

*FCC PART 15, SUBPART B and C
TEST REPORT**for***DYNAPRO ETHERNET****MODEL: 30056033**

Prepared for

**MAGTEK, INC.
1710 APOLLO COURT
SEAL BEACH, CALIFORNIA 90740**Prepared by: *Kyle Fujimoto***KYLE FUJIMOTO**Approved by: *James Ross***JAMES ROSS****COMPATIBLE ELECTRONICS INC.
114 OLINDA DRIVE
BREA, CALIFORNIA 92823
(714) 579-0500****DATE: AUGUST 18, 2015**

	REPORT BODY	APPENDICES					TOTAL
		A	B	C	D	E	
PAGES	19	2	2	2	12	14	51

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GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced without the written permission of Compatible Electronics, unless done so in full.

This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the federal government.

Device Tested: DynaPro Ethernet
Model: 30056033
S/N: N/A

Product Description: See Expository Statement.

Modifications: The EUT was not modified during the testing.

Customer: Magtek, Inc.
1710 Apollo Court
Seal Beach, California, 90740

Test Dates: July 20, 2015; and August 4, 2015

Test Specifications: Emissions requirements
CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.225

Test Procedure: ANSI C63.4, ANSI C63.10

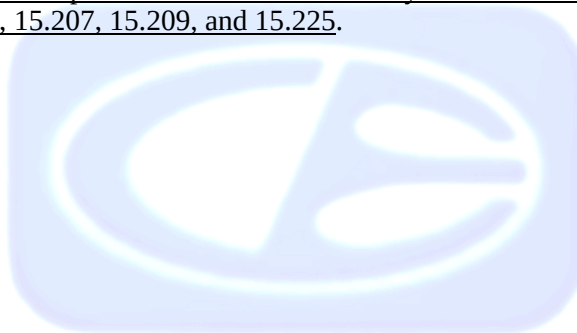
Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Spurious Radiated RF Emissions, 10 kHz – 1000 MHz (Transmitter and Digital portion)	Complies with the Class B limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.225
2	Conducted RF Emissions, 150 kHz to 30 MHz	Complies with the Class B limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.207

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the DynaPro Ethernet, Model: 30056033. The emissions measurements were performed according to the measurement procedure described in ANSI C63.10. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.225.



2. ADMINISTRATIVE DATA

2.1 Location of Testing

The emissions tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Magtek, Inc.

Robert Rodriguez

Electrical Engineer

Compatible Electronics Inc.

Kyle Fujimoto

Test Engineer

James Ross

Test Engineer

2.4 Date Test Sample was Received

The test sample was received prior to the initial test date.

2.5 Disposition of the Test Sample

The test sample has not been returned to Magtek, Inc. as of the date of this test report.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
N/A	Not Applicable
BLE	Bluetooth Low Energy
USB	Universal Serial Bus

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this emissions Test Report.

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules - Radio frequency devices (including digital devices) – Intentional Radiators
FCC Title 47, Part 15 Subpart B	FCC Rules - Radio frequency devices (including digital devices) – Unintentional Radiators
ANSI C63.4 2014	Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz
ANSI C63.10 2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
EN 50147-2 1997	Anechoic chambers, Alternative test site suitability with respect to site attenuation

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - Emissions

The DynaPro Ethernet, Model: 30056033 (EUT) was connected to a laptop computer and an AC adapter, through a junction box, via its ethernet and power ports, respectively. The laptop was also connected to the power supply and mouse via its power and mouse ports, respectively. The device was continuously transmitting at 13.56 MHz and sending data via ethernet to the EUT.

The final radiated data as well as the conducted data for the EUT as was taken in the mode described above. Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

- Cable 1** This is a 2-meter braid and foil shielded cable connecting the laptop to the mouse. The cable has a USB type 'A' connector at the laptop end and is hardwired into the mouse. The shield of the cable was grounded to the chassis via the connector.
- Cable 2** This is a 2-meter unshielded cable connecting the laptop to the AC adapter. The cable has a single pin connector at the laptop end and is hardwired to the AC adapter. The cable was bundled to a length of 1-meter.
- Cable 3** This is a 2-meter unshielded cable connecting the EUT to the junction box. The cable has an RJ-12 connector at the EUT end and is hard wired into the junction box. The cable was bundled to a length of 1-meter.
- Cable 4** This is a 2-meter unshielded cable connecting the junction box to the power supply for the EUT. The cable was a 1/8 inch power connector at the EUT end and is hard wired into the junction box.
- Cable 5** This is a 30-centimeter unshielded cable connecting the laptop to the junction box. The cable has an RJ-45 connector at the laptop end and is hard wired into the junction box. The cable has a molded ferrite on the laptop end.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT**5.1 EUT and Accessory List**

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
DYNAPRO ETHERNET (EUT)	MAGTEK, INC.	30056033	N/A	U73-30056033
MOUSE	AGILGENT TECHNOLOGIES	M-B0001	N/A	DoC
LAPTOP	DELL	E7450	49R4P32	DoC
AC ADAPTER FOR LAPTOP	DELL	HA65NM130	N/A	N/A
AC ADAPTER FOR EUT	DSA-12CA-05	3114HB	N/A	N/A

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
GENERAL TEST EQUIPMENT USED IN LAB A					
Computer	Compaq	CQ5210F	CNX9360CF9	N/A	N/A
Monitor	Hewlett Packard	HPs2031a	3CQ046N3MD	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	3638A08768	May 27, 2015	1 Year
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	2648A15285	May 27, 2015	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00424	May 27, 2015	1 Year
GENERAL TEST EQUIPMENT USED IN LAB D					
Computer	Hewlett Packard	p6716f	MXX1030PX0	N/A	N/A
LCD Monitor	Hewlett Packard	52031a	3CQ046N3MG	N/A	N/A
EMI Receiver, 20 Hz – 26.5 GHz	Agilent Technologies	N9038A	MY51100115	March 6, 2014	2 Year
RF CONDUCTED EMISSIONS TEST EQUIPMENT					
Shield Room Test	Compatible Electronics	11CD	N/A	N/A	N/A
LISN	Com-Power	LI-215	12082	June 9, 2015	1 Year
LISN	Com-Power	LI-215	12090	June 9, 2015	1 Year
Transient Limiter	Com-Power	252A910	1	October 10, 2014	1 Year
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
RF RADIATED EMISSIONS TEST EQUIPMENT					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
CombiLog Antenna	Com-Power	AC-220	61060	May 20, 2014	2 Year
Loop Antenna	Com-Power	AL-130	17089	February 6, 2015	2 Year
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
System Controller	Sunol Sciences Corporation	SC110V	112213-1	N/A	N/A
Turntable	Sunol Sciences Corporation	2011VS	N/A	N/A	N/A
Antenna-Mast	Sunol Sciences Corporation	TWR95-4	112213-3	N/A	N/A

Emissions test equipment (continued)

EQUIPMENT TYPE	MANU- FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
FREQUENCY TOLERANCE OF CARRIER SIGNAL TEST EQUIPMENT					
Temperature Chamber	Despatch Industries, Inc.	16212A	149857	April 20, 2015	1 Year
Digital Multimeter	Fluke	87	58450372	April 20, 2015	1 Year
AC Power Supply	ELGAR Corp.	1751SX	642810	N/A	N/A
Variable Autotransformer	Superior Electric Company	Type: 11560	Spec. BP142056	N/A	N/A
EMI Receiver	Rohde & Schwarz	ESIB40	100194	December 4, 2014	1 Year

6. TEST SITE DESCRIPTION

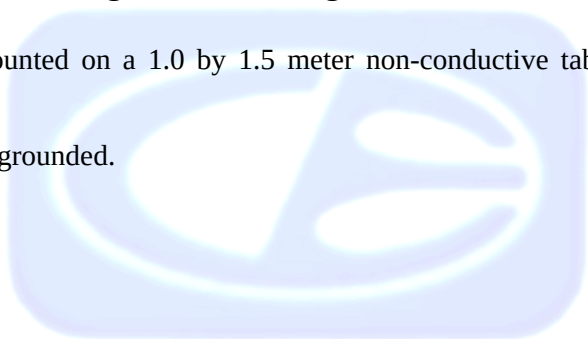
6.1 Test Facility Description

Please refer to section 2.1 of this report for emissions test location.

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was not grounded.



7. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

7.1 RF Emissions

7.1.1 Conducted Emissions Test

The spectrum analyzer was used as a measuring meter. The data was collected with the spectrum analyzer in the peak detect mode with the “Max Hold” feature activated. The quasi-peak was used only where indicated in the data sheets. A transient limiter was used for the protection of the spectrum analyzer input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the spectrum analyzer. The output of the second LISN was terminated by a 50-ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding, and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The conducted emissions from the EUT were maximized for operating mode as well as cable placement. The final data was collected under program control by the Compatible Electronics software in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave. The final qualification data is located in Appendix E.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.207.

7.1.2 Radiated Emissions (Spurious and Harmonics) Test – Lab A**7.1.3 Radiated Emissions Test (Spurious and Harmonics)**

The spectrum analyzer was used as a measuring meter. The measurement meter was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the measurement meter records the highest measured reading over all the sweeps. The following antenna and measurement bandwidths were used as specified in the following table.

The resolution bandwidths and transducers used for this test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
9 kHz to 150 kHz	200 Hz	Loop Antenna
150 kHz to 30 MHz	9 kHz	Loop Antenna

An open field, non-ground plane test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4. Please see section 6.2 of this report for mounting, bonding, and grounding of the EUT. The portable turntable supporting the EUT is remote controlled using a motor. The portable turntable permits EUT rotation of 360 degrees in order to maximize emissions. Data was collected in the worst case (highest emission) configuration of the EUT. At the transmit frequency band, the antenna height was 1 meter; the EUT was rotated 360 degrees; and the antenna was rotated 360 degrees on its vertical axis (for H field radiated field strength).

The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. The EUT was tested at a 10-meter test distance to obtain final test data. The EUT was also tested with the modulation on, since it was not possible to turn it off. The final qualification data is located in Appendix E.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.225 for radiated emissions. Please see Appendix E for the data sheets.

7.1.4 Radiated Emissions (Spurious and Harmonics) Test – Lab D

The EMI Receiver was used as the measuring meter. A built-in, internal preamplifier was used to increase the sensitivity of the instrument. The EMI Receiver was initially used with the Analyzer mode feature activated. In this mode, the EMI receiver can then record the actual frequency to be measured. This final reading is then taken accurately in the EMI Receiver mode, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. A quasi-peak reading was taken only for those readings, which are marked accordingly on the data sheets.

The EMI test chamber of Compatible Electronics, Inc. was used for radiated emissions testing. This test site is set up according to ANSI C63.4. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT.

The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength).

The measurement bandwidths and transducers used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
30 MHz to 1 GHz	120 kHz	CombiLog Antenna

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Sections 15.209 and 15.225 for radiated emissions. Please see Appendix E for the data sheets.

7.1.5 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
DynaPro Ethernet, Model: 30056033

Frequency MHz	Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
624.00 (H)	44.22 (QP)	46.00	-1.78
275.00 (H)	41.04 (QP)	46.00	-4.96
624.00 (V)	40.29 (QP)	46.00	-5.71
912.00 (H)	39.95 (QP)	46.00	-6.05
912.00 (V)	39.80 (QP)	46.00	-6.20
542.40 (H)	39.65 (QP)	46.00	-6.35

Table 2.0 CONDUCTED EMISSION RESULTS
DynaPro Ethernet, Model: 30056033

Frequency MHz	Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
13.486 (WL)	47.16 (Average)	50.00	-2.84
13.486 (BL)	46.85 (Average)	50.00	-3.15
0.365 (BL)	42.02 (Average)	48.61	-6.59
0.363 (WL)	42.01 (Average)	48.65	-6.64
0.728 (WL)	36.20 (Average)	46.00	-9.80
0.731 (BL)	36.18 (Average)	46.00	-9.82

Notes:

(H) Horizontal
(V) Vertical
(BL) Black Lead
(WL) White Lead
(QP) Quasi Peak

* The complete emissions data is given in Appendix E of this report.

7.2 Frequency Tolerance of Carrier Signal

The EUT was placed in a temperature chamber and set to +50 degrees Celsius. The EUT was exposed to this temperature for a period of 10 minutes. The temperature was subsequently decreased at 10 degree increments down to -20 degrees Celsius with a 30 minute acclimation period between each temperature. At each temperature, the EUT's fundamental emission was measured with an EMI Receiver to determine whether the carrier signal was within 0.01% of the fundamental frequency at startup, 2 minutes, 5 minutes, and 10 minutes after removal from the temperature chamber.

Also, at +20 degrees Celsius, the EUT's input voltage was varied between 85% and 115% using a variable auto transformer and the fundamental of the EUT was measured with an EMI Receiver to determine whether the carrier signal was within 0.01% of the fundamental frequency.

A data sheet of the Frequency Tolerance testing is located in Appendix E.

Test Results:

The EUT complies with the requirements of FCC Title 47, Part 15, Subpart, B, section 15.225 [e]. Please see Appendix E for the data sheets.

8. CONCLUSIONS

The DynaPro Ethernet, Model: 30056033, as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B and Subpart C, sections 15.205, 15.209, and 15.225.

APPENDIX A***LABORATORY ACCREDITATIONS AND RECOGNITIONS***

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

LABORATORY ACCREDITATIONS AND RECOGNITIONS



For US, Canada, Australia/New Zealand, Japan, Taiwan, Korea, and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025. Please follow the link to the NIST/NVLAP site for each of our facilities' NVLAP certificate and scope of accreditation

NVLAP listing links

[Agoura Division](#) / [Brea Division](#) / [Silverado/Lake Forest Division](#)

.Quote from ISO-ILAC-IAF Communiqué on 17025:

"A laboratory's fulfilment of the requirements of ISO/IEC 17025:2005 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025:2005 (Section 4) are written in language relevant to laboratory operations and meet the principles of ISO 9001:2008 Quality Management Systems — Requirements."



ANSI listing [CETCB](#)



Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for EMC under the US/EU Mutual Recognition Agreement (MRA).

US/EU MRA list [NIST MRA site](#)



Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for Taiwan/BSMI under the US/APEC (Asia-Pacific Economic Cooperation) Mutual Recognition Agreement (MRA).

APEC MRA list [NIST MRA site](#)

We are also listed for IT products by the following country/agency:



VCCI Support member: Please visit http://www.vcci.jp/vcci_e/



FCC Listing, from FCC OET site

[FCC test lab search](#) <https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm>



Compatible Electronics IC listing can be found at:

<http://www.ic.gc.ca/eic/site/ic1.nsf/eng/home>

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC 15.225 specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

No modifications were made to the EUT during the testing.



APPENDIX C

ADDITIONAL MODELS

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

DynaPro Ethernet
Model: 30056033
S/N: N/A

There were no additional models covered under this report.

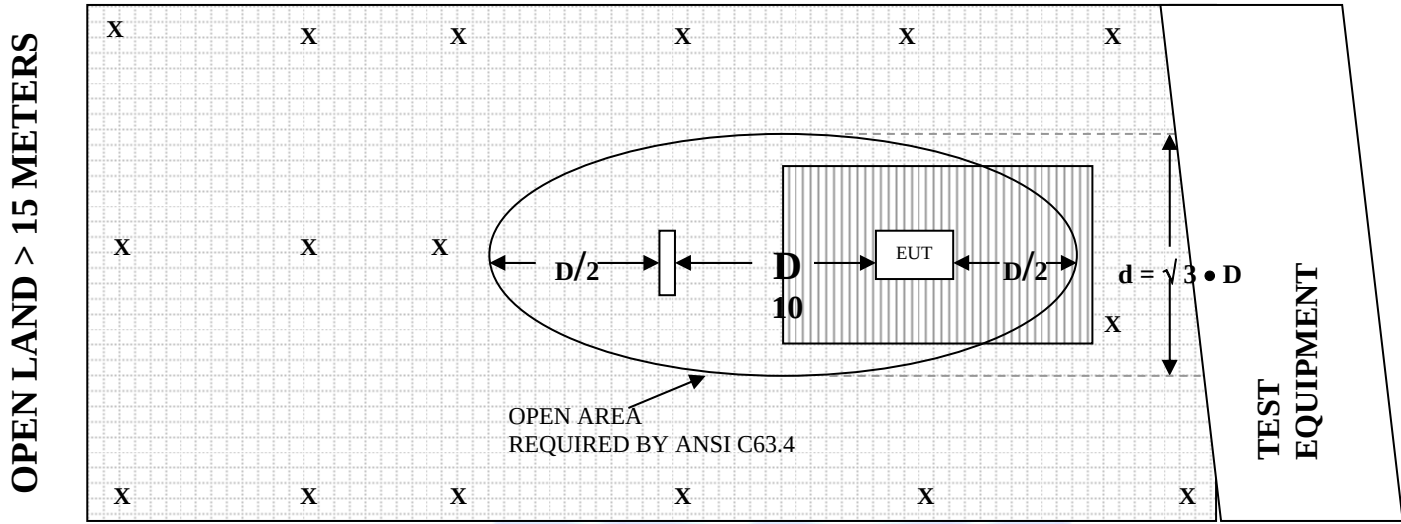


APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED SITE

OPEN LAND > 15 METERS



OPEN LAND > 15 METERS

X	= GROUND RODS		= GROUND SCREEN
D	= TEST DISTANCE (meters)		= WOOD COVER

FIGURE 2: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER

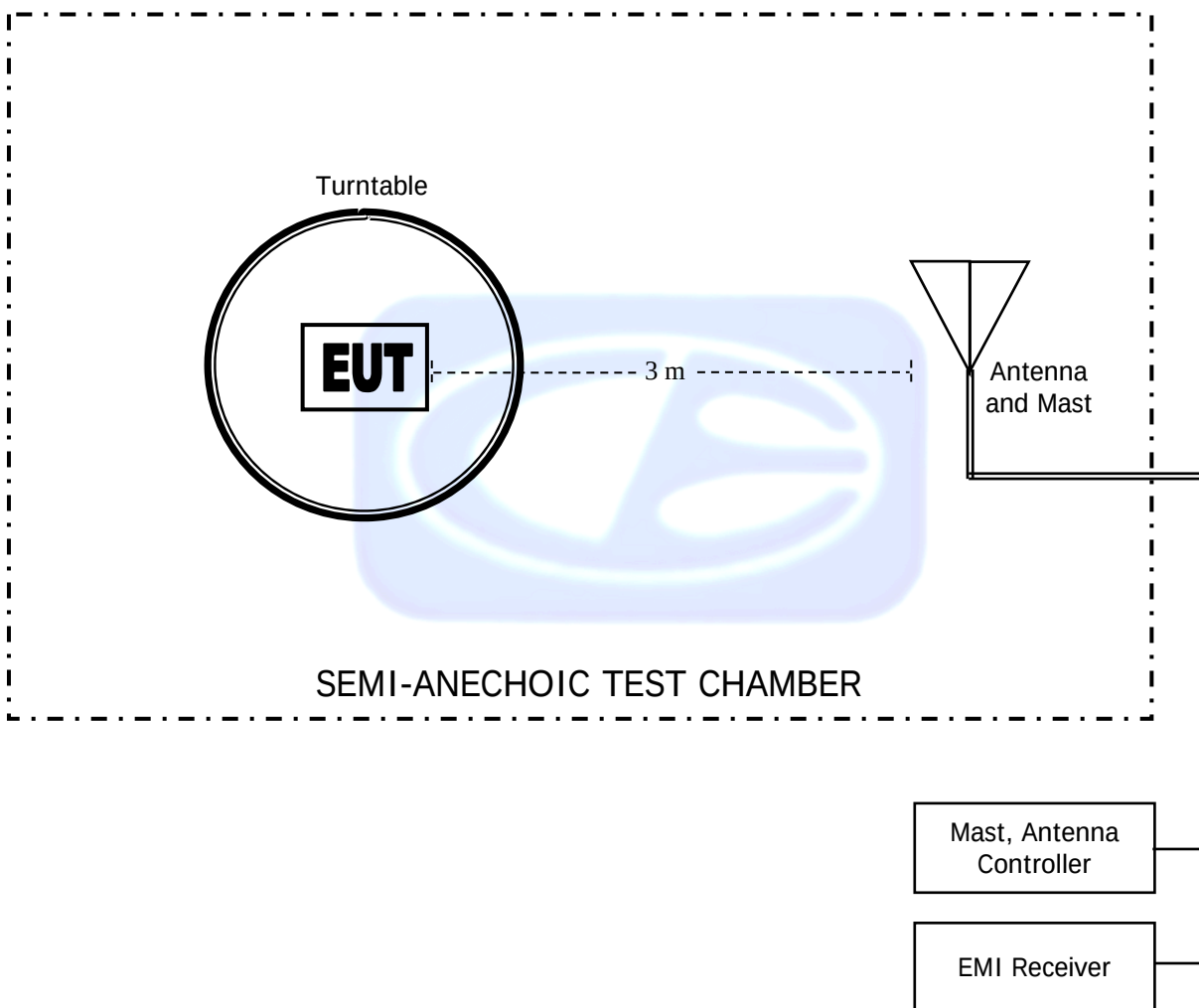
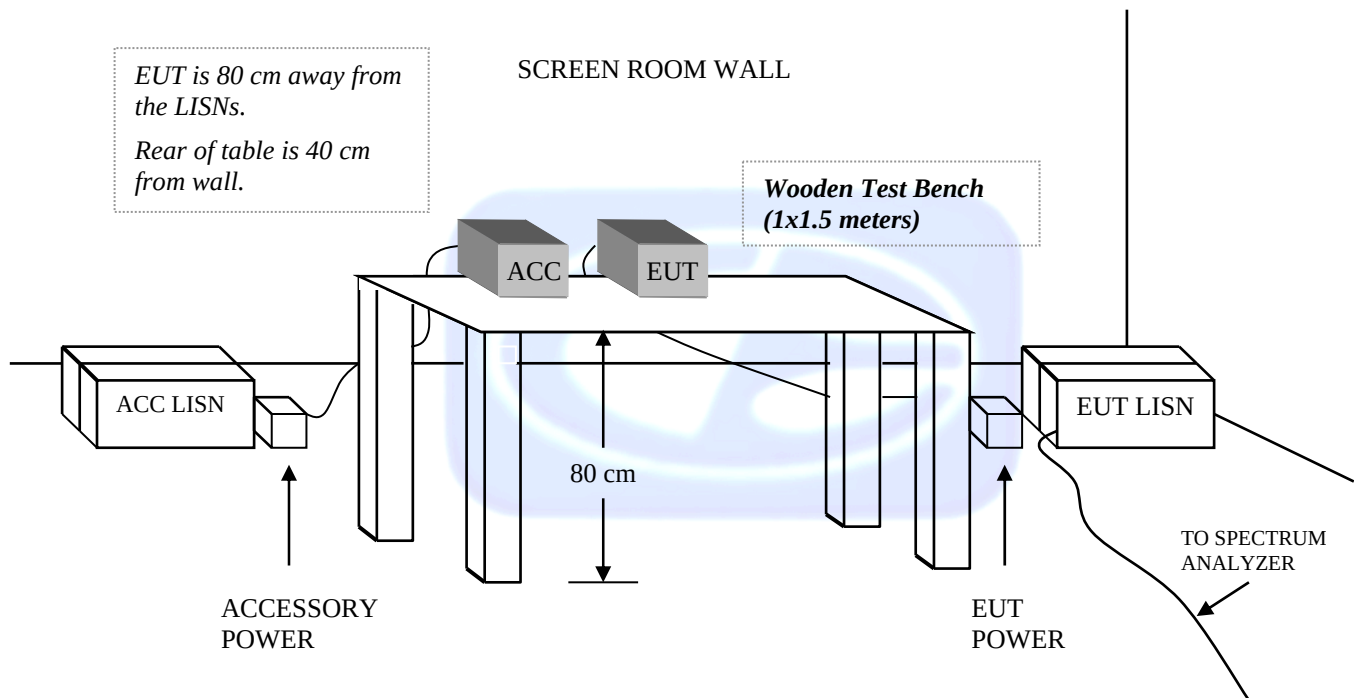


FIGURE 3: CONDUCTED EMISSIONS TEST SETUP



COM-POWER AL-130**LOOP ANTENNA**

S/N: 17089

CALIBRATION DATE: FEBRUARY 6, 2015

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-33.18	18.32
0.01	-34.10	17.40
0.02	-38.65	12.85
0.03	-39.28	12.22
0.04	-40.09	11.41
0.05	-40.85	10.65
0.06	-40.88	10.62
0.07	-41.07	10.43
0.08	-41.04	10.46
0.09	-41.19	10.31
0.1	-41.20	10.30
0.2	-41.52	9.98
0.3	-41.53	9.97
0.4	-41.42	10.08
0.5	-41.53	9.97
0.6	-41.53	9.97
0.7	-41.43	10.07
0.8	-41.23	10.27
0.9	-41.13	10.37
1	-41.14	10.36
2	-40.80	10.70
3	-40.66	10.84
4	-40.61	10.89
5	-40.33	11.17
6	-40.53	10.97
7	-40.47	11.03
8	-40.48	11.02
9	-39.93	11.57
10	-39.81	11.69
15	-43.35	8.15
20	-39.16	12.34
25	-40.24	11.26
30	-43.18	8.32

COM-POWER AC-220**COMBILOG ANTENNA****S/N: 61060****CALIBRATION DATE: MAY 20, 2014**

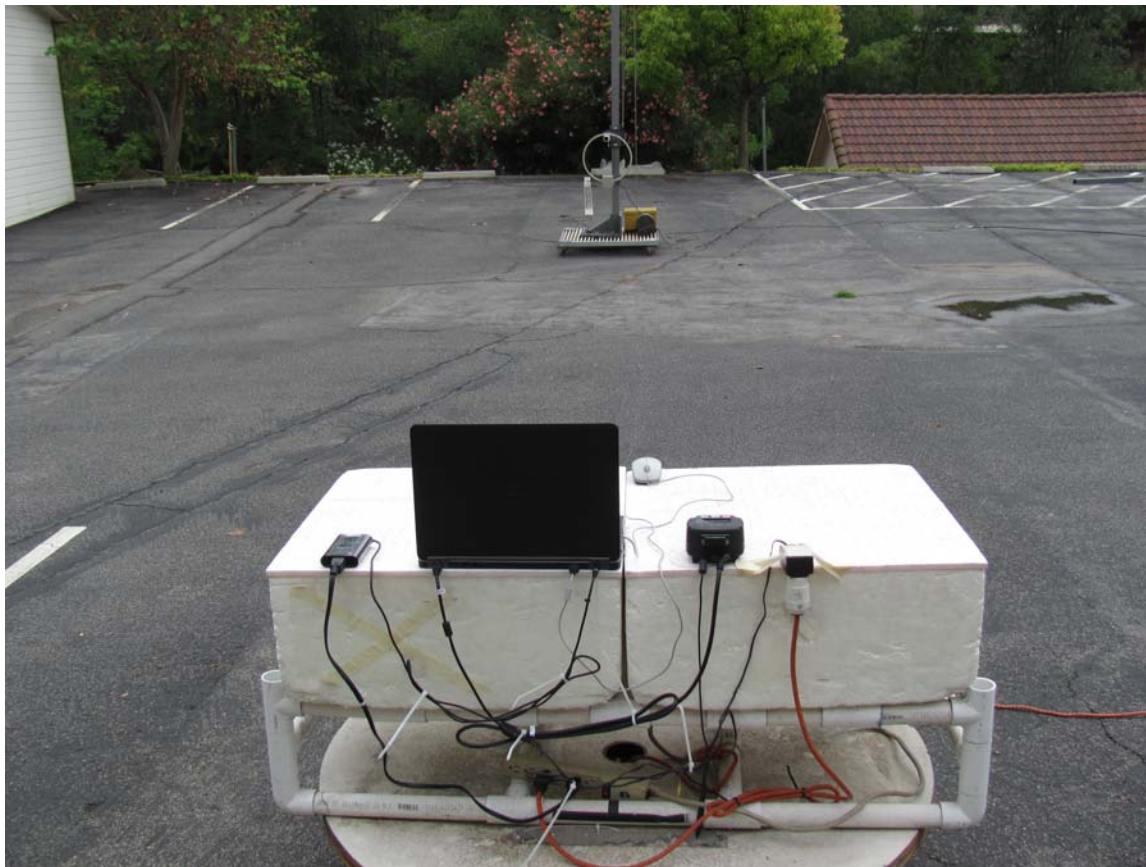
FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	23.40	200	14.40
35	23.70	250	16.40
40	24.20	300	17.90
45	22.60	350	15.60
50	22.10	400	19.90
60	17.90	450	20.40
70	12.70	500	21.60
80	11.60	550	21.50
90	12.20	600	22.30
100	13.20	650	23.50
120	15.70	700	23.70
125	15.80	750	25.90
140	13.60	800	25.90
150	16.90	850	26.40
160	14.20	900	27.00
175	14.90	950	27.70
180	15.00	1000	27.50



FRONT VIEW

MAGTEK, INC.
DYNAPRO ETHERNET
MODEL: 30056033
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 30 MHz

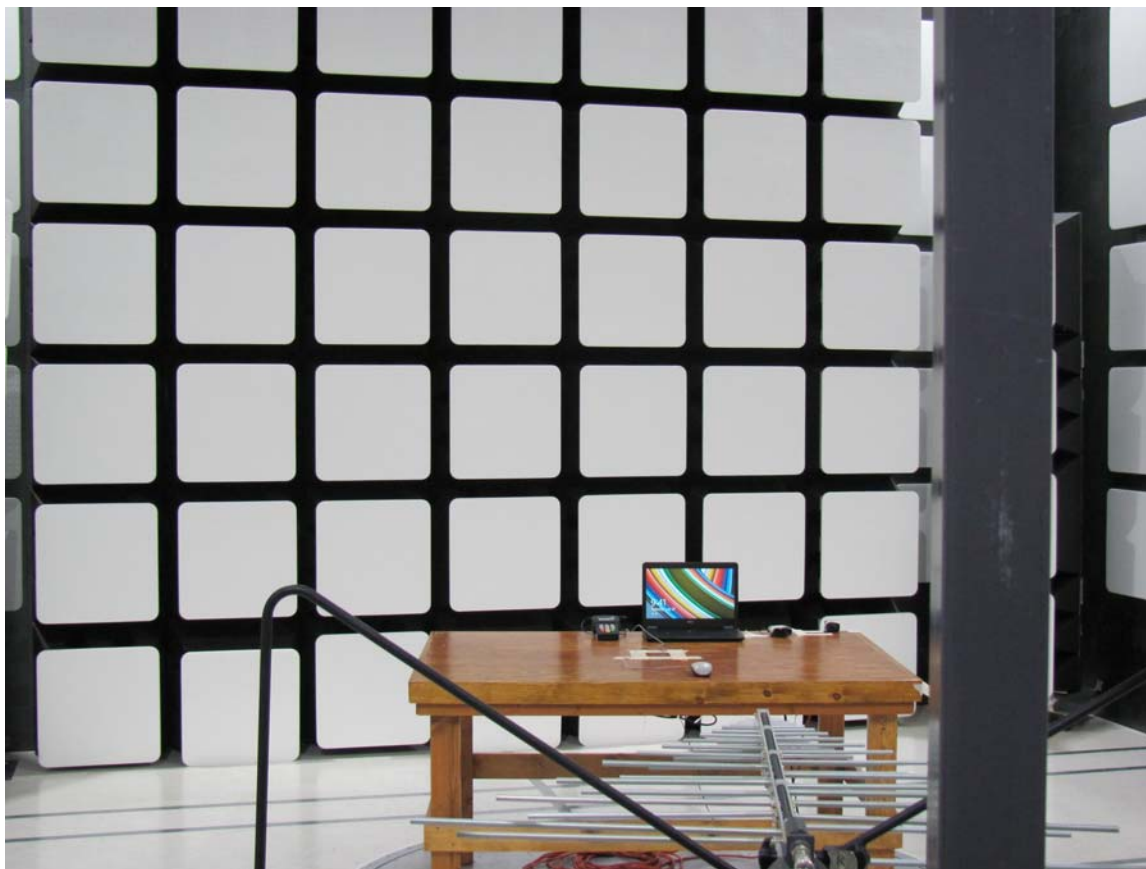
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

MAGTEK, INC.
DYNAPRO ETHERNET
MODEL: 30056033
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 30 MHz

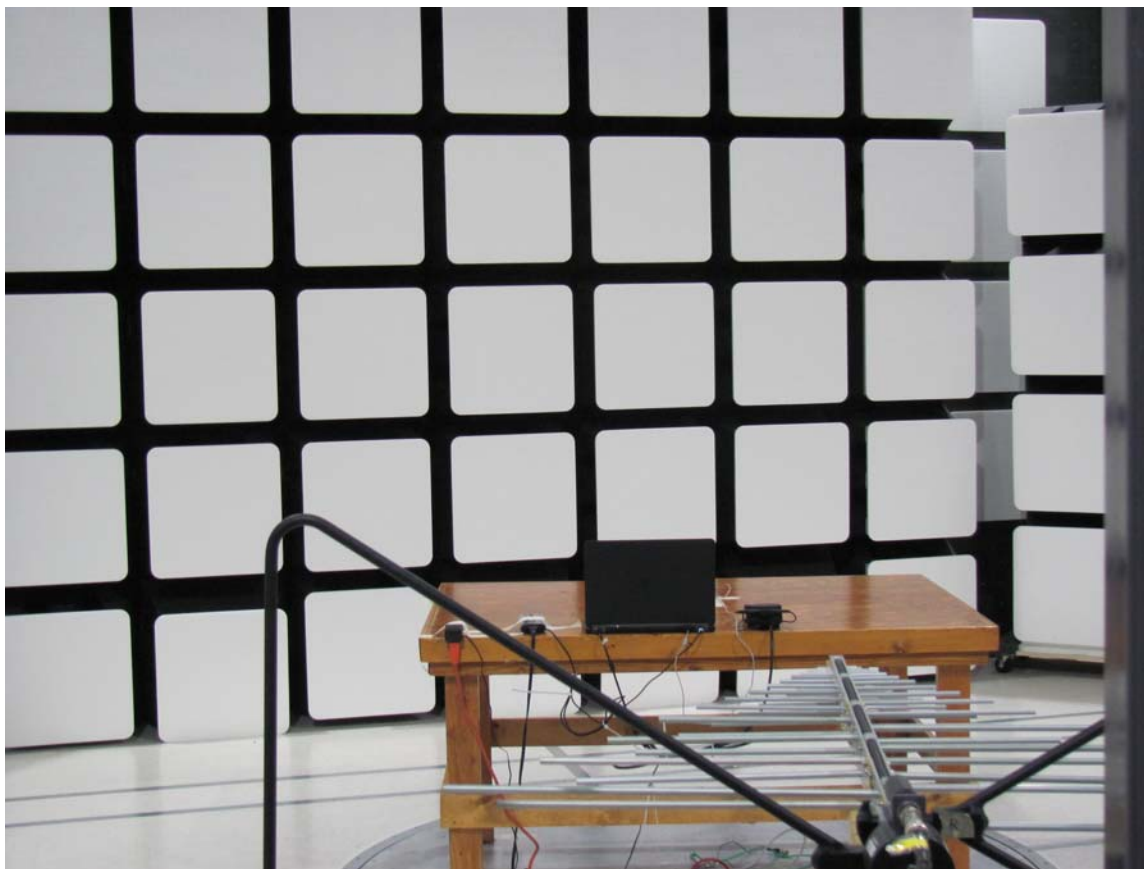
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



FRONT VIEW

MAGTEK, INC.
DYNAPRO ETHERNET
MODEL: 30056033
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 30 MHz

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

MAGTEK, INC.
DYNAPRO ETHERNET
MODEL: 30056033
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 30 MHz

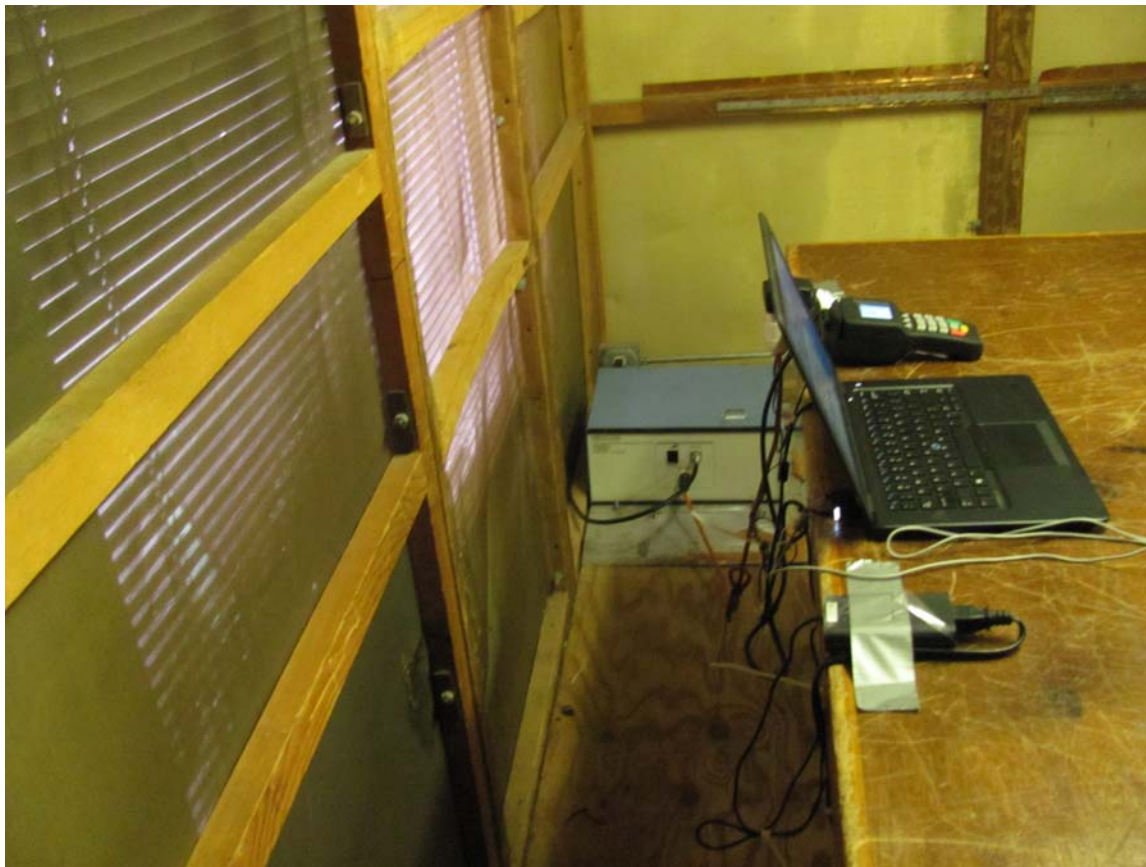
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



FRONT VIEW

MAGTEK, INC.
DYNAPRO ETHERNET
MODEL: 30056033
FCC SUBPART B – CONDUCTED EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

MAGTEK, INC.
DYNAPRO ETHERNET
MODEL: 30056033
FCC SUBPART B AND C – CONDUCTED EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

APPENDIX E
DATA SHEETS

RADIATED EMISSIONS

DATA SHEETS

FCC 15.225

Magtek, Inc.
DynaPro Ethernet
Model: 30056033

Date: 07/20/2015
Lab: A
Tested By: Kyle Fujimoto

Transmit Mode - 9 kHz to 30 MHz

Test Distance: 10 Meters

Corrected Spec Limit at 10 Meters = [x Log (spec test dist./actual test dist.)] + spec limit

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Spec Limit (at 10 Meters)	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
13.559	46.6	V	103.08	-56.484	Peak	1	180	X-Axis
13.559	56.5	V	103.08	-46.584	Peak	1	180	Y-Axis
13.559	57.2	V	103.08	-45.884	Peak	1	180	Z-Axis
13.553	38.5	V	69.56	-31.06	Peak	1	180	FCC 15.255 (b) Z-Axis Worst Case
13.567	38.6	V	69.56	-30.96	Peak	1	180	FCC 15.255 (b) Z-Axis Worst Case
13.41	29.5	V	59.59	-30.091	Peak	1	180	FCC 15.255 [c] Z-Axis Worst Case
13.71	30.2	V	59.59	-29.391	Peak	1	180	FCC 15.225 [c] Z-Axis Worst Case
27.118	35.6	V	48.63	-13.027	Peak	1	180	X-Axis
27.118	37.2	V	48.63	-11.427	Peak	1	180	Y-Axis
27.118	38.1	V	48.63	-10.527	Peak	1	180	Z-Axis

Limit in uV/m = 2400/F (kHz) at 300 Meters from 9 kHz to 490 kHz

Limit in uV/m = 24000/F (kHz) at 30 Meters from 490 kHz to 1705 kHz

Limit in uV/m = 30 at 30 Meters from 1705 kHz to 30 MHz

dBuV/m = 20 Log (uV/m)

FCC 15.225

Magtek, Inc.
DynaPro Ethernet
Model: 30056033

Date: 07/20/2015
Lab: A
Tested By: Kyle Fujimoto

Transmit Mode - 9 kHz to 30 MHz

Test Distance: 10 Meters

Corrected Spec Limit at 10 Meters = [x Log (spec test dist./actual test dist.)] + spec limit

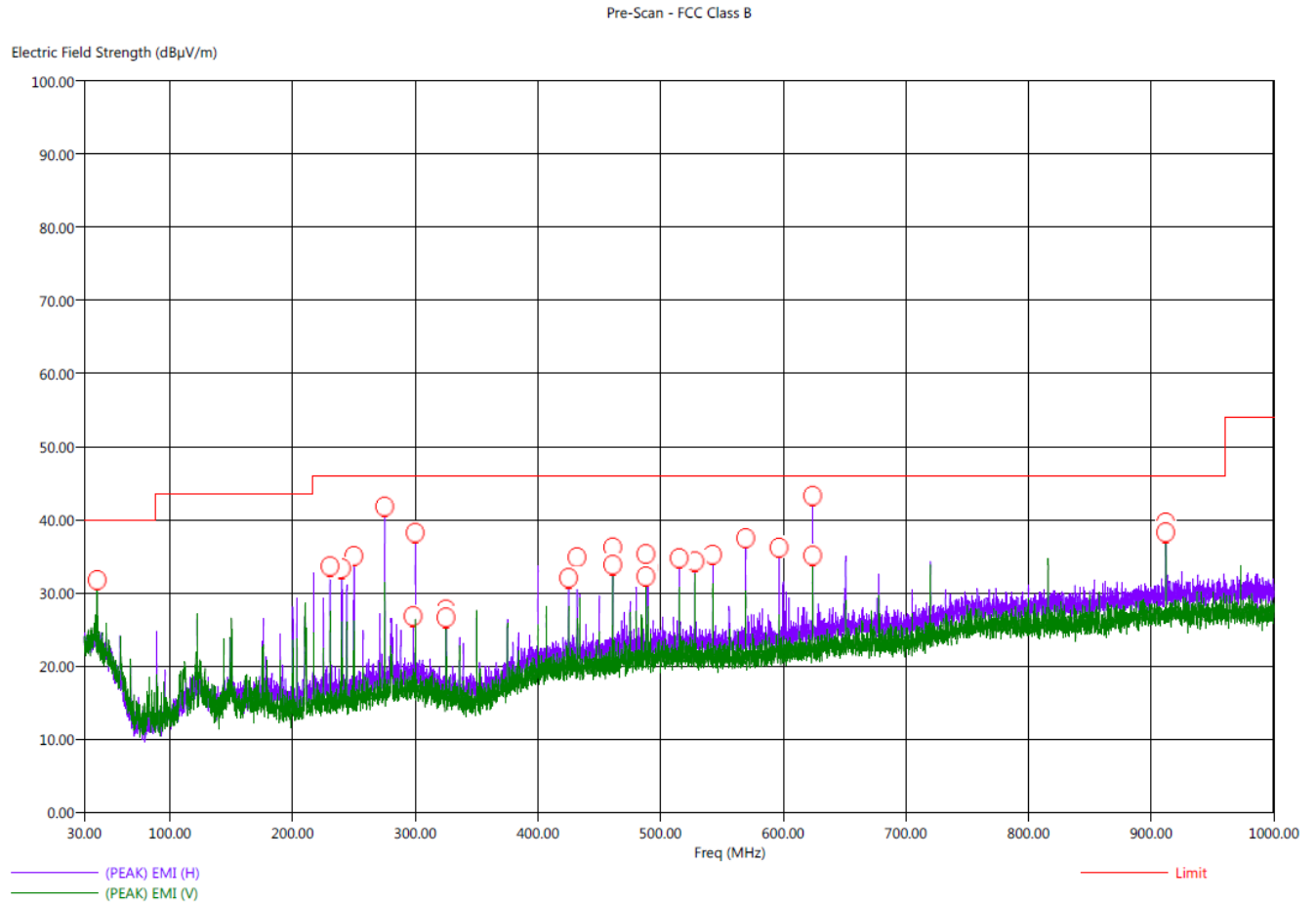
Freq. (MHz)	Level (dBuV)	Pol (v/h)	Spec Limit (at 10 Meters)	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
13.559	44.2	H	103.08	-58.884	Peak	1	90	X-Axis
13.559	52.3	H	103.08	-50.784	Peak	1	90	Y-Axis
13.559	56.8	H	103.08	-46.284	Peak	1	90	Z-Axis
13.553	37.4	H	69.56	-32.16	Peak	1	90	FCC 15.255 (b) Z-Axis Worst Case
13.567	38.2	H	69.56	-31.36	Peak	1	90	FCC 15.255 (b) Z-Axis Worst Case
13.41	30.5	H	59.59	-29.091	Peak	1	90	FCC 15.255 [c] Z-Axis Worst Case
13.71	30.1	H	59.59	-29.491	Peak	1	90	FCC 15.225 [c] Z-Axis Worst Case
27.118	35.1	H	48.63	-13.527	Peak	1	90	X-Axis
27.118	36.4	H	48.63	-12.227	Peak	1	90	Y-Axis
27.118	37.2	H	48.63	-11.427	Peak	1	90	Z-Axis

Limit in uV/m = 2400/F (kHz) at 300 Meters from 9 kHz to 490 kHz
Limit in uV/m = 24000/F (kHz) at 30 Meters from 490 kHz to 1705 kHz
Limit in uV/m = 30 at 30 Meters from 1705 kHz to 30 MHz

dBuV/m = 20 Log (uV/m)

Title: Pre-Scan - FCC Class B
File: Agilent - Radiated Pre-Scan 30-1000 MHz - FCC Class B - 07-20-2015.set
Operator: Kyle Fujimoto
EUT Type: DynaPro Ethernet
EUT Condition: The EUT is continuously Transmitting at 13.56 MHz and communicating with Laptop
Comments: Customer: Magtek, Inc.
Model: 30056033
X-Axis - Worst Case

7/20/2015 2:19:55 PM
Sequence: Preliminary Scan



Title: Radiated Final - 30-1000 MHz - EN 5022 Class B
 File: Agilent - Radiated Final 30-1000 MHz - FCC Class B - 07-20-2015.set
 Operator: Kyle Fujimoto
 EUT Type: DynaPro Ethernet
 EUT Condition: The EUT is continuously Transmitting at 13.56 MHz and communicating with Laptop
 Comments: Customer: Magtek, Inc.
 Model: 30056033

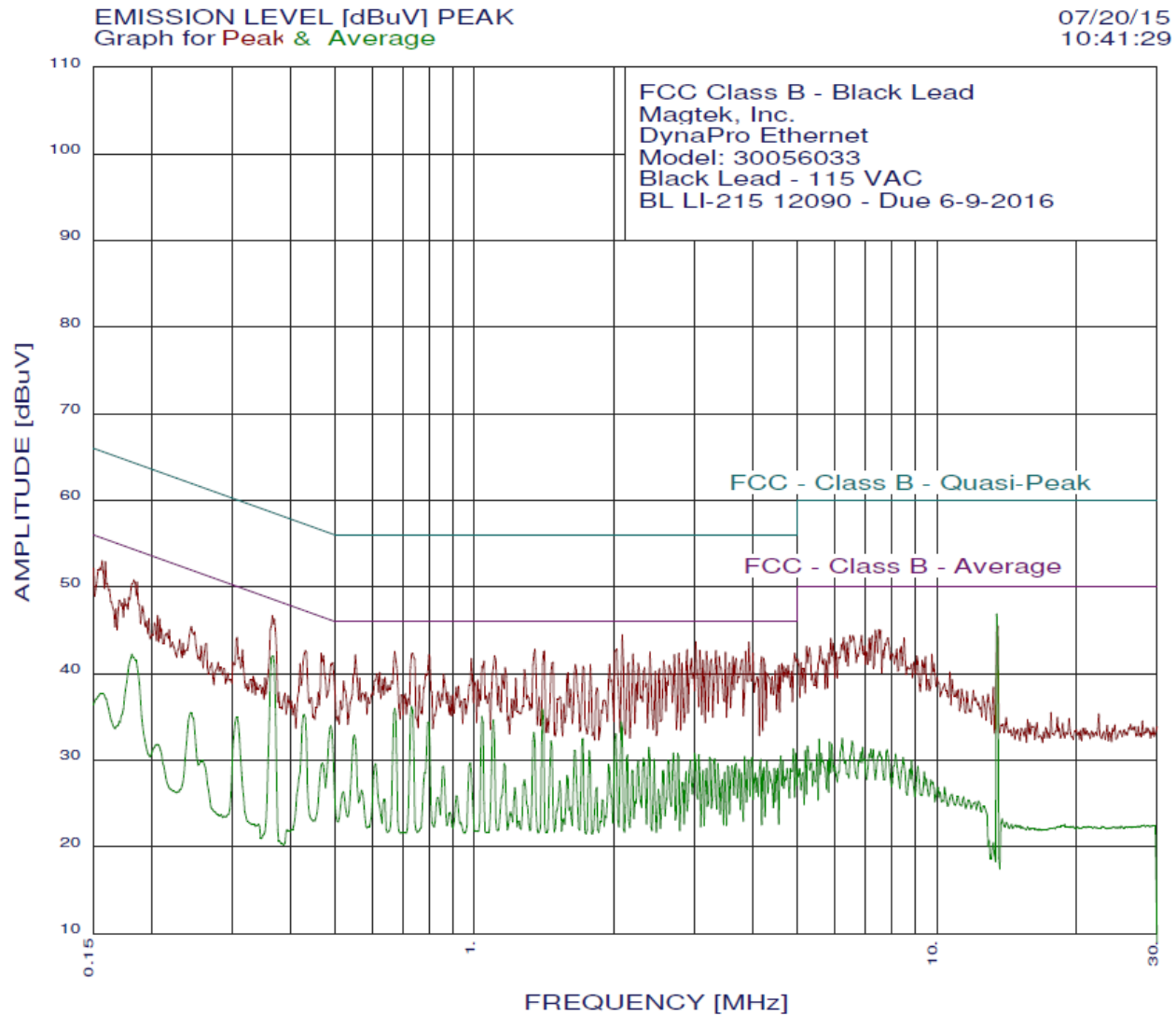
7/20/2015 2:34:05 PM
 Sequence: Final Measurements

EN 55022 Class B

Freq (MHz)	Pol	(PEAK) EMI (dBμV/m)	(OP) EMI (dBμV/m)	Freq (Max) (MHz)	Limit (dBμV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Ttbt Aql (deg)	Twr Ht (cm)
40.70	V	35.30	33.58	40.69	40.00	-4.70	-6.42	55.50	127.07
230.50	H	34.59	33.90	230.52	46.00	-11.41	-12.10	84.50	110.77
240.00	H	34.94	34.03	240.00	46.00	-11.06	-11.97	360.00	127.13
250.00	H	34.30	33.28	250.01	46.00	-11.70	-12.72	233.00	127.37
275.00	H	41.63	41.04	275.01	46.00	-4.37	-4.96	0.00	111.25
298.30	H	29.53	27.77	298.31	46.00	-16.47	-18.23	302.25	127.37
300.00	H	39.98	39.01	300.01	46.00	-6.02	-6.99	-0.25	127.31
325.00	H	31.59	30.02	325.04	46.00	-14.41	-15.98	65.75	111.19
325.00	V	31.75	30.58	325.01	46.00	-14.25	-15.42	360.00	126.65
425.10	H	33.23	31.63	425.02	46.00	-12.77	-14.37	359.00	111.19
432.00	H	34.48	33.13	431.98	46.00	-11.52	-12.87	115.25	174.89
461.00	H	32.22	30.24	461.03	46.00	-13.78	-15.76	203.25	268.56
461.00	V	37.05	35.85	461.04	46.00	-8.95	-10.15	87.50	111.07
488.10	H	38.63	37.48	488.16	46.00	-7.37	-8.52	62.00	158.05
488.10	V	36.24	35.15	488.15	46.00	-9.76	-10.85	89.25	111.25
489.80	H	36.30	31.50	489.76	46.00	-9.70	-14.50	53.75	126.41
515.30	H	37.95	36.92	515.27	46.00	-8.05	-9.08	50.50	126.29
528.00	H	39.66	38.48	527.98	46.00	-6.34	-7.52	81.00	126.47
542.40	H	40.71	39.65	542.40	46.00	-5.29	-6.35	81.00	142.71
569.50	H	39.82	38.94	569.51	46.00	-6.18	-7.06	93.25	111.37
596.60	H	37.72	36.44	596.62	46.00	-8.28	-9.56	92.75	126.77
624.00	H	44.81	44.22	623.99	46.00	-1.19	-1.78	93.75	111.01
624.00	V	41.04	40.29	623.98	46.00	-4.96	-5.71	358.00	111.19
912.00	H	41.37	39.95	911.99	46.00	-4.63	-6.05	139.50	239.19
912.00	V	42.19	39.80	911.97	46.00	-3.81	-6.20	95.75	159.25



***CONDUCTED EMISSIONS
DATA SHEETS***



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07/20/15 10:41:29

FCC Class B - Black Lead
Magtek, Inc.
DynaPro Ethernet
Model: 30056033
Black Lead - 115 VAC
BL LI-215 12090 - Due 6-9-2016
Test Engineer : Kyle Fujimoto

39 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	2.089	44.45	46.00	-1.55**
2	0.365	46.70	48.61	-1.91**
3	3.011	43.65	46.00	-2.35**
4	3.924	43.64	46.00	-2.36**
5	0.159	52.90	55.51	-2.61**
6	0.157	53.01	55.64	-2.63**
7	2.034	42.85	46.00	-3.15**
8	1.352	42.77	46.00	-3.23**
9	2.885	42.75	46.00	-3.25**
10	3.075	42.65	46.00	-3.35**
11	3.328	42.65	46.00	-3.35**
12	1.419	42.58	46.00	-3.42**
13	3.175	42.55	46.00	-3.45**
14	0.672	42.54	46.00	-3.46**
15	3.862	42.54	46.00	-3.46**
16	0.183	50.79	54.33	-3.54**
17	2.397	42.45	46.00	-3.55**
18	3.492	42.44	46.00	-3.56**
19	0.186	50.58	54.19	-3.62**
20	2.766	42.35	46.00	-3.65**
21	4.928	42.34	46.00	-3.66**
22	4.008	42.34	46.00	-3.66**
23	0.735	42.34	46.00	-3.66**
24	2.201	42.25	46.00	-3.75**
25	2.707	42.15	46.00	-3.85**
26	0.552	42.15	46.00	-3.85**
27	0.796	42.14	46.00	-3.86**
28	1.106	42.04	46.00	-3.96**
29	3.383	41.94	46.00	-4.06**
30	3.624	41.94	46.00	-4.06**
31	4.182	41.94	46.00	-4.06**
32	0.466	42.34	46.58	-4.24**
33	2.948	41.75	46.00	-4.25**
34	3.683	41.74	46.00	-4.26**
35	4.227	41.74	46.00	-4.26**
36	0.984	41.73	46.00	-4.27**
37	3.260	41.65	46.00	-4.35**
38	3.800	41.64	46.00	-4.36**
39	3.124	41.55	46.00	-4.45**

**Please See the Average Readings on the Next Page and on the Plot

page 1/1

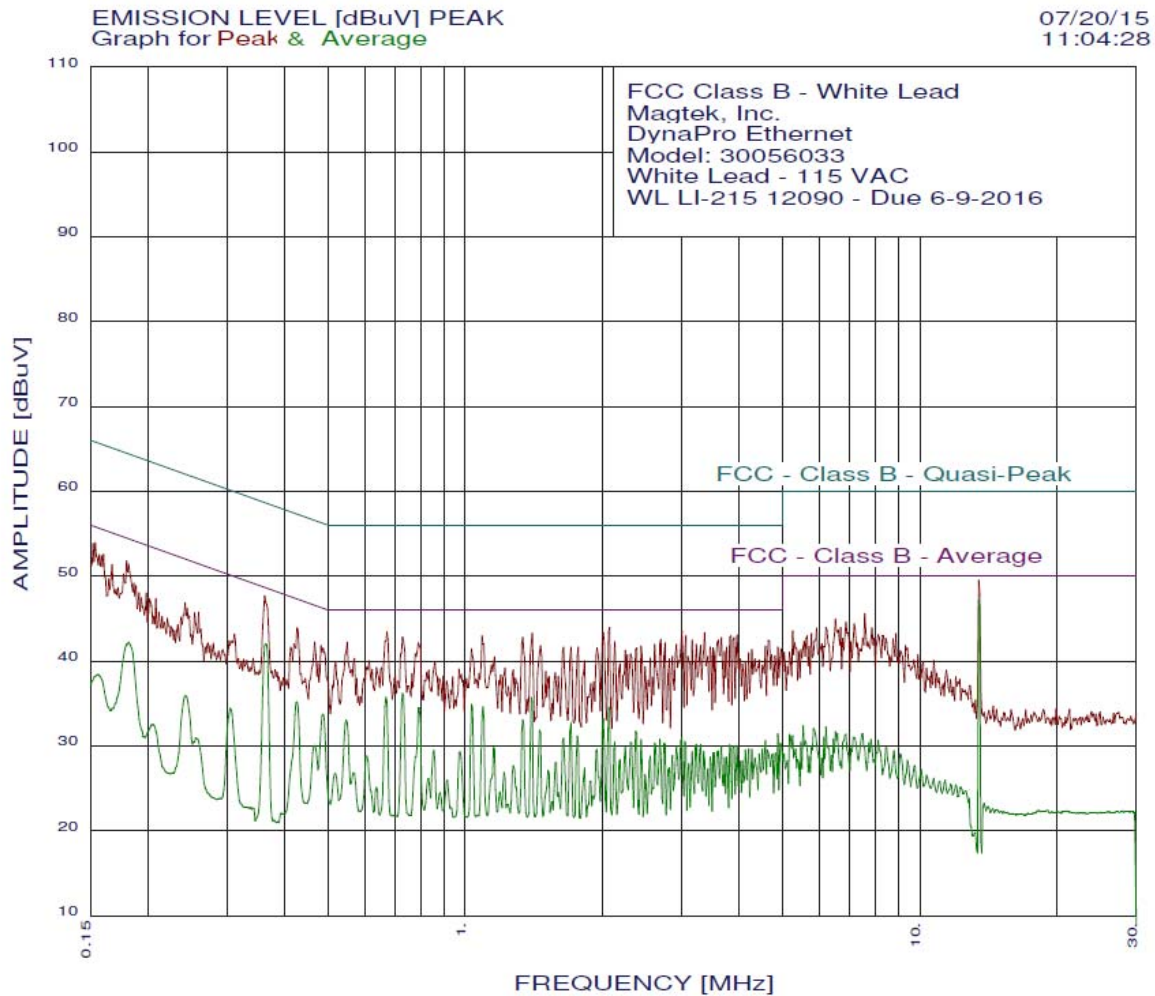
07/20/15 10:41:29

FCC Class B - Black Lead
Magtek, Inc.
DynaPro Ethernet
Model: 30056033
Black Lead - 115 VAC
BL LI-215 12090 - Due 6-9-2016
Test Engineer : Kyle Fujimoto

39 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 0.00 dB, Curve : Average

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	13.486	46.85	50.00	-3.15
2	0.365	42.02	48.61	-6.59
3	0.731	36.18	46.00	-9.82
4	0.672	35.97	46.00	-10.03
5	1.404	35.85	46.00	-10.15
6	1.038	35.06	46.00	-10.94
7	1.100	34.63	46.00	-11.37
8	2.077	34.41	46.00	-11.59
9	0.796	34.36	46.00	-11.64
10	0.428	35.26	47.28	-12.03
11	0.182	42.21	54.41	-12.20
12	0.489	33.96	46.18	-12.22
13	1.345	33.19	46.00	-12.81
14	2.023	33.03	46.00	-12.97
15	0.550	32.91	46.00	-13.09
16	1.717	32.47	46.00	-13.53
17	1.464	32.23	46.00	-13.77
18	2.384	31.45	46.00	-14.55
19	4.902	31.32	46.00	-14.68
20	1.646	31.11	46.00	-14.89
21	1.772	31.06	46.00	-14.94
22	0.307	34.94	50.05	-15.12
23	2.693	30.80	46.00	-15.20
24	2.751	30.77	46.00	-15.23
25	4.954	30.76	46.00	-15.24
26	2.995	30.74	46.00	-15.26
27	3.059	30.64	46.00	-15.36
28	2.145	30.61	46.00	-15.39
29	4.600	30.50	46.00	-15.50
30	3.841	30.41	46.00	-15.59
31	3.226	30.35	46.00	-15.65
32	3.987	30.31	46.00	-15.69
33	2.322	30.21	46.00	-15.79
34	3.311	30.18	46.00	-15.82
35	2.449	30.08	46.00	-15.92
36	4.159	30.07	46.00	-15.93
37	3.924	30.03	46.00	-15.97
38	2.932	30.01	46.00	-15.99
39	2.624	29.97	46.00	-16.03



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FCC Class B - White Lead
Magtek, Inc.
DynaPro Ethernet
Model: 30056033
White Lead - 115 VAC
WL LI-215 12090 - Due 6-9-2016
Test Engineer : Kyle Fujimoto

39 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	13.486	49.52	50.00	-0.48**
2	0.362	47.69	48.69	-1.00**
3	0.153	53.92	55.82	-1.90**
4	2.077	43.95	46.00	-2.05**
5	0.152	53.82	55.91	-2.09**
6	2.995	43.54	46.00	-2.46**
7	0.672	43.43	46.00	-2.57**
8	2.013	43.35	46.00	-2.65**
9	3.365	43.34	46.00	-2.66**
10	0.180	51.80	54.50	-2.70**
11	1.404	43.28	46.00	-2.72**
12	0.160	52.59	55.47	-2.88**
13	3.966	43.05	46.00	-2.95**
14	3.841	42.95	46.00	-3.05**
15	3.059	42.94	46.00	-3.06**
16	1.089	42.94	46.00	-3.06**
17	0.157	52.50	55.64	-3.14**
18	0.158	52.39	55.56	-3.16**
19	0.728	42.83	46.00	-3.17**
20	1.338	42.77	46.00	-3.23**
21	3.903	42.75	46.00	-3.25**
22	3.663	42.75	46.00	-3.25**
23	0.426	43.91	47.33	-3.42**
24	2.693	42.55	46.00	-3.45**
25	3.605	42.45	46.00	-3.55**
26	3.158	42.44	46.00	-3.56**
27	4.648	42.44	46.00	-3.56**
28	2.134	42.25	46.00	-3.75**
29	0.167	51.36	55.11	-3.76**
30	0.550	42.22	46.00	-3.78**
31	2.751	42.15	46.00	-3.85**
32	0.788	42.13	46.00	-3.87**
33	2.610	41.95	46.00	-4.05**
34	2.916	41.94	46.00	-4.06**
35	3.226	41.94	46.00	-4.06**
36	3.294	41.84	46.00	-4.16**
37	1.464	41.79	46.00	-4.21**
38	2.436	41.75	46.00	-4.25**
39	4.576	41.74	46.00	-4.26**

**Please See the Average Readings on the Next Page and on the Plot

page 1/1

07/20/15 11:04:28

FCC Class B - White Lead
Magtek, Inc.
DynaPro Ethernet
Model: 30056033
White Lead - 115 VAC
WL LI-215 12090 - Due 6-9-2016
Test Engineer : Kyle Fujimoto

39 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 0.00 dB, Curve : Average

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	13.486	47.16	50.00	-2.84
2	0.363	42.01	48.65	-6.64
3	0.728	36.20	46.00	-9.80
4	0.669	35.73	46.00	-10.27
5	1.397	35.69	46.00	-10.31
6	1.032	34.89	46.00	-11.11
7	1.094	34.59	46.00	-11.41
8	2.066	34.54	46.00	-11.46
9	0.792	34.39	46.00	-11.61
10	0.426	35.20	47.33	-12.13
11	0.182	42.23	54.41	-12.18
12	0.180	42.04	54.50	-12.46
13	0.486	33.72	46.23	-12.51
14	2.013	33.20	46.00	-12.80
15	1.338	33.07	46.00	-12.93
16	0.547	33.05	46.00	-12.95
17	1.708	32.67	46.00	-13.33
18	1.456	31.85	46.00	-14.15
19	2.371	31.71	46.00	-14.29
20	4.877	31.44	46.00	-14.56
21	1.763	31.15	46.00	-14.85
22	2.995	30.89	46.00	-15.11
23	1.646	30.89	46.00	-15.11
24	2.679	30.77	46.00	-15.23
25	2.436	30.71	46.00	-15.29
26	4.576	30.60	46.00	-15.40
27	3.043	30.50	46.00	-15.50
28	2.134	30.45	46.00	-15.55
29	2.310	30.42	46.00	-15.58
30	2.610	30.32	46.00	-15.68
31	2.736	30.32	46.00	-15.68
32	4.928	30.31	46.00	-15.69
33	0.304	34.42	50.14	-15.73
34	3.294	30.17	46.00	-15.83
35	3.226	30.17	46.00	-15.83
36	3.820	30.11	46.00	-15.89
37	3.966	30.04	46.00	-15.96
38	3.903	30.01	46.00	-15.99
39	3.663	29.94	46.00	-16.06

FCC 15.225 [e] Testing

COMPANY:	MAGTEK, INC.	DATE:	08-03-2015
EUT:	DYNAPRO ETHERNET	ENGINEER:	KYLE FUJIMOTO
MODEL:	30056033	S/N:	N/A

TEMPERATURE (CELSIUS)	FREQUENCY (MHz) at 0 MINUTES	FREQUENCY (MHz) at 2 MINUTES	FREQUENCY (MHz) at 5 MINUTES	FREQUENCY (MHz) at 10 MINUTES
-20	13.55980461	13.55979459	13.55980461	13.55984061
-10	13.55978457	13.55978457	13.55976453	13.55978457
0	13.55976453	13.55976453	13.55976453	13.55976453
10	13.55974449	13.55975451	13.55972445	13.55971443
20	13.55976453	13.55976453	13.55976453	13.55976453
30	13.55975451	13.55975451	13.55974449	13.55976453
40	13.55976453	13.55974449	13.55976453	13.55947451
50	13.55976453	13.55976453	13.55976453	13.55978457

Baseline = 13.55976453 MHz 20 Degrees Celsius at 100%

Low Limit = 13.558409 MHz Fundamental -0.01%
High Limit = 13.5611205 MHz Fundamental +0.01%

85% at 20 Degrees Celsius = 13.55976453 MHz

115% at 20 Degrees Celsius = 13.55924449 MHz