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Report On

FCC Testing of the
Modelabs Manufacture
CD1D

COMMERCIAL-IN-CONFIDENCE

FCC ID: WCKCD1D

Document 75903927 Report 01 Issue 4 June 2008

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REPORT ON FCC Testing of the
Modelabs Manufacture
CD1D

Document 75903927 Report 01 Issue 4

June 2008

PREPARED FOR Avantech Mobile
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PREPARED BY

J Holcombe
EMC Engineer

APPROVED BY

J Adams
Authorised Signatory

DATED 26 June 2008

This report has been up-issued to Issue 4 to amend the model name

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 15B. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineers;

J Holcombe

A Guy

UKAS TESTING 0141

Product Service

CONTENTS

Product Service

SECTION 1

REPORT SUMMARY

FCC Testing of the
Modelabs Manufacture
CD1D

Product Service

1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Modelabs Manufacture CD1D to the requirements of FCC CFR 47 Part 15B: 2006.

Objective	To perform Electromagnetic Compatibility (EMC) Qualification Approval Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	Modelabs Manufacture
Model Number(s)	CD1D
Serial Number(s)	IMEI 004401750007177
Software Version	0259000505020000
Hardware Version	PrePilot
Number of Samples Tested	1
Test Specification/Issue/Date	FCC CFR 47 Part 15B: 2006 Industry Canada
Order Number Date	08/0000000152 21 May 2008
Start of Test	04 June 2008
Finish of Test	05 June 2008
Name of Engineer(s)	J Holcombe A Guy

Product Service

1.2 BRIEF SUMMARY OF RESULTS

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

Configuration 1 - Mobile Handset with Battery						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
2.1	15.109	Radiated Emissions (Enclosure Port)	850 Middle Channel Idle	0	Pass	FCC CFR 47 Part 15: 2006
			1900 Middle Channel Idle	0	Pass	
			2.4GHz Middle Channel Idle	0	Pass	
	15.107	Conducted Emissions (AC Power Port)	850 Middle Channel Idle		N/A	FCC CFR 47: Part 15: 2006
			1900 Middle Channel Idle		N/A	
			2.4GHz Middle Channel Idle		N/A	

Configuration 2 - Mobile Handset with AC Adaptor						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	15.109	Radiated Emissions (Enclosure Port)	850 Middle Channel Idle		N/A	FCC CFR 47 Part 15: 2006
			1900 Middle Channel Idle		N/A	
			2.4GHz Middle Channel Idle		N/A	
2.2	15.107	Conducted Emissions (AC Power Port)	850 Middle Channel Idle	0	Pass	FCC CFR 47 Part 15: 2006
			1900 Middle Channel Idle	0	Pass	
			2.4GHz Middle Channel Idle	0	Pass	

N/A – Not Applicable

Product Service

1.3 DECLARATION OF BUILD STATUS

MAIN EUT			
MANUFACTURING DESCRIPTION	Cellular mobile phone manufacturer		
MANUFACTURER	Modelabs Manufacture		
TYPE	Cellular mobile phone		
PART NUMBER	CD1D		
SERIAL NUMBER	031425000814000036		
HARDWARE VERSION	PrePilot		
SOFTWARE VERSION	0259000505020000		
TRANSMITTER OPERATING RANGE	N/A		
RECEIVER OPERATING RANGE	Part15B 869.2-893.8 MHz, 1930.2-1989.8 MHz, 2402-2480MHz		
COUNTRY OF ORIGIN	France		
INTERMEDIATE FREQUENCIES	Direct conversion		
ITU DESIGNATION OF EMISSION	300KGXW		
HIGHEST INTERNALLY GENERATED FREQUENCY	2480MHz		
OUTPUT POWER (W or dBm)	N/A		
FCC ID	WCKCD1D		
BATTERY/POWER SUPPLY			
MANUFACTURING DESCRIPTION	Batterie'e Manufacturer		
MANUFACTURER	XWODA		
TYPE	Lithium Ion		
PART NUMBER	XWD00016063		
VOLTAGE	3.7 V Nominal		
COUNTRY OF ORIGIN	China		
MODULES (if applicable)			
MANUFACTURING DESCRIPTION			
MANUFACTURER			
TYPE			
POWER			
FCC ID			
COUNTRY OF ORIGIN			
INDUSTRY CANADA ID			
EMISSION DESIGNATOR			
DHSS/FHSS/COMBINED OR OTHER			
ANCILLARIES (if applicable)			
MANUFACTURING DESCRIPTION			
MANUFACTURER			
TYPE			
PART NUMBER			
SERIAL NUMBER			
COUNTRY OF ORIGIN			

Signature 

Date: 02 June 2008
Declaration of Build Status Serial Number: 75903927-01

Product Service

1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) was a Modelabs Manufacture CD1D Cellular Mobile Phone as shown in the photograph below. A full technical description can be found in the Manufacturers documentation.

Equipment Under Test

Product Service

1.4.2 Test Configuration

Configuration 1: Mobile Handset with Battery

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

Configuration 2: Mobile Handset with AC Adaptor

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

1.4.3 Modes of Operation

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

Mode 1 - 850 Middle Channel Idle

Mode 2 - 1900 Middle Channel Idle

Mode 3 - 2.4GHz Middle Channel Idle

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 a 3.7V nominal battery supply during radiated emissions

The EUT was powered from an AC/DC adaptor via 120V 60Hz AC supply during conducted emissions

FCC Accreditation
90987 Octagon House, Fareham Test Laboratory

1.6 DEVIATIONS FROM THE STANDARD

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

1.7 MODIFICATION RECORD

No modifications were made to the EUT during testing.

Product Service

SECTION 2

TEST DETAILS

FCC Testing of the
Modelabs Manufacture
CD1D

Product Service

2.1 RADIATED EMISSIONS (ENCLOSURE PORT)

2.1.1 Specification Reference

FCC CRF 47 Part 15B: 2006, Clause 15.109

2.1.2 Equipment Under Test

CD1D IMEI 004401750007177

2.1.3 Date of Test and Modification State

04 June 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 1 - Mode 1
- Mode 2
- Mode 3

2.1.6 Environmental Conditions

	04 June 2008
Ambient Temperature	19 - 21°C
Relative Humidity	39 - 49%
Atmospheric Pressure	1012 - 1014mbar

Product Service

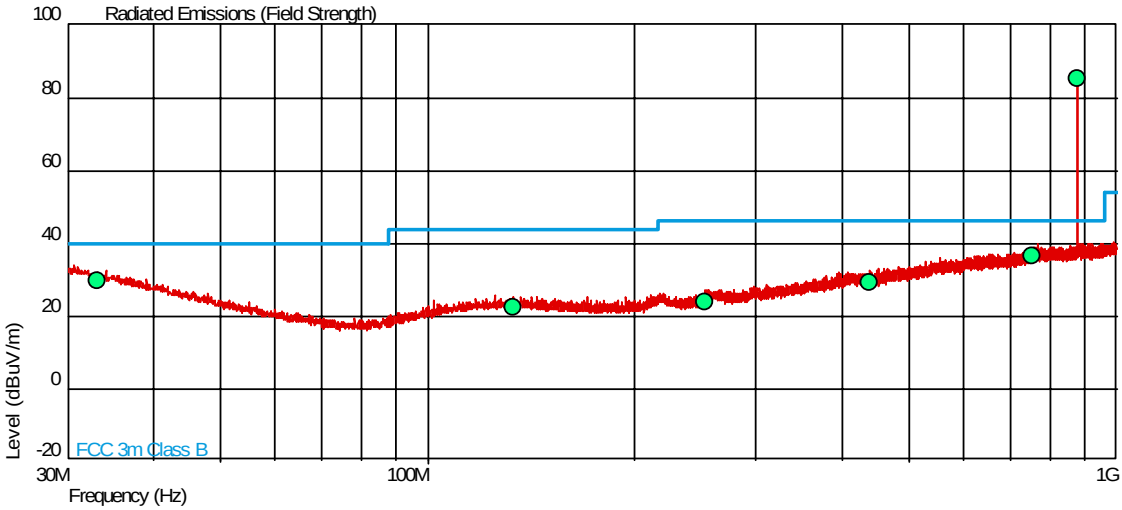
2.1.7 Test Results

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

The test results are shown below.

Configuration 1 - Mode 1

30MHz to 1GHz



Frequency (MHz)	QP Level		QP Limit		QP Margin		Angle (Deg)	Height (m)	Polarity
	(dBuV/m)	(µV/m)	(dBuV/m)	(µV/m)	(dBuV/m)	(µV/m)			
33.104	29.4	29.5	40.0	100.0	-10.6	70.5	38	1.00	Vertical
133.111	22.1	12.7	43.5	150.0	-21.4	137.3	281	1.00	Vertical
253.254	23.8	15.5	46.0	200.0	-22.2	184.5	349	3.49	Vertical
439.396	29.2	28.8	46.0	200.0	-16.8	171.2	249	1.00	Horizontal
756.637	36.2	64.6	46.0	200.0	-9.8	135.4	284	1.00	Horizontal
875.993*	85.3	18407.7	46.0	200.0	39.3	18207.7	15	1.02	Horizontal

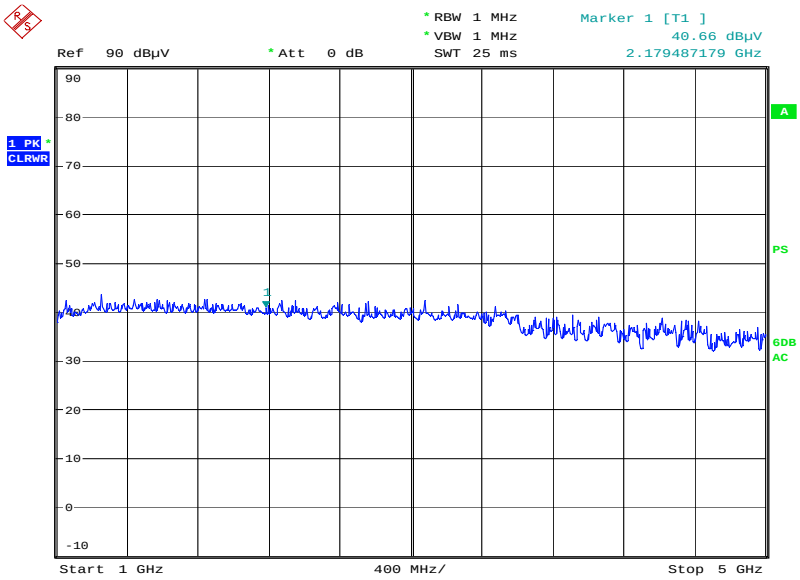
* This emissions is the transmit frequency of the EUT and therefore the specification limit does not apply at this frequency.

No emissions were detected above the receiver noise floor with the exception of the transmit frequency, therefore no measurement tables are presented.

Product Service

1GHz to 5GHz

Vertical Polarity



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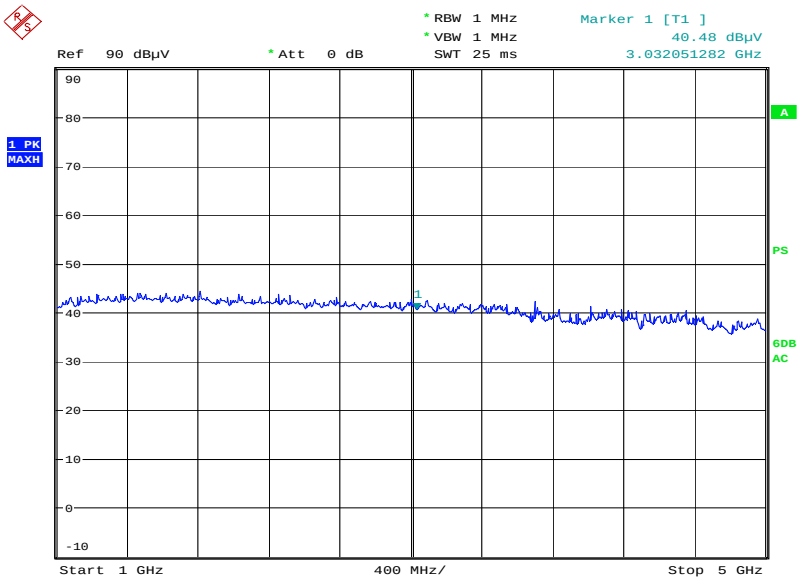
Horizontal Polarity



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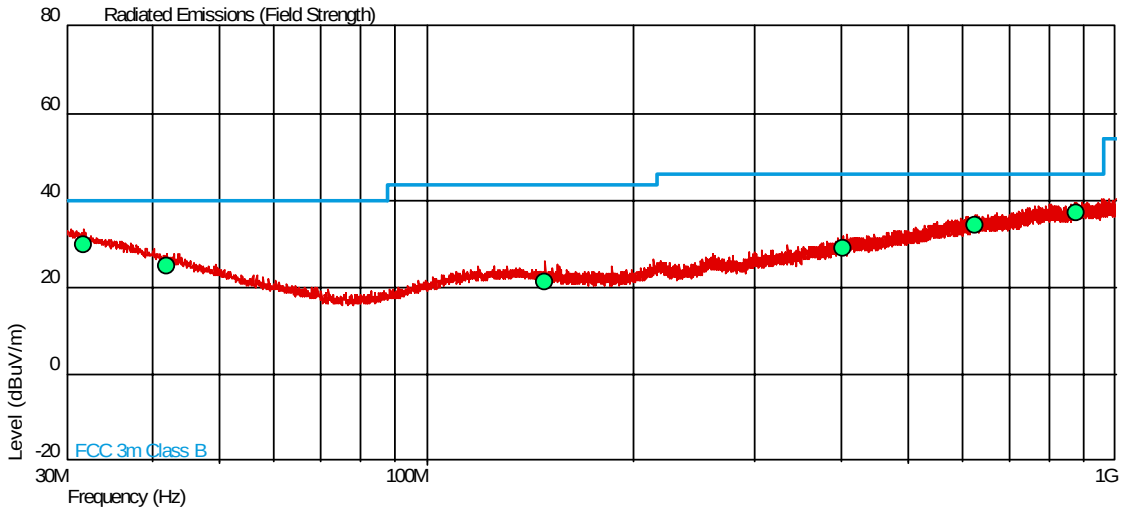
Product Service

Configuration 1 - Mode 2

30MHz to 1GHz



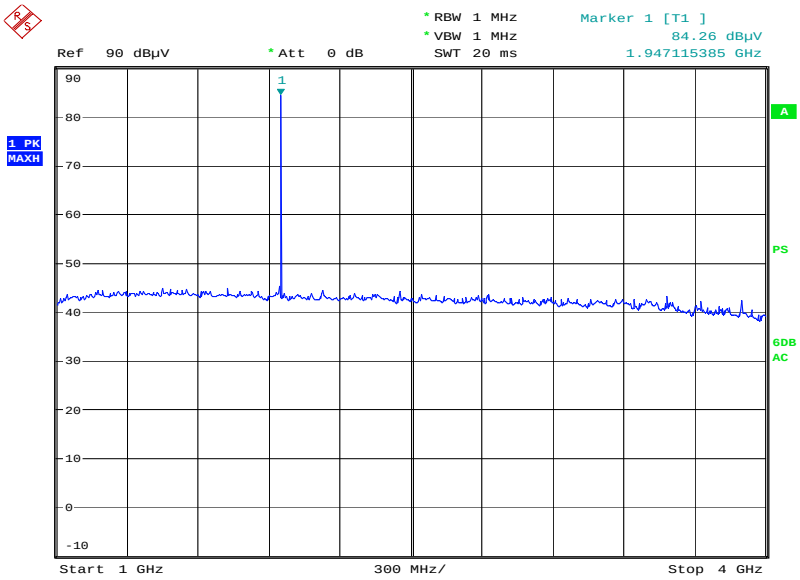
Frequency (MHz)	QP Level		QP Limit		QP Margin		Angle (Deg)	Height (m)	Polarity
	(dBuV/m)	(µV/m)	(dBuV/m)	(µV/m)	(dBuV/m)	(µV/m)			
31.745	30.0	31.6	40.0	100.0	-10.0	68.4	88	1.00	Horizontal
41.932	25.0	17.8	40.0	100.0	-15.0	82.2	297	1.00	Horizontal
148.682	21.3	11.6	43.5	150.0	-22.2	138.4	324	2.11	Horizontal
401.920	28.8	27.5	46.0	200.0	-17.2	172.5	2	1.00	Horizontal
626.976	34.1	50.7	46.0	200.0	-11.9	149.3	159	1.00	Horizontal
880.470	37.0	70.8	46.0	200.0	-9.0	129.2	339	1.00	Vertical

No emissions were detected above the receiver noise floor with the exception of the transmit frequency, therefore no measurement tables are presented.

Product Service

1GHz to 4GHz

Vertical Polarity



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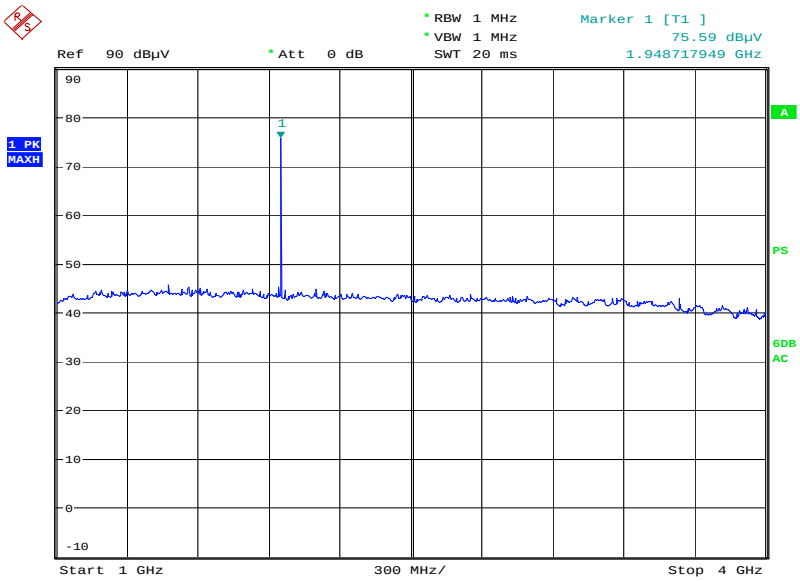
Horizontal Polarity

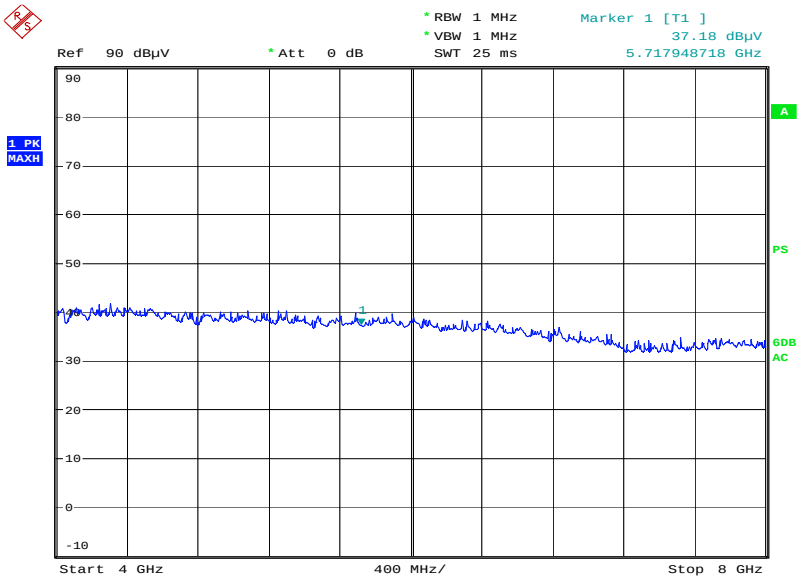


Date: 5.JUN.2008 00:28:18

Product Service

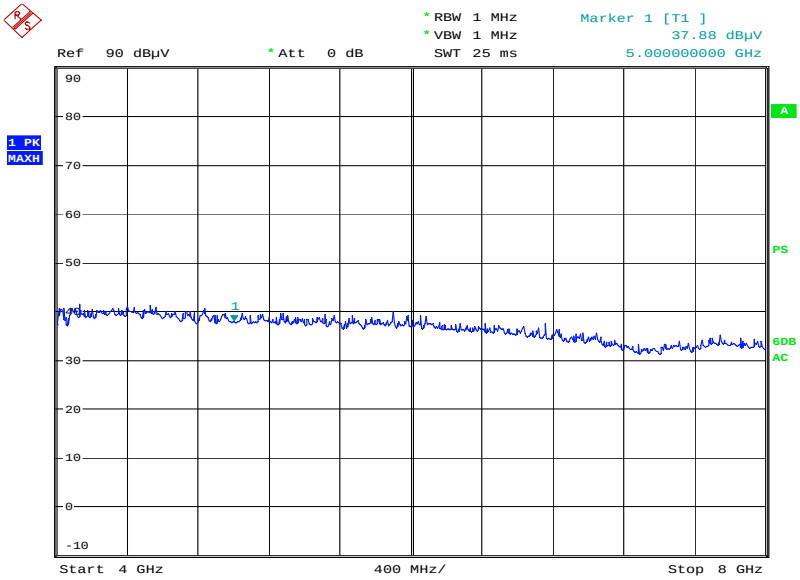
4GHz to 8GHz

Vertical Polarity



Date: 5.JUN.2008 00:35:28

Horizontal Polarity



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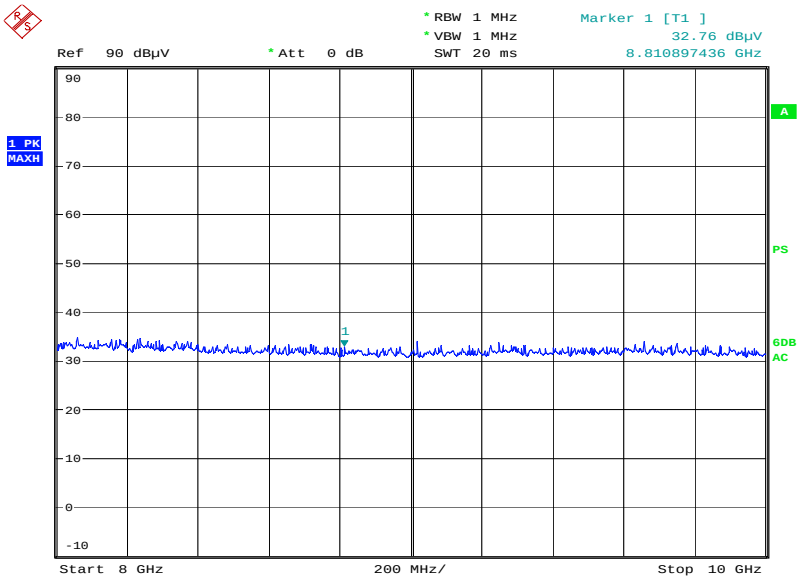
Product Service

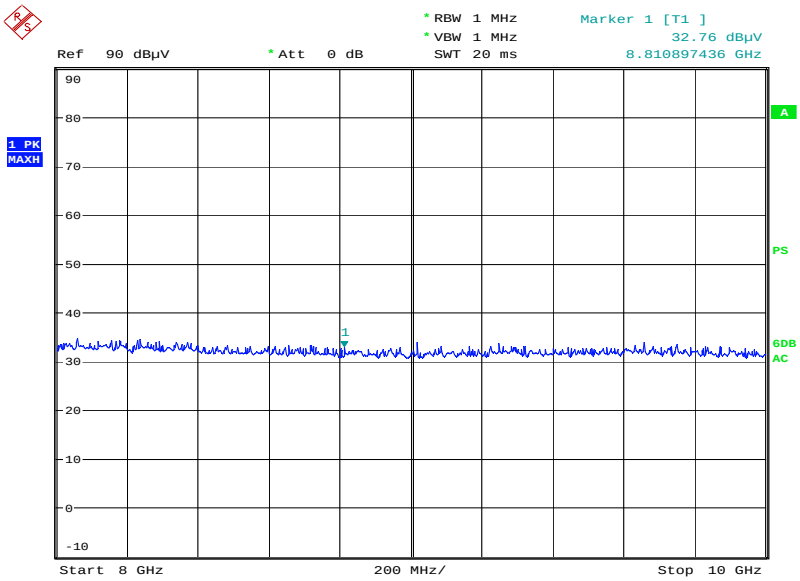
8GHz to 10GHz

Vertical Polarity



Date: 4.JUN.2008 23:35:33

Horizontal Polarity

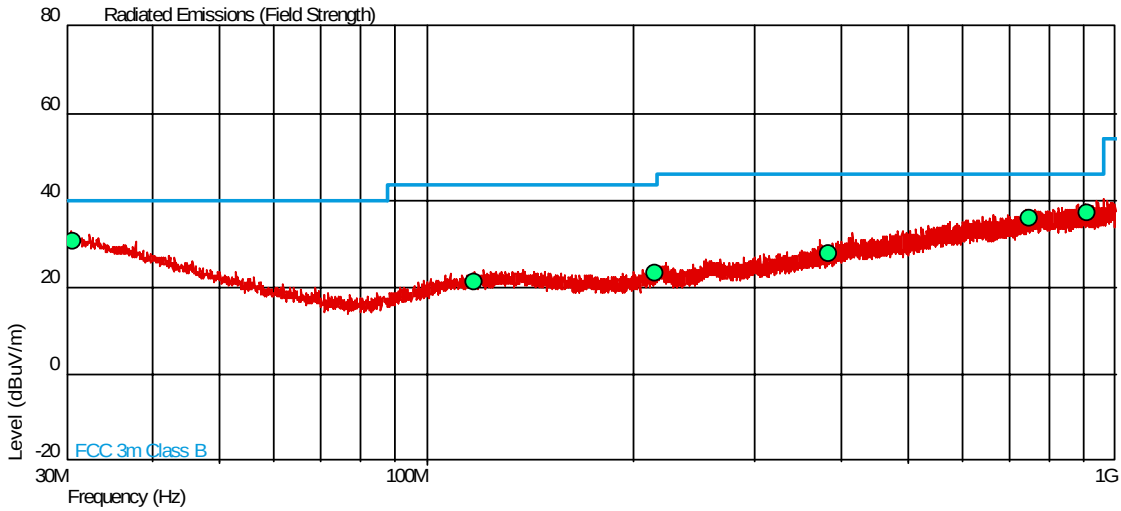


Date: 4.JUN.2008 23:35:33

Product Service

Configuration 1 - Mode 3

30MHz to 1GHz



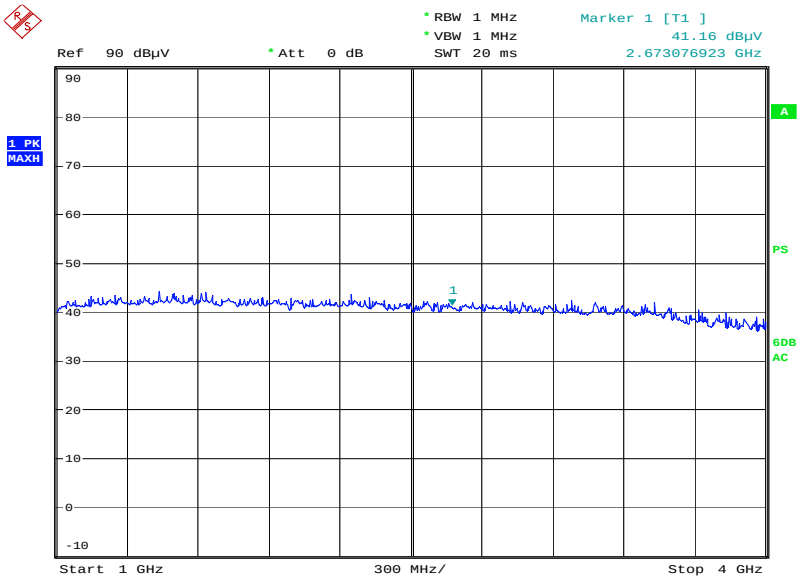
Frequency (MHz)	QP Level		QP Limit		QP Margin		Angle (Deg)	Height (m)	Polarity
	(dBuV/m)	(µV/m)	(dBuV/m)	(µV/m)	(dBuV/m)	(µV/m)			
33.104	30.7	34.3	40.0	100.0	-9.3	65.7	29	3.24	Horizontal
133.111	21.4	12.2	43.5	150.0	-22.1	137.8	28	1.80	Horizontal
253.254	23.3	14.6	43.5	150.0	-20.2	135.4	30	3.62	Horizontal
439.396	28.0	25.1	46.0	200.0	-18.0	174.9	10	3.49	Horizontal
756.637	35.9	62.4	46.0	200.0	-10.1	137.6	30	2.37	Horizontal
875.993*	37.3	73.4	46.0	200.0	-8.7	126.6	17	2.80	Horizontal

No emissions were detected above the receiver noise floor with the exception of the transmit frequency, therefore no measurement tables are presented.

Product Service

1GHz to 4GHz

Vertical Polarity



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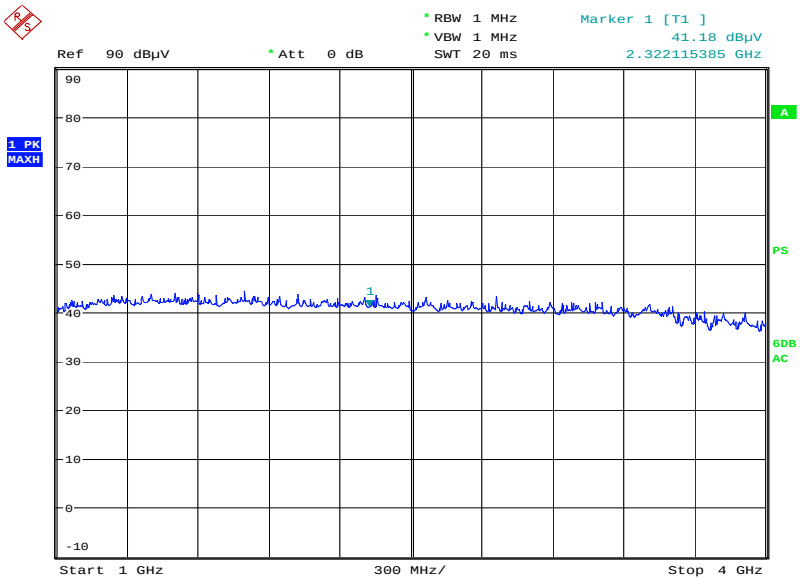
Horizontal Polarity



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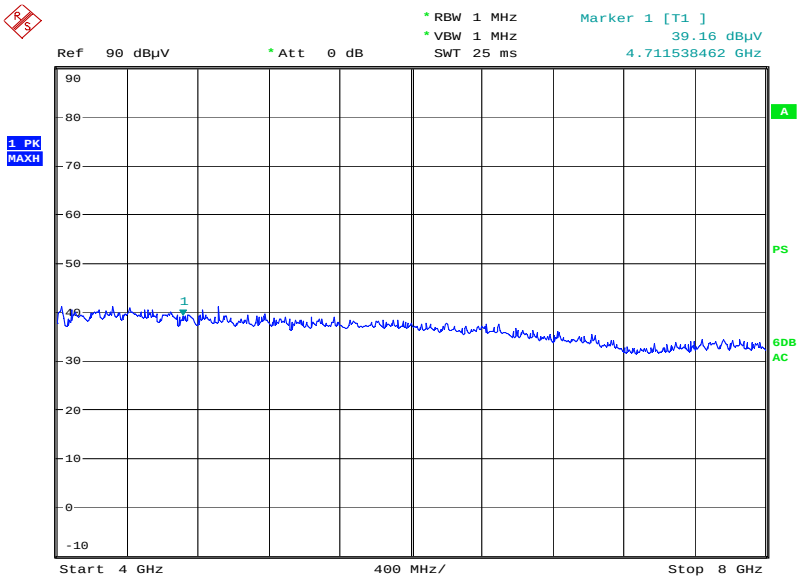
Product Service

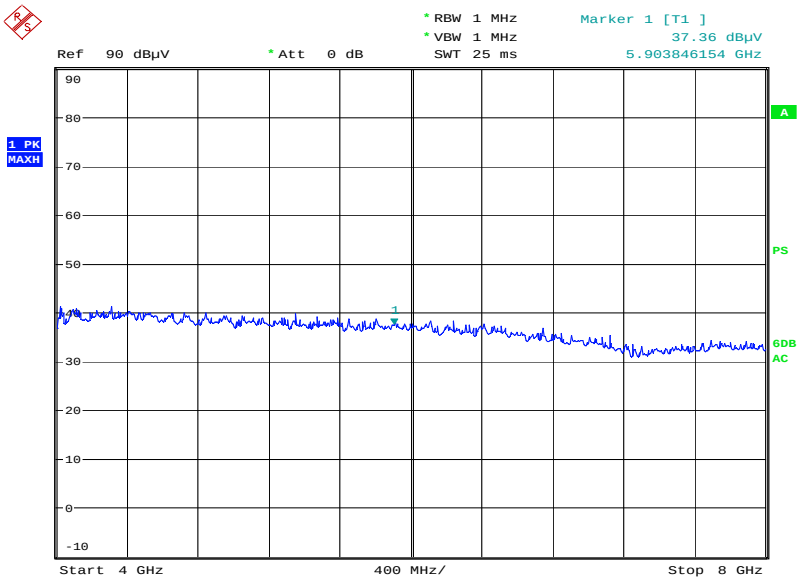
4GHz to 8GHz

Vertical Polarity



Date: 5.JUN.2008 00:02:47

Horizontal Polarity

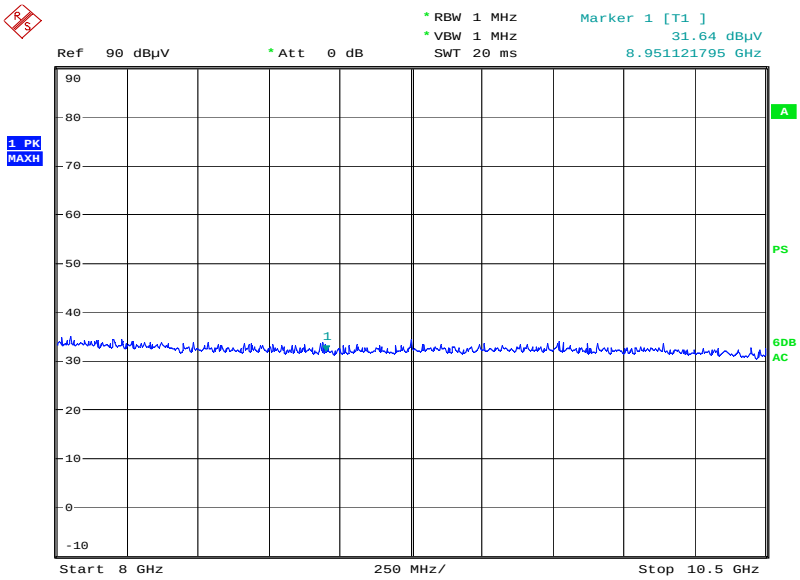


Date: 5.JUN.2008 00:06:32

Product Service

8GHz to 10.5GHz

Vertical Polarity



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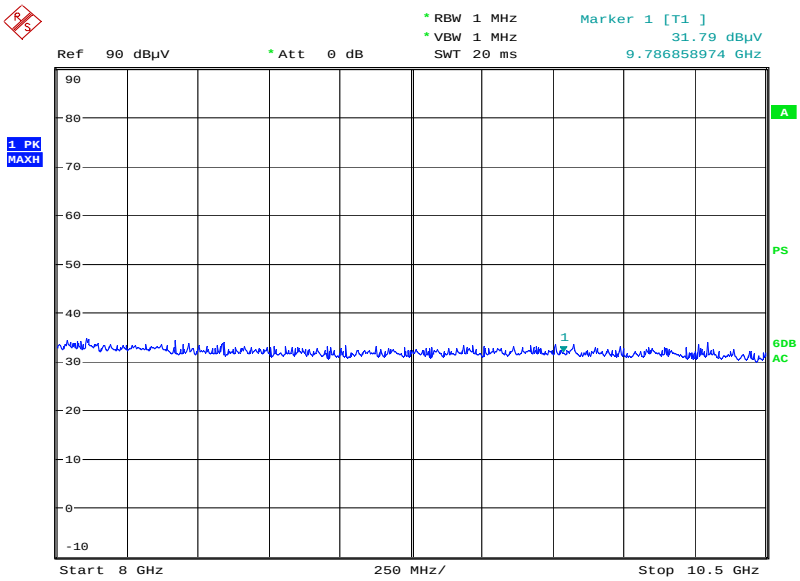
Horizontal Polarity



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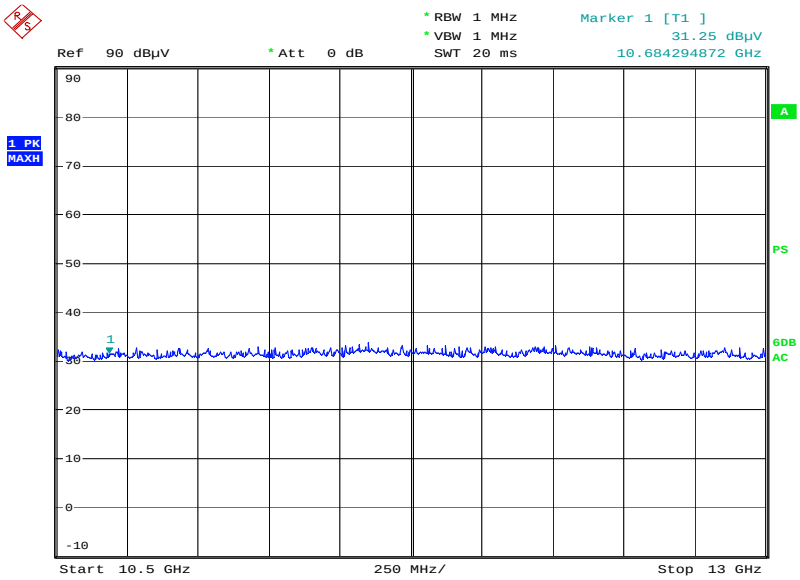
Product Service

10.5GHz to 13GHz

Vertical Polarity



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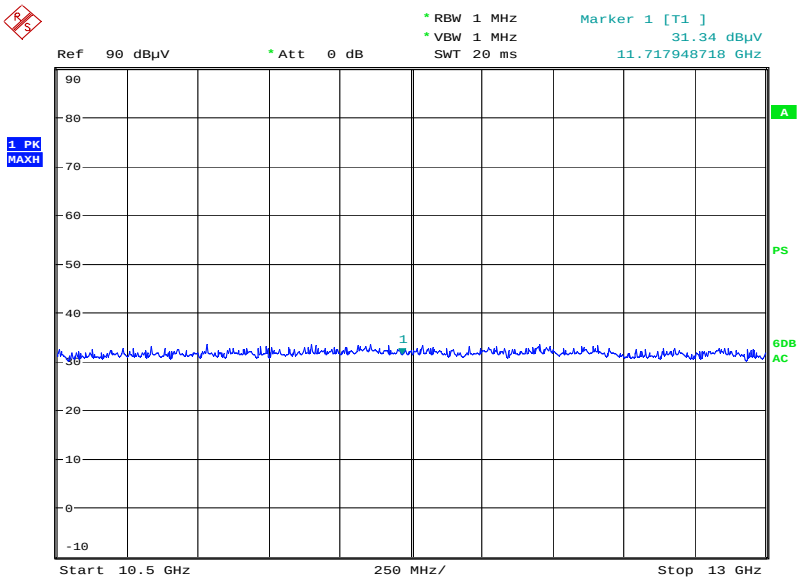
Horizontal Polarity



Date: 4.JUN.2008 23:39:24

Product Service

2.2 CONDUCTED EMISSIONS (AC POWER PORT)

2.2.1 Specification Reference

FCC CRF 47 Part 15B: 2006, Clause 15.107

2.2.2 Equipment Under Test

CD1D IMEI 004401750007177

2.2.3 Date of Test and Modification State

05 June 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 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

2.2.6 Environmental Conditions

	05 June 2008
Ambient Temperature	18°C
Relative Humidity	42%
Atmospheric Pressure	1014mbar

Product Service

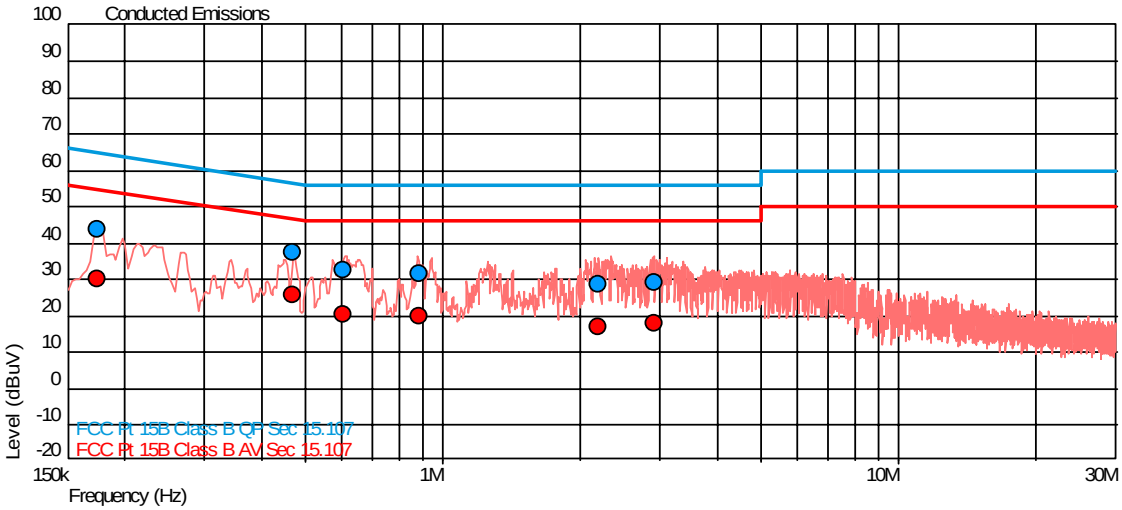
2.2.7 Test Results

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

The test results are shown below.

Configuration 2 - Mode 1

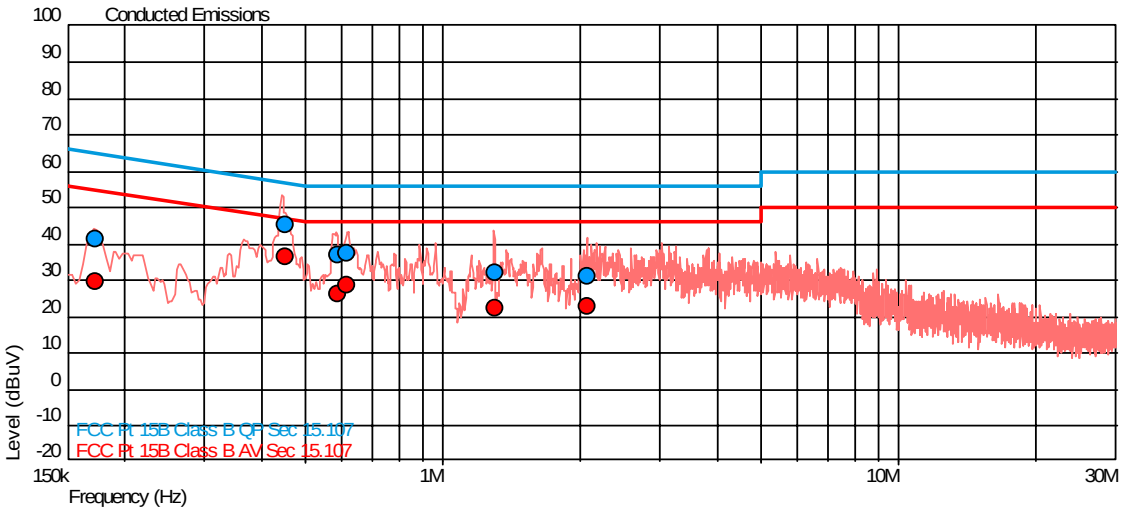
Live Line



Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.175	43.8	64.7	-20.9	30.1	54.7	-24.6
0.467	37.1	56.6	-19.4	25.5	46.6	-21.1
0.604	32.4	56.0	-23.6	20.5	46.0	-25.5
0.885	31.3	56.0	-24.7	19.6	46.0	-26.4
2.189	28.6	56.0	-27.4	17.0	46.0	-29.0
2.895	29.2	56.0	-26.8	17.6	46.0	-28.4

Product Service

Neutral Line

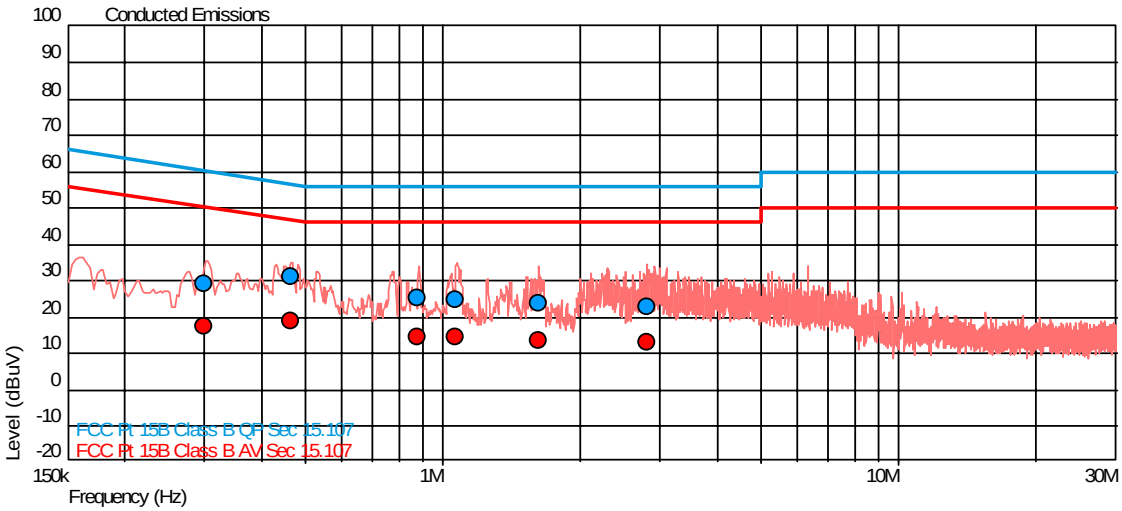


Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.172	41.3	64.8	-23.5	29.7	54.8	-25.1
0.450	45.3	56.9	-11.6	36.6	46.9	-10.3
0.586	36.7	56.0	-19.3	26.3	46.0	-19.7
0.618	37.1	56.0	-18.9	28.3	46.0	-17.7
1.296	32.0	56.0	-24.0	22.3	46.0	-23.7
2.068	31.1	56.0	-24.9	22.5	46.0	-23.5

Product Service

Configuration 2 - Mode 2

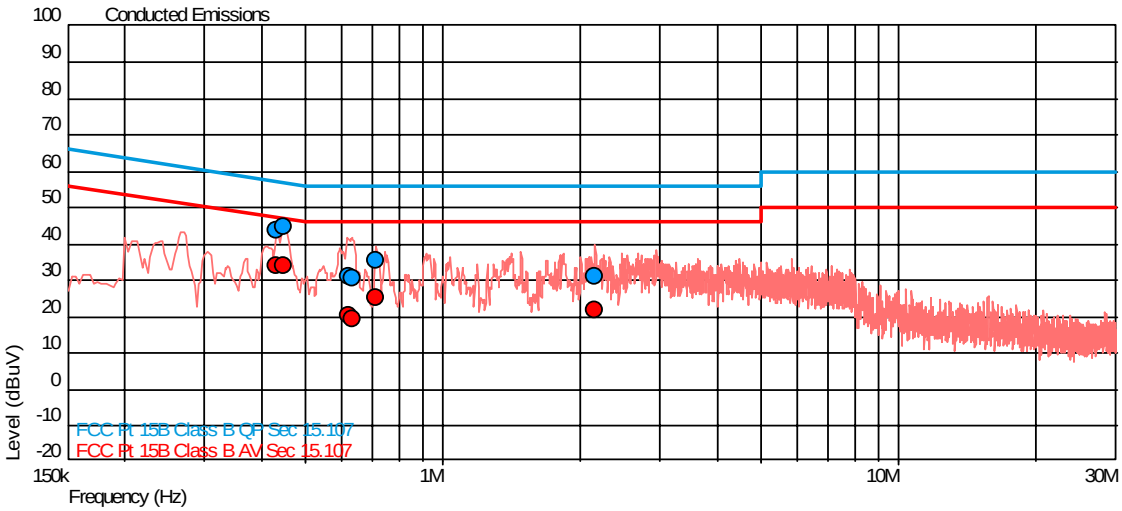
Live Line



Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.298	29.1	60.3	-31.2	17.5	50.3	-32.8
0.464	31.2	56.6	-25.4	19.0	46.6	-27.6
0.879	25.1	56.0	-30.9	14.4	46.0	-31.6
1.065	24.5	56.0	-31.5	14.2	46.0	-31.8
1.618	23.6	56.0	-32.4	13.5	46.0	-32.5
2.803	22.7	56.0	-33.3	12.8	46.0	-33.2

Product Service

Neutral Line

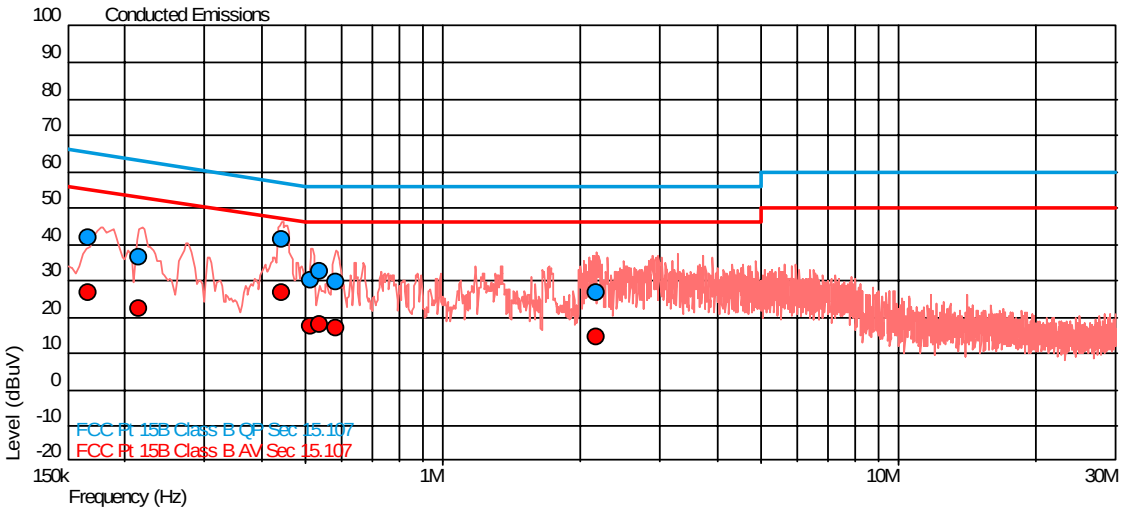


Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.432	43.8	57.2	-13.4	34.1	47.2	-13.1
0.447	44.4	56.9	-12.5	34.1	46.9	-12.8
0.619	31.0	56.0	-25.0	20.3	46.0	-25.7
0.631	30.4	56.0	-25.6	19.4	46.0	-26.6
0.715	35.2	56.0	-20.8	25.1	46.0	-20.9
2.145	31.0	56.0	-25.0	21.8	46.0	-24.2

Product Service

Configuration 2 - Mode 3

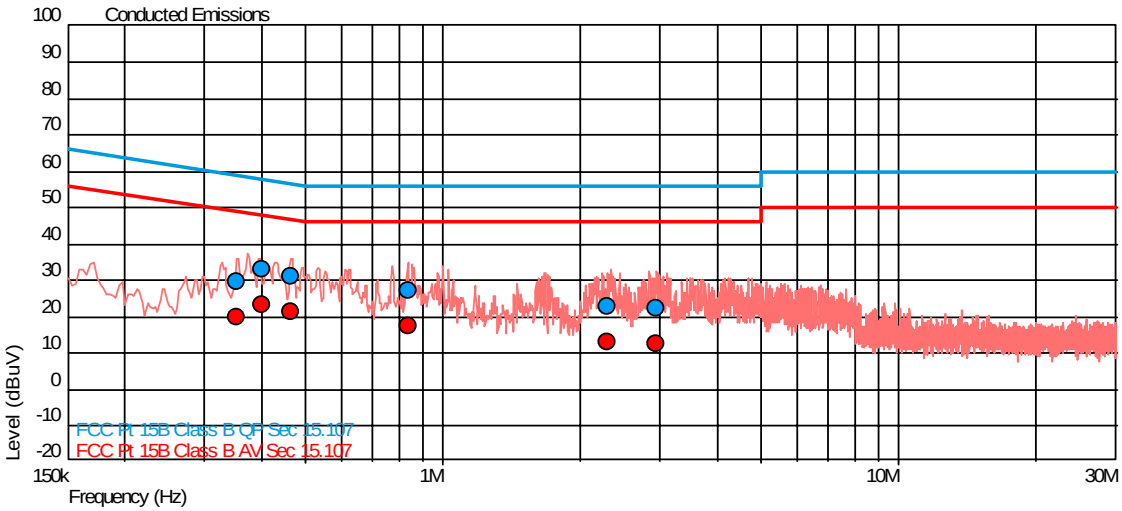
Live Line



Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.166	41.6	65.2	-23.5	26.5	55.2	-28.6
0.215	36.2	63.0	-26.8	22.0	53.0	-31.0
0.443	41.3	57.0	-15.7	26.6	47.0	-20.4
0.515	29.9	56.0	-26.1	17.4	46.0	-28.6
0.538	32.5	56.0	-23.5	17.9	46.0	-28.1
0.583	29.6	56.0	-26.4	16.7	46.0	-29.3
2.178	26.6	56.0	-29.4	14.5	46.0	-31.5

Product Service

Neutral Line



Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.352	29.6	58.9	-29.3	19.7	48.9	-29.2
0.400	32.7	57.9	-25.2	23.3	47.9	-24.6
0.465	31.0	56.6	-25.6	21.3	46.6	-25.3
0.836	27.3	56.0	-28.7	17.3	46.0	-28.7
2.300	22.8	56.0	-33.2	12.7	46.0	-33.3
2.922	22.2	56.0	-33.8	12.5	46.0	-33.5

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
Section 2.1 EMC - Radiated Emissions					
Radio Communications Tester	Rohde & Schwarz	CMU 200	39	12	27-Oct-2008
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	235	12	29-Jun-2008
Pre-Amplifier	Phase One	PS04-0085	1532	-	TU
Pre-Amplifier	Phase One	PS04-0086	1533	-	TU
Screened Room (5)	Rainford	Rainford	1545	36	11-Feb-2011
Mast Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Turntable/Mast Controller	EMCO	2090	1607	-	TU
Antenna (Bilog)	Chase	CBL6143	2904	24	28-Nov-2009
Signal Generator: 10MHz to 20GHz	Rohde & Schwarz	SMR20	3475	12	27-Nov-2008
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	15-Mar-2009
Section 2.2 EMC - Conducted Emissions					
LISN (1 Phase)	Chase	MN 2050	336	12	18-Mar-2009
Transient Limiter	Hewlett Packard	11947A	2378	12	19-Jun-2008
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	15-Mar-2009

TU – Traceability Unscheduled

Product Service

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

PHOTOGRAPHS

Product Service

4.1 PHOTOGRAPHS OF EQUIPMENT UNDER TEST (EUT)

EUT Front Face Open

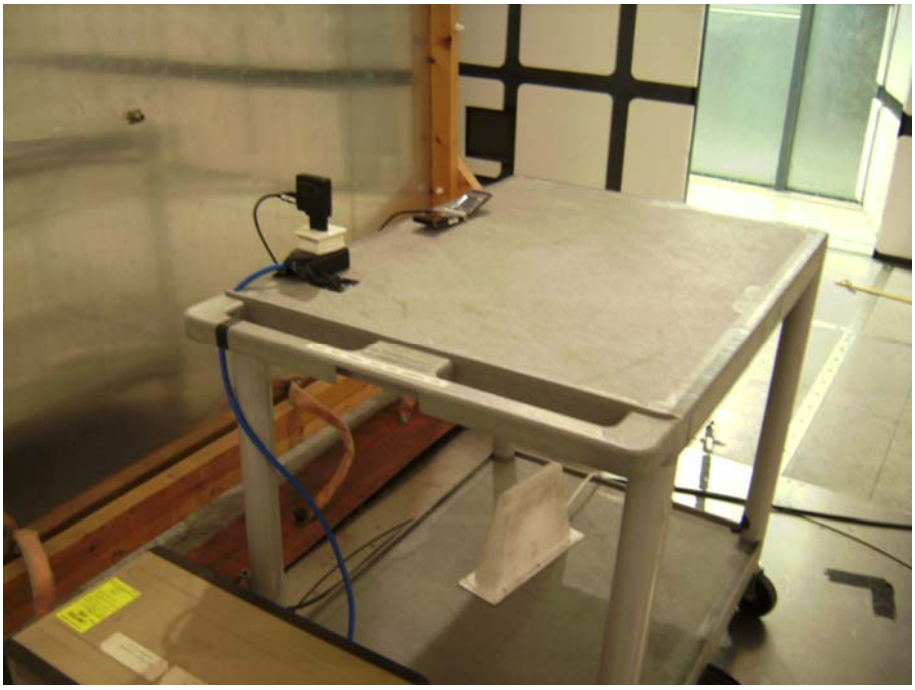
EUT Front Face Closed

EUT Read Face Closed

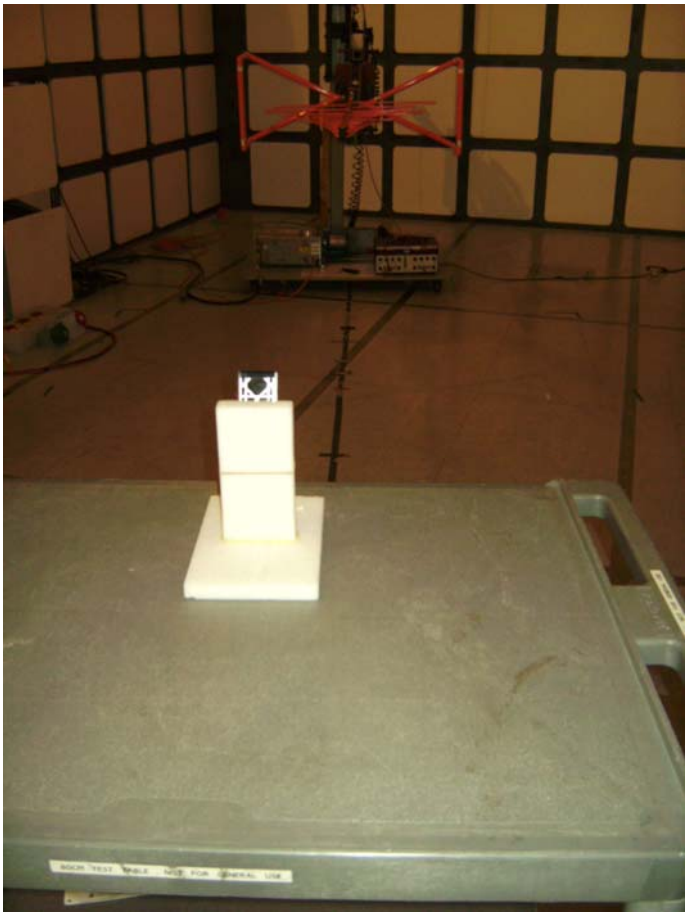
EUT Rear Face with the Battery Removed

Product Service

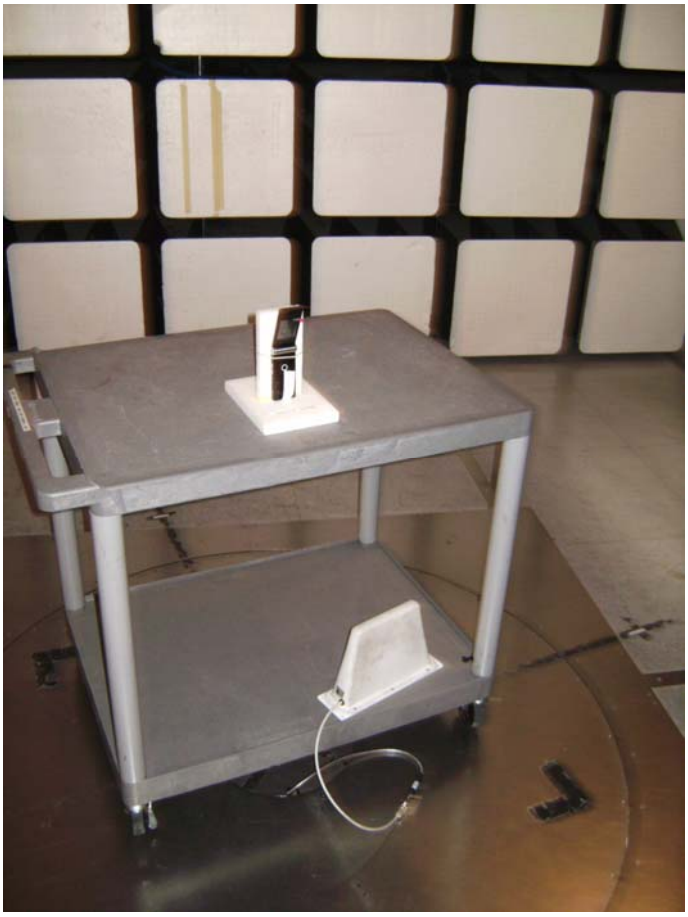
4.2 PHOTOGRAPHS OF TEST SETUP



Conducted Emissions Testing Set-up



Radiated Emissions Testing Set-up



Radiated Emissions Testing Set-up

Product Service

SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT

Product Service

5.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT

UKAS TESTING 0141

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).