

TEST REPORT



Testing Certification # 1367-01

Laboratory ID

PRODUCT SAFETY ENGINEERING, INC.
12955 Bellamy Brothers Boulevard
Dade City, Florida 33525 USA
PH (352) 588-2209 FX (352) 588-2544

Submitter ID

CAE Healthcare Inc.
6300 Edgelake Drive
Sarasota, FL 34240

Report Issue Date: 10/23/2012
Sample S/N: None
Sample Receipt Date: 08/07/2012
Sample Test Date: see data sheets

Test Report Number: 12F231B
Model Designation: Voicelink
Product Description: Wireless Voice Link

Description of non-standard test method or test practice: *None*

Estimated Measurement Uncertainty: *See page 9. This uncertainty represents and expanded uncertainty expressed at approximately 95% confidence level using a coverage factor of k=2.*

Special limitations of use: *None*

Traceability: *reference standards of measurement have been calibrated by a competent body using standards traceable to the NIST.*

According to testing performed at Product Safety Engineering, Inc., the above-mentioned unit is in compliance with the electromagnetic compatibility requirements defined in regulations indicated on page (3) of the test report. The test results contained herein relate only to the item identified above. It is the manufacturer's responsibility to assure that additional production units are manufactured with identical electrical and mechanical characteristics.

As the responsible EMC Project Engineer, I hereby declare that the equipment tested as specified above conforms to the requirements indicated on page (3) of the test report.

Signature  Name David Foerstner

Title Engineering Group Leader Date 23 Oct 2012

Reviewed by:

Approved Signatory  Date 23 Oct 2012

Steve Hoke (EMC Site Manager)

This report may only be reproduced in full without written permission from Product Safety Engineering, Inc.

Test Report Number 12F231B

Product Safety Engineering, Inc. 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

Page 1 of 12

DIRECTORY - EMISSIONS

		Page(s)
A) Documentation		
Test report		1 - 10
Directory		2
Test Regulations		3
General Remarks		10
Test-setups (Photos)		11 - 12
B) Test data		
Conducted emissions	10/150 kHz - 30 MHz	5, 9
Radiated emissions	10 kHz - 30 MHz	5, 9
Radiated emissions	30 MHz - 1000 MHz	6, 9
Interference power	30 MHz - 300 MHz	6, 9
Equivalent Radiated emissions	1 GHz - 18 GHz	7, 9
Antenna Disturbance Voltage	30 MHz - 1,000 MHz	7,9
C) Appendix A		
Test Data Sheets		A2 - A13
D) Appendix B		
System Under Test Description		B2 - B2
E) Appendix C		
Measurement Protocol		C1 - C2

Test Report Number 12F231B

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to following regulations:

- ☐ - EN 61000-6-3:2007
- ☐ - EN 61000-6-4:2007
- - ETSI EN 300 328 V1.7.1
- ☐ - EN 55011 : 2009/A1:2010
 - ☐ - Group 1
 - ☐ - Class A
- ☐ - Group 2
- ☐ - Class B
- - RSS-210
- ☐ - EN 55014 -1: 2006
 - ☐ - Household appliances and similar
 - ☐ - Portable tools
 - ☐ - Semiconductor devices
- ☐ - EN 55022:2010
 - ☐ - Class A
 - ☐ - Class B
- ☐ -AS/NZS CISPR 22
 - ☐ - Class A
 - ☐ - Class B
- ☐ - ICES-003
 - ☐ - Class A
 - ☐ - Class B
- ☐ - CNS 13438
 - ☐ - Class A
 - ☐ - Class B
- ☐ - VCCI V-3/2010.4
 - ☐ - Class A
 - ☐ - Class B
- - FCC Part 15 (per ANSI C63.4)
 - ☐ - Class A
 - ☐ - Class B
 - - Certification
 - ☐ - Verification
 - ☐ - Declaration of Conformity
- ☐ - FCC Part 18

Test Report Number 12F231B

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

Environmental conditions during testing:

	LAB	OATS
Temperature: *	_____	: _____
Relative Humidity: **	_____	: _____

* The ambient temperature during the testing was within the range of (50° - 104° F) unless indicted above.
** The humidity levels during the testing was within the range of (10% - 90%) relative humidity unless indicated above.

Power supply system : _____ Volts _____ Hz SINGLE phase

Sign Explanations:

- ☐ - not applicable
- ☒ - applicable

Test Report Number 12F231B

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage)

The *CONDUCTED EMISSIONS (INTERFERENCE VOLTAGE)* measurements were performed at the following test location:

☐ - Test not applicable

- ☐ - Darby Test Site (Open Area Test Site)
☒ - Darby Laboratory

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
<input type="checkbox"/> -	8028-50	Solar	50 Ω LISN	829012, 829022
<input type="checkbox"/> -	8012	Solar	50 Ω LISN	924840
<input checked="" type="checkbox"/> -	EMC-30	Electro-Metrics	EMI Receiver	191
<input type="checkbox"/> -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
<input type="checkbox"/> -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
<input type="checkbox"/> -	85662A	Hewlett Packard	Analyzer Display	2403A07352
<input type="checkbox"/> -	8028-50	Solar	50 Ω LISN	903725, 903726
<input type="checkbox"/> -	FCC-TLISN-T4-02	Fisher Custom Com.	Telecom ISN	20454
<input type="checkbox"/> -	FCC-TLISN-T8-02	Fisher Custom Com.	Telecom ISN	20452
<input checked="" type="checkbox"/> -	LI-125	Com-Power	50 Ω LISN	191080/191081

Emissions Test Conditions: RADIATED EMISSIONS (Magnetic Field)

The *RADIATED EMISSIONS (MAGNETIC FIELD)* measurements were performed at the following test location:

- ☒ - Darby Test Site (Open Area Test Site)
☐ -
☐ -

at a test distance of :

- ☒ - 3 meters
☐ - 30 meters

☐ - Test not applicable

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
<input type="checkbox"/> -	3148	EMCO	Log Periodic Antenna	00044783
<input type="checkbox"/> -	BIA-25	Electro-Metrics	Biconical Antenna	4283
<input checked="" type="checkbox"/> -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
<input checked="" type="checkbox"/> -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
<input checked="" type="checkbox"/> -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
<input checked="" type="checkbox"/> -	ALR-30M	Electro-Metrics	Loop Antenna	824
<input type="checkbox"/> -	8447D	Hewlett Packard	Preamplifier	2944A06832
<input type="checkbox"/> -	EMC-30	Electro-Metrics	EMI Receiver	191
<input type="checkbox"/> -	ALA-130/A	Antenna Research	Loop Antenna	106

Test Report Number 12F231B

Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *RADIATED EMISSIONS (ELECTRIC FIELD)* measurements, in the frequency range of 30 MHz-1000 MHz, were tested in a horizontal and vertical polarization at the following test location :

☐ - Test not applicable

- - Darby Site (Open Area Test Site)
- ☐ - Darby Lab
- ☐ -

at a test distance of :

- - 3 meters
- ☐ - 10 meters
- ☐ - 30 meters

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
<input type="checkbox"/>	HLP 3003C	EMC Automation	Hybrid Periodic Antenna	017501
■	8447D	Hewlett-Packard	Preamplifier (26dB)	1937A03247
■	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
■	85662A	Hewlett-Packard	Analyzer Display	2403A07352
■	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
<input type="checkbox"/>	BIA 25	Electro-Metrics	Biconical Antenna	4283
<input type="checkbox"/>	EMC-30	Electro-Metrics	EMI Receiver	191
<input type="checkbox"/>	8568B	Hewlett Packard	Spectrum Analyzer	2407A03213
<input type="checkbox"/>	85650A	Hewlett Packard	Quasi-Peak Adapter	2043A00358
<input type="checkbox"/>	85662A	Hewlett Packard	Analyzer Display	2340A05806
<input type="checkbox"/>	LPA30	Electro-Metrics	Log Periodic	2280
■	3104C	Emco	Biconical Antenna	00075927
■	9005	Eaton	Log Periodic Antenna	1099

Emissions Test Conditions): INTERFERENCE POWER

The *INTERFERENCE POWER* measurements were performed by using the absorbing clamp on the mains and interface cables in the frequency range 30 MHz - 300 MHz at the following test location :

■ - Test not applicable

- ☐ - Darby Lab
- ☐ -

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
<input type="checkbox"/>	MDS-21	Rhode&Schwarz	Absorbing Clamp	8608447020
<input type="checkbox"/>	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
<input type="checkbox"/>	85662A	Hewlett-Packard	Analyzer Display	2403A07352
<input type="checkbox"/>	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
<input type="checkbox"/>	8447D	Hewlett-Packard	Amplifier (26 dB)	2944A06832
<input type="checkbox"/>	EMC-30	Electro-Metrics	EMI Receiver	191

Test Report Number 12F231B

The EQUIVALENT RADIATED EMISSIONS measurements in the frequency range 1 GHz -24 GHz were performed in a horizontal and vertical polarization at the following test location :

■ - Darby Test Site (Open Area Test Site)

- ☐ -
- ☐ -
- ☐ -

at a test distance of:

- - 1 meters
- ☐ - 3 meters
- ☐ - 10 meters

☐ - **Test not applicable**

Test equipment used :

Model Number	Manufacturer	Description	Serial Number
■ - 8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
■ - 85662A	Hewlett-Packard	Analyzer Display	2403A07352
■ - 85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
■ - 8449B	Hewlett-Packard	Preamplifier	3008A00320
■ - 3115	Electro-Mechanics	Double Ridge Guide Horn	3810

The ANTENNA TERMINAL DISTURBANCE VOLTAGE in the frequency range 30 MHz - 1,000 MHz were performed.

☐ - Darby Test Site (Open Area Test Site)

- ☐ - Laboratory
- ☐ -
- ☐ -

■ - **Test not applicable**

Model Number	Manufacturer	Description	Serial Number
<input type="checkbox"/> - 2F9-3C4-3C5	Wavecom	UHF PAL TV Modulator	185879
<input type="checkbox"/> - 2F1-3C4-3C5	Wavecom	VHF PAL TV Modulator	157728
<input type="checkbox"/> - A-8000	IFR	Spectrum Analyzer	1306
<input type="checkbox"/> - 8648B	Hewlett-Packard	Signal Generator	3623A01433
<input type="checkbox"/> - 8648B	Hewlett-Packard	Signal Generator	3623A01477
<input type="checkbox"/> - LMV-182A	Leader	RMS Milli-Voltmeter	8010091
<input type="checkbox"/> - 3202	Krhon-Hite	Active filter	5899
<input type="checkbox"/> - FMT115	Leaming	FM Modulator	NONE
<input type="checkbox"/> - 371	UDT	Optical power meter	06657
<input type="checkbox"/> - TSG95	Tektronix	PAL video / Audio gen	B028883

Test Report Number 12F231B

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

Page 7 of 12

Equipment Under Test (EUT) Test Operation Mode - Emission tests :

The device under test was operated under the following conditions during emissions testing:

- ☐ - Standby
- ☐ - Test program (H - Pattern)
- ☐ - Test program (color bar)
- ☐ - Test program (customer specific)
- ☒ - Practice operation
- ☐ - Normal Operating Mode
- ☐ -

Configuration of the device under test:

- ☒ - See System Under Test Information in Appendix B

Rationale for EUT setup / configuration:

ANSI C63.4:2003

Emission Test Results:

Conducted emissions 150 kHz - 30 MHz

The requirements are ☒ - MET ☐ - NOT MET
Minimum limit margin 14.0 dB at 0.150 MHz
MU: 5.3 dB

Radiated emissions (magnetic field) 10 kHz - 30 MHz

The requirements are ☐ - MET ☐ - NOT MET
Minimum limit margin >20 dB at MHz
MU: NA

Radiated emissions (electric field) 30 MHz - 1000 MHz

The requirements are ☒ - MET ☐ - NOT MET
Minimum limit margin 5.0 dB at 144 MHz
MU: 5.2 dB

Interference Power at the mains and interface cables 30 MHz - 300 MHz

The requirements are ☐ - MET ☐ - NOT MET
Minimum limit margin dB at MHz
MU: NA

Radiated emissions 1 GHz - 24 GHz

The requirements are ☒ - MET ☐ - NOT MET
Minimum limit margin 8.5 dB at 4,960 GHz
MU: 4.9 dB

Antenna Terminal Disturbance Voltage 30 MHz - 1,000 MHz

The requirements are ☐ - MET ☐ - NOT MET
Minimum limit margin dB at MHz
MU: NA

MU = Measurement Uncertainty

Test Report Number 12F231B

GENERAL REMARKS:

Conducted emissions - Exploratory measurements are used to identify the frequency of the emission that has the highest amplitude relative to the limit by operating the EUT in a range of typical modes of operation, cable positions, and with a typical system equipment configuration and arrangement. For each mode of operation and for each ac power current-carrying conductor, cable manipulation is performed within the range of likely configurations. For this measurement or series of measurements, the frequency spectrum of interest is monitored looking for the emission that has the highest amplitude relative to the limit. Once that emission is found for each current-carrying conductor of each power cord associated with the EUT (but not the cords associated with non-EUT equipment in the overall system), the one and arrangement and mode of operation that produces the emission closest to the limit across all the measured conductors is recorded. Software used is Electro metrics OS-30-CAT ver 1.10

Radiated emissions - The equipment under test is oriented at (0) degrees azimuth with respect to the measuring antenna. The antenna is placed in the vertical polarity and the software performs an automated set of measurements across the frequency range of interest. When complete, a database of all signals labeled "suspects" is displayed and the test engineer manually investigates any signal that is within (15) dB of the limit. Those determined to be from the EUT are placed on a separate database labeled "finals" and those not from the EUT are placed in the ambient database. The EUT is then rotated (90) degrees and the process is repeated. Upon completion of (4) scans, the antenna polarity is changed to horizontal, the EUT orientation is set to (45) degrees and the process is repeated (4) additional times. After every scan, the final list is completed re-measured and updated for amplitude and polarity if higher in amplitude.

Once all (8) scans are complete, the highest (6) signals are re-measured by maximizing the amplitude with cable manipulation, antenna height and EUT azimuth. The final (6) six signals are included in the test report. Software used is HP 85870A Opt655/Rev A.02.01.

SUMMARY:

The requirements according to the technical regulations are

- ☒ - met
- ☐ - **not** met.

The device under test does

- ☒ - fulfill the general approval requirements mentioned on page 3.
- ☐ - **not** fulfill the general approval requirements mentioned on page 3.

Testing Start Date 11 Sep 2012

Testing End Date: 18 Sep 2012

- PRODUCT SAFETY ENGINEERING INC -

Test Report Number 12F231B

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

Test-setup photo(s):
Conducted emission 150 kHz - 30 MHz

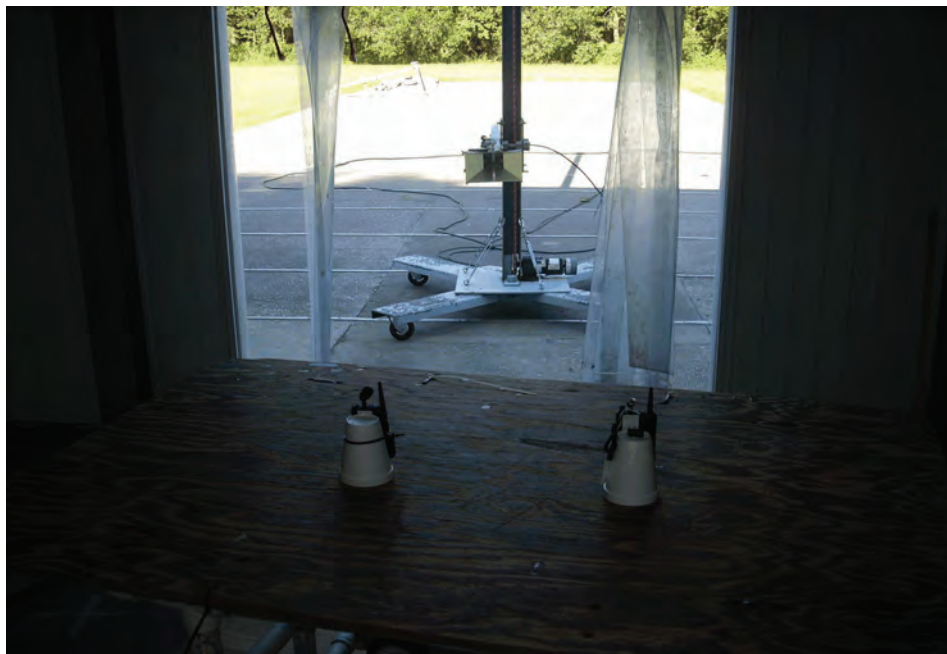


Test Report Number 12F231B

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

Page 11 of 12

Test-setup photo(s):
Radiated emission 30 MHz - 1000 MHz



Test Report Number 12F231B

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

Page 12 of 12

APPENDIX

A

Test Equipment Calibration Information & Test Data Sheets

	TEST EQUIPMENT CALIBRATION INFORMATION			
Manufacturer	Model	Description	Serial Number	Cal Due *
Hewlett Packard	8566B	Spectrum Analyzer	2421A00526	
Hewlett Packard	85662A	Display	2403A07352	
Hewlett Packard	85650A	Quasi-peak Adapter	2043A00209	11/4/2013
Hewlett Packard	8566B	Spectrum Analyzer	2532A02418	11/12/2013
Hewlett Packard	85662A	Display	2403A06604	11/12/2013
Hewlett Packard	85650A	Quasi-peak Adapter	2043A00358	
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	2944A06832	
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	2944A06901	
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	1937A03247	9/19/2013
Hewlett Packard	8449B	Preamp 1 - 26.5 GHz	3008A00320	5/7/2013
Hewlett Packard	E7402A	Portable Spectrum Analyzer	US40240204	
Eaton	96005	Log Periodic Antenna	1099	12/27/2012
Electro-Metrics	BIA-30	Biconical Antenna	3852	
EMCO	3104C	Biconical Antenna	75927	4/5/2013
Electro-Metrics	ALR30M	Magnetic Loop Antenna	824	11/9/2013
Electro-Metrics	EMC-30	EMI Receiver	191	7/24/2013
Electro-Metrics	3115	Double Ridge Guide Antenna	3810	5/25/2013
Solar	8028	LISN	829012/809022	
Com-Power	LI-125	LISN	191180/191181	9/17/2013
EMCO	3148	Log Periodic Antenna	75741	
Schwartzbeck	MDS-21	Absorbing Clamp	2581	
Fisher Custom	FCC-TLISN-T4-02	T LISN	20454	
Fisher Custom	FCC-TLISN-T8-02	Fisher Custom	20452	
		* Cal Due Date Format = MM/DD/YY		
All equipment was calibrated one year prior to the cal due date listed unless otherwise indicated				

PRODUCT EMISSIONS

PSE OPEN AREA TEST SITE

Data File: WIRELESS LINKS FCC-B@3M 17SEPT12

No	EMISSION	SPEC	MEASUREMENTS			SITE			CORR	COMMENTS
	FREQUENCY MHz	LIMIT dBuV/m	ABS	dLIM dB	MODE	POL	HGT cm	AZM deg	FACTOR dB	
1	33.100	40.0	33.8	-6.2	PK	V	100	225	-16.8	
2	55.109	40.0	31.9	-8.2	PK	V	150	180	-18.1	
3	72.000	40.0	34.8	-5.2	PK	V	150	270	-20.3	
4	96.006	43.5	38.0	-5.5	PK	V	100	225	-18.	
5	144.004	43.5	38.5	-5.0	PK	V	150	270	-14.2	
6	175.002	43.5	36.0	-7.5	PK	V	150	270	-12.2	
7	192.001	43.5	37.9	-5.6	PK	V	100	135	-10.6	
8	215.995	43.5	31.8	-11.7	PK	H	200	135	-15.3	
9	240.001	46.0	34.8	-11.2	PK	H	150	180	-14.4	
10	600.004	46.0	33.9	-12.1	PK	V	100	270	-7.7	

Radiated Emissions (1 - 24) GHz

CAE Wireless Voice Link										
Variety of Channels chosen so that 6 Different Transmitter Frequencies could be measured from lowest to highest frequency range possible.										
All Levels measured (and reported below) are Highest with Measurement Horn Antenna in Vertical Position.										
Transmitters are investigated at 3 orthogonal positions, Levels are Highest with Tx in Vertical upright position.										
Fundamental thru 3rd Harmonic are Measured at 3 Meter Distance										
Freq.	Peak			PA	Adj Peak	Peak	Delta	Average Level	AVG	Delta
	Measured @ 3 m	ACF	CL	Gain		Limit			Limit	
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
2402	92.2	28.4	7.5	30	98.1	114	-15.9	84.6	94	-9.4
2412	91	28.4	7.5	30	96.9	114	-17.1	83.5	94	-10.5
2435	93.1	28.4	7.5	30	99	114	-15	85	94	-9
2447	92.5	28.4	7.5	30	98.4	114	-15.6	85.3	94	-8.7
2470	91.1	28.4	7.5	30	97	114	-17	83.6	94	-10.4
2480	92.7	28.5	7.5	30	98.7	114	-15.3	83.9	94	-10.1
4804	42.3	32.7	11.5	30	56.5	74	-17.5	43.5	54	-10.5
4824	44.2	32.8	11.5	30	58.5	74	-15.5	45.2	54	-8.8
4870	42.3	32.7	11.5	30	56.5	74	-17.5	42.9	54	-11.1
4894	44.2	32.9	11.5	30	58.6	74	-15.4	44	54	-10
4940	44.2	33	11.5	30	58.7	74	-15.3	44.8	54	-9.2
4960	44.9	33.1	11.5	30	59.5	74	-14.5	45.5	54	-8.5
7206	28.4	35.9	17.2	30	51.5	74	-22.5	38.6	54	-15.4
7236	29	36.5	17.2	30	52.7	74	-21.3	39.4	54	-14.6
7305	28.4	36.5	17.2	30	52.1	74	-21.9	39	54	-15
7341	29	36.6	17.2	30	52.8	74	-21.2	40.3	54	-13.7
7410	29	36.6	17.2	30	52.8	74	-21.2	40.6	54	-13.4
7440	29.5	36.6	17.2	30	53.3	74	-20.7	41.7	54	-12.3

4th Harmonic and Higher Measured at 1 Meter Distance											
Freq.	Peak			Dist	PA	Adj Peak	Peak	Delta	Average Level	AVG	Delta
	Measured @ 1 m	ACF	CL	Corr	Gain	Level	Limit			Limit	
MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
9608	24.3	37.6	4.2	9.5	30	26.6	74	-47.4	13.2	54	-40.8
9648	24.6	37.6	4.2	9.5	30	26.9	74	-47.1	14.1	54	-39.9
9740	24.9	37.7	4.3	9.5	30	27.4	74	-46.6	12.9	54	-41.1
9788	22.2	37.8	4.4	9.5	30	24.9	74	-49.1	11.4	54	-42.6
9880	22	37.9	4.4	9.5	30	24.8	74	-49.2	11.5	54	-42.5
9920	22.9	38	4.4	9.5	30	25.8	74	-48.2	13.1	54	-40.9
**5th Harmonic											
**6th Harmonic											
**7th Harmonic											
**8th Harmonic											
**9th Harmonic											
**10th Harmonic											
**There are no Emissions to Measure above 10 GHz within 40 dB of the Limit, (Harmonics #5 thru #10)											
3 Meter Limit changed to 1 Meter Limit using 20 Log (3/1)= 9.5, Therefore Limit at 1 Meter is adjusted +9.5dB Higher											

Date : 09/18/12 Time : 14:45:38.10
Technician : CHIP FOERSTNER Test Equip. : EMC-30
Test Method : EN55022 CLASS B Test Number : 1
Equipment : WIRELESS VOICE LINK Sensor Loc. : SIDE 1
Mode of Op. : NORMAL Sensor Pol. :
Serial No. : NONE Ext. Atten. : 0 dB

Comment : 230 VAC / 50 HZ PHIHONG SWITCHING SUPPLY MODEL# PSC11R-050 5VDC OUTPUT

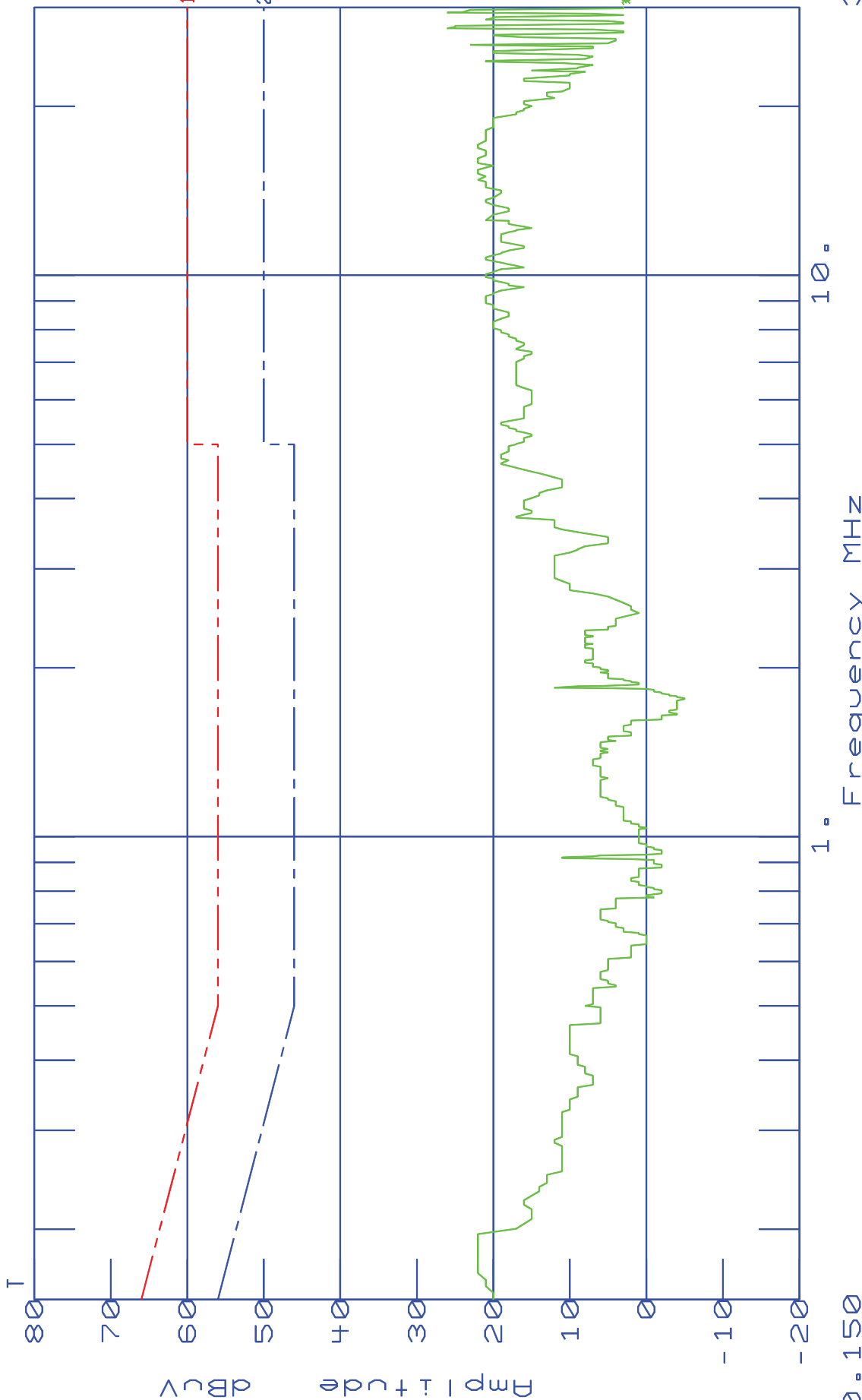
EMC-30 SETTINGS
Detector QuasiPeak
Bandwidth CISPR
Dump/Dwell IN/A
RF Atten. 10 dB
IF Atten. 10 dB

SPECS
1) CISPR 22 Quasi Peak
2) CISPR 22 AVG
3)
4)

ANTENNA
FILES

OTHER
FACTORS

E-M



TEST TITLE: CAE
DATA FILE : 12231_1.D30
Amplitude Units : dBuV

Threshold -27 dB

PAGE 1
Freq. (MHz)
0.1500

Freq(MHz)	Amp	C22BQP. S30 vs Spec(dB)	C22BAVG. S30 vs Spec(dB)
4.6123	19.0		-27.000 *
4.6264	19.0		-27.000 *
4.7179	19.0		-27.000 *
4.7531	19.0		-27.000 *
4.7882	19.0		-27.000 *
4.7953	19.0		-27.000 *
25.7202	23.0		-27.000 *
27.5435	26.0		-24.000 *
27.7114	25.0		-25.000 *
27.8121	25.0		-25.000 *
29.3738	26.0		-24.000 *
29.3906	24.0		-26.000 *
29.6996	23.0		-27.000 *

Date : 09/18/12 Time : 14:21:08.52
Technician : CHIP FOERSTNER Test Equip. : EMC-30
Test Method : EN55022 CLASS B Test Number : 1
Equipment : WIRELESS VOICE LINK Sensor Loc. : SIDE 2
Mode of Op. : NORMAL Sensor Pol. :
Serial No. : NONE Ext. Atten. : 0 dB

Comment : 230 VAC / 50 HZ PHIHONG SWITCHING SUPPLY MODEL# PSC11R-050 5VDC OUTPU

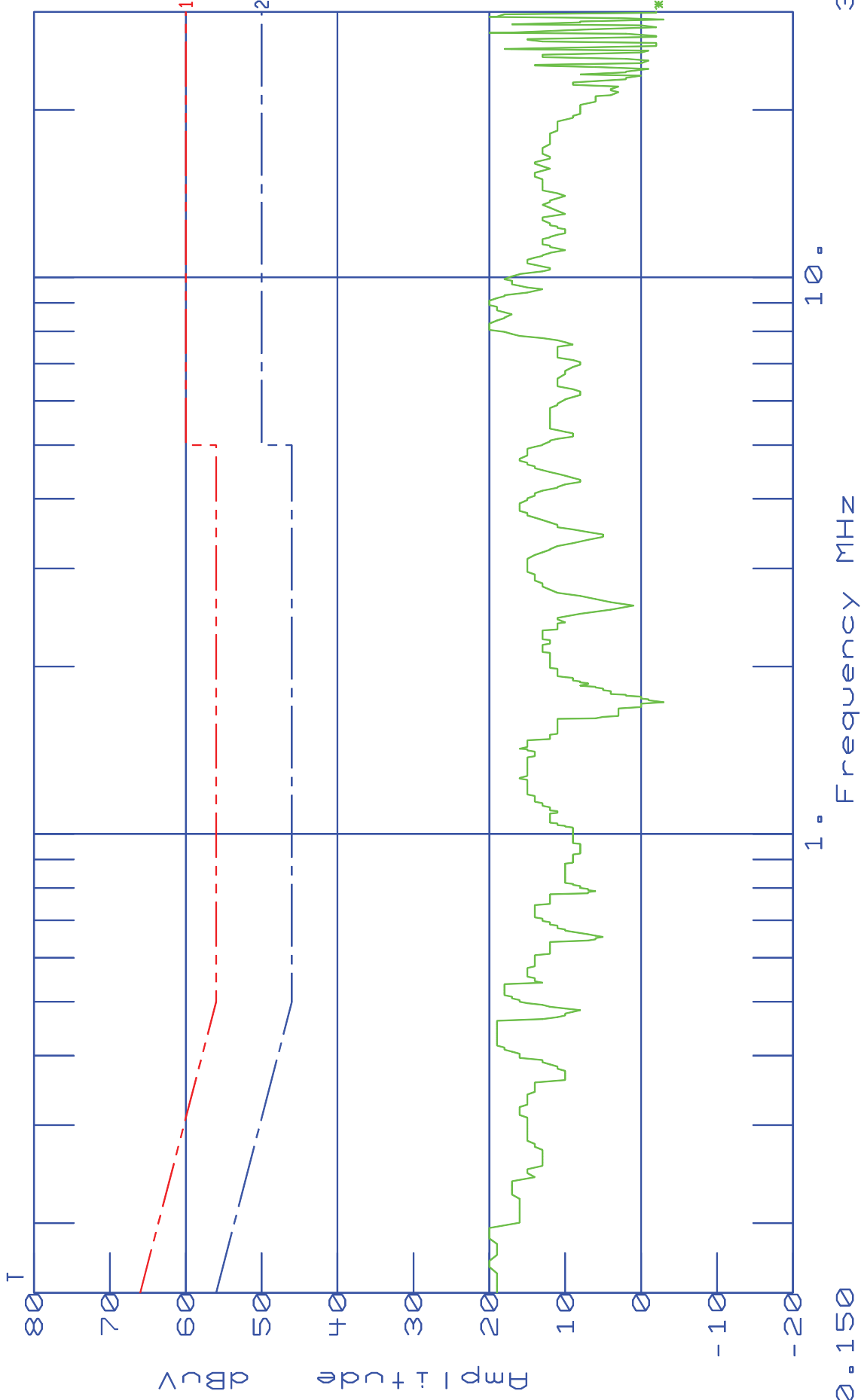
EMC-30 SETTINGS
Detector QuasiPeak
Bandwidth CISPR
Dump/Dwell IN/A
RF Atten. 10 dB
IF Atten. 10 dB

SPECS
1) CISPR 22 Quasi Peak
2) CISPR 22 AVG
3)
4)

ANTENNA
FILES

OTHER
FACTORS

E-M



TEST TITLE: CAE
 DATA FILE : 12231_2.D30
 Amplitude Units : dBuV

Threshold -30 dB

PAGE 1
 Freq. (MHz)
 0.1670

Freq(MHz)	Amp	C22BQP. S30 vs Spec(dB)	C22BAVG. S30 vs Spec(dB)
0.4101	18.0		-29.646 *
0.4135	18.0		-29.578 *
0.4170	19.0		-28.508 *
0.4205	19.0		-28.438 *
0.4239	19.0		-28.371 *
0.4274	19.0		-28.303 *
0.4309	19.0		-28.235 *
0.4343	19.0		-28.170 *
0.4378	19.0		-28.103 *
0.4413	19.0		-28.037 *
0.4447	19.0		-27.974 *
0.4482	19.0		-27.908 *
0.4517	19.0		-27.844 *
0.4551	19.0		-27.782 *
0.4586	19.0		-27.718 *
0.4621	19.0		-27.655 *
0.5000	16.0		-30.000 *
0.5034	16.0		-30.000 *
0.5068	17.0		-29.000 *
0.5102	17.0		-29.000 *
0.5136	18.0		-28.000 *
0.5170	18.0		-28.000 *
0.5204	18.0		-28.000 *
0.5238	18.0		-28.000 *
0.5272	18.0		-28.000 *
0.5306	18.0		-28.000 *
0.5341	18.0		-28.000 *
0.5375	18.0		-28.000 *
1.2584	16.0		-30.000 *
1.2618	16.0		-30.000 *
1.4239	16.0		-30.000 *
3.8064	16.0		-30.000 *
3.8416	16.0		-30.000 *
3.8768	16.0		-30.000 *
3.9120	16.0		-30.000 *
3.9261	16.0		-30.000 *
4.6827	16.0		-30.000 *
4.7179	16.0		-30.000 *
4.7249	16.0		-30.000 *
8.0481	20.0		-30.000 *
8.1154	20.0		-30.000 *
8.1829	20.0		-30.000 *
8.2501	20.0		-30.000 *
8.2569	20.0		-30.000 *
8.9194	20.0		-30.000 *
8.9867	20.0		-30.000 *
9.0538	20.0		-30.000 *
9.0739	20.0		-30.000 *
27.5133	20.0		-30.000 *
29.3839	20.0		-30.000 *

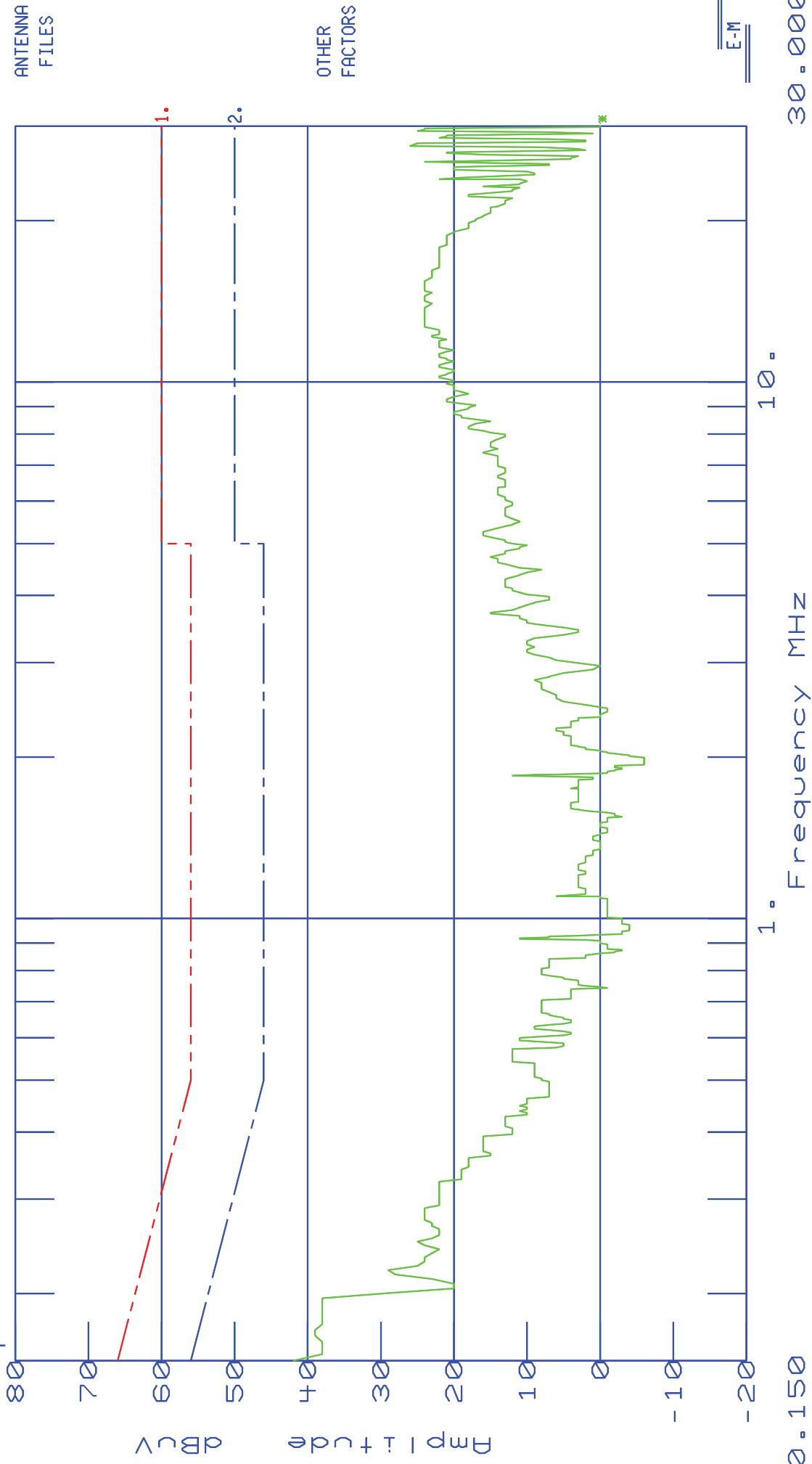
Test Date : 09/18/12
Technician : CHIP FOERSTNER
Test Method : EN55022 CLASS B
Equipment : WIRELESS VOICE LINK
Mode of Op. : NORMAL
Serial No. : NONE

Time : 15:05:50.36
Test Equip. : EMC-30
Test Number : 1
Sensor Loc. : LINE
Sensor Pol. :
Ext. Atten. : 0 dB

EMC-30 SETTINGS
Detector QuasiPeak
Bandwidth CISPR
Dump/Dwell IN/A
RF Atten. 10 dB
IF Atten. 10 dB

SPECS
1) CISPR 22 Quasi Peak
2) CISPR 22 AVG
3)
4)

Comment : 120 VAC / 60 HZ PHIHONG SWITCHING SUPPLY MODEL# PSC11R-050 5VDC OUTPUT



TEST TITLE: CAE
DATA FILE : 12231_L.D30
Amplitude Units : dBuV

Threshold -16 dB

PAGE 1
Freq. (MHz)
0.1500

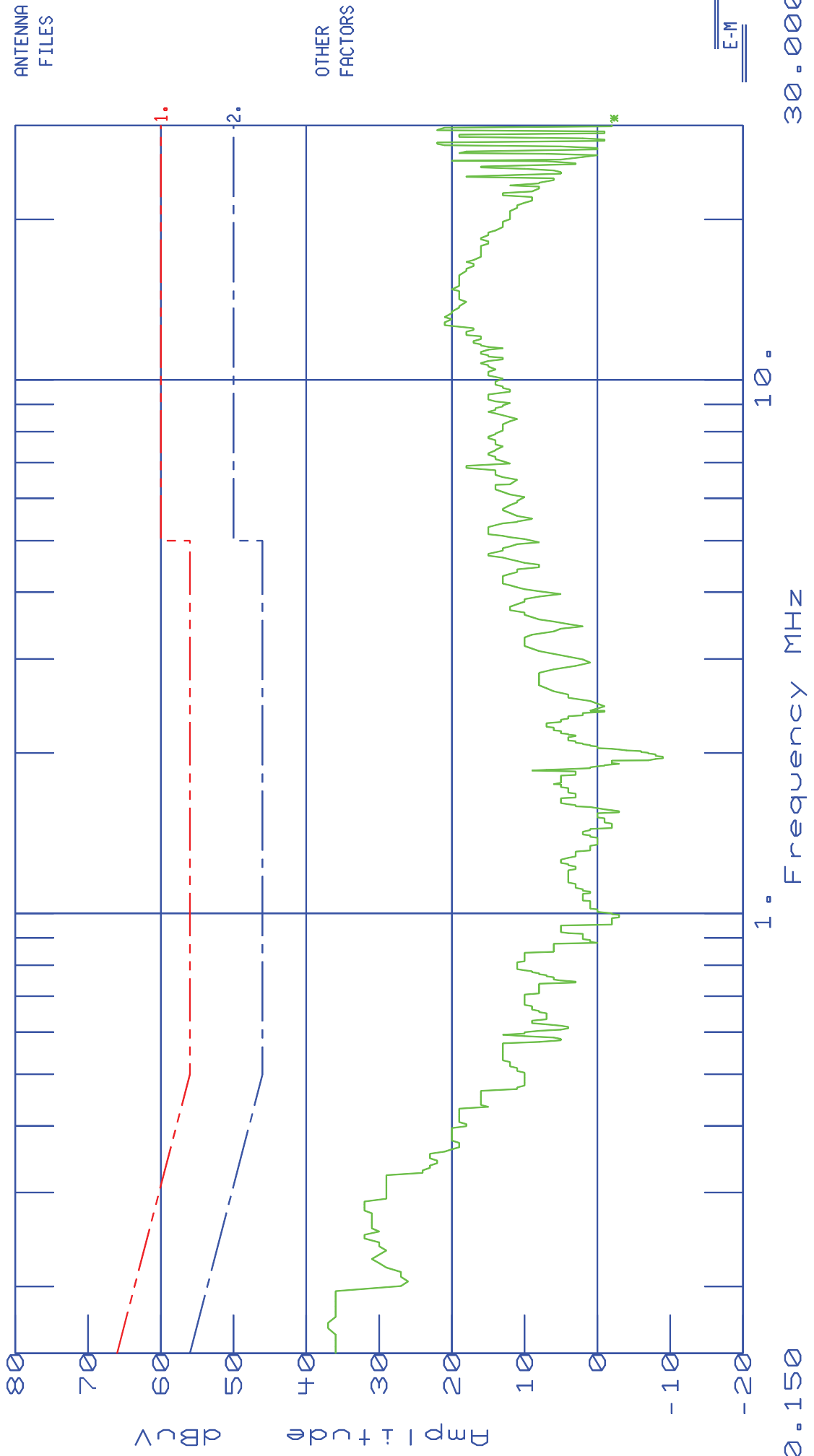
Freq (MHz)	Amp	C22BQP. S30 vs Spec (dB)	C22BAVG. S30 vs Spec (dB)
0.1500	42.0		-14.000 *
0.1711	39.0		-15.907 *
0.1920	38.0		-15.950 *
0.1961	38.0		-15.774 *

Date : 09/18/12 Time : 14:06:31.74
Technician : CHIP FOERSTNER Test Equip. : EMC-30
Test Method : EN55022 CLASS B Test Number : 1
Equipment : WIRELESS VOICE LINK Sensor Loc. : LINE
Mode of Op. : NORMAL Sensor Pol. :
Serial No. : NONE Ext. Atten. : 0 dB

Comment : 120 VAC / 60 HZ

EMC-30 SETTINGS
Detector QuasiPeak
Bandwidth CISPR
Dump/Dwell IN/A
RF Atten. 10 dB
IF Atten. 10 dB

SPECS
1) CISPR 22 Quasi Peak
2) CISPR 22 AVG
3)
4)



TEST TITLE: CAE
DATA FILE : 12231_N.D30
Amplitude Units : dBuV

Threshold -20 dB

PAGE 1
Freq. (MHz)
0.1500

Freq(MHz)	Amp	C22BQP. S30 vs Spec(dB)	C22BAVG. S30 vs Spec(dB)
0.1500	36.0		-20.000 *
0.1542	36.0		-19.771 *
0.1583	36.0		-19.553 *
0.1625	36.0		-19.335 *
0.1670	37.0		-18.108 *
0.1711	37.0		-17.907 *
0.1752	36.0		-18.710 *
0.1794	36.0		-18.513 *
0.1836	36.0		-18.321 *
0.1878	36.0		-18.133 *
0.1920	36.0		-17.950 *
0.1961	36.0		-17.774 *
0.2461	32.0		-19.888 *
0.2500	32.0		-19.757 *
0.2743	31.0		-19.987 *
0.2778	32.0		-18.881 *
0.2812	32.0		-18.780 *
0.2852	32.0		-18.663 *
0.2887	32.0		-18.562 *

APPENDIX

B

System Under Test Description

SYSTEM COMPONENTS

DEVICE TYPE: EUT, Wireless Voice Link with Pihong power supply model PSC11R-050

INTERFACE CABLES

DEVICE TYPE: Serial

SHIELD: Yes

LENGTH: 2.3 meters

CONNECTOR TYPE: 3 pin Molex type to unterminated

PORT: Serial

DEVICE TYPE: Line out

SHIELD: Coax

LENGTH: 1 meter

CONNECTOR TYPE: audio miniplug to jack

PORT: Line out

AC LINE CORDS

DEVICE TYPE: Plug in power supply (**DC side**)

SHIELD: Coax

LENGTH: 1.8 meters Ferrite at plug end

CONNECTOR TYPE: dedicated to miniplug

APPENDIX

C

Measurement Protocol

ANSCI C63.4 2003 was the guiding document for test procedures as required by 47 CFR Part 15 Subpart A Section 15.31(a)(3).

The EUT was powered with an external power supply during the collection of data included within.

The data is compared to the FCC Part 15 Class B limits.

The "EMI" instrumentation is capable of calculating the final emission level based on the following formula:

Level at the receiver (dB μ V) + Antenna Correction Factor (dB/M) + Cable Loss (dB) - Preamp Gain (dB) = Actual Level in dB μ V/M.

The sample calculation below is based on the actual test data collected:

Observed Level		50.6	dB μ V	
ACF	+	13.3	dB/M	
Cable Loss	+	0.6	dB	
Preamp Gain	-	<u>26.0</u>	dB	
Actual Level		38.5	dB μ V/M	@ 144 MHz

Please have a company official review this report and sign.
