



FCC CFR47 PART 15 SUBPART C

C2PC CERTIFICATION TEST REPORT

FOR

CDMA WATCH + Bluetooth, DTS b/g

MODEL NUMBER: LG-VC110, LGVC110, VC110, LG-VC110B, LGVC110B, VC110B

FCC ID: ZNFVC110

REPORT NUMBER: 15I21553-E2V1

ISSUE DATE: SEPTEMBER 28, 2015

Prepared for

**LG ELECTRONICS MOBILECOMM U.S.A., INC
1000 SYLVAN AVENUE
ENGLEWOOD CLIFFS,
NEW JERSEY, 07632, U.S.A**

Prepared by

**UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888**



NVLAP LAB CODE 200065-0

Revision History

Issue			
Rev.	Date	Revisions	Revised By
V1	09/28/15	Initial Issue	

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	4
2. TEST METHODOLOGY	6
3. FACILITIES AND ACCREDITATION	6
4. CALIBRATION AND UNCERTAINTY	6
4.1. MEASURING INSTRUMENT CALIBRATION	6
4.2. SAMPLE CALCULATION	6
4.3. MEASUREMENT UNCERTAINTY	7
5. EQUIPMENT UNDER TEST	8
5.1. DESCRIPTION OF EUT	8
5.2. MAXIMUM OUTPUT POWER.....	8
5.3. DESCRIPTION OF AVAILABLE ANTENNAS	8
5.4. WORST-CASE CONFIGURATION AND MODE	9
5.5. DESCRIPTION OF TEST SETUP.....	10
6. TEST AND MEASUREMENT EQUIPMENT	12
7. SUMMARY TABLE	13
9. RADIATED TEST RESULTS.....	14
9.1. LIMITS AND PROCEDURE	14
9.2. TRANSMITTER ABOVE 1 GHz	15
9.2.1. BASIC DATA RATE GFSK MODULATION	15
9.2.2. ENHANCED DATA RATE 8PSK MODULATION	28
9.3. WORST-CASE BELOW 1 GHz.....	41
10. SETUP PHOTOS	44

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC.
EUT DESCRIPTION: CDMA WATCH + Bluetooth, DTS b/g
MODEL: LG-VC110 LGVC110, VC110, LG-VC110B, LGVC110B, VC110B
SERIAL NUMBER: 20KFP (Conducted), 23F9Z (Radiated)
DATE TESTED: SEPTEMBER 7-16, 2015

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Verification Services Inc. By:

Tested By:

Huda Mustapha

Oren Stoelting

HUDA MUSTAPHA
CONSUMER TECHNOLOGY DIVISION
WISE PROJECT LEAD
UL VERIFICATION SERVICES INC

OREN STOELTING
CONSUMER TECHNOLOGY DIVISION
WISE LAB ENGINEER
UL VERIFICATION SERVICES INC

Dan Coronia

DAN CORONIA
CONSUMER TECHNOLOGY DIVISION
WISE PROJECT LEAD
UL VERIFICATION SERVICES INC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, and ANSI C63.10-2009 for FCC.

Deviation from ANSI C63.10-2009:

Radiated spurious emission above 1GHz was performed with the EUT elevated at 1.5m instead of 0.8m. 1.5m is the required height in ANSI C63.10:2013.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A(IC: 2324B-1)	☐ Chamber D(IC: 2324B-4)
☐ Chamber B(IC: 2324B-2)	☒ Chamber E(IC: 2324B-5)
☒ Chamber C(IC: 2324B-3)	☐ Chamber F(IC: 2324B-6)
	☐ Chamber G(IC: 2324B-7)
	☐ Chamber H(IC: 2324B-8)

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://ts.nist.gov/standards/scopes/2000650.htm>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable} \\ &\text{Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 18000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is CDMA WATCH + Bluetooth, DTS b/g

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	Basic GFSK	8.90	7.76
2402 - 2480	Enhanced 8PSK	4.70	2.95

Note: GFSK, Pi/4-DQPSK, 8PSK average Power are all investigated, The GFSK & 8PSK Power are the worst case. Testing is based on this mode to showing compliance. For average power data please refer to section 8.6.

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an LMA antenna, with a maximum gain of -0.14 dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission below 1 GHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y, Z it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	STA-U17WD	DS542312055	N/A

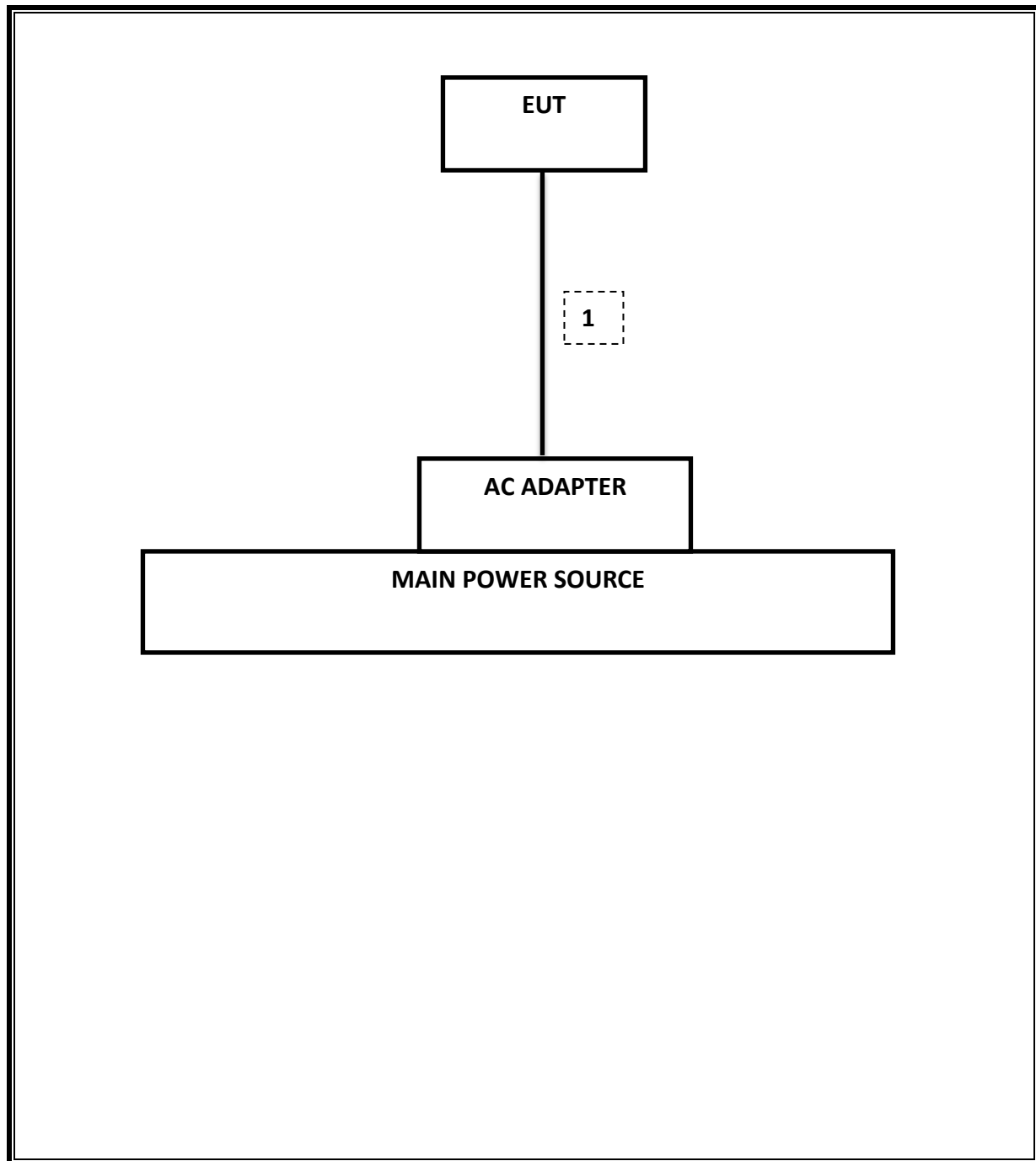
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini-USB	Shielded	1.2m	N/A

TEST SETUP

The EUT is continuously communicating to the Bluetooth tester during the tests.

EUT was set in the Hidden menu mode to enable BT communications.

SETUP DIAGRAM FOR TESTS

6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	Manufacturer	Model	Asset	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/15
Spectrum Analyzer, 9KHz-40GHz	HP	8564E	C00986	04/01/16
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/15
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/15
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/16
Antenna, Horn, 18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/15
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/16
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/16
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/16
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/16
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	T404	06/29/16
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
CBT Bluetooth Tester	R & S	CBT	None	42551
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/16
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/16
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/16
Radiated Software	UL	UL EMC	Ver 9.5, Jul 22, 2014	
Conducted Software	UL	UL EMC	Ver 9.5, May 17 2012	
CLT Software	UL	UL RF	Ver 1.0, Feb 2 2015	
Antenna Port Software	UL	UL RF	Ver 2.1.1.1, Jan 20 2015	

7. SUMMARY TABLE

C2PC Reason: Please see LG-VC110 FCC Class II change description for detail

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
2.1049	RSS-GEN 4.6	Occupied Band width (99%)	N/A	Conducted	Pass	See original
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	See original
15.247 (b)(1)	RSS-247 5.4.2	TX conducted output power	<21dBm		Pass	See original
15.247 (a)(1)	RSS-247 5.1.2	Hopping frequency separation	> 25KHz		Pass	See original
15.247 (a)(1)(iii)	RSS-247 5.1.4	Number of Hopping channels	More than 15 non-overlapping channels		Pass	See original
15.247 (a)(1)(iii)	RSS-247 5.1.4	Avg Time of Occupancy	< 0.4sec		Pass	See original
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	See original
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m		Pass	52.31 dBuV/m

9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit ($\mu\text{V/m}$) at 3 m	Field Strength Limit (dB $\mu\text{V/m}$) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150 cm for above 1GHz measurements. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For band edge measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 1/T (on time) for average measurement.
 $\text{GFSK} = 1/T = 1 / 0.00288\text{S} = 350\text{Hz}$.

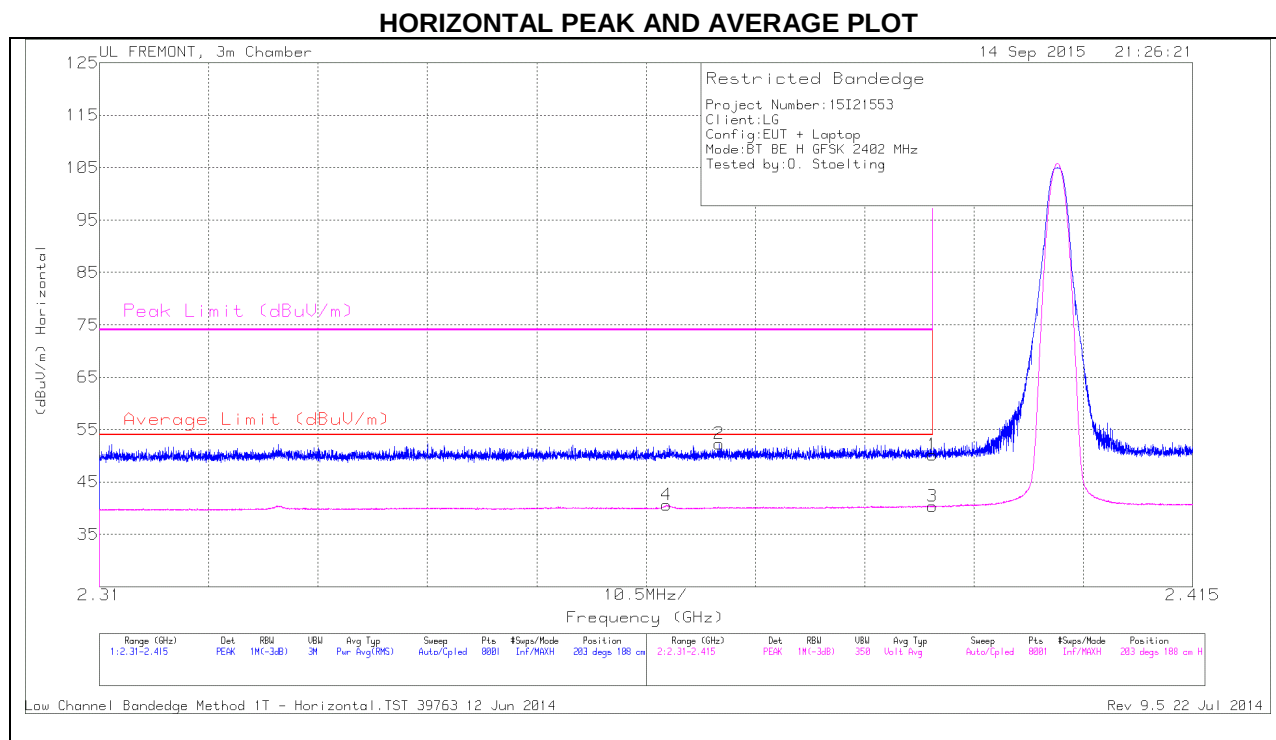
The spectrum from 1GHzHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. BASIC DATA RATE GFSK MODULATION

RESTRICTED BANDEDGE (LOW CHANNEL)



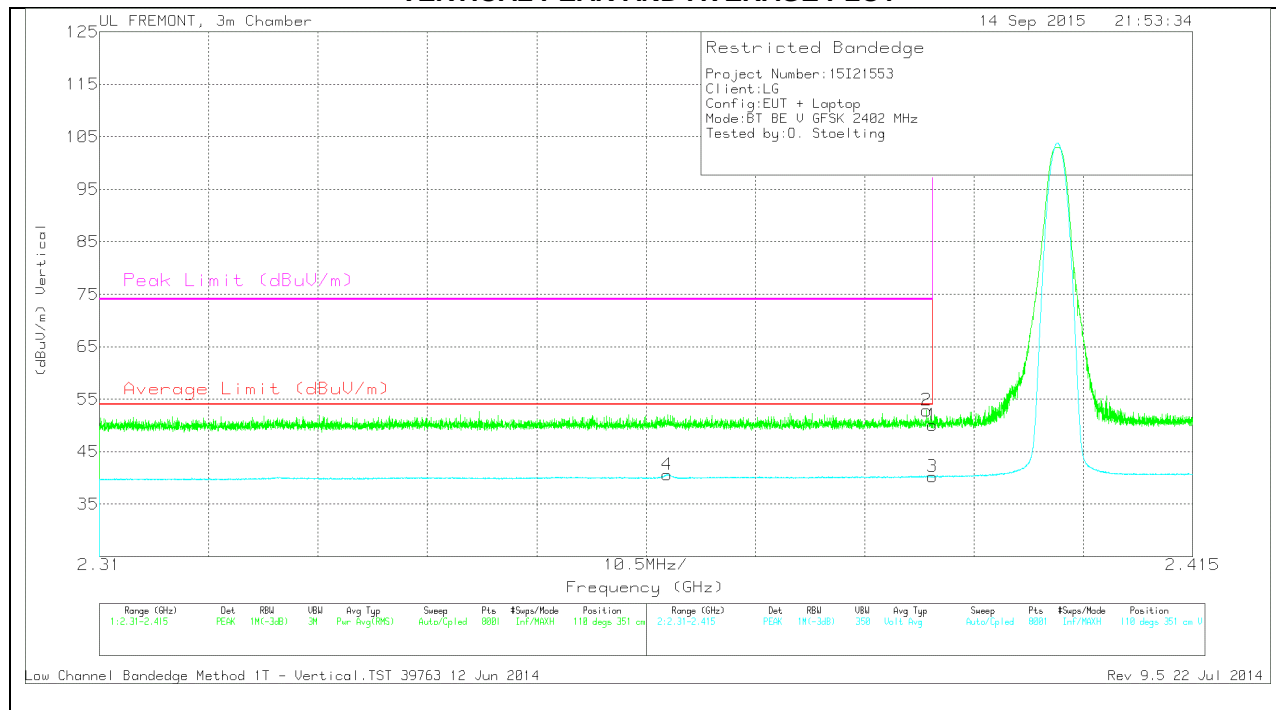
HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	2.364	31.16	VB1T	31.9	-22.5	0	40.56	54	-13.44	-	-	203	188	H
2	2.369	42.75	PK	31.9	-22.4	0	52.25	-	-	74	-21.75	203	188	H
1	2.39	40.58	PK	32	-22.4	0	50.18	-	-	74	-23.82	203	188	H
3	2.39	30.71	VB1T	32	-22.4	0	40.31	54	-13.69	-	-	203	188	H

* - indicates frequency in CFR15.205 Restricted Band

Pk - Peak detector

VERTICAL PEAK AND AVERAGE PLOT

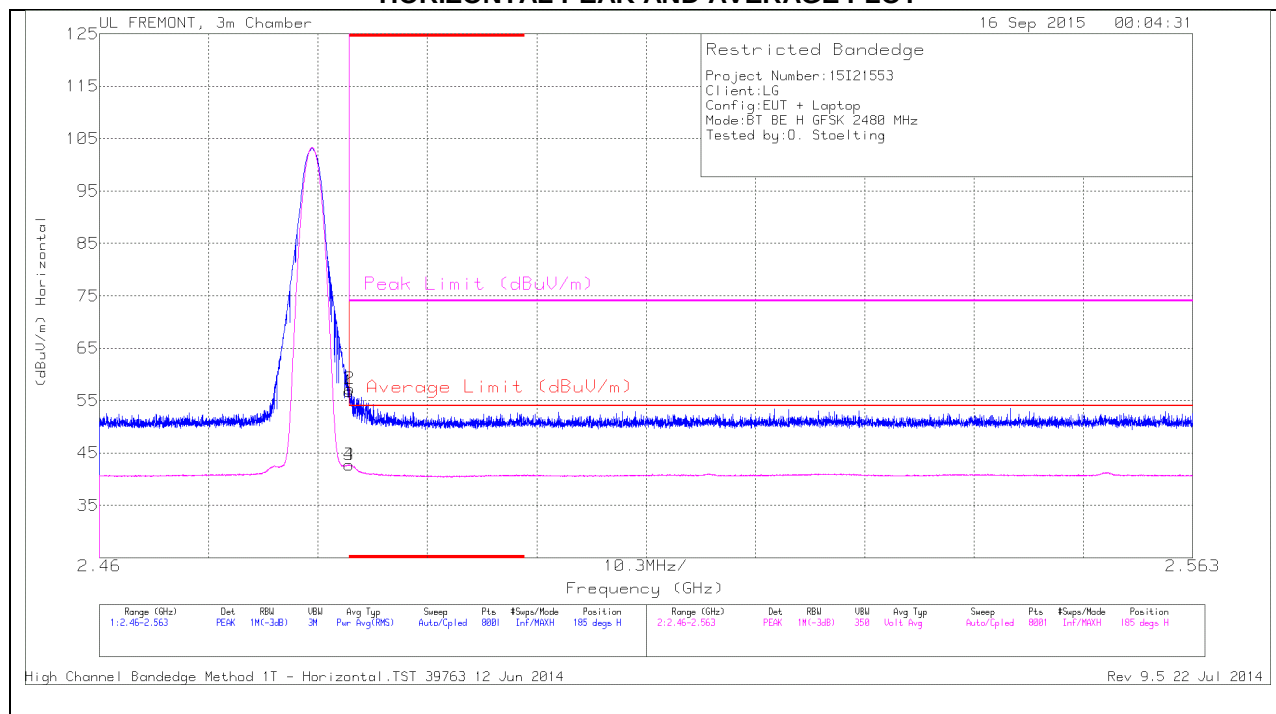


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	2.365	31.26	VB1T	31.9	-22.5	0	40.66	54	-13.34	-	-	110	351	V
2	2.389	43.24	PK	32	-22.4	0	52.84	-	-	74	-21.16	110	351	V
1	2.39	40.44	PK	32	-22.4	0	50.04	-	-	74	-23.96	110	351	V
3	2.39	30.65	VB1T	32	-22.4	0	40.25	54	-13.75	-	-	110	351	V

* - indicates frequency in CFR15.205 Restricted Band

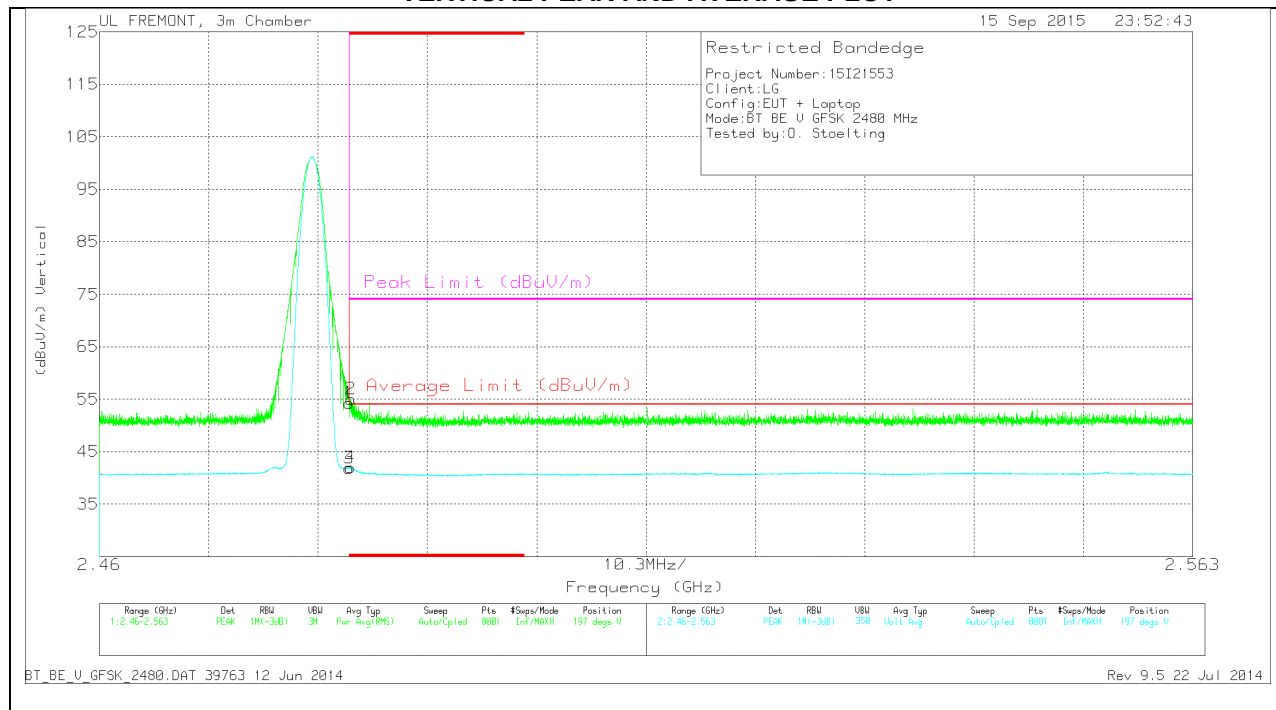
Pk - Peak detector

AUTHORIZED BANDEDGE (HIGH CHANNEL)**HORIZONTAL PEAK AND AVERAGE PLOT****HORIZONTAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	46.5	PK	32.3	-22.1	0	56.7	-	-	74	-17.3	185	144	H
2	* 2.484	47.07	PK	32.3	-22.1	0	57.27	-	-	74	-16.73	185	144	H
3	* 2.484	32.48	VB1T	32.3	-22.1	0	42.68	54	-11.32	-	-	185	144	H
4	* 2.484	32.5	VB1T	32.3	-22.1	0	42.7	54	-11.3	-	-	185	144	H

* - indicates frequency in CFR15.205 Restricted Band

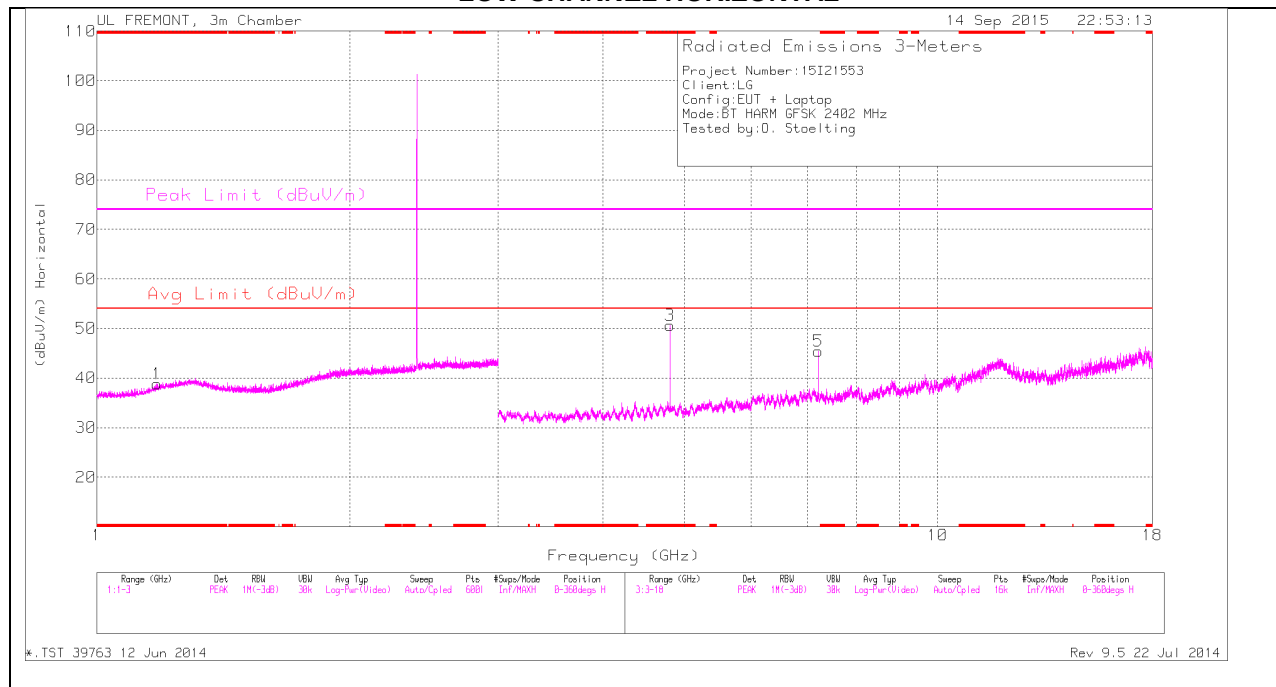
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

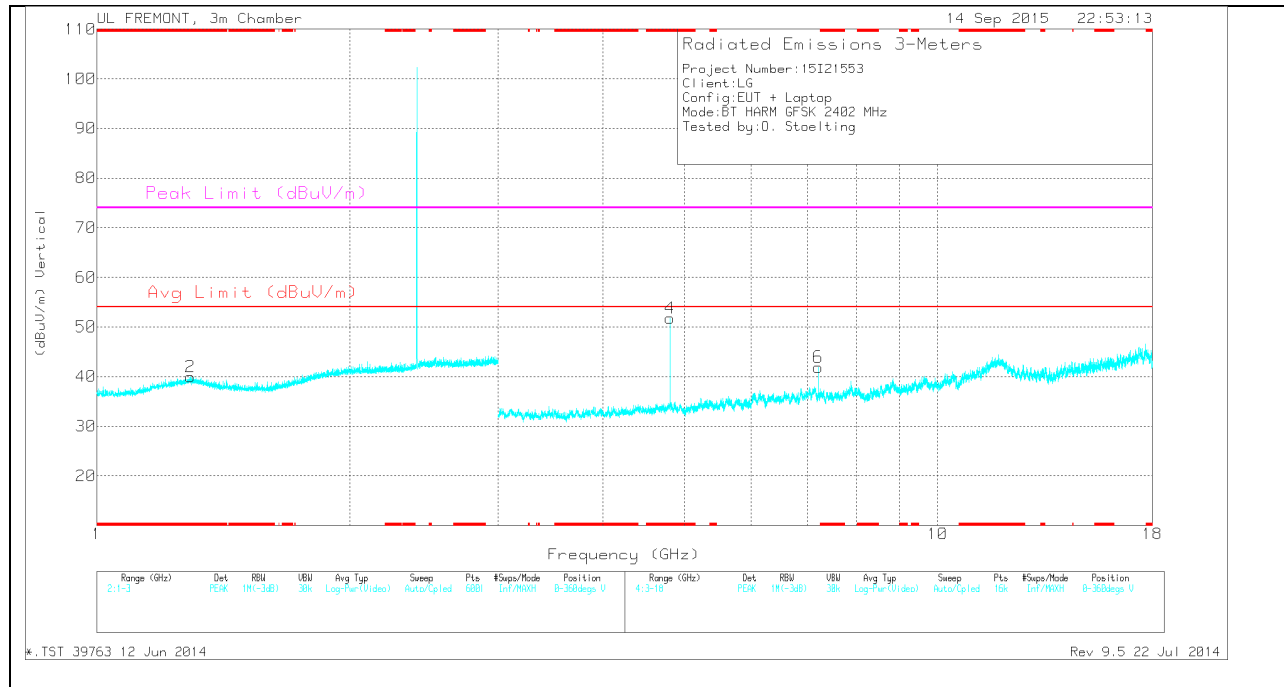
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	44.08	PK	32.3	-22.1	0	54.28	-	-	74	-19.72	197	140	V
2	* 2.484	44.81	PK	32.3	-22.1	0	55.01	-	-	74	-18.99	197	140	V
3	* 2.484	31.67	VB1T	32.3	-22.1	0	41.87	54	-12.13	-	-	197	140	V
4	* 2.484	31.73	VB1T	32.3	-22.1	0	41.93	54	-12.07	-	-	197	140	V

* - indicates frequency in CFR15.205 Restricted Band

HARMONICS AND SPURIOUS EMISSIONS**LOW CHANNEL HORIZONTAL**

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA*TRACE MARKERS*

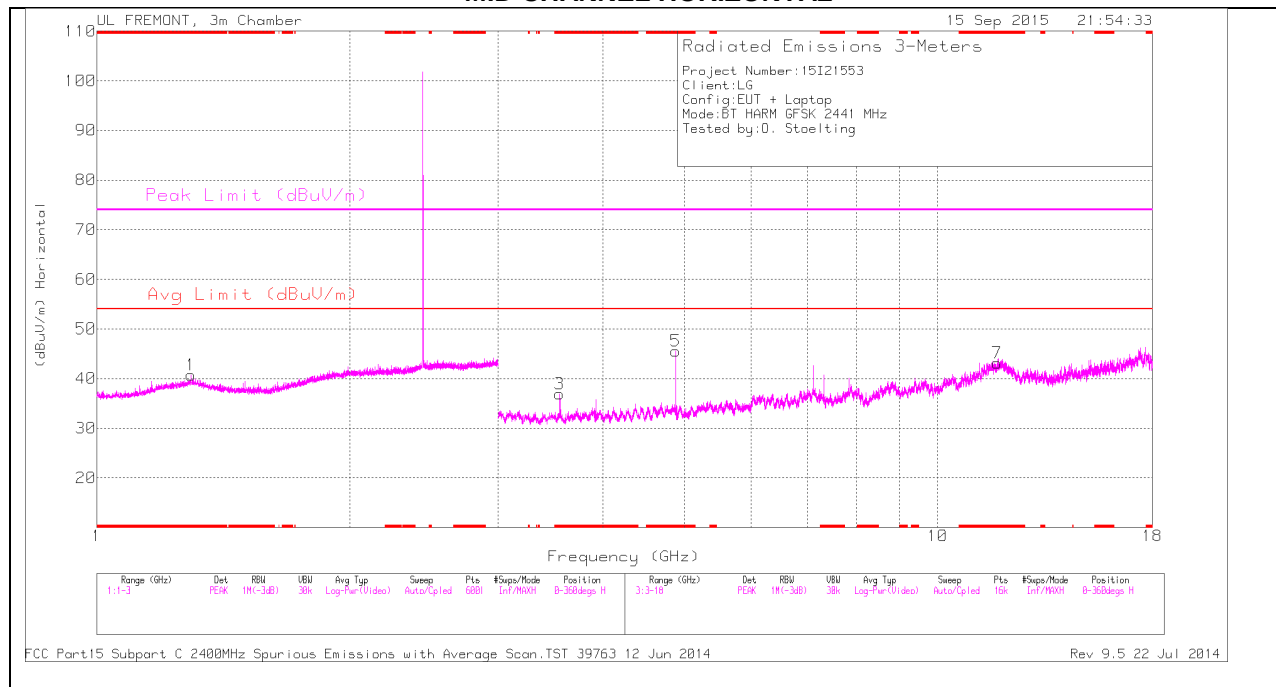
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.179	33.45	PK	28.6	-23.2	0	38.85	-	-	74	-35.15	0-360	200	H
2	* 1.292	33.23	PK	29.8	-23.1	0	39.93	-	-	74	-34.07	0-360	100	V
3	* 4.804	46.05	PK	34	-29.4	0	50.65	-	-	74	-23.35	0-360	200	H
4	* 4.804	47.15	PK	34	-29.4	0	51.75	-	-	74	-22.25	0-360	100	V
5	7.205	38.17	PK	35.6	-28.4	0	45.37	-	-	-	-	0-360	200	H
6	7.205	34.73	PK	35.6	-28.4	0	41.93	-	-	-	-	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

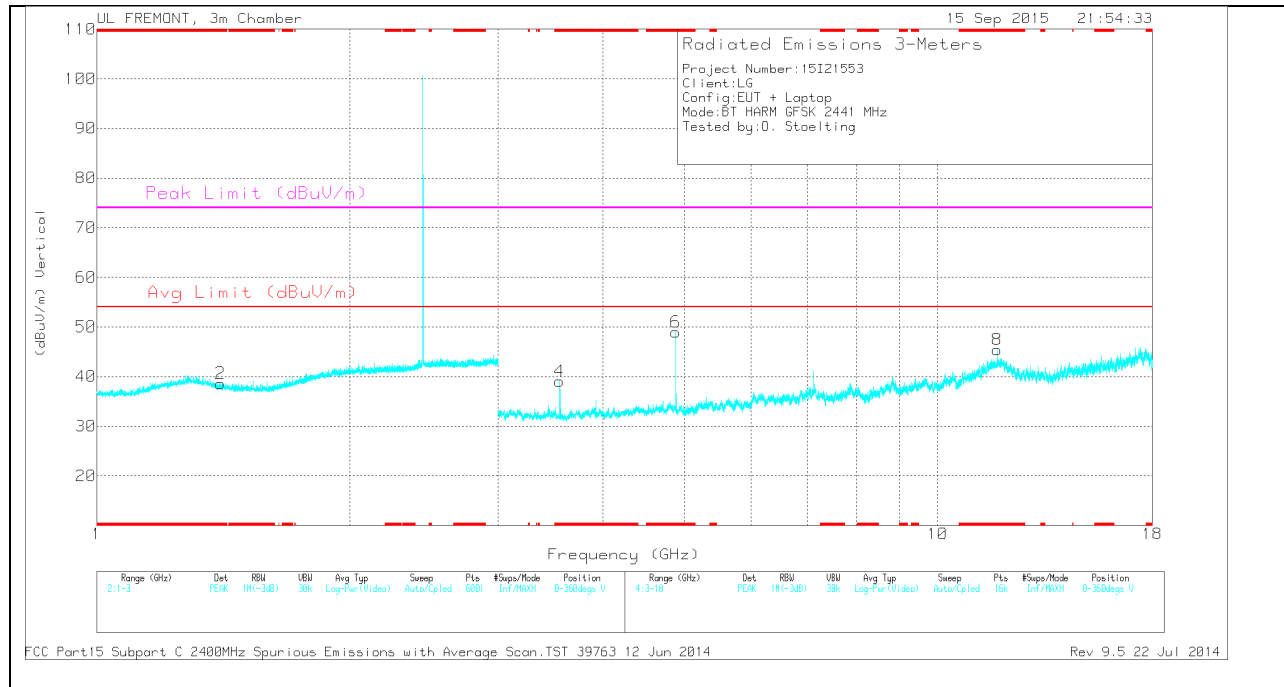
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.179	42.85	PK2	28.6	-23.2	0	48.25	-	-	74	-25.75	3	200	H
* 1.178	31.04	MAV1	28.6	-23.2	1.13	37.57	54	-16.43	-	-	3	200	H
* 1.292	42.68	PK2	29.8	-23.1	0	49.38	-	-	74	-24.62	3	100	V
* 1.29	31.05	MAV1	29.8	-23.1	1.13	38.88	54	-15.12	-	-	3	100	V
* 4.804	49.53	PK2	34	-29.4	0	54.13	-	-	74	-19.87	225	203	H
* 4.804	45.69	MAV1	34	-29.4	1.13	51.42	54	-2.58	-	-	225	203	H
* 4.804	50.43	PK2	34	-29.4	0	55.03	-	-	74	-18.97	209	108	V
* 4.804	46.58	MAV1	34	-29.4	1.13	52.31	54	-1.69	-	-	209	108	V
7.206	36.87	MAV1	35.6	-28.4	1.13	45.2	-	-	-	-	99	198	H
7.206	42.7	PK2	35.6	-28.4	0	49.9	-	-	-	-	164	225	V
7.206	33.43	MAV1	35.6	-28.4	1.13	41.76	-	-	-	-	164	225	V
7.207	43.97	PK2	35.6	-28.4	0	51.17	-	-	-	-	99	198	H

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA*TRACE MARKERS*

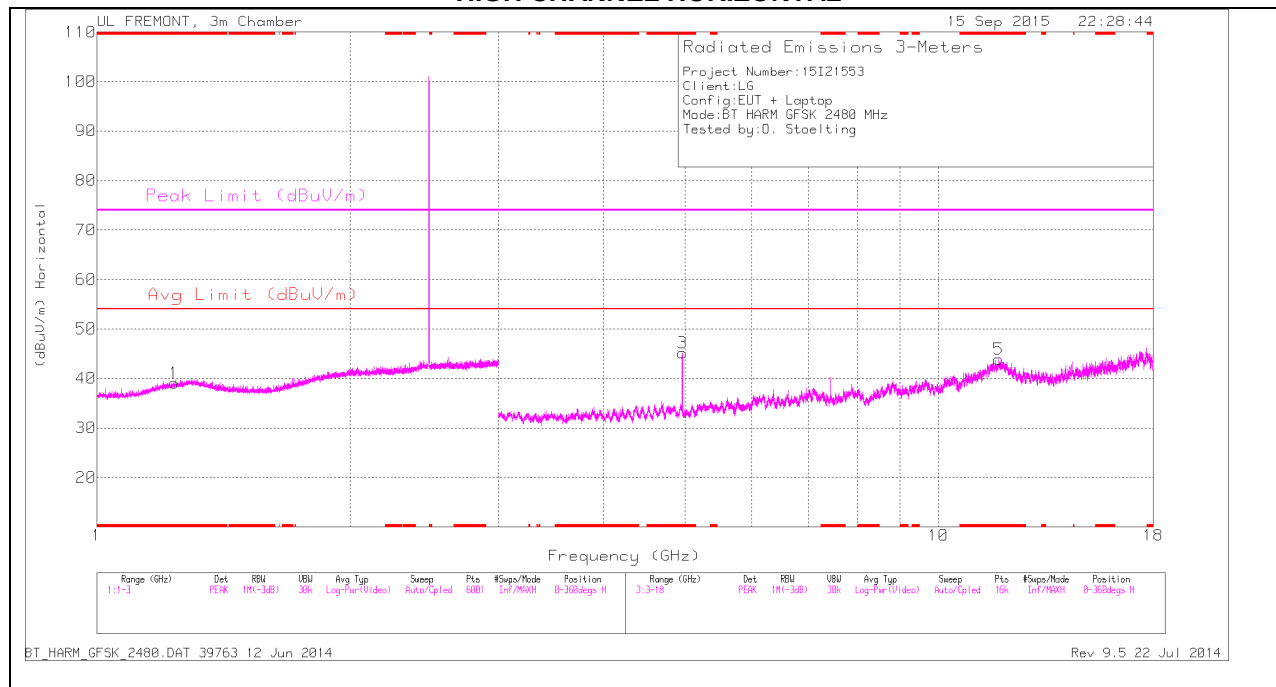
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.294	34.14	PK	29.8	-23.2	0	40.74	-	-	74	-33.26	0-360	100	H
2	* 1.403	33.13	PK	28.6	-23.1	0	38.63	-	-	74	-35.37	0-360	200	V
7	* 11.76	26.44	PK	38.9	-22.2	0	43.14	-	-	74	-30.86	0-360	100	H
8	* 11.76	28.77	PK	38.9	-22.2	0	45.47	-	-	74	-28.53	0-360	100	V
3	* 3.553	34.56	PK	32.8	-30.4	0	36.96	-	-	74	-37.04	0-360	100	H
4	* 3.553	36.68	PK	32.8	-30.4	0	39.08	-	-	74	-34.92	0-360	200	V
5	* 4.882	40.68	PK	34	-29.1	0	45.58	-	-	74	-28.42	0-360	200	H
6	* 4.882	44.08	PK	34	-29.1	0	48.98	-	-	74	-25.02	0-360	100	V

PK - Peak detector

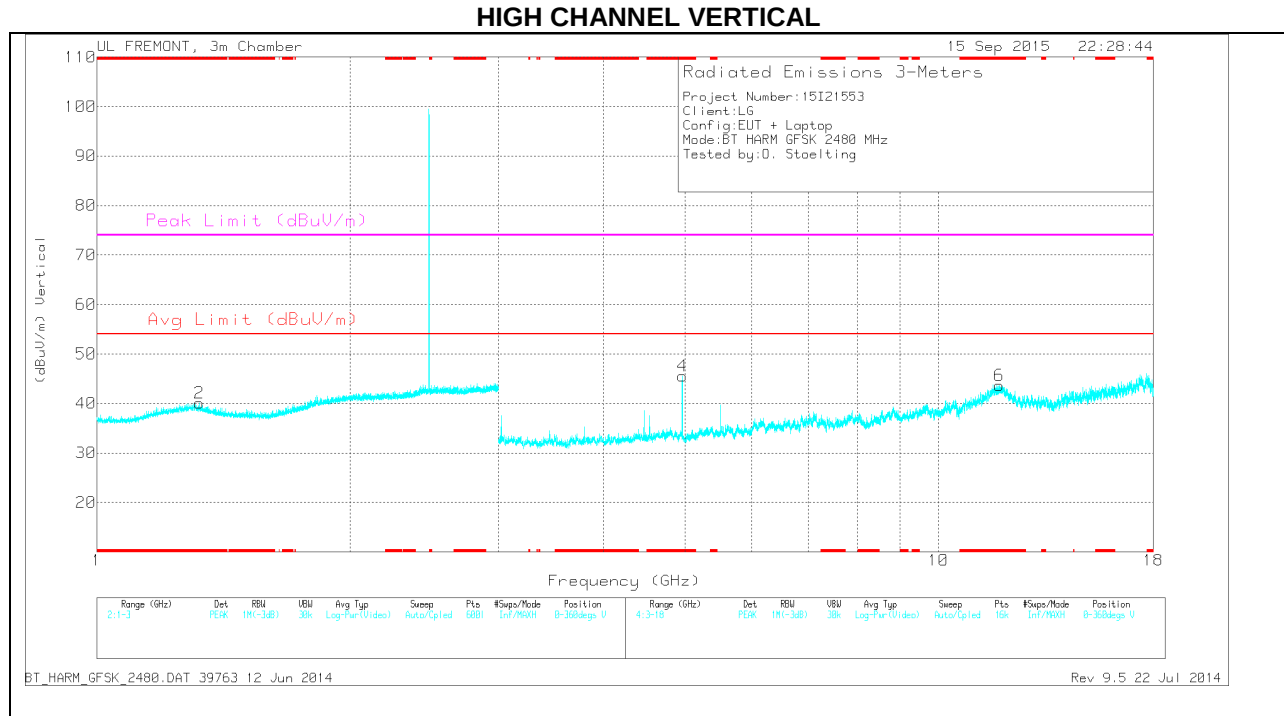
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.293	42.59	PK2	29.8	-23.2	0	49.19	-	-	74	-24.81	0	100	H
* 1.293	30.99	MAV1	29.8	-23.1	1.13	38.82	54	-15.18	-	-	0	100	H
* 1.402	42.52	PK2	28.6	-23.1	0	48.02	-	-	74	-25.98	0	200	V
* 1.404	30.83	MAV1	28.6	-23.1	1.13	37.46	54	-16.54	-	-	0	200	V
* 3.552	40.22	PK2	32.8	-30.4	0	42.62	-	-	74	-31.38	353	132	H
* 3.551	28.24	MAV1	32.8	-30.4	1.13	31.77	54	-22.23	-	-	353	132	H
* 4.882	45.82	PK2	34	-29.1	0	50.72	-	-	74	-23.28	190	293	H
* 4.882	40.26	MAV1	34	-29.1	1.13	46.29	54	-7.71	-	-	190	293	H
* 11.76	35.89	PK2	38.9	-22.2	0	52.59	-	-	74	-21.41	177	247	H
* 11.759	23.95	MAV1	38.9	-22.2	1.13	41.78	54	-12.22	-	-	177	247	H
* 3.552	40.44	PK2	32.8	-30.4	0	42.84	-	-	74	-31.16	337	384	V
* 3.554	28.2	MAV1	32.8	-30.5	1.13	31.63	54	-22.37	-	-	337	384	V
* 4.882	48.01	PK2	34	-29.1	0	52.91	-	-	74	-21.09	213	100	V
* 4.882	43.57	MAV1	34	-29.1	1.13	49.6	54	-4.4	-	-	213	100	V
* 11.759	36.09	PK2	38.9	-22.2	0	52.79	-	-	74	-21.21	340	251	V
* 11.759	24.06	MAV1	38.9	-22.2	1.13	41.89	54	-12.11	-	-	340	251	V

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA*TRACE MARKERS*

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.236	33.01	PK	29.3	-23.2	0	39.11	-	-	74	-34.89	0-360	200	H
2	* 1.323	33.61	PK	29.6	-23.1	0	40.11	-	-	74	-33.89	0-360	200	V
3	* 4.96	41.43	PK	34	-30.3	0	45.13	-	-	74	-28.87	0-360	100	H
5	* 11.786	27.25	PK	39	-22.3	0	43.95	-	-	74	-30.05	0-360	200	H
4	* 4.96	41.85	PK	34	-30.3	0	45.55	-	-	74	-28.45	0-360	200	V
6	* 11.809	27.19	PK	39	-22.5	0	43.69	-	-	74	-30.31	0-360	200	V

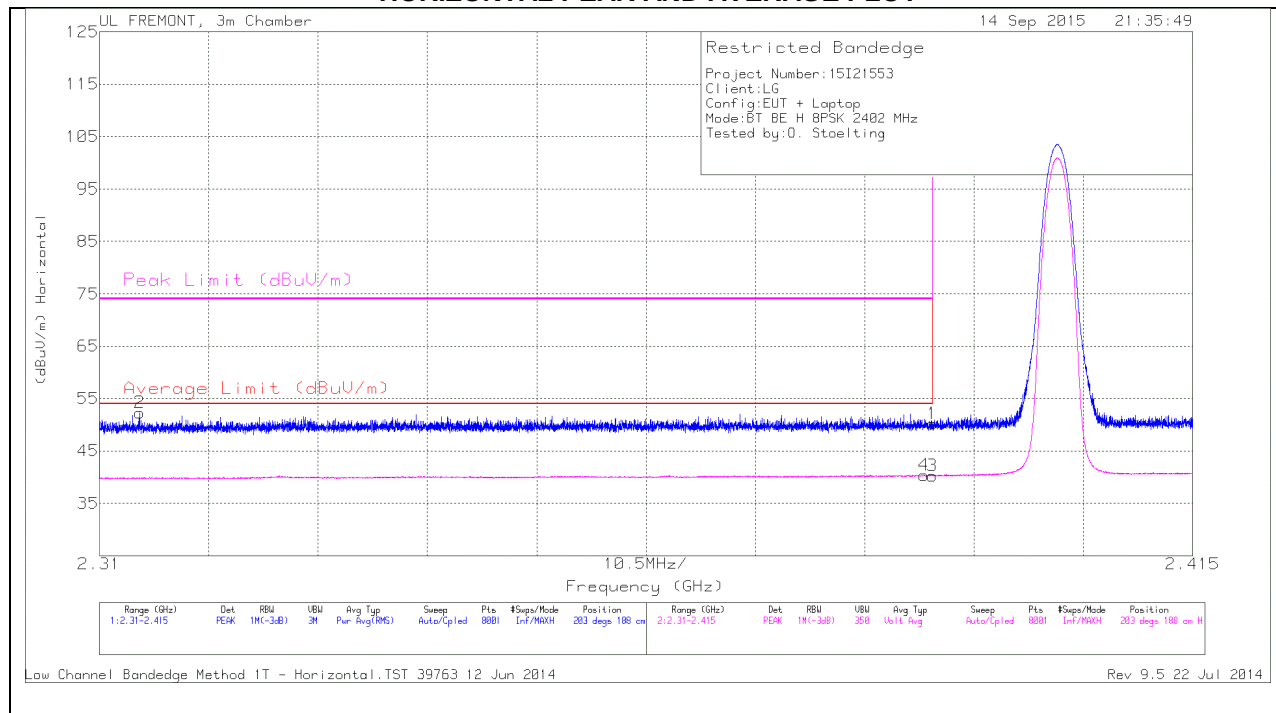
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.237	42.6	PK2	29.3	-23.1	0	48.8	-	-	74	-25.2	360	200	H
* 1.234	30.89	MAV1	29.3	-23.2	1.13	38.12	54	-15.88	-	-	360	200	H
* 1.325	42.77	PK2	29.6	-23.2	0	49.17	-	-	74	-24.83	360	200	V
* 1.323	30.88	MAV1	29.6	-23.1	1.13	38.51	54	-15.49	-	-	360	200	V
* 4.96	46.27	PK2	34	-30.3	0	49.97	-	-	74	-24.03	191	238	H
* 4.96	41.23	MAV1	34	-30.3	1.13	46.06	54	-7.94	-	-	191	238	H
* 11.785	36.75	PK2	39	-22.3	0	53.45	-	-	74	-20.55	107	314	H
* 11.784	24.82	MAV1	39	-22.4	1.13	42.55	54	-11.45	-	-	107	314	H
* 4.96	46.82	PK2	34	-30.3	0	50.52	-	-	74	-23.48	211	100	V
* 4.96	41.55	MAV1	34	-30.3	1.13	46.38	54	-7.62	-	-	211	100	V
* 11.808	36.91	PK2	39	-22.5	0	53.41	-	-	74	-20.59	52	201	V
* 11.807	25.09	MAV1	39	-22.5	1.13	42.72	54	-11.28	-	-	52	201	V

9.2.2. ENHANCED DATA RATE 8PSK MODULATION RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT

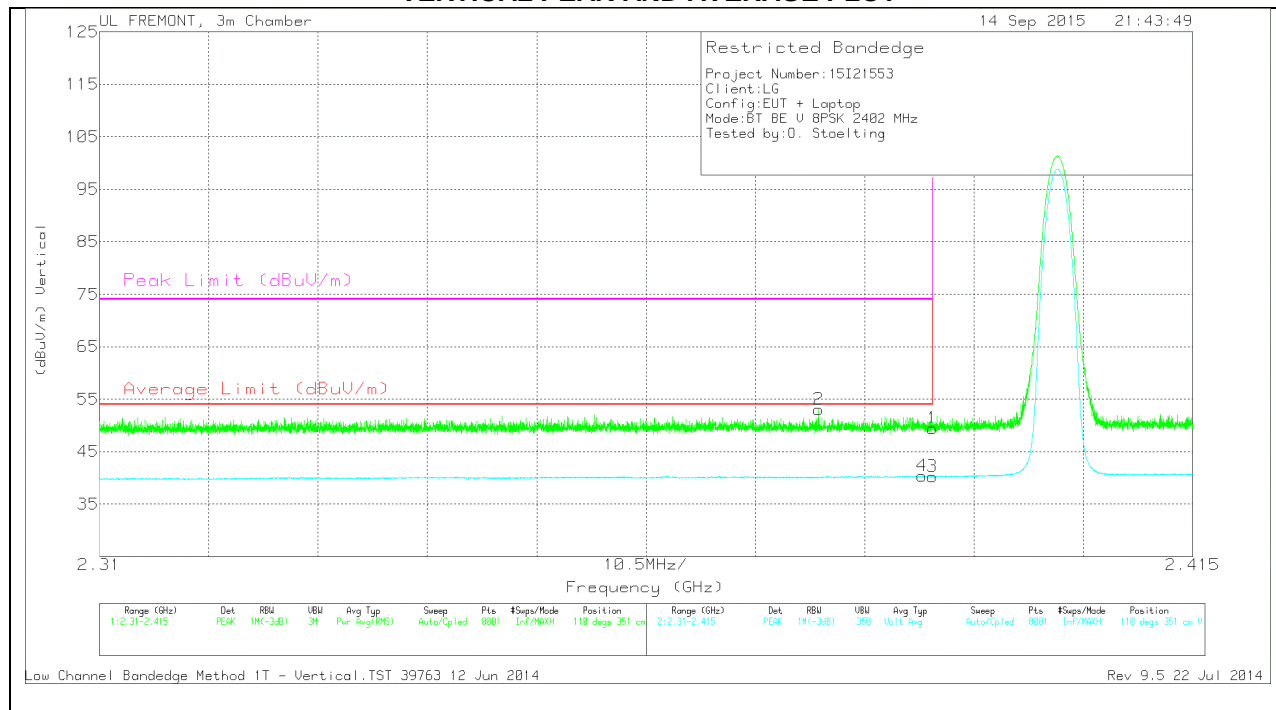


HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2.314	42.98	PK	31.7	-22.4	0	52.28	-	-	74	-21.72	203	188	H
4	2.389	30.78	VB1T	32	-22.4	0	40.38	54	-13.62	-	-	203	188	H
1	2.39	40.61	PK	32	-22.4	0	50.21	-	-	74	-23.79	203	188	H
3	2.39	30.65	VB1T	32	-22.4	0	40.25	54	-13.75	-	-	203	188	H

* - indicates frequency in CFR15.205 Restricted Band

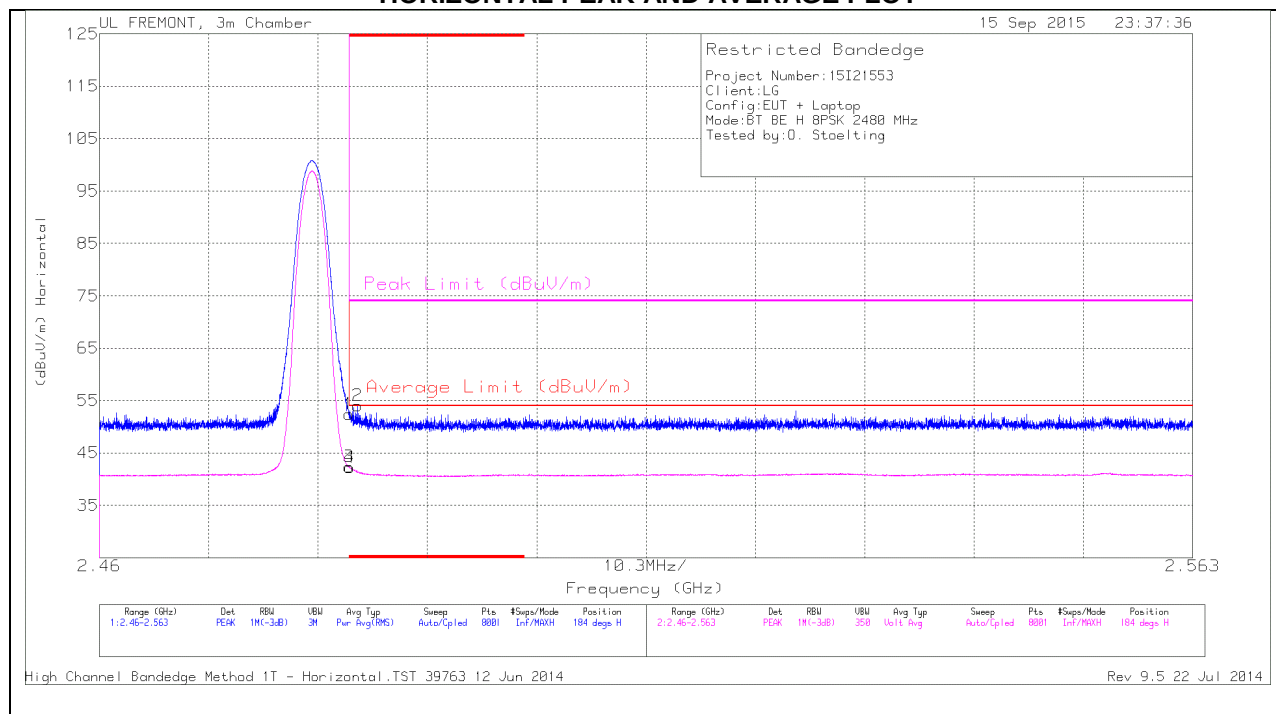
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2.379	43.49	PK	31.9	-22.4	0	52.99	-	-	74	-21.01	110	351	V
4	2.389	30.77	VB1T	32	-22.4	0	40.37	54	-13.63	-	-	110	351	V
1	2.39	39.78	PK	32	-22.4	0	49.38	-	-	74	-24.62	110	351	V
3	2.39	30.65	VB1T	32	-22.4	0	40.25	54	-13.75	-	-	110	351	V

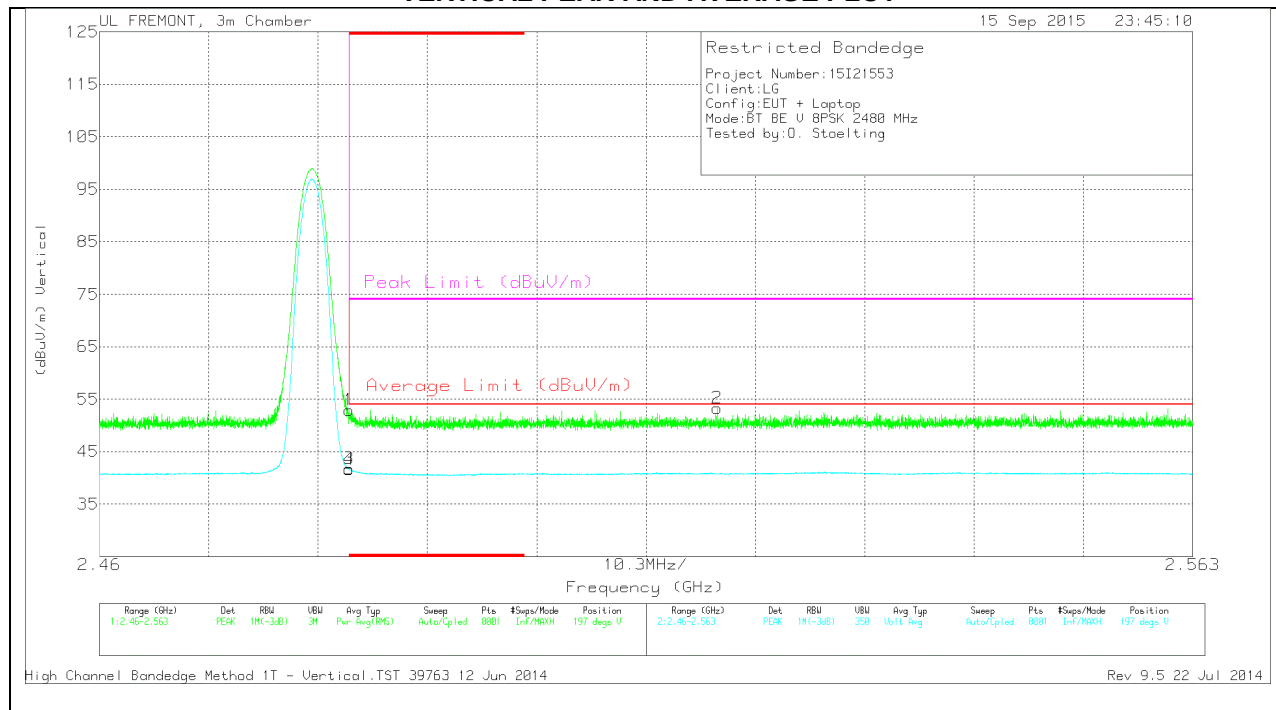
* - indicates frequency in CFR15.205 Restricted Band

AUTHORIZED BANDEDGE (HIGH CHANNEL)**HORIZONTAL PEAK AND AVERAGE PLOT****HORIZONTAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.18	PK	32.3	-22.1	0	52.38	-	-	74	-21.62	184	146	H
2	* 2.484	43.78	PK	32.3	-22.1	0	53.98	-	-	74	-20.02	184	146	H
3	* 2.484	32.13	VB1T	32.3	-22.1	0	42.33	54	-11.67	-	-	184	146	H
4	* 2.484	32.04	VB1T	32.3	-22.1	0	42.24	54	-11.76	-	-	184	146	H

* - indicates frequency in CFR15.205 Restricted Band

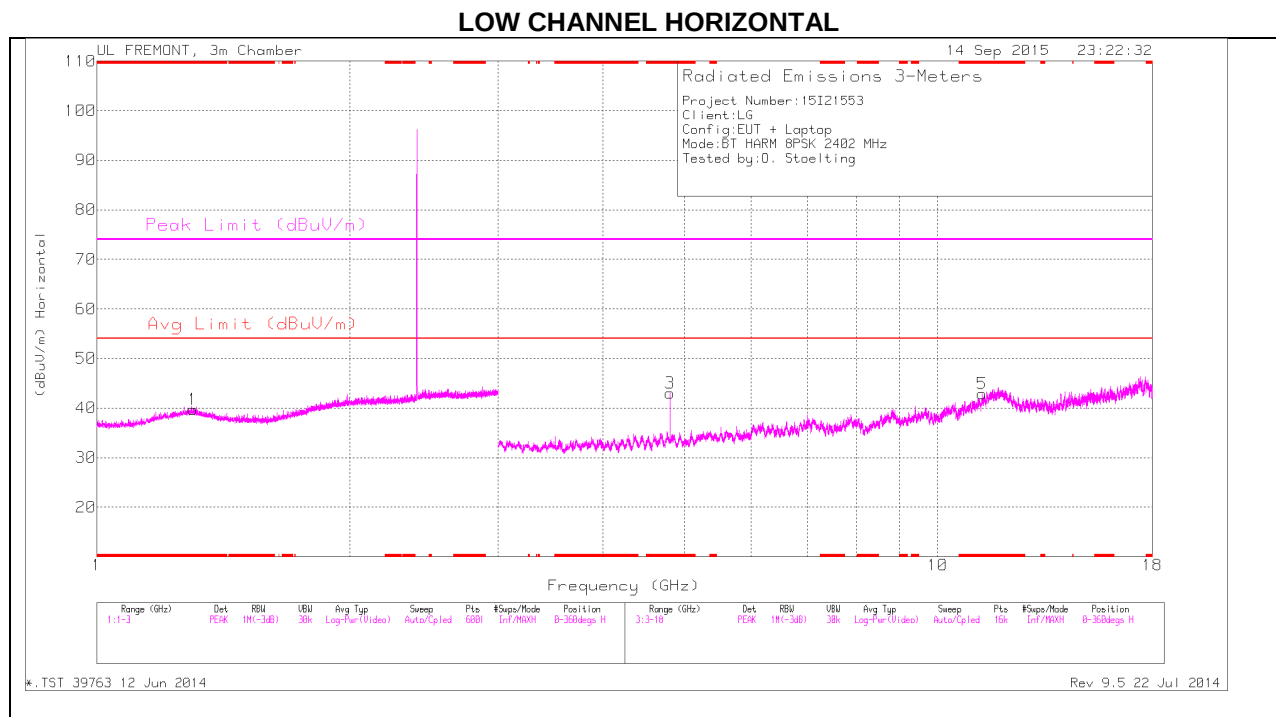
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

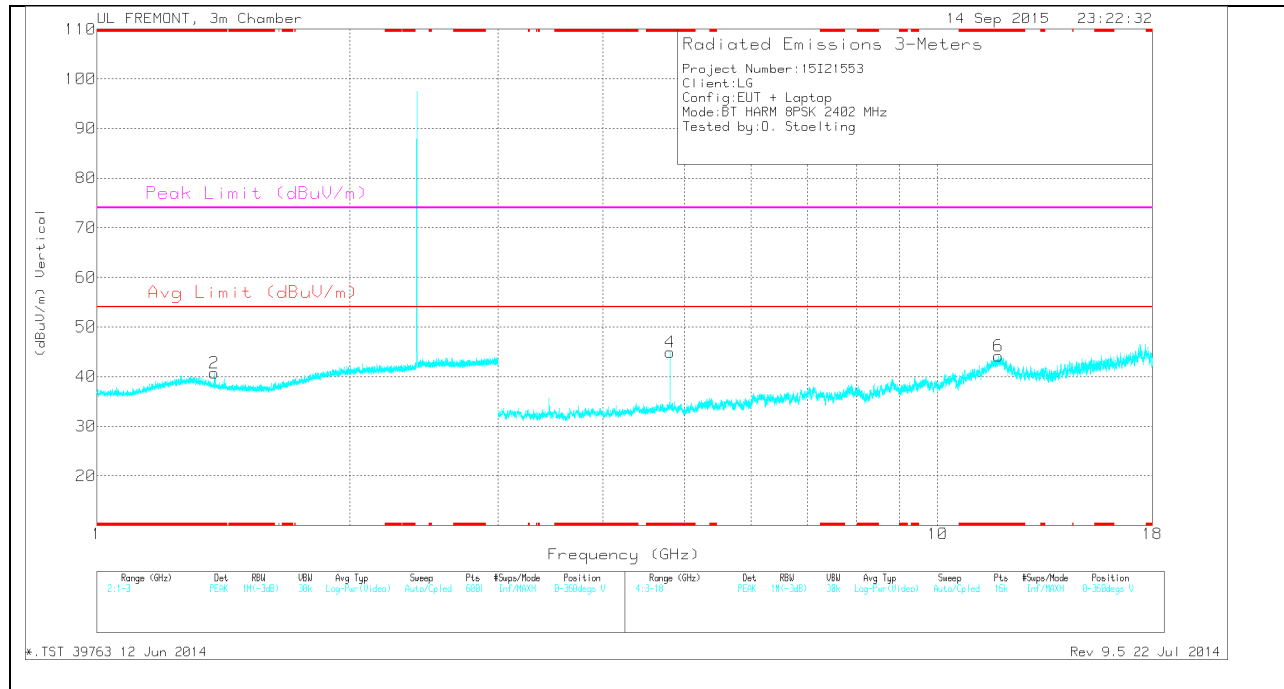
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.67	PK	32.3	-22.1	0	52.87	-	-	74	-21.13	197	140	V
3	* 2.484	31.51	VB1T	32.3	-22.1	0	41.71	54	-12.29	-	-	197	140	V
4	* 2.484	31.4	VB1T	32.3	-22.1	0	41.6	54	-12.4	-	-	197	140	V
2	2.518	43.04	PK	32.3	-22.1	0	53.24	-	-	74	-20.76	197	140	V

* - indicates frequency in CFR15.205 Restricted Band

HARMONICS AND SPURIOUS EMISSIONS

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

TRACE MARKERS

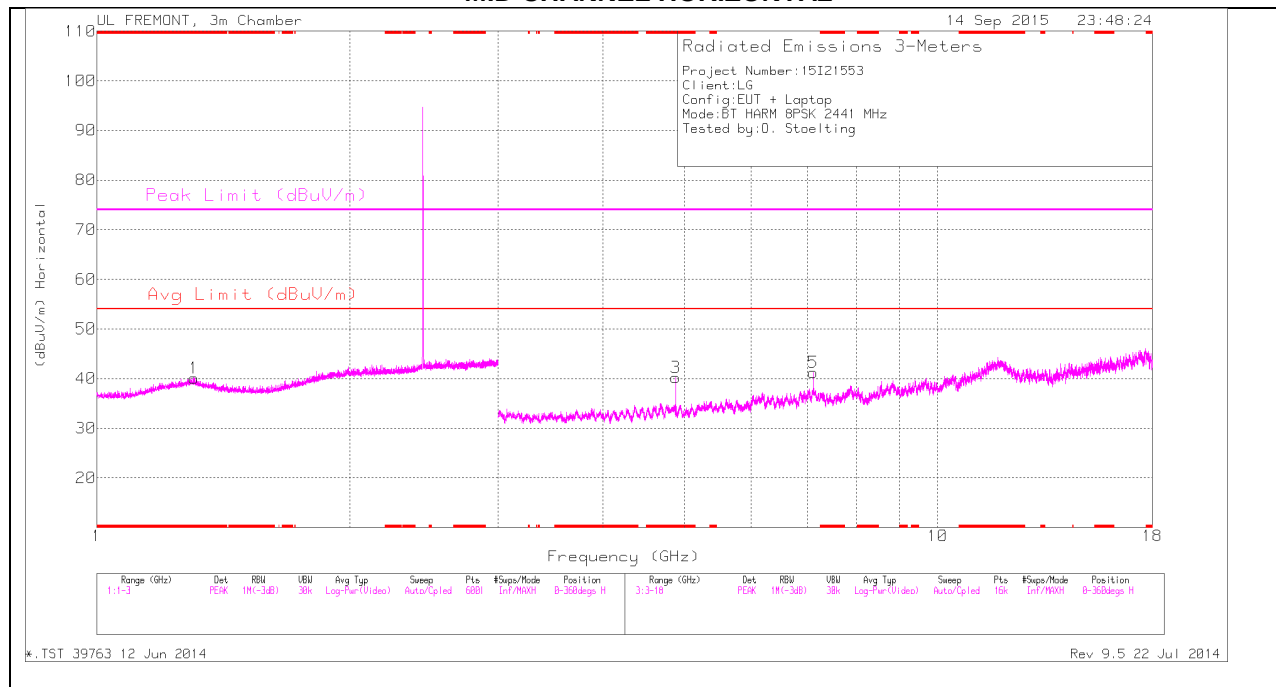
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.3	33.06	PK	29.9	-23.2	0	39.76	-	-	74	-34.24	0-360	200	H
2	* 1.38	34.87	PK	28.9	-23.1	0	40.67	-	-	74	-33.33	0-360	200	V
3	* 4.804	38.45	PK	34	-29.4	0	43.05	-	-	74	-30.95	0-360	200	H
5	* 11.289	27.23	PK	38	-22.4	0	42.83	-	-	74	-31.17	0-360	200	H
4	* 4.804	40.28	PK	34	-29.4	0	44.88	-	-	74	-29.12	0-360	200	V
6	* 11.801	27.67	PK	39	-22.5	0	44.17	-	-	74	-29.83	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

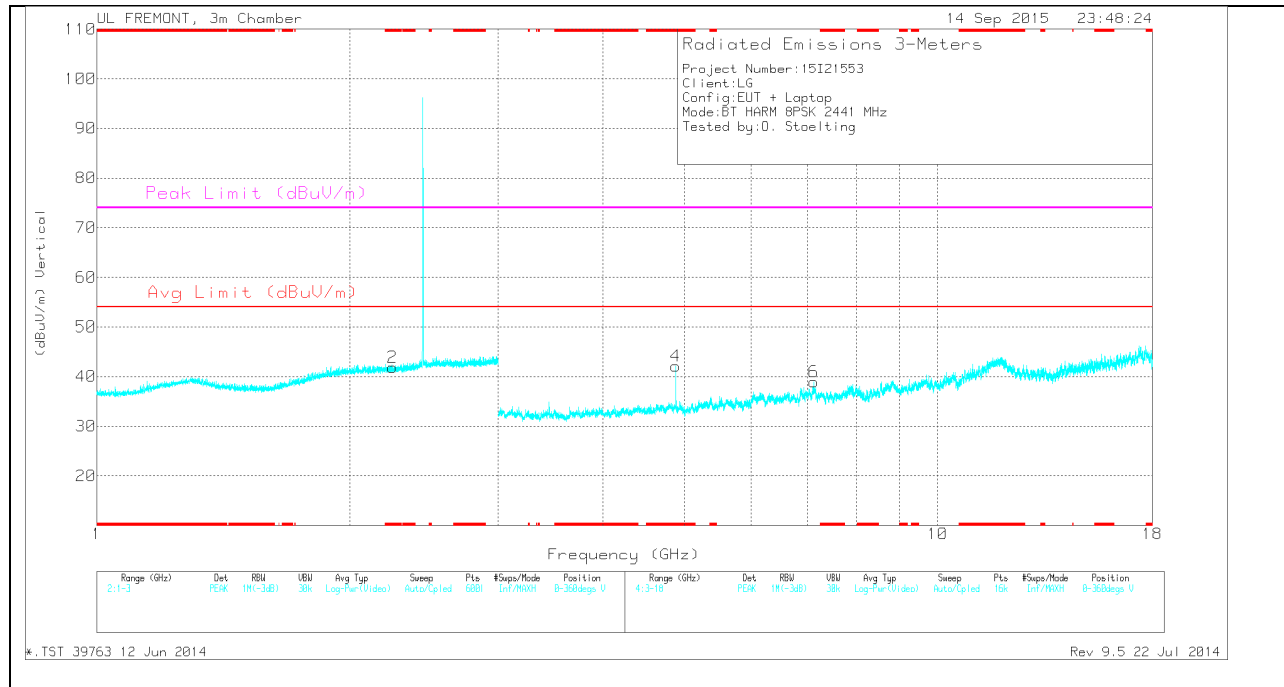
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.299	42.68	PK2	29.9	-23.2	0	49.38	-	-	74	-24.62	0	200	H
* 1.3	31.01	MAV1	29.9	-23.2	1.21	38.92	54	-15.08	-	-	0	200	H
* 1.381	42.56	PK2	28.9	-23.1	0	48.36	-	-	74	-25.64	0	200	V
* 1.381	30.94	MAV1	28.9	-23.1	1.21	37.95	54	-16.05	-	-	0	200	V
* 4.804	46.53	PK2	34	-29.4	0	51.13	-	-	74	-22.87	225	203	H
* 4.804	37.9	MAV1	34	-29.4	1.21	43.71	54	-10.29	-	-	225	203	H
* 11.29	36.42	PK2	38	-22.4	0	52.02	-	-	74	-21.98	225	200	H
* 11.29	24.89	MAV1	38	-22.4	1.21	41.7	54	-12.3	-	-	225	200	H
* 4.804	47.41	PK2	34	-29.4	0	52.01	-	-	74	-21.99	214	101	V
* 4.804	38.98	MAV1	34	-29.4	1.21	44.79	54	-9.21	-	-	214	101	V
* 11.8	36.99	PK2	39	-22.4	0	53.59	-	-	74	-20.41	192	295	V
* 11.8	25.1	MAV1	39	-22.4	1.21	42.91	54	-11.09	-	-	192	295	V

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA*TRACE MARKERS*

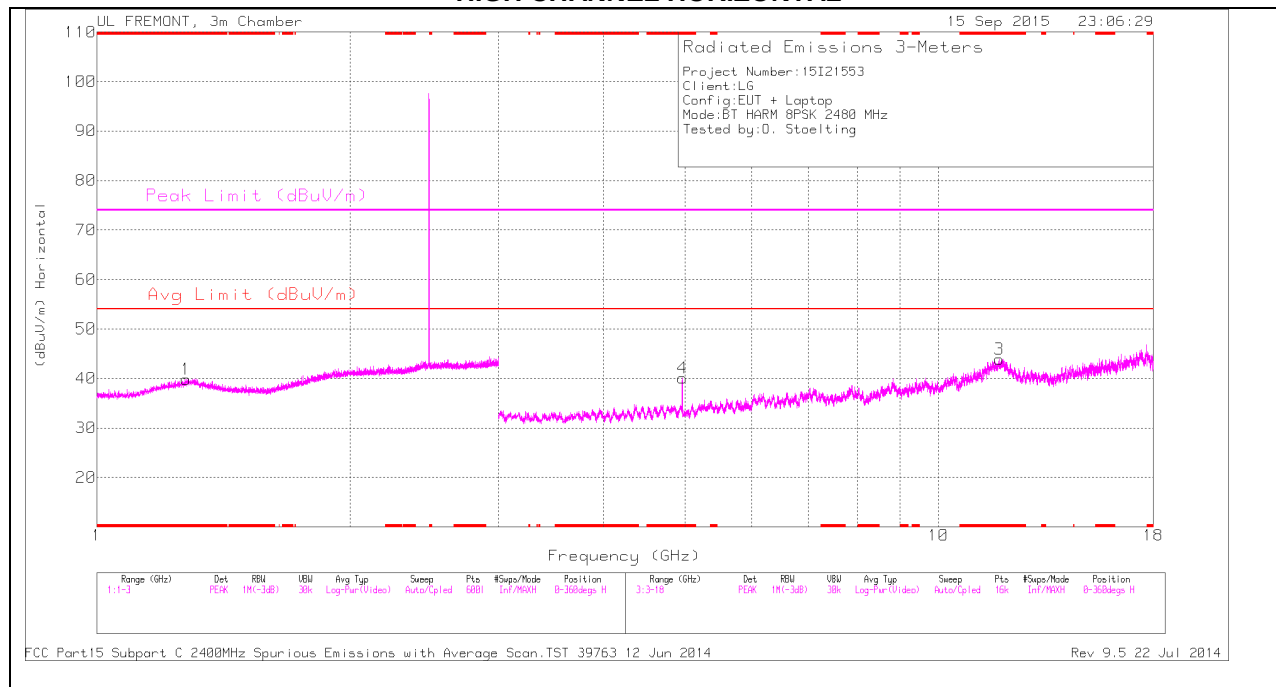
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.306	33.43	PK	29.8	-23.1	0	40.13	-	-	74	-33.87	0-360	100	H
2	* 2.248	32.82	PK	31.5	-22.4	0	41.92	-	-	74	-32.08	0-360	100	V
3	* 4.881	35.29	PK	34	-29.1	0	40.19	-	-	74	-33.81	0-360	200	H
4	* 4.882	37.26	PK	34	-29.1	0	42.16	-	-	74	-31.84	0-360	100	V
5	7.106	32.61	PK	35.6	-27	0	41.21	-	-	-	-	0-360	200	H
6	7.122	30.76	PK	35.6	-27.4	0	38.96	-	-	-	-	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

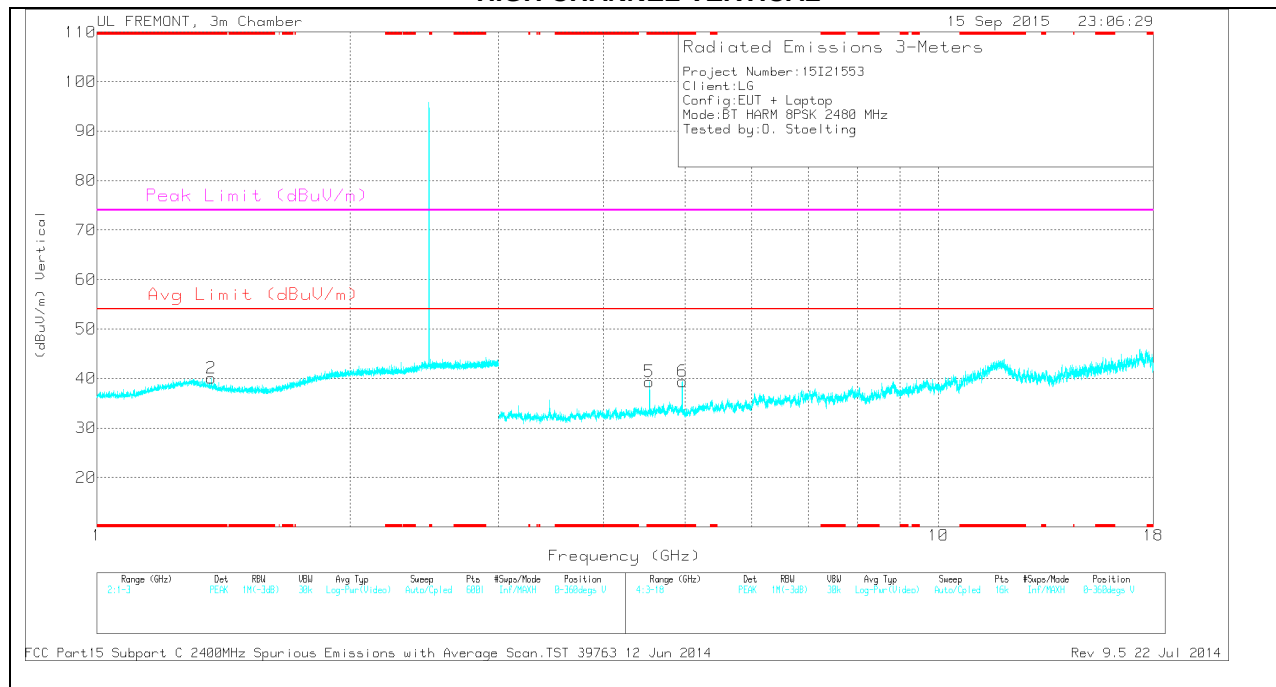
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.306	43.11	PK2	29.8	-23.1	0	49.81	-	-	74	-24.19	360	100	H
* 1.307	31.1	MAV1	29.8	-23.1	1.21	39.01	54	-14.99	-	-	360	100	H
* 2.248	42.14	PK2	31.5	-22.4	0	51.24	-	-	74	-22.76	360	100	V
* 2.248	30.74	MAV1	31.5	-22.4	1.21	41.05	54	-12.95	-	-	360	100	V
* 4.882	44.68	PK2	34	-29.1	0	49.58	-	-	74	-24.42	229	194	H
* 4.882	35.44	MAV1	34	-29.1	1.21	41.55	54	-12.45	-	-	229	194	H
* 4.882	44.61	PK2	34	-29.1	0	49.51	-	-	74	-24.49	236	194	V
* 4.882	36.56	MAV1	34	-29.1	1.21	42.67	54	-11.33	-	-	236	194	V
7.107	38.62	PK2	35.6	-27.1	0	47.12	-	-	-	-	297	360	H
7.107	26.17	MAV1	35.6	-27.1	1.21	35.88	-	-	-	-	297	360	H
7.122	38.55	PK2	35.6	-27.4	0	46.75	-	-	-	-	263	399	V
7.124	26.88	MAV1	35.6	-27.5	1.21	36.19	-	-	-	-	263	399	V

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA*TRACE MARKERS*

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.276	33.25	PK	29.7	-23.1	0	39.85	-	-	74	-34.15	0-360	100	H
2	* 1.368	34.14	PK	29	-23.1	0	40.04	-	-	74	-33.96	0-360	100	V
3	* 11.803	27.39	PK	39	-22.5	0	43.89	-	-	74	-30.11	0-360	100	H
4	* 4.96	36.45	PK	34	-30.3	0	40.15	-	-	74	-33.85	0-360	100	H
5	* 4.536	36.19	PK	33.8	-30.6	0	39.39	-	-	74	-34.61	0-360	200	V
6	* 4.96	35.7	PK	34	-30.3	0	39.4	-	-	74	-34.6	0-360	100	V

PK - Peak detector

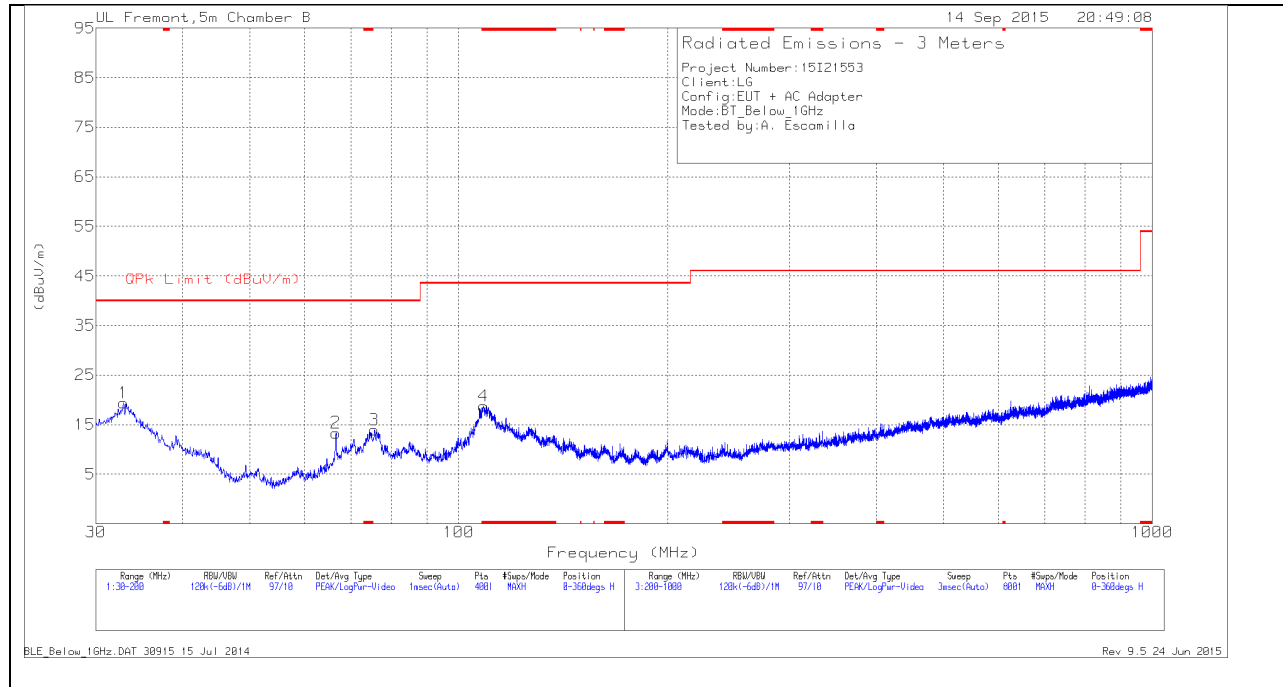
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.277	42.42	PK2	29.7	-23.1	0	49.02	-	-	74	-24.98	0	100	H
* 1.278	30.98	MAV1	29.7	-23.1	1.21	38.79	54	-15.21	-	-	0	100	H
* 1.367	42.84	PK2	29	-23.1	0	48.74	-	-	74	-25.26	0	100	V
* 1.368	31.1	MAV1	29	-23.1	1.21	38.21	54	-15.79	-	-	0	100	V
* 11.803	37.01	PK2	39	-22.5	0	53.51	-	-	74	-20.49	82	112	H
* 11.801	25.2	MAV1	39	-22.5	1.21	42.91	54	-11.09	-	-	82	112	H
* 4.96	44.33	PK2	34	-30.3	0	48.03	-	-	74	-25.97	192	197	H
* 4.96	34.87	MAV1	34	-30.3	1.21	39.78	54	-14.22	-	-	192	197	H
* 4.537	41.31	PK2	33.8	-30.6	0	44.51	-	-	74	-29.49	56	343	V
* 4.536	28.41	MAV1	33.8	-30.6	1.21	32.82	54	-21.18	-	-	56	343	V
* 4.96	44.53	PK2	34	-30.3	0	48.23	-	-	74	-25.77	210	101	V
* 4.96	34.69	MAV1	34	-30.3	1.21	39.6	54	-14.4	-	-	210	101	V

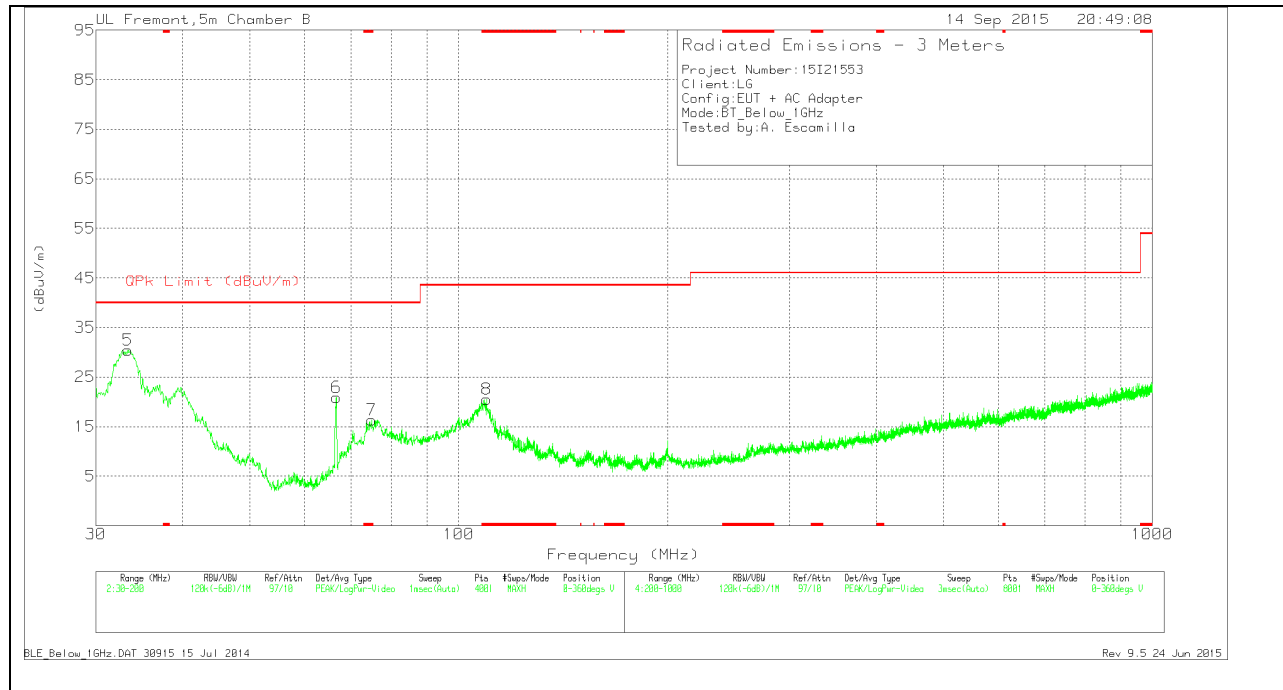
9.3. WORST-CASE BELOW 1 GHz

GFASK SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



VERTICAL PLOT



BELOW 1 GHz TABLE*TRACE MARKERS*

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T408 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 108.5825	38.09	Pk	12	-31.3	18.79	43.52	-24.73	0-360	301	H
7	* 74.9225	39.32	Pk	8.4	-31.4	16.32	40	-23.68	0-360	100	V
8	* 109.7725	39.47	Pk	12.3	-31.3	20.47	43.52	-23.05	0-360	100	V
1	32.89	31.68	Pk	19.5	-31.8	19.38	40	-20.62	0-360	301	H
5	33.3575	43.18	Pk	19.1	-31.8	30.48	40	-9.52	0-360	100	V
2	66.5925	36.45	Pk	8.4	-31.5	13.35	40	-26.65	0-360	301	H
6	66.635	44.06	Pk	8.4	-31.5	20.96	40	-19.04	0-360	100	V
3	75.6025	37.13	Pk	8.3	-31.5	13.93	40	-26.07	0-360	401	H