

TEST REPORT FROM RFI GLOBAL SERVICES LTD

Partial Testing of: Tempus IC 00-1001

To: FCC Part 15.247: 2008 Subpart C, RSS-210 Issue 7 June 2007
& RSS-Gen Issue 2 June 2007

Test Report Serial No:
RFI/RPT3/RP75697JD03B

Supersedes Test Report Serial No:
RFI/RPT2/RP75697JD03B

**This Test Report Is Issued Under The Authority
Of Brian Watson, Operations Director:**



Checked By:	Rob Graham
Signature:	 pp
Date of Issue:	08 March 2010

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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

Specification Reference:	47CFR15.247
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2008: Part 15 Subpart C (Radio Frequency Devices) - Section 15.247
Specification Reference:	RSS-210 Issue 7 June 2007
Specification Title:	Low-power Licence-exempt Radio communication Devices (All Frequency Bands): Category I Equipment.
Specification Reference:	RSS-GEN Issue 2 June 2007
Specification Title:	General Requirements and Information for the Certification of Radio communication Equipment
Site Registration:	FCC: 209735; Industry Canada: 3245B-2
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	07 October 2009

2.2. Summary of Test Results

FCC Reference (47CFR)	IC Reference	Measurement	Port Type	Result
Part 15.247(b)(3)	RSS-Gen 4.8 RSS-210 A8.4(2)	Transmitter Maximum Peak Output Power	Antenna	
Key to Results				
 = Complied  = Did not comply				

2.3. Methods and Procedures

Reference:	ANSI C63.4 (2003)
Title:	American National Standard Methods of Measurement of Electromagnetic Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
Reference:	DA00-705 (2000)
Title:	Filing and Frequency Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

2.4. Deviations from the Test Specification

Only measurements of Transmitter Maximum Peak Output Power in Bluetooth and WiFi modes 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:	Bluetooth		
Mode:	Basic Rate		
Maximum Output Power (EIRP):	4.9 dBm		
Transmit Frequency Range:	2400 to 2483.5 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	0	2402
	Middle	39	2441
	Top	78	2480

Technology Tested:	WiFi		
Mode:	802.11b		802.11g
Data Rates:	11 Mbps		54 Mbps
Maximum Output Power (EIRP):	4.9 dBm		
Transmit Frequency Range:	2400 to 2483.5 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	1	2412
	Middle	6	2437
	Top	11	2462

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):

- 802.11b and g were tested with the EUT transmitting on top, middle and bottom channels as required.

The modes tested were those that presented the maximum output power for the conditions tested at the time of test. It must be noted that as all transmitter modules are integrated and now co-existing within a host, the powers measured may not reflect those that are reported on any existing reports that reflect individual module testing.

- Bluetooth was tested with the EUT transmitting DH5 packets at maximum power.

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 Maximum Peak Output Power (EIRP)

Test Summary:

FCC Part:	15.247(b)(3)
Test Method Used:	As detailed in Public Notice DA 00-705 (March 30, 2000)

Environmental Conditions:

Temperature (°C):	27
Relative Humidity (%):	42

Results: Bluetooth

Channel	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	2.1	30.0	27.9	Complied
Middle	3.6	30.0	26.4	Complied
Top	4.9	30.0	25.1	Complied

Results: 802.11b

Channel	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	-1.0	30.0	31.0	Complied
Middle	-2.8	30.0	32.8	Complied
Top	-2.7	30.0	32.7	Complied

Results 802.11g:

Channel	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	4.9	30.0	25.1	Complied
Middle	4.0	30.0	26.0	Complied
Top	3.5	30.0	26.5	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
Transmitter Maximum Peak Output Power	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.