



**FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8**

CERTIFICATION TEST REPORT

FOR

**Fitness Watch with integrated Radios 1) WCDMA (850/1800/2100/R99+HSDPA) 2) BT
(v3.0+EDR+LE) 3) GPS**

MODEL NUMBER: M061

**FCC ID: EP9-TMXM061
IC: 3348A-TMXM061**

REPORT NUMBER: 14U17447-2A

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	08/19/14	Initial Issue	M.Ferrer
A	08/20/14	Updated Conducted Emissions Data	M.Ferrer
B	09/25/14	Updated Radiated Spurious Emissions Data	M.Ferrer

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Timex Group USA, INC.

EUT DESCRIPTION: Fitness Watch with integrated Radios 1) WCDMA (850/1800/2100/R99+HSDPA) 2) BT (v3.0+EDR+LE) 3) GPS

MODEL: M061

SERIAL NUMBER: P2a/D2-920, P2a/D2-921, P2a/D2-924

DATE TESTED: July 1, 2014 – September 25, 2014

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-210 Issue 8 Annex 8	Pass
INDUSTRY CANADA RSS-GEN Issue 3	Pass

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL LLC based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL LLC By:



Peng Zhang
EMC Project Lead
UL LLC

Tested By:



Michael Ferrer
EMC Program Manager
UL LLC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 333 Pfingsten Road, Northbrook, IL 60062 USA.

UL NBK is accredited by NVLAP, Laboratory Code 100414-0. The full scope of accreditation can be viewed at <http://ts.nist.gov/Standards/scopes/1004140.htm>

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamplifier Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test	Range	Equipment	Uncertainty k=2
Radiated Emissions	30-200MHz	Bicon 10m Horz	4.27dB
Radiated Emissions	30-200MHz	Bicon 10m Vert	4.28dB
Radiated Emissions	200-1000MHz	LogP 10m Horz	3.33dB
Radiated Emissions	200-1000MHz	LogP 10m Vert	3.39dB
Radiated Emissions	1-6GHz	Horn	5.02dB
Radiated Emissions	6-18GHz	Horn	5.34dB
Radiated Emissions	18-26GHz	Horn	6.60dB
Conducted Ant Port	30MHz-26GHz	Spectrum Analyzer	2.94

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a Bluetooth transceiver.

The radio module is manufactured by Qualcomm.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	Basic GFSK	7.26	5.32
2402 - 2480	DQPSK	7.96	6.26
2402 - 2480	Enhanced 8PSK	8.24	6.67

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an Monopole antenna, with a maximum gain of -2.0 dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
EUT	Qualcomm	M6021	-	-
Power Supply	Flotv	PSA105R-050Q	-	DoC
BT Call Box	R&S	CBT	-	DoC

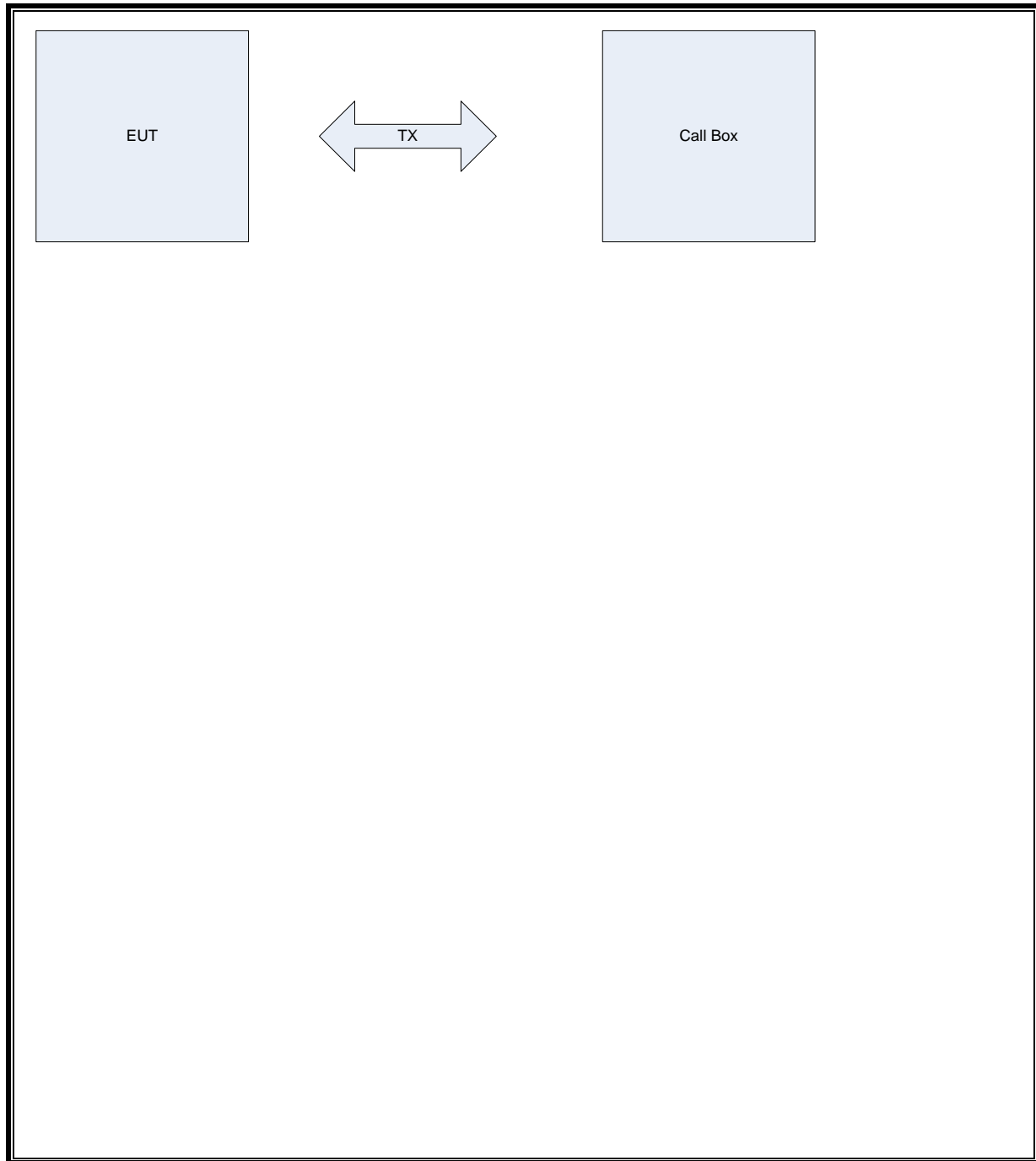
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB	1	1	USB	>3	none

TEST SETUP

EUT was setup in battery mode during Radiated Emissions.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List						
Description	Manufacturer	Model	Asset	Cal Date	Cal Due	Test
EMI Test Receiver	Rohde & Schwarz	ESU	EMC4323	20131220	20141231	RE
Bicon Antenna	Chase	VBA6106A	EMC4078	20140401	20150401	RE
Log-P Antenna	Chase	UPA6109	EMC4313	20131003	20141031	RE
Spectrum Analyzer	Rohde & Schwarz	FSEK	EMC4182	20131217	20143112	RE
Antenna Array	UL	BOMS	EMC4276	20130913	20140913	RE
EMI Test Receiver	Agilent	N9030A	EMC4360	20131221	20141221	OBW, Dwell
Antenna	EMCO	-	-	N/A	N/A	OBW, Dwell
Power Meter	Agilent	N1912A	EMC4362	20130606	20150606	AP
Power Sensor	Agilent	85481A	EMC4363	20131209	20141209	AP
EMI Test Receiver	Rohde & Schwarz	ESCI	EMC4328	20131217	20141231	CE
LISN	Solar	8602-50-TS-50-N	EMC4052	20140116	20150116	CE
LISN	Solar	8602-50-TS-50-N	EMC4064	20140116	20150116	CE

7. ANTENNA PORT TEST RESULTS

8. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

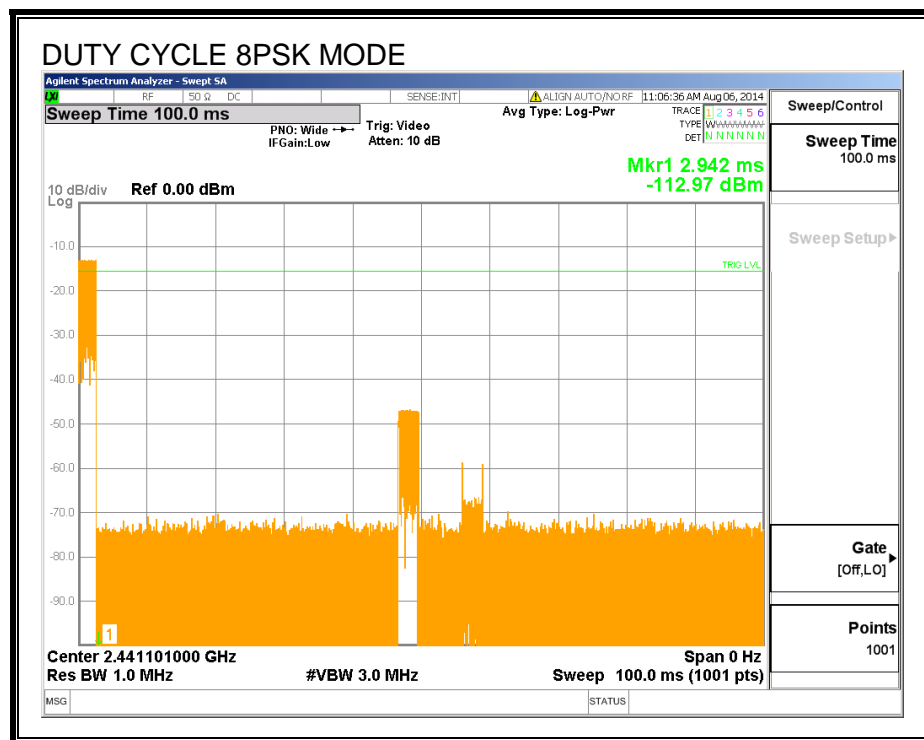
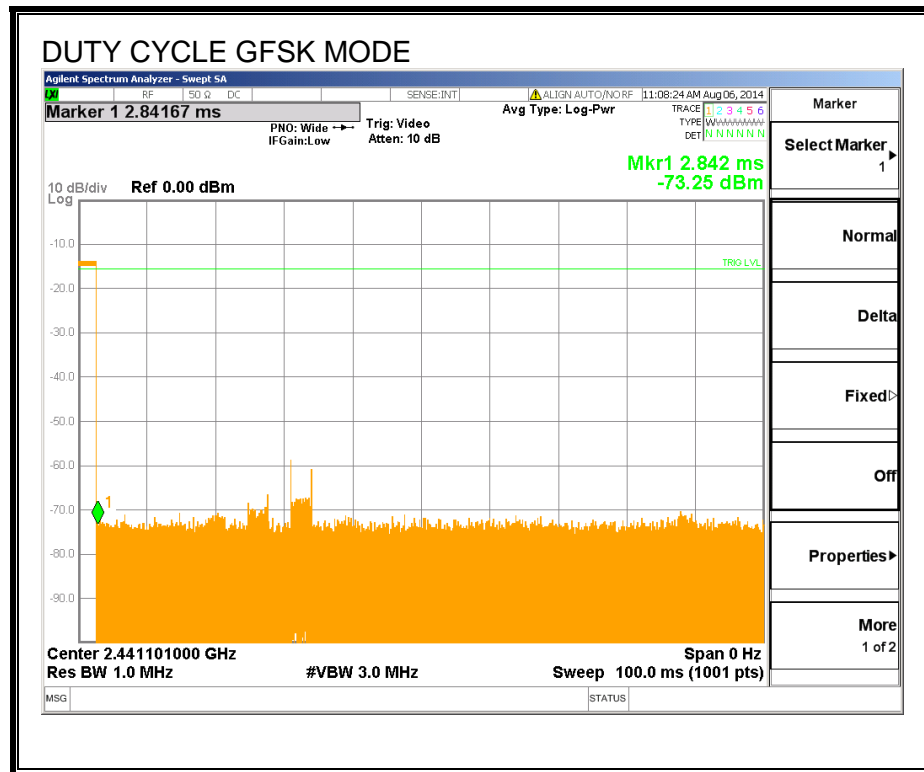
KDB 558074 Zero-Span Spectrum Analyzer Method.

8.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4 GHz band (Hopping ON)						
Bluetooth GFSK	2.842	100	0.028	2.84%	30.93	N/A
Bluetooth 8PSK	2.942	100	0.029	2.94%	30.63	N/A

8.2. DUTY CYCLE PLOTS

HOPPING ON



8.3. BASIC DATA RATE GFSK MODULATION

8.3.1. 20 dB AND 99% BANDWIDTH

LIMIT

None; for reporting purposes only.

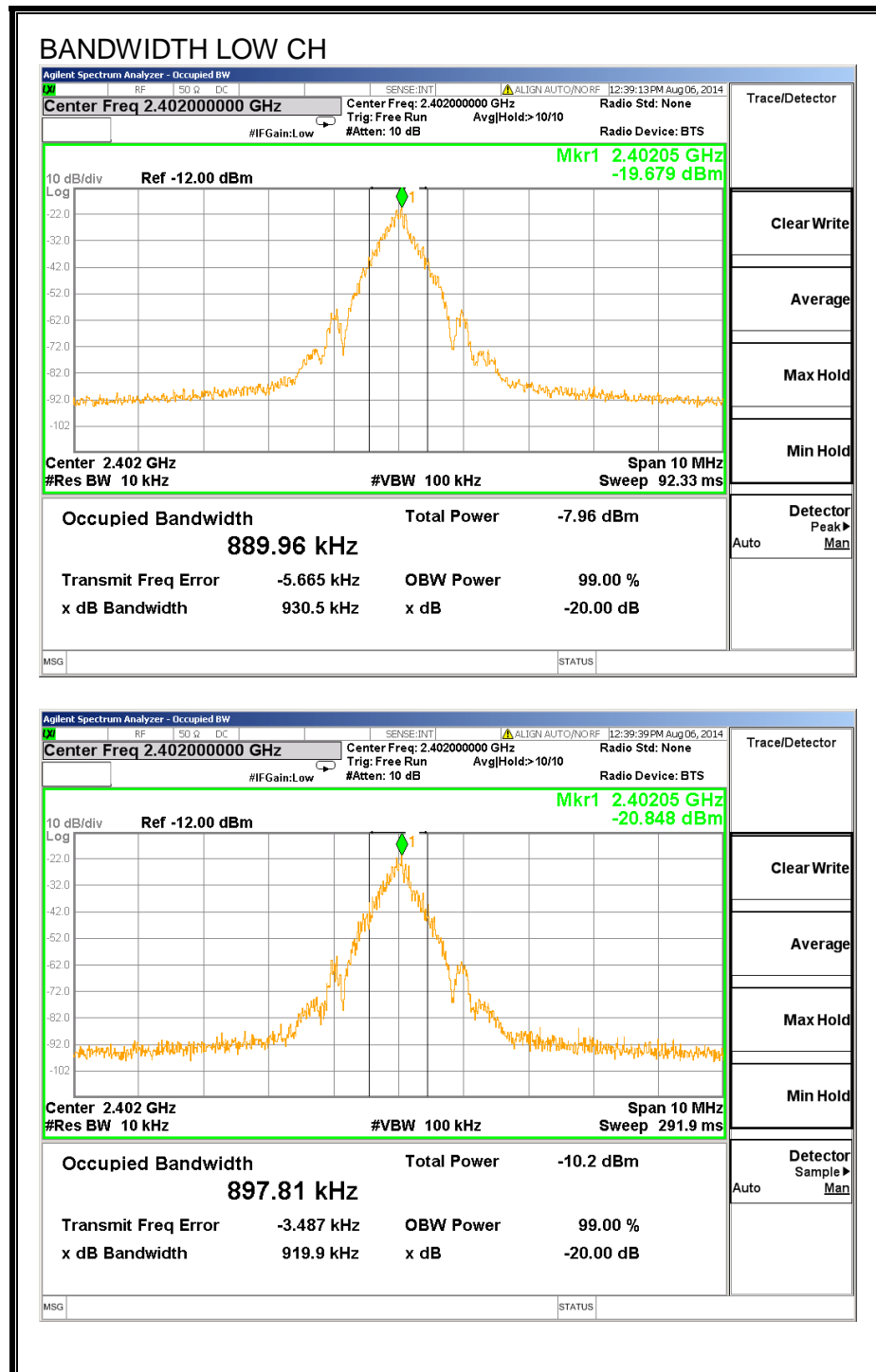
TEST PROCEDURE

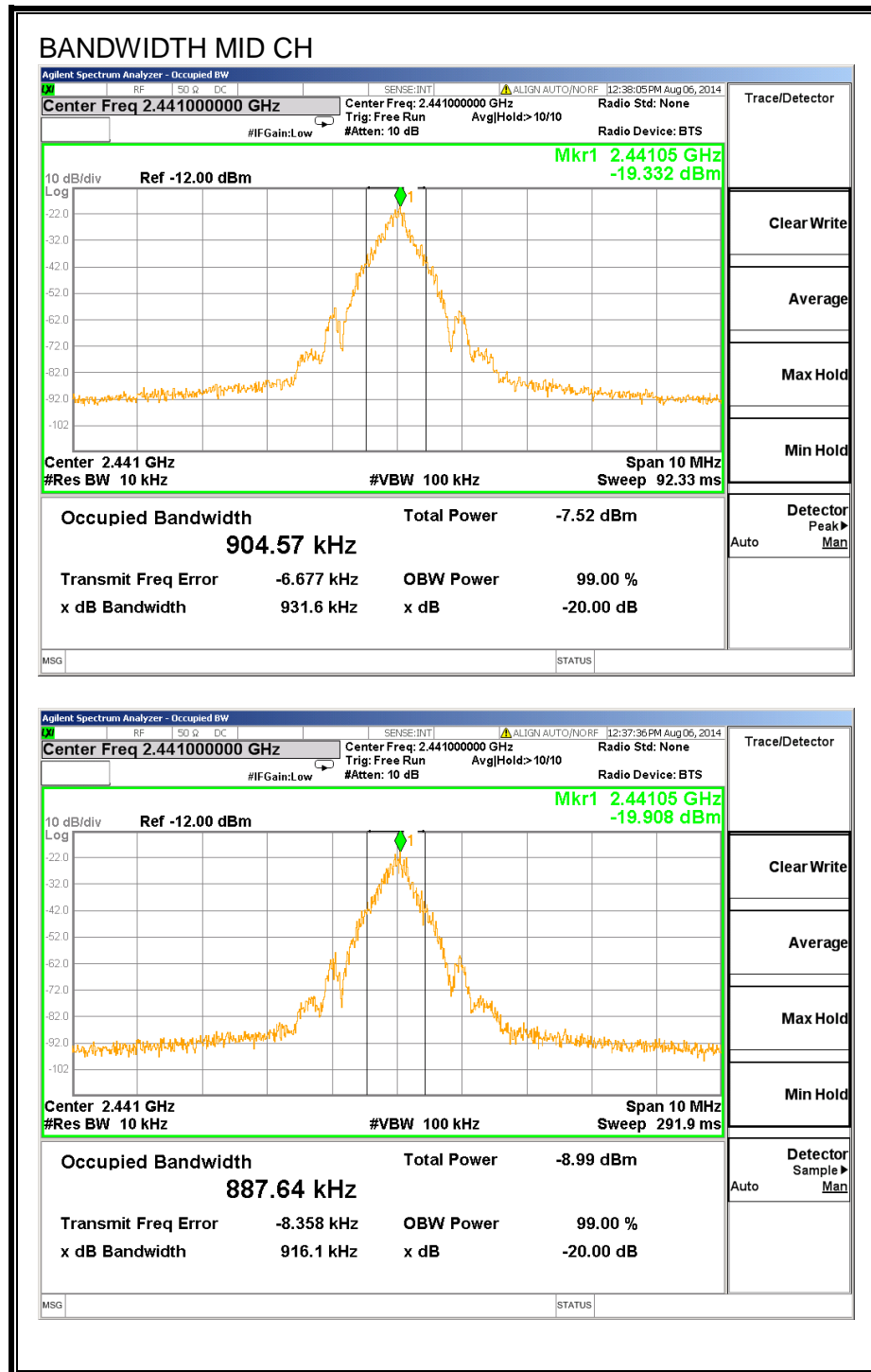
The transmitter output is connected to a spectrum analyzer. The RBW is set to $\geq 1\%$ of the 20 dB bandwidth. The VBW is set to \geq RBW. The sweep time is coupled.

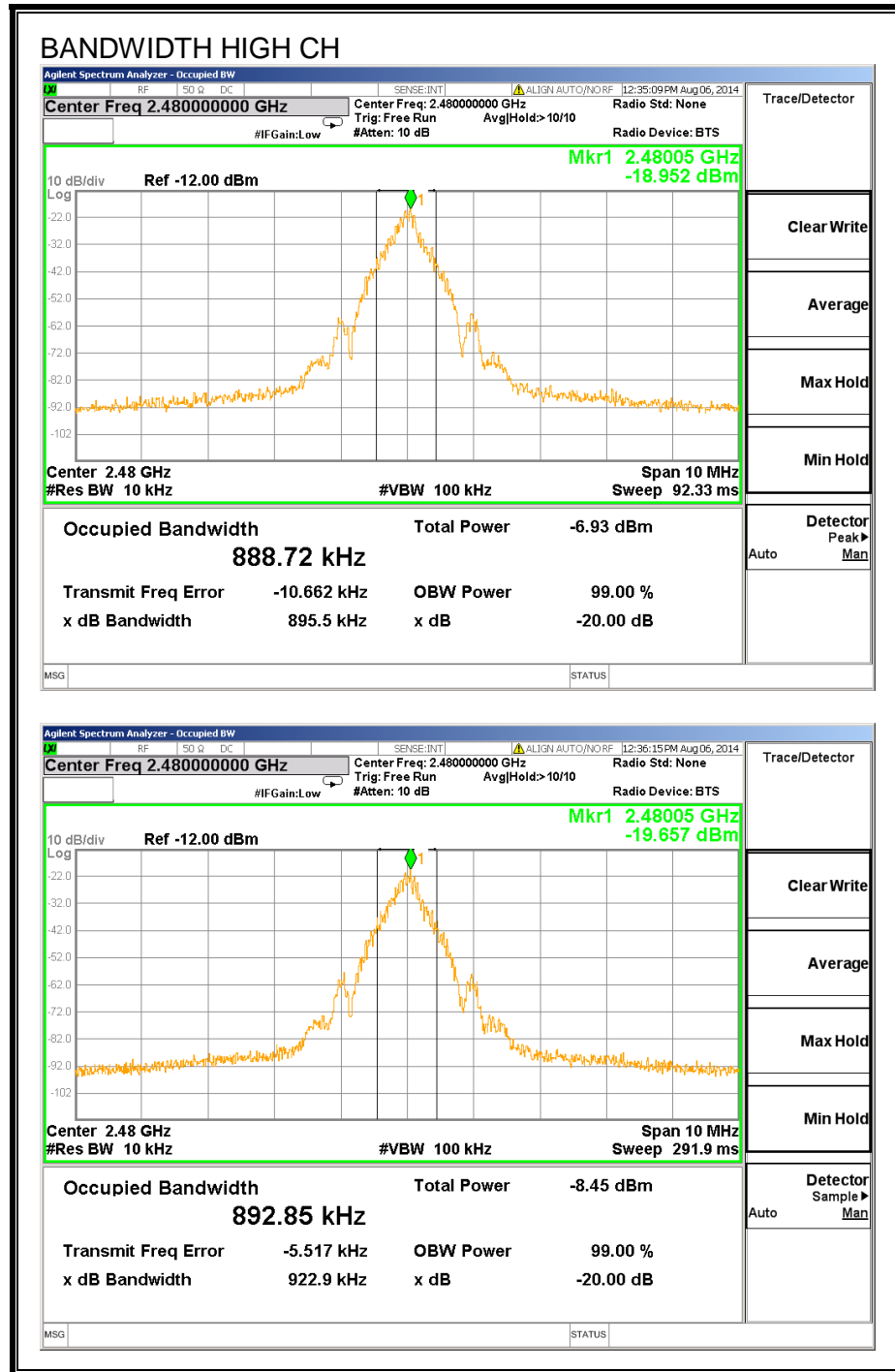
RESULTS

Channel	Frequency (MHz)	20 dB Bandwidth (kHz)	99% Bandwidth (kHz)
Low	2402	930.5	897.81
Middle	2441	931.6	887.64
High	2480	895.5	892.85

20 dB AND 99% BANDWIDTH







8.3.2. HOPPING FREQUENCY SEPARATION

LIMIT

FCC §15.247 (a) (1)

IC RSS-210 A8.1 (b)

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

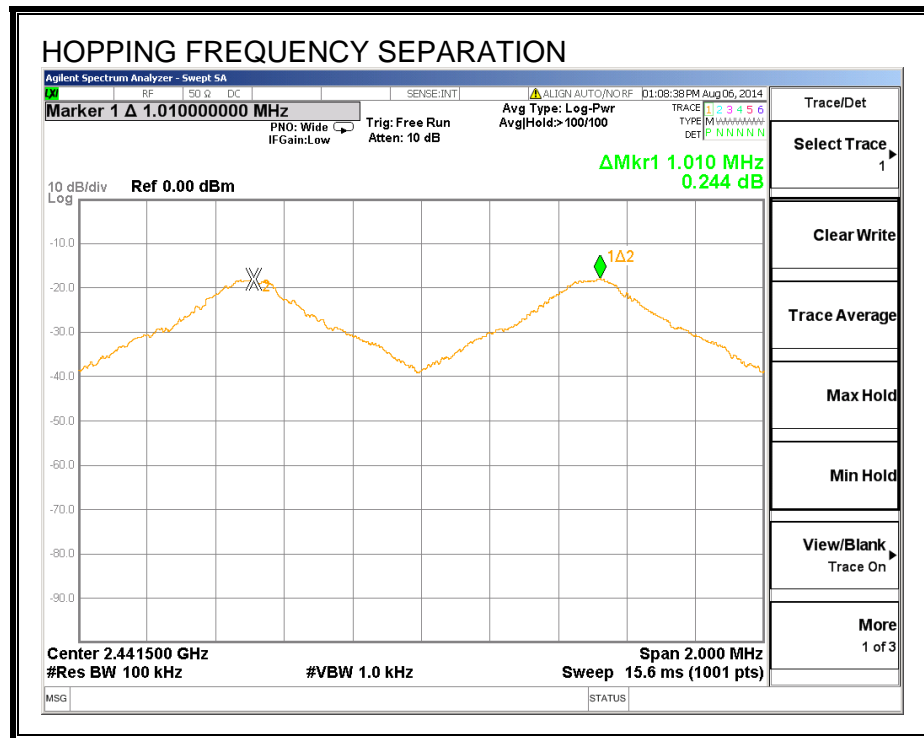
Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 1 kHz. The sweep time is coupled.

RESULTS

HOPPING FREQUENCY SEPARATION



8.3.3. NUMBER OF HOPPING CHANNELS

LIMIT

FCC §15.247 (a) (1) (iii)

IC RSS-210 A8.1 (d)

Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 15 non-overlapping channels.

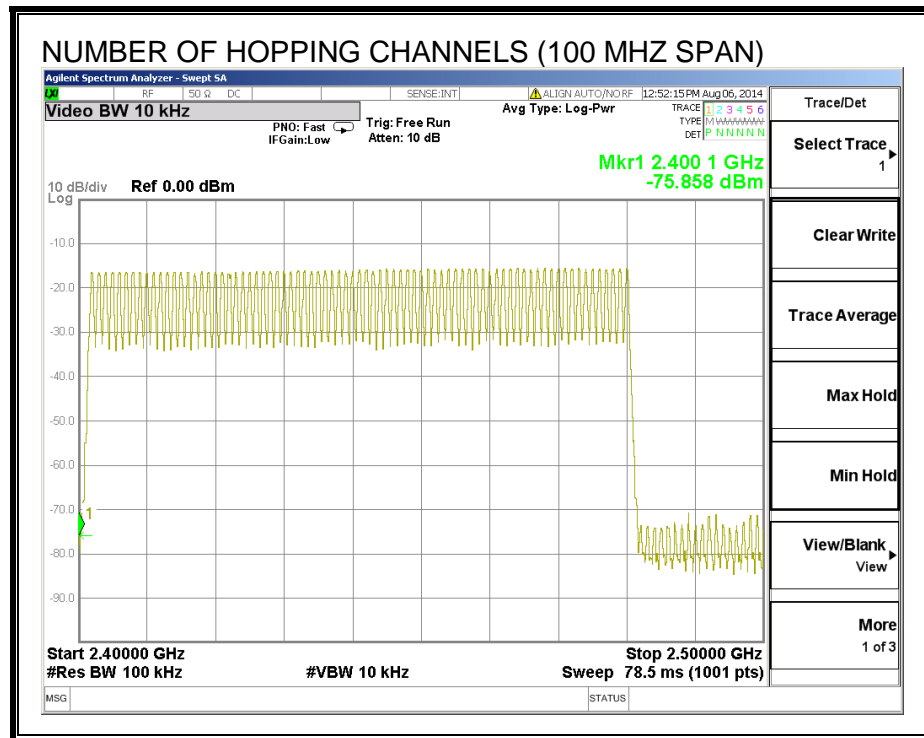
TEST PROCEDURE

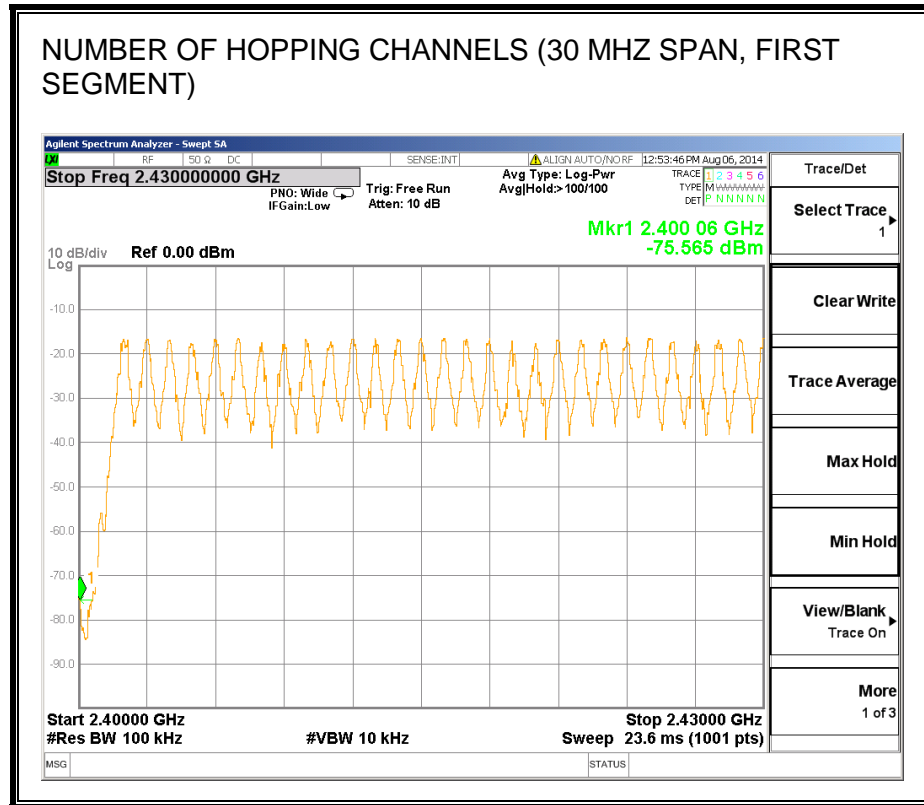
The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

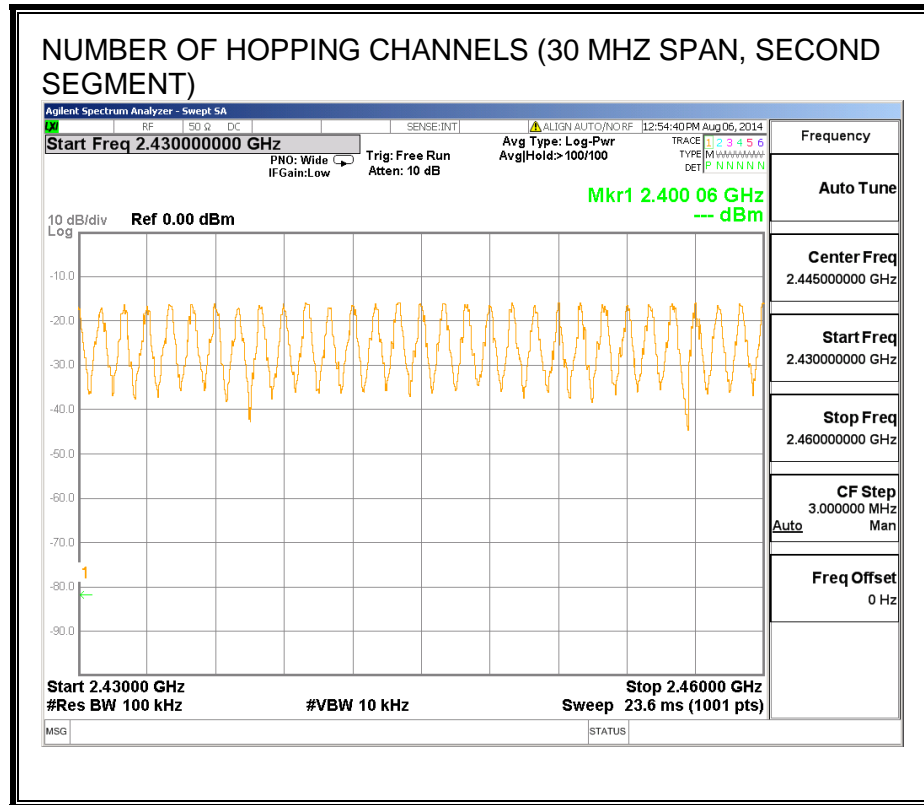
RESULTS

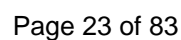
Normal Mode: 79 Channels observed.

NUMBER OF HOPPING CHANNELS









8.3.4. AVERAGE TIME OF OCCUPANCY

LIMIT

FCC §15.247 (a) (1) (iii)

IC RSS-210 A8.1 (d)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 3.16 second scan, to enable resolution of each occurrence.

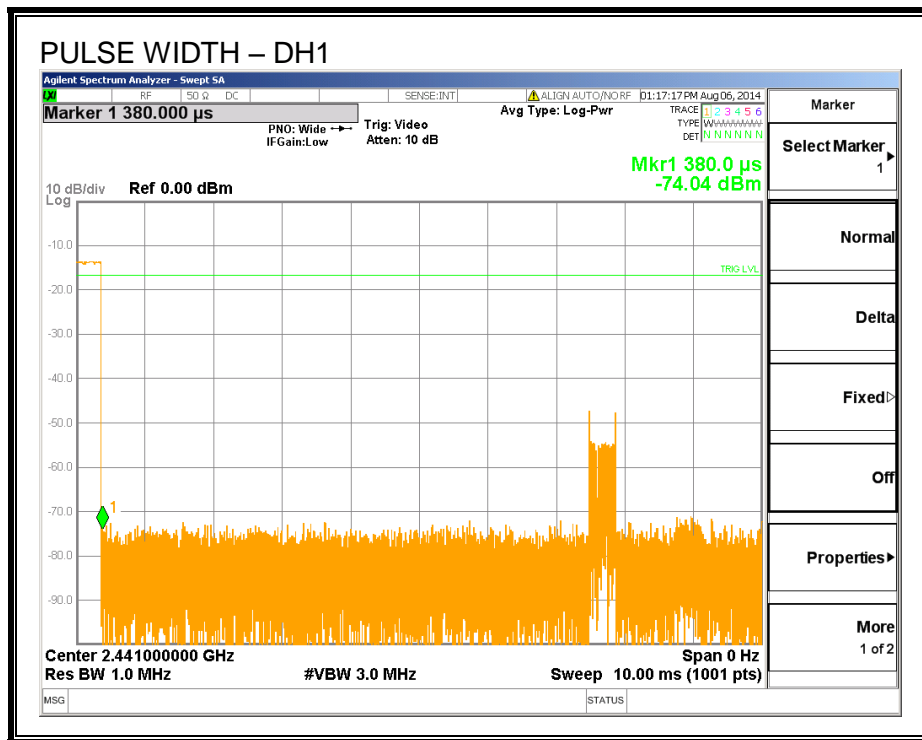
The average time of occupancy in the specified 31.6 second period (79 channels * 0.4 s) is equal to $10 * (\# \text{ of pulses in } 3.16 \text{ s}) * \text{pulse width}$.

For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to $10 * (\# \text{ of pulses in } 0.8 \text{ s}) * \text{pulse width}$.

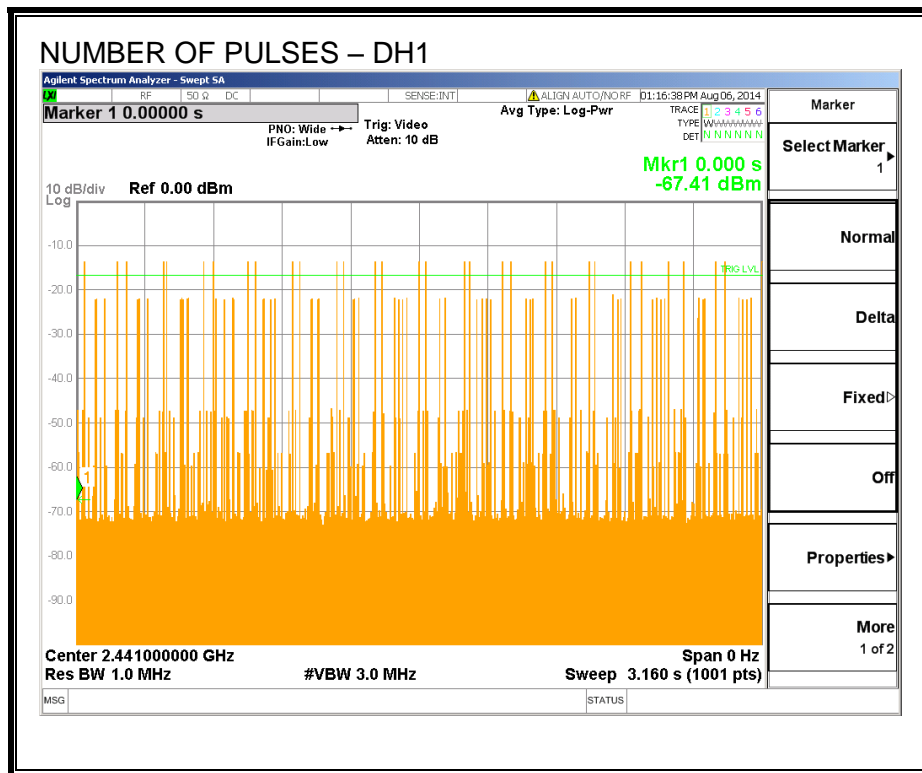
RESULTS

DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK Normal Mode					
DH1	0.38	30	0.114	0.4	-0.286
DH3	1.64	14	0.230	0.4	-0.170
DH5	2.88	11	0.317	0.4	-0.083
DH Packet	Pulse Width (msec)	Number of Pulses in 0.8 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK AFH Mode					
DH1	0.38	7.5	0.029	0.4	-0.372
DH3	1.64	3.5	0.057	0.4	-0.343
DH5	2.88	2.75	0.079	0.4	-0.321

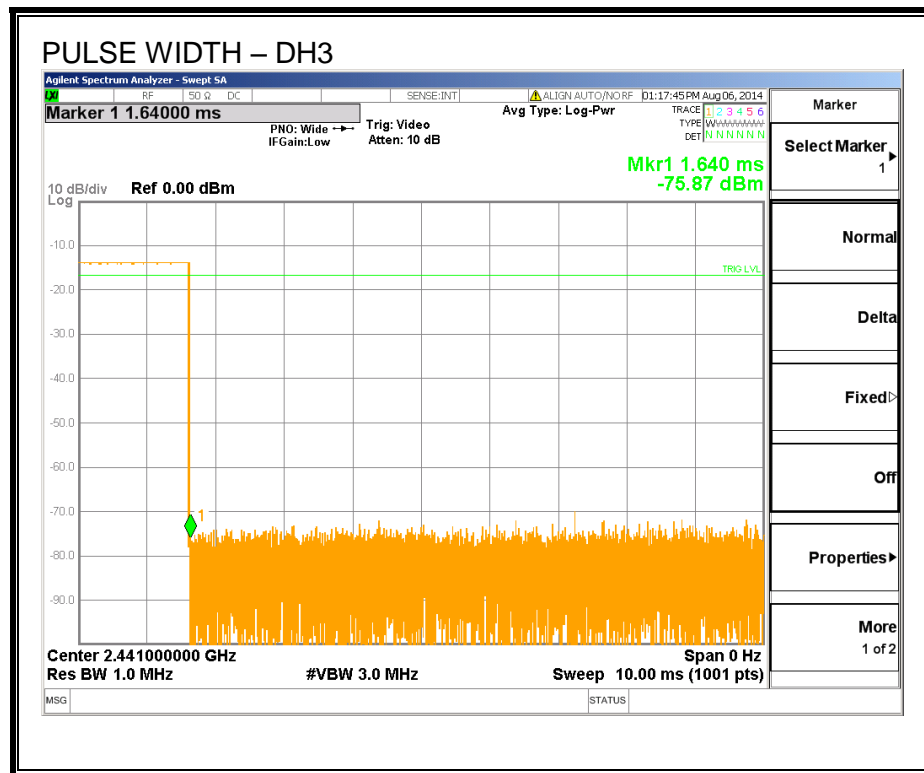
PULSE WIDTH - DH1



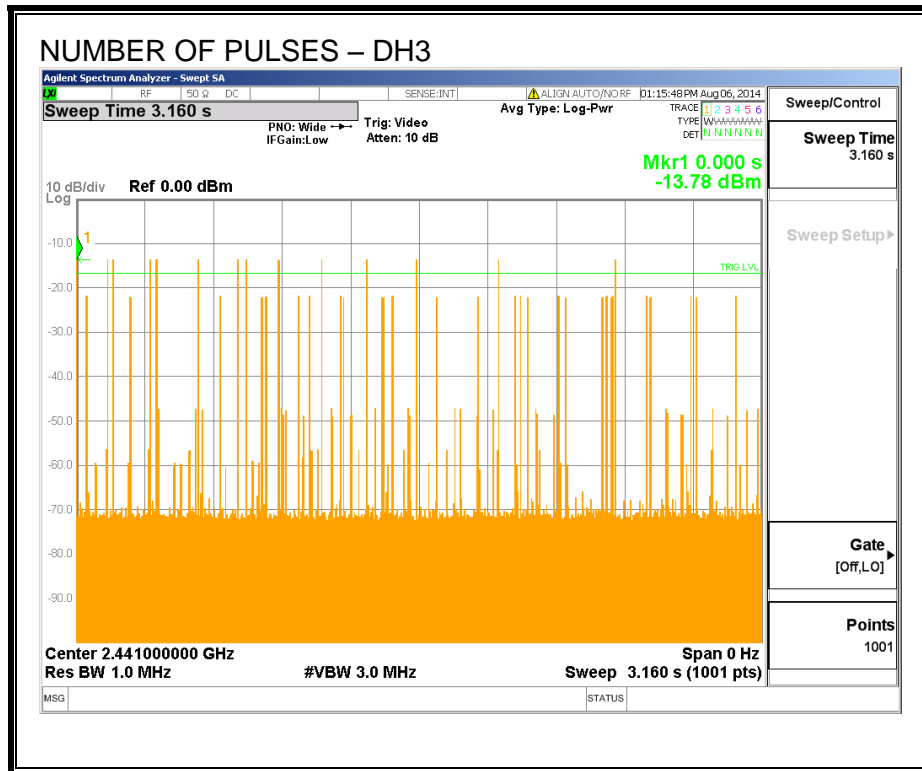
NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH1



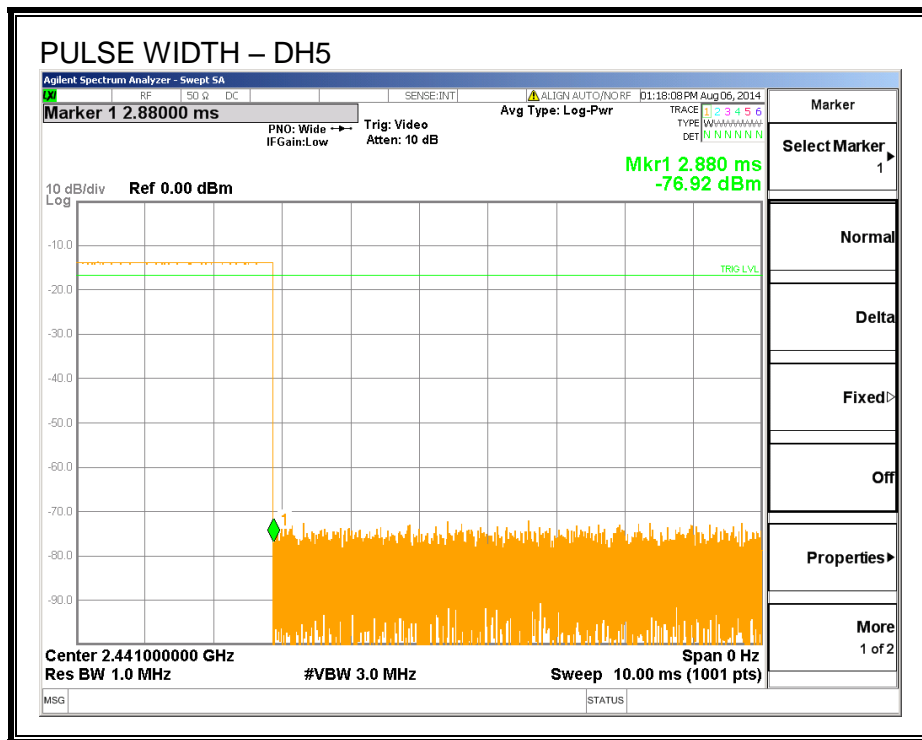
PULSE WIDTH – DH3



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH3



PULSE WIDTH – DH5



NUMBER OF PULSES – DH5

Agilent Spectrum Analyzer – Swept SA

RF | SO | DC | SENSE:INT | ALIGN: AUTO | NO RF | D1:14:28 PM Aug 06, 2014

Sweep Time 3.160 s | PNO: Wide → IF Gain: Low | Trig: Video Atten: 10 dB | Avg Type: Log-Pwr

TRACE 1 2 3 4 5 6
TYPE W W W W W W W W
DET N N N N N N N

**Mkr1 0.000 s
-13.77 dBm**

Sweep/Control
Sweep Time 3.160 s

Sweep Setup

Gate
[Off, LO]

Points
1001

10 dB/div Log Ref 0.00 dBm

Center 2.441000000 GHz Span 0 Hz
Res BW 1.0 MHz #VBW 3.0 MHz Sweep 3.160 s (1001 pts)

MSG STATUS

8.3.5. OUTPUT POWER

LIMIT

§15.247 (b) (1)

RSS-210 Issue 7 Clause A8.4

The maximum antenna gain is less than 6 dBi, therefore the limit is 30 dBm.

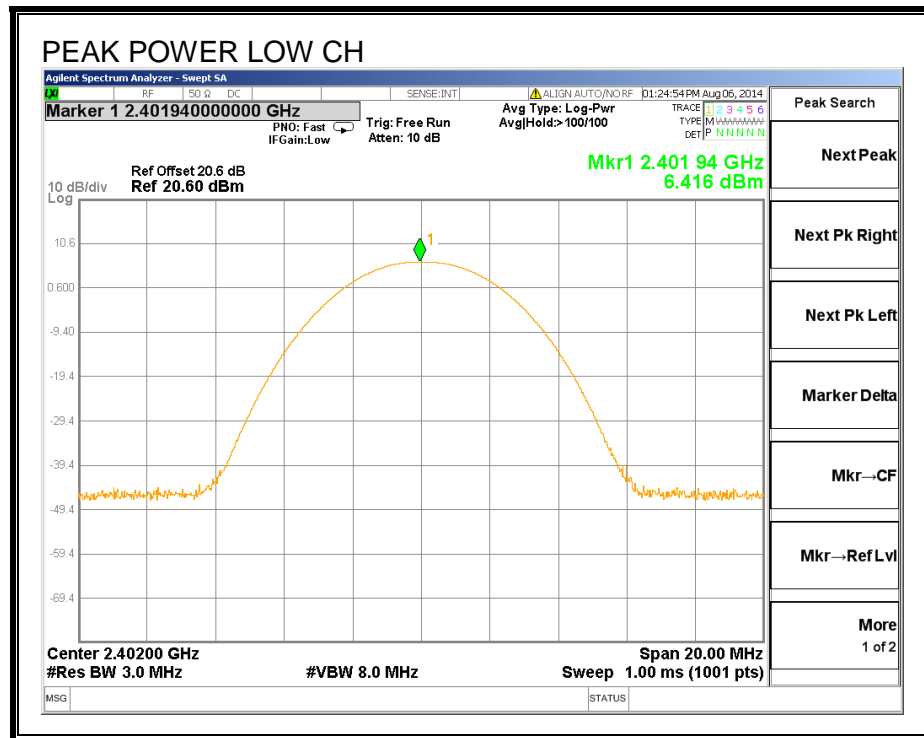
TEST PROCEDURE

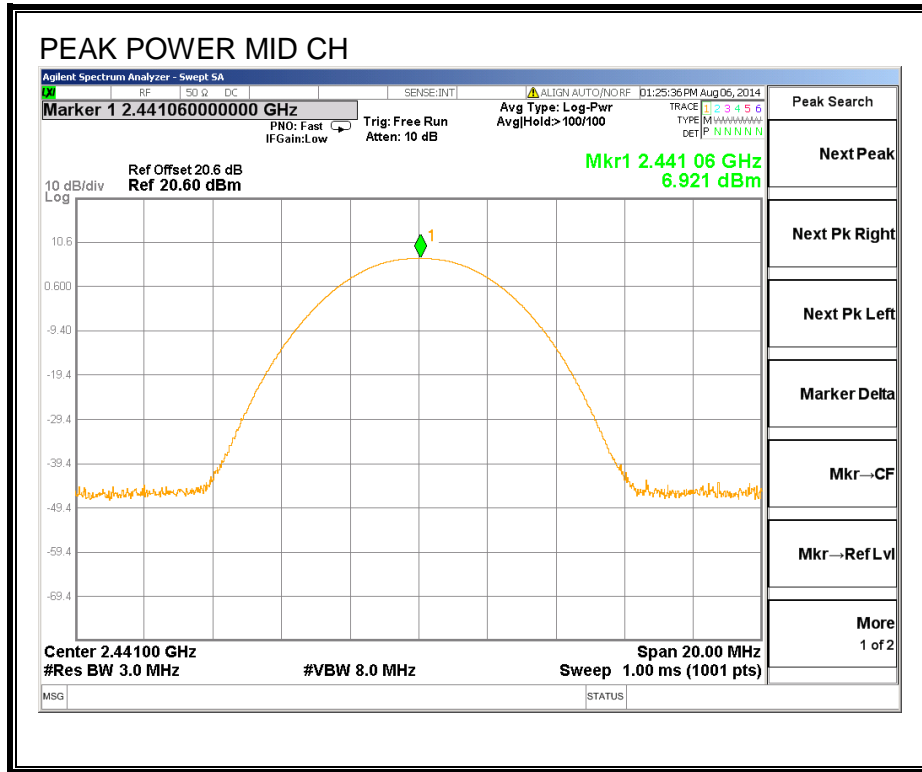
The transmitter output is connected to a spectrum analyzer the analyzer bandwidth is set to a value greater than the 20 dB bandwidth of the EUT.

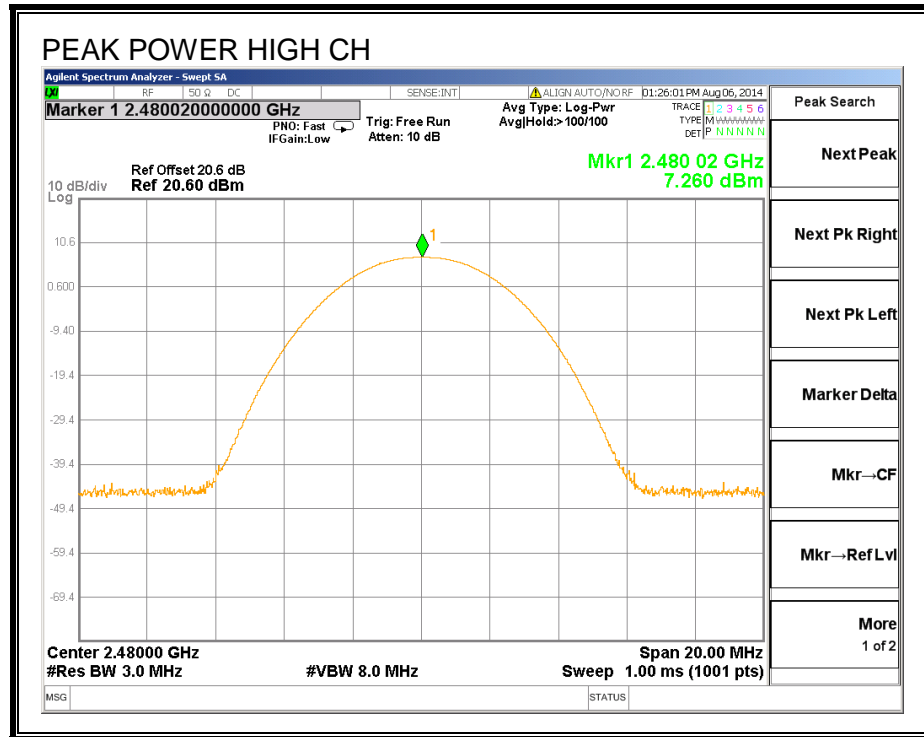
RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	6.42	30	-23.58
Middle	2441	6.92	30	-23.08
High	2480	7.26	30	-22.74

OUTPUT POWER







8.3.6. AVERAGE POWER

LIMIT

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 20.6 dB was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	4.50
Middle	2441	5.04
High	2480	5.18

8.4. ENHANCED DATA RATE QPSK MODULATION

8.4.1. OUTPUT POWER

LIMIT

§15.247 (b) (1)

RSS-210 Issue 7 Clause A8.4

The maximum antenna gain is less than 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer the analyzer bandwidth is set to a value greater than the 20 dB bandwidth of the EUT.

RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	7.34	30	-22.66
Middle	2441	7.81	30	-22.19
High	2480	7.96	30	-22.04

PEAK POWER LOW CH

Agilent Spectrum Analyzer - Swept SA

FREQ	RF	SQ	QC	SENSE:INT	ALIGN AUTO/NR RF	D1:29:50 PM Aug 06, 2014
------	----	----	----	-----------	------------------	--------------------------

Marker 1 2.40206000000 GHz

PW: Fast IF Gain: Low Trig: Free Run Atten: 10 dB

Avg Type: Log-Pwr Avg/Hold: 100/100

TRACE 1 2 3 4 5 6
TYPE M N N N N N
DET P N N N N N

Ref Offset 20.6 dB Ref 20.60 dBm

Mkr1 2.402 06 GHz
7.337 dBm

Center 2.40200 GHz #Res BW 3.0 MHz

#VBW 8.0 MHz

Sweep Span 20.00 MHz 1.00 ms (1001 pts)

MSG
STATUS

Peak Search

Next Peak

Next Pk Right

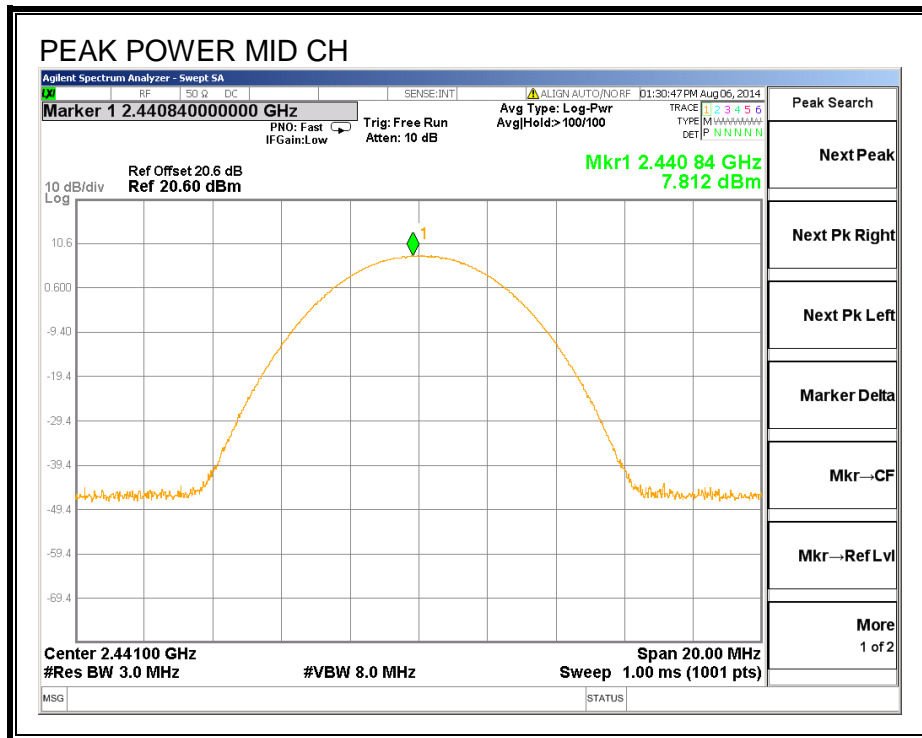
Next Pk Left

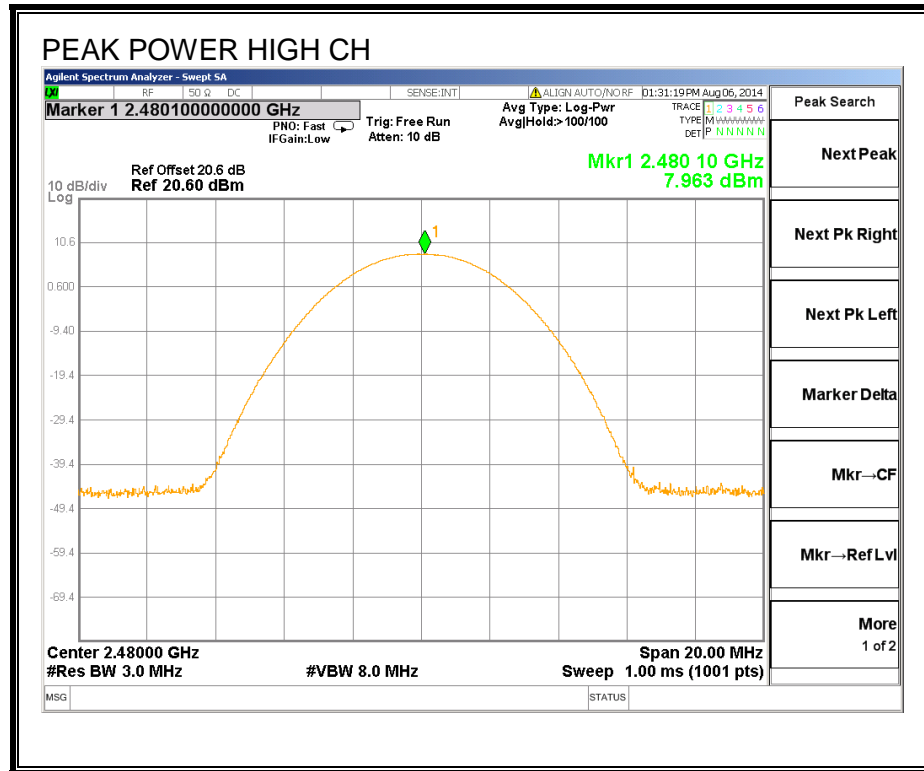
Marker Delta

Mkr→CF

Mkr→Ref Lvl

More
1 of 2





8.4.2. AVERAGE POWER

LIMIT

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 20.6 dB was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	2.68
Middle	2441	3.01
High	2480	3.01

8.5. ENHANCED DATA RATE 8PSK MODULATION

8.5.1. 20 dB AND 99% BANDWIDTH

LIMIT

None; for reporting purposes only.

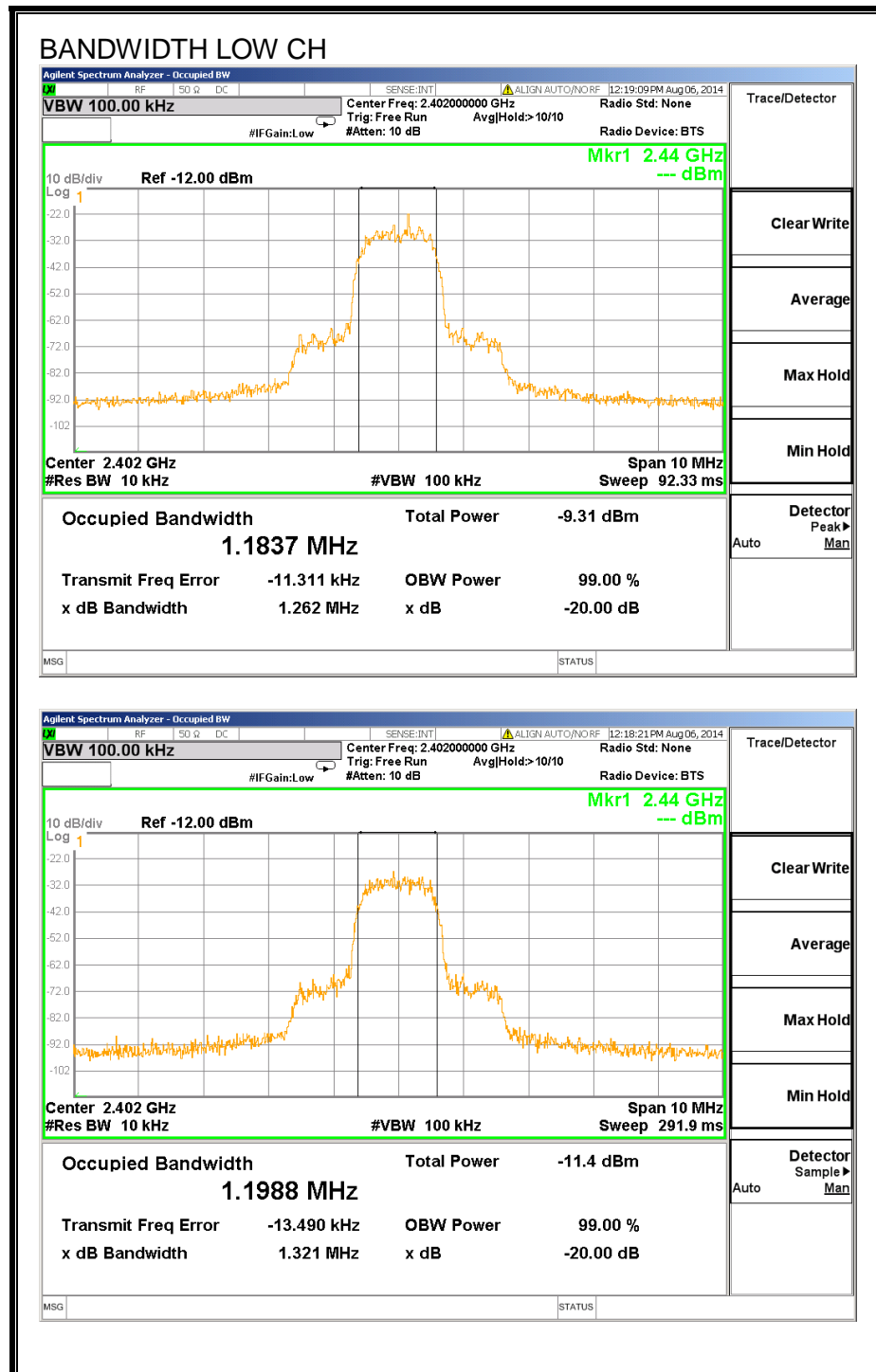
TEST PROCEDURE

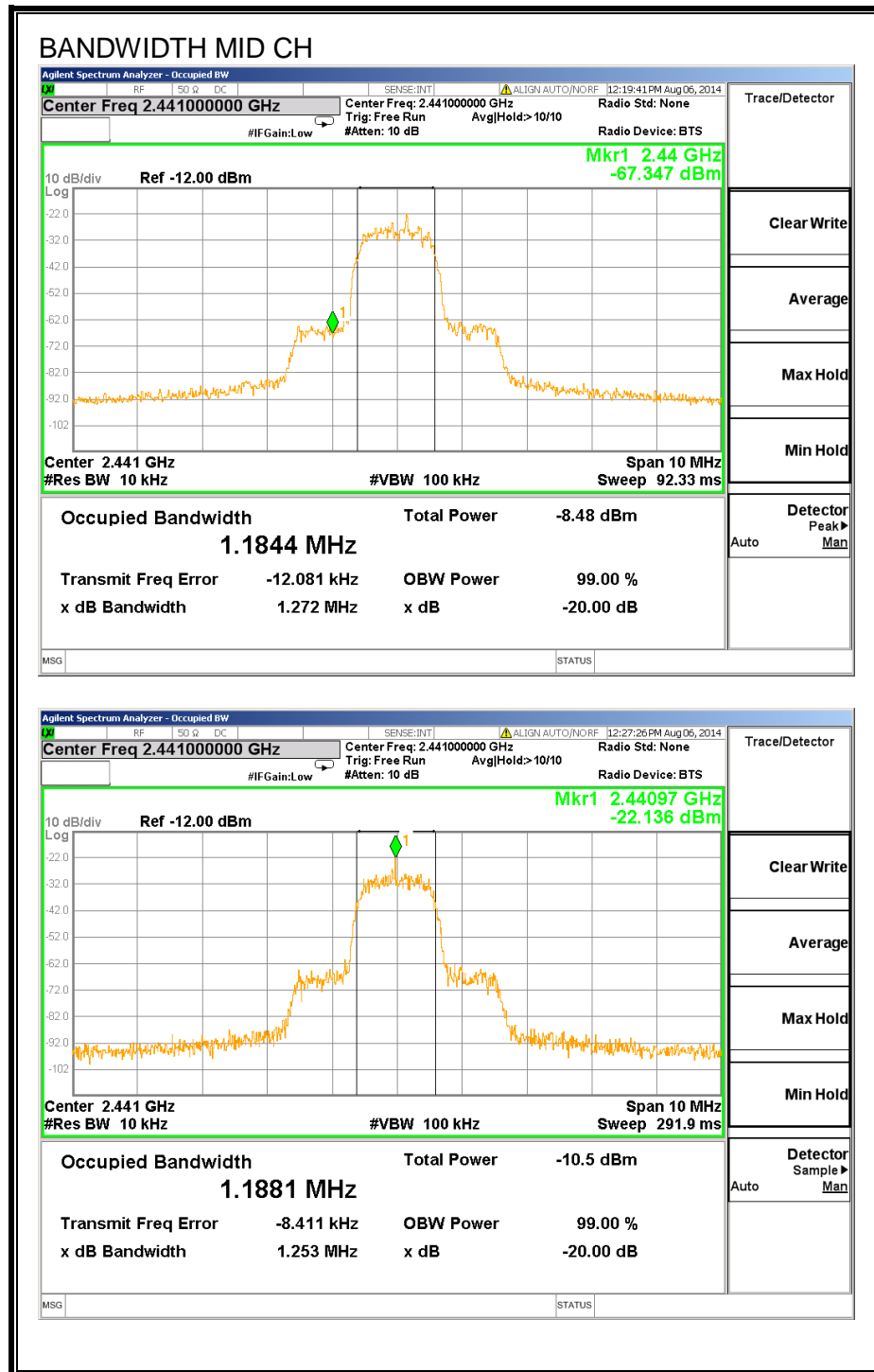
The transmitter output is connected to a spectrum analyzer. The RBW is set to $\geq 1\%$ of the 20 dB bandwidth. The VBW is set to \geq RBW. The sweep time is coupled.

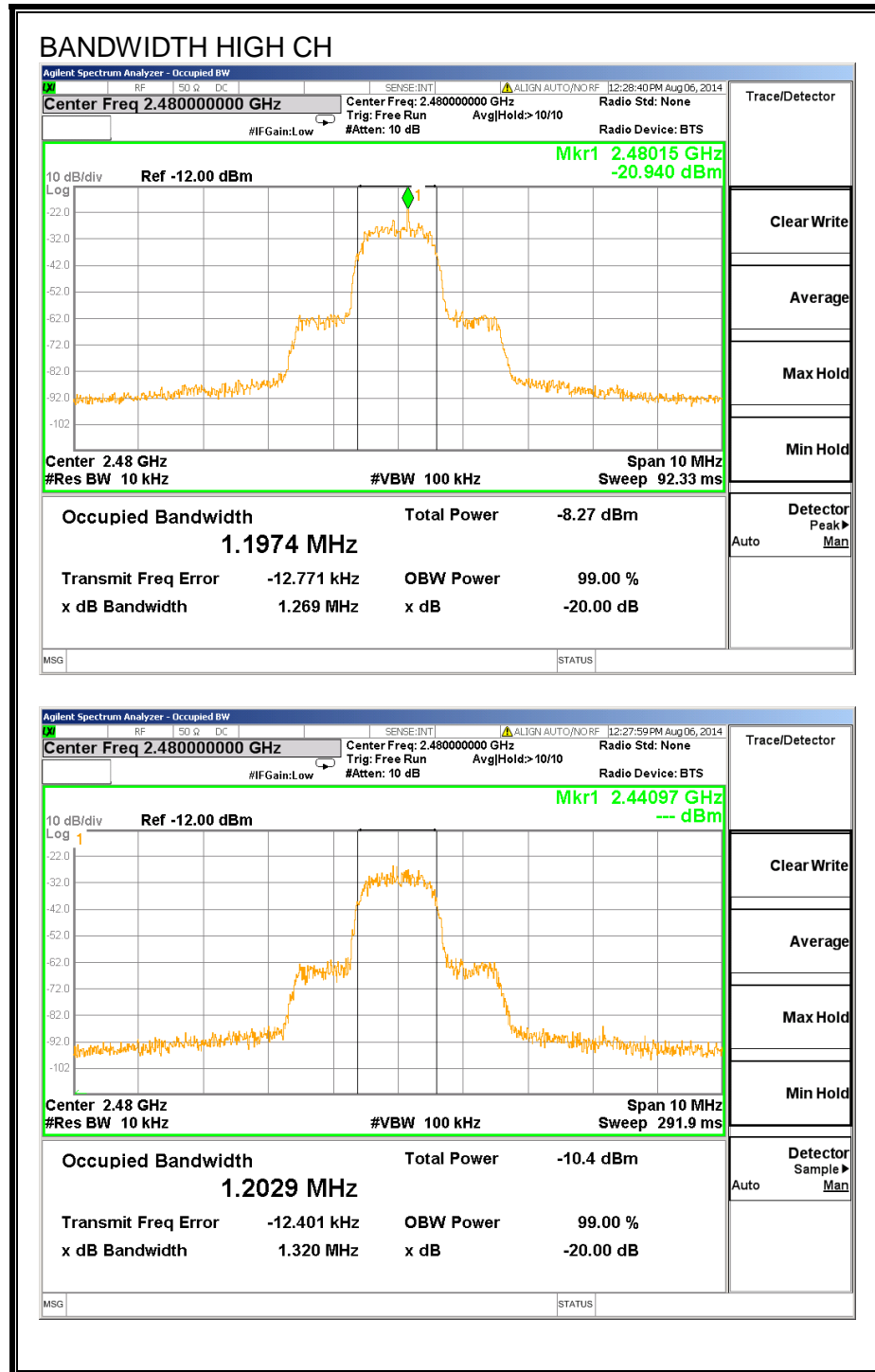
RESULTS

Channel	Frequency (MHz)	20 dB Bandwidth (kHz)	99% Bandwidth (kHz)
Low	2402	1262	1198
Middle	2441	1272	1188
High	2480	1269	1202.9

20 dB AND 99% BANDWIDTH







8.5.2. OUTPUT POWER

LIMIT

§15.247 (b) (1)

RSS-210 Issue 7 Clause A8.4

The maximum antenna gain is less than 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer the analyzer bandwidth is set to a value greater than the 20 dB bandwidth of the EUT.

RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	7.76	30	-22.24
Middle	2441	8.13	30	-21.87
High	2480	8.24	30	-21.76

PEAK POWER LOW CH

Agilent Spectrum Analyzer - Swept SA

RF SQ D C SENSE:INT ALIGN AUTO/NO RF D1:28:38 PM Aug 06, 2014

Marker 1 2.401980000000 GHz PNO: Fast IF Gain:Low Trig: Free Run Atten: 10 dB Avg Type: Log-Pwr Avg/Hold: > 100/100

TRACE 1 2 3 4 5 6 TYPE M M M M M M M M DET P N N N N N N

Ref Offset 20.6 dB Ref 20.60 dBm

10 dB/div Log

Center 2.40200 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Span 20.00 MHz Sweep 1.00 ms (1001 pts)

MSG STATUS

Peak Search

Next Peak

Next Pk Right

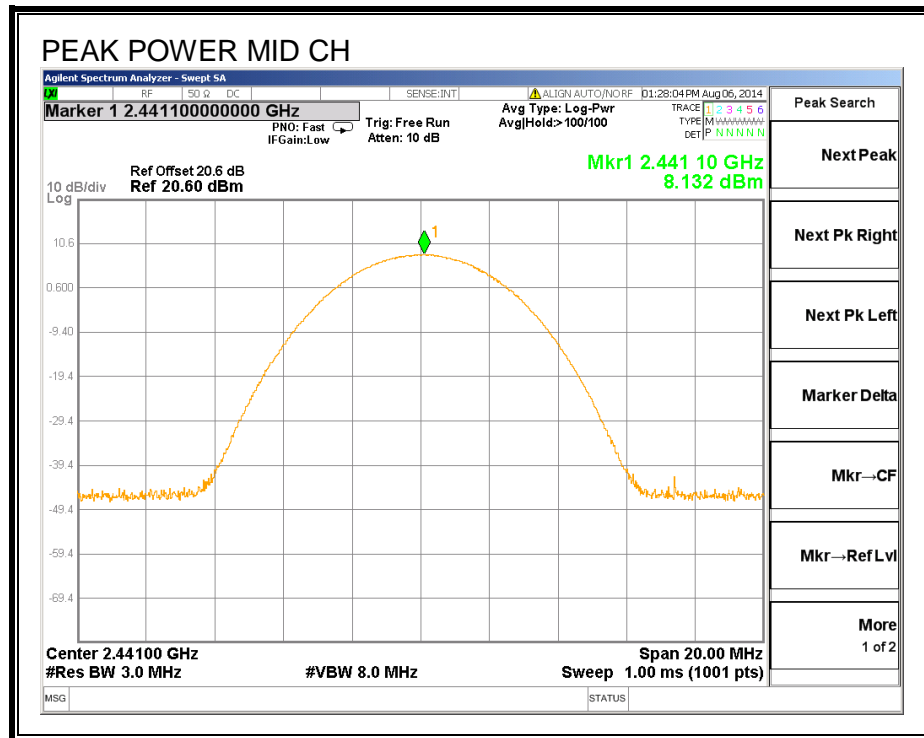
Next Pk Left

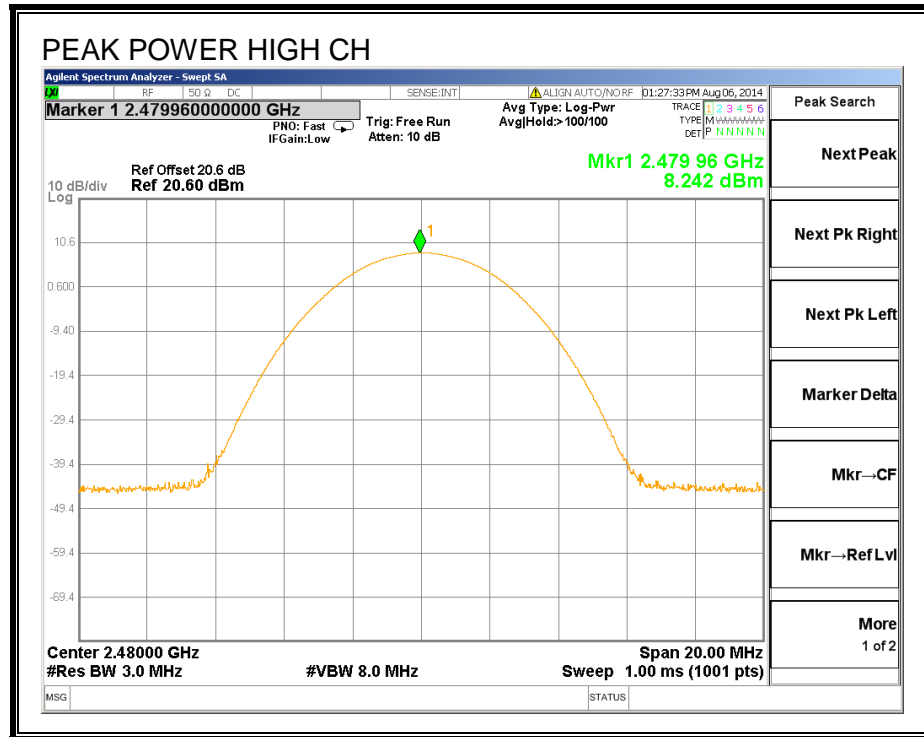
Marker Delta

Mkr→CF

Mkr→Ref Lvl

More 1 of 2





8.5.3. AVERAGE POWER

LIMIT

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 20.6 dB was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	Average Power (dBm)
Low	2402	3.05
Middle	2441	3.62
High	2480	3.80

8.5.4. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

Limit = -20 dBc

TEST PROCEDURE

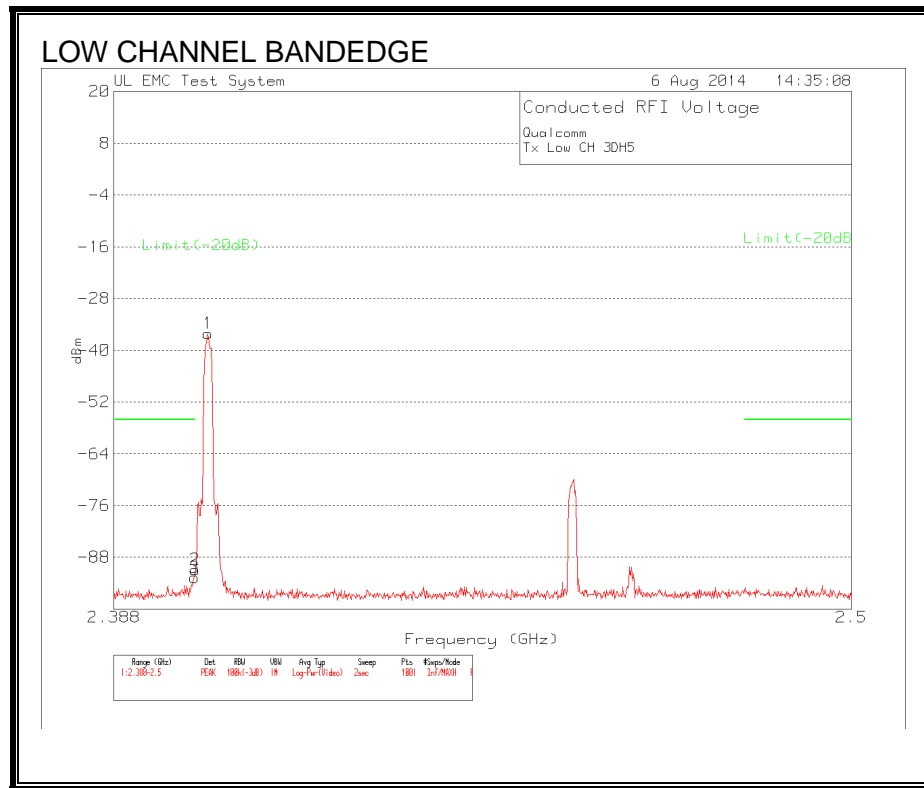
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

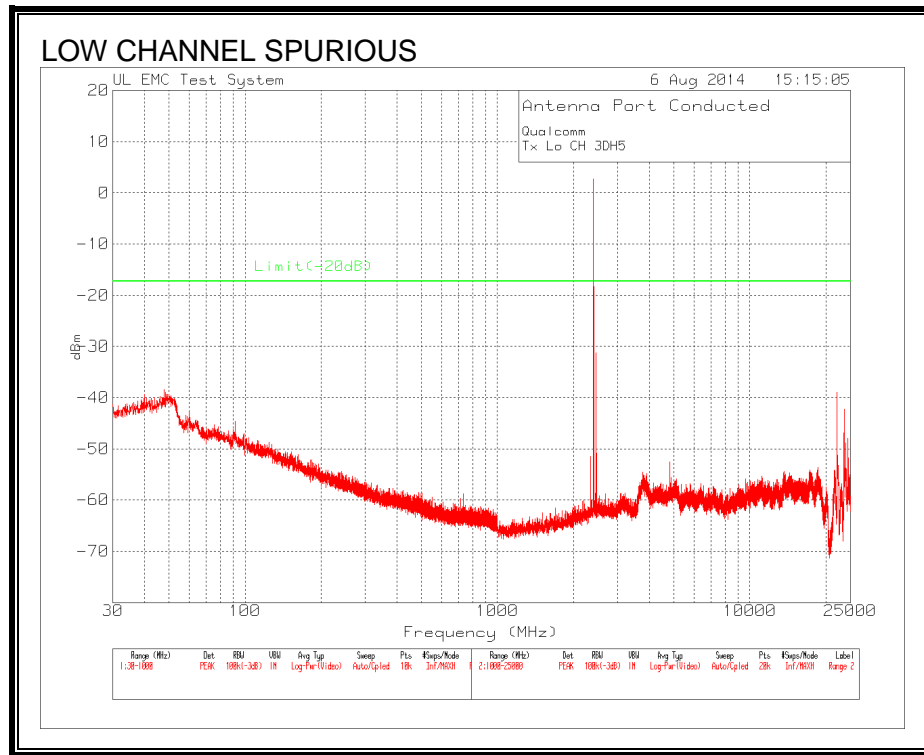
The spectrum from 30 MHz to 25 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

The bandedges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

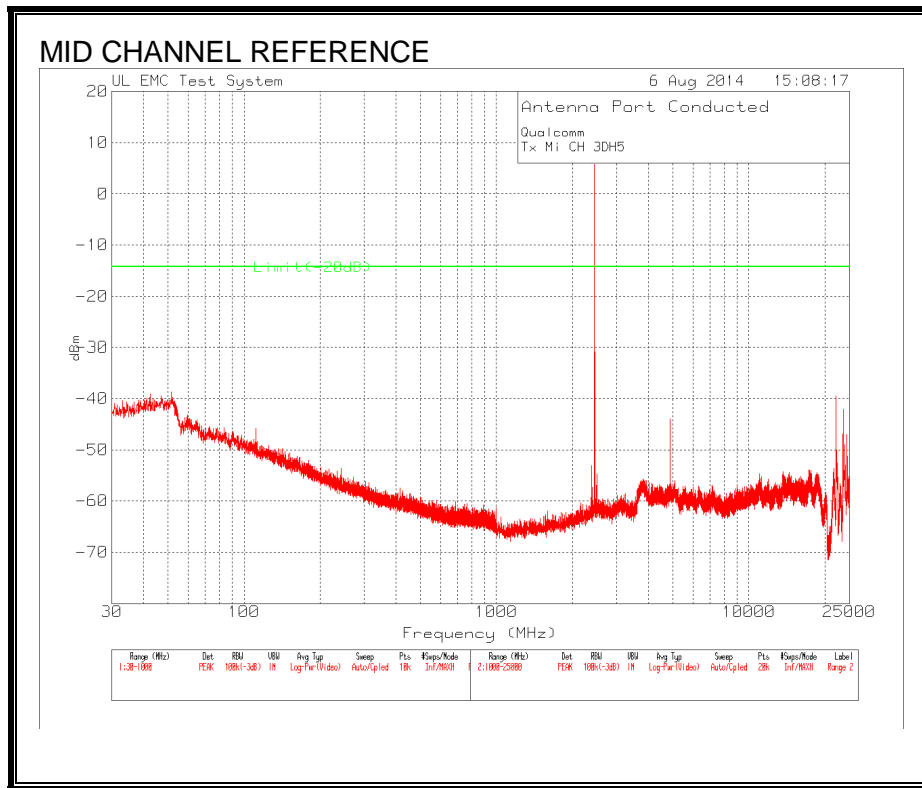
RESULTS

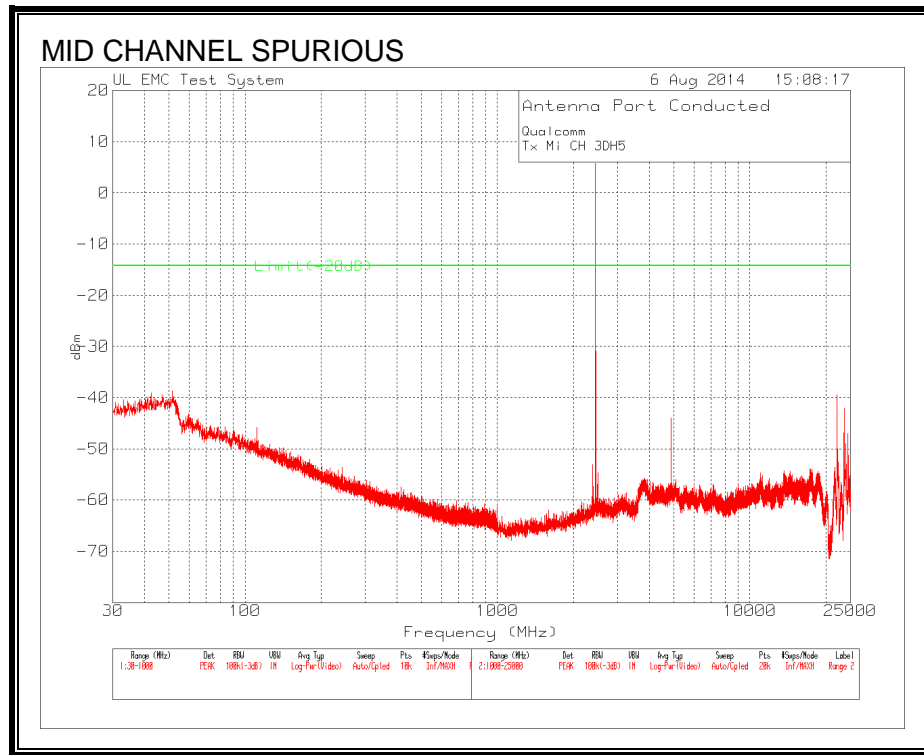
SPURIOUS EMISSIONS, LOW CHANNEL



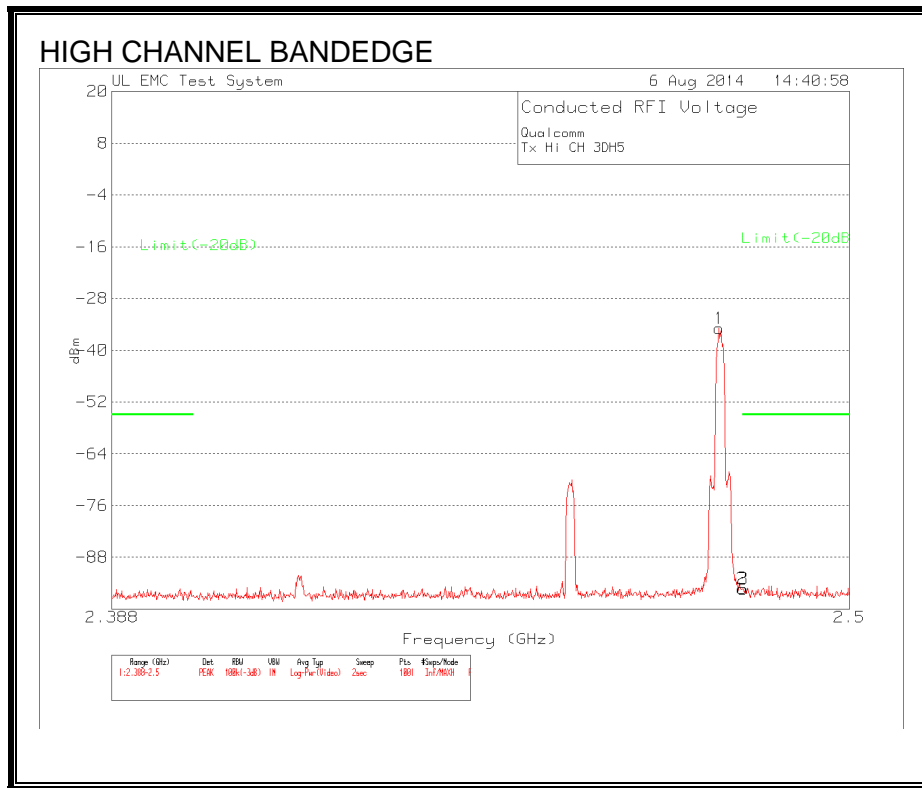


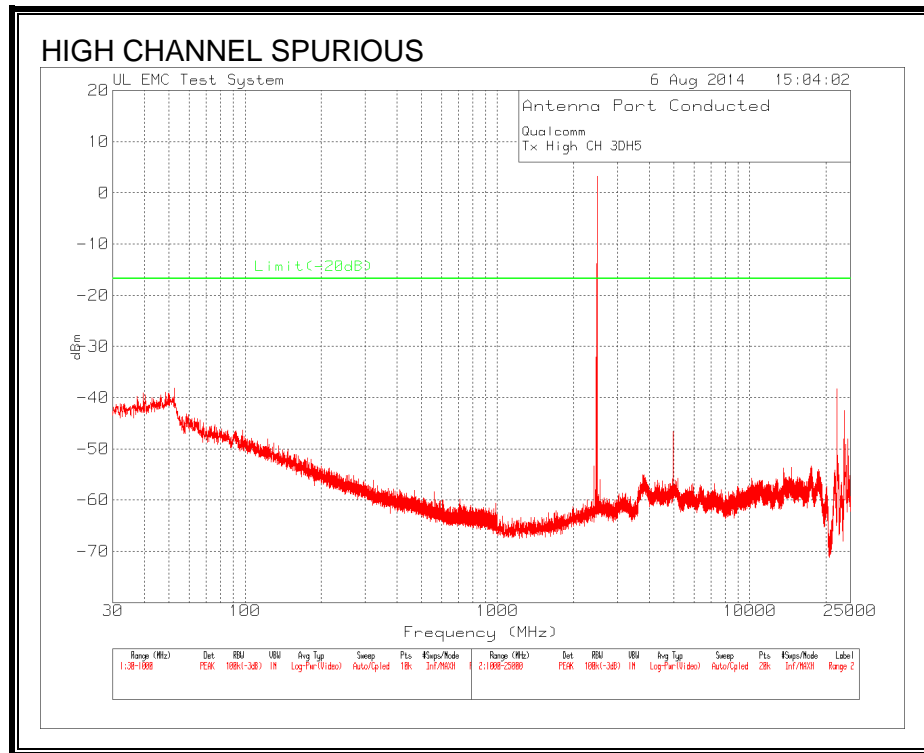
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

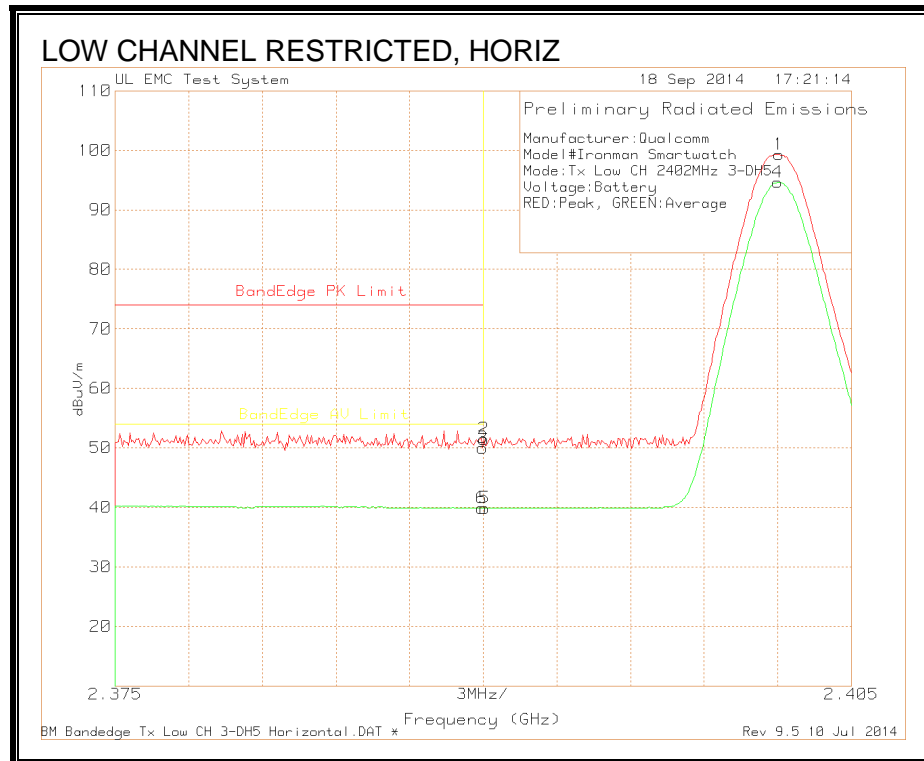
Frequency Range (MHz)	Field Strength Limit ($\mu\text{V}/\text{m}$) at 3 m	Field Strength Limit (dB $\mu\text{V}/\text{m}$) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

9.2. TRANSMITTER ABOVE 1 GHz

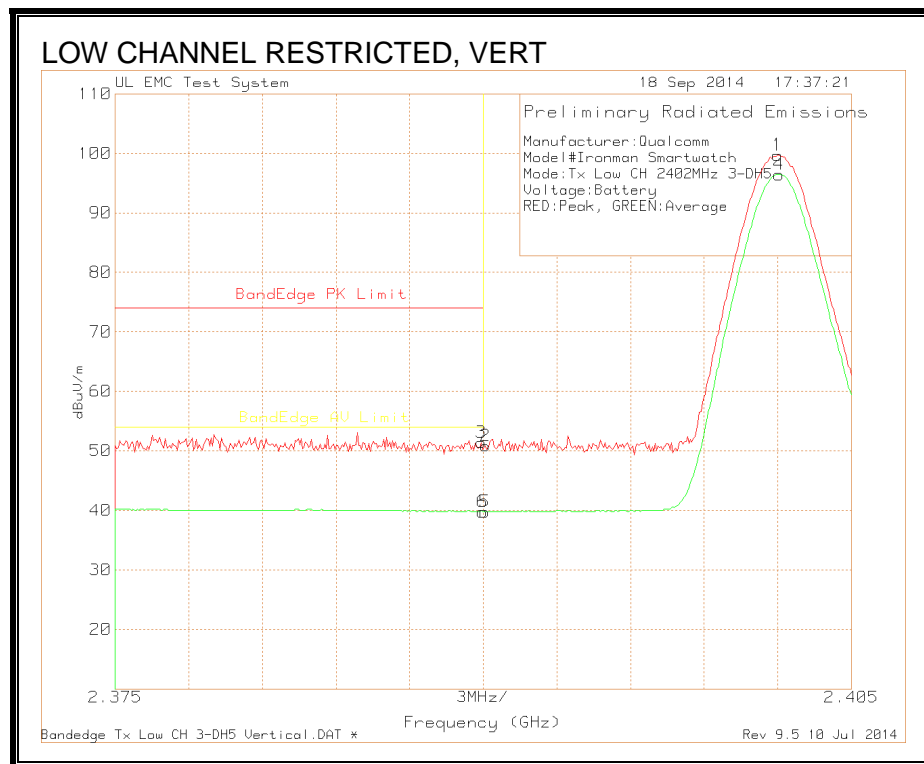
EDR was considered worst case modulation.

9.2.1. ENHANCED DATA RATE 8PSK MODULATION

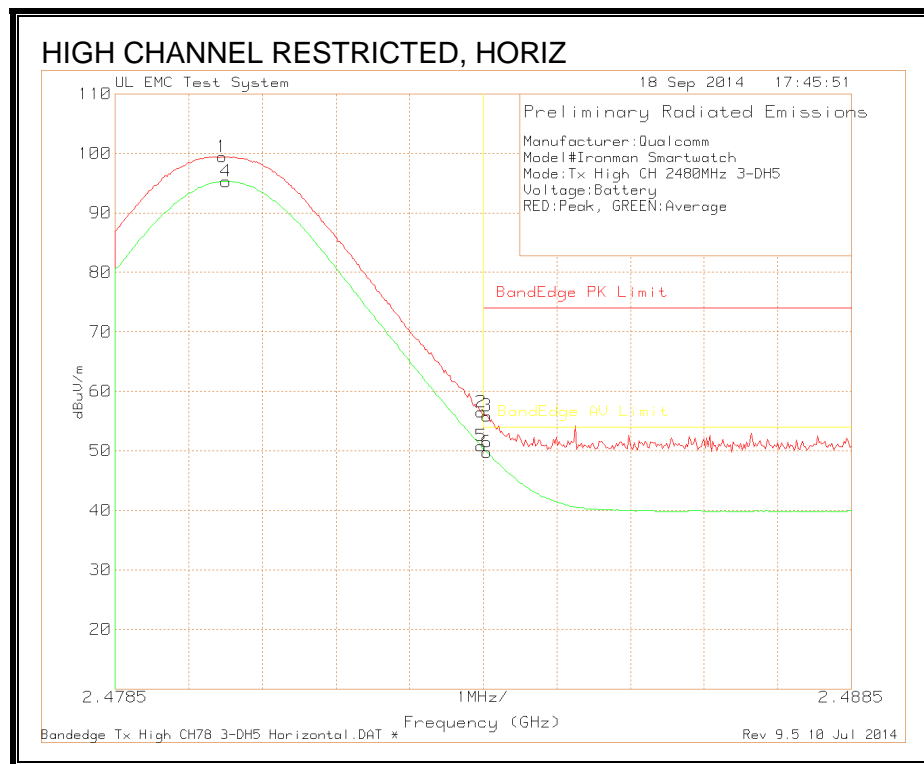
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



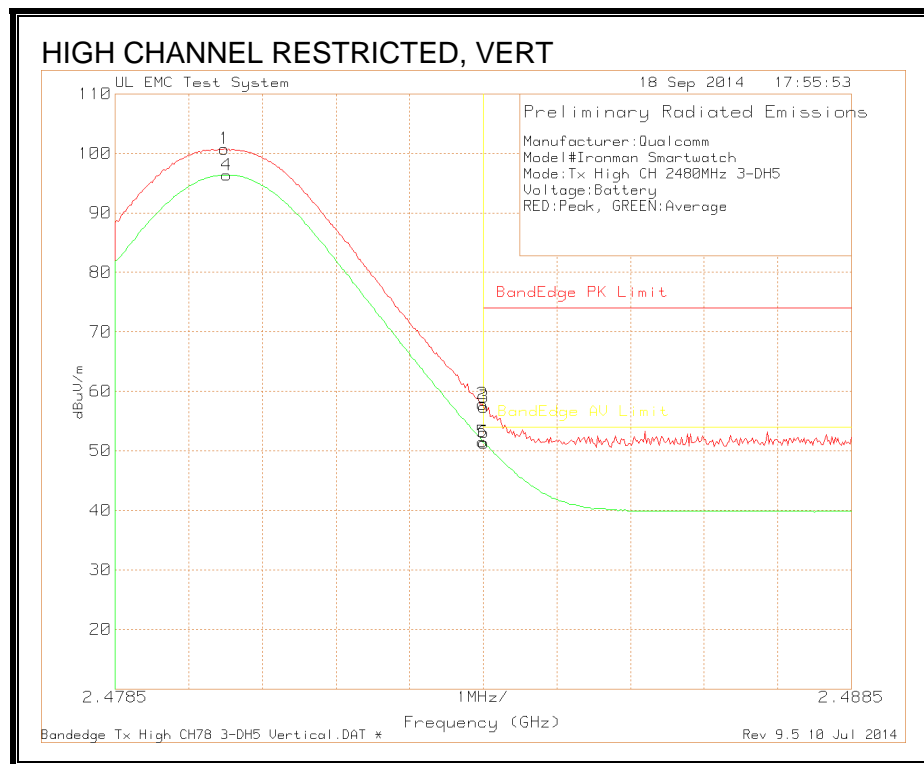
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



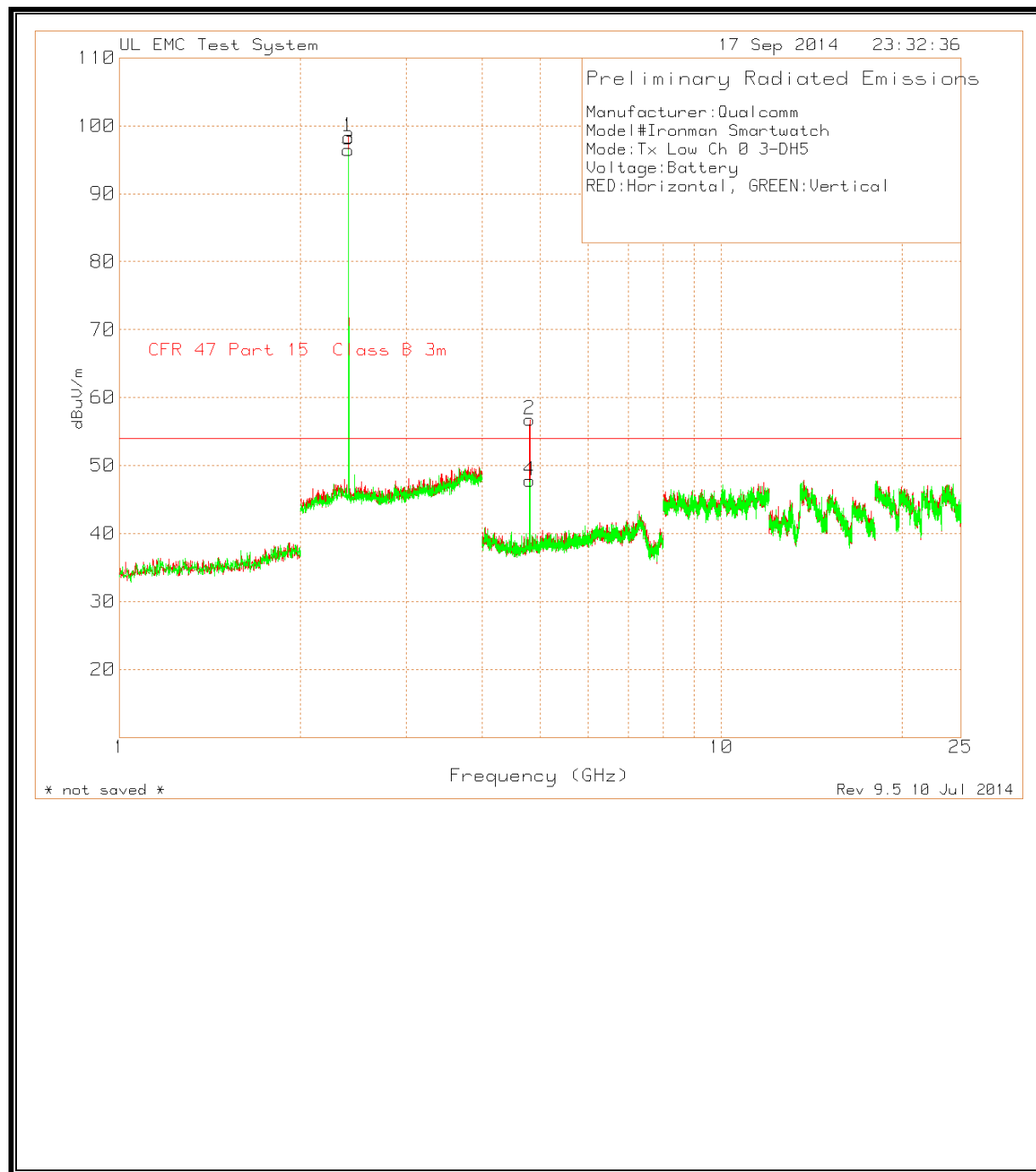
RESTRICTED BANEDGE (HIGH CHANNEL, HORIZONTAL)

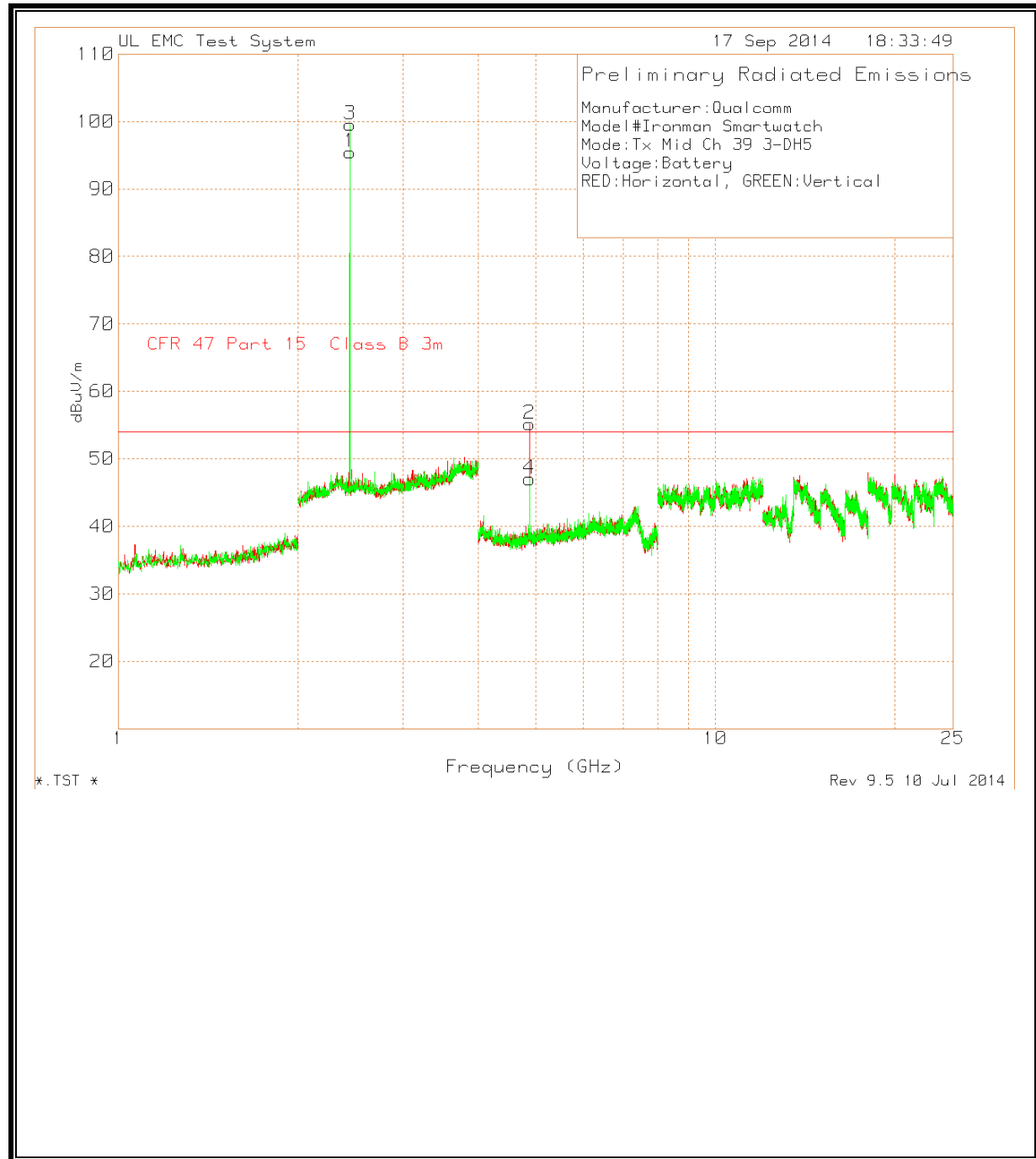


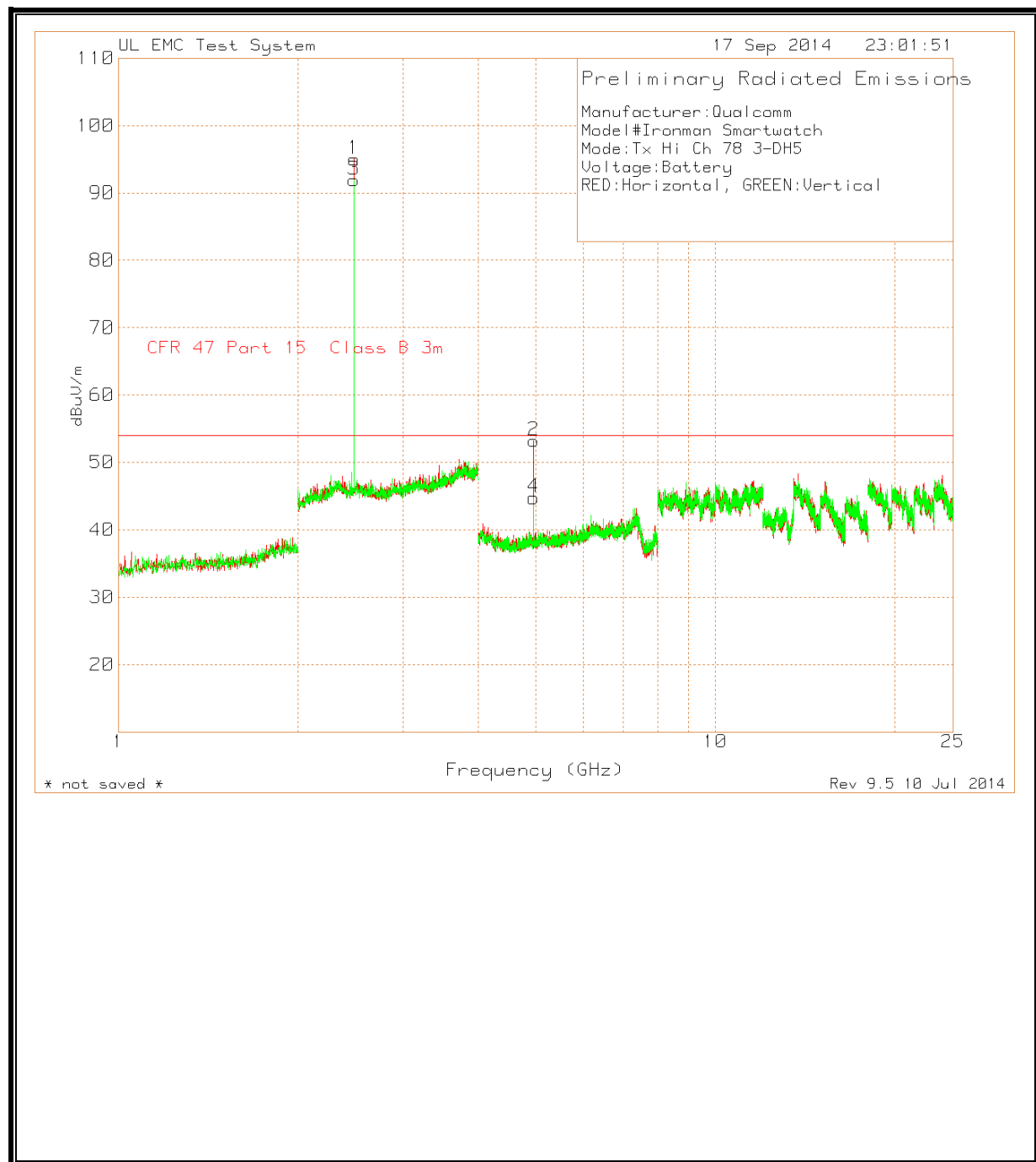
RESTRICTED BANEDGE (HIGH CHANNEL, VERTICAL)



HARMONICS AND SPURIOUS EMISSIONS







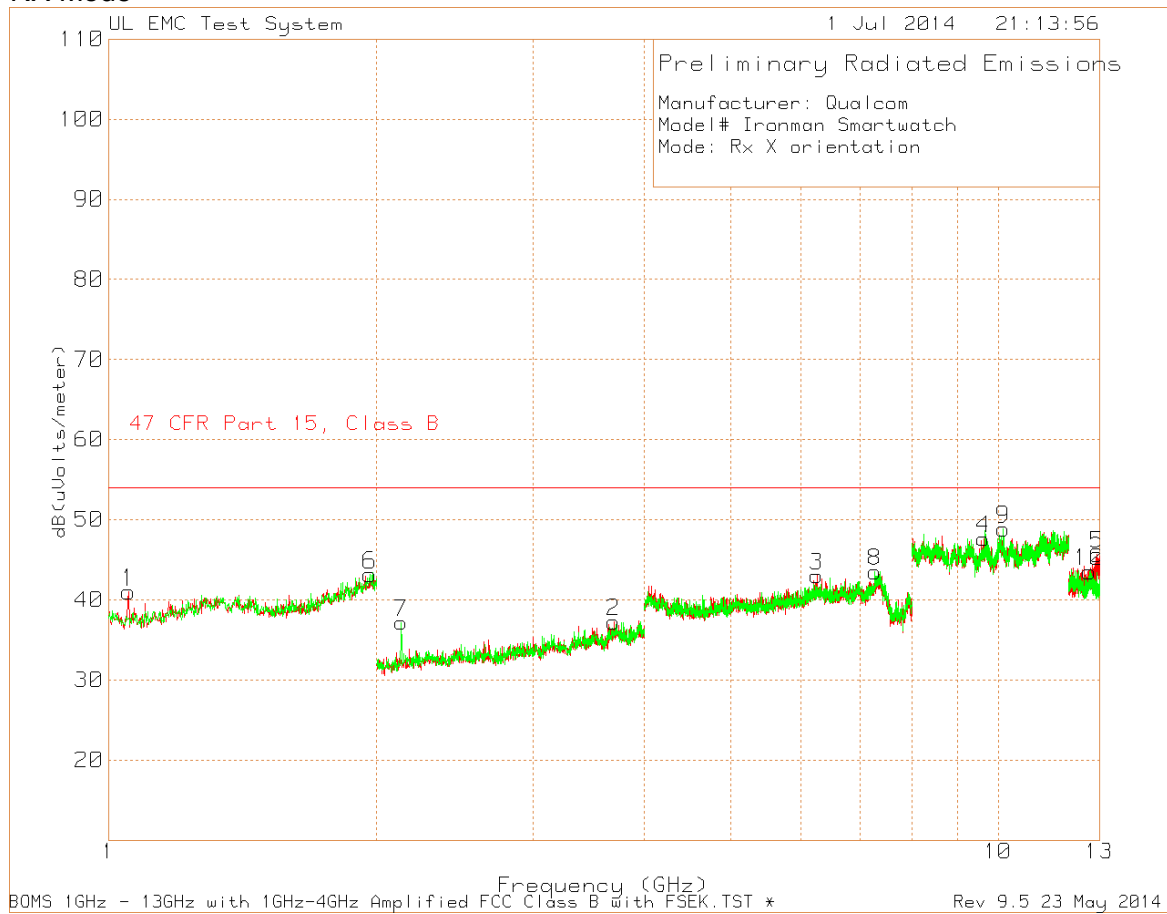
Manufacturer:Qualcomm
Model#Ironman Smartwatch
Mode:Tx 3-DH5
Voltage:Battery
RED:Horizontal, GREEN:Vertical

Test	Meter	Antenna	Corrected CFR 47						
Frequency	Reading	Factor	Gain/Loss	Reading	Part 15	Margin	Azimuth	Height	
(GHz)	(dBuV) Detector	dB/m	(dB)	dBuV/m	Limit	(dB)	[Degs]	[cm]	Polarity
4.8819	80.1 PK	27.7	-50.11	57.69	74	-16.31	244	103	H
4.882	68.91 LnAv	27.7	-50.11	46.5	54	-7.5	244	103	H
4.882	71.88 PK	27.7	-50.11	49.47	74	-24.53	111	106	V
4.882	60.17 LnAv	27.7	-50.11	37.76	54	-16.24	111	106	V
4.8039	81.97 PK	27.7	-50.46	59.21	74	-14.79	246	107	H
4.804	69.78 LnAv	27.7	-50.46	47.02	54	-6.98	246	107	H
4.8036	73.66 PK	27.7	-50.46	50.9	74	-23.1	321	109	V
4.804	62.22 LnAv	27.7	-50.46	39.46	54	-14.54	321	109	V
4.9599	78.05 PK	27.8	-50.5	55.35	74	-18.65	249	101	H
4.96	66.89 LnAv	27.8	-50.5	44.19	54	-9.81	249	101	H
4.9601	69.81 PK	27.8	-50.5	47.11	74	-26.89	112	117	V
4.96	58.54 LnAv	27.8	-50.5	35.84	54	-18.16	112	117	V

PK - Peak detector

LnAv - Linear (voltage) average detector

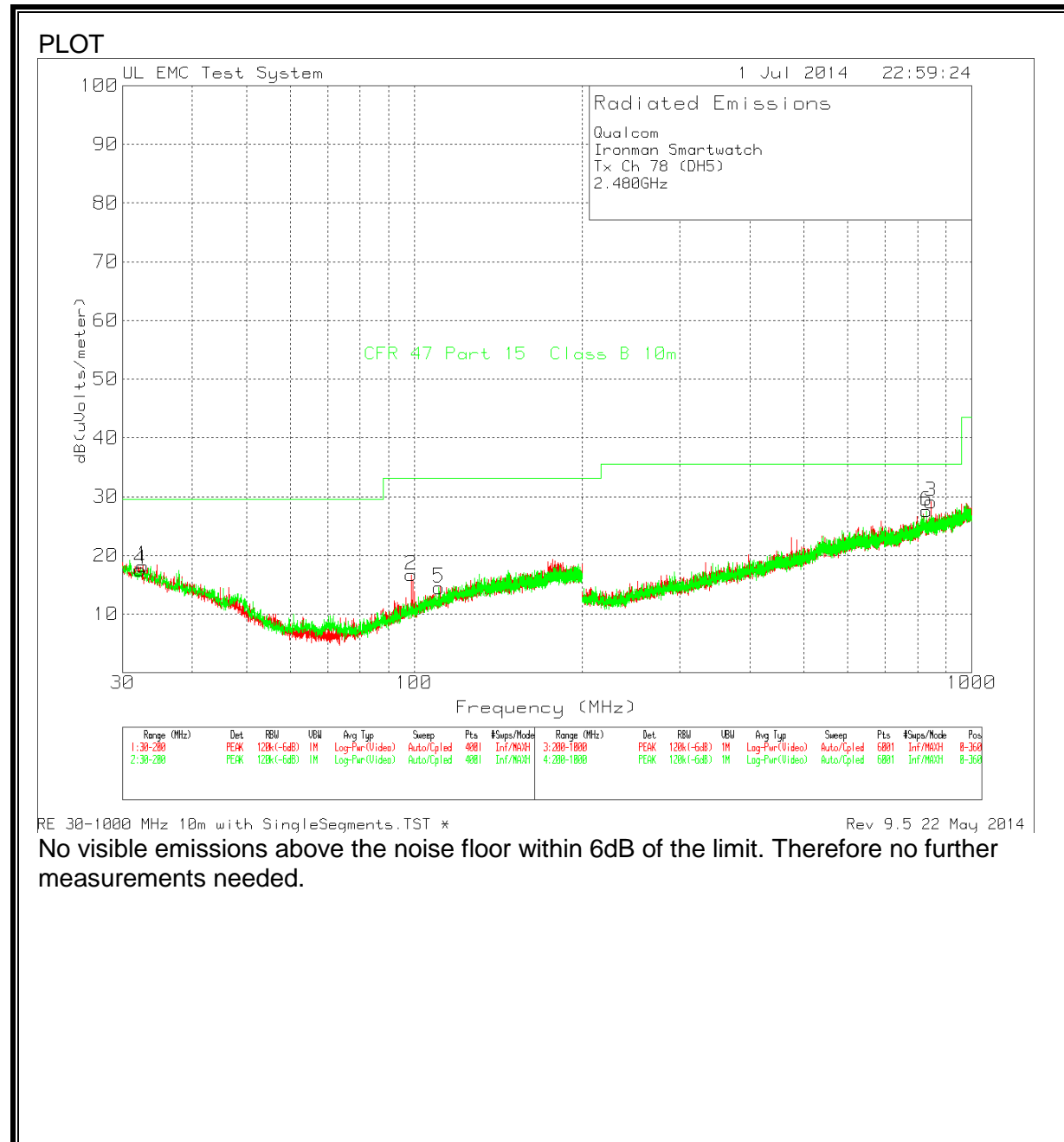
RX Mode



No visible emissions above noise floor within 6dB of the limit. Therefore no further measurements needed.

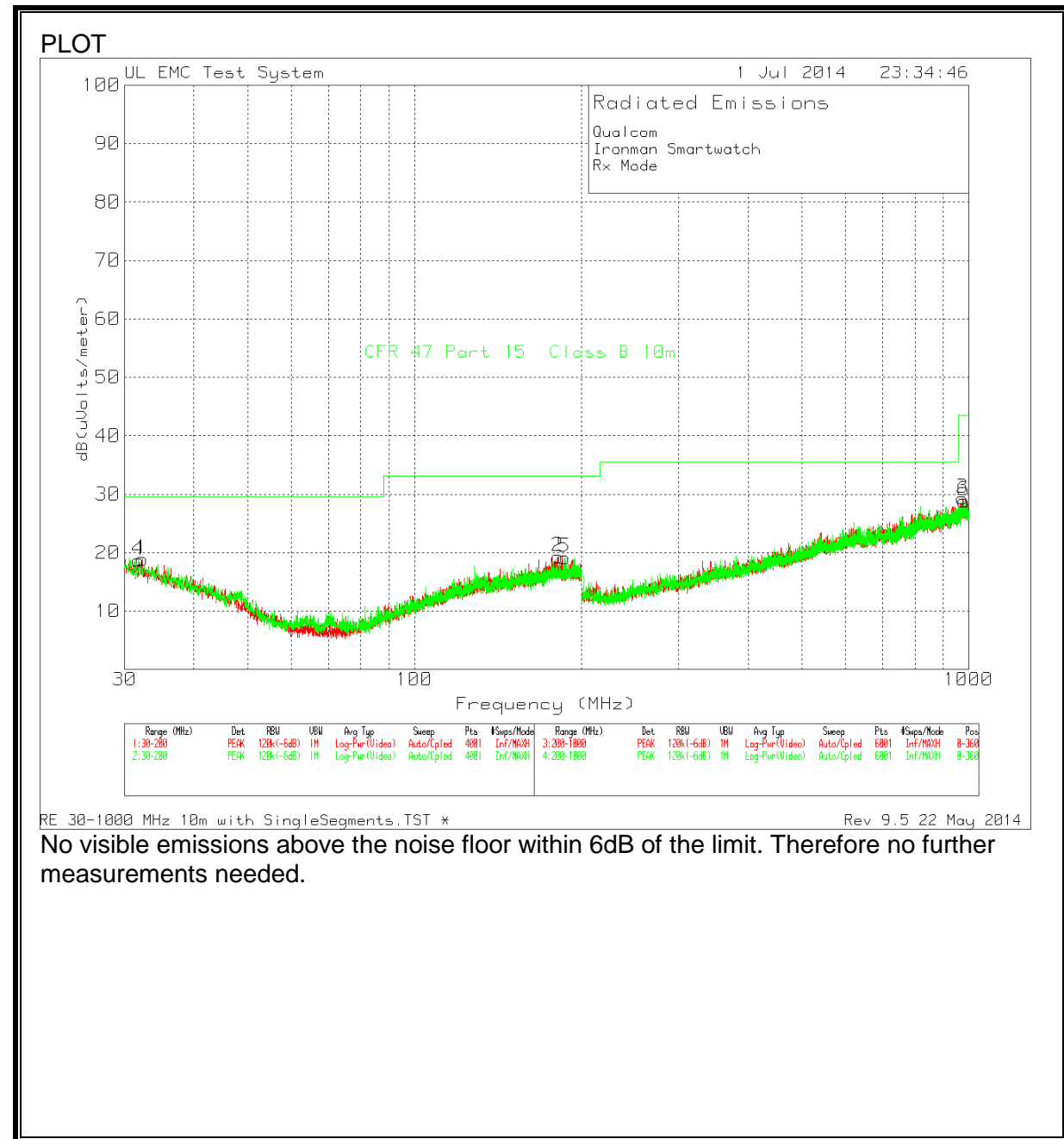
9.3. WORST-CASE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



9.4. DIGITAL DEVICE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (DIGITAL DEVICE)



10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 [*]	56 to 46 [*]
0.5-5	56	46
5-30	60	50

^{*} Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

Extended Power cable as seen in test setup photo is included in the test setup and factors.

6 WORST EMISSIONS

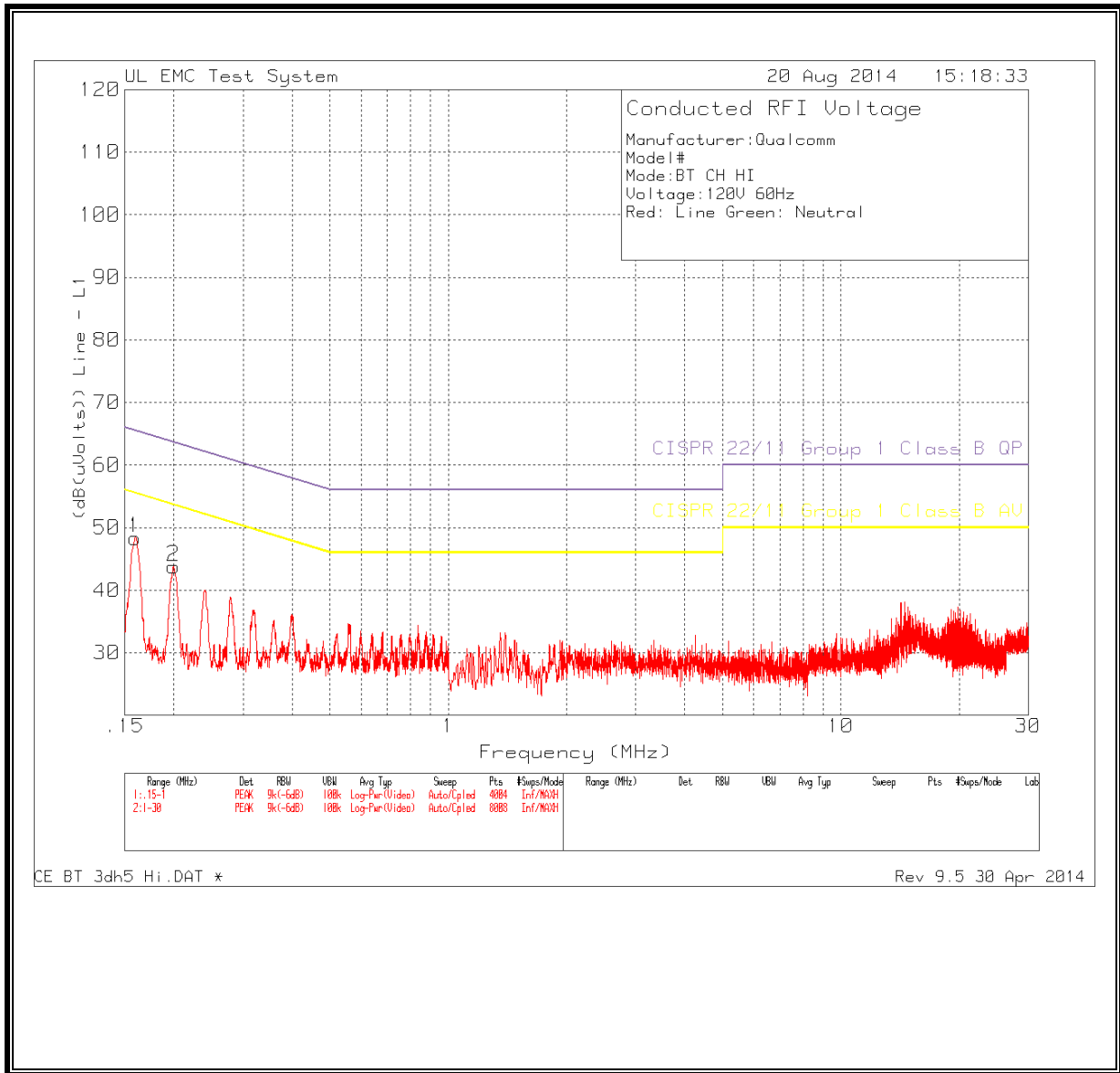
Manufacturer:Qualcomm
Model#
Mode:BT CH HI
Voltage:120V 60Hz
Red: Line Green: Neutral

Trace Markers											
No.	Test Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading (dB(uVolts))	Limit:1	2	3	4	5	6
=====											
Line - L1 .15 - 1MHz -----											
1	.15912	34.24dBuV PK	.2	13.9	48.34	-	-	65.51	55.51	-	-
					Margin (dB)	-	-	-17.17	-7.17	-	-
2	.1994	32.17dBuV PK	.1	11.5	43.77	-	-	63.64	53.64	-	-
					Margin (dB)	-	-	-19.87	-9.87	-	-
Line - L2 .15 - 1MHz -----											
3	.16028	33.66dBuV PK	.2	13.8	47.66	-	-	65.45	55.45	-	-
					Margin (dB)	-	-	-17.79	-7.79	-	-
4	.19918	31.94dBuV PK	.2	11.5	43.64	-	-	63.64	53.64	-	-
					Margin (dB)	-	-	-20	-10	-	-
5	.35606	29.3dBuV PK	.2	10.8	40.3	-	-	58.82	48.82	-	-
					Margin (dB)	-	-	-18.52	-8.52	-	-
Line - L2 1 - 30MHz -----											
6	14.54266	29.44dBuV PK	.8	11.2	41.44	-	-	60	50	-	-
					Margin (dB)	-	-	-18.56	-8.56	-	-
7	19.47582	29.93dBuV PK	1	11.4	42.33	-	-	60	50	-	-
					Margin (dB)	-	-	-17.67	-7.67	-	-

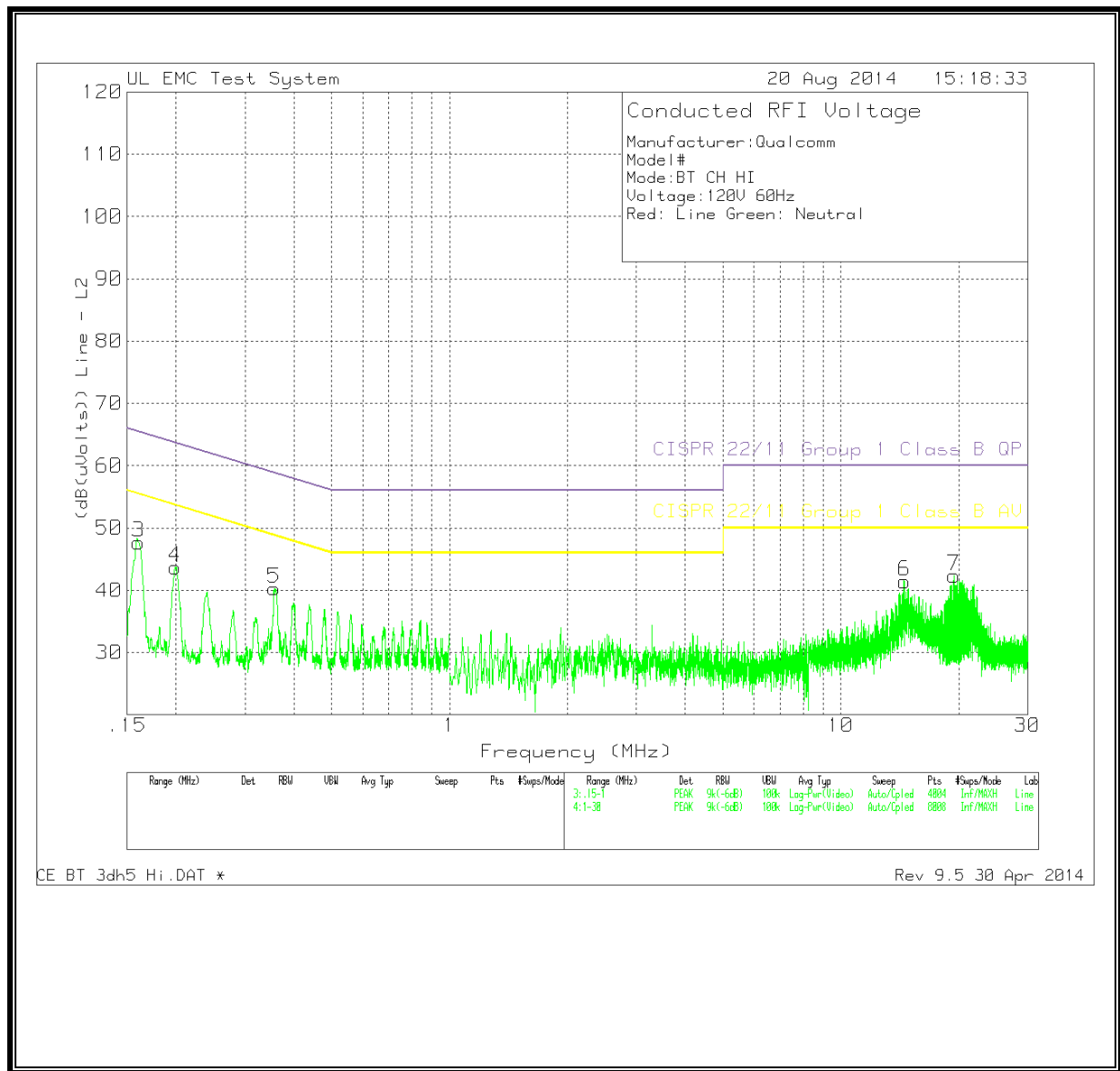
LIMIT 3: CISPR 22/11 Group 1 Class B QP
LIMIT 4: CISPR 22/11 Group 1 Class B AV

PK - Peak detector

LINE 1 RESULTS



LINE 2 RESULTS



6 WORST EMISSIONS

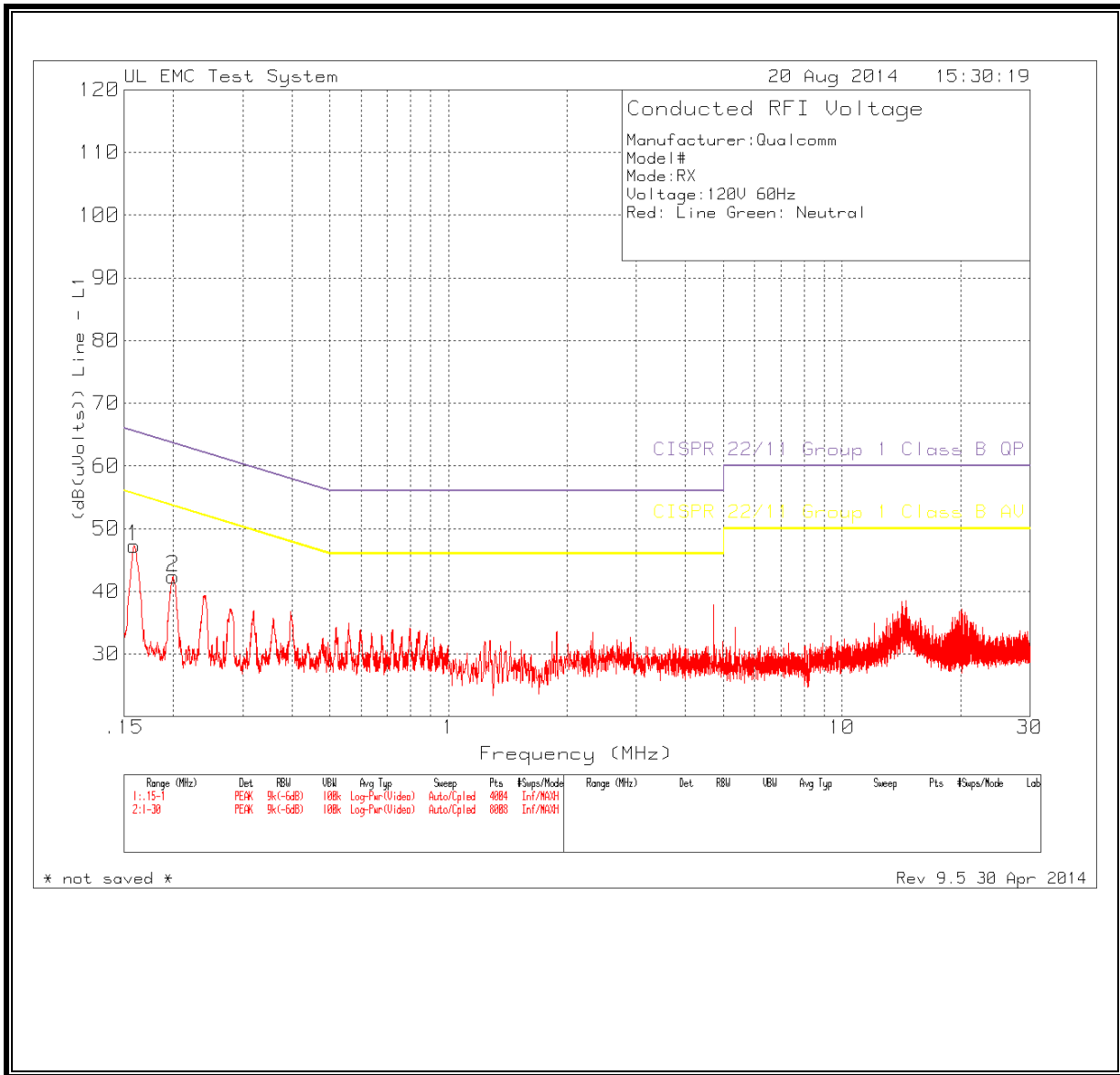
Manufacturer:Qualcomm
Model#
Mode:RX
Voltage:120V 60Hz
Red: Line Green: Neutral

Trace Markers											
No.	Test Frequency (MHz)	Meter Reading	Transducer Factor (dB)	Gain/Loss Factor (dB)	Corrected Reading (dB(uVolts))	Limit:1	2	3	4	5	6
=====											
Line - L1 .15 - 1MHz -----											
1	.15901	33.15dBuV PK	.2	13.9	47.25	-	-	65.52	55.52	-	-
					Margin (dB)	-	-	-18.27	-8.27	-	-
2	.1994	30.74dBuV PK	.1	11.5	42.34	-	-	63.64	53.64	-	-
					Margin (dB)	-	-	-21.3	-11.3	-	-
Line - L2 .15 - 1MHz -----											
3	.1589	32.75dBuV PK	.2	13.9	46.85	-	-	65.52	55.52	-	-
					Margin (dB)	-	-	-18.67	-8.67	-	-
4	.19876	31.08dBuV PK	.2	11.6	42.88	-	-	63.66	53.66	-	-
					Margin (dB)	-	-	-20.78	-10.78	-	-
5	.35914	29.92dBuV PK	.2	10.8	40.92	-	-	58.75	48.75	-	-
					Margin (dB)	-	-	-17.83	-7.83	-	-
Line - L2 1 - 30MHz -----											
6	14.19132	29.85dBuV PK	.8	11.2	41.85	-	-	60	50	-	-
					Margin (dB)	-	-	-18.15	-8.15	-	-
7	20.20022	29.49dBuV PK	1.2	11.5	42.19	-	-	60	50	-	-
					Margin (dB)	-	-	-17.81	-7.81	-	-

LIMIT 3: CISPR 22/11 Group 1 Class B QP
LIMIT 4: CISPR 22/11 Group 1 Class B AV

PK - Peak detector

LINE 1 RESULTS



LINE 2 RESULTS

