



# TEST REPORT

**Test Report No. : UL-RPT-RP13683656-716A**

**Customer** : Loc8tor Ltd  
**Model No.** : TT  
**FCC ID** : TUW-BT  
**Technology** : Proprietary (IEEE.802.15.4 based)  
**Test Standard(s)** : FCC Parts 15.209(a) & 15.247  
  
**Test Laboratory** : UL International (UK) Ltd, Basingstoke, Hampshire, RG24 8AH, United Kingdom

1. This test report shall not be reproduced except in full, without the written approval of UL International (UK) 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 1.0.

**Date of Issue:** 07 July 2022

**Checked by:**

Ben Mercer  
Lead Project Engineer, Radio Laboratory

**Company Signatory:**

Sarah Williams  
RF Operations Leader, Radio Laboratory



5772

---

**UL International (UK) LTD**

Unit 1-3 Horizon, Kingsland Business Park, Wade Road, Basingstoke, Hampshire, RG24 8AH, UK  
Telephone: +44 (0)1256 312000  
Facsimile: +44 (0)1256 312001

## **Customer Information**

<b>Company Name:</b>	Loc8tor Ltd
<b>Address:</b>	Devonshire House Manor Way Borehamwood Herts WD6 1QQ United Kingdom

## **Report Revision History**

<b>Version Number</b>	<b>Issue Date</b>	<b>Revision Details</b>	<b>Revised By</b>
1.0	07/07/2022	Initial Version	Ben Mercer

## **Table of Contents**

<b>Customer Information.....</b>	<b>2</b>
<b>Report Revision History .....</b>	<b>2</b>
<b>Table of Contents.....</b>	<b>3</b>
<b>1 Attestation of Test Results.....</b>	<b>4</b>
1.1 Description of EUT	4
1.2 General Information	4
1.3 Summary of Test Results	5
1.4 Deviations from the Test Specification	5
<b>2 Summary of Testing.....</b>	<b>6</b>
2.1 Facilities and Accreditation	6
2.2 Methods and Procedures	6
2.3 Calibration and Uncertainty	7
2.4 Test and Measurement Equipment	8
<b>3 Equipment Under Test (EUT) .....</b>	<b>9</b>
3.1 Identification of Equipment Under Test (EUT)	9
3.2 Modifications Incorporated in the EUT	9
3.3 Additional Information Related to Testing	10
3.4 Description of Available Antennas	10
3.5 Description of Test Setup	11
<b>4 Radiated Test Results.....</b>	<b>13</b>
4.1 Transmitter Duty Cycle	13
4.2 Transmitter Minimum 6 dB Bandwidth	15
4.3 Transmitter Maximum Peak Output Power	17
4.4 Transmitter Radiated Emissions <1 GHz	19
4.5 Transmitter Radiated Emissions >1 GHz	21
4.6 Transmitter Band Edge Radiated Emissions	24

## **1 Attestation of Test Results**

### **1.1 Description of EUT**

The Equipment Under Test was a personal asset locator with an internal antenna. It operates with the Loc8tor controller and is powered from 2 x LR1130 1.5 V batteries. The EUT utilises a proprietary DSSS protocol in the 2.4 GHz frequency range.

### **1.2 General Information**

<b>Specification Reference:</b>	47CFR15.247
<b>Specification Title:</b>	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) – Section 15.247
<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>FCC Site Registration:</b>	685609
<b>FCC Lab. Designation No.:</b>	UK2011
<b>Location of Testing:</b>	Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, G24 8AH, United Kingdom
<b>Test Dates:</b>	08 April 2021 to 12 January 2022

### **1.3 Summary of Test Results**

FCC Reference (47CFR)	Measurement	Result
Part 15.35(c)	Transmitter Duty Cycle	Note 1
Part 15.247(a)(2)	Transmitter Minimum 6 dB Bandwidth	✓
Part 15.247(b)(3)	Transmitter Maximum Peak Output Power	✓
Part 15.247(e)	Transmitter Power Spectral Density	Note 2
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

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

1. The measurement was performed to assist in the calculation of the level of the emissions. The EUT cannot transmit continuously and sweep triggering/signal gating cannot be implemented.
2. In accordance with ANSI C63.10 Section 11.10.1, PSD measurements are not required if the maximum conducted output power is less than the PSD limit of 8 dBm / 3 kHz. The PSD level is therefore deemed to be equal to the measured output power.

### **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
<b>Reference:</b>	KDB 558074 D01 15.247 Meas Guidance v05r02, April 2, 2019
<b>Title:</b>	Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under Section 15.247 of the FCC Rules

## **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".

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
Radiated Duty Cycle	2.4 GHz to 2.4835 GHz	95%	±1.14 %
Radiated Minimum 6 dB Bandwidth	2.4 GHz to 2.4835 GHz	95%	±4.59 %
Radiated 99% Occupied Bandwidth	2.4 GHz to 2.4835 GHz	95%	±3.92 %
Radiated Power Spectral Density	2.4 GHz to 2.4835 GHz	95%	±2.94 dB
Radiated Maximum Peak Output Power	2.4 GHz to 2.4835 GHz	95%	±2.94 dB
Radiated Spurious Emissions	30 MHz to 1 GHz	95%	±3.3 dB
Radiated Spurious Emissions	1 GHz to 25 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 Minimum 6 dB Bandwidth, Duty Cycle, Maximum Peak Output Power & Band Edge Radiated Emissions Tests**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2003	Thermohygrometer	Testo	608-H1	45046641	09 Dec 2022	12
K0017	3m RSE Chamber	Rainford	N/A	N/A	26 Oct 2022	12
M1995	Test Receiver	Rohde & Schwarz	ESU40	100428	12 Oct 2022	12
A2863	Pre Amplifier	Agilent	8449B	3008A02100	21 Oct 2022	12
A2889	Antenna	Schwarzbeck	BBHA 9120 B	BBHA 9120B653	26 Oct 2022	12
A2916	Attenuator	AtlanTecRF	AN18W5-10	832827#1	01 Feb 2022	12
M2040	Thermohygrometer	Testo	608-H1	45124934	09 Dec 2022	12
K0001	3m RSE Chamber	Rainford EMC	N/A	N/A	06 Sep 2022	12
M2044	Test Receiver	Rohde & Schwarz	ESU26	100122	29 Apr 2022	12
A3179	Pre Amplifier	Agilent	8449B	3008A00934	24 Aug 2022	12
A3138	Antenna	Schwarzbeck	BBHA 9120 B	00702	27 Aug 2022	12
A2523	Attenuator	AtlanTecRF	AN18W5-10	832827#1	03 Feb 2022	12

### **Test Equipment Used for Transmitter Radiated Emissions Tests**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2003	Thermohygrometer	Testo	608-H1	45046641	09 Dec 2022	12
K0017	3m RSE Chamber	Rainford	N/A	N/A	26 Oct 2022	12
M1995	Test Receiver	Rohde & Schwarz	ESU40	100428	12 Oct 2022	12
A3142	Pre Amplifier	Schwarzbeck	BBV 9718B	00020	20 Oct 2022	12
A2951	Pre Amplifier	Com-Power	PAM-103	441141	25 Jan 2022	12
A2892	Pre Amplifier	Schwarzbeck	BBHA 9170	#727	02 Nov 2022	12
A3265	Pre Amplifier	Schwarzbeck	BBV 9721	12345	16 Feb 2022	12
A2863	Pre Amplifier	Agilent	8449B	3008A02100	21 Oct 2022	12
A490	Antenna	Chase	CBL6111A	1590	05 Jun 2021	12
A2889	Antenna	Schwarzbeck	BBHA 9120 B	BBHA 9120B653	26 Oct 2022	12
A2890	Antenna	Schwarzbeck	HWRD 750	014	29 Oct 2022	12
A2916	Attenuator	AtlanTecRF	AN18W5-10	832827#1	01 Feb 2022	12
A3036	Low Pass Filter	AtlanTecRF	AFL-02000	15062902848	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

All test equipment was within the current or previous calibration period on the date of testing

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

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

<b>Brand Name:</b>	Loc8tor
<b>Model Name or Number:</b>	TT
<b>Test Sample Serial Number:</b>	Not marked or stated ( <i>Radiated Sample #1</i> )
<b>Hardware Version:</b>	Revision 2A
<b>Firmware Version:</b>	V9
<b>FCC ID:</b>	TUW-BT

<b>Brand Name:</b>	Loc8tor
<b>Model Name or Number:</b>	TT
<b>Test Sample Serial Number:</b>	Not marked or stated ( <i>Radiated Sample #2</i> )
<b>Hardware Version:</b>	Revision 2A
<b>Firmware Version:</b>	V9
<b>FCC ID:</b>	TUW-BT

#### **3.2 Modifications Incorporated in the EUT**

No modifications were applied to the EUT during testing.

### **3.3 Additional Information Related to Testing**

<b>Technology Tested:</b>	IEEE 802.15.4 (Digital Transmission System)	
<b>Type of Unit:</b>	Transceiver	
<b>Modulation:</b>	DSSS	
<b>Data Rate:</b>	250 kbps	
<b>Power Supply Requirement(s):</b>	Nominal	3.0 VDC
<b>Maximum Output Power:</b>	2.9 dBm	
<b>Transmit Frequency:</b>	2435 MHz	
<b>Transmit Channels Tested:</b>	<b>Channel ID</b>	<b>Channel Frequency (MHz)</b>
	Single	2435

### **3.4 Description of Available Antennas**

The radio utilizes an integrated antenna, with the following maximum gain:

Frequency Range (MHz)	Antenna Gain (dBi)
2400-2480	-5.8

### **3.5 Description of Test Setup**

No support equipment was used to exercise the EUT during testing.

### **Operating Modes**

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

- Continuously transmitting at maximum power with modulated carrier on a single channel.

### **Configuration and Peripherals**

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

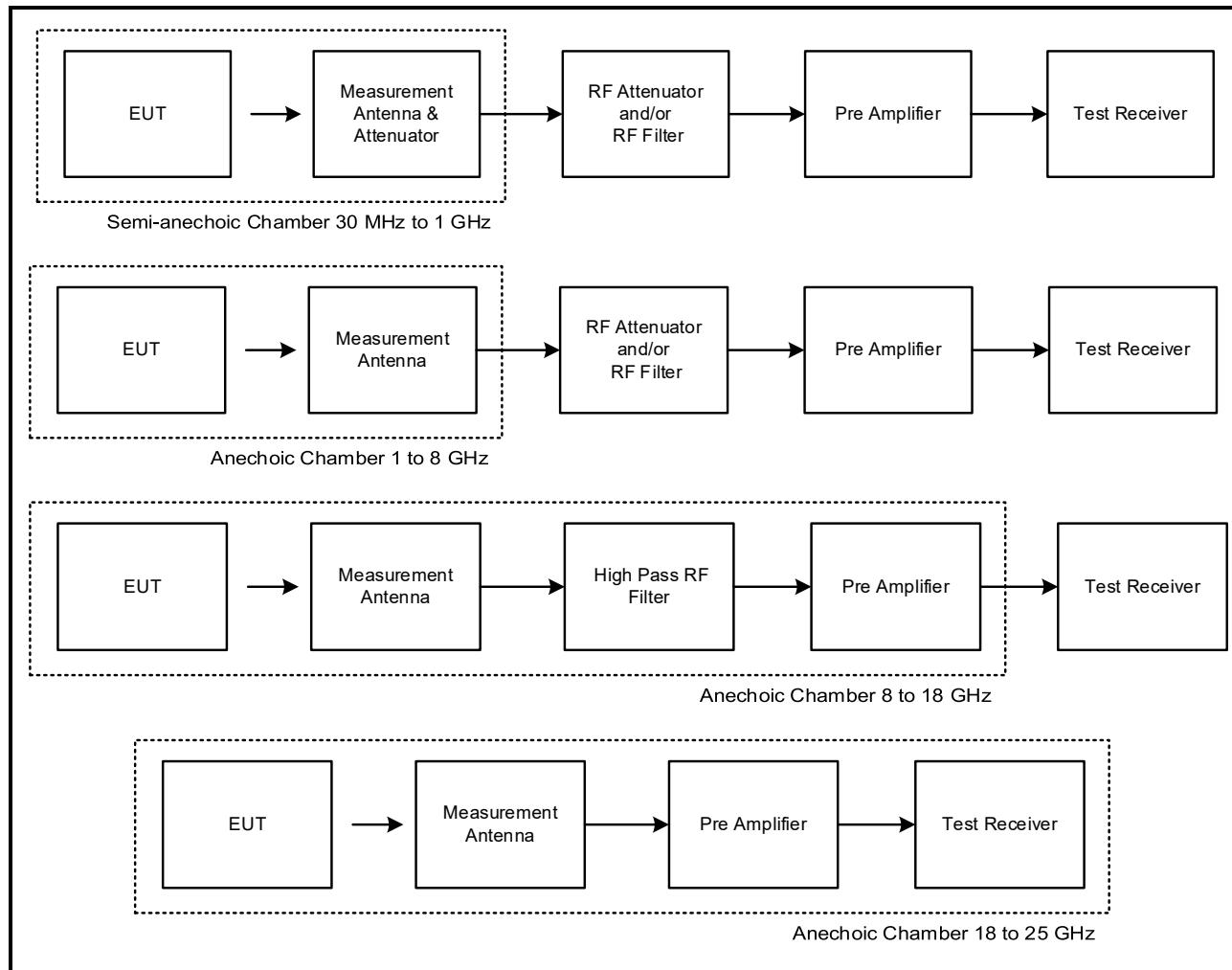
- The EUT (Sample #1) was preconfigured to continuously transmit a 9-bit pseudorandom modulated carrier when connected to the internal batteries.
- The EUT (Sample #2) was preconfigured to transmit a 9-bit pseudorandom modulated carrier, one packet every 200ms, when connected to the internal batteries.
- The EUT was placed in the worst case position/orientation for the respective test.

There were no ports to terminate.

## Test Setup Diagrams

### Radiated Tests:

#### Test Setup for Transmitter Radiated Emissions



## **4 Radiated Test Results**

### **4.1 Transmitter Duty Cycle**

#### **Test Summary:**

<b>Test Engineer:</b>	John Ferdinand	<b>Test Date:</b>	14 April 2021
<b>Test Sample Serial Number:</b>	#2		

<b>FCC Reference:</b>	Part 15.35(c)
<b>Test Method Used:</b>	FCC KDB 558074 Section 6 referencing ANSI C63.10 Section 11.6

#### **Environmental Conditions:**

<b>Temperature (°C):</b>	23
<b>Relative Humidity (%):</b>	25

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

1. In order to assist with the determination of the average level of spurious emissions field strength, measurements were made of duty cycle to determine the transmission duration and the silent period time of the transmitter. The transmitter duty cycle was measured using a spectrum analyser in the time domain and calculated by using the following calculation:

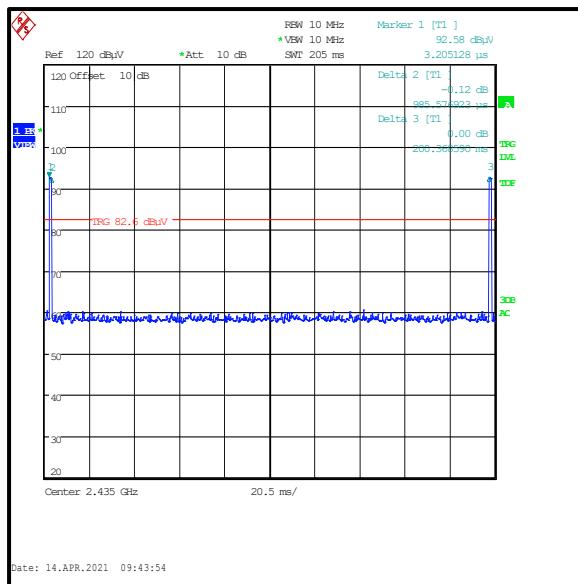
$$20 \log (1 / (\text{On Time} / [\text{Period or } 100 \text{ ms whichever is the lesser}])).$$

$$\text{Duty cycle: } 20 \log (1 / (0.986\text{ms} / 100\text{ms})) = 40.1 \text{ dB}$$

2. The measurement was performed as a radiated test due to a conducted sample not being provided.

**Transmitter Duty Cycle (continued)****Results:**

Pulse Duration ( $\mu$ s)	Period (ms)	Duty Cycle (dB)
985.577	200.369	40.1



## **4.2 Transmitter Minimum 6 dB Bandwidth**

### **Test Summary:**

<b>Test Engineer:</b>	John Ferdinand	<b>Test Date:</b>	08 April 2021
<b>Test Sample Serial Number:</b>	#1		

<b>FCC Reference:</b>	Part 15.247(a)(2)
<b>Test Method Used:</b>	FCC KDB 558074 Section 8.2 referencing ANSI C63.10 Section 11.8.1

### **Environmental Conditions:**

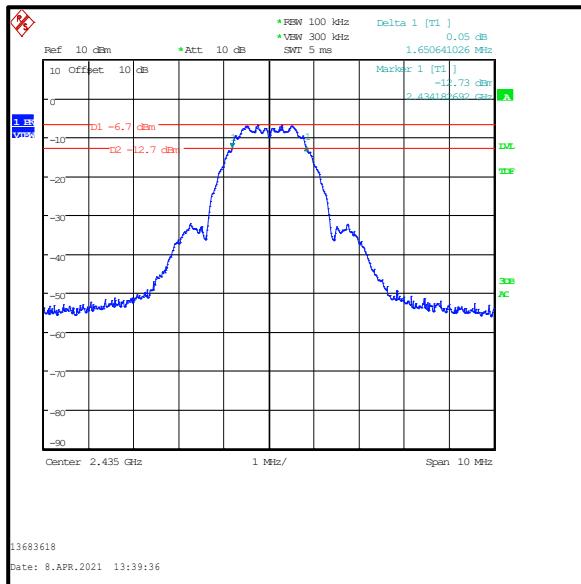
<b>Temperature (°C):</b>	23
<b>Relative Humidity (%):</b>	33

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

1. 6 dB DTS bandwidth tests were performed using a signal analyser in accordance with ANSI C63.10 Section 11.8.1 Option 1 measurement procedure. The signal analyser resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. A peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The DTS bandwidth was measured at 6 dB down from the peak of the signal.
2. The measurement was performed as a radiated test due to a conducted sample not being provided.

**Transmitter Minimum 6 dB Bandwidth (continued)****Results:**

Channel	6 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Single	1.651	≥0.5	1.151	Complied



### **4.3 Transmitter Maximum Peak Output Power**

#### **Test Summary:**

<b>Test Engineer:</b>	John Ferdinand	<b>Test Date:</b>	08 April 2021
<b>Test Sample Serial Number:</b>	#1		

<b>FCC Reference:</b>	Part 15.247(b)(3)
<b>Test Method Used:</b>	FCC KDB 558074 Section 8.3.1.1 referencing ANSI C63.10 Section 11.9.1.1 and Notes below

#### **Environmental Conditions:**

<b>Temperature (°C):</b>	23
<b>Relative Humidity (%):</b>	33

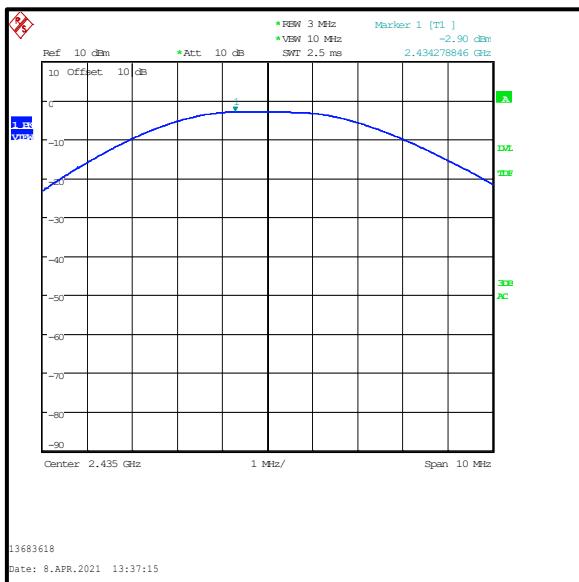
#### **Note(s):**

1. Radiated power tests were performed using a test receiver in accordance with ANSI C63.10 Section 11.9.1.1 with the  $RBW \geq DTS$  bandwidth procedure.
2. The signal analyser resolution bandwidth was set to 3 MHz and video bandwidth of 10 MHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. The span was set to 10 MHz. A marker was placed at the peak of the signal and the results recorded in the tables below.
3. The measurement was performed as a radiated test due to a conducted sample not being provided.

**Transmitter Maximum Peak Output Power (continued)****Results:**

Channel	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Single	-2.9	36.0	38.9	Complied

Channel	EIRP (dBm)	Declared Antenna Gain (dBi)	Conducted Power (dBm)	Conducted Power Limit (dBm)	Margin (dB)	Result
Single	-2.9	-5.8	2.9	30.0	27.1	Complied



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

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

<b>Test Engineer:</b>	John Ferdinand	<b>Test Date:</b>	13 April 2021
<b>Test Sample Serial Number:</b>	#1		

<b>FCC Reference:</b>	Parts 15.247(d) & 15.209(a)
<b>Test Method Used:</b>	ANSI C63.10 Sections 6.3, 6.4, 6.5 and notes below
<b>Frequency Range</b>	30 MHz to 1000 MHz

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

<b>Temperature (°C):</b>	24
<b>Relative Humidity (%):</b>	26

##### **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 emissions shown on the pre-scan plots were investigated and found to be ambient, >20 dB below the applicable limit or below the measurement system noise floor. Therefore the highest peak noise floor reading of the measuring receiver was recorded in the table below.
3. Measurements below 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.
4. 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.

**Transmitter Radiated Emissions (continued)****Results: Peak**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
956.040	Horizontal	31.4	46.0	14.6	Complied



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

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

### **Test Summary:**

<b>Test Engineer:</b>	John Ferdinand	<b>Test Dates:</b>	09 April 2021 & 13 April 2021
<b>Test Sample Serial Number:</b>	#1		

<b>FCC Reference:</b>	Parts 15.247(d) & 15.209(a)
<b>Test Method Used:</b>	FCC KDB 558074 Sections 8.1 c)3), 8.5 & 8.6 referencing ANSI C63.10 Sections 6.3, 6.6, 11.11 & 11.12
<b>Frequency Range</b>	1 GHz to 25 GHz

### **Environmental Conditions:**

<b>Temperature (°C):</b>	21 to 24
<b>Relative Humidity (%):</b>	26 to 34

### **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-scans were investigated and found to be ambient, >20 dB below the applicable limit or below the noise floor of the measurement system.
3. The emission shown on the 1 GHz to 3 GHz plot is the EUT fundamental.
4. 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 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 m 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. Peak and average measurements were performed with their respective detectors during the pre-scan measurements.
6. The reference level for the emission in the non-restricted band was established by following KDB 558074 Section 11.2 procedure.
7. \* -20 dBc limit.
8. \*\* 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.
9. Average emission levels were calculated by applying a duty cycle correction to the peak level in accordance with ANSI C63.10 Section 7.5:

$$20 \log (1 / (0.986ms / 100ms)) = 40.1 \text{ dB} \text{ (limited to 20 dB)}$$

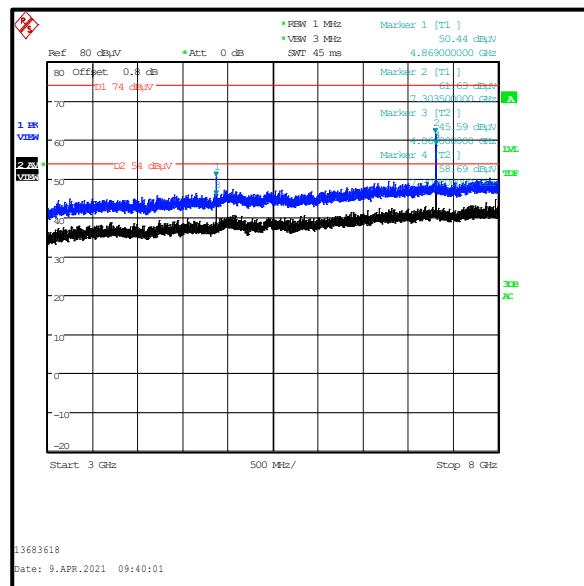
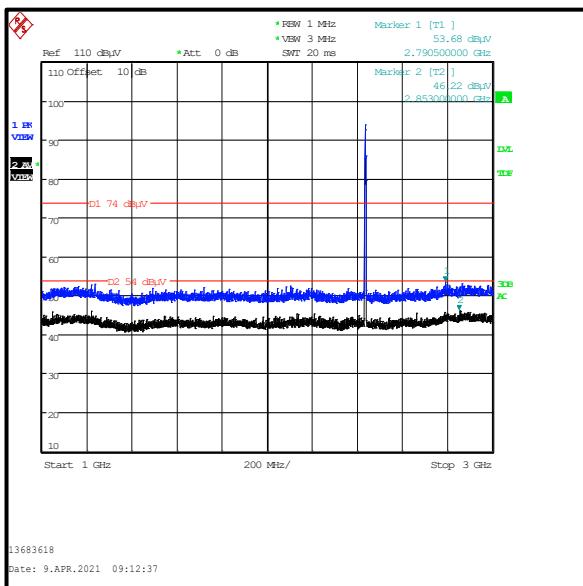
**Transmitter Radiated Emissions (continued)****Results: Peak**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
4868.950	Horizontal	50.6	54.0**	3.4	Complied
7306.713	Vertical	60.8	74.0	13.2	Complied
12177.600	Horizontal	66.0	74.0	8.0	Complied
17041.272	Horizontal	51.3	70.2*	18.9	Complied
19475.820	Vertical	44.7	54.0**	9.3	Complied
21910.260	Horizontal	47.1	70.2*	23.1	Complied
24344.700	Vertical	45.1	70.2*	25.1	Complied

**Results: Average**

Frequency (MHz)	Antenna Polarity	Peak Level (dB $\mu$ V/m)	Duty cycle correction (dB)	Corrected Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
7306.713	Vertical	60.8	20.0	40.8	54.0	13.2	Complied
12177.600	Horizontal	66.0	20.0	46.0	54.0	8.0	Complied

## Transmitter Radiated Emissions (continued)



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

### **Test Summary:**

<b>Test Engineer:</b>	John Ferdinand	<b>Test Date:</b>	08 April 2021
<b>Test Sample Serial Number:</b>	Sample#1		

<b>FCC Reference:</b>	Parts 15.247(d) & 15.209(a)
<b>Test Method Used:</b>	KDB 558074 Section 8.7 referencing ANSI C63.10 Sections 11.11, 11.12 & 11.13

### **Environmental Conditions:**

<b>Temperature (°C):</b>	23
<b>Relative Humidity (%):</b>	33

### **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 maximum peak conducted output power was previously measured. In accordance with ANSI C63.10 Section 11.11.1(a), the lower band edge measurement was performed with a peak detector and the -20 dBc limit applied.
3. As the lower band edge is adjacent to a non-restricted band, only peak measurements are required. In accordance with ANSI C63.10 Section 11.11.1, the test method in Section 11.11.3 was followed: 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 marker and corresponding reference level line were placed on the peak of the carrier. As the maximum peak conducted output power was measured using a peak detector in accordance with ANSI C63.10 Section 11.9.1.1 an out-of-band limit line was placed 20 dB (ANSI C63.10 Section 11.11.1(a)) below the peak level. A marker was placed on the band edge spot frequencies. Marker frequency and levels were recorded.
4. As the upper band edge is adjacent to a restricted band, both peak and average measurements were recorded by placing a marker at the edge of the band. For peak measurements the test receiver resolution bandwidth was set to 1 MHz and the video bandwidth 3 MHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. For average measurements the test receiver resolution bandwidth was set to 1 MHz and the video bandwidth 3 MHz. An RMS detector was used, sweep time was set to auto and trace mode was trace averaging over 300 sweeps. A marker was placed on the band edge spot frequencies and a second marker placed on the highest emission level in the adjacent restricted band of operation (where a higher level emission was present). Marker frequencies and levels were recorded.
5. There is a restricted band 10 MHz below the lower band edge. The test receiver was set up as follows: the RBW set to 1 MHz, the VBW set to 3 MHz, with the sweep time set to auto couple. Peak and average measurements were performed with peak and RMS detectors respectively. Markers were placed on the highest point on each trace.
6. \* -20 dBc limit.

**Transmitter Band Edge Radiated Emissions (continued)****Results: Peak**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
2392.800	Horizontal	44.1	69.4*	25.3	Complied
2400.000	Horizontal	42.8	69.4*	26.6	Complied
2483.500	Horizontal	51.3	74.0	22.7	Complied
2530.936	Horizontal	54.0	74.0	20.0	Complied

**Results: Average**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
2483.5	Horizontal	44.8	54.0	9.2	Complied
2528.372	Horizontal	47.0	54.0	7.0	Complied

**Results: 2310 MHz to 2390 MHz Restricted Band / Peak**

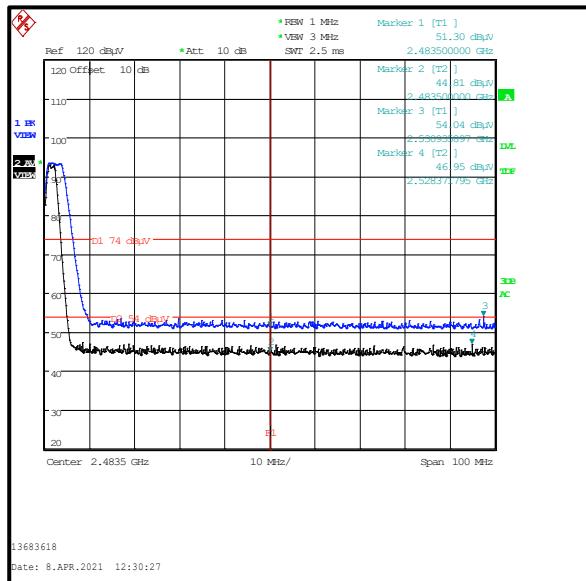
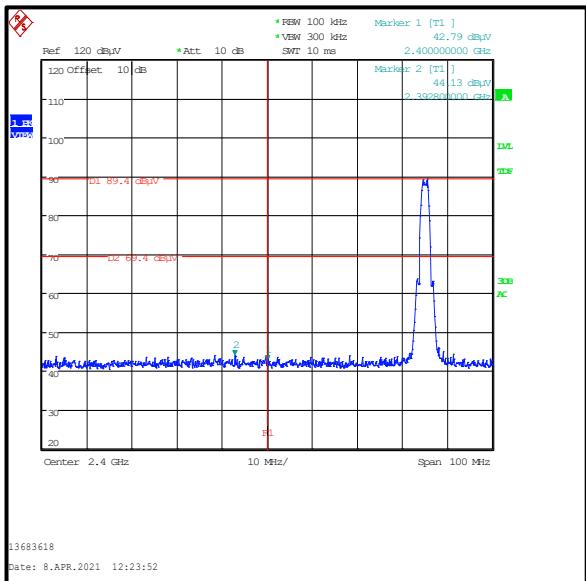
Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
2379.744	Horizontal	52.9	74.0	21.1	Complied

**Results: 2310 MHz to 2390 MHz Restricted Band / Average**

Frequency (MHz)	Antenna Polarity	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Result
2383.974	Horizontal	46.7	54.0	7.3	Complied

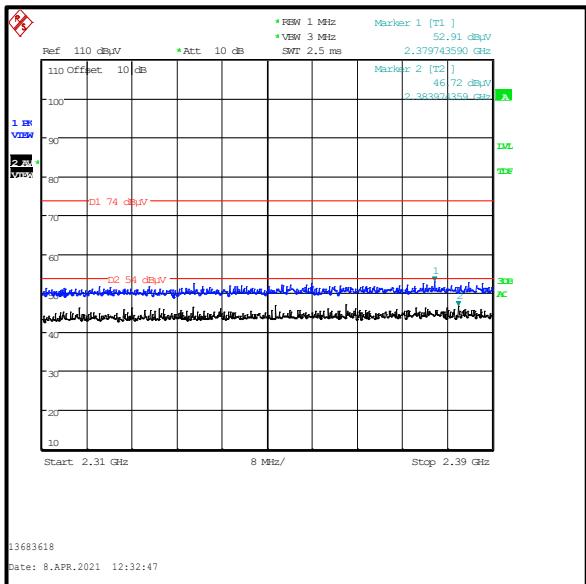
## **Transmitter Band Edge Radiated Emissions (continued)**

## **Results:**



## Lower Band Edge

## Upper Band Edge



## 2310 MHz to 2390 MHz Restricted Band

--- END OF REPORT ---