

REPORT: **FCC / IC Radio Frequency (RF) test report**
This report replaces the old test report: T08-691C-RF

PRODUCT:

Test item description:	Team2 Base Station
Trade Mark:	Polar
Model/Type reference:	Team2 Base Station Pro
Serial number:	F816N80200043
Customer:	Polar Electro Oy Professorintie 5 90440 Kemple FINLAND
Contact person:	Kari Parkkisenniemi
Manufacturer:	Polar Electro Oy Professorintie 5 90440 Kempele FINLAND

DATE: **11.12.2008**
Corrected date **12.12.2008**

TESTED BY:



Päivi Punta ; Test engineer

APPROVED BY:



Tuomo Hahl ; Test engineer

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1 LABORATORY INFORMATION

Test Laboratory	Intertek ETL Semko OY EMC Laboratory Koneenkatu 12 / K17 05830 Hyvinkää FINLAND Tel: +358 10 424 6200 Fax: +358 10 424 6201 e-mail: firstname.surname@intertek.com
FCC registration number: IC file number:	910391 (January 27, 2003) IC 2042C-1 (May 14, 2003)

2 CUSTOMER INFORMATION

Client	Kari Parkkisenniemi Polar Electro Oy Professorintie 5 90440 Kempele FINLAND
Contact person:	Kari Parkkisenniemi Polar Electro Oy Professorintie 5 90440 Kempele FINLAND
Receipt of EUT:	December 10. 2008
Testing date:	December 10. 2008
Report date:	December 11. 2008

The tests listed in this report have been done to demonstrate compliance to the FCC rules section §15.107, §15.109, §15.247 and IC standard RSS-GEN / RSS-210.

3 SUMMARY OF TEST RESULTS

Transmitter measurements

Section in CFR 47	Section in RSS-210	Test	Result
15.247, a 1	A8.1 (2)	Carrier frequency separation	-
15.247, a 1 iii	A8.1 (4)	Number of hopping frequencies	-
15.247, a 1 iii	A8.1 (4)	Time of occupancy	-
15.247, a	A8.1 (1)	20dB bandwidth	-
15.247, b 1	A8.4 (2)	Peak output power	PASS
15.247, d	A8.5	Band-edge compliance of RF emissions	-
15.247, d	A8.5	Spurious RF conducted emissions	-
15.247, d	A8.5	Spurious radiated emissions	-

PASS Pass
 FAIL Fail
 X Measured, but there is no applicable performance criteria
 - Not done

4 EUT INFORMATION

The EUT and accessories used in the tests are listed below. Later in this report only EUT numbers are used as reference.

	Device	Type	S/N	EUT number
EUT	Team2 Base Station Pro	Base Station	F816N80200043	69101*
Accessories	Switching power Adapter	PSC30R-180-R	-	69102

Notes:

* Antenna replaced with SMA-connector

4.1 EUT description

The EUT is a part of Team2 system. The EUT is a stand alone unit which is used to measure heart rate and send the data with two different wireless technologies. EUT uses Bluetooth-technology to connect Base Station and Polar 5,46 kHz protocol to send data to polar wrist receiver.

EUT uses certified WT11 Bluetooth module. FCC ID QQQWT11

The EUT was not modified during the tests.

5 EUT TEST SETUPS

For each test the EUT was exercised to find out the worst case of operation modes and device configuration.

Two different test setups were used: one for conducted measurements, another for radiated measurements. One EUT was equipped with an external antenna connector for conductive measurements.

The test setup photographs are in the document referenced in section 9.

6 APPLICABLE STANDARDS

The tests were performed in guidance of:

CFR 47 Part:

§15.247

IC standard:

RSS-GEN, Issue 1

RSS-210, Issue 7

Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method" for each test case.

7 PEAK OUTPUT POWER

EUT	69101		
Accessories	69102		
Temp, Humidity, Air Pressure	19 °C	27 RH%	1007 hPa
Date of measurement	10.12.2008		
FCC rule part	15.247		
RSS-210 section	A8.4		
Measured by	Päivi Punta		

7.1 Test setup and measurement method



Picture 1: Test setup for conducted RF output power measurement

In the peak output power measurement the power splitter and cable attenuations were measured prior to the power measurement and set as parameter for cable loss in the spectrum analyzer to correct the reading of the peak output power. Spectrum analyzer subtracts the set attenuation value from the measured reading. The measurement was made using 3 MHz resolution bandwidth and 3 MHz video bandwidth and maximum hold function to record the maximum peak output power.

7.2 EUT operation mode

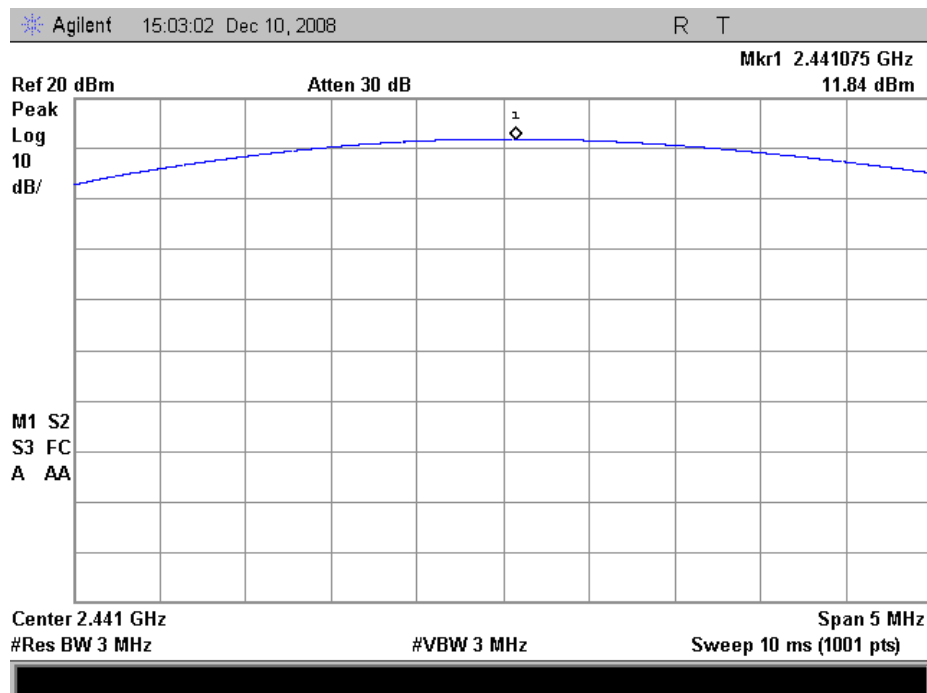
EUT operation mode	Connection, Bluetooth
EUT channel	2441 MHz
EUT TX power level	max

7.3 Results

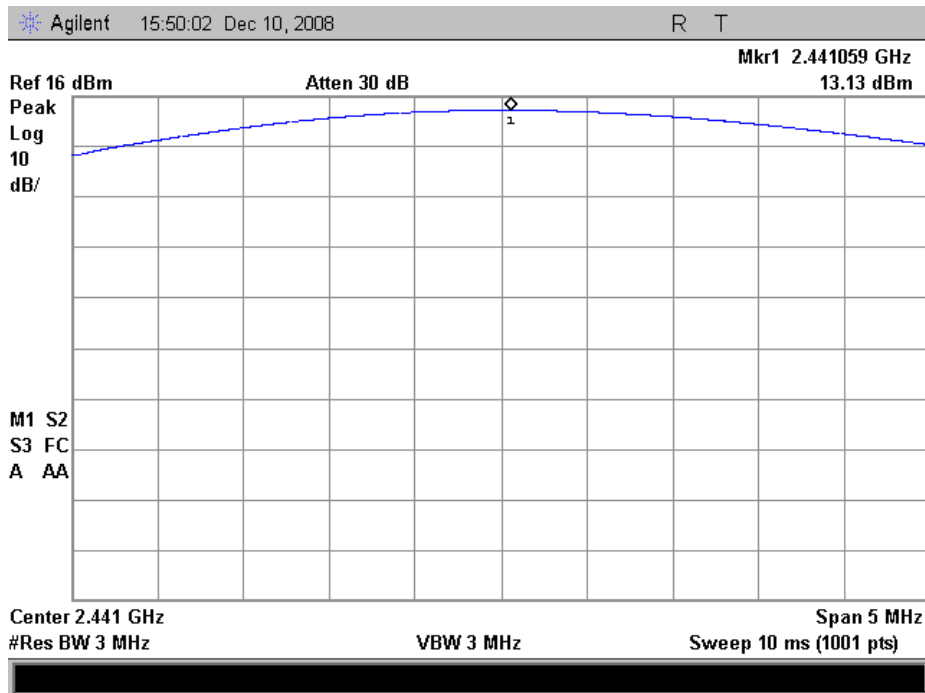
Table 1: Peak output power measurement results

EUT Channel	Limit (W)	Test result (W)	Limit (dBm)	Test result (dBm)
2441 MHz	≤ 1	0,015	≤ 30	11,8
2441 MHz		0,020		13,3
2441 MHz		0,006		7,5
2441 MHz		0,015		11,7

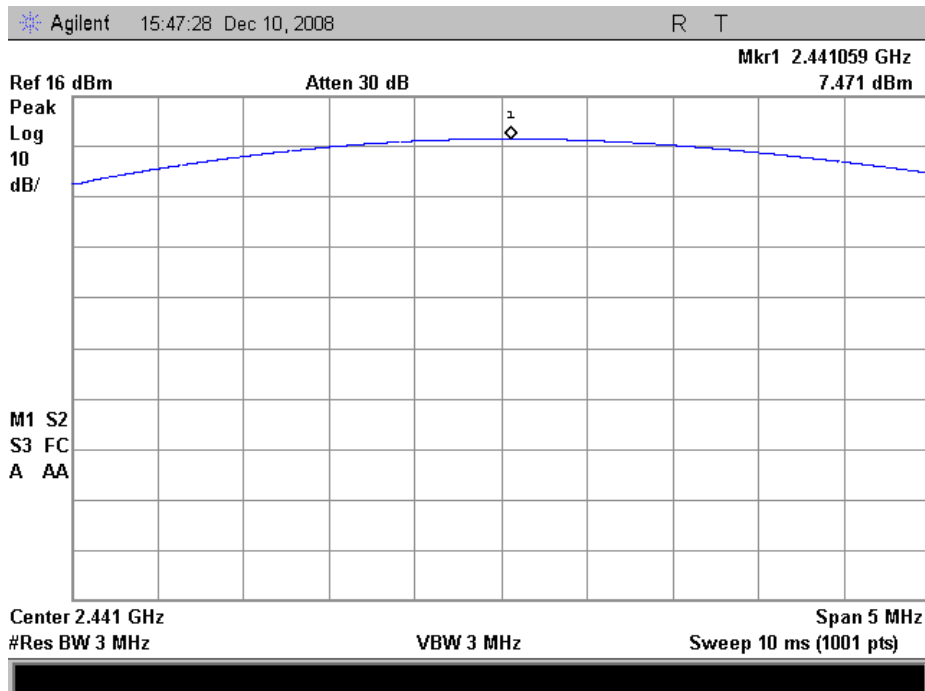
7.4 Screen shots



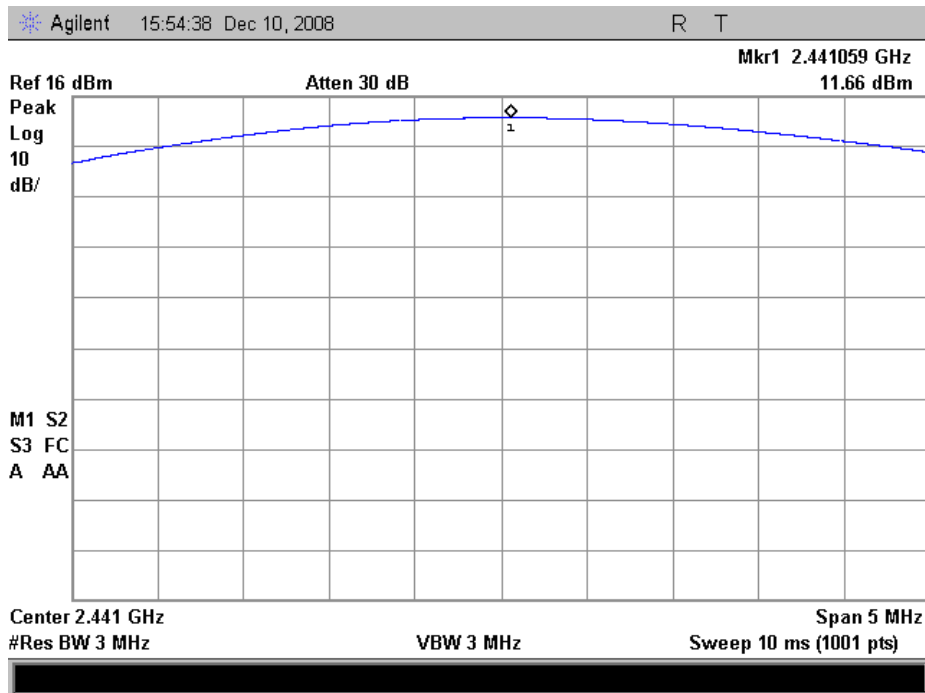
Picture 2: Peak output power, place 1



Picture 3: Peak output power, place 2



Picture 4: Peak output power, place 3



Picture 5: Peak output power, place 4

7.5 EUT operation mode

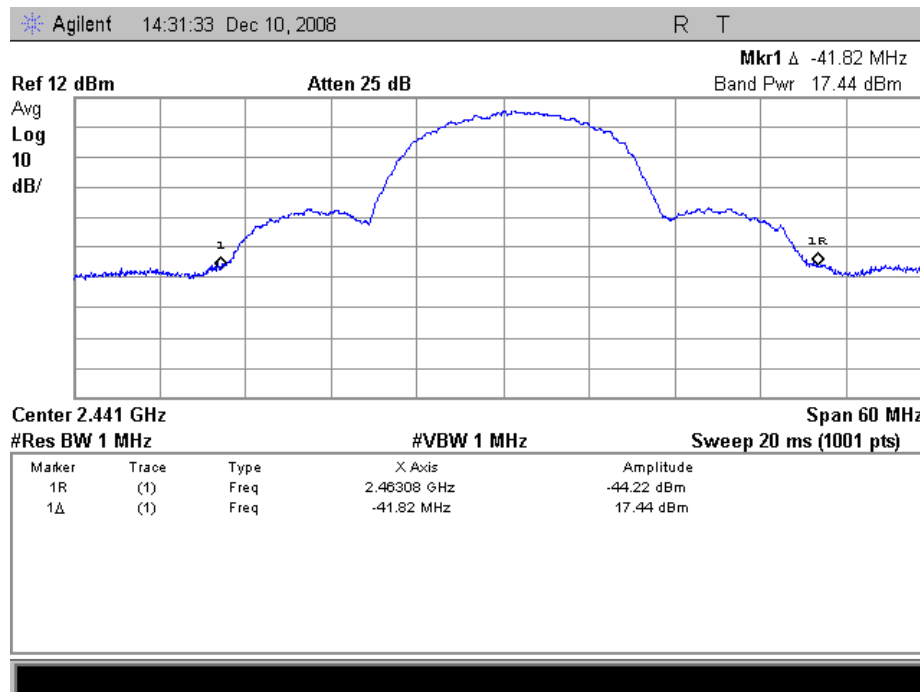
EUT operation mode	Connection WLAN
EUT channel	2441 MHz
EUT TX power level	max

7.6 Results

Table 2: Peak output power measurement results

EUT Channel	Limit (W)	Test result (W)	Limit (dBm)	Test result (dBm)
2441 MHz	≤ 1	0,055	≤ 30	17,4

7.7 Screen shots



Picture 6: Peak output power, 2441 MHz

8 TEST EQUIPMENT

All testing and measurement equipment has been calibrated once a year, except the antennas which are calibrated every two years.

8.1 Conducted measurements

Equipment	Manufacturer	Model
Spectrum Analyzer	Agilent	E7405A

9 TEST SETUP PHOTOGRAPHS

Test setup photograph can be found in a separate document

T08-691D-RF_PHOTOS.doc