COMPANY	Sensormatic Electronics Corp. 6600 Congress Ave Boca Raton, Florida 33487
PRODUCT TESTED	AMB-9020 FCC ID: BVCAMB9020 IC: 3506A-AMB9020
FCC RULES	15.207, 15.209
IC SPECIFICATIONS	RSS 210
TEST DATE	November 5-7, 2003
SUBMITTED BY	Donald J. Umbdenstock

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I. Summary of Results

47 CFR 15.203	ANTENNA REQUIREMENTS	COMPLIES
47 CFR 15.207	CONDUCTED EMISSIONS	COMPLIES
47 CFR 15.209	RADIATED EMISSIONS	COMPLIES
RSS 210: 5.9.1	OCCUPIED BANDWIDTH	PROVIDED

II. General Information

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 below 30MHz were performed at a distance of 3 and 6 meters, and the results extrapolated to the distance specified per 15.31 and 15.209 invoking the 2-point extrapolation method.

1.2. Test Facility

Measurements per 15.207 and 15.209 were performed at Sensormatic Electronics Corporation.

The shielded room conducted emissions measurement facility and the radiated emissions Open Area Test Site are located at Sensormatic Electronics Corporation Headquarters at 6600 Congress Avenue, Boca Raton, Florida 33487. These sites have been found acceptable by and are on file with the FCC per FCC Registration Number 90925, and Industry Canada per file number IC 3506.

1.3. Test System Description.

The device is an anti-theft system auxiliary device whose purpose is to detect and deactivate anti-theft labels. The device consists of 4 modules – an external power supply, a controller and 2 antennas. The controller houses the transmitter, receiver, deactivator, and control and I/O interface electronics. When an anti-theft label is brought in proximity of the loop antenna of the controller, the transmitter excites the label. The receiver detects the presence of the label and enables the deactivator.

The product tested was a pre-production unit built to production drawings.

15.203. The antenna is an external antenna employing custom Molex connectors; therefore the antenna is compliant with the requirements of this clause.

III. Conducted Emissions

15.207. Conducted emissions data are presented in Section VIII "Data", Part A, Conducted Emissions. The product demonstrated compliance with the requirements. The product was tested at 120 V, 60 Hz.

IV. Radiated Emissions

15.209. Radiated emissions data for this product are presented in Section VIII "Data", Part B, Radiated Emissions. The product demonstrated compliance with the requirements. Radiated emissions measurements were performed at 3 meters. Propagation loss was determined by extrapolating the results to 300 meters as per 15.31(f)(2), using the 2-point extrapolation method.

Maximum radiation was determined by placing the system on a non-conductive turntable and rotating the turntable for maximum emissions. The measurement antenna was rotated for maximum pickup about the vertical and horizontal axis of the measurement antenna at the radial of the EUT with the maximum emission. The maximum emission was determined to be with the measurement loop antenna in the vertical polarization.

The product was tested at input voltages to the power supply ranging from 102 – 138V, 60Hz. See Section VIII, Part B.

V. Occupied Bandwidth

RSS 210:5.9.1. The 20 dB bandwidth measurements for this product are presented in Section VII "Data", Part C, Occupied Bandwidth. A bandwidth requirement was not specified for 58kHz products, so the default 20dB bandwidth was measured. The HP 8591EM spectrum analyzer cannot measure a bandwidth over 1.8kHz in quasi-peak detection mode, so the bandwidth was measured in peak detection mode, providing a worst-case occupied bandwidth.

VI. LIST OF MEASURING EQUIPMENT

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

	Model	Description	Vendor	Serial #
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 Preamplifier	Hewlett Packard	2805A03473

VII. Data

Part A contains conducted emissions data; Part B contains magnetic field radiated emissions data; Part C contains occupied bandwidth data.

Part A Conducted Emissions

Project Name	Conducted Emissions EN55022	Filename	AMB9020-CondEMI_60Hz_11-4-03.doc
EUT Name	AMB9020 Dual Pad Deactivator	Serial Number	Verification Unit
Engineer	Eddie Keith/Alan Dewey	Phone Number	
Date of Test	11/04/2003 2:08:16 PM	Test Name	Conducted Emission
Reg. Technician	Stephen Krizmanich	Reviewer	Don Umbdentock

Comments	Line In: 120 V 60 Hz: EN55022 Class B Limits

Signal List

Signal	Freq (MHz)	Peak Amp (dBuV)	QP Amp (dBuV)	Avg Amp (dBuV)	EN55022 Class B Limits QP/Av (dBuV)	Comments
1	.343	40.3	38.2	27.2	59.5/49.5	Complies
2	.336	40.5	38.0	29.6	59.6/49.6	Complies
3	29.8	42.2	36.3	23.7	60.0/50.0	Complies
4	.202	39.0	34.6	26.4	63.5/53.5	Complies
5	.150	42.0	35.0	24.1	66.0/56.0	Complies
6	29.6	40.4	34.1	22.4	60.0/50.0	Complies

Figure 1. L1 Full Range

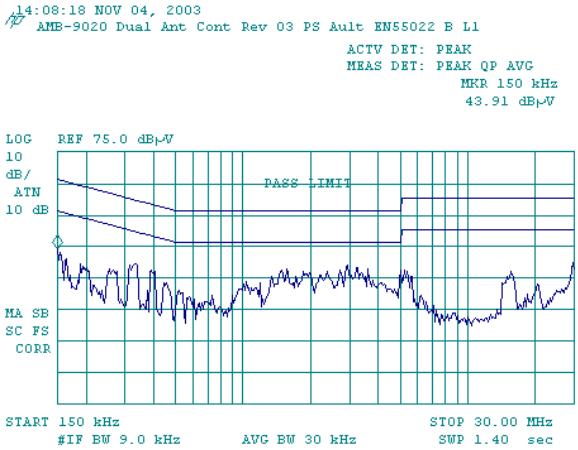
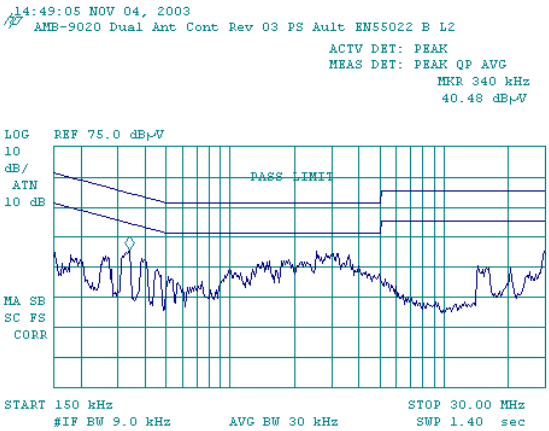


Figure 2. L2 Full Range



Part B Radiated Emissions

Project Name	Radiated Emissions	Filename	
EUT Name	AMB 2010	Serial Number	
Engineer	Steve Maitin	Phone Number	
Date of Test	December 13, 2002	Test Name	Radiated Emission
Reg. Staff	Don Umbdenstock	Reviewer	

Comments	1. Average detector specified; peak detector and associated calculations to arrive at average detector measurement used per previous FCC instructions. 2. 2 point extrapolation used. 3. Measurement distance 3 meters

Freq kHz	S.A. dBuV	Det	BW	Ant Fact dB	DCF dB	Actual dBuV/m	Limit dBuV/m
58/3	61.4 (pk)						
58/6	43.9 (pk)						
58(pwr-15%)	42.7						
58(pwr+15%)	42.7						
58	42.7	ave	9kHz	62.5	-120	-14.8	32.3/300
116	16.2	ave	9kHz	56.6	-120	-47.2	26.3/300
174	17.3	ave	9kHz	53.1	-120	-49.6	22.8/300
232	11.8	ave	9kHz	50.6	-120	-57.6	20.3/300
290	4.8	ave	9kHz	48.7	-120	-66.5	18.4/300
348	3.0	ave	9kHz	47.1	-120	-69.9	16.8/300
406	0.9	ave	9kHz	45.7	-120	-73.4	15.4/300
464	0.1	ave	9kHz	44.6	-120	-75.3	14.3/300
522	nf	qp	9kHz	43.5	-80	-26.3	33.3/30
580	21.5	qp	9kHz	42.6	-80	ambient	32.3/30

**: noise floor

SA: Spectrum Analyzer Reading

Det: Detector

BW: Band Width

Ant Fact Antenna Factor

DCF: Distance Correction Factor

Actual Corrected Reading

Part C Occupied Bandwidth

Project Name	Emissions BW Industry Canada	Filename	AMB9020_IC_ModBW_11-19-03.doc
EUT Name	AMB9020 Dual pad Deactivator	Serial Number	
Engineer	Brooks/Dewey	Phone Number	
Date of Test	11/19/2003 11:47:38 AM	Test Name	Modulation BandWidth
Reg. Technician	Stephen Krizmanich	Reviewed	Don Umbdenstock

Comments	Line Input 120vac 60hz:

Figure 1.