

| Product Name | PX3 RX |
|--------------|---------------|
| Model No | TB300-2240-01 |
| FCC ID. | XGB-TB2240 |

| Applicant | Voyetra Turtle Beach, Inc. |
|-----------|---|
| Address | 150 Clearbrook Rd Suite 162 Elmsford, NY 10523 U.S.A. |

| Date of Receipt | Mar. 24, 2011 |
|-----------------|--------------------|
| Issue Date | Apr. 27, 2011 |
| Report No. | 113381R-RFUSP28V01 |
| Report Version | V1.0 |

The test results relate only to the samples tested.

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Test Report Certification

Issue Date: Apr. 27, 2011 Report No.: 113381R-RFUSP28V01



Accredited by NIST (NVLAP) NVLAP Lab Code: 200533-0

| Product Name | PX3 RX | |
|---------------------|---|--|
| Applicant | Voyetra Turtle Beach, Inc. | |
| Address | 150 Clearbrook Rd Suite 162 Elmsford, NY 10523 U.S.A. | |
| Manufacturer | Voyetra Turtle Beach, Inc. | |
| Model No. | TB300-2240-01 | |
| EUT Rated Voltage | By PC(USB port DC 5V) | |
| EUT Test Voltage | AC 120V/60Hz | |
| Trade Name | TURTLE BEACH | |
| Applicable Standard | FCC CFR Title 47 Part 15 Subpart C: 2010 | |
| | ANSI C63.4: 2009 | |
| Test Result | Complied UV CLAP Lab Code: 200533-0 | |

The test results relate only to the samples tested.

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Documented By : sanne lin (Adm. Specialist / Joanne Lin) Tested By Igai brina (Assistant Engineer / Sabrina Tsai) **Testing Laboratory** Approved By 0914 (Manager / Vincent Lin)

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- Attachment 1: EUT Test Photographs
- Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

| Product Name | PX3 RX |
|----------------------|--|
| Trade Name | TURTLE BEACH |
| Model No. | TB300-2240-01 |
| FCC ID. | XGB-TB2240 |
| Frequency Range | 2405-2477MHz |
| Number of Channels | 37CH |
| Channel Separation | 2MHz |
| Type of Modulation | $\pi/4$ DQPSK (Differential Quadrature Phase Shift Keying) |
| Antenna Type | Printed on PCB |
| Antenna Gain | Refer to the table "Antenna List" |
| Channel Control | Auto |
| 2.5 mini Audio Cable | Non-shielded, 0.85m |

Antenna List

| No. | Manufacturer | Part No. | Peak Gain |
|-----|----------------------------|----------|------------------|
| 1 | Voyetra Turtle Beach, Inc. | N/A | 3dBi for 2.4 GHz |

Note: The antenna of EUT is conform to FCC 15.203

Center Frequency of Each Channel:

| Channel | Frequency | Channel | Frequency | Channel | Frequency |
|-------------|-----------|-------------|-----------|-------------|-----------|
| Channel 2: | 2405 MHz | Channel 3: | 2407 MHz | Channel 4: | 2409 MHz |
| Channel 5: | 2411 MHz | Channel 6: | 2413 MHz | Channel 7: | 2415 MHz |
| Channel 8: | 2417 MHz | Channel 9: | 2419 MHz | Channel 10: | 2421 MHz |
| Channel 11: | 2423 MHz | Channel 12: | 2425 MHz | Channel 13: | 2427 MHz |
| Channel 14: | 2429 MHz | Channel 15: | 2431 MHz | Channel 16: | 2433 MHz |
| Channel 17: | 2435 MHz | Channel 18: | 2437 MHz | Channel 19: | 2439 MHz |
| Channel 20: | 2441 MHz | Channel 21: | 2443 MHz | Channel 22: | 2445 MHz |
| Channel 23: | 2447 MHz | Channel 24: | 2449 MHz | Channel 25: | 2451 MHz |
| Channel 26: | 2453 MHz | Channel 27: | 2455 MHz | Channel 28: | 2457 MHz |
| Channel 29: | 2459 MHz | Channel 30: | 2461 MHz | Channel 31: | 2463 MHz |
| Channel 32: | 2465 MHz | Channel 33: | 2467 MHz | Channel 34: | 2469 MHz |
| Channel 35: | 2471 MHz | Channel 36: | 2473 MHz | Channel 37: | 2475 MHz |
| Channel 38: | 2477 MHz | | | | |

- 1. The EUT is a PX3 RX with a built-in 2.4GHz transceiver.
- 2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
- 3. These tests are conducted on a sample for the purpose of demonstrating compliance of 2.4GHz transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices
- 4. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

1.2. Operational Description

The EUT is a wireless headset with a built-in 2.4GHz transceiver, It uses the latest 2.4GHz wireless audio solution which can provide high quality wide-band audio and robust wireless audio transmission. Total numbers of channels supported by this device are 37 channels operating from 2405 to 2477MHz with 2MHz channel spacing. The antenna type is Printed antenna and the modulation type is $\pi/4$ DQPSK (Differential Quadrature Phase Shift Keying). The device can receive wireless signal and transmit signal for associate device.

| Test Mode: | Mode 1: Transmit |
|------------|------------------|
|------------|------------------|

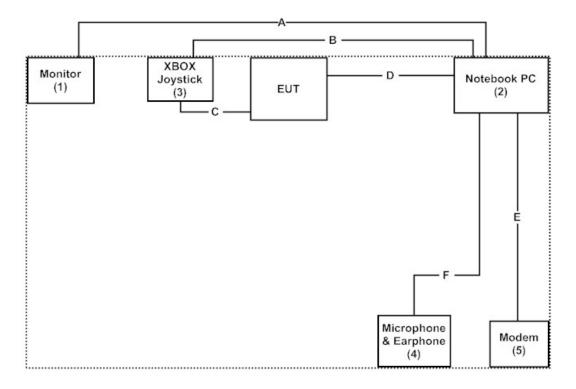
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

| Pro | duct | Manufacturer | Model No. | Serial No. | Power Cord |
|-----|--------------|--------------|-----------|--------------------------|--------------------|
| 1 | Monitor | Dell | 2407WFPb | CN-0FC255-46633-67T-04AS | Non-Shielded, 1.8m |
| 2 | Notebook PC | DELL | PPT | N/A | Non-Shielded, 0.8m |
| 3 | Joystick | Mcrosoft | XBOX360 | N/A | N/A |
| 4 | Microphone & | Ergotech | ET-E201 | N/A | N/A |
| | Earphone | | | | |
| 5 | Modem | ACEEX | DM-1414 | 0102027532 | N/A |

| Sign | al Cable Type | Signal cable Description |
|------|-----------------------------|--|
| А | VGA Cable | Shielded, 1.8m, with two ferrite cores bonded. |
| В | Joystick Cable | Shielded, 2.8m, with two ferrite cores bonded. |
| С | 2.5 mini Audio Cable | Non-Shielded, 0.85m |
| D | USB Cable | Shielded, 1m |
| E | Modem Cable | Shielded, 1.5m |
| F | Microphone & Earphone Cable | Non-Shielded, 1m |

1.4. Configuration of Tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in section 1.4.
- (2) Connect the EUT to a notebook via a USB cable.
- (3) Execute AWAflash.exe on the notebook.
- (4) Double-click "AV7211" and select USB as a primary connection interface.
- (5) Setup the test channel.
- (6) Press "Apply" to start the continuous transmission.
- (7) Verify that the EUT works correctly.

1.6. Test Facility

Ambient conditions in the laboratory:

| Items | Required (IEC 68-1) | Actual |
|----------------------------|---------------------|----------|
| Temperature (°C) | 15-35 | 20-35 |
| Humidity (%RH) | 25-75 | 50-65 |
| Barometric pressure (mbar) | 860-1060 | 950-1000 |

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site :

http://www.quietek.com/tw/ctg/cts/accreditations.htm

The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.guietek.com/

Site Description: File on

Federal Communications Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046 Registration Number: 92195

Accreditation on NVLAP NVLAP Lab Code: 200533-0





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FCC Accreditation Number: TW1014



2. Conducted Emission

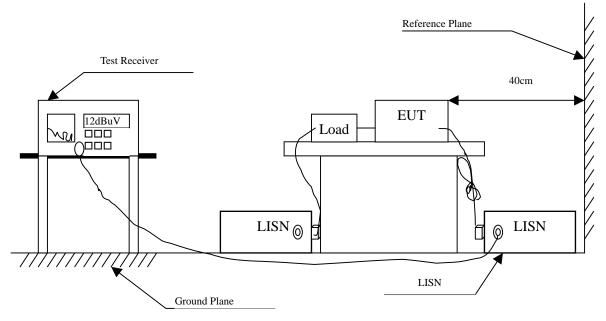
2.1. Test Equipment

The following test equipment are used during the conducted emission test:

| Item | Instrument | Manufacturer | Type No./Serial No | Last Cal. | Remark |
|------|------------------|--------------|--------------------|-----------|-------------|
| 1 | Test Receiver | R & S | ESCS 30/825442/17 | May, 2010 | |
| 2 | L.I.S.N. | R & S | ESH3-Z5/825016/6 | May, 2010 | EUT |
| 3 | L.I.S.N. | Kyoritsu | KNW-407/8-1420-3 | May, 2010 | Peripherals |
| 4 | Pulse Limiter | R & S | ESH3-Z2 | May, 2010 | |
| 5 | No.1 Shielded Ro | om | | N/A | |

Note: All instruments are calibrated every one year.

2.2. Test Setup



2.3. Limits

| FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit | | | |
|---|-------|-------|--|
| Frequency | L | imits | |
| MHz | QP | AVG | |
| 0.15 - 0.50 | 66-56 | 56-46 | |
| 0.50-5.0 | 56 | 46 | |
| 5.0 - 30 | 60 | 50 | |

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.) Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2009 on conducted measurement. Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

| Product | : | PX3 RX |
|------------|---|----------------------------|
| Test Item | : | Conducted Emission Test |
| Power Line | : | Line 1 |
| Test Mode | : | Mode 1: Transmit (2441MHz) |

| Frequency | Correct | Reading | Measurement | Margin | Limit |
|------------|---------|---------|-------------|---------|--------|
| | Factor | Level | Level | | |
| MHz | dB | dBuV | dBuV | dB | dBuV |
| LINE 1 | | | | | |
| Quasi-Peak | | | | | |
| 0.181 | 9.724 | 42.370 | 52.094 | -13.020 | 65.114 |
| 0.240 | 9.680 | 34.080 | 43.760 | -19.669 | 63.429 |
| 0.306 | 9.650 | 30.230 | 39.880 | -21.663 | 61.543 |
| 0.361 | 9.650 | 24.200 | 33.850 | -26.121 | 59.971 |
| 3.763 | 9.700 | 26.160 | 35.860 | -20.140 | 56.000 |
| 14.451 | 9.960 | 23.200 | 33.160 | -26.840 | 60.000 |
| Average | | | | | |
| 0.181 | 9.724 | 34.080 | 43.804 | -11.310 | 55.114 |
| 0.240 | 9.680 | 28.110 | 37.790 | -15.639 | 53.429 |
| 0.306 | 9.650 | 22.570 | 32.220 | -19.323 | 51.543 |
| 0.361 | 9.650 | 18.380 | 28.030 | -21.941 | 49.971 |
| 3.763 | 9.700 | 16.630 | 26.330 | -19.670 | 46.000 |
| 14.451 | 9.960 | 14.940 | 24.900 | -25.100 | 50.000 |

- 1. All Reading Levels are Quasi-Peak and average value.
- 2. "means the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor

| Product Test Iten Power L Test Moo | ine : Line 2 | X cted Emission Te I: Transmit (2441 | | | |
|---|--------------|--|-------------|---------|--------|
| Frequency | Correct | Reading | Measurement | Margin | Limit |
| | Factor | Level | Level | - | |
| MHz | dB | dBuV | dBuV | dB | dBuV |
| LINE 2 | | | | | |
| Quasi-Peak | | | | | |
| 0.185 | 9.727 | 38.680 | 48.408 | -16.592 | 65.000 |
| 0.244 | 9.689 | 35.060 | 44.749 | -18.565 | 63.314 |
| 0.295 | 9.662 | 24.480 | 34.142 | -27.715 | 61.857 |
| 2.064 | 9.680 | 20.300 | 29.980 | -26.020 | 56.000 |
| 3.943 | 9.700 | 25.270 | 34.970 | -21.030 | 56.000 |
| 14.443 | 9.970 | 24.090 | 34.060 | -25.940 | 60.000 |
| Average | | | | | |
| 0.185 | 9.727 | 30.530 | 40.258 | -14.742 | 55.000 |
| 0.244 | 9.689 | 29.040 | 38.729 | -14.585 | 53.314 |
| 0.295 | 9.662 | 6.020 | 15.682 | -36.175 | 51.857 |
| 2.064 | 9.680 | 16.640 | 26.320 | -19.680 | 46.000 |
| 3.943 | 9.700 | 14.440 | 24.140 | -21.860 | 46.000 |
| 14.443 | 9.970 | 17.180 | 27.150 | -22.850 | 50.000 |

- 1. All Reading Levels are Quasi-Peak and average value.
- 2. "means the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor

3. Peak Power Output

3.1. Test Equipment

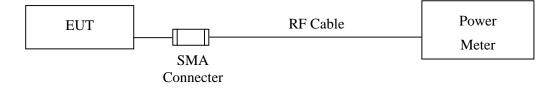
| _ | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|--------------|--------------|--------------|----------------------|-----------|
| Х | Power Meter | Anritsu | ML2495A/6K00003357 | May, 2010 |
| Х | Power Sensor | Anritsu | MA2411B/0738448 | Jun, 2010 |
| N 1 (| 4 411 1 1 | PH 6 1 | | |

Note: 1. All instruments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

3.2. Test Setup

Conducted Measurement



3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Test Procedure

The EUT was tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

3.5. Uncertainty

 \pm 1.27 dB

3.6. Test Result of Peak Power Output

| Product | : | PX3 RX |
|-----------|---|------------------------|
| Test Item | : | Peak Power Output Data |
| Test Site | : | No.3 OATS |
| Test Mode | : | Mode 1: Transmit |

| Channel No. | Frequency | Measurement Level | Required Limit | Result |
|-------------|-----------|-------------------|----------------|--------|
| | (MHz) | (dBm) | (dBm) | |
| 02 | 2405 | 2.22 | <30dBm | Pass |
| 20 | 2441 | 1.6 | <30dBm | Pass |
| 38 | 2477 | 0.84 | <30dBm | Pass |

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

4. Radiated Emission

4.1. Test Equipment

The following test equipment are used during the radiated emission test:

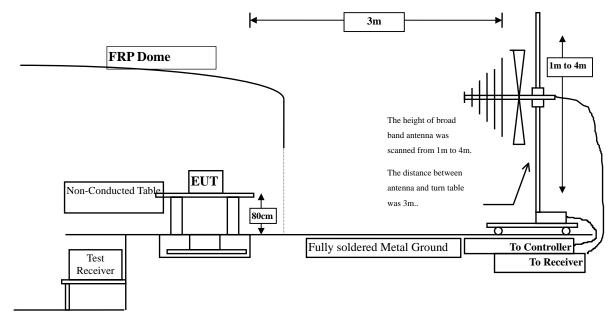
| Test Site | | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|-----------|---|-------------------|-----------------|-----------------------|------------|
| Site # 3 | Х | Bilog Antenna | Schaffner Chase | CBL6112B/2673 | Sep., 2010 |
| | Х | Horn Antenna | Schwarzbeck | BBHA9120D/D305 | Sep., 2010 |
| | Х | Horn Antenna | Schwarzbeck | BBHA9170/208 | Jul., 2010 |
| | Х | Pre-Amplifier | Agilent | 8447D/2944A09549 | Sep., 2010 |
| | Х | Spectrum Analyzer | Agilent | E4407B / US39440758 | May, 2010 |
| | Х | Test Receiver | R & S | ESCS 30/ 825442/018 | Sep., 2010 |
| | Х | Coaxial Cable | QuieTek | QTK-CABLE/ CAB5 | Feb., 2011 |
| | Х | Controller | QuieTek | QTK-CONTROLLER/ CTRL3 | N/A |
| | Х | Coaxial Switch | Anritsu | MP59B/6200265729 | N/A |

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

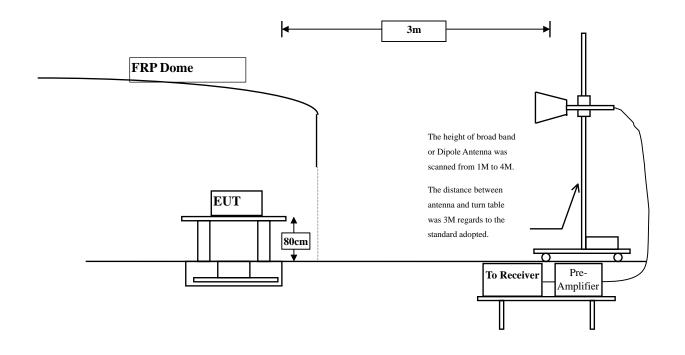
2. The test instruments marked with "X" are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz





4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

| FCC Part 15 Subpart C Paragraph 15.209(a) Limits | | | | |
|--|----------|-----------|--|--|
| Frequency MHz | uV/m @3m | dBuV/m@3m | | |
| 30-88 | 100 | 40 | | |
| 88-216 | 150 | 43.5 | | |
| 216-960 | 200 | 46 | | |
| Above 960 | 500 | 54 | | |

Remarks: E field strength (dBuV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009 and tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements. The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2009 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range form 30MHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

- ± 3.9 dB above 1GHz
- ± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

| Product | : | PX3 RX |
|-----------|---|---------------------------------|
| Test Item | : | Harmonic Radiated Emission Data |
| Test Site | : | No.3 OATS |
| Test Mode | : | Mode 1: Transmit (2405MHz) |

| Frequency | Correct | Reading | Measurement | Margin | Limit |
|-------------------|---------|---------|-------------|---------|--------|
| | Factor | Level | Level | | |
| MHz | dB | dBuV | dBuV/m | dB | dBuV/m |
| Horizontal | | | | | |
| Peak Detector: | | | | | |
| 1802.000 | -1.432 | 53.880 | 52.447 | -21.553 | 74.000 |
| 4810.000 | 0.532 | 50.150 | 50.682 | -23.318 | 74.000 |
| 7215.000 | 7.411 | 39.490 | 46.901 | -27.099 | 74.000 |
| 9620.000 | 8.282 | 40.480 | 48.762 | -25.238 | 74.000 |
| Average Detector: | | | | | |
| | | | | | |
| Vertical | | | | | |
| Peak Detector: | | | | | |
| 1802.000 | -0.472 | 55.660 | 55.188 | -18.812 | 74.000 |
| 4810.000 | 0.927 | 47.400 | 48.327 | -25.673 | 74.000 |
| 7215.000 | 7.895 | 39.400 | 47.295 | -26.705 | 74.000 |
| 9620.000 | 8.760 | 39.680 | 48.440 | -25.560 | 74.000 |
| Average Detector: | | | | | |
| 1802.000 | -0.472 | 50.730 | 50.258 | -3.742 | 54.000 |

Note:

1. Correct factor = Antenna Factor + Cable Loss – Pre-amplifier Gain

The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

| Product Test Item Test Site Test Mode | PX3 RX Harmonic Radiated Emission Data No.3 OATS Mode 1: Transmit (2441MHz) | | | | | | |
|--|--|---------|-------------|---------|--------|--|--|
| Frequency | Correct | Reading | Measurement | Margin | Limit | | |
| | Factor | Level | Level | - | | | |
| MHz | dB | dBuV | dBuV/m | dB | dBuV/m | | |
| Horizontal | | | | | | | |
| Peak Detector: | | | | | | | |
| 1811.000 | -1.801 | 54.790 | 52.990 | -21.010 | 74.000 | | |
| 4882.000 | 0.025 | 51.690 | 51.715 | -22.285 | 74.000 | | |
| 7323.000 | 7.762 | 38.220 | 45.981 | -28.019 | 74.000 | | |
| 9764.000 | 7.682 | 39.320 | 47.001 | -26.999 | 74.000 | | |
| Average Detector: | | | | | | | |
| | | | | | | | |
| Vertical | | | | | | | |
| Peak Detector: | | | | | | | |
| 1811.000 | -0.936 | 57.380 | 56.444 | -17.556 | 74.000 | | |
| 4882.000 | 0.488 | 47.720 | 48.208 | -25.792 | 74.000 | | |
| 7323.000 | 8.375 | 39.500 | 47.874 | -26.126 | 74.000 | | |
| 9764.000 | 8.315 | 39.330 | 47.645 | -26.355 | 74.000 | | |
| Average Detector: | | | | | | | |
| 1811.000 | -0.936 | 52.750 | 51.814 | -2.186 | 54.000 | | |

- 1. Correct factor = Antenna Factor + Cable Loss Pre-amplifier Gain
- 2. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

| Product Test Item Test Site Test Mode | PX3 RX Harmonic Radiated Emission Data No.3 OATS Mode 1: Transmit (2477MHz) | | | | | | |
|--|--|---------|-------------|---------|--------|--|--|
| Frequency | Correct | Reading | Measurement | Margin | Limit | | |
| | Factor | Level | Level | | | | |
| MHz | dB | dBuV | dBuV/m | dB | dBuV/m | | |
| Horizontal | | | | | | | |
| Peak Detector: | | | | | | | |
| 1857.000 | -3.907 | 53.980 | 50.073 | -23.927 | 74.000 | | |
| 4954.000 | 0.522 | 51.640 | 52.163 | -21.837 | 74.000 | | |
| 7431.000 | 8.520 | 39.240 | 47.760 | -26.240 | 74.000 | | |
| 9908.000 | 8.187 | 38.950 | 47.137 | -26.863 | 74.000 | | |
| Average Detector: | | | | | | | |
| | | | | | | | |
| Vertical | | | | | | | |
| Peak Detector: | | | | | | | |
| 1857.000 | -3.571 | 58.640 | 55.069 | -18.931 | 74.000 | | |
| 4954.000 | 1.305 | 47.920 | 49.225 | -24.775 | 74.000 | | |
| 7431.000 | 9.222 | 40.740 | 49.961 | -24.039 | 74.000 | | |
| 9908.000 | 9.240 | 39.180 | 48.420 | -25.580 | 74.000 | | |
| Average Detector: | | | | | | | |
| 1857.000 | -3.571 | 53.710 | 50.139 | -3.861 | 54.000 | | |

- 1. Correct factor = Antenna Factor + Cable Loss Pre-amplifier Gain
- 2. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

| | Product | : PX3 RX | | | | | |
|---|------------|----------------------------------|------------------|-------------|---------|--------|--|
| | Test Item | : General Radiated Emission Data | | | | | |
| | Test Site | : No.3 O/ | | | | | |
| | Test Mode | : Mode 1 | : Transmit (2441 | MHz) | | | |
| | | | | | | | |
| | Frequency | Correct | Reading | Measurement | Margin | Limit | |
| | | Factor | Level | Level | | | |
| _ | MHz | dB | dBuV | dBuV/m | dB | dBuV/m | |
| - | Horizontal | | | | | | |
| | 30.000 | -0.150 | 35.800 | 35.650 | -4.350 | 40.000 | |
| | 57.160 | -11.836 | 41.719 | 29.883 | -10.117 | 40.000 | |
| | 115.360 | -7.390 | 37.363 | 29.974 | -13.526 | 43.500 | |
| | 398.600 | 0.879 | 34.392 | 35.271 | -10.729 | 46.000 | |
| | 854.500 | 7.380 | 29.951 | 37.331 | -8.669 | 46.000 | |
| | 1000.000 | 9.564 | 30.452 | 40.016 | -13.984 | 54.000 | |
| | | | | | | | |
| | Vertical | | | | | | |
| | 64.920 | -12.387 | 49.396 | 37.009 | -2.991 | 40.000 | |
| | 97.900 | -6.437 | 44.760 | 38.323 | -5.177 | 43.500 | |
| | 177.440 | -1.248 | 40.819 | 39.571 | -3.929 | 43.500 | |
| | 398.600 | -2.371 | 35.280 | 32.909 | -13.091 | 46.000 | |
| | 499.480 | -0.199 | 34.535 | 34.335 | -11.665 | 46.000 | |
| | 598.420 | 1.114 | 34.151 | 35.265 | -10.735 | 46.000 | |
| | | | | | | | |

- 1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
- 2. "" means the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor

5. RF antenna conducted test

5.1. Test Equipment

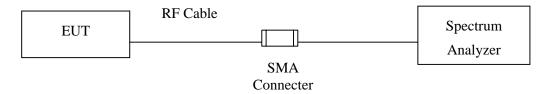
| | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|---|-------------------|--------------|----------------------|------------|
| | Spectrum Analyzer | R&S | FSP40 / 100170 | Jun, 2010 |
| | Spectrum Analyzer | Agilent | E4407B / US39440758 | Jun, 2010 |
| Х | Spectrum Analyzer | Agilent | N9010A / MY48030495 | Apr., 2011 |

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT was tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

5.5. Uncertainty

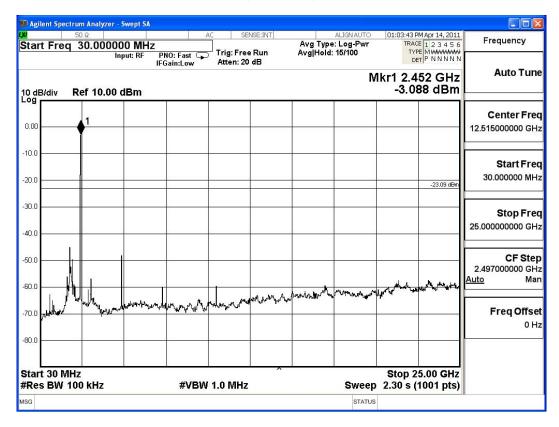
The measurement uncertainty Conducted is defined as \pm 1.27dB

5.6. Test Result of RF antenna conducted test

| Product | : | PX3 RX |
|-----------|---|---------------------------|
| Test Item | : | RF antenna conducted test |
| Test Site | : | No.3 OATS |
| Test Mode | : | Mode 1: Transmit |

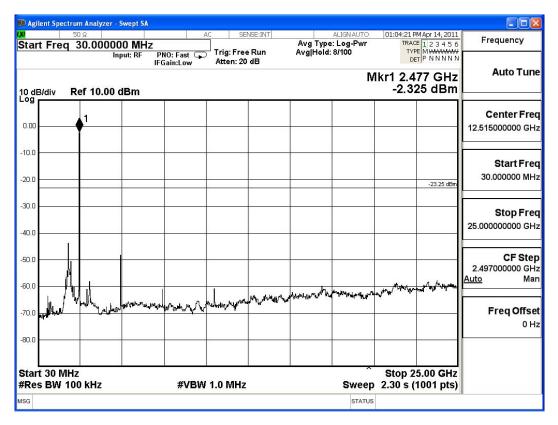
Channel 02 (2405MHz) 30M-25GHz

| 💭 Agilent Spectrum Analyzer - Sw | | | | | |
|---|--|---|---------------------------|---|---|
| Σtart Freg 30.000000 | | SENSE:INT Ava T | ALIGNAUTO vpe: Log-Pwr | 01:02:38 PM Apr 14, 2011 TRACE 1 2 3 4 5 6 | Frequency |
| | nt: RF PNO: Fast 🖵 ' Trig: Fr IFGain:Low Atten: 2 | ee Run Avg H | old: 12/100 | kr1 2.402 GHz -1.091 dBm | Auto Tune |
| | | | | | Center Fred 12.515000000 GH: |
| -10.0 | | | | -21.09 dBm | Start Free 30.000000 MH |
| -30.0 | | | | | Stop Free 25.000000000 GH |
| -60.0 | | 1 <u>4.</u> u.Jossa (u.J | ply property with | wat Alada a a a a a a a a a a a a a a a a a a | CF Stej 2.497000000 GH <u>Auto</u> Ma |
| -70.0 +++++++++++++++++++++++++++++++++++ | motor her have a | AND CALCER | | - | Freq Offse 0 H |
| Start 30 MHz #Res BW 100 kHz | #VBW 1.0 MH | z | Sweep | Stop 25.00 GHz 2.30 s (1001 pts) | |
| MSG | An operation of sources | | STATUS | | 1 |



Channel 20 (2441MHz) 30M-25GHz

Channel 38 (2477MHz) 30M-25GHz



6. Band Edge

6.1. Test Equipment

RF Conducted Measurement

The following test equipments are used during the band edge tests:

| | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|---|-------------------|--------------|----------------------|------------|
| | Spectrum Analyzer | R&S | FSP40 / 100170 | Jun, 2010 |
| | Spectrum Analyzer | Agilent | E4407B / US39440758 | Jun, 2010 |
| Х | Spectrum Analyzer | Agilent | N9010A / MY48030495 | Apr., 2011 |

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

RF Radiated Measurement:

The following test equipments are used during the band edge tests:

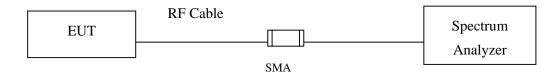
| Test Site | | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|-----------|---|-------------------|-----------------|-----------------------|------------|
| Site # 3 | | Bilog Antenna | Schaffner Chase | CBL6112B/2673 | Sep., 2010 |
| | Х | Horn Antenna | Schwarzbeck | BBHA9120D/D305 | Sep., 2010 |
| | | Horn Antenna | Schwarzbeck | BBHA9170/208 | Jul., 2010 |
| | Х | Pre-Amplifier | Agilent | 8447D/2944A09549 | Sep., 2010 |
| | Х | Spectrum Analyzer | Agilent | E4407B / US39440758 | May, 2010 |
| | | Test Receiver | R & S | ESCS 30/ 825442/018 | Sep., 2010 |
| | Х | Coaxial Cable | QuieTek | QTK-CABLE/ CAB5 | Feb., 2011 |
| | Х | Controller | QuieTek | QTK-CONTROLLER/ CTRL3 | N/A |
| | Х | Coaxial Switch | Anritsu | MP59B/6200265729 | N/A |

Note: 1. All instruments are calibrated every one year.

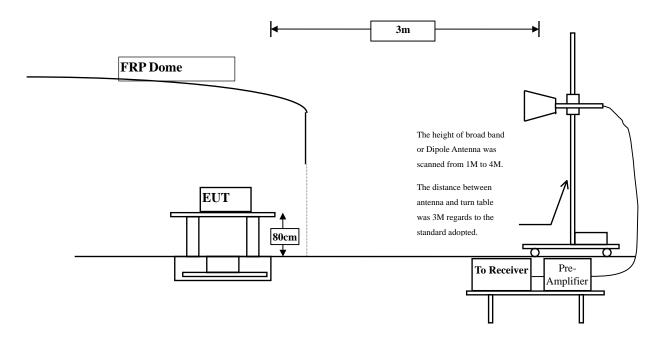
2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Conducted Measurement



RF Radiated Measurement:



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009 and tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements. The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

6.5. Uncertainty

- ± 3.9 dB above 1GHz
- ± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

| Product | : | PX3 RX |
|-----------|---|------------------|
| Test Item | : | Band Edge Data |
| Test Site | : | No.3 OATS |
| Test Mode | : | Mode 1: Transmit |

Fundamental Filed Strength

| Antenna Pole | Frequency [MHz] | Correction Factor [dB/m] | Reading Level [dBuV] | Emission Level [dBuV/m] | Detector |
|-----------------|--------------------|--------------------------------|-------------------------|----------------------------|----------|
| Horizontal | 2405 | 31.759 | 59.93 | 91.689 | Peak |
| Horizontal | 2405 | 31.759 | 56.83 | 88.589 | Average |
| Vertical | 2405 | 30.242 | 61.61 | 91.852 | Peak |
| Vertical | 2405 | 30.242 | 58.45 | 88.692 | Average |

Note: 1: Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

| Antenna Pole | Test Frequency (MHz) | Fundamental (dBuV/m) | ∆ (dB) | Band Edge Field Strength (dBuV/m) | Detector |
|-----------------|-------------------------|-------------------------|--------|---|----------|
| Horizontal | 2389.5 | 91.689 | 53.077 | 38.612 | Peak |
| Horizontal | 2389.1 | 88.589 | 58.284 | 30.305 | Average |
| Vertical | 2389.5 | 91.852 | 53.077 | 38.775 | Peak |
| Vertical | 2389.1 | 88.692 | 58.284 | 30.408 | Average |

Note:

The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = $F - \Delta$

F = Fundamental field Strength (Peak or Average)

 Δ = Conducted Band Edge Delta (Peak or Average)

Peak limit = 74dBuV/m, Average limit = 54dBuV/m

| 🛙 Agilent Spectrum Analyzer - | Swept SA | | | | |
|---------------------------------------|---|--|--|---|-----------------------------------|
| XI 50 Ω Center Freq 2.3900 Ιι | DOOOOO GHz nput: RF PNO: Fast G IFGain:Low | AC SENSE:INT D Trig: Free Run Atten: 20 dB | ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 37/100 | 01:07:42 PM Apr 14, 2011 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N | Frequency |
| 10 dB/div Ref 10.00 | | | Mk | r1 2.405 1 GHz 1.821 dBm | Auto Tun |
| .og 0.00 10.0 | | | | | Center Fre 2.390000000 GH |
| 20.0 30.0 40.0 | | | | | Start Fre |
| 50.0 Min | and server disciplication with a ground in strain and | Same and a second s | | Manuaran | 2.340000000 GH |
| 70.0 | | | | | Stop Fre 2.440000000 GH |
| enter 2.39000 GHz Res BW 1.0 MHz | #VB | V 1.0 MHz | #Sweep | Span 100.0 MHz 500 ms (1001 pts) | CF Ste 10.000000 Mi |
| KR MODE TRC SCL 1 N 1 f 2 N 1 f | × 2.405 1 GHz 2.390 0 GHz | 1.821 dBm -52.706 dBm | JNCTION FUNCTION WIDTH | FUNCTION VALUE | <u>Auto</u> Ma |
| 3 N 1 f 4 5 6 8 | 2.389 5 GHz | -51.256 dBm | | | Freq Offs 01 |
| 7 8 9 9 | | | | | |
| 11 | | | | | |

Peak Detector of conducted Band Edge Delta

Average Detector of conducted Band Edge Delta

| Agilent Spectrum Analy | zer - Swept SA | | | 12 | |
|--|--|--|-------------------------|---|------------------------------------|
| Zenter Freg 2.3 | 90000000 GHz | AC SENSE:INT | Avg Type: Log-Pwr | 01:07:14 PM Apr 14, 2011 TRACE 1 2 3 4 5 6 | Frequency |
| | Input: RF PNO: Fast IFGain:Lov | Atten: 20 dB | Avg Hold: 2/100 | r3 2.389 1 GHz -59.054 dBm | Auto Tun |
| 10 dB/div Ref 10. | 00 dBm | | | -59.034 UBIII | Center Fre 2.390000000 GH |
| -40.0 -50.0 | | 3 ₂ | | | Start Fre 2.340000000 GF |
| -60.0 -70.0 -80.0 | | | | <u></u> | Stop Fre 2.44000000 GF |
| Center 2.39000 Gl #Res BW 1.0 MHz | #V | BW 10 Hz | | Span 100.0 MHz 7.80 s (1001 pts) | CF Ste 10.000000 MH |
| MKR MODE TRC SCL 1 N 1 f 2 N 1 f 3 N 1 f 4 - - - 5 - - - 6 - - - 7 - - - | × 2.405 1 GHz 2.390 0 GHz 2.389 1 GHz | -0.770 dBm -63.170 dBm -59.054 dBm | FUNCTION FUNCTION WIDTH | FUNCTION VALUE | Auto Ma FreqOffs 0 F |
| 8 9 10 11 12 | | | | | |
| SG | | | STATUS | | |

| Product | : | PX3 RX |
|-----------|---|------------------|
| Test Item | : | Band Edge Data |
| Test Site | : | No.3 OATS |
| Test Mode | : | Mode 1: Transmit |

Fundamental Filed Strength

| Antenna Pole | Frequency [MHz] | Correction Factor [dB/m] | Factor [dBuV] | | Detector |
|-----------------|--------------------|--------------------------------|---------------|--------|----------|
| Horizontal | 2477 | 31.933 | 57.36 | 89.293 | Peak |
| Horizontal | 2477 | 31.933 | 53.97 | 85.903 | Average |
| Vertical | 2477 | 30.553 | 58.39 | 88.943 | Peak |
| Vertical | 2477 | 30.553 | 55.02 | 85.573 | Average |

Note: 1: Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

| Antenna Pole | Test Frequency (MHz) | Fundamental (dBuV/m) | ∆ (dB) | Band Edge Field Strength (dBuV/m) | Detector |
|-----------------|-------------------------|-------------------------|--------|---|----------|
| Horizontal | 2483.5 | 89.293 | 47.09 | 42.203 | Peak |
| Horizontal | 2483.5 | 85.903 | 55.555 | 30.348 | Average |
| Vertical | 2483.5 | 88.943 | 47.09 | 41.853 | Peak |
| Vertical | 2483.5 | 85.573 | 55.555 | 30.018 | Average |

Note:

The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = $F - \Delta$

F = Fundamental field Strength (Peak or Average)

 Δ = Conducted Band Edge Delta (Peak or Average)

Peak limit = 74dBuV/m, Average limit = 54dBuV/m



| | | | | | | ••••• | |
|---------------------------------------|-------------------|--------------------|--|--------------------------|----------------------|--|--------------------------------|
| 🔟 Agilent Spectrum Analyzer - S | Swept SA | | | | | | |
| Center Freq 2.4835 | 00000 GHz | Trig: Free Run | Avg Type: Avg Hold: | | TRACE | Apr 14, 2011 1 2 3 4 5 6 MWWWWW P N N N N N | Frequency |
| | IFGain:Low | Atten: 20 dB | 504P7 | Mkr | 2 2.483 | 50 GHz | Auto Tune |
| 10 dB/div Ref 10.00 c | | | | | -46.97 | 2 dBm | |
| -10.0 -20.0 | | | | | | | Center Fred 2.483500000 GH: |
| -30.0 | | 2 | | | | | Start Free 2.458500000 GH: |
| -50.0 | | Contraction of the | an annaise and | Theory and the survey of | and many states | and a standard | |
| -60.0 | | | | | | | Stop Free |
| -80.0 | | | | | | | 2.508500000 GH |
| Center 2.48350 GHz #Res BW 1.0 MHz | #VBW | 1.0 MHz | | #Sweep | Span 51 500 ms (1 | 0.00 MHz 001 pts) | CF Stej 5.000000 MH |
| MKR MODE TRC SCL | × 2.477 06 GHz | ⊻ 0.118 dBm | FUNCTION FUN | ICTION WIDTH | FUNCTIO | N VALUE | <u>Auto</u> Ma |
| 2 N 1 f 3 | 2.483 50 GHz | -46.972 dBm | 1 | | | | F Of |
| 4 5 | | | | | | | Freq Offse |
| 6 7 | | | 5 | | | | |
| 8 | | | | | | | |
| 10 | 0 | | | | | | |
| 12 | | | | | | | |
| MSG | | | | STATUS | | | |

Peak Detector of conducted Band Edge Delta

lent Spectrum Analyzer - Swept SA ALIGNAUTO Avg Type: Log-Pwr Avg|Hold: 2/100 01:05:29 PM Apr 14, 2011 TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P N N N N N Frequency Center Freq 2.483500000 GHz Trig: Free Run Atten: 20 dB PNO: Fast C Input: RF Auto Tune Mkr2 2.483 50 GHz -58.100 dBm 10 dB/div Log Ref 10.00 dBm $\wedge 1$ 0.00 **Center Freq** -10.0 2.483500000 GHz -20.0 -30.0 Start Freq 40.0 2.458500000 GHz -50.0 2 -60.0 Stop Freq -70.0 2.508500000 GHz -80.0 Center 2.48350 GHz Span 50.00 MHz **CF** Step #Res BW 1.0 MHz #VBW 10 Hz Sweep 3.90 s (1001 pts) 5.000000 MHz MKR MODE TRC SCL FUNCTION WIDTH FUNCTION VALUE FUNCTION Auto Man 1 N 1 f 2 N 1 f -2.545 dBm -58.100 dBm 2.477 06 GHz 2.483 50 GHz **Freq Offset** 0 Hz 6 8 9 10 11 12 STATUS MSG

Average Detector of conducted Band Edge Delta

7. Occupied Bandwidth

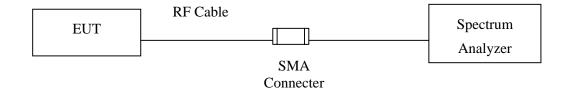
7.1. Test Equipment

| | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|---|-------------------|--------------|----------------------|------------|
| | Spectrum Analyzer | R&S | FSP40 / 100170 | Jun, 2010 |
| | Spectrum Analyzer | Agilent | E4407B / US39440758 | Jun, 2010 |
| Х | Spectrum Analyzer | Agilent | N9010A / MY48030495 | Apr., 2011 |

Note: 1. All instruments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009; tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements. Set RBW = 100 kHz, Span greater than RBW.

7.5. Uncertainty

 \pm 150Hz

7.6. Test Result of Occupied Bandwidth

| Product | : | PX3 RX |
|-----------|---|----------------------------|
| Test Item | : | Occupied Bandwidth Data |
| Test Site | : | No.3 OATS |
| Test Mode | : | Mode 1: Transmit (2405MHz) |

| Channel N | lo. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-----------|-----|--------------------|----------------------------|-------------------------|--------|
| 02 | | 2405.00 | 1120 | >500 | Pass |

Figure Channel 02:

| 50 Ω Center Freq 2.405000000 (Input: RF | A GHz PNO: Fast FGain:Low | 1 | lun | | ALIGNAUTO :: Log-Pwr 48/100 | TRAC | M Apr 14, 2011 E 1 2 3 4 5 6 E MWWWWW T P N N N N N | Frequency |
|---|------------------------------------|---------|----------|-----------------|-----------------------------------|---------------|--|-------------------------------|
| 0 dB/div Ref 10.00 dBm | | | | | Mkr′ | 2.404 -0.4 | 85 GHz I7 dBm | Auto Tun |
| | | 1 | -6.00 dE | 1 | | | · · · · · · | Center Fre 2.405000000 GH |
| 10.0 | | | 1.12 M | 2.64 | | | | |
| 20.0 | | | Mu | | | | | Start Fre 2.380000000 GF |
| 30.0 | | | <u> </u> | | | | | Stop Fre |
| 10.0 | | m | h | | | | 8 | CF Ste |
| 0.0 0.0 | A mark for | | և | 181 • / 48/4 | | <u>~</u> | | 5.000000 MI <u>Auto</u> Mi |
| 0.0 Louth the show and have been a stand and have been been been been been been been be | | | | | ht hteranitation | / human | w was | Freq Offs |
| 0.0 | | | | | | | | 0 |
| enter 2.40500 GHz Res BW 100 kHz | #VBW | 100 kHz | | | #Sweep | | 0.00 MHz 1001 pts) | |

| Product | : | PX3 RX |
|-----------|---|----------------------------|
| Test Item | : | Occupied Bandwidth Data |
| Test Site | : | No.3 OATS |
| Test Mode | : | Mode 1: Transmit (2441MHz) |

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|--------------------|----------------------------|-------------------------|--------|
| 20 | 2441.00 | 1140 | >500 | Pass |

Figure Channel 20:

| enter 2.441 Res BW 10 | | 1 | #VBW | 100 kHz | 1 | | #Sweep | Span 5 500 ms (| 0.00 MHz 1001 pts) | |
|--------------------------|--------------|----------------------------|------------------------------|--------------------------|-----------|---------------------|---------------------------|--------------------|-----------------------------|---------------------|
| 0.0 | | | | | | | | | | |
| 0.0 | "hund Marty" | unan kaju ^a nan | | | | | WILMET LABORT | ld haventhe | wandy | Freq Offs 01 |
| بلمبر | h.n | end they out when | and a | | | - Lun | Ma With Martin Marting | m | | <u>Auto</u> M |
| 0.0 | | | N. | ł | ¥ | ևանո | | | | CF St 5.000000 M |
| 0.0 | | | | M | - hy | | | | | 2.466000000 G |
| 0.0 | | | 1. | \\ | - V | | | | | Stop Fr |
| 0.0 | | | | M | Wh | | | | | 2.416000000 G |
| 0.0 | | | 1. | | 1.14 N | Hz | | | | Start Fr |
| .00 | | | 2 | | ∖ -6.00 c | в | | | ~ | 2.441000000 G |
| og | | | | | 1 | | | | | Center Fr |
| | ef 10.00 d | lBm | | | | | Mkr | | 75 GHz 76 dBm | Auto Tu |
| enter Freq | | out: RF PI | HZ NO: Fast 😱 Gain:Low | Trig: Free #Atten: 20 | | Avg Typ Avg Hold | | TY | PE MWWWWW ET P N N N N N | |
| | Ω | 00000 0 | β. | | VSE:INT | 0 | ALIGNAUTO e: Log-Pwr | | M Apr 14, 2011 | Frequency |

| Product | : | PX3 RX |
|-----------|---|----------------------------|
| Test Item | : | Occupied Bandwidth Data |
| Test Site | : | No.3 OATS |
| Test Mode | : | Mode 1: Transmit (2477MHz) |
| | | |

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|--------------------|----------------------------|-------------------------|--------|
| 38 | 2477.00 | 1110 | >500 | Pass |

Figure Channel 38:

| Agilent Spectrum Analyzer - Sw 50 Ω Center Freg 2.477000 | AC | SENSE:INT | ALIGN AUTO Avg Type: Log-Pwr | 11:50:05 AM Apr 14, 2011 TRACE 1 2 3 4 5 6 | Frequency |
|--|---------------------|--------------------------------|---------------------------------|---|--------------------------|
| Input | BE PNO: East | Trig: Free Run Atten: 20 dB | Avg Hold: 30/100 | | Auto Tun |
| 0 dB/div Ref 10.00 dE | m | | IVIKI | 1 2.477 05 GHz -2.330 dBm | |
| | | 1 | | | Center Fre |
| 5.00 | | -6.00 di | в | | 2.477000000 GI |
| 10.0 | | → • 1.11 M | Hz | | Start Fre |
| 20.0 | | | | | 2.452000000 GI |
| 80.0 | | | | | |
| 0.0 | | | | | Stop Fr 2.502000000 G |
| 0.0 | م. | ry W | | | |
| 0.0 | | | AN. | | CF Ste 5.000000 M |
| 50.0 | محميدهم | | | July | <u>Auto</u> M |
| 10.0 สารและที่หน่งเราสารการการที่ไป เก | www.marshaplichear | | W. June Low | of hopeward with a same | Freq Offs |
| 30.0 | | | | | 01 |
| | | | | | |
| enter 2.47700 GHz Res BW 100 kHz | #\(D \\(4) | | #Swoon | Span 50.00 MHz | |
| Res BW 100 KHZ | #VBW 1 | | #Sweep | 500 ms (1001 pts) | |

8. Power Density

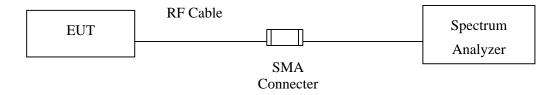
8.1. Test Equipment

| | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|---|-------------------|--------------|----------------------|------------|
| | Spectrum Analyzer | R&S | FSP40 / 100170 | Jun, 2010 |
| | Spectrum Analyzer | Agilent | E4407B / US39440758 | Jun, 2010 |
| Х | Spectrum Analyzer | Agilent | N9010A / MY48030495 | Apr., 2011 |

Note: 1. All equipments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009; tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements. Set RBW= 3 kHz, VBW=10KHz, Sweep time=(SPAN/3KHz), detector=Peak detector

8.5. Uncertainty

 \pm 1.27 dB

8.6. Test Result of Power Density

| Product | : | PX3 RX |
|-----------|---|---------------------------|
| Test Item | : | Power Density Data |
| Test Site | : | No.3 OATS |
| Test Mode | : | Mode 1: Transmit(2405MHz) |

| Channel No. | Frequency (MHz) | Measure Level (dBm) | Limit (dBm) | Result |
|-------------|--------------------|------------------------|----------------|--------|
| 02 | 2405.00 | -12.936 | < 8dBm | Pass |

Figure Channel 02:

| enter F | 50 Ω reg 2.4051 | 20000 G | | | NSE:INT | Avg Type | ALIGNAUTO : Log-Pwr | | M Apr 14, 2011 | Frequer | ıcy |
|---------------------|---------------------|----------------|------------------------|--------------------------|---------|-----------|------------------------|-------------------------|--------------------|---------------------|------------|
| | | put: RF F | PNO: Far 🖵 Gain:Low | Trig: Free #Atten: 20 | | Avg Hold: | 1/100 | | EMWWWWW TPNNNNN | | _ |
| 0 dB/div | Ref 10.00 | dBm | | | | | Mkr1 2.4 | | l 1 GHz 36 dBm | Auto | Tun |
| .og | | | | | | | | | | Cente | |
| 0.00 | ¥1 | | | | | | | | | 2.4051200 | 00 Gł |
| 10.0 | mailtheamhiliterien | Lunderspitzers | Hummungellinger | www. | | Munneurup | hotomak water of the | الموادر الإسرالي وعاقره | white | Star | tFre |
| 20.0 | | | | | | | | | | 2.4049700 | 00 GI |
| 30.0 | | | | | | | | | | Sto | p Fre |
| 10.0 | | | | | | | | | | 2.4052700 | 00 GI |
| 0.0 | | | | | | | | | | | FSte |
| 0.0 | | | | | | | | | | 30.0 <u>Auto</u> | 000 k M |
| 0.0 | | | | | | | | | | Freq | Offs |
| | | | | | | | | | | CEL CONSTANT | 0 |
| 30.0 | | | | | | | | | | | |
| enter 2.4 Res BW | 4051200 GH | Z | #VB\M | | | | #Sweep | | 00.0 kHz | | |
| SG DW | 0.0 1.12 | | | 10 1112 | | | STATUS | 100 3 (| 1001 pt3) | | |

| Product | : | PX3 RX |
|-----------|---|----------------------------|
| Test Item | : | Power Density Data |
| Test Site | : | No.3OATS |
| Test Mode | : | Mode 1: Transmit (2441MHz) |

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|--------------------|----------------------------|-------------------------|--------|
| 20 | 2441.00 | -13.520 | < 8dBm | Pass |

Figure Channel 20:

| | 50 Ω | | AC | : SEN | SE:INT | | ALIGN AUTO | | 1 Apr 14, 2011 | Frequenc | |
|------------------------------------|---|-----------------|--------------------------------------|---|---------------|------------------------|--|--------------------|--|----------------------|-----------|
| enter Fr | req 2.440 | Input: RF | GHZ PNO: Far 🍙 Gain:Low | Trig: Free #Atten: 20 | | Avg Typ Avg Hold | e: Log-Pwr I: 1/100 | TYPE | 123456 M WWWWW PNNNNN | | |
| dB/div | Ref 10.00 |) dBm | | | | | Mkr1 2.4 | | 3 GHz 0 dBm | Auto | Tu |
| ^{pg} | | | | | | | | | | Center | Fn |
| .00 | | | | | | | | | | 2.44088000 | 0 G |
| 0.0 | | 1 | | 5.00 MIN | 5. 15. 50. | | | | ∳ ¹ | Start | tFr |
| 0.0 4⁶⁵⁴6494 644 | ৻৻ ঢ়ৡ৾ড়ঀ৾৾ঀ৾৻৽৻৻৻ঢ়৽৻৻৻ঢ়ঀ৾ঢ়ৣ৾৾৾ঀ৾৽৾৽ | ~h/himhh/hh/~aa | feledigt for afree show | malentation | alad monopole | (fyst)lladdendefys-454 | and a second | non Allenandell Ma | huphware which | 2.44073000 | |
| 0.0 | | | | | | - | | | | Stop | Fr |
| 0.0 | _ | | | | | | | | | 2.44103000 | |
| i.o | _ | | | | | | | | | CF | |
| 0.0 | | | | | | _ | | | | 30.00 <u>Auto</u> | 00 k N |
| 0.0 | | | | | | | | | | FreqC | Offs |
| 0.0 | | | | | | | | | | | 0 |
| | | | | | | | | | | | |
| enter 2.4 Res BW | 1408800 G 3.0 kHz | Hz | #VBW | 10 kHz | | | ^ #Sweep | | 00.0 kHz 001 pts) | | |
| G | 1000 100 100 100 100 100 100 100 100 10 | | | 10000 100 100 100 100 100 100 100 100 1 | | | STATUS | | | d. | |

| Product | : | PX3 RX |
|-----------|---|----------------------------|
| Test Item | : | Power Density Data |
| Test Site | : | No.3 OATS |
| Test Mode | : | Mode 1: Transmit (2477MHz) |

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result | |
|-------------|--------------------|----------------------------|-------------------------|--------|--|
| 38 | 2477.00 | -14.679 | < 8dBm | Pass | |

Figure Channel 38:

| enter | 50 Ω Frea 2 | 2.47728 | 30000 G | | 7 | NSE:INT | | ALIGNAUTO pe: Log-Pwr | TRAC | M Apr 14, 2011 E 1 2 3 4 5 6 | Fre | quency |
|---------------------|---------------------|-----------------------|--------------|------------------------|------------------------|-------------------|---------------------|--------------------------|---------|---------------------------------|-------------|---------------|
| | | | ut: RF | PNO: Far 😱 Gain:Low | Trig: Fre #Atten: 2 | | Avg Hol | d: 1/100 | TYP | | | |
| dB/div | Ref | 10.00 d | IBm | ı | | | Mkr1 2.4 | | | 477 135 7 GHz -14.679 dBm | | Auto Tur |
| ^{og} | | | | | | | | | | | С | enter Fro |
| .00 | | | | 2 | 2 | | | + | | · · · · · | 2.477 | 280000 G |
| 1.0 | | | | | | | | | | | | Start Fr |
| 0.0 64474U M | why. Manh. | polytop of the second | hallestation | All have been by the | เหน่งเป็องสำนักงาน | hefip-at-flashert | itherplanter Arrien | h willinger have a | hadanta | muhilitation | | 130000 G |
| | | | | | | | - | | | | | Stop Fr |
| 0.0 | | | | | 2 | | | _ | | | | 430000 G |
| 0.0 | | | | | | | | | | | | CF St |
| 0.0 | | | | | | | | | | | <u>Auto</u> | 30.000 k M |
| | | | | | | | | | | | F | req Offs |
| | | | | | | | | | | | | 0 |
| 0.0 | | | | | | | | | | | | |
| | 2.47728 N 3.0 ki | | 1 | #\/R\M | 10 kHz | 1 | 1 | #Sween | | 300.0 kHz 1001 pts) | | |
| | - 5.0 KI | 14 | | #VDVV | IV KIIZ | | | #Sweep | 100 3 (| 1001 pts) | | |

9. EMI Reduction Method During Compliance Testing

No modification was made during testing.