

47 CFR FCC Part 15 Subpart C

Section 15.247

Test Report

Product : **Wrist Type Blood Pressure Monitor**

Trade Name : N/A

Model Number : BPM13B

FCC ID : UV3BPW-2113B

Prepared for

AVITA Corporation

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Remark:

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The test result in this report is only subjected to the test sample.

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Statement of Compliance

Applicant: AViTA Corporation
Manufacturer: 1. AViTA Corporation
2. AViTA (Wujiang) Co., Ltd.
Product: Wrist Type Blood Pressure Monitor
Model No.: BPM13B
Tested Power Voltage: DC 3V (2 * 1.5V AAA batteries)
Date of Final Test: Jan. 10, 2022


Configuration of Measurements and Standards Used :


FCC Rules and Regulations Part 15 Subpart C Section 15.247

I HEREBY CERTIFY THAT: The data shown in this report were made in accordance with the procedures given in ANSI C63.10, and the energy emitted by the device was founded to be within the limits applicable. I assume full responsibility for accuracy and completeness of these data.

- Note:** 1. The result of the testing report relate only to the item tested.
2. This report shall not be partial reproduced without written approval by Interocean EMC Technology Corporation.
3. Judgment of conformity is based on test result, regardless of measurement uncertainty.

Report Issued: 2022/03/10

Prepared by: 
Scott Chang

Approved: 
Jerry Chang

1 General Information

1.1 Description of Equipment Under Test

- Product** : Wrist Type Blood Pressure Monitor
- Model Number** : BPM13B
- Applicant** : **AViTA Corporation**
9F., No. 78, Sec. 1, Kwang-Fu Rd., San-Chung District.,
New Taipei City, Taiwan 24158
- Manufacturer** : **1. AViTA Corporation**
9F., No. 78, Sec. 1, Kwang-Fu Rd., San-Chung District.,
New Taipei City, Taiwan 24158
2. AViTA (Wujiang) Co., Ltd.
No. 858, Jiao Tong Road, Wujiang Economic Development Zone,
Jiangsu Province, P.R. China
- Power Supply** : DC 3V (Powered by 2 * 1.5V AAA batteries)
- Operating Frequency** : 2402 MHz - 2480 MHz
- Output Power** : -3.26 dBm
- Channel Number** : 40 channels
- Type of Modulation** : GFSK
- Antenna Description** : PCB Antenna. maximum Peak gain: 0dBi.
- Measurement Software** : e3; Ver: 8.120803a7-2
- Receipt Date of EUT** : Dec. 27, 2021
- Date of Test** : Jan. 10, 2022
- Additional Description** : 1) The test model is "**BPM13B**" and included in this report.
2) Compliant with Bluetooth Ver 4.0.
3) For more detailed specification about EUT, please refer to the user's manual.

1.2 Table for Channel Frequencies

Bluetooth 4.0

| Channel | Frequency | Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|---------|-----------|
| 0 | 2402 MHz | 14 | 2430 MHz | 28 | 2458 MHz |
| 1 | 2404 MHz | 15 | 2432 MHz | 29 | 2460 MHz |
| 2 | 2406 MHz | 16 | 2434 MHz | 30 | 2462 MHz |
| 3 | 2408 MHz | 17 | 2436 MHz | 31 | 2464 MHz |
| 4 | 2410 MHz | 18 | 2438 MHz | 32 | 2466 MHz |
| 5 | 2412 MHz | 19 | 2440 MHz | 33 | 2468 MHz |
| 6 | 2414 MHz | 20 | 2442 MHz | 34 | 2470 MHz |
| 7 | 2416 MHz | 21 | 2444 MHz | 35 | 2472 MHz |
| 8 | 2418 MHz | 22 | 2446 MHz | 36 | 2474 MHz |
| 9 | 2420 MHz | 23 | 2448 MHz | 37 | 2476 MHz |
| 10 | 2422 MHz | 24 | 2450 MHz | 38 | 2478 MHz |
| 11 | 2424 MHz | 25 | 2452 MHz | 39 | 2480 MHz |
| 12 | 2426 MHz | 26 | 2454 MHz | | |
| 13 | 2428 MHz | 27 | 2456 MHz | | |

1.3 Test Equipment

| Instrument | Manufacturer | Model | Serial No. | Next Cal. Date |
|-----------------------------|---------------------|-------------------------------|------------------------|----------------|
| EMI Test Receiver | Rohde & Schwarz | ESCS 30 | 100127 | 2022/10/18 |
| RF Cable | IETC | CBL68 | CBL68 | 2022/01/22 |
| Pulse Limiter | R&S | ESH3-Z2 | 8360836/026 | 2022/01/22 |
| L.I.S.N. | Schwarzbeck | NNLK8121 | 8121417 | 2022/03/08 |
| L.I.S.N. | Schaffner | MN2050D | 1598 | 2022/08/10 |
| Spectrum Analyzer | R&S | FSP40 | 100478 | 2022/08/01 |
| EMI Test Receiver | Rohde & Schwarz | ESI7 | 830154/002 | 2022/05/03 |
| Loop Antenna | Electro-Metrics | EM-6879 | 261 | 2022/09/01 |
| Bilog Antenna with 5 dB Pad | ETC & JYEBAO | MCTD 2786B & FAT-NM5NF5T3G2W5 | BLB17S04020 & JB-5-020 | 2022/05/13 |
| Horn Antenna | Schwarzbeck | BBHA9120 | 9120D-1051 | 2022/08/31 |
| Horn Antenna | Schwarzbeck | BBHA9170 | BBHA9170213 | 2022/06/07 |
| Pre-Amplifier | EMCI | EMC001150 | 980130 | 2022/08/24 |
| Pre-Amplifier | EMCI | EMC 051845 | 980110 | 2022/07/12 |
| Pre-Amplifier | Agilent | 83050A | 3950M00225 | 2022/02/04 |
| RF Cable | HARBOUR | 27478LL142 | CBL65 | 2022/01/22 |
| RF Cable | Marvelous Microwave | MCBL-LL266.50 | CBL70 | 2022/01/22 |
| RF Cable | Junkosha | MWX241 | CBL58 | 2022/09/22 |

Note: The above equipments are within the valid calibration period.

1.4 Measurement Uncertainty

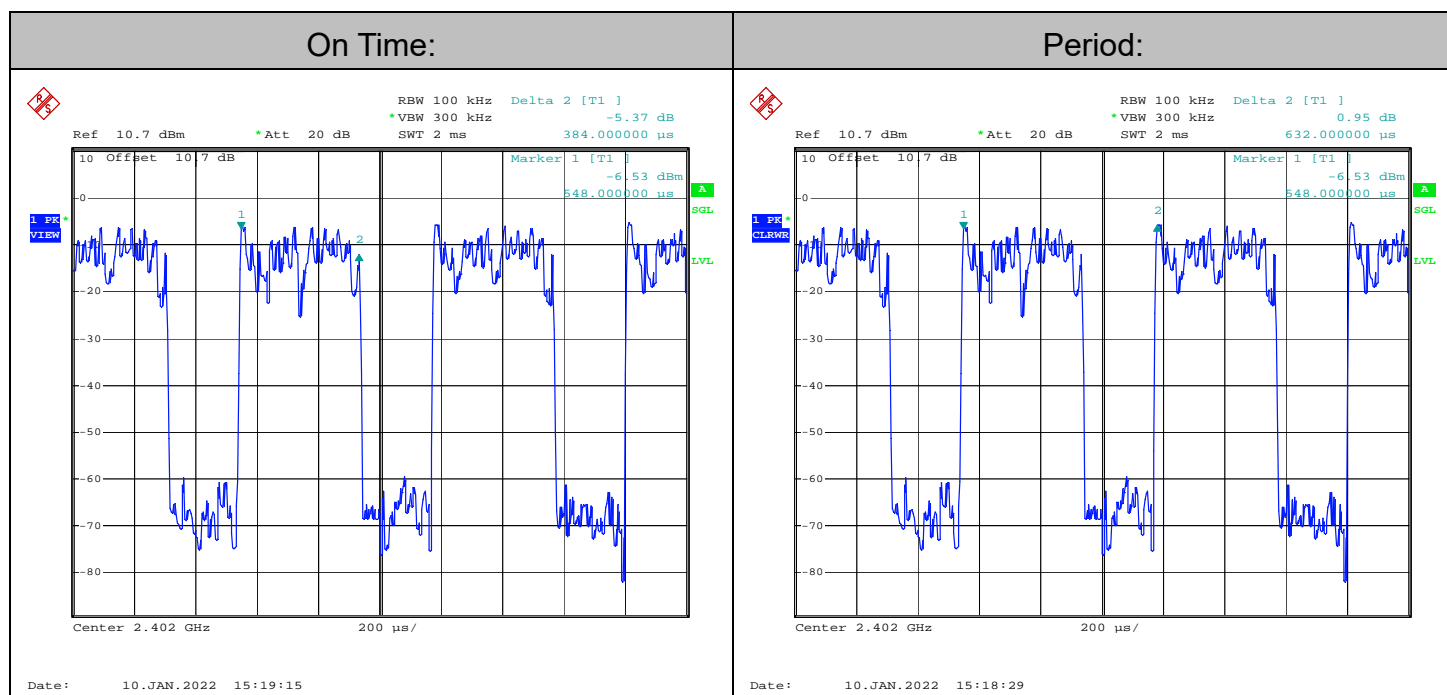
| Items | Measurement Items | Expanded Uncertainty | | | | | Estimation |
|-------|---|---------------------------------|------------------------------------|---------------------------------|------------------------------------|------------------------------------|-----------------|
| | | Frequency 9 kHz to 30 MHz | Frequency 30 MHz to 1000 MHz | Frequency 1 GHz to 18 GHz | Frequency 18 GHz to 26.5 GHz | Frequency 26.5 GHz to 40 GHz | |
| 1. | Power-Line Conducted Emissions (dB μ V) | ± 2.120 | ----- | ----- | ----- | ----- | LAB34 |
| 2. | Radiation Power (dB μ V/m) | ± 3.336 | ± 3.170 | ± 2.284 | ± 2.140 | ± 2.140 | LAB34 |
| 3. | Output Power (dB) | ± 1.109 | ± 1.109 | ± 1.970 | ± 1.970 | ± 1.970 | ETSI TR 100 028 |
| 4. | E.I.R.P (dB) | ± 4.319 | ± 4.319 | ± 4.319 | ± 4.319 | ± 4.319 | |
| 5. | Spurious Emissions (dB) | ± 4.090 | ± 4.090 | ± 4.111 | ± 4.111 | ± 4.111 | |
| 6. | Conducted RF Band Edge (dB) | ± 4.090 | ± 4.090 | ± 4.111 | ± 4.111 | ± 4.111 | |
| 7. | Conducted Spurious Emissions (dB) | ± 4.090 | ± 4.090 | ± 4.111 | ± 4.111 | ± 4.111 | |
| 8. | Radiation Spurious Emissions (dB) | ± 2.125 | ± 3.419 | ± 3.419 | ± 3.419 | ± 3.419 | |
| 9. | Operating Frequency (Hz) | $\pm 1.36 \times 10^{-8}$ | $\pm 1.36 \times 10^{-8}$ | $\pm 7.55 \times 10^{-8}$ | $\pm 6.60 \times 10^{-8}$ | $\pm 6.60 \times 10^{-8}$ | |
| 10. | Frequency Stability (Hz) | ± 33.965 | ± 48.779 | ± 631.398 | ± 928.835 | ± 928.835 | |
| 11. | Frequency Stability of Input Voltage (Hz) | ± 33.965 | ± 48.779 | ± 631.398 | ± 928.835 | ± 928.835 | |
| 12. | Frequency Deviation (%) | ± 1.296 | ± 1.296 | ± 1.296 | ± 1.296 | ± 1.296 | |
| 13. | Channel Bandwidth (Hz) | ± 33.951 | ± 35.786 | ± 206.505 | ± 301.800 | ± 301.800 | |
| 14. | 6dB Channel Bandwidth (Hz) | ± 33.951 | ----- | ± 206.505 | ----- | ----- | |
| 15. | 20dB Channel Bandwidth (Hz) | ----- | ± 35.786 | ± 206.505 | ----- | ----- | |
| 16. | Output Peak Power (dB) | ± 0.654 | ± 0.654 | ± 0.654 | ± 0.654 | ± 0.654 | |
| 17. | Power Density (dB) | ± 1.109 | ± 1.109 | ± 0.105 | ± 1.970 | ± 1.970 | |
| 18. | Number of Hopping Channel | ----- | ----- | ----- | ----- | ----- | |
| 19. | Hopping Channel Separation (Hz) | ----- | ----- | ± 206.505 | ----- | ----- | |
| 20. | Dwell Time (ms) | ± 2.225 | ± 2.225 | ± 2.225 | ± 2.225 | ± 2.225 | |
| 21. | ACLR (Adjacent Channel Leakage Ratio) (dB) | ± 1.442 | ± 1.442 | ± 1.442 | ± 1.443 | ± 1.443 | |
| 22. | Frequency Response (%) | ± 5.246 | ± 5.246 | ± 5.246 | ± 5.246 | ± 5.246 | |
| 23. | Max Modulation (%) | ± 1.296 | ± 1.296 | ± 1.296 | ± 1.296 | ± 1.296 | |
| 24. | Harmonic Attenuation (dB) | ± 4.090 | ± 4.090 | ± 4.111 | ± 4.111 | ± 4.111 | |

1.5 Duty Cycle

According to KDB 558074 D01 15.247 Meas Guidance v05:

All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum power transmission duration, T, are required for each tested mode of operation.

| Configuration | On Time (ms) | Period (ms) | Duty Cycle (%) | Duty Factor (dB) |
|---------------|--------------|-------------|----------------|------------------|
| BT4.0 | 0.384 | 0.632 | 60.76 | -2.16 |



1.6 Summary of Measurement

| Report Clause | Test Parameter | Reference Document 47 CFR Part15 | Results |
|---------------|----------------------------------|-------------------------------------|---------|
| 2 | RF Radiated Spurious Emission | §15.205, 15.209 | Pass |
| 3 | RF Conducted Spurious Emission | §15.247(d) | Pass |
| 4 | Maximum Peak Output Power | §15.247(b) | Pass |
| 5 | 6dB Bandwidth | §15.247(a)(2) | Pass |
| 6 | Power Spectral Density | §15.247(e) | Pass |
| 7 | Emission on the Band Edge | §15.247(d) | Pass |
| | AC Power Line Conducted Emission | §15.207 | N/A |

1.7 Test Step of EUT

- 1.7.1 Set the fixture to EUT for power supplying.
- 1.7.2 Turn on the power of all equipments.
- 1.7.3 Let the EUT continuous transmission.
- 1.7.4 Execute the test.

2 RF Radiated Spurious Emission

2.1 Limit

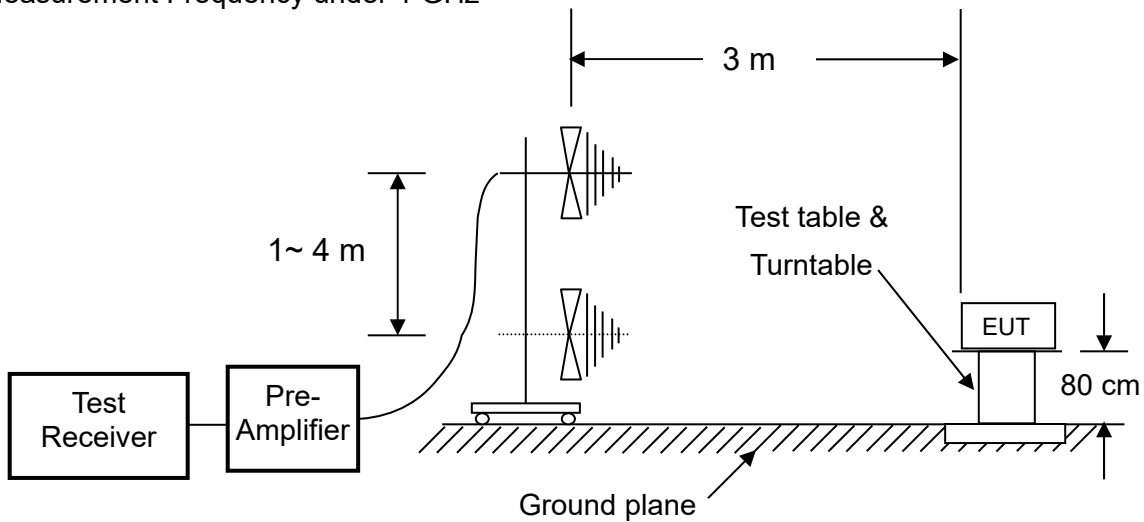
For intentional radiator, the radiated emission shall comply with §15.209(a).

For intentional radiators, according to §15.247 (a), operation under this provision is limited to frequency hopping and direct sequence spread spectrum, and the out band emission shall be comply with §15.247 (d)

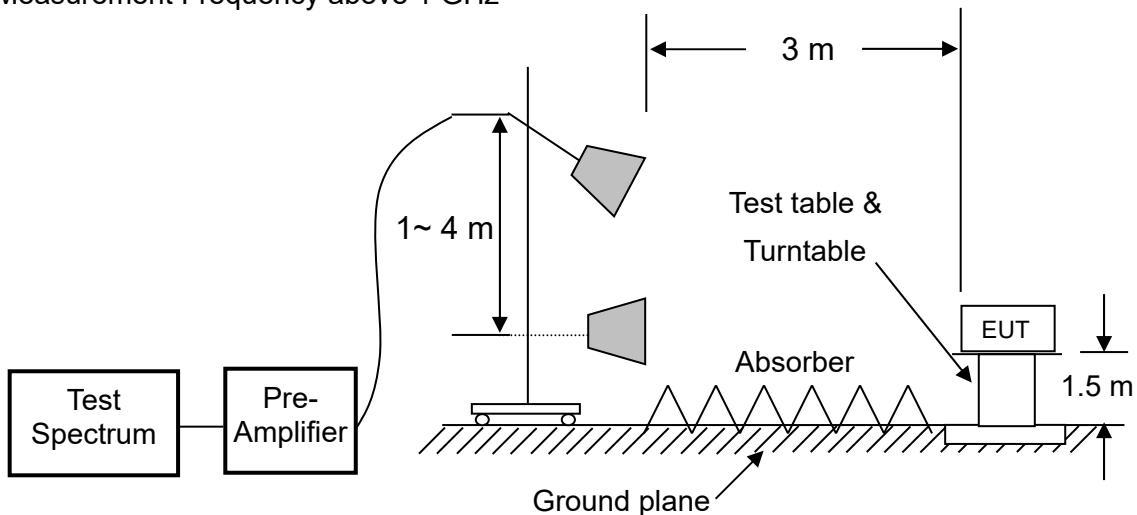
| Frequency (MHz) | Field strength dB(μ V/m) | Measurement distance (meters) |
|-----------------|-------------------------------|-------------------------------|
| 1.705 - 30.0 | 29.5 | 30 |
| 30 - 88 | 40 | 3 |
| 88 - 216 | 43.5 | 3 |
| 216 - 960 | 46 | 3 |
| Above 960 | 54 | 3 |

2.2 Configuration of Measurement

Measurement Frequency under 1 GHz



Measurement Frequency above 1 GHz



2.3 Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to DTS test procedure of August 24, 2018 KDB558074 D01 for compliance to FCC 47CFR 15.247 requirements.

Radiated emission measurements were performed from 30 MHz to 25 GHz. Spectrum Analyzer set as below: For frequency range from 30 MHz to 1 GHz: RBW=100 kHz or greater. For frequencies above 1 GHz: set RBW=VBW=1 MHz for peak detector and RBW=1 MHz, VBW=10 Hz for average detector.

The EUT for testing is arranged on a turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meter and down to 1 meter.

The frequency range from 9 kHz to 30 MHz was pre-scanned and the results was 20 dB lower than the limit line which according to FCC 15.31(o) needs not be recorded.

2.4 Test Result

PASS.

The final test data is shown on as following pages.

Radiated Spurious Emission

Radiated Emission Below 1 GHz

CLIENT: AViTA Corporation

EUT: Wrist Type Blood Pressure Monitor

MODEL: BPM13B

RATING: DC 3V

COMMENT:

Data:2

OPERATOR : Scott

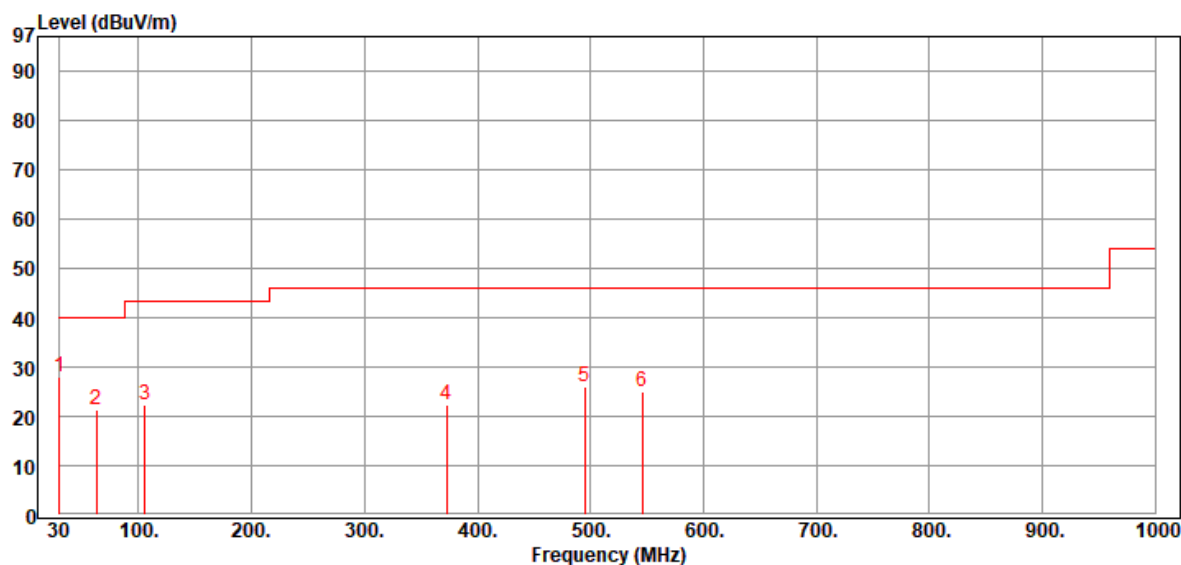
TEST SITE : Chamber 3

TEST DISTANCE : 3 m

POLARIZATION : HORIZONTAL

TEMP/HUM : 24.1°C/52%

2022-01-10



| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|--------|
| 1 | 30.000 | 60.39 | -32.30 | 28.09 | 40.00 | -11.91 | QP |
| 2 | 62.980 | 58.08 | -36.67 | 21.41 | 40.00 | -18.59 | QP |
| 3 | 105.660 | 53.90 | -31.41 | 22.49 | 43.50 | -21.01 | QP |
| 4 | 372.410 | 50.84 | -28.47 | 22.37 | 46.02 | -23.65 | QP |
| 5 | 494.630 | 52.59 | -26.61 | 25.98 | 46.02 | -20.04 | QP |
| 6 | 546.040 | 51.36 | -26.39 | 24.97 | 46.02 | -21.05 | QP |

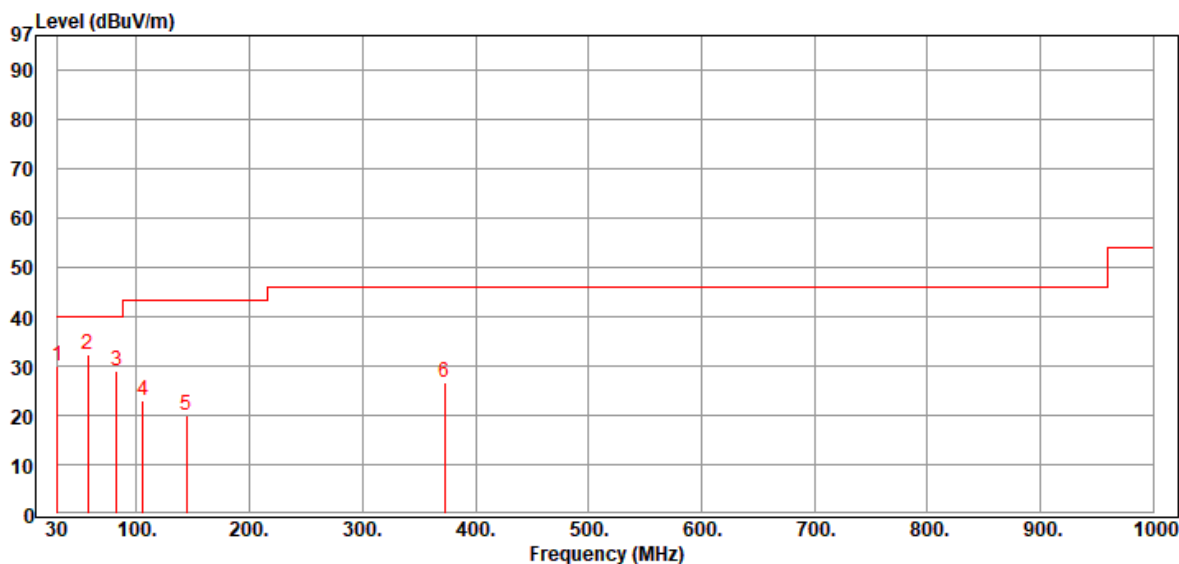
Remark : Result Level = Reading + Factor

Factor = Antenna Factor + Cable Loss - Preamp

Margin = Result Level - Limits

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT:
 Data:1

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : VERTICAL
 TEMP/HUM : 24.1°C/52%
 2022-01-10



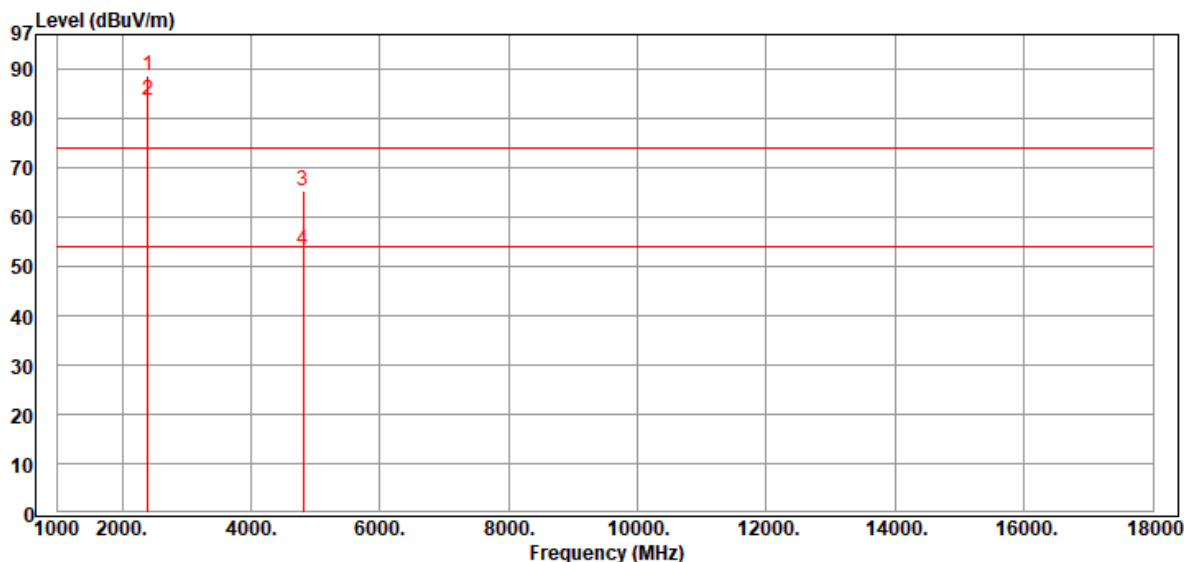
| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|--------|
| 1 | 30.000 | 62.40 | -32.30 | 30.10 | 40.00 | -9.90 | QP |
| 2 | 57.160 | 68.13 | -35.71 | 32.42 | 40.00 | -7.58 | QP |
| 3 | 82.380 | 67.71 | -38.77 | 28.94 | 40.00 | -11.06 | QP |
| 4 | 105.660 | 54.58 | -31.41 | 23.17 | 43.50 | -20.33 | QP |
| 5 | 144.460 | 50.94 | -30.98 | 19.96 | 43.50 | -23.54 | QP |
| 6 | 372.410 | 55.23 | -28.47 | 26.76 | 46.02 | -19.26 | QP |

Remark : Result Level = Reading + Factor
 Factor = Antenna Factor + Cable Loss - Preamp
 Margin = Result Level - Limits

Radiated Emission Above 1 GHz

CLIENT: AVITA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: Low Channel
 Data:21

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : HORIZONTAL
 TEMP/HUM : 24.1°C/52%
 2022-01-10



| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|---------|
| 1 | 2405.000 | 104.40 | -15.78 | 88.62 | | | Peak |
| 2 | 2405.000 | 99.30 | -15.78 | 83.52 | | | Average |
| 3 | 4810.000 | 74.05 | -8.62 | 65.43 | 74.00 | -8.57 | Peak |
| 4 | 4810.000 | 61.98 | -8.62 | 53.36 | 54.00 | -0.64 | Average |

Remark : Result Level = Reading + Factor

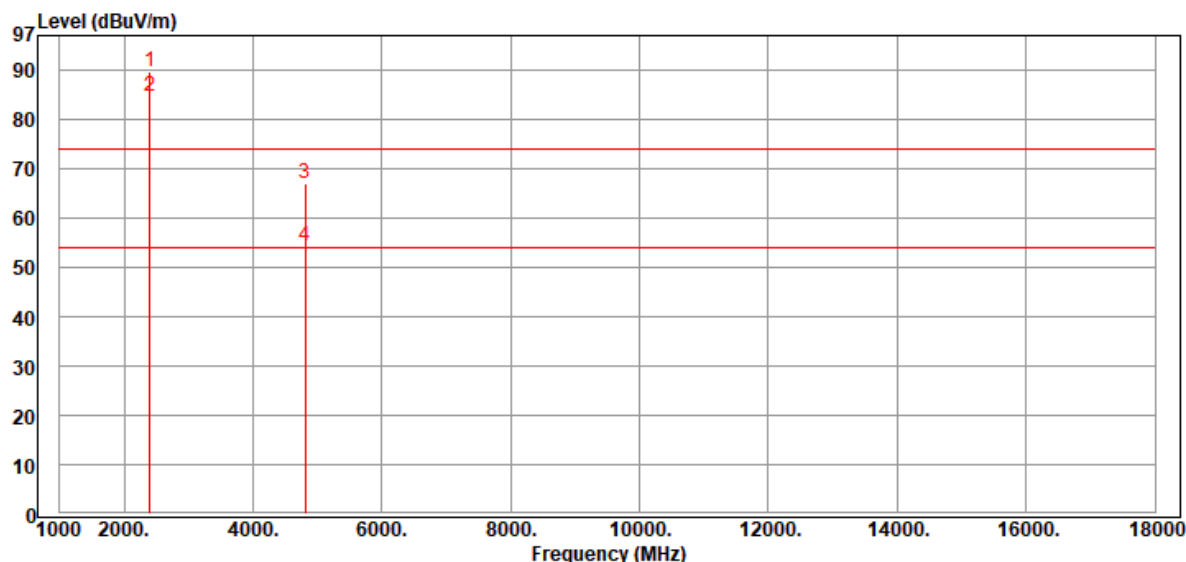
Factor = Antenna Factor + Cable Loss - Preamp

Margin = Result Level - Limits

Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: Low Channel
 Data:22

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : VERTICAL
 TEMP/HUM : 24.1°C/52%
 2022-01-10



| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|---------|
| 1 | 2405.000 | 105.28 | -15.78 | 89.50 | | | Peak |
| 2 | 2405.000 | 100.39 | -15.78 | 84.61 | | | Average |
| 3 | 4810.000 | 75.46 | -8.62 | 66.84 | 74.00 | -7.16 | Peak |
| 4 | 4810.000 | 62.81 | -8.62 | 53.19 | 54.00 | -0.81 | Average |

Remark : Result Level = Reading + Factor

Factor = Antenna Factor + Cable Loss - Preamp

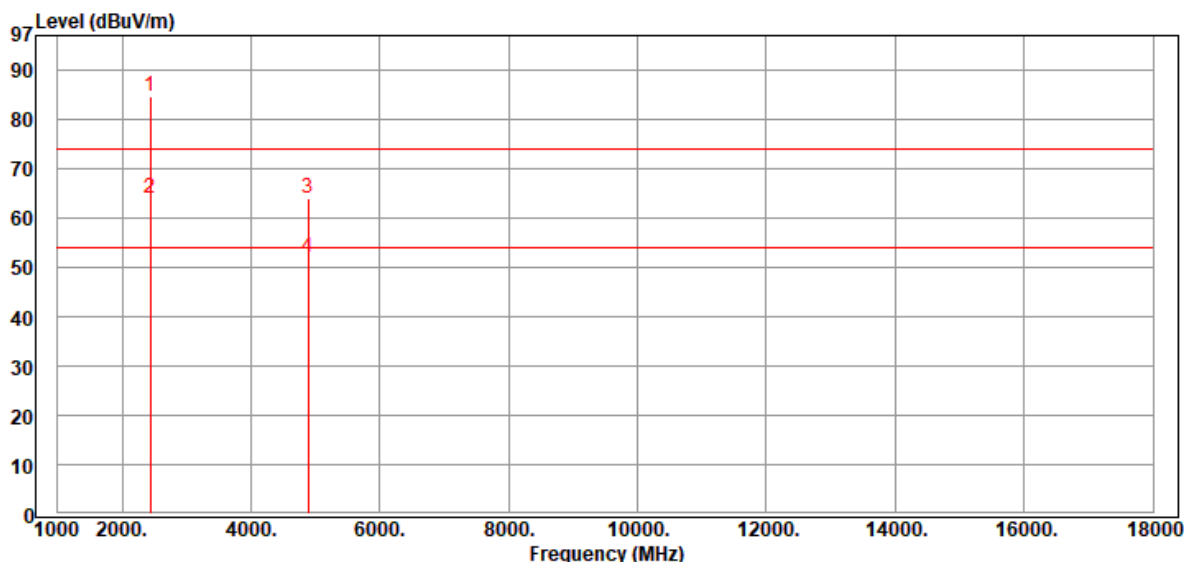
Margin = Result Level - Limits

Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: Mid Channel
 Data:23

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : HORIZONTAL
 TEMP/HUM : 24.1°C/52%
 2022-01-10



| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|---------|
| 1 | 2445.000 | 100.58 | -15.79 | 84.79 | | | Peak |
| 2 | 2445.000 | 79.66 | -15.79 | 63.87 | | | Average |
| 3 | 4890.000 | 72.73 | -8.66 | 64.07 | 74.00 | -9.93 | Peak |
| 4 | 4890.000 | 60.71 | -8.66 | 52.05 | 54.00 | -1.95 | Average |

Remark : Result Level = Reading + Factor

Factor = Antenna Factor + Cable Loss - Preamp

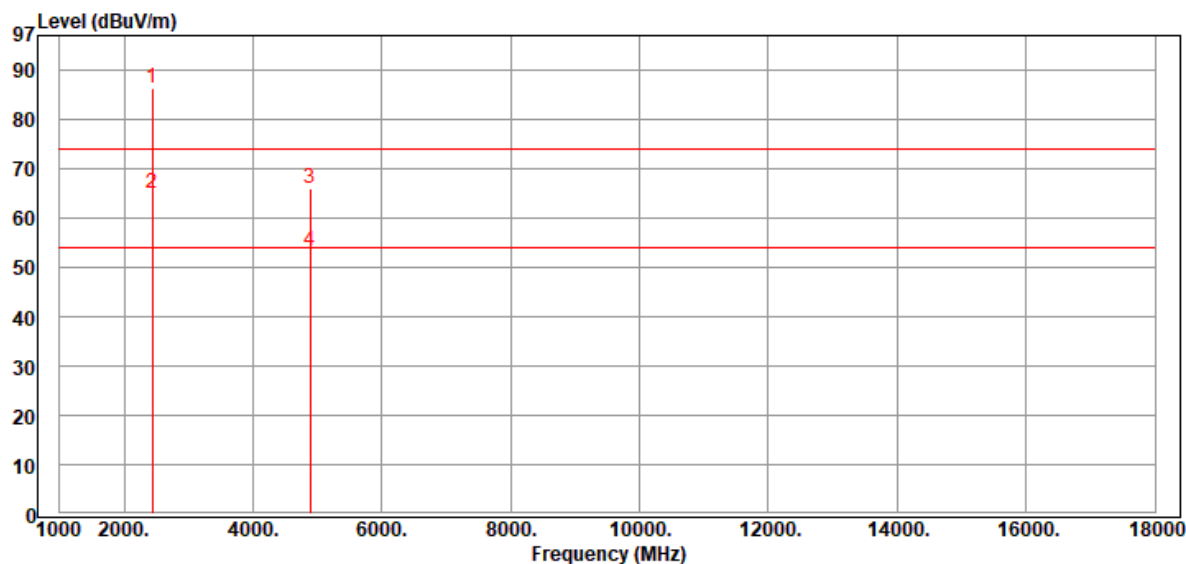
Margin = Result Level - Limits

Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: Mid Channel
 Data:24

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : VERTICAL
 TEMP/HUM : 24.1°C/52%
 2022-01-10



| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|---------|
| 1 | 2445.000 | 102.29 | -15.79 | 86.50 | | | Peak |
| 2 | 2445.000 | 80.92 | -15.79 | 65.13 | | | Average |
| 3 | 4890.000 | 74.50 | -8.66 | 65.84 | 74.00 | -8.16 | Peak |
| 4 | 4890.000 | 61.87 | -8.66 | 53.21 | 54.00 | -0.79 | Average |

Remark : Result Level = Reading + Factor

Factor = Antenna Factor + Cable Loss - Preamp

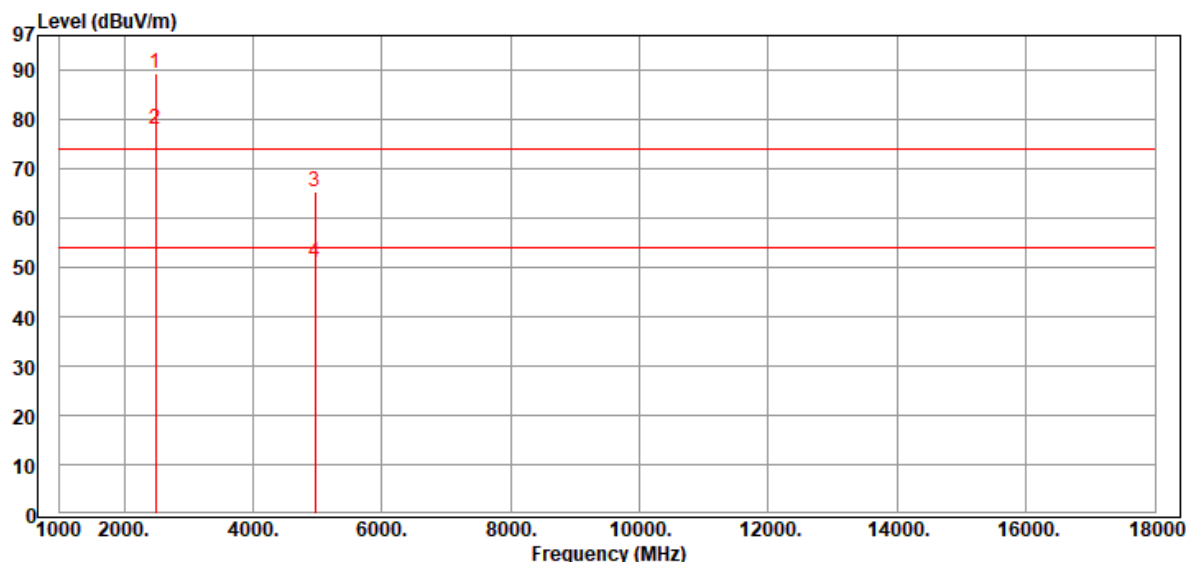
Margin = Result Level - Limits

Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: High Channel
 Data:19

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : HORIZONTAL
 TEMP/HUM : 24.1°C/52%
 2022-01-10



| Item | Freq. | Reading | Factor | Level | Limit | Margin | Remark |
|------|----------|---------|--------|--------|--------|--------|---------|
| Mark | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | |
| 1 | 2485.000 | 105.19 | -15.80 | 89.39 | | | Peak |
| 2 | 2485.000 | 93.96 | -15.80 | 78.16 | | | Average |
| 3 | 4970.000 | 73.60 | -8.42 | 65.18 | 74.00 | -8.82 | Peak |
| 4 | 4970.000 | 59.40 | -8.42 | 50.98 | 54.00 | -3.02 | Average |

Remark : Result Level = Reading + Factor

Factor = Antenna Factor + Cable Loss - Preamp

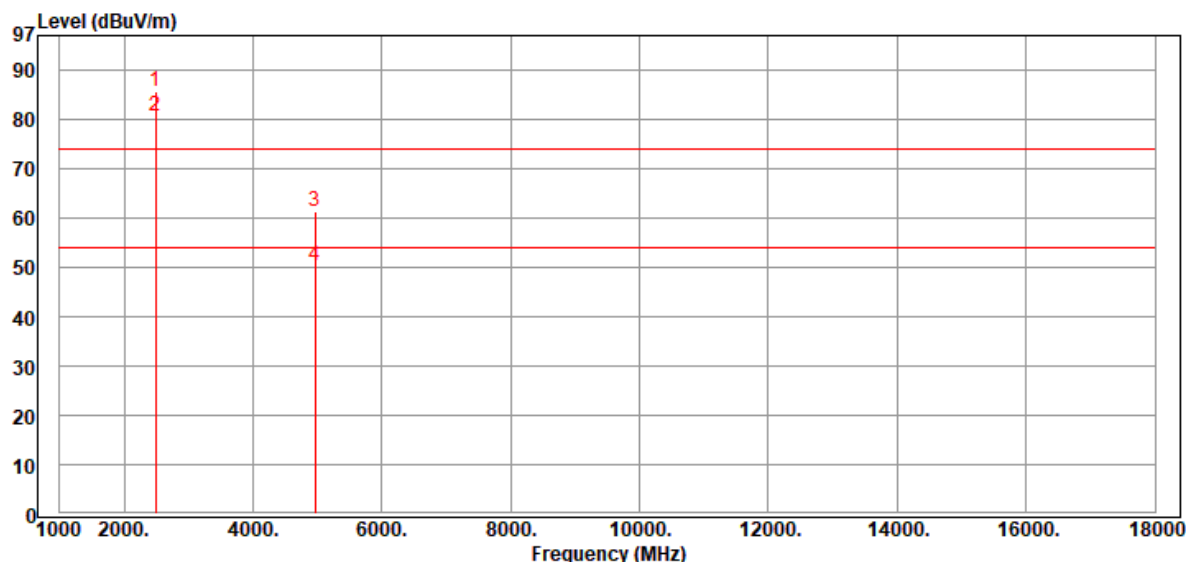
Margin = Result Level - Limits

Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: High Channel
 Data:20

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : VERTICAL
 TEMP/HUM : 24.1°C/52%
 2022-01-10



| Item | Freq. | Reading | Factor | Level | Limit | Margin | Remark |
|------|----------|---------|--------|--------|--------|--------|---------|
| Mark | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | |
| 1 | 2485.000 | 101.41 | -15.80 | 85.61 | | | Peak |
| 2 | 2485.000 | 96.36 | -15.80 | 80.56 | | | Average |
| 3 | 4970.000 | 69.75 | -8.42 | 61.33 | 74.00 | -12.67 | Peak |
| 4 | 4970.000 | 58.66 | -8.42 | 50.24 | 54.00 | -3.76 | Average |

Remark : Result Level = Reading + Factor

Factor = Antenna Factor + Cable Loss - Preamp

Margin = Result Level - Limits

Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.

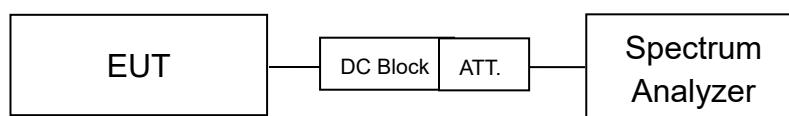
3 RF Conducted Spurious Emission

3.1 Limit

According to 15.247(d) requirement :

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.

3.2 Configuration of Measurement



3.3 Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to DTS test procedure of August 24, 2018 KDB558074 D01 for compliance to FCC 47CFR 15.247 requirements.

The measurements were performed from 30MHz to 25GHz RF antenna conducted per FCC 15.247 (c) was measured from the EUT antenna port using a 50ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set \geq RBW.

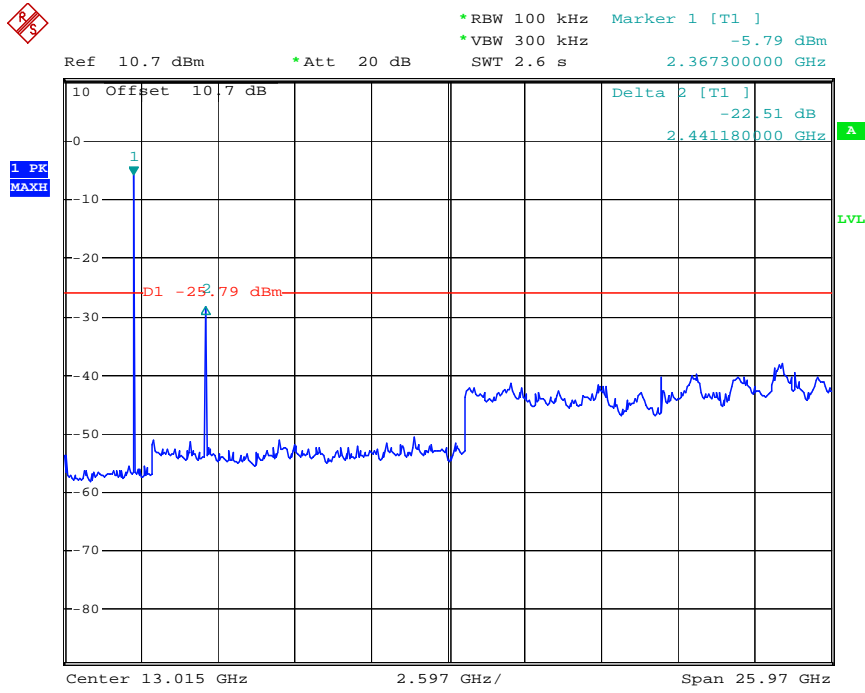
Harmonics and spurious noise must be at least 20dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW. The table below is the results from the highest emission for each channel within the authorized band. This table was used to determine the spurious limit for each channel.

3.4 Test Result

PASS.

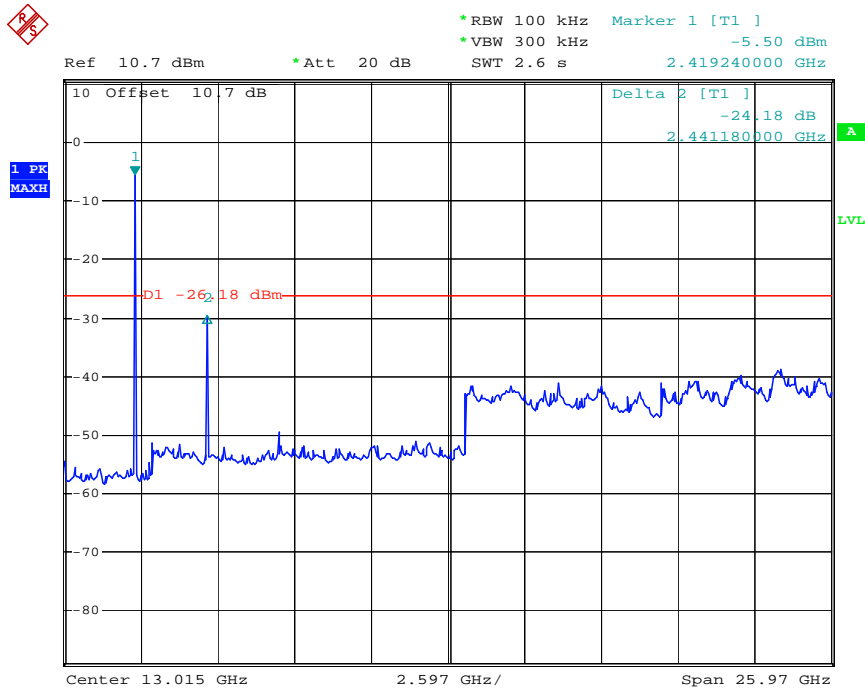
Conducted Spurious Emission

Low Channel



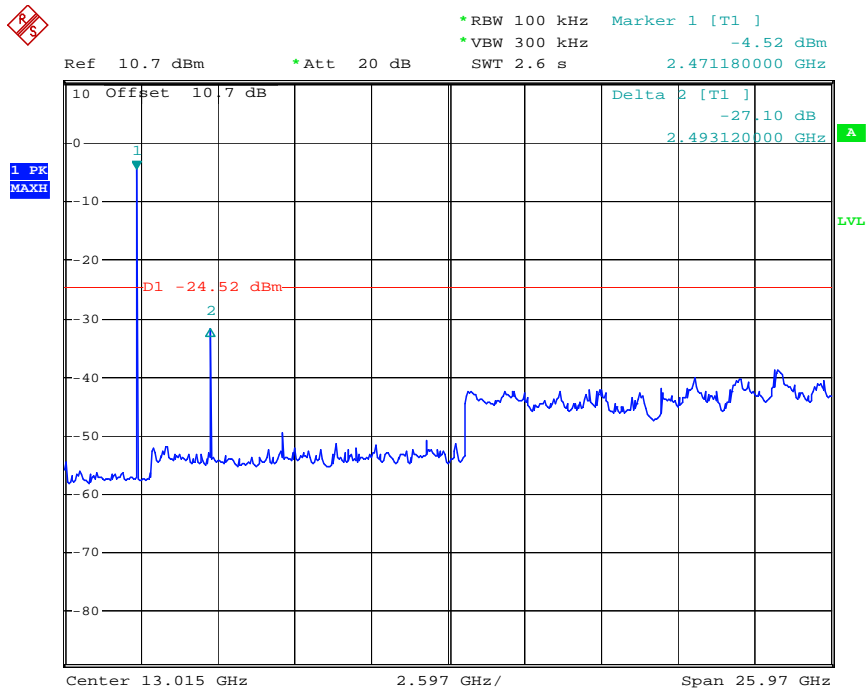
Date: 10.JAN.2022 15:54:10

Mid Channel



Date: 10.JAN.2022 15:55:09

High Channel



Date: 10.JAN.2022 15:55:48

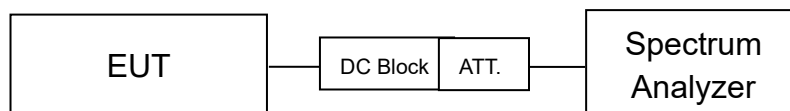
4 Maximum Peak Output Power

4.1 Limit

According to FCC Part 15.247 (b)(3) requirement :

For systems using digital modulation in the 902–928 MHz bands: The maximum conducted output power shall be less than 1Watt.

4.2 Configuration of Measurement



4.3 Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to DTS test procedure of August 24, 2018 KDB558074 D01 for compliance to FCC 47CFR 15.247 requirements.

For FCC §15.247(b) the power output was measured on the EUT using a 50 ohm SMA cable connected to Spectrum Analyzer. Peak output power was read directly from Spectrum Analyzer.

Set :

- (1) $RBW \geq$ DTS bandwidth, $VBW \geq 3 \times RBW$
- (2) $Span \geq 3 \times EBW$
- (3) Detector = peak, trace mode = max hold
- (4) All trace to fully stabilize
- (5) Use peak marker function to determine the peak amplitude

4.4 Test Result

PASS.

The final test data is shown on as following pages.

Remark:

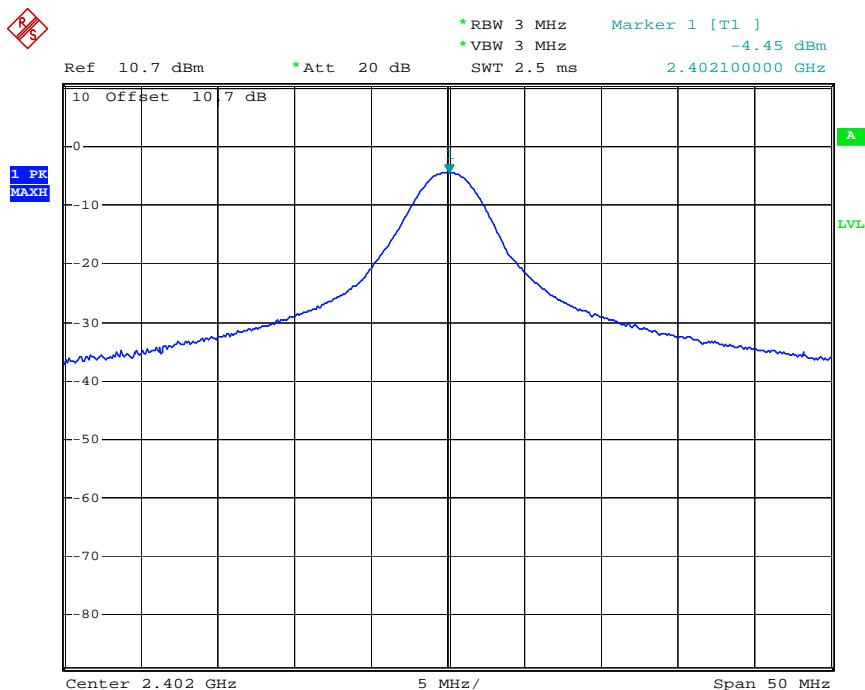
1. Output power = Reading + factor
2. Margin = Output power - Limit

Maximum Output Power

| Freq. (MHz) | Output Power (dBm) | Output Power (mW) | LIMIT (dBm) | Margin (dB) |
|-------------|--------------------|-------------------|-------------|-------------|
| 2402 | -4.45 | 0.36 | 30 | -34.45 |
| 2440 | -3.87 | 0.41 | 30 | -33.87 |
| 2480 | -3.26 | 0.47 | 30 | -33.26 |

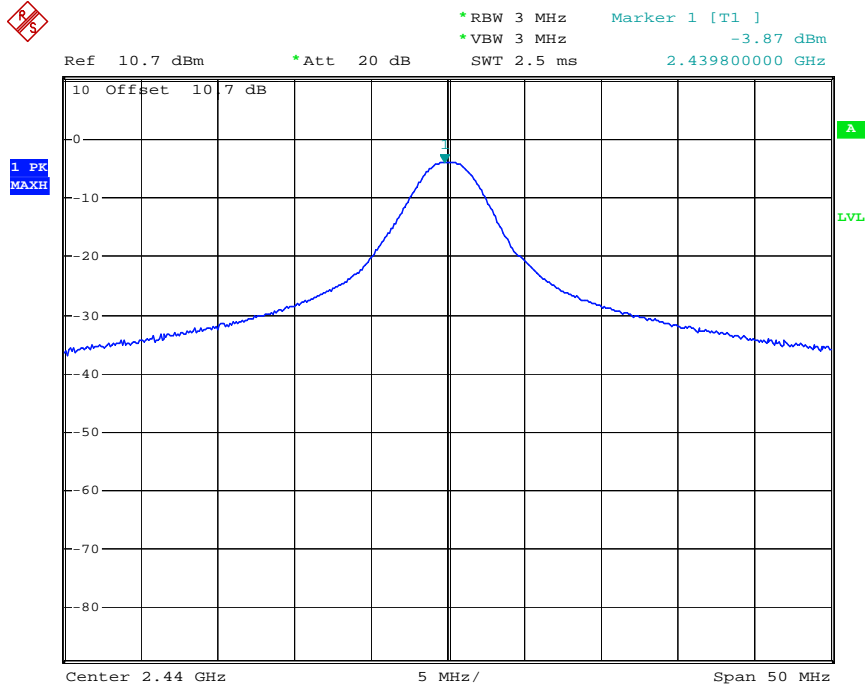
Plot:

Low Channel:



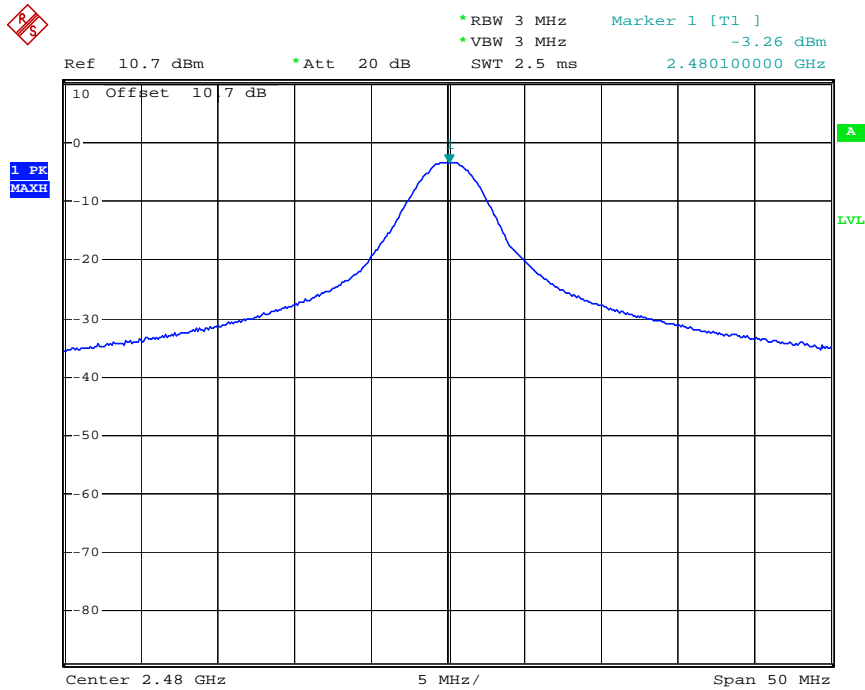
Date: 10.JAN.2022 15:15:33

Mid Channel:



Date: 10.JAN.2022 15:16:39

High Channel:



Date: 10.JAN.2022 15:14:15

Maximum Average Power

Duty cycle factor in dB = $20 \log (\text{duty cycle}) = 20 \log (\text{Ton}/\text{Tp})$

The duration of one cycle = 0.384 ms

The transmission time of one cycle = 0.632 ms

Duty Cycle = $0.384 \text{ ms} / 0.632 \text{ ms} = 0.61$

Therefore, the duty cycle factor is found by $20 \log 0.61 = -2.16 \text{ dB}$

| Freq. (MHz) | Output Power (dBm) | Duty Factor (dB) | Average Power (dBm) | Average Power (mW) | LIMIT (dBm) | Margin (dB) |
|-------------|--------------------|------------------|---------------------|--------------------|-------------|-------------|
| 2402 | -4.45 | -2.16 | -6.61 | 0.22 | 30 | -36.61 |
| 2440 | -3.87 | -2.16 | -6.03 | 0.25 | 30 | -36.03 |
| 2480 | -3.26 | -2.16 | -5.42 | 0.29 | 30 | -35.42 |

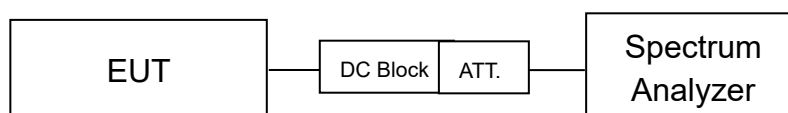
5 6dB Bandwidth

5.1 Limit

According to FCC Part 15.247 (a)(2) requirement :

Systems using digital modulation techniques may operate in the 902–928 MHz, The minimum 6dB bandwidth shall be at least 500 kHz.

5.2 Configuration of Measurement



5.3 Test Procedure

The minimum 6dB bandwidth was measured using a 50 ohm spectrum analyzer.

- (1) RBW = 100 kHz
- (2) VBW \geq 3 x RBW
- (3) Detector = Peak
- (4) Trace mode = Max hold
- (5) Sweep = auto couple
- (6) All trace to fully stabilize
- (7) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission.

5.4 Test Result

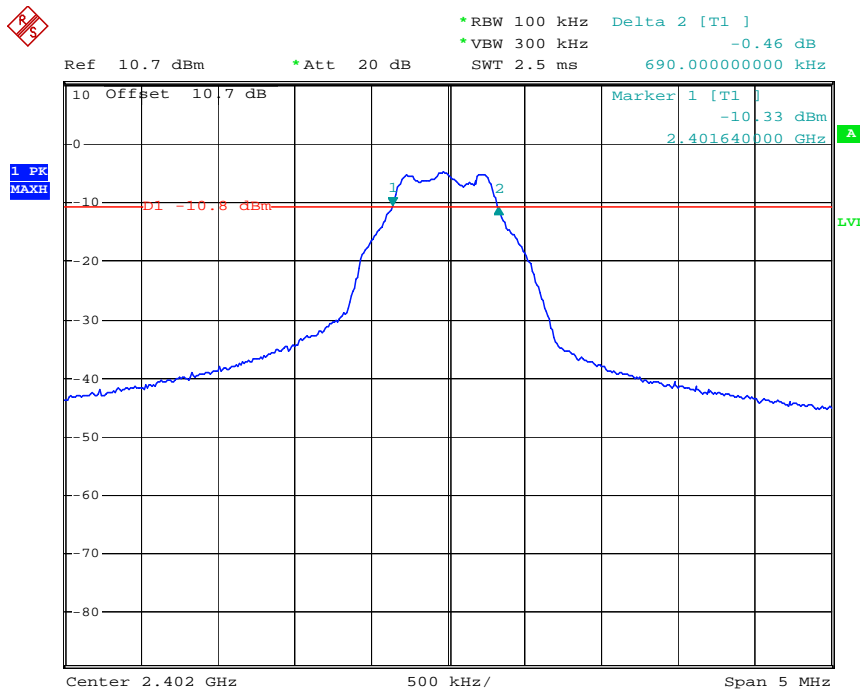
PASS.

The final test data is shown on as following pages.

6dB Bandwidth

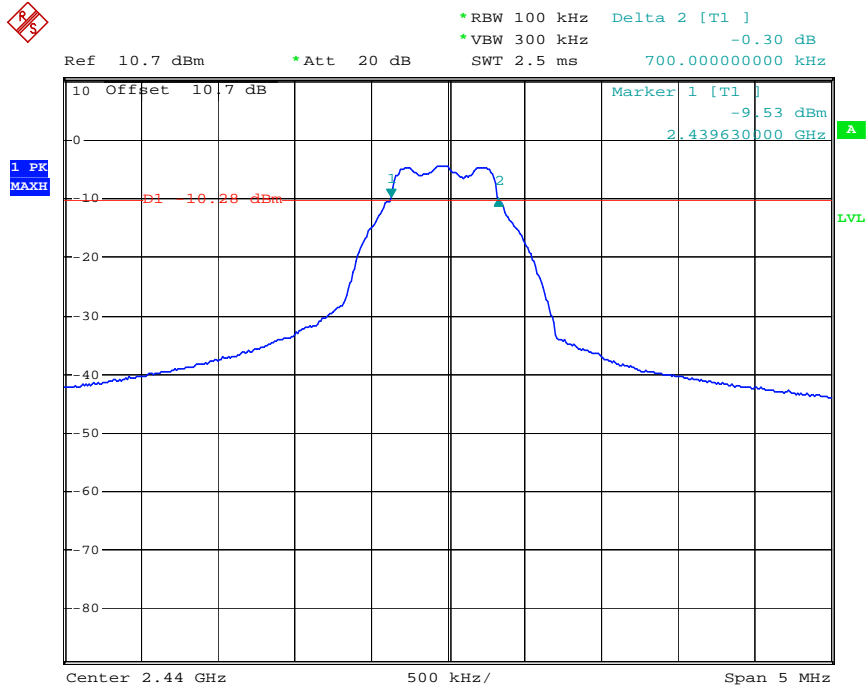
| Freq. (MHz) | 6dB Bandwidth (kHz) | LIMIT (kHz) | Result |
|-------------|---------------------|-------------|--------|
| 2402 | 690.00 | >500 | PASS |
| 2440 | 700.00 | >500 | PASS |
| 2480 | 700.00 | >500 | PASS |

Plot:
 Low Channel:



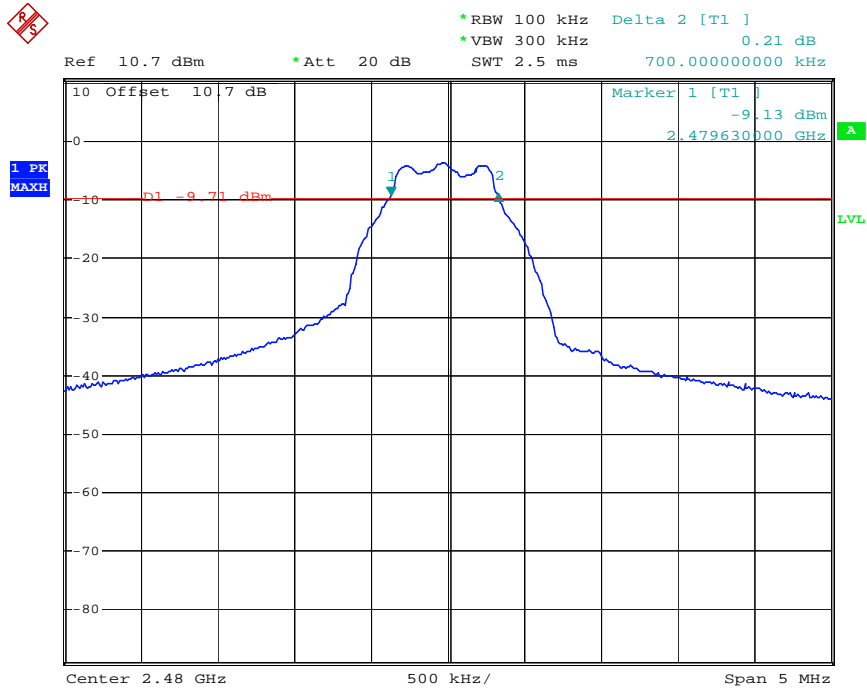
Date: 10.JAN.2022 15:20:35

Mid Channel:



Date: 10.JAN.2022 15:44:32

High Channel:



Date: 10.JAN.2022 15:45:38

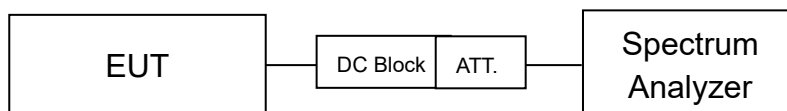
6 Power Spectral Density

6.1 Limit

According to FCC Part 15.247 (e) requirement :

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.

6.2 Configuration of Measurement



6.3 Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to DTS test procedure of August 24, 2018 KDB558074 D01 for compliance to FCC 47CFR 15.247 requirements.

Set:

- (1) Analyzer center frequency to DTS channel center frequency
- (2) The span to 1.5 times the DTS bandwidth
- (3) RBW: $3\text{kHz} \leq \text{RBW} \leq 100\text{kHz}$
- (4) VBW $\geq 3 \times \text{RBW}$
- (5) Detector = Peak
- (6) Trace mode = Max hold
- (7) Sweep = auto couple
- (8) All trace to fully stabilize
- (9) Use the peak marker function to determine the maximum amplitude level within the RBW
- (10) If measured value exceeds limit, reduce RBW (no less than 3kHz) and repeat

6.4 Test Result

PASS.

The final test data is shown on as following pages.

Remark:

1. PSD = Reading + factor
2. Margin = Output power – Limit

Power Spectral Density

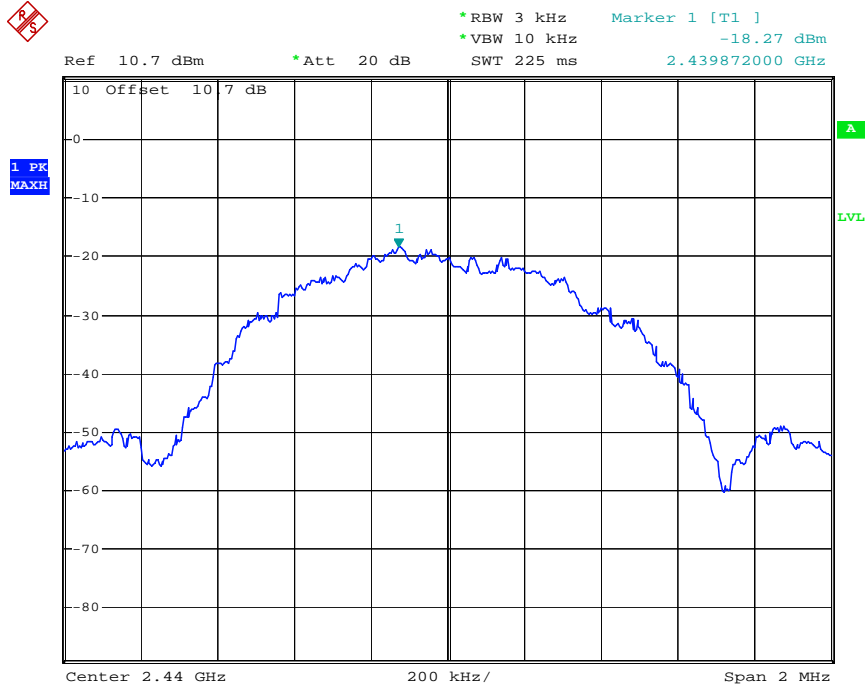
| Freq. (MHz) | PSD (dBm/3kHz) | LIMIT (dBm/3kHz) | Result |
|-------------|----------------|------------------|--------|
| 2402 | -18.58 | 8 | PASS |
| 2440 | -18.27 | 8 | PASS |
| 2480 | -17.62 | 8 | PASS |

Plot:
 Low Channel:



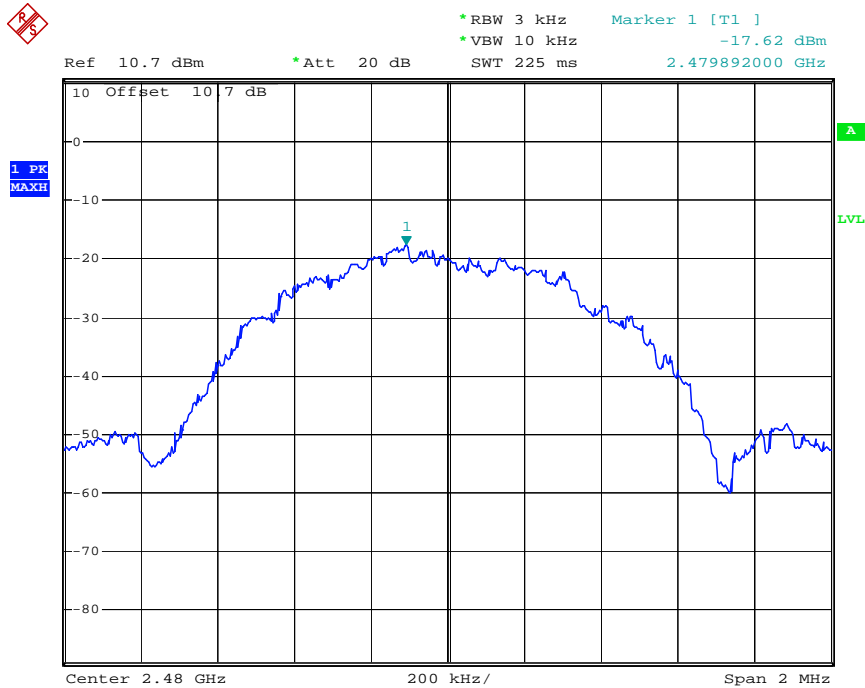
Date: 10.JAN.2022 15:52:28

Mid Channel:



Date: 10.JAN.2022 15:50:16

High Channel:



Date: 10.JAN.2022 15:51:02

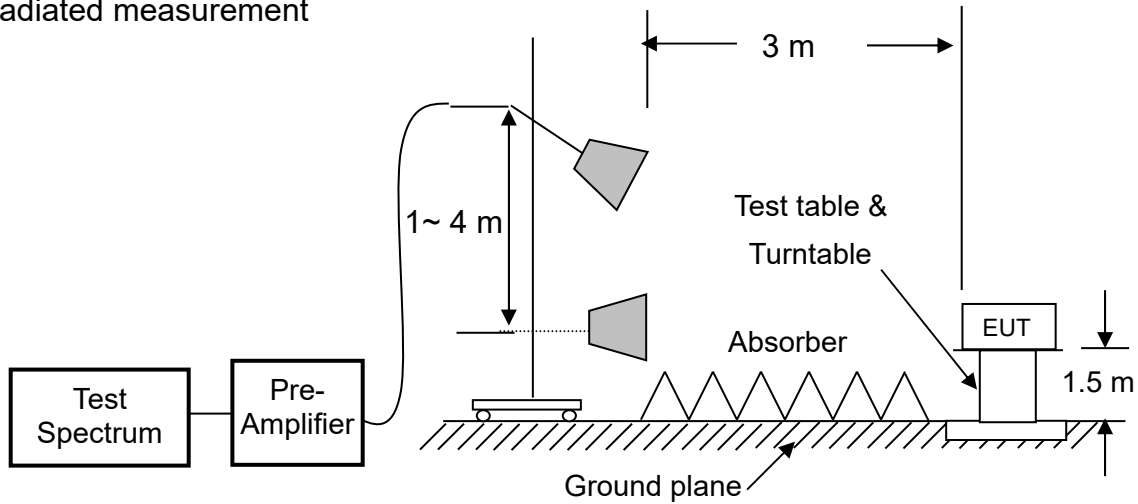
7 Emission on the Band Edge

7.1 Limit

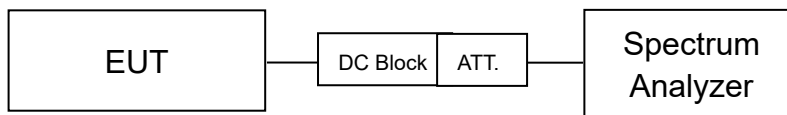
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 KHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

7.2 Configuration of Measurement

Radiated measurement



Conducted measurement



7.3 Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to DTS test procedure of August 24, 2018 KDB558074 D01 for compliance to FCC 47CFR 15.247 requirements.

Set RBW =1MHz, VBW= RBW for peak, and RBW =1MHz, VBW=10Hz for average.

The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meter and down to 1 meter.

7.4 Test Result

PASS.

The final test data is shown on as following pages.

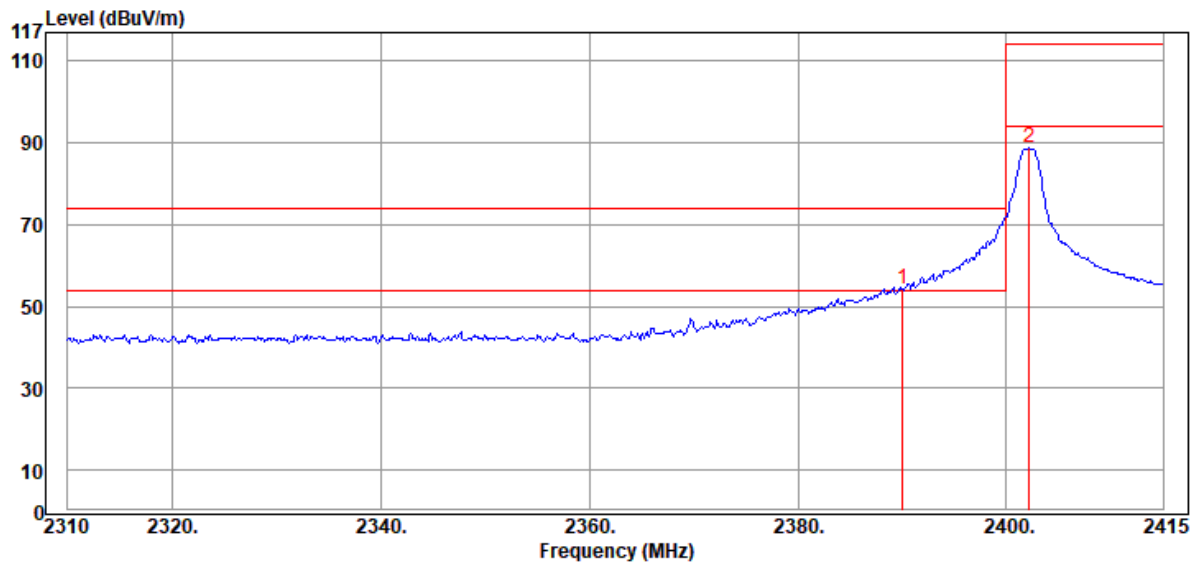
Band Edge Radiated

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: Band Edge-Low

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : HORIZONTAL
 TEMP/HUM : 24.1°C/52%

Data:3

2022-01-10



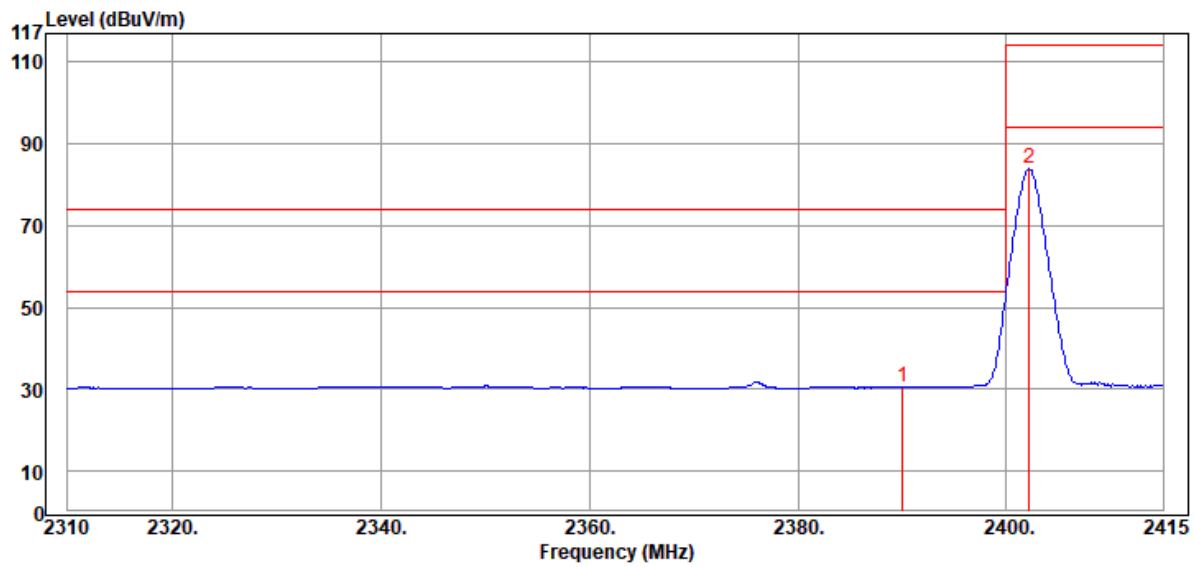
| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|--------|
| 1 | 2390.010 | 69.92 | -15.78 | 54.14 | 74.00 | -19.86 | Peak |
| 2 | 2402.190 | 104.45 | -15.78 | 88.67 | 114.00 | -25.33 | Peak |

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: Band Edge-Low

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : HORIZONTAL
 TEMP/HUM : 24.1°C/52%

Data:4

2022-01-10



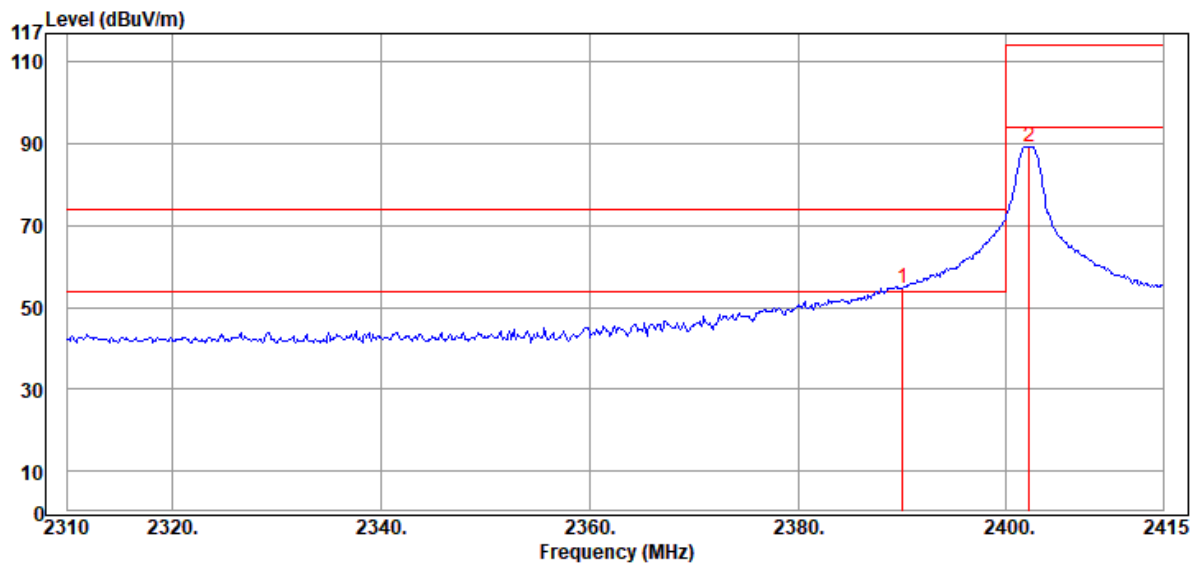
| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|---------|
| 1 | 2390.010 | 46.24 | -15.78 | 30.46 | 54.00 | -23.54 | Average |
| 2 | 2402.190 | 99.80 | -15.78 | 84.02 | 94.00 | -9.98 | Average |

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: Band Edge-Low

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : VERTICAL
 TEMP/HUM : 24.1°C/52%

Data:5

2022-01-10



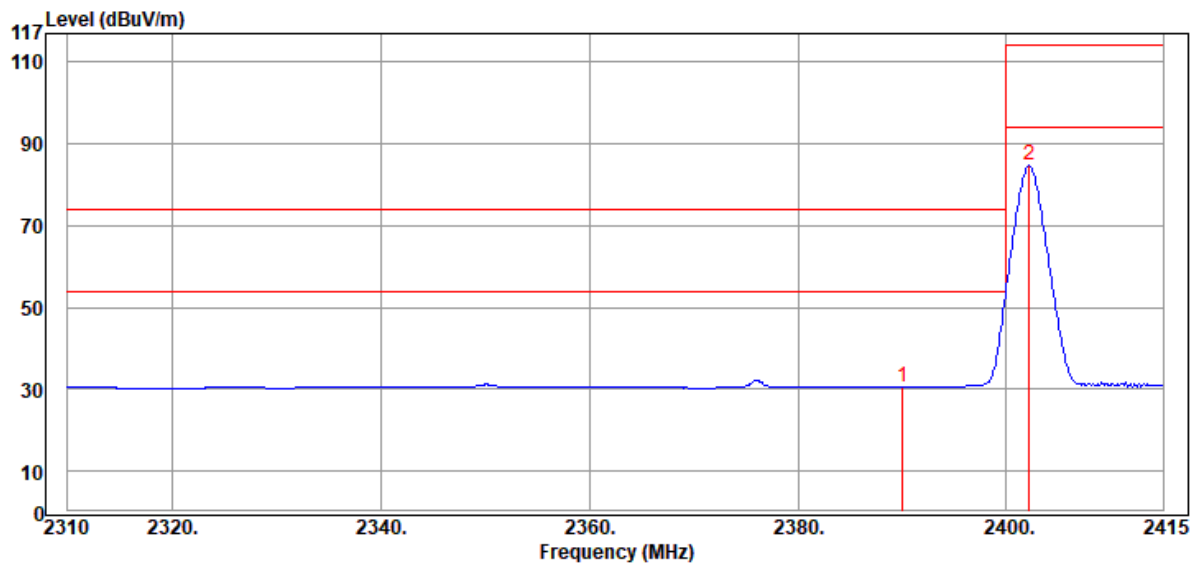
| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|--------|
| 1 | 2390.010 | 70.29 | -15.78 | 54.51 | 74.00 | -19.49 | Peak |
| 2 | 2402.190 | 105.19 | -15.78 | 89.41 | 114.00 | -24.59 | Peak |

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: Band Edge-Low

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : VERTICAL
 TEMP/HUM : 24.1°C/52%

Data:6

2022-01-10



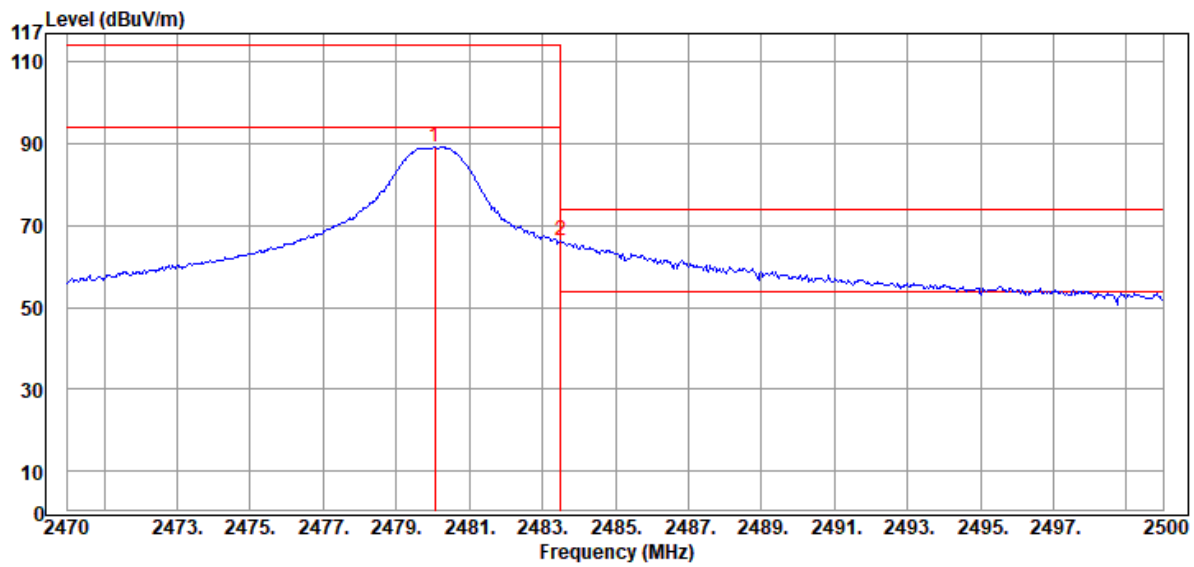
| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|---------|
| 1 | 2390.010 | 46.40 | -15.78 | 30.62 | 54.00 | -23.38 | Average |
| 2 | 2402.190 | 100.54 | -15.78 | 84.76 | 94.00 | -9.24 | Average |

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: Band Edge-High

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : HORIZONTAL
 TEMP/HUM : 24.1°C/52%

Data:15

2022-01-10



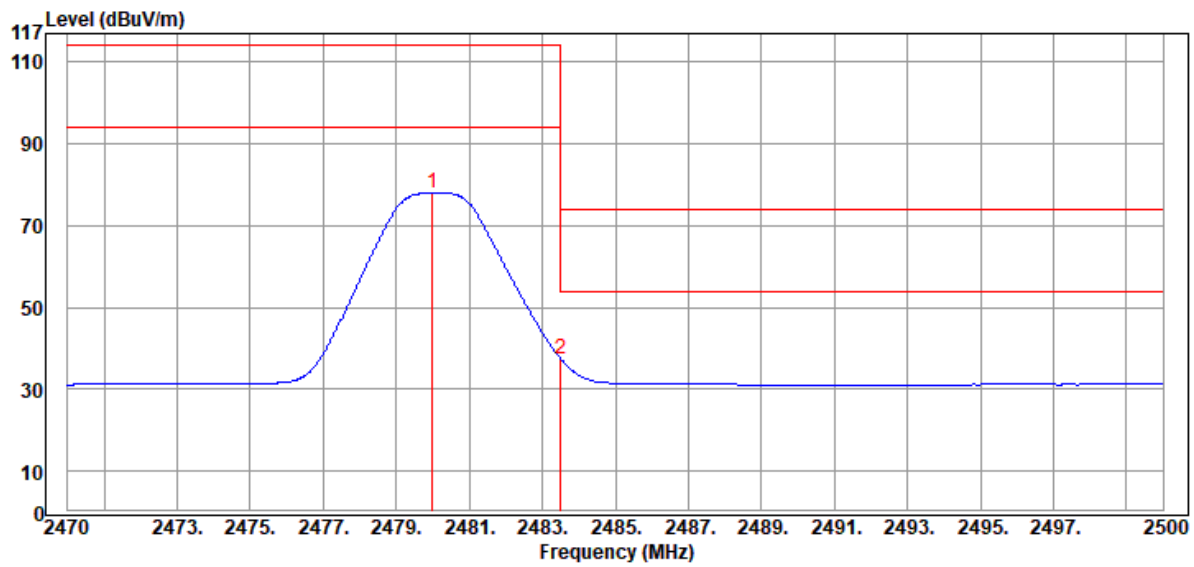
| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|--------|
| 1 | 2480.050 | 104.91 | -15.79 | 89.12 | 114.00 | -24.88 | Peak |
| 2 | 2483.500 | 82.05 | -15.80 | 66.25 | 74.00 | -7.75 | Peak |

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: Band Edge-High

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : HORIZONTAL
 TEMP/HUM : 24.1°C/52%

Data:16

2022-01-10



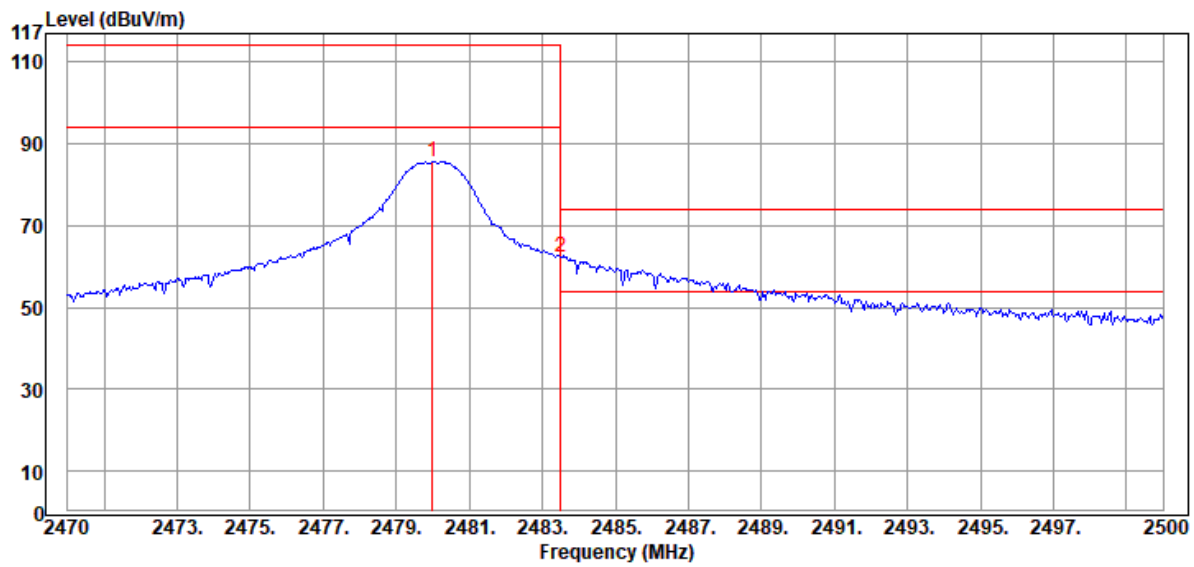
| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|---------|
| 1 | 2479.990 | 93.61 | -15.79 | 77.82 | 94.00 | -16.18 | Average |
| 2 | 2483.500 | 53.25 | -15.80 | 37.45 | 54.00 | -16.55 | Average |

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: Band Edge-High

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : VERTICAL
 TEMP/HUM : 24.1°C/52%

Data:17

2022-01-10



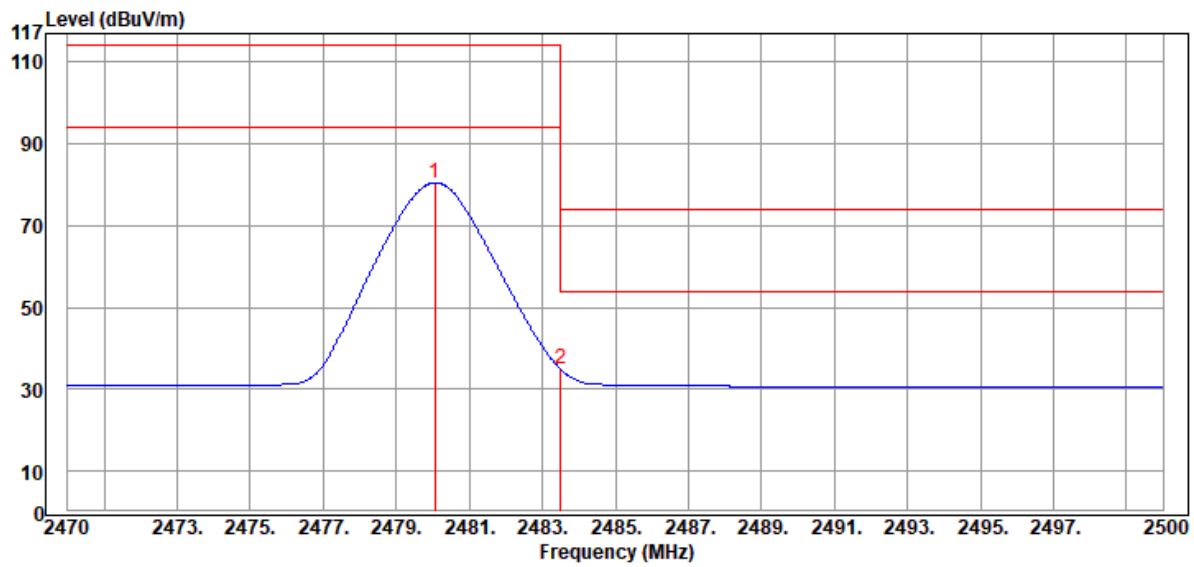
| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|--------|
| 1 | 2479.990 | 101.26 | -15.79 | 85.47 | 114.00 | -28.53 | Peak |
| 2 | 2483.500 | 78.14 | -15.80 | 62.34 | 74.00 | -11.66 | Peak |

CLIENT: AViTA Corporation
 EUT: Wrist Type Blood Pressure Monitor
 MODEL: BPM13B
 RATING: DC 3V
 COMMENT: Band Edge-High

OPERATOR : Scott
 TEST SITE : Chamber 3
 TEST DISTANCE : 3 m
 POLARIZATION : VERTICAL
 TEMP/HUM : 24.1°C/52%

Data:18

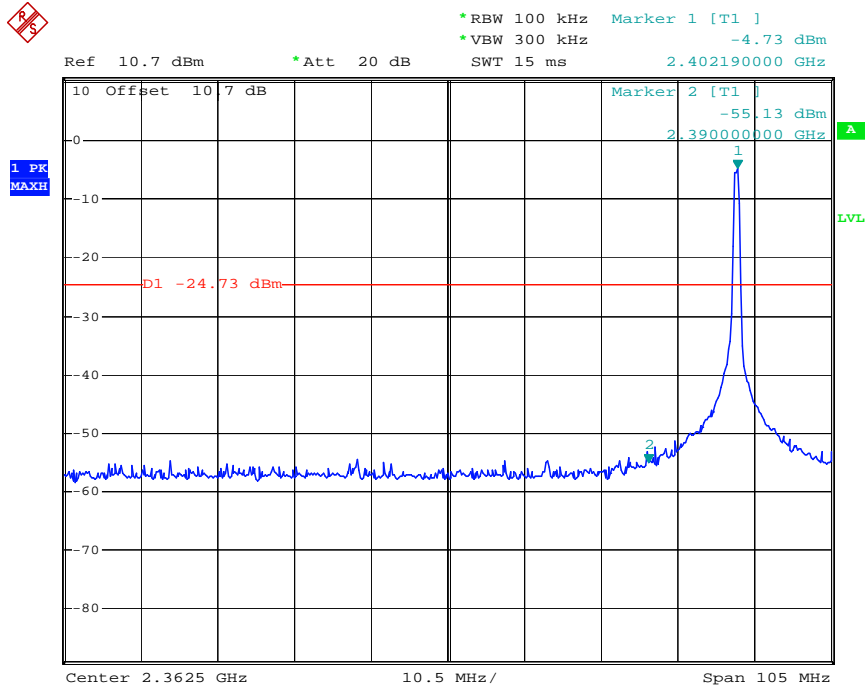
2022-01-10



| Item Mark | Freq. MHz | Reading dBuV | Factor dB/m | Level dBuV/m | Limit dBuV/m | Margin dB | Remark |
|-----------|-----------|--------------|-------------|--------------|--------------|-----------|---------|
| 1 | 2480.050 | 96.40 | -15.79 | 80.61 | 94.00 | -13.39 | Average |
| 2 | 2483.500 | 50.66 | -15.80 | 34.86 | 54.00 | -19.14 | Average |

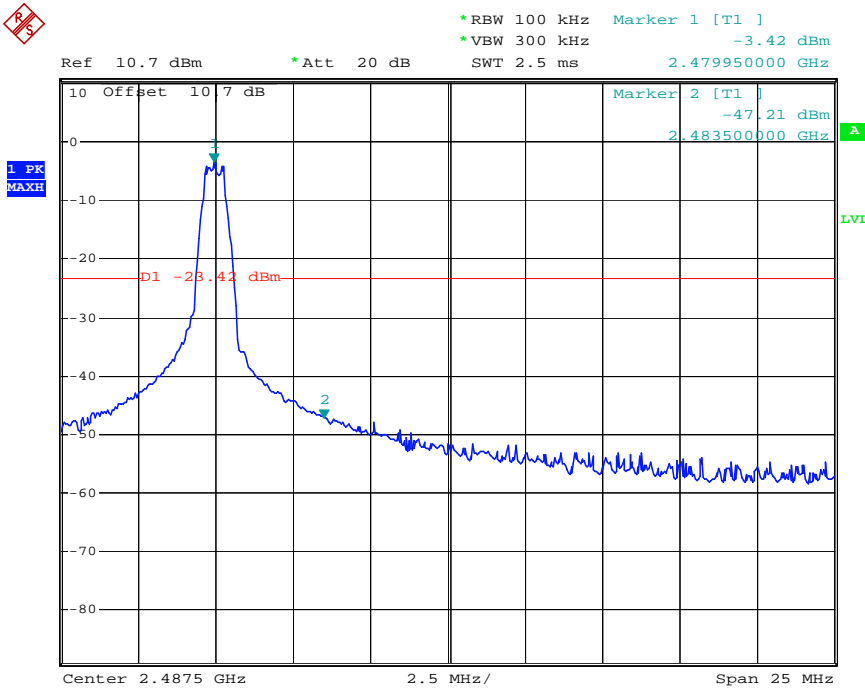
Band Edge Conducted

Low Channel:



Date: 10.JAN.2022 15:58:55

High Channel:



Date: 10.JAN.2022 16:00:01