FCC/IC Test Report

FOR:

Harman International

Model Number: VP3 NA, VP4 NA, VP3 CA, VP4 CA
Product Description: Automotive Infotainment Unit

FCC ID: QNG-BE2800
IC ID: 6434C-BE2800

47 CFR Part 15.247 for FHSS Systems

IC RSS-210 Issue 8

TEST REPORT #: EMC_HARMA_018_11001_BE2800_FHSS_Rev1
DATE: 2012-09-06

ACCREDITED
TESTING LABORATORY
Certificate #2135.01

CTIA Authorized Test Lab
LAB CODE 20020328-00

FCC listed
A2LA Accredited

IC recognized #
3462B

***CETECOM* Inc.**
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1 Assessment

The following equipment (and as identified in Ch.3 of this test report) was evaluated against the applicable criteria specified in FCC CFR47 Part 15.247 and Industry Canada Radio Standard Specification RSS 210 Issue 8,
and no deviations were ascertained during the course of the tests performed.

Company	Description	Model #
Harman International	Automotive Infotainment Unit	VP3 NA, VP4 NA, VP3 CA, VP4 CA

Responsible for Testing Laboratory:

Date	Section	Name	Signature
2012-09-06	Compliance	Sajay Jose (Test Lab Manager)	

Responsible for the Report:

Date	Section	Name	Signature
2012-09-06	Compliance	Josie Sabado (EMC Test Engineer)	

2 Administrative Data

2.1 Identification of the Testing Laboratory Issuing the Test Report

Company Name:	CETECOM Inc.
Department:	Compliance
Address:	411 Dixon Landing Road Milpitas, CA 95035 U.S.A.
Telephone:	+1 (408) 586 6200
Fax:	+1 (408) 586 6299
Test Lab Manager:	Sajay Jose
Test Engineer:	Josie Sabado

2.2 Identification of the Client

Client:	Harman International
Street Address:	26500 Haggerty Road
City/Zip Code	Farmington Hills, MI 48331
Country	USA
Contact Person:	Shain E. Chmura
Phone No.	+1 (248) 592-3157
e-mail:	schmura@harman.com

2.3 Identification of the Manufacturer

Same as Client.

2.4 Environmental conditions during Test:

The following environmental conditions were maintained during the course of testing:
Ambient Temperature: 20-25°C
Relative humidity: 40-60%

2.5 Dates of Testing:

Apr 12, 2012-Apr 27, 2012.

3 Equipment under Test (EUT)

3.1 Specification of the Equipment under Test

Marketing Name:	Uconnect
Model No:	VP3 NA, VP4 NA, VP3 CA, VP4 CA
FCC-ID:	QNG-BE2800
IC ID:	6434C-BE2800
Product Description:	Automotive Infotainment Unit
Frequency Range of test/ number of channels:	Bluetooth: 2402 – 2480 MHz / 79 Channels
Type(s) of Modulation:	Bluetooth: GFSK, π/4 DQPSK, 8DPSK
Antenna Gain Information:	Gain (As stated by manufacturer): Low Channel: -3.37 dBi Mid Channel: -3.67 dBi High Channel: -2.03 dBi
Max. Output Powers:	Conducted (Measured): GFSK: 3.74 dBm Radiated –EIRP (Calculated): GFSK: 1.2 dBm
Other radios supported in the device:	EVDO Band Class 0: 824.7 – 848.31 MHz / 656 Channels EVDO Band Class 1: 1851.25 – 1908.75 MHz / 906 Channels 802.11 b/g: 2412 – 2462 MHz / 11 Channels GPS: 1.575 GHz / 1 Channel
Operating Voltage:	12 VDC
Rated Operating temperature range:	-40°C to 85°C
Prototype / Production unit:	Pre-Production

3.2 Identification of the Equipment Under Test (EUT)

EUT #	Serial Number	HW Version	SW Version	Model	Notes/Comments
1	T00BE349170251	PV	11.48.1	VP3	Radiated Unit
2	T00BE349170252	PV	11.48.1	VP3	Conducted Power Verification Unit

3.3 Identification of Accessory Equipment

AE #	Type	Manufacturer	Model	Serial Number
1	Cellular Antenna	Wilson	N/A	N/A
2	GPS Antenna	N/A	N/A	N/A

3.4 Identification of Support Test Equipment

STE #	Type	Manufacturer	Model	Serial Number
1	Laptop	IBM	ThinkPad T41	55274-641-4106881-23841
2	Optical CAN Transceiver	SonTec Electricity	OPTOCAN 2000	CAN 12/133HS
3	Optical CAN Transceiver	SonTec Electricity	OPTOCAN 2000	CAN 12/134HS
4	Vehicle Interface	EEPOD LLC	MCS1	N/A

4 Subject of Investigation

The objective of the measurements applied by CETECOM Inc. was to establish compliance of the EUT as described under Ch. 3 of this Test Report, with the applicable criteria specified in

- FCC CFR47 Parts 15.247, 15.209 and
- Industry Canada Radio Standard Specifications RSS-210 Issue 8, RSS-Gen Issue 3

This test report is to support a request for new equipment authorization under the FCC ID: **QNG-BE2800** and IC ID: **6434C-BE2800.**

The device was configured with a manufacturer provided test SW, capable of setting the unit in BT Test mode. In this mode, the unit can be connected to a Bluetooth Tester to control different modulation schemes, channels etc., as required for testing.
The EUT was tested on low, mid and high channels in GFSK, π/4DQPSK and 8DPSK modes.

The product comes in two variants- VP3 and VP4. All testing was performed on VP3 Variant. The only hardware difference between VP3 and VP4 is the flash NAND memory size (8GB on VP3 and 16GB on VP4). Both variants use the same software, but certain non-radio relevant features are disabled on VP3. Based on this declaration from the manufacturer, testing was only performed on VP3 variant, and deemed sufficient to establish compliance of VP4 variant to the applicable requirements.
Further, the "NA" variant is for North American Market and "CA" variant for Canadian market, with no HW/SW differences.

Test data is leveraged from the sister product with FCC ID: QNG-BE2801, since the relevant HW is the same on both products.

5 Summary of Measurement Results

Test Specification	Test Case	Temperature and Voltage Conditions	Mode	Pass	Fail	NA	NP	Result
§15.247(e) RSS210 A8.2(b)	Power Spectral Density	Nominal	GFSK π/4DQPSK 8DPSK	☐	☐	■	☐	See Note 1
§15.247(a)(1) RSS210 A8.1(b)	Carrier Frequency Separation	Nominal	Hopping	☐	☐	☐	■	See Note 2
§15.247(a)(1) RSS210 A8.1(d)	Number of Hopping Channels	Nominal	Hopping	☐	☐	☐	■	See Note 2
§15.247(a)(1)(iii) RSS210 A8.3(1)	Time of occupancy	Nominal	Hopping	☐	☐	☐	■	See Note 2
§15.247(a)(1) RSS210 A8.2(a)	Spectrum Bandwidth	Nominal	GFSK π/4DQPSK 8DPSK	☐	☐	☐	■	See Note 2
§15.247(b)(1) RSS210 A8.4(2)	Maximum Peak Conducted Output Power	Nominal	GFSK π/4DQPSK 8DPSK	■	☐	☐	☐	Complies
§15.247(d) RSS210 A8.5	Band edge compliance-Conducted	Nominal	GFSK π/4DQPSK 8DPSK	☐	☐	☐	■	See Note 3
§15.247(d) RSS210 A8.5	Band edge compliance-Radiated	Nominal	GFSK π/4DQPSK 8DPSK	■	☐	☐	☐	Complies
§15.247(d) RSS210 A8.5	TX Spurious emissions-Conducted	Nominal	GFSK π/4DQPSK 8DPSK	☐	☐	☐	■	See Note 2
§15.247(d) RSS210 A8.5	TX Spurious emissions-Radiated	Nominal	GFSK	■	☐	☐	☐	Complies
§15.209(a) RSS Gen	TX Spurious Emissions Radiated<30MHz	Nominal	GFSK	■	☐	☐	☐	Complies

Note: NA= Not Applicable; NP= Not Performed.

1. Power Spectral Density is NOT APPLICABLE for devices with hopping functionality.
2. Conducted measurements are re-used from the module's certification data.
    a. Module FCC ID: NKRUWMWBT-CWM01
    b. Test report number FR1D0821AB issued by SPORTON International Inc. dated December 22, 2011.
3. Band Edge compliance-conducted is NOT PERFORMED as the device passes radiated measurement.

6 Measurements

6.1 Measurement Method:

Ref: FCC Public Notice DA 00-705: Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems|

6.2 Radiated Measurement Procedure

ANSI C63.4 (2009) Section 8.3.1.1: Exploratory radiated emission measurements
Exploratory radiated measurements shall be performed at the measurement distance or at a closer distance than that specified for compliance to determine the emission characteristics of the EUT. At near distances, for EUTs of comparably small size, it is relatively easy to determine the spectrum signature of the EUT and, if applicable, the EUT configuration that produces the maximum level of emissions. A shielded room may be used for exploratory testing, but may have anomalies that can lead to significant errors in amplitude measurements.

Broadband antennas and a spectrum analyzer or a radio-noise meter with a panoramic display are often useful in this type of testing. It is recommended that either a headset or loudspeaker be connected as an aid in detecting ambient signals and finding frequencies of significant emission from the EUT when the exploratory and final testing is performed in an OATS with strong ambient signals. Caution should be taken if either antenna height between 1 and 4 meters or EUT azimuth is not fully explored. Not fully exploring these parameters during exploratory testing may require complete testing at the OATS or semi-anechoic chamber when the final full spectrum testing is conducted.

The EUT should be set up in its typical configuration and arrangement, and operated in its various modes. For tabletop systems, cables or wires should be manipulated within the range of likely arrangements. For floor-standing equipment, the cables or wires should be located in the same manner as the user would install them and no further manipulation is made. For combination EUTs, the tabletop and floor-standing portions of the EUT shall follow the procedures for their respective setups and cable manipulation. If the manner of cable installation is not known, or if it changes with each installation, cables or wires for floor-standing equipment shall be manipulated to the extent possible to produce the maximum level of emissions.

For each mode of operation required to be tested, the frequency spectrum shall be monitored. Variations in antenna height between 1 and 4 m, antenna polarization, EUT azimuth, and cable or wire placement (each variable within bounds specified elsewhere) shall be explored to produce the emission that has the highest amplitude relative to the limit. A step-by-step technique for determining this emission can be found in Annex C.

When measuring emissions above 1 GHz, the frequencies of maximum emission shall be determined by manually positioning the antenna close to the EUT and by moving the antenna over all sides of the EUT while observing a spectral display. It will be advantageous to have prior knowledge of the frequencies of emissions above 1 GHz. If the EUT is a device with dimensions approximately equal to that of the measurement antenna beamwidth, the measurement antenna shall be aligned with the EUT.

ANSI C63.4 (2009) Section 8.3.1.2: Final radiated emission measurements

Based on the measurement results in 8.3.1.1, the one EUT, cable and wire arrangement, and mode of operation that produces the emission that has the highest amplitude relative to the limit is selected for the final measurement. The final measurement is then performed on a site meeting the requirements of 5.3, 5.4, or 5.5 as appropriate without variation of the EUT arrangement or EUT mode of operation. If the EUT is relocated from an exploratory test site to a final test site, the highest emission shall be remaximized at the final test location before final radiated emissions measurements are performed. However, antenna height and polarity and EUT azimuth are to be varied. In addition, the full frequency spectrum (for the range to be checked for meeting compliance) shall be investigated.

This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. During the full frequency spectrum investigation, particular focus should be made on those frequencies found in exploratory testing that were used to find the final test configuration, mode of operation, and arrangement (associated with achieving the least margin with respect to the limit). This full spectrum test constitutes the compliance measurement.

For measurements above 1 GHz, use the cable, EUT arrangement, and mode of operation determined in the exploratory testing to produce the emission that has the highest amplitude relative to the limit. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the antenna in the "cone of radiation" from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response. The antenna may have to be higher or lower than the EUT, depending on the EUT's size and mounting height, but the antenna should be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. If the transmission line for the measurement antenna restricts its range of height and polarization, the steps needed to ensure the correct measurement of the maximum emissions, shall be described in detail in the report of measurements. Data collected shall satisfy the report requirements of Clause 10.

NOTES

1— Where limits are specified by agencies for both average and peak (or quasi-peak) detection, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.
2—Use of waveguide and flexible waveguide may be necessary at frequencies above 10 GHz to achieve usable signal-to noise ratios at required measurement distances. If so, it may be necessary to restrict the height search of the antenna, and special care should be taken to ensure that maximum emissions are correctly measured.
3—All presently known devices causing emissions above 10 GHz are physically small compared with the beam-widths of typical horn antennas used for EMC measurements. For such EUTs and frequencies, it may be preferable to vary the height and polarization of the EUT instead of the receiving antenna to maximize the measured emissions.

6.3 Sample Calculations for Radiated Measurements

6.3.1.1 Field Strength Measurements:

Measurements from the Spectrum Analyzer/ Receiver is used to calculate the Field Strength, taking into account the following parameters:

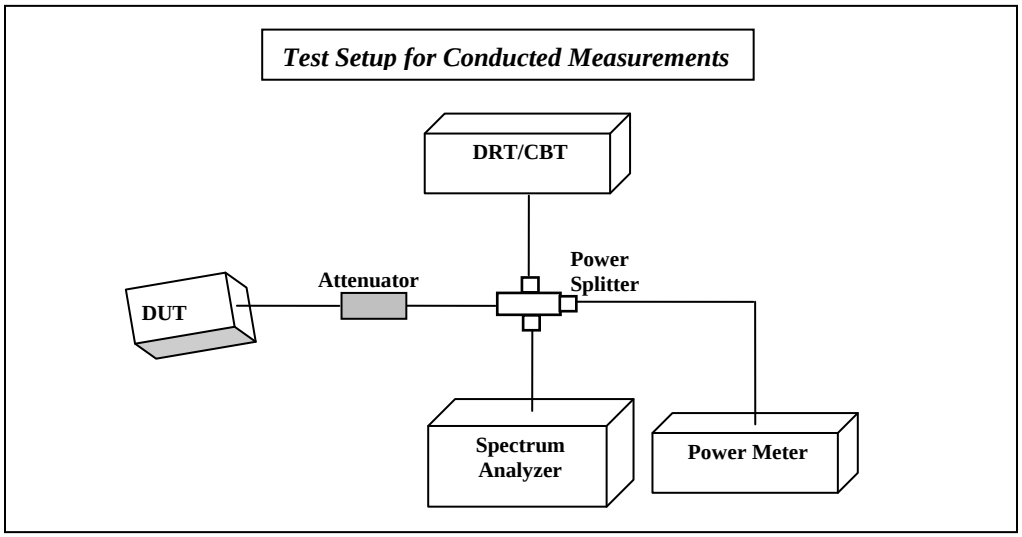
1. Measured reading in dBµV
2. Cable Loss between the receiving antenna and SA in dB and
3. Antenna Factor in dB/m

FS (dBµV/m)= Measured Value on SA (dBµV)+ Cable Loss (dB)+ Antenna Factor (dB/m)
Eg:

Frequency (MHz)	Measured SA (dBµV)	Cable Loss (dB)	Antenna Factor Correction (dB)	Field Strength Result (dBµV/m)
1000	80.5	3.5	14	98.0

All radiated measurement plots in this report are taken from a test SW that calculates the Field Strength based on the above equation.

6.4 Conducted Measurement Procedure



1. Connect the equipment as shown in the above diagram.
2. Adjust the settings of the CBT (Rohde-Schwarz Bluetooth Tester) to connect the EUT at the required channel.
3. Measurements are to be performed with the EUT set to the low, middle and high channels and for GFSK, π/4DQPSK and 8DPSK modulation schemes.
   Measurement Uncertainty: ±0.5dB

6.5 Maximum Peak Output Power

6.5.1 Limits:

6.5.1.1 §15.247 (b)(1)

The maximum peak conducted output power of the intentional radiator shall not exceed the following: For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts.

6.5.1.2 RSS 210- A8.4(2)

Nominal Peak Output Power < 30 dBm (1W)

6.5.2 Test Conditions:

Tnom: 25°C; Vnom: 12 V
Hopping OFF

Measurement Settings:

Conducted output power measured using a CBT (Bluetooth Tester).
Radiated EIRP calculated using the formula= Conducted Power+ Antenna Gain.

Antenna Gain (dBi):

Low Channel: -3.37 dBi
Mid Channel: -3.67 dBi
High Channel: -2.03 dBi

6.5.3 Test Result:

Measured Peak Output Power - Conducted (dBm)			
Modulation	**Frequency (MHz)**		
	2402	**2441**	**2480**
GFSK	3.69	3.74	3.23
π/4 DQPSK	1.78	1.86	1.46
8-DPSK	1.68	1.84	1.41
Measurement Uncertainty: ±0.5dB			

Calculated Peak Output Power- Radiated (dBm)			
Modulation	**Frequency (MHz)**		
	2402	**2441**	**2480**
GFSK	0.32	0.07	1.2
π/4 DQPSK	-1.59	-1.81	-0.57
8-DPSK	-1.69	-1.83	-0.62
Measurement Uncertainty: ±3.0dB			

Note: Radiated EIRP is calculated as
Conducted Measurement + Antenna Gain

6.5.3.1 Measurement Result

Pass.

6.6 Band Edge Compliance of Radiated Emissions

6.6.1 Limits: §15.247/15.205
RSS-210 A8.5

15.247 (d) Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

15.205 (a) Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41			

15.209 (a) Emission Limits:

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (m)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100**	3
88–216	150**	3
216–960	200**	3
Above 960	500	3

6.6.2 Test Conditions:

Tnom: 25°C; Vnom: 12 V
Hopping OFF

6.6.3 Measurement Procedure:

Peak measurements are made using a peak detector and RBW=1MHz.
*PEAK LIMIT= 74dBµV/m

Average measurements performed using a peak detector and according to video averaging procedure with RBW=1MHz and VBW=10Hz.
*AVG. LIMIT= 54dBµV/m

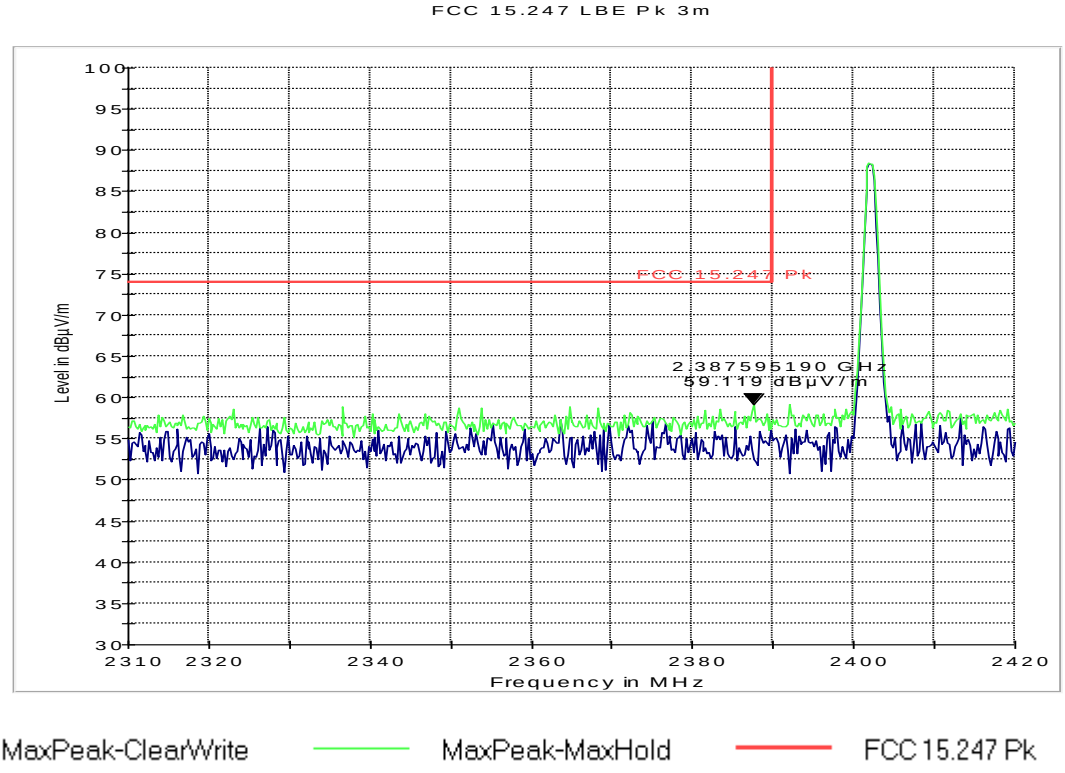
Measurement Uncertainty: ±3.0dB

6.6.3.1 Test Verdict

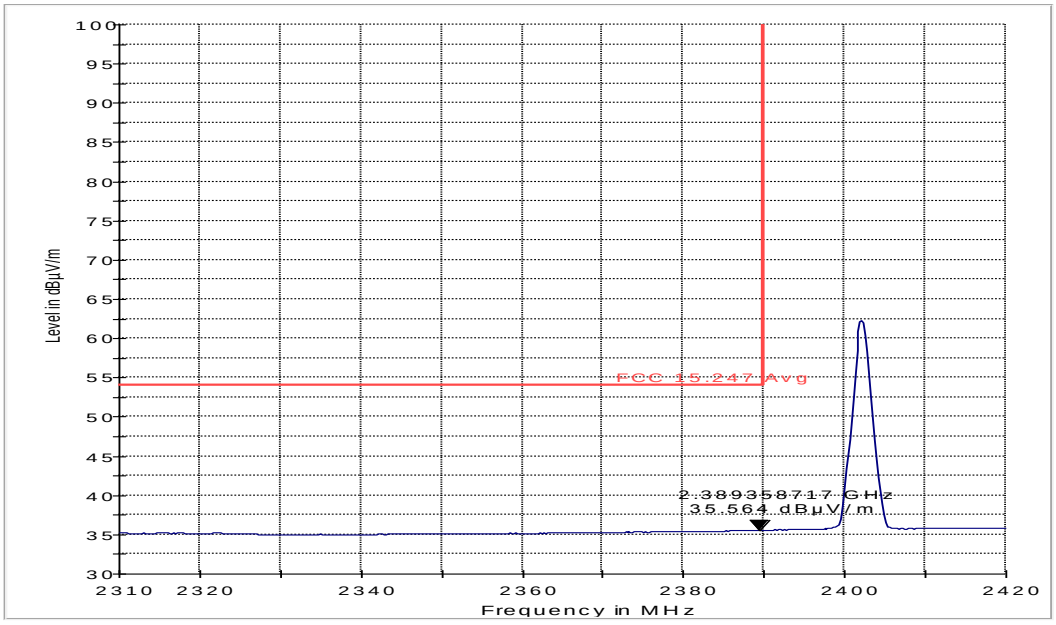
Pass.

6.7 Test Data/plots:

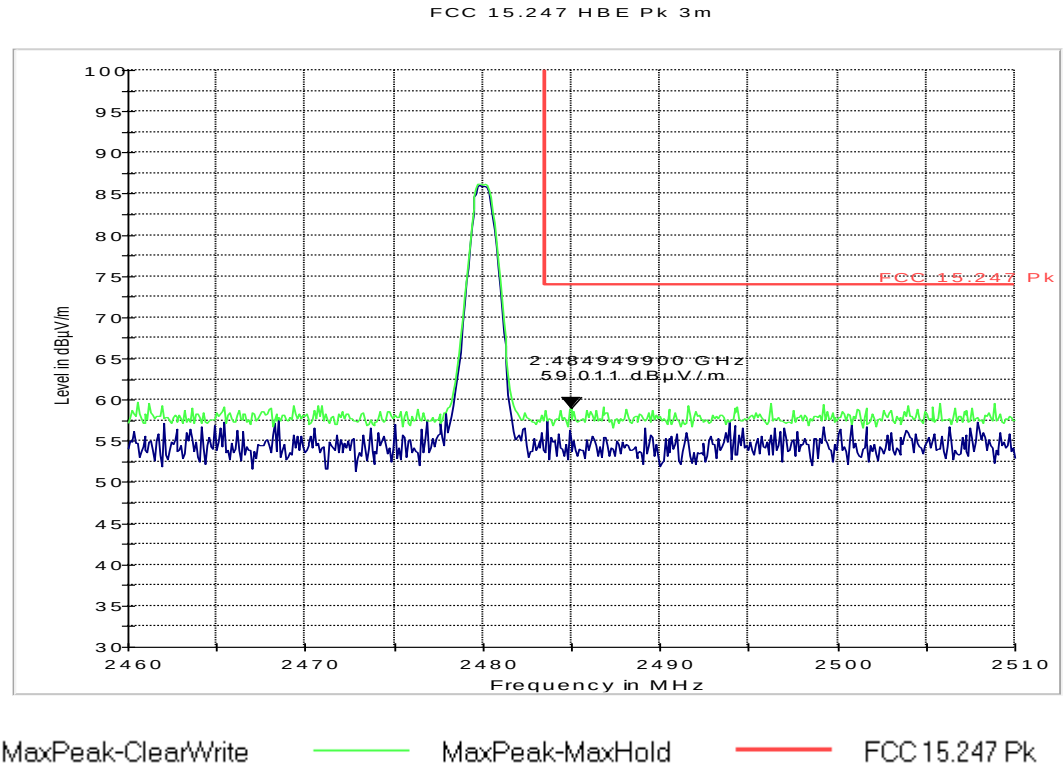
Lower band edge peak -GFSK modulation



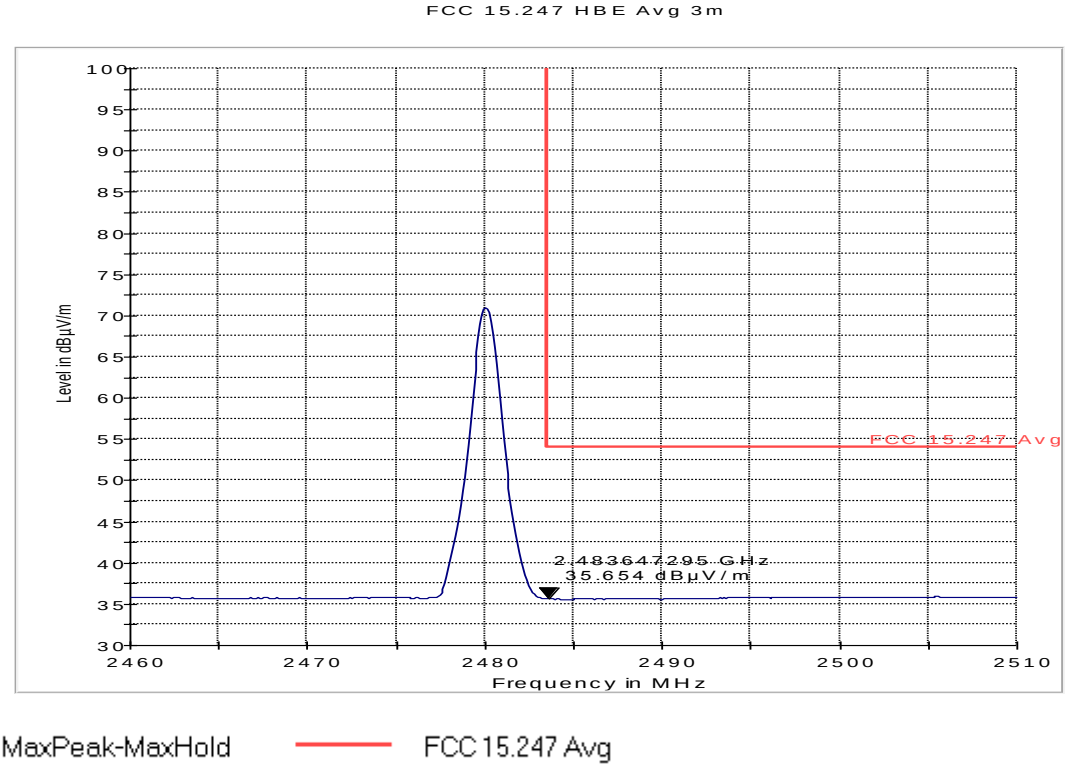
Lower band edge average -GFSK modulation



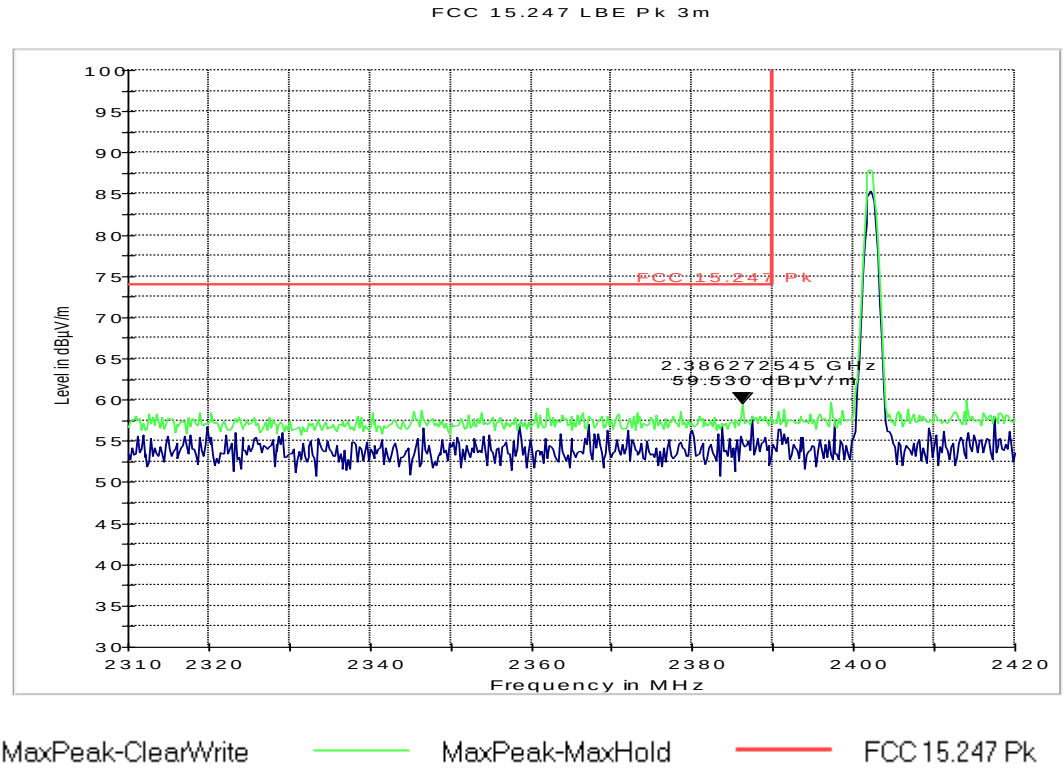
Higher band edge peak -GFSK modulation



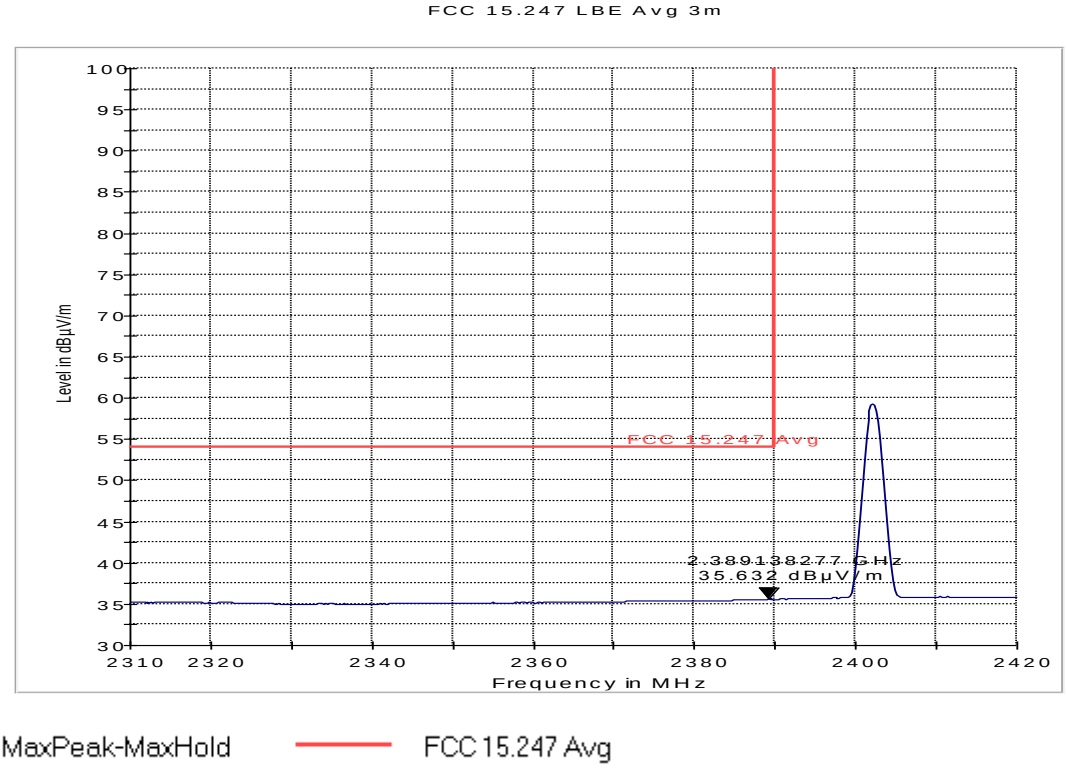
Higher band edge average-GFSK modulation



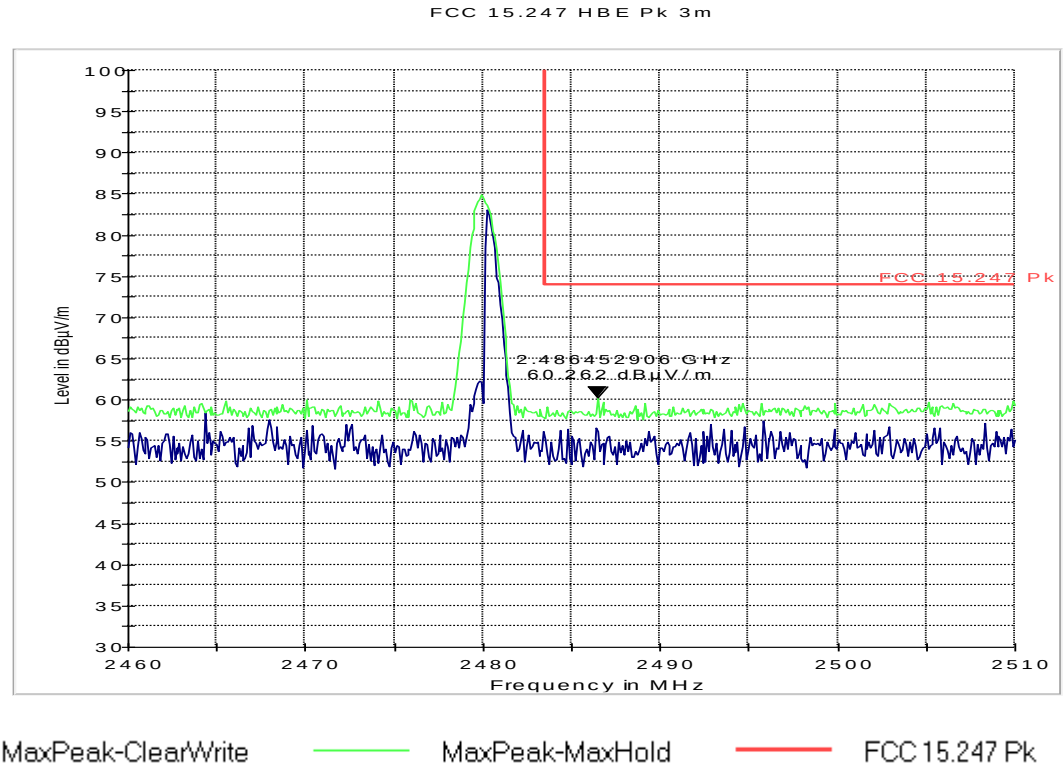
Lower band edge peak - π/4 DQPSK modulation



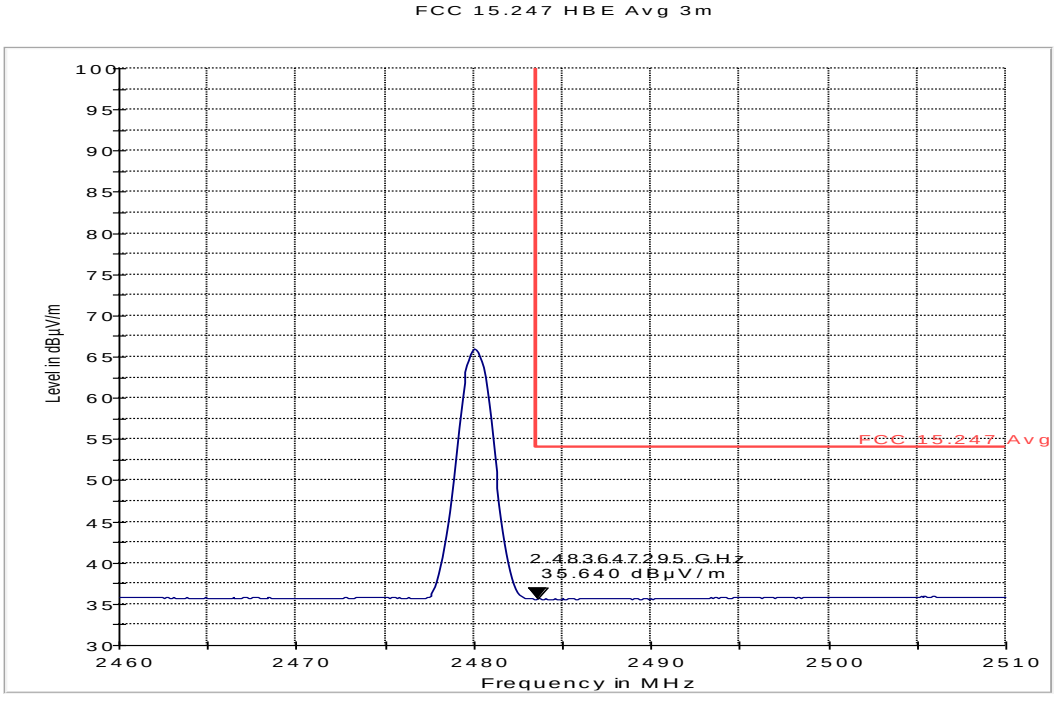
Lower band edge average -π/4 DQPSK modulation



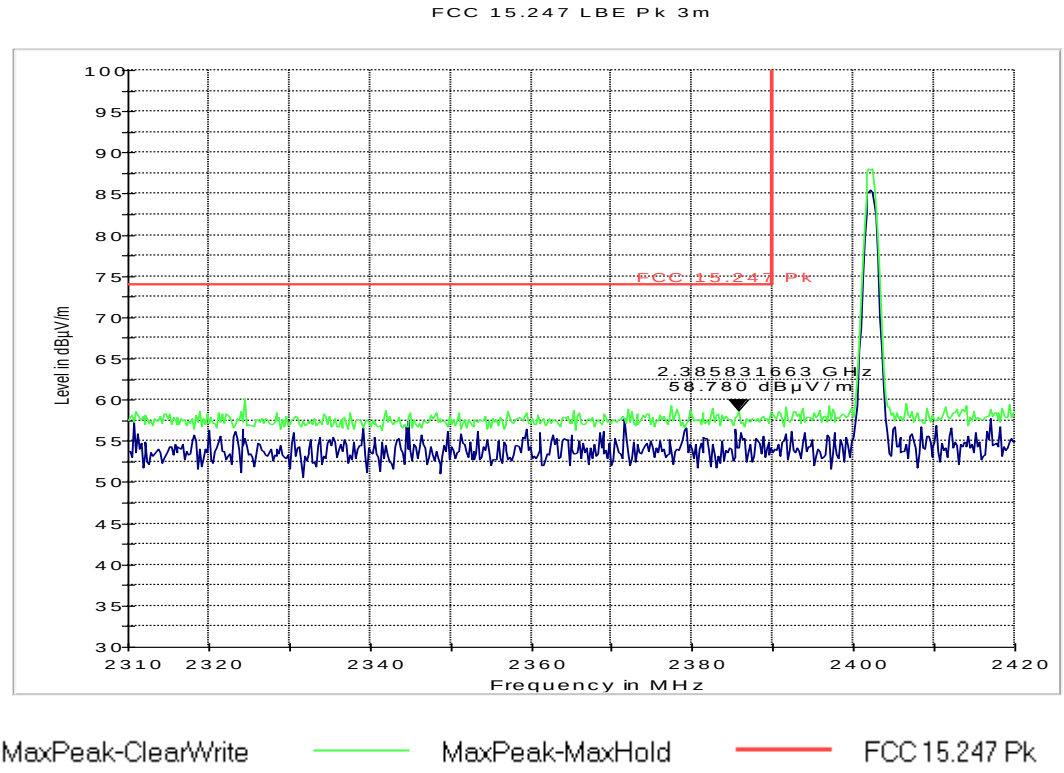
Higher band edge peak -π/4 DQPSK modulation



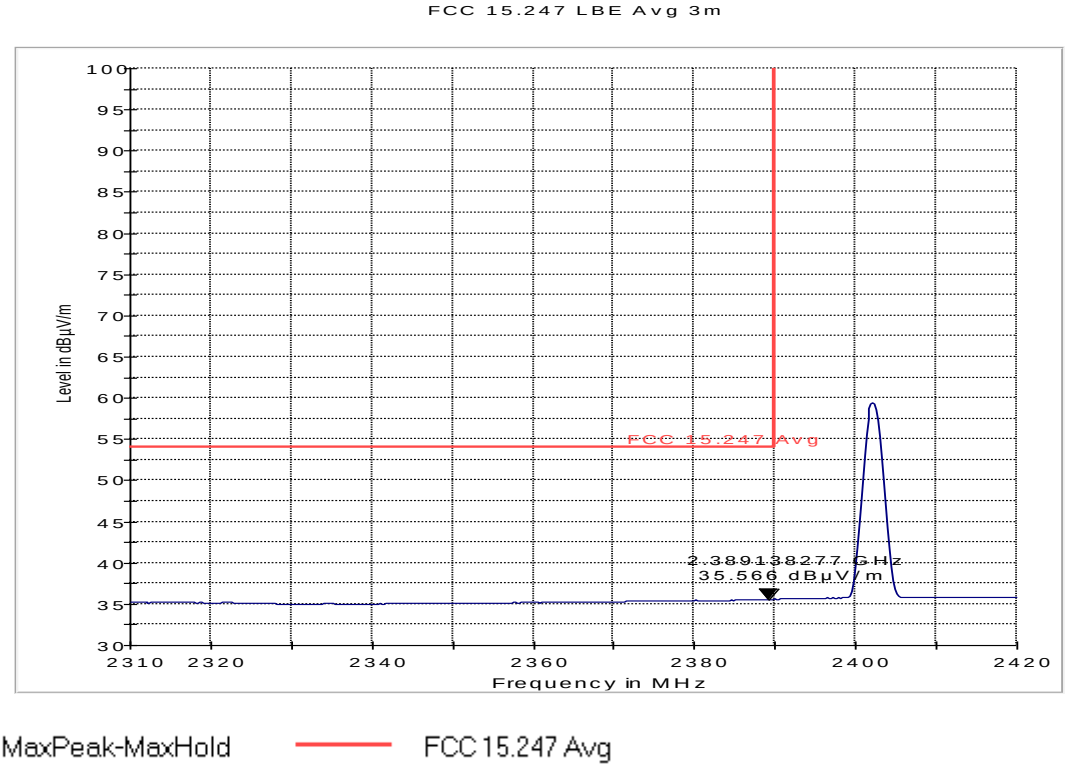
Higher band edge average- π/4 DQPSK modulation



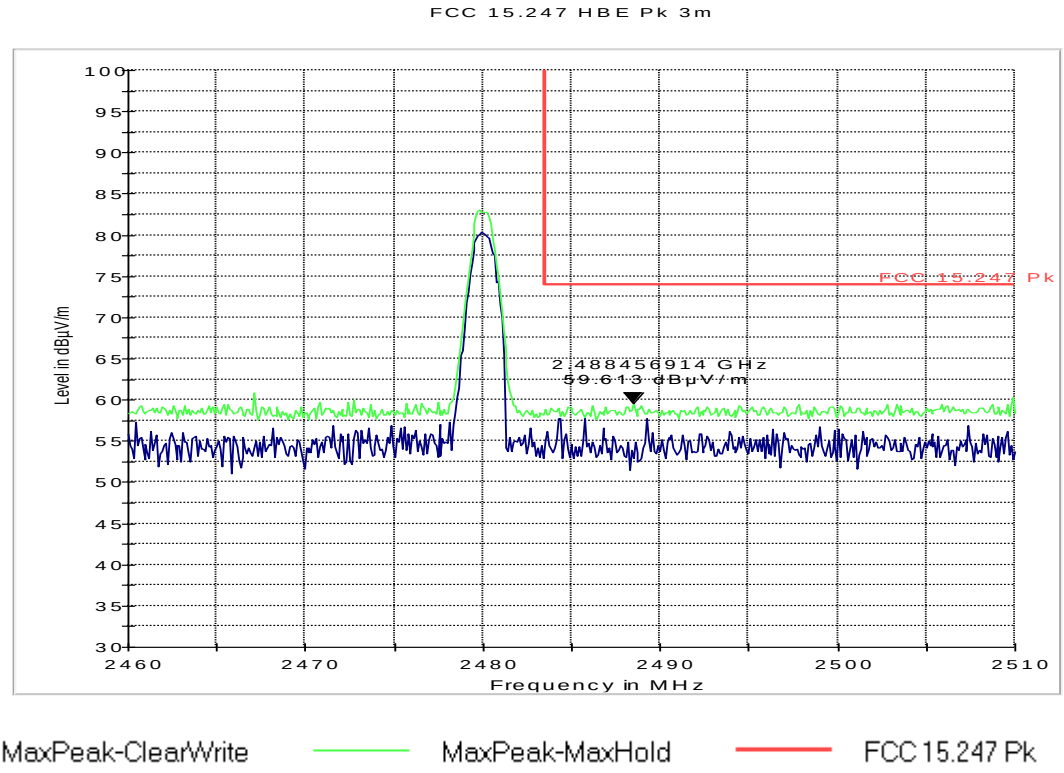
Lower band edge peak - 8DPSK modulation



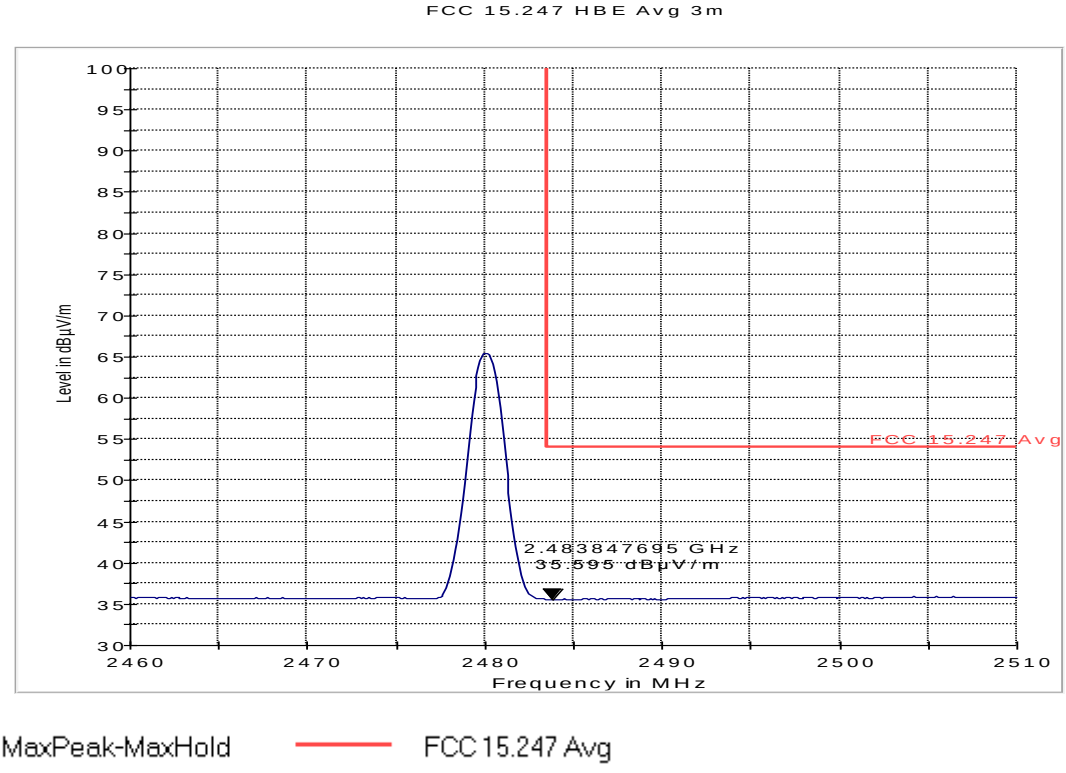
Lower band edge average -8DPSK modulation



Higher band edge peak - 8DPSK modulation



Higher band edge average-8DPSK modulation



6.8 Transmitter Spurious Emissions- Radiated

6.8.1 Limits:

§15.247/15.205
RSS 210-A8.5

Frequency of emission (MHz)	Field strength (µV/m)	Measurement Distance (m)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30

Frequency of emission (MHz)	Field strength (µV/m)
30–88	100 (40dBµV/m)
88–216	150 (43.5 dBµV/m)
216–960	200 (46 dBµV/m)
Above 960	500 (54 dBµV/m)

6.8.2 Test Result:

The device was set to operate in GFSK test mode (highest conducted output power) and measurement results as reported here, represents the worst case radiated spurious emissions.
Unless mentioned otherwise, the emissions outside the limit lines in the plots are from the transmit signal.

For radiated measurements, all data in this report shows the worst case emissions data between H/V antenna polarizations and for all 3 orthogonal orientations of the EUT.

6.8.3 Test Conditions:

Tnom: 25°C; Vnom: 12 V
Hopping OFF

6.8.4 Measurement Procedure:

Peak measurements are made using a peak detector and RBW=120kHz (<1GHz) and RBW= 1MHz (>1GHz)
Measurement Uncertainty: ±3.0dB

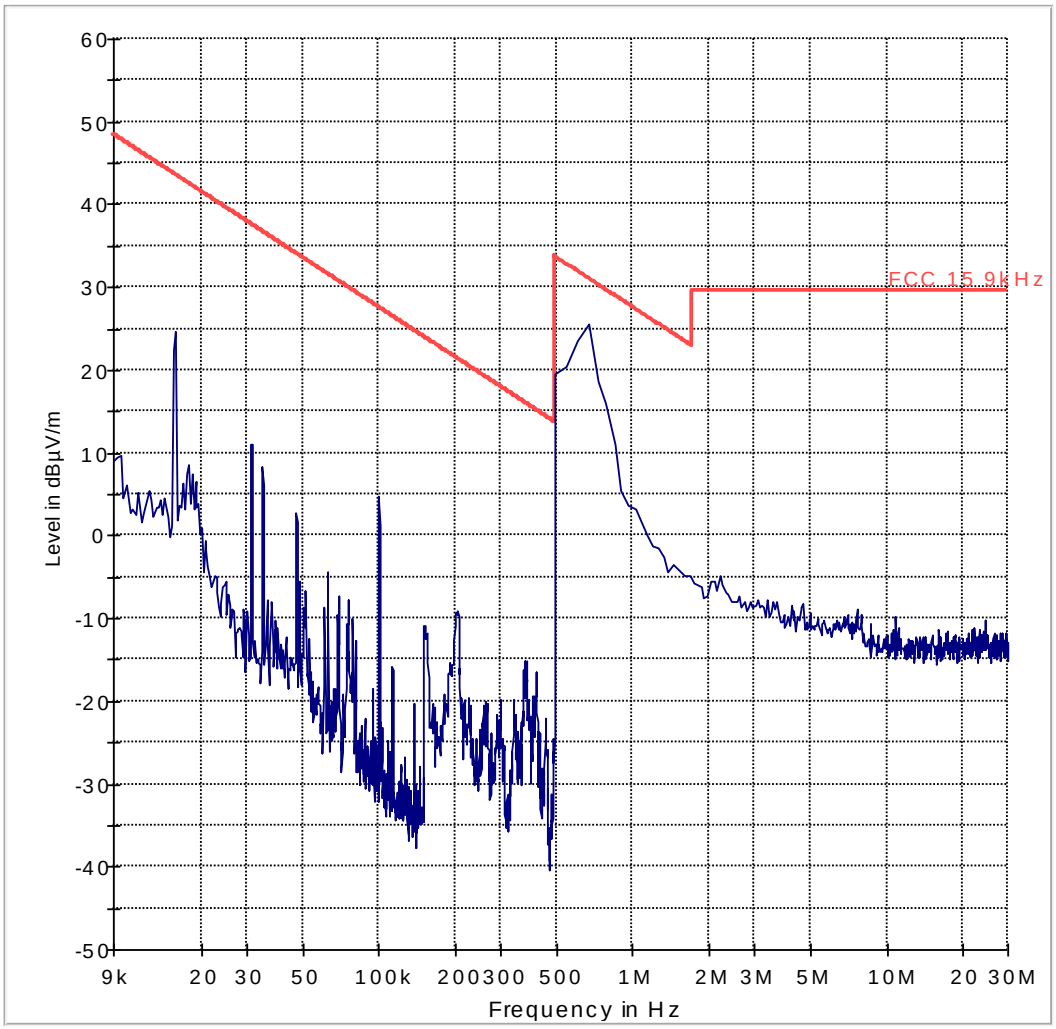
6.8.4.1 Test Verdict

Pass.

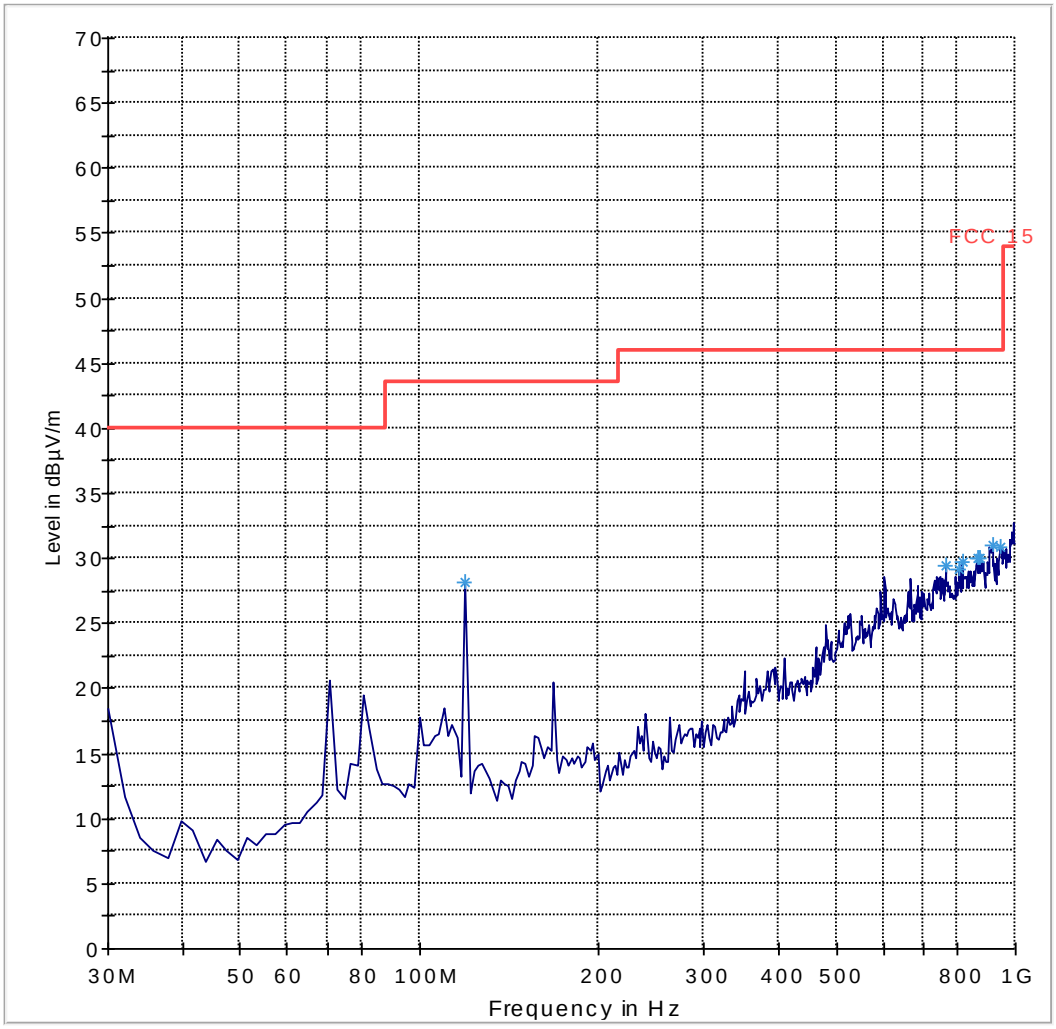
6.8.5 Test data/ plots:

Transmitter Radiated Spurious Emission: Ch39: <30MHz

Note: Worst case representation for all channels and modes of operation in this frequency range- Limits adjusted for 3m measurement.

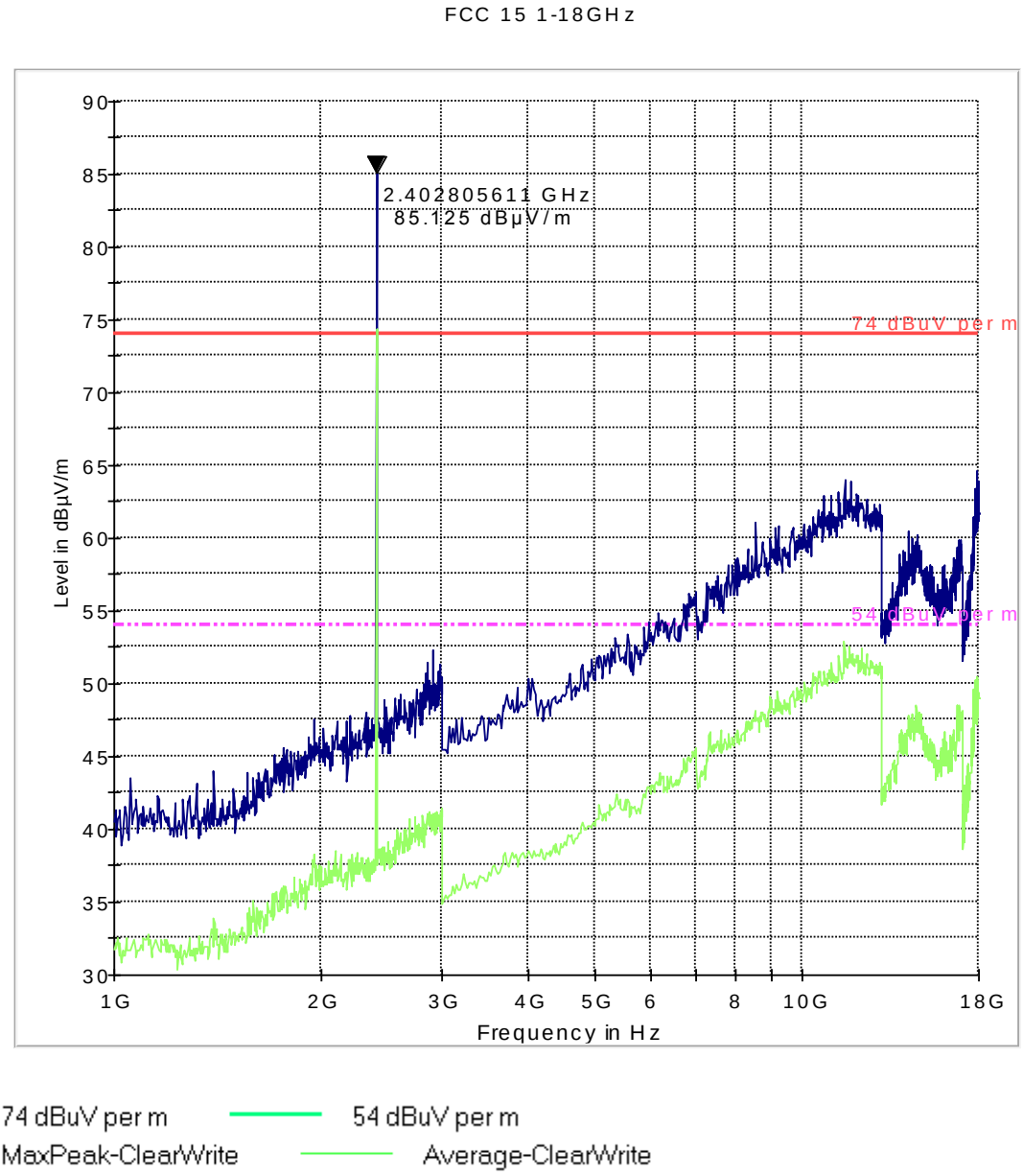


Transmitter Radiated Spurious Emission- Ch0- 30M-1GHz

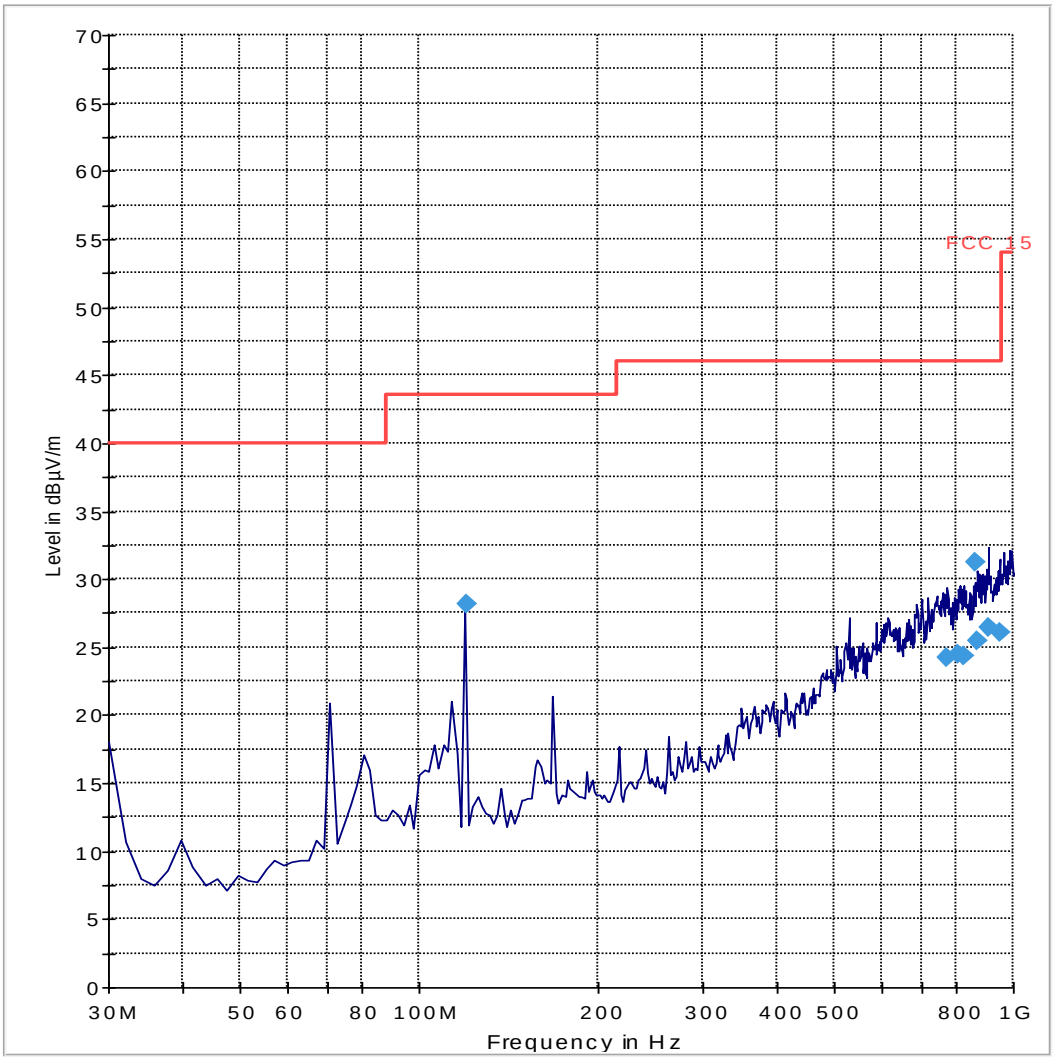


Transmitter Radiated Spurious Emission- Ch0- 1G-18GHz

Note: Signal over the limit is the carrier frequency



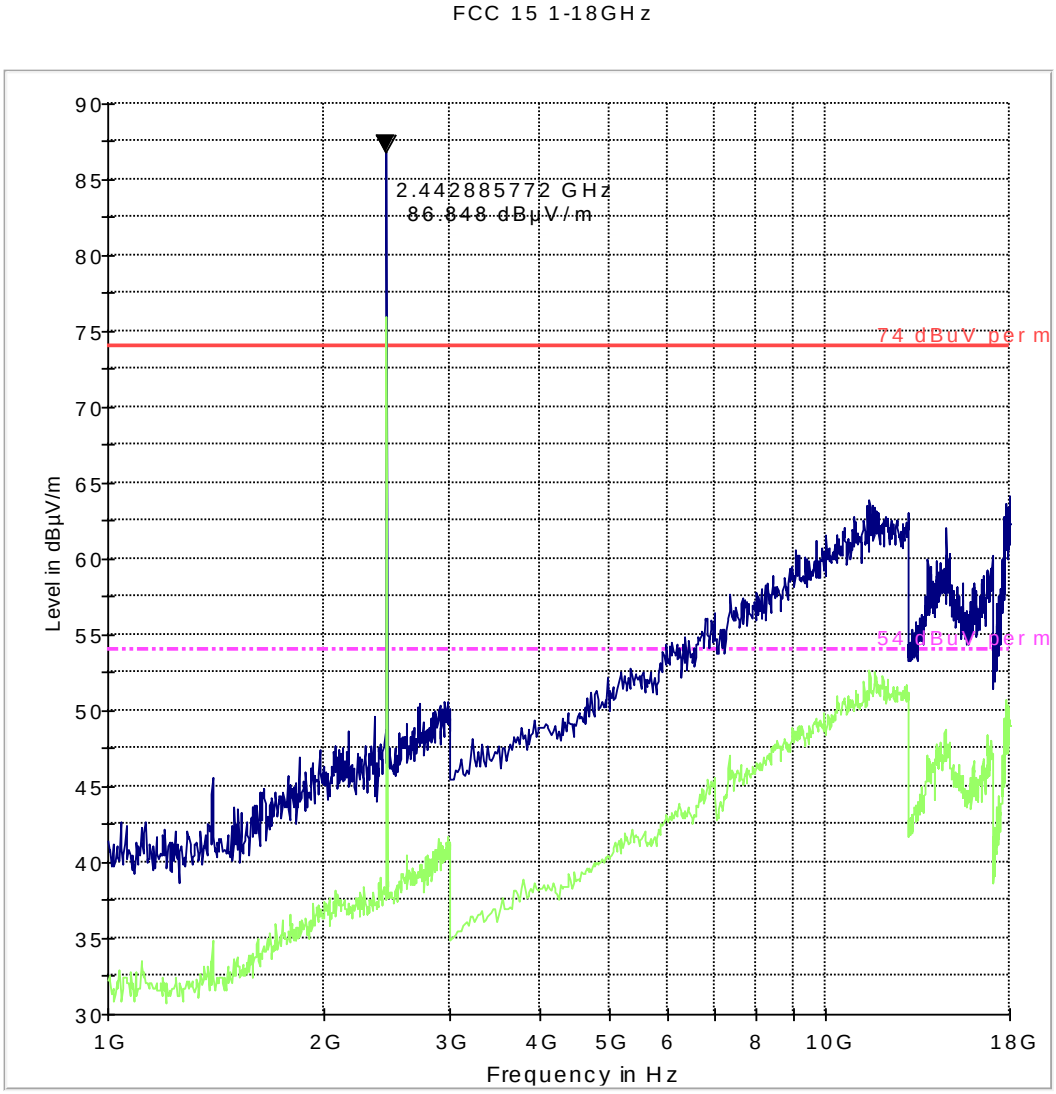
Transmitter Radiated Spurious Emission- Ch39- 30M-1GHz



FCC 15.LimitLine — MaxPeak-ClearWrite
Data Reduction Result — Final Measurement Result

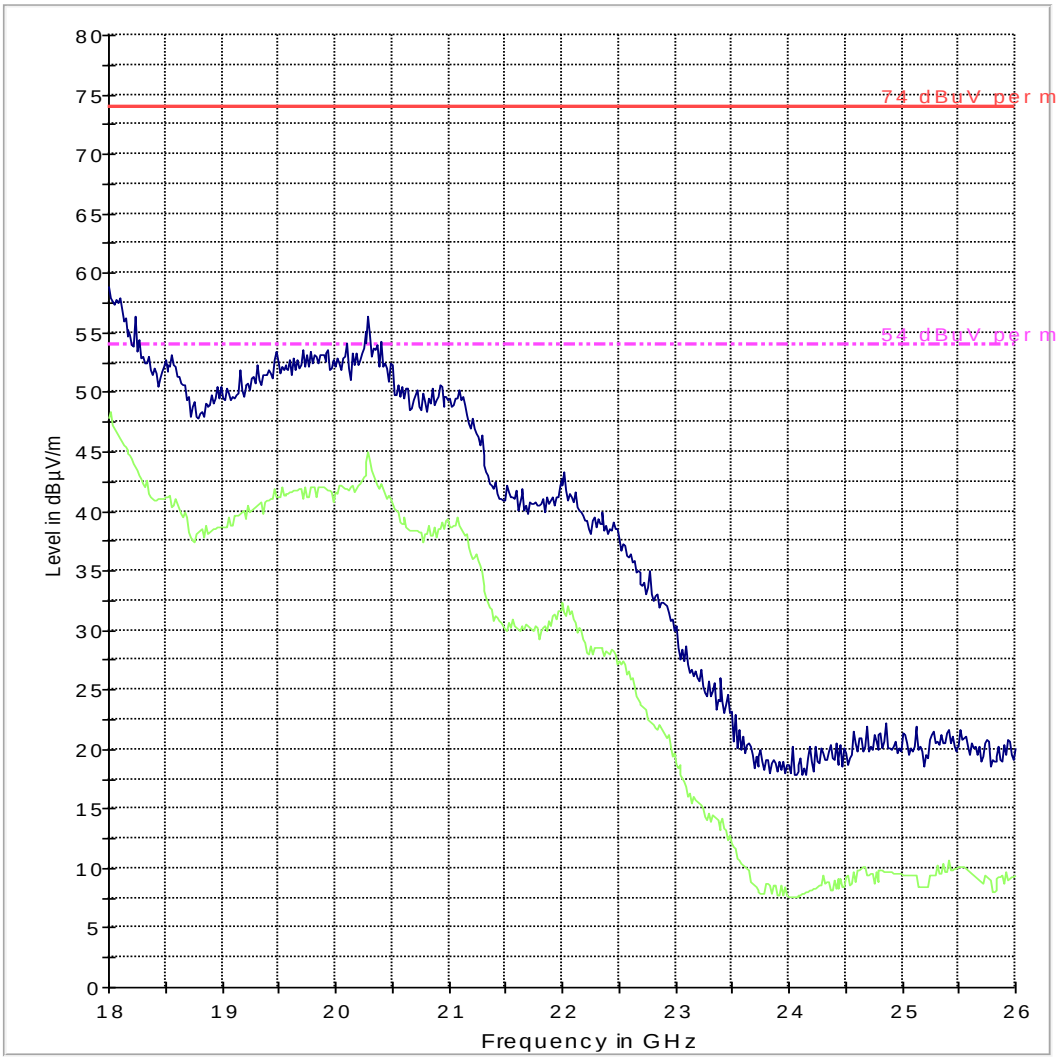
Transmitter Radiated Spurious Emission- Ch39- 1G-18GHz

Note: Signal over the limit is the carrier frequency



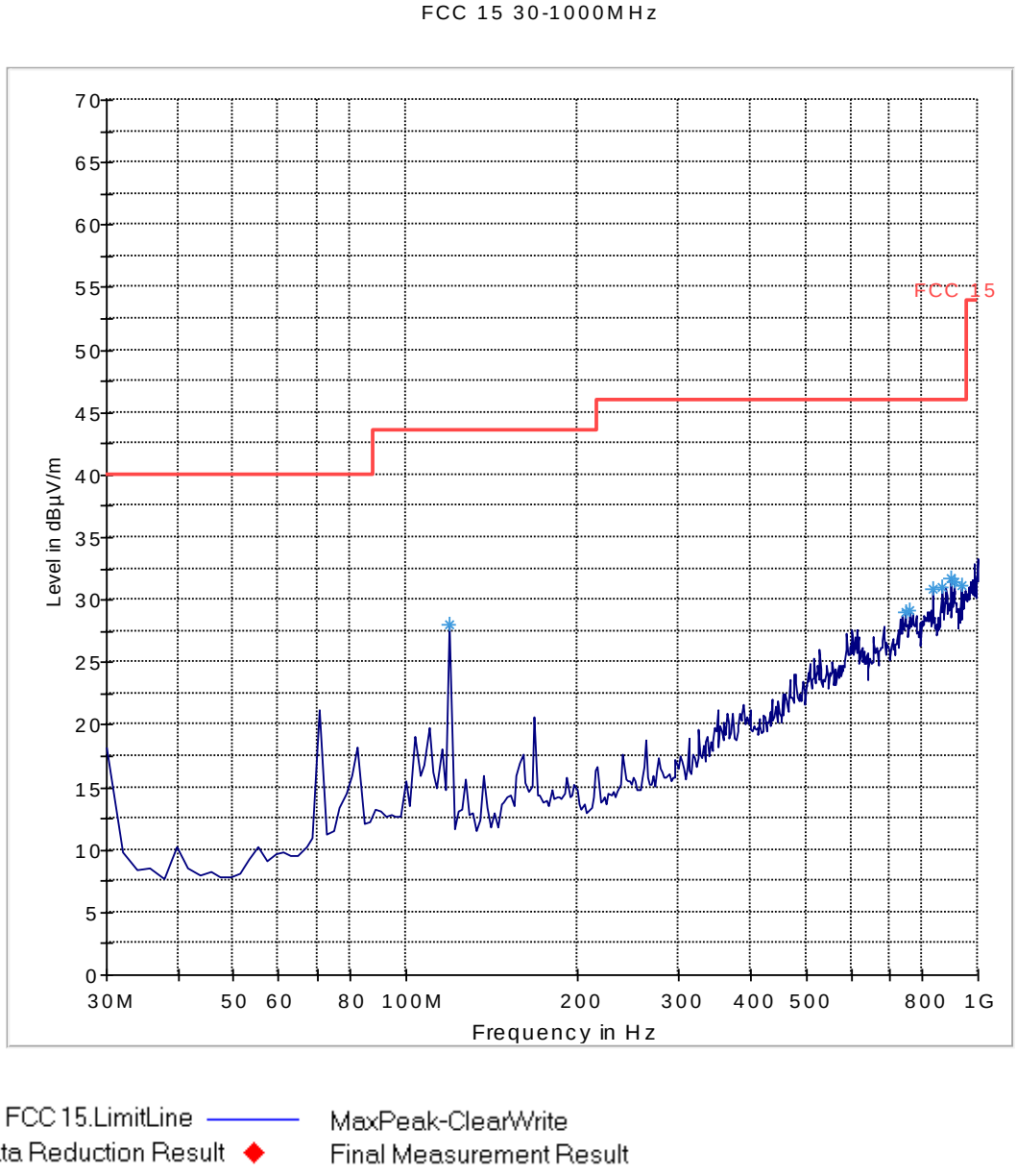
Transmitter Radiated Spurious Emission- Ch39- 18G-26GHz

Note: Worst case representation for all channels and modes of operation in this frequency range-



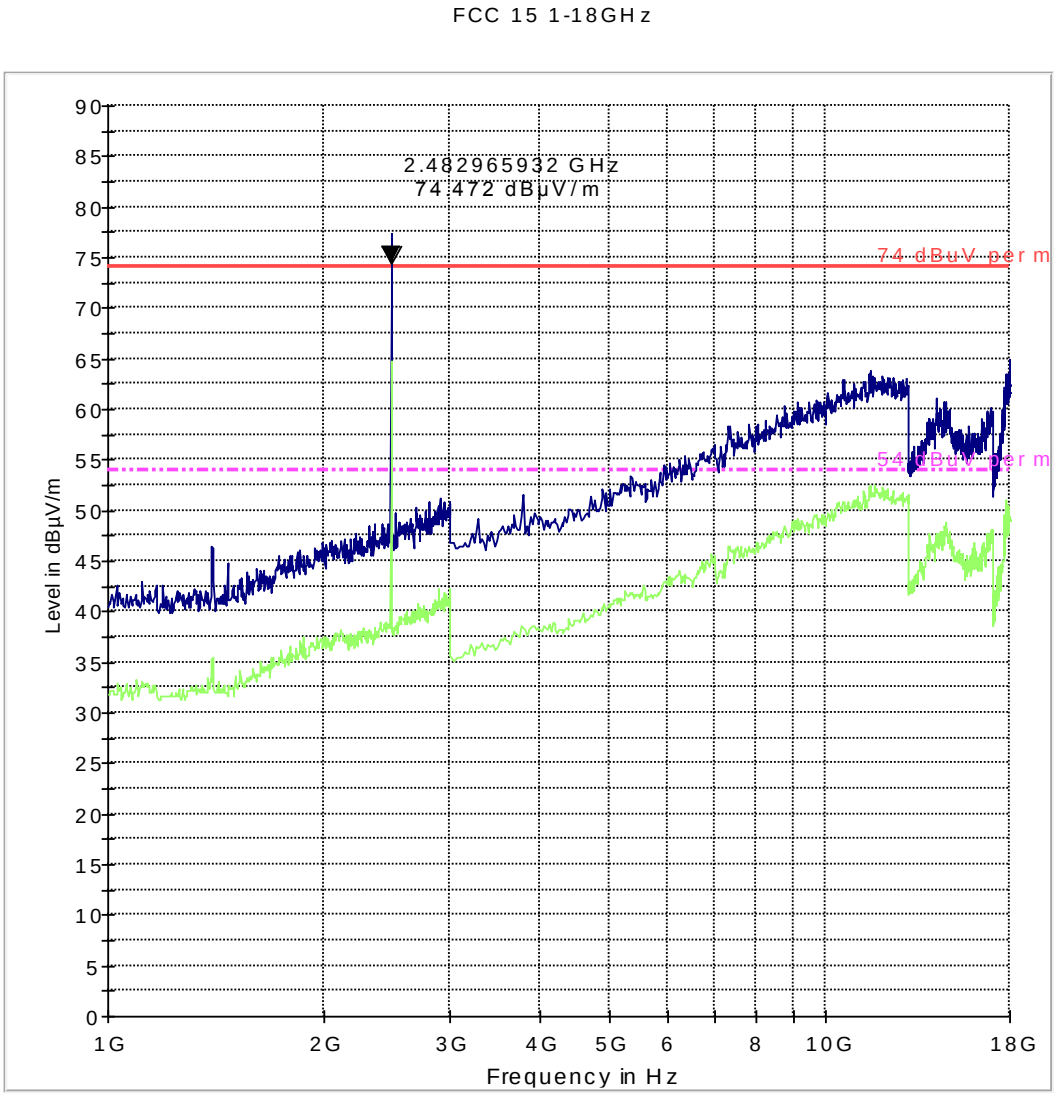
74 dBuV per m
54 dBuV per m
MaxPeak-ClearWrite
Average-ClearWrite

Transmitter Radiated Spurious Emission- Ch78- 30M-1GHz



Transmitter Radiated Spurious Emission- Ch78- 1G-18GHz

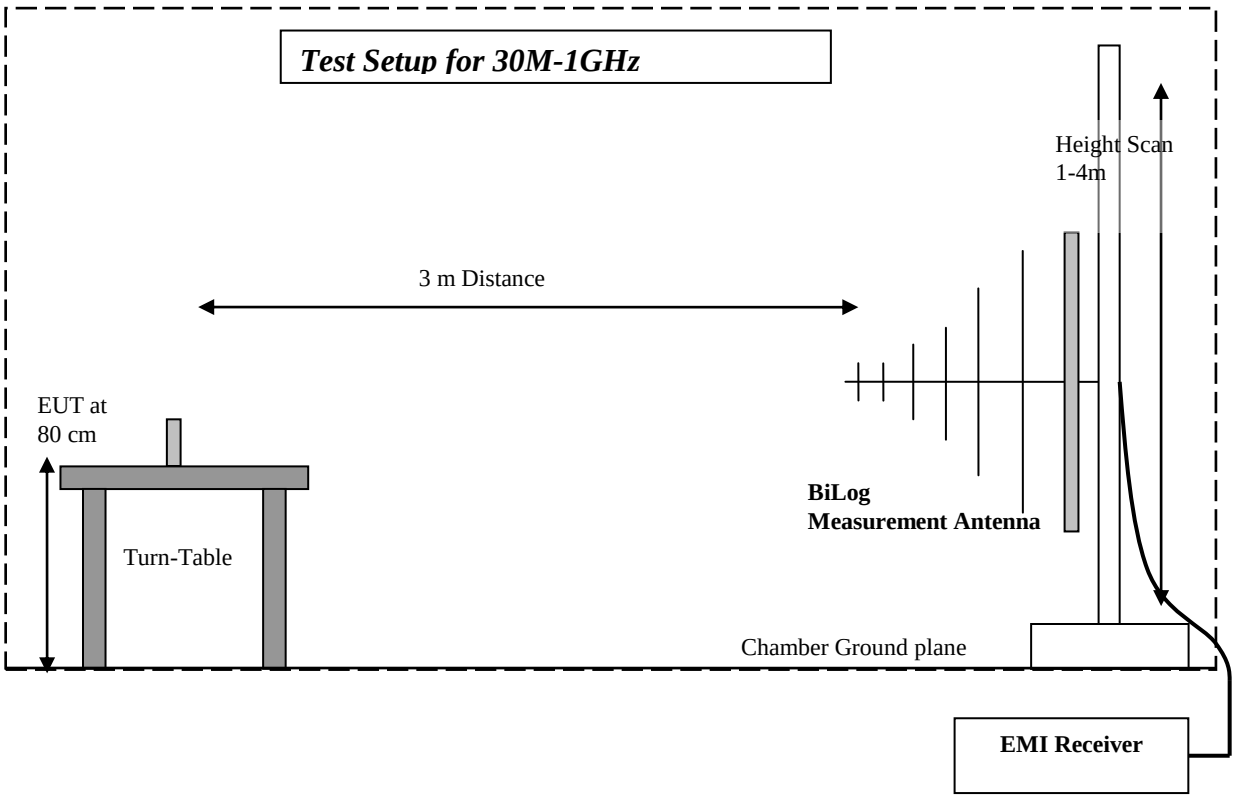
Note: Signal over the limit is the carrier frequency

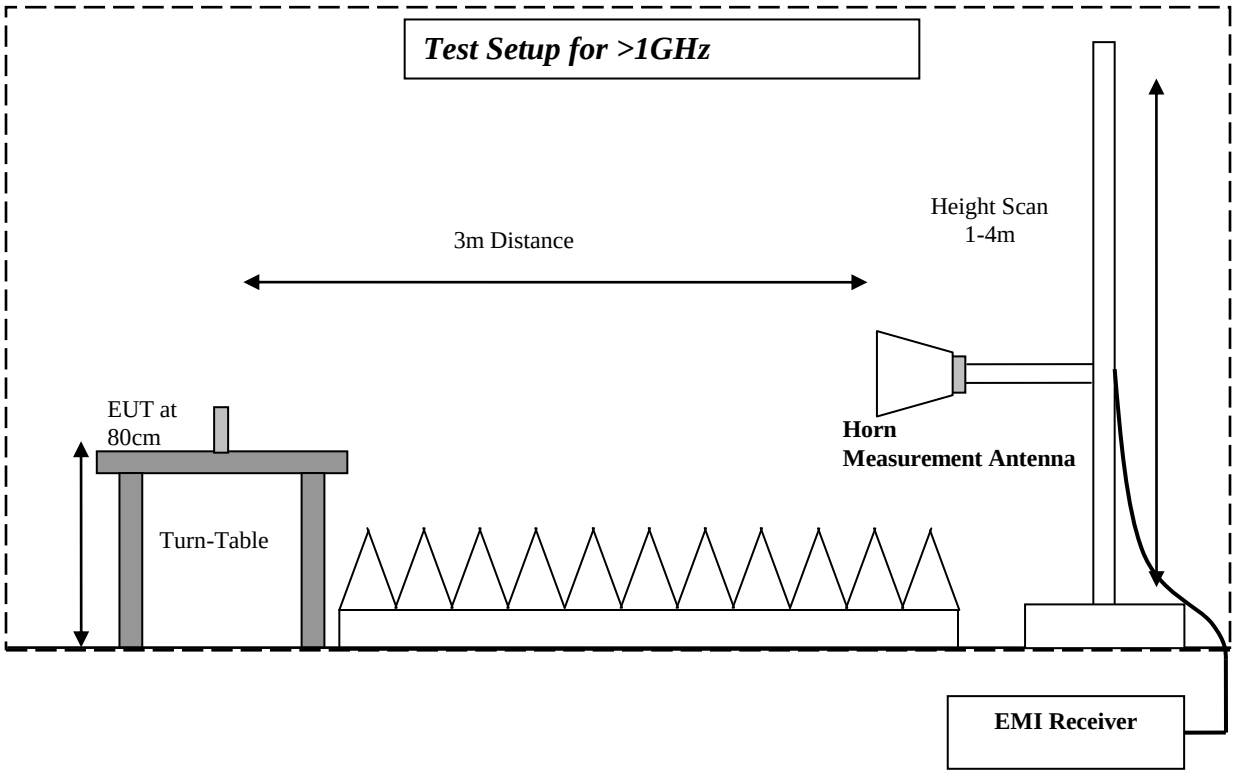


7 Test Equipment and Ancillaries used for tests

Instrument/Ancillary	Model	Manufacturer	Serial No.	Cal Date	Cal Interval
Bluetooth Tester	CBT	Rohde & Schwarz	100212	May 2011	2 Years
EMI Receiver/Analyzer	ESIB 40	Rohde & Schwarz	100107	May 2011	2 Years
Spectrum Analyzer	FSU	Rohde & Schwarz	200302	May 2011	2 Years
Loop Antenna	6512	EMCO	00049838	Aug 2011	3 years
Biconilog Antenna	3141	EMCO	0005-1186	Apr 2012	3 years
Horn Antenna (1-18GHz)	3115	ETS	00035111	Apr 2012	3 years
Horn Antenna (1-18GHz)	3115	ETS	00035114	Mar 2012	3 years
Horn Antenna (18-40GHz)	3116	ETS	00070497	Aug 2011	3 years
Communication Antenna	IBP5-900/1940	Kathrein	n/a	n/a	n/a
High Pass Filter	5HC2700	Trilithic Inc.	9926013	Part of system calibration	
High Pass Filter	4HC1600	Trilithic Inc.	9922307	Part of system calibration	
6GHz High Pass Filter	HPM50106	Microtronics	001	Part of system calibration	
Pre-Amplifier	JS4-00102600	Miteq	00616	Part of system calibration	
Power Smart Sensor	R&S	NRP-Z81	100161	May 2011	2 Years
DC Power Supply	E3610A	Hewlett Packard	KR83023316	n/a	n/a
DC Power Supply	6632A	Hewlett Packard	3524A-12822	n/a	n/a
Multimeter	MM200	Klein	N/A	Apr 2011	2 Years
Temp Hum Logger	TM320	Dickson	03280063	Mar 2012	1 Year
Temp Hum Logger	TM325	Dickson	5285354	Mar 2012	1 Year

8 Test Setup Info:





9 Revision History

Date	Report Name	Changes to report	Report prepared by
2012-07-02	EMC_ HARMA_018_11001 _BE2800_FHSS	First Version	J Sabado
2012-09-06	EMC_ HARMA_018_11001 _BE2800_FHSS_Rev1	Added Sec 2.4 and 2.5	J Sabado