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FCC PART 15 B CLASS B TEST REPORT

Applicant	Harris Corp.
	Test Report
Address	1025 West NASA Boulevard Melbourne FL 32919-0001 USA
Model Number	NK73100176
Product Description	NK73100176 WITH 300KGXW & 1M25F9W
Date Sample Received	10/16/2009
Date Tested	10/26/2009
Tested By	Nam Nguyen
Approved By	Mario de Aranzeta
Report Number	2511BUT9TestReport.doc
Test Results	☒ PASS ☐ FAIL

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



Testing Certificate # 0955-01

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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

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 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.



Testing Certificate # 0955-01

I attest that the necessary measurements were made, under my supervision, at:

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



Authorized Signatory Name:

Mario de Aranzeta C.E.T.
Compliance Engineer/ Lab. Supervisor

Date: 11/24/2009

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REPORT SUMMARY

Applicable Rule(s)	Pt 15.109, Pt 15.107, ANSI C63.4: 2003
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TEST ENVIRONMENT

Test Facility	Timco Engineering, Inc. 849 NW State Road 45 Newberry, FL 32669 USA.
Test Condition in the laboratory	Temperature: 26°C Relative humidity: 50%

TEST SETUP SUMMARY

Test Setup Diagram/Description	The DUT was placed on the turntable per setup per ANSI C63.4: 2003. A test set up photo is provided for clarification.
Deviation from the standard/procedure	No deviation
Modification of DUT	No modification

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DUT SPECIFICATION

DUT Description	NK73100176 WITH 300KGXW & 1M25F9W
Model Number	NK73100176
DUT Power Source	☐ 110-120Vac/50- 60Hz
	☒ DC Power
	☐ Battery Operated Exclusively
Test Item	☐ Prototype
	☒ Pre-Production
	☐ Production
Type of Equipment	☒ Fixed
	☐ Mobile
	☐ Portable
Laboratory Test Conditions	Temperature: 26°C Humidity: 55%
Modifications to DUT:	☒ No ☐ Yes (explanation below)

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DUT EXTERNAL

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TEST EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/20/07	3/19/10
3-Meter OATS	TEI	N/A	N/A	Listed 2/5/09	2/5/12
3-Meter Semi-Anechoic Chamber	Panashield	N/A	N/A	Listed 5/11/07	5/10/10
Analyzer Open-Frame Tower Preamplifier	HP	8449B	3008A01075	CAL 7/22/09	7/22/11
Analyzer Open-Frame Tower Quasi-Peak Adapter	HP	85650A	2043A00305	CAL 10/26/09	10/26/11
Analyzer Open-Frame Tower RF Preselector	HP	85685A	3107A01282	CAL 7/22/09	7/22/11
Analyzer Open-Frame Tower Spectrum Analyzer	HP	8566B/85662A	2627A03154/ 2648A14276	CAL 7/22/09	7/22/11
Antenna: Biconnical	Eaton	94455-1	1057	CAL 1/15/08	1/15/10
Antenna: Log-Periodic	Electro-Metrics	LPA-25	1122	CAL 12/15/08	12/15/10
Power Line Coupling/Decoupling Network	Fischer Custom Communications	FCC-801-M2-16A	01048	CHAR 11/25/08	11/25/10
Power Line Coupling/Decoupling Network	Fischer Custom Communications	FCC-801-M3-16A	01060	CHAR 11/25/08	11/25/10

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TEST PROCEDURES

Power line conducted Emission: The test procedure used was ANSI C63.4-2003. The spectrum was scanned from 0.15 to 30 MHz.

Radiation Interference: The test procedure used was ANSI C63.4-2003 using a spectrum analyzer with preselector. The resolution bandwidth used was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The video bandwidth was always greater than or equal to the RBW.

The unit under test was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes. The frequency was scanned from 30 MHz to 1.0 GHz.. The DUT was measured in three (3) orthogonal planes when necessary.

Formula Of Conversion Factors: The field strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer plus the coax loss. The antenna correction factors are stated in terms of dB. The gain of the preselector was accounted for in the spectrum analyzer meter reading.

Example:

Freq (MHz)	Meter Reading	+ ACF	+CL	= FS
33	20 dBuV	+ 10.36 dB/m	+0.40 dB	=30.36 dBuV/m @ 3m

RADIATED SPURIOUS EMISSIONS

Rules Part No.: 15.109

Requirements:

Frequency MHz	Limits
30 – 88	40.0 dB μ V/m measured @ 3 meters
88 – 216	43.5 dB μ V/m measured @ 3 meters
216 – 960	46.0 dB μ V/m measured @ 3 meters
Above 960	54.0 dB μ V/m measured @ 3 meters

Test Data:

Emission Frequency MHz	Meter Reading dB μ V	Ant. Polarity	Coax Loss dB	Correction Factor dB/m	Field Strength dB μ V/m	Margin dB
45.00	20.4	V	0.48	11.80	32.68	7.33
45.30	10.1	H	0.48	12.82	23.40	16.60
64.00	16.8	H	0.55	6.10	23.45	16.55
64.20	21.2	V	0.55	6.14	27.89	12.11
89.80	15.1	H	0.62	10.27	25.99	17.51
90.20	17.2	V	0.63	11.12	28.95	14.55
100.40	19.4	V	0.65	11.48	31.53	11.97
108.00	18.4	H	0.66	10.38	29.44	14.06
108.00	25.2	V	0.66	11.12	36.98	6.52
120.10	29.9	V	0.67	11.12	41.69	1.81
120.30	23.3	H	0.67	10.56	34.53	8.97
140.30	22.0	H	0.69	15.23	37.92	5.58
140.50	15.6	V	0.69	16.19	32.48	11.02
160.40	15.5	V	0.74	16.97	33.21	10.29
160.40	17.9	H	0.74	16.38	35.02	8.48
180.30	13.4	V	0.82	14.48	28.70	14.80
180.30	21.7	H	0.82	13.68	36.20	7.30
220.00	15.0	H	0.94	11.50	27.44	18.56
234.10	24.2	H	0.97	11.71	36.88	9.12
234.10	25.5	V	0.97	11.49	37.96	8.04
248.60	11.8	H	1.00	12.43	25.23	20.77
249.10	12.9	V	1.00	12.45	26.35	19.65
250.00	15.0	H	1.00	12.50	28.50	17.50
280.20	13.1	H	1.06	13.80	27.96	18.04
312.00	9.9	H	1.11	15.16	26.17	19.83
349.80	13.0	V	1.15	14.60	28.75	17.25

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TEST DATA CONTD.

Emission Frequency MHz	Meter Reading dB μ V	Ant. Polarity	Coax Loss dB	Correction Factor dB/m	Field Strength dB μ V/m	Margin dB
360.10	9.0	H	1.16	15.00	25.16	20.84
400.20	12.1	H	1.20	16.10	29.40	16.60
400.20	14.8	V	1.20	15.70	31.70	14.30
468.30	11.2	V	1.27	17.07	29.54	16.46
761.40	12.3	V	1.82	20.71	34.83	11.17

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POWER LINE CONDUCTED INTERFERENCE

Rules Part No.: Part 15.107

Requirements:

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		

Test Data: The following plots represent the emissions read for power line conducted. Both lines were observed.

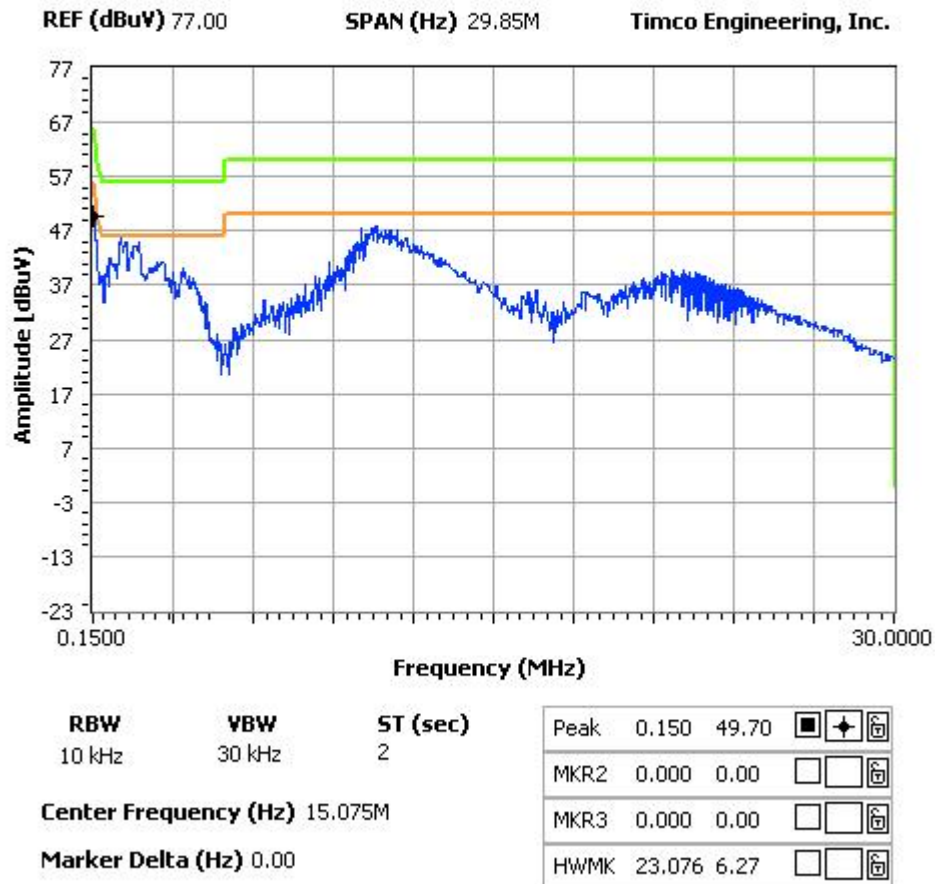
WITHOUT 2100 MHz CONVERTER BOX:

POWERLINE CONDUCTED EMISSIONS – LINE 1

NOTES:

Harris Corp.
Model number: Power line conducted plot - Line 1

FCC 15.107 Mask Class B



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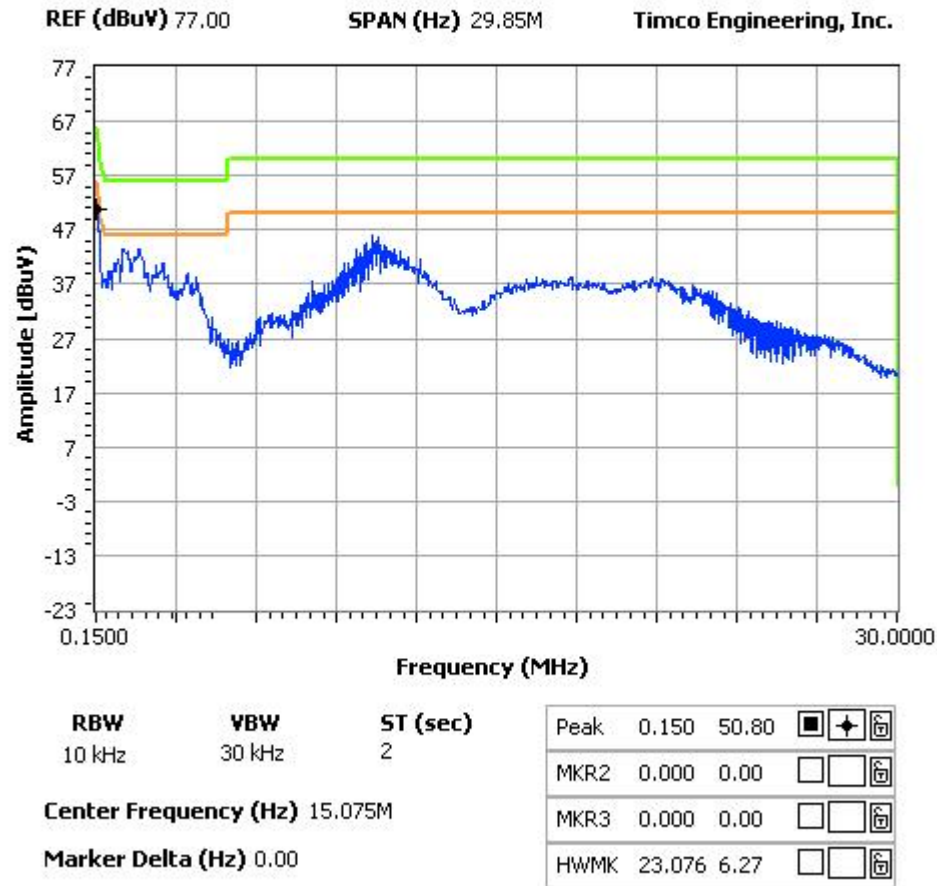
POWERLINE CONDUCTED EMISSIONS – LINE 2

NOTES:

Harris Corp.
Model number:

Power line conducted plot - Line 2

FCC 15.107 Mask Class B



APPLICANT: Harris Corp.
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WITH 2100 MHz CONVERTER BOX:

POWERLINE CONDUCTED EMISSIONS – LINE 1

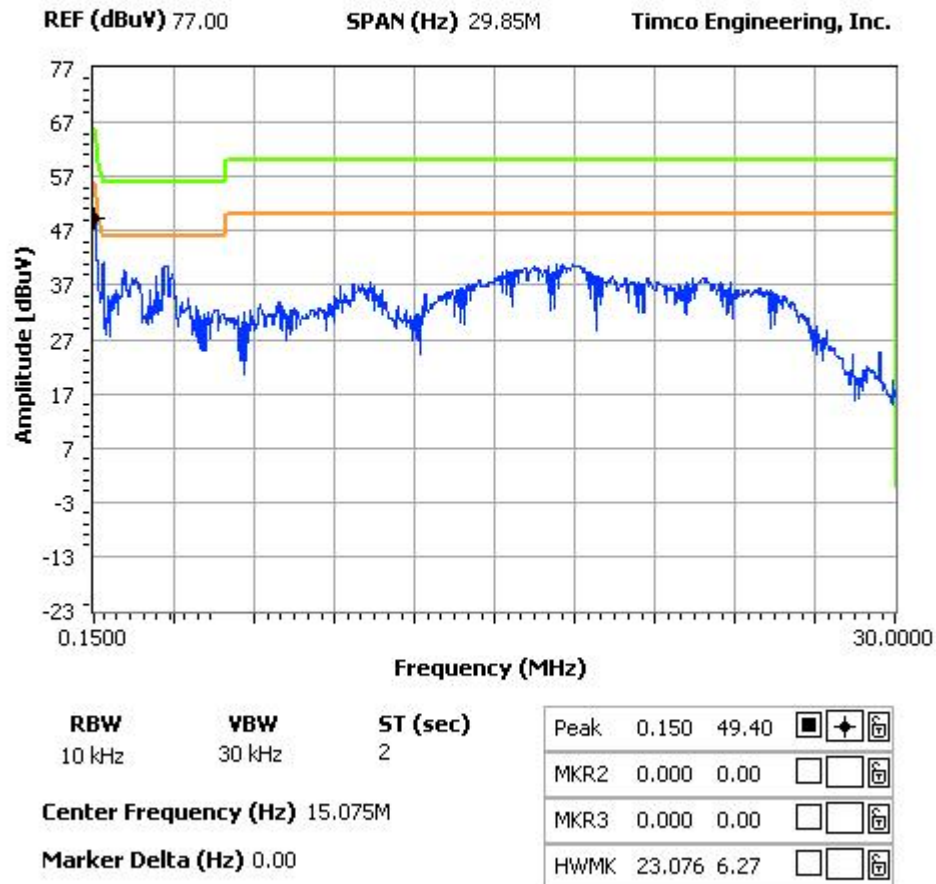
NOTES:

Harris Corp.

Model number:

Power line conducted - With converter box - Line 1

FCC 15.107 Mask Class B



APPLICANT: Harris Corp.

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POWERLINE CONDUCTED EMISSIONS – LINE 2

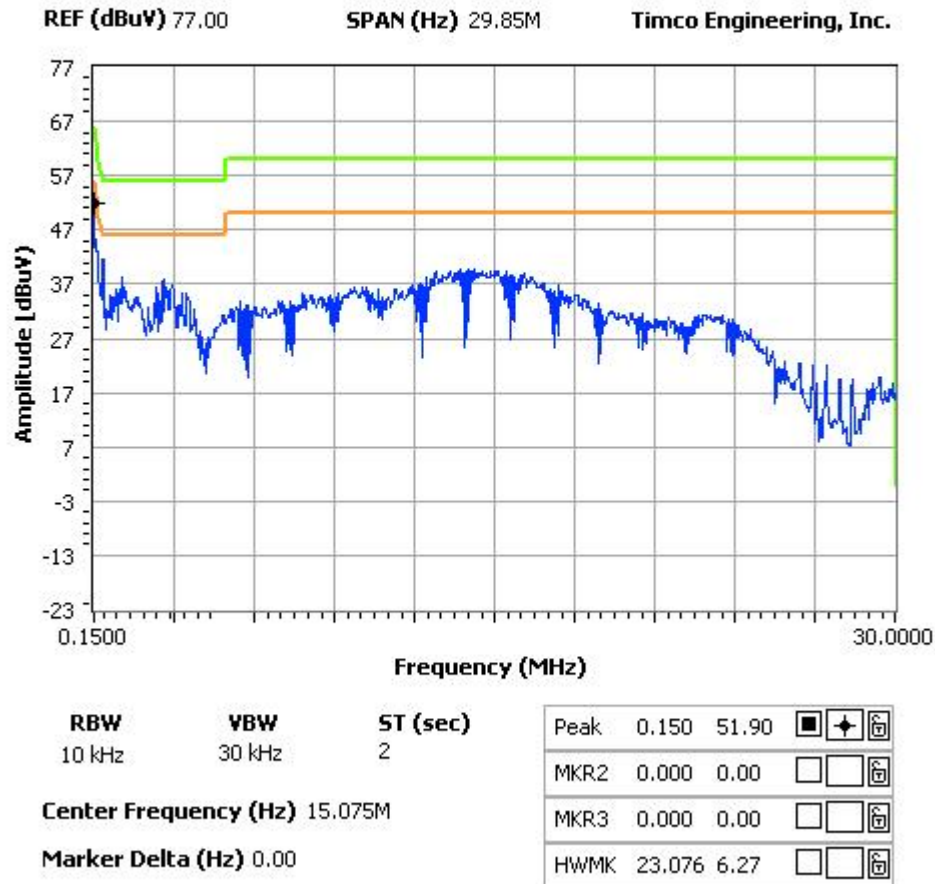
NOTES:

Harris Corp.

Model number:

Power line conducted - With converter box - Line 2

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RADIATED EMISSIONS TEST SETUP

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POWERLINE CONDUCTED EMISSIONS TEST SET UP

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WITH 2100 MHz CONVERTER BOX:

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