



849 NW State Road 45

Newberry, FL 32669 USA

Phone: 352.472.5500

Fax: 352.472.2030

Email: info@timcoengr.com

Website: www.timcoengr.com

TEST REPORT

FCC PART 15

for

FCC ID: AZ489FT4931

Applicant	MOTOROLA SOLUTIONS, INC.
Address	8000 WEST SUNRISE BLVD FT. LAUDERDALE FL 33322-9947 USA
Model Number	CLP1040 w/ BT90
Product Description	450-470 MHz RADIO
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
792CUT16TestReport	Rev1	Initial Issue	06/02/2016

**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
TEST INFORMATION	5
RESULTS SUMMARY.....	5
RADIATED SPURIOUS EMISSIONS.....	6
30–200 MHZ PEAK PLOT	7
200-1000 MHZ PEAK PLOT	8
POWER LINE CONDUCTED INTERFERENCE	9
POWERLINE 1 PEAK PLOT.....	10
POWERLINE 2 PEAK PLOT.....	11
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 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

A blue ink signature of Tim Royer is written over a circular purple stamp. The stamp contains the text "TIMCO ENGINEERING, INC." around the perimeter and "TESTED" in the center.

Tested by: _____

Name and Title: Tim Royer Project Manager

Date: 5/ 18/ 2016

A blue ink signature of Cory Leverett is written over a circular purple stamp. The stamp contains the text "TIMCO ENGINEERING, INC." around the perimeter and "TESTED" in the center.

Reviewed and approved by: _____

Name and Title: Cory Leverett, Engineering

Date: 6/ 2/ 2016

Applicant: MOTOROLA SOLUTIONS, INC.
FCC ID: AZ489FT4931
Report: 792CUT16TestReport_Rev1

[TABLE OF CONTENTS](#)

GENERAL INFORMATION

The test results relate only to the items tested.	
EUT Description	450-470 MHz RADIO
FCC ID	AZ489FT4931
Model Number	CLP1040
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: 24-26°C Relative humidity: 50-65% Barometric Pressure: 30.01 in

EUT CABLES USED FOR TESTING

Description	Type	Connector	Length
Motorola HKKN4027A USB Programming cable	Shielded USB	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	EUT was placed in a charging cradle and continually communicated with via laptop connection.
Setup	The EUT was configured as a computer peripheral through a supplied Motorola P/N: HKKN4027A USB programming cable, the setup used was a tabletop arrangement for IT equipment as specified in the standard
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

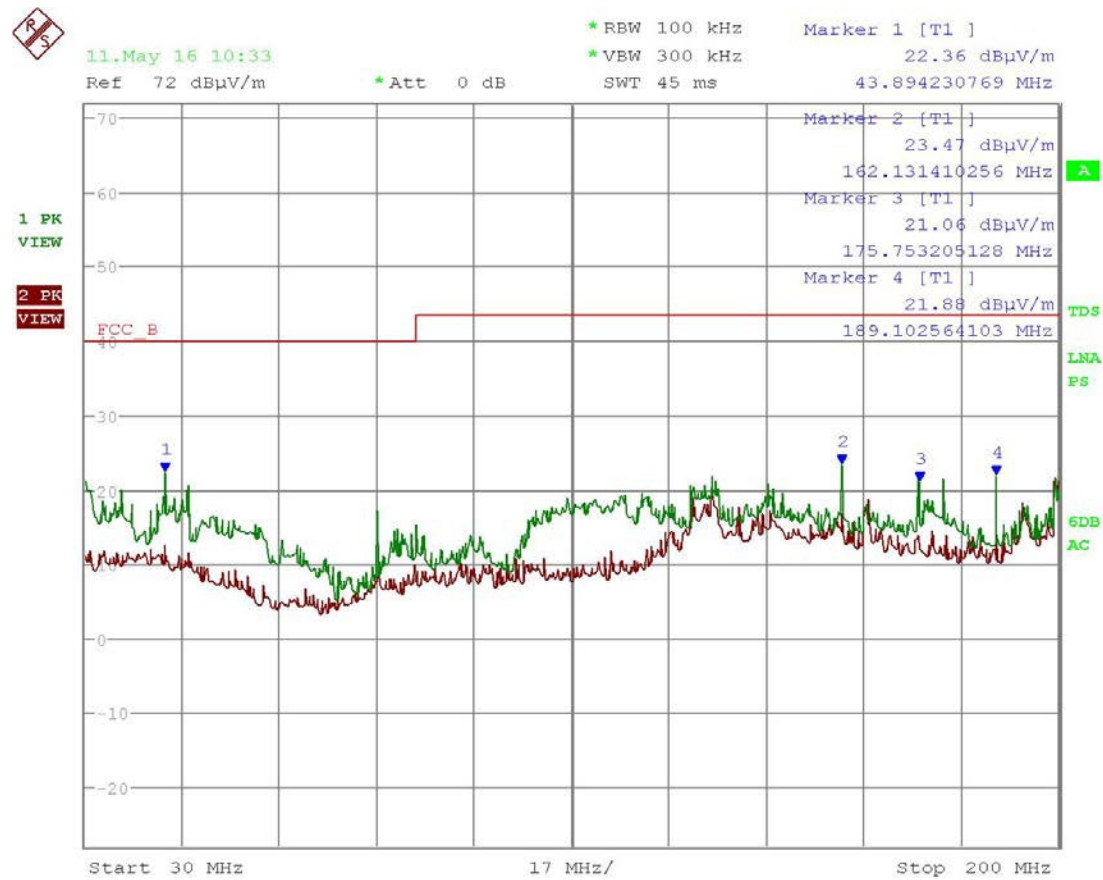
§ 11.5 Tabletop equipment arrangement

§ 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



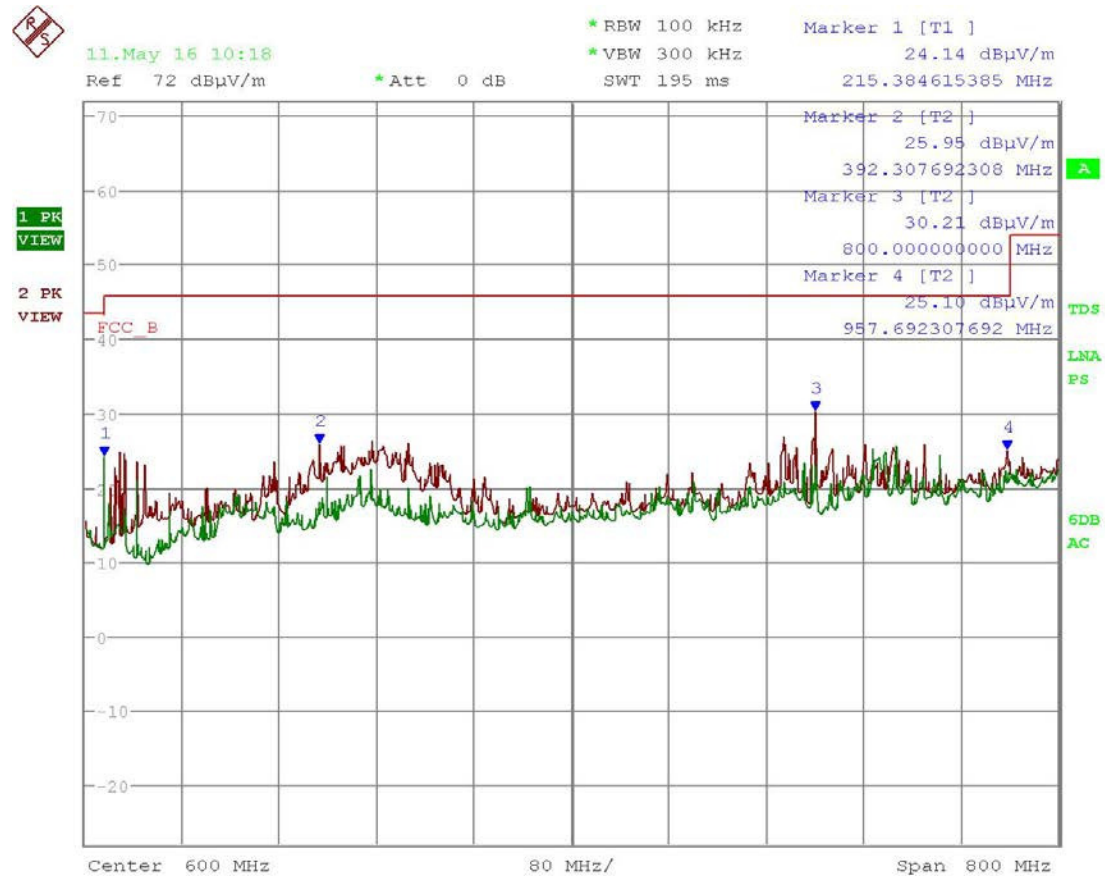
Date: 11.MAY.2016 10:33:41

Results - Meets Requirements

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

RADIATED SPURIOUS EMISSIONS

200-1000 MHZ PEAK PLOT



Date: 11.MAY.2016 10:18:41

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

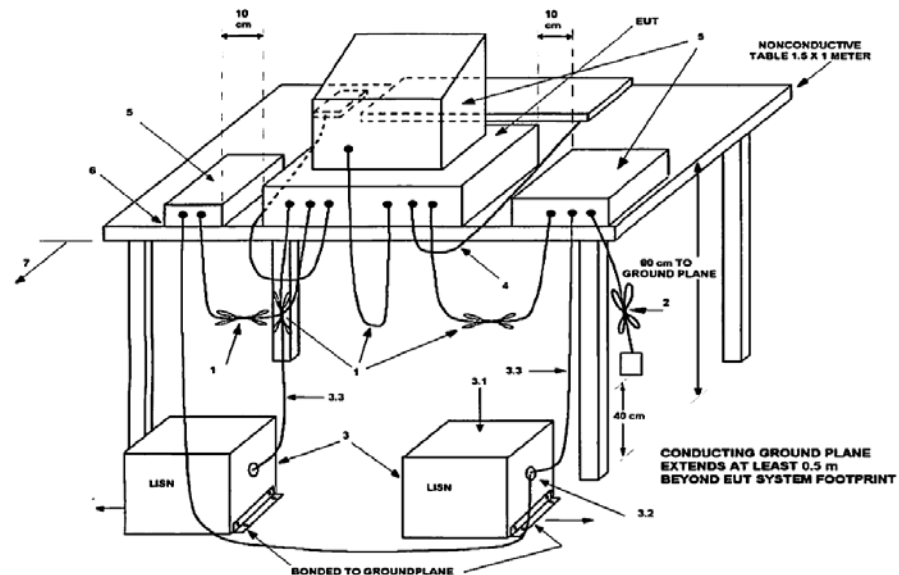
Frequency (MHz)	Quasi Peak Limits (dB μ V)	Average Limits (dB μ V)
0.15 – 0.5	66 – 56 *	56 – 46 *
0.5 – 5.0	56	46
5.0 – 30	60	50
* Decrease with logarithm of frequency		

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

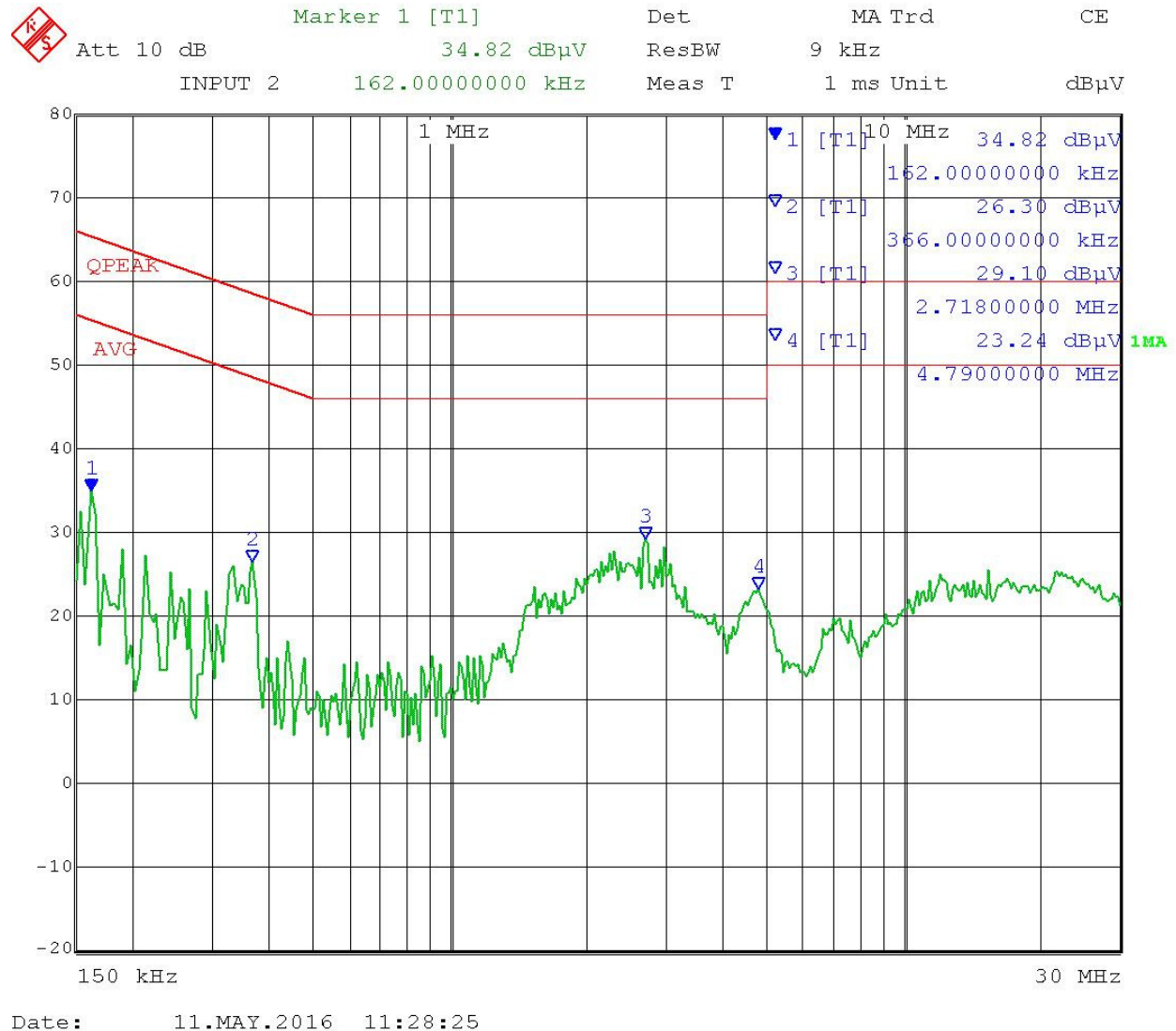
Configuration: The EUT is configured as a computer peripheral through a USB cable connected to a partially configured host PC. A firmware update to the EUT was used to transfer data between the EUT and the host PC

Setup:



POWER LINE CONDUCTED INTERFERENCE

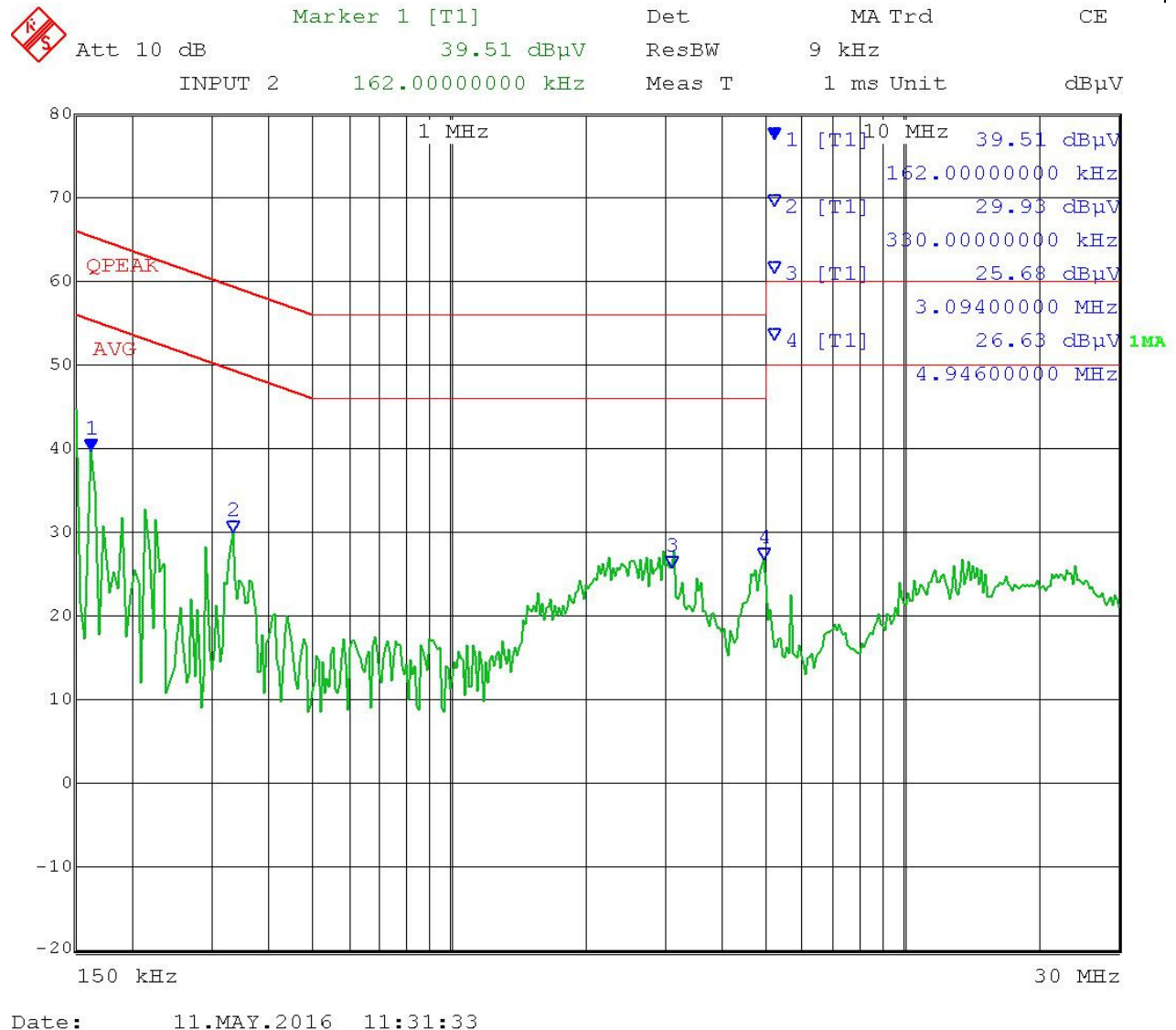
POWERLINE 1 PEAK PLOT



Results - Meets Requirements

POWER LINE CONDUCTED INTERFERENCE

POWERLINE 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	$\pm 4.4\text{dB}$	(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 $k=1.96$.

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