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BSMI Lab ID: SL2-IN-E-3008
KC Lab ID: EU0184

FCC Part 15C, Industry Canada Certification Report

for the

Aura 29BLE Display

FCC ID = VC7120-0141
IC = 8910A-1200141

Project Engineer: R. Pennell

Approval Signatory

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Document History:

Issue#1: 28th September 2015 was withdrawn and replaced by Issue#2: updated with editorial correction.

Issue#2: 13th October 2015 was withdrawn and replaced by Issue#2: updated with editorial correction.

1.0 DECLARATION

1.1 FCC Part 15C Statement and Industry Canada (IC) Statement

The Equipment Under Test (EUT), as described and reported within this document, complies with IC RSS-Gen 3 Issue 3:2010 and IC RSS-210 Issue 8 and the parts 15.109, 15.209 and 15.249 of the CFR 47:2013 FCC rules in accordance with ANSI C63.4:2003. The EUT operates at frequencies of 902.5 to 927.5 MHz also 2.4 to 2.485 GHz and complies with part 15C emission requirements.

1.2 Related Submittal(s) Grants

This is an application for certification of an Aura 29BLE Display (transmitting at 902.5 to 927.5 MHz and 2.4 to 2.485 GHz), described in this report.

The sections of FCC Part 15 that apply to the EUT are:
15.209 General requirements
15.249 Operation within the band 902 to 928 MHz and 2.4 to 2.485 GHz
15.109 applied to the EUT in receive model.

Note: The EUT in receiver mode complies with part 15B of the FCC rules for unintentional radiators.

1.3 EUT Manufacturer

Trade name:	Displaydata Limited
Company name:	Displaydata Limited
Company address:	Century Court Millenium Way Bracknell Berkshire RG12 2XT United Kingdom
Manufacturing address:	As above.
Company representative:	Mr Simon Cox Tel: +44 (0) 1344 887685

2.0 EUT DESCRIPTION

2.1 Identity

EUT:	Electronic Shelf Label
Model:	Aura 29BLE
Serial numbers:	BL00000910 (38.4kbps data rate) The serial numbers of EUTs were allocated by Displaydata specifically for testing purpose identification, and do not reflect serial numbers used in Aura 29BLE production.
Sample build:	Pre-Production issue 3.0
Firmware	EPD CC 3.7.13 , BLE CC 0002
	FCC ID = VC7120-0141 IC = 8910A-1200141

2.2 Product Operation

The EUT is part of a system for electronic shelf labels to be used within retail outlets such as shops and supermarkets. The EUT is an electronic shelf edge label that displays product and price information and additionally includes a BLE marketing beacon used for location services. The EUT is always installed in a landscape orientation.

The EUT contains 2 radios:

Radio 1: “915MHz” transceiver for the display functionality, operating in the 902MHz to 928MHz band for receiving and transmitting data at a single data rate of 38.4kbps to a base unit known as a Dynamic Communicator. The EUTs 915MHz transceiver transmits infrequently, typically once a day for a few milliseconds. The 915MHz transmitter was set to power level 5 for testing.

Radio 2: “2.4GHz” transmitter for the marketing beacon functionality. This transmits up to a maximum nominal conducted power of 0dBm and with a maximum 3 of fixed frequencies, each transmitted for less than 0.9ms every 500ms. There is no 2.4GHz receiver function in the EUT. The power was set to maximum 0dBm for testing.

The 2 transmitter modes are subsequently referred to as 915MHz mode and 2.4GHz mode for this test report.

The 2 transmitters are never active at the same time within the EUT.

2.3 Support Equipment

SUPPORTING EQUIPMENT	PART/MODEL NUMBER	SERIAL NUMBER
Dell Laptop	Latitude D620	9G47FJ2
Displaydata Communicator	Dynamic Communicator	ZC0000035

2.4 Exerciser Program

The EUT was set to transmit continuously at the bottom, middle and top of the 902 to 928MHz radio operating range, this being 902.5, 913.5 and 927.5MHz respectively. The laptop, via the Dynamic Communicator, was used to set the operating frequency of the EUT. Once transmitting the EUT was tested standalone in the semi-anechoic chamber.
In 915MHz mode the EUT was measured transmitting at 38.4kbps data rate.

2.4GHz test mode was set to transmit modulated carrier continuously at each the 3 possible frequencies, 2402MHz, 2426 MHz and 2480MHz. These 2.4GHz test modes were selected on the EUT by means of shorting test points on the PCB.
In 2.4GHz mode the EUT was measured transmitting with the BLE protocol 1Mbps data rate.

The EUT was also tested in receive mode, the sample s/n BL00000910 was used for this test.
All the tests were performed with the EUT powered with new batteries.
All emissions were maximised and measured in landscape orientations.

3.0 MEASUREMENT PROCEDURE AND INSTRUMENTATION

3.1 EMI Site Address & Test Date

EMI Company Offices	Hursley EMC Services Ltd Trafalgar House, Trafalgar Close, Chandlers Ford, Hampshire
EMI Measurement Site	Hursley EMC Services Ltd Hursley Park, Winchester; FCC Registered UK Designation number: UK0006 Industry Canada Registration Number : **7104A**
Test Dates	16th & 17th September 2015
HEMCS References:	15R352

3.2 General Operating Conditions

Testing was performed according to the procedures in ANSI C63.4:2003. Final radiated testing was performed at an EUT to antenna distance of three metres.

Instrumentation, including receiver and spectrum analyser bandwidth, comply with the requirements of ANSI C63.2:1996.

3.3 Environmental Ambient

Test Type	Temperature	Humidity	Atmospheric Pressure
Radiated & Conducted	19 to 20 degrees Celsius	59 to 62% relative	970 to 1001 millibars

3.4 Radiated Emissions

Initial Scan

A radiated profile scan was taken at a three metre distance on eight azimuths of the system under test in both vertical and horizontal polarities of the antenna in a semi-anechoic chamber. Instrumentation used in the chamber as below:

#ID	CP	Manufacturer	Type	Serial No	Description	Calibration due date
452	3	CHASE	CBL 6141	4013	Pink 30M-2G Antenna	02/10/2015
050	1	HP	8447D	1937A02341	Pre-amplifier (30-1000MHz)	Internal
538	1	HP	8593EM	3710A00204	Spectrum analyser	05/11/2015
466	3	Schwarzbeck	BBHA 9120 571	571	1-10GHz Horn	29/01/2016
676	3	Schwarzbeck	BBHA 9120 C	576	2-18GHz Horn	28/07/2018
297	3	Q-par Angus	QSH20S20S	9526	18 to 26 GHz Barbie	13/08/2017
250	1	HP	8449B	3008A01077	Pre-amplifier (1.0-26.5GHz)	02/07/2016
256	0	HEMCS	PA XVIII	001	Pre-amp, 1-18GHz 55dB	Internal
400	1	Rohde & Schwarz	ESI26	833362/006	Test Receiver	26/06/2016

The data obtained from the profile scan was used as a guide for the final measurements. Profiles were measured of the EUT in both orientations and at both data rates.

Final Measurements

The system under test was then measured at three metres in the Open Area Test site (OATS) using a receiver. The data obtained from the chamber profile-scan was used to guide the test engineer. Above 30 MHz, each emission from the transmitter was maximised by revolving the system on the turntable and moving the antennae in height and azimuth. All tests were repeated with the EUT in both landscape and Landscape orientations. The worst-case data is presented in this report.

Test instrumentation used was as follows:

#ID	CP	Manufacturer	Type	Serial No	Description	Calibration due date
250	1	HP	8449B	3008A01077	Pre-amplifier (1.0-26.5GHz)	02/07/2016
256	0	HEMCS	PA XVIII	001	Pre-amp, 1-18GHz 55dB	Internal
289	1	Rohde & Schwarz	ESCI 7	100765	CISPR 7GHz Receiver	12/06/2016
297	3	Q-par Angus	QSH20S20S	9526	18 to 26 GHz Barbie	13/08/2017
400	1	Rohde & Schwarz	ESI26	833362/006	Test Receiver	26/06/2016
452	3	CHASE	CBL 6141	4013	Pink 30M-2G Antenna	02/10/2015
466	3	Schwarzbeck	BBHA 9120 571	571	1-10GHz Horn	29/01/2016
538	1	HP	8593EM	3710A00204	Spectrum analyser	05/11/2015
676	3	Schwarzbeck	BBHA 9120 C	576	2-18GHz Horn	28/07/2018

CP = Interval period [year] prescribed for external calibrations

Note: 'Calibration due date' means that the instrument is certified with a UKAS or traceable calibration certificate.
'Internal' means internally calibrated using HEMCS procedures

4.0 TEST DATA

4.1 FCC – Radiated Emissions (Transmitting)

A search was made of the frequency spectrum from 30 MHz to 10 GHz and the measurements reported are the highest emissions relative to the 'FCC CFR 47 Section 15.209 and 15.249 Limits' at a measuring distance of three metres.

Testing was performed with the EUT at the top, bottom and middle transmitter operating frequencies. Below 1 GHz a quasi-peak detector was used (bandwidth 120 kHz), above 1 GHz a peak and average detector was used (bandwidth 1 MHz). The worst-case results from all tests are presented here.

RESULTS - 30 MHz to 1000 MHz (915 MHz)

Frequency MHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Actual quasi-peak value @ 3m dBµV/m	Specified limit @ 3m dBµV/m	Channel B,M,T
53.619	3.4	13.1	0.9	17.4	40	B
71.333	4.9	8.1	1.1	14.1	40	B
113.096	6.6	10.4	1.4	18.4	43.5	B
553.99	9.1	17.7	3.6	30.4	46	B
798.58	8.4	20.7	4.6	33.7	46	B
850.59	8.3	21.4	4.8	34.5	46	B
901.195	12.3	21.9	5.0	39.2	46	B
902	14.6	21.9	5.0	41.5	46	B
902.5*	59.2	21.9	5.0	86.1	94	B
33.606	15.1	11.3	0.7	27.1	40	M
43.149	8.2	13.2	0.8	22.2	40	M
123.39	9.7	8.7	1.4	19.8	43.5	M
245.77	7.1	11.7	2.2	21.0	46	M
564.5	8.8	18.0	3.6	30.4	46	M
861.73	8.3	21.6	4.8	34.7	46	M
913.5*	49.7	21.9	5.0	76.6	94	M
32.054	16.0	11.2	0.7	27.9	40	T
41.75	9.1	12.9	0.8	22.8	40	T
38.4.027	5.3	11.6	1.3	18.2	43.5	T
149.569	10.2	7.9	1.6	19.7	43.5	T
557.64	9.2	17.7	3.6	30.5	46	T
823.64	8.0	20.7	4.7	33.4	46	T
927.5*	57.6	22.0	5.1	84.7	94	T
928	12.9	22.0	5.1	40.0	46	T
928.05	17.3	22.0	5.1	44.4	46	T

*Transmitter frequency
Transmitter power meets requirements in-band and at the band edges
Only emissions above the noise floor were measured
Emissions are within limits
Power reduced to power level 5 to meet the band edge emission requirements
Uncertainty of measurements: ± 4.2 dBµV for a 95% confidence level.

RESULTS - 30 MHz to 1 GHz (2.4GHz)

Frequency MHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Actual quasi-peak value @ 3m dBµV/m	Specified limit @ 3m dBµV/m	Channel B,M,T
33.108	15.4	11.3	0.7	27.4	40	B
44.203	7.4	13.4	0.8	21.6	40	B
133.006	10.0	8.5	1.5	20.0	43.5	B
394.41	6.2	15.7	2.9	24.8	46	B
554.33	9.1	17.7	3.6	30.4	46	B
855.95	8.2	21.5	4.8	34.5	46	B
32.352	15.8	11.2	0.7	27.7	40	M
44.715	7.2	13.4	0.8	21.4	40	M
38.4.027	3.8	11.6	1.3	16.7	43.5	M
142.753	10.3	8.3	1.5	20.1	43.5	M
573.63	7.9	18.3	3.7	29.9	46	M
735.25	9.0	20.4	4.3	33.7	46	M
34.975	14.2	11.5	0.7	26.4	40	T
43.464	8.0	13.2	0.8	22.0	40	T
38.4.002	3.9	11.6	1.3	16.8	43.5	T
132.426	10.1	8.5	1.5	20.1	43.5	T
563.48	8.8	17.9	3.6	30.3	46	T
963.87	8.9	22.1	5.2	36.2	54	T

2nd harmonic was the only spurious emission above the noise floor
Emissions are within limits

TEST ENGINEER: Richard Pennell

Radiated emissions (continued)

AVERAGE RESULTS - 1.0 GHz to 10.0 GHz (915 MHz)

Frequency GHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Pre-amp gain dB	Actual average value @ 3m dBµV/m	Specified average limit @ 3m dBµV/m	Channel B,M,T
1805.13	36.4	33.7	5.7	37.6	38.2	54.0	B
5416.1	44.1	33.7	5.7	37.6	45.9	54.0	B
7220.3	35.7	33.7	5.7	37.6	37.5	54.0	B
1827.29	37.8	33.7	5.7	37.6	39.6	54.0	M
5481.5	41.1	33.7	5.7	37.6	42.9	54.0	M
7308.5	29.7	33.7	5.7	37.6	31.5	54.0	M
1858.5	38.1	33.7	5.7	37.6	39.9	54.0	T
5571.4	41.1	33.7	5.7	37.6	42.9	54.0	T
7438	34.7	33.7	5.7	37.6	36.5	54.0	T

PEAK RESULTS - 1.0 GHz to 10.0 GHz (915 MHz)

Frequency GHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Pre-amp gain dB	Actual Peak value @ 3m dBµV/m	Specified Peak limit @ 3m dBµV/m	Channel B,M,T
1805.13	41.0	33.7	5.7	37.6	42.8	74.0	B
5416.1	47.9	33.7	5.7	37.6	49.7	74.0	B
7220.3	42.7	33.7	5.7	37.6	44.5	74.0	B
1827.29	41.5	33.7	5.7	37.6	43.3	74.0	M
5481.5	45.7	33.7	5.7	37.6	47.5	74.0	M
7308.5	39.9	33.7	5.7	37.6	41.7	74.0	M
1858.5	41.7	33.7	5.7	37.6	43.5	74.0	T
5571.4	45.8	33.7	5.7	37.6	47.6	74.0	T
7438	41.9	33.7	5.7	37.6	43.7	74.0	T

Emissions are within limits

AVERAGE RESULTS - 1.0 GHz to 10.0 GHz (2.4GHz)

Frequency GHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Pre-amp gain dB	Actual average value @ 3m dBµV/m	Specified average limit @ 3m dBµV/m	Channel B,M,T
2399.5	40.0	33.7	5.7	37.6	41.8	54.0	B
2400	48.9	33.7	5.7	37.6	50.7	54.0	B
2402*	86.2	33.7	5.7	37.6	88.0	94.0	B
4804.8	44.3	33.7	5.7	37.6	46.1	54.0	B
2426*	83.7	33.7	5.7	37.6	85.5	94.0	M
4852.6	33.5	33.7	5.7	37.6	35.3	54.0	M
2480*	82.9	33.7	5.7	37.6	84.7	94.0	T
2483.5	35.6	33.7	5.7	37.6	37.4	54.0	T
2484	28.7	33.7	5.7	37.6	30.5	54.0	T
4959.7	32.7	33.7	5.7	37.6	34.5	54.0	T

PEAK RESULTS - 1.0 GHz to 10.0 GHz (2.4GHz)

Frequency GHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Pre-amp gain dB	Actual Peak value @ 3m dBµV/m	Specified Peak limit @ 3m dBµV/m	Channel B,M,T
2399.5	49.0	33.7	5.7	37.6	50.8	74.0	B
2400	56.2	33.7	5.7	37.6	58.0	74.0	B
2402*	87.3	33.7	5.7	37.6	89.1	94.0	B
4804.8	52.7	33.7	5.7	37.6	54.5	74.0	B
2426*	84.9	33.7	5.7	37.6	86.7	94.0	M
4852.6	42.4	33.7	5.7	37.6	44.2	74.0	M
2480*	84.0	33.7	5.7	37.6	85.8	94.0	T
2483.5	46.5	33.7	5.7	37.6	48.3	74.0	T
2484	41.2	33.7	5.7	37.6	43.0	74.0	T
4959.7	43.8	33.7	5.7	37.6	45.6	74.0	T

2nd harmonic was the only spurious emission above the noise floor
Emissions are within limits

AVERAGE RESULTS 10 GHz to 18 GHz (2.4GHz)

Frequency MHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Actual Average value @ 3m dBµV/m	Specified limit @ 3m dBµV/m
All emissions were at or below the noise floor of the measuring system.					

PEAK RESULTS 10 GHz to 18 GHz (2.4GHz)

Frequency MHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Actual Peak value @ 3m dBµV/m	Specified limit @ 3m dBµV/m
All emissions were at or below the noise floor of the measuring system.					

AVERAGE RESULTS 18 GHz to 26.5 GHz (2.4GHz)

Frequency MHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Actual Average value @ 3m dBµV/m	Specified limit @ 3m dBµV/m
All emissions were at or below the noise floor of the measuring system.					

PEAK RESULTS 18 GHz to 26.5 GHz (2.4GHz)

Frequency MHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Actual Peak value @ 3m dBµV/m	Specified limit @ 3m dBµV/m
All emissions were at or below the noise floor of the measuring system.					

Emissions are within limits
Procedure: In accordance with ANSI C63.4:2003
Measurements below 1.0 GHz performed with a quasi-peak detector.
Measurements above 1.0 GHz performed with an average and peak detector.

TEST ENGINEER: Richard Pennell

4.2 FCC – Radiated Emissions (Receive Mode)

A search was made of the frequency spectrum from 30 MHz to 26.5 GHz and the measurements reported are the highest emissions relative to the 'FCC CFR 47 Section 15.109 Limits' at a measuring distance of three metres.

RESULTS - 30 MHz to 1 GHz (RX)

Frequency MHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Actual quasi-peak value @ 3m dBµV/m	Specified limit @ 3m dBµV/m
33.175	9.9	11.3	0.7	21.9	40
99.966	4.0	11.4	1.3	16.7	43.5
258.54	2.2	11.9	2.2	16.3	46
558.54	3.9	17.8	3.6	25.3	46
878.95	2.0	21.8	4.9	28.7	46
978.94	3.4	22.1	5.3	30.8	54

AVERAGE RESULTS 1 GHz to 10 GHz (RX)

Frequency MHz	Receiver amplitude dBµV	Antenna Factor dB	Cable loss dB	Actual Average value @ 3m dBµV/m	Specified limit @ 3m dBµV/m
All emissions were at or below the noise floor of the measuring system.					

PEAK RESULTS 1 GHz to 10 GHz (RX)

Frequency MHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Actual Peak value @ 3m dBµV/m	Specified limit @ 3m dBµV/m
All emissions were at or below the noise floor of the measuring system.					

Emissions are within limits

TEST ENGINEER: Richard Pennell

AVERAGE RESULTS 10 GHz to 18 GHz (RX)

Frequency MHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Actual Average value @ 3m dBµV/m	Specified limit @ 3m dBµV/m
All emissions were at or below the noise floor of the measuring system.					

PEAK RESULTS 10 GHz to 18 GHz (RX)

Frequency MHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Actual Peak value @ 3m dBµV/m	Specified limit @ 3m dBµV/m
All emissions were at or below the noise floor of the measuring system.					

AVERAGE RESULTS 18 GHz to 26.5 GHz (RX)

Frequency MHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Actual Average value @ 3m dBµV/m	Specified limit @ 3m dBµV/m
All emissions were at or below the noise floor of the measuring system.					

PEAK RESULTS 18 GHz to 26.5 GHz (RX)

Frequency MHz	Receiver amplitude dBµV	Antenna factor dB	Cable loss dB	Actual Peak value @ 3m dBµV/m	Specified limit @ 3m dBµV/m
All emissions were at or below the noise floor of the measuring system.					

Emissions are within limits

Procedure: In accordance with ANSI C63.4:2003
Measurements below 1.0 GHz performed with a quasi-peak detector.
Measurements above 1.0 GHz performed with an average and peak detector.

TEST ENGINEER: Richard Pennell

4.3 Occupied Bandwidth (IC)

RSS-GEN Section 4.6

The output from the measuring antenna was fed into the input of the ESCI7 spectrum analyser/receiver. The bandwidth of the transmitter was measured with an ESCI7 analyser set to 99% Occupied Bandwidth with a sampling detector on max hold. The resolution bandwidth, span and video bandwidth are indicated on the occupied bandwidth plot (modulated) included with this report.

In (915MHz) mode the bandwidth of the modulated Transmitter signal was measured as 64.8kHz.
In (2.4GHz) mode the bandwidth of the modulated Transmitter signal was measured as 1.68MHz.

4.4 Occupied Bandwidth (FCC)

ANSI 63.10 6.9.3

The output from the measuring antenna was fed into the input of the ESCI7 spectrum analyser/receiver. The bandwidth of the transmitter was measured 20dB down either side of the peak. The ESCI7 analyser was set to sampling detector on max hold. The resolution bandwidth, span and video bandwidth are indicated on the occupied bandwidth plot (modulated) included with this report.

In (915MHz) mode the bandwidth of the modulated Transmitter signal was measured as 68.4kHz.
In (2.4GHz) mode the bandwidth of the modulated Transmitter signal was measured as 1.8MHz.

4.5 Occupied Bandwidth (As/Nz)

AS/NZ 4268 Section 8.3.2

The output from the measuring antenna was fed into the input of the ESCI7 spectrum analyser/receiver. The bandwidth of the transmitter was measured with an ESCI7 analyser set to 99% Occupied Bandwidth with a sampling detector on max hold. The resolution bandwidth, span and video bandwidth are indicated on the occupied bandwidth plot (modulated) included with this report.

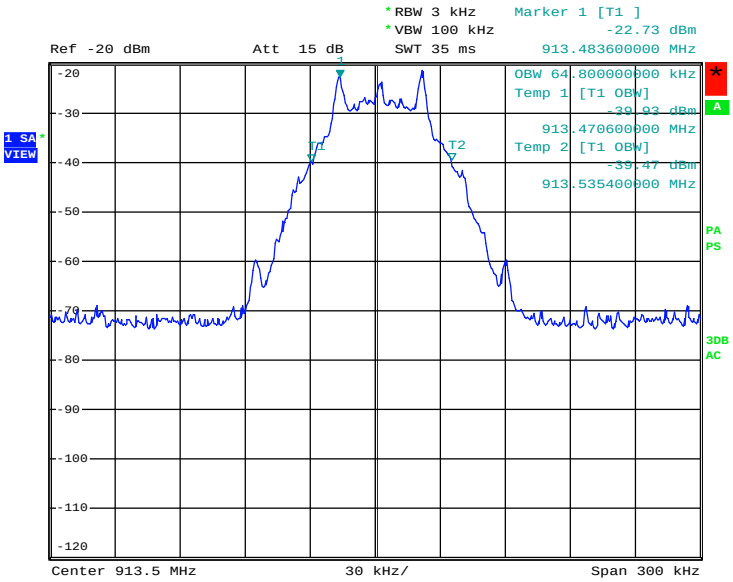
In (915MHz) mode the bandwidth of the modulated Transmitter signal was measured as 66kHz narrow span and 60kHz wide span.

In (2.4GHz) mode the bandwidth of the modulated Transmitter signal was measured as 1.1MHz narrow span and 1.08MHz wide span.

TEST ENGINEER: Richard Pennell

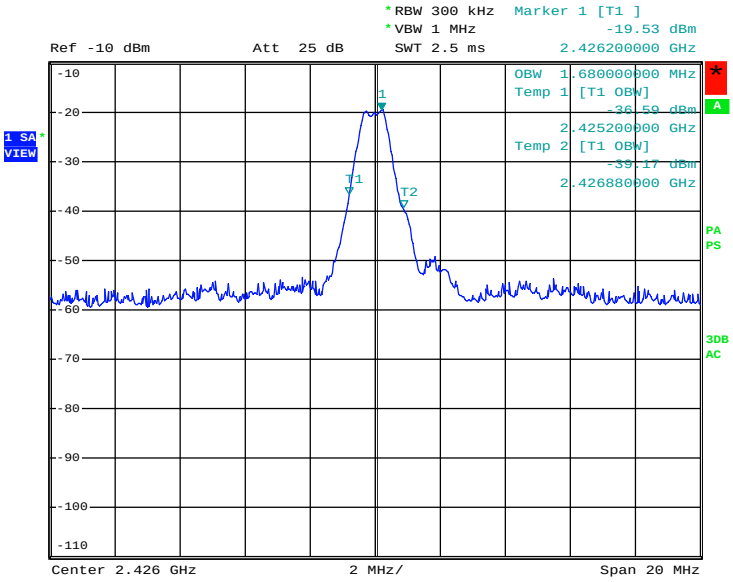
4.6 99% Bandwidth Plots

(915MHz) 99% bandwidth measured as 64.8kHz



Date: 17.SEP.2015 12:01:11

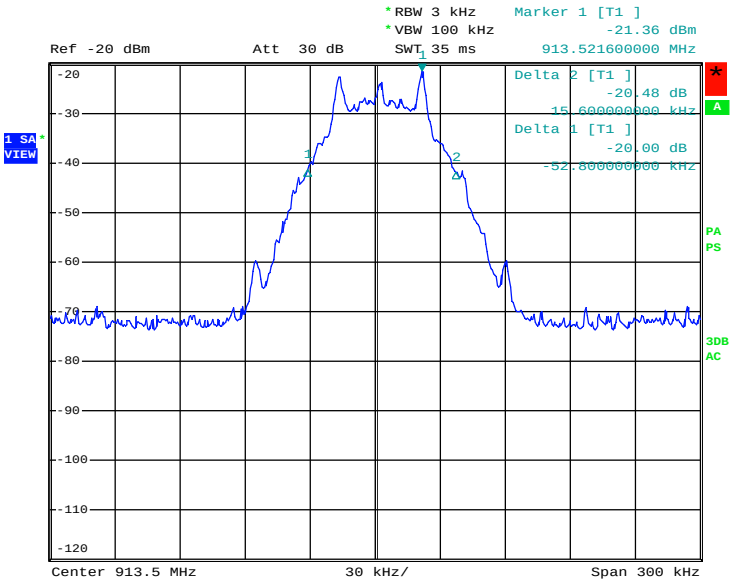
(2.4GHz) 99% bandwidth measured as 1.68MHz



Date: 17.SEP.2015 12:31:11

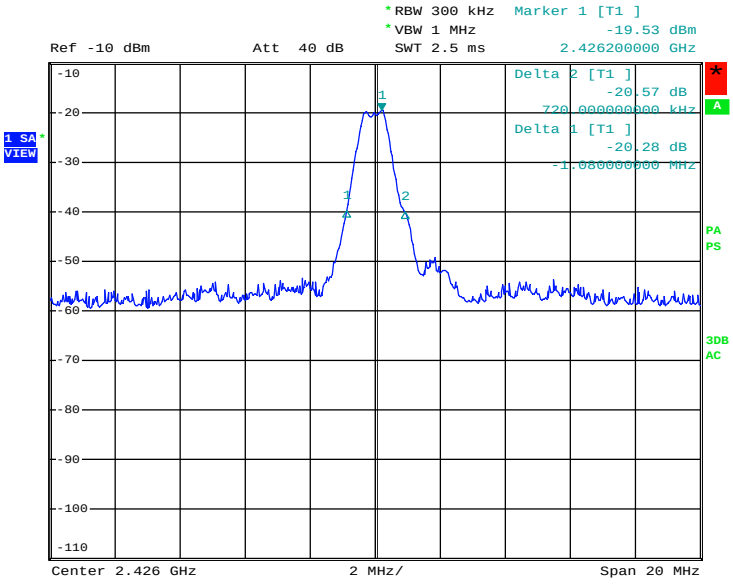
4.7 20dB Bandwidth Plot

(915MHz) 20dB bandwidth measured as 68.4kHz (68.4kHz = 52.8kHz + 15.6kHz from plot below)



Date: 17.SEP.2015 12:05:24

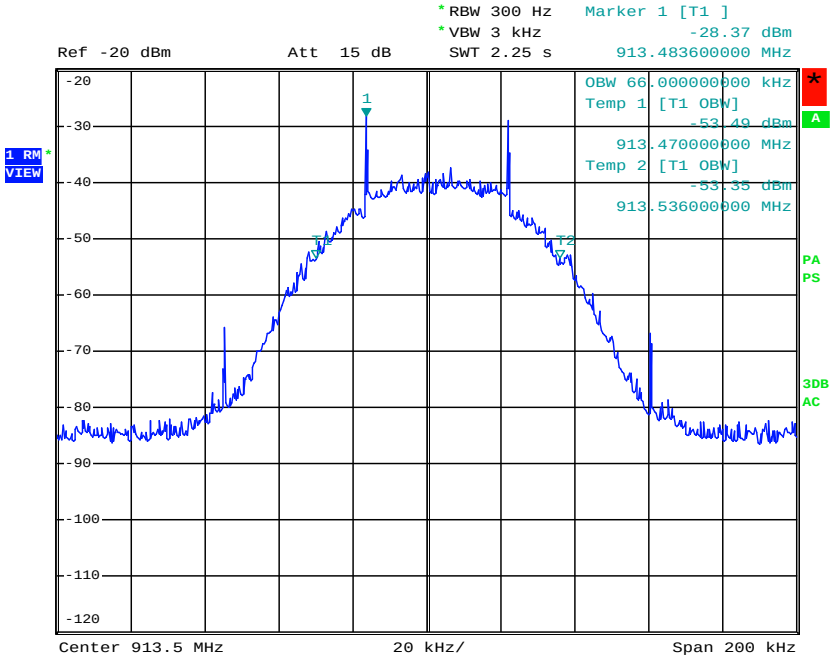
(2.4GHz) 20dB bandwidth measured as 1.8MHz (1.8MHz = 1.08MHz + 720kHz from plot below)



Date: 17.SEP.2015 12:38:58

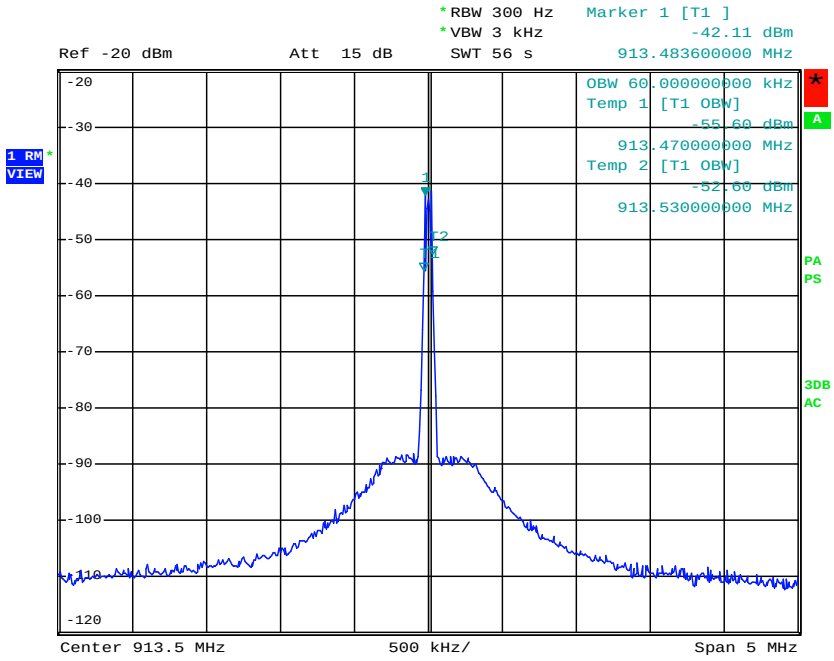
4.8 99% Bandwidth Plots (AS/NZ 4268)

(915MHz) Narrow span OBW = 66kHz



Date: 17.SEP.2015 11:51:01

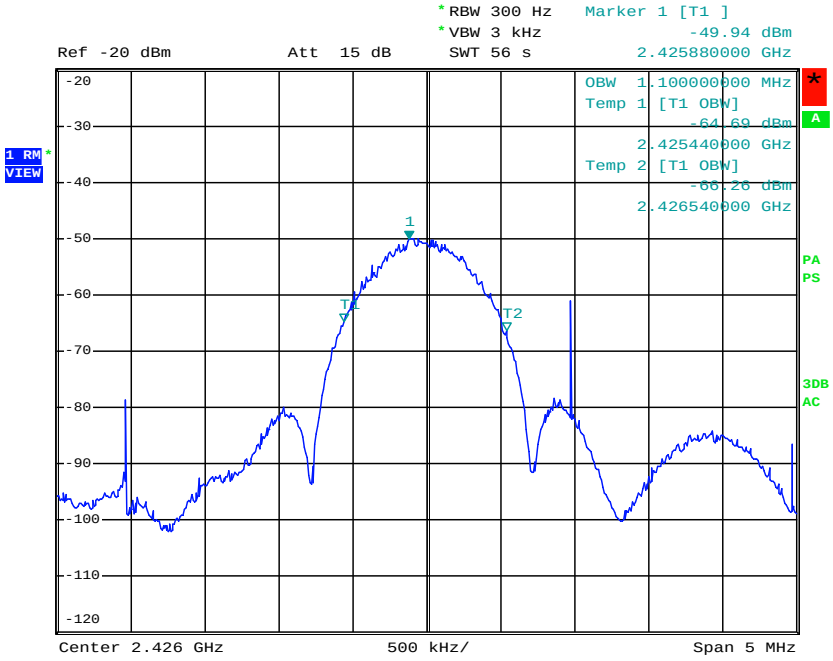
(915MHz) Wide span OBW = 60kHz



Date: 17.SEP.2015 11:54:35

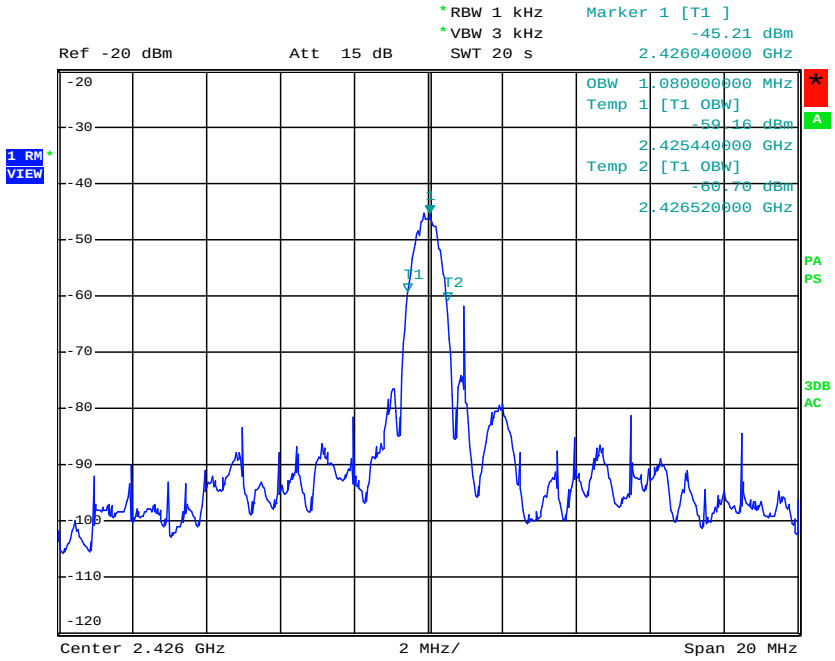
4.9 99% Bandwidth Plots (AS/NZ 4268)

(2.4GHz) Narrow span OBW = 1.1MHz



Date: 17.SEP.2015 13:08:23

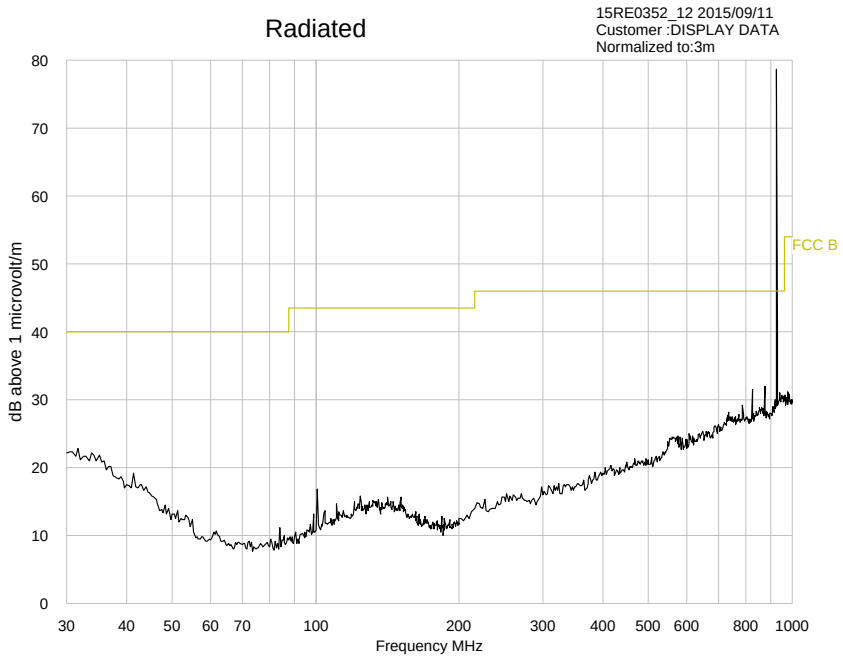
(2.4GHz) Wide span OBW = 1.08MHz



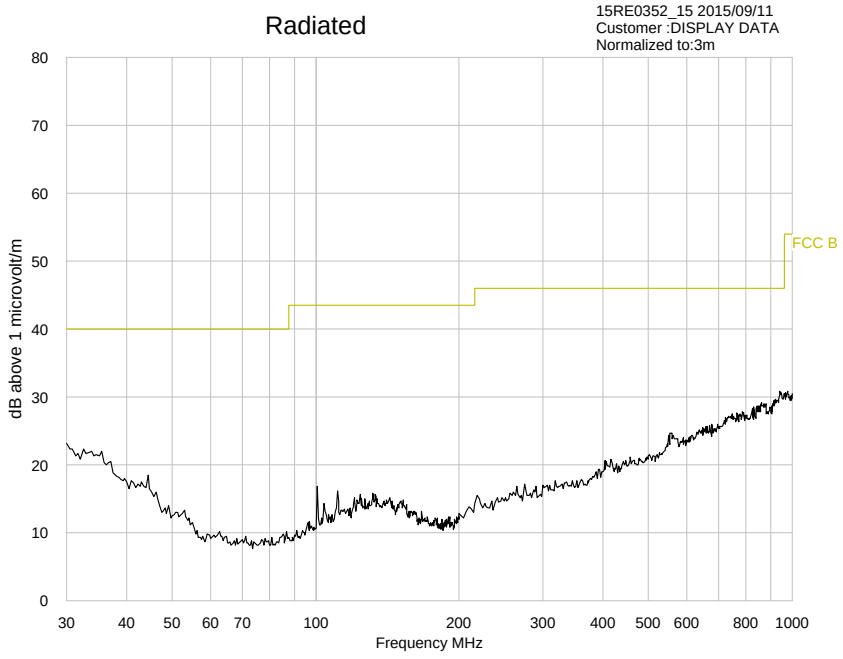
Date: 17.SEP.2015 13:15:38

5.0 TEST PLOTS

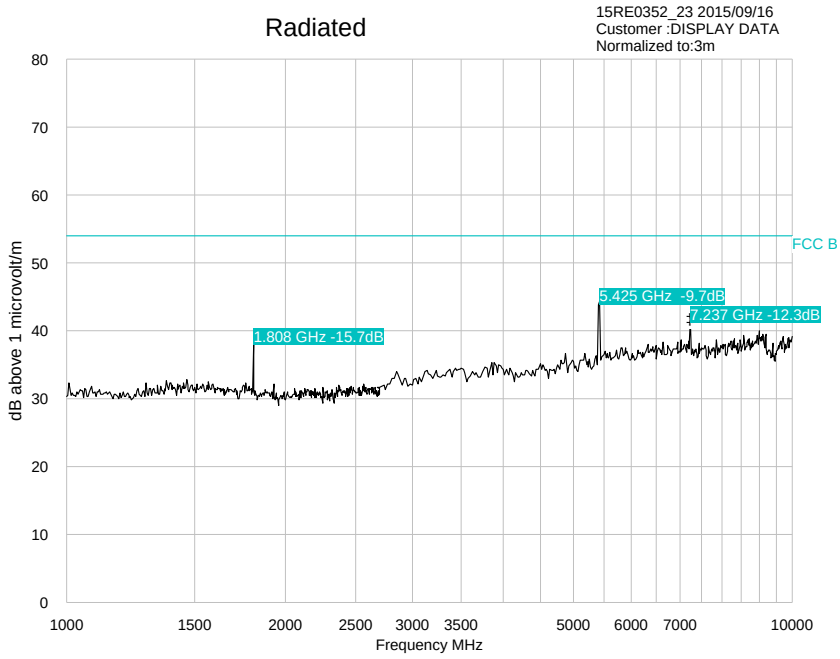
5.1 Radiated Emission Plot, 30 MHz to 1 GHz (915MHz)



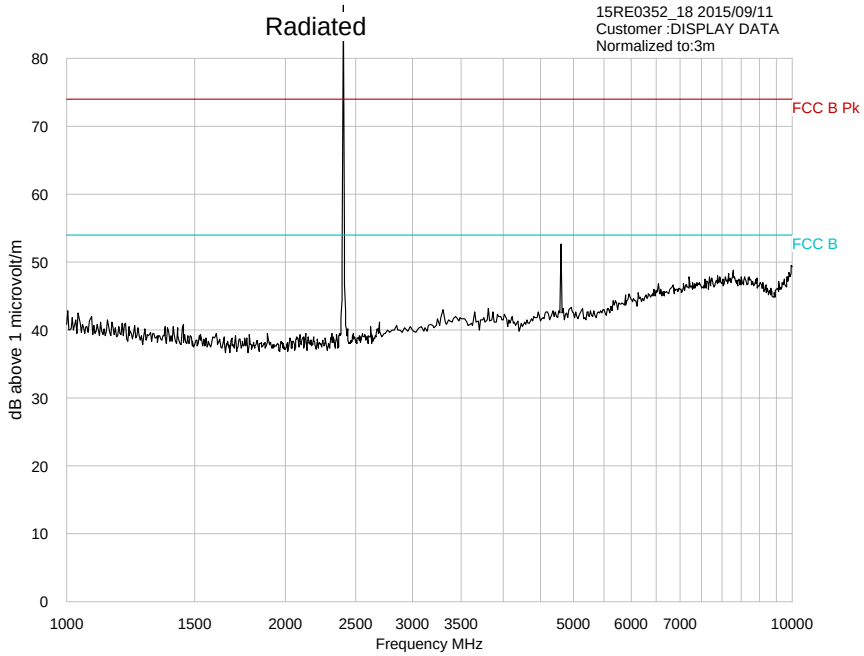
5.2 Radiated Emission Plot, 30 MHz to 1 GHz (2.4GHz)



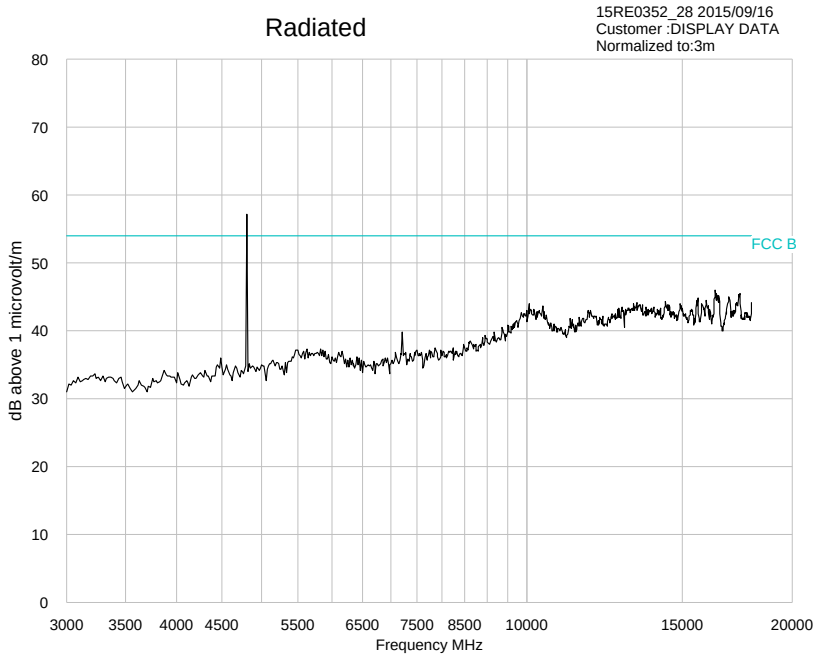
5.3 Radiated Emissions Plot, 1.0 to 10.0 GHz (915 MHz)



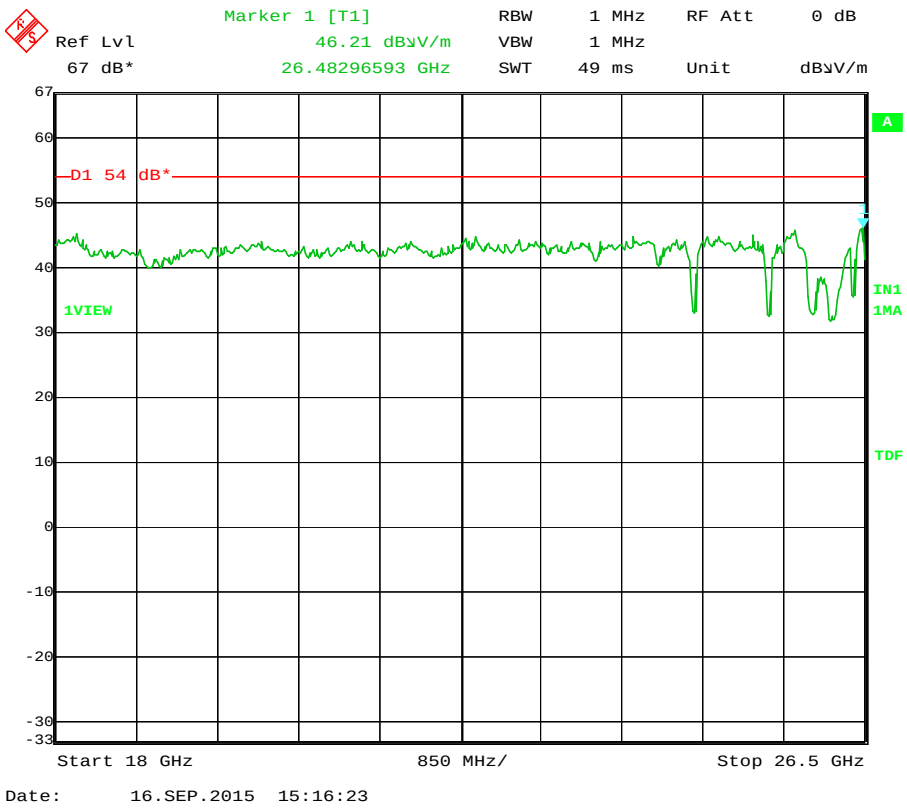
5.4 Radiated Emissions Plot, 1.0 to 10.0 GHz (2.4GHz)



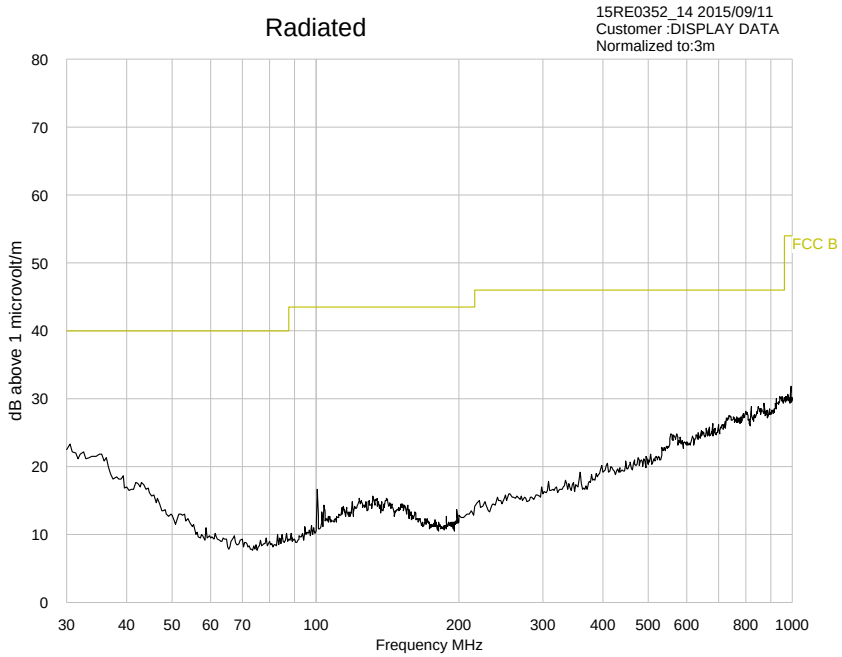
5.5 Radiated Emissions Plot, 10 to 18 GHz (2.4GHz)

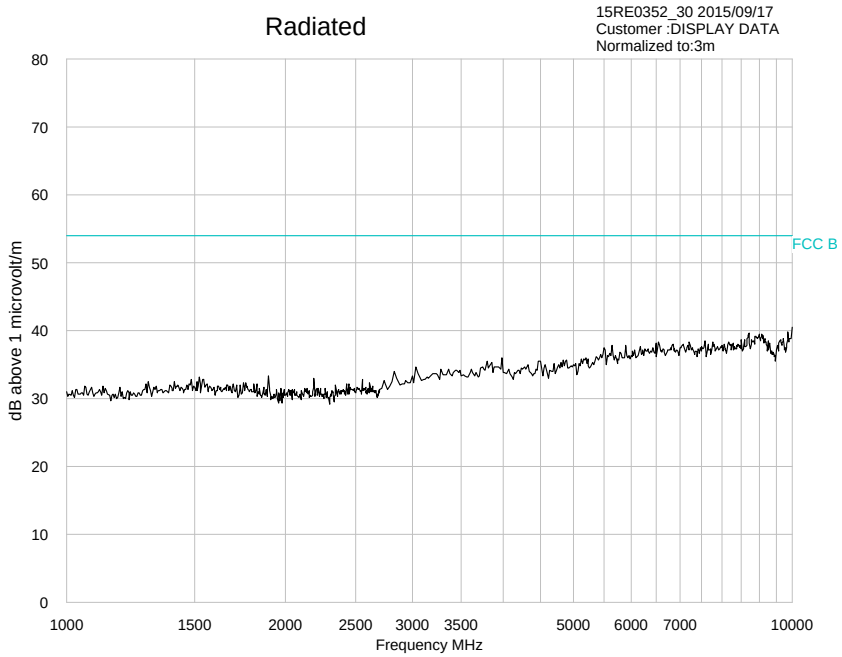


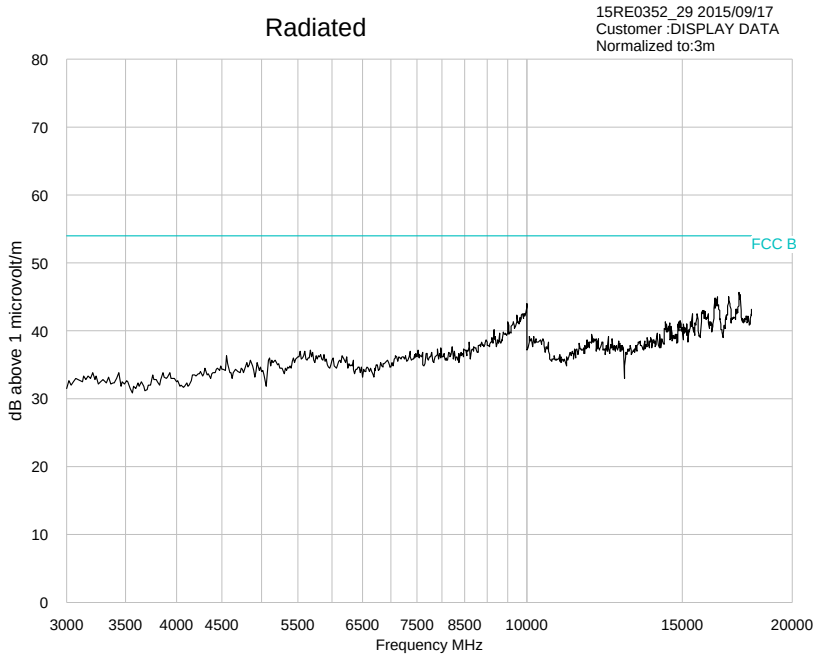
5.6 Radiated Emissions Plot, 18 to 26.5 GHz (2.4GHz)

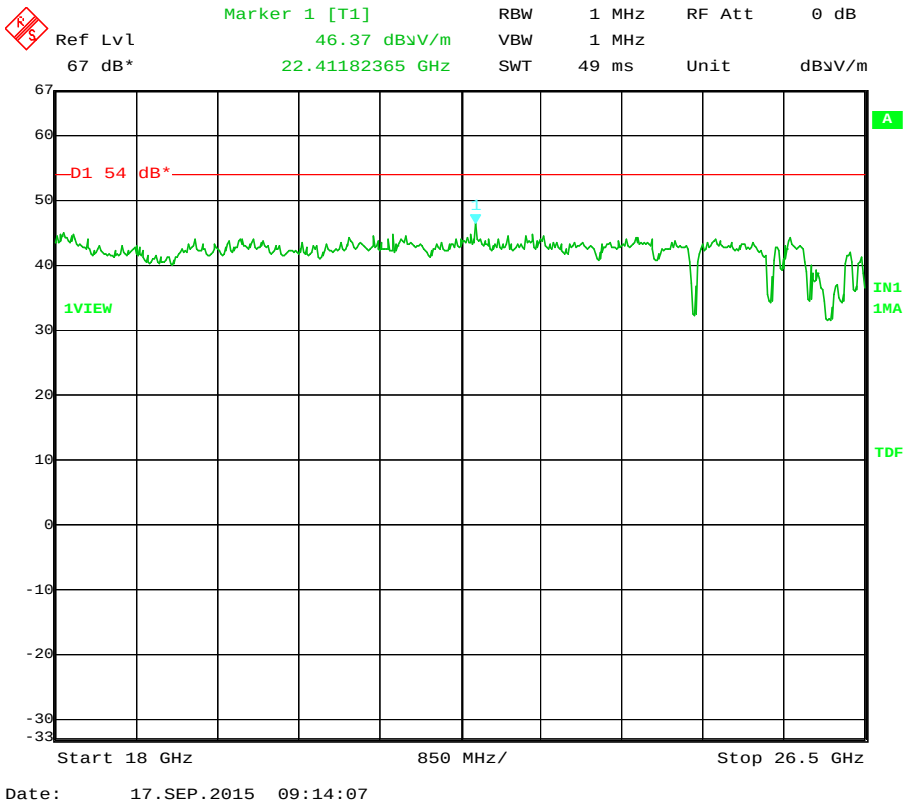


5.7 Radiated Emissions Plots – Receive Mode






Radiated
15RE0352_29 2015/09/17
Customer :DISPLAY DATA
Normalized to:3m
FCC B
dB above 1 microvolt/m
Frequency MHz
80
70
60
50
40
30
20
10
0
3000
3500
4000
4500
5500
6500
7500
8500
10000
15000
20000


Marker 1 [T1]
46.37 dBµV/m
22.41182365 GHz
RBW 1 MHz
VBW 1 MHz
SWT 49 ms
RF Att 0 dB
Unit dBµV/m
Ref Lvl
67 dB*
D1 54 dB*
1VIEW
A
IN1
1MA
TDF
67
60
50
40
30
20
10
0
-10
-20
-30
-33
Start 18 GHz
850 MHz/
Stop 26.5 GHz
Date: 17.SEP.2015 09:14:07

6.0 FCC DETAILS

FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046

February 13, 2006

Hursley EMC Services Ltd.
Unit 16
Brickfield Lane
Chandlers Ford - Hampshire, SO53 4DB
United Kingdom
Attention: R P St John James

Re: Accreditation of Hursley EMC Services Ltd.
Designation Number: UK0006

Dear Sir or Madam:

We have been notified by Department of Trade and Industry (DTI) that Hursley EMC Services Ltd. has been accredited as a Conformity Assessment Body (CAB).

At this time your organization is hereby designated to perform compliance testing on equipment subject to Declaration Of Conformity (DOC) and Certification under Parts 15 and 18 of the Commission's Rules.

This designation will expire upon expiration of the accreditation or notification of withdrawal of designation.

Sincerely,

Thomas Phillips
Electronics Engineer

End of document