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CERTIFICATION TEST REPORT

Manufacturer: **Transducers Direct LLC**
12115 Ellington Court
Cincinnati, Ohio 45249 USA

Product Name: **TDWPG Pressure Gauge**

Product Description: The TDWPG measures the pressure of a fluid, such as gas in a cylinder or hydraulic fluid, operating via a 3-Volt lithium battery. The product displays the pressure via the liquid crystal display (LCD). The product also transmits the pressure via Bluetooth to a smart phone or tablet.

Model: **TDWPG / GW-DIG3000-1**

FCC ID: **2ACGE-TDWPG**

Testing Commenced: **Oct. 13, 2015**

Testing Ended: **Jan. 25, 2016**

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**

❖ **FCC Part 15, Subpart C, Section 15.209**



Order Number: F2LQ7692A

Client: Transducers Direct LLC

Model: TDWPG / GW-3000-1

Evaluation Conducted by:

Joe Knepper, EMC Proj. Eng.

Report Reviewed by:

Ken Littell, Director of EMC & Wireless Operations

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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 ANSI C63.4 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:

Radiated Emissions

- Combined Uncertainty (+ or -) 2.54 dB
- Expanded Uncertainty (+ or -) 5.07 dB

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
F2LQ7692A-01E	First Issue	Jan. 28, 2016	K. Littell



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 3.3dBi Internal 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: The requirements of 15.31 were met by using new batteries.

Modifications Made to the Equipment
No modifications were made to the EUT.

**3 TABLES OF MEASURED RESULTS**

Test	High Channel (2.4802GHz)	Mid Channel (2.4402GHz)	Low Channel (2.4022GHz)
-6dB Occupied Bandwidth	0.7075MHz	0.7187MHz	0.7149MHz
-6dB Occupied Bandwidth Limit	≥ 500KHz	≥ 500KHz	≥ 500KHz
Conducted Output Power	0.712mW (-1.47dBm)	0.807mW (-0.93dBm)	0.875mW (-0.58dBm)
Conducted Output Power Limit	1 Watt (30dBm)	1 Watt (30dBm)	1 Watt (30dBm)
E.I.R.P. (3.3dBi Antenna)	1.524mW	1.725mW	1.871mW
E.I.R.P. Limit	4 Watts	4 Watts	4 Watts
Peak Power Spectral Density	-12.7dBm	-11.69 dBm	-11.4 dBm
Peak Power Spectral Density Limit	8 dBm	8 dBm	8 dBm



Order Number: F2LQ7692A

Client: Transducers Direct LLC

Model: TDWPG / GW-3000-1

4 ENGINEERING STATEMENT

This report has been prepared on behalf of Transducers Direct LLC 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 C63.4 and KDB558074 standards. The test results found in this test report relate only to the items tested.



5 EUT INFORMATION AND DATA

5.1 Equipment Under Test:

Product: TDWPG Pressure Gauge

Model: TDWPG / GW-3000-1

FCC ID: 2ACGE-TDWPG

5.2 Trade Name:

Transducers Direct LLC

5.3 Power Supply:

Battery-operated; non-rechargeable, disposable

5.4 Applicable Rules:

CFR 47, Part 15.247, subpart C

5.5 Equipment Category:

Radio Transmitter-DTS

5.6 Antenna:

3.3dBi Internal 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:

EUT was set up in a normal operating manner, powered by battery. EUT transmitted at high (2.4802 GHz), mid (2.4402 GHz) and low (2.40202 GHz) channels. The highest emissions were recorded in the data tables.



6 LIST OF MEASUREMENT INSTRUMENTATION

Equipment Type	Asset Number	Manufacturer	Model	Serial Number	Calibration Due Date
Shielded Chamber	CL166	AlbatrossProjects	B83117-DF435-T261	US140023	Feb. 26, 2016
Shield Room	0175	Ray Proof	N/A	11645	Verified
Receiver	CL151	Rohde & Schwarz	ESU40	100319	Nov. 25, 2016
Horn Antenna	CL098	Emco	3115	9809-5580	Dec. 3, 2015
Horn, Antenna	CL114	A.H. Systems	SAS-572	237	Oct. 16, 2016
Pre-Amplifier	CL153	Agilent	83006-69007	MY39500791	May 6, 2016
Active 18" Loop Antenna	CL163	A.H. Systems, Inc.	EHA-52B	100	Apr. 20, 2016
Pre-Amplifier	CL189	Com-Power	PAM-840A	461303	June 18, 2016
Software:	Tile Version 1.0		Software Verified: Oct. 13, 2015		
Software:	EMC 32, Version 5.20.2		Software Verified: Oct. 13, 2015		



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

7.1 Requirements:

The 6dB bandwidth shall be greater than 500 kHz.

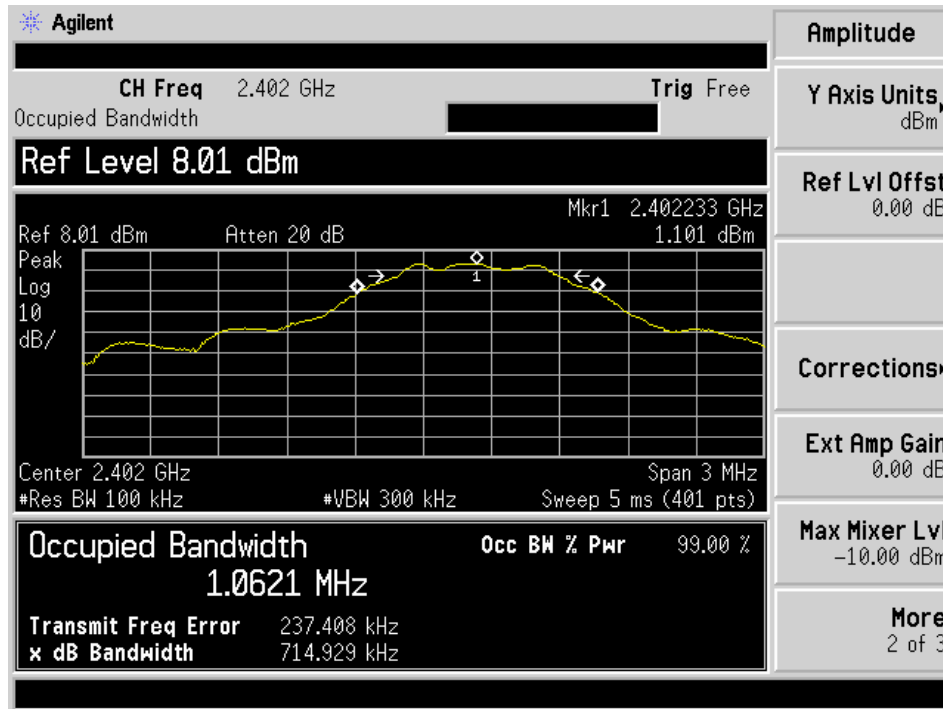
Bandwidth measurements were made at the low (2.40202 GHz), mid (2.4402 GHz) and upper (2.4802 GHz) frequencies with the resolution Bandwidth set at 100 kHz (video bandwidth set at 300 kHz) while the span was set at 3MHz. The bandwidth was measured using the analyzer's marker function.



7.2 Occupied Bandwidth Test Data

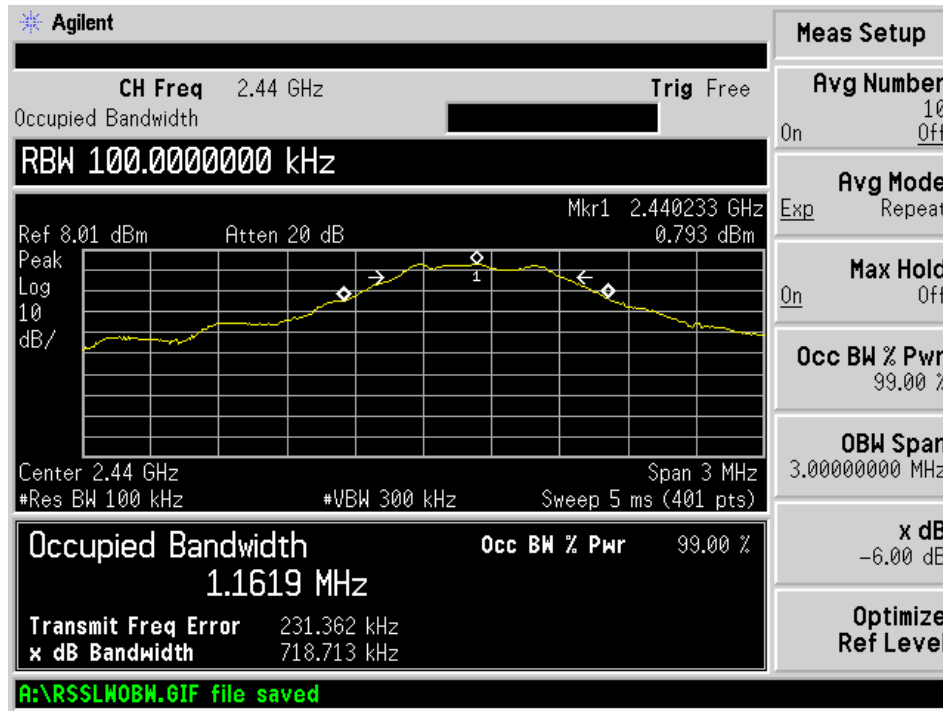
Test Date:	Oct. 13, 2015	Test Engineer:	J. Knepper
Standards:	CFR 47 Part 15.247(a)(2); KDB558074	Air Temperature:	22.2°C
		Relative Humidity:	47%

Low Channel



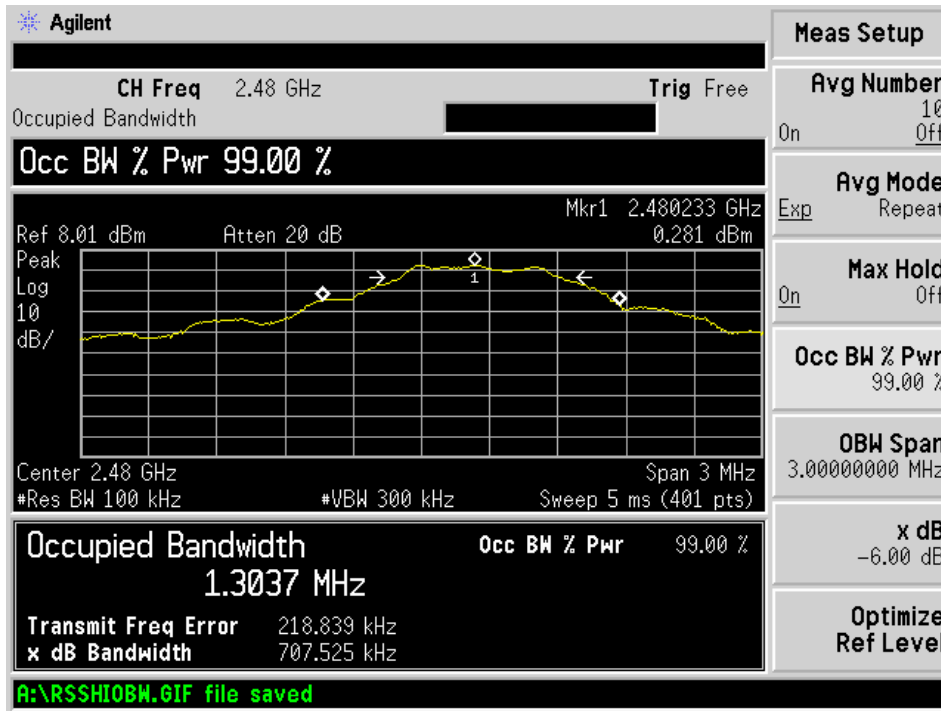


Mid Channel





High Channel





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:

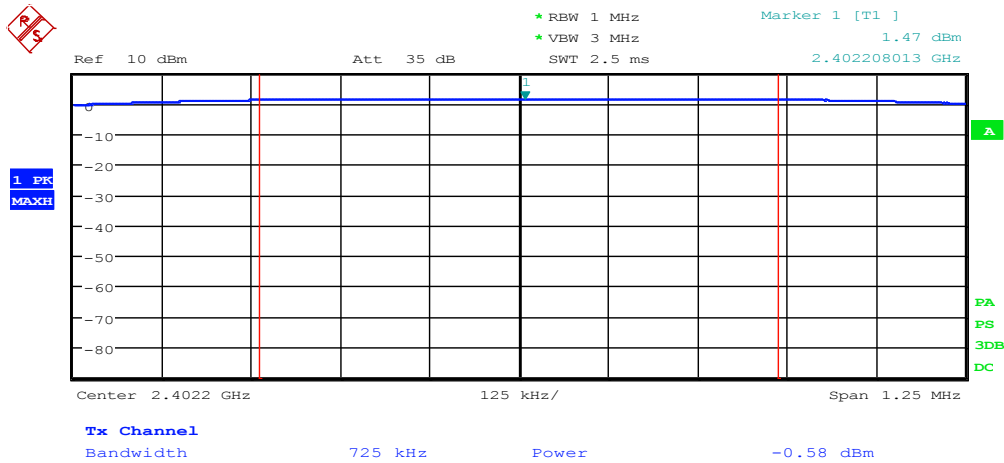
The peak power output shall be 1 watt (30 dBm) or less when using an antenna with a gain of less than 6dBi. For antennas having a gain of more than 6dBi, the limit is reduced by 1dB for every dB the antenna gain is over 6dBi.



8.2 Conducted Output Power Test Data

Test Date:	Oct. 13, 2015	Test Engineer:	J. Knepper
Standards:	CFR 47 Part 15.247(b)(3); KDB558074	Air Temperature:	22.3°C
		Relative Humidity:	40%

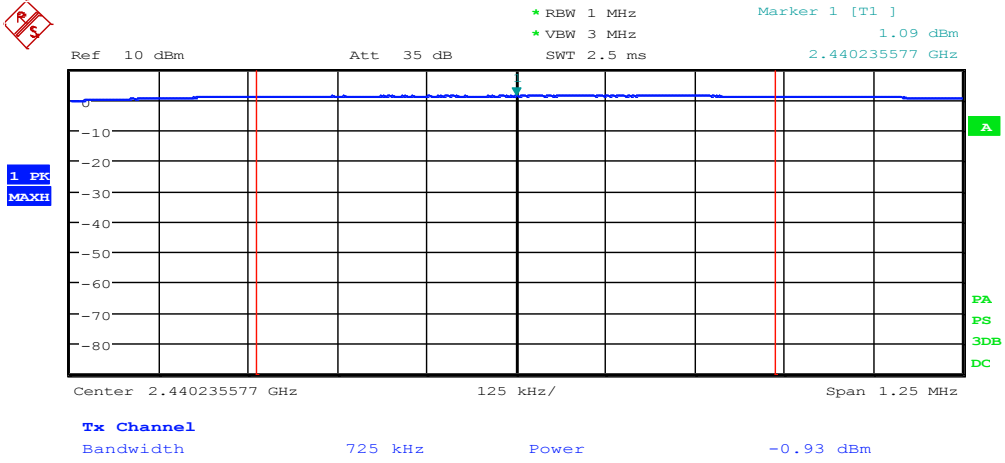
Low Channel



Date: 13.OCT.2015 14:16:52



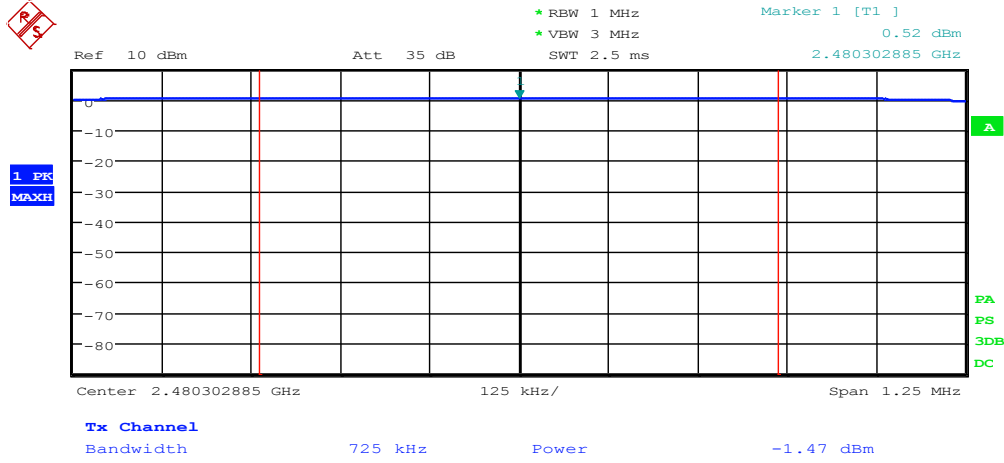
Mid Channel



Date: 13.OCT.2015 14:18:58



High Channel



Date: 13.OCT.2015 14:24:18



9 FCC Part 15.247(c) – 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.

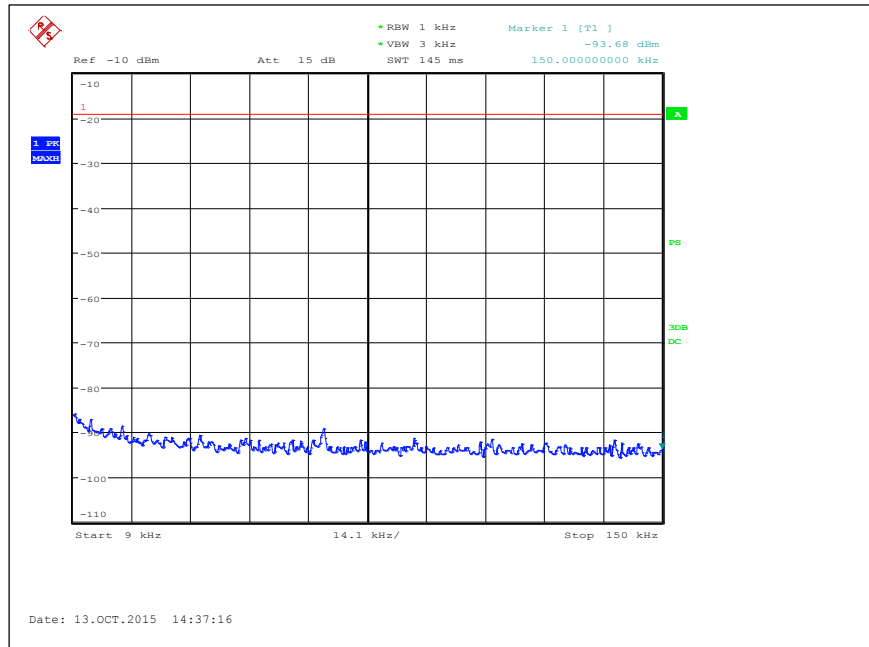
Spurious emissions measurements were made with the appropriate spectrum analyzer impulse bandwidth. Additionally, 20dB down points were measured for the channel to verify band edge compliance.



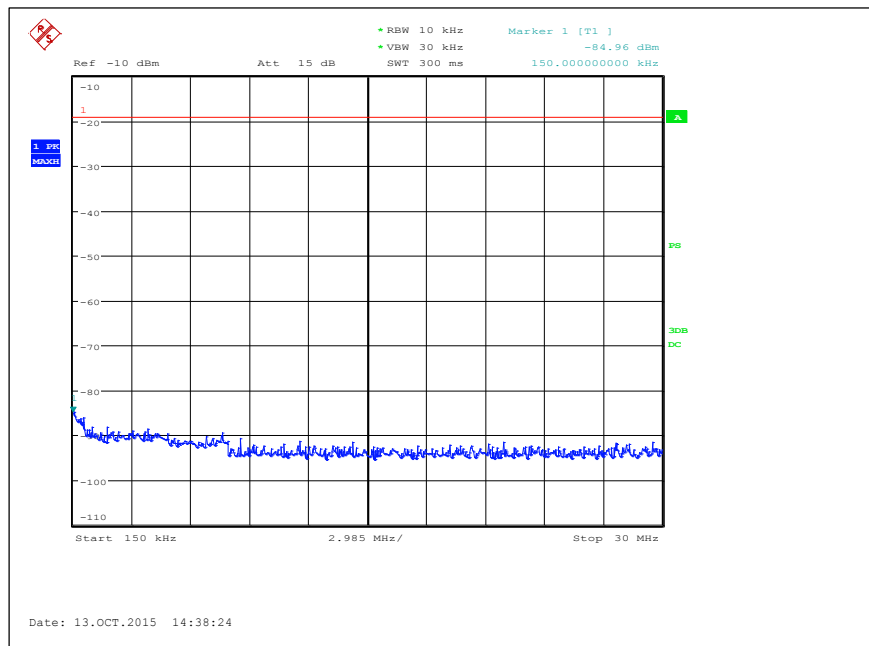
9.2 Test Data – Conducted Spurious Emissions

Test Date(s):	Oct. 13, 2015; Jan. 25, 2016	Test Engineer:	J. Knepper
Standards:	CFR 47 Part 15.247(d) / Part 15.209; KDB558074	Air Temperature:	22.3°C
		Relative Humidity:	48%

Low Channel: 9 kHz to 150kHz

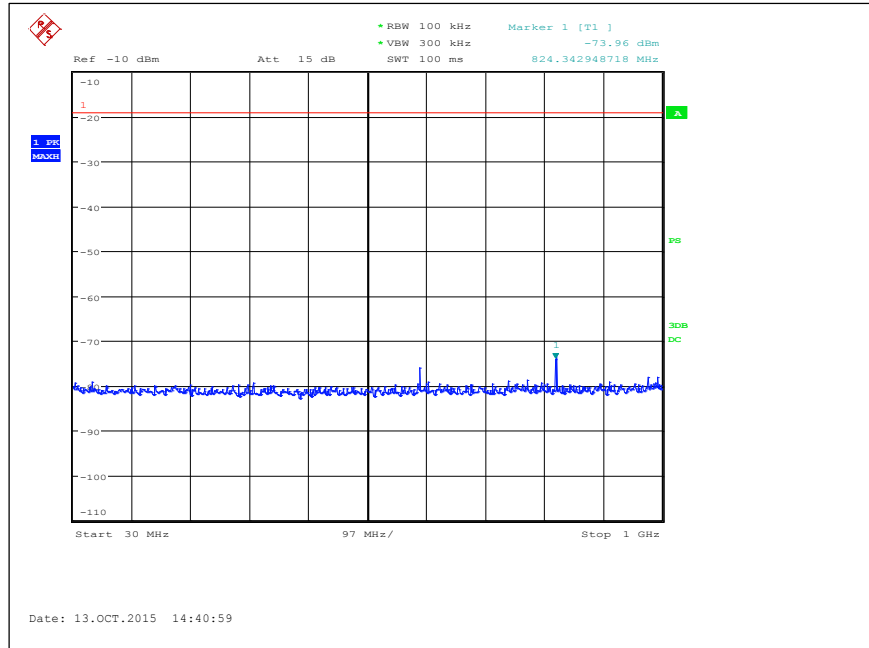


Low Channel: 150 kHz to 30 MHz

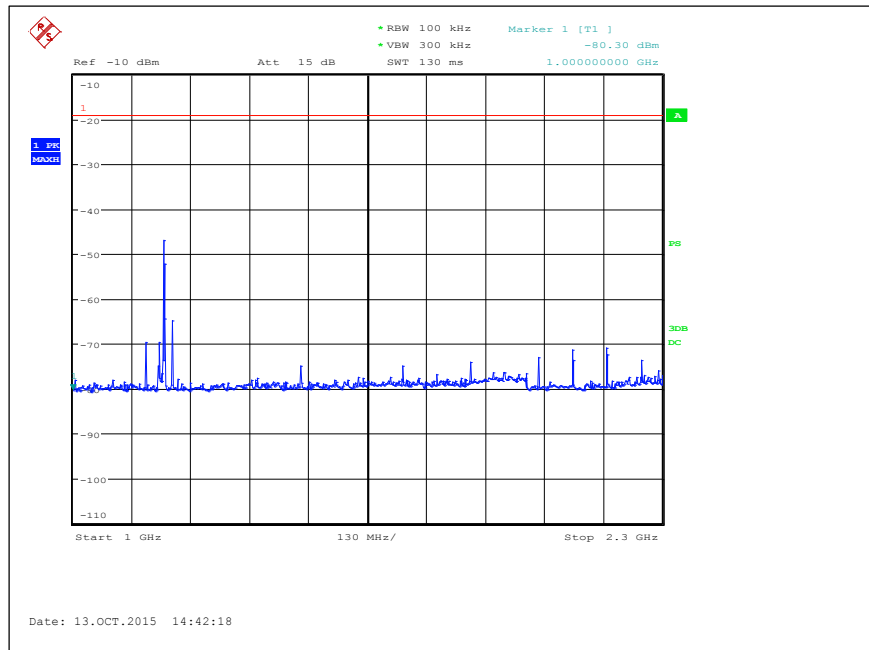




Low Channel: 30 MHz to 1 GHz

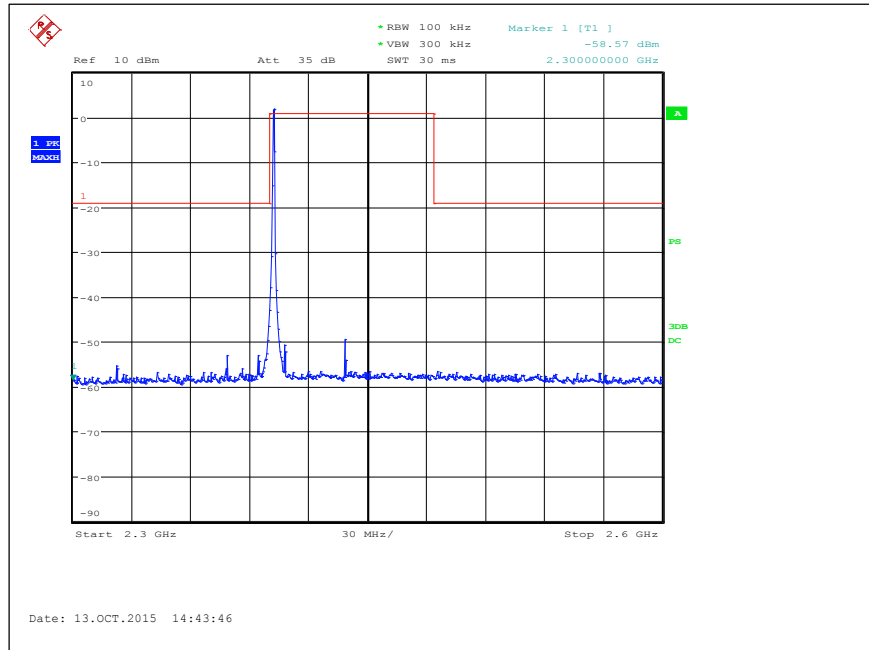


Low Channel: 1 GHz to 2.3 GHz

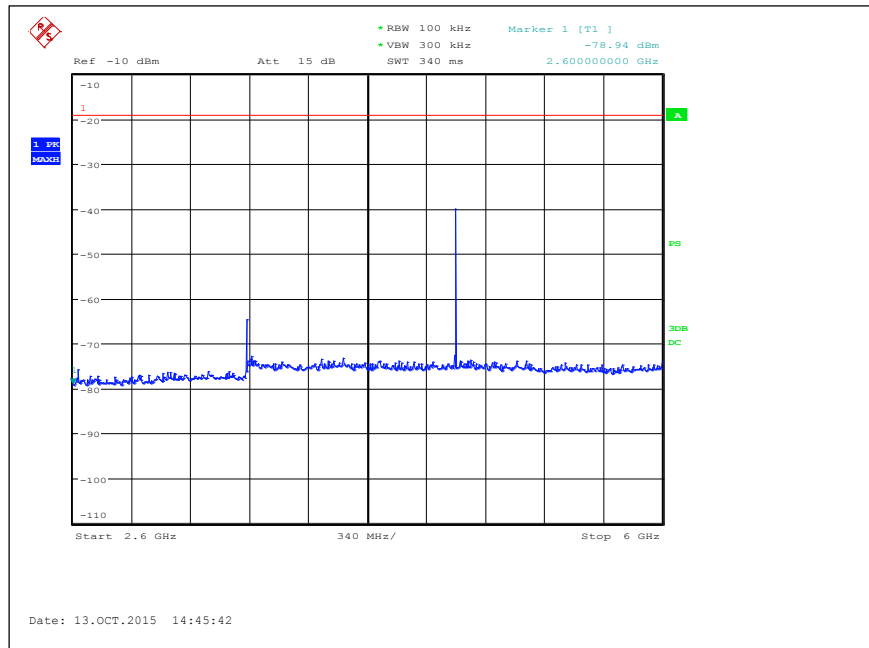




Low Channel: 2.3 GHz to 2.6 GHz

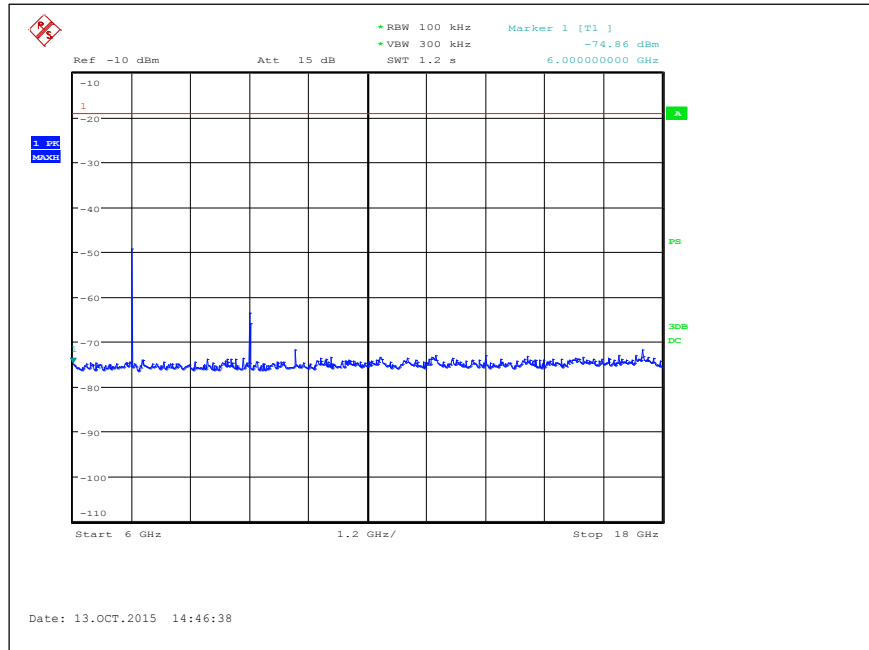


Low Channel: 2.6 GHz to 6 GHz

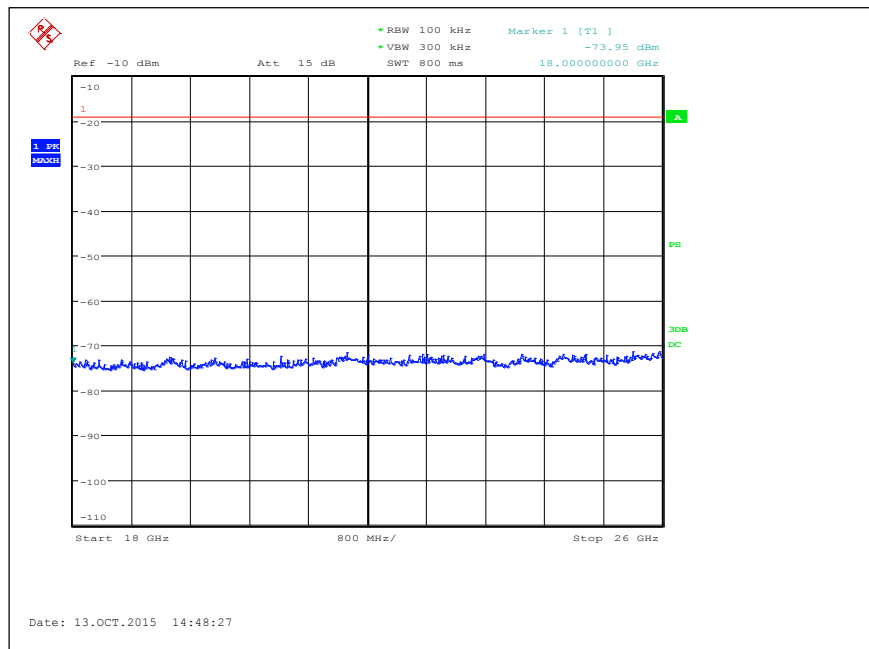




Low Channel: 6 GHz to 18 GHz

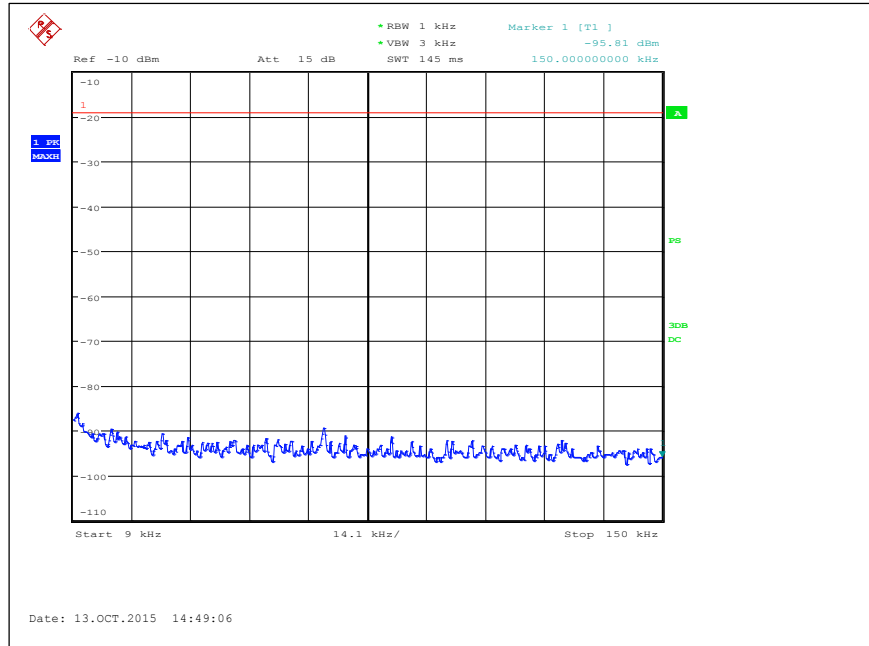


Low Channel: 18 GHz to 26 GHz

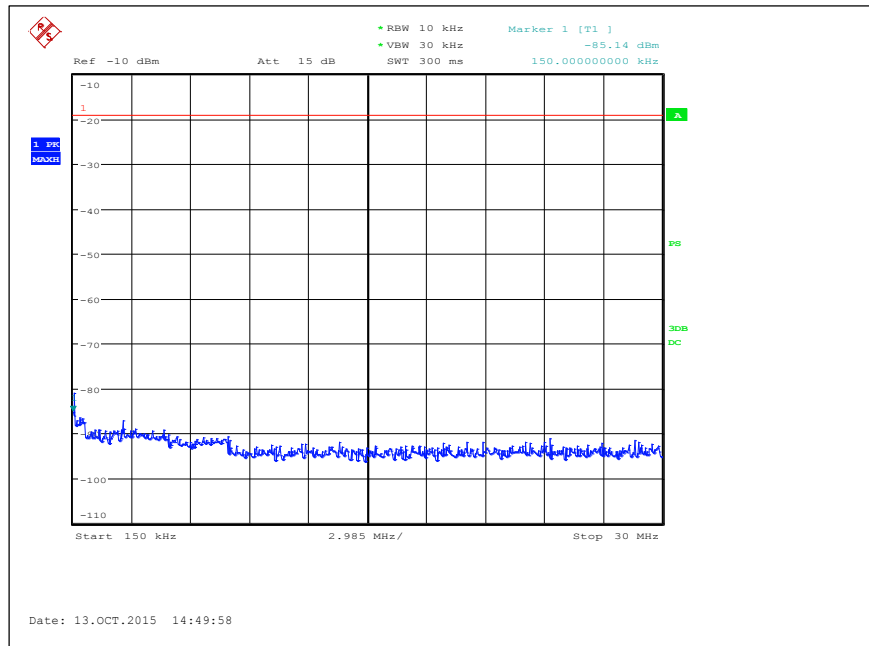




Mid Channel: 9 kHz to 150 kHz

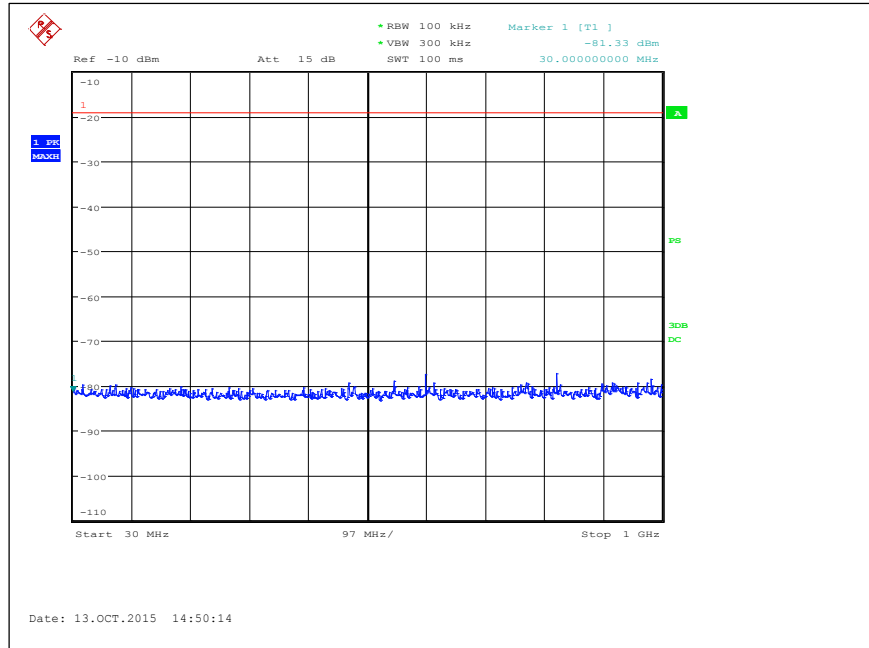


Mid Channel: 150 kHz to 30 MHz

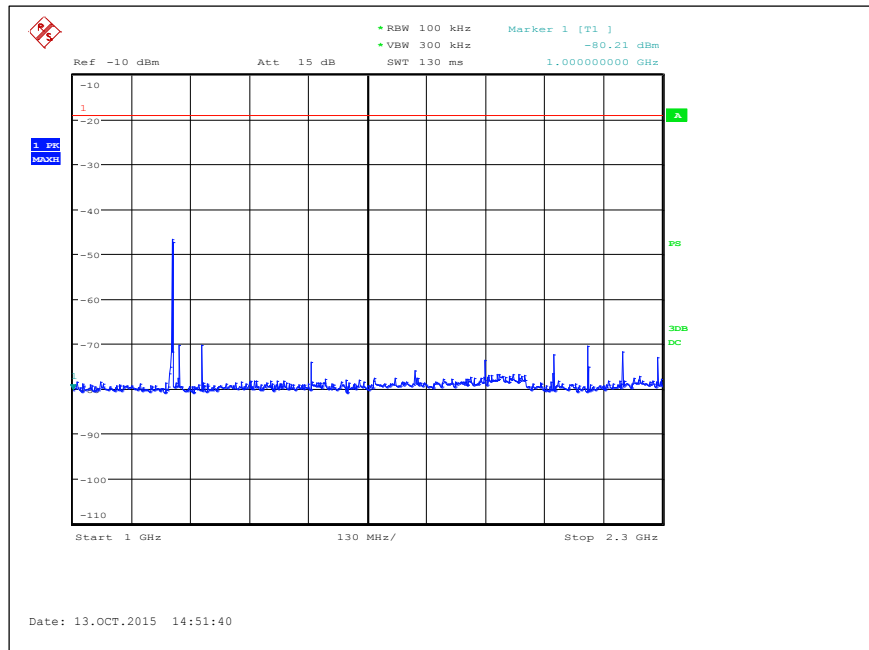




Mid Channel: 30 MHz to 1 GHz

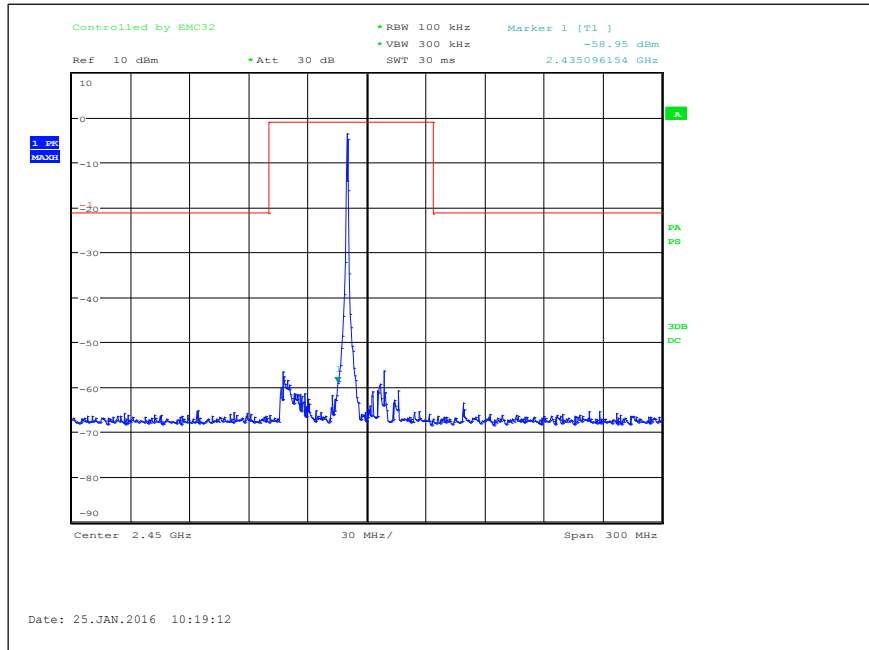


Mid Channel: 1 GHz to 2.3 GHz

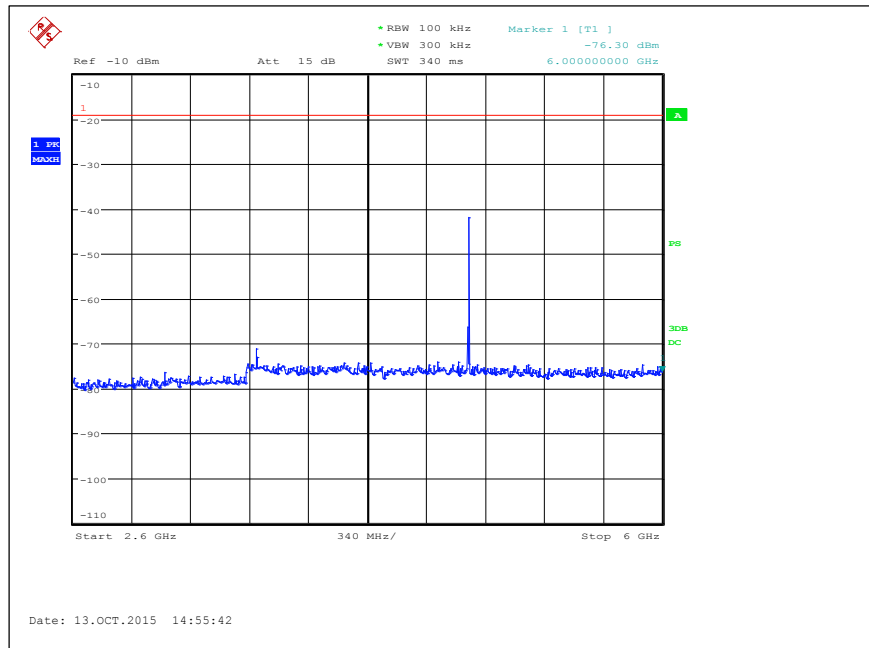




Mid Channel: 2.3 GHz to 2.6 GHz

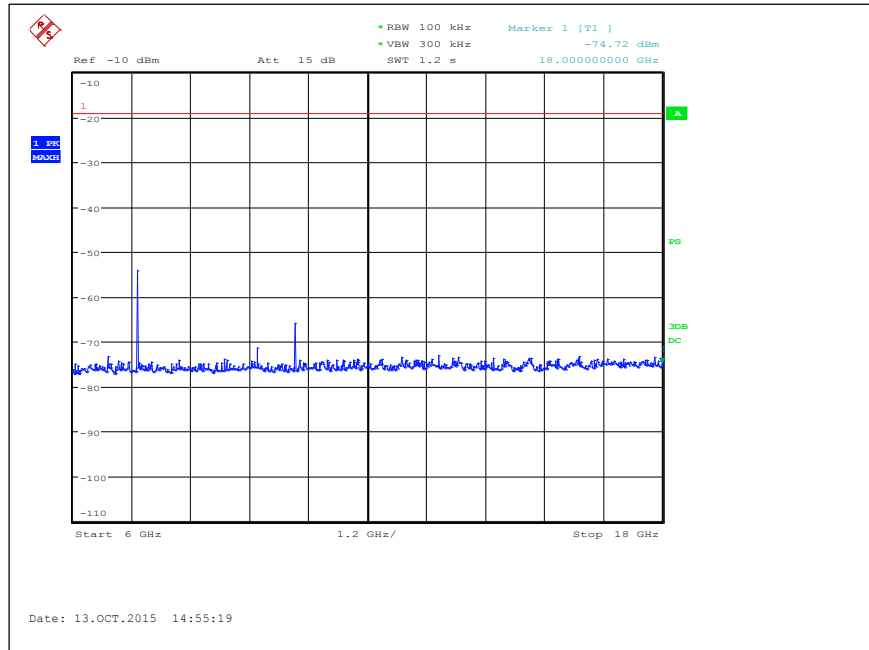


Mid Channel: 2.6 GHz to 6 GHz

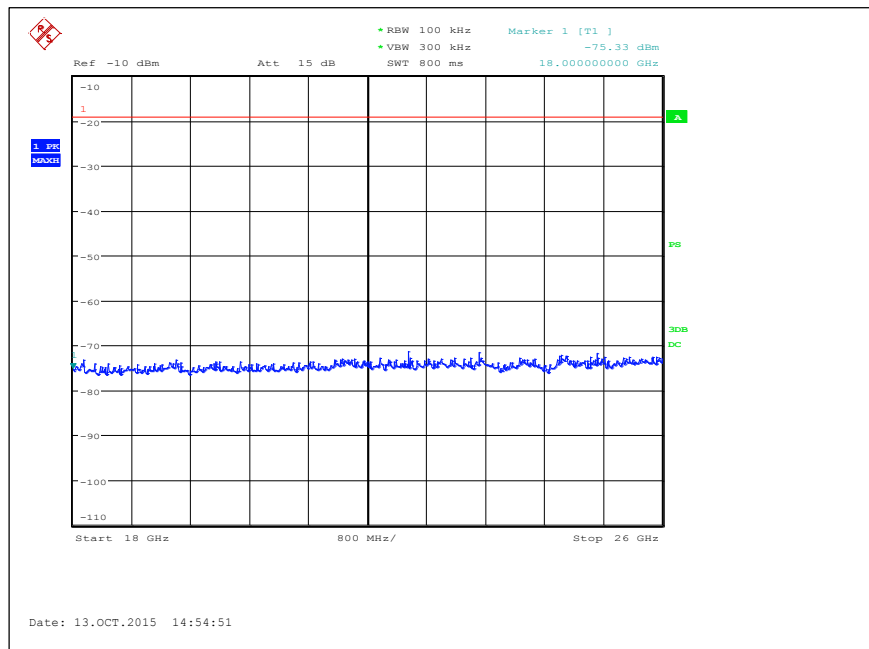




Mid Channel: 6 GHz to 18 GHz

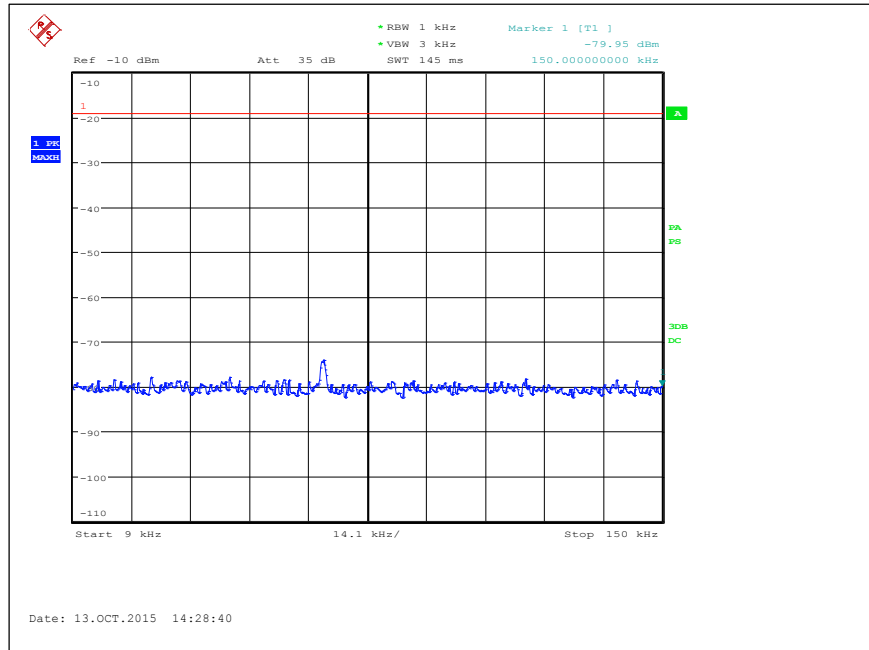


Mid Channel: 18 GHz to 26 GHz

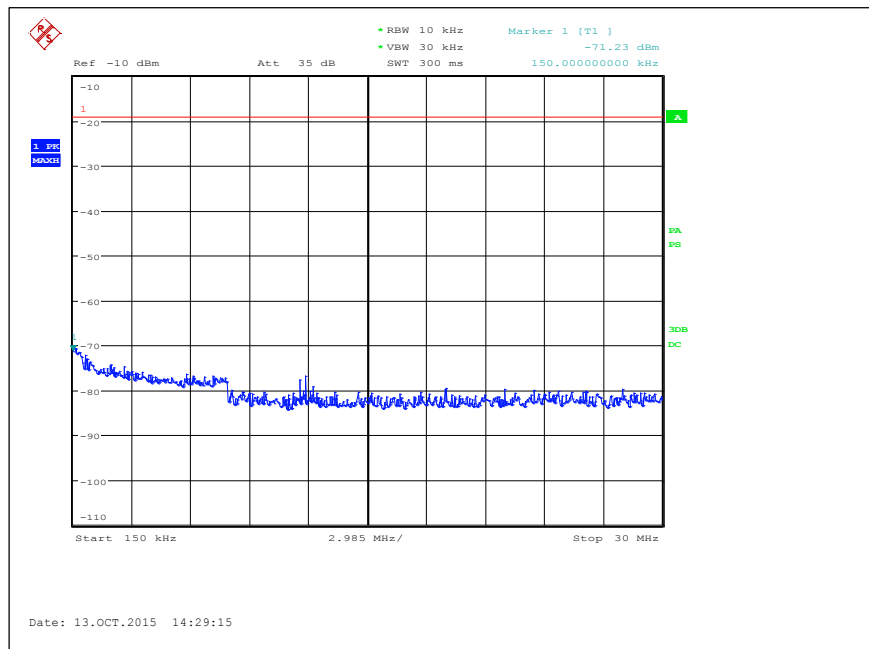




High Channel: 9 kHz to 150 kHz

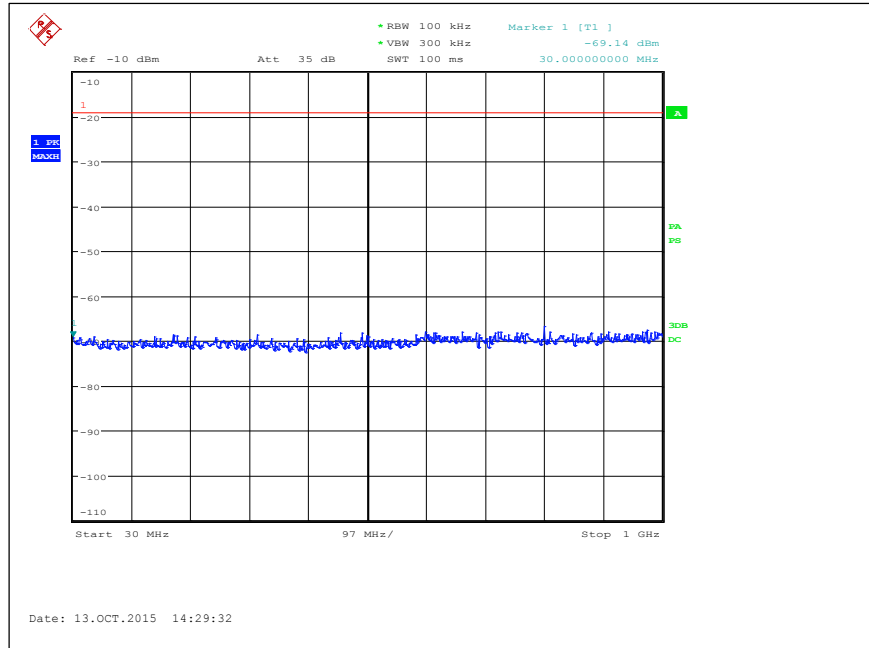


High Channel: 150 kHz to 30 MHz

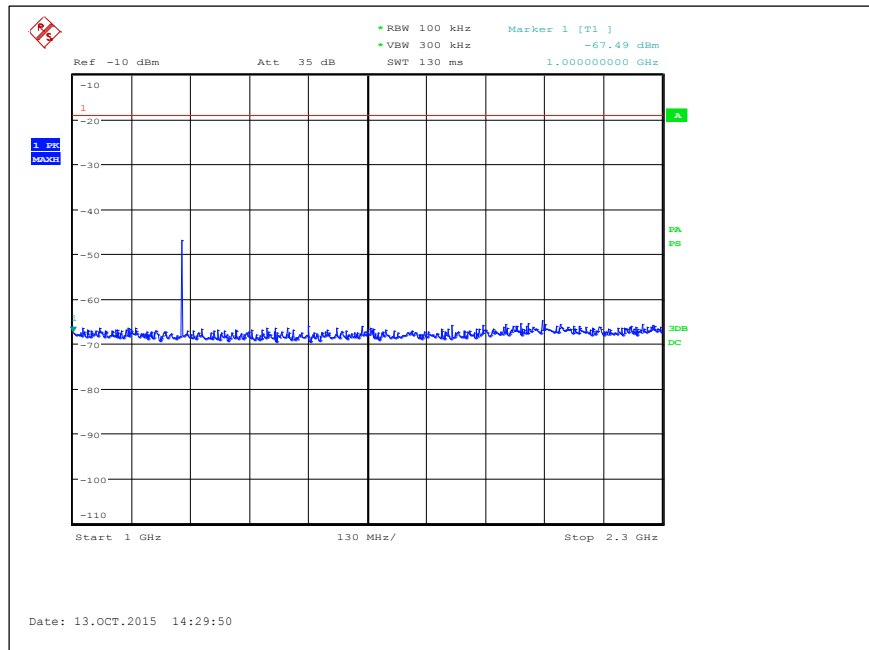




High Channel: 30 MHz to 1 GHz

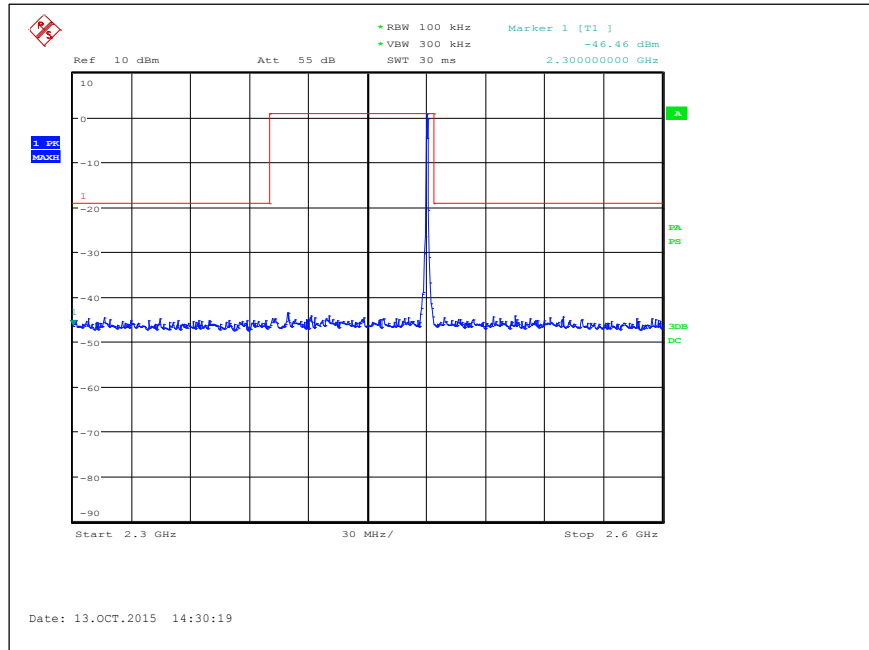


High Channel: 1 GHz to 2.3 GHz

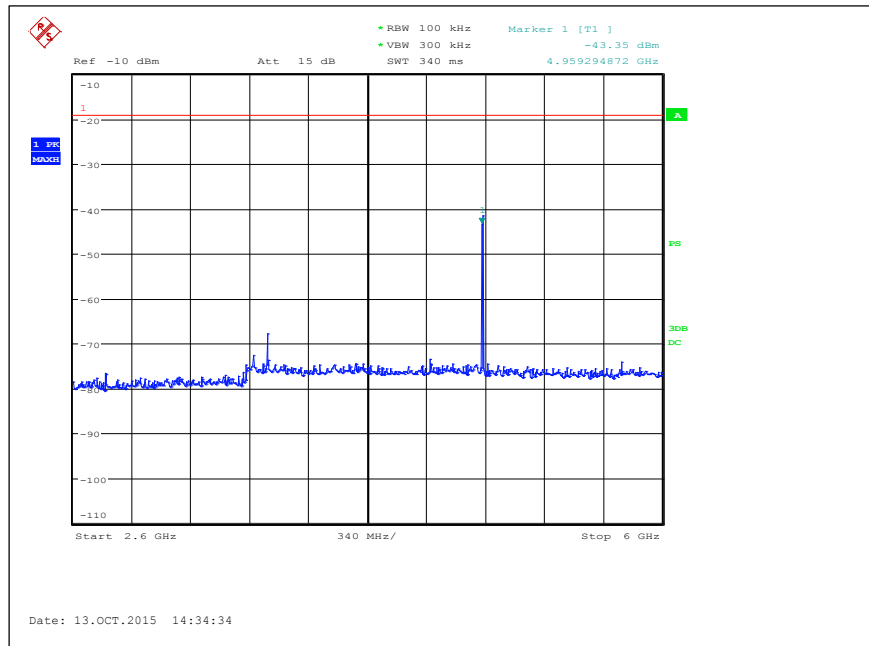




High Channel: 2.3 GHz to 2.6 GHz

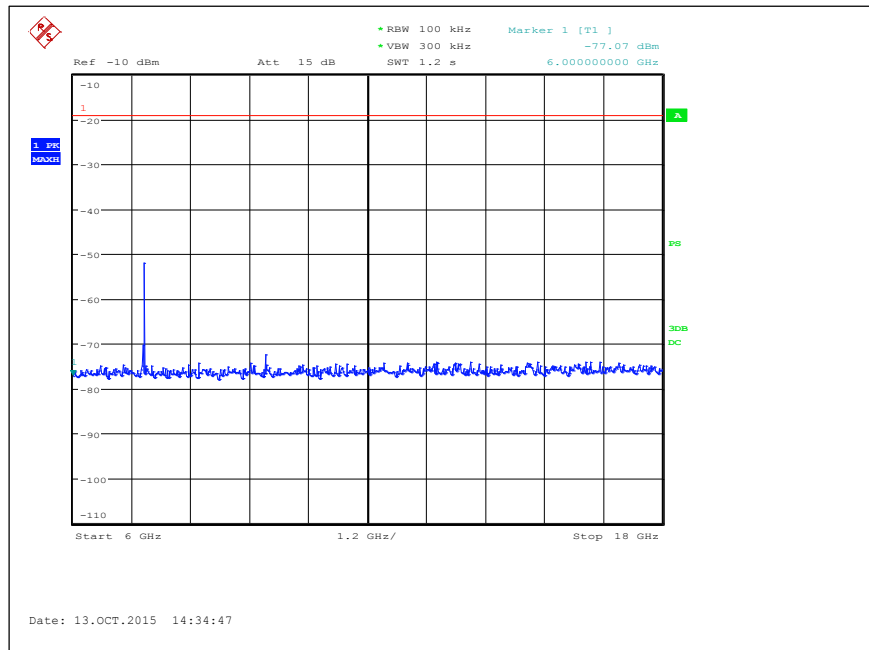


High Channel: 2.6 GHz to 6 GHz

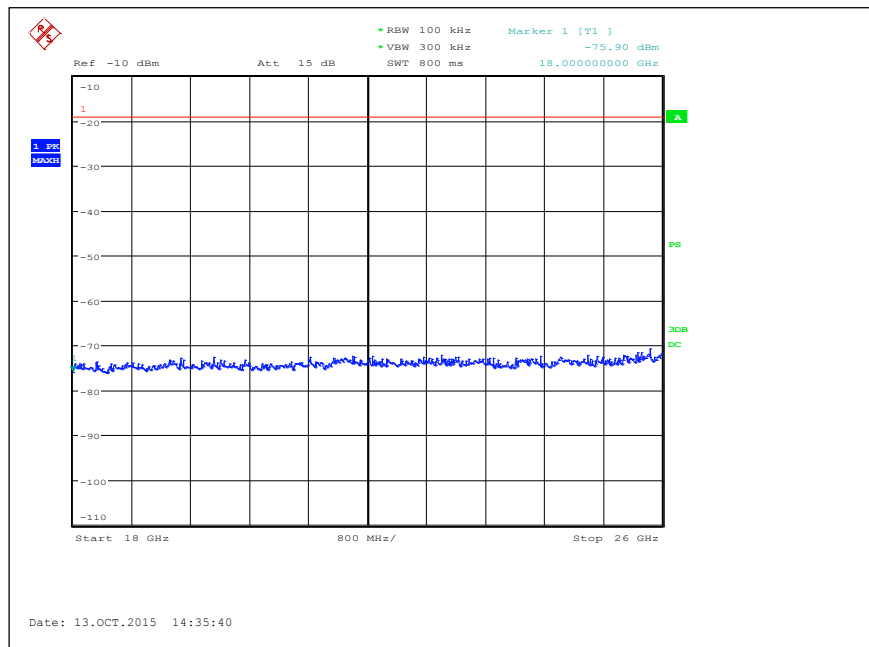




High Channel: 6 GHz to 18 GHz



High Channel: 18 GHz to 26 GHz





10 RADIATED SPURIOUS EMISSIONS

The EUT antenna port was fitted with its 3.3 dBi antenna. Radiated emissions were measured in a Semi-Anechoic Chamber (SAC). 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).



10.2 Radiated Spurious Emission Test Data

Test Date(s):	Oct. 14, 2015	Test Engineer:	J. Knepper
Standards:	CFR 47 Part 15.247(d); Part 15.209 / KDB558074	Air Temperature:	20.4°C
		Relative Humidity:	52%

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.

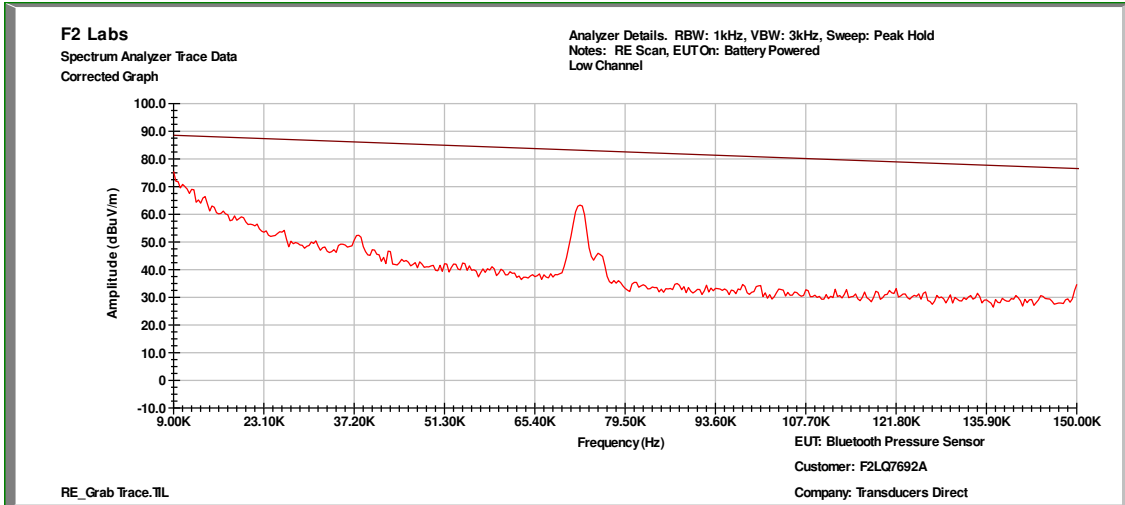
The equipment was fully exercised with all cabling attached to the EUT and was positioned in a SAC for maximum emissions. While the equipment was energized, the receiving antenna was scanned from 1.0 meter to 4.0 meters in both vertical and horizontal polarities while the turntable was adjusted 360 degrees 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.

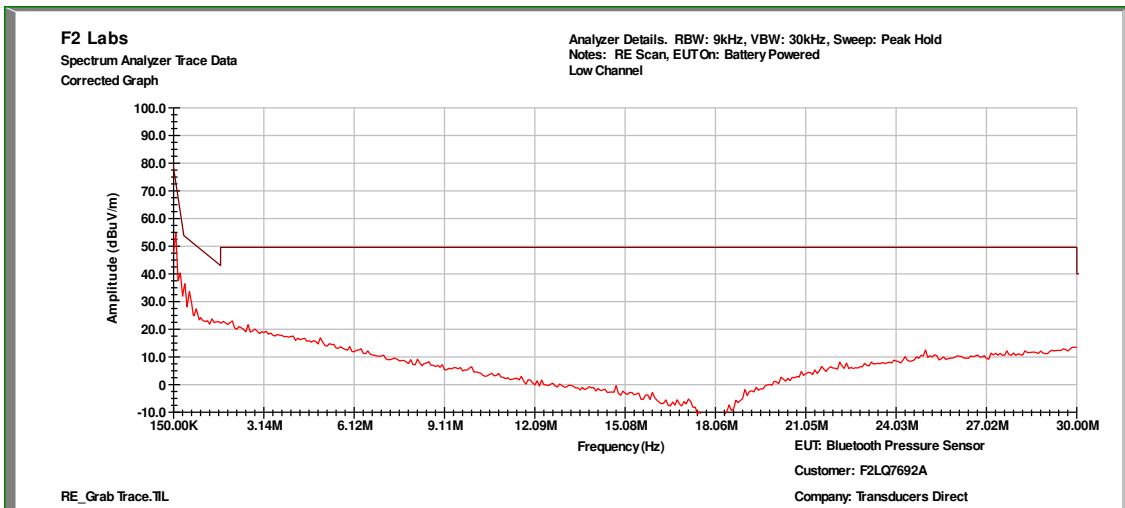
In the following plots, the black line indicates ambient noise and the red line indicates the measurement with the EUT on. Emissions to be found by the EUT were measured and listed in tables. The plots are for reference only and the limit lines are not actual limit lines but merely a guide.



Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 9k-150k

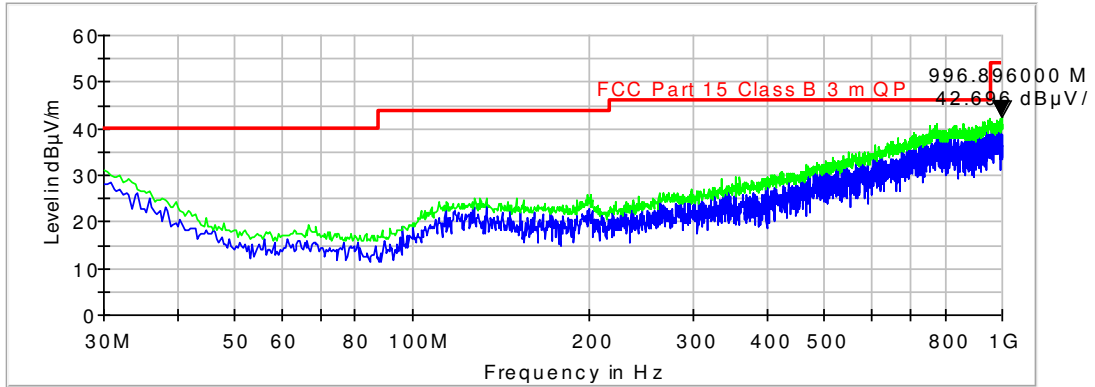


Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 150k-30M

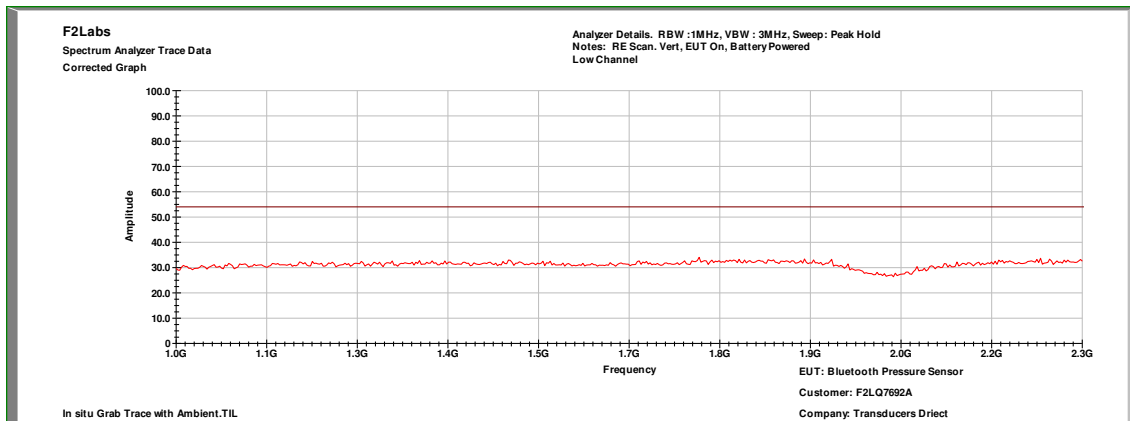




Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 30M-1G Vert

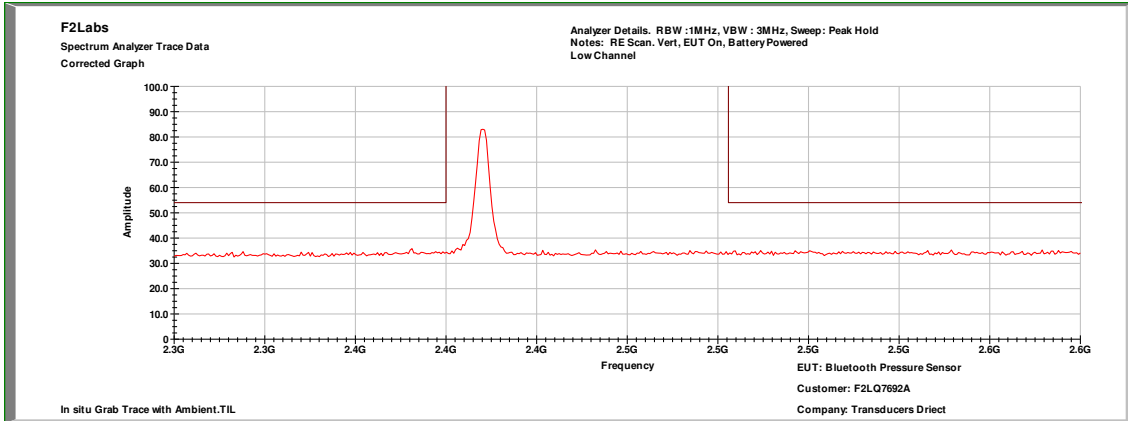


Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 1G-2.3G Vert

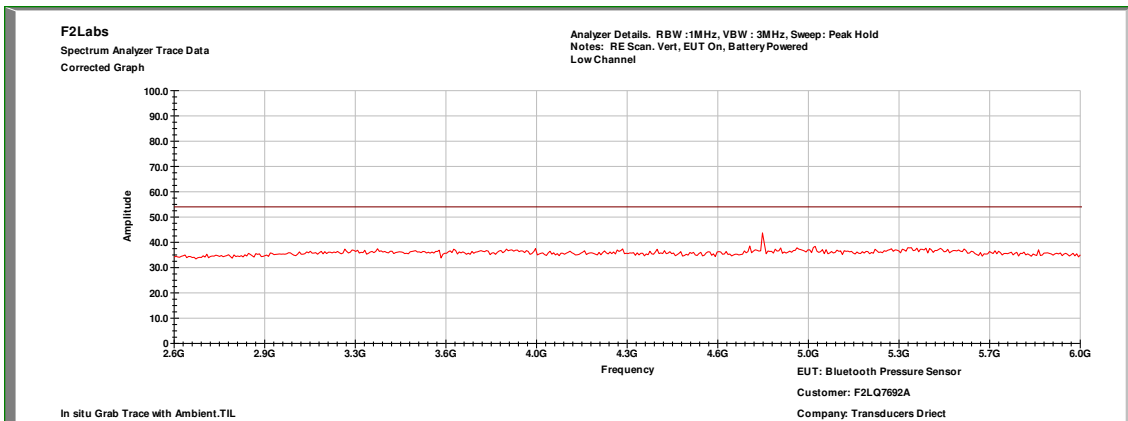




Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 2.3G-2.6G Vert

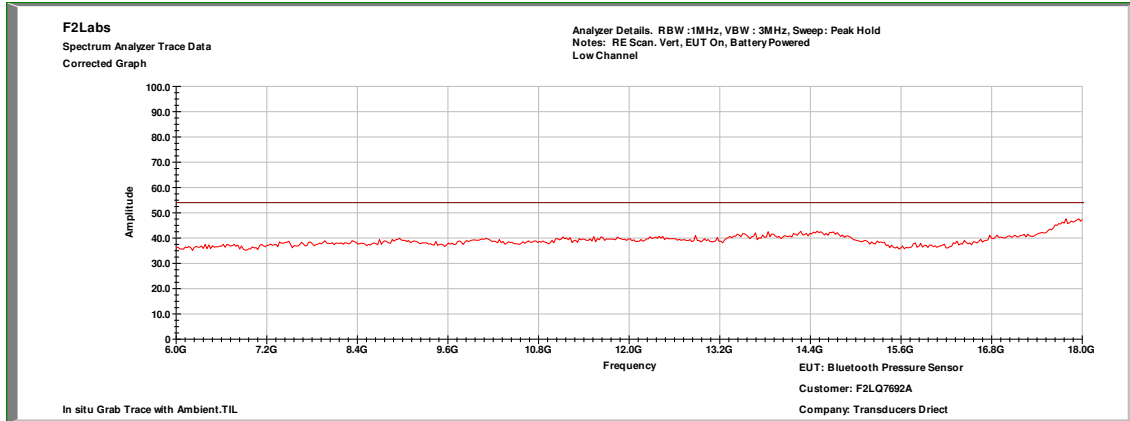


Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 2.6G-6G Vert

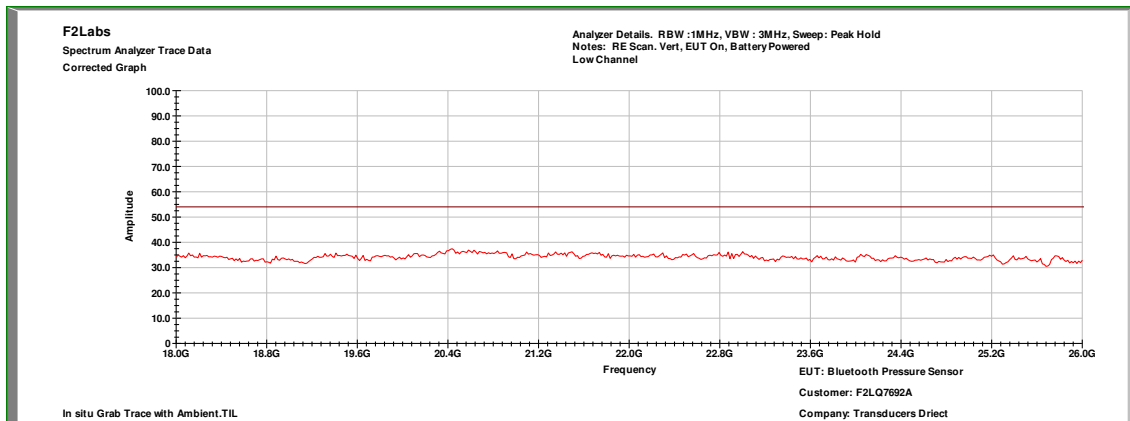




Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 6G-18G Vert

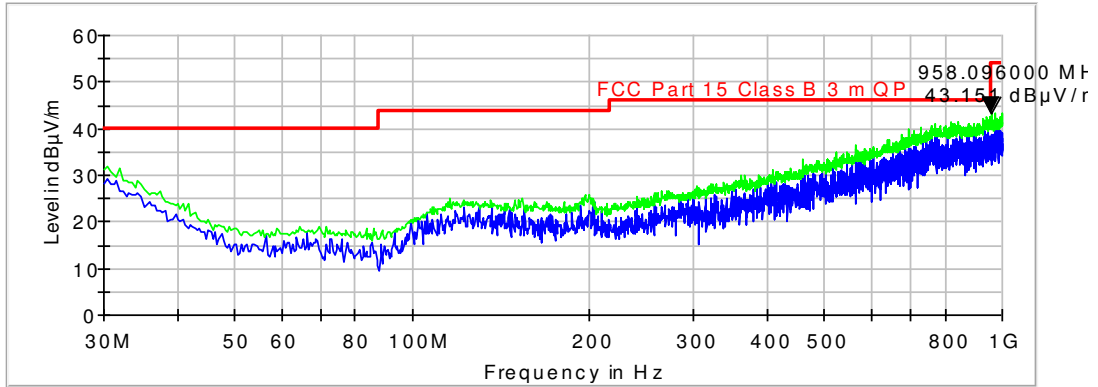


Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 18G-26G Vert

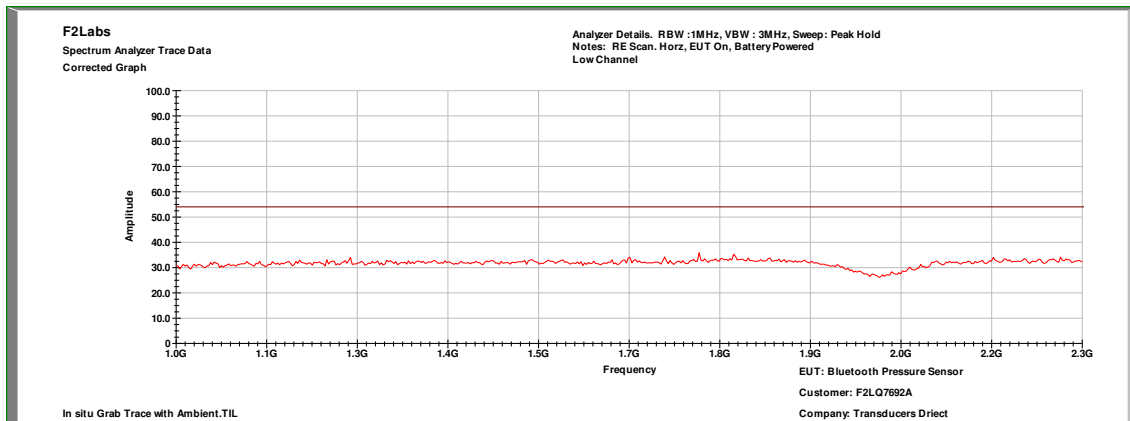




Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 30M-1G Horz

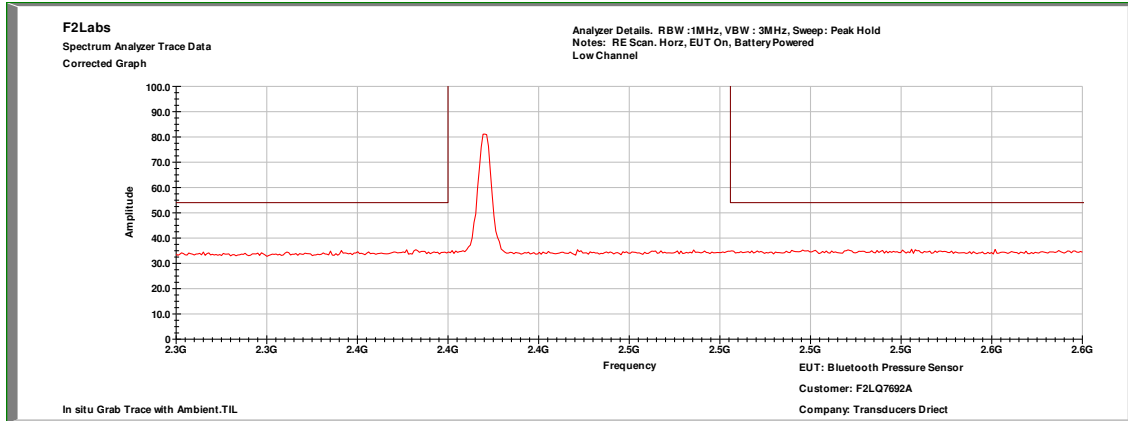


Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 1G-2.3G Horz

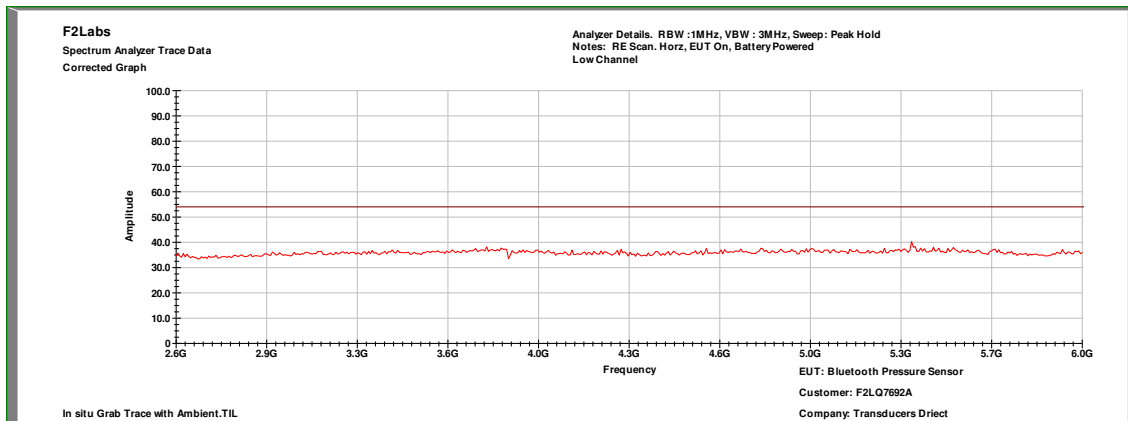




Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 2.3G-2.6G Horz

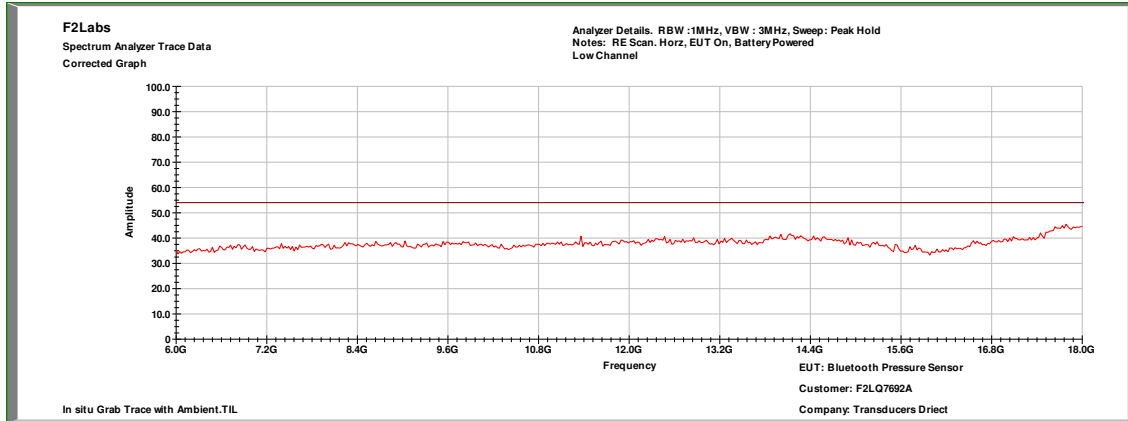


Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 2.6G-6G Horz

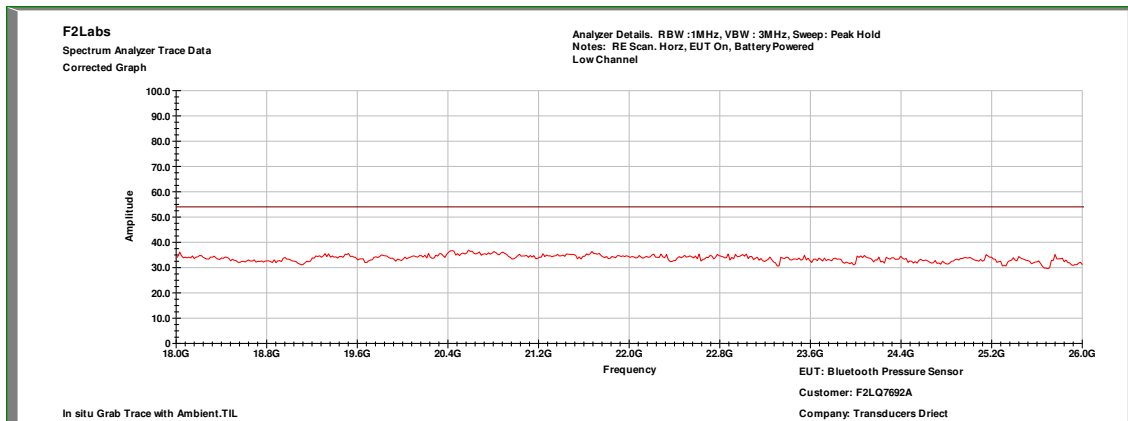




Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 6G-18G Horz

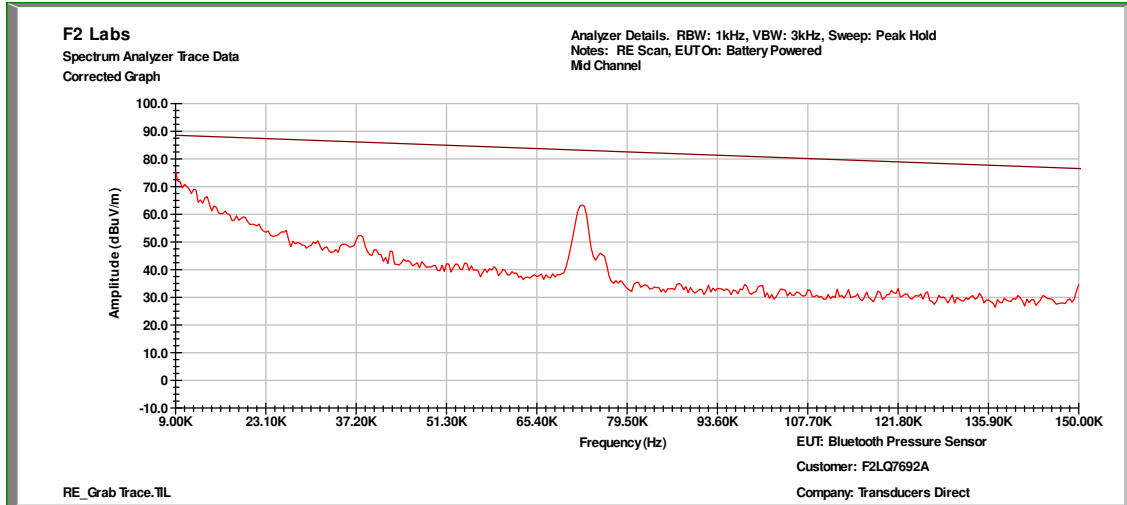


Radiated Spurious Emission 3.3dBi Internal Antenna Low Channel: 18G-26G Horz

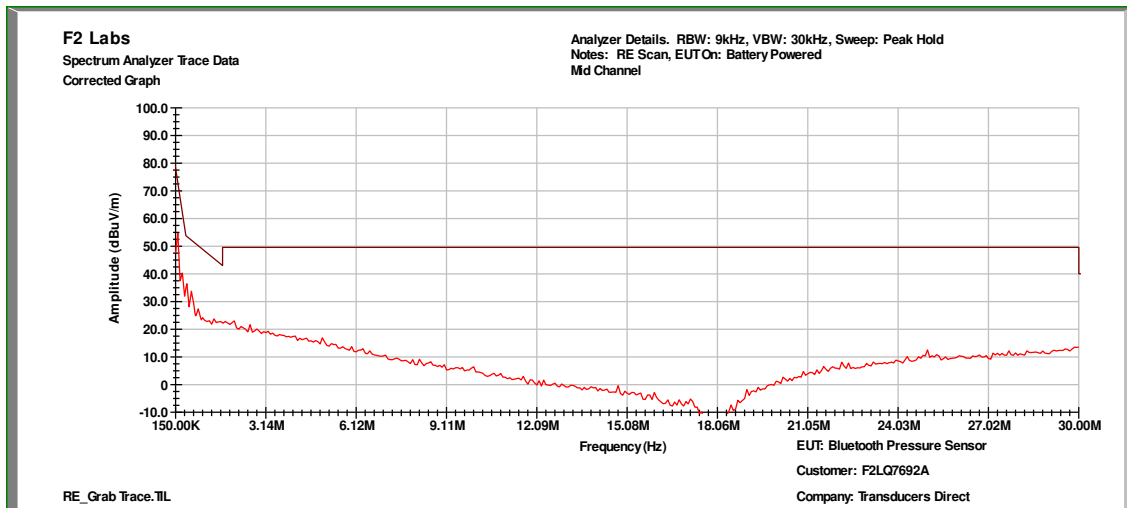




Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 9k-150k

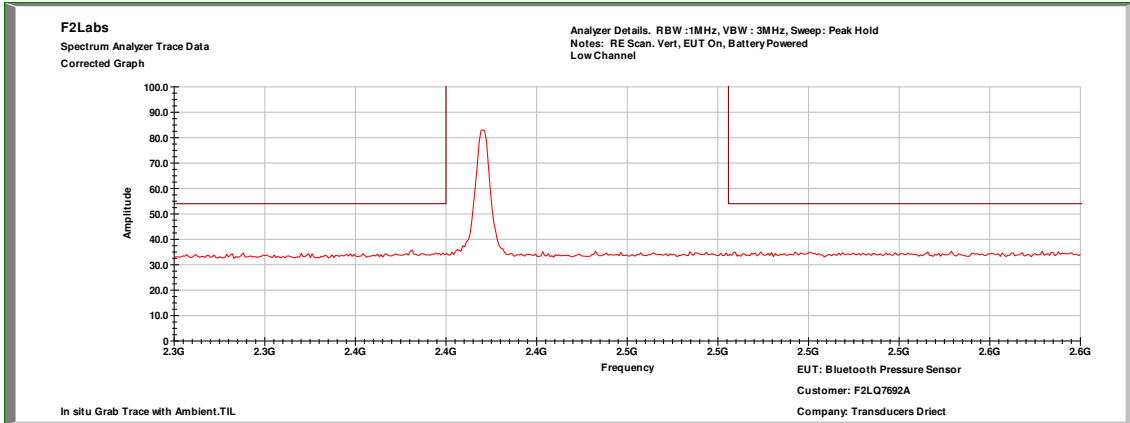


Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 150k-30M

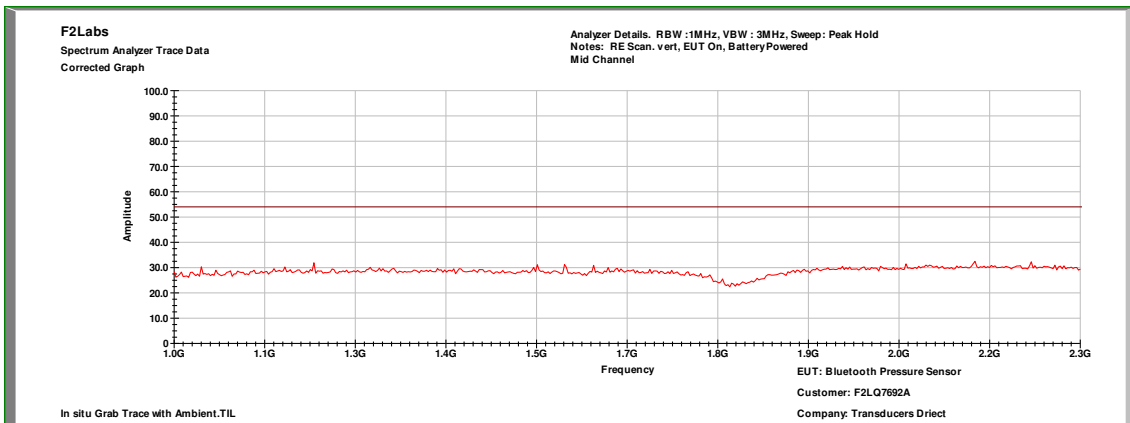




Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 30M-1G Vert

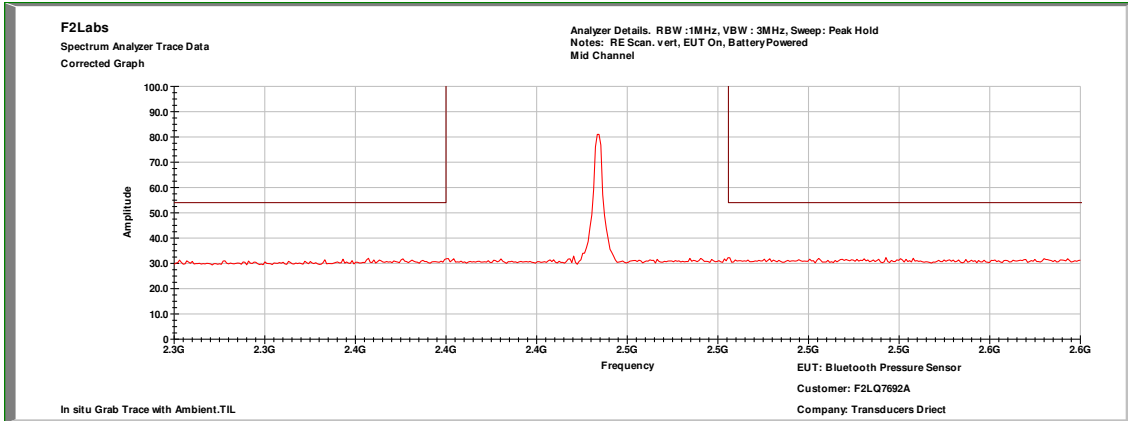


Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 1G-2.3G Vert

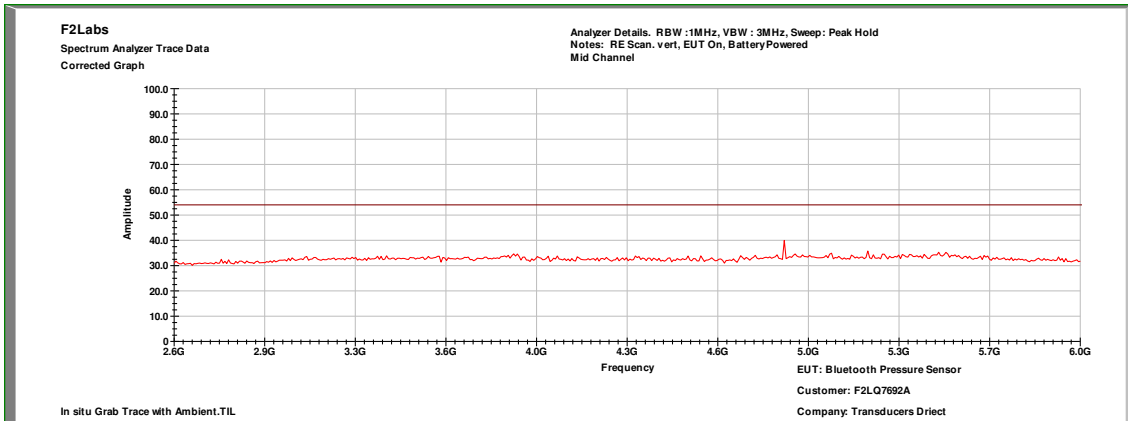




Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 2.3G-2.6G Vert

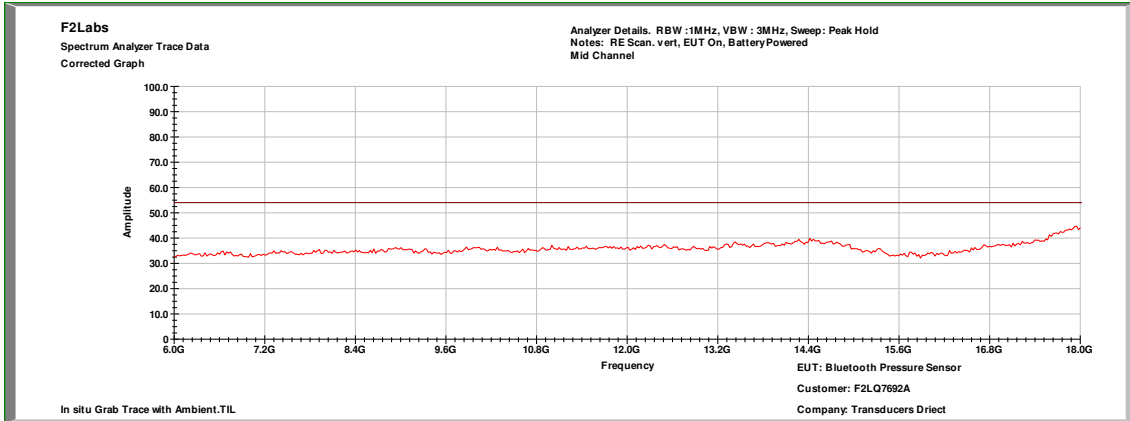


Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 2.6G-6G Vert

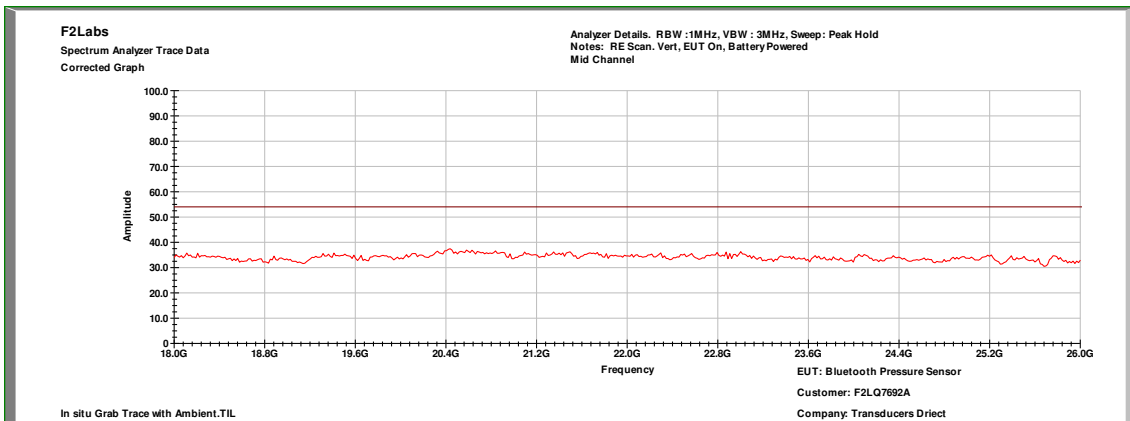




Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 6G-18G Vert

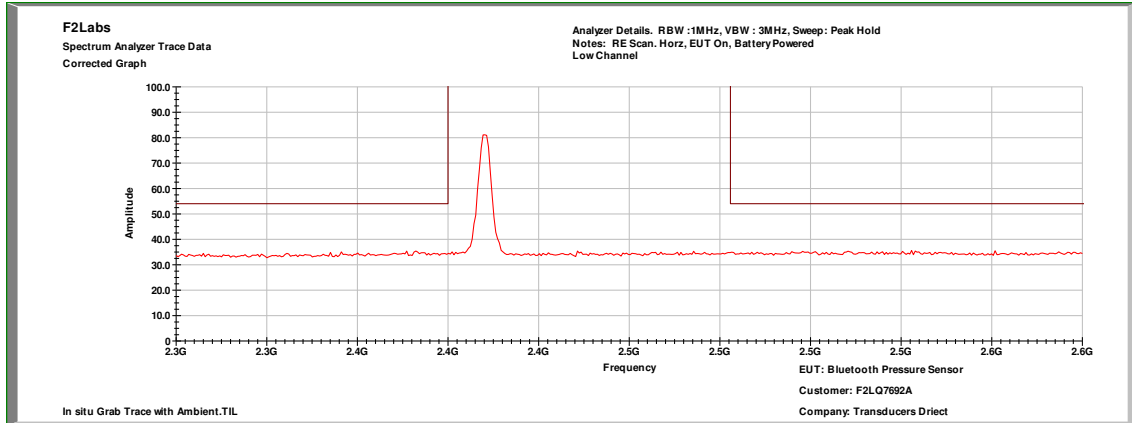


Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 18G-26G Vert

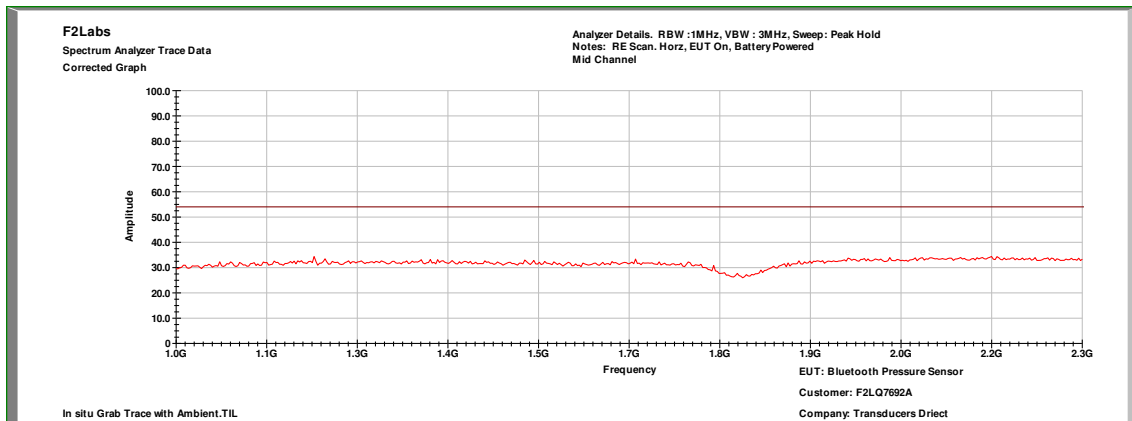




Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 30M-1G Horz

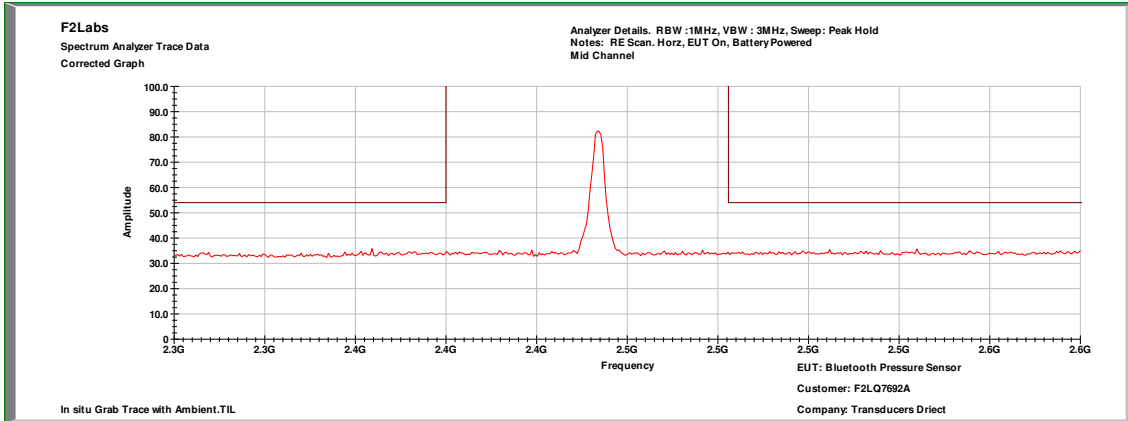


Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 1G-2.3G Horz

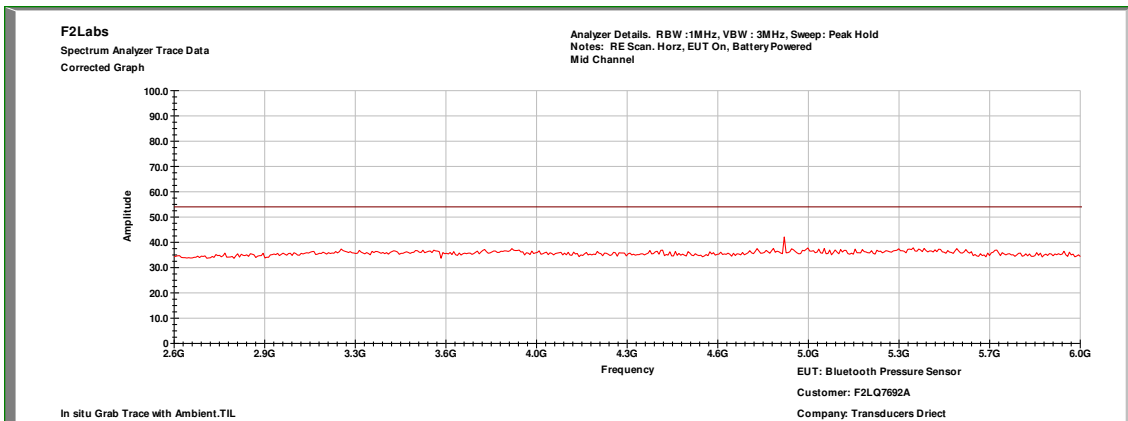




Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 2.3G-2.6G Horz

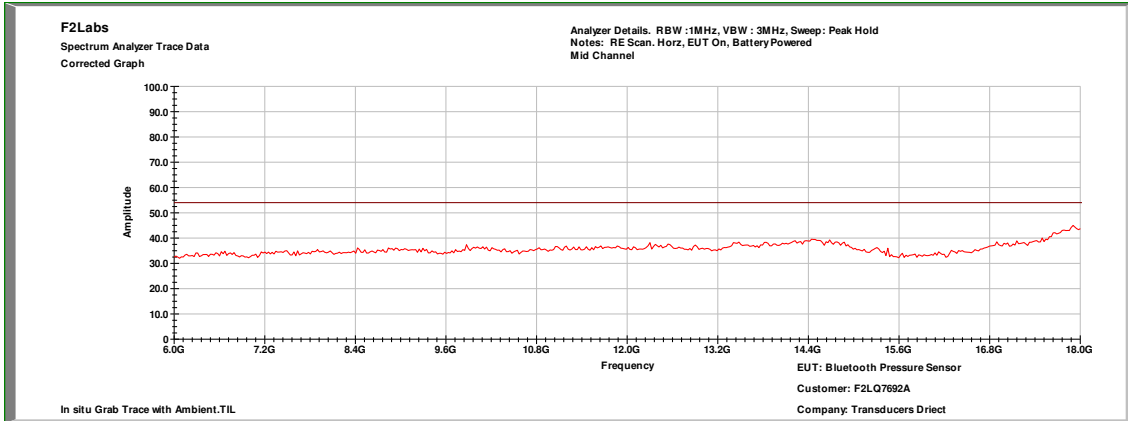


Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 2.6G-6G Horz

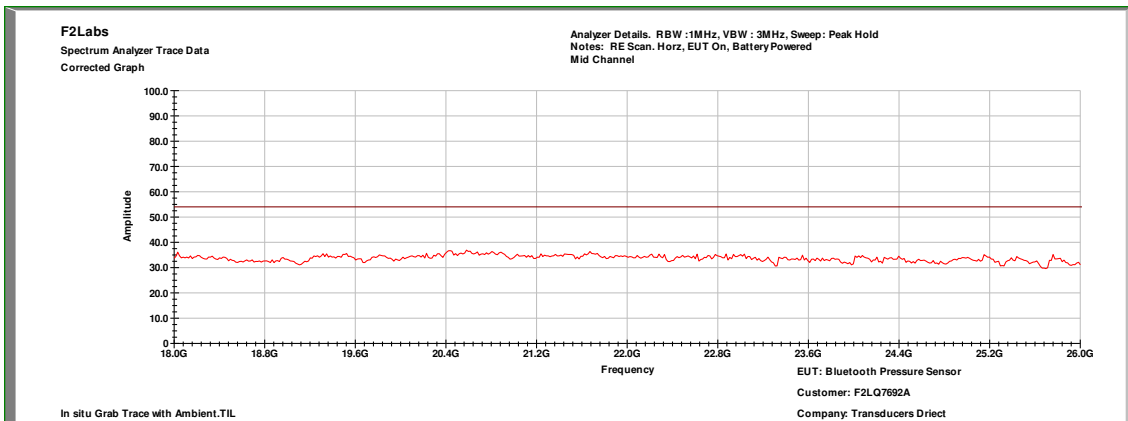




Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 6G-18G Horz

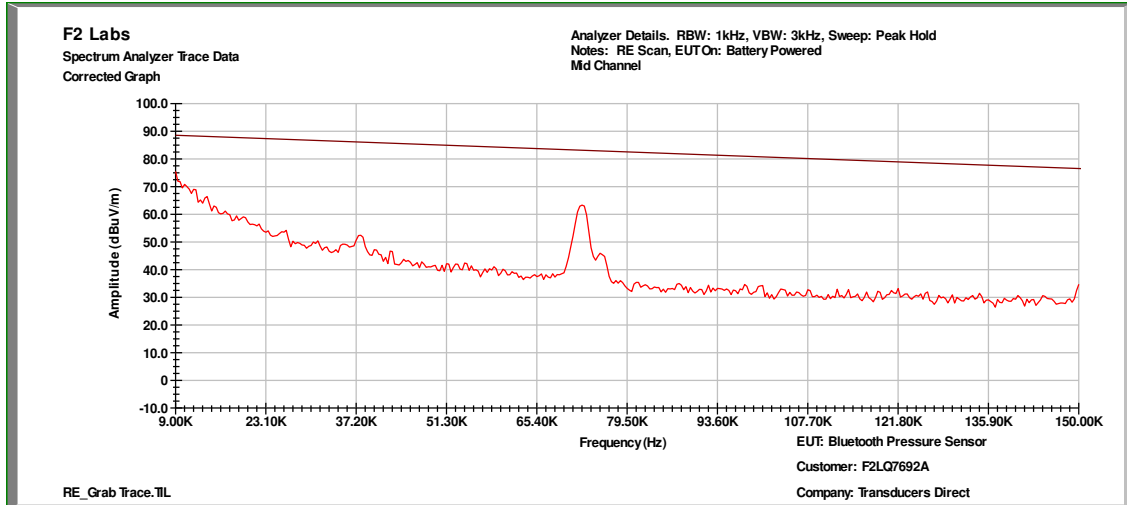


Radiated Spurious Emission 3.3dBi Internal Antenna Mid Channel: 18G-26G Horz

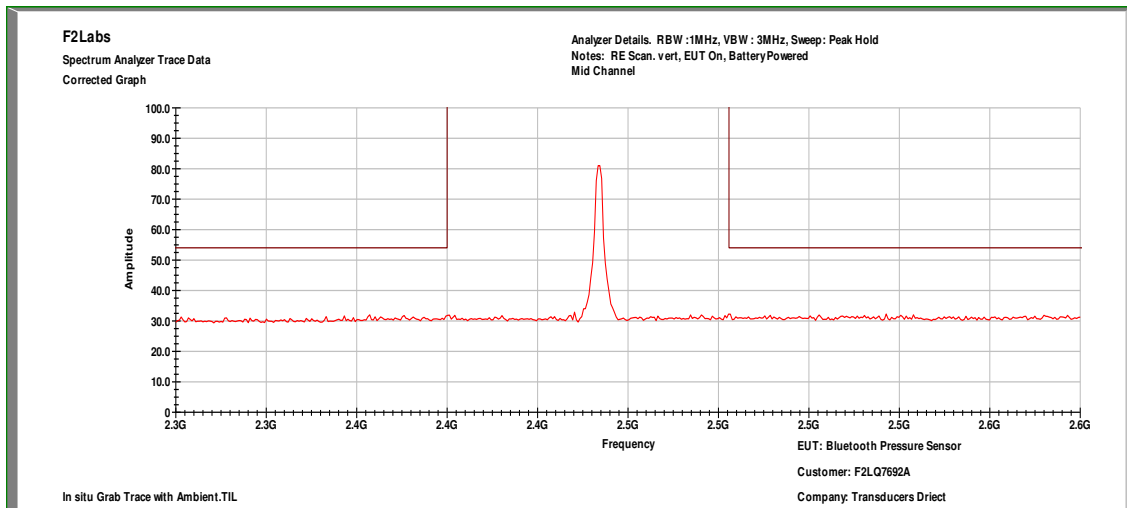




Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 9k-150k

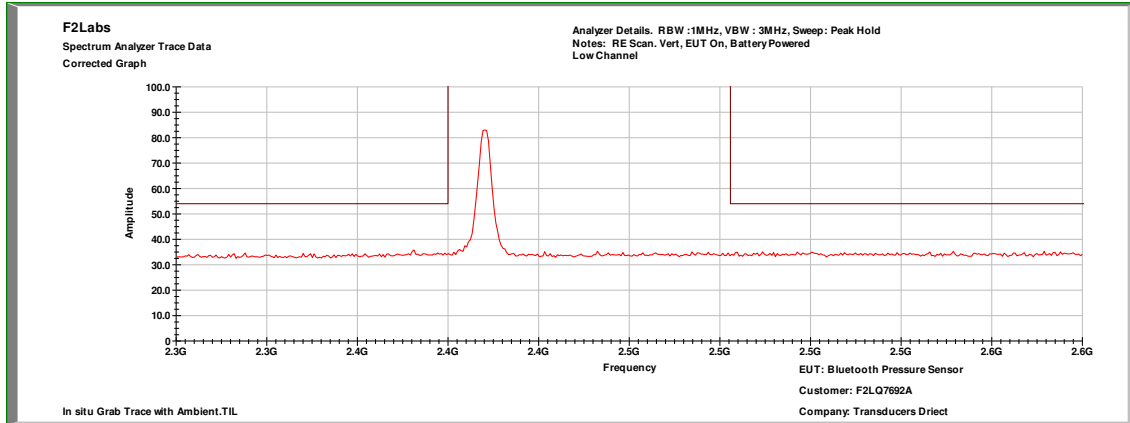


Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 150k-30M

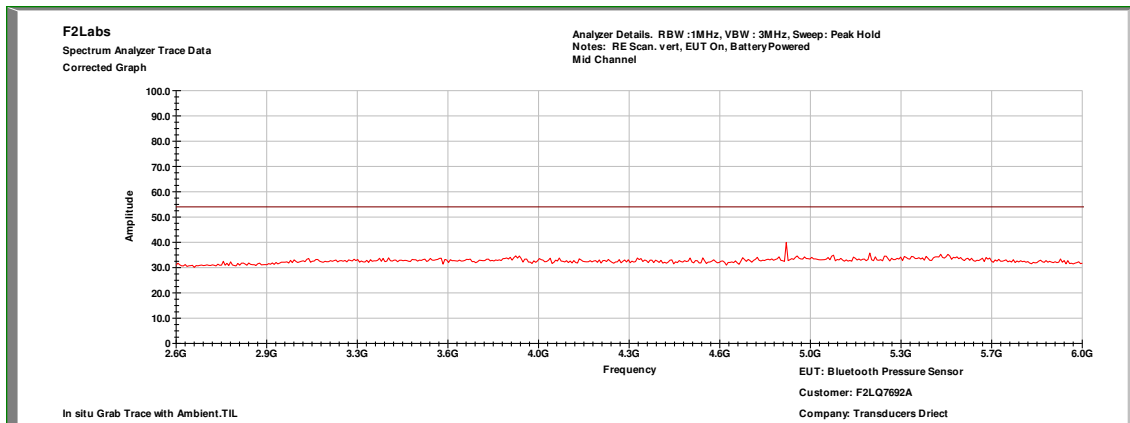




Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 30M-1G Vert

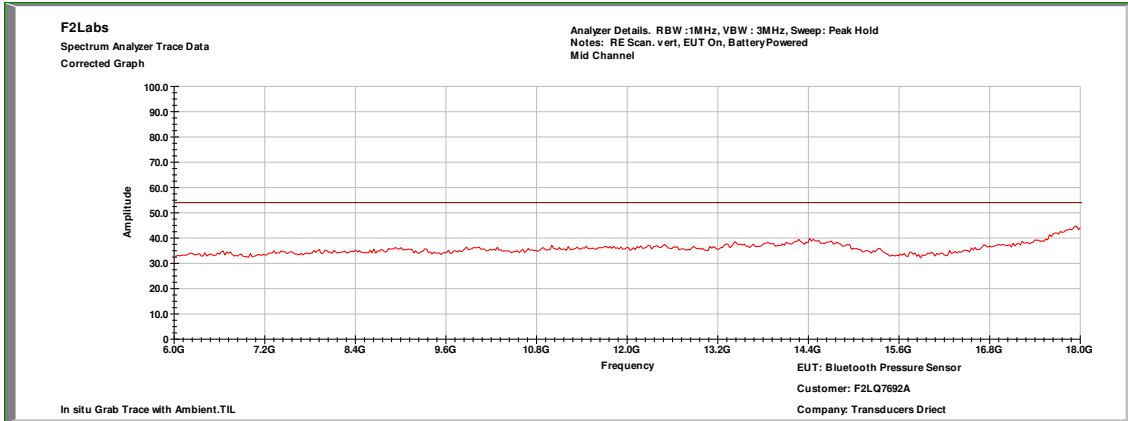


Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 1G-2.3G Vert

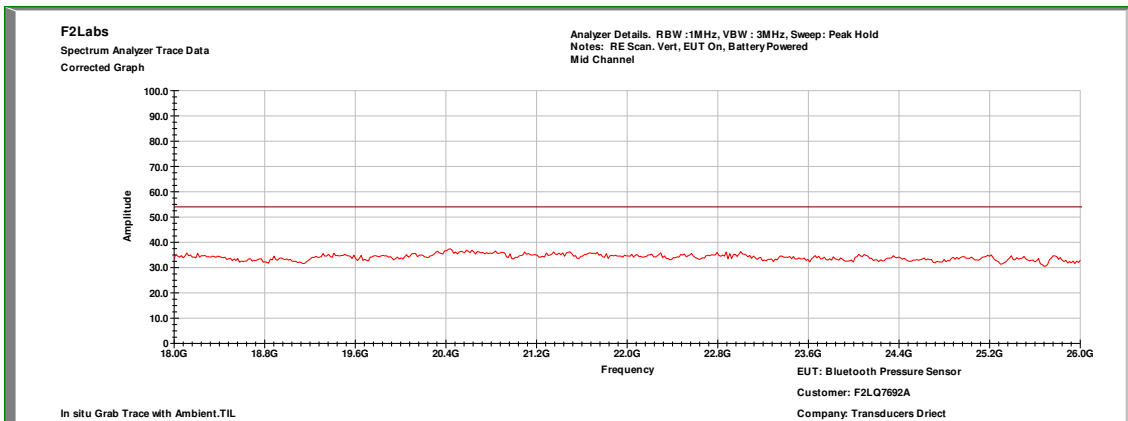




Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 2.3G-2.6G Vert

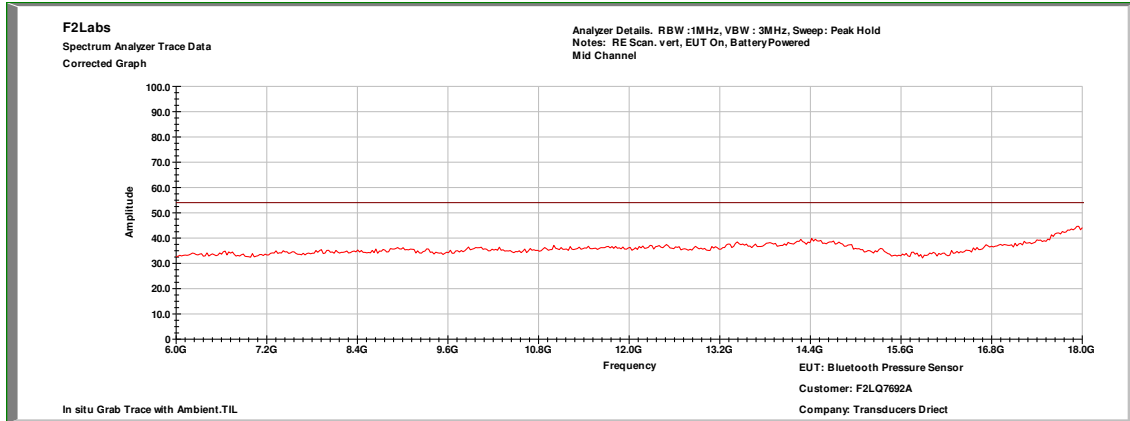


Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 2.6G-6G Vert

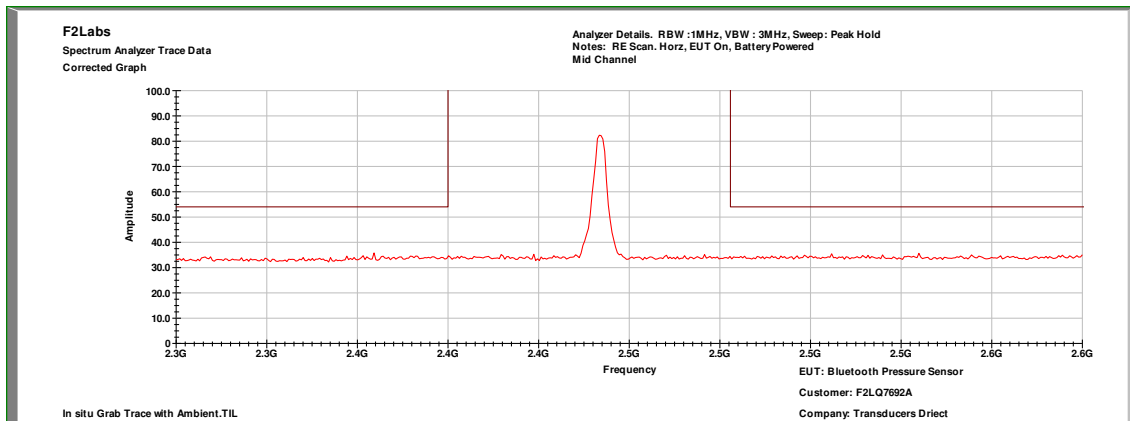




Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 6G-18G Vert

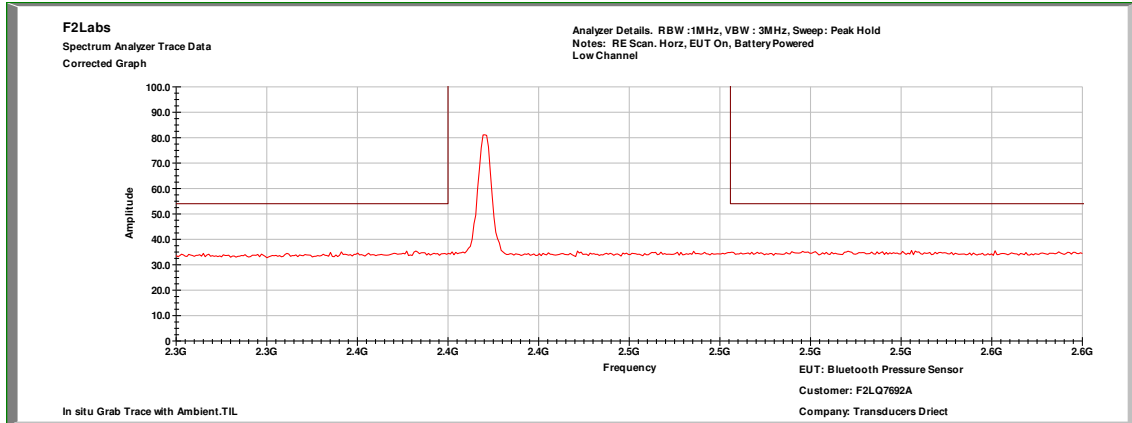


Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 18G-26G Vert

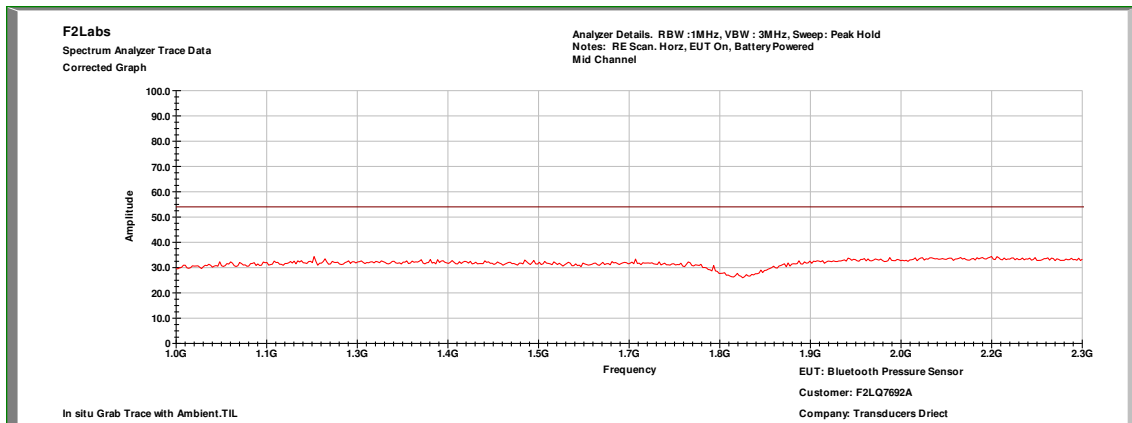




Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 30M-1G Horz

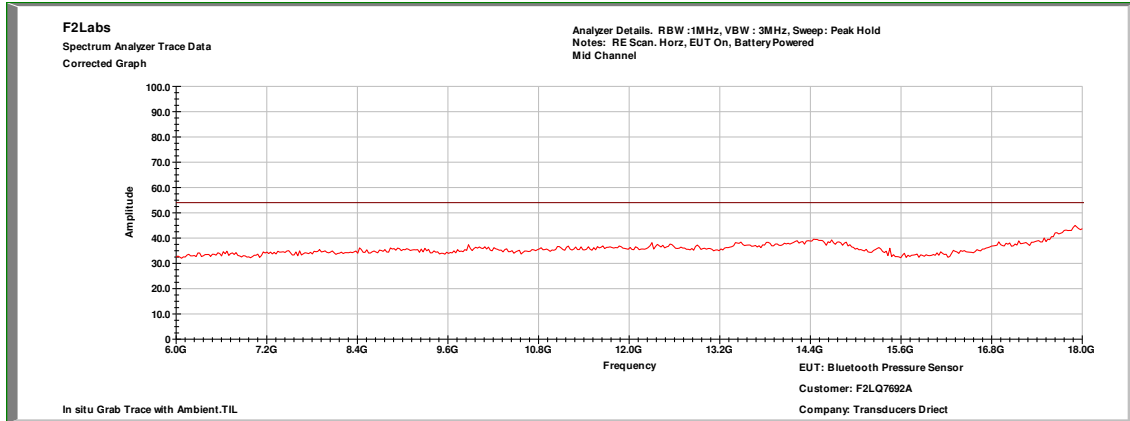


Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 1G-2.3G Horz

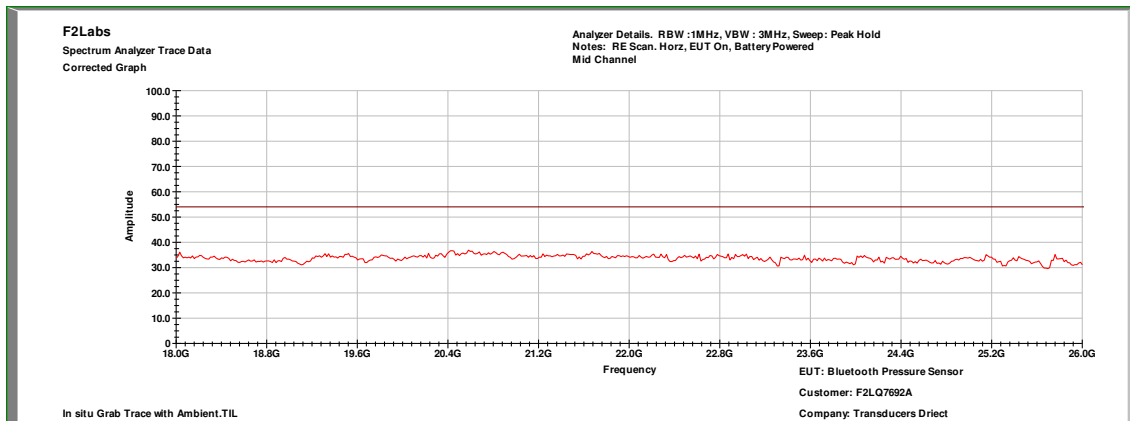




Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 2.3G-2.6G Horz

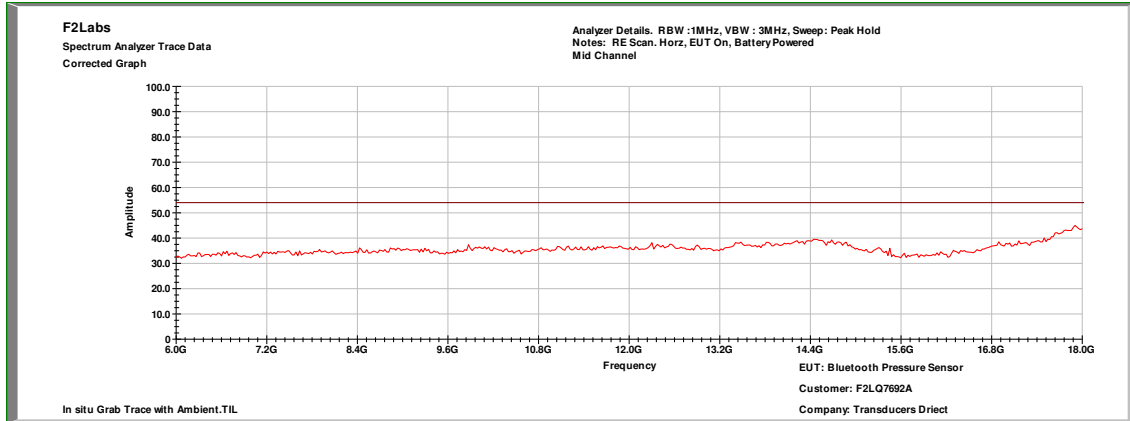


Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 2.6G-6G Horz

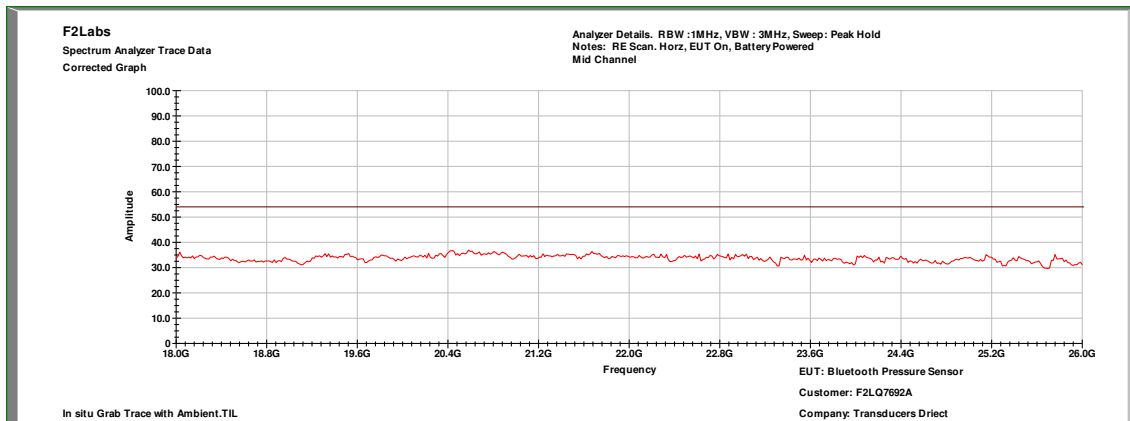




Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 6G-18G Horz



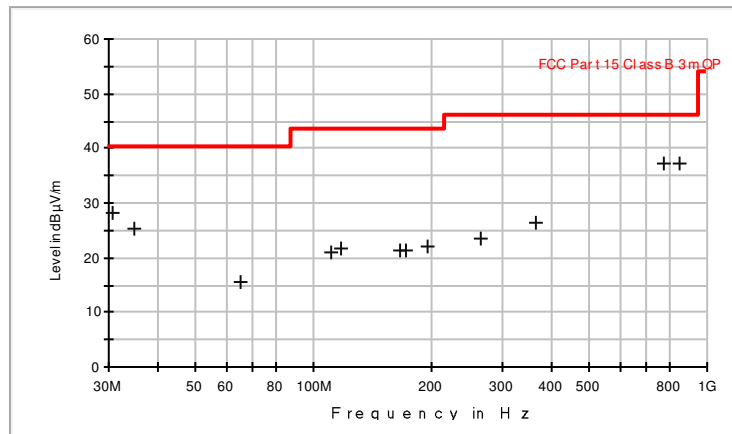
Radiated Spurious Emission 3.3dBi Internal Antenna High Channel: 18G-26G Horz





Low Channel
3.3dBi Internal Antenna, 30 MHz to 1 GHz, QuasiPeak

Frequency (MHz)	Antenna Polarization	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
30.776000	V	6.0	22.2	28.20	40.0	-11.8
34.656000	H	5.9	19.4	25.30	40.0	-14.7
65.308000	H	5.8	9.7	15.50	40.0	-24.5
110.316000	V	5.8	15.1	20.90	40.0	-19.1
116.524000	H	5.7	15.9	21.60	43.5	-21.9
165.412000	V	6.0	15.4	21.40	43.5	-22.1
170.844000	H	6.2	15.2	21.40	43.5	-22.1
193.348000	V	6.5	15.5	22.00	43.5	-21.5
264.740000	H	6.1	17.3	23.40	46.0	-22.6
367.560000	V	6.3	20.2	26.50	46.0	-19.5
775.736000	H	7.5	29.7	37.20	46.0	-8.8
854.500000	V	7.4	29.8	37.20	46.0	-8.8





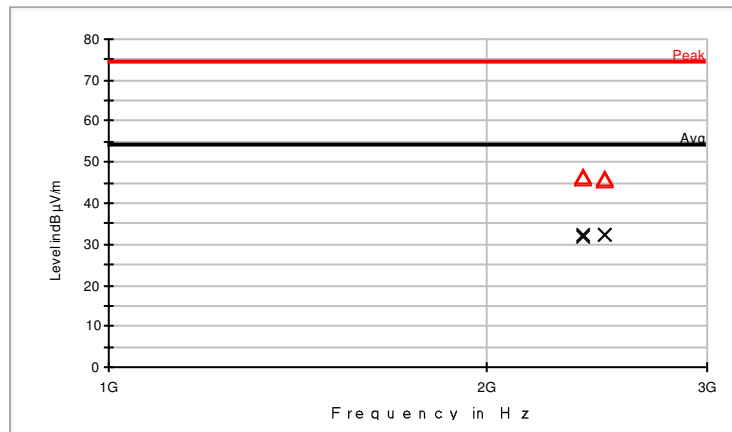
Low Channel
3.3dBi Internal Antenna, 1 GHz to 18 GHz, MaxPeak

Frequency (MHz)	Antenna Polarization	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2390.000000	V	35.5	10.7	46.20	74.0	-27.8
2390.000000	H	36.1	10.7	46.80	74.0	-27.2
2483.530000	V	35.1	10.9	46.00	74.0	-28.0
2483.530000	H	35.5	10.9	46.40	74.0	-27.6

Low Channel
3.3dBi Internal Antenna, >1 GHz to 18 GHz, Average

Frequency (MHz)	Antenna Polarization	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2390.000000	V	21.4	10.7	32.10	54.0	-21.9
2390.000000	H	21.3	10.7	32.00	54.0	-22.0
2483.530000	V	21.3	10.9	32.20	54.0	-21.8
2483.530000	H	21.3	10.9	32.20	54.0	-21.8

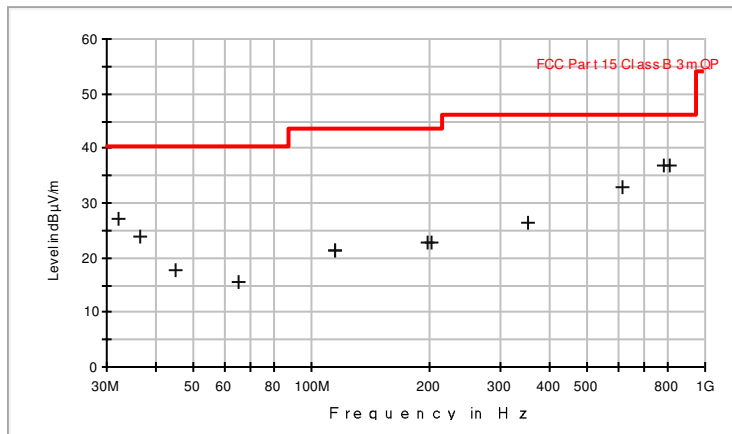
Low Channel





Mid Channel
3.3dBi Internal Antenna, 30 MHz to 1 GHz, QuasiPeak

Frequency (MHz)	Antenna Polarization	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
32.328000	H	5.9	21.1	27.00	40.0	-13.0
36.596000	V	5.9	17.9	23.80	40.0	-16.2
45.132000	V	5.7	11.8	17.50	40.0	-22.5
65.308000	H	5.9	9.7	15.60	40.0	-24.4
114.196000	H	5.8	15.6	21.40	43.5	-22.1
114.196000	V	5.8	15.6	21.40	43.5	-22.1
197.228000	H	6.5	16.2	22.70	43.5	-20.8
200.720000	V	6.4	16.3	22.70	43.5	-20.8
355.532000	H	6.2	20.0	26.20	46.0	-19.8
617.432000	V	7.2	25.7	32.90	46.0	-13.1
785.824000	V	7.5	29.3	36.80	46.0	-9.2
814.148000	H	7.5	29.5	37.00	46.0	-9.0





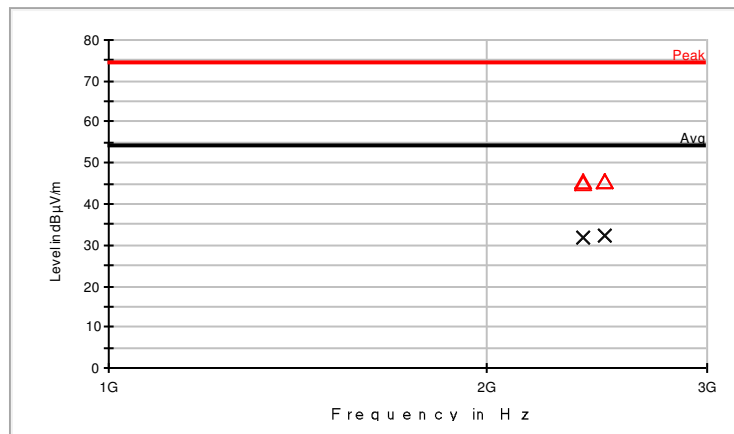
Mid Channel
3.3dBi Internal Antenna, 1 GHz to 18 GHz, MaxPeak

Frequency (MHz)	Antenna Polarization	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2390.000000	H	34.7	10.7	45.40	74.0	-28.6
2390.000000	V	34.9	10.7	45.60	74.0	-28.4
2483.500000	V	34.7	10.9	45.60	74.0	-28.4
2483.500000	H	34.8	10.9	45.70	74.0	-28.3

Mid Channel
3.3dBi Internal Antenna, 1 GHz to 18 GHz, Average

Frequency (MHz)	Antenna Polarization	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2390.000000	H	21.3	10.7	32.00	54.0	-22.0
2390.000000	V	21.2	10.7	31.90	54.0	-22.1
2483.500000	V	21.3	10.9	32.20	54.0	-21.8
2483.500000	H	21.2	10.9	32.10	54.0	-21.9

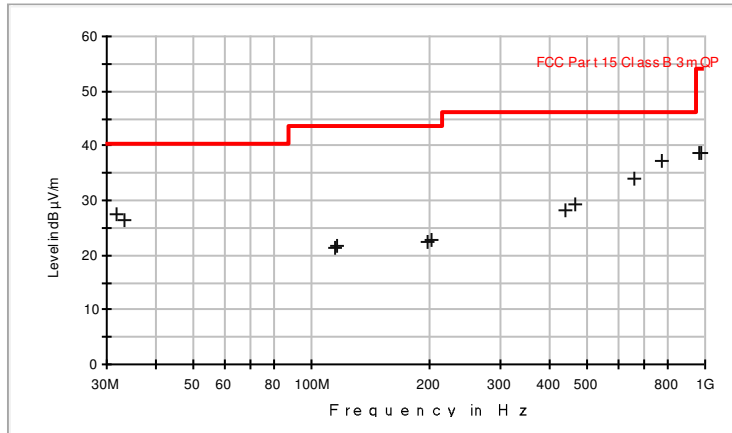
Mid Channel





High Channel 3.3dBi Internal Antenna, 30 MHz to 1 GHz, QuasiPeak

Frequency (MHz)	Antenna Polarization	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
31.940000	V	6.0	21.4	27.40	40.0	-12.6
33.104000	H	5.9	20.5	26.40	40.0	-13.6
114.196000	H	5.8	15.6	21.40	40.0	-18.6
116.136000	V	5.9	15.8	21.70	40.0	-18.3
196.452000	V	6.6	16.0	22.60	43.5	-20.9
200.720000	H	6.4	16.3	22.70	43.5	-20.8
438.952000	V	6.4	21.9	28.30	43.5	-15.2
466.500000	H	6.5	22.8	29.30	43.5	-14.2
661.276000	V	7.1	26.9	34.00	43.5	-9.5
773.796000	H	7.6	29.7	37.30	43.5	-6.2
961.200000	V	8.1	30.6	38.70	43.5	-4.8
976.332000	H	8.1	30.5	38.60	43.5	-4.9





**High Channel
3.3dBi Internal Antenna, 1 GHz to 18 GHz, MaxPeak**

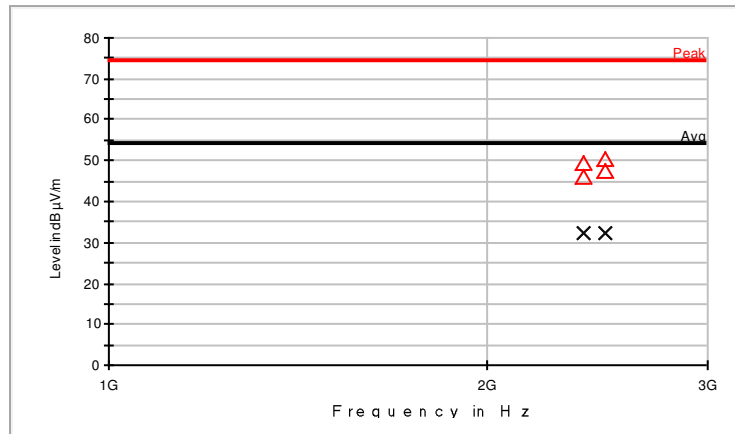
Frequency (MHz)	Antenna Polarization	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2390.000000	H	38.9	10.7	49.60	74.0	-24.4
2390.000000	V	35.5	10.7	46.20	74.0	-27.8
2483.500000	H	39.5	10.9	50.40	74.0	-23.6
2483.500000	V	36.8	10.9	47.70	74.0	-26.3

**High Channel
3.3dBi Internal Antenna, >1 GHz to 18 GHz, Average**

Frequency (MHz)	Antenna Polarization	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2390.000000	H	21.7	10.7	32.40	54.0	-21.6
2390.000000	V	21.4	10.7	32.10	54.0	-21.9
2483.500000	H	21.5	10.9	32.40	54.0	-21.6
2483.500000	V	21.4	10.9	32.30	54.0	-21.7



High Channel





11 FCC PART 15.247 – 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.

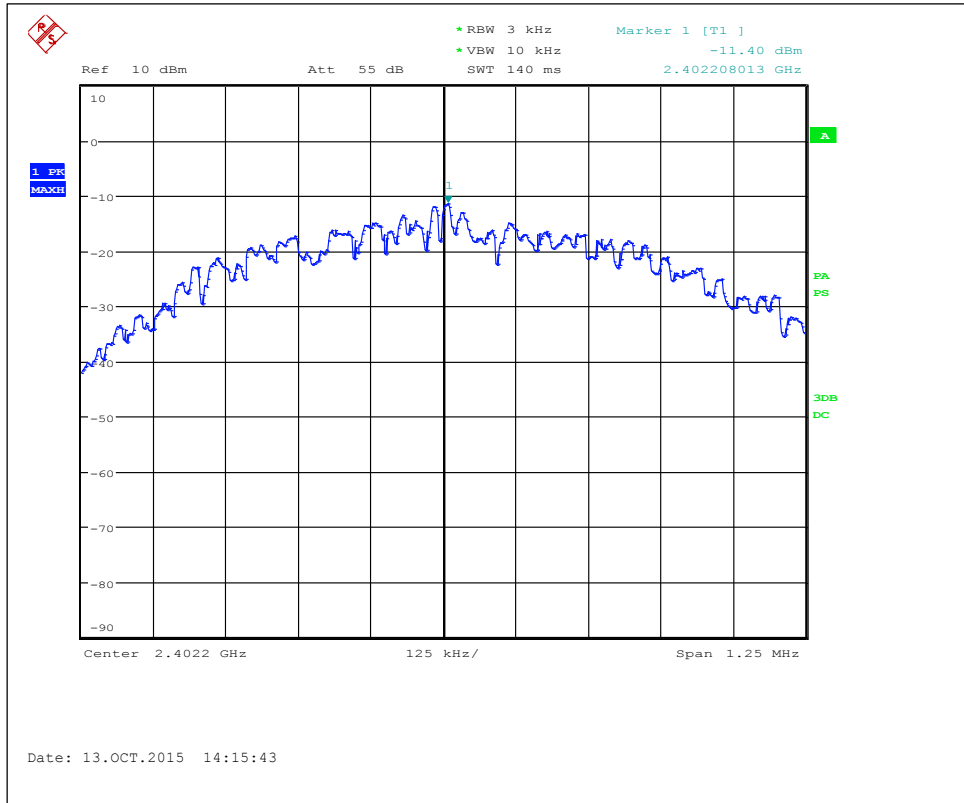
Power spectral density measurements were performed at a resolution bandwidth of 3 kHz (video bandwidth set at 10 KHz). The peak spectral densities were measured at 2.402 GHz, 2.4402 GHz, and 2.4802 GHz.



11.2 Peak Power Spectral Density Test Data

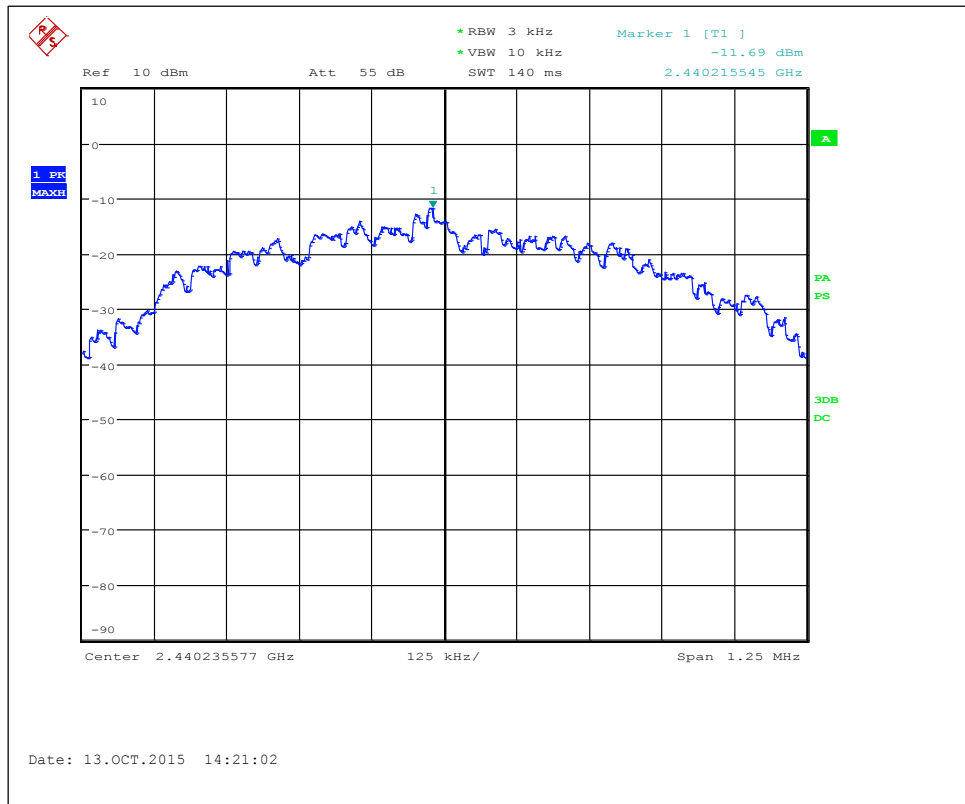
Test Date(s):	Oct. 13 2015	Test Engineer:	J. Knepper
Standards:	CFR 47 Part 15.247; KDB558074	Air Temperature:	22.3°C
		Relative Humidity:	48%

Low Channel



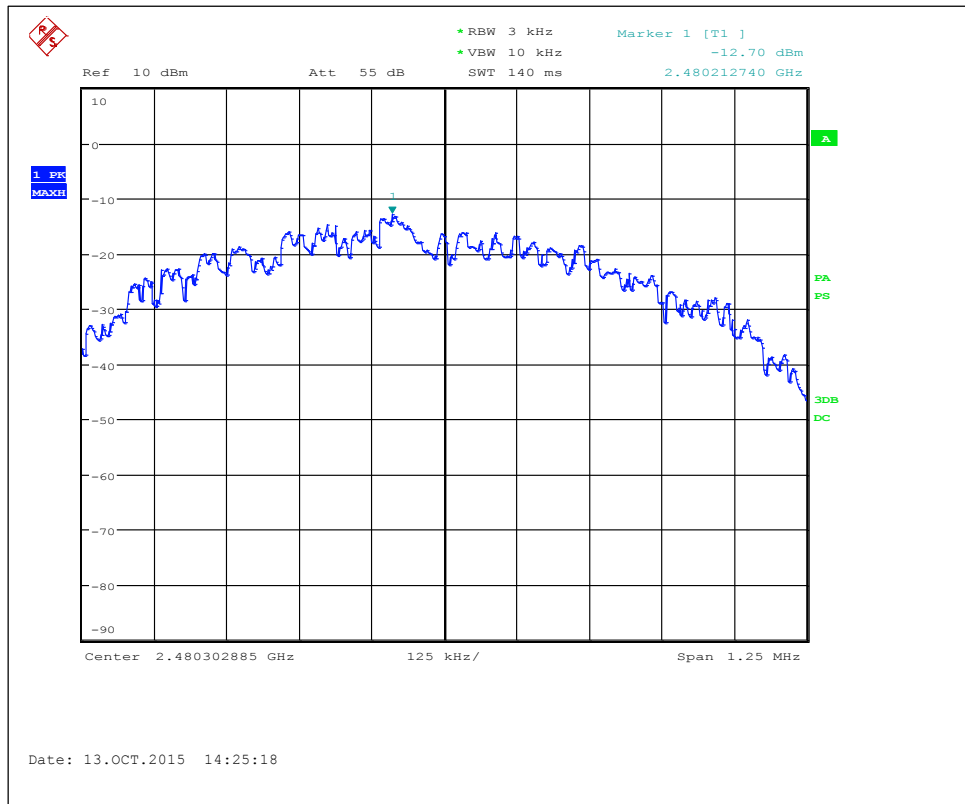


Mid Channel





High Channel



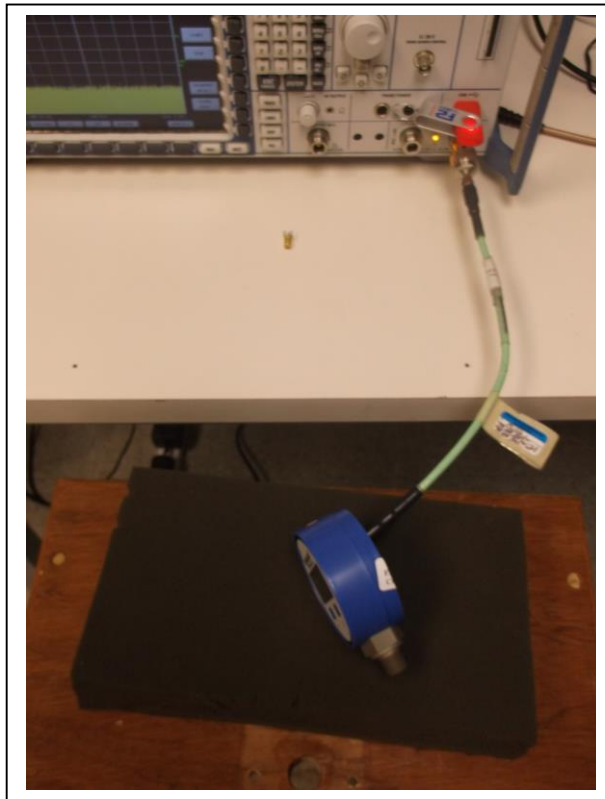


12 PHOTOGRAPHS/EXHIBITS – PRODUCT PHOTOS, TEST SETUPS

-6dB Occupied Bandwidth

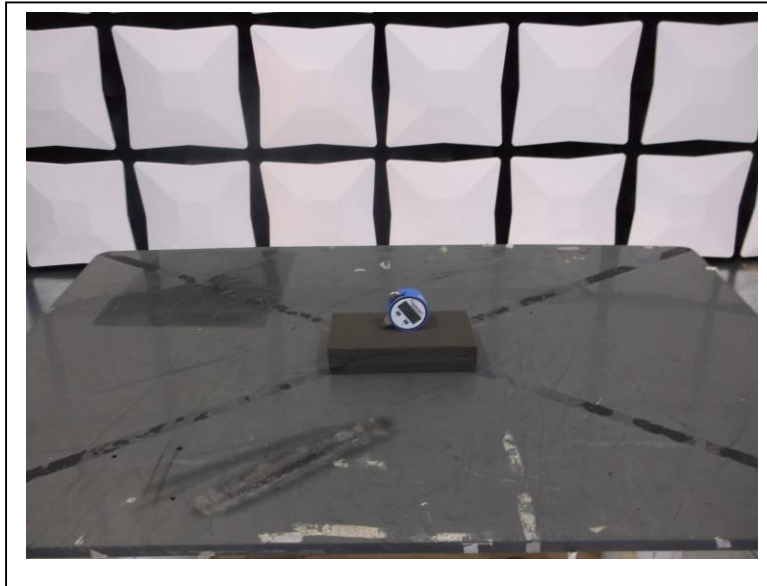


RF Output Power, Conducted Spurious Emissions,
Peak Power Spectral Density





Radiated Spurious Emissions, <1GHz



Radiated Spurious Emissions, >1GHz

