TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: Telensa TC-A3-NM-XX-N

To: FCC Part 15.247: 2009 Subpart C

Test Report Serial No:
RFI-RPT-RP76924JD12A

Version 2.0 supersedes all previous versions

This Test Report Is Issued Under The Authority Of Brian Watson, COO Payments and Consultancy:	pp R. Graham
Checked By:	R. Graham
Signature:	R. Graham
Date of Issue:	19 May 2010

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1. Customer Information

Company Name:	Telensa Ltd.
Address:	Plextek Building London Road Great Chesterford Essex CB10 1NY United Kingdom

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR15.247
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2009: Part 15 Subpart C (Radio Frequency Devices) - Section 15.247
Specification Reference:	47CFR15.107 and 47CFR15.109
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2008: Part 15 Subpart B (Radio Frequency Devices) - Sections 15.107 and 15.109
Specification Reference:	47CFR15.207
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2009: Part 15 Subpart C (Intentional Radiators) - Sections 15.107 and 15.109
Site Registration:	FCC: 209735
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	09 April 2010 to 13 April 2010

2.2. Summary of Test Results

FCC Reference (47CFR)	Measurement	Result
Part 15.107	Receiver/Idle Mode AC Conducted emissions	✓
Part 15.109	Receiver/Idle Mode Radiated Spurious Emissions	✓
Part 15.207	Transmitter AC Conducted 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 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 Methods of Measurement of Electromagnetic 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)

Description:	480V NEMA socket streetlight control and monitoring device
Brand Name:	Telensa
Model Name or Number:	TC-A3-NM-XX-N
Serial Number:	LL3464
Hardware Version Number:	Build standard LLYB0302
Software Version Number:	2.6.2
FCC ID Number:	XYD-TCNM-V

3.2. Description of EUT

The equipment under test was a streetlight control and monitoring device.

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:	Frequency Hopping Spread Spectrum device operating in the ISM band with a 20 dB bandwidth of less than 250 kHz and hopping on more than 50 frequencies		
Power Supply Requirement:	Nominal	480 VAC 60 Hz	
	Minimum	408 VAC 60 Hz	
	Maximum	552 VAC 60 Hz	
Type of Unit:	Transceiver		
Channel Spacing:	25 kHz		
Modulation:	2 level FSK		
Data Rate	62.5 bps or 500 bps		
Maximum Transmit ERP:	13 dBm		
Transmit Frequency Range:	902 MHz to 928 MHz		
Transmit Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	Sub-band 0 channel 0	910.500
	Middle	Sub-band 2 channel 58	915.000
	Top	Sub-band 5 channel 58	919.975
Receive Frequency Range:	902 MHz to 928 MHz		
Receive Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	Sub-band 0 channel 0	910.500
	Middle	Sub-band 2 channel 58	915.000
	Top	Sub-band 5 channel 58	919.975

3.5. Support Equipment

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

Description:	Streetlight Luminaire with NEMA socket
Brand Name:	Indal Industrial
Model Name or Number:	ASR150CGN
Serial Number:	2685.22012

Description:	Halogen Lamp
Brand Name:	Everspring Ind. Co. Ltd.
Model Name or Number:	SA122
Serial Number:	Not marked or stated

Description:	240V - 480V Transformer
Brand Name:	Block
Model Name or Number:	Tim300
Serial Number:	Not marked or stated

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

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

- Constantly transmitting at maximum power.
- Transmitting at a data rate of 62.5 bps or 500 bps depending on the test case requirement.
- Receive / idle mode.

4.2. Configuration and Peripherals

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

- A laptop computer with bespoke application was used to configure the EUT.
- The EUT was plugged into the Streetlight Luminaire with NEMA socket. This is representative of a typical user configuration. Power to the EUT is supplied via the NEMA socket on the streetlight.
- Power to the Streetlight Luminaire was supplied from a 240 Volt to 480 Volt transformer. The voltage was monitored using a calibrated digital multimeter.
- Two halogen lamps were connected to the Luminaire in order to present a typical load current.

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.

5.2. Test Results

5.2.1. Idle Mode AC Conducted Spurious Emissions

Test Summary:

FCC Part:	15.107(a)
Test Method Used:	As detailed in ANSI C63.10 Section 6.2 referencing ANSI C63.4

Environmental Conditions:

Temperature (°C):	26
Relative Humidity (%):	29

Results: Quasi Peak Detector Measurements

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.285000	Neutral	36.1	60.7	24.6	Complied
0.339000	Neutral	44.1	59.2	15.1	Complied
0.406500	Neutral	33.5	57.7	24.2	Complied
0.559500	Neutral	32.4	56.0	23.6	Complied
0.586500	Neutral	32.1	56.0	23.9	Complied
0.676500	Neutral	35.2	56.0	20.8	Complied

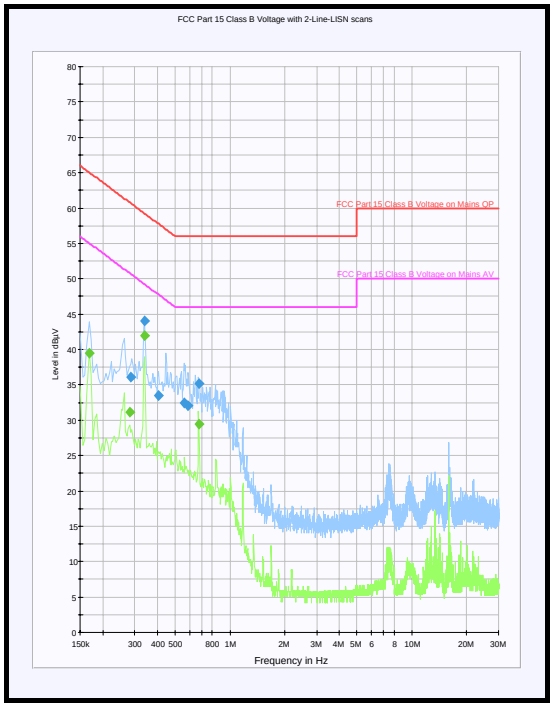
Results: Average Detector Measurements

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.168000	Neutral	39.5	55.1	15.6	Complied
0.280500	Neutral	31.1	50.8	19.7	Complied
0.339000	Neutral	41.9	49.2	7.3	Complied
0.676500	Neutral	29.4	46.0	16.6	Complied

Note(s):

1. The EUT transmitter was disabled during the test.

Idle Mode AC Conducted Spurious Emissions (continued)



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

5.2.2. Receiver/Idle Mode Radiated Spurious Emissions

Test Summary:

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:

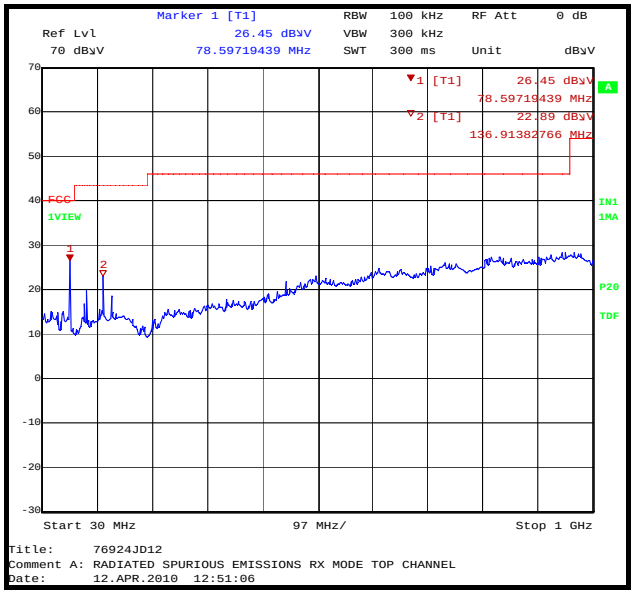
Temperature (°C):	24
Relative Humidity (%):	29

Results: Quasi Peak Detector Measurements

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
80.010	Horizontal	23.9	40.0	16.1	Complied
138.146	Horizontal	29.3	43.5	14.2	Complied

Note(s):

1. The EUT transmitter was disabled during the test.
2. All other emissions were >20 dB below the applicable limits or below the level of the measurement system noise floor.



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

Receiver/Idle Mode Radiated Spurious Emissions (continued)

Test Summary:

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:	1 GHz to 4.7 GHz

Environmental Conditions:

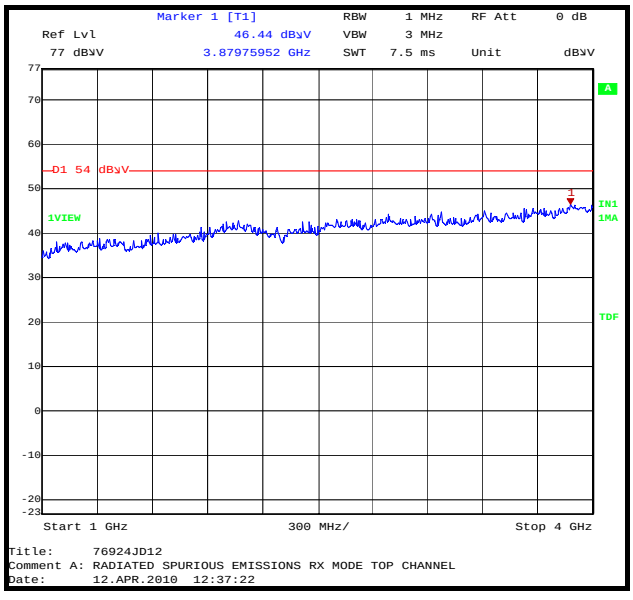
Temperature (°C):	24
Relative Humidity (%):	29

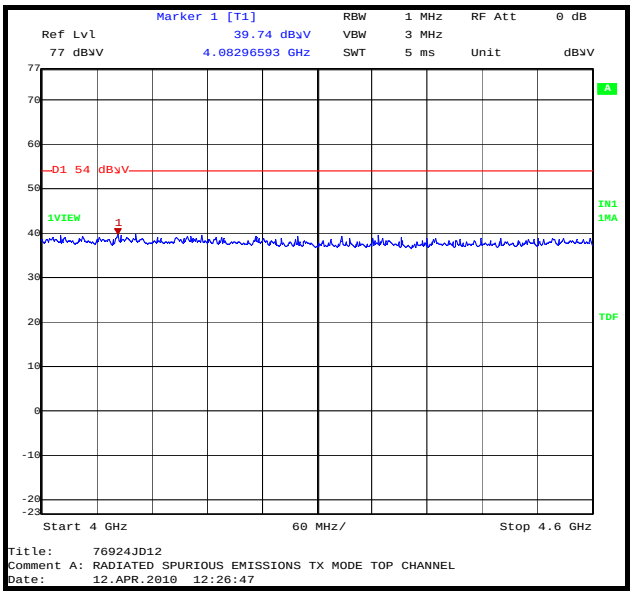
Results:

Frequency (MHz)	Antenna Polarity	Peak Level (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)	Result
3879.759	Vertical	46.4	54.0	7.6	Complied

Note(s):

1. The EUT transmitter was disabled during the test.
2. No emissions were observed above the noise floor of the measurement system. The highest noise floor level was recorded in the above table.





5.2.3. Transmitter AC Conducted Spurious Emissions

Test Summary:

FCC Part:	15.207(a)
Test Method Used:	As detailed in ANSI C63.10 Section 6.2 referencing ANSI C63.4

Environmental Conditions:

Temperature (°C):	26
Relative Humidity (%):	29

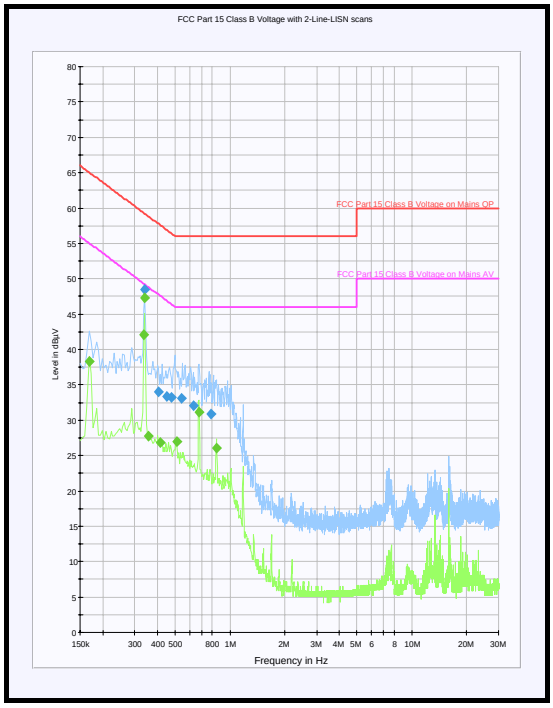
Results: Quasi Peak Detector Measurements

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.339000	Neutral	48.5	59.2	10.7	Complied
0.406500	Neutral	33.9	57.7	23.8	Complied
0.447000	Neutral	33.3	56.9	23.6	Complied
0.474000	Neutral	33.3	56.4	23.1	Complied
0.541500	Neutral	33.0	56.0	23.0	Complied
0.631500	Neutral	32.1	56.0	23.9	Complied
0.784500	Neutral	30.8	56.0	25.2	Complied

Results: Average Detector Measurements

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.168000	Neutral	38.3	55.1	16.8	Complied
0.334500	Neutral	42.1	49.3	7.2	Complied
0.339000	Neutral	47.3	49.2	1.9	Complied
0.357000	Neutral	27.8	48.8	21.0	Complied
0.415500	Neutral	26.8	47.5	20.7	Complied
0.510000	Neutral	27.0	46.0	19.0	Complied
0.676500	Neutral	31.1	46.0	14.9	Complied
0.847500	Neutral	26.1	46.0	19.9	Complied

Transmitter AC Conducted Spurious Emissions (continued)



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

5.2.4. Transmitter 20 dB Bandwidth

Test Summary:

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

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	29

Results for 62.5 bps data rate:

Channel	Transmitter 20 dB Bandwidth (kHz)	Limit (kHz)
910.5	0.942	500
915.0	1.032	500
919.575	1.168	500

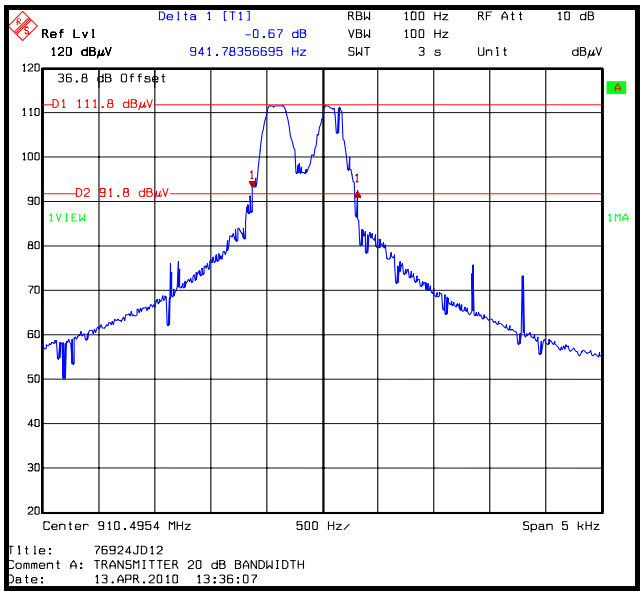
Results for 500 bps data rate:

Channel	Transmitter 20 dB Bandwidth (kHz)	Limit (kHz)
910.5	1.172	500
915.0	1.142	500
919.575	1.208	500

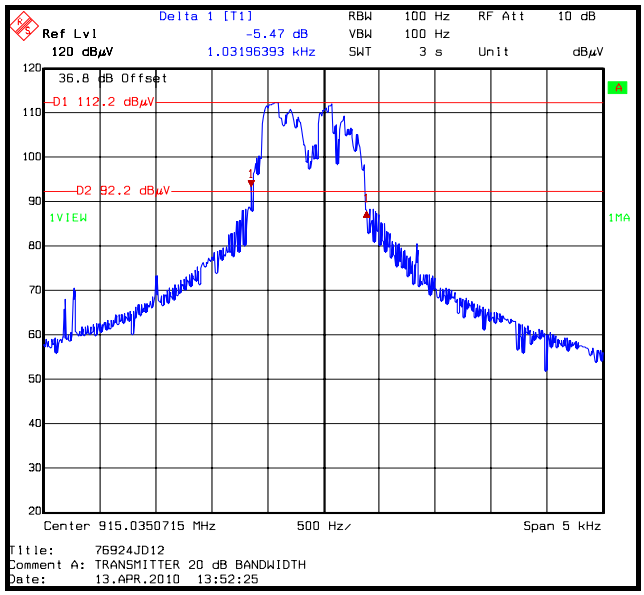
Note(s):

1. Tests were performed at both data rates supported by the EUT.

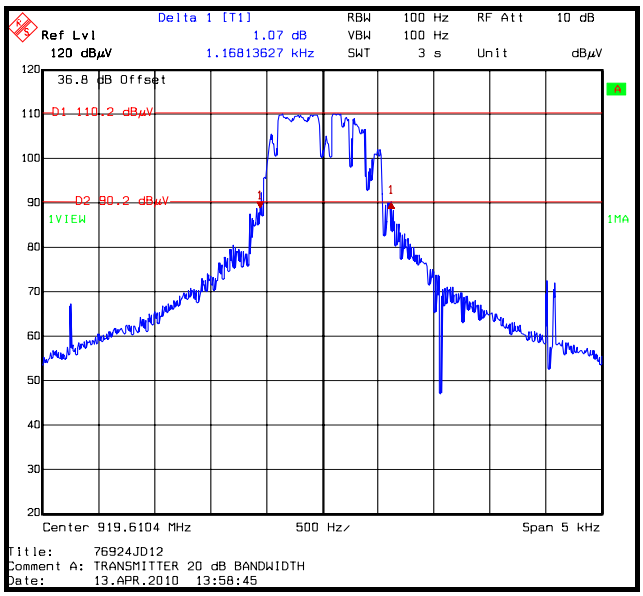
Transmitter 20 dB Bandwidth (continued)



Bottom Channel / 62.5 bps

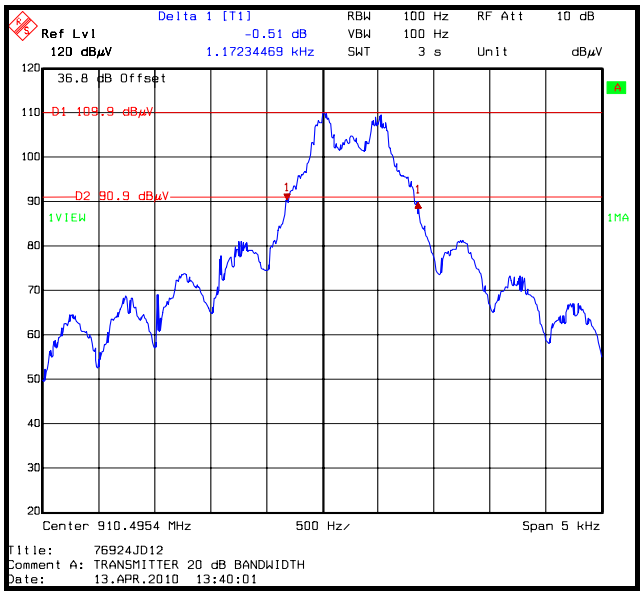


Centre Channel / 62.5 bps

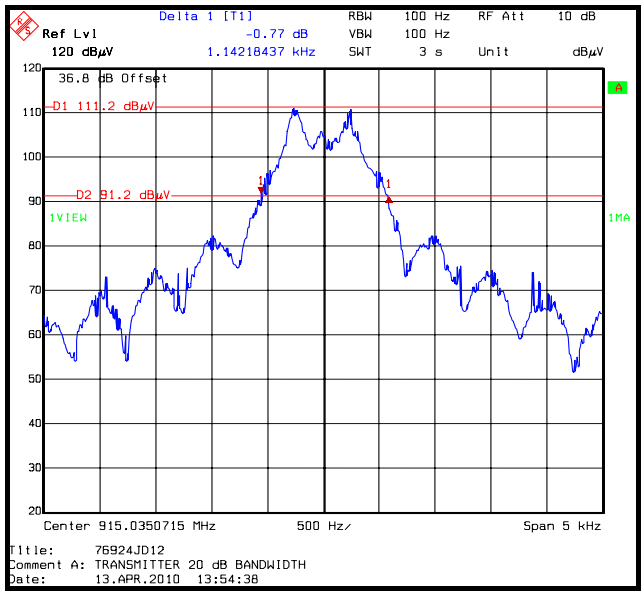


Top Channel / 62.5 bps

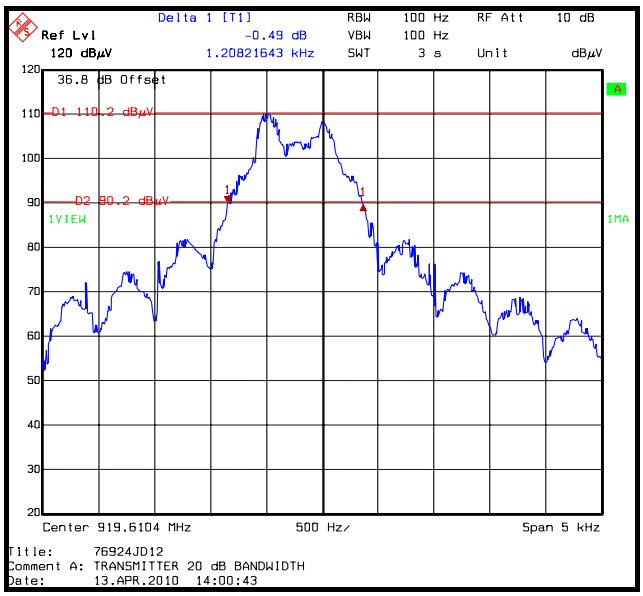
Transmitter 20 dB Bandwidth (continued)



Bottom Channel / 500 bps



Centre Channel / 500 bps



Top Channel / 500 bps

5.2.5. Transmitter Carrier Frequency Separation

Test Summary:

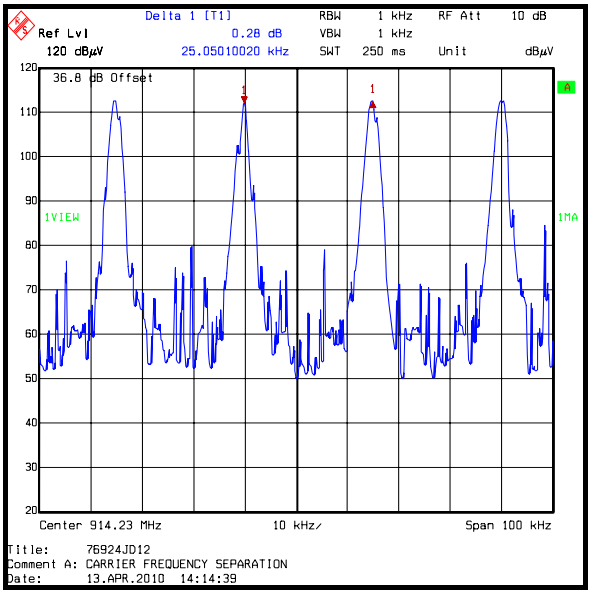
FCC Part:	15.247(a)(1)
Test Method Used:	As detailed in ANSI C63.10 Section 7.7.2

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	29

Results:

Transmitter Carrier Frequency Separation (kHz)	Limit (kHz)	Margin (kHz)	Result
25.050	25.0	0.05	Complied



Note(s):

1. The hopping function of the EUT was enabled. Markers were placed on the peaks of two adjacent channels and the frequency delta recorded.

5.2.6. Transmitter Time of Occupancy

Test Summary:

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

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	28

Results:

Operating Mode	Transmit Duration Time (Burst Length) (seconds in 20 second period)
Frequency hopping	0.3888

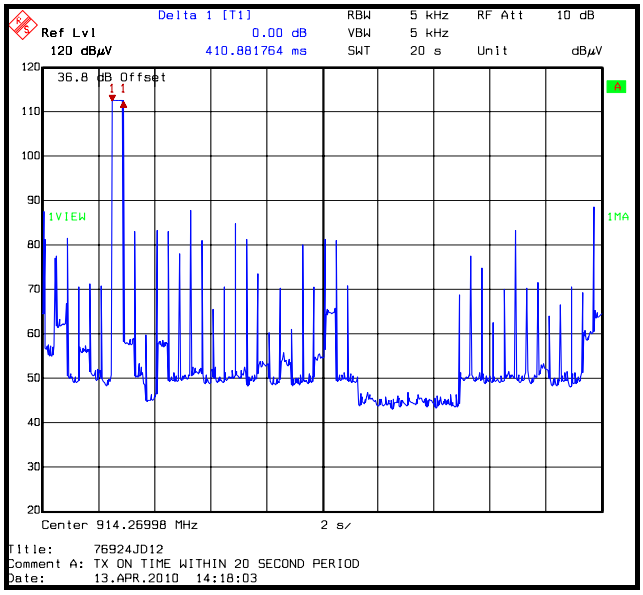
Operating Mode	Transmit Off Time (seconds in 20 second period)
Frequency hopping	19.61

Operating Mode	Number of Hopping Channels in Sub-Band
Frequency hopping	59

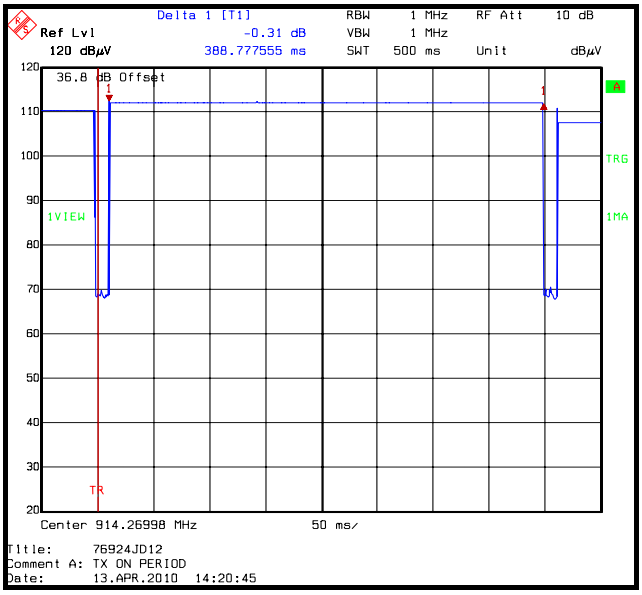
Note(s):

1. The hopping function of the EUT was enabled.
2. The EUT operates over six sub-bands in the 902-928 MHz band. Each sub-band has 59 channels and a bandwidth of 1.5 MHz. The Client stated that the hopping sequence is identical in each sub-band.
3. The test was performed with the EUT transmitting in sub-band 2 which is the only sub-band that incorporates the channel in the centre of the 902-928 MHz band. The EUT was transmitting 500 bps during the test, the Client confirmed there is no difference between any of the hopping characteristics or burst duration when transmitting at the lower data rate of 62.5 bps.
4. The channel width is 25 kHz. Transmitter on time measurements were made using a measurement bandwidth of 5 kHz in order to avoid emissions from adjacent channels.

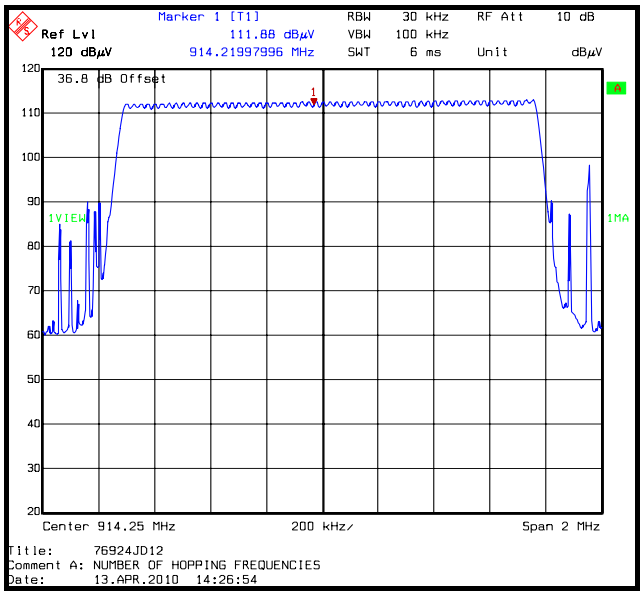
Transmitter Time of Occupancy (continued)



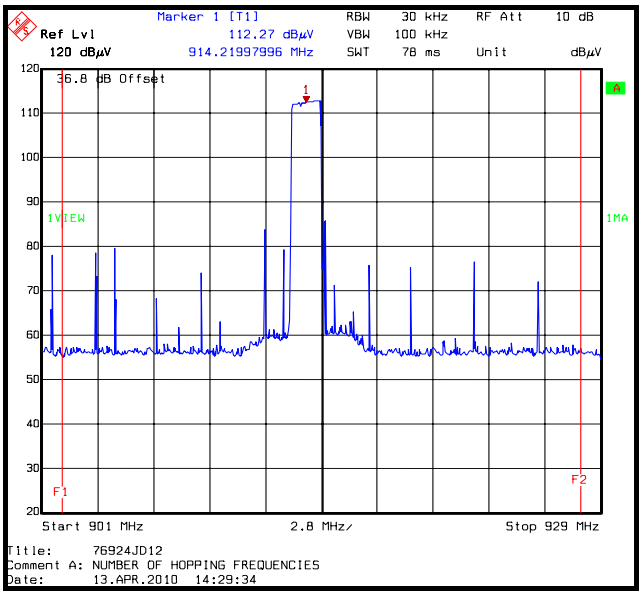
TX on time in 20 second period



TX on period



Number Of Hopping Channels (sub-band)



Number Of Hopping Channels (showing sub-band within operating band)

5.2.7. Transmitter Maximum Peak Output Power (ERP)

Test Summary:

FCC Part:	15.247(b)(2)
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3 and 6.5 referencing ANSI C63.4 (see note 2 below)

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	22

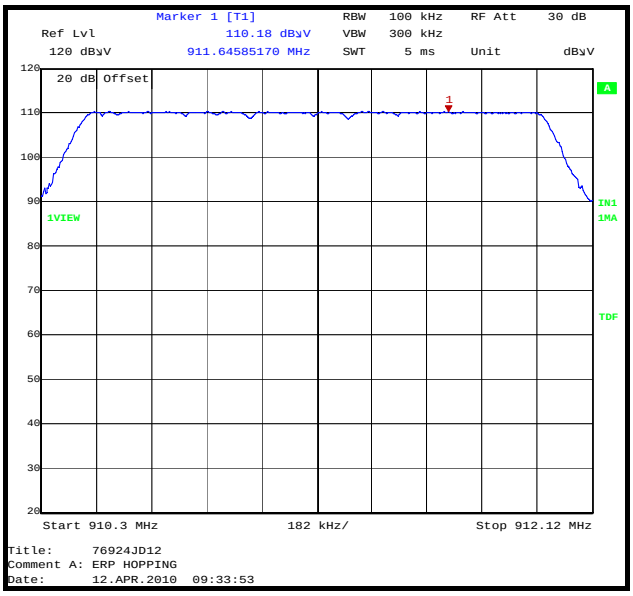
Results: AC Powered Devices – 480V Nominal

Channel	Input Voltage (AC)	ERP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	408	13.0	30.0	17.0	Complied
Bottom	480	12.9	30.0	17.1	Complied
Bottom	552	12.9	30.0	17.1	Complied
Middle	408	12.8	30.0	17.2	Complied
Middle	480	12.8	30.0	17.2	Complied
Middle	552	12.8	30.0	17.2	Complied
Top	408	12.9	30.0	17.1	Complied
Top	480	12.5	30.0	17.5	Complied
Top	552	12.6	30.0	17.4	Complied

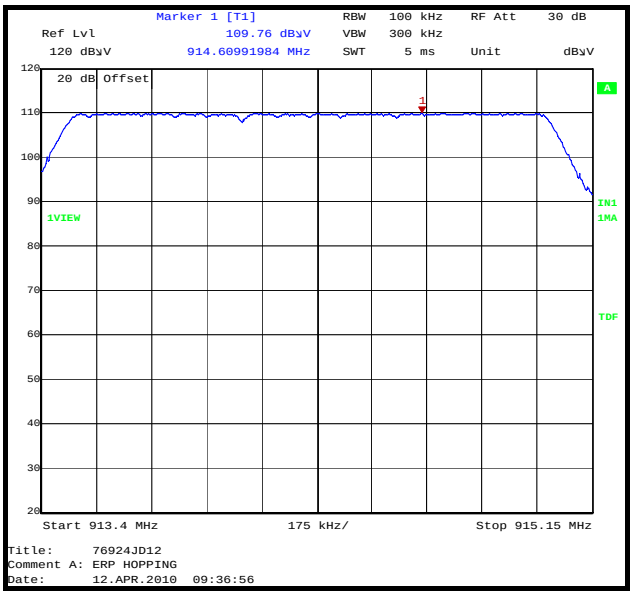
Note(s):

1. These tests were performed radiated; therefore the EUT antenna gain is encompassed in the final result and not measurable.
2. Tests were performed using the test methods described in ANSI C63.10 Sections 6.3 and 6.6 in lieu of the test method for a conducted measurement described in ANSI C63.10 Section 6.10.1.
3. The EUT operates at a nominal 480 VAC 60 Hz.
4. 62.5 bps and 500 bps transmission rates were tested on bottom, centre and top channels. No difference in ERP levels was observed.
5. No correction was made for duty cycle as the EUT has a TX on period of >10 seconds when measured on the bottom, centre and top channels and not frequency hopping (worst case).
6. Tests were performed with the EUT static on the bottom, centre and top channels and then repeated while frequency hopping across three sub-bands of operation. It can be seen from the plots on the following page that the power was the same across each sub-band when the EUT was in hopping mode.

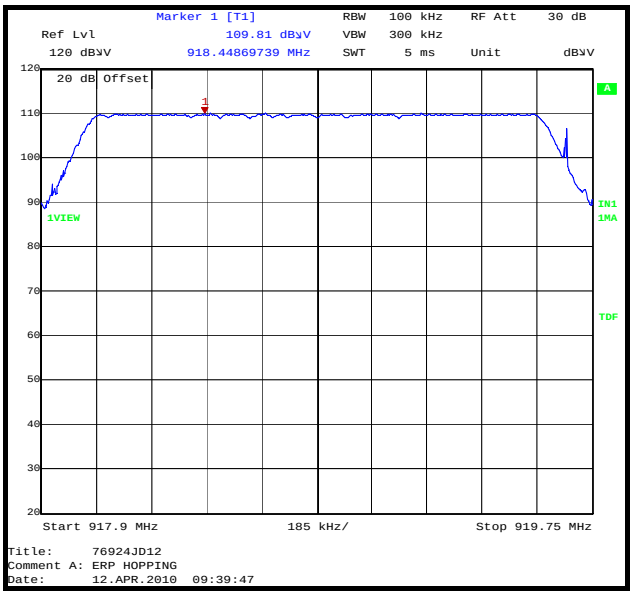
Transmitter Maximum Peak Output Power (continued)



ERP Hopping / Lower Sub-Band



ERP Hopping / Centre Sub-Band



ERP Hopping / Upper Sub-Band

5.2.8. Transmitter Radiated Emissions

Test Summary:

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):	22
Relative Humidity (%):	23

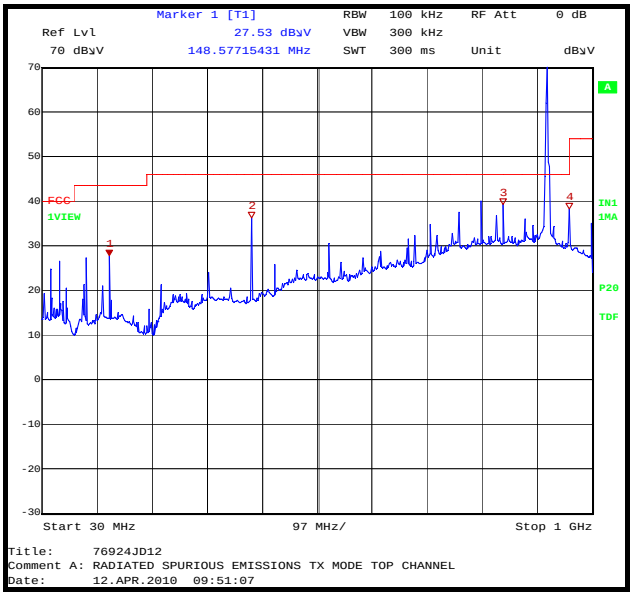
Results: Top Channel

Frequency (MHz)	Antenna Polarity	Quasi-Peak Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
768.367	Vertical	39.4	90.3*	50.9	Complied
841.754	Vertical	47.5	90.3*	42.8	Complied
958.527	Vertical	44.5	90.3*	45.8	Complied

Note(s):

1. *-20 dBc limit
2. The carrier is shown on the pre-scan plot at approximately 920 MHz.
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 >20 dB below the applicable limits or below the noise floor of the measurement system.
5. No emissions were observed within the restricted bands.

Transmitter Radiated Emissions (continued)



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

5.2.9. Transmitter Radiated Emissions

Test Summary:

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 9.20 GHz

Environmental Conditions:

Temperature (°C):	24 to 25
Relative Humidity (%):	25 to 27

Results: Highest Peak Level. Bottom Channel

Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
1.820961	Vertical	45.0	-2.1	42.9	90.4*	47.5	Complied

Results: Highest Peak Level. Middle Channel

Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
1.830029	Vertical	44.6	-2.0	42.6	90.2*	47.6	Complied

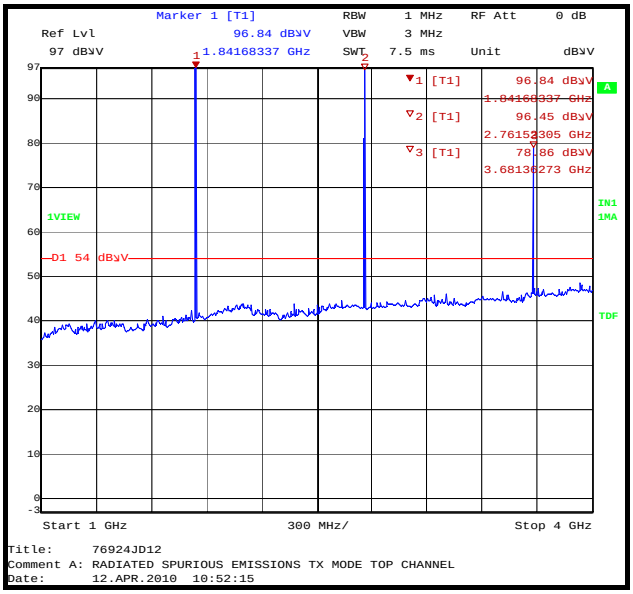
Results: Highest Peak Level. Top Channel

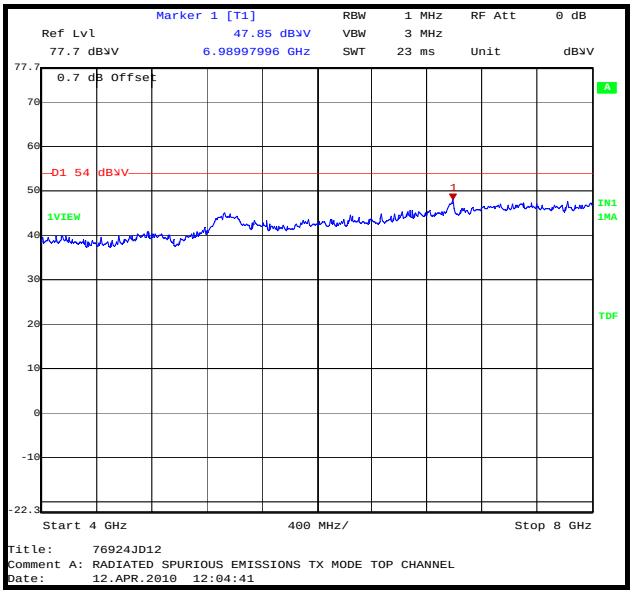
Frequency (GHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
1.839192	Vertical	45.3	-1.9	43.4	90.3*	46.9	Complied

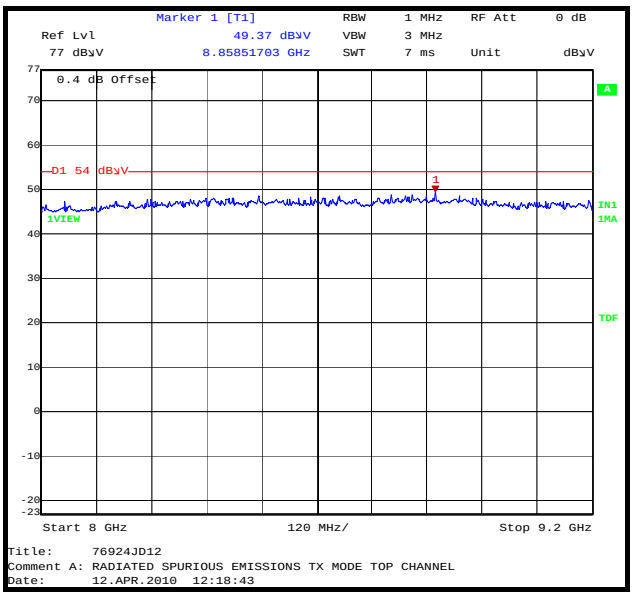
Note(s):

1. *-20 dBc limit
2. The high level second, third and fourth harmonic emissions shown on the 1 GHz to 4 GHz pre-scan plot were caused by an overload on the spectrum analyser due to the high level of transmitter fundamental. Final measurements on the bottom, centre and top channels were performed using appropriate high pass RF filters and attenuators. Only the second harmonic was measurable, the third and fourth harmonics were below the noise floor of the measurement system.
3. Measurements were also performed with the EUT transmitting at data rates of 500 bps, 62.5 bps and also frequency hopping. No difference in spurious emission levels was observed.
4. Emissions when the EUT was frequency hopping were investigated and found to be lower than those recorded in the above tables.

Transmitter Radiated Emissions (continued)







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

5.2.10. Transmitter Band Edge Radiated Emissions

Test Summary:

FCC Part:	15.247(d)
Test Method Used:	As detailed in ANSI C63.10 Sections 6.9.2

Environmental Conditions:

Temperature (°C):	24 to 26
Relative Humidity (%):	22 to 29

Results: Peak Power Level Static Mode / 62.5 bps

Frequency (MHz)	Emission Level (dBµV/m)	-20 dBc Limit (dBµV/m)	Margin (dB)	Result
902	61.9	90.4	28.5	Complied
928	62.1	90.3	28.2	Complied

Results: Peak Power Level Hopping Mode / 62.5 bps

Frequency (MHz)	Emission Level (dBµV/m)	-20 dBc Limit (dBµV/m)	Margin (dB)	Result
902	61.2	90.4	29.2	Complied
928	61.2	90.3	29.1	Complied

Results: Peak Power Level Static Mode / 500 bps

Frequency (MHz)	Emission Level (dBµV/m)	-20 dBc Limit (dBµV/m)	Margin (dB)	Result
902	61.5	90.4	28.9	Complied
928	60.0	90.3	30.3	Complied

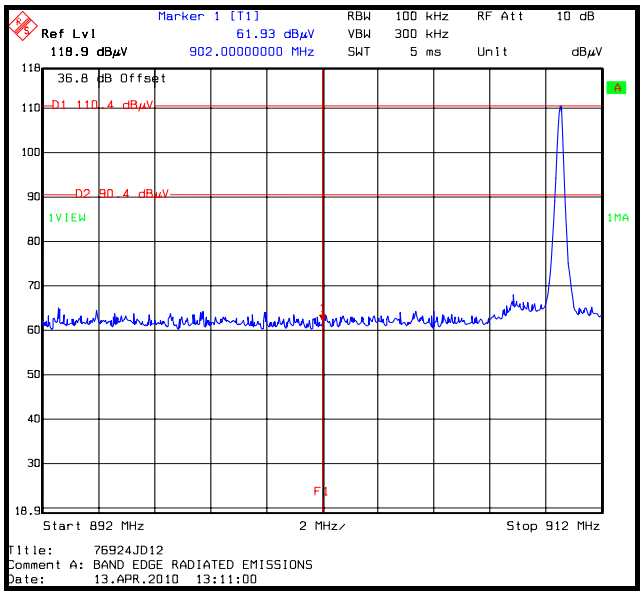
Results: Peak Power Level Hopping Mode / 500 bps

Frequency (MHz)	Emission Level (dBµV/m)	-20 dBc Limit (dBµV/m)	Margin (dB)	Result
902	60.5	90.4	29.9	Complied
928	61.7	90.3	28.6	Complied

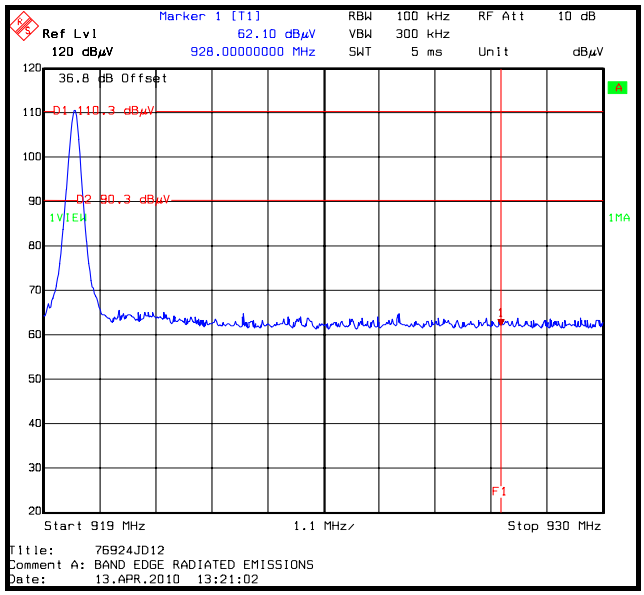
Note(s):

1. The limit lines shown in the static mode plots below are set to a level 20 dB below the measured fundamental peak power of the channel closest to the lower and upper band edges, in a 100 kHz measurement bandwidth.
2. The limit line shown in the hopping mode plots was set to a level 20 dB below the measured fundamental peak power of the highest power level contained within the band, in a 100 kHz measurement bandwidth.
3. Tests were performed with the EUT static on the bottom and top channels and repeated with the EUT frequency hopping using both supported data rates.

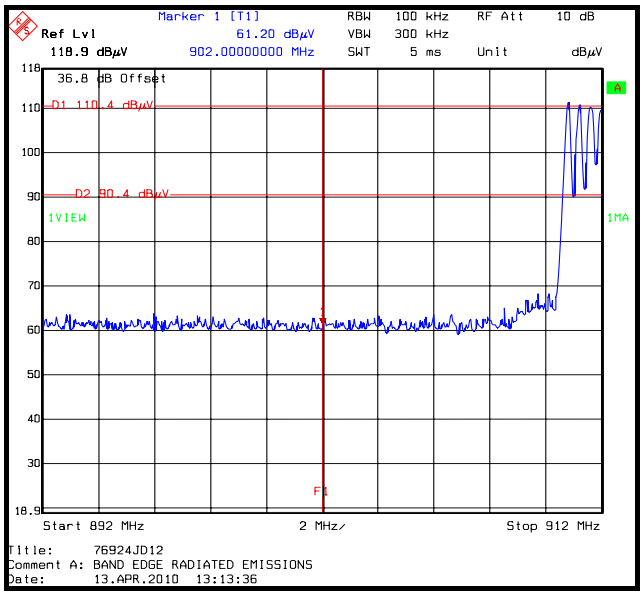
Transmitter Band Edge Radiated Emissions (continued)



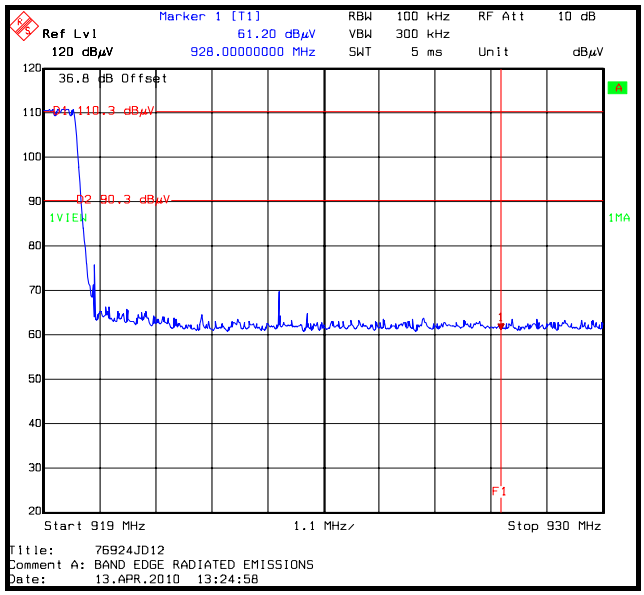
Lower Band Edge / Bottom Channel / Static / 62.5 bps



Upper Band Edge / Top Channel / Static/ 62.5 bps

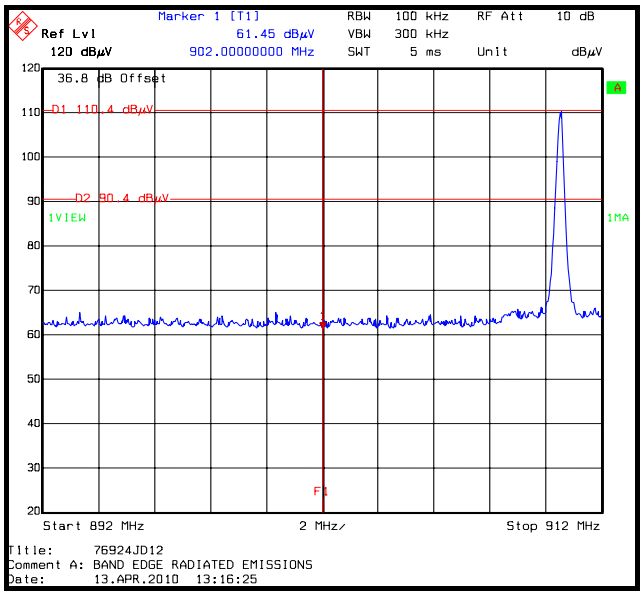


Lower Band Edge / Bottom Channel / Hopping / 62.5 bps

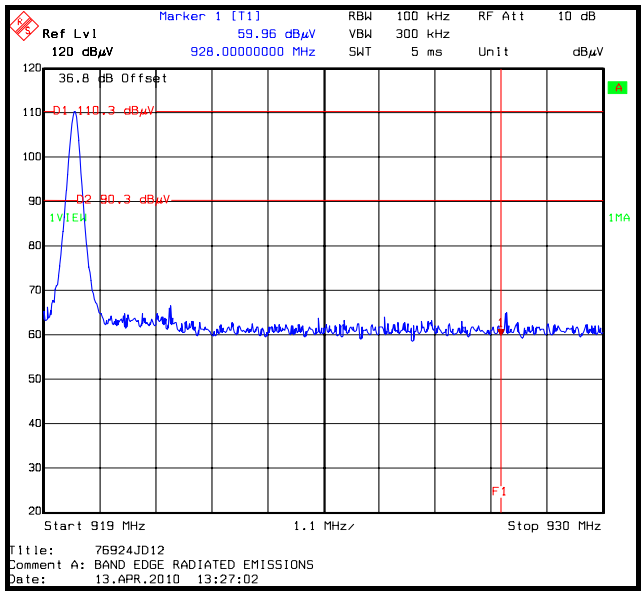


Upper Band Edge / Top Channel / Hopping/ 62.5 bps

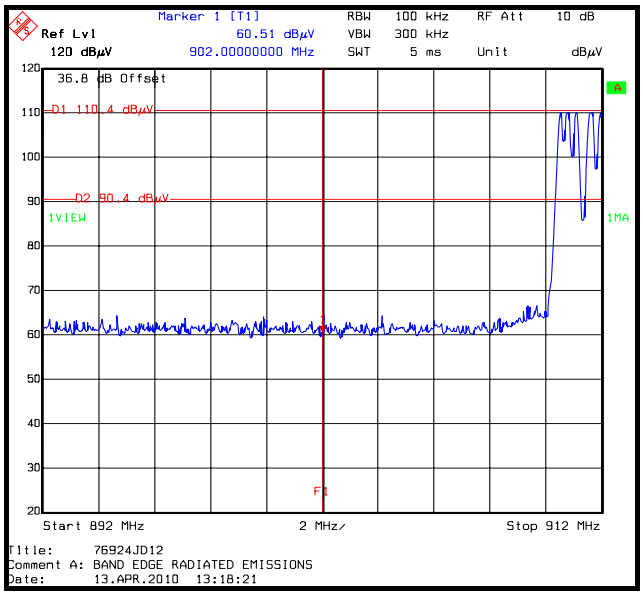
Transmitter Band Edge Radiated Emissions (continued)



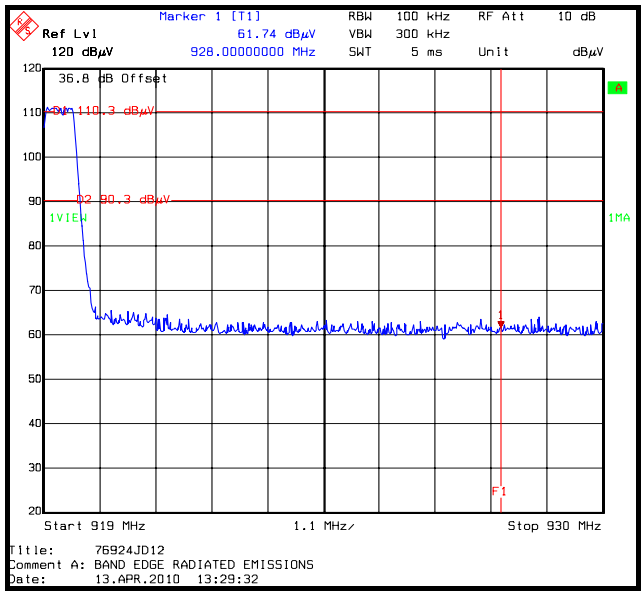
Lower Band Edge / Bottom Channel / Static / 500 bps



Upper Band Edge / Top Channel / Static/ 500 bps



Lower Band Edge / Bottom Channel / Hopping / 500 bps



Upper Band Edge / Top Channel / Hopping/ 500 bps

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
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	±3.72 dB
Transmitter Maximum Peak Output Power	902 to 928 MHz	95%	±2.94 dB
Transmitter Carrier Frequency Separation	N/A	95%	±0.92 ppm
Transmitter Average Time of Occupancy	N/A	95%	±0.3 ns
20 dB Bandwidth	N/A	95%	±0.92 ppm
Radiated Spurious Emissions	30 MHz to 9.2 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 Last Calibrated	Cal. Interval
A057	High Pass Filter	Aerial Facilities	HP-950-5N	4389B	Calibrated before use	-
A067	LISN	Rohde & Schwarz	ESH3-Z5	890603/002	03 Jun 2009	12
A1393	Attenuator	Huber + Suhner	757456	6820.17.B	Calibrated before use	-
A1534	Pre Amplifier	Hewlett Packard	8449B OPT H02	3008A00405	Calibrated before use	-
A1818	Antenna	EMCO	3115	00075692	27 Nov 2009	12
A1830	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100668	01 Mar 2010	12
A1975	High Pass Filter	AtlanTecRF	AFH-03000	090424010	Calibrated before use	-
A288	Antenna	Chase	CBL6111A	1589	16 Mar 2010	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	01 Sep 2009	12
M1124	Spectrum Analyser	Rohde & Schwarz	ESIB26	100046K	06 April 2010	15
M1242	Spectrum Analyser	Rohde & Schwarz	FSEM30	845986/022	18 Mar 2010	12
M1269	Multimeter	Fluke	179	90250210	23 Jun 2009	12
M1379	Spectrum Analyser	Rohde & Schwarz	ESIB7	100330	20 Aug 2009	12
S0539	Power Supply Unit	Kikusui	PCR 1000L	13010170	Calibrated before use	-

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