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TEST REPORT

FCC PART 15

for

FCC ID: AZ489FT7092

Applicant	**MOTOROLA SOLUTIONS, INC.**
Address	**8000 WEST SUNRISE BLVD FT. LAUDERDALE FL 33322-9947 USA**
Model Number	CLP1060 w/BT90
Product Description	450-470 MHz RADIO W/BT
Date Sample Received	5/10/2016
Date Tested	5/11/2016
Tested By	Tim Royer
Approved By	Cory Leverett
Test Results	☒ PASS ☐ FAIL

Report Number	Version Number	Description	Issue Date
791DUT16TestReport	Rev1	Initial Issue	06/02/2016

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.

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 and was selected by the customer.

☐ 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

Tested by: _____
Name and Title: Tim Royer Project Manager

Date: 5/18/2016

Reviewed and approved by: _____
Name and Title: Engineering Project Manager

Date: 06/02/2016

GENERAL INFORMATION

The test results relate only to the items tested.	
EUT Description	**450-470 MHz RADIO W/ BT**
FCC ID	**AZ489FT7092**
Model Number	**CLP1060 w/ BT90**
Receiver Range	450-470 MHz
Lowest Internal Frequency	131kHz
Highest Tuned Frequency	16.8MHz
I/O Port Type	Audio phono Jack USB Mini port
Battery	BT90
EUT Power Source	☐ 110–120Vac/50– 60Hz
	☐ 12.6 VDC Nominal
	☒ Battery Operated Exclusively
Test Item	☐ Prototype
	☐ Pre-Production
	☒ Production
Environmental Condition in the laboratory	Temperature: 24-26ºC Relative humidity: 50-65% Barometric Pressure: 30.03 in

EUT CABLES USED FOR TESTING

Description	Type	Connector	Length
Headphone	Unshielded	Phono	1m
Motorola HKKN4027A USB Programming Cable	Shielded	Mini USB-A to Mini USB-B	1m

TEST INFORMATION

Regulatory Standard	CFR Title 47 FCC Rule part 15B § 15.109, 15.107
Test Procedures	FCC Part 15.31, 15.33, 15.35 ANSI C63.4 – 2014
Operational Modes	Receive
Setup	The EUT was configured with the headpiece plugged in and in a receive mode. A Laptop was connected and transferring data through a Motorola P/N: HKKN4027A USB Programming cable.
Modifications required for Testing	None
Deviation from the standard/ procedure	No deviation
Host PC Model	Microsoft Surface

RESULTS SUMMARY

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

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

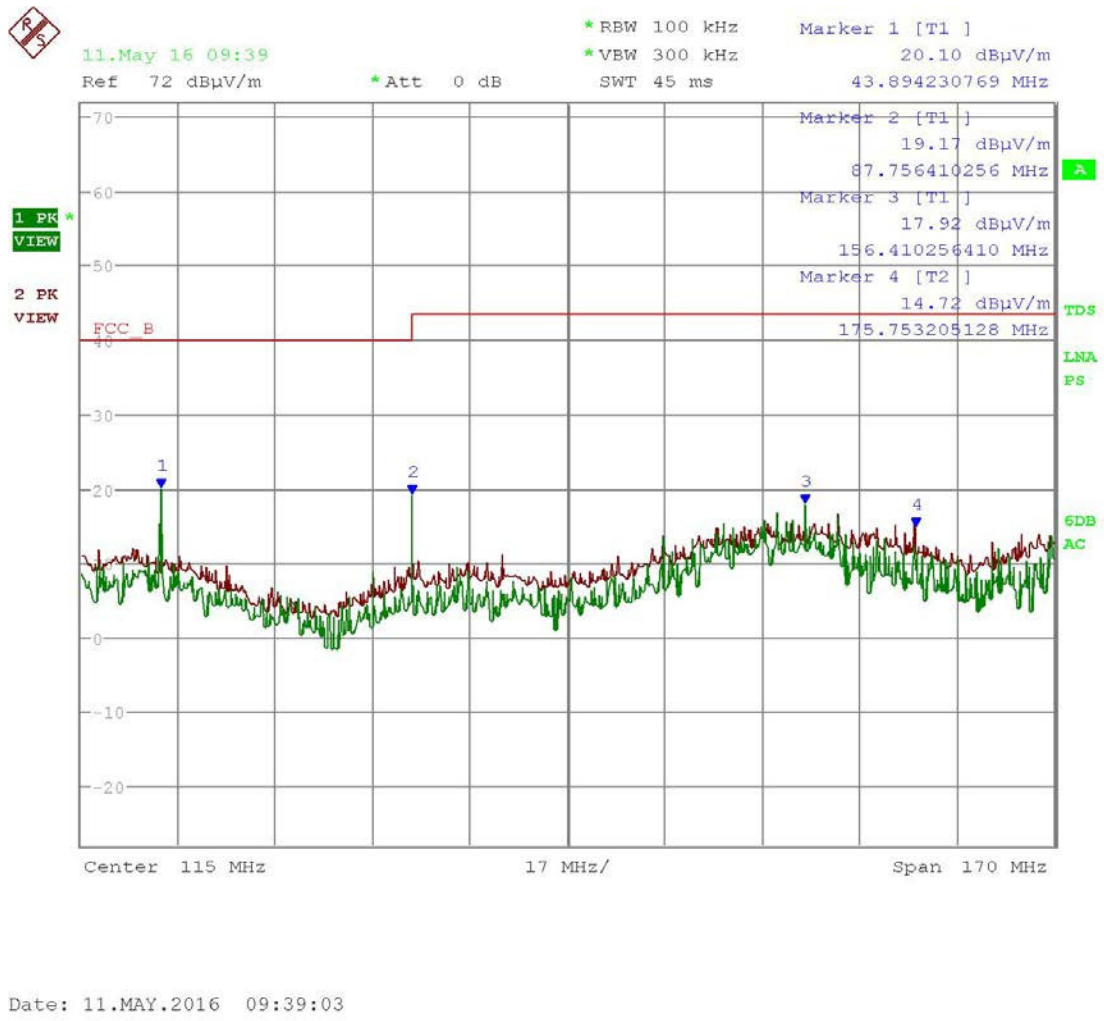
ANSI C63.4 Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment 9 kHz to 40 GHz

§ 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

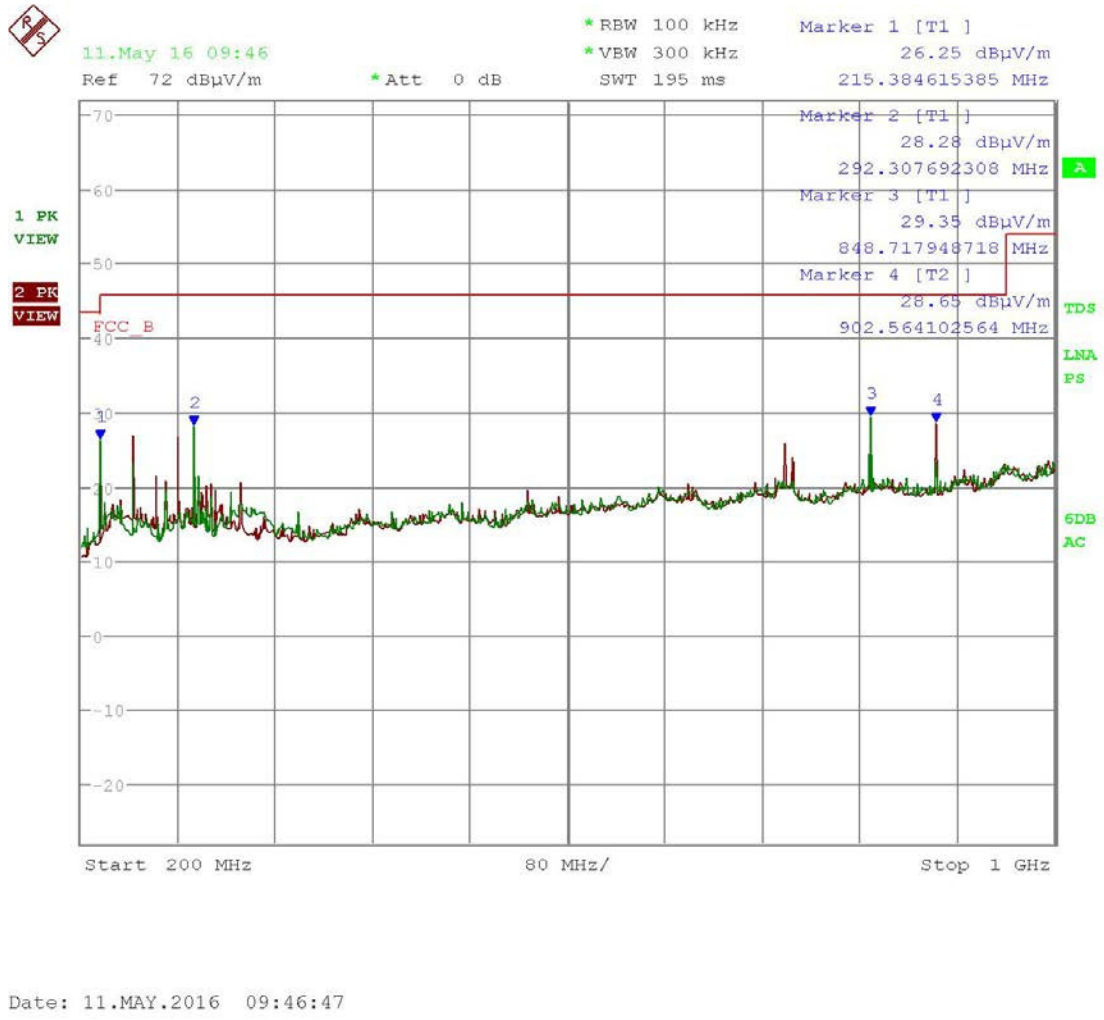


Results - Meets Requirements

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

RADIATED SPURIOUS EMISSIONS

200-1000 MHZ PEAK PLOT



Date: 11.MAY.2016 09:46:47

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

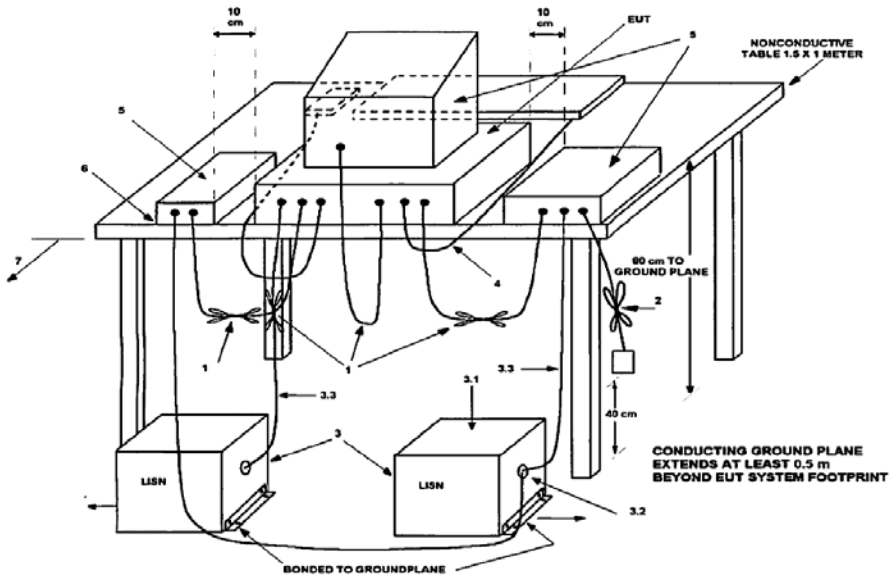
Frequency (MHz)	Quasi Peak Limits (dBµV)	Average Limits (dBµV)
0.15 – 0.5	66 – 56 *	56 – 46 *
0.5 – 5.0	56	46
5.0 – 30	60	50
* Decrease with logarithm of frequency		

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

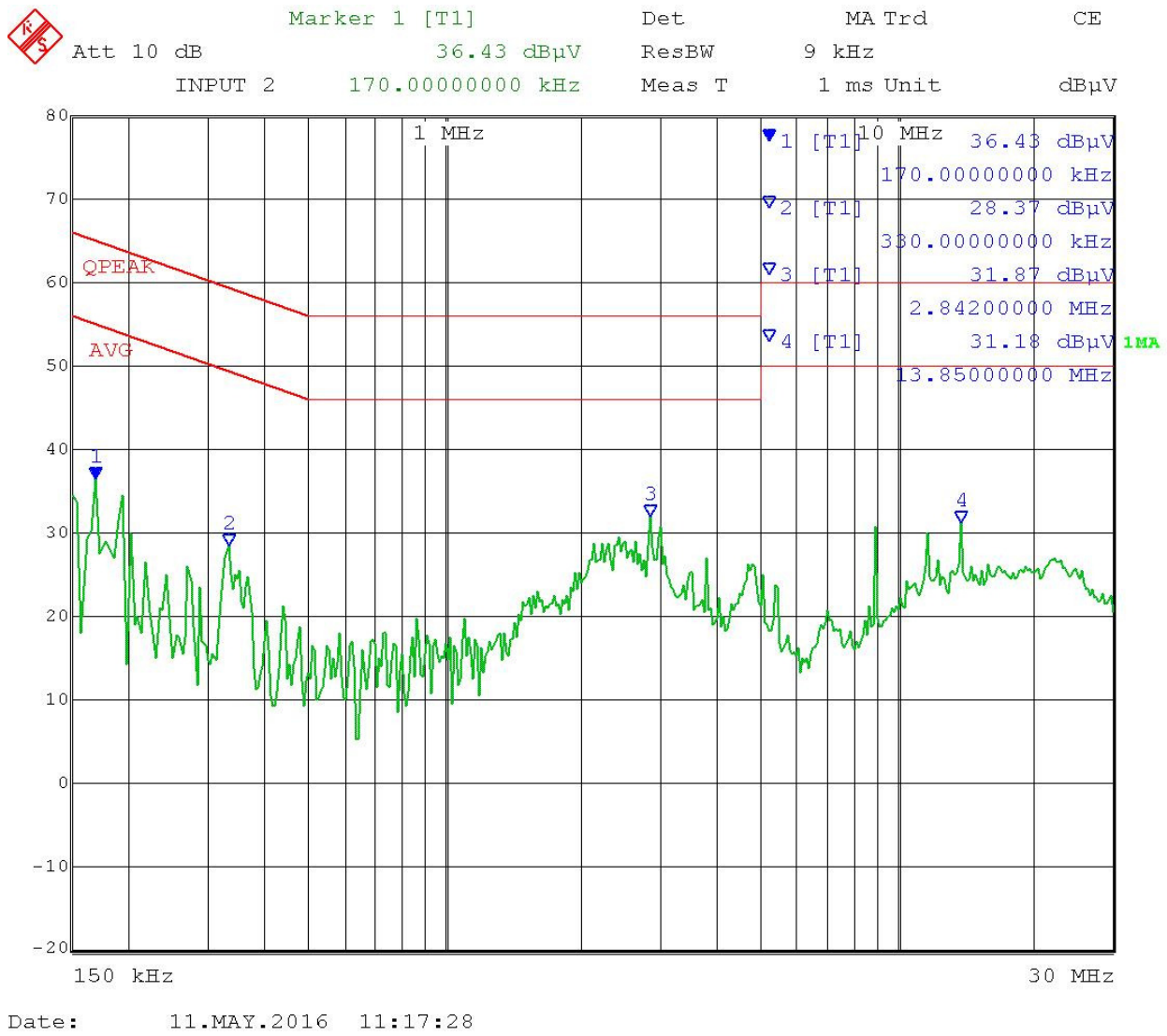
Configuration: The EUT is configured as a computer peripheral through a USB cable connected to a partially configured host PC. A firmware update to the EUT was used to transfer data between the EUT and the host PC

Setup:



POWER LINE CONDUCTED INTERFERENCE

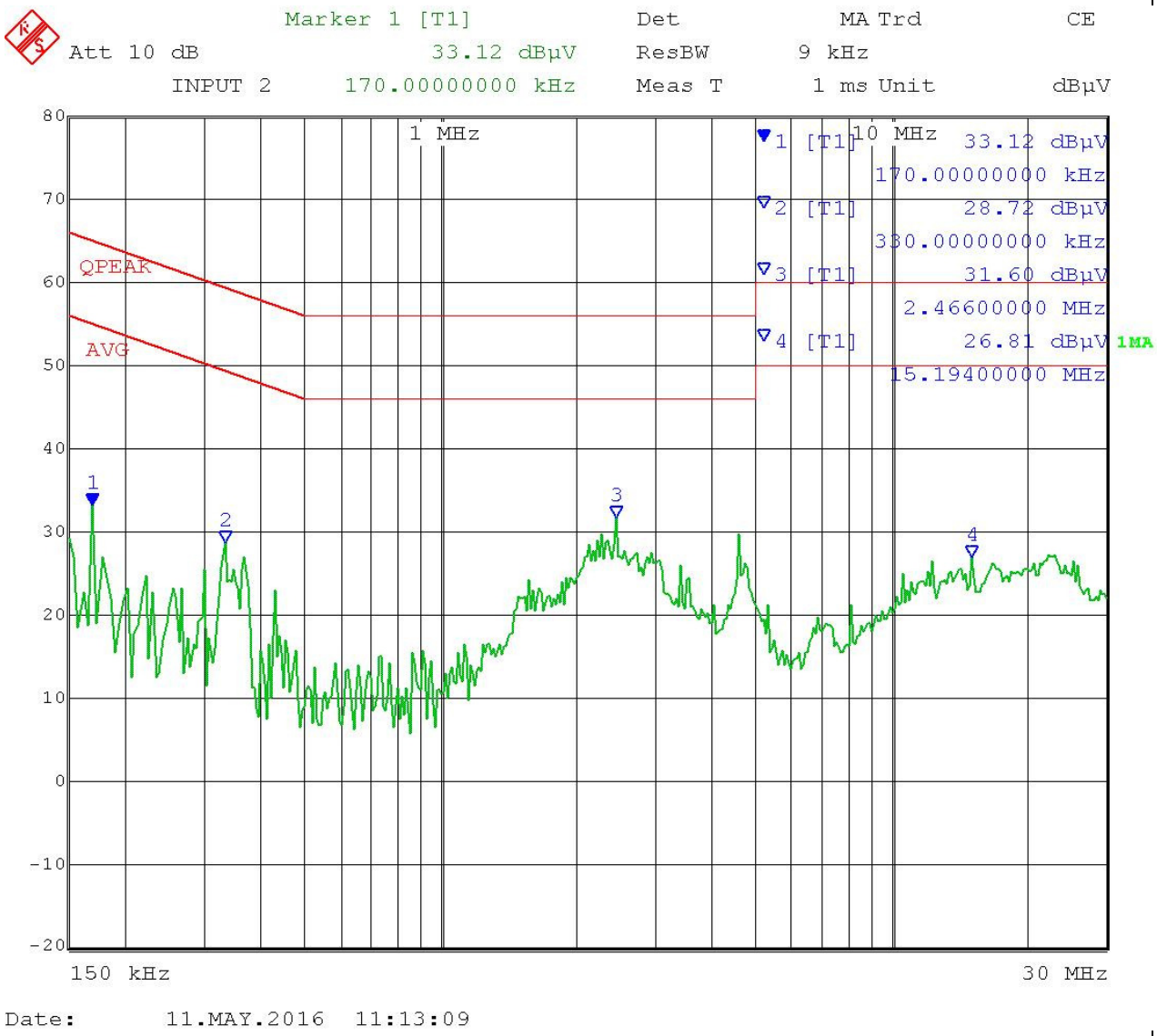
POWERLINE 1 PEAK PLOT



Results - Meets Requirements

POWER LINE CONDUCTED INTERFERENCE

POWERLINE 2 PEAK PLOT



Results - Meets Requirements

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	± 4.4dB	(1)
Power line conducted emissions	± 3.9dB	(1)

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

TEST EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/ Char Date	Due Date
Antenna: Biconnical 1096	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	EM-7820	2682	05/08/15	05/08/17
CHAMBER	Panashield	3M	N/A	01/05/16	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	N/A	N/A
EMI Test Receiver R & S ESU 40 Chamber	Rohde & Schwarz	ESU 40	100320	04/01/16	04/01/18
Coaxial Cable for LISN	TIMCO LISN	17		01/05/16	01/04/17
Coaxial Cable - Chamber 3 cable set (Primary)	Micro-Coax		Chamber 3 cable set (Primary).	12/05/15	12/05/17

* EMI RECEIVER SOFTWARE VERSION

The receiver firmware used was version 4.43 Service Pack 3

END OF TEST REPORT