



# TEST REPORT

**Test Report No. : UL-RPT-RP12888381-1216A**

**Customer** : Accesso technology Group Plc  
**Model No. / HVIN** : 57136-1, 57136-2 and 57136-3  
**PMN** : Prism V2  
**FCC ID** : 2AKCM-57136  
**ISED Certification No.** : 21963-57136  
**Technology** : SRD  
**Test Standard(s)** : FCC Parts 15.209(a) & 15.249  
Innovation, Science and Economic Development Canada  
RSS-210 Issue 10 April 2020  
RSS-Gen Issue 5 February 2021  
**Test Laboratory** : UL International (UK) Ltd, Basingstoke, Hampshire, RG24 8AH,  
United Kingdom

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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:** 27 July 2021

**Checked by:**

Ben Mercer  
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**Customer Information**

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**Report Revision History**

<b>Version Number</b>	<b>Issue Date</b>	<b>Revision Details</b>	<b>Revised By</b>
1.0	15/06/2021	Initial Version	Ben Mercer
2.0	27/07/2021	Implemented changes requested by TCB	Ben Mercer

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## 1 Attestation of Test Results








### 1.1 Description of EUT

The equipment under test was a wrist worn wireless booking device. It contains a *Bluetooth* LE transceiver and a 915 MHz LoRaWAN transceiver.

### 1.2 General Information

<b>Specification Reference:</b>	47CFR15.249
<b>Specification Title:</b>	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) - Section 15.249
<b>Specification Reference:</b>	47CFR15.209
<b>Specification Title:</b>	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) – Section 15.209
<b>Specification Reference:</b>	RSS-Gen Issue 5 February 2021
<b>Specification Title:</b>	General Requirements for Compliance of Radio Apparatus
<b>Specification Reference:</b>	RSS-210 Issue 10 April 2020
<b>Specification Title:</b>	Licence-Exempt Radio Apparatus: Category I Equipment
<b>FCC Site Registration:</b>	685609
<b>ISED Site Registration:</b>	20903
<b>FCC Lab. Designation No.:</b>	UK2011
<b>ISED CABID:</b>	UK0001
<b>Location of Testing:</b>	Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, United Kingdom
<b>Test Dates:</b>	24 May 2021 to 27 May 2021

### 1.3 Summary of Test Results

<b>FCC Reference (47CFR)</b>	<b>ISED Canada Reference</b>	<b>Measurement</b>	<b>Result</b>
Part 15.249(a)(e)	RSS-Gen 6.12 / RSS-210 B.10(a)	Transmitter Fundamental Field Strength	
N/A	RSS-Gen 6.7	Transmitter 99% Occupied Bandwidth	
Part 2.1049	N/A	Transmitter 20 dB Bandwidth	
Part 15.249(d)(e) / 15.209(a)	RSS-Gen 6.13 / RSS-210 B.10(a)(b)	Transmitter Radiated Emissions	
Part 15.249(d) / 15.209(a)	RSS-Gen 6.13 / RSS-210 B.10(b)	Transmitter Band Edge Radiated Emissions	
<b>Key to Results</b>			
 = Complied  = Did not comply			

### 1.4 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.

## **2 Summary of Testing**

### **2.1 Facilities and Accreditation**

The test site and measurement facilities used to collect data are located at Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, United Kingdom. The following table identifies which facilities were utilised for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

Site 1	X
Site 2	-
Site 17	X

UL International (UK) Ltd is accredited by the United Kingdom Accreditation Service (UKAS). UKAS is one of the signatories to the International Laboratory Accreditation Co-operation (ILAC) Arrangement for the mutual recognition of test reports. The tests reported herein have been performed in accordance with its terms of accreditation.

### **2.2 Methods and Procedures**

<b>Reference:</b>	ANSI C63.10-2013
<b>Title:</b>	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

## **2.3 Calibration and Uncertainty**

### **Measuring Instrument Calibration**

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.

### **Measurement Uncertainty & Decision Rule**

#### **Overview**

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.

#### **Decision Rule**

The decision rule applied is based upon the accuracy method criteria. The measurement uncertainty is met and the result is considered in conformance with the requirement criteria if the observed value is within the prescribed limit.

#### **Measurement Uncertainty**

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”.

<b>Measurement Type</b>	<b>Range</b>	<b>Confidence Level (%)</b>	<b>Calculated Uncertainty</b>
Fundamental Field Strength	902 MHz to 928 MHz	95%	±3.30 dB
99% Emission Bandwidth	902 MHz to 928 MHz	95%	±3.92 %
20 dB Bandwidth	902 MHz to 928 MHz	95%	±4.59 %
Radiated Spurious Emissions	9 kHz to 30 MHz	95%	±5.32 dB
Radiated Spurious Emissions	30 MHz to 1 GHz	95%	±3.30 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.

## 2.4 Test and Measurement Equipment

### Test Equipment Used for Transmitter Fundamental Field Strength, Transmitter 20 dB Bandwidth, 99% Emission Bandwidth & Transmitter Band Edge Radiated Emissions

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2003	Thermohygrometer	Testo	608-H1	45046641	10 Dec 2021	12
K0017	3m RSE Chamber	Rainford	N/A	N/A	21 Oct 2021	12
M1794	Spectrum Analyser	Rohde & Schwarz	FSU26	100027	02 Mar 2022	12
M1886	Test Receiver	Rohde & Schwarz	ESU26	100554	15 Aug 2021	12
A2951	Pre Amplifier	Com-Power	PAM-103	441141	25 Jan 2022	12
A490	Antenna	Chase	CBL6111A	1590	05 Jun 2021	12

### Test Equipment Used for Transmitter Radiated Emissions

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2003	Thermohygrometer	Testo	608-H1	45046641	10 Dec 2021	12
K0017	3m RSE Chamber	Rainford	N/A	N/A	21 Oct 2021	12
M1886	Test Receiver	Rohde & Schwarz	ESU26	100554	15 Aug 2021	12
A2951	Pre Amplifier	Com-Power	PAM-103	441141	25 Jan 2022	12
A2948	Pre Amplifier	Com-Power	PAM-118A	551087	21 Oct 2021	12
A3142	Pre Amplifier	Schwarzbeck	BBV 9718B	00020	21 Oct 2021	12
A490	Antenna	Teseq	CBL6111D	50859	05 Jun 2021	12
A2889	Antenna	Schwarzbeck	BBHA 9120 B	BBHA 9120B653	23 Oct 2021	12
A2890	Antenna	Schwarzbeck	HWRD 750	014	26 Oct 2021	12
A2908	High Pass Filter	Wainright Instruments	WHJE5-920-1000-4000-60EE	3	01 Feb 2022	12
A2914	High Pass Filter	AtlanTecRF	AFH-03000	2155	01 Feb 2022	12
A2947	High Pass Filter	AtlanTecRF	AFH-07000	1601900001	01 Feb 2022	12
M2040	Thermohygrometer	Testo	608-H1	45124934	10 Dec 2021	12
K0001	3m RSE Chamber	Rainford EMC	N/A	N/A	14 Oct 2021	12
M2044	Test Receiver	Rohde & Schwarz	ESU26	100122	03 Sep 2021	12
A3165	Magnetic Loop Antenna	ETS-Lindgren	6502	00224383	21 Sep 2021	12

### **3 Equipment Under Test (EUT)**

#### **3.1 Identification of Equipment Under Test (EUT)**

<b>Brand Name / PMN:</b>	Prism V2
<b>Model Number / HVIN:</b>	57136-2
<b>Test Sample Serial Number:</b>	200066
<b>Hardware Version:</b>	57136-3002 REV-E3
<b>Firmware Version:</b>	Prism 2.1 Factory Test V3.62
<b>FCC ID:</b>	2AKCM-57136
<b>ISED Certification Number:</b>	21963-57136

#### **3.2 Untested Variants**

The customer declared that model numbers 57136-1 and 57136-3 are electrically and functionally identical to 57136-2, with only the bezel colour and laser printing differing between models.

#### **3.3 Modifications Incorporated in the EUT**

No modifications were applied to the EUT during testing.

#### **3.4 Additional Information Related to Testing**

<b>Technology Tested:</b>	Short Range Device		
<b>Type of Unit:</b>	Transceiver		
<b>Modulation Type:</b>	Chirp spread spectrum		
<b>Data Rate:</b>	980 bit/s		
<b>Power Supply Requirement(s):</b>	Nominal	3.0 VDC	
<b>Channel Spacing:</b>	200 kHz		
<b>Transmit Frequency Range:</b>	902.3 MHz to 927.7 MHz		
<b>Transmit Channels Tested:</b>	<b>Channel ID</b>	<b>Channel Number</b>	<b>Channel Frequency (MHz)</b>
	Bottom	2	902.3
	Middle	66	915.1
	Top	129	927.7

#### **3.5 Description of Available Antenna**

The LoRa radio contains a PCB antenna, with the following maximum gain:

Frequency Range (MHz)	Antenna Gain (dBi)
902 to 928	-17.0



### **3.6 Description of Test Setup**

#### **Support Equipment**

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

<b>Description:</b>	Support Laptop
<b>Brand Name:</b>	Dell
<b>Model Name or Number:</b>	Latitude E5440
<b>Serial Number:</b>	00371-OEM-8992671-00524

<b>Description:</b>	Reader
<b>Brand Name:</b>	N/A
<b>Model Name or Number:</b>	CPR44-02-4SCUSB
<b>Serial Number:</b>	5734093

#### **Operating Modes**

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

- Continuously transmitting with a modulated carrier and a power setting of 0 dBm on the bottom, middle and top channels as required.

#### **Configuration and Peripherals**

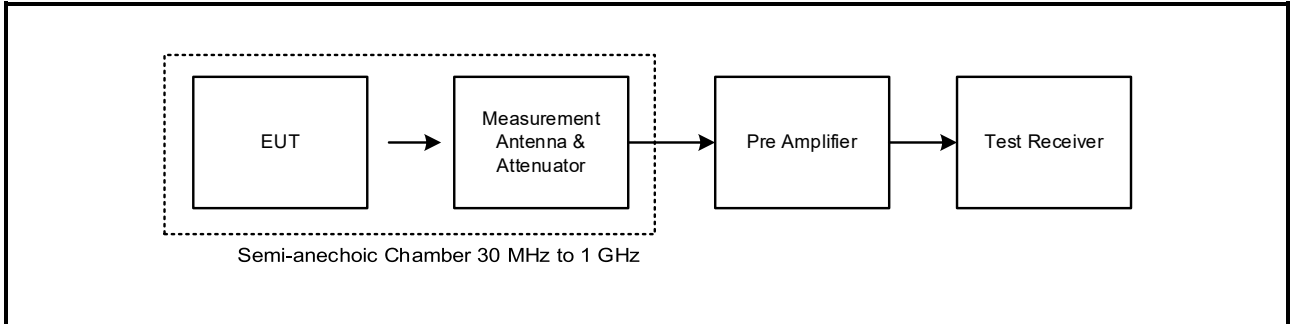
The EUT was tested in the following configuration(s):

- Controlled in test mode using a software application on the laptop PC supplied by the customer. The application was used to enable a continuous transmission and to select the test channels, packet length, duty cycle and output power as required. The customer supplied a document containing the setup instructions 'Prism FCC Tester.pdf'. The laptop PC was connected to the EUT via an NFC reader and USB cable.
- All tests were performed with the EUT in the worst case orientation/position for the applicable test.
- All tests were performed with a power setting of 0 dBm, modulated carrier and 100% duty cycle.
- The EUT was powered from an internal 3.0 V battery.

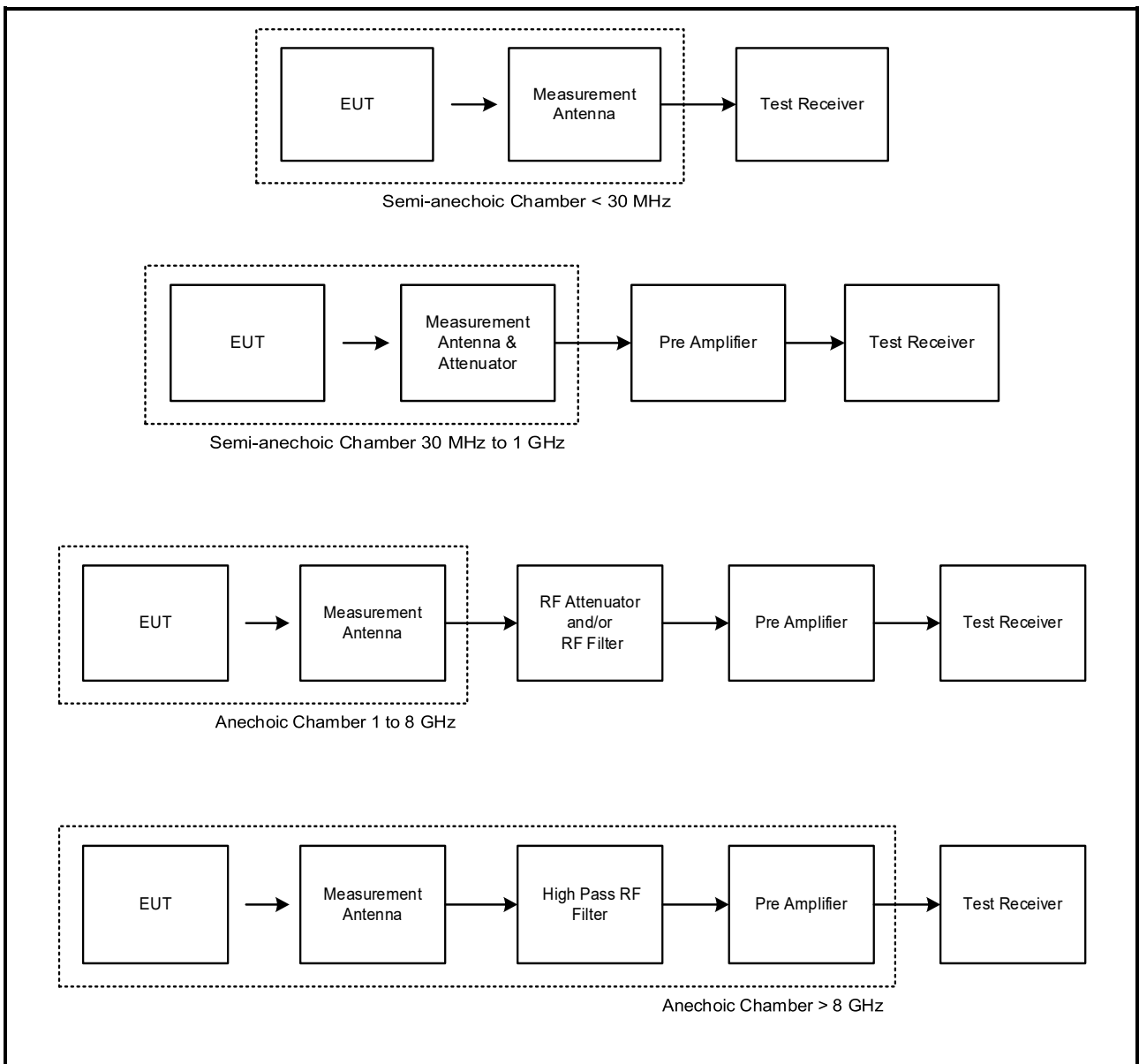
**Test Setup Diagrams**

**Radiated Tests:**

**Test Setup for Transmitter Fundamental Field Strength, Transmitter 20 dB Bandwidth, 99% Emission Bandwidth & Transmitter Band Edge Radiated Emissions**



**Test Setup for Transmitter Radiated Emissions**



## **4 Radiated Test Results**

### **4.1. Transmitter Fundamental Field Strength**

#### **Test Summary:**

<b>Test Engineer:</b>	Jose Bayona	<b>Test Date:</b>	24 May 2021
<b>Test Sample Serial Number:</b>	200066		

<b>FCC Reference:</b>	Part 15.249(a)(e)
<b>ISED Canada Reference:</b>	RSS-Gen 6.12 / RSS-210 B.10(a)
<b>Test Method Used:</b>	ANSI C63.10 Section 6.5

#### **Environmental Conditions:**

<b>Temperature (°C):</b>	23
<b>Relative Humidity (%):</b>	37

#### **Note(s):**

1. The final measured value in the tables below incorporates the calibrated antenna factor and cable loss.
2. Measurements were performed in a semi-anechoic chamber (Asset Number K0017) 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. Pre-scans were performed and markers placed on the highest measured levels. The test receiver resolution bandwidth was set to 120 kHz and video bandwidth 500 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold.
4. Final measurements were performed on the marker frequencies and results entered into the table below. The test receiver resolution bandwidth was set to 120 kHz, using a CISPR quasi-peak detector.

#### **Results: Bottom Channel / Quasi-Peak**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
902.255	Horizontal	74.6	94.0	19.4	Complied

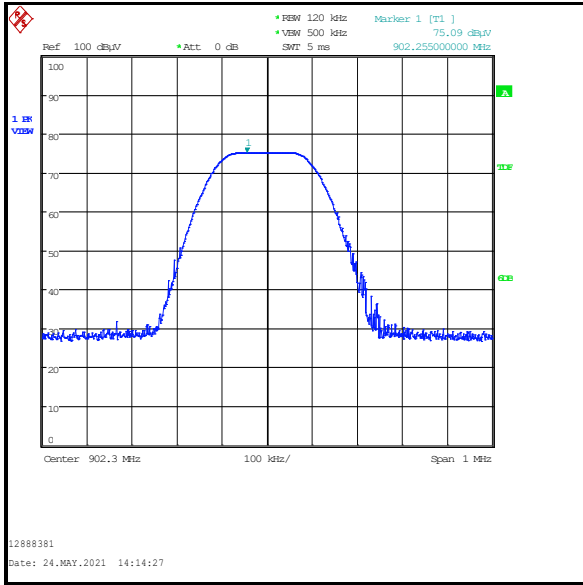
#### **Results: Middle Channel / Quasi-Peak**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
915.055	Vertical	73.7	94.0	20.3	Complied

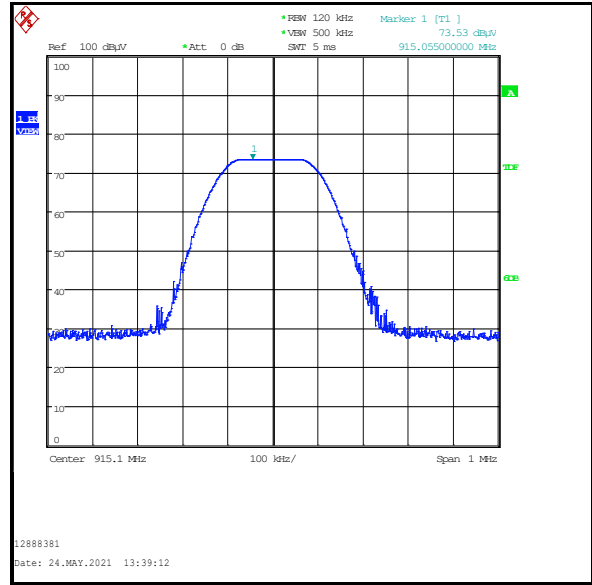
#### **Results: Top Channel / Quasi-Peak**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
927.661	Vertical	72.8	94.0	21.2	Complied

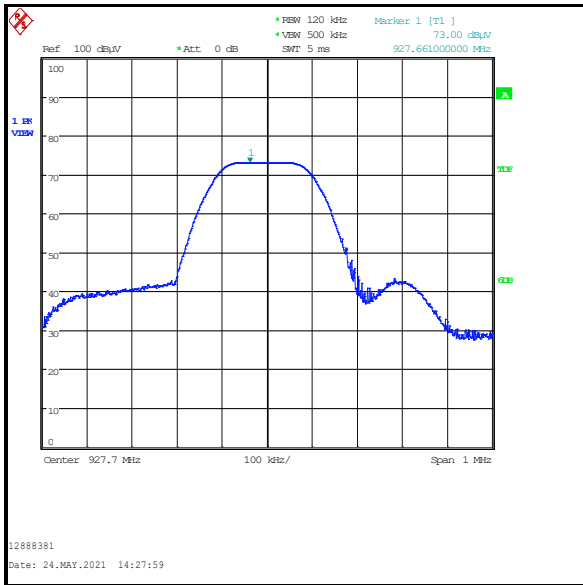
**Transmitter Fundamental Field Strength (continued)**



**Bottom Channel**



**Middle Channel**



**Top Channel**

## **4.2. Transmitter Occupied Bandwidth**

### **Test Summary:**

<b>Test Engineer:</b>	Jose Bayona	<b>Test Date:</b>	24 May 2021
<b>Test Sample Serial Number:</b>	200066		

<b>Industry Canada Reference:</b>	RSS-Gen 6.7
<b>Test Method Used:</b>	RSS-Gen 6.7 and notes below

### **Environmental Conditions:**

<b>Temperature (°C):</b>	23
<b>Relative Humidity (%):</b>	37

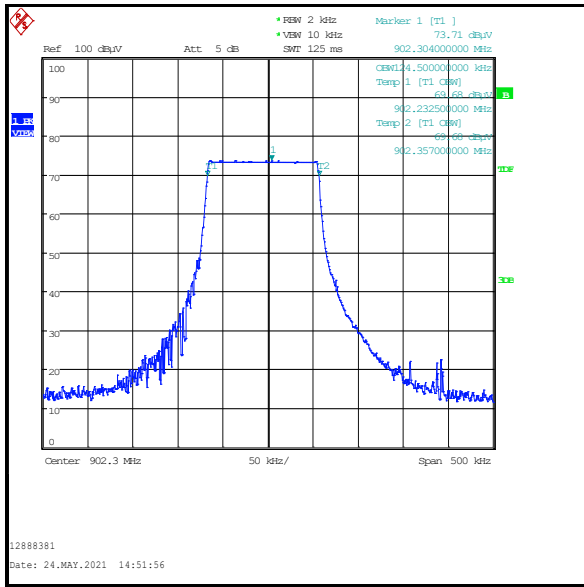
### **Note(s):**

1. Occupied bandwidth (99% bandwidth) was measured using the occupied bandwidth function of a spectrum analyser. The resolution bandwidth was set to approximately 1 % of the occupied bandwidth and the video bandwidth set to 3 times the resolution bandwidth.
2. The spectrum analyser resolution bandwidth was set to 2 kHz and video bandwidth to 10 kHz. A peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The span was set to 500 kHz. The spectrum analyser function set the measurements to be made at 99% of the emission bandwidth. The results are given in the table below.

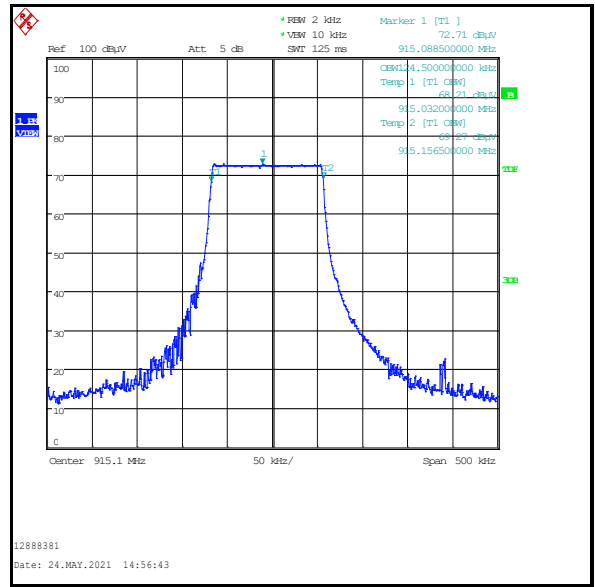
### **Results:**

<b>Channel</b>	<b>Occupied Bandwidth (kHz)</b>
Bottom	124.500
Middle	124.500
Top	124.500

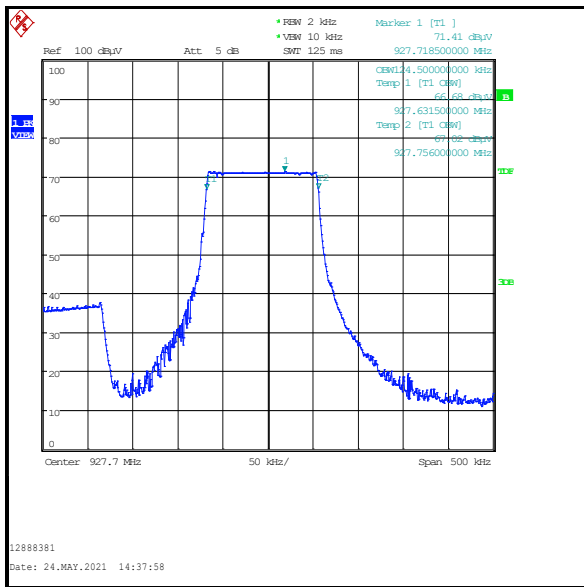
**Transmitter Occupied Bandwidth (continued)**



**Bottom Channel**



**Middle Channel**



**Top Channel**

**4.3. Transmitter 20 dB Bandwidth****Test Summary:**

<b>Test Engineer:</b>	Jose Bayona	<b>Test Date:</b>	24 May 2021
<b>Test Sample Serial Number:</b>	200066		

<b>FCC Reference:</b>	Part 2.1049
<b>Test Method Used:</b>	ANSI C63.10 Section 6.9.2

**Environmental Conditions:**

<b>Temperature (°C):</b>	23
<b>Relative Humidity (%):</b>	37

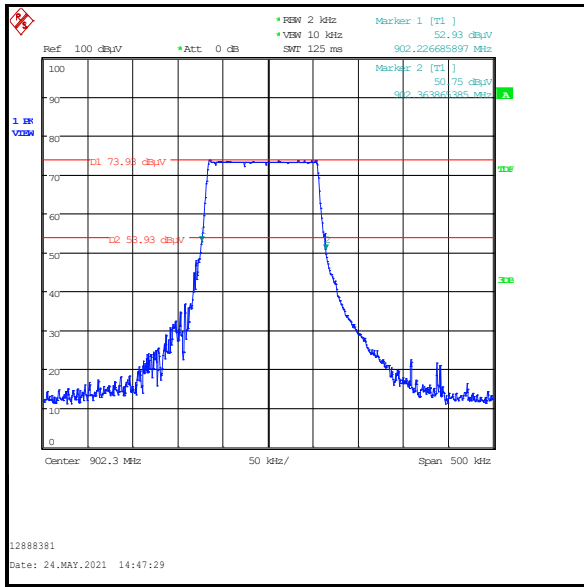
**Note(s):**

1. Transmitter 20 dB bandwidth was measured using the marker delta function of a spectrum analyser. The resolution bandwidth was set between 1 % and 5% of the occupied bandwidth and the video bandwidth set to 3 times the resolution bandwidth.
2. The spectrum analyser resolution bandwidth was set to 2 kHz and video bandwidth to 10 kHz. A peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The span was set to 500 kHz. Markers were placed 20 dB above and below the peak of the carrier. The marker delta function was used to calculate the 20 dB bandwidth. The results are given in the table below.

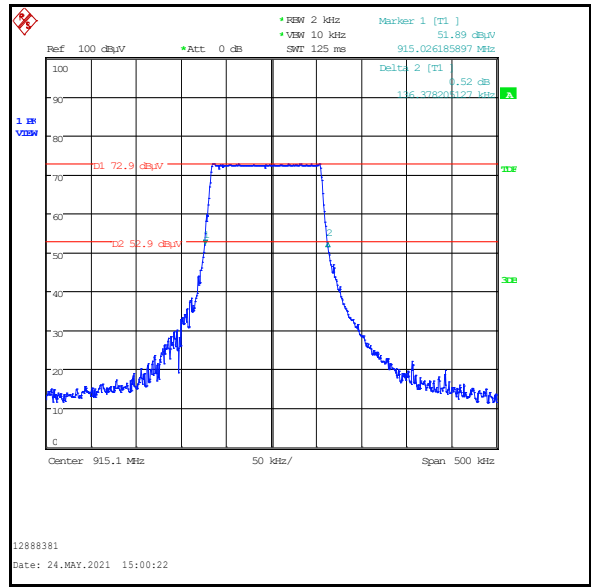
**Results:**

<b>Channel</b>	<b>20dB Bandwidth (kHz)</b>
Bottom	137.179
Middle	136.378
Top	136.058

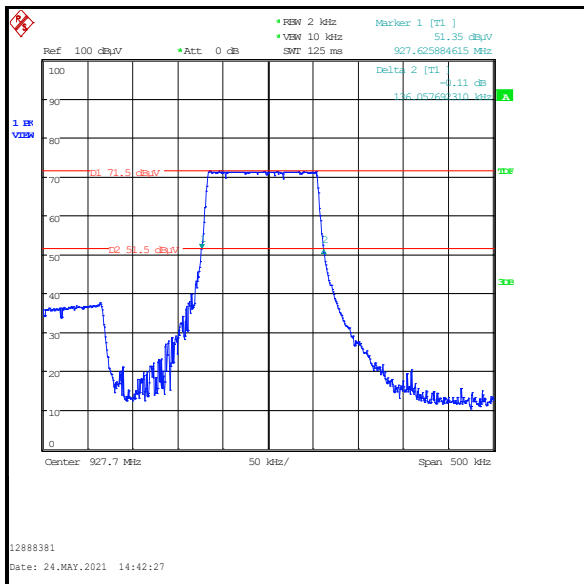
**Transmitter 20 dB Bandwidth (continued)**



**Bottom Channel**



**Middle Channel**



**Top Channel**



#### **4.4 Transmitter Radiated Emissions <1 GHz**

##### **Test Summary:**

<b>Test Engineers:</b>	Jose Bayona	<b>Test Dates:</b>	24 May 2021 & 27 May 2021
<b>Test Sample Serial Number:</b>	200066		

<b>FCC Reference:</b>	Parts 15.249(d) & 15.209(a)
<b>ISED Canada Reference:</b>	RSS-Gen 6.13 / RSS-210 B.10 (a)(b)
<b>Test Method Used:</b>	ANSI C63.10 Sections 6.3 and 6.5
<b>Frequency Range</b>	9 kHz to 1000 MHz

##### **Environmental Conditions:**

<b>Temperature (°C):</b>	22 to 23
<b>Relative Humidity (%):</b>	37 to 40

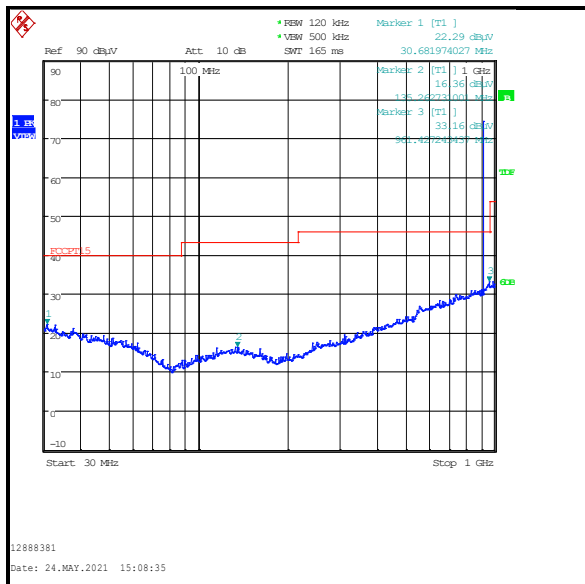
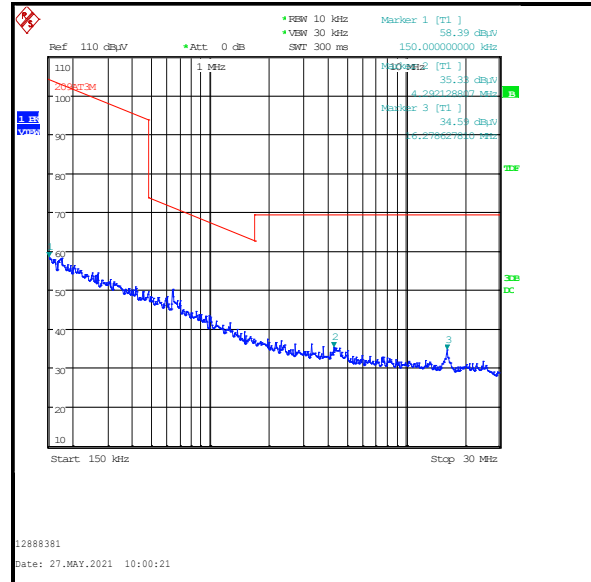
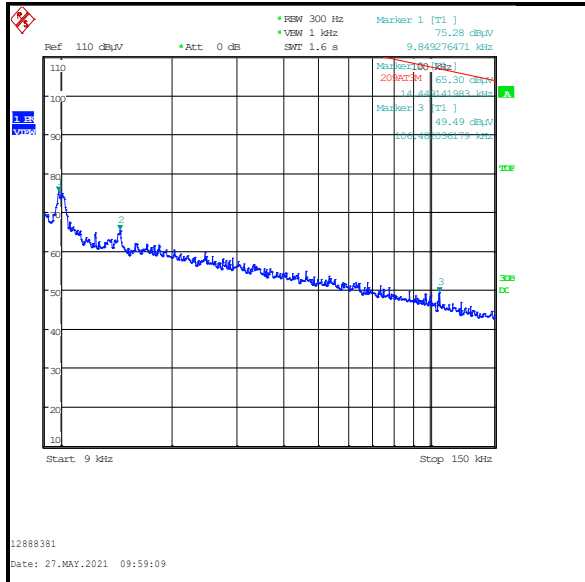
##### **Note(s):**

1. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
2. The 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.
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 in the table below.
4. The EUT fundamental is shown on the 30 MHz to 1 GHz plot.
5. Measurements below 30 MHz were performed in a semi-anechoic chamber (Asset Number K0001) at 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. The limit was extrapolated to 3 metres in accordance with ANSI C63.10 Section 6.4.4.2. Correlation data between the semi-anechoic chamber and an open-field test site is available upon request.
6. Measurements between 30 MHz to 1 GHz were performed in a semi-anechoic chamber (Asset Number K0017) 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 was configured as follows: During 9 kHz to 150 kHz tests, the resolution bandwidth was set to 300 Hz and video bandwidth 1 kHz. A peak detector was used and trace mode was Max Hold. For 150 kHz to 30 MHz, the resolution bandwidth was set to 10 kHz and video bandwidth 30 kHz. A peak detector was used and trace mode was Max Hold. For 30 MHz to 1 GHz, the resolution bandwidth was set to 120 kHz and video bandwidth 500 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold.

**Transmitter Radiated Emissions (continued)**

**Results: Middle Channel**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
961.437	Horizontal	33.2	54.0	20.8	Complied



## **4.5 Transmitter Radiated Emissions >1 GHz**

### **Test Summary:**

<b>Test Engineer:</b>	Jose Bayona	<b>Test Dates:</b>	25 May 2021
<b>Test Sample Serial Number:</b>	200066		

<b>FCC Reference:</b>	Parts 15.249(d) & 15.209(a)
<b>ISED Canada Reference:</b>	RSS-Gen 6.13 / RSS-210 B.10 (a)(b)
<b>Test Method Used:</b>	ANSI C63.10 Sections 6.3 and 6.6
<b>Frequency Range</b>	1 GHz to 9.3 GHz

### **Environmental Conditions:**

<b>Temperature (°C):</b>	23
<b>Relative Humidity (%):</b>	37

### **Note(s):**

1. The final measured value, for the given emission, in the table below 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 appropriate limit or below the measurement system noise floor.
3. \*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.
4. Pre-scans and 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 test chamber floor in the centre of the chamber turntable. During prescans, 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 with the EUT 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.
5. Pre-scans were performed and a marker placed on the highest measured level 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.

**Transmitter Radiated Emissions (continued)****Results: Bottom Channel / Peak**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
1804.680	Horizontal	48.1	54.0*	5.9	Complied
2706.948	Horizontal	51.1	54.0*	2.9	Complied
3608.928	Horizontal	46.4	54.0*	7.6	Complied
7218.440	Horizontal	54.5	74.0	19.5	Complied
8120.500	Horizontal	50.1	54.0*	3.9	Complied

**Results: Bottom Channel / Average**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
7218.250	Horizontal	50.6	54.0	3.4	Complied

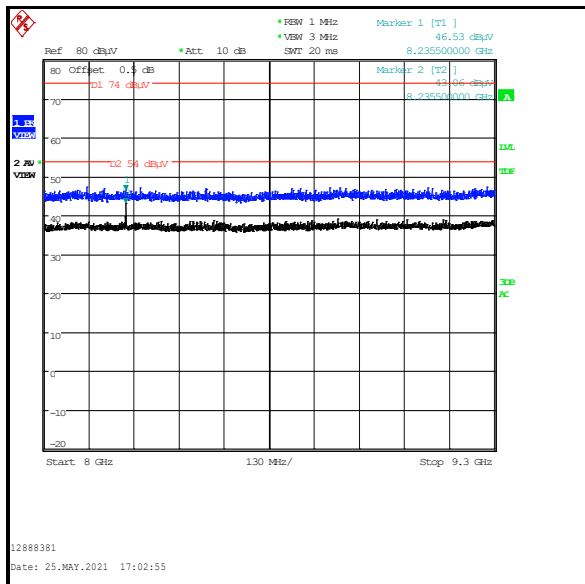
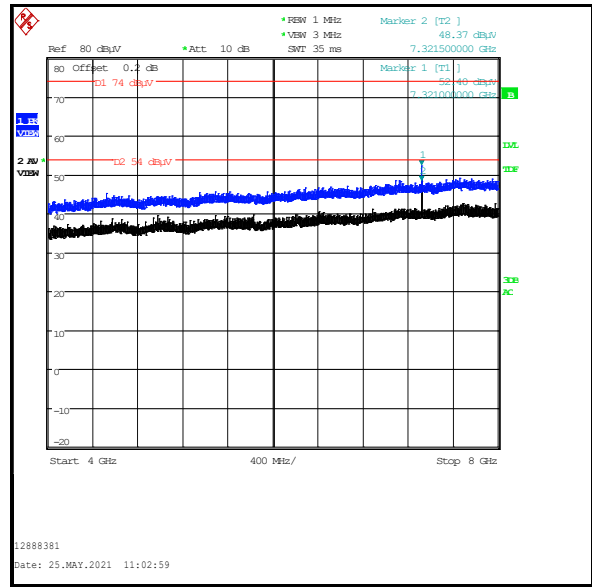
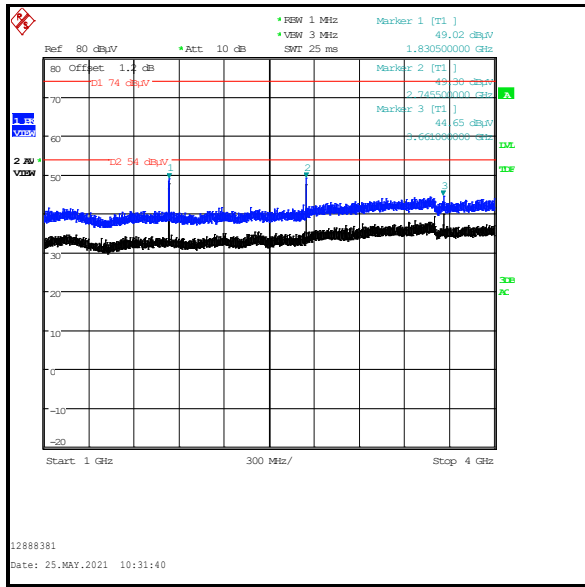
**Results: Middle Channel / Peak**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
1830.088	Horizontal	49.4	54.0*	4.6	Complied
2706.948	Horizontal	50.7	54.0*	3.3	Complied
3660.576	Horizontal	46.0	54.0*	8.0	Complied
7321.185	Horizontal	53.5	54.0*	0.5	Complied
8236.100	Horizontal	49.4	54.0*	4.6	Complied

**Results: Top Channel / Peak**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
1855.392	Horizontal	50.5	54.0*	3.5	Complied
2783.020	Horizontal	50.6	54.0*	3.4	Complied
3711.121	Horizontal	46.4	54.0*	7.6	Complied
7422.081	Horizontal	53.0	54.0*	1.0	Complied
8348.931	Horizontal	50.5	54.0*	3.5	Complied

### Transmitter Radiated Emissions (continued)



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

## **4.6 Transmitter Band Edge Radiated Emissions**

### **Test Summary:**

<b>Test Engineer:</b>	Jose Bayona	<b>Test Dates:</b>	24 May 2021
<b>Test Sample Serial Number:</b>	200066		

<b>FCC Reference:</b>	Parts 15.249(d) & 15.209(a)
<b>ISED Canada Reference:</b>	RSS-Gen 6.13 / RSS-210 B.10 (b)
<b>Test Method Used:</b>	ANSI C63.10 Sections 6.3, 6.5 and 6.10

### **Environmental Conditions:**

<b>Temperature (°C):</b>	23
<b>Relative Humidity (%):</b>	37

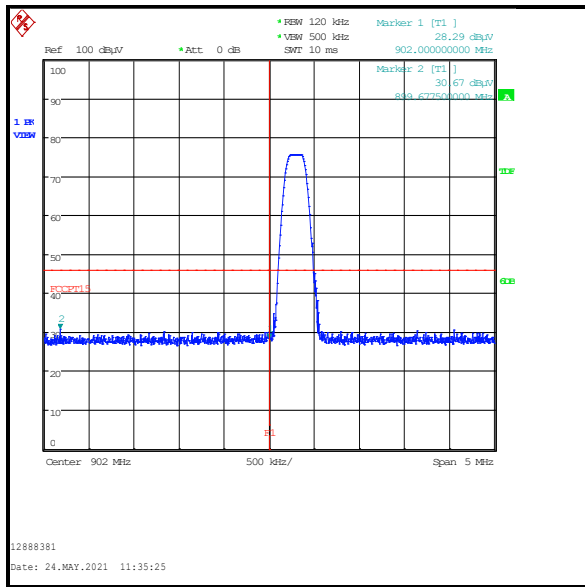
### **Note(s):**

1. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
2. In accordance with FCC part 15.249(d), all emissions outside of the specified frequency band shall be attenuated by at least 50 dBc or the general radiated emission limits in 15.209 whichever has less attenuation.
3. As both band edges are adjacent to non-restricted bands, only peak measurements are required in accordance with ANSI C63.10 Section 6.10.4. The test receiver resolution bandwidth was set to 120 kHz and video bandwidth 500 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 marker and corresponding reference level line were placed on the peak of the carrier and an out-of-band limit line was placed below the peak level. Markers were placed on the band edge spot frequencies. Additional markers were placed on the highest emission levels outside the band edges (where a higher level emission was present). Marker frequencies and levels were recorded.

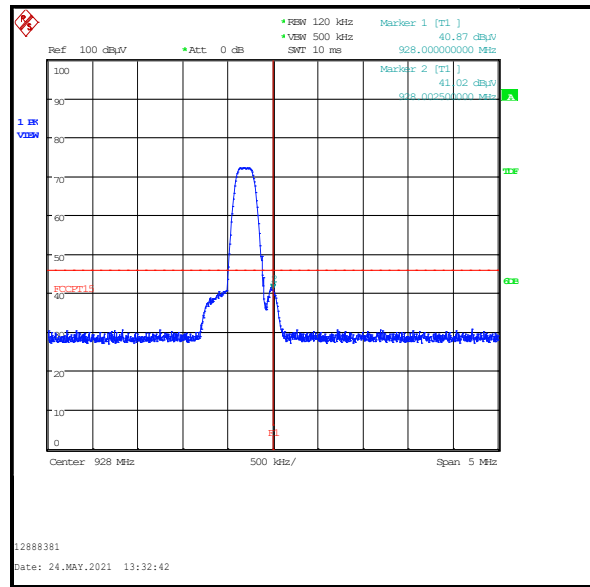
**Transmitter Band Edge Radiated Emissions (continued)**

**Results: Peak**

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
899.678	Vertical	30.7	46.0	15.3	Complied
902	Vertical	28.3	46.0	17.7	Complied
928	Vertical	40.9	46.0	5.1	Complied
928.003	Vertical	41.0	46.0	5.0	Complied



Lower Band Edge



Upper Band Edge

--- END OF REPORT ---