

a) POWER LINE CONDUCTED EMISSIONS ----- Pursuant 47 CFR 15.107.

Measured data on conducted emissions per 47CFR 15.107 on AC power lines is the subject of Technical Report No.9FOX049F, attached.

b) RADIATED EMISSIONS ----- Pursuant 47 CFR 15.109.

Measured data on radiated emissions per 47CFR 15.109 is the subject of Technical Report No.9FOX049F, attached.

FCC ID: OJFLITENNA0009110

ELECTROMAGNETIC COMPATIBILITY TEST REPORT

Company Name: Foxcom Wireless Ltd.

Equipment Under Test: Litenna™ Model 9110

Report I.D.Number: 9FOX049F.DOC

Total number of pages (including this page): 35

Date: 25 April, 1999

EMI TEST Ltd. EMC Test Laboratory

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1. General Information.

Applicant: Foxcom Wireless Ltd.

Applicant Address: Ofek One Center Building B,

Northern Industrial Zone

Lod, Israel 71293

Telephone: 972-8-9183818

FAX: 972-8-9183844

The testing was observed by the

following applicant's personnel:

Mr.Shlomo Cohen

Date of reception for testing: March 14, 1999

Dates of testing: March 14, 1999

Test Laboratory Location: EMI TEST Ltd, Moshav Hanniel,

P.O.Box 65, D.N.Lev Hasharon,

Israel 42865

Equipment Under Test: Litenna™ Model 9110

Serial Numbers: TBD

Mode of Operation: Up-Link and Down-Link Receiving and

Transmitting modes

Year of Manufacture: 1999

Applicable Federal Communication Commission (FCC),

EMC Specification: Code of Federal Regulations 47, Ch. 1

(10-1-97 Edition)

Part 15: Radio Frequency Devices, Sections 15.107 & 15.109, Class A

2. Tests Summary.

EMI Test Laboratory has completed testing of Litenna™ Model 9110 in accordance with the requirements of the FCC Part 15 Regulations for Class A equipment.

The EUT has been found to comply with the conducted and radiated emission requirements of the FCC Part 15 Regulations for Class A equipment:

Section 15.107: Limits of Mains Terminal Interference

Voltage (Conducted Emission) in the

0.45MHz to 30MHz frequency range.

Section 15.109: Limits of Radiated Interference Field

Strength in the 30MHz to 9000MHz

frequency range.

3. Applicable Documents.

- 3.1 Federal Communication Commission (FCC), Code of Federal Regulations 47, Ch.1 (10-1-97 Edition), Part 15: Radio Frequency Devices, Sections 15.107 & 15.109.
- 3.2 FCC/OET, Laboratory Measurement Procedures MP-4, July 1987, "FCC Procedures for Measuring RF Emissions from Computing Devices".
- 3.3 FCC/Office of Science and Technology OST-55, August 1982, "Characteristics of Open Field Test Sites".
- 3.4 FCC/OET, "FCC Procedure for Measuring Electromagnetic Emissions from Digital Devices", TP-5, March 1989.
- 3.5 FCC/OET, "Understanding the FCC Regulations Concerning Computing Devices", OST-62, May 1984
- 3.6 International Special Committee On Radio Interference (CISPR) Publication 16, First Edition 1993, Part 1. "Radio disturbance and immunity measuring apparatus".
- 3.7 International Special Committee On Radio Interference (CISPR) Publication 16, First Edition 1993, Part 2. "Methods of measurement of disturbance and immunity".
- 3.8 American National Standard, "Specifications for Electromagnetic Noise and Field Strength Instrumentation, 10KHz to 1GHz", ANSI C63.2, 1987.
- 3.9 American National Standard, "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9KHz to 40GHz", ANSI C63.4, 1992.

4. Detailed Applicable EMC Requirements and Limits.

4.1 Limits of Mains Terminal Interference Voltage (Conducted Emission).

FCC Part 15 Class A Limits for mains terminal interference voltages in the frequency band 450KHz to 30MHz are:

Frequency, in MHz	Quasi-Peak (dBuV)		
0.45 - 1.705	60		
1.705 - 30	69.5		

Note:

In accordance with CISPR16 Publication measurements were made across a 50 Ohm/50uH Line Impedance Stabilization Network (LISN).

4.2 FCC Part 15 Limits of Radiated Interference Field

The Litenna™ Model 9110 operates with radio frequencies in 869-894MHz (Down-Link) and 824-849MHz (Up Link) bands. In accordance with 47 CFR.Para.15.33 (a) (1), the highest frequency of measurement range should be to the tenth harmonic of the highest fundamental frequency, or 8940MHz.

Field strength (Radiated Emissions) for Class A equipment in the frequency range 30MHz to 8940MHz at test distance of 10 m should be less than those given in the following table:

Frequency (MHz)	Field Strength at 10 m in dBuV/m
30 - 88	39.1
88 - 216	43.5
216 - 960	46.4
Above 960	49.5

Notes

- 1. The tighter limit shall apply at the edge between two frequency bands;
- 2. Distance refers to the distance in meters from measuring instrument antenna to the closest point of any part of the EUT.

5. Procedures for Measuring RF Emissions from EUT.

5.1 AC Power line Conducted Emissions Measurements.

Conducted emissions on the input power leads of LitennaTM Model 9110 were measured in the frequency range of 450KHz to 30MHz. The measurements were performed using a spectrum analyzer, which has CISPR characteristic bandwidths and quasi-peak detector, and a Line Impedance Stabilization Network (LISN), with $50\Omega/50\mu$ H (CISPR16) characteristics.

Measurements were made to determine the line-to-ground radio noise voltage which was conducted from the power-input cables that are directly connected to the public utility AC power lines. EUT units were connected to the public utility power lines through a standardized $50\mu H/50\Omega$ LISN. The LISN was attached to the ground plane and bonded to it by means of low-inductance bonding strap.

LitennaTM Model 9110 was designed for table-top or rack-mounted operation, and was tested as a table-top equipment. It was installed upon the 0.8m-high wooden table located in the center of a horizontal conductive ground plane with 4 x 4 meters dimensions.

Additional vertical reference ground plane with dimensions 2x2 meters was located 40cm from the EUT. This vertical ground plane was bonded to horizontal ground plane by means of low-impedance bonds with spacing of 1 meter between adjacent bonds.

The EUT was tested with unshielded power cords. The length of the power cord between the EUT and the Line Impedance Stabilization Network (LISN) was shortened to 1 meter. The excess length of the power cord was folded back and forth in a non-inductive pattern at its approximate center in a bundle 30cm to 40cm in length. The EUT and cables were positioned in a way maximizing conductive emission. No isolation transformers or other external RFI suppression devices were used during the tests.

In some cases, a pre-scan using a spectrum analyzer in Peak Detector mode was initially performed on the EUT to locate the highest emissions. If the minimum passing margin appeared to be less than 20dB, when measured in a peak detector mode, the emissions were re-measured using spectrum analyzer in quasi-peak mode. The test results of this test were recorded in the data sheets.

In case of each emission the test results were recorded and emission level was compared with the standard level.

All conducted emission tests were performed on the following supply leads:

- a) 230VAC leads of 230VAC/48VDC power supply;
- b) +48VDC supply leads of Base Unit;
- c) +.48VDC supply leads of Remote HUB Unit.

5.2 Radiated Emissions Measurements.

Measurements of radiated emission were made using a spectrum analyzer with 120KHz/6dB bandwidth and peak or quasi-peak detector, and appropriate broadband linearly polarized antennas. Tests were performed in the frequency range of 30MHz to 8660MHz.

The EUT was set and operated in a manner representative of actual use. During radiated emission tests the EUT was placed on wooden table located in the center of a non-conductive rotating platform, 80cm above the horizontal metallic ground plane.

The test antenna was located 10 meters from the EUT, and precise compliance measurements were performed.

The test antenna was installed on the antenna mast in vertical polarization. When necessary, small frequency ranges (5MHz or 10MHz, typically) were spanned in order to increase resolution and make easier identification of emissions emanating from the EUT in presence of ambient noise. To locate maximum emissions from the test sample, the antenna was varied in height from 1 to 4 meters, and the EUT was rotated through 360 degrees.

For each emission the test results were recorded and emission levels were compared with the standard level. All significant emissions were recorded in tabular form.

Identical measurement procedure was repeated with antenna oriented horizontally.

During the compliance tests spectrum analyzer was set in quasi-peak detector mode.

All radiated emission tests were performed in the following operational mode:

- a) Receiving Down-Link 881.5MHz signal at -30dBm power level from external signal generator;
- b) Transmitting Up-Link signal at +20dBm power level into 50Ohm dummy load.

During all emission tests the Litenna™ Model 9110 Base Unit and Remote HUB Unit were fed from +48VDC supply voltage generated in AC/DC power supply.

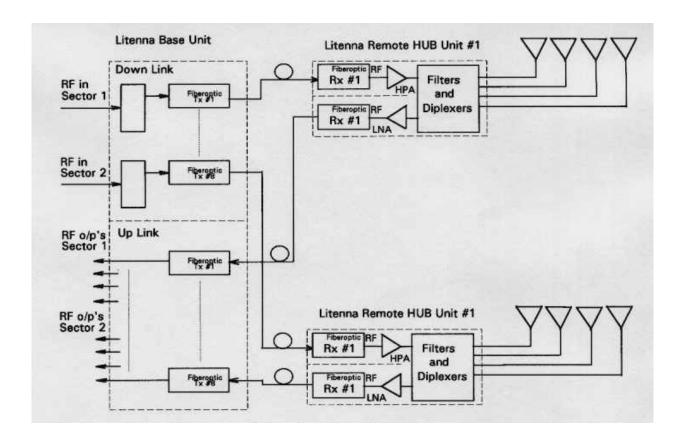
6. System Test Configuration.

6.1 Product Description.

The Litenna[™] is a high performance fiberoptic In-Building RF Distribution System, which allows cellular and PCS services to be extended into shadow areas. With Litenna[™] large telecom manufacturers, service providers, and system integrators can cost-effectively broaden services into micro and pico cell markets, such as airports, buildings, underground parking and shopping malls.

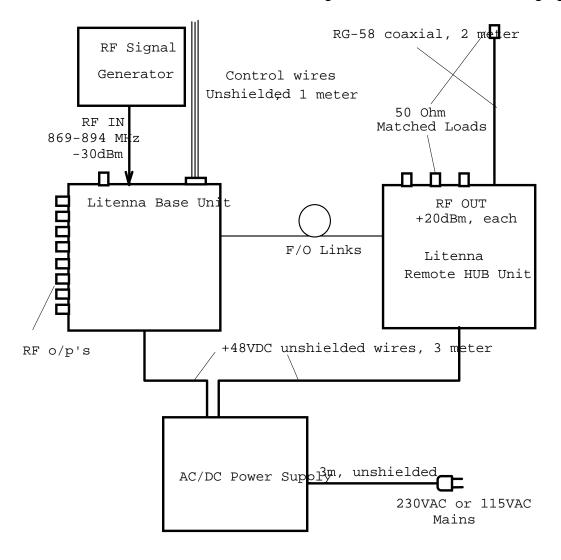
The Litenna™ Model 9110 system provides mobile communication for customers using the AMPS/TDMA 800 service.

The block-diagram of the Litenna™ Model 9110 is given in the following figure:



6.2 The Tested Configuration.

The Litenna™ Model 9110 was tested in the configuration shown in the following figure:



6.3 Clock frequencies.

The Litenna™ Model 9110 does not employ any digital clock oscillator.

6.4 Cables Used During the Tests:

No.	Description	Length (m)	Shielding
1	50Ohm coaxial cable from Signal Generator to the Litenna Base Unit.	1.0	85-95% braided + foil overall shield
2	50Ohm coaxial cable from the Litenna Remote Unit to 50Ohm matched load.	0.5	85-95% braided + foil overall shield
3	25 wires ribbon cable attached to D-25 connector on the Base Unit	1,0	Unshielded
4	AC Power cable for AC/DC Power Supply	3.0	Unshielded

6.5 Modifications Required for Compliance.

The Litenna™ Model 9110 in its original design complied with the conducted and radiated emission requirements of FCC Part 15 for Class A equipment. Therefore no corrective actions were required.

7. Description of the Test Site.

Location: Moshav Hanniel, P.O.Box 65,

D.N.Lev Hasharon, 42865, Israel

Phone: (972)-9-8987382

FAX: (972)-9-8987383

Open Site Ranges: 3 and 10 meters

Turntable: 2.1 x 1.6 meter with maximum loading 1500kg,

distant actuation.

The turntable and the tested equipment are

environmentally protected.

Antenna Mast: 1 to 4 meter

Supply Voltages: 230VAC/50Hz, 3 Phases, 16A from each

phase;

115VAC/50Hz, 3 Phases, 32A from each

phase;

up to 50VDC, 30A max

8. List of Test Equipment Used.

No.	Description	Manufacturer and Model Number	Series No.
1.	Spectrum Analyzer 9KHz to 2.2GHz	Anritsu MS2601B/K	MT81431
2	Spectrum Analyzer	HP8563E	3821A09026
3	RF Signal Generator	HP8656A	N/A
4	Antenna, Biconical, 20MHz to 200MHz	EMCO Model 3110B	1813
5	Antenna, Log-Periodic, 200MHz to 1GHz	EMCO Model 3146	3807
6	Antenna Double Ridged Horn	EMCO Model 3115	4272
7	Amplifier 10MHz to 500MHz	MITEQ Model AU-1114	323214
8	Amplifier, 500MHz to 2GHz	MITEQ Model AM-3A-0520	329110
9	Amplifier 30dB	Microwave Technology Ltd. Model SAO-4868	14026
10	Plotter	HP,Model 7440A-002	2929A17765
11	LISN, 9KHz to 100MHz	EMCO Model 3825/2	2205

EMI Test Laboratory test equipment is calibrated on regular basis according to equipment manufacturer requirements.

9. Conducted Emission Data.

The final level of the conducted emission in $dB\mu V$, is calculated by taking the reading from the spectrum analyzer and taking into account the LISN Correction Factor and the Cable Loss.

To convert the data from $dB\mu V$ to μV , the following conversion is applied:

```
dB\mu V = 20log(\mu V)

\mu V = Inverse log(dB\mu V/20)
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10. Radiated Emission Data.

 The Final Level, expressed in dBuV/m, is calculated by taking the reading from the spectrum analyzer (Vrec, dBuV), subtracting the preamplifier gain (Gain, dB) and adding the Antenna Correction Factor (AF, dB/m) and Cable Loss Factor (CF, dB). This result then was subtracted from the FCC Part 15 Standard limit for Class A equipment to yield the Safety Margin (in dB) given in tabular form in data sheets.

Example:

Suppose that:

```
The test frequency F = 118MHz; Spacing between the test antenna and the EUT is 10 meters; The level detected by spectrum analyzer Vrec = 58.9dB\mu V; Preamplifier gain Gain(dB) = 35dB; The antenna factor AF(dB/m) = 10.8dB at 118 MHz; The cable loss CL(dB) = 1.6dB.
```

The field strength can be calculated using the following formula:

```
E(dB\muV/m) = Vrec(dB\muV) - Gamp(dB) + AF(dB/m) + CL(dB) = = 58.9 - 35 + 10.8 + 1.6 = 36.3 (dB\muV/m).
```

This level is 7.2dB less than the FCC Part 15 standard limit (43.5dB μ V/m) for Class A devices at frequency 118MHz.

11. Results of Conducted Emissions Tests.

11.1 Conducted Emission on AC Power Cord of the AC/DC Power Supply.

Levels of conducted emissions were measured on the following supply leads:

- a) "Phase" and "Neutral" power leads of the AC/DC Power Supply (see Figs. 1 and 2, Tables 1 and 2);
- b) +48VDC and 48V_RTN of the Base Unit (see Figs. 3 and 4, Tables 3 and 4);
- c) +48VDC and 48V_RTN of the Remote Hub Unit (see Figs. 5 and 6, Tables 5 and 6).

All measurements were performed in the 450KHz to 30MHz frequency range: The AC/DC power supply was fed from 230VAC/50Hz power source.

Lowest safety margins relative to the FCC Part 15, Class A limits were detected in the following cases:

Tested Power Leads	Lowest Safety Margin (dB)	Frequency
"Phase" lead	8.54	13.46
"Neutral" lead	9.69	13.46
+48VDC of Base Unit	17.29	0.51
48V_RTN of Base Unit	4.99	0.50
+48VDC of RHU	4.95	1.00
48V_RTN of RHU	4.66	1.00

Summary of Conducted Emission Tests.

The conducted emissions were tested on "Phase" and "Neutral" 230VAC/50Hz and 115VAC/50Hz power leads of the Litenna™ Model 9110 in the 450KHz to 30MHz frequency range.

In summary, the Litenna[™] Model 9110 complied with the conducted emission requirements of FCC Part 15 Standard for Class A equipment.

12. Results of Radiated Emission Tests.

Radiated emission tests were conducted in the 30MHz to 1000MHz frequency range. The measured radiated emission of the Litenna™ Model 9110 in its original design were below the FCC Part 15 limits for Class A equipment. The test results are given in Fig.7 and Table 7.

The lowest safety margins relative to the FCC Part 15, Class A limits were detected in the following cases:

Polarization	Lowest Safety Margin (dB)	Frequency
Vertical	7.4	58.84

Summary of Radiated Emission Tests.

The Litenna™ Model 9110 meets radiated electric field requirements of FCC Part 15 Regulations for Class A equipment.

13. Signatures.

Test measurements were performed by: Dr.Alexander Axelrod (EMI Test Ltd.)

25 April 1999 A (Date, Signature)

Test report was prepared by:

Mr.Tal Axelrod (EMI Test Ltd.)

25 April 1999 T.A (Date, Signature)

Approved by:

Dr.Alexander Axelrod (EMI Test Ltd.)

(Date, Signature)

The testing was observed by:

Mr.Shlomo Cohen (Foxcom Wireless Ltd.)

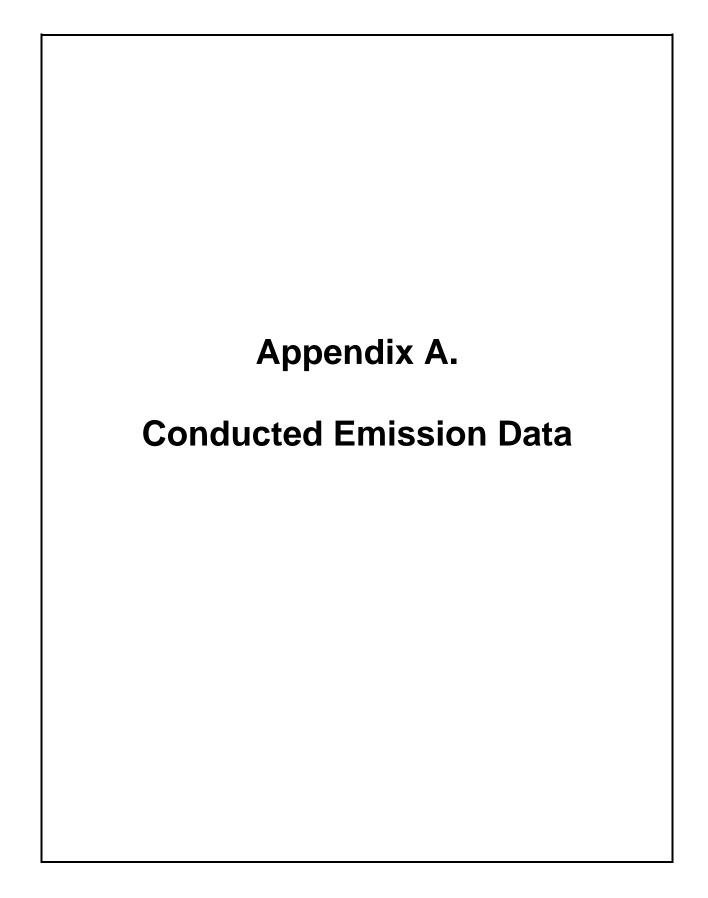
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Photograph 1. Test Setup for Conducted Emission Tests.



Photograph 2. Test Setup for Radiated Emission Tests.





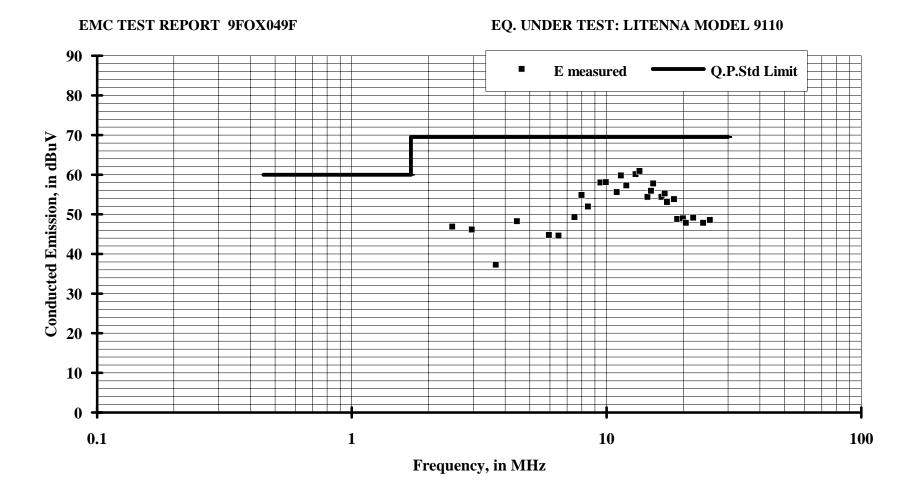


Fig. 1 Conducted Emission vrs. FCC Class A Standard Limit, AC Power Leads of AC/DC Power Supply, Phase Lead, Q.P. Detector.

Table 1. Conducted Emission in 0.45MHz...30MHz Range AC Power Leads of AC/DC Power Supply, Phase Lead FCC Class A Standard, Q.P. Detector

f MHz	Vmeas dBuV	LISN CF dB	Cable Loss dB	Econd dBuV	Estand dBuV	Safety Margins dB
2.48	46.81	0.01	0.10	46.92	69.50	22.58
2.96	46.05	0.01	0.10	46.16	69.50	23.34
3.67	37.20	0.01	0.10	37.31	69.50	32.19
4.45	48.20	0.01	0.10	48.31	69.50	21.19
5.94	44.70	0.01	0.10	44.81	69.50	24.69
6.48	44.50	0.01	0.10	44.61	69.50	24.89
7.49	49.20	0.01	0.10	49.31	69.50	20.19
7.97	54.77	0.01	0.10	54.88	69.50	14.62
8.45	51.87	0.01	0.10	51.98	69.50	17.52
9.46	57.90	0.01	0.10	58.01	69.50	11.49
9.94	58.02	0.01	0.10	58.13	69.50	11.37
10.96	55.50	0.01	0.10	55.61	69.50	13.89
11.40	59.70	0.01	0.10	59.81	69.50	9.69
11.97	57.20	0.01	0.10	57.31	69.50	12.19
12.99	60.03	0.01	0.10	60.14	69.50	9.36
13.46	60.85	0.01	0.10	60.96	69.50	8.54
14.48	54.28	0.01	0.10	54.39	69.50	15.11
14.96	55.80	0.01	0.10	55.91	69.50	13.59
15.25	57.70	0.01	0.10	57.81	69.50	11.69
16.45	54.30	0.01	0.10	54.41	69.50	15.09
16.93	55.20	0.01	0.10	55.31	69.50	14.19
17.28	53.03	0.01	0.10	53.14	69.50	16.36
18.42	53.70	0.01	0.10	53.81	69.50	15.69
18.96	48.70	0.01	0.10	48.81	69.50	20.69
19.97	48.90	0.01	0.10	49.01	69.50	20.49
20.45	47.75	0.01	0.10	47.86	69.50	21.64
21.88	49.07	0.01	0.10	49.18	69.50	20.32
23.91	47.78	0.01	0.10	47.89	69.50	21.61
25.40	48.50	0.01	0.10	48.61	69.50	20.89

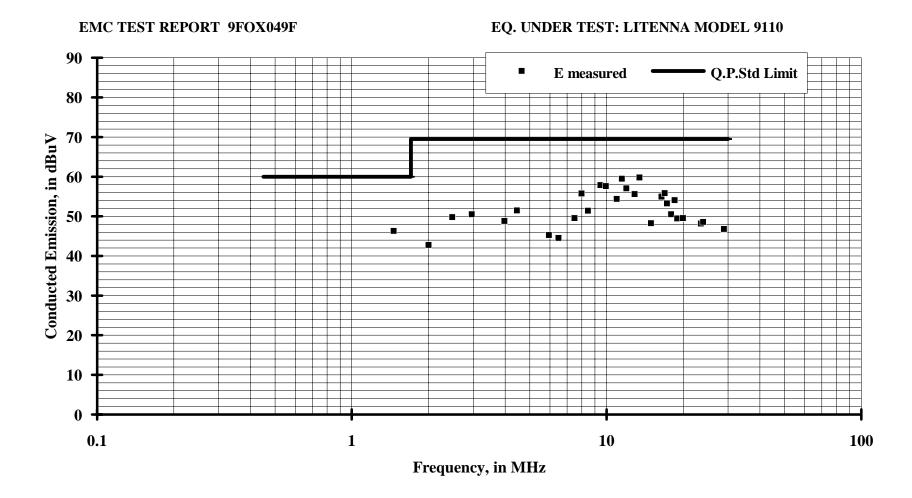


Fig. 2 Conducted Emission vrs. FCC Class A Standard Limit, AC Power Leads of AC/DC Power Supply, Neutral Lead, Q.P. Detector.

Table 2. Conducted Emission in 0.45MHz...30MHz Range AC Power Leads of AC/DC Power Supply, Neutral Lead FCC Class A Standard, Q.P. Detector

f MHz	Vmeas dBuV	LISN CF dB	Cable Loss dB	Econd dBuV	Estand dBuV	Safety Margins dB
1.46	46.20	0.01	0.10	46.31	60.00	13.69
2.00	42.70	0.01	0.10	42.81	69.50	26.69
2.48	49.70	0.01	0.10	49.81	69.50	19.69
2.96	50.40	0.01	0.10	50.51	69.50	18.99
3.97	48.70	0.01	0.10	48.81	69.50	20.69
4.45	51.40	0.01	0.10	51.51	69.50	17.99
5.94	45.20	0.01	0.10	45.31	69.50	24.19
6.48	44.48	0.01	0.10	44.59	69.50	24.91
7.49	49.50	0.01	0.10	49.61	69.50	19.89
7.97	55.64	0.01	0.10	55.75	69.50	13.75
8.45	51.30	0.01	0.10	51.41	69.50	18.09
9.46	57.80	0.01	0.10	57.91	69.50	11.59
9.94	57.50	0.01	0.10	57.61	69.50	11.89
10.96	54.30	0.01	0.10	54.41	69.50	15.09
11.49	59.40	0.01	0.10	59.51	69.50	9.99
11.97	56.95	0.01	0.10	57.06	69.50	12.44
12.90	55.50	0.01	0.10	55.61	69.50	13.89
13.46	59.70	0.01	0.10	59.81	69.50	9.69
14.96	48.15	0.01	0.10	48.26	69.50	21.24
16.45	54.90	0.01	0.10	55.01	69.50	14.49
16.93	55.77	0.01	0.10	55.88	69.50	13.62
17.28	53.18	0.01	0.10	53.29	69.50	16.21
17.90	50.40	0.01	0.10	50.51	69.50	18.99
18.48	53.98	0.01	0.10	54.09	69.50	15.41
18.96	49.40	0.01	0.10	49.51	69.50	19.99
19.97	49.50	0.01	0.10	49.61	69.50	19.89
23.43	48.12	0.01	0.10	48.23	69.50	21.27
23.97	48.50	0.01	0.10	48.61	69.50	20.89
28.93	46.70	0.01	0.10	46.81	69.50	22.69

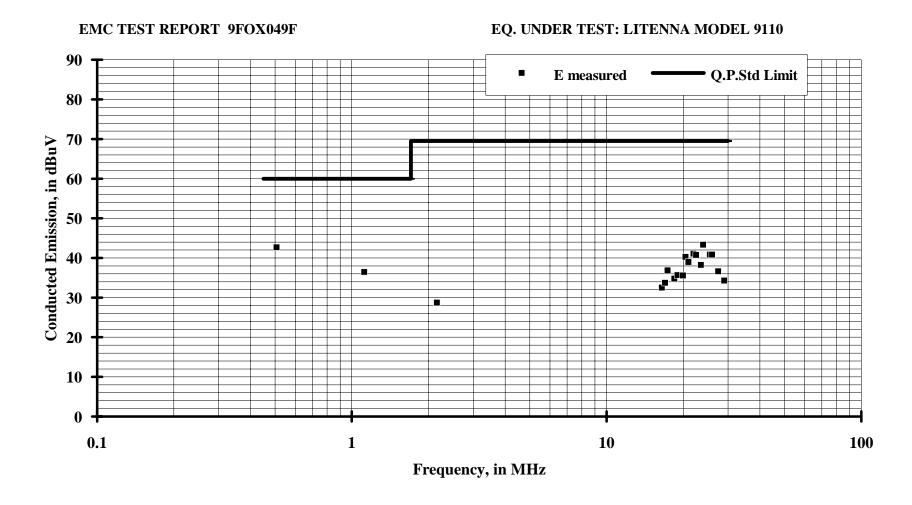


Fig. 3 Conducted Emission vrs. FCC Class A Standard Limit, DC Power Leads of Base Unit, +48VDC Lead, Q.P. Detector.

Table 3. Conducted Emission in 0.45MHz...30MHz Range DC Power Leads of Base Unit, +48VDC Lead FCC Class A Standard, Q.P. Detector

f MHz	Vmeas dBuV	LISN CF dB	Cable Loss dB	Econd dBuV	Estand dBuV	Safety Margins dB
0.51	42.60	0.01	0.10	42.71	60.00	17.29
1.12	36.37	0.01	0.10	36.48	60.00	23.52
2.16	28.60	0.01	0.10	28.71	69.50	40.79
16.49	32.45	0.01	0.10	32.56	69.50	36.94
16.95	33.60	0.01	0.10	33.71	69.50	35.79
17.36	36.80	0.01	0.10	36.91	69.50	32.59
18.46	34.70	0.01	0.10	34.81	69.50	34.69
18.98	35.55	0.01	0.10	35.66	69.50	33.84
19.97	35.50	0.01	0.10	35.61	69.50	33.89
20.43	40.16	0.01	0.10	40.27	69.50	29.23
20.95	38.85	0.01	0.10	38.96	69.50	30.54
21.94	40.97	0.01	0.10	41.08	69.50	28.42
22.46	40.66	0.01	0.10	40.77	69.50	28.73
23.45	38.16	0.01	0.10	38.27	69.50	31.23
23.97	43.26	0.01	0.10	43.37	69.50	26.13
25.42	40.74	0.01	0.10	40.85	69.50	28.65
25.94	40.70	0.01	0.10	40.81	69.50	28.69
27.45	36.54	0.01	0.10	36.65	69.50	32.85
28.96	34.17	0.01	0.10	34.28	69.50	35.22

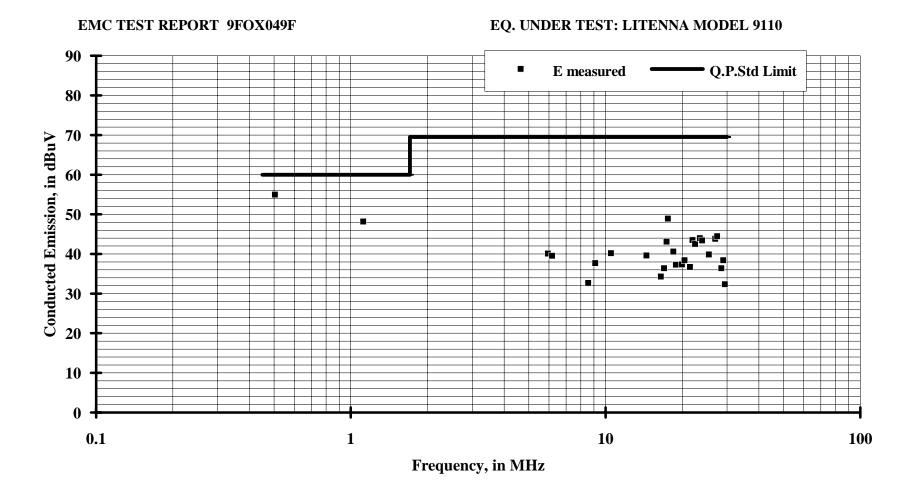


Fig. 4 Conducted Emission vrs. FCC Class A Standard Limit, DC Power Leads of Base Unit, 48V_RTN Lead, Q.P. Detector.

Table 4. Conducted Emission in 0.45MHz...30MHz Range DC Power Leads of Base Unit, 48V_RTN Lead FCC Class A Standard, Q.P. Detector

f MHz	Vmeas dBuV	LISN CF dB	Cable Loss dB	Econd dBuV	Estand dBuV	Safety Margins dB
0.50	54.90	0.01	0.10	55.01	60.00	4.99
1.12	48.09	0.01	0.10	48.20	60.00	11.80
5.93	40.05	0.01	0.10	40.16	69.50	29.34
6.16	39.45	0.01	0.10	39.56	69.50	29.94
8.54	32.60	0.01	0.10	32.71	69.50	36.79
9.12	37.60	0.01	0.10	37.71	69.50	31.79
10.51	40.11	0.01	0.10	40.22	69.50	29.28
14.46	39.50	0.01	0.10	39.61	69.50	29.89
16.49	34.19	0.01	0.10	34.30	69.50	35.20
16.95	36.30	0.01	0.10	36.41	69.50	33.09
17.36	42.98	0.01	0.10	43.09	69.50	26.41
17.59	48.80	0.01	0.10	48.91	69.50	20.59
18.46	40.50	0.01	0.10	40.61	69.50	28.89
18.90	37.19	0.01	0.10	37.30	69.50	32.20
19.97	37.30	0.01	0.10	37.41	69.50	32.09
20.43	38.30	0.01	0.10	38.41	69.50	31.09
21.47	36.60	0.01	0.10	36.71	69.50	32.79
21.94	43.39	0.01	0.10	43.50	69.50	26.00
22.46	42.47	0.01	0.10	42.58	69.50	26.92
23.45	43.88	0.01	0.10	43.99	69.50	25.51
23.91	43.30	0.01	0.10	43.41	69.50	26.09
25.40	39.80	0.01	0.10	39.91	69.50	29.59
26.93	43.70	0.01	0.10	43.81	69.50	25.69
27.45	44.36	0.01	0.10	44.47	69.50	25.03
28.43	36.30	0.01	0.10	36.41	69.50	33.09
28.96	38.30	0.01	0.10	38.41	69.50	31.09
29.42	32.30	0.01	0.10	32.41	69.50	37.09

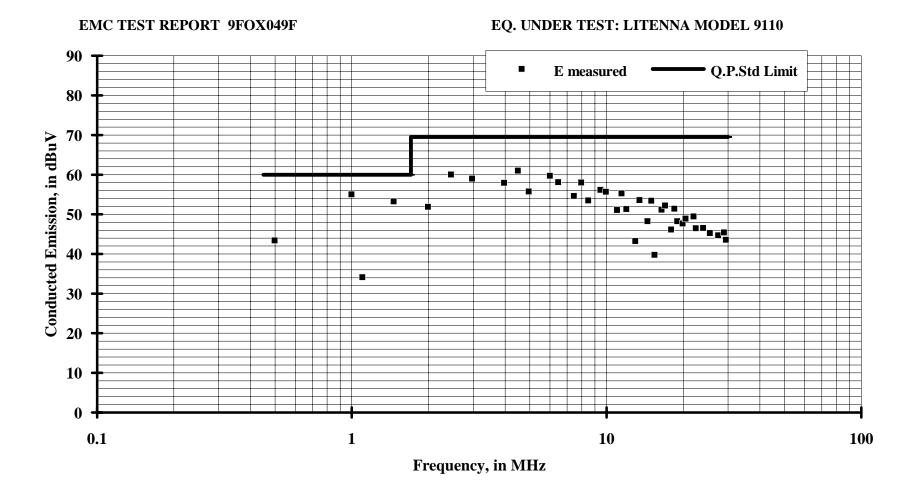


Fig. 5 Conducted Emission vrs. FCC Class A Standard Limit, DC Power Leads of Remote HUB Unit, +48VDC Lead, Q.P. Detector.

Table 5. Conducted Emission in 0.45MHz...30MHz Range DC Power Leads of Remote HUB Unit, +48VDC Lead FCC Class A Standard, Q.P. Detector

f MHz	Vmeas dBuV	LISN CF dB	Cable Loss dB	Econd dBuV	Estand dBuV	Safety Margins dB
0.50	43.30	0.01	0.10	43.41	60.00	16.59
1.00	54.94	0.01	0.10	55.05	60.00	4.95
1.10	34.00	0.01	0.10	34.11	60.00	25.89
1.46	53.20	0.01	0.10	53.31	60.00	6.69
1.99	51.82	0.01	0.10	51.93	69.50	17.57
2.45	59.94	0.01	0.10	60.05	69.50	9.45
2.97	58.87	0.01	0.10	58.98	69.50	10.52
3.96	57.88	0.01	0.10	57.99	69.50	11.51
4.48	60.92	0.01	0.10	61.03	69.50	8.47
4.94	55.69	0.01	0.10	55.80	69.50	13.70
5.99	59.60	0.01	0.10	59.71	69.50	9.79
6.45	57.99	0.01	0.10	58.10	69.50	11.40
7.44	54.54	0.01	0.10	54.65	69.50	14.85
7.96	57.90	0.01	0.10	58.01	69.50	11.49
8.48	53.40	0.01	0.10	53.51	69.50	15.99
9.47	56.11	0.01	0.10	56.22	69.50	13.28
9.93	55.60	0.01	0.10	55.71	69.50	13.79
10.98	51.03	0.01	0.10	51.14	69.50	18.36
11.44	55.17	0.01	0.10	55.28	69.50	14.22
11.96	51.22	0.01	0.10	51.33	69.50	18.17
12.95	43.16	0.01	0.10	43.27	69.50	26.23
13.47	53.50	0.01	0.10	53.61	69.50	15.89
14.46	48.13	0.01	0.10	48.24	69.50	21.26
14.98	53.30	0.01	0.10	53.41	69.50	16.09
15.44	39.69	0.01	0.10	39.80	69.50	29.70
16.43	51.04	0.01	0.10	51.15	69.50	18.35
16.95	52.10	0.01	0.10	52.21	69.50	17.29
17.94	46.09	0.01	0.10	46.20	69.50	23.30
18.46	51.34	0.01	0.10	51.45	69.50	18.05
18.92	48.20	0.01	0.10	48.31	69.50	21.19
19.91	47.60	0.01	0.10	47.71	69.50	21.79
20.43	48.80	0.01	0.10	48.91	69.50	20.59
21.94	49.37	0.01	0.10	49.48	69.50	20.02
22.40	46.41	0.01	0.10	46.52	69.50	22.98
23.90	46.50	0.01	0.10	46.61	69.50	22.89
25.40	45.20	0.01	0.10	45.31	69.50	24.19
27.40	44.60	0.01	0.10	44.71	69.50	24.79
28.90	45.34	0.01	0.10	45.45	69.50	24.05
29.40	43.50	0.01	0.10	43.61	69.50	25.89

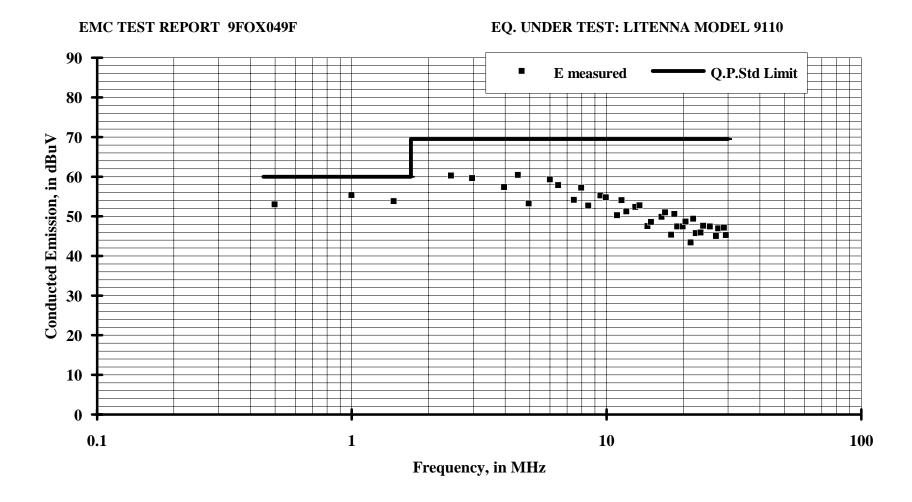


Fig. 6 Conducted Emission vrs. FCC Class A Standard Limit, DC Power Leads of Remote HUB Unit, 48V_RTN Lead, Q.P. Detector.

Table 6. Conducted Emission in 0.45MHz...30MHz Range DC Power Leads of Remote HUB Unit, 48V_RTN Lead FCC Class A Standard, Q.P. Detector

f MHz	Vmeas dBuV	LISN CF dB	Cable Loss dB	Econd dBuV	Estand dBuV	Safety Margins dB
0.50	52.96	0.01	0.10	53.07	60.00	6.93
1.00	55.23	0.01	0.10	55.34	60.00	4.66
1.46	53.70	0.01	0.10	53.81	60.00	6.19
2.45	60.18	0.01	0.10	60.29	69.50	9.21
2.97	59.55	0.01	0.10	59.66	69.50	9.84
3.96	57.30	0.01	0.10	57.41	69.50	12.09
4.48	60.40	0.01	0.10	60.51	69.50	8.99
4.94	53.16	0.01	0.10	53.27	69.50	16.23
5.99	59.20	0.01	0.10	59.31	69.50	10.19
6.45	57.78	0.01	0.10	57.89	69.50	11.61
7.44	54.09	0.01	0.10	54.20	69.50	15.30
7.96	57.17	0.01	0.10	57.28	69.50	12.22
8.48	52.60	0.01	0.10	52.71	69.50	16.79
9.47	55.20	0.01	0.10	55.31	69.50	14.19
9.93	54.70	0.01	0.10	54.81	69.50	14.69
10.98	50.16	0.01	0.10	50.27	69.50	19.23
11.44	54.01	0.01	0.10	54.12	69.50	15.38
11.96	51.17	0.01	0.10	51.28	69.50	18.22
12.95	52.30	0.01	0.10	52.41	69.50	17.09
13.47	52.67	0.01	0.10	52.78	69.50	16.72
14.46	47.47	0.01	0.10	47.58	69.50	21.92
14.92	48.50	0.01	0.10	48.61	69.50	20.89
16.43	49.80	0.01	0.10	49.91	69.50	19.59
16.95	50.88	0.01	0.10	50.99	69.50	18.51
17.94	45.25	0.01	0.10	45.36	69.50	24.14
18.46	50.50	0.01	0.10	50.61	69.50	18.89
18.92	47.40	0.01	0.10	47.51	69.50	21.99
19.91	47.37	0.01	0.10	47.48	69.50	22.02
20.43	48.60	0.01	0.10	48.71	69.50	20.79
21.40	43.30	0.01	0.10	43.41	69.50	26.09
21.90	49.30	0.01	0.10	49.41	69.50	20.09
22.40	45.70	0.01	0.10	45.81	69.50	23.69
23.39	45.80	0.01	0.10	45.91	69.50	23.59
23.90	47.50	0.01	0.10	47.61	69.50	21.89
25.40	47.37	0.01	0.10	47.48	69.50	22.02
26.90	44.95	0.01	0.10	45.06	69.50	24.44
27.40	46.86	0.01	0.10	46.97	69.50	22.53
28.90	47.07	0.01	0.10	47.18	69.50	22.32
29.42	45.20	0.01	0.10	45.31	69.50	24.19

Appendix B.
Radiated Emission Data

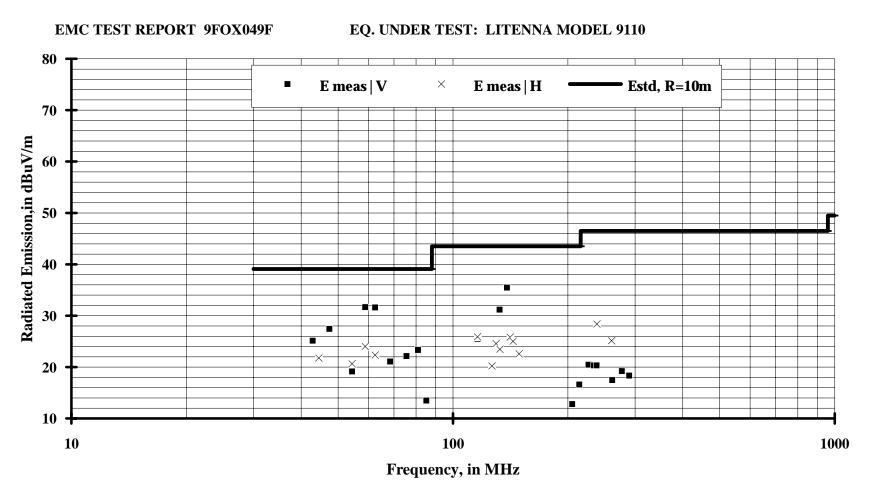


Fig.7 Radiated Emission vrs. FCC Class A Standard Limit, Vertical/Horizontal Polarization.

Table 7. Radiated Emission in 30MHz...1000MHz Range Vertical/Horizontal Polarization FCC Class A Standard, Q.P. Detector, R=10meters.

f MHz	Vmeas Vert dBuV	Vmeas Hor dB/m	AF dB/m	CF dB	GAIN dB	Emeas Vert dBuV/m	Emeas Hor dBuV/m	Estand dBuV/m	Safety Margins dB
42.88	46.70		10.38	0.86	32.80	25.14		39.10	13.96
44.48		43.60	10.09	0.87	32.80		21.77	39.10	17.33
47.36	49.80		9.58	0.90	32.80	27.47		39.10	11.63
54.36	42.00	43.50	9.01	0.96	32.80	19.17	20.67	39.10	18.43
58.84	54.58	46.90	8.92	1.00	32.80	31.70	24.02	39.10	7.40
62.48	54.37	45.10	9.00	1.03	32.80	31.60	22.33	39.10	7.50
68.36	43.60		9.23	1.09	32.80	21.12		39.10	17.98
75.50	44.43		9.36	1.15	32.80	22.13		39.10	16.97
80.96	45.50		9.43	1.20	32.80	23.32		39.10	15.78
85.02	35.50		9.55	1.23	32.80	13.48		39.10	25.62
115.80	45.76	46.10	11.09	1.49	32.80	25.54	25.88	43.50	17.62
126.40		39.91	11.56	1.58	32.80		20.25	43.50	23.25
129.60		44.10	11.68	1.61	32.80		24.59	43.50	18.91
132.40	50.50		11.84	1.63	32.80	31.18		43.50	12.32
132.60		42.80	11.86	1.63	32.80		23.49	43.50	20.01
138.40	54.40		12.20	1.68	32.80	35.49		43.50	8.01
141.00		44.60	12.33	1.70	32.80		25.83	43.50	17.67

Table 7 (cont.). Radiated Emission in 30MHz...1000MHz Range Vertical/Horizontal Polarization FCC Class A Standard, Q.P. Detector, R=10meters.

f MHz	Vmeas Vert dBuV	Vmeas Hor dB/m	AF dB/m	CF dB	GAIN dB	Emeas Vert dBuV/m	Emeas Hor dBuV/m	Estand dBuV/m	Safety Margins dB
143.60		43.67	12.41	1.72	32.80		25.00	43.50	18.50
149.00		41.03	12.57	1.77	32.80		22.57	43.50	20.93
205.20	32.44		10.95	2.21	32.80	12.81		43.50	30.69
214.20	36.45		10.70	2.28	32.80	16.64		43.50	26.86
226.40	40.42		10.47	2.38	32.80	20.46		46.50	26.04
234.00	39.90		10.83	2.43	32.80	20.36		46.50	26.14
237.60	39.70		11.00	2.46	32.80	20.36		46.50	26.14
238.20		47.70	11.03	2.46	32.80		28.40	46.50	18.10
260.20		43.20	12.09	2.63	32.80		25.12	46.50	21.38
261.00	35.50		12.13	2.63	32.80	17.46		46.50	29.04
276.80	36.40		12.92	2.75	32.80	19.26		46.50	27.24
289.20	34.60		13.71	2.83	32.80	18.34		46.50	28.16