

I. General Information

PRODUCT TESTED: Hand Held Deactivator (HHD)
FCC ID: BVCDEACHH

TEST DATE: July 13-19, 2000

SUMMARY OF RESULTS:

47 CFR 15.207	CONDUCTED EMISSIONS	PASS
47 CFR 15.209	RADIATED EMISSIONS	PASS

1.1 Test Methodology

Both conducted and radiated emissions testing were performed according to the procedures in ANSI C63.4-1992, and the requirements of 15.31, 15.33, 15.35, 15.207, and 15.209. Radiated emissions measurements were performed at a distance of 3 meters and the results extrapolated to the distance specified per 15.31 and 15.209.

1.2 Test Facility

The shielded room conducted emissions measurement facility is located at Sensormatic Electronics Corporation Headquarters at 951 Yamato Road, Boca Raton, Florida, 33431. The radiated emissions site is located at Sensormatic Electronics Corporation manufacturing location, 6600 Congress Avenue, Boca Raton, Florida 33487. These sites have been found acceptable by and are on file with the FCC per FCC letter 31040/SIT 1300F2.

1.3 Test System Description.

The HHD system consists of a charging base and a hand held unit. The hand held unit consists of a battery, power supply/transmitter electronics, receive electronics, data processing electronics, deactivation electronics and a multi-turn coil antenna common to transmit, receive and deactivation.

The product tested was an engineering prototype built to production drawings.

II. Conducted Emissions

Conducted emissions data are presented in Section V “Data”, Part A “Conducted Emissions”.

The hand held unit was plugged into the base unit and the transmit function was enabled. The battery was discharged prior to initiating the test. The product demonstrated compliance with the requirements of 15.207. The product was tested at 120 V, 60 Hz.

III. Radiated Emissions

Radiated emissions data are presented in Section V “Data”, Part B “Radiated Emissions”. The product demonstrated compliance with the requirements of 15.209. Radiated emissions measurements were performed at 3 meters. Propagation loss assumed square law roll-off as permitted by the rules; the measurements were extrapolated to 300 meters as required.

The hand-held unit was fully charged prior to initiating tests. It was mounted in a vertical position, i.e., the loop antenna was in the vertical plane. Maximum radiation was determined by first assessing symmetry while applying incremental rotation of the turntable. The product exhibited quadrant symmetry. Measurements were taken at radials of 22.5° throughout one quadrant; the measurement antenna was rotated for maximum pickup about the vertical axis of the measurement antenna at each radial. The maximum emission was determined to be with the measurement loop antenna in the vertical polarization, parallel to the radiating loop of the HHD.

The product was tested and results reported using peak detection. In addition, the product was eligible for extrapolation by calculating the roll off factor as determined by measurements at 2 distances. Although peak detection and square law extrapolation are more severe than required by the rules, measurements using these techniques were sufficient to demonstrate compliance of this product with the FCC rules.

IV. LIST OF MEASURING EQUIPMENT

The equipment used for determining compliance of the HHD system with the requirements of 15.207 and 15.209 is marked with an "X" in the first column of the table below.

	<u>Model</u>	<u>Description</u>	<u>Vendor</u>	<u>Serial #</u>
X	ALP -70	Loop Antenna	Electro Metrics	163
	3110B	Biconnical Antenna	Electro Metrics	1017
	3146	Log Periodic Antenna	EMCO	3909
	3825/2	Line Imp Stable Network	EMCO	1562
X	3816/2NM	Line Imp Stable Network	EMCO	9703 1064
	6060B	Frequency Generator	Giga-tronics	5850202
	FM2000	Isotropic Field Monitor	Amplifier Research	15171
	FP2000	Isotropic Field Probe	Amplifier Research	15214
	888	Leveler	Amplifier Research	14998
	75A220	Low Band Amplifier	Amplifier Research	15208
	10W1000A	High Band Amplifier	Amplifier Research	15138
	PEFT Junior	EFT Generator	Haefely Trench	083 180-16
	PEFT Junior	Capacitive Cable Clamp	Haefely Trench	083-078-31
	NSG435	ESD Simulator	Schaffner	1197
	NSG431	ESD Simulator	Schaffner	1267
X	HP8591EM	EMC Analyzer	Hewlett - Packard	3520A00190
		Power Source	Pacific Instruments	
	F-2031	EM Injection Clamp	Fischer Cust. Comm.	30
	FCC-801-M3-16	Coupling Decoupling Nwk	Fischer Cust. Comm.	58
	FCC-801-M3-16	Coupling Decoupling Nwk	Fischer Cust. Comm.	59
	F-33-1	RF Current Probe	Fischer Cust. Comm.	304
	EM 7600	Transient Limiter	Electro-Metrics	187
	Roberts Ant	Tunable Dipole Set	Compliance Design	003282
	Roberts Ant	Tunable Dipole Set	Compliance Design	003283
	HP8594E	Spectrum Analyzer	Hewlett Packard	3246A00300
X	HP8447F Opt 64	Dual Preampifier	Hewlett Packard	2805A03473

V. Data

Part A contains conducted emissions data; Part B contains radiated emissions data.

Part A

Conducted Emissions

Project Name	Conducted Emissions	Filename	HHD_Deac_CondEMI_FCC-B_7-19-00.doc
EUT Name	HandHeld Deactivator	Serial Number	
Engineer	Larry Canipe	Phone Number	
Date of Test	07/19/2000 3:59:53 PM	Test Name	FCC Class B Conducted Emissions
Reg. Technician	C Daoust		

Comments	Line 120vac 60hz; Rev 2 Mesh B;
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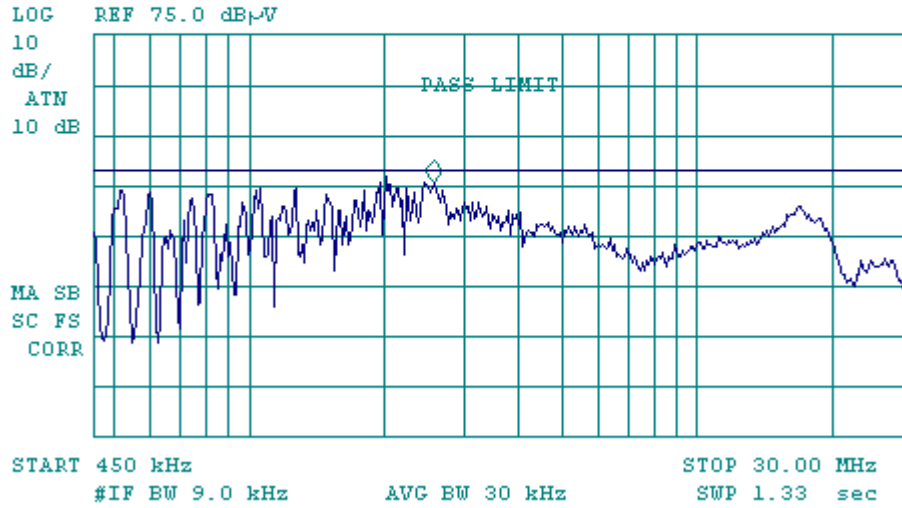
Signal List

Signal	Freq (MHz)	Peak Amp (dBuV)	QP Amp (dBuV)	Avg Amp (dBuV)	FCC Class B Limits (dBuV)	Comments
1	2.041750	46.94	43.13	27.22	48.00	
2	2.505378	46.52	43.13	29.29	48.00	
3	0.521055	44.20	42.99	32.58	48.00	
4	1.288460	44.36	42.46	27.42	48.00	
5	0.604820	43.71	42.22	31.27	48.00	
6	1.063000	44.42	42.18	27.78	48.00	

Figure 1. L1 Full Range

15:59:54 JUL 19, 2000
HHD_FCC15BC_Charging_L1

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.59 MHz
45.55 dB μ V



Part B**Radiated Emissions**

Project Name	Hand Held Deactivator	Filename	
EUT Name	Deac HH	Serial Number	
Engineer	Larry Canipe	Phone Number	
Date of Test	7/14/2000	Test Name	Radiated Emissions 47CFR15.209
Reg. Technician	Steve Krizmanich	Proj. Ldr	Don Umbdenstock

Freq	S.A.	Det	BW	Ant Fac	A>V	DCF	Correct'd	FCC Limit
kHz	dBuA		kHz	dB	dB	dB	dBuV/m	dBuV/m
58	45.1	pk	9	11.1	51.5	-80	27.7	32.3/300
116	24.2	pk	9	4.5	51.5	-80	0.2	26.3/300
174	20.2	pk	9	0.5	51.5	-80	-7.8	22.8/300
232	17.0	pk	9	-1.0	51.5	-80	-12.5	20.3/300
290	3.5	pk	9	-2.5	51.5	-80	-27.5	18.4/300
348	8.3	pk	9	-4.5	51.5	-80	-24.7	16.8/300
406	6.1	pk	9	-5.5	51.5	-80	-27.9	15.4/300
464	7.5	pk	9	-6.5	51.5	-80	-27.5	14.3/300
522	11.5	pk	9	-7.3	51.5	-40	10.0	33.3/30
580	ambient	pk	9	-7.8	51.5	-40		32.3/30

Test performed on OATS