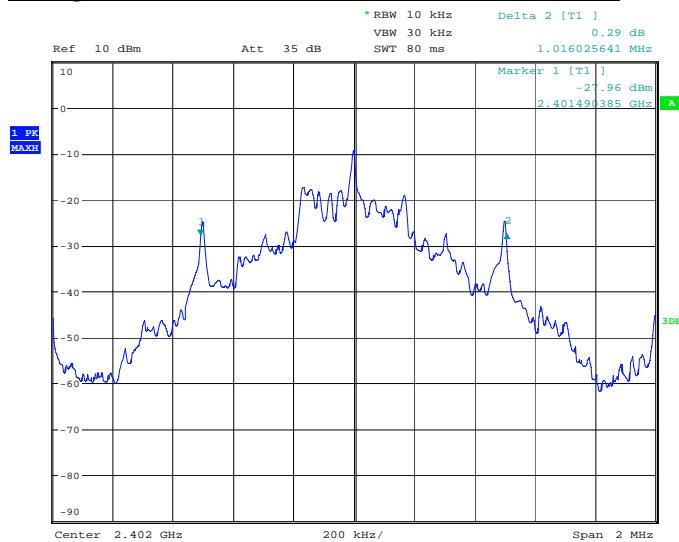
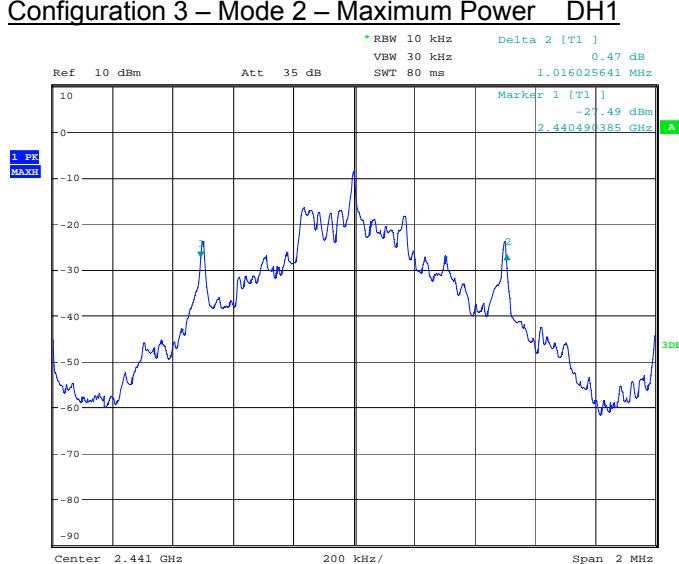
The test results are shown on the following page

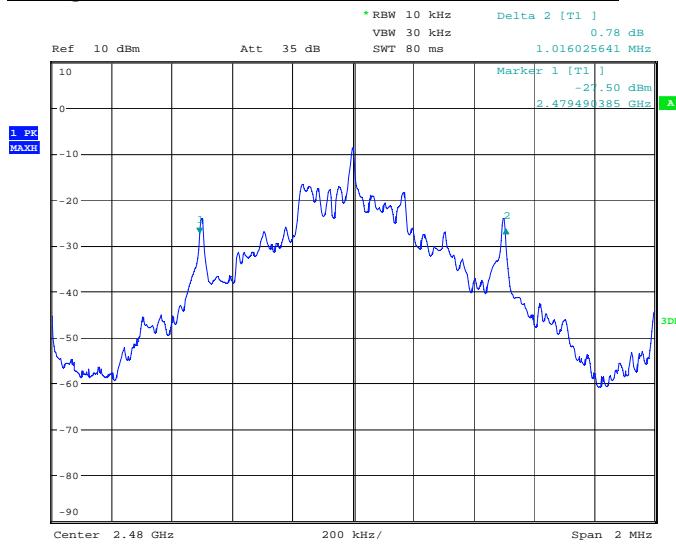

Configuration 3 - Modes 1, 2 & 3

Frequency (MHz)	Data Rate (Mbps)	20dB Bandwidth (kHz)
2402	DH1	1016.026
2441	DH1	1016.026
2480	DH1	1016.026

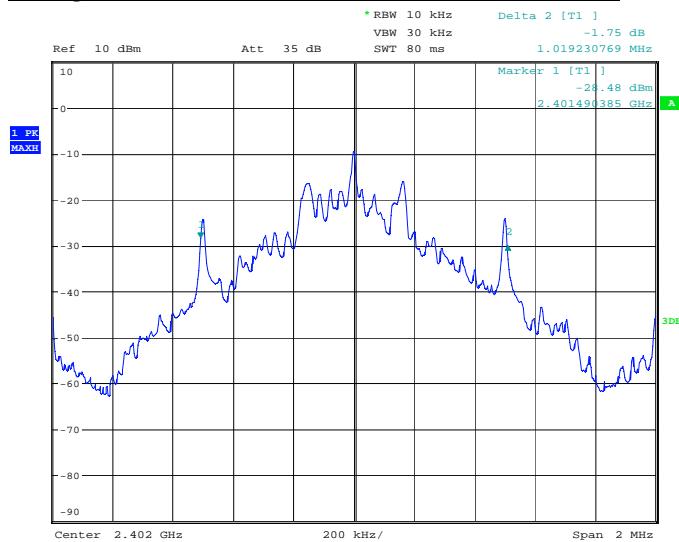
Frequency (MHz)	Data Rate (Mbps)	20dB Bandwidth (kHz)
2402	DH3	1019.231
2441	DH3	1019.231
2480	DH3	1019.231

Frequency (MHz)	Data Rate (Mbps)	20dB Bandwidth (kHz)
2402	DH5	1019.231
2441	DH5	1019.231
2480	DH5	1019.231

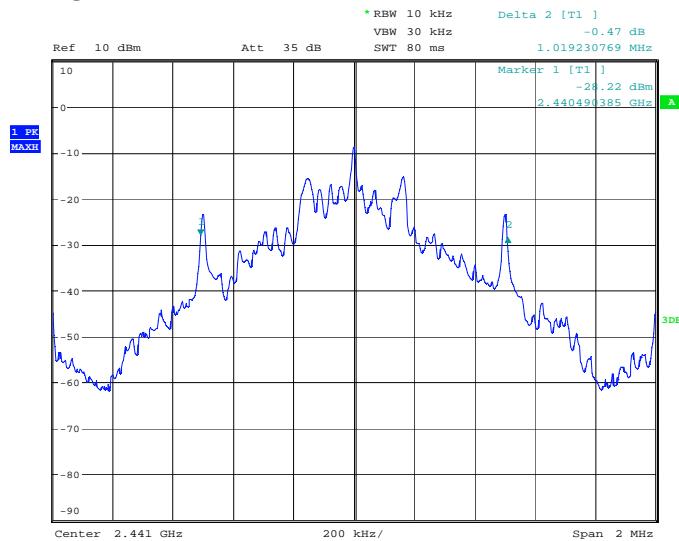
Configuration 3 – Mode 1 – Maximum Power DH1Configuration 3 – Mode 2 – Maximum Power DH1


Configuration 3 – Mode 3 – Maximum Power DH1


FR  
Date: 1.JUL.2008 15:50:38

Configuration 3 – Mode 1 – Maximum Power DH3

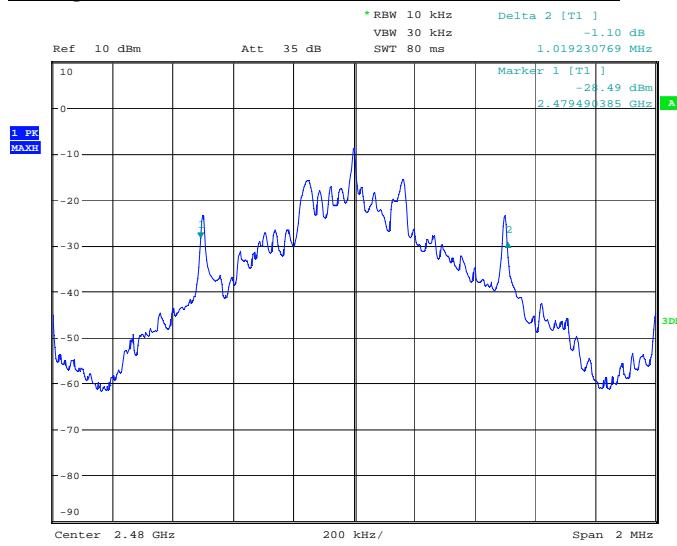
FR  
Date: 2.JUL.2008 07:27:58

Configuration 3 – Mode 2 – Maximum Power DH3

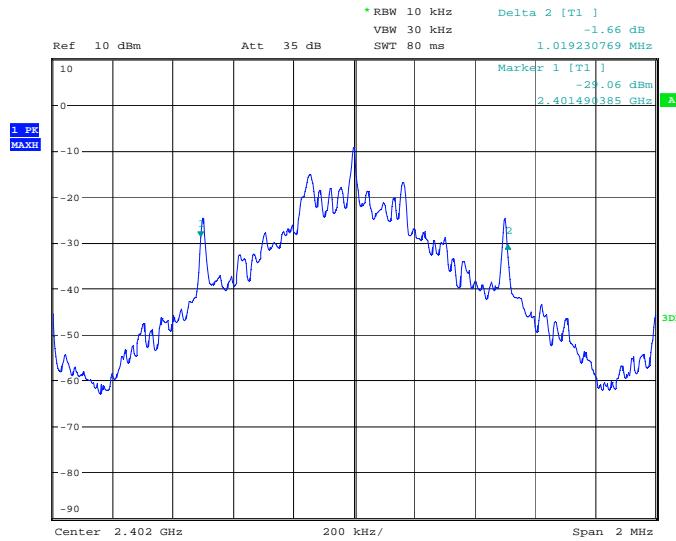
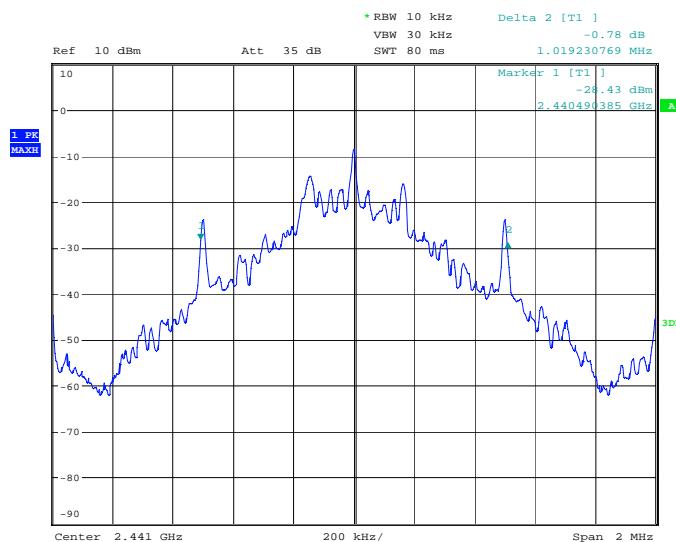
FR  
Date: 2.JUL.2008 07:31:20



Product Service

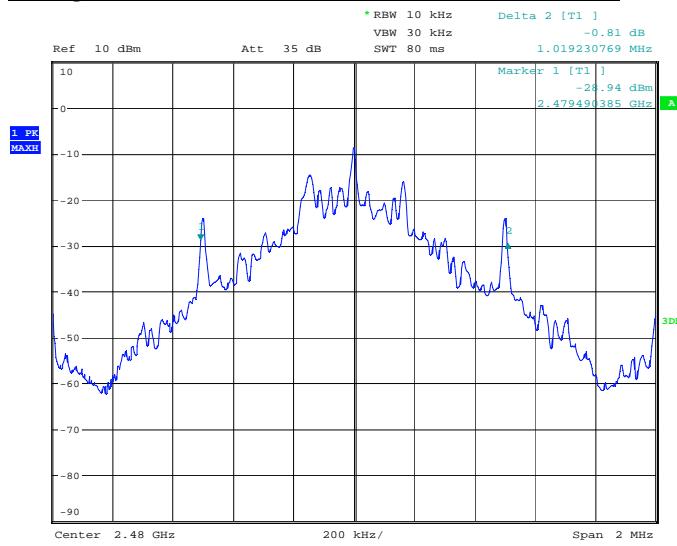
Configuration 3 – Mode 3 – Maximum Power DH3

FR  
 Date: 2.JUL.2008 07:37:03

Configuration 3 – Mode 1 – Maximum Power DH5Configuration 3 – Mode 2 – Maximum Power DH5



Product Service

Configuration 3 – Mode 3 – Maximum Power DH5

FR  
 Date: 2.JUL.2008 07:50:09



## 2.5 CHANNEL DWELL TIME (DH1)

### 2.5.1 Specification Reference

FCC CFR 47 Part 15C: 2006, Clause 15.247(a)(iii)

### 2.5.2 Equipment Under Test

Attitude E310, IMEI: 352455020004065

### 2.5.3 Date of Test and Modification State

02 July 2008 – Modification State 0

### 2.5.4 Test Equipment Used

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

### 2.5.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of FCC CFR 47 Part 15: 2006.

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

Configuration 3 - Mode 2

### 2.5.6 Environmental Conditions

02 July 2008

Ambient Temperature 22.7°C

Relative Humidity 53.4%

### 2.5.7 Test Procedure

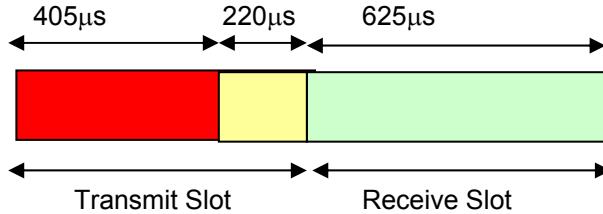
Procedure: Test Performed in accordance with 15.247.

The Bluetooth system hops at a rate of 1600 times per second. Thus, this equates to 1600 timeslots in 1 second. The DH1 data rate operates on a Transmit on 1 timeslot and Receive on 1 timeslot basis. Thus, in 1 second, there are 800 Transmit timeslots and 800 Receive timeslots.

Thus:

$$1 \text{ Timeslot} = \frac{1}{1600} = 625\mu\text{s}$$

In 1 transmit timeslot, the transmit on time is only 405μs. 220μs is reserved as off time for the synthesizer to re-tune ready for the next transmit frequency. The following timeslot is a receive slot. This process continues assuming the data rate remains the same.



DH1 Timeslot Arrangement Showing One Complete Transmit and Receive Cycle

So, with 800 Tx and 800 Rx timeslots, the transmitter is on for  $800 \times 405\mu\text{s} = 0.324$  seconds.

$$\therefore \frac{\text{Total Tx Time On}}{\text{No of Channels}} = \frac{0.324}{79} = 4.10\text{ms}$$

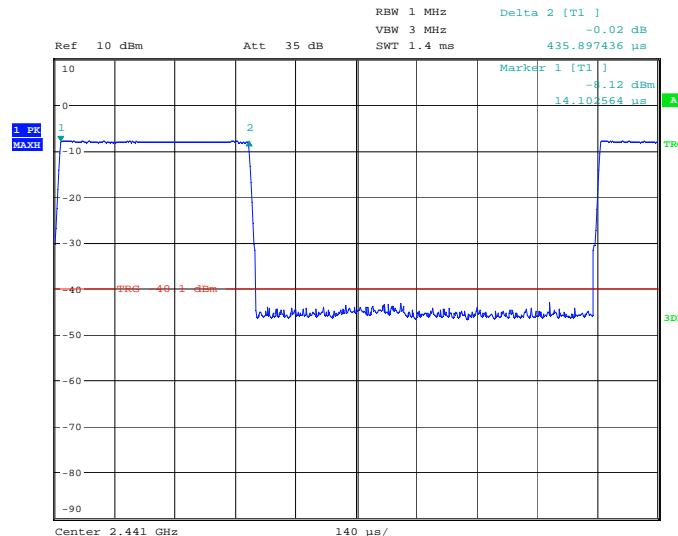
So, in 31.6 seconds, the transmitter dwell time per channel is:

$$31.6 \times 4.10\text{ms} = 0.1296 \text{ seconds}$$

### 2.5.8 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C: 2006 Channel Dwell Time (DH1).

Configuration 3 – Mode 2 – Maximum Power DH1



FR  
Date: 2.JUL.2008 08:50:37



## 2.6 CHANNEL DWELL TIME (DH3)

### 2.6.1 Specification Reference

FCC CFR 47 Part 15C: 2006, Clause 15.247(a)(iii)

### 2.6.2 Equipment Under Test

Attitude E310, IMEI: 352455020004065

### 2.6.3 Date of Test and Modification State

02 July 2008 – Modification State 0

### 2.6.4 Test Equipment Used

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

### 2.6.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of FCC CFR 47 Part 15: 2006.

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

Configuration 3 - Mode 2

### 2.6.6 Environmental Conditions

02 July 2008

Ambient Temperature 22.7°C

Relative Humidity 53.4%

### 2.6.7 Test Procedure

Test Performed in accordance with 15.247.

The Bluetooth system hops at a rate of 1600 times per second. Thus, this equates to 1600 timeslots in 1 second. With data rate DH3, the data payload is higher and can use up to 3 timeslots. When more than one timeslot is used, the frequency does not hop and transmission is continuous on all 3 slots, (ie. no receive slot in-between the 3 transmit slots). The 220µs off time for synthesizer re-tuning at the end of a slot is only used on the final slot. Thus, for one cycle, there are 3 transmit timeslots. 2 are 625µs long and the final slot is transmitting for 405µs.

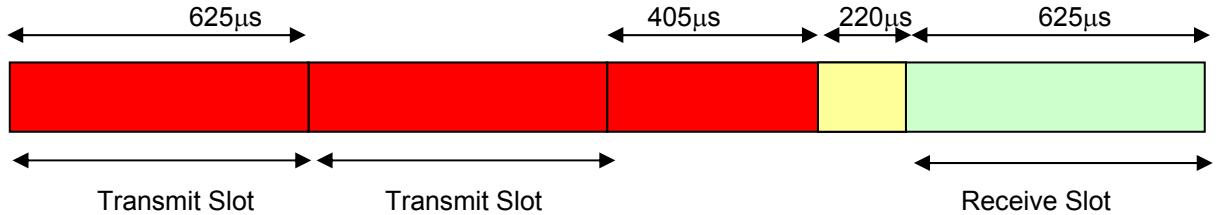
The DH3 data rate operates on a Transmit on 3 timeslots and Receives on 1 timeslot basis, (assuming maximum data payload). The frequency-hopping rate is the same. Thus, in 1 second, there are 1200 Transmit timeslots and 400 Receive timeslots.



Thus:

$$1 \text{ Timeslot} = \frac{1}{1600} = 625\mu\text{s}$$

The first 2 Transmit timeslots are transmitting for the complete  $625\mu\text{s}$ . In the third transmit slot, the transmit on time is only  $405\mu\text{s}$ .  $220\mu\text{s}$  is reserved as off time for the synthesizer to re-tune ready for the next transmit frequency. The following timeslot is a receive slot. This process continues assuming the data rate remains the same.



DH3 Timeslot Arrangement Showing One Complete Transmit and Receive Cycle, (Maximum Payload)

Thus, the transmitter for one complete transmit and receive cycle would be on for:

$$\text{Tx} \quad (2 \times 625\mu\text{s}) + (1 \times 405\mu\text{s}) = 1.655\text{ms}$$

So:

$$\begin{aligned} 800 \times 625\mu\text{s} &= 0.5 \text{ seconds} \\ 400 \times 405\mu\text{s} &= 0.162 \text{ seconds} \end{aligned}$$

$$\text{Thus: } 0.5 + 0.162 = 0.662 \text{ seconds}$$

$$\therefore \frac{\text{Total Tx Time On}}{\text{No Of Channels}} = \frac{0.662}{79} = 8.379\text{ms}$$

So, in 31.6 seconds, the transmitter dwell time per channel is:

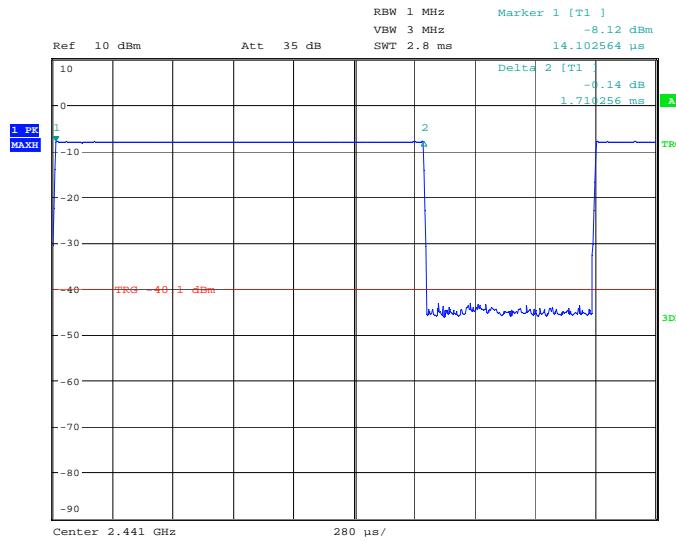
$$31.6 \times 8.379\text{ms} = 0.2648 \text{ seconds}$$



## 2.6.8 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C: 2006 Channel Dwell Time (DH3).

### Configuration 3 – Mode 2 – Maximum Power DH3



FR  
 Date: 2.JUL.2008 08:55:01



## 2.7 CHANNEL DWELL TIME (DH5)

### 2.7.1 Specification Reference

FCC CFR 47 Part 15C: 2006, Clause 15.247(a)(iii)

### 2.7.2 Equipment Under Test

Attitude E310, IMEI: 352455020004065

### 2.7.3 Date of Test and Modification State

02 July 2008 – Modification State 0

### 2.7.4 Test Equipment Used

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

### 2.7.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of FCC CFR 47 Part 15: 2006.

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

Configuration 3 - Mode 2

### 2.7.6 Environmental Conditions

02 July 2008

Ambient Temperature 22.7°C

Relative Humidity 53.4%

### 2.7.7 Test Procedure

Test Performed in accordance with 15.247.

The Bluetooth system hops at a rate of 1600 times per second. Thus, this equates to 1600 timeslots in 1 second. With data rate DH5, the data payload is higher and can use up to 5 timeslots. When more than one timeslot is used, the frequency does not hop and transmission is continuous on all 5 slots, (ie. no receive slot in-between the 5 transmit slots). The 220µs off time for synthesizer re-tuning at the end of a slot is only used on the final slot. Thus, for one cycle, there are 5 transmit timeslots. 4 are 625µs long and the final slot is transmitting for 405µs.

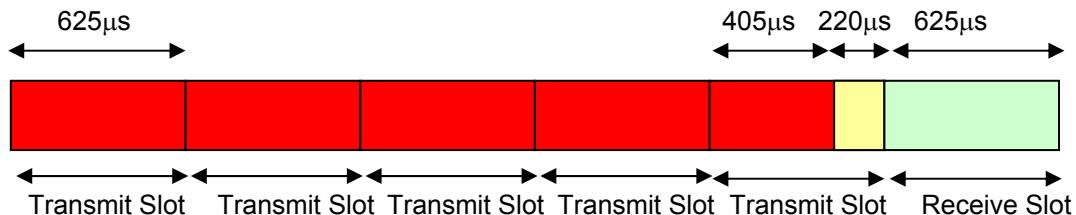


The DH5 data rate operates on a Transmit on 5 timeslots and Receives on 1 timeslot basis, (assuming maximum data payload). The frequency-hopping rate is the same. Thus, in 1 second, there are 1333.3 Transmit timeslots and 266.7 Receive timeslots.

Thus:

$$1 \text{ Timeslot} = \frac{1}{1600} = 625\mu\text{s}$$

The first 4 Transmit timeslots are transmitting for the complete  $625\mu\text{s}$ . In the fifth transmit slot, the transmit on time is only  $405\mu\text{s}$ .  $220\mu\text{s}$  is reserved as off time for the synthesizer to re-tune ready for the next transmit frequency. The following timeslot is a receive slot. This process continues assuming the data rate remains the same.



DH5 Timeslot Arrangement Showing One Complete Transmit and Receive Cycle, (Maximum Payload)

Thus, the transmitter for one complete transmit and receive cycle would be on for:

$$\text{Tx} \quad (2 \times 625\mu\text{s}) + (1 \times 405\mu\text{s}) = 2.905\text{ms}$$

So:

$$\begin{aligned} 1066.7 \times 625\mu\text{s} &= 0.666 \text{ seconds} \\ 266.7 \times 405\mu\text{s} &= 0.108 \text{ seconds} \end{aligned}$$

$$\text{Thus: } 0.666 + 0.108 = 0.774 \text{ seconds}$$

$$\therefore \frac{\text{Total Tx Time On}}{\text{No Of Channels}} = \frac{0.774}{79} = 9.797\text{ms}$$

So, in 31.6 seconds, the transmitter dwell time per channel is:

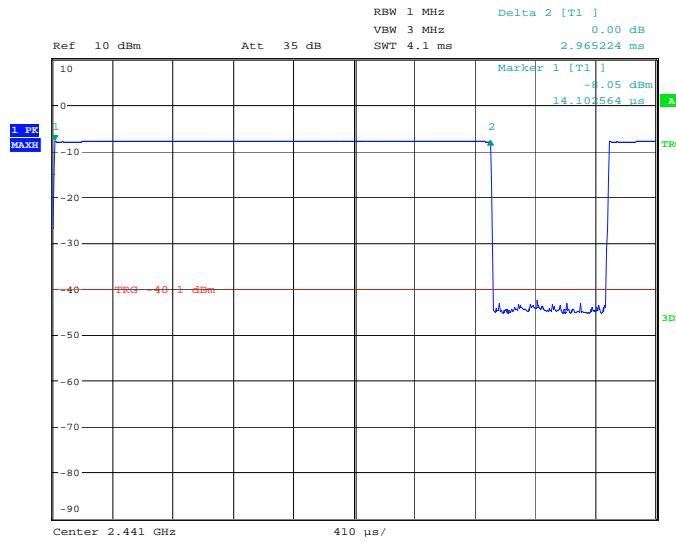
$$31.6 \times 9.797\text{ms} = 0.31 \text{ seconds}$$



## 2.7.8 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C: 2006 Channel Dwell Time (DH5).

### Configuration 3 – Mode 2 – Maximum Power DH5



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 Date: 2.JUL.2008 08:58:10



## 2.8 CHANNEL SEPARATION

### 2.8.1 Specification Reference

FCC CFR 47 Part 15C: 2006, Clause 15.247(a)(1)

### 2.8.2 Equipment Under Test

Attitude E310, IMEI: 352455020004065

### 2.8.3 Date of Test and Modification State

02 July 2008 – Modification State 0

### 2.8.4 Test Equipment Used

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

### 2.8.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of FCC CFR 47 Part 15: 2006.

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

Configuration 3 - Mode 4

### 2.8.6 Environmental Conditions

02 July 2008

Ambient Temperature 22.7°C

Relative Humidity 53.4%

### 2.8.7 Test Procedure

The EUT was transmitted at maximum power into a Spectrum Analyser. The trace was set to Max Hold to store several adjacent channels on screen. Using the marker delta function, the markers were positioned to show the separation between adjacent channels.

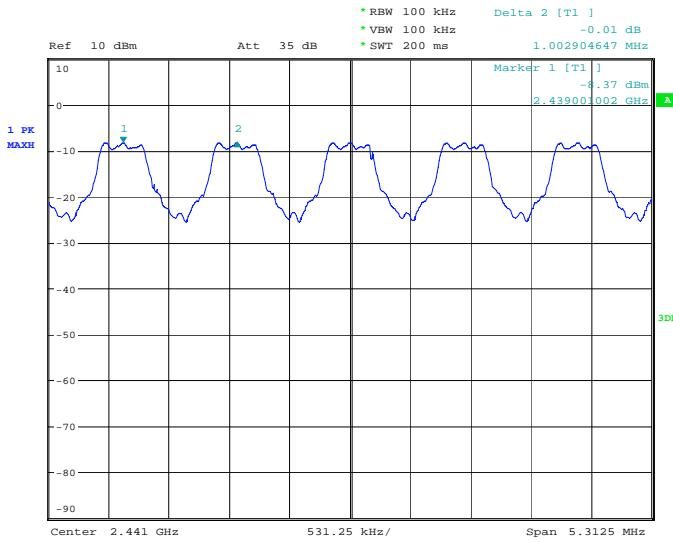
### 2.8.8 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C: 2006 for Channel Separation.

The test results are shown on the follow page



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 Date: 2.JUL.2008 09:38:39

The system channel separation is specified as being 1MHz. The measured channel separation from the plot above is: 1002.905kHz.

Limit	>25kHz
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## 2.9 NUMBER OF HOPPING CHANNELS

### 2.9.1 Specification Reference

FCC CFR 47 Part 15C: 2006, Clause 15.247(a)(1)

### 2.9.2 Equipment Under Test

Attitude E310, IMEI: 352455020004065

### 2.9.3 Date of Test and Modification State

02 July 2008 – Modification State 0

### 2.9.4 Test Equipment Used

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

### 2.9.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of FCC CFR 47 Part 15: 2006.

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

Configuration 3 - Mode 4

### 2.9.6 Environmental Conditions

02 July 2008

Ambient Temperature 22.7°C

Relative Humidity 53.4%

### 2.9.7 Test Procedure

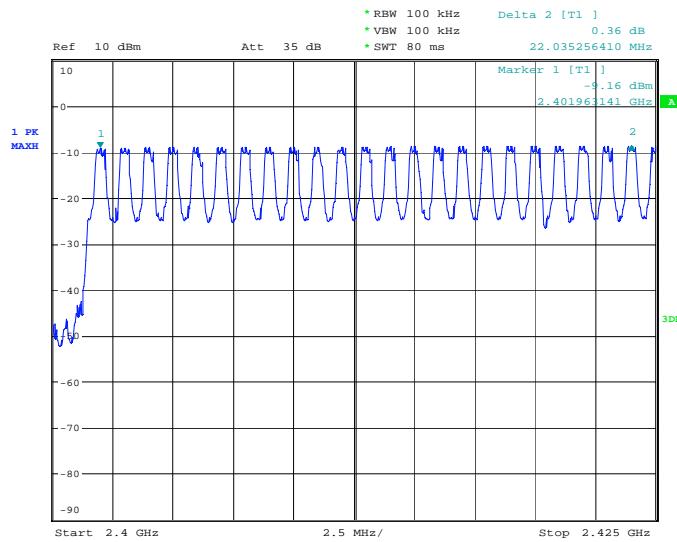
Test Performed in accordance with 15.247.

The EUT was connected to a Spectrum Analyser via a cable. The EUT was set to transmit on maximum power and hopping on all channels. The span was adjusted to show the individual channels. To reasonably display the number of channels, the occupied band was split into four traces. The display trace was set to Max Hold and the plots recorded.

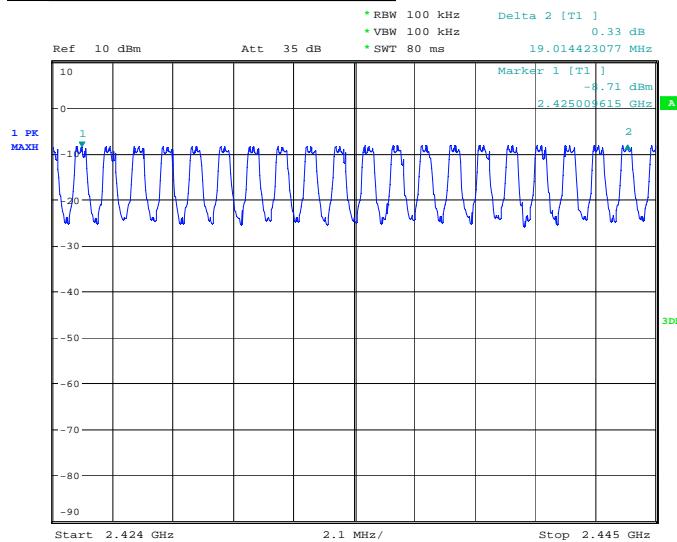
### 2.9.8 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C: 2006 for Number of Hopping Channels.

The test results are shown on the following page

Trace Showing Channels 1 - 23

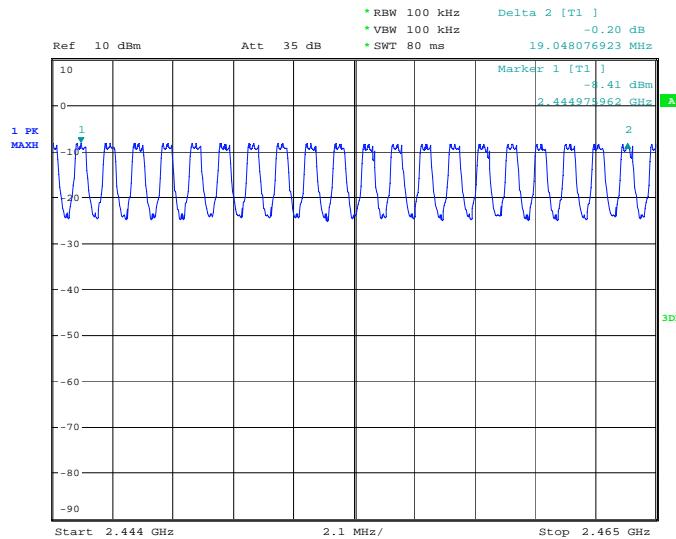
FR  
 Date: 2.JUL.2008 10:18:15

Trace Showing Channels 24 - 43

FR  
 Date: 2.JUL.2008 10:13:49



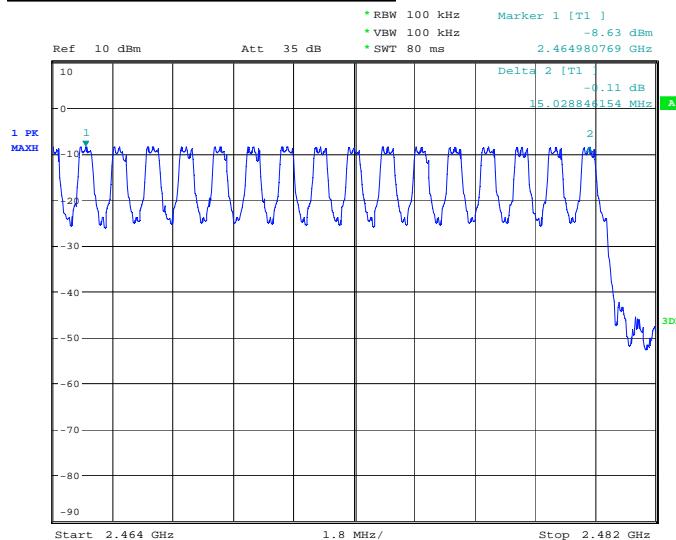
### Trace Showing Channels 44 - 63



FR

Date: 2.JUL.2008 10:09:05

### Trace Showing Channels 64 - 79



FR

Date: 2.JUL.2008 10:02:11

Limit	≥75 channels
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## 2.10 SPURIOUS CONDUCTED EMISSIONS

### 2.10.1 Specification Reference

FCC CFR 47 Part 15C: 2006, Clause 15.247(c)

### 2.10.2 Equipment Under Test

Attitude E310, IMEI: 352455020004065

### 2.10.3 Date of Test and Modification State

02 July 2008 – Modification State 0

### 2.10.4 Test Equipment Used

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

### 2.10.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of FCC CFR 47 Part 15: 2006.

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

Configuration 3 - Mode 4

### 2.10.6 Environmental Conditions

02 July 2008

Ambient Temperature 22.7°C

Relative Humidity 53.4%

### 2.10.7 Test Procedure

In accordance with Part 15.247(c), the Spurious Conducted Emissions from the antenna terminal were measured. The transmitter output power was attenuated using an RF splitter, the frequency spectrum investigated from 9kHz to 25 GHz. The EUT was set to transmit on full power and frequency hopping on all channels. The resolution and video bandwidths were set to 100kHz in accordance with Part 15.247. The spectrum analyser detector was set to Max Hold.

With the EUT transmitting at maximum power, the Spectrum Analyser was set to Max Hold and the fundamental peak measured in a RBW and VBW of 100kHz. This level was used to determine the limit line as displayed on the plots of -20dBc.

The maximum path loss across each measurement band was used as the reference level offset to ensure worst case results.



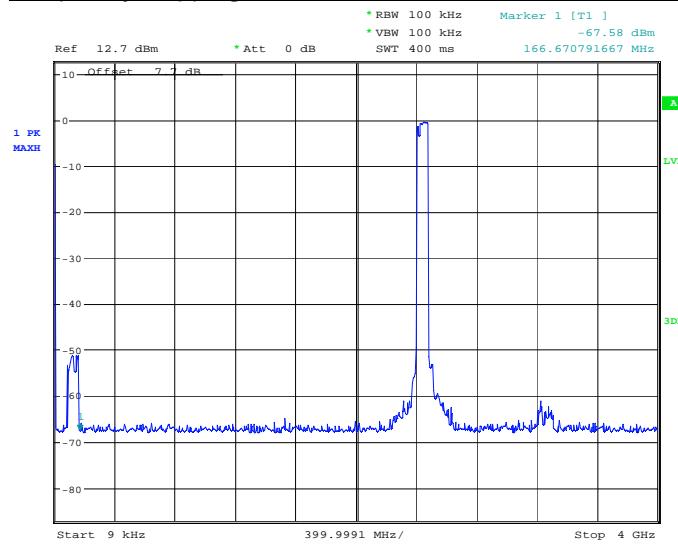
## 2.10.8 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C: 2006 for Spurious Conducted Emissions.

The test results are shown below.

### Spurious Conducted Emissions (9kHz – 4GHz)

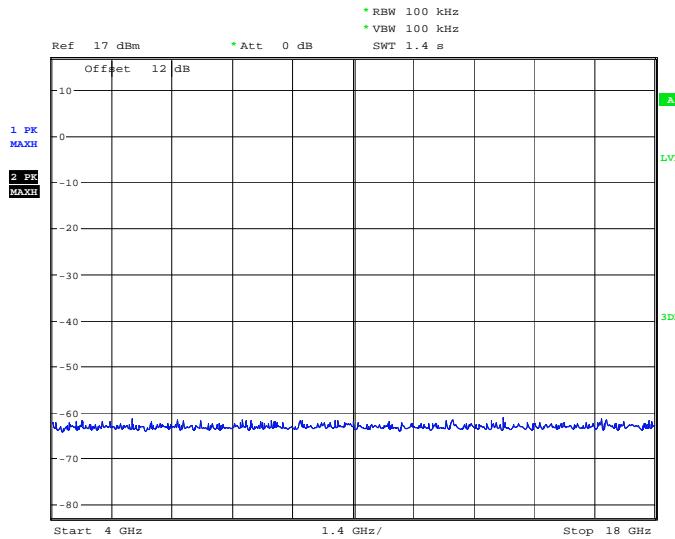
#### Frequency Hopping On All Channels – Maximum Power (DH1) Configuration 3 - Mode 4



FR  
Date: 2.JUL.2008 13:57:14

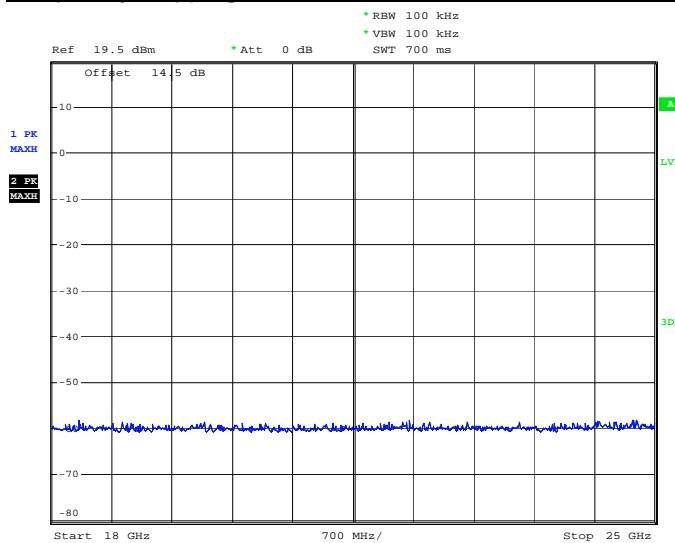


Spurious Conducted Emissions (4GHz – 18GHz)  
Frequency Hopping On All Channels – Maximum Power (DH1) Configuration 3 - Mode 4

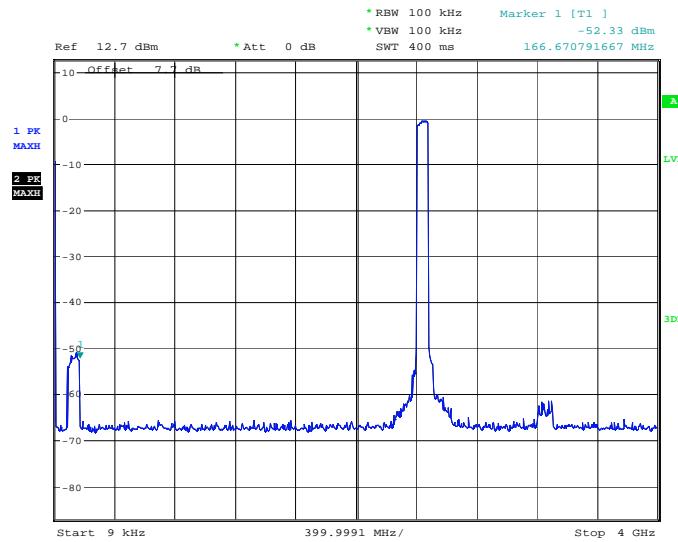


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Spurious Conducted Emissions (18GHz – 25GHz)  
Frequency Hopping On All Channels – Maximum Power (DH1) Configuration 3 - Mode 4

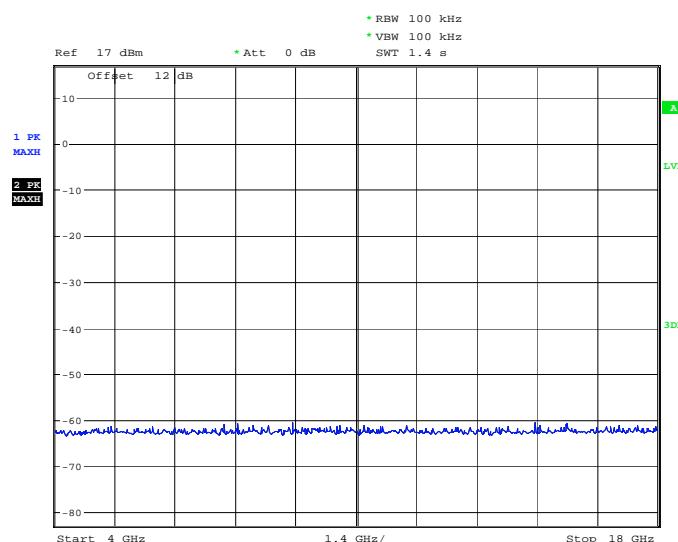


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 Date: 2.JUL.2008 14:13:34

Spurious Conducted Emissions (9kHz – 4GHz)Frequency Hopping On All Channels – Maximum Power (DH3) Configuration 3 - Mode 4

FR

Date: 2.JUL.2008 13:59:19

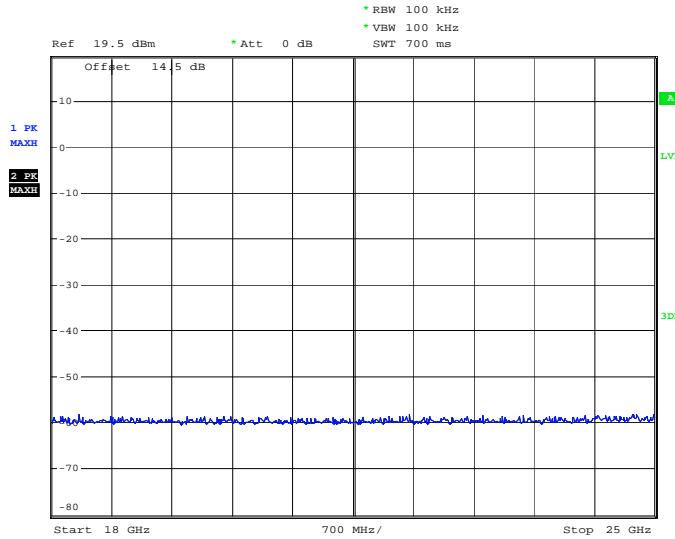
Spurious Conducted Emissions (4GHz – 18GHz)Frequency Hopping On All Channels – Maximum Power (DH3) Configuration 3 - Mode 4

FR

Date: 2.JUL.2008 14:08:53

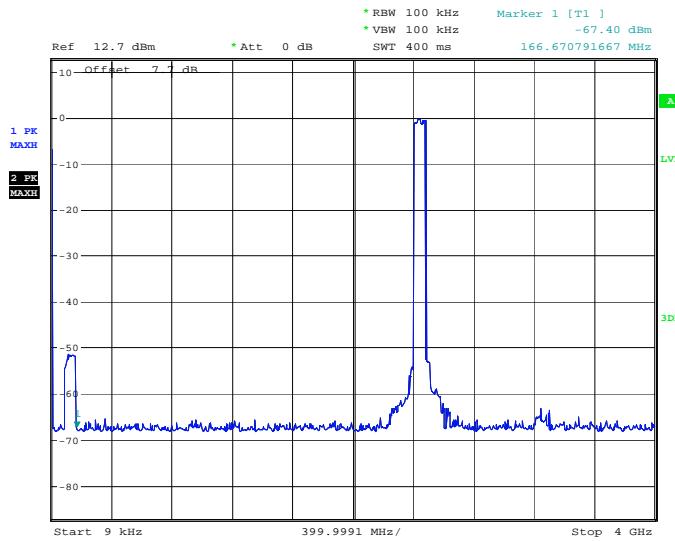


**Spurious Conducted Emissions (18GHz – 25GHz)**  
**Frequency Hopping On All Channels – Maximum Power (DH3) Configuration 3 - Mode 4**

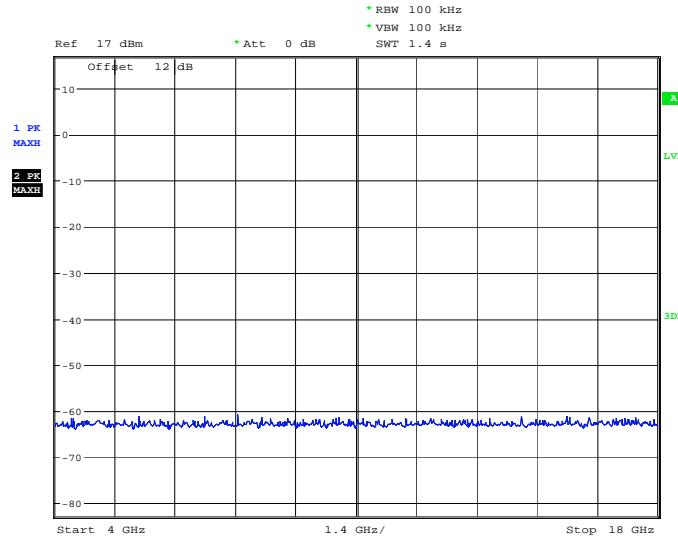


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 Date: 2.JUL.2008 14:16:25

**Spurious Conducted Emissions (9kHz – 4GHz)**  
**Frequency Hopping On All Channels – Maximum Power (DH5) Configuration 3 - Mode 4**

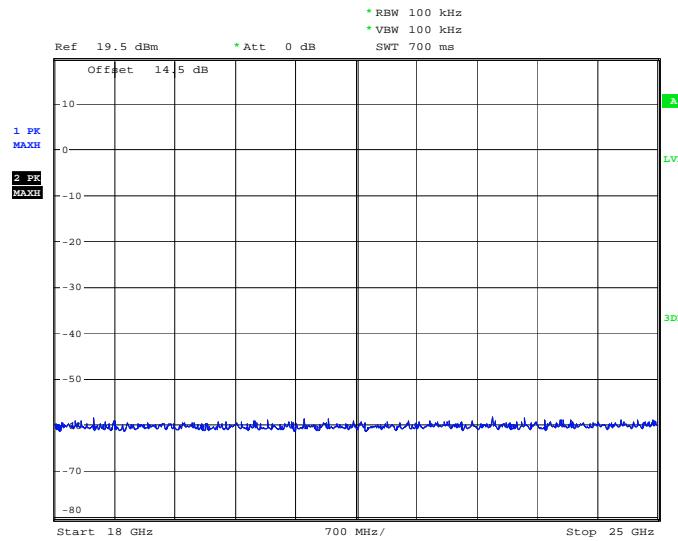


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 Date: 2.JUL.2008 14:00:48

Spurious Conducted Emissions (4GHz – 18GHz)Frequency Hopping On All Channels – Maximum Power (DH5) Configuration 3 - Mode 4

FR

Date: 2.JUL.2008 14:04:42

Spurious Conducted Emissions (18GHz – 25GHz)Frequency Hopping On All Channels – Maximum Power (DH5) Configuration 3 - Mode 4

FR

Date: 2.JUL.2008 14:17:45



## 2.11 MAXIMUM PEAK OUTPUT POWER (CONDUCTED)

### 2.11.1 Specification Reference

FCC CFR 47 Part 15C: 2006, Clause 15.247(b)(1)

### 2.11.2 Equipment Under Test

Attitude E310, IMEI: 352455020004065

### 2.11.3 Date of Test and Modification State

02 July 2008 – Modification State 0

### 2.11.4 Test Equipment Used

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

### 2.11.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of FCC CFR 47 Part 15: 2006.

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

Configuration 3 - Mode 1  
- Mode 2  
- Mode 3

### 2.11.6 Environmental Conditions

02 July 2008  
Ambient Temperature 22.7°C  
Relative Humidity 53.4%

### 2.11.7 Test Procedure

Test Performed in accordance with 15.247.

The EUT was connected to a Peak Power Analyser, (8990A), via an RF cable. Using a Signal Generator and the 8990A, the path loss of the cable was measured and entered as an offset adjustment into the 8990A. The peak level was recorded and compared with the test limits.



### 2.11.8 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C: 2006 for Maximum Peak Output Power (Conducted).

The test results are shown below.

Configuration 3 - Modes 1, 2 & 3

DH1 Results

Frequency (MHz)	Output Power (dBm)	Result (mW)
2402.0	-1.14	0.769
2441.0	-0.35	0.923
2480.0	-0.56	0.879

DH3 Results

Frequency (MHz)	Output Power (dBm)	Result (mW)
2402.0	-1.25	0.750
2441.0	-0.49	0.893
2480.0	-0.64	0.863

DH5 Results

Frequency (MHz)	Output Power (dBm)	Result (mW)
2402.0	-1.25	0.750
2441.0	-0.30	0.933
2480.0	-0.40	0.912

Limit	<1W or <+30dBm
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Product Service

## **SECTION 3**

### **TEST EQUIPMENT USED**



### 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 EMC - Conducted Emissions</b>					
Transient Limiter	Hewlett Packard	11947A	15	12	29-Sep-2008
LISN (1 Phase)	Chase	MN 2050	336	12	18-Mar-2009
Screened Room (2)	Rainford	Rainford	1542	-	TU
Test Receiver	Rohde & Schwarz	ESIB26	2085	12	3-Dec-2008
Transient Limiter	Hewlett Packard	11947A	2378	12	18-Jun-2009
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	15-Mar-2009
<b>Section 2.3 EMC - Maximum Output Power</b>					
Modulation Analyser	Hewlett Packard	8901B	45	12	4-Jul-2008
Antenna (Bilog)	Schaffner	CBL6143	287	24	21-Jan-2010
Screened Room (5)	Rainford	Rainford	1545	36	11-Feb-2011
Antenna (Bilog)	Chase	CBL6143	2904	24	28-Nov-2009
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	15-Mar-2009
<b>Section 2.2 EMC - Radiated Emissions</b>					
Antenna (Double Ridge Guide)	Link Microtek Ltd	AM180HA-K-TU2	230	24	24-Aug-2008
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	234	12	2-Sep-2008
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	235	12	2-Sep-2008
Dual Power Supply Unit	Thurlby	PL320	288	-	TU
Termination (8ohm)	Rohde & Schwarz	Rt = 8	1522	-	TU
Pre-Amplifier	Phase One	PS04-0085	1532	-	TU
Pre-Amplifier	Phase One	PS04-0086	1533	-	TU
Pre-Amplifier	Phase One	PS04-0087	1534	-	TU
Screened Room (5)	Rainford	Rainford	1545	36	11-Feb-2011
Signal Generator	Rohde & Schwarz	SMR40	1589	12	22-Oct-2008
Mast Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Turntable/Mast Controller	EMCO	2090	1607	-	TU
High Pass Filter (4GHz)	RLC Electronics	F-100-4000-5-R	2773	-	TU
GSM Test Set	Rohde & Schwarz	CMU 200	2809	12	21-Apr-2009
Filter (Hi Pass)	Lorch	9HP7-7000-SR	2833	12	31-Oct-2008
Filter (High Pass)	RLC Electronics	RLC-F100-1500-S-R	2843	-	TU
Antenna (Bilog)	Chase	CBL6143	2904	24	28-Nov-2009
Radio Communications Test Set	Rohde & Schwarz	CMU 200	3035	12	9-Jun-2009
Antenna (DRG Horn)	ETS-LINDGREN	3115	3125	12	23-Apr-2009
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	3171	12	11-Jul-2008
Compliance 3 Emissions	Schaffner	C3e Software V.4.00.00	3274	-	N/A - Software
High Pass Filter (3GHz)	RLC Electronics	F-100-3000-5-R	3349	12	23-May-2009
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	15-Mar-2009



Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
<b>Section 2.4, 2.5, 2.6, 2.7, 2.8, 2.9 and 2.11 Radio - 20 dB Bandwidth, Channel Bandwidth, Channel Separation, Number of Hopping Channels and Maximum Peak Output Power (Conducted)</b>					
Broadband Resistive Power Divider	Weinschel	1506A	601	12	18-Aug-2008
Multimeter	Iso-tech	Iso Tech	2419	12	13-Aug-2008
Power Supply Unit	Weir	460	2754	-	TU
Hygrometer	Rotronic	I-1000	3220	12	9-Apr-2009
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	21-May-2009
<b>Section 2.10 Radio - Conducted Spurious Emissions</b>					
Broadband Resistive Power Divider	Weinschel	1506A	601	12	18-Aug-2008
Multimeter	Iso-tech	Iso Tech	2419	12	13-Aug-2008
Power Supply Unit	Weir	460	2754	-	TU
Hygrometer	Rotronic	I-1000	3220	12	9-Apr-2009
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	21-May-2009
Network Analyser	Rohde & Schwarz	100127	3548	12	16/04/2009

TU – Traceability Unscheduled



### 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
Worst case error for both Time and Frequency measurement 12 parts in $10^6$ .		

\* In accordance with CISPR 16-4



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.

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