Cert. No. 1152.01
Electrical (EMC)

DATE: 17 May 2007

I.T.L. (PRODUCT TESTING) LTD.

FCC EMC/Radio Test

for

Hi-G-Tek Ltd.

Equipment under test:

Programming Unit*

* See customer's declaration on page 5.

IG-IU-125PU

Written by: _____
D. Shidlowsky, Documentation

Approved by: _____
E. Pitt, Test Engineer

Approved by: _____
I. Raz, EMC Laboratory Manager

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This report relates only to items tested.

Cert. No. 1152.01
Electrical (EMC)

Measurement/Technical Report for

Hi-G-Tek Ltd.

Programming Unit*

*See customer's declaration on page 5.

IG-IU-125PU

FCC ID: OB6-IGIU125PU

17 May 2007

This report concerns: Original Grant _x_ Class II change

Class B verification ___ Class A verification_____Class I change

Equipment type: Low Power Transmitter Below 1705kHz

Request Issue of Grant:

__**x**__ Immediately upon completion of review

Limits used:

CISPR 22 _____ Part 15 _x_

Measurement procedure used is ANSI C63.4-2003.

Application for Certification
prepared by:
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Applicant for this device:
(different from "prepared by")
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1. General Information

1.1 Administrative Information

Manufacturer:	Hi-G-Tek Ltd.
Manufacturer's Address:	16 Hacharoshet St. Or-Yehuda 60375 Israel Tel: +972-3-533-9359 Fax: +972-3-533-9225
Manufacturer's Representative:	Yossi Hershko Arkady Genin
Equipment Under Test (E.U.T):	Programming Unit (See customer's declaration on following page).
Equipment Model No.:	IG-IU-125PU
Equipment Serial No.:	1082802242
Date of Receipt of E.U.T:	14.02.07
Start of Test:	14.02.07
End of Test:	25.03.07
Test Laboratory Location:	I.T.L (Product Testing) Ltd. Kfar Bin Nun, ISRAEL 99780
Test Specifications:	FCC Part 15, Sub-part B, Sub-part C Sections: 15.207, 15.209

April 23, 2007

DECLARATION

I HEREBY DECLARE THAT THE FOLLOWING PRODUCT:

Programming Unit
M/N: IG-IU-125PU

IS IDENTICAL ELECTRONICALLY, PHYSICALLY, AND MECHANICALLY TO:

Data Port
M/N IG-IU-125PU

Please relate to these two products as the same product.

Thank you,

Roni Cohen
Manager, Hardware Development

Hi·G·Tek Ltd.
Wireless Monitoring Platform

1.2 List of Accreditations

The EMC laboratory of I.T.L. is accredited by the following bodies:

1. The American Association for Laboratory Accreditation (A2LA) (U.S.A.), Certificate No. 1152.01.
2. The Federal Communications Commission (FCC) (U.S.A.), Registration No. 90715.
3. The Israel Ministry of the Environment (Israel), Registration No. 1104/01.
4. The Voluntary Control Council for Interference by Information Technology Equipment (VCCI) (Japan), Registration Numbers: C-1350, R-1285.
5. Industry Canada (Canada), File No. IC 4025.
6. TUV Product Services, England, ASLLAS No. 97201.
7. Nemko (Norway), Authorization No. ELA 207.

I.T.L. Product Testing Ltd. is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this test report have been determined in accordance with I.T.L.'s terms of accreditation unless stated otherwise in the report.

1.3 Product Description

The Programming unit is a stationary (desktop device) low frequency modem that is used to configure parameters in the electronic sensors prior to their distribution or installation. The unit is controlled from a PC, it is externally powered from AC/DC adaptor (12VDC typically) and has RS232 channel to communicate with the PC.

The Programming unit communicates with the electronic sensors via the low frequency channel (125 KHz carrier with OOK modulated data) The LF channel allows to interrogate the sensors by short range link (up to 20cm) for set-up or manual verification.

2. Technical specifications:

Communications:

Frequency Range:

Low frequency: 125 kHz

Interface to PC: RS-232

Read Range: Low-frequency: 20cm

Power Requirements:

Power Source: 9 - 18VDC external Power supply (AC/DC adaptor)

Physical:

Size: 100 x 66 x 40mm

Weight: 200g

Housing: Splash-proof plastic reinforced with fiberglass

Environmental:

Operating Temperature: -20°C to +55°C

Humidity: 90% non-condensing

Vibration and Shock: Complies with MIL-STD-810D

1.4 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4: 2003. Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.5 Test Facility

The radiated emissions tests were performed at I.T.L.'s testing facility at Kfar Bin-Nun, Israel. This site is a FCC listed test laboratory (FCC Registration No. 90715, date of listing August 22, 2006).
I.T.L.'s EMC Laboratory is also accredited by A2LA, certificate No. 1152.01.

1.6 Measurement Uncertainty

Radiated Emission

The Open Site complies with the ±4 dB Normalized Site Attenuation requirements of ANSI C63.4-2003. In accordance with Paragraph 5.4.6.1 of this standard, this tolerance includes instrumentation calibration errors, measurement technique errors, and errors due to site anomalies.

2. Product Labeling

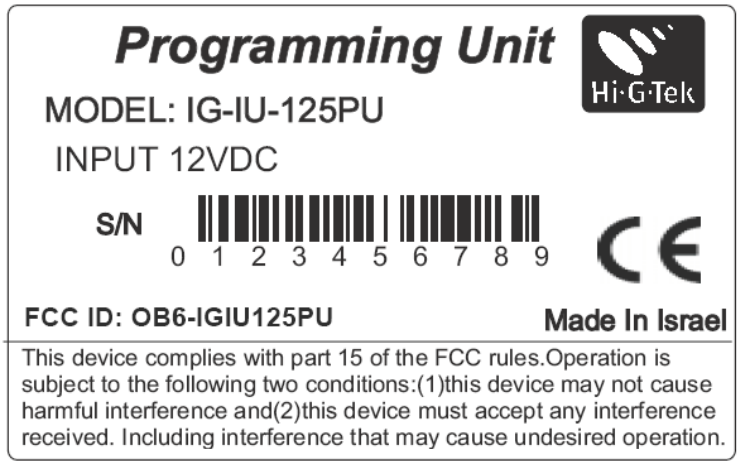

Figure 1. FCC Label

Figure 2. Location of Label on EUT

3. System Test Configuration

3.1 Justification

The E.U.T. is typically used as a desktop device. The E.U.T. was tested in the horizontal position.

3.2 EUT Exercise Software

Normally, the EUT transmits short messages in short periods. Therefore, in order to enable measurements of the transmitted signals, the EUT exercise program used during the RF testing was designed to transmit continuously random data or carrier wave (cw) according to test procedures.

3.3 Special Accessories

No special accessories were needed to achieve compliance.

3.4 Equipment Modifications

No equipment modifications are required and none have been made.

3.5 Configuration of Tested System

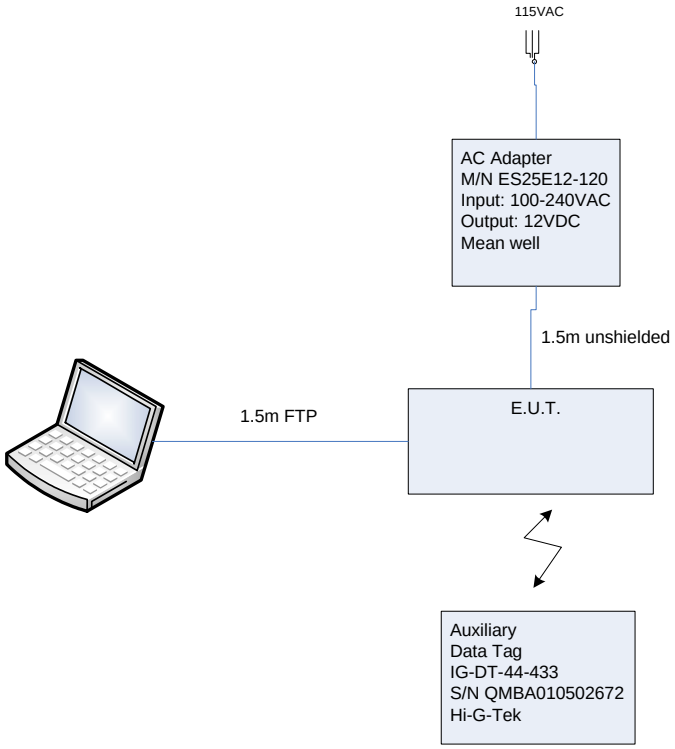

Figure 3. Configuration of Tested System

4. Block Diagram

4.1 Schematic Block/Connection Diagram

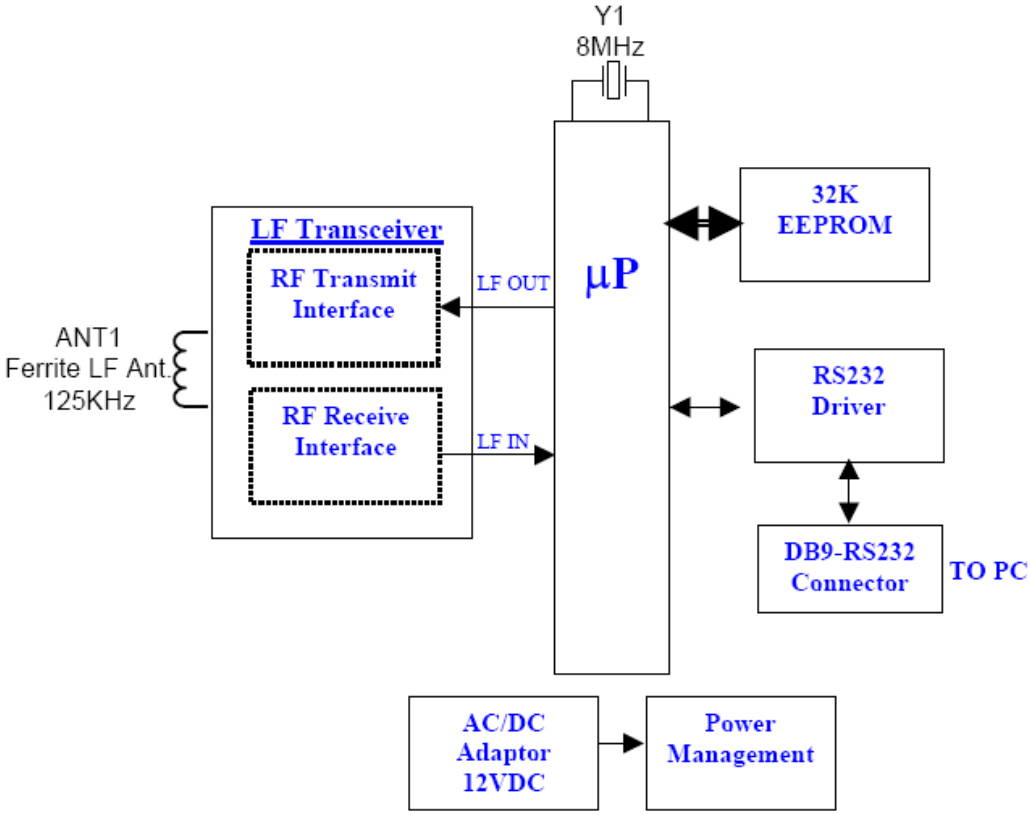

Figure 4. Block Diagram

4.2 Theory of Operation

Circuit Description

1. Functional Description

The Programming unit uses its simple 125kHz LF transceiver (at any time when it commanded to do so) to communicate by short range link with the end devices (active RFID electronic sensors) The data is transferred to the user through a serial RS-232 PC port.

2. Hardware Description

2.1. The PCB includes digital parts (µP, memory, RS232 driver etc.) and LF transceiver which utilizes on-off keying (OOK) modulation over a 125KHz carrier (4Kbit data rate) at short range (up to 20cm)

5. Field Strength of Fundamental

5.1 Test Specification

F.C.C., Part 15, Subpart C, Section 15.209

5.2 Test Procedure

The E.U.T. operation mode and test set-up are as described in Section 3.

The E.U.T. was placed on a non-conductive table, 0.8 meters above the O.A.T.S. ground plane.
The distance between the E.U.T. and test antenna was 3 meters.

The EMI receiver was set to the E.U.T. Fundamental Frequency (125.00 kHz) and Peak Detection.
The turntable and antenna were adjusted for maximum level reading on the EMI receiver. The loop antenna was rotated on its vertical axis. The antenna height (center of loop) was 1 meter.

5.3 Measured Data

JUDGEMENT: Passed by 20.5 dB

The EUT met the FCC Part 15, Subpart C, Section 15.209 specification requirements.

The details of the highest emissions are given in Figure 5.

TEST PERSONNEL:

Tester Signature: _____ Date: 20.05.07

Typed/Printed Name: Y. Mordukhovitch

Field Strength of Fundamental

E.U.T Description	Programming Unit
Model Number	IG-IU-125PU
Serial Number:	1082802242

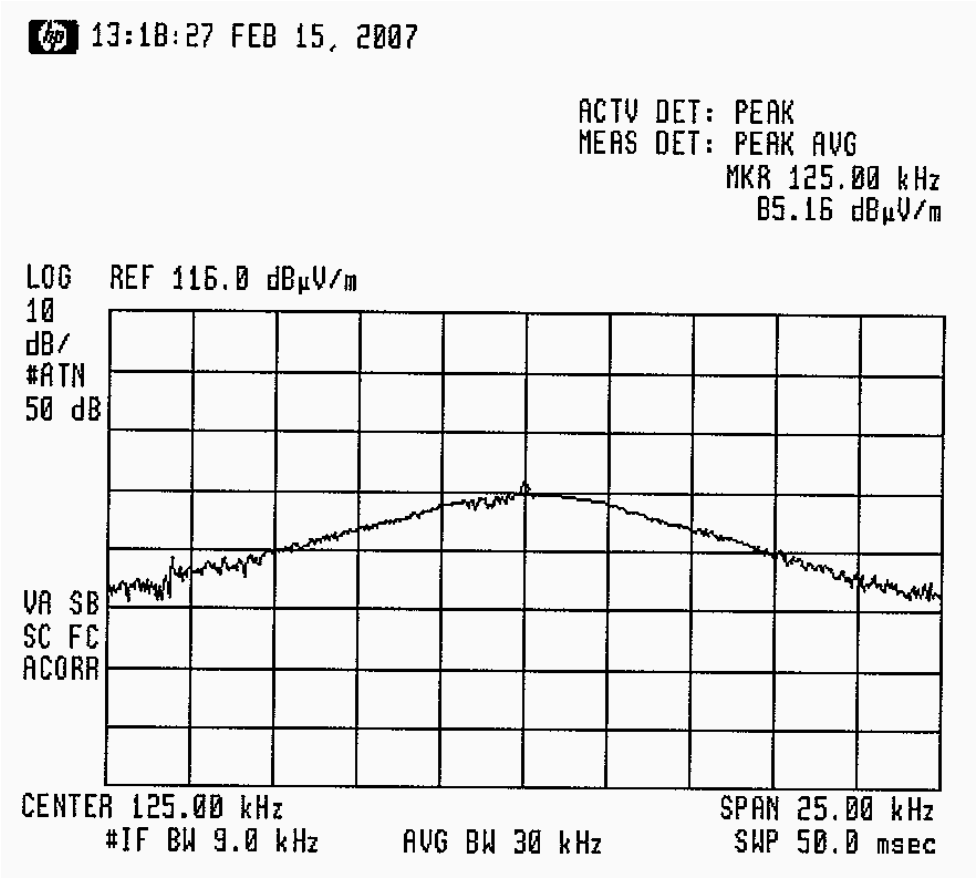

Figure 5. Field Strength of Fundamental
Detector: Peak

L_{im300m} = 25.7 dBµV/m

L_{im3m} = 105.7 dBµV/m

6. Conducted and Radiated Measurement Photos

Figure 6. Conducted Emission Test Front

Figure 7. Conducted Emission Test Side

Figure 8. Radiated Emission Test

7. Conducted Emission Data

7.1 Test Specification

F.C.C., Part 15, Subpart B, Class B ; Sub-Part C

7.2 Test Procedure

The E.U.T operation mode and test set-up are as described in Section 3.1. In order to minimize background noise interference, the conducted emission testing was performed inside a shielded room (see section 3), with the E.U.T placed on an 0.8 meter high wooden table, 0.4 meter from the room's vertical wall.

The E.U.T was powered from 115 V AC / 60 Hz – 5 VDC adapter via 50 Ohm / 50 µHn Line Impedance Stabilization Network (LISN) on the phase and neutral lines. The LISN's were grounded to the shielded room ground plane (floor), and were kept at least 0.8 meters from the nearest boundary of the E.U.T

The center of the E.U.T AC cable was folded back and forth, in order to form a bundle less than 0.40 meters and a total cable length of 1 meter.

The emission voltages at the LISN's outputs were measured using a computerized receiver, complying with CISPR 16 requirements. The specification limits are loaded to the receiver via a 3.5" floppy disk and are displayed on the receiver's spectrum display.

A frequency scan between 0.15 and 30 MHz was performed at 9 kHz I.F. band width, and using peak detection.

The spectral components having the highest level on each line were measured using a quasi-peak and average detector.

7.3 Measured Data

JUDGEMENT: Passed by 8.4 dB

The margin between the emission levels and the specification limit is, in the worst case, 8.4 dB for the phase line at 0.36 MHz and 13.3 dB at 0.36 MHz for the neutral line.

The EUT met the F.C.C. Part 15, Subpart B, Sub-part B; Sub-Part C specification requirements.

The details of the highest emissions are given in *Figure 9* to *Figure 12*.

TEST PERSONNEL:

Tester Signature: _____ Date: 20.05.07

Typed/Printed Name: Y. Mordukhovitch

Conducted Emission

E.U.T Description	Programming Unit
Type	IG-IU-125PU
Serial Number:	1082802242

Specification:	F.C.C., Part 15, Subpart B, Class B; Sub-Part C
Lead:	Phase
Detectors:	Peak, Quasi-peak, Average

Signal Number	Frequency (MHz)	Peak (dBuV)	QP (dBuV)	QP Delta L 1 (dB)	Avg (dBuV)	Av Delta L 2 (dB)	Corr (dB)
1	0.180847	48.1	47.3	-17.2	40.6	-13.9	0.0
2	0.226335	45.5	44.7	-17.9	39.9	-12.8	0.0
3	0.270582	42.0	41.1	-20.1	37.5	-13.6	0.0
4	0.361871	42.2	41.4	-17.4	40.3	-8.4	0.0
5	0.406796	39.0	36.3	-21.5	35.3	-12.4	0.0
6	0.452426	32.9	31.9	-25.0	31.3	-15.6	0.0
7	13.609390	37.0	35.7	-24.4	34.1	-15.9	0.0

Figure 9. Detectors: Peak, AVERAGE .

Note: QP Delta/Av Delta refer to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

Conducted Emission

E.U.T Description	Programming Unit
Type	IG-IU-125PU
Serial Number:	1082802242

Specification:	F.C.C., Part 15, Subpart B, Class B; Sub-Part C
Lead:	Phase
Detectors:	Peak, Quasi-peak, Average

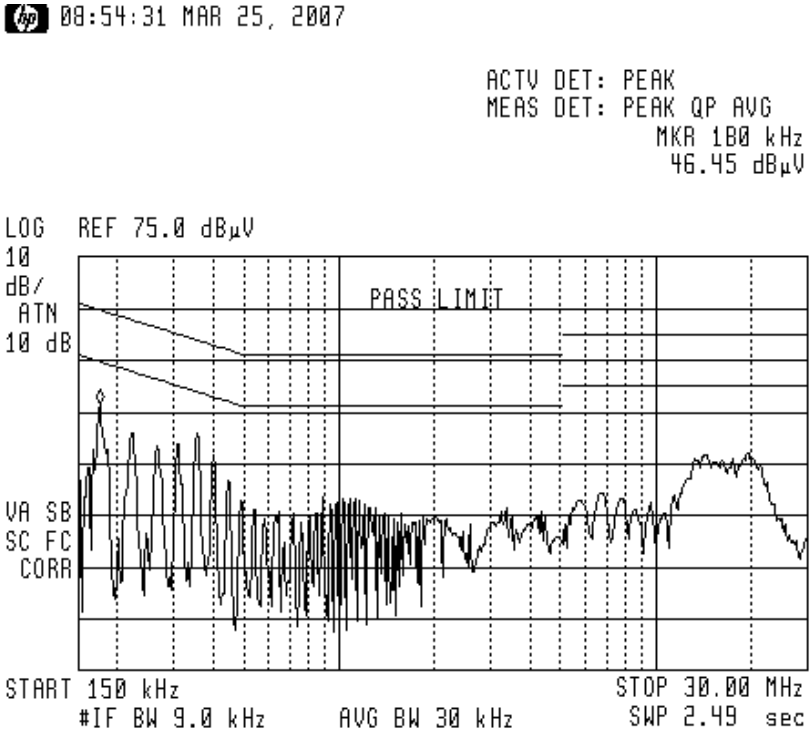

Figure 10. Detectors: Peak, Quasi-peak, Average

Conducted Emission

E.U.T Description	Programming Unit
Type	IG-IU-125PU
Serial Number:	1082802242

Specification:	F.C.C., Part 15, Subpart B, Class B; Sub-Part C
Lead:	Neutral
Detectors:	Peak, Quasi-peak, Average

Signal Number	Frequency (MHz)	Peak (dBuV)	QP (dBuV)	QP Delta L 1 (dB)	Avg (dBuV)	Av Delta L 2 (dB)	Corr (dB)
1	0.181176	44.2	43.4	-21.0	36.1	-18.4	0.0
2	0.225866	39.4	38.4	-24.2	35.8	-16.9	0.0
3	0.273090	35.0	33.9	-27.2	33.3	-17.8	0.0
4	0.361946	37.4	36.3	-22.4	35.5	-13.3	0.0
5	0.408611	32.4	31.8	-26.0	30.7	-17.0	0.0
6	20.596963	38.4	35.7	-24.4	31.3	-18.7	0.0
7	21.141130	37.1	35.3	-24.7	32.6	-17.4	0.0

Figure 11. Detectors: Peak, AVERAGE

Conducted Emission

E.U.T Description	Programming Unit
Type	IG-IU-125PU
Serial Number:	1082802242

Specification:	F.C.C., Part 15, Subpart B, Class B; Sub-Part C
Lead:	Neutral
Detectors:	Peak, Quasi-peak, Average

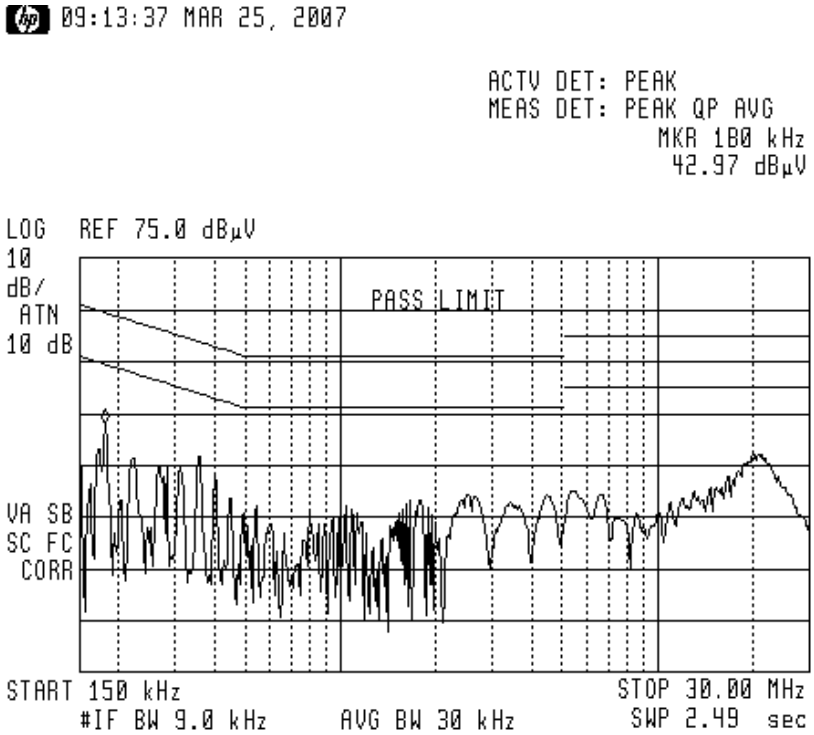

Figure 12 Conducted Emission: NEUTRAL
Detectors: Peak, Quasi-peak, Average

7.4 Test Instrumentation Used, Conducted Measurement

Instrument	Manufacturer	Model	Serial No.	Calibration	Period
LISN	Fischer	FCC-LISN-2A	127	March 8, 2007	1 Year
LISN	Fischer	FCC-LISN-2A	128	March 8, 2007	1 Year
EMI Receiver	HP	85422E	3906A00276	November 22, 2006	1Year
RF Filter Section	HP	85420E	3705A00248	November 22, 2006	1Year
Printer	HP	LaserJet 2200	JPKGC19982	N/A	N/A

8. Radiated Emission, 9 kHz – 30 MHz

8.1 Test Specification

9 kHz-30 MHz, FCC, Part 15, Subpart C, Section 209

8.2 Test Procedure

The E.U.T. operation mode and test set-up are as described in Section 3.

A preliminary measurement to characterize the E.U.T was performed inside the shielded room at a distance of 3 meters, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The configuration tested is shown in Figure 3.1.

The frequency range 9 kHz-30 MHz was scanned.

The emissions were measured using a computerized EMI receiver complying to CISPR 16 requirements. The specification limits and applicable correction factors are loaded to the receiver via a 3.5" floppy disk.

In the frequency range 9 kHz-30MHz, the loop antenna was rotated on its vertical axis. The antenna height (center of loop) was 1 meter at a distance of 3 meters.

The E.U.T. was operated at the frequency of 125 kHz. This frequency was measured using a peak detector.

8.3 Measured Data

JUDGEMENT: Passed

The EUT was tested and it met the requirements of the FCC Part 15, Subpart C, specification.

In the band 9kHz-30MHz, the only signal found was the carrier frequency.

TEST PERSONNEL:

Tester Signature: _____ Date: 20.05.07

Typed/Printed Name: E. Pitt

8.4 Test Instrumentation Used, Radiated Measurements

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3411A00102	November 22, 2006	1 year
RF Section	HP	85420E	3427A00103	November 22, 2006	1 year
Active Loop Antenna	EMCO	6502	9506-2950	October 16, 2006	1 year
Antenna Mast	ARA	AAM-4A	1001	N/A	N/A
Turntable	ARA	ART-1001/4	1001	N/A	N/A
Mast & Table Controller	ARA	ACU-2/5	1001	N/A	N/A

8.5 Field Strength Calculation

The field strength is calculated directly by the EMI Receiver software, and a "Correction Factors" data disk, using the following equation:

$$FS = RA + AF + CF$$

FS:	Field Strength [dBμv/m]
RA:	Receiver Amplitude [dBμv]
AF:	Receiving Antenna Correction Factor [dB/m]
CF:	Cable Attenuation Factor [dB]

No external pre-amplifiers are used.

9. Radiated Emission Test Data Per FCC Part 15, Sub-part B

9.1 Test Specification

30 MHz-1000 MHz, FCC, Part 15, Subpart B, Class B

9.2 Test Procedure

The E.U.T. operation mode and test set-up are as described in Section 3.

A preliminary measurement to characterize the E.U.T was performed inside the shielded room at a distance of 3 meters, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The configuration tested is shown in *Figure 3*.

The frequency range 30 MHz-1000 MHz was scanned, and the list of the highest emissions was verified and updated accordingly.

The levels of the emissions within the frequency ranges of the restricted bands (Section 15.205 of FCC Part 15) were compared to the limits of the table in Section 15.209 (a), General Requirements.

The emissions were measured using a computerized EMI receiver complying to CISPR 16 requirements. The specification limits and applicable correction factors are loaded to the receiver via a 3.5" floppy disk.

In the frequency range 30-1000MHz, the readings were maximized by adjusting the antenna height between 1-4 meters. The turntable azimuth between 0-360°, and the antenna polarization.

Verification of the E.U.T emissions was based on the following methods:

Turning the E.U.T on and off.
Using a frequency span less than 10 MHz.
Observation of the signal level during turntable rotation. Background noise is not affected by the rotation of the E.U.T.

9.3 Measured Data

The results for both operating and standby modes were the same.

JUDGEMENT: Passed by 16.5 dB

The EUT met the requirements of the F.C.C. Part 15, Subpart B, Class B specification.

The margin between the emission level and the specification limit is 16.5 dB in the worst case at the frequency of 52.42 MHz, vertical polarization.

The details of the highest emissions are given in *Figure 13* to *Figure 16*.

TEST PERSONNEL:

Tester Signature: _____ Date: 20.05.07

Typed/Printed Name: Y. Mordukhovitch

Radiated Emission 30 MHz– 1 GHz

E.U.T Description	Programming Unit
Type	IG-IU-125PU
Serial Number:	1082802242

Specification: FCC Part 15, Subpart B, Class B

Antenna Polarization: Horizontal
Antenna: 3 meters distance
Frequency range: 30 MHz to 1000 MHz
Detectors: Peak, Quasi-peak

Signal Number	Frequency (MHz)	Peak dBuV/m	QP dBuV/m	QP Delta L 1 (dB)	Avg dBuV/m	Av Delta L 2 (dB)	Corr (dB)
1	50.459063	27.0	22.5	-17.5			11.5
2	189.534863	23.7	18.1	-25.4			16.7
3	309.232106	21.3	16.0	-30.0			16.3
4	350.892600	24.0	17.8	-28.2			17.9
5	411.851700	25.2	19.6	-26.4			19.8
6	453.046800	27.0	20.3	-25.7			20.5

Figure 13. Radiated Emission. Antenna Polarization: HORIZONTAL. Detectors: Peak, Quasi-peak

Note: QP Delta refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

Radiated Emission 30 MHz– 1 GHz

E.U.T Description	Programming Unit
Type	IG-IU-125PU
Serial Number:	1082802242

Specification: FCC Part 15, Subpart B, Class B

Antenna Polarization: Horizontal
Antenna: 3 meters distance

Frequency range: 30 MHz to 1000 MHz
Detectors: Peak, Quasi-peak

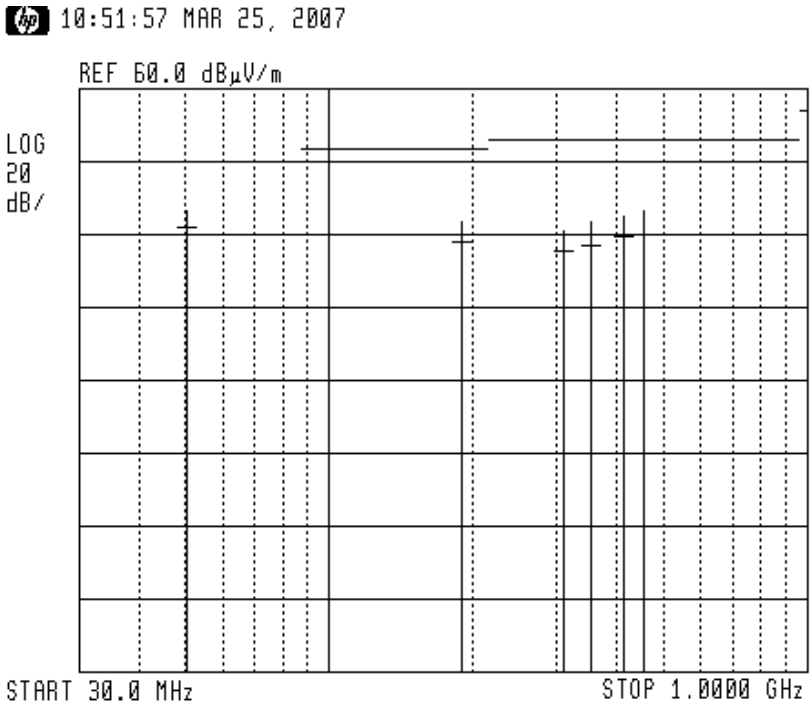

Figure 14. Radiated Emission. Antenna Polarization: HORIZONTAL Detectors: Peak, Quasi-peak

Note:

1. *Horizontal axis shows logarithmic frequency scale.*
2. *The vertical axis shows amplitude (in dB µV/m).*
3. *Peak detection is designated by the top of each vertical line.*
4. *Quasi-peak detection is designated by the first dash mark (from the top) of each vertical line.*

Radiated Emission 30 MHz– 1 GHz

E.U.T Description	Programming Unit
Type	IG-IU-125PU
Serial Number:	1082802242

Specification: FCC Part 15, Subpart B, Class B

Antenna Polarization: Vertical
Antenna: 3 meters distance

Frequency range: 30 MHz to 1000 MHz
Detectors: Peak, Quasi-peak

Signal Number	Frequency (MHz)	Peak dBuV/m	QP dBuV/m	QP Delta L 1 (dB)	Avg dBuV/m	Av Delta L 2 (dB)	Corr (dB)
1	39.490695	30.8	20.6	-19.4			13.4
2	40.005519	27.9	23.2	-16.8			13.3
3	41.301955	34.4	13.1	-26.9			13.1
4	52.418500	27.5	23.5	-16.5			11.3
5	142.483450	19.8	14.1	-29.4			14.6
6	150.386650	23.6	17.1	-26.4			15.0
7	310.200788	21.9	16.0	-30.0			16.4

Figure 15. Radiated Emission. Antenna Polarization: VERTICAL. Detectors: Peak, Quasi-peak

Note: QP Delta refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

Radiated Emission 30 MHz– 1 GHz

E.U.T Description	Programming Unit
Type	IG-IU-125PU
Serial Number:	1082802242

Specification: FCC Part 15, Subpart B, Class B

Antenna Polarization: Vertical
Antenna: 3 meters distance

Frequency range: 30 MHz to 1000 MHz
Detectors: Peak, Quasi-peak

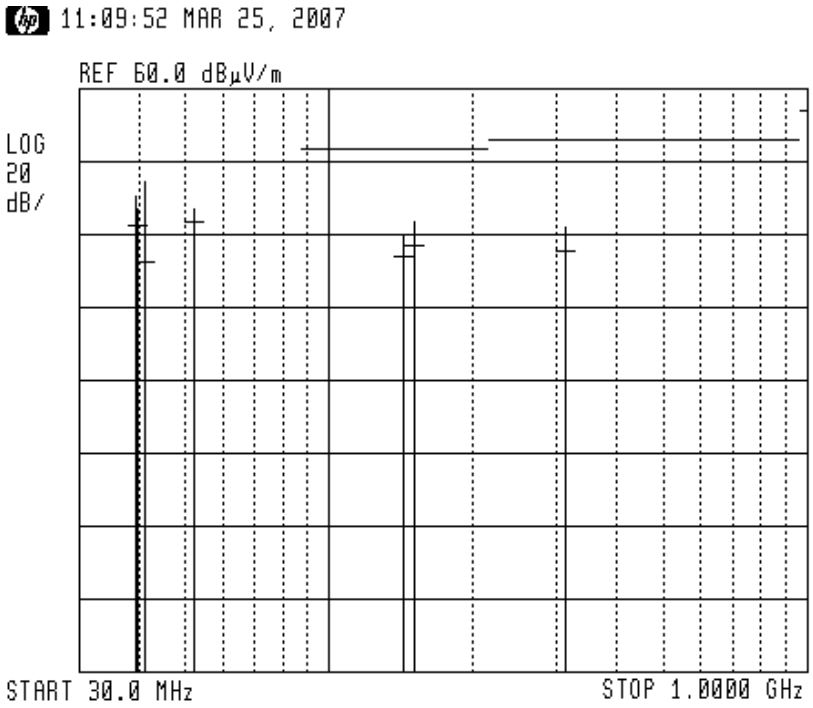

Figure 16. Radiated Emission. Antenna Polarization: VERTICAL. Detectors: Peak, Quasi-peak

Note:

1. *Horizontal axis shows logarithmic frequency scale.*
2. *The vertical axis shows amplitude (in dB µV/m).*
3. *Peak detection is designated by the top of each vertical line.*
4. *Quasi-peak detection is designated by the first dash mark (from the top) of each vertical line.*

9.4 Test Instrumentation Used, Radiated Measurements

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3411A00102	November 22, 2006	1 year
RF Section	HP	85420E	3427A00103	November 22, 2006	1 year
Antenna Bioconical	ARA	BCD 235/B	1041	March 22, 2007	1 year
Antenna Log Periodic	ARA	LPD-2010/A	1038	November 30, 2006	1 year
Antenna Mast	ARA	AAM-4A	1001	N/A	N/A
Turntable	ARA	ART-1001/4	1001	N/A	N/A
Mast & Table Controller	ARA	ACU-2/5	1001	N/A	N/A

9.5 Field Strength Calculation

The field strength is calculated directly by the EMI Receiver software, and a "Correction Factors" data disk, using the following equation:

$$FS = RA + AF + CF$$

FS:	Field Strength [dBμv/m]
RA:	Receiver Amplitude [dBμv]
AF:	Receiving Antenna Correction Factor [dB/m]
CF:	Cable Attenuation Factor [dB]

No external pre-amplifiers are used.

10. Photographs of Tested E.U.T.

Figure 17 Front View

Figure 18 Rear View

Figure 19 Data Port

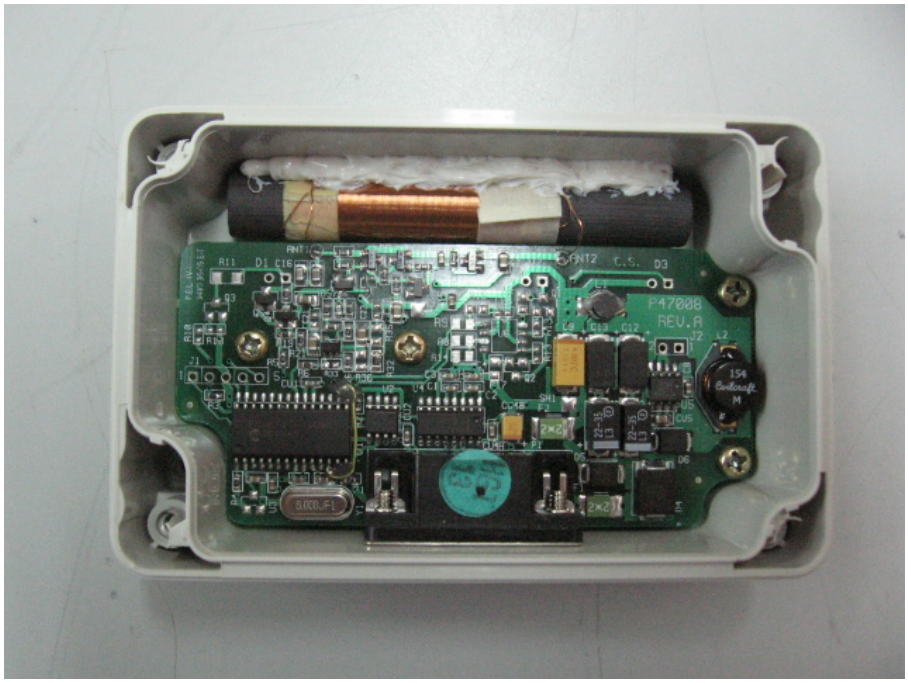

Figure 20 PCB in Cover

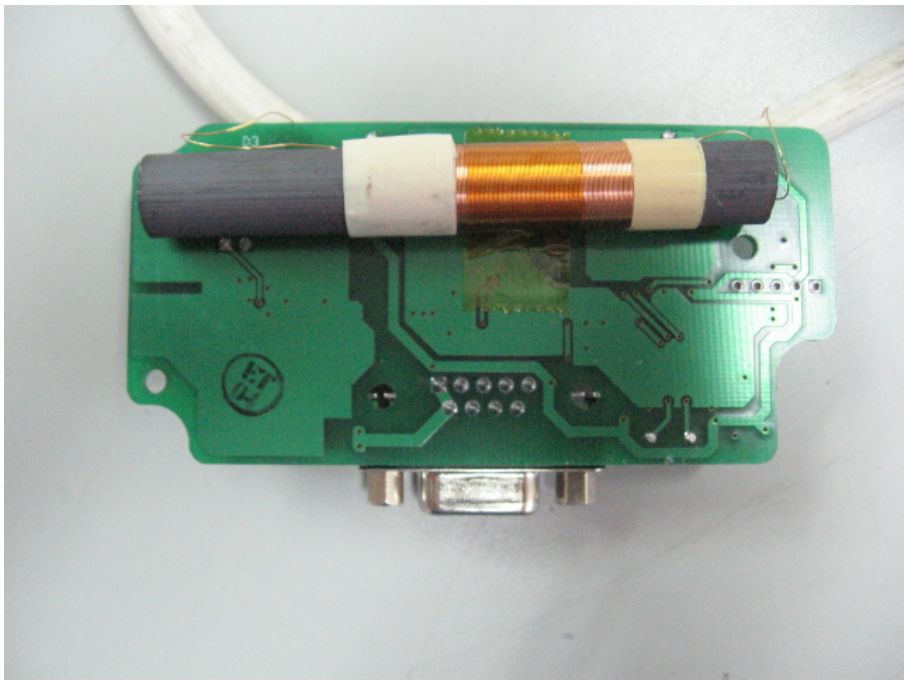

Figure 21 PCB Print Side

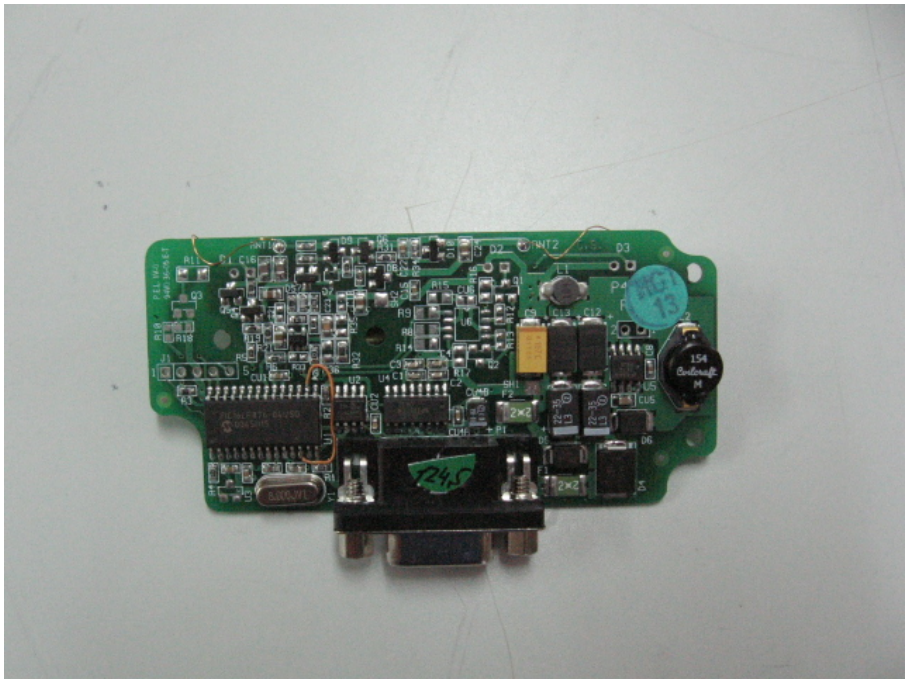

Figure 22 PCB Component Side

11. APPENDIX A - CORRECTION FACTORS

11.1 Correction factors for CABLE

from EMI receiver to test antenna at 3 meter range.

FREQUENCY (MHz)	CORRECTION FACTOR (dB)
10.0	0.3
20.0	0.6
30.0	0.8
40.0	0.9
50.0	1.1
60.0	1.2
70.0	1.3
80.0	1.4
90.0	1.6
100.0	1.7
150.0	2.0
200.0	2.3
250.0	2.7
300.0	3.1
350.0	3.4
400.0	3.7
450.0	4.0
500.0	4.3
600.0	4.7
700.0	5.3
800.0	5.9
900.0	6.3
1000.0	6.7

FREQUENCY (MHz)	CORRECTION FACTOR (dB)
1200.0	7.3
1400.0	7.8
1600.0	8.4
1800.0	9.1
2000.0	9.9
2300.0	11.2
2600.0	12.2
2900.0	13.0

NOTES:

1. The cable type is RG-214.

2. The overall length of the cable is 27 meters.

3. The above data is located in file 27MO3MO.CBL on the disk marked "Radiated Emission Tests EMI Receiver".

11.2 Correction factors for LOG PERIODIC ANTENNA

Type LPD 2010/A
at 3 and 10 meter ranges.

Distance of 3 meters

FREQUENCY (MHz)	AFE (dB/m)
200.0	9.1
250.0	10.2
300.0	11.4
400.0	14.5
500.0	15.2
600.0	17.3
700.0	19.0
850.0	20.1
1000.0	22.2

Distance of 10 meters

FREQUENCY (MHz)	AFE (dB/m)
200.0	9.0
250.0	10.1
300.0	11.2
400.0	14.4
500.0	15.2
600.0	17.2
700.0	19.0
850.0	20.1
1000.0	22.1

NOTES:

1. *Antenna serial number is 1038.*
2. *The above lists are located in file number 38M3O.ANT for a 3 meter range, and file number 38M100.ANT for a 10 meter range.*
3. *The files mentioned above are located on the disk marked "Radiated Emission Test EMI Receiver".*

11.3 Correction factors for BICONICAL ANTENNA

Type BCD-235/B, at 3 meter range

FREQUENCY (MHz)	AFE (dB/m)
20.0	19.4
30.0	14.8
40.0	11.9
50.0	10.2
60.0	9.1
70.0	8.5
80.0	8.9
90.0	9.6
100.0	10.3
110.0	11.0
120.0	11.5
130.0	11.7
140.0	12.1
150.0	12.6
160.0	12.8
170.0	13.0
180.0	13.5
190.0	14.0
200.0	14.8
210.0	15.3
220.0	15.8
230.0	16.2
240.0	16.6
250.0	17.6
260.0	18.2
270.0	18.4
280.0	18.7
290.0	19.2
300.0	19.9
310	20.7
320	21.9
330	23.4
340	25.1
350	27.0

NOTES:

1. Antenna serial number is 1041.

2. The above list is located in file 19BC10M1.ANT on the disk marked "Radiated Emissions Tests EMI Receiver".

11.4 Correction factors for ACTIVE LOOP ANTENNA

Model 6502
S/N 9506-2950

FREQUENCY	Magnetic Antenna Factor	Electric Antenna Factor
(MHz)	(dB)	(dB)
.009	-35.1	16.4
.010	-35.7	15.8
.020	-38.5	13.0
.050	-39.6	11.9
.075	-39.8	11.8
.100	-40.0	11.6
.150	-40.0	11.5
.250	-40.0	11.6
.500	-40.0	11.5
.750	-40.1	11.5
1.000	-39.9	11.7
2.000	-39.5	12.0
3.000	-39.4	12.1
4.000	-39.7	11.9
5.000	-39.7	11.8
10.000	40.2	11.3
15.000	-40.7	10.8
20.000	-40.5	11.0
25.000	-41.3	10.2
30.000	42.3	9.2