Test Report

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

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

NVLAP Lab Code: 200533-0

The test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.
This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented By : (Adm. Specialist / Joanne Lin)

Tested By : (Assistant Engineer / Sabrina Tsai)

Approved By : (Manager / Vincent Lin)

Testing Laboratory
0914

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Description Page

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	π/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				

Note:

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 π/4 DQPSK (Differential Quadrature Phase Shift Keying). The device can receive wireless signal and transmit signal for associate device.

Test Mode:	Mode 1: Transmit

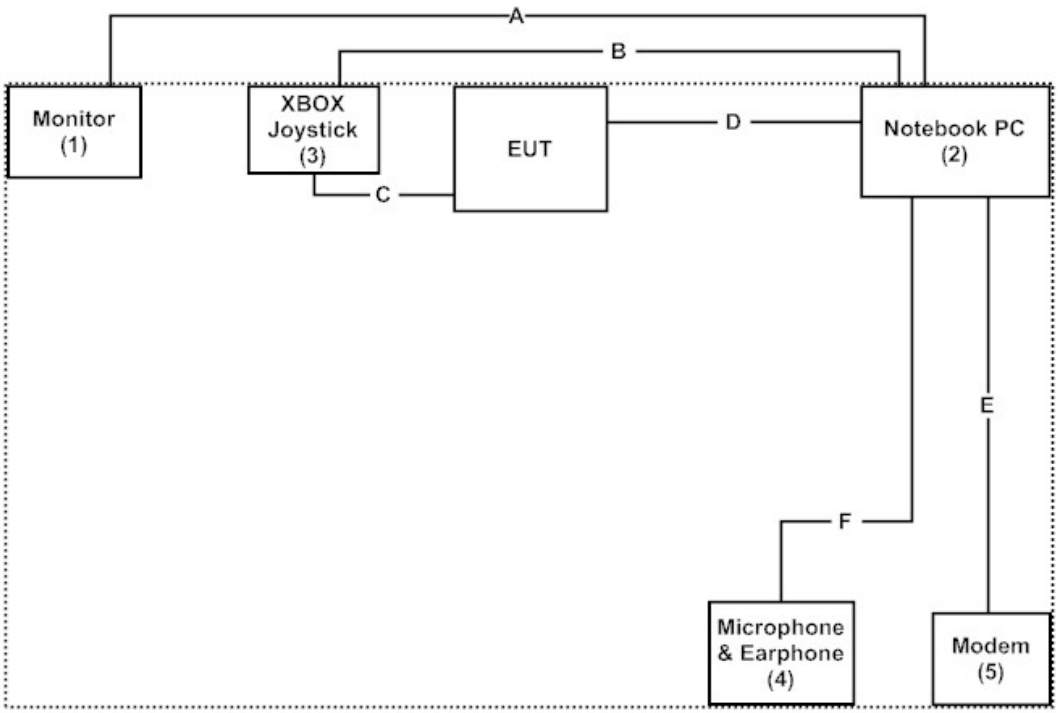
1.3. Tested System Details

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

Product		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 & Earphone	Ergotech	ET-E201	N/A	N/A
5	Modem	ACEEX	DM-1414	0102027532	N/A

Signal Cable Type		Signal cable Description
A	VGA Cable	Shielded, 1.8m, with two ferrite cores bonded.
B	Joystick Cable	Shielded, 2.8m, with two ferrite cores bonded.
C	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.quietek.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

Site Name: Quietek Corporation
Site Address: No. 5-22, Rueishu Keng,
Linkou Dist., New Taipei City 24451
Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

Testing Laboratory
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2. Conducted Emission

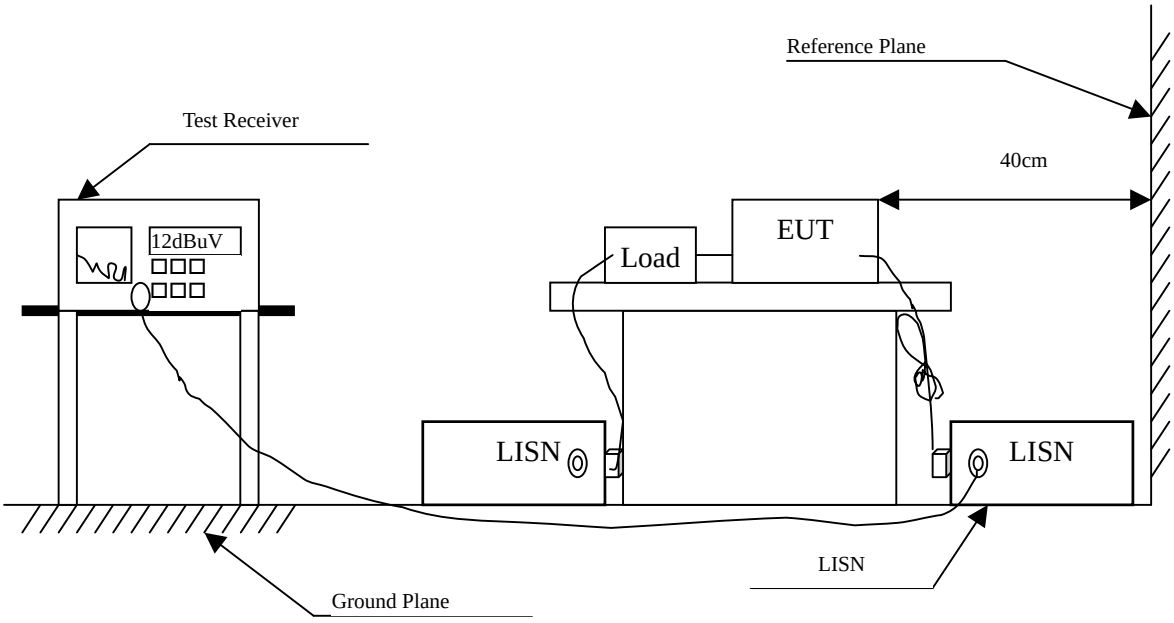
2.1. Test Equipment

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 Room			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 MHz	Limits	
	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 Factor	Reading Level	Measurement Level	Margin	Limit
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

Note:

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

Product : PX3 RX
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 1: Transmit (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
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

Note:

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

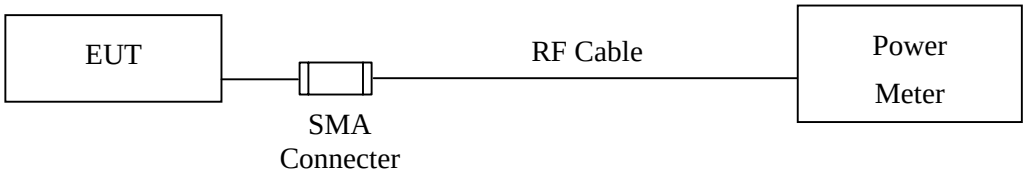
3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2010
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2010

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

± 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 (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
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:

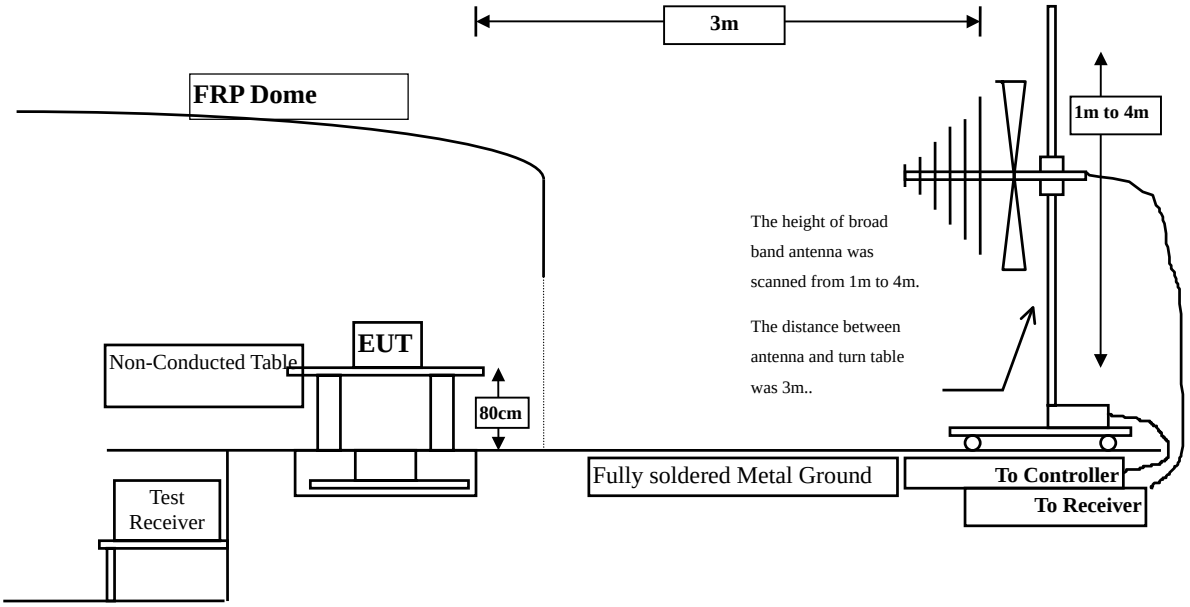
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2010
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2010
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2010
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2010
	X	Spectrum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

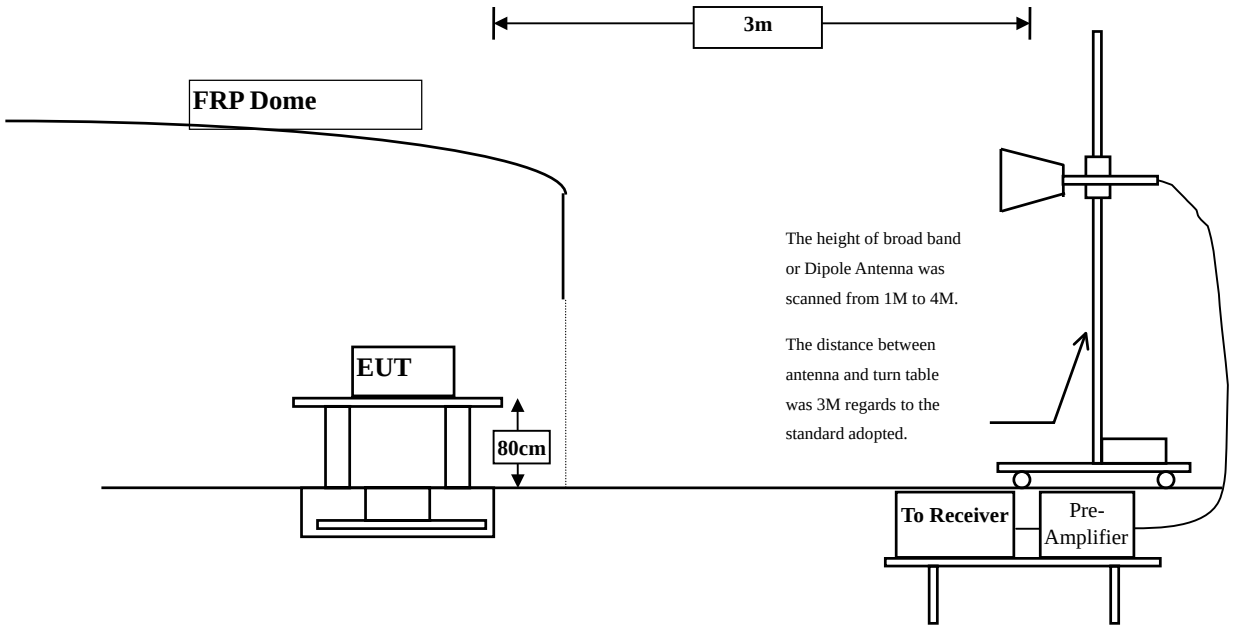
2. The test instruments marked with “X” are used to measure the final test results.

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 Factor	Reading Level	Measurement Level	Margin	Limit
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
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 : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
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

Note:

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 : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2477MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
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

Note:

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 OATS
Test Mode : Mode 1: Transmit (2441MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
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

Note:

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

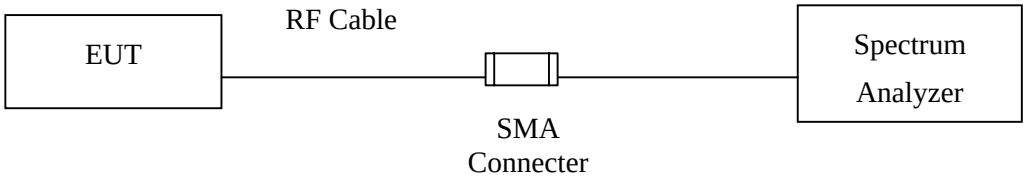
5.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2010
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2010
X	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.

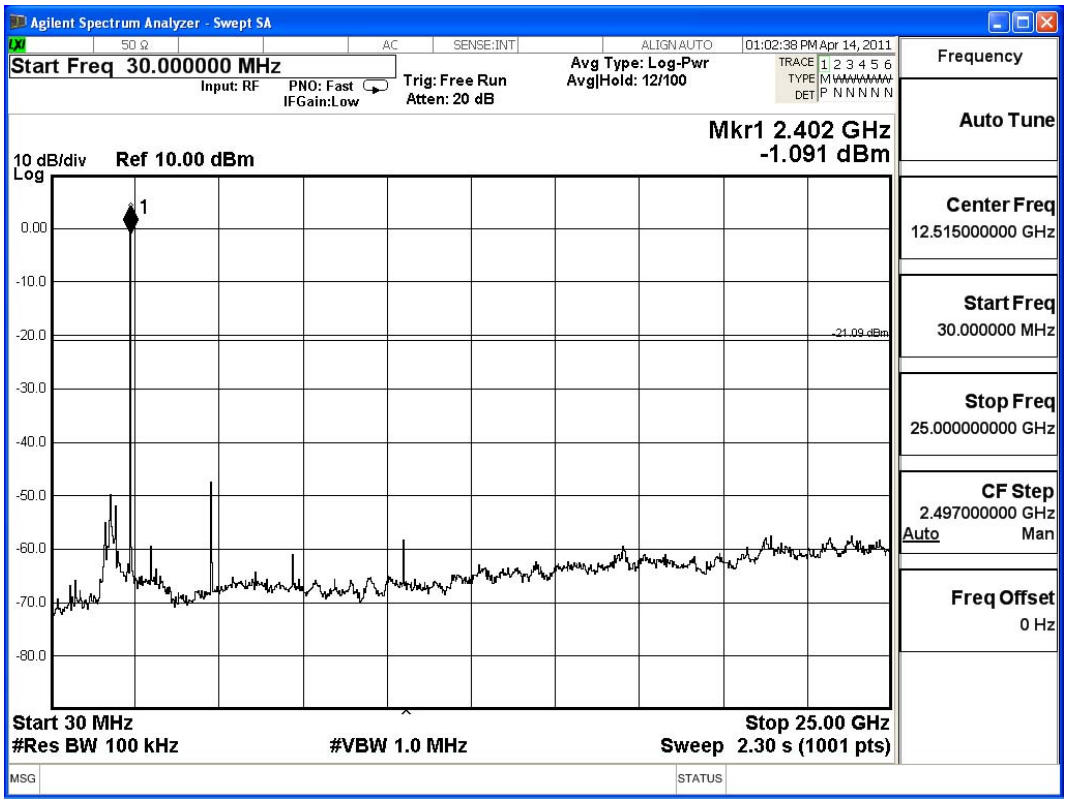
5.5. Uncertainty

The measurement uncertainty
Conducted is defined as ± 1.27dB

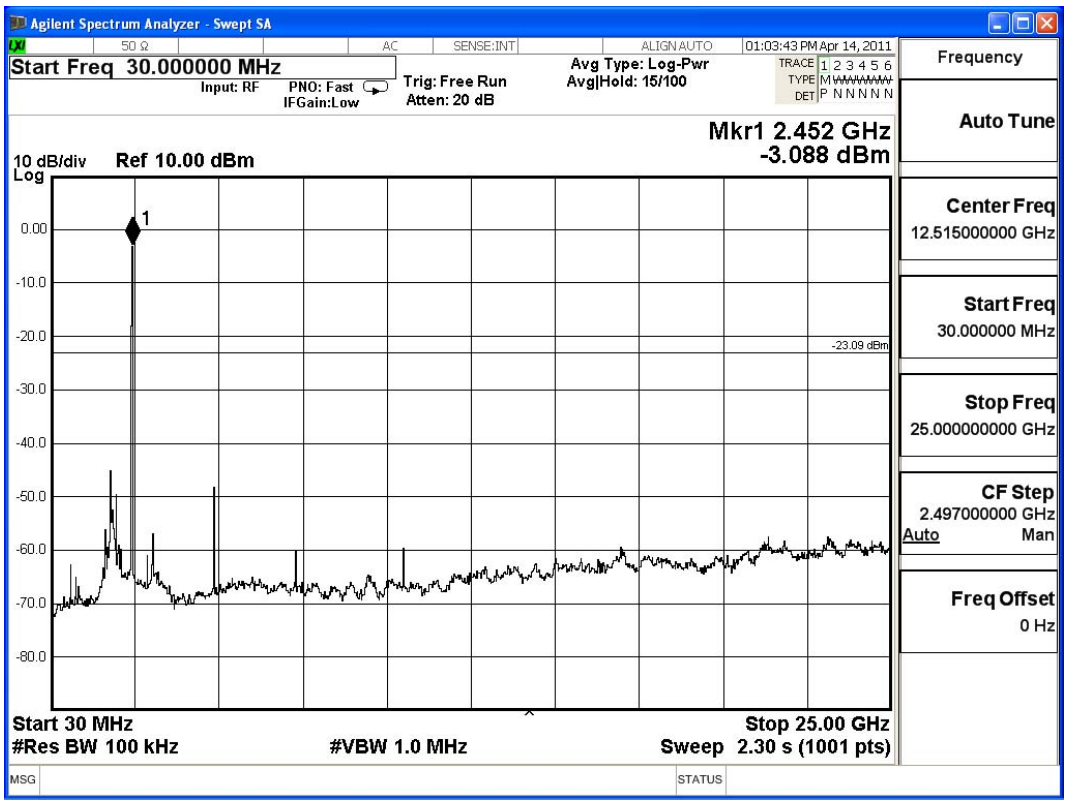
5.6. Test Result of RF antenna conducted test

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

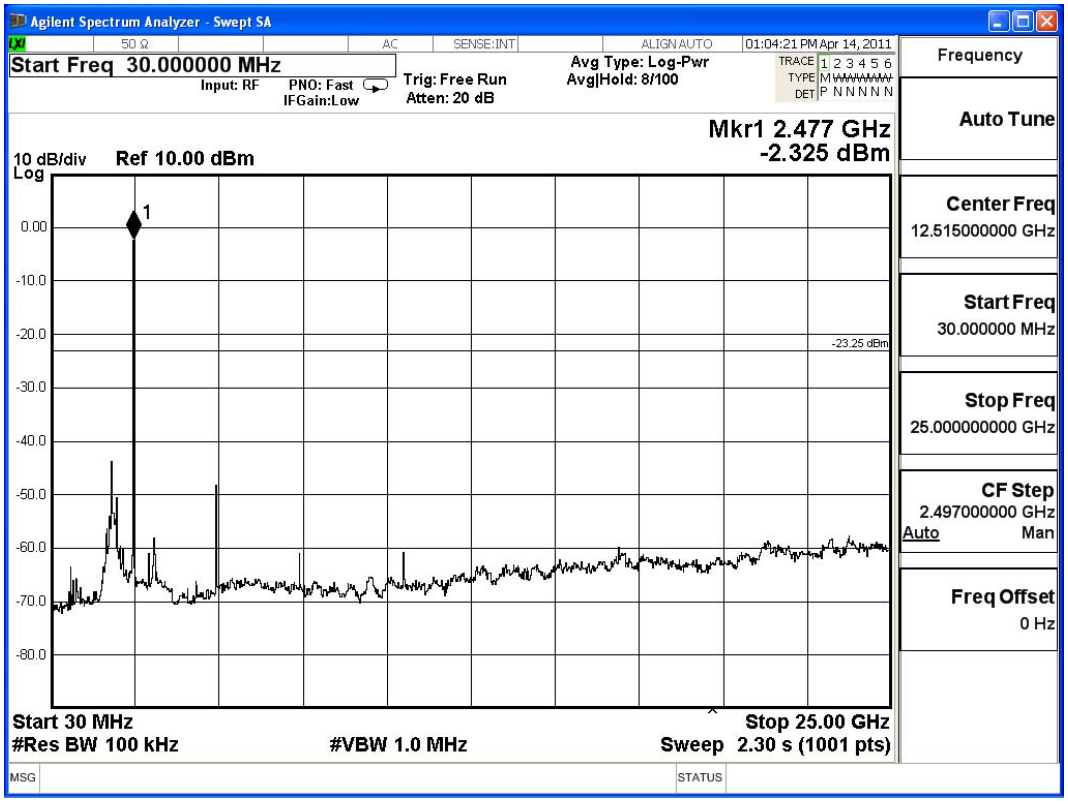
Channel 02 (2405MHz) 30M-25GHz



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
X	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:

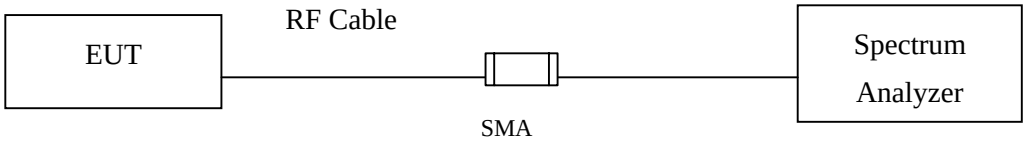
The following test equipments are used during the band edge tests:

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

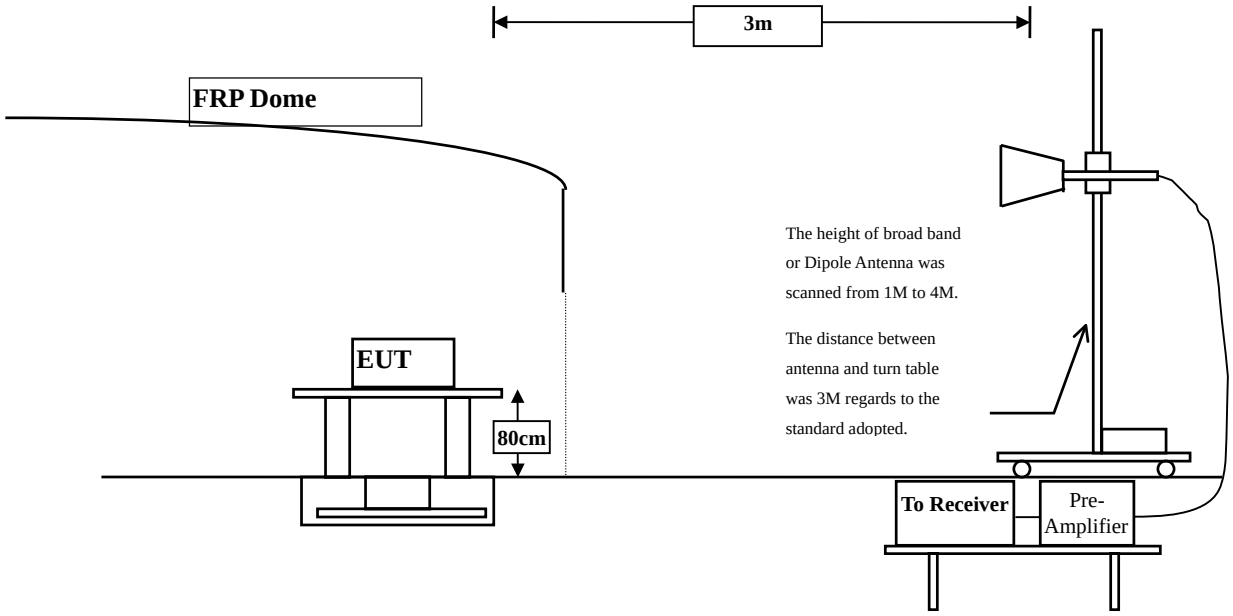
Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by “X” are used to measure the final test results.

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

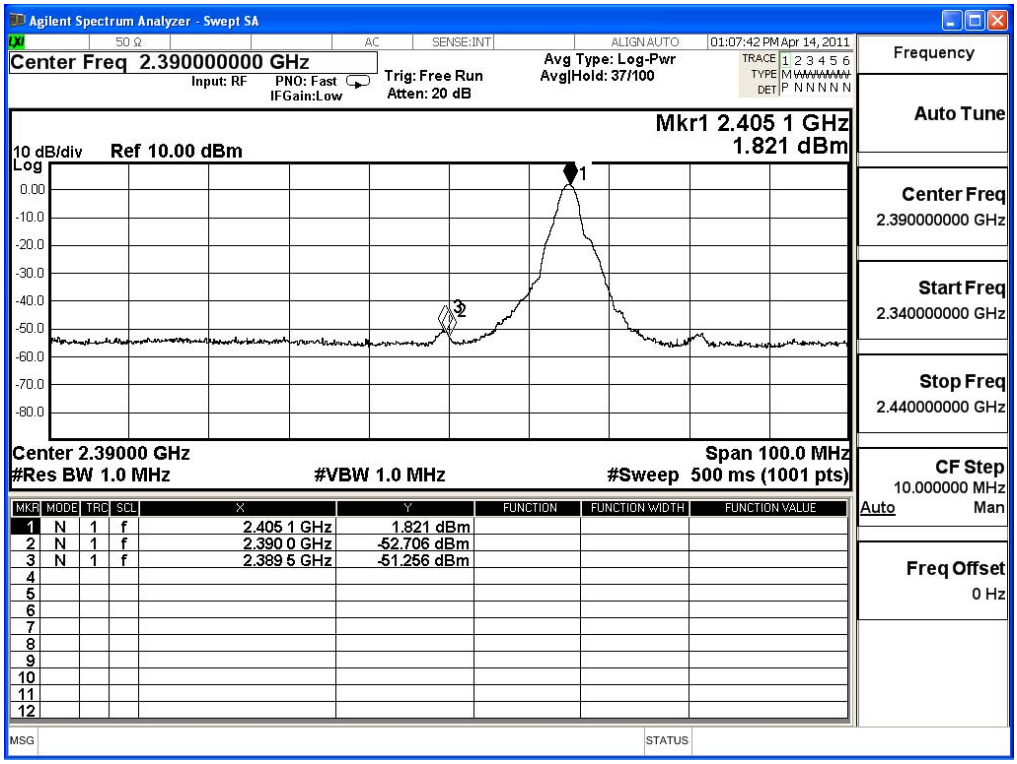
Note: 1: Spectrum Analyzer setting:
Peak detector: RBW=1MHz, VBW=1MHz
Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

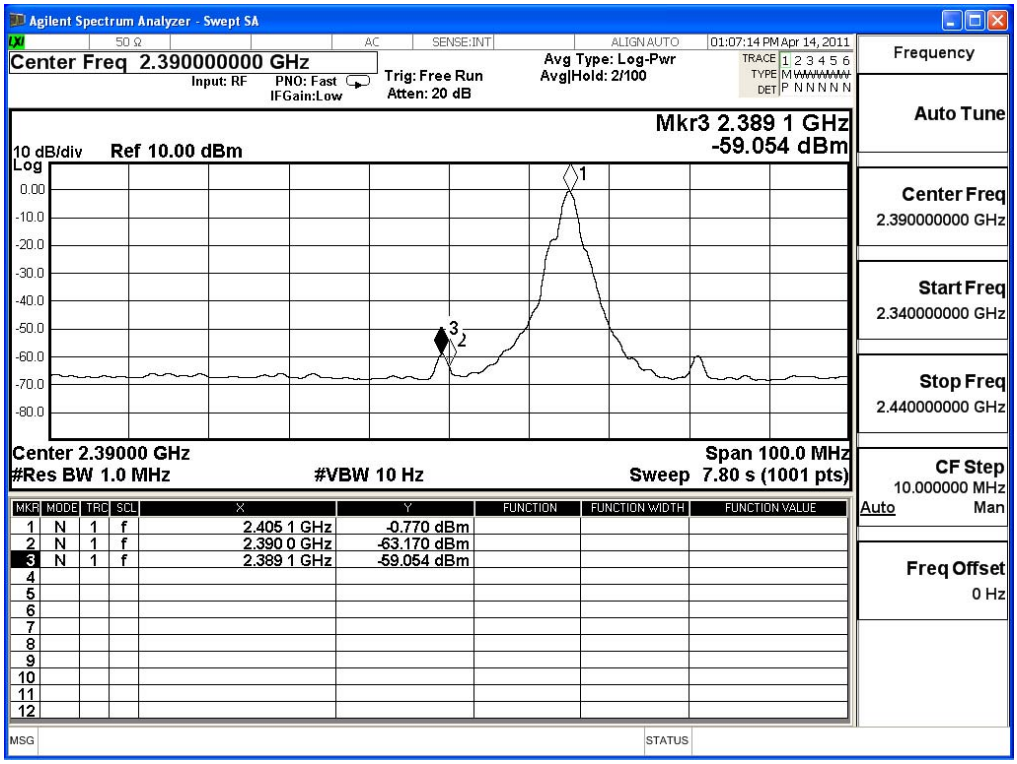
Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2389.5	91.689	53.077	38.612	Peak
Horizontal	2389.1	88.589	58.284	30.305	Average
Vertical	2389.5	91.852	53.077	38.775	Peak
Vertical	2389.1	88.692	58.284	30.408	Average

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 - Δ
F = Fundamental field Strength (Peak or Average)
Δ = Conducted Band Edge Delta (Peak or Average)
Peak limit = 74dBuV/m, Average limit = 54dBuV/m

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



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	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

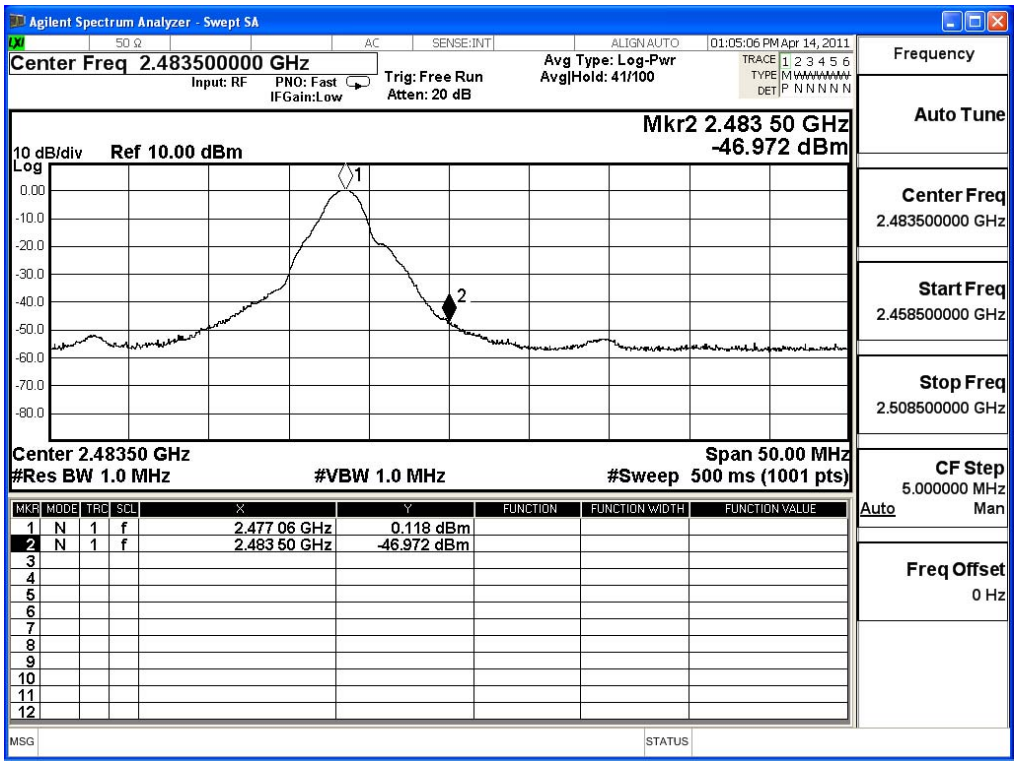
Note: 1: Spectrum Analyzer setting:
Peak detector: RBW=1MHz, VBW=1MHz
Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

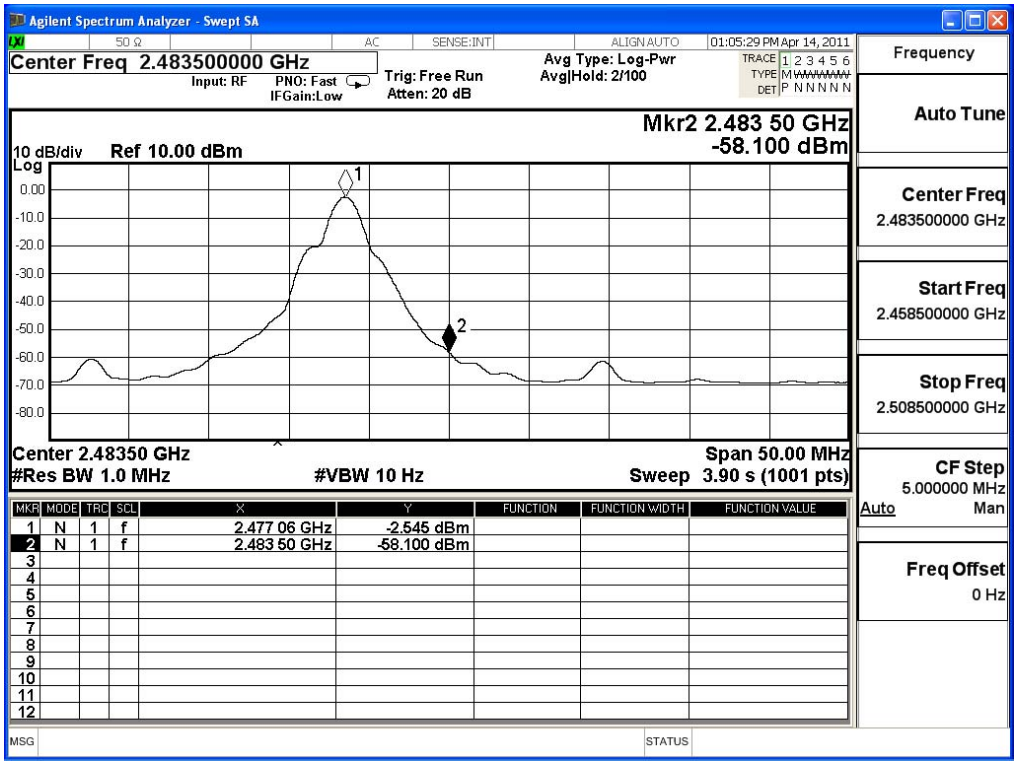
Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2483.5	89.293	47.09	42.203	Peak
Horizontal	2483.5	85.903	55.555	30.348	Average
Vertical	2483.5	88.943	47.09	41.853	Peak
Vertical	2483.5	85.573	55.555	30.018	Average

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 - Δ
F = Fundamental field Strength (Peak or Average)
Δ = Conducted Band Edge Delta (Peak or Average)
Peak limit = 74dBuV/m, Average limit = 54dBuV/m

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



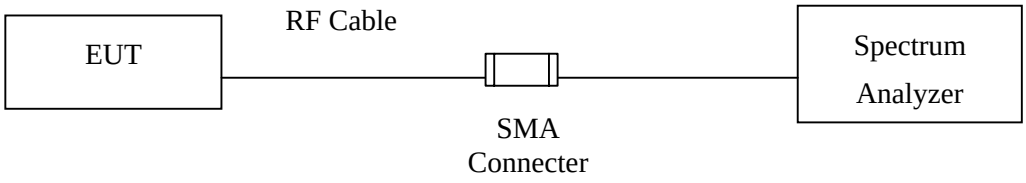
7. Occupied Bandwidth

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
X	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

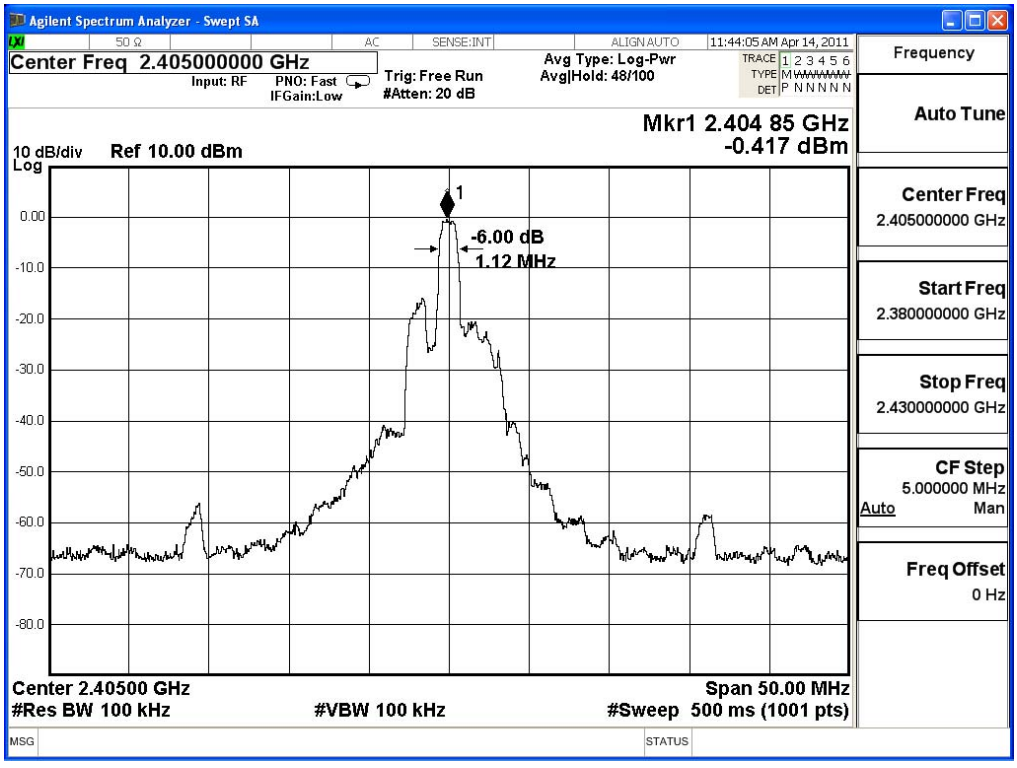
± 150Hz

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 No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
02	2405.00	1120	>500	Pass

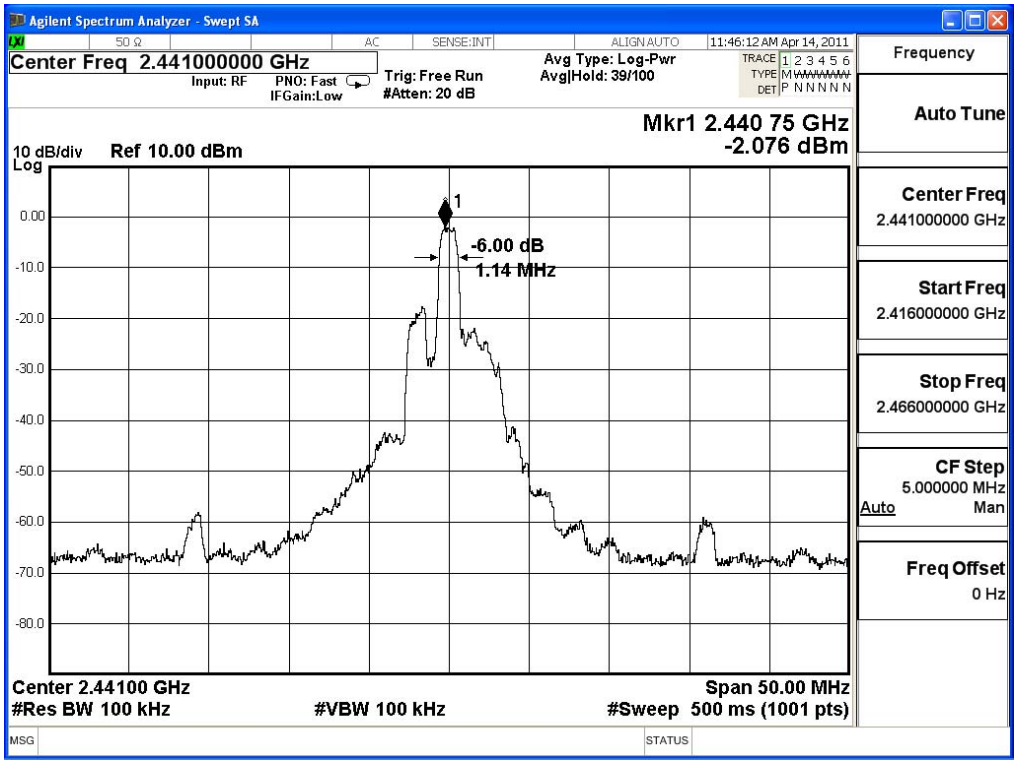
Figure Channel 02:



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

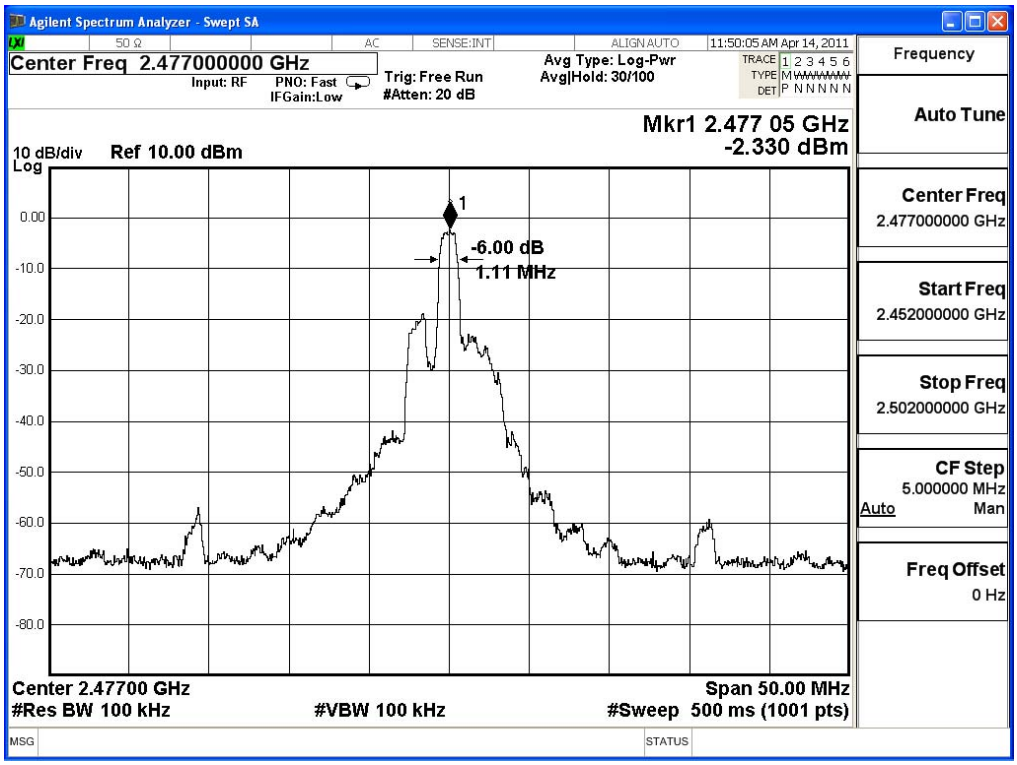
Figure Channel 20:



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:



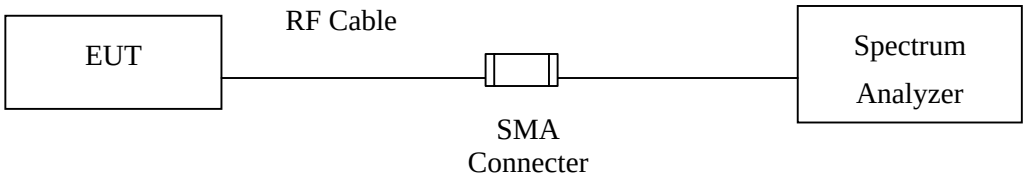
8. Power Density

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
X	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

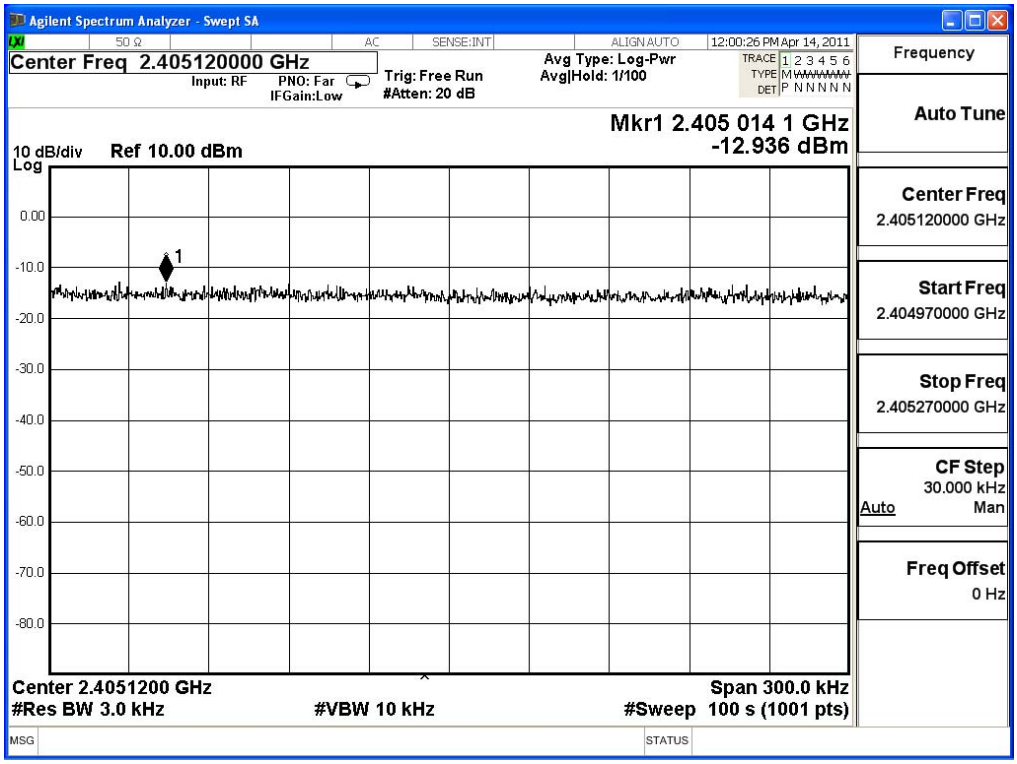
± 1.27 dB

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

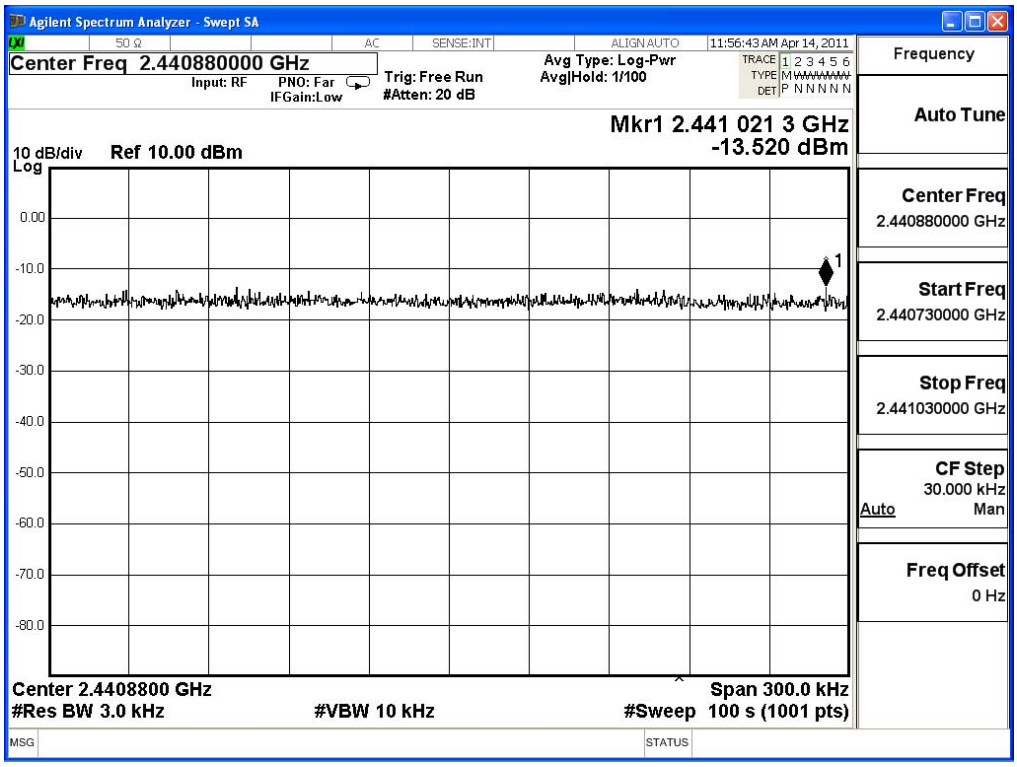
Figure Channel 02:



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

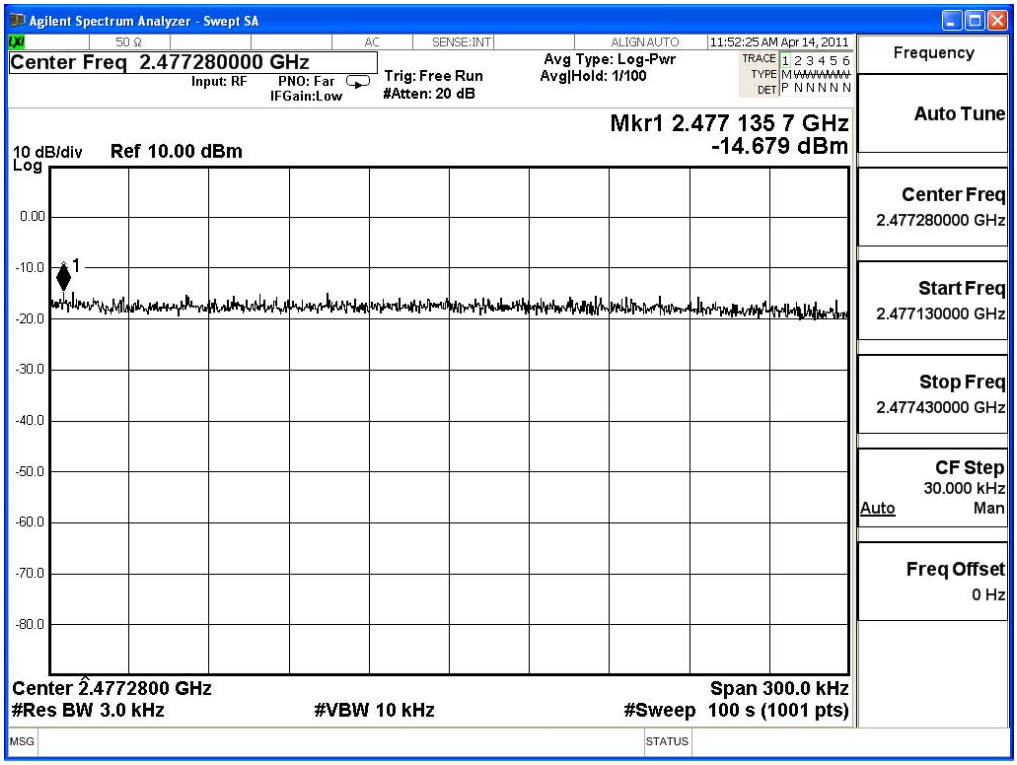
Figure Channel 20:



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:



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.