EMC Test Report
Application for Grant of Equipment Authorization
pursuant to
Industry Canada RSS-Gen Issue 2 / RSS 210 Issue 7
FCC Part 15 Subpart C

Model: P2181 Party Dock

IC CERTIFICATION #:	6384A-2181PDRM (Remote) 6384A-2181PDRX (Docking station)
FCC ID:	PAV2181
APPLICANT:	Griffin Technology 1930 Air Lane Drive Nashville, TN 37210
TEST SITE(S):	Elliott Laboratories 41039 Boyce Road. Fremont, CA. 94538-2435
IC SITE REGISTRATION #:	2845B-3; 2845B-4
REPORT DATE:	August 9, 2010
FINAL TEST DATES:	June 3 and June 29, 2010

AUTHORIZED SIGNATORY:

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Staff Engineer
Elliott Laboratories

Testing Cert #2016.01

REVISION HISTORY

Rev#	Date	Comments	Modified By
-	August 9, 2010	First release	

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SCOPE

An electromagnetic emissions test has been performed on the Griffin Technology model P2181 Party Dock, pursuant to the following rules:

Industry Canada RSS-Gen Issue 2
RSS 210 Issue 7 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"
FCC Part 15 Subpart C

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

ANSI C63.4:2003

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

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

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

OBJECTIVE

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

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

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

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

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 Griffin Technology model P2181 Party Dock complied with the requirements of the following regulations:

Industry Canada RSS-Gen Issue 2
RSS 210 Issue 7 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"
FCC Part 15 Subpart C

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

The test results recorded herein are based on a single type test of Griffin Technology model P2181 Party Dock and therefore apply only to the tested sample. The sample was selected and prepared by Michael O'Connor of Griffin Technology.

DEVIATIONS FROM THE STANDARDS

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

TEST RESULTS SUMMARY

MOMENTARILY OPERATED DEVICES – CONTROL SIGNALS

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.231 (a) (1)	RSS 210 A1.1.1 (1)	Duration of manually activated transmissions	< 5 seconds	< 5 seconds	Complies
15.231 (a) (2)	RSS 210 A1.1.1 (2)	Duration of automatically activated transmissions	All transmissions are manually activated.	< 5 seconds	N/A
15.231 (a) (3)	RSS 210 A1.1.1 (3)	Transmissions at predetermined / regular intervals	All transmissions are manually activated.	Such transmissions are not permitted	Complies
15.231 (a) (4)	RSS 210 A1.1.1 (4)	Pendency of transmissions used during emergencies	Not used for emergencies	-	N/A
15.231 (b)	RSS 210 Table 4	Fundamental Signal Strength	66.7dBµV/m @ 433.92MHz (-14.1dB)	Refer to table in limits section	Complies
15.231 (b) / 15.209	RSS 210 Table 2 / 4	Radiated Spurious Emissions, 30 - 4400 MHz	54.9dBµV/m @ 867.81MHz (-5.9dB)	Refer to table in limits section	Complies
15.231 (c)	RSS 210 A1.1.3	Bandwidth	786kHz	< 0.25% of center frequency	Complies
15.231 (d)	RSS 210 A1.1.4	Frequency Stability - 40.66 – 40.70 MHz band	Operation at 433 MHz	-	N/A

Note 1 – Refer to the operational description included with this application for detailed description and timing diagrams for transmission duration.
Note 2 – As the device is intended for hand-held operation it was tested in all three orthogonal orientations.

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

Transmitter

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Antenna internal and integral to the device	-	Complies
15.109	RSS GEN 7.2.3 Table 1	Receiver spurious emissions	Not applicable- no receiver	Refer to standard	Complies
15.207	RSS GEN Table 2	AC Conducted Emissions	Not applicable- battery powered	Refer to standard	Complies
-	RSP 100 RSS GEN 7.1.5	User Manual		Statement required regarding non-interference	Complies
-	RSP 100 RSS GEN 4.4.1	99% Bandwidth	1088kHz	Information only	N/A

Receiver

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.109	RSS GEN 7.2.3 Table 1	Receiver spurious emissions	34.5dBµV/m @ 106.93MHz (-9.0dB)	Refer to standard	Complies
15.207	RSS GEN Table 2	AC Conducted Emissions	59.3dBµV @ 0.226MHz (-3.3dB)	Refer to standard	Complies
-	RSP 100 RSS GEN 7.1.5	User Manual		Statement required regarding non-interference	Complies

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
Radiated emission (field strength)	dBµV/m	25 to 1000 MHz	± 3.6 dB
		1000 to 40000 MHz	± 6.0 dB

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The Griffin Technology model P2181 Party Dock is comprised of up to 4 independent wireless controls and one docking station (receiver) for an Apple iPad. The remote controls are battery powered and do not provide a means for charging the batteries. The docking station is powered from an AC/DC adapter, rated 10-240V, 50-60Hz, 0.5A.

The samples was received on June 3, 2010 and tested on June 3 and June 29, 2010. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID
Griffin	P2181	Remote Control	N/A	PAV2181

Company	Model	Description	Serial Number	FCC ID
Griffin	P2181	iPad Docking Station	-	N/A
DVE	DSA-15P-05-05 US	AC/DC Adapter	-	N/A

ANTENNA SYSTEM

The antenna is PCB trace antenna internal to the device.

ENCLOSURE

The remote control enclosure is primarily constructed of plastic. It measures approximately 2.6cm wide by 11.7cm deep by 1cm high.

The docking station enclosure is primarily constructed of plastic. It measures approximately 21cm wide by 23cm deep by 5cm high.

MODIFICATIONS

No modifications were made to the EUT during the time the product was at Elliott.

SUPPORT EQUIPMENT

No support equipment was used during testing of the remote control. For the docking station the following equipment was used as local support:

Manufacturer	Model	Description	Serial Number	FCC ID
Apple	iPad	Tablet PC	-	-

EUT INTERFACE PORTS

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

Remote Control

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
None	-	-	-	-

Docking Station

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
DC Power In	AC/DC Adapter	2wire	Unshielded	1.5m
AC/DC Adapter	AC Mains	-	-	-
Component Video (x3)	75ohm termination	coax	shielded	1.8m
Video (x1)	75ohm termination	coax	shielded	1.8m
Audio (x2)	75ohm termination	coax	shielded	1.8m

EUT OPERATION

The remote control was configured to continuously transmit when a button was depressed.

During emissions testing for the docking station, the iPad was configured to continuously play audio and display video that would be passed thru the EUT. The EUT had the receiver active.

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	

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.

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.

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.

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.

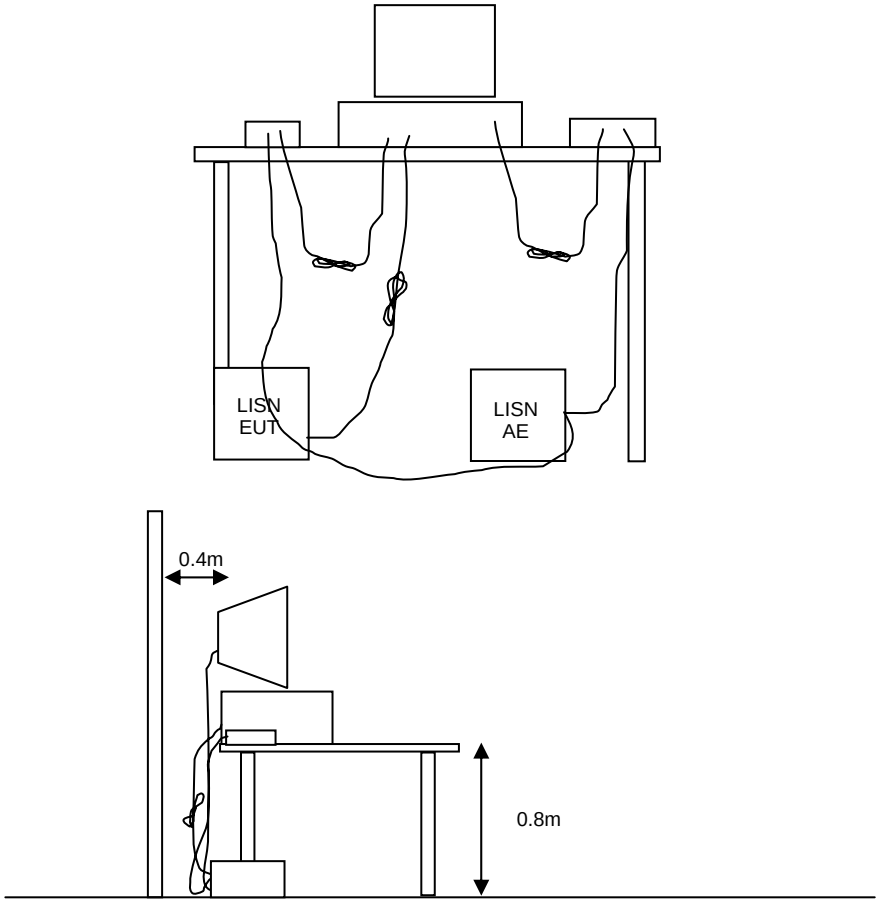
TEST PROCEDURES

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.



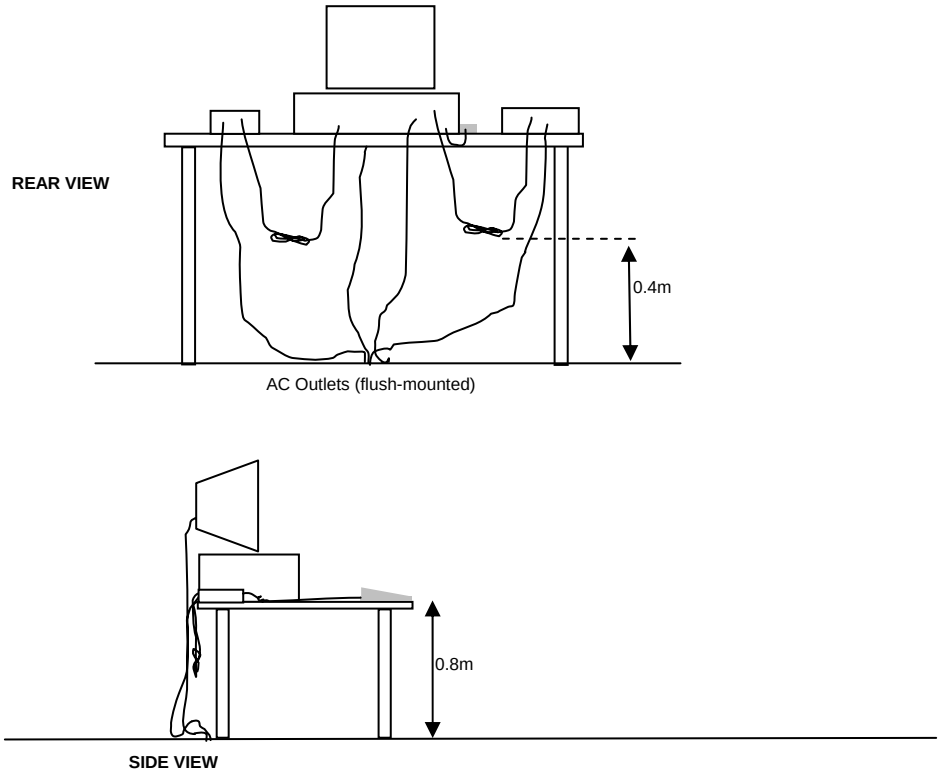
RADIATED EMISSIONS

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.

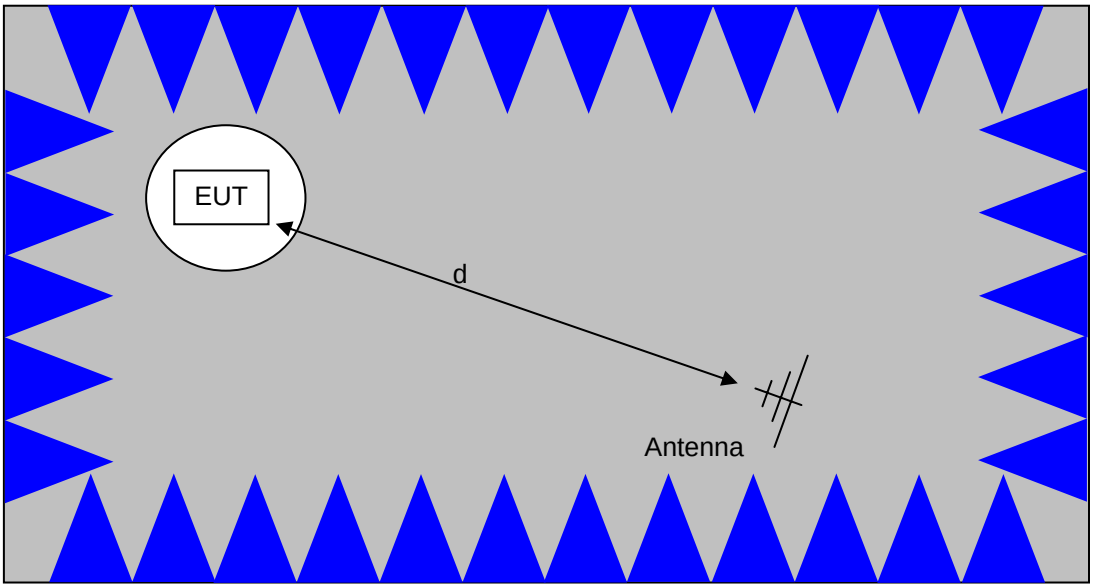
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

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.

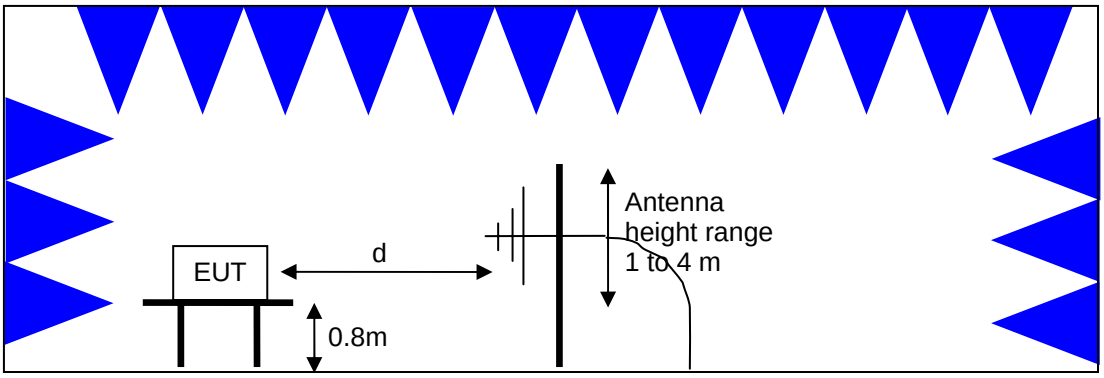


Typical Test Configuration for Radiated Field Strength Measurements



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

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

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

RADIATED FUNDAMENTAL AND SPURIOUS EMISSIONS – MOMENTARILY OPERATED DEVICES

The table below shows the limits for both the fundamental and spurious emissions for control signals. The limits for data signals, or signals with predetermined transmissions, are given in the second table

Operating Frequency (MHz)	Fundamental Field Strength (microvolts/m)	Spurious Emissions (microvolts/m)
70 - 130	1250	125
130 - 174	1250 - 3750	125 - 375
174 – 260	3750	375
260 – 470	3750 – 12,500	375 - 1250
Above 470	12,500	1250

Spurious Emissions Limits – Control Signals

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

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

$$R_r - S = M$$

where:

R_r = Receiver Reading in dBuV

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

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

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

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

where:

F_d = Distance Factor in dB

D_m = Measurement Distance in meters

D_s = Specification Distance in meters

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

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

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

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

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:

R_r = Receiver Reading in dBuV/m

F_d = Distance Factor in dB

R_c = Corrected Reading in dBuV/m

L_s = Specification Limit in dBuV/m

M = Margin in dB Relative to Spec

SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

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

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

where P is the eirp (Watts)

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

Appendix A Test Equipment Calibration Data

Radiated Emissions, 30 - 4,400MHz, 03-Jun-10

Manufacturer	Description	Model	Asset #	Cal Due
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	12/15/2010
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	6/12/2010
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	9/2/2010
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	1548	6/13/2010
Com-Power Corp.	Preamplifier, 30-1000 MHz	PA-103	1632	4/23/2011
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1756	3/16/2011

Radiated Emissions & Signal Subs, 25 - 4,000 MHz, 03-Jul-10

Manufacturer	Description	Model	Asset #	Cal Due
Filtek	Filter, 1 GHz High Pass	HP12/1000-5BA	955	5/17/2011
Hewlett Packard	EMC Spectrum Analyzer, 9 KHz-26.5 GHz	8593EM	1141	12/21/2010
EMCO	Antenna, Horn, 1-18 GHz (SA40-Blu)	3115	1386	9/2/2010
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	1548	6/24/2012
EMCO	Antenna, Horn, 1-18 GHz	3115	1561	8/10/2010
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1630	3/31/2011
Rohde & Schwarz	Power Meter, Dual Channel	NRVD	1786	2/5/2011
Agilent	PSG Vector Signal Generator (250kHz - 20GHz)	E8267C	1877	3/24/2011
Rohde & Schwarz	Power Sensor, 1 uW-100 mW, DC-18 GHz, 50ohms	NRV-Z51	2152	4/29/2011
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	2197	12/29/2011
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	2199	1/11/2011
Com-Power Corp.	Preamplifier, 30-1000 MHz	PA-103A	2204	2/26/2011

Radiated Emissions, 25 - 4000 MHz, 30-Jun-10

Manufacturer	Description	Model	Asset #	Cal Due
Rohde & Schwarz	Signal Generator, 9 kHz-1.04 GHz	SMY01	168	11/4/2010
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	785	5/26/2011
Rohde & Schwarz	Power Sensor, 1 uW-100 mW, DC-18 GHz, 50ohms	NRV-Z51	1070	5/17/2011
EMCO	Antenna, Horn, 1-18 GHz (SA40-Red)	3115	1142	7/15/2010
Hewlett Packard	SpecAn 9 kHz - 40 GHz, FT (SA40) Blue	8564E (84125C)	1393	4/14/2011
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	10/15/2010
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	1549	6/4/2011
Hewlett Packard	Preamplifier, 100 kHz - 1.3 GHz	8447E	1606	4/29/2011
Rohde & Schwarz	Power Meter, Dual Channel	NRVD	1786	2/5/2011
Sunol Sciences	Biconilog, 30-3000 MHz	JB3	2197	12/29/2011

Conducted Emissions - AC Power Ports, 01-Jul-10

Manufacturer	Description	Model	Asset #	Cal Due
EMCO	LISN, 10 kHz-100 MHz	3825/2	1292	3/12/2011
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1538	10/15/2010
Rohde & Schwarz	Pulse Limiter	ESH3 Z2	1594	5/27/2011

Appendix B Test Data

T79128 11 Pages
T79806 9 Pages

Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock	Test-Log Number:	T79128
	(Remote Control)	Project Manager:	Sheareen
Contact:	Jeff Altheide		
Emissions Spec:	FCC 15.231(a) / EN 300 220	Class:	B
Immunity Spec:	EN 301 489-1/-3	Environment:	-

EMC Test Data

For The

Griffin Technology

Model

P2181 Audio/Video/Application Dock (Remote Control)

Date of Last Test: 7/31/2010

Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Remote Control)	T-Log Number:	T79128
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15.231(a) / EN 300 220	Class:	B

Radiated 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 located on the turntable for radiated emissions testing. The EUT was tested in all three orthogonal orientations.

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: 39 %

Summary of Results

Run #	Test Performed	Limit	Result	Value / Margin
2	Fundamental Signal Field Strength	FCC 15.231(b) RSS 210 Annex A.1	Pass	66.7dBµV/m @ 433.92MHz (-14.1dB)
2	Transmitter Radiated Spurious Emissions, 30 - 4400 MHz	FCC 15.209 & 15.231(b) RSS 210/RSS GEN	Pass	54.9dBµV/m @ 867.81MHz (-5.9dB)
3	99% Bandwidth (center channel)	RSS-GEN	Pass	1088kHz
3	TX Shutoff time	FCC 15.231(b) RSS 210 Annex A.1	Pass	<5 seconds

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:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Remote Control)	T-Log Number:	T79128
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15.231(a) / EN 300 220	Class:	B

Run #1: Maximized Radiated Emissions, 30 - 4400 MHz, Transmitter Spurious Emissions
EUT #2010-1841, Latching Unit

Date of Test: 6/3/2010 Config. Used: 1
Test Engineer: Joseph Cadigal Config Change: none
Test Location: Fremont Chamber #3 EUT Voltage: Battery

Frequency Range	Test Distance	Limit Distance	Extrapolation Factor
30 - 5000 MHz	3	3	0.0

Note:	The limits for devices operating under 15.231 are calculated in the table below. The limits in 15.231(b) are for devices that fulfill the requirements of 15.231(a). The limits for 15.231(e) are for all other devices provided that they meet the requirements of 15.231(e). Spurious emissions falling in restricted bands must comply with the 15.209 limit, all other spurious emissions must comply with the higher of the limit calculated below or the 15.209 limit.
Note:	The field strength of any spurious emissions may not exceed the field strength of the fundamental signal.

Frequency (MHz)	15.231(b) Limits			15.231(e) Limits		
	Fundamental		Spurious	Fundamental		Spurious
	uV/m	dBuV/m	dBuV/m	uV/m	dBuV/m	dBuV/m
433.92	10996.7	80.8	60.8	-	-	-

Note:	The field strength of any spurious emissions may not exceed the 15.209 limit when the spurious emission falls in a restricted band. Additionally the spurious emissions can exceed the limit calculated above if the 15.209 limit is higher.
Note:	The limits above are AVERAGE. Per FCC 15.35(b), when average limits are specified, peak measurements shall not exceed the average limit by more than 20dB. As an alternative to the average limits, 15.231 allows for the use of a quasi-peak measurement.

Duty Cycle Correction - For the fundamental measurement - a duty cycle correction of 20dB was applied to the peak reading to calculate the average measurements

Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Remote Control)	T-Log Number:	T79128
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15.231(a) / EN 300 220	Class:	B

Fundamental Frequency

EUT Flat

Frequency	Level	Pol	RSS 210 / FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
433.920	55.9	V	80.8	-24.9	AVG	69	1.0	AVG (0.10s)
433.920	75.9	V	100.8	-24.9	PK	69	1.0	PK (0.10s)
433.920	66.7	H	80.8	-14.1	AVG	82	1.0	AVG (0.10s)
433.920	86.7	H	100.8	-14.1	PK	82	1.0	PK (0.10s)

EUT Side

Frequency	Level	Pol	RSS 210 / FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
433.920	60.4	V	80.8	-20.4	AVG	360	1.1	AVG (0.10s)
433.920	80.4	V	100.8	-20.4	PK	360	1.1	PK (0.10s)
433.920	65.6	H	80.8	-15.2	AVG	81	1.0	AVG (0.10s)
433.920	85.6	H	100.8	-15.2	PK	81	1.0	PK (0.10s)

EUT Upright

Frequency	Level	Pol	RSS 210 / FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
433.920	62.9	V	80.8	-17.9	AVG	360	1.2	AVG (0.10s)
433.920	82.9	V	100.8	-17.9	PK	360	1.2	PK (0.10s)
433.920	53.8	H	80.8	-27.0	AVG	315	3.5	AVG (0.10s)
433.920	73.8	H	100.8	-27.0	PK	315	3.5	PK (0.10s)

Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Remote Control)	T-Log Number:	T79128
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15.231(a) / EN 300 220	Class:	B

Spurious Emissions

Frequency Range	Test Distance	Limit Distance	Extrapolation Factor
30 - 4400 MHz	3	3	0.0

EUT Upright

Frequency	Level	Pol	RSS 210 / FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3905.240	45.9	H	54.0	-8.1	AVG	230	1.8	
867.812	50.3	H	60.8	-10.5	AVG	86	2.3	AVG (0.10s)
1301.790	43.4	H	54.0	-10.6	AVG	204	2.5	
867.812	47.9	V	60.8	-12.9	AVG	27	1.2	AVG (0.10s)
4339.140	39.6	H	54.0	-14.4	AVG	233	1.3	
1735.690	42.3	V	60.8	-18.5	AVG	80	1.7	
2169.570	41.8	V	60.8	-19.0	AVG	351	1.6	
2603.510	40.4	V	60.8	-20.4	AVG	360	1.4	
3037.440	40.1	V	60.8	-20.7	AVG	142	1.5	
3905.280	50.0	H	74.0	-24.0	PK	230	1.8	
3471.270	36.5	H	60.8	-24.3	AVG	338	1.6	
1301.790	46.0	H	74.0	-28.0	PK	204	2.5	
4339.260	46.0	H	74.0	-28.0	PK	233	1.3	
867.812	50.6	H	80.8	-30.2	PK	86	2.3	PK (0.10s)
867.812	48.2	V	80.8	-32.6	PK	27	1.2	PK (0.10s)
1735.840	45.6	V	80.0	-34.4	PK	80	1.7	
3037.350	46.0	V	80.8	-34.8	PK	142	1.5	
2603.330	45.4	V	80.8	-35.4	PK	360	1.4	
2169.710	45.4	V	80.8	-35.4	PK	351	1.6	
3471.430	44.9	H	80.8	-35.9	PK	338	1.6	

Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Remote Control)	T-Log Number:	T79128
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15.231(a) / EN 300 220	Class:	B

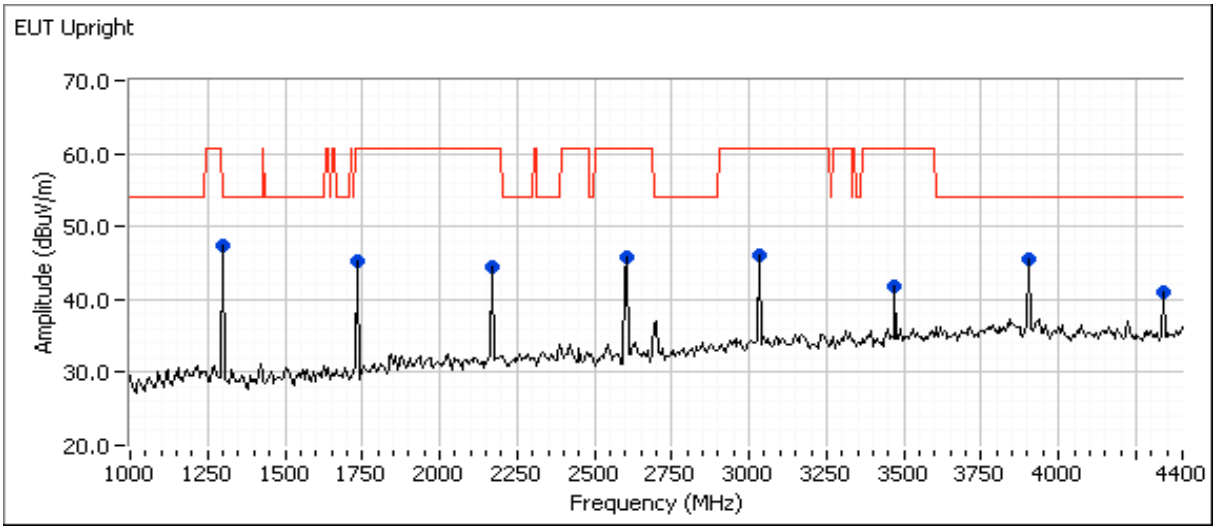
EUT Side

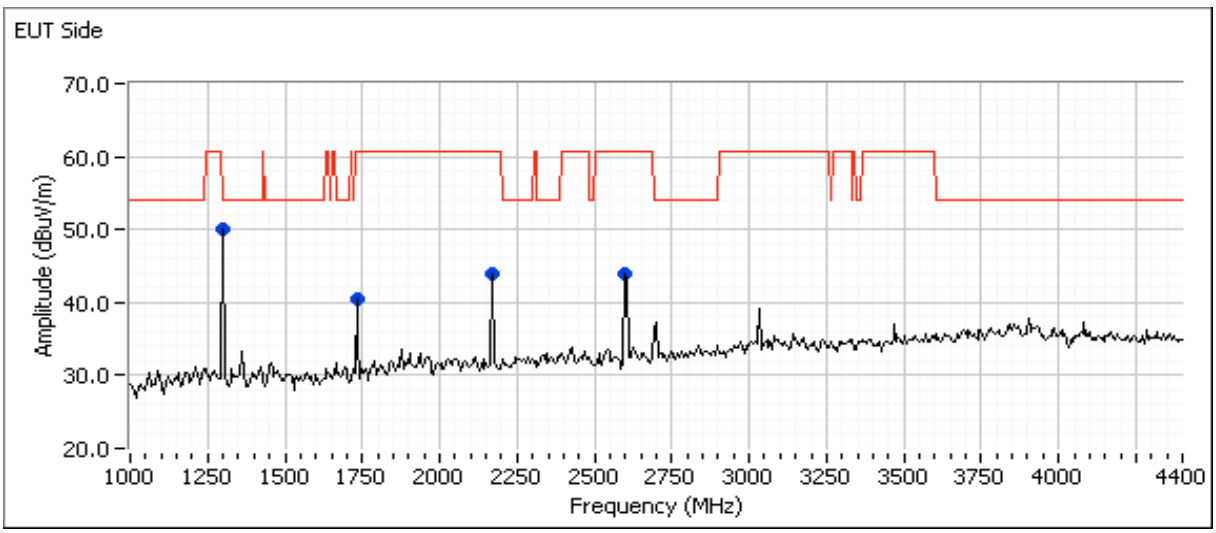
Frequency	Level	Pol	RSS 210 / FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
867.812	54.9	H	60.8	-5.9	AVG	292	1.0	AVG (0.10s)
867.812	52.6	V	60.8	-8.2	AVG	334	1.4	AVG (0.10s)
1301.800	42.4	V	54.0	-11.6	AVG	0	1.1	
2603.550	43.5	V	60.8	-17.3	AVG	128	1.3	
2169.610	42.3	H	60.8	-18.5	AVG	36	1.6	
1735.670	37.5	H	60.8	-23.3	AVG	35	2.1	
867.812	55.1	H	80.8	-25.7	PK	292	1.0	PK (0.10s)
867.812	52.8	V	80.8	-28.0	PK	334	1.4	PK (0.10s)
1301.710	45.9	V	74.0	-28.1	PK	0	1.1	
2603.550	46.9	V	80.8	-33.9	PK	128	1.3	
2169.630	45.8	H	80.8	-35.0	PK	36	1.6	
1735.440	41.5	H	80.8	-39.3	PK	35	2.1	

EUT Flat

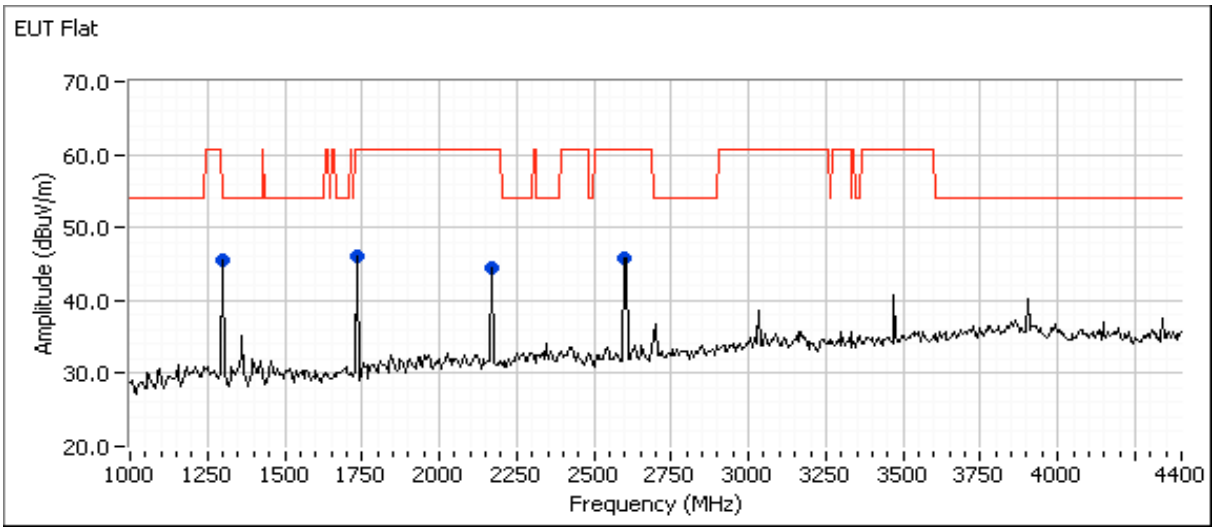
Frequency	Level	Pol	RSS 210 / FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
867.812	52.6	H	60.8	-8.2	AVG	296	1.0	AVG (0.10s)
1301.780	45.8	V	54.0	-8.2	AVG	294	1.0	
867.812	49.1	V	60.8	-11.7	AVG	17	1.0	AVG (0.10s)
2169.610	41.2	V	60.8	-19.6	AVG	120	1.6	
2603.530	37.9	H	60.8	-22.9	AVG	300	1.6	
1735.590	37.3	V	60.8	-23.5	AVG	316	1.3	
1301.680	47.9	V	74.0	-26.1	PK	294	1.0	
867.812	52.9	H	80.8	-27.9	PK	296	1.0	PK (0.10s)
867.812	49.4	V	80.8	-31.4	PK	17	1.0	PK (0.10s)
2169.630	45.3	V	80.8	-35.5	PK	120	1.6	
2603.560	43.1	H	80.8	-37.7	PK	300	1.6	
1735.590	41.8	V	80.8	-39.0	PK	316	1.3	

Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Remote Control)	T-Log Number:	T79128
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15.231(a) / EN 300 220	Class:	B





Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Remote Control)	T-Log Number:	T79128
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15.231(a) / EN 300 220	Class:	B



Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Remote Control)	T-Log Number:	T79128
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15.231(a) / EN 300 220	Class:	B

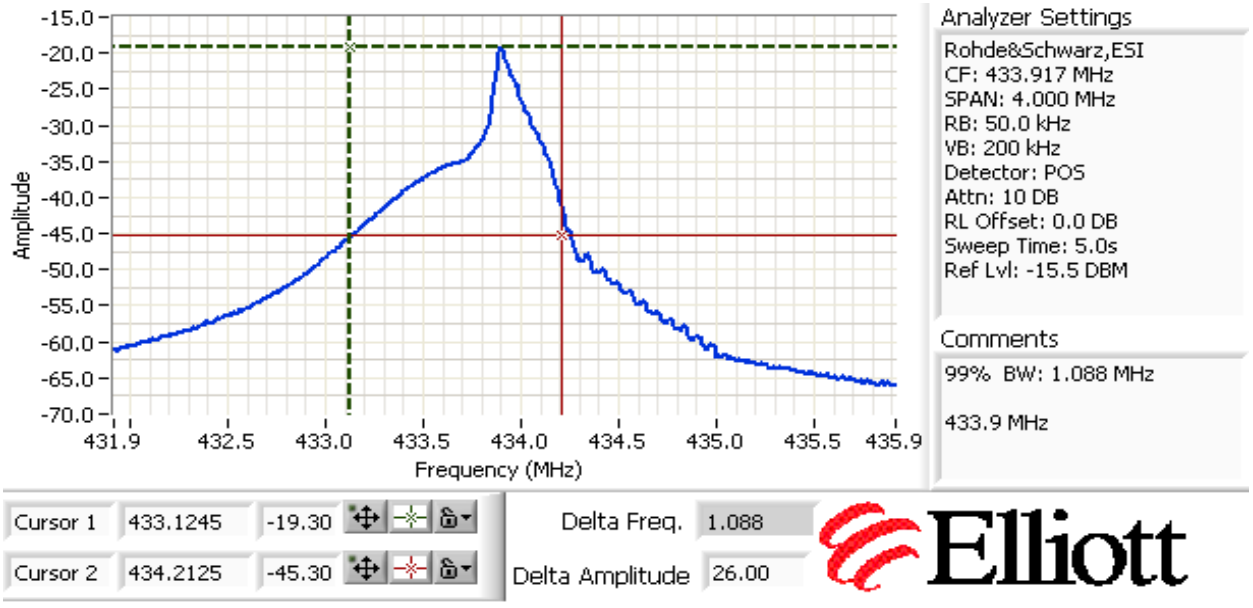
Run #3: Bandwidth Measurement(s)

Date of Test: 6/29/2010
Test Engineer: Rafael Varelas
Test Location: FT Chamber #4

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

Power Setting	Frequency (MHz)	Resolution Bandwidth	Video Bandwidth	99% Bandwidth
	433.9	50kHz	200kHz	1088kHz

Note 1:	99% bandwidth measured in accordance with RSS GEN, with RB > 1% of the span and VB > 3xRB

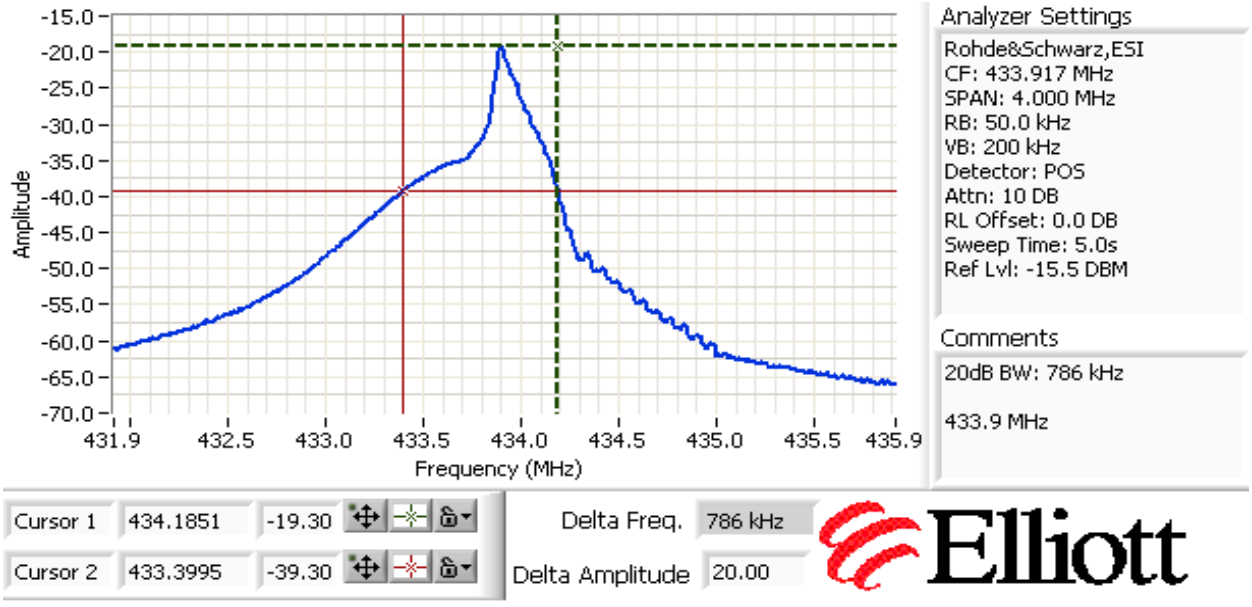


Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Remote Control)	T-Log Number:	T79128
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15.231(a) / EN 300 220	Class:	B

Compliance with 15.231 bandwidth and transmit time requirements

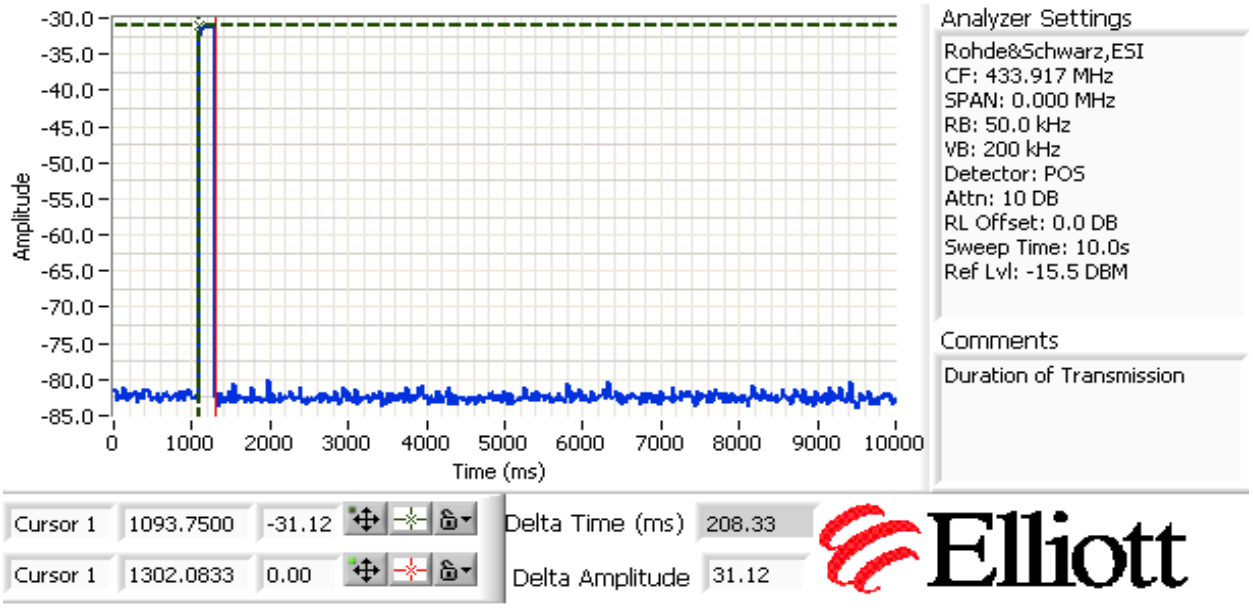
Power Setting	Frequency (MHz)	Resolution Bandwidth	Video Bandwidth	20dB BW (kHz)	15.231 Limit (kHz)
	433.9	50kHz	200kHz	786	1084.75

Note 1:	20dB bandwidth measured using a resolution bandwidth at least 1% of the maximum permitted bandwidth.



Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Remote Control)	T-Log Number:	T79128
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15.231(a) / EN 300 220	Class:	B

Compliance with 15.231 duration of transmissions and time between transmissions:
Transmissions are manually initiated and, therefore, random in nature. The plot below shows the duration of a transmission, with the first marker/cursor at the point the transmit key was released and the second marker/cursor at the end of the transmission. The duration is less than 5 seconds.



Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock	Test-Log Number:	T79806
	(Docking Station)	Project Manager:	Sheareen
Contact:	Jeff Altheide		
Emissions Standard(s):	FCC 15 / EN 300 220	Class:	B
Immunity Standard(s):	EN 301 489-1/-3	Environment:	-

EMC Test Data

For The

Griffin Technology

Model

P2181 Audio/Video/Application Dock (Docking Station)

Date of Last Test: 7/6/2010

Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Docking Station)	T-Log Number:	T79806
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15 / EN 300 220	Class:	B

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: 6/29/2010
Test Engineer: Rafael Varelas
Test Location: Fremont Chamber #4
Config. Used: 1
Config Change: None
EUT Voltage: 230V/50Hz

General Test Configuration

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

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: 20.4 °C
Rel. Humidity: 35 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
2	Radiated Emissions 30 - 1000 MHz, Maximized	FCC Class B	Pass	34.5dBµV/m @ 106.93MHz (-9.0dB)

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.

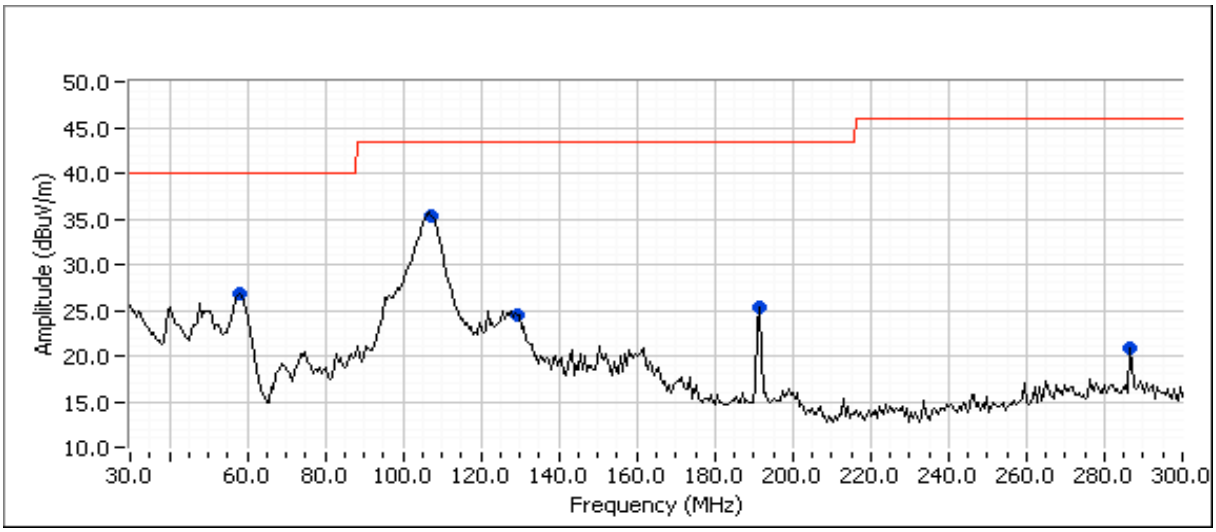
Note: No emissions were detected above 1GHz. Preliminary testing performed up to 1.3GHz

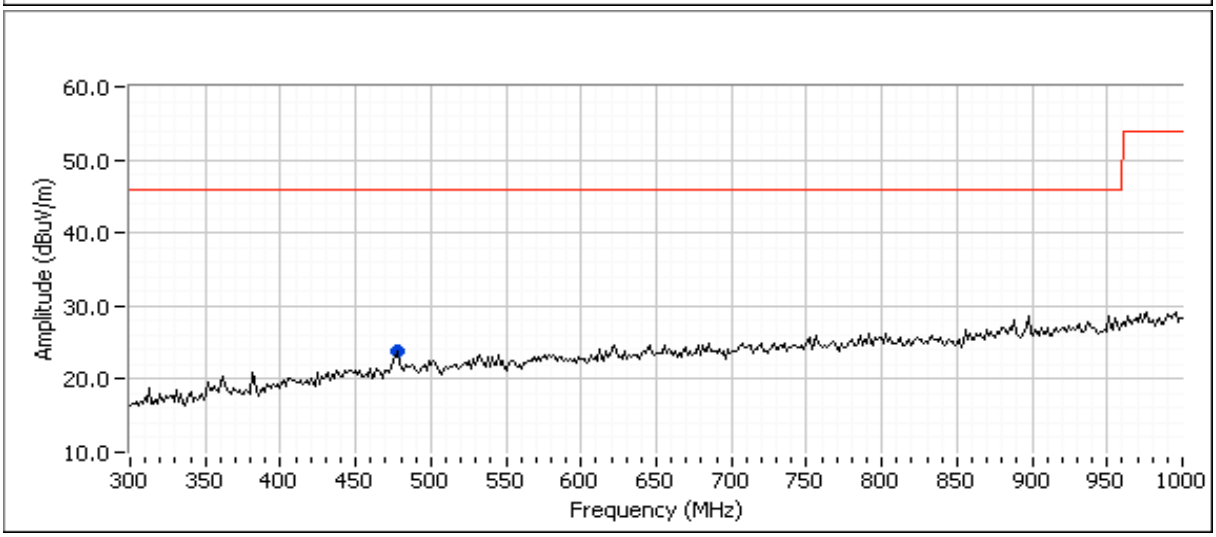
EMC Test Data

Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Docking Station)	T-Log Number:	T79806
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15 / EN 300 220	Class:	B

Run #1: Preliminary Radiated Emissions, 30 - 1000 MHz

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





Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Docking Station)	T-Log Number:	T79806
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15 / EN 300 220	Class:	B

Preliminary peak readings captured during pre-scan

Frequency	Level	Pol	FCC Class B		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
58.511	26.9	V	40.0	-13.1	Peak	0	1.5	
106.932	35.4	V	43.5	-8.1	Peak	159	1.0	
190.950	25.3	V	43.5	-18.2	Peak	136	1.0	
128.366	24.5	V	43.5	-19.0	Peak	298	1.0	
286.159	20.9	H	46.0	-25.1	Peak	290	1.0	
477.321	23.9	V	46.0	-22.1	Peak	359	1.0	

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

Frequency	Level	Pol	FCC Class B		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
477.321	19.2	V	46.0	-26.8	QP	360	1.0	QP (1.00s)
128.366	25.8	V	43.5	-17.7	QP	298	1.0	QP (1.00s)
286.159	18.1	H	46.0	-27.9	QP	285	1.0	QP (1.00s)
106.932	34.5	V	43.5	-9.0	QP	153	1.0	QP (1.00s)
190.950	24.6	V	43.5	-18.9	QP	131	1.0	QP (1.00s)
58.511	26.2	V	40.0	-13.8	QP	0	1.0	QP (1.00s)

Run #2: Maximized Readings From Run #1

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

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

Frequency	Level	Pol	FCC Class B		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
106.932	34.5	V	43.5	-9.0	QP	153	1.0	QP (1.00s)
58.511	26.3	V	40.0	-13.7	QP	0	1.0	QP (1.00s)
477.321	19.2	V	46.0	-26.8	QP	360	1.0	QP (1.00s)
128.366	25.8	V	43.5	-17.7	QP	298	1.0	QP (1.00s)
286.159	18.1	H	46.0	-27.9	QP	285	1.0	QP (1.00s)
190.950	24.6	V	43.5	-18.9	QP	131	1.0	QP (1.00s)

Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Docking Station)	T-Log Number:	T79806
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15 / EN 300 220	Class:	B

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: 7/1/2010
Test Engineer: Rafael Varelas
Test Location: Fremont Chamber #4
Config. Used: 1
Config Change: None
EUT Voltage: 230V/50Hz

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.

Ambient Conditions:

Temperature: 21.4 °C
Rel. Humidity: 35 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1	CE, AC Power, 230V/50Hz	EN55022 Class B	Pass	53.3dBµV @ 0.255MHz (-8.3dB)
2	CE, AC Power,120V/60Hz	EN55022 Class B	Pass	59.3dBµV @ 0.226MHz (-3.3dB)

Modifications Made During Testing

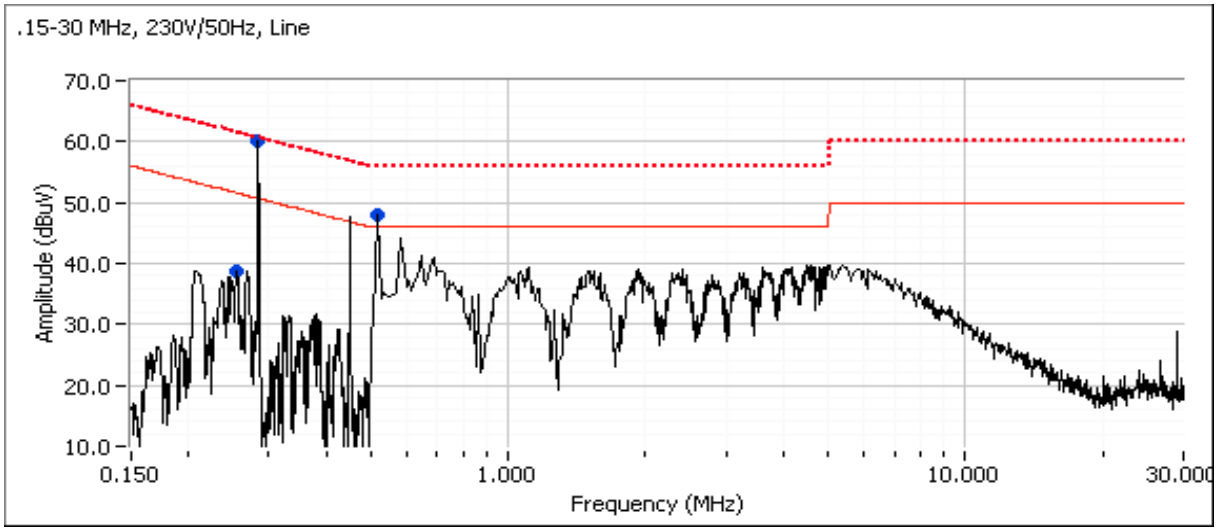
No modifications were made to the EUT during testing

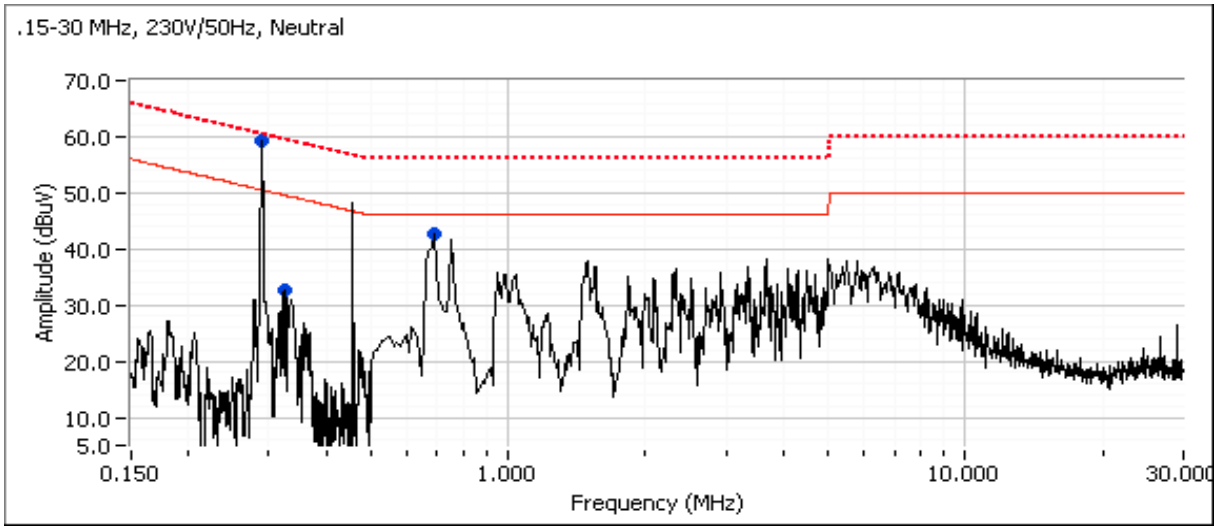
Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Docking Station)	T-Log Number:	T79806
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15 / EN 300 220	Class:	B

Run #1: AC Power Port Conducted Emissions, 0.15 - 30MHz, 230V/50Hz





Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Docking Station)	T-Log Number:	T79806
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15 / EN 300 220	Class:	B

Run #1: Continued

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

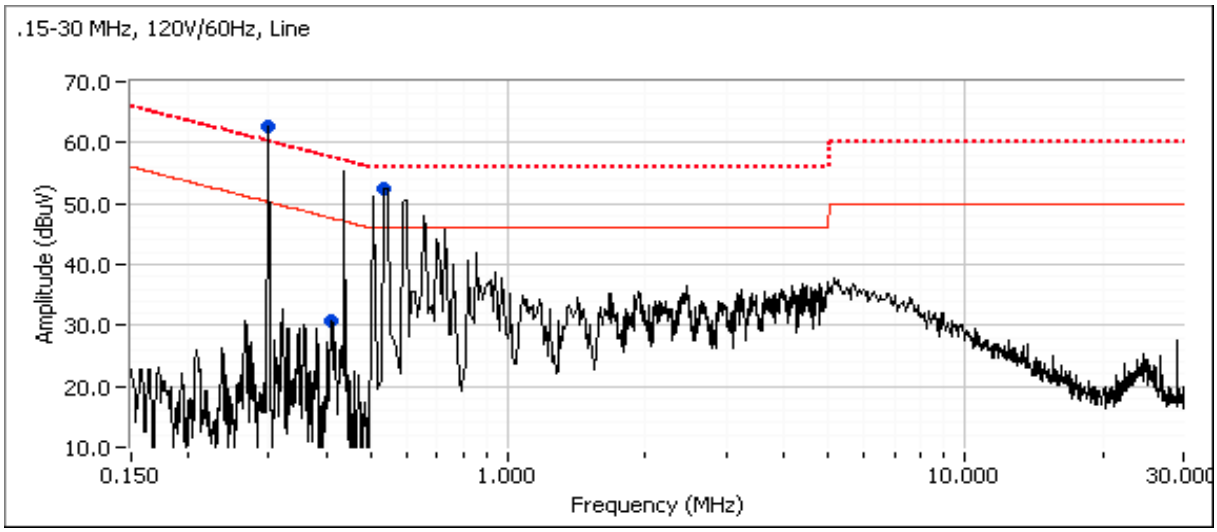
Frequency MHz	Level dBµV	AC Line	EN55022 Class B Limit	Margin	Detector QP/Ave	Comments
0.255	38.8	Line	51.6	-12.8	Peak	random spike
0.283	60.2	Line	50.7	9.5	Peak	
0.504	47.9	Line	46.0	1.9	Peak	
0.288	59.4	Neutral	50.6	8.8	Peak	random spike
0.322	32.6	Neutral	49.6	-17.0	Peak	
0.700	42.8	Neutral	46.0	-3.2	Peak	

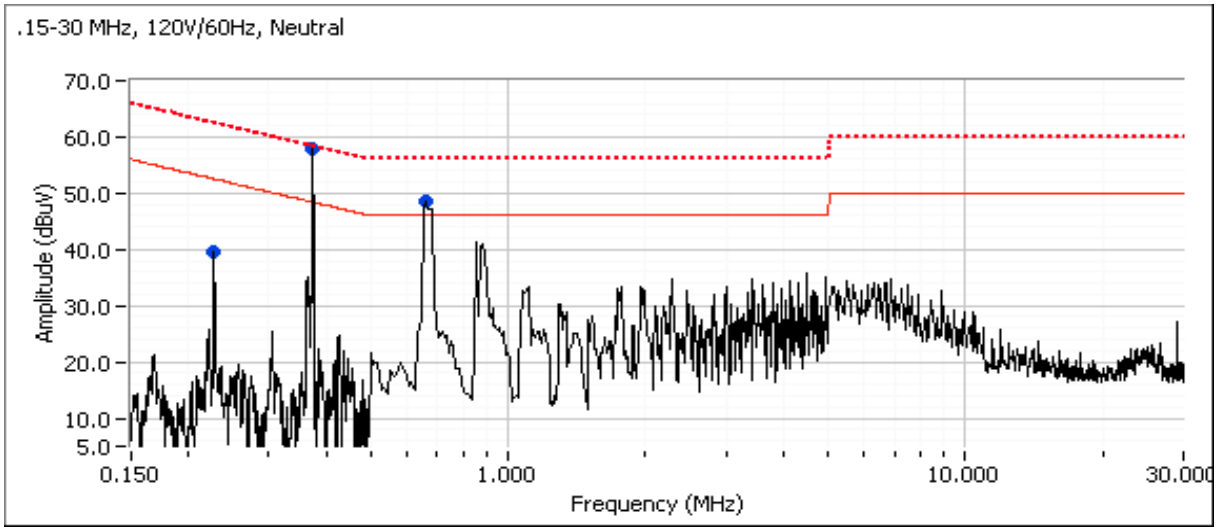
Final quasi-peak and average readings

Frequency MHz	Level dBµV	AC Line	EN55022 Class B Limit	Margin	Detector QP/Ave	Comments
0.255	53.3	Line	61.6	-8.3	QP	QP (1.00s)
0.288	51.8	Neutral	60.6	-8.8	QP	QP (1.00s)
0.283	51.7	Line	60.7	-9.0	QP	QP (1.00s)
0.322	50.0	Neutral	59.7	-9.7	QP	QP (1.00s)
0.504	40.8	Line	56.0	-15.2	QP	QP (1.00s)
0.255	31.7	Line	51.6	-19.9	AVG	AVG (0.10s)
0.283	29.8	Line	50.7	-20.9	AVG	AVG (0.10s)
0.700	35.0	Neutral	56.0	-21.0	QP	QP (1.00s)
0.504	22.8	Line	46.0	-23.2	AVG	AVG (0.10s)
0.322	25.6	Neutral	49.7	-24.1	AVG	AVG (0.10s)
0.700	20.9	Neutral	46.0	-25.1	AVG	AVG (0.10s)
0.288	23.8	Neutral	50.6	-26.8	AVG	AVG (0.10s)

Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Docking Station)	T-Log Number:	T79806
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15 / EN 300 220	Class:	B

Run #2: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz





Client:	Griffin Technology	Job Number:	J79077
Model:	P2181 Audio/Video/Application Dock (Docking Station)	T-Log Number:	T79806
		Account Manager:	Sheareen
Contact:	Jeff Altheide		
Standard:	FCC 15 / EN 300 220	Class:	B

Run #2: Continued

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

Frequency	Level	AC	EN55022 Class B		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.299	62.7	Line	50.3	12.4	Peak	random spike
0.410	30.9	Line	47.6	-16.7	Peak	
0.511	52.6	Line	46.0	6.6	Peak	
0.226	39.7	Neutral	52.5	-12.8	Peak	random spike
0.371	57.9	Neutral	48.4	9.5	Peak	
0.665	48.4	Neutral	46.0	2.4	Peak	

Final quasi-peak and average readings

Frequency	Level	AC	EN55022 Class B		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
0.226	59.3	Neutral	62.6	-3.3	QP	QP (1.00s)
0.299	56.3	Line	60.3	-4.0	QP	QP (1.00s)
0.371	52.2	Neutral	58.5	-6.3	QP	QP (1.00s)
0.410	51.1	Line	57.6	-6.5	QP	QP (1.00s)
0.511	46.9	Line	56.0	-9.1	QP	QP (1.00s)
0.665	40.6	Neutral	56.0	-15.4	QP	QP (1.00s)
0.299	28.7	Line	50.3	-21.6	AVG	AVG (0.10s)
0.410	24.2	Line	47.6	-23.4	AVG	AVG (0.10s)
0.371	24.9	Neutral	48.5	-23.6	AVG	AVG (0.10s)
0.226	28.9	Neutral	52.6	-23.7	AVG	AVG (0.10s)
0.511	20.7	Line	46.0	-25.3	AVG	AVG (0.10s)
0.665	19.4	Neutral	46.0	-26.6	AVG	AVG (0.10s)