TEST REPORT

Test Report No. : UL-RPT-RP11856640JD01C V2.0

Manufacturer	:	Telensa Ltd
Model No.	:	T2A1U
FCC ID	:	XYD-2TXD
Technology	:	FHSS
Test Standard(s)	:	FCC Parts 15.209(a), 15.247(b)(2) & 15.247(d)

1. This test report shall not be reproduced in full or partial, without the written approval of UL VS LTD.
2. The results in this report apply only to the sample(s) tested.
3. The sample tested is in compliance with the above standard(s).
4. The test results in this report are traceable to the national or international standards.
5. Version 2.0 supersedes all previous versions.

Date of Issue: 01 November 2017

Checked by:

Sarah Williams
Senior Test Engineer, Radio Laboratory

Company Signatory:

Ian Watch
Senior Test Engineer, Radio Laboratory
UL VS LTD

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This laboratory is accredited by UKAS. The tests reported herein have been performed in accordance with its terms of accreditation.

UL VS LTD

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1. Customer Information

Company Name:	Telensa Ltd
Address:	Iconix 3, London Road, Pampisford, Cambridge, CB22 3EG

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR15.247
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) - Section 15.247
Specification Reference:	47CFR15.209
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) - Section15.209
Site Registration:	FCC: 209735
Location of Testing:	UL VS LTD, Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, United Kingdom
Test Dates:	23 August 2017 to 12 September 2017

2.2. Summary of Test Results

FCC Reference (47CFR)	Measurement	Result
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 C63.10-2013
Title:	American National Standard of Procedures for Compliance Testing of 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:	Telensa
Model Name or Number:	T2A1U
Test Sample Serial Number:	30460
Hardware Version:	6LP1B1(6LYJ0021)
Software Version:	2.13.22
FCC ID:	XYD-2TXD

3.2. Description of EUT

The Equipment Under Test was a public lighting control unit. It contains an FHSS transceiver operating over six sub-bands in the 902–928 MHz band.

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 system with a 20 dB bandwidth of less than 250 kHz and hopping on at least 50 frequencies		
Power Supply Requirement:	Nominal	120 VAC 60 Hz	
Type of Unit:	Transceiver		
Channel Spacing:	25 kHz		
Modulation:	2 level FSK		
Data Rates (bit/s)	62.5 & 500		
Maximum Conducted Output Power:	19.0 dBm		
Antenna Gain:	5.0 dBi		
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

3.5. Support Equipment

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

Description:	Representative road lighting luminaire
Brand Name:	Philips
Model Name or Number:	SGS252
Serial Number:	104688292

Description:	Representative road lighting luminaire
Brand Name:	Ledway
Model Name or Number:	XIL0F06C^UCY7
Serial Number:	031610

Description:	Linux PC
Brand Name:	Raspberry Pi Foundation
Model Name or Number:	Raspberry Pi 3 Model B V1.2
Serial Number:	Not marked or stated

Description:	Laptop PC
Brand Name:	HP
Model Name or Number:	Probook 455 G1
Serial Number:	2CE3400GZD

Description:	Power supply
Brand Name:	Raspberry Pi PSU
Model Name or Number:	Not marked or stated
Serial Number:	Not marked or stated

Description:	External antenna attached to 0.4 m length coaxial cable
Brand Name:	Panorama
Model Name or Number:	BS926
Serial Number:	Not marked or stated

Description:	2 metre USB cable
Brand Name:	Not marked or stated
Model Name or Number:	Not marked or stated
Serial Number:	Not marked or stated

Support Equipment (continued)

Description:	10 metre Ethernet cable
Brand Name:	Not marked or stated
Model Name or Number:	Not marked or stated
Serial Number:	Not marked or stated

Description:	Near field communications transceiver
Brand Name:	ST Microelectronics
Model Name or Number:	MB1054B CR95HF
Serial Number:	2160900329

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 on fixed frequencies.
- Constantly transmitting at maximum power in hopping mode.

4.2. Configuration and Peripherals

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

- Controlled using the test application ‘icstest.py’ on the Support Laptop supplied by the customer. The application was used to enable a suitable transmission mode and to select the test channels and data rates, via the Raspberry Pi computer and Near Field communications transceiver. The Support Laptop was connected to the Raspberry Pi via Ethernet and the Raspberry Pi was connected to the Near Field communications transceiver via a USB cable. The Near Field communications transceiver was placed alongside the EUT to allow communication to take place. Once the appropriate transmit mode was enabled, the PC, Raspberry Pi and Near Field communications transceiver were disconnected from the EUT..
- During all testing the EUT was connected to a representative road lighting luminaire. The luminaire was connected to a 120 VAC 60 Hz single phase supply.
- Radiated spurious emissions were performed with the EUT transmitting at fixed frequencies, with a data rate of 62.5 bit/s. This was found to be the worst case with regards to emissions after preliminary investigations and, as this mode emits the highest output power level, it was deemed to be the worst case.
- The EUT was only tested in the one orientation (luminaire facing downwards), as this is representative of the orientation in which the complete configuration would be, in its operational mode.
- The radiated sample was converted to a conducted sample by disconnecting the external antenna from the SMA connector and connecting a cable in its place.

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. Transmitter Maximum Peak Output Power

Test Summary:

Test Engineer:	David Doyle	**Test Date:**	25 August 2017
Test Sample Serial Number:	30460		

FCC Reference:	Part 15.247(b)(2)
Test Method Used:	ANSI C63.10 Section 7.8.5 & Notes below

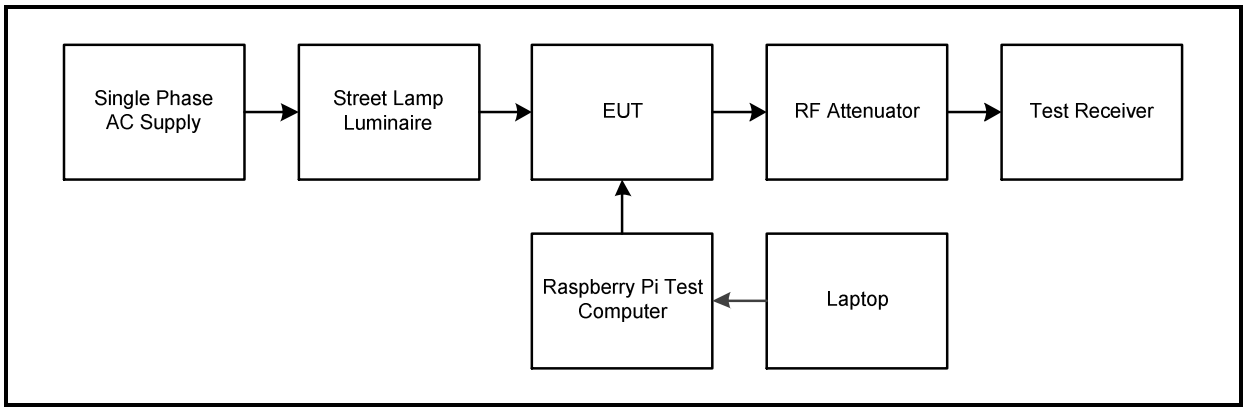
Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	57

Note(s):

1. For frequency hopping systems employing at least 50 hopping channels.
2. For the data rate of 62.5 bit/s, the test receiver's resolution bandwidth was set to 1 kHz and the video bandwidth to 3 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. The span was set to 3 kHz. A marker was placed at the peak of the signal and the results recorded in the table below.
3. For the data rate of 500 bit/s, the test receiver's resolution bandwidth was set to 2 kHz and the video bandwidth to 10 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. The span was set to 5 kHz. A marker was placed at the peak of the signal and the results recorded in the table below.
4. The test receiver was connected to the RF port on the EUT using suitable attenuation and RF cable. An RF offset level was entered on the test receiver to compensate for the loss of the attenuator and RF cable.

Test setup for Maximum Peak Output Power measurement:



Transmitter Maximum Peak Output Power (continued)

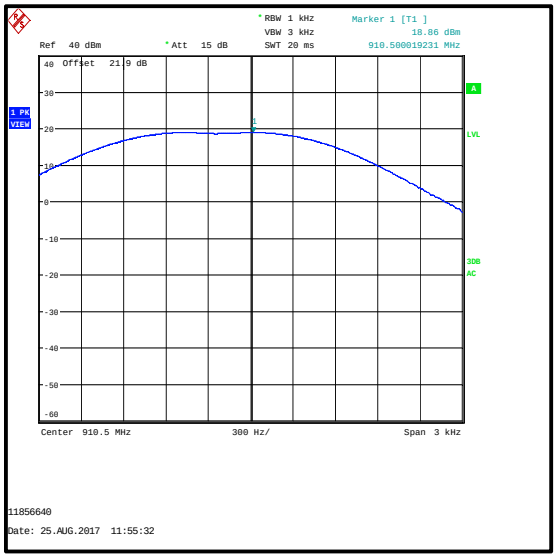
Results: 62.5 bit/s

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Note	Result
Bottom	18.9	30.0	11.1	1	Complied
Middle	18.7	30.0	11.3	1	Complied
Top	18.7	30.0	11.3	1	Complied

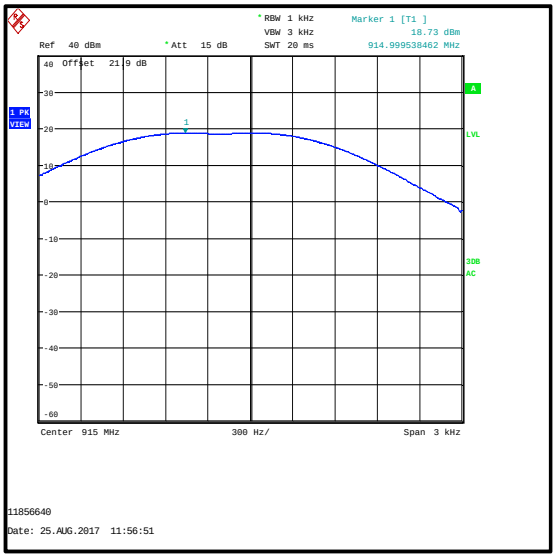
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Note	Result
Bottom	18.9	5.0	23.9	36.0	12.1	1	Complied
Middle	18.7	5.0	23.7	36.0	12.3	1	Complied
Top	18.7	5.0	23.7	36.0	12.3	1	Complied

Transmitter Maximum Peak Output Power (continued)

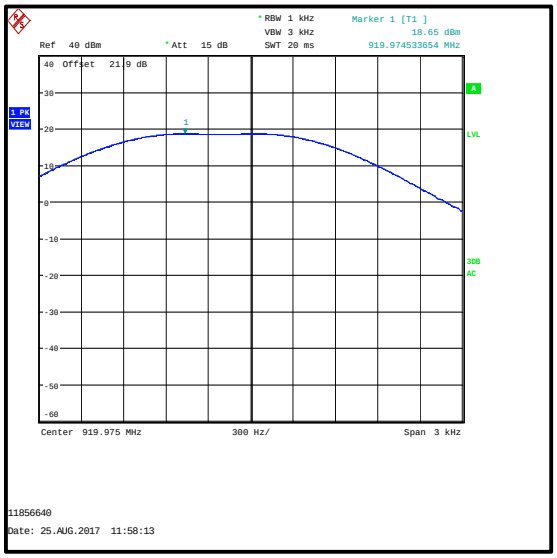
Results: 62.5 bit/s



Bottom Channel



Middle Channel



Top Channel

Transmitter Maximum Peak Output Power (continued)

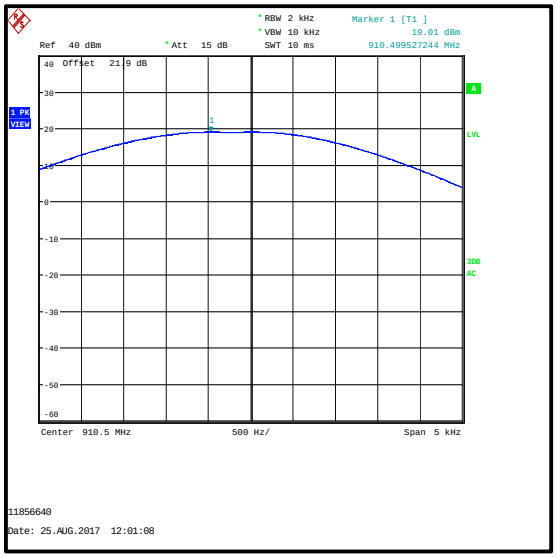
Results: 500 bit/s

Channel	Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Note	Result
Bottom	19.0	30.0	11.0	1	Complied
Middle	18.8	30.0	11.2	1	Complied
Top	18.7	30.0	11.3	1	Complied

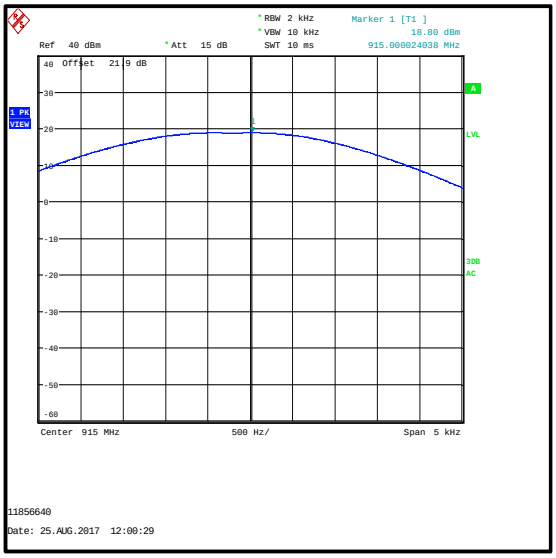
Channel	Conducted Peak Power (dBm)	Declared Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Note	Result
Bottom	19.0	5.0	24.0	36.0	12.0	1	Complied
Middle	18.8	5.0	23.8	36.0	12.2	1	Complied
Top	18.7	5.0	23.7	36.0	12.3	1	Complied

Transmitter Maximum Peak Output Power (continued)

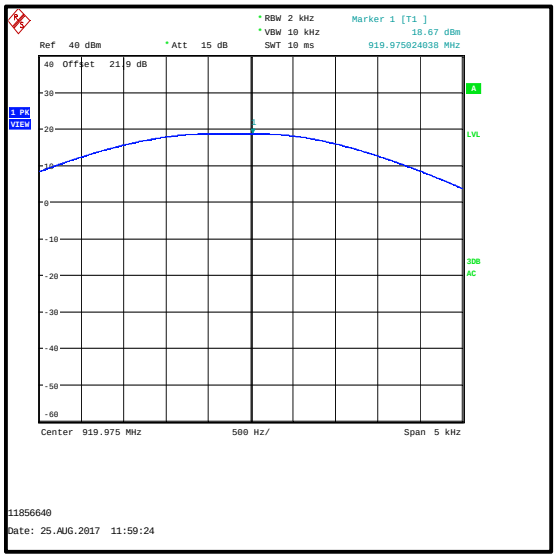
Results: 500 bit/s



Bottom Channel



Middle Channel



Top Channel

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2002	Thermohygrometer	Testo	608-H1	45041825	22 Feb 2018	12
M1886	Test Receiver	Rohde & Schwarz	ESU26	100554	04 Apr 2018	12
A2526	Attenuator	AtlanTecRF	AN18W5-20	832828#1	Calibrated before use	-
M260	Signal Generator	Rohde & Schwarz	SMP02	829076/008	12 Apr 2018	12
M199	Power Meter	Rohde & Schwarz	NRVS	827023/075	11 Apr 2018	24
M1267	Power Sensor	Rohde & Schwarz	NRV-Z52	100155	15 Apr 2018	24

5.2.2. Transmitter Radiated Emissions

Test Summary:

Test Engineer:	David Doyle	**Test Date:**	25 August 2017
Test Sample Serial Number:	30460		

FCC Reference:	Parts 15.247(d) & 15.209(a)
Test Method Used:	ANSI C63.10 Sections 6.3 and 6.5
Frequency Range	30 MHz to 1000 MHz

Environmental Conditions:

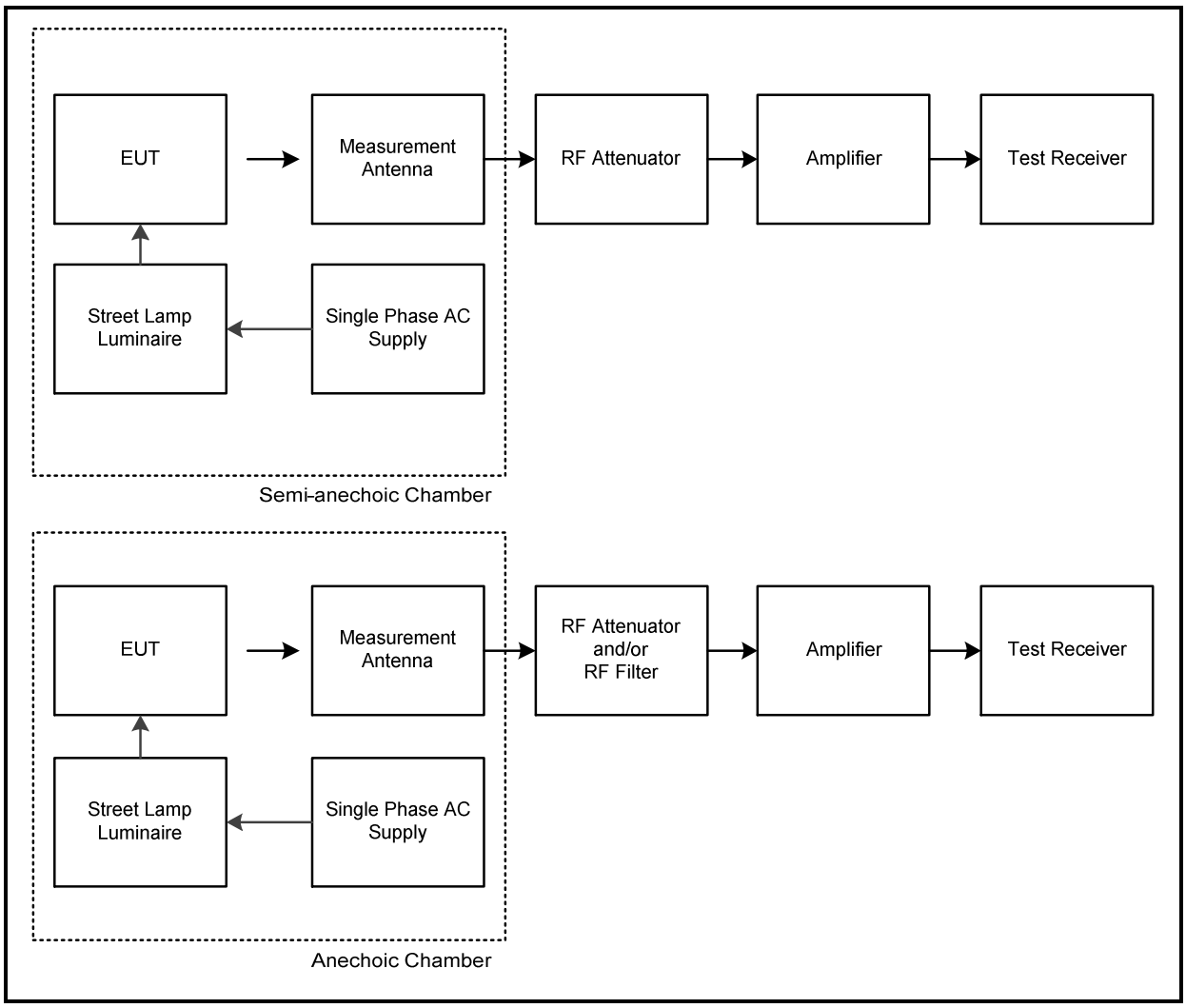
Temperature (°C):	25
Relative Humidity (%):	48

Note(s):

1. The EUT was transmitting at full power with a data rate of 62.5 bit/s.
2. The emission at 915 MHz shown on the 30 MHz to 1 GHz plot is the EUT fundamental.
3. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
4. 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 middle channel only.
5. 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.
6. Measurements below 1 GHz were performed in a semi-anechoic chamber (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.
7. Pre-scans were performed and markers placed on the highest measured levels. The test receiver resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. The sweep time was set to auto. A peak detector was used, sweep time was set to auto and trace mode was Max Hold.
8. Final measurements were performed on the marker frequencies and the results entered into the table below. The test receiver resolution bandwidth was set to 120 kHz, using a CISPR quasi-peak detector and span wide enough to see the whole emission.

Transmitter Radiated Emissions (continued)

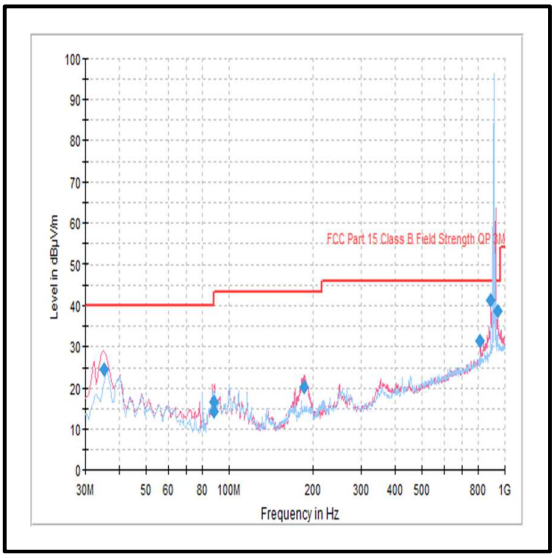
Test setup for radiated measurements:



Transmitter Radiated Emissions (continued)

Results: Quasi-Peak

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
35.072	Vertical	24.5	40.0	15.5	Complied
812.360	Vertical	31.3	46.0	14.7	Complied
888.995	Vertical	41.2	46.0	4.8	Complied
940.962	Vertical	38.6	46.0	7.4	Complied



Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2009	Thermohygrometer	Testo	608-H1	45046699	20 Jun 2018	12
K0001	5m RSE Chamber	Rainford EMC	N/A	N/A	07 Dec 2017	12
A2959	Antenna	Schwarzbeck	VULB 9163	9163-967	08 Sep 2017	12
M1273	Test Receiver	Rohde & Schwarz	ESIB 26	100275	20 Apr 2018	12
G0543	Amplifier	Sonoma	310N	230801	09 Dec 2017	6
A1834	Attenuator	Hewlett Packard	8491B	10444	23 Feb 2018	12

5.2.3. Transmitter Radiated Emissions

Test Summary:

Test Engineer:	David Doyle	**Test Date:**	12 September 2017
Test Sample Serial Number:	30460		

FCC Reference:	Parts 15.247(d) & 15.209(a)
Test Method Used:	ANSI C63.10 Sections 6.3 and 6.6
Frequency Range	1 GHz to 9.3 GHz

Environmental Conditions:

Temperature (°C):	22
Relative Humidity (%):	49

Note(s):

1. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
2. The EUT was transmitting at full power with a data rate of 62.5 bit/s.
3. 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.
4. In accordance with ANSI C63.10 Section 6.6.4.3 (Note 1), if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.
5. Pre-scans above 1 GHz were performed in a fully anechoic chamber (Asset Number K0017) 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 fully anechoic chamber (Asset Number K0017) at a distance of 3 metres. The EUT was placed at a height of 1.5 metres 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. Pre-scans were performed and markers were placed on the highest measured levels of the appropriate plot. The test receiver resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. The sweep time was set to auto. Peak and average measurements were performed with their own appropriate detectors during the pre-scan measurements.

Transmitter Radiated Emissions (continued)

Results: Bottom Channel

Frequency (MHz)	Antenna Polarity	Peak Level (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)	Result
2731.316	Vertical	49.0	54.0	5.0	Complied
3641.671	Vertical	45.6	54.0	8.4	Complied
4552.444	Vertical	47.4	54.0	6.6	Complied
7284.064	Vertical	49.9	54.0	4.1	Complied
8193.026	Vertical	46.1	54.0	7.9	Complied
9104.734	Vertical	48.3	54.0	5.7	Complied

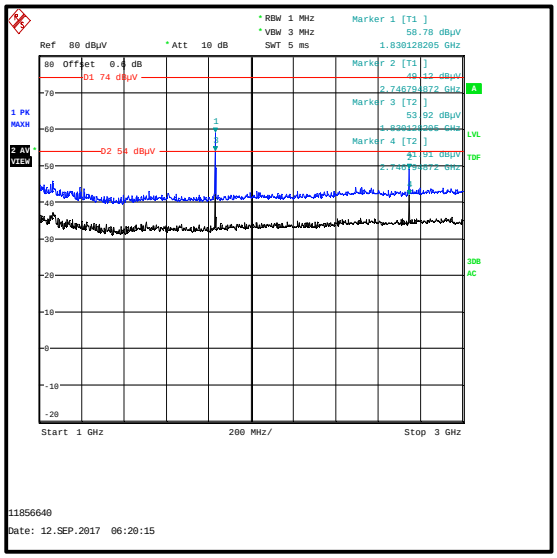
Results: Middle Channel

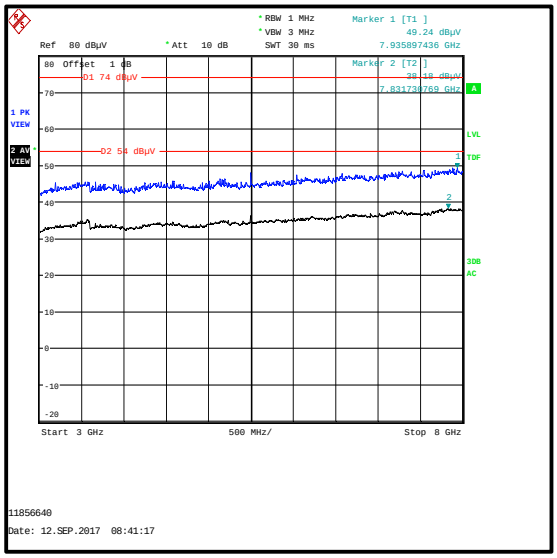
Frequency (MHz)	Antenna Polarity	Peak Level (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)	Result
2744.920	Vertical	49.7	54.0	4.3	Complied
3659.944	Horizontal	46.2	54.0	7.8	Complied
4575.000	Horizontal	47.1	54.0	6.9	Complied
7319.631	Vertical	48.9	54.0	5.1	Complied
8235.000	Vertical	46.3	54.0	7.7	Complied
9151.210	Horizontal	48.6	54.0	5.4	Complied

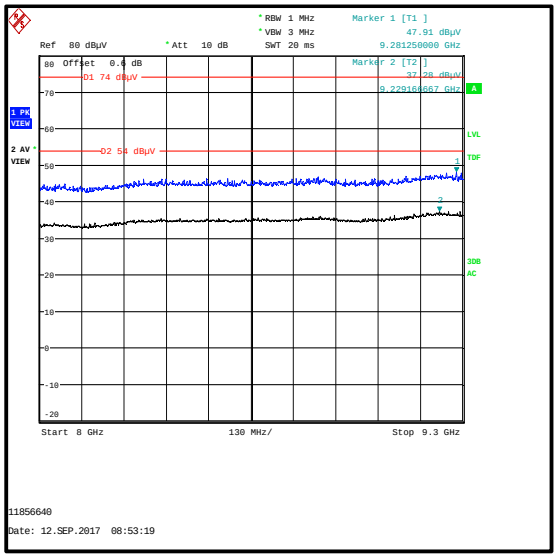
Results: Top Channel

Frequency (MHz)	Antenna Polarity	Peak Level (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)	Result
2760.061	Vertical	51.5	54.0	2.5	Complied
3679.812	Vertical	46.2	54.0	7.8	Complied
4599.739	Vertical	47.3	54.0	6.7	Complied
7359.504	Vertical	49.1	54.0	4.9	Complied
8279.751	Vertical	46.6	54.0	7.4	Complied
9199.886	Vertical	49.5	54.0	4.5	Complied

Transmitter Radiated Emissions (continued)







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

Transmitter Radiated Emissions (continued)

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2003	Thermohygrometer	Testo	608-H1	45046641	22 Feb 2018	12
K0017	3m RSE Chamber	Rainford EMC	N/A	N/A	14 Apr 2018	12
M1995	Test Receiver	Rohde & Schwarz	ESU40	100428	13 Apr 2018	12
A2863	Pre Amplifier	Agilent	8449B	3008A02100	11 Apr 2018	12
A2891	Pre Amplifier	Schwarzbeck	BBV 9718	9718-306	11 Apr 2018	12
A2893	Pre Amplifier	Schwarzbeck	BBV 9721	9721-021	11 Apr 2018	12
A2889	Antenna	Schwarzbeck	BBHA 9120 B	BBHA 9120 B 653	11 Apr 2018	12
A2890	Antenna	Schwarzbeck	HWRD 750	014	11 Apr 2018	12
A2908	High Pass Filter	Wainwright Instruments GmbH	WHJE5-920-1000-4000-60EE	3	06 Mar 2018	12
A2914	High Pass Filter	AtlanTecRF	AFH-03000	2155	06 Mar 2018	12
A2947	High Pass Filter	AtlanTecRF	AFH-07000	1601900001	18 May 2018	12

5.2.4. Transmitter Band Edge Radiated Emissions

Test Summary:

Test Engineer:	David Doyle	**Test Date:**	23 August 2017
Test Sample Serial Number:	30460		

FCC Reference:	Parts 15.247(d) & 15.209(a)
Test Method Used:	ANSI C63.10 Section 6.10.4

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	51

Note(s):

1. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
2. As both band edges fall within the non-restricted bands, only peak measurements are required. The test receiver resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. The test receiver was left to sweep for a sufficient length of time in order to maximise the carrier level and out-of-band emissions. A reference level line was placed on the peak of the carrier and a second reference line was placed at -20 dBc. A marker was placed on the band edge spot frequencies and a second marker placed on the highest emission or noise floor level in the adjacent band. Marker frequencies and levels were recorded.

Results: Static Mode / 62.5 bit/s

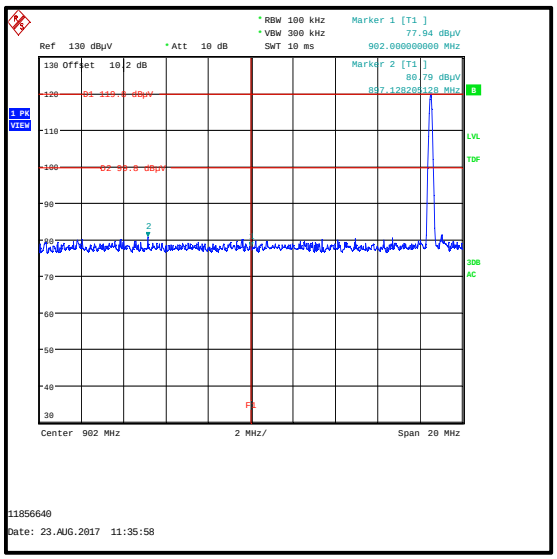
Frequency (MHz)	Peak Level (dBµV/m)	-20 dBc Limit (dBµV/m)	Margin (dB)	Result
897.128	80.8	99.8	19.0	Complied
902	77.9	99.8	21.9	Complied
928	78.2	99.2	21.0	Complied
936.141	81.1	99.2	18.1	Complied

Results: Hopping Mode / 62.5 bit/s

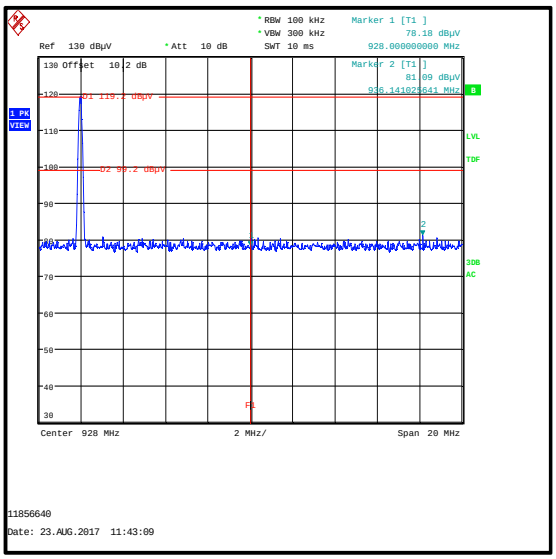
Frequency (MHz)	Peak Level (dBµV/m)	-20 dBc Limit (dBµV/m)	Margin (dB)	Result
897.705	81.5	99.8	18.3	Complied
902	78.6	99.8	21.2	Complied
928	78.8	99.2	20.4	Complied
932.327	80.9	99.2	18.3	Complied

Transmitter Band Edge Radiated Emissions (continued)

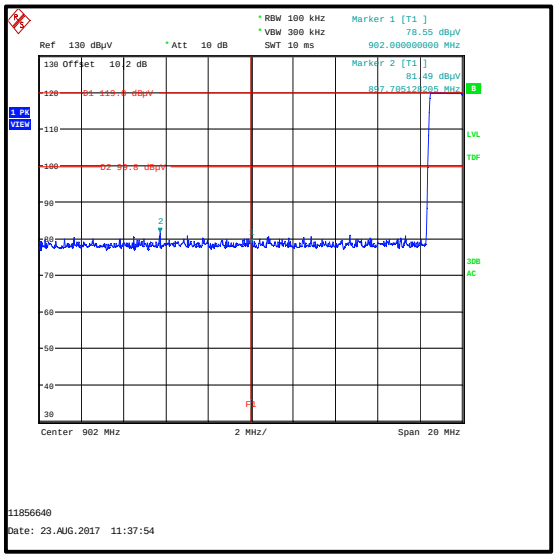
Results: 62.5 bit/s



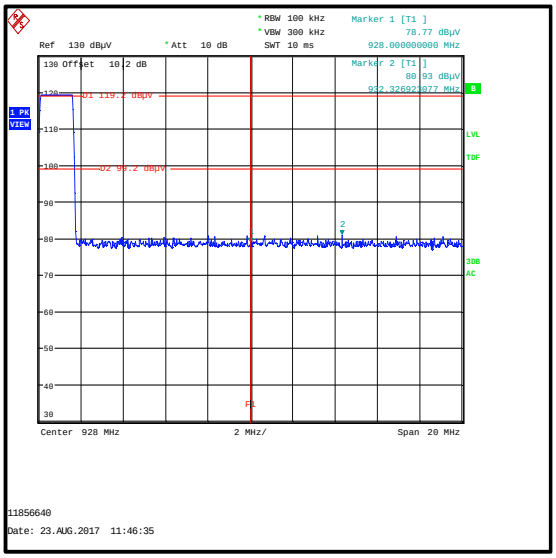
Lower Band Edge / Static Mode



Upper Band Edge / Static Mode



Lower Band Edge / Hopping Mode



Upper Band Edge / Hopping Mode

Transmitter Band Edge Radiated Emissions (continued)

Results: Static Mode / 500 bit/s

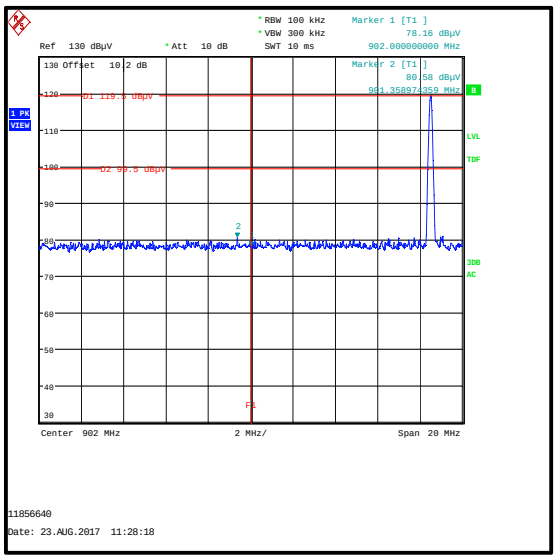
Frequency (MHz)	Peak Level (dBµV/m)	-20 dBc Limit (dBµV/m)	Margin (dB)	Result
901.359	80.6	99.5	18.9	Complied
902	78.2	99.5	21.3	Complied
928	79.1	99.2	20.1	Complied
928.032	80.8	99.2	18.4	Complied

Results: Hopping Mode / 500 bit/s

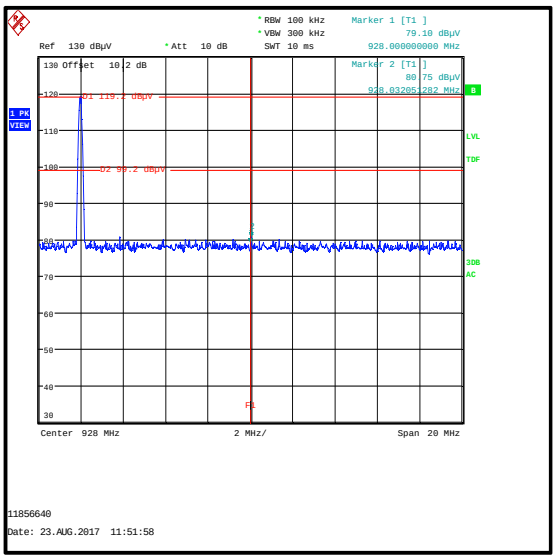
Frequency (MHz)	Peak Level (dBµV/m)	-20 dBc Limit (dBµV/m)	Margin (dB)	Result
898.955	80.5	99.6	19.1	Complied
902	77.5	99.6	22.1	Complied
928	79.6	99.3	19.7	Complied
936.910	80.6	99.3	18.7	Complied

Transmitter Band Edge Radiated Emissions (continued)

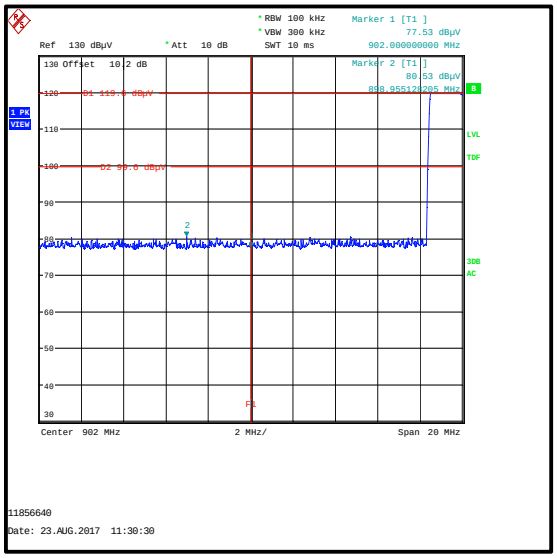
Results: 500 bit/s



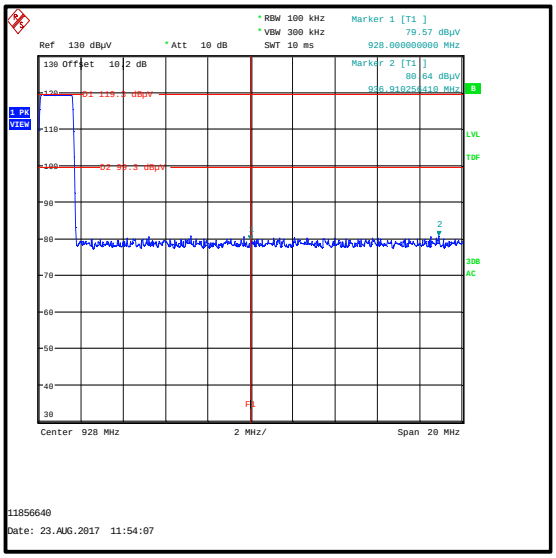
Lower Band Edge / Static Mode



Upper Band Edge / Static Mode



Lower Band Edge / Hopping Mode



Upper Band Edge / Hopping Mode

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2003	Thermohygrometer	Testo	608-H1	45046641	22 Feb 2018	12
K0017	3m RSE Chamber	Rainford EMC	N/A	N/A	14 Apr 2018	12
M1995	Test Receiver	Rohde & Schwarz	ESU40	100428	13 Apr 2018	12
A2888	Antenna	Schwarzbeck	VULB 9163	9163-941	25 Apr 2018	12
A2916	Attenuator	AtlanTecRF	AN18W5-10	832827#1	03 Mar 2018	12

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
Conducted Maximum Peak Output Power	902 MHz to 928 MHz	95%	±1.13 dB
Radiated Spurious Emissions	30 MHz to 1 GHz	95%	±5.65 dB
Radiated Spurious Emissions	1 GHz to 9.3 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.

7. Report Revision History

Version Number	Revision Details		
	Page No(s)	Clause	Details
1.0	-	-	Initial Version
2.0	-	-	Section 4.2 updated

--- END OF REPORT ---