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RADIO TEST REPORT

REPORT NUMBER: M2112039-7

- **TEST STANDARD: FCC PART 15 SUBPART C SECTION 15.247 ISED RSS-247 SECTION 5.0**
 - **CLIENT: MINELAB ELECTRONICS PTY** LTD
 - **DEVICE: MANTICORE METAL** DETECTOR
 - **MODEL: MANTICORE**
 - FCC ID: Z4C-0049
 - IC: 24927-0049

DATE OF ISSUE: 16 JUNE 2022

EMC Technologies Pty Ltd reports apply only to the specific samples tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. EMC Technologies Pty Ltd shall have no liability for any deductions, inferences or generalisations drawn by the client or others from EMC Technologies Pty Ltd issued reports. This report shall not be used to claim, constitute or imply product endorsement by EMC Technologies Pty Ltd.



Accredited for compliance with ISO/IEC 17025 - Testing. The results of tests, calibration and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.





REVISION TABLE

Version	Sec/Para Changed	Change Made	Date
1		Initial issue of document	16/06/2022





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TEST CERTIFICATE

Device: Manticore Metal Detector Model: Manticore Manufacturer: Minelab Electronics Pty Ltd Radio: Bluetooth Low Energy (Nordic nRF5340) FCC ID: Z4C-0049 IC: 24927-0049 Tested for: Minelab Electronics Pty Ltd Address: 2 Second Avenue, Mawson Lakes, SA 5095, Australia Charles Edwards Contact: Phone Number: +61 8 8238 0823 Email: Charles.Edwards@codan.com.au Standard: FCC Part 15, Subpart C, Section 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz ISED RSS-247, Issue 2, Section 5 Standard specifications for frequency hopping systems and digital transmission systems operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz Result: The Manticore Metal Detector complied with the applicable requirements of the above standards. Refer to Report M2112039-7 for full details. Test Date: 18-22 March 2022 Issue Date: 16 June 2022 635 Test Engineer: lan Paul Ng Attestation: I hereby certify that the device(s) described herein were tested as described in this report and that the data included is that which was obtained during such testing. Wilson XMAN Wilson Xiao Authorised Signatory: Lead Engineer - Radio Issued by: EMC Technologies Pty. Ltd., 176 Harrick Road, Keilor Park, VIC, 3042, Australia. Phone: +61 3 9365 1000 E-mail: emc-general@emctech.com.au Web: www.emctech.com.au





RADIO TEST REPORT

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1 TEST SUMMARY

Sec.	Description	FCC	ISED	Result(s)
6.1	Antenna Requirement	§15.203	RSS-Gen 6.8	Complied
6.2	Restricted Bands of Operation	§15.205	RSS-Gen 8.10	Complied
6.3	Conducted Limits	§15.207	RSS-Gen 8.8	Not Applicable
6.4	Radiated emission limits; general requirements	§15.209	RSS-Gen 8.9	Complied
6.5	6 dB Bandwidth	§15.247(a)(2)	RSS-247 5.2(a)	Complied
6.6	Peak Output Power	§15.247(b)(3)	RSS-247 5.4(d)	Complied
6.7	Out-of-Band/Spurious Emissions	§15.247(d)	RSS-247 5.5	Complied
6.8	Band-Edge Emission Measurements	§15.247(d)	RSS-247 5.5	Complied
6.9	Power spectral density	§15.247(e)	RSS-247 5.2(b)	Complied
6.10	Maximum Permissible Exposure	§15.247(i)	RSS-102	Complied
6.11	Occupied Bandwidth – 99% power	§15.215	RSS-Gen 6.7	Complied

2 TEST FACILITY

2.1 General

EMC Technologies Pty Ltd is accredited by the FCC as a test laboratory able to perform compliance testing for the public. EMC Technologies Pty Ltd has also been designated as a Conformity Assessment Body (CAB) by Australian Communications and Media Authority (ACMA) under the APECTEL MRA and is designated to perform compliance testing on equipment subject to Declaration of Conformity (DoC) and Certification under Parts 15 and 18 of the FCC Commission's rules – **Registration Number 494713 & Designation number AU0001**.

EMC Technologies Pty Ltd is also an ISED Canada recognized testing laboratory – **ISED** company number: 3569B and CAB identifier number: AU0001.

2.2 Test Laboratory/Accreditations

NATA is the Australian National laboratory accreditation body and has accredited EMC Technologies to operate to the IEC/ISO17025 requirements. A major requirement for accreditation is the assessment of the company and its personnel as being technically competent in testing to the standards. This requires fully documented test procedures, continued calibration of all equipment to the National Standard at the National Measurements Institute (NMI) and an internal quality system similar to ISO 9002. NATA has mutual recognition agreements with the National Voluntary Laboratory Accreditation Program (NVLAP) and the American Association for Laboratory Accreditation (A^2LA).

All testing in this report has been conducted in accordance with EMC Technologies' scope of NATA accreditation to ISO 17025 for both testing and calibration and ISO 17020 for Inspection – **Accreditation Number 5292**.

The current full scope of accreditation can be found on the NATA website: www.nata.com.au





3 TEST EQUIPMENT CALIBRATION

Measurement instrumentation and transducers were calibrated in accordance with the applicable standards by an independent NATA registered laboratory such as Keysight Technologies (Australia) Pty Ltd or the National Measurement Institute (NMI) or in-house. All equipment calibration is traceable to Australian national standards at the National Measurements Institute.

Equipment Type	Make/Model/Serial Number	Last Cal. dd/mm/yyyy	Due Date dd/mm/yyyy	Cal. Interval
Chamber	Frankonia SAC-3-2 (R-144)	10/08/2020	10/08/2023	3 Year*1
EMI Receiver	R&S ESW26 Sn: 101306 (R-143)	21/06/2021	21/06/2022	1 Year ^{*2}
	EMCO 6502 Active Loop Antenna Sn: 2021 (A-310)	31/08/2020	31/08/2022	2 Year ^{*2}
Antennas	SUNOL JB1 Sn. A052518 (A-434)	13/11/2020	13/11/2022	2 Year ^{*2}
	EMCO 3115 Horn Antenna Sn: 9501-4398 (A-406)	10/01/2022	10/01/2025	3 Year ^{*1}
	ETS-Lindgren 3160-09 Horn Antenna Sn:66032 (A307)	30/04/2021	30/04/2024	3 Year ^{*1}
	Huber & Suhner Sucoflex 104A Sn: 503061/4A (C-463)	04/02/2022	04/02/2023	1 Year ^{*1}
Cables* ³	Huber & Suhner Sucoflex 104A Sn: 507100 /4A (C-478)	04/02/2022	04/02/2023	1 Year ^{*1}
	Huber & Suhner Sucoflex 104A Sn: 27319 (C-273)	15/03/2022	15/03/2023	1 Year*1

Note *1. Internal NATA calibration.

Note *2. External NATA / A2LA calibration.

Note *3. Cables are verified before measurements are taken.

4 MEASUREMENT UNCERTAINTY

EMC Technologies has evaluated the equipment and the methods used to perform the emissions testing. The estimated measurement uncertainties for emissions tests shown within this report are as follows:

Radiated Emissions:	9 kHz to 30 MHz	±4.1 dB
	30 MHz to 300 MHz	±5.1 dB
	300 MHz to 1000 MHz	±4.7 dB
	1 GHz to 18 GHz	±4.6 dB
	18 GHz to 40 GHz	±4.6 dB
Peak Output Power:		±1.5 dB

The above expanded uncertainties are based on standard uncertainties multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Application of measurement uncertainty for this report:

The referenced uncertainty standard specifies that determination of compliance shall be based on measurements <u>without</u> considering measurement instrumentation uncertainty. However, the measurement uncertainty shall appear in the test report.





5 Device Details

(Information supplied by the Client)

Manticore (project name: Sirius) is designed as a high-performance coin & treasure metal detector. The product is designed to detect metal targets buried at varying depths in the ground. The metal detector supports a low-latency wireless audio connection for use with wireless headphones.

5.1 EUT (Transmitter) Details

Frequency band:2400 – 2483.5 MHzNumber of Channels:40Operating Frequency:Low Channel: 2402 MHz (BT LE Advertising Channel 37) Mid Channel: 2480 MHz (BT LE Data Channel 17) High Channel: 2480 MHz (BT LE Advertising Channel 39)Modulation:Gaussian Frequency Shift Modulation (GFSK)Nominal Bandwidth:2 MHzData Rate:2 MbpsAntenna:PCB Trace Antenna TEXAS INSTRUMENTS 2.4-GHz Inverted F Antenna (T AP #SWRU120D)Antenna Peak Gain:3.3 dBi	Radio:	Bluetooth Low Energy (Nordic nRF5340)
Operating Frequency:Low Channel: 2402 MHz (BT LE Advertising Channel 37) Mid Channel: 2440 MHz (BT LE Data Channel 17) High Channel: 2480 MHz (BT LE Advertising Channel 39)Modulation:Gaussian Frequency Shift Modulation (GFSK)Nominal Bandwidth:2 MHzData Rate:2 MbpsPCB Trace Antenna TEXAS INSTRUMENTS 2.4-GHz Inverted F Antenna 	Frequency band:	2400 – 2483.5 MHz
Operating Frequency:Mid Channel: 2440 MHz (BT LE Data Channel 17) High Channel: 2480 MHz (BT LE Advertising Channel 39)Modulation:Gaussian Frequency Shift Modulation (GFSK)Nominal Bandwidth:2 MHzData Rate:2 MbpsPCB Trace Antenna TEXAS INSTRUMENTS 2.4-GHz Inverted F Antenna (TI AP #SWRU120D)	Number of Channels:	40
Nominal Bandwidth: 2 MHz Data Rate: 2 Mbps Antenna: PCB Trace Antenna TEXAS INSTRUMENTS 2.4-GHz Inverted F Antenna (TI AP #SWRU120D)	Operating Frequency:	Mid Channel: 2440 MHz (BT LE Data Channel 17)
Data Rate: 2 Mbps PCB Trace Antenna TEXAS INSTRUMENTS 2.4-GHz Inverted F Antenna (TI AP #SWRU120D)	Modulation:	Gaussian Frequency Shift Modulation (GFSK)
Antenna: PCB Trace Antenna TEXAS INSTRUMENTS 2.4-GHz Inverted F Antenna (TI AP #SWRU120D)	Nominal Bandwidth:	2 MHz
Antenna:TEXAS INSTRUMENTS 2.4-GHz Inverted F Antenna (TI AP #SWRU120D)	Data Rate:	2 Mbps
Antenna Peak Gain: 3.3 dBi	Antenna:	TEXAS INSTRUMENTS 2.4-GHz Inverted F Antenna
	Antenna Peak Gain:	3.3 dBi

5.2 EUT (Host) Details

Test Sample:	Manticore Metal Detector
Model:	Manticore
Supply Rating:	3.7VDC (Battery Powered - 1x internal, rechargeable Li-lon)

5.3 Test Configuration

Testing was performed with the EUT's Transceiver set to transmit continuously at Low Channel (2402 MHz), Mid Channel (2440 MHz) and High Channel (2480 MHz).

5.4 Modifications

No modifications were required to achieve compliance.

5.5 Deviations from the Standard

No deviation from the standard.





6 **RESULTS**

6.1 §15.203/ RSS-Gen 6.8 Antenna Requirement

The test sample's Bluetooth Transceiver incorporates a PCB Trace Antenna and cannot be replaced by another type.

Antenna Brand: Texas Instruments

Antenna Type: 2.4 GHz Inverted F Antenna - PCB Trace Antenna (TI AP #SWRU120D) Antenna Peak Gain: 3.3 dBi Connector: Not Applicable

The above installation will prevent any unauthorised switching of antennas.

6.2 §15.205/ RSS-Gen 8.10/ RSS-247 3.3 Restricted Bands of Operation

The provisions of the §15.205/ RSS-Gen 8.10/ RSS-247 3.3 restricted bands of operation and §15.209 radiated emissions limits have been met, refer to section 6.7

6.3 §15.207/ RSS-Gen 8.8 Conducted Limits

The device is battery DC powered and does not connect directly or indirectly to the AC mains network. Test was not applicable.

6.4 §15.209/ RSS-Gen 8.9 Radiated Emission Limits; General Requirements

The provisions of the §15.205/ RSS-Gen 8.10/ RSS-247 3.3 restricted bands of operation and §15.209/ RSS-Gen 8.9 radiated emissions limits have been met, refer to section 6.7

6.5 §15.247(a)(2)/ RSS-247 5.2(a) 6 dB bandwidth

6.5.1 Test Procedure

The tests were performed in accordance with ANSI C63.10: 2013 Clause 11.8 DTS bandwidth.

The 6 dB bandwidth was measured while the device was transmitting with typical modulation applied. The resolution bandwidth of 100 kHz and the video bandwidth of 300 kHz were utilised when measuring the bandwidth.

6.5.2 Limits

In the band 2400-2483.5MHz, the minimum 6 dB bandwidth shall be at least 500 kHz.

6.5.3 Results

Frequency (MHz)	6 dB Bandwidth (kHz)	Limit (kHz)
2402	1280	≥ 500
2440	1290	≥ 500
2480	1250	≥ 500

Table 6-1: 6 dB Bandwidth









14:53:08 18.03.2022





14:20:14 18.03.2022

Graph 6-2: 6 dB bandwidth, 2440 MHz







14:34:42 18.03.2022

Graph 6-3: 6 dB bandwidth, 2480 MHz

6.6 §15.247(b)(3)/ RSS-247 5.4(d) Peak Output Power

6.6.1 Test Procedure

The maximum peak conducted output power was measured in accordance with ANSI C63.10: 2013 clause 11.9.1.1.

6.6.2 Limits

The maximum peak conducted output power at 2400-2483.5 MHz is 1 Watt or 30 dBm.

6.6.3 Results

Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Results		
2402	0.34	30	Complied		
2440	0.44	30	Complied		

30

Complied

0.73

Table 6-2: Maximum peak conducted power

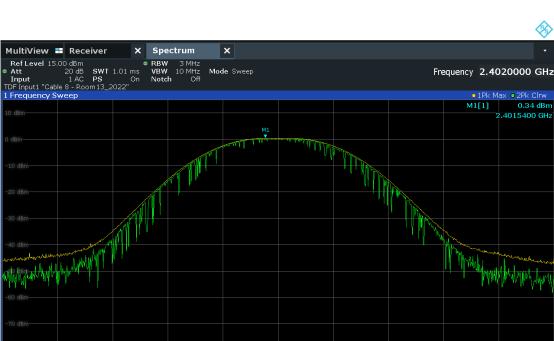


2480

Span 20.0 MHz

18.03.2022 14:51:31 Ref Le





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14:51:31 18.03.2022

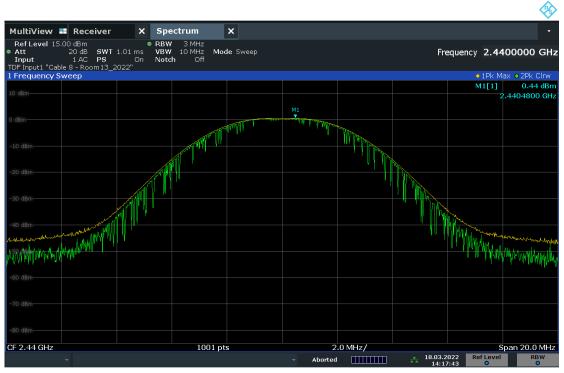
CF 2.402 GHz

Graph 6-4: Maximum peak conducted power, 2402 MHz

1001 pts

2.0 MHz/

Aborted



14:17:43 18.03.2022

Graph 6-5: Maximum peak conducted power, 2440 MHz





									\$
MultiView 🚥	Receiver	X Spe	ectrum	×					•
Ref Level 15.00 Att Input TDF Input1 "Cable :	20 dB SWT 1 AC PS	On Note	10 MHz Mod	e Sweep			Fre	equency 2.48	300000 GHz
1 Frequency Swo		.022						● 1Pk M	lax •2Pk Clrw
10 dBm								M1[1]	0.73 dBm 2.4795000 GHz
0 dBm				WIT T	Allen Maria				
-10 dBm									
-20 dBm									
-40 dBm	- and the second of the						' W	M. M. Martin	
monormum	and with the lit						4	White	Mullen
-eo gem-	1.0							ryyy y	Alle Mala and a second
-70 dBm-									
-80 dBm-									
CF 2.48 GHz			1001 pts		2	.0 MHz/			Span 20.0 MHz
					→ Aborted		+ 18.03.2 14:33	022 Ref Level	

14:33:13 18.03.2022

Graph 6-6: Maximum peak conducted power, 2480MHz

6.7 §15.247(d)/ RSS-247 5.5 Out-of-Band/Spurious Emissions

6.7.1 Test procedure

Radiated out-of-band/spurious emissions measurements were performed in a semi-anechoic chamber compliant with ANSI C63.4: 2014.

The test frequency range was sub-divided into smaller bands with the defined resolution bandwidths to permit reliable display and identification of emissions.

Frequency range (MHz)	Measurement Bandwidth (kHz)	Measurement Distance (m)	Antenna
0.009 to 0.150	0.2	3	0.6 metre loop antenna
0.150 to 30	9	3	
30 to 1000	120	3	Biconilog hybrid
1000 to 18 000	1000	3	Standard gain or broadband
18 000 to 40 000	1000	1	horn

EUT was set at a height of 0.8 m for measurements below 1000 MHz and set at a height of 1.5 m for measurements above 1000 MHz.

The sample was slowly rotated with the spectrum analyser set to Max-Hold. This was performed for at least two antenna heights. When an emission was located, it was positively identified, and its maximum level was found by rotating the automated turntable and by varying the antenna height. For below 1000 MHz the emissions were measured with a Quasi-Peak detector, and for above 1000 MHz the emissions were measured with Peak and Average detectors.

Measurements on the worst axis are presented.





The measurement data for each frequency range was corrected for cable losses, antenna factors and preamplifier gain. This process was performed for both horizontal and vertical polarisations of the measurement antenna.

6.7.2 Evaluation of field strength

Field strengths were calculated automatically by the software using pre-stored calibration data. The method of calculation is shown below:

$$E = V + AF - G + L$$

Where: $E = \text{Radiated Field Strength in } dB_{\mu}V/m$.

V = EMI Receiver Voltage in dBµV.

AF = Antenna Factor in dB/m (stored as a data array).

G = Preamplifier Gain in dB (stored as a data array).

L = Cable loss in dB (stored as a data array of Insertion Loss versus frequency).

6.7.3 Limits

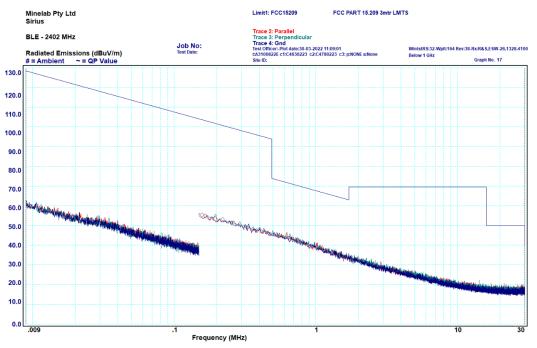
The limit applied is in accordance with the out-of-band/spurious emissions limit defined in §15.247(d).

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

The in-band peak PSD in 100 kHz bandwidth were measured on all three channels. The maximum PSD level was used to establish the limit. However, the general limits of §15.209 apply for the restricted bands of operation defined in §15.205.

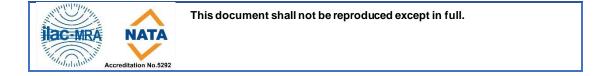
6.7.4 Transmitter Spurious Emissions: 9 kHz to 30 MHz

All emissions measured in the frequency band 9kHz - 30MHz complied with the requirements of the standard.

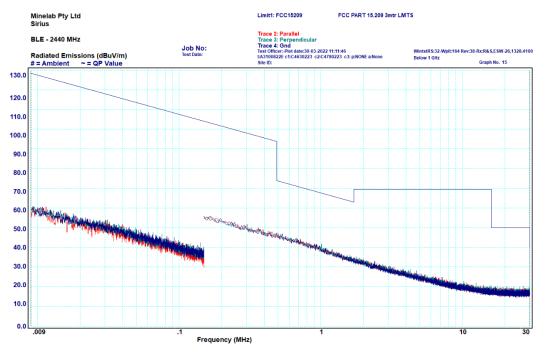


Graph 6-7: Transmitter Spurious Emissions, 9 kHz – 30 MHz, 2402 MHz

No peaks were measured within 10 dB of the limit.



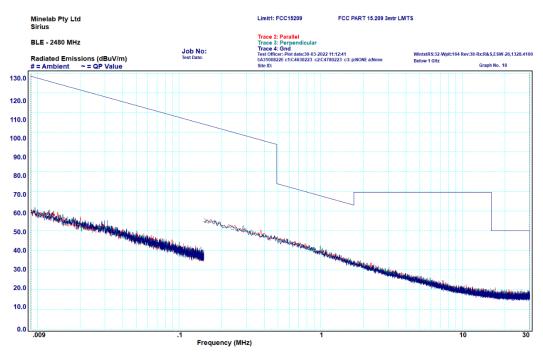




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Graph 6-8: Transmitter Spurious Emissions, 9 kHz - 30 MHz, 2440 MHz

No peaks were measured within 10 dB of the limit.





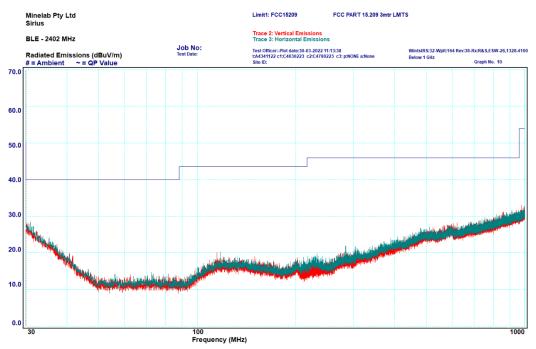
No peaks were measured within 10 dB of the limit.





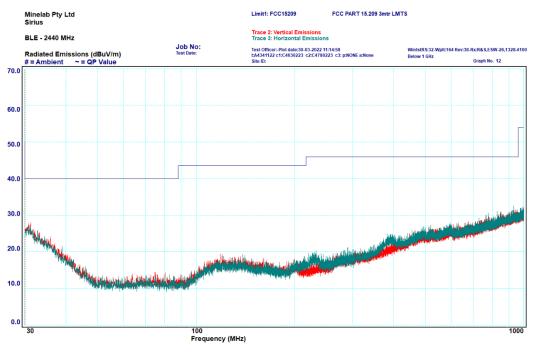
6.7.5 Transmitter Spurious Emissions: 30 - 1000 MHz

All emissions measured in the frequency band 30 - 1000 MHz complied with the requirements of the standard.



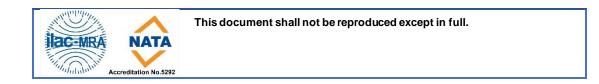
Graph 6-10: Transmitter Spurious Emissions, 30- 1000 MHz, 2402 MHz

No peaks were measured within 10 dB of the limit.

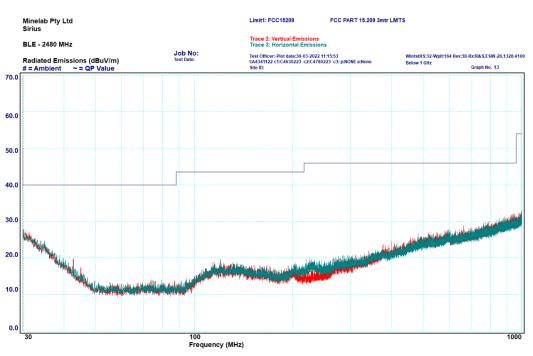


Graph 6-11: Transmitter Spurious Emissions, 30- 1000 MHz, 2440 MHz

No peaks were measured within 10 dB of the limit.







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Graph 6-12: Transmitter Spurious Emissions, 30- 1000 MHz, 2480 MHz

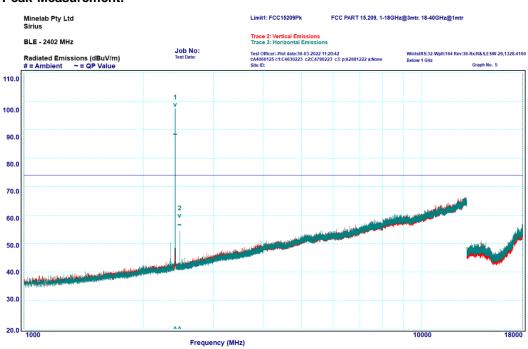
No peaks were measured within 10 dB of the limit.





6.7.6 Transmitter Spurious Emissions: 1 - 18 GHz

All emissions measured in the frequency band 1 - 18 GHz complied with the requirements of the standard.



Peak Measurement:

Graph 6-13: Transmitter Spurious Emissions, 1 – 18 GHz, 2402 MHz, Peak

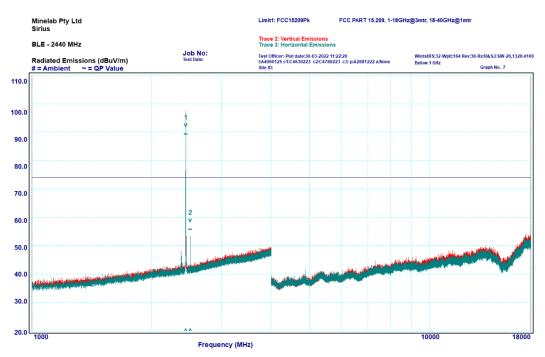
Table 6-3: Transmitter Spurious Emissions, 1 – 18 GHz, 2402 MHz, Peak

ſ		Frequency		Average		
	Peak	Frequency (MHz)	Polarisation	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	1*	2401.98	Horizontal	N/A	N/A	N/A
ſ	2	2466.12	Horizontal	56.6	74	-17.4

*Note: Peaks above the limit are the fundamental transmission and not subject to the spurious emissions limit of the standard







Graph 6-14: Transmitter Spurious Emissions, 1 – 18 GHz, 2440 MHz, Peak

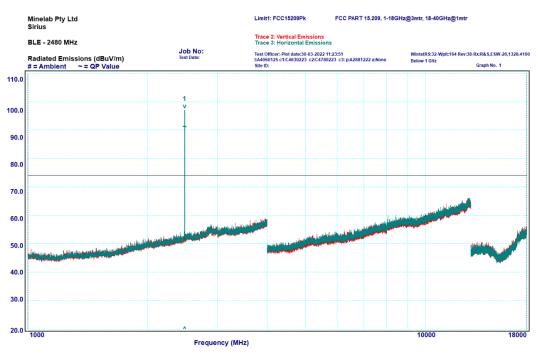
	Table 6-4: Transmitter	Spurious Emissions,	1 –	18 GHz,	2440 MHz,	Peak
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Γ		Frequency		Average		
	Peak	Frequency (MHz)	Polarisation	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	1*	2439.78	Horizontal	N/A	N/A	N/A
L	2	2504.44	Horizontal	55.7	74	-18.3

*Note: Peaks above the limit are the fundamental transmission and not subject to the spurious emissions limit of the standard







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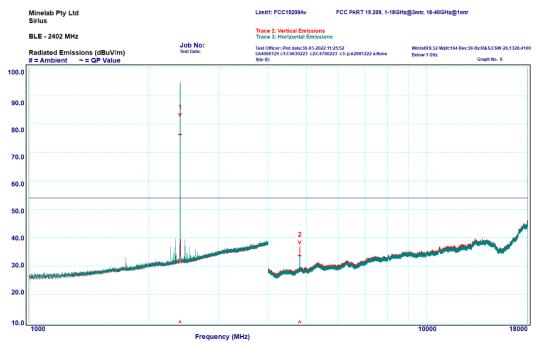
Graph 6-15: Transmitter Spurious Emissions, 1 – 18 GHz, 2480 MHz, Peak

Note: Peaks above the limit are the fundamental transmission and not subject to the spurious emissions limit of the standard





Average Measurement:



Graph 6-16: Transmitter Spurious Emissions, 1 – 18 GHz, 2402 MHz, Average

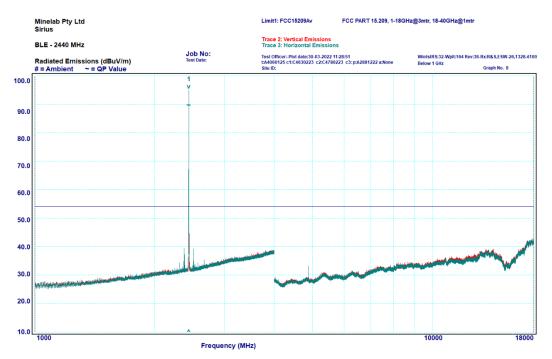
Table 6-5: Transmitter Spurious Emissions, 1 – 18 GHz, 2402 MHz, Average

	Fraguanay			Average	
Peak	Frequency (MHz)	Polarisation	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1*	2401.96	Vertical	N/A	N/A	N/A
2	4803.86	Horizontal	33.6	54.0	-20.4

*Note: Peaks above the limit are the fundamental transmission and not subject to the spurious emissions limit of the standard







Graph 6-17: Transmitter Spurious Emissions, 1 – 18 GHz, 2440 MHz, Average

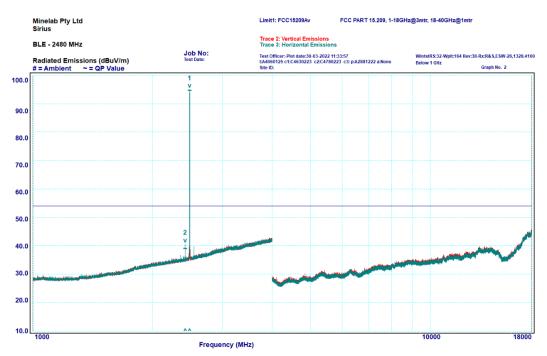
Table 6-6: Transmitter Spurious Emissions, 1 – 18 GHz, 2440 MHz, Average

	Frequency			Average	
Peak	Frequency (MHz)	Polarisation	Level	Limit	Margin
	(1112)		(dBµV/m)	(dBµV/m)	(dB)
1*	2440.00	Horizontal	N/A	N/A	N/A

*Note: Peaks above the limit are the fundamental transmission and not subject to the spurious emissions limit of the standard







Graph 6-18: Transmitter Spurious Emissions, 1 – 18 GHz, 2480 MHz, Average

Table 6-7: Transmitter Spurious Emissions, 1 – 18 GHz, 2480 MHz, Average

		Frequency			Average	
Pea	k	Frequency (MHz)	Polarisation	Level	Limit	Margin
		· · ·		(dBµV/m)	(dBµV/m)	(dB)
1*		2480.01	Horizontal	N/A	N/A	N/A
2		2416.00	Horizontal	38.9	54.0	-15.1

*Note: Peaks above the limit are the fundamental transmission and not subject to the spurious emissions limit of the standard





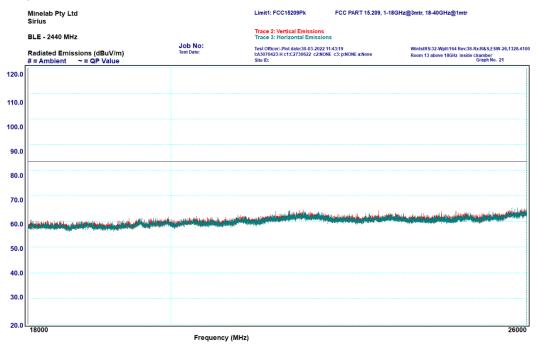
6.7.7 Transmitter Spurious Emissions: 18 – 26 GHz

All emissions measured in the frequency band 18 - 26 GHz complied with the requirements of the standard.

Peak Measurement:



Graph 6-19: Transmitter Spurious Emissions, 18-26 GHz, 2402 MHz, Peak



No peaks were measured within 10 dB of the limit.

Graph 6-20: Transmitter Spurious Emissions, 18–26 GHz, 2440 MHz, Peak

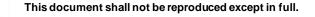
No peaks were measured within 10 dB of the limit.

NATA

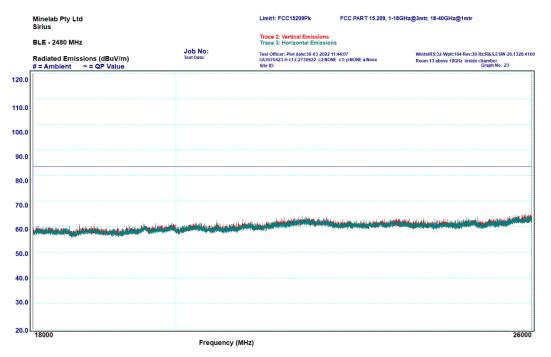
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Graph 6-21: Transmitter Spurious Emissions, 18–26 GHz, 2480 MHz, Peak

No peaks were measured within 10 dB of the limit.



Average Measurement:

Graph 6-22: Transmitter Spurious Emissions, 18–26 GHz, 2402 MHz, Average

No peaks were measured within 10 dB of the limit.

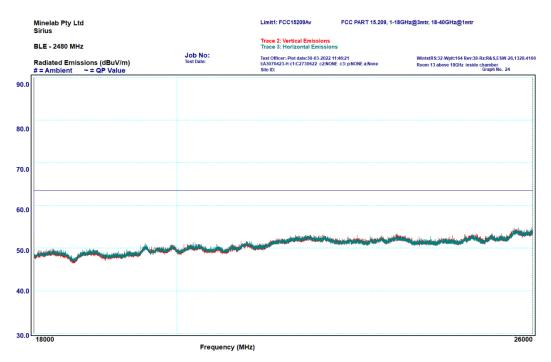






Graph 6-23: Transmitter Spurious Emissions, 18-26 GHz, 2440 MHz, Average

No peaks were measured within 10 dB of the limit.



Graph 6-24: Transmitter Spurious Emissions, 18–26 GHz, 2480 MHz, Average

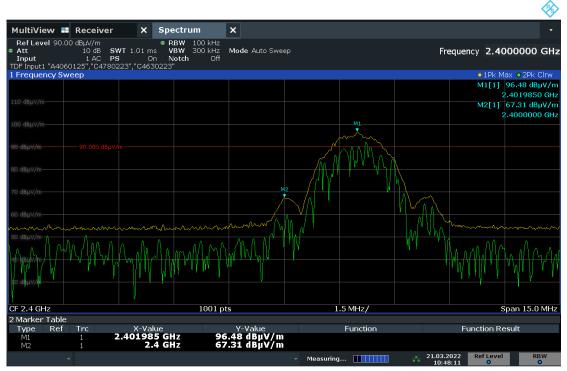
No peaks were measured within 10 dB of the limit.





6.8 §15.247(d)/ RSS-247 5.5 Band Edge Emission Measurements

Band-edge radiated measurements were done in accordance with ANSI C63.10 clause 6.10. All emissions measured near the lower and higher band edge complied with the requirements of §15.247/ RSS-247 5.0.



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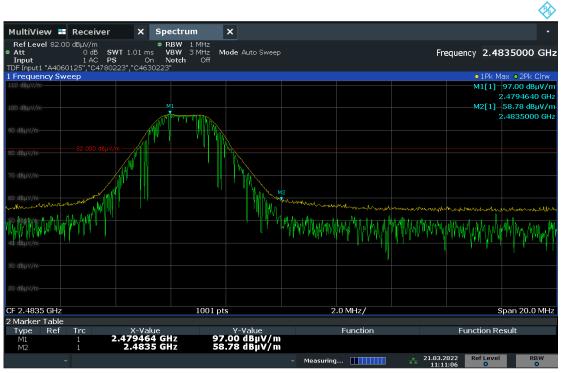
Graph 6-25: Band Edge Emission, Lower Band-edge

Table 6-8: Band Edge Emission, Lower Band-edge

Measurement	Freq	Measurement	Limit	Result
Type	(MHz)	(dBμV/m)	(dBµV/m)	
Peak	2400	67.31	74	Complied







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Graph 6-27: Band Edge Emission, Upper Band-edge, Average

Table 6-9: Band Edge Emission, Upper Band-edge

Measurement Type	Freq (MHz)	Measurement (dBμV/m)	Limit (dBµV/m)	Result
Peak	2483.5	58.78	74	Complied
Average	2483.5	46.97	54	Complied





6.9 §15.247(e)/ RSS-247 5.2(b) Power Spectral Density

6.9.1 Test procedure

Maximum power spectral density level in the fundamental emission was measured in accordance with ANSI C63.10: 2013 Clause 11.10

6.9.2 Limits

The maximum peak conducted power spectral density (PSD) is 8 dBm per 3 kHz.

6.9.3 Results

Frequency (MHz)	Power Spectral Density (dBm)	Limit (dBm)	Results
2402	-14.98	8	Complied
2440	-16.39	8	Complied
2480	-14.06	8	Complied

Table 6-10: Power spectral density

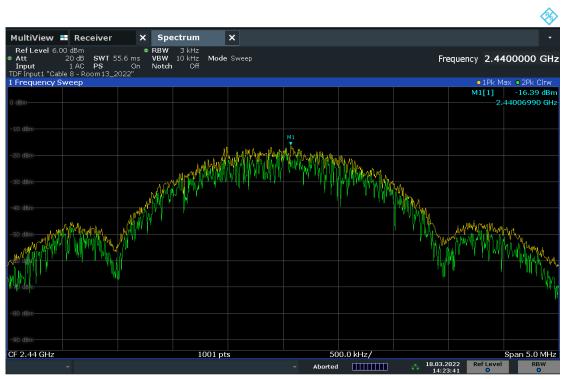
R MultiView 🎫 Receiver Spectrum × Ref Level 6.00 dBm RBW VBW 3 kHz 10 kHz Mode Sweep Frequency 2.4020000 GHz SWT 55.6 Att DF Input1 "Cable 8 Frequency Swee ●1Pk Max ●2Pk Clrw -14.98 dBr M1[1] 2.40201000 GHz CF 2.402 GHz 1001 pts 500.0 kHz/ Span 5.0 MHz 18.03.2022 Ref Level 14:55:23 O Aborted

14:55:23 18.03.2022

Graph 6-28: Power Spectral Density, 2402 MHz

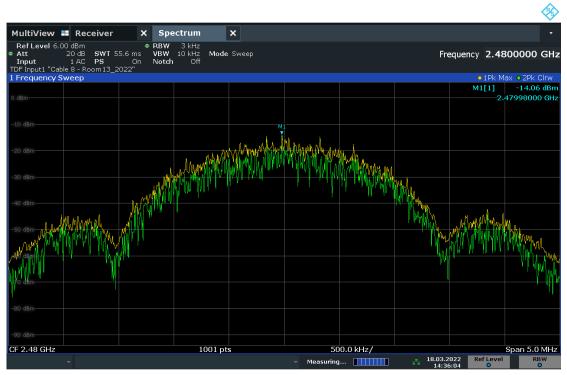






14:23:42 18.03.2022

Graph 6-29: Power Spectral Density, 2440 MHz



14:36:05 18.03.2022

Graph 6-30: Power Spectral Density, 2480 MHz





6.10 §15.247(i)/ RSS-Gen 3.4/RSS-102 Maximum Permissible Exposure

The EUT complied with the applicable maximum permissible exposure levels. Refer to EMC Technologies report M2112039-5 and M2112039-6.

6.11 §15.215/ RSS-Gen 6.7 Occupied Bandwidth - 99% power

6.11.1 Test procedure

The bandwidth containing 99% power of the transmitted signal was measured using the procedure from ANSI C63.10 section 6.9.

6.11.2 Limits

The 99% power should be contained within the frequency band 2400 – 2483.5 MHz.

6.11.3 Results

Freq. (MHz)	99% Bandwidth (MHz)	Lower Frequency (MHz)	Upper Frequency (MHz)	Result
2402	2.118	2400.91	2403.03	Complied
2440	2.129	2438.90	2441.03	Complied
2480	2.134	2478.90	2481.04	Complied





14:47:48 18.03.2022

Graph 6-31: Occupied bandwidth, 2402 MHz



Span 7.0 MHz

Function Result 2.129861973 MHz 2.439971714 GHz -28.285953743 kHz

18.03.2022 14:15:32





14:15:32 18.03.2022

Ref Tro

CF 2.44 GHz

2 Marker Table Type Ref M1 T1 T2

Graph 6-32: Occupied bandwidth, 2440 MHz

700.0 kHz/

Aborted

: Bw Centroid : Bw Freq Offset

Function

1001 pts

Y-Value -0.61 dBm -15.19 dBm -15.90 dBm

X-Value 2.44 GHz 2.43890678 GHz 2.44103665 GHz



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Graph 6-33: Occupied bandwidth, 2480 MHz

END OF REPORT

