



FOR THE SCOPE OF ACCREDITATION UNDER NVLAP LAB CODE 500051-0

TEST REPORT #290817

STANDARD: FCC PART 15

SUBPART C--INTENTIONAL RADIATORS

**SECTION 15. 247 OPERATION WITHIN THE BANDS 902-928 MHZ,
2400-2483.5 MHZ, AND 5725-5850 MHZ**

EQUIPMENT TESTED:

INSTINCT PERFORMANCE, LLC

SPORT TRAINING EYEWARE

FCC ID: 2ANPQ-REV

MODELS: 001 AND 002

TEST DATE: 29 AUGUST 2017

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Glencoe, MN 55336



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International Certification Services represents to the client that testing is done in accordance with standard procedures applicable and that reported test results are accurate within generally accepted commercial ranges of accuracy.

- 1.0** This report only applies to the specific samples tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. International Certification Services shall have no liability for any deductions, inferences or generalizations drawn by the client or others from this report.

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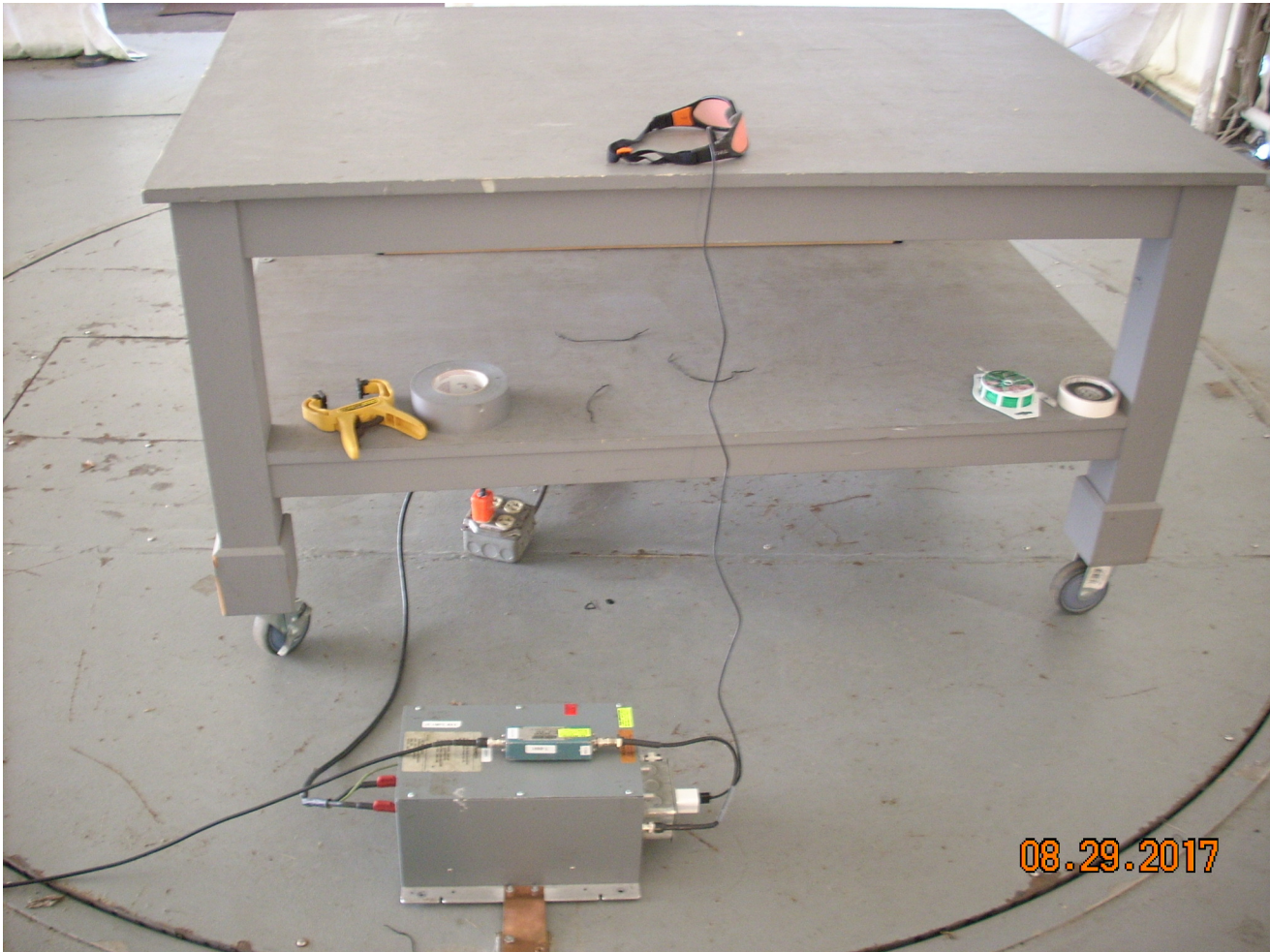
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**Instinct Performance, LLC
FCC ID: 2ANPQ-REV Model: 002
Radiated Emissions Test Configuration**



**Instinct Performance, LLC
FCC ID: 2ANPQ-REV Model: 002
Conducted Emissions Test Configuration**



2.0 ATTACHMENT B Detailed Test Data Sheets

Each radiated emissions plot indicates the receiving antenna measurement distance in meters and the emission amplitudes with respect to their applicable limits. The associated tabulation for each radiated plot lists the emission frequency, the final emission level, and the margin from the limit.

Instinct Performance, LLC
Sport Training Eyeware
Model: 002
Temperature: 30.1 Deg C.
Humidity: 56 % R.H.

Test Technician: Duane R. Bagdons

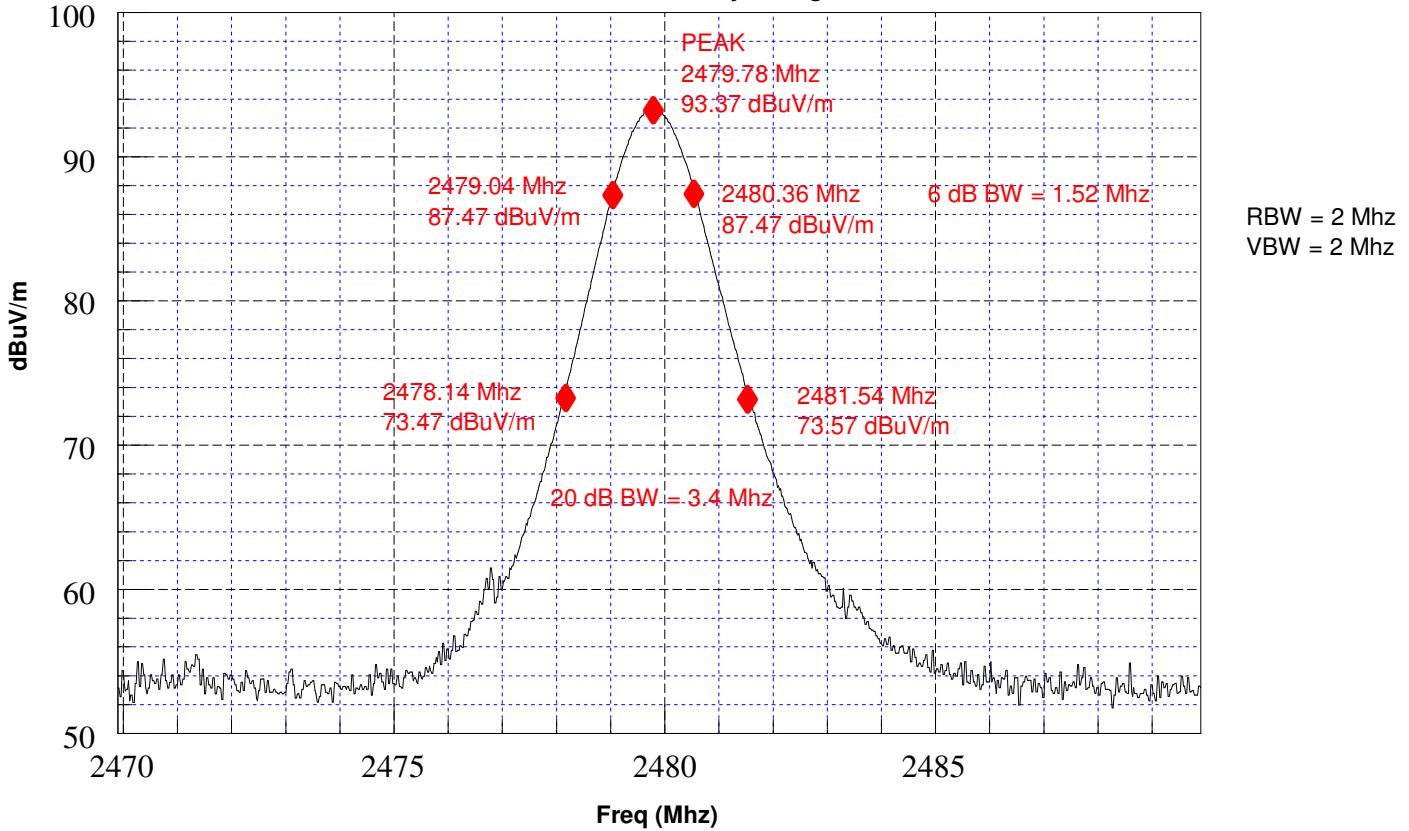
Center Frequency: 2401.95 Mhz (low channel)
2439.96 Mhz (mid channel)
2479.95 Mhz (high channel)

Preliminary testing was done to determine what antenna polarity and antenna height generated the highest signal levels. Tests were performed at this test configuration and then each frequency was maximized to 0-360 degrees orientation and antenna height of 1-4 meters.

3.0 15.247 (a) (1) PASS

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively frequency hopping systems operating in the 2400 – 2483.5 Mhz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Instinct Performance, LLC
FCC ID: 2ANPQ-REV Model: 002
FCC 15.247 Maximum Output Field Strength
Transmit Carrier Channel 39
Maximum Field Strength Output, 20 dB BW and 6 dB BW
Continuous Transmit only no Digital Data



International Certification Services, Inc.

August 21, 2017

Measured results: PASS

Using FCC Public Notice DA 00-705 alternate test procedure for measuring the output power the results are as follows:

$$P = (E \cdot d)^2 / 30 \cdot G$$

- E Maximum fundamental field strength in V/m
- d Antenna Distance (m)
- G Numeric Gain of the transmitting antenna with reference to an isotropic radiator (dB)

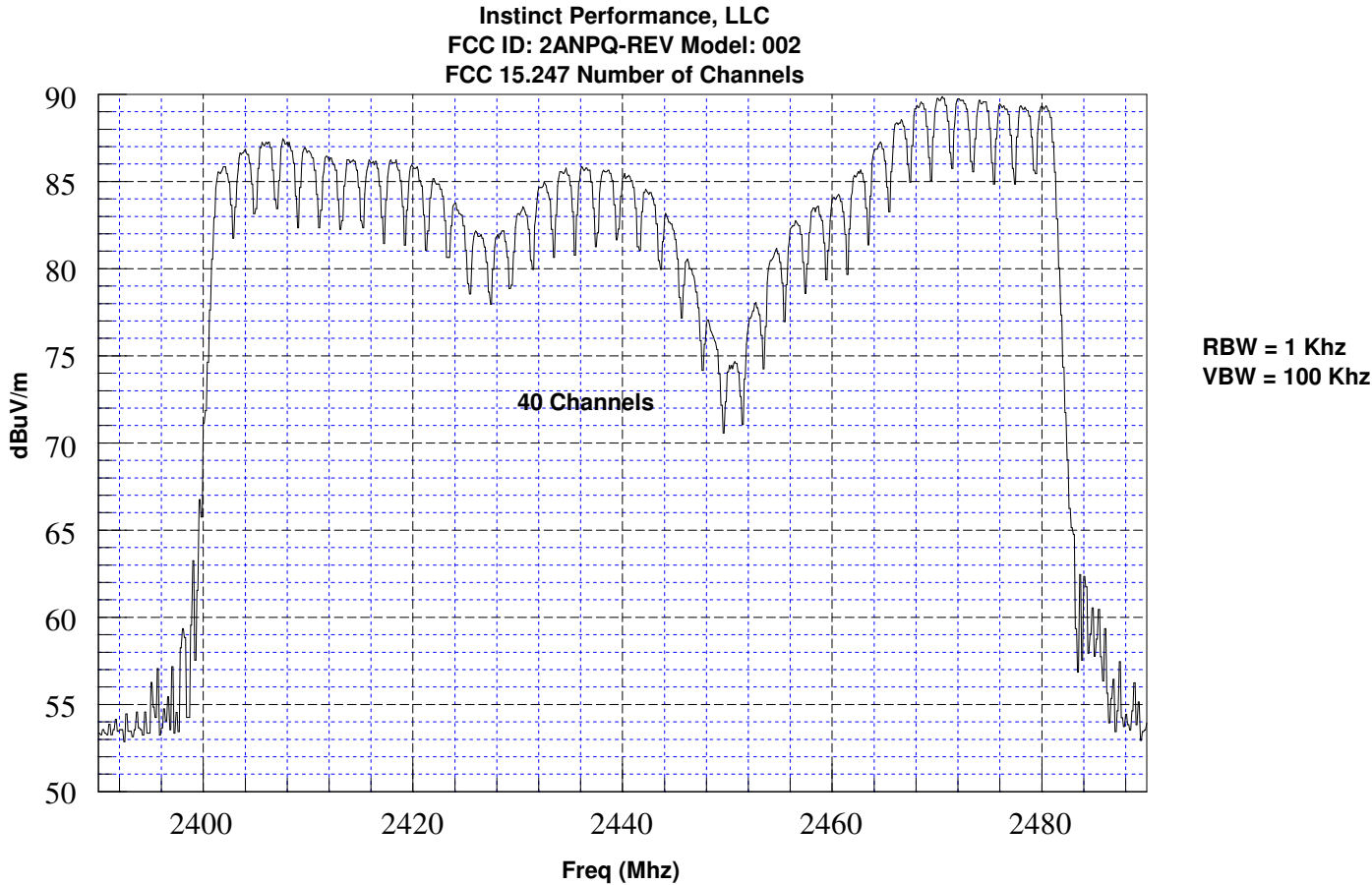
$$P = (E \cdot d)^2 / 30 \cdot G$$

$$P = (0.046 \cdot 3)^2 / (30 \cdot 1.7)$$

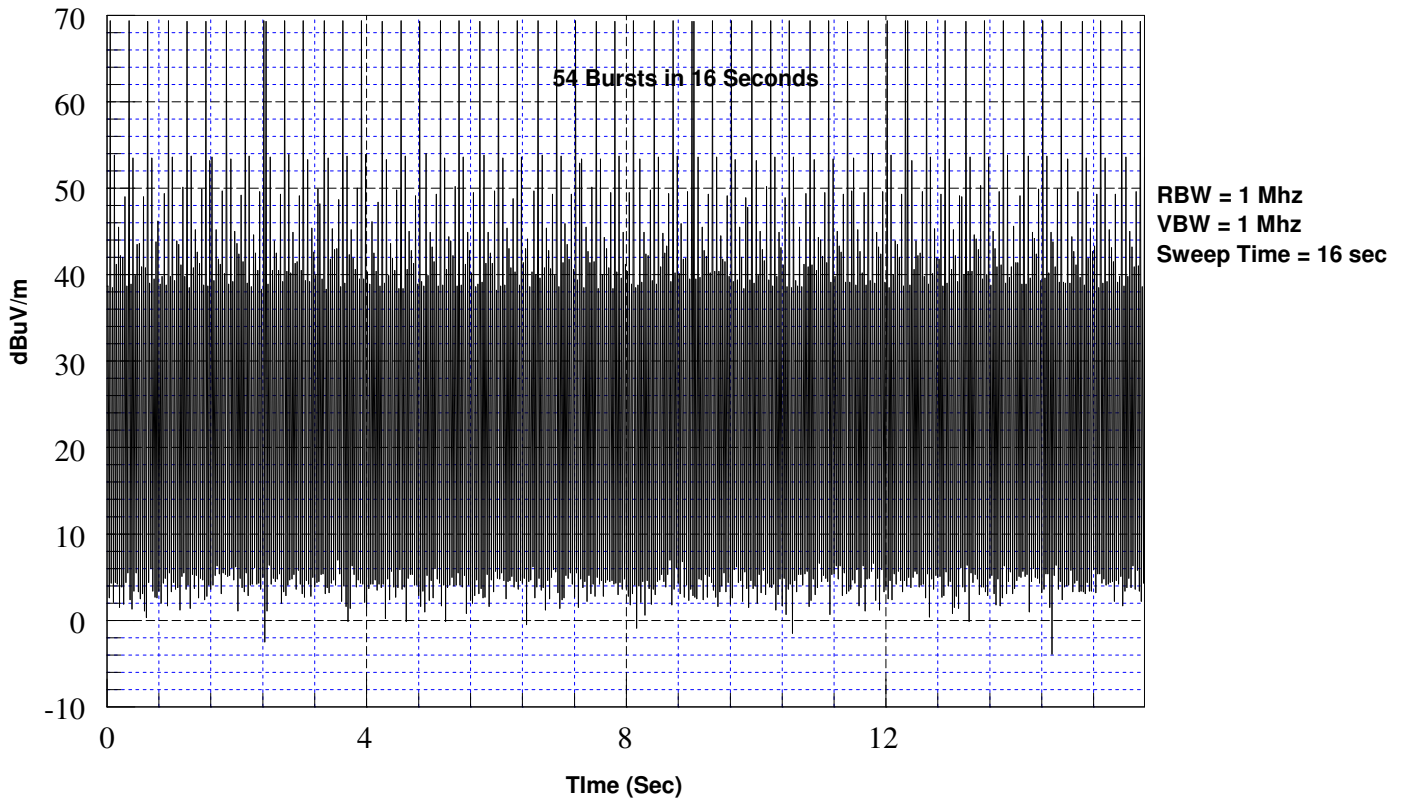
$$P = 370 \text{ uW}$$

- 4.0 15.247 (a) (1) (i) 902-928 Mhz Band **Not Applicable**
- 5.0 15.247 (a) (1) (ii) 5725-5850 Mhz Band **Not Applicable**
- 6.0 15.247 (a) (1) (iii) **PASS**

Frequency hopping systems in the 2400 – 2483.5 Mhz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provide that a minimum of 15 channels are used.



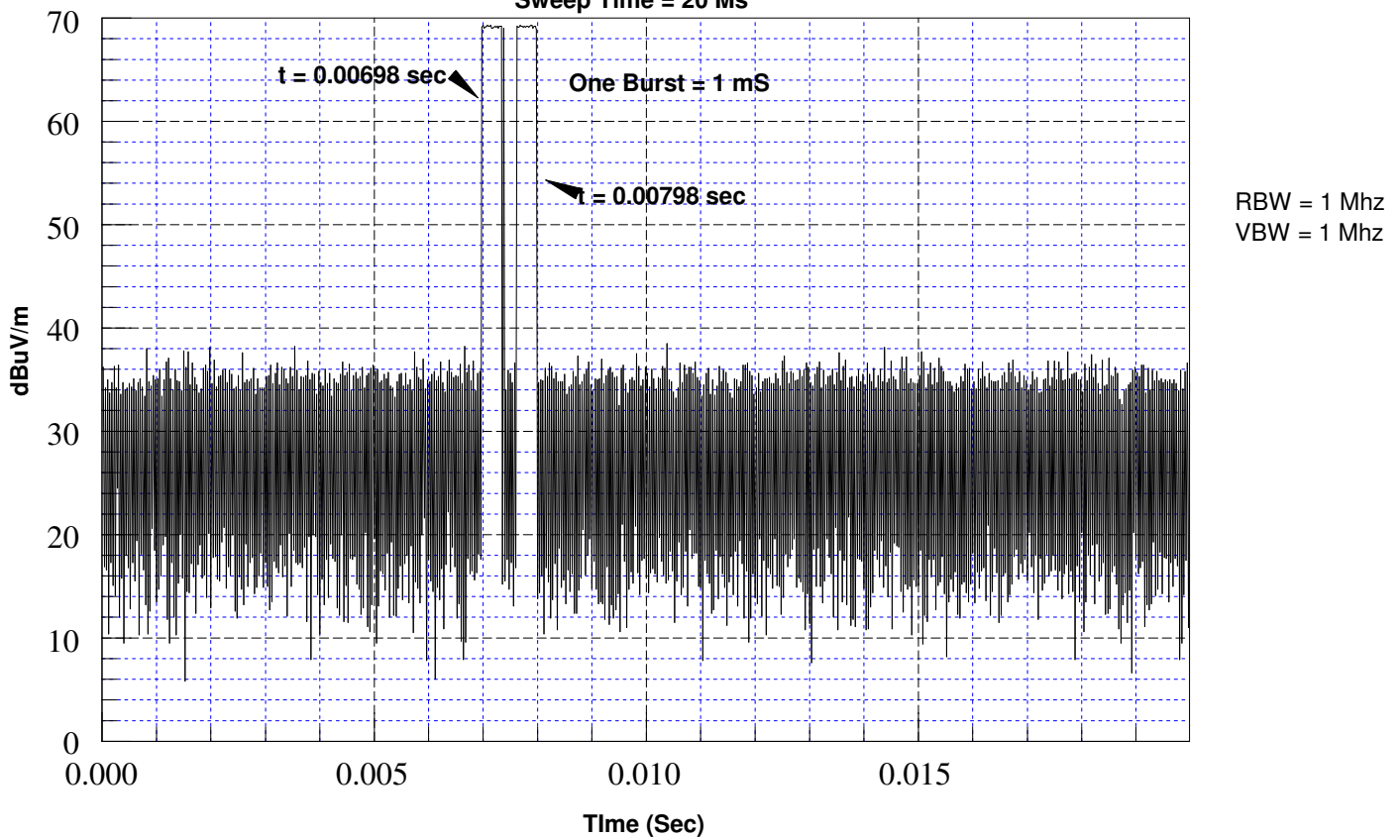
Instinct Performance, LLC
FCC ID: 2ANPQ-REV Model: 002
FCC 15.247 (f) Time of Occupancy 2438 Mhz



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Instinct Performance, LLC
 FCC ID: 2ANPQ-REV Model: 002
 FCC 15.247 (f) Time of Occupancy 2438 Mhz
 Sweep Time = 20 Ms



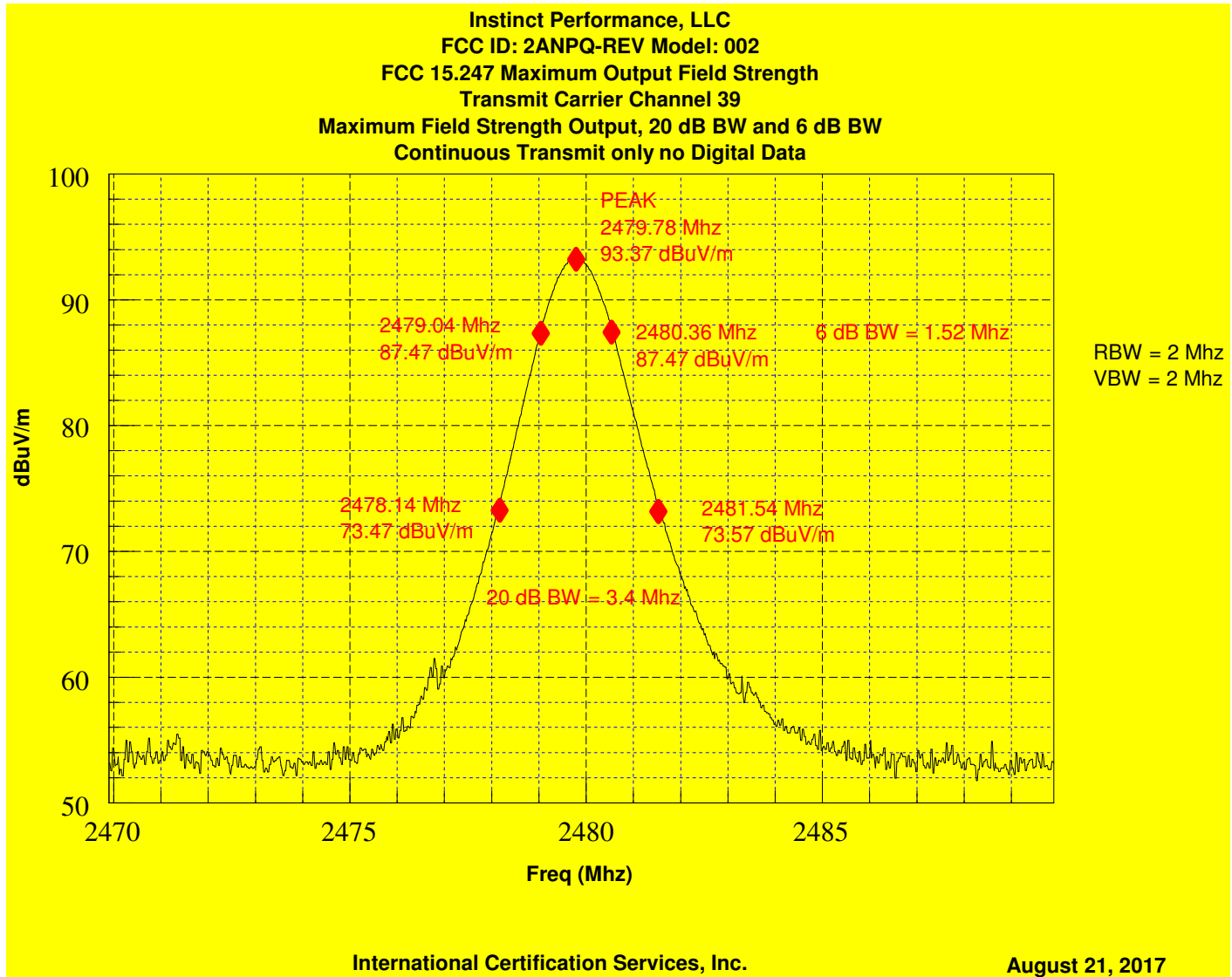
International Certification Services, Inc.

August 21, 2017

54 1 mS bursts in 16 seconds = time of occupancy of $(54 * 1.0) \text{ mS} = 54 \text{ mS}$ out of the allowed 400 mS

7.0 15.247 (a) (2) PASS

Systems using Digital modulation techniques may operate in the 902-928 Mhz, 2400-2483.5 Mhz, and 5725-5850 Mhz bands. The minimum 6 dB bandwidth shall be at least 500 KHz.



8.0 15.247 (b) PASS

The maximum peak conducted output power of the intentional radiator shall not exceed the following:

9.0 15.247 (b) (1) This device uses 40 channels Not Applicable

10.0 15.247 (b) (2) 902-928 Mhz Band Not Applicable

11.0 15.247 (b) (3) PASS

Measured results:

Using FCC Public Notice DA 00-705 alternate test procedure for measuring the output power the results are as follows:

$$P = (E*d)^2/30*G$$

E Maximum fundamental field strength in V/m

d Antenna Distance (m)

G Numeric Gain of the transmitting antenna with reference to an isotropic radiator (dB)

$$P = (E*d)^2/30*G$$
$$P = (0.046*3)^{2/(30*1.7)}$$
$$P = 370 \text{ uW}$$

12.0 15.247 (b) (4) PASS

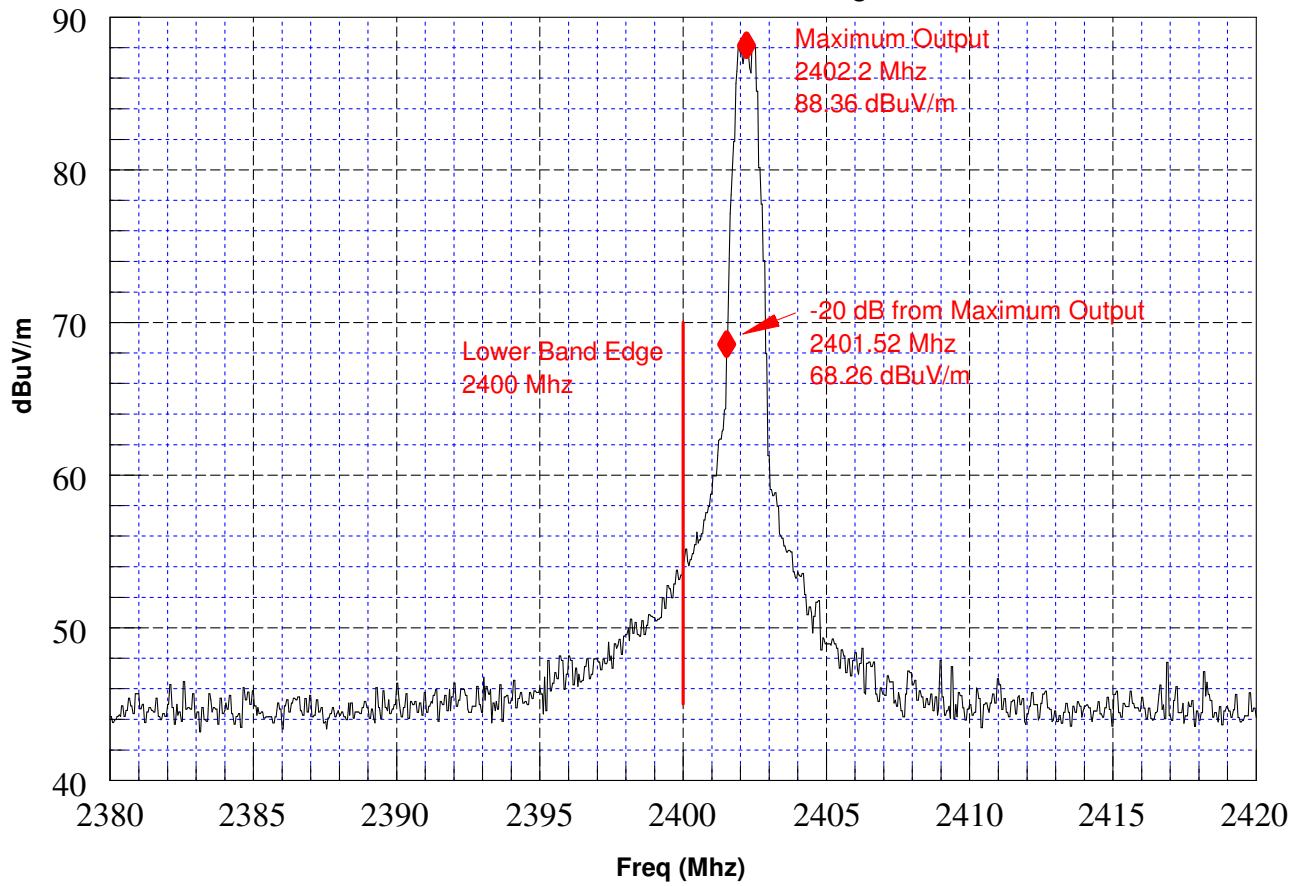
The antenna in this device has a isotropic gain of 1.7 dBi

13.0 15.247 (c) Antenna gain is less than 6 dBi Not Applicable

14.0 15.247 (d) PASS

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional Radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 Khz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement., provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in 15.209 (a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in 15.205 (a), must also comply with the radiated emission limits specified in 15.209 (a) (see 15.205 (c).)

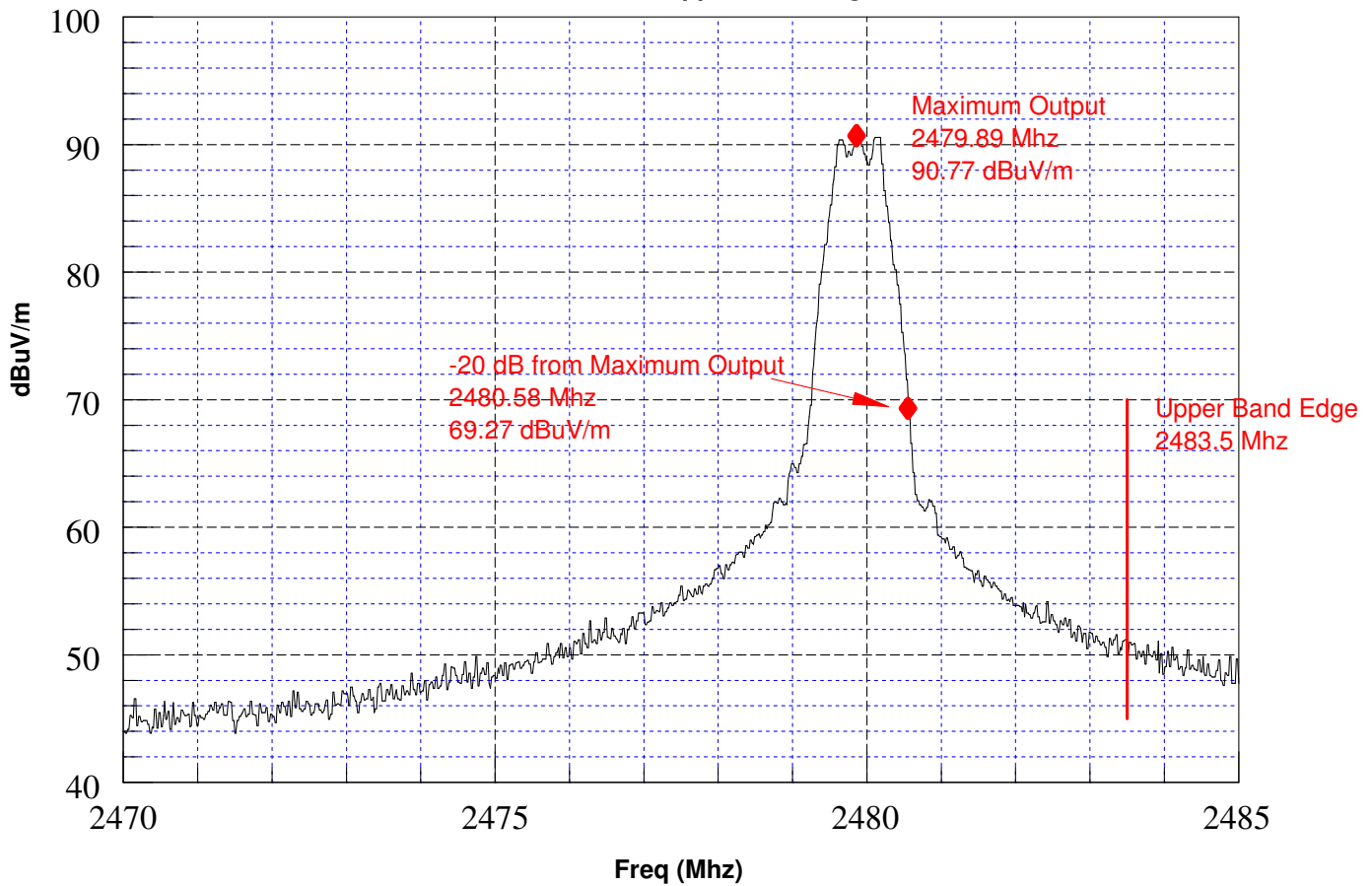
Instinct Performance (dba VIMA)
FCC ID: 2ANPQ-REV Model: 002
FCC 15.247 Lower Band Edge



International Certification Services, Inc.

August 21, 2017

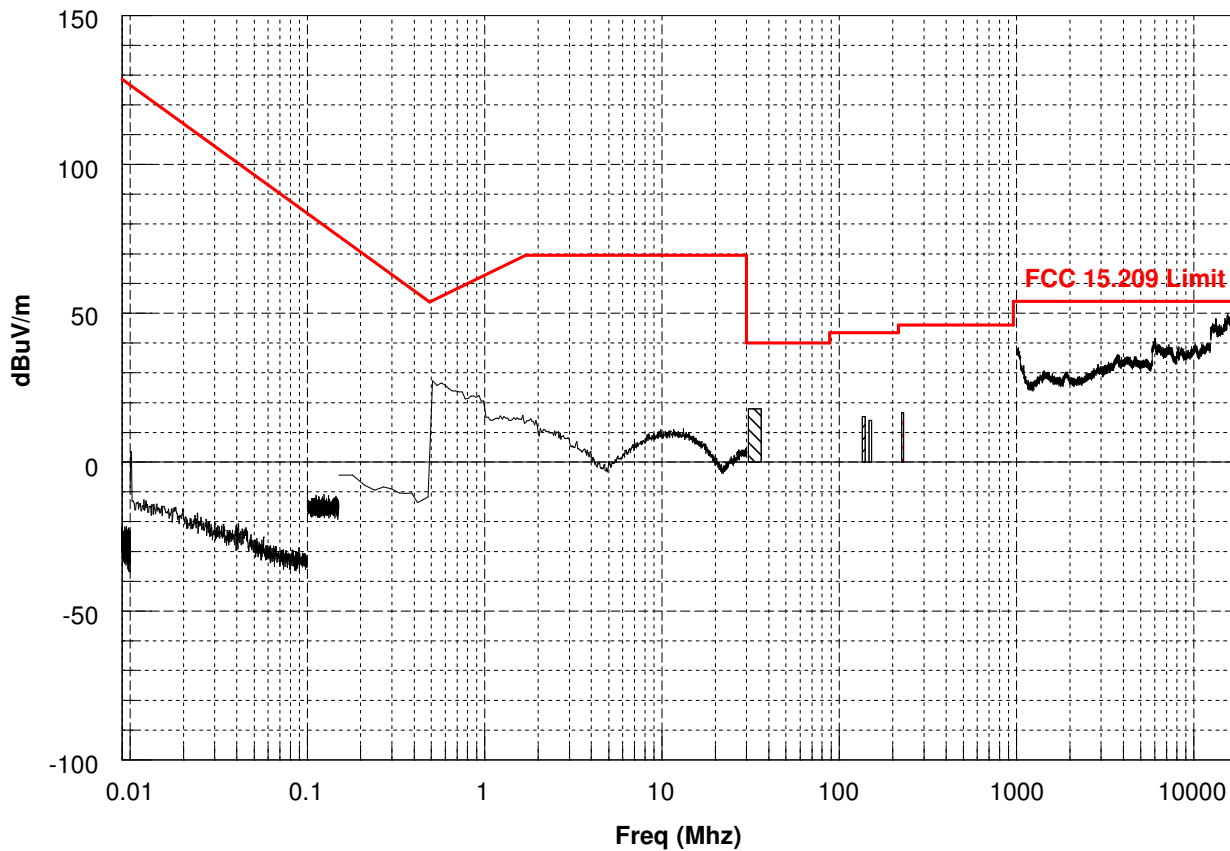
Instinct Performance, LLC
FCC ID: 2ANPQ-REV Model: 002
FCC 15.247 Upper Band Edge



International Certification Services, Inc.

August 21, 2017

Instinct Performance, LLC
FCC ID: 2ANPQ-REV Model: 002
FCC 15.247 Out of Band and Restricted Band Signals (15.205, 15.209)



International Certification Services, Inc.

September 05, 2017

15.0 15.247 (e) PASS

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Measurements were recorded with a RBW=100 KHz and VBW=300 KHz with the EUT transmitting digital data on each of the three frequencies (Low, Middle and High) of the band. Radiated emissions were recorded since the antenna of the EUT was a chip soldered onto the pc board. The alternative test procedure listed in FCC DA 00-705 was used to calculate the actual power from the measured field strength of the signal so the report can show results appropriate for this report. See details below:

Frequency (Mhz)	Field Strength (dBuV/m)	6 dB DTS BW (kHz)
2401.95	87.357	744
2439.95	89.19	748
2479.95	91.467	752

Using the antenna gain of 1.7 dBi and an antenna measuring distance of 3 meters and the following equation from FCC DA 00-705 Alternative Test Procedure

$$P = (E \cdot d)^2 / 30 \cdot G$$

E Maximum fundamental field strength in V/m

d Antenna Distance (m)

G Numeric Gain of the transmitting antenna with reference to an isotropic radiator (dB)

Frequency (Mhz)	Field Strength (dBuV/m)	Field Strength (V/m)	Output Power (Watts)	Output Power (dBm)
2401.95	87.357	0.023326	95.8 uW	-10.186
2439.95	89.19	0.0288	0.146 mW	-8.356
2479.95	91.467	0.0374	0.247 mW	-6.07

16.0 15.247 (g) PASS

Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.

The Microprocessor chip (Cypress CY8C4248LQI-BL483) used in this product is designed to meet the Bluetooth requirements and this section of the FCC requirements.

17.0 15.247 (h) PASS

The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hopsets to avoid hopping on occupied channels is permitted. The Coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

The Microprocessor chip (Cypress CY8C4248LQI-BL483) used in this product is designed to meet the Bluetooth requirements and this section of the FCC requirements.

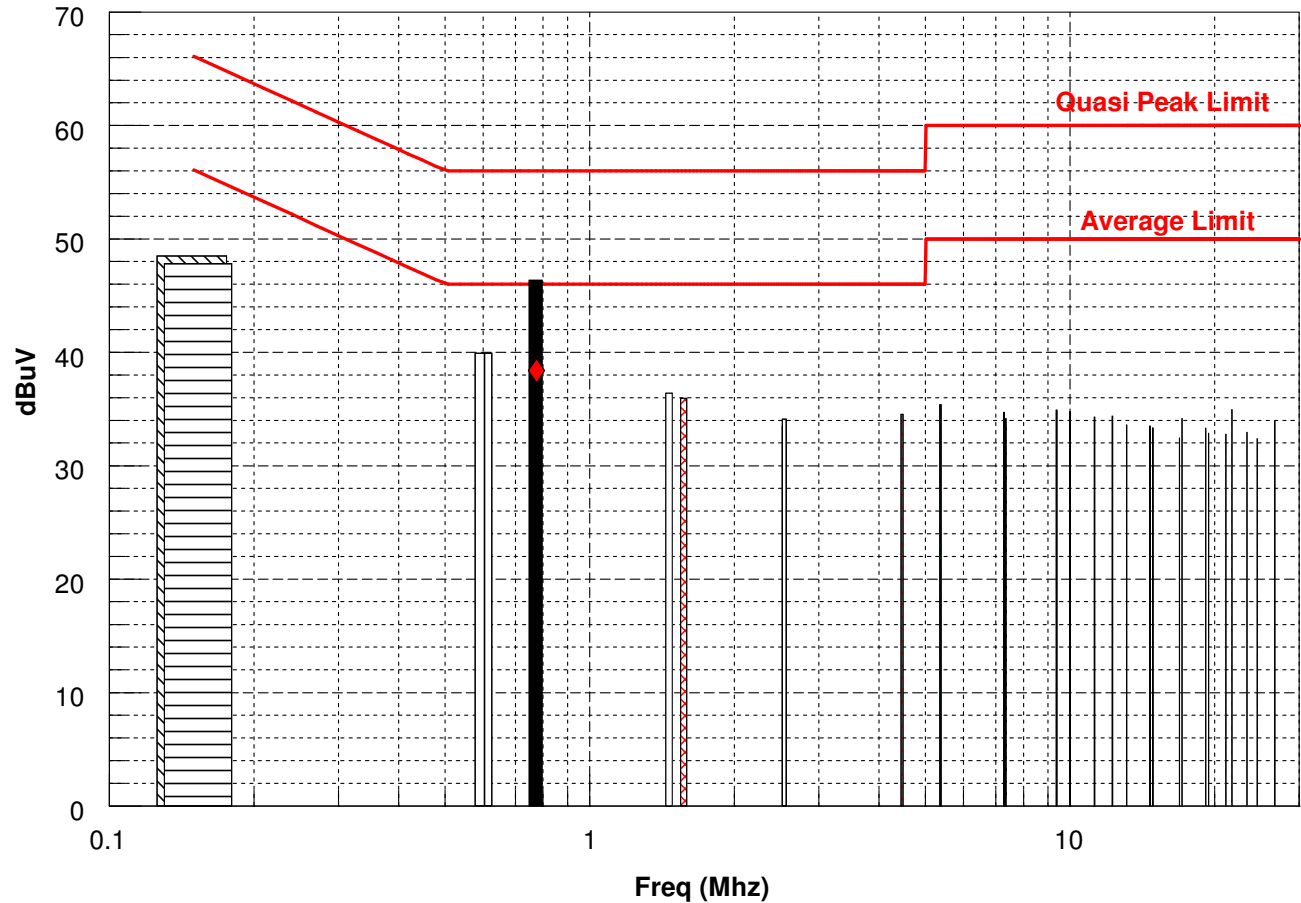
18.0 15.247 (i) PASS

Systems operating under the provision of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission’s guidelines. See 1.1307 (b)(1) of this chapter

The Microprocessor chip (Cypress CY8C4248LQI-BL483) used in this product is designed to meet the Bluetooth requirements and this section of the FCC requirements.

19.0 15.207 PASS
Conducted Emissions

Instinct Performance, LLC
FCC ID: 2ANPQ-REV Model: 002
Conducted Emissions FCC 15.207
120 VAC, 60 Hz



◆ Average Detected Data

20.0 SAR Requirements: PASS

Using the equation from FCC KDB 447498 D01 General Exposure Guidance V06 Section 4.3.1

General RF Exposure ≤ 3.0 for 5 mm test separation distance

General RF Exposure $= (P(\text{mW})/5\text{mm}) * (\sqrt{\text{test freq (Ghz)}})$

General RF Exposure $= (0.37/5) * (\sqrt{2.47978})$

General RF Exposure $= 0.18$

This unit passes the SAR Requirements

21.0 ATTACHMENT C Product Information Sheet as supplied by the Customer

COMPANY NAME: Instinct Performance, LLC

CUSTOMER REPRESENTATIVE: International Certification Services, Inc.

EQUIPMENT DESCRIPTION: Sport Training Eyeware

MODEL NUMBER: 001, 002

SERIAL NUMBER: N/A

TYPE OF TEST: ☐ Development
☐ Initial Design Verification
☐ Design Change (Please describe exact changes below)
☒ Production Sample (Audit Test)
Changes made: NONE

OSCILLATOR FREQUENCIES:

32.768 Khz, 24 Mhz

PRODUCT SHIELDING PROVISION:

Plastic enclosure

SOFTWARE AND / OR OPERATING MODES:

GooglesWithOtaBootloader Version 2.20