



# Radiated & Conducted Emissions Test Report


## FCC 47 CFR PART 15 SUBPART C

**Report#: TR-P000E000-Emission**

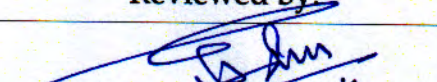
**Manufacturer: Phidgets Inc.**  
**Model: Phidget 125 kHz RFID Reader/Writer**  
**Serial# N/A**

**Test Start Date: Jan 29, 2013**  
**Test Completion Date: Feb 15, 2013**  
**Test Result: PASS**  
**Report Issue Date: Apr 04, 2013**  
**FCC ID: SUT1024-0**

Approved by:

  
**Trung Nguyen, Discipline Prime**

Reviewed by:

  
**Adishesu Nyshadham, QCM**

Report Issued to:

Phidgets Inc.  
Unit 1, 6115 - 4th Street S.E.  
Calgary, Alberta  
Canada T2H 2H9

Report Issued by:

**Applied Test Lab Inc.**  
Unit 4174-3961 52<sup>nd</sup> Avenue NE  
Calgary, AB, T3J 0J8  
[www.appliedtestlab.com](http://www.appliedtestlab.com)  
[emctesting@appliedtestlab.com](mailto:emctesting@appliedtestlab.com)

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This report contains 26 pages



### Document Release History

Approvals			
Organization	Name	Signature	Date
Applied Test lab	Adishesu Nyashadham		2012-04-04
Applied Test lab	Trung Nguyen		2012-04-04

Revision History			
Rev	Description of Change	Author	Effective Date
Draft01	Initial release	Trung Nguyen	2012-04-02
Release 1	Approved release	Trung Nguyen	2012-04-04



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### **LABELING INFORMATION-FCC**

Products subject to authorization under Verification procedures shall be labeled as follows:

“This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.”

Where a device is constructed in two or more sections connected by wires and marketed together, the statement is required to be affixed only to the main control unit.

When the device is so small or for such use that it is not practicable to place the statement on it, the information required by this paragraph shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed. However, the FCC identifier or the unique identifier, as appropriate, must be displayed on the device.

### **LABELING INFORMATION-Industry Canada**

Products subject to Industry Canada ICES-003 should be labeled in English and French as follows:

This Class A/B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A/B est conforme à la norme NMB-003 du Canada.

### **INFORMATION TO THE USER-FCC**

For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

“NOTE: This equipment has been tested and found to comply with the limits for a Class A/B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this device in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.”

### **INFORMATION TO THE USER-Industry Canada**

For a Class A/B digital device, the instructions furnished the user shall include the following or similar statement, placed in English and French, in a prominent location in the text of the manual:

This Class A/B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Operation is subject to the following two conditions; (1) this device digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Operation is subject to the following two conditions; (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareillage numérique de la classe A/B répond à toutes les exigences de l'interférence canadienne causant des règlements d'équipement. L'opération est sujette aux deux conditions suivantes: (1) ce dispositif peut ne pas causer l'interférence nocive, et (2) ce dispositif doit accepter n'importe quelle interférence reçue, y compris l'interférence qui peut causer l'opération peu désirée.



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## 1.0 General

### 1.1 Purpose

The purpose of this report is to document conformance with FCC 47 CFR PART 15 SUBPART C, intentional Radiators and to detail the results of testing performed on the sample Model: **Phidget 125 kHz RFID Reader/Writer** manufactured by **Phidgets Inc.**. The test sample was received in good condition. Testing began on **Jan 29, 2013** and was completed on **Feb 15, 2013**.

### 1.2 Relevant Standards and References

One or more of the following standards were used to evaluate the EUT:

1 – ANSI C63.4-2009: Method of Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the 9kHz to 40GHz

2 - 47CFR15.207, 47CFR15.209 and 47CFR15.215 ( c ) , Code of Federal Regulations Volume 47 (Telecommunications) 2010: Part 15 Subpart C (Intentional Radiators) – Sections 15.207, 15.209 and 15.215 ( c )

### 1.3 Performance Requirement

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increase emission levels should be checked and verified to ensure continuous compliance has been maintained (i.e., printed circuit board layout changes, changes to filter performance, power supply changes, I/O cable and interface changes, critical component changes etc.)

### 1.4 Test Results Summary

Test Case	Test Type	Basic Standard	Modifications	Result
6.2	AC Conducted Emissions	FCC 15.107	No	PASS
6.3	Transmitter Radiated Emission	FCC 15.109	No	PASS
6.4	Transmitter Fundamental Field Strength	FCC 15.209	No	PASS
6.5	Transmitter 20 dB Bandwidth	FCC 15.215	No	PASS

### 1.5 Test Facility Information

Name	Applied Test Lab Inc.			
Address	Unit 4174-3961 52 <sup>nd</sup> Avenue NE, Calgary, Alberta, T3J 0J8, Canada			
Telephone	403 590 8701	Fax	403 590 8570	
Email	sale@appliedtestlab.com	Website	<a href="http://www.appliedtestlab.com">www.appliedtestlab.com</a>	
FCC Recognition	697081	IC Recognition		

### 1.6 Client Information

Name	<b>Phidgets Inc.</b>			
Address	Unit 1, 6115 - 4 Street S.E. Calgary, Alberta Canada			
Telephone	1-403-282-7335	Fax		
Contact Name	Leo Angelo Marrero	Contact Email	leo@phidgets.com	

### 1.7 Manufacturer

Same as client



## 2.0 Test Sample Information

The **Phidget 125 kHz RFID Reader/Writer** was only operated and exercised in the mode(s) and configuration(s) described in this report. All inputs and outputs to and from support equipment associated with the **Phidget 125 kHz RFID Reader/Writer** were provided or simulated under the direction and responsibility of **Phidgets Inc.**. A description of these signals and their provision is included in Appendix A.

### 2.1 Equipment Under Test (EUT)

Product Description	<p>The PhidgetRFID Reader/Writer is a device used to read or write to RFID tags. Using an embedded PCB antenna, the 1024_0 radiates an electromagnetic field in order to read or write tags. When a tag is brought into the read range of the 1024_0, the tag is momentarily powered and re-broadcasts its tag identification number. The tag identification is read by the 1024_0 and made available to the user. There are many different tags available and the 1024_0 can read and/or write to tags that are: EM4102, ISO11784, T5577</p> <p>Typical applications include:          Security - Access Control          Payroll - Time Clock          Inventory - Livestock, merchandise or goods</p>
Manufacturer	<b>Phidgets Inc.</b>
Trade Name	
Model Number	<b>Phidget 125 kHz RFID Reader/Writer</b>
Serial Number	<b>N/A</b>
FCC ID	<b>SUT1024-0</b>
Model discrepancy/Variations	N/A
Power Supply and Requirements	USB power and 5VDC external, 500mA max
Firmware Version	100
Software Version	2.1.8.20121218
Equipment Category	Proximity Reader, Information Technology
Intended Operating Environment	Residential / Commercial and Light Industrial
Cycle Time	< 1 sec
Weight	0.04189 lbs
Dimensions	2.700 in x 3.200 in x 0.485 in
Operating Frequency	125 kHz
Transmitter power	
Part number	1024_0
Typical Installations	Table Top
Duration of Self Test	Continuous
Reaction Time	< 1 sec
Fault Recovery Time	< 1 sec
Highest Freq generated	72 MHz
Other Information	
Product Manufacturing Status	<input type="checkbox"/> Production Unit <input type="checkbox"/> Pre-Production Unit



**2.2 Support Equipment and Details**

**Included**

Manufacturer	Description	Model No.	Serial Number	Other Info
Asus	Laptop	B43S	N/a	
RFID tag	RFID tag			Simulate read conditions

**2.3 I/O Ports and Details**

**Not Applicable**

Port Type	Description	Filter Info	Shielding Info	Other Info
Mini USB	4 wired USB include power	No	Yes	

**2.4 External I/O Cable Descriptions**

**Not Applicable**

Cable Description	Length (m)	Port From	Port To	Cable Type	Remarks
USB cable	1.8 M	USB Type B	USB Type A	shielded	
Power cable	1.8 M			Power cable	

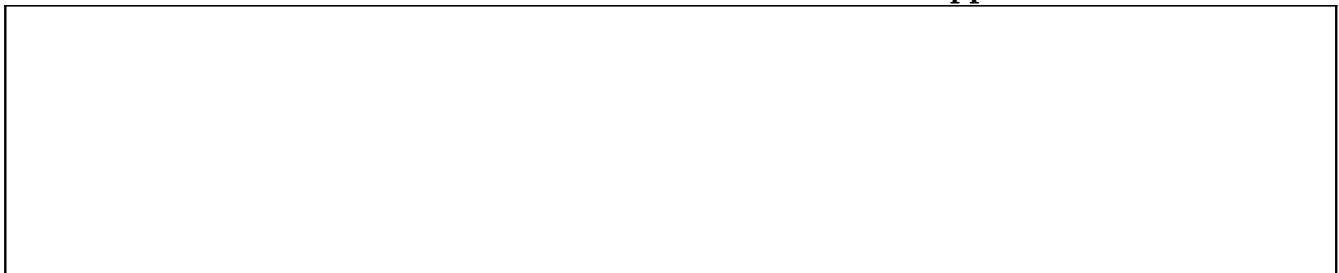
**2.5 Modifications**

**Not Applicable**

Modification Type	Component / Material Description	Placement	Test Used for
Change AC to DC adapter		From Asus to Gateway adapter	Conducted Emission

**Photo of Modifications**

**Not Applicable**



Notes:



### 3.0 Test Facilities

#### Laboratory Location

The radiated and conducted emissions test sites are located at the following address:

Applied Test Lab,  
Unit 4174, 3961-52 Ave N.E., Calgary, AB T3J 0J8

#### Laboratory Accreditation/Recognitions/Certifications

The Semi-Anechoic Chamber Test Site and Conducted Emissions Site have been fully described, submitted to, and accepted by the FCC and Industry Canada for testing Interference by information technology equipment. In addition, ATL has implemented an interim in-house quality system which is based on the ISO 17025 standard and is actively pursuing to achieve its accreditation. The following certification numbers have been issued in recognition of the certifications:

FCC Registration Number: **697081**  
Industry Canada Lab Code: IC

**\*Note:** Unless otherwise specified, ATL performs the tests using standard test methods to evaluate the EUT for compliance to the defined International standards. However, the report is not to be used to claim compliance, certification or endorsement by FCC or Industry Canada or any other government agency unless specifically submitted to such agency for such purpose.

Country	Agency	Accreditation/Certification	LOGO
USA	FCC	3m Semi-Anechoic Chamber to perform FCC Part 15/18 measurements	
Canada	Industry Canada	3m Semi-Anechoic Chamber to perform ICES-004 and RSS measurements	

#### 3.1 Semi-Anechoic Chamber Test Site Description

The Semi-Anechoic Chamber Test Site consists of a 6.24 x 9.144 x 5.79 meter shielded enclosure. The chamber is lined with SAMWAH Ferrite Grid Absorber, model number SN-20. The ferrite tile grid is 100 x 100x 6.7mm thick and weighs approximately 200 grams. These tiles are mounted on steel panels and installed directly on the inner walls of the chamber. Inner side Wall is lined by 600H Foam Absorber with White Cap. Chamber is illuminated by set of 12 Incandescent Bulbs.

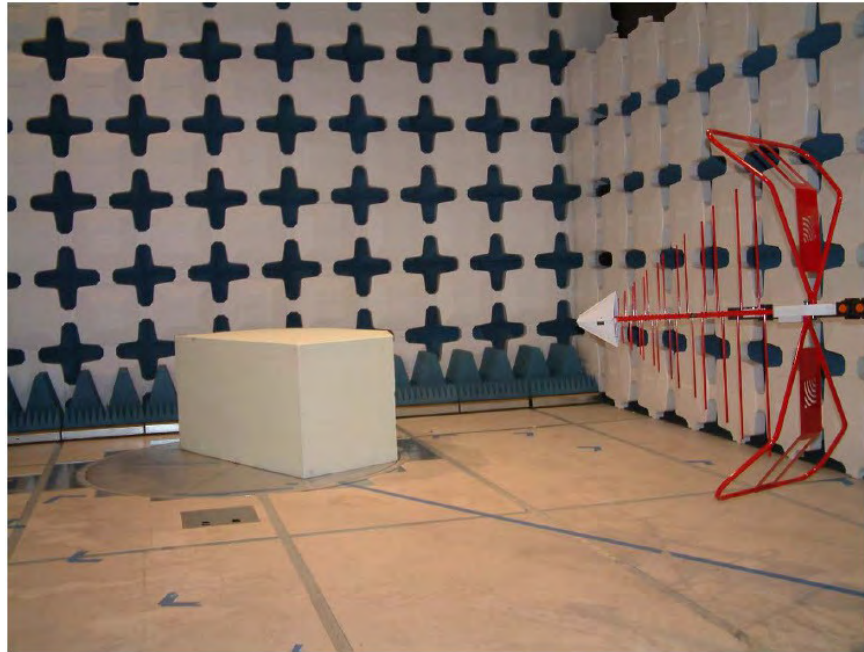
The turntable is 198cm in diameter and is located 160cm from the back wall of the chamber. The chamber is grounded via Utility Ground installed at the side of the back East wall, it is bound to the Chamber ground Stud using 1/2" copper braided cable.

The turntable is all aluminum, flush mounted table installed in an all steel frame. The table is remotely operated from the control area located outside the Semi Anechoic Chamber. The turntable is electrically bonded to the surrounding ground plane via steel fingers installed on the edge of the turn table. The steel fingers make constant contact with the ground plane during operation.





3.2 A diagram of the Semi-Anechoic Chamber Test Site is shown in Figure below



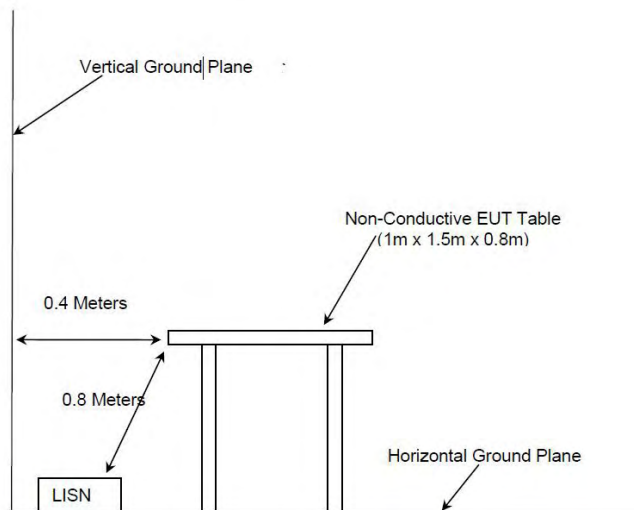
### 3.3 Conducted Emissions Test Site Description

The AC mains conducted EMI site is located in the main ATL EMC lab. It consists of a 2.04 x 2.04 Meter solid copper horizontal group reference plane (GRP) bonded to a 2.25 x 2.25 meter vertical ground plane.

The site is of sufficient size to test table top and floor standing equipment in accordance with section 6.1.4 of ANSI C63.4. A diagram of the test site is shown figure below.



3.4 A diagram of the Conducted Emissions Test Site is shown in Figure below





### 3.5 Test Equipment List

#### Test Equipments used for Radiated Emissions

Description	Manufacturer	Model Number	Ser Number	Next Cal
Bi-Log antenna	ETS Lindgren	3142E	144760	18 Sep, 2014
Double Ridged Horn	ETS Lindgren	3117	143095	2014-08-29
Loop Antenna	COM-POWER	AL-130	121035	2014-08-24
Spectrum Analyzer	Hewlett Packard	Hp8593EM	3639A00172	Dec 18, 2013
EMI Receiver	Hewlett Packard	8546A	3549A00267	25 Sep, 2014
Cable	Micro Coax UTIFLEX	UFB293C	303	Direct Measurement
Cable	Micro Coax UTIFLEX	UFB311A	SFC220863	Direct Measurement
Turntable	ETS Lindgren	2187	NA	NCR
Antenna Bore-sight Mast	ETS Lindgren	2071B	136243	NCR
Multi Device Controller	ETS Lindgren	ETS 2090	148017	NCR
3 Meter chamber	ETS Lindgren	FACT 3-2.0	N/A	Aug, 14, 2015
Test SW	DVT Solutions Inc	REDvtAtlV3p28		

Note: The measurement uncertainty is less than +/- 4.25 dB which is evaluated as per the NAMAS NIS 81 and CISPR 16-4-x

NCR: No Calibration required.

#### Test Equipment used for Power line Conducted Emissions

Description	Manufacturer	Model Number	Ser Number	Next Cal
LISN	Com-Power	LI-215A	191933	Aug 22, 2013
EMI Receiver	Hewlett Packard	8546A	3549A00267	25 Sep, 2014
Cable	Huber & Suhner	M17/60-RG142	NA	Direct Measurement
Transient Limiter	Com-Power	LIT-930	531577	Direct Measurement
Test SW	DVT Solutions Inc	CETestExecV3p21		

Note: The measurement uncertainty is less than +/- 2.71 dB which is evaluated as per the NAMAS NIS 81 and CISPR 16-4-x

**Test Equipments used for Transmitter Fundamental Field Strength**

Description	Manufacturer	Model Number	Ser Number	Next Cal
Loop Antenna	COM-POWER	AL-130	121035	2014-08-24
EMI Receiver	Hewlett Packard	8546A	3549A00267	25 Sep, 2014
Cable	Micro Coax UTIFLEX	UFB293C	303	Direct Measurement
Cable	Micro Coax UTIFLEX	UFB311A	SFC220863	Direct Measurement
Turntable	ETS Lindgren	2187	NA	NCR
Antenna Bore-sight Mast	ETS Lindgren	2071B	136243	NCR
Multi Device Controller	ETS Lindgren	ETS 2090	148017	NCR
3 Meter chamber	ETS Lindgren	FACT 3-2.0	N/A	Aug, 14, 2015
Test SW	DVT Solutions Inc	REDvtAtIV3p28		

Note: The measurement uncertainty is less than +/- 4.25 dB which is evaluated as per the NAMAS NIS 81 and CISPR 16-4-x

**NCR: No Calibration required.**

**Test Equipments used for Transmitter 20 dB Occupied Bandwidth**

Description	Manufacturer	Model Number	Ser Number	Next Cal
Loop Antenna	COM-POWER	AL-130	121035	2014-08-24
EMI Receiver	Hewlett Packard	8546A	3549A00267	25 Sep, 2014
Cable	Micro Coax UTIFLEX	UFB293C	303	Direct Measurement
Cable	Micro Coax UTIFLEX	UFB311A	SFC220863	Direct Measurement
Turntable	ETS Lindgren	2187	NA	NCR
Antenna Bore-sight Mast	ETS Lindgren	2071B	136243	NCR
Multi Device Controller	ETS Lindgren	ETS 2090	148017	NCR
3 Meter chamber	ETS Lindgren	FACT 3-2.0	N/A	Aug, 14, 2015
Test SW	DVT Solutions Inc	REDvtAtIV3p28		

Note: The measurement uncertainty is less than +/- 0.92 ppm which is evaluated as per the NAMAS NIS 81 and CISPR 16-4-x

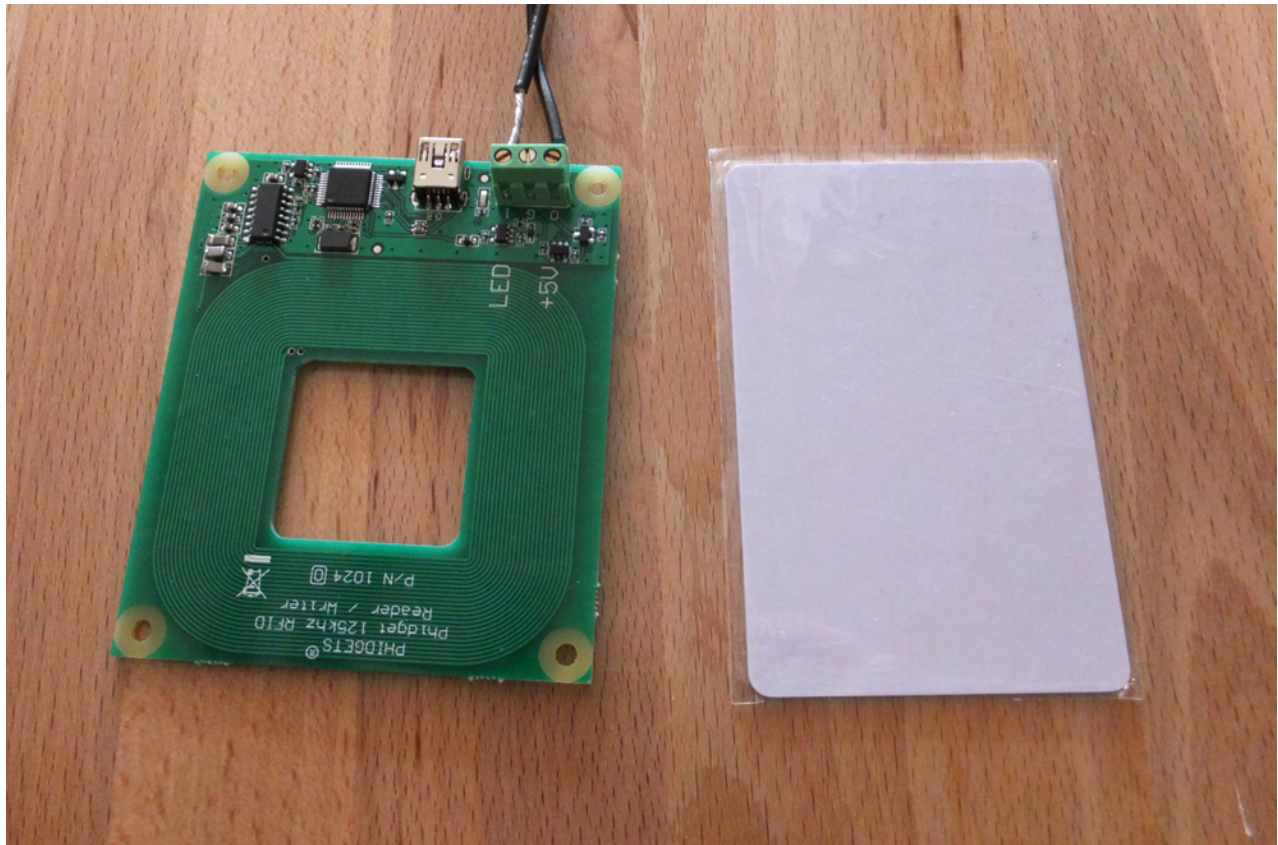
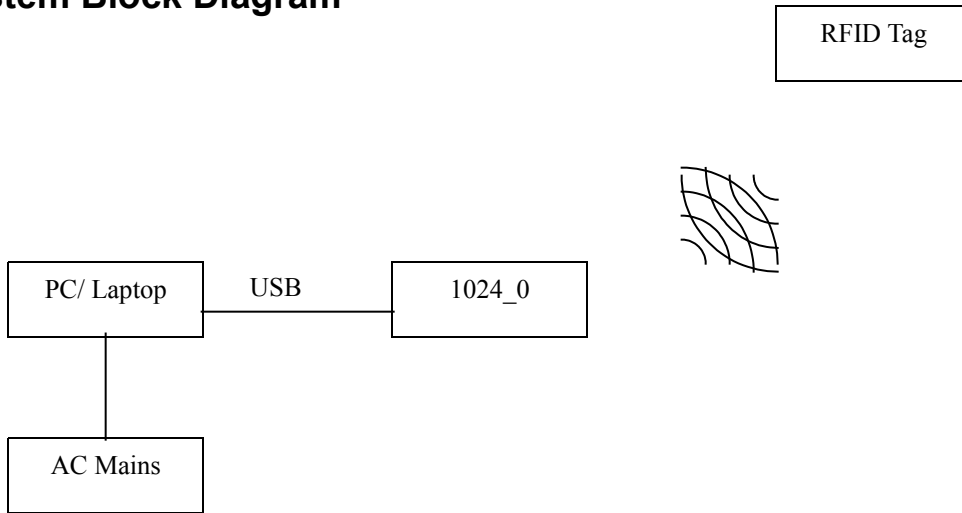
**NCR: No Calibration required.**



## 4.0 Test Setup Description

### System Block Diagram and Support Equipment

#### System Block Diagram

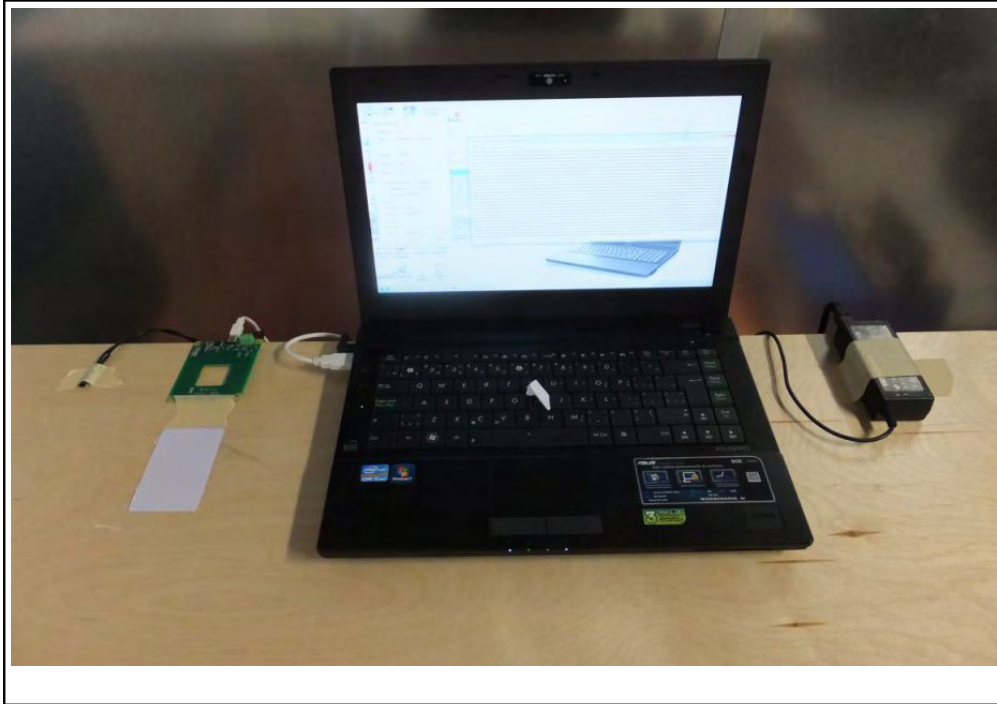




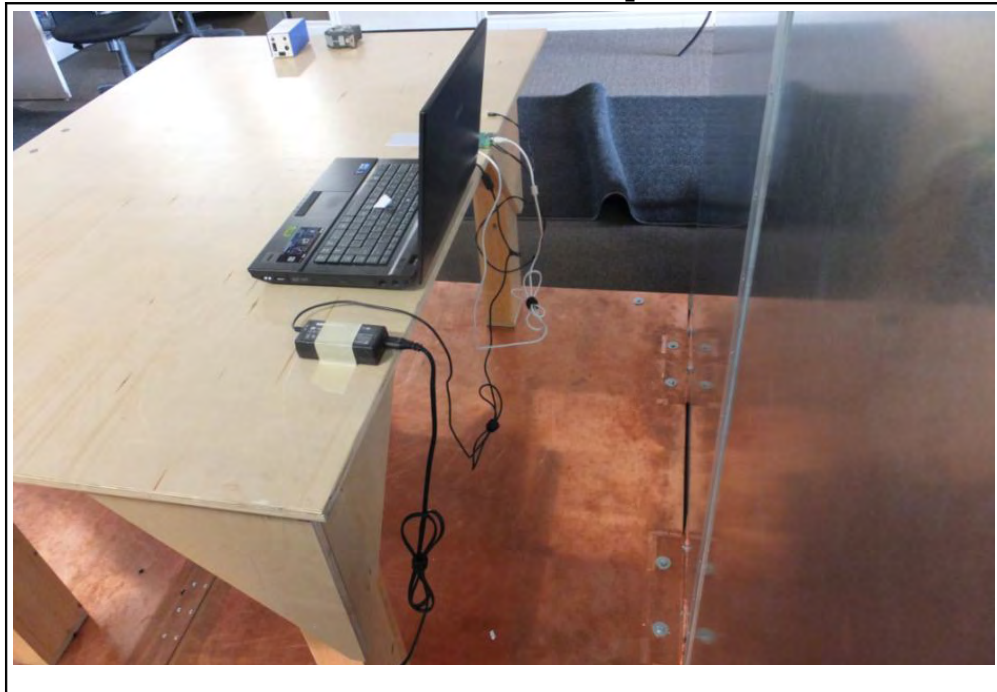
4.2 Test Setup Photographs Conducted Emission

Included

Conducted Emissions Test Setup - Front View



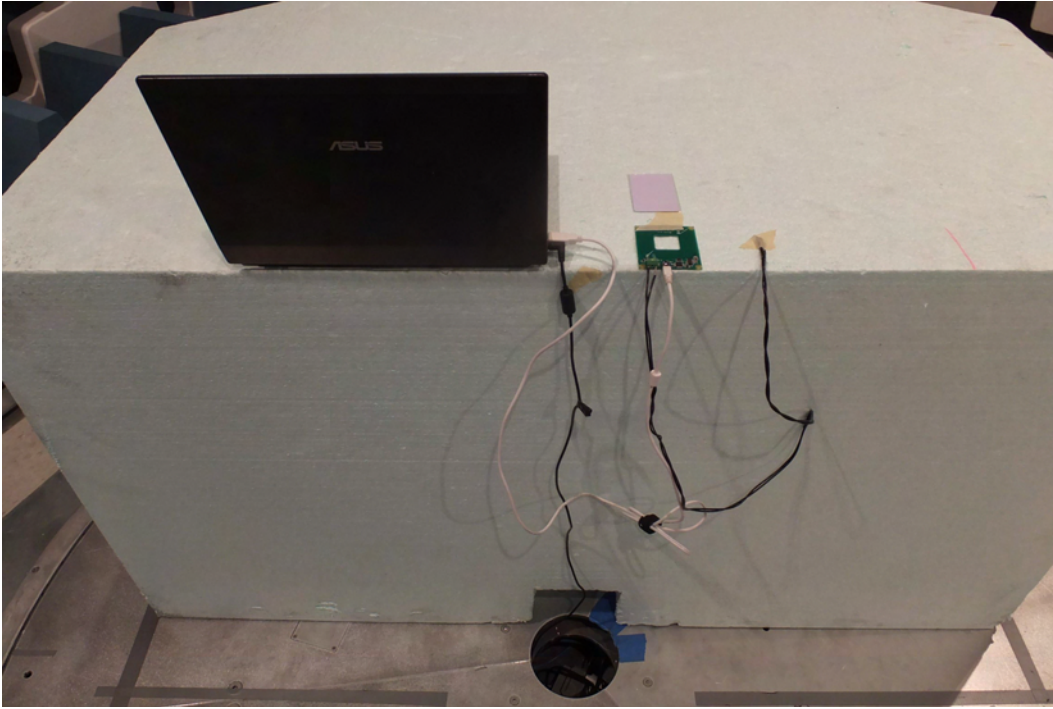
Conducted Emissions Test Setup - Side View



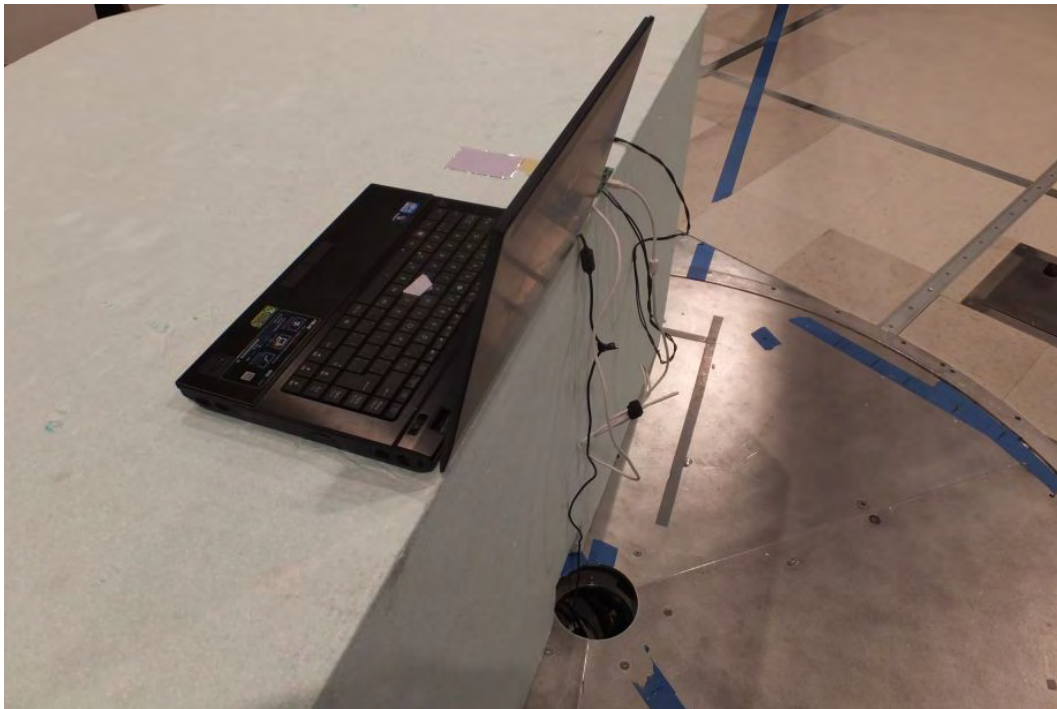


### 4.3 Test Setup Photographs Radiated Emissions

#### Radiated Emissions Test Setup - Front View



#### Radiated Emissions Test Setup - Side View





## 5.0 Test Methodology

### 5.1 Conducted Emissions

Conducted emissions measurements were made over the frequency range of 150 kHz to 30MHz. The software is programmed to perform a peak sweep of the frequency band using the max hold function. This sweep is performed for every power conductor of the power line. During the sweep measurement the spectrum analyzer/Receiver's resolution bandwidth set to 9.0 kHz and the video bandwidth set to 30.0 kHz. Although not a fully maximized scan, this type of scan provides emission data with a good indication of pass or fail.

Quasi- Peak measurements are taken with the Spectrum Analyzer/Receiver's resolution bandwidth set to 9.0 kHz and Video Bandwidth set to 30 kHz. Average measurements are taken with the resolution bandwidth set to 9.0 kHz and the video bandwidth set to 1.0 Hz. The calculation for the radiated emissions field strength is as follows:

**Corrected Reading = Analyzer/Receiver Reading + LISN Insertion Loss + Cable Insertion Loss + Transient Limiter Insertion Loss**

**Margin = Corrected Reading – Applicable Limit**

### 5.2 Radiated Emission

#### Multi-Angle-Scans

Radiated pre-scans and Final Emission are performed on all EUT's in the 3m Semi-Anechoic Chamber. Pre-scans are a method by which the 10 highest emissions can be identified for final evaluation. This is achieved by taking automated emission snapshots of the EUT at various azimuths and antenna heights.

The software is programmed to perform a peak sweep of the frequency band using the max hold function. This sweep is performed every 22.5 deg in both horizontal and vertical polarities and at antenna heights of 100, 200 and 400cm. Although not a fully maximized scan, this type of scan provides emission data with a good indication of pass or fail.

#### Compliance Scans

Radiated emissions measurements were made over the frequency range of 9KHz to 1000MHz. Quasi- Peak measurements are taken with the Spectrum Analyzer/Receiver 's Resolution Bandwidth set to 120 kHz and Video Bandwidth set to 300 kHz for measurements below 1000MHz. Average measurements are taken with the Resolution Bandwidth set to 120 kHz and the Video Bandwidth set to 1.6 Hz for measurements below 1000MHz. The calculation for the radiated emissions field strength is as follows:

**Corrected Reading = Analyzer/Receiver Reading + Cable Loss + Antenna Factor**

**Margin (dB) = Corrected Reading - Applicable Limit**





### 5.3 Test Criteria

Emission Type	Frequency Range MHz	FCC Voltage Limits (dBuV)	
		Quasi-Peak	Average
Conducted Emission	0.150 to 0.50	66.0 to 56.0	56.0 to 46.0
	0.50 to 5.0	56.0	46.0
	5.0 to 30.0	60.0	50.0

Emission Type	Frequency Range MHz	FCC, IC E-Field Limits	
		Quasi-Peak (uV/m)	Peak (uV/m)
Radiated Emission	0.009-0.090		2400/F(kHz), 300m
	0.090-0.11	2400/F(kHz), 300m	
	0.11-0.49		2400/F(kHz), 300m
	0.490-1.705	24000/F(kHz), 30m	
	1.705-30.0	30, 30m	
	30.0 to 88.0	100, 3m	
	88.0 to 216.0	150, 3m	
	216.0 to 960.0	200, 3m	
	960.0 and above	500, 3m	

#### Note:

- Limits below 30 MHz are specified at a test distance of 30 meters, whilst below 0.49 MHz they are specified at a test distance of 300 meters. However, as specified by RSS-Gen Section 7.2.7 or FCC 15.31, 15.33, 15.35 (b) measurements may be performed at a closer distance and compliance limits corrected to the specified measurement distance by using the square of an inverse linear distance extrapolation factor (40dB/decade).
- Limits below 30 MHz are specified at a test distance of 30 meters, whilst below 0.49 MHz they are specified at a test distance of 300 meters. However, as specified by FCC Section 15.31 (f)(2), measurements may be performed at a closer distance and the compliance limits level corrected to the specified measurement distance by using the square of an inverse linear distance extrapolation factor (40dB/decade).
- Final measurement values include corrections for antenna factor and cable losses.
- The emission shown at approximately 125 kHz is the fundamental.
- All other emissions were found to be >20 dB below the applicable limit or below the measurement system noise floor.
- The EUT was rotated around the X, Y and Z axis to maximize the emission. The measurement antenna was at a fixed distance of 3 m, fixed height of 80 cm and was positioned at 0 degrees, 45 degrees and 90 degrees to the EUT to maximize the emission.

### 5.4 EUT Operation during Emission Testing

EUT was tested while running software to exercise applications of the device. Custom verification software version 2, provide by client.

### 5.5 Test Justification

No test justification required.



**6.0 Test Results**

**6.1 Ambient Atmospheric Conditions**

AMBIENT TEMPERATURE: 22 deg C  
RELATIVE HUMIDITY: 33%  
ATMOSPHERIC PRESSURE: 102.1 kPa

**6.2 Conducted Emissions**

ATL TECHNICIAN: Marin Bilan

Included  
TEST DATE:

**Conducted Emissions Line 1**

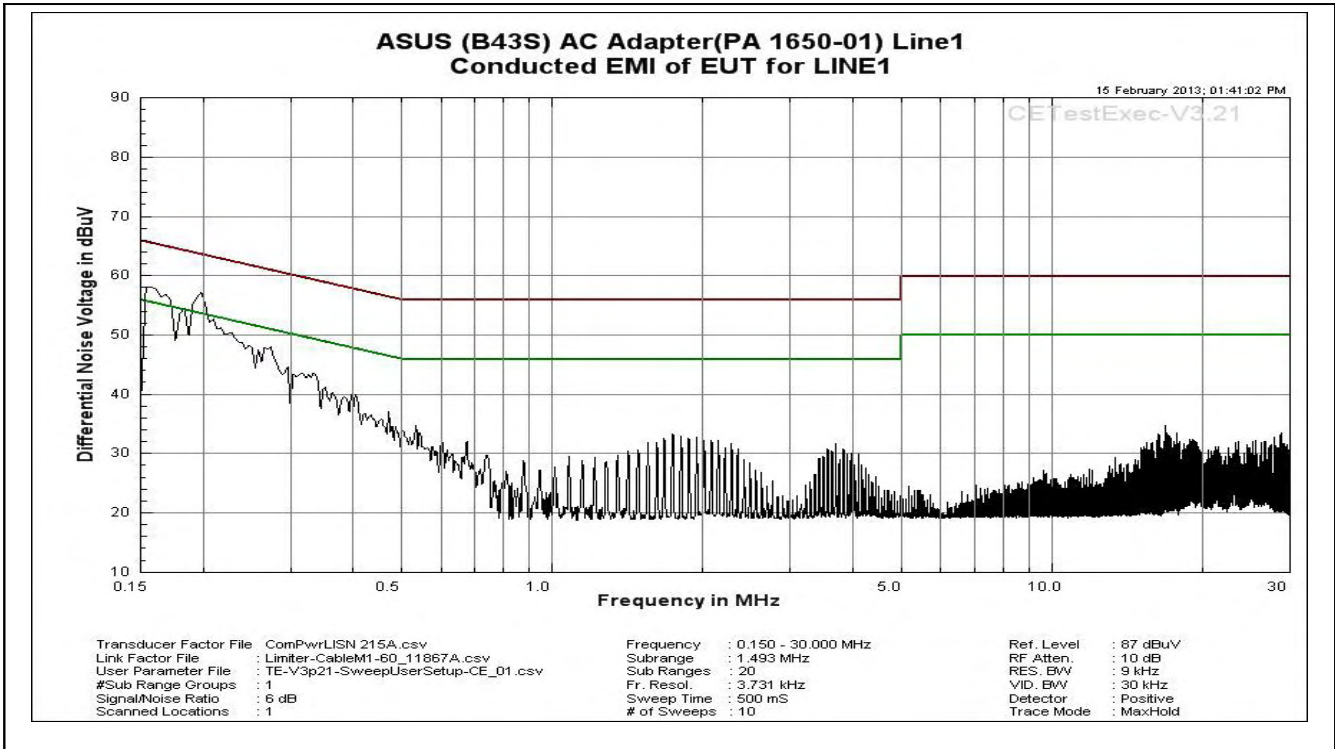
Freq (MHz)	Level (dBuV)	Correction Factor (dB)	QP FCC Limit (dBuV)	Avg FCC Limit (dBuV)	QP FCC Margin (dB)	Avg FCC Margin (dB)
0.150	51.01	10.85	66.00		-14.99	
0.199	48.80	10.68	64.61		-15.81	
0.200	20.55	10.68		54.61		-34.06

**Conducted Emissions Line 2**

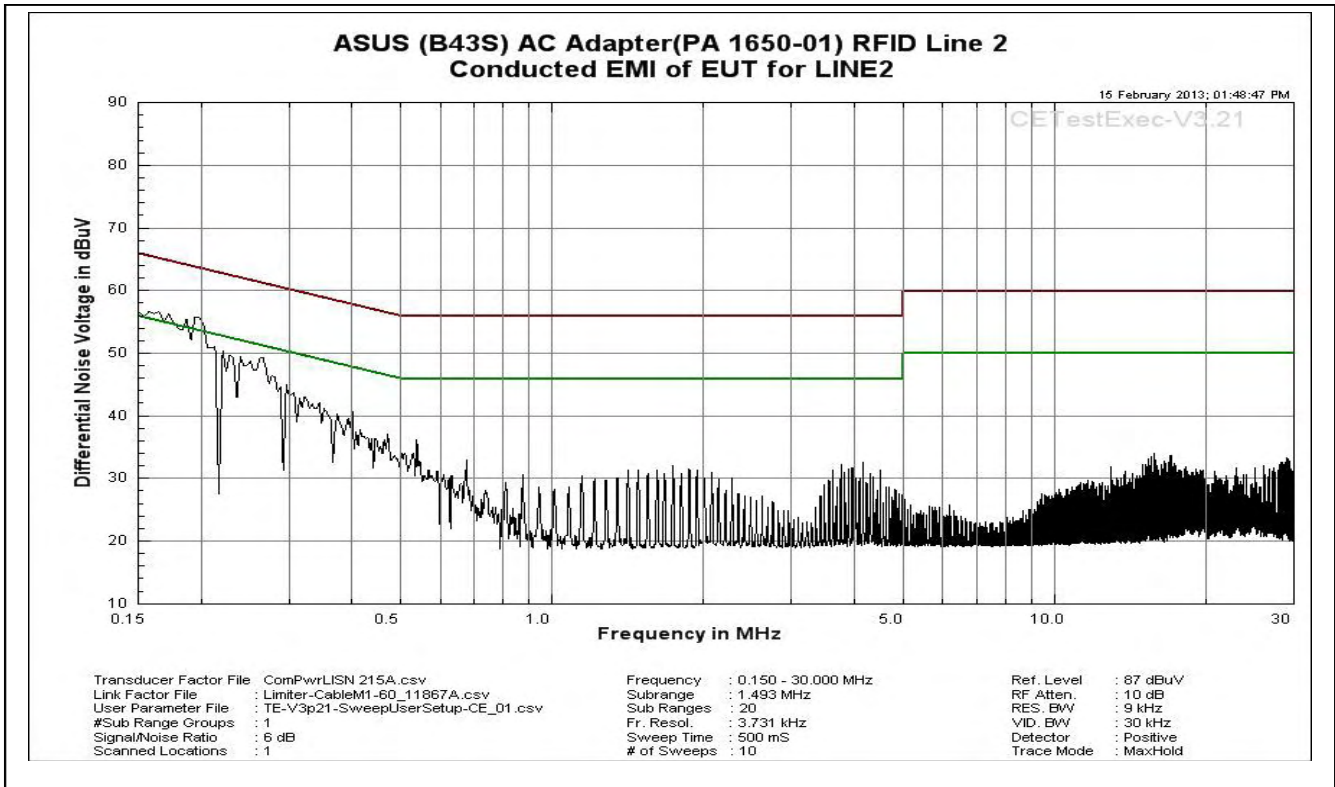
Frequency (MHz)	Level (dBuV)	Correction Factor (dB)	QP FCC Limit (dBuV)	Avg FCC Limit (dBuV)	QP FCC Margin (dB)	Avg FCC Margin (dB)
0.150	51.23	10.82	66		-14.77	
0.203	49.96	10.66	64.61		-14.65	
0.200	23.51	10.66		54.61		-31.1



### Conducted Emissions Scan Line 1



### Conducted Emissions Scan Line 2





### 6.3 Transmitter Radiated Emission

Several pre-scans may have been performed in an effort to mitigate any non-compliance and ultimately to identify the 10 highest offending emissions. The final compliance scan graph is shown below in figure and any modifications necessary to pass are detailed in section 2.5.

Final tabulated radiated emissions data:

ATL TECHNICIAN: Marin Bilan

TEST DATE: 13 Feb, 2013

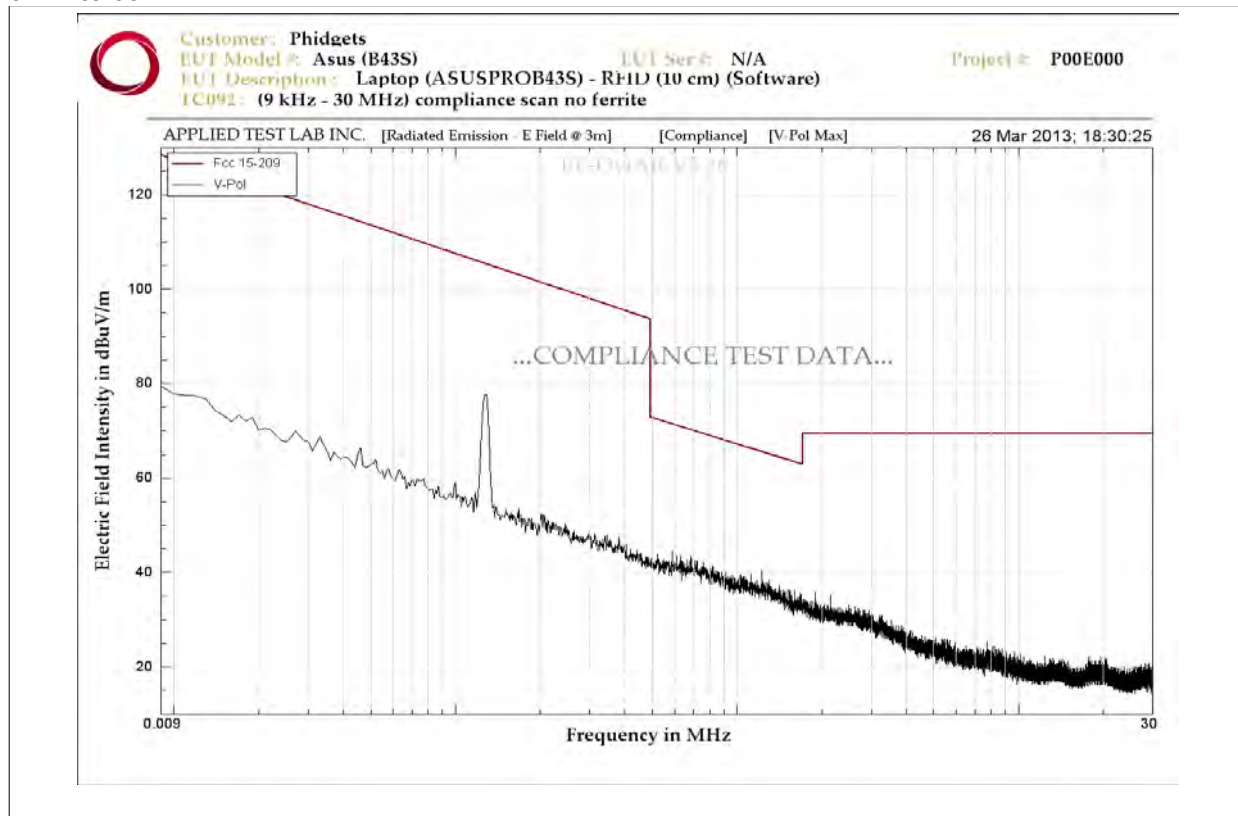
#### Vertical Polarization

Frequency (MHz)	Measured Reading (dBuV)	Azimuth Angle (deg)	Antenna Height (cm)	Correction Factor (dB)	Corrected Reading (dBuV/m)	FCC Limit (dBuV/m)	Margin (dB)
431.96	8.61	90	100	18.28	26.89	46.02	-19.13
432.02	8.21	90	100	18.28	26.49	46.02	-19.53

#### Horizontal Polarization

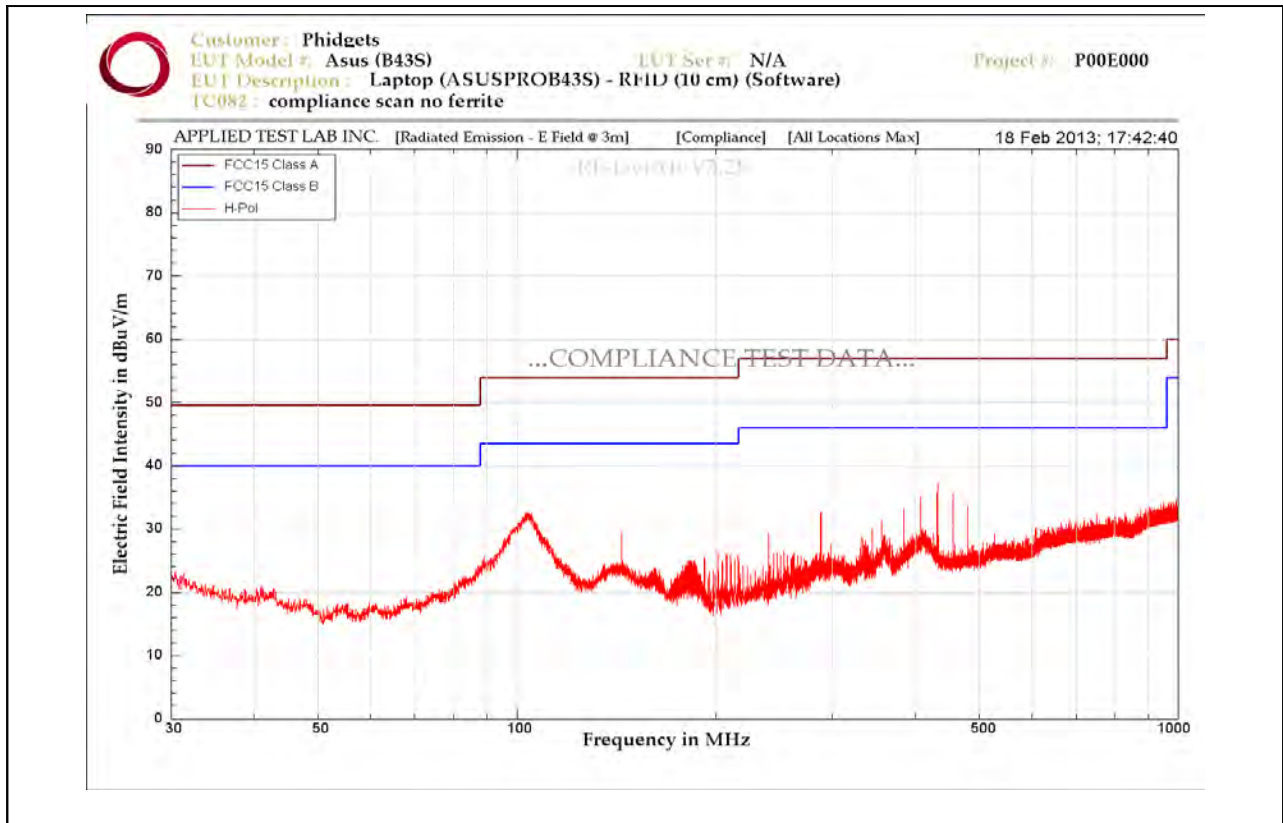
Frequency (MHz)	Measured Reading (dBuV)	Azimuth Angle (deg)	Antenna Height (cm)	Correction Factor (dB)	Corrected Reading (dBuV/m)	FCC Limit (dBuV/m)	Margin (dB)
431.96	19.04	90	100	18.28	37.32	46.02	-8.7
432.02	18.51	90	100	18.28	36.79	46.02	-9.23

#### 9kHz to 30MHz

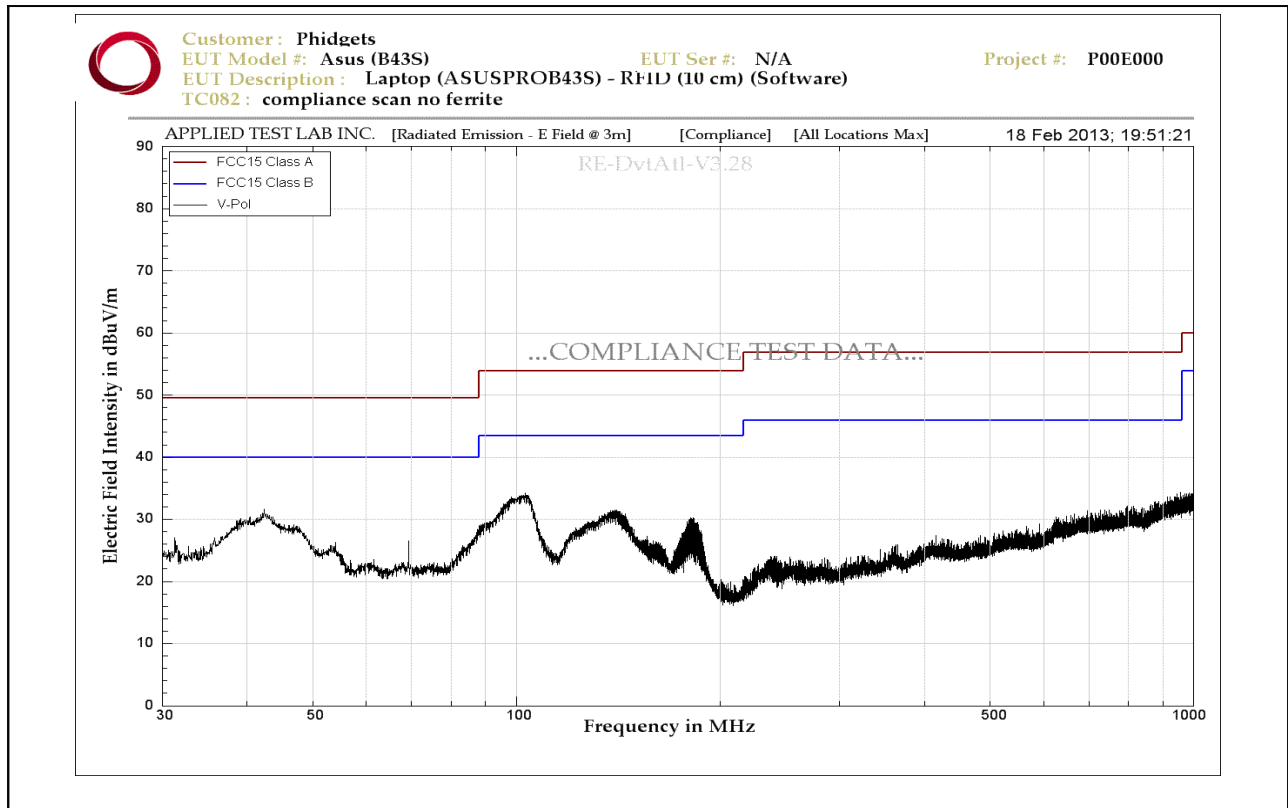




### Radiated Emissions Scan Horizontal Polarization



### Radiated Emissions Scan Vertical Polarization





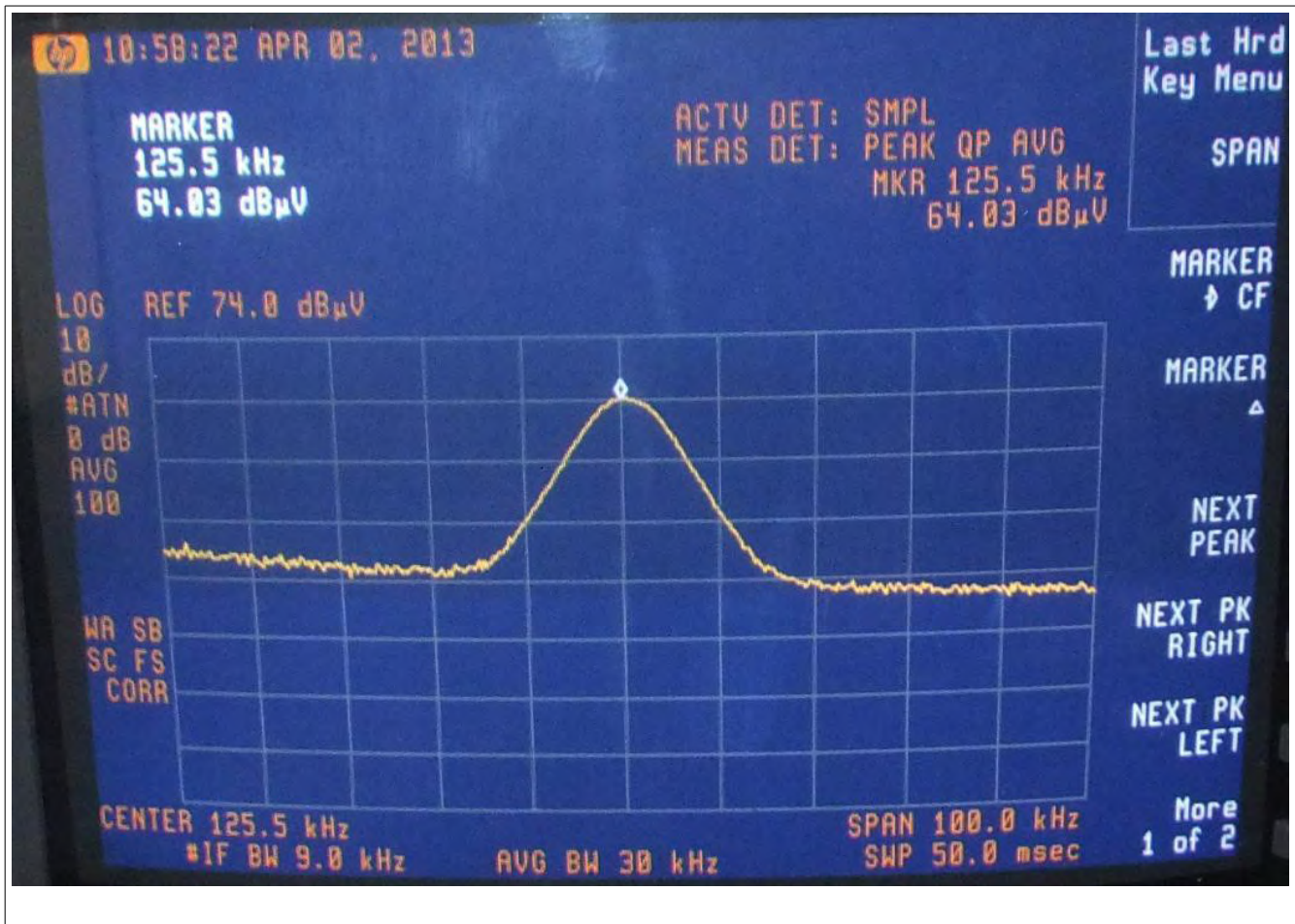
### 6.4 Transmitter Fundamental Field Strength

Test Specification 15.209

Test Method Used: ANSI C63.10 Section 6.4

MEASUREMENT RESULTS						
Frequency (kHz)	Antenna Polarity	Detector	Level (dBμV)	Limit (dBμV)	Margin (dBμV)	Result
126.5	0 to 360 Degree	Max Hold	77.88	105.67	-27.79	Pass

Note: Limit is extrapolated to 3m from 300m



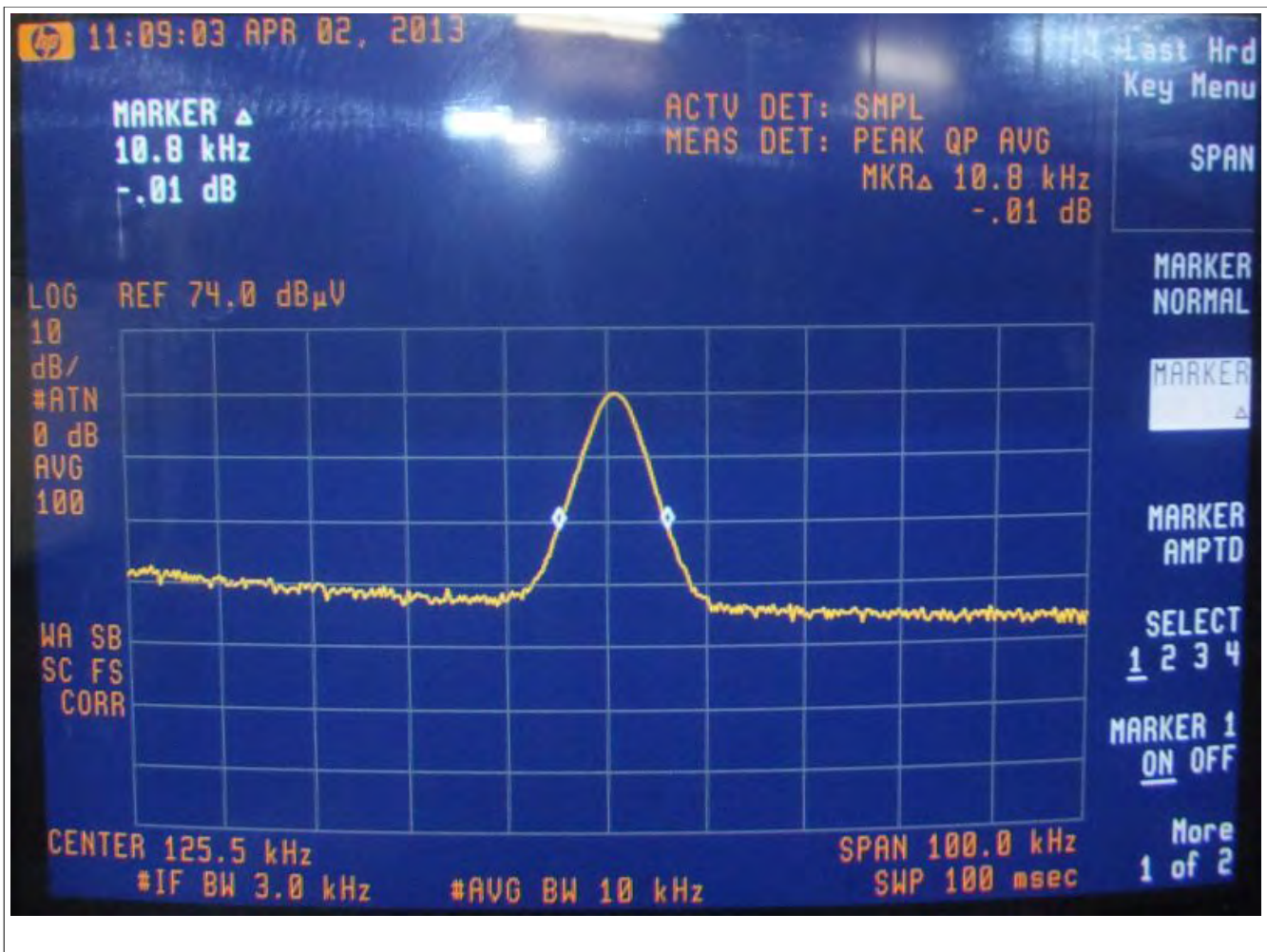


### 6.5 Transmitter 20 dB Bandwidth

Test Specification 15.215(c)

Test Method use ANSI C63.10 Section 6.9.1

MEASUREMENT RESULTS	
Bandwidth (kHz)	Result
10.8	Pass





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## 7.0 Appendix A – Test Sample Description

The test sample is a hand-built production sample, which was assembled, soldered & tested by Phidgets Inc. Called a “Gold Board”, the test sample is intended to mimic the final product as closely as possible. This is to ensure that the final appearance and packaging is correct and within acceptable tolerances. It is also loaded with the final version of firmware to ensure proper operation and to verify full functionality. Once tested, the designs are provided to Contract Manufacturer for mass production.





## 8.0 Appendix B – List of Abbreviations and Acronyms

A/m	Amperes per meter	kPa	kilopascal
AC	Alternating Current	kV	kilovolt
ACF	Antenna Correction Factor	LISN	Line Impedance Stabilization Network
ANSI	American National Standards Institute	LNA	Low Noise Amplifier
CISPR	Comité International Spécial des Perturbations Radioélectriques	MHz	Megahertz
<i>d</i>	Measurement Distance in meters	uH	microhenry
dB	Decibels	uF	microfarad
dBuA	Decibels above one microamp	uS	microsecond
dBuV	Decibels above one microvolt	PRF	Pulse Repetition Frequency
dBuA/m	Decibels above one microamp per meter	RF	Radio Frequency
dBuV/m	Decibels above one microvolt per meter	RMS	Root Mean Square
DC	Direct Current	TWT	Travelling wave Tube
DUT	Device Under Test	V/m	Volts per meter
DSL	Digital Subscriber Line	VCP	Vertical Coupling Plane
E	Electric Field Intensity		
EN	European Standards (Norm)		
ESD	Electrostatic Discharge		
EUT	Equipment Under Test		
<i>f</i>	Frequency		
FCC	Federal Communication Commission		
GRP	Ground Reference Plane		
H	Magnetic Field Intensity		
HCP	Horizontal Coupling Plane		
Hz	Hertz		
IC	Industry Canada		
IEC	International Electrotechnical Commission		
kHz	Kilohertz		



**End of Document**