

Test Report # 317060 A

Equipment Under Test: PPD

Test Date(s): 8/22/17 – 8/28/17

Prepared for: GE Healthcare
Attn: Matt Pekarske
8200 West Tower Ave.
Milwaukee, WI 53223

Report Issued by: Shane Dock, EMC Engineer

Signature:



Date: 10/25/17

Report Reviewed by: Adam Alger, Quality Systems Engineer

Signature: 

Date: 10/19/2017

Report Constructed by: Shane Dock, EMC Engineer

Signature:



Date: 10/25/17

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Laird Technologies Test Services in Review

The Laird Technologies, Inc. laboratory located at W66 N220 Commerce Court Cedarburg, Wisconsin, 53012 USA is recognized through the following organizations:



A2LA – American Association for Laboratory Accreditation

Accreditation based on ISO/IEC 17025: 2005 with Electrical (EMC) Scope

A2LA Certificate Number: 1255.01

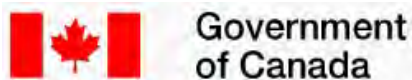
Scope of accreditation includes all test methods listed herein, unless otherwise noted.



Federal Communications Commission (FCC) – USA

Accredited recognition of two 3 meter Semi-Anechoic Chambers

Accredited Test Firm Registration Number: 953492



Innovation, Science and Economic Development Canada

ISED Site listing of two 3 meter Semi-Anechoic Chambers based on RSS-GEN – Issue 4

File Number: IC 3088A-2

File Number: IC 3088A-3

Company: GE Healthcare	Page 3 of 38	Name: PPD
Report: 317060 A		Model: See Section 2.1
Job: C-2826		Serial: See Section 2.1

1 TEST REPORT SUMMARY

During **8/22/17 to 8/28/17** the Equipment Under Test (EUT), **PPD**, as provided by **GE Healthcare** was tested to the following requirements:

Requirement	Description	Specification	Method	Result
FCC: 15.247 (a)(2) IC: RSS-247 5.2 (1)	Digital Modulation System 6 dB bandwidth	500 kHz	KDB*	Pass
FCC: 2.1049 IC: RSS-GEN 6.6	Occupied Bandwidth	Reported	ANSI C63.10	Pass
FCC: 15.247 (b)(3) IC: RSS-247 5.4 (4)	Maximum Conducted Output Power	30 dBm	KDB*	Pass
FCC: 15.247 (e) IC: RSS-247 5.2 (2)	Digital Modulation System Power Spectral Density	8 dBm / 3 kHz	KDB*	Pass
FCC: 15.247 (d) IC: RSS-247 5.5	RF Spurious Emissions at the Transmitter Antenna Terminal	20 dBc	KDB*	Pass
FCC: 15.247 (d) IC: RSS-GEN 8.10	Spurious Radiated Emissions in Restricted Bands	FCC 15.209 RSS-GEN 8.9	ANSI C63.10	Pass
FCC: 2.1055 (d) IC: RSS-GEN 6.11	Frequency Stability	Reported	ANSI C63.10	Pass
FCC: 15.207 IC: RSS-GEN 8.8	AC Power Line Conducted Emissions	0.150-30 MHz	ANSI C63.10	Pass

Note: KDB* is referring to KDB 558074 D01 DTS Meas Guidance V04.

Notice:

The results relate only to the item tested and described in this report. Any modifications made to the equipment under test after the specified test date(s) may invalidate the data herein.

If the resulting measurement margin is seen to be within the uncertainty value, as listed in this report, the possibility exists that this unit may not meet the required limit specification if subsequently tested.

2 CLIENT INFORMATION

Company Name	GE Healthcare
Contact Person	Matthew Pekarske
Address	8200 West Tower Ave

2.1 Equipment Under Test (EUT) Information

The following information has been supplied by the client

Product Name	PPD
Model Number	CARESCAPE ONE v1
Serial Number	Conducted measurements: SNA 16260004SP Radiated measurements: SNA 16270022SP DFS testing: SNA 16260004SP

2.2 Product Description

The PPD CARESCAPE ONE v1 is a transport bedside patient monitor used for measuring and displaying the physiologic data acquired from the connected patient. The wireless functionality will not be enabled in v1.

2.3 Modifications Incorporated for Compliance

None noted at time of test

2.4 Deviations and Exclusions from Test Specifications

None noted at time of test

2.5 Additional Information

Unit's WLAN functionality programmed via serial connection. Unit connected to 120V power with an adaptor as well as an internal battery. Channels 1, 6, 11 used for the WLAN's low, mid and high channels. The unit was tested on the 1 MBPS, 6 MBPS, and MCS0 data rates in the HT20 Tx modes.

FCC .ini file: GE_modified_FCC_930-0049-R1.2.ini

IC .ini file: GE_modified_IC_930-0049-R1.2.ini

3 REFERENCES

Publication	Edition	Date
CFR 47 Part 15	-	2017
ANSI C63.10	-	2013
RSS-247	2	2017
RSS GEN	4	2014

4 UNCERTAINTY SUMMARY

Using the guidance of the following publications the calculated measurement uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level, using a coverage factor of $k = 2$.

References	Version / Date
CISPR 16-4-1	Ed. 2 (2009-02)
CISPR 16-4-2	Ed. 2 (2011-06)
CISPR 32	Ed. 1 (2012-01)
ANSI C63.23	2012
A2LA P103	February 4, 2016
A2LA P103c	August 10, 2015
ETSI TR 100-028	V1.3.1 (2001-03)

Measurement Type	Configuration	Uncertainty $\pm$
Radiated Emissions	Biconical Antenna	5.0 dB
Radiated Emissions	Log Periodic Antenna	5.3 dB
Radiated Emissions	Horn Antenna	4.7 dB
AC Line Conducted Emissions	Artificial Mains Network	3.4 dB
Telecom Conducted Emissions	Asymmetric Artificial Network	4.9 dB
Disturbance Power Emissions	Absorbing Clamp	4.1 dB
Radiated Immunity	3 Volts/meter	2.2 dB
Conducted Immunity	CDN/EM/BCI	2.4/3.5/3.4 dB
EFT Burst/Surge	Peak pulse voltage	164 volts
ESD Immunity	15 kV level	1377 Volts

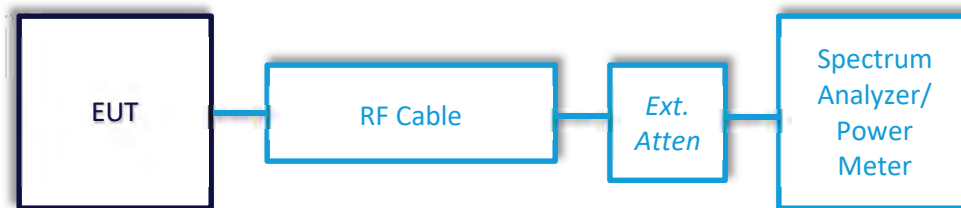
Parameter	ETSI U.C. $\pm$	U.C. $\pm$
Radio Frequency, from F0	1×10^{-7}	0.55×10^{-7}
Occupied Channel Bandwidth	5 %	2 %
RF conducted Power (Power Meter)	1.5 dB	1.2 dB
RF conducted emissions (Spectrum Analyzer)	3.0 dB	1.7 dB
All emissions, radiated	6.0 dB	5.3 dB
Temperature	1° C	0.65° C
Humidity	5 %	2.9 %
Supply voltages	3 %	1 %

5 TEST DATA

5.1 Antenna Port Conducted Emissions

Description of Measurement	The direct measurement of emissions at the antenna port of the EUT is achieved by use of a RF connection to a spectrum analyzer or power meter. The cable and attenuator factors are loaded into the analyzer or power meter allowing for direct measurement readings without the need for further corrections.
Example Calculations	Measurement (dBm) + Cable factor (dB) + External Attenuator (dB) = Corrected Reading (dBm) Margin (dB) = Limit (dBm) – Corrected Reading (dBm)

Block Diagram



5.1.1 Antenna Port Conducted Emissions – Power Spectral Density

Operator	Aidi Zainal
QA	Shane D.
Test Date	8/28/2017
Location	Conducted measurement area
Temp. / R.H.	72/66%
Requirement	FCC: 15.247 (e) IC: RSS-247 5.2 (2)
Method	FCC KDB 558074 D01 DTS Meas Guidance V04, Section 10.2

Limits:

PSD (dBm/3 kHz)

< 8

Test Parameters

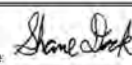
Frequency	2412, 2437 and 2462 MHz
Settings	Peak detector with Max hold
Settings	RBW=100kHz
Settings	Span 1.5 times DTS BW

Instrumentation

Laird
Smart Technology. Delivered.

Date: 22-Aug-2017 Test: Conducted RF Radio Job: C-2826
PE: Shane Dock Customer: GE Healthcare Quote: 317060

No.	Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due Date	Equipment Status
1	AA 960160	UTIFLEX Cable	Micro-Coax	UFC142A-0-0720-201	218652-001	6/29/2016	11/11/2017	Active Verification
2	EE 960073	Spectrum Analyzer	Agilent	E4448A	US45300564	11/21/2016	11/21/2017	Active Calibration

Tested By:  Quality Assurance: 

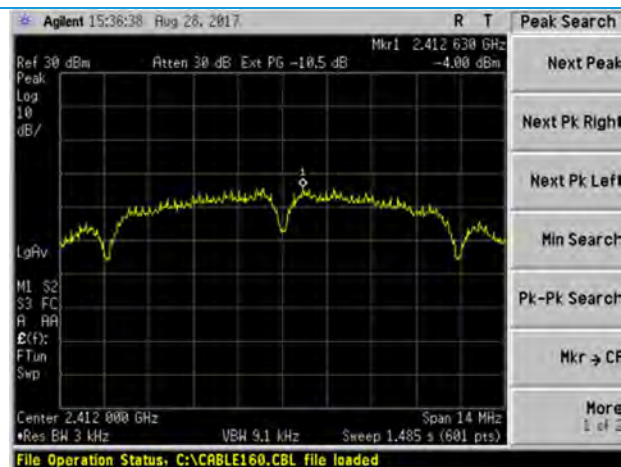
Table

1MBPS				
Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
1	2412.0	-4.0	8.0	12.0
6	2437.0	-4.6	8.0	12.6
11	2462.0	-4.6	8.0	12.6

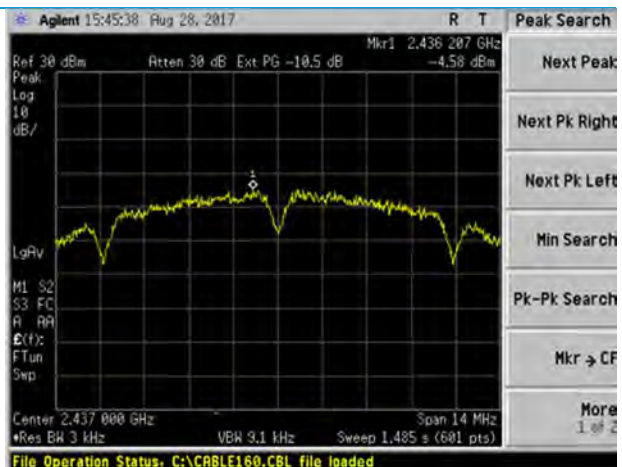
6MBPS				
Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
1	2412.0	-11.4	8.0	19.4
6	2437.0	-11.0	8.0	19.0
11	2462.0	-11.8	8.0	19.8

MCS0				
Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
1	2412.0	-12.3	8.0	20.3
6	2437.0	-11.1	8.0	19.1
11	2462.0	-11.8	8.0	19.8

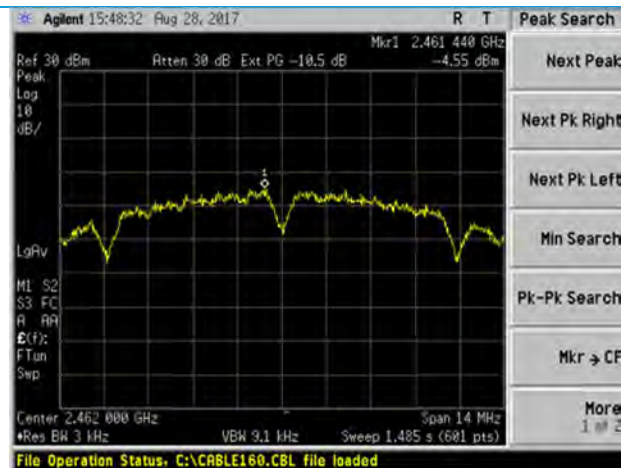
Plots



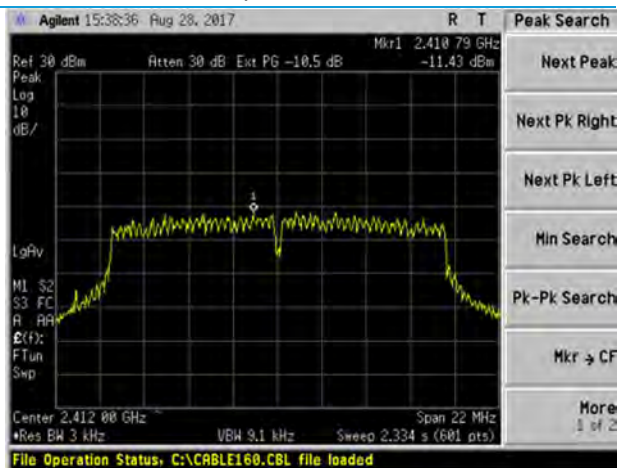
1 Mbps Low Channel



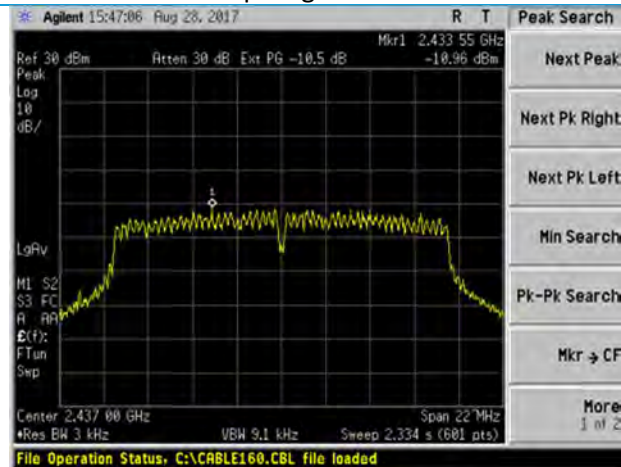
1 Mbps Mid Channel



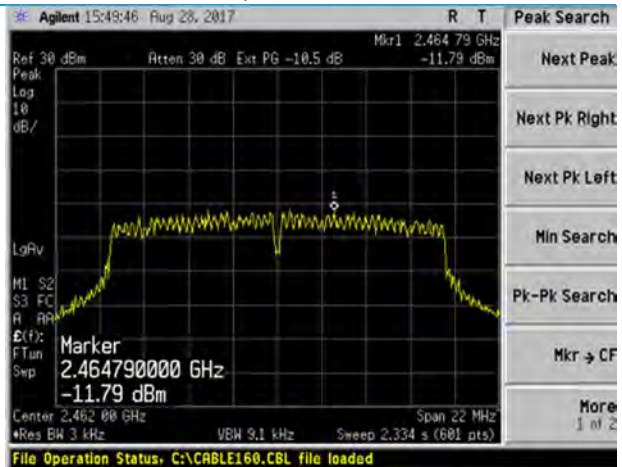
1 Mbps High Channel



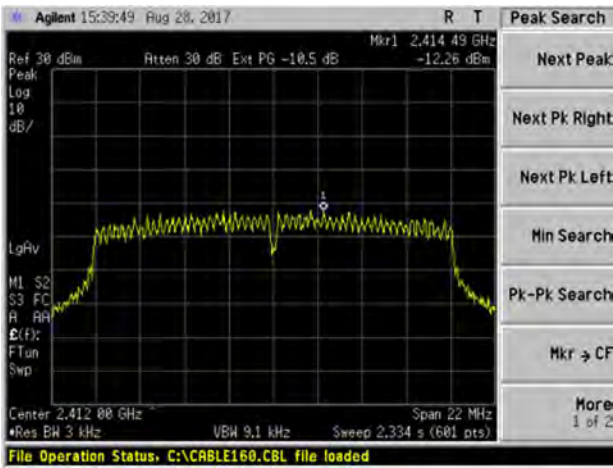
6 Mbps Low Channel



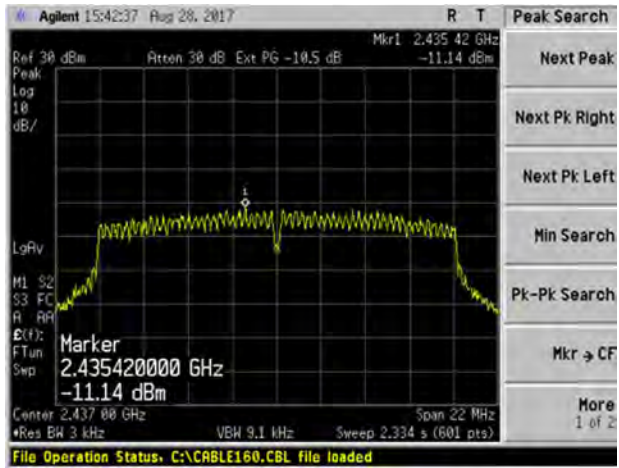
6 Mbps Mid Channel



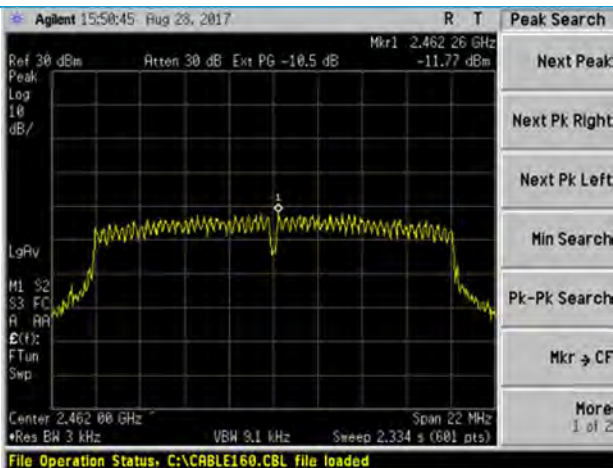
6 Mbps High Channel



MCS0 Low Channel



MCS0 Mid Channel



MCS0 High Channel

5.1.2 Antenna Port Conducted Emissions – Occupied Bandwidth/DTS Bandwidth

Operator	Aidi Zainal
QA	Shane Dock
Test Date	8/28/17
Location	Conducted RF Area
Temp. / R.H.	72 degrees F, 33% RH
Requirement	OBW: FCC: 2.1049 IC: RSS-GEN 6.6 DTS BW: FCC: 15.247 (a)(2) IC: RSS-247 5.2 (1)
Methods	ANSI C63.10 Section 6.9.2 FCC KDB 558074 D01 DTS Meas Guidance V04, Section 8

Limits:

6 dB BW (MHz)
> 500

Test Parameters

Frequency	2412, 2437 and 2462 MHz
Settings	Peak detector with Max hold
Settings	RBW=100kHz (DTS BW) RBW=200kHz (OBW)
Settings	Span >2 times BW

Tables

DTS BW

1MBPS				
Channel	Frequency (MHz)	DTS Bandwidth (MHz)	Limit (MHz)	Margin (MHz)
1	2412.0	9.1	0.5	8.6
6	2437.0	9.1	0.5	8.6
11	2462.0	9.1	0.5	8.6

6MBPS				
Channel	Frequency (MHz)	DTS Bandwidth (MHz)	Limit (MHz)	Margin (MHz)
1	2412.0	15.2	0.5	14.7
6	2437.0	15.2	0.5	14.7
11	2462.0	15.2	0.5	14.7

MCS0				
Channel	Frequency (MHz)	DTS Bandwidth (MHz)	Limit (MHz)	Margin (MHz)
1	2412.0	15.2	0.5	14.7
6	2437.0	15.6	0.5	15.1
11	2462.0	15.2	0.5	14.7

99% BW

1MBPS		
Channel	Frequency (MHz)	99% Bandwidth (MHz)
1	2412.0	13.9
6	2437.0	14.0
11	2462.0	14.0

6MBPS		
Channel	Frequency (MHz)	99% Bandwidth (MHz)
1	2412.0	16.5
6	2437.0	16.5
11	2462.0	16.5

MCS0		
Channel	Frequency (MHz)	99% Bandwidth (MHz)
1	2412.0	17.6
6	2437.0	17.7
11	2462.0	17.6

Plots

1 Mbps

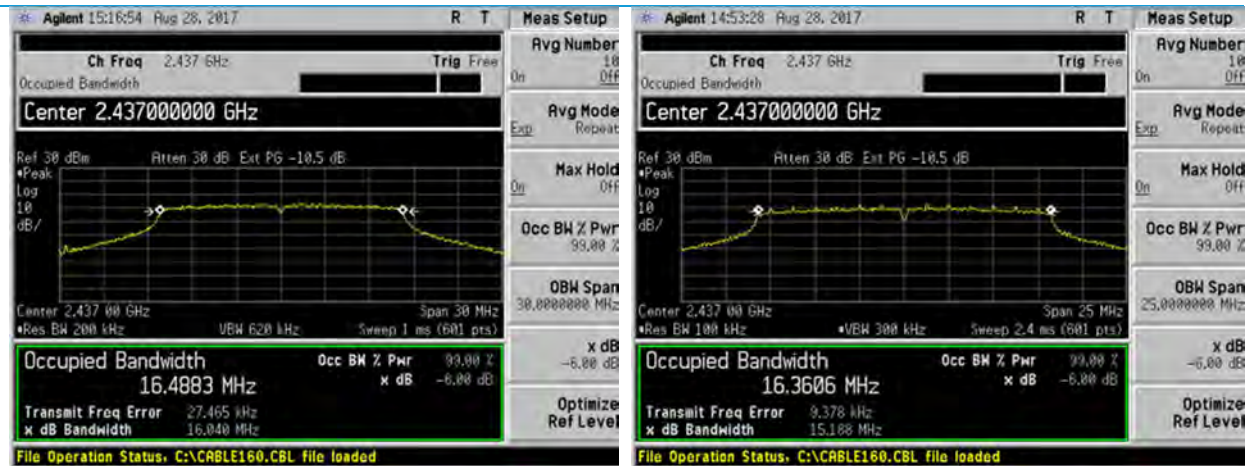


6 Mbps



99% BW

6 dB BW



99% BW

6 dB BW



99% BW

6 dB BW

MCS0



5.1.3 Antenna Port Conducted Emissions – Maximum Conducted Output Power

Operator	Aidi Zainal
QA	Shane Dock
Test Date	8/28/2017
Location	Conducted measurement area
Temp. / R.H.	72/66%
Requirement	FCC: 15.247 (b)(3) IC: RSS-247 5.4 (4)
Method	FCC KDB 558074 D01 DTS Meas Guidance V04, section 9.1.3

Limits:

Maximum Conducted Output Power (watts)	Maximum Conducted Output Power (dBm)
1	30

Test Parameters

Frequency	2412, 2437 and 2462 MHz
Settings	Channel mode = Modulated
Settings	Measurement = Peak
Settings	Trigger source = internal A

Instrumentation

								
Smart Technology. Delivered.								
Date: 22-Aug-2017		Test: Conducted Power Output				Job: C-2826		
PE: Shane Dock		Customer: GE Healthcare				Quote: 317060		
No.	Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due Date	Equipment Status
1	EE 960090	Power Meter	Anritsu	ML2495A	1335006	4/5/2017	4/5/2018	Active Calibration
2	EE 960091	Power Sensor	Anritsu	MA2491A	1249277	4/5/2017	4/5/2018	Active Calibration
3	AA 960160	UTIFLEX Cable	Micro-Coax	UFC142A-0-0720-20(	218652-001	6/29/2016	8/23/2017	Active Verification

Company: GE Healthcare	Page 19 of 38	Name: PPD
Report: 317060 A		Model: See Section 2.1
Job: C-2826		Serial: See Section 2.1

Table

1MBPS				
Channel	Frequency (MHz)	Peak Output power (dBm)	Limit (dBm)	Margin (dB)
1	2412.0	19.6	30.0	10.4
6	2437.0	19.9	30.0	10.2
11	2462.0	20.0	30.0	10.0

6MBPS				
Channel	Frequency (MHz)	Peak Output power (dBm)	Limit (dBm)	Margin (dB)
1	2412.0	22.1	30.0	7.9
6	2437.0	22.0	30.0	8.0
11	2462.0	22.3	30.0	7.7

MCS0				
Channel	Frequency (MHz)	Peak Output power (dBm)	Limit (dBm)	Margin (dB)
1	2412.0	21.7	30.0	8.3
6	2437.0	22.5	30.0	7.5
11	2462.0	22.5	30.0	7.5

5.1.4 Antenna Port Conducted Emissions – RF Spurious Emissions

Operator	Aidi Zainal
QA	Shane Dock
Test Date	8/28/2017
Location	Conducted measurement area
Temp. / R.H.	72/66%
Requirement	FCC: 15.247 (d) IC: RSS-247 5.5
Method	FCC KDB 558074 D01 DTS Meas Guidance V04, section 11

Limits:

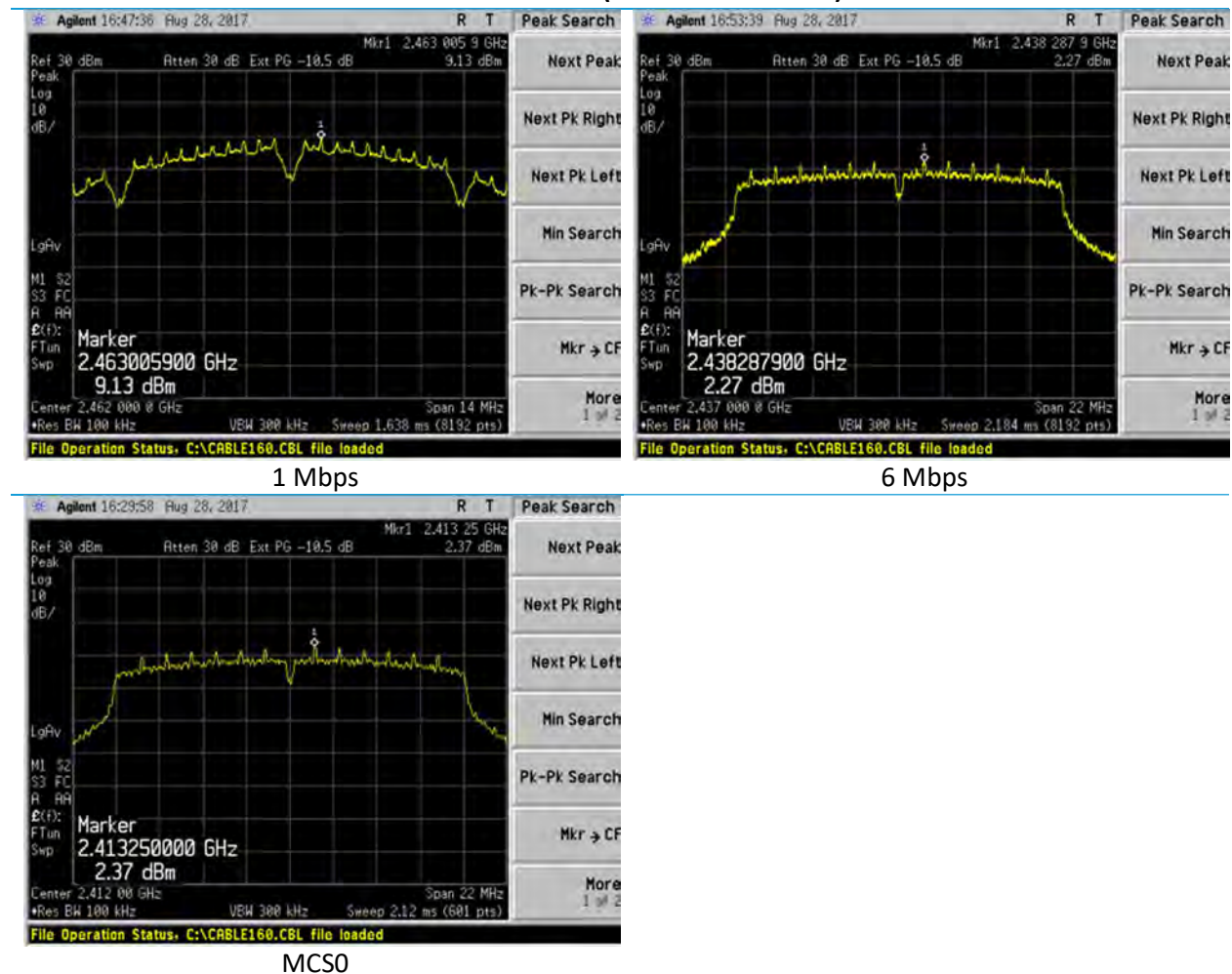
RF Spurious Limit
20 dBc

Test Parameters

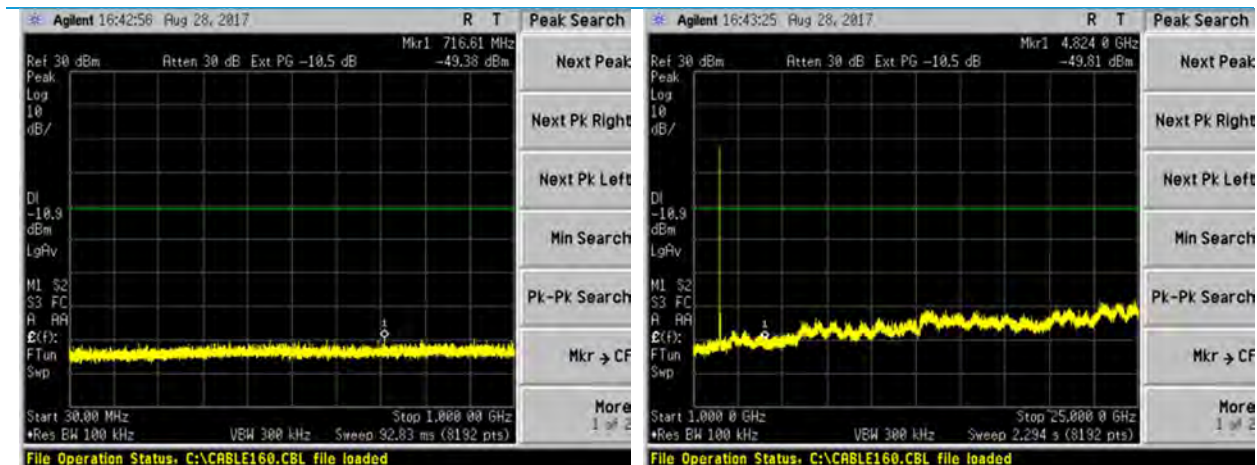
Frequency	2412, 2437 and 2462 MHz
Settings	Peak detector with Max hold
Settings	RBW=100kHz
Settings	VBW = 300kHz
EUT Spec	Spurious emissions < 20dBc
Notes	All emissions 15 dB under limit

Plots

Reference Levels (Worst-Case Shown)

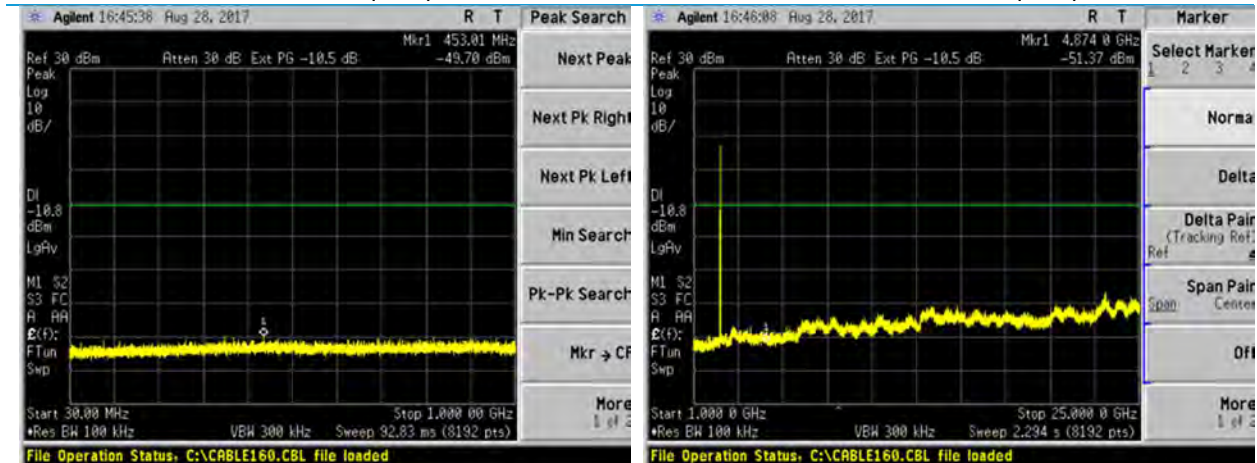


1 MBPS



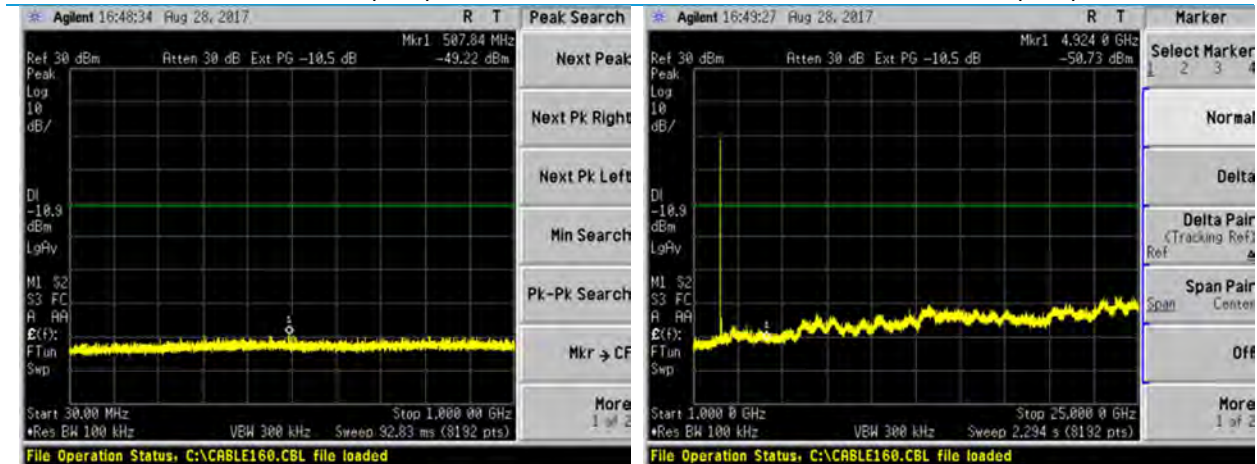
30-1000 MHz (Low)

1000-25000 MHz (Low)



30-1000 MHz (Mid)

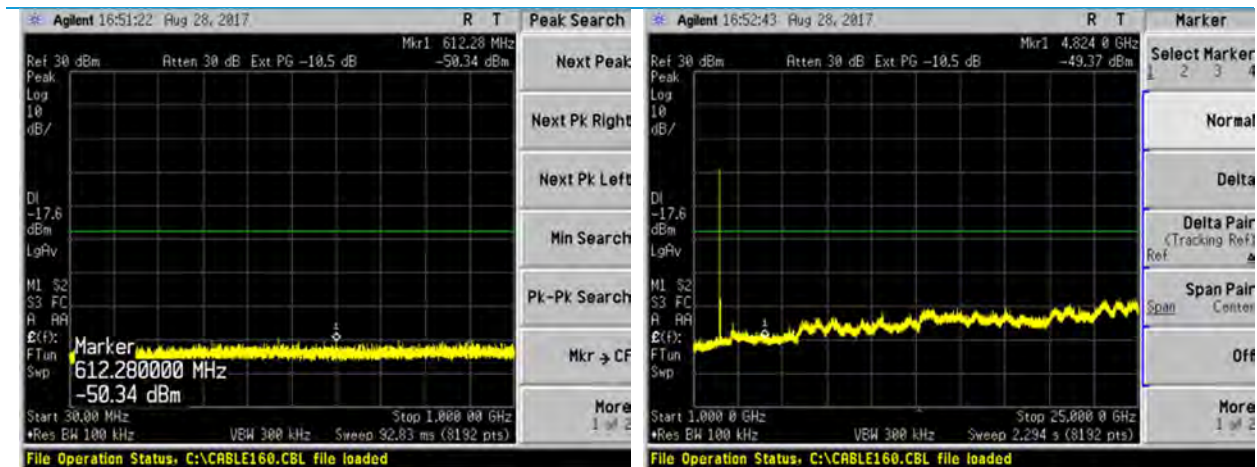
1000-25000 MHz (Mid)



30-1000 MHz (High)

1000-25000 MHz (High)

6 MBPS



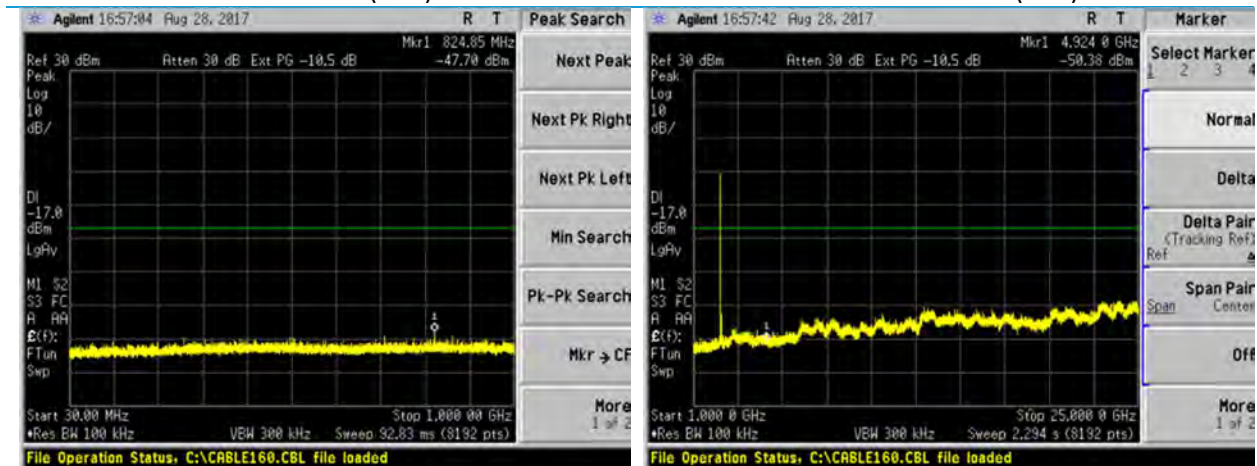
30-1000 MHz (Low)

1000-25000 MHz (Low)



30-1000 MHz (Mid)

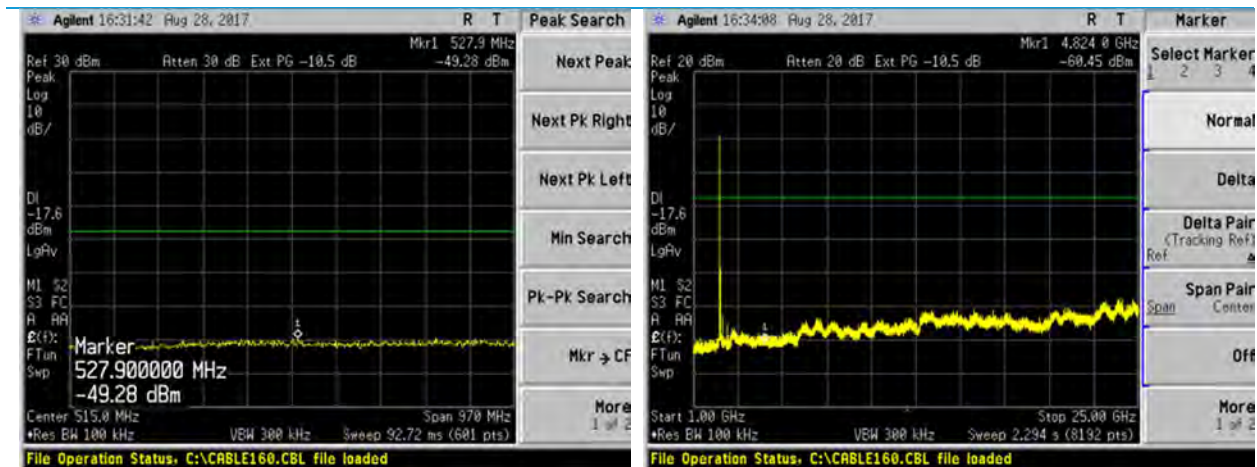
1000-25000 MHz (Mid)



30-1000 MHz (High)

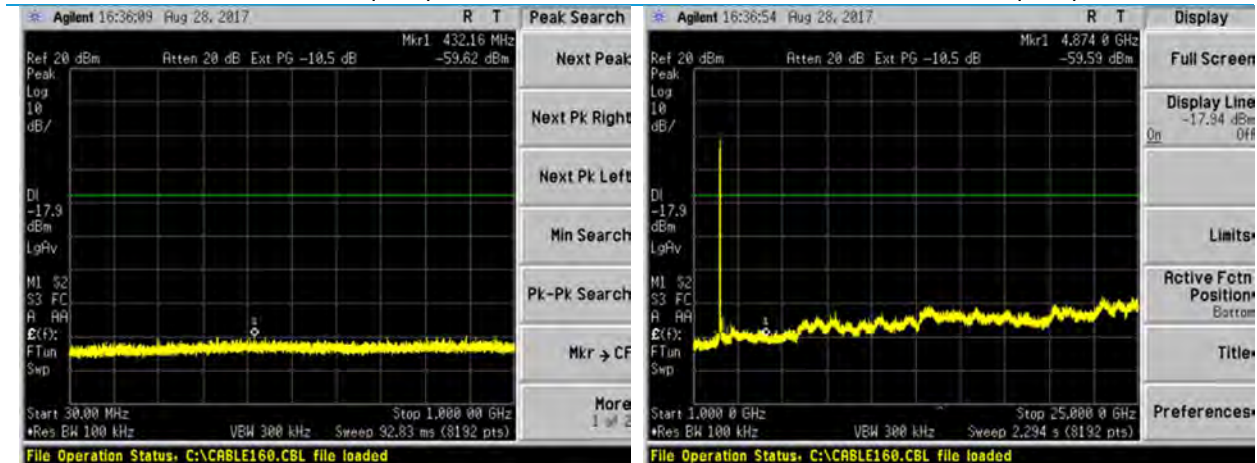
1000-25000 MHz (High)

MCS0



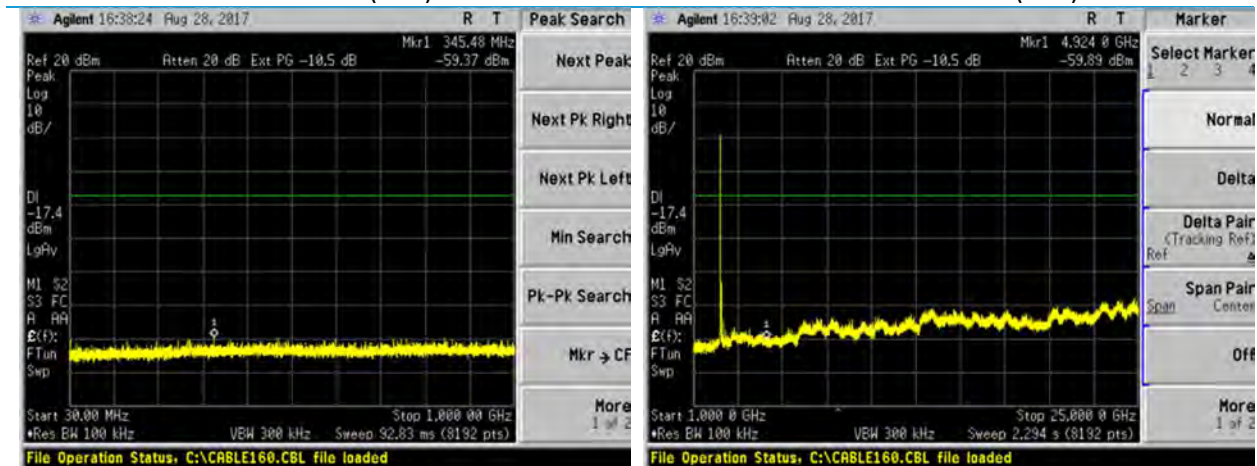
30-1000 MHz (Low)

1000-25000 MHz (Low)



30-1000 MHz (Mid)

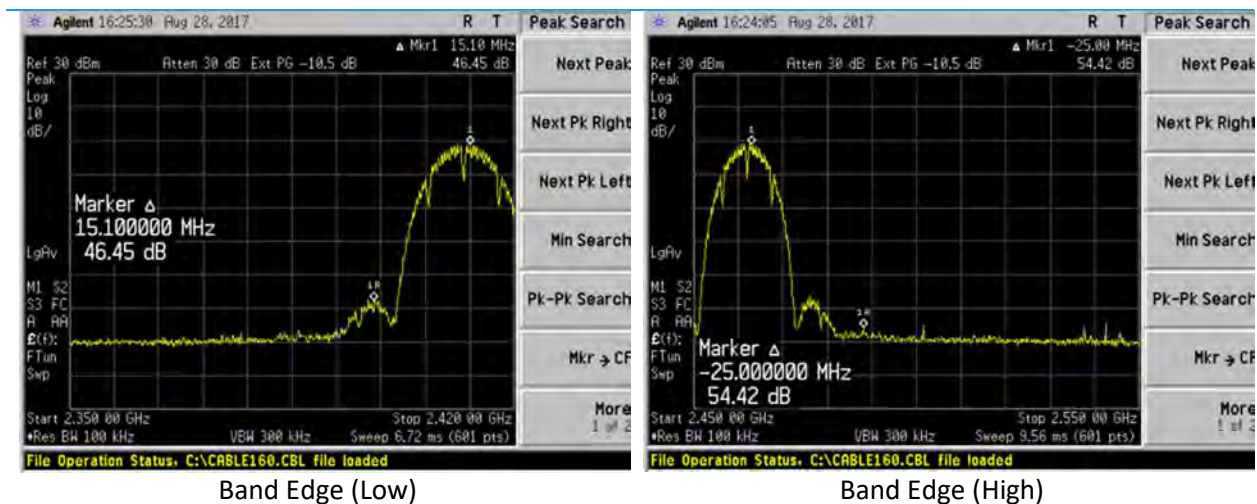
1000-25000 MHz (Mid)



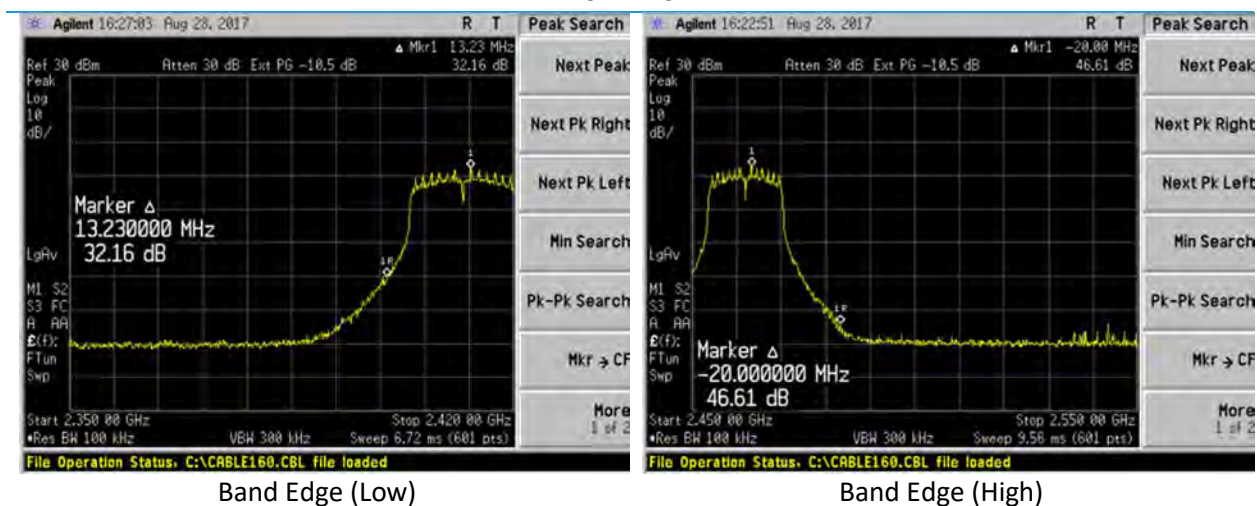
30-1000 MHz (High)

1000-25000 MHz (High)

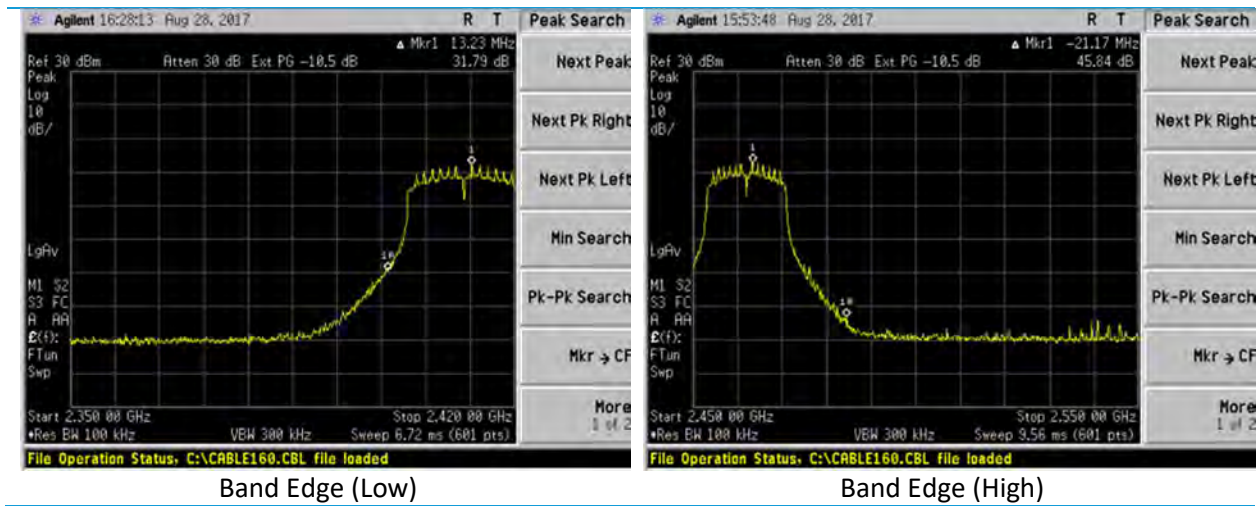
1 MBPS



6 MBPS



MCS0



5.1.5 Antenna Port Conducted Emissions – Frequency Stability

Operator	Aidi Zainal
Test Date	4/25/12
Requirement	FCC: 2.1055 (d) IC: RSS-GEN 6.11
Method	ANSI C63.10 Section 6.8

Test Parameters

Frequency	2412, 2437, 2462 MHz
Notes	Data leveraged from TIWI 5 Modular Data

Instrumentation


LS RESEARCH LLC
 Wireless Product Development
 Equipment Calibration

Date: 20 Dec 2011 Type Test: Conducted measurements Job #: C-1371
 Prepared By: Aidi Customer: LSR Quote #: 311062

No.	Asset #	Description	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date	Equipment Status
1	AA 980143	PicoeSis	Core	EXD1001M8.0	5540519	6/12/11	6/12/12	Active Calibration
2	CC 000221C	Spectrum Analyzer	HP	E4407B	1639160256	5/4/2011	5/4/2012	Active Calibration
3	EE 000073	Spectrum Analyzer	Agilent	E4440A	0845300564	4/25/2011	4/25/2012	Active Calibration
4	AA 980144	PicoeSis	Core	EXD1001M720	5000373	6/12/11	6/12/12	Active Calibration

Project Engineer: Aidi Quality Assurance: ADMALGER

Table (Values below listed in Hz at the given voltages)

	3.06 VDC	3.6 VDC	4.14 VDC	Deviation
Low Channel	2412000969	2412000990	2402000479	20
Mid Channel	2437000920	2437000940	2440000539	21
High Channel	2462000939	2462000960	2462000539	41

5.2 Radiated Emissions

Description of Measurement	The frequency spectrum is investigated for intentional and / or unintentional signals emanating from the EUT by use of a standardized test site and measurement antenna. The antenna, cable, pre-amp, and other necessary measurement system correction factors are loaded onto the EMI receiver / spectrum analyzer when the measurements are performed allowing the data to be gathered and reported as corrected values. The maximum emissions from the EUT are determined by turn-table azimuth rotation (360°) and scanning of the measurement antenna. Maximized levels are noted at degree values of azimuth, measurement antenna height, and measurement antenna polarity.
Example Calculations	Measurement (dBμV) + Cable factor (dB) + Other (dB) + Antenna Factor (dB/m) = Corrected Reading (dBμV/m) Margin (dB) = Limit (dBμV/m) - Corrected Reading (dBμV/m) Example at 4000 MHz: Reading = 40 dBμV + 3.4 dB + 0.9 dB + 6.5 dB/m = 50.8 dBμV/m Average Limit = 20 log (500) = 54 dBμV/m Margin = 54 dBμV/m - 50.8 dBμV/m = 3.2 dB

Block Diagram



5.2.1 Radiated Emissions

Operator	Zach Wilson
QA	Khairul Aidi Zainal
Test Date	8/24/17 – 8/30/17
Location	Chamber 5
Temp. / R.H.	72 degrees F, 52% RH
Requirement	FCC: 15.247 (d) IC: RSS-GEN 8.10
Method	ANSI C63.10 Sections 6.5 and 6.6

Limits:

	30-88 MHz	88-216 MHz	216 – 960 MHz	960+ MHz
Field Strength ($\mu\text{V}/\text{m}$)	100	150	200	500
Field Strength ($\text{dB}\mu\text{V}/\text{m}$)	40.0	43.5	46.0	54.0

Test Parameters

Frequency	30-25000
Distance	3 meters
Settings	Unit tested at Low, Mid, High Channels
Settings	RBW = 120kHz, VBW 1.2 MHz (<1 GHz) RBW = 1 MHz, VBW = 3 MHz (>1 GHz)
Notes	Measurements taken in restricted bands. For measurements above 1 GHz, antenna used with a tilt gear to keep EUT within the cone of radiation. Absorbers were also added to the floor of the chamber while measuring emissions above 1 GHz. Plots shown represent worst-case. Emissions under 1 GHz are not a function of Tx Mode.
Example Calculation	Limit ($\text{dB}\mu\text{V}$) = $20 * \log[\text{Limit } (\mu\text{V})]$ $40 = 20 * \log(100)$ Raw Data + Antenna Factor + Cable Factor = Reported Data $19.77 \text{ dB}\mu\text{V} + 12.50 \text{ dB/m} + 0.93 \text{ dB} = 33.20 \text{ dB}\mu\text{V/m}$

Instrumentation



Date: 22-Aug-2017

Test: Radiated Emissions

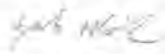
Job: C-2826

PE: Shane Dock

Customer: GE Healthcare

Quote: 317060

No.	Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due Date	Equipment Status
1	AA 960158	Double Ridge Horn Antenna	ETS Lindgren	3117	109300	10/13/2016	10/13/2017	Active Calibration
2	EE 960088	EMI Receiver	Agilent	N9038A	MY51210138	3/2/2017	3/2/2018	Active Calibration
3	EE 960085	EMI Receiver	Agilent	N9038A	MY51210148	5/12/2017	5/12/2018	Active Calibration
4	AA 960176	Cable - low loss 6m	A.H. Systems, Inc	SAC-26G-6	395	5/15/2017	5/15/2018	Active Verification
5	AA 960174	Small Horn Antenna	ETS Lindgren	3116C-PA	00206680	5/1/2017	5/1/2018	Active Calibration
6	EE 960159	Low Noise Amplifier	Mini-Circuits	ZVA-213X-S+	462101702	4/12/2017	4/12/2018	Active Calibration
7	AA 960153	High Pass Filter 2.4 GHz	KWM	HPF-L-14186	7272-04	5/2/2017	5/2/2018	Active Calibration
8	AA 960078	Log Periodic Antenna	BICO	93146	9701-4855	4/17/2017	4/17/2018	Active Calibration
9	AA 960163	Log Periodic Antenna	A.H. Systems, Inc	SAS-512-2	500	3/28/2017	3/28/2018	Active Calibration

Tested By: 

Quality Assurance: 

Table

Band Edges

Frequency (GHz)	Data Rate	Channel	EUT orientation	Antenna Polarity	Height (cm)	Azimuth (degree)	Peak Reading (dBµV/m)	Peak Limit (dBµV/m)	Peak Margin (dB)
2.4839	6 Mbps	High	Side	Horizontal	100	185	62.7	74.0	11.3
2.4839	MCS0	High	Side	Horizontal	100	185	66.7	74.0	7.3
2.4848	1 Mbps	High	Side	Horizontal	100	185	58.8	74.0	15.2
2.3900	6 Mbps	Low	Side	Horizontal	100	185	63.9	74.0	10.1
2.3899	MCS0	Low	Side	Horizontal	100	185	63.3	74.0	10.7
2.3896	1 Mbps	Low	Side	Horizontal	100	185	57.6	74.0	16.4

Frequency (GHz)	Data Rate	Channel	EUT orientation	Antenna Polarity	Height (cm)	Azimuth (degree)	Average Reading (dBµV/m)	Average Limit (dBµV/m)	Average Margin (dB)
2.4837	6 Mbps	High	Side	Horizontal	100	185	49.7	54.0	4.3
2.4836	MCS0	High	Side	Horizontal	100	185	49.5	54.0	4.5
2.4870	1 Mbps	High	Side	Horizontal	100	185	47.4	54.0	6.6
2.3900	6 Mbps	Low	Side	Horizontal	100	185	46.1	54.0	7.9
2.3898	MCS0	Low	Side	Horizontal	100	185	47.1	54.0	6.9
2.3898	1 Mbps	Low	Side	Horizontal	100	185	46.1	54.0	7.9

Spurious Emissions

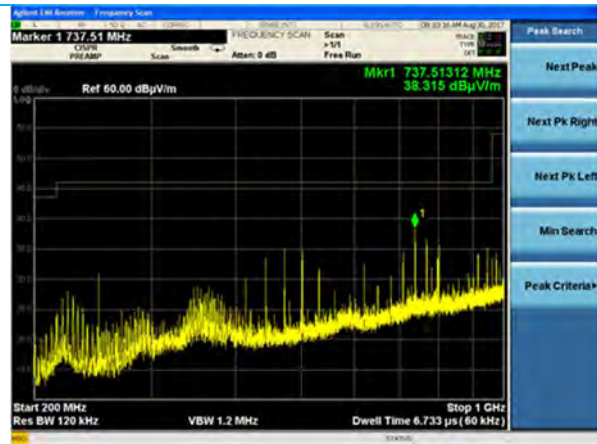
Frequency (GHz)	Channel	EUT orient.	Polarity	Height (cm)	Azimuth (degree)	Peak Reading (dBμV/m)	Peak Limit (dBμV/m)	Peak Margin (dB)	Avg Reading (dBμV/m)	Avg Limit (dBμV/m)	Avg Margin (dB)
1.6002	Low	Side	H	187.00	175.75	47.9	74.0	26.1	38.7	54.0	15.3
4.8680	Mid	Normal	Vertical	150.00	197.50	45.4	74.0	28.6	41.4	54.0	12.6
4.8240	Low	Normal	Vertical	121.00	163.50	46.5	74.0	27.5	42.6	54.0	11.4
4.9240	High	Normal	Vertical	150.00	182.75	45.1	74.0	28.9	40.4	54.0	13.6

Frequency (MHz)	EUT Channel	Height (cm)	Azimuth (degree)	Quasi Peak Reading (dBμV/m)	Quasi Peak Limit (dBμV/m)	Margin (dB)	Antenna Polarity	EUT orientation
799.0	Mid	100.00	321.00	32.8	46.0	13.2	H	TT
472.0	Mid	182.00	320.75	34.2	46.0	11.8	H	TT
944.0	Mid	110.00	0.00	39.8	46.0	6.2	V	TT
973.6	Mid	100.00	0.00	38.9	54.0	15.1	V	TT

Plots



30-200 MHz (6 Mbps)



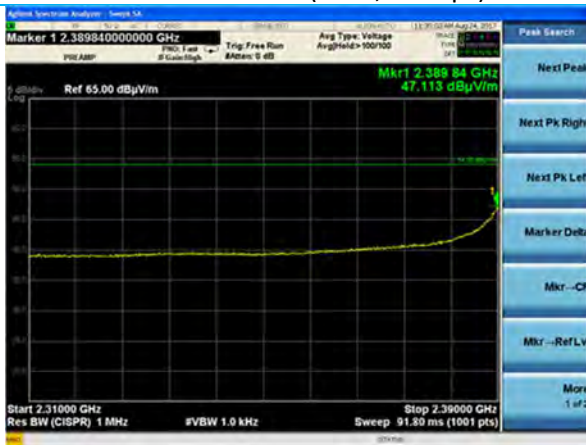
200-1000 MHz (6 Mbps)



1000-2310 MHz (RBW, 1 Mbps)



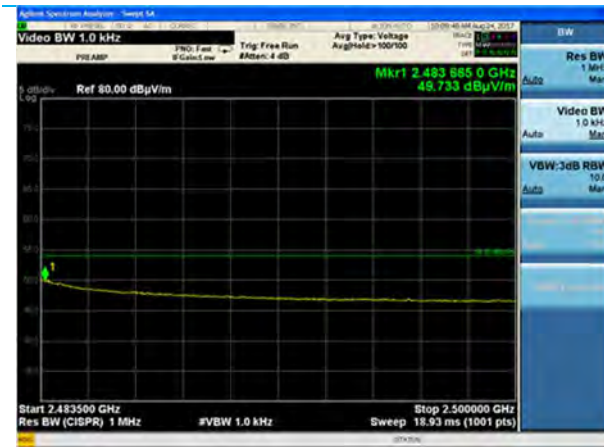
MCS0 Lower Band Edge



Lower Band Edge (Average)



6 MBPS Upper Band Edge (Peak)



6 MBPS Upper Bandedge (Average)



2500 – 4000 MHz (RBW, 1 Mbps)



4-18 GHz (RBW, 1 Mbps)



18-25 GHz (RBW, 1 Mbps)

5.3 AC Mains Conducted Emissions

A line impedance stabilization network (LISN) or artificial mains network (AMN) allows the emissions of the power supply conductors to be measured while isolating the EUT from the supply mains.

Description of Measurement

The AMN, cable, and other necessary measurement system correction factors are loaded onto the EMI receiver when the measurements are performed. The data is gathered and reported as the corrected values.

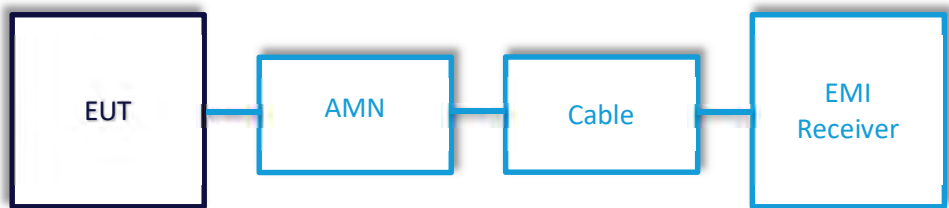
Maximum emissions are determined with a peak max hold trace then measurements at a selection of the highest points are made with quasi-peak and average detectors. Results are recorded and compared to limit for each line. (e.g. line and neutral)

Example Calculations

$$\text{Measurement (dB}\mu\text{V)} + \text{Cable factor (dB)} + \text{Other (dB)} = \text{Corrected Reading (dB}\mu\text{V)}$$

$$\text{Margin (dB)} = \text{Limit (dB}\mu\text{V)} - \text{Corrected Reading (dB}\mu\text{V)}$$

Block Diagram



5.3.1 AC Mains Conducted Emissions

Operator	Shane Dock
Test Date	8/22/17
Location	CE Area
Temp. / R.H.	72 degrees F/ 51% RH
Requirement	FCC: 15.207 IC: RSS-GEN 8.8
Method	ANSI C63.10 Section 6.2

Limits:

Frequency of Emission (MHz)	Quasi-Peak Limit (dBuV)	Average Limit (dBuV)
0.15 - 0.50	66 to 56	56 to 46
0.5 - 5	56	46
5-30	60	50

Test Parameters

Frequency	150 kHz - 30 MHz
Settings	RBW 9 kHz
Settings	VBW 90 kHz
EUT Power	120 VAC 60 Hz
EUT Configuration	Tx Mode Tested on Mid Channel (Worst-Case)

Instrumentation

Laird
Smart Technology. Delivered.

Date : 22-Aug-2017

Test : Conducted Emissions

Job : C-2826

PE : Shane Dock

Customer : GE Healthcare

Quote : 317060

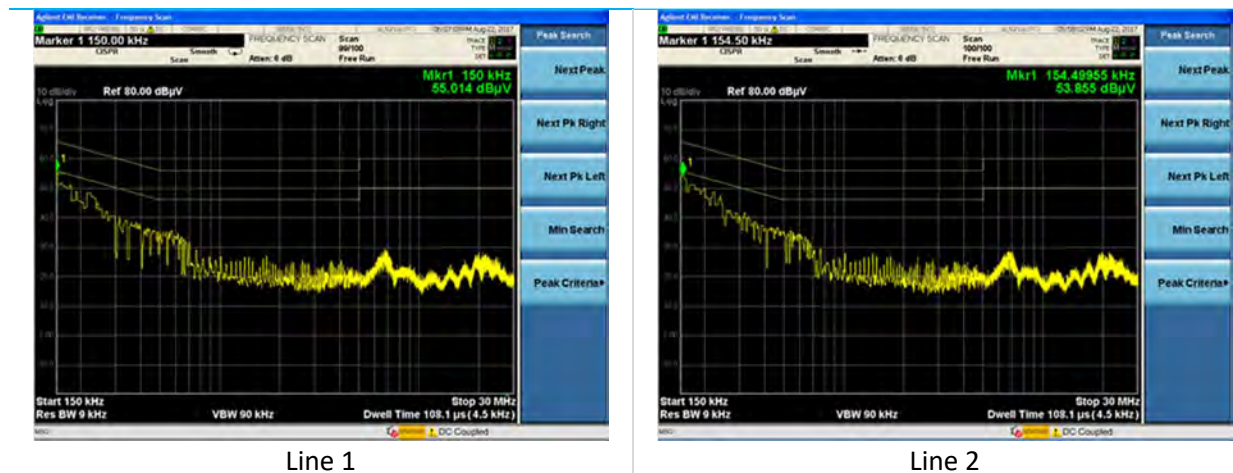
No.	Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due Date	Equipment Status
1	EE 960089	LISN	COM-POWER	LI-215A	191643	3/13/2017	3/13/2018	Active Calibration
2	EE 960088	EMI Receiver	Agilent	N9038A	MY51210138	3/2/2017	3/2/2018	Active Calibration

Company: GE Healthcare	Page 36 of 38	Name: PPD
Report: 317060 A		Model: See Section 2.1
Job: C-2826		Serial: See Section 2.1

Table

Line	Frequency (MHz)	Q-Peak Reading (dBμV)	Q-Peak Limit (dBμV)	Quasi-Peak Margin (dB)	Average Reading (dBμV)	Average Limit (dBμV)	Average Margin (dB)
1	0.150	47.0	66.0	19.0	32.9	56.0	23.1
1	0.154	46.4	65.8	19.4	32.5	55.8	23.2
1	0.177	44.1	64.6	20.5	31.4	54.6	23.2
1	0.222	41.1	62.7	21.6	29.5	52.7	23.2
2	0.154	46.8	65.8	18.9	32.6	55.8	23.1
2	0.150	47.3	66.0	18.7	32.9	56.0	23.1
2	0.181	44.1	64.4	20.3	31.3	54.4	23.1
2	0.501	30.1	56.0	25.9	14.9	46.0	31.1

Plots



6 REVISION HISTORY

Version	Date	Notes	Person
V0	10/11/17	First Draft	Shane Dock
V1	10/18/17	1 st Revision	Shane Dock
V2	10/25/17	Final Draft	Shane Dock
V3	1/22/17	Updated for TCB review	Shane Dock

END OF REPORT