TEST REPORT

Report Number: 3107210ATL-001

February 7, 2007

Product Designation: BioTransceiver 2.4 GHz

Standard: FCC Part 15.249: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHZ, and 24.0-24.25 GHz.
RSS-210 Issue 6 September 2005

Tested by:
Intertek Testing Services NA Inc.
1950 Evergreen Blvd., Suite 100
Duluth, GA 30096

Client:
BodyMedia, Inc.
4 Smithfield Street
Suite 1200
Pittsburgh, PA 15222
Contact: Scott Boehmke
Phone: 412.288.9901
Fax: 412.288.9902

Tests performed by:

Shawn K. McGuinness
EMC Project Engineer

Report reviewed by:

David J. Schramm
EMC Department Manager

1.0 Introduction and Conclusion

The tests indicated in section 2.0 were performed on the product constructed as described in section 3.0. The remaining test sections are the verbatum text from the actual data sheets used during the investigation. These test sections include the test name, the specified test Method, a list of the actual Test Equipment Used, documentation Photos, Results and raw Data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.

Based on the results of our investigation, we have concluded the product tested complies with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested.

2.0 Test Summary

Section	Test Full Name	Test Date	Result
4.0	System setup including cable interconnection details, support equipment and simplified block diagram. (System Setup)		
5.0	Overview of EUT (Low Power Transmitters) (FCC 15C - EUT Overview)		
6.0	Duty Cycle Determination (FCC 15A - 15.35(c))	10/16/2006	
7.0	Conducted emissions on AC power lines (Conducted Emissions)	10/31/2006	PASS
8.0	Radiated emissions (E-field) (Radiated Emissions)	10/30/2006	PASS
9.0	Radiated emissions (E-field) (Radiated Emissions)	12/03/2006	
10.0	Revision History (Revision History)		
NA	15.249(b): Requirements for fixed, point-to-point operation (FCC 15C - 15.249(b)) was waived due to EUT not for point-to-ponit operation		

3.0 Description of Equipment Under Test

Equipment Under Test			
Description	Manufacturer	Model Number	Serial Number
Wireless Data Communicator	BodyMedia, Inc.	BioTransciever 2.4 GHz	Prototype

EUT receive date:	10-12-2006
EUT receive condition:	Prototype

Description of EUT provided by Client:
The EUT is a wireless data communicator used to transmit physiological data to a central data collection point. The processor has an integrated 2.4GHz RF transceiver. It is a synthesizer baser transceiver with a 26MHz 10ppm crystal source which serves as the clock source for the CPU, serial port, Serial EEPROM and the 2.4GHz radio. The transceiver is intended to operate with < 1mW output power at the antenna.

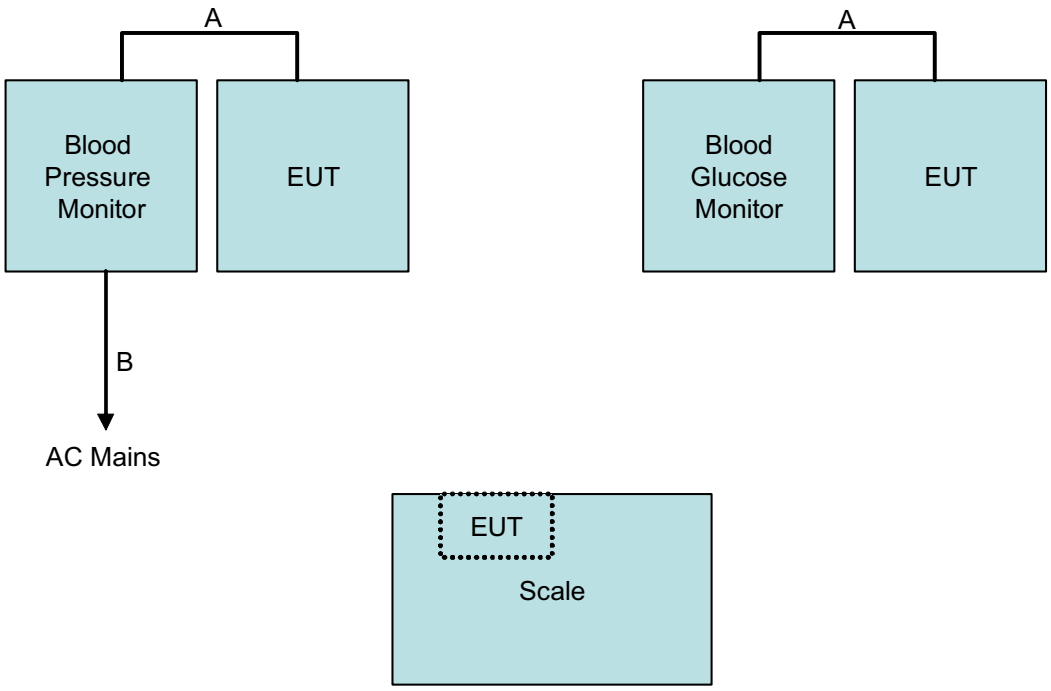
Description of EUT exercising:
The EUT was tested in both receive and transmit mode. When tested in transmit mode the EUT was tested in its low, mid, and high channel setting. EUT transmit output power was set to its maximum programmable setting.

4.0 System setup including cable interconnection details, support equipment and simplified block diagram. (System Setup)

Method:

Record the details of EUTcabling, document the support equipment, and show the interconnections in a block diagram.

Photo:



Setup Block Diagram

4.0 System setup including cable interconnection details, support equipment and simplified block diagram. (System Setup)

Data:

EUT Cabling						
					Connection	
ID	Description	Length	Shielding	Ferrites	From	To
A	Interface cable	25 cm	None	None	EUT	Support Equipment
B	Power cable	1.8 m	None	None	Support Equipment	AC mains

Support Equipment			
Description	Manufacturer	Model Number	Serial Number
Blood Pressure Monitor	Omron	HEM-705CP	4803396L
Glucose Monitor	LifeScan, Inc.	OneTouch Ultra	Not Labeled
Weight Scale	Tanita	HD-351	540513

5.0 Overview of EUT (Low Power Transmitters) (FCC 15C - EUT Overview)

Method:

Complete the overview spreadsheet.

Related Submittal(s) Grants: This report is for use with an application for certification of a low power transmitter. One transmitter is included in the application.

Data:

Applicant	BodyMedia, Inc.
	4 Smiths Street, Suite 1200
	Pittsburg, PA 15222
Trade Name & Model No.	BioTransciever
FCC Identifier	PV8XXXXX (TBD)
Use of product	Quantity production is planned.
Transmitter activation	☑ Automatically activated
	☑
	Periodic transmissions
Frequency Range (MHz)	2400 to 2483.5 MHz
Antenna Type (15.203)	Internal board mounted
Manufacturer name & address	BodyMedia, Inc.
	4 Smiths Street, Suite 1200
	Pittsburg, PA 15222

Related Submittals and Grants:	This report is for use with an application for certification of a low power transmitter. One transmitter is included in the application.
Additions, deviations and exclusions from standards	None

6.0 Duty Cycle Determination (FCC 15A - 15.35(c))

Method:

(c) Unless otherwise specified, e.g. §15.255(b), when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value. The exact method of calculating the average field strength shall be submitted with any application for certification or shall be retained in the measurement data file for equipment subject to notification or verification.

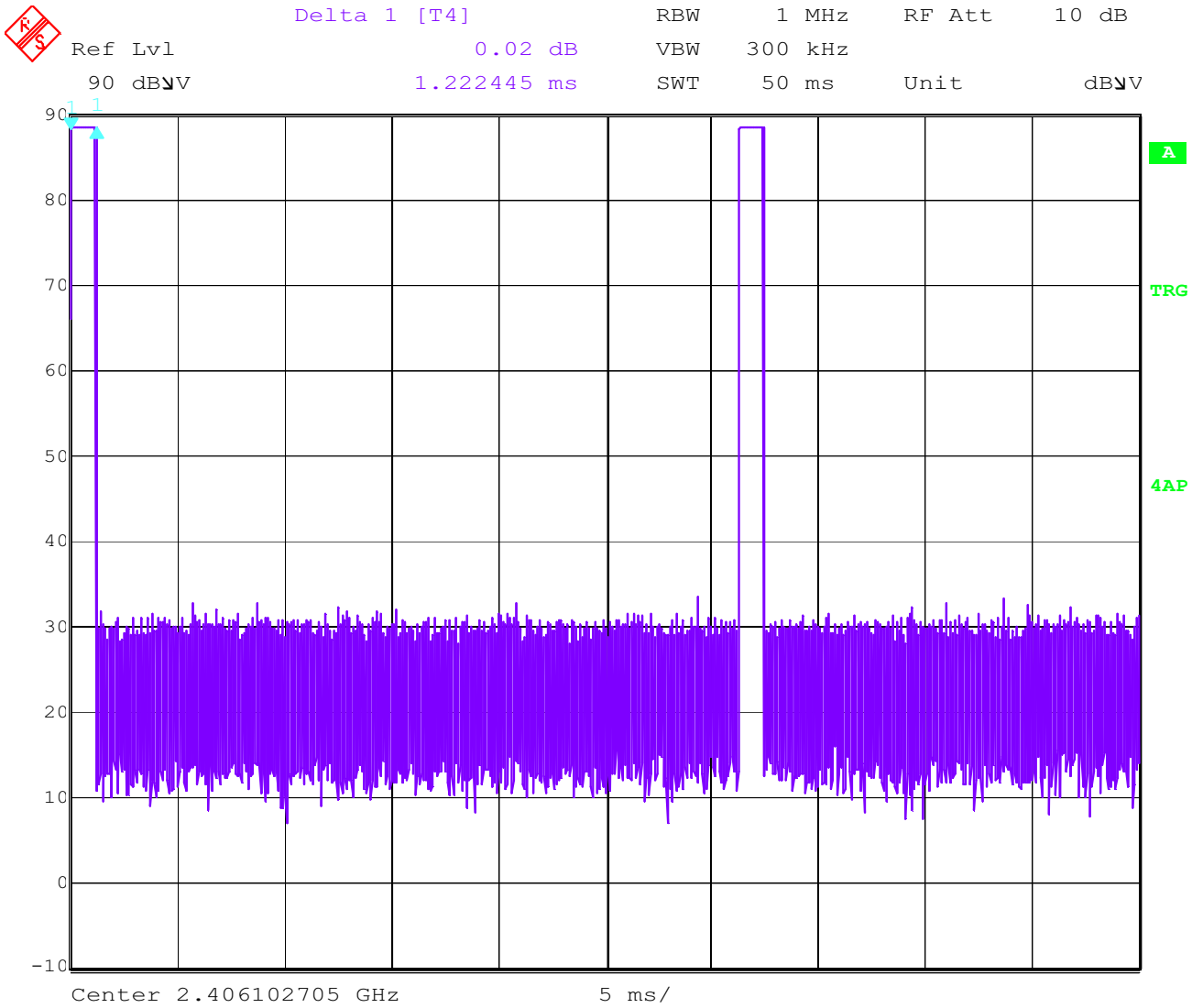
Determine the period of the pulse train, T, in mSec and record the results. T is defined as the time from the beginning of one pulse train to the beginning of the next pulse train.

Count the number of different types of pulses, N and record the results.

For each of the different types of pulses, count the number of occurrences within one pulse train.

Use the Duty Cycle Correction Factor, DCCF, from the results table and use it to adjust the field strength measurements recorded for radiated emissions.

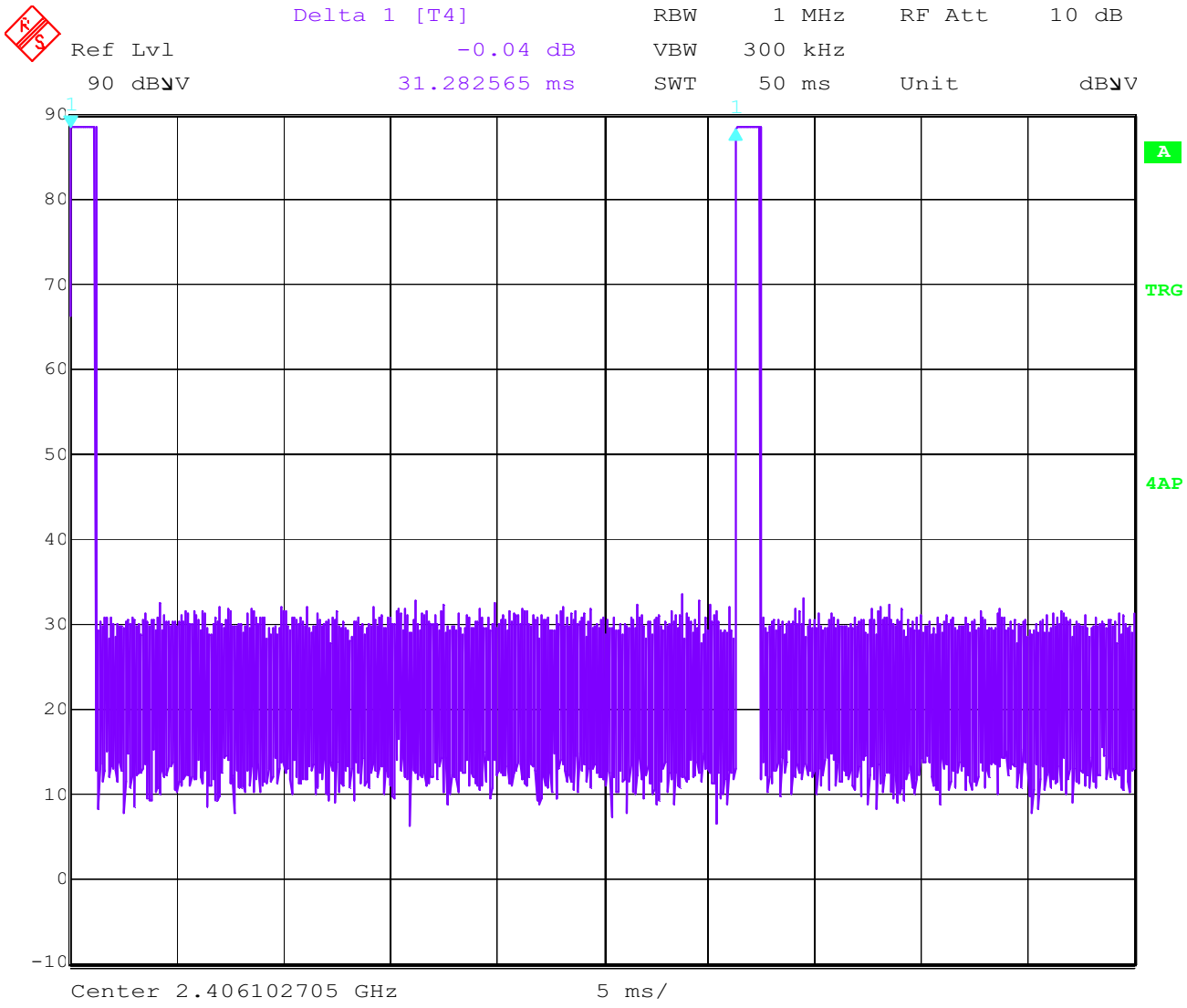
Photo:



Duty cycle plot

6.0 Duty Cycle Determination (FCC 15A - 15.35(c))

Photo:



Duty cycle plot

6.0 Duty Cycle Determination (FCC 15A - 15.35(c))

Data:

Duration of Pulse Train, T (mSec):	31.28
Averaging Interval, A_I (mSec):	31.28
Number of different Pulses, N:	1

	Number ($\#P_x$)	Pulse Width, mSec (PW_x)	Product ($\#P_x$)*(PW_x)
Pulse Width 1	1	1.222	1.222
Pulse Width 2			
Pulse Width 3			
Pulse Width 4			
Pulse Width 5			
Pulse Width 6			
Pulse Width 7			
Pulse Width 8			
Pulse Width 9			
Pulse Width 10			

Duty Cycle:	0.039066496
Duty Cycle Correction Factor, dB:	-28.2

$$T_{on} = (PW_1 * \#P)_1 + (PW_{2*} * \#P_2) + \cdots + (PW_n * \#P_n)$$

$$DutyCycle = T_{on} \div A_I$$

$$DCCF = 20 * Log_{10}(DutyCycle)$$

7.0 Conducted emissions on AC power lines (Conducted Emissions)

Method:

Equipment setup for conducted disturbance tests shall follow the guidelines of ANSI C63.4:2003.

Measurements in the frequency range of 150kHz to 30 MHz shall be performed with a quasi-peak or average detector instrument that meets the requirements of Section One of CISPR 16. An AMN shall be used to provide a defined impedance at high frequencies across the power feed at the point of measurement of terminal voltage and also to provide isolation of the circuit under test from the ambient noise on the power lines. An AMN defined in CISPR 16 shall be used.

In the frequency range of 150 kHz to 30 MHz, a resolution/video bandwidth of 9kHz/30kHz or greater shall be used.

The EUT shall be located so that the distance between the boundary of the EUT and the closest surface of the AMN is 0.8m.

If a flexible mains cord is provided by the manufacturer that is in excess of 1m, the excess cable shall be folded back and forth as far as possible to form a bundle not exceeding 0.4m in length.

The EUT shall be arranged and connected with cables terminated in accordance with the product specification.

Conducted disturbance shall be measured between each current carrying conductor and the reference ground. Each measured values shall be reported.

If EUT is intended for tabletop use, the EUT shall be placed on a table whose top is 0.8m above the ground plane. A vertical, metal reference plane is be placed 0.4m from the EUT. The vertical metal reference-plane is at least 2m by 2m. The EUT shall be kept at least 0.8m from any other metal surface or other ground plane not being part of the EUT. The table shall be constructed of non-conductive materials. Its dimensions are at least 1m by 1.5m, but may be extended for larger EUT.

If EUT is floor standing, the floor standing EUT shall be placed on a horizontal metal ground plane and isolated from the ground plane by up to 12 mm of insulating material. The metal ground plane shall extend at least 0.5m beyond the boundaries of the EUT and had minimum dimensions of 2m by 2m.

TEST SITE
The test site for radiated emissions is located at 1950 Evergreen Blvd, Suite 100, Duluth, Georgia 30096.

MEASUREMENT UNCERTAINTY
Compliance of the product is based on the measured value. However, the measurement uncertainty is included for informational purposes. The values given are the measurement uncertainty values with an expanded uncertainty of k=2.
150 kHz to 30 MHz: +/- 2.8 dB

Test Equipment Used:

Description:	Manufacturer:	Model:	Asset Number:	Cal Date:	Cal Due:
Cable TT4	Andrews	Cable TT4	211404	05/11/2006	05/11/2007
Coaxial Cable, 6ft, N(Male) to N(Male)	Mini-Circuits	CBL-6FT-NMNM	TT1	05/11/2006	05/11/2007
EMI Receiver	Hewlett Packard	8546A	211388	08/04/2006	08/04/2007
EMI Receiver, Preselector section	Hewlett Packard	85460A	211389	08/04/2006	08/04/2007
Excel spreadsheet for conducted emissions tests	Intertek Software	SW (CE Worksheet	SW002	08/01/2006	08/01/2007
LISN (TT4)	Fischer Custom Comm	FCC-LISN-50-50-M	211406	09/26/2006	09/26/2007

Results: The sample tested was found to Comply.

7.0 Conducted emissions on AC power lines (Conducted Emissions)

Photo:

Setup photograph: Blood pressure monitor - front

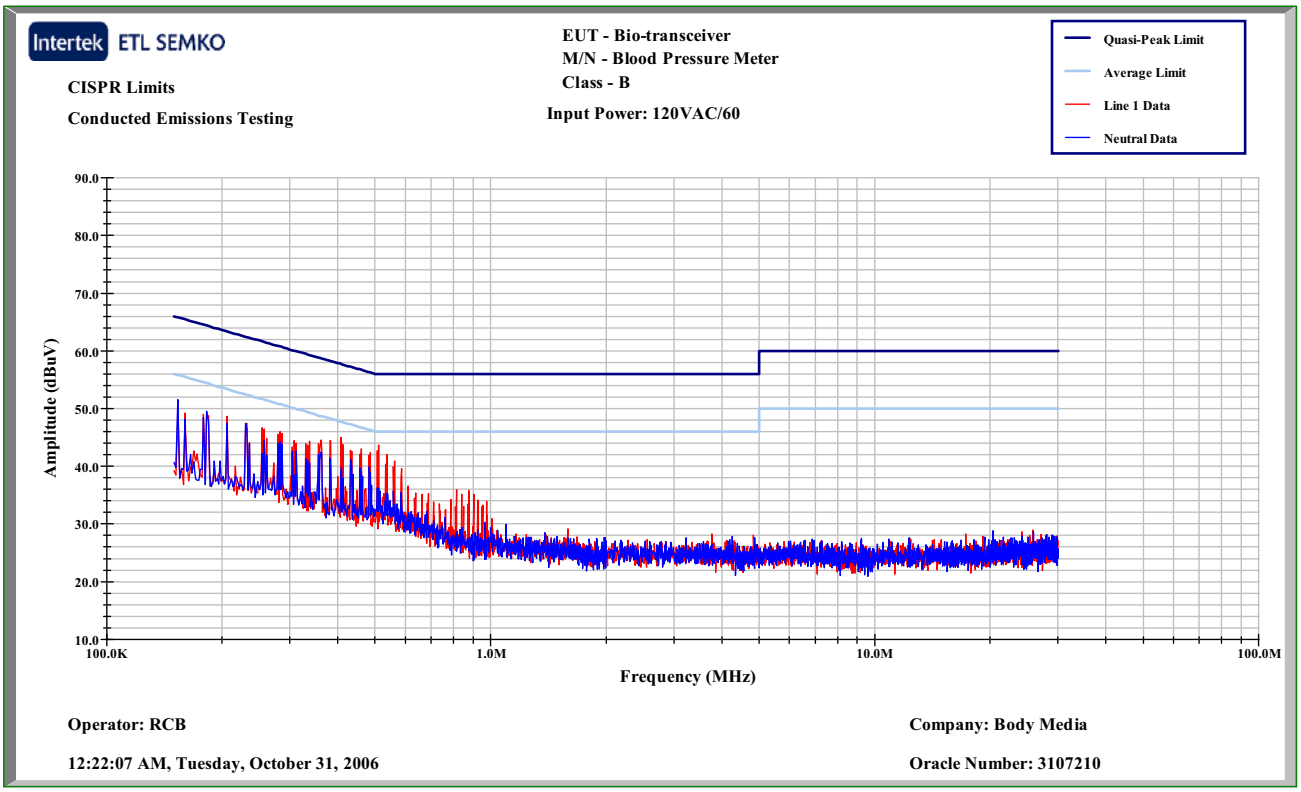
7.0 Conducted emissions on AC power lines (Conducted Emissions)

Photo:

Setup photograph: Blood pressure monitor - rear

7.0 Conducted emissions on AC power lines (Conducted Emissions)

Plot:



Conducted Emissions - Peak

7.0 Conducted emissions on AC power lines (Conducted Emissions)

Data:

Date: 10-30-2006 **Limit:** CISPR Class B

Frequency Range (MHz): .150-30 **Modifications for compliance (y/n):** No

Input power: 120 / 60 Hz

A	B	C	D	E	F	G	H	I
LISN Number 1,2	**Detector (P,QP, A)**	**Frequency MHz**	**Reading dBuV**	**Cable Loss dB**	**LISN Ins. Loss dB**	**Net dBuV**	**Limit dBuV**	**Margin dB**
1	P	0.319	38.3	0.6	6.1	45.0	49.8	-4.8
1	P	0.386	35.4	0.6	6.1	42.1	48.2	-6.1
1	P	0.452	35.9	0.6	6.1	42.6	46.9	-4.3
1	P	0.514	35.1	0.6	6.1	41.8	46.0	-4.2
1	P	0.532	33.5	0.6	6.1	40.2	46.0	-5.8
1	P	0.599	31.7	0.6	6.1	38.4	46.0	-7.6
2	P	0.163	41.6	0.6	6.2	48.4	55.5	-7.1
2	P	0.189	39.2	0.6	6.1	45.9	54.3	-8.4
2	P	0.223	37.8	0.6	6.1	44.5	52.8	-8.3
2	P	0.387	33.5	0.6	6.1	40.2	48.2	-8.0
2	P	0.535	32.7	0.6	6.1	39.4	46.0	-6.6
2	P	0.601	30.2	0.6	6.1	36.9	46.0	-9.1
Calculations		G=D+E+F		I=G-H				

Note: Peak measurements are compared to the average limit.

8.0 Radiated emissions (E-field) (Radiated Emissions)

Method:

Measurements in the frequency range of 30 MHz to 1000 MHz shall be performed with a quasi-peak detector instrument that meets the requirements of Section One of CISPR 16. Above 1000 MHz, a peak detector shall be used. Peak values converted to average by appying the duty cycle correction factor. The measuring antenna shall correlate to a balanced dipole.

Bandwidths:
30 MHz to 1000 MHz: 120 kHz RBW and 1 MHz VBW
Above 1000 MHz: 1 MHz RBW and 3 MHz VBW

Measurements of the radiated field are made with the antenna located at a distance of 3 or 10 meters from the EUT. The limit applied to the measurement shall be appropriate for the test distance. The test distance shall be indicated in the results section.

The EUT shall be arranged and connected with cables terminated in accordance with the product specification.

Exploratory tests should be carried out while varying the cable positions to determine the maximum or near-maximum emission level. During manipulation, cables shall not be placed under or on top of the system test components unless such placement is required by the inherent equipment design.

The antenna shall be adjusted between 1m and 4m in height above the ground plane for maximum meter reading at each test frequency.

The antenna-to-EUT azimuth shall be varied during the measurement to find the maximum field-strength readings.

The antenna-to-EUT polarization (horizontal and vertical) shall be varied during the measurements to find the maximum field-strength readings.

If the EUT is intended for tabletop use, it shall be placed on a table whose top is 0.8m above the ground plane. The table shall be constructed of non-conductive materials. Its dimensions are at least 1m by 1.5m, but may be extended for larger EUT.

If EUT is floor standing, the EUT was placed on a horizontal metal ground plane and isolated from the ground plane by up to 12 mm of insulating material.

Equipment setup for radiated disturbance tests shall follow the guidelines of ANSI C63.4:2003.

TEST SITE
The test site for radiated emissions is located at 1950 Evergreen Blvd, Suite 100, Duluth, Georgia 30096.

MEASUREMENT UNCERTAINTY
Compliance of the product is based on the measured value. However, the measurement uncertainty is included for informational purposes. The values given are the measurement uncertainty values with an expanded uncertainty of k=2.
30 MHz to 1000 MHz at 3 meters: +/- 3.9 dB
30 MHz to 1000 MHz at 10 meters: +/- 3.6 dB
1 GHz to 18 GHz at 3 meters: +/- 4.2 dB

Test Equipment Used:

Description:	Manufacturer:	Model:	Asset Number:	Cal Date:	Cal Due:
Antenna, Bilog (20MHz to 2GHz)	Chase	CBL6112B	211386	08/29/2006	08/29/2007
Antenna, Horn, 1-18 GHz	EMCO	3115	213061	03/28/2006	03/28/2007
Antenna, Horn, 18-40 GHz	EMCO	3116	213023	03/22/2006	03/22/2007
Cable E01 (Formerly PE7000N-N2 or N2)	Pasternack	RG214/U	E01	05/11/2006	05/11/2007
Cable, 18 GHz, N, 394 inches	Megaphase	G919-NKNK-394	MP3	05/11/2006	05/11/2007
Cable, 40 GHz, 2.9, 80 inches	Megaphase	TM40 K1K1 80	E405	05/12/2006	05/12/2007
Cable, 40 GHz, 2.9, 80 inches	Megaphase	TM40 K1K1 80	E404	05/12/2006	05/12/2007
Coaxial Cable, 6ft, N(Male) to N(Male)	Mini-Circuits	CBL-6FT-NMNM	TT1	05/11/2006	05/11/2007
EMI Receiver	Hewlett Packard	8546A	211388	08/04/2006	08/04/2007
EMI Receiver, Preselector section	Hewlett Packard	85460A	211389	08/04/2006	08/04/2007
Excel spreadsheet for radiated emissions	Intertek Software	SW (RE Worksheet	SW004	08/01/2006	08/01/2007
Preamplifier, 10 MHz to 2000 MHz, 27 dB gain	Mini-Circuits	ZKL-2	200074	01/24/2006	01/24/2007
Preamplifier, 1-26 GHz	Hewlett Packard	8449B	213191	05/04/2006	05/04/2007
Spectrum Analyzer, 20 Hz to 40 GHz	Rohde & Schwarz	FSEK30	200062	01/12/2006	01/12/2007

Results: The sample tested was found to Comply.

8.0 Radiated emissions (E-field) (Radiated Emissions)

Photo:

Setup photograph: Glucose monitor - front

8.0 Radiated emissions (E-field) (Radiated Emissions)

Photo:

Setup photograph: Glucose monitor - rear

8.0 Radiated emissions (E-field) (Radiated Emissions)

Photo:

Setup photograph: Weight Scale - front

8.0 Radiated emissions (E-field) (Radiated Emissions)

Photo:

Setup photograph: Weight Scale - rear

8.0 Radiated emissions (E-field) (Radiated Emissions)

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Setup photograph: Blood pressure monitor - front

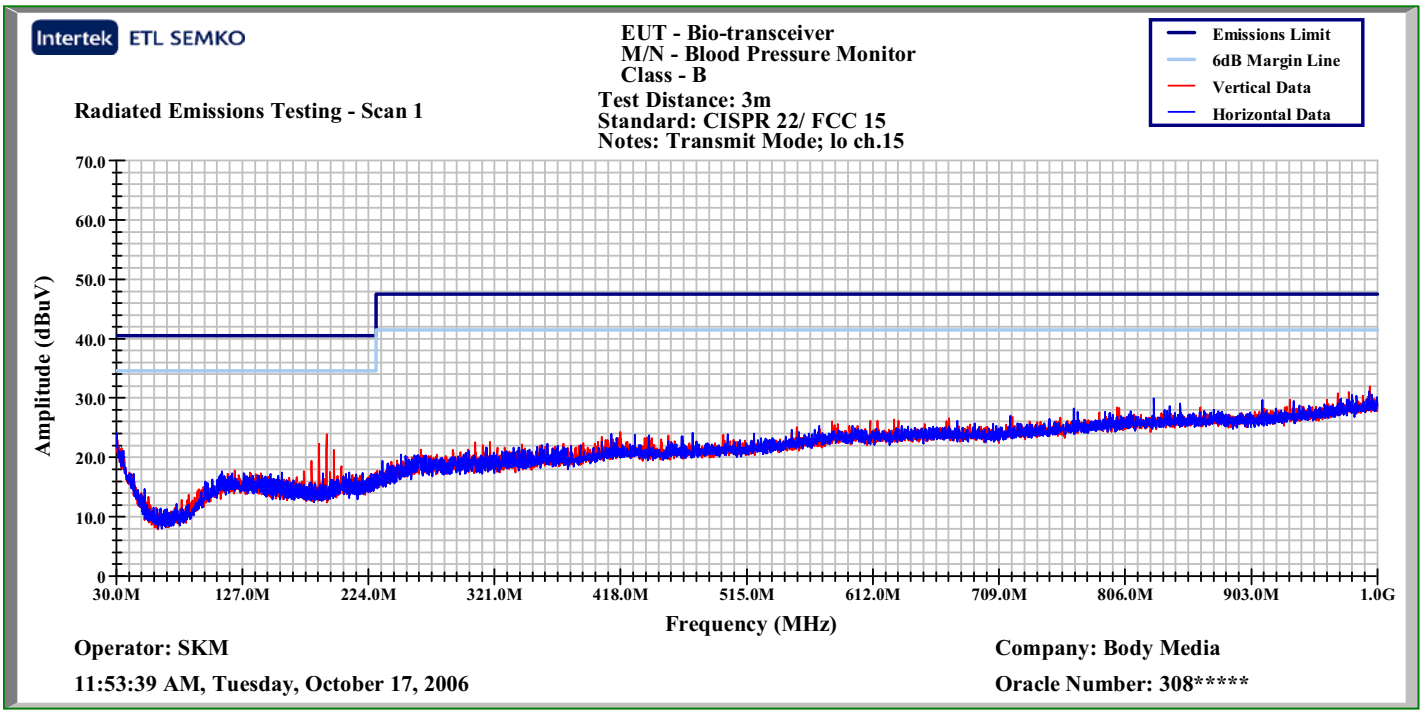
8.0 Radiated emissions (E-field) (Radiated Emissions)

Photo:

Setup photograph: Blood pressure monitor - rear

8.0 Radiated emissions (E-field) (Radiated Emissions)

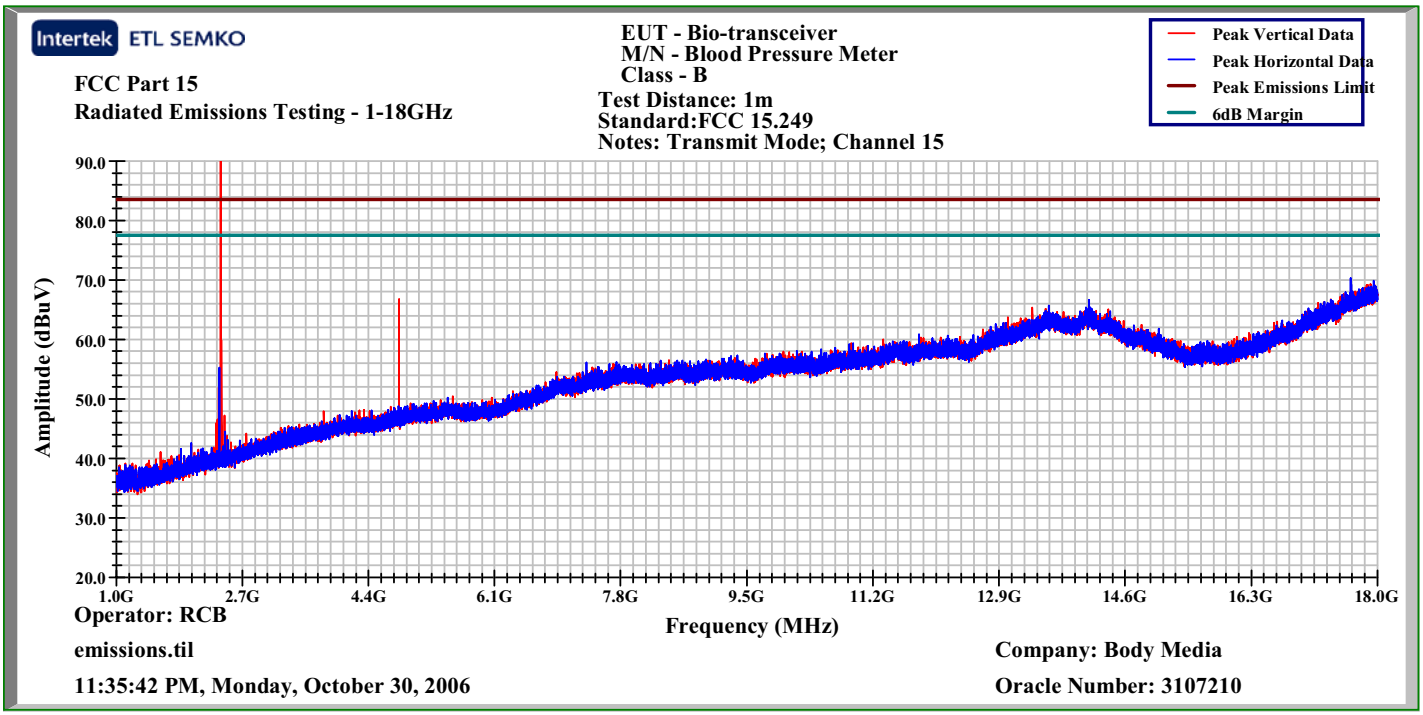
Plot:



TX Mode: BPM - prescan Low Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

Plot:



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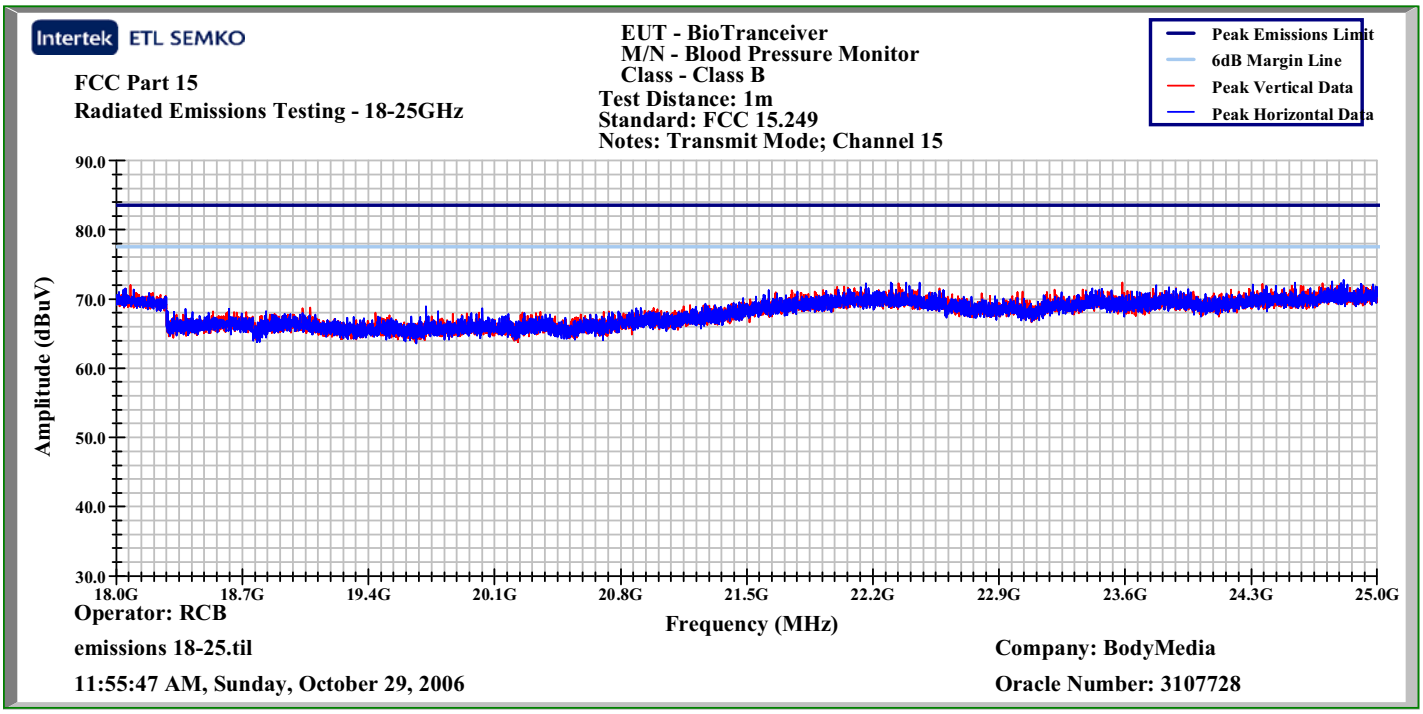

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8.0 Radiated emissions (E-field) (Radiated Emissions)

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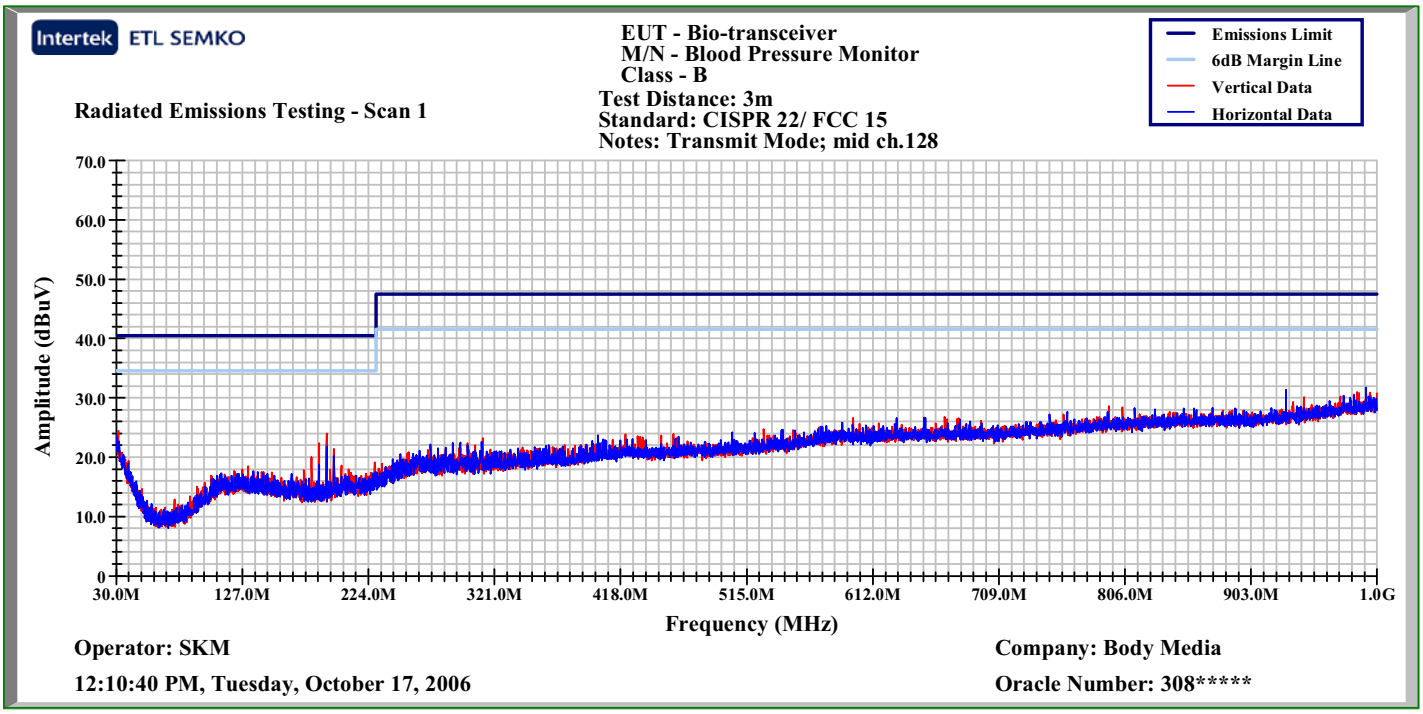
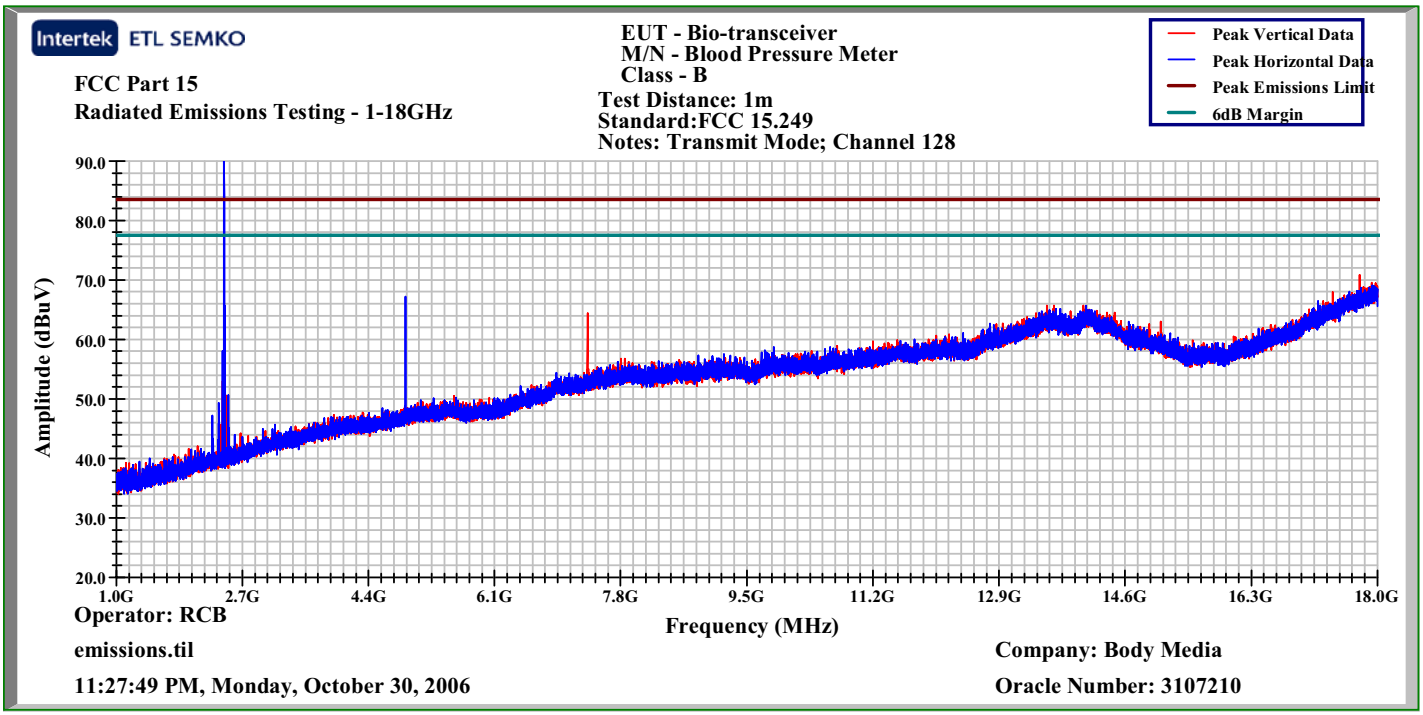


TX Mode: BPM - prescan Mid Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

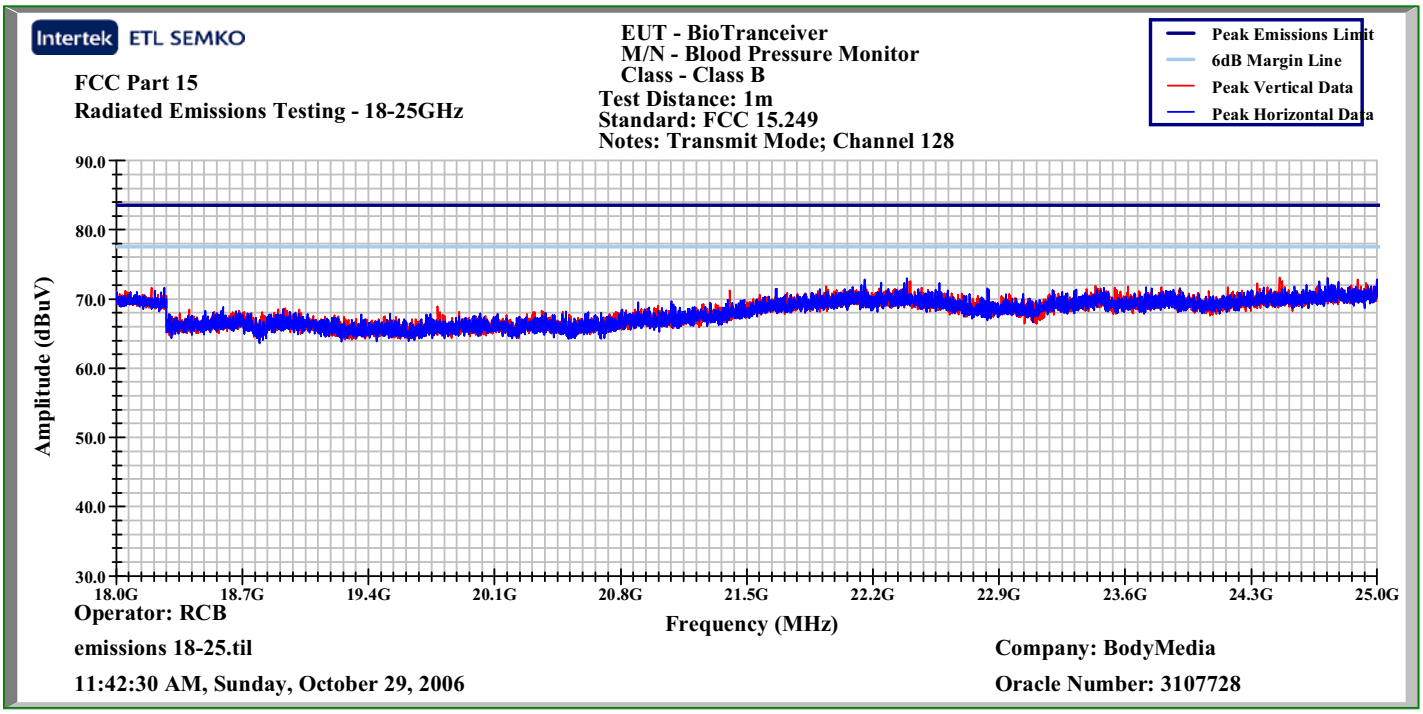
Plot:



TX Mode: BPM - prescan Mid Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

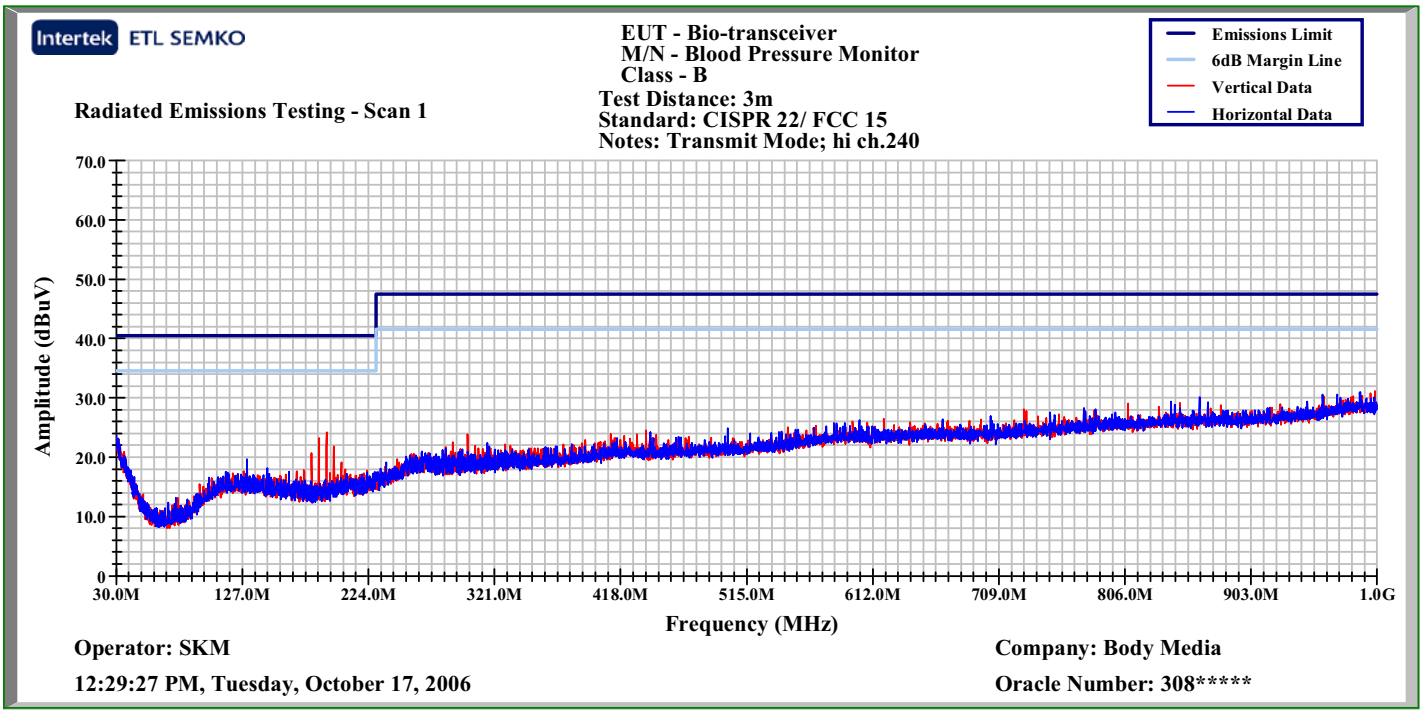
Plot:



TX Mode: BPM - prescan Mid Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

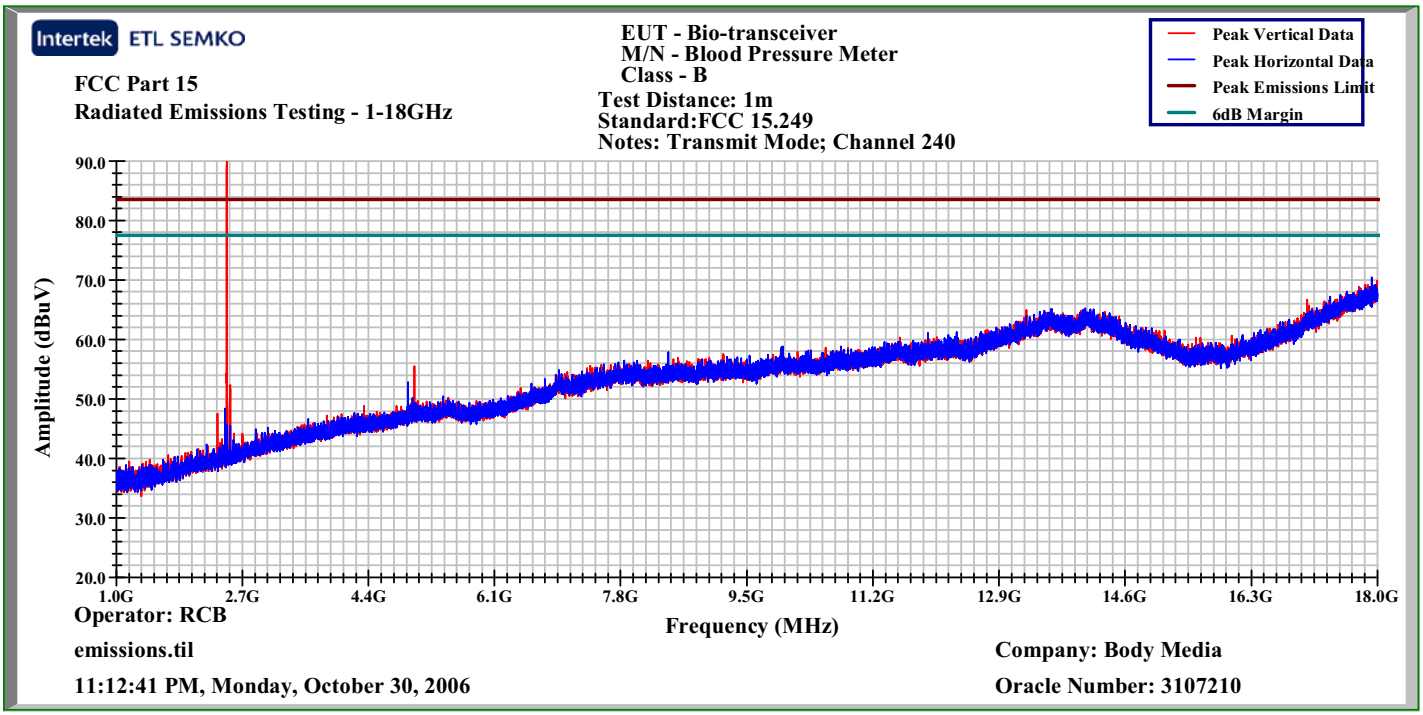
Plot:



TX Mode: BPM - prescan High Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

Plot:



TX Mode: BPM - prescan High Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

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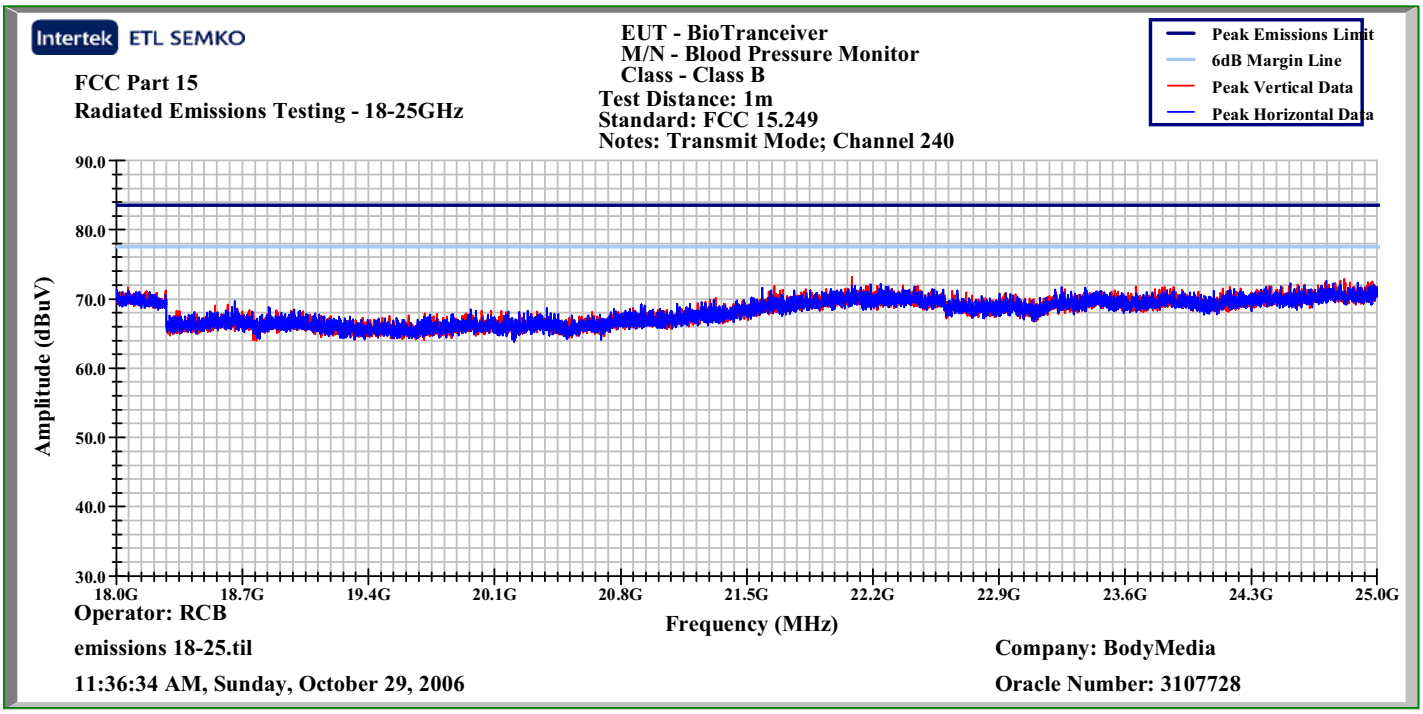
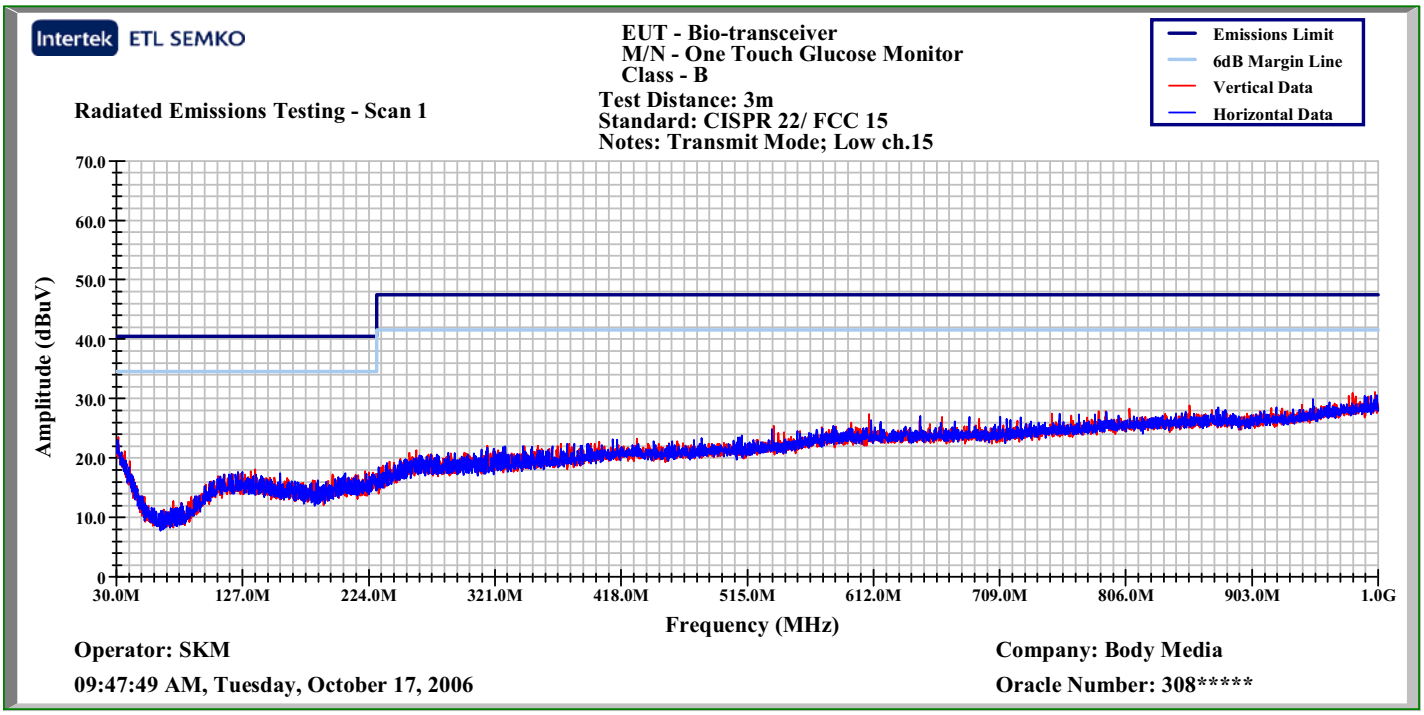


TX Mode: BPM - prescan High Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

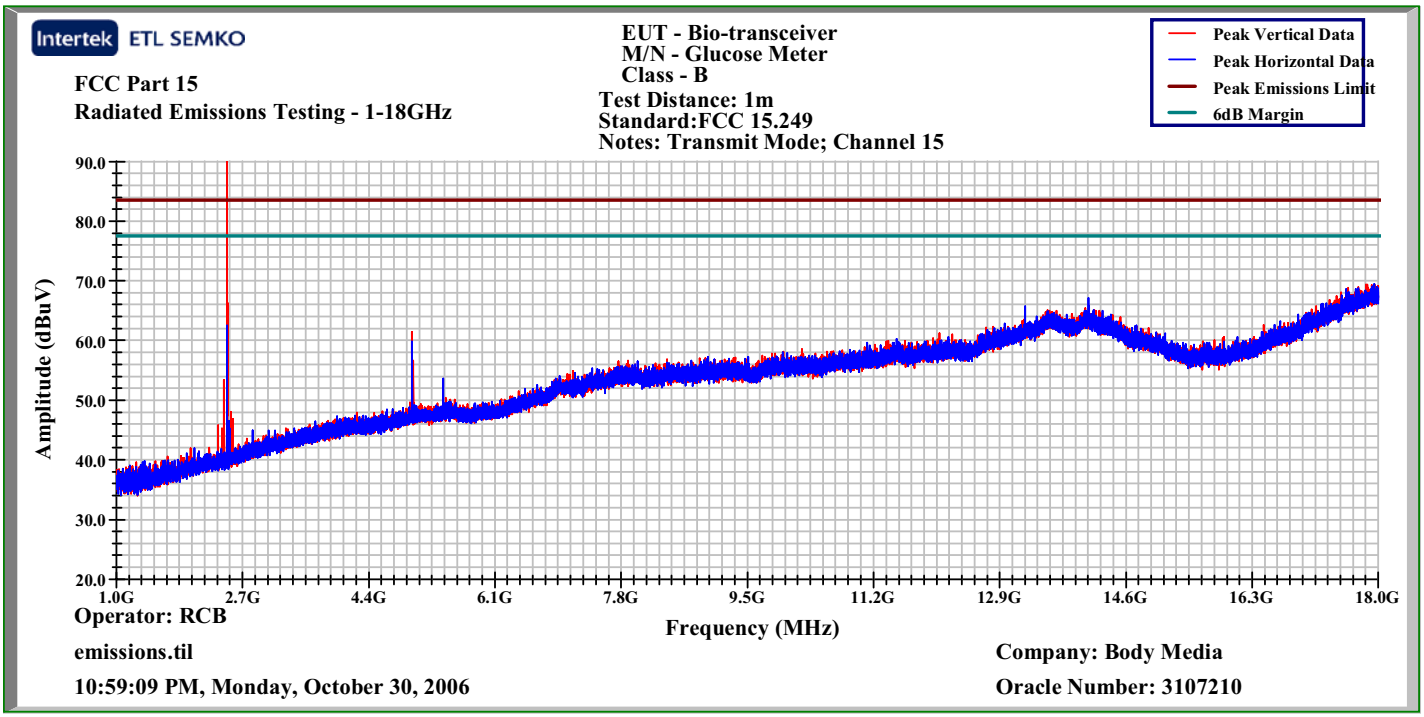
Plot:



TX Mode: Glucose Monitor - prescan Low Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

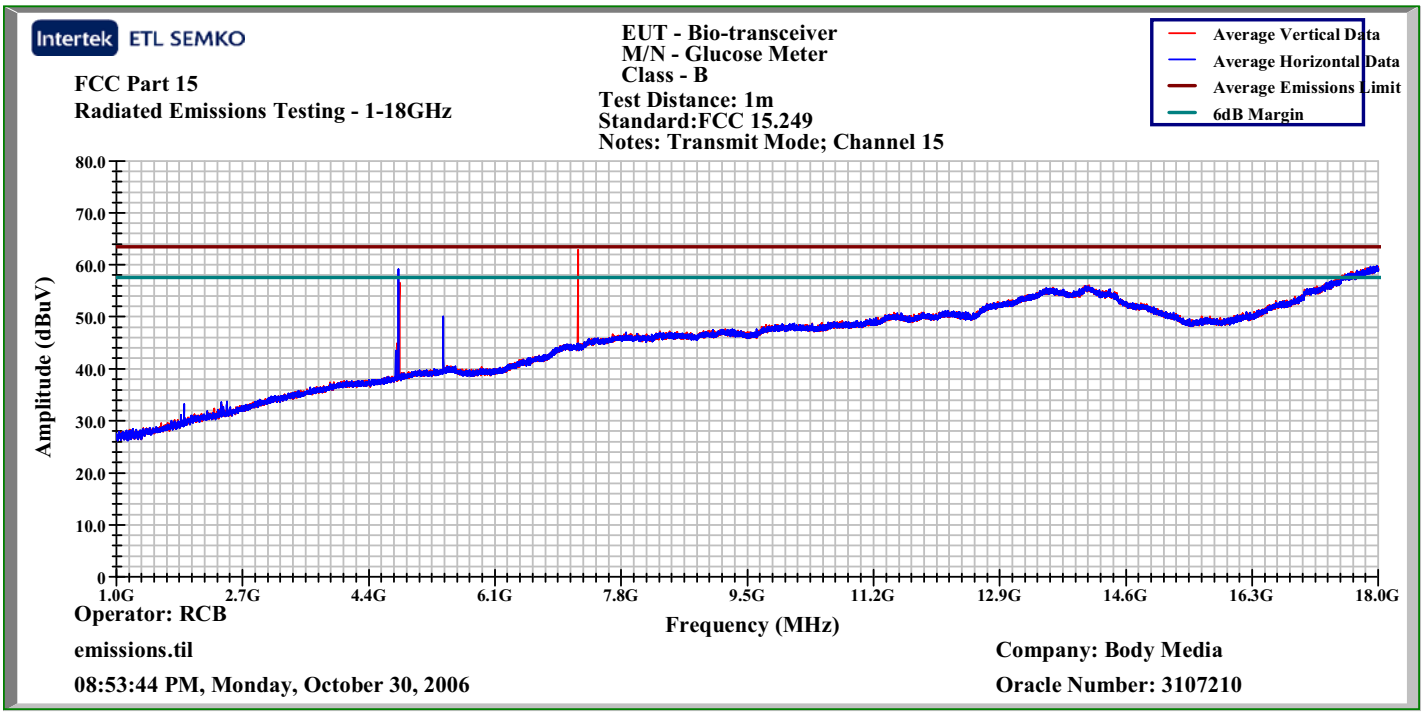
Plot:



TX Mode: Glucose Monitor - prescan Low Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

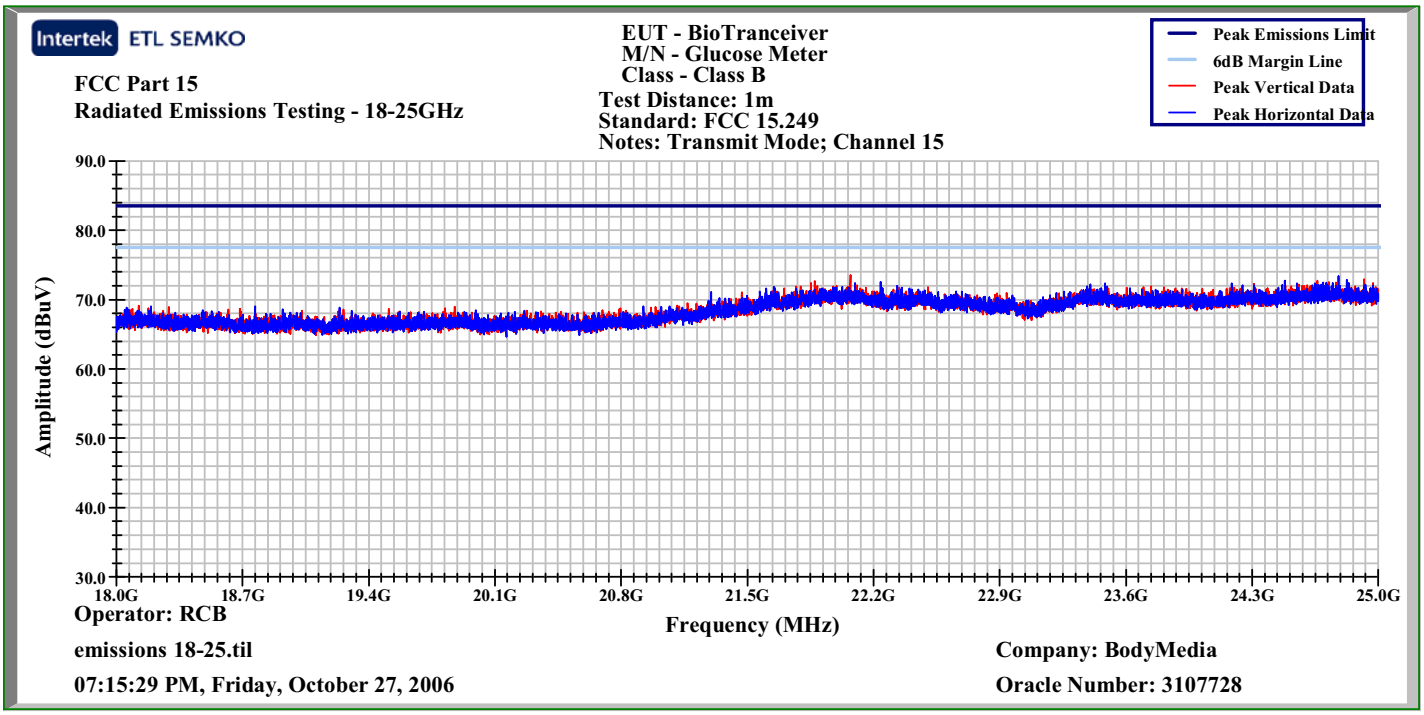
Plot:



TX Mode: Glucose Monitor - prescan Low Ch average

8.0 Radiated emissions (E-field) (Radiated Emissions)

Plot:



TX Mode: Glucose Monitor - prescan Low Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

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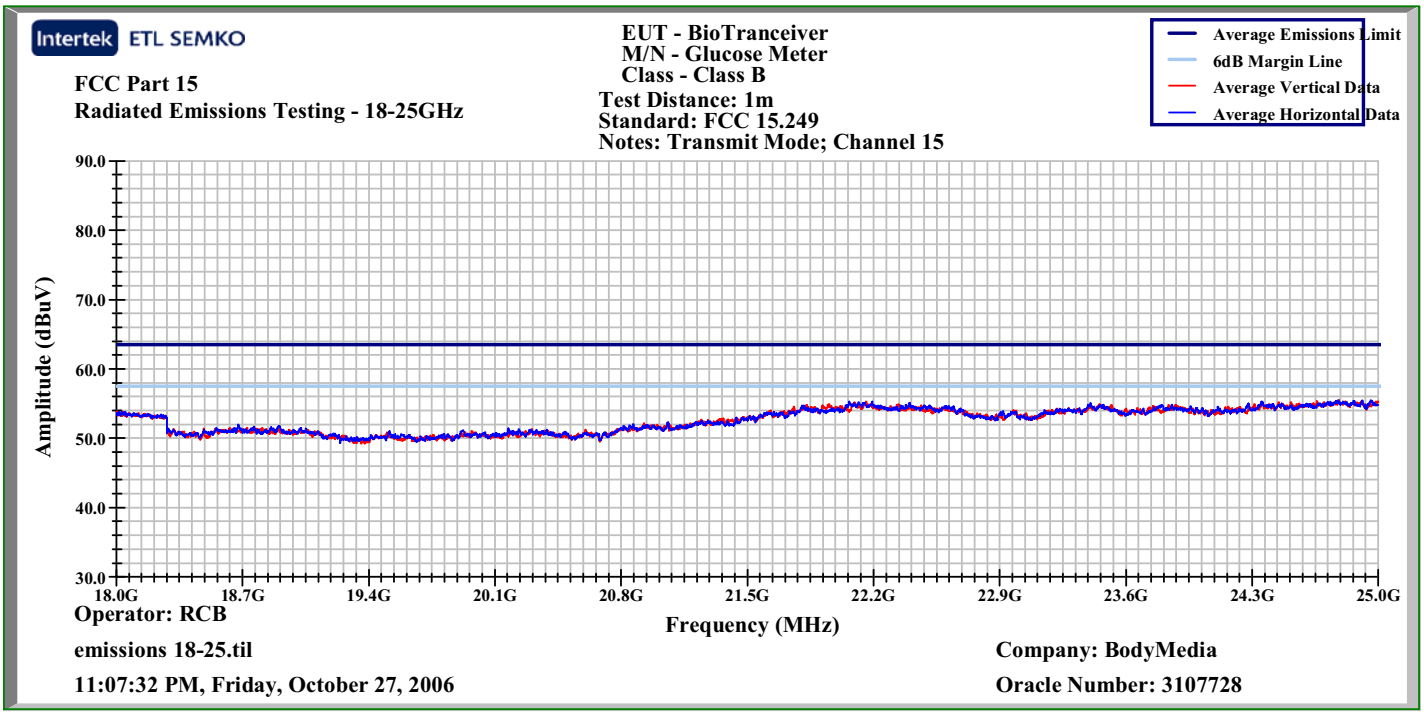

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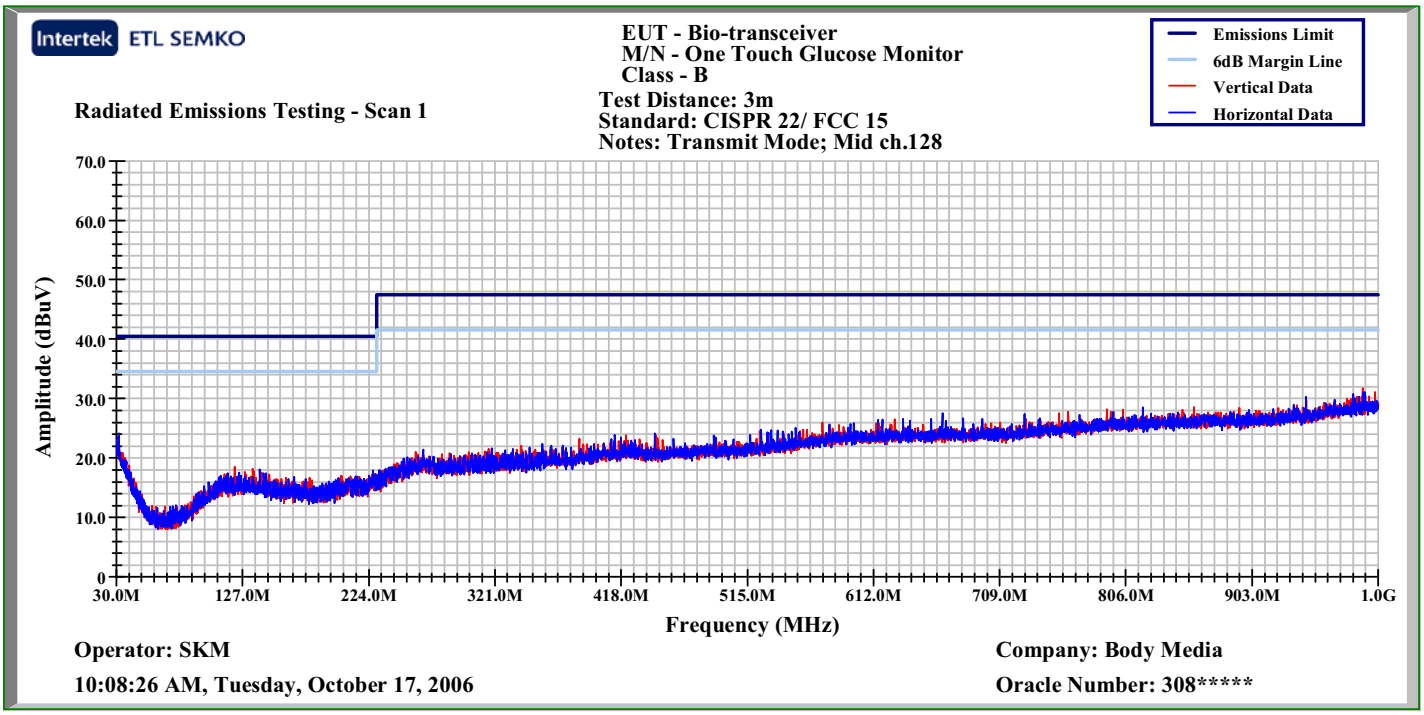
8.0 Radiated emissions (E-field) (Radiated Emissions)

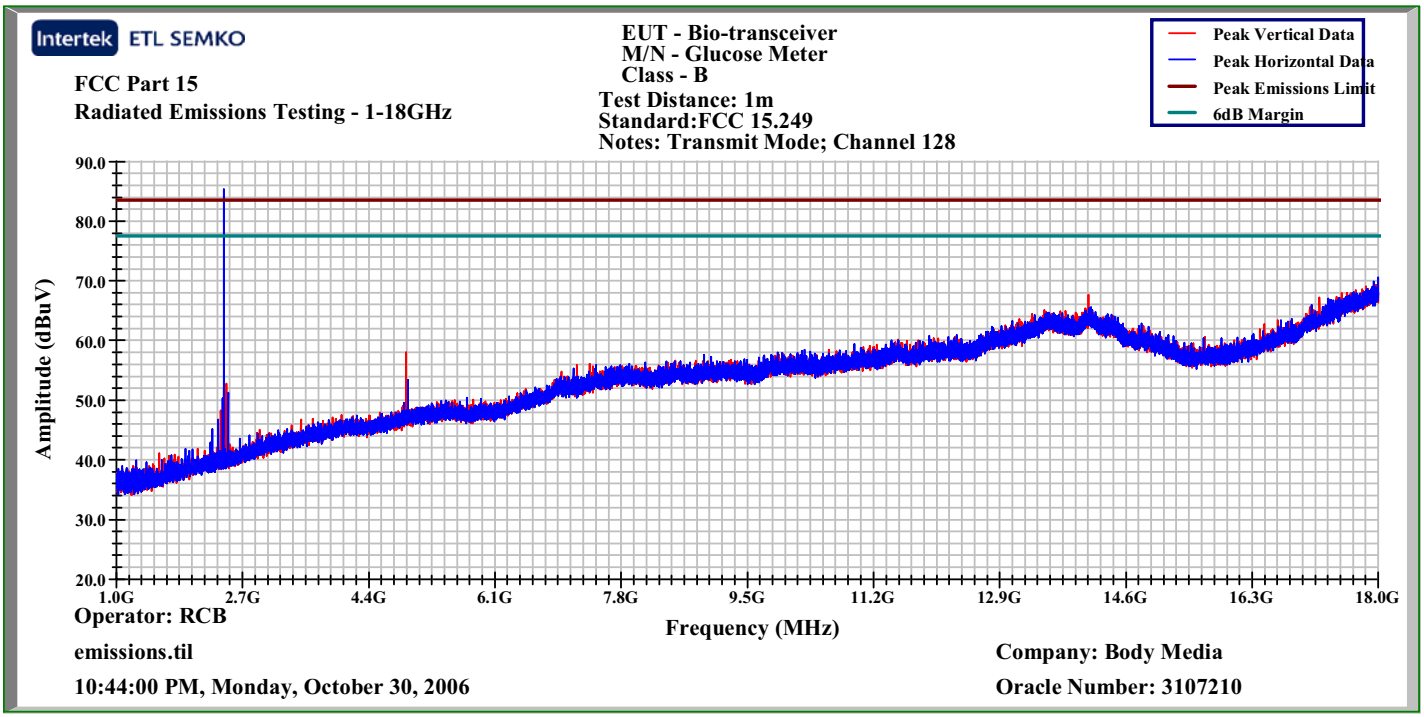
Plot:



TX Mode: Glucose Monitor - prescan Mid Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

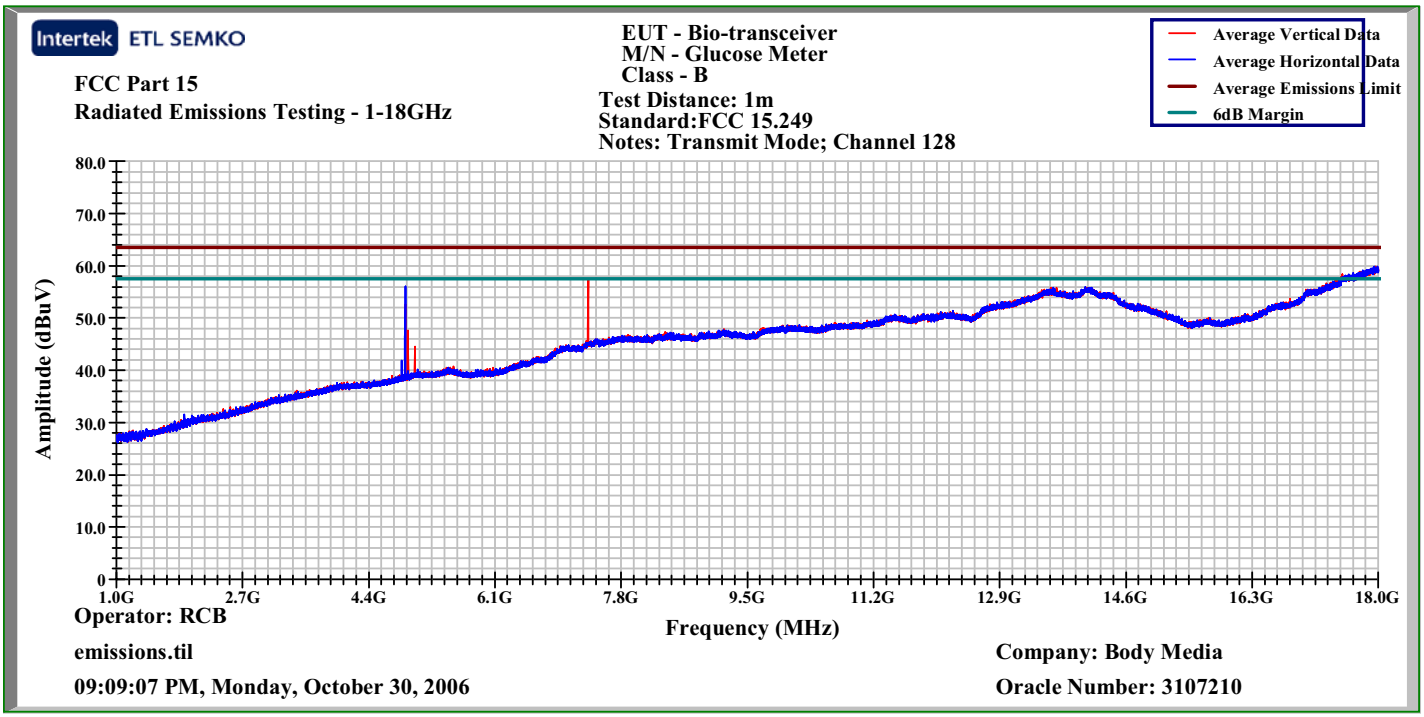
Plot:



TX Mode: Glucose Monitor - prescan Mid Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

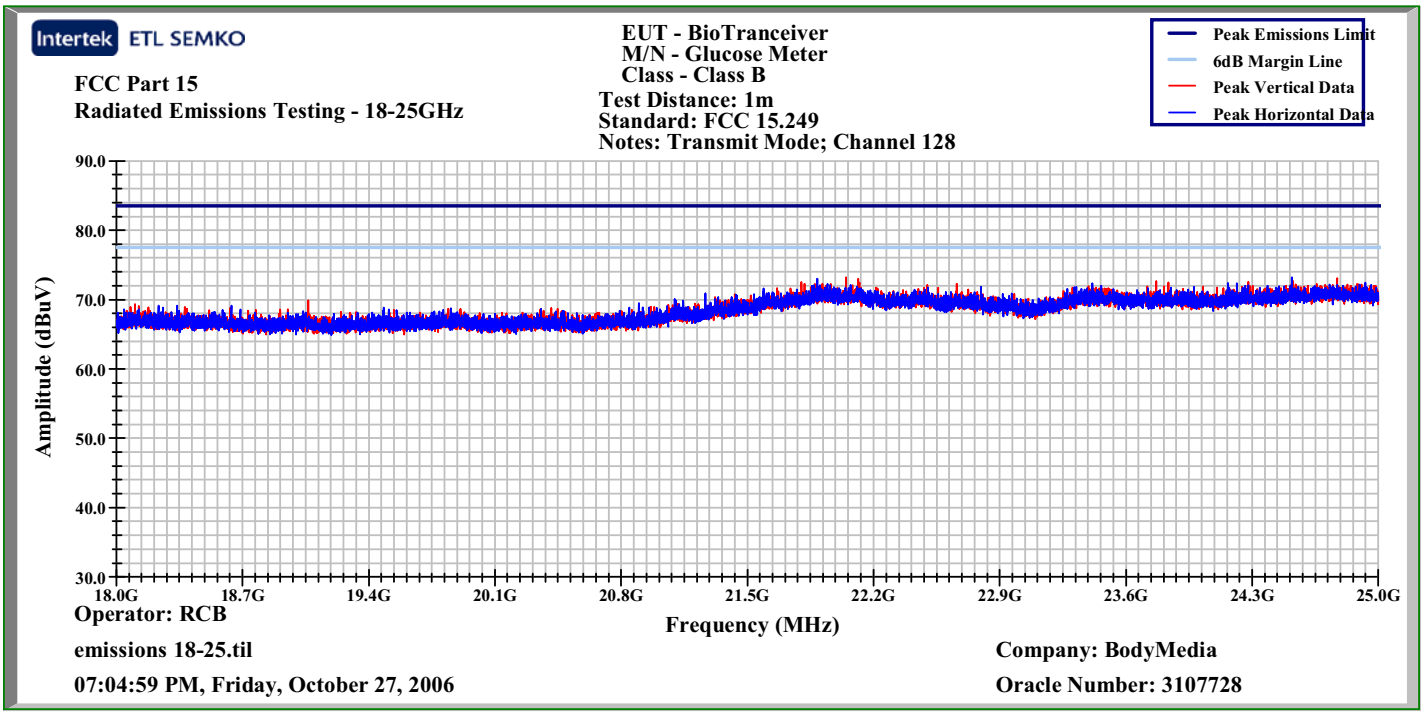
Plot:



TX Mode: Glucose Monitor - prescan Mid Ch average

8.0 Radiated emissions (E-field) (Radiated Emissions)

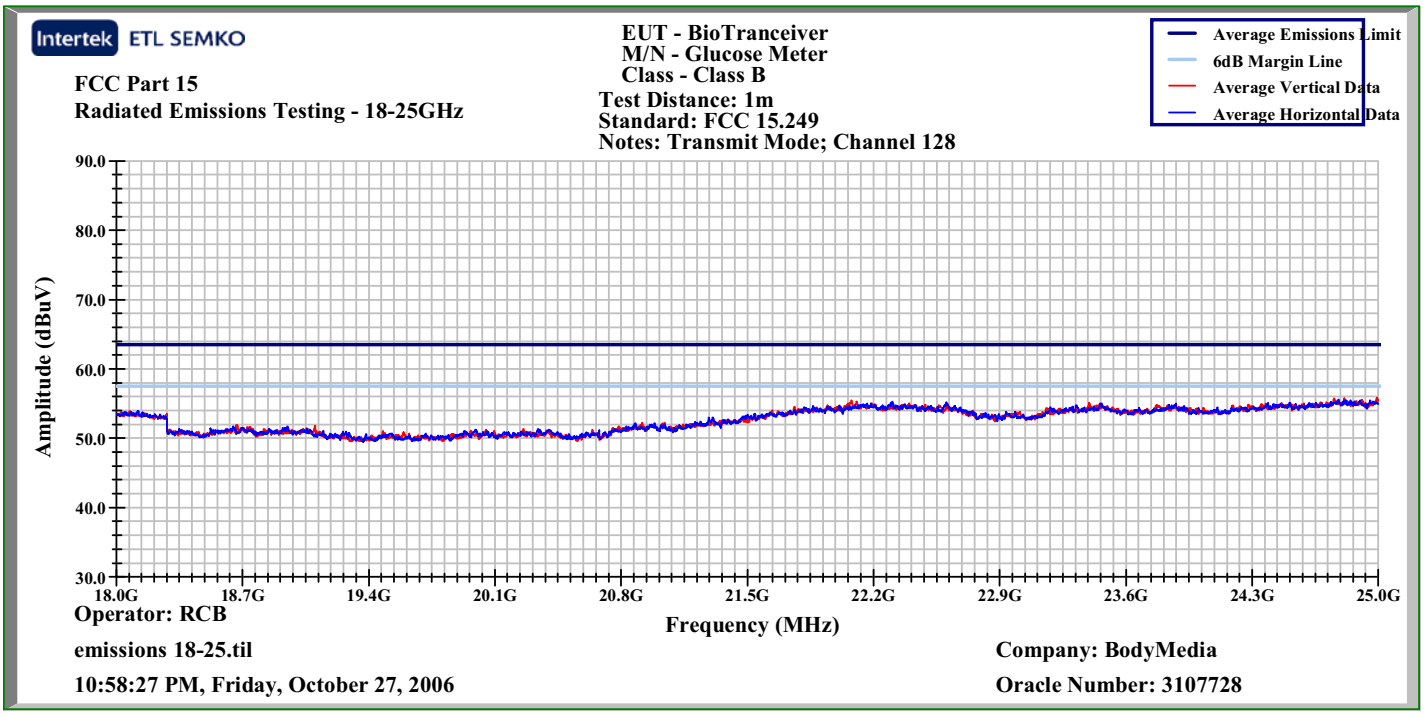
Plot:



TX Mode: Glucose Monitor - prescan Mid Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

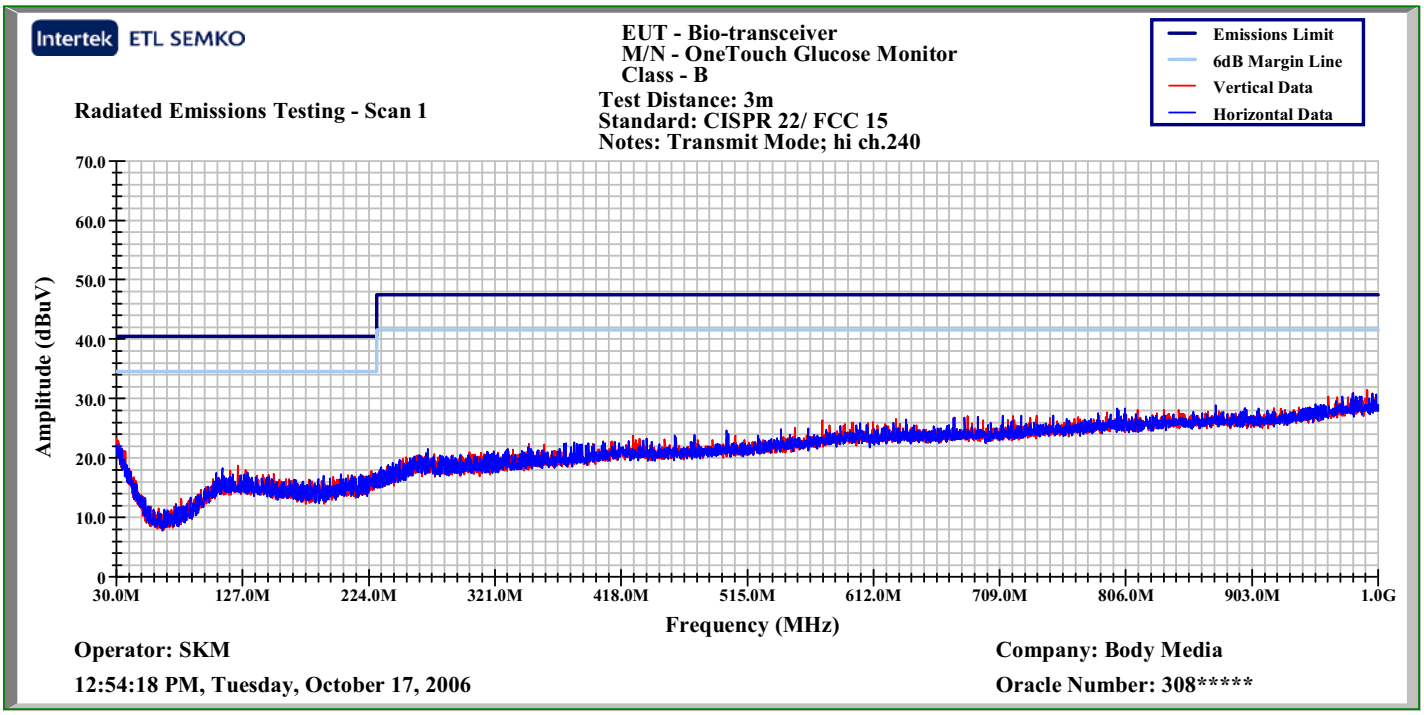
Plot:



TX Mode: Glucose Monitor - prescan Mid Ch average

8.0 Radiated emissions (E-field) (Radiated Emissions)

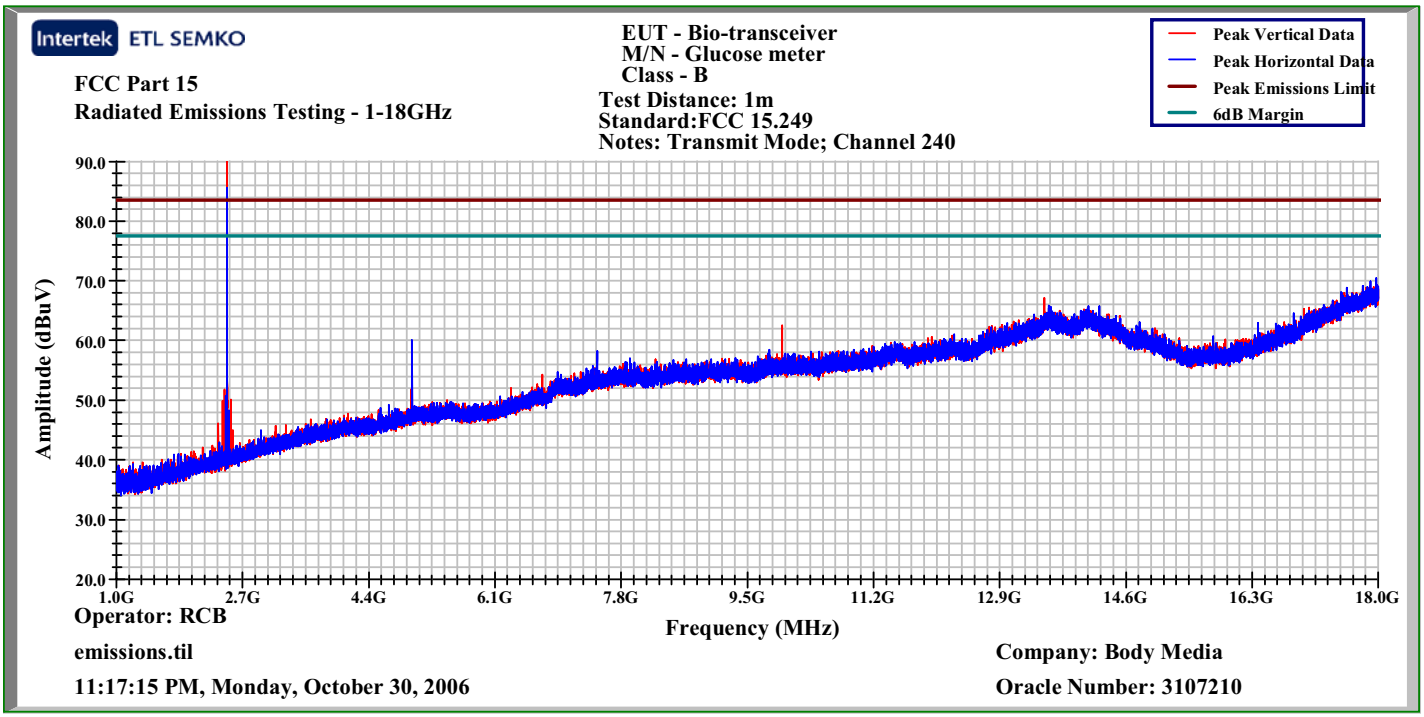
Plot:



TX Mode: Glucose Monitor - prescan High Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

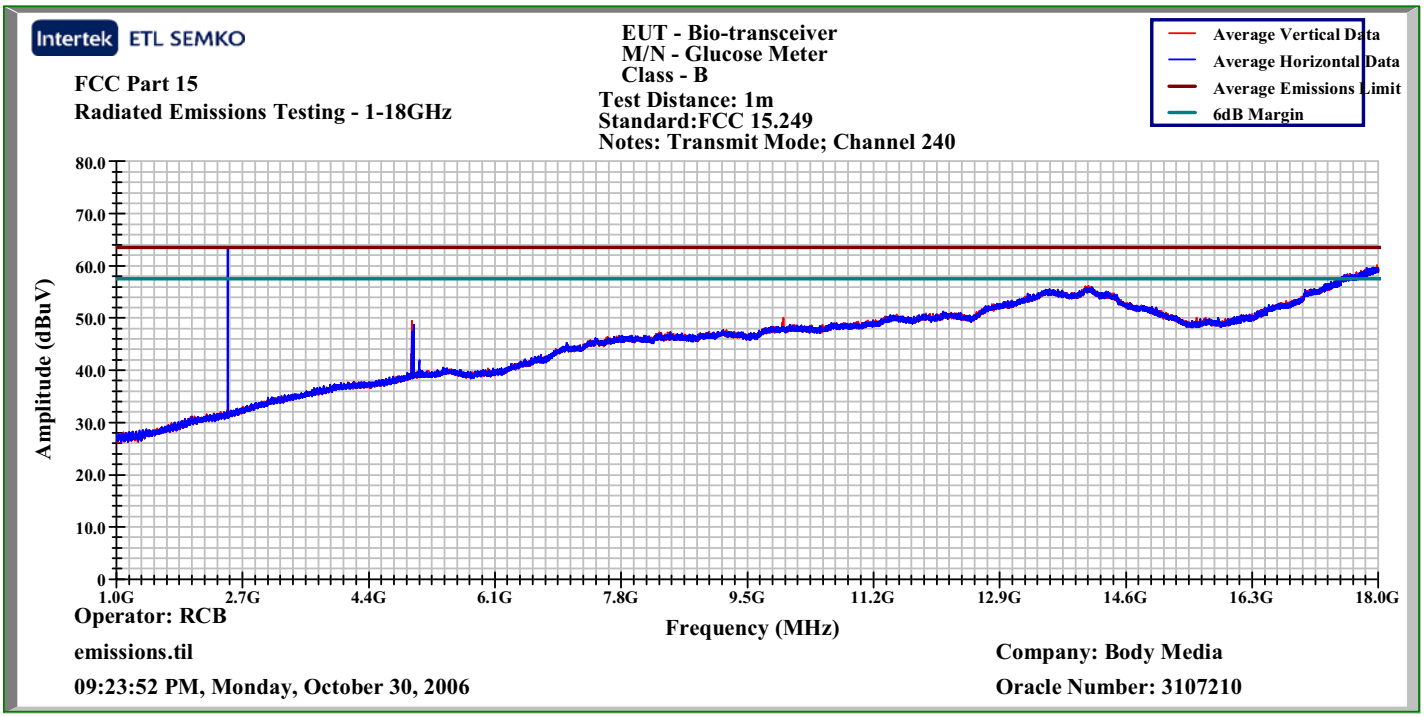
Plot:



TX Mode: Glucose Monitor - prescan High Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

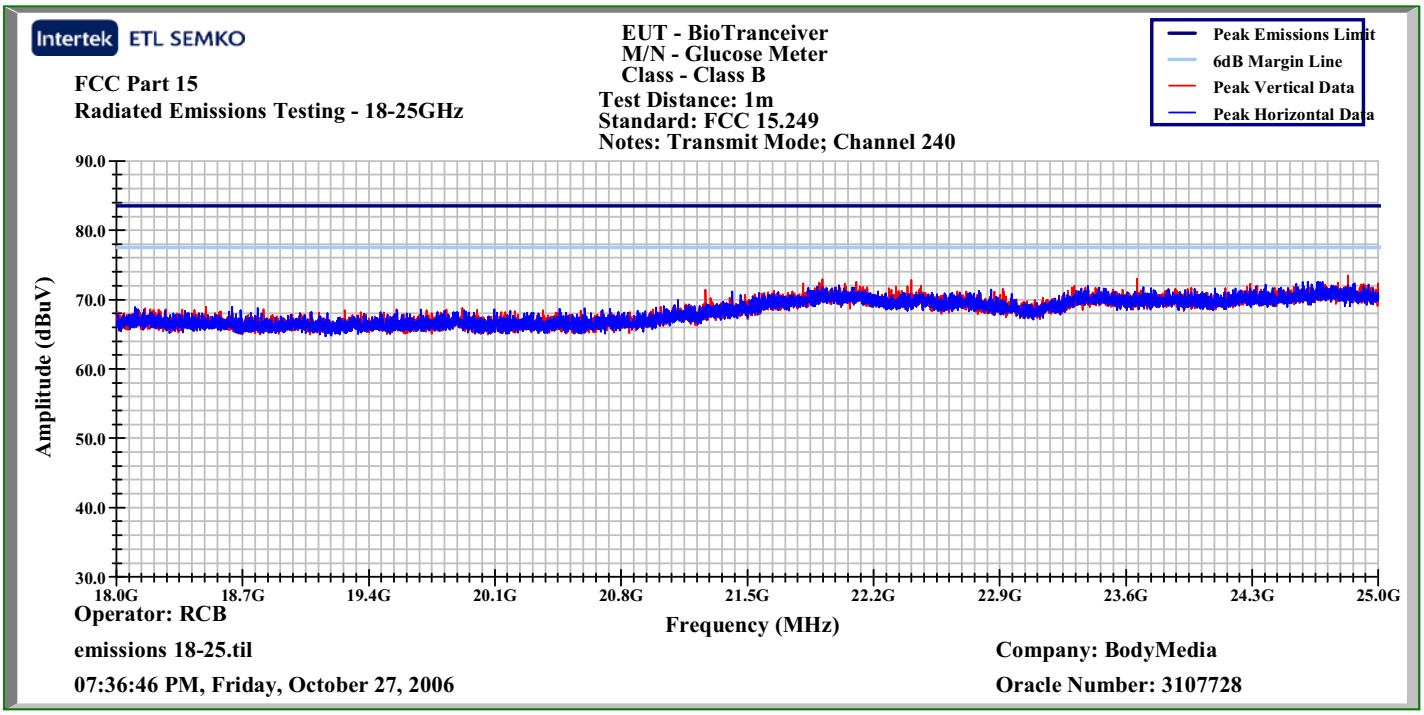
Plot:



TX Mode: Glucose Monitor - prescan High Ch average

8.0 Radiated emissions (E-field) (Radiated Emissions)

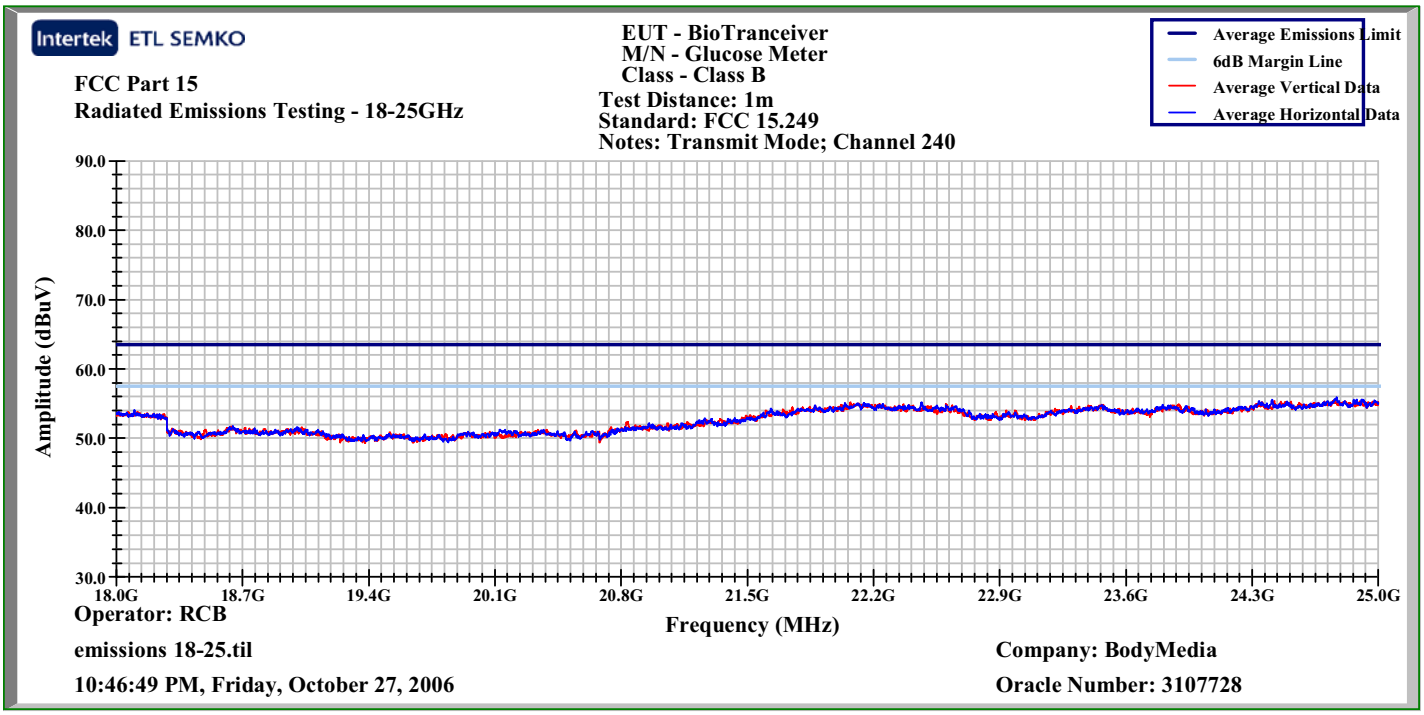
Plot:



TX Mode: Glucose Monitor - prescan High Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

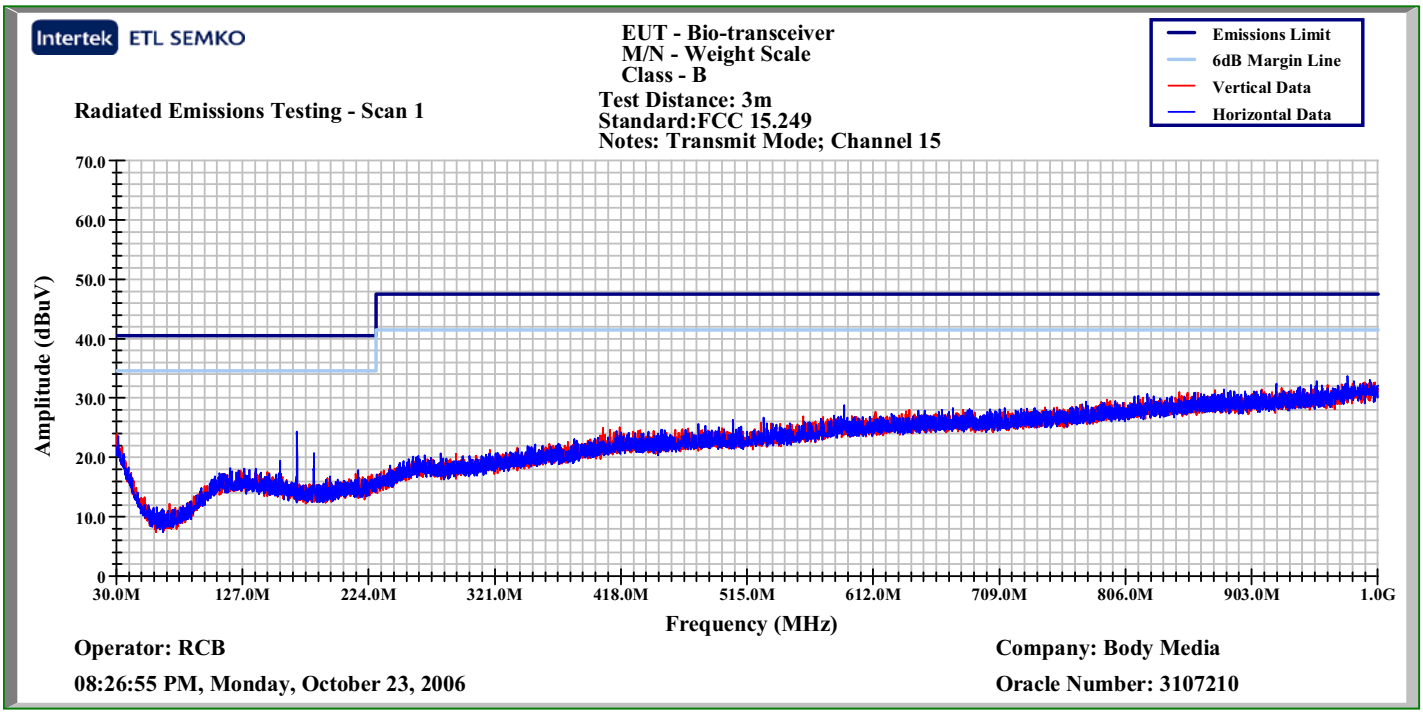
Plot:



TX Mode: Glucose Monitor - prescan High Ch average

8.0 Radiated emissions (E-field) (Radiated Emissions)

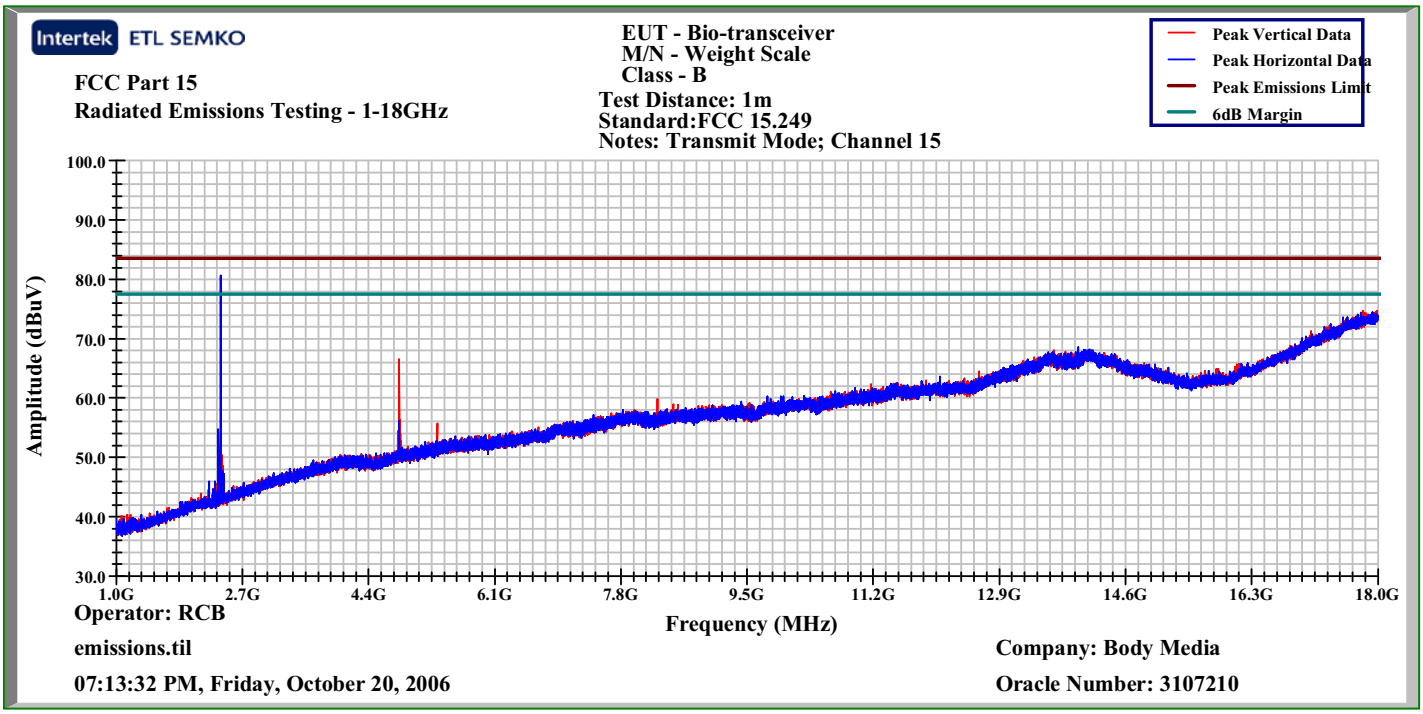
Plot:



TX Mode:Weight Scale - prescan Low Ch

8.0 Radiated emissions (E-field) (Radiated Emissions)

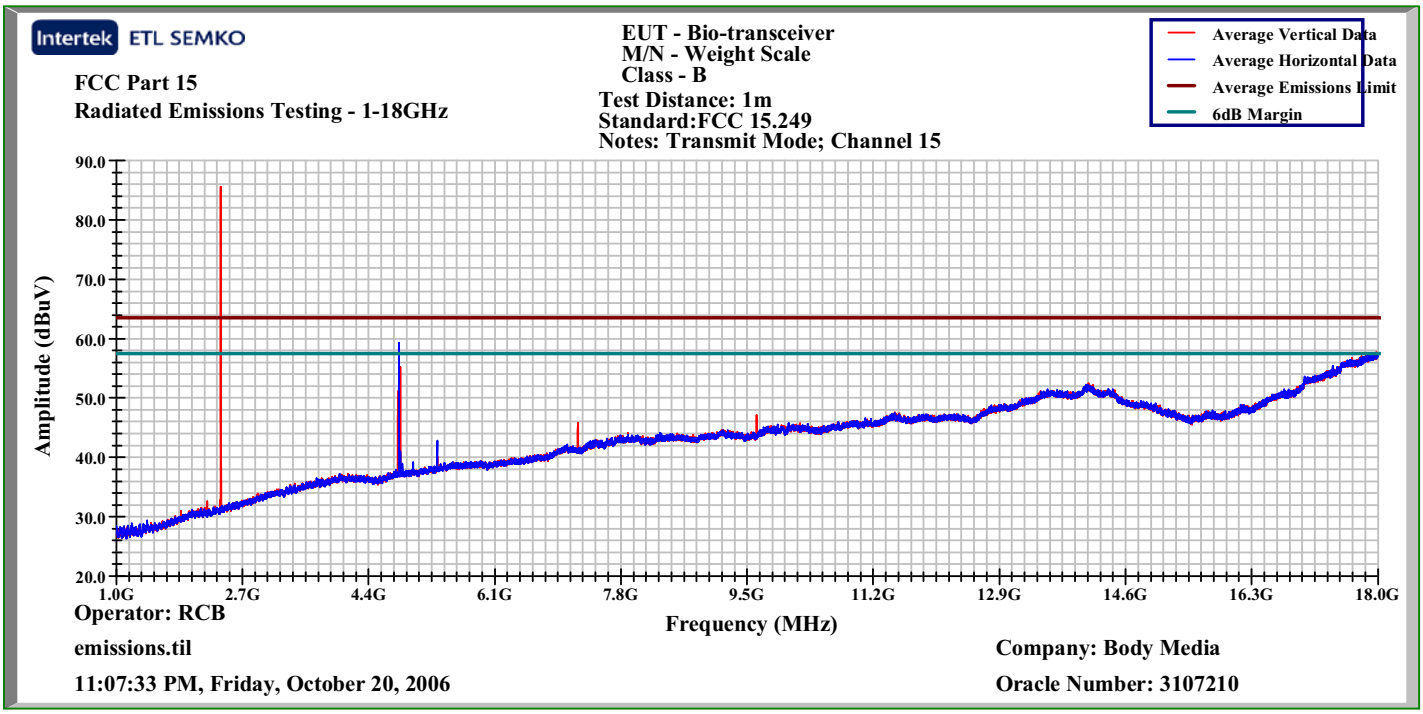
Plot:



TX Mode:Weight Scale - prescan Low Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

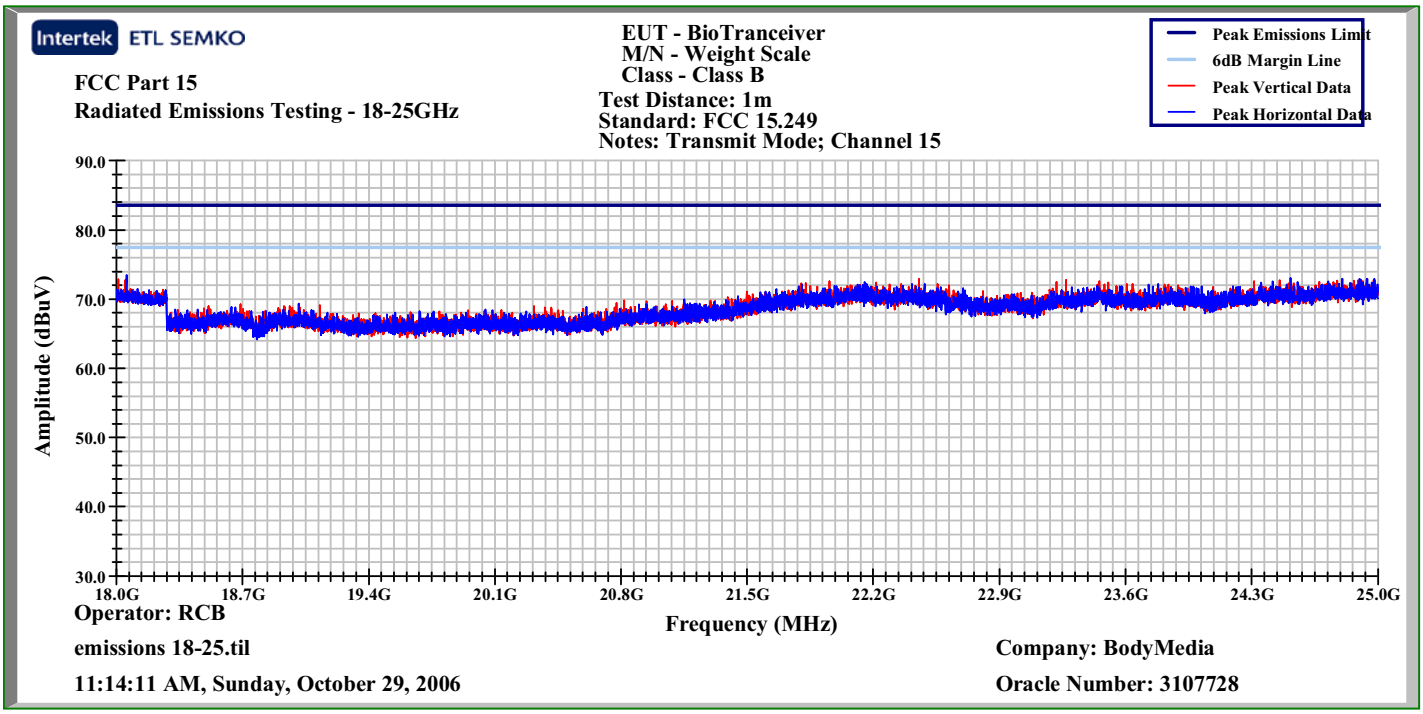
Plot:



TX Mode:Weight Scale - prescan Low Ch average

8.0 Radiated emissions (E-field) (Radiated Emissions)

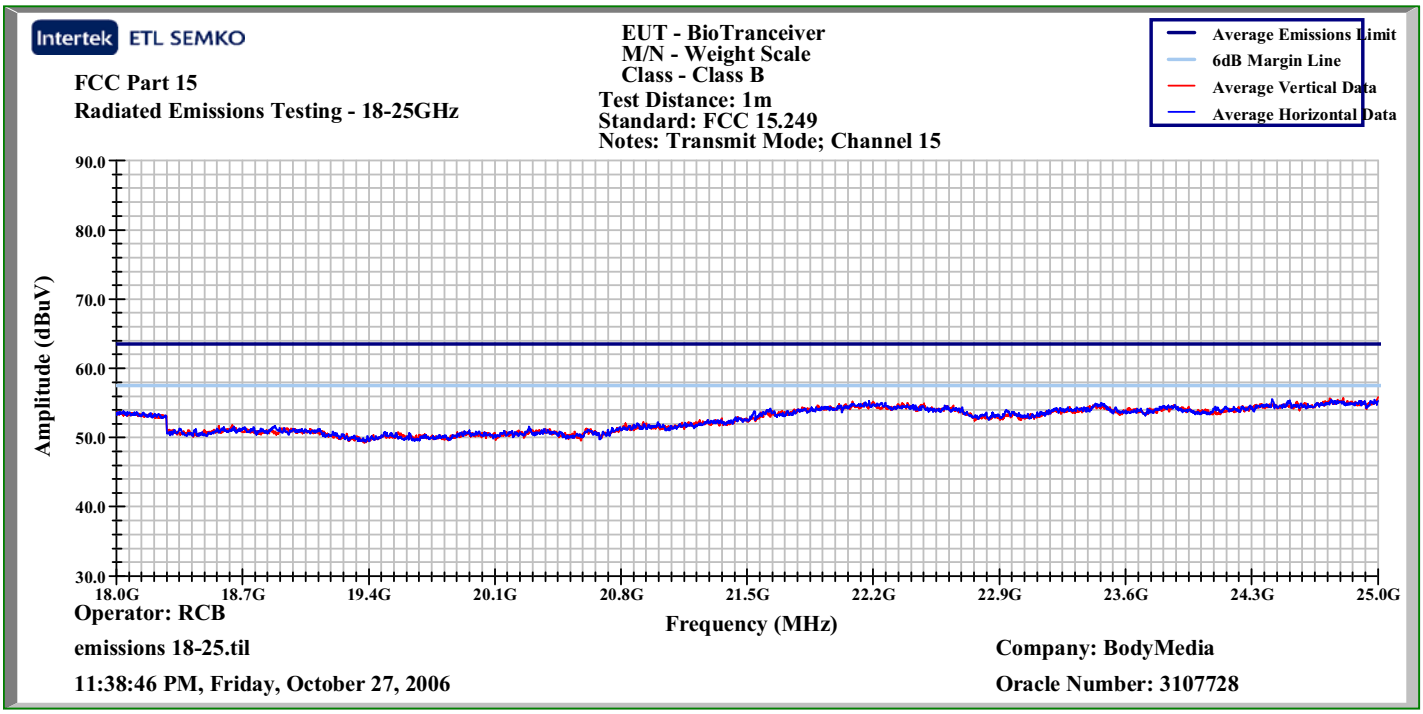
Plot:



TX Mode:Weight Scale - prescan Low Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

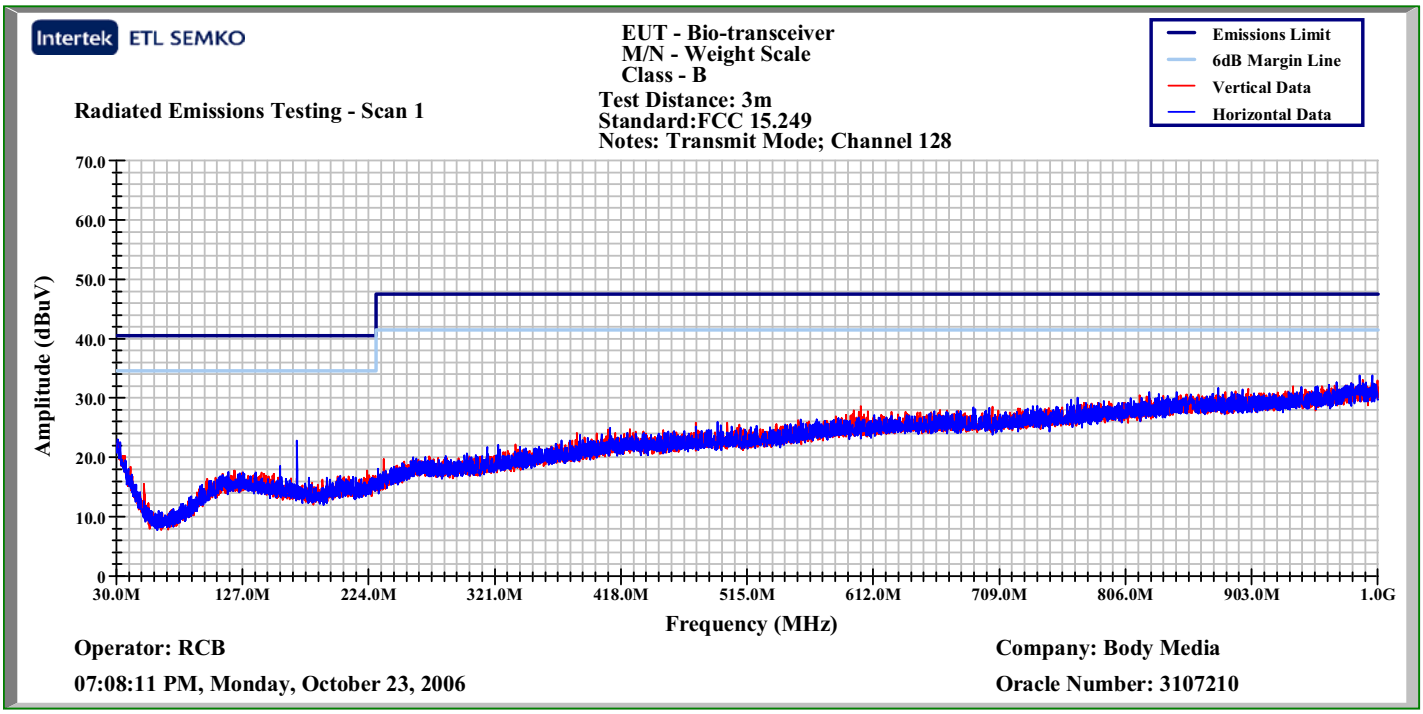
Plot:



TX Mode:Weight Scale - prescan Low Ch average

8.0 Radiated emissions (E-field) (Radiated Emissions)

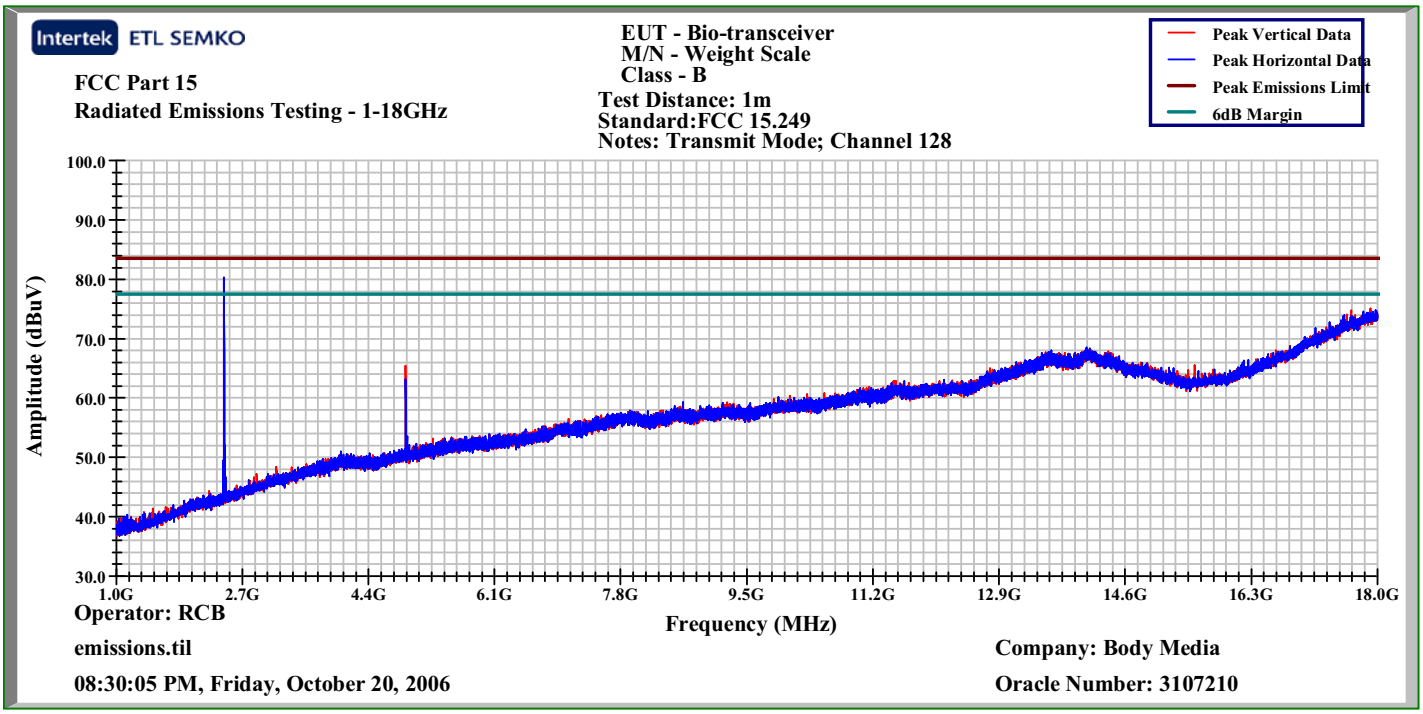
Plot:



TX Mode: Weight Scale - prescan Mid Ch

8.0 Radiated emissions (E-field) (Radiated Emissions)

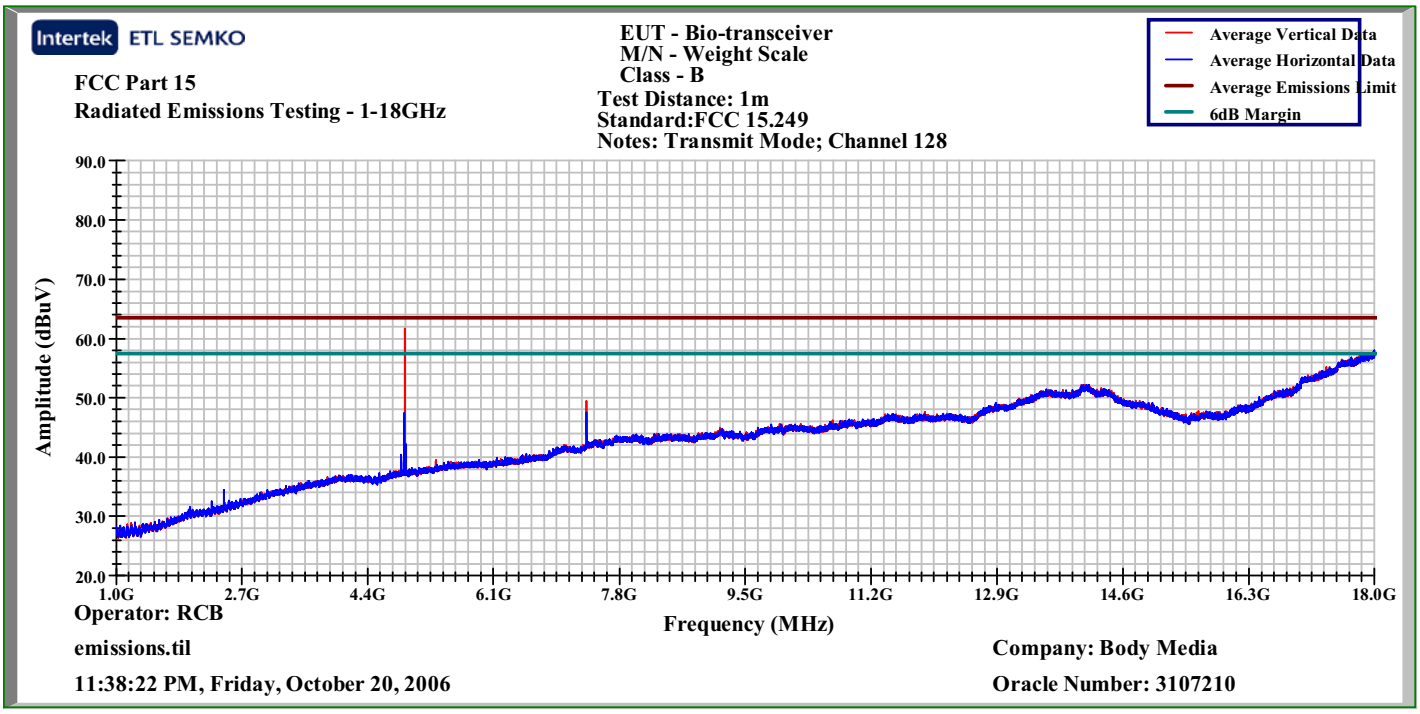
Plot:



TX Mode: Weight Scale - prescan Mid Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

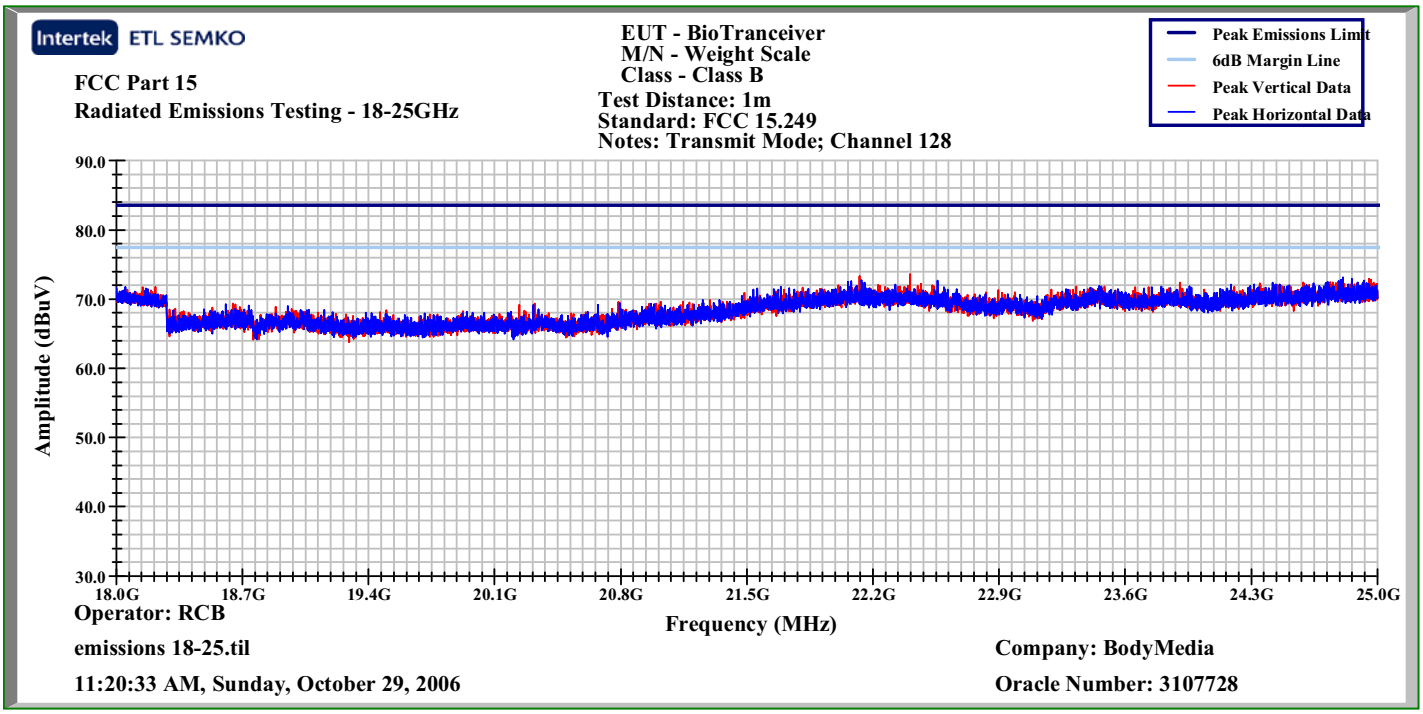
Plot:



TX Mode: Weight Scale - prescan Mid Ch average

8.0 Radiated emissions (E-field) (Radiated Emissions)

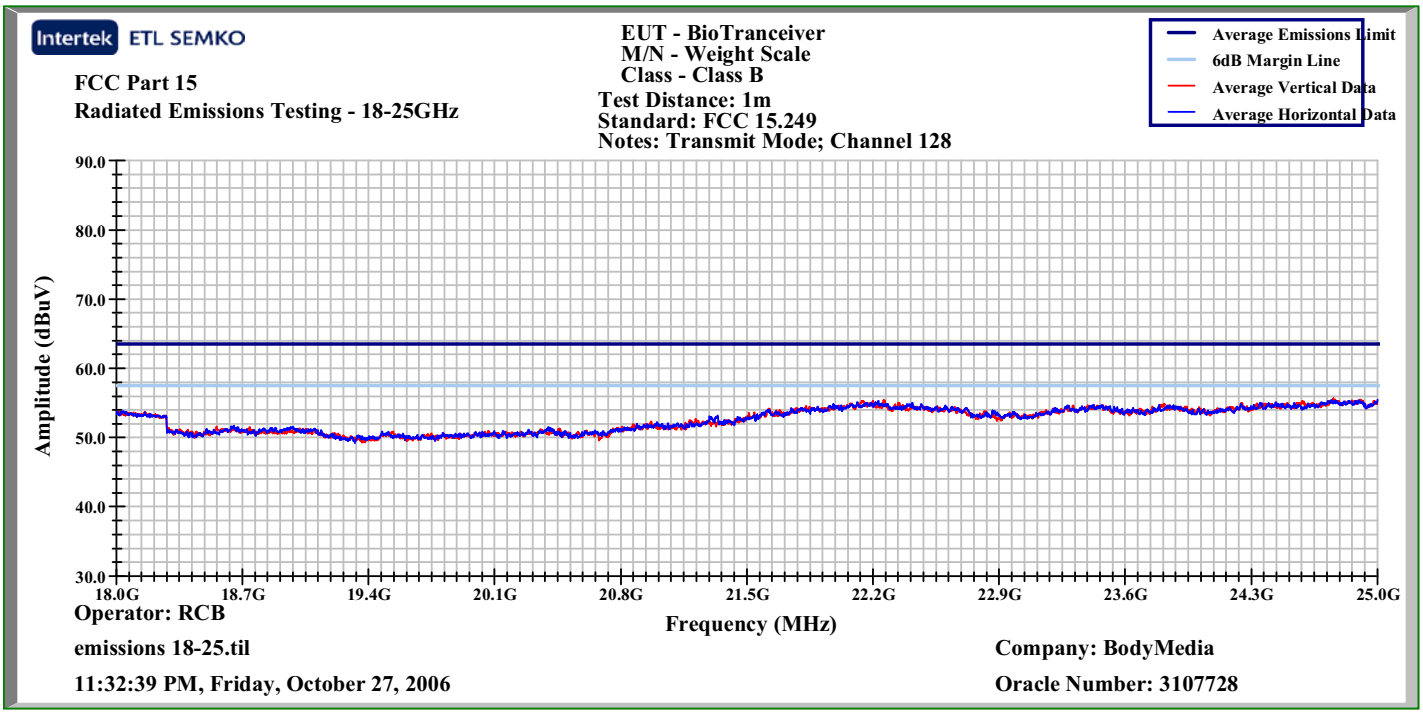
Plot:



TX Mode: Weight Scale - prescan Mid Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

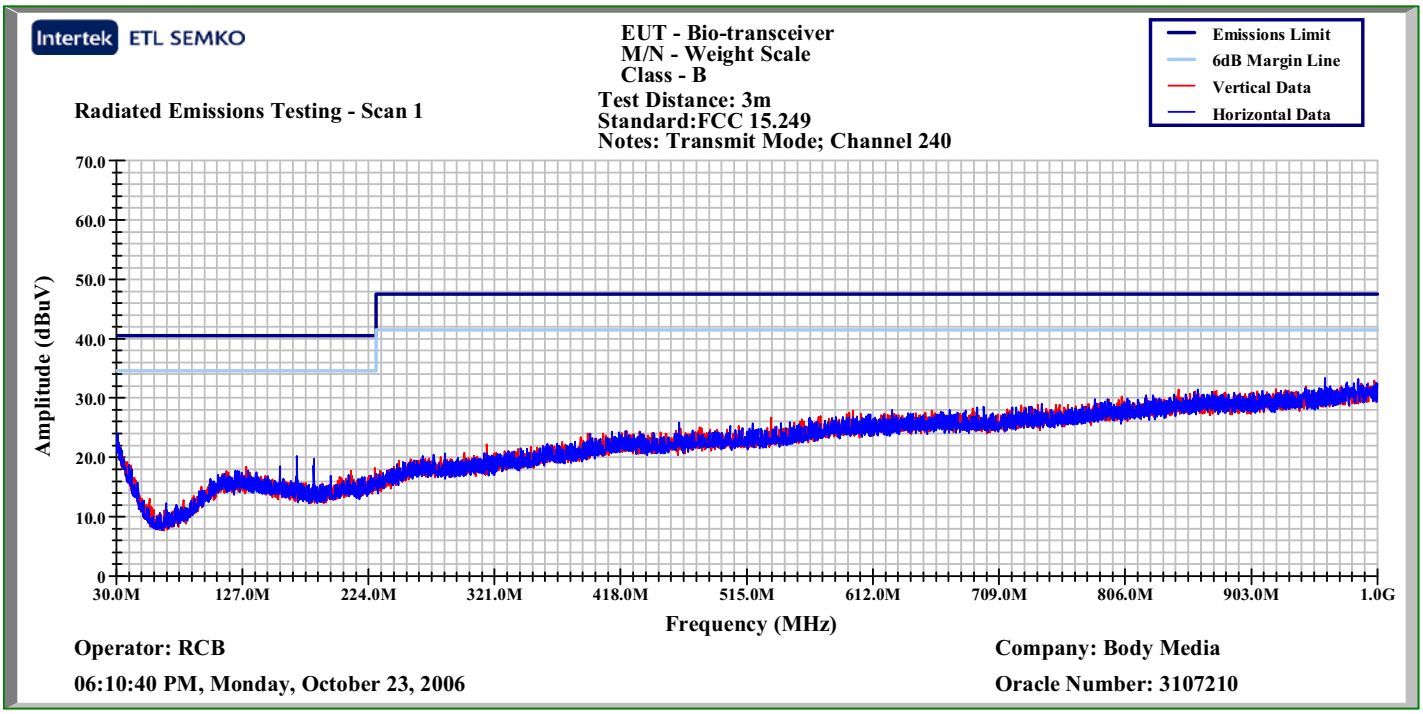
Plot:



TX Mode: Weight Scale - prescan Mid Ch average

8.0 Radiated emissions (E-field) (Radiated Emissions)

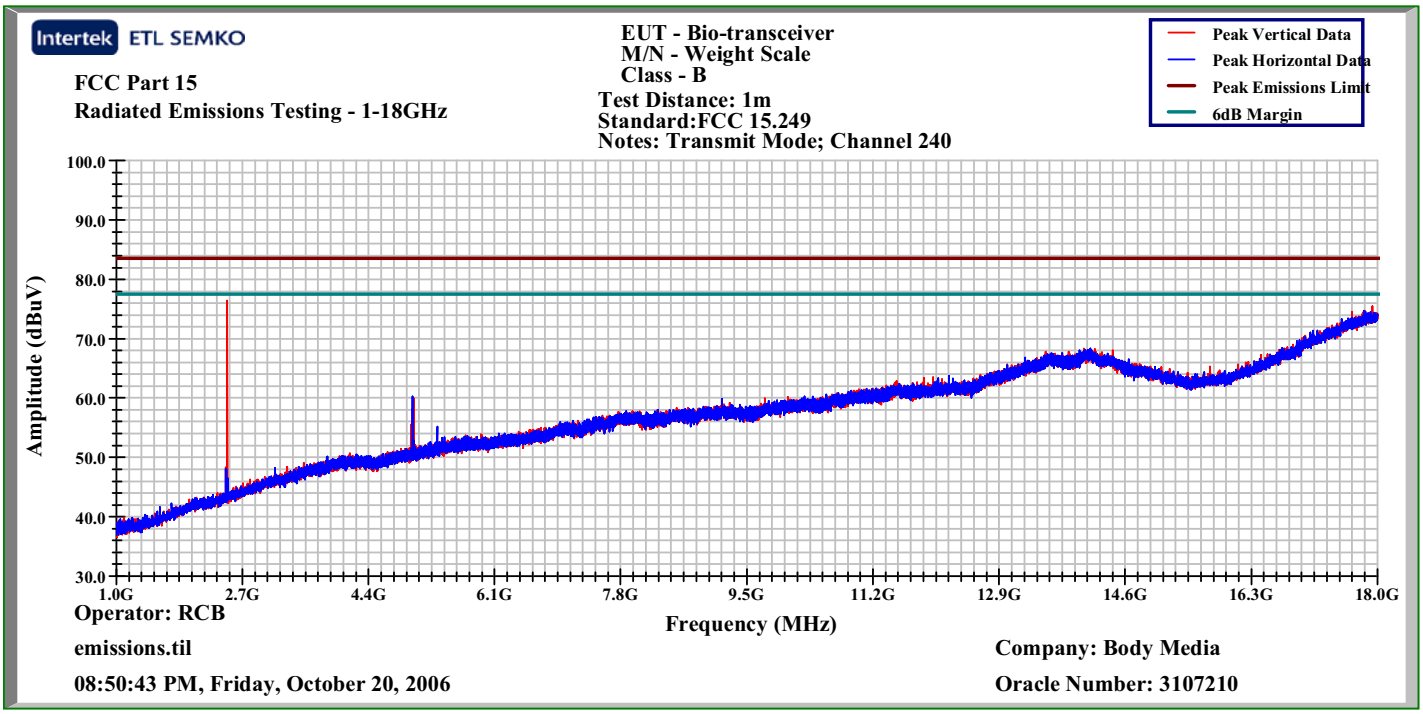
Plot:



TX Mode: Weight Scale - prescan High Ch

8.0 Radiated emissions (E-field) (Radiated Emissions)

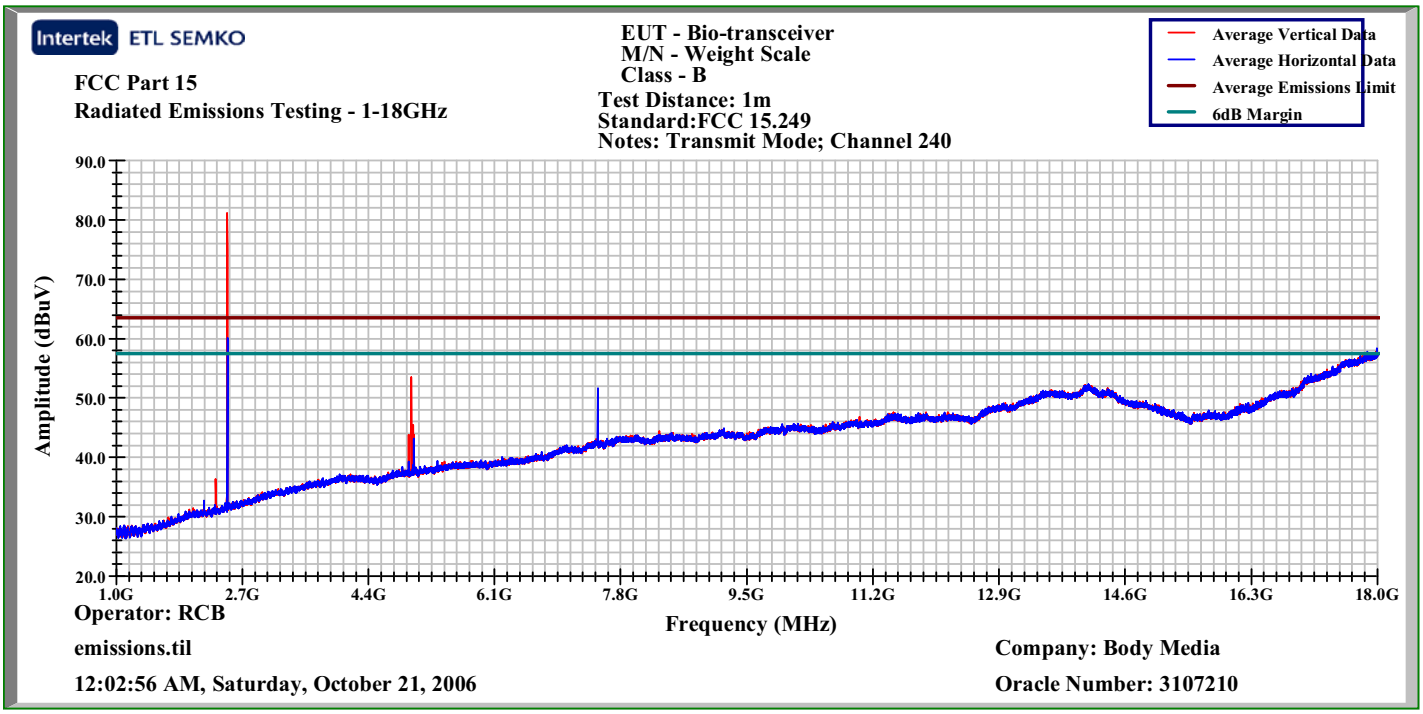
Plot:



TX Mode: Weight Scale - prescan High Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

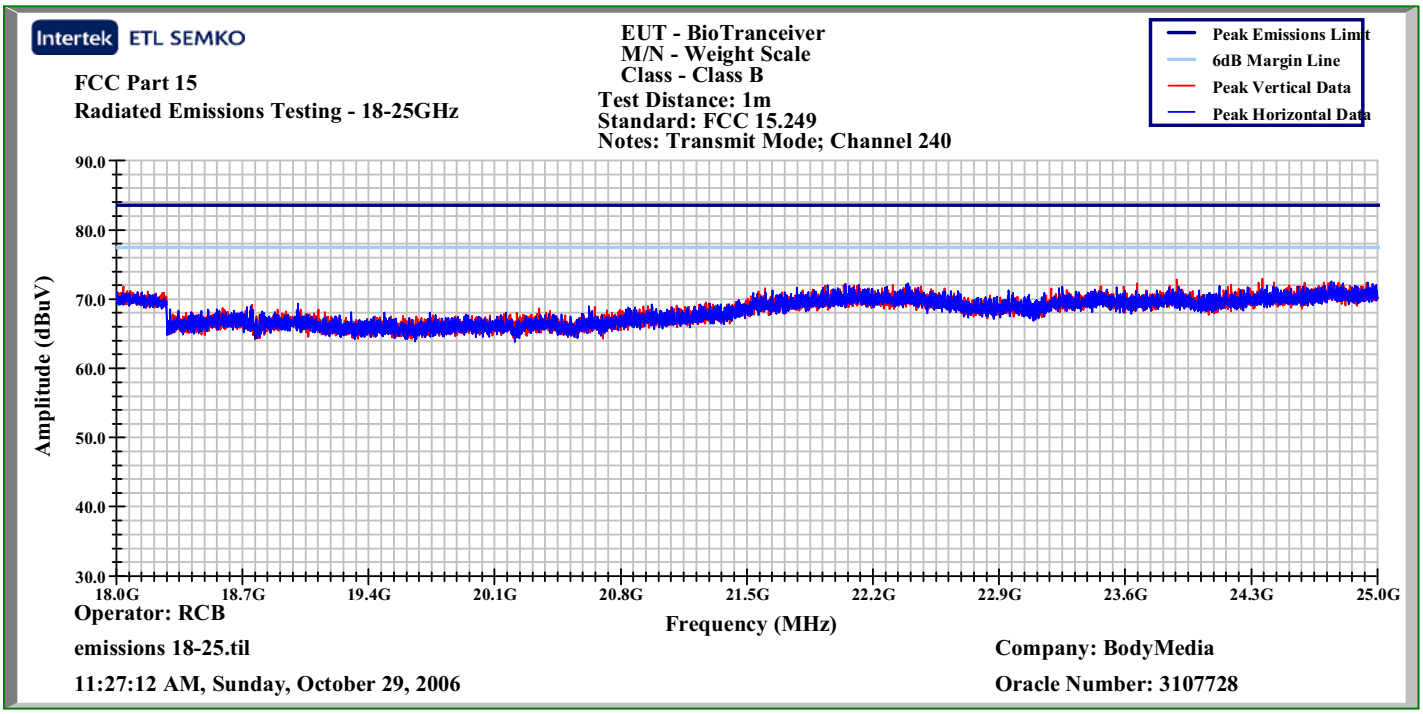
Plot:



TX Mode: Weight Scale - prescan High Ch average

8.0 Radiated emissions (E-field) (Radiated Emissions)

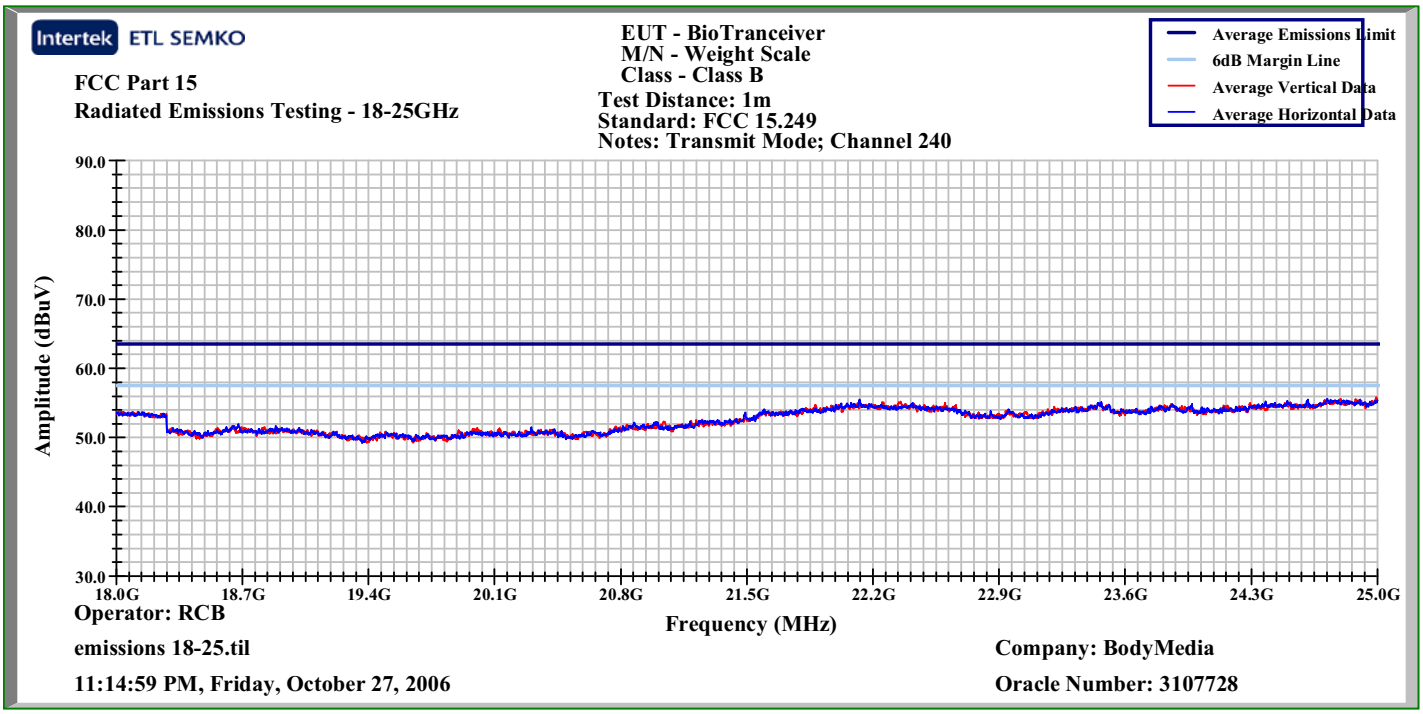
Plot:



TX Mode: Weight Scale - prescan High Ch peak

8.0 Radiated emissions (E-field) (Radiated Emissions)

Plot:



TX Mode: Weight Scale - prescan High Ch average

8.0 Radiated emissions (E-field) (Radiated Emissions)

Data:

Date: 10-17-2006 **Limit:** FCC 249
Frequency Range (MHz): 2406 **Test Distance (m):** 3
Input power: Battery **Modifications for compliance (y/n):** N

A	B	C	D	E	F	G	H	I	J
Ant. Pol. (V/H)	**Frequency MHz**	**Reading dB(uV)**	**Antenna Factor dB(1/m)**	**Cable Loss dB**	**Duty Cycle Factor dB**	**Net dB(uV/m)**	**3m Limit dB(uV/m)**	**Margin dB**	**Axis / Detector**
Lo Channel; Max Power Setting (255)									
V	2406.000	59.6	27.2	8.0	0.0	94.8	114.0	-19.2	X Peak
V	2406.000	59.6	27.2	8.0	28.2	66.6	94.0	-27.4	X Avg
V	2406.000	55.4	27.2	8.0	0.0	90.6	114.0	-23.4	Y Peak
V	2406.000	55.4	27.2	8.0	28.2	62.4	94.0	-31.6	Y Avg
V	2406.000	60.0	27.2	8.0	0.0	95.2	114.0	-18.8	Z Peak
V	2406.000	60.0	27.2	8.0	28.2	67.0	94.0	-27.0	Z Avg
H	2406.000	57.2	27.4	8.0	0.0	92.6	114.0	-21.4	X Peak
H	2406.000	57.2	27.4	8.0	28.2	64.4	94.0	-29.6	X Avg
H	2406.000	60.6	27.4	8.0	0.0	96.0	114.0	-18.0	Y Peak
H	2406.000	60.6	27.4	8.0	28.2	67.8	94.0	-26.2	Y Avg
H	2406.000	61.9	27.4	8.0	0.0	97.3	114.0	-16.7	Z Peak
H	2406.000	61.9	27.4	8.0	28.2	69.1	94.0	-24.9	Z Avg
Calculations		G=C+D+E-F		I=G-H					

TX Mode: Fundamental emissions, Low channel

8.0 Radiated emissions (E-field) (Radiated Emissions)

Data:

Date: 10-17-2006 **Limit:** FCC 249

Frequency Range (MHz): 2451 **Test Distance (m):** 3

Input power: Battery **Modifications for compliance (y/n):** N

A	B	C	D	E	F	G	H	I	J
Ant. Pol. (V/H)	**Frequency MHz**	**Reading dB(uV)**	**Antenna Factor dB(1/m)**	**Cable Loss dB**	**Duty Cycle Factor dB**	**Net dB(uV/m)**	**3m Limit dB(uV/m)**	**Margin dB**	**Axis / Detector**
Mid Channel; Max Power Setting (255)									
V	2451.000	57.9	27.2	8.0	0.0	93.1	114.0	-20.9	X Peak
V	2451.000	57.9	27.2	8.0	28.2	64.9	94.0	-29.1	X Avg
V	2451.000	54.1	27.2	8.0	0.0	89.3	114.0	-24.7	Y Peak
V	2451.000	54.1	27.2	8.0	28.2	61.1	94.0	-32.9	Y Avg
V	2451.000	52.5	27.2	8.0	0.0	87.7	114.0	-26.3	Z Peak
V	2451.000	52.5	27.2	8.0	28.2	59.5	94.0	-34.5	Z Avg
H	2451.000	55.2	27.4	8.0	0.0	90.6	114.0	-23.4	X Peak
H	2451.000	55.2	27.4	8.0	28.2	62.4	94.0	-31.6	X Avg
H	2451.000	61.2	27.4	8.0	0.0	96.6	114.0	-17.4	Y Peak
H	2451.000	61.2	27.4	8.0	28.2	68.4	94.0	-25.6	Y Avg
H	2451.000	58.7	27.4	8.0	0.0	94.1	114.0	-19.9	Z Peak
H	2451.000	58.7	27.4	8.0	28.2	65.9	94.0	-28.1	Z Avg
Calculations		G=C+D+E-F		I=G-H					

TX Mode: Fundamental emissions, Mid channel

8.0 Radiated emissions (E-field) (Radiated Emissions)

Data:

Client: BodyMedia
Model Number: Biotransceiver
Project Number:
Tested By: RCB
Date: 12-3-2006
Frequency Range (MHz): 2481
Input power: Battery

Receiver: HP 8546A
Antenna: EMCO 3115
Cables: E11+MP3+TT1+E05
Preamp: None
Limit: FCC 15.249
Test Distance (m): 3
Modifications for compliance (y/n): N

A	B	C	D	E	F	G	H	I	J
Ant. Pol. (V/H)	**Frequency MHz**	**Reading dB(uV)**	**Antenna Factor dB(1/m)**	**Cable Loss dB**	**Duty Cycle Factor dB**	**Net dB(uV/m)**	**3m Limit dB(uV/m)**	**Margin dB**	**Axis / Detector**
Hi Channel; Max Power Setting (255)									
V	2481.000	56.1	27.1	7.9	0.0	91.1	114.0	-22.9	X Peak
V	2481.000	56.1	27.1	7.9	28.2	62.9	94.0	-31.1	X Avg
V	2481.000	52.9	27.1	7.9	0.0	87.9	114.0	-26.1	Y Peak
V	2481.000	52.9	27.1	7.9	28.2	59.7	94.0	-34.3	Y Avg
V	2481.000	55.9	27.1	7.9	0.0	90.9	114.0	-23.1	Z Peak
V	2481.000	55.9	27.1	7.9	28.2	62.7	94.0	-31.3	Z Avg
H	2481.000	54.2	27.2	7.9	0.0	89.3	114.0	-24.7	X Peak
H	2481.000	54.2	27.2	7.9	28.2	61.1	94.0	-32.9	X Avg
H	2481.000	60.8	27.2	7.9	0.0	95.9	114.0	-18.1	Y Peak
H	2481.000	60.8	27.2	7.9	28.2	67.7	94.0	-26.3	Y Avg
H	2481.000	60.4	27.2	7.9	0.0	95.5	114.0	-18.5	Z Peak
H	2481.000	60.4	27.2	7.9	28.2	67.3	94.0	-26.7	Z Avg
Calculations		G=C+D+E-F		I=G-H					

TX Mode: Fundamental emissions, High channel

8.0 Radiated emissions (E-field) (Radiated Emissions)

Data:

Date: 10-30-2006 **Limit:** FCC15.249 / 15.209
Frequency Range (MHz): 1000-26000 **Test Distance (m):** 1m
Input power: Battery **Modifications for compliance (y/n):** No
Channel 15

A	B	C	D	E	F	G	H	I	J	K
Ant. Pol. (V/H)	**Frequency MHz**	**Reading dB(uV)**	**Antenna Factor dB(1/m)**	**Cable Loss dB**	**Pre-amp Factor dB**	**Duty Cycle Factor dB**	**Net dB(uV/m)**	**1m Limit dB(uV/m)**	**Margin dB**	**Axis / Detector**
V	4812.170	51.3	32.8	14.7	35.1	0.0	63.7	83.5	-19.8	XP
V	4812.170	51.3	32.8	14.7	35.1	28.2	35.5	63.5	-28.0	XA
V	4812.170	49.5	32.8	14.7	35.1	0.0	61.9	83.5	-21.6	YP
V	4812.170	49.5	32.8	14.7	35.1	28.2	33.7	63.5	-29.8	YA
V	4812.170	52.1	32.8	14.7	35.1	0.0	64.5	83.5	-19.0	ZP
V	4812.170	52.1	32.8	14.7	35.1	28.2	36.3	63.5	-27.2	ZA
H	4812.170	52.6	33.2	14.7	35.1	0.0	65.4	83.5	-18.1	XP
H	4812.170	52.6	33.2	14.7	35.1	28.2	37.2	63.5	-26.3	XA
H	4812.170	49.7	33.2	14.7	35.1	0.0	62.5	83.5	-21.0	YP
H	4812.170	49.7	33.2	14.7	35.1	28.2	34.3	63.5	-29.2	YA
H	4812.170	53.0	33.2	14.7	35.1	0.0	65.8	83.5	-17.7	ZP
H	4812.170	53.0	33.2	14.7	35.1	28.2	37.6	63.5	-25.9	ZA
V	7219.060	38.1	36.1	23.1	35.1	0.0	62.2	83.5	-21.3	XP
V	7219.060	38.1	36.1	23.1	35.1	28.2	34.0	63.5	-29.5	XA
V	7219.060	36.4	36.1	23.1	35.1	0.0	60.5	83.5	-23.0	YP
V	7219.060	36.4	36.1	23.1	35.1	28.2	32.3	63.5	-31.2	YA
V	7219.060	39.0	36.1	23.1	35.1	0.0	63.1	83.5	-20.4	ZP
V	7219.060	39.0	36.1	23.1	35.1	28.2	34.9	63.5	-28.6	ZA
H	7219.060	38.6	36.6	23.1	35.1	0.0	63.1	83.5	-20.4	XP
H	7219.060	38.6	36.6	23.1	35.1	28.2	34.9	63.5	-28.6	XA
H	7219.060	36.5	36.6	23.1	35.1	0.0	61.0	83.5	-22.5	YP
H	7219.060	36.5	36.6	23.1	35.1	28.2	32.8	63.5	-30.7	YA
H	7219.060	39.7	36.6	23.1	35.1	0.0	64.2	83.5	-19.3	ZP
H	7219.060	39.7	36.6	23.1	35.1	28.2	36.0	63.5	-27.5	ZA
Calculations		H=C+D+E-F-G		J=H-I						

Note: X, Y, and Z denote the EUT was placed in the X. Y and Z orthoganal axes.
Note: P indicates peak detection. A indicates the peak reading corrected by the duty cycle.

TX Mode: Spurious Emissions - Low Channel

8.0 Radiated emissions (E-field) (Radiated Emissions)

Data:

Date: 10-30-2006 **Limit:** FCC15.249 / 15.209
Frequency Range (MHz): 1000-26000 **Test Distance (m):** 1m
Input power: Battery **Modifications for compliance (y/n):** No

Channel 128

A	B	C	D	E	F	G	H	I	J	K
Ant. Pol. (V/H)	**Frequency MHz**	**Reading dB(uV)**	**Antenna Factor dB(1/m)**	**Cable Loss dB**	**Pre-amp Factor dB**	**Duty Cycle Factor dB**	**Net dB(uV/m)**	**1m Limit dB(uV/m)**	**Margin dB**	**Axis / Detector**
V	4902.360	51.0	32.8	14.7	35.1	0.0	63.4	83.5	-20.1	XP
V	4902.360	51.0	32.8	14.7	35.1	28.2	35.2	63.5	-28.3	XA
V	4902.360	49.5	32.8	14.7	35.1	0.0	61.9	83.5	-21.6	YP
V	4902.360	49.5	32.8	14.7	35.1	28.2	33.7	63.5	-29.8	YA
V	4902.360	54.0	32.8	14.7	35.1	0.0	66.4	83.5	-17.1	ZP
V	4902.360	54.0	32.8	14.7	35.1	28.2	38.2	63.5	-25.3	ZA
H	4902.360	51.4	33.2	14.7	35.1	0.0	64.2	83.5	-19.3	XP
H	4902.360	51.4	33.2	14.7	35.1	28.2	36.0	63.5	-27.5	XA
H	4902.360	47.8	33.2	14.7	35.1	0.0	60.6	83.5	-22.9	YP
H	4902.360	47.8	33.2	14.7	35.1	28.2	32.4	63.5	-31.1	YA
H	4902.360	54.6	33.2	14.7	35.1	0.0	67.4	83.5	-16.1	ZP
H	4902.360	54.6	33.2	14.7	35.1	28.2	39.2	63.5	-24.3	ZA
V	7354.120	36.1	36.1	23.1	35.1	0.0	60.2	83.5	-23.3	XP
V	7354.120	36.1	36.1	23.1	35.1	28.2	32.0	63.5	-31.5	XA
V	7354.120	35.4	36.1	23.1	35.1	0.0	59.5	83.5	-24.0	YP
V	7354.120	35.4	36.1	23.1	35.1	28.2	31.3	63.5	-32.2	YA
V	7354.120	37.8	36.1	23.1	35.1	0.0	61.9	83.5	-21.6	ZP
V	7354.120	37.8	36.1	23.1	35.1	28.2	33.7	63.5	-29.8	ZA
H	7354.120	36.4	36.6	23.1	35.1	0.0	60.9	83.5	-22.6	XP
H	7354.120	36.4	36.6	23.1	35.1	28.2	32.7	63.5	-30.8	XA
H	7354.120	34.5	36.6	23.1	35.1	0.0	59.0	83.5	-24.5	YP
H	7354.120	34.5	36.6	23.1	35.1	28.2	30.8	63.5	-32.7	YA
H	7354.120	37.9	36.6	23.1	35.1	0.0	62.4	83.5	-21.1	ZP
H	7354.120	37.9	36.6	23.1	35.1	28.2	34.2	63.5	-29.3	ZA
Calculations		G=C+D+E-F		I=G-H						

Note: X, Y, and Z denote the EUT was placed in the X. Y and Z orthoganal axes.
Note: P indicates peak detection. A indicates the peak reading corrected by the duty cycle.

TX Mode: Spurious Emissions - Mid Channel

8.0 Radiated emissions (E-field) (Radiated Emissions)

Data:

Client: Bodymedia
Model Number: Glucose Meter
Project Number: 3107210
Tested By: RCB
Date: 12-21-2006
Frequency Range (MHz): 1000-18000
Input power: Battery

Receiver: R&S FSEK 30
Antenna: EMCO 3115
Cables: E11+MP3+E20+TT1
Preamp: HP 8449B
Limit: FCC15 Class B-1m
Test Distance (m): 1m
Modifications for compliance (y/n): No

Channel 229 - 2481MHz

A	B	C	D	E	F	G	H	I	J	K
Ant. Pol. (V/H)	**Frequency MHz**	**Reading dB(uV)**	**Antenna Factor dB(1/m)**	**Cable Loss dB**	**Pre-amp Factor dB**	**Duty Cycle Factor dB**	**Net dB(uV/m)**	**1m Limit dB(uV/m)**	**Margin dB**	**Axis / Detector**
V	4961.890	52.3	32.8	13.0	35.1	0.0	63.0	83.5	-20.5	XP
V	4961.890	52.3	32.8	13.0	35.1	28.2	34.8	63.5	-28.7	XA
V	4961.890	51.9	32.8	13.0	35.1	0.0	62.6	83.5	-20.9	YP
V	4961.890	51.9	32.8	13.0	35.1	28.2	34.4	63.5	-29.1	YA
V	4961.890	56.4	32.8	13.0	35.1	0.0	67.1	83.5	-16.4	ZP
V	4961.890	56.4	32.8	13.0	35.1	28.2	38.9	63.5	-24.6	ZA
H	4961.890	53.0	33.2	13.0	35.1	0.0	64.1	83.5	-19.4	XP
H	4961.890	53.0	33.2	13.0	35.1	28.2	35.9	63.5	-27.6	XA
H	4961.890	50.2	33.2	13.0	35.1	0.0	61.3	83.5	-22.2	YP
H	4961.890	50.2	33.2	13.0	35.1	28.2	33.1	63.5	-30.4	YA
H	4961.890	57.1	33.2	13.0	35.1	0.0	68.2	83.5	-15.3	ZP
H	4961.890	57.1	33.2	13.0	35.1	28.2	40.0	63.5	-23.5	ZA
V	7442.950	38.1	36.1	18.0	35.1	0.0	57.2	83.5	-26.3	XP
V	7442.950	38.1	36.1	18.0	35.1	28.2	29.0	63.5	-34.5	XA
V	7442.950	37.9	36.1	18.0	35.1	0.0	57.0	83.5	-26.5	YP
V	7442.950	37.9	36.1	18.0	35.1	28.2	28.8	63.5	-34.7	YA
V	7442.950	40.6	36.1	18.0	35.1	0.0	59.7	83.5	-23.8	ZP
V	7442.950	40.6	36.1	18.0	35.1	28.2	31.5	63.5	-32.0	ZA
H	7442.950	38.8	36.6	18.0	35.1	0.0	58.3	83.5	-25.2	XP
H	7442.950	38.8	36.6	18.0	35.1	28.2	30.1	63.5	-33.4	XA
H	7442.950	38.0	36.6	18.0	35.1	0.0	57.5	83.5	-26.0	YP
H	7442.950	38.0	36.6	18.0	35.1	28.2	29.3	63.5	-34.2	YA
H	7442.950	40.7	36.6	18.0	35.1	0.0	60.2	83.5	-23.3	ZP
H	7442.950	40.7	36.6	18.0	35.1	28.2	32.0	63.5	-31.5	ZA
Calculations		H=C+D+E-F-G		J=H-I						

TX Mode: Spurious Emissions - High Channel

9.0 Radiated emissions (E-field) (Radiated Emissions)

Method:

Measurements in the frequency range of 30 MHz to 1000 MHz shall be performed with a quasi-peak detector instrument that meets the requirements of Section One of CISPR 16. Above 1000 MHz, a peak detector shall be used. Peak values converted to average by appying the duty cycle correction factor. The measuring antenna shall correlate to a balanced dipole.

Bandwidths:
30 MHz to 1000 MHz: 120 kHz RBW and 1 MHz VBW
Above 1000 MHz: 1 MHz RBW and 3 MHz VBW

Measurements of the radiated field are made with the antenna located at a distance of 3 or 10 meters from the EUT. The limit applied to the measurement shall be appropriate for the test distance. The test distance shall be indicated in the results section.

The EUT shall be arranged and connected with cables terminated in accordance with the product specification.

Exploratory tests should be carried out while varying the cable positions to determine the maximum or near-maximum emission level. During manipulation, cables shall not be placed under or on top of the system test components unless such placement is required by the inherent equipment design.

The antenna shall be adjusted between 1m and 4m in height above the ground plane for maximum meter reading at each test frequency.

The antenna-to-EUT azimuth shall be varied during the measurement to find the maximum field-strength readings.

The antenna-to-EUT polarization (horizontal and vertical) shall be varied during the measurements to find the maximum field-strength readings.

If the EUT is intended for tabletop use, it shall be placed on a table whose top is 0.8m above the ground plane. The table shall be constructed of non-conductive materials. Its dimensions are at least 1m by 1.5m, but may be extended for larger EUT.

If EUT is floor standing, the EUT was placed on a horizontal metal ground plane and isolated from the ground plane by up to 12 mm of insulating material.

Equipment setup for radiated disturbance tests shall follow the guidelines of ANSI C63.4:2003.

TEST SITE
The test site for radiated emissions is located at 1950 Evergreen Blvd, Suite 100, Duluth, Georgia 30096.

MEASUREMENT UNCERTAINTY
Compliance of the product is based on the measured value. However, the measurement uncertainty is included for informational purposes. The values given are the measurement uncertainty values with an expanded uncertainty of k=2.
30 MHz to 1000 MHz at 3 meters: +/- 3.9 dB
30 MHz to 1000 MHz at 10 meters: +/- 3.6 dB
1 GHz to 18 GHz at 3 meters: +/- 4.2 dB

Test Equipment Used:

Description:	Manufacturer:	Model:	Asset Number:	Cal Date:	Cal Due:
Antenna, Bilog (20MHz to 2GHz)	Chase	CBL6112B	211386	08/29/2006	08/29/2007
Antenna, Horn, 1-18 GHz	EMCO	3115	213061	03/28/2006	03/28/2007
Antenna, Horn, 18-40 GHz	EMCO	3116	213023	03/22/2006	03/22/2007
Cable E01 (Formerly PE7000N-N2 or N2)	Pasternack	RG214/U	E01	05/11/2006	05/11/2007
Cable, 18 GHz, N, 394 inches	Megaphase	G919-NKNK-394	MP3	05/11/2006	05/11/2007
Cable, 40 GHz, 2.9, 80 inches	Megaphase	TM40 K1K1 80	E405	05/12/2006	05/12/2007
Cable, 40 GHz, 2.9, 80 inches	Megaphase	TM40 K1K1 80	E404	05/12/2006	05/12/2007
Coaxial Cable, 6ft, N(Male) to N(Male)	Mini-Circuits	CBL-6FT-NMNM	TT1	05/11/2006	05/11/2007
EMI Receiver	Hewlett Packard	8546A	211388	08/04/2006	08/04/2007
EMI Receiver, Preselector section	Hewlett Packard	85460A	211389	08/04/2006	08/04/2007
Excel spreadsheet for radiated emissions	Intertek Software	SW (RE Worksheet	SW004	08/01/2006	08/01/2007
Preamplifier, 10 MHz to 2000 MHz, 27 dB gain	Mini-Circuits	ZKL-2	200074	01/24/2006	01/24/2007
Preamplifier, 1-26 GHz	Hewlett Packard	8449B	213191	05/04/2006	05/04/2007
Spectrum Analyzer, 20 Hz to 40 GHz	Rohde & Schwarz	FSEK30	200062	01/12/2006	01/12/2007

9.0 Radiated emissions (E-field) (Radiated Emissions)

Data:

Client: BodyMedia
Model Number: Biotransceiver
Project Number:
Tested By: RCB
Date: 12-3-2006
Frequency Range (MHz): 2481
Input power: Battery

Receiver: HP 8546A
Antenna: EMCO 3115
Cables: E11+MP3+TT1+E05
Preamp: None
Limit: FCC 15.249
Test Distance (m): 3
Modifications for compliance (y/n): N

A	B	C	D	E	F	G	H	I	J
Ant. Pol. (V/H)	**Frequency MHz**	**Reading dB(uV)**	**Antenna Factor dB(1/m)**	**Cable Loss dB**	**Duty Cycle Factor dB**	**Net dB(uV/m)**	**3m Limit dB(uV/m)**	**Margin dB**	**Axis / Detector**
Hi Channel; Max Power Setting (255)									
V	2481.000	56.1	27.1	7.9	0.0	91.1	114.0	-22.9	X Peak
V	2481.000	56.1	27.1	7.9	28.2	62.9	94.0	-31.1	X Avg
V	2481.000	52.9	27.1	7.9	0.0	87.9	114.0	-26.1	Y Peak
V	2481.000	52.9	27.1	7.9	28.2	59.7	94.0	-34.3	Y Avg
V	2481.000	55.9	27.1	7.9	0.0	90.9	114.0	-23.1	Z Peak
V	2481.000	55.9	27.1	7.9	28.2	62.7	94.0	-31.3	Z Avg
H	2481.000	54.2	27.2	7.9	0.0	89.3	114.0	-24.7	X Peak
H	2481.000	54.2	27.2	7.9	28.2	61.1	94.0	-32.9	X Avg
H	2481.000	60.8	27.2	7.9	0.0	95.9	114.0	-18.1	Y Peak
H	2481.000	60.8	27.2	7.9	28.2	67.7	94.0	-26.3	Y Avg
H	2481.000	60.4	27.2	7.9	0.0	95.5	114.0	-18.5	Z Peak
H	2481.000	60.4	27.2	7.9	28.2	67.3	94.0	-26.7	Z Avg
Calculations		G=C+D+E-F		I=G-H					

10.0 Revision History (Revision History)

Method:

Document the history of the report.

Data:

Revision Level	Date	Report Number	Notes
Original issue	October 31, 2006	3107210ATL-001	--
1	December 22, 2006	3107210ATL-001	Added test data from 12/3/06 and 12/21/06. This data replaced data which was recorded outside the allowed transmit band.