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APPLICANT: AUDIO TECHNICA CORPORATION

FCC ID: JFZR4100D

TEST REPORT CONTAINING:

EXHIBITS CONTAINING:

Equipment List

	DEVICE	MFGR	MODEL	SERNO	CAL/CHAR DATE	DUE DATE or STATUS
X	3-Meter OATS	TEI	N/A	N/A	Listed 12/22/99	12/22/02
	3/10-Meter OATS	TEI	N/A	N/A	Listed 3/26/01	3/26/04
X	Receiver, Beige Tower					
X	Spectrum Analyzer (Tan)	HP	8566B Opt 462	3138A07786 3144A20661	CAL 8/31/01	8/31/02
X	RF Preselector (Tan)	HP	85685A	3221A01400	CAL 8/31/01	8/31/02
X	Quasi-Peak Adapter (Tan)	HP	85650A	3303A01690	CAL 8/31/01	8/31/02
	Receiver, Blue Tower					
	Spectrum Analyzer (Blue)	HP	8568B	2928A04729 2848A18049	CHAR 10/22/01	10/22/02
	RF Preselector (Blue)	HP	85685A	2926A00983	CHAR 10/22/01	10/22/02
	Quasi-Peak Adapter (Blue)	HP	85650A	2811A01279	CHAR 10/22/01	10/22/02
	Biconnical Antenna	Electro-Metrics	BIA-25	1171	CAL 4/26/01	4/26/03
X	Biconnical Antenna	Eaton	94455-1	1096	CAL 10/1/01	10/1/02
	Biconnical Antenna	Eaton	94455-1	1057	CHAR 3/15/00	3/15/01
	BiconiLog Antenna	EMCO	3143	9409-1043		
X	Log-Periodic Antenna	Electro-Metrics	LPA-25	1122	CAL 10/2/01	10/2/02
	Log-Periodic Antenna	Electro-Metrics	EM-6950	632	CHAR 10/15/01	10/15/02
	Log-Periodic Antenna	Electro-Metrics	LPA-30	409	CHAR 10/16/01	10/16/02
	Dipole Antenna Kit	Electro-Metrics	TDA-30/1-4	152	CAL 3/21/01	3/21/02
	Dipole Antenna Kit	Electro-Metrics	TDA-30/1-4	153	CHAR 11/24/00	11/24/01
	Double-Ridged Horn Antenna	Electro-Metrics	RGA-180	2319	CAL 12/19/01	12/19/02
	Horn Antenna	Electro-Metrics	EM-6961	6246	CAL 3/21/01	3/21/02

Horn Antenna	ATM	19-443-6R	None	No Cal Required	

Passive Loop Antenna	EMC Test Systems	EMCO 6512	9706-1211	CHAR 7/10/01	7/10/02
Line Impedance Stabilization . . .	Electro-Metrics	ANS-25/2	2604	CAL 10/9/01	10/9/02
Line Impedance Stabilization . . .	Electro-Metrics	EM-7820	2682	CAL 3/16/01	3/16/02
Termaline Wattmeter	Bird Electronic Corporation	611	16405	CAL 5/25/99	(5/25/00)
Termaline Wattmeter	Bird Electronic Corporation	6104	1926	CAL 12/12/01	12/12/02
Oscilloscope	Tektronix	2230	300572	CHAR 2/1/01	2/1/02
Temperature Chamber	Tenney Engineering	TTRC	11717-7	CHAR 1/22/02	1/22/03
AC Voltmeter	HP	400FL	2213A14499	CAL 10/9/01	10/9/02
AC Voltmeter	HP	400FL	2213A14261	CHAR 10/15/01	10/15/02
AC Voltmeter	HP	400FL	2213A14728	CHAR 10/15/01	10/15/02
Digital Multimeter	Fluke	77	35053830	CHAR 1/8/02	1/8/03
Digital Multimeter	Fluke	77	43850817	CHAR 1/8/02	1/8/03
Digital Multimeter	HP	E2377A	2927J05849	CHAR 1/8/02	1/8/03
Multimeter	Fluke	FLUKE-77-3	79510405	CAL 9/26/01	9/26/02
Peak Power Meter	HP	8900C	2131A00545	CHAR 1/26/01	1/26/02
Digital Thermometer	Fluke	2166A	42032	CAL 1/16/02	1/16/03
Thermometer	Traulsen	SK-128		CHAR 1/22/02	1/22/03
Temp/Humidity gauge	EXTech	44577F	E000901	CHAR 1/22/02	1/22/03
Frequency Counter	HP	5352B	2632A00165	CAL 11/28/01	11/28/02
Power Sensor	Agilent Technologies	84811A	2551A02705	CAL 1/26/01	1/26/02

Injection Probe	Fischer Custom Communications	F-120-9A	270	CAL 6/1/01	6/1/02
Service Monitor	IFR	FM/AM 500A	5182	CAL 11/22/00	11/22/01
Comm. Serv. Monitor	IFR	FM/AM 1200S	6593	CAL 11/12/99	11/12/00
Signal Generator	HP	8640B	2308A21464	CAL 11/15/01	11/15/02
Modulation Analyzer	HP	8901A	3435A06868	CAL 9/5/01	9/5/02
Power Line Coupling/ Decoupling Network	Fischer Custom Communications	FCC-801-M2-16A	01048	CAL 8/29/01	8/29/02
Power Line Coupling/ Decoupling Network	Fischer Custom Communications	FCC-801-M3-16A	01060	CAL 8/29/01	8/29/02
VHF/UHF Current Probe	Fischer Custom Communications	F-52	130	CAL 8/30/01	8/30/02
Passive Impedance Adapter	Fischer Custom Communications	FCC-801-150-50-CDN	01117 & 01118	CAL 8/29/01	8/29/02
Radiating Field Coil	Fischer Custom Communications	F-1000-4-8/9/10-L-1M	9859	CAL 10/15/98	10/15/99
Near Field Probe	HP	HP11940A	2650A02748	CHAR 2/1/01	2/1/02
BandReject Filter	Lorch Microwave	5BR4-2400/ 60-N	Z1	CHAR 3/2/01	3/2/02
BandReject Filter	Lorch Microwave	6BR6-2442/ 300-N	Z1	CHAR 3/2/01	3/2/02
BandReject Filter	Lorch Microwave	5BR4-10525/ 900-S	Z1	CHAR 3/2/01	3/2/02
High Pas Filter	Microlab	HA-10N		CHAR 10/4/01	10/4/02
Audio Oscillator	HP	653A	832-00260	CHAR 3/1/01	3/1/02
Frequency Counter	HP	5382A	1620A03535	CHAR 3/2/01	3/2/02
Frequency Counter	HP	5385A	3242A07460	CHAR 12/11/01	12/11/02
Preamplifier	HP	8449B-H02	3008A00372	CHAR 3/4/01	3/4/02
Amplifier	HP	11975A	2738A01969	CHAR 3/1/01	3/1/02
Egg Timer	Unk			CHAR 2/28/01	2/28/02

Measuring Tape, 20M	Kraftixx	0631-20		CHAR 2/28/01	2/28/02
Measuring Tape, 7.5M	Kraftixx	7.5M PROFI		CHAR 2/28/01	2/28/02
EMC Immunity Test System	Keytek	CEMASTER	9810210		
AC Power Source	California Instruments	1251RP	L05865		
AC Power Source	California Instruments	PACS-1	X71484		
Isotropic Field Probe	Amplifier Research	FP5000	22839		
Isotropic Field Probe	Amplifier Research	FP5000	300103		
Capacitor Clamp	Keytek	CM-CCL	9811359	No Cal Required	
Amplifier	Amplifier Research	10W1000B	23117	No Cal Required	
Field Monitor	Amplifier Research	FM5004	22288	No Cal Required	
ELF Meter	F. W. Bell	4060	Not serialized		
Coaxial Cable #51	Insulated Wire Inc.	NPS 2251-2880	Timco #51	CHAR 1/23/02	1/23/03
Coaxial Cable #64	Semflex Inc.	60637	Timco #64	CHAR 1/24/02	1/24/03
Coaxial Cable #65	General Cable Co.	E9917 RG233/U	Timco #65	CHAR 1/23/02	1/23/03
Coaxial Cable #106	Unknown	Unknown	Timco #106	CHAR 1/23/02	1/23/03

TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of TIMCO ENGINEERING, INC.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-1992 using a HEWLETT PACKARD spectrum analyzer with a preselector. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth for measurements below 1 GHz was 100 kHz and the video bandwidth was 300 kHz. Above 1 GHz a RBW of 1 MHz and a VBW of 1 MHz or greater was used. The ambient temperature of the UUT was 94ºF with a humidity of 47%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz)	METER READING + ACF = FS
33	20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

ANSI STANDARD C63.4-1992 10.1.7 MEASUREMENT PROCEDURES: The unit under test was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSIC63.4-1992 with the EUT 40 cm from the vertical ground wall.

APPLICANT: AUDIO TECHNICA CORPORATION

FCC ID: JFZR4100D

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NUMBER: 15.109

REQUIREMENTS: 30 to 88 MHz: 40.0 dBuV/M @ 3 METERS
88 to 216 MHz: 43.5 dBuV/M
216 to 960 MHz: 46.0 dBuV/M
ABOVE 960 MHz: 54.0 dBuV/M

TEST RESULTS: A search was made of the spectrum from 30 to 1000 MHz and the measurements indicate that the unit DOES meet the FCC requirements.

TEST DATA:

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuv	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuv/m	Margin dB
655.5	589.70	15.5	V	3.37	19.10	37.97	8.03
655.5	589.70	15.8	H	3.37	19.10	38.27	7.73
655.5	1,179.50	26.1	V	2.14	25.50	53.74	0.26
655.5	1,179.50	19.8	H	2.14	25.50	47.44	6.56
655.5	1,769.20	20.4	V	2.76	28.39	51.55	2.45
655.5	1,769.20	15.8	H	2.76	28.39	46.95	7.05
655.5	2,359.00	15.3	V	3.29	28.86	47.45	6.55
655.5	2,359.00	9.9	H	3.29	28.86	42.05	11.95
655.5	2,948.80	12.2	V	3.76	30.60	46.56	7.44
668.0	602.20	13.2	H	3.41	18.97	35.58	10.42
668.0	602.20	19.7	V	3.41	18.97	42.08	3.92
668.0	1,204.50	25.2	V	2.16	25.71	53.07	0.93
668.0	1,204.50	19.3	H	2.16	25.71	47.17	6.83
668.0	1,806.70	18.7	V	2.80	28.41	49.91	4.09
668.0	2,409.00	8.0	H	3.33	28.90	40.23	13.77
668.0	2,409.00	10.1	V	3.33	28.90	42.33	11.67
668.0	3,011.20	11.0	V	3.81	30.79	45.60	8.40
680.4	614.60	14.1	H	3.44	19.30	36.84	9.16
680.4	614.60	19.1	V	3.44	19.30	41.84	4.16
680.4	1,229.20	25.3	V	2.19	25.92	53.41	0.59
680.4	1,229.20	18.5	H	2.19	25.92	46.61	7.39
680.4	1,843.80	17.2	V	2.84	28.44	48.48	5.52
680.4	2,458.40	6.1	H	3.37	28.94	38.41	15.59
680.4	2,458.40	6.6	V	3.37	28.94	38.91	15.09
680.4	3,073.10	8.1	V	3.87	30.81	42.78	11.22

Note: Different test setups were tried for the EUT from all ports full to none filled. This was done till the worst case was found. The data presented reflect this.

APPLICANT: AUDIO TECHNICA CORPORATION

FCC ID: JFZR4100D

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NUMBER: 15.109

SAMPLE CALCULATION: FSdBuV/m = MR(dBuV) + ACFdB.

TEST PROCEDURE: ANSI STANDARD C63.4-1992 using a Hewlett Packard Model 8566B spectrum analyzer, a Hewlett Packard Model 85685A Preselector, a Hewlett Packard Model 85650A Quasi-Peak adapter, and an appropriate antenna – see the test equipment list. The bandwidth of spectrum analyzer was 100 kHz with an appropriate sweep speed. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported.

PERFORMED BY: JOSEPH SCOGLIO DATE: AUGUST 6, 2002

APPLICANT: AUDIO TECHNICA CORPORATION

FCC IC: JFZR4100D

NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE

RULES PART NUMBER: 15.107

MINIMUM REQUIREMENTS:	FREQUENCY	LEVEL
	__MHz___	_uV_
	0.450-30	250

TEST PROCEDURE: ANSI STANDARD C63.4-1992

THE HIGHEST EMISSION READ FOR LINE 1 WAS 108.26 uV @ 5.89 MHz.

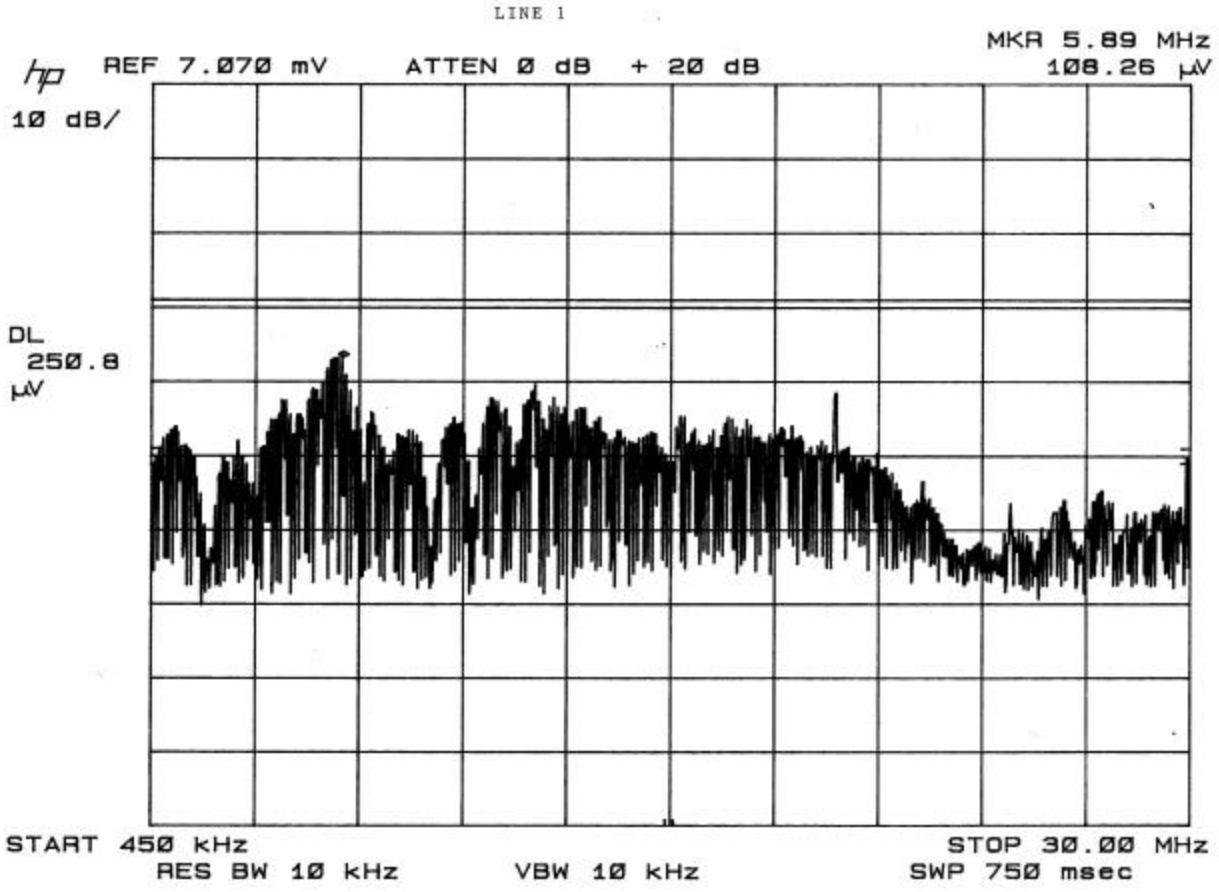
THE HIGHEST EMISSION READ FOR LINE 2 WAS 85.995 uV @ 5.77 MHz.

THE GRAPHS ON THE FOLLOWING PAGES REPRESENT THE EMISSIONS READ FOR POWERLINE CONDUCTED FOR THIS DEVICE.

TEST RESULTS: Both lines were observed. The measurements indicate that the unit DOES appear to meet the FCC requirements for this class of equipment.

PERFORMED BY: JOSEPH SCOGLIO DATE: AUGUST 6, 2002

POWER LINE CONDUCTED PLOT LINE 1



POWER LINE CONDUCTED PLOT LINE 2