NTS Silicon Valley
www.nts.com
41089 Boyce Road
Fremont, CA 94538
510-578-3500 Phone
510-440-9525 Fax

EMC Test Report

Application for Grant of Equipment Authorization
Class II Permissive Change/Reassessment

Industry Canada RSS-Gen Issue 3 / RSS 210 Issue 8
FCC Part 15 Subpart C

Models: Mercury 5800 Subscriber & Mercury 5800 Base Station

IC CERTIFICATION #:	101D-MERCMIMO5A
FCC ID:	E5MDS-MERCMIMO5A
APPLICANT:	GE MDS LLC 175 Science Parkway Rochester, NY 14620
TEST SITE(S):	NTS Silicon Valley 41039 Boyce Road. Fremont, CA. 94538-2435
IC SITE REGISTRATION #:	2845B-3; 2845B-4 and 2845B-7
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PROGRAM MGR /
TECHNICAL REVIEWER:

David W. Bare
Chief Engineer

QUALITY ASSURANCE DELEGATE /
FINAL REPORT PREPARER:

David Guidotti
Senior Technical Writer

A2LA ACCREDITED
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REVISION HISTORY

Rev#	Date	Comments	Modified By
-	07-19-2012	First release	

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SCOPE

An electromagnetic emissions test has been performed on the GE MDS LLC model Mercury 5800 Subscriber & Mercury 5800 Base Station, pursuant to the following rules:

Industry Canada RSS-Gen Issue 3
RSS 210 Issue 8 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"
FCC Part 15 Subpart C

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in NTS Silicon Valley test procedures:

ANSI C63.4:2003
FCC DTS Measurement Procedure KDB558074

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Industry Canada performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

OBJECTIVE

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, all unlicensed transmitters and transceivers require certification. Receive-only devices operating between 30 MHz and 960 MHz are subject to either certification or a manufacturer's declaration of conformity, with all other receive-only devices exempt from the technical requirements.

Prior to marketing in Canada, Class I transmitters, receivers and transceivers require certification. Class II devices are required to meet the appropriate technical requirements but are exempt from certification requirements.

Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body's review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units, which are subsequently manufactured.

Testing was performed only on model Mercury 5800 Subscriber. This model was considered representative of the Mercury 5800 Base Station.

STATEMENT OF COMPLIANCE

The tested sample of GE MDS LLC model Mercury 5800 Subscriber & Mercury 5800 Base Station complied with the requirements of the following regulations:

Industry Canada RSS-Gen Issue 3
RSS 210 Issue 8 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"
FCC Part 15 Subpart C

Maintenance of compliance is the responsibility of the manufacturer. Any modifications to the product should be assessed to determine their potential impact on the compliance status of the device with respect to the standards detailed in this test report.

The test results recorded herein are based on a single type test of GE MDS LLC model Mercury 5800 Subscriber and therefore apply only to the tested sample. The sample was selected and prepared by Jonathan Vilagy of GE MDS LLC.

DEVIATIONS FROM THE STANDARDS

No deviations were made from the published requirements listed in the scope of this report.

TEST RESULTS SUMMARY

DIGITAL TRANSMISSION SYSTEMS (5725 –5850 MHz)

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.247(a)	RSS 210 A8.2	Digital Modulation	Systems uses OFDM techniques	System must utilize a digital transmission technology	Complies
15.247 (a) (2)	RSS 210 A8.2 (1)	6dB Bandwidth	No change from original submittal	>500kHz	Complies
15.247 (b)	RSS 210 A8.2 (4)	Output Power (multipoint systems)	No change from original submittal	1Watt, EIRP limited to 4 Watts.	Complies
15.247(d)	RSS 210 A8.2 (2)	Power Spectral Density	No change from original submittal	Maximum permitted is 8dBm/3kHz	Complies
15.247(c)	RSS 210 A8.5	Antenna Port Spurious Emissions – 30MHz – 40 GHz	All spurious emissions < -30dBc	< -30dBc Note 1	Complies
15.247(c) / 15.209	RSS 210 A8.5 Table 2, 3	Radiated Spurious Emissions 30MHz – 40 GHz	53.9dBµV/m @ 11575.9MHz (-0.1dB)	15.207 in restricted bands, all others <-30dBc Note 1	Complies
15.203	-	RF Connector	Standard SMA	Professional installation	Complies
15.207	RSS GEN Table 2	AC Conducted Emissions	No change from original submittal	Refer to standard	Complies
15.247 (b) (5) 15.407 (f)	RSS 102	RF Exposure Requirements	Refer to MPE calculations, RSS 102 declaration and User Manual statements.	Refer to OET 65, FCC Part 1 and RSS 102	Complies
-	RSP 100 RSS GEN 7.1.5	User Manual	See statement in manual	Statement required regarding non-interference	Complies
-	RSP 100 RSS GEN 7.1.5	User Manual	See statement in manual	Statement for products with detachable antenna	Complies
-	RSP 100 RSS GEN 4.4.1	99% Bandwidth	No change from original submittal	Information only	N/A

Note 1: Limit of -30dBc used because the power was measured using the UNII test procedure (maximum power averaged over a transmission burst).

MEASUREMENT UNCERTAINTIES

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with UKAS document LAB 34.

Measurement Type	Measurement Unit	Frequency Range	Expanded Uncertainty
RF power, conducted (power meter)	dBm	25 to 7000 MHz	± 0.52 dB
RF power, conducted (Spectrum analyzer)	dBm	25 to 7000 MHz	± 0.7 dB
Conducted emission of transmitter	dBm	25 to 26500 MHz	± 0.7 dB
Radiated emission (field strength)	dBμV/m	25 to 1000 MHz	± 3.6 dB
		1000 to 40000 MHz	± 6.0 dB

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The GE MDS LLC model Mercury 5800 Subscriber & Mercury 5800 Base Station are WiMAX transceivers that are designed to transmit data. The Mercury 5800 radio operates as a 2x2 spacial-multiplexing MIMO radio in the 5725-5850MHz frequency band as a digitally modulated radio under FCC rules section 15.247. Since the EUT could be placed anywhere in use, it was placed on a table top during testing to simulate the end-user environment. The electrical rating of the EUT is 10 - 60 Volts DC, 3 Amps. The Mercury 5800 Subscriber and Mercury 5800 Base Station are identical except for the software that allows the Base Station to act as the center of each point-to-multipoint network and the Subscriber to act as one of the multipoints in the network.

The sample was received on June 21, 2012 and tested on June 21, 25, 26 and 27, 2012. The EUT consisted of the following component(s):

Company	Model(s)	Description	Serial Number	FCC ID
GE MDS LLC	Mercury 5800 Subscriber	WiMAX transceiver	Preproduction	E5MDS-MERCMIMO5A

ANTENNA SYSTEM

The EUT antenna is external 10dBi omni. The antenna connects to the EUT via a standard SMA antenna connector, so is professionally installed per 15.203.

ENCLOSURE

The EUT enclosure is primarily constructed of metal. It measures approximately 20cm wide by 11cm deep by 5cm high.

MODIFICATIONS

No modifications were made to the EUT during the time the product was at NTS Silicon Valley.

SUPPORT EQUIPMENT

The following equipment was used as support equipment for testing:

Company	Model	Description	Serial Number	FCC ID
Agilent	E3610A	Power Supply	MY40011740	-

The following equipment was used as remote support equipment for emissions testing:

Company	Model	Description	Serial Number	FCC ID
Cisco	SD2005	Network Switch	DNI145303V1	-

EUT INTERFACE PORTS

The I/O cabling configuration during testing was as follows:

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
LAN1	Remote Switch	CAT 5	Unshielded	15
LAN2	Remote Switch	CAT 5	Unshielded	15
GPS	Terminator	Coax	Shielded	1
TX/RX1	Antenna	Coax	Shielded	1
TX/RX2	Antenna	Coax	Shielded	1
DC Power	Power Supply	Two wire	Unshielded	1.5
Power Supply AC Power	AC Mains	Three wire	Unshielded	2

Note: The USB and COM1 ports were not connected during testing. GE MDS stated that these are for diagnostic/maintenance purposes and therefore would not normally be connected.

EUT OPERATION

During emissions testing the EUT was set to continuously transmit and OFDM signal at the selected frequency, bandwidth and power setting.

PROPOSED MODIFICATION DETAILS

GENERAL

This section details the modifications to the GE MDS LLC model Mercury 5800 Subscriber & Mercury 5800 Base Station being proposed. All performance and construction deviations from the characteristics originally reported to the FCC are addressed

ANTENNA TYPE

A new antenna type is a 10dBi Omni.

TEST SITE

GENERAL INFORMATION

Final test measurements were taken at the test sites listed below. Pursuant to section 2.948 of the FCC's Rules and section 3.3 of RSP-100, construction, calibration, and equipment data has been filed with the Commission and with industry Canada.

Site	Registration Numbers		Location
	FCC	Canada	
Chamber 3	769238	2845B-3	41039 Boyce Road Fremont, CA 94538-2435
Chamber 4	211948	2845B-4	
Chamber 7	A2LA accreditation	2845B-7	

ANSI C63.4:2003 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement. The test site(s) contain separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4:2003.

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.4:2003. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

RADIATED EMISSIONS CONSIDERATIONS

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment or in a semi-anechoic chamber. The test sites are maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4:2003 guidelines and meet the Normalized Site Attenuation (NSA) requirements of ANSI C63.4:2003.

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

An EMI receiver as specified in CISPR 16-1-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements. If the repetition frequency of the signal being measured is below 20Hz, peak measurements are made in lieu of Quasi-Peak measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz, unless the signal is pulsed in which case the average (or video) bandwidth of the measuring instrument is reduced to onset of pulse desensitization and then increased.

INSTRUMENT CONTROL COMPUTER

The receivers utilize either a Rohde & Schwarz EZM Spectrum Monitor/Controller or contain an internal Spectrum Monitor/Controller to view and convert the receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers.

The Spectrum Monitor provides a visual display of the signal being measured. In addition, the controller or a personal computer run automated data collection programs which control the receivers. This provides added accuracy since all site correction factors, such as cable loss and antenna factors are added automatically.

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.

FILTERS/ATTENUATORS

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

ANTENNAS

A loop antenna is used below 30 MHz. For the measurement range 30 MHz to 1000 MHz either a combination of a biconical antenna and a log periodic or a bi-log antenna is used. Above 1000 MHz, horn antennas are used. The antenna calibration factors to convert the received voltage to an electric field strength are included with appropriate cable loss and amplifier gain factors to determine an overall site factor, which is then programmed into the test receivers or incorporated into the test software.

ANTENNA MAST AND EQUIPMENT TURNTABLE

The antennas used to measure the radiated electric field strength are mounted on a non-conductive antenna mast equipped with a motor-drive to vary the antenna height. Measurements below 30 MHz are made with the loop antenna at a fixed height of 1m above the ground plane.

ANSI C63.4:2003 specifies that the test height above ground for table mounted devices shall be 80 centimeters. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

INSTRUMENT CALIBRATION

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

TEST PROCEDURES

EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.4:2003, and the worst-case orientation is used for final measurements.

CONDUCTED EMISSIONS

Conducted emissions are measured at the plug end of the power cord supplied with the EUT. Excess power cord length is wrapped in a bundle between 30 and 40 centimeters in length near the center of the cord. Preliminary measurements are made to determine the highest amplitude emission relative to the specification limit for all the modes of operation. Placement of system components and varying of cable positions are performed in each mode. A final peak mode scan is then performed in the position and mode for which the highest emission was noted on all current carrying conductors of the power cord.

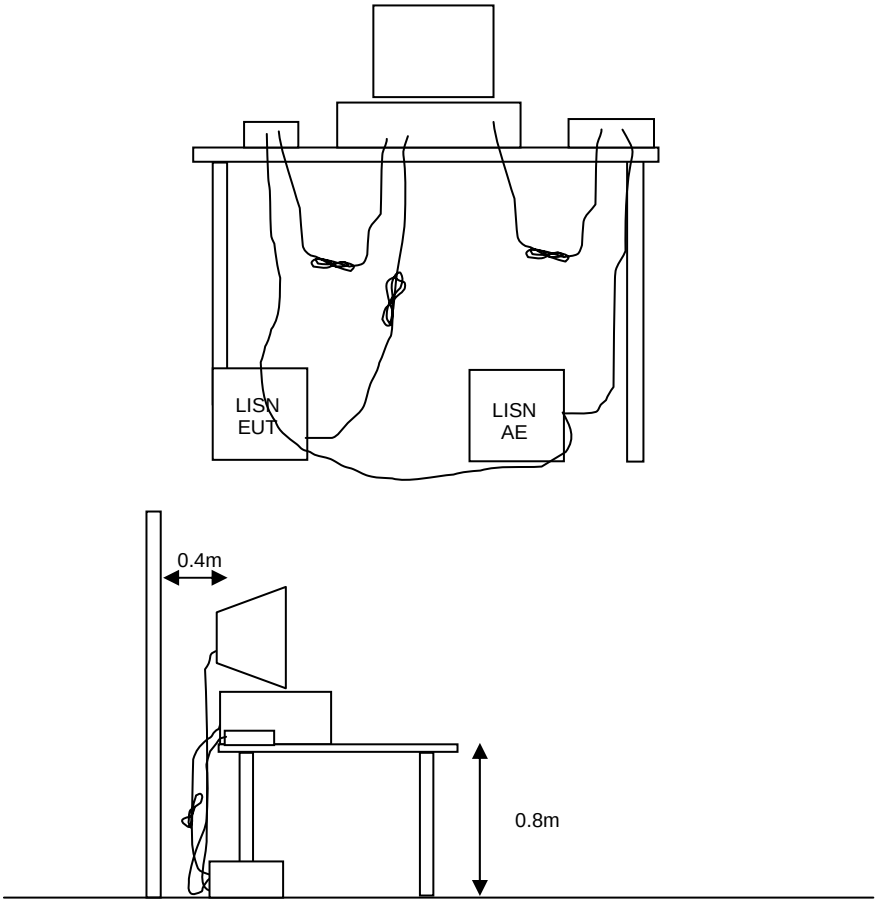


Figure 1 Typical Conducted Emissions Test Configuration

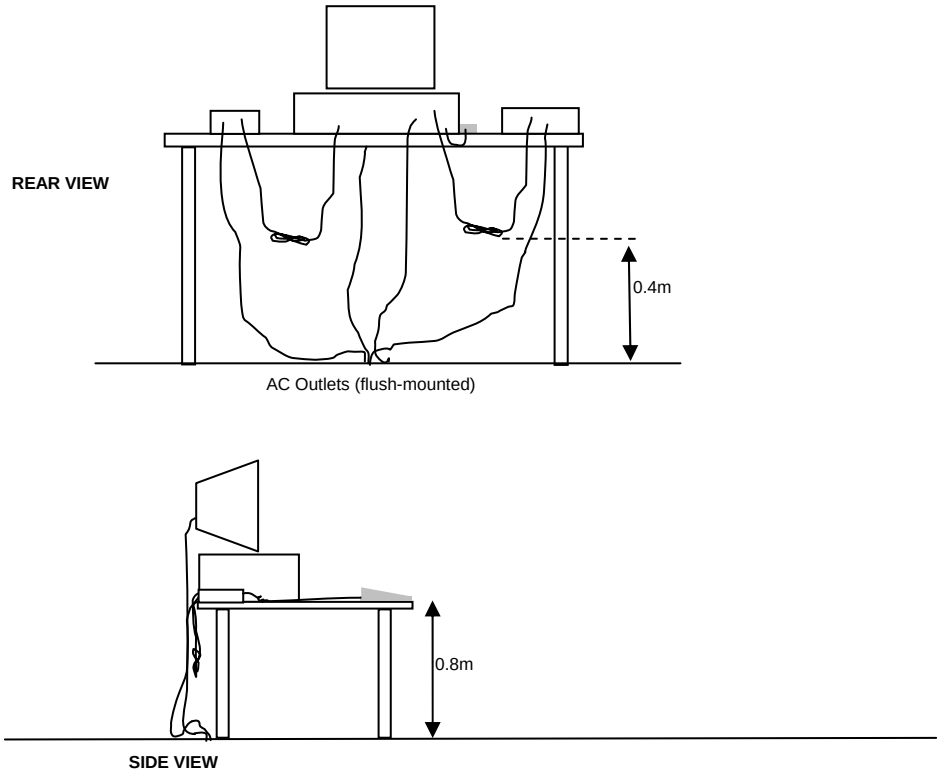
RADIATED EMISSIONS

A preliminary scan of the radiated emissions is performed in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed, one scan for each antenna polarization (horizontal and vertical; loop parallel and perpendicular to the EUT). During the preliminary scans, the EUT is rotated through 360˚, the antenna height is varied (for measurements above 30 MHz) and cable positions are varied to determine the highest emission relative to the limit. Preliminary scans may be performed in a fully anechoic chamber for the purposes of identifying the frequencies of the highest emissions from the EUT.

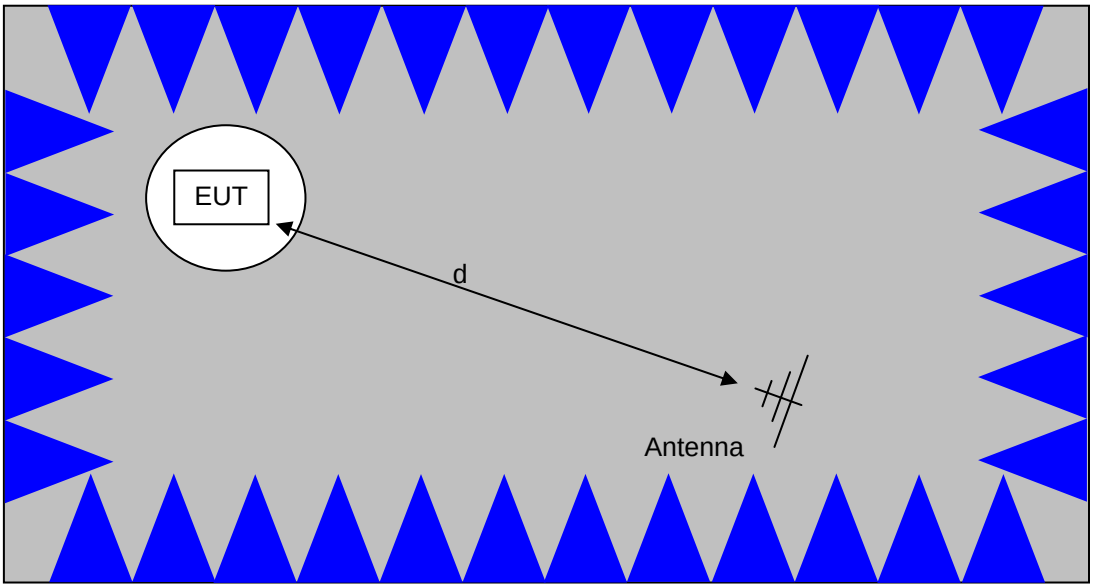
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth, which results in the highest emission is then maintained while varying the antenna height from one to four meters (for measurements above 30 MHz, measurements below 30 MHz are made with the loop antenna at a fixed height of 1m). The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain.

When testing above 18 GHz, the receive antenna is located at 1meter from the EUT and the antenna height is restricted to a maximum of 2.5 meters.

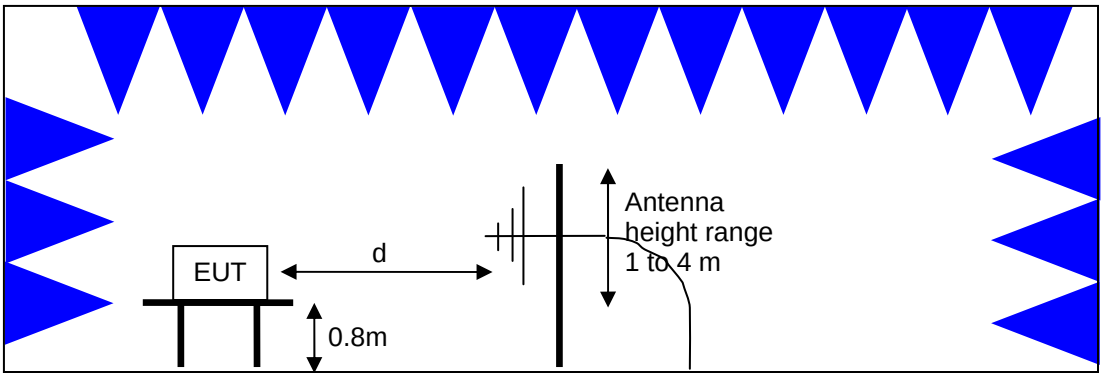


Typical Test Configuration for Radiated Field Strength Measurements



The anechoic materials on the walls and ceiling ensure compliance with the normalized site attenuation requirements of CISPR 16 / CISPR 22 / ANSI C63.4 for an alternate test site at the measurement distances used.

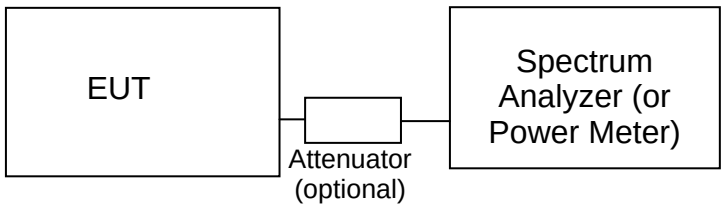
Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



Test Configuration for Radiated Field Strength Measurements
Semi-Anechoic Chamber, Plan and Side Views

CONDUCTED EMISSIONS FROM ANTENNA PORT

Direct measurements of power, bandwidth and power spectral density are performed, where possible, with the antenna port of the EUT connected to either the power meter or spectrum analyzer via a suitable attenuator and/or filter. These are used to ensure that the front end of the measurement instrument is not overloaded by the fundamental transmission.



Test Configuration for Antenna Port Measurements

Measurement bandwidths (video and resolution) are set in accordance with the relevant standards and NTS Silicon Valley's test procedures for the type of radio being tested. When power measurements are made using a resolution bandwidth less than the signal bandwidth the power is calculated by summing the power across the signal bandwidth using either the analyzer channel power function or by capturing the trace data and calculating the power using software. In both cases the summed power is corrected to account for the equivalent noise bandwidth (ENBW) of the resolution bandwidth used.

If power averaging is used (typically for certain digital modulation techniques), the EUT is configured to transmit continuously. Power averaging is performed using either the built-in function of the analyzer or, if the analyzer does not feature power averaging, using external software. In both cases the average power is calculated over a number of sweeps (typically 100). When the EUT cannot be configured to continuously transmit then either the analyzer is configured to perform a gated sweep to ensure that the power is averaged over periods that the device is transmitting or power averaging is disabled and a max-hold feature is used.

If a power meter is used to make output power measurements the sensor head type (peak or average) is stated in the test data table.

BANDWIDTH MEASUREMENTS

The 6dB, 20dB and/or 26dB signal bandwidth is measured in using the bandwidths recommended by ANSI C63.4. When required, the 99% bandwidth is measured using the methods detailed in RSS GEN.

SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

The limits for conducted emissions are given in units of microvolts, and the limits for radiated emissions are given in units of microvolts per meter at a specified test distance. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

For reference, converting the specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. These limits in both linear and logarithmic form are as follows:

GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands[1] (with the exception of transmitters operating under FCC Part 15 Subpart D and RSS 210 Annex 9), the limits for all emissions from a low power device operating under the general rules of RSS 310 (tables 3 and 4), RSS 210 (table 2) and FCC Part 15 Subpart C section 15.209.

Frequency Range (MHz)	Limit (uV/m)	Limit (dBuV/m @ 3m)
0.009-0.490	$2400/F_{KHz}$ @ 300m	$67.6-20*\log_{10}(F_{KHz})$ @ 300m
0.490-1.705	$24000/F_{KHz}$ @ 30m	$87.6-20*\log_{10}(F_{KHz})$ @ 30m
1.705 to 30	30 @ 30m	29.5 @ 30m
30 to 88	100 @ 3m	40 @ 3m
88 to 216	150 @ 3m	43.5 @ 3m
216 to 960	200 @ 3m	46.0 @ 3m
Above 960	500 @ 3m	54.0 @ 3m

RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from receivers as detailed in FCC Part 15.109, RSS 210 Table 2, RSS GEN Table 1 and RSS 310 Table 3. Note that receivers operating outside of the frequency range 30 MHz – 960 MHz are exempt from the requirements of 15.109.

Frequency Range (MHz)	Limit (uV/m @ 3m)	Limit (dBuV/m @ 3m)
30 to 88	100	40
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

[1] The restricted bands are detailed in FCC 15.203, RSS 210 Table 1 and RSS 310 Table 2

OUTPUT POWER LIMITS – DIGITAL TRANSMISSION SYSTEMS

The table below shows the limits for output power and output power density. Where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency (MHz)	Output Power	Power Spectral Density
902 – 928	1 Watt (30 dBm)	8 dBm/3kHz
2400 – 2483.5	1 Watt (30 dBm)	8 dBm/3kHz
5725 – 5850	1 Watt (30 dBm)	8 dBm/3kHz

The maximum permitted output power is reduced by 1dB for every dB the antenna gain exceeds 6dBi. Fixed point-to-point applications using the 5725 – 5850 MHz band are not subject to this restriction.

TRANSMIT MODE SPURIOUS RADIATED EMISSIONS LIMITS – FHSS and DTS SYSTEMS

The limits for unwanted (spurious) emissions from the transmitter falling in the restricted bands are those specified in the general limits sections of FCC Part 15 and RSS 210. All other unwanted (spurious) emissions shall be at least 20dB below the level of the highest in-band signal level (30dB if the power is measured using the sample detector/power averaging method).

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

Receiver readings are compared directly to the conducted emissions specification limit (decibel form) as follows:

$$R_r - S = M$$

where:

R_r = Receiver Reading in dBuV

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor, when used for electric field measurements above 30MHz, is calculated by using the following formula:

$$F_d = 20*LOG_{10} (D_m/D_s)$$

where:

F_d = Distance Factor in dB

D_m = Measurement Distance in meters

D_S = Specification Distance in meters

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

$$F_d = 40*LOG_{10} (D_m/D_S)$$

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

The margin of a given emission peak relative to the limit is calculated as follows:

$$R_c = R_r + F_d$$

and

$$M = R_c - L_S$$

where:

R_r = Receiver Reading in dBuV/m

F_d = Distance Factor in dB

R_c = Corrected Reading in dBuV/m

L_S = Specification Limit in dBuV/m

M = Margin in dB Relative to Spec

SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp), or where a field strength measurement of output power is made in lieu of a direct measurement, the following formula is used to convert between eirp and field strength at a distance of d (meters) from the equipment under test:

$$E = \frac{1000000 \sqrt{30 P}}{d} \text{ microvolts per meter}$$

where P is the eirp (Watts)

For a measurement at 3m the conversion from a logarithmic value for field strength (dBuV/m) to an eirp power (dBm) is -95.3dB.

Appendix A Test Equipment Calibration Data

Manufacturer	Description	Model	Asset #	Cal Due
Radiated Emissions, 30 - 40000MHz, 20-Apr-12				
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	8/2/2012
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	8/15/2012
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	2199	2/23/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	10/4/2012
Radiated Emissions, 30 - 18,000 MHz, 21-Jun-12				
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	3/29/2013
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	9/21/2012
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/1/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	10/4/2012
Radiated Emissions, 1000 - 18,000 MHz, 26-Jun-12				
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	8/15/2012
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	9/21/2012
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	3/23/2013
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	11/22/2012
Radiated Emissions, 1,000 - 18,000 MHz, 26-Jun-12				
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	3/29/2013
EMCO	Antenna, Horn, 1-18 GHz	3115	786	12/19/2013
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	5/1/2013
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	10/4/2012
Hewlett Packard	High Pass filter, 8.2 GHz	P/N 84300-80039	1156	6/7/2013
Radiated Emissions, 1000 - 18,000 MHz, 27-Jun-12				
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	8/15/2012
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	9/21/2012
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	3/23/2013
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	11/22/2012

Appendix B Test Data

T87282 Pages 23 - 78

Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		-
Emissions Standard(s):	FCC Part15.247, RSS-210 Issue 7	Class:	-
Immunity Standard(s):	-	Environment:	-

EMC Test Data

For The

GE MDS LLC

Model

Mercury 5800 IDU

Date of Last Test: 6/27/2012

Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Antenna Port Measurements
MIMO and Smart Antenna Systems
Power, PSD, Bandwidth and Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 6/27/2012
Test Engineer: Rafael Varelas
Test Location: Fremont EMC Lab #4

Config. Used: 1
Config Change: None
EUT Voltage: 13.8Vdc

General Test Configuration

The EUT was connected to the spectrum analyzer or power meter via a suitable attenuator. All measurements were made on a single chain.

All measurements have been corrected to allow for the external attenuators used.

Ambient Conditions:

Temperature: 21 °C
Rel. Humidity: 34 %

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Summary of Results - Point to Multipoint Radio

Run #	Pwr setting		Test Performed	Limit	Pass / Fail	Result / Margin
1	23		Spurious emissions	15.247(b)	Pass	All emissions > -30dBc below the fundamental

Client:	GE MDS LLC	Job Number:	J87251
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Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #1: Out of Band Spurious Emissions

3.5 MHz mode

Power Setting Per Chain				Frequency (MHz)	Limit	Result
#1	#2	#3	#4			
25	25			5727	-30dBc	PASS
25	25			5788	-30dBc	PASS
25	25			5846	-30dBc	PASS

5 MHz mode

Power Setting Per Chain				Frequency (MHz)	Limit	Result
#1	#2	#3	#4			
23	23			5729	-30dBc	PASS
23	23			5788	-30dBc	PASS
23	23			5846	-30dBc	PASS

7 MHz mode

Power Setting Per Chain				Frequency (MHz)	Limit	Result
#1	#2	#3	#4			
23	23			5730	-30dBc	PASS
23	23			5788	-30dBc	PASS
23	23			5845	-30dBc	PASS

8.75 MHz mode

Power Setting Per Chain				Frequency (MHz)	Limit	Result
#1	#2	#3	#4			
23	23			5731	-30dBc	PASS
23	23			5788	-30dBc	PASS
23	23			5844	-30dBc	PASS

10 MHz mode

Power Setting Per Chain				Frequency (MHz)	Limit	Result
#1	#2	#3	#4			
23	23			5732	-30dBc	PASS
23	23			5788	-30dBc	PASS
23	23			5844	-30dBc	PASS

Note 1:	Measured on each chain individually
Note 2:	All plots used RB=VB=100kHz

Client:	GE MDS LLC	Job Number:	J87251
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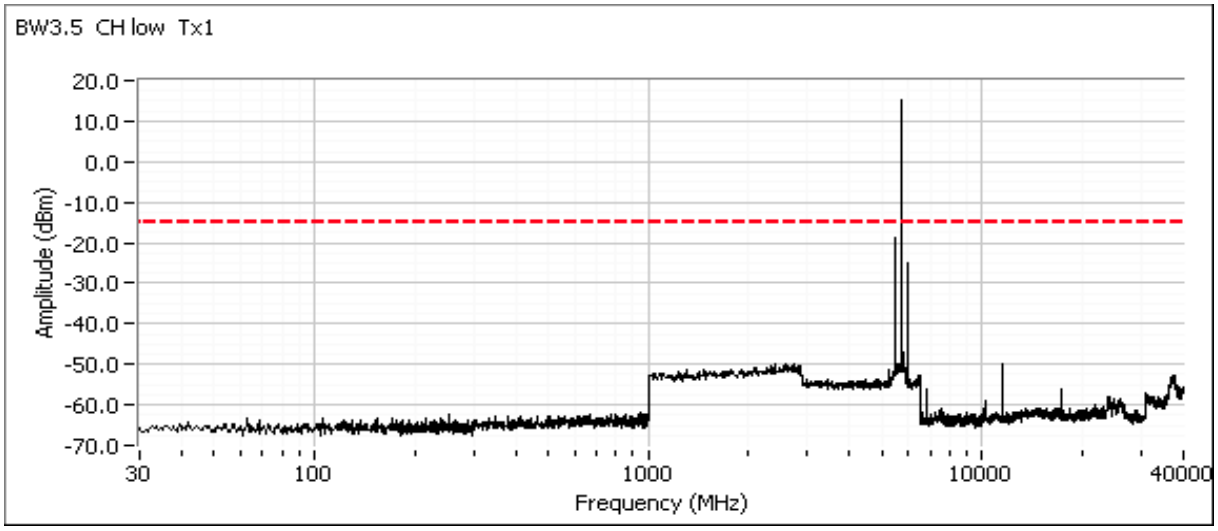
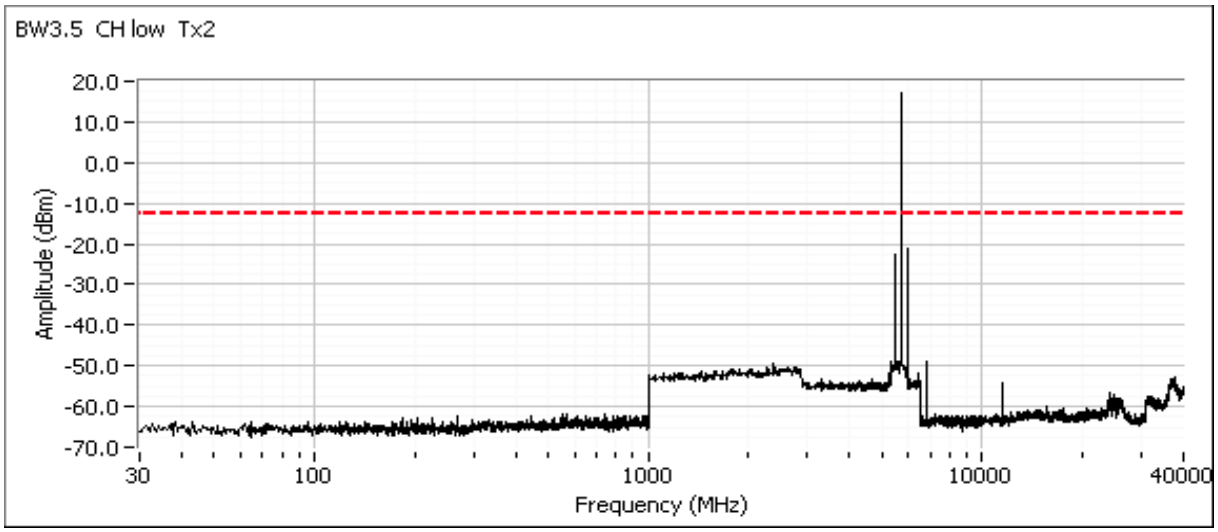
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

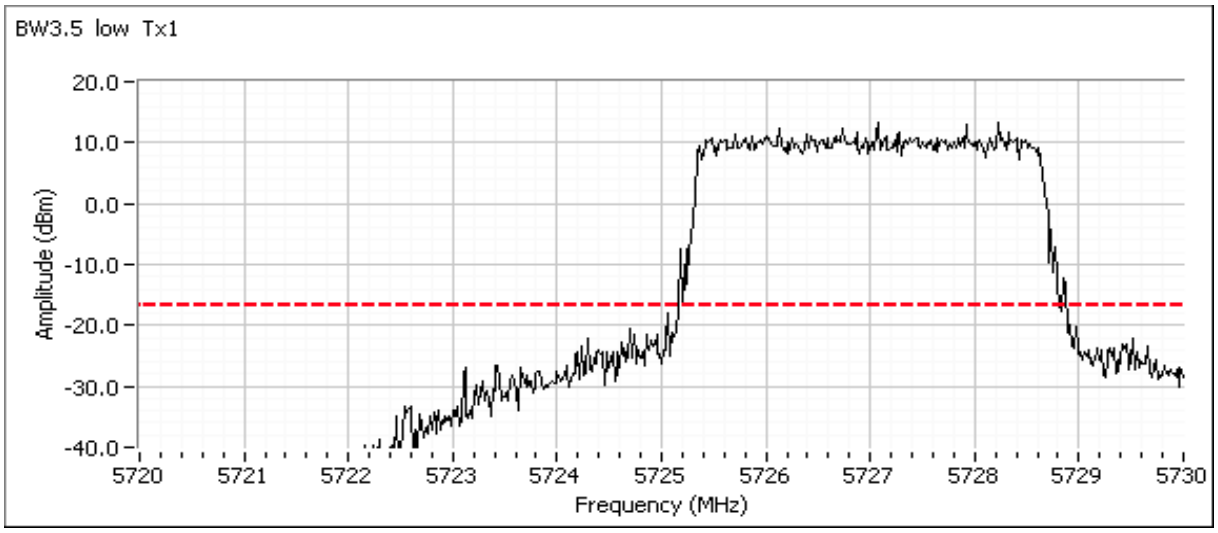
BW 3.5

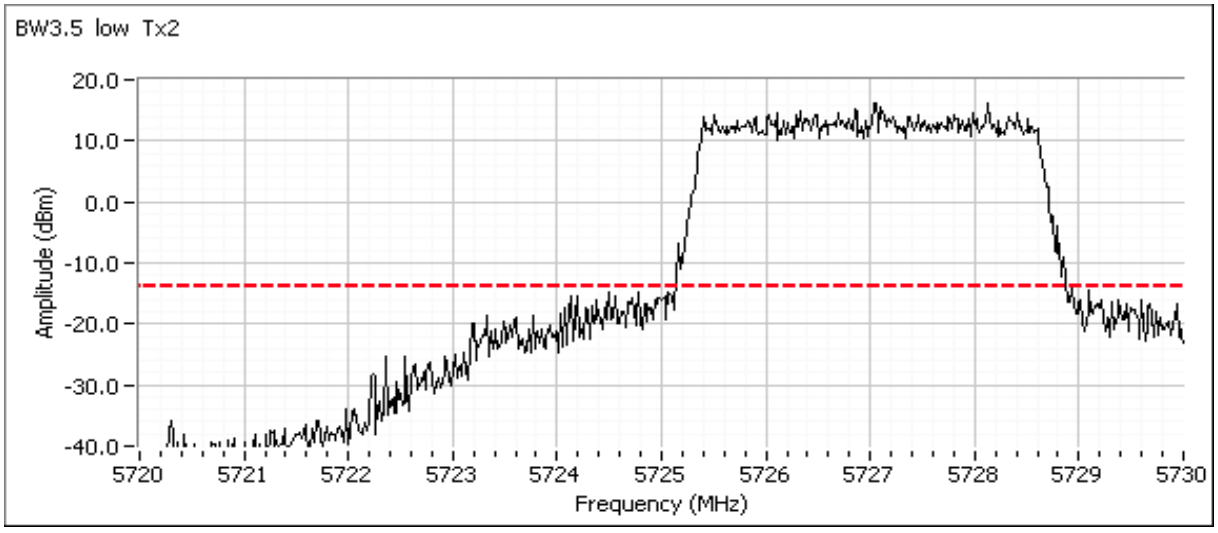




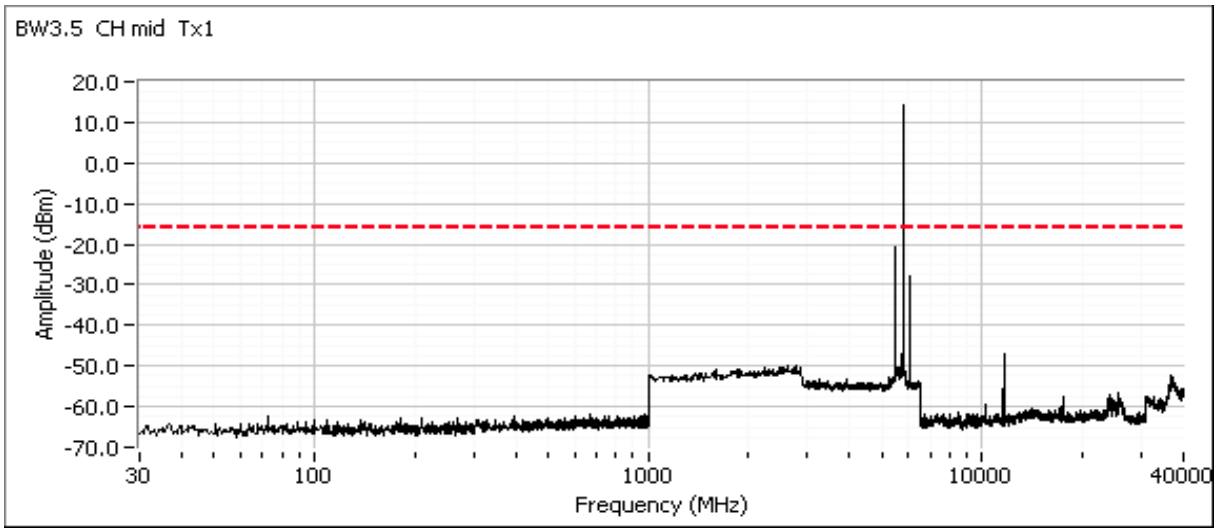
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

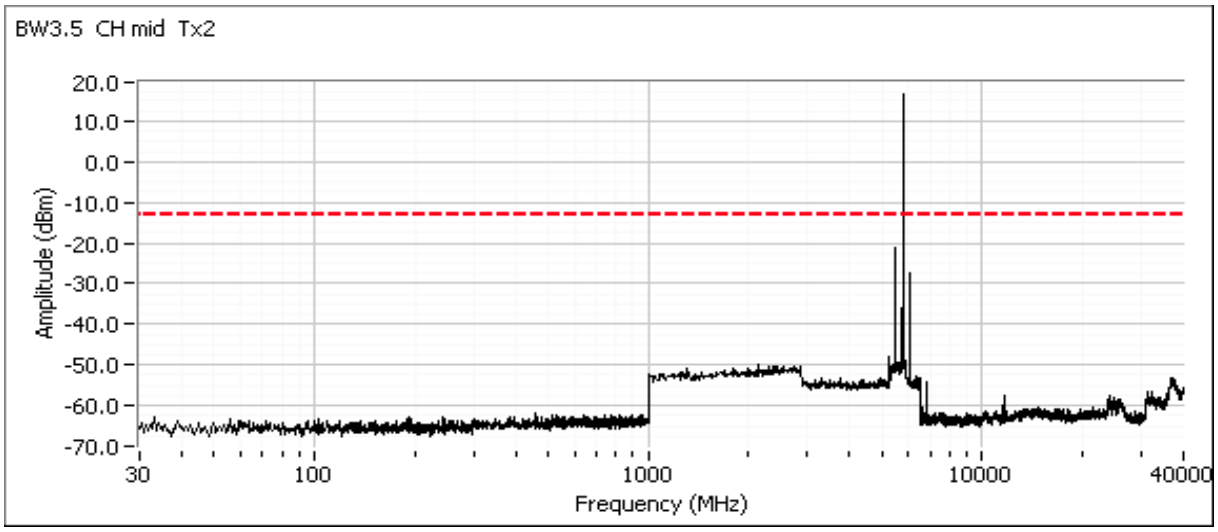
Additional plots showing compliance with -30dBc at the band edges.



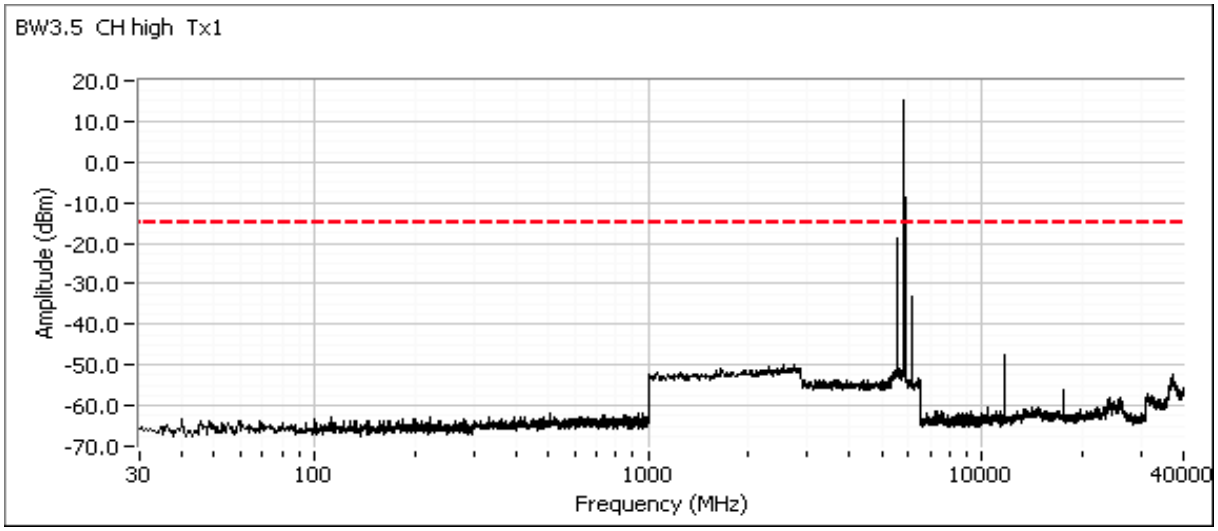


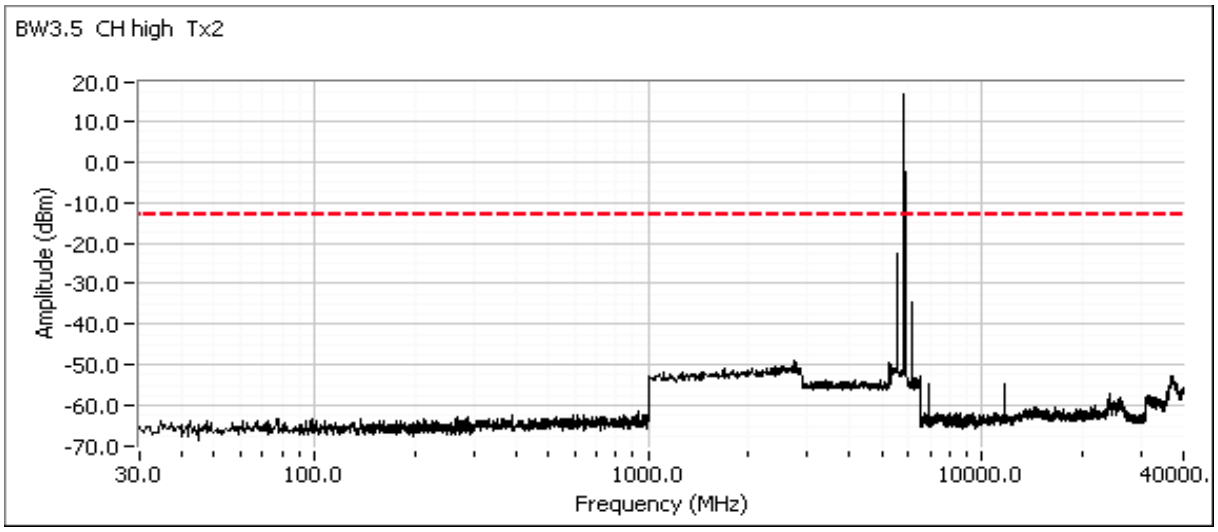
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A





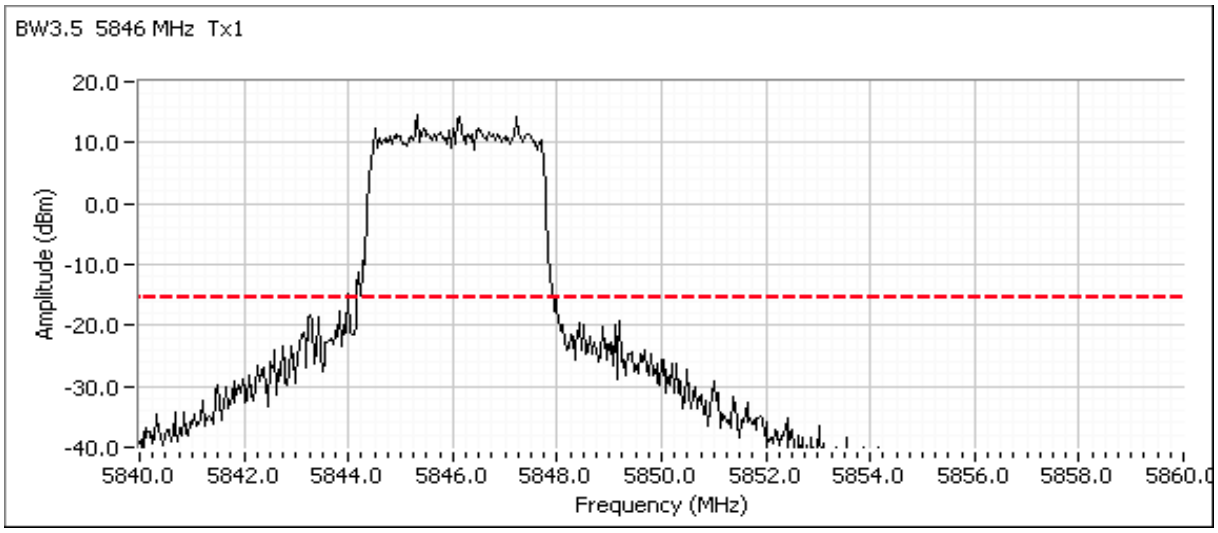
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

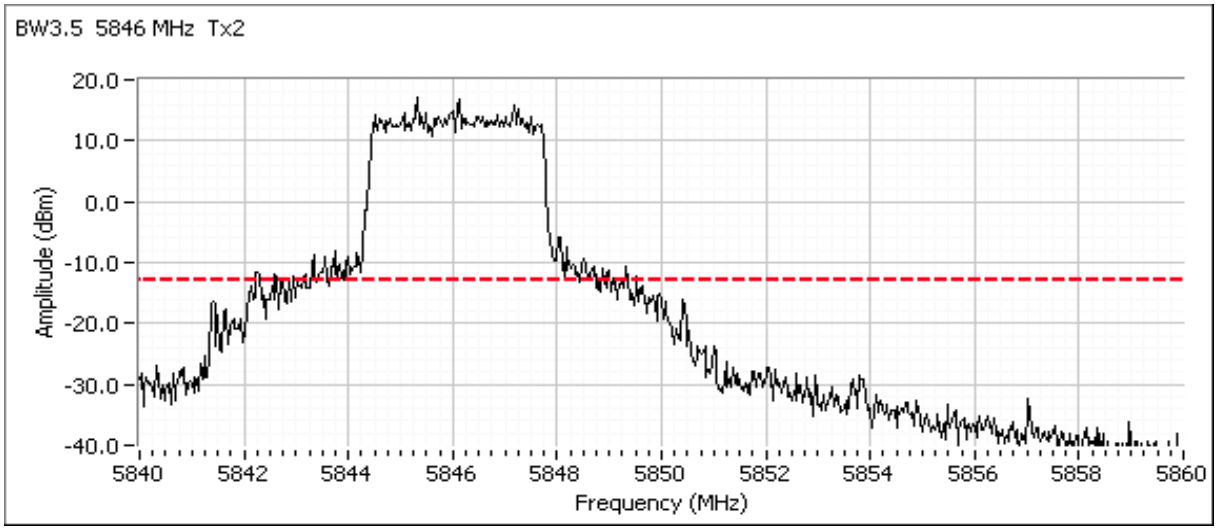




Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

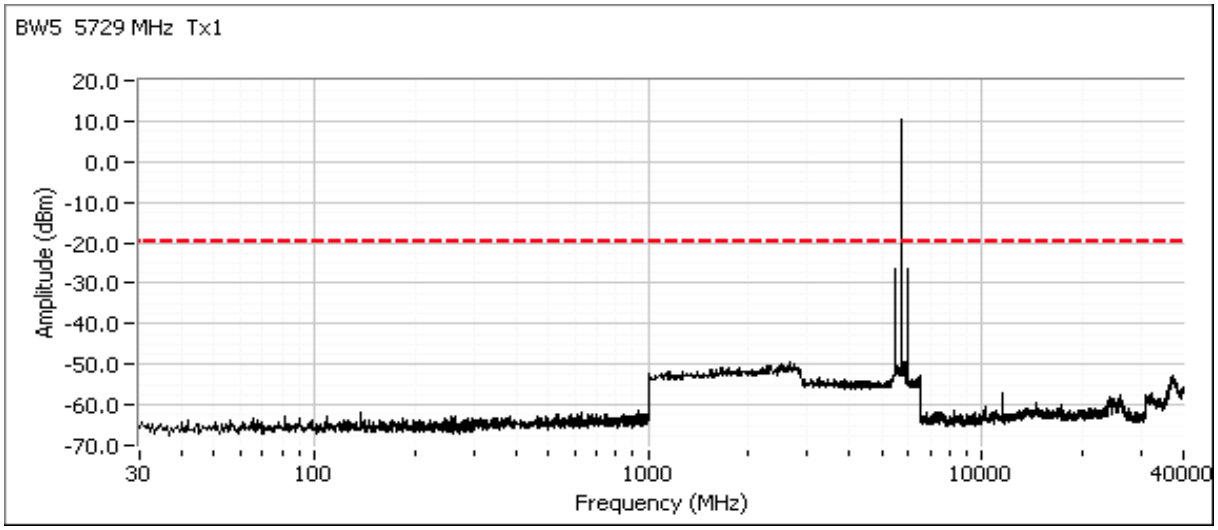
Additional plots showing compliance with -30dBc at the band edges.

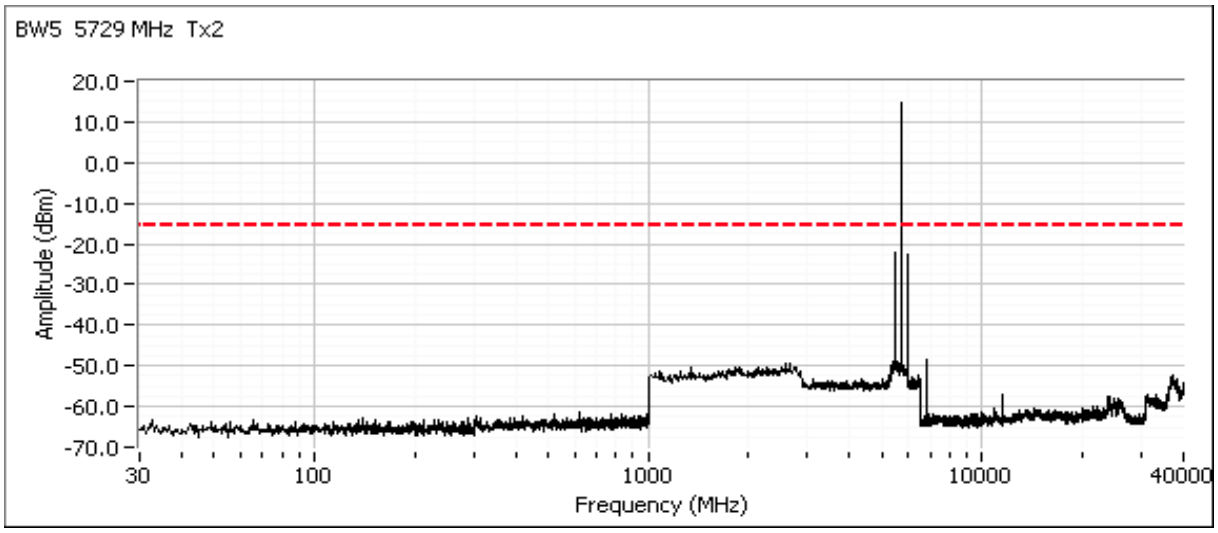




Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

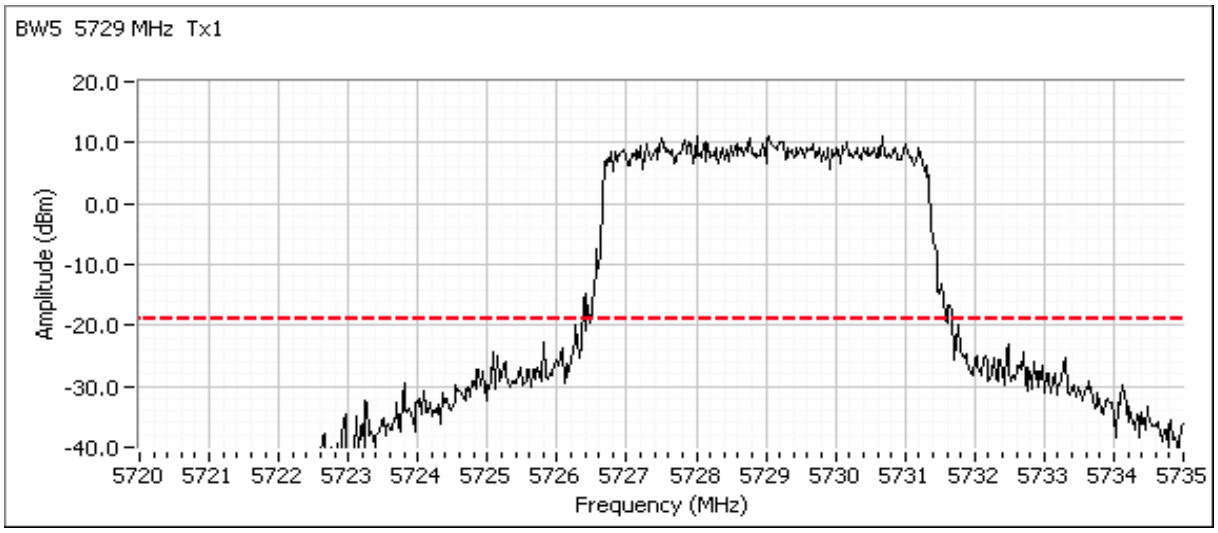
BW 5

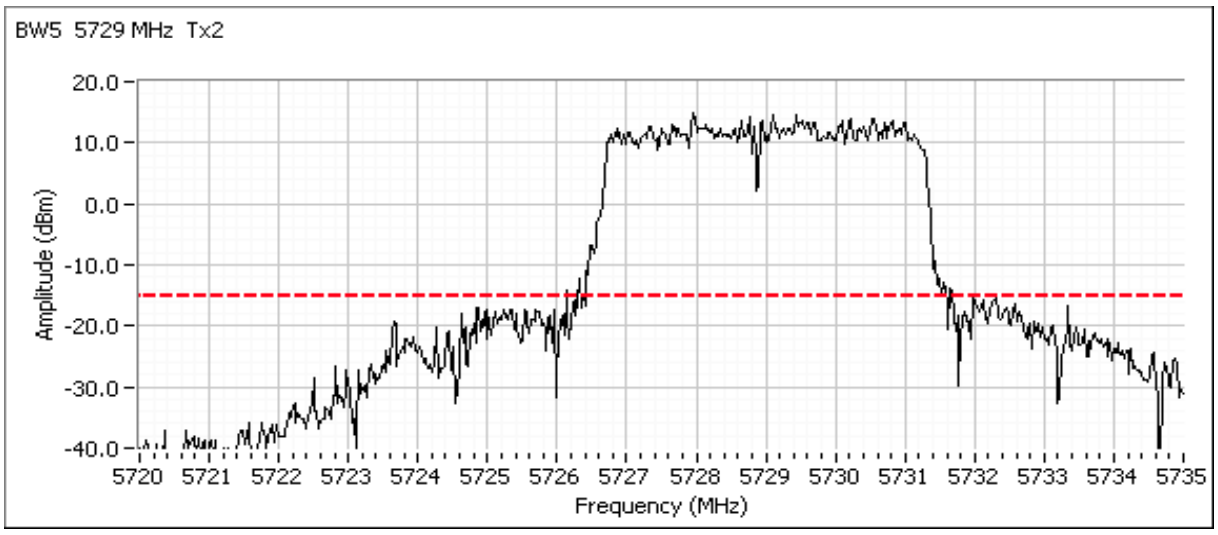




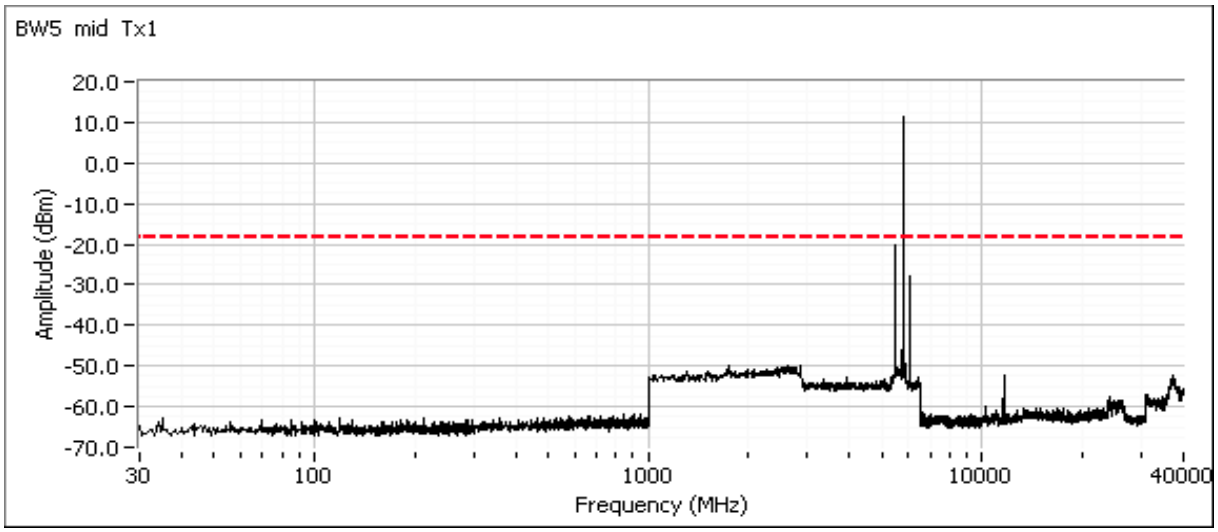
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

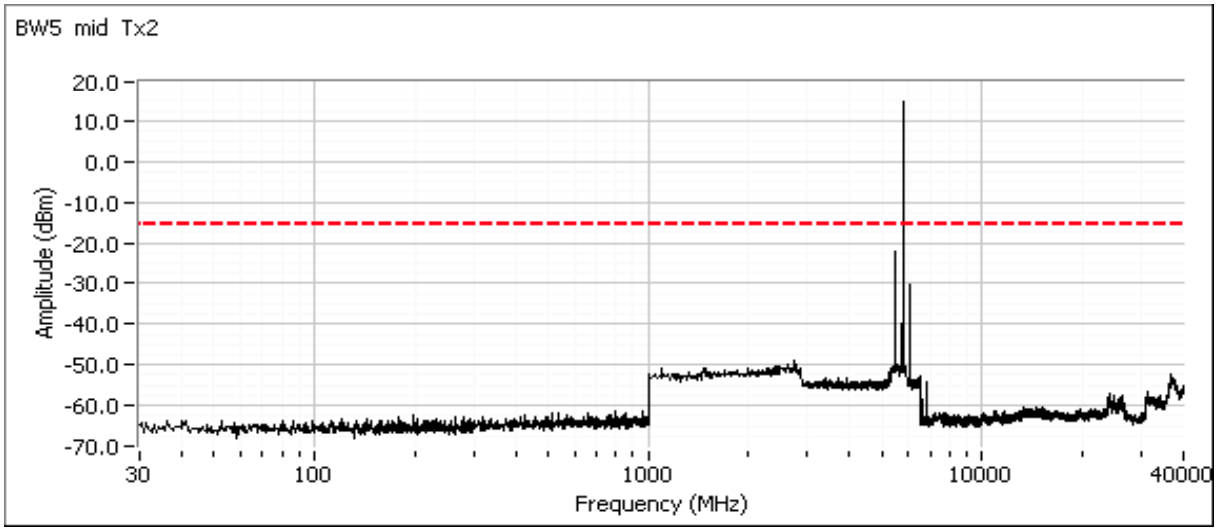
Additional plots showing compliance with -30dBc at the band edges.



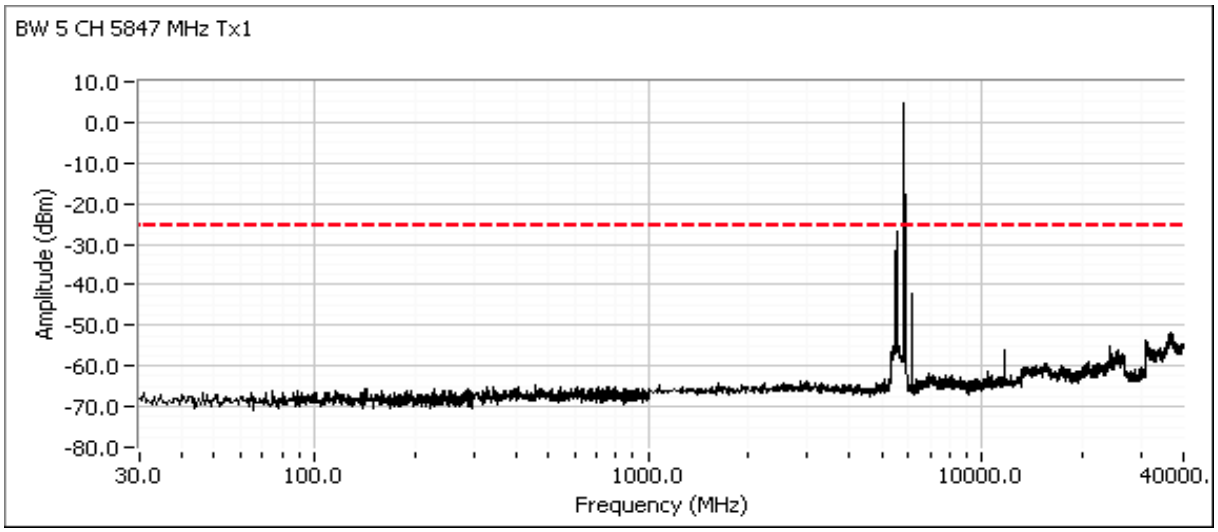


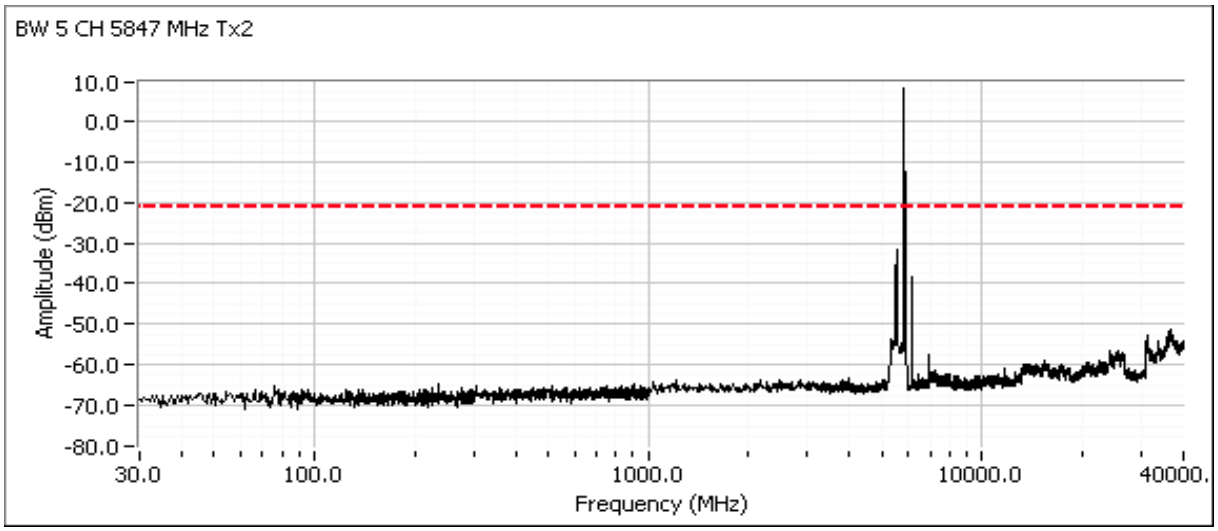
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A



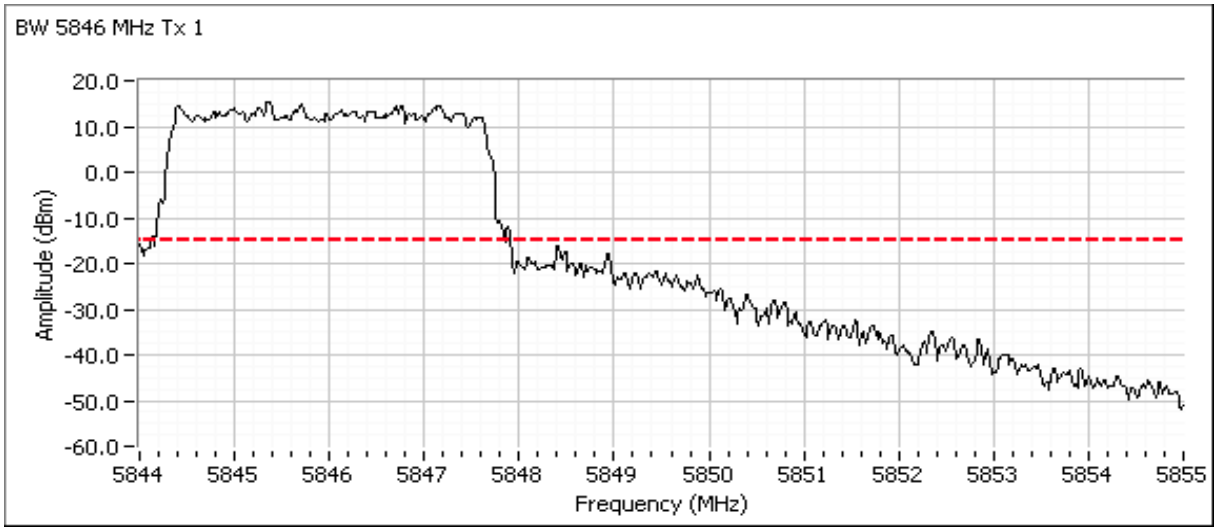


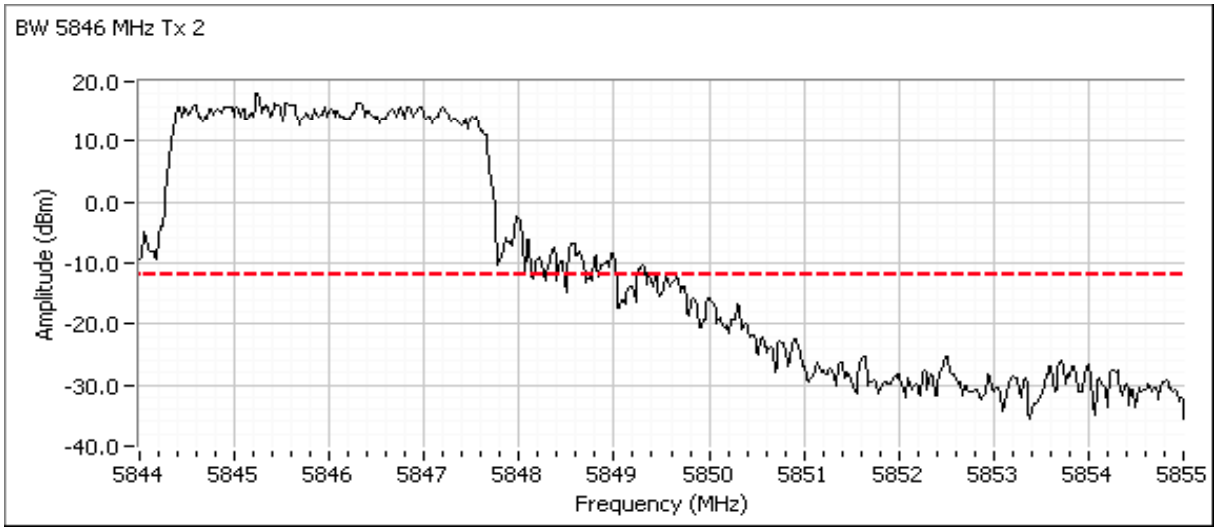
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A





Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A





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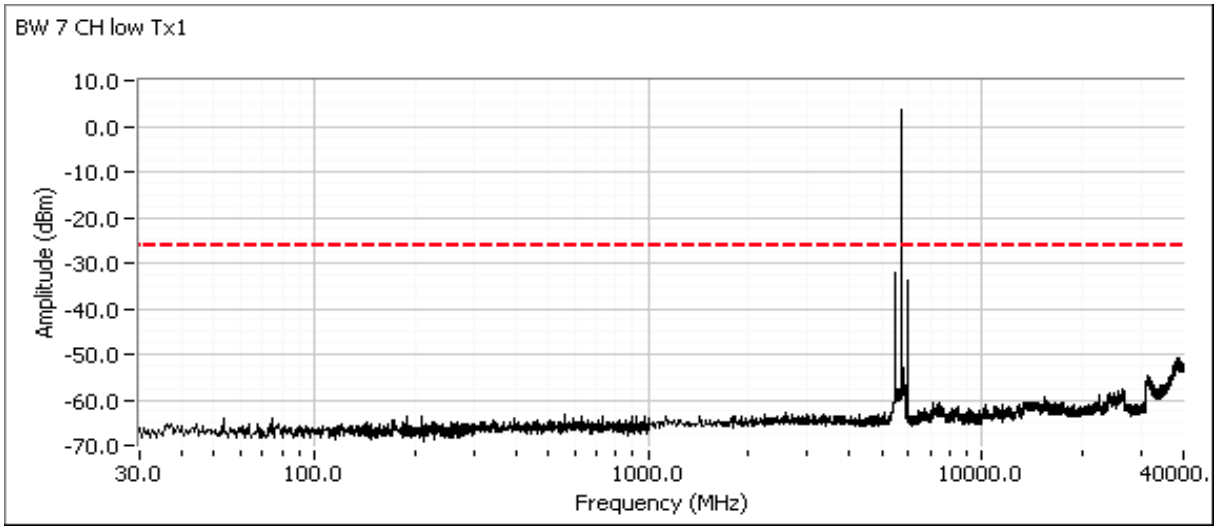
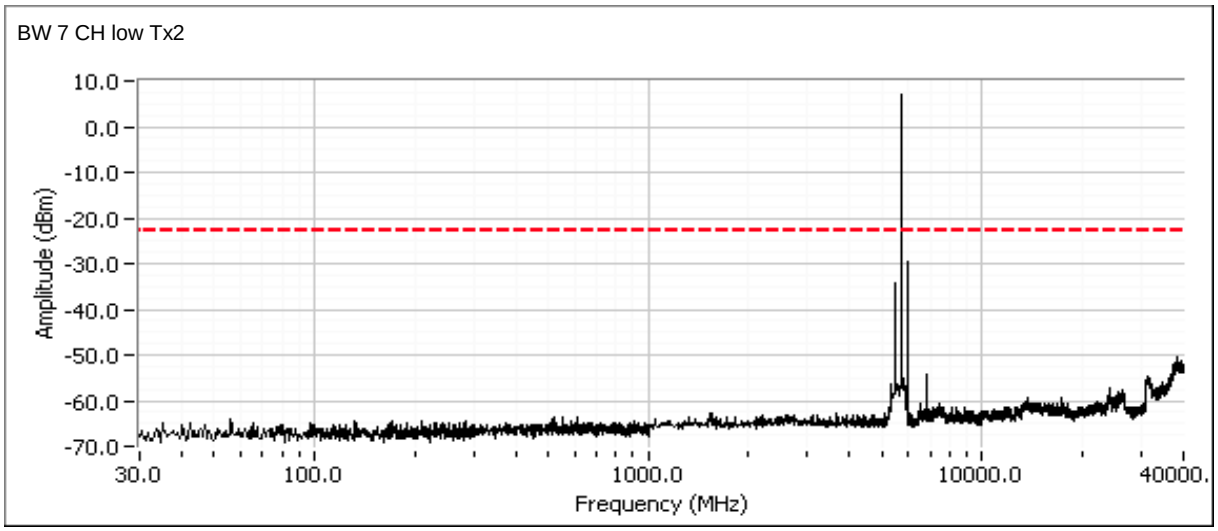
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

BW 7

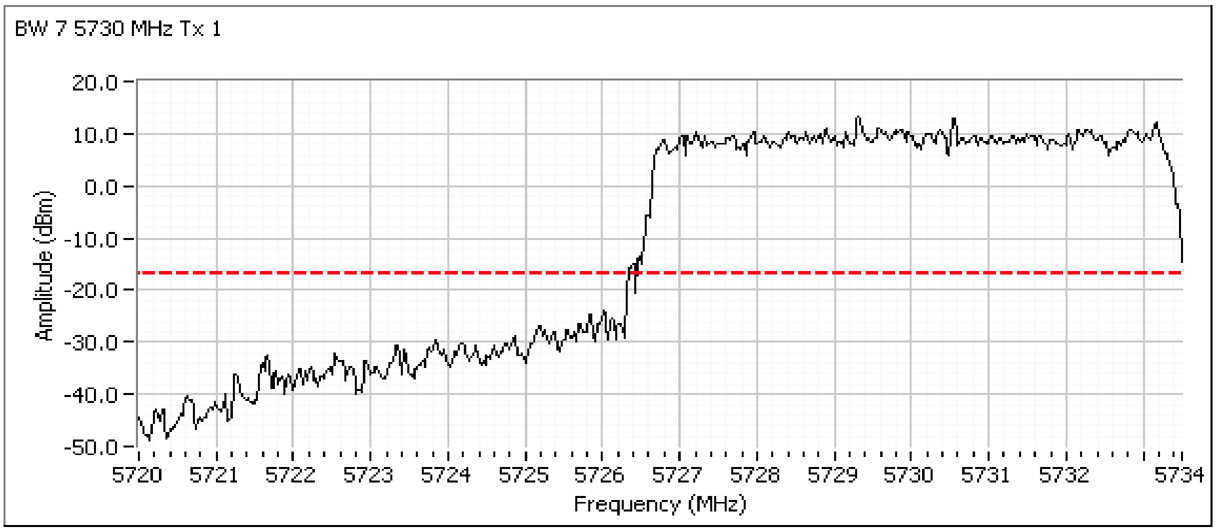


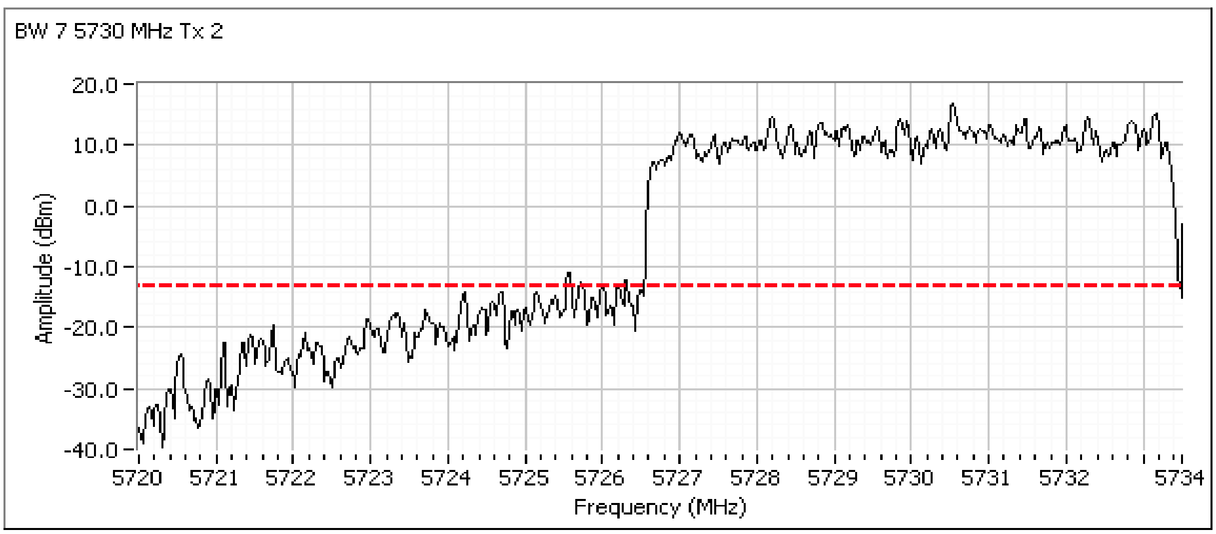


EMC Test Data

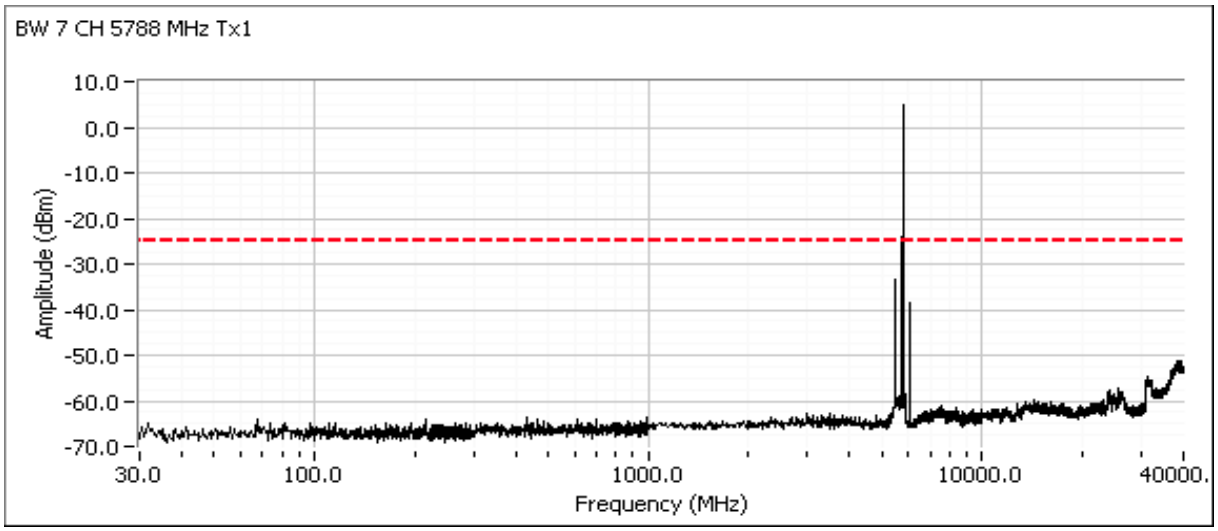
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

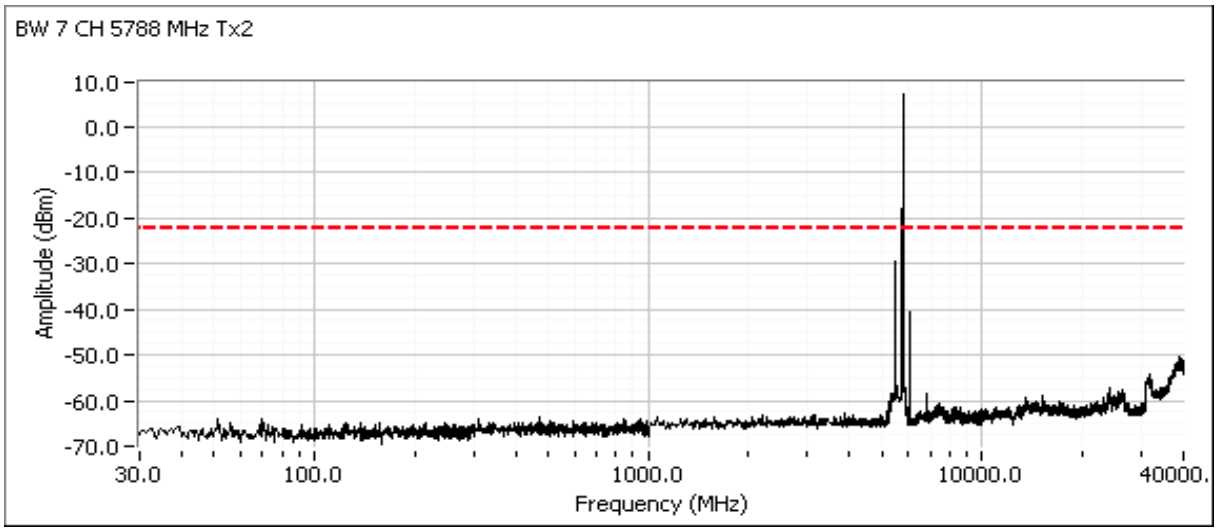
Additional plots showing compliance with -30dBc at the band edges.





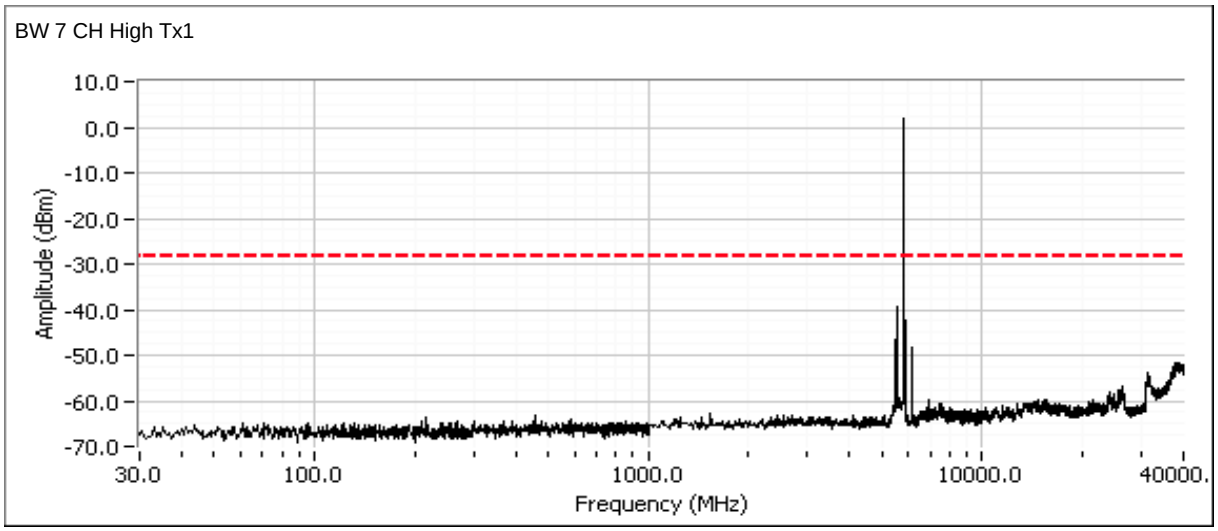
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A



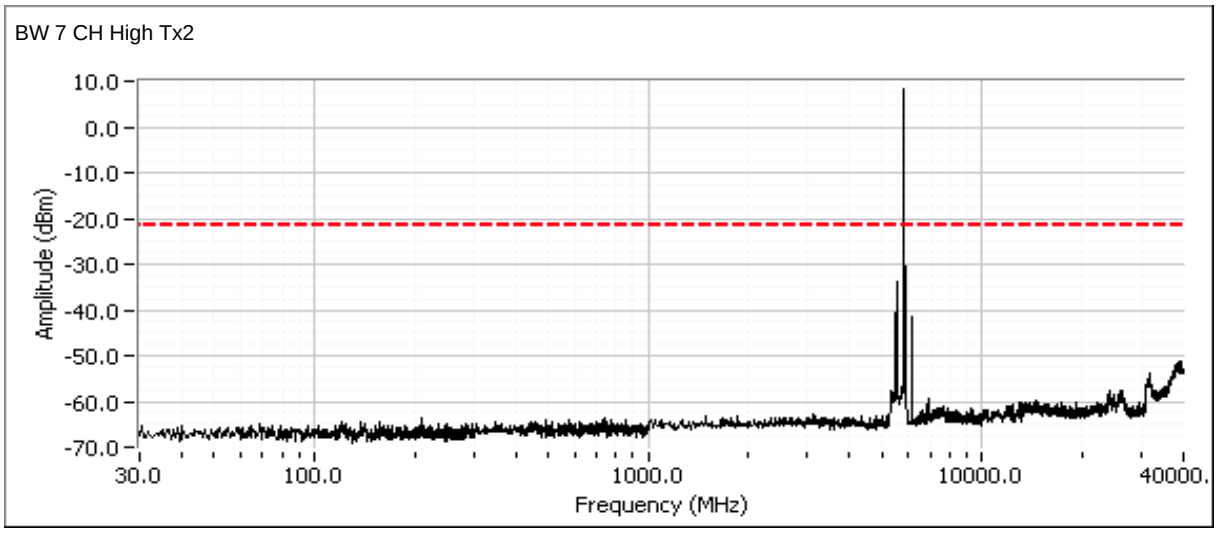


Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

BW 7 CH High Tx1

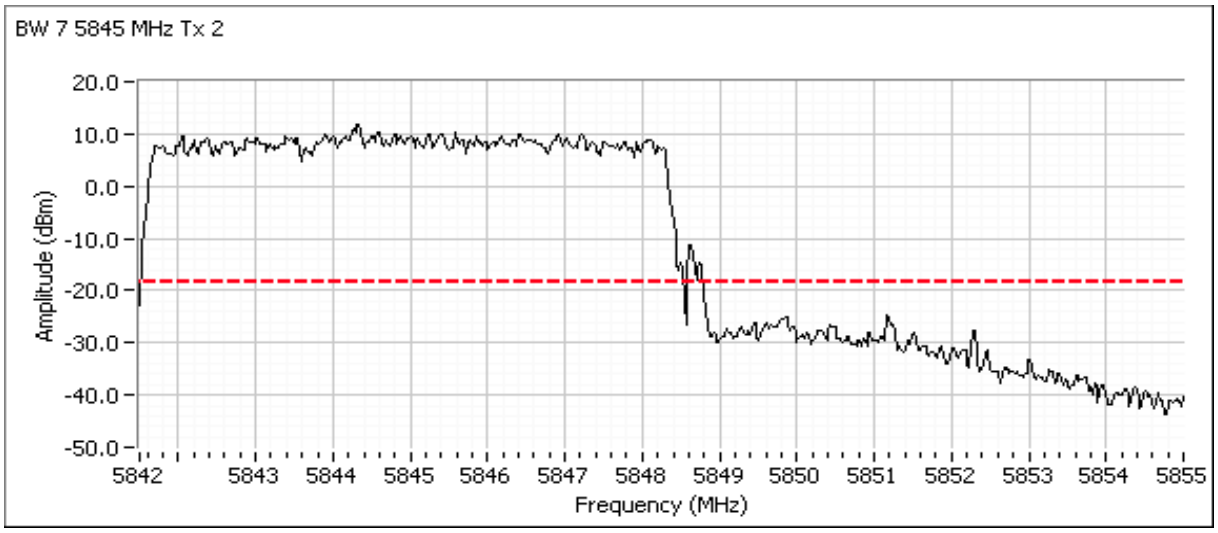


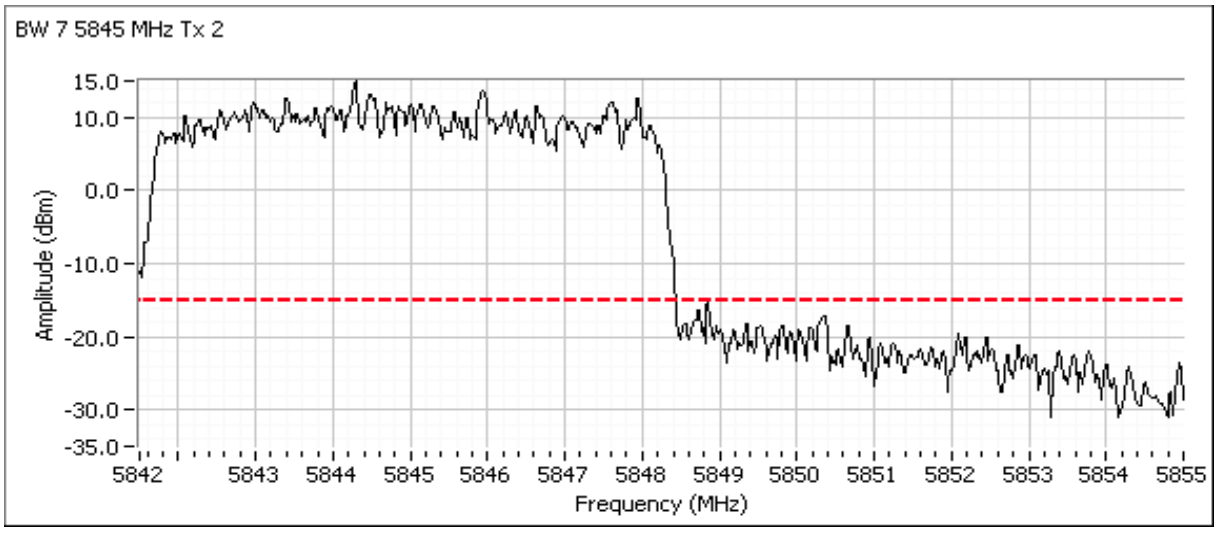
BW 7 CH High Tx2



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Additional plots showing compliance with -30dBc at the band edges.

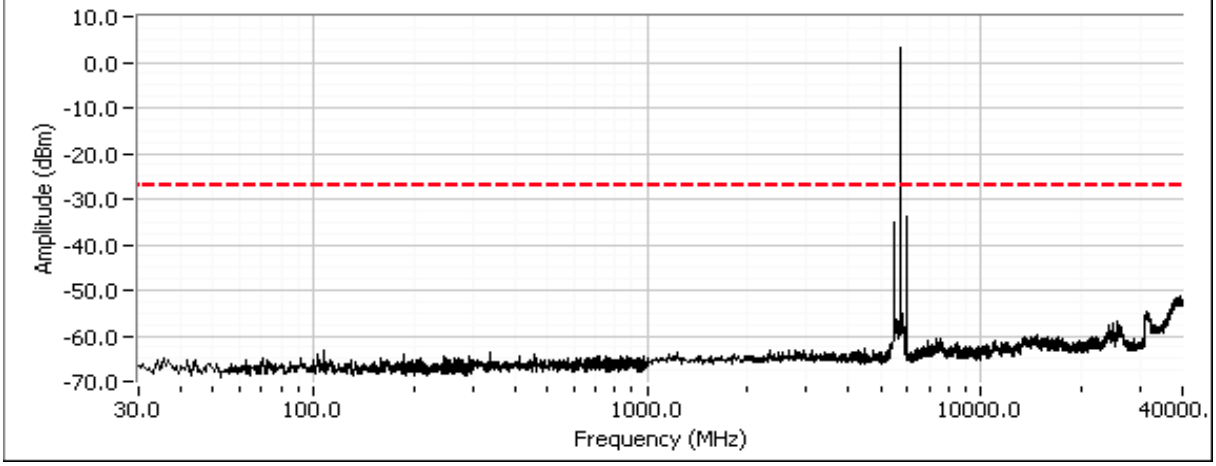




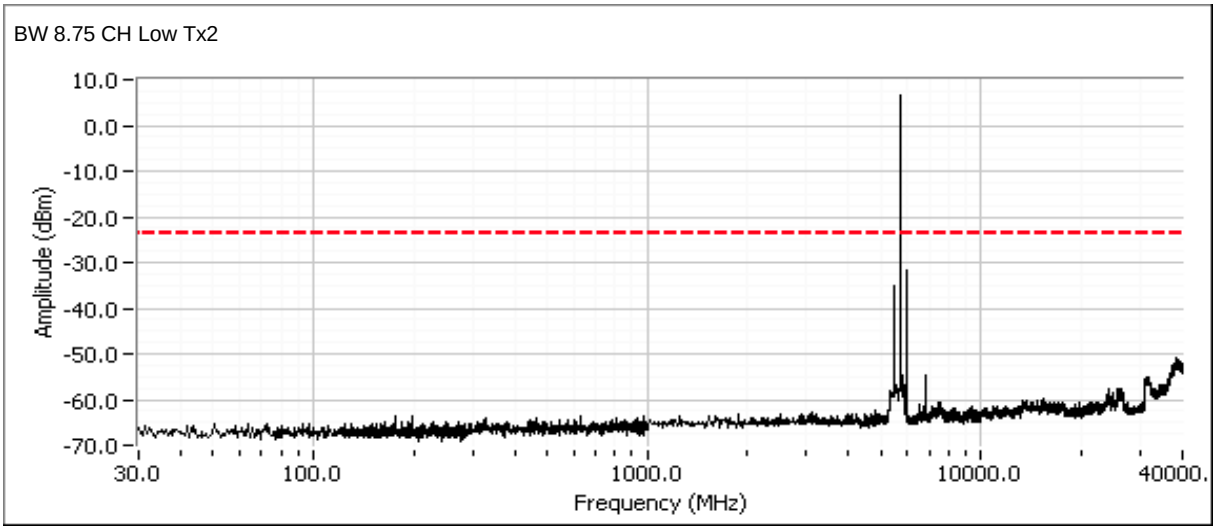
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

BW 8.75

BW 8.75 CH Low Tx1

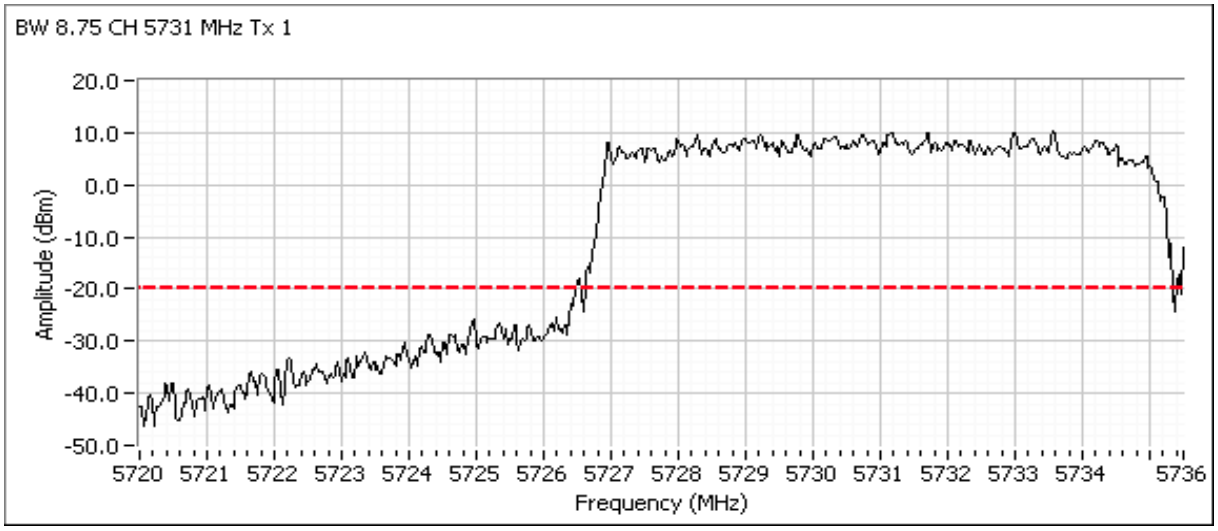


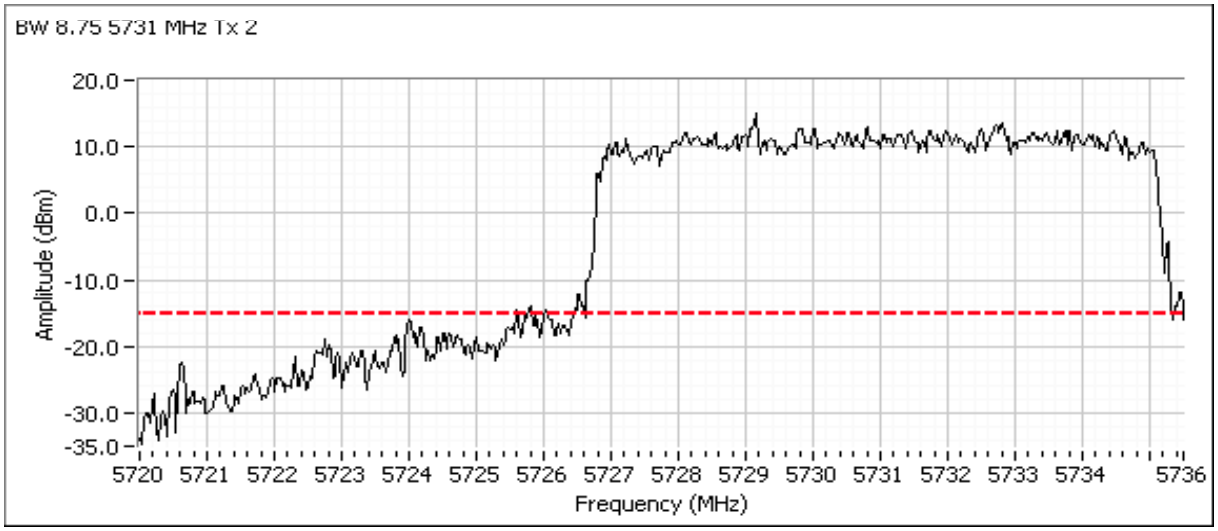
BW 8.75 CH Low Tx2



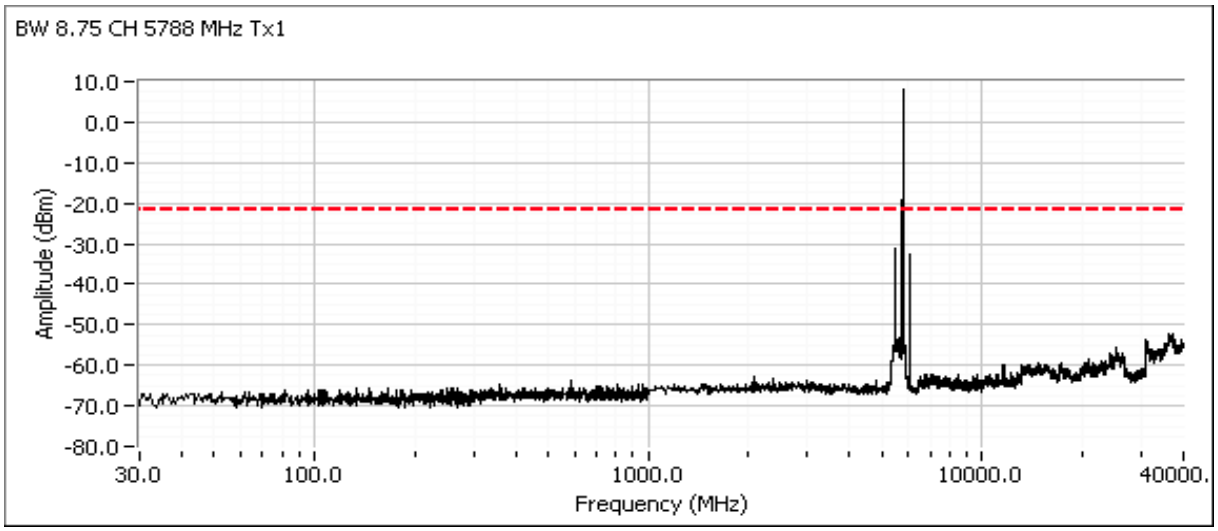
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

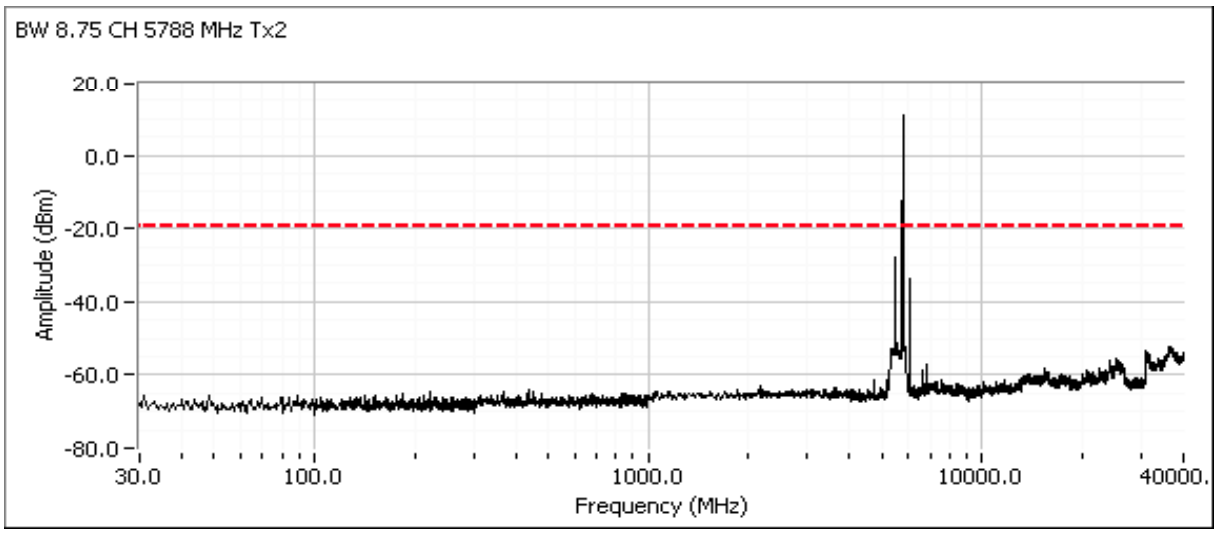
Additional plots showing compliance with -30dBc at the band edges.





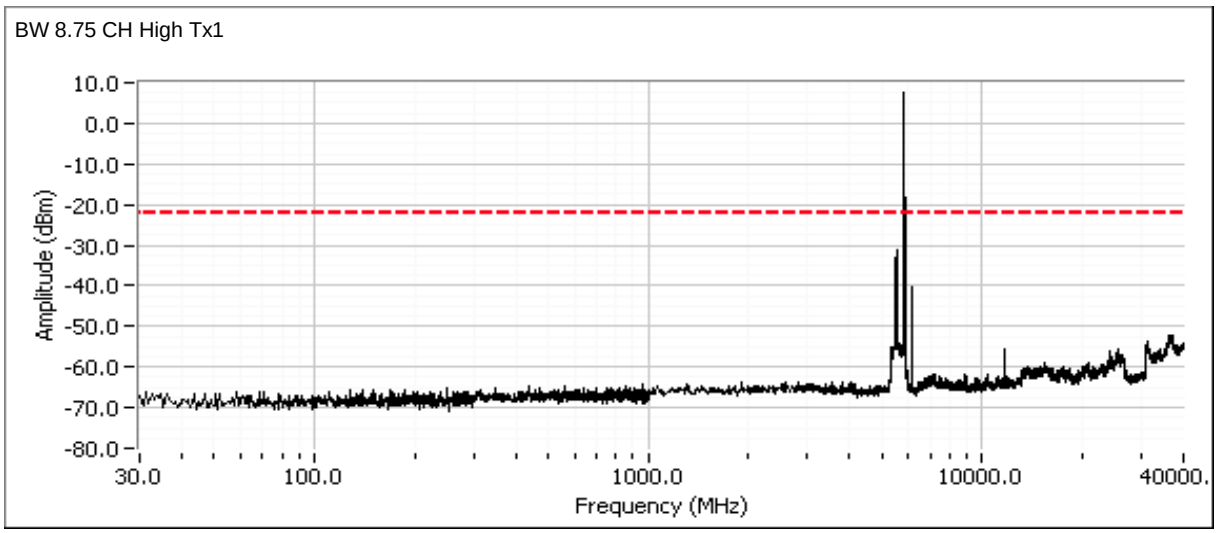
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A





Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

BW 8.75 CH High Tx1



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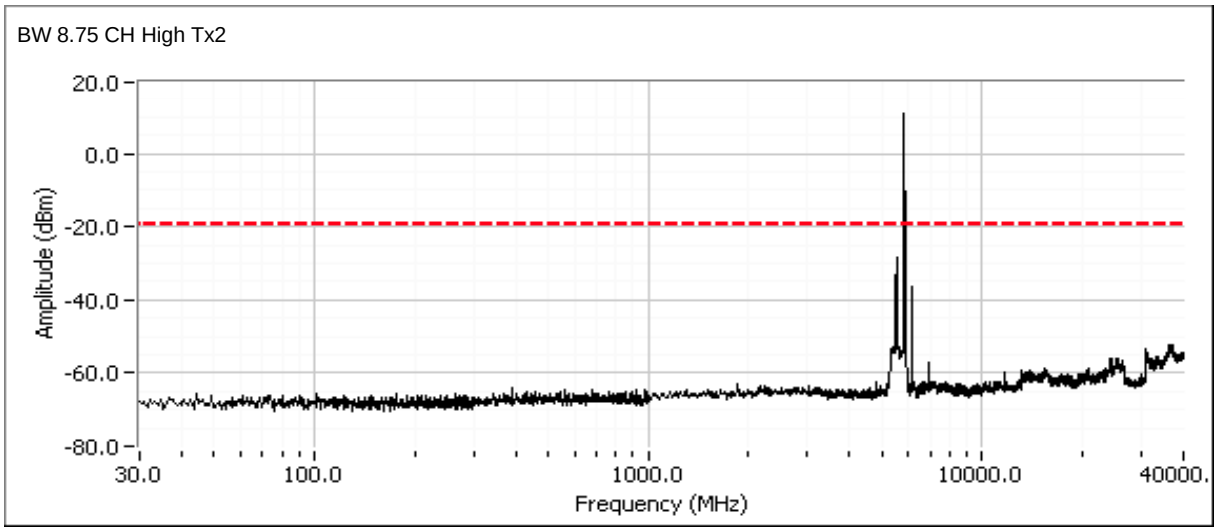
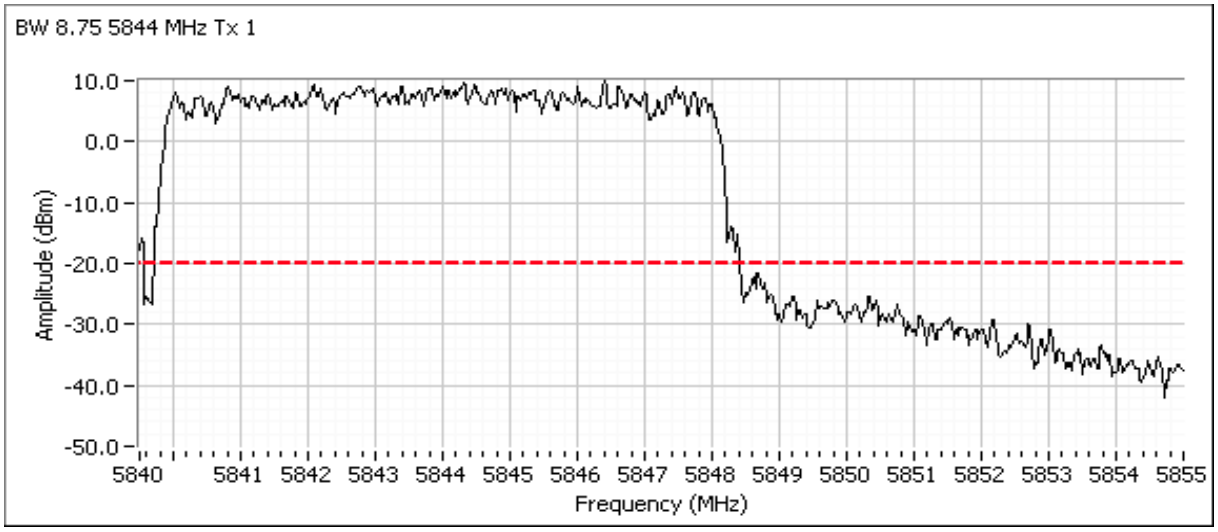
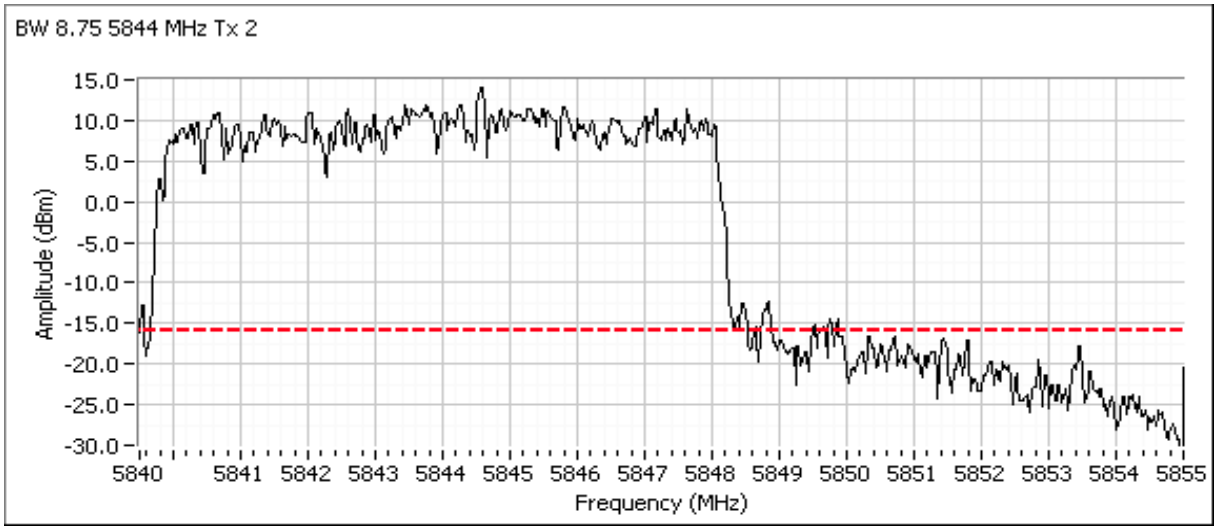


Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

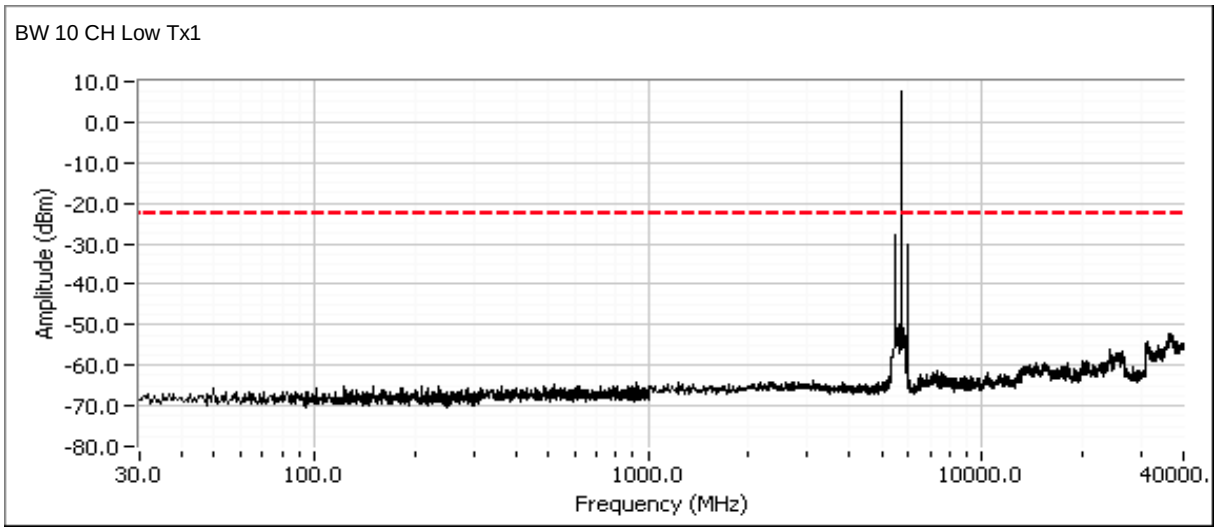
Additional plots showing compliance with -30dBc at the band edges.

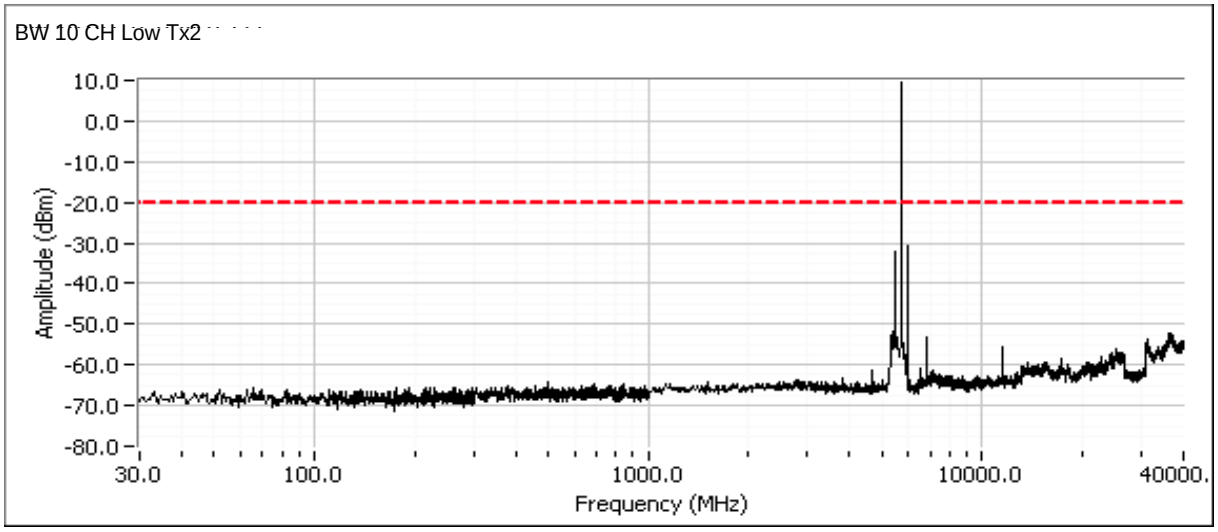




Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

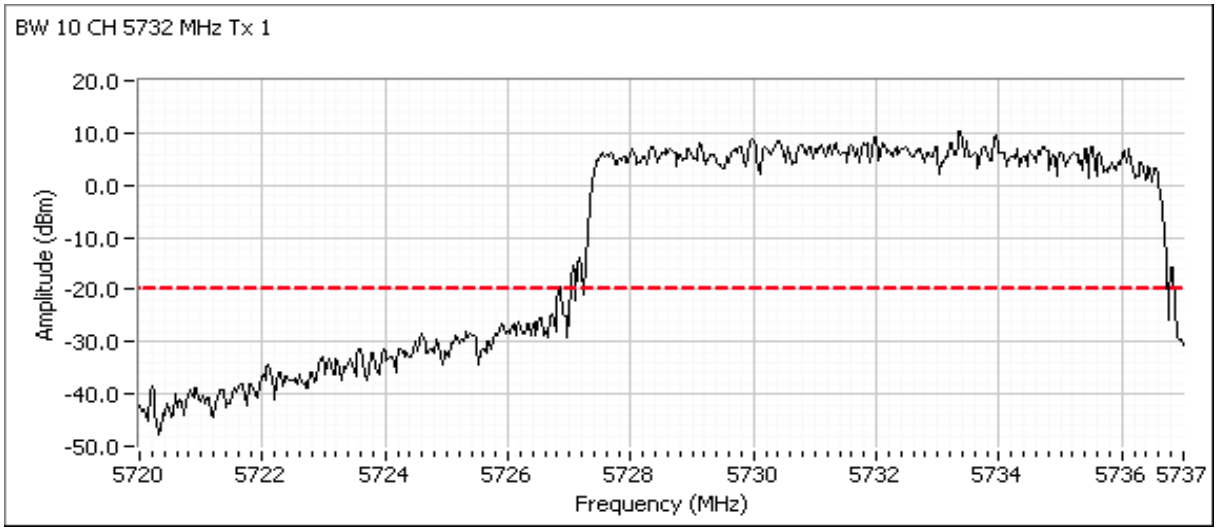
BW 10

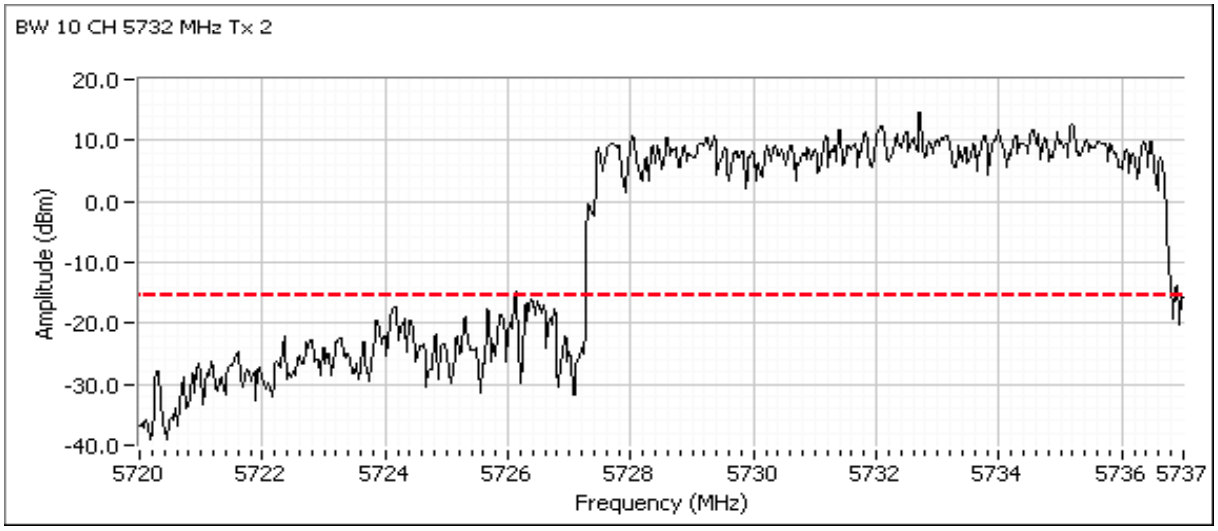




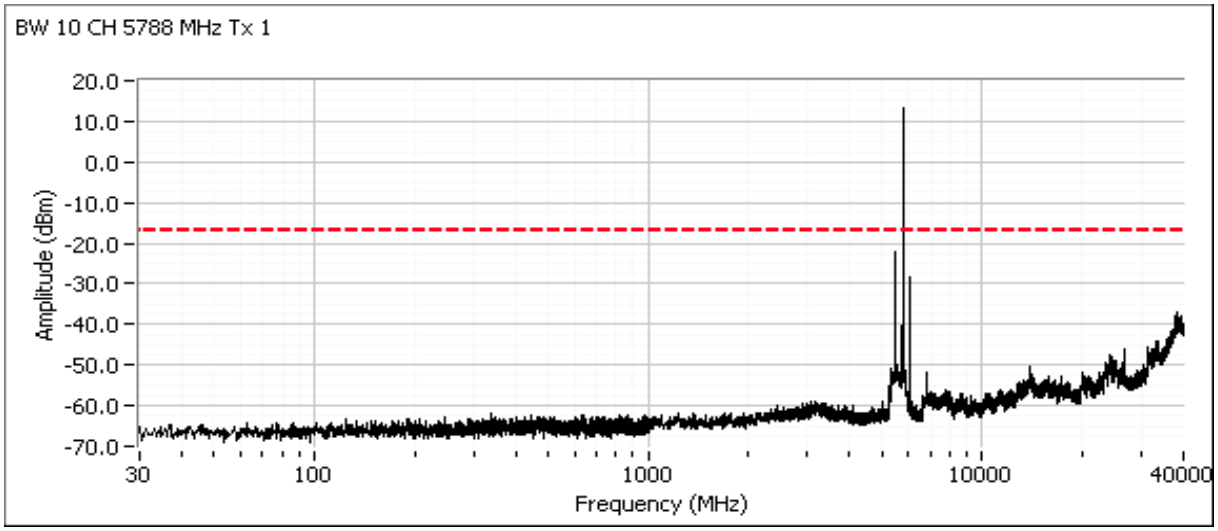
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

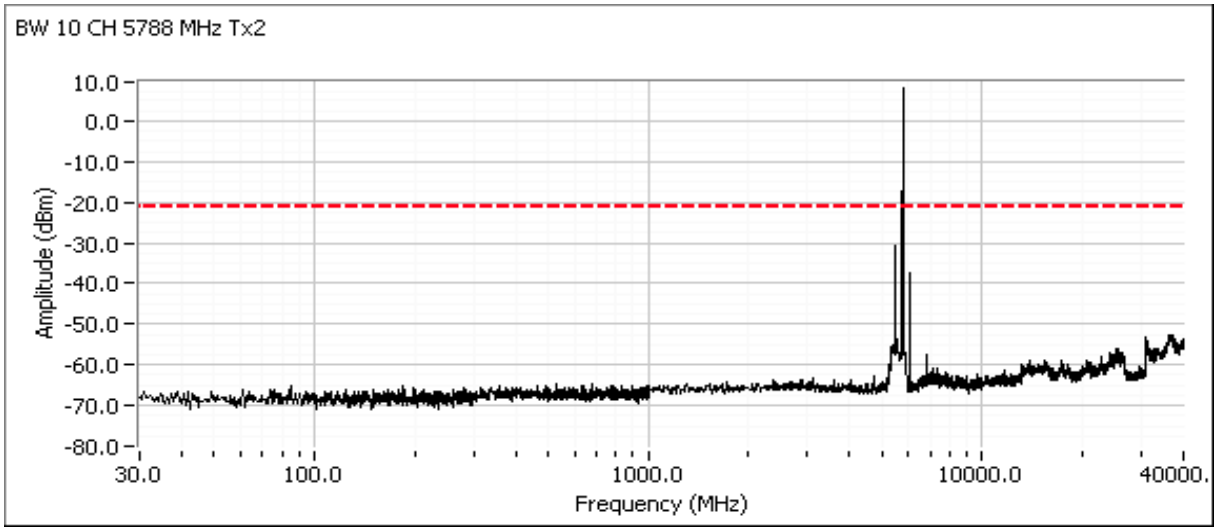
Additional plots showing compliance with -30dBc at the band edges.



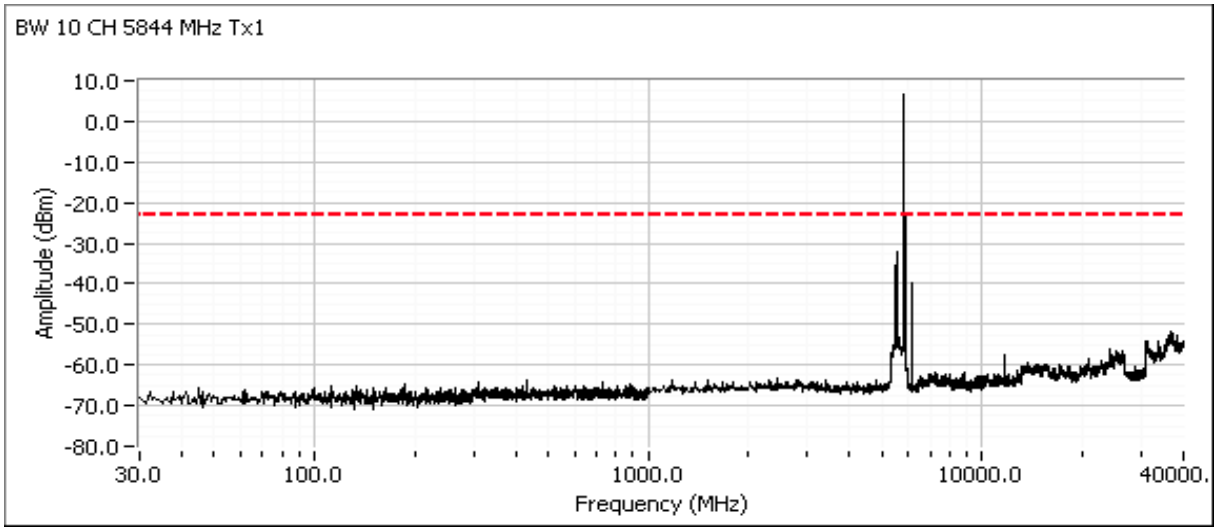


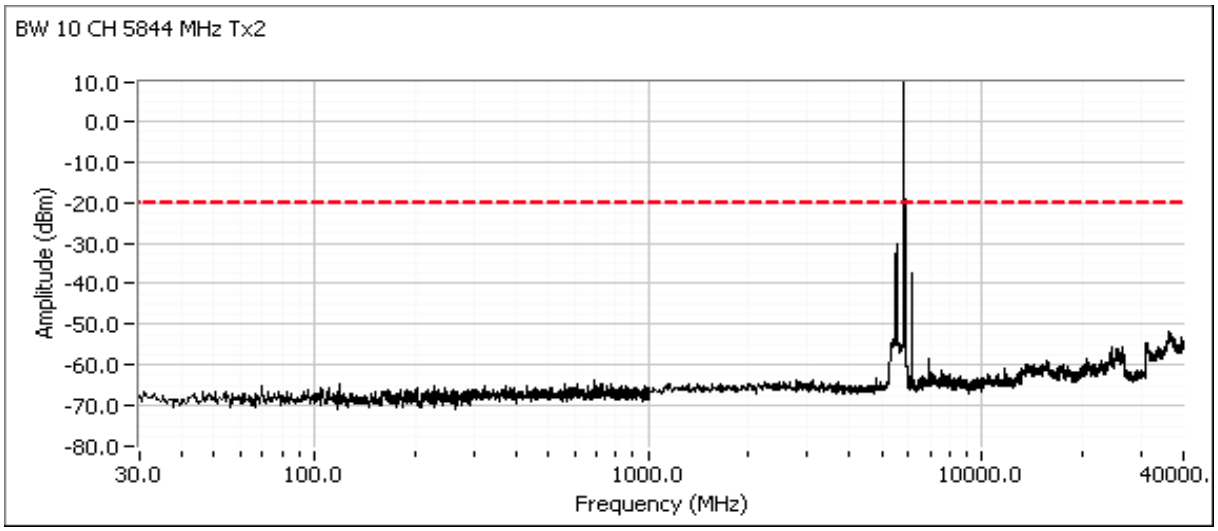
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A





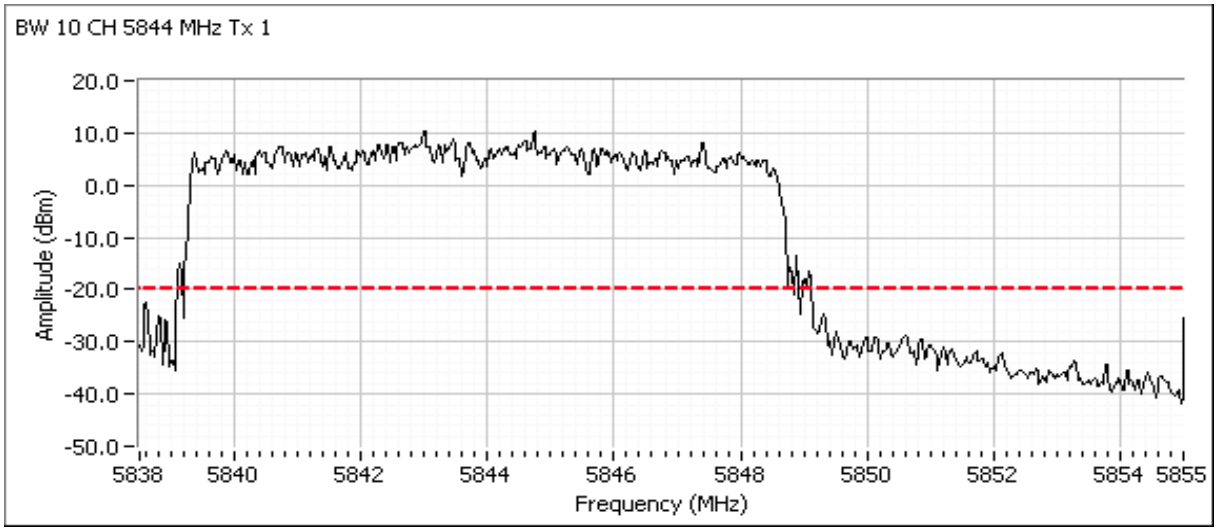
Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

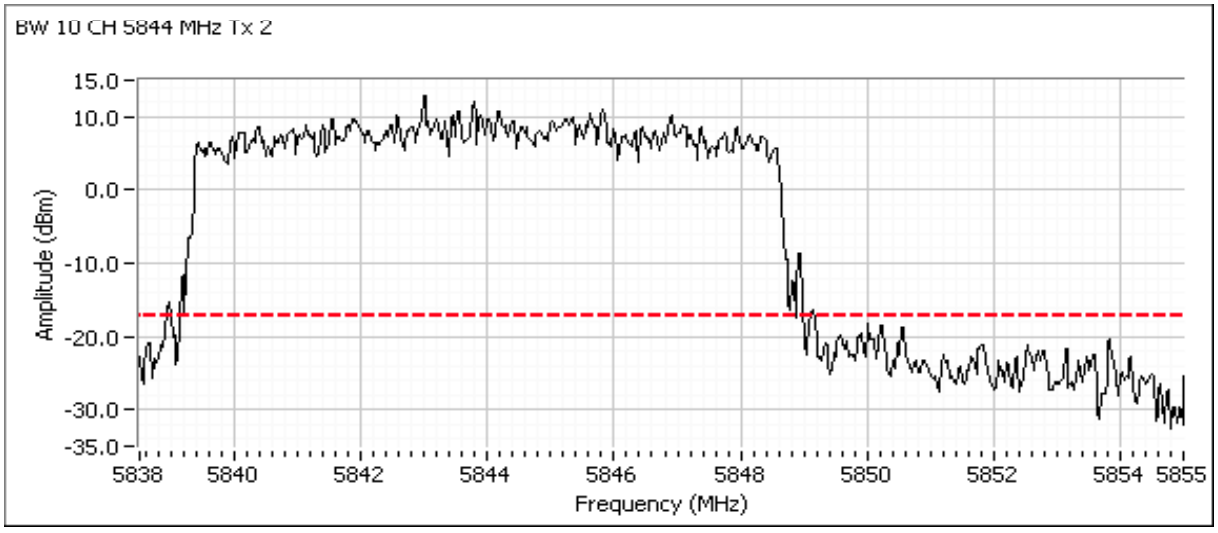




Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Additional plots showing compliance with -30dBc at the band edges.





Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions:

Temperature: 24 °C

Rel. Humidity: 35 %

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Test Notes

Based on previous test results, emissions below 1 GHz are unaffected by the channel, mode or antenna used and were not repeated.

Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Summary of Results - Device Operating in the 5725 - 5850 MHz Band

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	BW 5	low - 5728	19	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	53.1 dBµV/m @ 11455.9 MHz (-0.9 dB)
1b	BW 5	center - 5788	20	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	52.8 dBµV/m @ 11575.8 MHz (-1.2 dB)
1c	BW 5	high - 5847	15	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	53.1 dBµV/m @ 11693.9 MHz (-0.9 dB)
2a	3.5MHz BW	Low - 5727	19	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	53.8 dBµV/m @ 11453.9 MHz (-0.2 dB)
2b	3.5MHz BW	center - 5788	19	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	53.9 dBµV/m @ 11575.9 MHz (-0.1 dB)
2c	3.5MHz BW	High - 5848	18	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	53.5 dBµV/m @ 11695.9 MHz (-0.5 dB)
3a	7MHz BW	low- 5729	22	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	53.3 dBµV/m @ 11458.0 MHz (-0.7 dB)
3b	7MHz BW	center - 5788	19	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	53.3 dBµV/m @ 11576.1 MHz (-0.7 dB)
3c	7MHz BW	high - 5846	17	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	53.3 dBµV/m @ 1457.4 MHz (-0.7 dB)
4a	8.75MHz BW	low - 5730	23	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	53.5 dBµV/m @ 11460.4 MHz (-0.5 dB)
4b	8.75MHz BW	center - 5788	21	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	53.9 dBµV/m @ 11575.9 MHz (-0.1 dB)
4c	8.75MHz BW	high - 5845	17	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	53.4 dBµV/m @ 11690.4 MHz (-0.6 dB)
5a	10MHz BW	low - 5731	20	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	53.4 dBµV/m @ 5376.0 MHz (-0.6 dB)
5b	10MHz BW	center - 5788	21	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	53.0 dBµV/m @ 11576.7 MHz (-1.0 dB)
5c	10MHz BW	high - 5844	17	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	52.9 dBµV/m @ 11688.2 MHz (-1.1 dB)

Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #1: Radiated Spurious Emissions, 30 - 40000 MHz. Operating Mode: BW 5

Date of Test: 6/21/2012 Test Location: Chamber #7

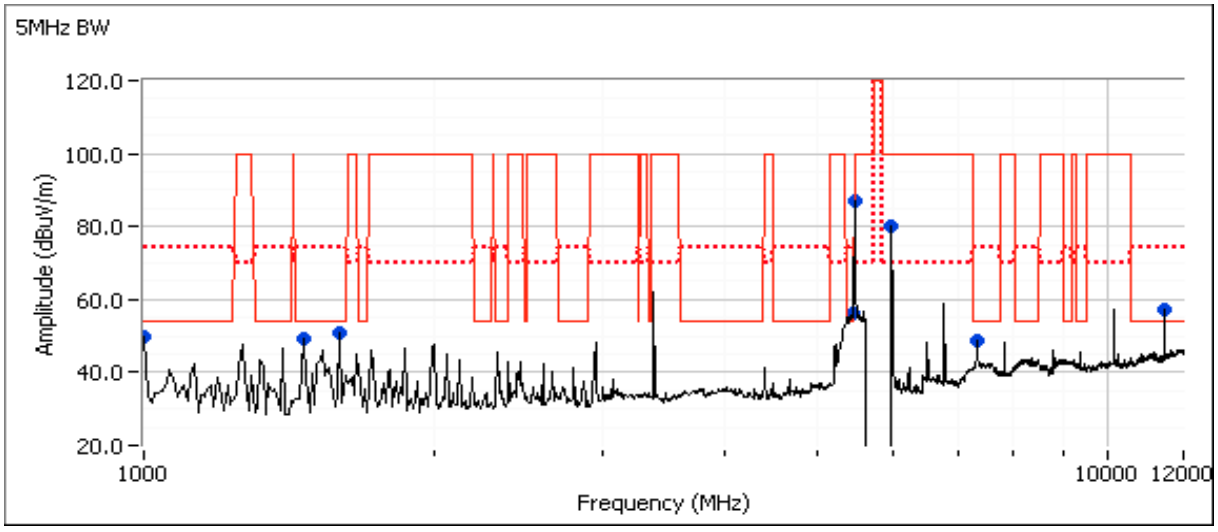
Test Engineer: M. Birgani

Run #1a: Low Channel @ 5728 MHz

Other Spurious Emissions

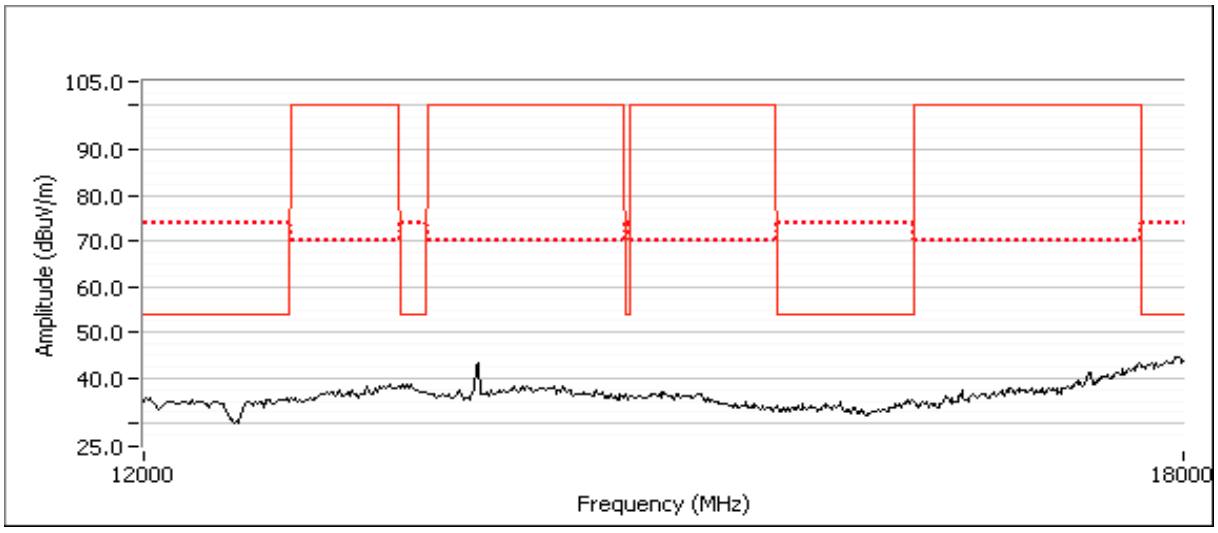
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11455.920	53.1	V	54.0	-0.9	AVG	184	1.1	
1595.830	51.1	V	54.0	-2.9	Peak	260	1.0	From local support equip (laptop)
11452.880	71.1	V	74.0	-2.9	PK	184	1.1	
1000.000	49.6	V	54.0	-4.4	Peak	253	1.5	From local support equip (laptop)
1467.500	49.0	V	54.0	-5.0	Peak	96	1.0	
7325.000	48.6	V	54.0	-5.4	Peak	136	2.0	Peak reading with average limit
11458.830	67.7	V	74.0	-6.3	PK	184	1.1	
5473.330	87.2	H	-	-	Peak	101	1.0	Note 1
5977.500	79.9	V	-	-	Peak	97	1.5	Note 1

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Note:	Preliminary testing showed that there were no emsisions from the radio above the noise floor of the measurment system between 12 and 40 GHz.

Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #1b: Center Channel @ 5788 MHz

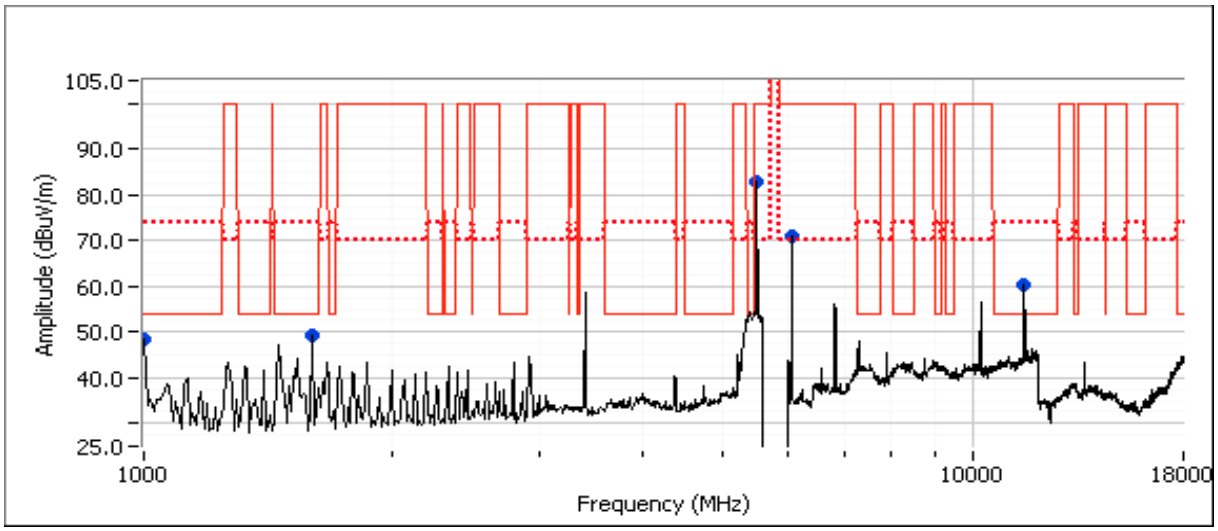
Date of Test: 6/21/2012 Test Location: Chamber #7

Test Engineer: M. Birgani

Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11575.820	52.8	V	54.0	-1.2	AVG	184	1.1	
11572.900	70.6	V	74.0	-3.4	PK	184	1.1	
1600.010	49.1	V	54.0	-4.9	PK	360	1.3	From local support equip (laptop)
11578.600	68.6	V	74.0	-5.4	PK	184	1.1	
1000.020	48.3	V	54.0	-5.7	PK	346	1.9	From local support equip (laptop)
5500.830	82.8	H	-	-	PK	341	1.1	Note 1
6060.000	71.0	V	-	-	PK	248	1.6	Note 1

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #1c: High Channel @ 5847 MHz

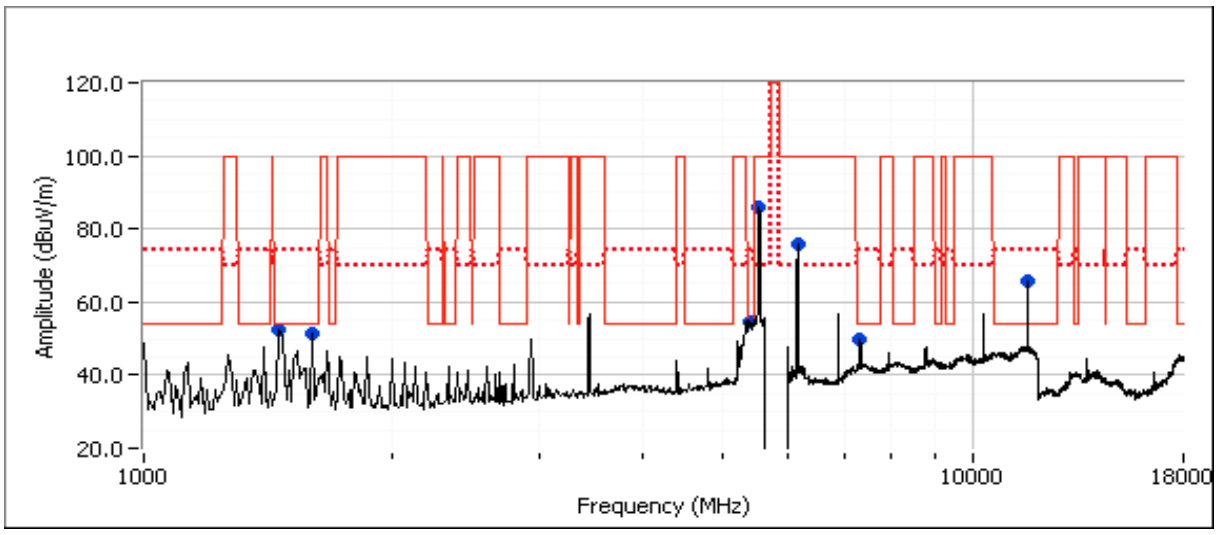
Date of Test: 6/25/2012 Test Location: FT7

Test Engineer: Rafael Varelas

Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11693.900	53.1	V	54.0	-0.9	AVG	328	1.7	RB 1 MHz;VB 10 Hz;Peak
11696.880	68.4	V	74.0	-5.6	PK	328	1.7	RB 1 MHz;VB 3 MHz;Peak
7308.360	46.0	V	54.0	-8.0	AVG	311	1.0	RB 1 MHz;VB 10 Hz;Peak
7306.860	54.6	V	74.0	-19.4	PK	311	1.0	RB 1 MHz;VB 3 MHz;Peak
5394.160	51.7	H	54.0	-2.3	AVG	347	1.0	RB 1 MHz;VB 10 Hz;Peak
5395.590	63.6	H	74.0	-10.4	PK	347	1.0	RB 1 MHz;VB 3 MHz;Peak
1461.820	52.8	H	54.0	-1.2	AVG	291	1.0	RB 1 MHz;VB 10 Hz;Peak
1461.940	54.4	H	74.0	-19.6	PK	291	1.0	RB 1 MHz;VB 3 MHz;Peak
1600.040	51.4	V	54.0	-2.6	AVG	82	1.0	RB 1 MHz;VB 10 Hz;Peak
1600.200	53.4	V	74.0	-20.6	PK	82	1.0	RB 1 MHz;VB 3 MHz;Peak
5537.120	85.9	V	-	-	Peak	268	1.0	Note 1
6157.980	75.9	V	-	-	Peak	295	1.6	Note 1

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #2: Radiated Spurious Emissions, 30 - 40000 MHz. Operating Mode: BW 3.5

Date of Test: 6/25/2012 Test Location: FT7

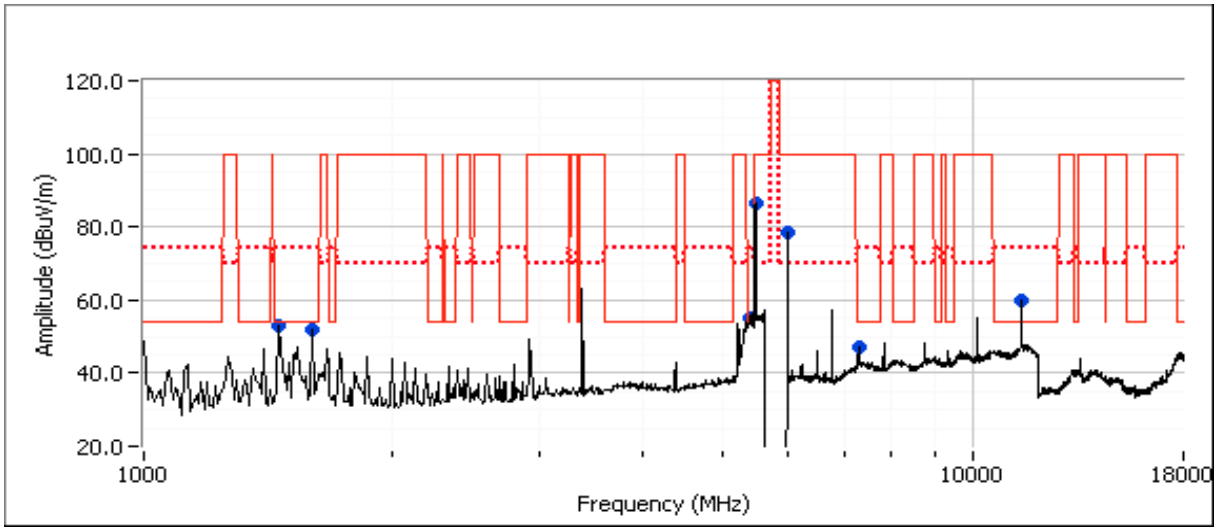
Test Engineer: Rafael Varelas

Run #2a: Low Channel @ 5727 MHz

Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11453.920	53.8	V	54.0	-0.2	AVG	308	1.0	RB 1 MHz;VB 10 Hz;Peak
11455.650	66.5	V	74.0	-7.5	PK	308	1.0	RB 1 MHz;VB 3 MHz;Peak
7319.150	48.3	V	54.0	-5.7	AVG	227	1.1	RB 1 MHz;VB 10 Hz;Peak
7320.820	56.9	V	74.0	-17.1	PK	227	1.1	RB 1 MHz;VB 3 MHz;Peak
1464.340	50.6	H	54.0	-3.4	AVG	308	1.0	RB 1 MHz;VB 10 Hz;Peak
1464.350	52.7	H	74.0	-21.3	PK	308	1.0	RB 1 MHz;VB 3 MHz;Peak
1600.050	50.1	V	54.0	-3.9	AVG	64	1.0	RB 1 MHz;VB 10 Hz;Peak
1600.050	52.3	V	74.0	-21.7	PK	64	1.0	RB 1 MHz;VB 3 MHz;Peak
5411.890	53.2	H	54.0	-0.8	AVG	2	1.0	RB 1 MHz;VB 10 Hz;Peak
5411.510	63.6	H	74.0	-10.4	PK	2	1.0	RB 1 MHz;VB 3 MHz;Peak
5475.070	86.5	H	-	-	Peak	2	1.3	Note 1
5978.230	78.3	V	-	-	Peak	271	1.6	Note 1

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #2b: Center Channel @ 5788 MHz

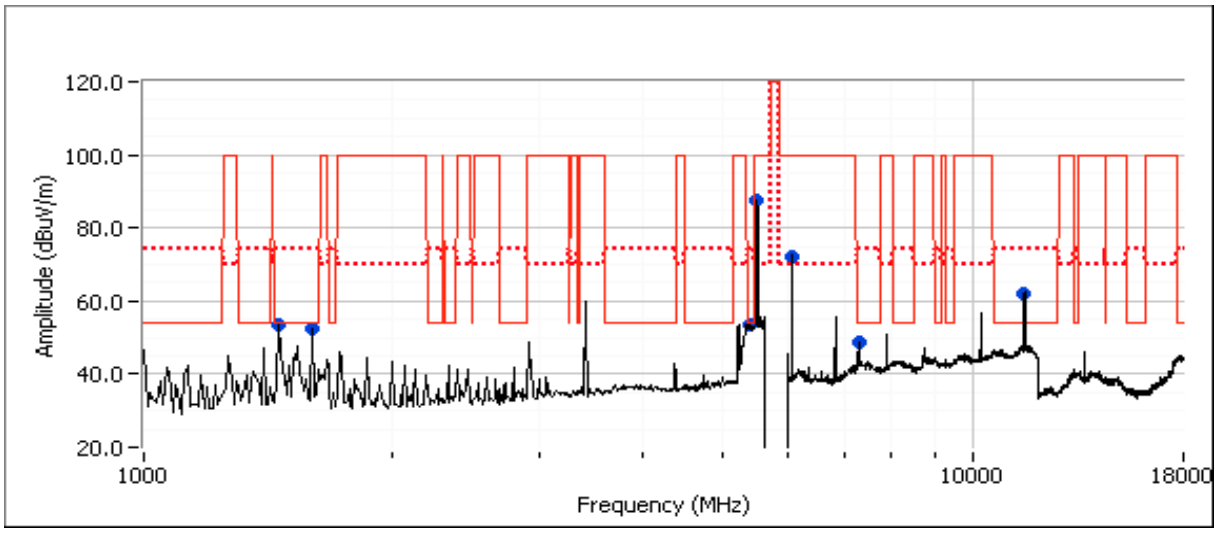
Date of Test: 6/25/2012 Test Location: FT7

Test Engineer: Rafael Varelas

Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11575.910	53.9	V	54.0	-0.1	AVG	304	1.0	RB 1 MHz;VB 10 Hz;Peak
11577.620	68.4	V	74.0	-5.6	PK	304	1.0	RB 1 MHz;VB 3 MHz;Peak
7299.010	45.7	V	54.0	-8.3	AVG	314	1.0	RB 1 MHz;VB 10 Hz;Peak
7303.670	54.6	V	74.0	-19.4	PK	314	1.0	RB 1 MHz;VB 3 MHz;Peak
1460.460	51.2	H	54.0	-2.8	AVG	286	1.0	RB 1 MHz;VB 10 Hz;Peak
1460.420	52.8	H	74.0	-21.2	PK	286	1.0	RB 1 MHz;VB 3 MHz;Peak
1600.070	50.1	V	54.0	-3.9	AVG	85	1.0	RB 1 MHz;VB 10 Hz;Peak
1600.010	52.6	V	74.0	-21.4	PK	85	1.0	RB 1 MHz;VB 3 MHz;Peak
5396.720	50.5	H	54.0	-3.5	AVG	70	1.0	RB 1 MHz;VB 10 Hz;Peak
5396.750	61.9	H	74.0	-12.1	PK	70	1.0	RB 1 MHz;VB 3 MHz;Peak
5506.050	87.7	H	-	-	Peak	150	1.0	Note 1
6070.250	72.1	V	-	-	Peak	253	1.6	Note 1

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #2c: High Channel @ 5848 MHz 3.5BW

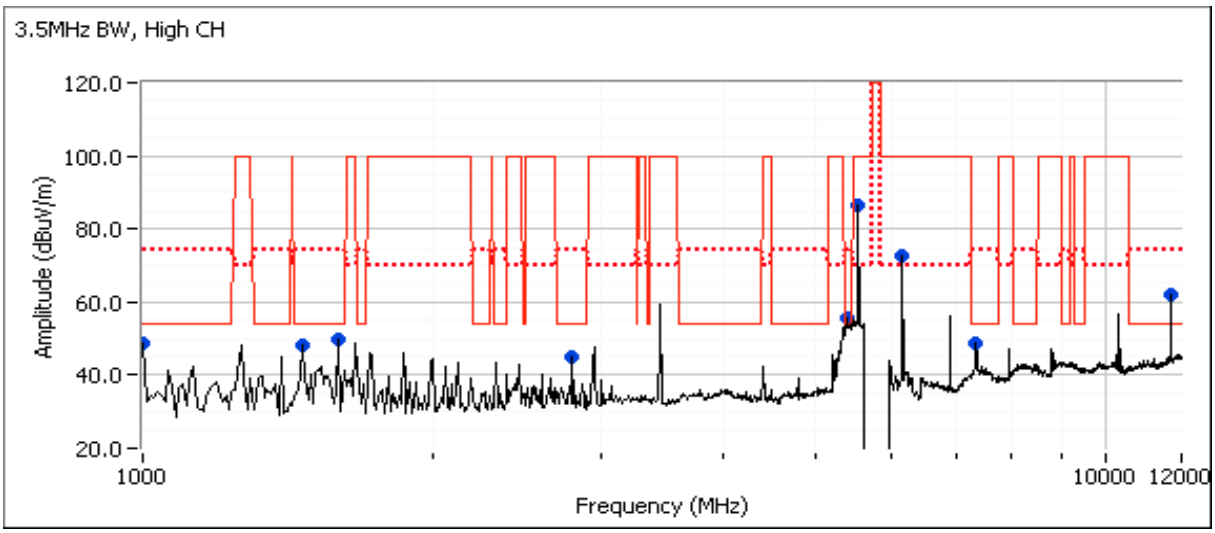
Date of Test: 6/26/2012 Test Location: FT4

Test Engineer: Jack Liu

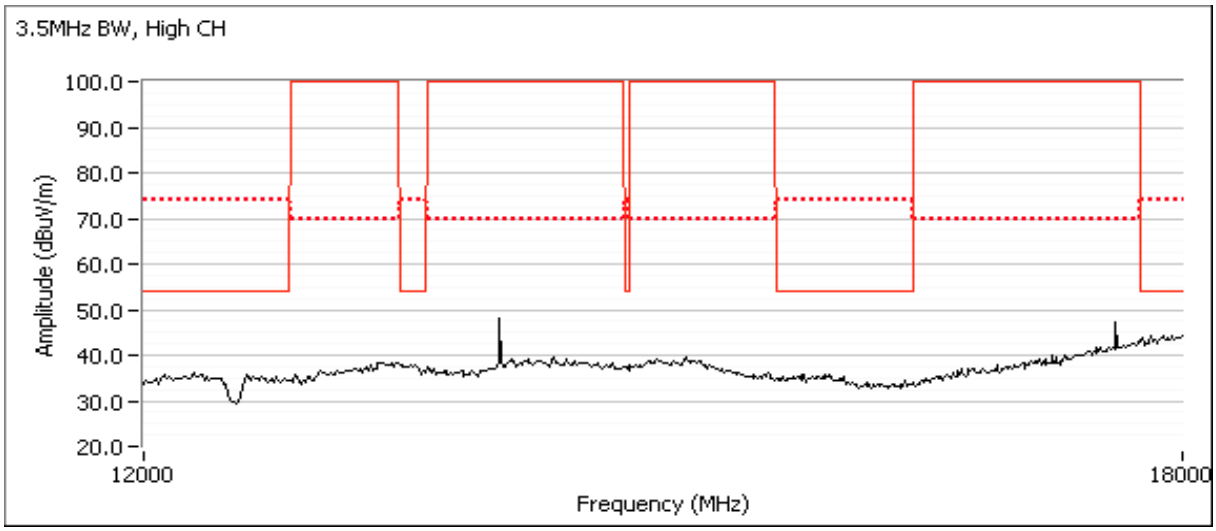
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11695.860	53.5	V	54.0	-0.5	AVG	103	1.3	
11697.410	68.0	V	74.0	-6.0	PK	103	1.3	
2799.990	43.2	V	54.0	-10.8	AVG	273	1.2	
2800.040	46.1	V	74.0	-27.9	PK	273	1.2	
5389.000	46.5	V	54.0	-7.5	AVG	17	0.9	
5388.000	57.8	V	74.0	-16.2	PK	17	0.9	
1600.030	49.1	V	54.0	-4.9	AVG	254	1.4	From local support equip (laptop)
1600.110	50.8	V	74.0	-23.2	PK	254	1.4	From local support equip (laptop)
1462.500	46.2	H	54.0	-7.8	AVG	232	1.0	
1462.630	48.2	H	74.0	-25.8	PK	232	1.0	
7308.600	45.8	V	54.0	-8.2	AVG	132	1.4	
7306.860	54.7	V	74.0	-19.3	PK	132	1.4	
5535.650	86.4	V	-	-	Peak	158	1.0	Note 1
6160.210	72.8	V	-	-	Peak	180	1.6	Note 1

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #3a: Low Channel @ 5729 MHz 7MHz BW

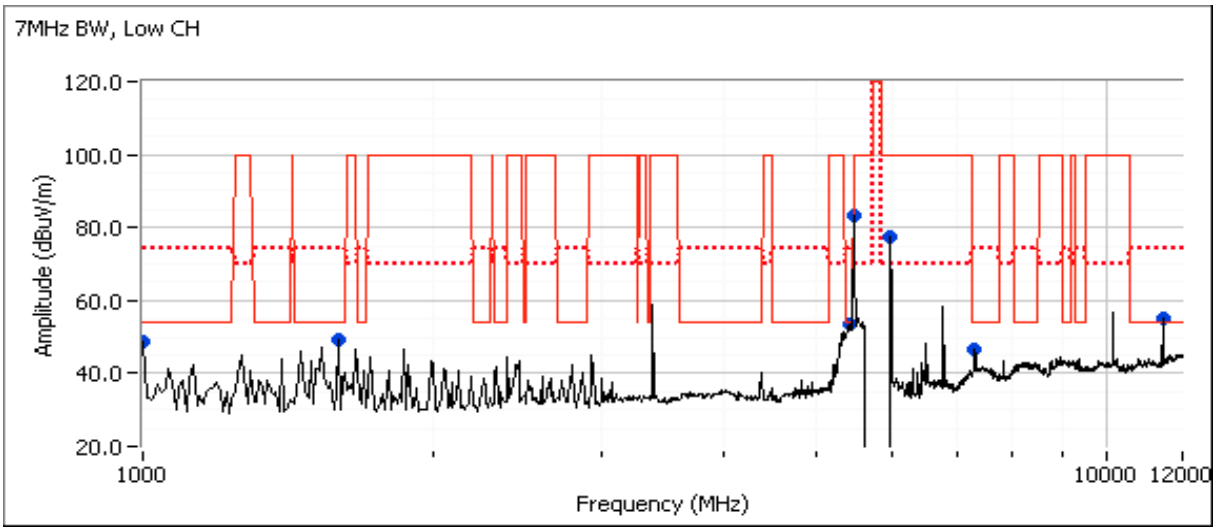
Date of Test: 6/26/2012 Test Location: FT4

Test Engineer: Jack Liu

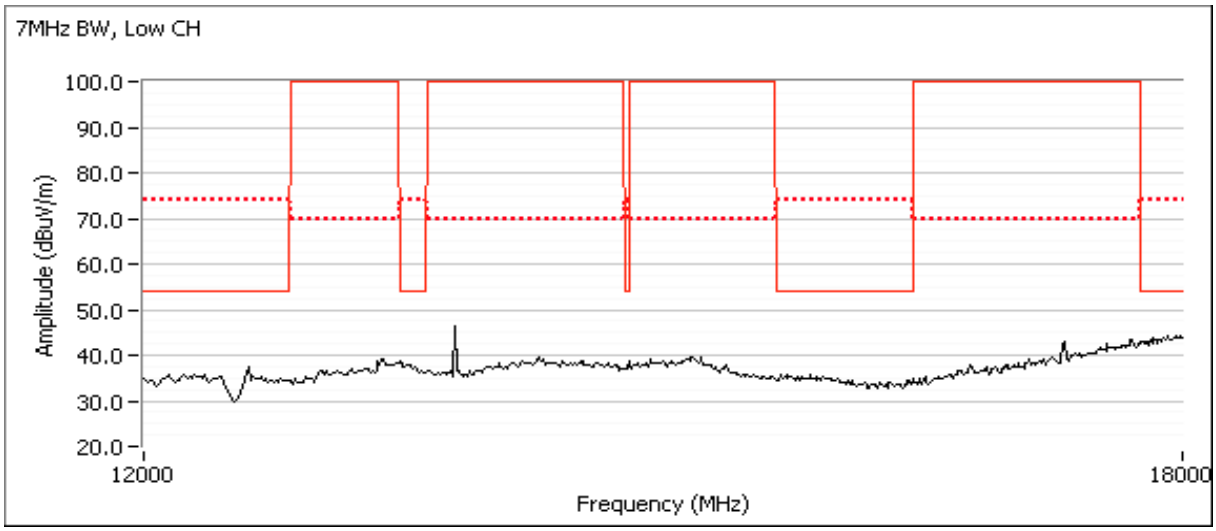
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11458.040	53.3	V	54.0	-0.7	AVG	115	1.0	
11455.160	66.8	V	74.0	-7.2	PK	115	1.0	
5374.020	48.6	V	54.0	-5.4	AVG	7	0.9	
5457.980	58.0	V	74.0	-16.0	PK	7	0.9	
1600.010	49.1	V	54.0	-4.9	AVG	251	1.4	
1600.050	50.7	V	74.0	-23.3	PK	251	1.4	
1000.020	47.6	V	54.0	-6.4	AVG	257	2.4	
1000.080	49.5	V	74.0	-24.5	PK	257	2.4	
7300.450	44.1	V	54.0	-9.9	AVG	258	1.6	
7299.790	53.7	V	74.0	-20.3	PK	258	1.6	
5980.920	77.3	V	-	-	Peak	177	1.3	Note 1
5475.770	83.4	V	-	-	Peak	156	1.0	Note 1

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #3b: Center Channel @ 5788 MHz 7MHz BW

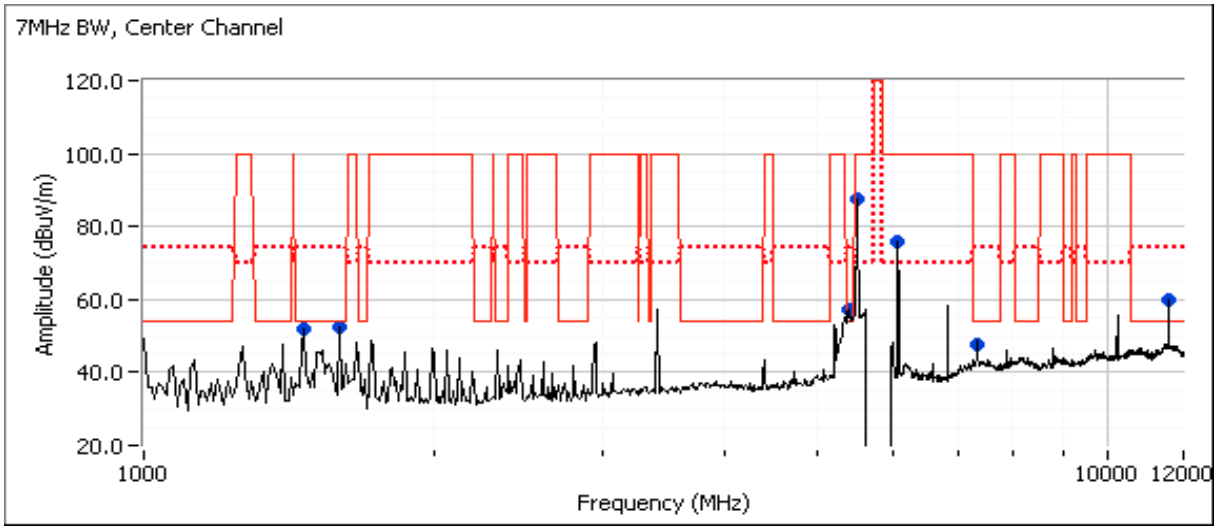
Date of Test: 6/26/2012 Test Location: FT3

Test Engineer: Rafael Varelas

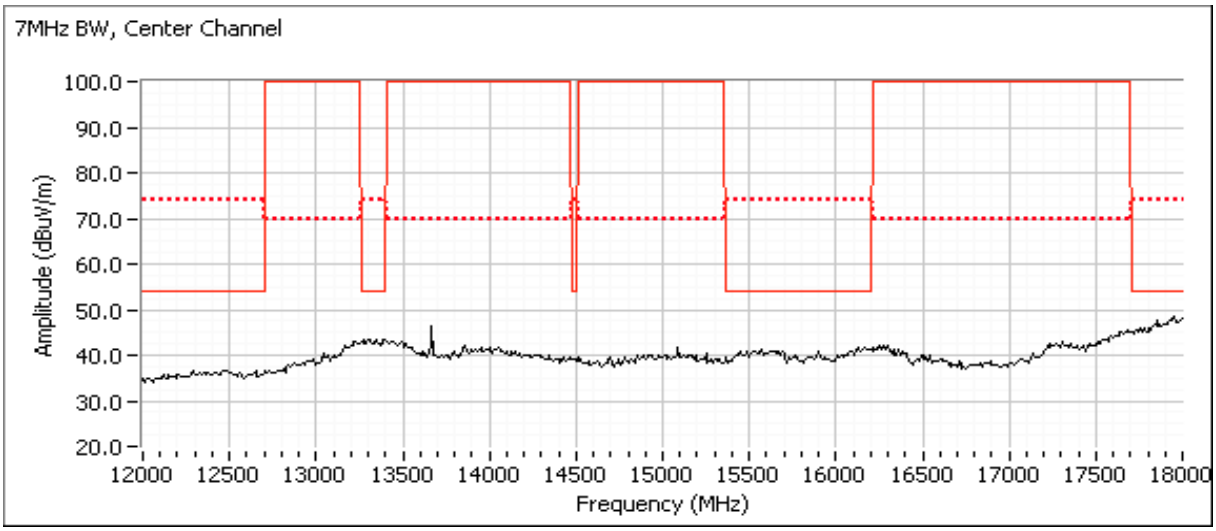
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11576.130	53.3	V	54.0	-0.7	AVG	315	1.4	RB 1 MHz;VB 10 Hz;Peak
11573.170	68.0	V	74.0	-6.0	PK	315	1.4	RB 1 MHz;VB 3 MHz;Peak
5390.220	51.4	H	54.0	-2.6	AVG	339	1.0	RB 1 MHz;VB 10 Hz;Peak
5390.120	62.7	H	74.0	-11.3	PK	339	1.0	RB 1 MHz;VB 3 MHz;Peak
1461.780	51.1	V	54.0	-2.9	AVG	250	1.1	RB 1 MHz;VB 10 Hz;Peak
1461.660	52.9	V	74.0	-21.1	PK	250	1.1	RB 1 MHz;VB 3 MHz;Peak
1600.030	51.8	V	54.0	-2.2	AVG	73	1.0	RB 1 MHz;VB 10 Hz;Peak
1600.010	54.3	V	74.0	-19.7	PK	73	1.0	RB 1 MHz;VB 3 MHz;Peak
5505.410	87.5	H	-	-	Peak	358	1.3	Note 1
6069.980	76.0	V	-	-	Peak	71	1.6	Note 1
7333.510	47.8	V	54.0	-6.2	Peak	71	1.6	Peak reading vs. average limit

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #3c: High Channel @ 5846 MHz 7MHz BW

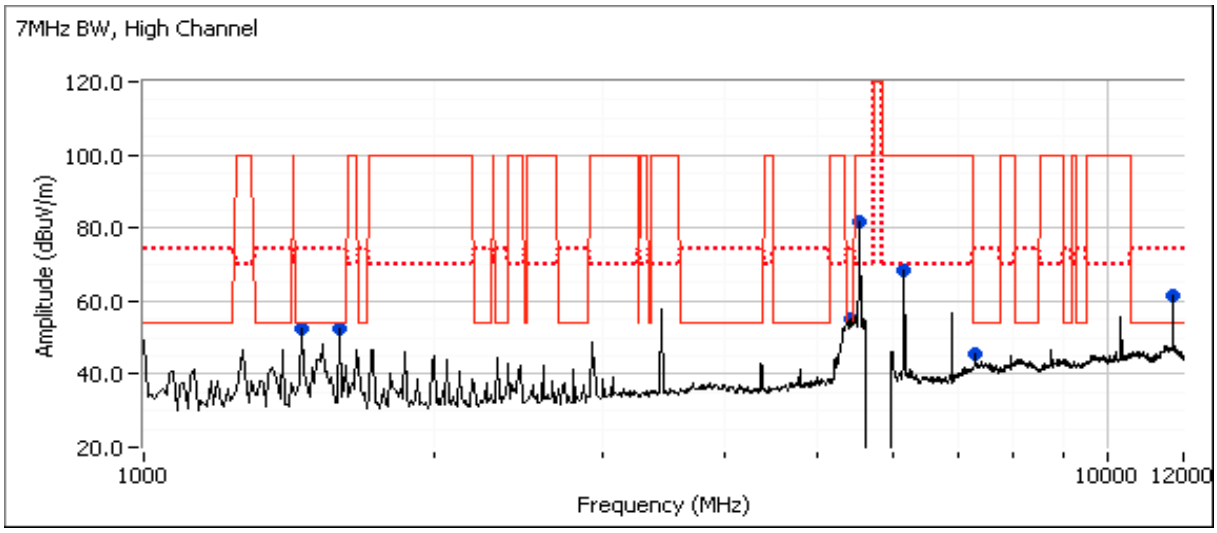
Date of Test: 6/26/2012 Test Location: FT3

Test Engineer: Rafael Varelas

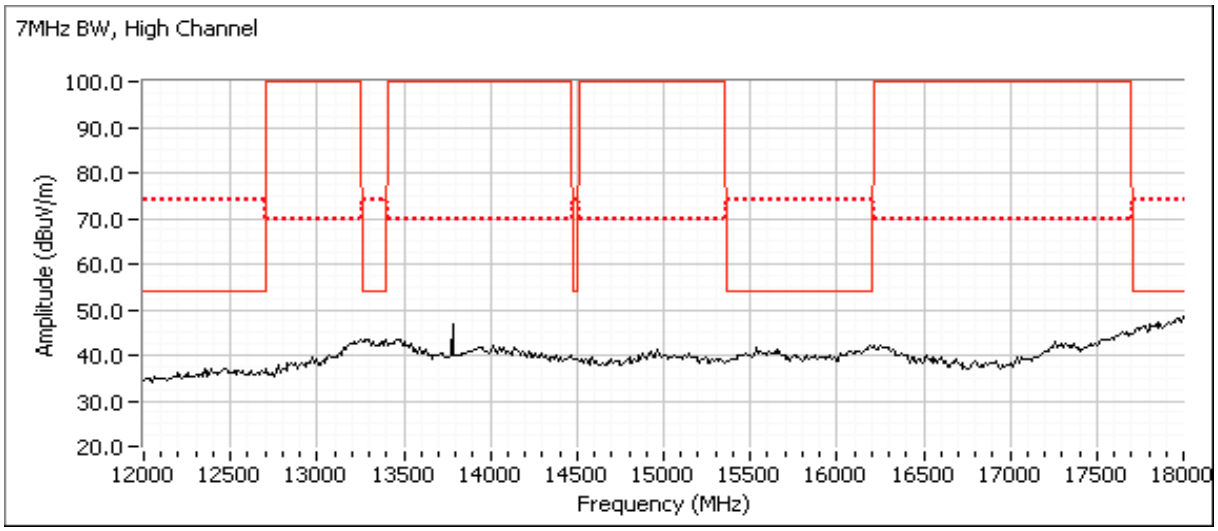
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11691.910	52.8	V	54.0	-1.2	AVG	313	1.6	RB 1 MHz;VB 10 Hz;Peak
11688.970	67.7	V	74.0	-6.3	PK	313	1.6	RB 1 MHz;VB 3 MHz;Peak
1457.350	53.3	H	54.0	-0.7	AVG	352	1.0	RB 1 MHz;VB 10 Hz;Peak
1457.550	54.7	H	74.0	-19.3	PK	352	1.0	RB 1 MHz;VB 3 MHz;Peak
1600.060	50.0	V	54.0	-4.0	AVG	84	1.0	RB 1 MHz;VB 10 Hz;Peak
1599.910	52.7	V	74.0	-21.3	PK	84	1.0	RB 1 MHz;VB 3 MHz;Peak
5410.510	51.5	H	54.0	-2.5	AVG	0	1.0	RB 1 MHz;VB 10 Hz;Peak
5410.230	63.0	H	74.0	-11.0	PK	0	1.0	RB 1 MHz;VB 3 MHz;Peak
5535.830	81.7	V	70.0	11.7	Peak	86	1.0	Note 1
6156.520	68.5	V	70.0	-1.5	Peak	273	1.6	Note 1
7306.560	45.6	V	54.0	-8.4	Peak	302	1.9	Peak reading vs. average limit

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #4a: Low Channel @ 5730 MHz 8.75MHz BW

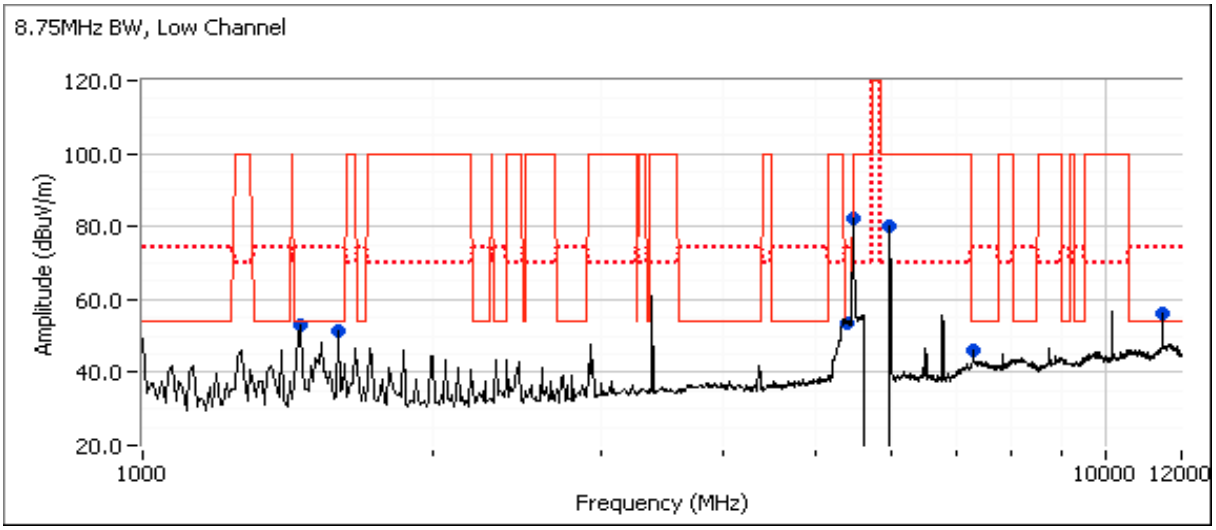
Date of Test: 6/26/2012 Test Location: FT3

Test Engineer: Rafael Varelas

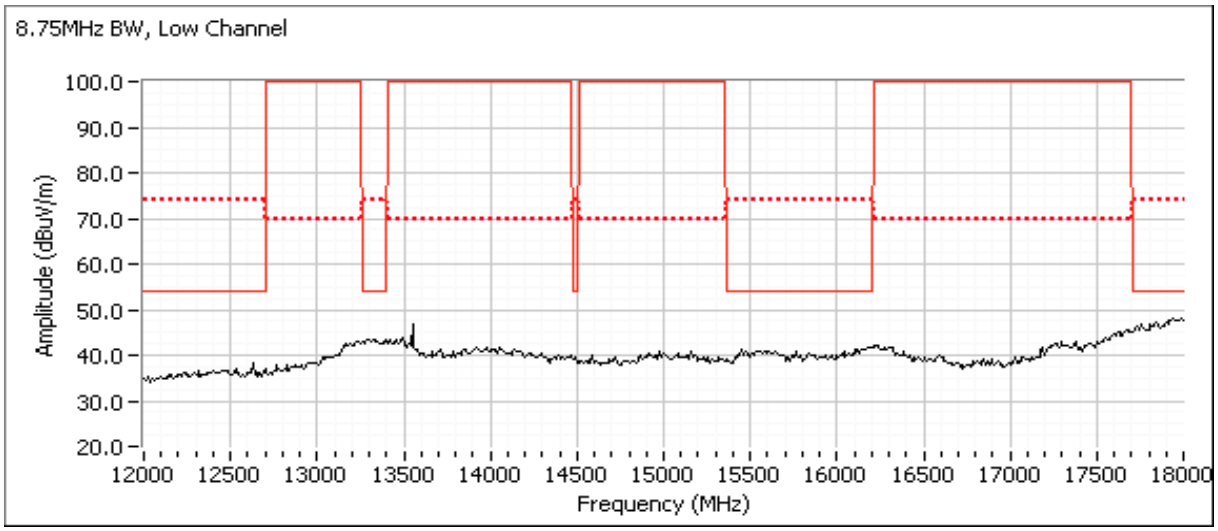
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11460.350	53.5	V	54.0	-0.5	AVG	304	1.0	RB 1 MHz;VB 10 Hz;Peak
11460.950	65.9	V	74.0	-8.1	PK	304	1.0	RB 1 MHz;VB 3 MHz;Peak
5403.810	52.6	H	54.0	-1.4	AVG	327	1.0	RB 1 MHz;VB 10 Hz;Peak
5404.850	64.1	H	74.0	-9.9	PK	327	1.0	RB 1 MHz;VB 3 MHz;Peak
1457.790	53.1	H	54.0	-0.9	AVG	351	1.0	RB 1 MHz;VB 10 Hz;Peak
1457.630	54.0	H	74.0	-20.0	PK	351	1.0	RB 1 MHz;VB 3 MHz;Peak
1600.020	50.7	V	54.0	-3.3	AVG	77	1.0	RB 1 MHz;VB 10 Hz;Peak
1600.330	52.9	V	74.0	-21.1	PK	77	1.0	RB 1 MHz;VB 3 MHz;Peak
5478.730	82.4	H	-	-	Peak	360	1.0	Note 1
5982.810	80.0	V	-	-	Peak	80	1.6	Note 1
7287.690	46.3	V	54.0	-7.7	Peak	308	1.0	Peak reading vs. average limit

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #4b: Center Channel @ 5788 MHz 8.75MHz BW

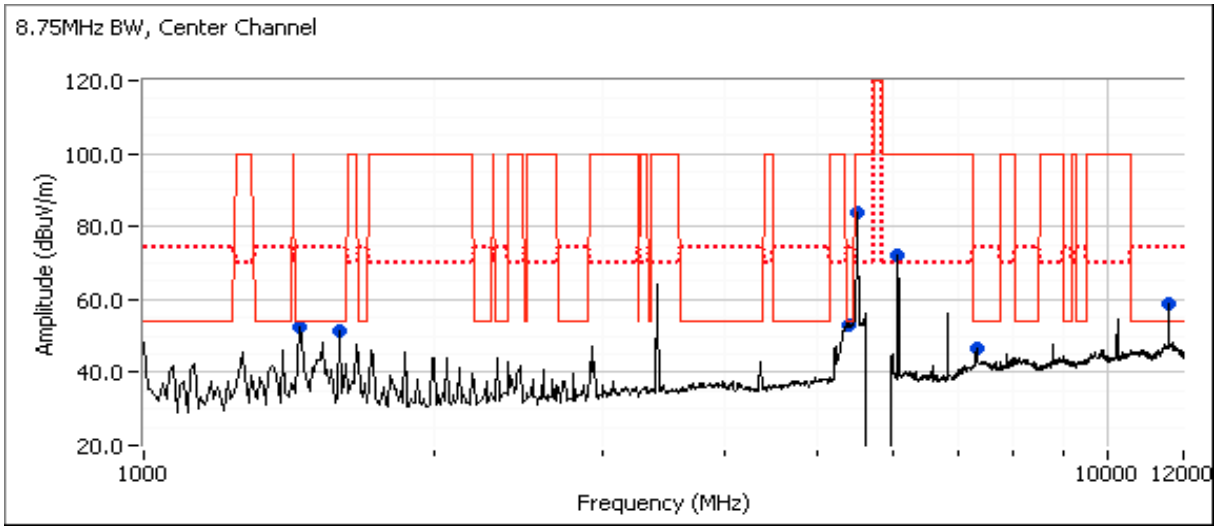
Date of Test: 6/26/2012 Test Location: FT3

Test Engineer: Rafael Varelas

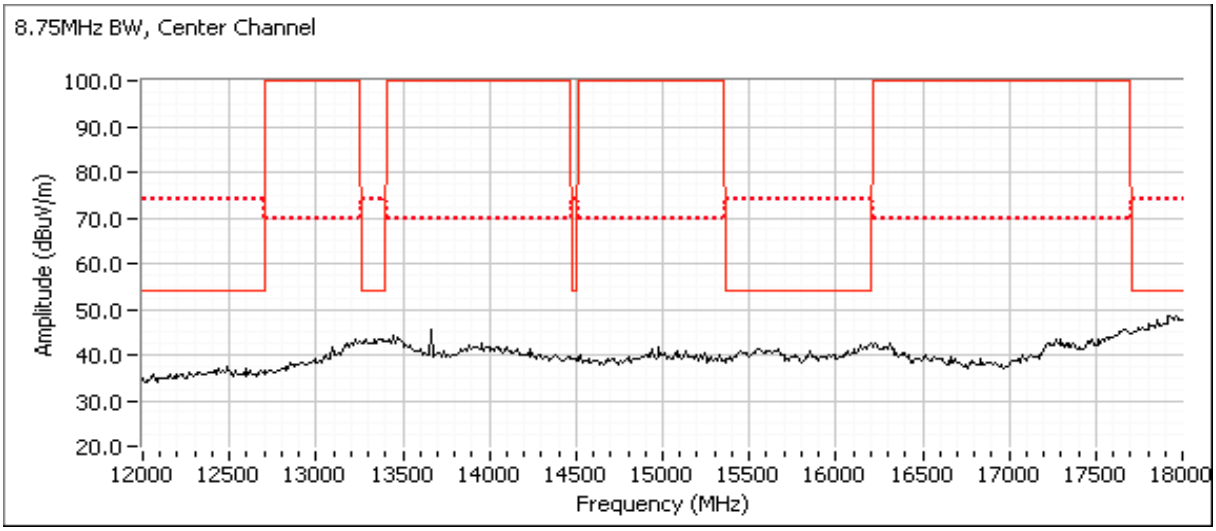
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11575.900	53.9	V	54.0	-0.1	AVG	313	1.4	RB 1 MHz;VB 10 Hz;Peak
11578.570	67.5	V	74.0	-6.5	PK	313	1.4	RB 1 MHz;VB 3 MHz;Peak
1459.330	52.8	H	54.0	-1.2	AVG	347	1.0	RB 1 MHz;VB 10 Hz;Peak
1459.370	53.7	H	74.0	-20.3	PK	347	1.0	RB 1 MHz;VB 3 MHz;Peak
5409.190	49.4	H	54.0	-4.6	AVG	147	1.0	RB 1 MHz;VB 10 Hz;Peak
5409.540	60.6	H	74.0	-13.4	PK	147	1.0	RB 1 MHz;VB 3 MHz;Peak
1600.010	51.3	V	54.0	-2.7	AVG	73	1.0	RB 1 MHz;VB 10 Hz;Peak
1599.860	53.7	V	74.0	-20.3	PK	73	1.0	RB 1 MHz;VB 3 MHz;Peak
5505.220	83.7	H	-	-	Peak	93	1.0	Note 1
6069.900	71.9	V	-	-	Peak	86	1.6	Note 1
7344.580	46.5	V	54.0	-7.5	Peak	304	1.9	Peak reading vs. average limit

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #4c: High Channel @ 5845 MHz 8.75MHz BW

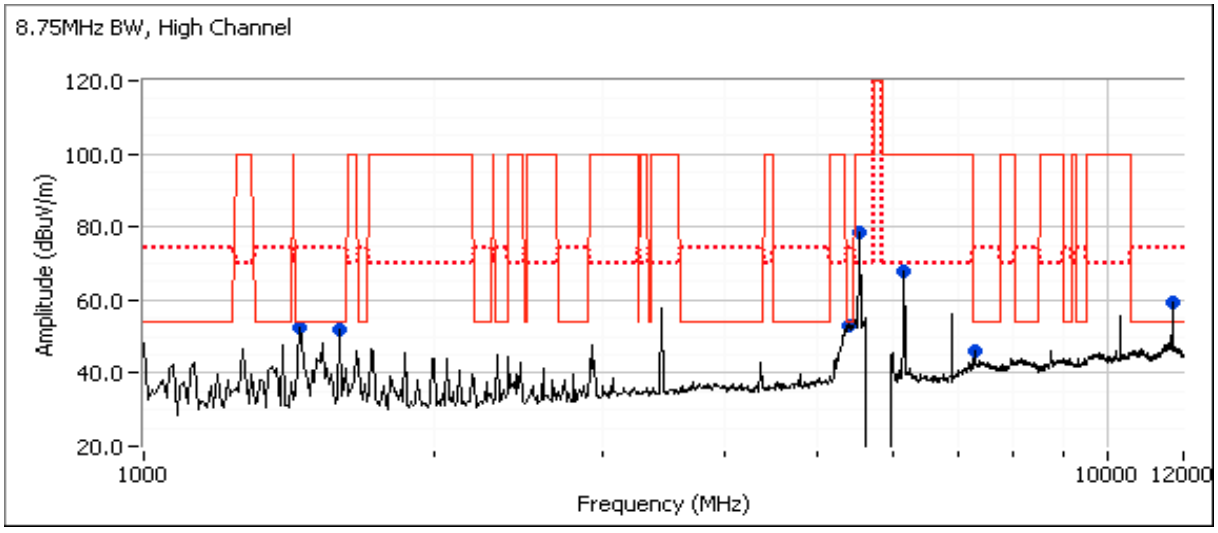
Date of Test: 6/26/2012 Test Location: FT3

Test Engineer: Rafael Varelas

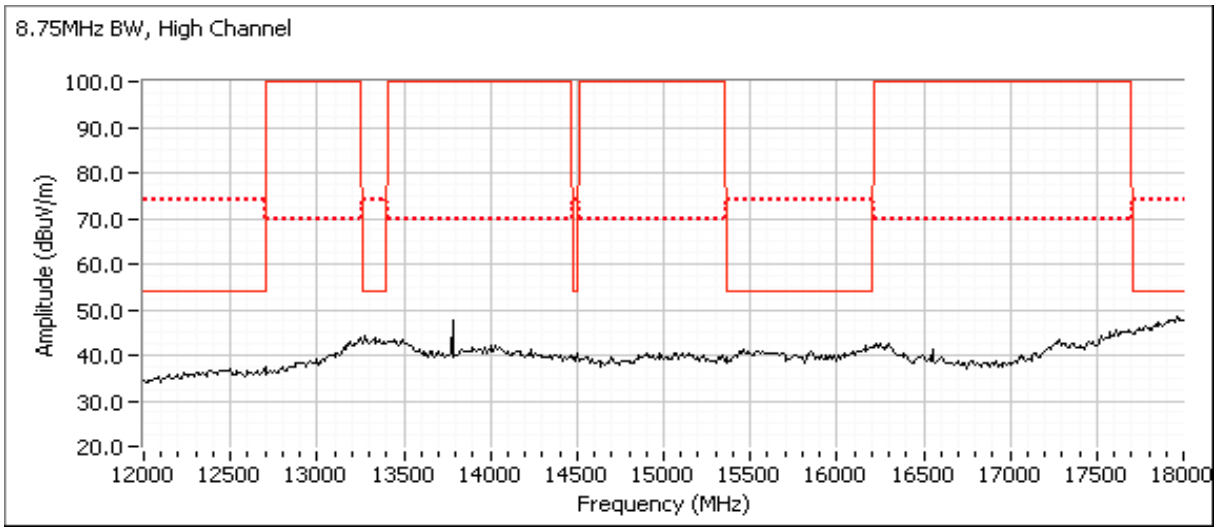
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11690.430	53.4	V	54.0	-0.6	AVG	312	1.6	RB 1 MHz;VB 10 Hz;Peak
11693.200	67.0	V	74.0	-7.0	PK	312	1.6	RB 1 MHz;VB 3 MHz;Peak
5401.250	50.5	H	54.0	-3.5	AVG	352	1.0	RB 1 MHz;VB 10 Hz;Peak
5401.170	61.6	H	74.0	-12.4	PK	352	1.0	RB 1 MHz;VB 3 MHz;Peak
1600.030	51.3	V	54.0	-2.7	AVG	76	1.0	RB 1 MHz;VB 10 Hz;Peak
1600.030	52.6	V	74.0	-21.4	PK	76	1.0	RB 1 MHz;VB 3 MHz;Peak
1459.670	52.2	H	54.0	-1.8	AVG	0	1.0	RB 1 MHz;VB 10 Hz;Peak
1459.940	54.5	H	74.0	-19.5	PK	0	1.0	RB 1 MHz;VB 3 MHz;Peak
5528.330	78.4	H	-	-	Peak	341	1.3	Note 1
6151.670	67.7	V	-	-	Peak	228	1.6	Note 1
7288.330	45.8	V	54.0	-8.2	Peak	213	1.3	Peak reading vs. average limit

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #5a: Low Channel @ 5731 MHz 10MHz BW

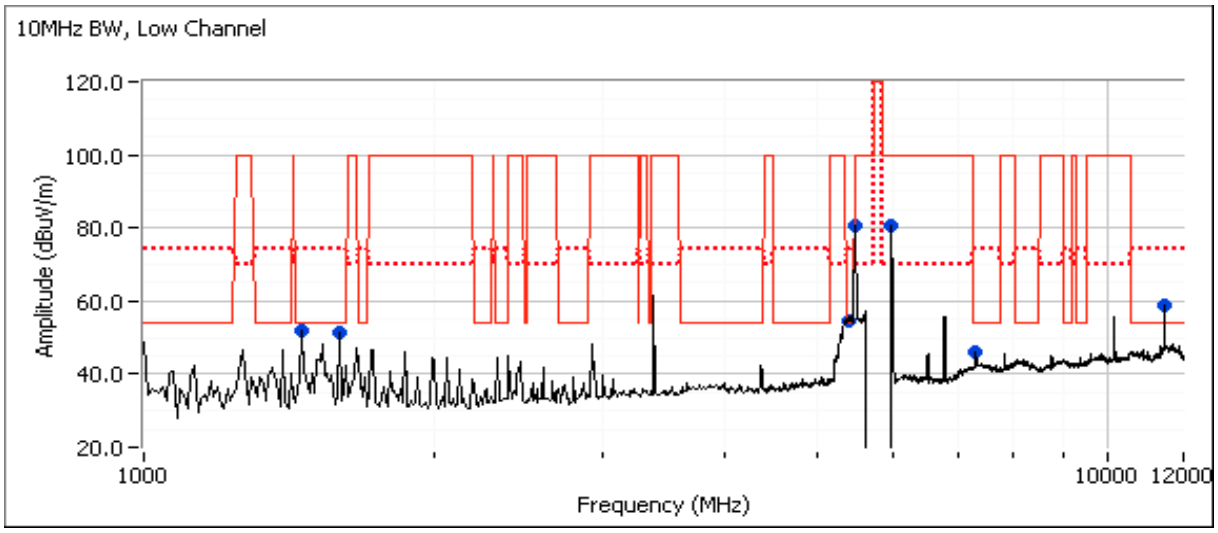
Date of Test: 6/26/2012 Test Location: FT3

Test Engineer: Rafael Varelas

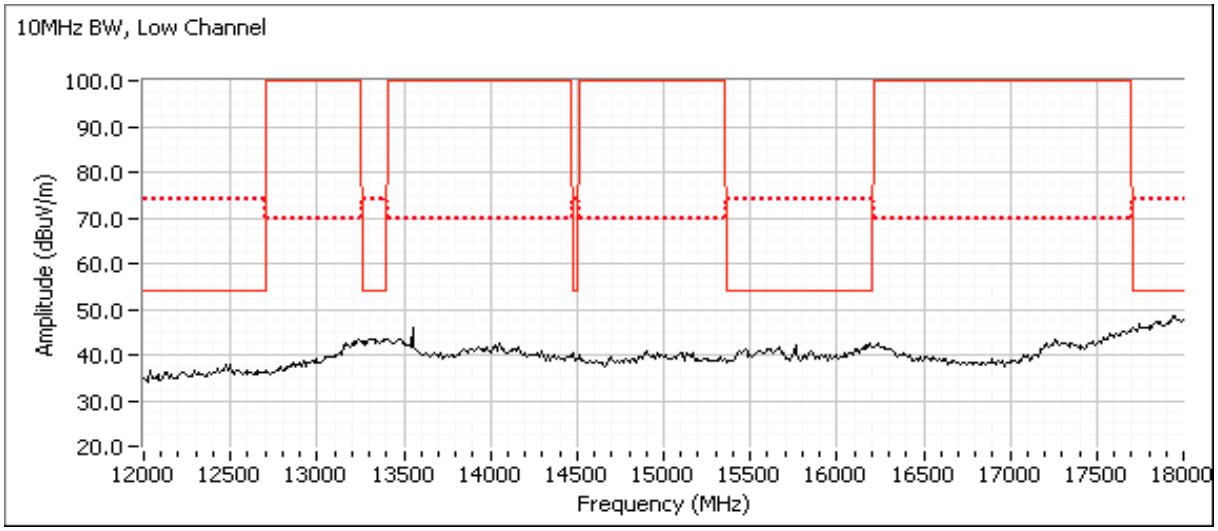
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11462.220	53.1	V	54.0	-0.9	AVG	292	1.0	RB 1 MHz;VB 10 Hz;Peak
11458.080	67.5	V	74.0	-6.5	PK	292	1.0	RB 1 MHz;VB 3 MHz;Peak
5376.000	53.4	H	54.0	-0.6	AVG	348	1.0	RB 1 MHz;VB 10 Hz;Peak
5376.250	63.9	H	74.0	-10.1	PK	348	1.0	RB 1 MHz;VB 3 MHz;Peak
1458.080	52.9	H	54.0	-1.1	AVG	355	1.0	RB 1 MHz;VB 10 Hz;Peak
1458.100	53.8	H	74.0	-20.2	PK	355	1.0	RB 1 MHz;VB 3 MHz;Peak
1600.030	50.6	V	54.0	-3.4	AVG	79	1.0	RB 1 MHz;VB 10 Hz;Peak
1599.970	53.1	V	74.0	-20.9	PK	79	1.0	RB 1 MHz;VB 3 MHz;Peak
5478.460	80.7	H	-	-	Peak	340	1.0	Note 1
5984.270	80.6	V	-	-	Peak	259	1.6	Note 1
7318.000	46.2	V	54.0	-7.8	Peak	212	1.6	Peak reading vs. average limit

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #5b: Center Channel @ 5788 MHz 10MHz BW

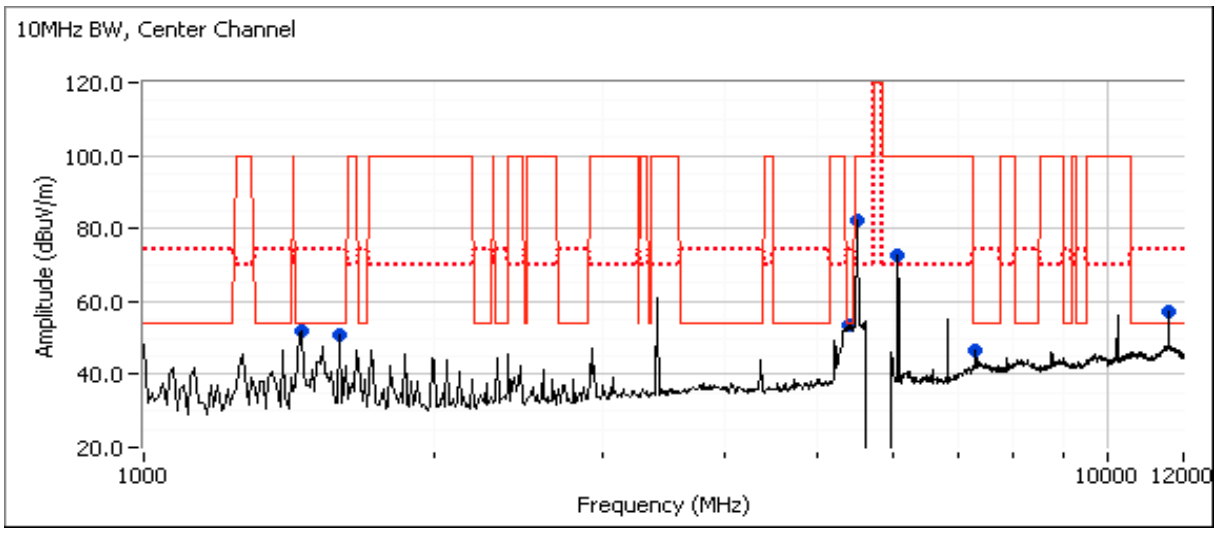
Date of Test: 6/26/2012 Test Location: FT3

Test Engineer: Rafael Varelas

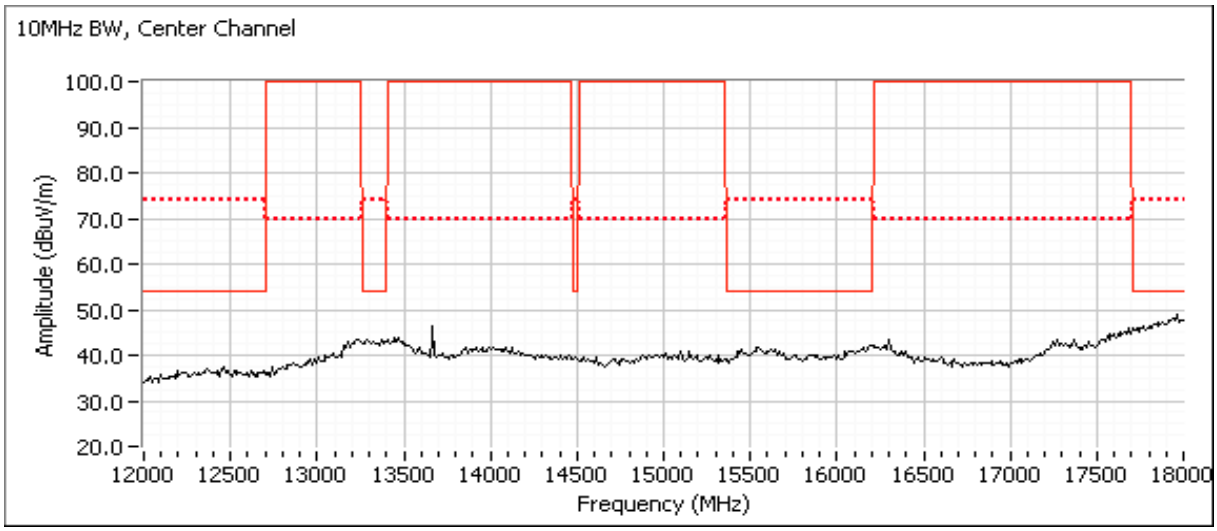
Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11576.730	53.0	V	54.0	-1.0	AVG	315	1.4	RB 1 MHz;VB 10 Hz;Peak
11571.460	66.7	V	74.0	-7.3	PK	315	1.4	RB 1 MHz;VB 3 MHz;Peak
1458.770	52.6	H	54.0	-1.4	AVG	352	1.0	RB 1 MHz;VB 10 Hz;Peak
1458.800	54.2	H	74.0	-19.8	PK	352	1.0	RB 1 MHz;VB 3 MHz;Peak
5412.850	50.6	H	54.0	-3.4	AVG	89	1.1	RB 1 MHz;VB 10 Hz;Peak
5412.270	61.3	H	74.0	-12.7	PK	89	1.1	RB 1 MHz;VB 3 MHz;Peak
1600.030	51.2	V	54.0	-2.8	AVG	71	1.0	RB 1 MHz;VB 10 Hz;Peak
1600.080	53.2	V	74.0	-20.8	PK	71	1.0	RB 1 MHz;VB 3 MHz;Peak
5510.260	82.0	H	-	-	Peak	337	1.0	Note 1
6069.900	72.4	V	-	-	Peak	69	1.6	Note 1
7320.120	46.4	V	54.0	-7.6	Peak	213	1.3	Peak reading vs. average limit

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A



Client:	GE MDS LLC	Job Number:	J87251
Model:	Mercury 5800 IDU	T-Log Number:	T87282
		Account Manager:	Michelle Kim
Contact:	Jonathan Vilagy		
Standard:	FCC Part15.247, RSS-210 Issue 7	Class:	N/A

Run #5c: High Channel @ 5844 MHz 10MHz BW

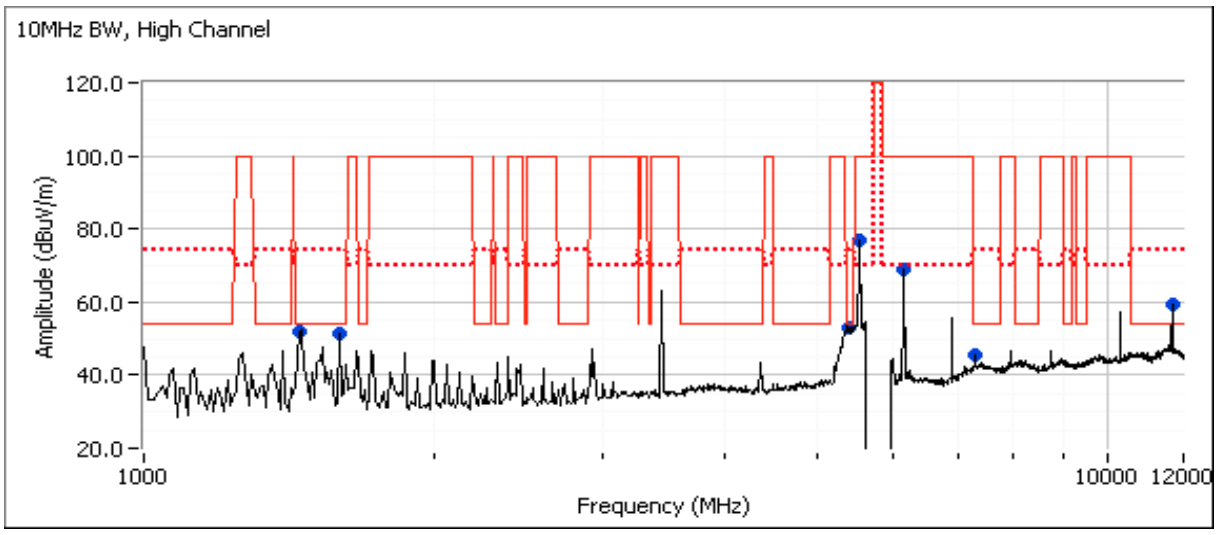
Date of Test: 6/26/2012 Test Location: FT3

Test Engineer: Rafael Varelas

Other Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11688.220	52.9	V	54.0	-1.1	AVG	311	1.4	RB 1 MHz;VB 10 Hz;Peak
11684.680	66.4	V	74.0	-7.6	PK	311	1.4	RB 1 MHz;VB 3 MHz;Peak
5409.200	52.2	H	54.0	-1.8	AVG	345	1.0	RB 1 MHz;VB 10 Hz;Peak
5408.520	62.8	H	74.0	-11.2	PK	345	1.0	RB 1 MHz;VB 3 MHz;Peak
1600.020	51.5	V	54.0	-2.5	AVG	73	1.0	RB 1 MHz;VB 10 Hz;Peak
1600.080	54.2	V	74.0	-19.8	PK	73	1.0	RB 1 MHz;VB 3 MHz;Peak
1461.120	49.1	H	54.0	-4.9	AVG	0	1.0	RB 1 MHz;VB 10 Hz;Peak
1461.220	52.9	H	74.0	-21.1	PK	0	1.0	RB 1 MHz;VB 3 MHz;Peak
5534.370	76.9	V	-	-	Peak	68	1.3	Note 1
6153.410	68.7	V	-	-	Peak	246	1.6	Note 1
7288.820	45.4	V	54.0	-8.6	Peak	269	1.0	Peak reading vs. average limit

Note 1:	The signal is within un-restricted band, compliance will be determined via conducted measurement
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J87251
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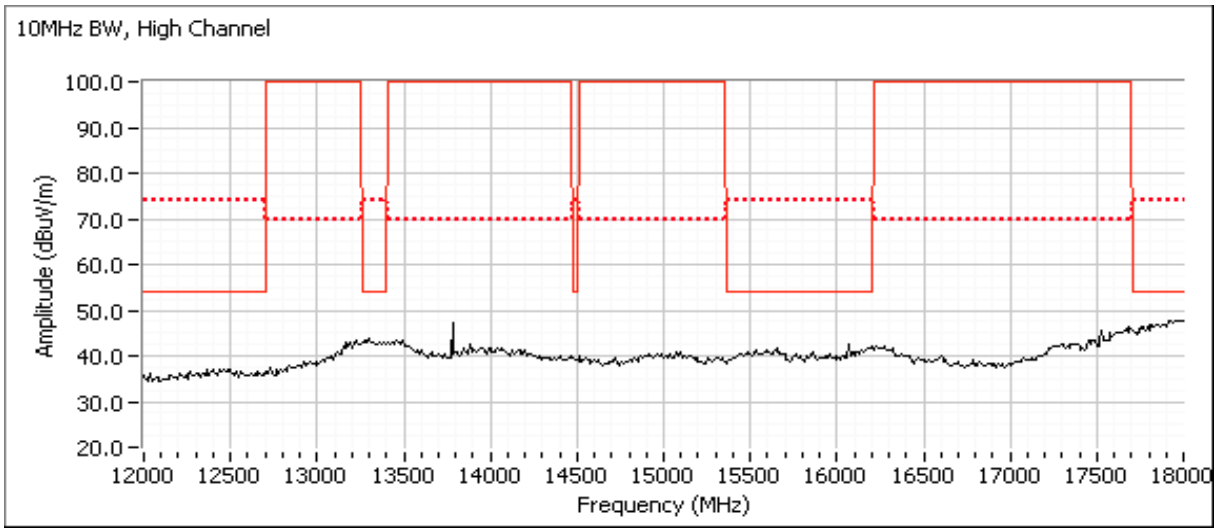

End of Report

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