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## TEST REPORT

### FCC PART 15

for

**FCC ID: AXI11464620**

<b>Applicant</b>	VERTEX STANDARD USA, INC.
<b>Address</b>	8000 WEST SUNRISE BLVD. FT. LAUDERDALE FL 33322 USA
<b>Model Number</b>	EVX-S24-G6-3
<b>Product Description</b>	UHF 2 WAY PORTABLE TRANSCEIVER
<b>Date Sample Received</b>	6/29/2016
<b>Date Tested</b>	7/26/2016
<b>Tested By</b>	Cory Leverett
<b>Approved By</b>	Sid Sanders
<b>Test Results</b>	<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL

Report Number	Version Number	Description	Issue Date
1233BUT16TestReport_	Rev1	Initial Issue	7/27/2016

**THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL  
WITHOUT THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.**

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## GENERAL REMARKS

The attached report shall not be reproduced except in full without the written permission of Timco Engineering Inc.

## Summary

The device under test does:

- ☒ Fulfill the general approval requirements as identified in this test report and was selected by the customer.
- ☐ Not fulfill the general approval requirements as identified in this test report

## Attestations

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.

I attest that the necessary measurements were made at:

**Timco Engineering Inc.**  
**849 NW State Road 45**  
**Newberry, FL 32669**



**Tested by:** \_\_\_\_\_

Name and Title: Project Manager/Testing Technician

**Date: 7/ 27/ 2016**



**Reviewed and approved by:** \_\_\_\_\_ Name and Title: Engineer

**Date: 7/ 27/ 2016**

## GENERAL INFORMATION

The test results relate only to the items tested.	
<b>EUT Description</b>	<b>UHF 2 WAY PORTABLE TRANSCEIVER</b>
<b>FCC ID</b>	<b>AXI11464620</b>
<b>Model Number</b>	<b>EVX-S24-G6-3</b>
<b>Highest Tuned Frequency</b>	480 MHz
<b>I / O Port Type</b>	USB Micro
<b>EUT Power Source</b>	<input type="checkbox"/> 110–120Vac/50– 60Hz
	<input type="checkbox"/> 12.6 VDC Nominal
	<input checked="" type="checkbox"/> Battery Operated Exclusively
<b>Test Item</b>	<input type="checkbox"/> Prototype
	<input type="checkbox"/> Pre-Production
	<input type="checkbox"/> Production
<b>Environmental Condition in the laboratory</b>	Temperature: 24-26°C Relative humidity: 50-65% Barometric Pressure: 1012.8mb

## EUT CABLES USED FOR TESTING

Description	Type	Connector	Length
USB Data Cable	Shielded	USB-A to USB Micro	Less than 3 m

## TEST INFORMATION

<b>Regulatory Standard</b>	CFR Title 47 FCC Rule part 15B § 15.109, 15.107
<b>Test Procedures</b>	FCC Part 15.31, 15.33, 15.35 ANSI C63.4 – 2014
<b>Operational Modes</b>	Configured as a computer peripheral through a PC running provided software with a continuous firmware update loop.
<b>Setup</b>	The EUT was configured as a computer peripheral through a supplied USB cable, the setup used was a tabletop arrangement for IT equipment as specified in the standard
<b>Modifications required for Testing</b>	None
<b>Deviation from the standard/ procedure</b>	No deviation
<b>Host PC Model</b>	Microsoft Surface Pro 3 with Microsoft model 1625 ITE supply

## RESULTS SUMMARY

Requirement			RESULTS
15.109 Radiated Emissions	<b>Frequency MHz</b>	<b>Level (dBuV/ m)</b>	Pass
	30 – 88	40.0	
	80 – 216	43.0	
	216 – 960	46.0	
	Above 960	54.0	
15.107 AC Powerline Conducted	<b>Frequency MHz</b>	<b>Quasi Peak Limits (dBµV)</b>	<b>Average Limits (dBµV)</b>
	0.15 – 0.5	66 – 56	56 – 46 *
	0.5 – 5.0	56	46
	5.0 – 30	60	50

Decrease with logarithm of frequency

## RADIATED SPURIOUS EMISSIONS

**Rule Part No.:** FCC Part 15 Subpart B

**Requirements:** FCC Part 15.109(a) Radiated Emission Limit

Class B Field Strength Limits @ 3 Meters	
Frequency (MHz)	Level (dBuV/ m)
30 – 88	40.0
80 – 216	43.5
216 – 960	46.0
Above 960	54.0

**Procedure:** FCC Part 15.33(b)(1) Frequency range of radiated measurements

FCC Part 15.35(a) Measurement detector functions and bandwidths

ANSI C63.4 Methods of Measurement of Radio-Noise Emissions from  
Low-Voltage Electrical and Electronic Equipment 9 kHz to 40 GHz

§ 11.2 Operating conditions

§ 11.3 Peripherals / Accessories

§ 11.5 Tabletop equipment arrangement

§ 11.9 Radiated emission measurements

**Configuration:** The EUT is configured as a computer peripheral through a USB cable connected to a partially configured host PC. A firmware update to the EUT was used to transfer data between the EUT and the host PC.

## RADIATED SPURIOUS EMISSIONS

### 30-200 MHZ PEAK PLOT



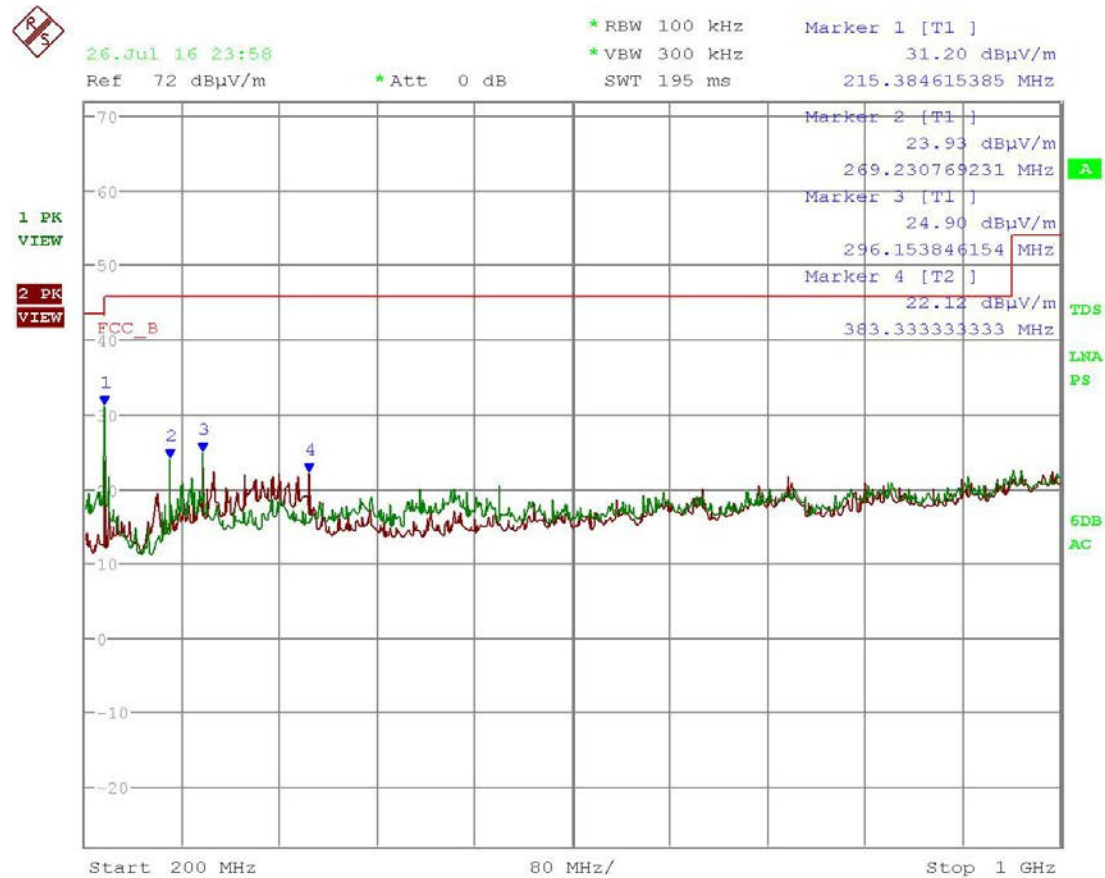
Date: 26.JUL.2016 23:54:36

### Results - Meets Requirements

Ant Polarity: T1 (Green) = Vertical, T2 (Red) = Horizontal

## RADIATED SPURIOUS EMISSIONS

### 200-1000 MHZ PEAK PLOT



Date: 26.JUL.2016 23:58:16

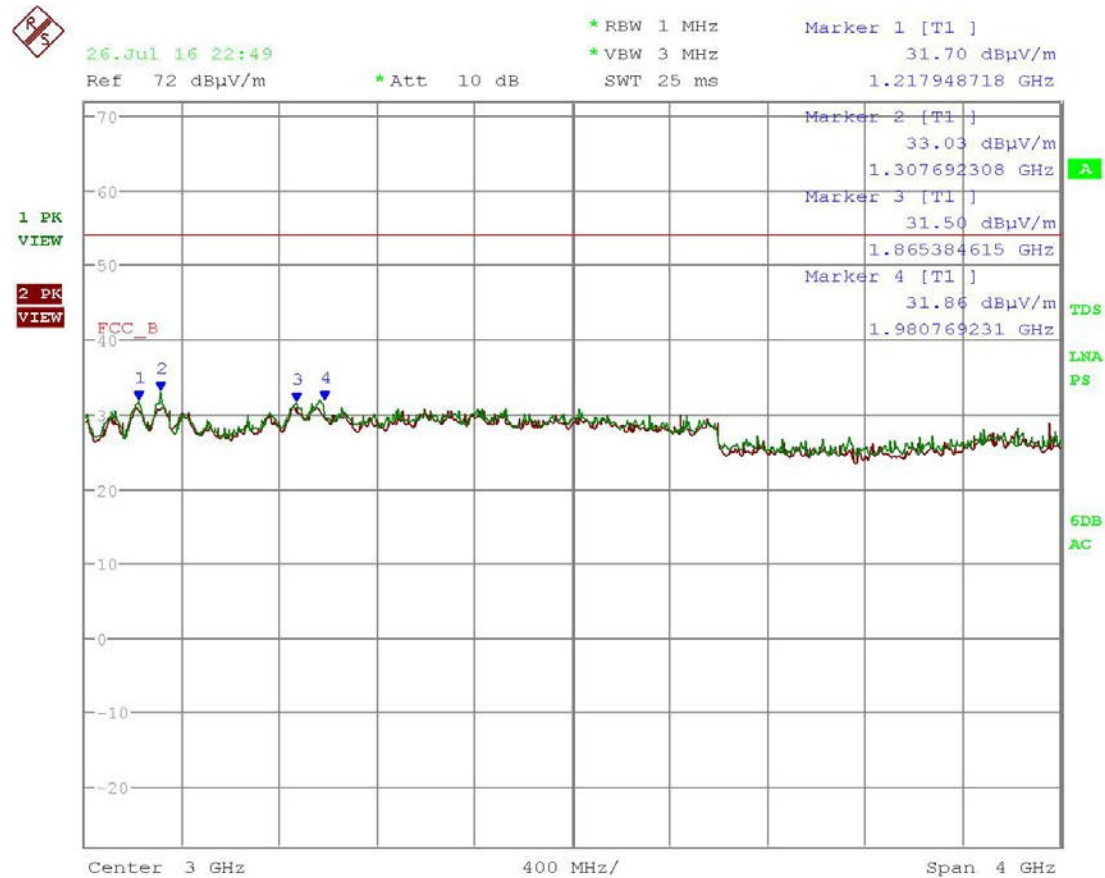
### Results - Meets Requirements

Ant Polarity: T1 (Green) = Vertical, T2 (Red) = Horizontal



## RADIATED SPURIOUS EMISSIONS

### 1000-5000 MHZ PEAK PLOT



Date: 26.JUL.2016 22:49:36

### Results - Meets Requirements

Ant Polarity: T1 (Green) = Vertical, T2 (Red) = Horizontal

## POWER LINE CONDUCTED INTERFERENCE

**Rules Part No.:** FCC Subpart B

**Requirements:** FCC 15.107 (a) Conducted Limits

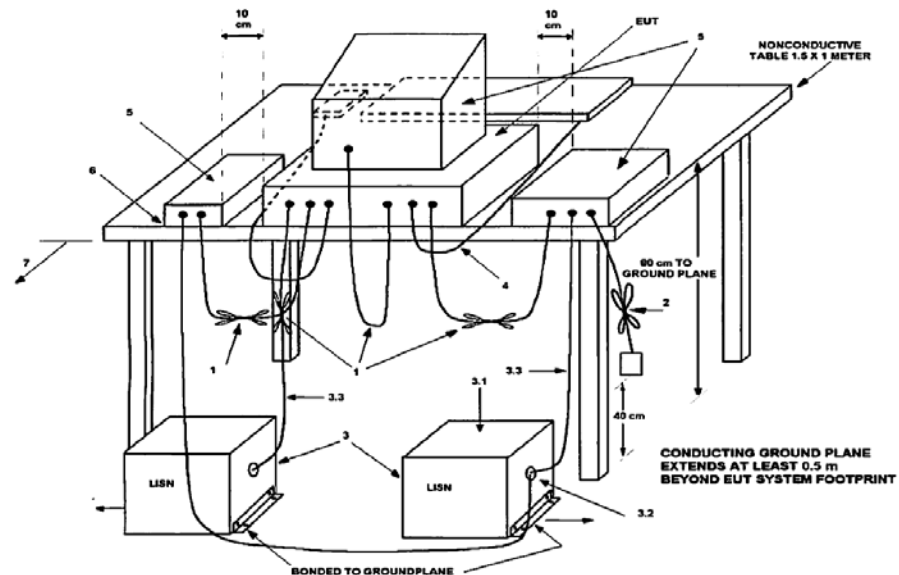
Frequency (MHz)	Quasi Peak Limits (dB $\mu$ V)	Average Limits (dB $\mu$ V)
0.15 – 0.5	66 – 56 *	56 – 46 *
0.5 – 5.0	56	46
5.0 – 30	60	50
* Decrease with logarithm of frequency		

**Procedure:** ANSI C63.4 Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment 9 kHz to 40 GHz

- § 11.2 Operating conditions
- § 11.3 Peripherals / Accessories
- § 11.5 Tabletop equipment arrangement
- § 11.8 AC power-line conducted emission measurements

**Configuration:** The EUT is configured as a computer peripheral through a USB cable connected to a partially configured host PC. A firmware update to the EUT was used to transfer data between the EUT and the host PC

### Setup:



## POWER LINE CONDUCTED INTERFERENCE

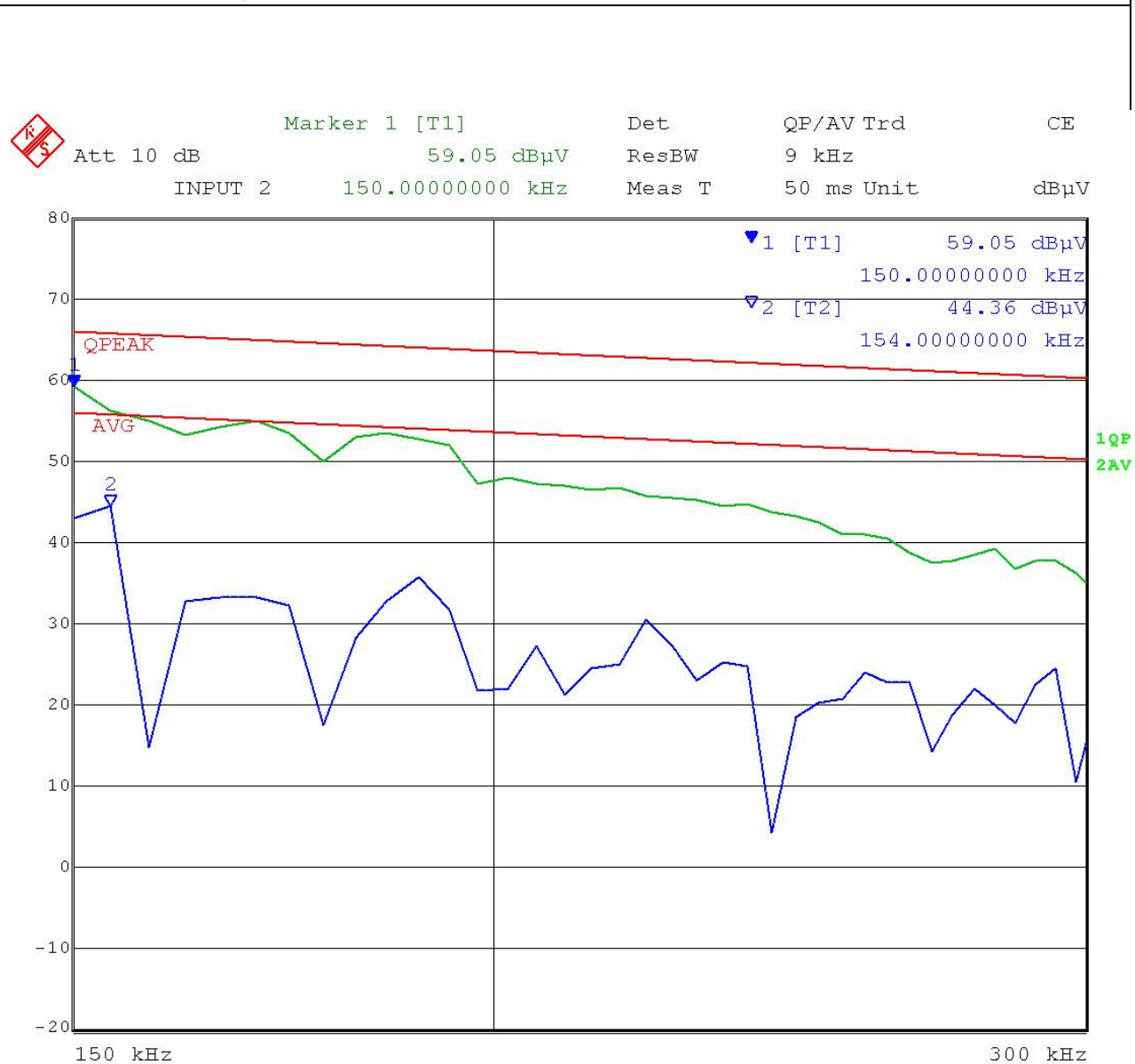
### POWERLINE 1 PEAK PLOT



**Results - Meets Requirements**

# POWER LINE CONDUCTED INTERFERENCE

## POWERLINE 1 QUASI PEAK & AVERAGE PLOT

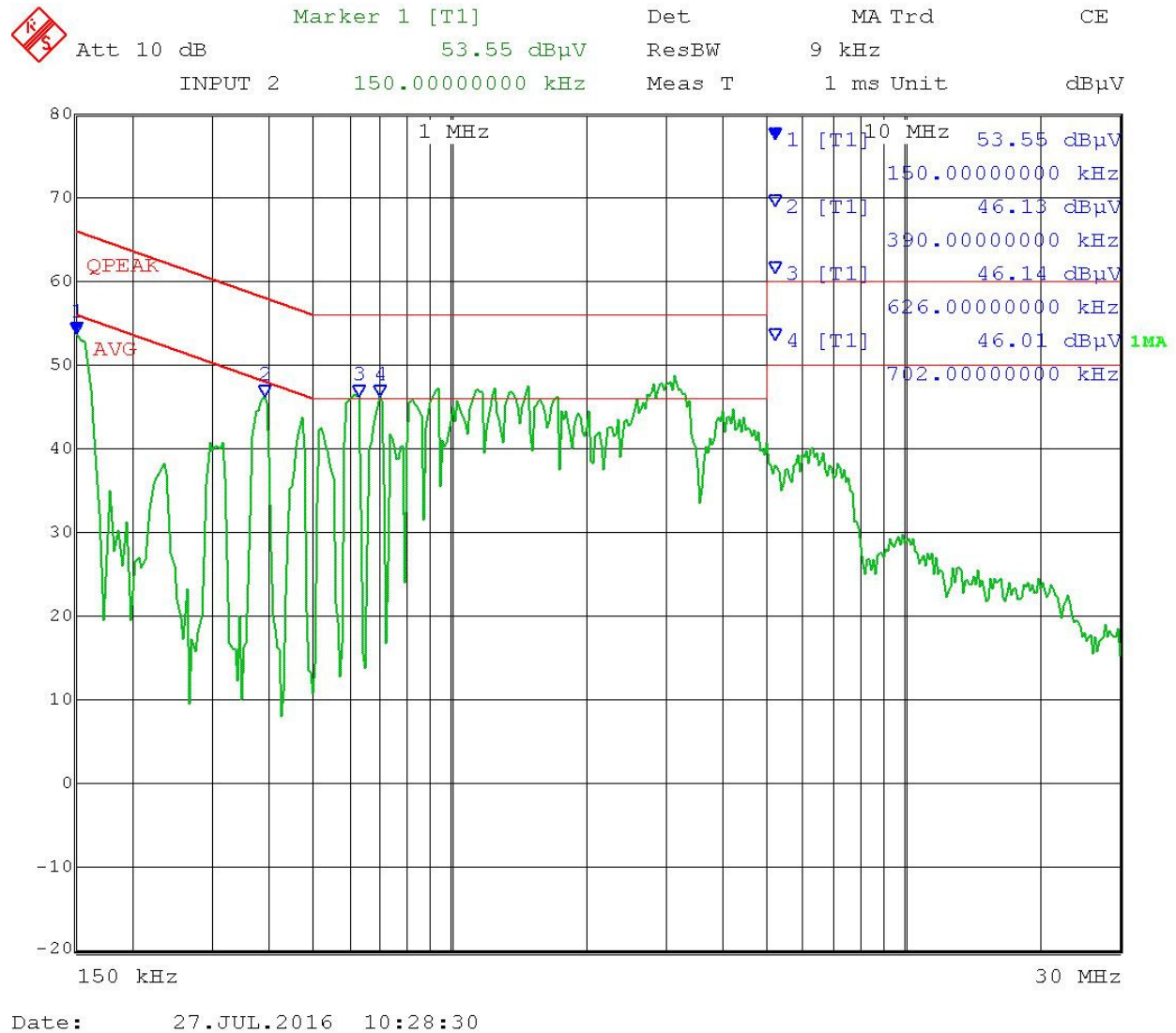


Date: 27.JUL.2016 10:42:38

**Results - Meets Requirements**

## POWER LINE CONDUCTED INTERFERENCE

### POWERLINE 2 PEAK PLOT



**Results - Meets Requirements**

# POWER LINE CONDUCTED INTERFERENCE

## POWERLINE 2 QUASI PEAK & AVERAGE PLOT



Date: 27.JUL.2016 10:50:11

**Results - Meets Requirements**

## TEST EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
Antenna: Biconical 1096 Chamber	Eaton	94455-1	1096	07/14/15	07/14/17
Antenna: Log-Periodic 1122	Electro-Metrics	LPA-25	1122	07/14/15	07/14/17
LISN (Primary)	Electro-Metrics	ANS-25/2	2604	07/13/15	07/13/17
LISN (Secondary)	Electro-Metrics	EM-7820	2682	05/08/15	05/08/17
CHAMBER	Panashield	3M	N/A	12/31/16	12/31/17
Antenna: Double-Ridged Horn/ETS Horn 2	ETS-Lindgren Chamber	3117	00041534	02/25/15	02/25/17
EMI Test Receiver R & S ESIB 40 Screen Room	Rohde & Schwarz	ESIB 40	100274	08/12/14	08/12/16
Software: Field Strength Program	Timco	N/A	Version 4.0 NO	NA	NA
EMI Test Receiver R & S ESU 40 Chamber	Rohde & Schwarz	ESU 40	100320	04/01/16	04/01/18
Coaxial Cable - BMBM-1000-00 Silver	Semflex	LISN Cable	BMBM-1000-00	01/05/16	01/04/17
Coaxial Cable - Chamber 3 cable set (Primary)	Micro-Coax	Chamber 3 cable set (Primary)	KMKM-0244-00; KMKM-0670-00; KFKF-0198-00	12/05/15	12/05/17
Bore-sight Antenna Positioning Tower	Sunol Sciences	TLT2	N/A	NA	NA
Pre-amp	RF-LAMBDA	RLNA00M45GA	NA	01/04/16	01/04/18

### \* EMI RECEIVER SOFTWARE VERSION

The receiver firmware used was version 4.43 Service Pack 3

## UNCERTAINTY TABLE

### State of the measurement uncertainty

The data and results referenced in this document are true and accurate. The measurement uncertainty was calculated for all measurements listed in this test report according To CISPR 16 – 4 or ENTR 100-028 Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: “Uncertainty in EMC Measurements” and is documented in the Timco Engineering, Inc. quality system according to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Timco Engineering, Inc. is reported:

Test Items	Measurement Uncertainty	Notes
Radiated Emissions to 6.0GHz	$\pm 4.4\text{dB}$	(1)
Power line conducted emissions	$\pm 3.9\text{dB}$	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=1.96$ .

END OF REPORT