



TEST REPORT FROM RFI GLOBAL SERVICES LTD

Partial Testing of: Tempus IC 00-1001

To: FCC Part 22: 2008 Subpart H, FCC Part 24: 2008 Subpart E,
RSS 132 Issue 2 September 2005 and RSS-133 Issue 5 February 2009

Test Report Serial No:
RFI/RPT2/RP75697JD03A

Version 2 Supersedes all Previous Versions

This Test Report Is Issued Under The Authority Of Brian Watson, Operations Director:	
	
Checked By:	Rob Graham
Signature:	 pp
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1. Customer Information





Company Name:	Remote Diagnostic Technologies Ltd
Address:	The Old Coach House The Avenue Farleigh Wallop Basingstoke Hampshire RG25 2HT United Kingdom

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)
Specification Reference:	RSS-132 Issue 2 Sep 2005
Specification Title:	Cellular Telephones Employing New Technologies Operating in the Bands 824-849 MHz and 869-894 MHz
Specification Reference:	RSS-133 Issue 5 Feb 2009
Specification Title:	2 GHz Personal Communications Services
Specification Reference:	SRSP-503 Issue 7 Sep 2008
Specification Title:	Technical Requirements for Cellular Radiotelephone Systems Operating in the Bands 824 – 849 MHz and 869 – 894 MHz
Specification Reference:	SRSP-510 Issue 5 Feb 2009
Specification Title:	Technical Requirements for Personal Communications Services (PCS) in the Bands 1850-1915 MHz and 1930-1995 MHz
Site Registration:	FCC: 209735; Industry Canada: 3245B-2
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	06 October 2009 to 07 October 2009

2.2. Summary of Test Results – FCC Part 22

FCC Reference (47CFR)	IC Reference	Measurement	Port Type	Result
Part 22.913(a)	RSS-132 4.4 SRSP-503 5.1.3	Transmitter Effective Radiated Power (ERP)	Antenna	
Part 24.232	RSS-133 6.4 SRSP-510 5.1.2	Transmitter Equivalent 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 measurements of ERP in the GSM850 band and EIRP in the PCS1900 band were performed were performed

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

Description:	Patient Monitor
Brand Name:	Tempus IC™
Model Name or Number:	00-1001
Serial Number:	000233
IMEI Number:	35202402170957505
Industry Canada Certification Number:	7845A-TEMPUSIC
FCC ID Number:	ROSTEMPUSIC-1

Description:	AC Charger
Brand Name:	Cincon Electronics
Model Name or Number:	TR60M12
Serial Number:	60120-0001218

3.2. Description of EUT

The equipment under test was a patient monitor which comprises off-the-shelf modules for wireless communications; these include a WiFi SD card (Socket Communications GoWiFi P320), *Bluetooth* module (Bluegiga WT11) and a MC55i Wireless Quad-Band GSM/GPRS module.

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		
Mode:	GSM/GPRS		
Maximum Output Power (ERP):	GSM	20.5 dBm	
	GPRS	19.1 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

Technology Tested:	PCS1900		
Mode:	GSM/GPRS		
Maximum Output Power (EIRP):	GSM	26.6 dBm	
	GPRS	26.6 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:	Laptop
Brand Name:	Dell
Model Name or Number:	Latitude D610
Serial Number:	None Stated

Description:	USB Keyboard
Brand Name:	None Stated
Model Name or Number:	None Stated
Serial Number:	None Stated

Description:	USB Mouse
Brand Name:	None Stated
Model Name or Number:	None Stated
Serial Number:	None Stated

Description:	Ethernet Router
Brand Name:	Belkin
Model Name or Number:	None Stated
Serial Number:	None Stated

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

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

- Constantly transmitting at full power on bottom, centre and top channels as required.

4.2. Configuration and Peripherals

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

- . EUT was tested standalone with all the ports terminated with accessories.

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

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):	28
Relative Humidity (%):	33

Results: GSM

Channel	Frequency (MHz)	Antenna Polarity	ERP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	824.2	Vertical	16.5	38.5	22.0	Complied
Middle	836.4	Vertical	17.2	38.5	21.3	Complied
Top	848.8	Vertical	20.5	38.5	18.0	Complied

Results: GPRS

Channel	Frequency (MHz)	Antenna Polarity	ERP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	824.2	Vertical	15.1	38.5	23.4	Complied
Middle	836.4	Vertical	16.4	38.5	22.1	Complied
Top	848.8	Vertical	19.1	38.5	19.4	Complied

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):	27
Relative Humidity (%):	41

Results: GSM

Channel	Frequency (MHz)	Antenna Polarity	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	1850.2	Horizontal	26.6	33.0	6.4	Complied
Middle	1879.8	Horizontal	25.3	33.0	7.7	Complied
Top	1909.8	Horizontal	22.7	33.0	10.3	Complied

Results: GPRS

Channel	Measured Frequency (MHz)	Antenna Polarity	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	1850.2	Horizontal	26.6	33.0	6.4	Complied
Middle	1879.8	Horizontal	25.3	33.0	7.7	Complied
Top	1909.8	Horizontal	22.7	33.0	10.3	Complied

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)
A1392	Attenuator	Huber + Suhner	757456	6820.17.B	Calibrated before use	-
A1534	Pre Amplifier	Hewlett Packard	8449B OPT H02	3008A00405	Calibrated before use	-
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
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.