TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: EndPoint915

FCC ID: Q8Q-SRE

To: FCC Part 15.247: 2012 Subpart C

Test Report Serial No.:
RFI-RPT-RP86123JD02B V6.0

Version 6.0 Supersedes All Previous Versions

This Test Report Is Issued Under The Authority Of John Newell, Group Quality Manager: 	
Checked By:	Sarah Williams
Signature: 	
Date of Issue:	08 May 2013

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Registered in England and Wales. Company number: 2117901

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1. Customer Information

Company Name:	Kenure Developments Ltd.
Address:	Springlakes Deadbrook lane Aldershot Hampshire GU12 4UH United Kingdom

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR15.247
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2012: Part 15 Subpart C (Intentional Radiators) - Section 15.247
Specification Reference:	47CFR15.109
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2012: Part 15 Subpart B (Unintentional Radiators) – Section 15.109
Site Registration:	209735;
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	17 August 2012 to 08 October 2012

2.2. Summary of Test Results

FCC Reference (47CFR)	Measurement	Result
Part 15.109	Receiver/Idle Mode Radiated Spurious Emissions	✓
Part 15.247(a)(1)(i)	Transmitter 20 dB Bandwidth	✓
Part 15.247(a)(1)	Transmitter Carrier Frequency Separation	✓
Part 15.247(a)(1)(i)	Transmitter Number of Hopping Frequencies and Average Time of Occupancy	✓
Part 15.247(b)(2)	Transmitter Maximum Peak Output Power	✓
Part 15.247(d)/ 15.209(a)	Transmitter Radiated Emissions	✓
Part 15.247(d)/ 15.209(a)	Transmitter Band Edge Radiated Emissions	✓
Key to Results ✓ = Complied ✗ = Did not comply		

2.3. Methods and Procedures

Reference:	ANSI C63.4 (2009)
Title:	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
Reference:	ANSI C63.10 (2009)
Title:	American National Standard for Testing Unlicensed Wireless Devices

2.4. Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specification identified above.

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

Brand Name:	Smart Route EndPoint
Model Name or Number:	EndPoint915
Serial Number:	8
Hardware Version Number:	#B
Software Version Number:	1.04
FCC ID:	Q8Q-SRE

3.2. Description of EUT

The equipment under test was a 915 MHz Wireless Water Register operating over the 902 MHz to 928 MHz band. The EUT uses a total of 50 channels for communications with a 500 kHz channel spacing.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing

Tested Technology:	FHSS		
Power Supply Requirement:	Nominal	3.6 VDC	
Type of Unit:	Transceiver		
Channel Spacing:	500 kHz		
Modulation:	2-FSK		
Data Rate	Max 320 kbps, min 100kbps		
Maximum Conducted Output Power:	29.4 dBm		
Transmit Frequency Range:	902 MHz to 928 MHz		
Transmit Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	1	902.5
	Middle	26	915.0
	Top	50	927.5
Receive Frequency Range:	902 MHz to 928 MHz		
Receive Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	1	902.5
	Middle	26	915.0
	Top	50	927.5

3.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

Description:	Magnet
Brand Name:	N/A
Model Name or Number:	N/A
Serial Number:	Not Marked or Stated

3.6. Antenna

Type	Stated Gain (dBi)	Manufacturer	Model No.
Stubby Dipole (Integral)	-0.85	Pro-cell Co. Ltd	SBA-A102

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

The EUT was tested in the following operating mode(s):

- Transmitter tests were performed with the EUT transmitting at full power on the bottom, middle and top channels or frequency hopping across the band of operation.
- Receiver/idle tests were performed with the EUT in receive mode.

4.2. Configuration and Peripherals

The EUT was tested in the following configuration(s):

- The EUT was powered by a 3.6 V battery. A new battery was fitted before testing commenced. The battery voltage was monitored throughout testing and the battery replaced as required.
- A magnet was used to change the EUT between the different modes of operation. The EUT contained a reed switch which when the magnet was placed next to it would change its state from hopping to static or idle. When the EUT was in static mode it could be switched between the top, middle and bottom channels. The EUT modes were:
    - Mode 0: Idle/Receive
    - Mode 2: Static & channel selection
    - Mode 11: Hopping.
- Radiated spurious emissions and 20 dB Bandwidth tests were performed with the antenna connected to the EUT.
- The antenna could be disconnected by removing the top of the EUT. All other tests were performed with the antenna removed.

5. Measurements, Examinations and Derived Results

5.1. General Comments

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to *Section 6. Measurement Uncertainty* for details.

In accordance with UKAS requirements all the measurement equipment is on a calibration schedule. All equipment was within the calibration period on the date of testing.

5.2. Test Results

5.2.1. Receiver/Idle Mode Radiated Spurious Emissions

Test Summary:

Test Engineer:	Mark Percival	**Test Date:**	04 September 2012
Test Sample Serial No:	8		

FCC Part:	15.109
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3 and 6.5 referencing ANSI C63.4
Frequency Range:	30 MHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	50

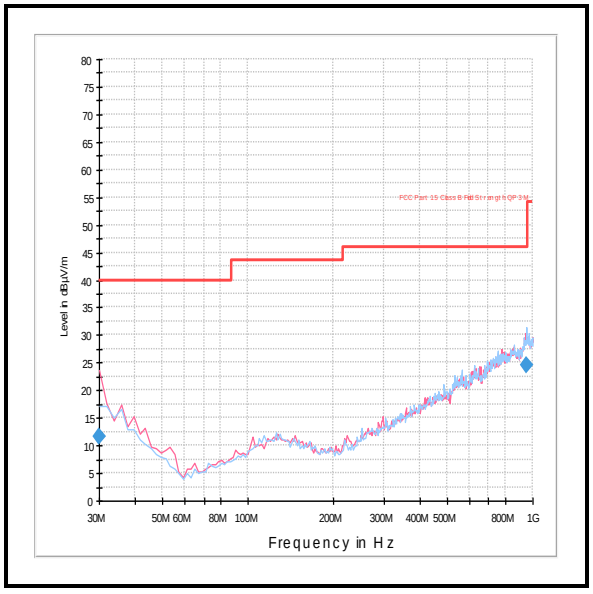
Results: Quasi-Peak

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
947.203	Horizontal	24.6	46.0	21.4	Complied

Note(s):

1. The final measured value, for the noise floor, in the table above incorporates the calibrated antenna factor and cable loss.
2. Measurements below 1 GHz were performed in a semi-anechoic chamber (RFI Asset Number K0001) at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.
3. No spurious emissions were detected above the noise floor of the measuring receiver therefore the highest peak noise floor reading of the measuring receiver was recorded as shown in the table above. The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit.

Receiver/Idle Mode Radiated Spurious Emissions (continued)



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Receiver/Idle Mode Radiated Spurious Emissions (continued)

Test Summary:

Test Engineer:	Andrew Edwards	**Test Date:**	07 September 2012
Test Sample Serial No:	8		

FCC Part:	15.109
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3 and 6.6 referencing ANSI C63.4
Frequency Range:	1 GHz to 4.7 GHz

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	39

Receiver/Idle Mode Radiated Spurious Emissions (continued)

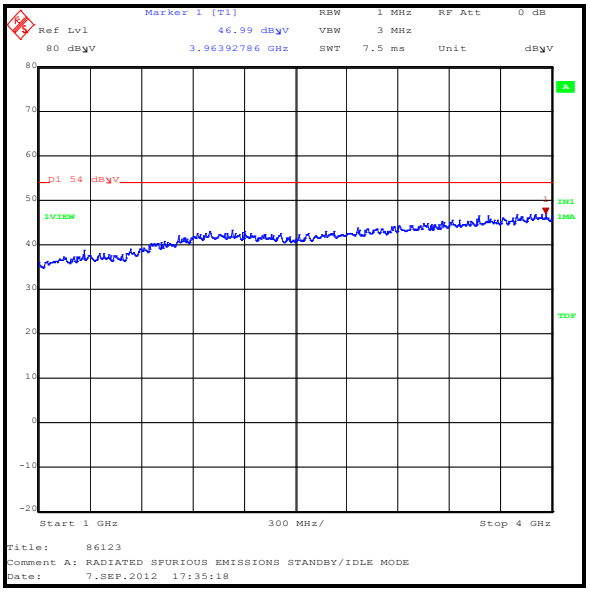
Results: Top channel

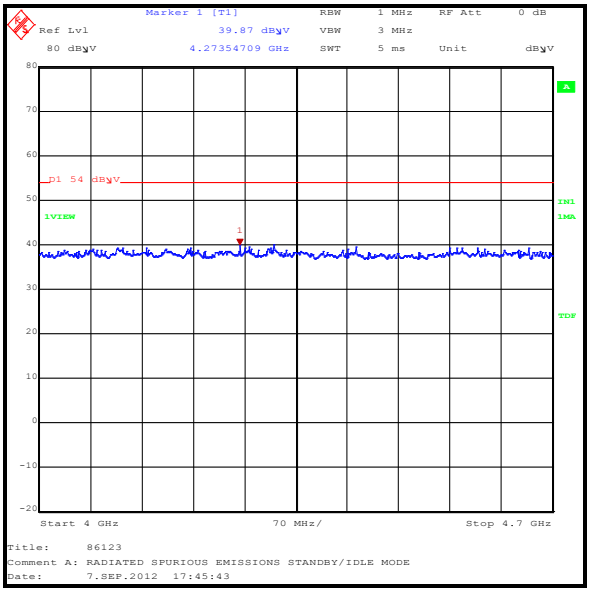
Frequency (MHz)	Antenna Polarity	Peak Level (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)	Result
3963.928	Vertical	47.0	54.0	7.0	Complied

Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit.
3. No spurious emissions were detected above the noise floor of the measuring receiver therefore the highest peak noise floor reading of the measuring receiver was recorded as shown in the table above. The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit.
4. Pre-scans above 1 GHz were performed in a fully anechoic chamber (RFI Asset Number K0002) at a distance of 3 metres. The EUT was placed at a height of 1.5 metres above the test chamber floor in the centre of the chamber turntable. All measurement antennas were placed at a fixed height of 1.5 metres above the test chamber floor, in line with the EUT. Final measurements above 1 GHz were performed in a semi-anechoic chamber (RFI Asset Number K0001) at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.

Receiver/Idle Mode Radiated Spurious Emissions (continued)





5.2.2. Transmitter 20 dB Bandwidth

Test Summary:

Test Engineer:	Mark Percival	**Test Date:**	08 October 2012
Test Sample Serial No:	8		

FCC Part:	15.247(a)(1)(i)
Test Method Used:	As detailed in ANSI C63.10 Section 6.9.1

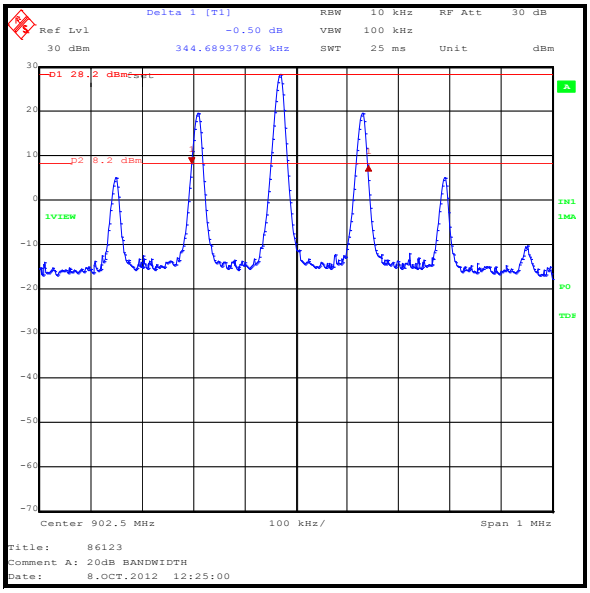
Environmental Conditions:

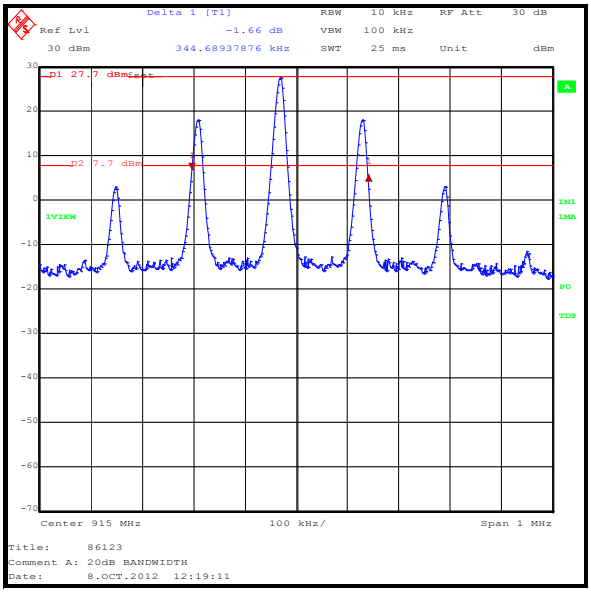
Temperature (°C):	22
Relative Humidity (%):	45

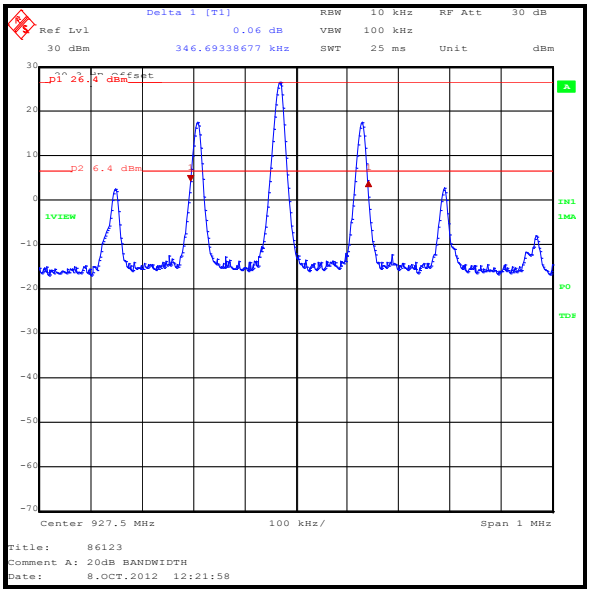
Results:

Channel	20 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Bottom	344.689	500	155.311	Complied
Middle	344.689	500	155.311	Complied
Top	346.693	500	153.307	Complied

Transmitter 20 dB Bandwidth (continued)







5.2.3. Transmitter Carrier Frequency Separation

Test Summary:

Test Engineer:	Mark Percival	**Test Date:**	11 September 2012
Test Sample Serial No:	8		

FCC Part:	15.247(a)(1)
Test Method Used:	As detailed in ANSI C63.10 Section 7.7.2

Environmental Conditions:

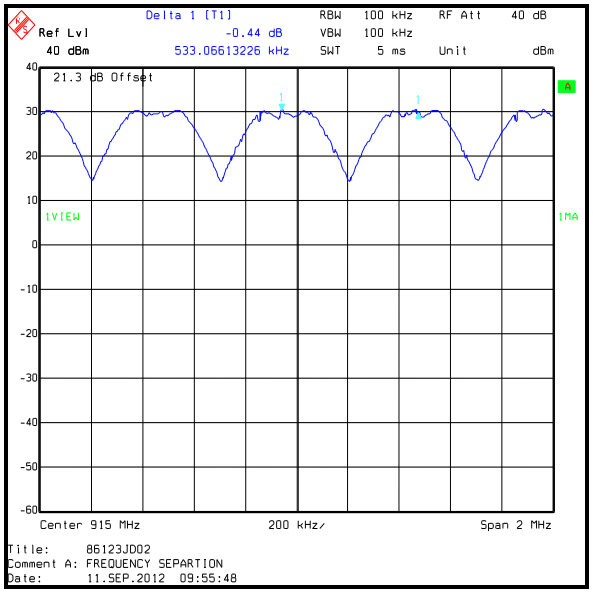
Temperature (°C):	24
Relative Humidity (%):	46

Results:

Carrier Frequency Separation (kHz)	Limit* (kHz)	Margin (kHz)	Result
533.066	344.689	188.377	Complied

Note(s):

1. *Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. The 20 dB bandwidth measured for the middle channel was used to calculate the limit.



5.2.4. Transmitter Number of Hopping Frequencies and Average Time of Occupancy

Test Summary:

Test Engineer:	Mark Percival	**Test Dates:**	11 September 2012 & 12 September 2012
Test Sample Serial No:	8		

Test Summary:

FCC Part:	15.247(a)(1)(i)
Test Method Used:	As detailed in ANSI C63.10 Sections 7.7.3 and 7.7.4

Environmental Conditions:

Temperature (°C):	21 to 24
Relative Humidity (%):	42 to 46

Results: Number of Hopping Frequencies:

Number of Hops	Limit (Hops)	Note	Result
50	≥25	1	Complied

Results: Average Time of Occupancy

Emission Width (ms)	Average Time of Occupancy* (s)	Limit (s)	Margin (s)	Note	Result
5.932	0.047456	0.4	0.352544	1	Complied

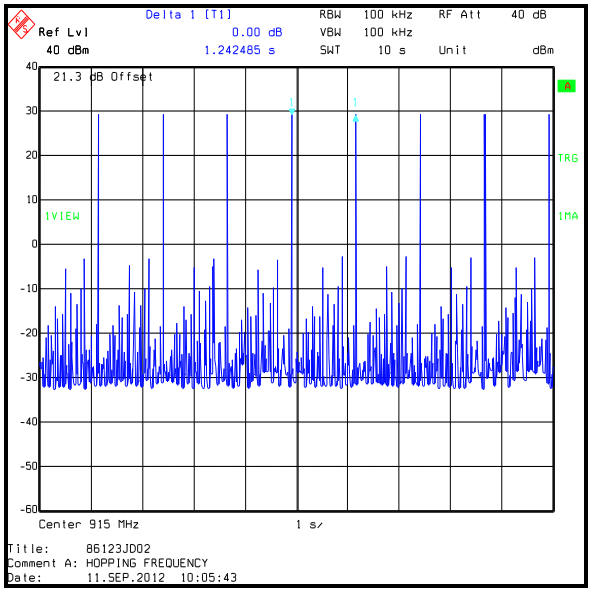
Note(s):

1. For a hopping channel with 20 dB bandwidth equal to, or greater than 250 kHz.

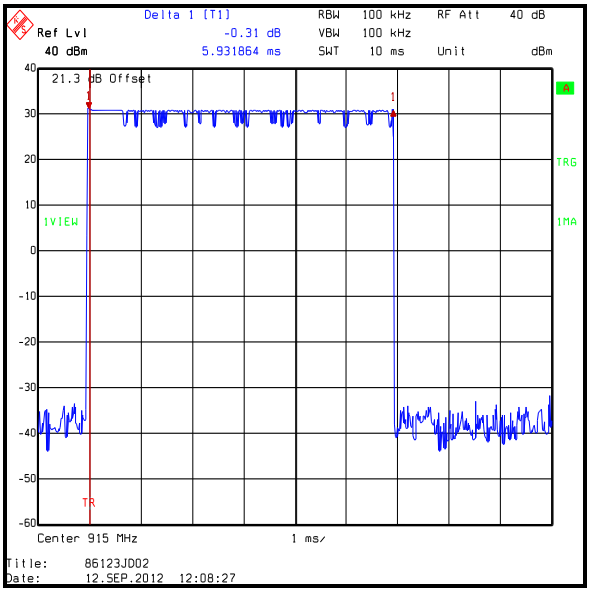
Limit:

If the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

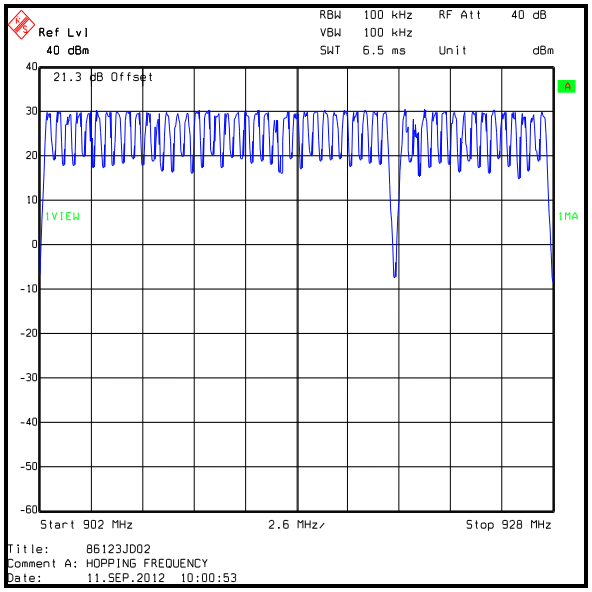
Transmitter Time of Occupancy (continued)



TX on time in 10 second period



TX on period



Number Of Hopping Channels

5.2.5. Transmitter Maximum Peak Output Power

Test Summary:

Test Engineer:	Mark Percival	**Test Date:**	11 September 2012
Test Sample Serial No:	8		

FCC Part:	15.247(b)(2)
Test Method Used:	As detailed in ANSI C63.10 Section 6.10.1 and Sections 6.3 and 6.6 referencing ANSI C63.4 (see note below)

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	42

Results:

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Note	Result
Bottom	29.4	30.0	0.6	1	Complied
Middle	29.2	30.0	0.8	1	Complied
Top	29.0	30.0	1.0	1	Complied

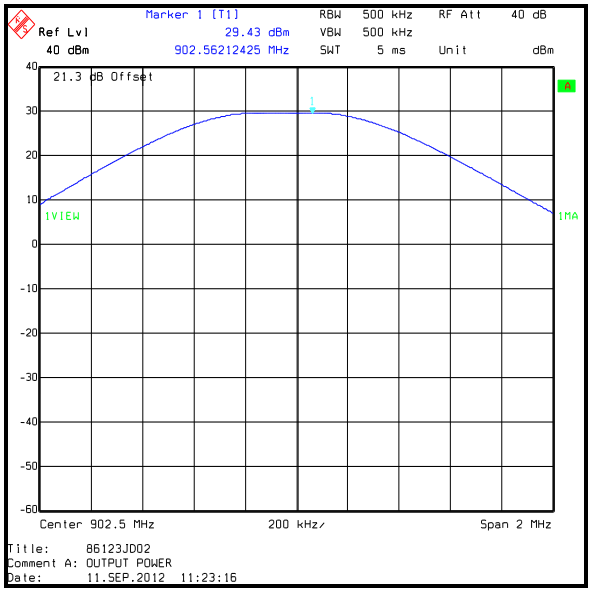
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Note	Result
Bottom	29.4	-0.85	28.55	36.0	7.45	1	Complied
Middle	29.2	-0.85	28.35	36.0	7.65	1	Complied
Top	29.0	-0.85	28.15	36.0	7.85	1	Complied

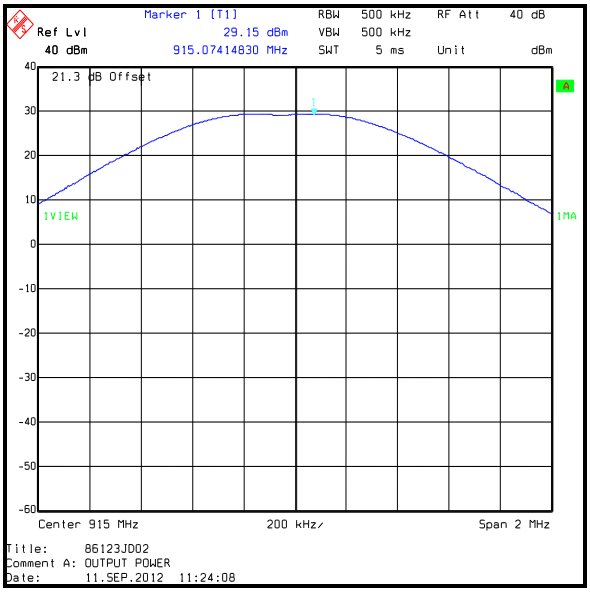
Channel	EIRP (dBm)	EIRP to ERP Conversion Factor	ERP (dBm)	De Facto ERP Limit (dBd)	Margin (dB)	Note	Result
Bottom	28.55	2.15	26.4	33.85	7.45	1	Complied
Middle	28.35	2.15	26.2	33.85	7.65	1	Complied
Top	28.15	2.15	26.0	33.85	7.85	1	Complied

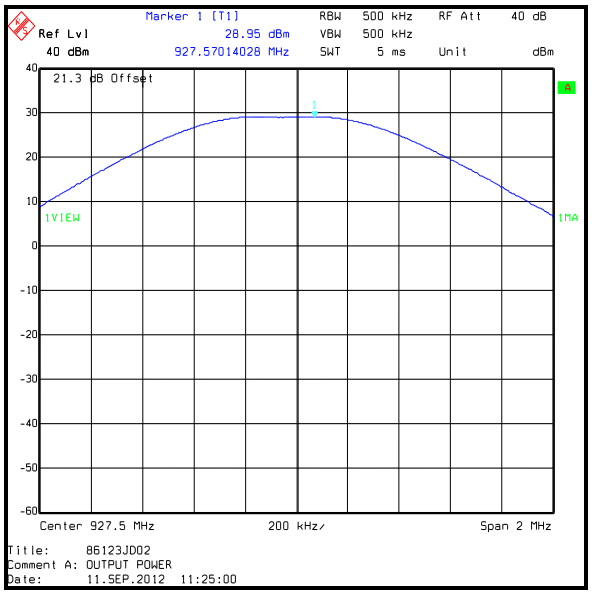
Note(s):

1. For frequency hopping systems employing at least 50 hopping channels.
2. The radiated results are shown as ERP and EIRP for completeness.

Transmitter Maximum Peak Output Power (continued)







5.2.6. Transmitter Radiated Emissions

Test Summary:

Test Engineer:	Mark Percival	**Test Date:**	04 September 2012
Test Sample Serial No:	8		

FCC Part:	15.247(d) & 15.209(a)
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3 and 6.5 referencing ANSI C63.4
Frequency Range	30 MHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	50

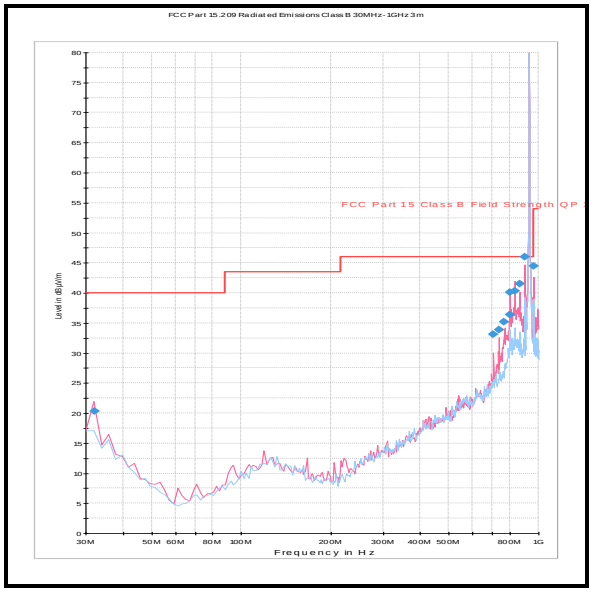
Results: Quasi-Peak

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
959.462	Vertical	44.5	80.2*	35.7	Complied

Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss
2. The emission at 927.407shown on the 30 MHz to 1 GHz plot is the EUT fundamental.
3. The preliminary scans showed similar emission levels below 1 GHz, for each channel of operation. Therefore final radiated emissions measurements were performed with the EUT set to the top channel only.
4. All other emissions shown on the pre-scan plot were investigated and found to be ambient or >20 dB below the applicable limit or below the measurement system noise floor.
5. Measurements below 1 GHz were performed in a semi-anechoic chamber (RFI Asset Number K0001) at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.
6. *-20 dBc Limit

Transmitter Radiated Emissions (continued)



Note: This plot is a pre-scan and for indication purposes only. For final measurements, see accompanying table.

Transmitter Radiated Emissions

Test Summary:

Test Engineers:	David Doyle & Mark Percival	**Test Dates:**	17 August 2012 & 06 September 2012
Test Sample Serial No:	8		

FCC Part:	15.247(d) & 15.209(a)
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3 and 6.6 referencing ANSI C63.4
Frequency Range	1 GHz to 9.30 GHz

Environmental Conditions:

Temperature (°C):	22 to 25
Relative Humidity (%):	24 to 53

Results: Peak / Bottom Channel

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2707.510	Vertical	53.3	74.0	20.7	Complied
3610.361	Vertical	59.8	74.0	14.2	Complied
4512.891	Vertical	55.1	74.0	18.9	Complied
5415.991	Vertical	60.1	74.0	13.9	Complied
8120.892	Vertical	72.7	74.0	1.3	Complied
9025.762	Vertical	73.4	74.0	0.6	Complied

Results: Average / Bottom Channel

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2707.540	Vertical	28.8	54.0	25.2	Complied
3610.020	Vertical	35.3	54.0	18.7	Complied
4512.510	Vertical	30.6	54.0	23.4	Complied
5415.020	Vertical	35.6	54.0	18.4	Complied
8122.337	Vertical	48.2	54.0	5.8	Complied
9024.797	Vertical	48.9	54.0	5.1	Complied

Transmitter Radiated Emissions (continued)

Results: Peak / Middle Channel

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2744.748	Horizontal	55.5	74.0	18.5	Complied
3659.549	Vertical	61.3	74.0	12.7	Complied
4575.507	Vertical	56.7	74.0	17.3	Complied
7319.137	Horizontal	69.4	74.0	4.6	Complied
8233.421	Horizontal	69.9	74.0	4.1	Complied
9148.282	Horizontal	72.3	74.0	1.7	Complied

Results: Average / Middle Channel

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2745.061	Horizontal	31.0	54.0	23.0	Complied
3660.061	Vertical	36.8	54.0	17.2	Complied
4575.074	Vertical	32.2	54.0	21.8	Complied
7320.64.7	Horizontal	44.9	54.0	9.1	Complied
8234.806	Horizontal	45.4	54.0	8.6	Complied
9149.747	Horizontal	47.8	54.0	6.2	Complied

Results: Peak / Top Channel

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2782.874	Vertical	57.6	74.0	16.4	Complied
3709.583	Vertical	58.2	74.0	15.8	Complied
4637.140	Vertical	58.0	74.0	16.0	Complied
7420.871	Vertical	70.6	74.0	3.4	Complied
8346.166	Horizontal	68.4	74.0	5.6	Complied

Results: Average / Top Channel

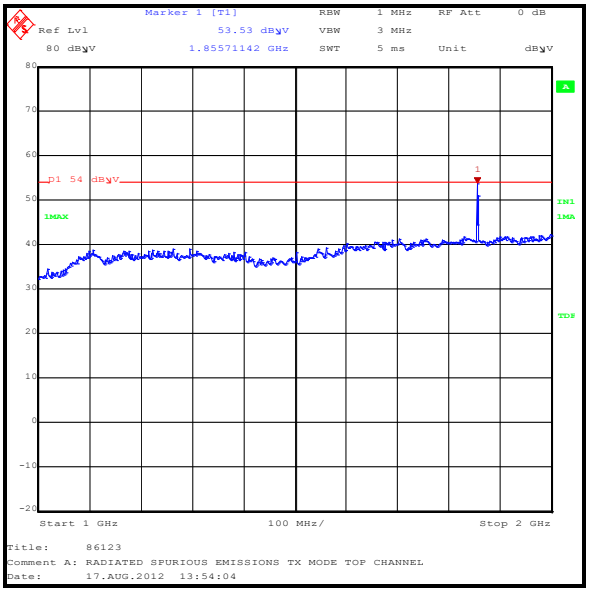
Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
3710.100	Vertical	33.1	54.0	20.9	Complied
2782.585	Vertical	33.7	54.0	20.3	Complied
4637.591	Vertical	33.5	54.0	20.5	Complied
7420.110	Vertical	46.1	54.0	7.9	Complied
8347.259	Horizontal	43.9	54.0	10.1	Complied

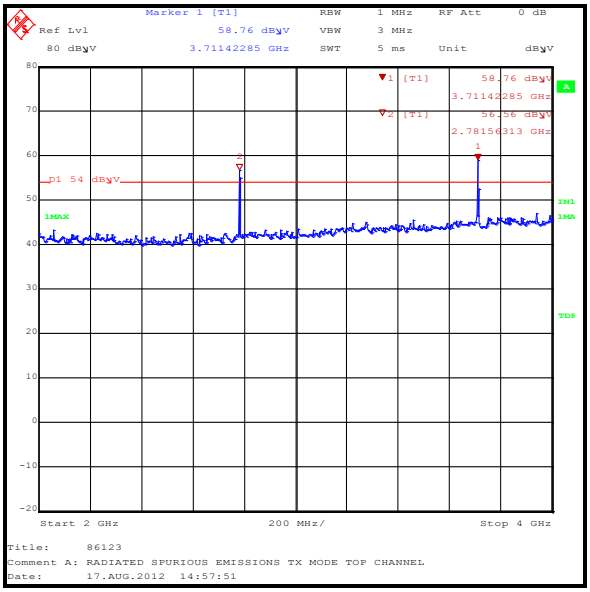
Transmitter Radiated Emissions (continued)

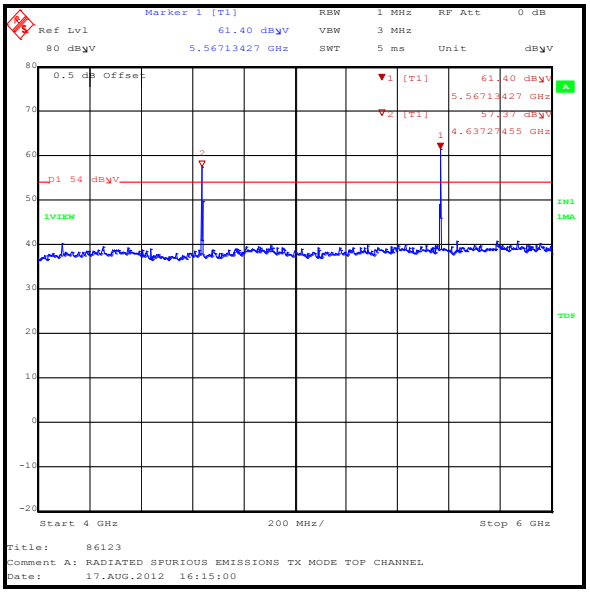
Note(s):

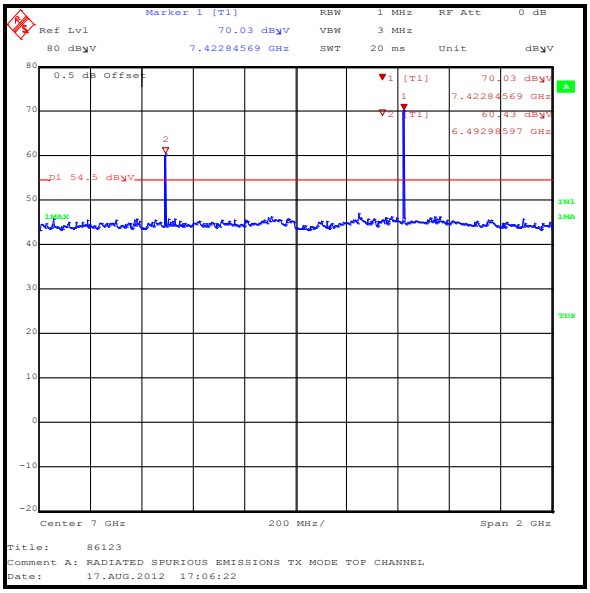
1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss
2. All other emissions shown on the pre-scan plot were investigated and found to be ambient or >20 dB below the applicable limit or below the measurement system noise floor.
3. Pre-scans above 1 GHz were performed in a fully anechoic chamber (RFI Asset Number K0002) at a distance of 3 metres. The EUT was placed at a height of 1.5 metres above the test chamber floor in the centre of the chamber turntable. All measurement antennas were placed at a fixed height of 1.5 metres above the test chamber floor, in line with the EUT. Final measurements above 1 GHz were performed in a semi-anechoic chamber (RFI Asset Number K0001) at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.
4. Average levels of emissions within the restricted bands were obtained using the test method and procedure stated in ANSI C63.10 Section 7.5. A duty cycle correction factor of -24.5 dB was used.
5. The level of peak emissions in hopping mode were equal to or less than those recorded in the results tables above.

Transmitter Radiated Emissions (continued)

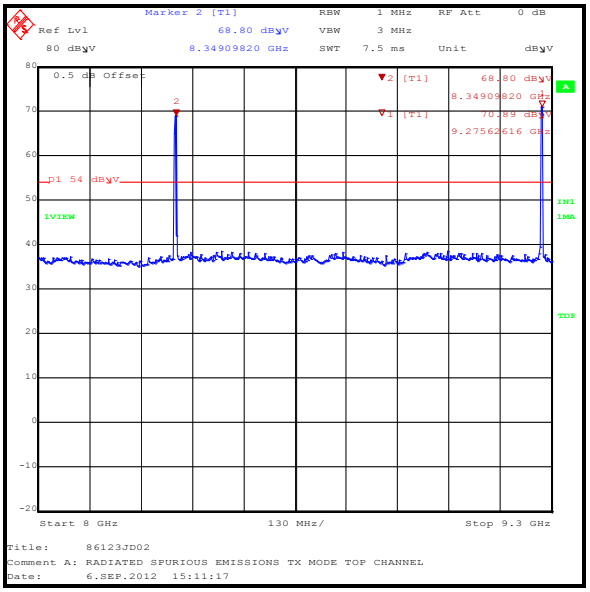








Transmitter Radiated Emissions (continued)



Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

5.2.6. Transmitter Duty Cycle

Test Summary:

Test Engineer:	Mark Percival	**Test Dates:**	11 September 2012 & 12 September 2012
Test Sample Serial No:	8		

FCC Part:	15.247(d) & 15.209(a)
Test Method Used:	As detailed in ANSI C63.10 Section 7.5

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	53

Results:

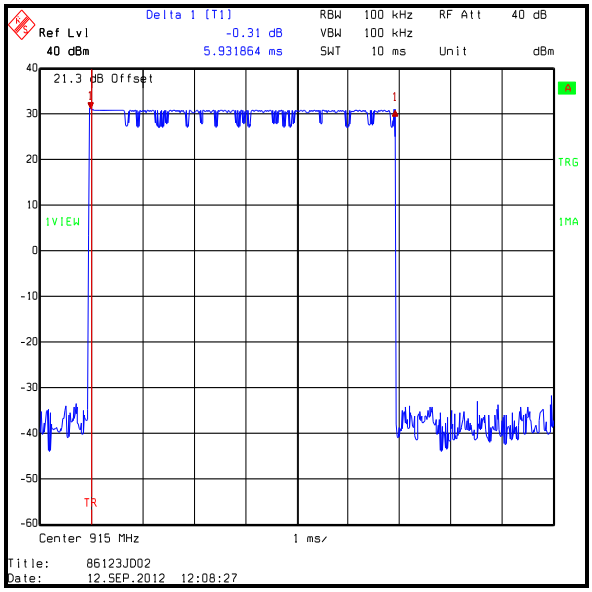
Total Pulse Duration (mS)	Duty Cycle (dB)
5.931864	24.5

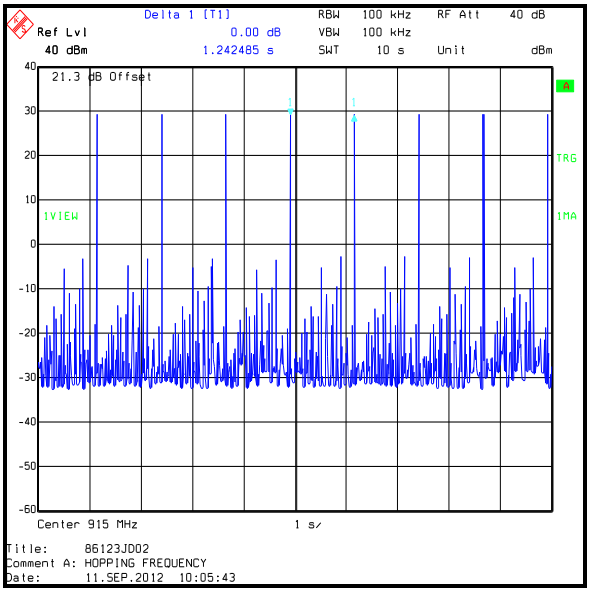
Silent Period (seconds)
1.242

Note(s):

1. In order to assist with the determination of the average level of fundamental and spurious emissions field strength, measurements were made of duty cycle to determine the transmission duration and the silent period time of the transmitter.
2. The EUT transmits a burst of 5.931 milliseconds within one 100 mS period.
3. The calculation for the duty cycle is 20 $\log_{10}$(5.931864/100ms) = -24.5 dB.

Transmitter Duty Cycle (continued)





5.2.7. Transmitter Band Edge Radiated Emissions

Test Summary:

Test Engineers:	David Doyle & Mark Percival	**Test Dates:**	17 August 2012 & 10 September 2012
Test Sample Serial No:	8		

FCC Part:	15.247(d) & 15.209(a)
Test Method Used:	As detailed in ANSI C63.10 Section 6.9.2

Environmental Conditions:

Temperature (°C):	24 to 25
Relative Humidity (%):	53 to 54

Results: Static Mode

Frequency (MHz)	Peak Level (dBµV/m)	-20 dBc Limit (dBµV/m)	Margin (dB)	Result
902	88.3	101.2	12.9	Complied
928	90.3	100.3	10.0	Complied

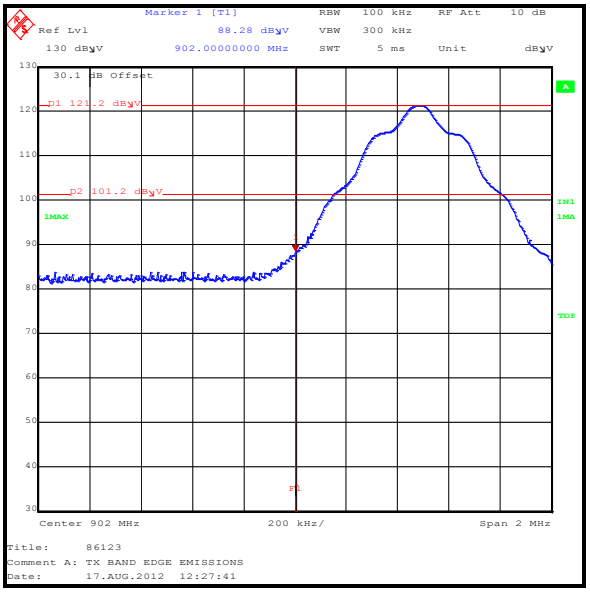
Results: Hopping Mode

Frequency (MHz)	Peak Level (dBµV/m)	-20 dBc Limit (dBµV/m)	Margin (dB)	Result
902	95.2	103.5	8.3	Complied
928	93.7	102.6	8.9	Complied

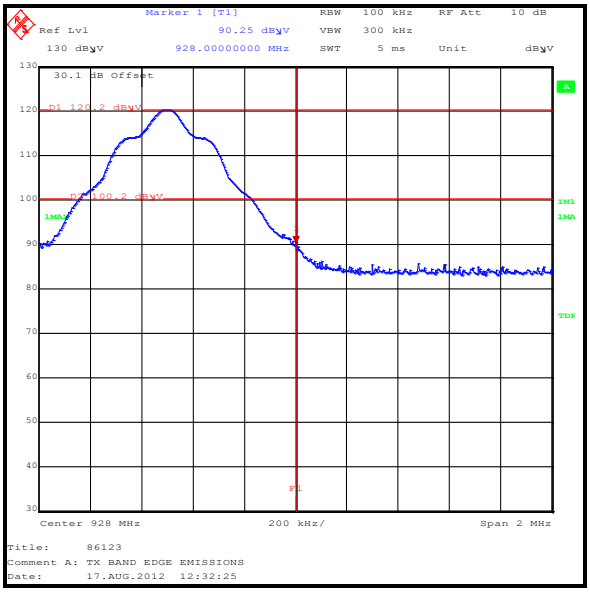
Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.

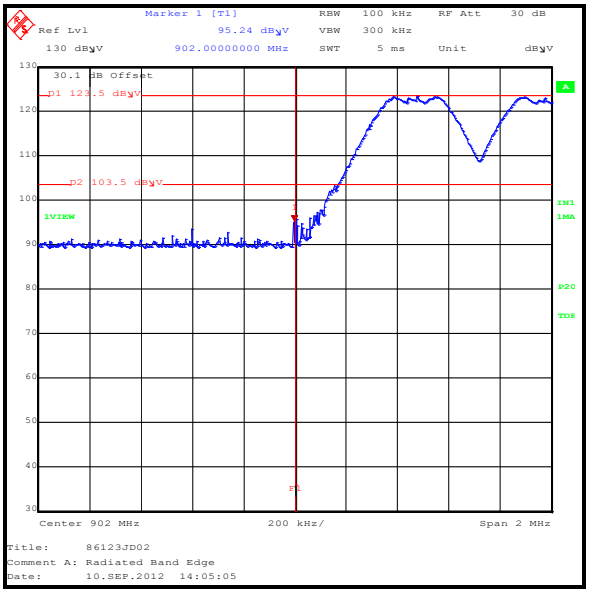
Transmitter Band Edge Radiated Emissions (continued)



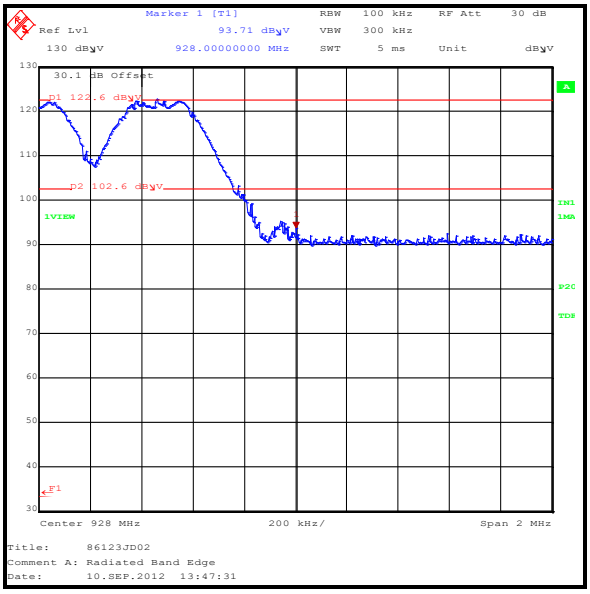
Lower Band Edge / Bottom Channel / Static



Upper Band Edge / Top Channel / Static



Lower Band Edge / Bottom Channel / Hopping



Upper Band Edge / Top Channel / Hopping

6. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
Radiated Maximum Peak Output Power	902 MHz to 928 MHz	95%	±2.94 dB
Carrier Frequency Separation	902 MHz to 928 MHz	95%	±0.92 ppm
Average Time of Occupancy	902 MHz to 928 MHz	95%	±0.3 ns
Duty Cycle	902 MHz to 928 MHz	95%	±0.3 ns
20 dB Bandwidth	902 MHz to 928 MHz	95%	±0.92 ppm
Radiated Spurious Emissions	30 MHz to 10 GHz	95%	±2.94 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (months)
A057	High Pass Filter	Aerial Facilities Ltd	HP-950-5N	4389B	08 Jul 2013	24
A1534	Pre Amplifier	Hewlett Packard	8449B	3008A00405	09 Oct 2012	12
A1818	Antenna	EMCO	3115	00075692	09 Oct 2012	12
A1834	Attenuator	Hewlett Packard	8491B	10444	29 Jan 2013	12
A1932	High Pass Filter	Atlan TechRF	AFH-02000	20r-JFBD04-002	15 Mar 2013	12
A1998	Attenuator	Huber & Suhner	6820.17.B	07101	03 Apr 2013	12
A2000	Attenuator	Huber & Suhner	6830.17.B	301623	03 Apr 2013	12
A253	Antenna	Flann Microwave	12240-20	128	09 Oct 2012	12
A254	Antenna	Flann Microwave	14240-20	139	09 Oct 2012	12
A255	Antenna	Flann Microwave	16240-20	519	09 Oct 2012	12
A288	Antenna	Chase	CBL6111A	1589	15 Aug 2013	12
A553	Antenna	Chase	CBL6111A	1593	15 Feb 2013	12
G0543	Amplifier	Sonoma	310N	230801	15 Oct 2012	3
K0001	5m RSE Chamber	Rainford EMC	N/A	N/A	30 Sep 2012	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	09 Oct 2012	12
M1124	Spectrum Analyser	Rohde & Schwarz	ESIB 26	100046K	14 Aug 2013	12
M127	Spectrum Analyser	Rohde & Schwarz	FSEB 30	842 659/016	13 Aug 2013	12
M1273	Test Receiver	Rohde & Schwarz	ESIB 26	100275	03 Feb 2013	12

NB In accordance with UKAS requirements all the measurement equipment is on a calibration schedule.