EMC Test Report

Application for Grant of Equipment Authorization

FCC Part 15 Subpart C

Model: MERCURY 5800 OUTDOOR SUBSCRIBER

FCC ID:	E5MDS-MERCODU5
APPLICANT:	GE MDS LLC 175 Science Parkway Rochester, NY 14620
TEST SITE(S):	Elliott Laboratories 41039 Boyce Road. Fremont, CA. 94538-2435
IC SITE REGISTRATION #:	2845B-3; 2845B-4, 2845B-5, 2845B-7
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REVISION HISTORY

Rev#	Date	Comments	Modified By
-	01-12-2012	First release	

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SCOPE

An electromagnetic emissions test has been performed on the GE MDS LLC model MERCURY 5800 OUTDOOR SUBSCRIBER, pursuant to the following rules:

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 Elliott Laboratories test procedures:

ANSI C63.4:2003
FCC DTS Measurement Procedure KDB558074, March 2005

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.

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.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

STATEMENT OF COMPLIANCE

The tested sample of GE MDS LLC model MERCURY 5800 OUTDOOR SUBSCRIBER complied with the requirements of the following regulations:

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 OUTDOOR SUBSCRIBER and therefore apply only to the tested sample. The sample was selected and prepared by Dennis McCarthy 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		Description	Measured Value / Comments	Limit / Requirement	Result
15.247(a)		Digital Modulation	System uses OFDM techniques	System must utilize a digital transmission technology	Complies
15.247 (a) (2)		6dB Bandwidth	3.5 MHz: 3.12 MHz 5.0 MHz: 4.43 MHz 7.0 MHz: 6.40 MHz 8.75 MHz: 7.63 MHz 10.0 MHz: 8.90 MHz	>500kHz	Complies
15.247 (b)		Output Power (multipoint systems)	3.5 MHz: 17.5 dBm 5 MHz: 17.4 dBm 7 MHz: 18.0 dBm 8.75 MHz: 17.4 dBm 10 MHz: 18.0 dBm EIRP = 4.0 W Note 1	1Watt, EIRP limited to 4 Watts.	Complies
15.247(d)		Power Spectral Density	3.5 MHz: -1.0 dBm 5 MHz: -5.0 dBm 7 MHz: -7.0 dBm 8.75 MHz: -8.0 dBm 10 MHz: -7.9 dBm All in 3kHz	Maximum permitted is 8dBm/3kHz	Complies
15.247(c)		Antenna Port Spurious Emissions – 30MHz – 40 GHz	All spurious emissions < -30dBc	< -30dBc Note 2	Complies
15.247(c) / 15.209		Radiated Spurious Emissions 30MHz – 40 GHz	51.6dBµV/m @ 11454.4MHz (-2.4dB)	15.207 in restricted bands, all others <-30dBc Note 2	Complies
15.203		RF Connector	Integral Antenna	Unique or integral antenna required	Complies
15.207		AC Conducted Emissions	49.9dBµV @ 23.781MHz (-0.1dB)	Refer to page 17	Complies
15.247 (b) (5) 15.407 (f)		RF Exposure Requirements	Refer to MPE calculations and User Manual statements.	Refer to OET 65 and FCC Part 1	Complies

Note 1: EIRP calculated using antenna gain of 18.0 dBi for the highest EIRP system multi-point system.
Note 2: 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
Conducted emission of receiver	dBm	25 to 26500 MHz	± 0.7 dB
Radiated emission (substitution method)	dBm	25 to 26500 MHz	± 2.5 dB
Radiated emission (field strength)	dBµV/m	25 to 1000 MHz	± 3.6 dB
		1000 to 40000 MHz	± 6.0 dB
Conducted Emissions (AC Power)	dBµV	0.15 to 30 MHz	± 2.4 dB

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The GE MDS LLC model MERCURY 5800 OUTDOOR SUBSCRIBER is a WiMAX transceiver that is designed to transmit data. 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 sample was received on June 23, 2011 and tested on June 23, September 19 and 27, October 13, 17, 19, 21 and 24 and December 14, 2011. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID
GE MDS LLC	MERCURY5800 ODU	WiMAX transceiver	PreProduction	E5MDS-MERCODU5

ANTENNA SYSTEM

The EUT antenna is integral panel, 18dBi.
The antenna is integral to the EUT, thereby meeting the requirements of FCC 15.203.

ENCLOSURE

The EUT enclosure is primarily constructed of Aluminum. 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 Elliott.

SUPPORT EQUIPMENT

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

Company	Model	Description	Serial Number	FCC ID
		POE Adapter		-

EUT INTERFACE PORTS

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

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
LAN	Remote POE	CAT 5	Unshielded	15

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 transmit at a specified power setting on the selected channel.

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 5	211948	2845B-5	
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.

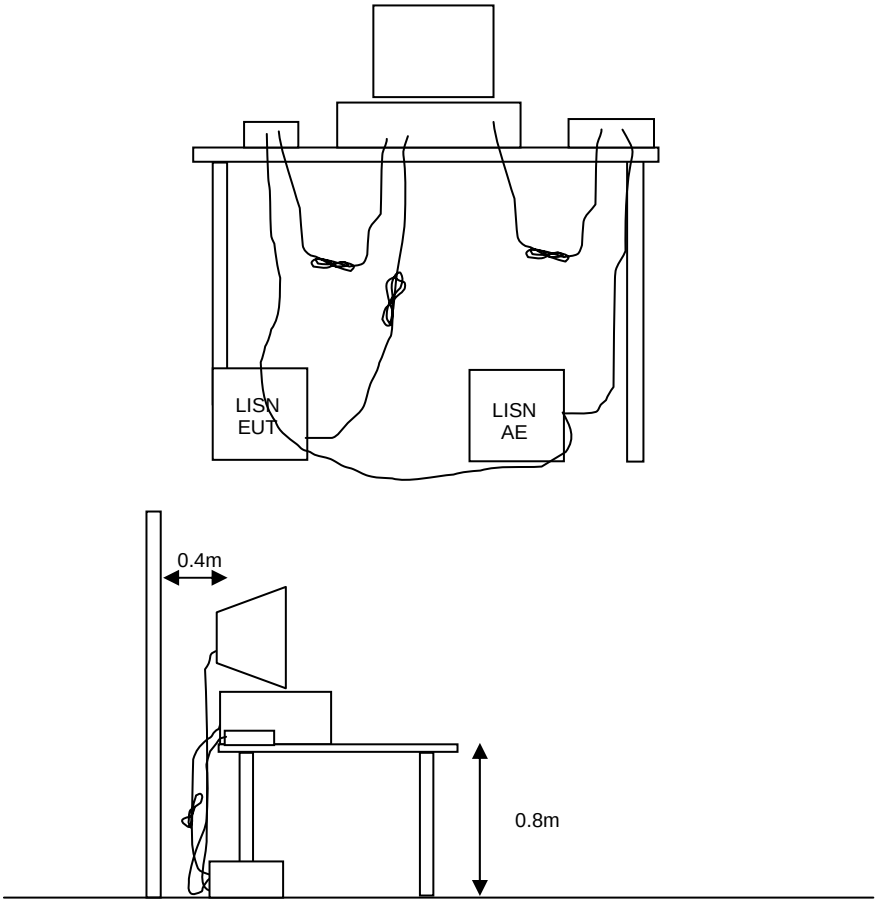


Figure 1 Typical Conducted Emissions Test Configuration

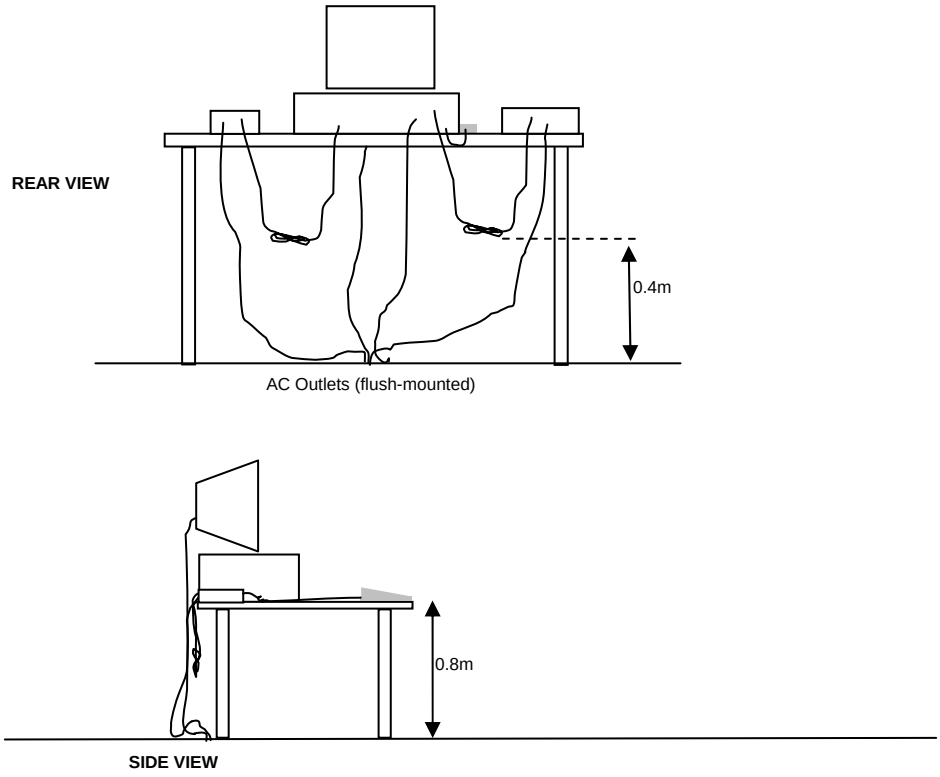
RADIATED EMISSIONS

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.

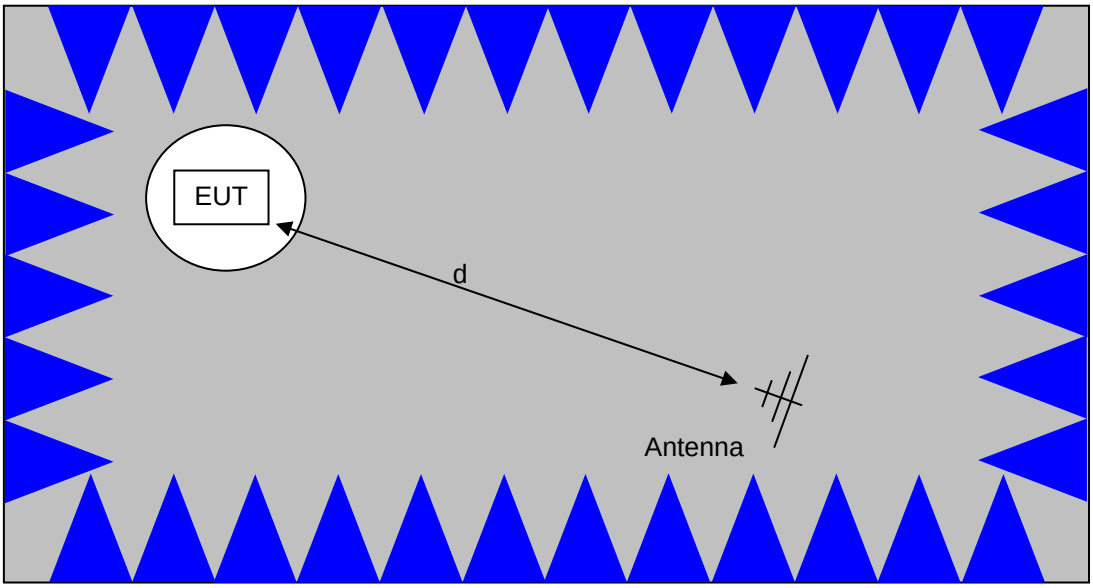
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

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.

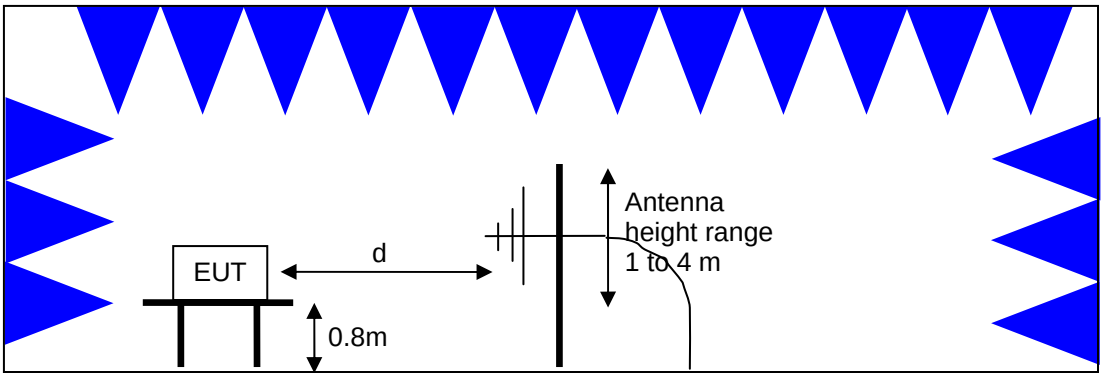


Typical Test Configuration for Radiated Field Strength Measurements



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.

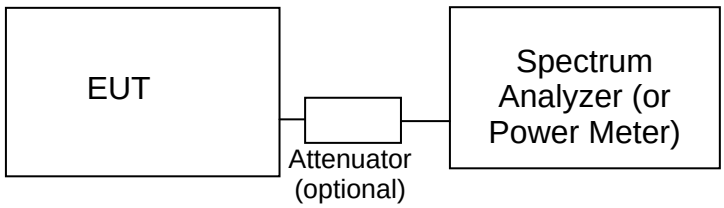
Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



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 Elliott'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:

CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(a), RSS GEN

The table below shows the limits for the emissions on the AC power line from an intentional radiator and a receiver.

Frequency (MHz)	Average Limit (dBuV)	Quasi Peak Limit (dBuV)
0.150 to 0.500	Linear decrease on logarithmic frequency axis between 56.0 and 46.0	Linear decrease on logarithmic frequency axis between 66.0 and 56.0
0.500 to 5.000	46.0	56.0
5.000 to 30.000	50.0	60.0

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:

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

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

Conducted Emissions - AC Power Ports, 23-Jun-11

Manufacturer	Description	Model	Asset #	Cal Due
Rohde & Schwarz	Pulse Limiter	ESH3 Z2	812	1/18/2012
EMCO	LISN, 10 kHz-100 MHz	3825/2	1292	3/1/2012
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	4/6/2012

Radio Antenna Port (Power and Spurious Emissions), 19-Sep-11

Manufacturer	Description	Model	Asset #	Cal Due
Agilent	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	1/26/2012

Radio Antenna Port (Power), 27-Sep-11

Manufacturer	Description	Model	Asset #	Cal Due
Agilent	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	1/26/2012

Radio Antenna Port (Power and Spurious Emissions), 13-Oct-11

Manufacturer	Description	Model	Asset #	Cal Due
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	8/15/2012

Radiated Emissions, 1000 - 18,000 MHz, 17-Oct-11

Manufacturer	Description	Model	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	12/8/2011
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	8/15/2012
EMCO	Antenna, Horn, 1-18 GHz	3115	1561	6/22/2012
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	3/23/2012

Radiated Emissions, 1000 - 40,000 MHz, 19-Oct-11

Manufacturer	Description	Model	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	5/18/2012
EMCO	Antenna, Horn, 1-18GHz	3115	868	6/8/2012
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	8/9/2012
Hewlett Packard	Head (Inc W1-W4, 1742 , 1743) Blue	84125C	1620	5/9/2012
A.H. Systems	Blue System Horn, 18-40GHz	SAS-574, p/n: 2581	2159	3/23/2012
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	2241	10/4/2012

Radiated Emissions, 1000 - 18,000 MHz, 21-Oct-11

Manufacturer	Description	Model	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	12/8/2011
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	2241	10/4/2012

Radiated Emissions, 1000 - 18,000 MHz, 14-Dec-11

Manufacturer	Description	Model #	Asset #	Cal Due
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	06-Dec-12
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	1548	24-Jun-12
Hewlett Packard	Preamplifier, 100 kHz - 1.3 GHz	8447D OPT 010	1826	17-May-12

Appendix B Test Data

T83697 Pages 25 - 91

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		-
Emissions Standard(s):	FCC 15.247, RSS-210	Class:	A
Immunity Standard(s):	-	Environment:	Radio

EMC Test Data

For The

GE MDS LLC

Model

Mercury5800

Date of Last Test: 12/14/2011

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	A

Radiated Emissions

(Elliott Laboratories Fremont Facility, Semi-Anechoic Chamber)

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: 12/14/2011
Test Engineer: Vishal Narayan
Test Location: Fremont Chamber #4
Config. Used: 1
Config Change: None
EUT Voltage: POE

General Test Configuration

The EUT and any local support equipment were located on the turntable for radiated emissions testing. Any remote support equipment was located outside the semi-anechoic chamber. Any cables running to remote support equipment where routed through metal conduit and when possible passed through a ferrite clamp upon exiting the chamber.

The test distance and extrapolation factor (if applicable) are detailed under each run description.

Note, preliminary testing indicates that the emissions were maximized by orientation of the EUT and elevation of the measurement antenna. Maximized testing indicated that the emissions were maximized by orientation of the EUT, elevation of the measurement antenna, and manipulation of the EUT's interface cables.

Ambient Conditions:

Temperature: 20 °C
Rel. Humidity: 41 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1	Radiated Emissions 30 - 1000 MHz, Preliminary	FCC Part 15.209 / 15.247(c)	Pass	36.0dBµV/m @ 37.56MHz (-4.0dB)
2	Radiated Emissions 30 - 1000 MHz, Maximized	FCC Part 15.209 / 15.247(c)	Pass	36.0dBµV/m @ 37.56MHz (-4.0dB)
3	Radiated Emissions 30 - 1000 MHz, Preliminary	FCC Part 15.209 / 15.247(c)	Pass	26.8dBµV/m @ 38.02MHz (-13.2dB)
4	Radiated Emissions 30 - 1000 MHz, Maximized	FCC Part 15.209 / 15.247(c)	Pass	26.8dBµV/m @ 38.02MHz (-13.2dB)

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	A

Modifications Made During Testing

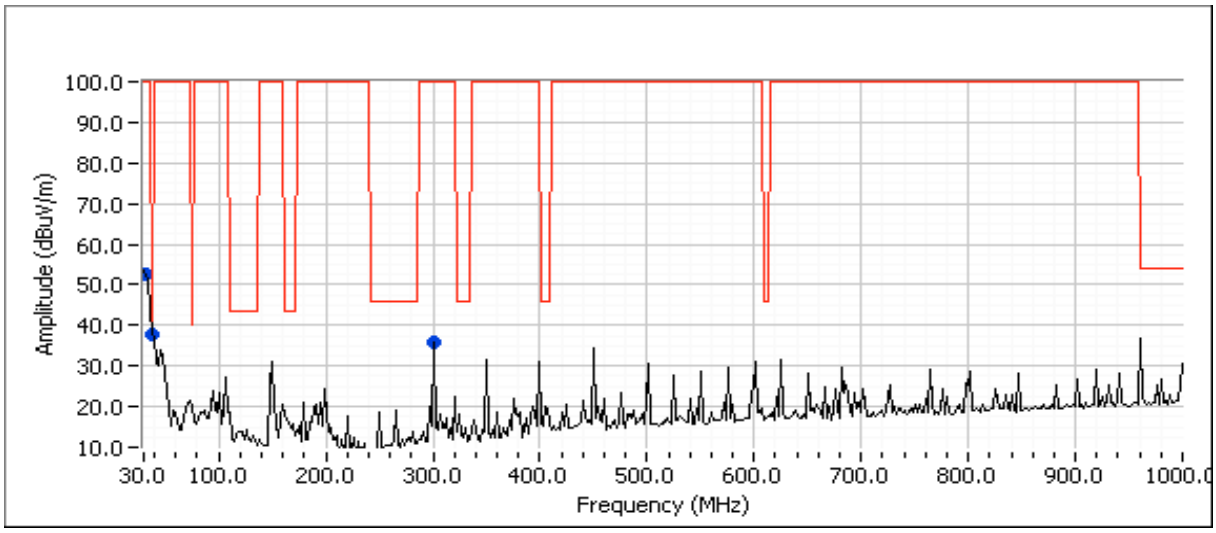
No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Run #1: Preliminary Radiated Emissions, 30 - 1000 MHz
Low Channel 5727MHz, BW 3.5
Power Setting 20

Frequency Range	Test Distance	Limit Distance	Extrapolation Factor
30 - 1000 MHz	3	3	0.0



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	A

Continuation of Run #1

Preliminary peak readings captured during pre-scan

Frequency	Level	Pol	FCC Part 15.209 / 15.247(c)		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
37.555	37.9	V	40.0	-2.1	Peak	347	1.0	
33.070	52.6	V	100.0	-47.4	Peak	201	1.0	
300.006	35.8	V	100.0	-64.2	Peak	186	1.5	

Preliminary quasi-peak readings (no manipulation of EUT interface cables)

Frequency	Level	Pol	FCC Part 15.209 / 15.247(c)		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
37.555	36.0	V	40.0	-4.0	QP	348	1.0	QP (1.00s)
33.070	46.1	V	100.0	-53.9	QP	203	1.0	QP (1.00s)
300.006	34.7	V	100.0	-65.3	QP	188	1.5	QP (1.00s)

Run #2: Maximized Readings From Run #1

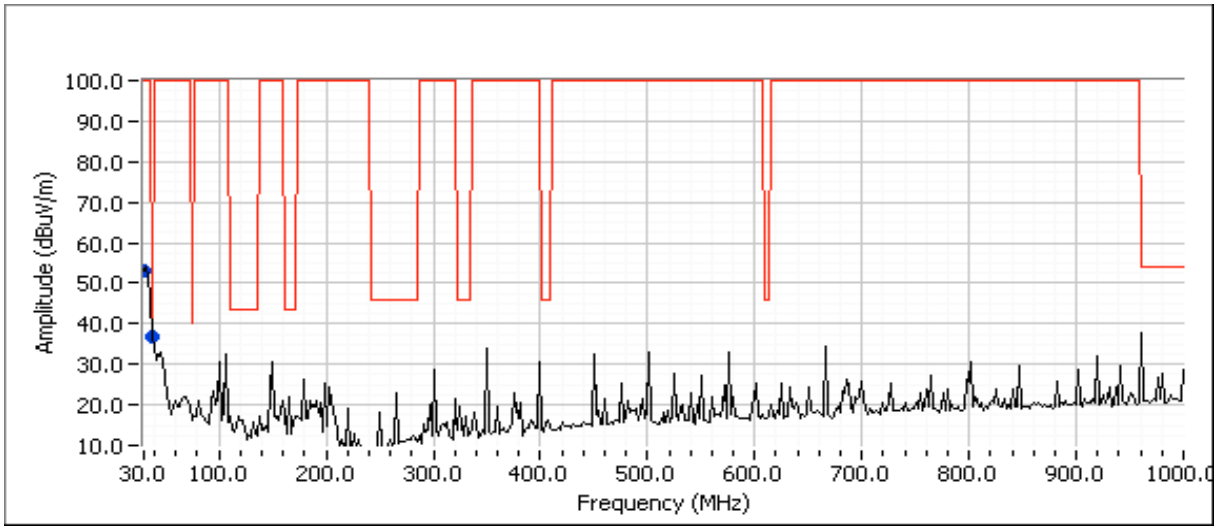
Maximized quasi-peak readings (includes manipulation of EUT interface cables)

Frequency	Level	Pol	FCC Part 15.209 / 15.247(c)		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
37.555	36.0	V	40.0	-4.0	QP	348	1.0	QP (1.00s)
33.070	46.1	V	100.0	-53.9	QP	203	1.0	QP (1.00s)
300.006	34.7	V	100.0	-65.3	QP	188	1.5	QP (1.00s)

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	A

Run #3: Preliminary Radiated Emissions, 30 - 1000 MHz
High Channel 5844MHz, BW 10
Power Setting 16

Frequency Range	Test Distance	Limit Distance	Extrapolation Factor
30 - 1000 MHz	3	3	0.0



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	A

Continuation of Run #3

Preliminary peak readings captured during pre-scan

Frequency	Level	Pol	FCC Part 15.209 / 15.247(c)		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
38.017	36.7	V	40.0	-3.3	Peak	27	1.0	
30.879	53.3	V	100.0	-46.7	Peak	132	1.0	

Preliminary quasi-peak readings (no manipulation of EUT interface cables)

Frequency	Level	Pol	FCC Part 15.209 / 15.247(c)		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
38.017	26.8	V	40.0	-13.2	QP	28	1.0	QP (1.00s)
30.800	24.1	V	100.0	-75.9	QP	140	1.2	QP (1.00s)

Run #4: Maximized Readings From Run #3

Maximized quasi-peak readings (includes manipulation of EUT interface cables)

Frequency	Level	Pol	FCC Part 15.209 / 15.247(c)		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
38.017	26.8	V	40.0	-13.2	QP	28	1.0	QP (1.00s)
30.800	24.1	V	100.0	-75.9	QP	140	1.2	QP (1.00s)

Note 2:	Since no emissions were different below 1 GHz when the frequency and mode of the radio were changed, additional tests at other frequencies and modes were no necessary.

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	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: 20.4 °C
Rel. Humidity: 39 %

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 3.5	low - 5727 MHz	20	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	51.6dBµV/m @ 11454.4MHz (-2.4dB)
1b	BW 3.5	center - 5788 MHz	20	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	49.7dBµV/m @ 4742.9MHz (-4.3dB)
1c	BW 3.5	high - 5847 MHz	18	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	50.0dBµV/m @ 11694.1MHz (-4.0dB)
2a	BW 5	low - 5728 MHz	16	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	47.5dBµV/m @ 5456.6MHz (-6.5dB)
2b	BW 5	center - 5788 MHz	16	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	43.5dBµV/m @ 4743.2MHz (-10.5dB)
2c	BW 5	high - 5847 MHz	15	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	47.7dBµV/m @ 4802.1MHz (-6.3dB)
3a	BW 7	low - 5729 MHz	17	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	40.1dBµV/m @ 4675.8MHz (-13.9dB)
3b	BW 7	center - 5788 MHz	17	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	41.4dBµV/m @ 4740.0MHz (-12.6dB)
3c	BW 7	high - 5846 MHz	16	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	47.4dBµV/m @ 4801.4MHz (-6.6dB)

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
4a	BW 8.75	low - 5730 MHz	16	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	42.2dBµV/m @ 4685.3MHz (-11.8dB)
4b	BW 8.75	center - 5788 MHz	16	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	42.9dBµV/m @ 4743.6MHz (-11.1dB)
4c	BW 8.75	high - 5845 MHz	15	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	49.0dBµV/m @ 4800.4MHz (-5.0dB)
5a	BW 10	low - 5732 MHz	17	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	40.9dBµV/m @ 4687.3MHz (-13.1dB)
5b	BW 10	center - 5788 MHz	17	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	43.1dBµV/m @ 4743.4MHz (-10.9dB)
5c	BW 10	high - 5844 MHz	16	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	47.9dBµV/m @ 4799.7MHz (-6.1dB)

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.

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #1: Radiated Spurious Emissions, 1000 - 40000 MHz. Operating Mode: BW 3.5
Date of Test: 10/17/2011
Test Engineer: Rafael Varelas
Test Location: FT Chamber #5

Run #1a: Low Channel @ 5727 MHz
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5727.950	121.6	V	-	-	PK	356	1.0	RB 100 kHz;VB 100 kHz;Pk
5727.180	121.1	H	-	-	PK	15	1.0	RB 100 kHz;VB 100 kHz;Pk

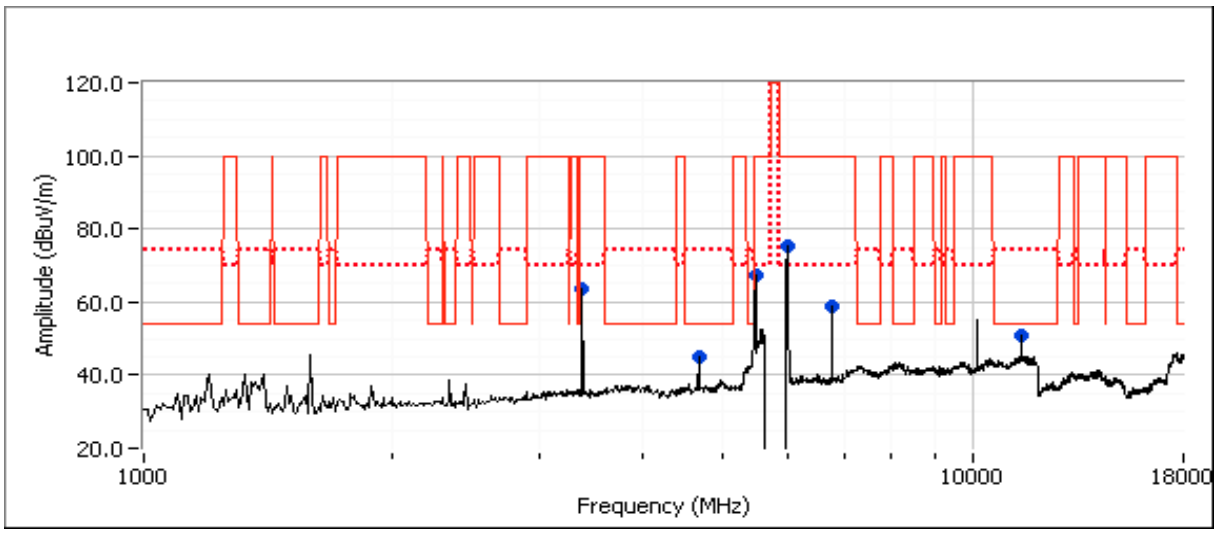
Fundamental emission level @ 3m in 100kHz RBW:	121.6	dBµV/m	
Limit for emissions outside of restricted bands:	91.6	dBµV/m	Limit is -30dBc (UNII power measurement)

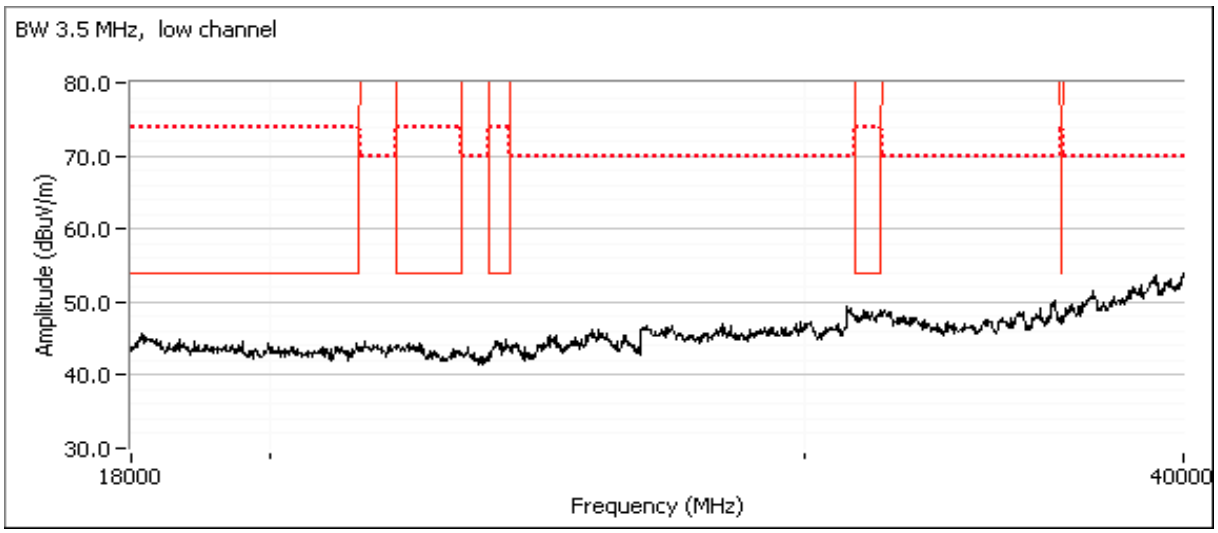
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11454.350	51.6	V	54.0	-2.4	AVG	171	1.7	RB 1 MHz;VB 10 Hz;Pk
11455.380	61.9	V	74.0	-12.1	PK	171	1.7	RB 1 MHz;VB 3 MHz;Pk
5978.120	72.8	V	91.6	-18.8	PK	8	1.0	RB 100 kHz;VB 100 kHz;Pk
5476.490	60.1	V	91.6	-31.5	PK	17	1.0	RB 100 kHz;VB 100 kHz;Pk
3386.030	64.0	V	91.6	-27.6	PK	205	1.0	RB 100 kHz;VB 100 kHz;Pk
4682.110	43.6	V	54.0	-10.4	AVG	335	1.3	RB 1 MHz;VB 10 Hz;Pk
4680.340	52.8	V	74.0	-21.2	PK	335	1.3	RB 1 MHz;VB 3 MHz;Pk

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A





Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

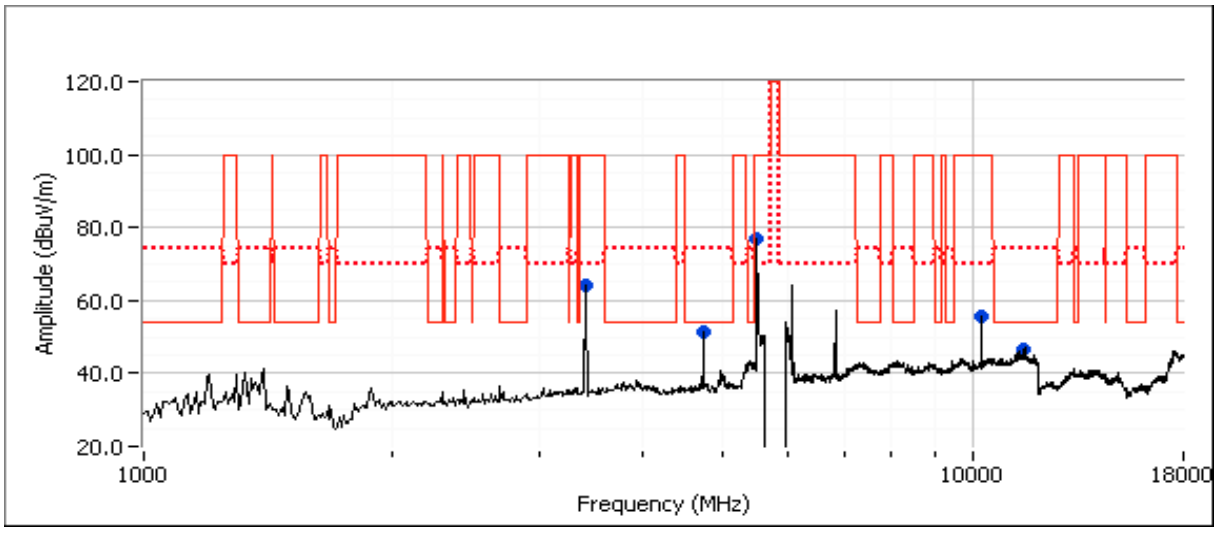
Run #1b: Center Channel @ 5788 MHz

Fundamental emission level @ 3m in 100kHz RBW:	123.7	dBµV/m
Limit for emissions outside of restricted bands:	93.7	dBµV/m

Limit is -30dBc (UNII power measurement)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4742.930	49.7	H	54.0	-4.3	AVG	21	1.0	RB 1 MHz;VB 10 Hz;Pk
4743.880	58.1	H	74.0	-15.9	PK	21	1.0	RB 1 MHz;VB 3 MHz;Pk
5505.460	67.9	V	93.7	-25.8	PK	8	1.0	RB 100 kHz;VB 100 kHz;Pk
11576.150	47.7	V	54.0	-6.3	AVG	154	1.0	RB 1 MHz;VB 10 Hz;Pk
11577.630	60.5	V	74.0	-13.5	PK	154	1.0	RB 1 MHz;VB 3 MHz;Pk
3416.530	64.3	V	93.7	-29.4	PK	206	1.0	RB 100 kHz;VB 100 kHz;Pk
10248.210	55.6	V	93.7	-38.1	Peak	155	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Since the scans in runs 1a & 1c showed no emissions above 18 GHz, that scan was not repeated for this mode on this channel.



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #1c: High Channel @ 5847 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5846.920	122.8	V	-	-	PK	355	1.0	RB 100 kHz;VB 100 kHz;Pk
5846.630	122.4	H	-	-	PK	360	1.0	RB 100 kHz;VB 100 kHz;Pk

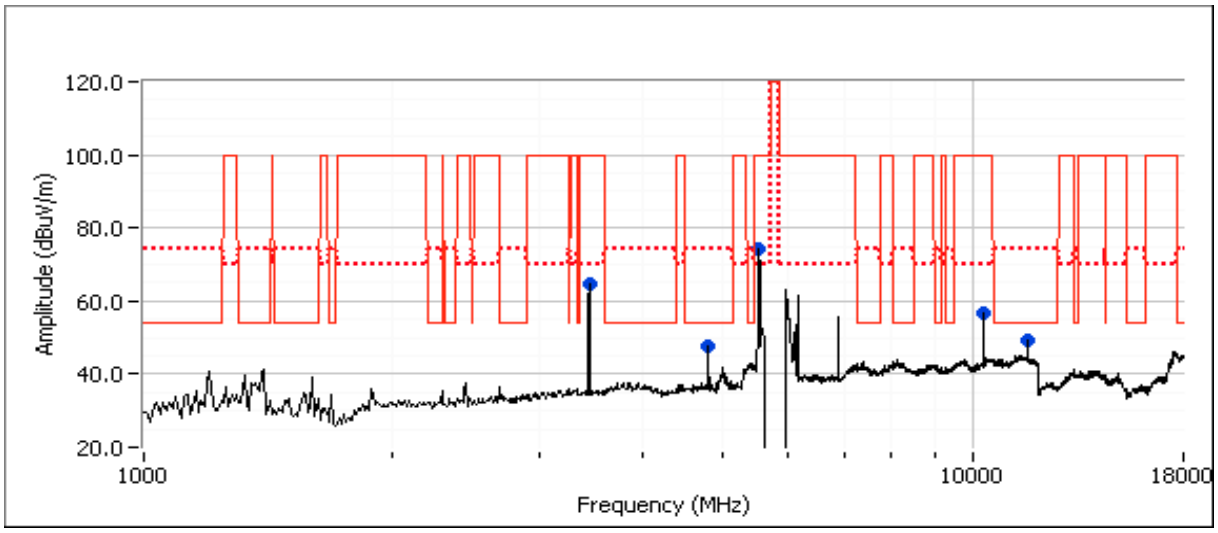
Fundamental emission level @ 3m in 100kHz RBW:	122.8	dBµV/m
Limit for emissions outside of restricted bands:	92.8	dBµV/m

Limit is -30dBc (UNII power measurement)

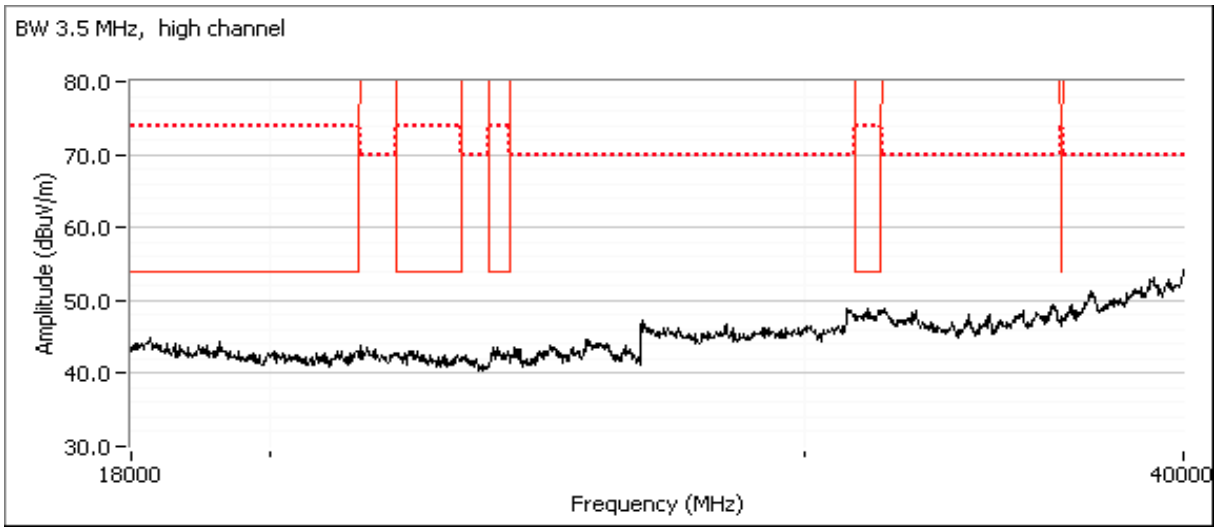
Spurious Emissions

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
11694.120	50.0	V	54.0	-4.0	AVG	178	1.1	RB 1 MHz;VB 10 Hz;Pk
11695.340	61.8	V	74.0	-12.2	PK	178	1.1	RB 1 MHz;VB 3 MHz;Pk
5537.270	69.1	V	92.8	-23.7	PK	354	1.0	RB 100 kHz;VB 100 kHz;Pk
4802.080	45.9	H	54.0	-8.1	AVG	334	1.0	RB 1 MHz;VB 10 Hz;Pk
4803.480	55.8	H	74.0	-18.2	PK	334	1.0	RB 1 MHz;VB 3 MHz;Pk
3446.010	64.8	V	92.8	-28.0	PK	206	1.0	RB 100 kHz;VB 100 kHz;Pk
10351.510	56.5	H	92.8	-36.3	Peak	239	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #2: Radiated Spurious Emissions, 1000 - 40000 MHz. Operating Mode: BW 5

Date of Test: 10/19/2011
Test Engineer: John Caizzi & Jack Liu
Test Location: FT4

Run #2a: Low Channel @ 5728 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5727.280	117.8	V	-	-	Pk	84	1.0	RB = VB = 100kHz
5727.080	117.8	H	-	-	Pk	87	1.1	RB = VB = 100kHz

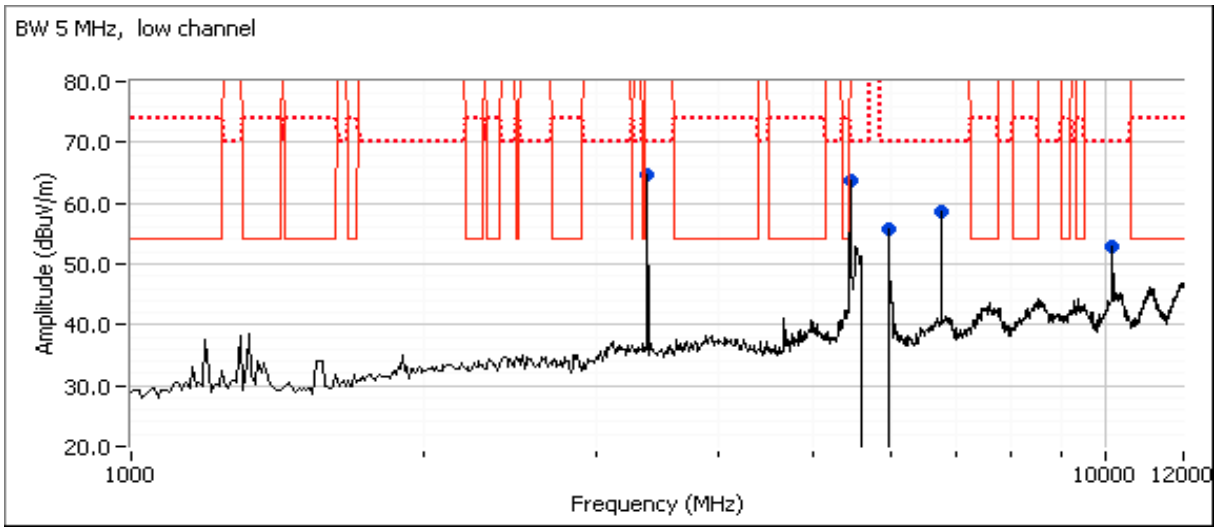
Fundamental emission level @ 3m in 100kHz RBW:	117.8	dBµV/m	
Limit for emissions outside of restricted bands:	87.8	dBµV/m	Limit is -30dBc (UNII power measurement)

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	
5456.620	47.5	H	54.0	-6.5	AVG	88	1.0	Signal extended into restricted band.
5452.430	56.8	H	74.0	-17.2	PK	88	1.0	Signal extended into restricted band.
3383.330	*64.8*	*V*	*87.8*	*-23.0*	*Peak*	*183*	*1.0*	
5473.330	*63.8*	*H*	*87.8*	*-24.0*	*Peak*	*86*	*1.0*	
6775.000	*58.7*	*H*	*87.8*	*-29.1*	*Peak*	*78*	*1.0*	
5977.500	*55.7*	*V*	*87.8*	*-32.1*	*Peak*	*84*	*1.0*	
10157.500	*52.9*	*V*	*87.8*	*-34.9*	*Peak*	*177*	*1.0*	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Since the scans in runs 1a & 1c showed no emissions above 18 GHz, that scan was not repeated for this mode on this channel.

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #2b: Center Channel @ 5788 MHz

Fundamental Signal Field Strength: Peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5786.950	118.9	V	-	-	Pk	92	1.09	RB = VB = 100kHz
5789.880	118.0	H	-	-	Pk	91	1.00	RB = VB = 100kHz

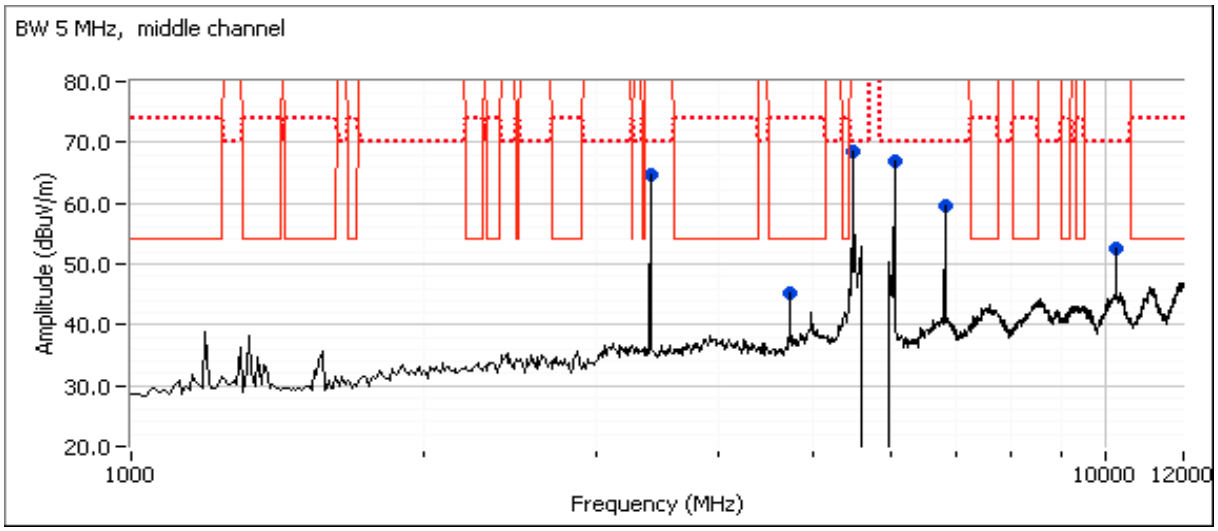
Fundamental emission level @ 3m in 100kHz RBW:	118.9	dBµV/m	
Limit for emissions outside of restricted bands:	88.9	dBµV/m	Limit is -30dBc (UNII power measurement)

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	
4740.000	*45.2*	*H*	*54.0*	*-8.8*	*Peak*	*114*	*1.3*	
4743.170	43.5	H	54.0	-10.5	AVG	105	1.3	
5500.830	*68.6*	*V*	*88.9*	*-20.3*	*Peak*	*74*	*1.0*	
4741.570	52.4	H	74.0	-21.6	PK	105	1.3	
6060.000	*67.0*	*V*	*88.9*	*-21.9*	*Peak*	*88*	*1.0*	
3410.830	*64.8*	*V*	*88.9*	*-24.1*	*Peak*	*213*	*1.0*	
6839.170	*59.7*	*V*	*88.9*	*-29.2*	*Peak*	*195*	*1.0*	
10249.170	*52.6*	*V*	*88.9*	*-36.3*	*Peak*	*199*	*1.0*	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Since the scans in runs 1a & 1c showed no emissions above 18 GHz, that scan was not repeated for this mode on this channel.

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #2c: High Channel @ 5847 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5848.650	118.7	V	-	-	Pk	90	1.00	RB = VB = 100kHz
5847.580	118.3	H	-	-	Pk	90	1.00	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	118.7	dBµV/m
Limit for emissions outside of restricted bands:	88.7	dBµV/m

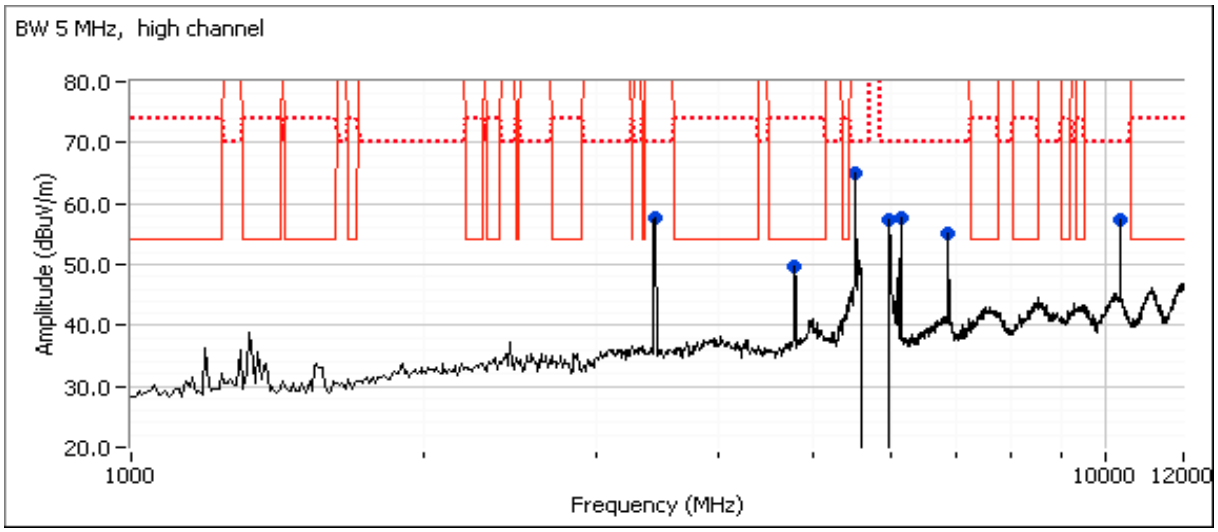
Limit is -30dBc (UNII power measurement)

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	
4795.000	*49.7*	*V*	*54.0*	*-4.3*	*Peak*	*66*	*1.0*	
4802.130	47.7	V	54.0	-6.3	AVG	70	1.03	
4802.900	57.2	V	74.0	-16.8	PK	70	1.03	
5528.330	*65.0*	*V*	*88.7*	*-23.7*	*Peak*	*85*	*1.0*	
6151.670	*57.8*	*V*	*88.7*	*-30.9*	*Peak*	*88*	*1.3*	
3447.500	*57.6*	*V*	*88.7*	*-31.1*	*Peak*	*250*	*1.3*	
5995.830	*57.3*	*V*	*88.7*	*-31.4*	*Peak*	*92*	*1.0*	
10331.670	*57.2*	*V*	*88.7*	*-31.5*	*Peak*	*231*	*1.3*	
6894.170	*55.0*	*V*	*88.7*	*-33.7*	*Peak*	*199*	*1.6*	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Since the scans in runs 1a & 1c showed no emissions above 18 GHz, that scan was not repeated for this mode on this channel.

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #3: Radiated Spurious Emissions, 1000 - 40000 MHz. Operating Mode: BW 7
Date of Test: 10/19/2011
Test Engineer: John Caizzi & Jack Liu
Test Location: FT4

Run #3a: Low Channel @ 5729 MHz
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5726.750	117.9	V	-	-	Pk	81	1.1	RB = VB = 100kHz
5732.230	116.3	H	-	-	Pk	87	1.0	RB = VB = 100kHz

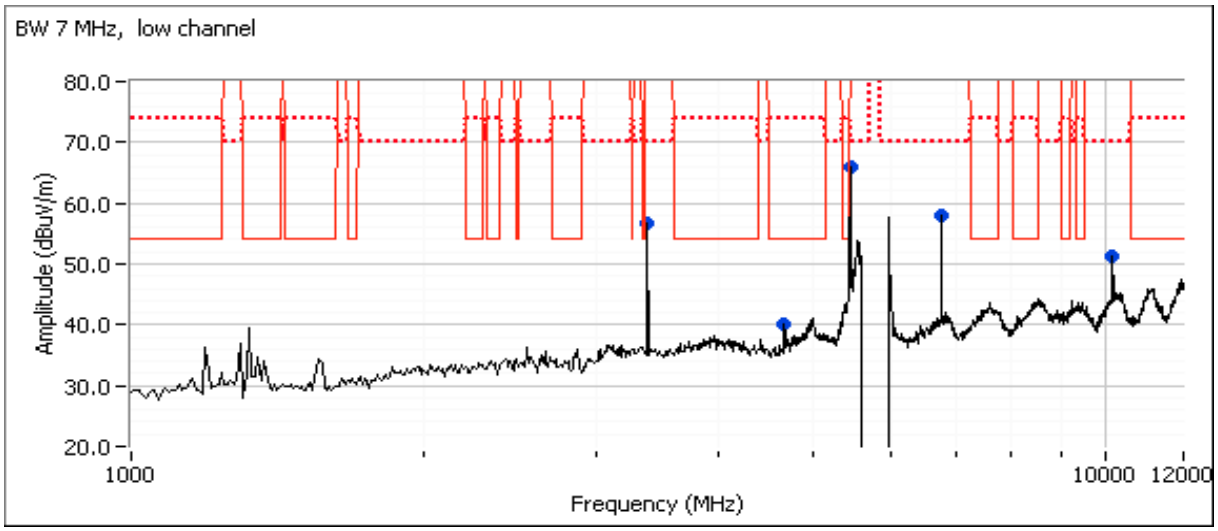
Fundamental emission level @ 3m in 100kHz RBW:	117.9	dBµV/m	
Limit for emissions outside of restricted bands:	87.9	dBµV/m	Limit is -30dBc (UNII power measurement)

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	
4675.830	*40.1*	*V*	*54.0*	*-13.9*	*Peak*	*67*	*1.6*	
5464.170	*66.1*	*V*	*87.9*	*-21.8*	*Peak*	*85*	*1.0*	
6775.000	*58.0*	*H*	*87.9*	*-29.9*	*Peak*	*170*	*1.3*	
3383.330	*56.6*	*V*	*87.9*	*-31.3*	*Peak*	*255*	*1.3*	
10157.500	*51.3*	*H*	*87.9*	*-36.6*	*Peak*	*174*	*1.3*	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.
Note 2:	Since the scans in runs 1a & 1c showed no emissions above 18 GHz, that scan was not repeated for this mode on this channel.

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #3b: Center Channel @ 5788 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

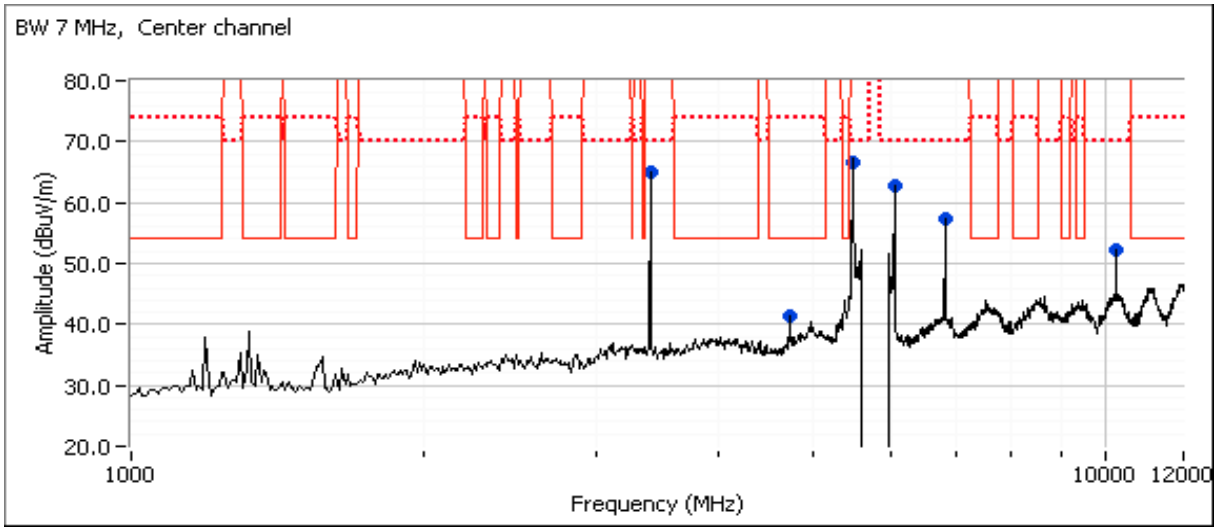
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5786.600	117.7	V	-	-	Pk	91	1.0	RB = VB = 100kHz
5787.830	117.1	H	-	-	Pk	91	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	117.7	dBµV/m	
Limit for emissions outside of restricted bands:	87.7	dBµV/m	Limit is -30dBc (UNII power measurement)

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	
4740.000	*41.4*	*V*	*54.0*	*-12.6*	*Peak*	*61*	*1.3*	
5491.670	*66.5*	*V*	*87.7*	*-21.2*	*Peak*	*94*	*1.0*	
3410.830	*65.1*	*V*	*87.7*	*-22.6*	*Peak*	*213*	*1.0*	
6060.000	*62.7*	*V*	*87.7*	*-25.0*	*Peak*	*81*	*1.6*	
6839.170	*57.2*	*V*	*87.7*	*-30.5*	*Peak*	*170*	*1.0*	
10249.170	*52.1*	*V*	*87.7*	*-35.6*	*Peak*	*178*	*1.0*	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the
Note 2:	Since the scans in runs 1a & 1c showed no emissions above 18 GHz, that scan was not repeated for this mode on this channel.



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #3c: High Channel @ 5846 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5843.350	116.8	V	-	-	Pk	91	1.0	RB = VB = 100kHz
5847.920	115.9	H	-	-	Pk	90	1.0	RB = VB = 100kHz

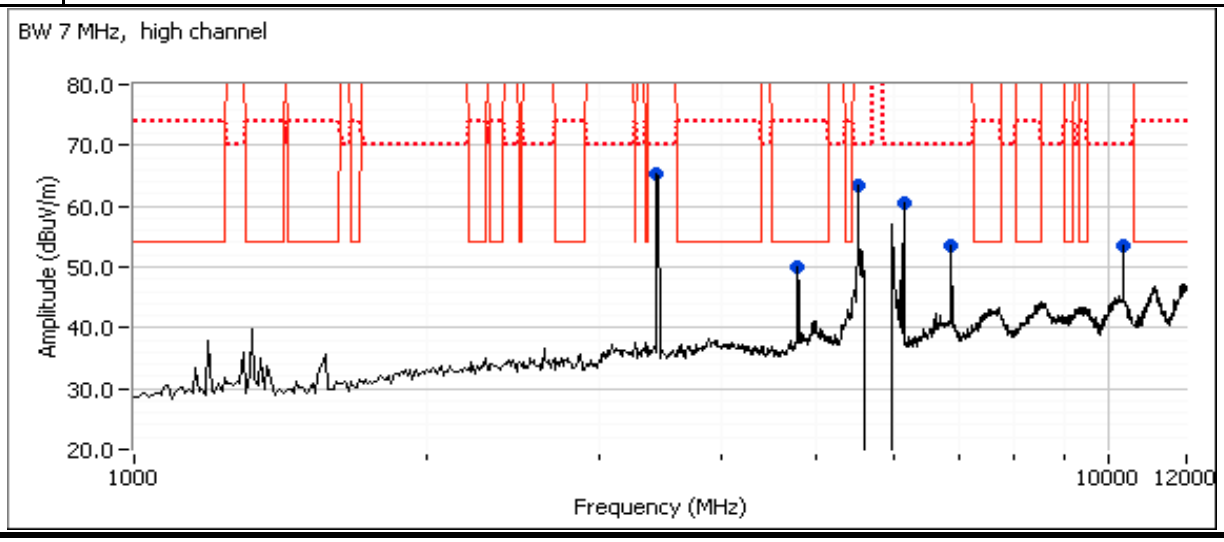
Fundamental emission level @ 3m in 100kHz RBW:	116.8	dBµV/m
Limit for emissions outside of restricted bands:	86.8	dBµV/m

Limit is -30dBc (UNII power measurement)

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	
4795.000	*50.0*	*V*	*54.0*	*-4.0*	*Peak*	*104*	*2.2*	
4801.430	47.4	V	54.0	-6.6	AVG	98	1.7	RB 1 MHz;VB 10 Hz;Pk
4804.370	58.3	V	74.0	-15.7	PK	98	1.7	RB 1 MHz;VB 3 MHz;Pk
3438.330	*65.3*	*V*	*86.8*	*-21.5*	*Peak*	*217*	*1.0*	
5528.330	*63.5*	*V*	*86.8*	*-23.3*	*Peak*	*92*	*1.0*	
6151.670	*60.6*	*H*	*86.8*	*-26.2*	*Peak*	*88*	*1.0*	
6894.170	*53.6*	*H*	*86.8*	*-33.2*	*Peak*	*171*	*1.3*	
10331.670	*53.4*	*H*	*86.8*	*-33.4*	*Peak*	*238*	*1.3*	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the
Note 2:	Since the scans in runs 1a & 1c showed no emissions above 18 GHz, that scan was not repeated for this mode on this channel.



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #4: Radiated Spurious Emissions, 1000 - 40000 MHz. Operating Mode: BW 8.75
Date of Test: 10/19 & 10/21/2011
Test Engineer: John Caizzi / Jack Liu /R. Varelas
Test Location: FT4

Run #4a: Low Channel @ 5730 MHz
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

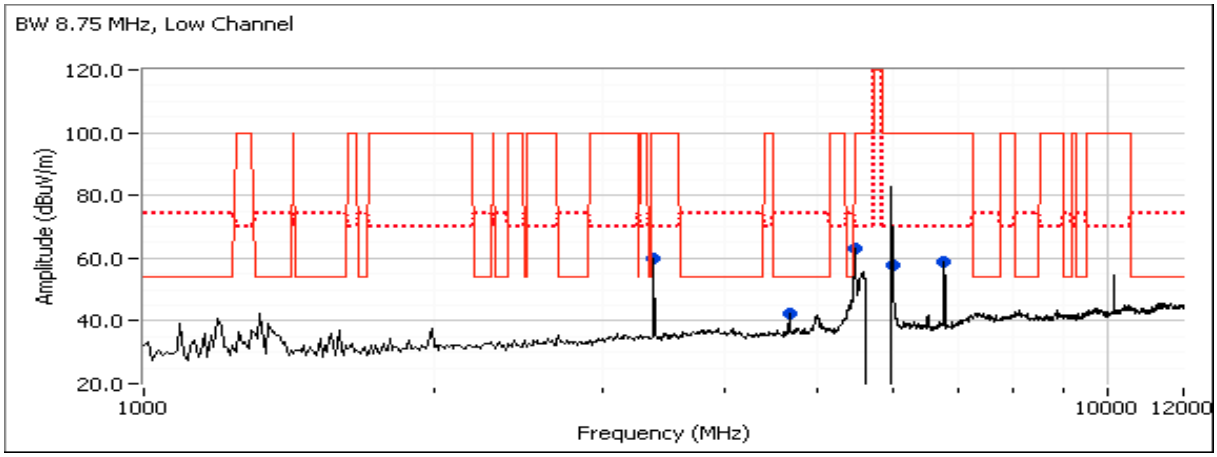
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5728.730	114.9	V	-	-	Pk	86	1.0	RB = VB = 100kHz
5730.930	115.5	H	-	-	Pk	90	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	115.5	dBµV/m	
Limit for emissions outside of restricted bands:	85.5	dBµV/m	Limit is -30dBc (UNII power measurement)

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	
4685.320	42.2	H	54.0	-11.8	AVG	343	1.4	RB 1 MHz;VB 10 Hz;Pk
4684.550	52.7	H	74.0	-21.3	PK	343	1.4	RB 1 MHz;VB 3 MHz;Pk
5479.040	61.0	H	85.5	-24.5	PK	360	1.0	RB 100 kHz;VB 100 kHz;Pk
3387.600	59.8	V	85.5	-25.7	Peak	206	1.0	
5982.890	57.6	H	85.5	-27.9	Peak	2	1.0	
6775.120	58.7	V	85.5	-26.8	Peak	5	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #4b: Center Channel @ 5788 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5788.300	115.8	V	-	-	Pk	87	1.0	RB = VB = 100kHz
5785.100	115.9	H	-	-	Pk	87	1.0	RB = VB = 100kHz

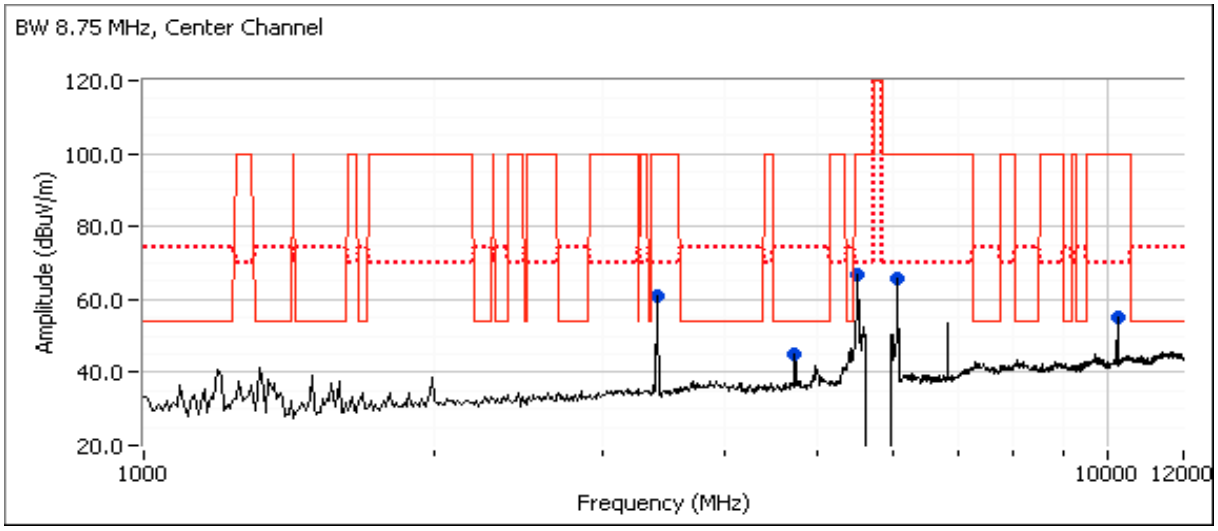
Fundamental emission level @ 3m in 100kHz RBW:	115.9	dBµV/m
Limit for emissions outside of restricted bands:	85.9	dBµV/m

Limit is -30dBc (UNII power measurement)

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	
4743.620	42.9	V	54.0	-11.1	AVG	20	1.1	RB 1 MHz;VB 10 Hz;Pk
4742.910	53.8	V	74.0	-20.2	PK	20	1.1	RB 1 MHz;VB 3 MHz;Pk
3416.520	61.1	V	85.9	-24.8	PK	210	1.0	RB 100 kHz;VB 100 kHz;Pk
5507.090	67.4	H	85.9	-18.5	PK	5	1.0	RB 100 kHz;VB 100 kHz;Pk
6069.560	67.9	V	85.9	-18.0	PK	0	1.0	RB 100 kHz;VB 100 kHz;Pk
10249.540	55.3	V	85.9	-30.6	Peak	226	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #4c: High Channel @ 5845 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5844.170	114.8	V	-	-	Pk	84	1.0	RB = VB = 100kHz
5844.600	114.0	H	-	-	Pk	88	1.0	RB = VB = 100kHz

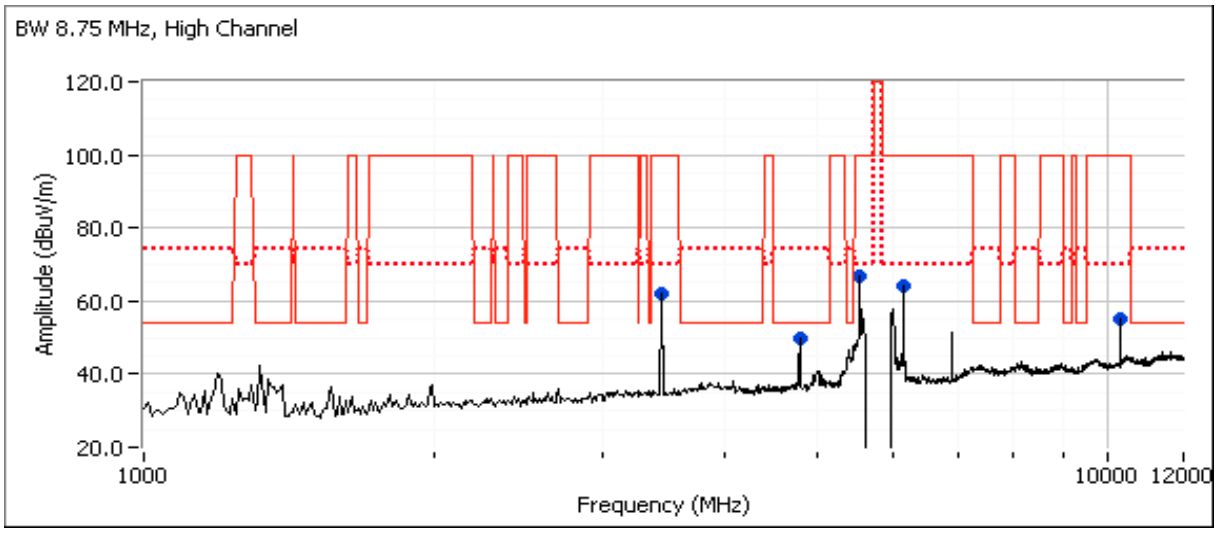
Fundamental emission level @ 3m in 100kHz RBW:	114.8	dBµV/m
Limit for emissions outside of restricted bands:	84.8	dBµV/m

Limit is -30dBc (UNII power measurement)

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	
4800.440	49.0	V	54.0	-5.0	AVG	24	1.3	RB 1 MHz;VB 10 Hz;Pk
4805.560	59.4	V	74.0	-14.6	PK	24	1.3	RB 1 MHz;VB 3 MHz;Pk
3444.990	61.9	V	84.8	-22.9	PK	216	1.0	RB 100 kHz;VB 100 kHz;Pk
5536.790	66.3	V	84.8	-18.5	PK	360	1.0	RB 100 kHz;VB 100 kHz;Pk
6155.120	63.9	V	84.8	-20.9	PK	360	1.0	RB 100 kHz;VB 100 kHz;Pk
10335.090	55.0	V	84.8	-29.8	Peak	160	1.0	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #5: Radiated Spurious Emissions, 1000 - 40000 MHz. Operating Mode: BW 10
Date of Test: 10/19 & 10/21/2011
Test Engineer: John Caizzi / Jack Liu /R. Varelas
Test Location: FT4

Run #5a: Low Channel @ 5732 MHz
Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5733.000	114.8	V	-	-	Pk	84	1.0	RB = VB = 100kHz
5730.300	115.0	H	-	-	Pk	87	1.0	RB = VB = 100kHz

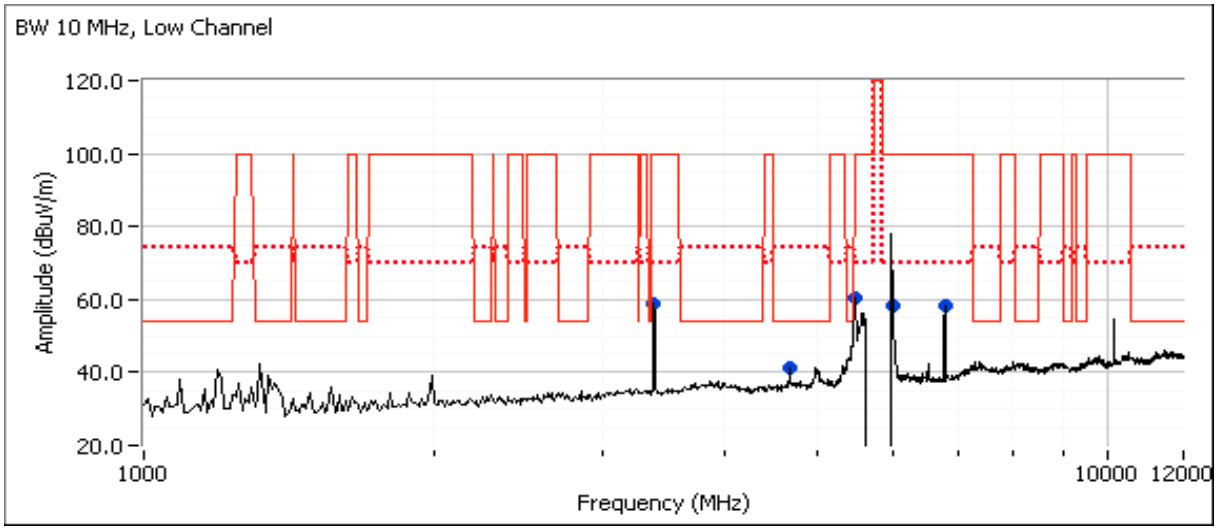
Fundamental emission level @ 3m in 100kHz RBW:	115	dBµV/m
Limit for emissions outside of restricted bands:	85	dBµV/m

Limit is -30dBc (UNII power measurement)

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	
4687.310	40.9	V	54.0	-13.1	AVG	340	1.0	RB 1 MHz;VB 10 Hz;Pk
4687.250	51.2	V	74.0	-22.8	PK	340	1.0	RB 1 MHz;VB 3 MHz;Pk
5479.340	61.0	H	85.0	-24.0	PK	11	1.0	RB 100 kHz;VB 100 kHz;Pk
3388.580	58.8	V	85.0	-26.2	Peak	202	1.0	
5985.820	58.4	H	85.0	-26.6	Peak	3	1.0	
6777.090	58.2	V	85.0	-26.8	Peak	190	1.3	

Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #5b: Center Channel @ 5788 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

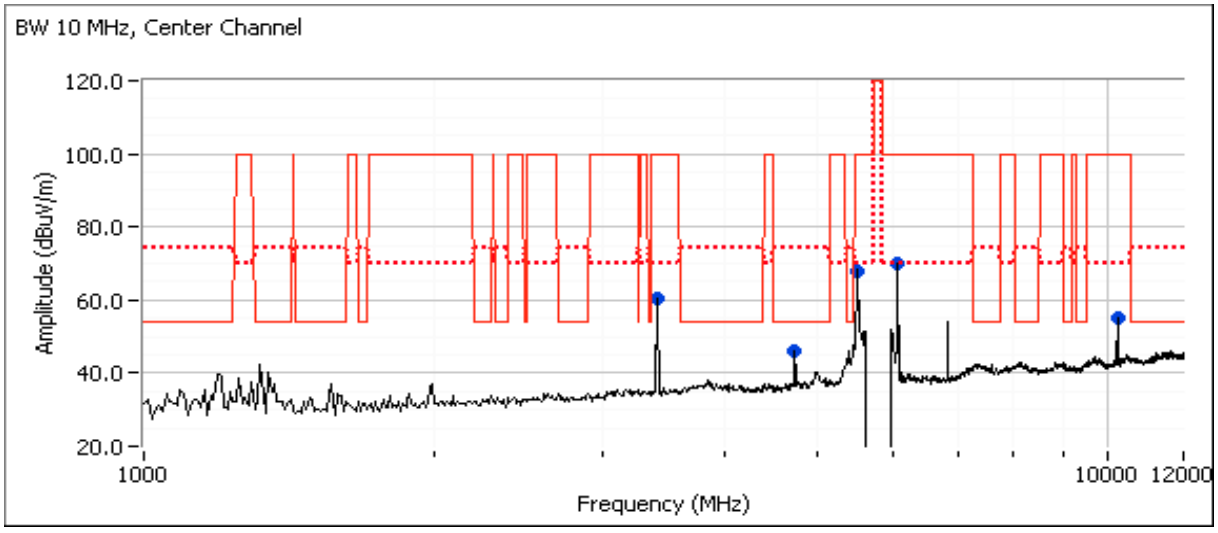
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5786.270	116.1	V	-	-	Pk	84	1.0	RB = VB = 100kHz
5789.800	116.7	H	-	-	Pk	86	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	116.7	dBµV/m	
Limit for emissions outside of restricted bands:	86.7	dBµV/m	Limit is -30dBc (UNII power measurement)

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	
4743.360	43.1	H	54.0	-10.9	AVG	26	1.0	RB 1 MHz;VB 10 Hz;Pk
4741.010	53.1	H	74.0	-20.9	PK	26	1.0	RB 1 MHz;VB 3 MHz;Pk
3416.510	61.0	V	86.7	-25.7	PK	214	1.0	RB 100 kHz;VB 100 kHz;Pk
5506.130	69.6	V	86.7	-17.1	PK	4	1.0	RB 100 kHz;VB 100 kHz;Pk
6069.500	60.6	V	86.7	-26.1	PK	0	1.0	RB 100 kHz;VB 100 kHz;Pk
10249.540	55.3	V	86.7	-31.4	Peak	224	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #5c: High Channel @ 5844 MHz

Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

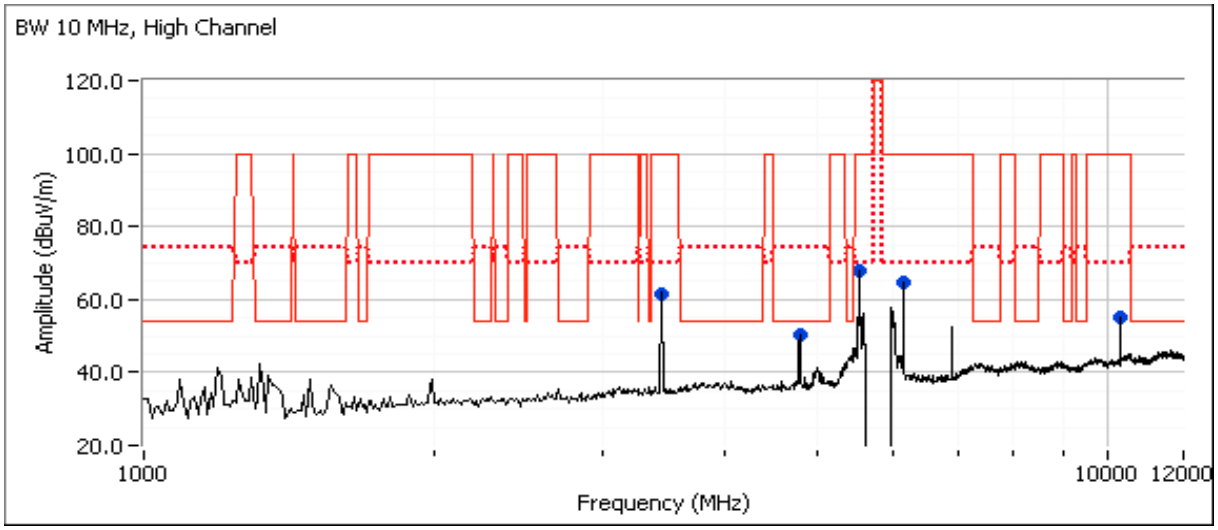
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5842.030	115.8	V	-	-	Pk	82	1.0	RB = VB = 100kHz
5845.370	115.0	H	-	-	Pk	85	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	115.8	dBµV/m	
Limit for emissions outside of restricted bands:	85.8	dBµV/m	Limit is -30dBc (UNII power measurement)

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	
4799.720	47.9	H	54.0	-6.1	AVG	23	1.3	RB 1 MHz;VB 10 Hz;Pk
4801.650	58.0	H	74.0	-16.0	PK	23	1.3	RB 1 MHz;VB 3 MHz;Pk
3444.500	61.9	V	85.8	-23.9	PK	217	1.0	RB 100 kHz;VB 100 kHz;Pk
5534.050	66.8	V	85.8	-19.0	PK	360	1.0	RB 100 kHz;VB 100 kHz;Pk
6153.550	64.7	V	85.8	-21.1	PK	360	1.0	RB 100 kHz;VB 100 kHz;Pk
10333.500	55.3	H	85.8	-30.5	Peak	207	1.3	

Note 1:	For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the
Note 2:	Signal is not in a restricted band but the more stringent restricted band limit was used.



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	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.

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: 20-22 °C

Rel. Humidity: 30-40 %

Summary of Results - Point to Multipoint Radio

Run #	Pwr setting		Test Performed	Limit	Pass / Fail	Result / Margin
1			Output Power	15.247(b)	Pass	3.5 MHz: 17.5 dBm 5 MHz: 17.4 dBm 7 MHz: 18.0 dBm 8.75 MHz: 17.4 dBm 10 MHz: 18.0 dBm
2			Power spectral Density (PSD) per 3kHz	15.247(d)	Pass	3.5 MHz: -1.0 dBm 5 MHz: -5.0 dBm 7 MHz: -7.0 dBm 8.75 MHz: -8.0 dBm 10 MHz: -7.9 dBm
3			Minimum 6dB Bandwidth	15.247(a)	Pass	> 500 KHz
4			Spurious emissions	15.247(b)	Pass	All emissions > -30dBc below the fundamental

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.

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Date of Test: 9/19 & 9/27/2011
Test Engineer: John Caizzi & David Bare
Test Location: FT EMC Lab#4

Config. Used: 1
Config Change: None
EUT Voltage: PoE

Run #1: Output Power

Operating Mode: 3.5 MHz BW

Transmitted signal on chain is coherent ? no Antennas are cross polarized

5727 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	20.0	20.0						
Output Power (dBm) Note 1	14.6	14.3			17.5 dBm	0.056 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	32.6	32.3			35.5 dBm	3.518 W		

5788 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	20.0	20.0						
Output Power (dBm) Note 1	14.5	14.4			17.5 dBm	0.056 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	32.5	32.4			35.5 dBm	3.516 W		

5847 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	19.0	19.0						
Output Power (dBm) Note 1	15.9	11.2			17.2 dBm	0.052 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	33.9	29.2			35.2 dBm	3.286 W		

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Operating Mode: 5 MHz BW

5728 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	16.0	16.0						
Output Power (dBm) Note 1	14.6	14.0			17.3 dBm	0.054 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	32.56	32			35.3 dBm	3.388 W		

5788 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	16.0	16.0						
Output Power (dBm) Note 1	14.3	14.1			17.2 dBm	0.053 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	32.3	32.1			35.2 dBm	3.320 W		

5847 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	15.0	15.0						
Output Power (dBm) Note 1	14.9	13.7			17.4 dBm	0.054 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	32.9	31.7			35.4 dBm	3.429 W		

Operating Mode: 7 MHz BW

5729 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	17.0	17.0						
Output Power (dBm) Note 1	15.1	14.8			18.0 dBm	0.063 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	33.1	32.8			36.0 dBm	3.947 W		

5788 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	17.0	17.0						
Output Power (dBm) Note 1	14.9	14.9			17.9 dBm	0.062 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	32.9	32.9			35.9 dBm	3.900 W		

5846 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	16.0	16.0						
Output Power (dBm) Note 1	15.2	14.2			17.7 dBm	0.059 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	33.2	32.2			35.7 dBm	3.749 W		

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Operating Mode: 8.75 MHz BW

5730 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	16.0	16.0						
Output Power (dBm) Note 1	14.4	14.2			17.3 dBm	0.054 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	32.4	32.2			35.3 dBm	3.397 W		

5788 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	16.0	16.0						
Output Power (dBm) Note 1	14.5	14.2			17.4 dBm	0.054 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	32.5	32.2			35.4 dBm	3.438 W		

5845 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	15.0	15.0						
Output Power (dBm) Note 1	14.8	14			17.4 dBm	0.055 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	32.8	32			35.4 dBm	3.490 W		

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Operating Mode: 10 MHz BW

5732 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	17.0	17.0						
Output Power (dBm) Note 1	14.5	14.2			17.4 dBm	0.054 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	32.5	32.2			35.4 dBm	3.438 W		

5788 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	17.0	17.0						
Output Power (dBm) Note 1	14.6	14.6			17.6 dBm	0.058 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	32.6	32.6			35.6 dBm	3.639 W		

5844 MHz	Chain 1	Chain 2	Chain 3	Chain 4	Total Across All Chains		Limit	
Power Setting Note 3	16.0	16.0						
Output Power (dBm) Note 1	15.3	14.6			18.0 dBm	0.063 W	18.0 dBm	0.063 W
Antenna Gain (dBi) Note 2	18	18				18.0 dBi	Pass	
eirp (dBm) Note 2	33.3	32.6			36.0 dBm	3.958 W		

Note 1:	Output power measured using a spectrum analyzer (see plots below) with RBW=1MHz, VB=3 MHz, sample detector, power averaging on (transmitted signal was not continuous but the analyzer was configured with a gated sweep such that the analyzer was only sweeping when the device was transmitting) and power integration over 20 MHz (option #2, method 1 in KDB 558074, equivalent to method 1 of DA-02-2138A1 for U-NII devices). Spurious limit becomes -30dBc.
Note 2:	As there is no coherency between chains the total EIRP is the sum of the individual EIRPs and effective antenna gain equals the eirp divided by the sum of the power on each chain.

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #2: Power spectral Density

3.5 MHz mode

Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1					Limit dBm/3kHz	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
20	5726.2223	-4.6	-4.6			-1.6	8.0	Pass
20	5787.7558	-4.7	-4.8			-1.7	8.0	Pass
19	5847.1031	-2.6	-6.2			-1.0	8.0	Pass

5 MHz mode

Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1					Limit dBm/3kHz	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
16	5728.4465	-7.9	-8.1			-5.0	8.0	Pass
16	5787.4173	-8.9	-8.9			-5.9	8.0	Pass
15	5848.0498	-8.3	-9.4			-5.8	8.0	Pass

7 MHz mode

Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1					Limit dBm/3kHz	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
17	5729.2810	-10.2	-10.1			-7.1	8.0	Pass
17	5789.3080	-9.9	-10.1			-7.0	8.0	Pass
16	5843.3628	-9.8	-10.6			-7.2	8.0	Pass

8.75 MHz mode

Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1					Limit dBm/3kHz	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
16	5732.1442	-12.2	-11.4			-8.8	8.0	Pass
16	5788.3582	-11.2	-11.4			-8.3	8.0	Pass
15	5843.5573	-10.9	-11.2			-8.0	8.0	Pass

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

10 MHz mode

Power Setting	Frequency (MHz)	PSD (dBm/3kHz) Note 1					Limit dBm/3kHz	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
17	5732.0863	-11.0	-9.2			-7.0	9.0	Pass
17	5788.2932	-11.2	-11.0			-8.1	8.0	Pass
16	5841.7042	-10.4	-11.5			-7.9	8.0	Pass

Note 1:	Power spectral density measured using RB=3 kHz, VB=10kHz, analyzer with peak detector (worst case). The span is set to 300 kHz and sweep time set to 100 sec to ensure there is at least 1 sec at each 3 kHz of span. The frequency with the highest PPSD is first determined using a peak detector with the same resolution and video bandwidth settings but over the 6dB bandwidth of the transmitted signal.

Run #3: Signal Bandwidth

BW setting	Frequency (MHz)	Resolution Bandwidth	Bandwidth (MHz)		
			6dB	20dB	99%
3.5 MHz	5727	100 kHz	3.12	3.49	3.34
3.5 MHz	5788	100 kHz	3.22		3.34
3.5 MHz	5847	100 kHz	3.19	3.49	3.94
5 MHz	5728	100 kHz	4.43	4.85	4.46
5 MHz	5788	100 kHz	4.43		4.51
5 MHz	5847	100 kHz	4.58	4.88	4.61
7 MHz	5729	300 kHz	6.55	6.68	6.56
7 MHz	5788	300 kHz	6.40		6.47
7 MHz	5846	300 kHz	6.47	6.83	6.51
8.75 MHz	5730	300 kHz	7.85	8.68	8.19
8.75 MHz	5788	300 kHz	7.65		8.29
8.75 MHz	5845	300 kHz	7.63	8.53	8.31
10 MHz	5732	300 kHz	9.10	10.30	9.56
10 MHz	5788	300 kHz	9.00		9.19
10 MHz	5844	300 kHz	9.03	9.70	9.25

Note 1:	Measured on a single chain

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Run #4: Out of Band Spurious Emissions

3.5 MHz mode

Power Setting Per Chain				Frequency (MHz)	Limit	Result
#1	#2	#3	#4			
20	20			5727	-30 dBc	PASS
20	20			5788		PASS
19	19			5847		PASS

5 MHz mode

Power Setting Per Chain				Frequency (MHz)	Limit	Result
#1	#2	#3	#4			
16	16			5728	-30 dBc	PASS
16	16			5788		PASS
15	15			5847		PASS

7 MHz mode

Power Setting Per Chain				Frequency (MHz)	Limit	Result
#1	#2	#3	#4			
17	17			5729	-30 dBc	PASS
17	17			5788		PASS
16	16			5846		PASS

8.75 MHz mode

Power Setting Per Chain				Frequency (MHz)	Limit	Result
#1	#2	#3	#4			
16	16			5730	-30 dBc	Pass
16	16			5788		Pass
15	15			5845		Pass

10 MHz mode

Power Setting Per Chain				Frequency (MHz)	Limit	Result
#1	#2	#3	#4			
17	17			5732	-30 dBc	Pass
17	17			5788		Pass
16	16			5844		Pass

Note 1	Measured on each chain individually

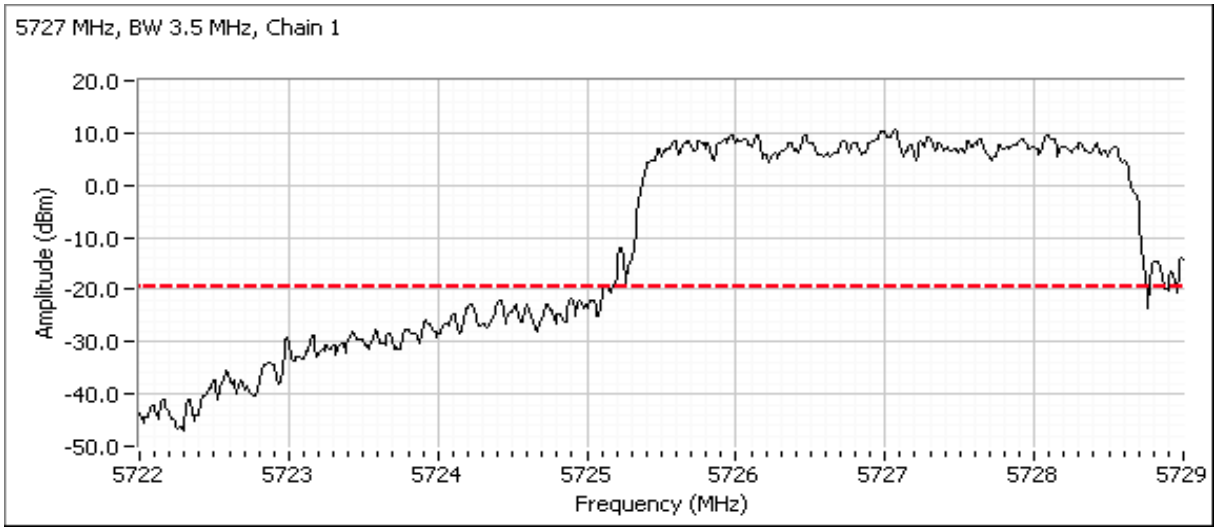
Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

3.5 MHz BW

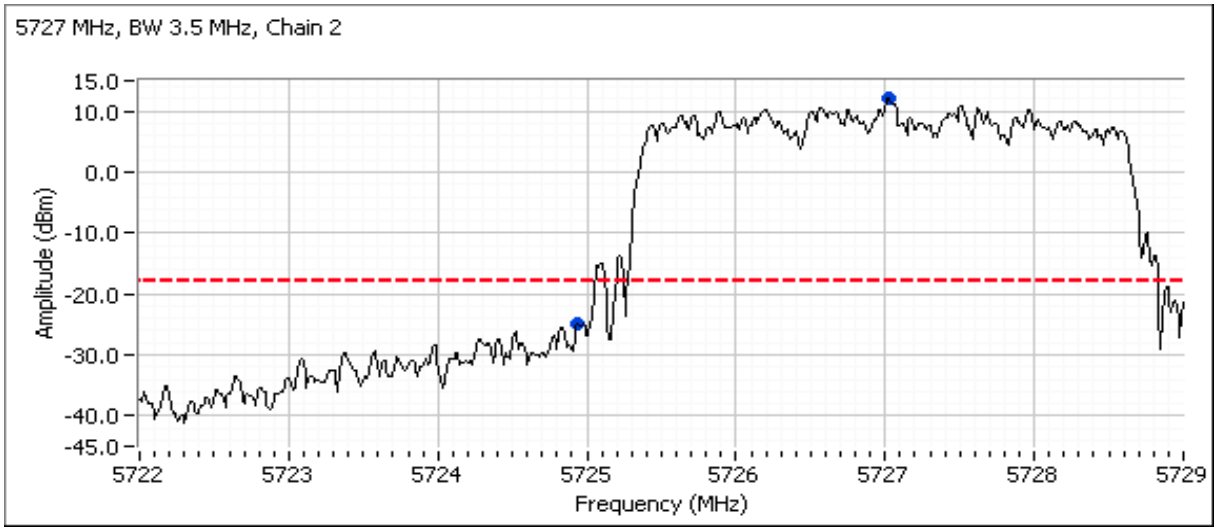
Frequency	Level	Pol	15.209 / 15.247		Detector	Comments
MHz	dBm	-	Limit	Margin	Pk/QP/Avg	
5726.990	10.4	RF Port	-	-	Peak	Fundamental, chain 1 5727 MHz
5724.890	-21.8	RF Port	-19.6	-2.2	Peak	
5727.030	12.2	RF Port	-	-	Peak	Fundamental, chain 2 5727 MHz
5724.940	-25.0	RF Port	-17.8	-7.2	Peak	
5847.010	14.9	RF Port	-	-	Peak	Fundamental, chain 2 5847 MHz
5850.110	-18.4	RF Port	-15.1	-3.3	Peak	

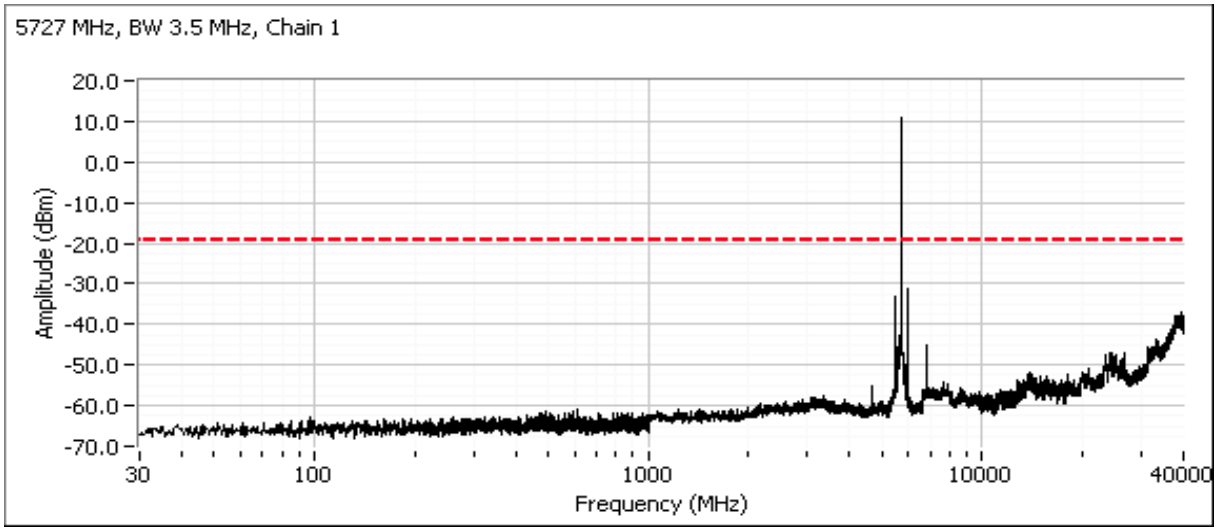
Plots for low channel, power settings = 20

Additional plot from 5722 - 5732 MHz showing compliance with -30dBc at the band edge.

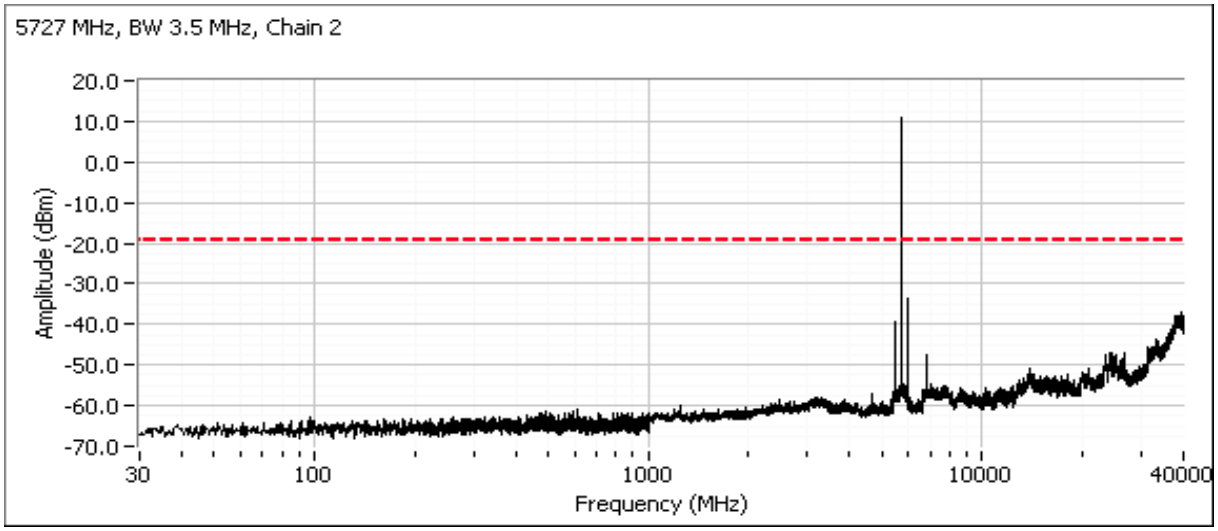


Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

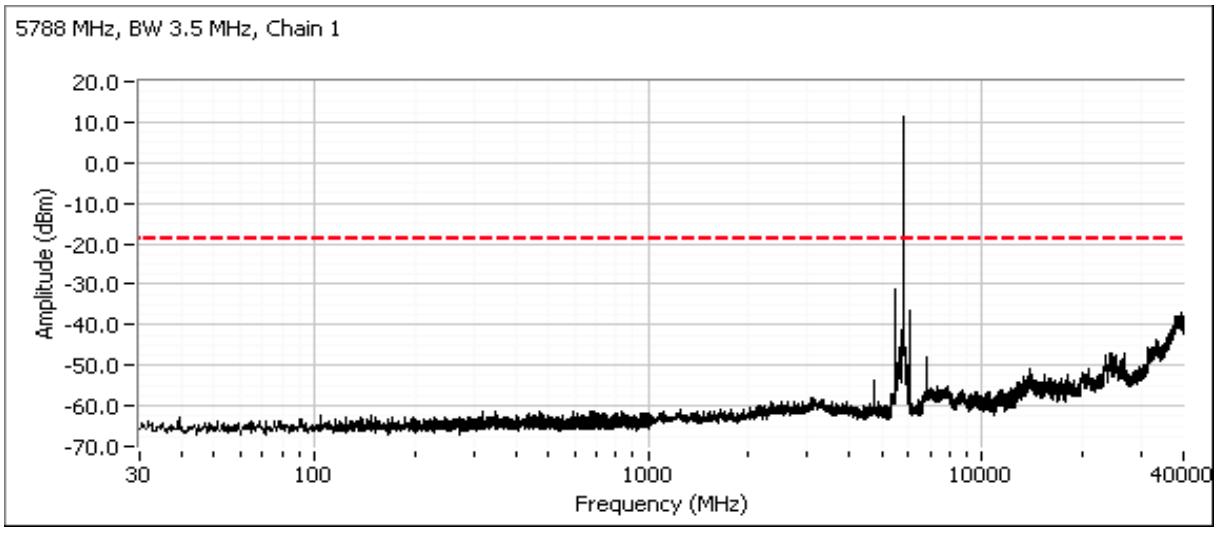




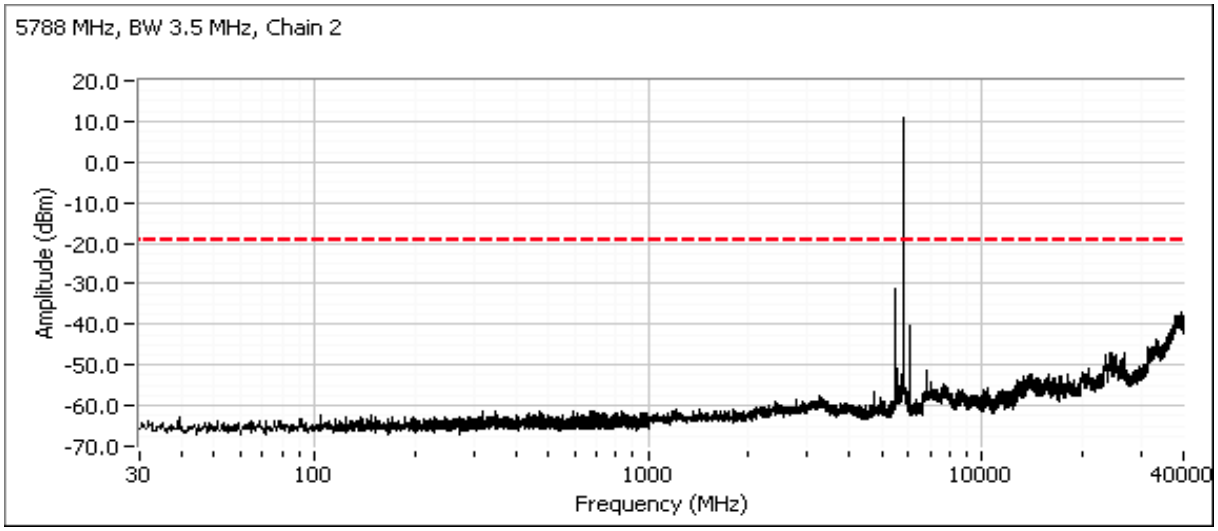
Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A



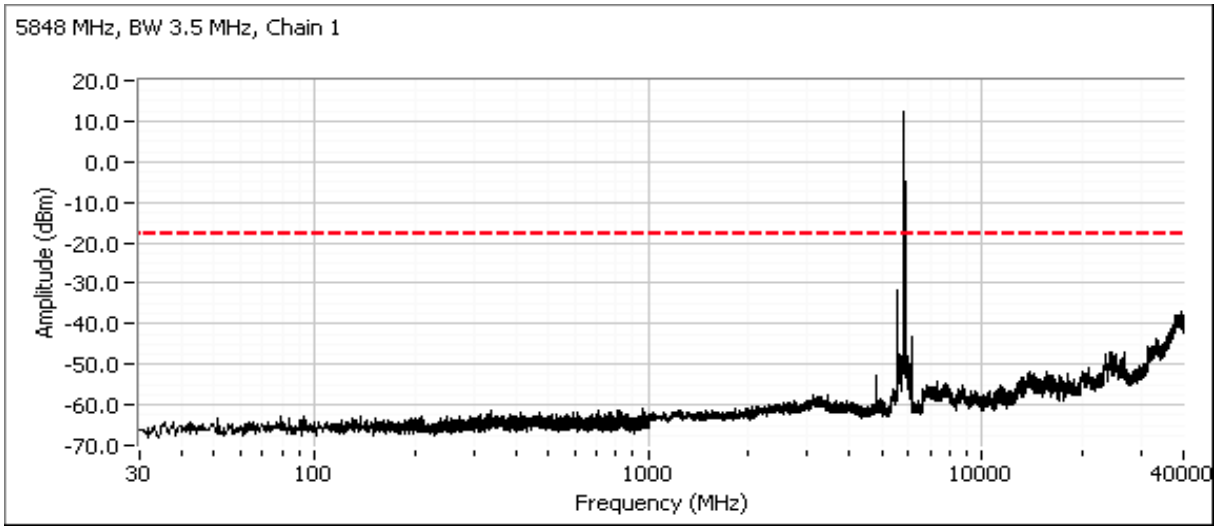
Plots for center channel, power settings = 20



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

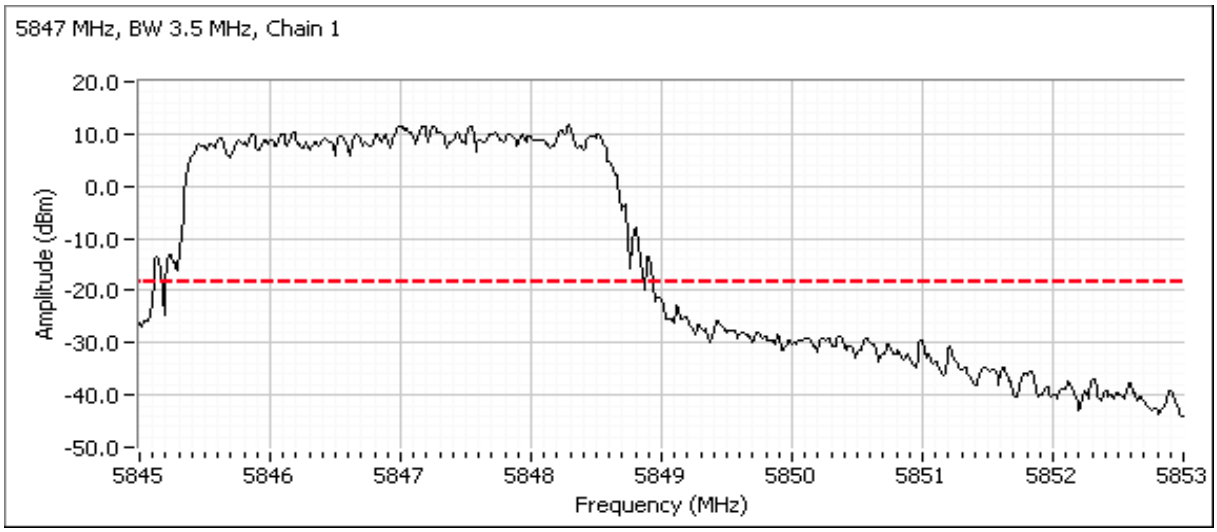


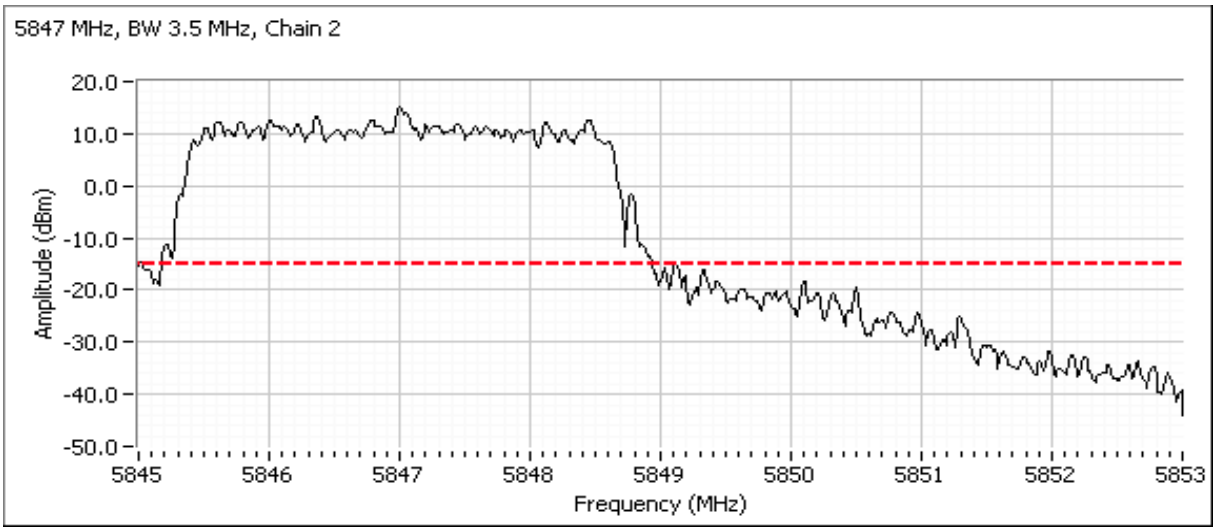
Plots for high channel, power setting(s) = 19



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Additional plot from 5843 - 5853 MHz showing compliance with -30dBc at the band edge.



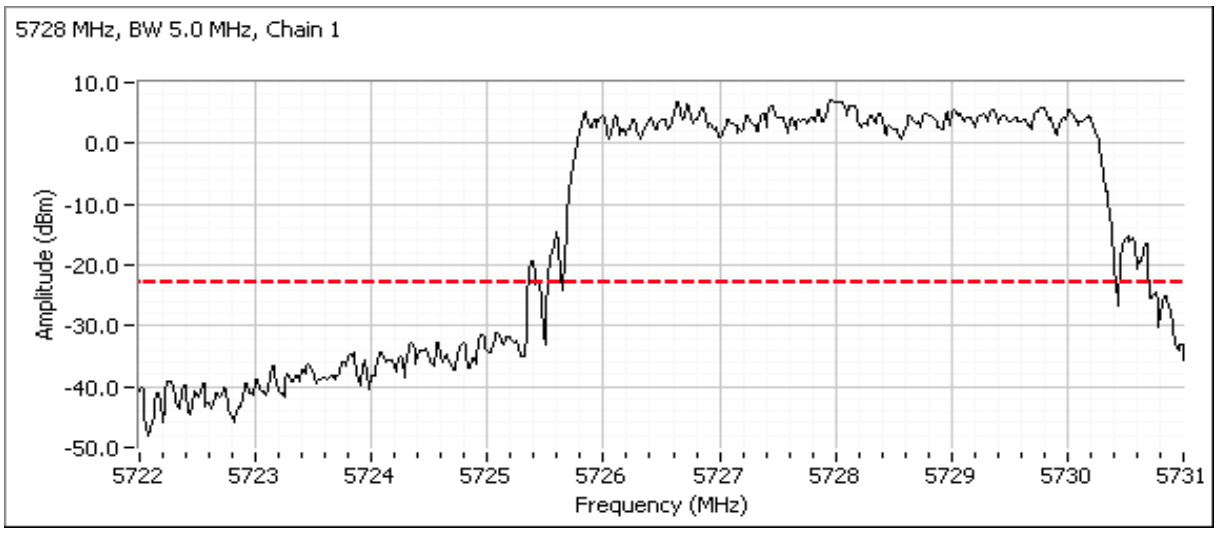


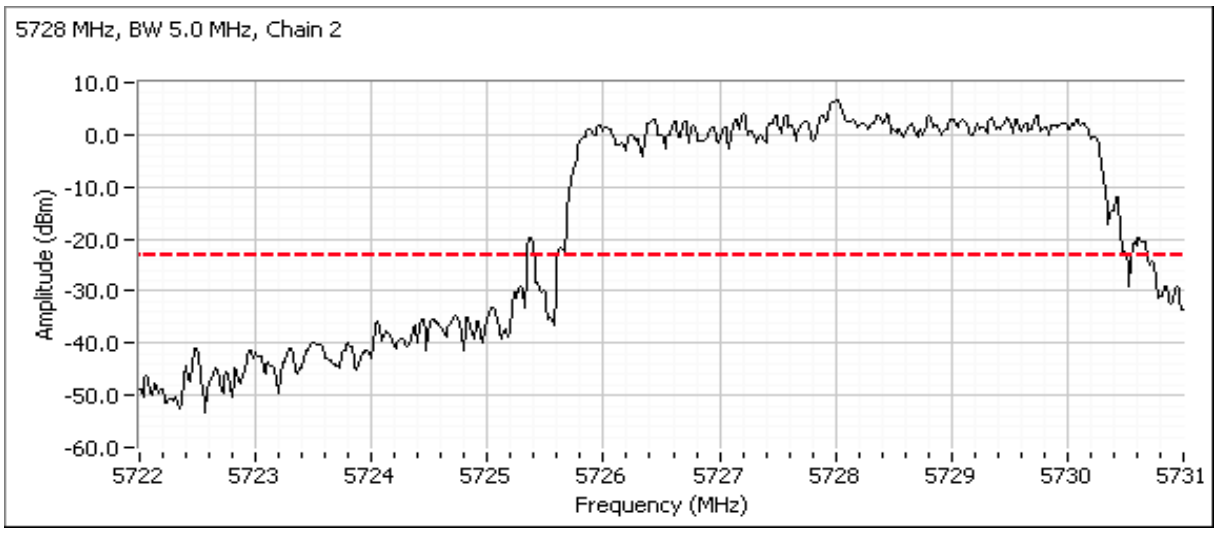
Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

5.0 MHz BW

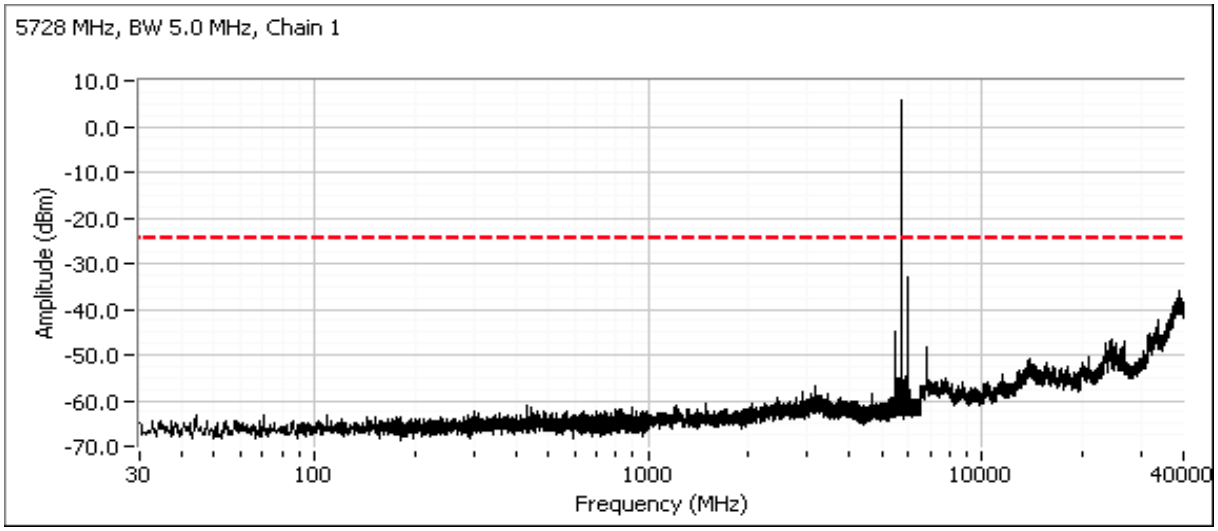
Plots for low channel, power settings = 16

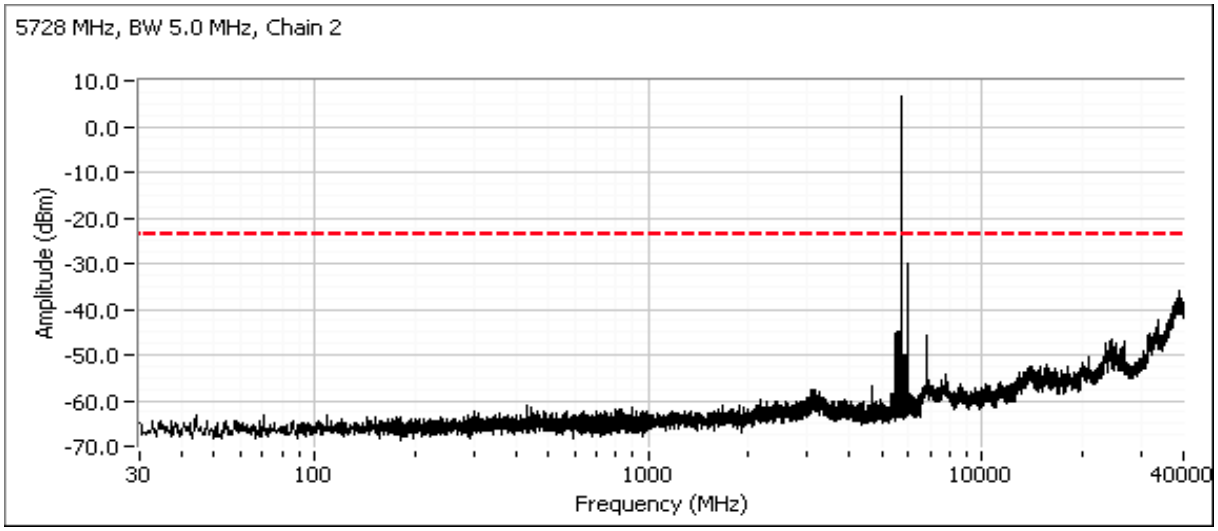
Additional plot from 5722 - 5732 MHz showing compliance with -30dBc at the band edge.





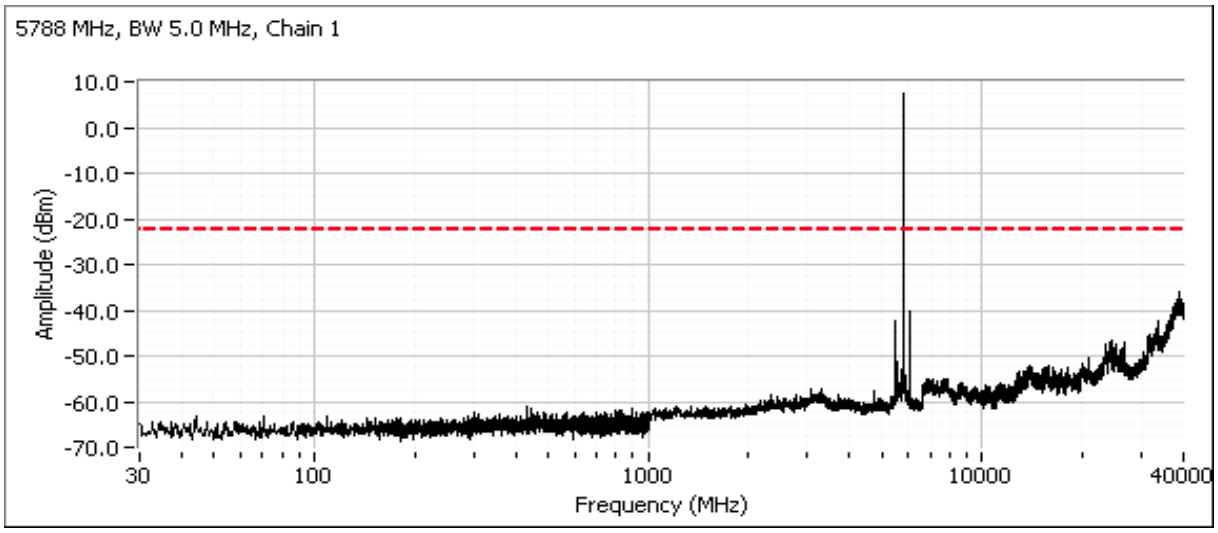
Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

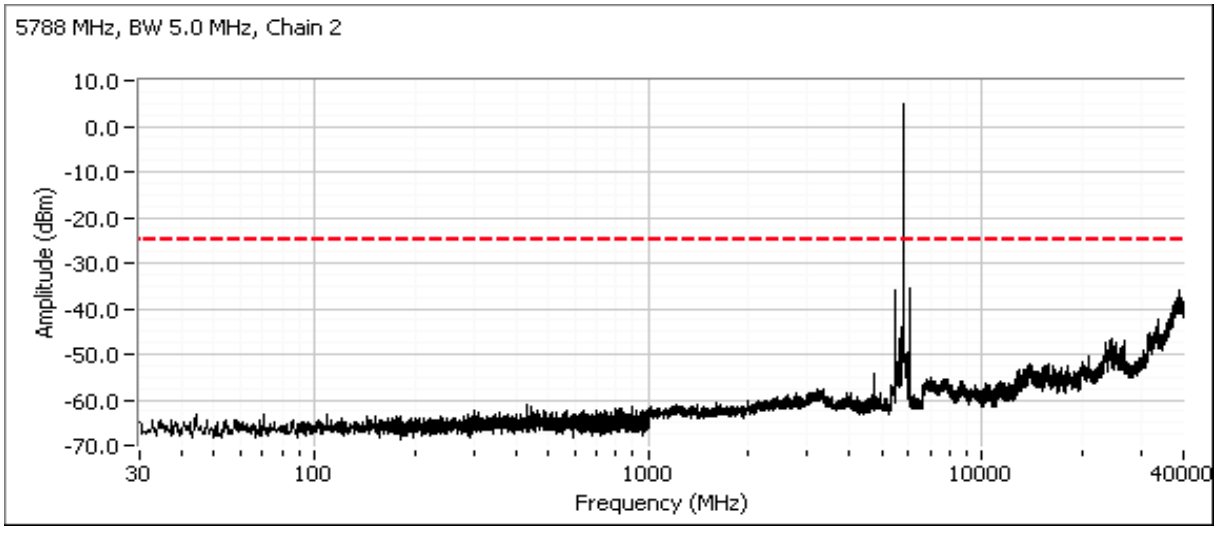




Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Plots for center channel, power settings = 16

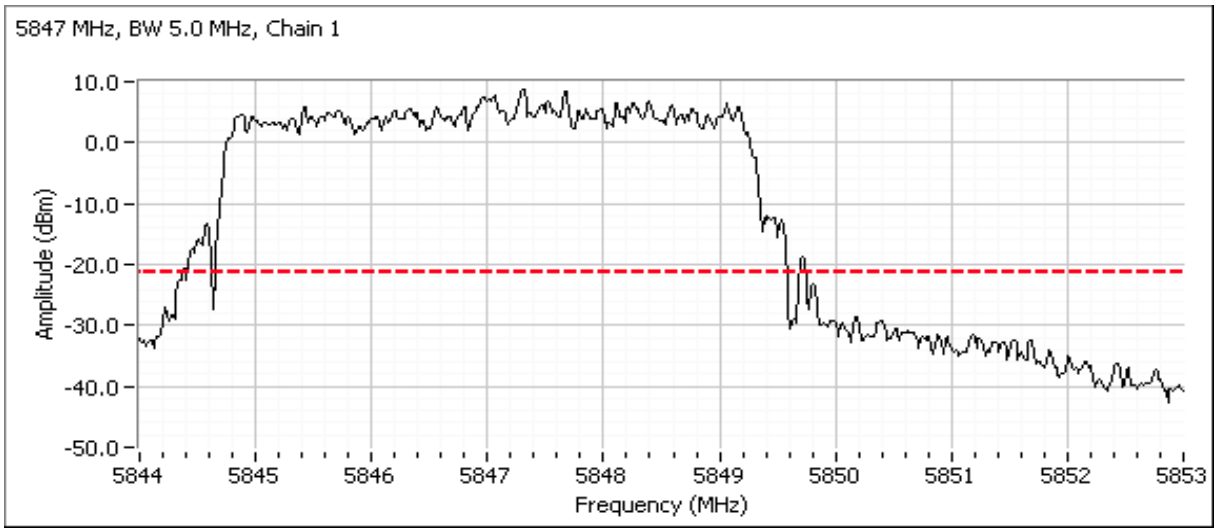


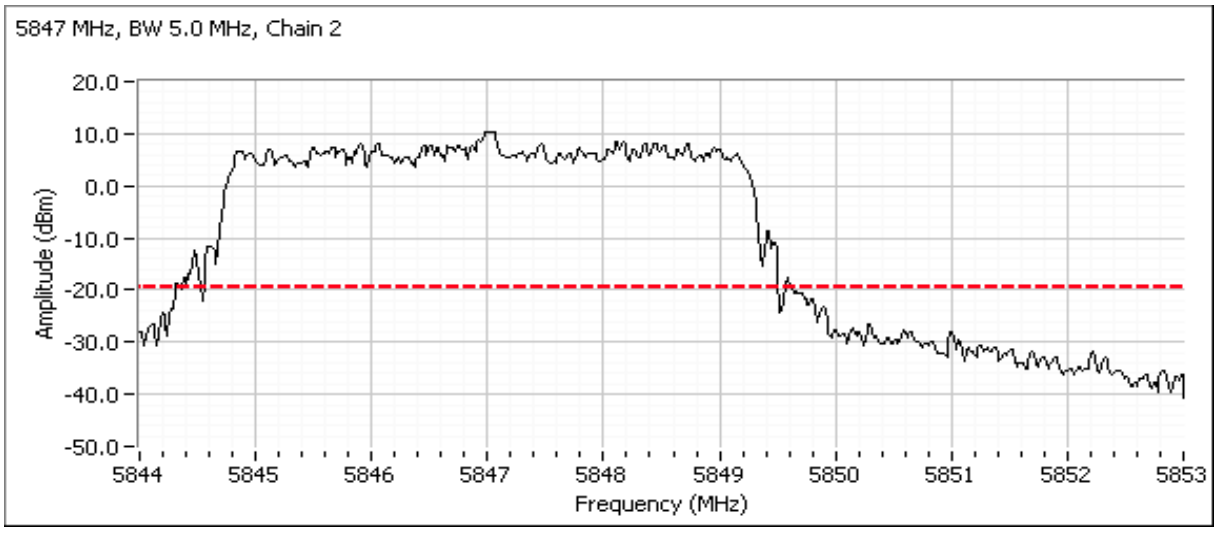


Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

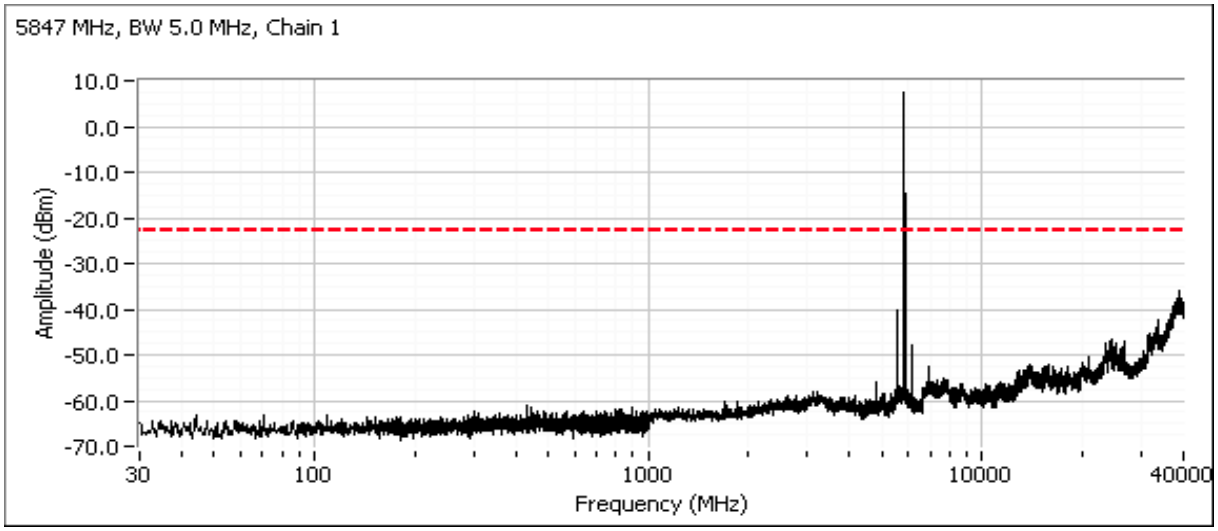
Plots for high channel, power setting(s) = 15

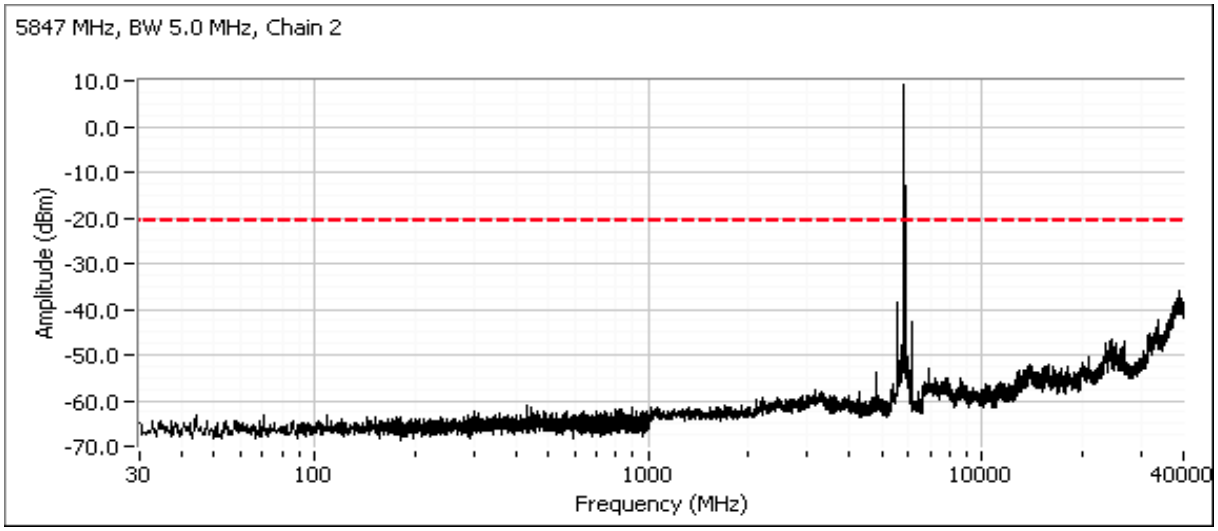
Additional plot from 5843 - 5853 MHz showing compliance with -30dBc at the band edge.





Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A



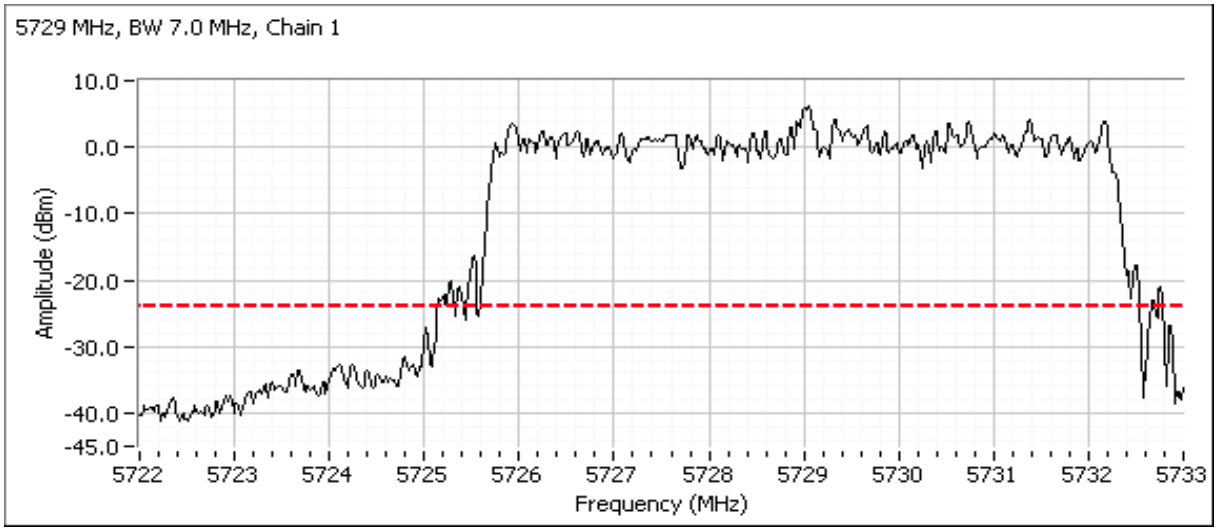


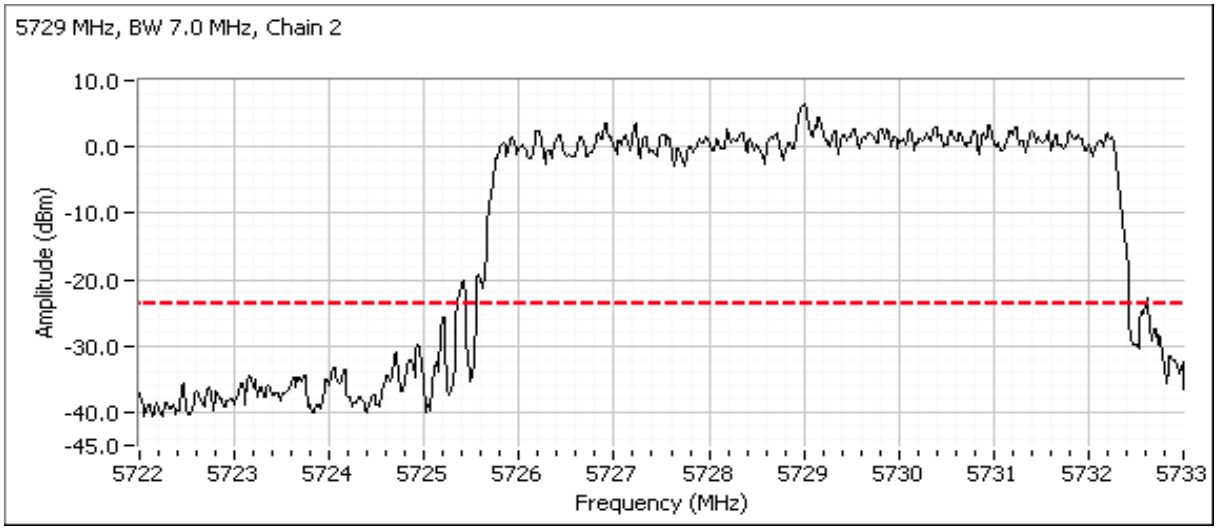
Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

7 MHz BW

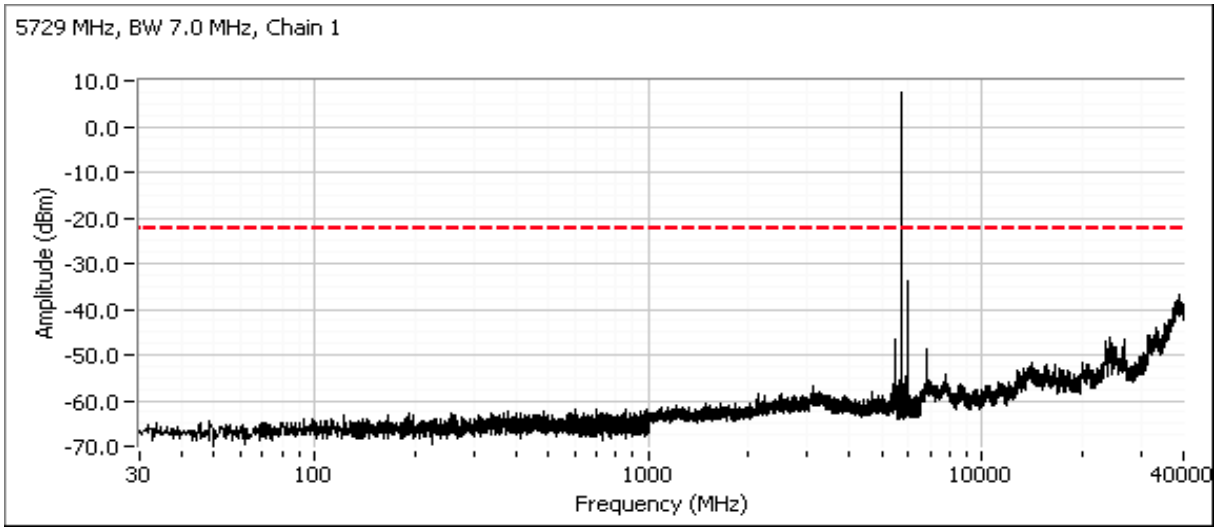
Plots for low channel, power settings = 17.0

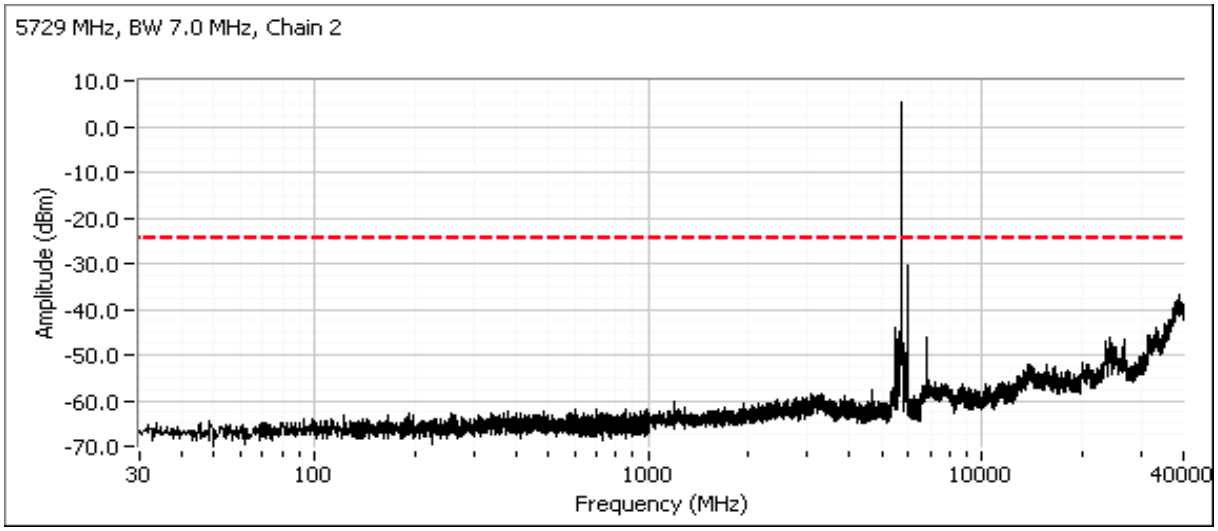
Additional plot from 5722 - 5732 MHz showing compliance with -30dBc at the band edge.





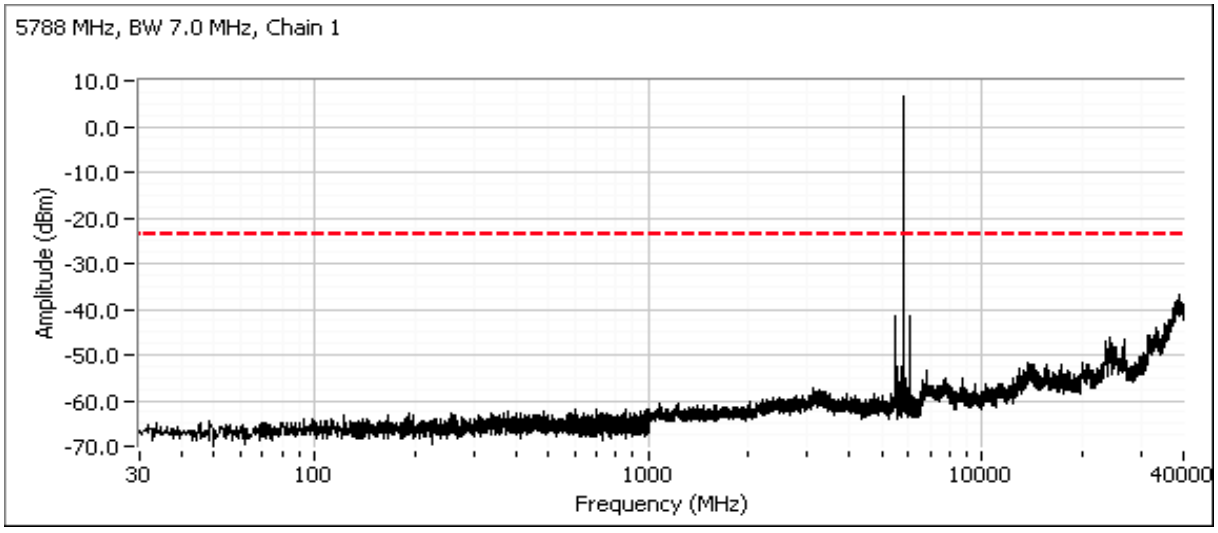
Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

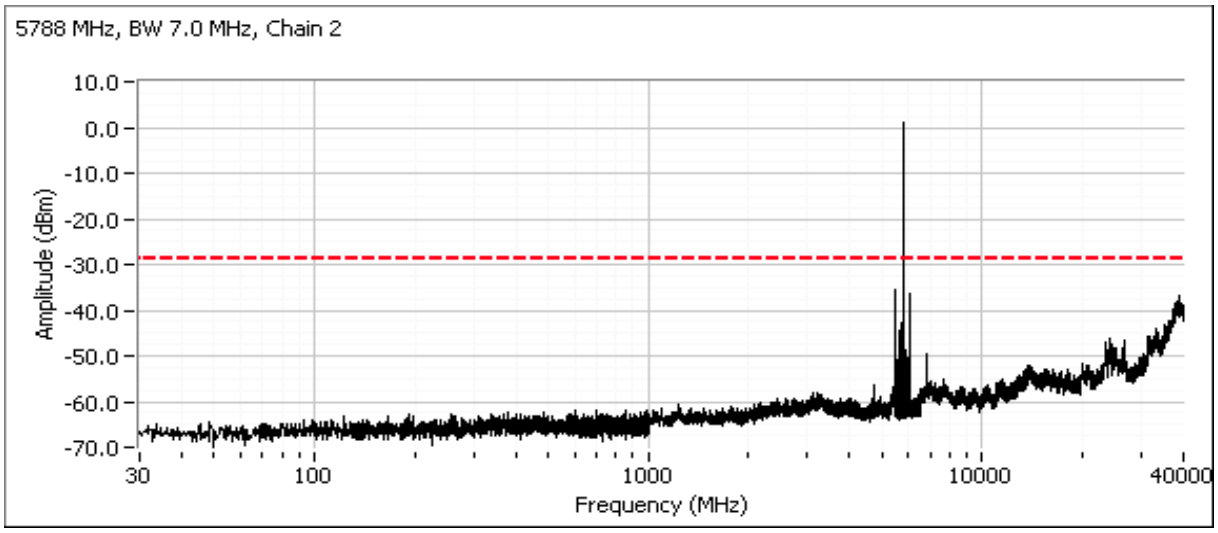




Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Plots for center channel, power settings = 17.0

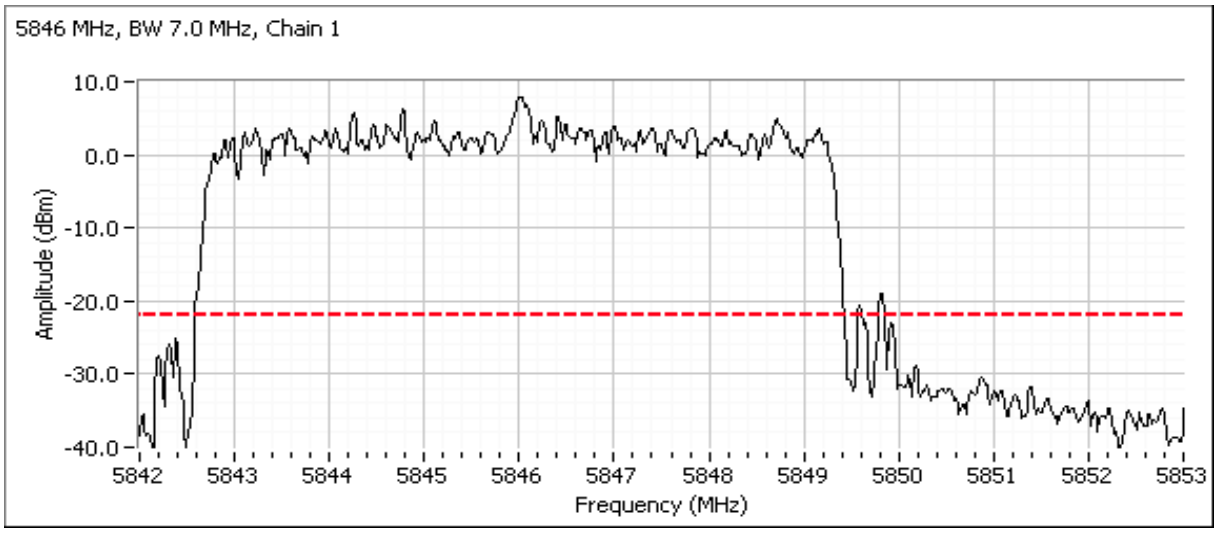


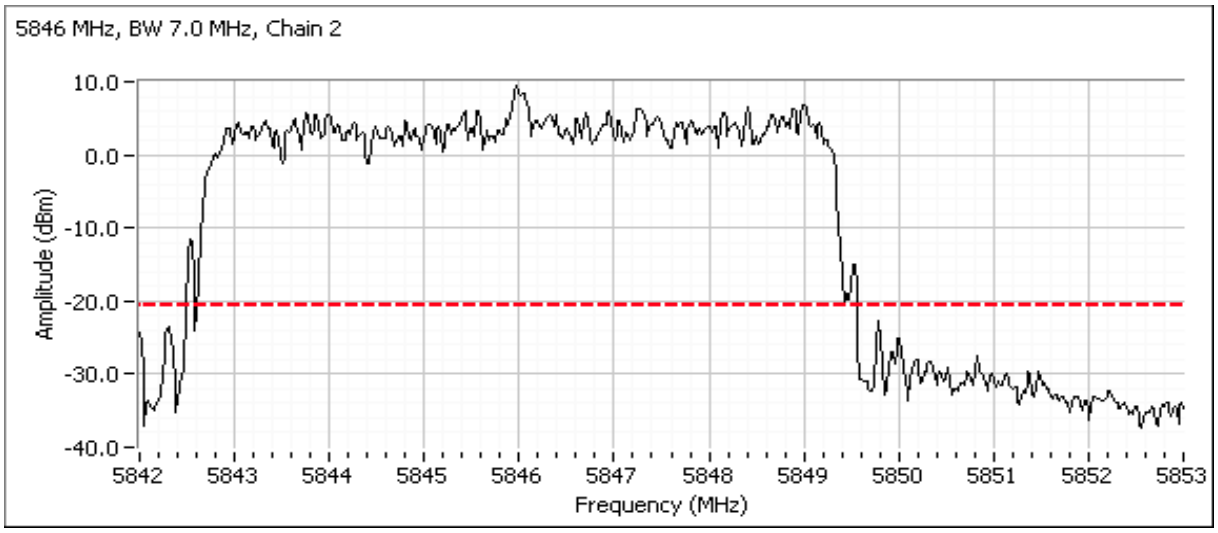


Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

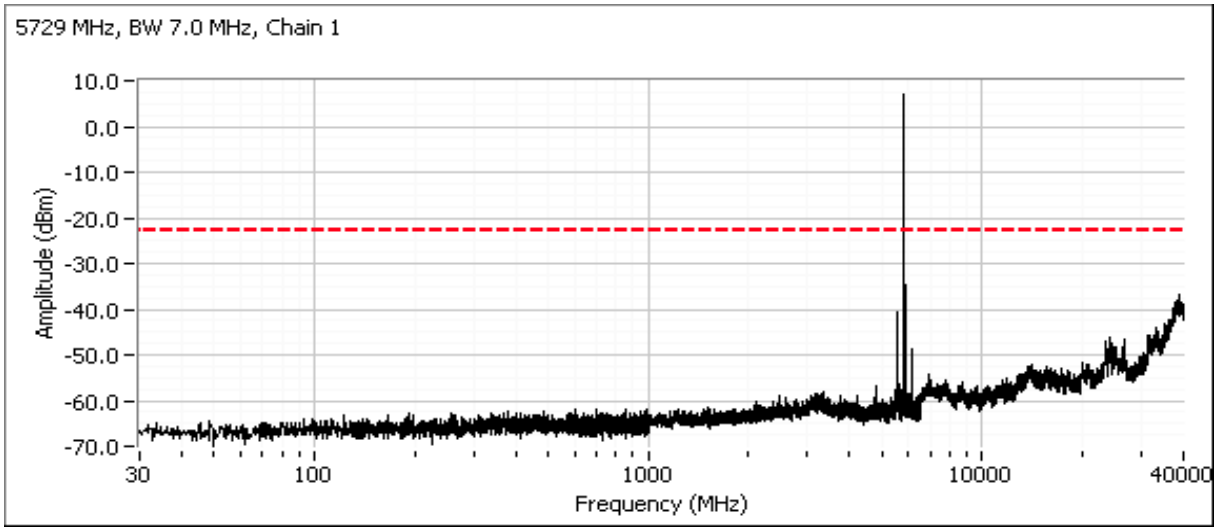
Plots for high channel, power settings = 16.0

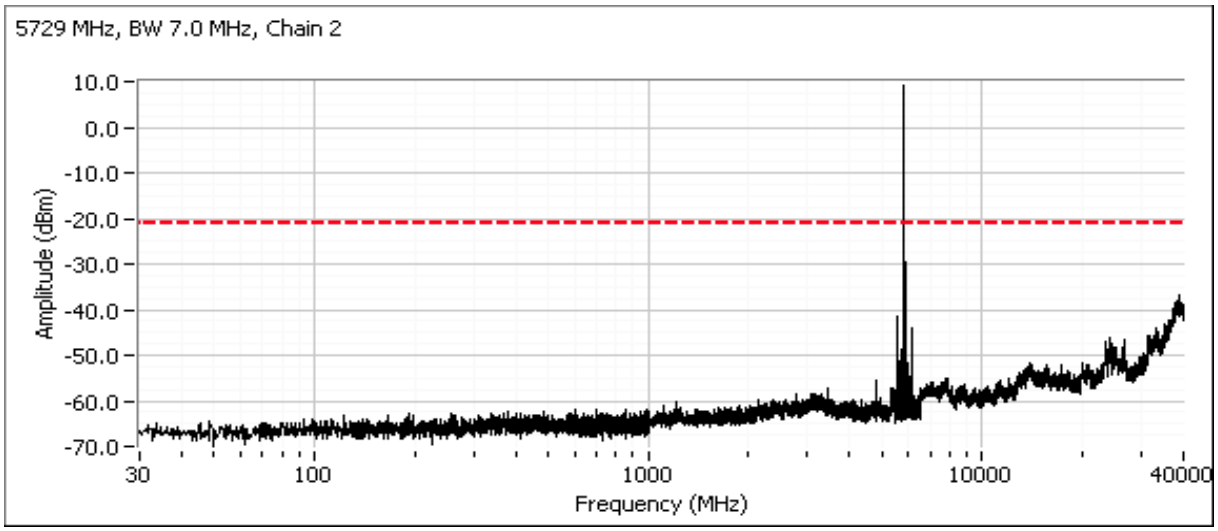
Additional plot from 5843 - 5853 MHz showing compliance with -30dBc at the band edge.





Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A



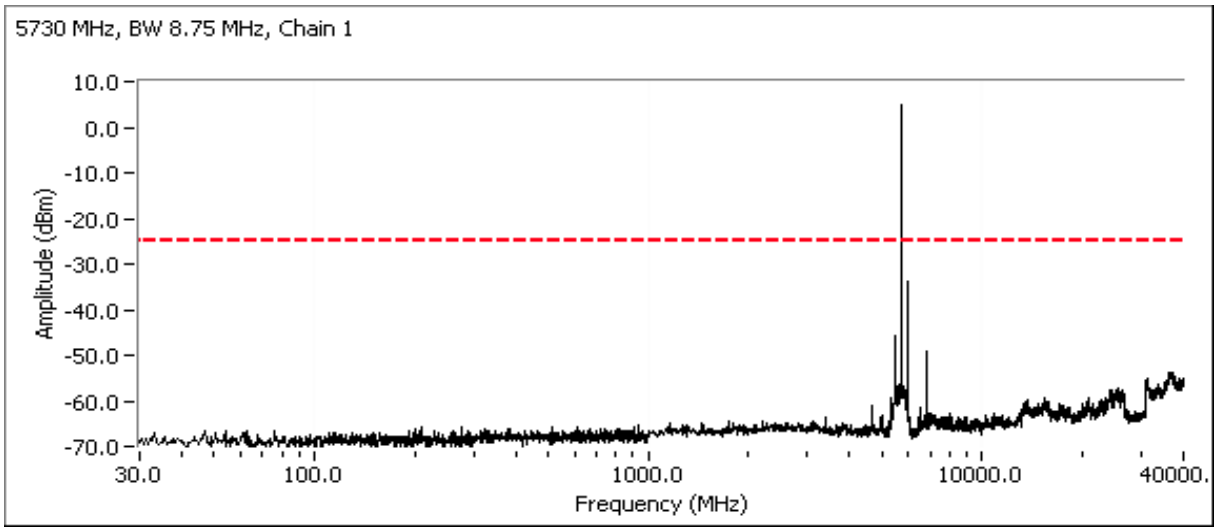


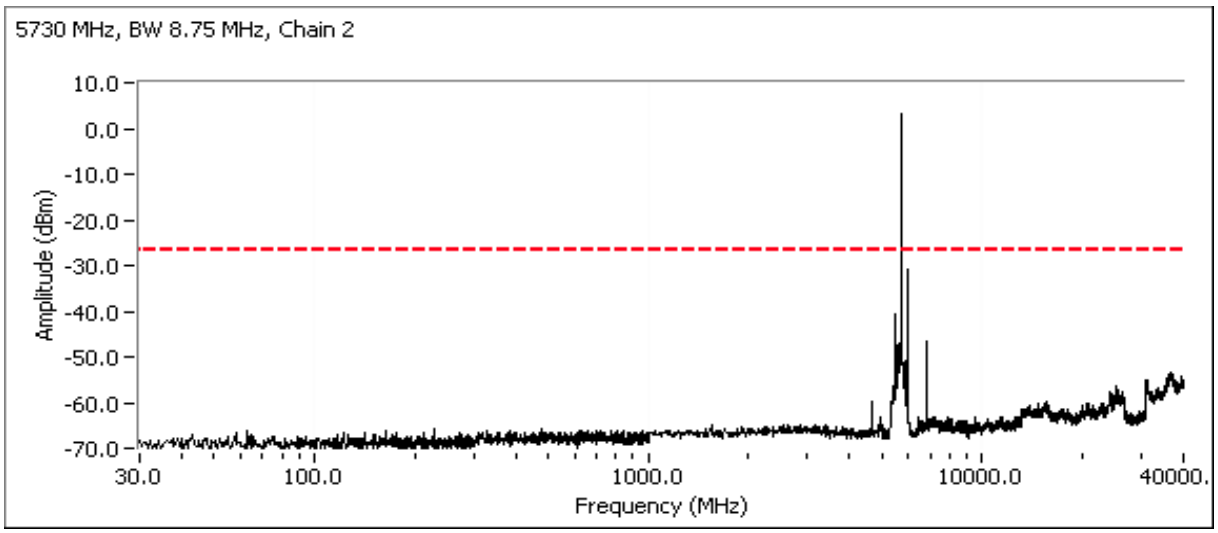
Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

8.75 MHz BW

Frequency	Level	Pol	15.209 / 15.247		Detector	Comments
MHz	dBm	-	Limit	Margin	Pk/QP/Avg	
5730.200	3.5	-	-	-	Peak	Fundamental, Chain2 5730 MHz
5725.370	-26.6	-	-26.5	-0.1	Peak	
5845.070	5.7	-	-	-	Peak	Fundamental, Chain1 5845 MHz
5850.000	-25.8	-	-24.3	-1.5	Peak	

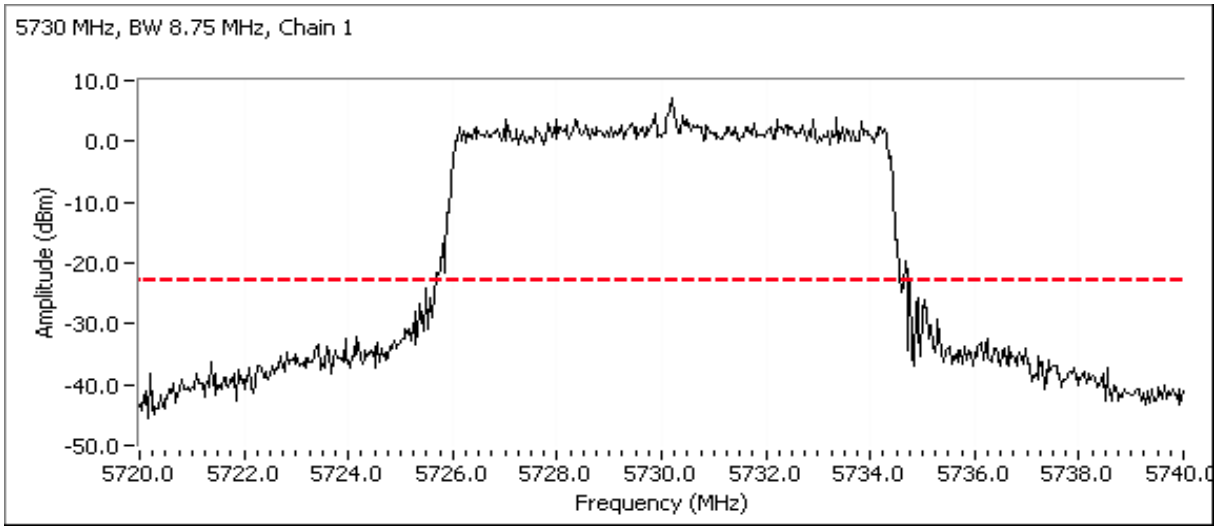
Plots for low channel, power settings = 16.0

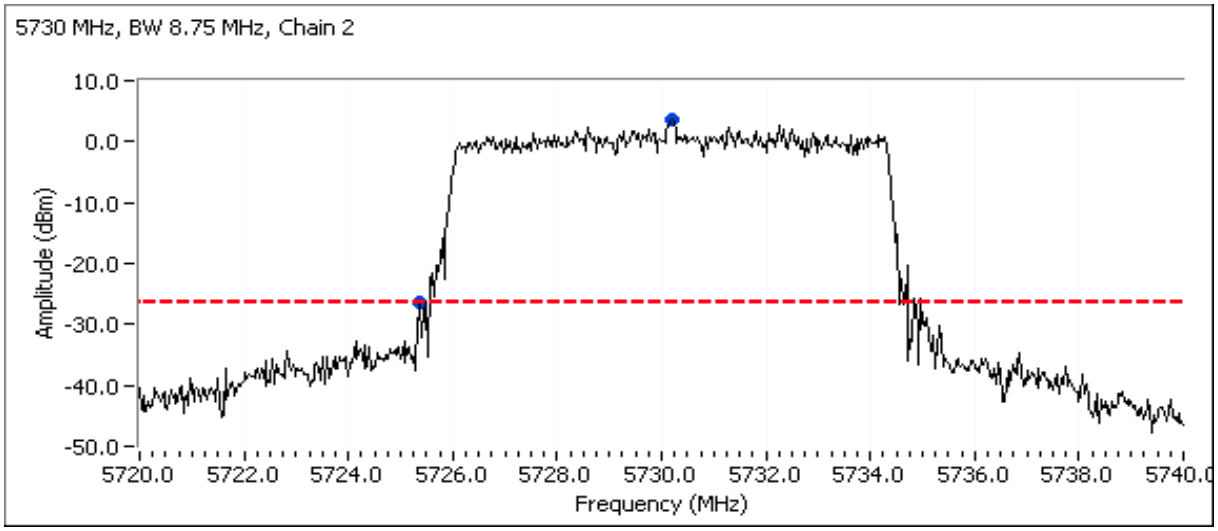




Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

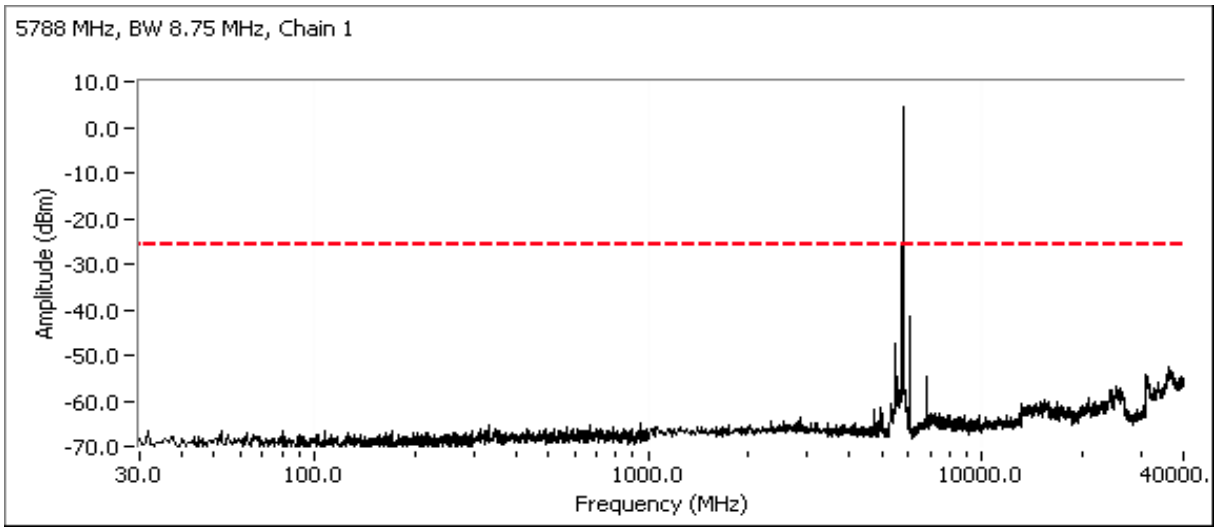
Additional plot from 5720 - 5740 MHz showing compliance with -30dBc at the band edge.

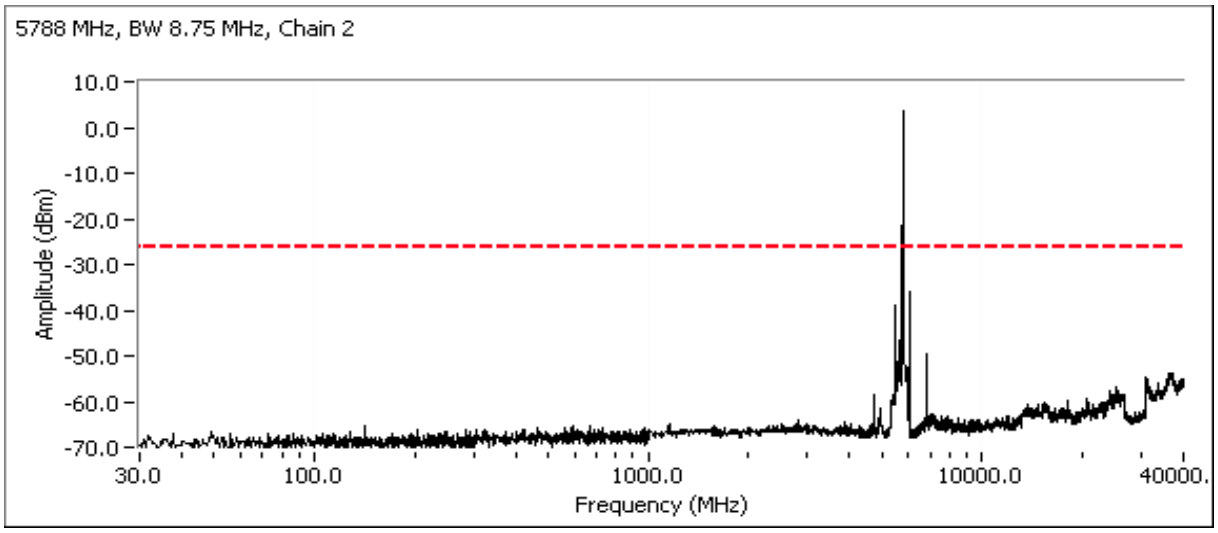




Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

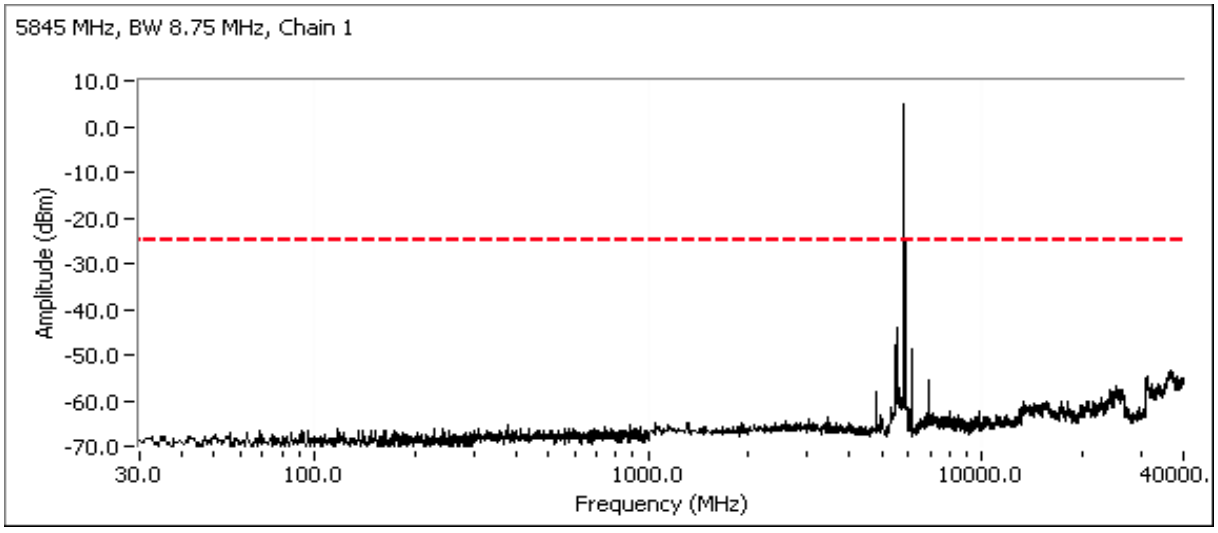
Plots for center channel, power settings = 16.0

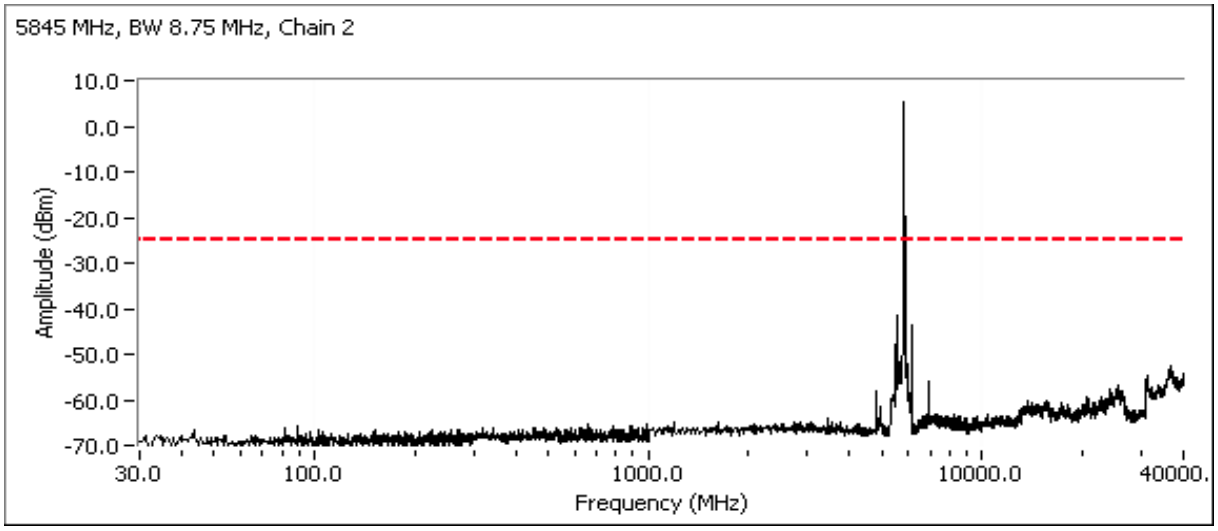




Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

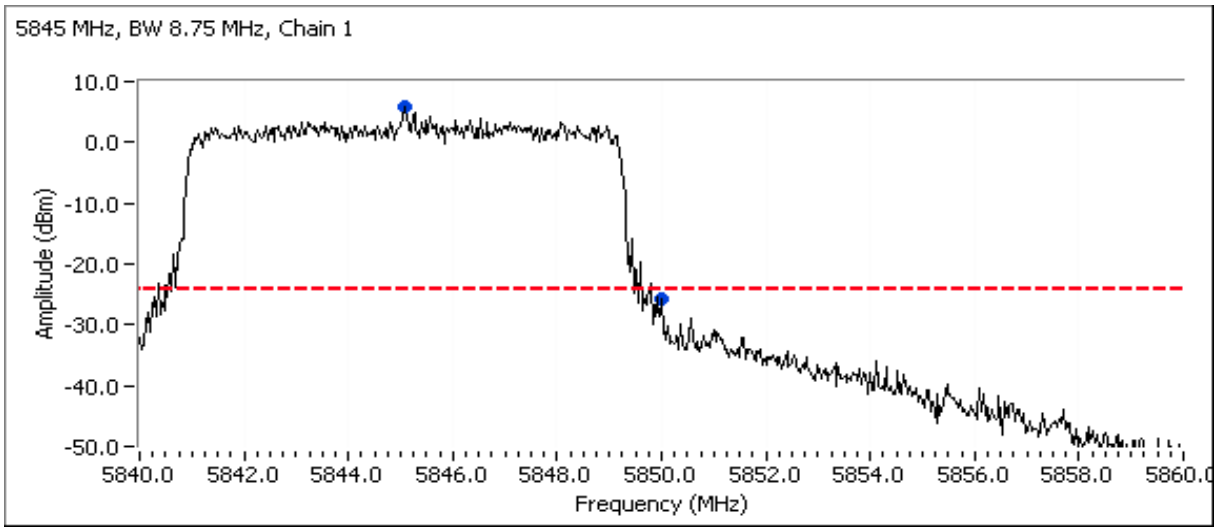
Plots for high channel, power settings = 15.0

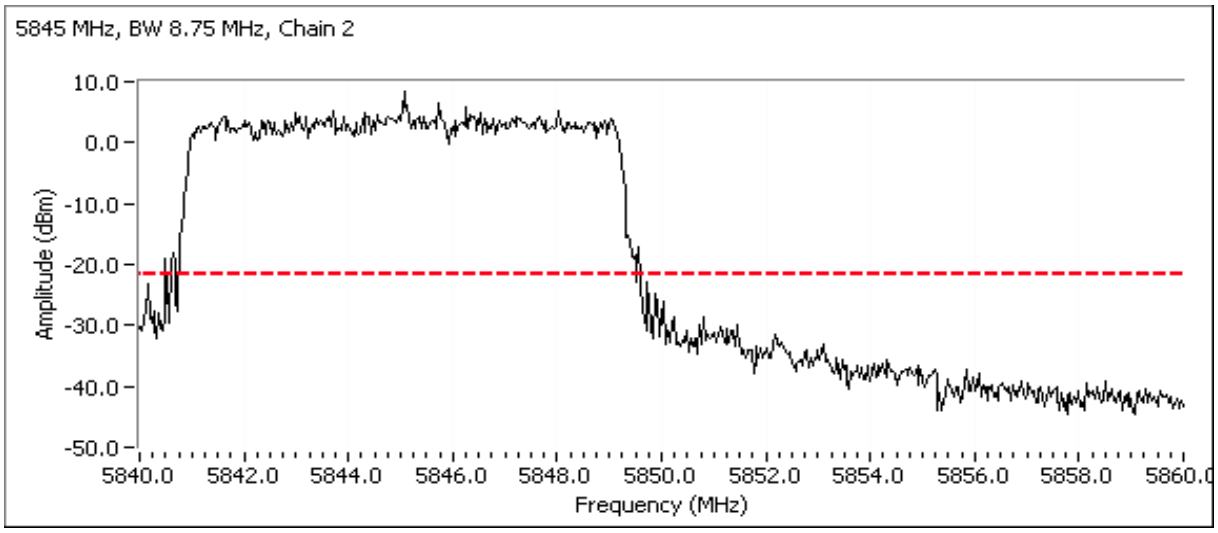




Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Additional plot from 5840 - 5860 MHz showing compliance with -30dBc at the band edge.



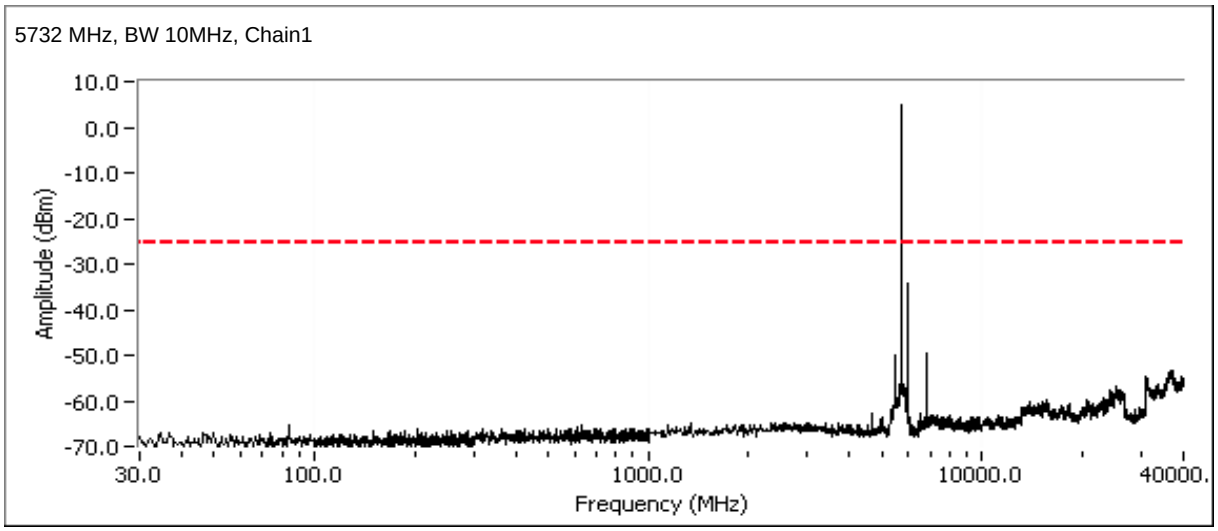


Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

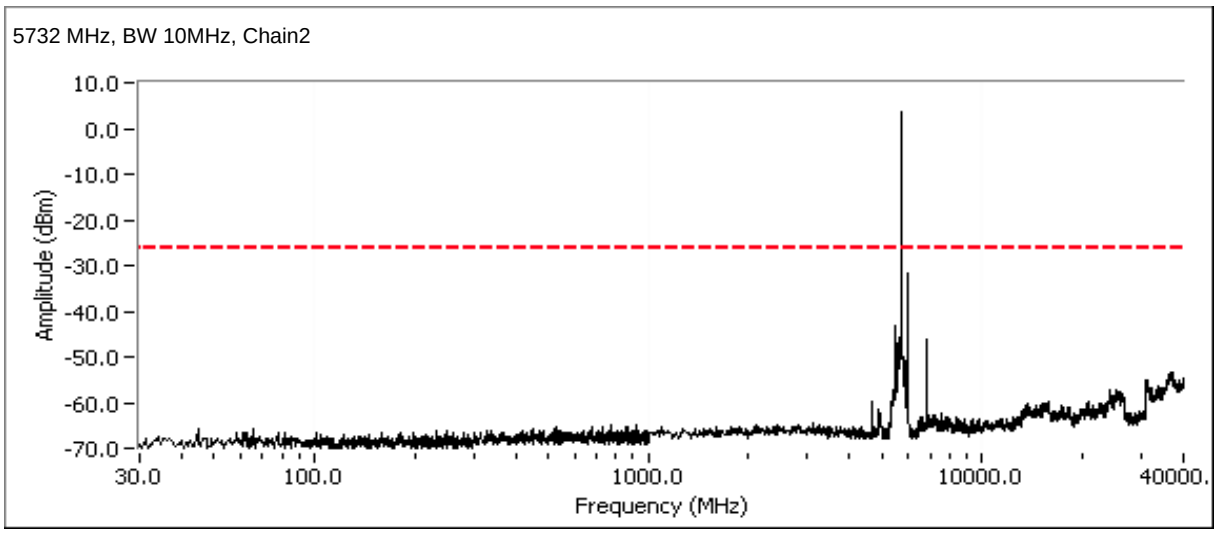
10 MHz BW

Plots for low channel, power settings = 17.0

5732 MHz, BW 10MHz, Chain1

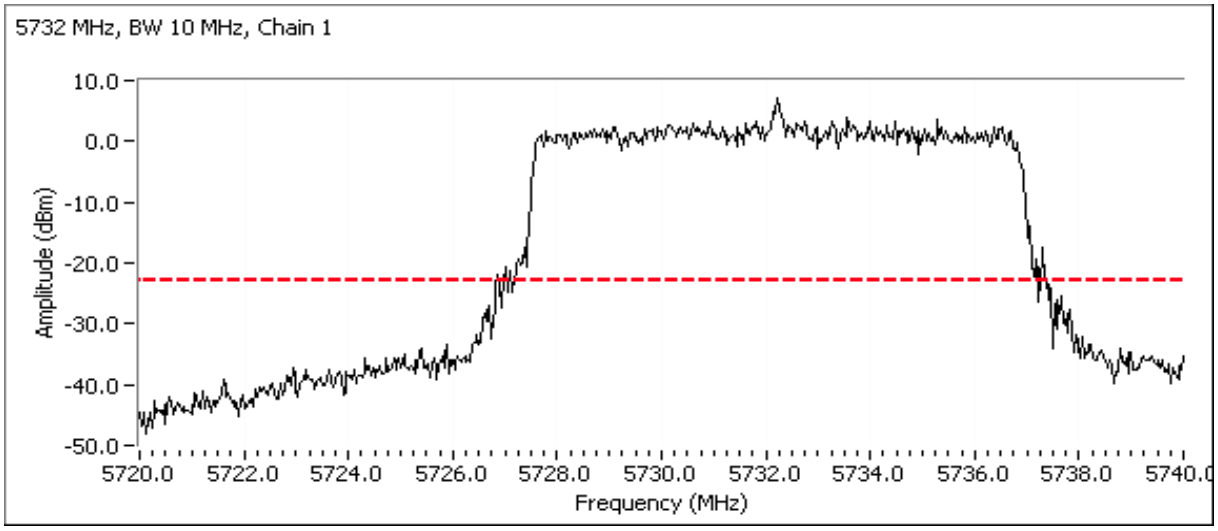


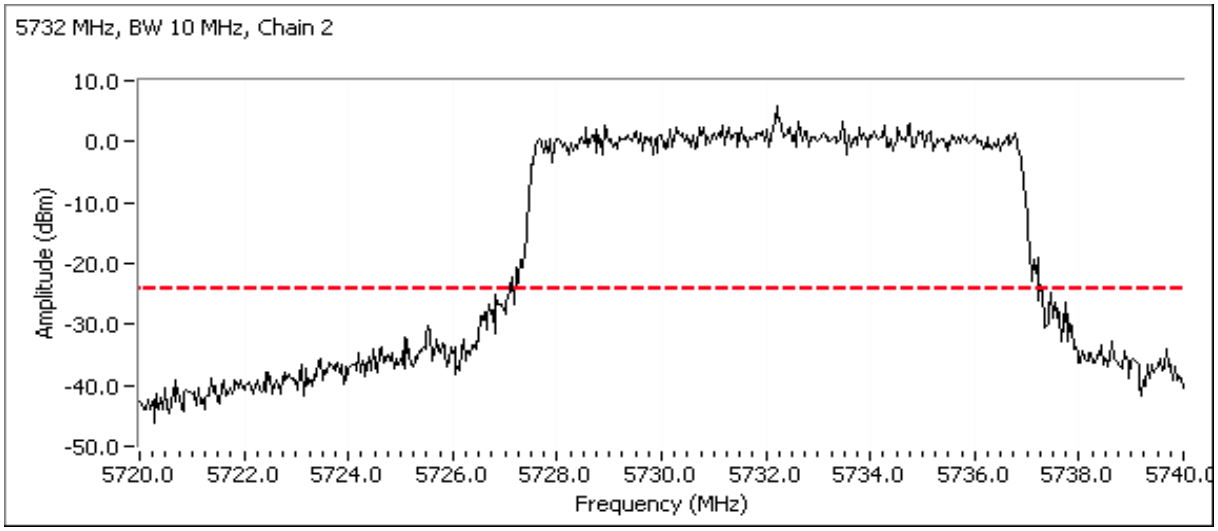
5732 MHz, BW 10MHz, Chain2



Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

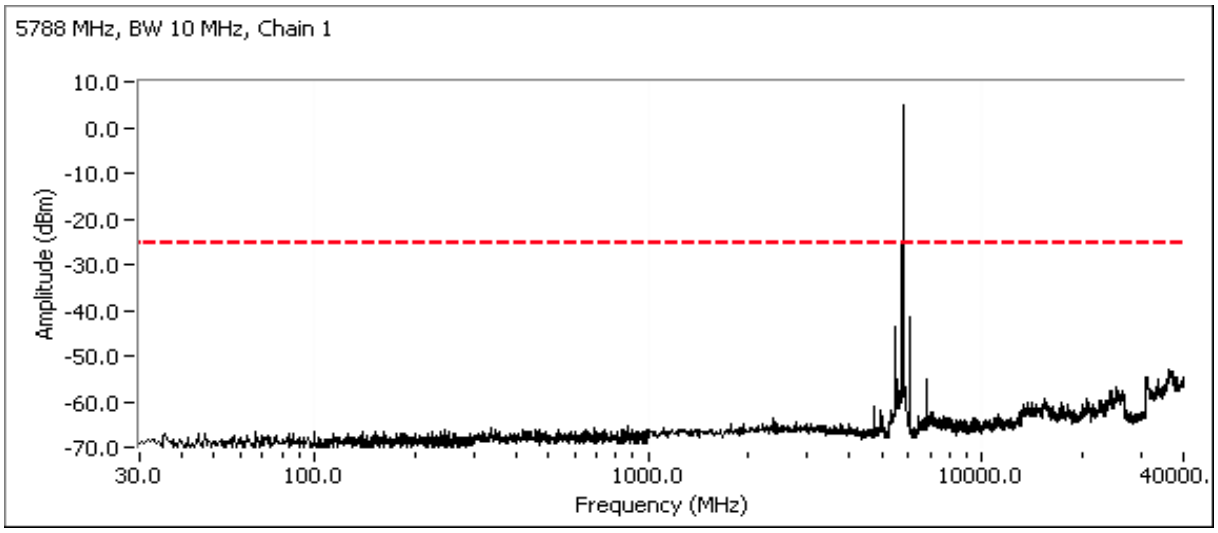
Additional plot from 5720 - 5740 MHz showing compliance with -30dBc at the band edge.

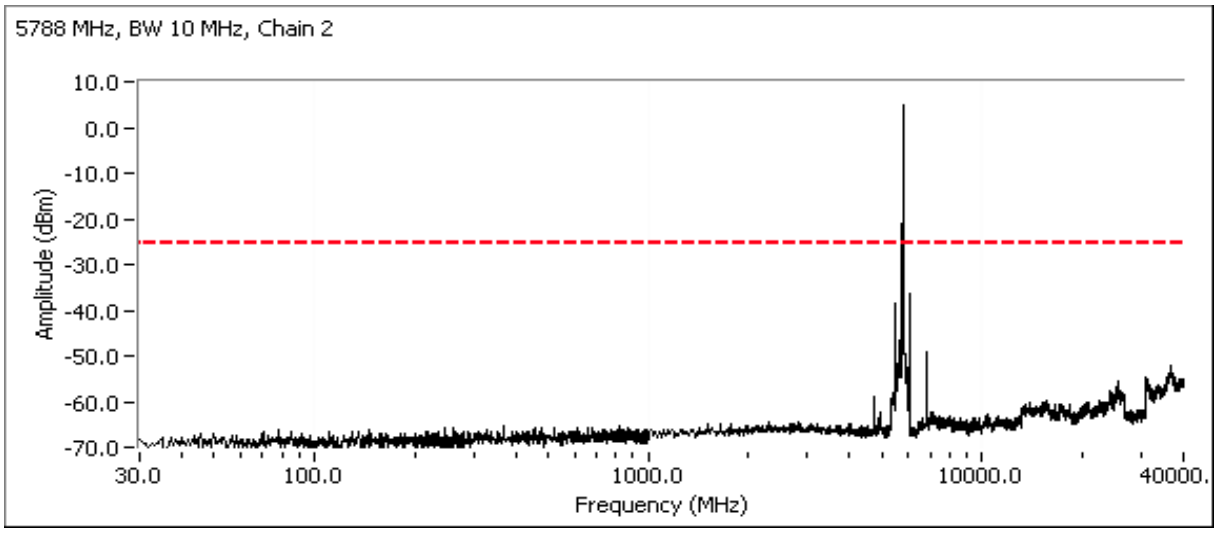




Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

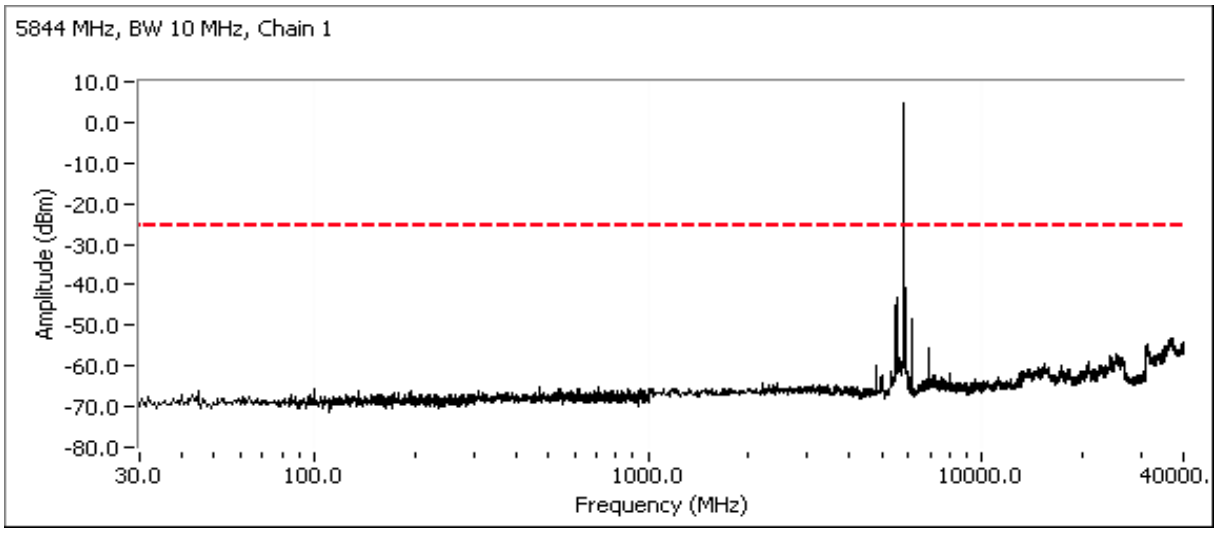
Plots for center channel, power settings = 17.0

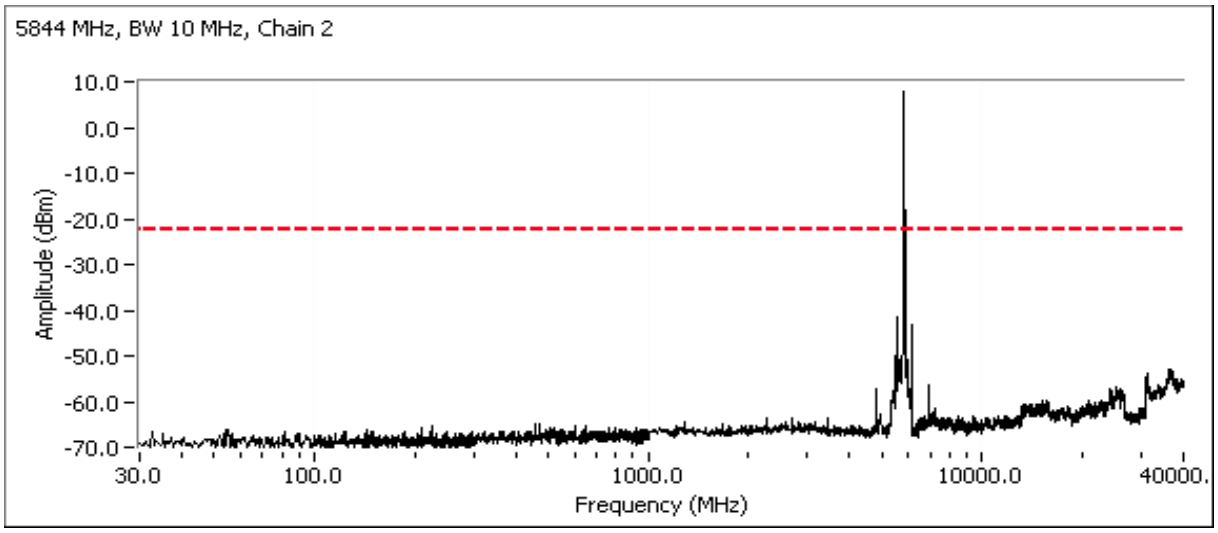




Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

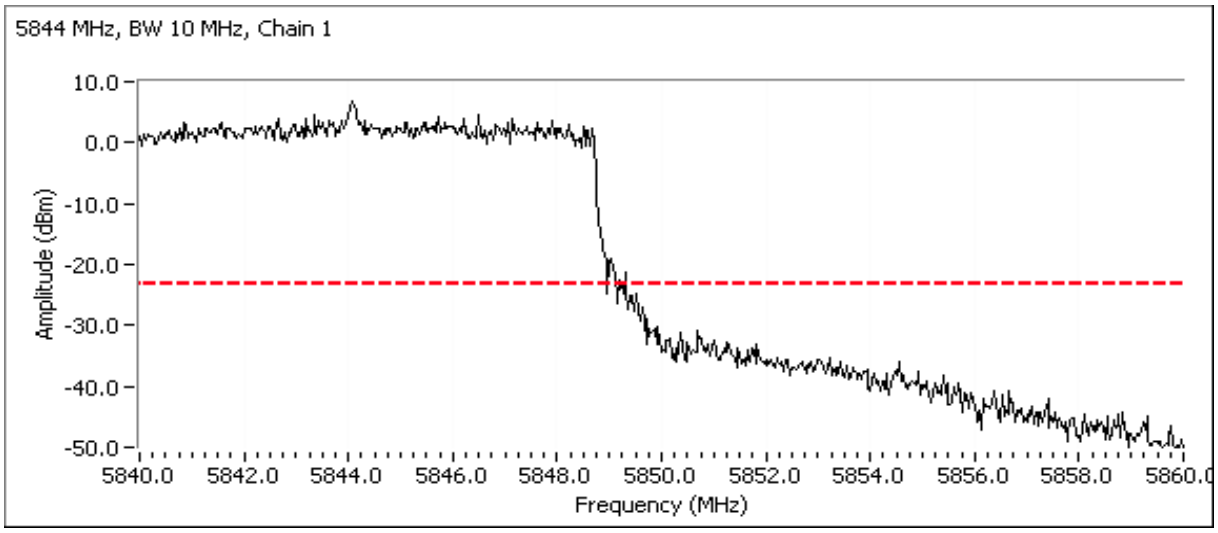
Plots for high channel, power settings = 16.0

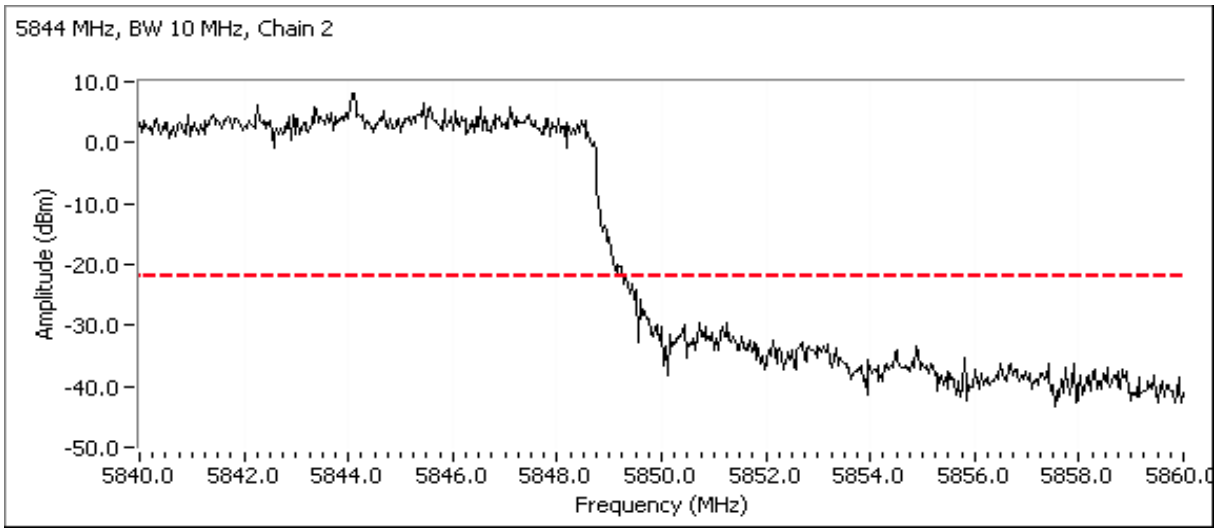




Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	N/A

Additional plot from 5840 - 5860 MHz showing compliance with -30dBc at the band edge.





Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	A

Conducted Emissions

(Elliott Laboratories Fremont Facility, Semi-Anechoic Chamber)

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: 6/23/2011
Test Engineer: Joseph Cadigal
Test Location: Fremont Chamber #5
Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

General Test Configuration

For tabletop equipment, the EUT was located on a wooden table inside the semi-anechoic chamber, 40 cm from a vertical coupling plane and 80cm from the LISN. A second LISN was used for all local support equipment. Remote support equipment was located outside of the semi-anechoic chamber. Any cables running to remote support equipment where routed through metal conduit and when possible passed through a ferrite clamp upon exiting the chamber.

Ambient Conditions:

Temperature: 25 °C
Rel. Humidity: 37 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1	CE, AC Power,120V/60Hz	Class B	Pass	49.9dBµV @ 23.781MHz (-0.1dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

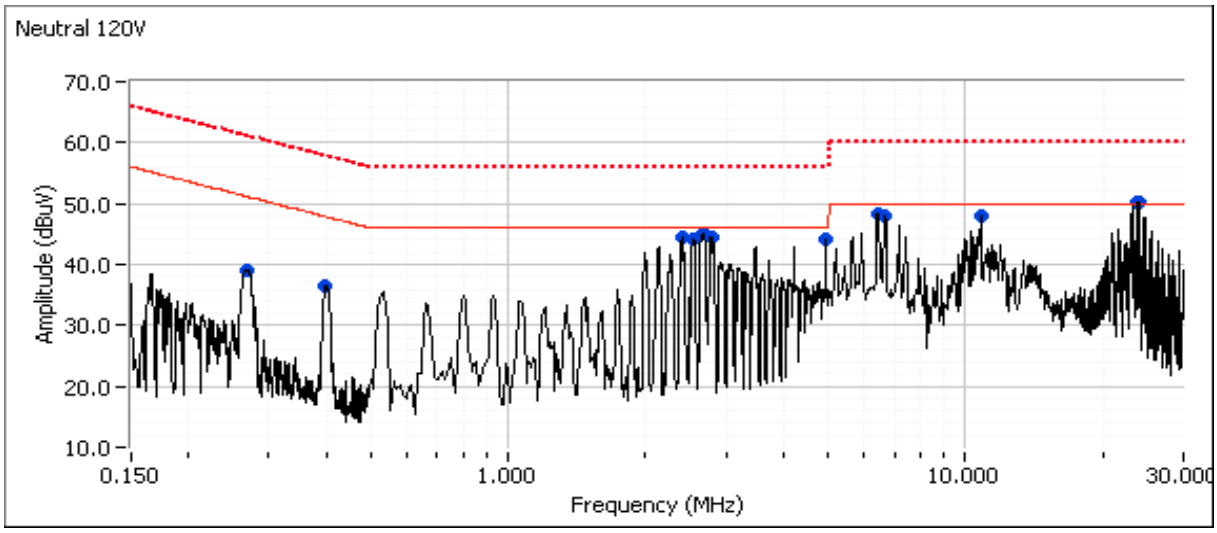
Deviations From The Standard

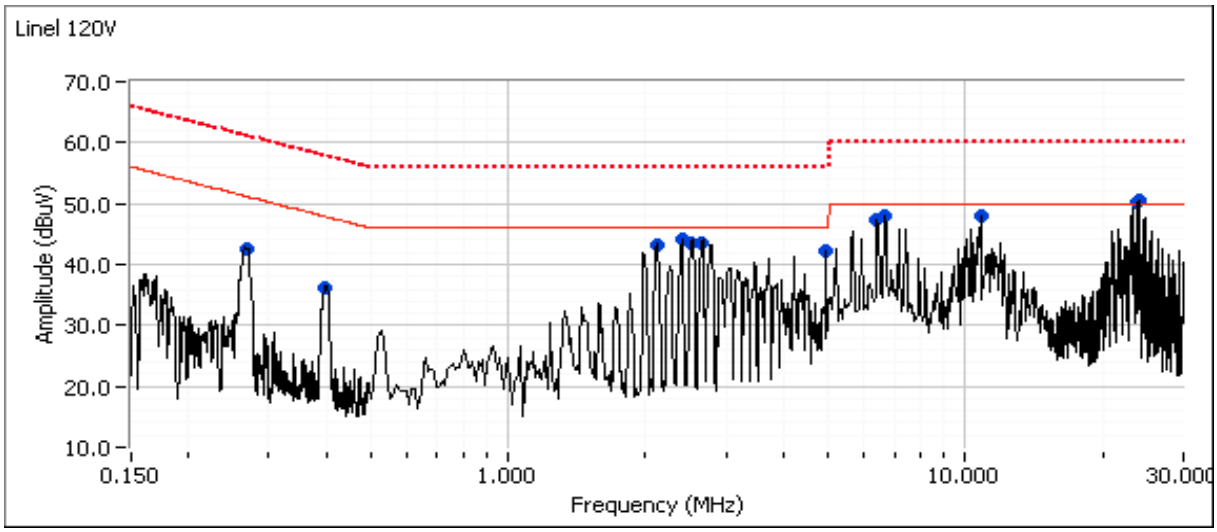
No deviations were made from the requirements of the standard.

Another POE was used during testing

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	A

Run #1: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz





Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	A

Preliminary peak readings captured during pre-scan (peak readings vs. average limit)

Frequency	Level	AC	Class B		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.269	39.2	Neutral	51.2	-12.0	Peak	
0.400	36.4	Neutral	47.9	-11.5	Peak	
2.667	45.2	Neutral	46.0	-0.8	Peak	
4.955	44.0	Neutral	46.0	-2.0	Peak	
2.405	44.6	Neutral	46.0	-1.4	Peak	
2.793	44.5	Neutral	46.0	-1.5	Peak	
2.532	44.3	Neutral	46.0	-1.7	Peak	
23.781	50.3	Neutral	50.0	0.3	Peak	
24.030	50.2	Neutral	50.0	0.2	Peak	
10.794	48.1	Neutral	50.0	-1.9	Peak	
6.441	48.3	Neutral	50.0	-1.7	Peak	
6.689	48.1	Neutral	50.0	-1.9	Peak	
0.268	42.7	Line 1	51.2	-8.5	Peak	
0.400	36.3	Line 1	47.9	-11.6	Peak	
2.405	44.1	Line 1	46.0	-1.9	Peak	
2.116	43.2	Line 1	46.0	-2.8	Peak	
2.525	43.5	Line 1	46.0	-2.5	Peak	
2.647	43.6	Line 1	46.0	-2.4	Peak	
4.955	42.3	Line 1	46.0	-3.7	Peak	
23.781	50.2	Line 1	50.0	0.2	Peak	
24.029	50.4	Line 1	50.0	0.4	Peak	
10.794	48.0	Line 1	50.0	-2.0	Peak	
6.689	48.0	Line 1	50.0	-2.0	Peak	
6.441	47.2	Line 1	50.0	-2.8	Peak	

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	A

Final quasi-peak and average readings

Frequency	Level	AC	Class B		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
23.781	49.9	Neutral	50.0	-0.1	AVG	AVG (0.10s)
23.781	49.9	Line 1	50.0	-0.1	AVG	AVG (0.10s)
24.029	49.5	Line 1	50.0	-0.5	AVG	AVG (0.10s)
24.030	48.7	Neutral	50.0	-1.3	AVG	AVG (0.10s)
6.689	46.9	Line 1	50.0	-3.1	AVG	AVG (0.10s)
6.689	46.6	Neutral	50.0	-3.4	AVG	AVG (0.10s)
10.794	46.5	Line 1	50.0	-3.5	AVG	AVG (0.10s)
6.441	46.5	Line 1	50.0	-3.5	AVG	AVG (0.10s)
10.794	46.4	Neutral	50.0	-3.6	AVG	AVG (0.10s)
6.441	46.4	Neutral	50.0	-3.6	AVG	AVG (0.10s)
4.955	41.3	Line 1	46.0	-4.7	AVG	AVG (0.10s)
4.955	41.2	Neutral	46.0	-4.8	AVG	AVG (0.10s)
23.781	50.7	Neutral	60.0	-9.3	QP	QP (1.00s)
23.781	50.5	Line 1	60.0	-9.5	QP	QP (1.00s)
24.029	50.5	Line 1	60.0	-9.5	QP	QP (1.00s)
24.030	50.2	Neutral	60.0	-9.8	QP	QP (1.00s)
2.667	34.8	Neutral	46.0	-11.2	AVG	AVG (0.10s)
2.525	34.4	Line 1	46.0	-11.6	AVG	AVG (0.10s)
6.689	47.7	Neutral	60.0	-12.3	QP	QP (1.00s)
10.794	47.6	Neutral	60.0	-12.4	QP	QP (1.00s)
2.647	33.5	Line 1	46.0	-12.5	AVG	AVG (0.10s)
10.794	47.5	Line 1	60.0	-12.5	QP	QP (1.00s)
6.689	47.5	Line 1	60.0	-12.5	QP	QP (1.00s)
2.793	33.4	Neutral	46.0	-12.6	AVG	AVG (0.10s)
2.667	43.2	Neutral	56.0	-12.8	QP	QP (1.00s)
6.441	46.9	Line 1	60.0	-13.1	QP	QP (1.00s)
6.441	46.8	Neutral	60.0	-13.2	QP	QP (1.00s)
4.955	42.1	Neutral	56.0	-13.9	QP	QP (1.00s)
2.793	42.0	Neutral	56.0	-14.0	QP	QP (1.00s)
2.647	42.0	Line 1	56.0	-14.0	QP	QP (1.00s)
4.955	41.7	Line 1	56.0	-14.3	QP	QP (1.00s)
2.532	41.6	Neutral	56.0	-14.4	QP	QP (1.00s)
0.269	36.5	Neutral	51.1	-14.6	AVG	AVG (0.10s)
2.405	41.2	Neutral	56.0	-14.8	QP	QP (1.00s)
2.525	41.1	Line 1	56.0	-14.9	QP	QP (1.00s)
2.116	40.2	Line 1	56.0	-15.8	QP	QP (1.00s)
0.400	31.7	Neutral	47.9	-16.2	AVG	AVG (0.10s)
2.532	29.4	Neutral	46.0	-16.6	AVG	AVG (0.10s)
2.405	39.4	Line 1	56.0	-16.6	QP	QP (1.00s)

Client:	GE MDS LLC	Job Number:	J83512
Model:	Mercury5800	T-Log Number:	T83697
		Account Manager:	Susan Pelzl
Contact:	Dennis McCarthy		
Standard:	FCC 15.247, RSS-210	Class:	A

0.400	29.5	Line 1	47.9	-18.4	AVG	AVG (0.10s)
2.116	27.1	Line 1	46.0	-18.9	AVG	AVG (0.10s)
0.268	39.5	Line 1	61.2	-21.7	QP	QP (1.00s)
0.269	38.2	Neutral	61.1	-22.9	QP	QP (1.00s)
0.400	34.6	Line 1	57.9	-23.3	QP	QP (1.00s)
0.400	34.5	Neutral	57.9	-23.4	QP	QP (1.00s)
2.405	20.5	Neutral	46.0	-25.5	AVG	AVG (0.10s)
0.268	25.4	Line 1	51.2	-25.8	AVG	AVG (0.10s)
2.405	13.1	Line 1	46.0	-32.9	AVG	AVG (0.10s)

End of Report

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