TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Partial Test of: XT3418

To: FCC Part 22: 2008 Subpart H and Part 24: 2008 Subpart E

Test Report Serial No:
RFI/RPT1/RP75527JD12B

This Test Report Is Issued Under The Authority Of Brian Watson, Operations Director:	pp 
Checked By:	Robert Graham
Signature:	
Date of Issue:	30 September 2009

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1. Customer Information

Company Name:	Pro Tech Monitoring inc.
Address:	1838 Gunn Highway Odessa, Florida 33556

2. Summary of Testing

2.1. General Information – FCC Part 22

Specification Reference:	47CFR22
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2008: Part 22 Subpart H (Public Mobile Services)
Specification Reference:	47CFR24
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2008: Part 24 Subpart E (Personal Communication Services)
Site Registration:	FCC: 209735
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	04 September 2009

2.2. Summary of Test Results

FCC Reference (47CFR)	Measurement	Port Type	Result
Part 22.913(a)	Transmitter Effective Radiated Power (ERP)	Antenna	✓
Part 24.232	Transmitter Effective Isotropic Radiated Power (EIRP)	Antenna	✓

Key to Results

✓ = Complied ✗ = Did not comply

2.3. Methods and Procedures

Reference:	ANSI/TIA-603-C-2004
Title:	Land Mobile Communications Equipment, Measurements and performance Standards

2.4. Deviations from the Test Specification

Only the testing of transmitter ERP in the GSM850 band and EIRP in the PCS1900 was performed.

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

Brand Name:	X-Tech
Model Name or Number:	XT3418
Serial Number:	36984440
IMEI Number:	01152600026127207
Hardware Version Number:	A00.00
Software Version Number:	5.0.0.14
FCC ID:	NC3FTD3418

Description:	AC Charger
Brand Name:	Elmo Tech
Model Name or Number:	SE120100
Serial Number:	None Stated

3.2. Description of EUT

The equipment under test was a GSM/GPRS/GPS tracker fitted with a 418 MHz transceiver.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing

Technology Tested:	GSM850 & PCS1900		
Type of Radio Device:	Transceiver		
Mode:	GSM/GPRS		
Maximum Output Power (ERP):	GSM	14.1 dBm	
	GPRS	13.0 dBm	
Transmit Frequency Range:	824 to 849 MHz		
Transmit Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	128	824.2
	Middle	190	836.6
	Top	251	848.8
Maximum Output Power (EIRP):	GSM	13.5 dBm	
	GPRS	11.4 dBm	
Transmit Frequency Range:	1850 to 1910 MHz		
Transmit Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	512	1850.2
	Middle	660	1879.8
	Top	810	1909.8

3.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

Description:	Infra Red Wireless Interface
Brand Name:	ACTiSYS
Model Name or Number:	ACT-IR220LN57
Serial Number:	LN001248

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

The EUT was tested in the following operating mode(s):

- EUT was tested in GSM single timeslot circuit switched and GPRS Multislot Class 8 with the unit transmitting on single timeslots in the uplink.
- Constantly transmitting at full power on bottom, middle and top channels as required.

4.2. Configuration and Peripherals

The EUT was tested in the following configuration(s):

- Connected to a GSM/GPRS system simulator, operating in transceiver mode.

5. Measurements, Examinations and Derived Results

5.1. General Comments

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to *Section 6. Measurement Uncertainty* for details.

5.2. Test Results – FCC Part 22

5.2.1. Transmitter Effective Radiated Power (ERP)

Test Summary:

FCC Part:	22.913(a)
Test Method Used:	As detailed in ANSI TIA-603-C-2004 Section 2.2.17.2

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	29

Results: GSM

Channel	Measured Frequency (MHz)	Antenna Polarity	Maximum Transmitter (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	824.2	Horizontal	13.7	38.5	24.8	Complied
Middle	836.4	Horizontal	13.6	38.5	24.9	Complied
Top	848.8	Horizontal	14.1	38.5	24.4	Complied

Results: GPRS

Channel	Measured Frequency (MHz)	Antenna Polarity	Maximum Transmitter (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	824.2	Horizontal	12.7	38.5	25.8	Complied
Middle	836.4	Horizontal	12.7	38.5	25.8	Complied
Top	848.8	Horizontal	13.0	38.5	25.5	Complied

Note(s):

1. Measurements were performed with the test antenna in the vertical and horizontal planes and the EUT in the X, Y and Z planes. The highest level was recorded.

5.2.2. Transmitter Equivalent Isotropic Radiated Power (EIRP)

Test Summary:

FCC Part:	24.232
Test Method Used:	As detailed in ANSI TIA-603-C-2004 Section 2.2.17.2

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	29

Results: GSM

Channel	Measured Frequency (MHz)	Antenna Polarity	Maximum Transmitter (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	1850.2	Horizontal	13.5	33.0	19.5	Complied
Middle	1879.8	Horizontal	13.2	33.0	19.8	Complied
Top	1909.8	Horizontal	11.0	33.0	22.0	Complied

Results: GPRS

Channel	Measured Frequency (MHz)	Antenna Polarity	Maximum Transmitter (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	1850.2	Horizontal	11.4	33.0	21.6	Complied
Middle	1879.8	Horizontal	10.2	33.0	22.8	Complied
Top	1909.8	Horizontal	9.8	33.0	23.2	Complied

Note(s):

1. Measurements were performed with the test antenna in the vertical and horizontal planes and the EUT in the X, Y and Z planes. The highest level was recorded.

6. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
Effective Radiated Power (ERP)	Not applicable	95%	±2.94 dB
Equivalent Isotropic Radiated Power (EIRP)	Not applicable	95%	±2.94 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A1534	Pre Amplifier	Hewlett Packard	8449B OPT H02	3008A00405	Calibrated before use	12
A1818	Antenna	EMCO	3115	00075692	25 Oct 2008	12
A288	Antenna	Chase	CBL6111A	1589	13 Mar 2009	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	01 Sep 2009	12
L0990	Comms Test Set	R&S	CMU 200	S220447	18 Feb 2009	12
M1124	Spectrum Analyser	Rohde & Schwarz	ESIB26	100046K	09 Mar 2009	12

NB In accordance with UKAS requirements all the measurement equipment is on a calibration schedule.