# FCC Test Report

Product Name	ASUS ZenWatch
Model No.	WI500Q
FCC ID.	MSQWI500Q

Applicant	ASUSTeK COMPUTER INC.
Address	4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan

Date of Receipt	July. 28, 2014
Issued Date	Aug. 18, 2014
Report No.	1480011R-RFUSP23V00
Report Version	V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

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	Test Report
	Issued Date: Aug. 18, 2014 Report No.: 1480011R-RFUSP23V00
	QuieTek
Product Name	ASUS ZenWatch
Applicant	ASUSTeK COMPUTER INC.
Address	4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan
Manufacturer	ASUSTeK COMPUTER INC.
Model No.	WI500Q
FCC ID.	MSQWI500Q
EUT Rated Voltage	DC 3.8V (Power by Battery)
EUT Test Voltage	AC 120V/ 60Hz
Trade Name	ASUS
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2013
	ANSI C63.10: 2009
Test Result	Complied

Documented By

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:

:

Leven Huang

(Senior Adm. Specialist / Leven Huang )

Tested By

Andy Lin

(Engineer / Andy Lin)

Approved By

(Director / Vincent Lin)

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Attachment 2: EUT Detailed Photographs

### 1. GENERAL INFORMATION

#### **1.1. EUT Description**

Product Name	ASUS ZenWatch	
Trade Name	ASUS	
Model No.	W1500Q	
FCC ID.	MSQWI500Q	
Frequency Range	2402 – 2480MHz	
Channel Number	79	
Type of Modulation	FHSS: GFSK(1Mbps) / π /4DQPSK(2Mbps) / 8DPSK(3Mbps)	
Antenna Type	PIFA Antenna	
Channel Control	Auto	
Antenna Gain	Refer to the table "Antenna List"	
USB Cable	Non-Shielded, 0.9m	
Power Adapter#1	MFR: Phihong Electronics, M/N:PSM06A-050Q	
	Input: AC 100-240V, 50-60Hz, 0.25A	
	Output: DC 5.2V, 1.35A	
Power Adapter#2 MFR: LITE-ON, M/N:PA-1070-07		
	Input: AC 100-240V, 50/60Hz, 0.25A	
	Output: DC 5.2V, 1.35A	
Charging Cradle	ASUS/ WI500Q Charging Cradle	

#### Antenna List

No.	Manufacturer	Model No.	Antenna Type	Peak Gain
1	ASUS	WI500Q	PIFA Antenna	-5.2dBi for 2.4 GHz

Note:

1. The antenna of EUT is conforming to FCC 15.203

Center Frequency of Each Channel:

1	5						
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00:	2402 MHz	Channel 20:	2422 MHz	Channel 40:	2442 MHz	Channel 60:	2462 MHz
Channel 01:	2403 MHz	Channel 21:	2423 MHz	Channel 41:	2443 MHz	Channel 61:	2463 MHz
Channel 02:	2404 MHz	Channel 22:	2424 MHz	Channel 42:	2444 MHz	Channel 62:	2464 MHz
Channel 03:	2405 MHz	Channel 23:	2425 MHz	Channel 43:	2445 MHz	Channel 63:	2465 MHz
Channel 04:	2406 MHz	Channel 24:	2426 MHz	Channel 44:	2446 MHz	Channel 64:	2466 MHz
Channel 05:	2407 MHz	Channel 25:	2427 MHz	Channel 45:	2447 MHz	Channel 65:	2467 MHz
Channel 06:	2408 MHz	Channel 26:	2428 MHz	Channel 46:	2448 MHz	Channel 66:	2468 MHz
Channel 07:	2409 MHz	Channel 27:	2429 MHz	Channel 47:	2449 MHz	Channel 67:	2469 MHz
Channel 08:	2410 MHz	Channel 28:	2430 MHz	Channel 48:	2450 MHz	Channel 68:	2470 MHz
Channel 09:	2411 MHz	Channel 29:	2431 MHz	Channel 49:	2451 MHz	Channel 69:	2471 MHz
Channel 10:	2412 MHz	Channel 30:	2432 MHz	Channel 50:	2452 MHz	Channel 70:	2472 MHz
Channel 11:	2413 MHz	Channel 31:	2433 MHz	Channel 51:	2453 MHz	Channel 71:	2473 MHz
Channel 12:	2414 MHz	Channel 32:	2434 MHz	Channel 52:	2454 MHz	Channel 72:	2474 MHz
Channel 13:	2415 MHz	Channel 33:	2435 MHz	Channel 53:	2455 MHz	Channel 73:	2475 MHz
Channel 14:	2416 MHz	Channel 34:	2436 MHz	Channel 54:	2456 MHz	Channel 74:	2476 MHz
Channel 15:	2417 MHz	Channel 35:	2437 MHz	Channel 55:	2457 MHz	Channel 75:	2477 MHz
Channel 16:	2418 MHz	Channel 36:	2438 MHz	Channel 56:	2458 MHz	Channel 76:	2478 MHz
Channel 17:	2419 MHz	Channel 37:	2439 MHz	Channel 57:	2459 MHz	Channel 77:	2479 MHz
Channel 18:	2420 MHz	Channel 38:	2440 MHz	Channel 58:	2460 MHz	Channel 78:	2480 MHz
Channel 19:	2421 MHz	Channel 39:	2441 MHz	Channel 59:	2461 MHz		

- 1. This device is an ASUS ZenWatch with a built-in Bluetooth V2.1+EDR, V4.0 transceiver, this report for Bluetooth V2.1+EDR transceiver.
- 2. These tests were conducted on a sample for the purpose of demonstrating compliance of Bluetooth transmitter with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
- 3. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
- 4. At result of pretests, Power Adapter#1 is the worst case is shown in the report.
- 5. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
- 6. Bluetooth operation was evaluated at both 1Mb/s and 3Mb/s data rates. 2Mb/s data rate was found, through pre-testing, to produce emissions similar to those for 3Mb/s.

Test Mode	Mode 1: Transmit - 1Mbps (GFSK)
	Mode 2: Transmit - 3Mbps (8DPSK)

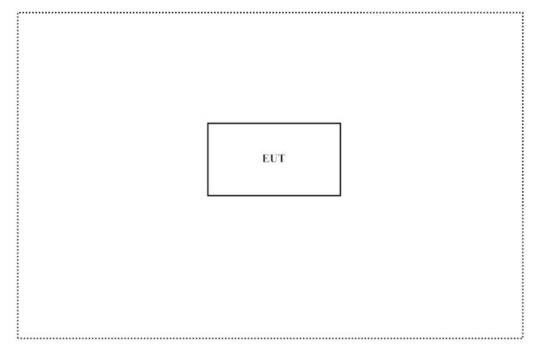
#### **1.3.** Tested System Details

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
N/A				

Signal Cable Type	Signal cable Description
1	N/A

#### 1.4. Configuration of Tested System



#### **1.5. EUT Exercise Software**

- (1) Connect EUT and the Notebook PC via USB.
- (2) Execute software "adb.exe" on the Notebook PC.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press "OK" to start the continuous transmission.
- (5) Remove the Notebook PC and connect EUT Charger, Setup the EUT as shown in Section 1.4
- (6) Verify that the EUT works properly.

#### 1.6. Test Facility

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	30-65
Barometric pressure (mbar)	860-1060	950-1000

Ambient conditions in the laboratory:

The related certificate for our laboratories about the test site and management system can be downloaded

from QuieTek Corporation's Web Site : <u>http://tw.quietek.com/tw/emc/accreditations/accreditations.htm</u> The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : <u>http://www.quietek.com/</u>

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

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

FCC Accreditation Number: TW1014

#### 2. Conducted Emission

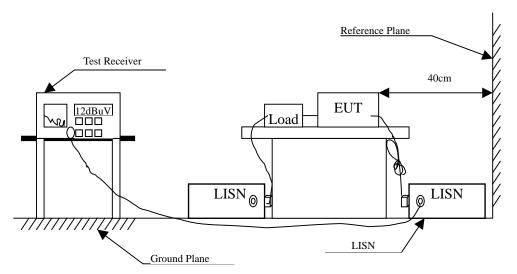
#### 2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
Х	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2013	
Х	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2014	Peripherals
Х	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2014	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2014	EUT
Х	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2014	
	No.1 Shielded Room				

Note:

- 1. All equipments are calibrated every one year.
- 2. The test instruments marked by "X" are used to measure the final test results.

#### 2.2. Test Setup



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

#### 2.3. Limits

Remarks: In the above table, the tighter limit applies at the band edges.

#### 2.4. Test Procedure

The EUT and Peripherals 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 refer 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 the interface cables must be changed according to ANSI C63.10: 2009 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

The EUT was setup to ANSI C63 10, 2009; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

#### 2.5. Uncertainty

± 2.26 dB

#### 2.6. Test Result of Conducted Emission

Product	:	ASUS ZenWatch
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK) (2441MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.283	9.655	18.760	28.415	-33.785	62.200
0.408	9.662	26.250	35.912	-22.717	58.629
0.650	9.675	31.490	41.165	-14.835	56.000
0.873	9.687	29.720	39.407	-16.593	56.000
1.732	9.744	19.690	29.434	-26.566	56.000
7.607	9.924	14.260	24.184	-35.816	60.000
Average					
0.283	9.655	14.270	23.925	-28.275	52.200
0.408	9.662	22.290	31.952	-16.677	48.629
0.650	9.675	13.380	23.055	-22.945	46.000
0.873	9.687	8.760	18.447	-27.553	46.000
1.732	9.744	9.680	19.424	-26.576	46.000
7.607	9.924	5.620	15.544	-34.456	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	: ASUS ZenWatch				
Test Item	: Conducted Emission Test				
Power Line	: Line 2				
Test Mode	: Mode 2	: Transmit - 3Mbp	s (8DPSK) (2441MH	[z)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.279	9.665	19.760	29.425	-32.889	62.314
0.584	9.671	21.460	31.131	-24.869	56.000
0.755	9.691	29.280	38.971	-17.029	56.000
0.966	9.702	25.750	35.452	-20.548	56.000
1.654	9.750	15.710	25.460	-30.540	56.000
4.670	9.854	18.420	28.274	-27.726	56.000
Average					
0.279	9.665	15.100	24.765	-27.549	52.314
0.584	9.671	15.740	25.411	-20.589	46.000
0.755	9.691	10.130	19.821	-26.179	46.000
0.966	9.702	12.560	22.262	-23.738	46.000
1.654	9.750	3.070	12.820	-33.180	46.000
4.670	9.854	10.360	20.214	-25.786	46.000

#### 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

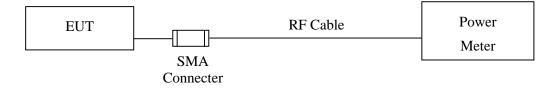
#### **3.1.** Test Equipment

_	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Х	Power Meter	Anritsu	ML2495A/6K00003357	May, 2014
Х	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2014

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

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

#### 3.2. Test Setup



#### **3.3.** Limit

The maximum peak power shall be less 1Watt.

#### **3.4.** Test Procedure

The EUT was setup to ANSI C63.10, 2009; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

#### 3.5. Uncertainty

± 1.27 dB

### 3.6. Test Result of Peak Power Output

Product	:	ASUS ZenWatch
Test Item	:	Peak Power Output
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

Channel No.	Frequency	Measurement	Required Limit	Result
	(MHz)	(dBm)		
Channel 00	2402.00	9.35	1 Watt= 30 dBm	Pass
Channel 39	2441.00	9.60	1 Watt= 30 dBm	Pass
Channel 78	2480.00	10.35	1 Watt= 30 dBm	Pass

Product	:	ASUS ZenWatch
Test Item	:	Peak Power Output
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

Channel No.	Frequency	Measurement	Required Limit	Result
	(MHz)	(dBm)		
Channel 00	2402.00	9.85	1 Watt= 30 dBm	Pass
Channel 39	2441.00	10.85	1 Watt= 30 dBm	Pass
Channel 78	2480.00	10.76	1 Watt= 30 dBm	Pass

#### 4. Radiated Emission

#### 4.1. Test Equipment

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

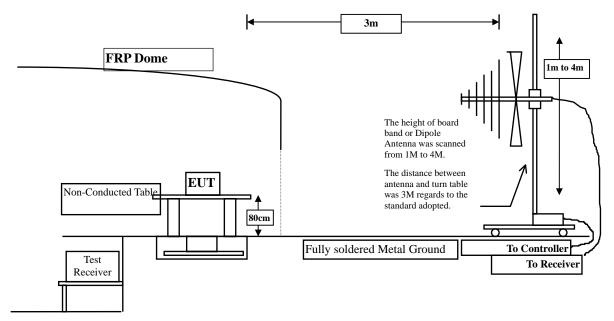
Test Site	Equi	pment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 3	Х	Loop Antenna	Teseq	HLA6120 / 26739	Jul., 2014
	Х	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2013
	Х	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2013
	Х	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	Х	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2014
	Х	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2013
	Х	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2014
	Х	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
	Х	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2013
	Х	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	Х	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	Х	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

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

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

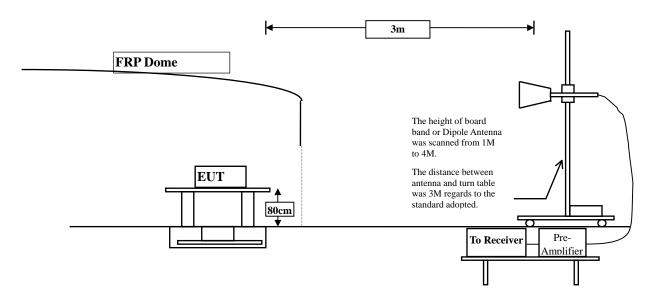
#### 4.2. Test Setup

Below 1GHz



QuieTek

Above 1GHz



#### 4.3. Limits

#### ➤ General Radiated Emission 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 Limits						
Frequency MHz	uV/m @3m	dBuV/m@3m				
0.009-0.490	2400/F(kHz)	300				
0.490-1.705	24000/F(kHz)	30				
1.705-30	30	30				
30-88	100	3				
88-216	150	3				
216-960	200	3				
Above 960	500	3				

Remarks: 1. RF Voltage  $(dBuV) = 20 \log RF$  Voltage (uV)

- 2. In the Above Table, the tighter limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

#### 4.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 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 C63.10:2009 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~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 beamwidth of the antenna. The worst radiated emission is measured on the Final Measurement.

The frequency range from 9kHz to 10th harmonics is checked.

#### 4.5. Uncertainty

- ± 3.9 dB above 1GHz
- $\pm$  3.8 dB below 1GHz

Product Test Item Test Site Test Mode	<ul> <li>ASUS ZenWatch</li> <li>Harmonic Radiated Emission</li> <li>No.3 OATS</li> <li>Mode 1: Transmit - 1Mbps (GFSK)(2402MHz)</li> </ul>				
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
<b>Peak Detector:</b>					
4804.000	2.511	41.190	43.700	-30.300	74.000
7206.000	9.511	40.130	49.641	-24.359	74.000
9608.000	10.394	39.430	49.824	-24.176	74.000
Average Detector:					
<b>Peak Detector:</b>					
4804.000	2.923	41.440	44.362	-29.638	74.000
7206.000	9.988	40.020	50.009	-23.991	74.000
9608.000	10.847	39.380	50.227	-23.773	74.000
Average Detector:					

#### 4.6. Test Result of Radiated Emission

--

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: ASUS ZenWatch				
Test Item	: Harmon	ic Radiated Emiss	sion		
Test Site	: No.3 OA	ATS			
Test Mode	: Mode 1:	Transmit - 1Mbp	s (GFSK)(2441MHz)	)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
<b>Peak Detector:</b>					
4882.000	2.025	42.130	44.155	-29.845	74.000
7323.000	9.762	39.510	49.271	-24.729	74.000
9764.000	9.682	39.410	49.091	-24.909	74.000
Average Detector:					
Vertical					
<b>Peak Detector:</b>					
4882.000	2.488	41.620	44.108	-29.892	74.000
7323.000	10.375	38.800	49.174	-24.826	74.000
9764.000	10.315	39.590	49.905	-24.095	74.000
Average Detector:					

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- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product Test Item	: ASUS ZenWatch · Harmonic Radiated Emission					
Test Site	No.3 OATS					
Test Mode			s (GFSK)(2480MHz)	)		
		-				
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBuV	dBuV/m	dB	dBuV/m	
Horizontal						
Peak Detector:						
4960.000	2.582	41.310	43.892	-30.108	74.000	
7440.000	10.555	37.280	47.835	-26.165	74.000	
9920.000	10.206	38.520	48.726	-25.274	74.000	
Average Detector:						
Vertical						
Peak Detector:						
4960.000	3.398	41.340	44.739	-29.261	74.000	
7440.000	11.214	37.520	48.734	-25.266	74.000	
9920.000	11.245	38.730	49.975	-24.025	74.000	
Average Detector:						

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- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: ASUS ZenWatch				
Test Item	: Harmonic Radiated Emission				
Test Site	: No.3 OA	ATS			
Test Mode	: Mode 2:	Transmit - 3Mbp	os (8DPSK)(2402MH	Z)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
<b>Peak Detector:</b>					
4804.000	2.511	40.990	43.500	-30.500	74.000
7206.000	9.511	39.510	49.021	-24.979	74.000
9608.000	10.394	39.260	49.654	-24.346	74.000
Average Detector:					
Vertical					
<b>Peak Detector:</b>					
4804.000	2.923	41.090	44.012	-29.988	74.000
7206.000	9.988	39.970	49.959	-24.041	74.000
9608.000	10.847	39.030	49.877	-24.123	74.000
Average Detector:					

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- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: ASUS ZenWatch						
Test Item	: Harmon	: Harmonic Radiated Emission					
Test Site	: No.3 OA	ATS					
Test Mode	: Mode 2:	Transmit - 3Mbp	os (8DPSK) (2441MH	lz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector:							
4882.000	2.025	41.140	43.165	-30.835	74.000		
7323.000	9.762	39.270	49.031	-24.969	74.000		
9764.000	9.682	38.920	48.601	-25.399	74.000		
Average Detector:							
Vertical							
Peak Detector:							
4882.000	2.488	41.510	43.998	-30.002	74.000		
7323.000	10.375	39.410	49.784	-24.216	74.000		
9764.000	10.315	39.290	49.605	-24.395	74.000		
Average Detector:							

\_\_\_

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: ASUS ZenWatch				
Test Item	: Harmoni	ic Radiated Emiss	sion		
Test Site	: No.3 OA	ATS			
Test Mode	: Mode 2:	Transmit - 3Mbp	s (8DPSK) (2480MH	[z)	
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
<b>Peak Detector:</b>					
4960.000	2.582	41.740	44.322	-29.678	74.000
7440.000	10.555	37.460	48.015	-25.985	74.000
9920.000	10.206	38.810	49.016	-24.984	74.000
Average Detector:					
Vertical					
<b>Peak Detector:</b>					
4960.000	3.398	41.290	44.689	-29.311	74.000
7440.000	11.214	37.610	48.824	-25.176	74.000
9920.000	11.245	38.930	50.175	-23.825	74.000
Average Detector:					

---

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: ASUS ZenWatch					
Test Item	: General Radiated Emission					
Test Site	: No.3 O	ATS				
Test Mode	: Mode 1	: Transmit - 1Mbps	s (GFSK) (2441MHz	2)		
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBuV	dBuV/m	dB	dBuV/m	
Horizontal						
39.700	-3.625	31.323	27.698	-12.302	40.000	
289.960	-5.470	30.258	24.788	-21.212	46.000	
460.680	4.030	25.362	29.392	-16.608	46.000	
613.940	3.132	30.115	33.247	-12.753	46.000	
691.540	3.722	35.889	39.611	-6.389	46.000	
903.000	5.938	27.152	33.090	-12.910	46.000	
Vertical						
45.520	-10.625	41.110	30.485	-9.515	40.000	
177.440	-1.248	25.234	23.986	-19.514	43.500	
373.380	0.043	23.916	23.959	-22.041	46.000	
691.540	2.092	32.369	34.461	-11.539	46.000	
769.140	2.558	28.441	30.999	-15.001	46.000	
941.800	3.460	24.777	28.237	-17.763	46.000	

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 8. No emission found between lowest internal used/generated frequency to 30MHz.

Product Test Item	<ul> <li>ASUS ZenWatch</li> <li>General Radiated Emission</li> </ul>					
Test Site	: No.3 OATS					
Test Mode			s (8DPSK) (2441MH	[z]		
				,		
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBuV	dBuV/m	dB	dBuV/m	
Horizontal						
383.080	1.305	23.995	25.300	-20.700	46.000	
538.280	3.316	27.721	31.037	-14.963	46.000	
652.740	1.899	31.894	33.793	-12.207	46.000	
730.340	3.819	32.833	36.652	-9.348	46.000	
864.200	6.329	27.683	34.012	-11.988	46.000	
980.600	7.314	26.425	33.739	-20.261	54.000	
Vertical						
45.520	-10.625	40.706	30.081	-9.919	40.000	
179.380	-0.824	22.720	21.896	-21.604	43.500	
381.140	0.816	23.892	24.708	-21.292	46.000	
538.280	1.996	25.333	27.329	-18.671	46.000	
691.540	2.092	33.011	35.103	-10.897	46.000	
903.000	1.418	24.717	26.135	-19.865	46.000	

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 8. No emission found between lowest internal used/generated frequency to 30MHz.

#### 5. **RF** Antenna Conducted Test

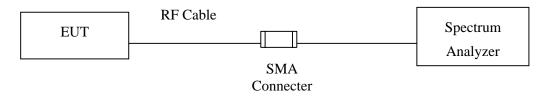
#### 5.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

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

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

#### 5.2. Test Setup



#### 5.3. Limits

According to FCC Section 15.247(d). 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 measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

#### 5.4. Test Procedure

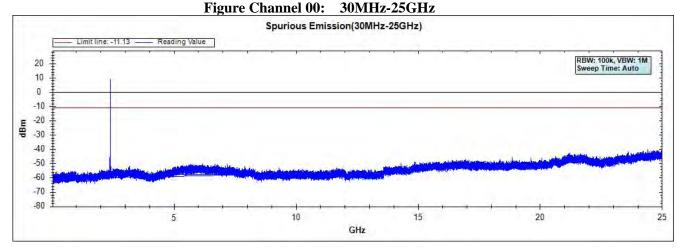
The EUT was setup to ANSI C63.10, 2009; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

#### 5.5. Uncertainty

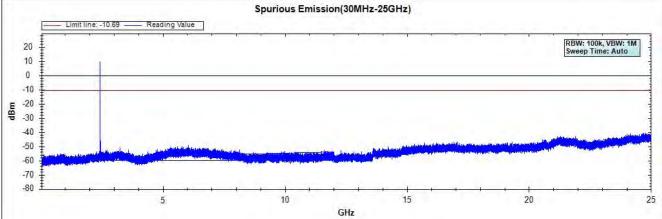
± 150Hz

#### 5.6. Test Result of RF Antenna Conducted Test

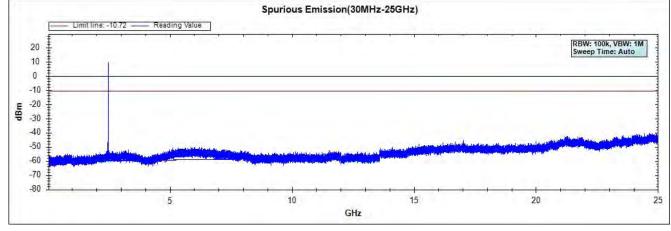
Product	:	ASUS ZenWatch
Test Item	:	RF Antenna Conducted Test
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)



#### Figure Channel 39: 30MHz-25GHz

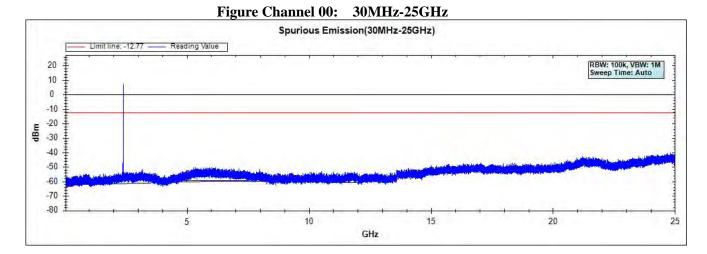


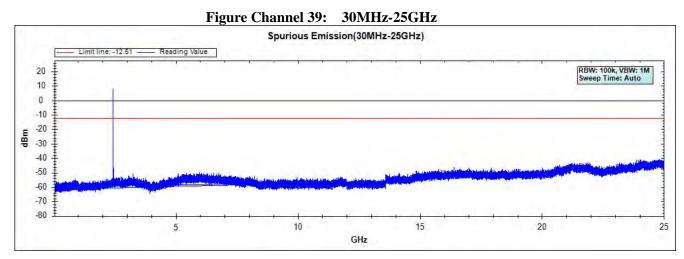
#### Figure Channel 78: 30MHz-25GHz



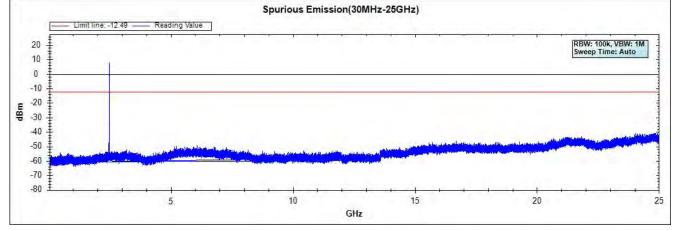
Note: The above test pattern is synthesized by multiple of the frequency range.

:	ASUS ZenWatch
:	RF Antenna Conducted Test
:	No.3 OATS
:	Mode 2: Transmit - 3Mbps (8DPSK)
	:





#### Figure Channel 78: 30MHz-25GHz



Note: The above test pattern is synthesized by multiple of the frequency range.

#### 6. Band Edge

#### 6.1. Test Equipment

#### **RF Radiated Measurement:**

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

Test Site	Equi	ipment	Manufacturer	Model No./Serial No.	Last Cal.
$\boxtimes$ Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2013
	Х	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2013
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
		Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2014
	Х	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2013
		Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2014
	Х	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2013
	Х	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	Х	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	Х	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

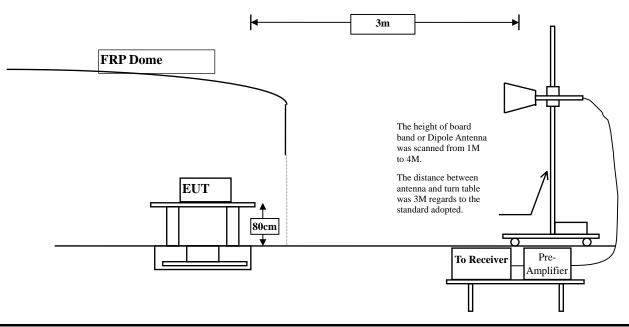
Note: 1. All equipments are calibrated every one year.

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

#### 6.2. Test Setup

#### **RF Radiated Measurement:**

Above 1GHz



#### 6.3. 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. 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)).

#### 6.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 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 can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2009 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz. The EUT was setup to ANSI C63.10, 2009; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

#### 6.5. Uncertainty

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

#### 6.6. **Test Result of Band Edge**

Product	:	ASUS ZenWatch
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

#### **RF Radiated Measurement (Horizontal):**

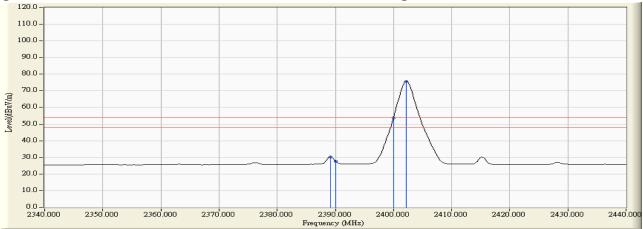
Channel No.	Frequency	Correct Factor	Reading Level	<b>Emission Level</b>	Peak Limit	Average Limit	Result
Channel No.	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	(dBµV/m)	Kesult
00 (Peak)	2389.000	-2.692	43.328	40.637	74.00	54.00	Pass
00 (Peak)	2390.000	-2.687	41.774	39.087	74.00	54.00	Pass
00 (Peak)	2400.000	-2.660	69.939	67.279			
00 (Peak)	2401.800	-2.658	92.373	89.715			
00 (Average)	2389.200	-2.690	32.988	30.298	74.00	54.00	Pass
00 (Average)	2390.000	-2.687	30.392	27.705	74.00	54.00	Pass
00 (Average)	2400.000	-2.660	56.312	53.652			
00 (Average)	2402.200	-2.657	78.420	75.763			

#### **Figure Channel 00:**

#### Horizontal (Peak) 120.0 110.0 100.0 90.0 80.08 70.0 Level(dBuV/m) 60.0 50.0 40.0 30.0 20.0 10.0 0.0 -2350,000 2360,000 2370,000 2390.000 Frequency (MHz) 2410,000 2380.000 2400.000 2420,000 2430.000 2440.000

#### **Figure Channel 00:**

#### Horizontal (Average)



- All readings above 1GHz are performed with peak and/or average measurements as necessary. 1.
- Peak measurements:  $RBW = \hat{1}MHz$ ,  $VBW = \hat{3}MHz$ , Sweep: Auto. 2.
- Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto. "\*", means this data is the worst emission level. 3.
- 4.
- 5. Measurement Level = Reading Level + Correct Factor.
- The average measurement was not performed when the peak measured data under the limit of average 6. detection.

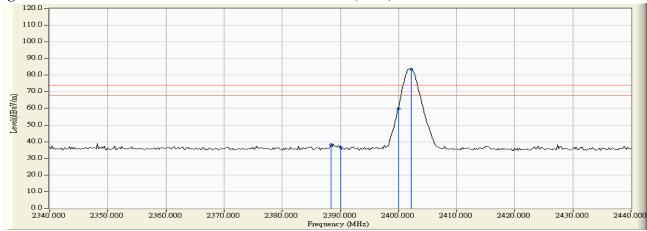
Product	:	ASUS ZenWatch
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

#### **RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
00 (Peak)	2388.400	-4.154	42.570	38.417	74.00	54.00	Pass
00 (Peak)	2390.000	-4.159	40.897	36.738	74.00	54.00	Pass
00 (Peak)	2400.000	-4.171	64.107	59.936			
00 (Peak)	2402.200	-4.171	87.701	83.530			
00 (Average)	2389.000	-4.156	30.614	26.459	74.00	54.00	Pass
00 (Average)	2390.000	-4.159	29.324	25.165	74.00	54.00	Pass
00 (Average)	2400.000	-4.171	52.795	48.624			
00 (Average)	2402.200	-4.171	74.461	70.290			

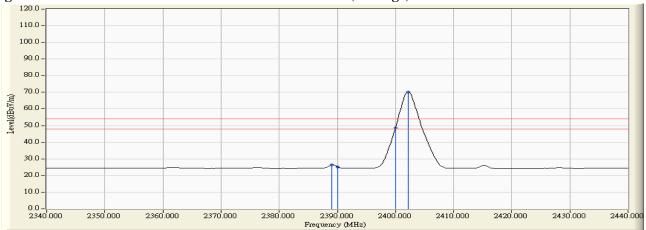
#### **Figure Channel 00:**





#### **Figure Channel 00:**

Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "\*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



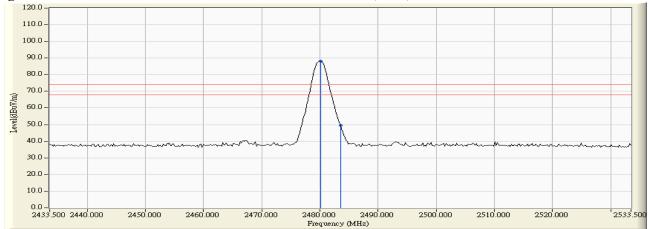
Product	:	ASUS ZenWatch
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

#### **RF Radiated Measurement (Horizontal):**

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Result
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	$(dB\mu V/m)$	(dBµV/m)	Kesult
78 (Peak)	2480.100	-2.605	90.612	88.007			
78 (Peak)	2483.500	-2.601	52.075	49.473	74.00	54.00	Pass
78 (Average)	2480.100	-2.605	76.994	74.389			
78 (Average)	2483.500	-2.601	46.666	44.064	74.00	54.00	Pass

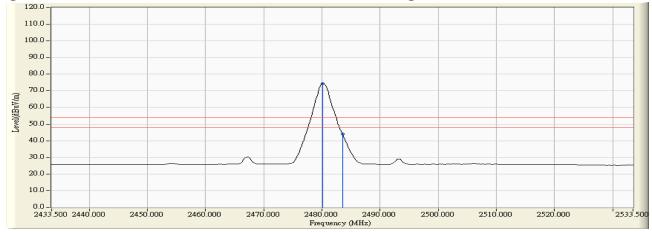
#### Figure Channel 78:

#### Horizontal (Peak)

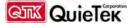


#### Figure Channel 78:

#### Horizontal (Average)



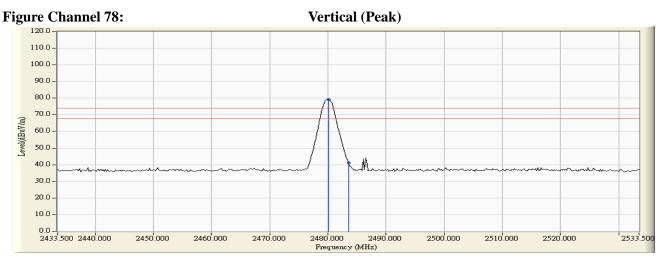
- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "\*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



Product	:	ASUS ZenWatch
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

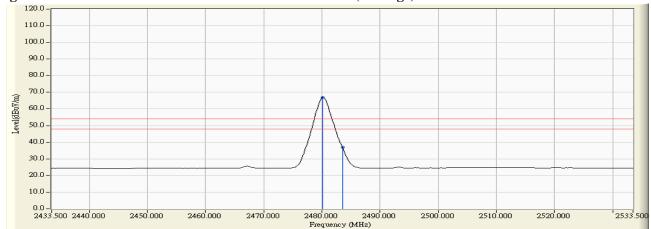
#### **RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
78 (Peak)	2480.100	-3.977	83.016	79.039			
78 (Peak)	2483.500	-3.966	45.271	41.304	74.00	54.00	Pass
78 (Average)	2480.100	-3.977	70.770	66.793			
78 (Average)	2483.500	-3.966	40.866	36.899	74.00	54.00	Pass





Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "\*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



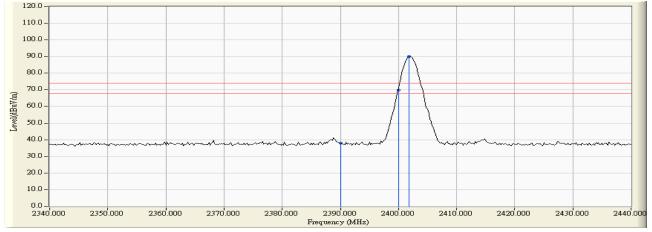
Product	:	ASUS ZenWatch
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

#### **RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
00 (Peak)	2390.000	-2.687	40.574	37.887	74.00	54.00	Pass
00 (Peak)	2400.000	-2.660	72.621	69.961			
00 (Peak)	2401.800	-2.658	92.719	90.061			
00 (Average)	2388.400	-2.694	32.238	29.544	74.00	54.00	Pass
00 (Average)	2390.000	-2.687	29.304	26.617	74.00	54.00	Pass
00 (Average)	2400.000	-2.660	58.627	55.967			
00 (Average)	2401.600	-2.658	78.690	76.032			

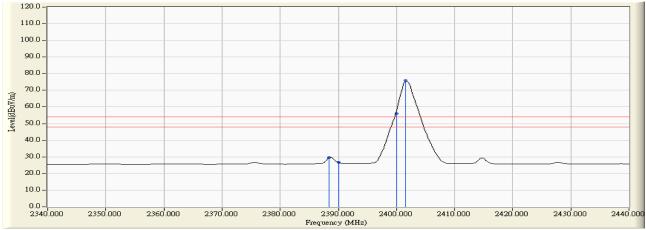
#### **Figure Channel 00:**

#### Horizontal (Peak)

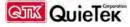


#### **Figure Channel 00:**

#### Horizontal (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto. Average measurements: RBW = 1MHz, VBW = 10Hz, Sweep: Auto. 2.
- 3.
- "\*", means this data is the worst emission level. 4.
- Measurement Level = Reading Level + Correct Factor. 5.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



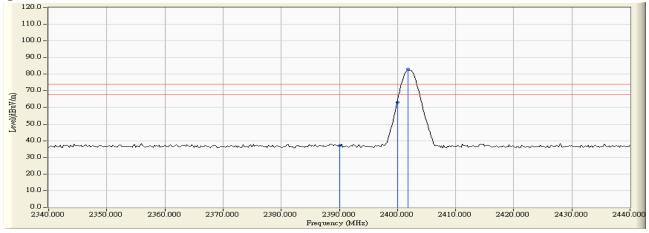
Product	:	ASUS ZenWatch
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

#### **RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
00 (Peak)	2390.000	-4.159	41.201	37.042	74.00	54.00	Pass
00 (Peak)	2400.000	-4.171	67.130	62.959			
00 (Peak)	2401.800	-4.171	87.218	83.047			
00 (Average)	2390.000	-4.159	28.694	24.535	74.00	54.00	Pass
00 (Average)	2400.000	-4.171	54.168	49.997			
00 (Average)	2401.800	-4.171	74.218	70.047			

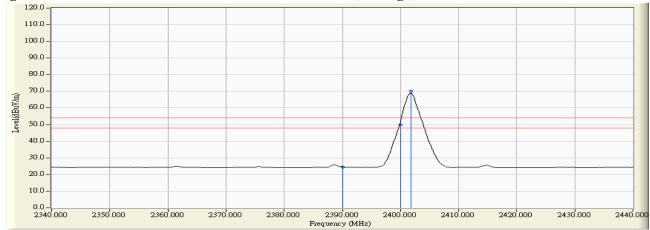
#### **Figure Channel 00:**

Vertical (Peak)



#### Figure Channel 00:

Vertical (Average)



#### Note:

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "\*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.



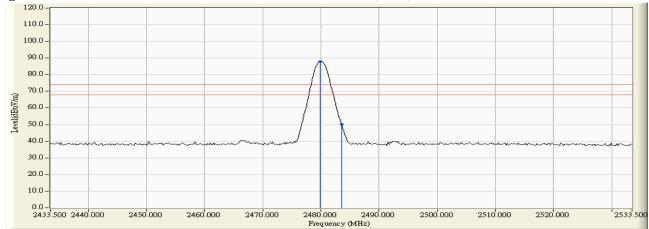
Product	:	ASUS ZenWatch
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

#### **RF Radiated Measurement (Horizontal):**

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Result
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	$(dB\mu V/m)$	(dBµV/m)	Result
78 (Peak)	2479.900	-2.605	90.437	87.832			
78 (Peak)	2483.500	-2.601	52.681	50.079	74.00	54.00	Pass
78 (Average)	2479.700	-2.604	75.329	72.724			
78 (Average)	2483.500	-2.601	41.524	38.922	74.00	54.00	Pass

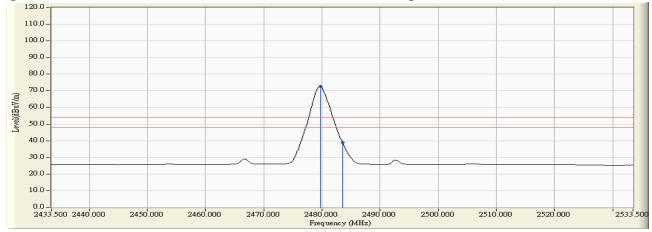
#### **Figure Channel 78:**

#### Horizontal (Peak)



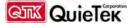
#### Figure Channel 78:

#### Horizontal (Average)



#### Note:

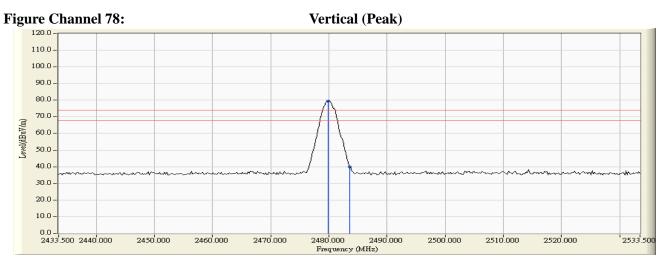
- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "\*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

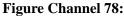


Product	:	ASUS ZenWatch
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

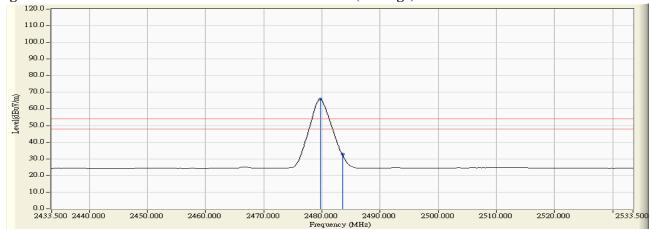
#### **RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
78 (Peak)	2479.900	-3.978	83.303	79.325			
78 (Peak)	2483.500	-3.966	43.946	39.979	74.00	54.00	Pass
78 (Average)	2479.700	-3.978	69.882	65.903			
78 (Average)	2483.500	-3.966	36.626	32.659	74.00	54.00	Pass





Vertical (Average)



Note:

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "\*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

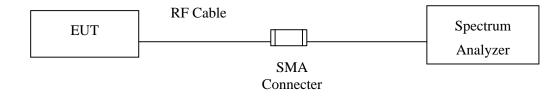
## 7. Channel Number

## 7.1. Test Equipment

_	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note: 1. All equipments 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. Limit

Frequency hopping systems operating in the 2400-2483.5 MHz bands shall use at least 75 hopping frequencies.

## 7.4. Test Procedure

The EUT was setup to ANSI C63.10, 2009; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

## 7.5. Uncertainty

N/A

## 7.6. Test Result of Channel Number

:	ASUS ZenWatch
:	Channel Number
:	No.3 OATS
:	Mode 1: Transmit - 1Mbps (GFSK)
	:

Frequency Range	Measurement	Required Limit	Result		
(MHz)	(Hopping Channel)	(Hopping Channel)	Result		
2402 ~ 2480	79	>75	Pass		

#### 2402-2421MHz

Frequency	M Aug 05, 2014		ALIGNAUTO		ISE:INT	SEN			50 Ω	RF			
Trequency	CE 1 2 3 4 5 6 PE MWWWWWW ET P NNNN	TRAC	: Log-Pwr	Avg Type		Trig: Free	HZ 'NO: Fast 🖵	0000 GI	2.41150	req	ter F		
Auto Tur	ET P N N N N N	DE	-		) dB	#Atten: 30	Gain:Low	Ú.		-			
Auto Tun	00 GHz 02 dBm	B/div Ref 20.00 dBm 9.02 dBm 9.02 dBm											
Center Fre	m m	Ing por	my my	m m	Ind hul	land hard	my my	my my	m m	m	A		
2.411500000 GH		111	111	1 U I	111	f V {		141	11	14	t		
Start Fre													
2.401500000 GH													
Stop Fre													
2.421500000 GH													
CF Ste	2150 GHz (1001 pts)					100 kHz	#\/R\A(			150			
2.000000 MH Auto Ma			DIION WIDTH	TION FUN	FUN	Y		X					
						8.08 dE 9.02 dE		2.402 0		f	N 1		
Freq Offse													
0 H													
		-									-		
		-									1		
				171			1.1.						
											1 mar 1 m		



		RF S	50 Ω AC		SEN	BE:INT	1	ALIGNAUTO	11:39:46/	AM Aug 05, 2014	Constants.
RL enter	Fre		31500000 GHz Avg Type: Log-Pwr TRACE 1 2 3 4 5 0 PN0: East S Trig: Free Run Trype							CE 1 2 3 4 5 6	Frequency
	IFGain:Low #Atten: 30 dB DET P NNNN Mkr2 2.441 00 GHz										Auto Tune
dB/di	v	Ref 20.0	00 dBm					WIN		25 dBm	
	1	m	mmm	mm	mm	mm	mm	m m	mm	M M	Center Freq 2.431500000 GHz
	V	Ver Vr	W W	Y V	W P V	l V <sup>a</sup>	WW		P V		
.0									-		Start Freq
).0											2.421500000 GHz
0.0 0.0											Stop Freq
J.0 J.0		-									2.441500000 GHz
		50 GHz 00 kHz		#VBV	V 100 kHz			Sweep		4150 GHz (1001 pts)	CF Step 2.000000 MHz
	TRC	f	×	00 GHz	9.12 dB		CTION FUI	NCTION WIDTH	FUNCTI	ON VALUE	<u>Auto</u> Man
2 N 3	1	f		00 GHz	9.12 dB 9.25 dB						From Offect
4						-			-		Freq Offset 0 Hz
5											1.
8 9											
0											
2 G		-				_		STATU			

#### 2422-2441MHz

### 2442-2461MHz

gilent Spe		Analyzer - S	wept SA Ω AC		L COTA	ion an inclusion	1	MACHINE	11,49,96		F
10			500000 Gł	Hz PNO: Fast G	and the second	Run	Avg Typ	e: Log-Pwr	TRA TY	AM Aug 05, 2014 CE 1 2 3 4 5 6 /PE M WAAWAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	Frequency
D dB/div Ref 20.00 dBm #Atten: 30 dB Det IP NNNN 0 dB/div Ref 20.00 dBm 9.27 dBm											Auto Tune
. <b>og</b> 10.0 0.00	1	N	M	M	MM	M	4 m	MM			Center Free 2.451500000 GH
0.0 0.0 0.0	_										Start Fre 2.441500000 GH
0.0 0.0 0.0											Stop Fre 2.461500000 GH
		0 GHz 0 kHz	-	#VBI	W 100 kHz	-		Sweep	Stop 2.4 2.47 ms	6150 GHz (1001 pts)	CF Ste 2.000000 MF
Krimode 1 N 2 N	1	f f	× 2.442 0 2.461 0	00 GHz 00 GHz	9.18 dB 9.27 dB	Sm	NCTION	NCTION WIDTH	FUNCTI	ON VALUE	<u>Auto</u> Ma
3 4 5 6											Freq Offs 0 F
7 8 9 0											
12 sg								STATU			



			HUUMIII								
							ept SA	ilyzer - Swe	rum Ana		
Frequency	11:47:01 AM Aug 05, 2014 TRACE 1 2 3 4 5 6 TYPE M WWWWWW	ALIGNAUTO pe: Log-Pwr	Avg T	SENSE(INT		Hz NO: Fast G	AC 0000 GH	50 Ω 2.47150	RF req 2		Cer
Auto Tune	DET PNNNN	-		ten: 30 dB		NU: Fast 🕒 Gain:Low				_	
	2 2.480 00 GHz 9.15 dBm	MKr2					Bm	20.00 c	Ref	B/div	10 d Log
Center Freq 2.471500000 GHz		WW	MM	I'm prof	M	mm	m	m	N	Å	10.0 0.00 -10.0
Start Freq 2.461500000 GHz			-							-	-20.0 -30.0 -40.0
Stop Freq 2.481500000 GHz											-50.0 -60.0 -70.0
CF Step 2.000000 MHz	Stop 2.48150 GHz 2.47 ms (1001 pts)		1	kHz	3W 100	#VBV			150 C		
<u>Auto</u> Man	FUNCTION VALUE	UNCTION WIDTH	FUNCTION	.27 dBm			× 2.462 0		RC SCL	MODE N	MKR 1
Freq Offset 0 Hz				.15 dBm			2.482 0		f	N	2 3 4 5
											6 7 8 9 10 11 12
		STATUS									MSG

، 2462-2480MHz

Product	:	ASUS ZenWatch
Test Item	:	Channel Number
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK)

Frequency Range	Measurement	Required Limit	Result	
(MHz)	(Hopping Channel)	(Hopping Channel)	Kesuit	
2402 ~ 2480	79	>75	Pass	

## 2402-2421MHz

Center Fr	eq 2.4115	00000 GHz PNO: F IEGain:		SENSE:INT	Avg Typ	ALIGNAUTO e: Log-Pwr	TRA TY	M Aug 05, 2014 CE 1 2 3 4 5 6 PE M WWWWWWW ET P N N N N N	Frequency			
10 dB/div	Mkr2 2.421 00 GHz 9.04 dBm 9.04 dBm											
10.0 1 0.00 1 -10.0	mumm	(Wm Wm Wm	Kurtuut	w and w,	1. M. T. W.	mm	mont	MMM	Center Free 2.411500000 GH			
-20.0									Start Fre 2.401500000 GH			
-50.0 -60.0 -70.0									<b>Stop Fre</b> 2.421500000 GH			
Start 2.40 #Res BW			#VBW 100	(Hz		Sweep		2150 GHz (1001 pts)	CF Ste 2.000000 MH			
MKR MODE TR		X	Y		Inction Fu	NCTION WIDTH	FUNCTIO	ON VALUE	<u>Auto</u> Ma			
1 N 1 2 N 1 3 4 5 6	f	2.402 00 GH 2.421 00 GH		0 dBm 4 dBm					Freq Offse 0 H			
7 8 9 10 11												



gilent Spectrum Analyzer - Swept SA								
RL RF 50Ω AC		SENSE:I		ALIGNAUTO		AM Aug 05, 2014	Frequency	
Center Freq 2.43150000	r Freq 2.431500000 GHz		Avg Type: Log-Pwr			TRACE 1 2 3 4 5 6		
	PNO: Fast 🕞	Trig: Free Ru #Atten: 30 dB				PNNNNN		
	00.011-	Auto Tun						
Mkr2 2.441 00 GHz 10 dB/div Ref 20.00 dBm 9.14 dBm								
0 dB/div Ref 20.00 dBm	ľ		-		9.	14 aBm	1	
og 👔					1	●2		
10.0 per nom nom nom way	NM NM NM	Ner INAN DE	A MAN WANT	my any any	NW MM	NM INM	Center Fre	
0.00	W Y Y L		Par M. Par	W W Y	F Y I	1 4 4	2.431500000 GH	
10.0	· · · · · · · · · · · · · · · · ·					- <u>·</u>		
20.0							Start Fre	
30.0					-	-	2.421500000 GH	
40.0							2.421000000 01	
50.0								
							Stop Fre	
60.0							1000	
70.0				_			2.441500000 GH	
The second second second			1.2					
tart 2.42150 GHz						4150 GHz	CF Step	
Res BW 100 kHz	#VBM	100 kHz		Sweep	2.47 ms	(1001 pts)	2.000000 MH	
KR MODE TRC SCL	<	Y I	FUNCTION	FUNCTION WIDTH	FUNCT	ON VALUE	<u>Auto</u> Ma	
	2.422 00 GHz	9.08 dBm						
	2.441 00 GHz	9.14 dBm					10.46	
3 4					-		Freq Offse	
5	11						01	
6								
7 8								
9					-			
10				-				
11					_			
12								
SG				STATUS	5			

#### 2422-2441MHz

#### 2442-2461MHz

Agilent Spectrum Analyzer - Swept SA										
RL         RF         50 Ω         AC           Center Freq 2.451500000 GHz         PN0:	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	12:01:59 PM Aug 05, 2014 TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P N N N N N	Frequency						
IFGair 10 dB/div Ref 20.00 dBm	Mkr2 2.461 00 GHz 0 dB/div Ref 20.00 dBm 9.19 dBm									
	with hat hand had he	when with with with	m m m	Center Free 2.451500000 GH						
-20.0				Start Free 2.441500000 GH						
-50.0				Stop Fre 2.461500000 GH						
Start 2.44150 GHz #Res BW 100 kHz	VBW 100 kHz	Sweep	Stop 2.46150 GHz 2.47 ms (1001 pts)	2.000000 1111						
MKR MODE TRC SCL X 1 N 1 f 2.442 00 G		UNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Ma						
2 N 1 f 2.442 00 G 3 4 5 6 6				Freq Offse 0 H						
7 8 9 10 11										
12		STATU	s							



							ept SA	alyzer - Sw	ım Ana	ectru		
Frequency	12:11:08 PM Aug 05, 2014	ALIGNAUTO		ISE:INT	SEN		AC		RF			R
	TRACE 123456 TYPE MWWWWWW DET PINNNNN	e: Log-Pwr	Avg Typ		Trig: Free #Atten: 30	<b>HZ</b> NO: Fast ♀ Gain:Low	00000 GI	2.47150	eq 2	Fre	nter	en
Auto Tur	Mkr2 2.480 00 GHz 10 dB/div Ref 20.00 dBm 9.23 dBm											
Center Fre 2.471500000 Gi	mmm may my	many	man	W. Frant	And Man D	wywy	Mun Went	whut	m hi	,1 ∖_∕/	M	. <b>og</b> 10.0 0.00
Start Fr 2.461500000 GI												20.0 30.0 40.0
Stop Fr 2.481500000 G											-	0.0 0.0 0.0
CF Ste 2.000000 MI	Stop 2.48150 GHz 2.47 ms (1001 pts)				100 kHz	#VBW			150 ( 100			
Auto Mi	FUNCTION VALUE	NCTION WIDTH	CTION FUI		Y		×		SOL	TRC		
					9.25 dB 9.23 dB		2.462 0		f	1	N N	1
Freq Offs				sm	9.23 UB		2.400 0		1	-	-	3
				3m	9.23 00		1.1000					456
Freq Offs 01				3m	9.23 GD							45678
				sm.	9.23 GD							4567

#### 2462-2480MHz

## 8. Channel Separation

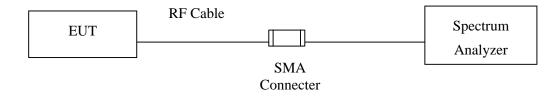
## 8.1. Test Equipment

_	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

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

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

## 8.2. Test Setup



## 8.3. Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

## 8.4. Test Procedure

The EUT was setup to ANSI C63.10, 2009; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

## 8.5. Uncertainty

± 150Hz

## 8.6. Test Result of Channel Separation

Product	:	ASUS ZenWatch
Test Item	:	Channel Separation
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)

Channel No.	Frequency		Limit	Limit of (2/3)*20dB	
	(MHz)	Level	(kHz)	Bandwidth (kHz)	Result
	()	(kHz)	(1112)	Dunu (ninz)	
00	2402	1000	>25 kHz	733.3	Pass
39	2441	1000	>25 kHz	746.7	Pass
78	2480	1000	>25 kHz	746.7	Pass

NOTE: The 20dB Bandwidth is refer to section 10.

50 Ω AC	SENSE;INT	ALIGNAUTO Avg Type: Log-Pwr	01:55:41 AM Aug 05, 2014 TRACE 1 2 3 4 5 6	Frequency
PNO: Wide IFGain:Low	Trig: Free Run #Atten: 30 dB	Trig: Free Run TYPE MWWWWW		June
20.00 dBm		Mkr	2 2.403 00 GHz 8.69 dBm	Auto Tune
		2		Center Free 2.402000000 GH
				Start Fre 2.397000000 GH
			Maran Maran Maran	Stop Fre 2.407000000 GH
Hz #VE				CF Ste 1.000000 MH Auto Ma
2.402 00 GHz 2.403 00 GHz	8.67 dBm 8.69 dBm			Freq Offse 0 H
	PN0: Wide (FGain:Low 20.00 dBm 0 GHz Hz #VE 2.402 00 GHz	PNO: Wide Trig: Free Run IFGain:Low #Atten: 30 dB 20.00 dBm 1 1 0 GHz Hz #VBW 100 kHz 2.402 00 GHz 8.67 dBm	Avg Type: Log-Pwr PN0: Wide Trig: Free Run #Atten: 30 dB Mkr 20.00 dBm 0 GHz Hz #VBW 100 kHz #Sweep	Avg Type: Log-Pwr PN0: Wide Trig: Free Run IFGain:Low #Atten: 30 dB Mkr2 2.403 00 GHz 20.00 dBm 1 2 0 GHz Hz #VBW 100 kHz #Sweep 500 ms (1001 pts) X 1 4 5 6 Trig: Free Run #Atten: 30 dB Mkr2 2.403 00 GHz 8.69 dBm 1 2 1 2 3 4 5 6 TWE [1 2 3 4 5 TWE [1 2 3 4 5 6 TWE [1 2 3 4 5 TWE [1 2 3 4 5

## Channel 00 2402MHz

XI RL		RF 50 Ω	AC		SENSE:I	UT I	ALIGN AUTO	03:01:09/	M Aug 05, 2014	
Center	enter Freq 2.441000000 GHz PNO: Wide G IFGain:Low		PNO: Wide 🕞 Trig: Free Run TYPE M WANNAWA				CE 1 2 3 4 5 6	Frequency		
10 dB/di	v	Ref 20.00 (		Gain:Low	#Atten: 30 dB		Mkr	2 2.442	00 GHz 01 dBm	Auto Tune
10.0 0.00 -10.0					A1	2				Center Fred 2.441000000 GHz
-20.0							M			Start Fred 2.436000000 GHz
-50.0 -60.0	-		and and a second se				Trans windy and	dar, maria	م الدينية من م	Stop Fred 2.446000000 GHz
Center #Res B		1000 GHz 00 kHz		#VBV	/ 100 kHz		#Sweep		10.00 MHz (1001 pts)	CF Step 1.000000 MH
MKR MODE	TRC	SOL CONTRACT	×		Y	FUNCTION	FUNCTION WIDTH	FUNCTI	ON VALUE	<u>Auto</u> Mar
1 N 2 N 3 4 5 6	1	f	2.441 0 2.442 0		9.09 dBm 9.01 dBm					Freq Offset 0 Hz
7 8 9 10 11 12										1
14										

## Channel 39 2441MHz

## Channel 78 2480 MHz

enter	RF	50 Q AC	SENSE:INT	A	LIGNAUTO	04:13:31 A	M Aug 05, 2014	Contraction of the
ontol	Freq 2	480000000 GHz PNO: Wide C	Trig: Free Run	Avg Type:	Log-Pwr	TY	E 123456	Frequency
		IFGain:Low	#Atten: 30 dB	-	Mkr	1 2.479	00 GHz	Auto Tune
0 dB/div	Ref	20.00 dBm	1	1 1	-	9.	11 dBm	
10.0 0.00			M					Center Fre 2.480000000 GH
10.0 20.0 30.0								Start Fre 2.475000000 GH
40.0 50.0 60.0 70.0	hydronger	Lamash him to the				a an	K utangan Phay	Stop Fre 2.485000000 GH
enter 2 Res BV			/ 100 kHz	#	#Sweep		0.00 MHz 1001 pts)	CF Ste 1.000000 MH
MKR MODE	TRC SOL	× 2.479 00 GHz	9.11 dBm	INCTION FUNC	TION WIDTH	FUNCTIO	IN VALUE	<u>Auto</u> Ma
	1 f	2.479 00 GHz 2.480 00 GHz	9.10 dBm					Freq Offse
2 N 3 4 5								0 H
2 N 3 4								0 H

:	ASUS ZenWatch
:	Channel Separation
:	No.3 OATS
:	Mode 2: Transmit - 3Mbps (8DPSK)

	Frequency	Measurement	Limit	Limit of (2/3)*20dB		
Channel No.	(MHz)	Level	(kHz)	Bandwidth (kHz)	Result	
	(WIIIZ)	(kHz)	(KIIZ)	Dandwiddii (KHZ)		
00	2402	1000	>25 kHz	900.0	Pass	
39	2441	1000	>25 kHz	893.3	Pass	
78	2480	1000	>25 kHz	900.0	Pass	

NOTE: The 20dB Bandwidth is refer to section 10.

RL RF 50 Q AC	SENSE:INT	ALIGNAUTO	04:30:33 AM Aug 05, 2014	
enter Freq 2.402000000 GHz PNO: Wide Game Low	) Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	TRACE 123456 TYPE MWWWWWW DET P N N N N N	Frequency
dB/div Ref 20.00 dBm		Mkr	2 2.403 00 GHz 8.80 dBm	Auto Tune
	mar	MA-9		Center Fre 2.402000000 GH
		may		Start Fre 2.397000000 G⊦
10 Andrew			vertificant and	Stop Fre 2.407000000 GH
	100 kHz		Span 10.00 MHz 500 ms (1001 pts)	CF Ste 1.000000 MH Auto Ma
R         MODE         TRC         X           N         1         f         2.402         00         GHz           N         1         f         2.403         00         GHz           3         1         f         2.403         00         GHz	8.74 dBm 8.80 dBm	NCTION FUNCTION WIDTH	FUNCTION VALUE	Freq Offse
4 5 7 7 8				01

#### Channel 00 2402MHz

RL RF	50 Q AC		SENSE:INT		ALIGN AUTO	05:08:14 A	M Aug 05, 2014	2.000
Center Freq 2	.441000000 0	SHz PNO: Wide 🕞		Avg Typ	oe: Log-Pwr	TRAC TY	E 123456	Frequency
	IFGain:Low							Auto Tune
	20.00 dBm			1	MKr		00 GHz 04 dBm	
.og 10.0		1 - 1	1	2			100 Cont	Center Fred
0.00			PV Ld	VIAN	-			2.441000000 GHz
20.0								
30.0		M			hat			Start Fred 2.436000000 GH:
40.0				-	M			2.45600000 GH.
60.0	amuchan were to	- m			NA	hout the have	methomame	Stop Free
70.0				-				2.446000000 GH
Center 2.44100							0.00 MHz	CF Step
Res BW 100 k		#VBV	V 100 kHz				1001 pts)	1.000000 MH: Auto Mar
MKR MODE TRC SCL 1 N 1 F 2 N 1 F		00 GHz	9.02 dBm	FUNCTION	JNCTION WIDTH	FUNCTION	IN VALUE	
3	2.442	2 00 GHz	9.04 dBm	-				Freq Offse
4 5 6								0 H:
7 8 9				-				
10					-			
11 12								
sg					STATUS	-		

## Channel 39 2441MHz

## Channel 78 2480 MHz

Contor	1	RF 50 Ω	AC		SENSE:INT		ALIGN AUTO	05:41:11 /	M Aug 05, 2014	
enter	r Free	q 2.48000	0000 GHz PNO:	Wide 😱	Trig: Free Run #Atten: 30 dB	Avg Typ	e: Log-Pwr	TY	CE 123456 PE MWWWWW ET P N N N N N	Frequency
10 dB/di	iv F	tef 20.00 d	IFGail Bm	n:Low	#Atten: 30 aB		Mkr	1 2.479	00 GHz 05 dBm	Auto Tune
.og 10.0 0.00 10.0				M		)				Center Free 2.480000000 GH
20.0			<u>n</u>			ty				Start Free 2.475000000 GH
50.0 60.0 70.0		al with						Anarol Maria Constant	tind hadedeene	<b>Stop Fre</b> 2.485000000 GH
	BW 10	0000 GHz 0 kHz		#VBW	100 kHz				10.00 MHz (1001 pts)	CF Ste 1.000000 MH Auto Ma
144 A C 144			×		7.05 dBm	FUNCTION FU	NCTION WIDTH	FUNCTI	JN VALUE	//4/0
4KR MOD 1 N 2 N	1	f f	2.479 00 0		9.02 dBm					1
MKR MOD 1 N 2 N 3 4 5 6	1									
MKE MOD 1 N 2 N 3 4 5	1									Freq Offse 0 H

## 9. Dwell Time

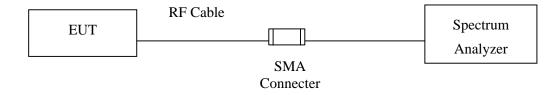
## 9.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

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

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

## 9.2. Test Setup



### **9.3.** Limit

The dwell time shall be the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

## 9.4. Test Procedure

The EUT was setup to ANSI C63.10, 2009; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

## 9.5. Uncertainty

± 25msec

## 9.6. Test Result of Dwell Time

:	ASUS ZenWatch
:	Dwell Time
:	No.3 OATS
:	Mode 1: Transmit - 1Mbps (GFSK) (Channel 00,39,78 –DH5)
	:

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Duty cycle	Dwell Time (Sec)	Limit (Sec)	Result
2402	2.890	13	50	0.75	0.301	0.4	Pass
2441	2.890	13	50	0.75	0.301	0.4	Pass
2480	2.880	13	50	0.75	0.300	0.4	Pass

Duty cycle =((Time slot length(ms)\*Hopping of Number) / Sweep time (ms)

Dwell time = (Duty cycle / 79) \* (79\*0.4)

#### CH 00 Time Interval between hops

#### nter Freq 2,402000000 GHz IND: Factor Trig: Free Run In Colimburer 30 dB Freque Freq Avg Type: Log-Pw Avg Type: Lognter Freq 2.402000000 GHz - Trig: Free Run #Atten: 30 dB Auto Tur Auto Tu Mkr1 1,980 m 9.00 dBr Ref 20.00 dBn 10 Center Fre Center Fr 2.402000000 0 Start Fre Start Fr 2.402000000 G Stop Fre Stop Fre 2 40200000 GH CF Step 1.000000 ML 402000000 GHz Span 0 H CF Step O MH: 10.00 M N E 1.980 ms 4.870 ms 5.730 ms 9.00 dBm 8.87 dBm 9.00 dBm Freq Offse Freq Offse 0 H 0 H Center 2.402000000 GHz Les BW 1.0 MHz Span 0 Hz Sweep 50.00 ms (1001 pts) #VBW 1.0 MHz

#### CH39 Time Interval between hops

#### CH 39Transmission Time

Agilant Spectrum Andrew v Reapt SA				Northeast Science of the									
4 6 124 C 8		02152150 MM 40005, 2014	Fraguency		·		100	1038	Avg Type: Log-Pwr	1118 THAMALO 00, 2011	Frequency		
Center Freq 2 441000000 GHz PND: Fast Thig: Free In-Gain: Low RAtten: 30	Avg Type: Log-Pwr Run	THE MANNER	The second secon	Center Freq	2.441000000	PRO-FAM - P	Trig: Free	Run	HVS TYPE: LOS-FWT	IT'S ANADAMAN	101101		
Il-Gain:Low #Atten: 30	dB	- the firefield	Auto Tune	· · · · · · · · · · · · · · · · · · ·		If Gaind one	#Atten: 30	dE		691 2221	Auto Tune		
10 dBidiv Ref 20.00 dBm	00 dBm				e Mkrt 2.170 m 10 dB/div Ref 20,00 dBm 9.24 dB								
100		2 5 5 5 5	( - Secondaria	Log	1		(	2 (	3		a characterit		
00	a second second second second	A 100 1 100 1	Center Freq 2 441000000 GHz	14180			_				Center Freg 2 441000000 GHz		
			2.441000000 GH2	19.9							2.441000000 0112		
0.00			The Internation	-Yin									
			Start Freq 2 441000000 GHz	3.98	0			-		1	Start Freq 2.441000000 GHz		
10.4			2.44100000 GHZ	-10.0		-		_			2.441000000.6Hz		
ini			1 1000	-9090	Maldings			as in frite		WARNUN	Lincoli		
.917			Stop Freq 2.441000000 GHz	म्होत. जोत							Stop Freg 2.441000000 GHz		
¥00			CF Step	Center 2.4410 Res BW 1.0 N	000000 GHz AHz	#VBW	1.0 MHz	1.1	Sweep	Span 0 Hz 10.00 ms (1001 pts)	CF Step		
			Auto Men					T 400			Auto Man		
son the tel tel tel tel tel tel	14 14 H	¥ 14 ¥			-	2.170 ms	9.24 dB 9.26 dB	m					
40.0		221122	Freq Offset	3 N 1		5.920 ms	9.24 dB	m			FreqOffset		
M/4			0 Hz	5							Ó Hz		
100				7		-		1					
		1.22		8	-			-					
Center 2.441000000 GHz	1 1 1	Span 0 Hz		10	-			-					
Res BW 1.0 MHz #VBW 1.0 MHz	Sweep 50	.00 ms (1001 pts)		12				1			-		
NEL .	5) = (VS			1855					SPAG	85			

#### CH 00 Transmission Time

## CH 78 Time Interval between hops

CH 78 Transmission Time

alari Santan dala									Neither		under - Smell å								
Center Freq 2	480000000	GHz	-	SERIES	Avg Type	Log-Pwr	109:22:13-44 4ug 00, 20 1940:21:01:14:5	Frequency	Cent		2.4800000	IND CH-		1		Avg Type	Log-Pwr	1110 184M 4005 2011 9442 1 > 114 5 6	Frequency
	Pillt, Fast Trig: Free Run In-Gain:Low #Atten: 30 dB			Run dB			The proving					PNI	ic Fast 🔹 🕨	Trig: Free #Atten: 30	dE			DEI PINNNN	A
0 dB/div Ref	20.00 dBm							Auto Tune	10 dE	Sidiy Re	r 20.00 dBr	n						Mkr1 2.310 ms 9.30 dBm	AutoTun
-08	1000	-		1				Center Freq 2.480000000 GHz	640		1	<b>6</b> 1			2	3			Center Free 2.480000000 GH
0.00 imit								Start Freq 2.48000000 CHz	-100 -700 -800										Start Free 2.480000000 GH
nn								Stop Freq 2.49000000 GHz			-414444				many			Mastrate	Stop Free 2.48000000 GH
810								CF Step 1.000000 MHz Auto Man	Res	ter 2.480 BW 1.0 N			#VBW	1.0 MHz	1		Sweep 1	Span 0 Hz 0.00 ms (1001 pts)	CF Step 1.000000 MH
aru <mark>ni mi</mark>	* *	N W	*	М	* *	*	* * *	Freq Offset	2	NLLC		2.310 6.190 6.050	ms	9.30 dB 9.33 dB 9.30 dB	m				FreqOffse
uu.									67 89 10						-				
enter 2.48000 tes BW 1.0 MH		#VBW	1.0 MHz		8		Span 0 H 0.00 ms (1001 pt	s)	11 12	1.1	-	_		_		-	- 1		1
6						3)#(US			1122								GRANDS		

Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

Product	:	ASUS ZenWatch
Test Item	:	Dwell Time
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit - 3Mbps (8DPSK) (Channel 00,39,78 –DH5)

Frequency (MHz)	Time slot length (ms)	Hopping of Number	Sweep time (ms)	Duty cycle	Dwell Time (Sec)	Limit (Sec)	Result
2402	2.890	13	50	0.75	0.301	0.4	Pass
2441	2.890	13	50	0.75	0.301	0.4	Pass
2480	2.890	13	50	0.75	0.301	0.4	Pass

Duty cycle =((Time slot length(ms)\*Hopping of Number) / Sweep time (ms)

Dwell time = (Duty cycle /79) \* (79\*0.4)

#### CH 00 Time Interval between hops

#### enter Freq 2,402000000 GHz Nith Free Run Ir GainLow BAtten: 30 dB Frequency Frequency Avg Type Log-Pa Avg Type: Log-P red 2,4020 GHZ PND: Fa Trig: Free Run #Atten: 30 dB Auto Tun Auto Tu Mkr1 1.910 ms 9.09 dBm Ref 20.00 dBm Ref 20.00 dBm 10 dBidly Center Fre Center Fre F Start Fre Start Fre 14.00 ----Stop Free Stop Fre enter 2.402000000 GHz as BW 1.0 MHz Span 0 H Sweep 10.00 ms (1001 pt: CF Step CF Step #VBW 1.0 MHz ų 1.910 ms 4.900 ms 5.660 ms NNN 9.09 dBm 7.87 dBm 9.10 dBm t FreqOffse Freq Offse 0 E enter 2,4020000 es BW 1.0 MHz Span 0 Hz Sweep 50.00 ms (1001 pts) TVBW 1.0 MHz

#### CH39 Time Interval between hops

#### CH 39Transmission Time

Egiled Spettrac America Amph 12					Aglerisocotrum Analyzer - Avent -			
Center Freq 2 441000000 (	GHZ Phile beer too Trig: Free Run	Avg Type: Log-Pwr	13811144 44005, 2011 14425 1 9 1 9 5 6 1715 460000000 1051 9 1010000	Frequency	Center Freq 2.4410000	PRU: Fast . F. Trig: Free Run	AVE Type: Log Pwr HILE TO THE AVE Ave Type: Log Pwr HILE TO THE AVE THE MANAGEMENT	Frequency
10 dB/div Ref 20.00 dBm	PNU: Fast Tig: Free Run If Guind mer #Attan: 30 dB		and annual	Auto Tune	10 dBidly Ref 20.00 dBn	If Guind mey #Atten: 30 dB	Mkr1 1,700 ms 9.35 dBm	Auto Tune
	1 18 37 18 1	TT IF IF	11 11	Center Freq 2.441000000 GHz	400 1			Center Freq 2.441000000 GHz
1000				Start Freq 2.441000000 GHz	-mo -mo -tro			Start Freq 2.441000000 GHz
-90.0				Stop Freq 2.441000000 GHz	9000 martinet	Kindubradi	Heirode	Stop Freq 2.441000000 GHz
900				CF Step 1.000000 MHz Auto Man	Center 2.441000000 GHz Res BW 1.0 MHz	#VBW 1.0 MHz	Span 0 Hz Sweep 10.00 ms (1001 pts)	CF Step 1.000000 MHz Auto Man
enn <mark>ha ha ha ha</mark>	<u>, n k k h</u>	kij (⊿ ne	* *	Freq Offset 0 Hz	2 N t 3 N t 4	1.700 ms 9.35 dDm 4.690 ms 8.17 dBm 5.450 ms 9.27 dBm		Freq Offset 0 Hz
(10) Center 2.441000000 GHz			Span 0 Hz		7 8 9 10 11			
Res BW 1.0 MHz	#VBW 1.0 MHz	Sweep 50.00	) ms (1001 pts)		12	et e	6/005	-

#### CH 00 Transmission Time

## CH 78 Time Interval between hops

CH 78 Transmission Time

en Spectrum Analysis - Swept SA		lying from the constant of	
الله 100 من	Frequency	Center Freq 2.48000000 GHz	Frequency
Trig: Free Run Prostinitions PAttern 30 dB	Auto Tune	PROCESS THE Z. 400000000 GRZ FAST THE FROM RUN. BADENISO DE CONTRACTOR NON NON CONTRACTOR NON NON NON NON NON NON NON NON NON N	Auto Tun
Bildiv Ref 20.00 dBm	THOSE ( DATE	10 dB/dly Ref 20.00 dBm 9.40 dBm	Plato Fallog
	Center Freq 2.480000000 GHz		Center Fre 480000000 GH
	Start Freq 2.48000000 CHz		Start Fre 480000000 GH
	Stop Freq 2.49000000 GHz		Stop Fre 48000000 GH
	CF Step 1.000000 MHz auto Man	Center 2.480000000 GHz Span 0 Hz Res BW 1.0 MHz #VBW 1.0 MHz Sweep 10.00 ms (1001 pts)	CF Stej 1,000000 MH
, 	Freq Offset	1 N t 300.0 Ms 9.40 dBm 2 N t 3.190 ms 9.34 dBm	Freq Offse
nter 2.480000000 GHz Span 0 H		6. 7 8 9 10	
s BW 1.0 MHz #VBW 1.0 MHz Sweep 50.00 ms (1001 pts	5)	12	

Note:

The dwell times of the packet type of DH1, DH3, and DH5 are tested. Only the worst case is shown on the report.

## 10. Occupied Bandwidth

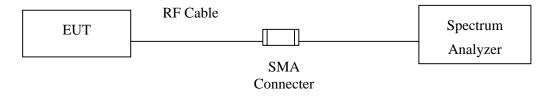
## **10.1.** Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

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

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

## 10.2. Test Setup



## 10.3. Limits

N/A

## 10.4. Test Procedure

The EUT was setup to ANSI C63.10, 2009; tested to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

#### 10.5. Uncertainty

± 150Hz

## 10.6. Test Result of Occupied Bandwidth

Product	:	ASUS ZenWatch
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit - 1Mbps (GFSK)(2402MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	1100		NA

# Figure Channel 00:

	01:03:08 AM Aug 05, 2014	ALIGN AUTO		NSE:INT	SEN			50 Ω	RF		RL
Frequency	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	Avg Type: Log-Pwr TRACE 1 2 3 4 5 6 TYPE M WARRANN		Run	Trig: Free	iHz PNO: Wide 🗔	0000 GI	40200	eq 2	er Fre	ent
	DET PNNNN				#Atten: 30	FGain:Low	IF				
Auto Tun	2 2.401 45 GHz -11.80 dBm	Mkr2					IBm	20.00 d	Ref	div	dB
Contor Ero	Section Section 1			$\langle \rangle^1$			1.			-	
Center Fre 2.402000000 GH	1		1	7	The second secon			11	111		.00
2.402000000 GF	-11.00 dBm			10 <sup>3</sup>						1	0.0
1.000 A.				1	1	6 (c)				i in	0.0
Start Fre				10	opt	-					1.0
2.397000000 GHz			1	1	-	and the second sec	)		21		1.0
			The second			I Bart				-	0.0
Stop Fre	- Amarian marine	an and a started	- min		-	WILLIAM	minuscar this	and a strange and	india	-max	2.0
2.407000000 GHz										-	J.O
CF Ste	Span 10.00 MHz 1.27 ms (1001 pts)	Swoon 1			( 100 kHz	#\(B)		0 GHz		er 2.40 BW 1	
1.000000 MH Auto Ma		Sweep 1	TION			#VDV	×	ΠZ			2.2.0
	FUNCTION VALUE			3m	9.00 dE	15 GHz	2.402 1		f	1	1
			-		-11.80 dE -12.63 dE	45 GHz 55 GHz		_	f	1 1	
Fron Offer											4
Freq Offse										_	5
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					_					_	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1											5 7 3
Freq Offse 0 H											7 3
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1											7

Product Test Item Test Site Test Mode	: Occupied Ban : No.3 OATS	ASUS ZenWatch Occupied Bandwidth Data No.3 OATS Mode 1: Transmit - 1Mbps (GFSK)(2441MHz)					
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)				
39	2441	1120					

#### **Figure Channel 39:**

	7:45 AM Aug 05, 2014	02:47:45 A	ALIGN AUTO	1	NSE:INT	CEN			lyzer - Swe 50 Ω	RF	ASE LI LI		R
Frequency	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N	TRAC TY	: Log-Pwr		e Run	] Trig: Free	0: Wide 💭	0000 GH			r Fre		
Auto Tur	40 44 GHz 11.69 dBm	2 2.440	Mkr2		0 dB	#Atten: 30	Sain:Low						
-	11.69 dBm	-14.			1.4.4	_		Bm	20.00 d	Ref	iv	B/di	0 d
Center Fre					01							2.1	10.0
2.441000000 GH					1								0.00
2.441000000 01	-10.59 dBm				03	¢ <sup>2</sup>						1.1	10.0
						1							
Start Fre						d						1	20.0
2.436000000 GH				1	100	P.	-(					1	30.0
pananana.	_			1			A		-	-	_		40.0
1.007.00				Dundhan			AL PARTY	-10 1		-	-	1	50.0
Stop Fre	the opposite and and a	and have not	the work and				27-	www.walkal	non	Arent	at an	m	60.0
2.446000000 GHz	_	_					_						70.0
CF Ste	an 10.00 MHz ms (1001 pts)		Sween			100 kHz	#\/B\M		0 GHz	4100 100 k			
1.000000 MH <u>tuto</u> Ma			ополикотн	TINN	FUNC	TOO KHZ	#0000	×	112	19.6 1		10.00	
		in sin sin s			3m	9.41 dE		2.441 16		f	1	N	1
						-11.69 dE -11.10 dE		2.440 44		f	1	NN	2
Fran Offe					5111	-11.10 ac	JOHZ	2.441 30			1	14	4
Freq Offs													5
Freq Offs 0 F		-											G
						_						-	6
													7
													7
													7 8 9

Product Test Item Test Site Test Mode	::	ASUS ZenWatch Occupied Bandwidth Data No.3 OATS Mode 1: Transmit - 1Mbps (GFSK)(2480MHz)					
Channel No.		Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)			
78		2480	1120				

#### Figure Channel 78:

			Deservations!	or the	1		yzer - Swe		cuun		R
TRACE 1 2 3 4 5 6 TYPE MWMMMM					z	0000 GH			Fre		
114											
2 2.479 44 GHz -10.79 dBm	Mkr2					IBm	20.00 c	Ref 2		B/div	
			$\Delta^1$	N	<u>-</u>	1			_		<b>.og</b> 10.0
-10 85 dBm			3	2/						-	0.00
-10.00 0011			Y		2					1	10.0 20.0
			ho	and and						-	30.0
1	0.0	- and			a al	A	- 11	11			40.0 50.0
man and a second	W When on prove				op of	and the second second	the second	long and the	main	with	60.0 70.0
Span 10.00 MHz 1.27 ms (1001 pts) Function value		TION FUN	-	100 kHz	#VBW	×		00 kH	N 10	s Bl	en Re
			3m	-10.79 dE	4 GHz	2.479 4		f f f		N N N	1 2 3 4
										_	5
											7
									· · · · · · · · · · ·		9
	2.479 44 GHz -10.79 dBm -10.86 dBm -10.86 dBm -10.86 dBm -10.86 dBm -10.86 dBm -10.87 dBm -10.97 dB	E Log-Pwr TRACE 1 2 3 4 5 6 TYPE MWWWWWW DETP NNNN Mkr2 2.479 44 GHz -10.79 dBm -10.66 dBm -10.66 dBm -10.66 dBm Span 10.00 MHz Sweep 1.27 ms (1001 pts)	Avg Type: Log-Pwr TRACE 1: 2:345.6 TYPE MWWWWWW Mkr2 2: 479 44 GHz -10.79 dBm -10.66 dBm -10.66 dBm -10.66 dBm -10.85 dBm -10.85 dBm -10.85 dBm -10.85 dBm -10.85 dBm -10.85 dBm -10.95	Avg Type: Log-Pwr         TRACE 1 2 3 4 5 6 TYPE M MANAGEM DET P NNNN           Awg Type: Log-Pwr         TRACE 1 2 3 4 5 6 TYPE M MANAGEM DET P NNNN           Mkr2 2.479 44 GHz -10.79 dBm           1         -10.79 dBm           3         -10.66 dbm           3         -10.66 dbm           5         Span 10.00 MHz           Sweep 1.27 ms (1001 pts)         State 10.00 MHz	Avg Type: Log-Pwr Trig: Free Run #Atten: 30 dB Mkr2 2.479 44 GHz -10.79 dBm -10.66 dBm -10.66 dBm -10.66 dBm -10.86 dBm -10.86 dBm -10.86 dBm -10.86 dBm -10.85 dBm	Z       Avg Type: Log-Pwr       TRACE 1.2.3.45.6         10: Wide market with the market withe with the market with the market with the market with	Avg Type: Log-Pwr     Trace 1/2 3 4 5 6 Type MWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW	Avg Type: Log-Pwr PNO: Wide IFGain:Low Trig: Free Run #Atten: 30 dB Mkr2 2.479 44 GHz -10.79 dBm -10.86 dBm -10.66 dBm -10.70 dBm	Q 2.480000000 GHz         Trig: Free Run         Avg Type: Log-Pwr         TRACE 12.345 6           PNO: Wide         Trig: Free Run         Mkr2 2.479 44 GHz         -10.79 dBm           Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"           ODO00 GHz         Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"           Colspan="2">Colspan="2"           Colspan="2"           Colspan="2"           Colspan="2"           Colspan="2"           Colspan="2"           Colspan="2"           Colspan="2"           Colspan= 2           Colspan= 2 <td>Freq 2.480000000 GHz         Trig: Free Run         Avg Type: Log-Pwr         TRACE 1.23456           PN0: Wide         Trig: Free Run         Mkr2 2.479 44 GHz         -10.79 dBm           Mkr2 2.479 44 GHz           Ref 20.00 dBm         -10.79 dBm           2         -10.86 dbm           2         -10.86 dbm           2         -10.86 dbm           2         -10.86 dbm           -10.79</td> <td>Iter Freq 2.480000000 GHz         Trig: Free Run #Atten: 30 dB         Avg Type: Log-Pwr Del P NNNNW Del P NNNN Del P NNNN Del P NNNN Del P NNNN Del P NNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNNNN Del P NNNNNNN Del P NNNNNN Del P NNNNNNN Del P NNNNNNN Del P NNNNNN Del P NNNNNNN Del P NNNNNNNN Del P</td>	Freq 2.480000000 GHz         Trig: Free Run         Avg Type: Log-Pwr         TRACE 1.23456           PN0: Wide         Trig: Free Run         Mkr2 2.479 44 GHz         -10.79 dBm           Mkr2 2.479 44 GHz           Ref 20.00 dBm         -10.79 dBm           2         -10.86 dbm           2         -10.86 dbm           2         -10.86 dbm           2         -10.86 dbm           -10.79	Iter Freq 2.480000000 GHz         Trig: Free Run #Atten: 30 dB         Avg Type: Log-Pwr Del P NNNNW Del P NNNN Del P NNNN Del P NNNN Del P NNNN Del P NNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNN Del P NNNNNN Del P NNNNN Del P NNNNNN Del P NNNNNNN Del P NNNNNNN Del P NNNNNN Del P NNNNNNN Del P NNNNNNN Del P NNNNNN Del P NNNNNNN Del P NNNNNNNN Del P

Test Site	: Occupied Ban : No.3 OATS	ASUS ZenWatch Occupied Bandwidth Data No.3 OATS Mode 2: Transmit - 3Mbps (8DPSK) (2402MHz)					
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)				
00	2402	1350					

#### **Figure Channel 00:**

A RL RF 50 Q AC	SENSE:INT	ALIGNAUTO	04:21:09 AM Aug 05, 2014	Fraguaday
Center Freq 2.402000000 GHz PNO:	Wide Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MWWWWWW DET P N N N N N	Frequency
IFGai 10 dB/div <b>Ref 20.00 dBm</b>	Auto Tune			
-og 10.0 0.00 10.0		3	-10.81 dBm	Center Free 2.402000000 GH:
20.0	man 1	~ Zmat		Start Free 2.397000000 GH
60.0	2	man want	hannen marine	Stop Fre 2.407000000 GH
Center 2.402000 GHz Res BW 100 kHz	#VBW 100 kHz	Sweep	Span 10.00 MHz 1.27 ms (1001 pts) FUNCTION VALUE	CF Ste 1.000000 MH <u>Auto</u> Ma
1         N         1         f         2.40215 (           2         N         1         f         2.40135 (           3         N         1         f         2.40270 (           4         -         -         -         -           5         -         -         -         -           6         -         -         -         -	Hz -11.66 dBm			Freq Offse 0 H
7				

Product Test Item Test Site Test Mode	: Occup : No.3 C	ZenWatch ied Bandwidth Data DATS 2: Transmit - 3Mbps (8DI	PSK) (2441MHz)
Channel No.	Freque (MH	•	evel Required Limit (kHz)
39	2441	1 1340	

#### Figure Channel 39:

	04:35:11 AM Aug 05, 2014	ALIGNAUTO	1	NSE:INT	CEN			zer - Swe 50 Ω	RF		1	R
Frequency Auto Tune Center Freq 2.441000000 GHz	TRACE 1 2 3 4 5 6 TYPE MWWWWW	e: Log-Pwr	Avg Ty		and the second	Hz NO: Wide 🔾	0000 GH			Fre		
	DET P NNNNN	- 5.0-			#Atten: 30	Gain:Low	IFG				_	
	2 2.440 36 GHz -12.22 dBm	Mkr2					Bm	20.00 d	Ref 2		B/div	
		1		1		1944 - A	19-1-17		11			. <b>og</b> 10.0
	1			3	N							0.00
	-10.76 dBm		·		<b>◆</b> <sup>2</sup>			-	-	_	-	10.0
Start Freq 2.436000000 GHz					1	0				_	1	20.0
			Imil	6	Y	The		-			1	30.0 40.0
Stop Freq		horsen	-	1		Jay L	man				1	50.0
	mul proving more	he to bet					wateral "Y	ano-M	n.	NWY	1000	60.0
2.446000000 GH												0.0
CF Step 1.000000 MHz	Span 10.00 MHz 1.27 ms (1001 pts)	Sweep 1			/ 100 kHz	#VBW	·	0 GHz Hz	1000 00 kH	_		
<u>Auto</u> Ma		NCTION WIDTH	ICTION F		Y		X			TRC	MODE	
					9.24 dE	99 GHz 36 GHz	2.440 99	-	f	1	NN	1
				neel	40 77 15				f	1	N	3
Freq Offs				Bm	-10.77 dB	70 GHz	2.441 70		-	1		
Freq Offs 0 H				BM	-10.77 dE	70 GHz	2.441 7(					4
				BM	-10.77 dE	70 GHz	2.441 7(					4567
				Sm	-10.77 dE	70 GHz	2.441 7(					4 5 6 7 8
					-10.// dE	70 GHz	2.441 7(					4567

Product Test Item Test Site Test Mode	: : :	ASUS ZenWat Occupied Ban No.3 OATS Mode 2: Trans		480MHz)
Channel No.		Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)
78		2480	1350	

#### **Figure Channel 78:**

							yzer - Swe		ectrun		
05:15:36 AM Aug 05, 2014 TRACE 1 2 2 4 5 6			SENSE:INT		50 Q AC			RF	Ero		R
TYPE MWWWW DET P N N N N N	Logiwi	Cut a Libro			IO: Wide 😱	PM	.40000	g z.	Fie	iter	en
2 2.479 36 GHz -11.40 dBm	Mkr2					Bm	20.00 d	Ref 2		B/div	10 d
	- 1		()1							-	.og
1			The second	N				1103		1.0	0.00
-10.53 dBm			$\sqrt{3}$					_	_		10.0
		-		1	- mbi	1 · · · · · · · · · · · · · · · · · · ·				-	20.0
		Wall	w.	2	TV.					1.000	30.0
	maspin	Int			pl	10 cm	= 1			1.0	50.0
Werner - Martin - martin and	a shell		-				y Mighar	winn	in my	-mpm	60.0
							I			10.00	D.O
Span 10.00 MHz 1.27 ms (1001 pts)	Sweep 1.	-		100 kHz	#VBW	·			_		
FUNCTION VALUE	CTION WIDTH	TION		Y		×			TRC		MKR 1
			Bm	-11.40 dB	5 GHz	2.479 3		f	1	N	2
		-	Sm	-11.94 dB	1 GHz	2.480 7		f	1	N	3
											5
											7
											8
											9 10
	2.479 36 GH: -11.40 dBm -10.53 dBm	: Log-Pwr TFACE 12 3 4 5 TYPE M WHANN DET P NNNN Mkr2 2.479 36 GH: -11.40 dBr -10.53 dBr	Avg Type: Log-Pwr TFACE 1 2 3 4 5 TYPE M WHANN Mkr2 2.479 36 GH: -11.40 dBm -1053 dBr -1053 dBr	Avg Type: Log-Pwr         TFACE         1 2 3 4 5           Run         DEF         MKr2 2.479 36 GH:         -11.40 dBr           1         -11.40 dBr         -11.40 dBr         -11.40 dBr           1         -10.53 dBr         -10.53 dBr         -10.53 dBr	Avg Type: Log-Pwr         TFACE 1 2 3 4 5 TYPE M WANNA DET P NNNN           #Atten: 30 dB         DET P NNN           Mkr2 2.479 36 GH: -11.40 dBm           4         -11.40 dBm           4         -11.40 dBm           4         -11.40 dBm           4         -11.40 dBm           5         -11.40 dBm           5         -11.40 dBm           4         -10.53 dBm           4         -10.53 dBm           5         -11.40 dBm           5         -11.40 dBm           4         -10.53 dBm           5         -11.20 dBm           5         -11.20 dBm           100 kHz         Sweep 1.27 ms (1001 pts	Iz         Avg Type: Log-Pwr         TFACE 1 2 3 4 5 TYPE IM WHATMAN Dain: Low           Sain: Low         #Atten: 30 dB         Mkr2 2.479 36 GH: -11.40 dBm           4         4         -11.40 dBm           4         -11.40 dBm         -1053 dBr           4         -1053 dBr         -1053 dBr           5         -11.40 dBm         -11.40 dBm	OUDD GHz         Trig: Free Run         Avg Type: Log-Pwr         TRACE 12345         Trig: 2345           PN0: Wide         Trig: Free Run         Mkr2 2.479 36 GH: -11.40 dBm         -11.40 dBm           IBm         -11.40 dBm         -1053 dBr         -1053 dBr           WWWWW         -1053 dBr         -1053 dBr         -1053 dBr           WBW 100 kHz         Span 10.00 MH         Span 10.00 MH         -1053 dBr           X         Y         FUNCTION MADE         FUNCTION MADE           2.479 36 GHz         -11.40 dBm         -1053 dBr         -1053 dBr	480000000 GHz         Trig: Free Run         Avg Type: Log-Pwr         Trace: 12345           PN0: Wide         Trig: Free Run         #Atten: 30 dB         Mkr2 2.479 36 GHz           20.00 dBm         -11.40 dBm         -11.40 dBm	q 2.480000000 GHz       Trig: Free Run       Avg Type: Log-Pwr       TRACE       T 2 3 4 5         PN0: Wide IF Gain:Low       Trig: Free Run       Mkr2 2.479 36 GHz       -11.40 dBm         Mkr2 2.479 36 GHz         -11.40 dBm         -11.40 dBm         -11.40 dBm         -11.40 dBm         -11.40 dBm         -11.40 dBm         -10.53 dBm         -10.53 dBm         -10.53 dBm         -10.53 dBm         -10.00 MHz         Span 10.00 MH         -11.40 dBm	Freq 2.480000000 GHz         Trig: Free Run IFGain:Low         Avg Type: Log-Pwr Trig: Free Run #Atten: 30 dB         Mkr2 2.479 36 GHz           Ref 20.00 dBm         -11.40 dBm         -11.40 dBm           2         3         -10.53 dBr           2         3         -10.53 dBr           2         3         -10.53 dBr           2         3         -10.53 dBr           4         4         4           4         4         4           4         4         4           4         4         4           4         4         4           4         4         4           4         4         4           4         4         4           4         4         4           4         4         4           4         4         4           4         4         5           4         4         4           4         4         5           5         4         4           4         5         4           4         4         5           4         5         4           4	ter Freq 2.48000000 GHz         Trig: Free Run IFGain: ow         Avg Type: Log-Pwr         TRACE 1 2 3 4 5 TYPE IM WWWWW           Mkr2 2.479 36 GHz           Mkr2 2.479 36 GHz           B/div         Ref 20.00 dBm           Mkr2 2.479 36 GHz           0           11.40 dBm           0           0           0           0           Mkr2 2.479 36 GHz           -11.40 dBm           0           0           0           0           0           PRO: Wide           Mkr2 2.479 36 GHz           -11.40 dBm           0           0           0           0           0           0           10.53 dBr           10.53 dBr           10.53 dBr           Span 10.00 MH           Span 10.00 MH           Span 10.00 MH

# 11. EMI Reduction Method During Compliance Testing

No modification was made during testing.