Advanced
Compliance Laboratory

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ELECTROMAGNETIC EMISSION COMPLIANCE REPORT

of

900MHZ CORDLESS HEADPHONE TRANSMITTER
MODEL: HA-W1000RF
FCC ID: ASIJ7R001

September 5, 2003

This report concerns (check one): Original grant __x__ Class II change _____
Equipment type: LOW POWER TRANSMITTER

Deferred grant requested per 47 CF 0.457(d)(1)(ii)? yes _____ no __x___
If yes, defer until: _____ (date)
Company agrees to notify the Commission by _____ (date)
of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? yes _____ no __x___
If no, assumed Part 15, Subpart B for unintentional radiators - the new 47 CFR [10-1-90 Edition] provision.

Report prepared for:	VICTOR COMPANY OF JAPAN LTD.
Report prepared by:	Advanced Compliance Lab
Report number:	0048-030718-02-TX

NVLAP®

The test result in this report IS supported and covered by the NVLAP accreditation

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1. GENERAL INFORMATION

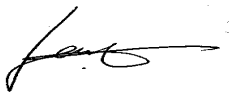
1.1 Verification of Compliance

EUT:	900MHZ CORDLESS HEADPHONE TRANSMITTER
Model:	HA-W1000RF
Applicant:	VICTOR COMPANY OF JAPAN LTD. 12, 3-CHOME, MORIYA-CHO, KANAGAWA YOKOHAMA (KANAGAWA), 221-8528, JAPAN
Test Type:	FCC Part 15C CERTIFICATION
Result:	PASS
Tested by:	ADVANCED COMPLIANCE LAB
Test Date:	September 5, 2003
Report Number:	0048-030718-02-TX

The above equipment was tested by Advanced Compliance Laboratory for compliance with the requirement set forth in the FCC rules and regulations Part 15, subpart C. This said equipment in the configuration described in the report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

The estimated uncertainty of the test result is given as following. The method of uncertainty calculation is provided in Advanced Compliance Lab. Doc. No. 0048-01-01.

	Prob. Dist.	Uncertainty(dB)	Uncertainty(dB)	Uncertainty(dB)
		30-1000MHz	1-6.5GHz	Conducted
Combined Std. Uncertainty u_c	norm.	±2.36	±2.99	±1.83



Wei Li
Lab Manager
Advanced Compliance Lab

Date: September 5, 2003

1.2 Equipment Modifications

N/A

1.3 Product Information

System Configuration

ITEM	DESCRIPTION	FCC ID	CABLE
Product	TRANSMITTER	ASIJ7R001*	
Housing	PLASTICS		
Power Supply	DC 7.5V J47310-001 AC Adapter 120V/60Hz		
Clock/OSC Freq.	907 MHz (Center Frequency)		
Device Type	Continuous Operation		
MP3 Player	OPTIMUS DR-32		
FM Receiver	Sony SRF-19W		
Receiver	FCC Certificate	ASIJ7R002*	

* EUT submitted for grant.

1.4 Test Methodology

Radiated tests were performed according to the procedures in ANSI C63.4-1992 at an antenna to EUT distance of 3 meters.

1.5 Test Facility

The open area test site and conducted measurement facility used to collect the radiated and conducted data are located at Somerset, New Jersey. This site has been accepted by FCC to perform measurements under Part 15 or 18 in a letter dated May 19, 1997 (Refer to: 31040/PRV 1300F2). The NVLAP Lab code for accreditation of FCC EMC Test Method is: 200101-0.

1.6 Test Equipment

Manufacture	Model	Serial No.	Description	Last Cal dd/mm/yy	Cal Due dd/mm/yy
Hewlett-Packard	HP8546A	3625A00341	EMI Receiver	23/10/02	23/10/03
EMCO	3104C	9307-4396	20-300MHz Biconical Antenna	19/09/02	19/09/03
EMCO	3146	9008-2860	200-1000MHz Log-Periodic Antenna	27/09/02	27/09/03
Fischer Custom	LISN-2	900-4-0008	Line Impedance Stabilization Networks	03/07/03	03/07/04
Fischer Custom	LISN-2	900-4-0009	Line Impedance Stabilization Networks	03/07/03	03/07/04
EMCO	6502	2665	10KHz-30MHz Active Loop Antenna	15/02/03	15/02/04

All Test Equipment Used are Calibrated Traceable to NIST Standards.

1.7 Statement for the Document Use

This report shall not be reproduced except in full, without the written approval of the laboratory. And this report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

2. PRODUCT LABELING

FCC ID: ASIJ7R001

This device complies with part 15 of the FCC Rules. Operating is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Figure 2.1 FCC ID Label

Figure 2.2 Location of the Label

3. SYSTEM TEST CONFIGURATION

3.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it). And its antenna was permanently attached to the EUT with fixed maximum length, 3 inches.

When an audio signal is input, the transmitter's power is turned on automatically, and the indicator lights in green. Also, when no audio signal is input for about a minute, the indicator goes out automatically and the power turns off. (Automatic Power On/Off function)

Testing was performed as EUT was operated at frequency 906~908MHz continuously. The worst case of EUT operating frequency as 106.7MHz is recorded for final data on Pg. 19.

3.2 Special Accessories

N/A

3.3 Configuration of Tested System

Figure 3.1 and Figure 3.3 illustrate this system, which is tested standing along.

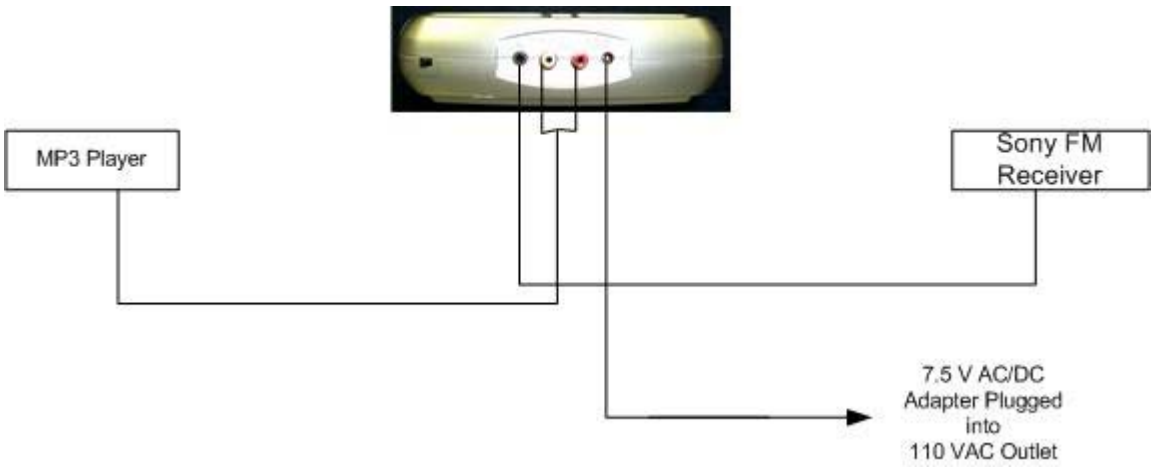


Figure 3.1 Cable Interlink Configuration

Figure 3.2 Radiated Front

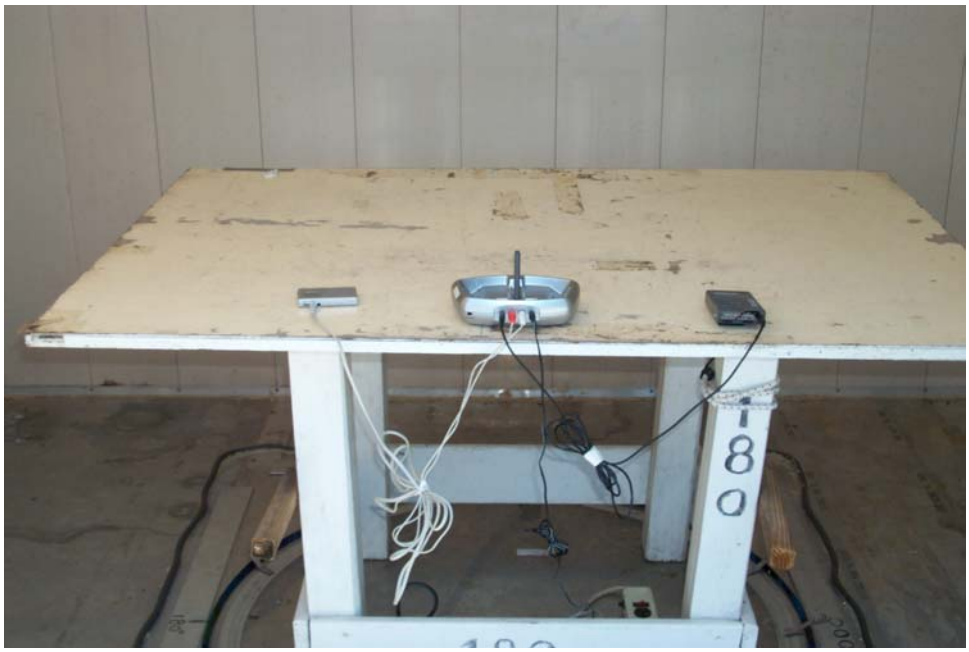


Figure 3.3 Radiated Rear

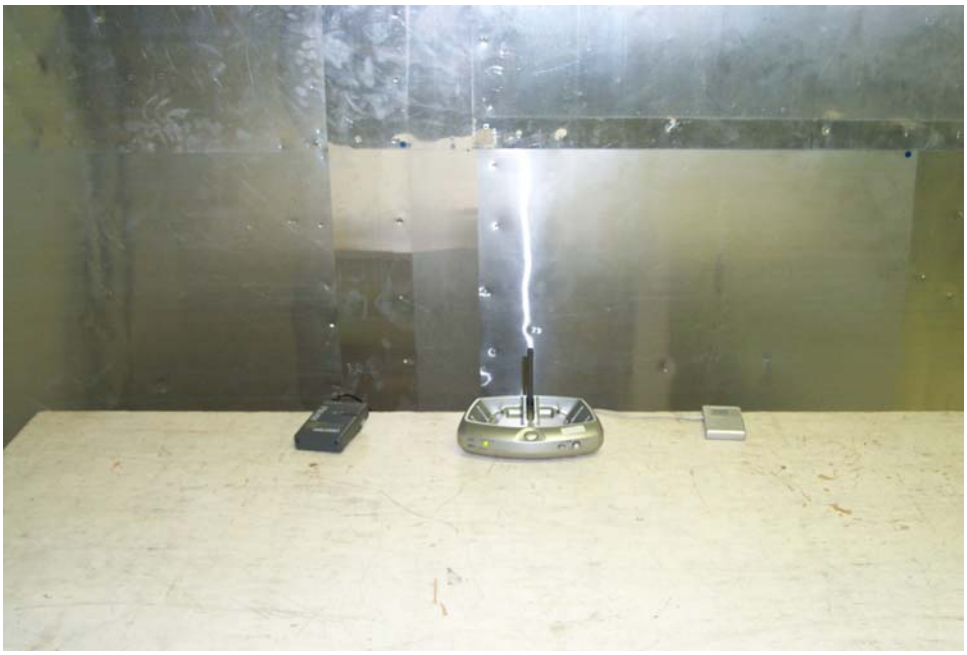


Figure 3.4 Conducted Front

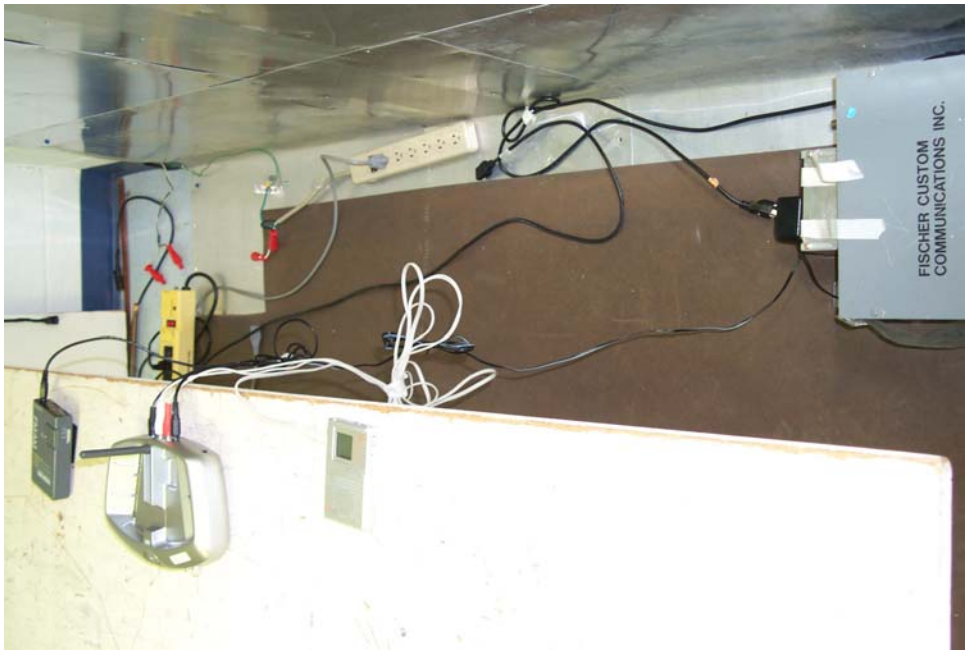


Figure 3.5 Conducted Rear

4. SYSTEM SCHEMATICS

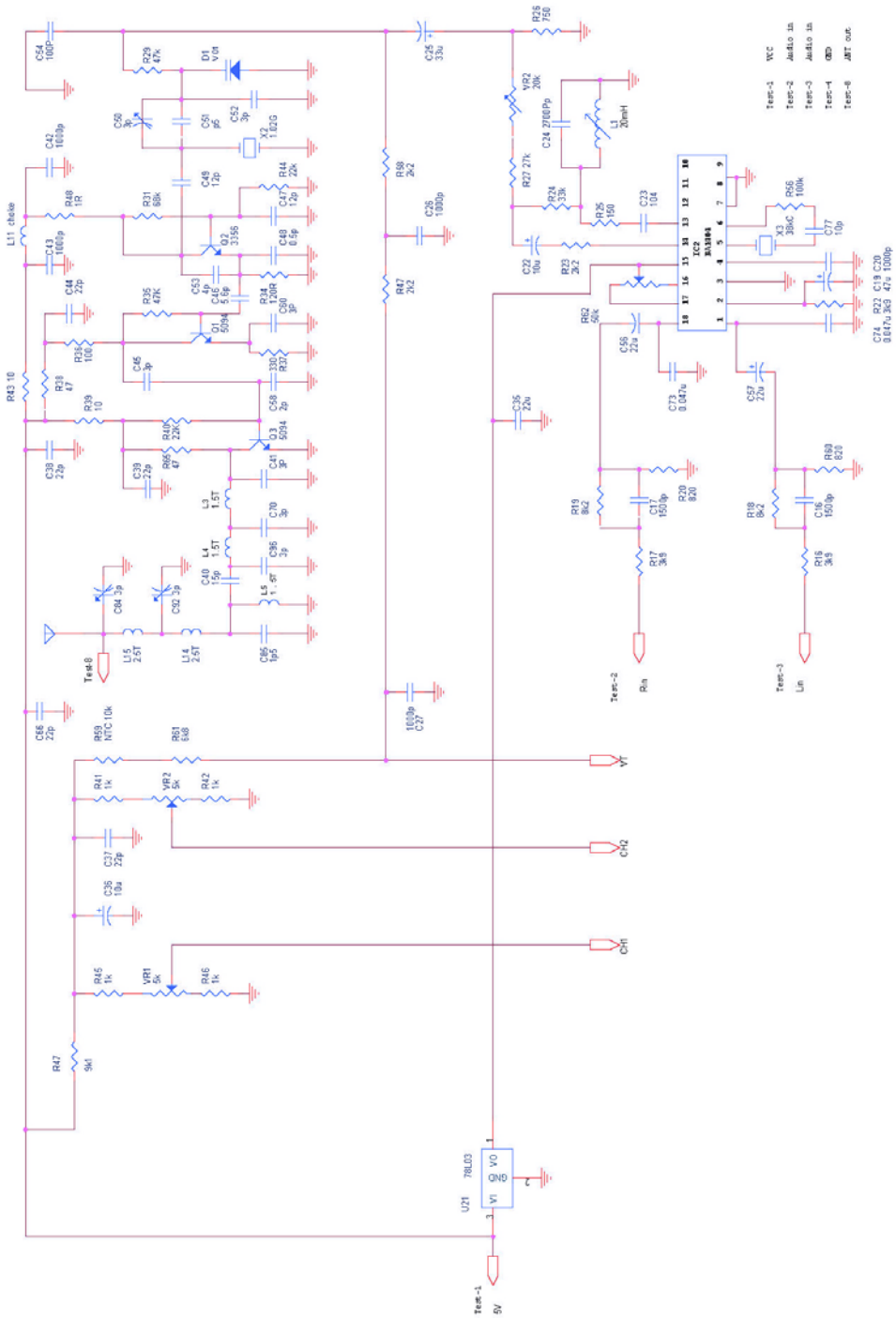


Figure 4.1 System Schematics

5. CONDUCTED EMISSION DATA

5.1 Test Methods and Conditions

The EUT was under normal operational mode during the conducted emission test. EMI Receiver was scanned from 450KHz to 30MHz with maximum hold mode for maximum emission. Recorded data was sent to the plotter to generate output in linear format. At the input of the spectrum analyzer, a HP transient limiter is inserted for protective purpose. This limiter has a 10 dB attenuation in the range of 450KHZ to 30MHZ. That factor was automatically compensated by the receiver, so the readings are the corrected readings. The reference of the plot is the CISPR 22 Class B limit in Figure 5.1 through Figure 5.2.

Conducted Emission Technical Requirements				
	Class A		Class B	
Frequency Range	Quasi-Peak dBuV	Average dBuV	Quasi-Peak DBuV	Average dBuV
150kHz –0.5MHz	79 (8912uV)	66 (1995uV)	66-56	56-46
0.5MHz-30MHz	73 (4467uV)	60 (1000uV)	---	---
0.5MHz- 5MHz	---	---	56	46
5MHz-30MHz	---	---	60	50

Emissions that have peak values close to the specification limit (if any) are also measured in the quasi-peak mode to determine compliance.

5.2 Test Data

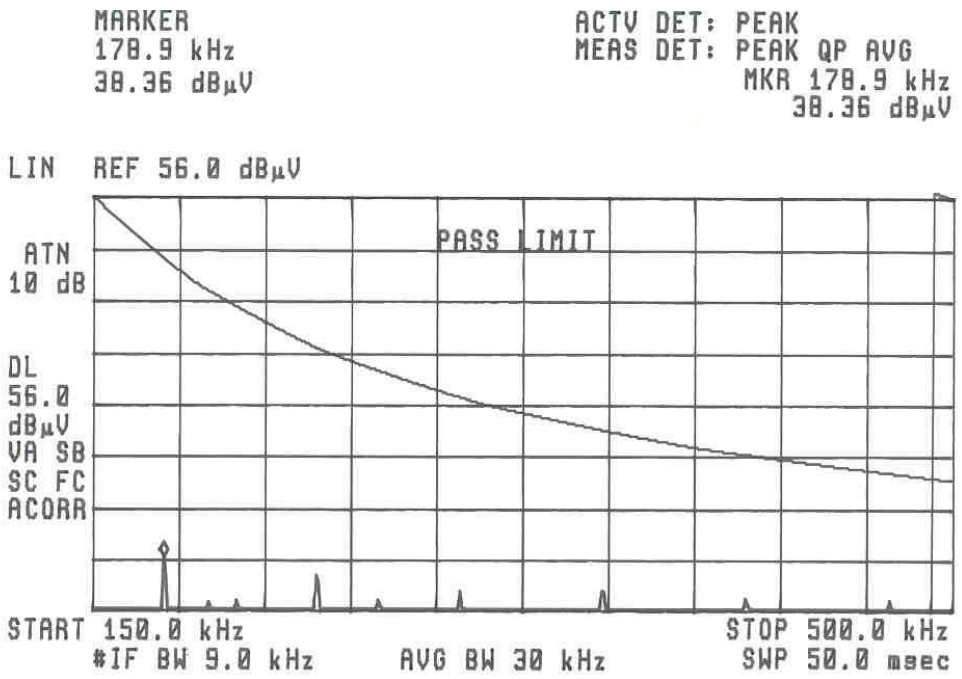
Figure 5.1 through Figure 5.2 show the neutral and line conducted emissions for the standard operation mode.

Six Highest Data for AC Line Conducted Emissions						
Frequency (MHz)	0.154	0.179	0.239	0.241	0.298	0.500
Peak Reading (dBuV)	38.3	38.4	34.8	35.0	34.6	33.8

Test Personnel:

Tester Signature: _____ Date: September 5, 2003

Typed/Printed Name: Edward Lee



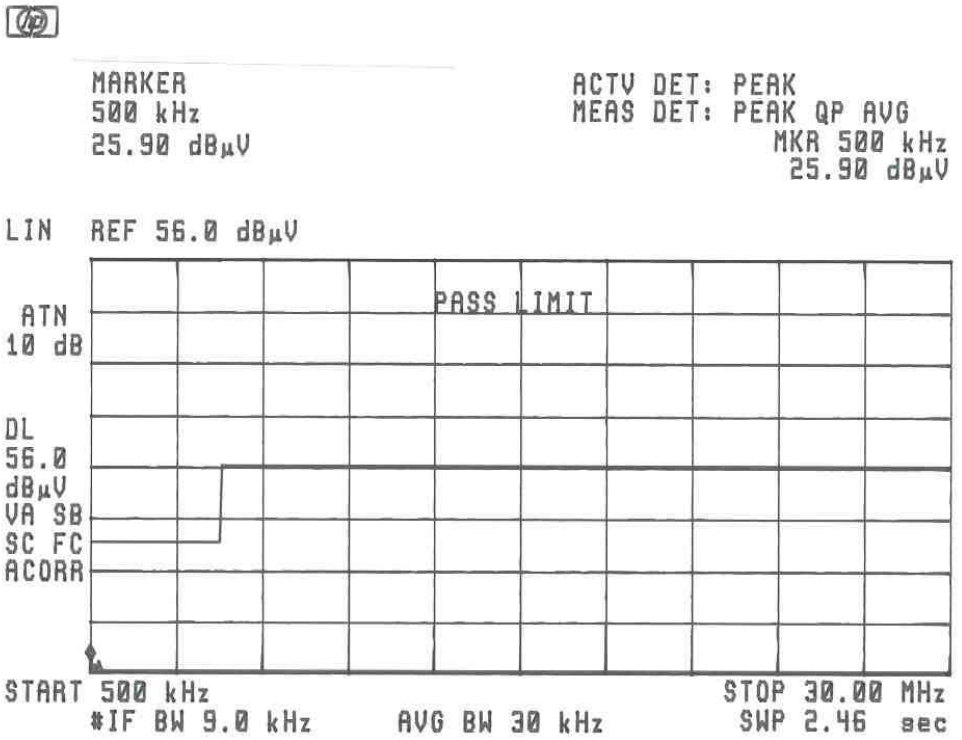
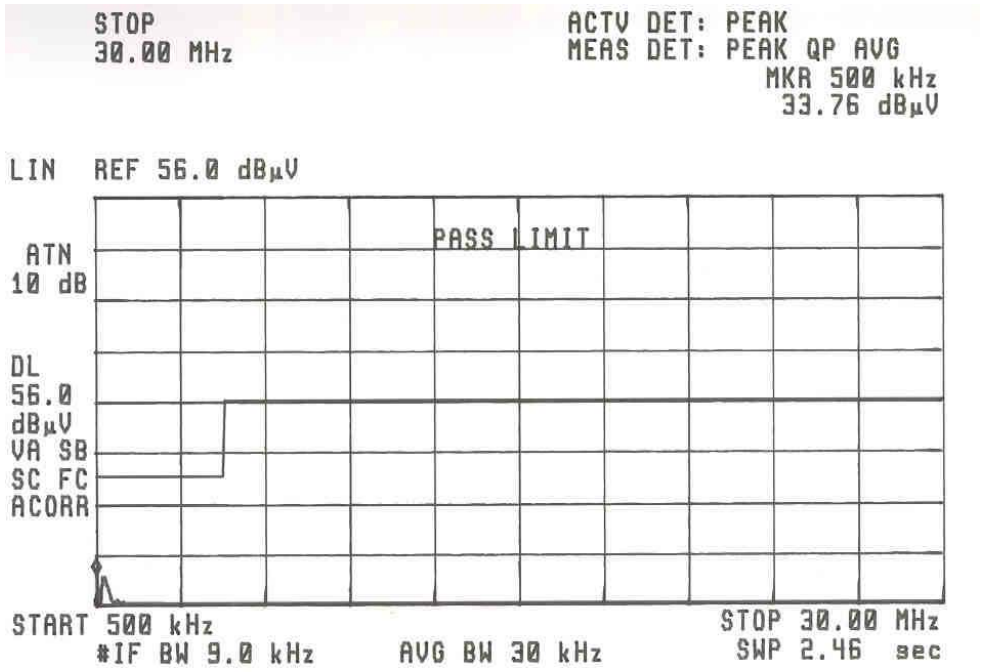


Figure 5.1 Line Conducted



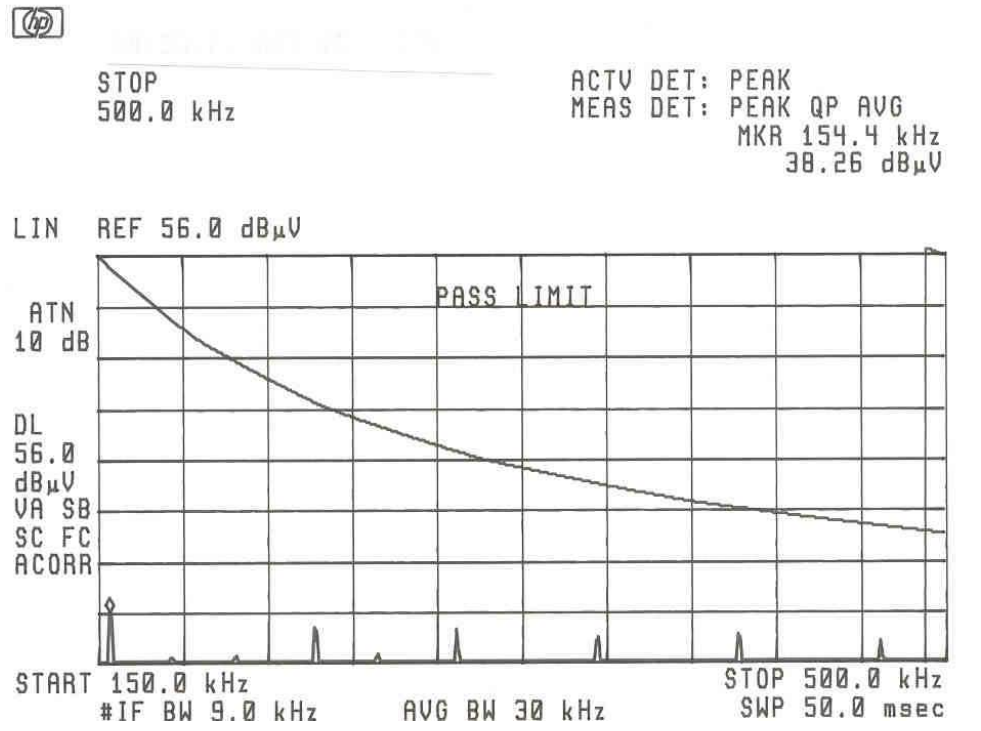


Figure 5.2 Neutral Conducted

6. RADIATED EMISSION DATA

6.1 Field Strength Calculation

The corrected field strength is automatically calculated by EMI Receiver using following:

$$FS = RA + AF + CF + AG$$

where FS: Corrected Field Strength in dBμV/m
RA: Amplitude of EMI Receiver before correction in dBμV
AF: Antenna Factor in dB/m
CF: Cable Attenuation Factor in dB
AG: Built-in Preamplifier Gain in dB (Stored in receiver as part of the calibration data)

6.2 Test Methods and Conditions

The initial step in collecting radiated data is a EMI Receiver scan of the measurement range below 30MHz using peak detector and 9KHz IF bandwidth / 30KHz video bandwidth. For the range 30MHz - 5GHz, IF bandwidth / 30KHz video bandwidth are used. Both bandwidths are 1MHz for above 1GHz measurement.

6.3 Test Data

The following data lists the significant emission frequencies, polarity and position, peak reading of the EMI Receiver, the FCC limit, and the difference between the peak reading and the limit. Explanation of the correction and calculation are given in section 5.1.

Testing was performed as EUT was operated at frequency 906~908MHz continuously. The worst case of EUT operating frequency as 106.7MHz (CH2) is recorded for final data.

Test Personnel:

Tester Signature: 

Typed/Printed Name: Edward Lee Date: September 5, 2003

Radiated Test Data

Worst Case : operating frequency=906.7MHz

Frequency (MHz)	Polarity [H, V] Position	Height (m)	Azimuth (Degree)	Peak[2] Reading (dBμV/m)	Class B[1] 3m Limit (dBμV/m)	Difference from limit (dB)
906.7	H	1.1	180	55.4	94	-38.6
2720.1	H	1.1	180	49.0	54	-5
3626.8	H	1.1	180	47.6	54	-6.4
4533.5	H	1.1	180	49.8	54	-4.2
906.7	V	1.2	180	66.0	94	-28
2720.1	V	1.2	180	48.4	54	-5.6
3626.8	V	1.2	180	51.7	54	-2.3
4533.5	V	1.2	180	50.4	54	-3.6

(1) The limit for emissions within the **902-928MHz** band is **50,000uV/m(94dB)**. Sec. **15.249**. The limit for field harmonics is **500uV/m(54dB)**. The limit for other emissions is defined in Sec. 15.249.

(2) Because each peak reading is less than the FCC average limit, it is not necessary to show the calculated average reading based on the pulse train characteristics.

7. PHOTOS OF TESTED EUT

The following photos show the inside details of the EUT.