



**FCC 47 CFR PART 15 SUBPART C  
INDUSTRY CANADA RSS-210 ISSUE 8**

**CERTIFICATION TEST REPORT**

**FOR**

**APPLE WATCH**

**MODEL NUMBER: A1758, A1817**

**FCC ID: BCG-E3105**

**IC: 579C-E3105**

**REPORT NUMBER: 16U23782-E4V2**

**ISSUE DATE: AUGUST 26, 2016**

*Prepared for*

**APPLE, INC.**

**1 INFINITE LOOP**

**CUPERTINO, CA 95014, 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

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V1	08/15/2016	Initial Issue	Chin Pang
V2	08/26/2016	Added Reader Mode and Additional Data Rate	Chin Pang

## TABLE OF CONTENTS

<b>1. ATTESTATION OF TEST RESULTS .....</b>	<b>4</b>
<b>2. TEST METHODOLOGY .....</b>	<b>5</b>
<b>3. FACILITIES AND ACCREDITATION .....</b>	<b>5</b>
<b>4. CALIBRATION AND UNCERTAINTY .....</b>	<b>5</b>
4.1. <i>MEASURING INSTRUMENT CALIBRATION .....</i>	<i>5</i>
4.2. <i>SAMPLE CALCULATION .....</i>	<i>5</i>
4.3. <i>MEASUREMENT UNCERTAINTY.....</i>	<i>6</i>
<b>5. EQUIPMENT UNDER TEST .....</b>	<b>7</b>
5.1. <i>DESCRIPTION OF EUT .....</i>	<i>7</i>
5.2. <i>MAXIMUM OUTPUT POWER.....</i>	<i>7</i>
5.3. <i>SOFTWARE AND FIRMWARE.....</i>	<i>7</i>
5.4. <i>WORST-CASE CONFIGURATION AND MODE.....</i>	<i>8</i>
5.5. <i>DESCRIPTION OF TEST SETUP.....</i>	<i>9</i>
<b>6. TEST AND MEASUREMENT EQUIPMENT .....</b>	<b>13</b>
<b>7. OCCUPIED BANDWIDTH .....</b>	<b>14</b>
<b>8. RADIATED EMISSION TEST RESULTS.....</b>	<b>26</b>
8.1. <i>FUNDAMENTAL AND SPURIOUS EMISSIONS (0.15 – 30 MHz), EUT WITH AC/DC ADAPTER .....</i>	<i>28</i>
8.1.1. <i>CE MODE.....</i>	<i>28</i>
8.1.2. <i>READER MODE .....</i>	<i>68</i>
8.2. <i>TX SPURIOUS EMISSION 30 TO 1000 MHz .....</i>	<i>108</i>
8.2.1. <i>CE MODE.....</i>	<i>108</i>
8.2.2. <i>READER MODE .....</i>	<i>128</i>
<b>9. FREQUENCY STABILITY .....</b>	<b>134</b>
9.1. <i>CE MODE.....</i>	<i>135</i>
9.2. <i>READER MODE .....</i>	<i>140</i>
<b>10. AC MAINS LINE CONDUCTED EMISSIONS .....</b>	<b>142</b>
<b>11. SETUP PHOTOS .....</b>	<b>143</b>

# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** APPLE, INC.  
1 INFINITE LOOP  
CUPERTINO, CA 95014, U.S.A.

**EUT DESCRIPTION:** APPLE WATCH WITH WLAN, BLUETOOTH, NFC SUPPORT, AND GPS RADIO

**MODEL:** A1758, A1817

**SERIAL NUMBER:** FH7RN01HHDNC

**DATE TESTED:** JUNE 15 - AUGUST 25, 2016

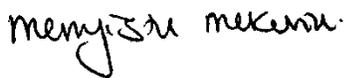
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART C	Pass
INDUSTRY CANADA RSS-210 Issue 8, Annex 2	Pass
INDUSTRY CANADA RSS-GEN Issue 4	Pass

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:

Prepared By:



MENGISTU MEKURIA  
SENIOR ENGINEER  
UL VERIFICATION SERVICES INC.

TOM CHEN  
EMC ENGINEER  
UL VERIFICATION SERVICES INC.

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 4, and RSS-210 Issue 8.

## 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
<input type="checkbox"/> Chamber A	<input type="checkbox"/> Chamber D
<input type="checkbox"/> Chamber B	<input type="checkbox"/> Chamber E
<input type="checkbox"/> Chamber C	<input type="checkbox"/> Chamber F
	<input type="checkbox"/> Chamber G
	<input checked="" type="checkbox"/> Chamber H

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively

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:

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

### 4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Radiated Disturbance, 18000 to 26000 MHz	4.45 dB
Radiated Disturbance, 26000 to 40000 MHz	5.24 dB

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

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is an Apple Watch with WLAN, Bluetooth, NFC support and GPS Radio.

### 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak radiated magnetic field strength as follows:

Frequency Range (MHz)	Mode	Type	E Field at 30m distance (dBuV/m)
13.56	CE Mode	A	9.52
		B	9.34
		F	8.47
	Reader	A	8.47
		B	7.56
		F	7.32

### 5.3. SOFTWARE AND FIRMWARE

The test utility software used during testing was 14S310.

#### **5.4. WORST-CASE CONFIGURATION AND MODE**

EUT has 3 types of enclosures and various kinds of metallic and non-metallic wristbands. There are 2 types of metallic bands; Metal Links, and Metal Mesh. Worst case configuration was investigated; and it was found that aluminum enclosure and metal mesh wristband was the worst case. All testing are performed on the worst case.

The fundamental of the EUT and radiated emission were investigated in three orthogonal orientations X (Flatbed), Y (Landscape), Z (Portrait). The Z (Portrait) orientation was determined to be the worst-case orientation; therefore, all final fundamental and radiated testing were performed with the EUT in Z (Portrait) orientation.

Fundamental and radiated emissions were investigated with EUT charging with wireless charger and as standalone. EUT charging with wireless charger was determined to be worst case. Therefore all final fundamental and radiated emissions were performed with the EUT charged by wireless charger

Based on all of the CE mode data rates, no significant difference among the data rates, therefore, all Reader mode 30-1000MHz spurious emission and frequency stability only performed on highest data rate.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 937606.

## 5.5. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Apple	Mac Book Pro	W801200UD94	n/a
Laptop AC/DC Adapter	Apple	85W MagSAfe Power adapter	A122	n/a
Wireless Charger AC/DC Adapter	Apple	A1385	D292365B2FQDHLHC7	n/a
Wireless Charger	Apple	A1768	DLC616200ZYHE1Y835	BCGA1768

### I/O CABLES (RADIATED TEST)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB	1	USB	Un-Shielded	2	To AC/DC adapter

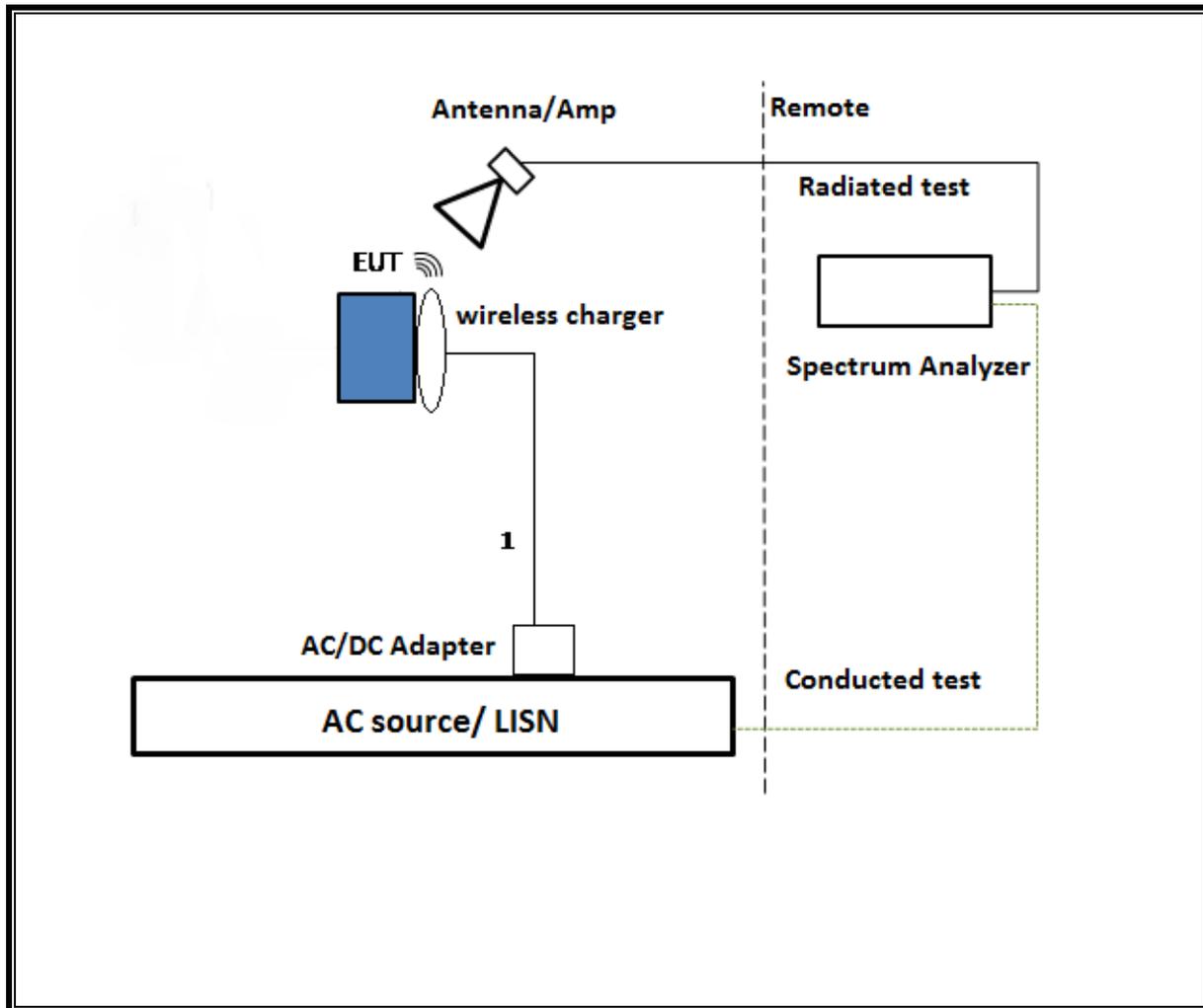
### I/O CABLES (CONDUCTED TEST)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
2	USB	1	USB to mini USB	Shielded	1	To laptop and fixture

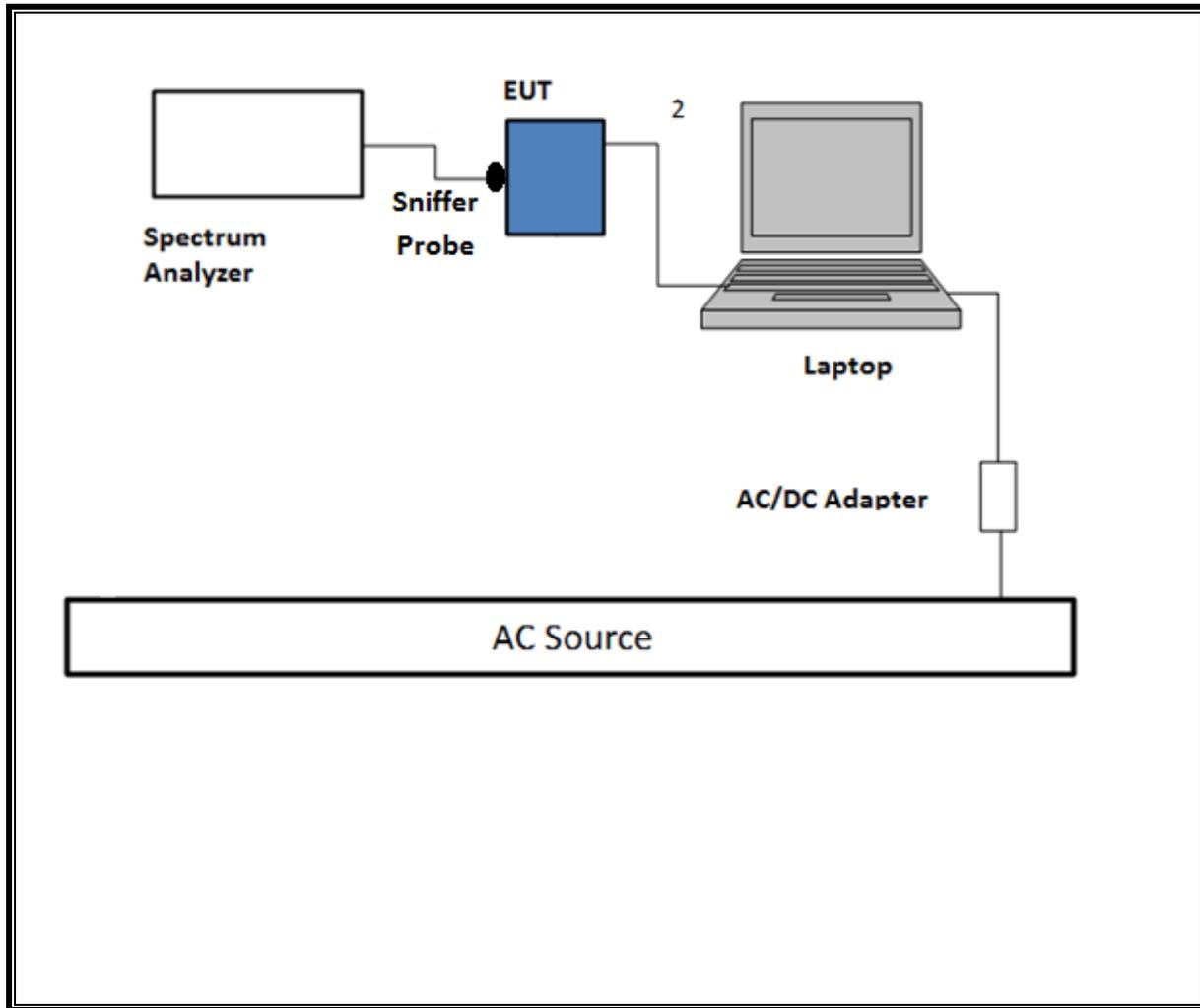
### I/O CABLES (TEMPERATURE CHAMBER)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
3	DC	2	Alligator	18 AWG strand	1	Insulated cable

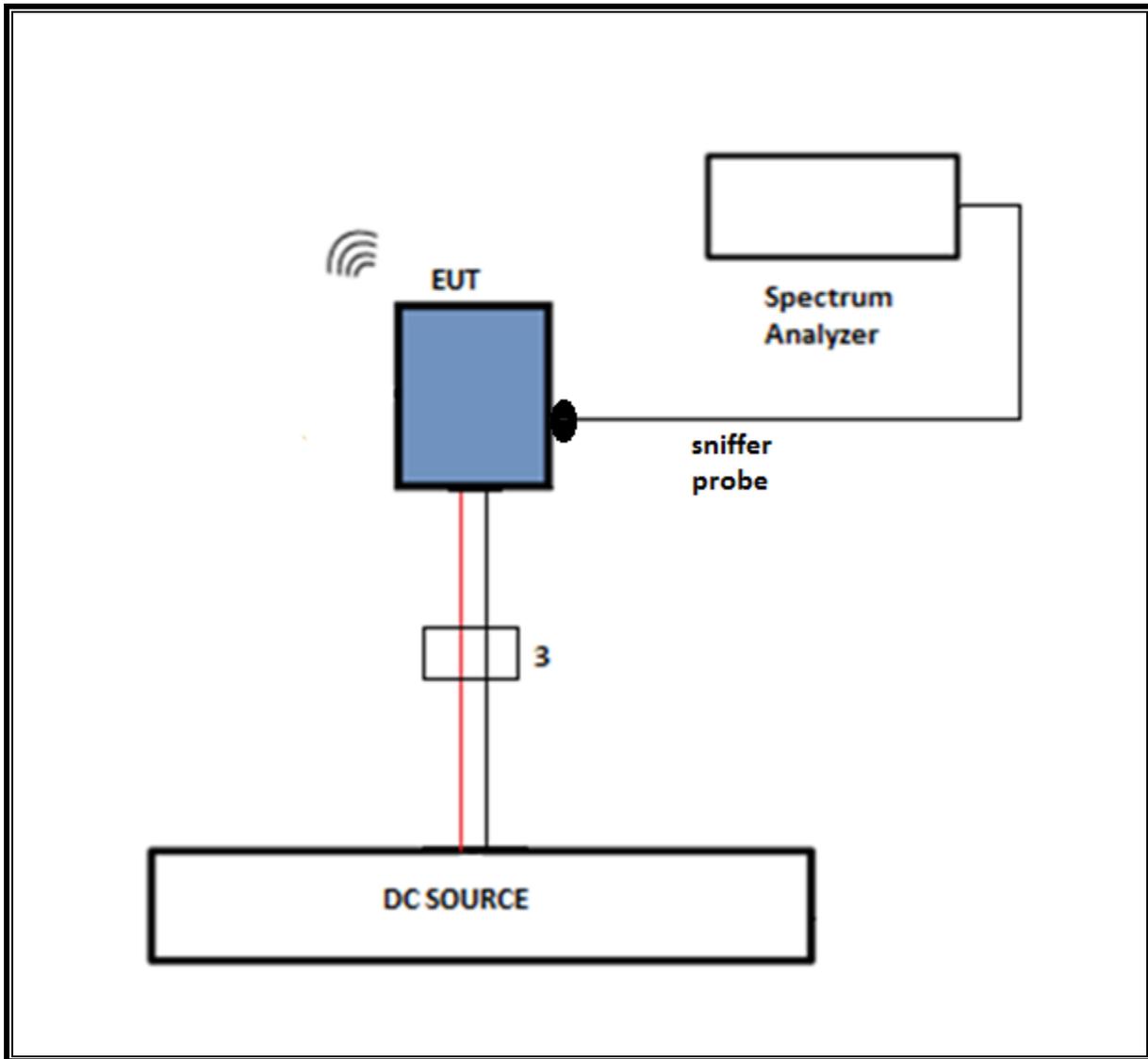
**SETUP DIAGRAM RADIATED**



**SETUP DIAGRAM- CONDUCTED**



**SETUP DIAGRAM FREQUENCY STABILITY**



## 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	T No.	Cal Due
Antenna, Broadband Hybrid	Sunol Sciences	JB3	899	05/26/17
**Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	835	06/18/16
***Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	835	06/18/17
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent	N9030A	906	02/03/17
Antenna, Loop, 30 MHz	ETS Lindgren	6502	757	05/31/17
Chamber, Environmental	Cincinnati Sub Zero	ZPHS-8-3.5-SCT/WC	754	09/21/16
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent	N9030A	340	11/16/16
UL SOFTWARE				
*Radiated Software	UL	UL EMC	Fundamental mask, 5/7/15	
*Conducted Software	UL	UL EMC	Ver 2.2, March 31, 2015	
*Radiated Software	UL	UL EMC	Below 30Mhz, 6/24/15	
*Radiated Software	UL	UL EMC	Below 1Ghz, 7/15/14	

Note: \* indicates automation software version used in the compliance certification testing.

\*\*Equipment was used before calibration due date.

\*\*\*Equipment was used after calibration.

## 7. OCCUPIED BANDWIDTH

### LIMITS

None; for reporting purposes only.

### TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 10kHz. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

### RESULTS

<b>ID:</b>	29435	<b>Date:</b>	8/25/16
------------	-------	--------------	---------

#### 99% and 20dB BW

##### CE Mode

Moduation	Frequency (MHz)	Data Rate (Kbps)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
Type A	13.56	848	21.332	24.95
		424	22.034	25.43
		212	21.613	25.36
		106	21.979	25.16

Moduation	Frequency (MHz)	Data Rate (Kbps)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
Type B	13.56	848	21.321	25.52
		424	21.431	25.25
		212	21.533	25.36
		106	21.621	25.12

Moduation	Frequency (MHz)	Data Rate (Kbps)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
Type F	13.56	424	22.017	25.45
		212	22.403	25.21

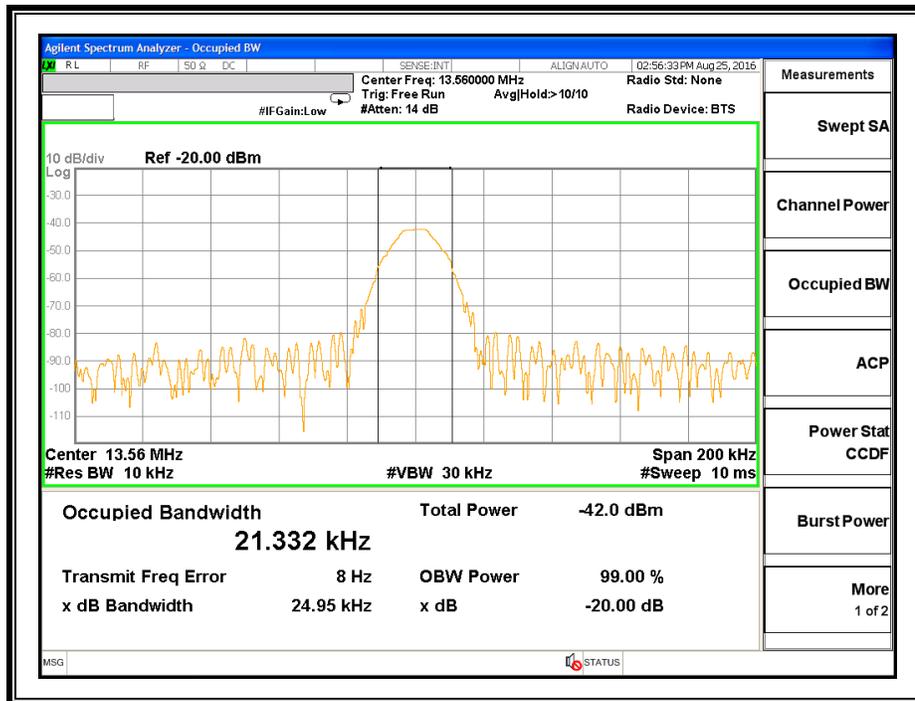
**READER Mode**

Moduation	Frequency (MHz)	Data Rate (Kbps)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
Type A	13.56	848	21.546	24.97
		424	21.751	25.75
		212	22.291	25.71
		106	22.537	25.20

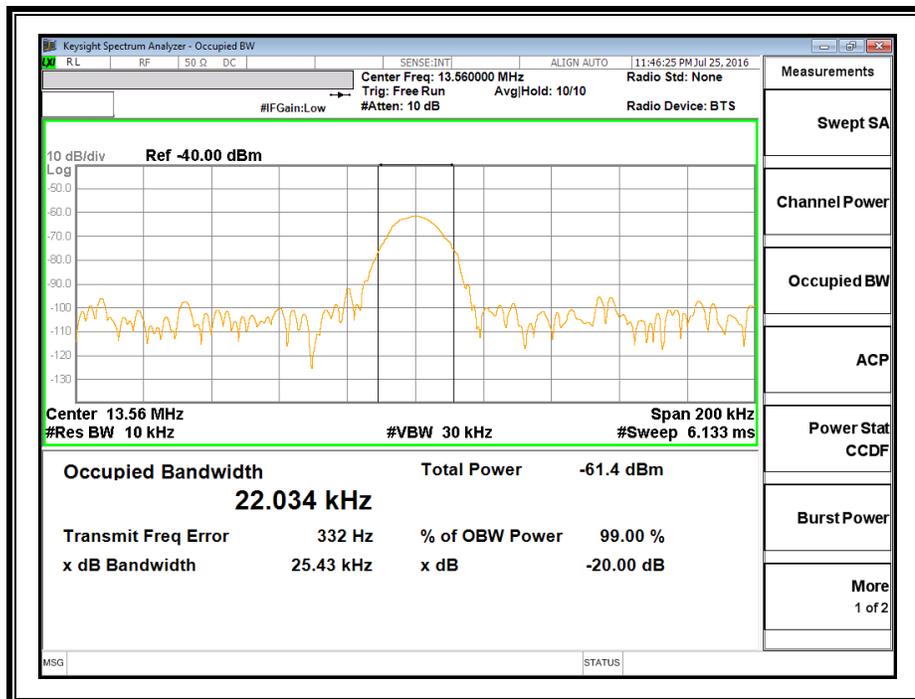
Moduation	Frequency (MHz)	Data Rate (Kbps)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
Type B	13.56	848	21.954	25.21
		424	22.412	25.52
		212	22.972	25.12
		106	22.132	23.98

Moduation	Frequency (MHz)	Data Rate (Kbps)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
Type F	13.56	424	21.47	24.98
		212	21.248	24.63

**CE MODE Type A, 848Kbps**



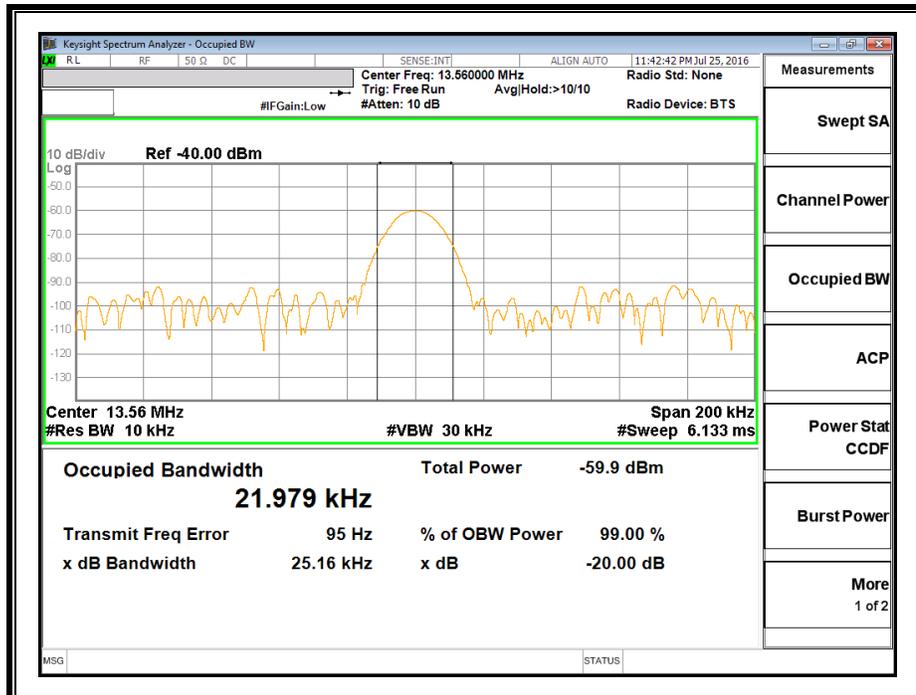
**424Kbps**



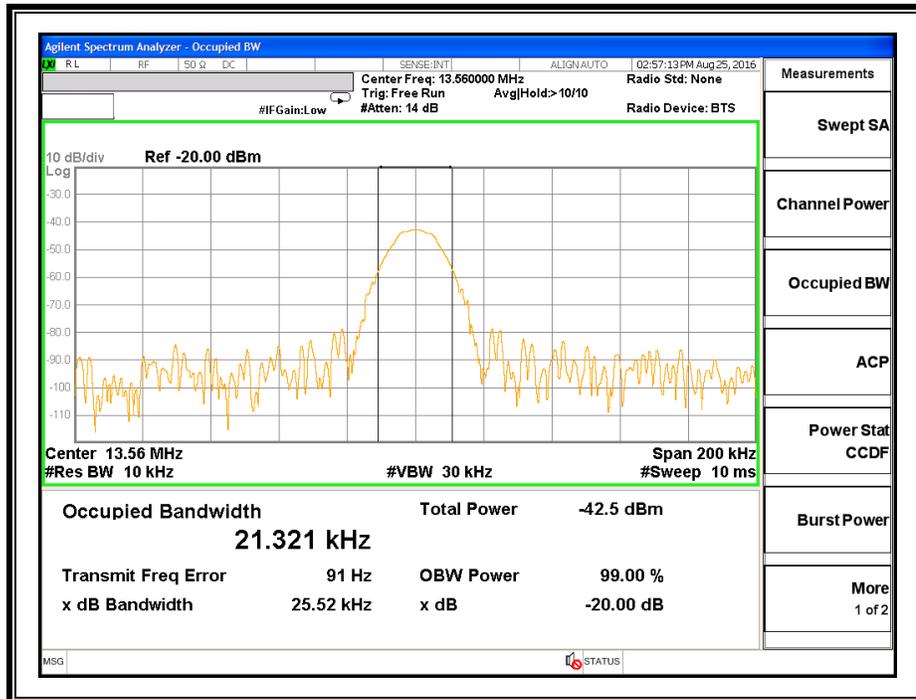
**212Kbps**



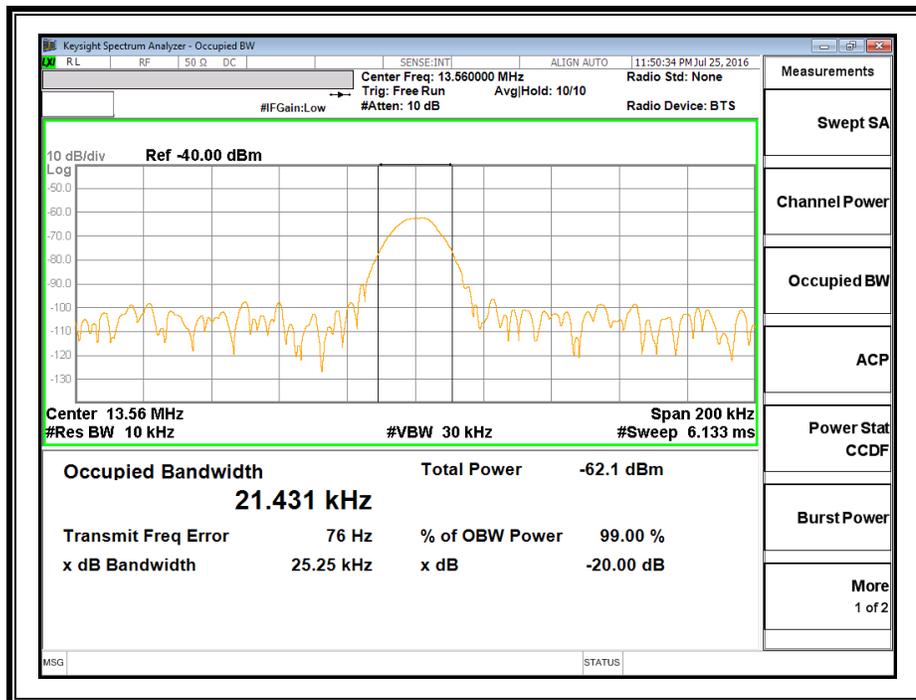
**106Kbps**



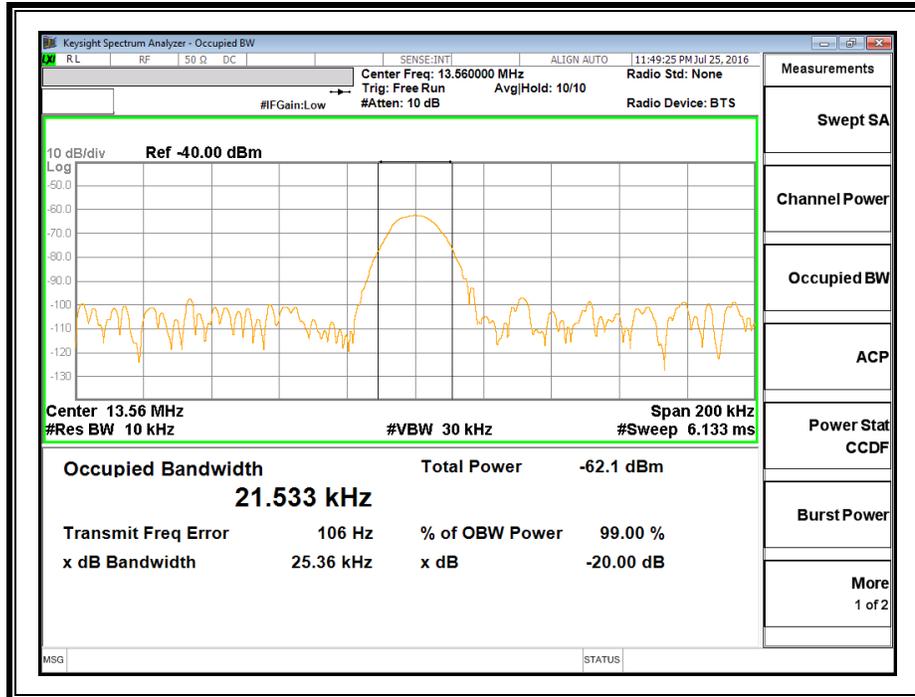
**TYPE B 848Kbps**



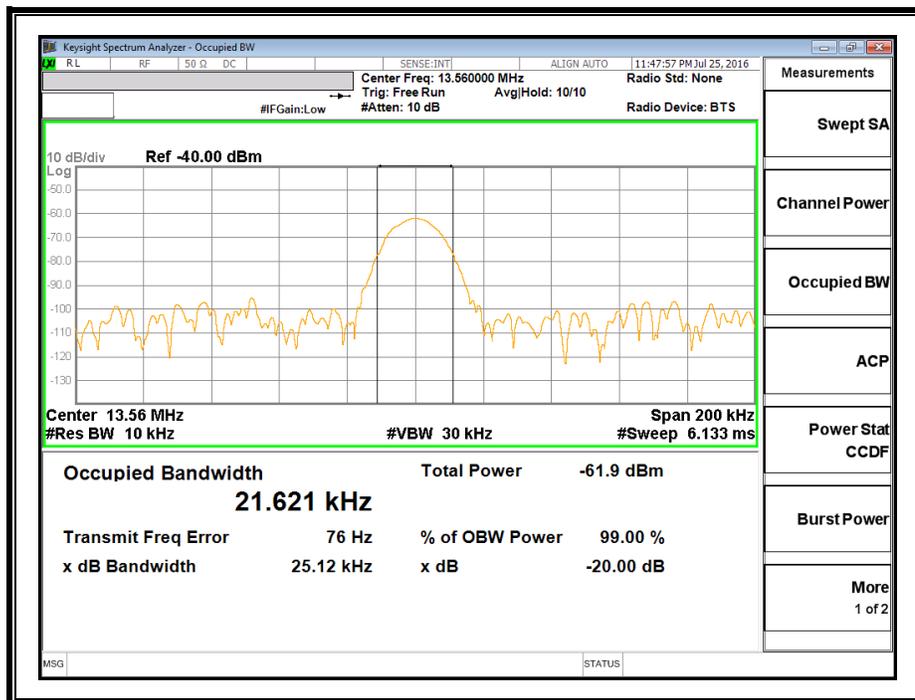
**424Kbps**



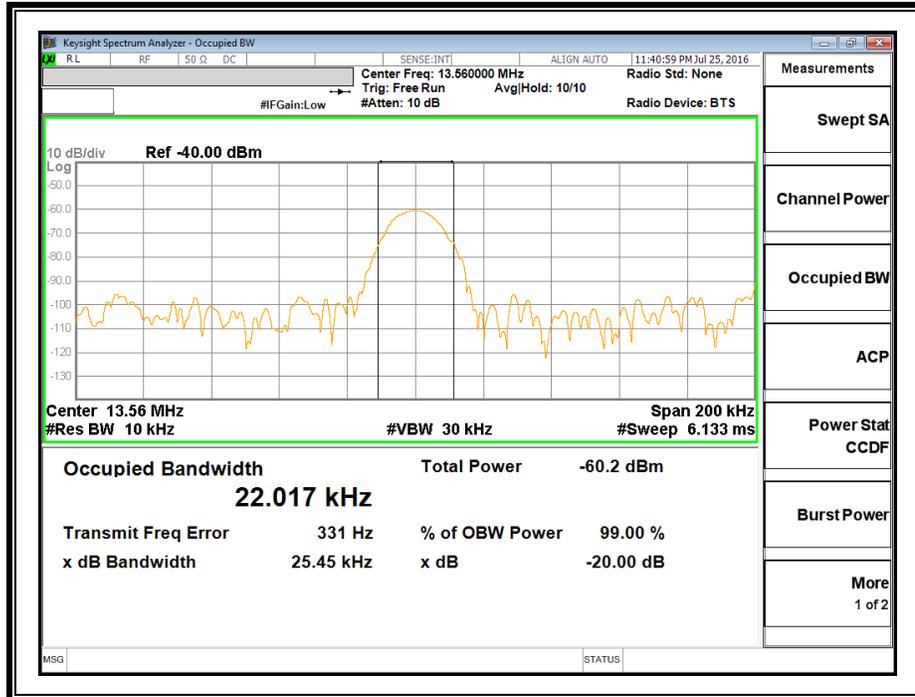
**212Kbps**



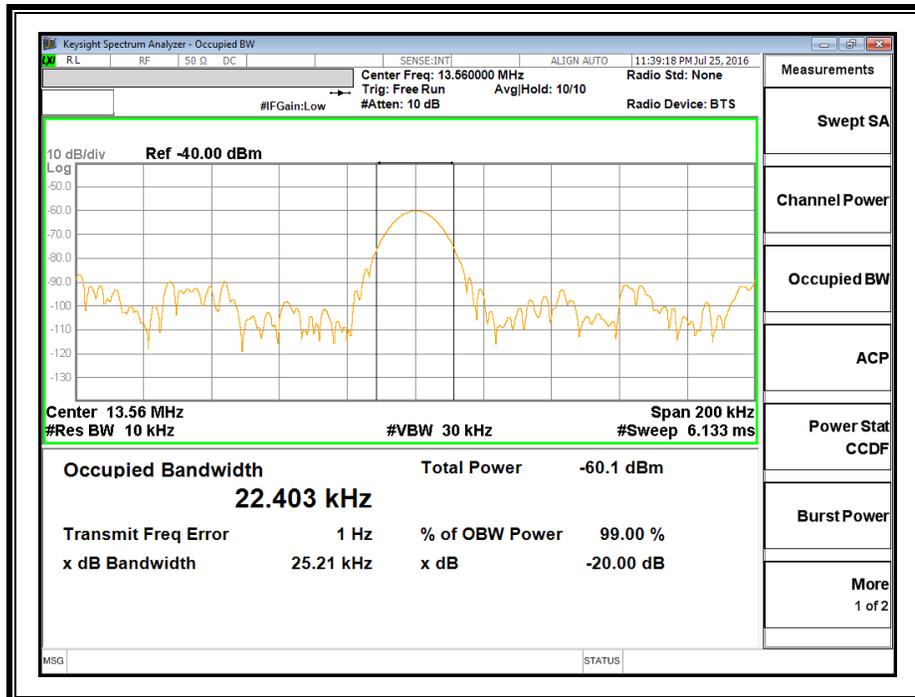
**106Kbps**



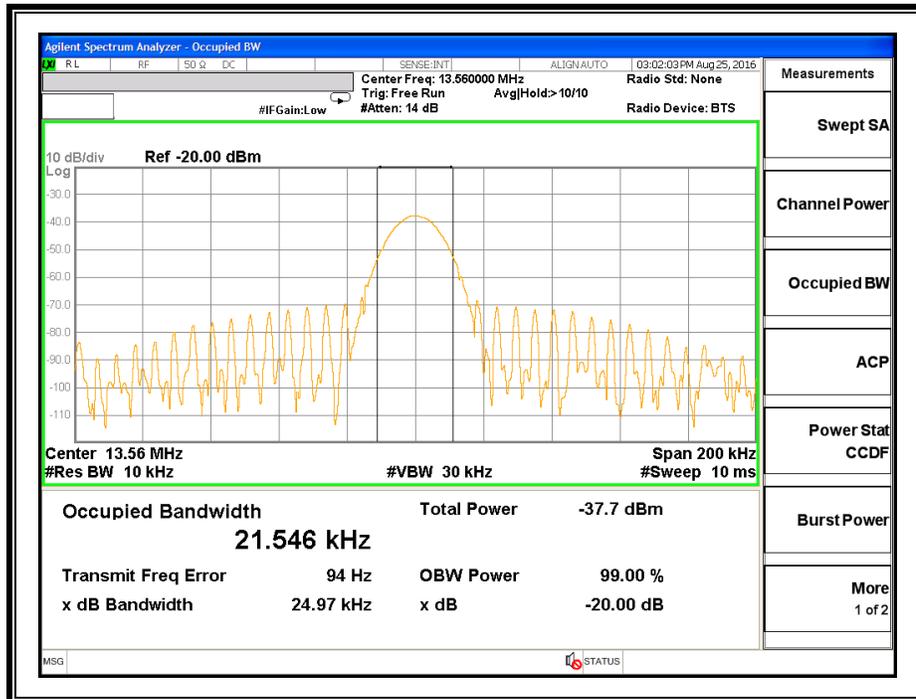
**TYPE F 424Kbps**



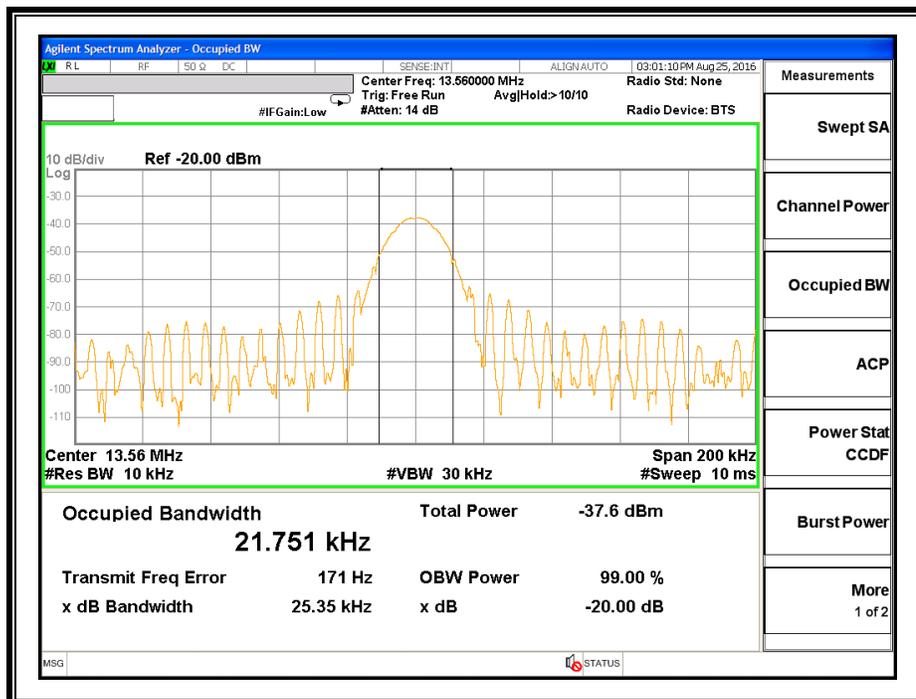
**212Kbps**



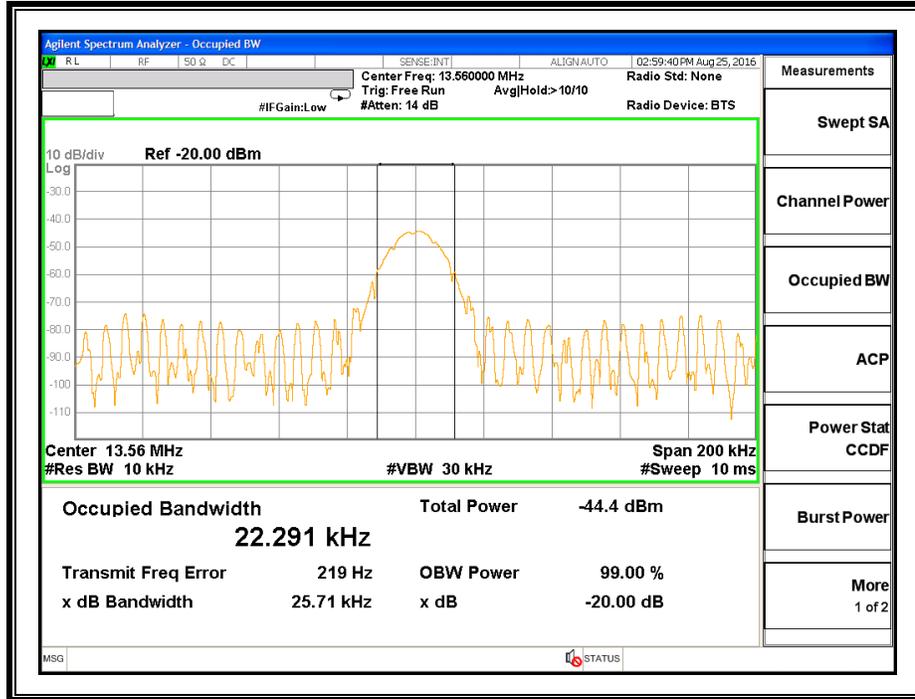
**READER MODE Type A, 848Kbps**



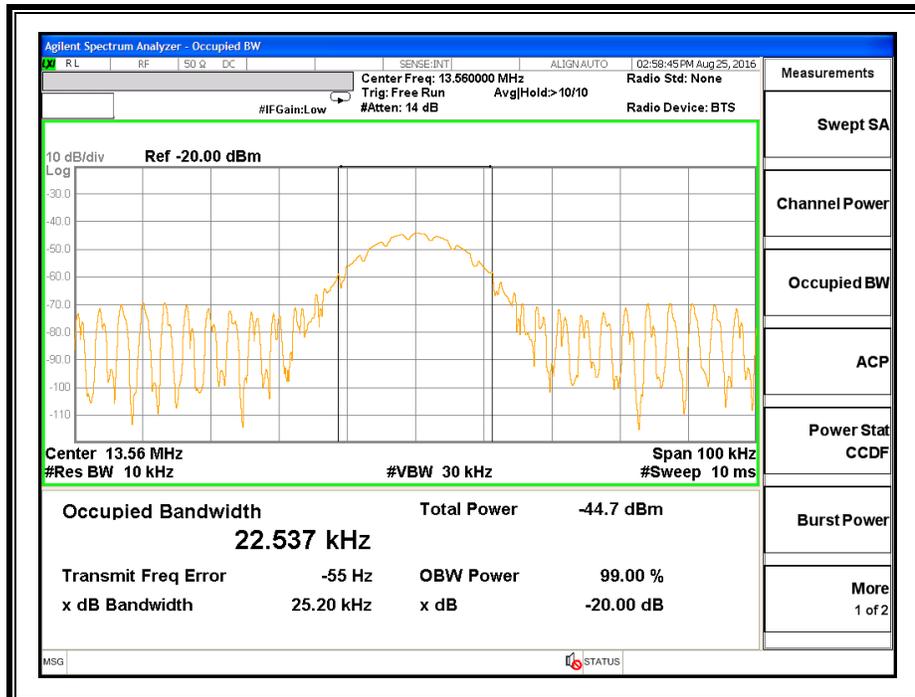
**424Kbps**



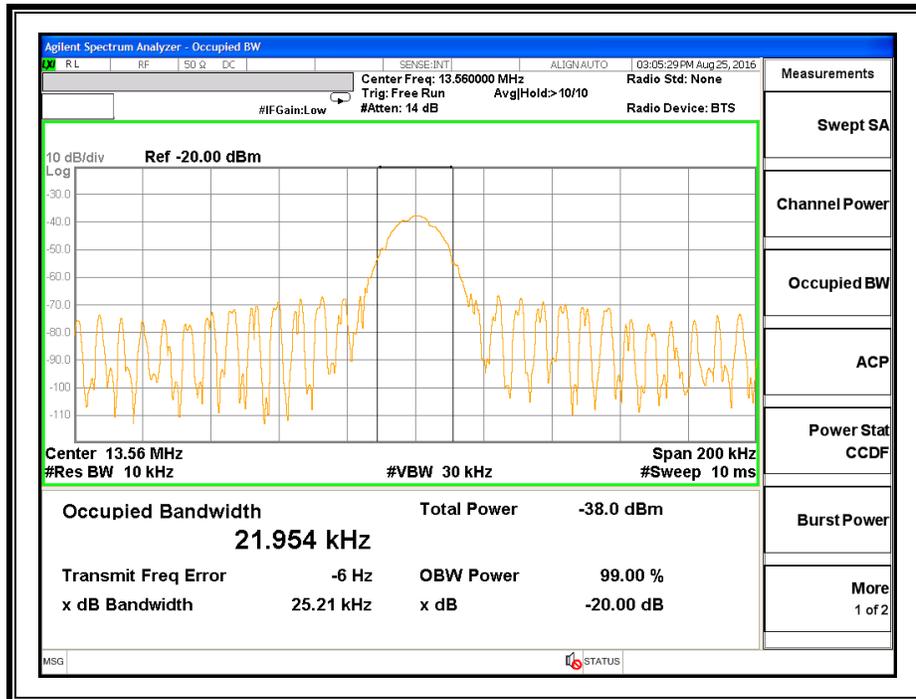
**212Kbps**



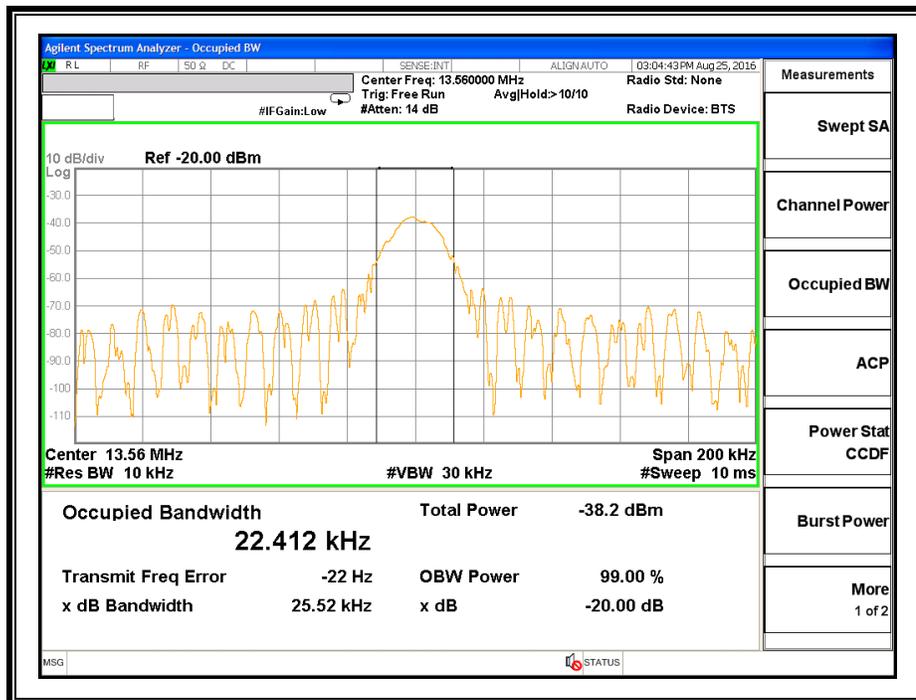
**106Kbps**



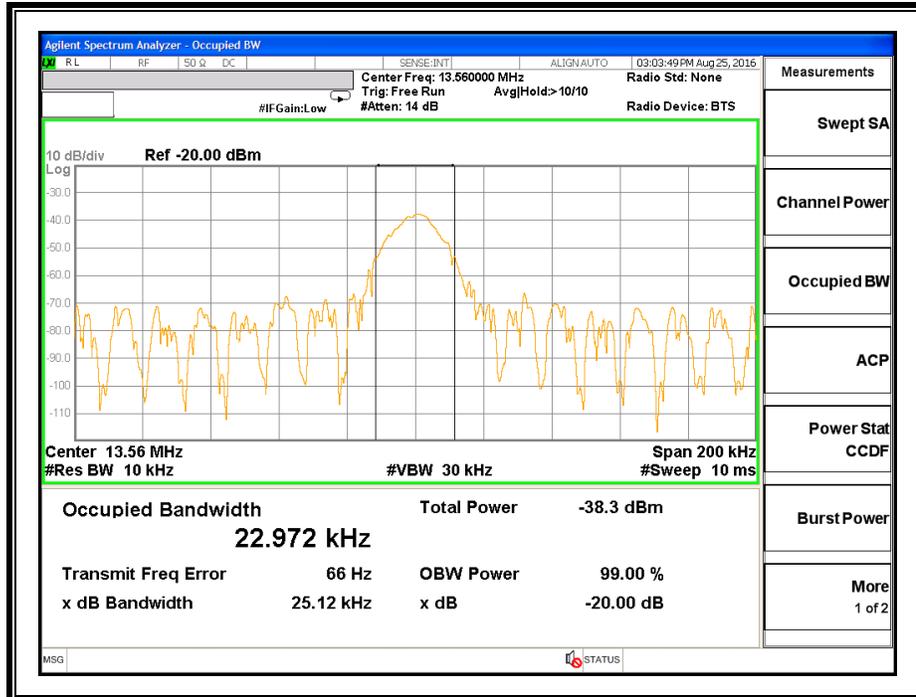
**Type B, 848Kbps**



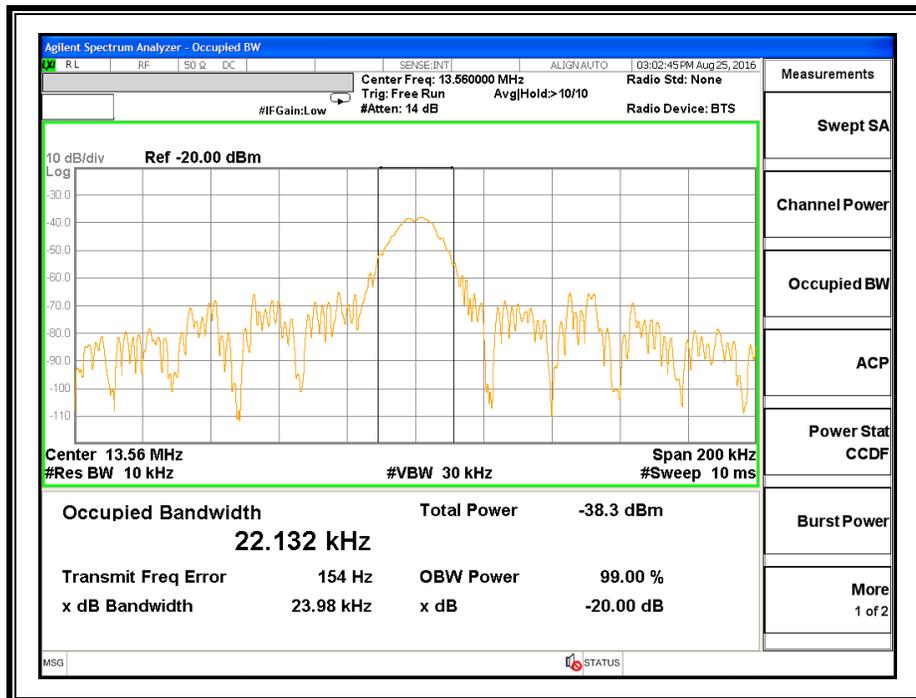
**424Kbps**



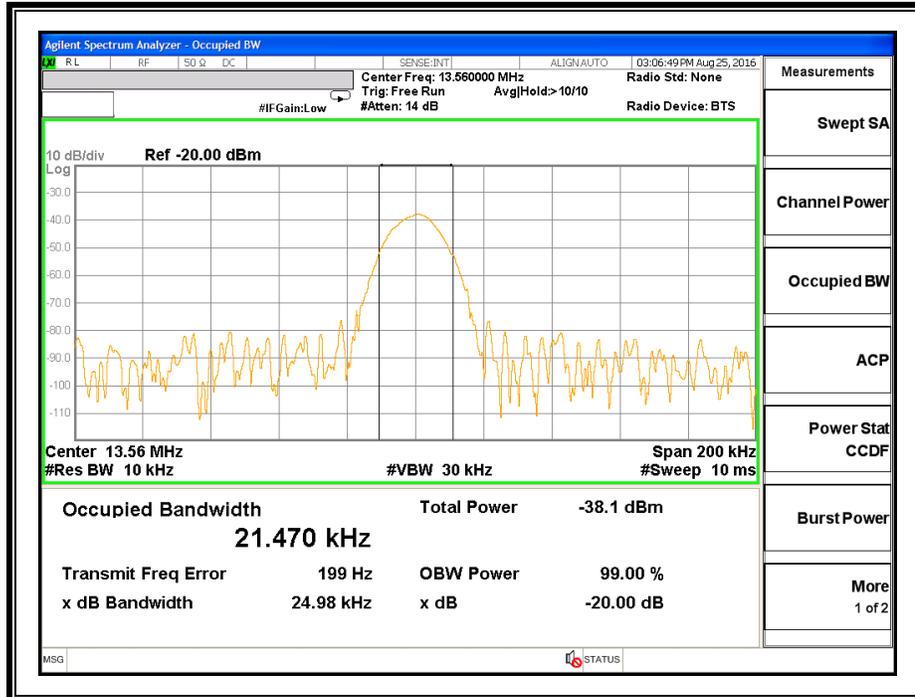
**212Kbps**



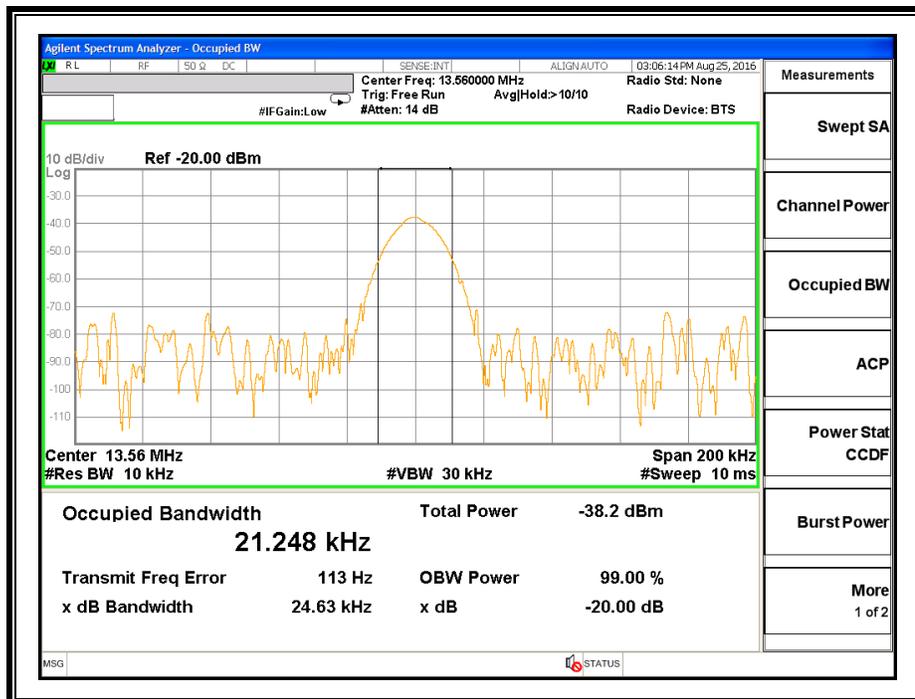
**106Kbps**



**TYPE F, 424Kbps**



**212Kbps**



## 8. RADIATED EMISSION TEST RESULTS

### LIMITS AND PROCEDURE

#### LIMIT

§15.225

IC RSS-210, A2.6

IC RSS-GEN, Section 8.9 (Transmitter)

IC RSS-GEN, Section 7.1.2 (Receiver)

(a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/ meter at 30 meters.

(b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110– 14.010 MHz and shall not exceed the general radiated emission limits in § 15.209 as follows:

§15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

\*\* Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

Formula for converting the filed strength from uV/m to dBuV/m is:

Limit (dBuV/m) = 20 log limit (uV/m)

In addition:

§15.209 (d) The emission limits shown the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

§15.209 (d) The provisions in §§ 15.225, measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.

### **TEST PROCEDURE**

ANSI C63.10, 2013

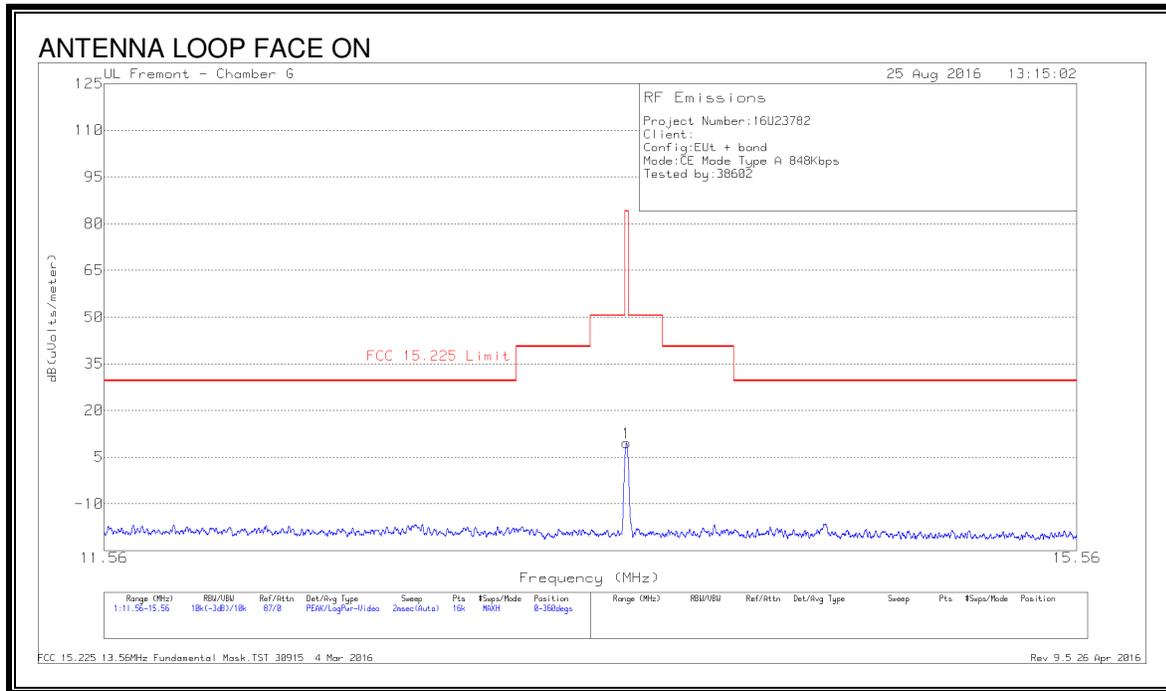
The EUT is an intentional radiator that incorporates a digital device, the highest fundamental frequency generated or used in the device is 13.56 MHz; therefore, the frequency range was investigated from 0.15 MHz to the 10<sup>th</sup> harmonic of the highest fundamental frequency, or 1000 MHz, whichever is greater.

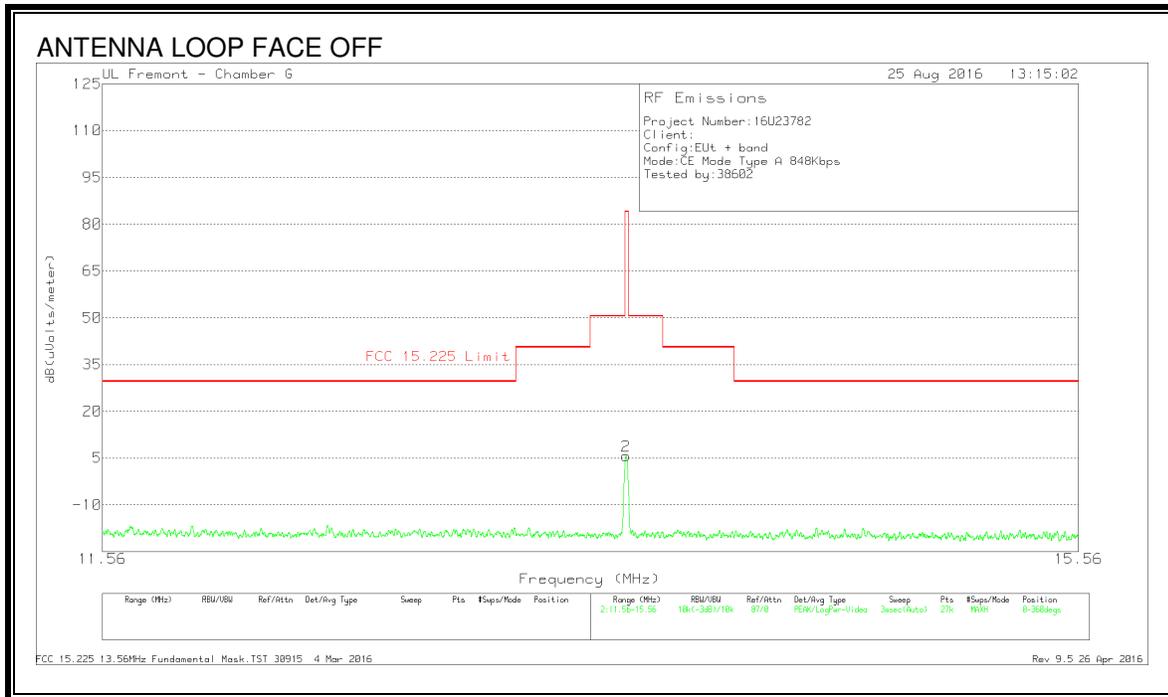
### **RESULTS**

# 8.1. FUNDAMENTAL AND SPURIOUS EMISSIONS (0.15 – 30 MHz), EUT WITH AC/DC ADAPTER

## 8.1.1. CE MODE

### TYPE A 848Kbps FUNDAMENTAL





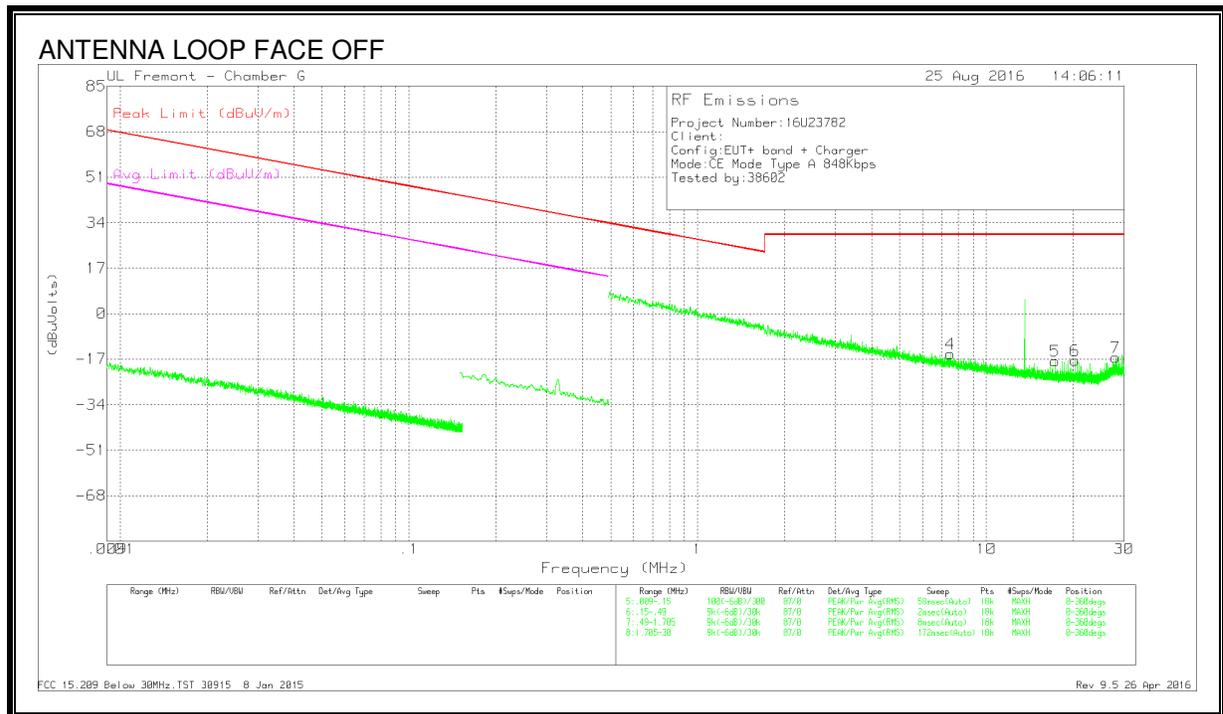
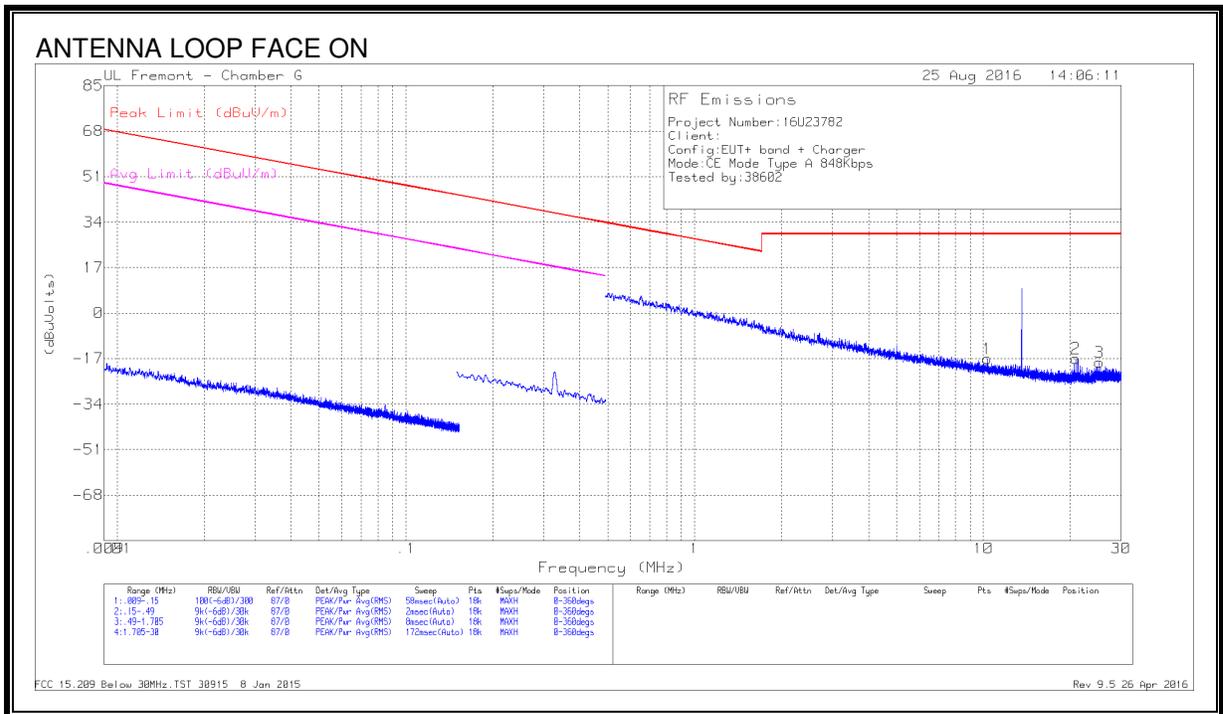
**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 30m	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.56	38.32	Pk	10.6	.6	-40	9.52	84	-74.48	0-360
2	13.55822	34.49	Pk	10.6	.6	-40	5.69	84	-78.31	0-360

Pk - Peak detector

FCC 15.225 13.56MHz Fundamental Mask.TST 30915 4 Mar 2016

**SPURIOUS EMISSION**



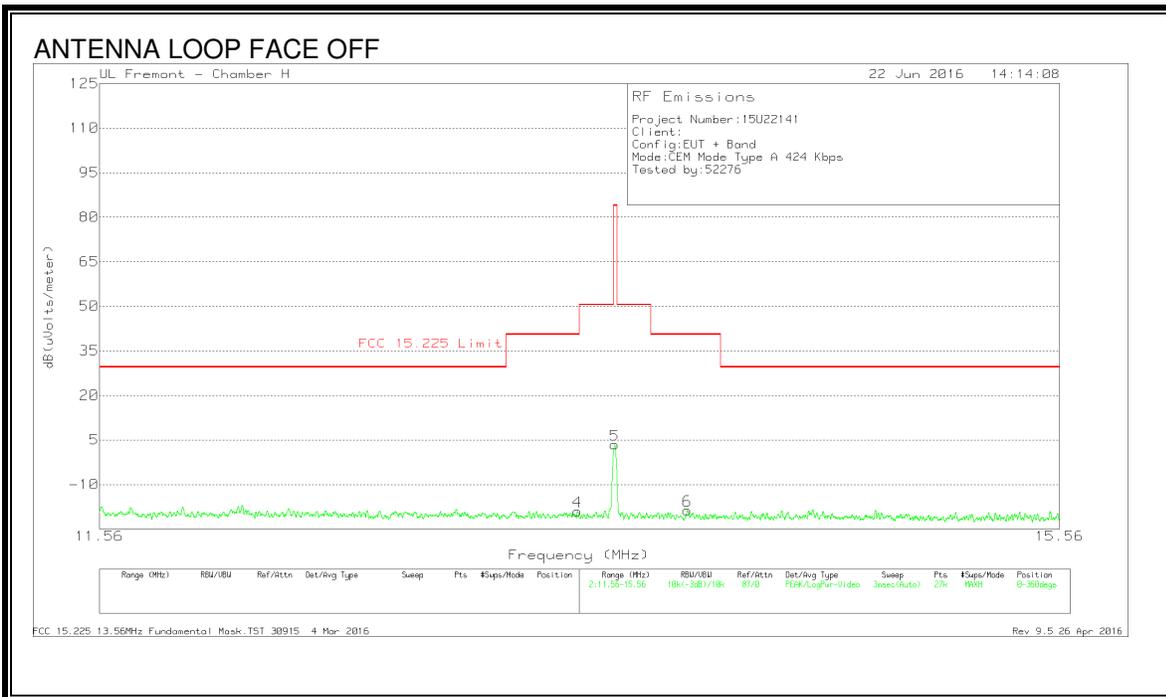
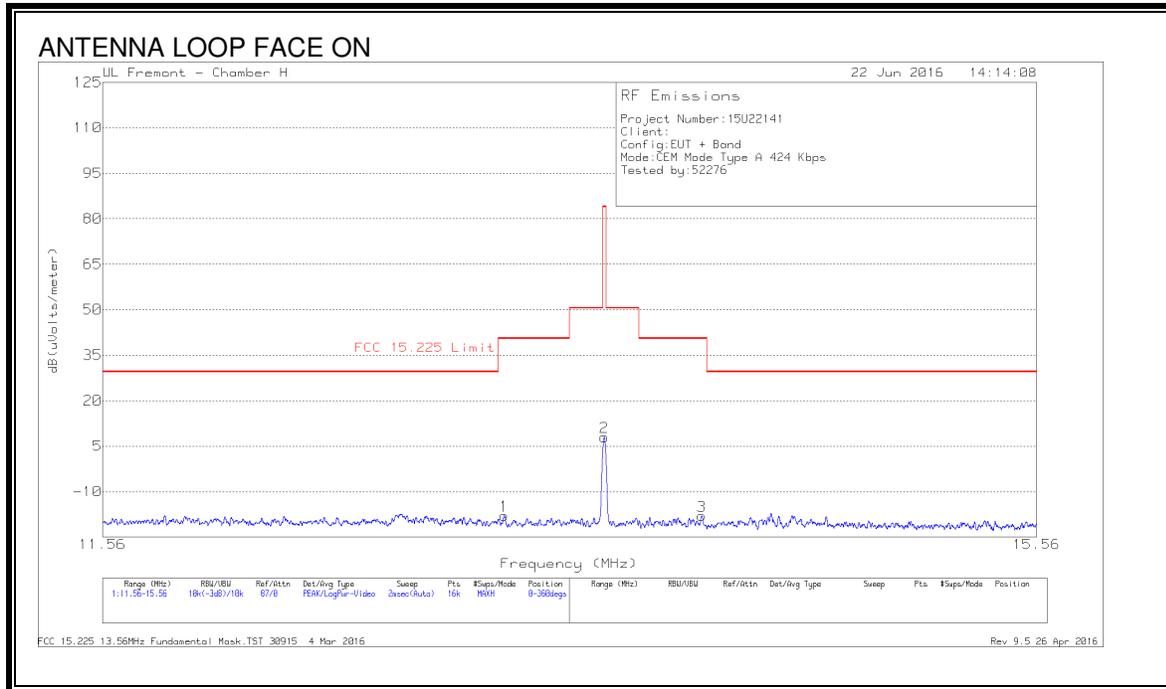
**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	10.3062	11.52	Pk	11	.5	-40	-16.98	29.54	-46.52	-	-	0-360
2	20.90069	12.56	Pk	9.7	.8	-40	-16.94	29.54	-46.48	-	-	0-360
3	25.14666	11.66	Pk	9.1	.8	-40	-18.44	29.54	-47.98	-	-	0-360
4	7.50725	13.31	Pk	11.2	.5	-40	-14.99	29.54	-44.53	-	-	0-360
5	17.30867	11.44	Pk	10.2	.7	-40	-17.66	29.54	-47.2	-	-	0-360
6	20.24753	11.87	Pk	9.8	.8	-40	-17.53	29.54	-47.07	-	-	0-360
7	28.08237	13.97	Pk	8.7	.9	-40	-16.43	29.54	-45.97	-	-	0-360

Pk - Peak detector

FCC 15.209 Below 30MHz.TST 30915 8 Jan 2015

**424Kbps FUNDAMENTAL**

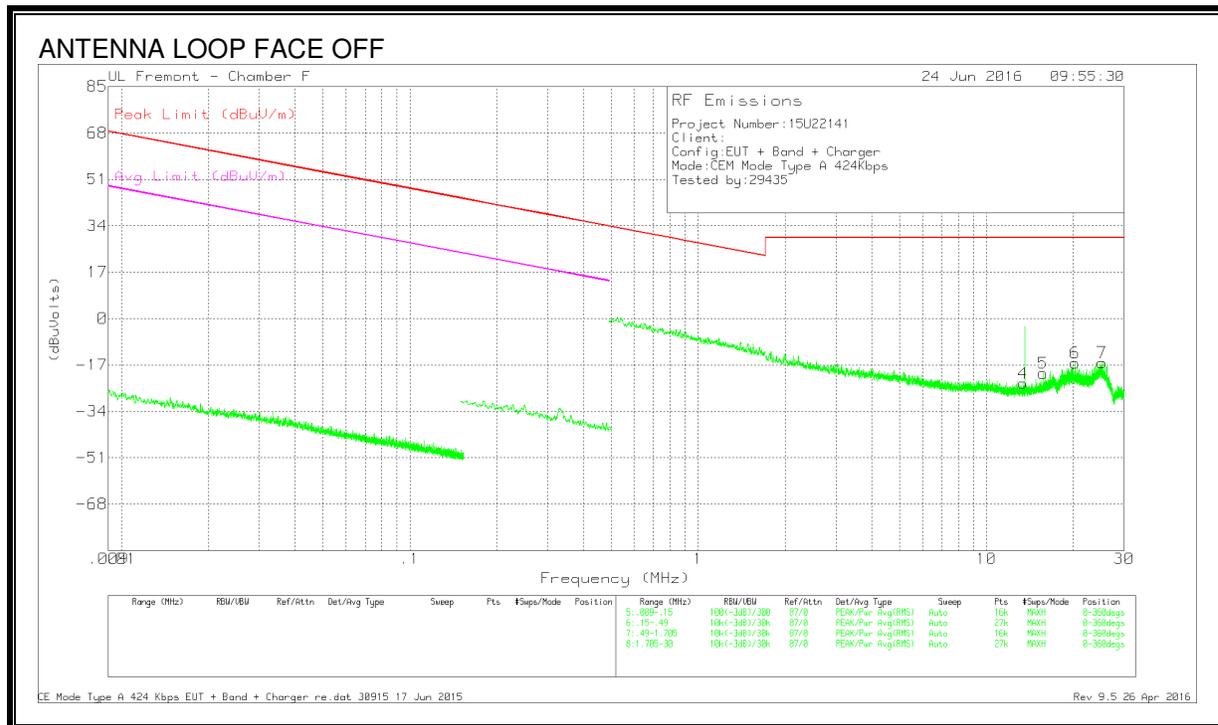
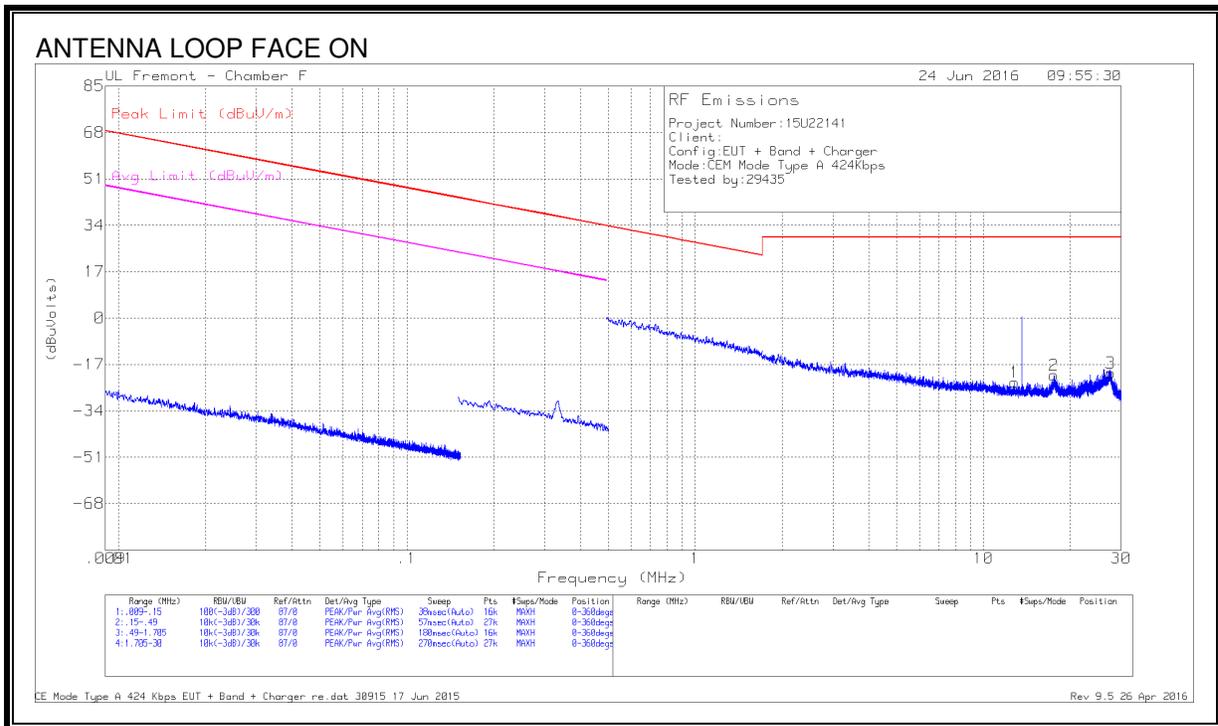


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.136	10.79	Pk	10.7	.6	-40	-17.91	40.51	-58.42	0-360
2	13.56025	36.77	Pk	10.6	.6	-40	7.97	84	-76.03	0-360
3	13.98763	10.89	Pk	10.6	.5	-40	-18.01	40.51	-58.52	0-360
4	13.4043	9.68	Pk	10.7	.6	-40	-19.02	40.51	-59.53	0-360
5	13.55822	32.21	Pk	10.6	.6	-40	3.41	84	-80.59	0-360
6	13.86739	10.21	Pk	10.6	.5	-40	-18.69	40.51	-59.2	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

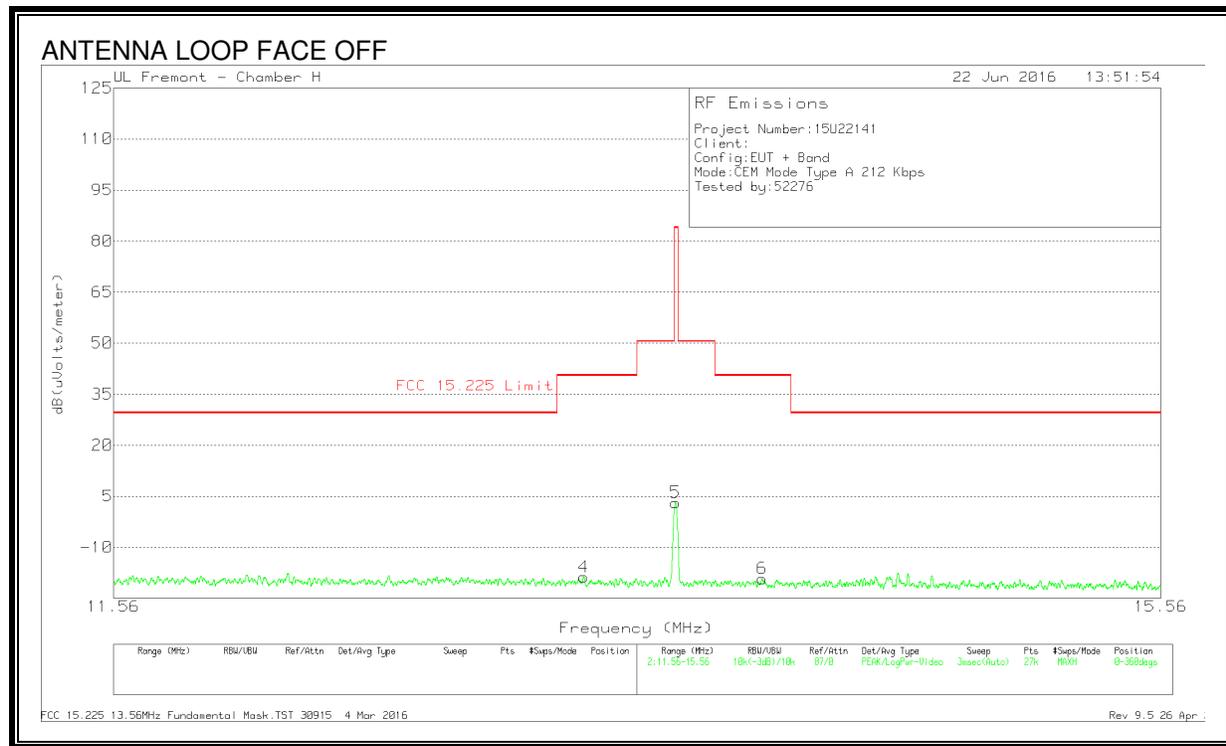
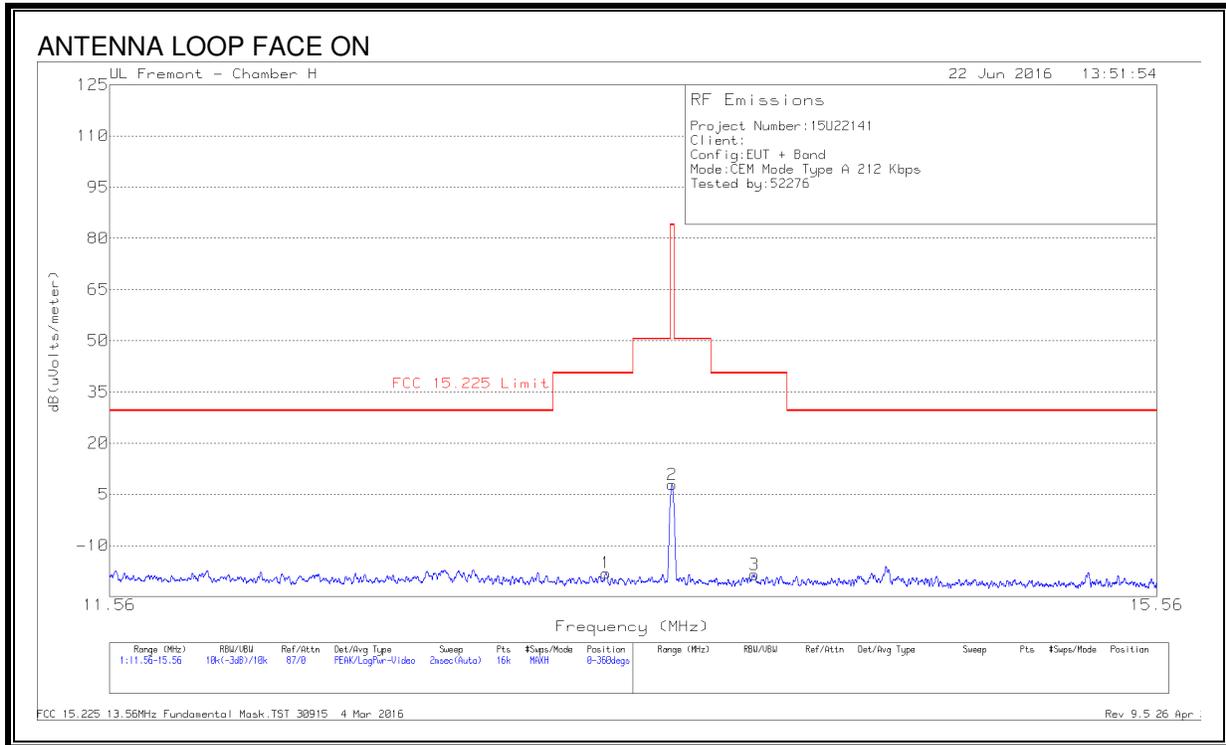


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	12.8138	5.21	Pk	10.7	.6	-40	-23.49	29.54	-53.03	-	-	0-360
2	17.55705	8.16	Pk	10.3	.6	-40	-20.94	29.54	-50.48	-	-	0-360
3	27.55968	10.5	Pk	8.6	.8	-40	-20.1	29.54	-49.64	-	-	0-360
4	13.37815	4.93	Pk	10.7	.6	-40	-23.77	29.54	-53.31	-	-	0-360
5	15.67694	8.88	Pk	10.5	.6	-40	-20.02	29.54	-49.56	-	-	0-360
6	20.24674	12.95	Pk	10.1	.7	-40	-16.25	29.54	-45.79	-	-	0-360
7	25.14562	13.94	Pk	9.2	.7	-40	-16.16	29.54	-45.7	-	-	0-360

Pk - Peak detector

**212Kbps FUNDAMENTAL**

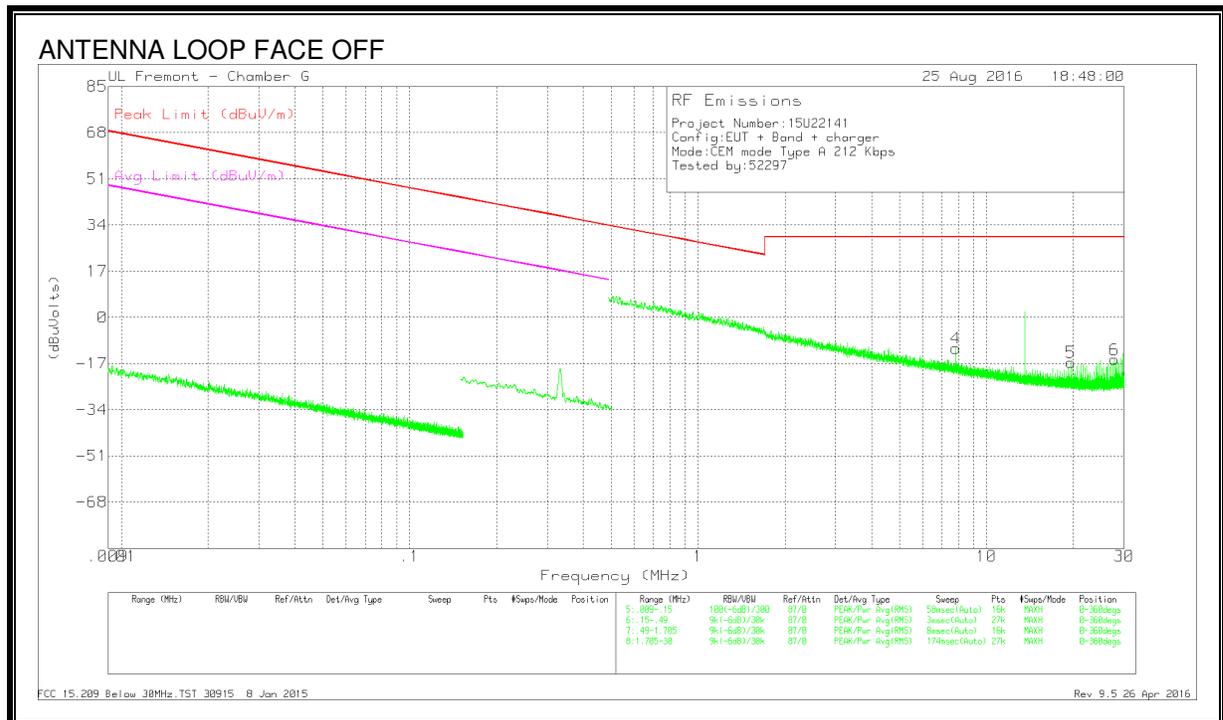
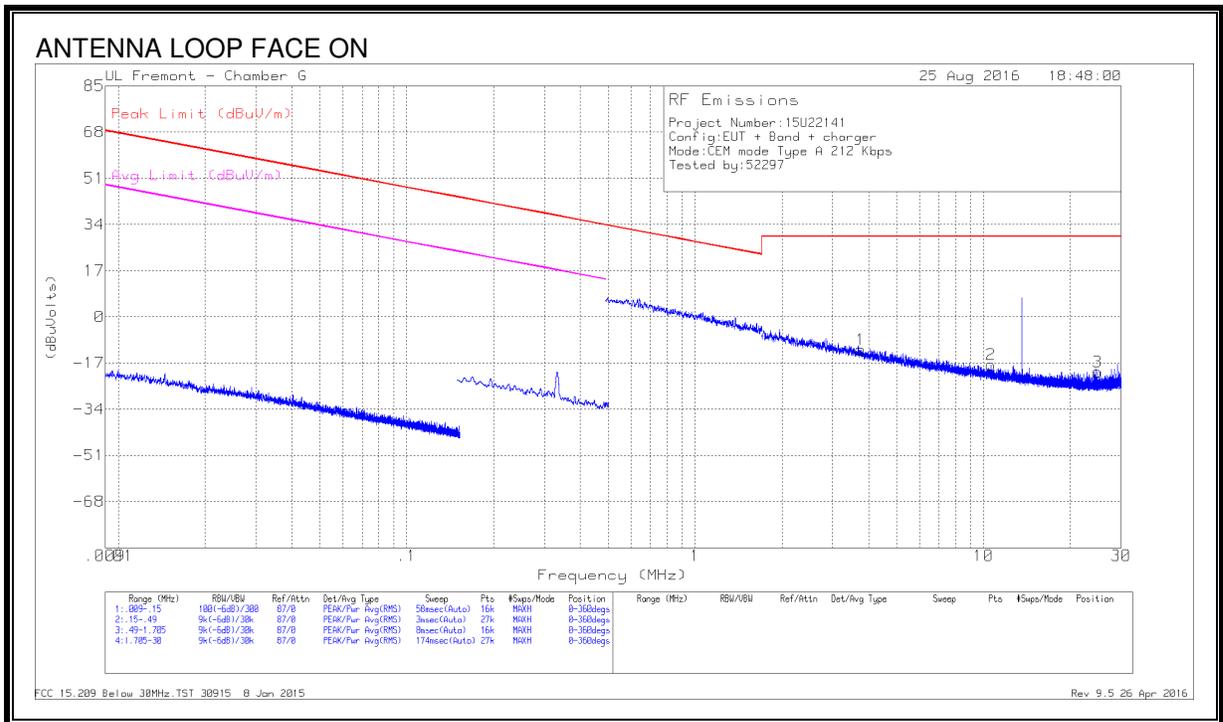


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.30863	10.63	Pk	10.7	.6	-40	-18.07	40.51	-58.58	0-360
2	13.56	36.64	Pk	10.6	.6	-40	7.84	84	-76.16	0-360
3	13.88138	10.38	Pk	10.6	.5	-40	-18.52	40.51	-59.03	0-360
4	13.20953	9.95	Pk	10.7	.6	-40	-18.75	40.51	-59.26	0-360
5	13.55837	31.96	Pk	10.6	.6	-40	3.16	84	-80.84	0-360
6	13.89537	9.73	Pk	10.6	.5	-40	-19.17	40.51	-59.68	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

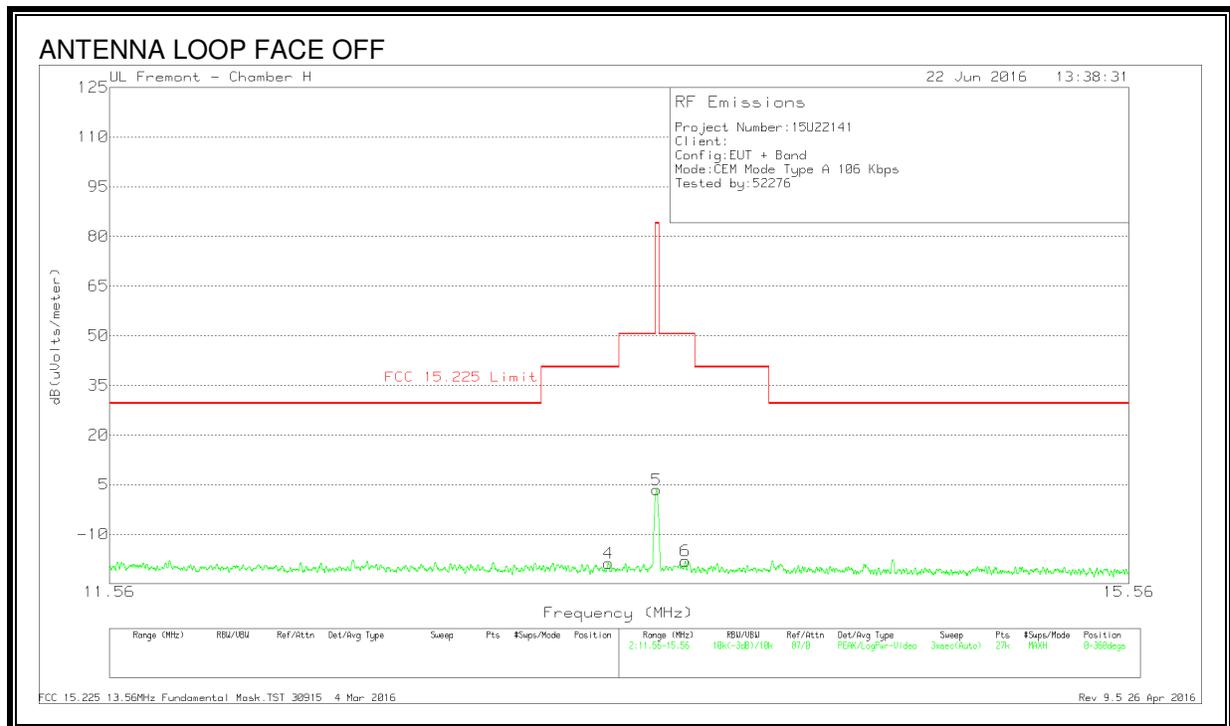
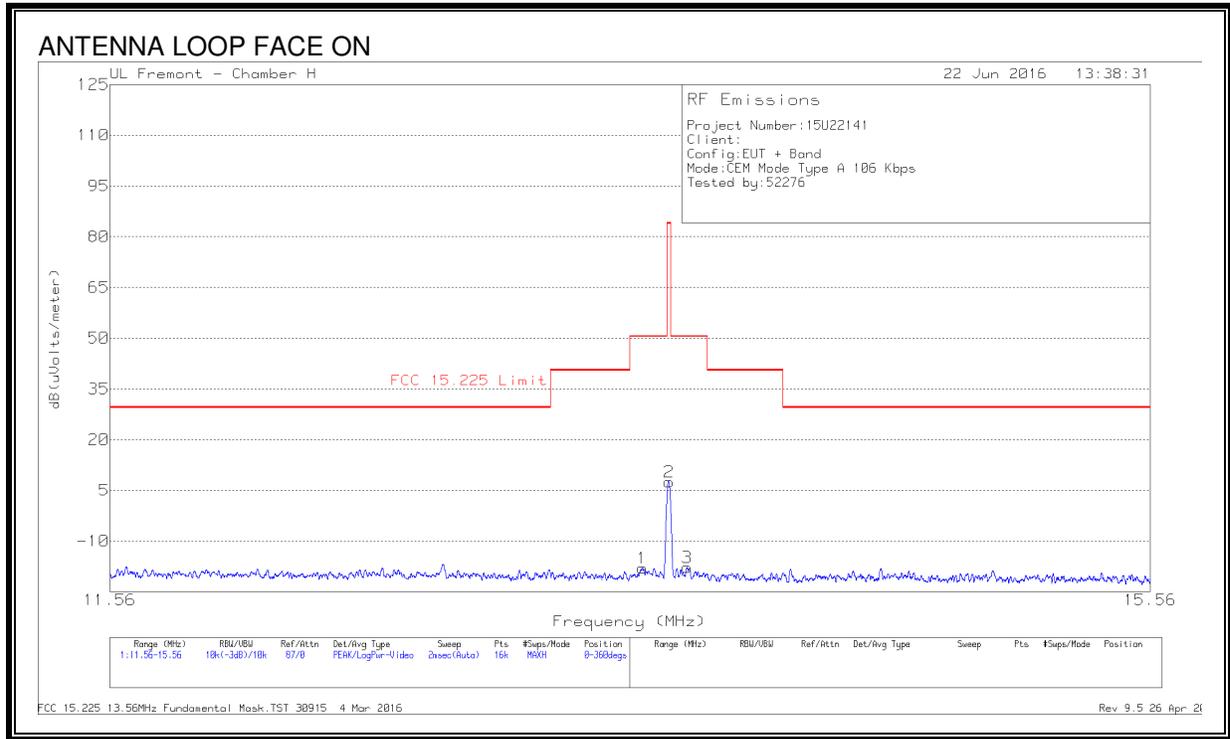


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	3.74808	15.94	Pk	11.7	.3	-40	-12.06	29.54	-41.6	-	-	0-360
4	7.83685	16.93	Pk	11.2	.5	-40	-11.37	29.54	-40.91	-	-	0-360
2	10.63186	10.88	Pk	10.9	.6	-40	-17.62	29.54	-47.16	-	-	0-360
5	19.59226	12.81	Pk	9.9	.7	-40	-16.59	29.54	-46.13	-	-	0-360
3	24.81864	9.83	Pk	9.1	.8	-40	-20.27	29.54	-49.81	-	-	0-360
6	27.75828	14.85	Pk	8.7	.9	-40	-15.55	29.54	-45.09	-	-	0-360

Pk - Peak detector

**106Kbps FUNDAMENTAL**

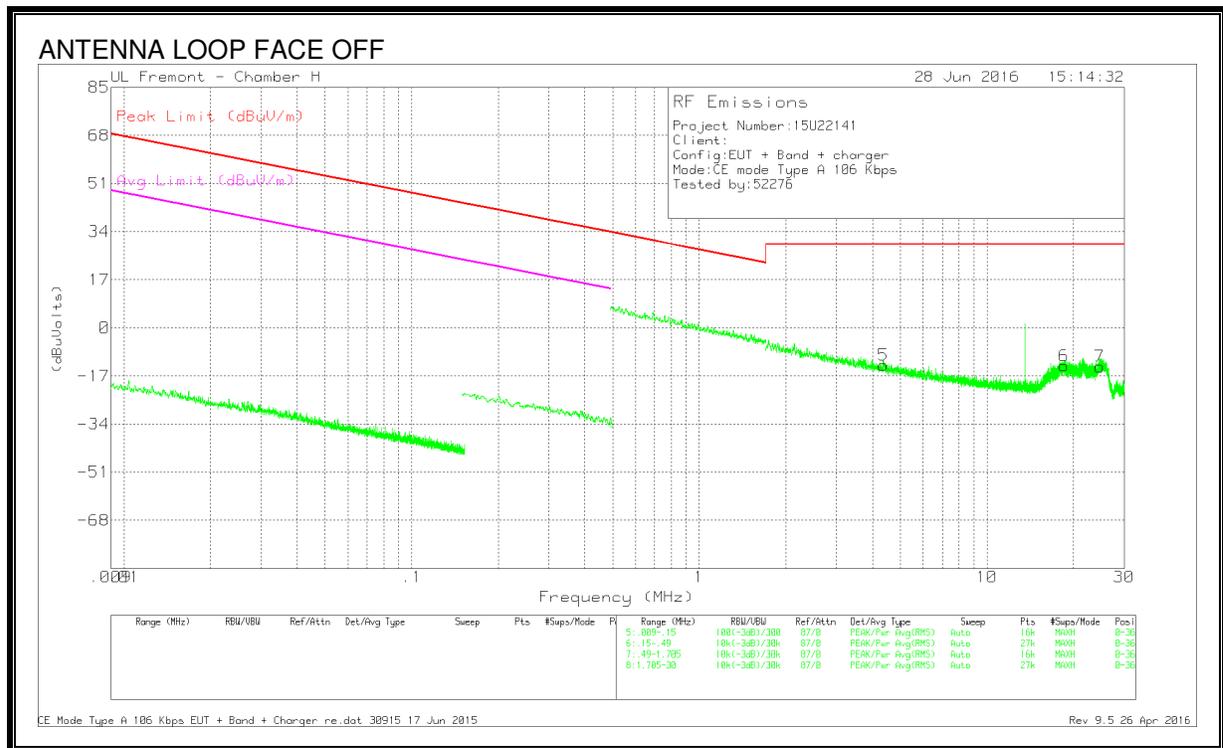
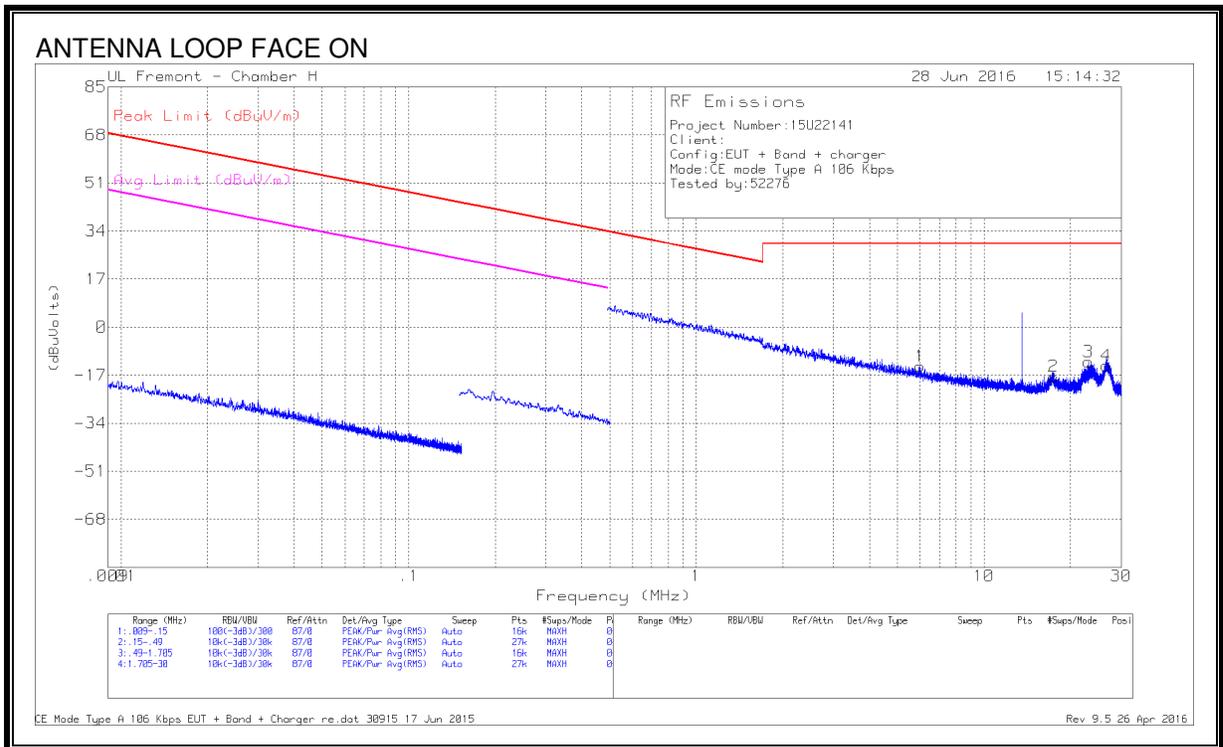


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.45925	10.68	Pk	10.7	.6	-40	-18.02	50.5	-68.52	0-360
2	13.562	36.27	Pk	10.6	.6	-40	7.47	84	-76.53	0-360
3	13.63188	10.97	Pk	10.6	.6	-40	-17.83	50.5	-68.33	0-360
4	13.36937	9.92	Pk	10.7	.6	-40	-18.78	40.51	-59.29	0-360
5	13.55822	32.26	Pk	10.6	.6	-40	3.46	84	-80.54	0-360
6	13.67307	10.74	Pk	10.6	.6	-40	-18.06	50.5	-68.56	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

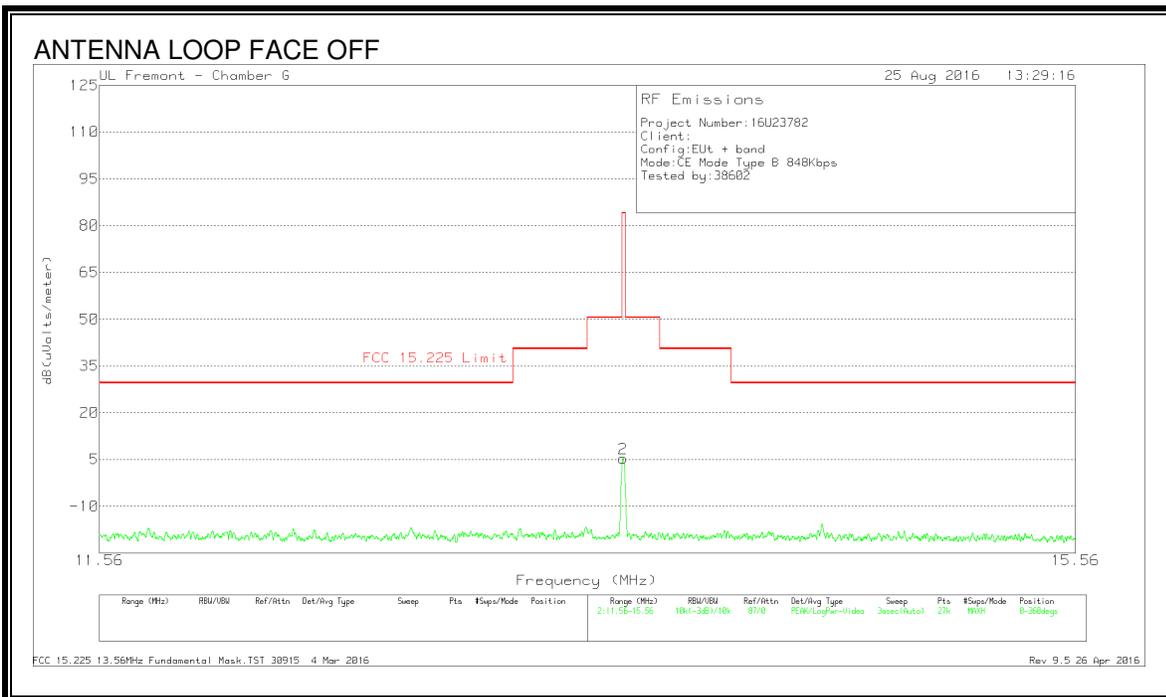
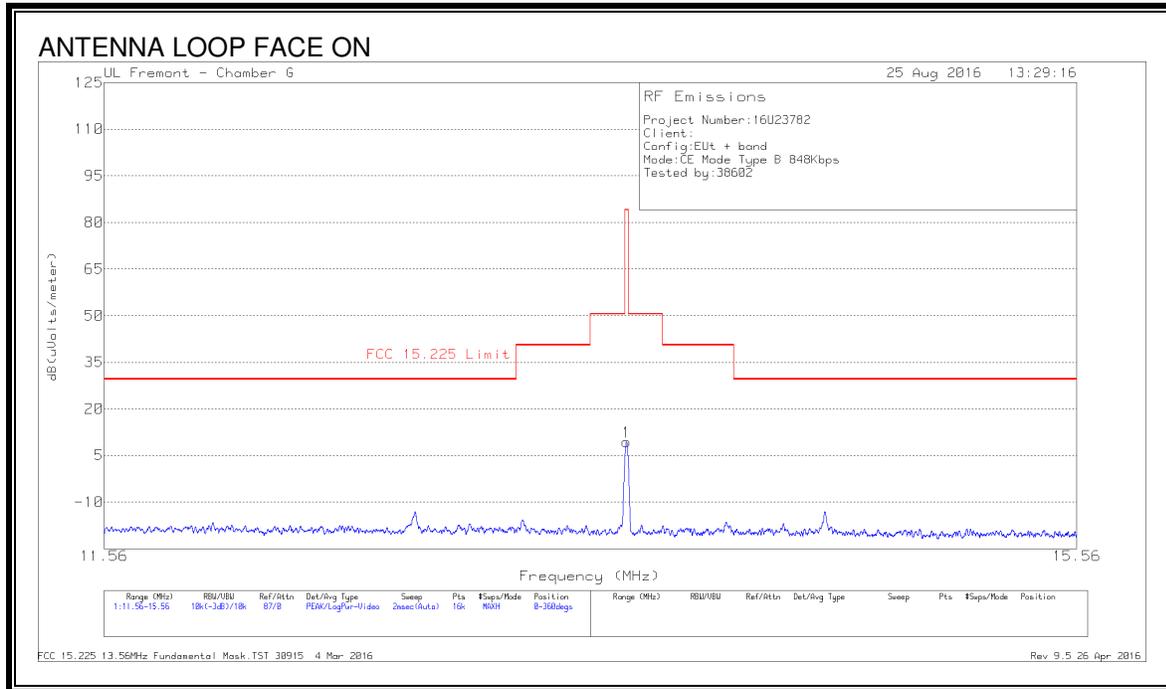


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	6.0018	14.85	Pk	10.9	.4	-40	-13.85	29.54	-43.39	-	-	0-360
2	17.44596	11.47	Pk	10.4	.6	-40	-17.53	29.54	-47.07	-	-	0-360
3	23.07948	17.47	Pk	9.5	.7	-40	-12.33	29.54	-41.87	-	-	0-360
4	26.6233	16.78	Pk	8.8	.8	-40	-13.62	29.54	-43.16	-	-	0-360
5	4.37111	15.64	Pk	10.9	.3	-40	-13.16	29.54	-42.7	-	-	0-360
6	18.52592	15.8	Pk	10.2	.6	-40	-13.4	29.54	-42.94	-	-	0-360
7	24.68659	16.31	Pk	9.3	.7	-40	-13.69	29.54	-43.23	-	-	0-360

Pk - Peak detector

**TYPE B 848Kbps FUNDAMENTAL**

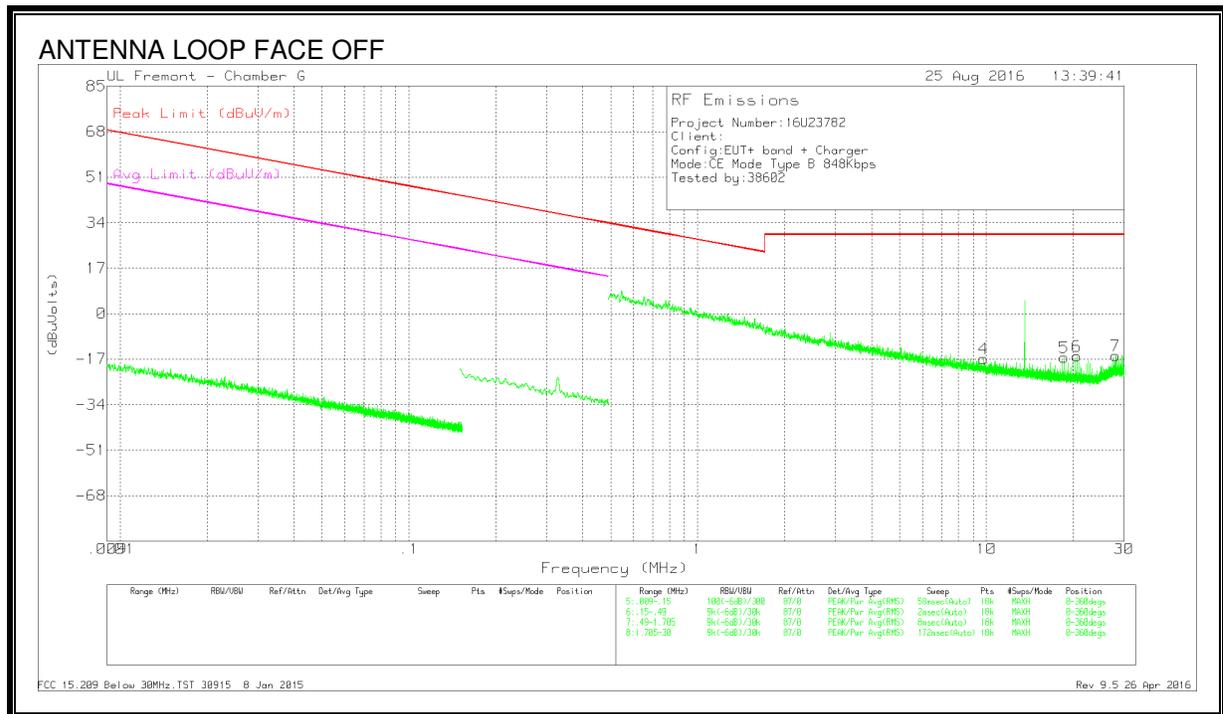
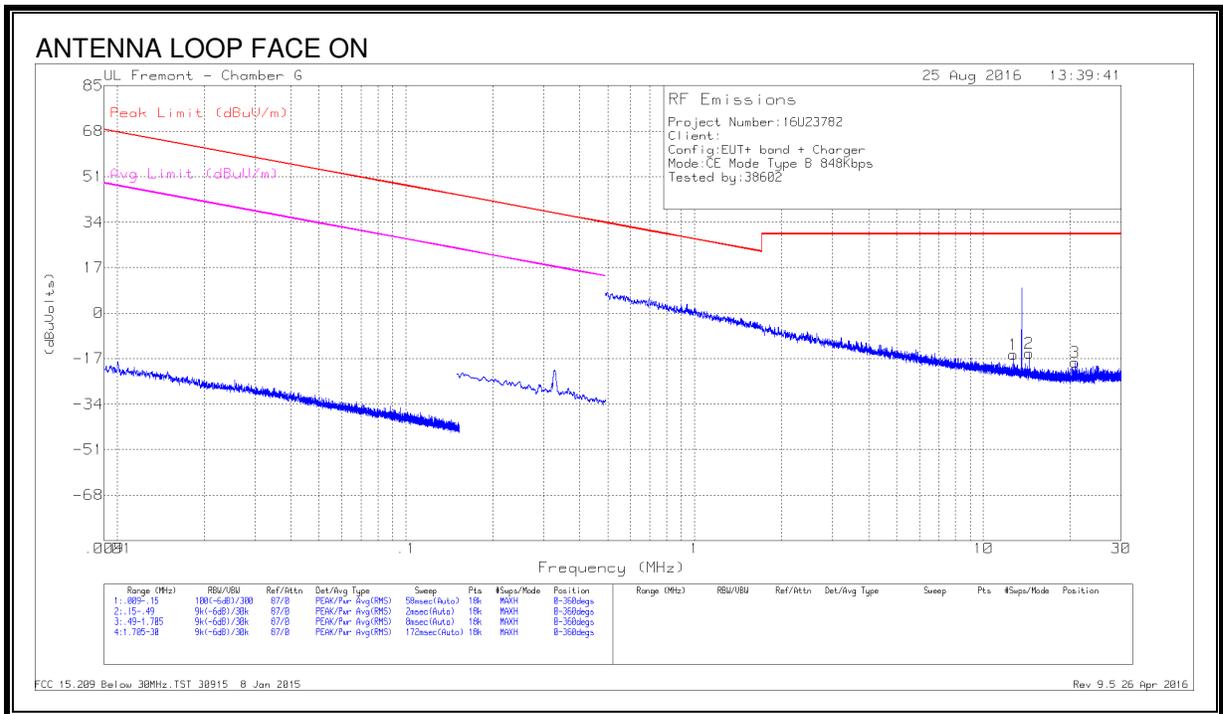


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 30m	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.56025	38.14	Pk	10.6	.6	-40	9.34	84	-74.66	0-360
2	13.55837	34.12	Pk	10.6	.6	-40	5.32	84	-78.68	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

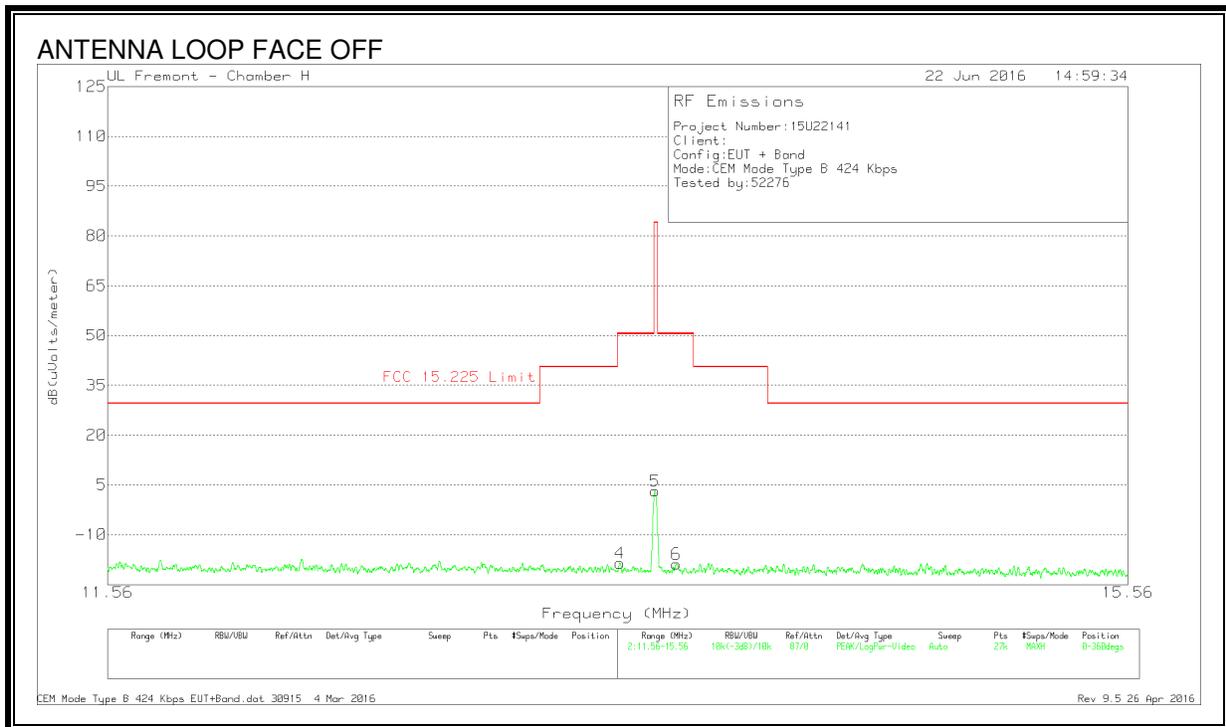
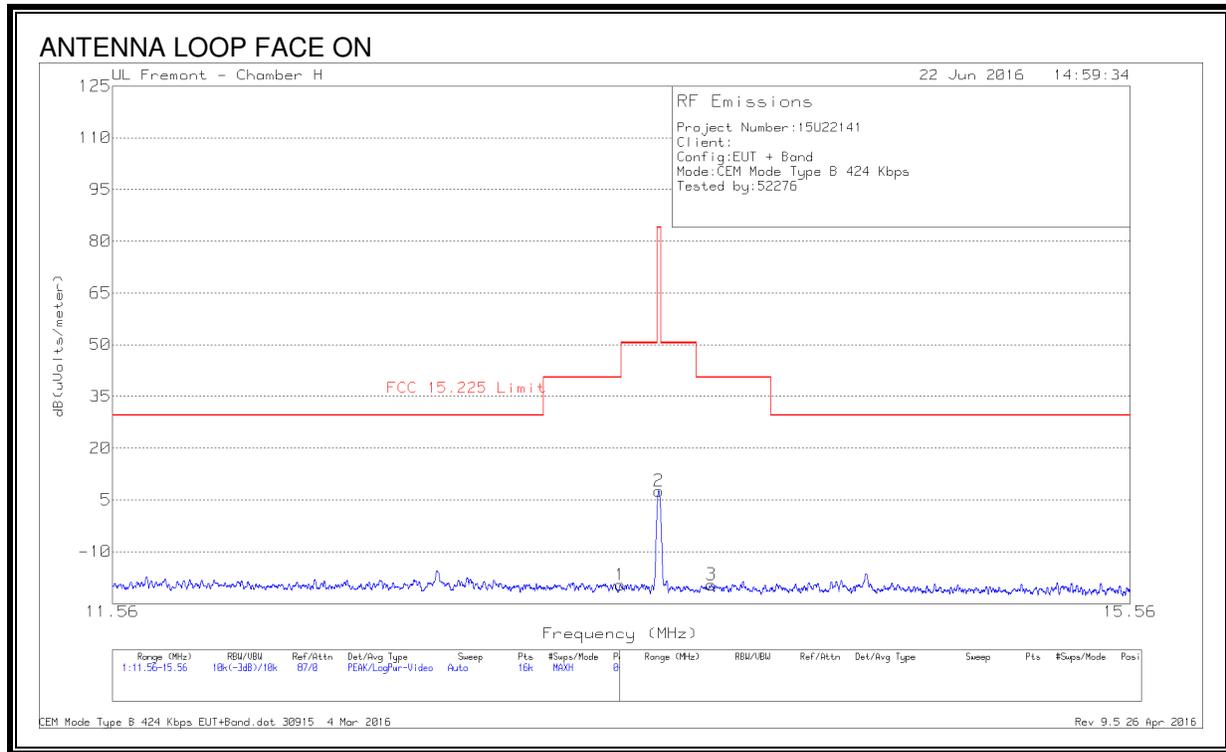


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	12.71214	13.21	Pk	10.7	.6	-40	-15.49	29.54	-45.03	-	-	0-360
2	14.40676	13.7	Pk	10.6	.6	-40	-15.1	29.54	-44.64	-	-	0-360
3	20.77022	11.1	Pk	9.7	.8	-40	-18.4	29.54	-47.94	-	-	0-360
4	9.79608	11.72	Pk	11	.5	-40	-16.78	29.54	-46.32	-	-	0-360
5	18.61343	13	Pk	10	.7	-40	-16.3	29.54	-45.84	-	-	0-360
6	20.57372	13.5	Pk	9.7	.8	-40	-16	29.54	-45.54	-	-	0-360
7	28.08316	14.7	Pk	8.7	.9	-40	-15.7	29.54	-45.24	-	-	0-360

Pk - Peak detector

**424Kbps FUNDAMENTAL**

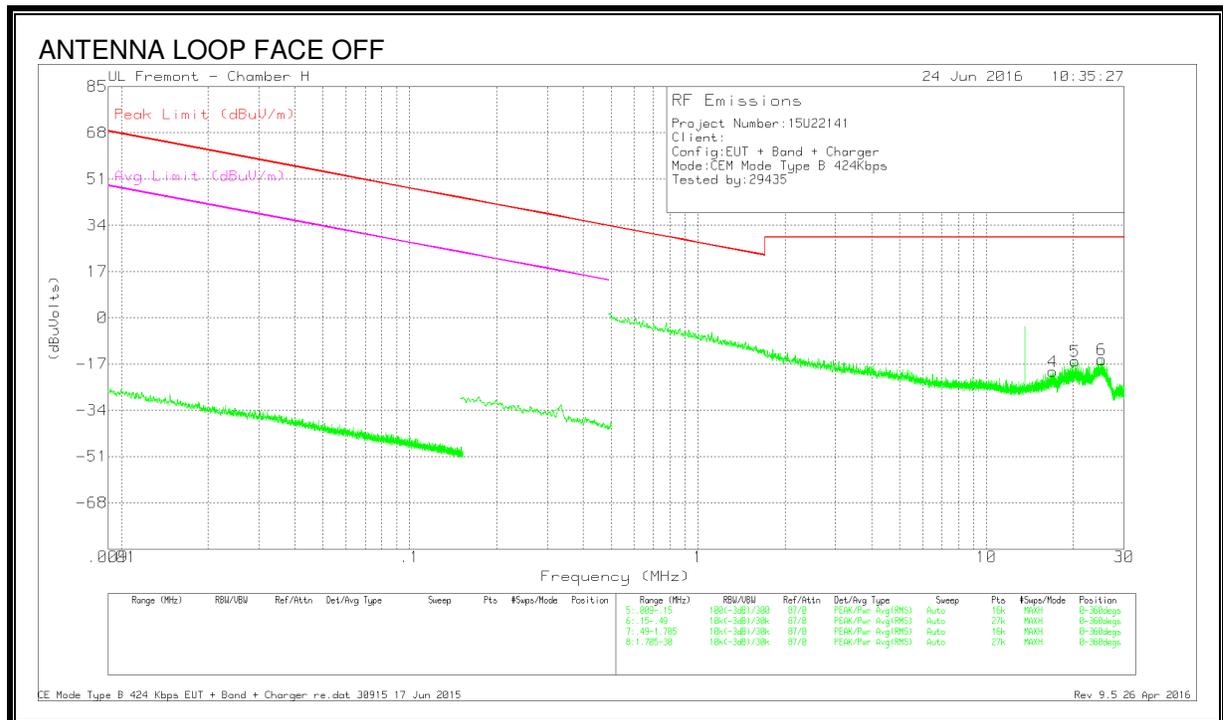
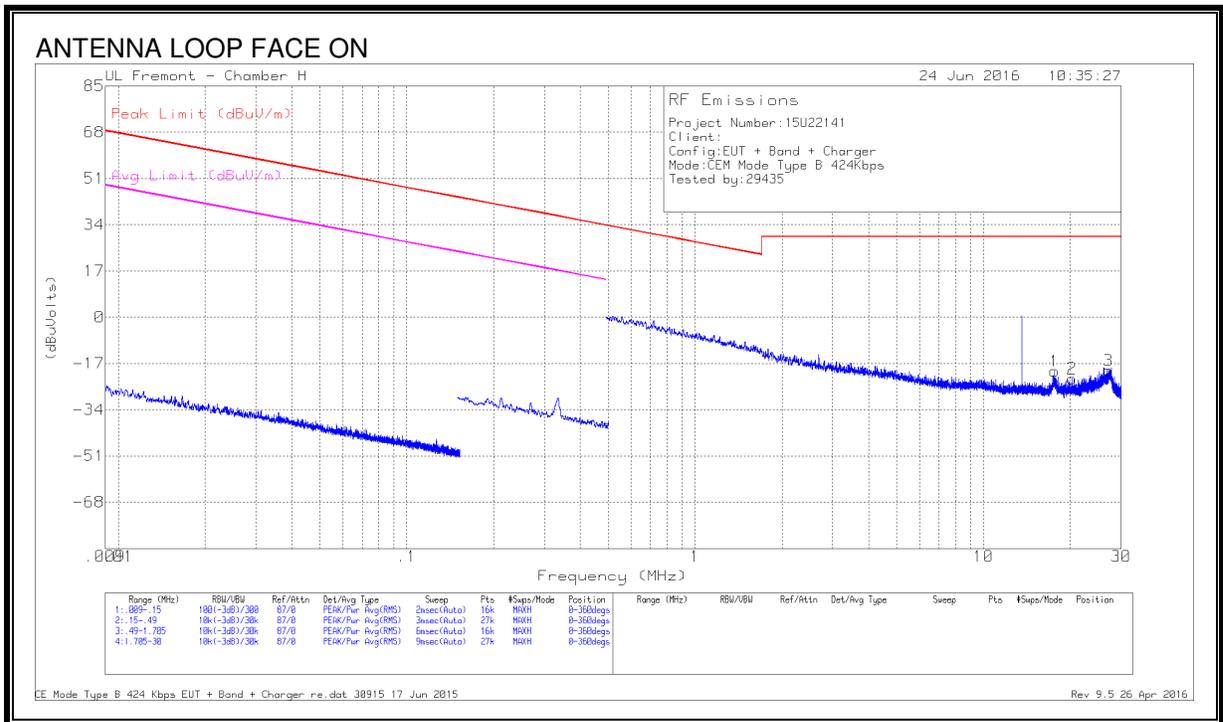


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.40938	9.08	Pk	10.7	.6	-40	-19.62	40.51	-60.13	0-360
2	13.56025	36.42	Pk	10.6	.6	-40	7.62	84	-76.38	0-360
3	13.76988	9.36	Pk	10.6	.5	-40	-19.54	40.51	-60.05	0-360
4	13.41977	10.14	Pk	10.7	.6	-40	-18.56	50.5	-69.06	0-360
5	13.55815	31.96	Pk	10.6	.6	-40	3.16	84	-80.84	0-360
6	13.64303	9.98	Pk	10.6	.6	-40	-18.82	50.5	-69.32	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

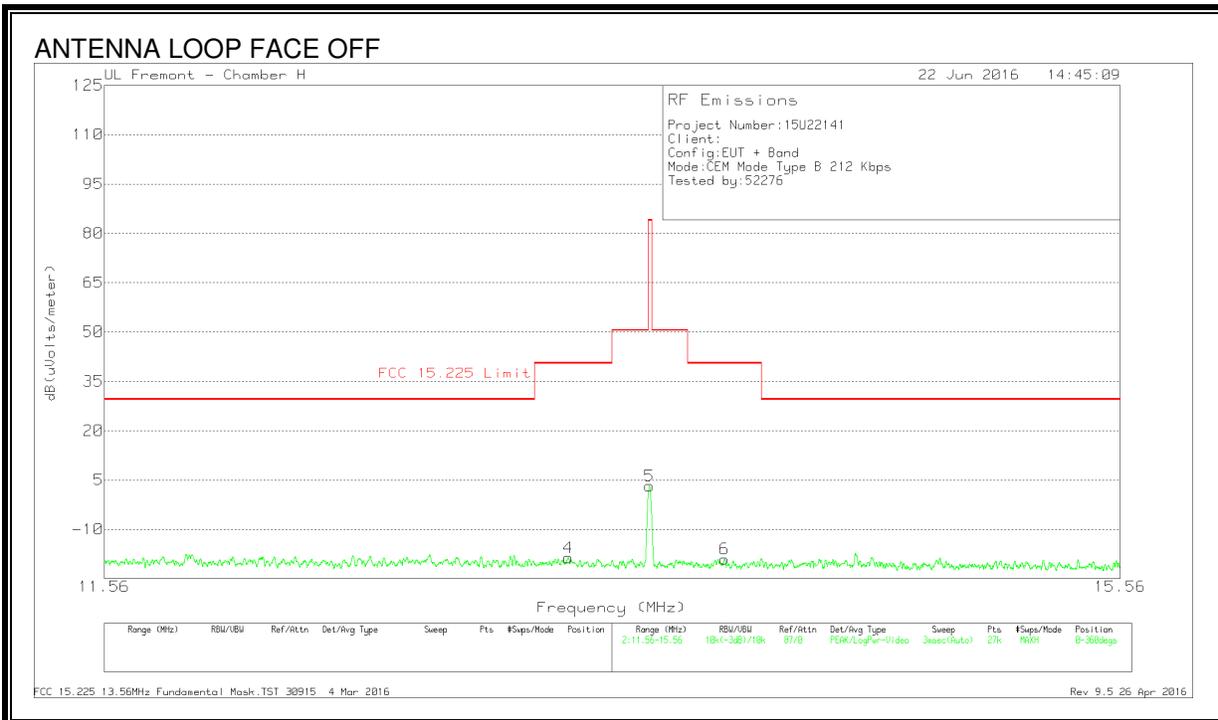
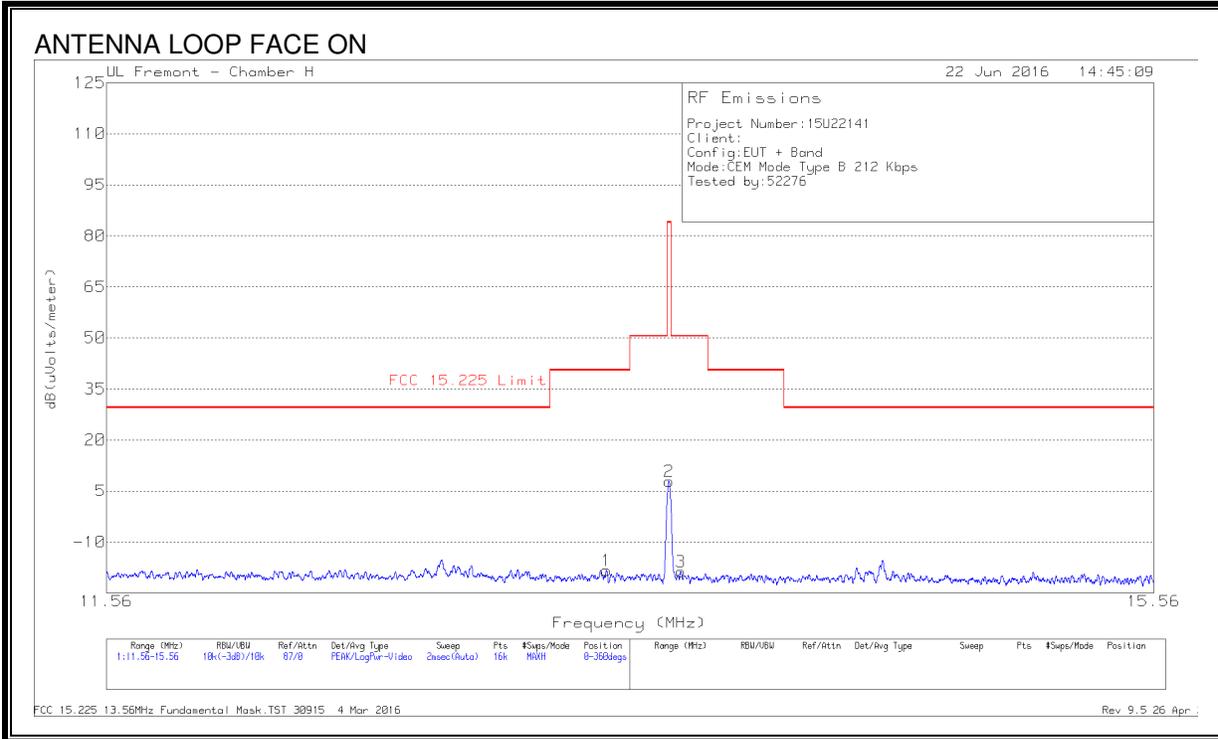


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	17.63512	9.27	Pk	10.3	.6	-40	-19.83	29.54	-49.37	-	-	0-360
2	20.24674	6.66	Pk	10.1	.7	-40	-22.54	29.54	-52.08	-	-	0-360
3	27.10171	10.97	Pk	8.7	.8	-40	-19.53	29.54	-49.07	-	-	0-360
4	16.93663	9.24	Pk	10.4	.6	-40	-19.76	29.54	-49.3	-	-	0-360
5	20.24569	13.22	Pk	10.1	.7	-40	-15.98	29.54	-45.52	-	-	0-360
6	25.07488	14.72	Pk	9.2	.7	-40	-15.38	29.54	-44.92	-	-	0-360

Pk - Peak detector

**212Kbps FUNDAMENTAL**

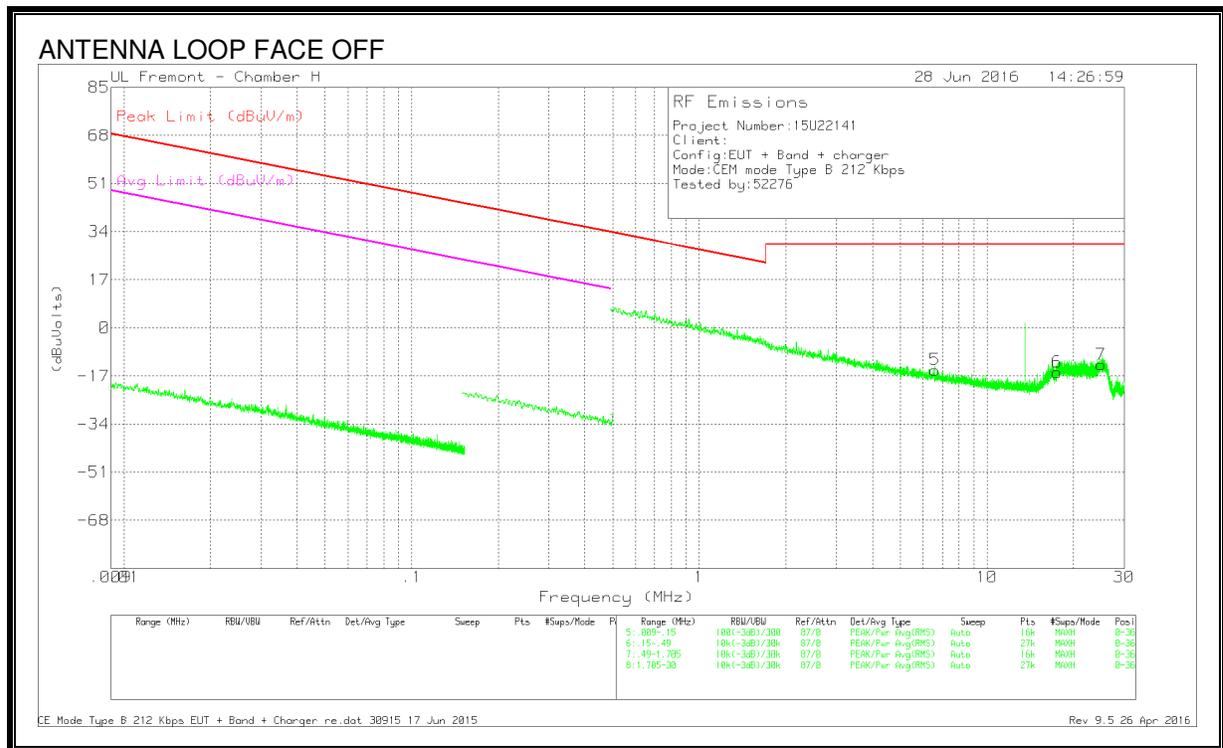
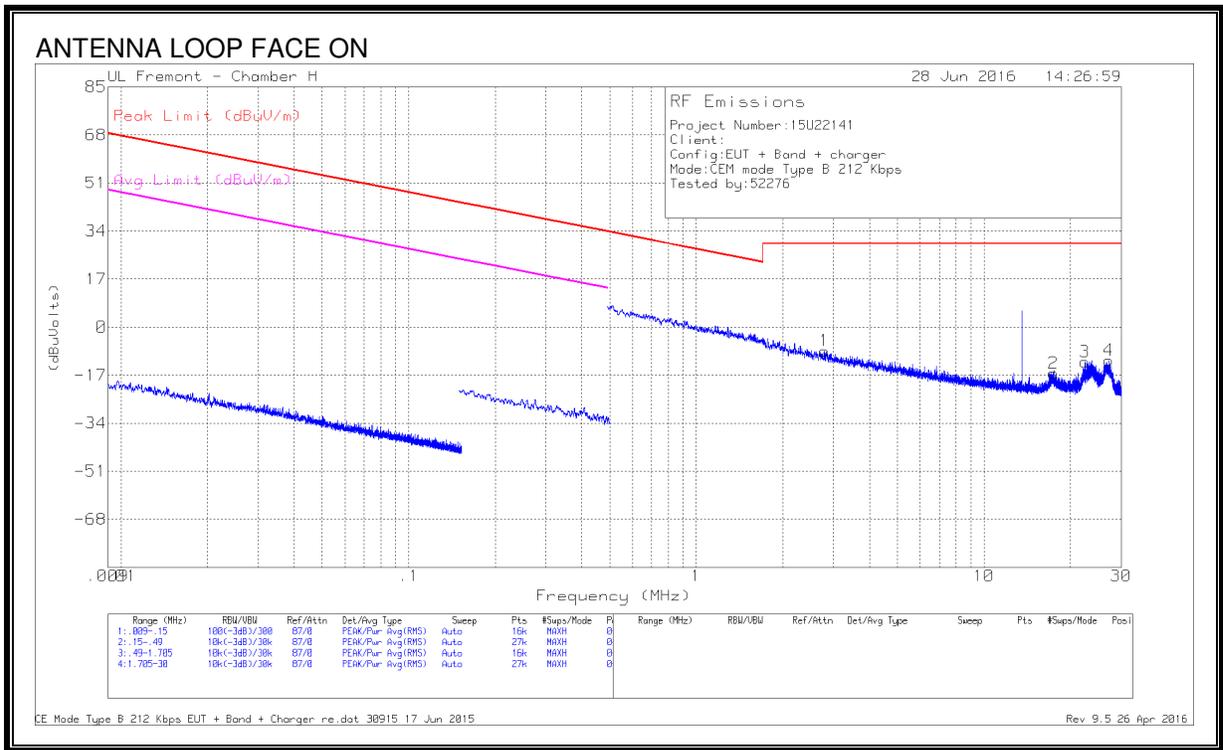


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.32188	10.36	Pk	10.7	.6	-40	-18.34	40.51	-58.85	0-360
2	13.56	36.64	Pk	10.6	.6	-40	7.84	84	-76.16	0-360
3	13.60638	10.07	Pk	10.6	.6	-40	-18.73	50.5	-69.23	0-360
4	13.24061	10.11	Pk	10.7	.6	-40	-18.59	40.51	-59.1	0-360
5	13.55837	32	Pk	10.6	.6	-40	3.2	84	-80.8	0-360
6	13.86014	9.91	Pk	10.6	.5	-40	-18.99	40.51	-59.5	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

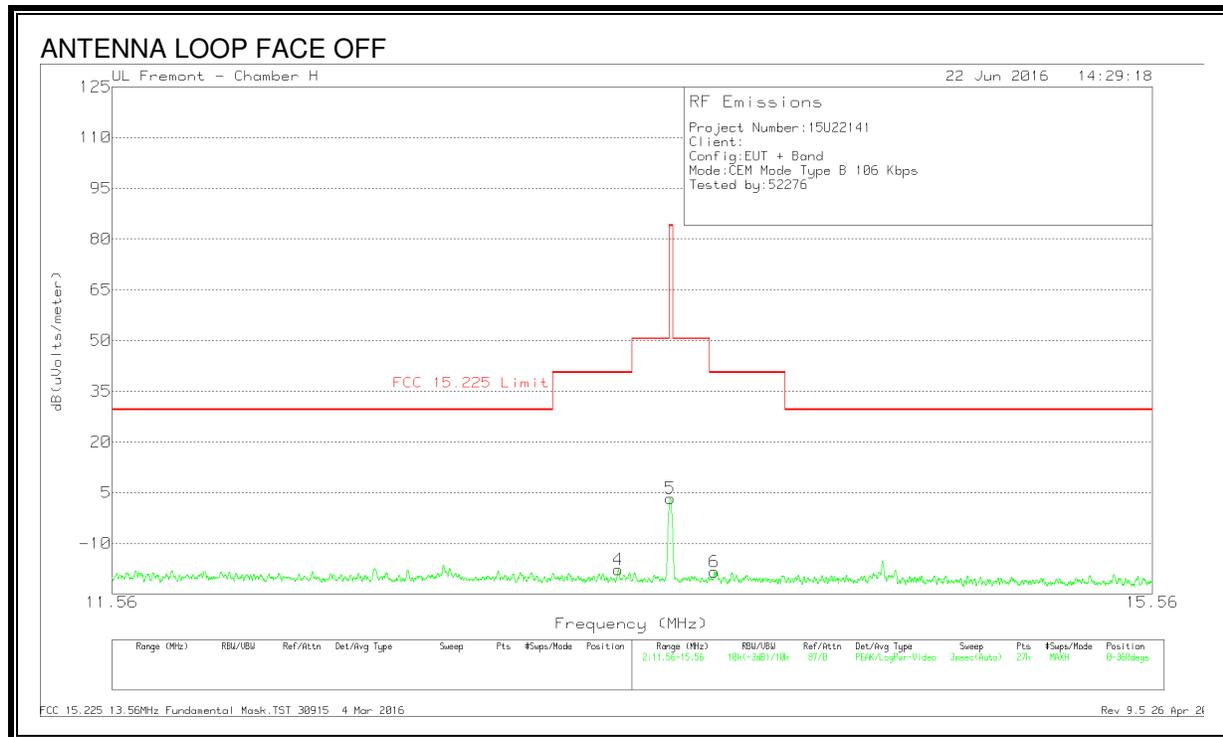
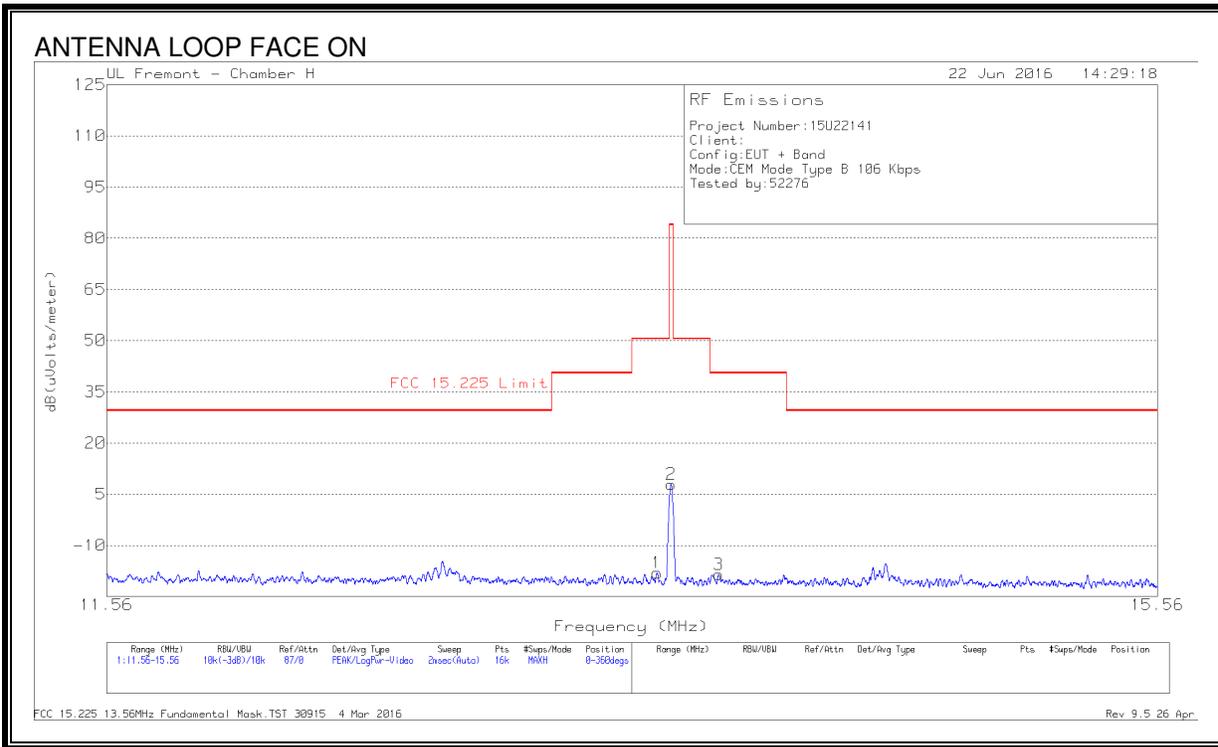


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	2.78654	20.5	Pk	10.8	.3	-40	-8.4	29.54	-37.94	-	-	0-360
2	17.44282	12.71	Pk	10.4	.6	-40	-16.29	29.54	-45.83	-	-	0-360
3	22.4182	17.31	Pk	9.7	.7	-40	-12.29	29.54	-41.83	-	-	0-360
4	27.14468	18.73	Pk	8.7	.8	-40	-11.77	29.54	-41.31	-	-	0-360
5	6.6065	13.86	Pk	10.9	.4	-40	-14.84	29.54	-44.38	-	-	0-360
6	17.53714	13.39	Pk	10.3	.6	-40	-15.71	29.54	-45.25	-	-	0-360
7	24.9465	17.16	Pk	9.2	.7	-40	-12.94	29.54	-42.48	-	-	0-360

Pk - Peak detector

**106Kbps FUNDAMENTAL**

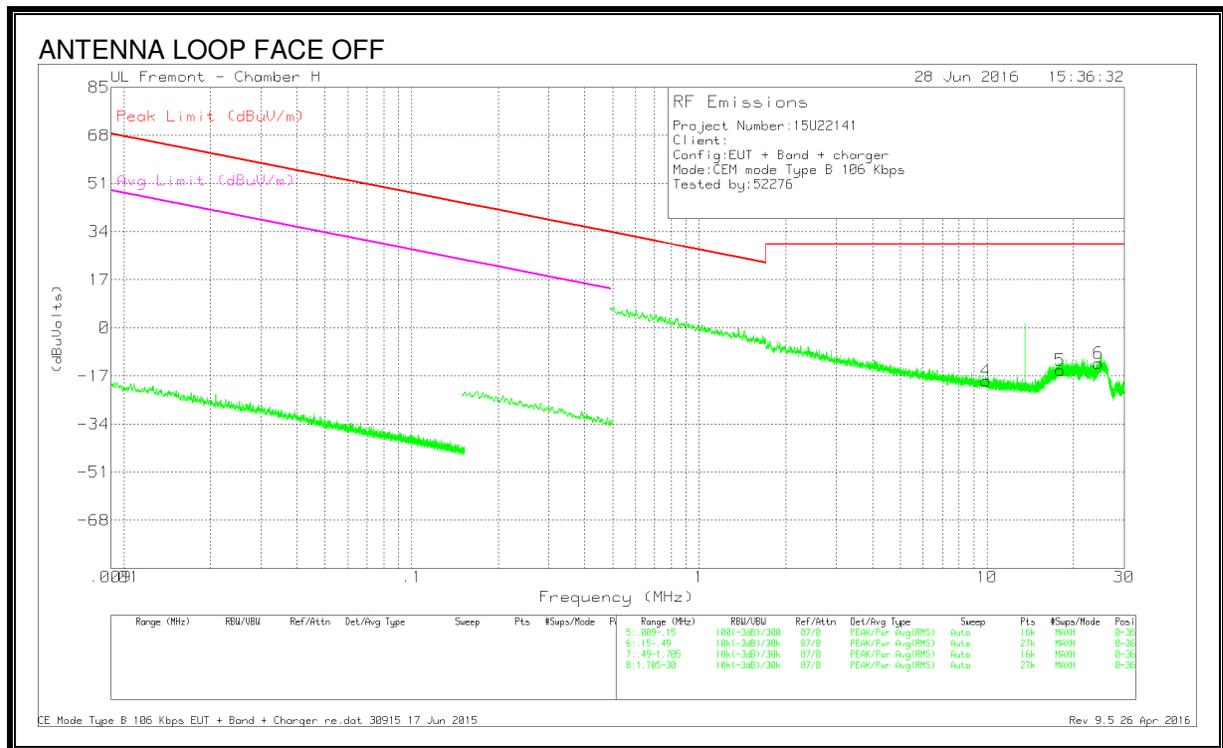
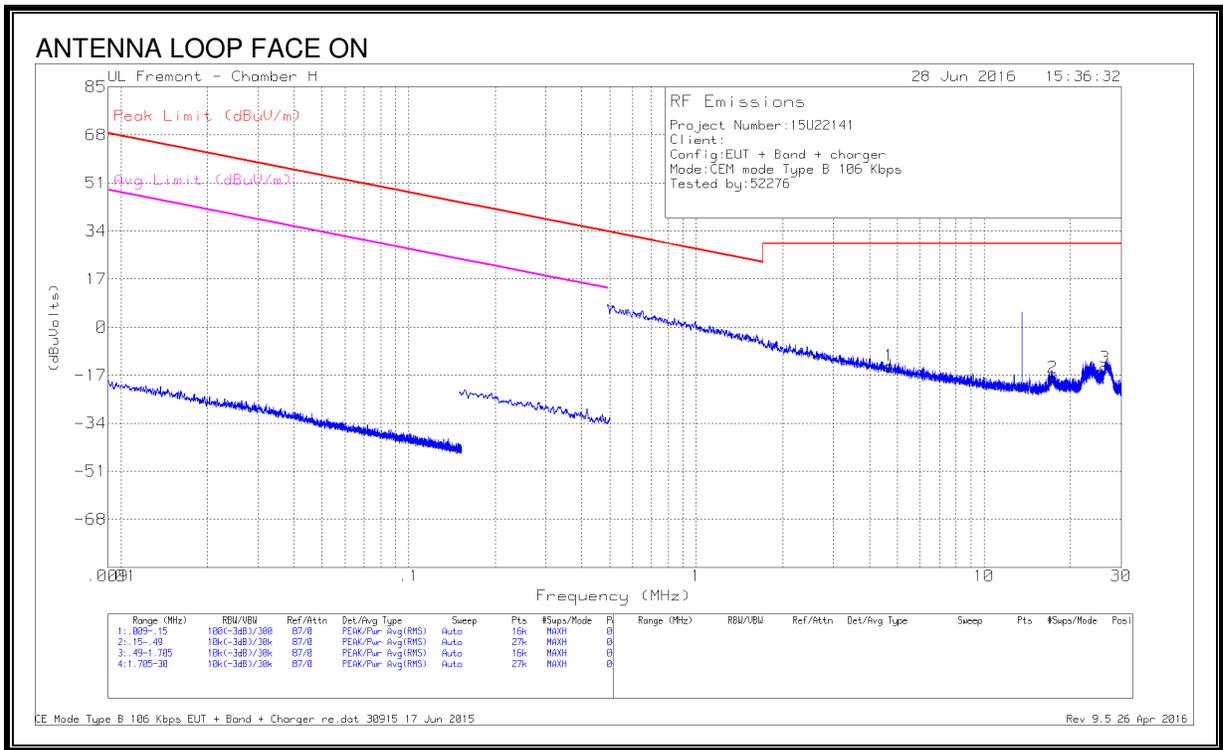


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.50688	10.74	Pk	10.6	.6	-40	-18.06	50.5	-68.56	0-360
2	13.56	36.69	Pk	10.6	.6	-40	7.89	84	-76.11	0-360
3	13.74488	10.28	Pk	10.6	.6	-40	-18.52	40.51	-59.03	0-360
4	13.35916	10.96	Pk	10.7	.6	-40	-17.74	40.51	-58.25	0-360
5	13.55822	32.15	Pk	10.6	.6	-40	3.35	84	-80.65	0-360
6	13.73049	10.4	Pk	10.6	.6	-40	-18.4	40.51	-58.91	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

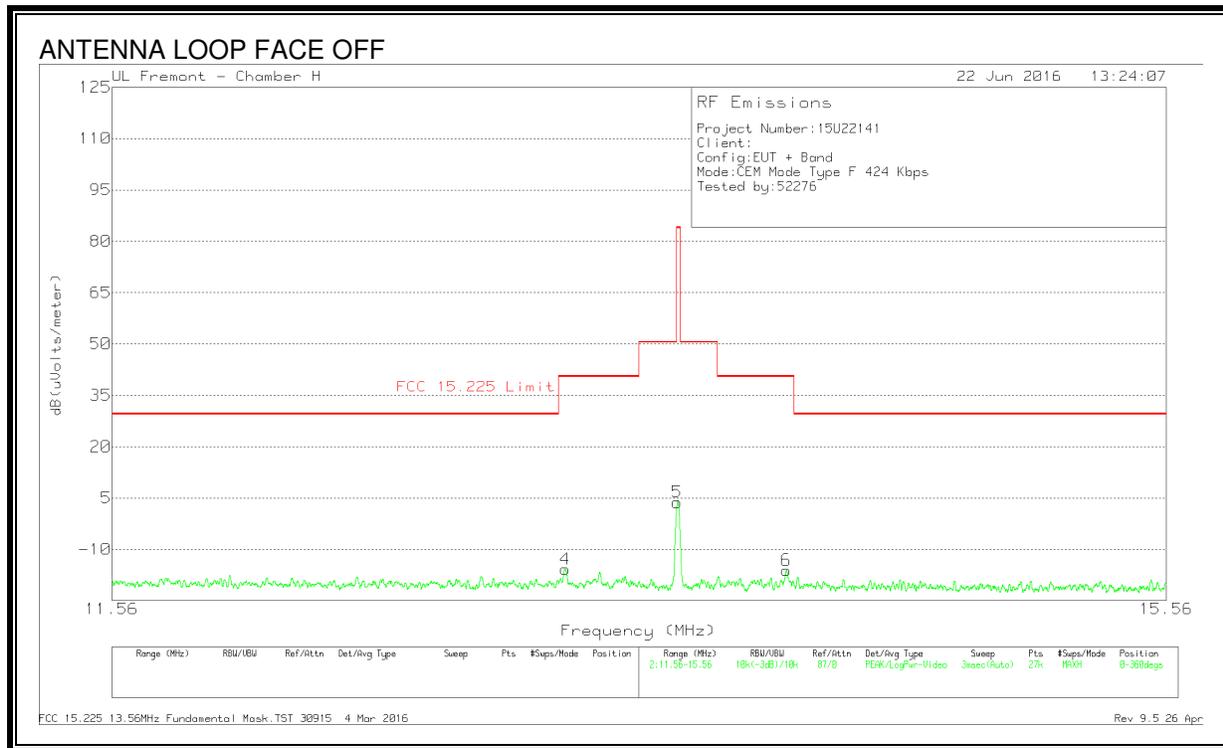
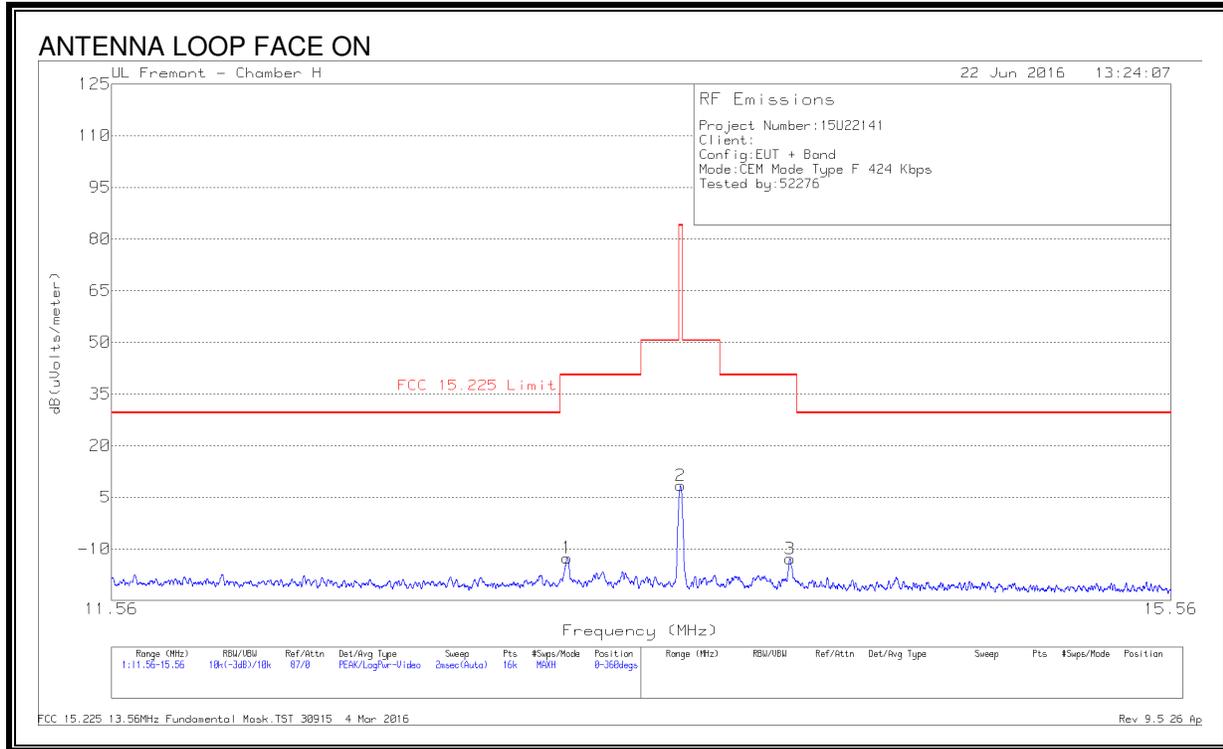


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	4.6808	15.07	Pk	10.9	.3	-40	-13.73	29.54	-43.27	-	-	0-360
2	17.35164	11.14	Pk	10.4	.6	-40	-17.86	29.54	-47.4	-	-	0-360
3	26.35972	15.94	Pk	8.9	.8	-40	-14.36	29.54	-43.9	-	-	0-360
4	9.91922	10.02	Pk	10.8	.4	-40	-18.78	29.54	-48.32	-	-	0-360
5	17.98463	14.17	Pk	10.3	.6	-40	-14.93	29.54	-44.47	-	-	0-360
6	24.44031	17.49	Pk	9.3	.7	-40	-12.51	29.54	-42.05	-	-	0-360

Pk - Peak detector

**TYPE F 424Kbps FUNDAMENTAL**

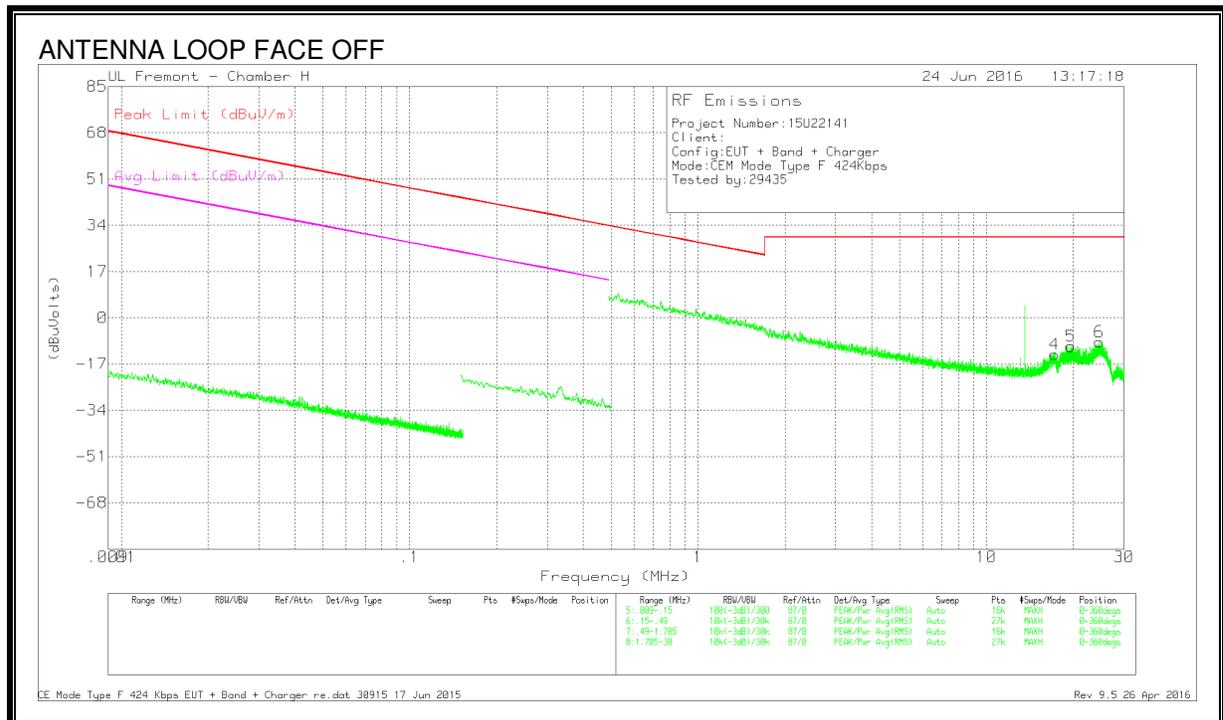
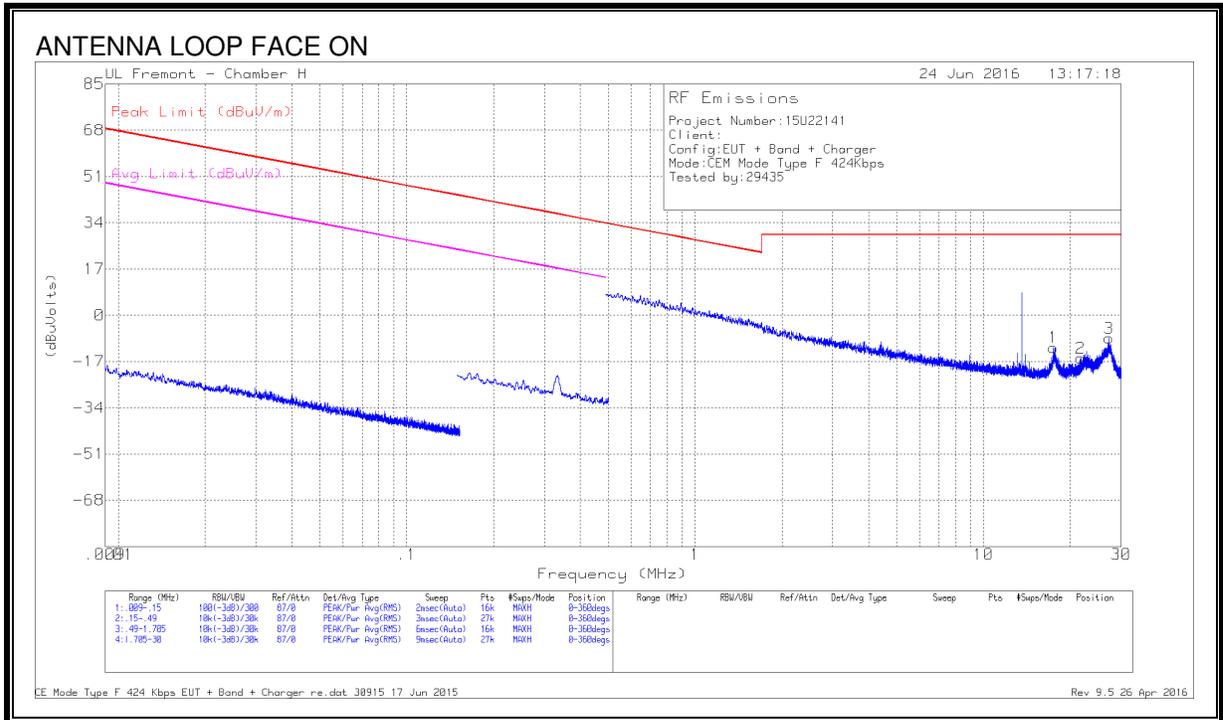


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.13588	16.08	Pk	10.7	.6	-40	-12.62	40.51	-53.13	0-360
2	13.56025	37.2	Pk	10.6	.6	-40	8.4	84	-75.6	0-360
3	13.9835	16.01	Pk	10.6	.5	-40	-12.89	40.51	-53.4	0-360
4	13.13502	12.87	Pk	10.7	.6	-40	-15.83	40.51	-56.34	0-360
5	13.55682	32.56	Pk	10.6	.6	-40	3.76	84	-80.24	0-360
6	13.98032	12.79	Pk	10.6	.5	-40	-16.11	40.51	-56.62	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

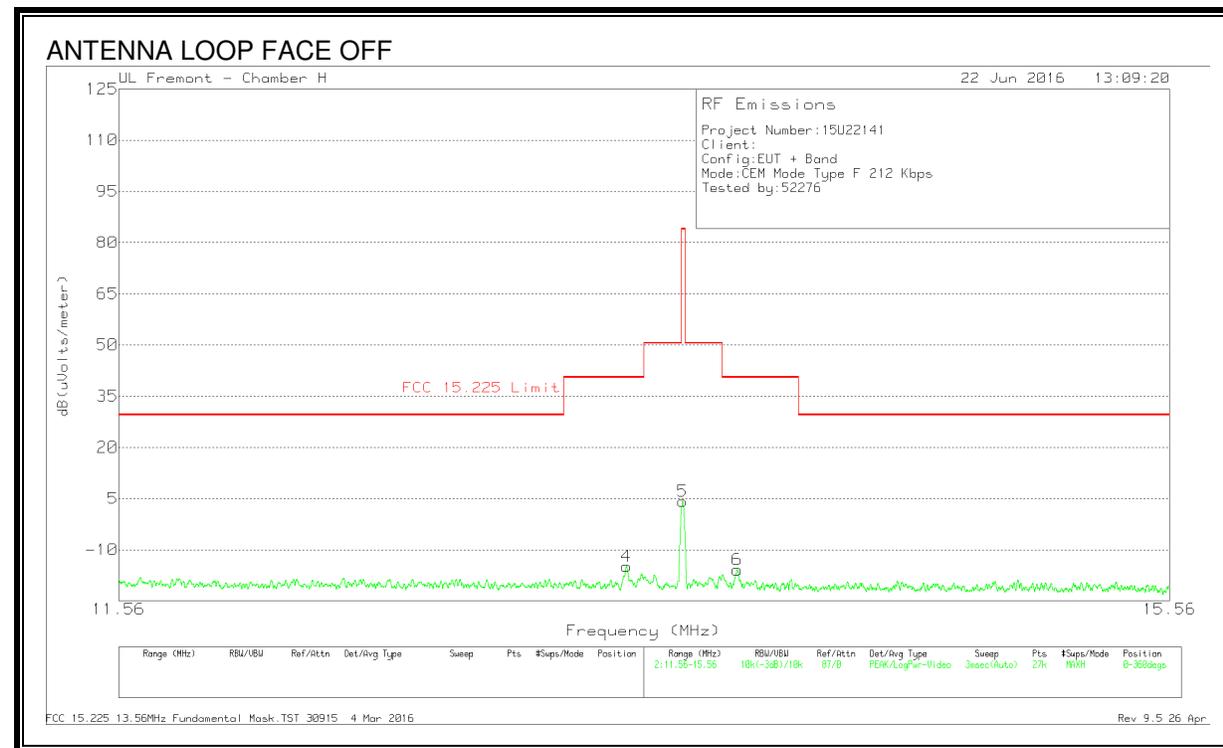
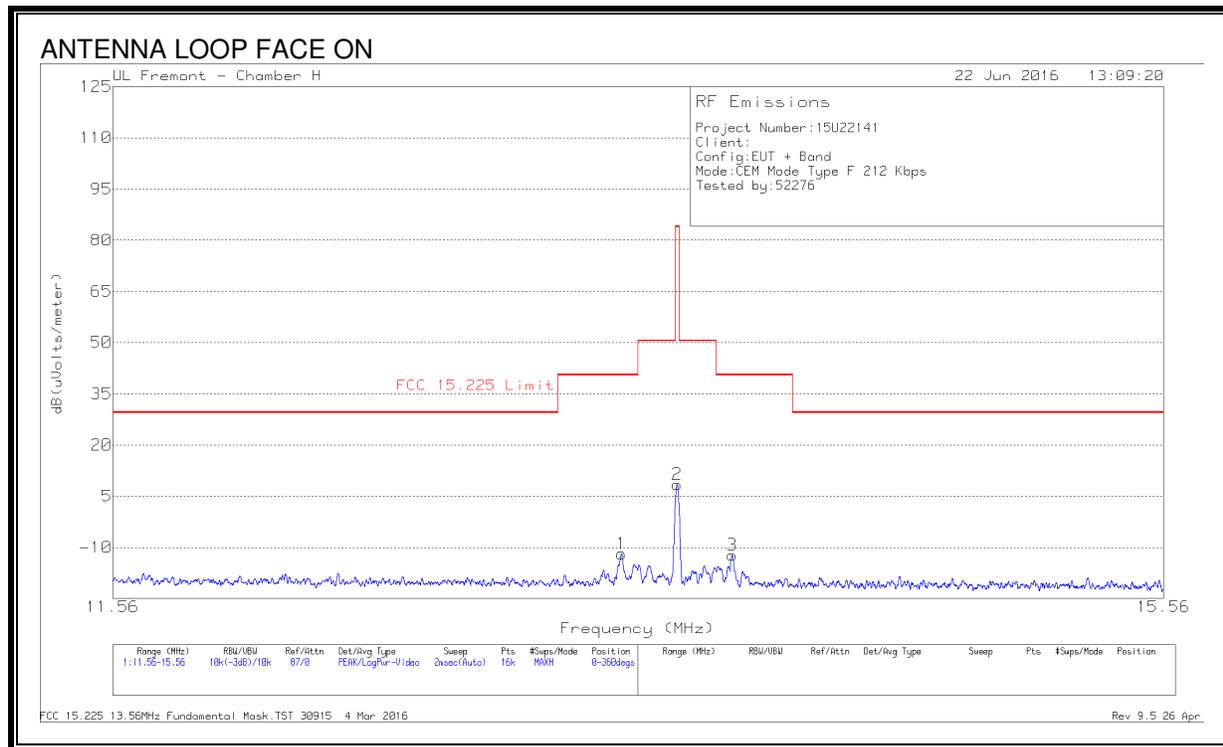


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	17.45172	17.15	Pk	10.4	.6	-40	-11.85	29.54	-41.39	-	-	0-360
2	21.70189	13.77	Pk	9.8	.7	-40	-15.73	29.54	-45.27	-	-	0-360
3	27.26939	22.06	Pk	8.7	.8	-40	-8.44	29.54	-37.98	-	-	0-360
4	17.19916	15.6	Pk	10.4	.6	-40	-13.4	29.54	-42.94	-	-	0-360
5	19.59331	18.73	Pk	10.1	.7	-40	-10.47	29.54	-40.01	-	-	0-360
6	24.55402	21.19	Pk	9.3	.7	-40	-8.81	29.54	-38.35	-	-	0-360

Pk - Peak detector

**212Kbps FUNDAMENTAL**

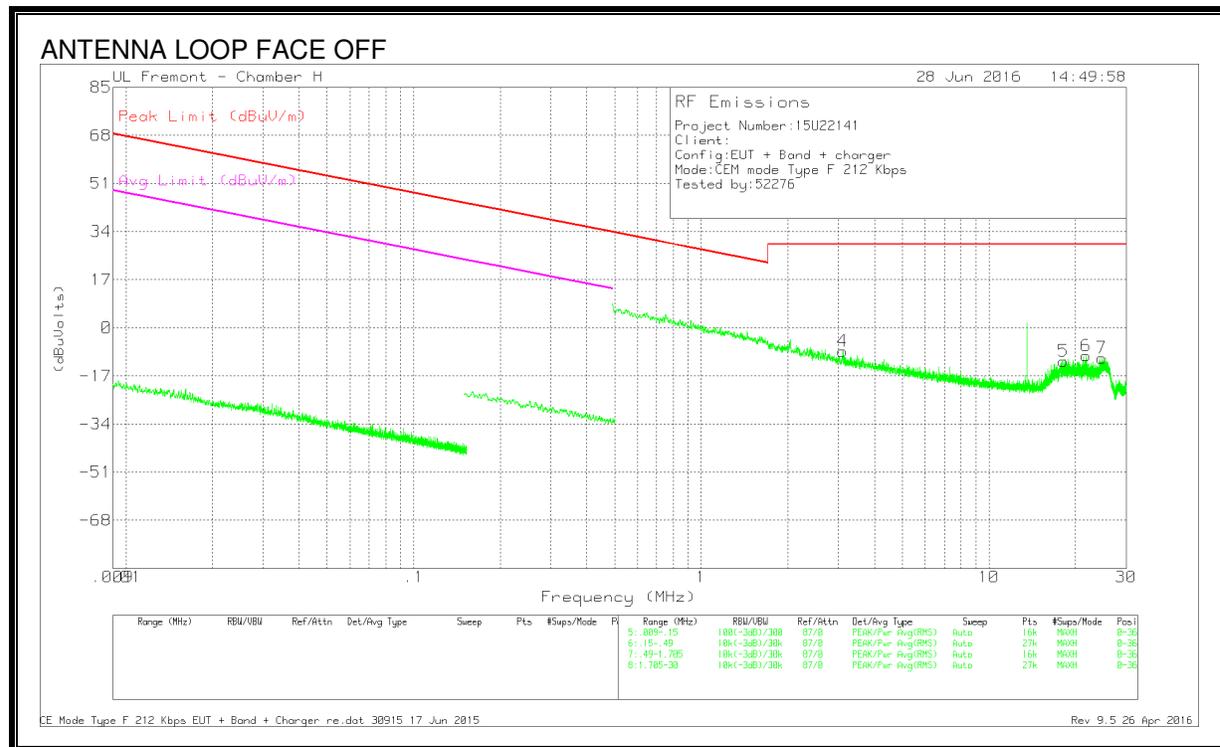
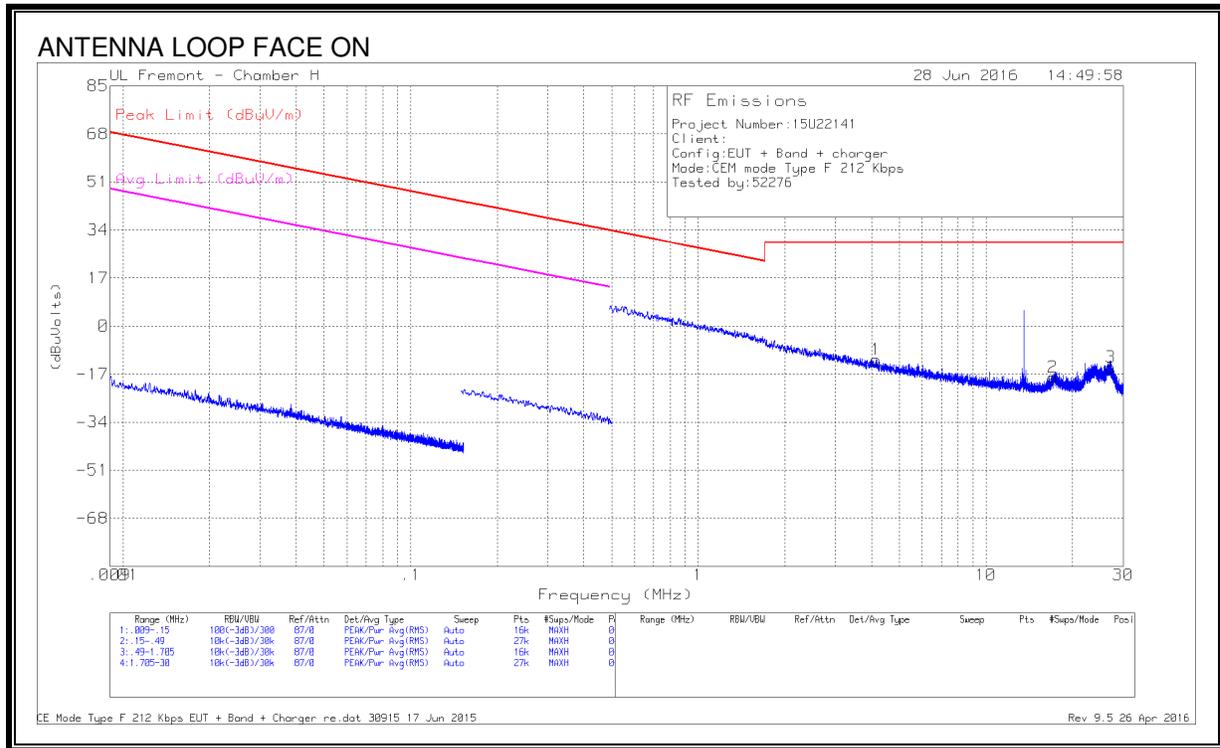


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.34838	16.87	Pk	10.7	.6	-40	-11.83	40.51	-52.34	0-360
2	13.56	37.27	Pk	10.6	.6	-40	8.47	84	-75.53	0-360
3	13.77338	16.64	Pk	10.6	.5	-40	-12.26	40.51	-52.77	0-360
4	13.34525	13.81	Pk	10.7	.6	-40	-14.89	40.51	-55.4	0-360
5	13.5583	32.95	Pk	10.6	.6	-40	4.15	84	-79.85	0-360
6	13.76986	13.04	Pk	10.6	.5	-40	-15.86	40.51	-56.37	0-360

Pk - Peak detector

**SPURIOUS EMISSION**



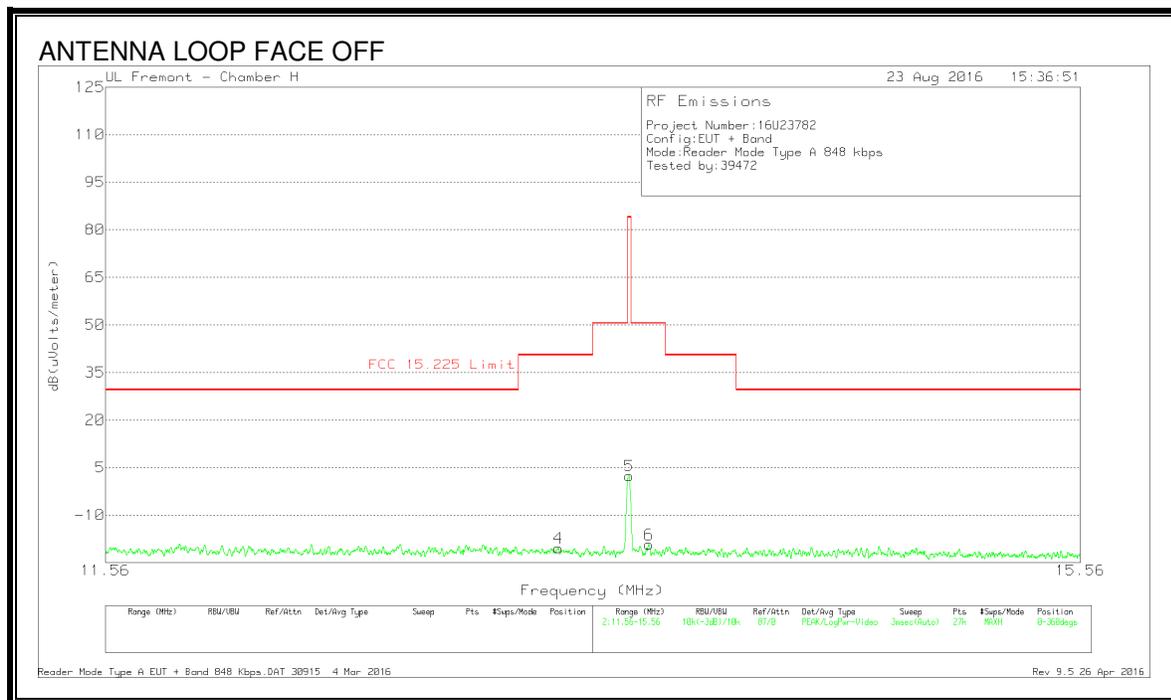
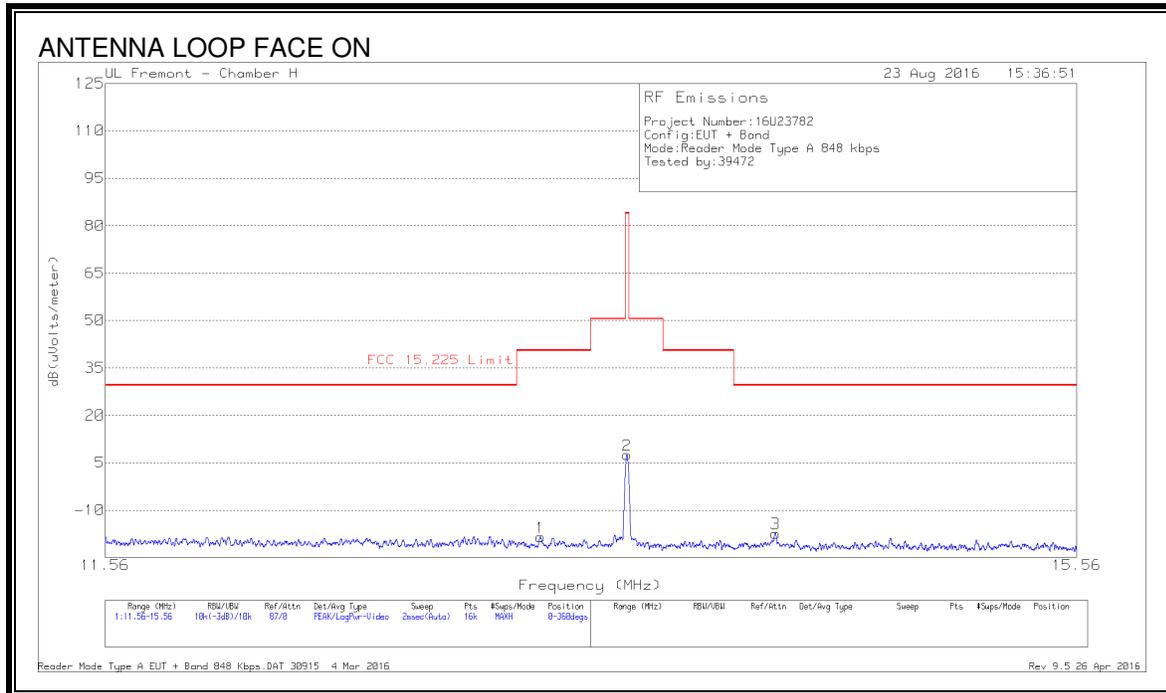
**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	4.14894	16.88	Pk	10.9	.3	-40	-11.92	29.54	-41.46	-	-	0-360
2	17.09278	10.9	Pk	10.4	.6	-40	-18.1	29.54	-47.64	-	-	0-360
3	27.1693	15.89	Pk	8.7	.8	-40	-14.61	29.54	-44.15	-	-	0-360
4	3.10775	20.65	Pk	10.8	.3	-40	-8.25	29.54	-37.79	-	-	0-360
5	18.1324	17.33	Pk	10.3	.6	-40	-11.77	29.54	-41.31	-	-	0-360
6	21.74276	19.68	Pk	9.8	.7	-40	-9.82	29.54	-39.36	-	-	0-360
7	24.68554	19.3	Pk	9.3	.7	-40	-10.7	29.54	-40.24	-	-	0-360

Pk - Peak detector

### 8.1.2. READER MODE

#### TYPE A 848Kbps FUNDAMENTAL

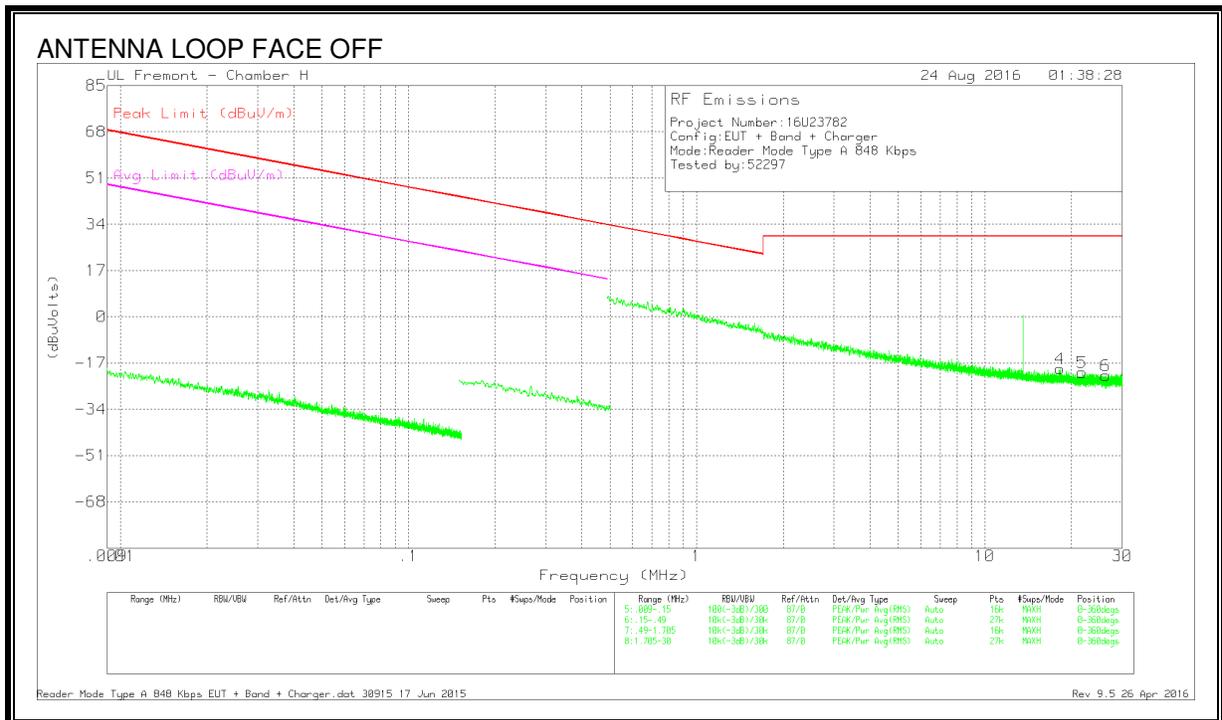
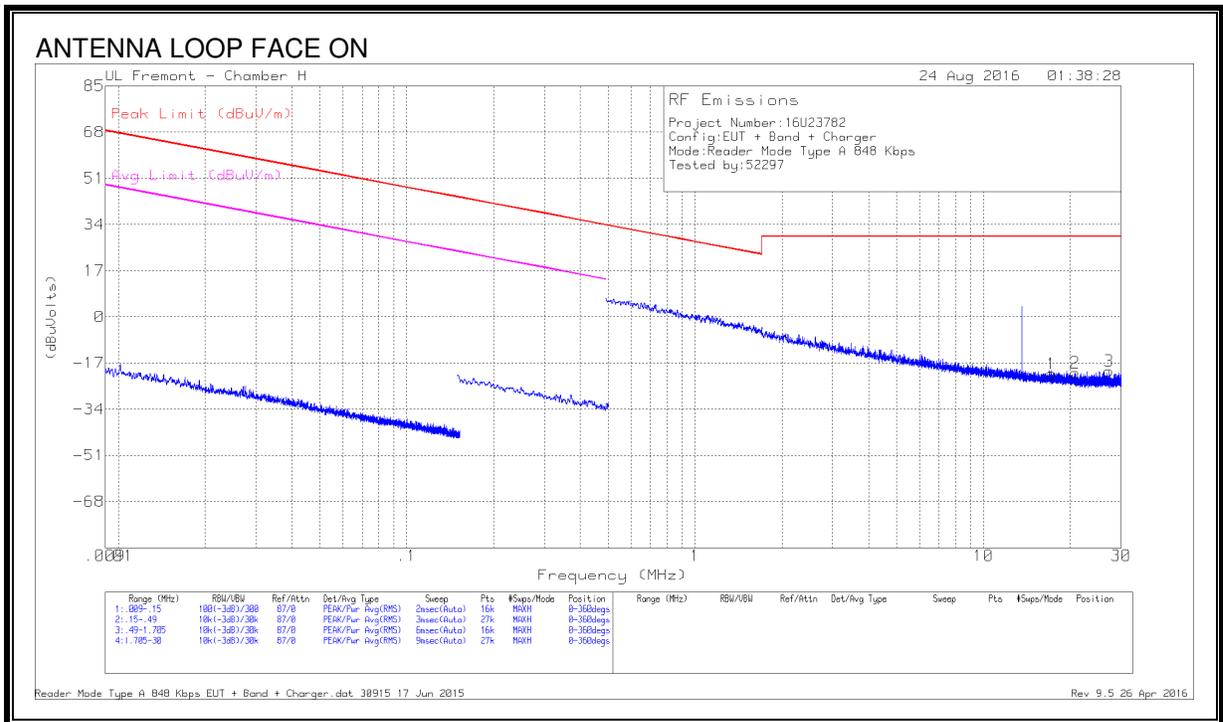


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.20675	10.18	Pk	10.7	.6	-40	-18.52	40.51	-59.03	0-360
2	13.56	36.3	Pk	10.6	.6	-40	7.5	84	-76.5	0-360
3	14.1905	11.51	Pk	10.6	.5	-40	-17.39	29.54	-46.93	0-360
4	13.27051	8.41	Pk	10.7	.6	-40	-20.29	40.51	-60.8	0-360
5	13.56007	31.25	Pk	10.6	.6	-40	2.45	84	-81.55	0-360
6	13.64243	9.59	Pk	10.6	.6	-40	-19.21	50.5	-69.71	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

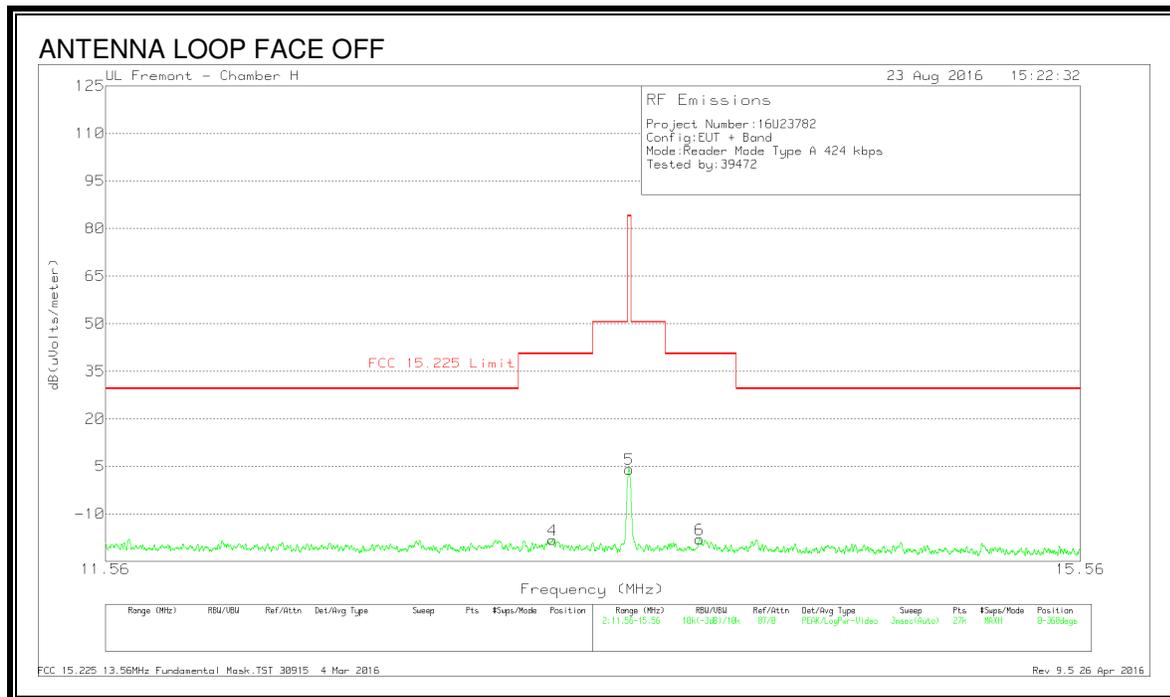
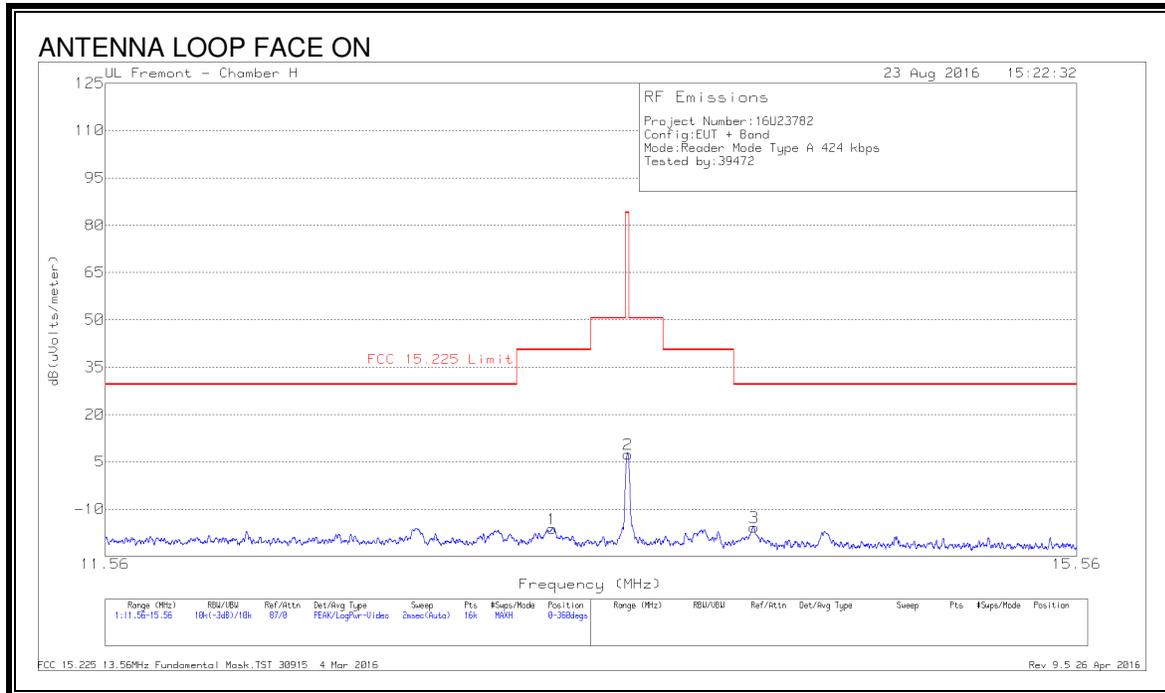


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	17.22798	8.08	Pk	10.4	.6	-40	-20.92	29.54	-50.46	-	-	0-360
2	20.73982	8.71	Pk	10	.7	-40	-20.59	29.54	-50.13	-	-	0-360
3	27.19184	10.57	Pk	8.7	.8	-40	-19.93	29.54	-49.47	-	-	0-360
4	18.25292	9.97	Pk	10.3	.6	-40	-19.13	29.54	-48.67	-	-	0-360
5	21.7501	9.01	Pk	9.8	.7	-40	-20.49	29.54	-50.03	-	-	0-360
6	26.26488	8.71	Pk	8.9	.8	-40	-21.59	29.54	-51.13	-	-	0-360

Pk - Peak detector

**424Kbps FUNDAMENTAL**

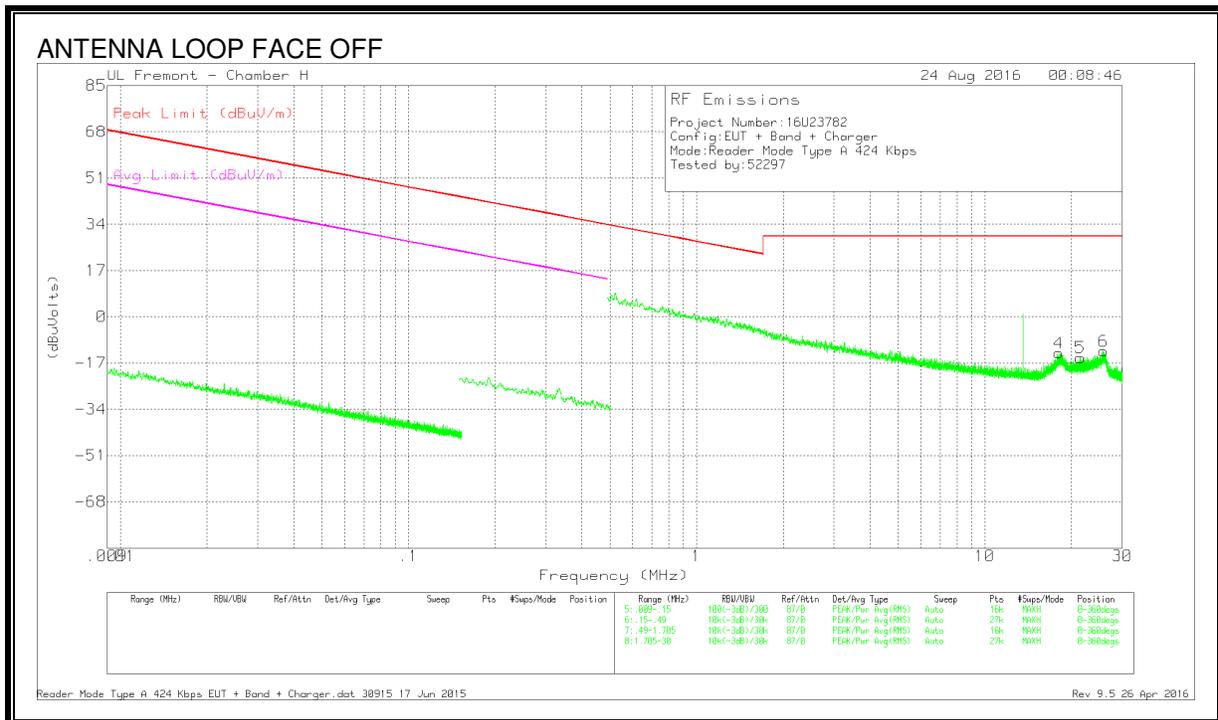
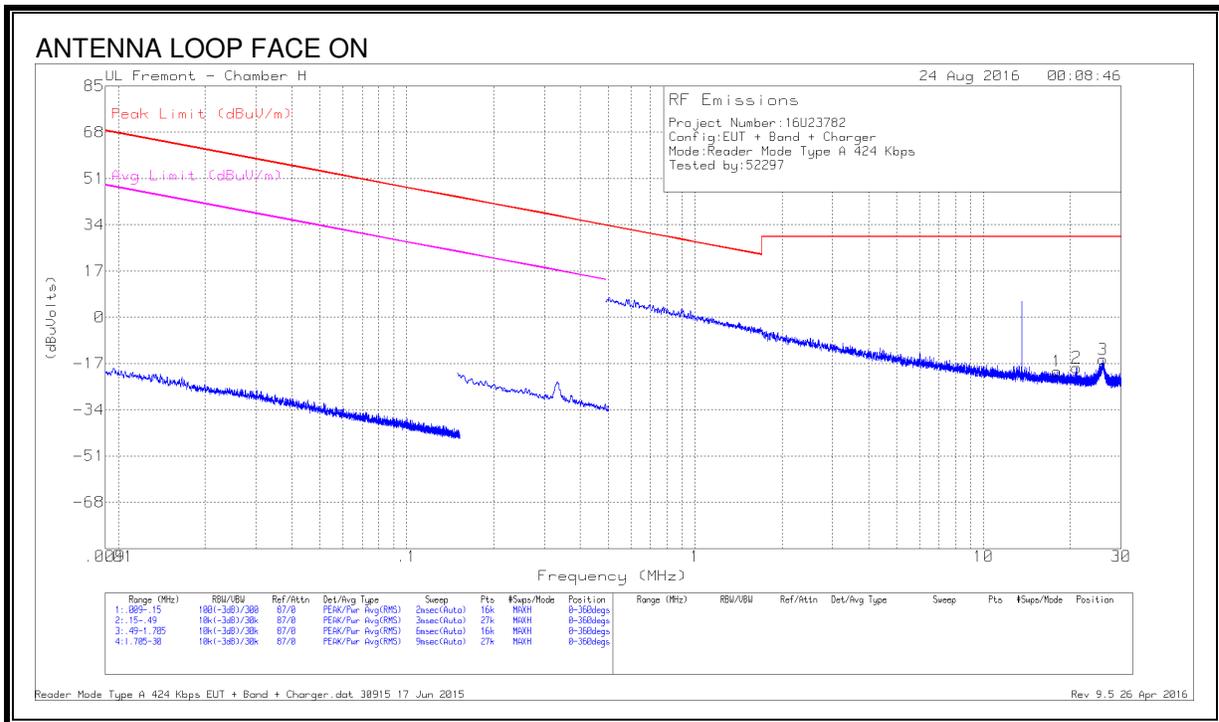


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.25363	12.5	Pk	10.7	.6	-40	-16.2	40.51	-56.71	0-360
2	13.5645	36.2	Pk	10.6	.6	-40	7.4	84	-76.6	0-360
3	14.098	13.17	Pk	10.6	.5	-40	-15.73	29.54	-45.27	0-360
4	13.24816	10.51	Pk	10.7	.6	-40	-18.19	40.51	-58.7	0-360
5	13.56007	32.91	Pk	10.6	.6	-40	4.11	84	-79.89	0-360
6	13.85422	10.93	Pk	10.6	.5	-40	-17.97	40.51	-58.48	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

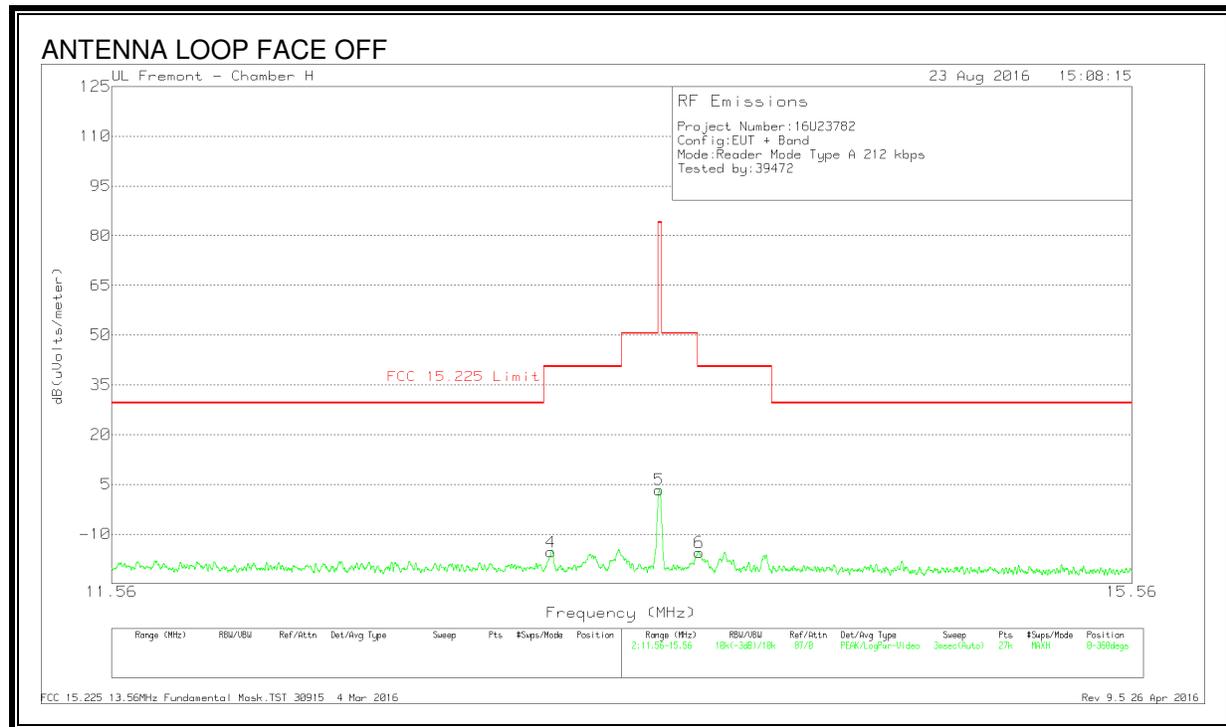
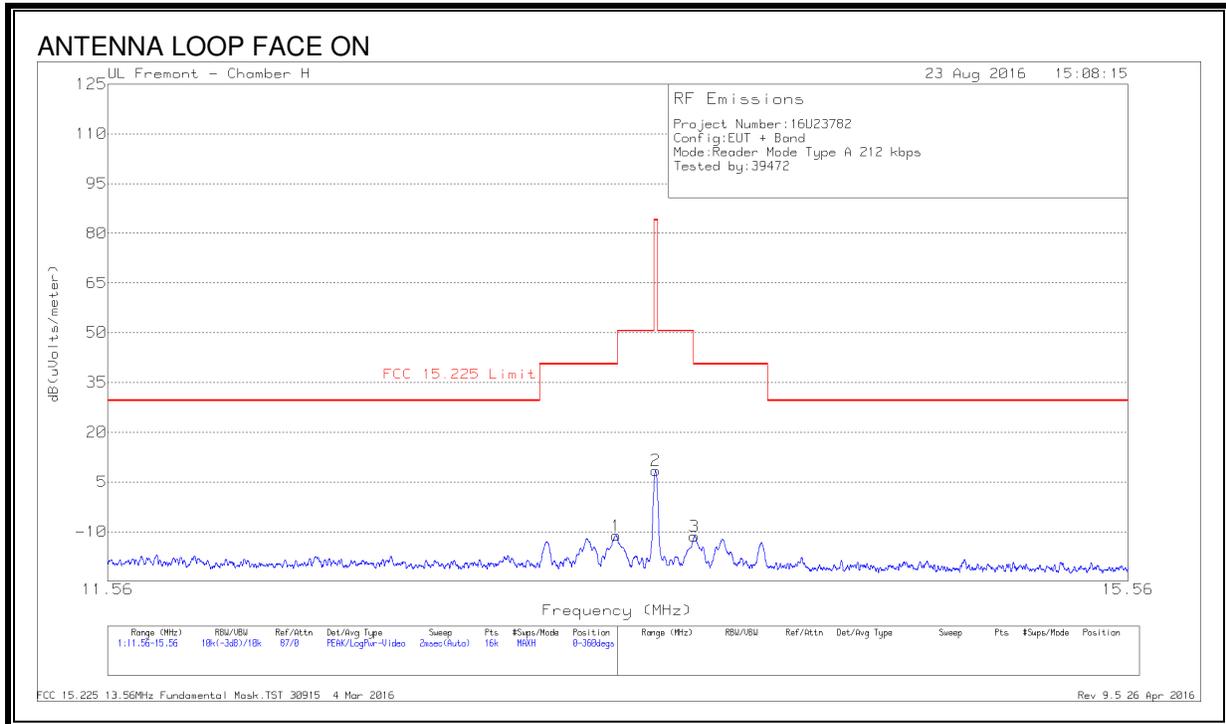


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	17.99354	9.24	Pk	10.3	.6	-40	-19.86	29.54	-49.4	-	-	0-360
2	21.02069	10.83	Pk	9.9	.7	-40	-18.57	29.54	-48.11	-	-	0-360
3	25.9159	14.83	Pk	9	.7	-40	-15.47	29.54	-45.01	-	-	0-360
4	18.02917	15.75	Pk	10.3	.6	-40	-13.35	29.54	-42.89	-	-	0-360
5	21.43098	14.52	Pk	9.8	.7	-40	-14.98	29.54	-44.52	-	-	0-360
6	25.85511	17.65	Pk	9	.7	-40	-12.65	29.54	-42.19	-	-	0-360

Pk - Peak detector

**212Kbps FUNDAMENTAL**

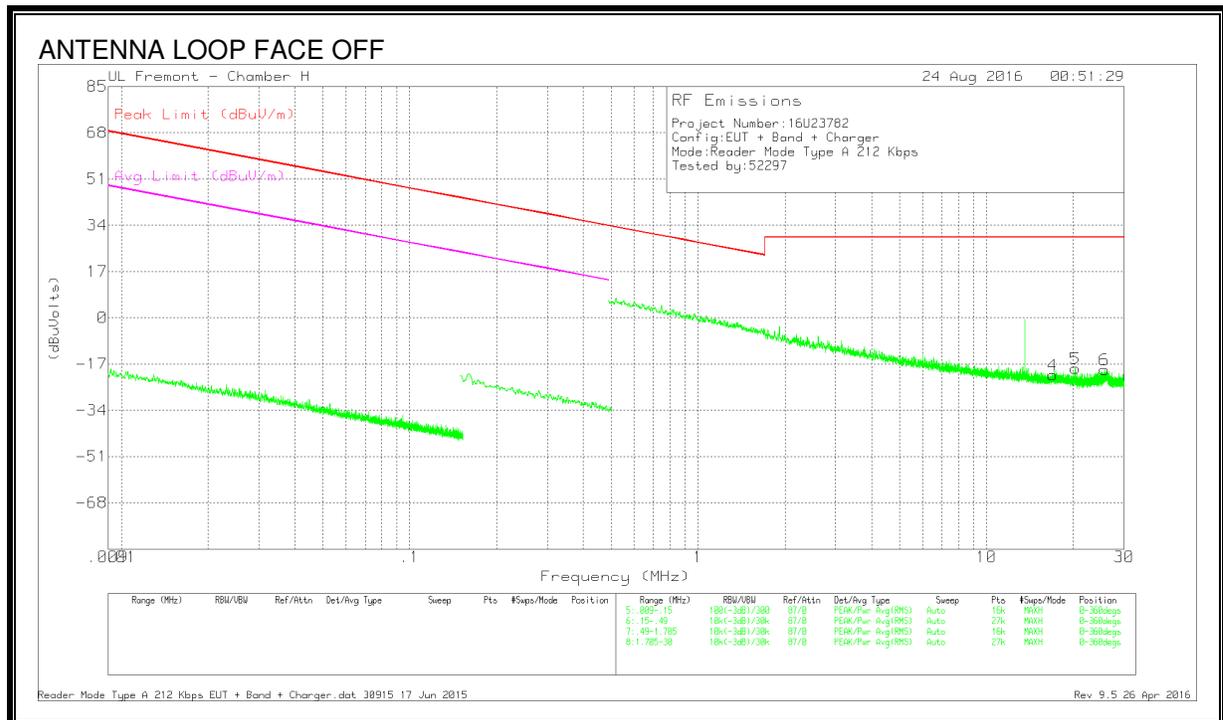
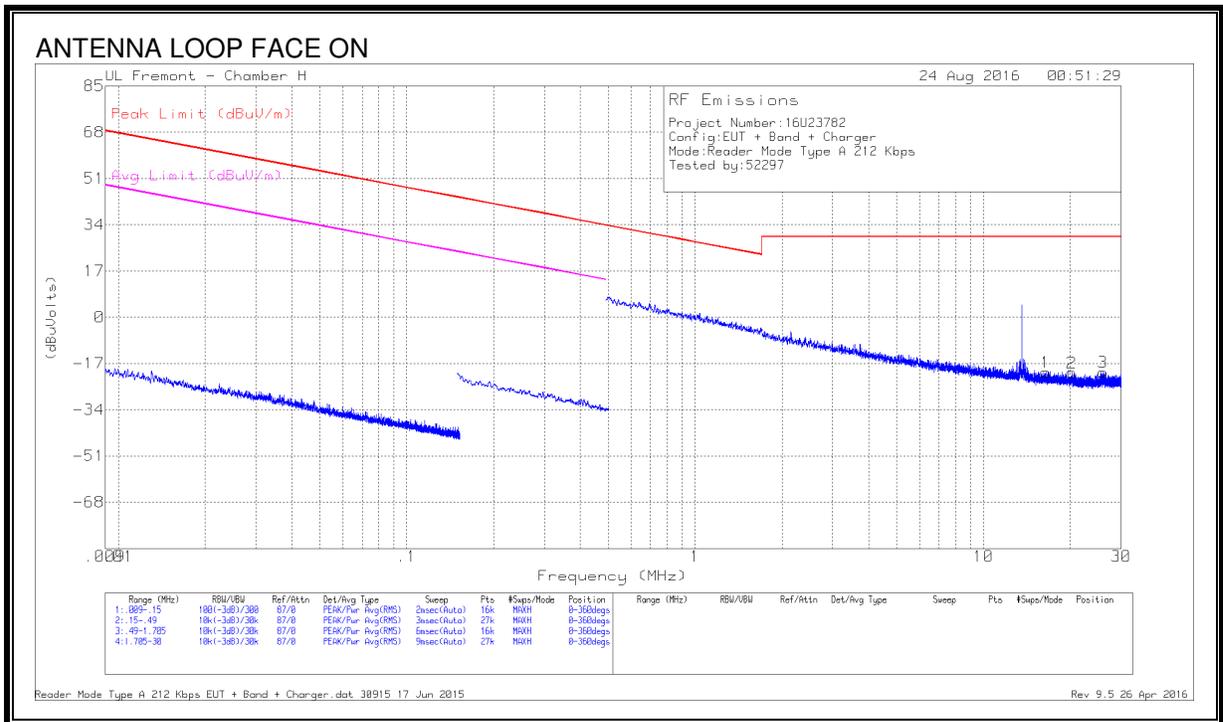


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.40638	17.49	Pk	10.7	.6	-40	-11.21	40.51	-51.72	0-360
2	13.56	37.27	Pk	10.6	.6	-40	8.47	84	-75.53	0-360
3	13.71425	17.38	Pk	10.6	.6	-40	-11.42	40.51	-51.93	0-360
4	13.13886	13.26	Pk	10.7	.6	-40	-15.44	40.51	-55.95	0-360
5	13.55918	32.17	Pk	10.6	.6	-40	3.37	84	-80.63	0-360
6	13.71695	13.25	Pk	10.6	.6	-40	-15.55	40.51	-56.06	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

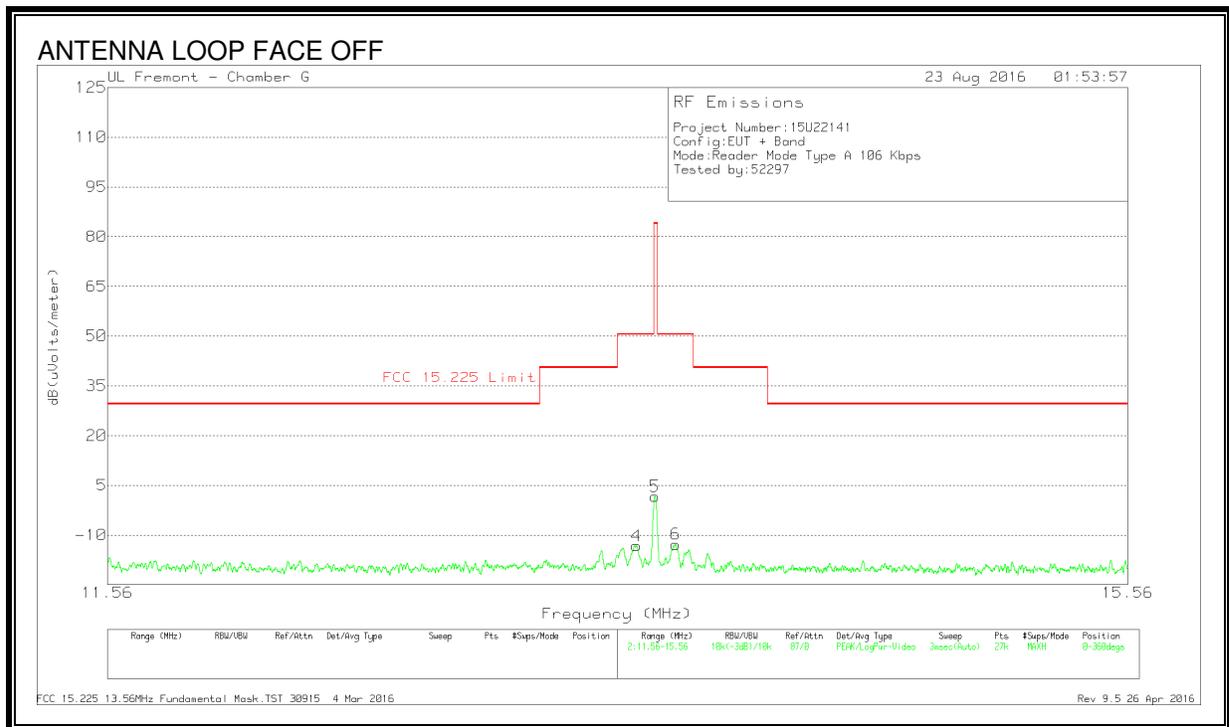
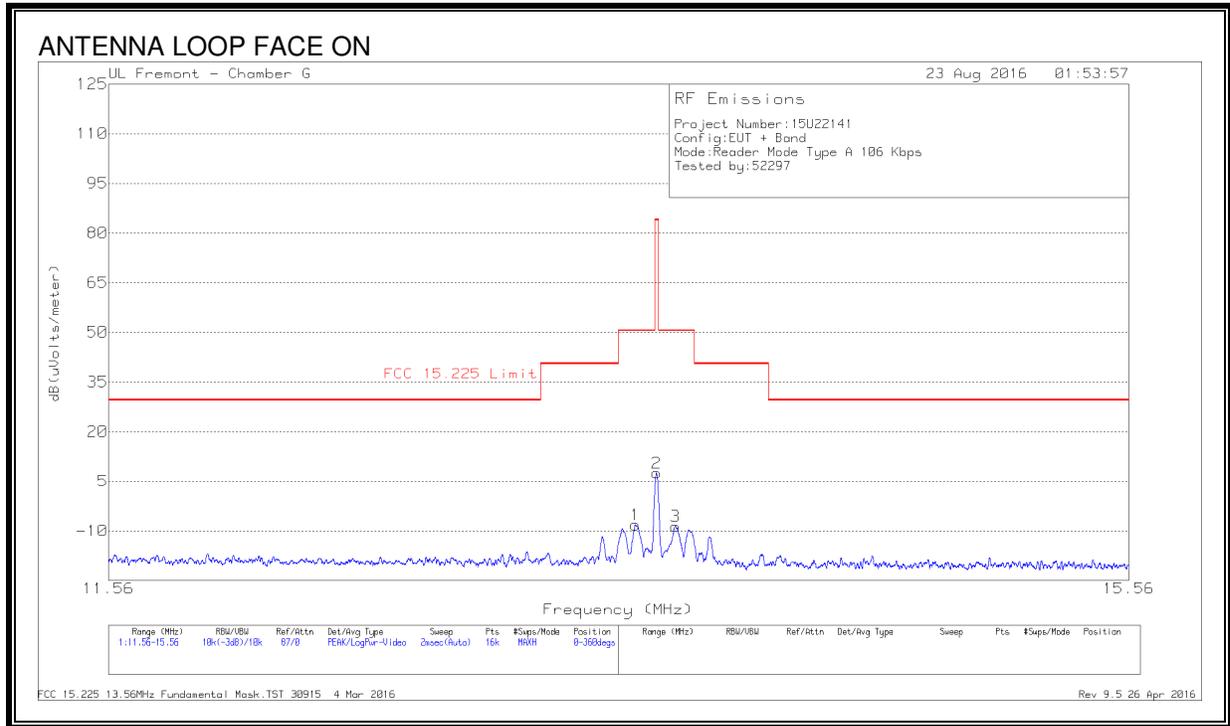


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	16.4315	8.63	Pk	10.5	.6	-40	-20.27	29.54	-49.81	-	-	0-360
2	20.22997	8.77	Pk	10.1	.7	-40	-20.43	29.54	-49.97	-	-	0-360
3	25.94629	10.13	Pk	9	.7	-40	-20.17	29.54	-49.71	-	-	0-360
4	16.9817	7.91	Pk	10.4	.6	-40	-21.09	29.54	-50.63	-	-	0-360
5	20.3201	10.62	Pk	10	.7	-40	-18.68	29.54	-48.22	-	-	0-360
6	25.63713	11.19	Pk	9	.7	-40	-19.11	29.54	-48.65	-	-	0-360

Pk - Peak detector

**106Kbps FUNDAMENTAL**

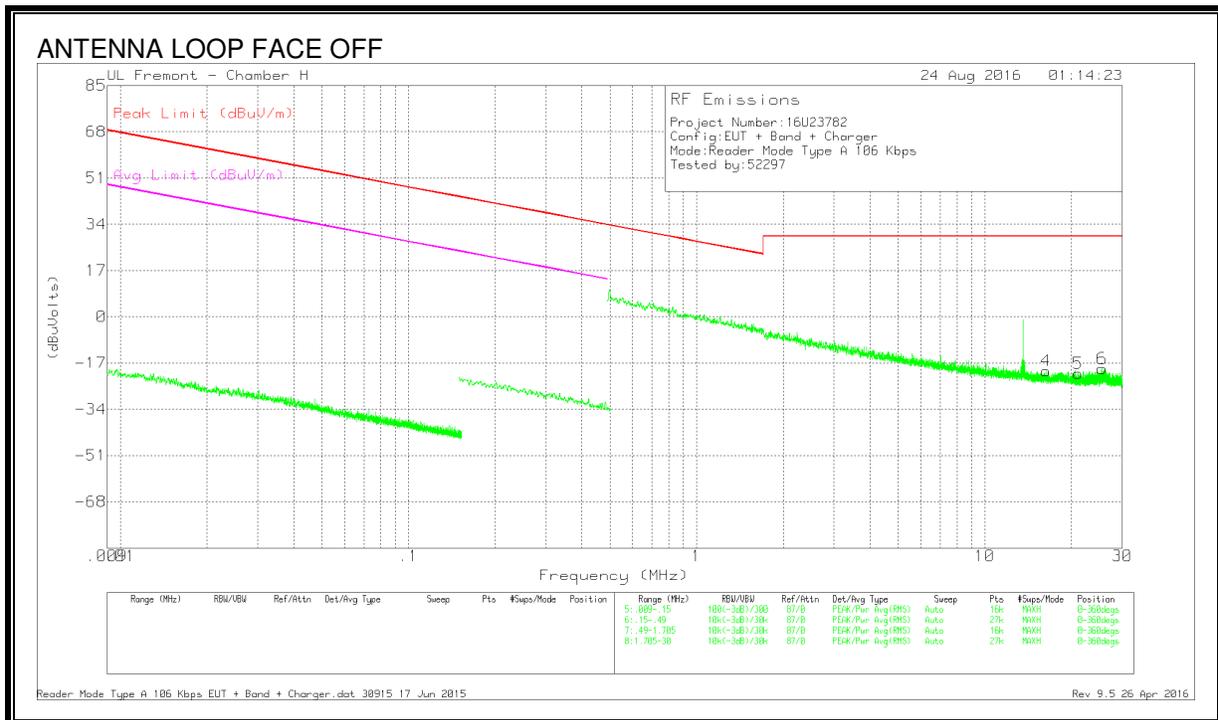
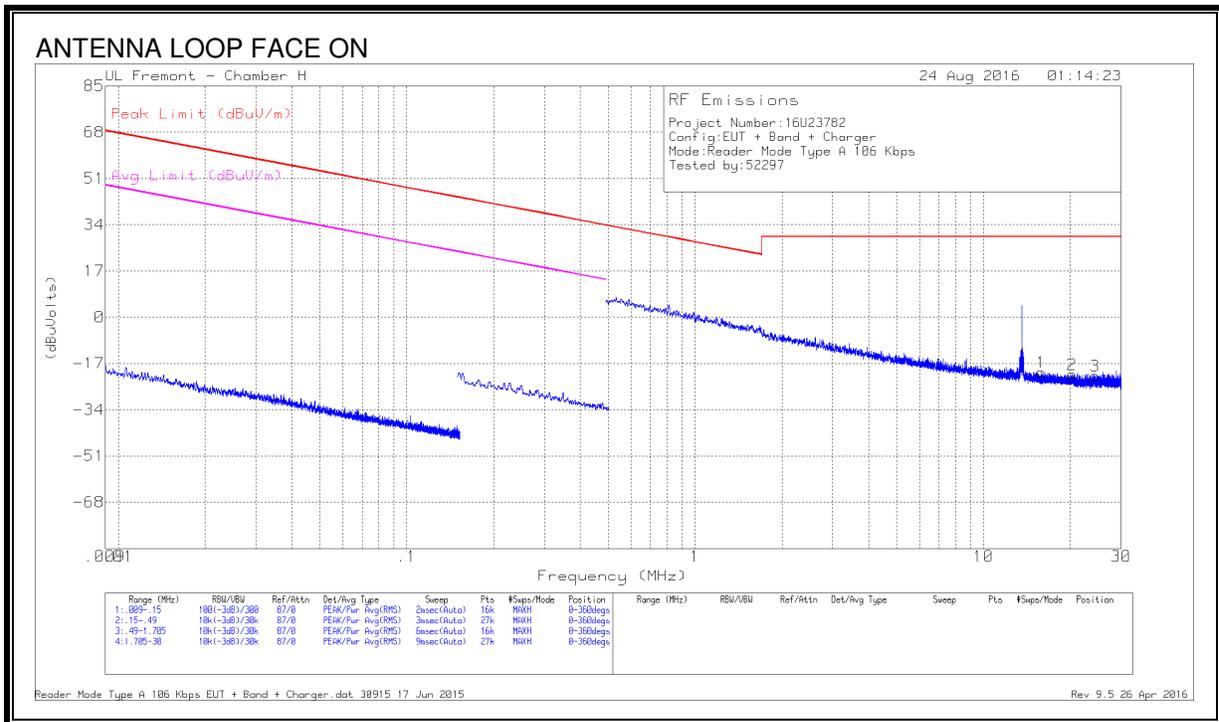


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 30m	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.47763	20.55	Pk	10.7	.6	-40	-8.15	50.5	-58.65	0-360
2	13.56013	36.26	Pk	10.6	.6	-40	7.46	84	-76.54	0-360
3	13.63588	20.19	Pk	10.6	.6	-40	-8.61	50.5	-59.11	0-360
4	13.48555	15.46	Pk	10.7	.6	-40	-13.24	50.5	-63.74	0-360
5	13.55852	30.45	Pk	10.6	.6	-40	1.65	84	-82.35	0-360
6	13.63992	16.04	Pk	10.6	.6	-40	-12.76	50.5	-63.26	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

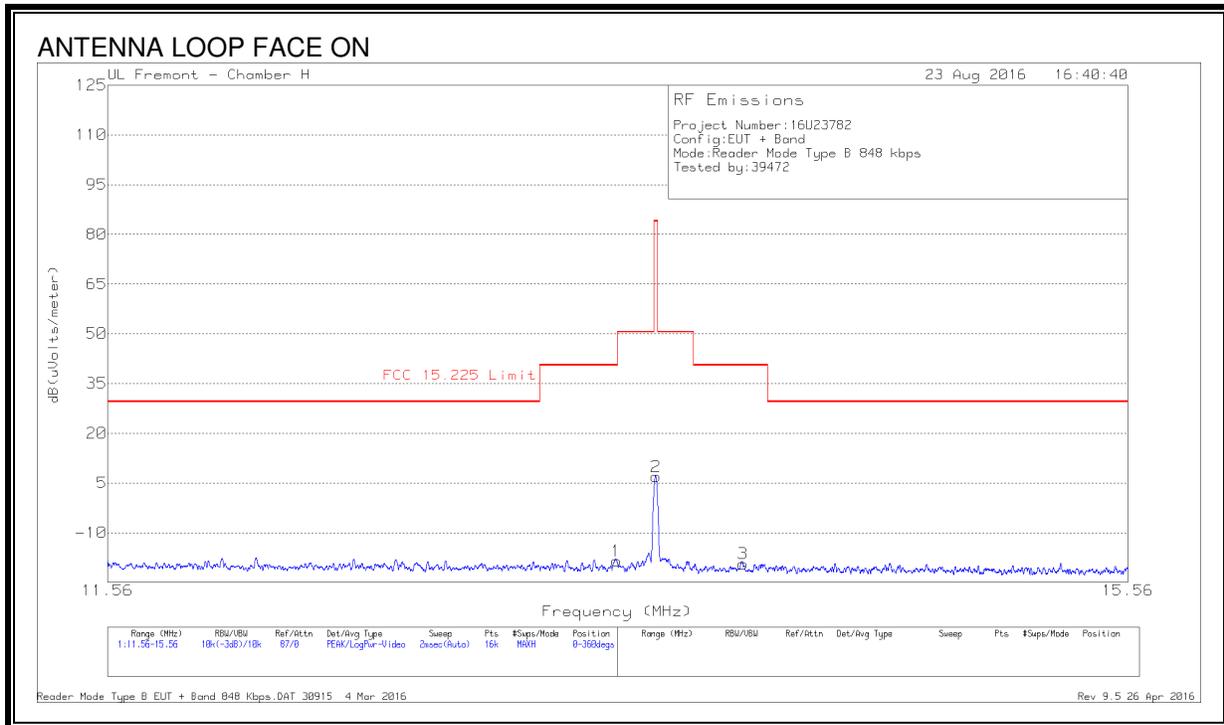


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	15.8268	8.69	Pk	10.5	.6	-40	-20.21	29.54	-49.75	-	-	0-360
2	20.29338	8.15	Pk	10	.7	-40	-21.15	29.54	-50.69	-	-	0-360
3	24.34756	8.46	Pk	9.3	.7	-40	-21.54	29.54	-51.08	-	-	0-360
4	16.2874	9.04	Pk	10.5	.6	-40	-19.86	29.54	-49.4	-	-	0-360
5	21.08776	8.61	Pk	9.9	.7	-40	-20.79	29.54	-50.33	-	-	0-360
6	25.51399	11.21	Pk	9.1	.7	-40	-18.99	29.54	-48.53	-	-	0-360

Pk - Peak detector

**TYPE B TYPE B 848Kbps FUNDAMENTAL**

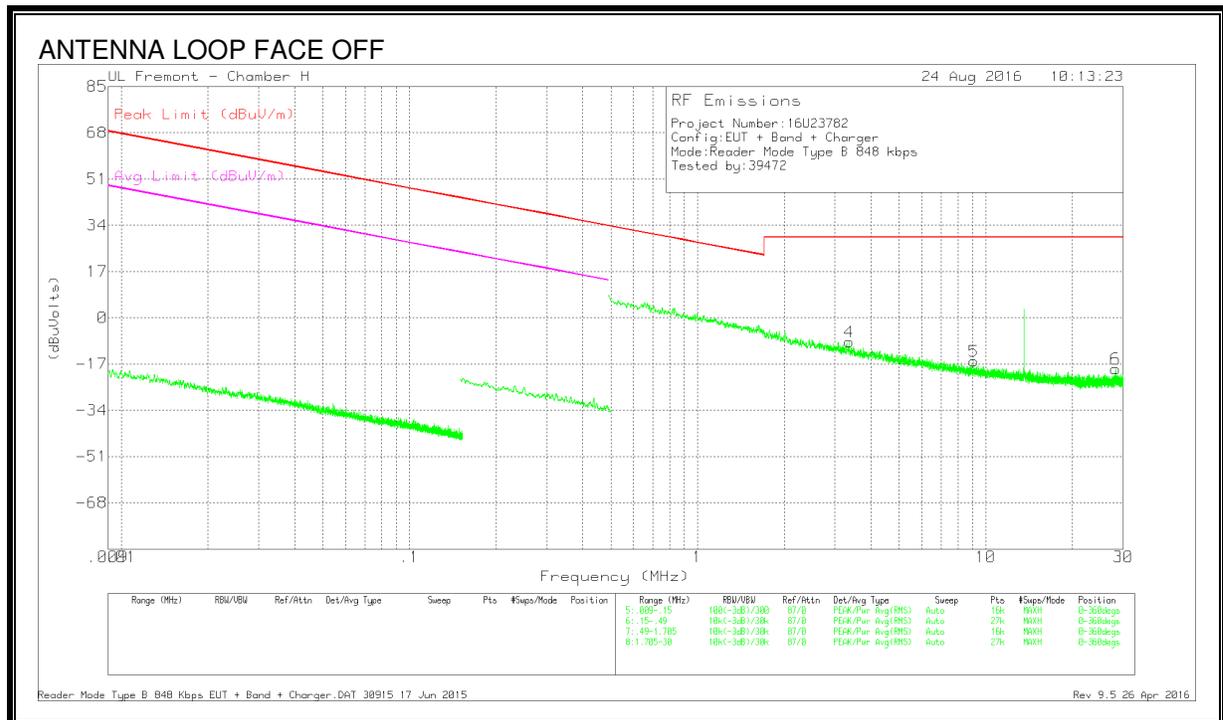
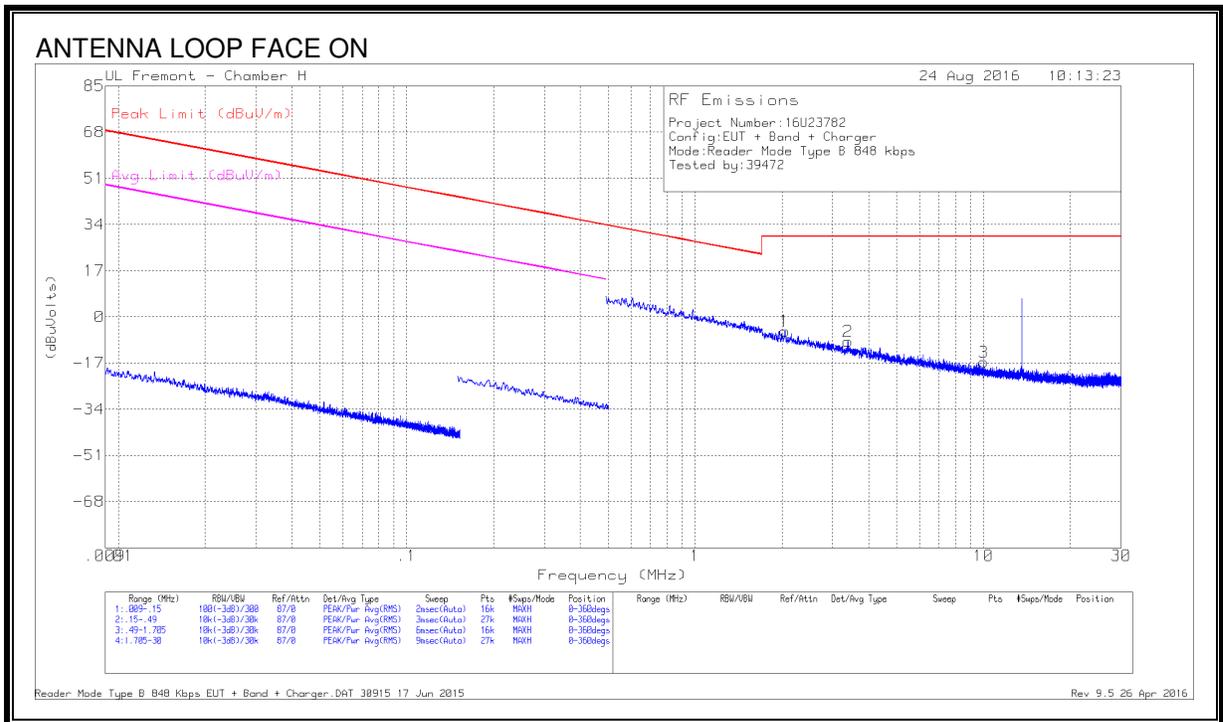


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.407	10.2	Pk	10.7	.6	-40	-18.5	40.51	-59.01	0-360
2	13.562	35.75	Pk	10.6	.6	-40	6.95	84	-77.05	0-360
3	13.9095	9.54	Pk	10.6	.5	-40	-19.36	40.51	-59.87	0-360
4	13.29774	9.43	Pk	10.7	.6	-40	-19.27	40.51	-59.78	0-360
5	13.56007	31.32	Pk	10.6	.6	-40	2.52	84	-81.48	0-360
6	14.03241	9.59	Pk	10.6	.5	-40	-19.31	29.54	-48.85	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

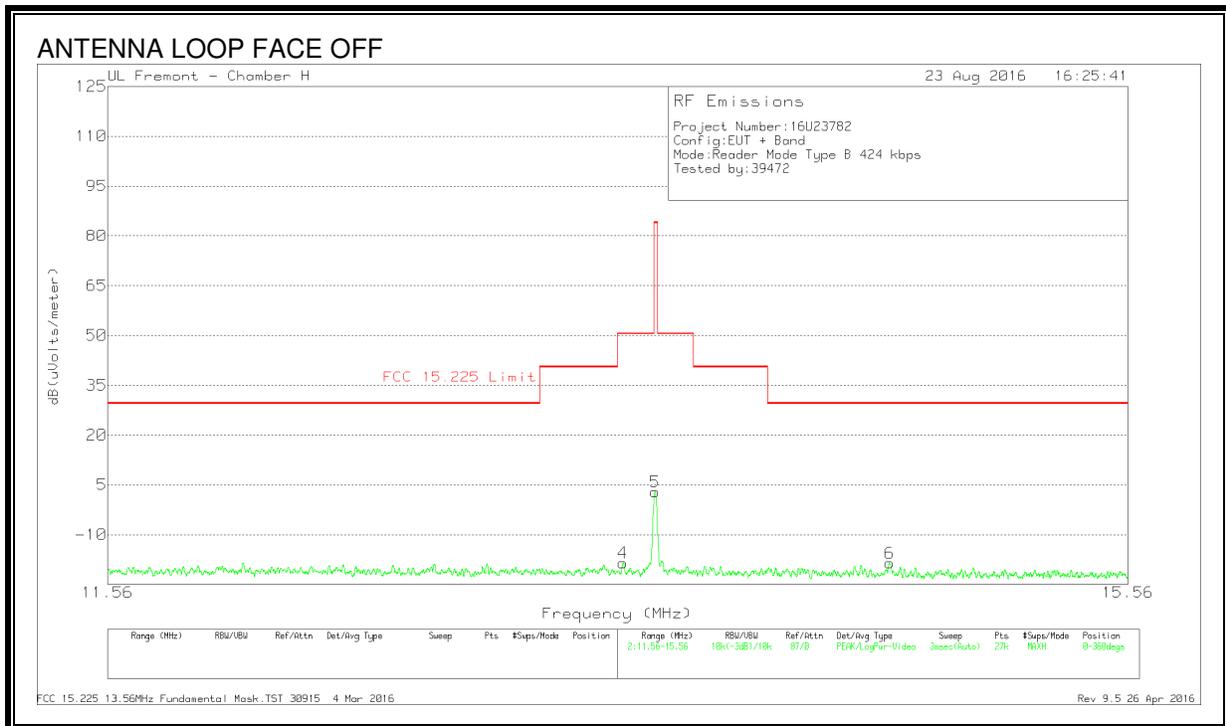
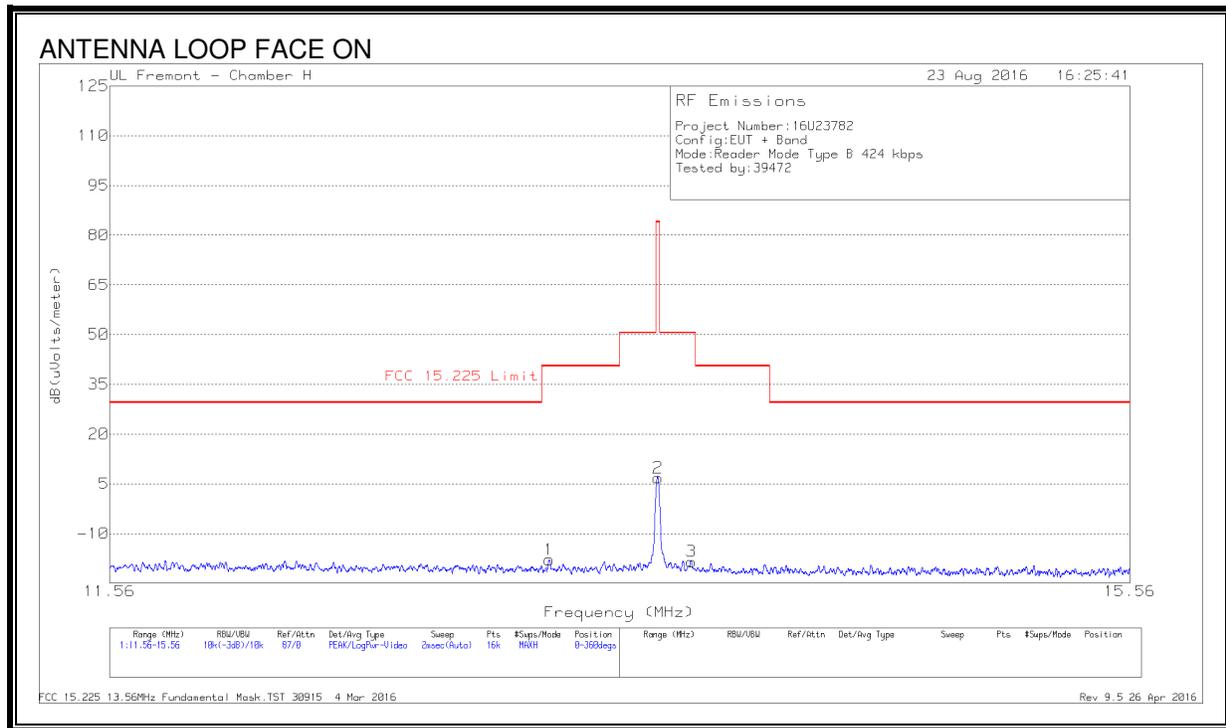


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	2.04874	23.78	Pk	10.8	.2	-40	-5.22	29.54	-34.76	-	-	0-360
2	3.38547	19.86	Pk	10.8	.3	-40	-9.04	29.54	-38.58	-	-	0-360
3	10.03293	12.16	Pk	10.8	.4	-40	-16.64	29.54	-46.18	-	-	0-360
4	3.35874	20.04	Pk	10.8	.3	-40	-8.86	29.54	-38.4	-	-	0-360
5	9.0803	12.74	Pk	10.8	.5	-40	-15.96	29.54	-45.5	-	-	0-360
6	28.23512	12.01	Pk	8.4	.8	-40	-18.79	29.54	-48.33	-	-	0-360

Pk - Peak detector

**424Kbps FUNDAMENTAL**

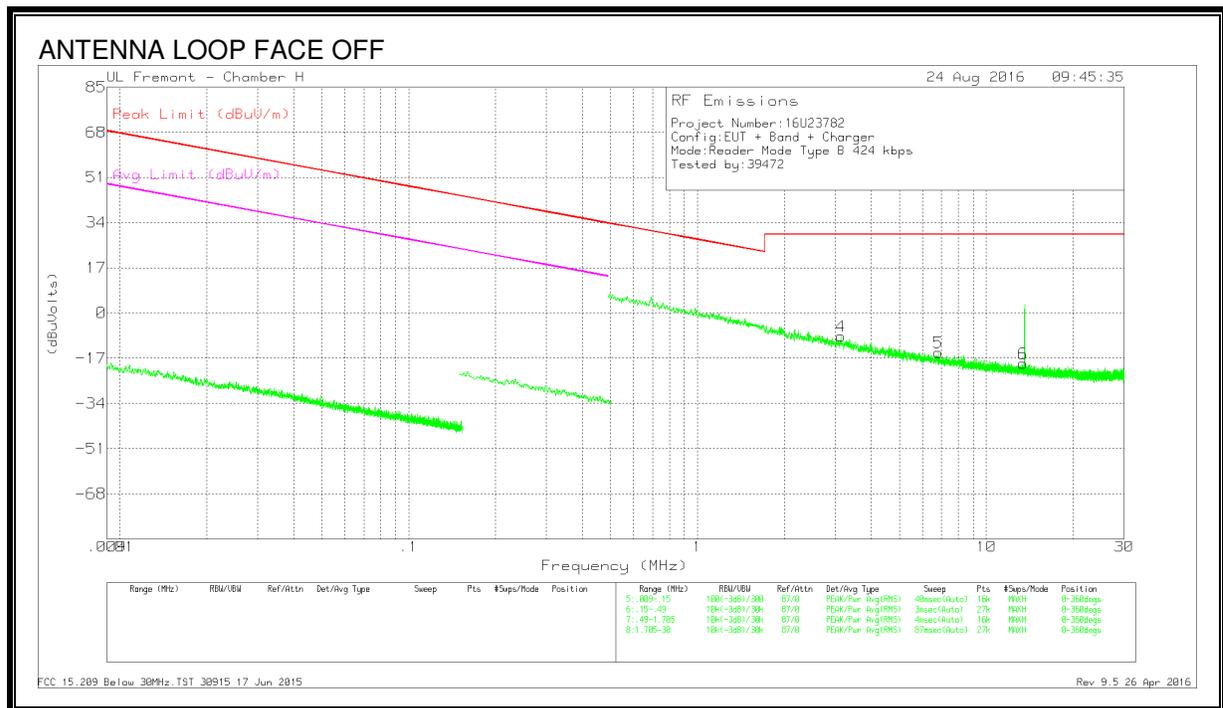
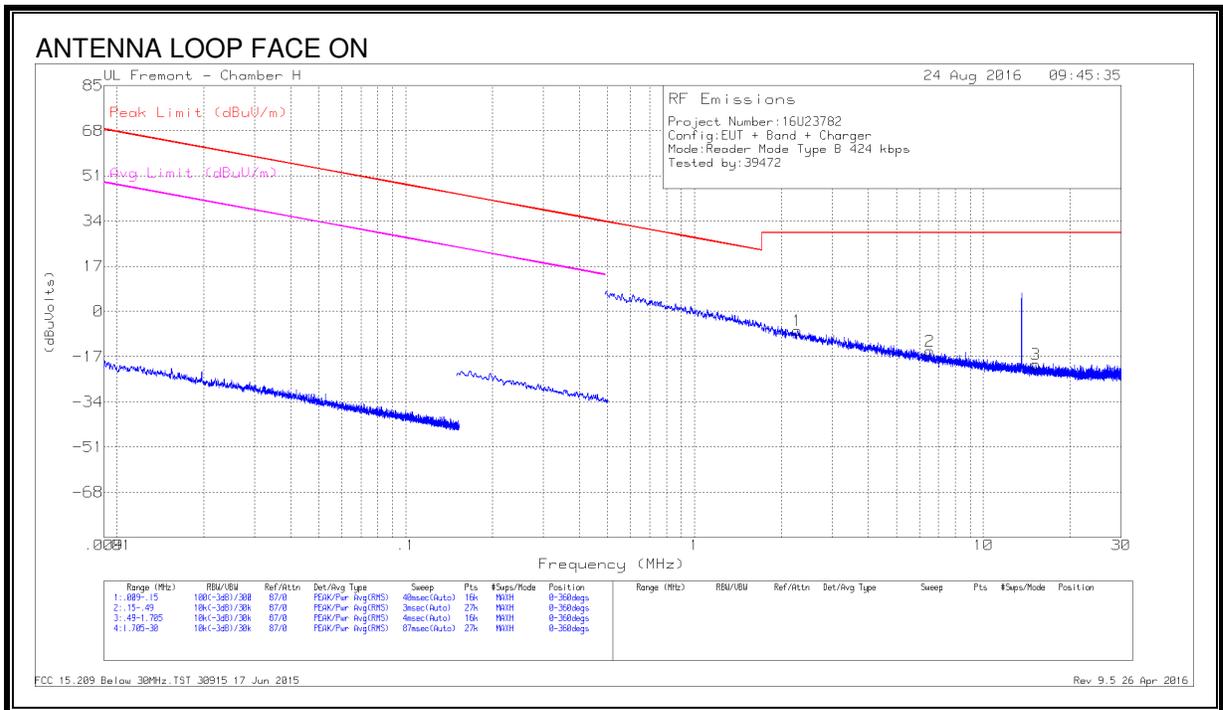


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.13913	10.82	Pk	10.7	.6	-40	-17.88	40.51	-58.39	0-360
2	13.562	35.63	Pk	10.6	.6	-40	6.83	84	-77.17	0-360
3	13.69475	10.35	Pk	10.6	.6	-40	-18.45	50.5	-68.95	0-360
4	13.43264	10.21	Pk	10.7	.6	-40	-18.49	50.5	-68.99	0-360
5	13.55837	31.73	Pk	10.6	.6	-40	2.93	84	-81.07	0-360
6	14.51608	10.33	Pk	10.5	.6	-40	-18.57	29.54	-48.11	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

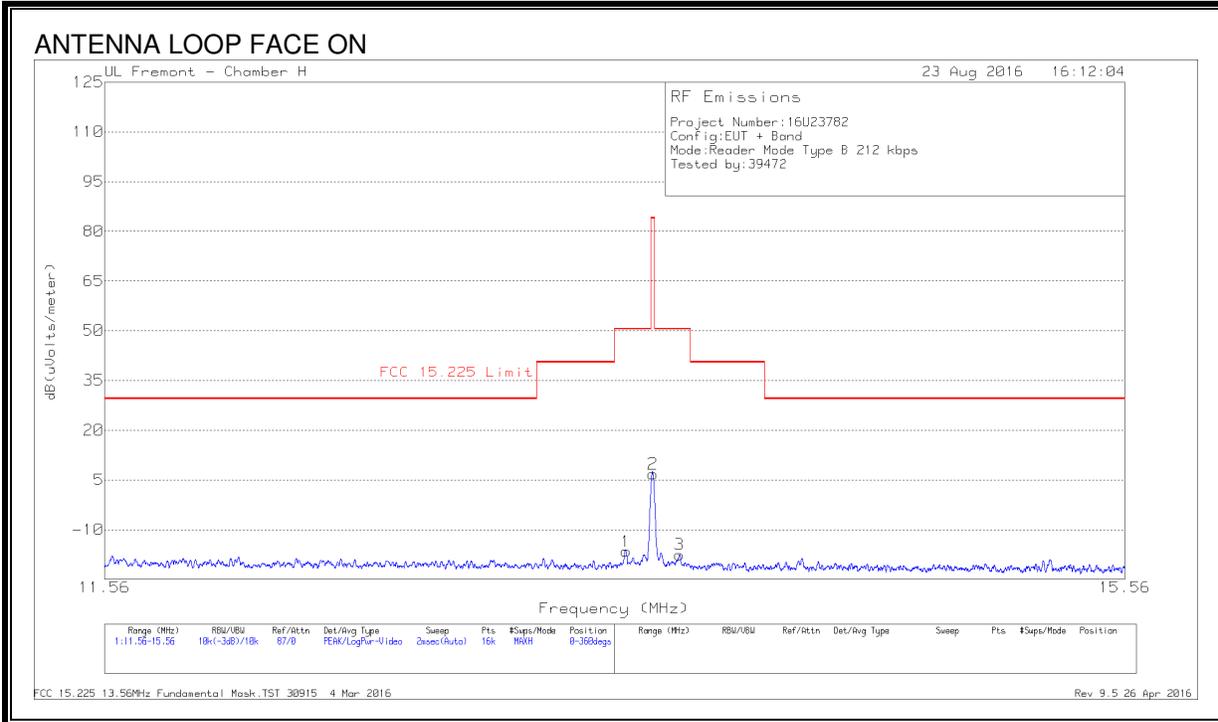


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	2.27249	21.92	Pk	10.8	.2	-40	-7.08	29.54	-36.62	-	-	0-360
2	6.51846	13.92	Pk	10.9	.4	-40	-14.78	29.54	-44.32	-	-	0-360
3	15.18909	8.88	Pk	10.6	.6	-40	-19.92	29.54	-49.46	-	-	0-360
4	3.13395	20.22	Pk	10.8	.3	-40	-8.68	29.54	-38.22	-	-	0-360
5	6.81348	13.73	Pk	10.9	.4	-40	-14.97	29.54	-44.51	-	-	0-360
6	13.3923	9.68	Pk	10.7	.6	-40	-19.02	29.54	-48.56	-	-	0-360

Pk - Peak detector

**212Kbps FUNDAMENTAL**

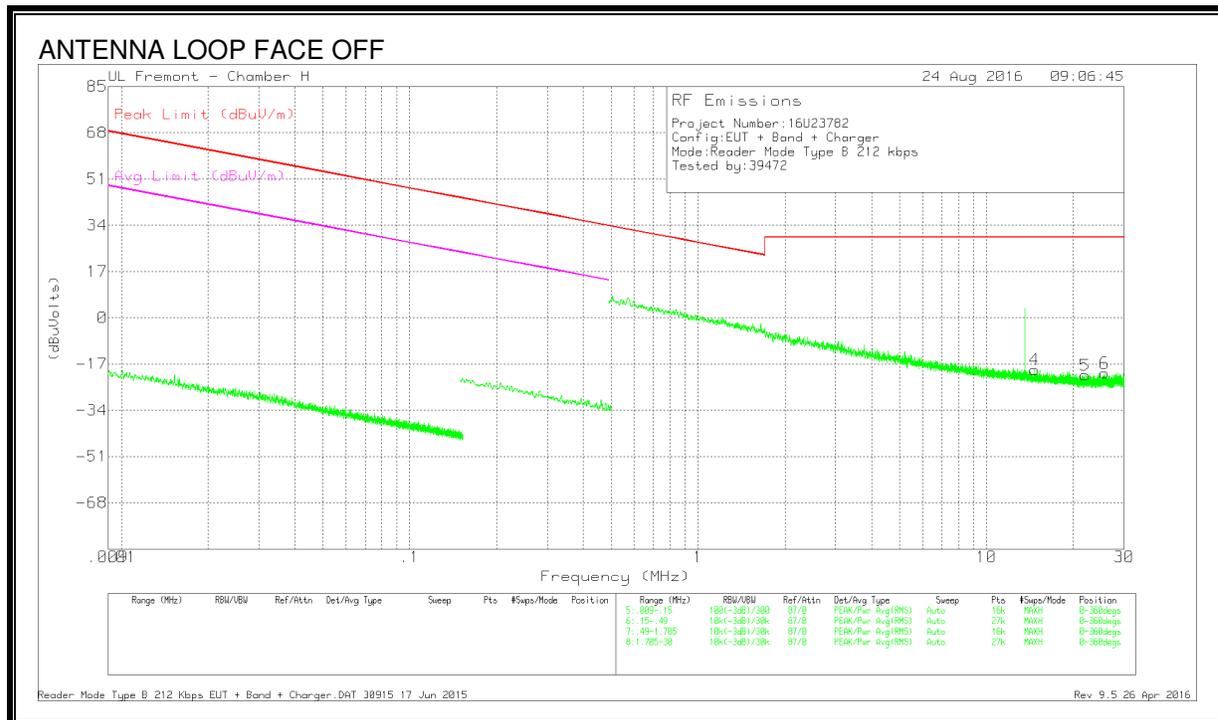
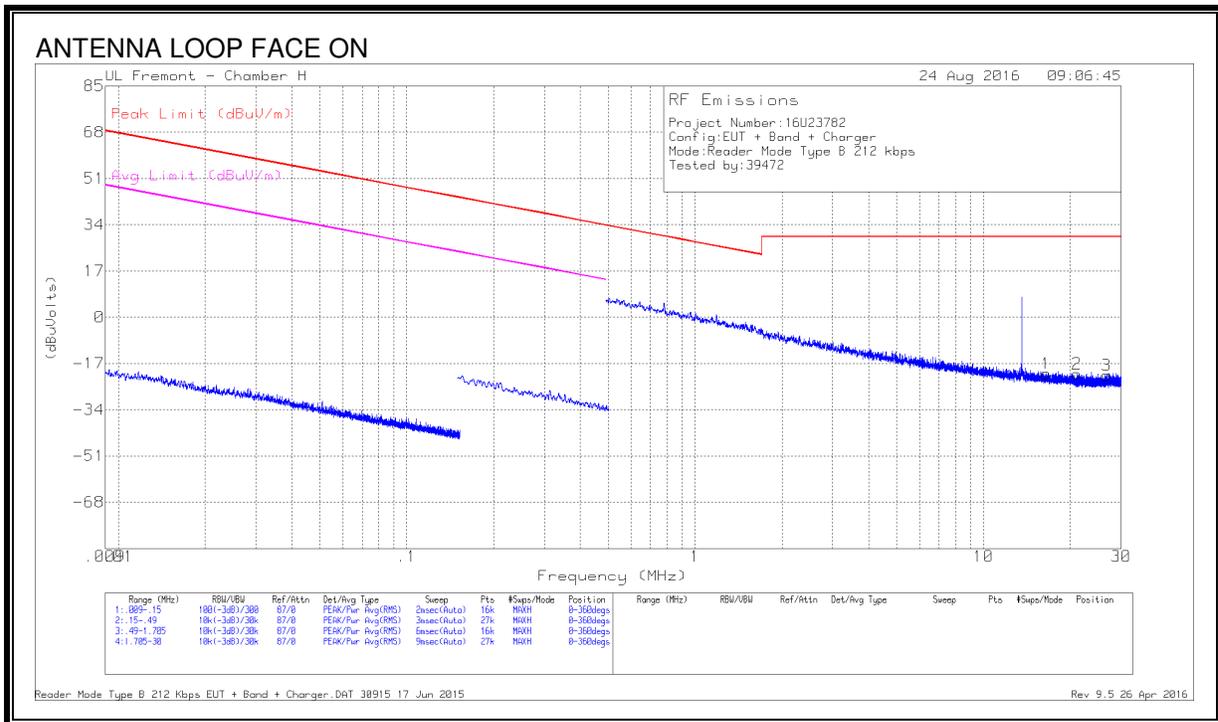


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.45675	12.14	Pk	10.7	.6	-40	-16.56	50.5	-67.06	0-360
2	13.562	35.62	Pk	10.6	.6	-40	6.82	84	-77.18	0-360
3	13.66738	11.27	Pk	10.6	.6	-40	-17.53	50.5	-68.03	0-360
4	12.96075	10.72	Pk	10.7	.6	-40	-17.98	29.54	-47.52	0-360
5	13.55837	31.88	Pk	10.6	.6	-40	3.08	84	-80.92	0-360
6	14.17139	10.15	Pk	10.6	.5	-40	-18.75	29.54	-48.29	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

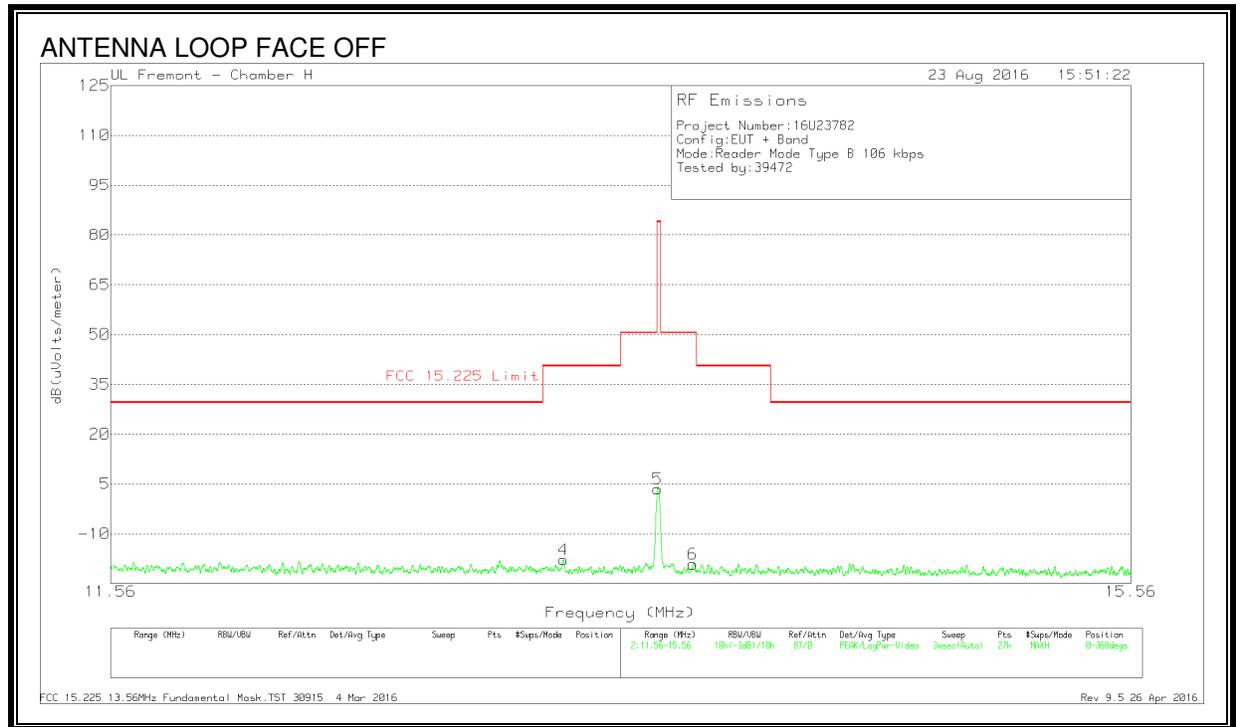
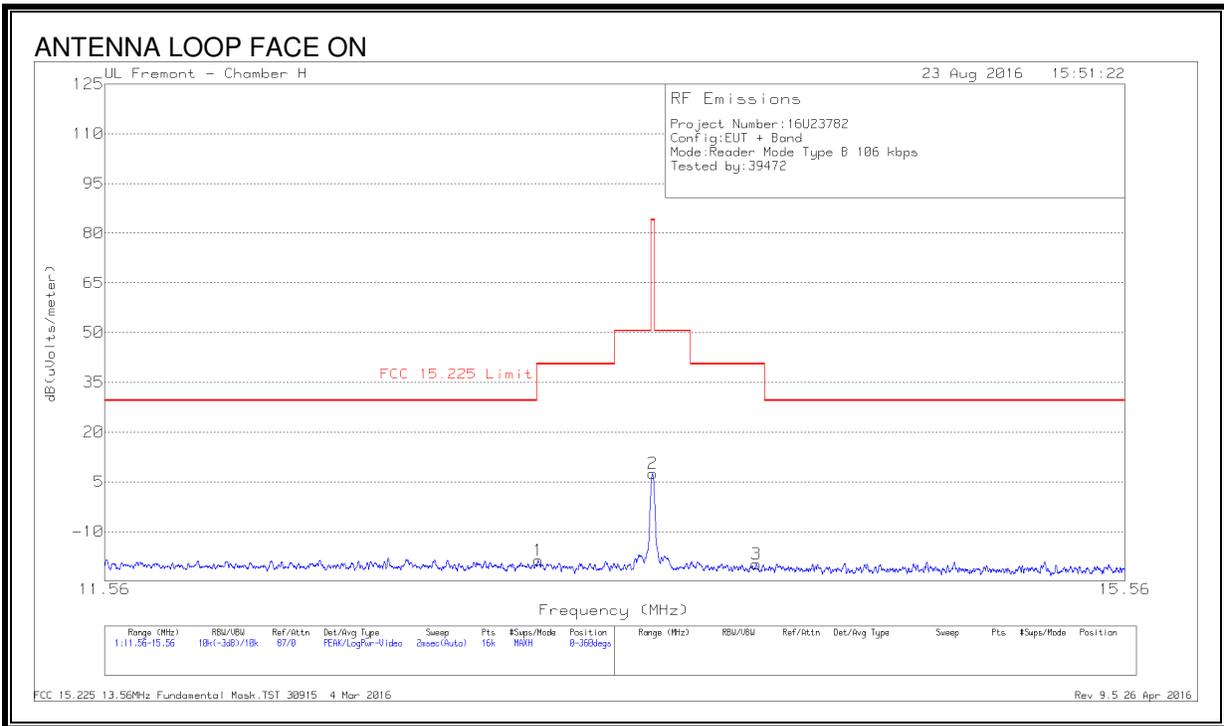


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	16.48809	8.19	Pk	10.5	.6	-40	-20.71	29.54	-50.25	-	-	0-360
2	21.03955	8.61	Pk	9.9	.7	-40	-20.79	29.54	-50.33	-	-	0-360
3	26.67884	9.01	Pk	8.8	.8	-40	-21.39	29.54	-50.93	-	-	0-360
4	14.66981	9.77	Pk	10.6	.6	-40	-19.03	29.54	-48.57	-	-	0-360
5	21.94712	8.55	Pk	9.7	.7	-40	-21.05	29.54	-50.59	-	-	0-360
6	25.70368	9.92	Pk	9	.7	-40	-20.38	29.54	-49.92	-	-	0-360

Pk - Peak detector

**106Kbps FUNDAMENTAL**

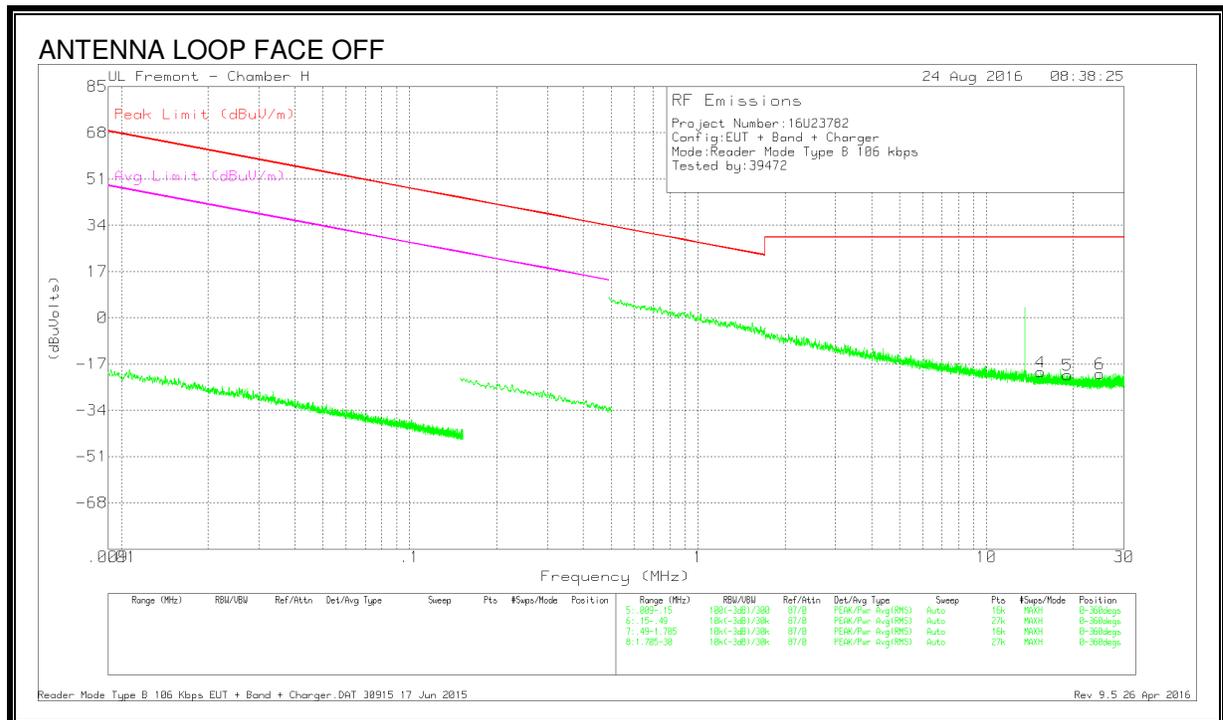
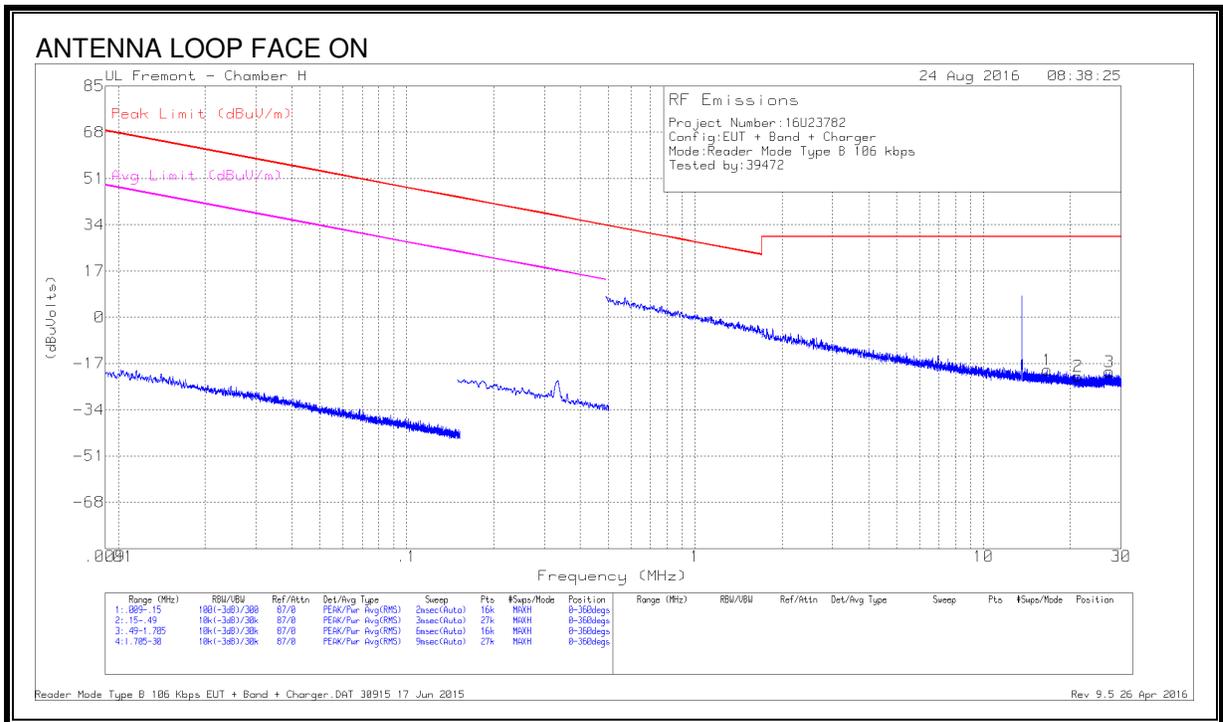


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.11713	10.05	Pk	10.7	.6	-40	-18.65	40.51	-59.16	0-360
2	13.56025	36.36	Pk	10.6	.6	-40	7.56	84	-76.44	0-360
3	13.97613	9.16	Pk	10.6	.5	-40	-19.74	40.51	-60.25	0-360
4	13.18941	10.86	Pk	10.7	.6	-40	-17.84	40.51	-58.35	0-360
5	13.55682	32.3	Pk	10.6	.6	-40	3.5	84	-80.5	0-360
6	13.69668	9.66	Pk	10.6	.6	-40	-19.14	50.5	-69.64	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

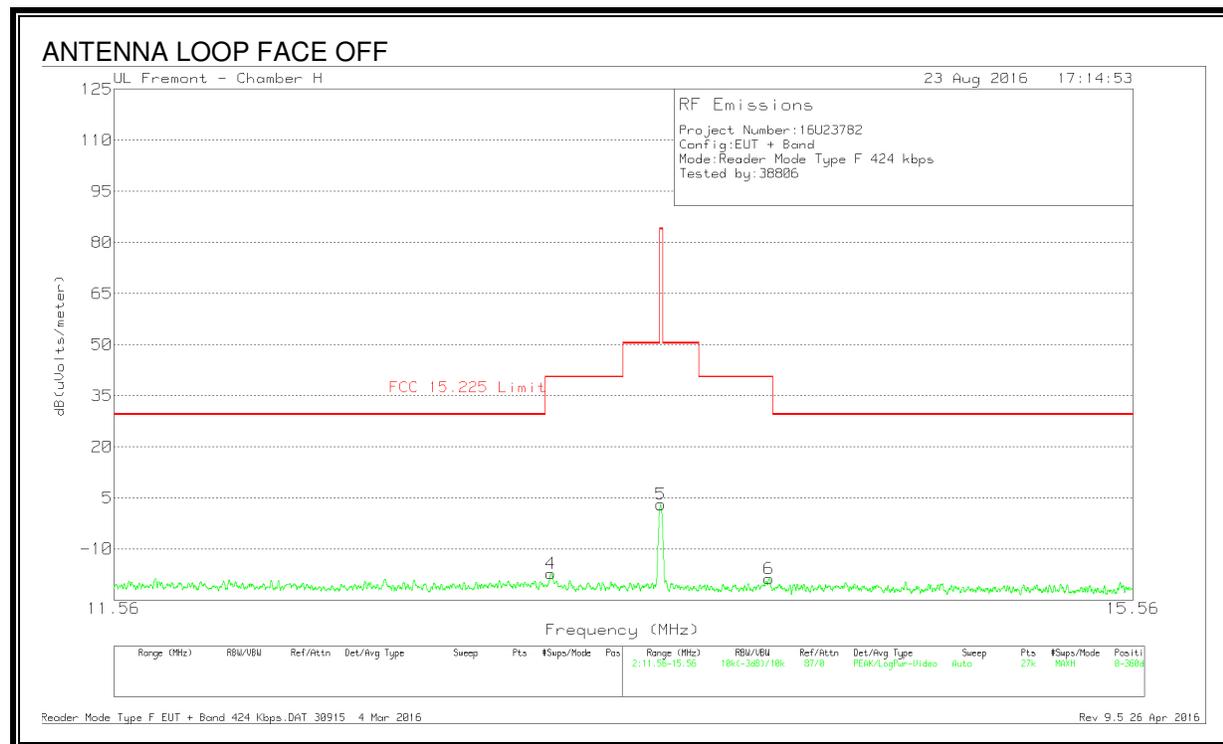
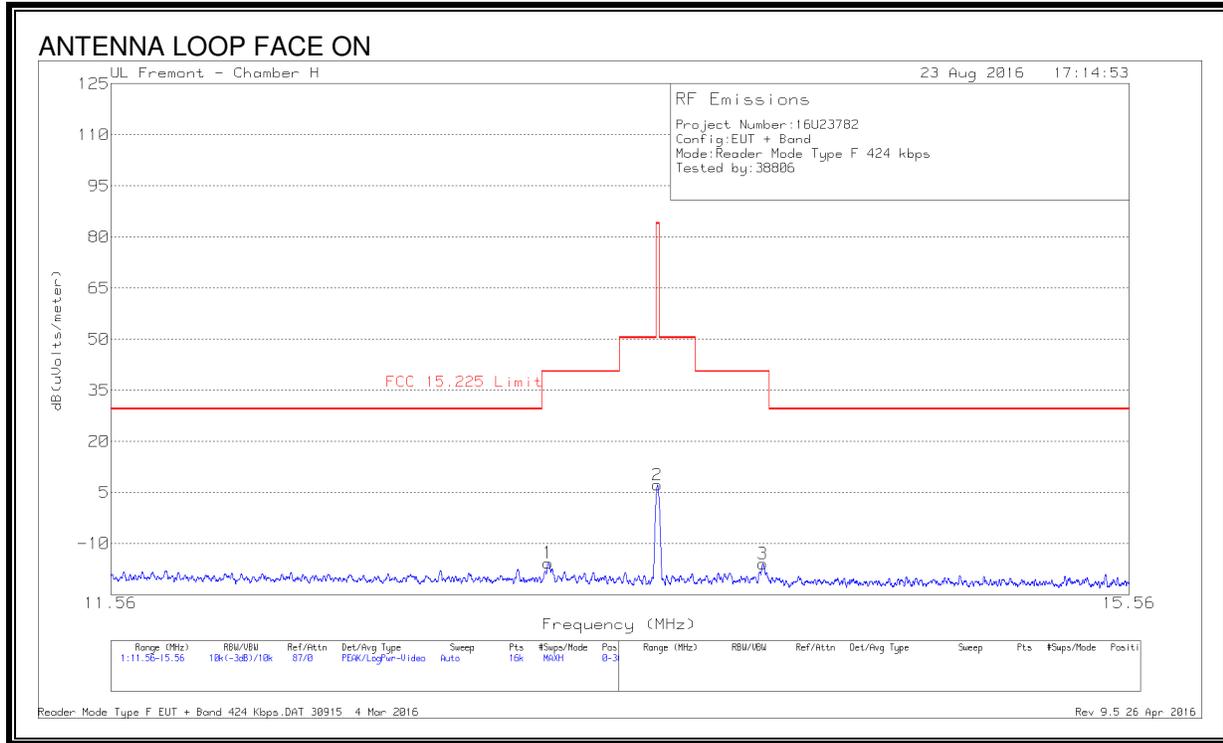


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	16.64319	9.62	Pk	10.4	.6	-40	-19.38	29.54	-48.92	-	-	0-360
2	21.28164	7.75	Pk	9.9	.7	-40	-21.65	29.54	-51.19	-	-	0-360
3	27.29402	10.55	Pk	8.6	.8	-40	-20.05	29.54	-49.59	-	-	0-360
4	15.37459	8.8	Pk	10.6	.6	-40	-20	29.54	-49.54	-	-	0-360
5	19.09499	8.09	Pk	10.2	.6	-40	-21.11	29.54	-50.65	-	-	0-360
6	24.75838	9.49	Pk	9.2	.7	-40	-20.61	29.54	-50.15	-	-	0-360

Pk - Peak detector

**TYPE F 424Kbps FUNDAMENTAL**

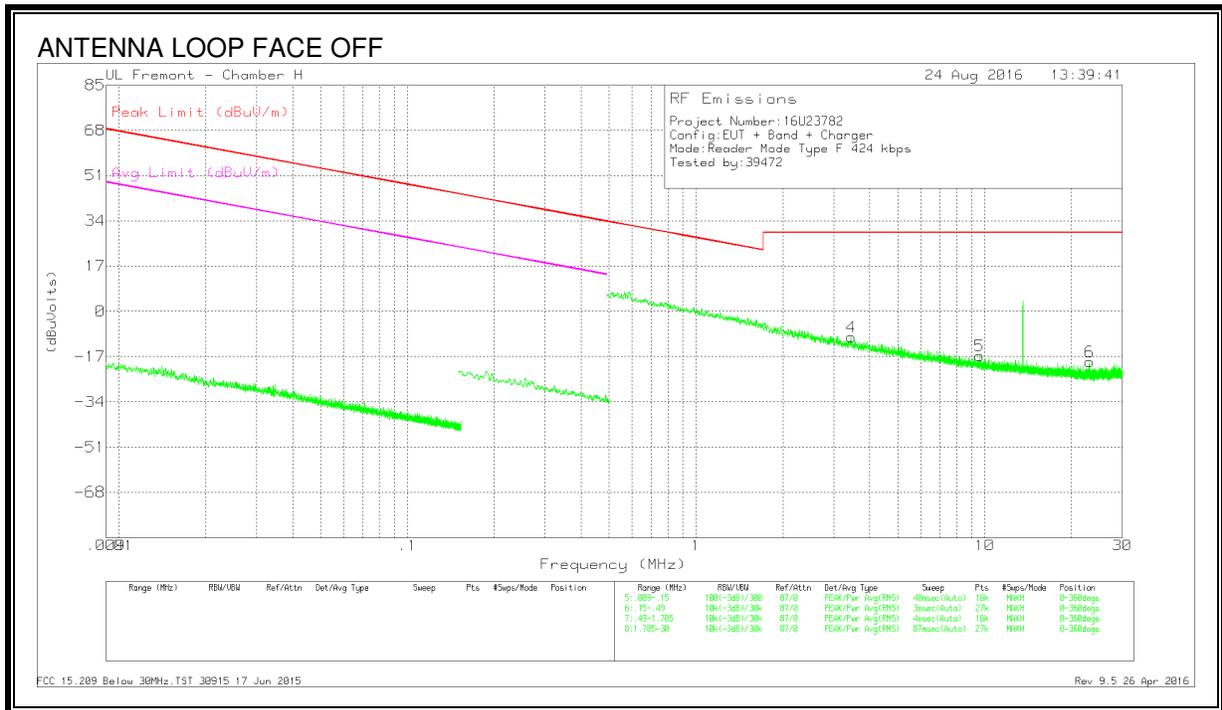
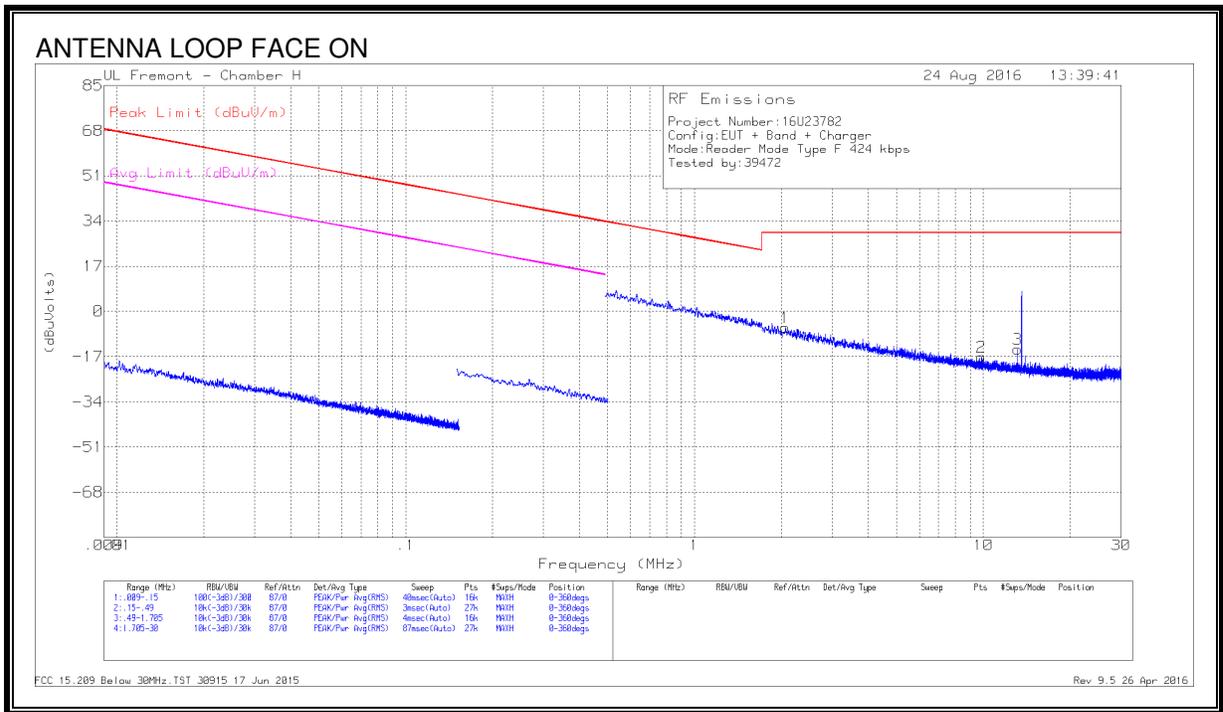


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.13388	13.04	Pk	10.7	.6	-40	-15.66	40.51	-56.17	0-360
2	13.56	36.02	Pk	10.6	.6	-40	7.22	84	-76.78	0-360
3	13.98388	12.97	Pk	10.6	.5	-40	-15.93	40.51	-56.44	0-360
4	13.13169	11.49	Pk	10.7	.6	-40	-17.21	40.51	-57.72	0-360
5	13.55837	31.88	Pk	10.6	.6	-40	3.08	84	-80.92	0-360
6	13.99423	10.17	Pk	10.6	.5	-40	-18.73	40.51	-59.24	0-360

Pk - Peak detector

**SPURIOUS EMISSION**

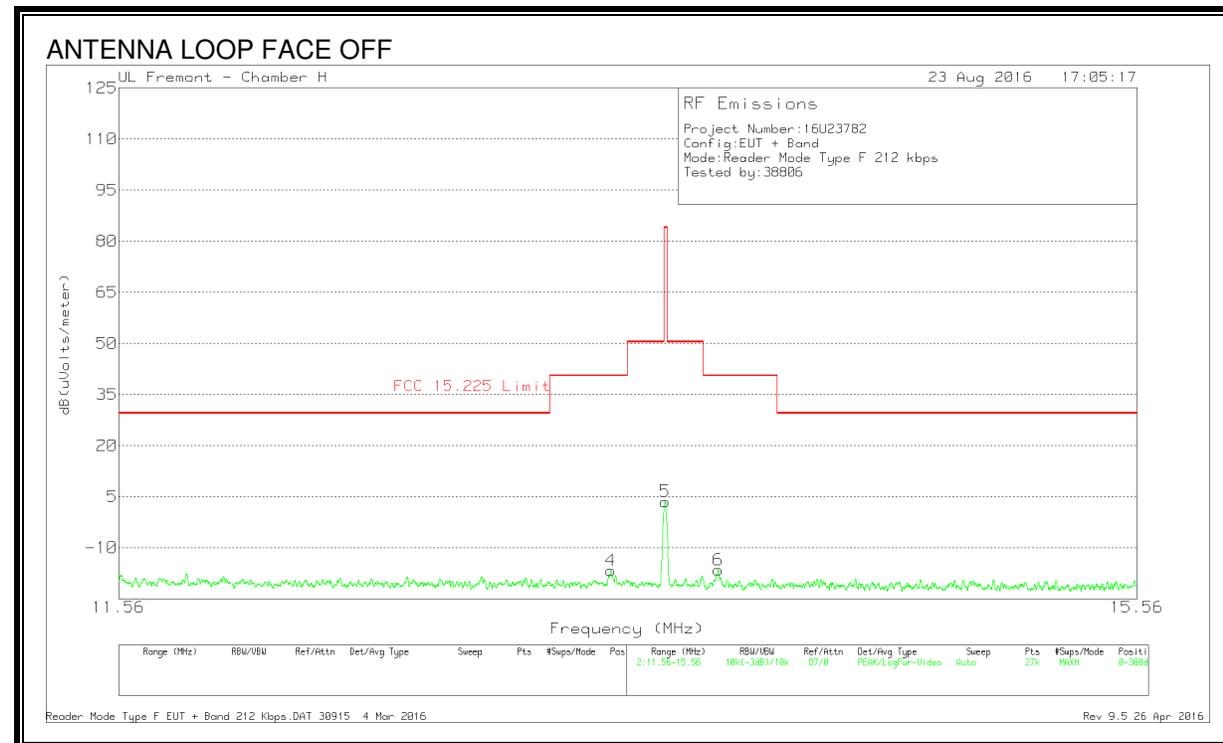
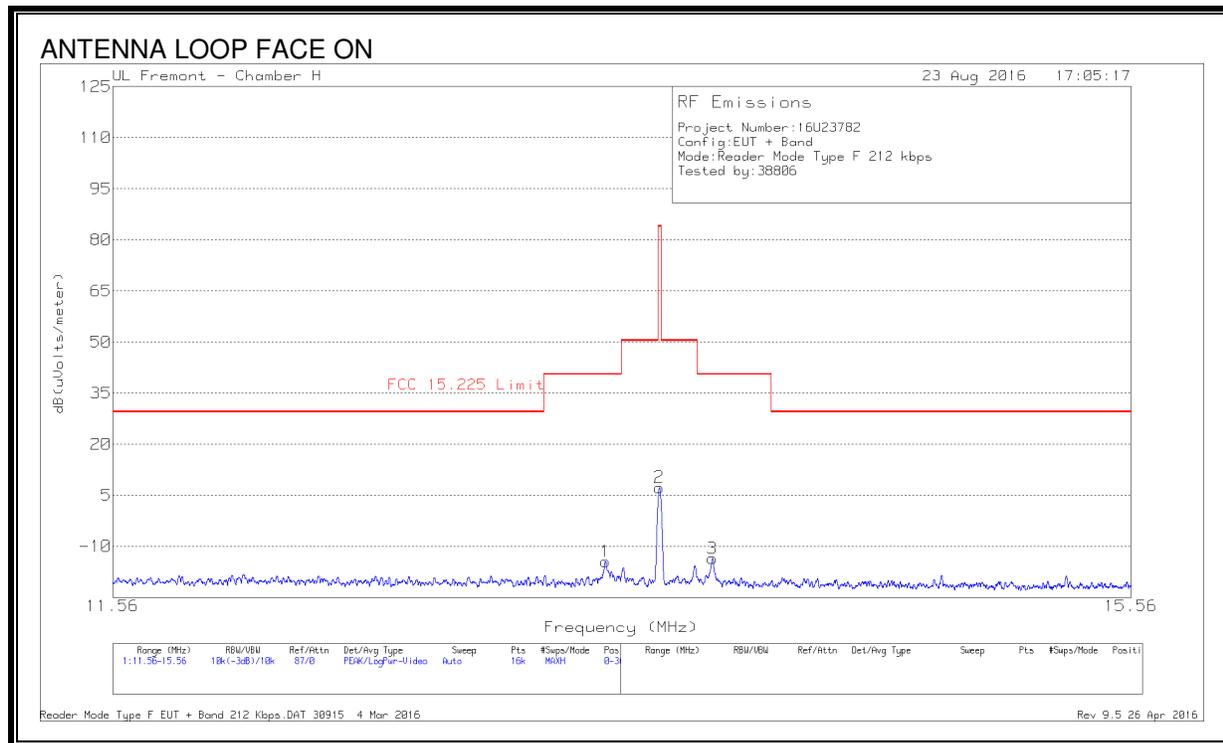


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	2.06342	23.02	Pk	10.8	.2	-40	-5.98	29.54	-35.52	-	-	0-360
2	9.85006	11.74	Pk	10.8	.4	-40	-17.06	29.54	-46.6	-	-	0-360
3	13.13658	14.58	Pk	10.7	.6	-40	-14.12	29.54	-43.66	-	-	0-360
4	3.45516	19.35	Pk	10.8	.3	-40	-9.55	29.54	-39.09	-	-	0-360
5	9.58806	11.94	Pk	10.8	.5	-40	-16.76	29.54	-46.3	-	-	0-360
6	23.04857	10.74	Pk	9.6	.7	-40	-18.96	29.54	-48.5	-	-	0-360

Pk - Peak detector

**212Kbps FUNDAMENTAL**

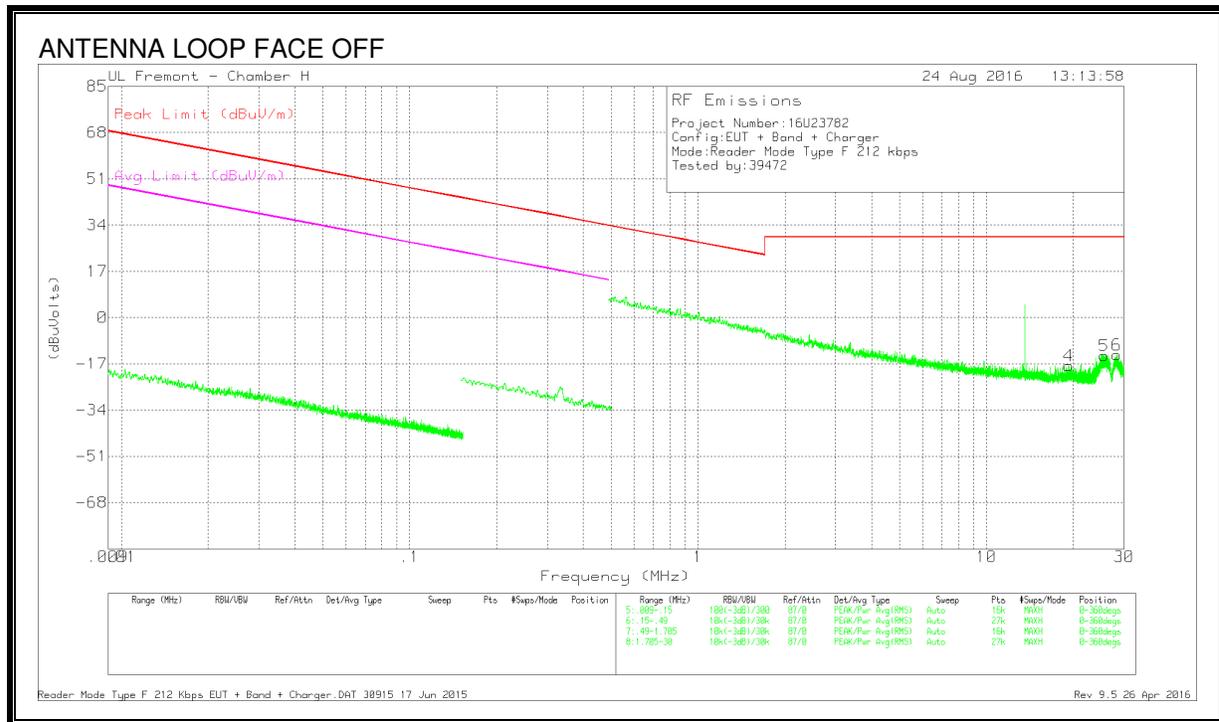
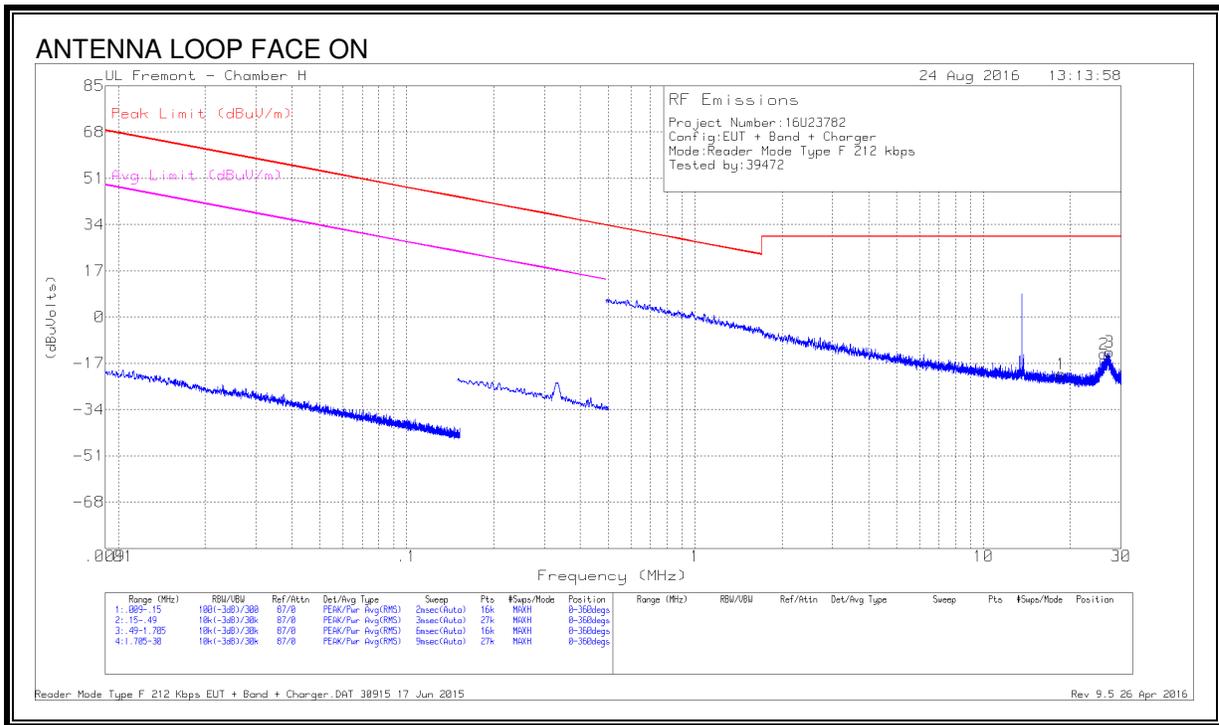


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	13.34763	14.23	Pk	10.7	.6	-40	-14.47	40.51	-54.98	0-360
2	13.56025	36.12	Pk	10.6	.6	-40	7.32	84	-76.68	0-360
3	13.77125	15.43	Pk	10.6	.5	-40	-13.47	40.51	-53.98	0-360
4	13.34599	11.96	Pk	10.7	.6	-40	-16.74	40.51	-57.25	0-360
5	13.55822	32.4	Pk	10.6	.6	-40	3.6	84	-80.4	0-360
6	13.77001	12.46	Pk	10.6	.5	-40	-16.44	40.51	-56.95	0-360

Pk - Peak detector

**SPURIOUS EMISSION**



**DATA**

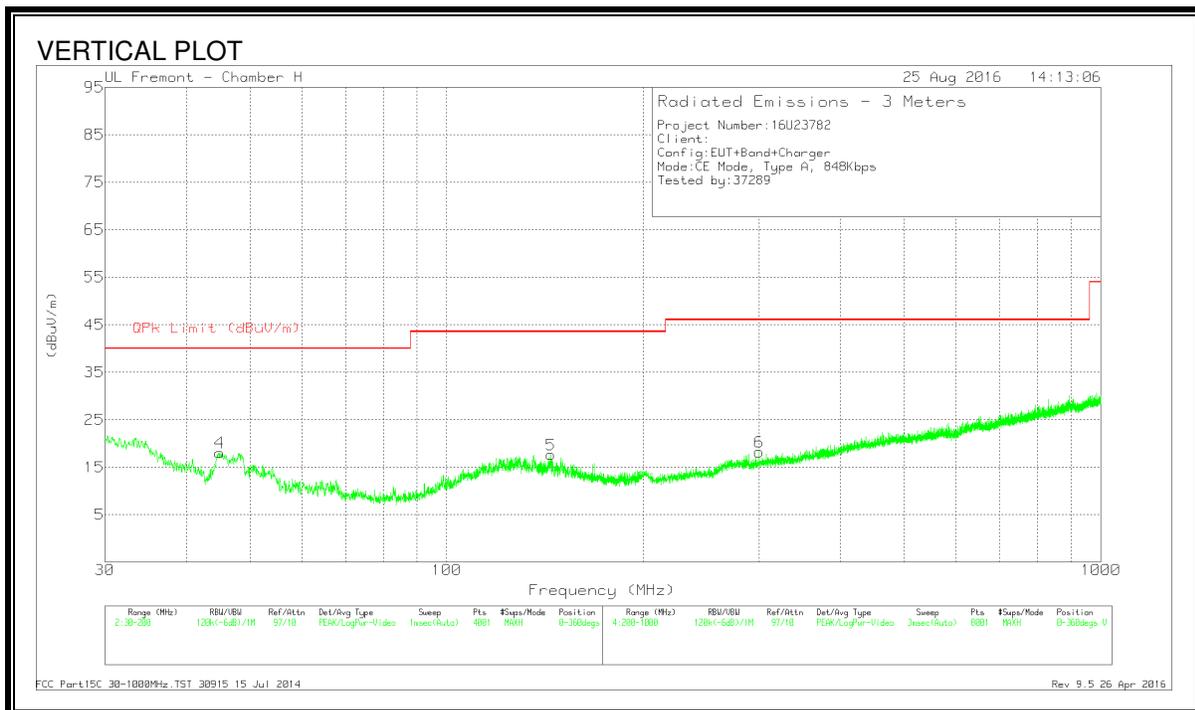
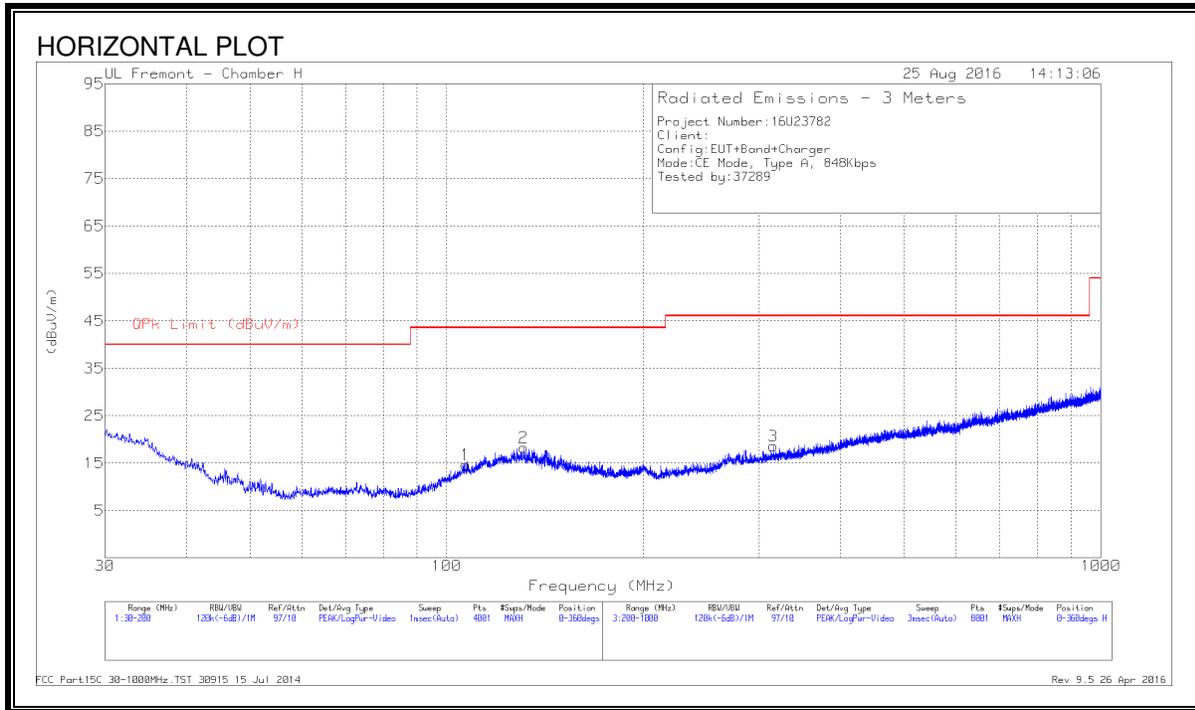
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	18.6171	8.25	Pk	10.2	.6	-40	-20.95	29.54	-50.49	-	-	0-360
2	26.23134	16.72	Pk	8.9	.8	-40	-13.58	29.54	-43.12	-	-	0-360
3	27.34956	17.78	Pk	8.6	.8	-40	-12.82	29.54	-42.36	-	-	0-360
4	19.26843	11.41	Pk	10.2	.7	-40	-17.69	29.54	-47.23	-	-	0-360
5	25.55276	16.19	Pk	9.1	.7	-40	-14.01	29.54	-43.55	-	-	0-360
6	28.24455	17.1	Pk	8.4	.8	-40	-13.7	29.54	-43.24	-	-	0-360

Pk - Peak detector

## 8.2. TX SPURIOUS EMISSION 30 TO 1000 MHz

### 8.2.1. CE MODE

#### TYPE A 848Kbps



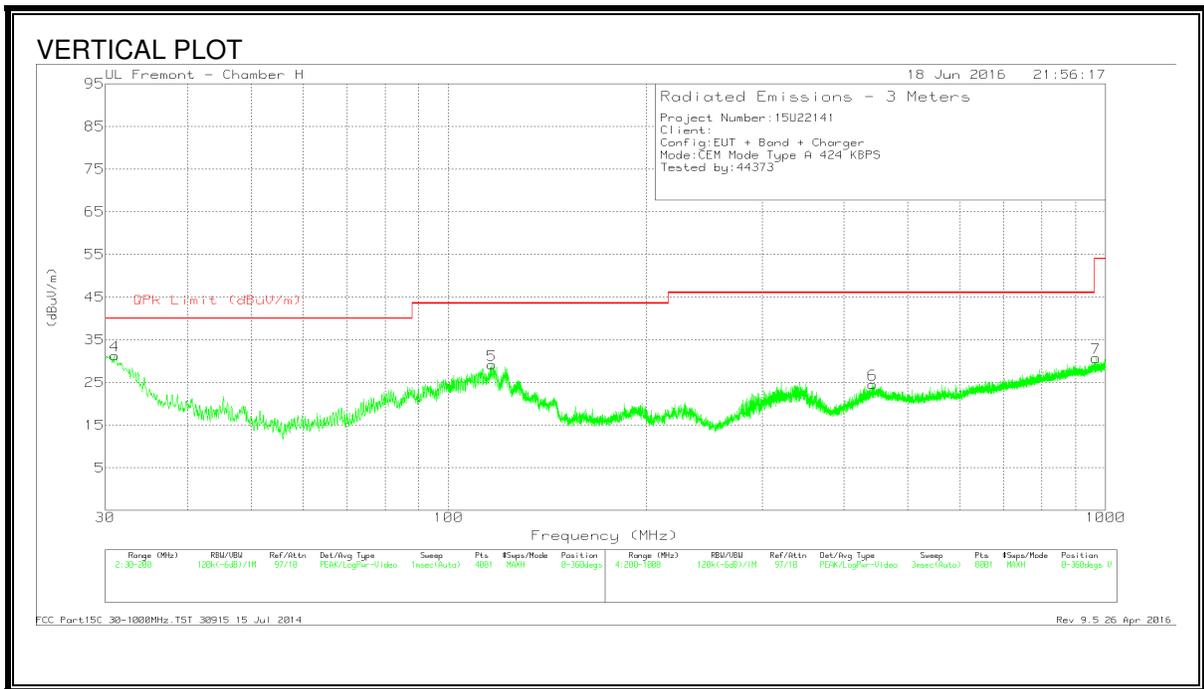
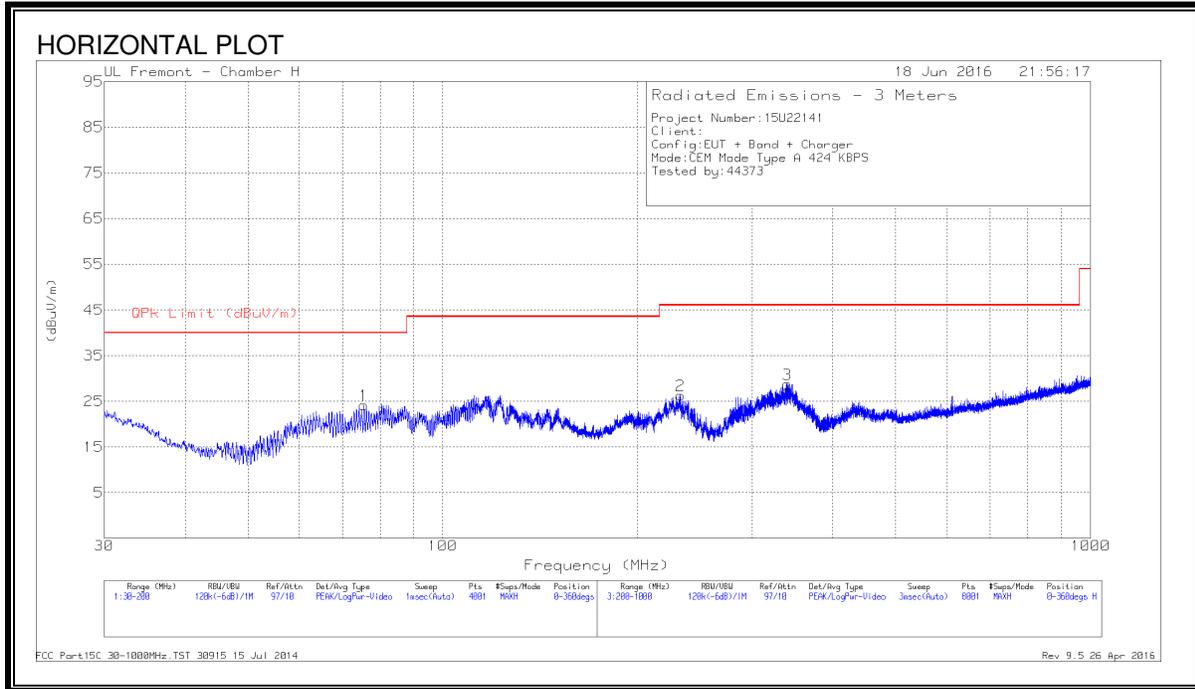
**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AFT407 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	106.84	29.31	Pk	15.9	-30.5	14.71	43.52	-28.81	0-360	299	H
3	315.7	29.92	Pk	17.7	-29	18.62	46.02	-27.4	0-360	399	H
2	* 131.0225	30.93	Pk	17.6	-30.2	18.33	43.52	-25.19	0-360	299	H
4	44.96	34.88	Pk	14.3	-31.1	18.08	40	-21.92	0-360	100	V
5	144.2825	31.27	Pk	16.6	-30.2	17.67	43.52	-25.85	0-360	100	V
6	300.3	30.03	Pk	17.3	-29.1	18.23	46.02	-27.79	0-360	399	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

**TYPE A 424Kbps**



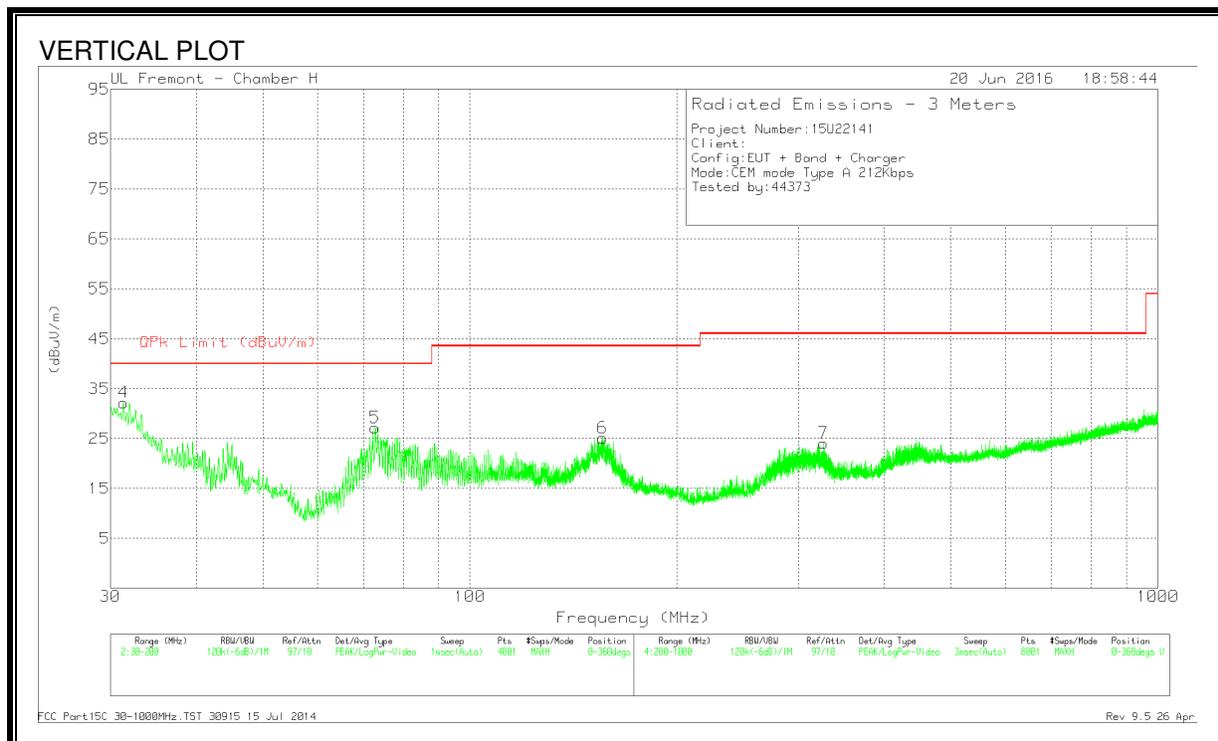
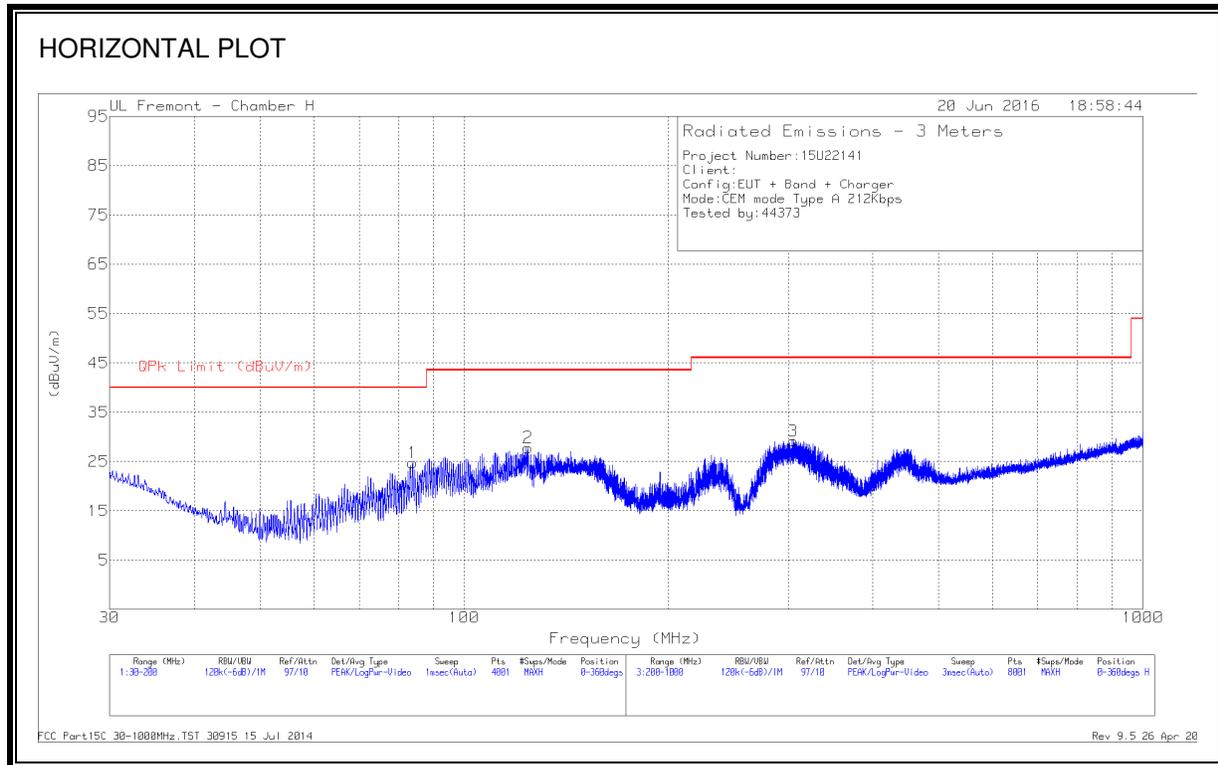
**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	75.5175	43.18	Pk	11.8	-30.8	24.18	40	-15.82	0-360	199	H
2	232.8	40.62	Pk	15.2	-29.5	26.32	46.02	-19.7	0-360	100	H
3	340.6	39.73	Pk	17.9	-28.9	28.73	46.02	-17.29	0-360	199	H
4	31.02	38.03	Pk	24.6	-31.3	31.33	40	-8.67	0-360	100	V
5	* 116.275	42.12	Pk	17.4	-30.4	29.12	43.52	-14.4	0-360	100	V
6	442.1	32.58	Pk	20.5	-28.5	24.58	46.02	-21.44	0-360	201	V
7	* 967.4	29.33	Pk	27	-25.6	30.73	53.97	-23.24	0-360	201	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

**212Kbps**



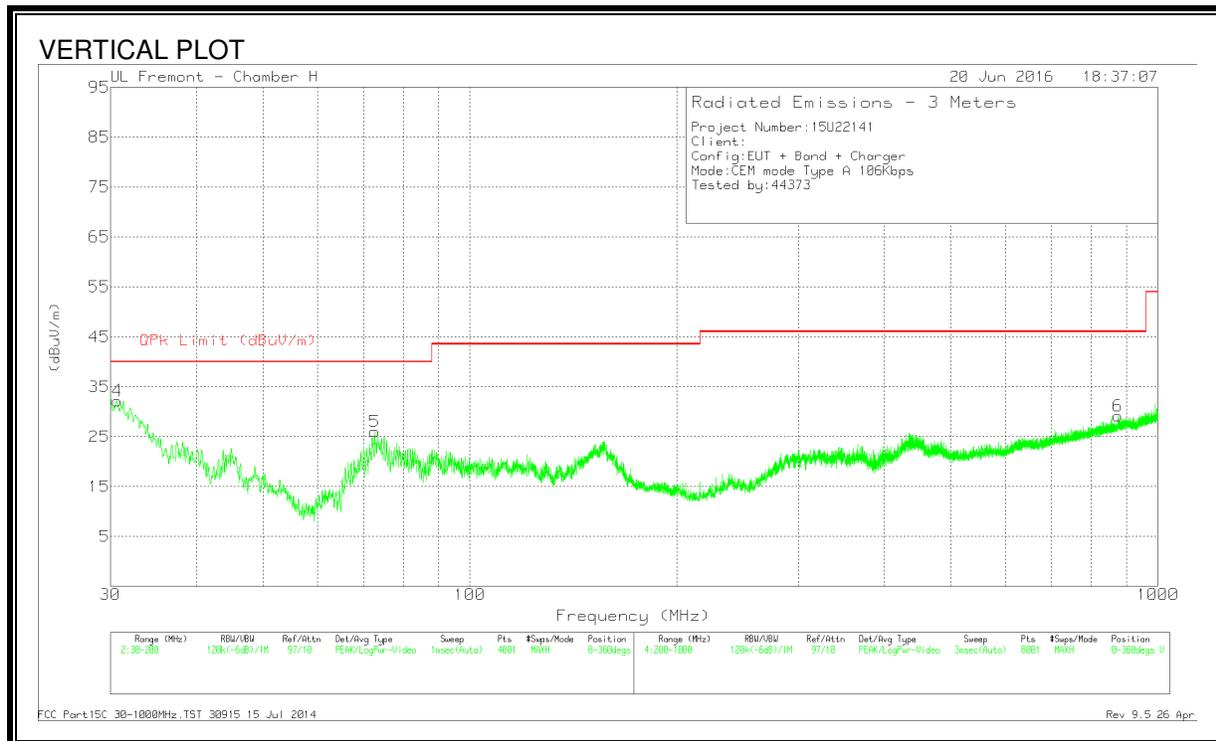
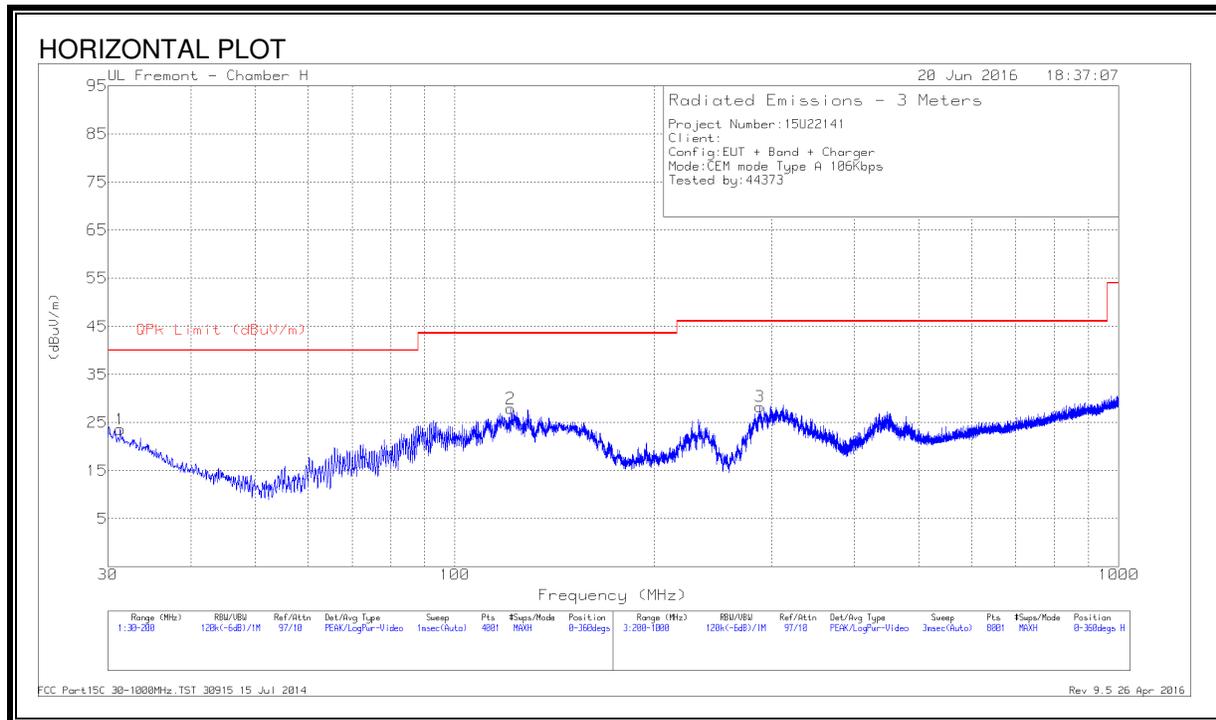
**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	83.9325	44.18	Pk	11.2	-30.6	24.78	40	-15.22	0-360	299	H
2	* 124.095	40.3	Pk	17.8	-30.3	27.8	43.52	-15.72	0-360	199	H
3	305.2	40.64	Pk	17.5	-29	29.14	46.02	-16.88	0-360	100	H
4	31.36	39.21	Pk	24.3	-31.3	32.21	40	-7.79	0-360	100	V
5	72.7975	46	Pk	12	-30.8	27.2	40	-12.8	0-360	100	V
6	155.7575	39	Pk	16.2	-30.1	25.1	43.52	-18.42	0-360	100	V
7	* 326.2	35.26	Pk	17.8	-29	24.06	46.02	-21.96	0-360	201	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

**106Kbps**



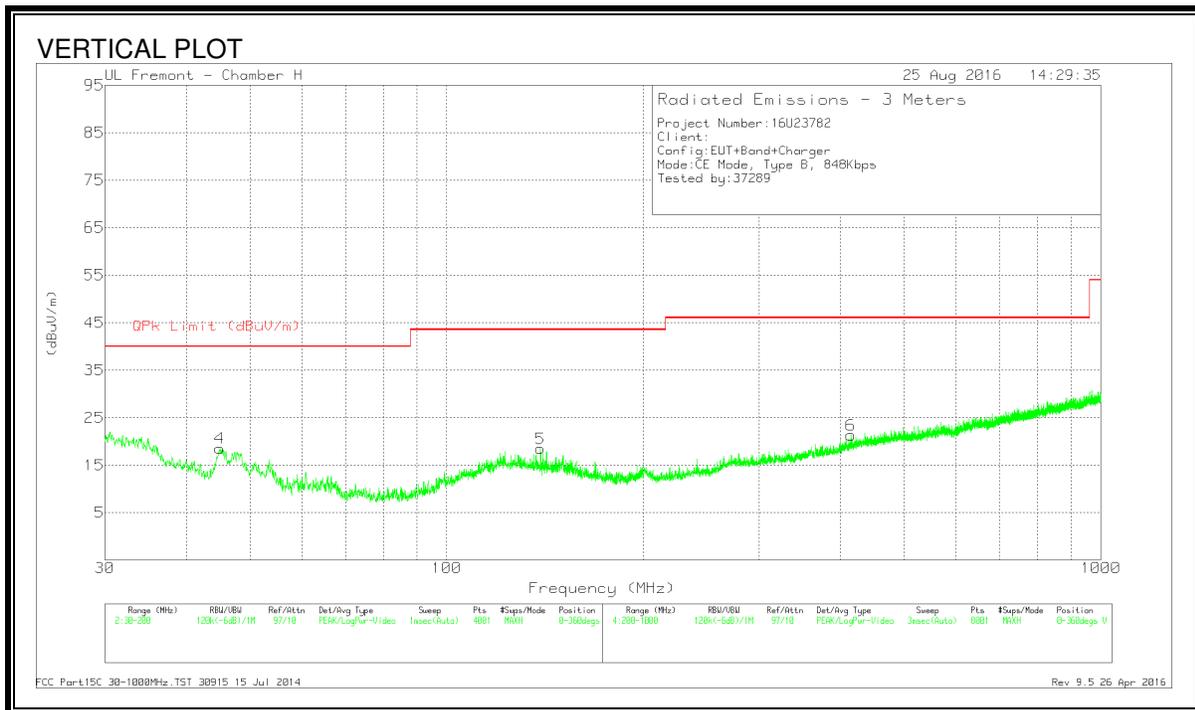
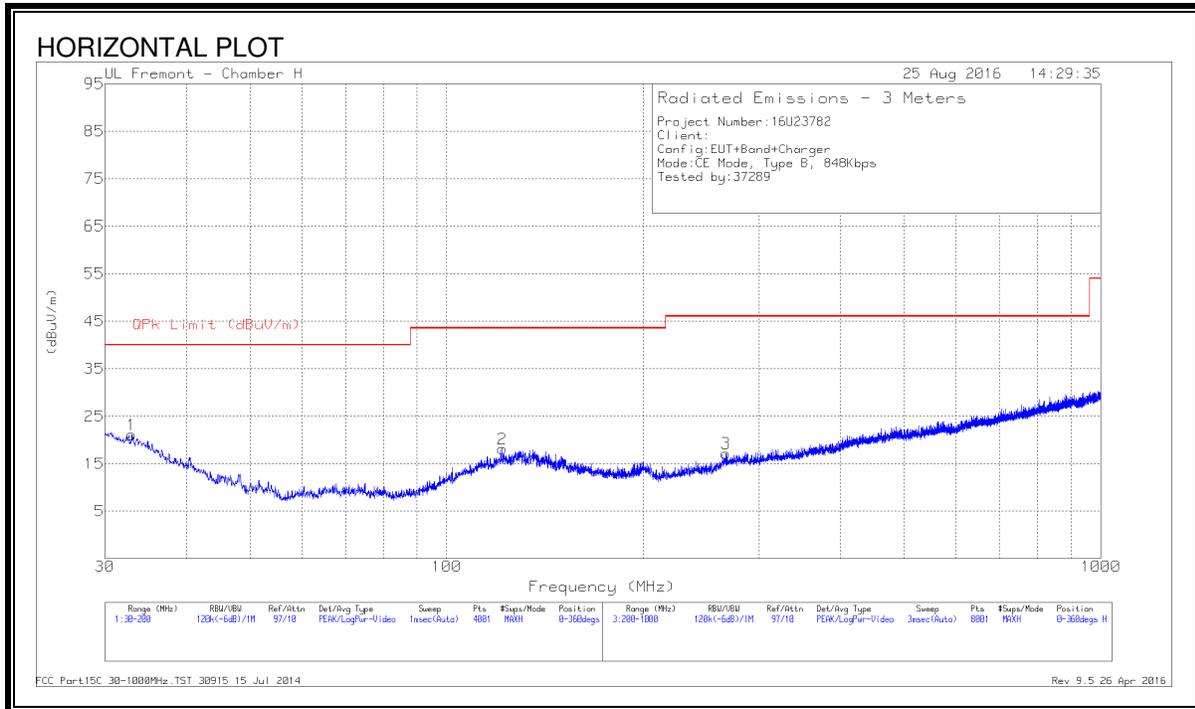
**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	31.3175	30.6	Pk	24.3	-31.3	23.6	40	-16.4	0-360	299	H
2	* 121.3325	40.43	Pk	17.8	-30.3	27.93	43.52	-15.59	0-360	199	H
3	287.9	40.24	Pk	17.2	-29.1	28.34	46.02	-17.68	0-360	100	H
4	30.7225	38.76	Pk	24.7	-31.3	32.16	40	-7.84	0-360	100	V
5	72.67	44.81	Pk	12	-30.8	26.01	40	-13.99	0-360	100	V
6	874.8	29.85	Pk	26	-26.7	29.15	46.02	-16.87	0-360	101	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

**TYPE B 848Kbps**



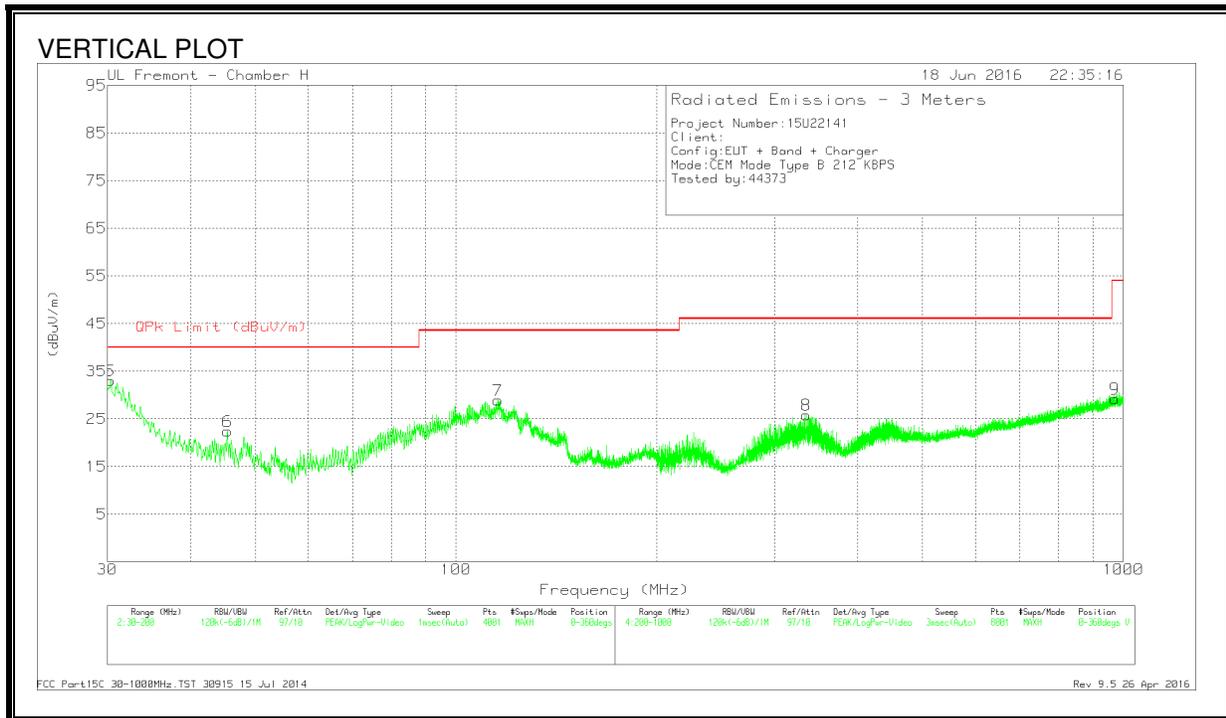
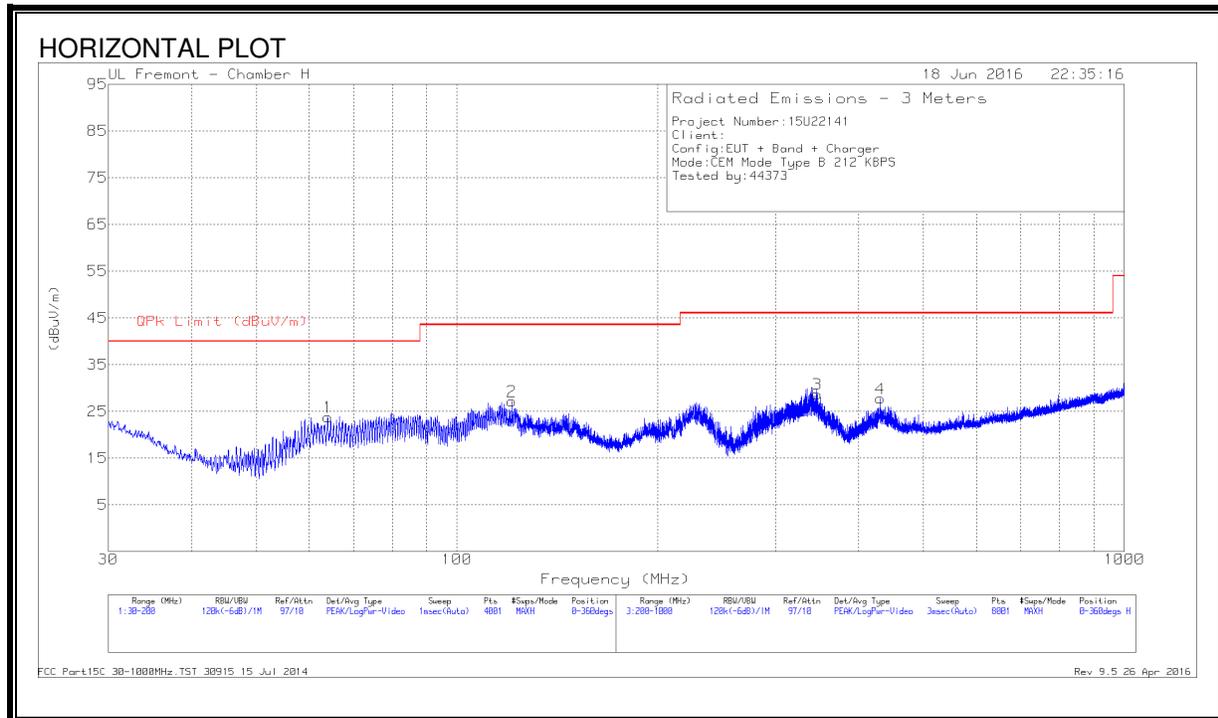
**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AFT407 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	32.975	29.31	Pk	23.1	-31.3	21.11	40	-18.89	0-360	399	H
2	* 121.63	30.64	Pk	17.8	-30.3	18.14	43.52	-25.38	0-360	199	H
3	* 267	29.51	Pk	17	-29.3	17.21	46.02	-28.81	0-360	299	H
4	44.96	35.39	Pk	14.3	-31.1	18.59	40	-21.41	0-360	101	V
5	139.055	31.74	Pk	16.9	-30.1	18.54	43.52	-24.98	0-360	101	V
6	414.7	29.86	Pk	20.1	-28.6	21.36	46.02	-24.66	0-360	301	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

**TYPE B 424Kbps**

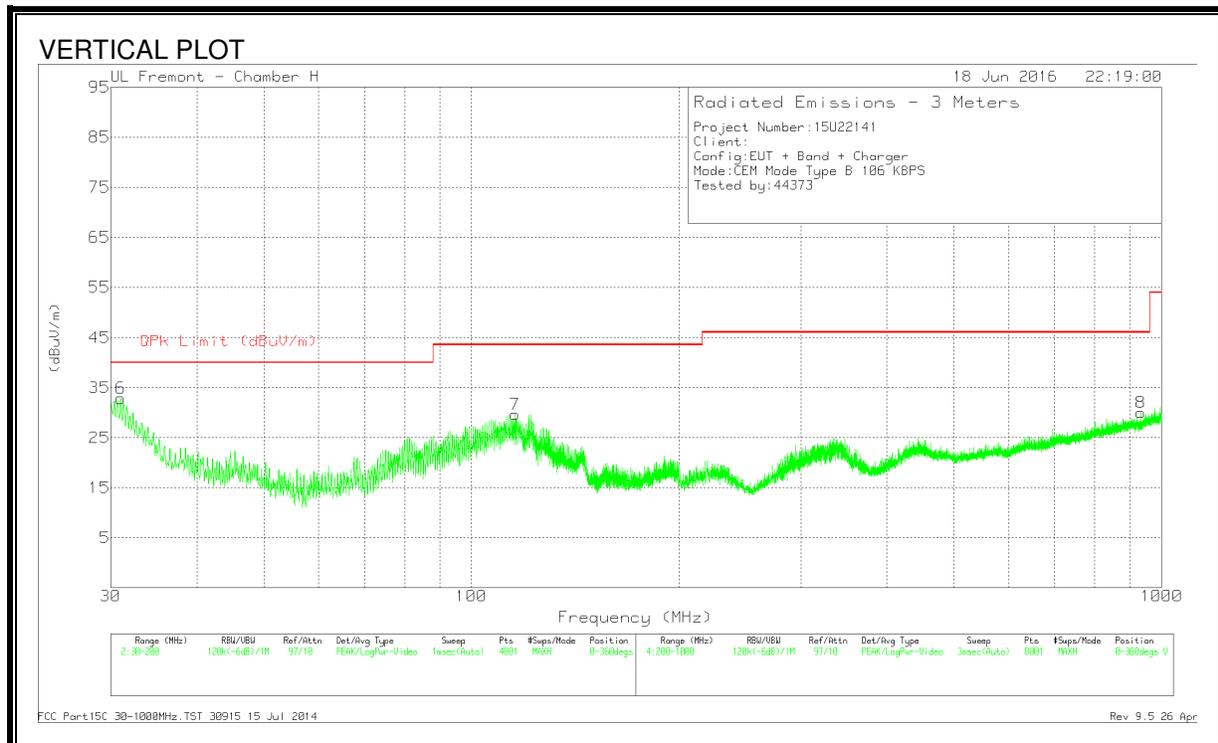
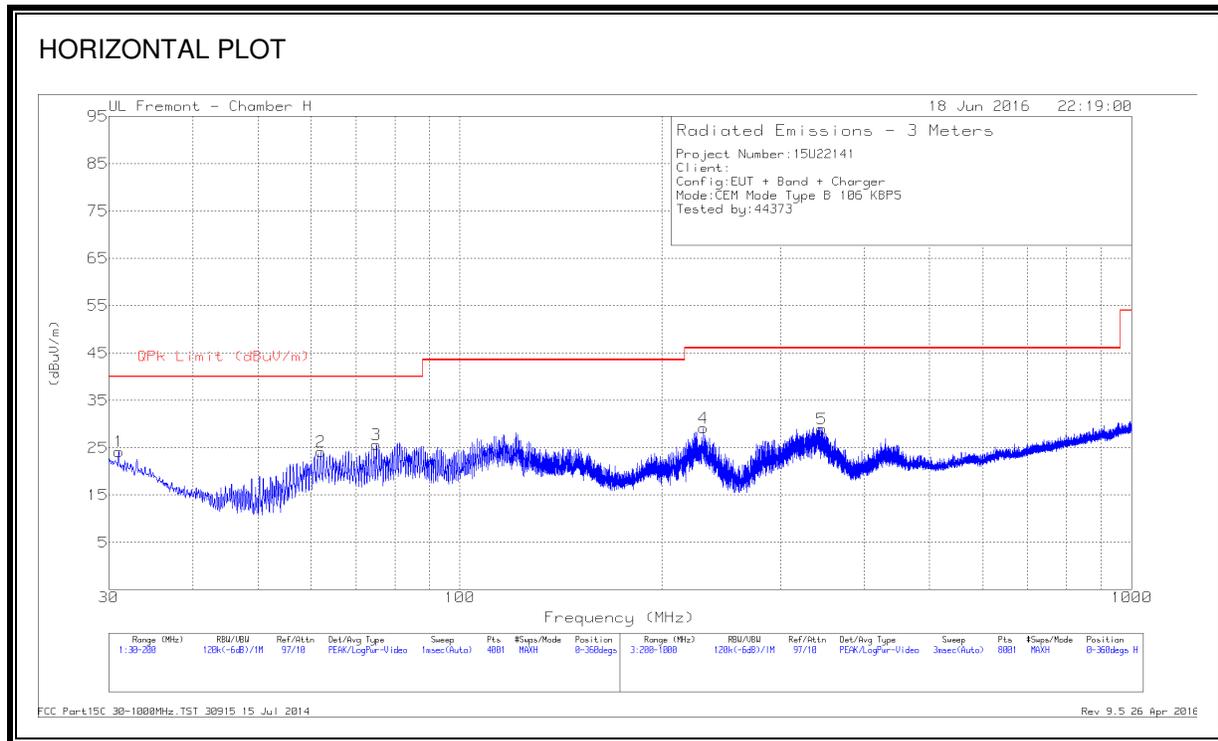


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	64	42.93	Pk	11.8	-30.9	23.83	40	-16.17	0-360	399	H
2	* 120.8225	39.69	Pk	17.8	-30.3	27.19	43.52	-16.33	0-360	199	H
3	346.4	39.41	Pk	18.2	-28.9	28.71	46.02	-17.31	0-360	199	H
4	431	35.86	Pk	20.5	-28.6	27.76	46.02	-18.26	0-360	199	H
5	30.34	39.4	Pk	24.9	-31.3	33	40	-7	0-360	100	V
6	45.4275	39.39	Pk	14	-31	22.39	40	-17.61	0-360	100	V
7	* 115.51	41.89	Pk	17.4	-30.4	28.89	43.52	-14.63	0-360	100	V
8	* 334.7	36.8	Pk	17.9	-28.9	25.8	46.02	-20.22	0-360	201	V
9	* 971.4	27.77	Pk	27	-25.6	29.17	53.97	-24.8	0-360	201	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 Pk - Peak detector

**212Kbps**

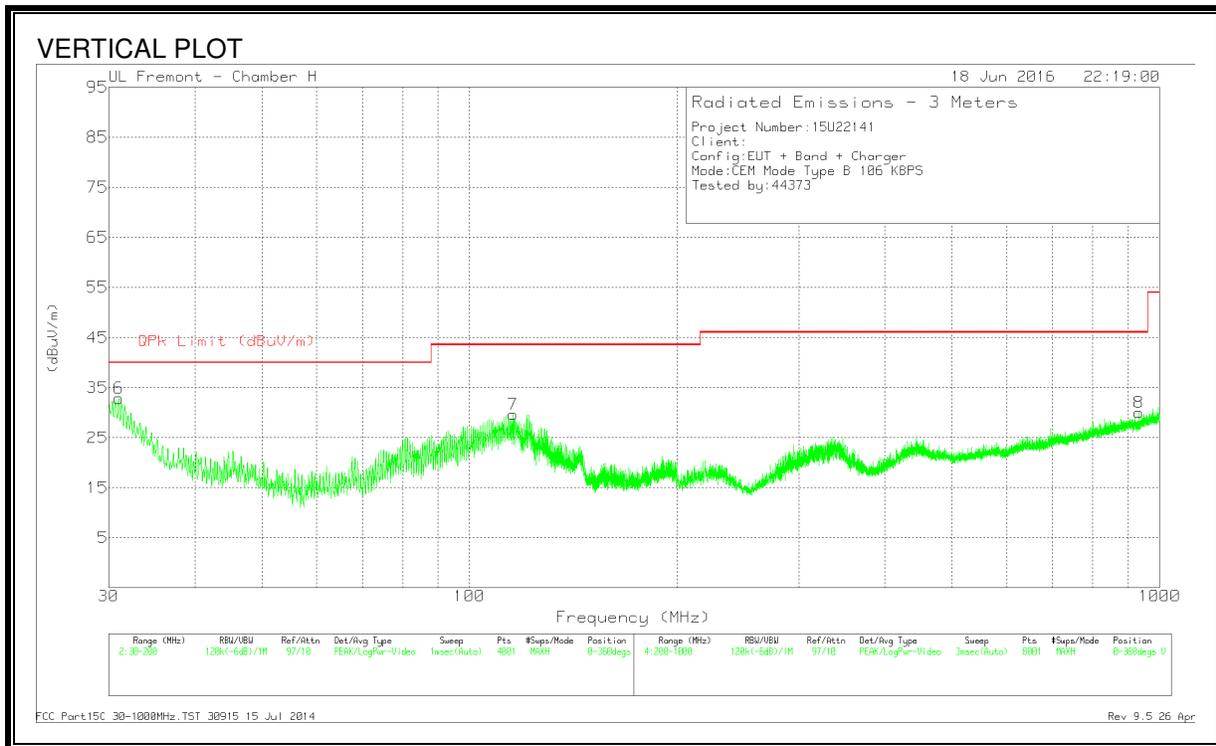
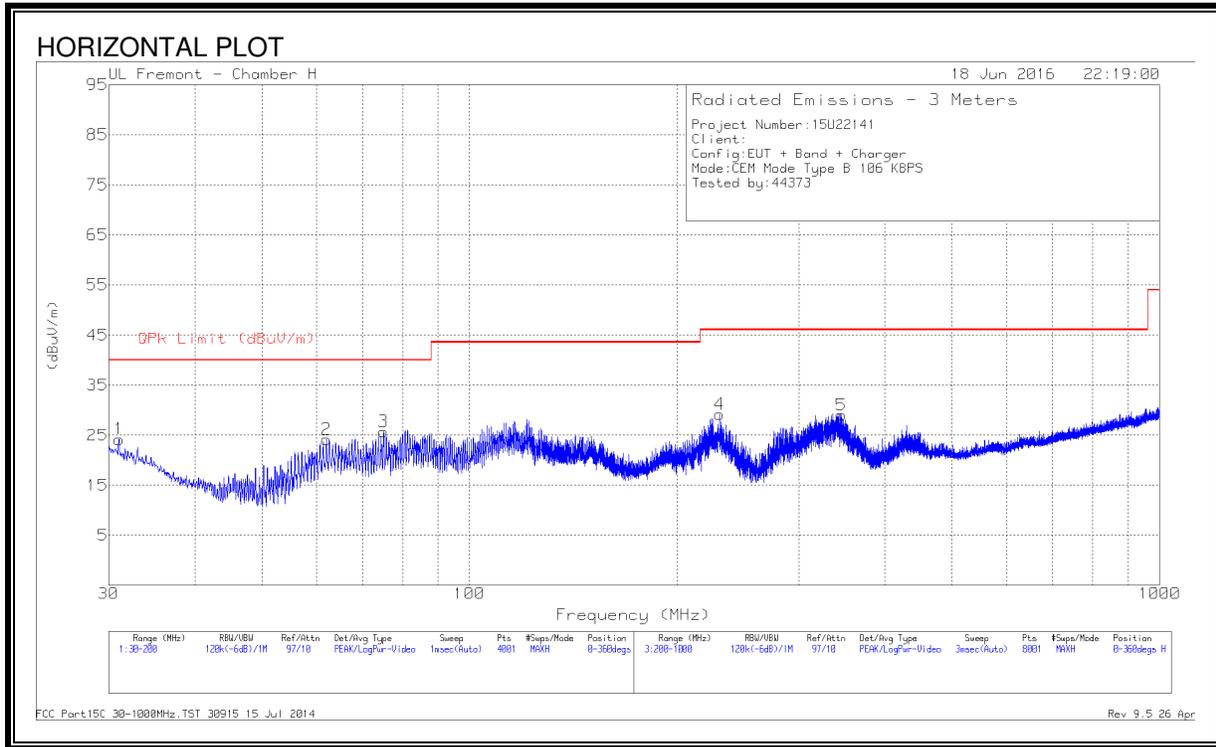


**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	31.0625	30.91	Pk	24.6	-31.3	24.21	40	-15.79	0-360	299	H
2	62.045	43.47	Pk	11.6	-30.9	24.17	40	-15.83	0-360	399	H
3	* 75.0925	44.5	Pk	11.9	-30.7	25.7	40	-14.3	0-360	299	H
4	230.2	43.67	Pk	15	-29.5	29.17	46.02	-16.85	0-360	100	H
5	345.8	39.8	Pk	18.1	-28.9	29	46.02	-17.02	0-360	199	H
6	31.02	39.54	Pk	24.6	-31.3	32.84	40	-7.16	0-360	100	V
7	* 115.595	42.63	Pk	17.4	-30.4	29.63	43.52	-13.89	0-360	100	V
8	933.9	29.92	Pk	26.2	-26.1	30.02	46.02	-16	0-360	201	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 Pk - Peak detector

**106Kbps**



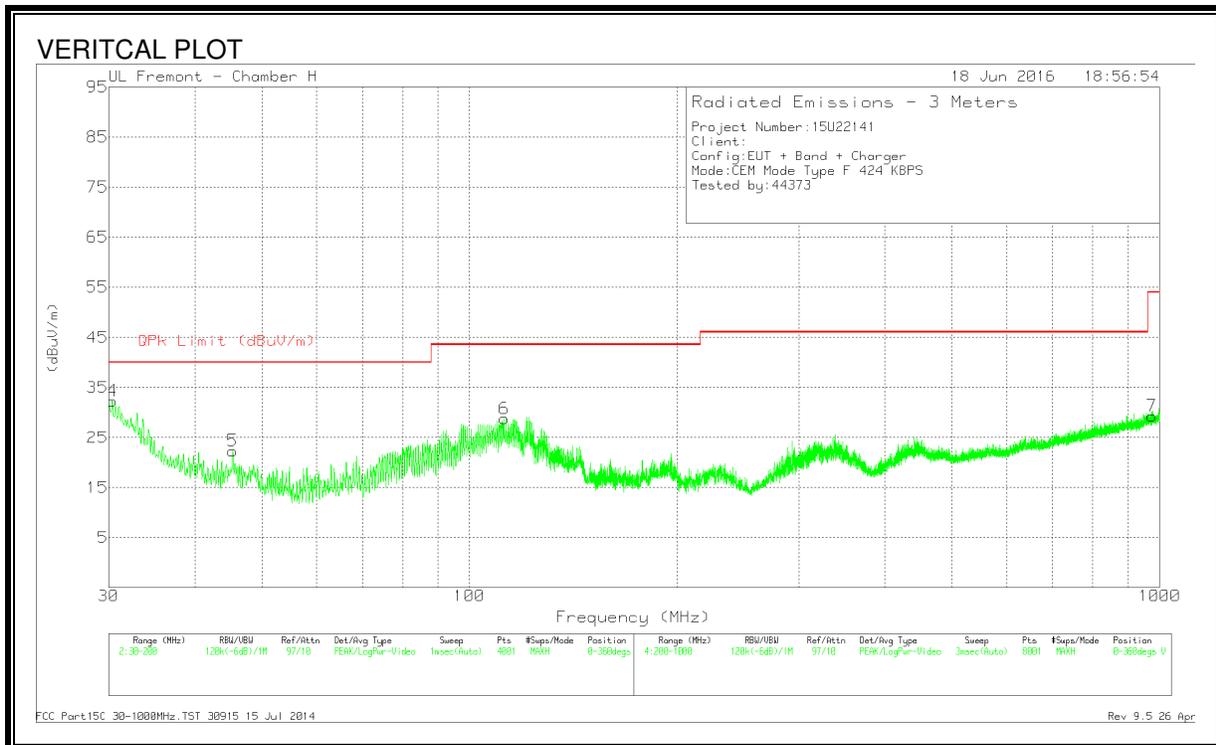
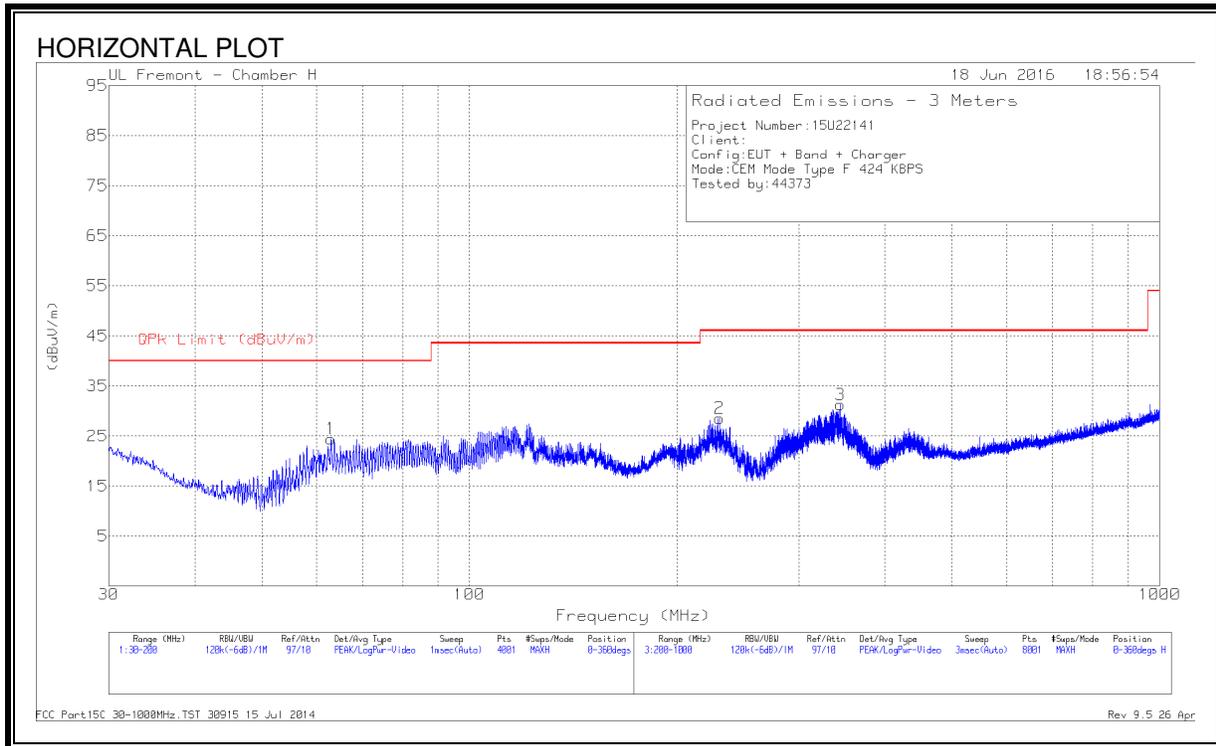
**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	31.0625	30.91	Pk	24.6	-31.3	24.21	40	-15.79	0-360	299	H
2	62.045	43.47	Pk	11.6	-30.9	24.17	40	-15.83	0-360	399	H
3	* 75.0925	44.5	Pk	11.9	-30.7	25.7	40	-14.3	0-360	299	H
4	230.2	43.67	Pk	15	-29.5	29.17	46.02	-16.85	0-360	100	H
5	345.8	39.8	Pk	18.1	-28.9	29	46.02	-17.02	0-360	199	H
6	31.02	39.54	Pk	24.6	-31.3	32.84	40	-7.16	0-360	100	V
7	* 115.595	42.63	Pk	17.4	-30.4	29.63	43.52	-13.89	0-360	100	V
8	933.9	29.92	Pk	26.2	-26.1	30.02	46.02	-16	0-360	201	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 Pk - Peak detector

**TYPE F**

**424Kbps**



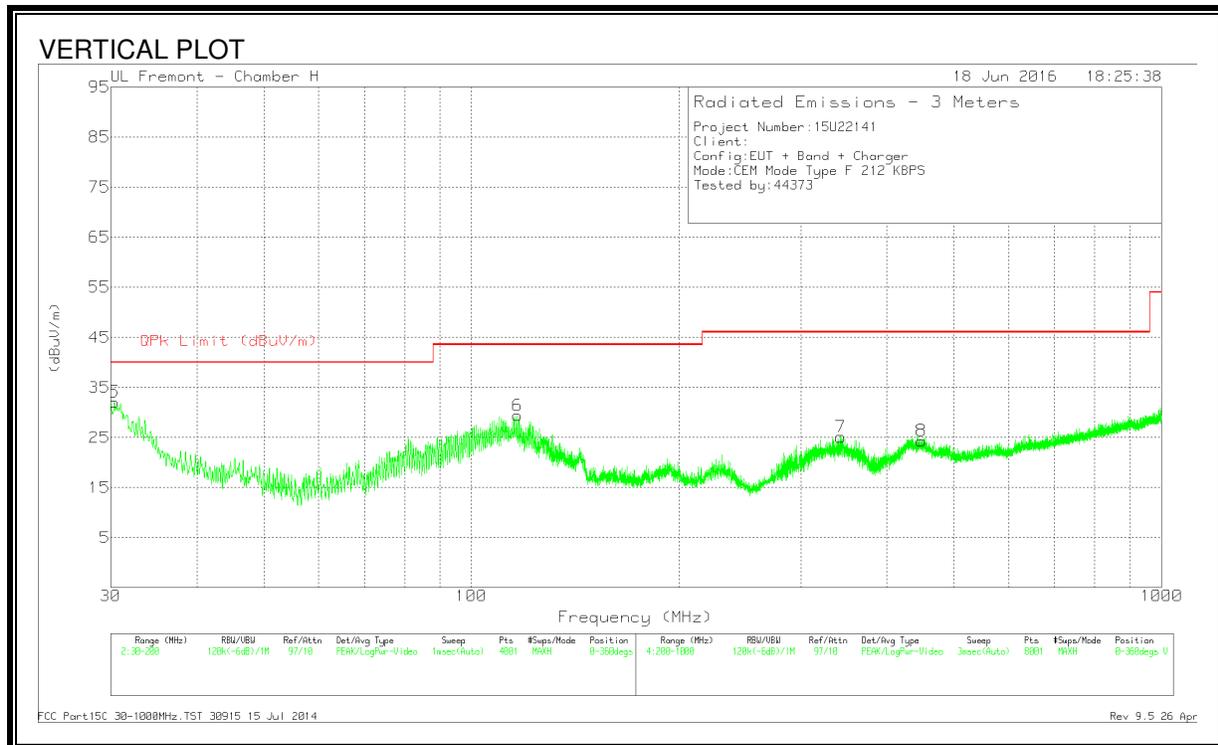
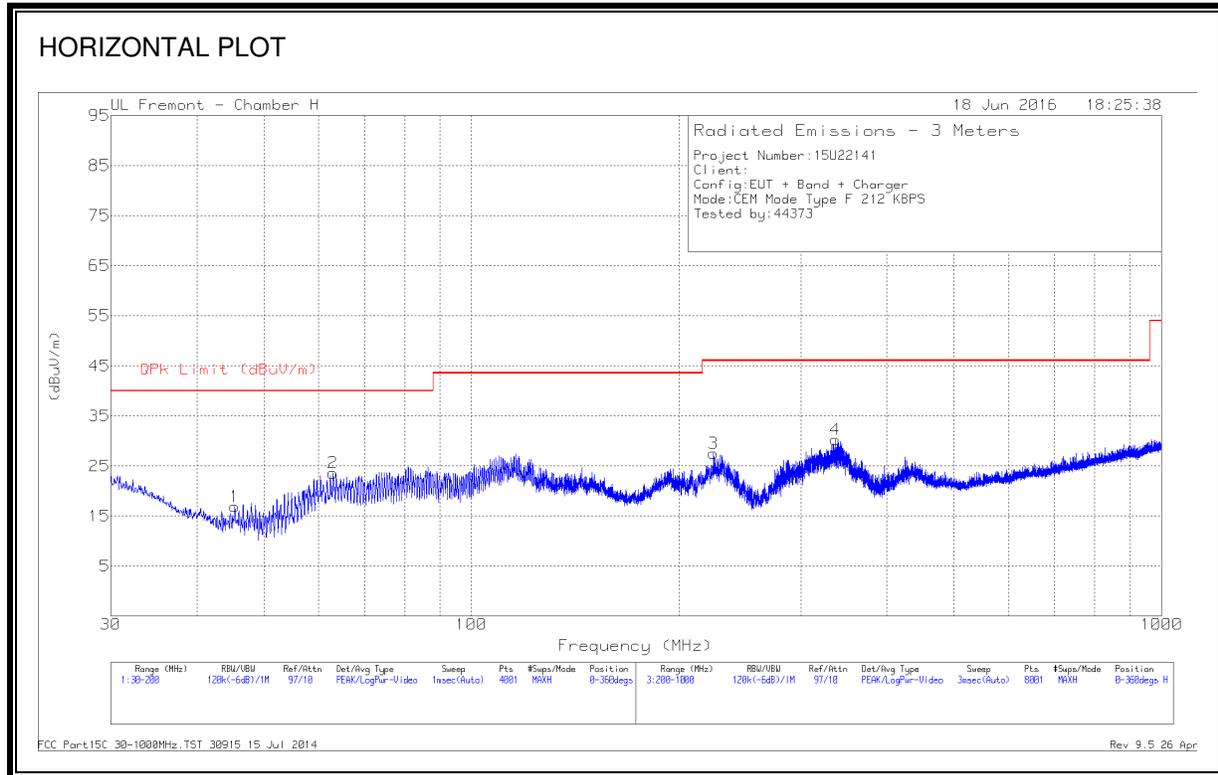
**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	63.0225	43.65	Pk	11.7	-30.9	24.45	40	-15.55	0-360	299	H
2	230.2	43.07	Pk	15	-29.5	28.57	46.02	-17.45	0-360	100	H
3	344.5	42.06	Pk	18.1	-28.9	31.26	46.02	-14.76	0-360	199	H
4	30.3825	38.79	Pk	24.8	-31.3	32.29	40	-7.71	0-360	100	V
5	45.385	39.21	Pk	14.1	-31	22.31	40	-17.69	0-360	100	V
6	* 112.3225	42.28	Pk	16.9	-30.4	28.78	43.52	-14.74	0-360	100	V
7	* 974.6	27.92	Pk	27	-25.6	29.32	53.97	-24.65	0-360	399	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

**212Kbps**



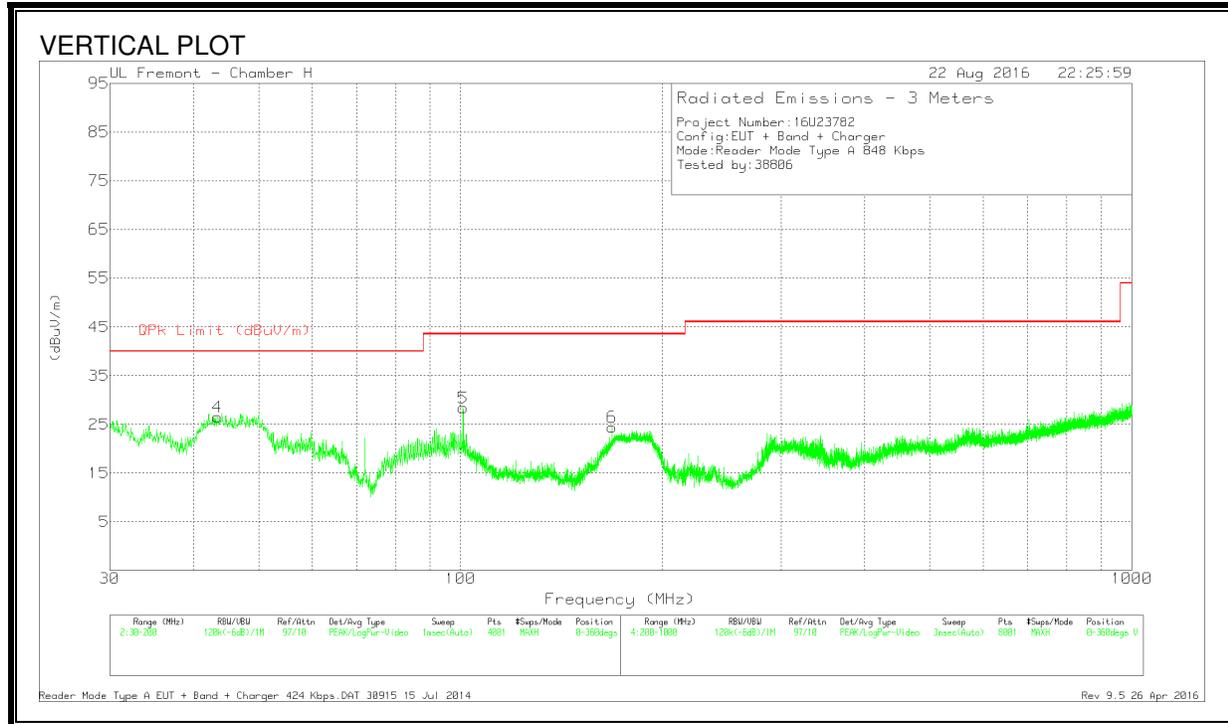
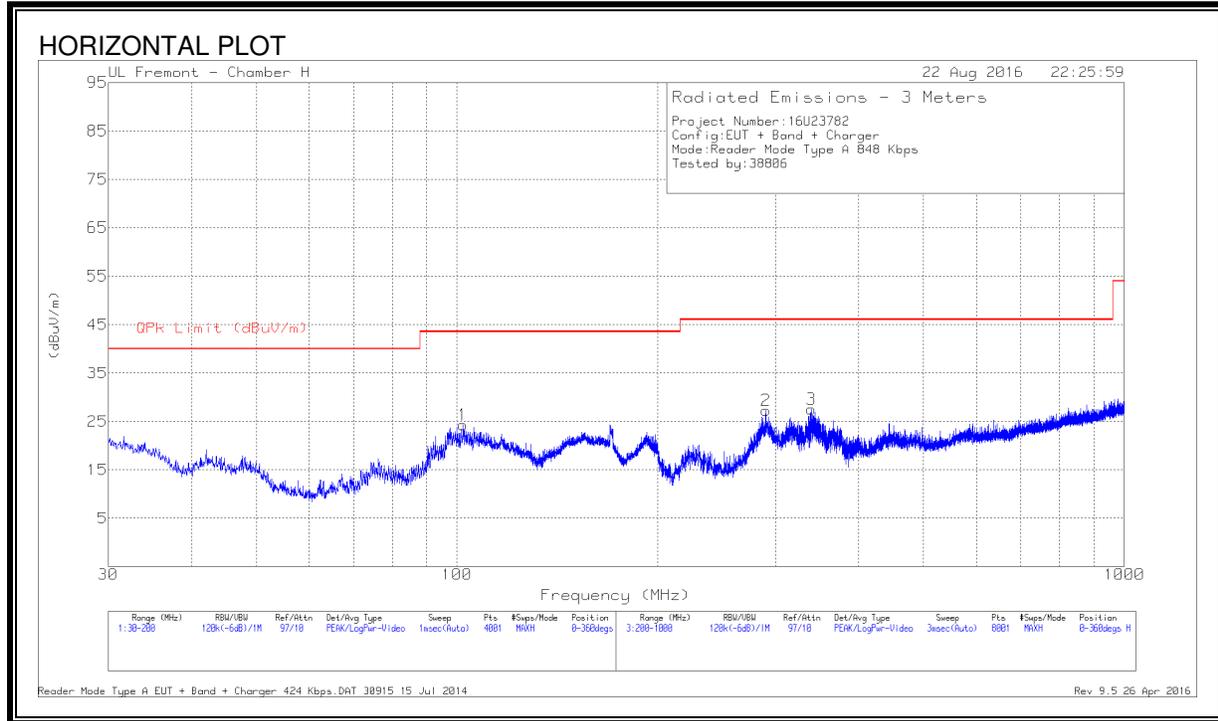
**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	45.385	33.81	Pk	14.1	-31	16.91	40	-23.09	0-360	399	H
2	63.0225	42.8	Pk	11.7	-30.9	23.6	40	-16.4	0-360	399	H
3	224.3	42.29	Pk	14.7	-29.5	27.49	46.02	-18.53	0-360	100	H
4	337	41.34	Pk	17.9	-29	30.24	46.02	-15.78	0-360	199	H
5	30.3825	38.57	Pk	24.8	-31.3	32.07	40	-7.93	0-360	100	V
6	* 116.5725	42.28	Pk	17.5	-30.4	29.38	43.52	-14.14	0-360	100	V
7	342.9	36.01	Pk	18	-28.9	25.11	46.02	-20.91	0-360	101	V
8	448.9	32.13	Pk	20.7	-28.5	24.33	46.02	-21.69	0-360	101	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 Pk - Peak detector

### 8.2.2. READER MODE

#### TYPE A 848Kbps



**DATA**

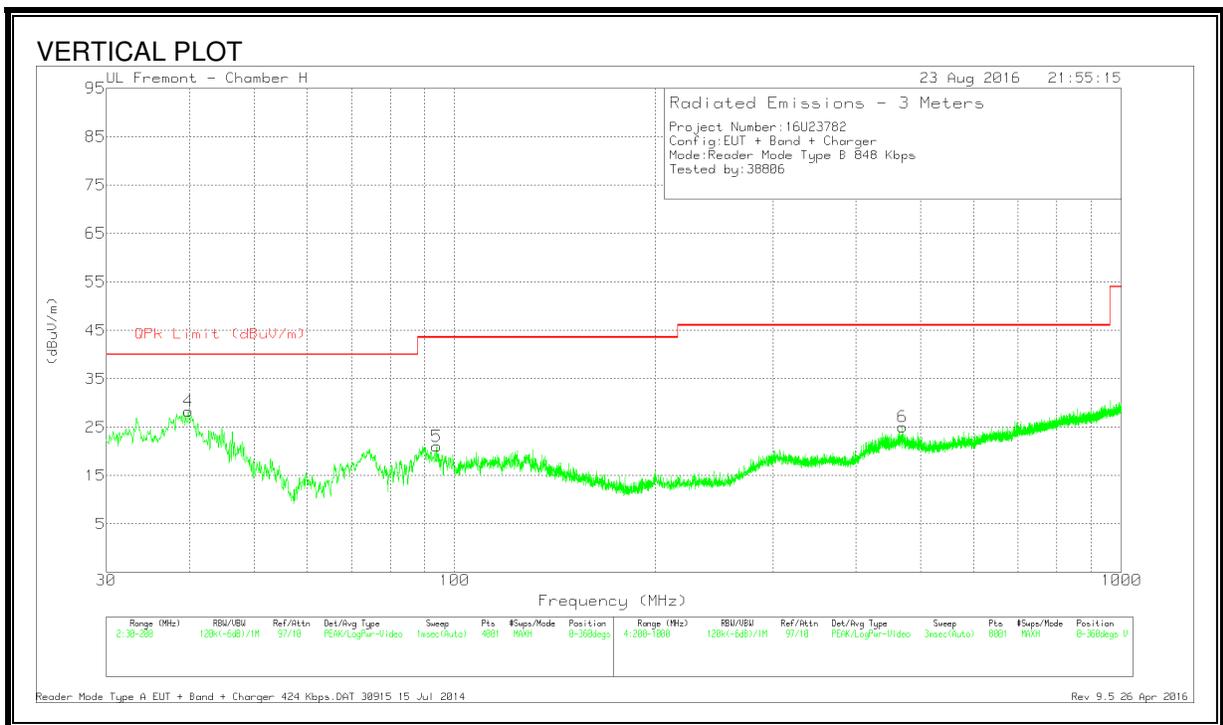
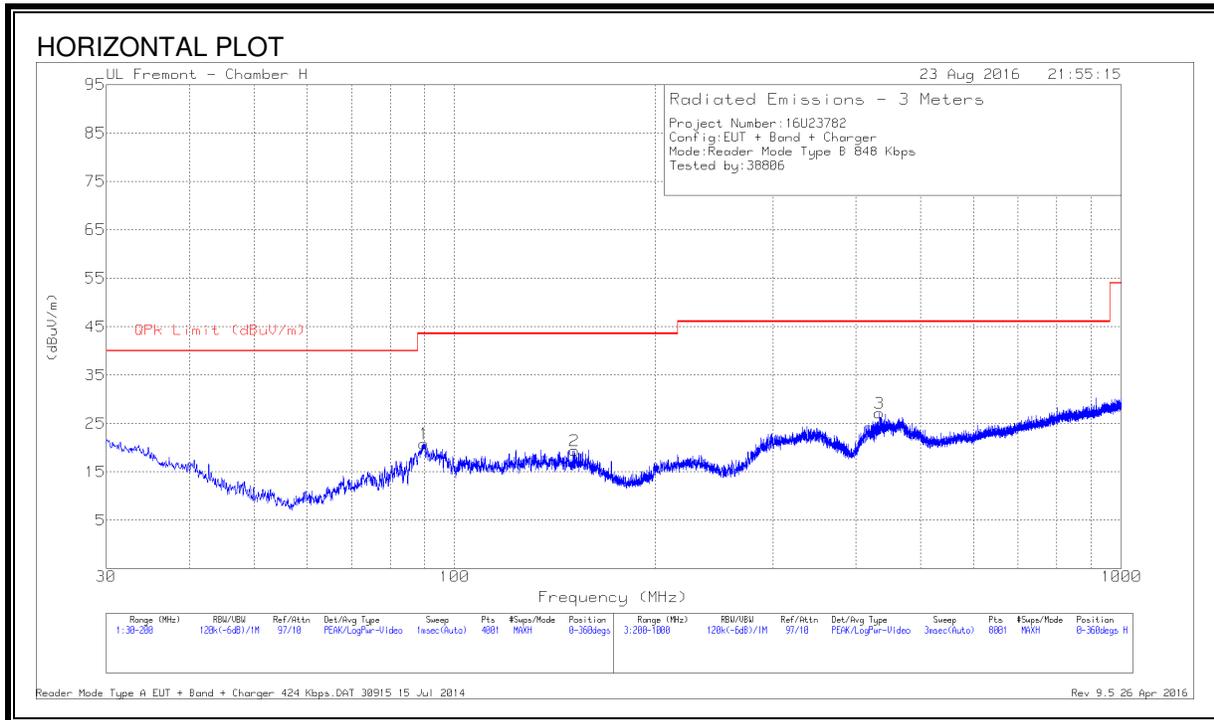
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T185 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	102.08	40.72	Pk	14.6	-31	24.32	43.52	-19.2	0-360	299	H
2	290.6	39.91	Pk	17.3	-29.9	27.31	46.02	-18.71	0-360	100	H
3	339.6	39.16	Pk	18.1	-29.7	27.56	46.02	-18.46	0-360	100	H
4	43.43	42.93	Pk	15.3	-31.7	26.53	40	-13.47	0-360	100	V
5	100.8475	45.09	Pk	14.4	-31.1	28.39	43.52	-15.13	0-360	100	V
6	* 167.9975	39.35	Pk	15.7	-30.6	24.45	43.52	-19.07	0-360	100	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

**TYPE B**

**848Kbps**



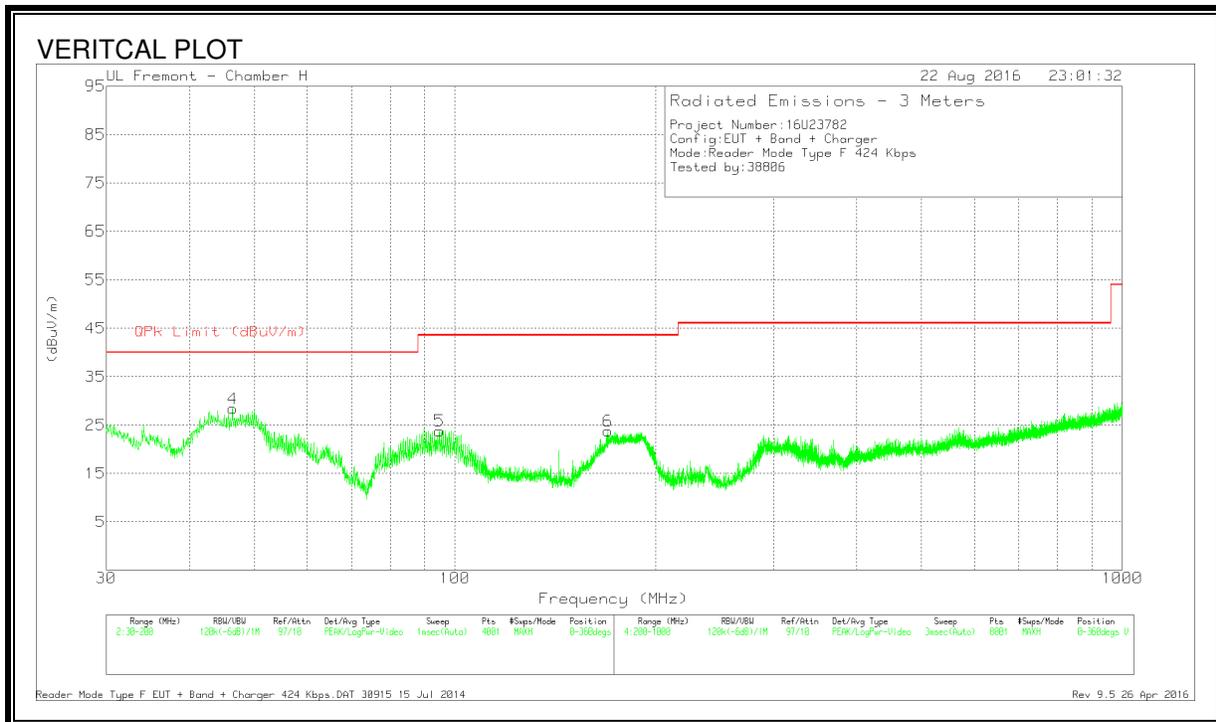
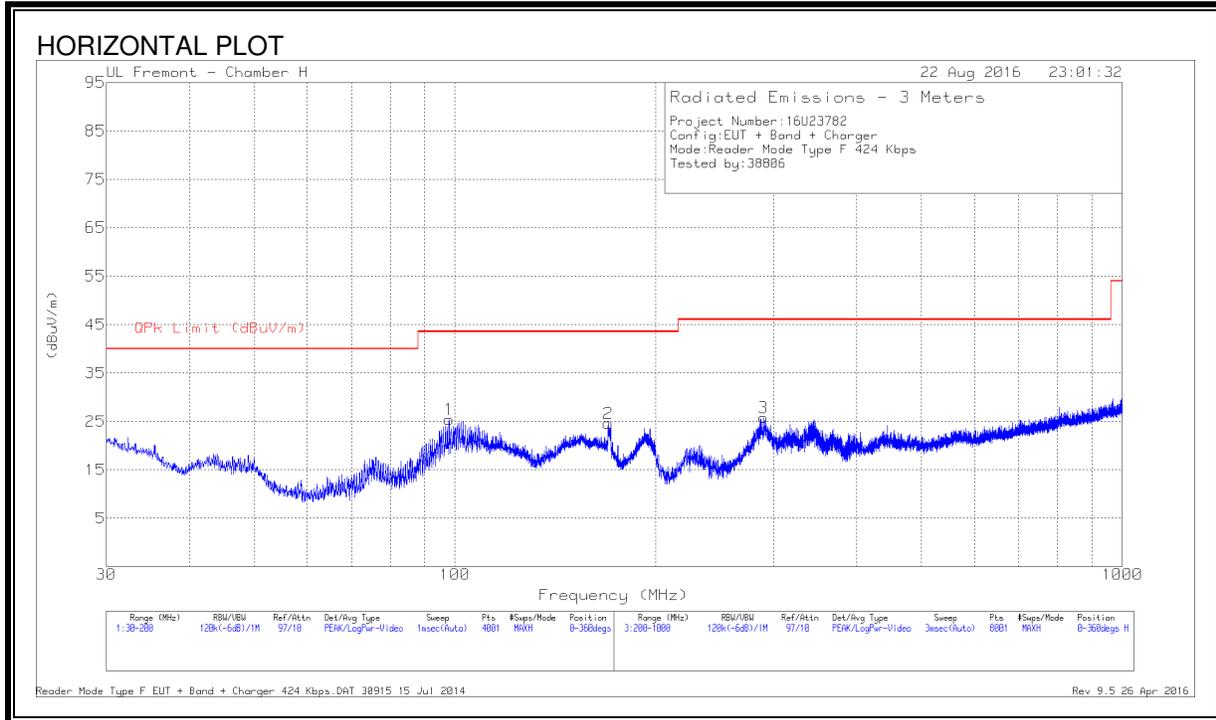
**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T185 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	89.925	40.33	Pk	11.7	-31.2	20.83	43.52	-22.69	0-360	199	H
2	151.21	33.81	Pk	16.4	-30.8	19.41	43.52	-24.11	0-360	299	H
3	433.3	35.86	Pk	20.6	-29.3	27.16	46.02	-18.86	0-360	101	H
4	39.86	42.12	Pk	17.8	-31.6	28.32	40	-11.68	0-360	101	V
5	93.9625	39.66	Pk	12.6	-31.2	21.06	43.52	-22.46	0-360	101	V
6	469.1	32.79	Pk	21.4	-29.1	25.09	46.02	-20.93	0-360	201	V

Pk - Peak detector

**TYPE F**

**424Kbps**



**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T185 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	97.9575	43.05	Pk	13.6	-31.2	25.45	43.52	-18.07	0-360	299	H
2	* 169.655	39.7	Pk	15.6	-30.7	24.6	43.52	-18.92	0-360	99	H
3	289.6	38.39	Pk	17.3	-29.9	25.79	46.02	-20.23	0-360	99	H
4	46.405	46.57	Pk	13.5	-31.7	28.37	40	-11.63	0-360	100	V
5	94.7275	42.31	Pk	12.7	-31.2	23.81	43.52	-19.71	0-360	100	V
6	* 169.4425	38.89	Pk	15.6	-30.7	23.79	43.52	-19.73	0-360	100	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

---

## **9. FREQUENCY STABILITY**

### **LIMIT**

§15.225 (e) The frequency tolerance of the carrier signal shall be maintained within  $\pm 0.01\%$  of the operating frequency, over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

### **TEST PROCEDURE**

ANSI C63.10 Clause 6.8

### **RESULTS**

**9.1. CE MODE**

<b>ID:</b>	52271	<b>Date:</b>	8/25/16
------------	-------	--------------	---------

**TYPE A 848Kbps**

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(Vdc)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.5599826	0.722	13.5599826	13.560	13.5599832	0.681	13.5599827	0.712	± 100
3.80	40	13.5599739	1.366	13.5599719	1.510	13.5599706	1.605	13.5599703	1.630	± 100
3.80	30	13.5599792	0.973	13.5599771	1.128	13.5599768	1.147	13.5599768	1.151	± 100
<b>3.80</b>	<b>20</b>	<b>13.5599924</b>	<b>0.000</b>	<b>13.5599957</b>	<b>-0.244</b>	<b>13.5599983</b>	<b>-0.434</b>	<b>13.5600005</b>	<b>-0.599</b>	<b>± 100</b>
3.80	10	13.5600119	-1.437	13.5600192	-1.974	13.5600245	-2.369	13.5600290	-2.698	± 100
3.80	0	13.5600637	-5.257	13.5600644	-5.312	13.5600650	-5.354	13.5600659	-5.417	± 100
3.80	-10	13.5600808	-6.520	13.5600899	-7.193	13.5600959	-7.631	13.5601008	-7.994	± 100
3.80	-20	13.5601242	-9.719	13.5601223	-9.581	13.5601221	-9.565	13.5601220	-9.560	± 100
3.23	20	13.5599853	0.522	13.5599878	0.337	13.5599903	0.157	13.5599926	-0.013	± 100
4.37	20	13.5599929	-0.040	13.5599935	-0.078	13.5599940	-0.120	13.5599926	-0.013	± 100

**424Kbps**

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(Vdc)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.5599837	-0.125	13.5599835	-0.108	13.5599832	-0.086	13.5599839	-0.137	± 100
3.80	40	13.5599702	0.869	13.5599709	0.817	13.5599710	0.813	13.5599711	0.805	± 100
3.80	30	13.5599786	0.251	13.5599774	0.341	13.5599772	0.356	13.5599771	0.358	± 100
<b>3.80</b>	<b>20</b>	<b>13.5599820</b>	<b>0.000</b>	<b>13.5599701</b>	<b>0.878</b>	<b>13.5599698</b>	<b>0.900</b>	<b>13.5599697</b>	<b>0.907</b>	<b>± 100</b>
3.80	10	13.5599975	-1.139	13.5600129	-2.279	13.5600160	-2.505	13.5600207	-2.854	± 100
3.80	0	13.5601088	-9.349	13.5600997	-8.678	13.5600921	-8.117	13.5601218	-10.312	± 100
3.80	-10	13.5601154	-9.841	13.5601108	-9.501	13.5601066	-9.189	13.5601066	-9.189	± 100
3.80	-20	13.5601240	-10.474	13.5601224	-10.354	13.5601222	-10.338	13.5601222	-10.342	± 100
3.23	20	13.5599896	-0.557	13.5599943	-0.909	13.5599958	-1.014	13.5599966	-1.080	± 100
4.37	20	13.5599929	-0.807	13.5599935	-0.845	13.5599940	-0.886	13.5599947	-0.938	± 100

**212Kbps**

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(Vdc)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.5599853	-0.747	13.5599850	-0.723	13.5599846	-0.695	13.5599856	-0.763	± 100
3.80	40	13.5599707	0.331	13.5599710	0.313	13.5599711	0.305	13.5599711	0.299	± 100
3.80	30	13.5599790	-0.278	13.5599776	-0.180	13.5599776	-0.175	13.5599775	-0.167	± 100
<b>3.80</b>	<b>20</b>	<b>13.5599752</b>	<b>0.000</b>	<b>13.5599699</b>	<b>0.391</b>	<b>13.5599697</b>	<b>0.406</b>	<b>13.5599696</b>	<b>0.413</b>	<b>± 100</b>
3.80	10	13.5600251	-3.681	13.5600242	-3.612	13.5600256	-3.719	13.5600277	-3.870	± 100
3.80	0	13.5600889	-8.386	13.5600802	-7.743	13.5600769	-7.500	13.5601220	-10.829	± 100
3.80	-10	13.5601154	-10.343	13.5601108	-10.003	13.5601066	-9.690	13.5601029	-9.421	± 100
3.80	-20	13.5601255	-11.084	13.5601228	-10.886	13.5601224	-10.856	13.5601219	-10.820	± 100
3.23	20	13.5599922	-1.253	13.5599957	-1.510	13.5599965	-1.570	13.5599970	-1.604	± 100
4.37	20	13.5599971	-1.614	13.5599971	-1.614	13.5599970	-1.611	13.5599971	-1.616	± 100

**106Kbps**

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(Vdc)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.5599876	-0.921	13.5599871	-0.888	13.5599871	-0.888	13.5599877	-0.931	± 100
3.80	40	13.5599708	0.320	13.5599713	0.283	13.5599713	0.277	13.5599714	0.272	± 100
3.80	30	13.5599800	-0.363	13.5599779	-0.205	13.5599775	-0.178	13.5599772	-0.157	± 100
<b>3.80</b>	<b>20</b>	<b>13.5599751</b>	<b>0.000</b>	<b>13.5599699</b>	<b>0.383</b>	<b>13.5599695</b>	<b>0.413</b>	<b>13.5599694</b>	<b>0.420</b>	<b>± 100</b>
3.80	10	13.5600311	-4.126	13.5600288	-3.960	13.5600290	-3.978	13.5600298	-4.031	± 100
3.80	0	13.5601242	-10.994	13.5601223	-10.856	13.5601221	-10.840	13.5601221	-10.840	± 100
3.80	-10	13.5601052	-9.596	13.5601015	-9.319	13.5601007	-9.266	13.5601007	-9.262	± 100
3.80	-20	13.5601227	-10.881	13.5601222	-10.849	13.5601220	-10.831	13.5601219	-10.827	± 100
3.23	20	13.5599956	-1.511	13.5599955	-1.503	13.5599954	-1.494	13.5599958	-1.524	± 100
4.37	20	13.5599938	-1.380	13.5599948	-1.452	13.5599953	-1.493	13.5599956	-1.511	± 100

**TYPE B 848Kbps**

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(Vdc)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.5599837	-0.125	13.5599835	-0.108	13.5599832	-0.086	13.5599839	-0.137	± 100
3.80	40	13.5599702	0.869	13.5599709	0.817	13.5599710	0.813	13.5599711	0.805	± 100
3.80	30	13.5599786	0.251	13.5599774	0.341	13.5599772	0.356	13.5599771	0.358	± 100
<b>3.80</b>	<b>20</b>	<b>13.5599820</b>	<b>0.000</b>	<b>13.5599701</b>	<b>0.878</b>	<b>13.5599698</b>	<b>0.900</b>	<b>13.5599697</b>	<b>0.907</b>	<b>± 100</b>
3.80	10	13.5599975	-1.139	13.5600129	-2.279	13.5600160	-2.505	13.5600207	-2.854	± 100
3.80	0	13.5601088	-9.349	13.5600997	-8.678	13.5600921	-8.117	13.5601218	-10.312	± 100
3.80	-10	13.5601154	-9.841	13.5601108	-9.501	13.5601066	-9.189	13.5601066	-9.189	± 100
3.80	-20	13.5601240	-10.474	13.5601224	-10.354	13.5601222	-10.338	13.5601222	-10.342	± 100
3.23	20	13.5599896	-0.557	13.5599943	-0.909	13.5599958	-1.014	13.5599966	-1.080	± 100
4.37	20	13.5599929	-0.807	13.5599935	-0.845	13.5599940	-0.886	13.5599947	-0.938	± 100

**424Kbps**

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(Vdc)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.5599799	0.158	13.5599859	-0.286	13.5599880	-0.440	13.5599899	-0.585	± 100
3.80	40	13.5599707	0.835	13.5599708	0.824	13.5599709	0.815	13.5599711	0.807	± 100
3.80	30	13.5599796	0.178	13.5599792	0.209	13.5599787	0.243	13.5599783	0.275	± 100
<b>3.80</b>	<b>20</b>	<b>13.5599820</b>	<b>0.000</b>	<b>13.5599789</b>	<b>0.226</b>	<b>13.5599759</b>	<b>0.450</b>	<b>13.5599727</b>	<b>0.686</b>	<b>± 100</b>
3.80	10	13.5600343	-3.855	13.5600318	-3.676	13.5600317	-3.662	13.5600317	-3.665	± 100
3.80	0	13.5600679	-6.332	13.5600626	-5.941	13.5600631	-5.983	13.5601218	-10.312	± 100
3.80	-10	13.5601057	-9.121	13.5601014	-8.805	13.5601012	-8.790	13.5601012	-8.791	± 100
3.80	-20	13.5601236	-10.444	13.5601213	-10.276	13.5601213	-10.276	13.5601029	-8.914	± 100
3.23	20	13.5600101	-2.069	13.5600266	-3.287	13.5600210	-2.879	13.5600156	-2.481	± 100
4.37	20	13.5600173	-2.601	13.5600109	-2.131	13.5600106	-2.111	13.5600129	-2.281	± 100

**212Kbps**

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(Vdc)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.5599799	-0.137	13.5599859	-0.581	13.5599880	-0.735	13.5599834	-0.398	± 100
3.80	40	13.5599701	0.585	13.5599708	0.528	13.5599710	0.518	13.5599711	0.512	± 100
3.80	30	13.5599863	-0.612	13.5599782	-0.015	13.5599769	0.081	13.5599776	0.029	± 100
<b>3.80</b>	<b>20</b>	<b>13.5599780</b>	<b>0.000</b>	<b>13.5599718</b>	<b>0.457</b>	<b>13.5599708</b>	<b>0.531</b>	<b>13.5599704</b>	<b>0.560</b>	<b>± 100</b>
3.80	10	13.5600348	-4.190	13.5600323	-4.007	13.5600322	-3.994	13.5600320	-3.984	± 100
3.80	0	13.5600748	-7.138	13.5600657	-6.464	13.5600653	-6.436	13.5600654	-6.448	± 100
3.80	-10	13.5601072	-9.528	13.5601026	-9.187	13.5601021	-9.149	13.5601019	-9.138	± 100
3.80	-20	13.5601164	-10.205	13.5601167	-10.229	13.5601185	-10.360	13.5601024	-9.175	± 100
3.23	20	13.5600139	-2.646	13.5600145	-2.694	13.5600144	-2.685	13.5600140	-2.658	± 100
4.37	20	13.5600120	-2.510	13.5600145	-2.694	13.5600651	-6.422	13.5600146	-2.702	± 100

**106Kbps**

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(Vdc)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.5599807	-0.570	13.5599867	-1.008	13.5599877	-1.086	13.5599887	-1.157	± 100
3.80	40	13.5599701	0.217	13.5599708	0.159	13.5599710	0.149	13.5599710	0.147	± 100
3.80	30	13.5599861	-0.966	13.5599768	-0.280	13.5599771	-0.302	13.5599769	-0.288	± 100
<b>3.80</b>	<b>20</b>	<b>13.5599730</b>	<b>0.000</b>	<b>13.5599705</b>	<b>0.184</b>	<b>13.5599703</b>	<b>0.199</b>	<b>13.5599700</b>	<b>0.221</b>	<b>± 100</b>
3.80	10	13.5600357	-4.622	13.5600330	-4.425	13.5600329	-4.418	13.5600331	-4.430	± 100
3.80	0	13.5600598	-6.404	13.5600638	-6.698	13.5600643	-6.735	13.5600654	-6.816	± 100
3.80	-10	13.5601063	-9.829	13.5601026	-9.554	13.5601021	-9.522	13.5601019	-9.507	± 100
3.80	-20	13.5601235	-11.097	13.5601219	-10.983	13.5601218	-10.976	13.5601029	-9.578	± 100
3.23	20	13.5600011	-2.076	13.5600101	-2.739	13.5600121	-2.885	13.5600142	-3.040	± 100
4.37	20	13.5600145	-3.058	13.5600123	-2.897	13.5600133	-2.972	13.5600104	-2.762	± 100

**TYPE F 424Kbps**

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(Vdc)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.5599807	-0.415	13.5599867	-0.853	13.5599877	-0.931	13.5599887	-1.002	± 100
3.80	40	13.5599703	0.356	13.5599708	0.317	13.5599709	0.307	13.5599710	0.305	± 100
3.80	30	13.5599783	-0.236	13.5599775	-0.177	13.5599773	-0.162	13.5599772	-0.155	± 100
<b>3.80</b>	<b>20</b>	<b>13.5599751</b>	<b>0.000</b>	<b>13.5599695</b>	<b>0.413</b>	<b>13.5599695</b>	<b>0.413</b>	<b>13.5599695</b>	<b>0.413</b>	<b>± 100</b>
3.80	10	13.5600363	-4.513	13.5600337	-4.321	13.5600335	-4.308	13.5600333	-4.293	± 100
3.80	0	13.5600715	-7.108	13.5600676	-6.824	13.5600673	-6.801	13.5600654	-6.661	± 100
3.80	-10	13.5601072	-9.741	13.5601031	-9.438	13.5601028	-9.417	13.5601020	-9.356	± 100
3.80	-20	13.5601230	-10.910	13.5601213	-10.779	13.5601213	-10.781	13.5601024	-9.389	± 100
3.23	20	13.5600358	-4.479	13.5600153	-2.968	13.5600158	-3.000	13.5600145	-2.903	± 100
4.37	20	13.5600213	-3.409	13.5600133	-2.817	13.5600120	-2.722	13.5600130	-2.796	± 100

**212Kbps**

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(Vdc)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.5599779	-0.130	13.5599798	-0.274	13.5599823	-0.460	13.5599823	-0.460	± 100
3.80	40	13.5599703	0.427	13.5599708	0.390	13.5599708	0.389	13.5599710	0.375	± 100
3.80	30	13.5599762	-0.007	13.5599764	-0.022	13.5599768	-0.052	13.5599772	-0.081	± 100
<b>3.80</b>	<b>20</b>	<b>13.5599761</b>	<b>0.000</b>	<b>13.5599701</b>	<b>0.442</b>	<b>13.5599698</b>	<b>0.465</b>	<b>13.5599698</b>	<b>0.465</b>	<b>± 100</b>
3.80	10	13.5600436	-4.979	13.5600408	-4.768	13.5600382	-4.582	13.5600361	-4.426	± 100
3.80	0	13.5600729	-7.137	13.5600683	-6.800	13.5600679	-6.767	13.5600673	-6.725	± 100
3.80	-10	13.5601069	-9.649	13.5601034	-9.386	13.5601030	-9.358	13.5601024	-9.315	± 100
3.80	-20	13.5601162	-10.333	13.5601174	-10.423	13.5601192	-10.550	13.5601029	-9.349	± 100
3.23	20	13.5600256	-3.651	13.5600246	-3.580	13.5600229	-3.448	13.5600135	-2.756	± 100
4.37	20	13.5600113	-2.596	13.5600191	-3.170	13.5600134	-2.751	13.5600155	-2.905	± 100

## 9.2. READER MODE

<b>ID:</b>	50822	<b>Date:</b>	8/24/16
------------	-------	--------------	---------

### TYPE A

#### 848Kbps

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(Vdc)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.5599814	1.802	13.5599852	13.560	13.5599854	1.508	13.5600630	-4.212	± 100
3.80	40	13.5599780	2.057	13.5599763	2.182	13.5599744	2.319	13.5599730	2.423	± 100
3.80	30	13.5600699	-4.722	13.5600697	-4.708	13.5600700	-4.732	13.5599846	1.566	± 100
<b>3.80</b>	<b>20</b>	<b>13.560059</b>	<b>0.000</b>	<b>13.560030</b>	<b>0.208</b>	<b>13.560015</b>	<b>0.321</b>	<b>13.560011</b>	<b>0.349</b>	<b>± 100</b>
3.80	10	13.5600143	-0.622	13.5600173	-0.845	13.5600206	-1.084	13.5600238	-1.326	± 100
3.80	0	13.5600453	-2.910	13.5600498	-3.241	13.5600541	-3.557	13.5600590	-3.922	± 100
3.80	-10	13.5600844	-5.792	13.5600875	-6.018	13.5600909	-6.274	13.5600942	-6.513	± 100
3.80	-20	13.5601615	-11.477	13.5601607	-11.419	13.5601607	-11.416	13.5601608	-11.430	± 100
3.23	20	13.5600764	-5.200	13.5600757	-5.153	13.5600757	-5.147	13.5600741	-5.035	± 100
4.37	20	13.5600740	-5.022	13.5600739	-5.021	13.5600739	-5.015	13.5600736	-4.996	± 100

### TYPE B

#### 848Kbps

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measured with Time Elapse								
(Vdc)	(°C)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.5599763	3.575	13.5599799	3.312	13.5599814	3.198	13.5600570	-2.375	± 100
3.80	40	13.5599715	3.927	13.5599722	3.878	13.5599722	3.880	13.5599730	3.818	± 100
3.80	30	13.5599827	3.100	13.5599805	3.263	13.5599835	3.042	13.5599799	3.309	± 100
<b>3.80</b>	<b>20</b>	<b>13.5600248</b>	<b>0.000</b>	<b>13.5600192</b>	<b>0.413</b>	<b>13.5600141</b>	<b>0.785</b>	<b>13.5600098</b>	<b>1.103</b>	<b>± 100</b>
3.80	10	13.5600365	-0.863	13.5600286	-0.280	13.5600282	-0.252	13.5600261	-0.098	± 100
3.80	0	13.5600413	-1.216	13.5600459	-1.560	13.5600520	-2.011	13.5600570	-2.375	± 100
3.80	-10	13.5601276	-7.585	13.5601314	-7.862	13.5601325	-7.946	13.5601316	-7.877	± 100
3.80	-20	13.5601642	-10.285	13.5601608	-10.030	13.5601619	-10.112	13.5601621	-10.129	± 100
3.23	20	13.5600753	-3.729	13.5600741	-3.640	13.5600739	-3.624	13.5600735	-3.596	± 100
4.37	20	13.5600736	-3.603	13.5600736	-3.601	13.5600733	-3.577	13.5600731	-3.562	± 100

**TYPE F**

**424Kbps**

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply (Vdc)	Envir. Temp (°C)	Frequency Deviation Measured with Time Elapse								
		Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.5599717	3.105	13.5599726	3.035	13.5599764	2.759	13.5600630	-3.629	± 100
3.80	40	13.5599714	3.128	13.5599718	3.093	13.5599718	3.093	13.5599719	3.087	± 100
3.80	30	13.5599766	2.738	13.5599788	2.576	13.5599776	2.667	13.5599799	2.497	± 100
<b>3.80</b>	<b>20</b>	<b>13.5600138</b>	<b>0.000</b>	<b>13.5600076</b>	<b>0.452</b>	<b>13.5600057</b>	<b>0.594</b>	<b>13.5600098</b>	<b>0.291</b>	<b>± 100</b>
3.80	10	13.5600175	-0.272	13.5600197	-0.438	13.5600229	-0.670	13.5600261	-0.909	± 100
3.80	0	13.5600643	-3.724	13.5600607	-3.461	13.5600618	-3.546	13.5600570	-3.186	± 100
3.80	-10	13.5601379	-9.158	13.5601343	-8.890	13.5601350	-8.938	13.5601316	-8.689	± 100
3.80	-20	13.5601574	-10.590	13.5601583	-10.658	13.5601583	-10.658	13.5601370	-9.085	± 100
3.23	20	13.5600924	-5.799	13.5600753	-4.539	13.5600735	-4.405	13.5600729	-4.363	± 100
4.37	20	13.5600730	-4.366	13.5600729	-4.360	13.5600727	-4.349	13.5600727	-4.349	± 100

## 10. AC MAINS LINE CONDUCTED EMISSIONS

### LIMITS

§15.207  
IC RSS-GEN, Section 8.8

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 $\mu$ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency range (MHz)	Limits (dB $\mu$ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Notes:  
1. The lower limit shall apply at the transition frequencies  
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

### TEST PROCEDURE

ANSI C63.10:2013

### RESULTS

EUT is powered by battery. AC line conducted emission is not applicable.