FCC PART 15 SUBPART C

Intentional Radiators

EVALUATION REPORT

RADIO FREQUENCY INTERFERENCE TEST

Prepared for:

SECURICOR EMS

30201 Aventura

Rancho Santa Margarita, California 92653

Product Description:

UHF Transmitter

(FCC ID: NSNEMSWPRFB)

Model:

Watch Patrol 418.00 MHz

Test Completion Date:

June 12, 2002

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1.0 LETTER OF CERTIFICATION

PDE Laboratories, Inc is accredited by the U.S. National Institute Standards Technology under NVLAP as suppliers of test results to the criteria established by ISO/IEC guide 25 and ISO 9002.

PDE Laboratories, Inc. has been validated by the Chinese Taipei Bureau of Standards, Metrology and Inspection (BSMI) under the Asia Pacific Economic Cooperation Mutual Recognition Arrangement (APEC MRA). PDE Labs is provisionally designated to act as a Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures of the APEC MRA.

PDE Laboratories, Inc is approved by TUV Product Services as a test facility testing to the EMC DIRECTIVE 89/336/EEC.

PDE Laboratories, Inc is approved as a contractor to Radio Frequency investigation LTD, a UK Competent Body and by Radio Frequency Technologies LTD, a Competent Body of Ireland.

The data, data evaluation and equipment configuration represented herein are a true and accurate representation of the test sample (EUT), and of the radio frequency susceptibility characteristics and measurements obtained as of the dates and at the times of the test under the conditions specified.

The test results provided with this report indicate that the equipment tested is **COMPLIANT** with the following Rules and Regulations:

1) The Code of Federal Regulations 47, Part 15, Subpart C for a Certified product.

Tests Performed By:

_____
Terry Reysbergen

Report Approved By:

_____
David Feher

2.0 SUMMARY OF TEST

2.1A ADMINISTRATIVE DATA

DEVICE TESTED:	Description: UHF Transmitter (418.00 MHz) Model: Watch Patrol
ACCESSORIES:	N/A
APPLICANT:	SECURICOR EMS 30201 Aventura Rancho Santa Margarita, California 92653
FCC ID:	NSNEMSWPRFB (Must appear on the product)
CONTACT:	Bob Herrick
MANUFACTURER:	SECURICOR EMS

2.1B TEST DESCRIPTION

FREQUENCY RANGES:	Conducted: 0.45 - 30.0 MHz Radiated: 30.0 - 1000 MHz
TEST LOCATION:	950 Calle Negocio, San Clemente, Calif. 92673
TEST DATES:	December 13, 1999, October 16, 2001, June 12, 2002
PURPOSE OF TEST:	To demonstrate compliance with the limits of FCC Part 15C.
TESTS PERFORMED:	1. Conducted Emissions Per ANSI C63.4. 2. Radiated emissions Per ANSI C63.4 at 3 Meters. 3. Engineering Evaluations

All Measurement Data is acquired according to the content of ANSI C63.4. The Test Site Data and performance complies with ANSI C63.4, unless supplemented with additional requirements as noted in the test report.

2.2 TEST RESULTS - CONDUCTED EMISSIONS

Conducted Emission Results - High or Supply Lead

*****Not applicable: Device internally battery powered**

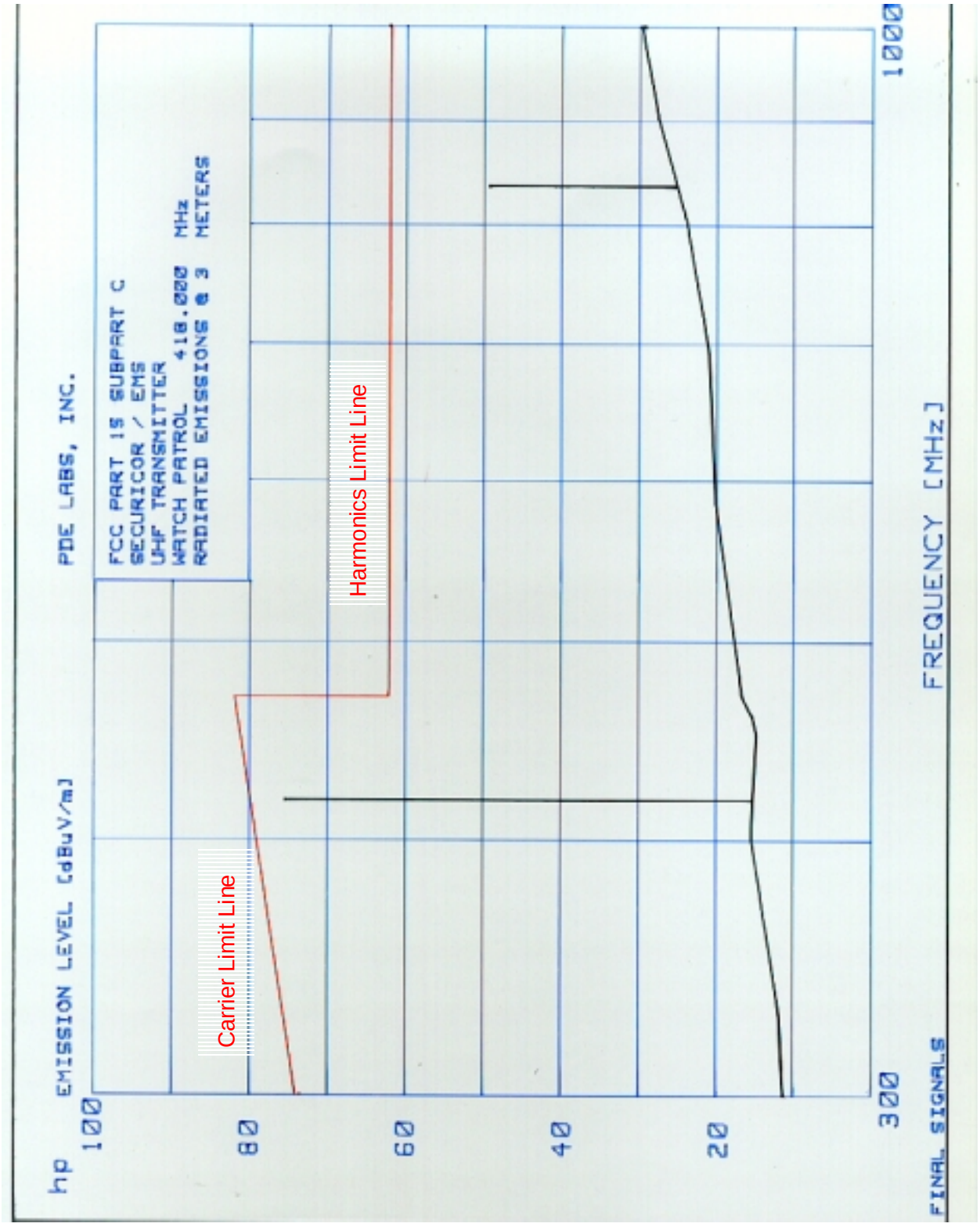
2.2 TEST RESULTS - CONDUCTED EMISSIONS

Conducted Emission Results – Low or Return Lead

*****Not applicable: Device internally battery powered**

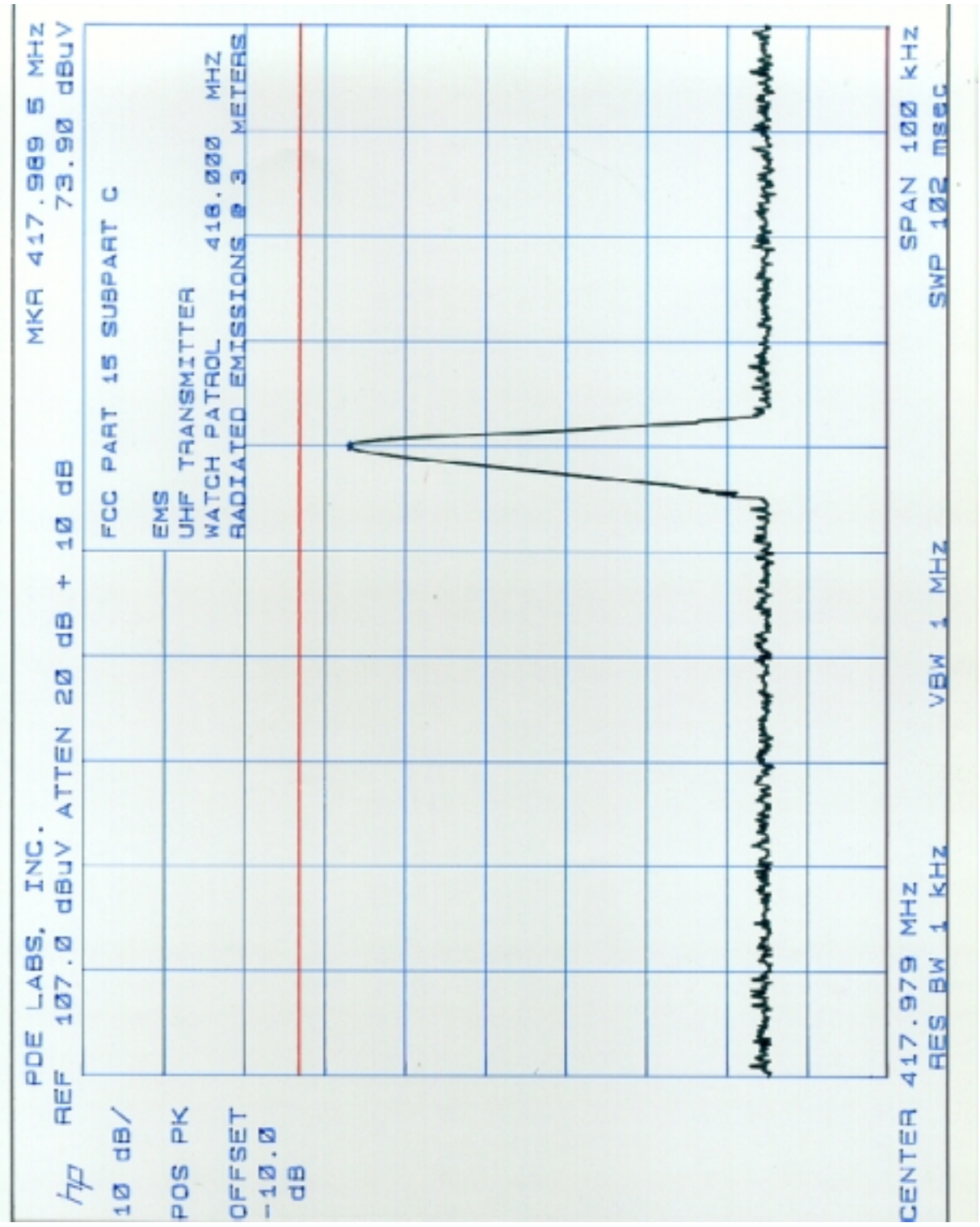
2.3 TEST RESULTS - RADIATED EMISSIONS

Measurements taken at 3 Meters.



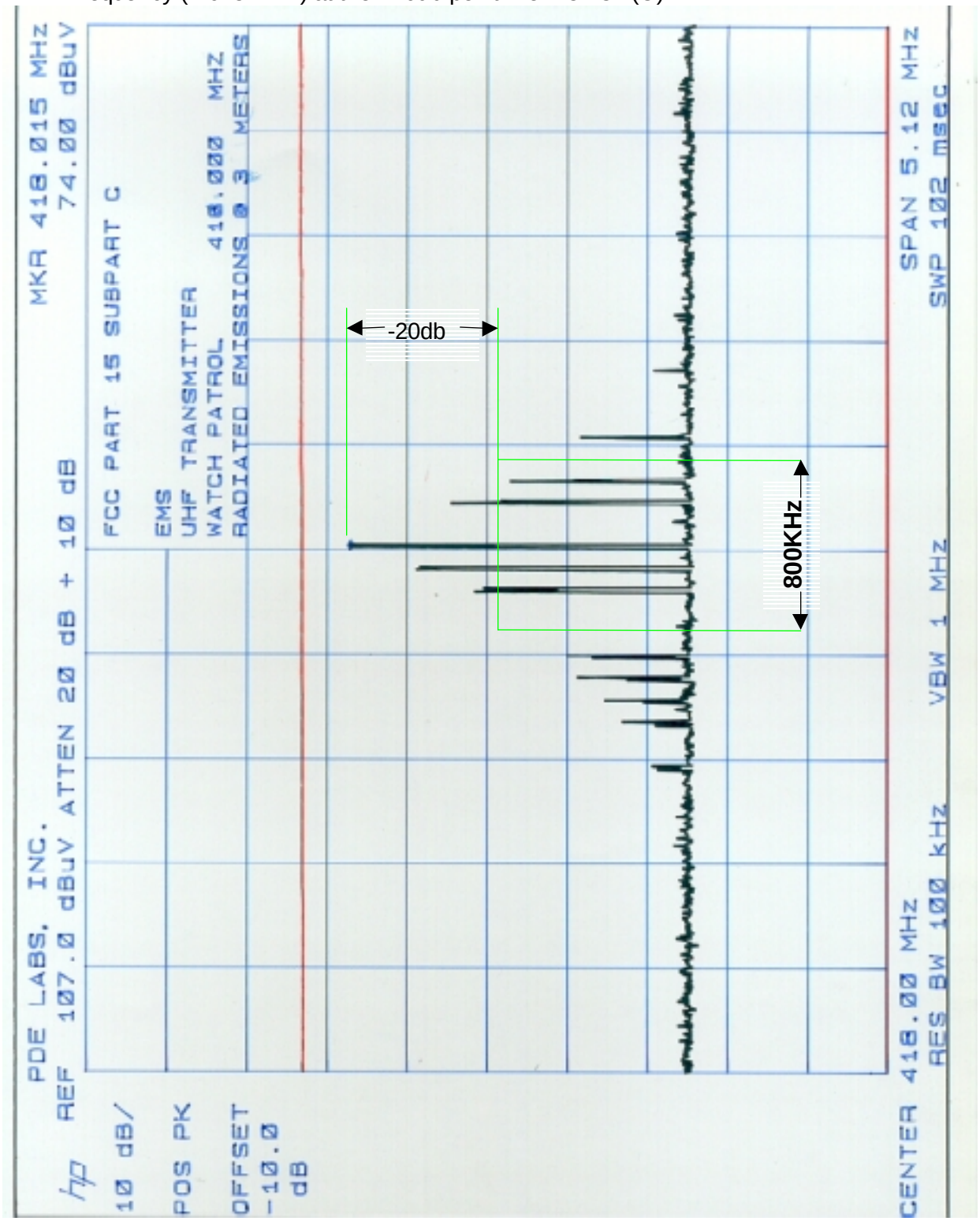
2.3 TEST RESULTS

Periodic Intentional Radiator Carrier emission at 418MHz is 95.3dbuV/m or 6.207 micro watt



2.3 TEST RESULTS

The bandwidth of the emission shall be no wider than .25% of the 418MHz carrier frequency (1.045 MHz) at the –20db point. Per 15.231 (C).



PRODUCT RADIATED EMISSIONS

PRODUCT EMISSIONS

FCC PART 15 SUBPART C Data File: FINALS 24 JUN 2002 00:35

No	EMISSION FREQUENCY MHz	SPEC LIMIT dBuV/m	MEASUREMENTS ABS	dLIM dB	MODE	POL	SITE HGT cm	AZM deg	CORR FACTOR dB	COMMENTS
1	418.031	79.9	75.3	-4.6	PK	H	100	0	-0.2	
2	836.000	61.9	49.2	-12.7	PK	H	100	0	9.	
3	1254.00	61.9	34.5	-27.4	PK	H	100	0	16.6	
4	1672.00	61.9	39.2	-22.7	PK	H	100	0	20.7	

NOTE: No emissions were detected from the 4th harmonic and above.

2.4 MODIFICATIONS

None required to demonstrate compliance. Product compliant as tested.

2.5 INTENT TO INCORPORATE ENGINEERING REWORK (If required by 2.4 above)

INTENT TO INCORPORATE ENGINEERING REWORK

This is a letter of Intent to Incorporate the Engineering Rework as described in the above referenced PDE Laboratories. Test Report, Section 2.4, to achieve compliance with the intent of the testing as documented. I, the undersigned have the responsibility for marketing the device tested, and have implemented procedures to monitor the quality of the product (device tested), during continued manufacturing processes and possible product changes or enhancements, and take the responsibility to monitor continued compliance through periodic re-testing during the life of product (device tested), and re-testing any new configuration which might alter the status of the product's continued compliance to the applicable Rules and Regulations.

[NOT APPLICABLE FOR THIS TEST REPORT]

_____

Signature Date

_____

Name

_____

Title

2.6 RECOMMENDATIONS

None. Refer to paragraph 2.4 for any applicable comments.

3.0 DESCRIPTION OF EUT CONFIGURATION

3.1 SKETCH OF EQUIPMENT AND CABLE CONFIGURATION

NOTE:

This product is a physically autonomous product that has no physical connection to external devices. See photos for details of product. This product does interact with a mating receiver to complete the system in which it is a representative part.

This product was tested and evaluated at all harmonics of the internal Local oscillator frequency to the 10th at 4.18 GHz. NO EMISSIONS WERE DETECTED ABOVE 1672.00 MHz.

3.2 DESCRIPTION OF EUT AND PERIPHERAL EQUIPMENT

3.2.1 DESCRIPTION OF EUT

The EUT is a SECURICOR EMS UHF Transmitter Model: Watch Patrol It is completely self-contained including an internal battery power supply. All components comprising the transmitter are contained within the external enclosure which resembles a wristwatch. The internal antenna and all other components are not accessible to the user or other non-technical personnel.

Equipment:	UHF Transmitter (418.00 MHz)
Manufacturer:	SECURICOR EMS
Model No.:	Watch Patrol
Serial No.:	N/A
FCC ID:	NSNEMSWPRFB

Internal Frequencies:	418.00, plus or minus for the Local Oscillator heterodyne action

Power Supply: N/A Internal Power Supply (battery powered)

RFI Suppression Features:

Powerline Filter:	N/A
Ferrite Chokes:	N/A

Internal Components: N/A

Equipment:	N/A
Manufacturer:	
Model No.:	
Serial No.:	
Located:	

3.2.2 DESCRIPTION OF PERIPHERAL EQUIPMENT

1) Equipment N/A
Manufacturer:
Model No.:
Serial No:

3.3 TYPES OF CABLES USED:

Power Cords

1) Unit: N/A
Manufacturer:
Shielded:
Length:

I/O Cables - External

1) Connection: N/A
Manufacturer:
Shielded:
Connectors:
Length:

3.4 OPERATING MODES

The SECURICOR EMS 's UHF Transmitter, Model: Watch Patrol operated continuously during all tests. The product was placed in a forced continuous data-burst mode to allow for reliable and repeatable measurements. Once the fundamental parameters of the output databurst were determined, operation was returned to normal to allow for calculation, if required, of the output RF energy level. Due to the extremely low output power, no additional calculations were necessary which would have been intended to allow for waveform duty cycle.

Absolute emission level measurements were made with various orientations of the unit relative to the receiving antenna. Prior to actual OATS testing, a near-field RF probe was used to exhaustively survey the EUT for their internal Local Oscillator and clock frequencies. The emissions were quite weak.

All final data was taken with the EUT in the above mode of operation. The position of the peripherals (if required in the test set up) and interconnect cables (if required in the test set up) were varied to provide generally the highest emissions prior to the final tests.

Absolute emission level measurements were made in an automatic orientation fashion such that the EUT was uniquely positioned for each of the significant emissions detected in the prescan evaluation. Those data are hereby recorded.