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## FCC PART 15 SUBPART B CLASS B TEST REPORT

<b>Applicant</b>	YAESU MUSEN CO., LTD.
<b>Address</b>	TENNOZU PARKSIDE BUILDING 2-5-8 HIGASHI-SHINAGAWA, SHINAGAWA-KU, TOKYO140-0002JAPAN
<b>FCC ID</b>	K6620523X51
<b>Model Number</b>	FTM-3100R
<b>Product Description</b>	ANALOGUE SCANNING RECEIVER
<b>Date Sample Received</b>	2/11/2016
<b>Final Test Date</b>	3/09/2016
<b>Tested By</b>	Christian Pawlak
<b>Approved By</b>	Cory Leverett
<b>Test Results</b>	<input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL

Report Number	Version Number	Description	Issue Date
288BUT16TestReport_	Rev1	Initial Issue	3/11/2016

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

## TABLE OF CONTENTS

GENERAL REMARKS .....	3
SUMMARY OF TESTING RESULTS.....	3
GENERAL INFORMATION .....	4
EUT CABLES USED FOR TESTING .....	4
REPORT SUMMARY.....	5
RESULTS SUMMARY.....	5
RADIATED SPURIOUS EMISSIONS .....	6
30–200 MHZ PEAK PLOT .....	7
200-1000 MHZ PEAK PLOT .....	8
1000-2000 MHz PEAK PLOT .....	9
POWER LINE CONDUCTED INTERFERENCE.....	10
POWERLINE 1 PEAK PLOT.....	11
POWERLINE 2 PEAK PLOT.....	12
TEST EQUIPMENT LIST.....	13

## GENERAL REMARKS

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

The test results only relate to the item tested.

## SUMMARY OF TESTING RESULTS

The device under test does:

Fulfill the general approval requirements as identified in this test report  
 Not fulfill the general approval requirements as identified in this test report

## ATTESTATIONS

This equipment was received without any visible damage and in good working order and 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: 2005 requirements.

I attest that the necessary measurements were made at:

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

**Authorized Signatory Name:**



**Christian Pawlak**  
**Project Manager**

**Date:** 03/09/2016

## TABLE OF CONTENTS

Applicant: YAESU MUSEN CO., LTD.  
FCC ID: K6620523X51  
Report: 288BUT16TestReport\_Rev1

TABLE OF CONTENTS

## GENERAL INFORMATION

The test results relate only to the items tested.	
<b>EUT Description</b>	<b>ANALOGUE SCANNING RECEIVER</b>
<b>FCC ID</b>	<b>K6620523X51</b>
<b>Model Number</b>	<b>FTM-3100R</b>
<b>Receiver Range</b>	136 -174 MHz
<b>Receiver Circuit Type</b>	Double conversion superheterodyne
<b>Lowest Internal Frequency</b>	450 KHz IF signal
<b>Highest Tuned Frequency</b>	174 MHz
<b>I/O Port Type</b>	USB Mini
<b>EUT Power Source</b>	<input type="checkbox"/> 110–120Vac/50– 60Hz
	<input checked="" type="checkbox"/> 12.6 VDC Nominal
	<input type="checkbox"/> Battery Operated Exclusively
<b>Test Item</b>	<input type="checkbox"/> Prototype
	<input checked="" type="checkbox"/> Pre-Production
	<input type="checkbox"/> Production
<b>Modifications required for Testing</b>	None

## EUT CABLES USED FOR TESTING

<b>Description</b>	<b>Type</b>	<b>Connector</b>	<b>Length</b>
USB Cable	Data	USB A to USB mini B	1 m

## REPORT SUMMARY

<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>	Simulated firmware update via host PC.
<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>Environmental Condition in the laboratory</b>	Temperature: 24-26°C Relative humidity: 50-65% Barometric Pressure:
<b>Deviation from the standard/procedure</b>	No deviation
<b>Host PC Model</b>	Microsoft Surface Pro 3

## RESULTS SUMMARY

Requirement	Result
15.109 Radiated Emissions	Pass
15.107 AC Powerline Conducted Emissions	Pass

## 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

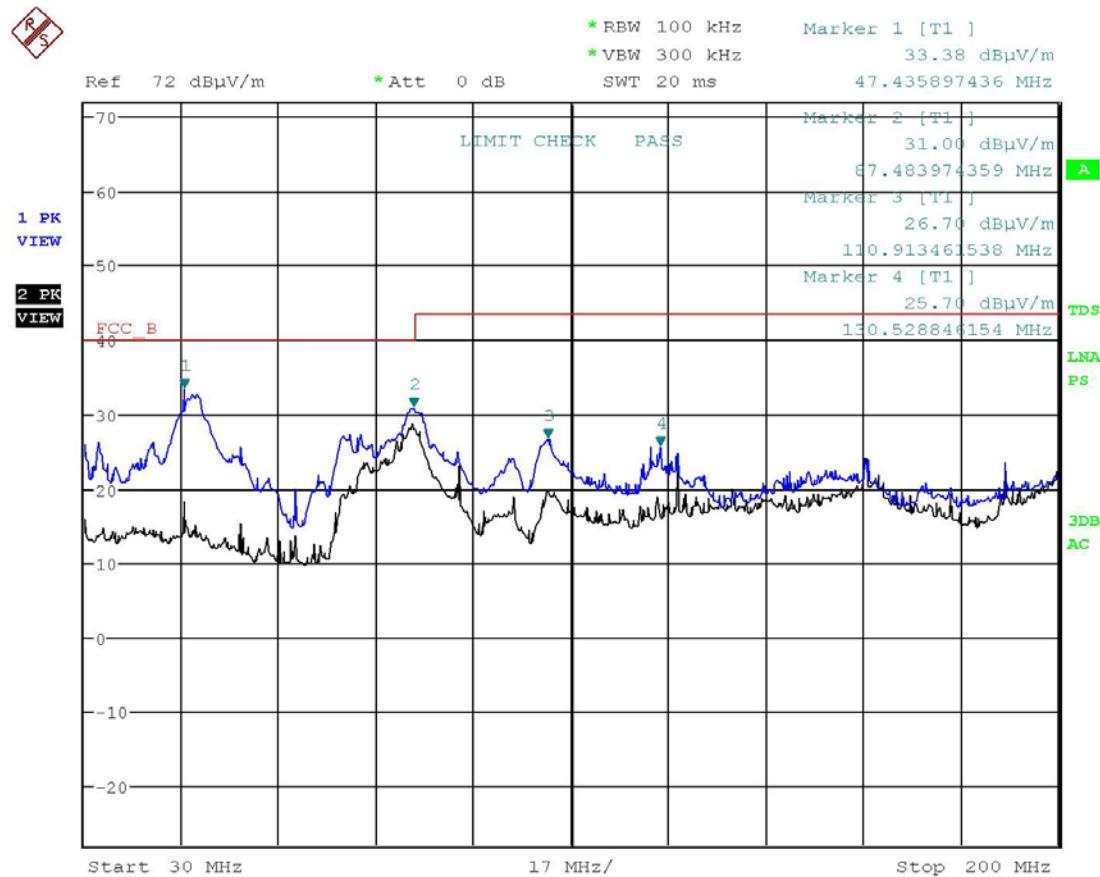
§ 11.5 Tabletop equipment arrangement

§ 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



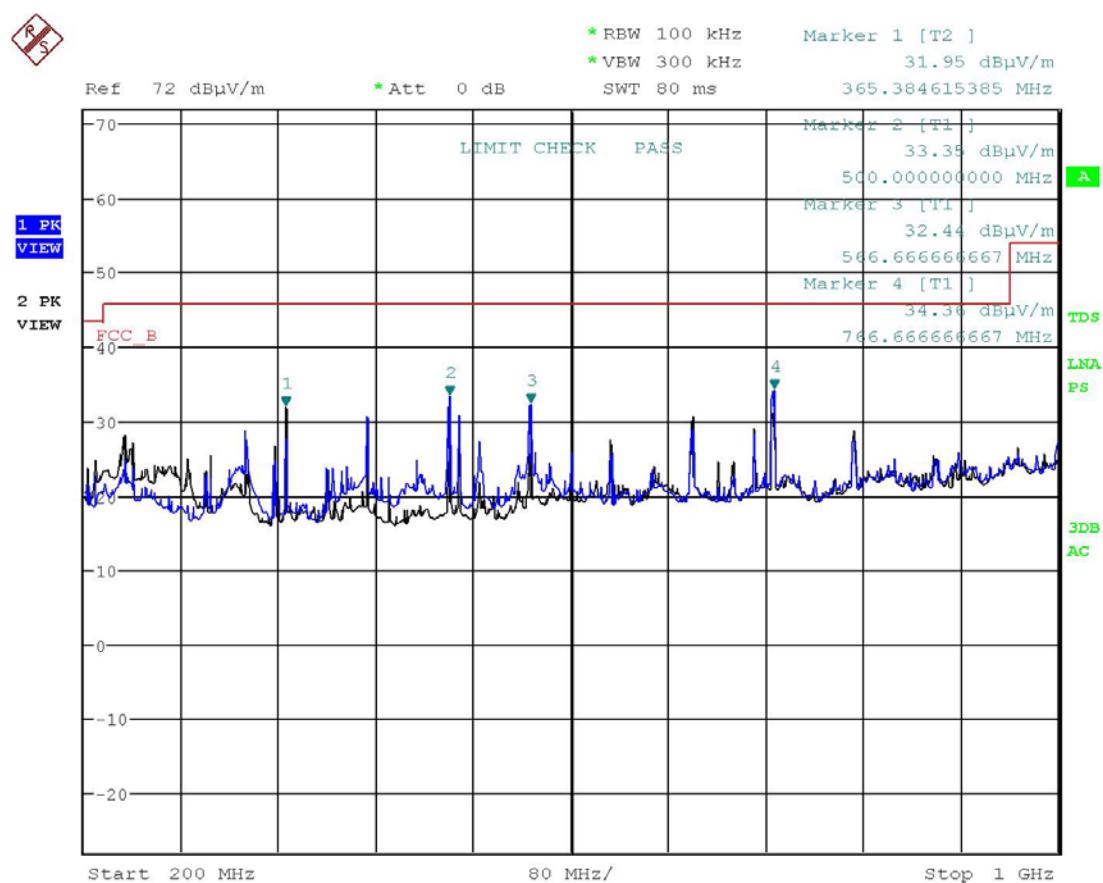
Date: 23.FEB.2016 16:21:15

Ant Polarity: T1 (Blue) =Vertical, T2 (Black) =Horizontal

**Results - Meets Requirements**

## RADIATED SPURIOUS EMISSIONS

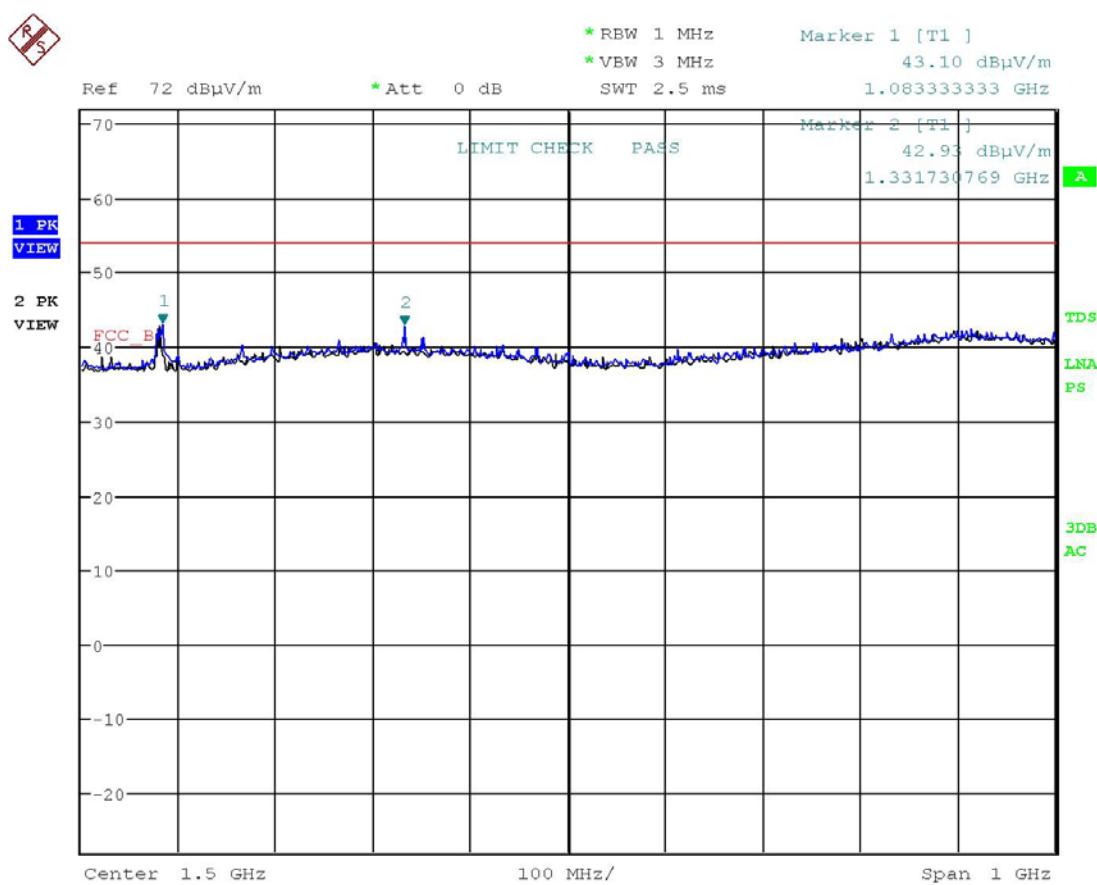
### 200-1000 MHZ PEAK PLOT



Date: 23.FEB.2016 16:12:04

Ant Polarity: T1 (Blue) =Vertical, T2 (Black) =Horizontal

**Results - Meets Requirements**

**RADIATED SPURIOUS EMISSIONS**
**1000-2000 MHZ PEAK PLOT**


Date: 23.FEB.2016 15:48:04

Ant Polarity: T1 (Blue) =Vertical, T2 (Black) =Horizontal

**Results - Meets Requirements**

## 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

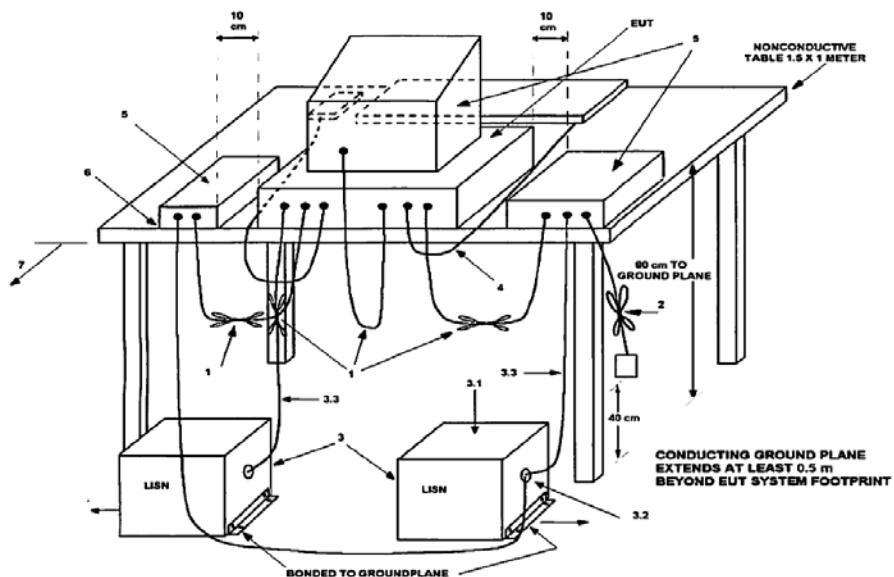
\* Decrease with logarithm of frequency

**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

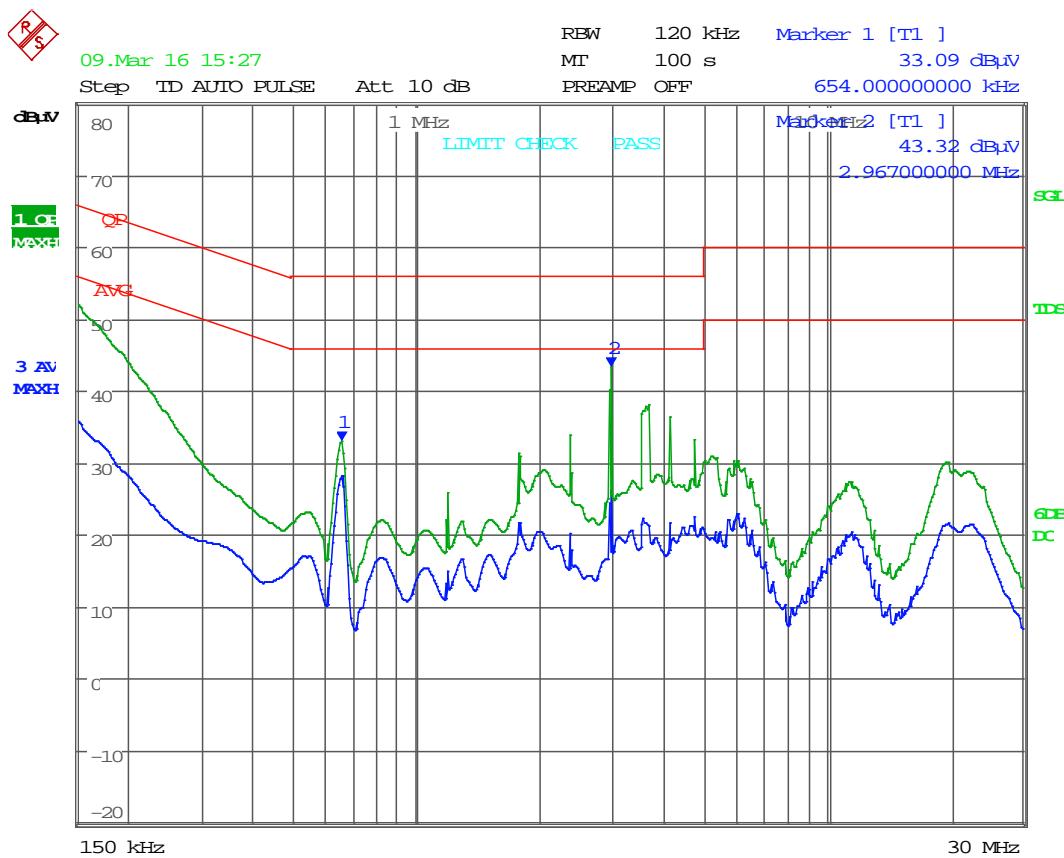
**Configuration:** The EUT is configured as a computer peripheral through a USB cable connected to a partially configured host PC. A firmware update to the EUT was used to transfer data between the EUT and the host PC

### Setup:



## POWER LINE CONDUCTED INTERFERENCE

### POWERLINE 1 PEAK PLOT

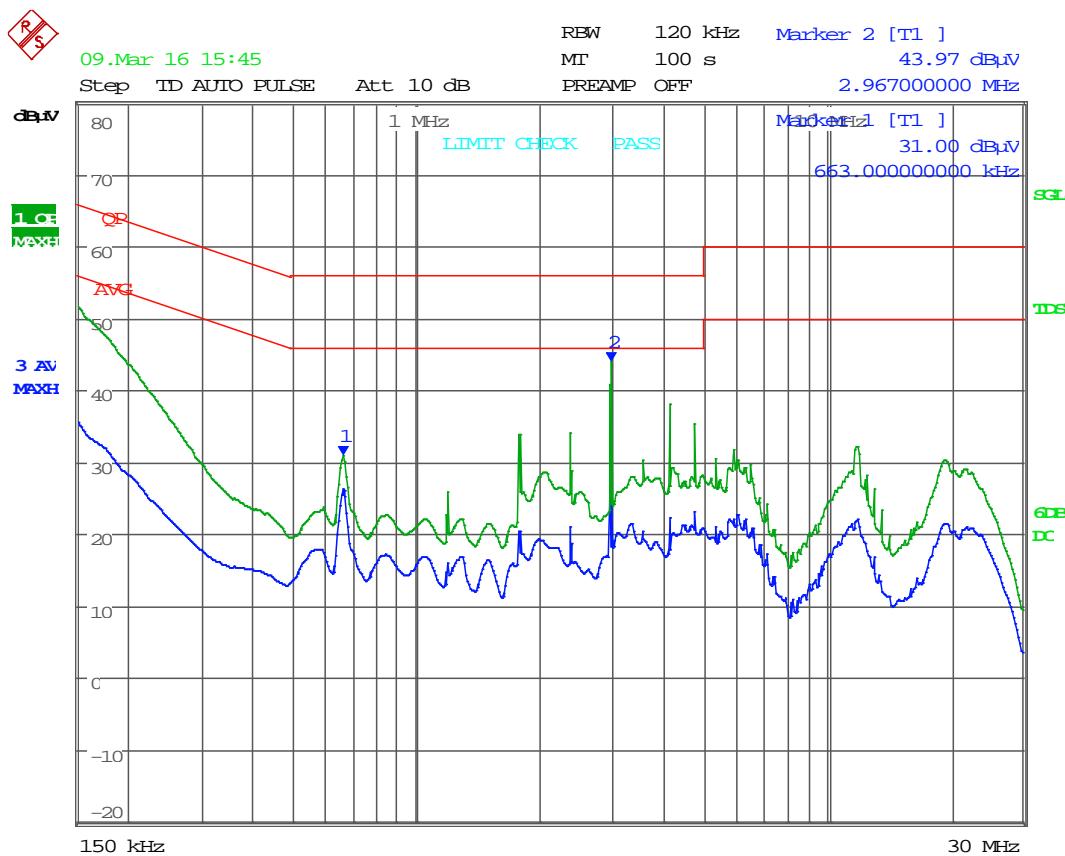


Date: 9.MAR.2016 15:27:16

**Results - Meets Requirements**

## POWER LINE CONDUCTED INTERFERENCE

### POWERLINE 2 PEAK PLOT



Date: 9.MAR.2016 15:45:52

**Results - Meets Requirements**

**TEST EQUIPMENT LIST**

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
Antenna: Biconical Chamber	Eaton Chamber	94455-1	1057	11/18/15	11/18/17
Antenna: Log- Periodic Chamber	Electro-Metrics	LPA-25	1122	07/14/15	07/14/17
3-Meter Semi- Anechoic Chamber	Panashield	N/A	N/A	01/05/16	03/01/16
Antenna: Double- Ridged Horn/ETS Horn 2	ETS-Lindgren	3117	00041534	02/25/15	02/25/17
Software: Field Strength Program	Timco	N/A	Version 4.0	NA	NA
EMI Test Receiver R & S ESU 40	Rohde & Schwarz	ESU 40	100320	03/11/14	03/11/16

**\*EMI RECEIVER SOFTWARE VERSION**

The receiver firmware used was version 4.43 Service Pack 3