

Focus Enhancements

Summit FS848 Slave Module (Brighton)

Report No. FOCU0053

Report Prepared By



www.nwemc.com
1-888-EMI-CERT

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EMC Test Report

Certificate of Test
Last Date of Test: May 11, 2009
Focus Enhancements
Model: Summit FS848 Slave Module

Emissions			
Test Description	Specification	Test Method	Pass/Fail
Spurious Radiated Emissions	FCC 15.407:2009	ANSI C63.4:2003 DA 02-2138:2002	Pass
Spurious Radiated Emissions	FCC 15.209:2009	ANSI C63.4:2003	Pass
Peak Transmit Power	FCC 15.407:2009	ANSI C63.4:2003 DA 02-2138:2002	Pass
Peak Power Spectral Density	FCC 15.407:2009	ANSI C63.4:2003 DA 02-2138:2002	Pass
Peak Excursion of the Modulation Envelope	FCC 15.407:2009	ANSI C63.4:2003 DA 02-2138:2002	Pass
Emission Bandwidth	FCC 15.407:2009	ANSI C63.4:2003 DA 02-2138:2002	Pass
Frequency Stability	FCC 15.407:2009	ANSI C63.4:2003 DA 02-2138:2002	Pass
AC Powerline Conducted Emissions	FCC 15.207:2009	ANSI C63.4:2003 DA 02-2138:2002	Pass

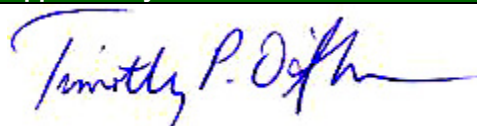
Modifications made to the product**See the Modifications section of this report****Test Facility**

The measurement facility used to collect the data is located at:

Northwest EMC, Inc.
22975 NW Evergreen Parkway, Suite 400
Hillsboro, OR 97124

Phone: (503) 844-4066 Fax: 844-3826

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada (Site filing #2834D-1).

Approved By:**Timothy O'Shea, Operations Manager****NVLAP Lab Code: 200630-0**

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.

Revision Number	Description	Date	Page Number
00	None		

FCC: Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.



NVLAP: Northwest EMC, Inc. is accredited under the United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.



NVLAP LAB CODE 200629-0
NVLAP LAB CODE 200630-0
NVLAP LAB CODE 200676-0
NVLAP LAB CODE 200761-0

Industry Canada: Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS-Gen, Issue 2 and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements. (*Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2*)



CAB: Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.



NEMKO: Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).



Australia/New Zealand: The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).



VCCI: Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. (*Registration Numbers. - Hillsboro: C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: R-1943, C-2766, and T-298, Sultan: R-871, C-1784, and T-294.*)



BSMI: Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement (US0017). License No.SL2-IN-E-1017.



GOST: Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification



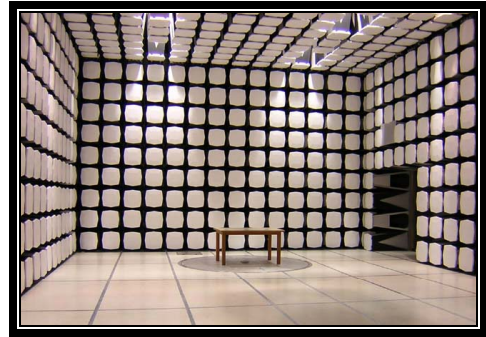
KCC: Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (*Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157*)



SCOPE

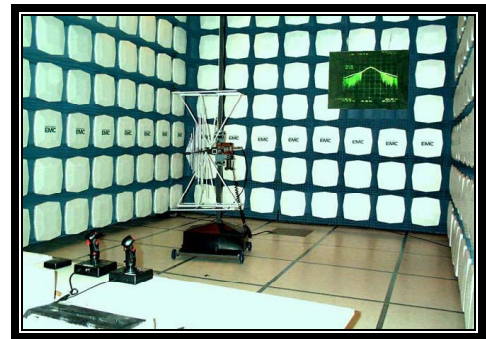
For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/accreditations/>



**California – Orange County Facility
Labs OC01 – OC13**

41 Tesla Ave. Irvine, CA 92618
(888) 364-2378 Fax: (503) 844-3826



**Oregon – Evergreen Facility
Labs EV01 – EV11**

22975 NW Evergreen Pkwy. Suite 400 Hillsboro, OR 97124
(503) 844-4066 Fax: (503) 844-3826



**Washington – Sultan Facility
Labs SU01 – SU07**

14128 339th Ave. SE Sultan, WA 98294
(888) 364-2378

Party Requesting the Test

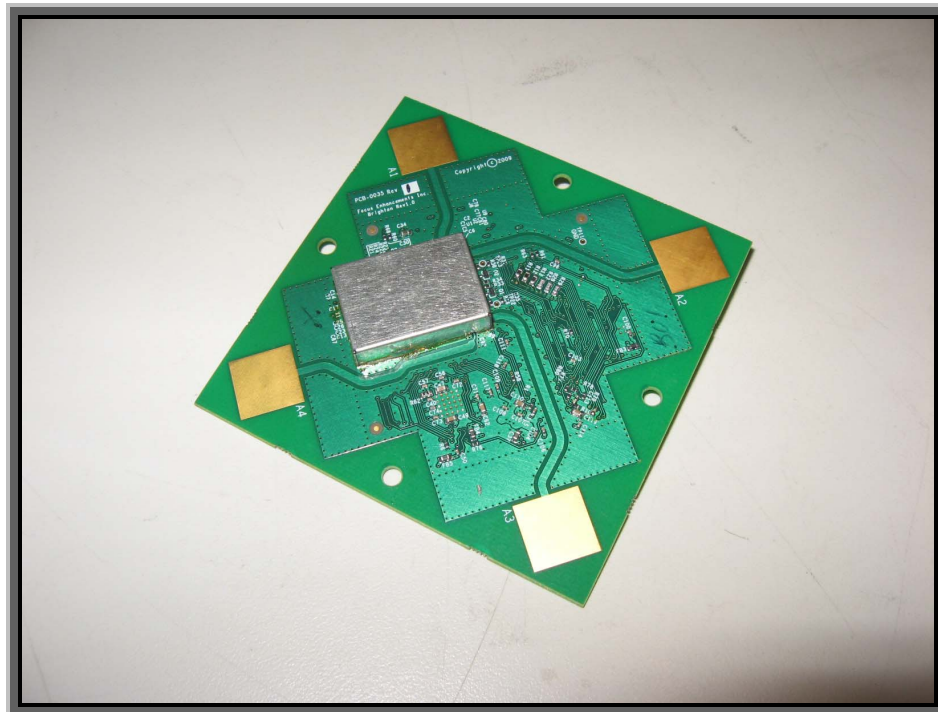
Company Name:	Focus Enhancements
Address:	22867 NW Bennett St., Suite 200
City, State, Zip:	Hillsboro, OR 97124
Test Requested By:	Jim Svoboda
Model:	444-2196
First Date of Test:	April 27, 2009
Last Date of Test:	May 11, 2009
Receipt Date of Samples:	April 27, 2009
Equipment Design Stage:	Preproduction
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test**Functional Description of the EUT (Equipment Under Test):**

Summit FS848 Slave Module

Testing Objective:

Seeking modular approval of the client under FCC 15.407 for operation in the 5.2, 5.3, and 5.6 GHz bands

EUT Photo

CONFIGURATION 1 FOCU0053**Software/Firmware Running during test**

Description	Version
Terminal	1.9B

EUT

Description	Manufacturer	Model/Part Number	Serial Number
Summit FS848 Slave Module – Direct Connect	Focus Enhancements	444-2196	30

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
DC Power / RS-232 Serial Interface	Focus Enhancements	Hermiston	None
DC Block	MCL	BLK-89	15542
AC Adapter	PHIHONG	PSA21R-033	None

Remote Equipment Outside of Test Setup Boundary

Description	Manufacturer	Model/Part Number	Serial Number
Remote PC	Dell	Latitude D820	2006-00516

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Multi-pin Flex Cable	No	0.3m	No	Summit FS848 Slave Module Direct Connect	DC Power / RS-232 Serial Interface
Serial	Yes	2.0m	No	DC Power / RS-232 Serial Interface	Remote PC
DC Lead	PA	1.8m	PA	AC Adapter	DC Power / RS-232 Serial Interface

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

CONFIGURATION 2 FOCU0053**Software/Firmware Running during test**

Description	Version
Terminal	1.9B

EUT

Description	Manufacturer	Model/Part Number	Serial Number
Summit FS848 Slave Module - Radiated	Focus Enhancements	444-2196	2

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
DC Power / RS-232 Serial Interface	Focus Enhancements	Hermiston	None
AC Adapter	PHIHONG	PSA21R-033	None

Remote Equipment Outside of Test Setup Boundary

Description	Manufacturer	Model/Part Number	Serial Number
Remote PC	Dell	Latitude D820	2006-00516

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Multi-pin Flex Cable	No	0.3m	No	Summit FS848 Slave Module Radiated	DC Power / RS-232 Serial Interface
Serial	Yes	2.0m	No	DC Power / RS-232 Serial Interface	Remote PC
DC Lead	PA	1.8m	PA	AC Adapter	DC Power / RS-232 Serial Interface

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

CONFIGURATION 3 FOCU0053**Software/Firmware Running during test**

Description	Version
Terminal	1.9B

EUT

Description	Manufacturer	Model/Part Number	Serial Number
Summit FS848 Slave Module - Radiated 2	Focus Enhancements	444-2196	2

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
DC Power / RS-232 Serial Interface	Focus Enhancements	Hermiston	None
DC Power Supply	Topward	6303D	743645

Remote Equipment Outside of Test Setup Boundary

Description	Manufacturer	Model/Part Number	Serial Number
Remote PC	Dell	Latitude D820	2006-00516

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Multi-pin Flex Cable	No	0.3m	No	Summit FS848 Slave Module Radiated 2	DC Power / RS-232 Serial Interface
AC Power	No	1.8m	No	AC Mains	DC Power Supply
DC Lead	No	1.9m	No	DC Power Supply	DC Power / RS-232 Serial Interface
Serial	Yes	1.9m	No	DC Power / RS-232 Serial Interface	Remote PC

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

Equipment modifications					
Item	Date	Test	Modification	Note	Disposition of EUT
1	4/27/2009	Peak Excursion of the Modulation Envelope	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	5/4/2009	Frequency Stability	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	5/6/2009	AC Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	5/7/2009	Emission Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	5/7/2009	Peak Transmit Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	5/8/2009	Peak Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
7	5/11/2009	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was complete.

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

Transmitting, Ch 36, 5180MHz.
 Transmitting, Ch 48, 5240MHz.
 Transmitting, Ch 52, 5260MHz.
 Transmitting, Ch 64, 5320MHz.
 Transmitting, Ch 100, 5500MHz.
 Transmitting, Ch 116, 5580MHz.
 Transmitting, Ch 140, 5700MHz.

MODE USED FOR FINAL DATA

Transmitting, Ch 36, 5180MHz.
 Transmitting, Ch 48, 5240MHz.
 Transmitting, Ch 52, 5260MHz.
 Transmitting, Ch 64, 5320MHz.
 Transmitting, Ch 100, 5500MHz.
 Transmitting, Ch 116, 5580MHz.
 Transmitting, Ch 140, 5700MHz.

POWER SETTINGS INVESTIGATED

120VAC/60Hz

POWER SETTINGS USED FOR FINAL DATA

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency 1 GHz Stop Frequency 40 GHz

CLOCKS AND OSCILLATORS

None Provided

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAY	12/11/2008	13
5.47-5.725 Notch Filter	Micro-Tronics	BRC50704	HGI	6/16/2008	12
5.25 GHz Notch Filter	K&L Microwave	8N50-5250/X200-0/0	HFK	4/3/2008	24
High Pass Filter	Micro-Tronics	HPM50112	HGA	6/27/2008	13
26-40GHz Cable		TTBJ141-KMKM-72	EVX	7/30/2008	13
EV01 Cables		Standard Gain Horns Cables	EVF	11/13/2008	13
EV01 Cables		18-26GHz Standard Gain Horn Cable	EVD	12/2/2008	13
EV01 Cables		Standard Gain Horns Cables	EVF	11/13/2008	13
EV01 Cables		Double Ridge Horn Cables	EVB	5/19/2008	13
Pre-Amplifier	Miteq	JSW45-26004000-40-5P	AVN	7/30/2008	13
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	12/2/2008	13
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	6/30/2008	13
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVC	6/30/2008	13
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	5/19/2008	13
Antenna, Horn	ETS	3160-10	AIC	NCR	0
Antenna, Horn	ETS	3160-09	AHG	NCR	0
Antenna, Horn	ETS	3160-08	AHV	NCR	0
Antenna, Horn	ETS	3160-07	AHU	NCR	0
Antenna, Horn	EMCO	3115	AHC	8/12/2008	24

MEASUREMENT BANDWIDTHS

Frequency Range	Peak Data	Quasi-Peak Data	Average Data
(MHz)	(kHz)	(kHz)	(kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0


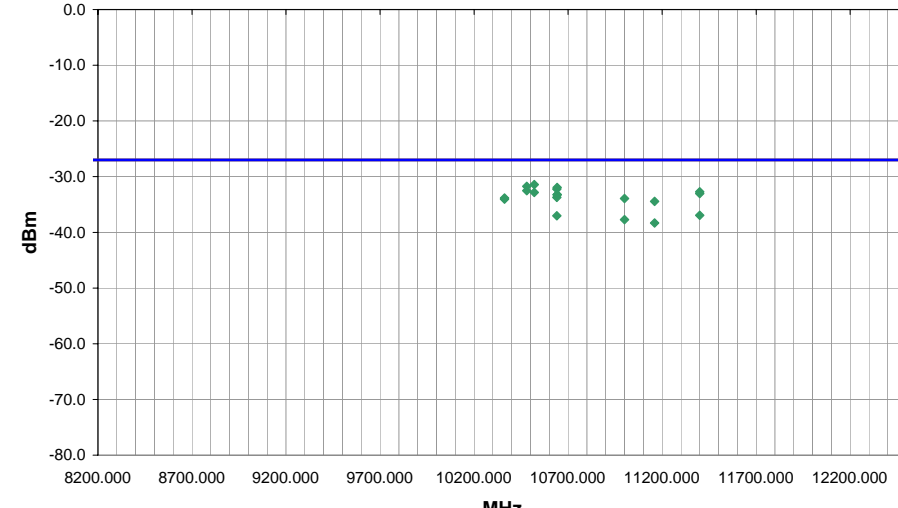
Measurements were made using the bandwidths and detectors specified. No video filter was used.


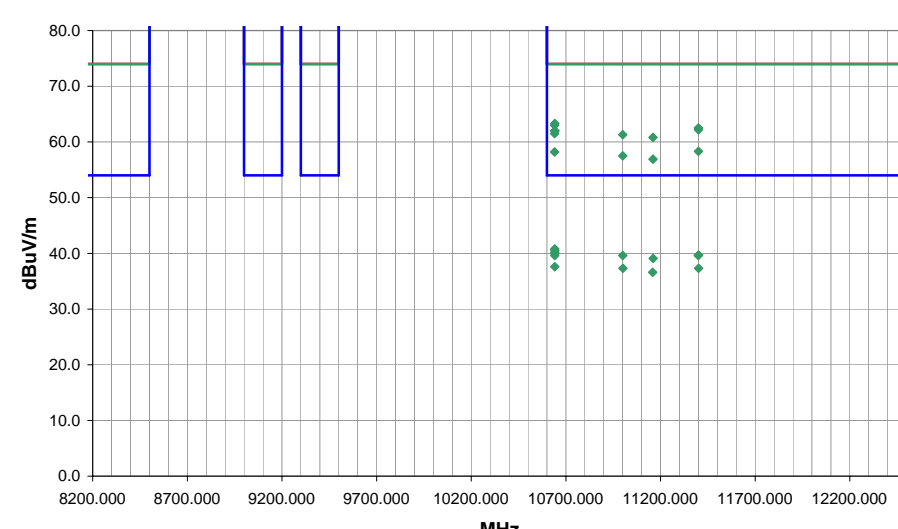
MEASUREMENT UNCERTAINTY


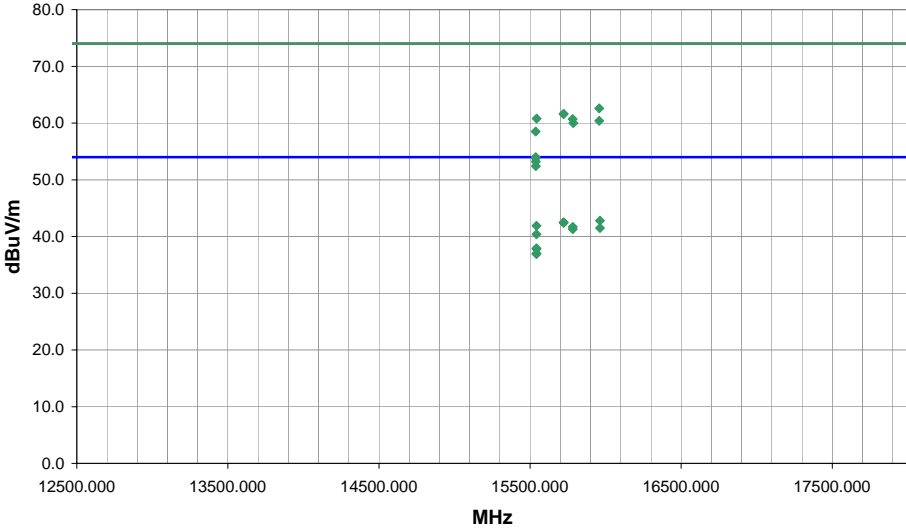
A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.


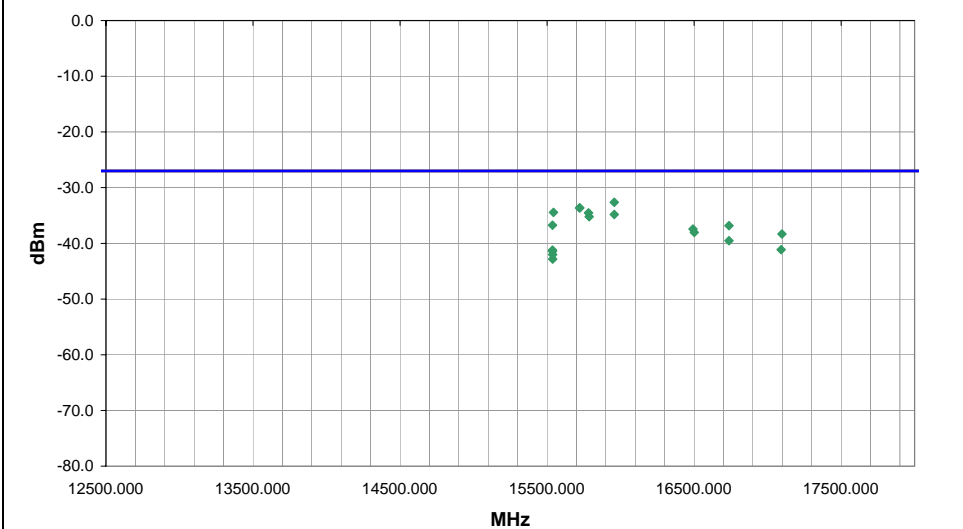
TEST DESCRIPTION


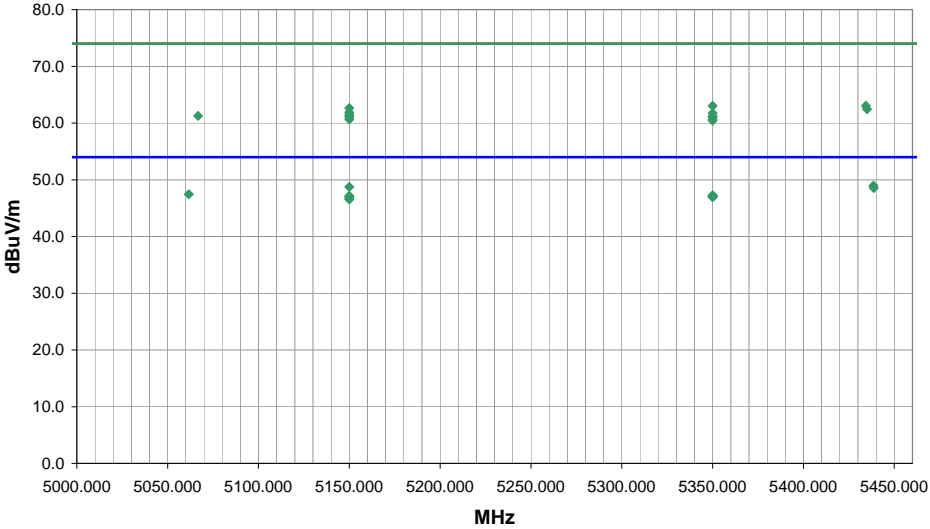
The antennas to be used with the EUT were tested. The EUT was transmitting and receiving while set at the channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and orientation in 3 orthogonal plane, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2003). An active loop antenna was used for this test in order to provide sufficient measurement sensitivity.


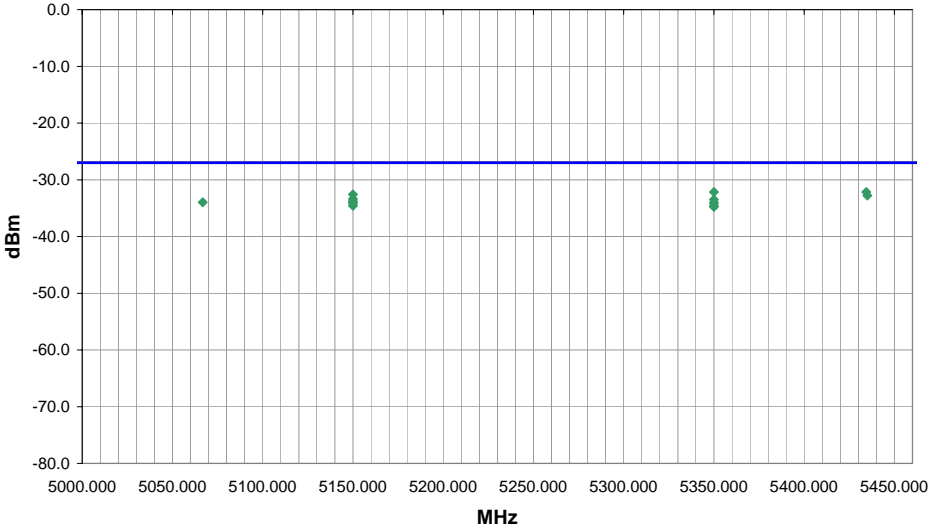
NORTHWEST		SPURIOUS RADIATED EMISSIONS		PSA 2008.07.21 EMI 2008.7.3	
EMC		EUT: Summit FS848 Slave Module		Work Order: FOCU0053	
Serial Number: 2		Customer: Focus Enhancements		Date: 05/05/09	
Attendees: Ponnappa Pasura		Project: None		Temperature: 20.4°C	
Tested by: Dan Haas		Power: 120VAC/60Hz		Humidity: 29%	
TEST SPECIFICATIONS		Test Method		Barometric Pres.: 1015.1mb	
FCC 15.407:2009		ANSI C63.4:2003 DA 02-2138:2002		Job Site: EV01	
TEST PARAMETERS					
Antenna Height(s) (m)		1 - 4		Test Distance (m)	
				3	
COMMENTS					
12inch cable w/o ferrites. R43 to R58 = 75ohm, 100pF caps to GND on pins 17 & 18 of FS848, R11-13 = 56.2ohms. R31&R32 = 33ohms, 100pF cap from GPIO8 to GND. RC filter on 14 pins of J8 of the Hermiston board, Bead on regulator. 100pF on GPIO 11. See notes					
EUT OPERATING MODES					
Transmitting at +8dBm					
DEVIATIONS FROM TEST STANDARD					
No deviations.					
Run #		7		Signature 	
Configuration #		1			
Results		Pass			
					
MHz					
Freq (MHz)					
Azimuth (degrees)					
Height (meters)					
Polarity					
Detector					
EIRP (Watts)					
EIRP (dBm)					
Spec. Limit (dBm)					
Compared to Spec. (dB)					
Comments					
10520.130					
10480.170					
10641.570					
10639.970					
10480.130					
11400.200					
10520.030					
11400.100					
10641.600					
10641.730					
10640.170					
10361.630					
11000.070					
10361.530					
11159.870					
11400.100					
10640.000					
11000.030					
11159.830					
Ch 52, 5260MHz. Board on its side.					
Ch 48, 5240MHz. Board on its side.					
Ch 64, 5320MHz. Board on its side.					
Ch 64, 5320MHz. Board horizontal.					
Ch 48, 5240MHz. Board on its side.					
Ch 140, 5700MHz. Board on its side.					
Ch 52, 5260MHz. Board on its side.					
Ch 116, 5580MHz. Board on its side.					
Ch 64, 5320MHz. Board vertical.					
Ch 64, 5320MHz. Board vertical.					
Ch 64, 5320MHz. Board on its side.					
Ch 36, 5180MHz. Board on its side.					
Ch 100, 5500MHz. Board on its side.					
Ch 36, 5180MHz. Board on its side.					
Ch 116, 5580MHz. Board on its side.					
Ch 140, 5700MHz. Board on its side.					
Ch 64, 5320MHz. Board horizontal.					
Ch 100, 5500MHz. Board on its side.					
Ch 116, 5580MHz. Board on its side.					


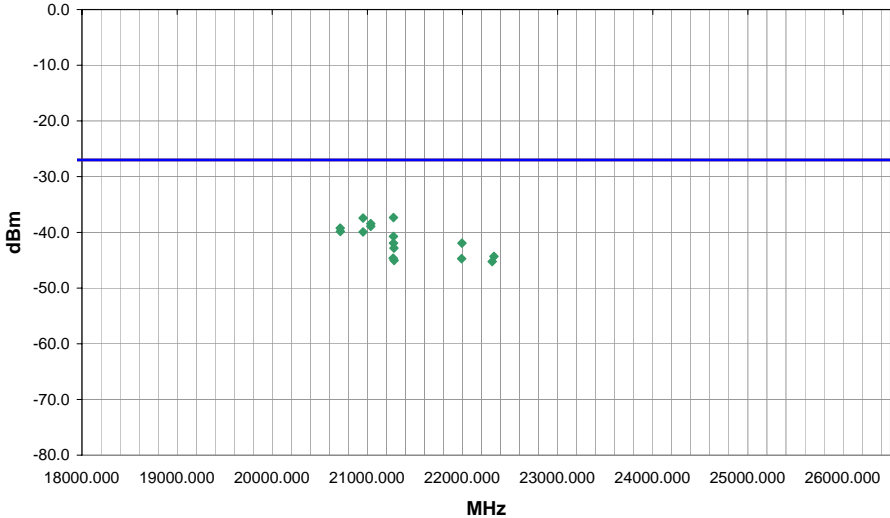
NORTHWEST		SPURIOUS RADIATED EMISSIONS		PSA 2008.07.21 EMI 2008.7.3									
EMC		EUT: Summit FS848 Slave Module		Work Order: FOCU0053									
Serial Number: 2				Date: 05/05/09									
Customer: Focus Enhancements				Temperature: 20.4°C									
Attendees: Ponnappa Pasura				Humidity: 29%									
Project: None				Barometric Pres.: 1015.1mb									
Tested by: Dan Haas		Power: 120VAC/60Hz		Job Site: EV01									
TEST SPECIFICATIONS		Test Method											
FCC 15.209:2009		ANSI C63.4:2003											
TEST PARAMETERS													
Antenna Height(s) (m)		Test Distance (m)											
1 - 4		3											
COMMENTS													
12inch cable w/o ferrites. R43 to R58 = 75ohm, 100pF caps to GND on pins 17 & 18 of FS848, R11-13 = 56.2ohms. R31&R32 = 33ohms, 100pF cap from GPIO8 to GND. RC filter on 14 pins of J8 of the Hermiston board, Bead on regulator. 100pF on GPIO 11. See notes for Tx channel and board orientation.													
EUT OPERATING MODES													
Transmitting at +8dBm													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #	7												
Configuration #	1												
Results	Pass												
Signature 													
													
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
10641.570	74.0	-10.7	27.0	1.3	3.0	0.0	V-Horn	PK	0.0	63.3	74.0	-10.7	Ch 64, 5320MHz. Board on its side.
10639.970	73.7	-10.7	85.0	1.0	3.0	0.0	H-Horn	PK	0.0	63.0	74.0	-11.0	Ch 64, 5320MHz. Board horizontal.
11400.200	69.3	-6.8	30.0	1.3	3.0	0.0	H-Horn	PK	0.0	62.5	74.0	-11.5	Ch 140, 5700MHz. Board on its side.
11400.100	69.0	-6.8	33.0	1.0	3.0	0.0	H-Horn	PK	0.0	62.2	74.0	-11.8	Ch 116, 5580MHz. Board on its side.
10641.600	72.7	-10.7	40.0	1.0	3.0	0.0	H-Horn	PK	0.0	62.0	74.0	-12.0	Ch 64, 5320MHz. Board vertical.
10641.730	72.7	-10.7	216.0	1.2	3.0	0.0	V-Horn	PK	0.0	62.0	74.0	-12.0	Ch 64, 5320MHz. Board vertical.
10640.170	72.2	-10.7	35.0	1.2	3.0	0.0	H-Horn	PK	0.0	61.5	74.0	-12.5	Ch 64, 5320MHz. Board on its side.
11000.070	69.6	-8.3	126.0	1.3	3.0	0.0	H-Horn	PK	0.0	61.3	74.0	-12.7	Ch 100, 5500MHz. Board on its side.
11159.870	68.5	-7.7	121.0	1.2	3.0	0.0	H-Horn	PK	0.0	60.8	74.0	-13.2	Ch 116, 5580MHz. Board on its side.
10641.430	51.5	-10.7	27.0	1.3	3.0	0.0	V-Horn	AV	0.0	40.8	54.0	-13.2	Ch 64, 5320MHz. Board on its side.
10641.400	51.2	-10.7	85.0	1.0	3.0	0.0	H-Horn	AV	0.0	40.5	54.0	-13.5	Ch 64, 5320MHz. Board horizontal.
10641.400	50.8	-10.7	216.0	1.2	3.0	0.0	V-Horn	AV	0.0	40.1	54.0	-13.9	Ch 64, 5320MHz. Board vertical.
10641.470	50.7	-10.7	40.0	1.0	3.0	0.0	H-Horn	AV	0.0	40.0	54.0	-14.0	Ch 64, 5320MHz. Board vertical.
11401.470	46.5	-6.8	30.0	1.3	3.0	0.0	H-Horn	AV	0.0	39.7	54.0	-14.3	Ch 140, 5700MHz. Board on its side.


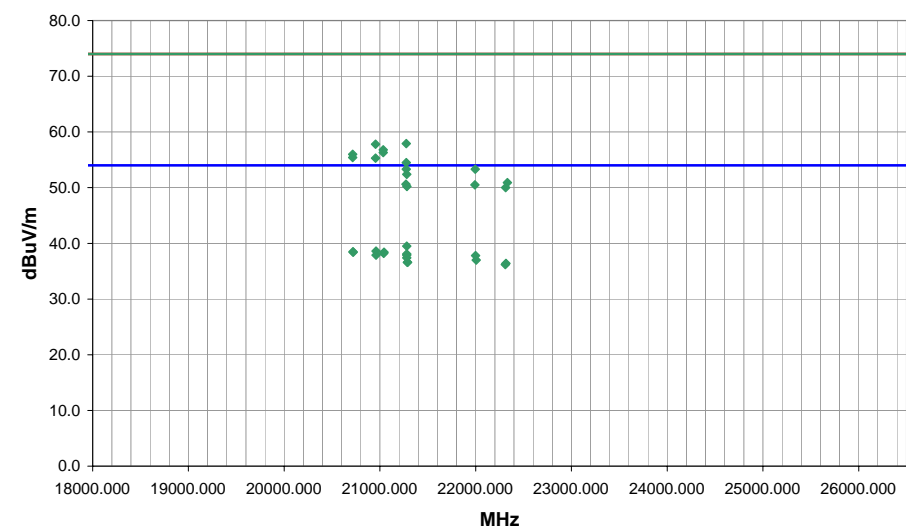
NORTHWEST		SPURIOUS RADIATED EMISSIONS		PSA 2008.07.21									
EMC				EMI 2008.7.3									
EUT: Summit FS848 Slave Module		Work Order: FOCU0053											
Serial Number: 2		Date: 05/05/09											
Customer: Focus Enhancements		Temperature: 20.8°C											
Attendees: Ponnappa Pasura		Humidity: 40%											
Project: None		Barometric Pres.: 1026.2mb											
Tested by: Dan Haas		Power: 120VAC/60Hz		Job Site: EV01									
TEST SPECIFICATIONS		Test Method											
FCC 15.209:2009		ANSI C63.4:2003											
TEST PARAMETERS													
Antenna Height(s) (m)		1 - 4		Test Distance (m) 3									
COMMENTS													
12inch cable w/o ferrites. R43 to R58 = 75ohm, 100pF caps to GND on pins 17 & 18 of FS848, R11-13 = 56.2ohms. R31&R32 = 33ohms, 100pF cap from GPIO8 to GND. RC filter on 14 pins of J8 of the Hermiston board, Bead on regulator. 100pF on GPIO 11. See notes													
EUT OPERATING MODES													
Transmitting													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		9		Signature 									
Configuration #		2											
Results		Pass											
													
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
15962.250	34.5	8.3	305.0	1.2	3.0	0.0	H-Horn	AV	0.0	42.8	54.0	-11.2	Ch 64, 5320MHz. Board on its side.
15957.550	54.3	8.3	305.0	1.2	3.0	0.0	H-Horn	PK	0.0	62.6	74.0	-11.4	Ch 64, 5320MHz. Board on its side.
15722.300	34.7	7.8	30.0	1.1	3.0	0.0	H-Horn	AV	0.0	42.5	54.0	-11.5	Ch 48, 5240MHz. Board on its side.
15722.200	34.6	7.8	4.0	1.1	3.0	0.0	V-Horn	AV	0.0	42.4	54.0	-11.6	Ch 48, 5240MHz. Board vertical.
15542.180	34.4	7.5	313.0	1.2	3.0	0.0	H-Horn	AV	0.0	41.9	54.0	-12.1	Ch 36, 5180MHz. Board on its side.
15782.200	33.7	8.0	8.0	1.2	3.0	0.0	V-Horn	AV	0.0	41.7	54.0	-12.3	Ch 52, 5260MHz. Board vertical.
15721.670	53.8	7.8	4.0	1.1	3.0	0.0	V-Horn	PK	0.0	61.6	74.0	-12.4	Ch 48, 5240MHz. Board vertical.
15722.630	53.8	7.8	30.0	1.1	3.0	0.0	H-Horn	PK	0.0	61.6	74.0	-12.4	Ch 48, 5240MHz. Board on its side.
15962.200	33.2	8.3	6.0	1.2	3.0	0.0	V-Horn	AV	0.0	41.5	54.0	-12.5	Ch 64, 5320MHz. Board vertical.
15782.200	33.3	8.0	26.0	1.1	3.0	0.0	H-Horn	AV	0.0	41.3	54.0	-12.7	Ch 52, 5260MHz. Board on its side.
15543.580	53.3	7.5	313.0	1.2	3.0	0.0	H-Horn	PK	0.0	60.8	74.0	-13.2	Ch 36, 5180MHz. Board on its side.
15781.650	52.7	8.0	8.0	1.2	3.0	0.0	V-Horn	PK	0.0	60.7	74.0	-13.3	Ch 52, 5260MHz. Board vertical.
15542.240	32.9	7.5	25.0	1.2	3.0	0.0	V-Horn	AV	0.0	40.4	54.0	-13.6	Ch 36, 5180MHz. Board vertical.
15957.150	52.1	8.3	6.0	1.2	3.0	0.0	V-Horn	PK	0.0	60.4	74.0	-13.6	Ch 64, 5320MHz. Board vertical.
15786.050	52.0	8.0	26.0	1.1	3.0	0.0	H-Horn	PK	0.0	60.0	74.0	-14.0	Ch 52, 5260MHz. Board on its side.
15537.440	51.0	7.5	25.0	1.2	3.0	0.0	V-Horn	PK	0.0	58.5	74.0	-15.5	Ch 36, 5180MHz. Board vertical.
15542.200	30.4	7.5	207.0	1.3	3.0	0.0	V-Horn	AV	0.0	37.9	54.0	-16.1	Ch 36, 5180MHz. Board horizontal.
15542.260	30.3	7.5	329.0	1.2	3.0	0.0	V-Horn	AV	0.0	37.8	54.0	-16.2	Ch 36, 5180MHz. Board on its side.
15542.350	29.5	7.5	2.0	1.1	3.0	0.0	H-Horn	AV	0.0	37.0	54.0	-17.0	Ch 36, 5180MHz. Board vertical.
15542.400	29.4	7.5	304.0	1.4	3.0	0.0	H-Horn	AV	0.0	36.9	54.0	-17.1	Ch 36, 5180MHz. Board horizontal.

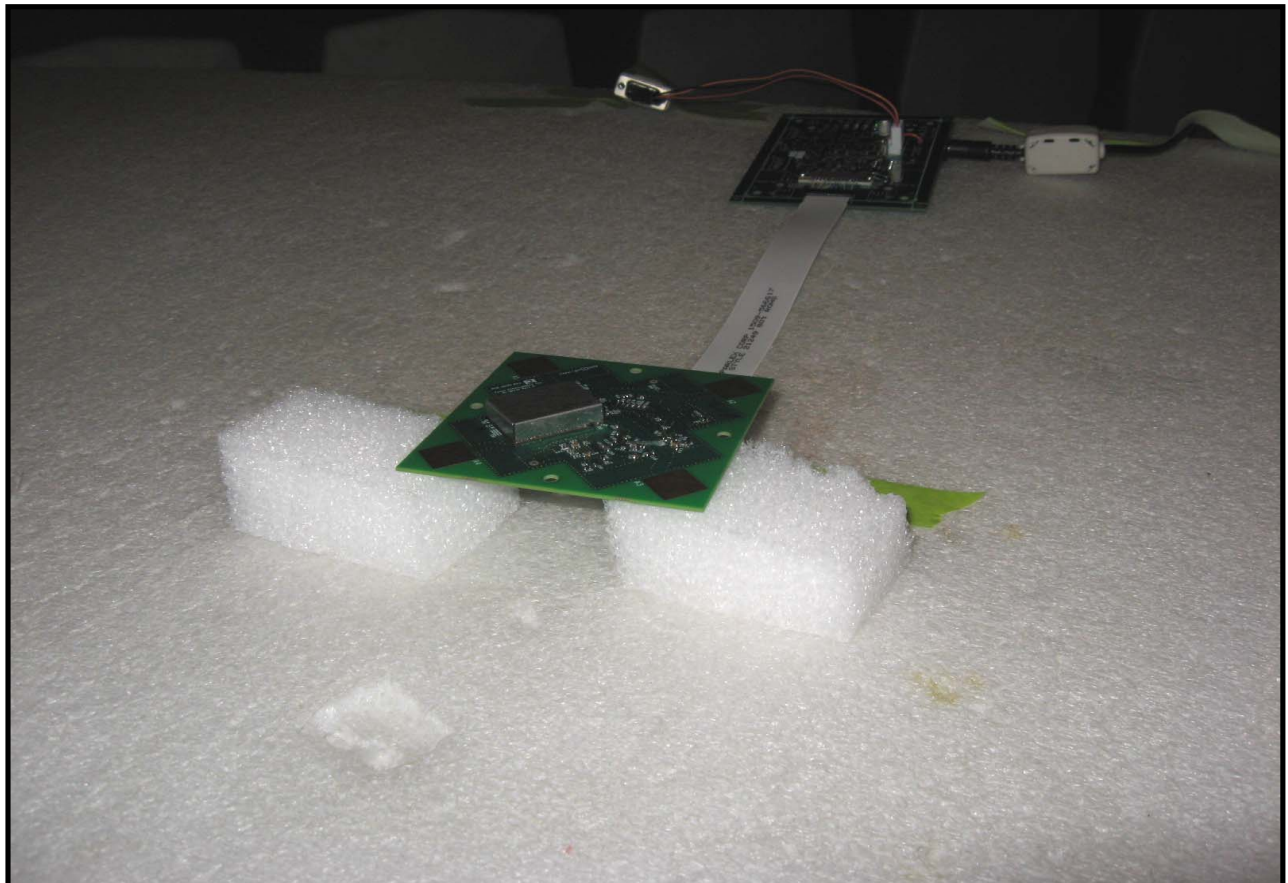
NORTHWEST		SPURIOUS RADIATED EMISSIONS		PSA 2008.07.21 EMI 2008.7.3																																																																																																																																																																																																																																																								
EMC																																																																																																																																																																																																																																																												
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Serial Number: 2		Date: 05/05/09																																																																																																																																																																																																																																																										
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Attendees: Ponnappa Pasura		Humidity: 40%																																																																																																																																																																																																																																																										
Project: None		Barometric Pres.: 1026.2mb																																																																																																																																																																																																																																																										
Tested by: Dan Haas		Power: 120VAC/60Hz		Job Site: EV01																																																																																																																																																																																																																																																								
TEST SPECIFICATIONS		Test Method																																																																																																																																																																																																																																																										
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<table><tr><th>Freq (MHz)</th><th></th><th></th><th>Azimuth (degrees)</th><th>Height (meters)</th><th></th><th>Polarity</th><th>Detector</th><th>EIRP (Watts)</th><th>EIRP (dBm)</th><th>Spec. Limit (dBm)</th><th>Compared to Spec. (dB)</th><th>Comments</th></tr><tr><td>15957.550</td><td></td><td></td><td>305.0</td><td>1.2</td><td></td><td>H-Horn</td><td>PK</td><td>5.46E-07</td><td>-32.6</td><td>-27.0</td><td>-5.6</td><td>Ch 64, 5320MHz. Board on its side.</td></tr><tr><td>15721.670</td><td></td><td></td><td>4.0</td><td>1.1</td><td></td><td>V-Horn</td><td>PK</td><td>4.34E-07</td><td>-33.6</td><td>-27.0</td><td>-6.6</td><td>Ch 48, 5240MHz. Board vertical.</td></tr><tr><td>15722.630</td><td></td><td></td><td>30.0</td><td>1.1</td><td></td><td>H-Horn</td><td>PK</td><td>4.34E-07</td><td>-33.6</td><td>-27.0</td><td>-6.6</td><td>Ch 48, 5240MHz. Board on its side.</td></tr><tr><td>15543.580</td><td></td><td></td><td>313.0</td><td>1.2</td><td></td><td>H-Horn</td><td>PK</td><td>3.61E-07</td><td>-34.4</td><td>-27.0</td><td>-7.4</td><td>Ch 36, 5180MHz. Board on its side.</td></tr><tr><td>15781.650</td><td></td><td></td><td>8.0</td><td>1.2</td><td></td><td>V-Horn</td><td>PK</td><td>3.52E-07</td><td>-34.5</td><td>-27.0</td><td>-7.5</td><td>Ch 52, 5260MHz. Board vertical.</td></tr><tr><td>15957.150</td><td></td><td></td><td>6.0</td><td>1.2</td><td></td><td>V-Horn</td><td>PK</td><td>3.29E-07</td><td>-34.8</td><td>-27.0</td><td>-7.8</td><td>Ch 64, 5320MHz. Board vertical.</td></tr><tr><td>15786.050</td><td></td><td></td><td>26.0</td><td>1.1</td><td></td><td>H-Horn</td><td>PK</td><td>3.00E-07</td><td>-35.2</td><td>-27.0</td><td>-8.2</td><td>Ch 52, 5260MHz. Board on its side.</td></tr><tr><td>15537.440</td><td></td><td></td><td>25.0</td><td>1.2</td><td></td><td>V-Horn</td><td>PK</td><td>2.12E-07</td><td>-36.7</td><td>-27.0</td><td>-9.7</td><td>Ch 36, 5180MHz. Board vertical.</td></tr><tr><td>16737.250</td><td></td><td></td><td>237.0</td><td>1.2</td><td></td><td>H-Horn</td><td>PK</td><td>2.08E-07</td><td>-36.8</td><td>-27.0</td><td>-9.8</td><td>Ch 116, 5580MHz. Board on its side.</td></tr><tr><td>16492.550</td><td></td><td></td><td>241.0</td><td>1.1</td><td></td><td>H-Horn</td><td>PK</td><td>1.81E-07</td><td>-37.4</td><td>-27.0</td><td>-10.4</td><td>Ch 100, 5500MHz. Board on its side.</td></tr><tr><td>16501.850</td><td></td><td></td><td>348.0</td><td>1.2</td><td></td><td>V-Horn</td><td>PK</td><td>1.57E-07</td><td>-38.0</td><td>-27.0</td><td>-11.0</td><td>Ch 100, 5500MHz. Board vertical.</td></tr><tr><td>17097.500</td><td></td><td></td><td>198.0</td><td>1.1</td><td></td><td>H-Horn</td><td>PK</td><td>1.47E-07</td><td>-38.3</td><td>-27.0</td><td>-11.3</td><td>Ch 140, 5700MHz. Board on its side.</td></tr><tr><td>16737.400</td><td></td><td></td><td>162.0</td><td>1.2</td><td></td><td>V-Horn</td><td>PK</td><td>1.11E-07</td><td>-39.5</td><td>-27.0</td><td>-12.5</td><td>Ch 116, 5580MHz. Board vertical.</td></tr><tr><td>17092.700</td><td></td><td></td><td>196.0</td><td>1.1</td><td></td><td>V-Horn</td><td>PK</td><td>7.71E-08</td><td>-41.1</td><td>-27.0</td><td>-14.1</td><td>Ch 140, 5700MHz. Board vertical.</td></tr><tr><td>15536.850</td><td></td><td></td><td>207.0</td><td>1.3</td><td></td><td>V-Horn</td><td>PK</td><td>7.54E-08</td><td>-41.2</td><td>-27.0</td><td>-14.2</td><td>Ch 36, 5180MHz. Board horizontal.</td></tr><tr><td>15537.390</td><td></td><td></td><td>329.0</td><td>1.2</td><td></td><td>V-Horn</td><td>PK</td><td>7.20E-08</td><td>-41.4</td><td>-27.0</td><td>-14.4</td><td>Ch 36, 5180MHz. Board on its side.</td></tr><tr><td>15538.550</td><td></td><td></td><td>2.0</td><td>1.1</td><td></td><td>H-Horn</td><td>PK</td><td>6.27E-08</td><td>-42.0</td><td>-27.0</td><td>-15.0</td><td>Ch 36, 5180MHz. Board vertical.</td></tr><tr><td>15538.500</td><td></td><td></td><td>304.0</td><td>1.4</td><td></td><td>H-Horn</td><td>PK</td><td>5.21E-08</td><td>-42.8</td><td>-27.0</td><td>-15.8</td><td>Ch 36, 5180MHz. Board horizontal.</td></tr></table>						Freq (MHz)			Azimuth (degrees)	Height (meters)		Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments	15957.550			305.0	1.2		H-Horn	PK	5.46E-07	-32.6	-27.0	-5.6	Ch 64, 5320MHz. Board on its side.	15721.670			4.0	1.1		V-Horn	PK	4.34E-07	-33.6	-27.0	-6.6	Ch 48, 5240MHz. Board vertical.	15722.630			30.0	1.1		H-Horn	PK	4.34E-07	-33.6	-27.0	-6.6	Ch 48, 5240MHz. Board on its side.	15543.580			313.0	1.2		H-Horn	PK	3.61E-07	-34.4	-27.0	-7.4	Ch 36, 5180MHz. Board on its side.	15781.650			8.0	1.2		V-Horn	PK	3.52E-07	-34.5	-27.0	-7.5	Ch 52, 5260MHz. Board vertical.	15957.150			6.0	1.2		V-Horn	PK	3.29E-07	-34.8	-27.0	-7.8	Ch 64, 5320MHz. Board vertical.	15786.050			26.0	1.1		H-Horn	PK	3.00E-07	-35.2	-27.0	-8.2	Ch 52, 5260MHz. Board on its side.	15537.440			25.0	1.2		V-Horn	PK	2.12E-07	-36.7	-27.0	-9.7	Ch 36, 5180MHz. Board vertical.	16737.250			237.0	1.2		H-Horn	PK	2.08E-07	-36.8	-27.0	-9.8	Ch 116, 5580MHz. Board on its side.	16492.550			241.0	1.1		H-Horn	PK	1.81E-07	-37.4	-27.0	-10.4	Ch 100, 5500MHz. Board on its side.	16501.850			348.0	1.2		V-Horn	PK	1.57E-07	-38.0	-27.0	-11.0	Ch 100, 5500MHz. Board vertical.	17097.500			198.0	1.1		H-Horn	PK	1.47E-07	-38.3	-27.0	-11.3	Ch 140, 5700MHz. Board on its side.	16737.400			162.0	1.2		V-Horn	PK	1.11E-07	-39.5	-27.0	-12.5	Ch 116, 5580MHz. Board vertical.	17092.700			196.0	1.1		V-Horn	PK	7.71E-08	-41.1	-27.0	-14.1	Ch 140, 5700MHz. Board vertical.	15536.850			207.0	1.3		V-Horn	PK	7.54E-08	-41.2	-27.0	-14.2	Ch 36, 5180MHz. Board horizontal.	15537.390			329.0	1.2		V-Horn	PK	7.20E-08	-41.4	-27.0	-14.4	Ch 36, 5180MHz. Board on its side.	15538.550			2.0	1.1		H-Horn	PK	6.27E-08	-42.0	-27.0	-15.0	Ch 36, 5180MHz. Board vertical.	15538.500			304.0	1.4		H-Horn	PK	5.21E-08	-42.8	-27.0	-15.8	Ch 36, 5180MHz. Board horizontal.
Freq (MHz)			Azimuth (degrees)	Height (meters)		Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments																																																																																																																																																																																																																																																
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15957.150			6.0	1.2		V-Horn	PK	3.29E-07	-34.8	-27.0	-7.8	Ch 64, 5320MHz. Board vertical.																																																																																																																																																																																																																																																
15786.050			26.0	1.1		H-Horn	PK	3.00E-07	-35.2	-27.0	-8.2	Ch 52, 5260MHz. Board on its side.																																																																																																																																																																																																																																																
15537.440			25.0	1.2		V-Horn	PK	2.12E-07	-36.7	-27.0	-9.7	Ch 36, 5180MHz. Board vertical.																																																																																																																																																																																																																																																
16737.250			237.0	1.2		H-Horn	PK	2.08E-07	-36.8	-27.0	-9.8	Ch 116, 5580MHz. Board on its side.																																																																																																																																																																																																																																																
16492.550			241.0	1.1		H-Horn	PK	1.81E-07	-37.4	-27.0	-10.4	Ch 100, 5500MHz. Board on its side.																																																																																																																																																																																																																																																
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17097.500			198.0	1.1		H-Horn	PK	1.47E-07	-38.3	-27.0	-11.3	Ch 140, 5700MHz. Board on its side.																																																																																																																																																																																																																																																
16737.400			162.0	1.2		V-Horn	PK	1.11E-07	-39.5	-27.0	-12.5	Ch 116, 5580MHz. Board vertical.																																																																																																																																																																																																																																																
17092.700			196.0	1.1		V-Horn	PK	7.71E-08	-41.1	-27.0	-14.1	Ch 140, 5700MHz. Board vertical.																																																																																																																																																																																																																																																
15536.850			207.0	1.3		V-Horn	PK	7.54E-08	-41.2	-27.0	-14.2	Ch 36, 5180MHz. Board horizontal.																																																																																																																																																																																																																																																
15537.390			329.0	1.2		V-Horn	PK	7.20E-08	-41.4	-27.0	-14.4	Ch 36, 5180MHz. Board on its side.																																																																																																																																																																																																																																																
15538.550			2.0	1.1		H-Horn	PK	6.27E-08	-42.0	-27.0	-15.0	Ch 36, 5180MHz. Board vertical.																																																																																																																																																																																																																																																
15538.500			304.0	1.4		H-Horn	PK	5.21E-08	-42.8	-27.0	-15.8	Ch 36, 5180MHz. Board horizontal.																																																																																																																																																																																																																																																

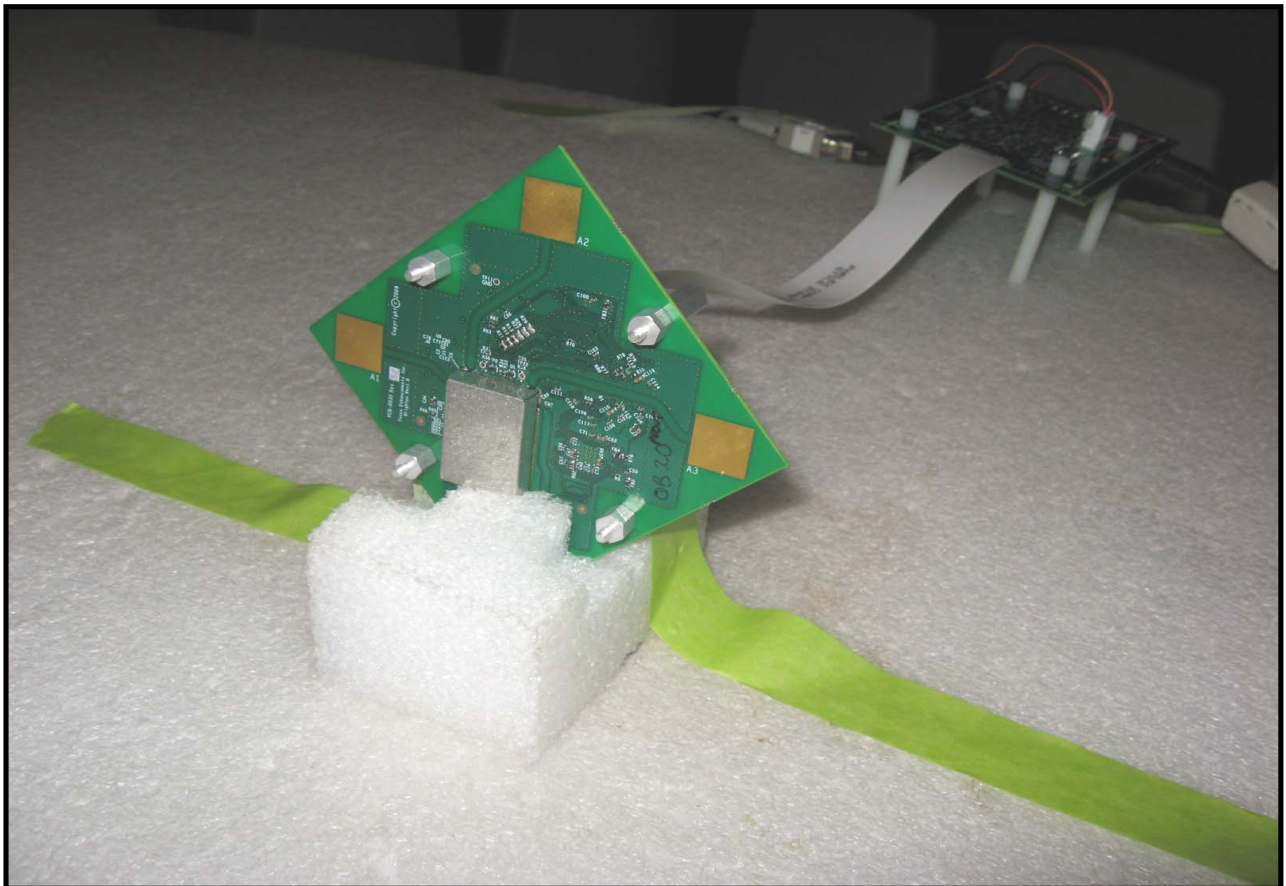
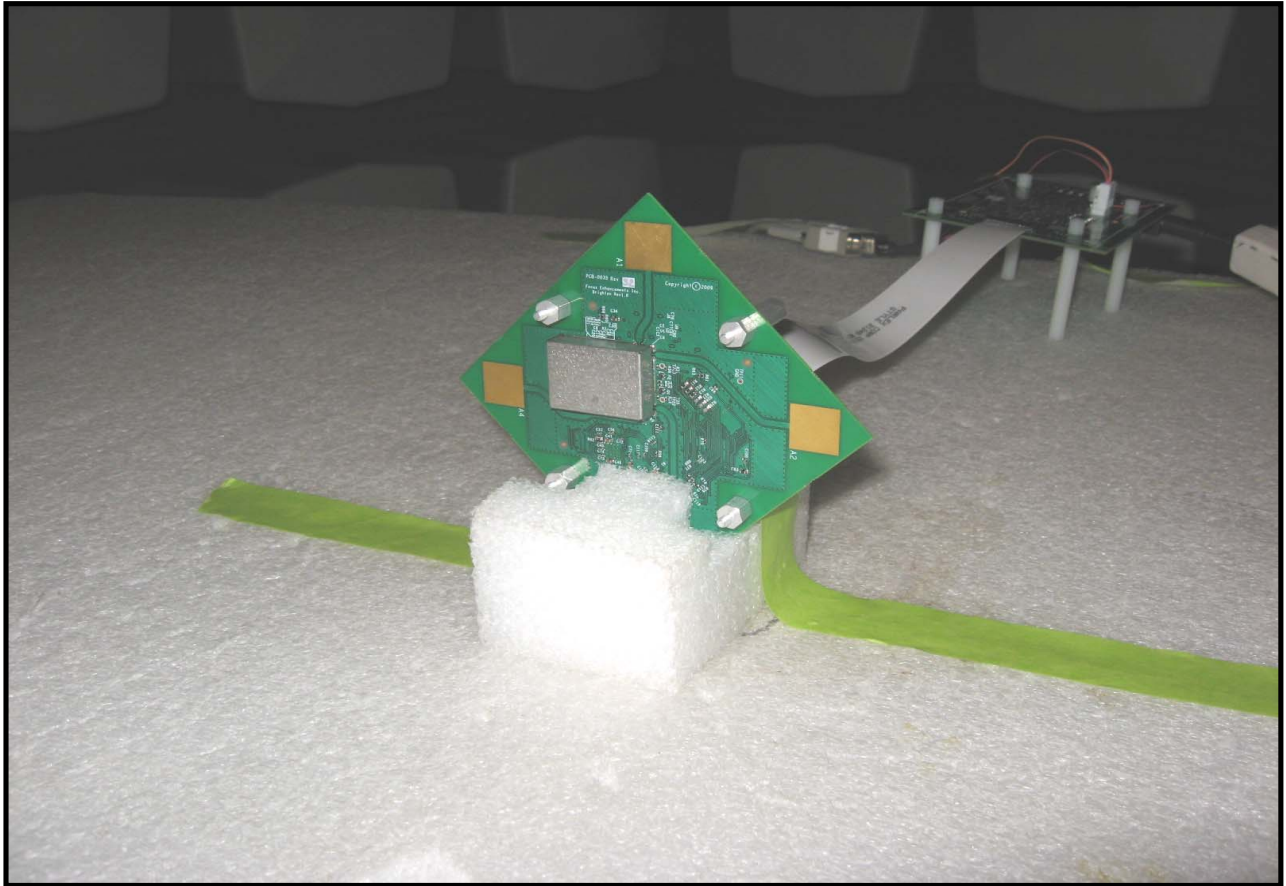
NORTHWEST		SPURIOUS RADIATED EMISSIONS		PSA 2008.07.21									
EMC				EMI 2008.7.3									
EUT: Summit FS848 Slave Module		Work Order: FOCU0053											
Serial Number: 2		Date: 05/08/09											
Customer: Focus Enhancements		Temperature: 19.7°C											
Attendees: Ponnappa Pasura		Humidity: 36%											
Project: None		Barometric Pres.: 1029.8mb											
Tested by: Dan Haas		Power: 120VAC/60Hz		Job Site: EV01									
TEST SPECIFICATIONS		Test Method											
FCC 15.209:2009		ANSI C63.4:2003											
TEST PARAMETERS													
Antenna Height(s) (m)		1 - 4		Test Distance (m) 1									
COMMENTS													
12inch cable w/o ferrites. See notes for channel and board orientation.													
EUT OPERATING MODES													
Transmitting, 6Mbps													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		10		Signature 									
Configuration #		2											
Results		Pass											
													
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
5438.550	21.7	36.8	158.0	1.0	1.0	0.0	H-Horn	AV	-9.5	49.0	54.0	-5.0	Ch 64, 5320MHz. Board horizontal.
5150.000	22.0	36.3	139.0	1.0	1.0	0.0	H-Horn	AV	-9.5	48.8	54.0	-5.2	Ch 36, 5180MHz. Board vertical.
5438.650	21.3	36.8	28.0	1.0	1.0	0.0	H-Horn	AV	-9.5	48.6	54.0	-5.4	Ch 64, 5320MHz. Board on its side.
5061.617	20.9	36.1	360.0	1.0	1.0	0.0	H-Horn	AV	-9.5	47.5	54.0	-6.5	Ch 36, 5180MHz. Board horizontal.
5350.000	20.1	36.7	276.0	1.1	1.0	0.0	H-Horn	AV	-9.5	47.3	54.0	-6.7	Ch 64, 5320MHz. Board horizontal.
5150.000	20.4	36.3	-1.0	1.0	1.0	0.0	H-Horn	AV	-9.5	47.2	54.0	-6.8	Ch 36, 5180MHz. Board on its side.
5350.000	20.0	36.7	176.0	1.1	1.0	0.0	H-Horn	AV	-9.5	47.2	54.0	-6.8	Ch 64, 5320MHz. Board on its side.
5350.000	20.0	36.7	116.0	1.1	1.0	0.0	V-Horn	AV	-9.5	47.2	54.0	-6.8	Ch 64, 5320MHz. Board vertical.
5150.000	20.3	36.3	263.0	1.1	1.0	0.0	H-Horn	AV	-9.5	47.1	54.0	-6.9	Ch 36, 5180MHz. Board horizontal.
5350.000	19.9	36.7	268.0	1.4	1.0	0.0	V-Horn	AV	-9.5	47.1	54.0	-6.9	Ch 64, 5320MHz. Board on its side.
5150.000	20.2	36.3	360.0	1.0	1.0	0.0	V-Horn	AV	-9.5	47.0	54.0	-7.0	Ch 36, 5180MHz. Board vertical.
5350.000	19.8	36.7	23.0	1.3	1.0	0.0	V-Horn	AV	-9.5	47.0	54.0	-7.0	Ch 64, 5320MHz. Board horizontal.
5350.000	19.8	36.7	220.0	1.1	1.0	0.0	H-Horn	AV	-9.5	47.0	54.0	-7.0	Ch 64, 5320MHz. Board vertical.
5150.000	19.9	36.3	5.0	1.1	1.0	0.0	V-Horn	AV	-9.5	46.7	54.0	-7.3	Ch 36, 5180MHz. Board on its side.
5150.000	19.8	36.3	24.0	1.2	1.0	0.0	V-Horn	AV	-9.5	46.6	54.0	-7.4	Ch 36, 5180MHz. Board horizontal.
5350.000	35.9	36.7	276.0	1.1	1.0	0.0	H-Horn	PK	-9.5	63.1	74.0	-10.9	Ch 64, 5320MHz. Board horizontal.
5434.400	35.8	36.8	158.0	1.0	1.0	0.0	H-Horn	PK	-9.5	63.1	74.0	-10.9	Ch 64, 5320MHz. Board horizontal.
5150.000	35.9	36.3	263.0	1.1	1.0	0.0	H-Horn	PK	-9.5	62.7	74.0	-11.3	Ch 36, 5180MHz. Board horizontal.
5435.000	35.2	36.8	28.0	1.0	1.0	0.0	H-Horn	PK	-9.5	62.5	74.0	-11.5	Ch 64, 5320MHz. Board on its side.
5150.000	35.1	36.3	-1.0	1.0	1.0	0.0	H-Horn	PK	-9.5	61.9	74.0	-12.1	Ch 36, 5180MHz. Board on its side.

NORTHWEST		SPURIOUS RADIATED EMISSIONS		PSA 2008.07.21																																																																																																																																																																																																																																	
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Board horizontal.</td></tr><tr><td>5435.000</td><td></td><td></td><td>28.0</td><td>1.0</td><td></td><td></td><td>H-Horn</td><td>PK</td><td>5.28E-07</td><td>-32.8</td><td>-27.0</td><td>-5.8</td><td>Ch 64, 5320MHz. Board on its side.</td></tr><tr><td>5150.000</td><td></td><td></td><td>-1.0</td><td>1.0</td><td></td><td></td><td>H-Horn</td><td>PK</td><td>4.60E-07</td><td>-33.4</td><td>-27.0</td><td>-6.4</td><td>Ch 36, 5180MHz. Board on its side.</td></tr><tr><td>5350.000</td><td></td><td></td><td>176.0</td><td>1.1</td><td></td><td></td><td>H-Horn</td><td>PK</td><td>4.50E-07</td><td>-33.5</td><td>-27.0</td><td>-6.5</td><td>Ch 64, 5320MHz. Board on its side.</td></tr><tr><td>5150.000</td><td></td><td></td><td>139.0</td><td>1.0</td><td></td><td></td><td>H-Horn</td><td>PK</td><td>4.20E-07</td><td>-33.8</td><td>-27.0</td><td>-6.8</td><td>Ch 36, 5180MHz. Board vertical.</td></tr><tr><td>5066.717</td><td></td><td></td><td>360.0</td><td>1.0</td><td></td><td></td><td>H-Horn</td><td>PK</td><td>4.01E-07</td><td>-34.0</td><td>-27.0</td><td>-7.0</td><td>Ch 36, 5180MHz. Board horizontal.</td></tr><tr><td>5150.000</td><td></td><td></td><td>360.0</td><td>1.0</td><td></td><td></td><td>V-Horn</td><td>PK</td><td>3.92E-07</td><td>-34.1</td><td>-27.0</td><td>-7.1</td><td>Ch 36, 5180MHz. Board vertical.</td></tr><tr><td>5350.000</td><td></td><td></td><td>116.0</td><td>1.1</td><td></td><td></td><td>V-Horn</td><td>PK</td><td>3.92E-07</td><td>-34.1</td><td>-27.0</td><td>-7.1</td><td>Ch 64, 5320MHz. Board vertical.</td></tr><tr><td>5350.000</td><td></td><td></td><td>268.0</td><td>1.4</td><td></td><td></td><td>V-Horn</td><td>PK</td><td>3.92E-07</td><td>-34.1</td><td>-27.0</td><td>-7.1</td><td>Ch 64, 5320MHz. Board on its side.</td></tr><tr><td>5150.000</td><td></td><td></td><td>24.0</td><td>1.2</td><td></td><td></td><td>V-Horn</td><td>PK</td><td>3.83E-07</td><td>-34.2</td><td>-27.0</td><td>-7.2</td><td>Ch 36, 5180MHz. Board horizontal.</td></tr><tr><td>5150.000</td><td></td><td></td><td>5.0</td><td>1.1</td><td></td><td></td><td>V-Horn</td><td>PK</td><td>3.49E-07</td><td>-34.6</td><td>-27.0</td><td>-7.6</td><td>Ch 36, 5180MHz. Board on its side.</td></tr><tr><td>5350.000</td><td></td><td></td><td>23.0</td><td>1.3</td><td></td><td></td><td>V-Horn</td><td>PK</td><td>3.49E-07</td><td>-34.6</td><td>-27.0</td><td>-7.6</td><td>Ch 64, 5320MHz. Board horizontal.</td></tr><tr><td>5350.000</td><td></td><td></td><td>220.0</td><td>1.1</td><td></td><td></td><td>H-Horn</td><td>PK</td><td>3.33E-07</td><td>-34.8</td><td>-27.0</td><td>-7.8</td><td>Ch 64, 5320MHz. Board vertical.</td></tr></tbody></table>						Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments	5350.000			276.0	1.1			H-Horn	PK	6.07E-07	-32.2	-27.0	-5.2	Ch 64, 5320MHz. Board horizontal.	5434.400			158.0	1.0			H-Horn	PK	6.07E-07	-32.2	-27.0	-5.2	Ch 64, 5320MHz. Board horizontal.	5150.000			263.0	1.1			H-Horn	PK	5.53E-07	-32.6	-27.0	-5.6	Ch 36, 5180MHz. Board horizontal.	5435.000			28.0	1.0			H-Horn	PK	5.28E-07	-32.8	-27.0	-5.8	Ch 64, 5320MHz. Board on its side.	5150.000			-1.0	1.0			H-Horn	PK	4.60E-07	-33.4	-27.0	-6.4	Ch 36, 5180MHz. Board on its side.	5350.000			176.0	1.1			H-Horn	PK	4.50E-07	-33.5	-27.0	-6.5	Ch 64, 5320MHz. Board on its side.	5150.000			139.0	1.0			H-Horn	PK	4.20E-07	-33.8	-27.0	-6.8	Ch 36, 5180MHz. Board vertical.	5066.717			360.0	1.0			H-Horn	PK	4.01E-07	-34.0	-27.0	-7.0	Ch 36, 5180MHz. Board horizontal.	5150.000			360.0	1.0			V-Horn	PK	3.92E-07	-34.1	-27.0	-7.1	Ch 36, 5180MHz. Board vertical.	5350.000			116.0	1.1			V-Horn	PK	3.92E-07	-34.1	-27.0	-7.1	Ch 64, 5320MHz. Board vertical.	5350.000			268.0	1.4			V-Horn	PK	3.92E-07	-34.1	-27.0	-7.1	Ch 64, 5320MHz. Board on its side.	5150.000			24.0	1.2			V-Horn	PK	3.83E-07	-34.2	-27.0	-7.2	Ch 36, 5180MHz. Board horizontal.	5150.000			5.0	1.1			V-Horn	PK	3.49E-07	-34.6	-27.0	-7.6	Ch 36, 5180MHz. Board on its side.	5350.000			23.0	1.3			V-Horn	PK	3.49E-07	-34.6	-27.0	-7.6	Ch 64, 5320MHz. Board horizontal.	5350.000			220.0	1.1			H-Horn	PK	3.33E-07	-34.8	-27.0	-7.8	Ch 64, 5320MHz. Board vertical.
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Board horizontal.</td></tr><tr><td>21034.930</td><td></td><td></td><td>88.0</td><td>1.0</td><td></td><td></td><td>H-High Horr</td><td>PK</td><td>1.28E-07</td><td>-38.9</td><td>-27.0</td><td>-11.9</td><td>Ch 52, 5260MHz. Board on its side.</td></tr><tr><td>20715.200</td><td></td><td></td><td>81.0</td><td>1.1</td><td></td><td></td><td>H-High Horr</td><td>PK</td><td>1.19E-07</td><td>-39.2</td><td>-27.0</td><td>-12.2</td><td>Ch 36, 5180MHz. Board on its side.</td></tr><tr><td>20715.330</td><td></td><td></td><td>238.0</td><td>1.2</td><td></td><td></td><td>V-High Horr</td><td>PK</td><td>1.04E-07</td><td>-39.8</td><td>-27.0</td><td>-12.8</td><td>Ch 36, 5180MHz. Board horizontal.</td></tr><tr><td>20954.870</td><td></td><td></td><td>33.0</td><td>1.2</td><td></td><td></td><td>V-High Horr</td><td>PK</td><td>1.02E-07</td><td>-39.9</td><td>-27.0</td><td>-12.9</td><td>Ch 48, 5240MHz. Board horizontal.</td></tr><tr><td>21275.070</td><td></td><td></td><td>50.0</td><td>1.2</td><td></td><td></td><td>V-High Horr</td><td>PK</td><td>8.46E-08</td><td>-40.7</td><td>-27.0</td><td>-13.7</td><td>Ch 64, 5320MHz. Board horizontal.</td></tr><tr><td>21994.870</td><td></td><td></td><td>286.0</td><td>1.1</td><td></td><td></td><td>H-High Horr</td><td>PK</td><td>6.41E-08</td><td>-41.9</td><td>-27.0</td><td>-14.9</td><td>Ch 100, 5500MHz. Board on its side.</td></tr><tr><td>21274.600</td><td></td><td></td><td>4.0</td><td>1.1</td><td></td><td></td><td>V-High Horr</td><td>PK</td><td>6.41E-08</td><td>-41.9</td><td>-27.0</td><td>-14.9</td><td>Ch 64, 5320MHz. Board vertical.</td></tr><tr><td>21279.600</td><td></td><td></td><td>283.0</td><td>1.2</td><td></td><td></td><td>H-High Horr</td><td>PK</td><td>5.21E-08</td><td>-42.8</td><td>-27.0</td><td>-15.8</td><td>Ch 64, 5320MHz. Board horizontal.</td></tr><tr><td>22330.730</td><td></td><td></td><td>360.0</td><td>1.2</td><td></td><td></td><td>H-High Horr</td><td>PK</td><td>3.69E-08</td><td>-44.3</td><td>-27.0</td><td>-17.3</td><td>Ch 116, 5580MHz. Board on its side.</td></tr><tr><td>21270.930</td><td></td><td></td><td>91.0</td><td>1.0</td><td></td><td></td><td>H-High Horr</td><td>PK</td><td>3.44E-08</td><td>-44.6</td><td>-27.0</td><td>-17.6</td><td>Ch 64, 5320MHz. Board vertical.</td></tr><tr><td>21991.730</td><td></td><td></td><td>180.0</td><td>1.2</td><td></td><td></td><td>V-High Horr</td><td>PK</td><td>3.37E-08</td><td>-44.7</td><td>-27.0</td><td>-17.7</td><td>Ch 100, 5500MHz. Board horizontal.</td></tr><tr><td>21281.670</td><td></td><td></td><td>-1.0</td><td>1.0</td><td></td><td></td><td>V-High Horr</td><td>PK</td><td>3.14E-08</td><td>-45.0</td><td>-27.0</td><td>-18.0</td><td>Ch 64, 5320MHz. Board on its side.</td></tr><tr><td>22312.530</td><td></td><td></td><td>0.0</td><td>1.0</td><td></td><td></td><td>V-High Horr</td><td>PK</td><td>3.00E-08</td><td>-45.2</td><td>-27.0</td><td>-18.2</td><td>Ch 116, 5580MHz. Board horizontal.</td></tr></tbody></table>						Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments	21275.000			300.0	1.1			H-High Horr	PK	1.85E-07	-37.3	-27.0	-10.3	Ch 64, 5320MHz. Board on its side.	20954.930			88.0	1.1			H-High Horr	PK	1.81E-07	-37.4	-27.0	-10.4	Ch 48, 5240MHz. Board on its side.	21034.930			47.0	1.2			V-High Horr	PK	1.44E-07	-38.4	-27.0	-11.4	Ch 52, 5260MHz. Board horizontal.	21034.930			88.0	1.0			H-High Horr	PK	1.28E-07	-38.9	-27.0	-11.9	Ch 52, 5260MHz. Board on its side.	20715.200			81.0	1.1			H-High Horr	PK	1.19E-07	-39.2	-27.0	-12.2	Ch 36, 5180MHz. Board on its side.	20715.330			238.0	1.2			V-High Horr	PK	1.04E-07	-39.8	-27.0	-12.8	Ch 36, 5180MHz. Board horizontal.	20954.870			33.0	1.2			V-High Horr	PK	1.02E-07	-39.9	-27.0	-12.9	Ch 48, 5240MHz. Board horizontal.	21275.070			50.0	1.2			V-High Horr	PK	8.46E-08	-40.7	-27.0	-13.7	Ch 64, 5320MHz. Board horizontal.	21994.870			286.0	1.1			H-High Horr	PK	6.41E-08	-41.9	-27.0	-14.9	Ch 100, 5500MHz. Board on its side.	21274.600			4.0	1.1			V-High Horr	PK	6.41E-08	-41.9	-27.0	-14.9	Ch 64, 5320MHz. Board vertical.	21279.600			283.0	1.2			H-High Horr	PK	5.21E-08	-42.8	-27.0	-15.8	Ch 64, 5320MHz. Board horizontal.	22330.730			360.0	1.2			H-High Horr	PK	3.69E-08	-44.3	-27.0	-17.3	Ch 116, 5580MHz. Board on its side.	21270.930			91.0	1.0			H-High Horr	PK	3.44E-08	-44.6	-27.0	-17.6	Ch 64, 5320MHz. Board vertical.	21991.730			180.0	1.2			V-High Horr	PK	3.37E-08	-44.7	-27.0	-17.7	Ch 100, 5500MHz. Board horizontal.	21281.670			-1.0	1.0			V-High Horr	PK	3.14E-08	-45.0	-27.0	-18.0	Ch 64, 5320MHz. Board on its side.	22312.530			0.0	1.0			V-High Horr	PK	3.00E-08	-45.2	-27.0	-18.2	Ch 116, 5580MHz. 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Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments																																																																																																																																																																																																																																						
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21994.870			286.0	1.1			H-High Horr	PK	6.41E-08	-41.9	-27.0	-14.9	Ch 100, 5500MHz. Board on its side.																																																																																																																																																																																																																																						
21274.600			4.0	1.1			V-High Horr	PK	6.41E-08	-41.9	-27.0	-14.9	Ch 64, 5320MHz. Board vertical.																																																																																																																																																																																																																																						
21279.600			283.0	1.2			H-High Horr	PK	5.21E-08	-42.8	-27.0	-15.8	Ch 64, 5320MHz. Board horizontal.																																																																																																																																																																																																																																						
22330.730			360.0	1.2			H-High Horr	PK	3.69E-08	-44.3	-27.0	-17.3	Ch 116, 5580MHz. Board on its side.																																																																																																																																																																																																																																						
21270.930			91.0	1.0			H-High Horr	PK	3.44E-08	-44.6	-27.0	-17.6	Ch 64, 5320MHz. Board vertical.																																																																																																																																																																																																																																						
21991.730			180.0	1.2			V-High Horr	PK	3.37E-08	-44.7	-27.0	-17.7	Ch 100, 5500MHz. Board horizontal.																																																																																																																																																																																																																																						
21281.670			-1.0	1.0			V-High Horr	PK	3.14E-08	-45.0	-27.0	-18.0	Ch 64, 5320MHz. Board on its side.																																																																																																																																																																																																																																						
22312.530			0.0	1.0			V-High Horr	PK	3.00E-08	-45.2	-27.0	-18.2	Ch 116, 5580MHz. Board horizontal.																																																																																																																																																																																																																																						

NORTHWEST		SPURIOUS RADIATED EMISSIONS		PSA 2008.07.21 EMI 2008.7.3									
EMC													
EUT: Summit FS848 Slave Module		Work Order: FOCU0053											
Serial Number: 2		Date: 05/08/09											
Customer: Focus Enhancements		Temperature: 20.0°C											
Attendees: Ponnappa Pasura		Humidity: 44%											
Project: None		Barometric Pres.: 1016.5mb											
Tested by: Dan Haas		Power: 120VAC/60Hz		Job Site: EV01									
TEST SPECIFICATIONS		Test Method											
FCC 15.209:2009		ANSI C63.4:2003											
TEST PARAMETERS													
Antenna Height(s) (m)		1 - 4		Test Distance (m)									
				1									
COMMENTS													
12inch cable w/o ferrites. See notes for channel and board orientation.													
EUT OPERATING MODES													
Transmitting, 6Mbps													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		11											
Configuration #		1											
Results		Pass		Signature 									
													
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
21279.470	31.5	8.0	300.0	1.1	3.0	0.0	I-High Horr	AV	0.0	39.5	54.0	-14.5	Ch 64, 5320MHz. Board on its side.
20959.330	31.1	7.5	88.0	1.1	3.0	0.0	I-High Horr	AV	0.0	38.6	54.0	-15.4	Ch 48, 5240MHz. Board on its side.
20719.400	31.1	7.4	238.0	1.2	3.0	0.0	I-High Horr	AV	0.0	38.5	54.0	-15.5	Ch 36, 5180MHz. Board horizontal.
20719.470	31.0	7.4	81.0	1.1	3.0	0.0	I-High Horr	AV	0.0	38.4	54.0	-15.6	Ch 36, 5180MHz. Board on its side.
21043.130	30.8	7.6	88.0	1.0	3.0	0.0	I-High Horr	AV	0.0	38.4	54.0	-15.6	Ch 52, 5260MHz. Board on its side.
21039.470	30.7	7.5	47.0	1.2	3.0	0.0	I-High Horr	AV	0.0	38.2	54.0	-15.8	Ch 52, 5260MHz. Board horizontal.
21279.270	30.1	8.0	50.0	1.2	3.0	0.0	I-High Horr	AV	0.0	38.1	54.0	-15.9	Ch 64, 5320MHz. Board horizontal.
21275.000	49.9	8.0	300.0	1.1	3.0	0.0	I-High Horr	PK	0.0	57.9	74.0	-16.1	Ch 64, 5320MHz. Board on its side.
20959.530	30.4	7.5	33.0	1.2	3.0	0.0	I-High Horr	AV	0.0	37.9	54.0	-16.1	Ch 48, 5240MHz. Board horizontal.
21279.270	29.9	8.0	4.0	1.1	3.0	0.0	I-High Horr	AV	0.0	37.9	54.0	-16.1	Ch 64, 5320MHz. Board vertical.
21999.270	28.4	9.4	286.0	1.1	3.0	0.0	I-High Horr	AV	0.0	37.8	54.0	-16.2	Ch 100, 5500MHz. Board on its side.
20954.930	50.3	7.5	88.0	1.1	3.0	0.0	I-High Horr	PK	0.0	57.8	74.0	-16.2	Ch 48, 5240MHz. Board on its side.
21279.270	29.4	8.0	283.0	1.2	3.0	0.0	I-High Horr	AV	0.0	37.4	54.0	-16.6	Ch 64, 5320MHz. Board horizontal.
22005.600	27.6	9.4	180.0	1.2	3.0	0.0	I-High Horr	AV	0.0	37.0	54.0	-17.0	Ch 100, 5500MHz. Board horizontal.
21034.930	49.3	7.5	47.0	1.2	3.0	0.0	I-High Horr	PK	0.0	56.8	74.0	-17.2	Ch 52, 5260MHz. Board horizontal.
21287.000	28.6	8.0	-1.0	1.0	3.0	0.0	I-High Horr	AV	0.0	36.6	54.0	-17.4	Ch 64, 5320MHz. Board on its side.
21289.000	28.6	8.0	91.0	1.0	3.0	0.0	I-High Horr	AV	0.0	36.6	54.0	-17.4	Ch 64, 5320MHz. Board vertical.
22315.330	27.1	9.3	360.0	1.2	3.0	0.0	I-High Horr	AV	0.0	36.4	54.0	-17.6	Ch 116, 5580MHz. Board on its side.
21034.930	48.8	7.5	88.0	1.0	3.0	0.0	I-High Horr	PK	0.0	56.3	74.0	-17.7	Ch 52, 5260MHz. Board on its side.
22308.800	26.9	9.3	0.0	1.0	3.0	0.0	I-High Horr	AV	0.0	36.2	54.0	-17.8	Ch 116, 5580MHz. Board horizontal.





RADIATED EMISSIONS

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

Transmitting channel 165, 5825 MHz
Transmitting channel 157, 5785 MHz
Transmitting channel 149, 5745 MHz
Transmitting channel 140, 5700 MHz
Transmitting channel 116, 5580 MHz
Transmitting channel 100, 5500 MHz
Transmitting channel 64, 5320 MHz
Transmitting channel 52, 5260 MHz
Transmitting channel 48, 5240 MHz
Transmitting channel 36, 5180 MHz

POWER SETTINGS INVESTIGATED

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency	30MHz	Stop Frequency	1000MHz
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SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation
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TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAY	12/11/2008	13
EV01 Cables		Bilog Cables	EVA	5/19/2008	13
Pre-Amplifier	Miteq	AM-1616-1000	AOL	5/19/2008	13
Antenna, Biconilog	EMCO	3141	AXE	1/15/2008	24

MEASUREMENT BANDWIDTHS

	Frequency Range	Peak Data	Quasi-Peak Data	Average Data
	(MHz)	(kHz)	(kHz)	(kHz)
	0.01 - 0.15	1.0	0.2	0.2
	0.15 - 30.0	10.0	9.0	9.0
	30.0 - 1000	100.0	120.0	120.0
	Above 1000	1000.0	N/A	1000.0
Measurements were made using the bandwidths and detectors specified. No video filter was used.				

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.

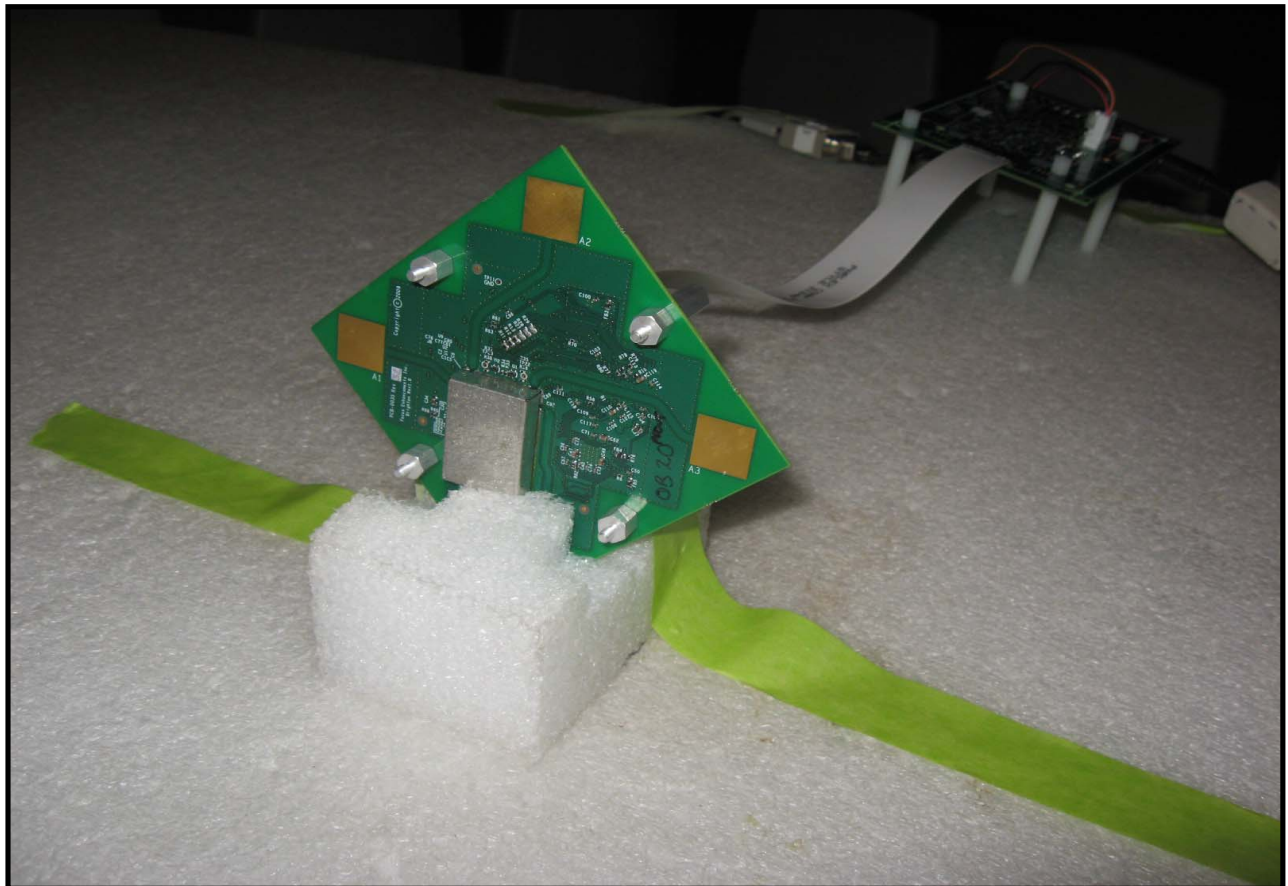
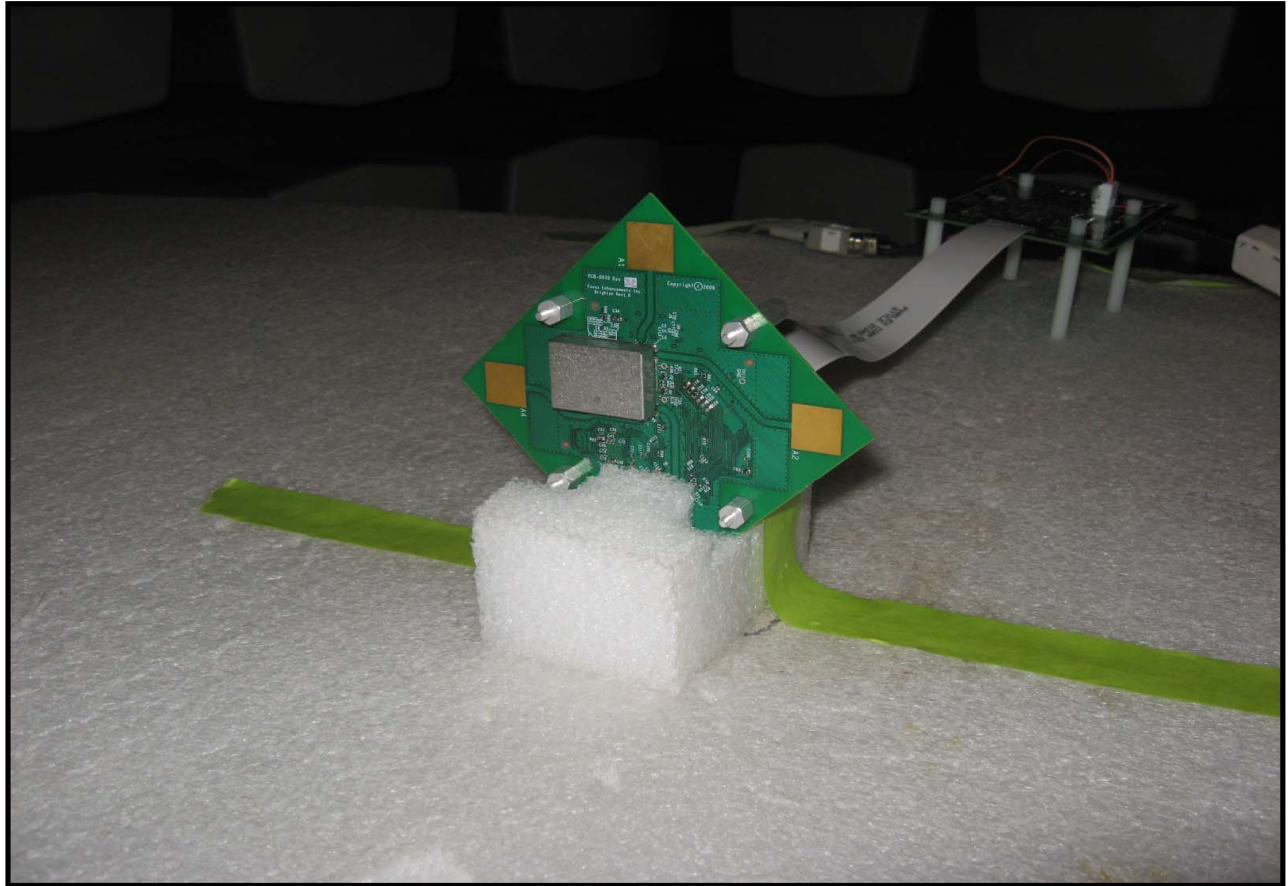
TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, a final radiated emissions test was performed. The frequency range investigated (scanned), is also noted in this report. Radiated emissions measurements were made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This requires the use of a turntable and an antenna positioner. The preferred method of a continuous azimuth search is utilized for frequency scans of the EUT field strength with both polarities of the measuring antenna. A calibrated, linearly polarized antenna was positioned at the specified distance from the periphery of the EUT.

Tests were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. Though specified in the report, the measurement distance shall be 3 meters or 10 meters. At any measurement distance, the antenna height was varied from 1 meter to 4 meters. These height scans apply for both horizontal and vertical polarization, except that for vertical polarization the minimum height of the center of the antenna shall be increased so that the lowest point of the bottom of the antenna clears the ground surface by at least 25 cm.

NORTHWEST		PSA 2008.07.21																																																																																																																																																																																																																																															
EMI 2008.7.3																																																																																																																																																																																																																																																	
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(dB)</th><th>Comments</th></tr></thead><tbody><tr><td>320.001</td><td>44.4</td><td>1.3</td><td>94.0</td><td>1.0</td><td>3.0</td><td>0.0</td><td>H-Bilog</td><td>QP</td><td>0.0</td><td>45.7</td><td>46.0</td><td>-0.3</td><td>Board vertical.</td></tr><tr><td>320.003</td><td>44.0</td><td>1.3</td><td>85.0</td><td>1.0</td><td>3.0</td><td>0.0</td><td>H-Bilog</td><td>QP</td><td>0.0</td><td>45.3</td><td>46.0</td><td>-0.7</td><td>Board horizontal.</td></tr><tr><td>320.005</td><td>43.1</td><td>1.3</td><td>100.0</td><td>1.0</td><td>3.0</td><td>0.0</td><td>H-Bilog</td><td>QP</td><td>0.0</td><td>44.4</td><td>46.0</td><td>-1.6</td><td>Board on its side.</td></tr><tr><td>320.003</td><td>36.7</td><td>1.3</td><td>166.0</td><td>1.6</td><td>3.0</td><td>0.0</td><td>V-Bilog</td><td>QP</td><td>0.0</td><td>38.0</td><td>46.0</td><td>-8.0</td><td>Board horizontal.</td></tr><tr><td>240.000</td><td>37.9</td><td>-1.2</td><td>206.0</td><td>1.4</td><td>3.0</td><td>0.0</td><td>H-Bilog</td><td>QP</td><td>0.0</td><td>36.7</td><td>46.0</td><td>-9.3</td><td>Board on its side.</td></tr><tr><td>320.003</td><td>35.4</td><td>1.3</td><td>172.0</td><td>1.0</td><td>3.0</td><td>0.0</td><td>V-Bilog</td><td>QP</td><td>0.0</td><td>36.7</td><td>46.0</td><td>-9.3</td><td>Board vertical.</td></tr><tr><td>240.003</td><td>37.3</td><td>-1.2</td><td>348.0</td><td>1.0</td><td>3.0</td><td>0.0</td><td>V-Bilog</td><td>QP</td><td>0.0</td><td>36.1</td><td>46.0</td><td>-9.9</td><td>Board on its side.</td></tr><tr><td>320.000</td><td>34.5</td><td>1.3</td><td>175.0</td><td>1.0</td><td>3.0</td><td>0.0</td><td>V-Bilog</td><td>QP</td><td>0.0</td><td>35.8</td><td>46.0</td><td>-10.2</td><td>Board on its side.</td></tr><tr><td>400.002</td><td>31.2</td><td>3.9</td><td>173.0</td><td>1.0</td><td>3.0</td><td>0.0</td><td>V-Bilog</td><td>QP</td><td>0.0</td><td>35.1</td><td>46.0</td><td>-10.9</td><td>Board on its side.</td></tr><tr><td>400.001</td><td>30.1</td><td>3.9</td><td>252.0</td><td>1.0</td><td>3.0</td><td>0.0</td><td>H-Bilog</td><td>QP</td><td>0.0</td><td>34.0</td><td>46.0</td><td>-12.0</td><td>Board on its side.</td></tr><tr><td>479.999</td><td>25.9</td><td>5.8</td><td>144.0</td><td>1.0</td><td>3.0</td><td>0.0</td><td>V-Bilog</td><td>QP</td><td>0.0</td><td>31.7</td><td>46.0</td><td>-14.3</td><td>Board on its side.</td></tr><tr><td>160.005</td><td>33.4</td><td>-4.9</td><td>21.0</td><td>1.0</td><td>3.0</td><td>0.0</td><td>V-Bilog</td><td>QP</td><td>0.0</td><td>28.5</td><td>43.0</td><td>-14.5</td><td>Board on its side.</td></tr><tr><td>800.001</td><td>20.4</td><td>10.8</td><td>219.0</td><td>2.0</td><td>3.0</td><td>0.0</td><td>H-Bilog</td><td>QP</td><td>0.0</td><td>31.2</td><td>46.0</td><td>-14.8</td><td>Board on its side.</td></tr><tr><td>800.006</td><td>20.0</td><td>10.8</td><td>61.0</td><td>1.0</td><td>3.0</td><td>0.0</td><td>V-Bilog</td><td>QP</td><td>0.0</td><td>30.8</td><td>46.0</td><td>-15.2</td><td>Board on its side.</td></tr><tr><td>160.007</td><td>31.6</td><td>-4.9</td><td>115.0</td><td>2.0</td><td>3.0</td><td>0.0</td><td>H-Bilog</td><td>QP</td><td>0.0</td><td>26.7</td><td>43.0</td><td>-16.3</td><td>Board on its side.</td></tr><tr><td>480.004</td><td>20.7</td><td>5.8</td><td>28.0</td><td>2.3</td><td>3.0</td><td>0.0</td><td>H-Bilog</td><td>QP</td><td>0.0</td><td>26.5</td><td>46.0</td><td>-19.5</td><td>Board on its side.</td></tr></tbody></table>				Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments	320.001	44.4	1.3	94.0	1.0	3.0	0.0	H-Bilog	QP	0.0	45.7	46.0	-0.3	Board vertical.	320.003	44.0	1.3	85.0	1.0	3.0	0.0	H-Bilog	QP	0.0	45.3	46.0	-0.7	Board horizontal.	320.005	43.1	1.3	100.0	1.0	3.0	0.0	H-Bilog	QP	0.0	44.4	46.0	-1.6	Board on its side.	320.003	36.7	1.3	166.0	1.6	3.0	0.0	V-Bilog	QP	0.0	38.0	46.0	-8.0	Board horizontal.	240.000	37.9	-1.2	206.0	1.4	3.0	0.0	H-Bilog	QP	0.0	36.7	46.0	-9.3	Board on its side.	320.003	35.4	1.3	172.0	1.0	3.0	0.0	V-Bilog	QP	0.0	36.7	46.0	-9.3	Board vertical.	240.003	37.3	-1.2	348.0	1.0	3.0	0.0	V-Bilog	QP	0.0	36.1	46.0	-9.9	Board on its side.	320.000	34.5	1.3	175.0	1.0	3.0	0.0	V-Bilog	QP	0.0	35.8	46.0	-10.2	Board on its side.	400.002	31.2	3.9	173.0	1.0	3.0	0.0	V-Bilog	QP	0.0	35.1	46.0	-10.9	Board on its side.	400.001	30.1	3.9	252.0	1.0	3.0	0.0	H-Bilog	QP	0.0	34.0	46.0	-12.0	Board on its side.	479.999	25.9	5.8	144.0	1.0	3.0	0.0	V-Bilog	QP	0.0	31.7	46.0	-14.3	Board on its side.	160.005	33.4	-4.9	21.0	1.0	3.0	0.0	V-Bilog	QP	0.0	28.5	43.0	-14.5	Board on its side.	800.001	20.4	10.8	219.0	2.0	3.0	0.0	H-Bilog	QP	0.0	31.2	46.0	-14.8	Board on its side.	800.006	20.0	10.8	61.0	1.0	3.0	0.0	V-Bilog	QP	0.0	30.8	46.0	-15.2	Board on its side.	160.007	31.6	-4.9	115.0	2.0	3.0	0.0	H-Bilog	QP	0.0	26.7	43.0	-16.3	Board on its side.	480.004	20.7	5.8	28.0	2.3	3.0	0.0	H-Bilog	QP	0.0	26.5	46.0	-19.5	Board on its side.
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Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

Transmitting, +8dBm, CH140, 5700MHz
 Transmitting, +8dBm, CH116, 5580MHz
 Transmitting, +8dBm, CH100, 5500MHz
 Transmitting, +8dBm, CH64, 5320MHz
 Transmitting, +8dBm, CH52, 5260MHz
 Transmitting, +8dBm, CH48, 5240MHz
 Transmitting, +8dBm, CH36, 5180MHz

POWER SETTINGS INVESTIGATED

3.3VDC

CONFIGURATIONS INVESTIGATED

FOCU0053 - 3

SAMPLE CALCULATIONS

Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Receiver	Rohde & Schwarz	ESCI	ARH	8/28/2008	24 mo
Attenuator	Coaxicom	66702 2910-20	ATO	6/30/2008	13 mo
High Pass Filter	T.T.E.	7766	HFG	2/23/2009	13 mo
EV07 Cables		Conducted Cables	EVG	5/2/2008	13 mo
LISN	Solar	9252-50-R-24-BNC	LIP	2/4/2009	13 mo
LISN	Solar	9252-50-R-24-BNC	LIR	2/4/2009	13 mo

MEASUREMENT BANDWIDTHS

Frequency Range	Peak Data	Quasi-Peak Data	Average Data
(MHz)	(kHz)	(kHz)	(kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0


Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

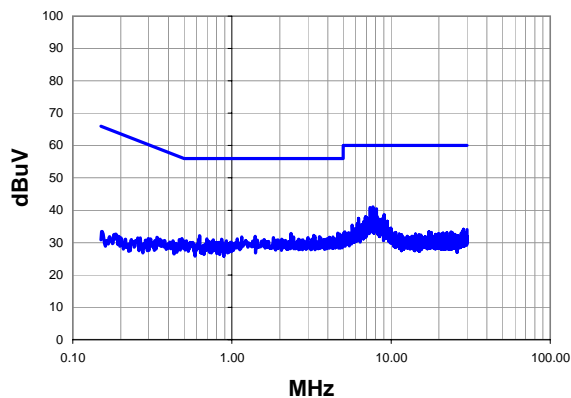
Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4-2. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

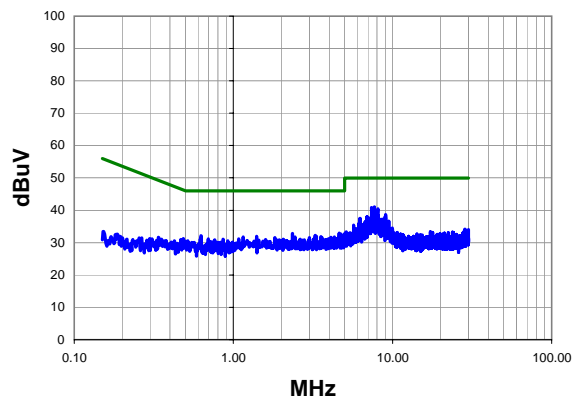
Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm.

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb	Tested by: Dan Haas			
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH36, 5180MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	1	Line:	High Line	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

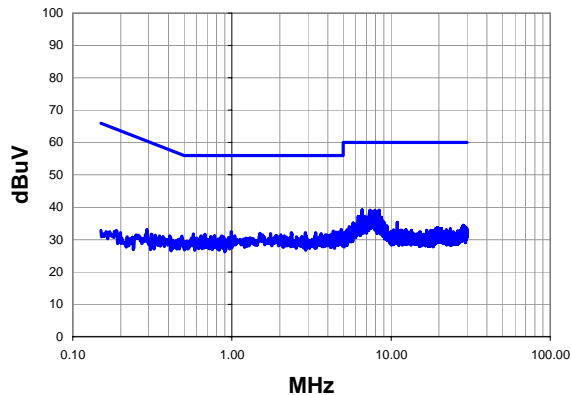
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.710	20.4	20.7	41.1	60.0	-18.9
7.390	20.2	20.7	40.9	60.0	-19.1
8.080	19.8	20.7	40.5	60.0	-19.5
7.840	19.1	20.7	39.8	60.0	-20.2
9.060	18.0	20.7	38.7	60.0	-21.3
7.950	17.6	20.7	38.3	60.0	-21.7
7.630	17.6	20.7	38.3	60.0	-21.7
7.590	17.6	20.7	38.3	60.0	-21.7
8.990	17.5	20.7	38.2	60.0	-21.8
6.910	17.3	20.7	38.0	60.0	-22.0
7.760	17.2	20.7	37.9	60.0	-22.1
7.010	17.1	20.7	37.8	60.0	-22.2
6.890	17.1	20.7	37.8	60.0	-22.2
7.520	16.9	20.7	37.6	60.0	-22.4
6.250	16.8	20.7	37.5	60.0	-22.5
8.840	16.6	20.7	37.3	60.0	-22.7
8.260	16.6	20.7	37.3	60.0	-22.7
8.480	16.5	20.7	37.2	60.0	-22.8
8.670	16.5	20.7	37.2	60.0	-22.8
7.210	16.5	20.7	37.2	60.0	-22.8

Peak Data - vs - Average Limit

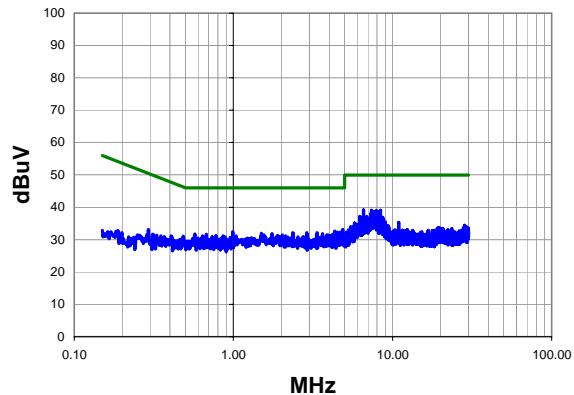
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.710	20.4	20.7	41.1	50.0	-8.9
7.390	20.2	20.7	40.9	50.0	-9.1
8.080	19.8	20.7	40.5	50.0	-9.5
7.840	19.1	20.7	39.8	50.0	-10.2
9.060	18.0	20.7	38.7	50.0	-11.3
7.950	17.6	20.7	38.3	50.0	-11.7
7.630	17.6	20.7	38.3	50.0	-11.7
7.590	17.6	20.7	38.3	50.0	-11.7
8.990	17.5	20.7	38.2	50.0	-11.8
6.910	17.3	20.7	38.0	50.0	-12.0
7.760	17.2	20.7	37.9	50.0	-12.1
7.010	17.1	20.7	37.8	50.0	-12.2
6.890	17.1	20.7	37.8	50.0	-12.2
7.520	16.9	20.7	37.6	50.0	-12.4
6.250	16.8	20.7	37.5	50.0	-12.5
8.840	16.6	20.7	37.3	50.0	-12.7
8.260	16.6	20.7	37.3	50.0	-12.7
8.480	16.5	20.7	37.2	50.0	-12.8
8.670	16.5	20.7	37.2	50.0	-12.8
7.210	16.5	20.7	37.2	50.0	-12.8

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb				
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH36, 5180MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	2	Line:	Neutral	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

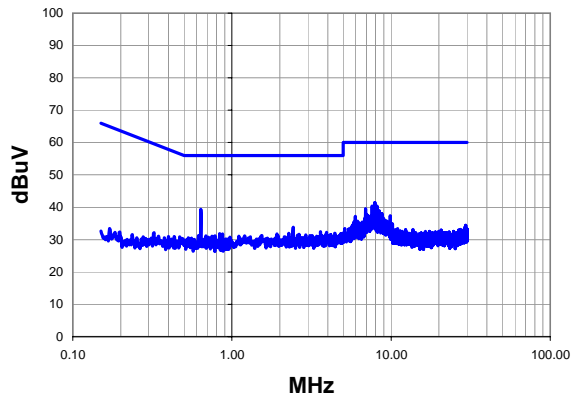
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
6.570	18.5	20.7	39.2	60.0	-20.8
7.900	18.4	20.7	39.1	60.0	-20.9
8.400	18.4	20.7	39.1	60.0	-20.9
7.380	18.4	20.7	39.1	60.0	-20.9
7.420	18.1	20.7	38.8	60.0	-21.2
8.080	18.0	20.7	38.7	60.0	-21.3
7.700	18.0	20.7	38.7	60.0	-21.3
7.560	17.9	20.7	38.6	60.0	-21.4
8.140	17.7	20.7	38.4	60.0	-21.6
8.030	17.6	20.7	38.3	60.0	-21.7
7.300	17.5	20.7	38.2	60.0	-21.8
7.610	16.9	20.7	37.6	60.0	-22.4
7.490	16.8	20.7	37.5	60.0	-22.5
6.870	16.5	20.7	37.2	60.0	-22.8
6.210	16.5	20.7	37.2	60.0	-22.8
7.250	16.4	20.7	37.1	60.0	-22.9
6.280	16.4	20.7	37.1	60.0	-22.9
4.864	12.4	20.6	33.0	56.0	-23.0
8.680	16.2	20.7	36.9	60.0	-23.1
6.660	16.0	20.7	36.7	60.0	-23.3

Peak Data - vs - Average Limit

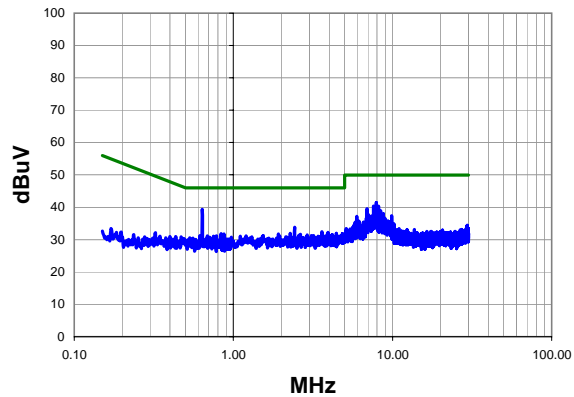
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
6.570	18.5	20.7	39.2	50.0	-10.8
7.900	18.4	20.7	39.1	50.0	-10.9
8.400	18.4	20.7	39.1	50.0	-10.9
7.380	18.4	20.7	39.1	50.0	-10.9
7.420	18.1	20.7	38.8	50.0	-11.2
8.080	18.0	20.7	38.7	50.0	-11.3
7.700	18.0	20.7	38.7	50.0	-11.3
7.560	17.9	20.7	38.6	50.0	-11.4
8.140	17.7	20.7	38.4	50.0	-11.6
8.030	17.6	20.7	38.3	50.0	-11.7
7.300	17.5	20.7	38.2	50.0	-11.8
7.610	16.9	20.7	37.6	50.0	-12.4
7.490	16.8	20.7	37.5	50.0	-12.5
6.870	16.5	20.7	37.2	50.0	-12.8
6.210	16.5	20.7	37.2	50.0	-12.8
7.250	16.4	20.7	37.1	50.0	-12.9
6.280	16.4	20.7	37.1	50.0	-12.9
4.864	12.4	20.6	33.0	46.0	-13.0
8.680	16.2	20.7	36.9	50.0	-13.1
6.660	16.0	20.7	36.7	50.0	-13.3

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb	Tested by: Dan Haas			
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH48, 5240MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	3	Line:	High Line	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

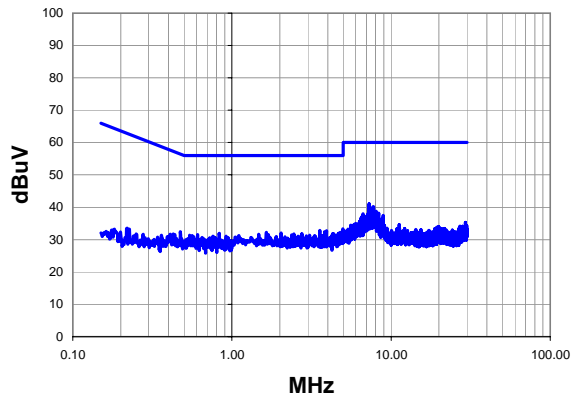
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.638	18.6	20.8	39.4	56.0	-16.6
7.910	20.7	20.7	41.4	60.0	-18.6
8.180	19.7	20.7	40.4	60.0	-19.6
7.610	19.7	20.7	40.4	60.0	-19.6
7.940	19.3	20.7	40.0	60.0	-20.0
6.900	18.9	20.7	39.6	60.0	-20.4
8.000	18.7	20.7	39.4	60.0	-20.6
7.730	18.7	20.7	39.4	60.0	-20.6
8.410	18.3	20.7	39.0	60.0	-21.0
8.230	17.9	20.7	38.6	60.0	-21.4
7.790	17.8	20.7	38.5	60.0	-21.5
7.850	17.7	20.7	38.4	60.0	-21.6
8.750	17.3	20.7	38.0	60.0	-22.0
7.020	17.2	20.7	37.9	60.0	-22.1
2.424	13.2	20.6	33.8	56.0	-22.2
7.120	16.8	20.7	37.5	60.0	-22.5
9.900	16.7	20.7	37.4	60.0	-22.6
7.500	16.7	20.7	37.4	60.0	-22.6
7.540	16.5	20.7	37.2	60.0	-22.8
7.330	16.5	20.7	37.2	60.0	-22.8

Peak Data - vs - Average Limit

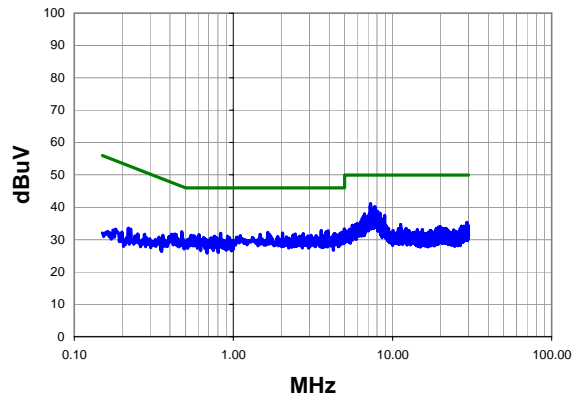
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.638	18.6	20.8	39.4	46.0	-6.6
7.910	20.7	20.7	41.4	50.0	-8.6
8.180	19.7	20.7	40.4	50.0	-9.6
7.610	19.7	20.7	40.4	50.0	-9.6
7.940	19.3	20.7	40.0	50.0	-10.0
6.900	18.9	20.7	39.6	50.0	-10.4
8.000	18.7	20.7	39.4	50.0	-10.6
7.730	18.7	20.7	39.4	50.0	-10.6
8.410	18.3	20.7	39.0	50.0	-11.0
8.230	17.9	20.7	38.6	50.0	-11.4
7.790	17.8	20.7	38.5	50.0	-11.5
7.850	17.7	20.7	38.4	50.0	-11.6
8.750	17.3	20.7	38.0	50.0	-12.0
7.020	17.2	20.7	37.9	50.0	-12.1
2.424	13.2	20.6	33.8	46.0	-12.2
7.120	16.8	20.7	37.5	50.0	-12.5
9.900	16.7	20.7	37.4	50.0	-12.6
7.500	16.7	20.7	37.4	50.0	-12.6
7.540	16.5	20.7	37.2	50.0	-12.8
7.330	16.5	20.7	37.2	50.0	-12.8

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb	Tested by: Dan Haas			
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH48, 5240MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	4	Line:	Neutral	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

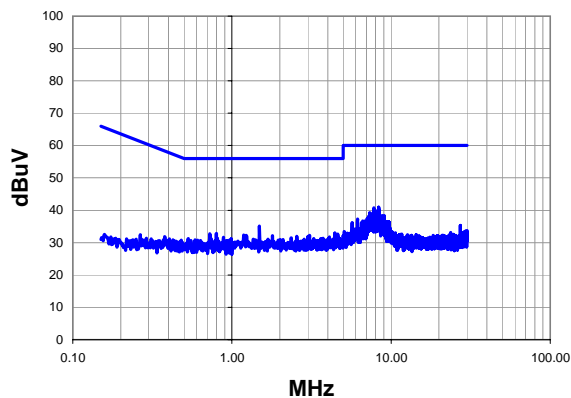
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.270	20.4	20.7	41.1	60.0	-18.9
7.750	19.5	20.7	40.2	60.0	-19.8
7.670	19.4	20.7	40.1	60.0	-19.9
7.440	18.3	20.7	39.0	60.0	-21.0
8.040	18.1	20.7	38.8	60.0	-21.2
7.900	18.0	20.7	38.7	60.0	-21.3
7.630	18.0	20.7	38.7	60.0	-21.3
7.610	18.0	20.7	38.7	60.0	-21.3
7.820	17.6	20.7	38.3	60.0	-21.7
7.300	17.6	20.7	38.3	60.0	-21.7
8.350	17.5	20.7	38.2	60.0	-21.8
7.530	17.5	20.7	38.2	60.0	-21.8
7.390	17.4	20.7	38.1	60.0	-21.9
7.150	17.3	20.7	38.0	60.0	-22.0
6.650	17.3	20.7	38.0	60.0	-22.0
8.910	16.8	20.7	37.5	60.0	-22.5
4.968	12.7	20.7	33.4	56.0	-22.6
6.960	16.5	20.7	37.2	60.0	-22.8
6.540	16.3	20.7	37.0	60.0	-23.0
3.560	12.2	20.6	32.8	56.0	-23.2

Peak Data - vs - Average Limit

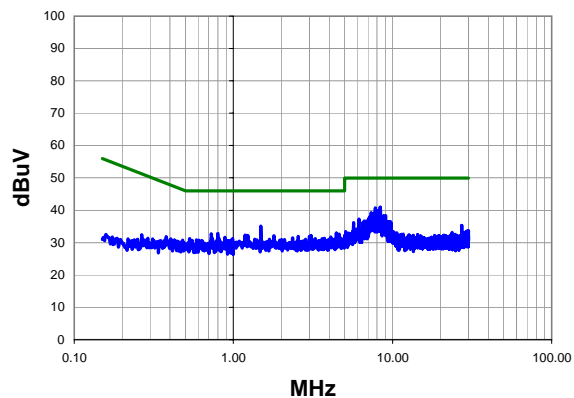
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.270	20.4	20.7	41.1	50.0	-8.9
7.750	19.5	20.7	40.2	50.0	-9.8
7.670	19.4	20.7	40.1	50.0	-9.9
7.440	18.3	20.7	39.0	50.0	-11.0
8.040	18.1	20.7	38.8	50.0	-11.2
7.900	18.0	20.7	38.7	50.0	-11.3
7.630	18.0	20.7	38.7	50.0	-11.3
7.610	18.0	20.7	38.7	50.0	-11.3
7.820	17.6	20.7	38.3	50.0	-11.7
7.300	17.6	20.7	38.3	50.0	-11.7
8.350	17.5	20.7	38.2	50.0	-11.8
7.530	17.5	20.7	38.2	50.0	-11.8
7.390	17.4	20.7	38.1	50.0	-11.9
7.150	17.3	20.7	38.0	50.0	-12.0
6.650	17.3	20.7	38.0	50.0	-12.0
8.910	16.8	20.7	37.5	50.0	-12.5
4.968	12.7	20.7	33.4	46.0	-12.6
6.960	16.5	20.7	37.2	50.0	-12.8
6.540	16.3	20.7	37.0	50.0	-13.0
3.560	12.2	20.6	32.8	46.0	-13.2

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb	Tested by: Dan Haas			
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH52, 5260MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	5	Line:	High Line	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

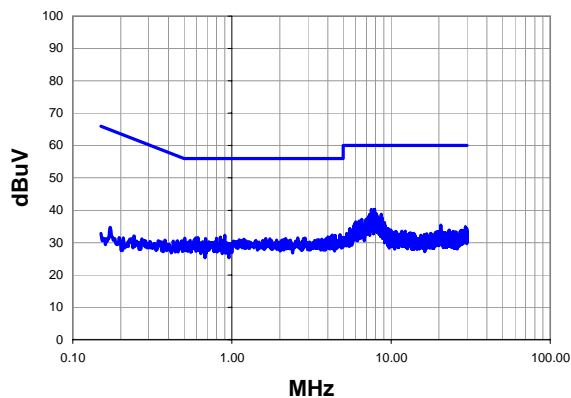
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.360	20.3	20.7	41.0	60.0	-19.0
7.790	20.1	20.7	40.8	60.0	-19.2
8.400	19.5	20.7	40.2	60.0	-19.8
7.890	19.4	20.7	40.1	60.0	-19.9
8.020	19.1	20.7	39.8	60.0	-20.2
7.360	18.6	20.7	39.3	60.0	-20.7
7.710	18.5	20.7	39.2	60.0	-20.8
1.488	14.5	20.6	35.1	56.0	-20.9
7.820	18.0	20.7	38.7	60.0	-21.3
9.030	17.7	20.7	38.4	60.0	-21.6
8.810	17.7	20.7	38.4	60.0	-21.6
8.430	17.7	20.7	38.4	60.0	-21.6
8.230	17.4	20.7	38.1	60.0	-21.9
7.620	17.4	20.7	38.1	60.0	-21.9
7.430	17.4	20.7	38.1	60.0	-21.9
7.210	17.3	20.7	38.0	60.0	-22.0
7.160	17.0	20.7	37.7	60.0	-22.3
7.320	16.9	20.7	37.6	60.0	-22.4
7.070	16.8	20.7	37.5	60.0	-22.5
8.490	16.6	20.7	37.3	60.0	-22.7

Peak Data - vs - Average Limit

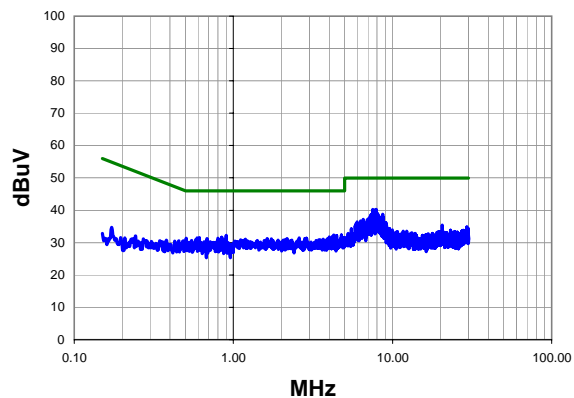
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.360	20.3	20.7	41.0	50.0	-9.0
7.790	20.1	20.7	40.8	50.0	-9.2
8.400	19.5	20.7	40.2	50.0	-9.8
7.890	19.4	20.7	40.1	50.0	-9.9
8.020	19.1	20.7	39.8	50.0	-10.2
7.360	18.6	20.7	39.3	50.0	-10.7
7.710	18.5	20.7	39.2	50.0	-10.8
1.488	14.5	20.6	35.1	46.0	-10.9
7.820	18.0	20.7	38.7	50.0	-11.3
9.030	17.7	20.7	38.4	50.0	-11.6
8.810	17.7	20.7	38.4	50.0	-11.6
8.430	17.7	20.7	38.4	50.0	-11.6
8.230	17.4	20.7	38.1	50.0	-11.9
7.620	17.4	20.7	38.1	50.0	-11.9
7.430	17.4	20.7	38.1	50.0	-11.9
7.210	17.3	20.7	38.0	50.0	-12.0
7.160	17.0	20.7	37.7	50.0	-12.3
7.320	16.9	20.7	37.6	50.0	-12.4
7.070	16.8	20.7	37.5	50.0	-12.5
8.490	16.6	20.7	37.3	50.0	-12.7

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb	Tested by: Dan Haas			
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH52, 5260MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	6	Line:	Neutral	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

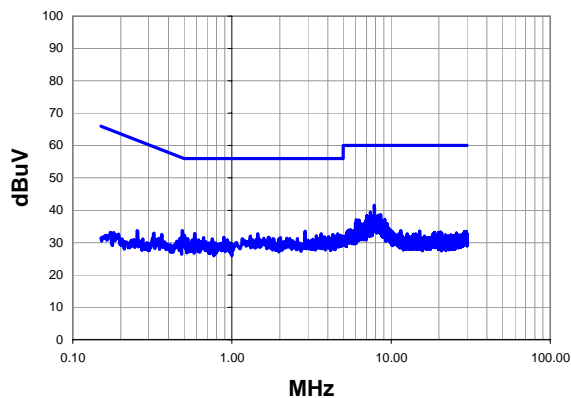
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.870	19.6	20.7	40.3	60.0	-19.7
7.530	19.6	20.7	40.3	60.0	-19.7
7.700	19.3	20.7	40.0	60.0	-20.0
8.010	18.4	20.7	39.1	60.0	-20.9
8.080	18.1	20.7	38.8	60.0	-21.2
8.660	18.1	20.7	38.8	60.0	-21.2
7.350	18.0	20.7	38.7	60.0	-21.3
7.620	17.9	20.7	38.6	60.0	-21.4
7.250	17.5	20.7	38.2	60.0	-21.8
7.790	17.4	20.7	38.1	60.0	-21.9
8.300	17.3	20.7	38.0	60.0	-22.0
8.750	17.0	20.7	37.7	60.0	-22.3
7.290	17.0	20.7	37.7	60.0	-22.3
7.560	16.9	20.7	37.6	60.0	-22.4
8.620	16.7	20.7	37.4	60.0	-22.6
8.470	16.6	20.7	37.3	60.0	-22.7
7.040	16.6	20.7	37.3	60.0	-22.7
7.830	16.5	20.7	37.2	60.0	-22.8
6.550	16.5	20.7	37.2	60.0	-22.8
6.940	16.4	20.7	37.1	60.0	-22.9

Peak Data - vs - Average Limit

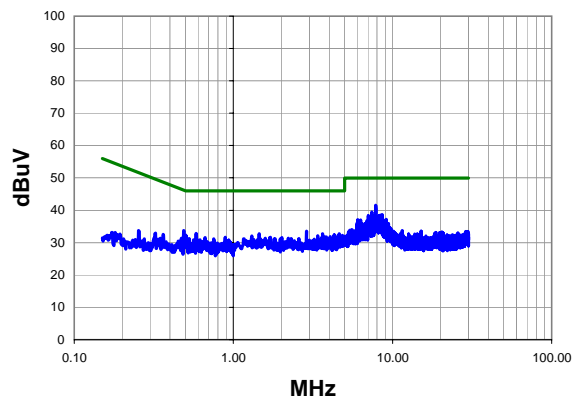
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.870	19.6	20.7	40.3	50.0	-9.7
7.530	19.6	20.7	40.3	50.0	-9.7
7.700	19.3	20.7	40.0	50.0	-10.0
8.010	18.4	20.7	39.1	50.0	-10.9
8.080	18.1	20.7	38.8	50.0	-11.2
8.660	18.1	20.7	38.8	50.0	-11.2
7.350	18.0	20.7	38.7	50.0	-11.3
7.620	17.9	20.7	38.6	50.0	-11.4
7.250	17.5	20.7	38.2	50.0	-11.8
7.790	17.4	20.7	38.1	50.0	-11.9
8.300	17.3	20.7	38.0	50.0	-12.0
8.750	17.0	20.7	37.7	50.0	-12.3
7.290	17.0	20.7	37.7	50.0	-12.3
7.560	16.9	20.7	37.6	50.0	-12.4
8.620	16.7	20.7	37.4	50.0	-12.6
8.470	16.6	20.7	37.3	50.0	-12.7
7.040	16.6	20.7	37.3	50.0	-12.7
7.830	16.5	20.7	37.2	50.0	-12.8
6.550	16.5	20.7	37.2	50.0	-12.8
6.940	16.4	20.7	37.1	50.0	-12.9

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb	Tested by: Dan Haas			
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH64, 5320MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	7	Line:	High Line	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

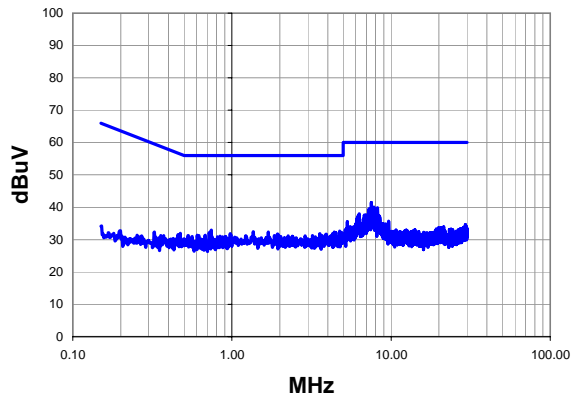
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.850	20.8	20.7	41.5	60.0	-18.5
7.420	18.8	20.7	39.5	60.0	-20.5
8.610	18.0	20.7	38.7	60.0	-21.3
8.380	17.8	20.7	38.5	60.0	-21.5
7.720	17.6	20.7	38.3	60.0	-21.7
8.250	17.6	20.7	38.3	60.0	-21.7
7.050	17.6	20.7	38.3	60.0	-21.7
7.630	17.3	20.7	38.0	60.0	-22.0
8.050	17.1	20.7	37.8	60.0	-22.2
2.880	12.9	20.6	33.5	56.0	-22.5
0.487	12.8	20.9	33.7	56.2	-22.5
7.930	16.6	20.7	37.3	60.0	-22.7
9.110	16.5	20.7	37.2	60.0	-22.8
6.040	16.4	20.7	37.1	60.0	-22.9
6.290	16.3	20.7	37.0	60.0	-23.0
8.860	16.2	20.7	36.9	60.0	-23.1
7.310	16.2	20.7	36.9	60.0	-23.1
0.584	12.0	20.8	32.8	56.0	-23.2
1.456	12.2	20.6	32.8	56.0	-23.2
6.900	16.1	20.7	36.8	60.0	-23.2

Peak Data - vs - Average Limit

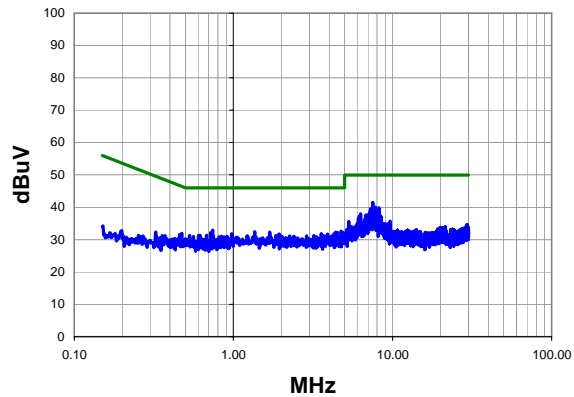
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.850	20.8	20.7	41.5	50.0	-8.5
7.420	18.8	20.7	39.5	50.0	-10.5
8.610	18.0	20.7	38.7	50.0	-11.3
8.380	17.8	20.7	38.5	50.0	-11.5
7.720	17.6	20.7	38.3	50.0	-11.7
8.250	17.6	20.7	38.3	50.0	-11.7
7.050	17.6	20.7	38.3	50.0	-11.7
7.630	17.3	20.7	38.0	50.0	-12.0
8.050	17.1	20.7	37.8	50.0	-12.2
2.880	12.9	20.6	33.5	46.0	-12.5
0.487	12.8	20.9	33.7	46.2	-12.5
7.930	16.6	20.7	37.3	50.0	-12.7
9.110	16.5	20.7	37.2	50.0	-12.8
6.040	16.4	20.7	37.1	50.0	-12.9
6.290	16.3	20.7	37.0	50.0	-13.0
8.860	16.2	20.7	36.9	50.0	-13.1
7.310	16.2	20.7	36.9	50.0	-13.1
0.584	12.0	20.8	32.8	46.0	-13.2
1.456	12.2	20.6	32.8	46.0	-13.2
6.900	16.1	20.7	36.8	50.0	-13.2

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb	Tested by: Dan Haas			
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH64, 5320MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	8	Line:	Neutral	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

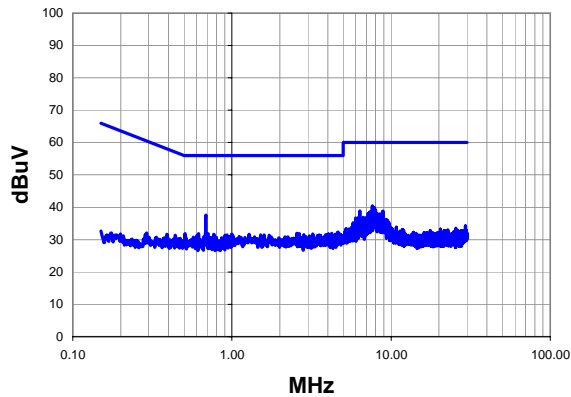
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.520	20.8	20.7	41.5	60.0	-18.5
7.810	19.4	20.7	40.1	60.0	-19.9
8.220	19.2	20.7	39.9	60.0	-20.1
7.260	18.9	20.7	39.6	60.0	-20.4
8.040	18.2	20.7	38.9	60.0	-21.1
7.230	18.1	20.7	38.8	60.0	-21.2
7.880	17.9	20.7	38.6	60.0	-21.4
6.290	17.3	20.7	38.0	60.0	-22.0
8.130	17.2	20.7	37.9	60.0	-22.1
7.630	17.2	20.7	37.9	60.0	-22.1
6.960	17.0	20.7	37.7	60.0	-22.3
6.800	16.9	20.7	37.6	60.0	-22.4
7.080	16.8	20.7	37.5	60.0	-22.5
8.410	16.7	20.7	37.4	60.0	-22.6
6.200	16.6	20.7	37.3	60.0	-22.7
8.460	16.4	20.7	37.1	60.0	-22.9
6.900	16.3	20.7	37.0	60.0	-23.0
0.742	12.2	20.7	32.9	56.0	-23.1
8.340	16.2	20.7	36.9	60.0	-23.1
4.760	12.0	20.6	32.6	56.0	-23.4

Peak Data - vs - Average Limit

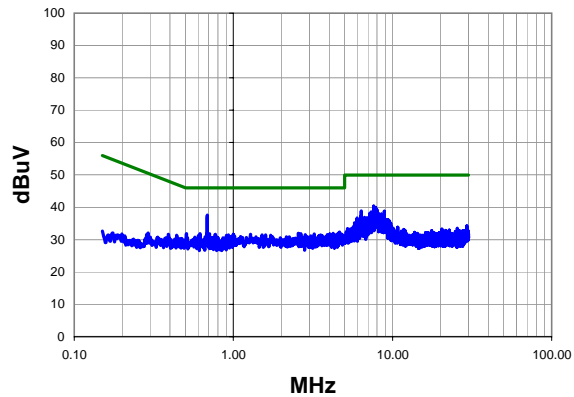
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.520	20.8	20.7	41.5	50.0	-8.5
7.810	19.4	20.7	40.1	50.0	-9.9
8.220	19.2	20.7	39.9	50.0	-10.1
7.260	18.9	20.7	39.6	50.0	-10.4
8.040	18.2	20.7	38.9	50.0	-11.1
7.230	18.1	20.7	38.8	50.0	-11.2
7.880	17.9	20.7	38.6	50.0	-11.4
6.290	17.3	20.7	38.0	50.0	-12.0
8.130	17.2	20.7	37.9	50.0	-12.1
7.630	17.2	20.7	37.9	50.0	-12.1
6.960	17.0	20.7	37.7	50.0	-12.3
6.800	16.9	20.7	37.6	50.0	-12.4
7.080	16.8	20.7	37.5	50.0	-12.5
8.410	16.7	20.7	37.4	50.0	-12.6
6.200	16.6	20.7	37.3	50.0	-12.7
8.460	16.4	20.7	37.1	50.0	-12.9
6.900	16.3	20.7	37.0	50.0	-13.0
0.742	12.2	20.7	32.9	46.0	-13.1
8.340	16.2	20.7	36.9	50.0	-13.1
4.760	12.0	20.6	32.6	46.0	-13.4

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb	Tested by: Dan Haas			
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH100, 5500MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	9	Line:	High Line	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

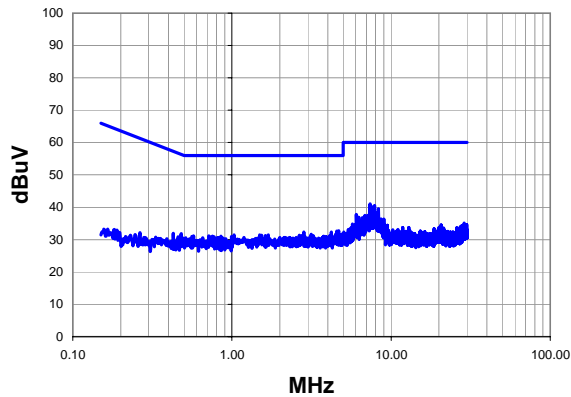
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.686	16.8	20.8	37.6	56.0	-18.4
7.620	19.7	20.7	40.4	60.0	-19.6
7.840	19.2	20.7	39.9	60.0	-20.1
7.990	18.5	20.7	39.2	60.0	-20.8
7.710	18.3	20.7	39.0	60.0	-21.0
6.350	18.2	20.7	38.9	60.0	-21.1
8.890	18.1	20.7	38.8	60.0	-21.2
7.360	17.9	20.7	38.6	60.0	-21.4
7.440	17.6	20.7	38.3	60.0	-21.7
7.290	17.5	20.7	38.2	60.0	-21.8
7.190	17.4	20.7	38.1	60.0	-21.9
8.090	17.3	20.7	38.0	60.0	-22.0
8.250	17.2	20.7	37.9	60.0	-22.1
8.520	17.2	20.7	37.9	60.0	-22.1
8.420	17.0	20.7	37.7	60.0	-22.3
8.580	17.0	20.7	37.7	60.0	-22.3
7.560	16.9	20.7	37.6	60.0	-22.4
6.290	16.5	20.7	37.2	60.0	-22.8
8.770	16.2	20.7	36.9	60.0	-23.1
6.650	16.2	20.7	36.9	60.0	-23.1

Peak Data - vs - Average Limit

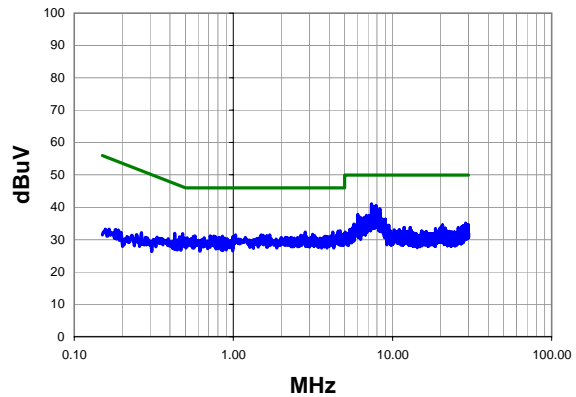
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.686	16.8	20.8	37.6	46.0	-8.4
7.620	19.7	20.7	40.4	50.0	-9.6
7.840	19.2	20.7	39.9	50.0	-10.1
7.990	18.5	20.7	39.2	50.0	-10.8
7.710	18.3	20.7	39.0	50.0	-11.0
6.350	18.2	20.7	38.9	50.0	-11.1
8.890	18.1	20.7	38.8	50.0	-11.2
7.360	17.9	20.7	38.6	50.0	-11.4
7.440	17.6	20.7	38.3	50.0	-11.7
7.290	17.5	20.7	38.2	50.0	-11.8
7.190	17.4	20.7	38.1	50.0	-11.9
8.090	17.3	20.7	38.0	50.0	-12.0
8.250	17.2	20.7	37.9	50.0	-12.1
8.520	17.2	20.7	37.9	50.0	-12.1
8.420	17.0	20.7	37.7	50.0	-12.3
8.580	17.0	20.7	37.7	50.0	-12.3
7.560	16.9	20.7	37.6	50.0	-12.4
6.290	16.5	20.7	37.2	50.0	-12.8
8.770	16.2	20.7	36.9	50.0	-13.1
6.650	16.2	20.7	36.9	50.0	-13.1

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb	Tested by: Dan Haas			
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH100, 5500MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	10	Line:	Neutral	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

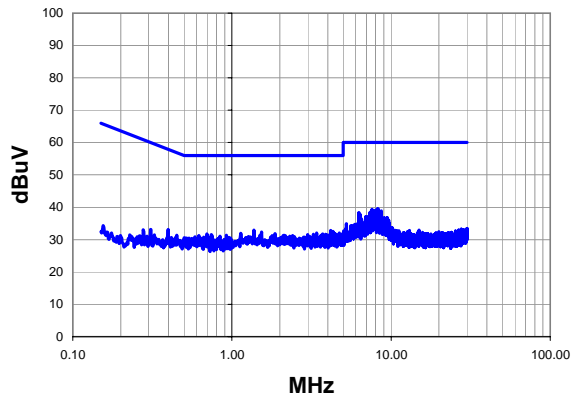
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.370	20.4	20.7	41.1	60.0	-18.9
7.860	19.9	20.7	40.6	60.0	-19.4
7.570	19.5	20.7	40.2	60.0	-19.8
8.340	18.9	20.7	39.6	60.0	-20.4
7.680	18.3	20.7	39.0	60.0	-21.0
8.270	17.8	20.7	38.5	60.0	-21.5
7.800	17.7	20.7	38.4	60.0	-21.6
8.070	17.6	20.7	38.3	60.0	-21.7
7.490	17.2	20.7	37.9	60.0	-22.1
6.060	17.1	20.7	37.8	60.0	-22.2
7.100	16.8	20.7	37.5	60.0	-22.5
6.860	16.8	20.7	37.5	60.0	-22.5
7.890	16.5	20.7	37.2	60.0	-22.8
7.080	16.4	20.7	37.1	60.0	-22.9
6.170	16.3	20.7	37.0	60.0	-23.0
6.900	16.2	20.7	36.9	60.0	-23.1
6.270	16.2	20.7	36.9	60.0	-23.1
6.590	16.1	20.7	36.8	60.0	-23.2
4.680	12.1	20.6	32.7	56.0	-23.3
7.260	16.0	20.7	36.7	60.0	-23.3

Peak Data - vs - Average Limit

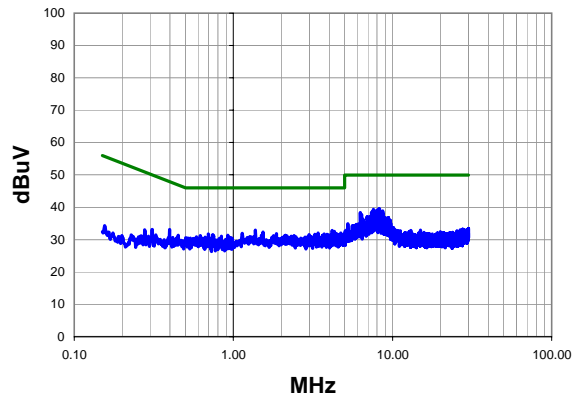
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.370	20.4	20.7	41.1	50.0	-8.9
7.860	19.9	20.7	40.6	50.0	-9.4
7.570	19.5	20.7	40.2	50.0	-9.8
8.340	18.9	20.7	39.6	50.0	-10.4
7.680	18.3	20.7	39.0	50.0	-11.0
8.270	17.8	20.7	38.5	50.0	-11.5
7.800	17.7	20.7	38.4	50.0	-11.6
8.070	17.6	20.7	38.3	50.0	-11.7
7.490	17.2	20.7	37.9	50.0	-12.1
6.060	17.1	20.7	37.8	50.0	-12.2
7.100	16.8	20.7	37.5	50.0	-12.5
6.860	16.8	20.7	37.5	50.0	-12.5
7.890	16.5	20.7	37.2	50.0	-12.8
7.080	16.4	20.7	37.1	50.0	-12.9
6.170	16.3	20.7	37.0	50.0	-13.0
6.900	16.2	20.7	36.9	50.0	-13.1
6.270	16.2	20.7	36.9	50.0	-13.1
6.590	16.1	20.7	36.8	50.0	-13.2
4.680	12.1	20.6	32.7	46.0	-13.3
7.260	16.0	20.7	36.7	50.0	-13.3

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb	Tested by: Dan Haas			
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH116, 5580MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	11	Line:	High Line	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

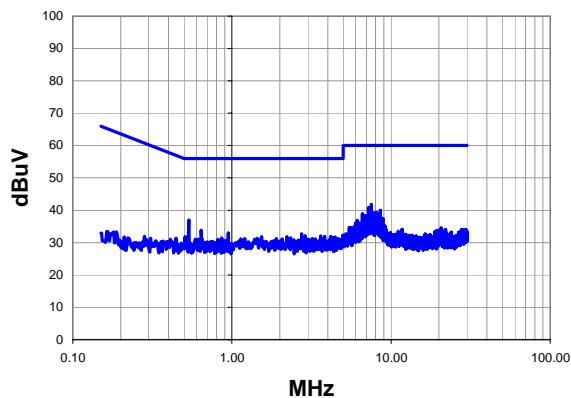
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.270	18.9	20.7	39.6	60.0	-20.4
8.160	18.8	20.7	39.5	60.0	-20.5
7.570	18.7	20.7	39.4	60.0	-20.6
7.930	18.4	20.7	39.1	60.0	-20.9
8.660	18.2	20.7	38.9	60.0	-21.1
8.410	18.1	20.7	38.8	60.0	-21.2
7.550	18.1	20.7	38.8	60.0	-21.2
7.960	18.0	20.7	38.7	60.0	-21.3
7.890	17.8	20.7	38.5	60.0	-21.5
8.210	17.8	20.7	38.5	60.0	-21.5
7.370	17.8	20.7	38.5	60.0	-21.5
6.280	17.7	20.7	38.4	60.0	-21.6
8.690	17.6	20.7	38.3	60.0	-21.7
6.380	17.1	20.7	37.8	60.0	-22.2
7.830	17.0	20.7	37.7	60.0	-22.3
7.710	16.9	20.7	37.6	60.0	-22.4
7.290	16.5	20.7	37.2	60.0	-22.8
8.470	16.4	20.7	37.1	60.0	-22.9
7.160	16.4	20.7	37.1	60.0	-22.9
6.980	16.3	20.7	37.0	60.0	-23.0

Peak Data - vs - Average Limit

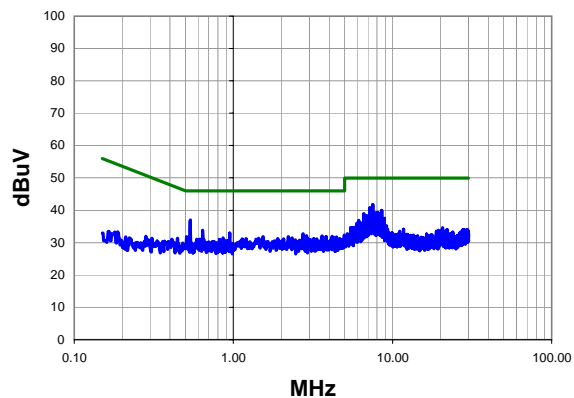
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.270	18.9	20.7	39.6	50.0	-10.4
8.160	18.8	20.7	39.5	50.0	-10.5
7.570	18.7	20.7	39.4	50.0	-10.6
7.930	18.4	20.7	39.1	50.0	-10.9
8.660	18.2	20.7	38.9	50.0	-11.1
8.410	18.1	20.7	38.8	50.0	-11.2
7.550	18.1	20.7	38.8	50.0	-11.2
7.960	18.0	20.7	38.7	50.0	-11.3
7.890	17.8	20.7	38.5	50.0	-11.5
8.210	17.8	20.7	38.5	50.0	-11.5
7.370	17.8	20.7	38.5	50.0	-11.5
6.280	17.7	20.7	38.4	50.0	-11.6
8.690	17.6	20.7	38.3	50.0	-11.7
6.380	17.1	20.7	37.8	50.0	-12.2
7.830	17.0	20.7	37.7	50.0	-12.3
7.710	16.9	20.7	37.6	50.0	-12.4
7.290	16.5	20.7	37.2	50.0	-12.8
8.470	16.4	20.7	37.1	50.0	-12.9
7.160	16.4	20.7	37.1	50.0	-12.9
6.980	16.3	20.7	37.0	50.0	-13.0

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb	Tested by: Dan Haas			
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH116, 5580MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	12	Line:	Neutral	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

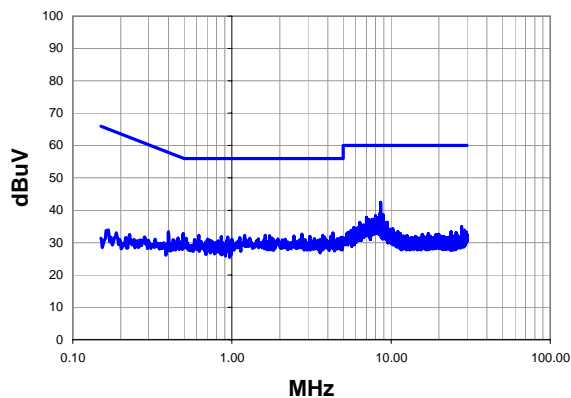
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.510	21.0	20.7	41.7	60.0	-18.3
0.536	16.1	20.9	37.0	56.0	-19.0
7.220	20.2	20.7	40.9	60.0	-19.1
8.560	19.3	20.7	40.0	60.0	-20.0
8.110	18.7	20.7	39.4	60.0	-20.6
7.750	18.5	20.7	39.2	60.0	-20.8
7.940	18.5	20.7	39.2	60.0	-20.8
6.590	18.3	20.7	39.0	60.0	-21.0
8.200	18.2	20.7	38.9	60.0	-21.1
8.180	18.1	20.7	38.8	60.0	-21.2
6.780	17.7	20.7	38.4	60.0	-21.6
7.260	17.6	20.7	38.3	60.0	-21.7
6.940	17.6	20.7	38.3	60.0	-21.7
6.850	17.4	20.7	38.1	60.0	-21.9
0.641	13.0	20.8	33.8	56.0	-22.2
7.780	17.1	20.7	37.8	60.0	-22.2
7.350	17.1	20.7	37.8	60.0	-22.2
8.870	16.8	20.7	37.5	60.0	-22.5
7.160	16.6	20.7	37.3	60.0	-22.7
0.949	12.3	20.6	32.9	56.0	-23.1

Peak Data - vs - Average Limit

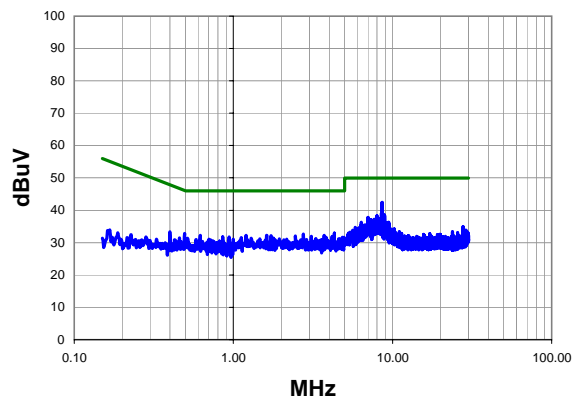
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.510	21.0	20.7	41.7	50.0	-8.3
0.536	16.1	20.9	37.0	46.0	-9.0
7.220	20.2	20.7	40.9	50.0	-9.1
8.560	19.3	20.7	40.0	50.0	-10.0
8.110	18.7	20.7	39.4	50.0	-10.6
7.750	18.5	20.7	39.2	50.0	-10.8
7.940	18.5	20.7	39.2	50.0	-10.8
6.590	18.3	20.7	39.0	50.0	-11.0
8.200	18.2	20.7	38.9	50.0	-11.1
8.180	18.1	20.7	38.8	50.0	-11.2
6.780	17.7	20.7	38.4	50.0	-11.6
7.260	17.6	20.7	38.3	50.0	-11.7
6.940	17.6	20.7	38.3	50.0	-11.7
6.850	17.4	20.7	38.1	50.0	-11.9
0.641	13.0	20.8	33.8	46.0	-12.2
7.780	17.1	20.7	37.8	50.0	-12.2
7.350	17.1	20.7	37.8	50.0	-12.2
8.870	16.8	20.7	37.5	50.0	-12.5
7.160	16.6	20.7	37.3	50.0	-12.7
0.949	12.3	20.6	32.9	46.0	-13.1

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb	Tested by: Dan Haas			
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH140, 5700MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	13	Line:	High Line	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit




Peak Data - vs - Quasi Peak Limit

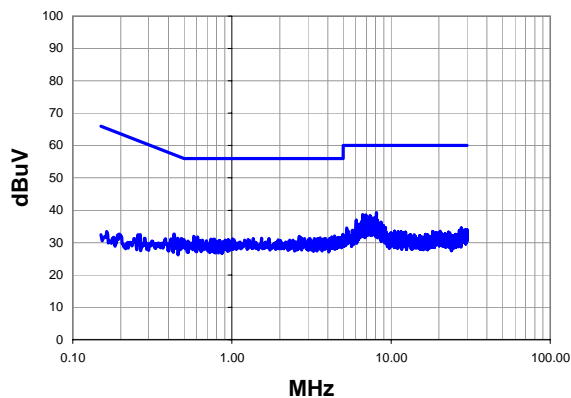
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.590	21.7	20.7	42.4	60.0	-17.6
8.520	18.4	20.7	39.1	60.0	-20.9
8.860	18.0	20.7	38.7	60.0	-21.3
8.940	17.7	20.7	38.4	60.0	-21.6
7.990	17.6	20.7	38.3	60.0	-21.7
8.740	17.5	20.7	38.2	60.0	-21.8
7.010	17.1	20.7	37.8	60.0	-22.2
8.090	17.0	20.7	37.7	60.0	-22.3
8.130	16.7	20.7	37.4	60.0	-22.6
8.550	16.7	20.7	37.4	60.0	-22.6
8.040	16.5	20.7	37.2	60.0	-22.8
7.650	16.5	20.7	37.2	60.0	-22.8
7.310	16.3	20.7	37.0	60.0	-23.0
7.270	16.3	20.7	37.0	60.0	-23.0
4.312	12.3	20.6	32.9	56.0	-23.1
7.830	16.1	20.7	36.8	60.0	-23.2
0.493	12.0	20.9	32.9	56.1	-23.2
8.220	16.0	20.7	36.7	60.0	-23.3
2.752	12.0	20.6	32.6	56.0	-23.4
7.130	15.9	20.7	36.6	60.0	-23.4

Peak Data - vs - Average Limit

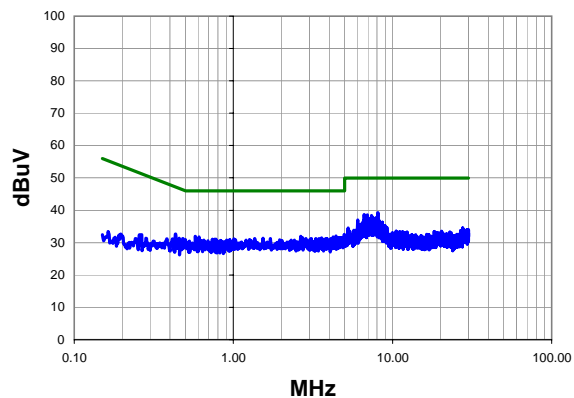
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.590	21.7	20.7	42.4	50.0	-7.6
8.520	18.4	20.7	39.1	50.0	-10.9
8.860	18.0	20.7	38.7	50.0	-11.3
8.940	17.7	20.7	38.4	50.0	-11.6
7.990	17.6	20.7	38.3	50.0	-11.7
8.740	17.5	20.7	38.2	50.0	-11.8
7.010	17.1	20.7	37.8	50.0	-12.2
8.090	17.0	20.7	37.7	50.0	-12.3
8.130	16.7	20.7	37.4	50.0	-12.6
8.550	16.7	20.7	37.4	50.0	-12.6
8.040	16.5	20.7	37.2	50.0	-12.8
7.650	16.5	20.7	37.2	50.0	-12.8
7.310	16.3	20.7	37.0	50.0	-13.0
7.270	16.3	20.7	37.0	50.0	-13.0
4.312	12.3	20.6	32.9	46.0	-13.1
7.830	16.1	20.7	36.8	50.0	-13.2
0.493	12.0	20.9	32.9	46.1	-13.2
8.220	16.0	20.7	36.7	50.0	-13.3
2.752	12.0	20.6	32.6	46.0	-13.4
7.130	15.9	20.7	36.6	50.0	-13.4

Work Order:	FOCU0053	Date:	05/06/09				
Project:	None	Temperature:	21.0°C				
Job Site:	EV07	Humidity:	42.1				
Serial Number:	2	Barometric Pres.:	1011.1mb	Tested by: Dan Haas			
EUT:	Summit FS848 Slave Module						
Configuration:	3 - AC Conducted Emissions						
Customer:	Focus Enhancements						
Attendees:	Ponnappa Pasura						
EUT Power:	3.3VDC						
Operating Mode:	Transmitting, +8dBm, CH140, 5700MHz						
Deviations:	No deviations.						
Comments:	12inch cable w/o ferrites.						
Test Specifications FCC 15.207:2009			Test Method ANSI C63.4:2003				
Run #	14	Line:	Neutral	Ext. Attenuation:	20	Results	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit

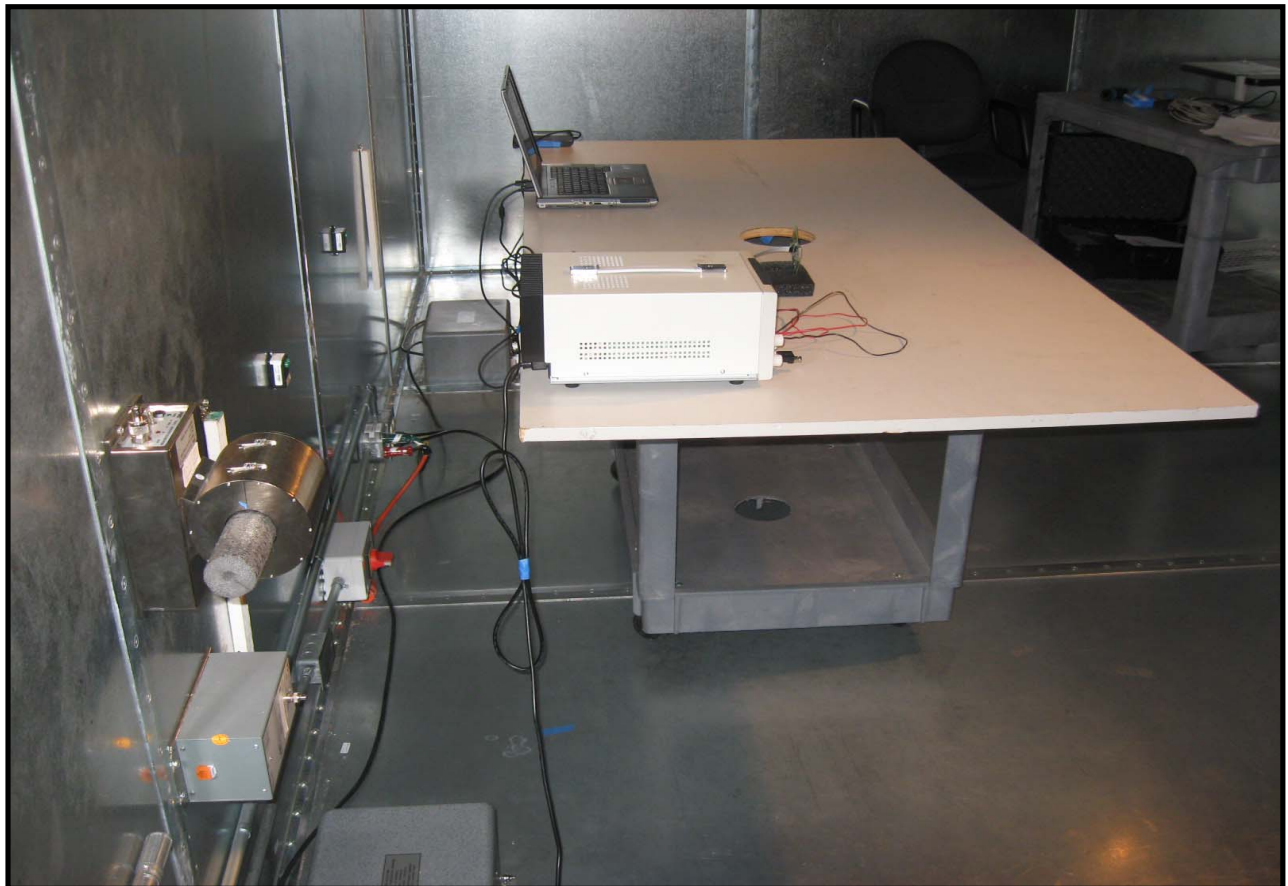


Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.080	18.6	20.7	39.3	60.0	-20.7
6.640	18.0	20.7	38.7	60.0	-21.3
6.940	17.9	20.7	38.6	60.0	-21.4
7.390	17.7	20.7	38.4	60.0	-21.6
7.490	17.2	20.7	37.9	60.0	-22.1
7.840	16.9	20.7	37.6	60.0	-22.4
7.250	16.8	20.7	37.5	60.0	-22.5
7.760	16.7	20.7	37.4	60.0	-22.6
7.940	16.5	20.7	37.2	60.0	-22.8
7.040	16.3	20.7	37.0	60.0	-23.0
6.040	16.3	20.7	37.0	60.0	-23.0
8.190	16.2	20.7	36.9	60.0	-23.1
6.610	16.2	20.7	36.9	60.0	-23.1
4.976	11.9	20.7	32.6	56.0	-23.4
7.570	15.7	20.7	36.4	60.0	-23.6
6.520	15.7	20.7	36.4	60.0	-23.6
8.630	15.6	20.7	36.3	60.0	-23.7
6.780	15.4	20.7	36.1	60.0	-23.9
4.408	11.4	20.6	32.0	56.0	-24.0
0.577	11.1	20.8	31.9	56.0	-24.1

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.080	18.6	20.7	39.3	50.0	-10.7
6.640	18.0	20.7	38.7	50.0	-11.3
6.940	17.9	20.7	38.6	50.0	-11.4
7.390	17.7	20.7	38.4	50.0	-11.6
7.490	17.2	20.7	37.9	50.0	-12.1
7.840	16.9	20.7	37.6	50.0	-12.4
7.250	16.8	20.7	37.5	50.0	-12.5
7.760	16.7	20.7	37.4	50.0	-12.6
7.940	16.5	20.7	37.2	50.0	-12.8
7.040	16.3	20.7	37.0	50.0	-13.0
6.040	16.3	20.7	37.0	50.0	-13.0
8.190	16.2	20.7	36.9	50.0	-13.1
6.610	16.2	20.7	36.9	50.0	-13.1
4.976	11.9	20.7	32.6	46.0	-13.4
7.570	15.7	20.7	36.4	50.0	-13.6
6.520	15.7	20.7	36.4	50.0	-13.6
8.630	15.6	20.7	36.3	50.0	-13.7
6.780	15.4	20.7	36.1	50.0	-13.9
4.408	11.4	20.6	32.0	46.0	-14.0
0.577	11.1	20.8	31.9	46.0	-14.1



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4407B	AAU	12/12/2008	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	6/27/2008	13
Power Meter	Gigatronics	8651A	SPM	12/10/2008	13
Power Sensor	Gigatronics	80701A	SPL	12/10/2008	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4-2. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

FCC Public Notice DA 02-2138 was followed. The transmit frequency was set to the lowest, a medium, and the highest channels in each band. The transmit power was set to its default maximum. The lowest, a medium, and the highest data rates were measured if available. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

The spectrum analyzer settings were as follows:

- Span = approximately 1.5 to 2 times the emission bandwidth, centered on the transmit channel.
- RBW = Approx. 1% of the emission bandwidth (B). This was an iterative process where an exact match of 1% may not be achieved. The largest value of RBW that came close to 1% of the emission bandwidth was used.
- A peak detector was used.

The marker-delta function was then used to measure 26 dB emission bandwidth

EMC

EMISSION BANDWIDTH

EUT:	Summit FS848 Slave Module	Work Order:	FOCU0053
Serial Number:	30	Date:	05/07/09
Customer:	Focus Enhancements	Temperature:	21°C
Attendees:	Ponnappa Pasura	Humidity:	34%
Project:	None	Barometric Pres.:	1016.0 mb
Tested by:	Rod Peloquin	Power:	3.3 VDC
		Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2009	ANSI C63.4:2003 DA 02-2138:2002

COMMENTS
None

DEVIATIONS FROM TEST STANDARD
No Deviations

Configuration #	1	Signature 
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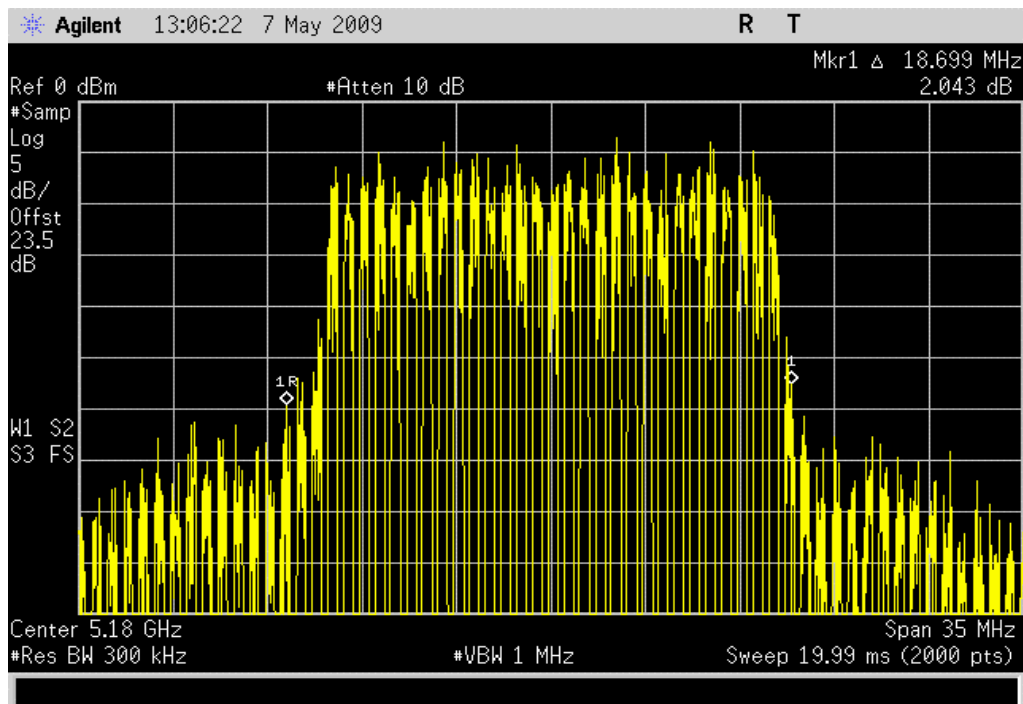
		Value	Limit	Results
6 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	18.699 MHz	N/A	N/A
	Channel 48, High Channel	18.174 MHz	N/A	N/A
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	18.244 MHz	N/A	N/A
	Channel 64, High Channel	18.332 MHz	N/A	N/A
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	18.227 MHz	N/A	N/A
	Channel 116, Mid Channel	18.699 MHz	N/A	N/A
	Channel 140, High Channel	18.192 MHz	N/A	N/A

6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel

Result: N/A

Value: 18.699 MHz

Limit: N/A

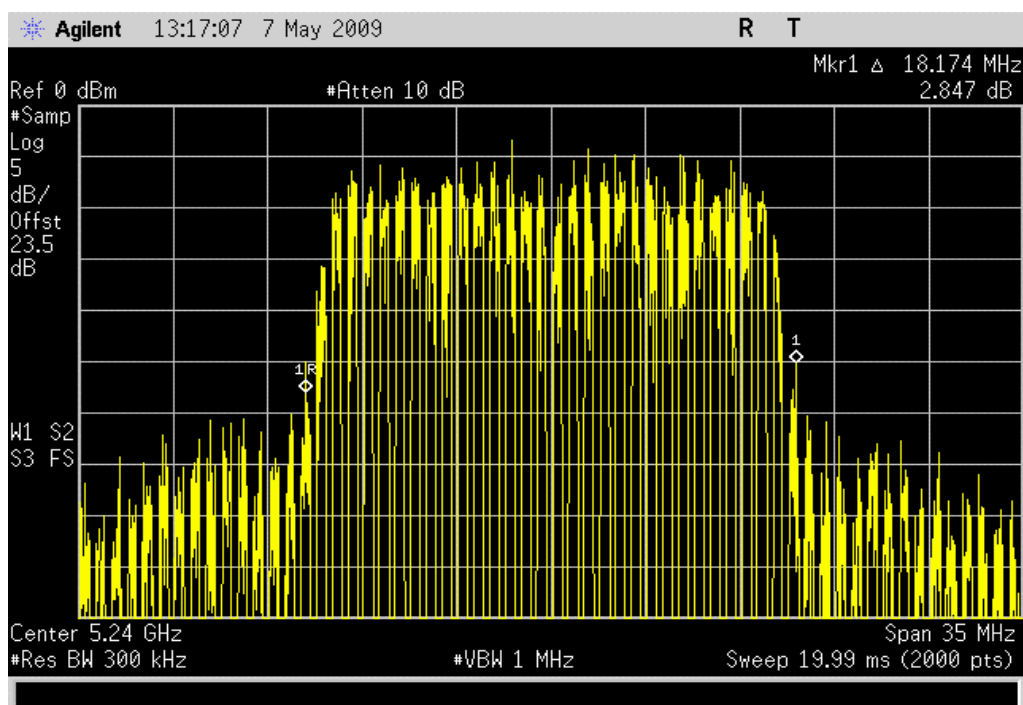


6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel

Result: N/A

Value: 18.174 MHz

Limit: N/A

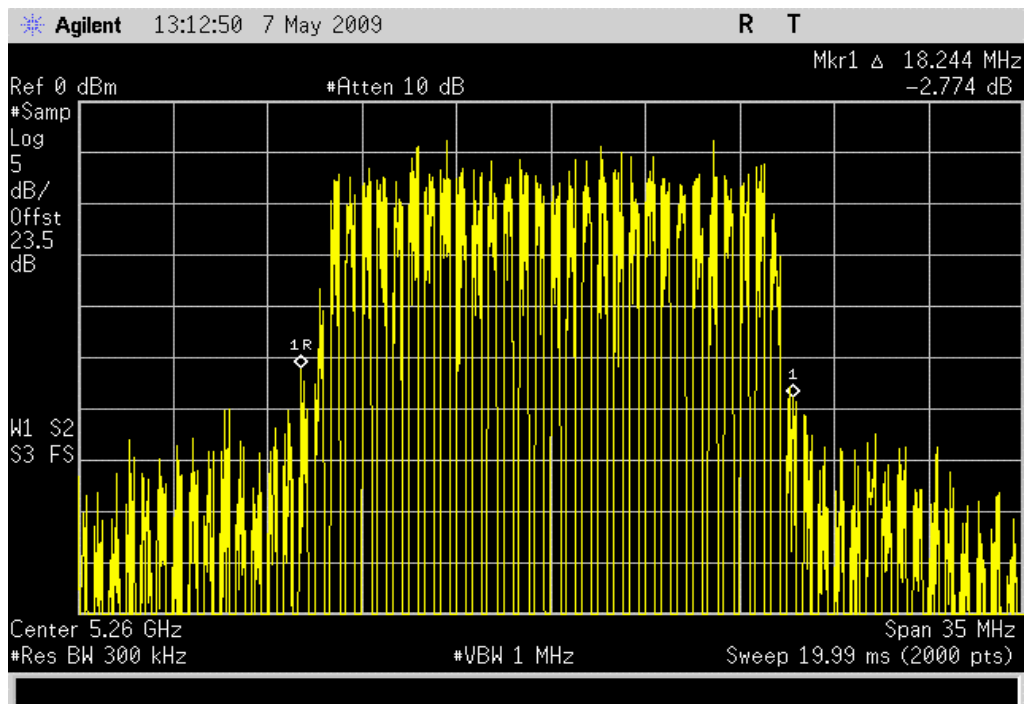


6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel

Result: N/A

Value: 18.244 MHz

Limit: N/A

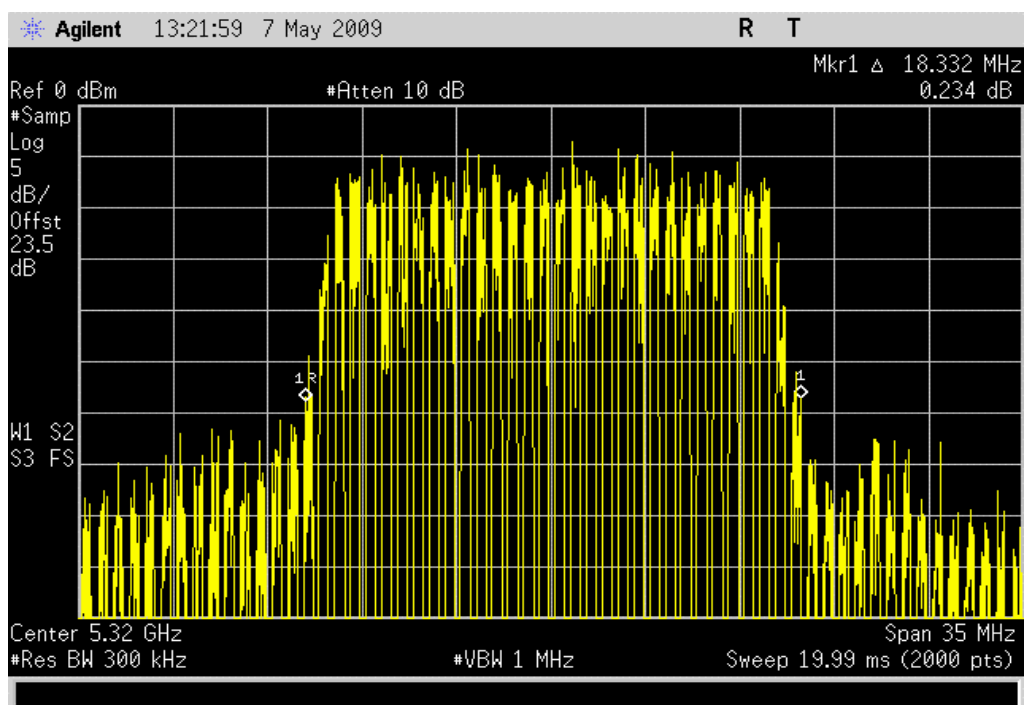


6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel

Result: N/A

Value: 18.332 MHz

Limit: N/A



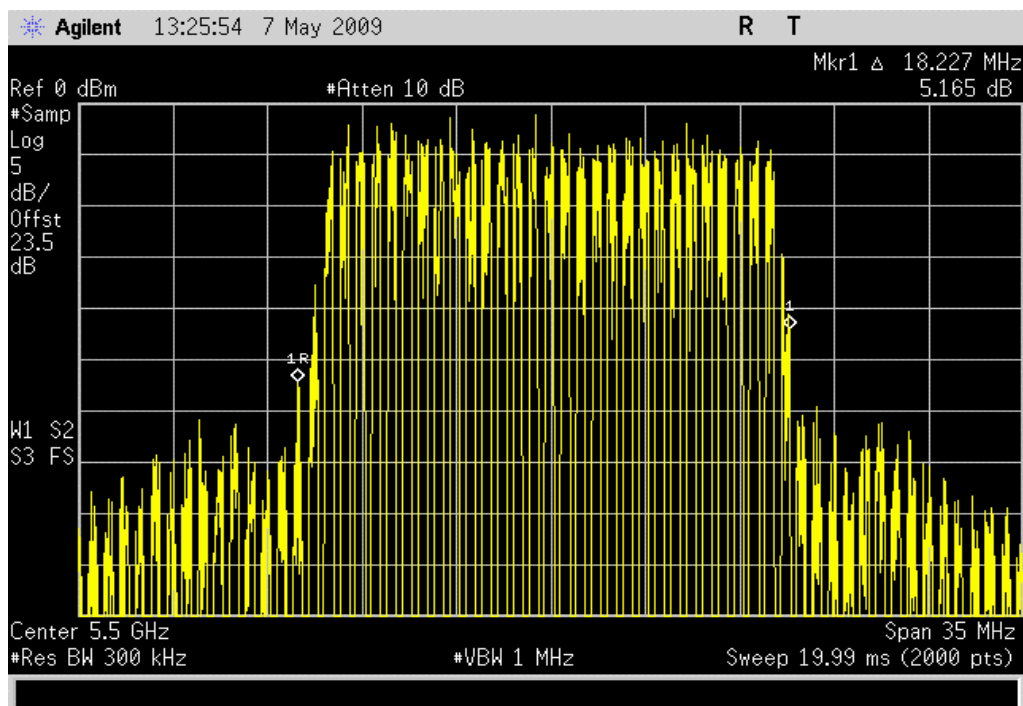
EMISSION BANDWIDTH

6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel

Result: N/A

Value: 18.227 MHz

Limit: N/A

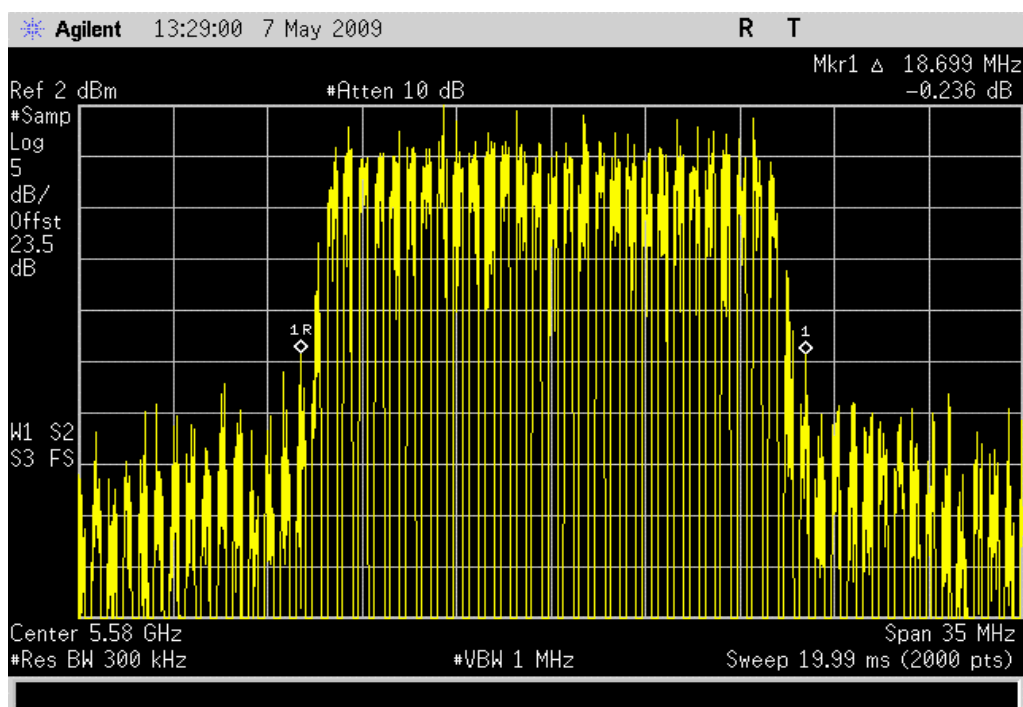


6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel

Result: N/A

Value: 18.699 MHz

Limit: N/A

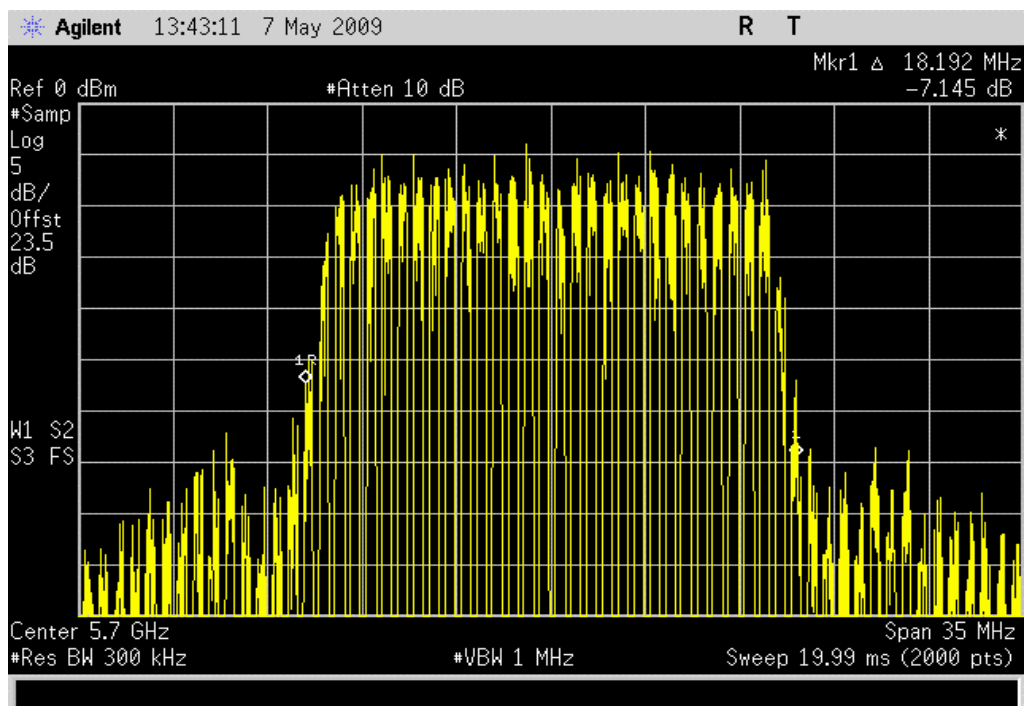


6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel

Result: N/A

Value: 18.192 MHz

Limit: N/A





Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4443A	AAS	12/12/2008	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	6/27/2008	13
Power Meter	Gigatronics	8651A	SPM	12/10/2008	13
Power Sensor	Gigatronics	80701A	SPL	12/10/2008	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4-2. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

FCC Public Notice DA 02-2138 was followed. The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The lowest data rate was measured as it provided the highest output power. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input. The amplitude accuracy of the spectrum analyzer was further enhanced by calibrating the setup using the power meter and synthesized signal generator.

Method #1 found in FCC Public Notice DA02-2138 was used.

The spectrum analyzer settings were as follows:

- The span was set to encompass entire emission bandwidth (B), centered on the transmit channel.
- RBW = 1 MHz, VBW \geq 3 MHz because the emission bandwidth (B) is greater than 1 MHz
- Peak detector.

EMC

PEAK POWER SPECTRAL DENSITY

EUT:	Summit FS848 Slave Module	Work Order:	FOCU0053
Serial Number:	30	Date:	05/08/09
Customer:	Focus Enhancements	Temperature:	20°C
Attendees:	Ponnappa Pasura	Humidity:	36%
Project:	None	Barometric Pres.:	1023.0 mb
Tested by:	Rod Peloquin	Power:	3.3 VDC
		Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2009	ANSI C63.4:2003 DA 02-2138:2002

COMMENTS
None

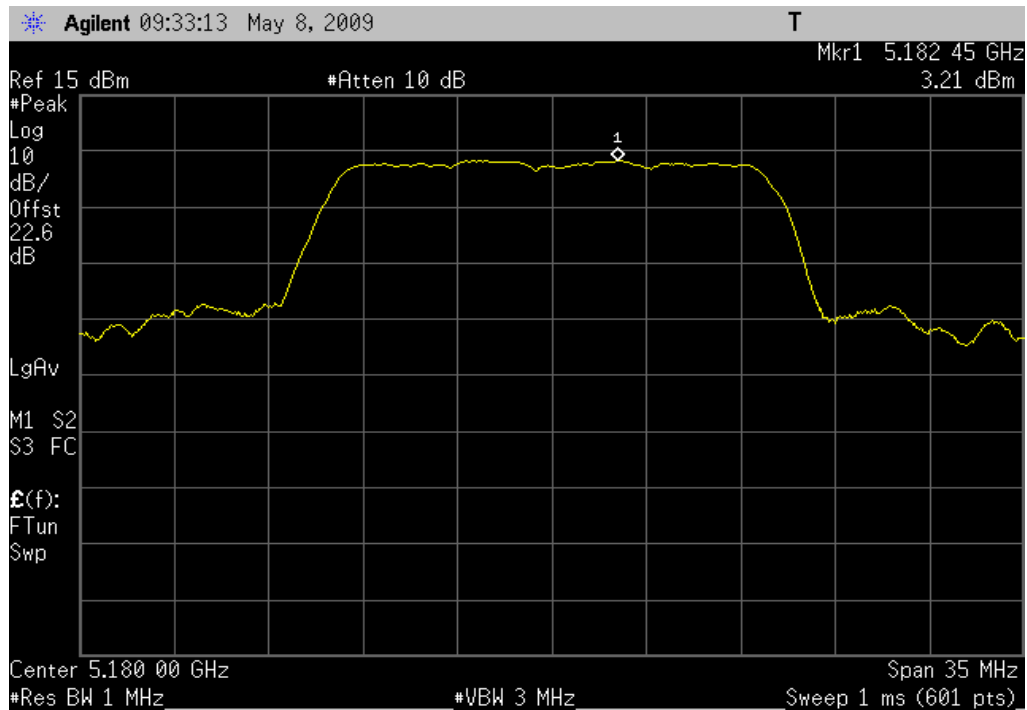
DEVIATIONS FROM TEST STANDARD
No Deviations

Configuration #	1	Signature 
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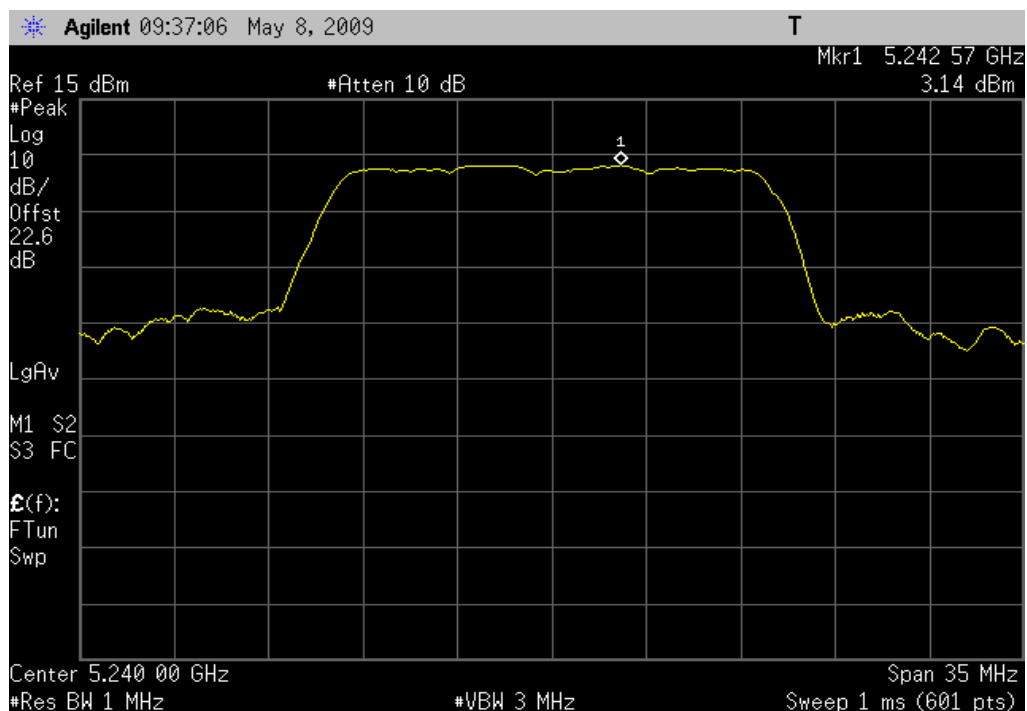
		Value	Limit	Results
6 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	3.21 dBm	4 dBm	Pass
	Channel 48, High Channel	3.14 dBm	4 dBm	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	3.52 dBm	11 dBm	Pass
	Channel 64, High Channel	3.01 dBm	11 dBm	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	2.96 dBm	11 dBm	Pass
	Channel 116, Mid Channel	3.04 dBm	11 dBm	Pass
	Channel 140, High Channel	3.21 dBm	11 dBm	Pass

PEAK POWER SPECTRAL DENSITY

6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel

Result: Pass **Value:** 3.21 dBm **Limit:** 4 dBm

6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel

Result: Pass **Value:** 3.14 dBm **Limit:** 4 dBm

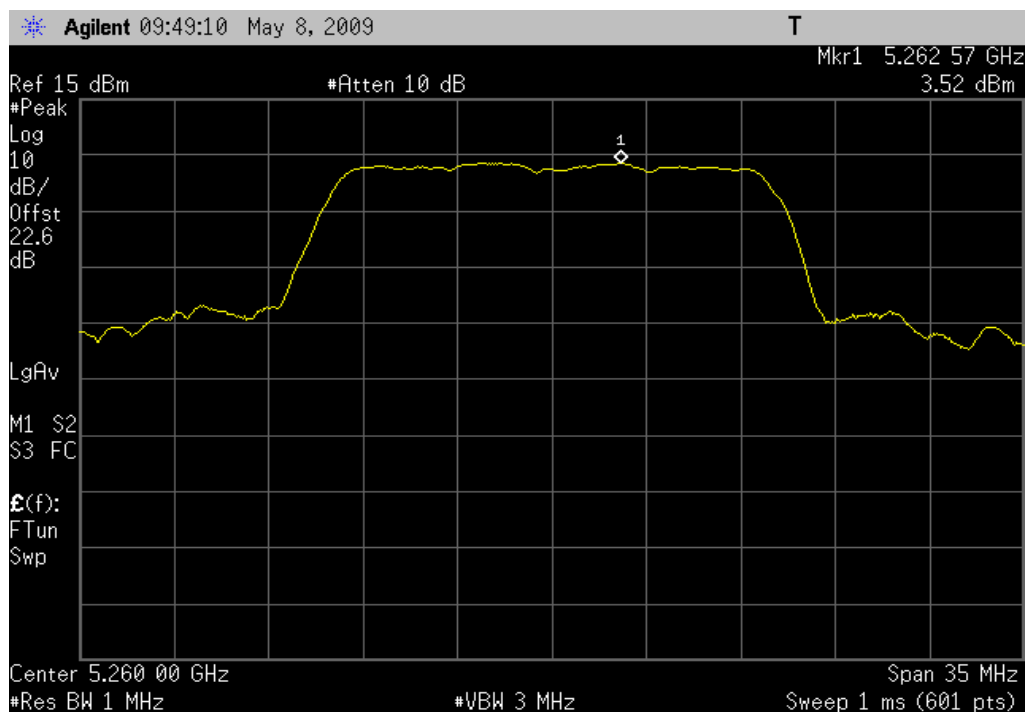
PEAK POWER SPECTRAL DENSITY

6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel

Result: Pass

Value: 3.52 dBm

Limit: 11 dBm

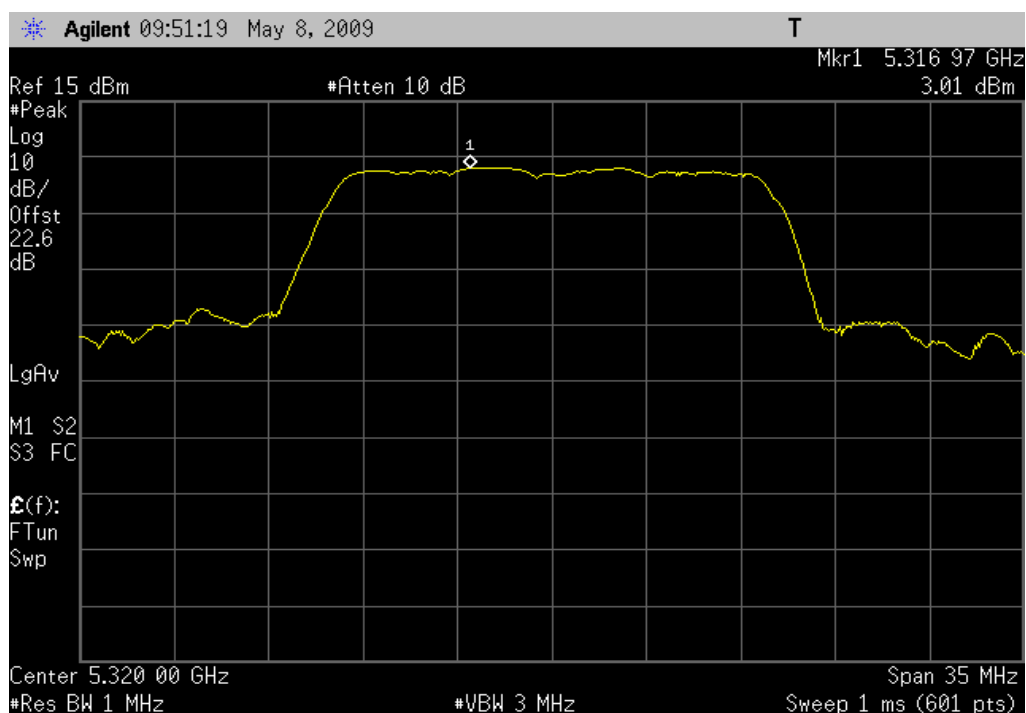


6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel

Result: Pass

Value: 3.01 dBm

Limit: 11 dBm



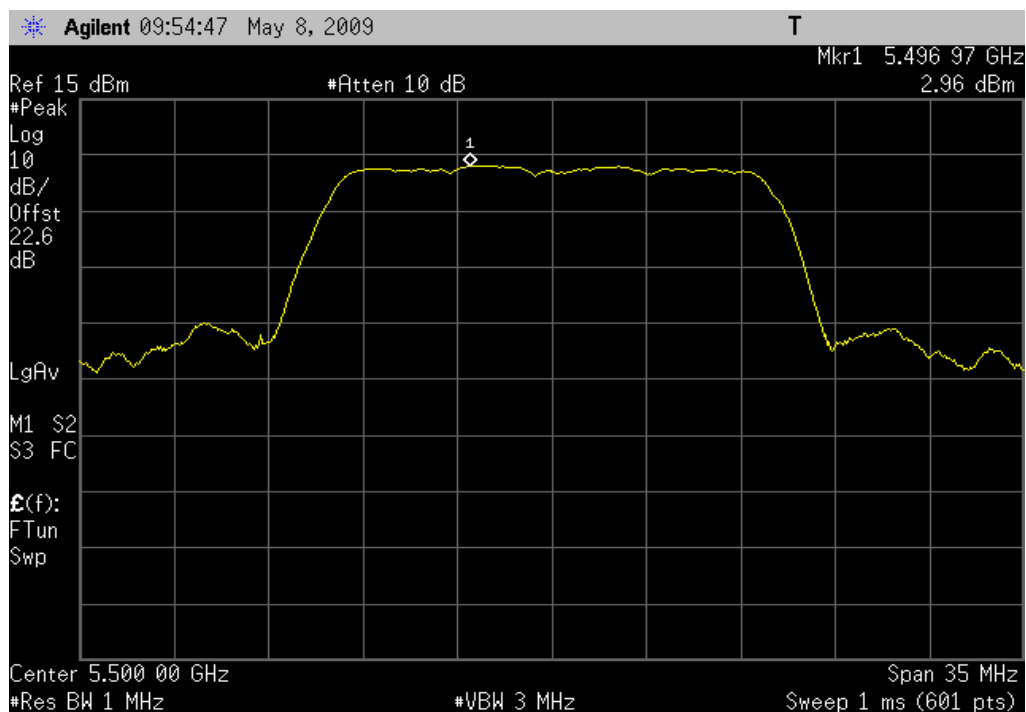
PEAK POWER SPECTRAL DENSITY

6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel

Result: Pass

Value: 2.96 dBm

Limit: 11 dBm

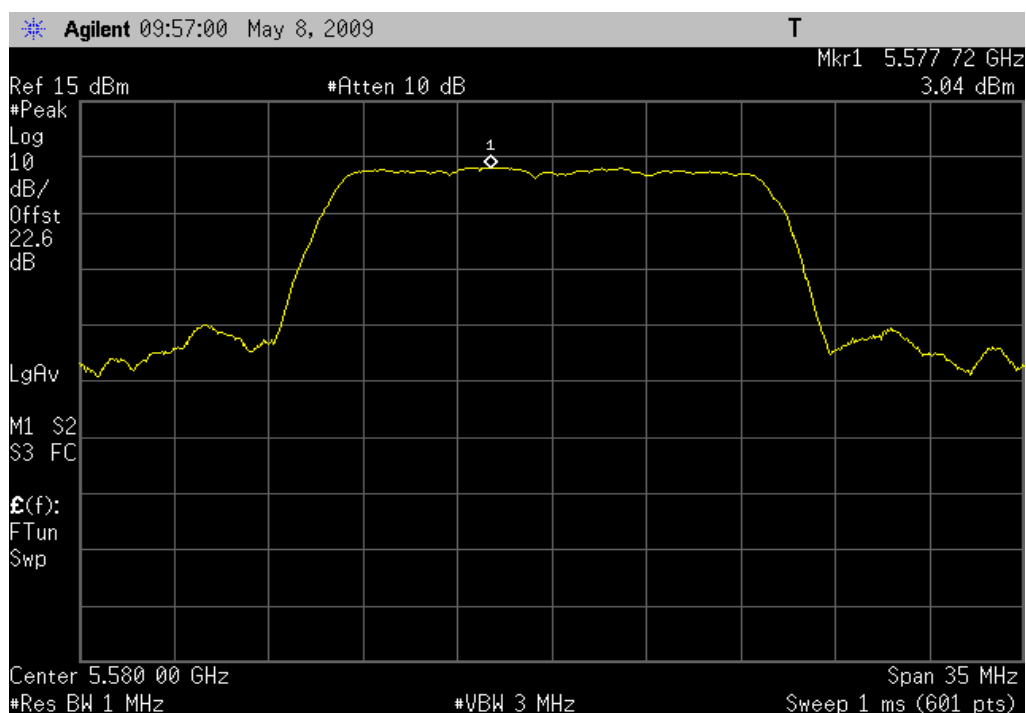


6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel

Result: Pass

Value: 3.04 dBm

Limit: 11 dBm



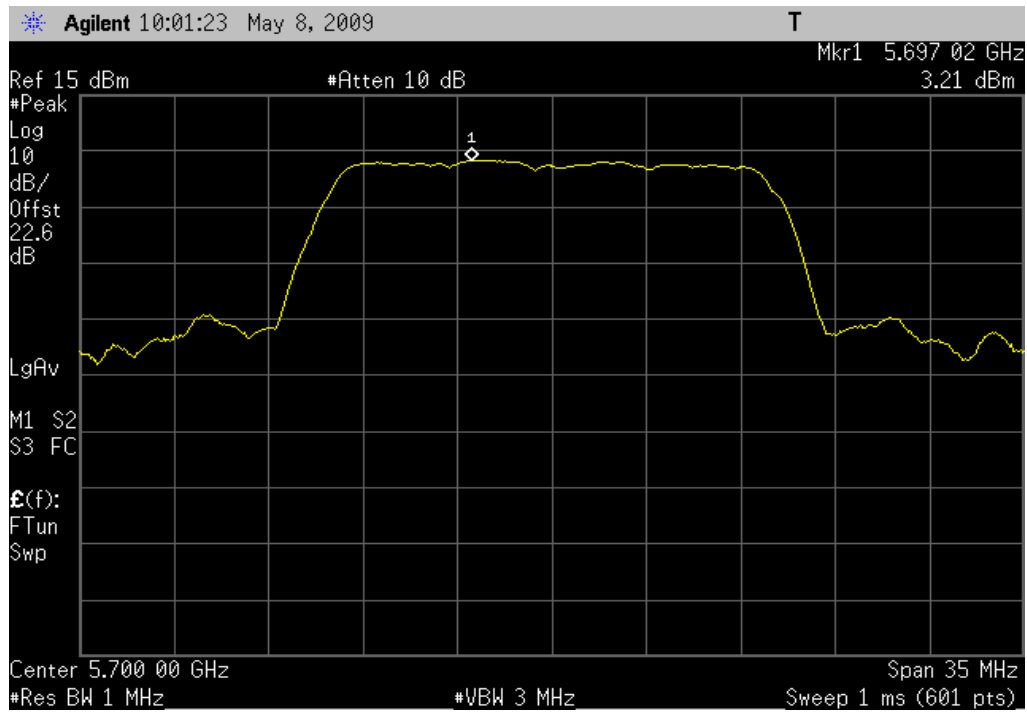
PEAK POWER SPECTRAL DENSITY

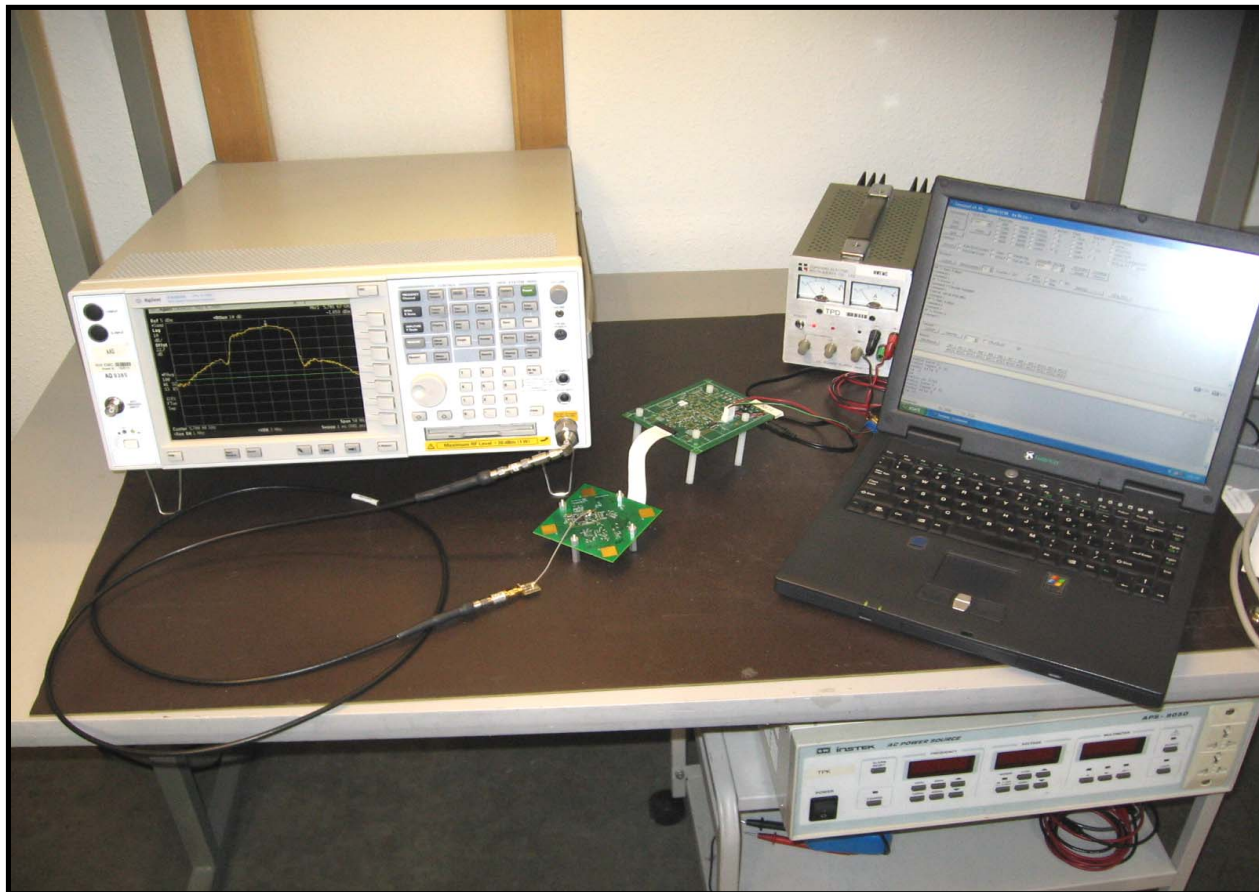
6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel

Result: Pass

Value: 3.21 dBm

Limit: 11 dBm





Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	6/27/2008	13
Spectrum Analyzer	Agilent	E4407B	AAU	12/12/2008	13
Power Meter	Gigatronics	8651A	SPM	12/10/2008	13
Power Sensor	Gigatronics	80701A	SPL	12/10/2008	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4-2. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

FCC Public Notice DA 02-2138 was followed. The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The lowest, a medium, and the highest data rates were measured. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

The spectrum analyzer settings were as follows:

- Span set to encompass the entire emission bandwidth (B), centered on the transmit channel.
- Using the marker delta function, the largest difference between the following two traces was measured:
 - 1st Trace: RBW = 1 MHz, VBW \geq 3 MHz with peak detector and max-hold settings.
 - 2nd Trace: Use same settings as were used for peak conducted transmit power. The sample detector was used as well as the VBW being matched to that used on the peak conducted transmit power.

EMC

PEAK EXCURSION of MODULATION ENVELOPE

EUT:	Summit FS848 Slave Module	Work Order:	FOCU0053
Serial Number:	30	Date:	04/27/09
Customer:	Focus Enhancements	Temperature:	21°C
Attendees:	Ponnappa Pasura	Humidity:	34%
Project:	None	Barometric Pres.:	1016.0 mb
Tested by:	Rod Peloquin	Power:	3.3 VDC
		Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2009	ANSI C63.4:2003 DA 02-2138:2002

COMMENTS
None

DEVIATIONS FROM TEST STANDARD
No Deviations

Configuration #	1	Signature
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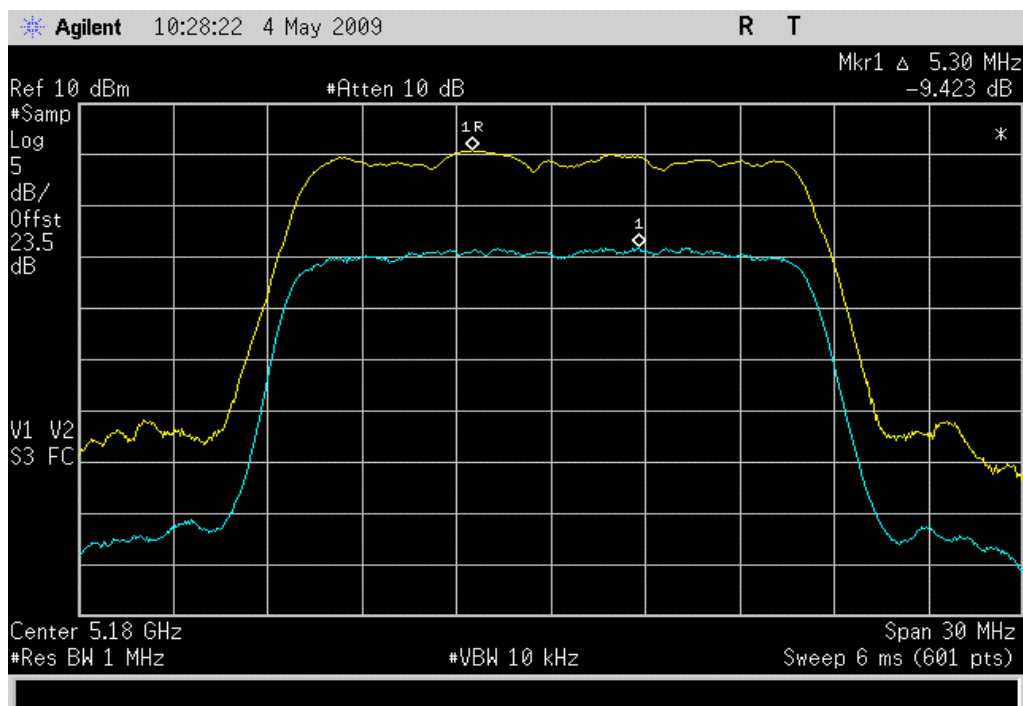
		Value	Limit	Results
6 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	9.4 dBm	≤ 13 dBm	Pass
	Channel 48, High Channel	9.4 dBm	≤ 13 dBm	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	9.5 dBm	≤ 13 dBm	Pass
	Channel 64, High Channel	9.5 dBm	≤ 13 dBm	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	9.4 dBm	≤ 13 dBm	Pass
	Channel 116, Mid Channel	9.4 dBm	≤ 13 dBm	Pass
	Channel 140, High Channel	9.4 dBm	≤ 13 dBm	Pass

PEAK EXCURSION of MODULATION ENVELOPE

6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel

Result: Pass

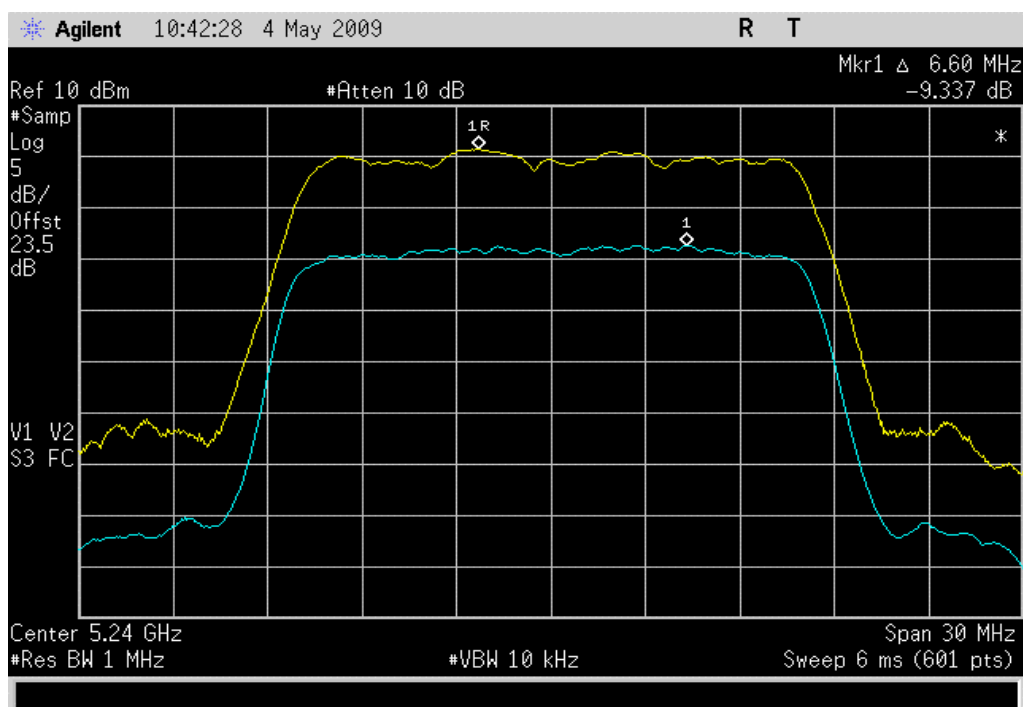
Value: 9.4 dBm

Limit: ≤ 13 dBm

6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel

Result: Pass

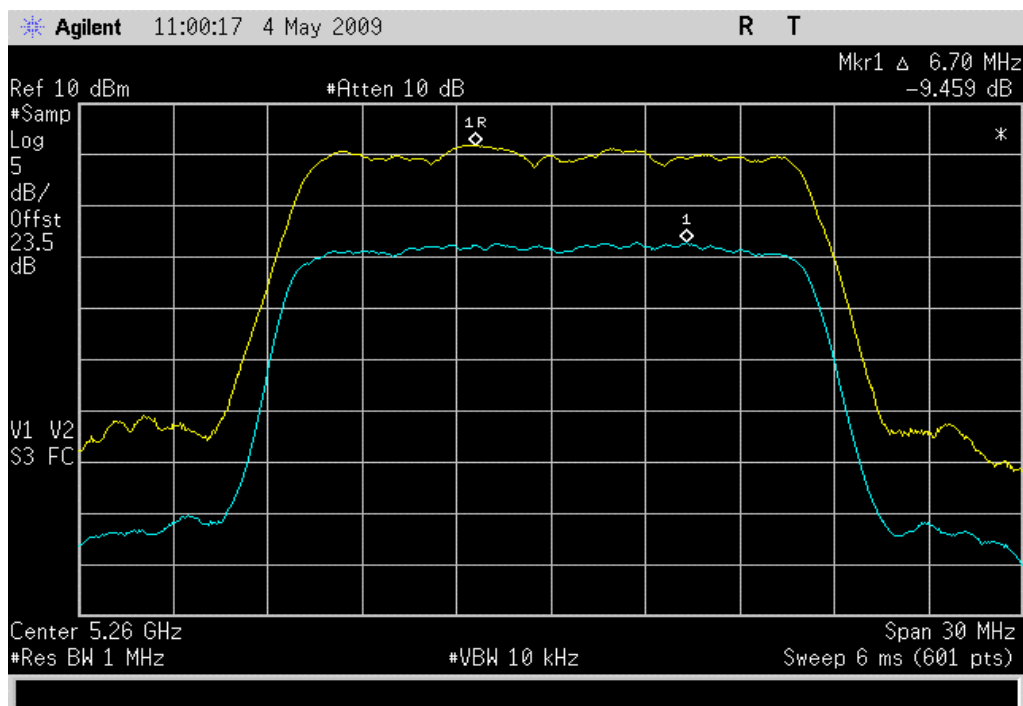
Value: 9.4 dBm

Limit: ≤ 13 dBm

6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel

Result: Pass

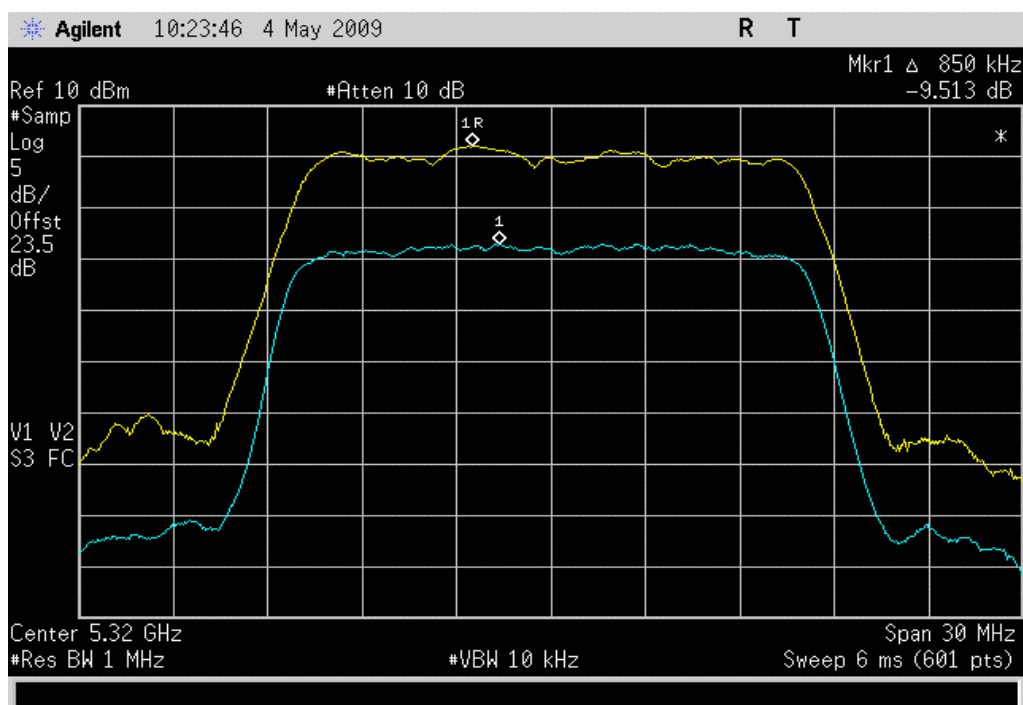
Value: 9.5 dBm

Limit: ≤ 13 dBm

6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel

Result: Pass

Value: 9.5 dBm

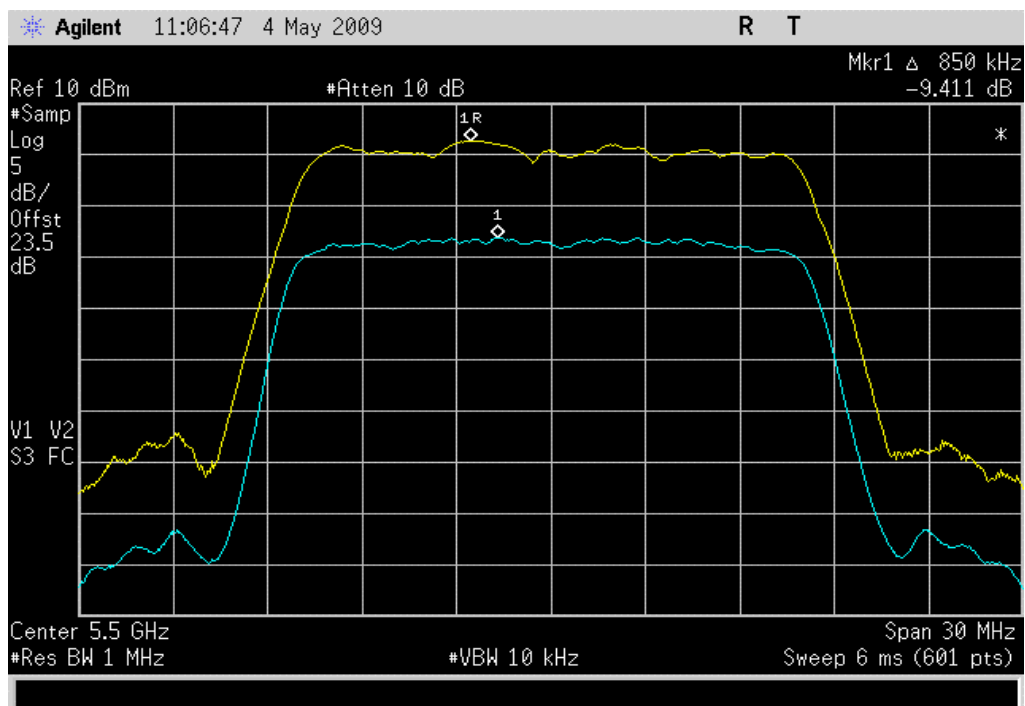
Limit: ≤ 13 dBm

PEAK EXCURSION of MODULATION ENVELOPE

6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel

Result: Pass

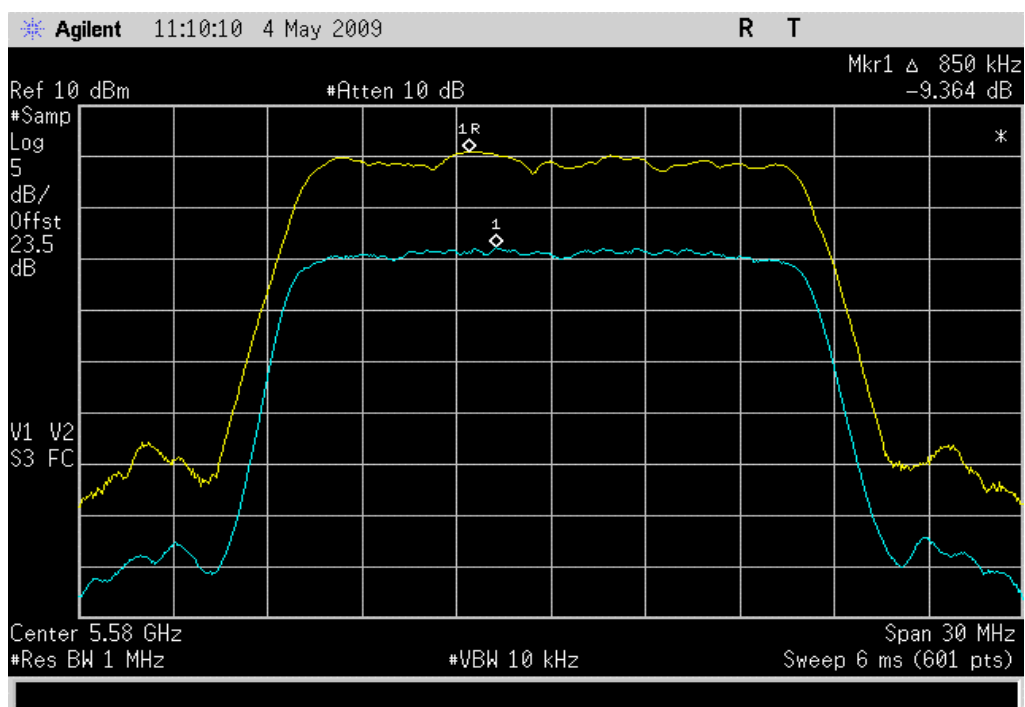
Value: 9.4 dBm

Limit: ≤ 13 dBm

6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel

Result: Pass

Value: 9.4 dBm

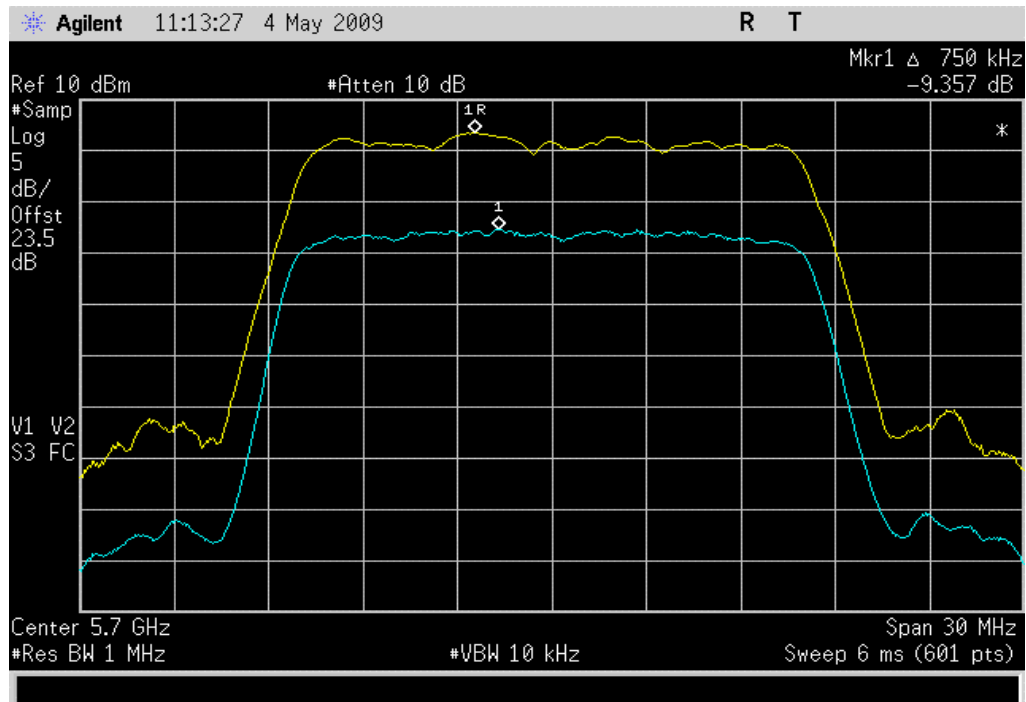
Limit: ≤ 13 dBm

PEAK EXCURSION of MODULATION ENVELOPE

6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel

Result: Pass

Value: 9.4 dBm

Limit: ≤ 13 dBm



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4407B	AAU	12/12/2008	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	6/27/2008	13
Power Meter	Gigatronics	8651A	SPM	12/10/2008	13
Power Sensor	Gigatronics	80701A	SPL	12/10/2008	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4-2. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

FCC Public Notice DA 02-2138 was followed. The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input. The amplitude accuracy of the spectrum analyzer was further enhanced by calibrating the setup using the power meter and synthesized signal generator.

Prior to measuring peak transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Peak Transmit Power. The method of measuring the emission bandwidth and the associated data are found elsewhere in this test report. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

Method #3 found in FCC Public Notice DA02-2138 was used because the analyzer sweep time was greater than T and the Emission Bandwidth was greater than the largest RBW on the analyzer.

The spectrum analyzer settings were as follows:

- The span was set to encompass entire emission bandwidth (B), centered on the transmit channel.
- The RBW = 1 MHz, VBW ? 1/T
- Sample detector mode because the bin width (span / number of spectral points) < 0.5 RBW.
- Power was integrated across "B", by using the channel power function of the analyzer.

EMC

PEAK TRANSMIT POWER

EUT:	Summit FS848 Slave Module	Work Order:	FOCU0053
Serial Number:	30	Date:	05/07/09
Customer:	Focus Enhancements	Temperature:	21°C
Attendees:	Ponnappa Pasura	Humidity:	39%
Project:	None	Barometric Pres.:	1023.9 mb
Tested by:	Rod Peloquin	Power:	3.3 VDC
		Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2009	ANSI C63.4:2003 DA 02-2138:2002

COMMENTS
None

DEVIATIONS FROM TEST STANDARD
No Deviations

Configuration #	1	Signature 
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		Value	Limit	Results
6 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	1.4 dBm	17 dBm	Pass
	Channel 48, High Channel	1.1 dBm	17 dBm	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	1.2 dBm	24 dBm	Pass
	Channel 64, High Channel	1.1 dBm	24 dBm	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	1.1 dBm	24 dBm	Pass
	Channel 116, Mid Channel	0.9 dBm	24 dBm	Pass
	Channel 140, High Channel	1.2 dBm	24 dBm	Pass

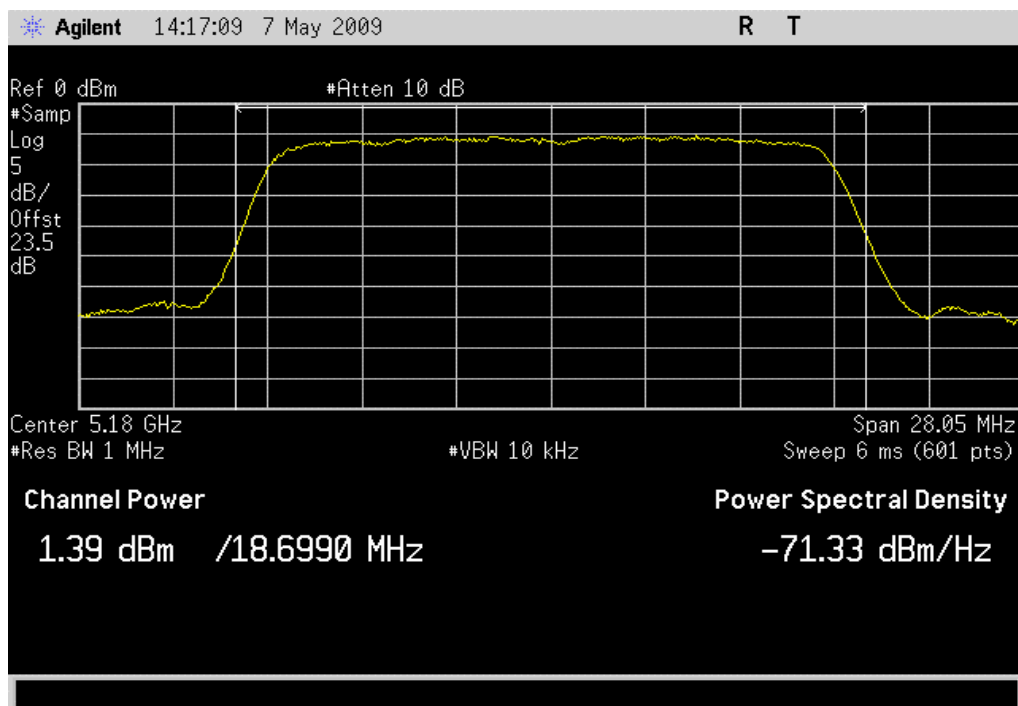
PEAK TRANSMIT POWER

6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel

Result: Pass

Value: 1.4 dBm

Limit: 17 dBm

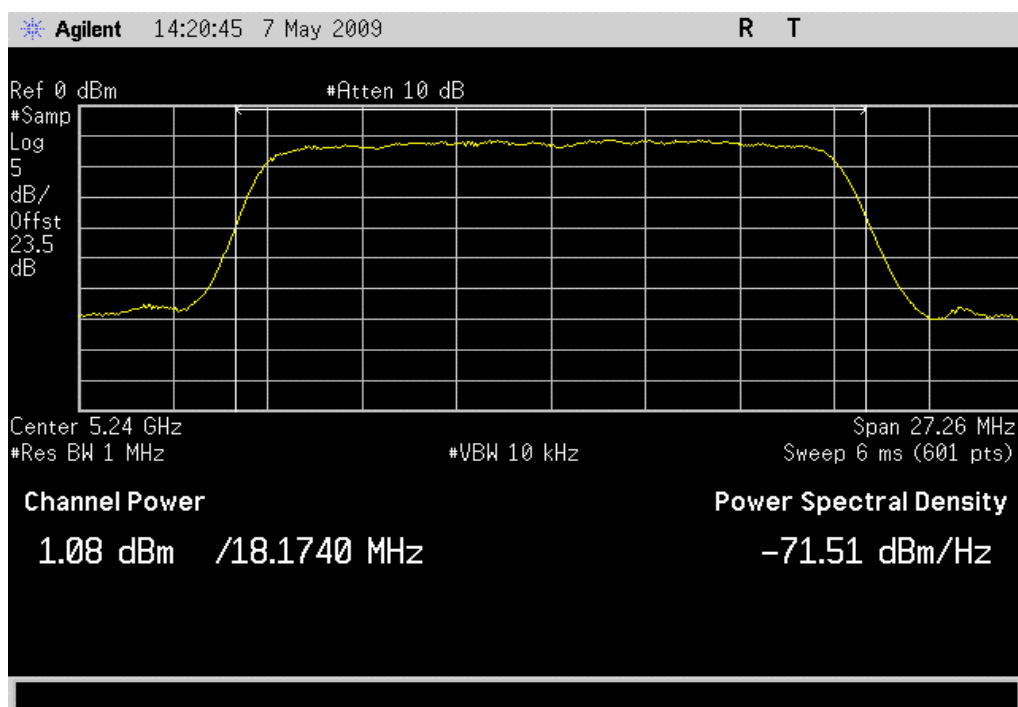


6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel

Result: Pass

Value: 1.1 dBm

Limit: 17 dBm



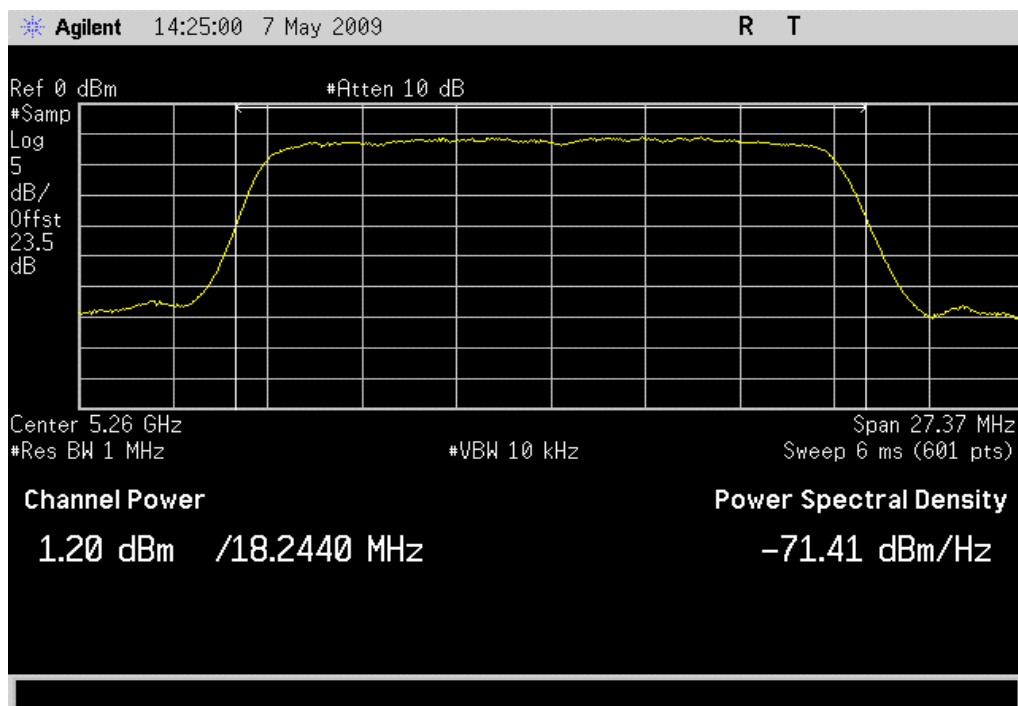
PEAK TRANSMIT POWER

6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel

Result: Pass

Value: 1.2 dBm

Limit: 24 dBm

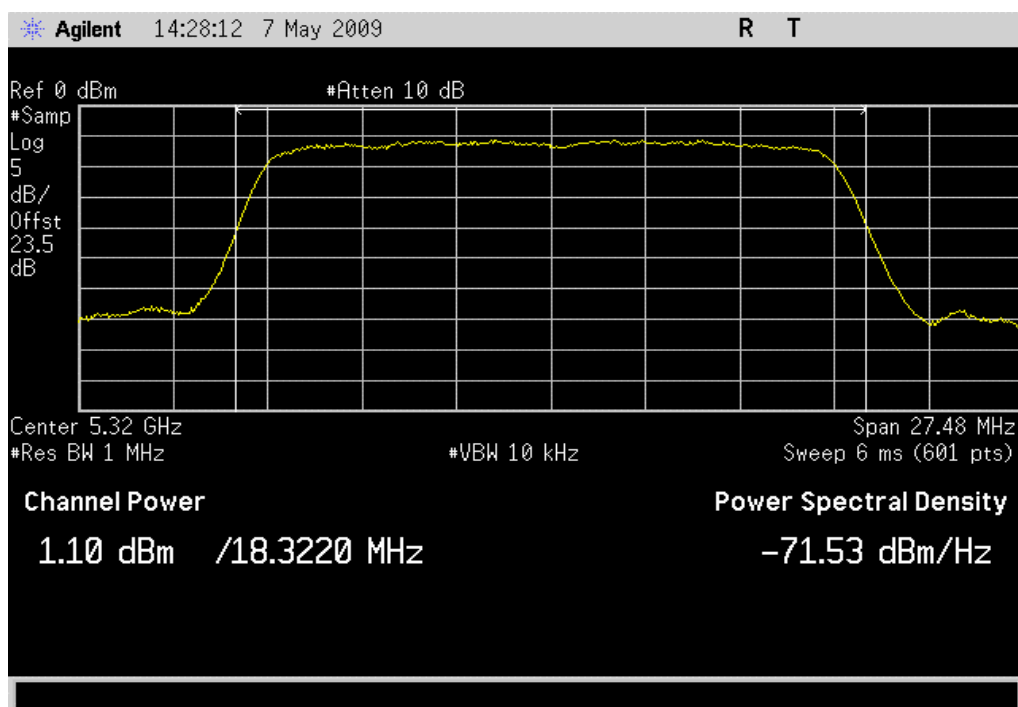


6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel

Result: Pass

Value: 1.1 dBm

Limit: 24 dBm



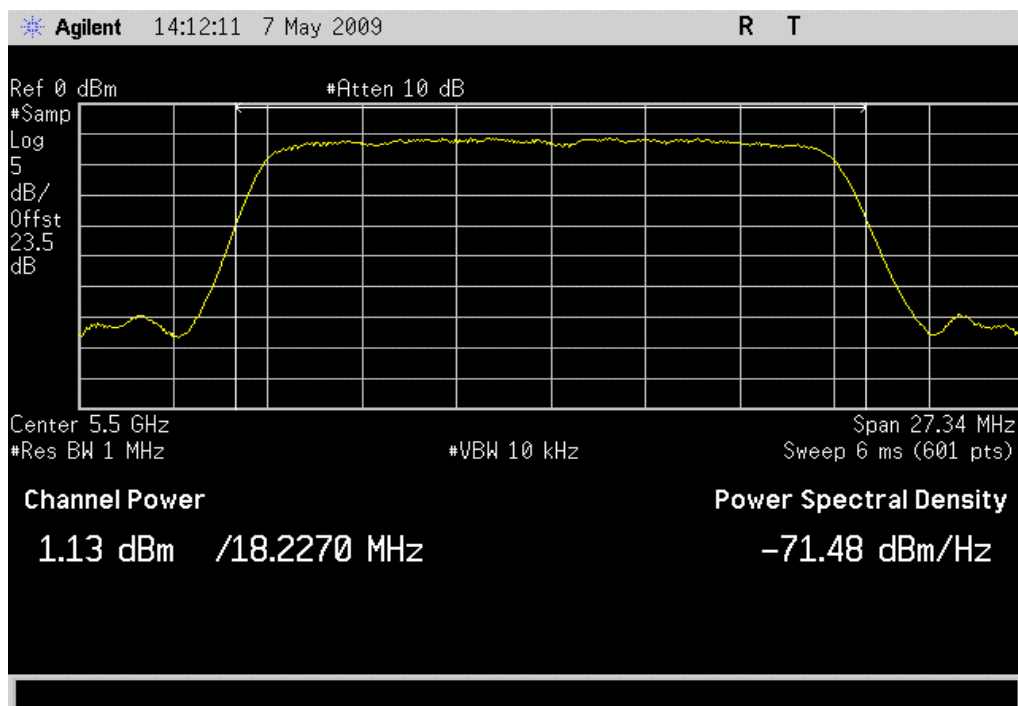
PEAK TRANSMIT POWER

6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel

Result: Pass

Value: 1.1 dBm

Limit: 24 dBm

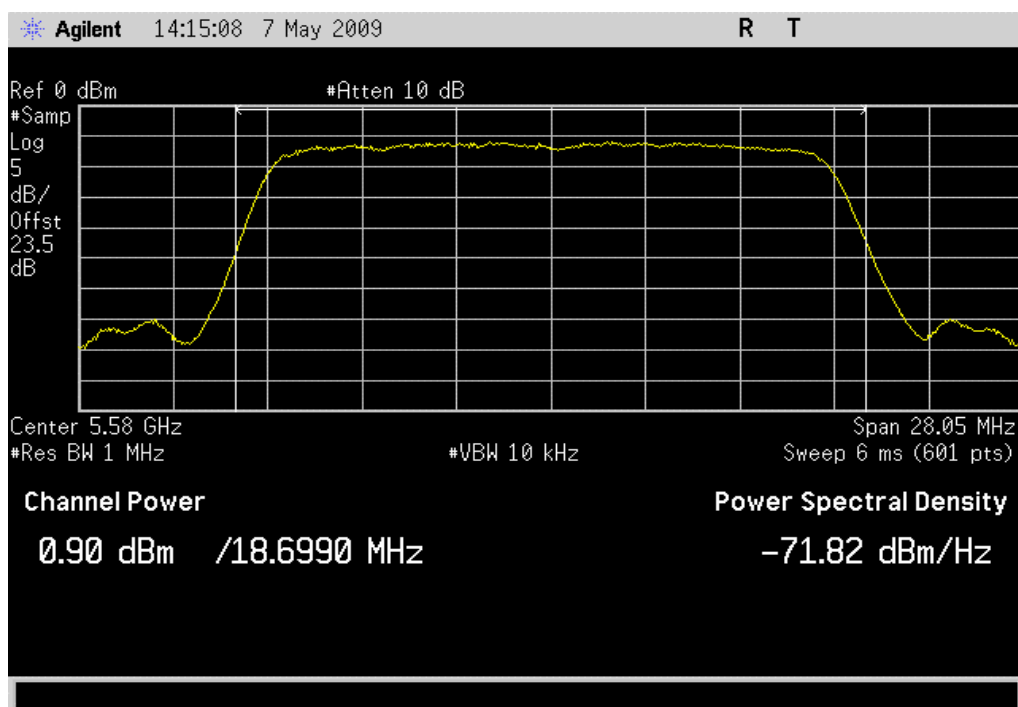


6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel

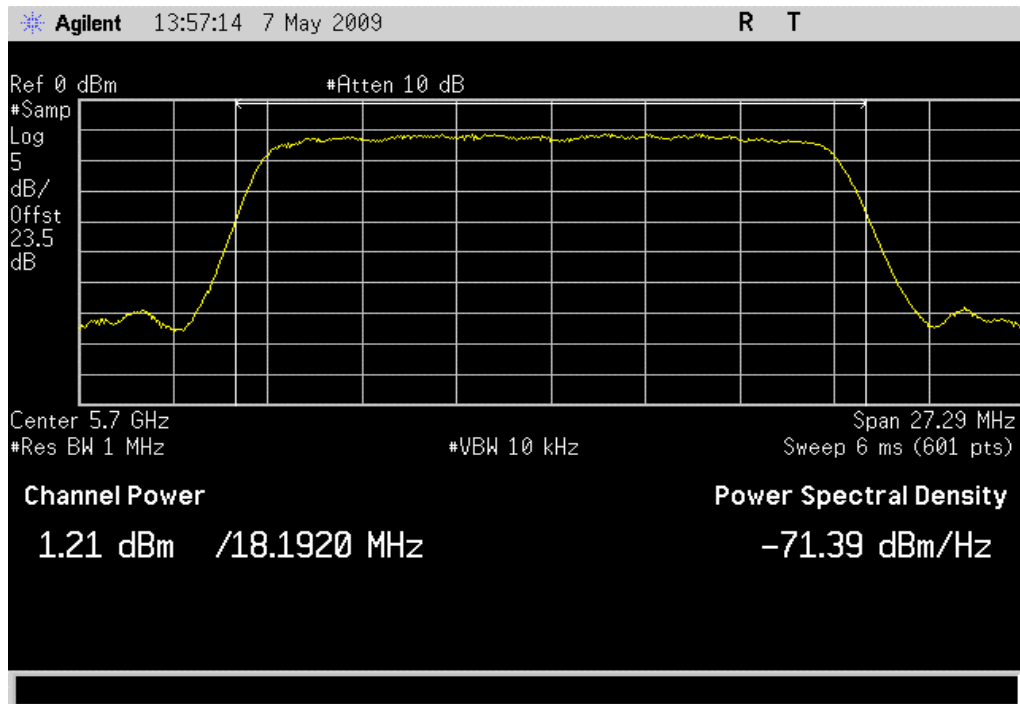
Result: Pass

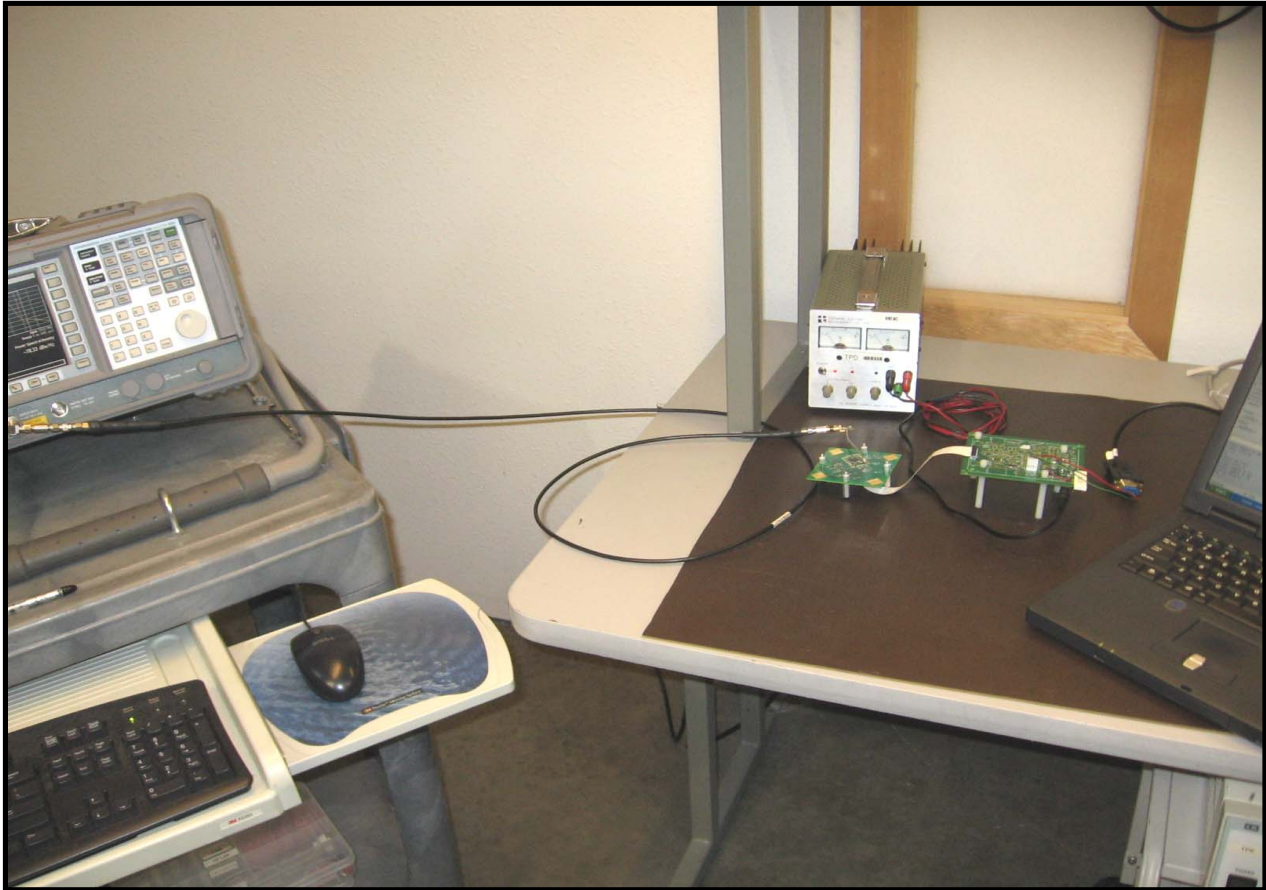
Value: 0.9 dBm

Limit: 24 dBm



6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel

Result: Pass**Value:** 1.2 dBm**Limit:** 24 dBm



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4407B	AAU	12/12/2008	13
Multimeter	Tektronix	DMM912	MMH	12/10/2008	13
DC Power Supply	Topward	TPS-2000	TPD	NCR	0
Chamber, Temp./Humidity Chamber	Cincinnati Sub Zero (CSZ)	ZH-32-2-2-H/AC	TBA	7/23/2008	24
Chamber Temp. & Humidity Controlle	ESZ / Eurotherm	Dimension II	TBC	7/23/2008	24

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4-2. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION


Variation of Supply Voltage

The primary supply voltage was varied over the range specified by the client. Per the client, the chip only works over this voltage range; it will shut off if the voltage is outside the specified range.

Variation of Ambient Temperature

Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range (-30 ° to +50° C) and at 10°C intervals.

A direct connect measurement was made between the EUT's antenna cable and a spectrum analyzer. The spectrum analyzer is equipped with a precision frequency reference that exceeds the stability requirement of the EUT. Measurements were made at the mid channel of each band to determine frequency stability. If the frequency variation is less than 100 ppm, the EUT will meet the requirement of 15.407(g), that the emissions are maintained within the band of operation.

NORTHWEST		FREQUENCY STABILITY		XMIT 2008.12.29		
EMC						
EUT: Summit FS848 Slave Module				Work Order: FOCU0053		
Serial Number: 30				Date: 05/04/09		
Customer: Focus Enhancements				Temperature: 22°C		
Attendees: Ponnappa Pasura				Humidity: 34%		
Project: None				Barometric Pres.: 1016.0 mb		
Tested by: Rod Peloquin				Job Site: EV06		
Power: 3.3 VDC nominal						
TEST SPECIFICATIONS				Test Method		
FCC 15.407:2009				ANSI C63.4:2003 DA 02-2138:2002		
COMMENTS						
None						
DEVIATIONS FROM TEST STANDARD						
No Deviations						
Configuration #	1	 Signature				
				Value	Limit	Results
Mid Channel 5150 - 5250 MHz Band						

Frequency Stability with Variation of DC Voltage (Ambient Temperature = 20°C)

Voltage (VDC)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
3.6 (110%)	5200.000000	5200.020559	3.95	n/a
3.3 (100%)	5200.000000	5200.008707	1.67	n/a
3.0 (90%)	5200.000000	5199.999452	0.11	n/a

Frequency Stability with Variation of Ambient Temperature (Primary Supply = 3.3 VDC)

Temp (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
50	5200.000000	5199.997490	0.48	n/a
40	5200.000000	5200.004457	0.86	n/a
30	5200.000000	5200.017312	3.33	n/a
20	5200.000000	5200.008707	1.67	n/a
10	5200.000000	5200.046017	8.85	n/a
0	5200.000000	5200.055230	10.62	n/a
-10	5200.000000	5200.061380	11.80	n/a
-20	5200.000000	5200.059040	11.35	n/a
-30	5200.000000	5200.043387	8.34	n/a

Mid Channel 5250 - 5350 MHz Band

Frequency Stability with Variation of DC Voltage (Ambient Temperature = 20°C)

Voltage (VDC)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
3.6 (110%)	5300.000000	5300.019298	3.64	n/a
3.3 (100%)	5300.000000	5300.008383	1.58	n/a
3.0 (90%)	5300.000000	5299.996416	0.68	n/a

Frequency Stability with Variation of Ambient Temperature (Primary Supply = 3.3 VDC)

Temp (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
50	5300.000000	5299.996980	0.57	n/a
40	5300.000000	5300.004042	0.76	n/a
30	5300.000000	5300.016850	3.18	n/a
20	5300.000000	5300.008383	1.58	n/a
10	5300.000000	5300.046432	8.76	n/a
0	5300.000000	5300.056085	10.58	n/a
-10	5300.000000	5300.064370	12.15	n/a
-20	5300.000000	5300.059030	11.14	n/a
-30	5300.000000	5300.044155	8.33	n/a

Mid Channel 5470 - 5725 MHz Band

Frequency Stability with Variation of DC Voltage (Ambient Temperature = 20°C)

Voltage (VDC)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
3.6 (110%)	5600.000000	5600.021933	3.92	n/a
3.3 (100%)	5600.000000	5600.010348	1.85	n/a
3.0 (90%)	5600.000000	5599.996941	0.55	n/a

Frequency Stability with Variation of Ambient Temperature (Primary Supply = 3.3 VDC)

Temp (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
50	5600.000000	5599.997100	0.52	n/a
40	5600.000000	5600.005270	0.94	n/a
30	5600.000000	5600.018445	3.29	n/a
20	5600.000000	5600.010348	1.85	n/a
10	5600.000000	5600.050174	8.96	n/a
0	5600.000000	5600.060050	10.72	n/a
-10	5600.000000	5600.066120	11.81	n/a
-20	5600.000000	5600.062120	11.09	n/a
-30	5600.000000	5600.046832	8.36	n/a

