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## **CERTIFICATION TEST REPORT**

**Manufacturer:** Centurion Medical Products  
100 Centurion Way  
Williamston, Michigan 48895 USA

**Applicant:** Same As Above

**Product Name:** Compass CAST

**Product Description:** The Centurion Compass CAST-MAP system consists of two parts. The Compass CAST disposable digital wireless blood pressure monitor (transmitter) and the Compass MAP wireless sensor (receiver) which plugs into the Blood Pressure monitor port of a medical multifunction monitor. When a connection is made between the CAST and the MAP, a detailed blood pressure waveform is presented on the multi-function monitor. The Compass CAST and MAP are both implemented using Low Energy Bluetooth radios.

**Model:** CWHG001 (Compass CAST)

**FCC ID:** 2AF4Z-CWHG001

**Testing Commenced:** Nov. 10, 2015

**Testing Ended:** Nov. 13, 2015

**Summary of Test Results:** In Compliance

The EUT complies with the EMC requirements when manufactured identically as the unit tested in this report, including any required modifications. Any changes to the design or build of this unit subsequent to this testing may deem it non-compliant.

**Standards:**

- FCC Part 15 Subpart C, Section 15.247
- ANSI C63.10:2013



Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

**Evaluation Conducted by:**

Joe Knepper, EMC Proj. Eng.

**Report Reviewed by:**

Ken Littell, Director of EMC & Wireless Operations

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Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

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## 1 ADMINISTRATIVE INFORMATION

### 1.1 Measurement Location:

F2 Labs in Middlefield, Ohio. Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD.

### 1.2 Measurement Procedure:

All measurements were performed according to the 2013 version of ANSI C63.10 and recommended FCC procedure of measurement of DTS operating under Section 15.247 and in KDB558074. A list of the measurement equipment can be found in Section 6.

### 1.3 Uncertainty Budget:

The uncertainty in EMC measurements arises from several factors which affect the results, some associated with environmental conditions in the measurement room, the test equipment being used and the measurement techniques adopted.

The measurement uncertainty budgets detailed below are calculated from the test and calibration data, and are expressed with a 95% confidence factor. Note: Only measurements listed below which relate to tests included in this Test Report are applicable.

Measurement	Uncertainty
Radiated Emissions <1 GHz @10m	±5.09dB
Radiated Emissions <1 GHz @3m	±5.07dB
Radiated Emissions 1 GHz to 2.7 GHz	±3.62dB
Radiated Emissions 2.7 GHz to 18 GHz	±3.10dB
Radiated Emissions 18 GHz to 26.5 GHz	±3.11dB
AC Power Line Conducted Emissions 150kHz to 30 MHz	±2.76dB

This Uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

### 1.4 Document History

Document Number	Description	Issue Date	Approved By
F2LQ7746C-03E	First Issue	Feb. 2, 2016	K. Littell



Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

## 2 SUMMARY OF TEST RESULTS

Test Name	Standard(s)	Results
-6dB Occupied Bandwidth	CFR 47 Part 15.247(a)(2) / KDB558074	Complies
Conducted Output Power	CFR 47 Part 15.247(b)(3) / KDB558074	Complies
Conducted Spurious Emissions	CFR 47 Part 15.247(d) / Part 15.209 / KDB558074	Complies
Radiated Spurious Emission with 0dBi Integral Antenna	CFR 47 Part 15.247(d) / Part 15.209 / KDB558074	Complies
Peak Power Spectral Density	CFR 47 Part 15.247(e) / KDB558074	Complies

Note: product was operated using a 3.0V battery.  
Requirements of 15.31 were met by using a fully charged battery.

Modifications Made to the Equipment
None



Order Number: F2LQ7746C

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### 3 TABLE OF MEASURED RESULTS

Test	High Channel 2.48GHz	Mid Channel 2.44GHz	Low Channel 2.402GHz
Conducted Output Power	2.630mW, 4.20dBm	1.820mW, 2.60dBm	1.941mW, 2.88dBm
Conducted Output Power Limit	1 Watt, 30dBm	1 Watt, 30dBm	1 Watt, 30dBm
E.I.R.P. with 0dBi Integral antenna	2.630mW, 4.20dBm	1.820mW, 2.60dBm	1.941mW, 2.88dBm
E.I.R.P. Limit	4 Watts, 36.02dBm	4 Watts, 36.02dBm	4 Watts, 36.02dBm
Peak Power Spectral Density	-11.47dBm	-13.24dBm	-13.53dBm
Peak Power Spectral Density Limit	8dBm	8dBm	8dBm
-6dB Occupied Bandwidth	806.3kHz	740.3kHz	733.5kHz
-6dB Occupied Bandwidth Limit	≥ 500kHz	≥ 500kHz	≥ 500kHz



**Order Number: F2LQ7746C**

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**Model: CWHG001 (Compass CAST)**

#### **4 ENGINEERING STATEMENT**

This report has been prepared on behalf of Centurion Medical Products to provide documentation for the testing described herein. This equipment has been tested and found to comply with Part 15.247 of the FCC Rules using ANSI C63.10:2013 and KDB558074 standards. The test results found in this test report relate only to the items tested.



Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

## 5 EUT INFORMATION AND DATA

### 5.1 Equipment Under Test:

Product: Compass CAST

Model: CWHG001

Serial No.: None Spec.

FCC ID: 2AF4Z-CWHG001

### 5.2 Trade Name:

Centurion Medical Products

### 5.3 Power Supply:

3.0V Rechargeable Battery

### 5.4 Applicable Rules:

CFR 47, Part 15.247, subpart C

### 5.5 Equipment Category:

Radio Transmitter-DTS

### 5.6 Antenna:

0dBi Integral Antenna

### 5.7 Accessories:

N/A

### 5.8 Test Item Condition:

The equipment to be tested was received in good condition.

### 5.9 Testing Algorithm:

The EUT was configured to permit frequency changes from low-mid-upper transmission channel using digital modulation (required for digital transmission systems). For RF antenna conducted tests, the EUT was equipped with an SMA connector for connection to the measuring equipment. For radiated emissions tests, in a semi-anechoic chamber, the EUT was equipped with integral/internal chip. The highest emissions were recorded in the data tables.



Order Number: F2LQ7746C

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Model: CWHG001 (Compass CAST)

## 6 LIST OF MEASUREMENT INSTRUMENTATION

Equipment Type	Asset Number	Manufacturer	Model	Serial Number	Calibration Due Date
Shielded Chamber	CL166-E	AlbatrossProjects	B83117-DF435-T261	US140023	Apr. 1, 2016
Spectrum Analyzer	CL138	Agilent Technologies	E4407B	US41192779	Nov. 17, 2015
Receiver	CL151	Rohde & Schwarz	ESU40	100319	Nov. 30, 2015
Pre-Amplifier	CL153	Agilent	83006-69007	MY39500791	May 6, 2016
Amplifier w/Monopole & 18" Loop	CL163	A.H. Systems, Inc.	EHA-52B	100	Apr. 20, 2016
Antenna	CL175	Sunol Sciences	JB3	A030315	Mar. 13, 2016
Horn Antenna	CL098	EMCO	3115	9809-5580	Dec. 3, 2015
Horn Antenna	CL114	A.H. Systems, Inc.	SAS-572	237	Oct. 15, 2016
Software:	Tile Version 1.0			Software Verified: Nov. 13, 2015	
Software:	EMC 32, Version 5.20.2			Software Verified: Nov. 13, 2015	



**Order Number: F2LQ7746C**

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**Model: CWHG001 (Compass CAST)**

## **7 FCC PART 15.247(a)(2) – OCCUPIED BANDWIDTH**

### **7.1 Requirements:**

The 6dB bandwidth shall be greater than 500 kHz.

Bandwidth measurements were made at the low (2.402 GHz), mid (2.44 GHz) and upper (2.48 GHz) frequencies with the resolution Bandwidth set at 100 kHz (video bandwidth set at 300 kHz) while the span was set at 3 MHz. The bandwidth was measured using the occupied bandwidth function.



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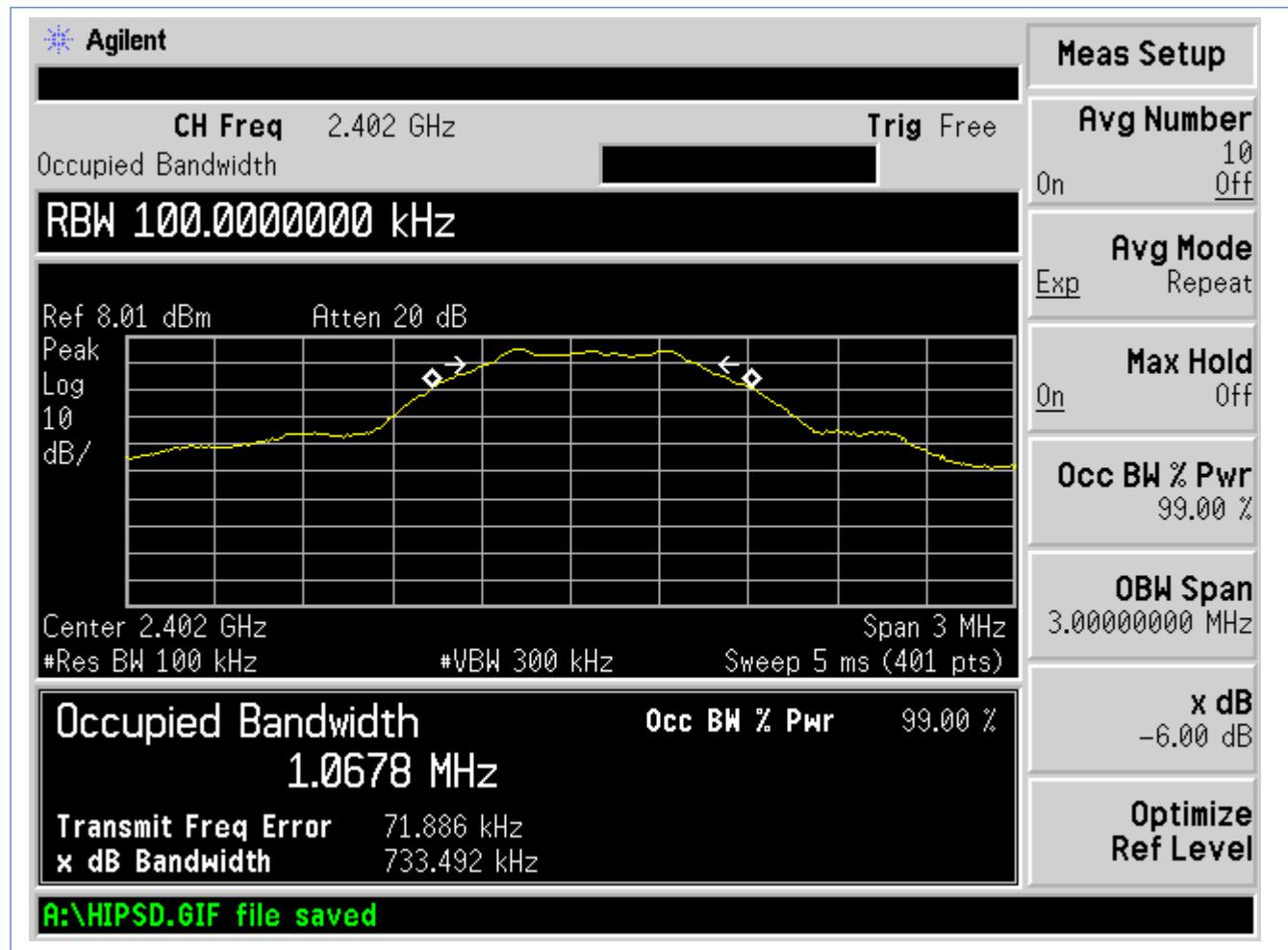
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

## 7.2 Occupied Bandwidth Test Data

Test Date:	Nov. 10, 2015	Test Engineer:	J. Knepper
Standards:	CFR 47 Part 15.247(a)(2); KDB558074	Air Temperature:	21.7°C
		Relative Humidity:	47%

### Low Channel



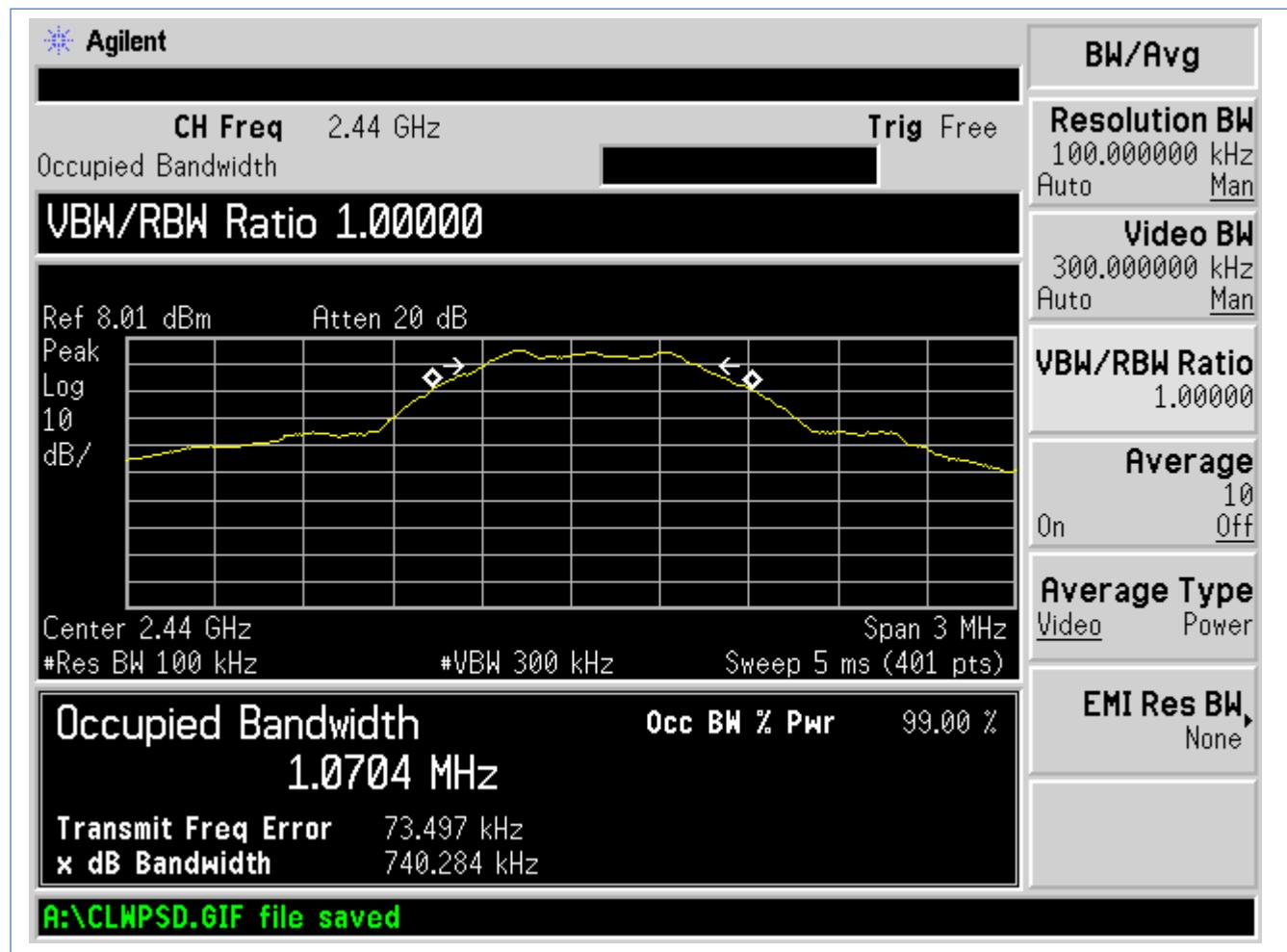


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Mid Channel



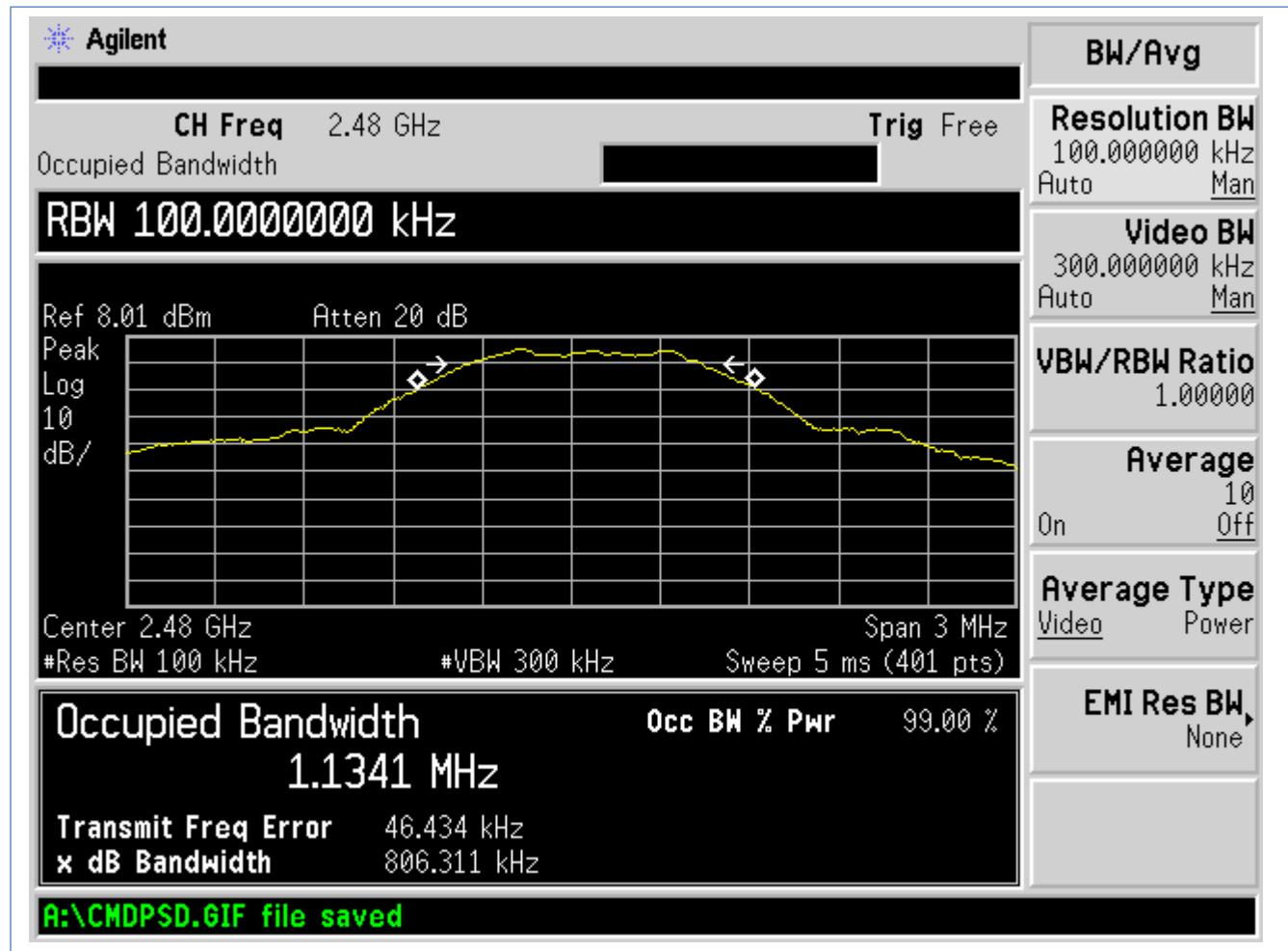


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### High Channel





**Order Number: F2LQ7746C**

**Manufacturer: Centurion Medical Products**

**Model: CWHG001 (Compass CAST)**

## **8 FCC PART 15.247(b)(3) – CONDUCTED OUTPUT POWER**

The EUT antenna port was fitted with an SMA connector and directly connected to the input of the receiver. The peak power output was measured.

### **8.1 Requirements:**

The peak power output shall be 1 watt (30 dBm) or less when using an antenna with a gain of less than 6dBi. For antennas having a gain of more than 6dBi, the limit is reduced by 1dB for every dB the antenna gain is over 6dBi.



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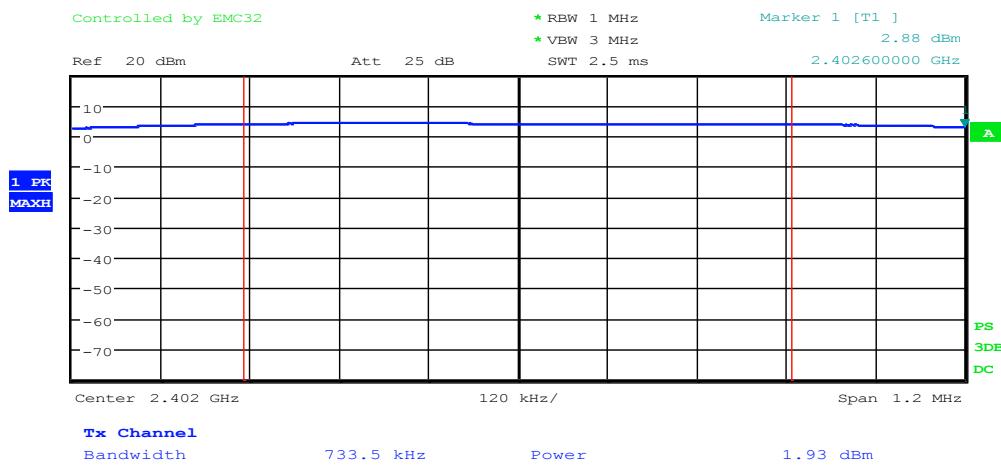
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

## 8.2 Conducted Output Power Test Data

Test Date:	Nov. 10, 2015	Test Engineer:	J. Knepper
Standards:	CFR 47 Part 15.247(b)(3); KDB558074	Air Temperature:	21.7°C

### Low Channel



Date: 10.NOV.2015 11:09:18

082515

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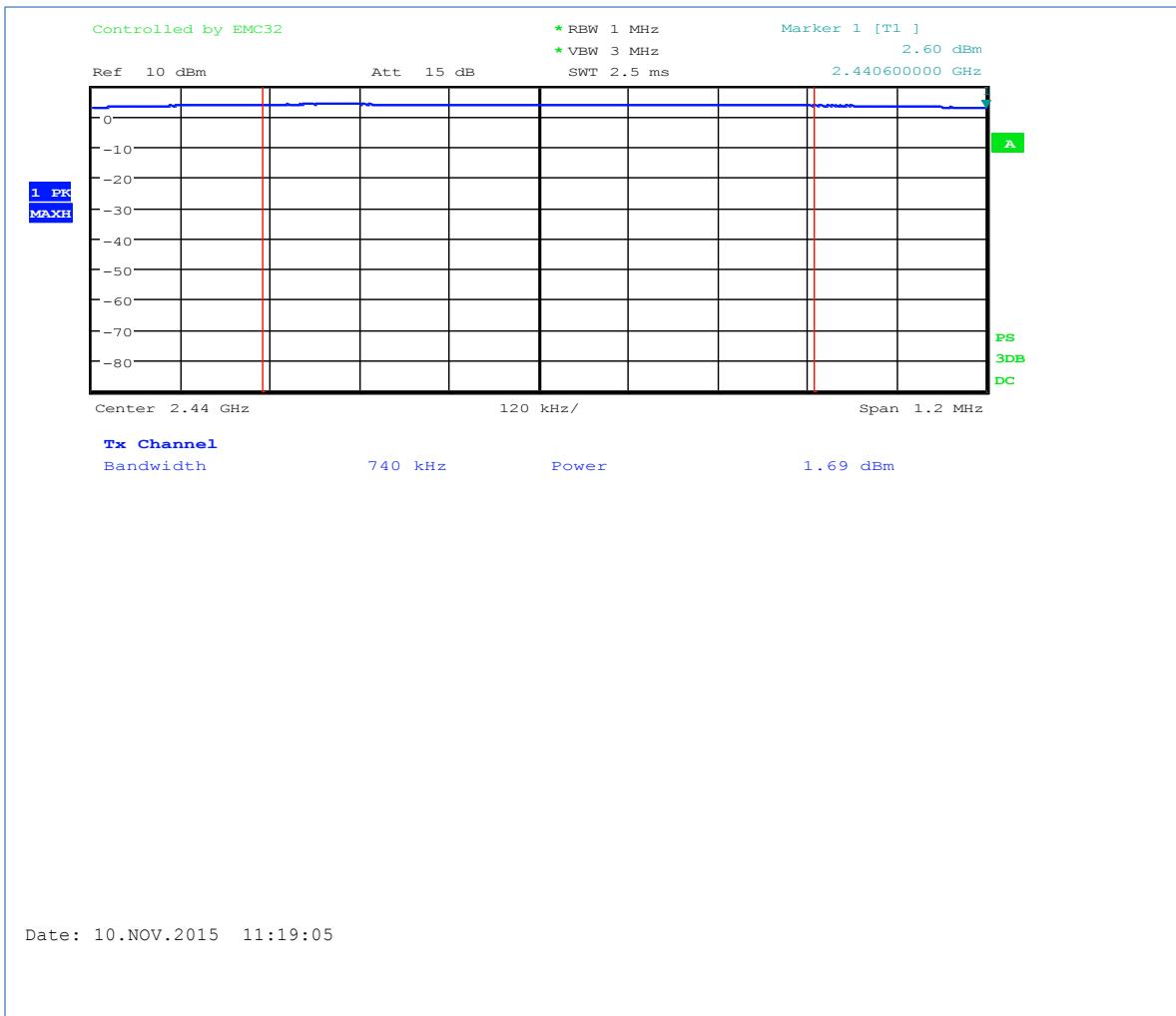


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

## Mid Channel



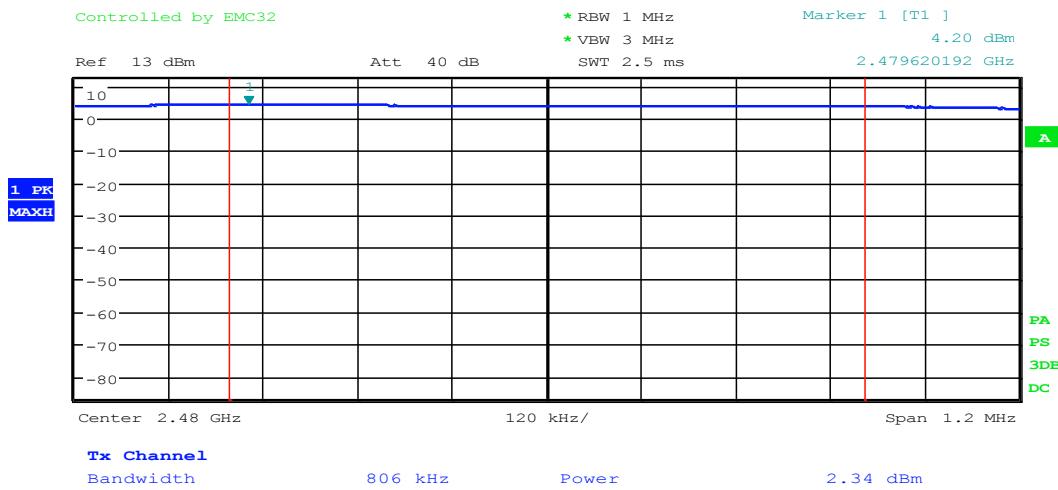


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

## High Channel



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082515

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Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

## 9 FCC Part 15.247(d) – CONDUCTED SPURIOUS EMISSIONS

The following tests were performed to demonstrate compliance.

### RF Antenna Conducted Test

The EUT antenna port was fitted with an SMA connector and directly connected to the input of the spectrum analyzer.

#### 9.1 Requirements:

All Spurious Emissions must be at least 20dB down from the highest emission level measured within the authorized band up through the tenth harmonic.

Spurious emissions measurements were made at the low, mid, and upper channels with the appropriate spectrum analyzer impulse bandwidth. Additionally, 20dB down points were measured for the low and high channels to verify band edge compliance.



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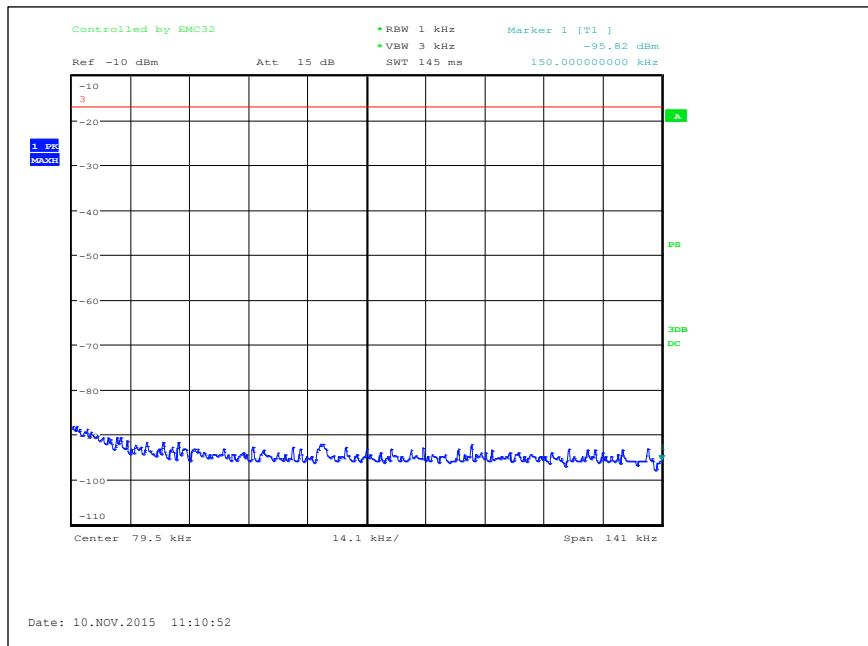
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

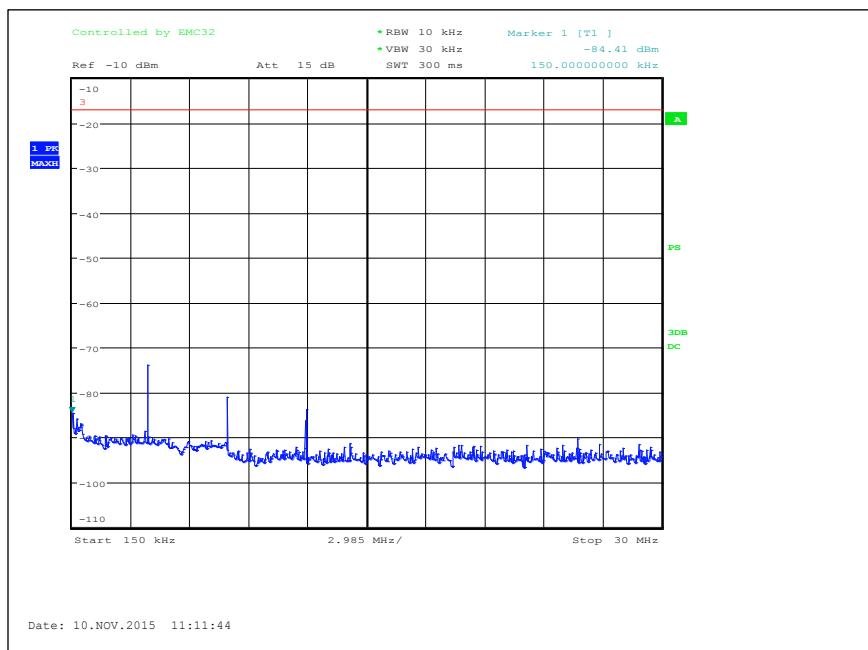
## 9.2 Test Data – Conducted Spurious Emissions

Test Date:	Nov. 10, 2015	Test Engineer:	J. Knepper
Standards:	CFR 47 Part 15.247(d) / Part 15.209; KDB558074	Air Temperature:	21.4°C
		Relative Humidity:	47%

### Low Channel: .009 MHz to 0.15 MHz



### Low Channel: 0.15 MHz to 30 MHz



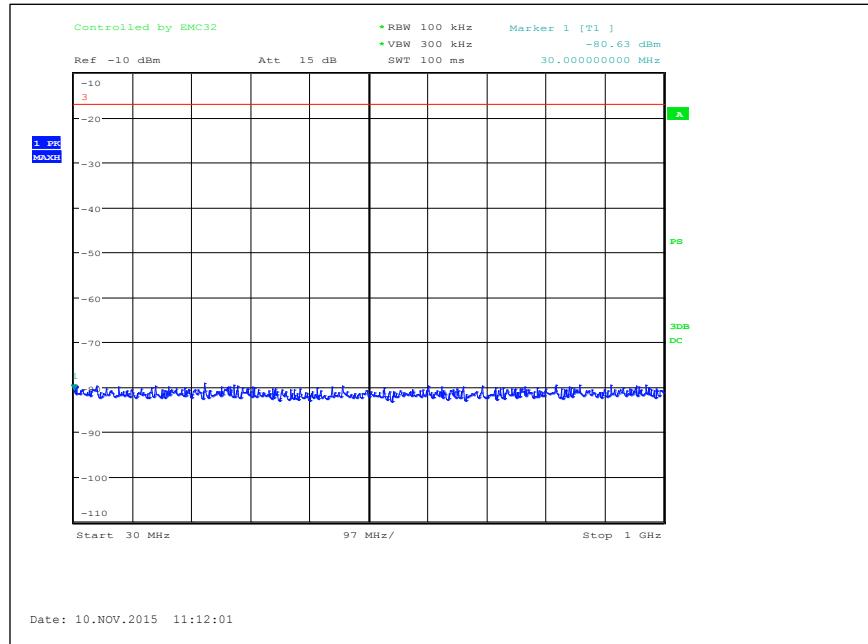


Order Number: F2LQ7746C

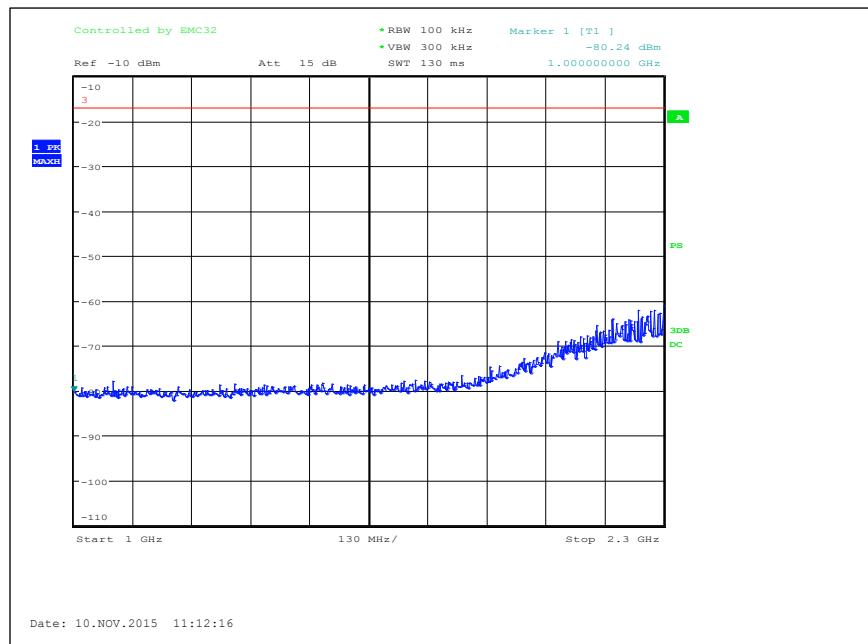
Manufacturer: Centurion Medical Products

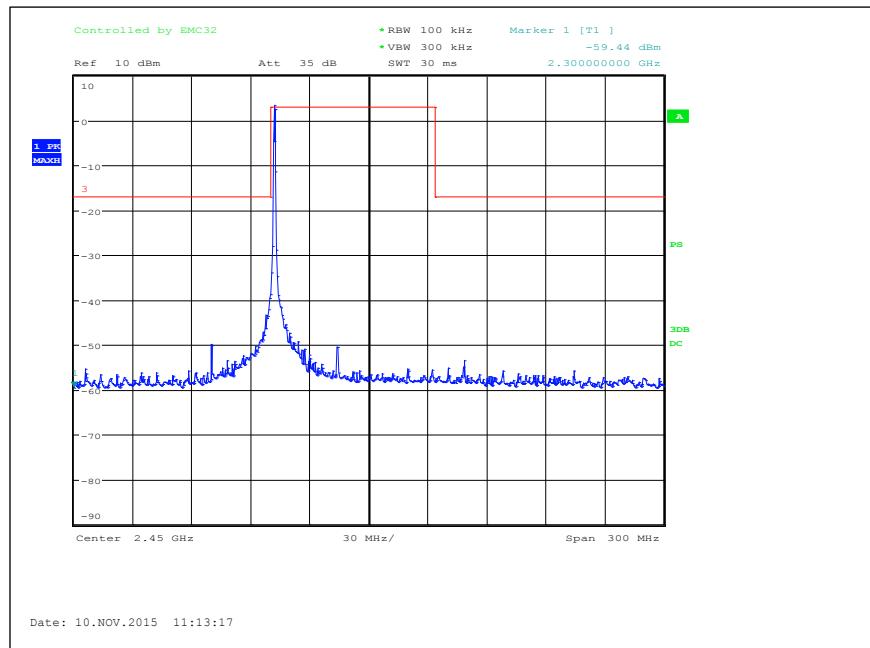
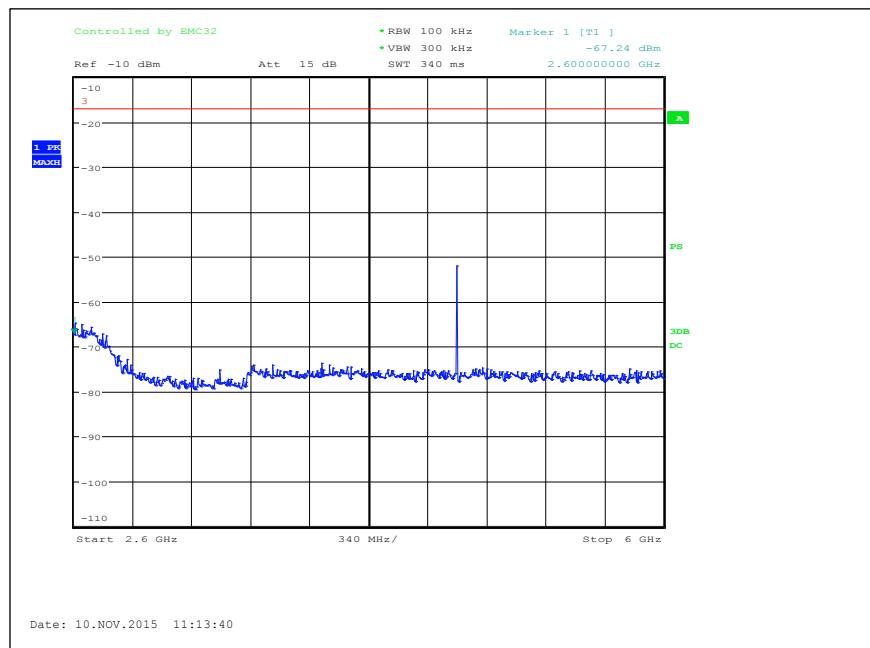
Model: CWHG001 (Compass CAST)

### Low Channel: 30 MHz to 1 GHz



### Low Channel: 1 GHz to 2.3 GHz



**Low Channel: 2.3 GHz to 2.6 GHz**

**Low Channel: 2.6 GHz to 6 GHz**


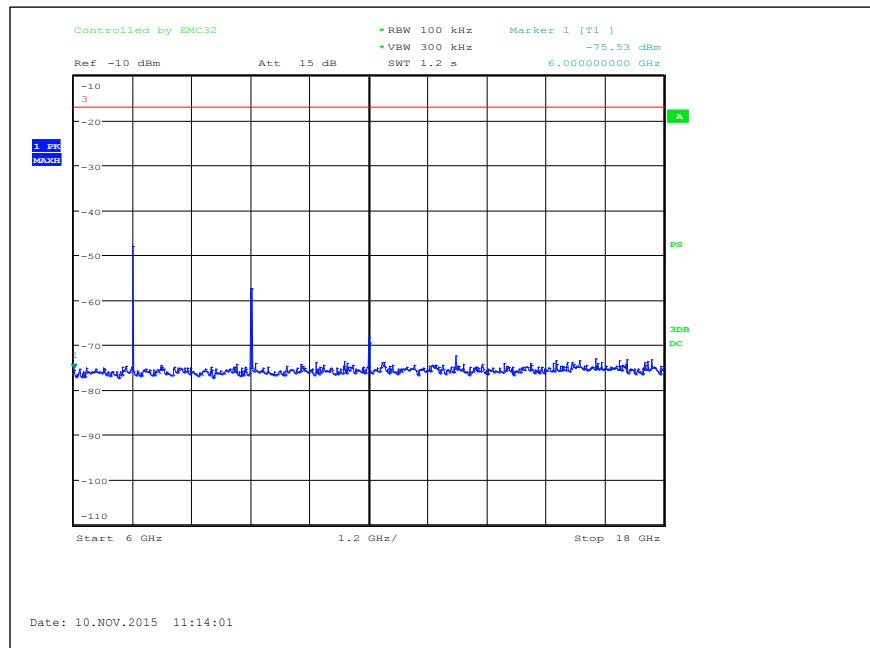


Order Number: F2LQ7746C

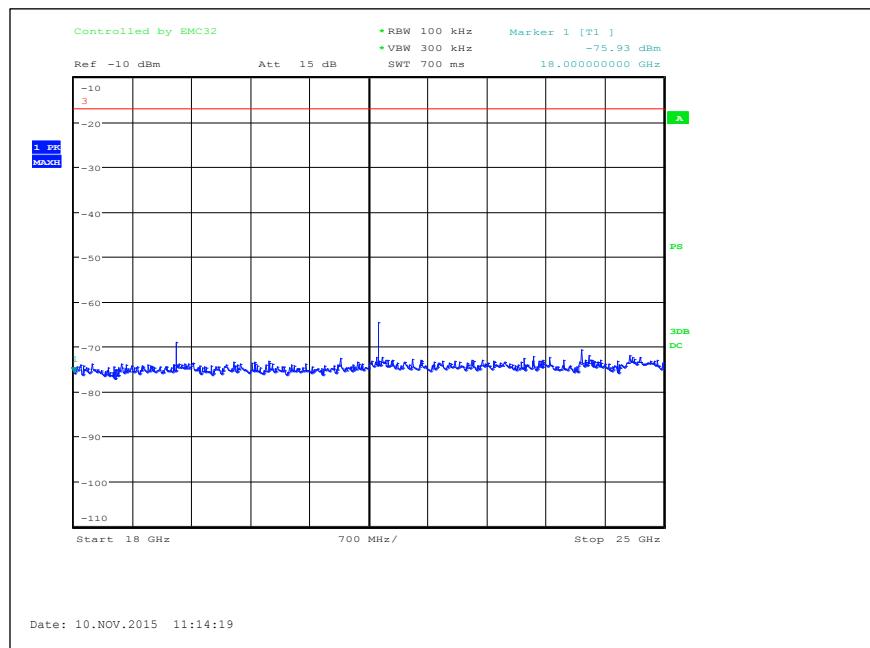
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Low Channel: 6 GHz to 18 GHz



### Low Channel: 18 GHz to 25 GHz



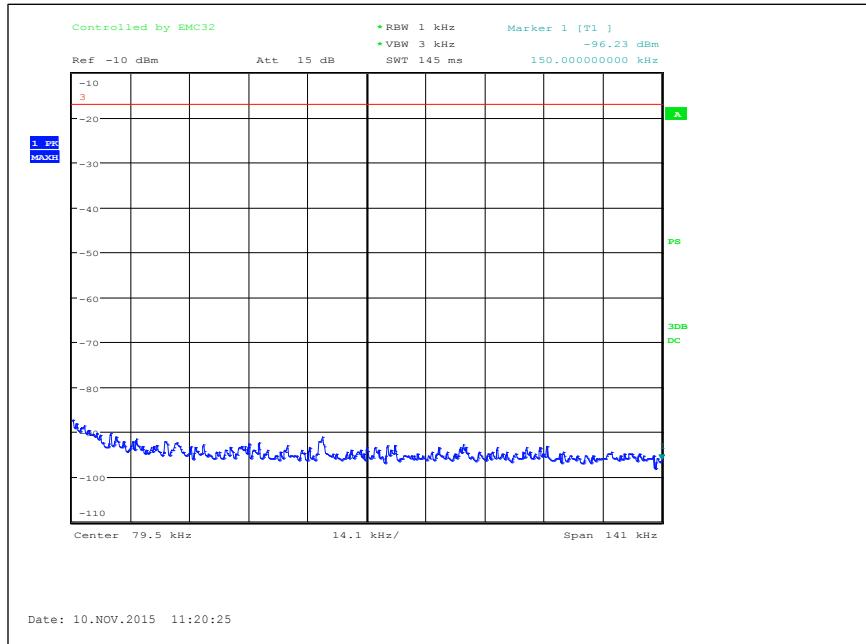


Order Number: F2LQ7746C

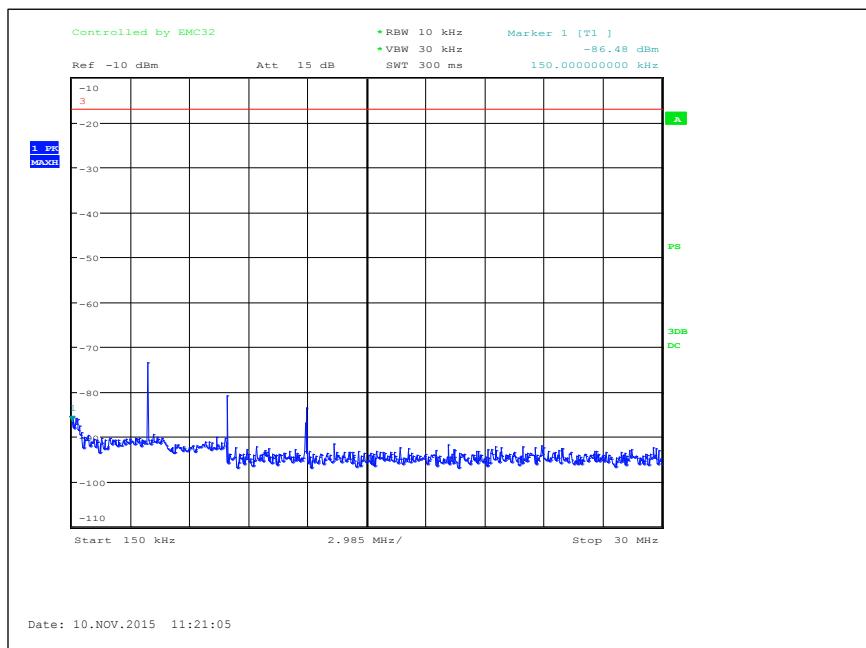
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

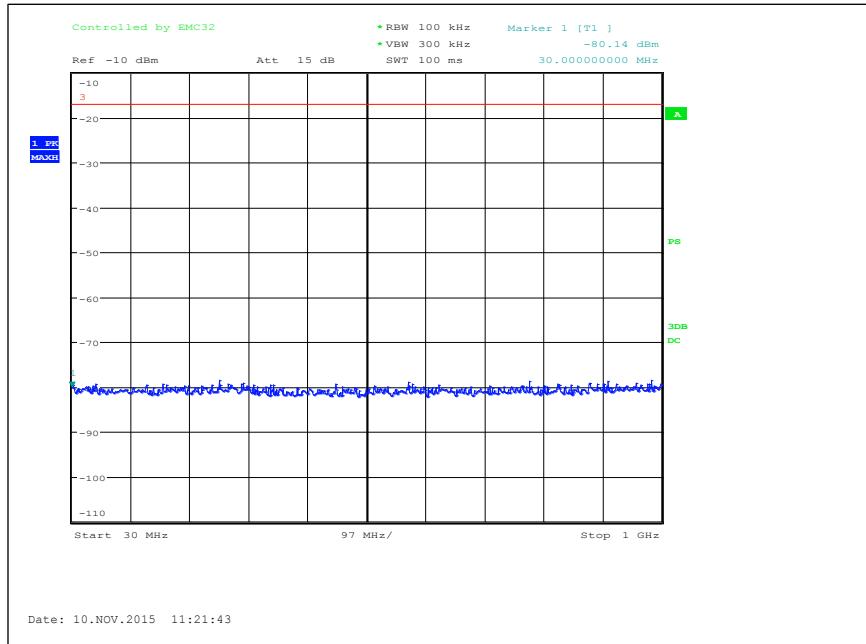
### Mid Channel: .009 MHz to 0.15 MHz



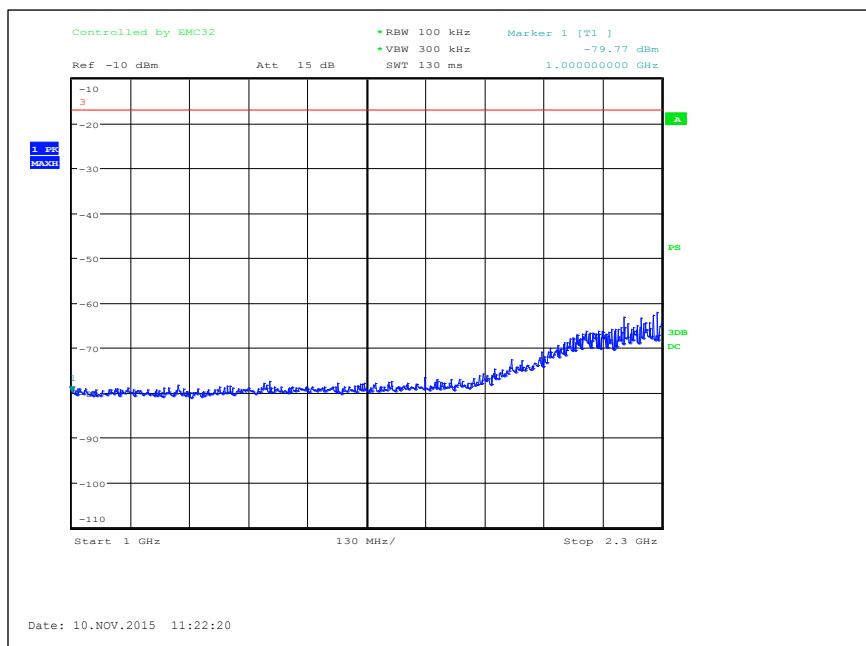
### Mid Channel: 0.15 MHz to 30 MHz

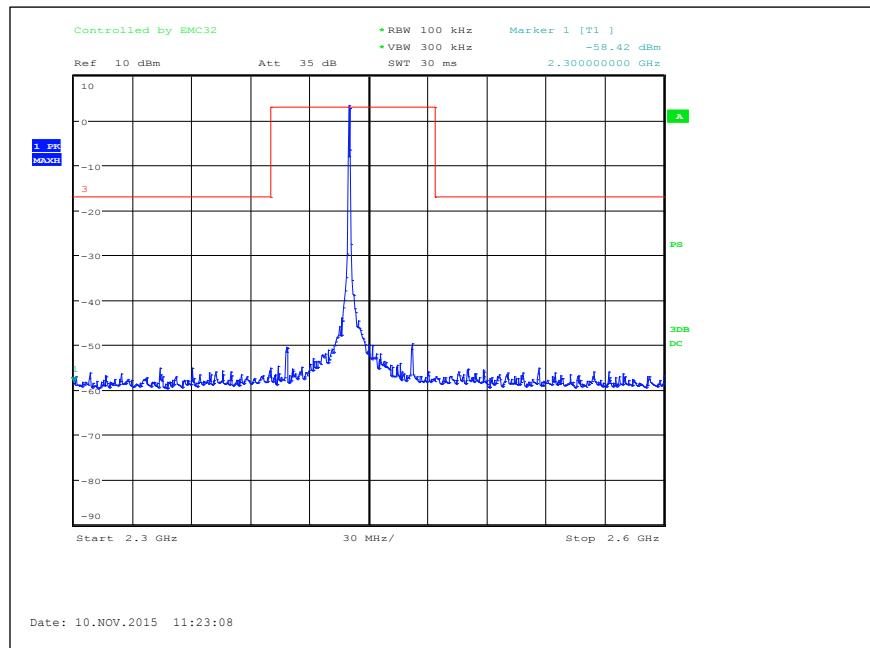
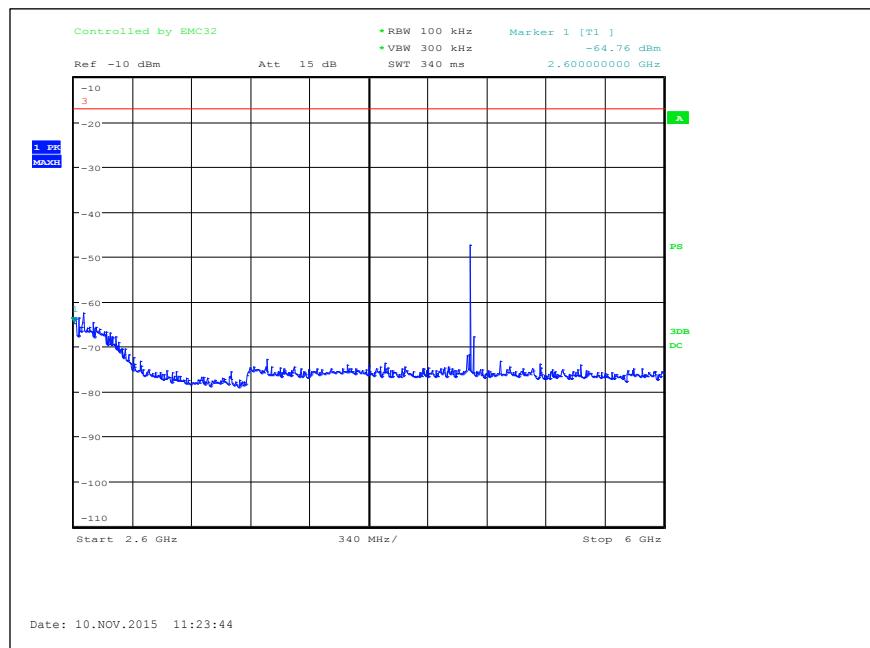


## Mid Channel: 30 MHz to 1 GHz



### Mid Channel: 1 GHz to 2.3 GHz



**Mid Channel: 2.3 GHz to 2.6 GHz**

**Mid Channel: 2.6 GHz to 6 GHz**


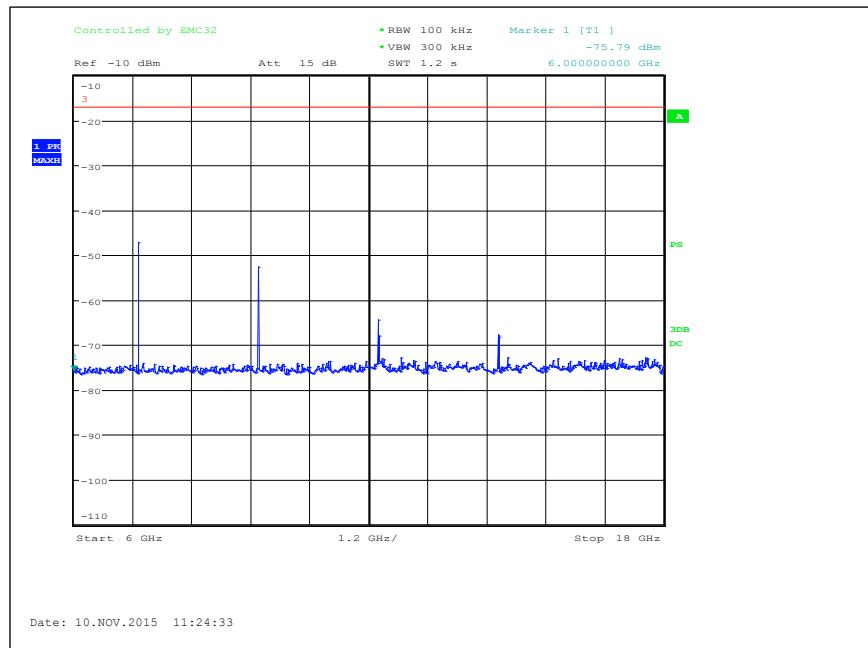


Order Number: F2LQ7746C

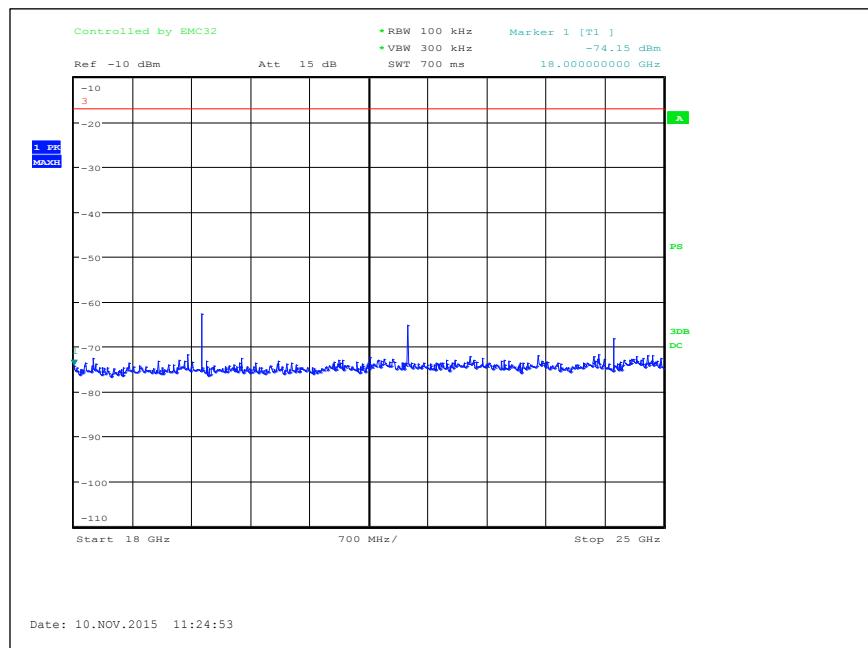
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

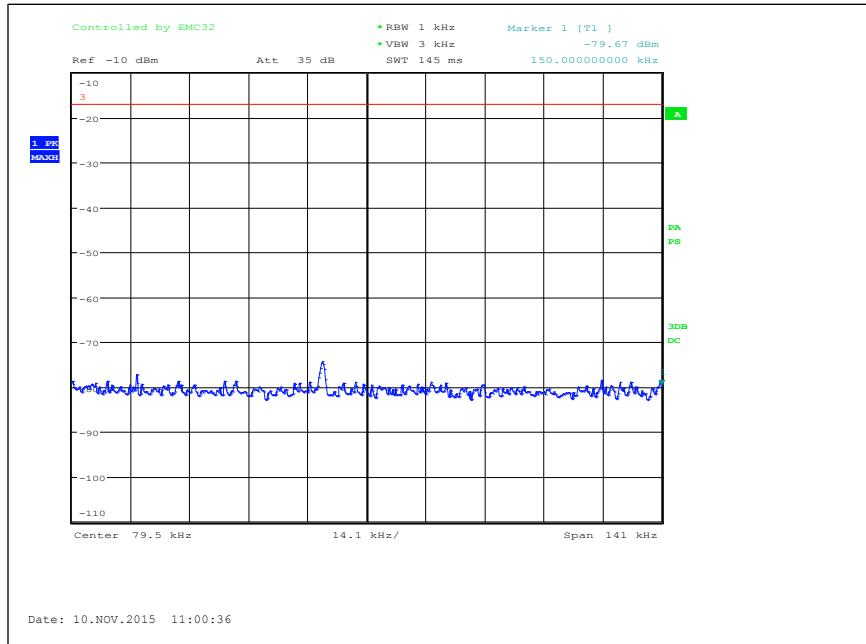
### Mid Channel: 6 GHz to 18 GHz



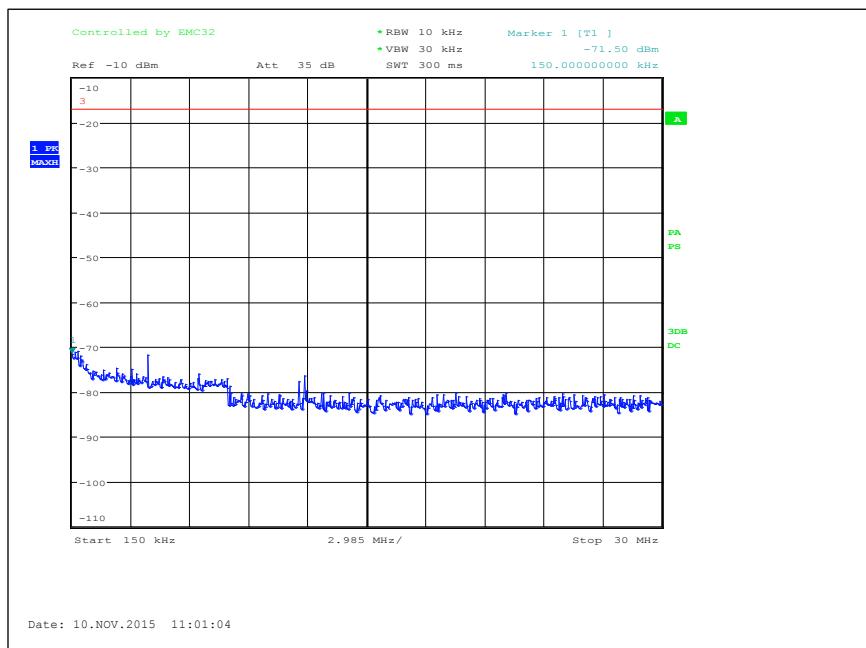
### Mid Channel: 18 GHz to 25 GHz



## High Channel: .009 MHz to 0.15 MHz



## High Channel: 0.15 MHz to 30 MHz



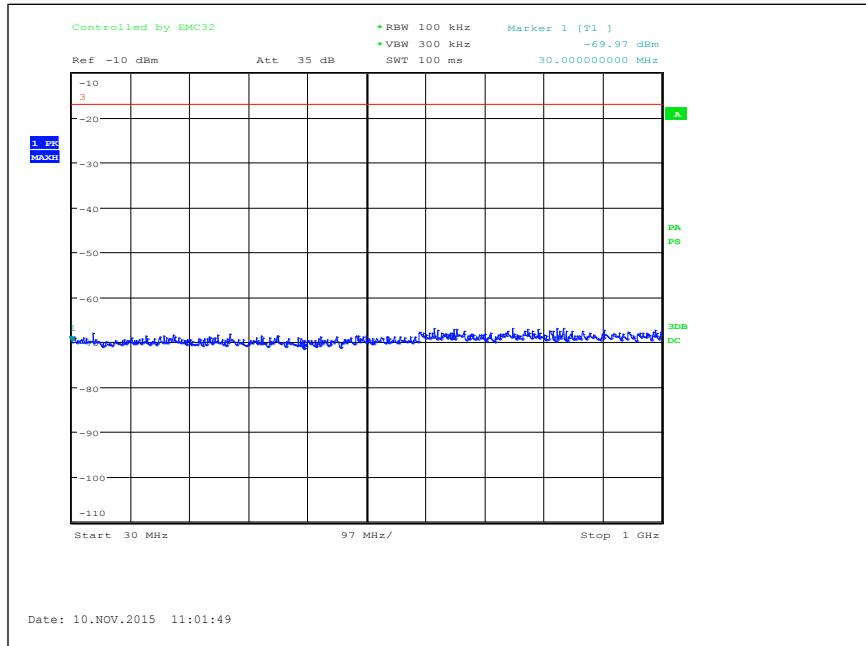


Order Number: F2LQ7746C

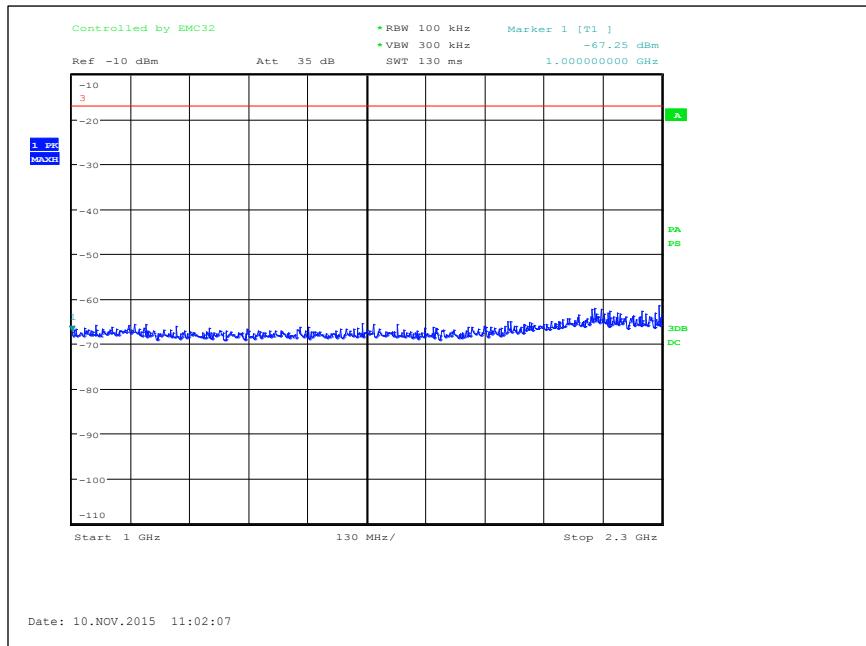
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### High Channel: 30 MHz to 1 GHz



### High Channel: 1 GHz to 2.3 GHz



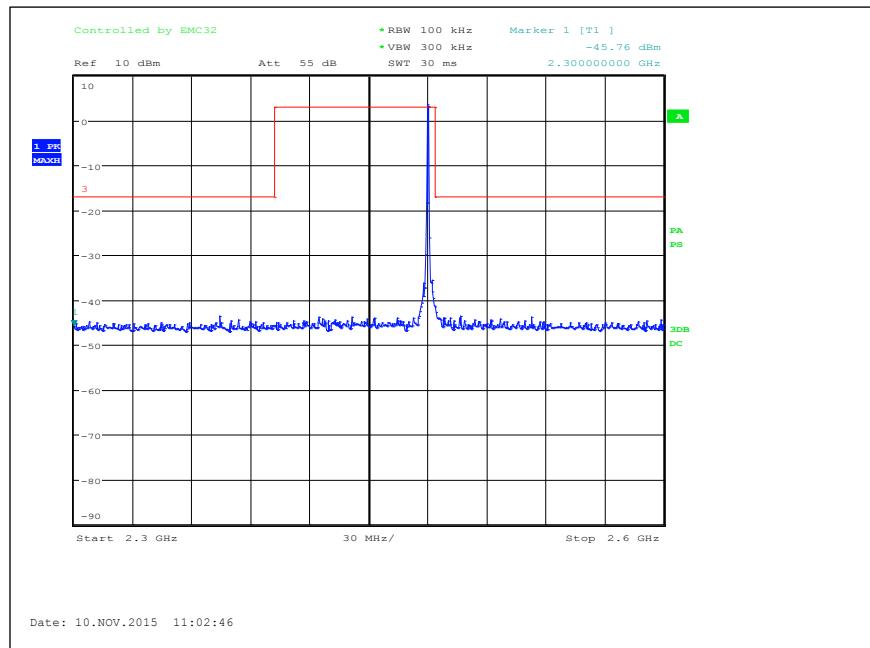


Order Number: F2LQ7746C

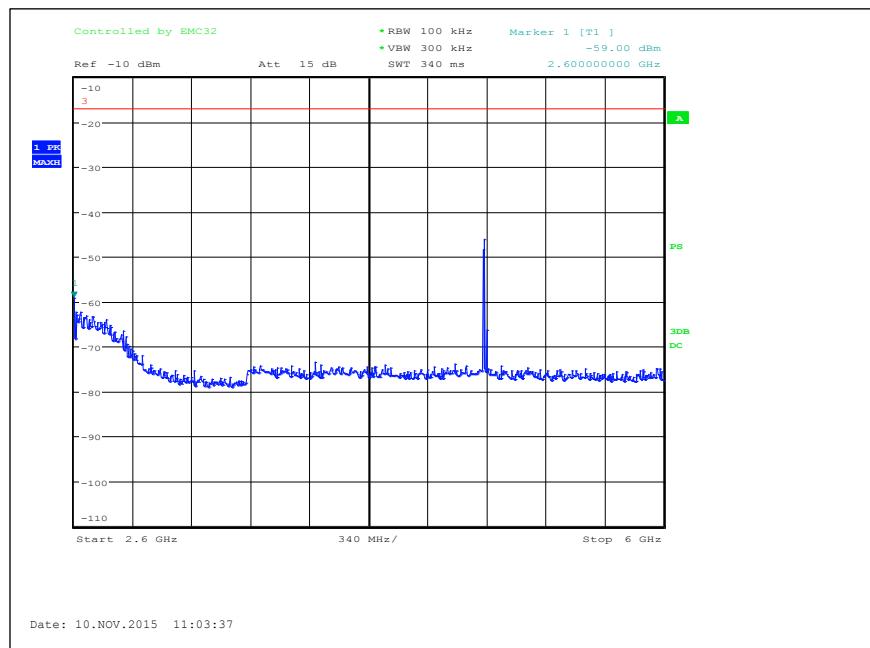
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### High Channel: 2.3 GHz to 2.6 GHz



### High Channel: 2.6 GHz to 6 GHz



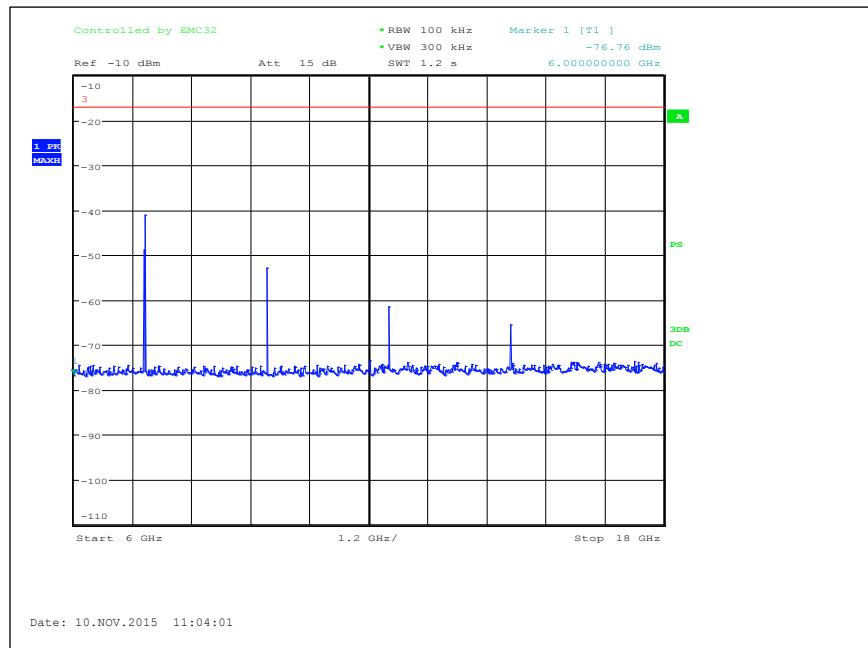


Order Number: F2LQ7746C

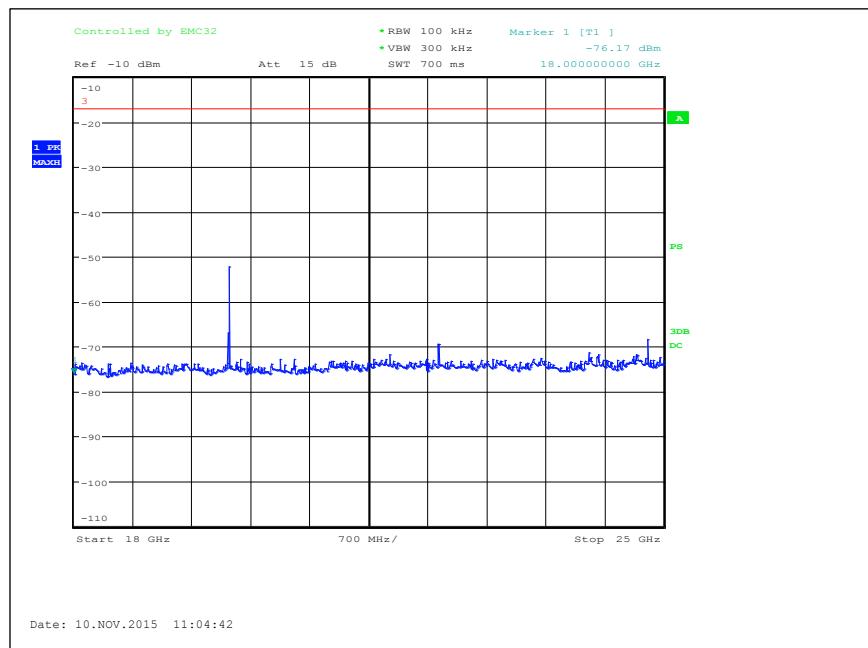
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### High Channel: 6 GHz to 18 GHz



### High Channel: 18 GHz to 25 GHz





**Order Number: F2LQ7746C**

**Manufacturer: Centurion Medical Products**

**Model: CWHG001 (Compass CAST)**

## **10 FCC PART 15.247(d) - RADIATED SPURIOUS EMISSION**

The EUT antenna port was fitted with its integral/internal chip antenna. Radiated emissions were measured in a Semi-Anechoic Chamber. All emissions generated that fall in the restricted bands per FCC Part 15.205 were examined.

### **10.1 Requirements:**

All emissions that fall in the restricted bands defined in FCC Part 15.205 shall not exceed the maximum field strength listed in FCC Part 15.209(a).



Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

## 10.2 Radiated Spurious Emission Test Data

<b>Test Date(s):</b>	Nov. 11, 2015	<b>Test Engineer:</b>	J. Knepper
<b>Standards:</b>	CFR 47 Part 15.247(d); Part 15.209 / KDB558074	<b>Air Temperature:</b>	19.6°C
		<b>Relative Humidity:</b>	45%

Notes: Plots are peak, max hold prescan data included only to determine what frequencies to investigate and measure. The EUT was initially placed in a semi-anechoic chamber, and rotated in all three orthogonal positions to maximize the emissions. Characterization measurements were then performed to determine at which frequencies significant emissions occurred. These graphs are shown below.

The equipment was fully exercised with all cabling attached to the EUT and was positioned in a semi-anechoic chamber for maximum emissions. While the equipment was energized, the receiving antenna was scanned from 1.0 meter to 4.0 meters in both vertical and horizontal polarities while the turntable was adjusted 360 degrees to determine the maximum field strength. The tables of measured results can be found below.

Some of the frequencies did not change with the EUT on or off. At those frequencies, the test distance was shortened to 1 meter and still no emissions from the EUT were visible or over the ambient or limit. The plots are for reference only and the limit lines are not actual limit lines but merely a guide.

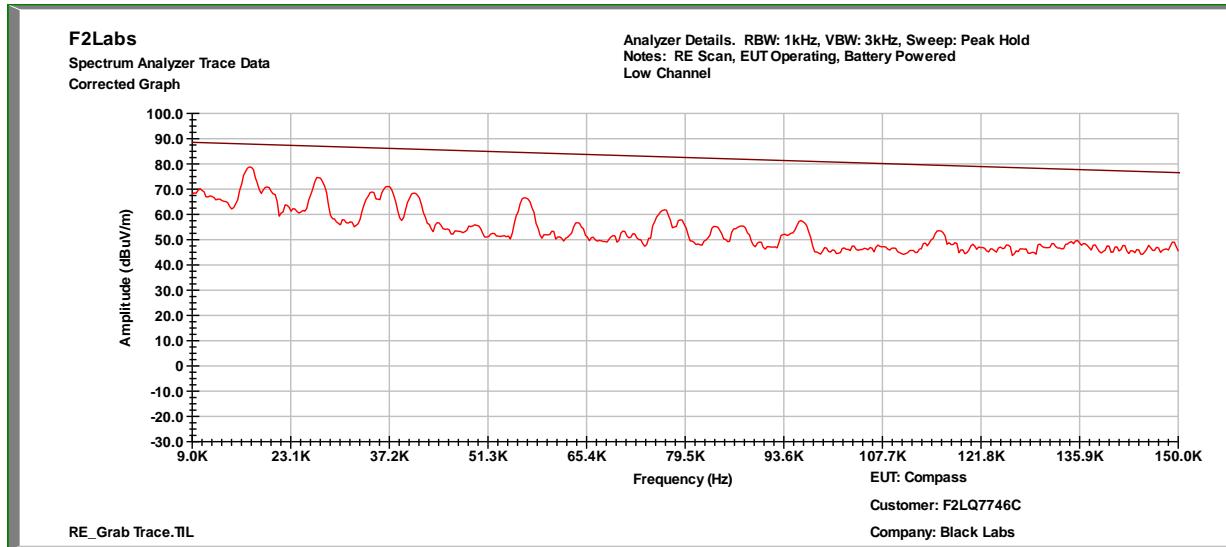


Order Number: F2LQ7746C

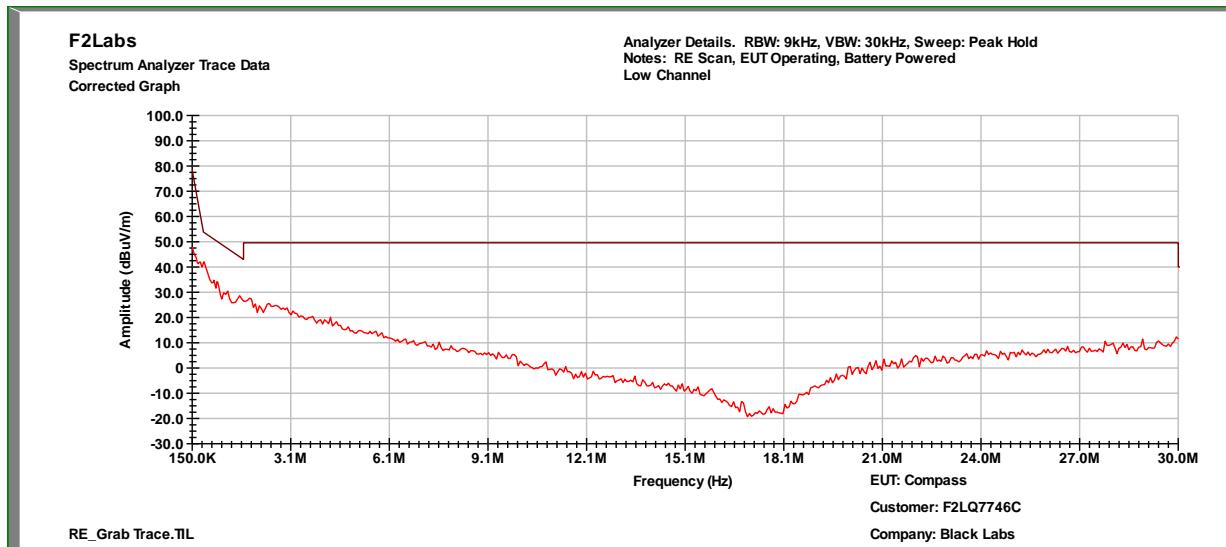
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Low Channel: 0.009 to 0.15 MHz



### Low Channel: 0.15 MHz to 30 MHz



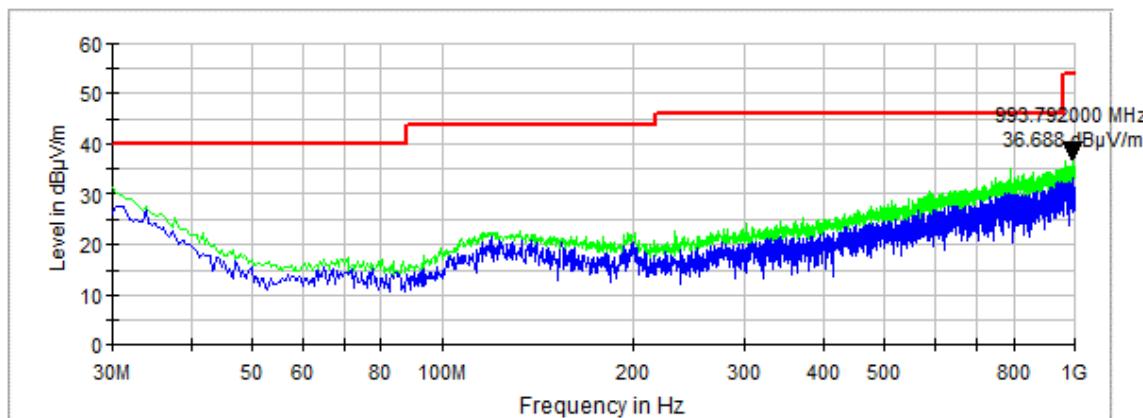


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

Low Channel: 30 MHz to 1 GHz, Vertical



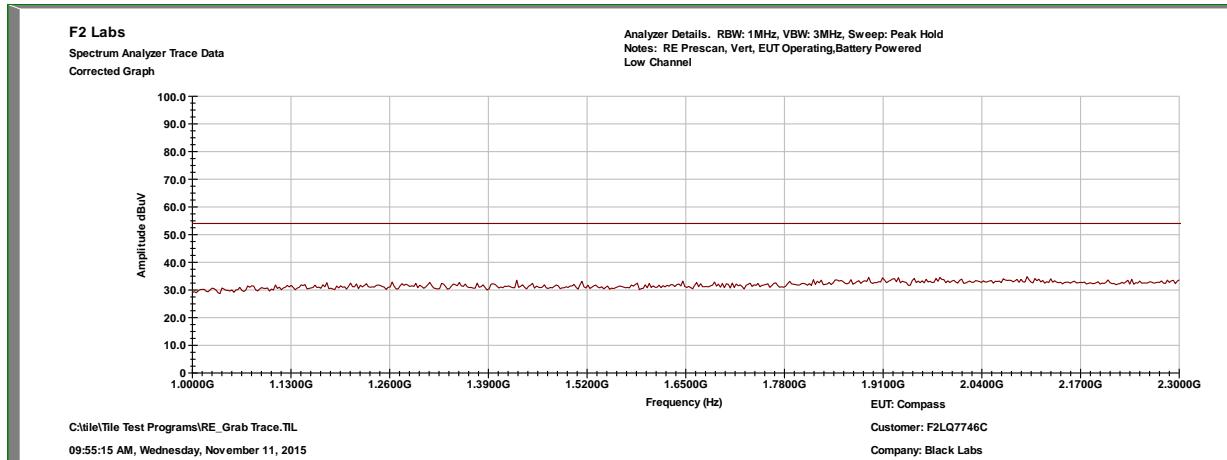


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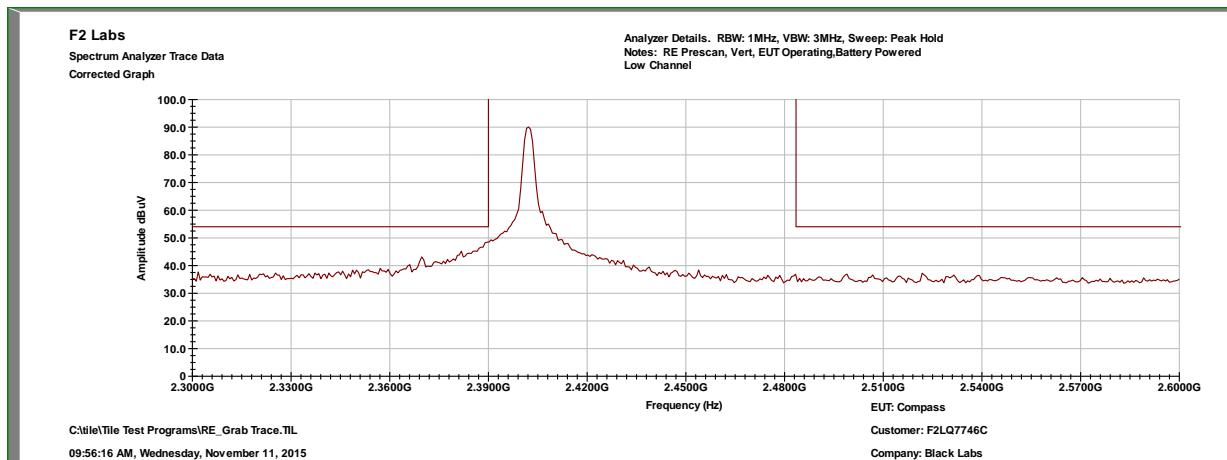
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Low Channel: 1 GHz to 2.3 GHz, Vertical



### Low Channel: 2.3 GHz to 2.6 GHz, Vertical



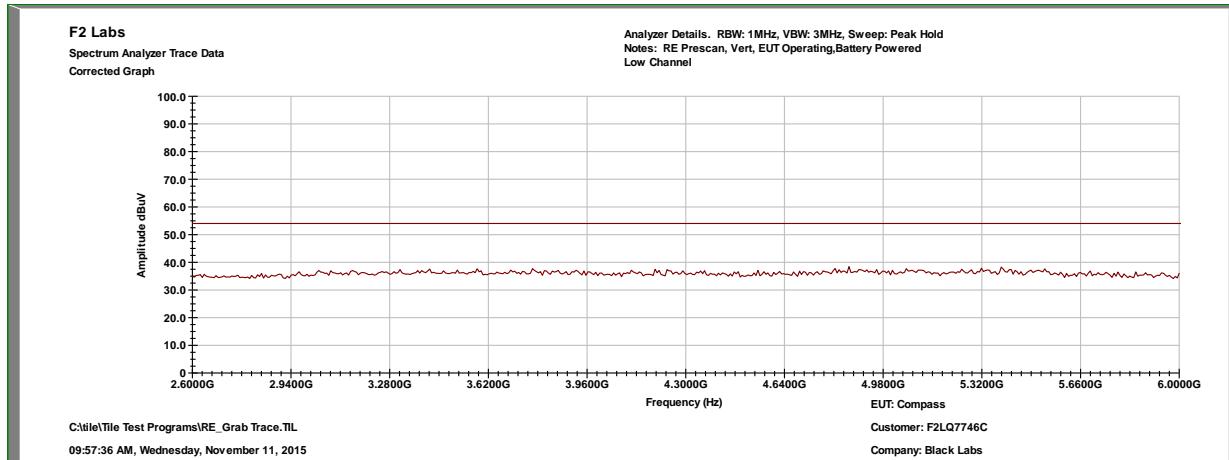


Order Number: F2LQ7746C

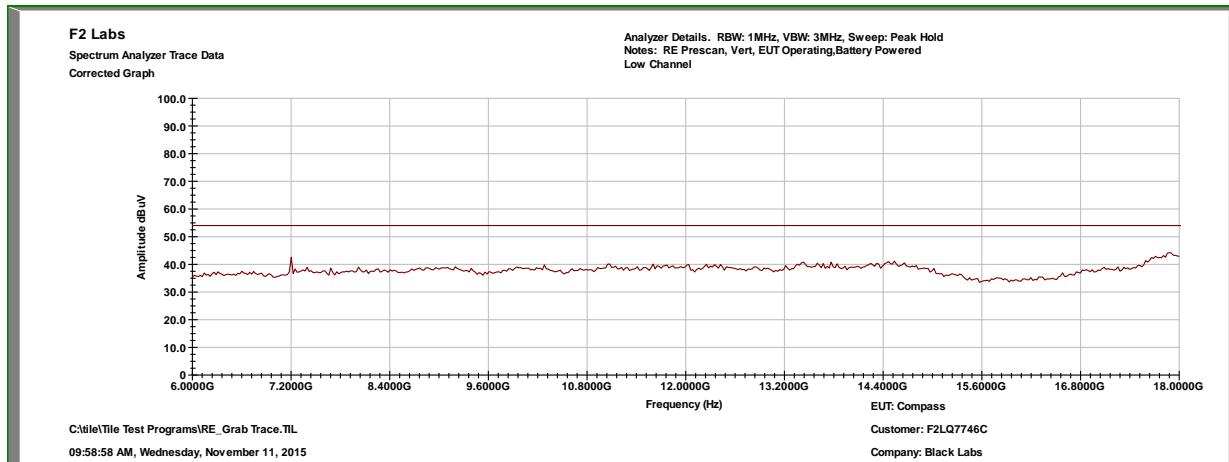
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Low Channel: 2.6 GHz to 6 GHz, Vertical



### Low Channel: 6 GHz to 18 GHz, Vertical



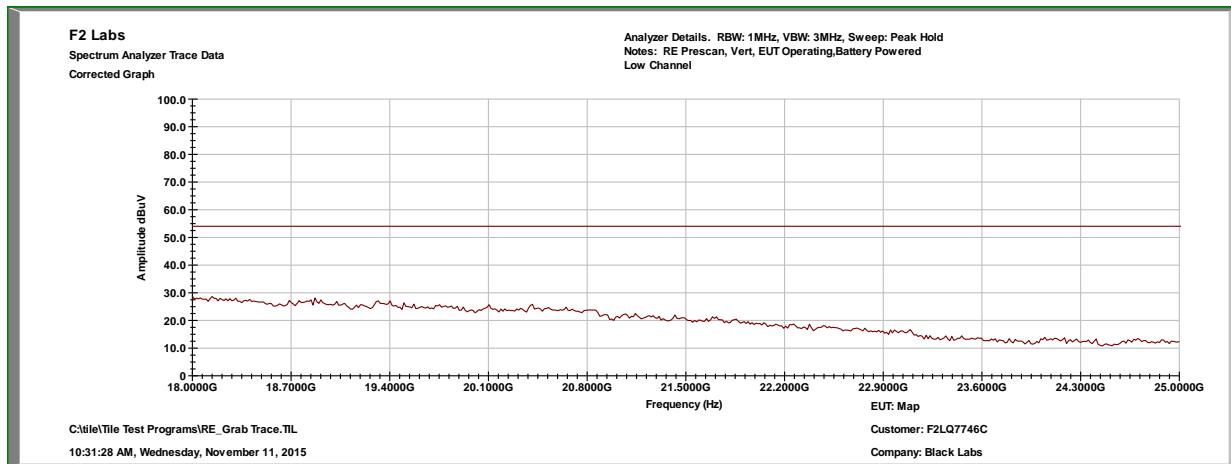


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

Low Channel: 18 GHz to 25 GHz, Vertical



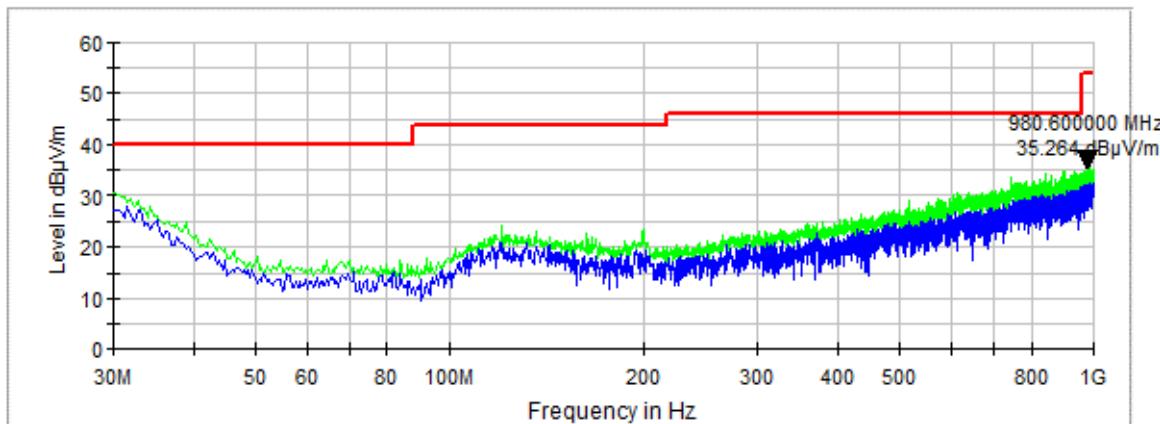


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

**Low Channel: 30 MHz to 1 GHz, Horizontal**



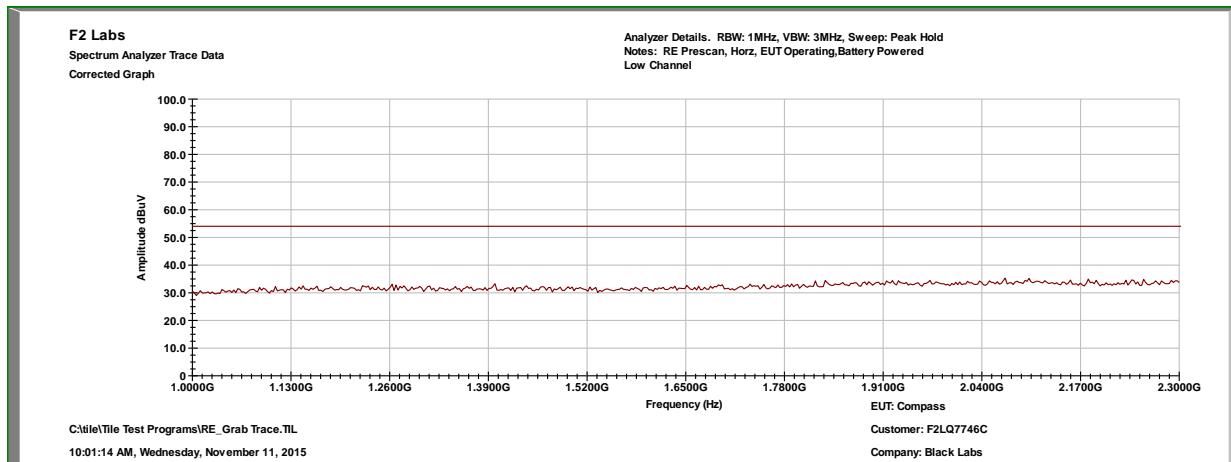


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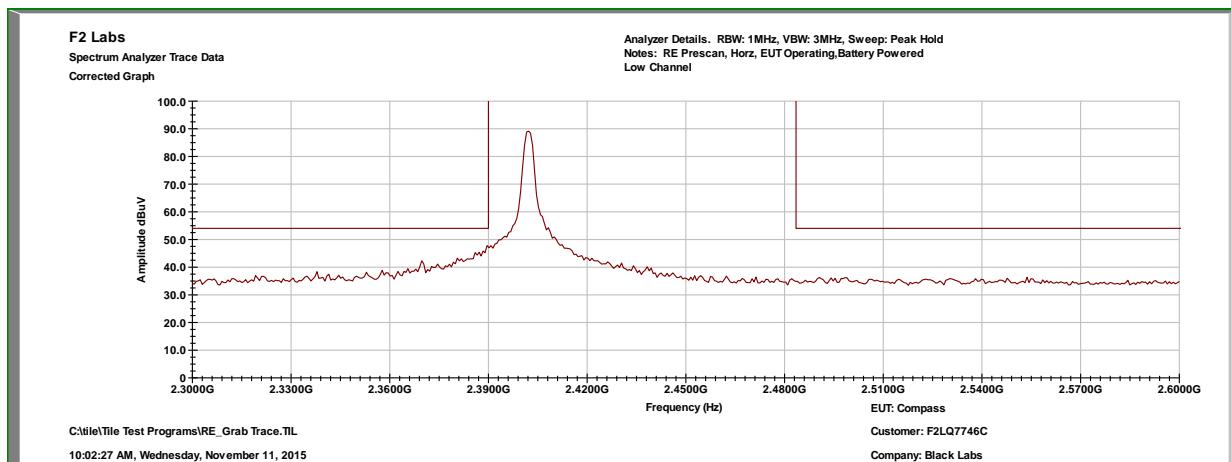
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Low Channel: 1 GHz to 2.3 GHz, Horizontal



### Low Channel: 2.3 GHz to 2.6 GHz, Horizontal



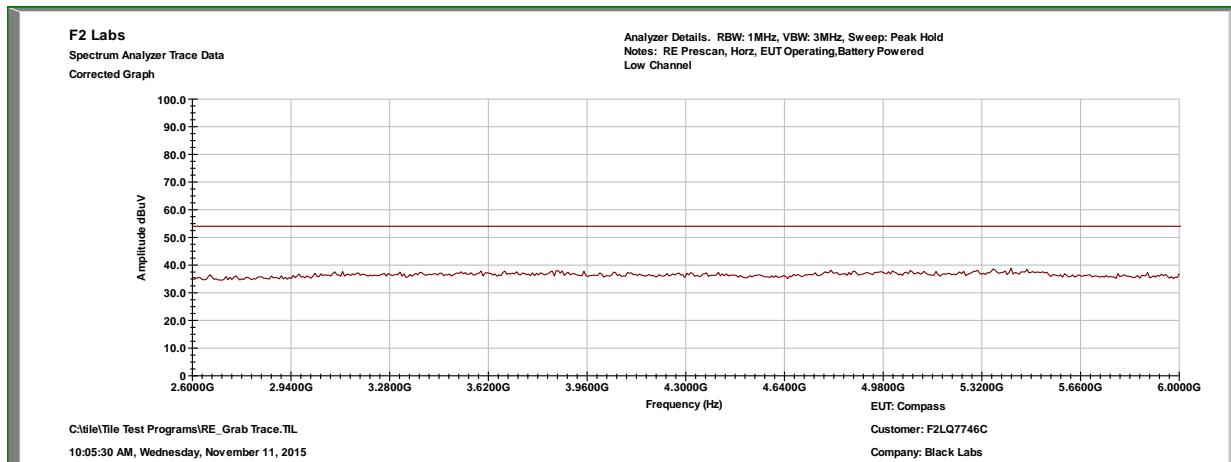


Order Number: F2LQ7746C

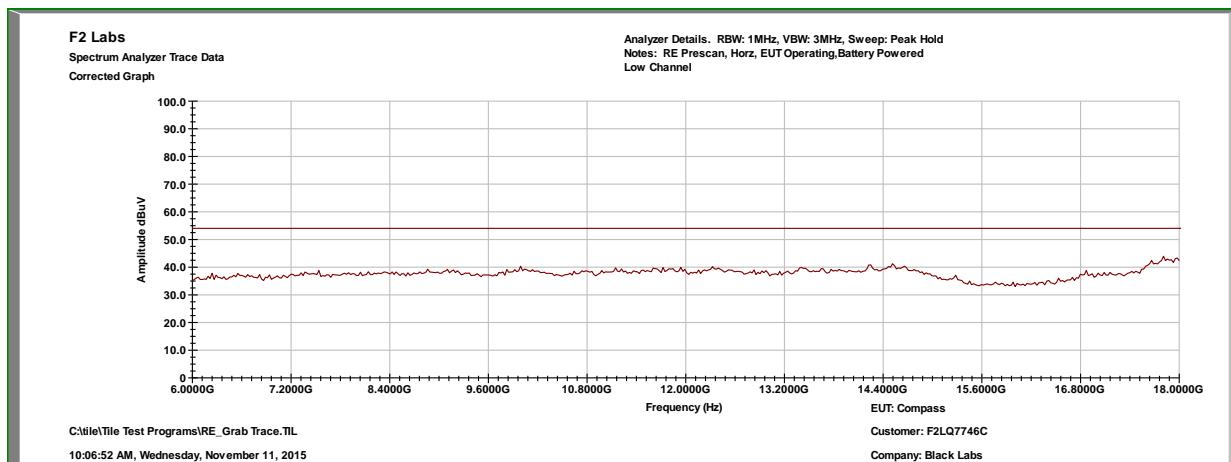
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Low Channel: 2.6 GHz to 6 GHz, Horizontal



### Low Channel: 6 GHz to 18 GHz, Horizontal



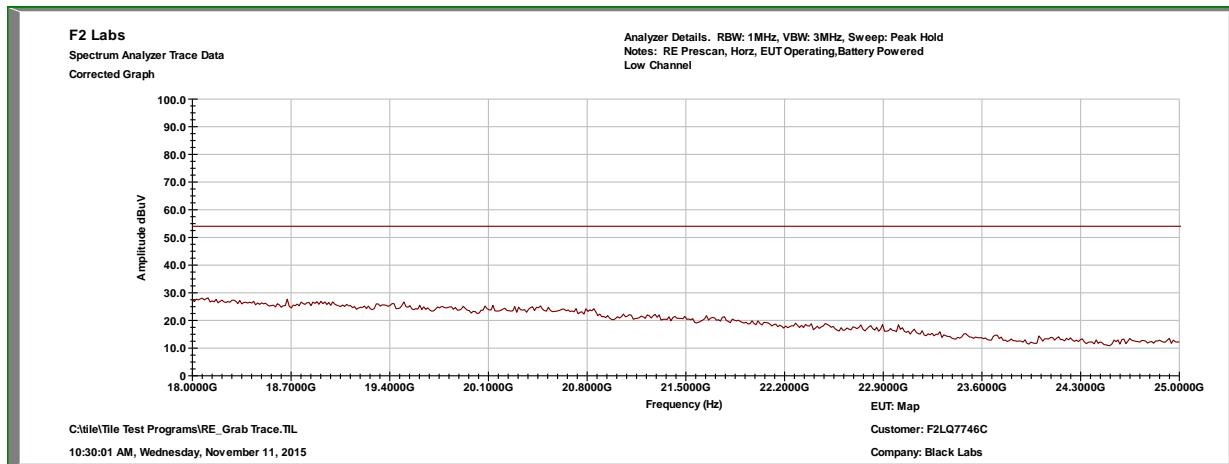


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Low Channel: 18 GHz to 25 GHz, Horizontal



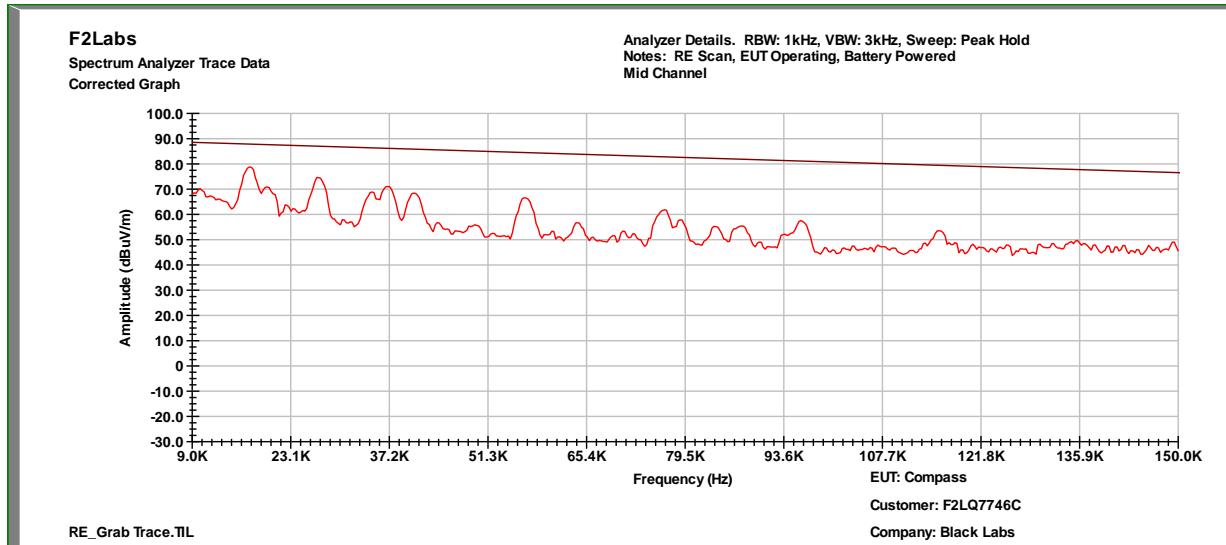


Order Number: F2LQ7746C

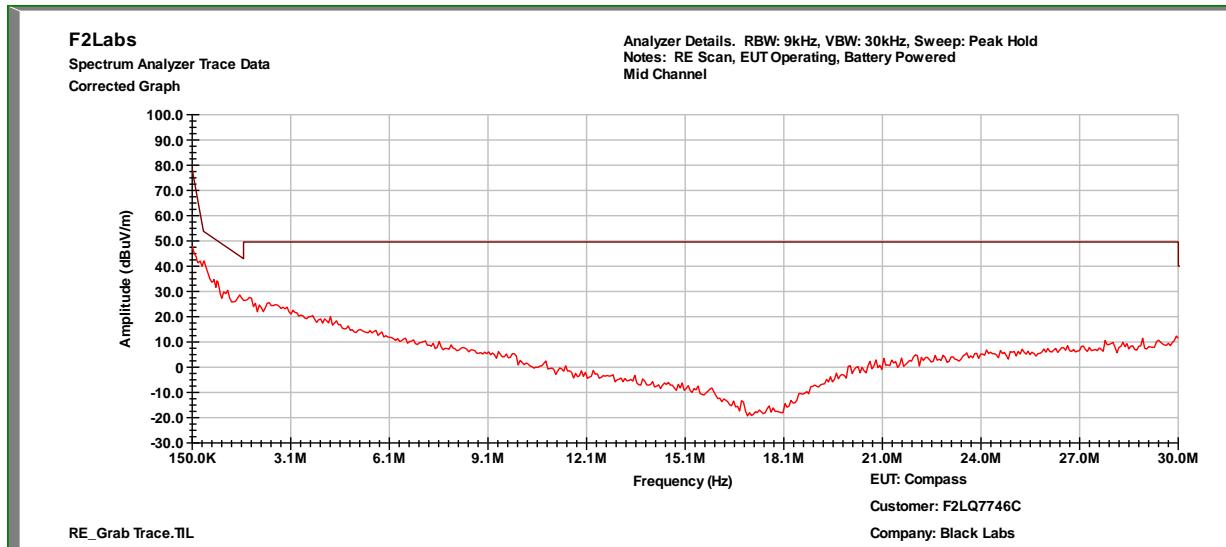
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Mid Channel: 0.009 to 0.15 MHz



### Mid Channel: 0.15 MHz to 30 MHz



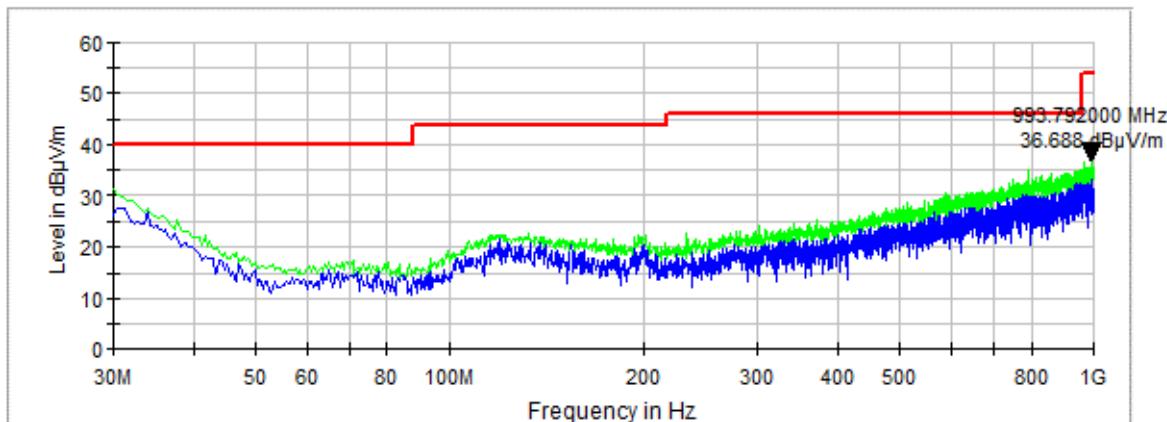


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

Mid Channel: 30 MHz to 1 GHz, Vertical



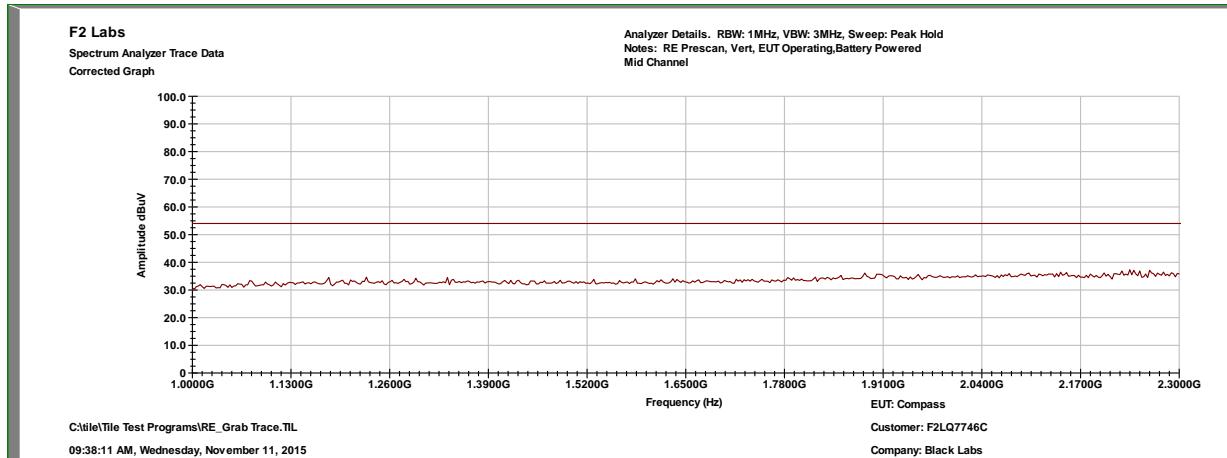


Order Number: F2LQ7746C

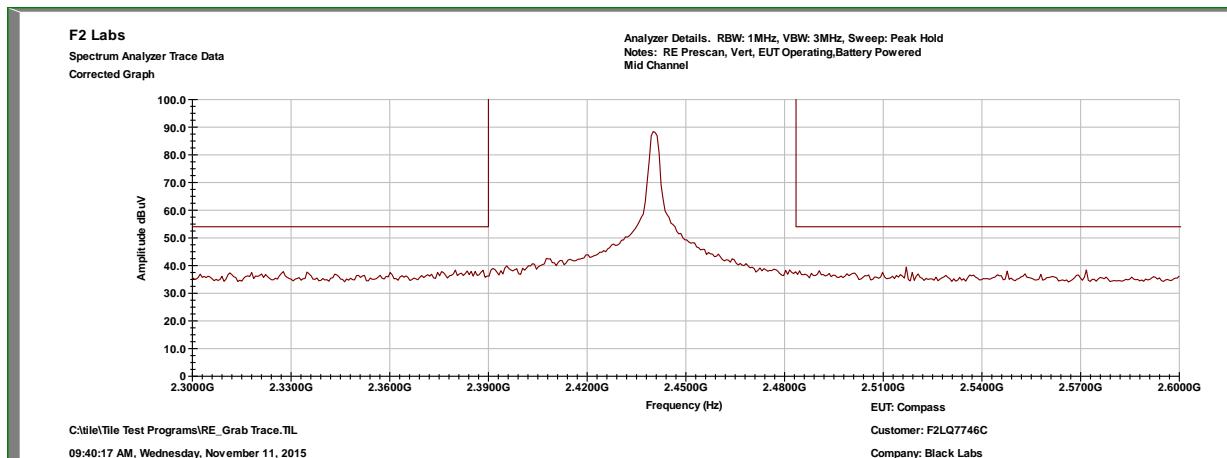
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Mid Channel: 1 GHz to 2.3 GHz, Vertical



### Mid Channel: 2.3 GHz to 2.6 GHz, Vertical



082515

Report Number: F2LQ7746C-03E

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Issue Date: Feb. 2, 2016

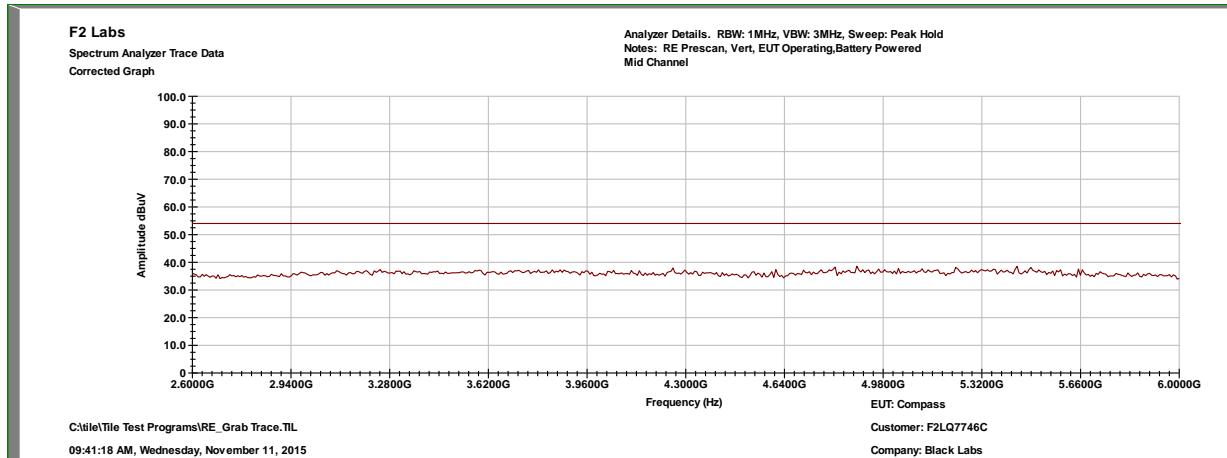


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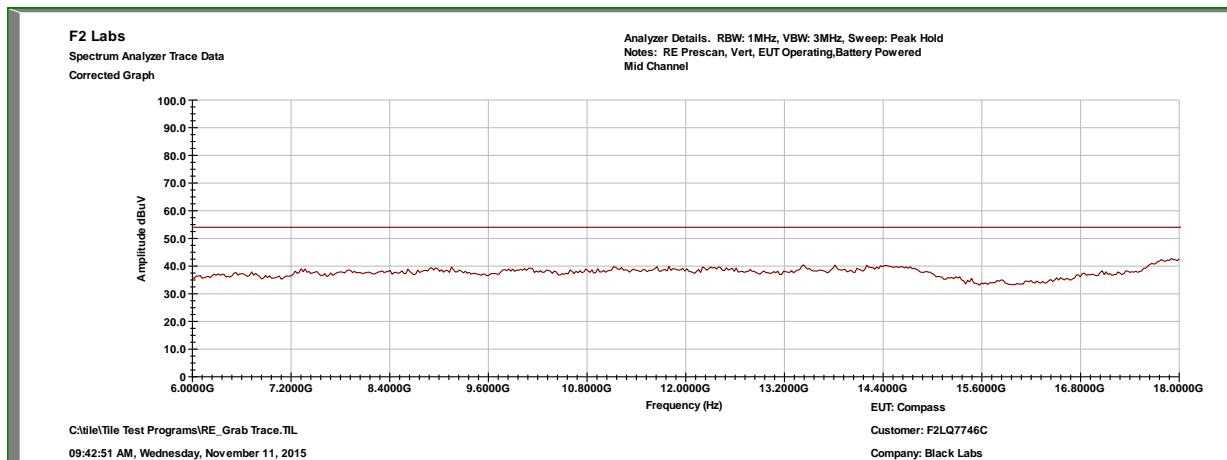
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Mid Channel: 2.6 GHz to 6 GHz, Vertical



### Mid Channel: 6 GHz to 18 GHz, Vertical



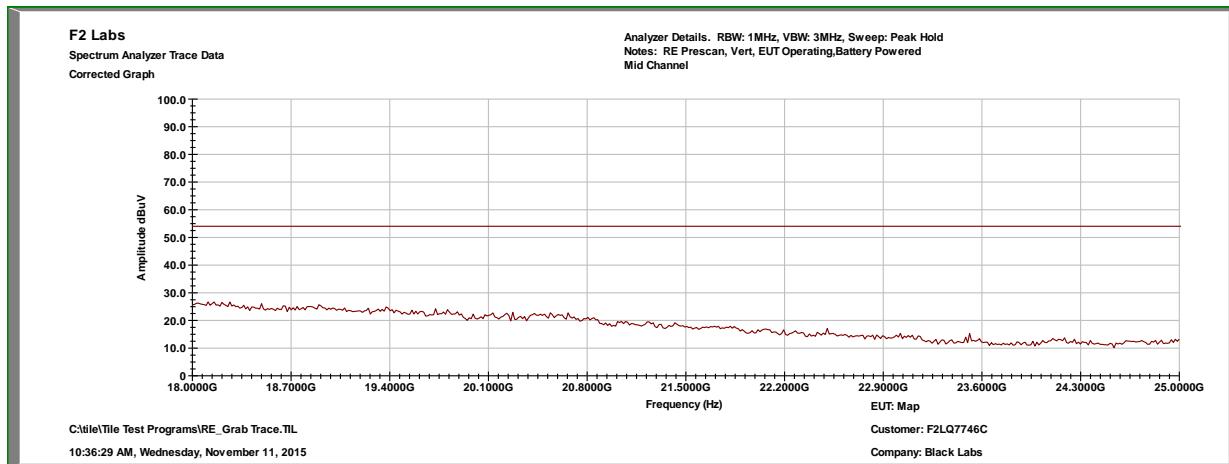


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

**Mid Channel: 18 GHz to 25 GHz, Vertical**



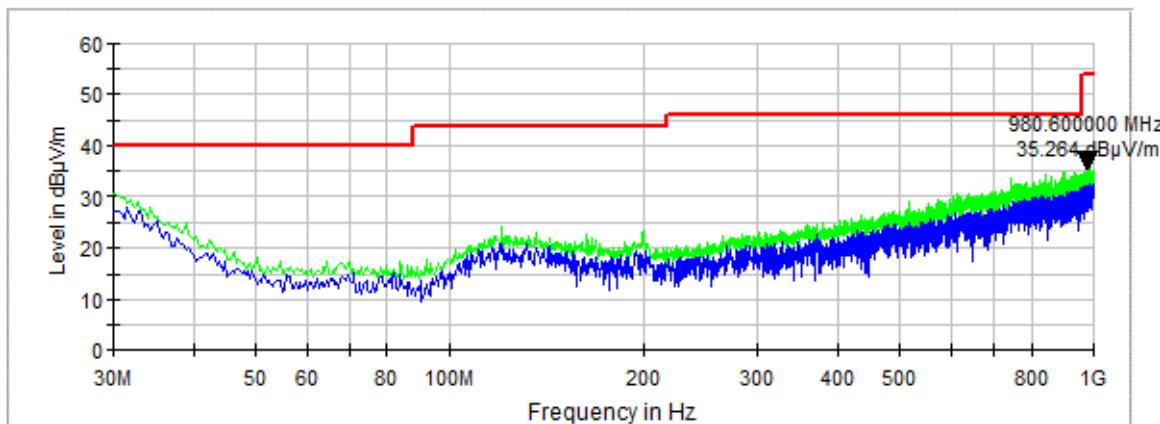


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

Mid Channel: 30 MHz to 1 GHz, Horizontal



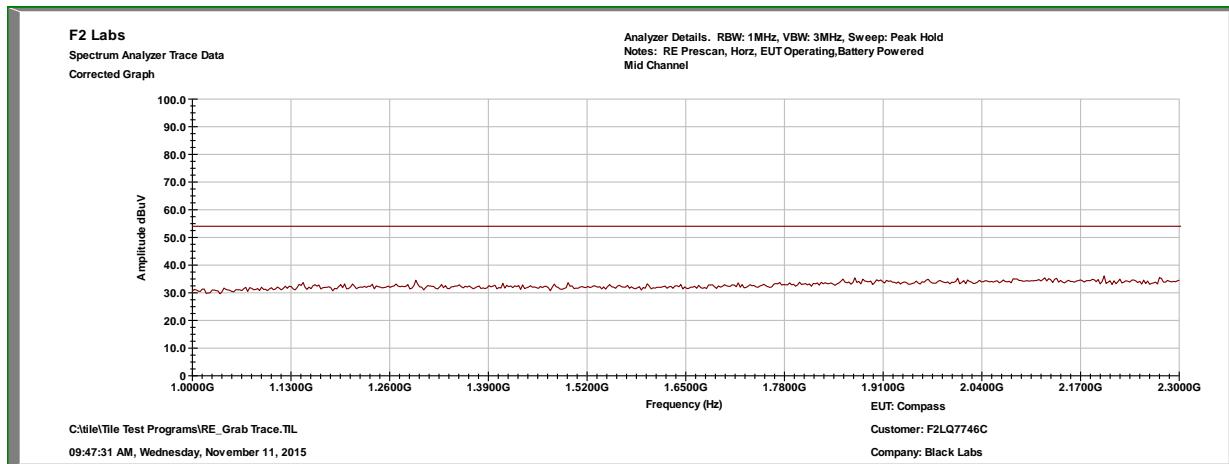


Order Number: F2LQ7746C

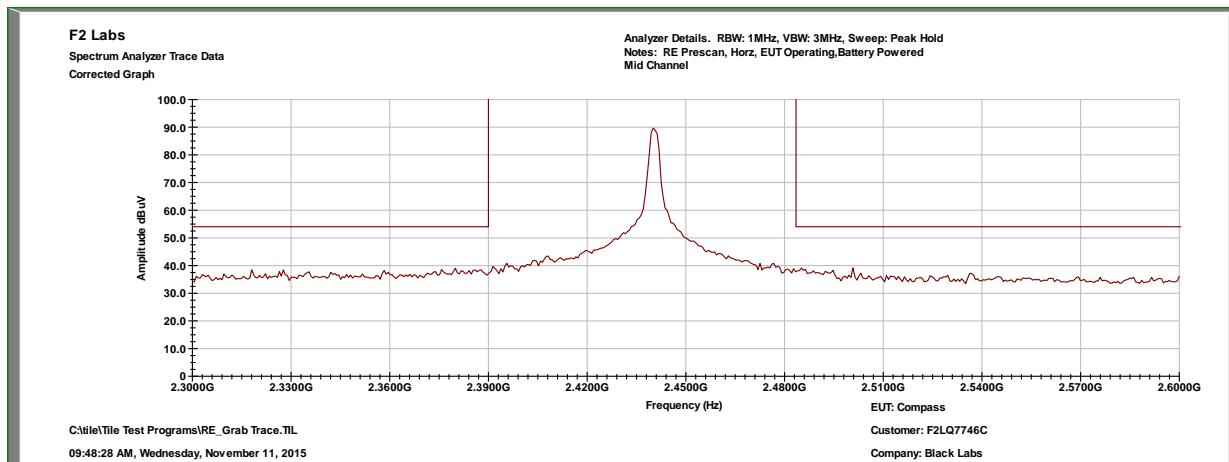
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Mid Channel: 1 GHz to 2.3 GHz, Horizontal



### Mid Channel: 2.3 GHz to 2.6 GHz, Horizontal



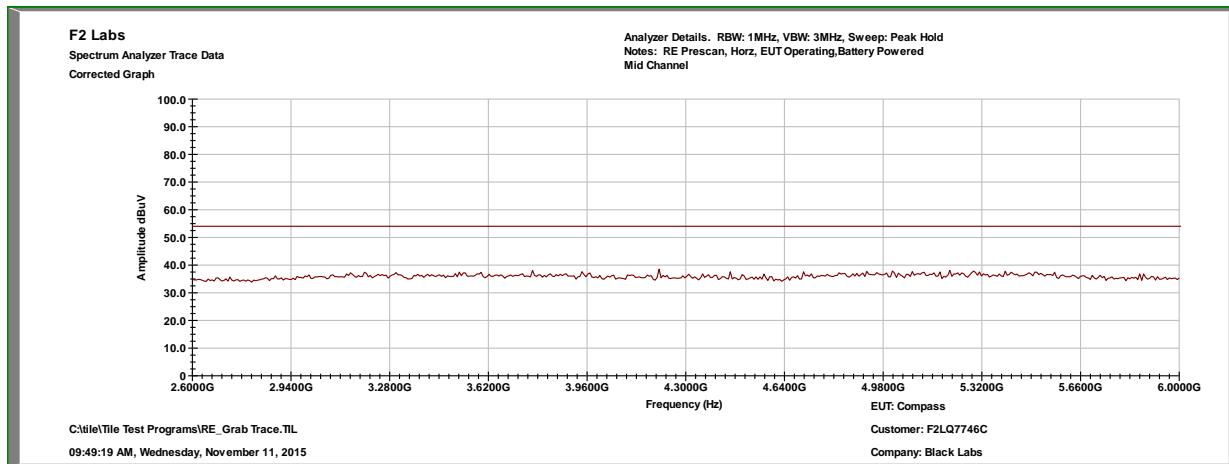


Order Number: F2LQ7746C

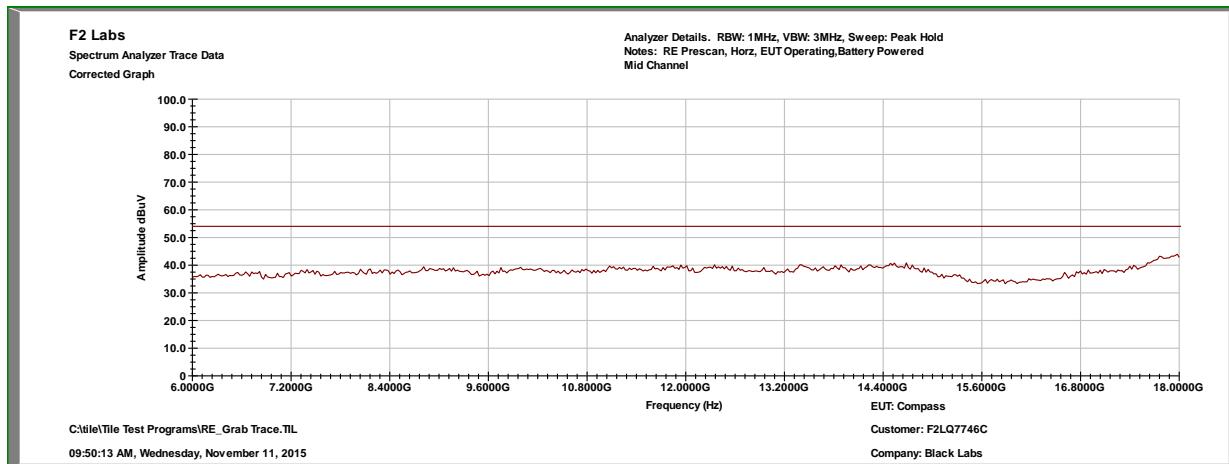
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Mid Channel: 2.6 GHz to 6 GHz, Horizontal



### Mid Channel: 6 GHz to 18 GHz, Horizontal



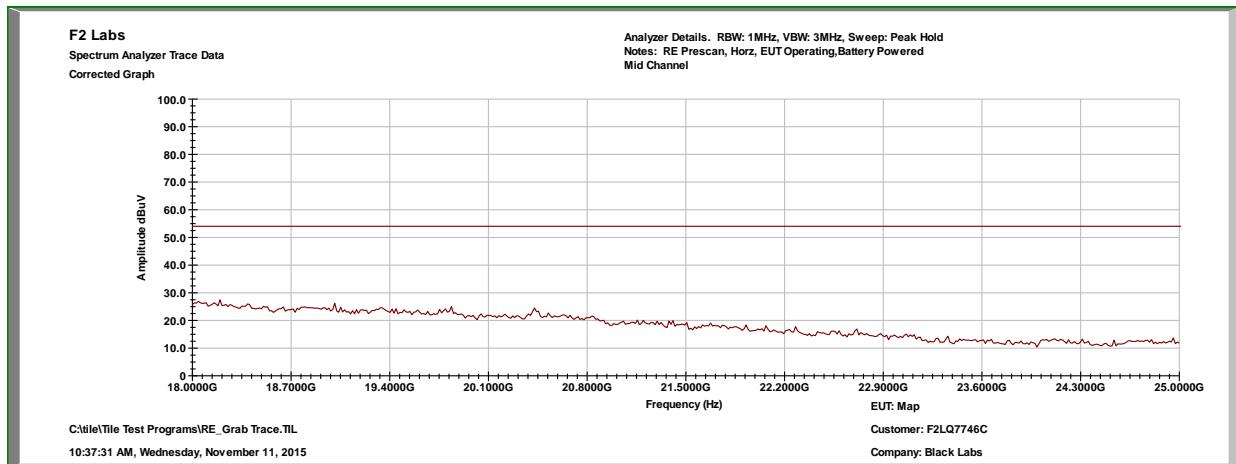


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

Mid Channel: 18 GHz to 25 GHz, Horizontal



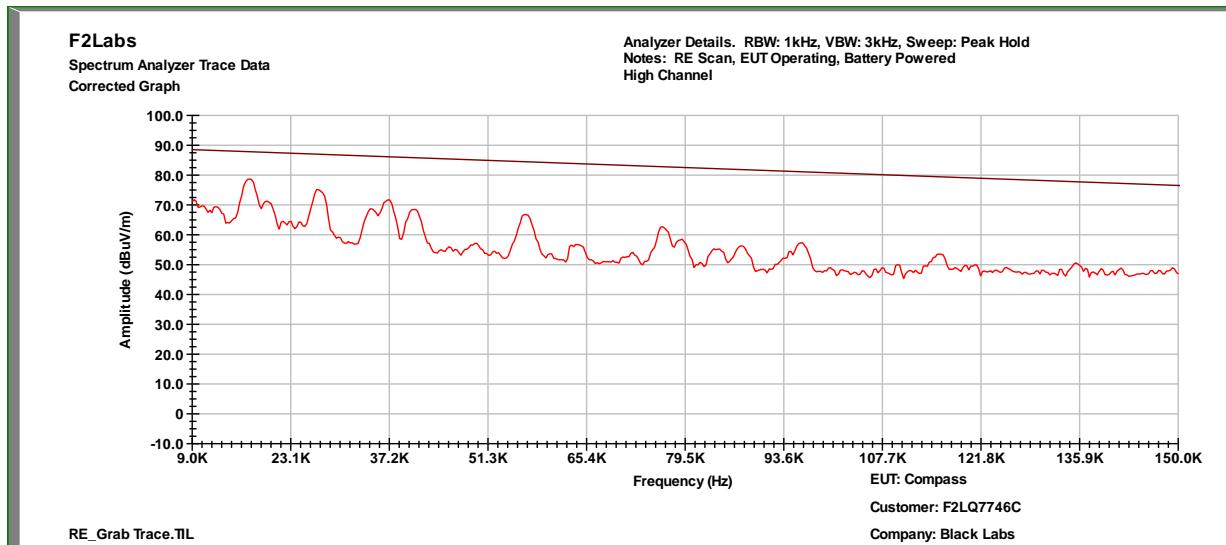


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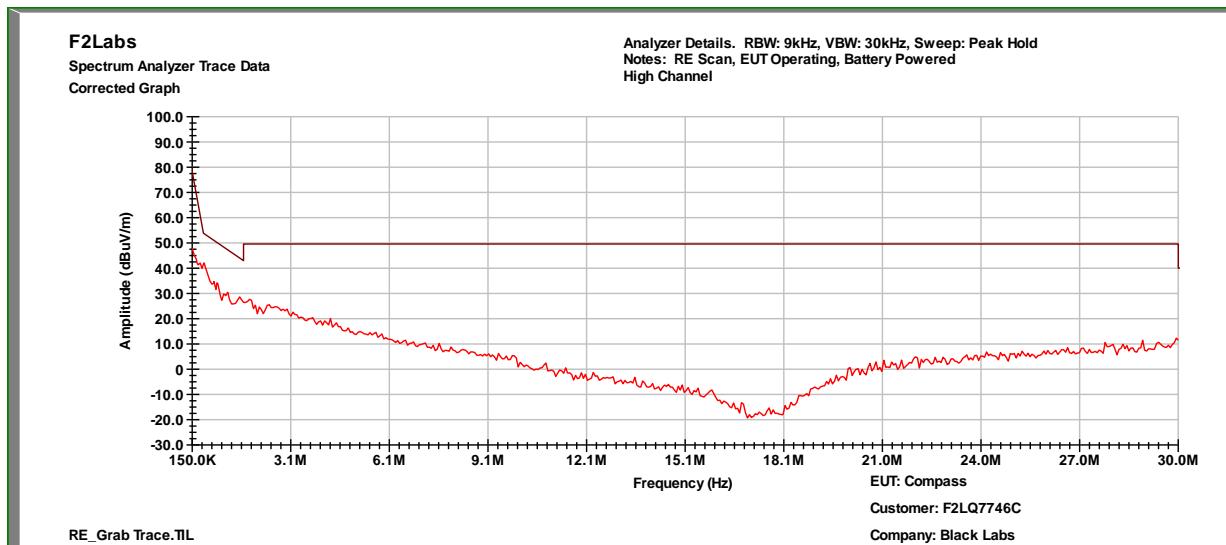
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### High Channel: 0.009 to 0.15 MHz



### High Channel: 0.15 MHz to 30 MHz



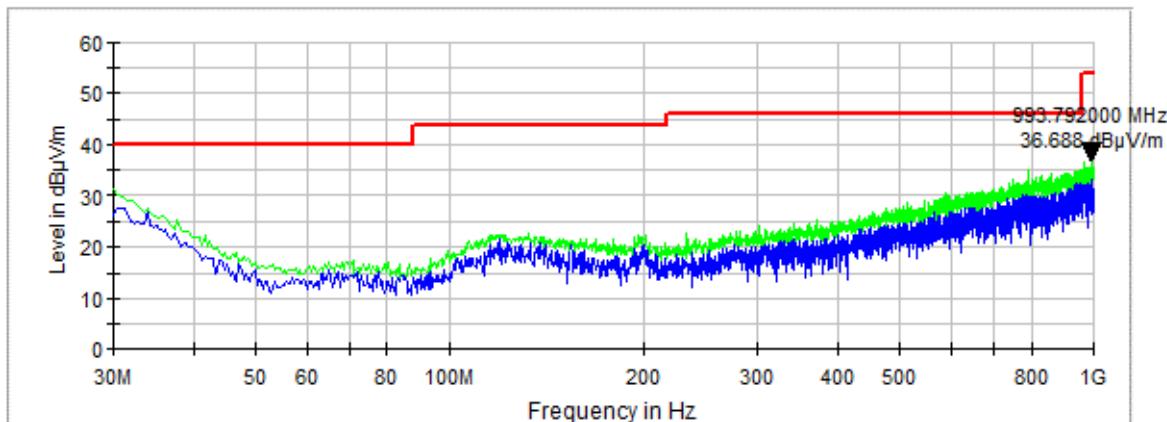


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

**High Channel: 30 MHz to 1 GHz, Vertical**



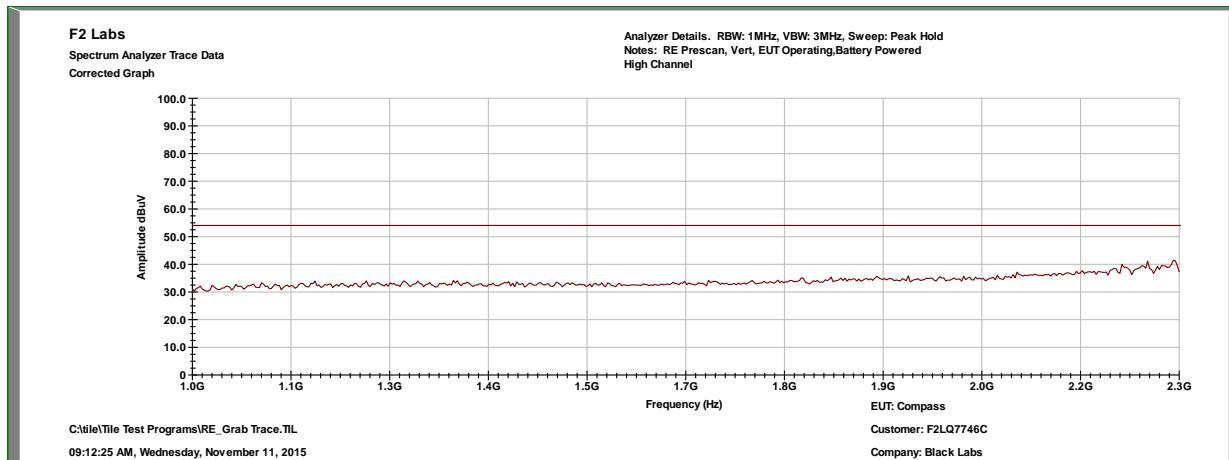


Order Number: F2LQ7746C

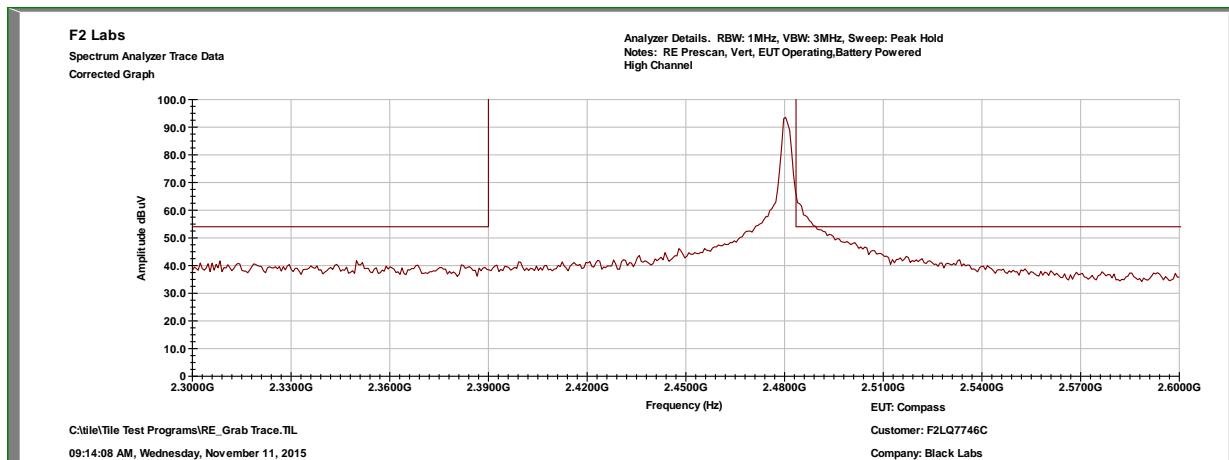
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### High Channel: 1 GHz to 2.3 GHz, Vertical



### High Channel: 2.3 GHz to 2.6 GHz, Vertical



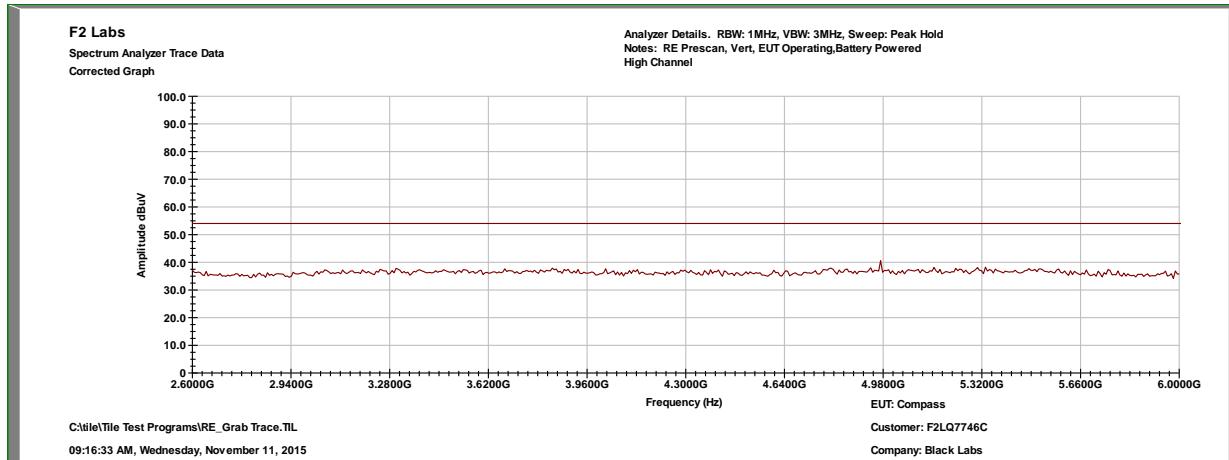


Order Number: F2LQ7746C

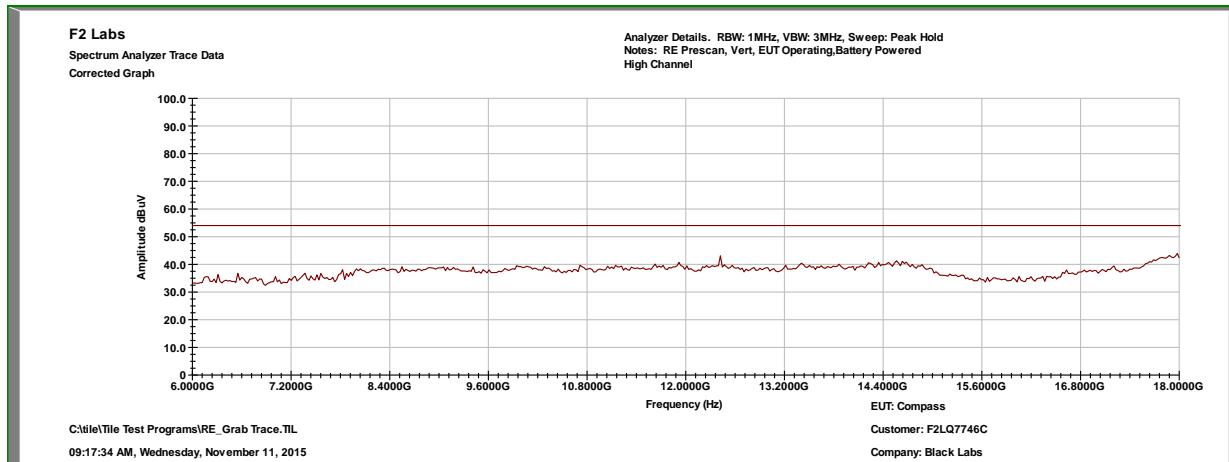
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### High Channel: 2.6 GHz to 6 GHz, Vertical



### High Channel: 6 GHz to 18 GHz, Vertical



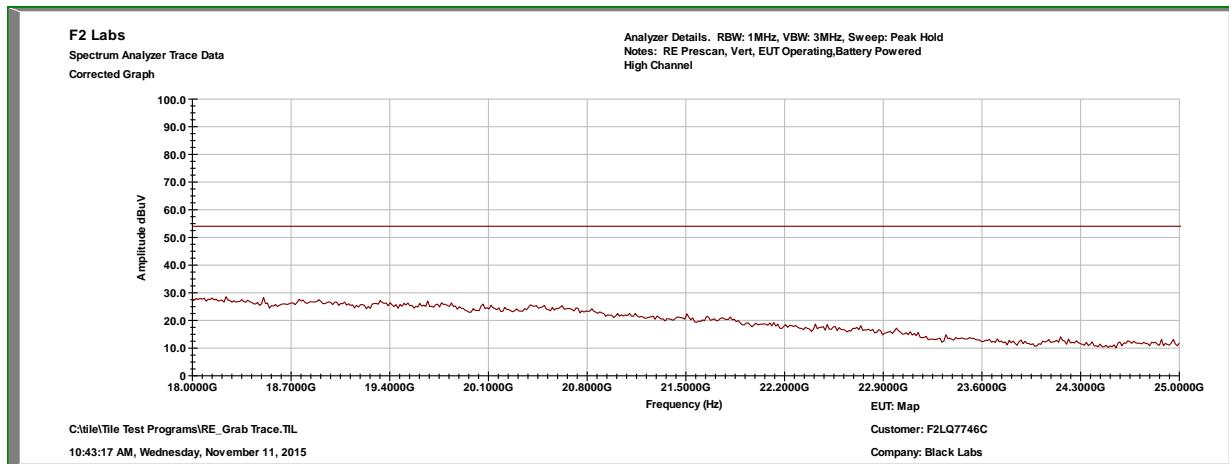


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### High Channel: 18 GHz to 25 GHz, Vertical



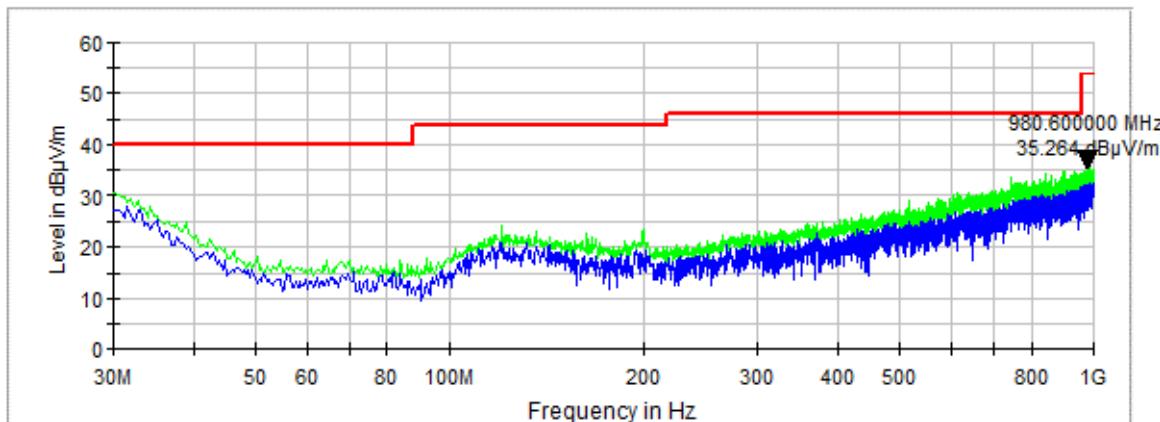


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

**High Channel: 30 MHz to 1 GHz, Horizontal**

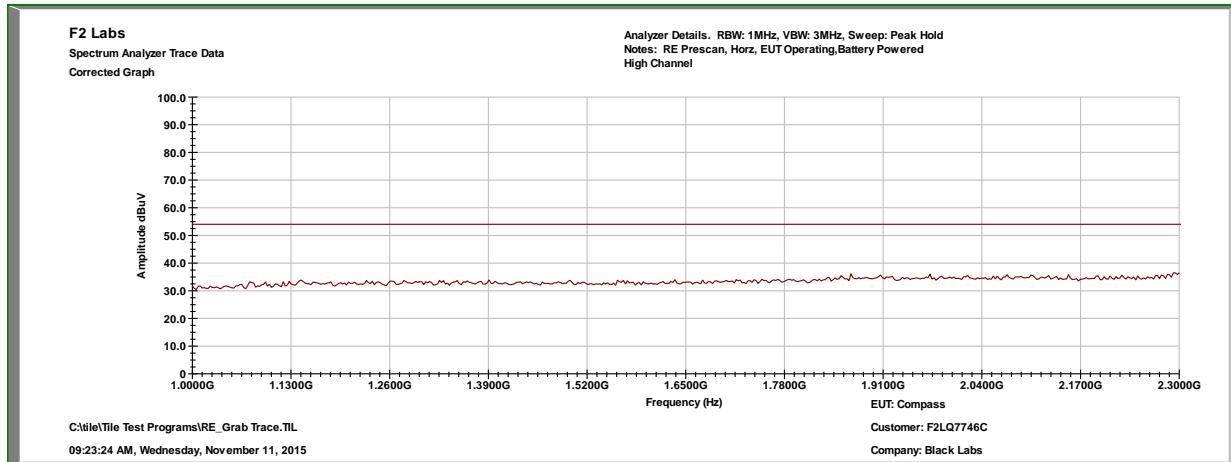




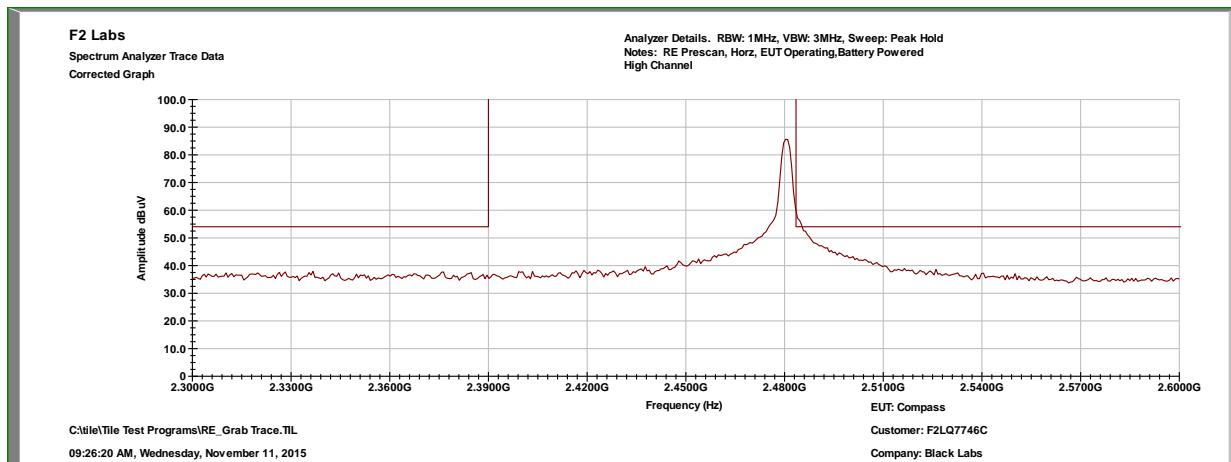
**Order Number: F2LQ7746C**

**Manufacturer:** Centurion Medical Products  
**Model:** CWHG001 (Compass CAST)

## High Channel: 1 GHz to 2.3 GHz, Horizontal



### High Channel: 2.3 GHz to 2.6 GHz, Horizontal



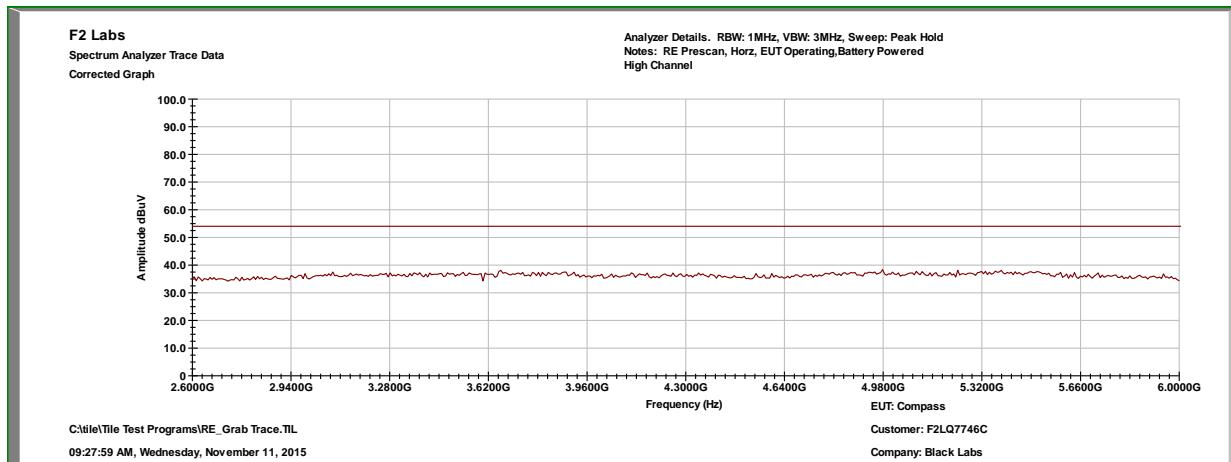


Order Number: F2LQ7746C

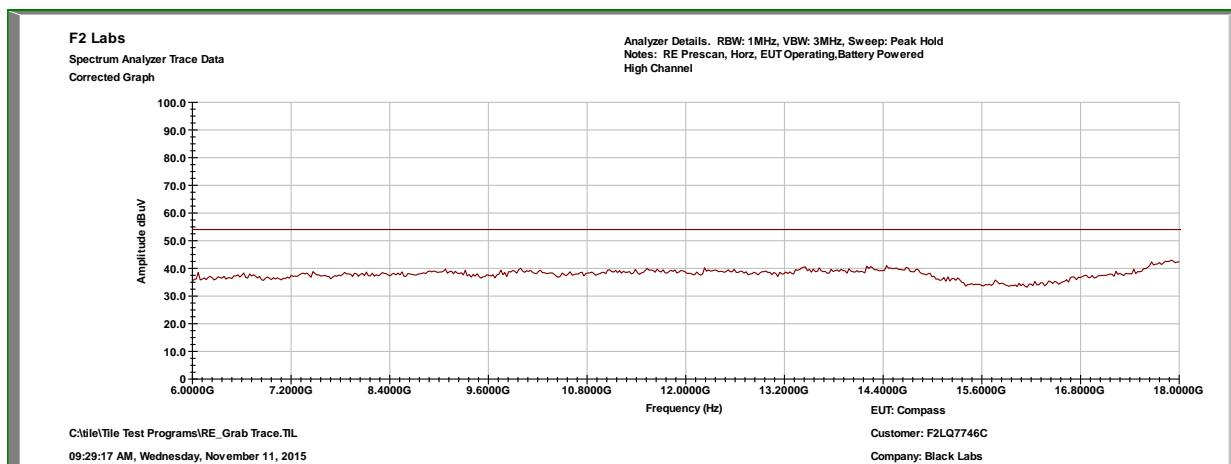
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### High Channel: 2.6 GHz to 6 GHz, Horizontal



### High Channel: 6 GHz to 18 GHz, Horizontal



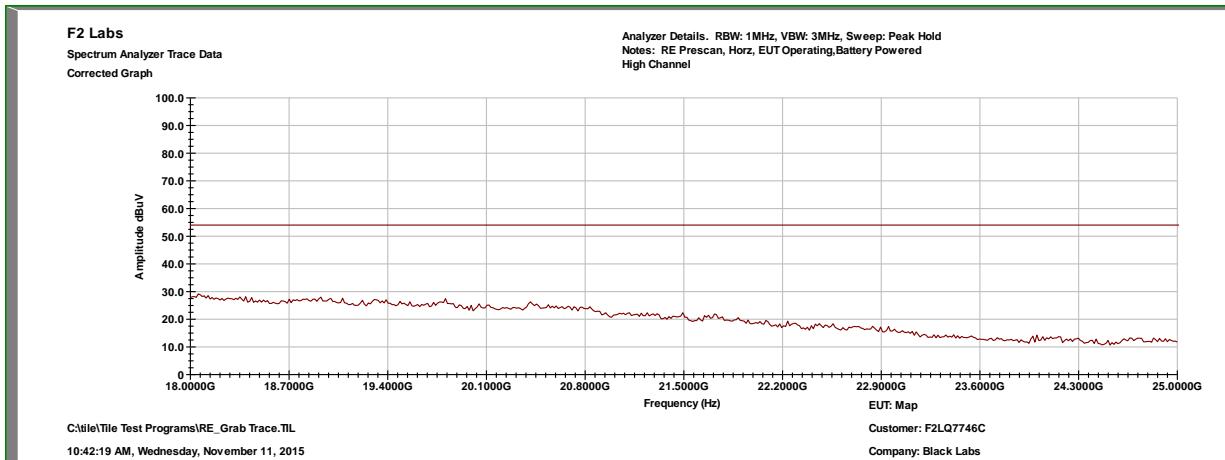


Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### High Channel: 18 GHz to 25 GHz, Horizontal





Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

## Measurements

### Low Channel - MaxPeak

Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
2390.000000	V	41.7	15.3	57.00	74.0	-17.0
2390.000000	H	41.1	15.3	56.40	74.0	-17.6
2483.500000	V	35.9	15.6	51.50	74.0	-22.5
2483.500000	H	35.9	15.6	51.50	74.0	-22.5

### Low Channel - Average

Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
2390.000000	V	25.1	15.3	40.40	54.0	-13.6
2390.000000	H	24.9	15.3	40.20	54.0	-13.8
2483.500000	V	22.3	15.6	37.90	54.0	-16.1
2483.500000	H	22.3	15.6	37.90	54.0	-16.1



Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Mid Channel - MaxPeak

Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
2390.000000	H	36.40	15.3	51.70	74.0	-22.3
2390.000000	V	35.70	15.3	51.00	74.0	-23.0
2483.500000	H	36.90	15.6	52.50	74.0	-21.5
2483.500000	V	36.20	15.6	51.80	74.0	-22.2

### Mid Channel - Average

Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
2390.000000	H	22.4	15.3	37.70	54.0	-16.3
2390.000000	V	22.4	15.3	37.70	54.0	-16.3
2483.500000	H	22.4	15.6	38.00	54.0	-16.0
2483.500000	V	22.5	15.6	38.10	54.0	-15.9



Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### High Channel - MaxPeak

Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
2390.000000	V	35.70	15.3	51.00	74.0	-23.0
2390.000000	H	36.10	15.3	51.40	74.0	-22.6
2483.500000	V	51.80	15.6	67.40	74.0	-6.6
2483.500000	H	50.50	15.6	66.10	74.0	-7.9

### High Channel - Average

Frequency (MHz)	Antenna Polarization	Reading (dB $\mu$ V)	Cable Loss & Antenna Factor (dB)	Emission (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
2390.000000	H	22.4	15.3	37.70	54.0	-16.3
2390.000000	V	22.4	15.3	37.70	54.0	-16.3
2483.500000	H	24.4	15.6	40.00	54.0	-14.0
2483.500000	V	23.9	15.6	39.50	54.0	-14.5



Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

## 11 FCC PART 15.247(e) - PEAK POWER SPECTRAL DENSITY (PSD)

Peak power spectral density measurements were performed.

### 11.1 Requirements:

The peak power spectral density shall not exceed +8dBm in any 3 kHz band during any time interval of continuous transmission.

Power spectral density measurements were performed at a resolution bandwidth of 3 kHz (video bandwidth set at 10 KHz). The peak spectral densities were measured at the low, mid, and upper channels.

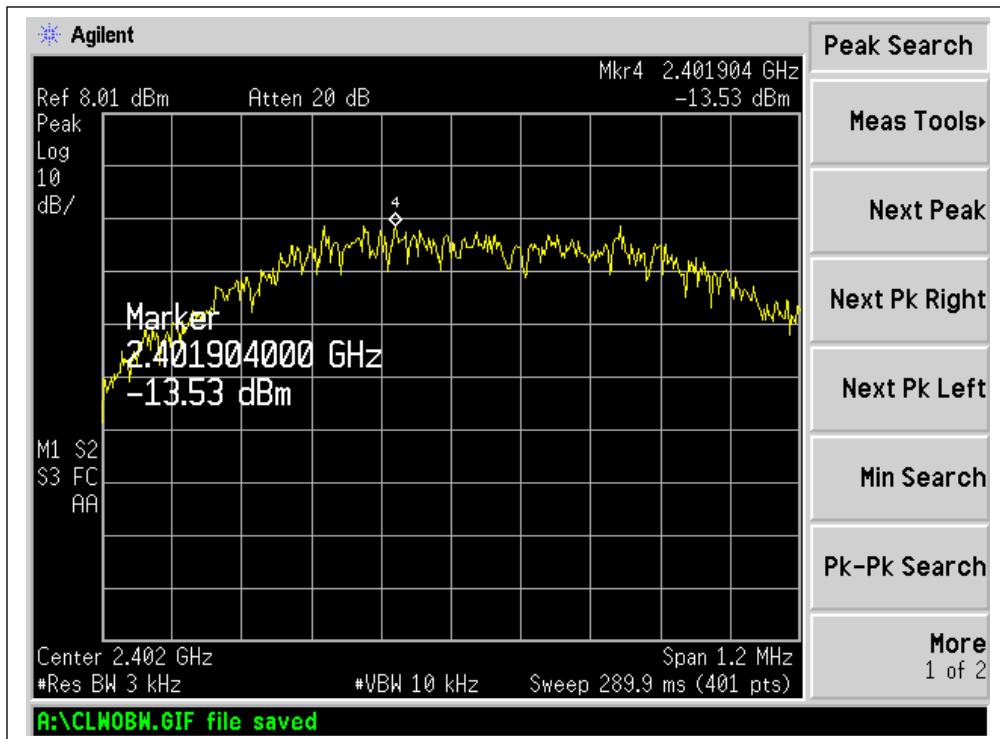
## 11.2 Peak Power Spectral Density Test Data

<b>Test Date(s):</b>	Nov. 10, 2015	<b>Test Engineer:</b>	J. Knepper
<b>Standards:</b>	CFR 47 Part 15.247; KDB558074	<b>Air Temperature:</b>	22.0°C

**Relative Humidity:**

46%

### Low Channel



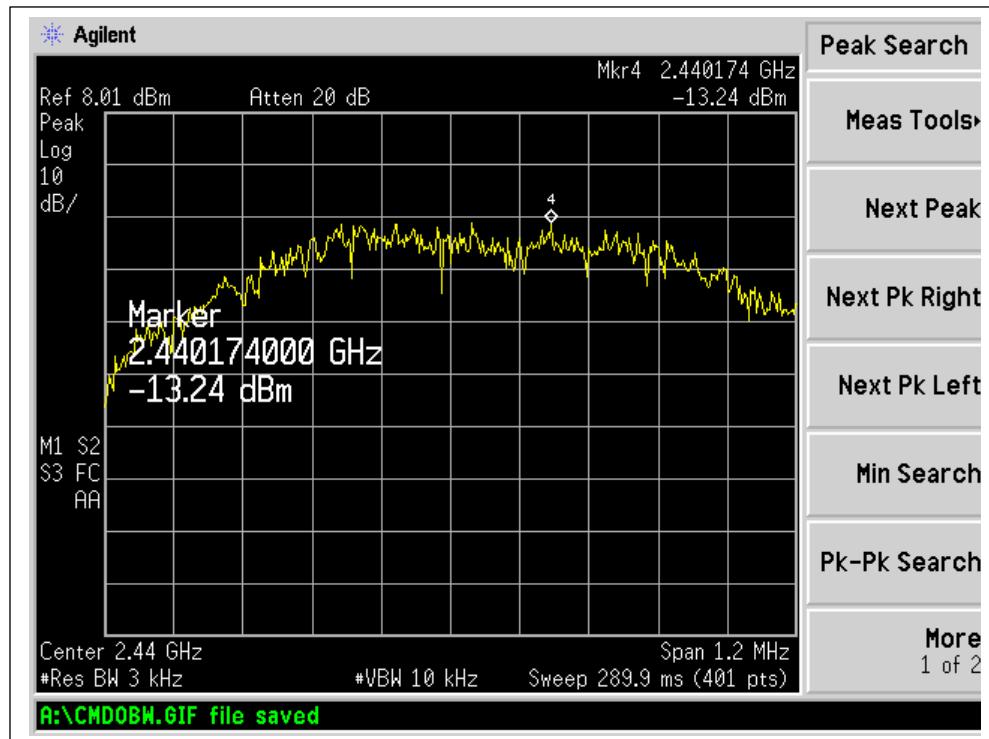


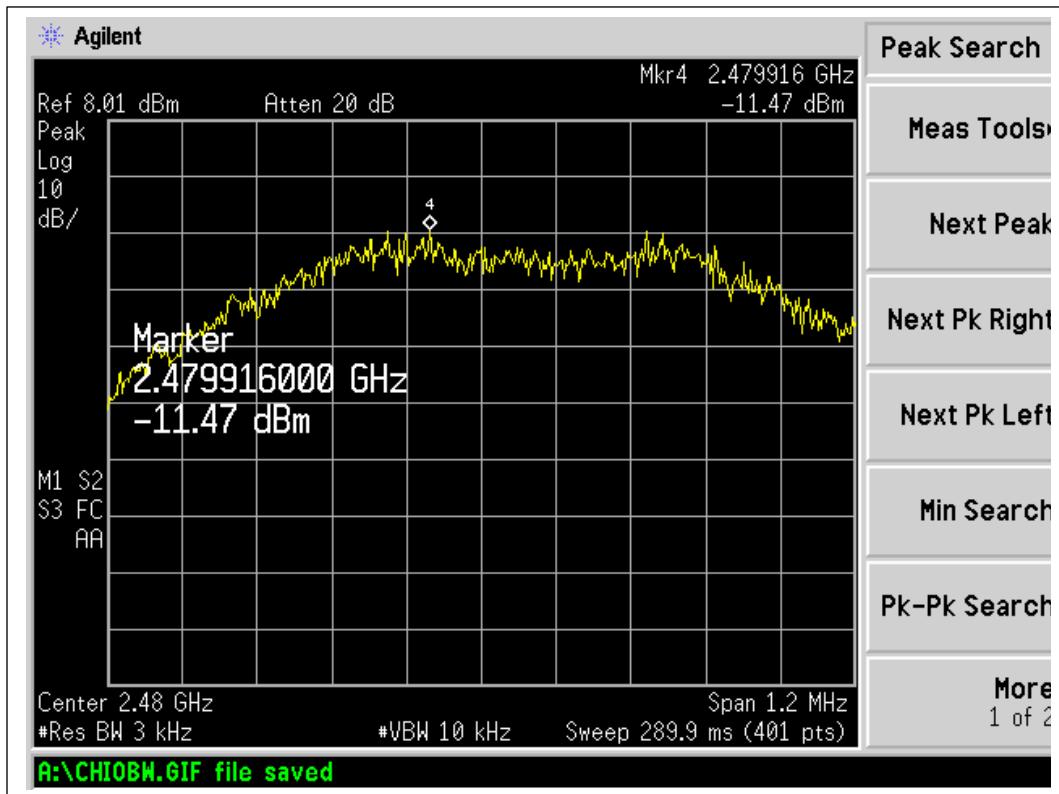
Order Number: F2LQ7746C

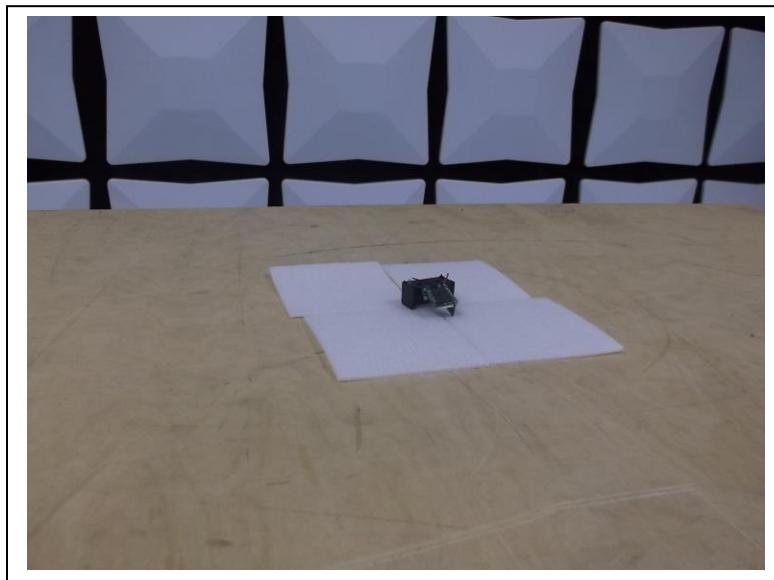
Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

### Mid Channel



**High Channel**

**13 PHOTOGRAHPS/EXHIBITS – PRODUCT PHOTOS, TEST SETUPS****Radiated Spurious Emission <1 GHz****Radiated Spurious Emission >1 GHz**



Order Number: F2LQ7746C

Manufacturer: Centurion Medical Products

Model: CWHG001 (Compass CAST)

Conducted Output Power, Peak Power Spectral Density,  
-6dB Occupied Bandwidth, and Conducted Spurious Emissions

