



LS RESEARCH, LLC

Wireless Product Development

W66 N220 Commerce Court • Cedarburg, WI 53012 USA • Phone: 262.375.4400 • Fax: 262.375.4248 • www.lsr.com

ENGINEERING TEST REPORT # 314128

LSR Job #: C-1951

Compliance Testing of:
FZM BLUETOOTH MODULE

Test Date(s):
May 16, 17, 19, 20 and June 6, 2014

Prepared For:
NSN
Attn: Terry Schwenk
1501 W Shure Drive
Arlington Heights, IL 60004

This Test Report is issued under the Authority of: Adam Alger, EMC Engineer

Signature:  Date: 7-7-14

Test Report Reviewed by:
Mike Hintzke, EMC Engineer

Signature:  Date: 6-11-14

Report by:
Adam Alger, EMC Engineer

Signature:  Date: 6-6-14

This Test Report may not be reproduced, except in full, without written approval of LS Research, LLC.

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

Table of Contents

i.	Title Page	1
ii.	Table of Contents	2
iii.	LS Research, LLC.....	3
1.0	Summary of Test Report.....	4
2.0	Test Facilities	4
3.0	Client Information.....	5
3.1	Equipment Under Test (EUT) Information.....	5
3.2	Product Description	5
3.3	Modifications Incorporated In the EUT for Compliance Purposes	5
3.4	Deviations & Exclusions from Test Specifications	5
3.5	Additional Information	5
4.0	Conditions of Test.....	6
5.0	Test Equipment	6
6.0	Conformance Summary	6
Appendix A – Test Equipment		7
Appendix B – Test Data.....		8
B.1	– RF Conducted Emissions	8
B.2	– Radiated Emissions	26
Appendix C - Uncertainty Summary		44
Appendix D - References.....		45

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

LS Research, LLC in Review

As an EMC Testing Laboratory, our Accreditation and Assessments are recognized through the following:



TESTING CERT #1255.01

A2LA – American Association for Laboratory Accreditation

Accreditation based on ISO/IEC 17025: 2005 with Electrical (EMC) Scope of Accreditation

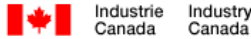
A2LA Certificate Number: 1255.01



Federal Communications Commission (FCC) – USA

Listing of 3 Meter Semi-Anechoic Chamber based on Title 47 CFR – Part 2.948

FCC Registration Number: 90756



Canada

Industry Canada

On file, 3 Meter Semi-Anechoic Chamber based on RSS-212 – Issue 1

File Number: IC 3088-A

On file, 3 and 10 Meter OATS based on RSS-212 – Issue 1

File Number: IC 3088



U. S. Conformity Assessment Body (CAB) Validation

Validated by the European Commission as a U. S. Competent Body operating under the U. S./EU, Mutual Recognition Agreement (MRA) operating under the European Union Electromagnetic Compatibility – Council Directive 2004/108/EC (formerly 89/336/EEC, Article 10.2).

Date of Validation: January 16, 2001

Validated by the European Commission as a U.S. Notified Body operating under the U.S. /EU, Mutual Recognition Agreement (MRA) operating under the European Union Telecommunication Equipment – Council Directive 99/5/EC, Annex V.

Date of Validation: November 20, 2002

Notified Body Identification Number: 1243

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

1.0 Summary of Test Report

In May and June 2014 the EUT, FZM BLUETOOTH MODULE, as provided by NSN, was tested and MEETS the following DTS and FHSS requirements:

FCC and IC Paragraph	Test Requirements	Compliance (Yes/No)
FCC:15.247 (a)(1) IC: RSS 210 A8.1	Carrier Frequency Separation	Yes
FCC:15.247 (a)(1)(iii) IC: RSS 210 A8.1	Time of Occupancy (Dwell Time) / Number of Hopping Frequencies	Yes
FCC:15.247 (a)(1) IC: RSS 210 A8.1	20 dB Bandwidth of a FHSS	Yes
FCC:15.247 (a)(1) IC: RSS 210 A8.1	Pseudorandom Frequency Hopping Sequence, Equal Hopping Frequency Use, System Receiver Input Bandwidth and Synchronization	Yes ¹
FCC:15.247 (a)(2) IC: RSS 210 A8.2 (a)	6 dB Bandwidth of a Digital Modulation System	Yes
FCC : 15.247(b) & 1.1310 IC : RSS 210 A8.4	Maximum Output Power	Yes
FCC:15.247 (d) IC: RSS 210 A8.2 (b)	Power Spectral Density of a Digital Modulation System	Yes
FCC :15.247(d) IC : RSS 210 A8.5	RF Conducted Spurious Emissions at the Transmitter Antenna Terminal	Yes
FCC : 15.247(c), 15.209 & 15.205 IC : RSS 210 A8.2(b), section 2.2, 2.6 and 2.7	Transmitter Radiated Emissions	Yes
FCC : 15.207 IC : RSS GEN sect. 7.2.2	Power Line Conducted Emissions Measurements	Yes

Note 1: By virtue of being an IEEE 802.15 Bluetooth device, the EUT is inherently compliant to the requirements.

2.0 Test Facilities

All testing was performed at:

LS Research, LLC
W66 N220 Commerce Court
Cedarburg, Wisconsin, 53012 USA

LS Research, LLC is accredited by A2LA (American Association for Laboratory Accreditation) to the requirements of ISO/IEC 17025, 2005 “General Requirements for the Competence of Calibration and Testing Laboratories”.

LS Research, LLC’s scope of accreditation includes all test methods listed herein, unless otherwise noted.

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

3.0 Client Information

Manufacturer Name:	NSN
Address:	1501 W Shure Drive Arlington Heights, IL 60004
Contact Person:	Terry Schwenk

3.1 Equipment Under Test (EUT) Information

The following information has been supplied by the applicant.

Product Name:	FZM BLUETOOTH MODULE
Model Number:	FZM BLUETOOTH MODULE
Serial Number:	000FBBD630FE
FCC ID	VBNFZMBTM-01
IC Number	661W-FZMBTM01

3.2 Product Description

The FZM BLUETOOTH MODULE is a radio module that implements a dual mode Bluetooth (BT) and Bluetooth Low Energy (LE) transceiver. A Texas Instruments CC2564 (System on Integrated Circuit) has one transceiver that can operate in either BT or BLE mode.

3.3 Modifications Incorporated In the EUT for Compliance Purposes

None noted at time of test

3.4 Deviations & Exclusions from Test Specifications

None noted at time of test

3.5 Additional Information

Device programmed for continuous transmit or receive via a USB connection to a laptop computer running a HyperTerminal type program. HCI commands were keyed to program mode, channel, hopping, etc.

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

4.0 Conditions of Test

Environmental:

Temperature: 20-25° C
Relative Humidity: 30-60%
Atmospheric Pressure: 86-106 kPa

Mains Voltage: 120VAC 60Hz
DC Supply to host: 12 VDC

5.0 Test Equipment

All test equipment is calibrated by a calibration laboratory accredited by A2LA to the requirements of ISO 17025. For a complete list of test equipment and calibration dates, see Appendix A. Unless otherwise noted, resolution bandwidth of measuring instrument used during testing for given frequency range, see below.

Frequency Range	Resolution Bandwidth
9 kHz – 150 kHz	200 Hz
150 kHz – 30 MHz	9 kHz
30 MHz – 1000 MHz	120 kHz
Above 1000 MHz	1 MHz

6.0 Conformance Summary

The EUT was found to MEET the requirements as described within the specification of FCC Title 47, CFR Part 15.247, 15.109, 15.107 and Industry Canada RSS-210, Issue 8 (2010), Annex 8.

If some emissions are seen to be within 3 dB of their respective limits:

As these levels are within the tolerances of the test equipment and site employed, there is a possibility that this unit, or a similar unit selected out of production may not meet the required limit specification if tested by another agency.

LS Research, LLC certifies that the data contained herein was taken under conditions that meet or exceed the requirements of the test specifications. The results in this Test Report apply only to the item(s) tested on the above-specified dates. Any modifications made to the EUT subsequent to the indicated test date(s) will invalidate the data herein, and void this certification.

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

Appendix A – Test Equipment



Date: 16-May-2014 Type Test: RF Conducted Emissions Job #: C-1951
 Prepared By: Adam A Customer: NSN Quote #: 31428

No.	Asset #	Description	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date	Equipment Status
1	EE 960087	44GHz EXA Spectrum Analyzer	Agilent	N9010A	MY53400296	10/27/2013	10/27/2014	Active Calibration

Project Engineer: Adam A Quality Assurance: [Signature]



Date: 16-May-2014 Type Test: AC Conducted Emissions Job #: C-1951
 Prepared By: Adam A Customer: NSN Quote #: 31428

No.	Asset #	Description	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date	Equipment Status
1	EE 960088	8GHz MXE Spectrum Analyzer	Agilent	N9038A	MY51210138	11/19/2013	11/19/2014	Active Calibration
2	EE 960089	LISN - 15A	COM-POWER	LI-215A	191943	2/26/2014	2/26/2015	Active Calibration

Project Engineer: Adam A Quality Assurance: [Signature]



Date: 16-May-2014 Type Test: Radiated Job #: C-1951
 Prepared By: Adam A Customer: NSN Quote #: 31428

No.	Asset #	Description	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date	Equipment Status
1	EE 960088	8GHz MXE Spectrum Analyzer	Agilent	N9038A	MY51210138	11/19/2013	11/19/2014	Active Calibration
2	AA 960005	Biconical Antenna	EMCO	93110E	9601-2280	7/25/2013	7/25/2014	Active Calibration
3	AA 960004	Log Periodic Antenna	EMCO	93146	9512-4276	9/23/2013	9/23/2014	Active Calibration
4	AA 960007	Double Ridge Horn Antenna	EMCO	3115	9311-4138	6/10/2013	6/10/2014	Active Calibration
5	EE 960085	N9038A MXE 26.5GHz Receiver	Agilent	N9038A	MY51210148	8/7/2013	8/7/2014	Active Calibration
6	AA 960081	Double Ridge Horn Antenna	EMCO	3115	6907	2/25/2014	2/25/2015	Active Calibration
7	EE 960147	Pre-Amp	Adv. Micro	WLA612	123101	2/25/2014	2/25/2015	Active Calibration
8	AA 960153	2.4GHz High Pass Filter	KwM	HPF-L-14186	7272-04	4/7/2014	4/7/2015	Active Calibration
9	EE 960146	Std. Gain Horn Ant. w/preamp	Adv. Micro / EMC	WLA622-4 / 3160-09	123001	9/24/2013	9/24/2014	Active Calibration

Project Engineer: Adam A Quality Assurance: [Signature]

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

Appendix B – Test Data
B.1 – RF Conducted Emissions

Manufacturer	NSN
Test Location	LS Research, LLC
Rule Part	FCC Part 15.247 / RSS-210 Annex 8
General Measurement Procedure	FCC KDB 558074 D01 DTS Meas Guidance v03r02 ANSI C63.10-2009 Section 6.7
General Description of Measurement	A direct measurement of the transmitted signal was performed at the antenna port of the EUT via a cable connection to a spectrum analyzer. An attenuator was placed in series with the cable to protect the spectrum analyzer. The loss from the cable and the attenuator were added on the analyzer as gain offset settings there by allowing direct measurements, without the need for any further corrections. The EUT was configured to run in a continuous transmit mode, while being supplied with typical data as a modulation source.

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

B.1.1 – RF Conducted – Fundamental Bandwidth

Manufacturer	NSN
Date	5-16,17-2014
Operator	Adam A
Temp. / R.H.	20 - 25° C / 30-60% R.H.
Rule Part	FCC Part 15.247 / RSS-210 A8
Specific Measurement Procedure	FCC KDB 558074 Section 8.0 DTS bandwidth ANSI C63.10-2009 Section 6.9 RSS-GEN Section 4.6
Additional Description of Measurement	Peak detector used
Additional Notes	Continuous transmit modulated used for this test.

FHSS Device

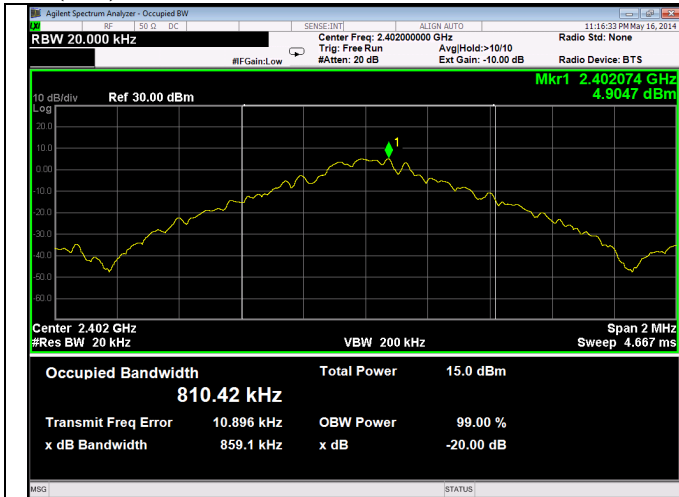
Mode	Frequency (MHz)	20 dB BW (kHz)	99 % BW (kHz)
BR	2402	859.1	810.4
	2440	888.8	857.7
	2480	936.7	870.9
EDR 2	2402	1379.0	1228.3
	2440	1379.0	1228.6
	2480	1380.0	1232.7
EDR 3	2402	1363.0	1231.6
	2440	1362.0	1229.8
	2480	1361.0	1229.1

DTS Device

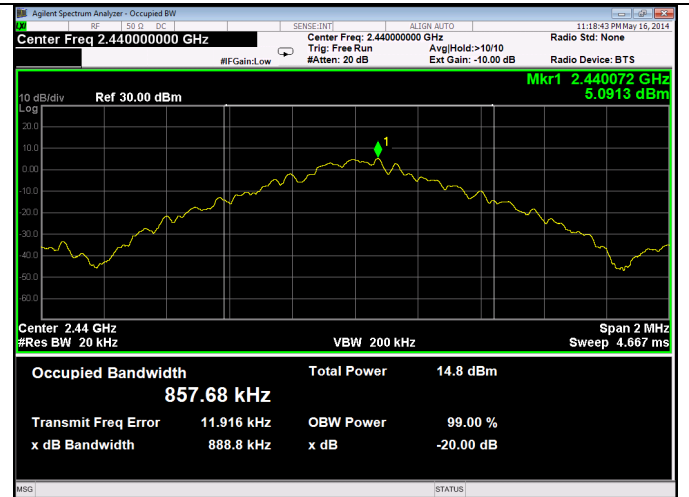
Mode	Frequency (MHz)	6 dB BW (kHz)	20 dB BW (kHz)	99 % BW (kHz)
LE	2402	723	1194	1035.7
	2440	715	1196	1036.5
	2480	719	1197	1037.0

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

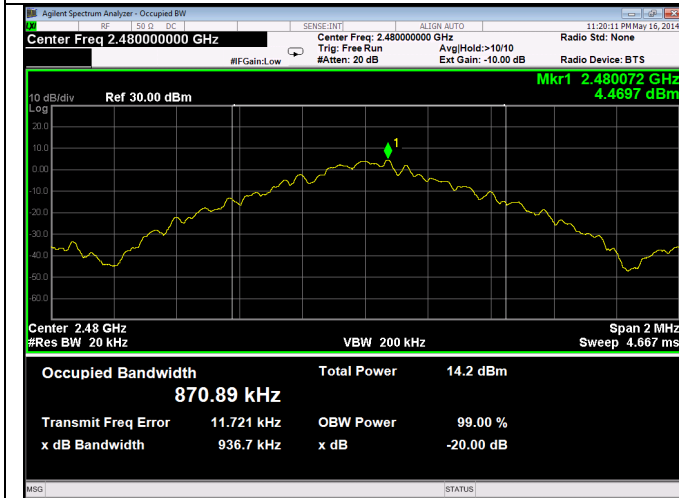
FHSS Plots (BR)



Low Channel



Middle Channel

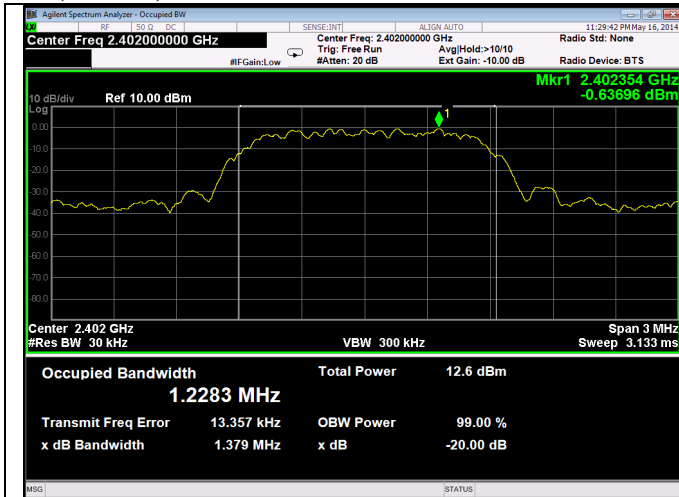


High Channel

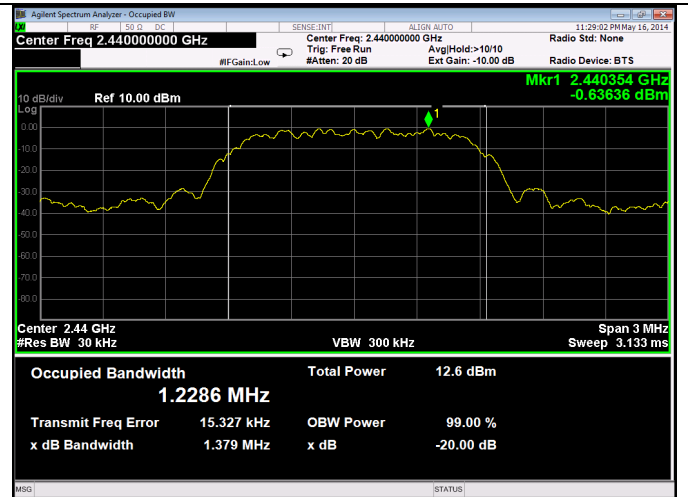
Prepared For: NSN
Report: TR314128 FCCIC
LSR: C-1951

Name: FZM BLUETOOTH MODULE
Model: FZM BLUETOOTH MODULE
Serial: 000FBBD630FE

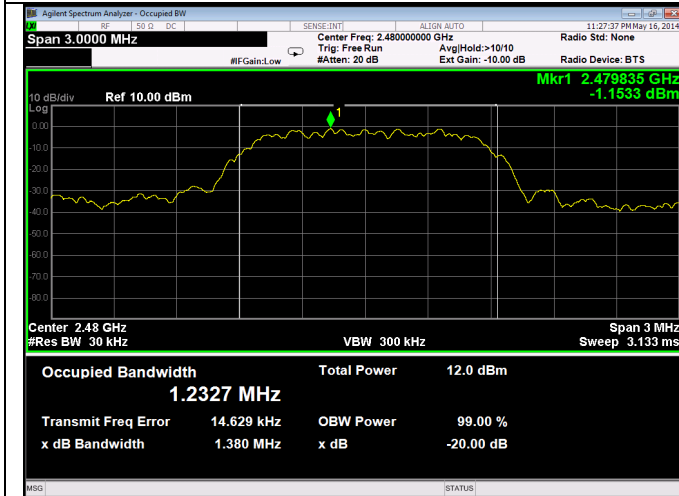
(EDR 2)



Low Channel



Middle Channel

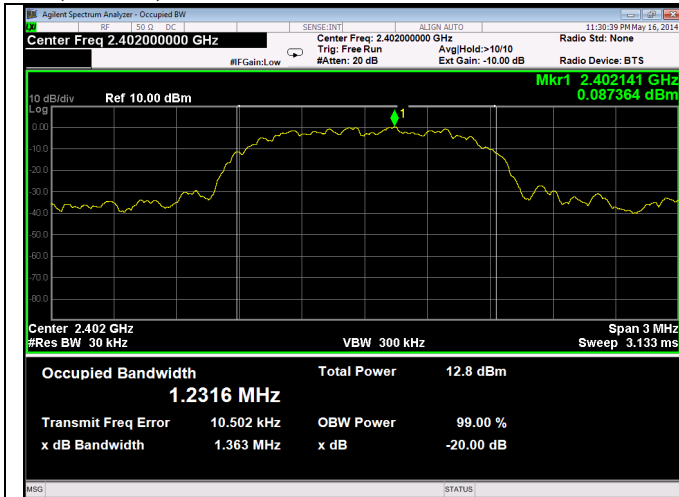


High Channel

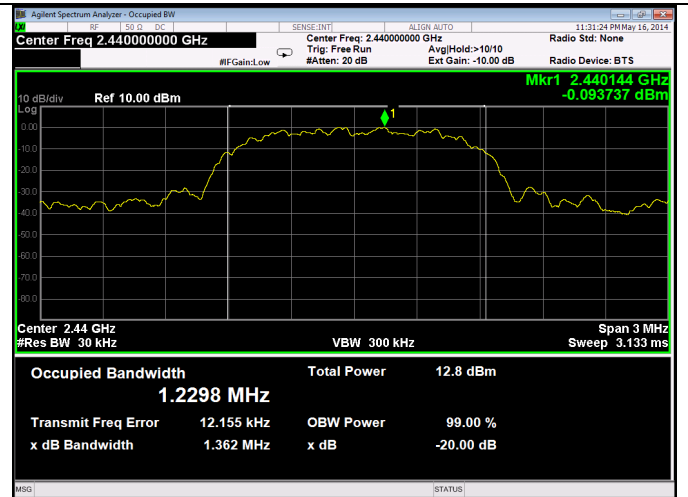
Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

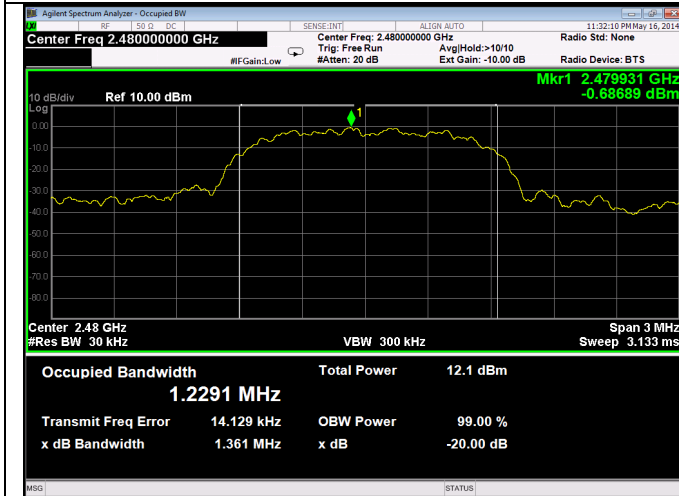
(EDR 3)



Low Channel



Middle Channel

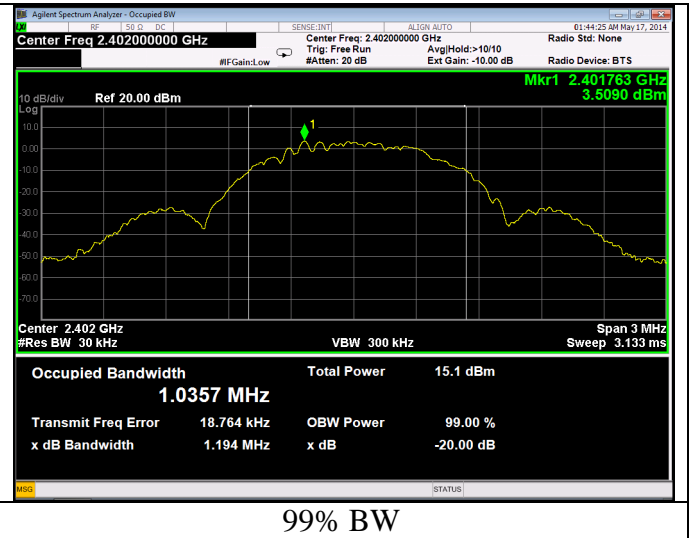
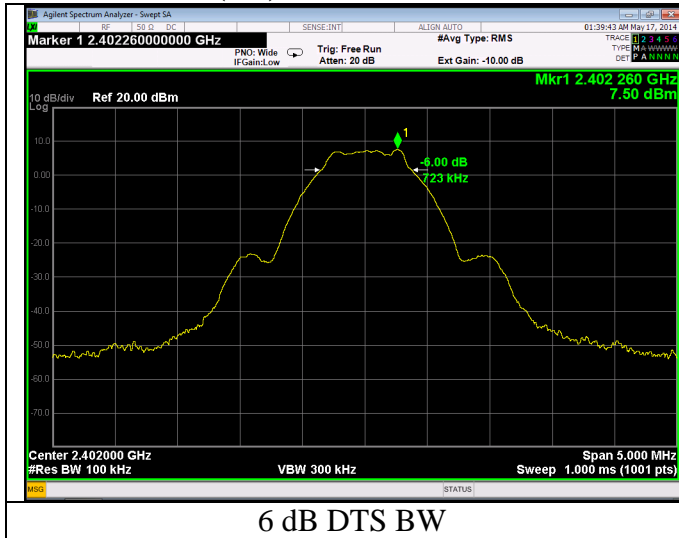


High Channel

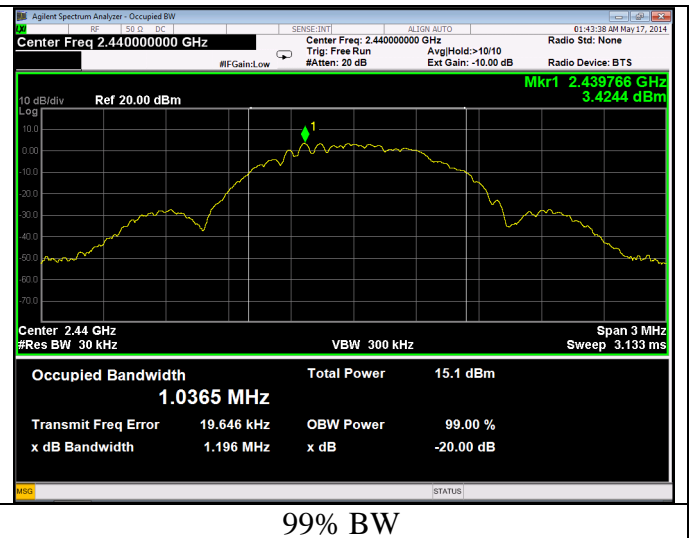
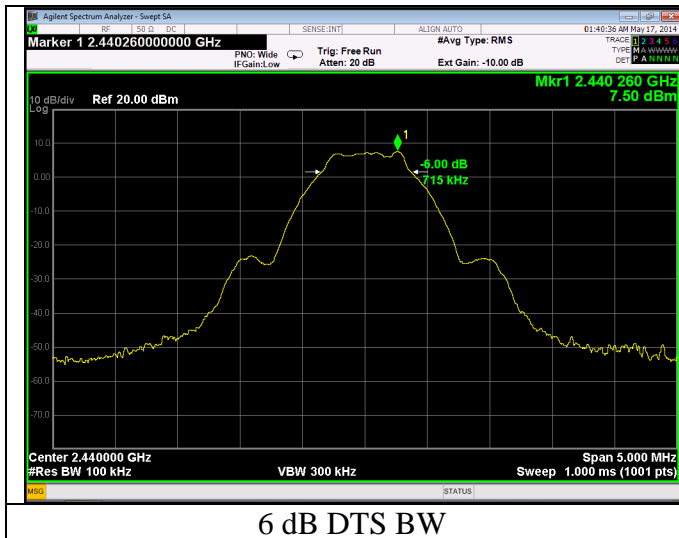
Prepared For: NSN
Report: TR314128 FCCIC
LSR: C-1951

Name: FZM BLUETOOTH MODULE
Model: FZM BLUETOOTH MODULE
Serial: 000FBBD630FE

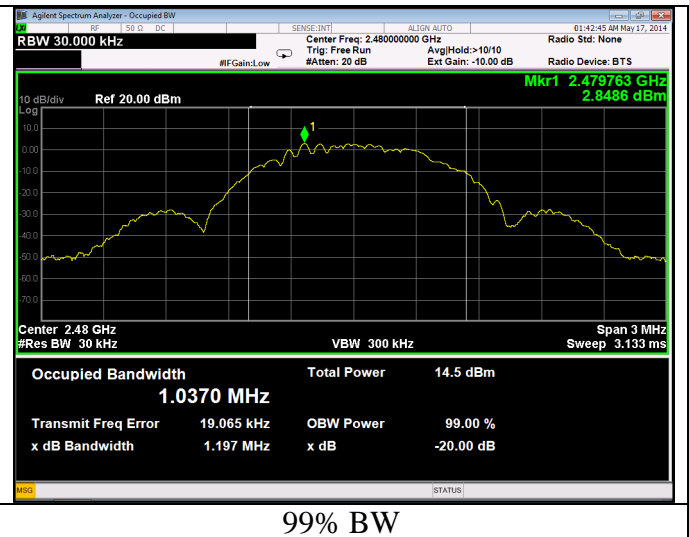
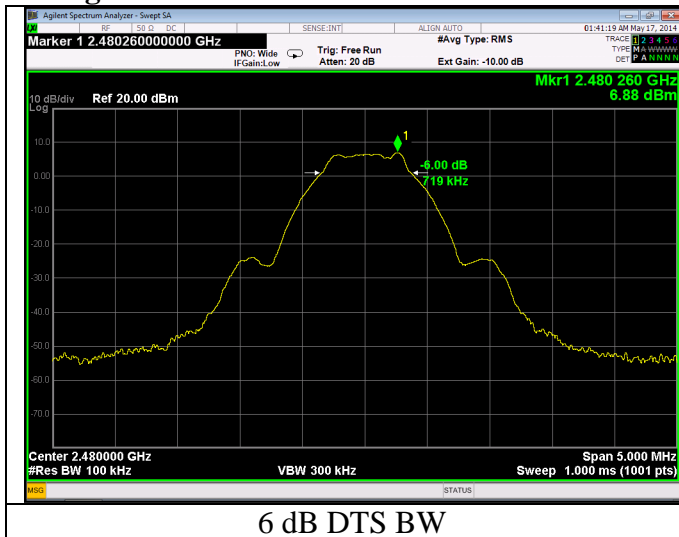
DTS Plots - (LE) - Low Channel – 2402 MHz



Mid Channel – 2440 MHz



High Channel – 2480 MHz



Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

B.1.2 – RF Conducted – Fundamental Power

Manufacturer	NSN
Date	5-16,17-2014
Operator	Adam A
Temp. / R.H.	20 - 25° C / 30-60% R.H.
Rule Part	15.247 / RSS-210 A8
Specific Measurement Procedure	FCC KDB 558074 Section 9.1.1 – Maximum peak conducted output power FCC KDB 558074 Section 10.2 – Peak PSD ANSI C63.10-2009 Section 6.10.1
Additional Description of Measurement	3 kHz resolution bandwidth used for Peak Power Spectral Density measurement
Additional Notes	Sample Calculation: Margin (dB) = Limit – Measured level Continuous transmit modulated used for this test.

FHSS Device

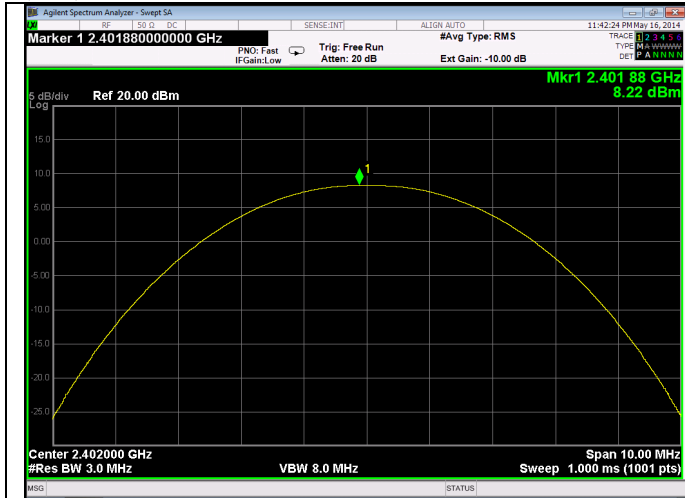
Mode	Frequency (MHz)	20 dB BW (kHz)	99 % BW (kHz)	Output Power (dBm)
BR	2402	859.1	810.4	8.22
	2440	888.8	857.7	8.24
	2480	936.7	870.9	7.62
EDR 2	2402	1379.0	1228.3	8.29
	2440	1379.0	1228.6	8.30
	2480	1380.0	1232.7	7.69
EDR 3	2402	1363.0	1231.6	9.08
	2440	1362.0	1229.8	9.11
	2480	1361.0	1229.1	8.51

DTS Device

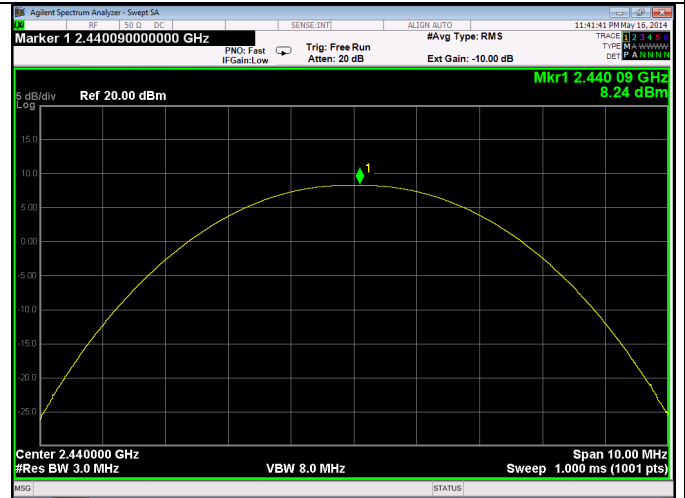
Mode	Frequency (MHz)	6 dB BW (kHz)	20 dB BW (kHz)	99 % BW (kHz)	PK PSD (dBm)	PK Output Power (dBm)
BLE	2402	723	1194	1035.7	-7.90	8.26
	2440	715	1196	1036.5	-8.02	8.27
	2480	719	1197	1037.0	-8.54	7.67

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

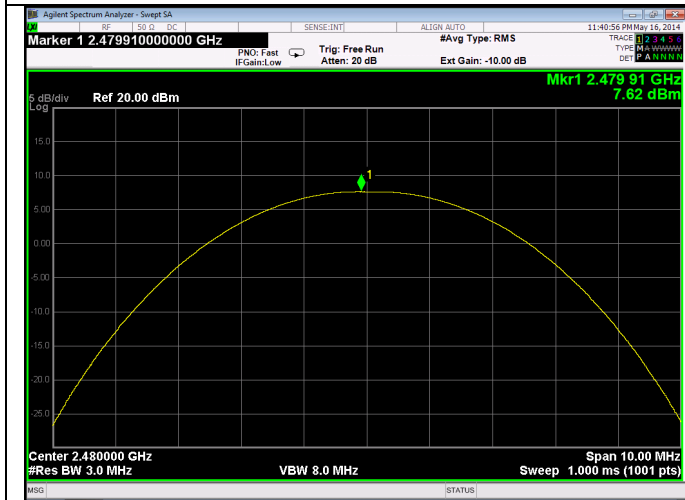
Plots (BR)



Low Channel



Middle Channel

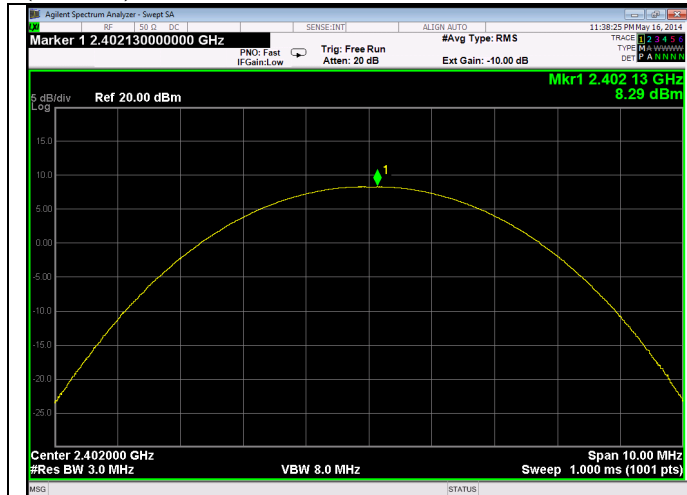


High Channel

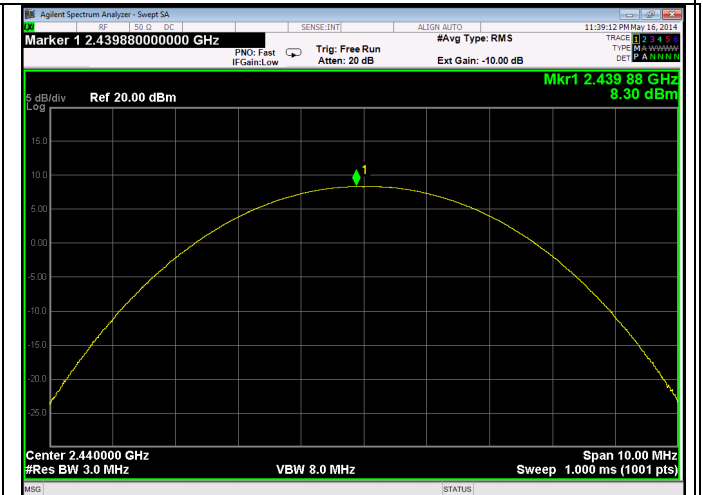
Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

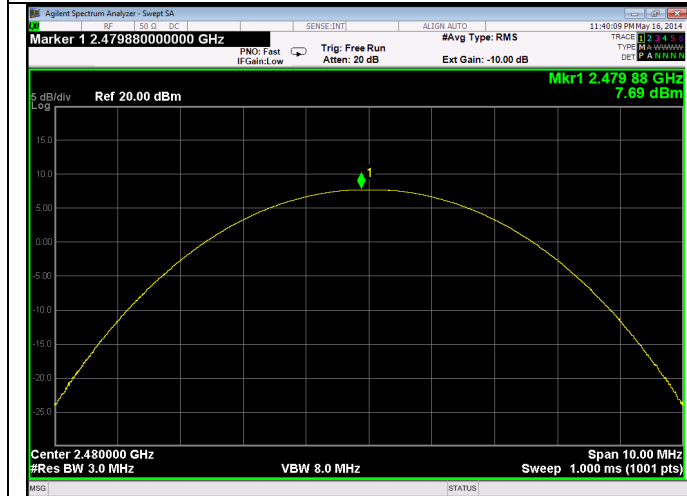
(EDR 2)



Low Channel



Middle Channel

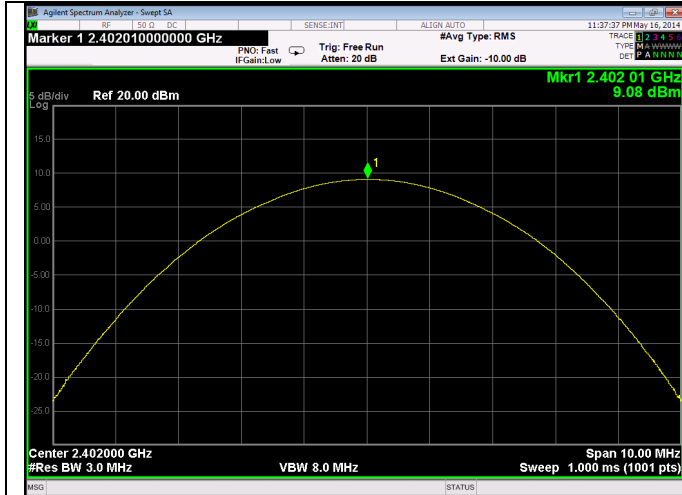


High Channel

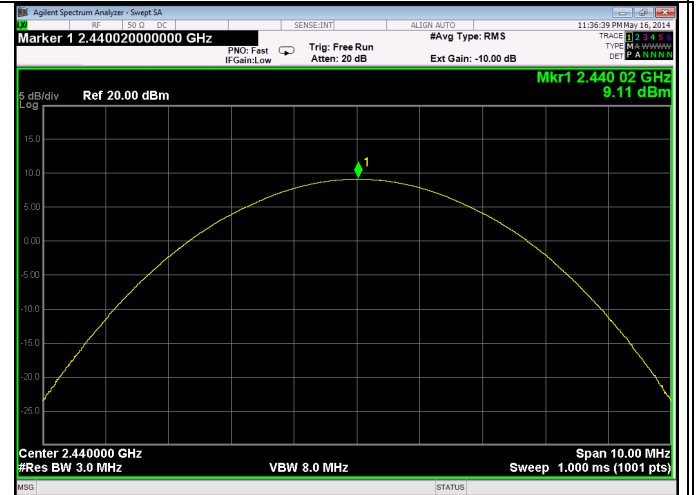
Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

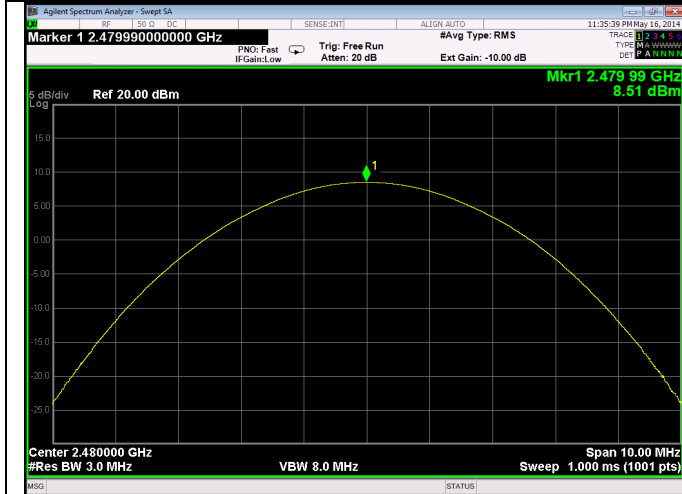
(EDR 3)



Low Channel



Middle Channel

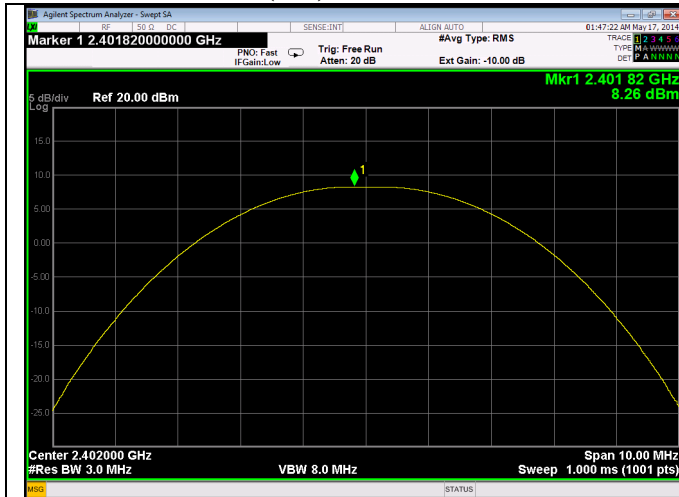


High Channel

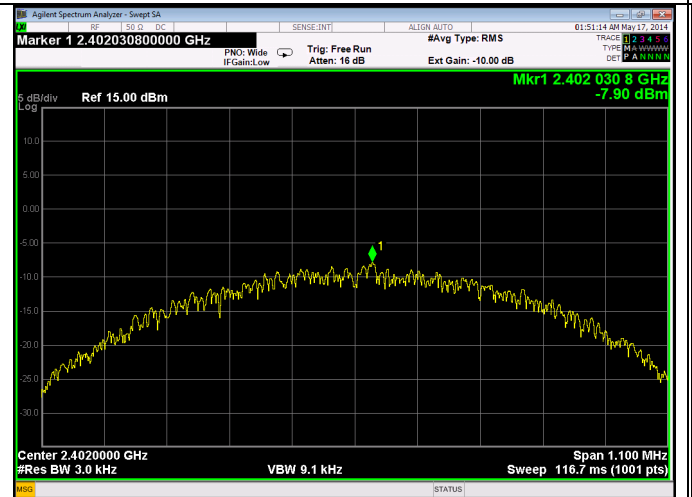
Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

DTS Device Plots (LE) - Low Channel – 2402 MHz

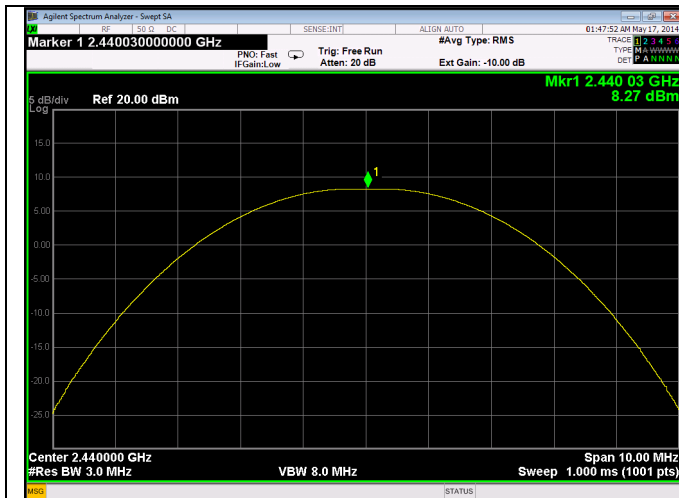


Peak Output Power

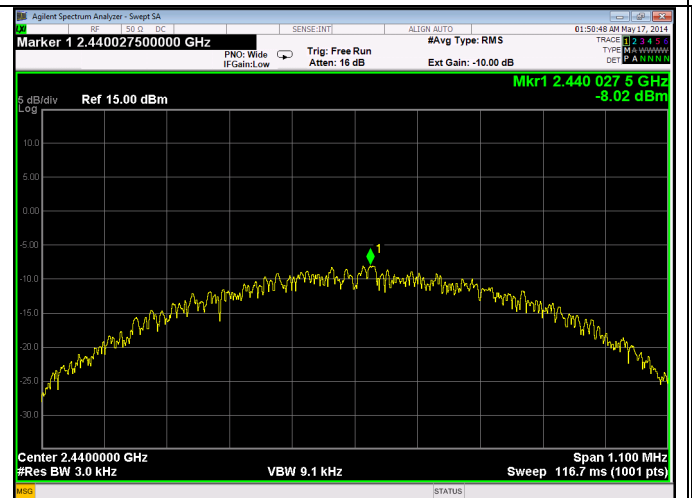


Peak Power Spectral Density

Mid Channel – 2440 MHz

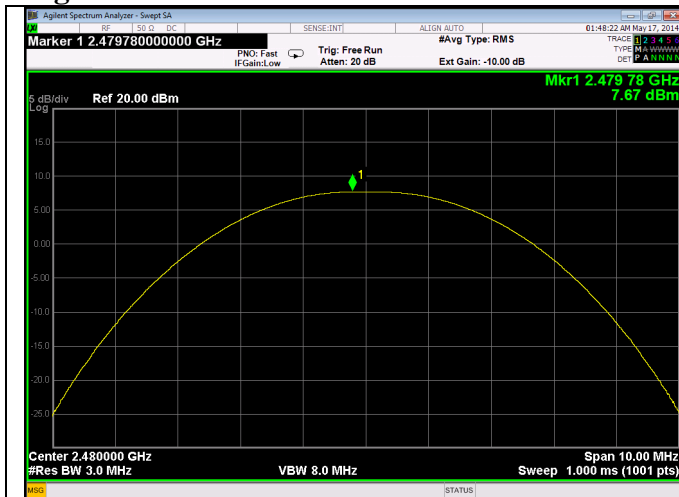


Peak Output Power

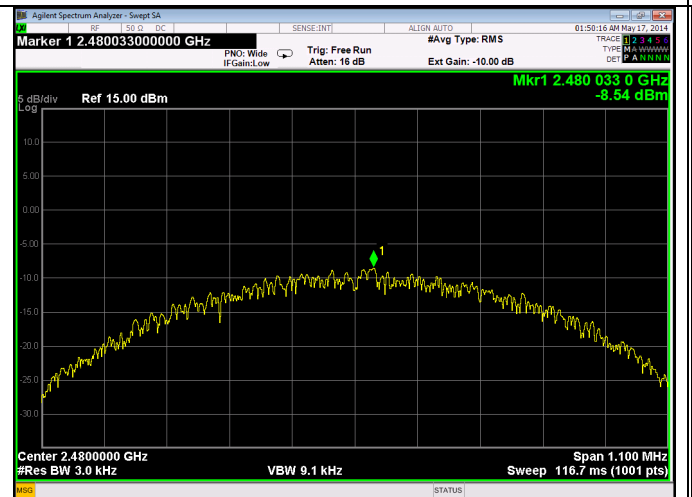


Peak Power Spectral Density

High Channel – 2480 MHz



Peak Output Power



Peak Power Spectral Density

Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

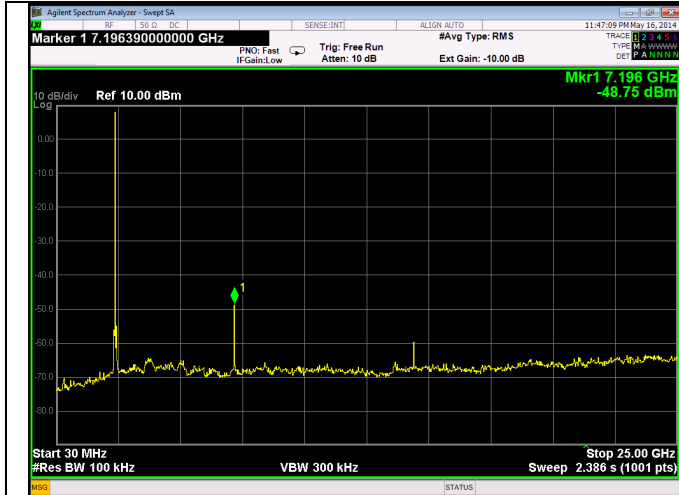
B.1.3 – RF Conducted – Fundamental Spurious

Manufacturer	NSN
Date	5-16,17-2014
Operator	Adam A
Temp. / R.H.	20 - 25° C / 30-60% R.H.
Rule Part	15.247 / RSS-210 A8
Specific Measurement Procedure	FCC KDB 558074 Section 11.0 – Emissions in non-restricted frequency bands ANSI C63.10-2009 Section 6.7
Additional Description of Measurement	RF Conducted Measurement
Additional Notes	1. No Emissions found to be within 20 dB of applicable limit 2. Continuous transmit modulated used for this test

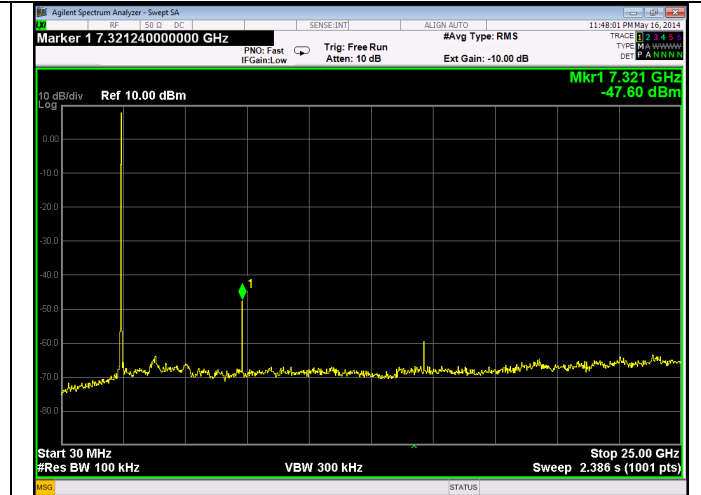
Plots start next page

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

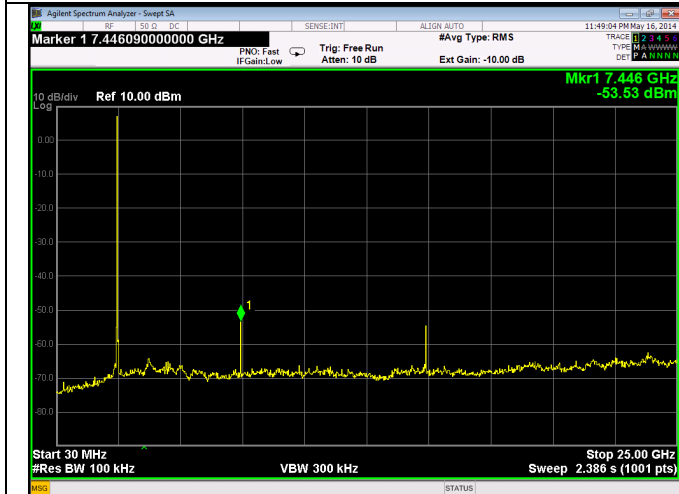
(BR)



Low Channel

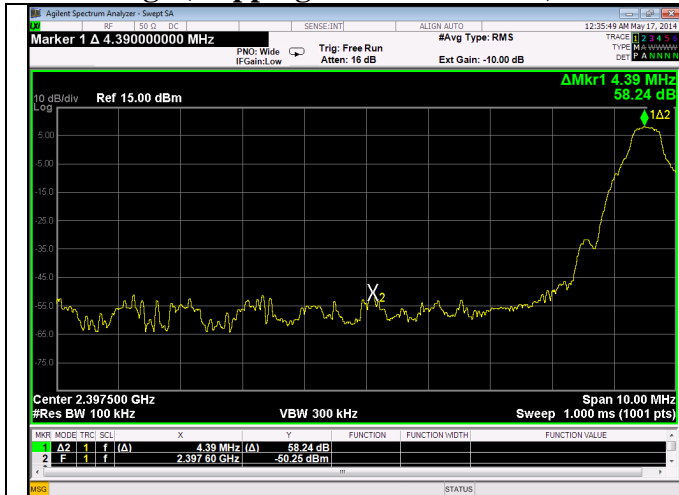


Middle Channel



High Channel

Band-Edge (Hopping Mode worst case)



Lower

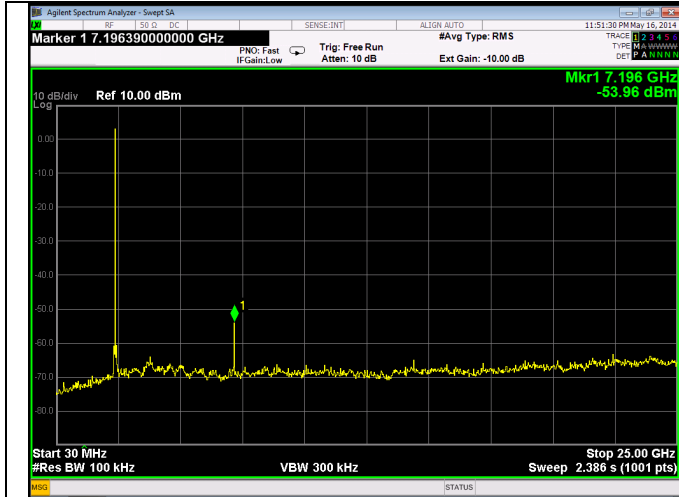


Upper

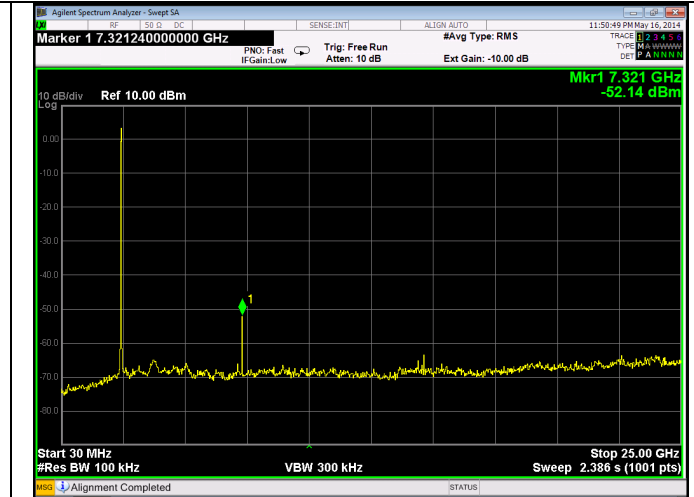
Prepared For: NSN
Report: TR314128 FCCIC
LSR: C-1951

Name: FZM BLUETOOTH MODULE
Model: FZM BLUETOOTH MODULE
Serial: 000FBBD630FE

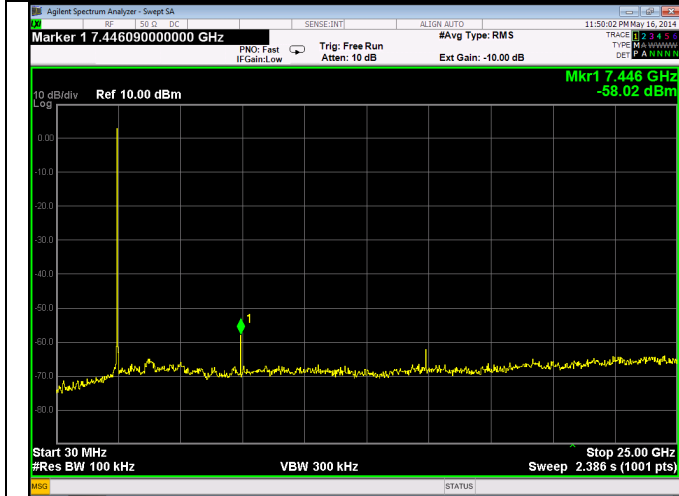
(EDR 2)



Low Channel



Middle Channel



High Channel

Band-Edge (Hopping Mode worst case)



Lower

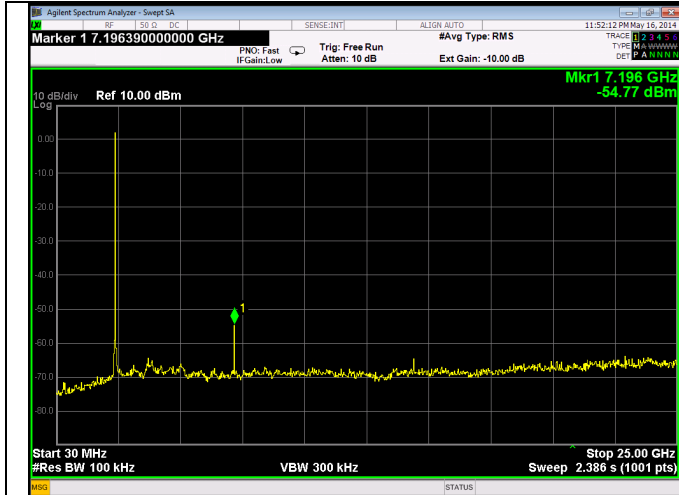


Upper

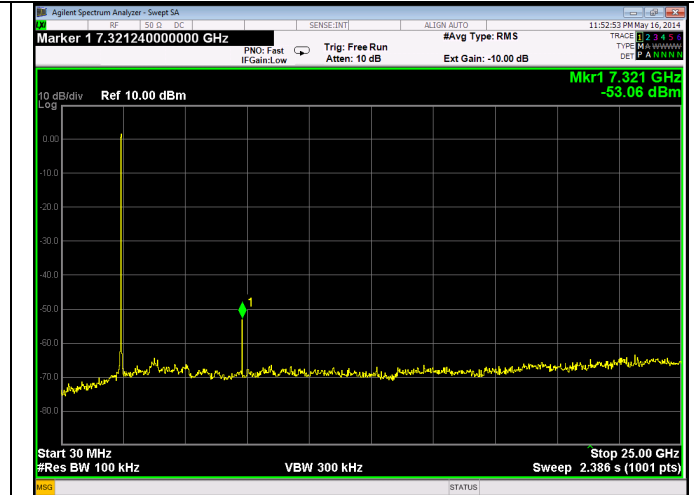
Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

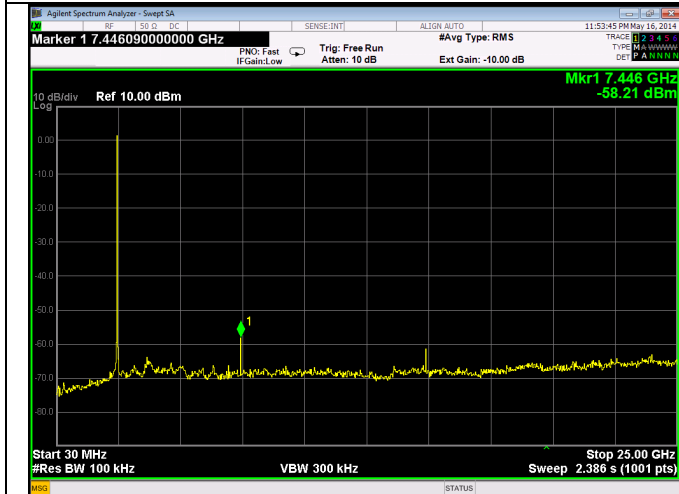
(EDR 3)



Low Channel

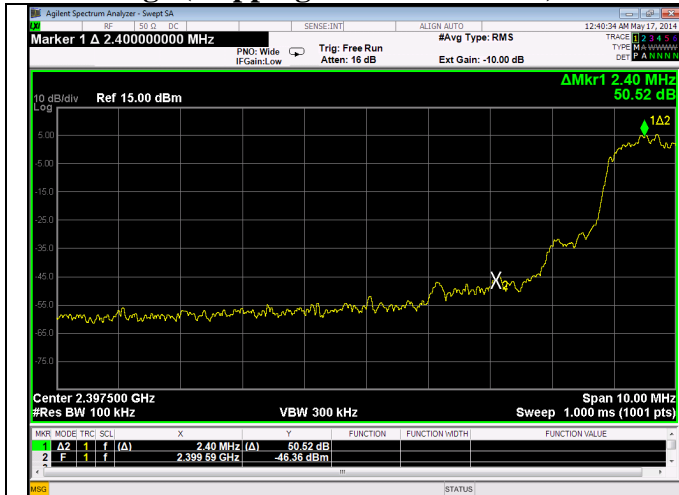


Middle Channel



High Channel

Band-Edge (Hopping Mode worst case)



Lower

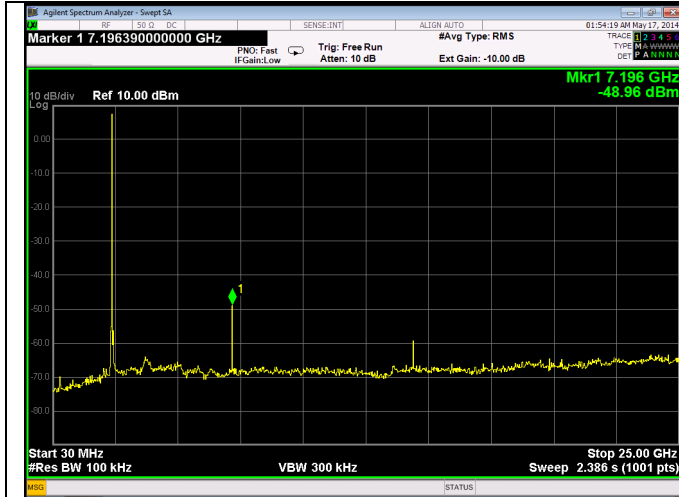


Upper

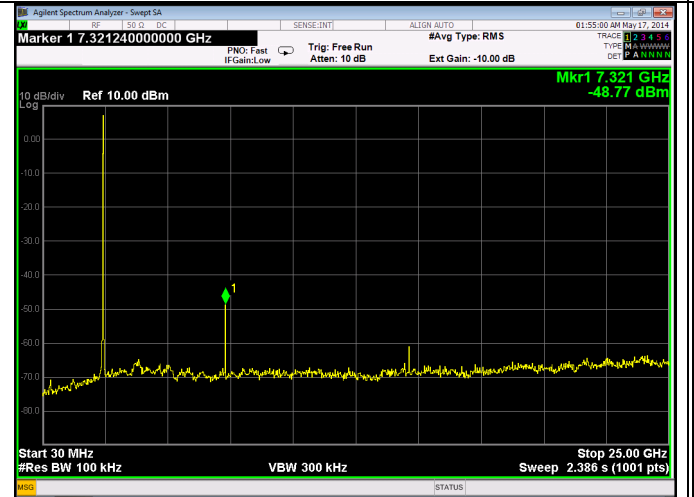
Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

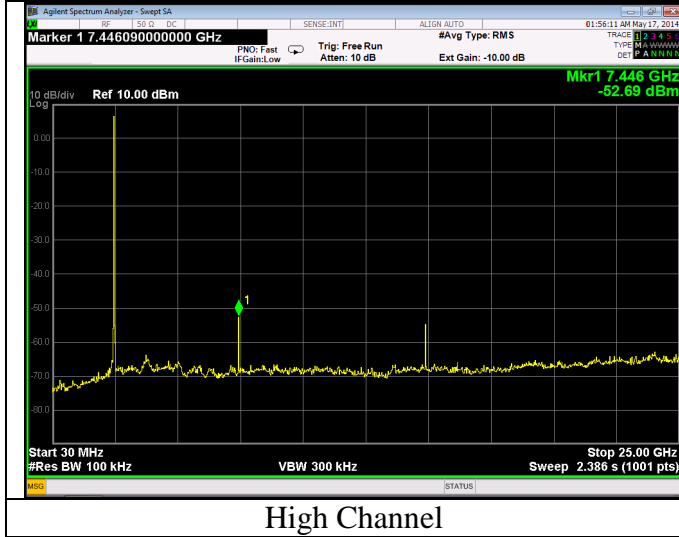
DTS Device (LE)



Low Channel

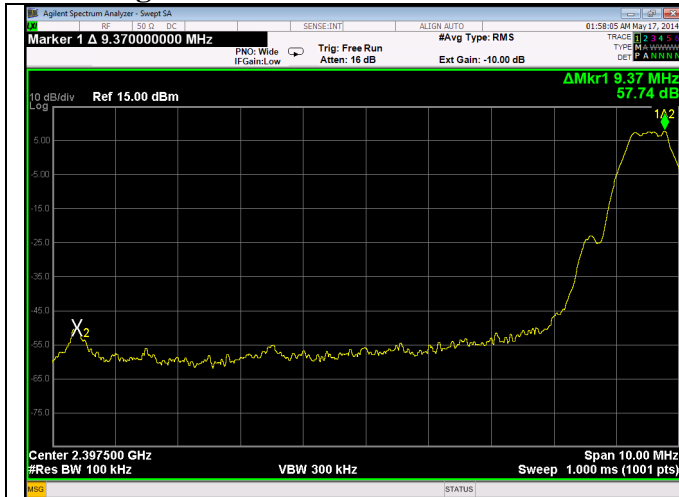


Middle Channel

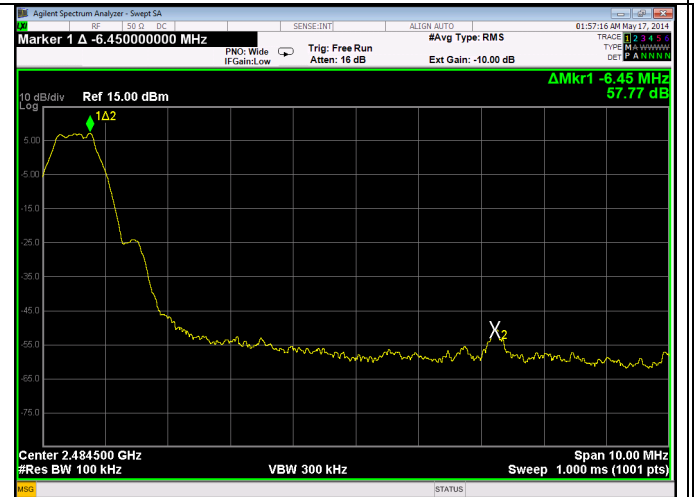


High Channel

Band-edge



Low Channel



High Channel

Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

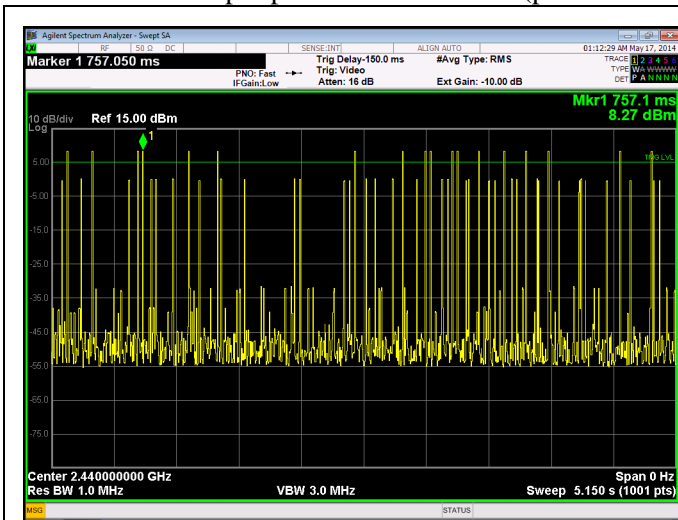
Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

B.1.4 – RF Conducted – Hopping Requirements

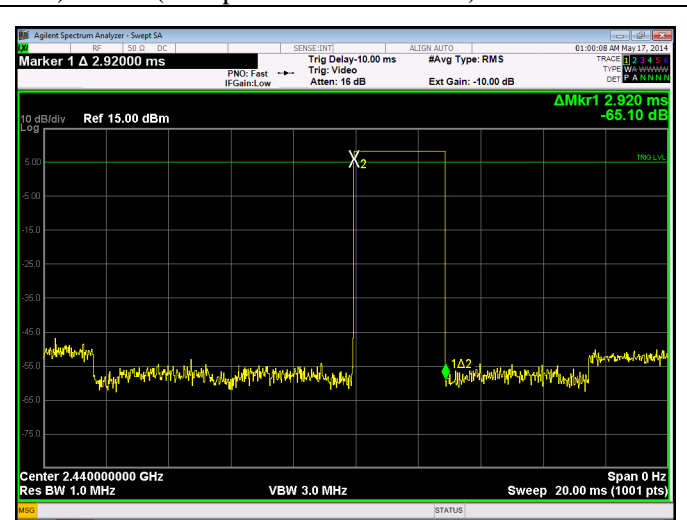
Manufacturer	NSN
Date	5-17-14
Operator	Adam A
Temp. / R.H.	20 - 25° C / 30-60% R.H.
Rule Part	15.247 / RSS-210 A8
Specific Measurement Procedure	DA 00-705
Additional Description of Measurement	RF Conducted Measurement
Additional Notes	none

Average time of occupancy = 0.4 seconds x 79 channels = 31.6 seconds

Dwell time per pulse = 2.92 ms x 18 (pulses in 5 seconds) x 6.32 (to expand to 31.6 seconds) = 332.18 ms



Number of hops (18 in 5 seconds)

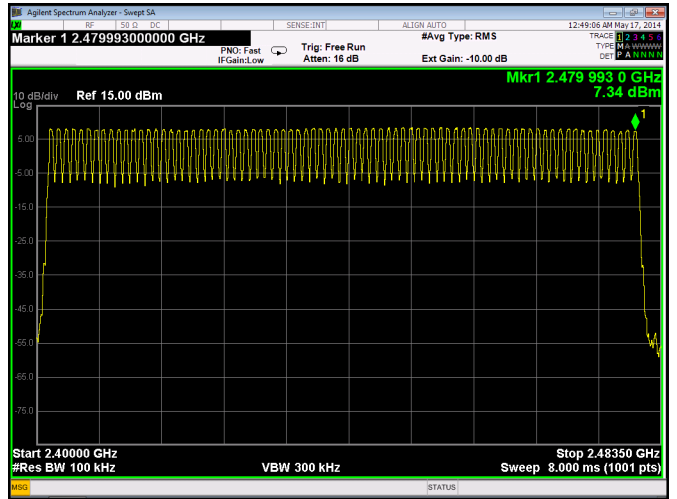


Length of one pulse (2.92 ms)

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE



Carrier Frequency Separation (1.00 MHz)



Number of hopping channels (79)

Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

B.2 – Radiated Emissions

Rule Part(s)	FCC: 15.247 / 15.205 / 15.209 IC: RSS-210 A8 / RSS-210 Section 2.2			
Measurement Procedure	ANSI C63.4 - 2003 ANSI C63.10 – 2009 FCC KDB 558074 D01 DTS Meas Guidance v03r02			
Test Location	LS Research, LLC - FCC Listed 3 meter Semi-Anechoic Chamber			
Test Distance	See data section			
EUT Placement	80 cm height non-conductive table above reference ground plane			
Frequency Range of Measurement	Biconical: 30-300 MHz	Log Periodic Dipole Array: 300-1000 MHz	Double-Ridged Waveguide Horn: 1-18 GHz	Standard Gain Horn: 18-26GHz
Measurement Detectors	30-1000MHz RBW: 120 kHz VBW: At least 300 kHz		1 - 40 GHz: RBW : 1MHz VBW: At least 3 (MHz) Peak 10 Hz Average	
Description of Measurement	<p>1) The antenna, cable, pre-amp, and other necessary measurement system correction factors are loaded onto the EMI receiver / spectrum analyzer when the measurements are performed. The data is gathered and reported as the corrected values.</p> <p>2) The EUT is placed on a non-conductive pedestal centered on a turn-table in the test location with the antenna at the test distance from the EUT</p> <p>3) Maximum radiated RF emissions are determined by rotation of azimuth and scanning the sense antenna between 1 and 4 meters in height using both horizontal and vertical antenna polarities. Maximized levels are manually noted at degree values of azimuth and at sense antenna height.</p>			
Example Calculations	Reported Measurement data = Raw receiver measurement + Antenna Correction Factor + Cable factor (dB) - amplification factor (when applicable) + Additional factor (when applicable)			

FCC Part 15.209 / IC RSS-210 Section 2.7 Limits:

Frequency (MHz)	3 m Limit ($\mu\text{V/m}$)	3 m Limit ($\text{dB}\mu\text{V/m}$)	Type
30-88	100	40.0	Quasi-Peak
88-216	150	43.5	Quasi-Peak
216-960	200	46.0	Quasi-Peak
Above 960	500	54.0	Average (>1 GHz)

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

B.2.1 – Radiated Band-Edge Restricted Bands

Manufacturer	NSN
Date	5-19-14
Operator	Adam A
Temp. / R.H.	20 - 25° C / 30-60% R.H.
Rule Part	15.247/ 15.205 / 15.209
Measurement Procedure	ANSI C63.4 - 2003 ANSI C63.10 - 2009 FCC KDB 558074
Test Distance	3 meter (1-4 GHz)
EUT Placement	80 cm height non-conductive table centered on turn-table
Detectors	Peak; RBW 1MHz VBW 3 MHz (10Hz VBW for average measurements)
Additional Notes	1) Tested in the worst case of continuous transmit modulated mode with EUT in three orthogonal orientations at maximum power. 2) EUT maximized in azimuth and antenna height with maximum results reported.

Example Calculation:

Peak Limit @ 3 meter (dB μ V/m) – Peak Reading (dB μ V/m) = Peak Margin

Average Limit @ 3 meter (dB μ V/m) – Average Reading (dB μ V/m) = Average Margin

Data Table

Channel	Frequency of Emission (MHz)	Peak Emission (dB μ V/m)	Peak Limit (dB μ V/m)	Peak Margin (dB)	Mode	Mode Type
Low	2372.4	61.30	74	12.7	BR	FHSS
	2328.8	58.49	74	15.5	EDR 2	
	2388.0	60.95	74	13.0	EDR 3	
	2384.0	58.54	74	15.4	LE	DTS
High	2489.6	60.98	74	13.0	BR	FHSS
	2483.6	62.01	74	11.9	EDR 2	
	2483.5	63.30	74	10.7	EDR 3	
	2486.4	59.76	74	14.2	LE	DTS
Channel	Frequency of Emission (MHz)	Average Emission (dB μ V/m)	Average Limit (dB μ V/m)	Average Margin (dB)	Mode	Mode Type
Low	2363.7	45.32	54	8.6	BR	FHSS
	2389.9	45.00	54	9.0	EDR 2	
	2390.0	45.13	54	8.8	EDR 3	
	2389.3	45.59	54	8.4	LE	DTS
High	2483.5	46.11	54	7.8	BR	FHSS
	2483.5	48.20	54	5.8	EDR 2	
	2483.5	48.51	54	5.5	EDR 3	
	2483.5	46.51	54	7.5	LE	DTS

Prepared For: NSN

Report: TR314128 FCCIC

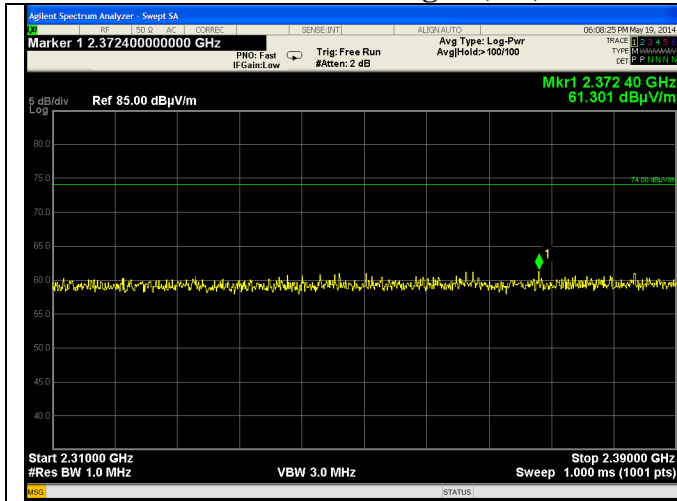
LSR: C-1951

Name: FZM BLUETOOTH MODULE

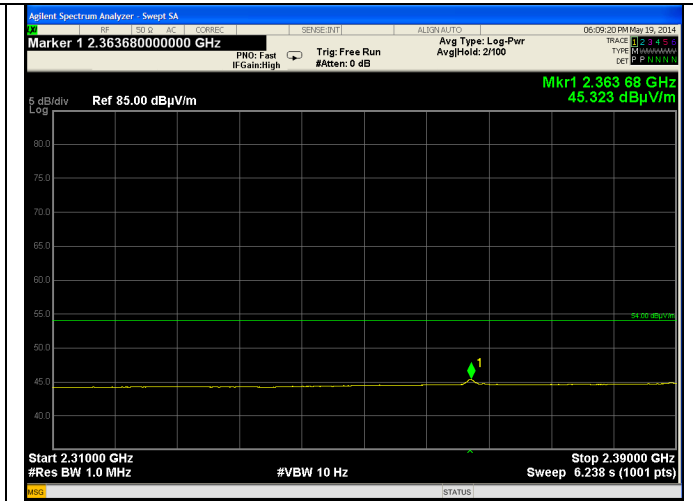
Model: FZM BLUETOOTH MODULE

Serial: 000FBBD630FE

FHSS Plots - Lower Band-Edge - (BR)

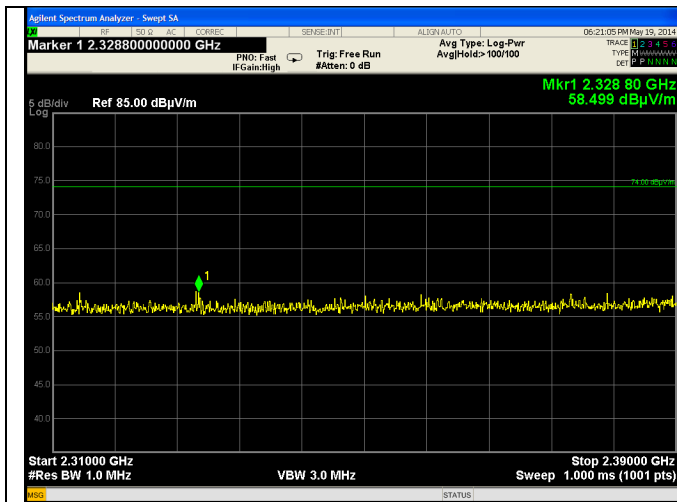


Peak

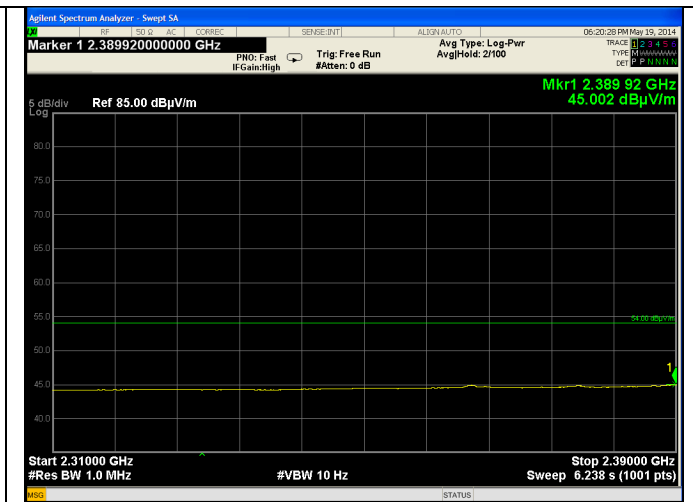


Average

EDR2

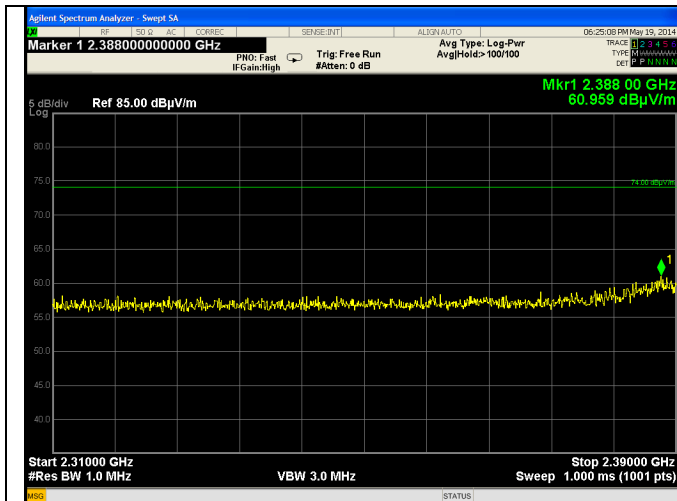


Peak

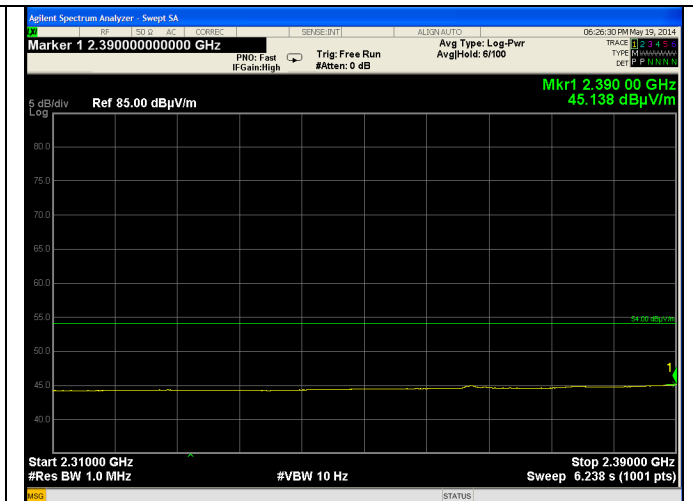


Average

EDR3



Peak

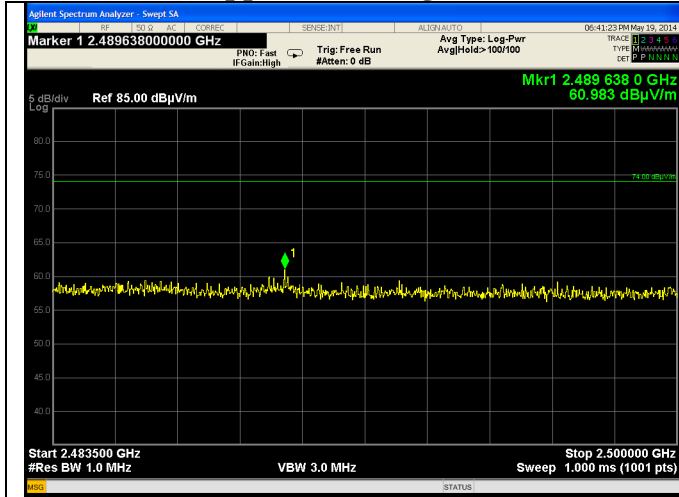


Average

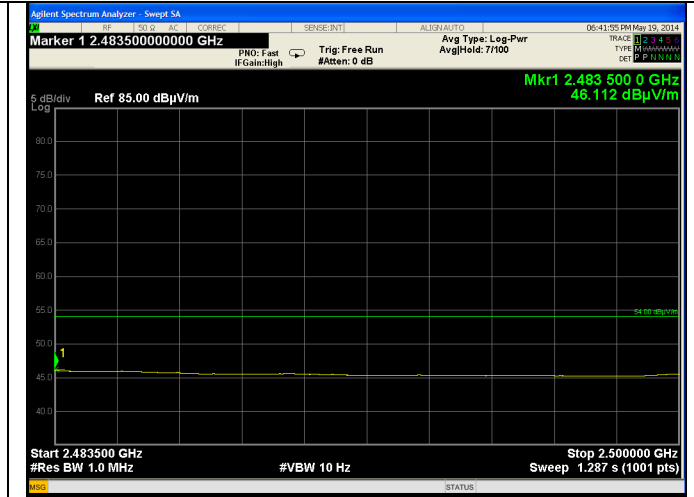
Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

FHSS Plots - Upper Band-Edge - (BR)

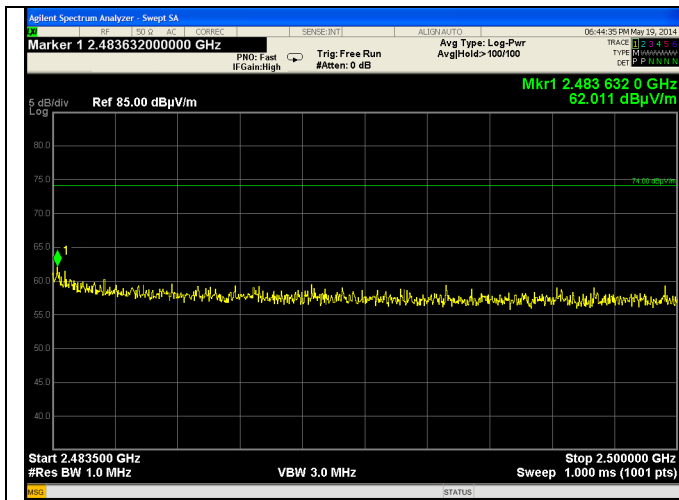


Peak

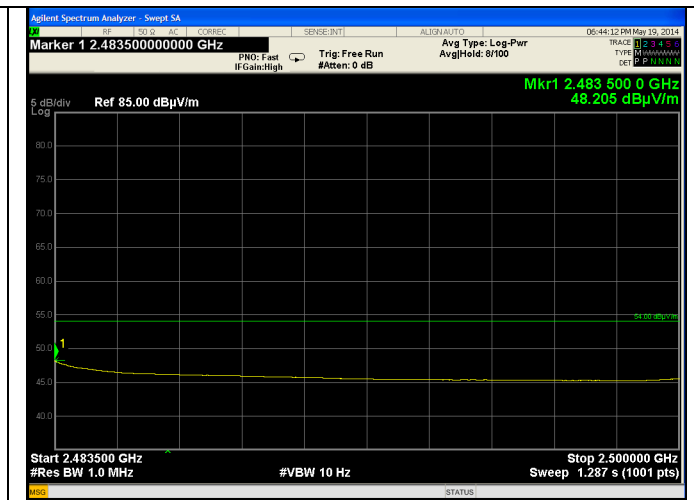


Average

EDR2

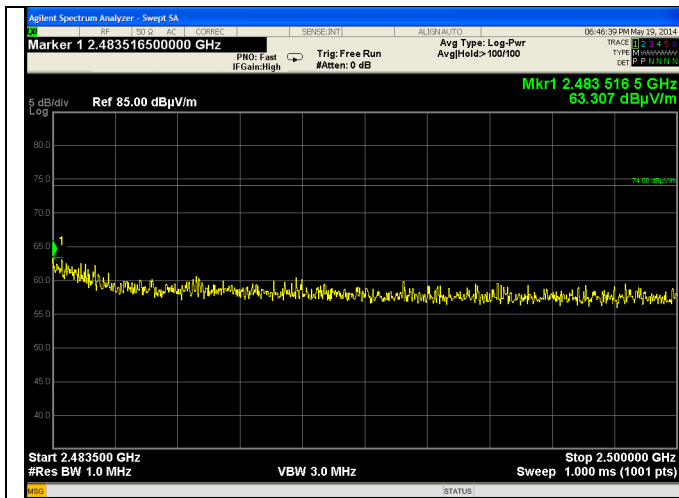


Peak

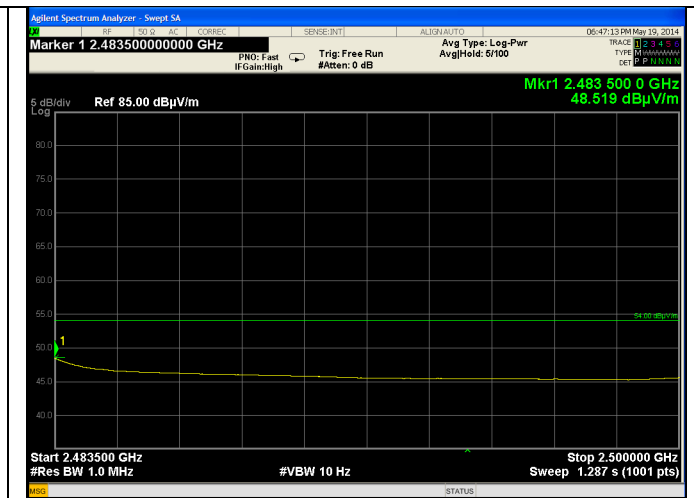


Average

EDR3



Peak

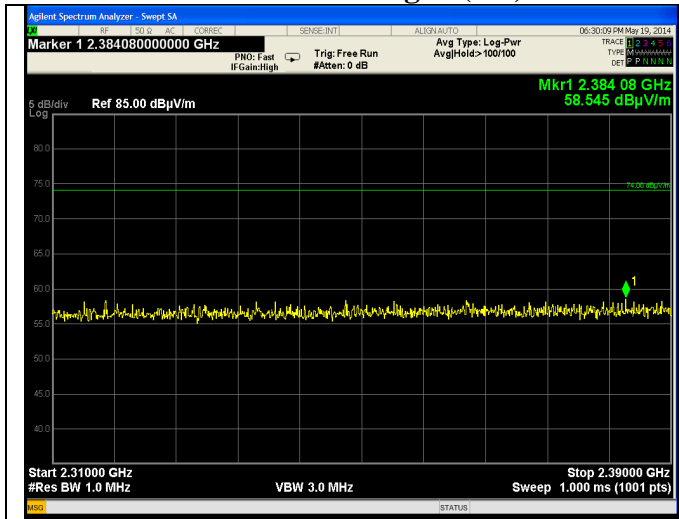


Average

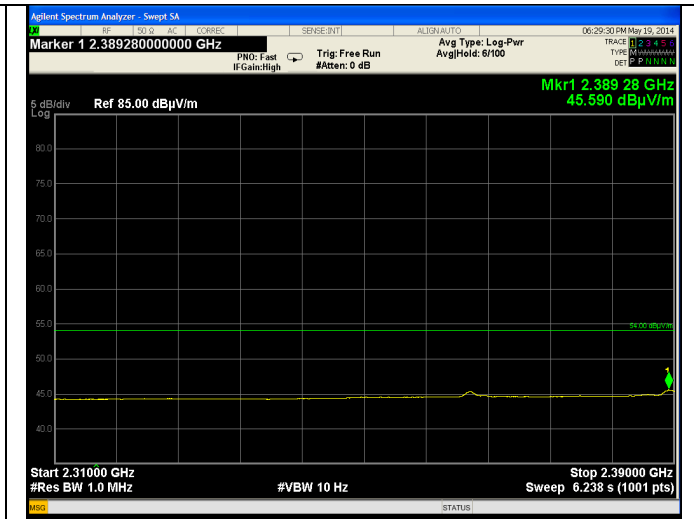
Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

DTS Plots - Lower Band-Edge - (LE)

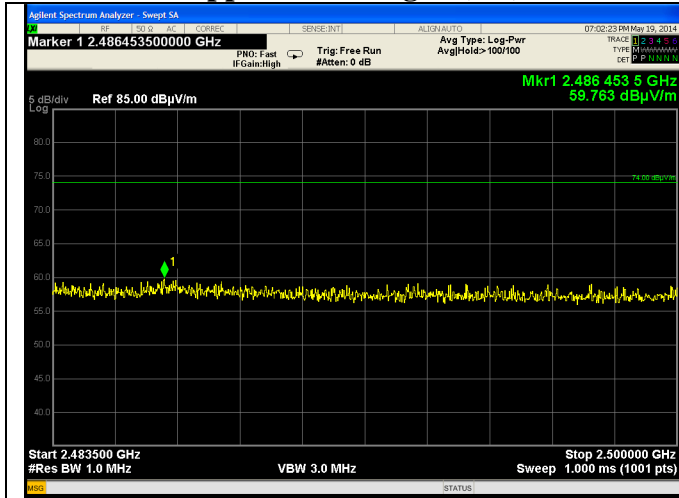


Peak

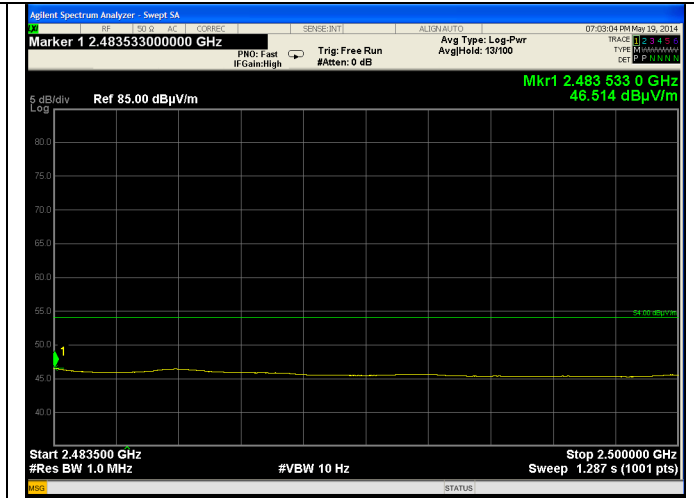


Average

DTS Plots - Upper Band-Edge - (LE)



Peak



Average

Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

B.2.2 – Radiated Harmonics in Restricted Bands

Manufacturer	NSN
Date	5-20-14
Operator	Adam A
Temp. / R.H.	20 - 25° C / 30-60% R.H.
Rule Part	15.247/ 15.205 / 15.209
Measurement Procedure	ANSI C63.4 - 2003 ANSI C63.10 - 2009
Test Distance	3 meter 4-18 GHz; 1 meter 18-25 GHz
EUT Placement	80 cm height non-conductive table centered on turn-table
Detectors	Peak Measurements: Peak Detector, RBW 1 MHz, VBW 3 MHz Average Measurements: Peak Detector, RBW 1 MHz, VBW (10Hz)
Additional Notes	<ol style="list-style-type: none"> 1) Tested in continuous transmit modulated (GFSK / BR) mode with EUT in three orientations at maximum power. 2) GFSK modulation determined worst case modulation in 1 MHz RBW 3) Maximum results reported. 4) BR and LE have essentially the same modulation (GFSK) therefore results satisfy FHSS and DTS modes of device.

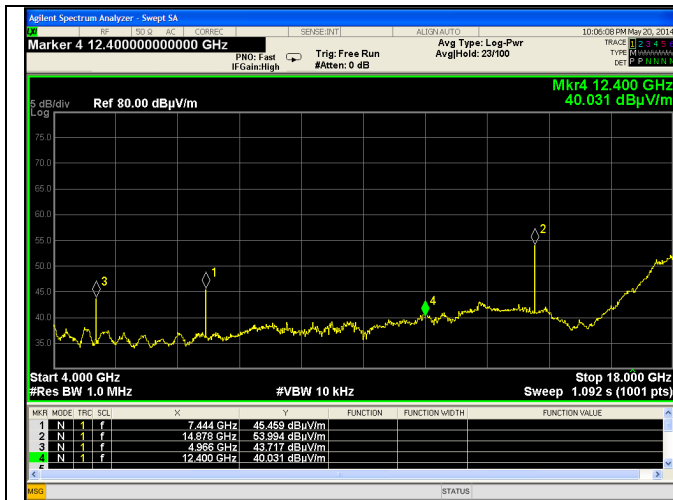
Example Calculation:

Peak Limit @ 3 meter (dB μ V/m) – Peak Reading (dB μ V/m) = Peak Margin

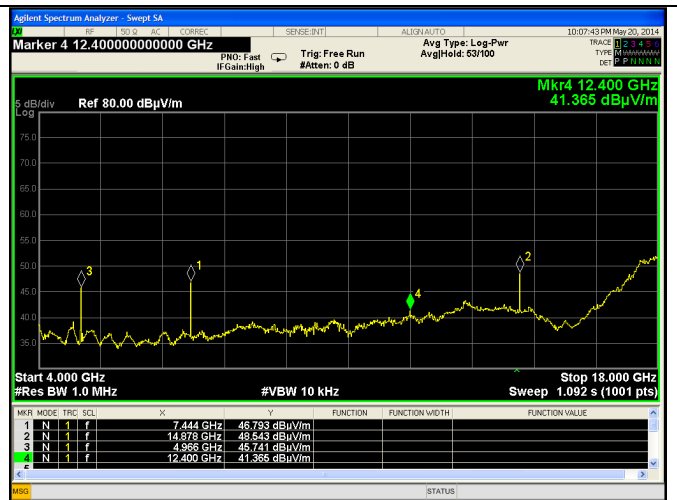
Average Limit @ 3 meter (dB μ V/m) – Average Reading (dB μ V/m) = Average Margin

Plots

4-18 GHz



High Ch, Horizontal EUT, Horizontal Antenna



High Ch, Horizontal EUT, Vertical Antenna

Prepared For: NSN

Report: TR314128 FCCIC

LSR: C-1951

Name: FZM BLUETOOTH MODULE

Model: FZM BLUETOOTH MODULE

Serial: 000FBBD630FE

**Data Table
Low Channel**

Frequency (MHz)	EUT orientation	Antenna Polarity	Height (cm)	Azimuth (degree)	Peak Reading (dBµV/m)	Avg Reading (dBµV/m)	Peak Limit (dBµV/m)	Peak Margin (dB)	Avg Limit (dBµV/m)	Avg Margin (dB)
4804	Vertical	Vertical	120	223	54.55	43.35	74	19.5	54	10.7
		Horizontal	114	14	56.02	45.38		18.0		8.6
	Horizontal	Vertical	110	187	56.31	45.21		17.7		8.8
		Horizontal	107	303	53.87	42.95		20.1		11.1
	Flat	Vertical	102	199	54.35	43.2		19.7		10.8
		Horizontal	100	355	56.01	45.69		18.0		8.3
12010	Vertical	Vertical	115	188	54.67	43.53	74	19.3	54	10.5
		Horizontal	109	153	56.28	45.04		17.7		9.0
	Horizontal	Vertical	105	184	52.46	41.27		21.5		12.7
		Horizontal	108	153	52.62	41.36		21.4		12.6
	Flat	Vertical	100	170	56.03	45.76		18.0		8.2
		Horizontal	103	111	52.18	41.20		21.8		12.8

Middle Channel

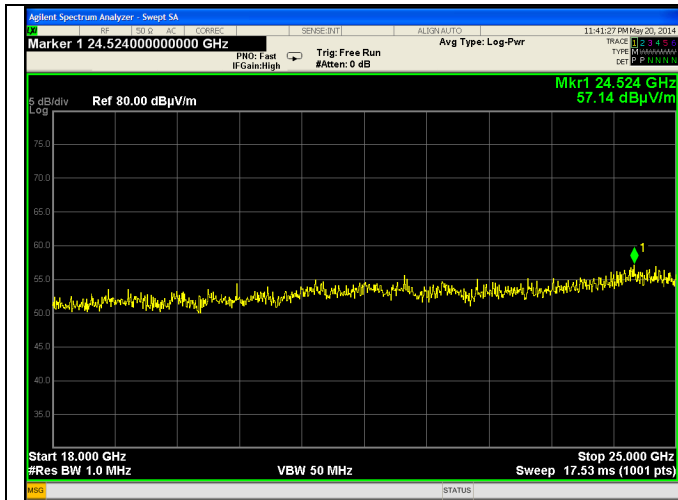
Frequency (MHz)	EUT orientation	Antenna Polarity	Height (cm)	Azimuth (degree)	Peak Reading (dBµV/m)	Avg Reading (dBµV/m)	Peak Limit (dBµV/m)	Peak Margin (dB)	Avg Limit (dBµV/m)	Avg Margin (dB)
4880	Vertical	Vertical	122	222	59.16	48.13	74	14.8	54	5.9
		Horizontal	117	46	59.22	48.5		14.8		5.5
	Horizontal	Vertical	114	177	56.28	44.99		17.7		9.0
		Horizontal	107	333	57.54	46.78		16.5		7.2
	Flat	Vertical	103	217	58.94	46.81		15.1		7.2
		Horizontal	101	317	55.46	44.78		18.5		9.2
7320	Vertical	Vertical	107	51	63	51.77	74	11.0	54	2.2
		Horizontal	100	84	62.17	51.81		11.8		2.2
	Horizontal	Vertical	104	44	54.21	44.74		19.8		9.3
		Horizontal	101	177	64.11	52.03		9.9		2.0
	Flat	Vertical	102	20	62.73	51.88		11.3		2.1
		Horizontal	101	11	62.24	51.02		11.8		3.0
12200	Vertical	Vertical	110	197	51.33	40.97	74	22.7	54	13.0
		Horizontal	105	25	55.55	44.15		18.5		9.9
	Horizontal	Vertical	102	188	52.14	41.81		21.9		12.2
		Horizontal	107	144	51.7	40.35		22.3		13.7
	Flat	Vertical	111	147	54.1	43.07		19.9		10.9
		Horizontal	131	46	51.88	40.99		22.1		13.0

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

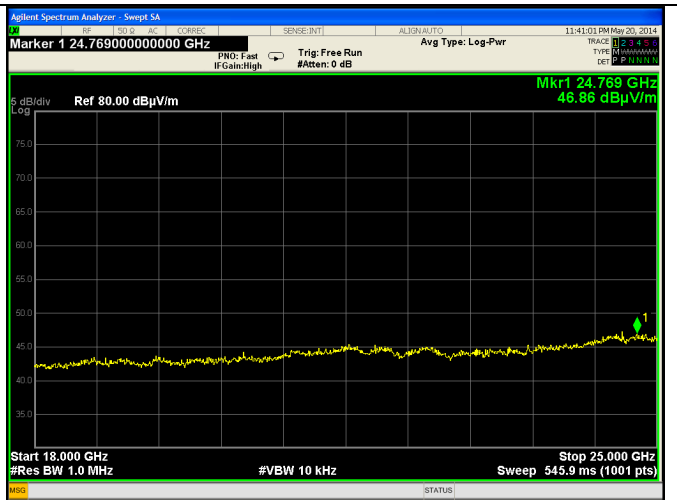
High Channel

Frequency (MHz)	EUT orientation	Antenna Polarity	Height (cm)	Azimuth (degree)	Peak Reading (dBμV/m)	Avg Reading (dBμV/m)	Peak Limit (dBμV/m)	Peak Margin (dB)	Avg Limit (dBμV/m)	Avg Margin (dB)
4960	Vertical	Vertical	117	232	55.16	43.9	74	18.8	54	10.1
		Horizontal	116	41	56.77	45.9		17.2		8.1
	Horizontal	Vertical	111	178	57.44	46.75		16.6		7.3
		Horizontal	105	347	55.25	44.17		18.8		9.8
	Flat	Vertical	103	222	55.67	44.71		18.3		9.3
		Horizontal	101	331	55.43	44.13		18.6		9.9
7440	Vertical	Vertical	103	55	63.11	52.04	74	10.9	54	2.0
		Horizontal	100	68	57.8	46.79		16.2		7.2
	Horizontal	Vertical	105	145	58.88	47.87		15.1		6.1
		Horizontal	100	154	57.13	46.42		16.9		7.6
	Flat	Vertical	103	13	62.3	51.21		11.7		2.8
		Horizontal	100	5	59.74	48.34		14.3		5.7
12400	Vertical	Vertical	113	179	52.2	41.6	74	21.8	54	12.4
		Horizontal	107	151	57.54	46.2		16.5		7.8
	Horizontal	Vertical	103	181	53.66	42.63		20.3		11.4
		Horizontal	105	135	52.76	41.3		21.2		12.7
	Flat	Vertical	100	107	55.97	44.58		18.0		9.4
		Horizontal	102	99	52.85	41.66		21.2		12.3

Plots 18-25 GHz



Peak



Average

Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

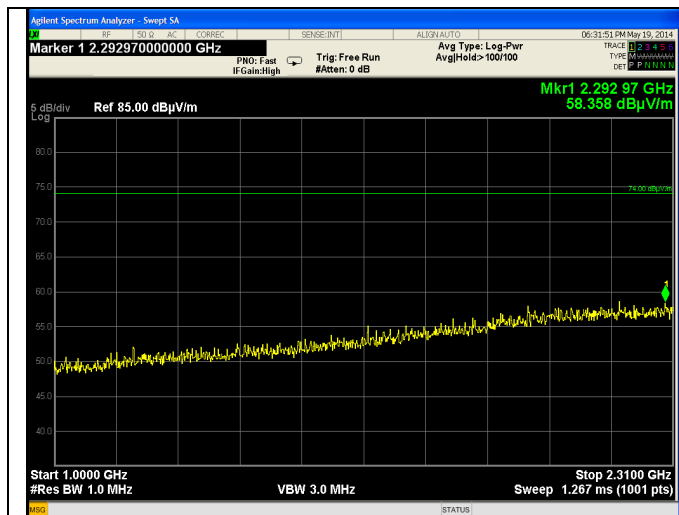
B.2.3 – Radiated Emissions Transmit Mode

Manufacturer	NSN
Date	5-19-14
Operator	Adam A
Temp. / R.H.	20 - 25° C / 30-60% R.H.
Rule Part	15.247/ 15.205 / 15.209
Measurement Procedure	ANSI C63.4 - 2003 ANSI C63.10 - 2009
Test Distance	3 meter 30-4000 MHz
EUT Placement	80 cm height non-conductive table centered on turn-table
Detectors	Peak; RBW 1 MHz Above 1000 MHz, 120 kHz below 1000 MHz
Additional Notes	1) Tested in continuous transmit modulated (GFSK / BR) mode with EUT in three orientations at maximum power. 2) Emissions (30-1000 MHz) determined not related to transceiver. Plots and data table seen in receive mode section

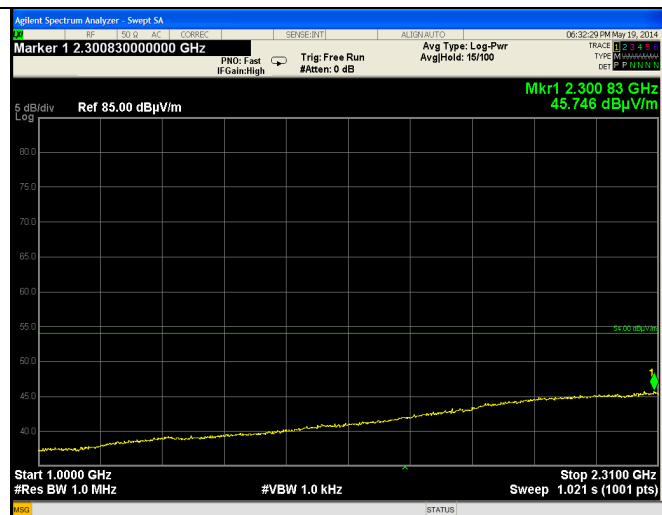
Example Calculation:

Limit (dB μ V/m) – Reading (dB μ V/m) = Margin

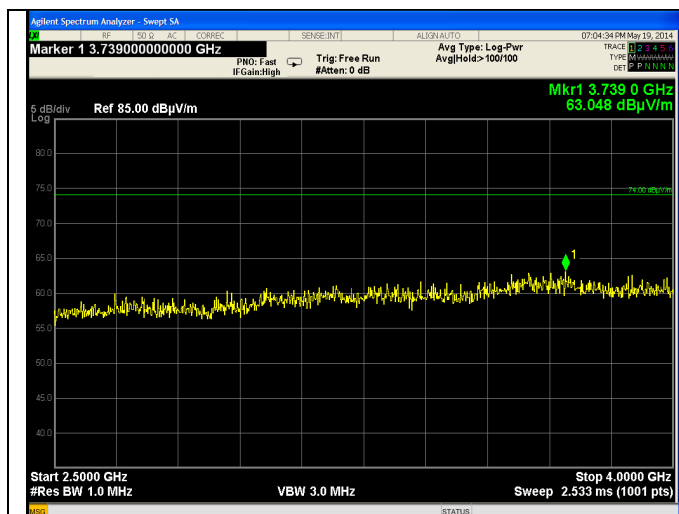
Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE



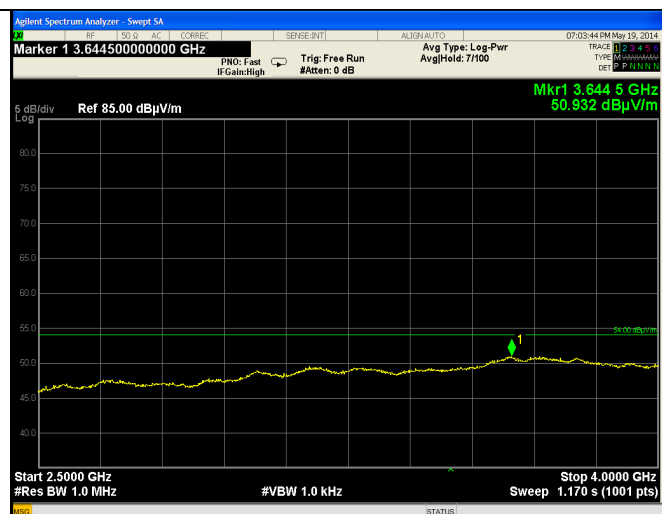
1000 – 2310 MHz (peak)



1000 – 2310 MHz (average)



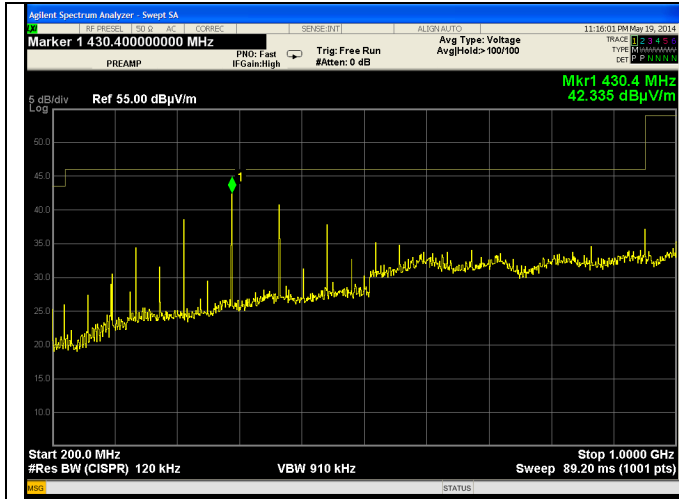
2500 – 4000 MHz (peak)



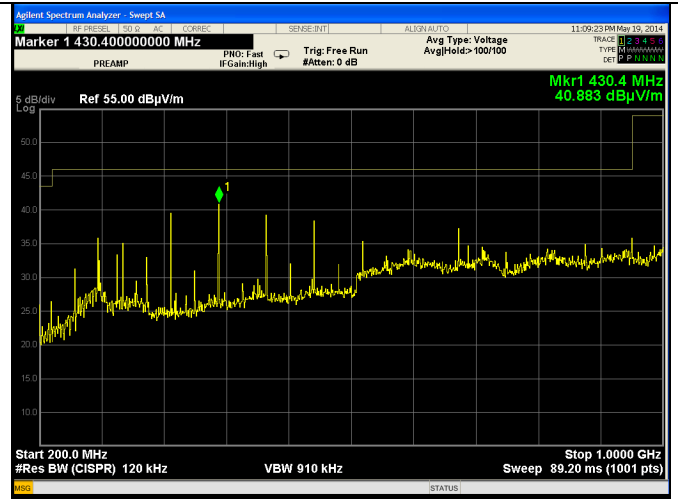
2500 – 4000 MHz (average)

Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

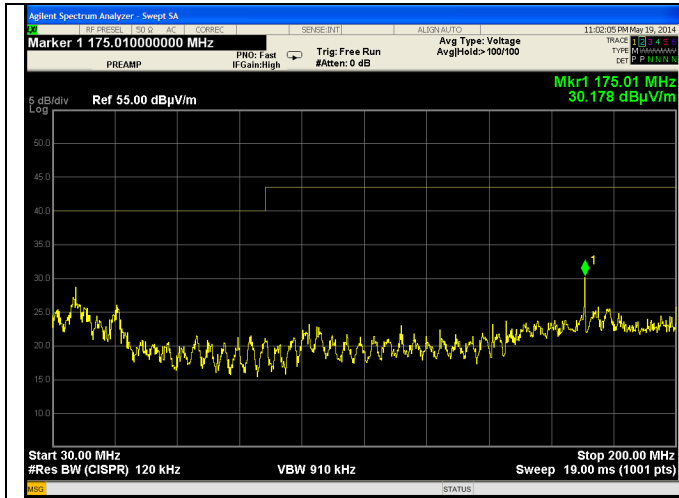
Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE



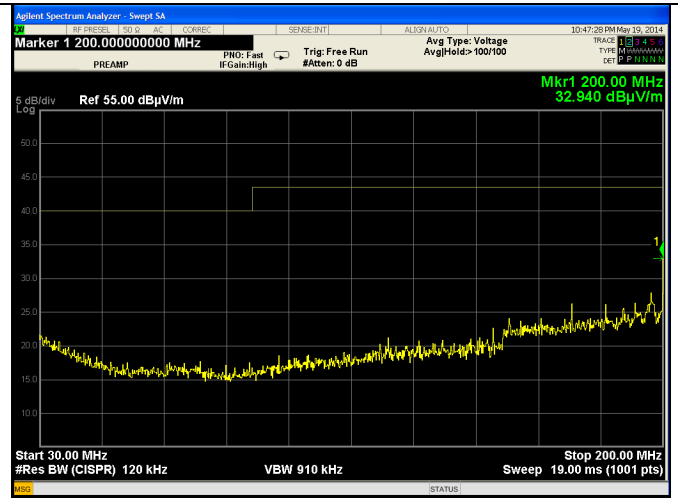
200-1000 MHz Vertical



200-1000 MHz Horizontal



30-200 MHz Vertical



30-200 MHz Horizontal

Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

B.2.4 – Radiated Emissions Receive Mode

Manufacturer	NSN
Date	5-19,20-2014
Operator	Adam A
Temp. / R.H.	20 - 25° C / 30-60% R.H.
Rule Part	15.247/ 15.205 / 15.209
Measurement Procedure	ANSI C63.4 - 2003 ANSI C63.10 - 2009
Test Distance	3 meter 30-4000 MHz
EUT Placement	80 cm height non-conductive table centered on turn-table
Detectors	Peak; RBW 1 MHz Above 1000 MHz, 120 kHz below 1000 MHz
Additional Notes	1) Tested in continuous receive mode with EUT in three orientations at maximum power. 2) Maximum results reported

Example Calculation:

$$\text{Limit (dB}\mu\text{V/m)} - \text{Reading (dB}\mu\text{V/m)} = \text{Margin}$$

Table 30-1000 MHz

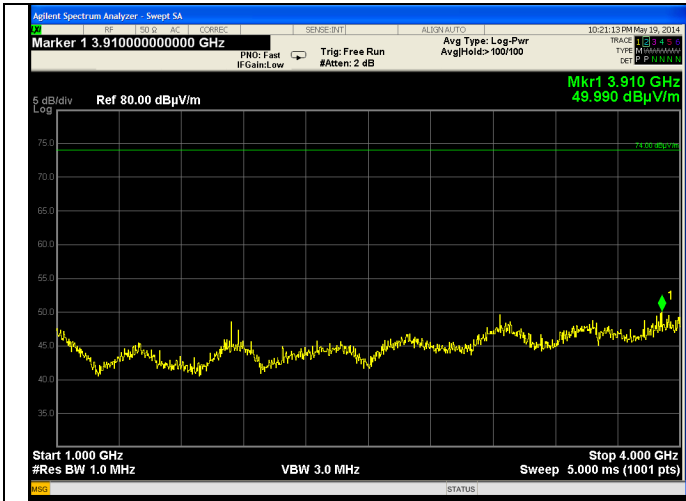
Frequency (MHz)	Antenna Polarity	Height (cm)	Azimuth (degree)	Quasi Peak Reading (dBμV/m)	Quasi Peak Limit (dBμV/m)	Margin (dB)
200.0	Horizontal	160	278	33.32	43	9.7
175.0	Vertical	100	143	31.87	43	11.1
36.5	Vertical	100	42	28.83	40	11.2
430.4	Horizontal	175	15	38.77	46	7.2
368.8	Horizontal	144	47	37.52	46	8.5
491.2	Horizontal	159	47	36.84	46	9.2
552.8	Horizontal	155	40	36.22	46	9.8
430.4	Vertical	110	53	40.89	46	5.1
491.2	Vertical	100	77	38.79	46	7.2
552.8	Vertical	105	75	38.65	46	7.4
368.8	Vertical	107	65	37.86	46	8.1

Table 1-4 GHz

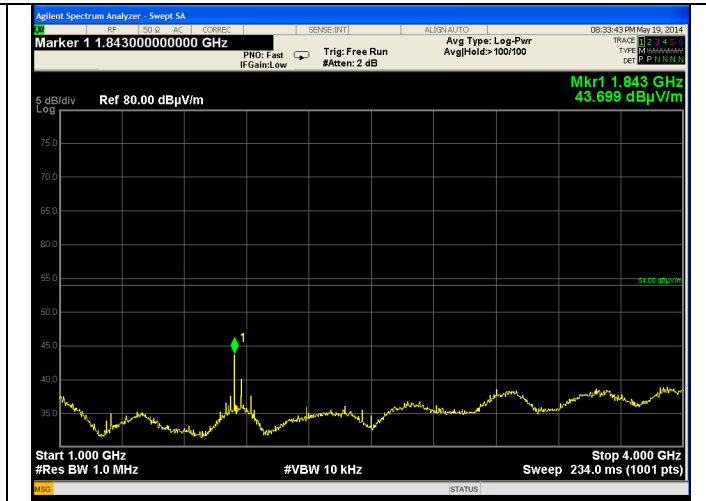
Frequency (GHz)	EUT orientation	Antenna Polarity	Height (cm)	Azimuth (degree)	Peak Reading (dBμV/m)	Avg Reading (dBμV/m)	Peak Limit (dBμV/m)	Peak Margin (dB)	Avg Limit (dBμV/m)	Avg Margin (dB)
1.843	Vertical	Vertical	110	345	49.56	40.71	74	24.44	54	13.29
		Horizontal	102	112	48.31	39.87		25.69		14.13
	Horizontal	Vertical	106	278	49.05	40.13		24.95		13.87
		Horizontal	100	313	50.28	41.86		23.72		12.14
	Flat	Vertical	100	87	48.22	38.99		25.78		15.01
		Horizontal	100	308	50.07	41.64		23.93		12.36

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

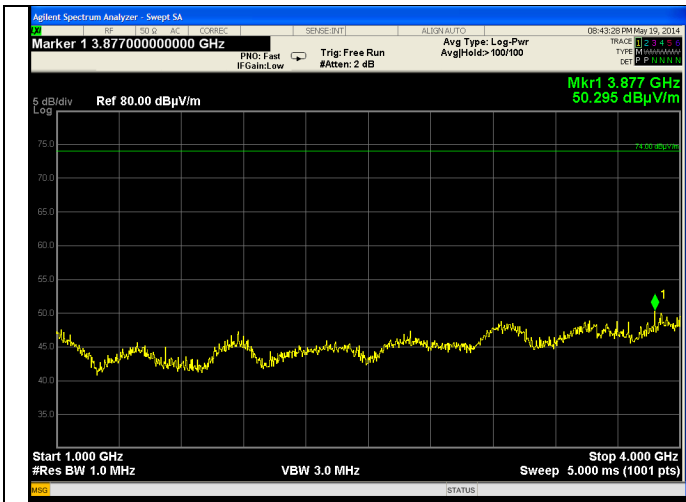
Plots



1-4 GHz Horizontal – Peak



1-4 GHz Horizontal – Average



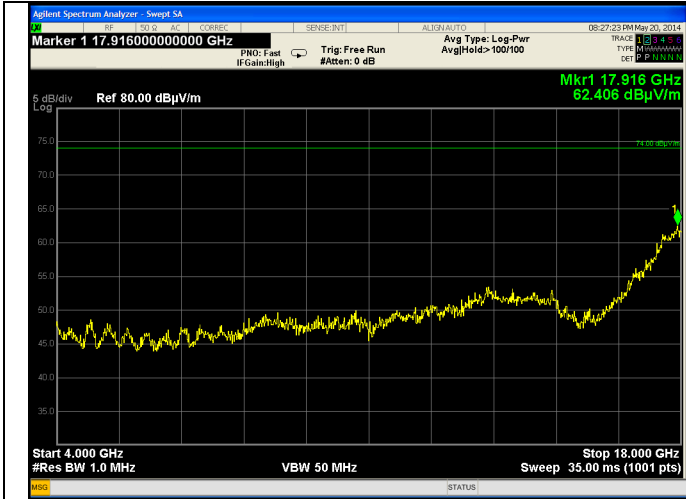
1-4 GHz Vertical – Peak



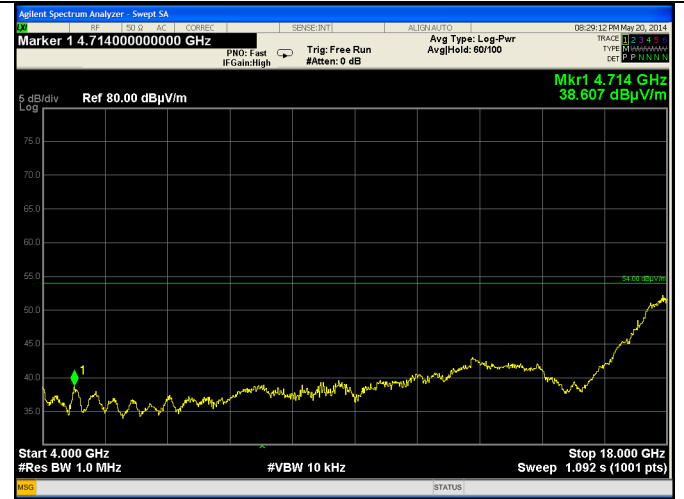
1-4 GHz Vertical – Average

Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

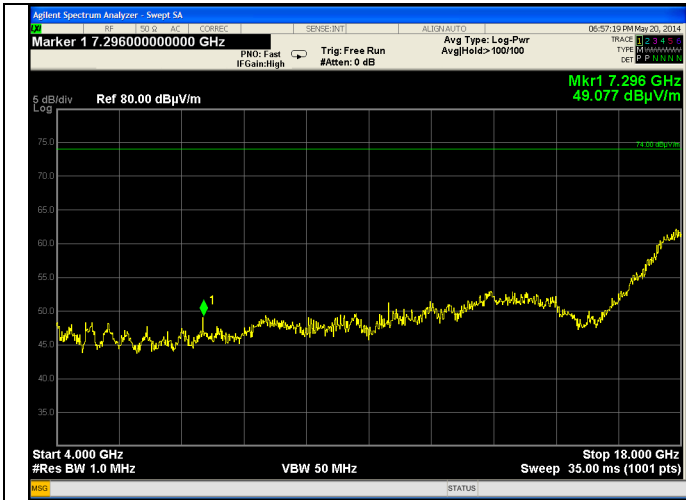
Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE



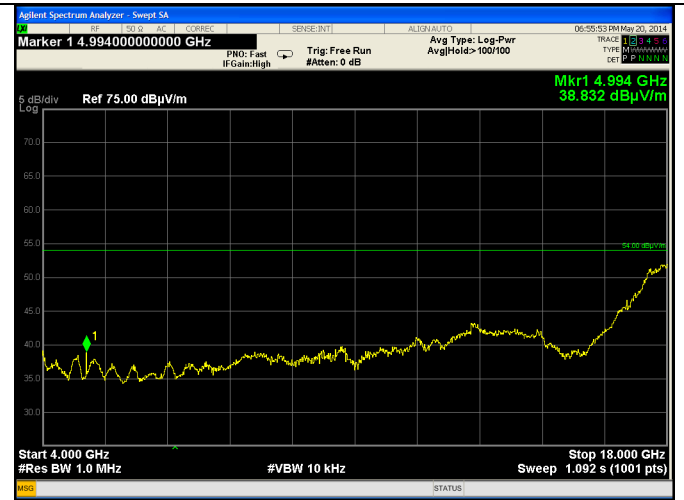
1-4 GHz Horizontal – Peak



1-4 GHz Horizontal – Average



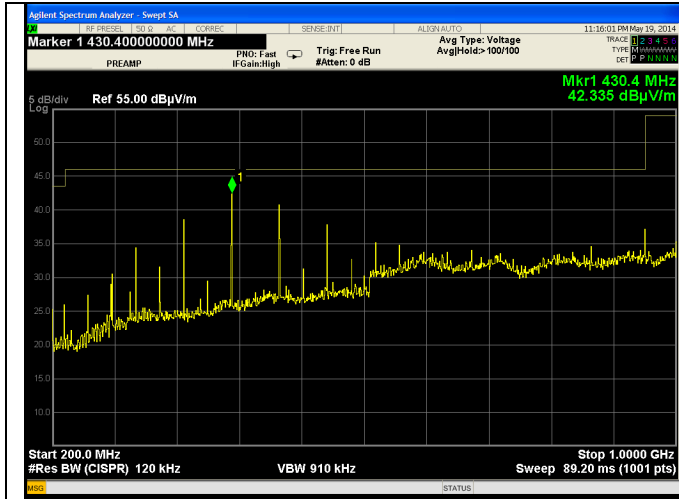
1-4 GHz Vertical – Peak



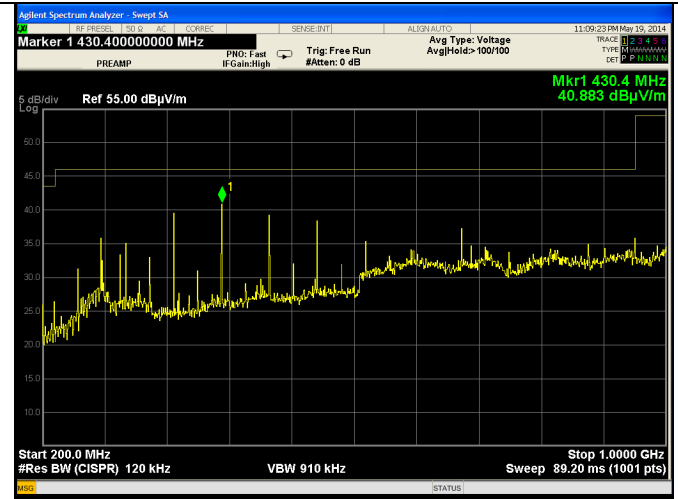
1-4 GHz Vertical – Average

Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

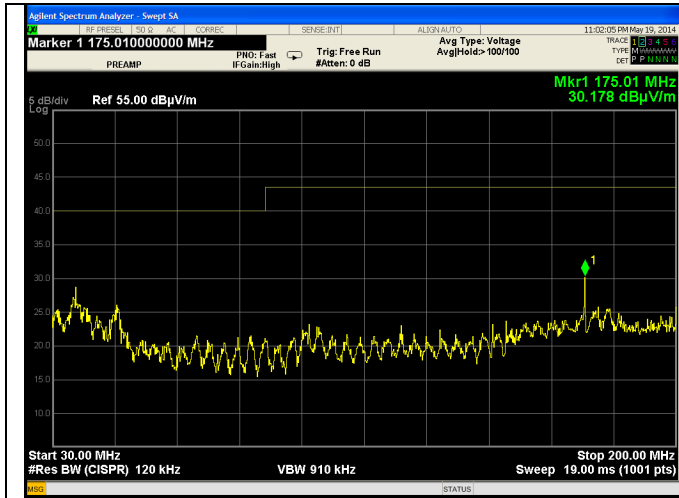
Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE



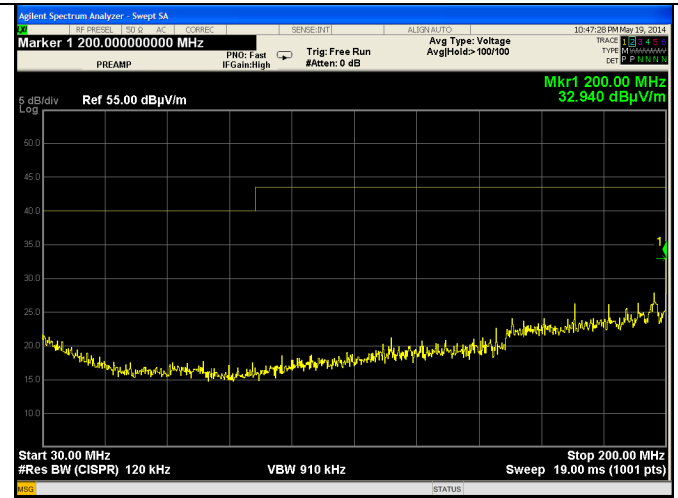
200-1000 MHz Vertical



200-1000 MHz Horizontal



30-200 MHz Vertical



30-200 MHz Horizontal

Prepared For: NSN
 Report: TR314128 FCCIC
 LSR: C-1951

Name: FZM BLUETOOTH MODULE
 Model: FZM BLUETOOTH MODULE
 Serial: 000FBBD630FE

B3 – AC Mains Conducted Emissions

Test Setup

The test area and setup are in accordance with ANSI C63.4-2003 and with Title 47 CFR, FCC Part 15, Industry Canada RSS-210 and RSS GEN. The EUT was placed on a non-conductive wooden table, with a height of 80 cm above the reference ground plane. The EUT's power cable was plugged into a Line Impedance Stabilization Network (LISN). The AC power supply of 120V was provided via an appropriate broadband EMI Filter, and then to the LISN line input. Final readings were then taken and recorded. After the EUT was setup and connected to the LISN, the RF Sampling Port of the LISN was connected to a 10 dB Attenuator-Limiter, and then to the EMI Receiver. The LISN used has the ability to terminate the unused port with a 50Ω (ohm) load when switched to either L1 (line) or L2 (neutral).

Test Procedure

The EUT was investigated in continuous modulated transmit mode for this portion of the testing. The appropriate frequency range and bandwidths were selected on the EMI Receiver, and measurements were made. The bandwidth used for these measurements was as specified for Quasi-Peak and Average detectors in the frequency range of 150 kHz to 30 MHz. Final readings were then taken and recorded.

Limits of Conducted Emissions at the AC Mains Ports

Frequency Range (MHz)	Class B Limits (dBμV)		Measuring Bandwidth
	Quasi-Peak	Average	
0.150 -0.50 *	66-56	56-46	RBW = 9 kHz
0.5 – 5.0	56	46	
5.0 – 30	60	50	
* The limit decreases linearly with the logarithm of the frequency in this range.			

Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

Test Data

Manufacturer:	NSN				
Date(s) of Test:	6-6-14				
Test Engineer:	Adam A				
Voltage:	120 VAC 60Hz supplying 12 VDC				
Operation Mode:	Continuous transmit modulated used for this test. (No difference in emissions noted for transmit or receive on any given channel)				
Environmental Conditions in the Lab:	Temperature: 71° F Relative Humidity: 40%				
Test Location:	X	AC Mains Test area			Chamber
EUT Placed On:	X	40cm from Vertical Ground Plane			10cm Spacers
	X	80cm above Ground Plane			Other:
Measurements:		Pre-Compliance		Preliminary	X Final
Detectors Used:	X	Peak	X	Quasi-Peak	X Average

Sample Calculation:

Margin (dB) = Limit (dBμV) – Reading (dBμV)

Frequency (MHz)	Line	Quasi-Peak			Average		
		Q-Peak Reading (dBμV)	Q-Peak Limit (dBμV)	Quasi-Peak Margin (dB)	Average Reading (dBμV)	Average Limit (dBμV)	Average Margin (dB)
0.154	1	46.10	65.78	19.68	32.60	55.78	23.18
0.172	1	45.00	64.86	19.86	31.70	54.86	23.16
0.222	1	40.40	62.74	22.34	29.60	52.74	23.14
1.851	1	26.90	56.00	29.10	20.40	46.00	25.60
3.066	1	23.10	56.00	32.90	19.60	46.00	26.40
19.291	1	25.60	60.00	34.40	21.10	50.00	28.90
0.150	2	43.10	66.00	22.90	23.50	56.00	32.50
0.172	2	41.20	64.86	23.66	22.40	54.86	32.46
0.199	2	37.20	63.65	26.45	21.30	53.65	32.35
0.248	2	33.10	61.82	28.72	19.60	51.82	32.22
0.275	2	29.40	60.97	31.57	22.30	50.97	28.67
19.606	2	25.40	60.00	34.60	18.80	50.00	31.20

Prepared For: NSN

Report: TR314128 FCCIC

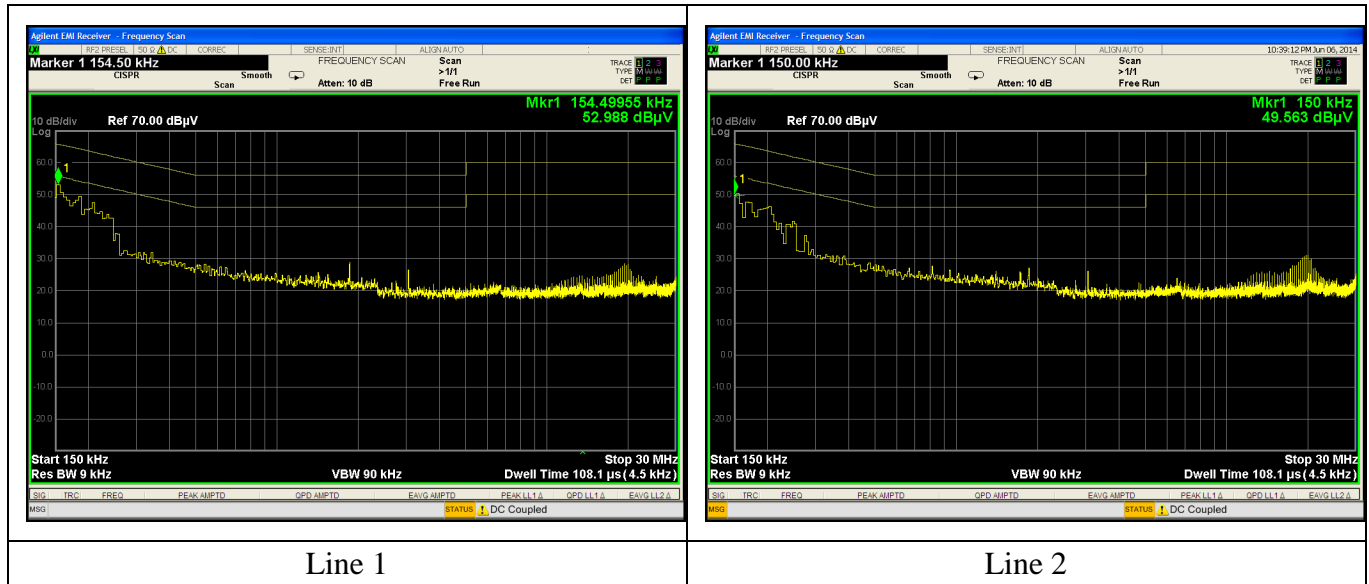
LSR: C-1951

Name: FZM BLUETOOTH MODULE

Model: FZM BLUETOOTH MODULE

Serial: 000FBBD630FE

These screen captures represent Peak Emissions. For conducted emission measurements, both a Quasi-Peak detector function and an Average detector function are utilized. The emissions must meet both the Quasi-peak limit and the Average limit as described in 47 CFR 15.207 and RSS GEN 7.2.2 (Table 2).



Prepared For: NSN	Name: FZM BLUETOOTH MODULE
Report: TR314128 FCCIC	Model: FZM BLUETOOTH MODULE
LSR: C-1951	Serial: 000FBBD630FE

Appendix C - Uncertainty Summary

This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level, using a coverage factor of $k=2$.

Table of Expanded Uncertainty Values, (K=2) for Specified Measurements

Measurement Type	Particular Configuration	Uncertainty Values
Radiated Emissions	3 – Meter chamber, Biconical Antenna	4.82 dB
Radiated Emissions	3-Meter Chamber, Log Periodic Antenna	4.88 dB
Radiated Emissions	3-Meter Chamber, Horn Antenna	4.85 dB
Radiated Emissions	10-Meter OATS, Biconical Antenna	4.32 dB
Radiated Emissions	10-Meter OATS, Log Periodic Antenna	3.63 dB
Absolute Conducted Emissions	Agilent PSA/ESA Series	1.38 dB
AC Line Conducted Emissions	Shielded Room/EMCO LISN	3.20 dB
Radiated Immunity	3 Volts/Meter in 3-Meter Chamber	2.05 Volts/Meter
Conducted Immunity	3 Volts level	2.33 V
EFT Burst, Surge, VDI	230 VAC	54.4 V
ESD Immunity	Discharge at 15kV	3200 V
Temperature/Humidity	Thermo-hygrometer	0.64°/ 2.88 %RH

Prepared For: NSN

Name: FZM BLUETOOTH MODULE

Report: TR314128 FCCIC

Model: FZM BLUETOOTH MODULE

LSR: C-1951

Serial: 000FBBD630FE

Appendix D - References

Publication	Year	Title
FCC CFR Parts 0-15	2013	Code of Federal Regulations – Telecommunications
ANSI C63.4	2003	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
RSS-210 Annex 8	2010	Low-power License-exempt Radio communication Devices (All Frequency Bands): Category I Equipment
RSS-GEN Issue 3	2010	General Requirements and Information for the Certification of Radio Apparatus
ANSI C63.10	2009	American National Standard for Testing Unlicensed Wireless Devices
FCC KDB 558074 D01 DTS Meas Guidance v03r02	2014	Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247
DA 00-705	2000	Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems

Prepared For: NSN

Name: FZM BLUETOOTH MODULE

Report: TR314128 FCCIC

Model: FZM BLUETOOTH MODULE

LSR: C-1951

Serial: 000FBBD630FE

END OF REPORT

Date	Version	Comments	Person
6-6-14	V0	Initial Draft Release	Adam A
6-13-14	V1	Final Released	Adam A
7-7-14	V1a	Addressed TCB comments to clarify data table in section B.2.1 and results in section B.2.2	Adam A

Prepared For: NSN

Report: TR314128 FCCIC

LSR: C-1951

Name: FZM BLUETOOTH MODULE

Model: FZM BLUETOOTH MODULE

Serial: 000FBBD630FE