

RADIO TEST REPORT

Report No.: M2504018-1

TESTED FOR:

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ISSUED BY:

EMC Technologies Pty. Ltd.

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Product Name: RedVision Display
Model: DISP4300
HW Version: RCU1-10
FCC ID: 2BAH6-DISP4300
IC: 30290-DISP4300
Test Date(s): 19, 20, 22, 23 and 26 May 2025
Issue Date: 29 July 2025

Standard: **FCC PART 15, SUBPART C, SECTION 15.247**
ISED RSS-247, Issue 3, SECTION 5.0

Result: *The test sample, under the condition and operating mode described in this test report, complies with the standard/s listed above.*

Test Engineer:



Ashish Nath

Authorized Signatory:



Ian Paul Ng, NCE

Senior Test Engineer

Radio & Wireless

Revision History

Version	Issue Date	Reason / Comments
1	29 July 2025	Initial issue

General Remarks

EMC Technologies Pty Ltd 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.

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 customer 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.

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1 Project Overview

1.1 Test Facility

Measurements were performed at the following location:

- ☒ Melbourne Laboratory 176 Harrick Road, Keilor Park, VIC 3042, Australia
- ☐ Sydney Laboratory Unit 3, 87 Station Road, Seven Hills, NSW 2147, Australia

EMC Technologies Pty. Ltd. is an independently owned Australian company that is NATA accredited to ISO 17025 for both testing and calibration and ISO 17020 for Inspection. – **Accreditation Number 5292.**

Country	Assessment Body	Lab Code / Member No.
Australia	NATA	Accreditation Number: 5292
Europe	European Union	Notified Body Number: 0819
USA	FCC	Designation Number: AU0001/AU0002
Canada	ISED Canada	CAB Identifier Number: AU0001/AU0002
Japan	VCCI	Company Number: 785
Taiwan	BSMI	Lab Code SL2-IN-E-5001R

1.2 Standards Applied

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 3, SECTION 5.0

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

ANSI C63.10 - 2013

American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

ANSI C63.4 - 2014

American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

FCC KDB – 558074 D01 15.247 Meas Guidance v05r02

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

1.3 Results Summary

The test sample was provided by the customer. All results herein apply only to the test sample.

Sec.	Description	FCC	ISED	Results
3.1	Antenna Requirement	§15.203	RSS-Gen 6.8	Complied
3.2	Restricted Bands of Operation	§15.205	RSS-Gen 8.10	Complied
3.3	Conducted Limits	§15.207	RSS-Gen 8.8	Not Applicable
3.4	Radiated emission limits; general requirements	§15.209	RSS-Gen 8.9	Complied
3.5	6 dB Bandwidth	§15.247(a)(2)	RSS-247 5.2(a)	Complied
3.6	Peak Output Power	§15.247(b)(3)	RSS-247 5.4(d)	Complied
3.7	Out-of-Band/Spurious Emissions	§15.247(d)	RSS-247 5.5	Complied
3.8	Band-Edge Emission Measurements	§15.247(d)	RSS-247 5.5	Complied
3.9	Power spectral density	§15.247(e)	RSS-247 5.2(b)	Complied
3.10	Maximum Permissible Exposure	§15.247(i)	RSS-102	Complied
3.11	Occupied Bandwidth – 99%	§15.215	RSS-Gen 6.7	Complied

1.4 Measurement Uncertainty

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

EMC Testing	Range	Value
Conducted Emission		
• Mains Port	9kHz to 30 MHz	± 3.2 dB
Radiated Emission	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 without taking into account measurement uncertainty. However, the measurement uncertainty shall appear in the test report.

1.5 Test Equipment

Measurement instrumentation and transducers were calibrated in accordance with the applicable standards by a NATA accredited laboratory or the National Measurement Institute (NMI).

Conducted Emission						
Manufacturer	Model	Serial No.	Asset No.	Description	Cal. Date	Cal. Due
Huber+Suhner	Sucoflex 118	800175/118	C-537	RF Cable	04/06/2025	04/06/2026
Teseq	NNB 51	47439	L-077	LISN	04/09/2024	04/09/2025
Rohde & Schwarz	ESCI	101306	R-028	EMC Receiver	20/03/2025	20/03/2026

Radiated Emission						
Manufacturer	Model	Serial No.	Asset No.	Description	Cal. Date	Cal. Due
Frankonia	SAC-3-2	-	R-144	Room 13 3m SAC	25/03/2024	25/03/2027
Rohde & Schwarz	ESW26	101306	R-143	EMI Receiver	06/08/2024	06/08/2025
EMCO	6502	9311-2801	A-231	Active Loop Antenna	14/01/2025	14/01/2027
EMCO	6502	2021	A-310	Active Loop Antenna	19/09/2024	19/09/2026
SunAR	JB1	A052518	A-434	Broadband Hybrid Antenna	25/04/2025	25/04/2027
SunAR	JB6	A012312	A-363	Broadband Hybrid Antenna	15/08/2024	15/08/2026
EMCO	3115	9501-4398	A-406	Horn Antenna	10/01/2025	10/01/2028
ETS-Lindgren	3160-09	66032	A-307	Horn Antenna	18/01/2024	18/01/2027
ETS-Lindgren	3160-10	64179	A-306	Horn Antenna	18/01/2024	18/01/2027
Huber+Suhner	Sucoflex 104A	503061/4A	CL131125	RF Cable	01/11/2024	01/11/2025
Huber+Suhner	Sucoflex 102	27319/2	C-273	RF Cable	23/01/2025	23/01/2026
EDS	SG18-B3015	1	A-288	Pre-Amp	27/11/2024	27/11/2025

2 Equipment Under Test

2.1 EUT Details

(EUT details are supplied by the customer)

EUT Transmitter Details	
Radio Module/Chip Manufacturer:	Nordic Semiconductor
Radio Module/Chip Model:	nRF52833
Type:	Bluetooth Low Energy (BLE)
Frequency Band:	2400 – 2483.5 MHz
Number of Channels:	40
Operating Frequency:	Low Channel: 2402 MHz Middle Channel: 2440 MHz High Channel: 2480 MHz
Nominal Bandwidth:	2 MHz
Modulation:	GFSK
Data Rate:	2Mbit/s
Antenna Manufacturer:	Not Applicable
Antenna Model:	Not Applicable
Antenna Type:	PCB Inverted F antenna
Antenna Maximum Gain:	1.1dBi

EUT Host Details	
Product Name:	RedVision Display
Model:	DISP4300
HW Version:	RCU1-10
Sample No / Identification:	S01957
Power Rating:	12V DC
Description:	The DISP4300 can be used as a replacement or secondary display for TVMS Rogue and TVMS Prime. The display uses a modern, user-friendly interface and features an easy-to-understand menu. The robust display has been built and tested to withstand tough and varied environmental conditions and allows you to control multiple on-board devices as well as have visibility of water tank levels and battery power when paired with a REDARC Manager battery management system. In-built Bluetooth Low Energy (BLE) provides a connection from your RedVision system to the RedVision app on a compatible mobile device.

2.2 Test Configuration

Testing was performed with the EUT's Transceiver set to continuously transmit on the low channel (2402 MHz), middle channel (2440 MHz) and high channel (2480 MHz). The test sample was provided by the manufacturer, and the RF transmit output power was configured to 6 dBm for each channel as specified in the manufacturer's test plan.

Test Mode	Channel	Frequency	RF Power Settings
1	Low	2402 MHz	6 dBm
2	Middle	2440 MHz	6 dBm
3	High	2480 MHz	6 dBm

2.3 Modifications

No modifications were required to achieve compliance.

2.4 Additions to, Deviations and Exclusions from the Method/Standard

No additions to, deviations or exclusions from the method/standard were performed.

2.5 Reference Document

No.	Document Title	Issue No.
1	REDARC_DISP4300_Test plan_FCC-ISED-CE	v3.0

3 Evaluation of Test Results

3.1 §15.203/ RSS-Gen 6.8 Antenna Requirement

The test sample's transceiver incorporates a PCB inverted F Antenna and cannot be replaced by another type.

Antenna Manufacturer: Not Applicable

Antenna Model: Not Applicable

Antenna Type: PCB inverted F Antenna

Antenna Maximum Gain: 1.1 dBi

Connector: Not Applicable

The above installation will prevent any unauthorized switching of antennas.

3.2 §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 3.7.

3.3 §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.

3.4 §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 3.7.

3.5 §15.247(a)(2)/ RSS-247 5.2(a) 6 dB bandwidth

3.5.1 Test Procedure

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

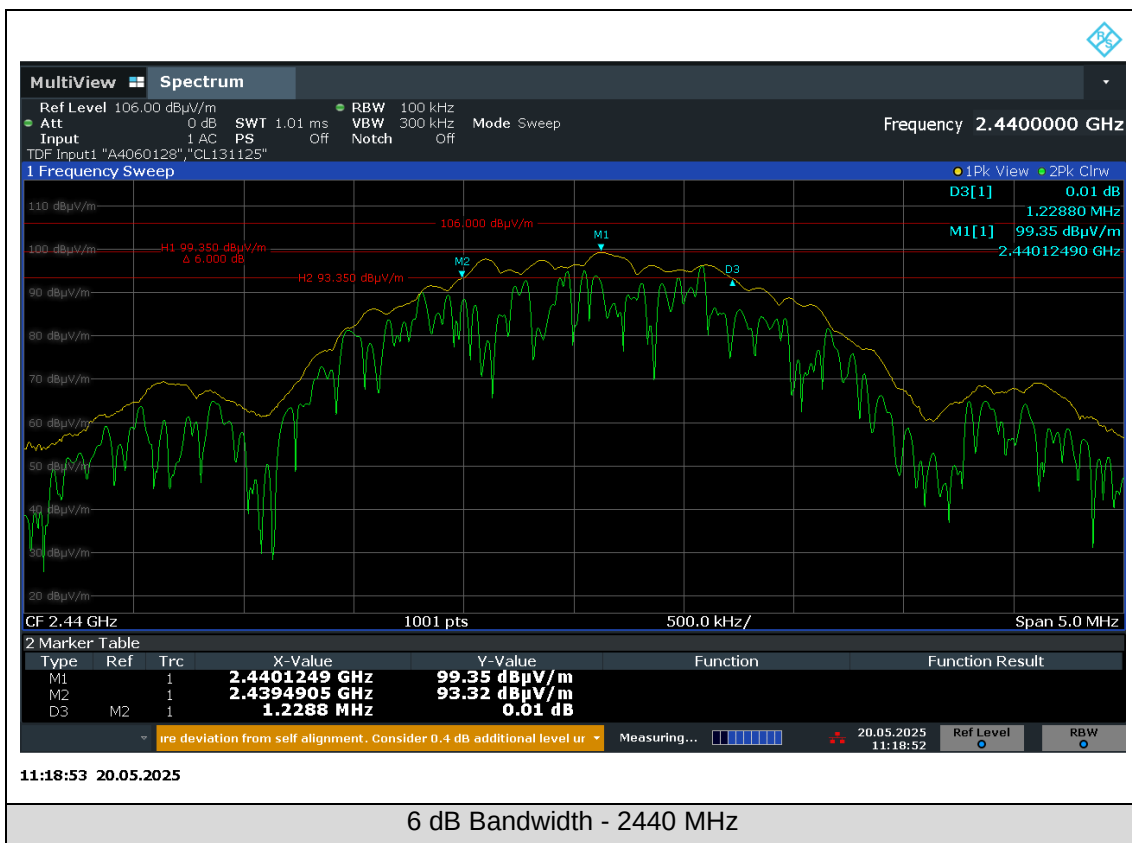
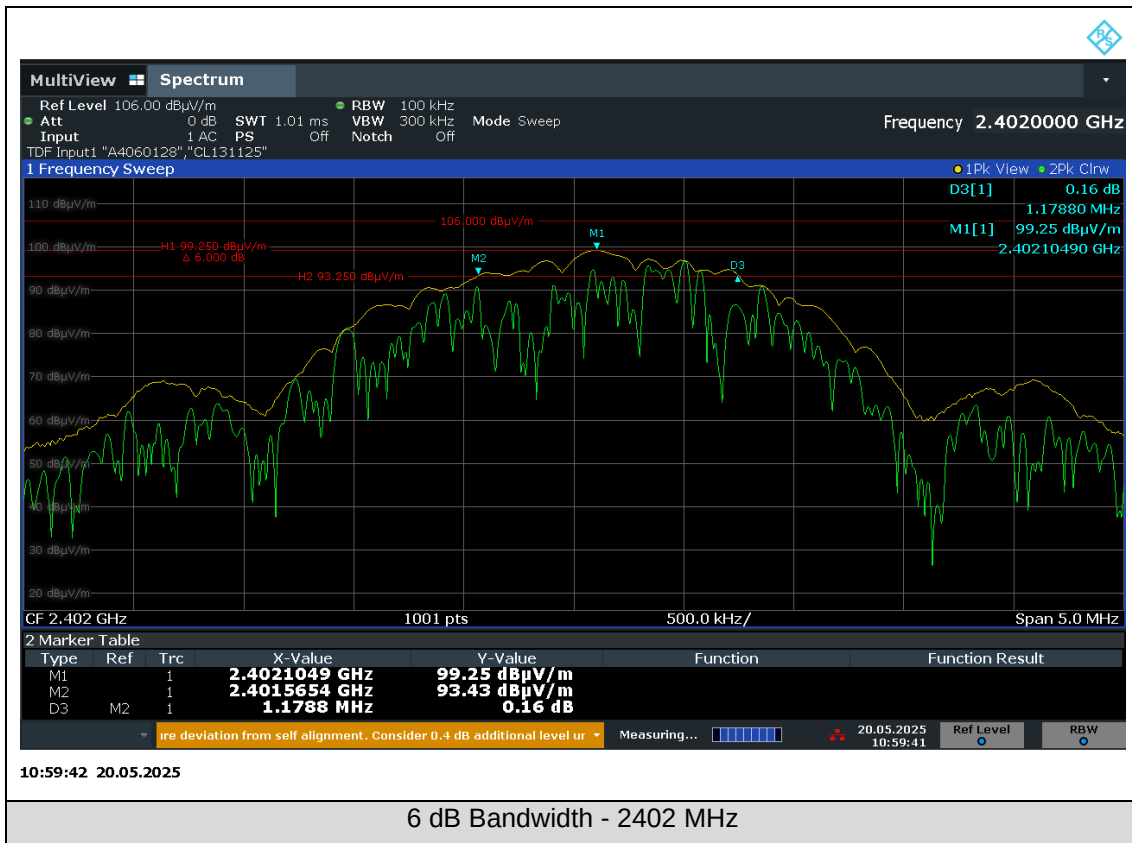
The 6 dB bandwidth was measured while the device was transmitting with typical modulation applied. The resolution bandwidth of 100 kHz and the video bandwidth of 300 kHz were utilized when measuring the bandwidth.

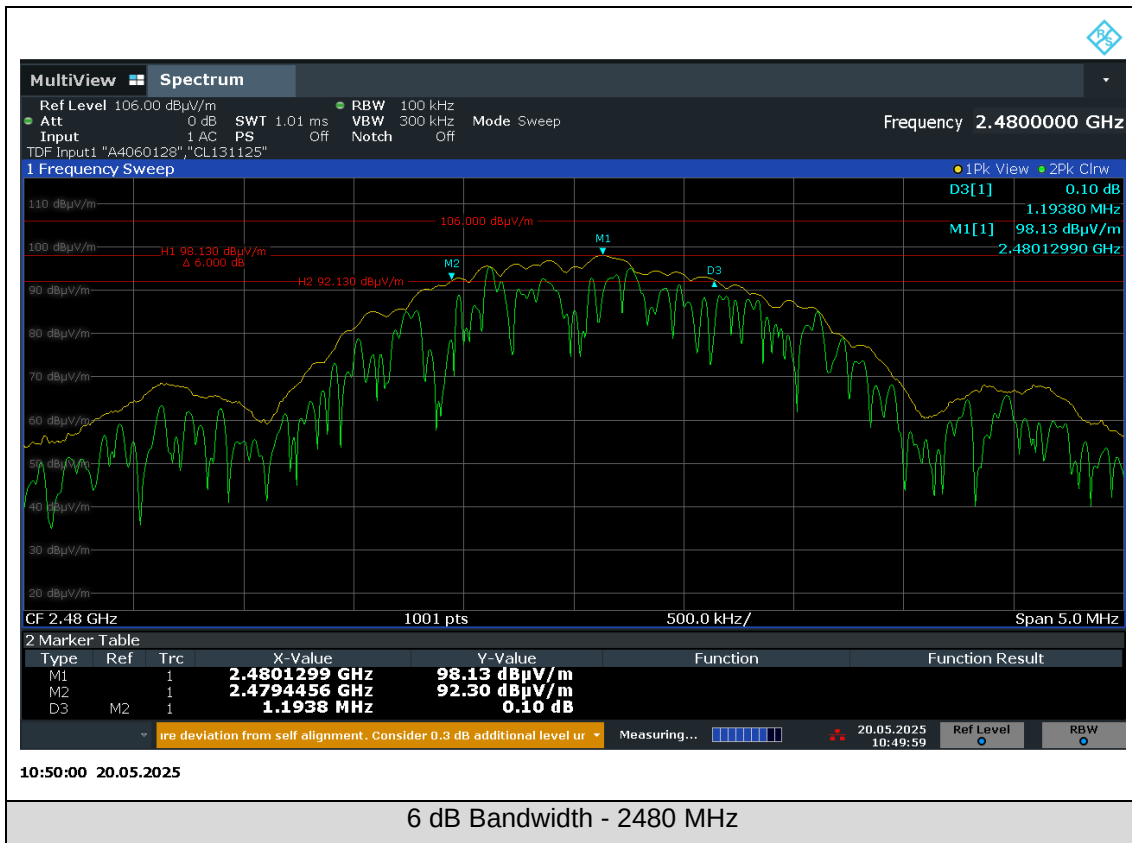
3.5.2 Limits

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

3.5.3 Results

Channel	Frequency [MHz]	6 dB Bandwidth [kHz]	Limit
Low	2402	1178.8	≥ 500
Middle	2440	1228.8	≥ 500
High	2480	1193.8	≥ 500





3.6 §15.247(b)(3)/ RSS-247 5.4(d) Peak Output Power

3.6.1 Test Procedure

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

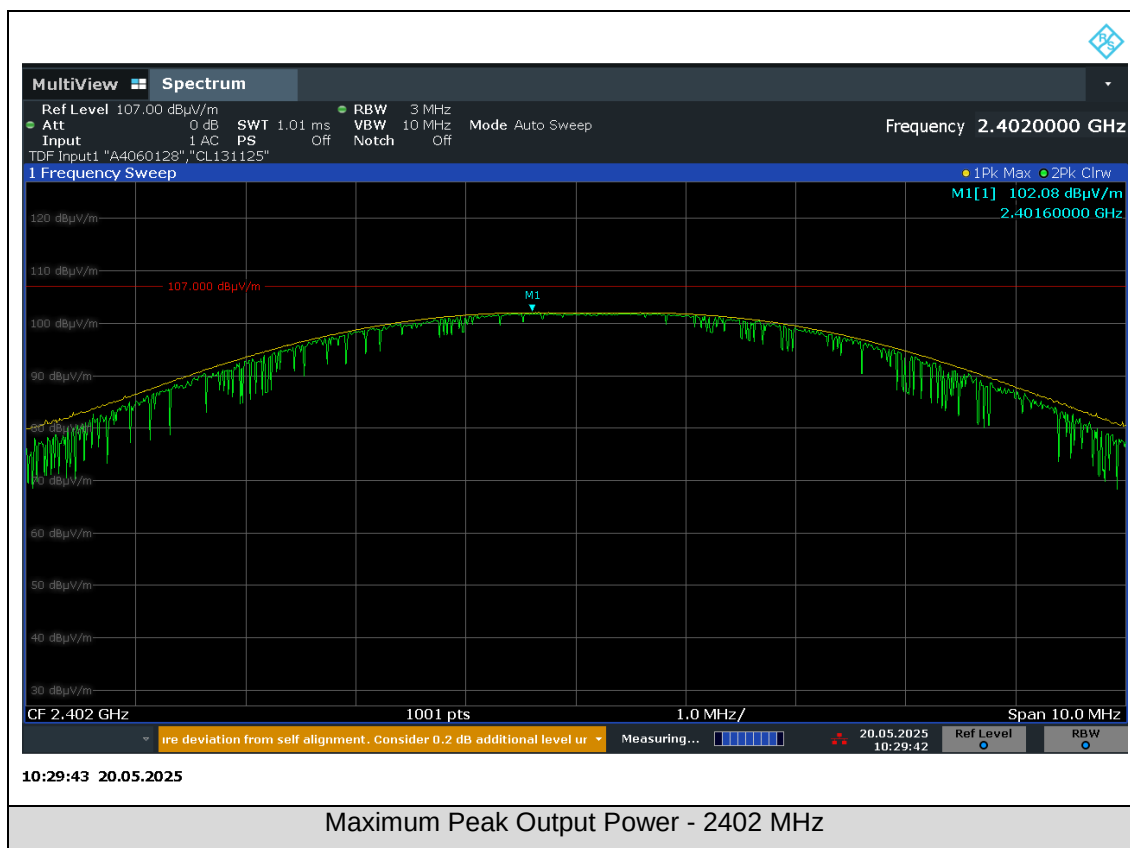
3.6.2 Limits

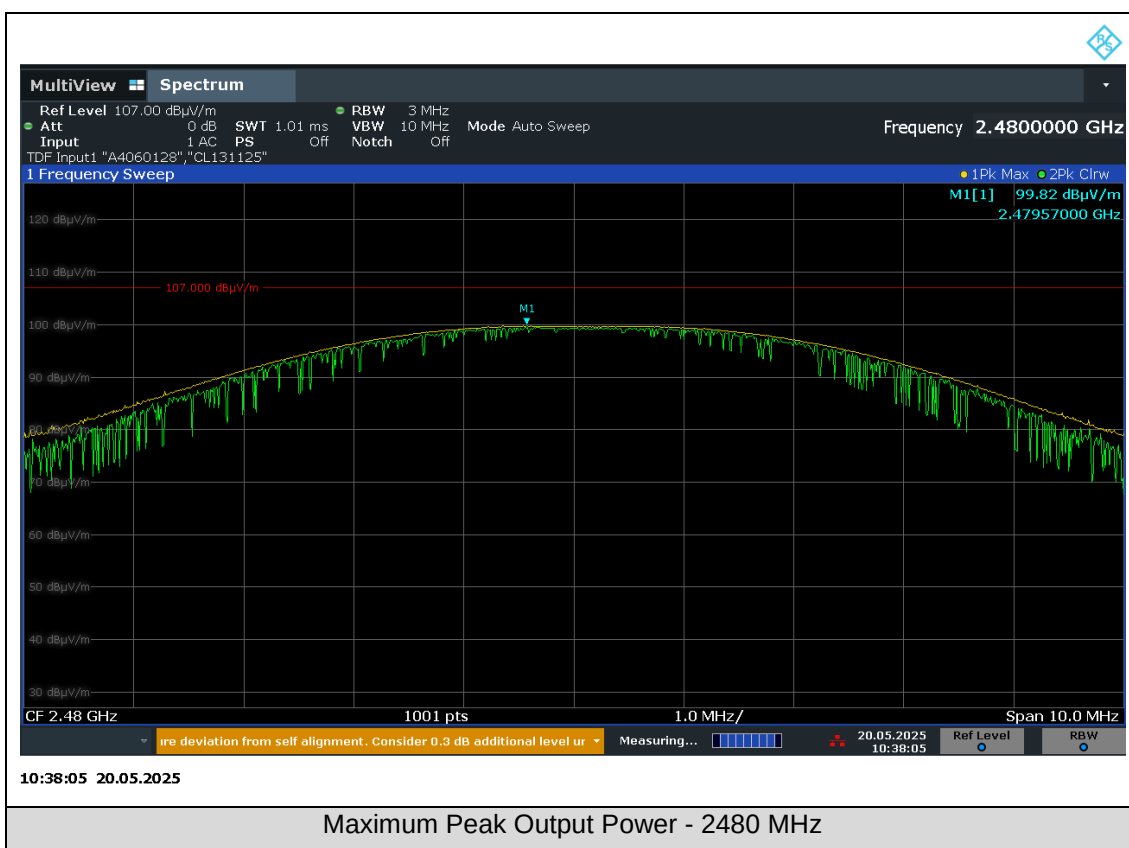
The maximum peak conducted output power at 2400 – 2483.5 MHz is 1 Watt or 30 dBm.

3.6.3 Results

The measured radiated field strength is converted to equivalent conducted output power for checking compliance (KDB 558074 D01 Section 3).

Frequency [MHz]	E-Field @ 3 m [dBμV/m]	EIRP [dBm]	Antenna Gain [dBi]	Equivalent Conducted Output Power [dBm]	Limit [dBm]	Results
2402	102.08	6.85	1.1	5.75	30	Complied
2440	101.38	6.15	1.1	5.05	30	Complied
2480	99.82	4.59	1.1	3.49	30	Complied





3.7 §15.247(d)/ RSS-247 5.5 Out-of-Band/Spurious Emissions

3.7.1 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 antenna
1000 to 18 000	1000	3	Standard gain or Broadband horn
18 000 to 40 000	1000	1	

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.

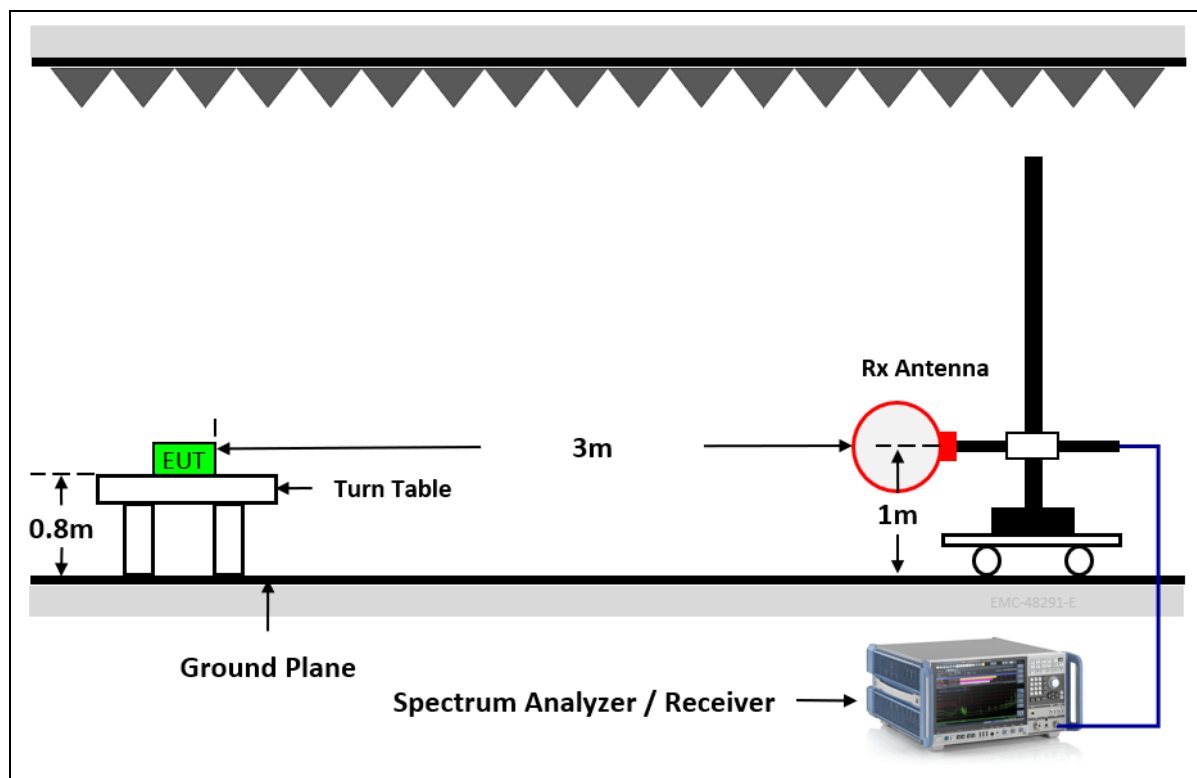
The EUT was slowly rotated with the Peak Detector set to Max-Hold. This was performed for at least two antenna heights. Each significant peak was then investigated and maximized with the Quasi-Peak detector for measurements below 1 GHz. Above 1 GHz, Average and Peak measurements were taken using linearly polarized horn antennas.

Measurements on the worst axis are presented.

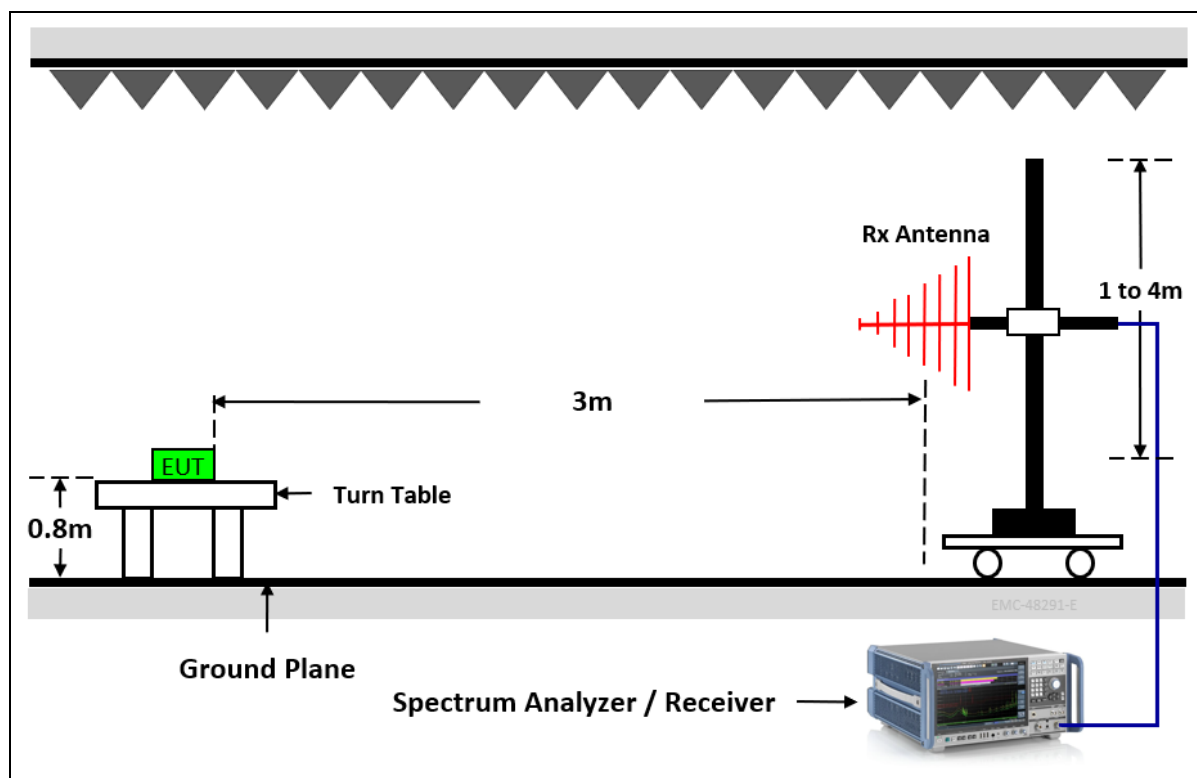
The measurement data for each frequency range was corrected for cable losses, antenna factors and preamplifier gain. This process was performed for both horizontal and vertical polarisations of the measurement antenna.

3.7.2 Test Setup

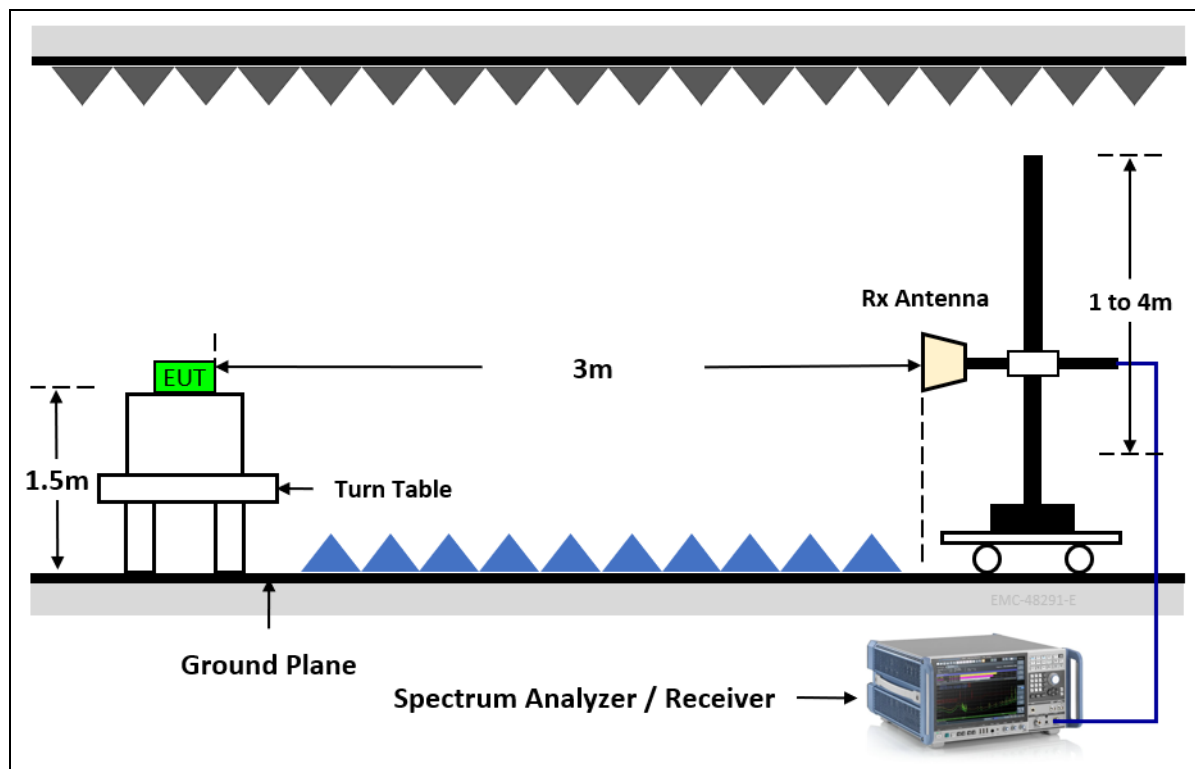
9 kHz to 30 MHz:



30 - 1000 MHz:



Above 1000 MHz:



3.7.3 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 = Radiated Field Strength in dB μ V/m

V = EMI Receiver Voltage in dB μ V

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)

3.7.4 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.

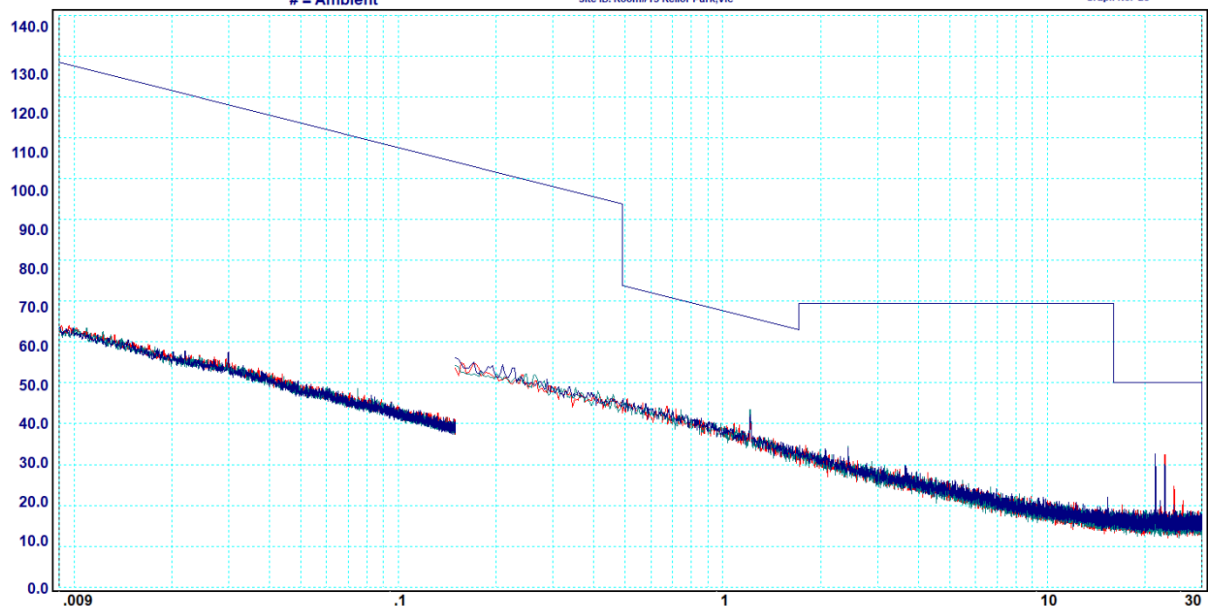
The in-band peak PSD in 100 kHz bandwidth were measured on all three channels. The maximum PSD level was used to establish the limit. However, the general limits of §15.209 apply for the restricted bands of operation defined in §15.205.

Frequency [MHz]	Peak at 3 m [dB μ V/m]	Established Limit @ 3 m [dB μ V/m]
2402	99.59	79.59

3.7.5 Transmitter Spurious Emissions – 9 kHz to 30 MHz

Operating Channel:	2402 MHz	Test Date:	26/05/2025
Power Input:	12V DC	Temperature:	19.8 °C
Measurement Distance:	3 m	Humidity:	49.5%
Test Standard:	FCC 15.247/RSS 247		

REDARC Technologies Pty Ltd M2504018 FCC 15.209 Low Channel - 2402MHz	Limit1: FCC15209	FCC PART 15.209 3mtr LMTS
FCC 15.209 Radiated Emissions (dBuV/m)	Job No: M2504018 Test Date:	Trace 2: Parallel Trace 3: Perpendicular Trace 4: Gnd Test Officer: Plot date: 16/06/2025 17:02:31 tA3100926E c1:CL131125 c2:NONE c3:NONE p:NONE a:NONE IP:OFF Site ID: Room#13 Keller Park, Vic
# = Ambient		WintstRS:36.45-WpIt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2 Room 13 below 30MHz Loop Antenna Graph No. 25



Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	QP Limit [dBuV/m]	Margin [dB]
-	-	-	-	-	-

Comment: No peaks were measured within 10 dB of the limit.

Operating Channel:	2440 MHz	Test Date:	26/05/2025
Power Input:	12V DC	Temperature:	19.8 °C
Measurement Distance:	3 m	Humidity:	49.5%
Test Standard:	FCC 15.247/RSS 247		

REDARC Technologies Pty Ltd
M2504018 FCC 15.209
Mid Channel - 2440MHz

Limit1: FCC15209

FCC PART 15.209 3mtr LMTS

FCC 15.209

Radiated Emissions (dBuV/m)

Job No: M2504018

Test Date:

Trace 2: Parallel

Trace 3: Perpendicular

Trace 4: Gnd

Test Officer: Plot date: 16/06/2025 17:03:33

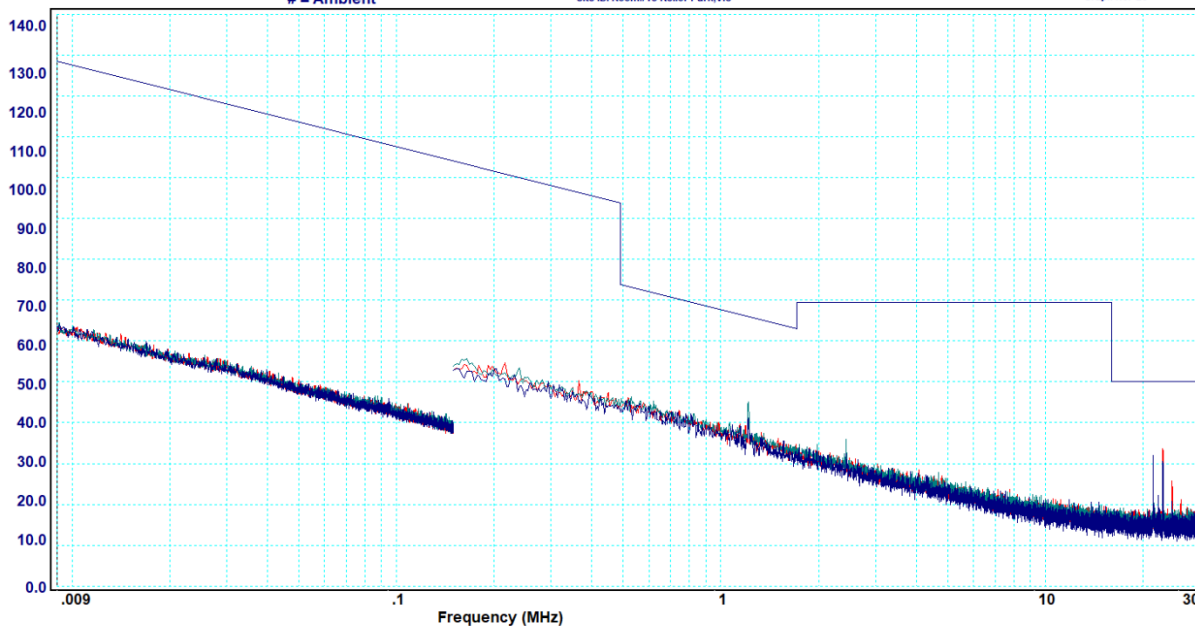
EA3100926E c1:CL131125 c2:NONE c3:NONE p:NONE a:NONE IP:OFF

Site ID: Room#13 Kellor Park, Vic

WintstRS:36.45-WpIt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2.

Room 13 below 30MHz Loop Antenna

Graph No. 26



Peak	Frequency [MHz]	Polarisation	Level [dBμV/m]	QP Limit [dBμV/m]	Margin [dB]
-	-	-	-	-	-
Comment: No peaks were measured within 10 dB of the limit.					

Operating Channel: 2480 MHz
Power Input: 12V DC
Measurement Distance: 3 m
Test Standard: FCC 15.247/RSS 247
Test Date: 26/05/2025
Temperature: 19.8 °C
Humidity: 49.5%

REDARC Technologies Pty Ltd
 M2504018 FCC 15.209
 High Channel - 2480MHz

Limit1: FCC15209

FCC PART 15.209 3mtr LMTS

FCC 15.209

Radiated Emissions (dBuV/m)

Job No: M2504018

Test Date:

Trace 2: Parallel

Trace 3: Perpendicular

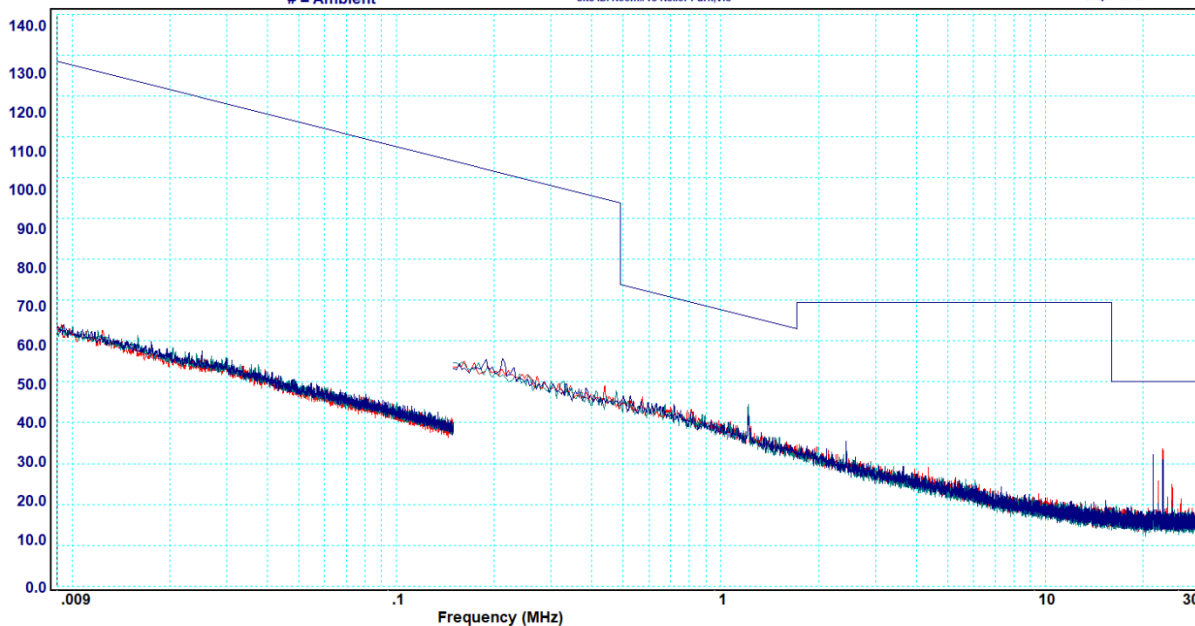
Trace 4: Gnd

Test Officer: Plot date: 16/06/2025 17:04:39

EA3100926E c1:CL131125 c2:NONE c3:NONE p:NONE a:NONE IP:OFF

Site ID: Room#13 Kellor Park,Vic

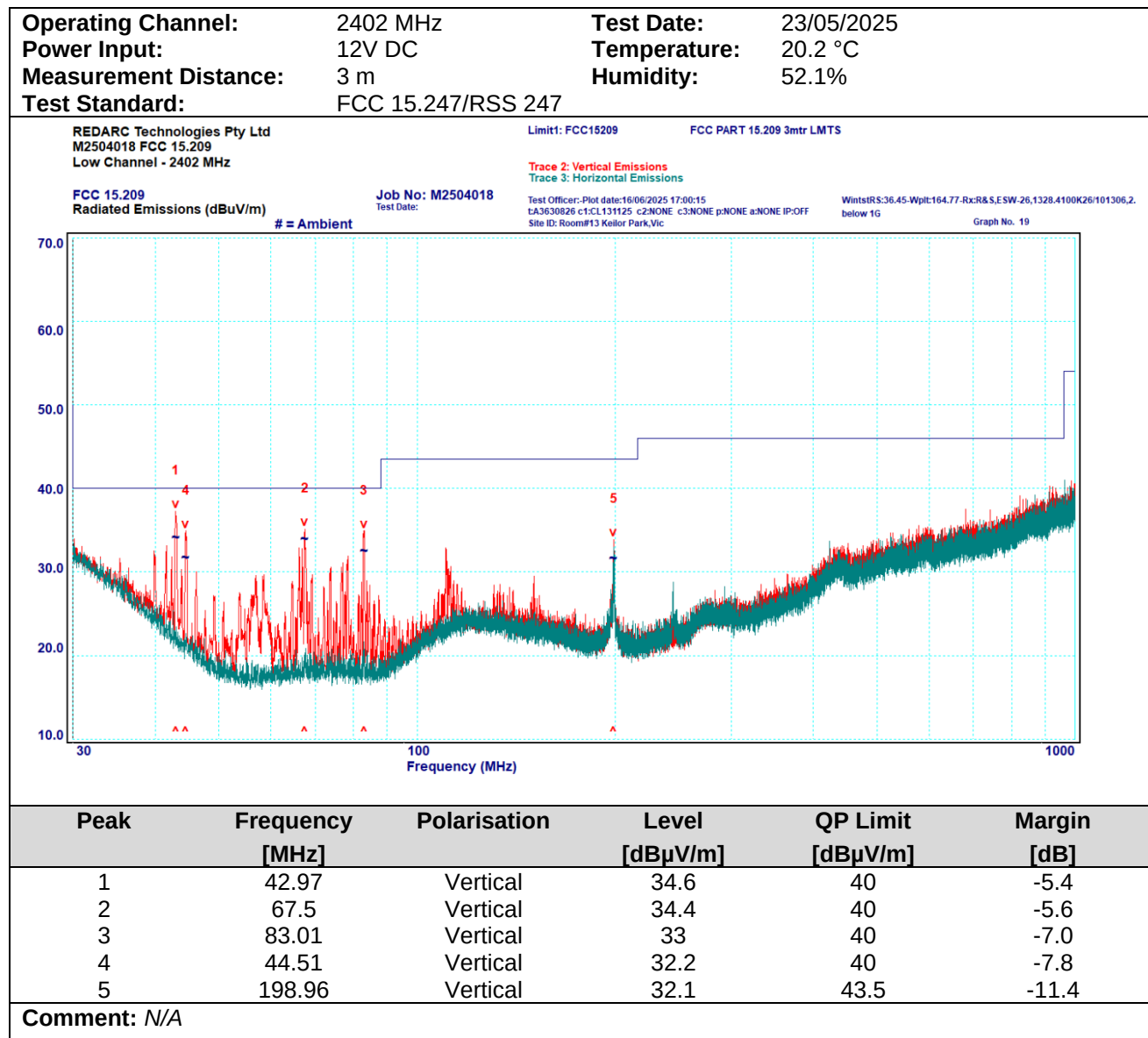
WintSR5:36.45-Wpit:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2.
 Room 13 below 30MHz Loop Antenna
 Graph No. 27



Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	QP Limit [dBuV/m]	Margin [dB]
-	-	-	-	-	-

Comment: No peaks were measured within 10 dB of the limit.

3.7.6 Transmitter Spurious Emissions – 30 MHz to 1000 MHz



Operating Channel: 2440 MHz
Power Input: 12V DC
Measurement Distance: 3 m
Test Standard: FCC 15.247/RSS 247
Test Date: 23/05/2025
Temperature: 20.2 °C
Humidity: 52.1%

REDARC Technologies Pty Ltd
 M2504018 FCC 15.209
 Mid Channel - 2440 MHz

Limit1: FCC15209

FCC PART 15.209 3mtr LMTS

FCC 15.209
 Radiated Emissions (dBuV/m)

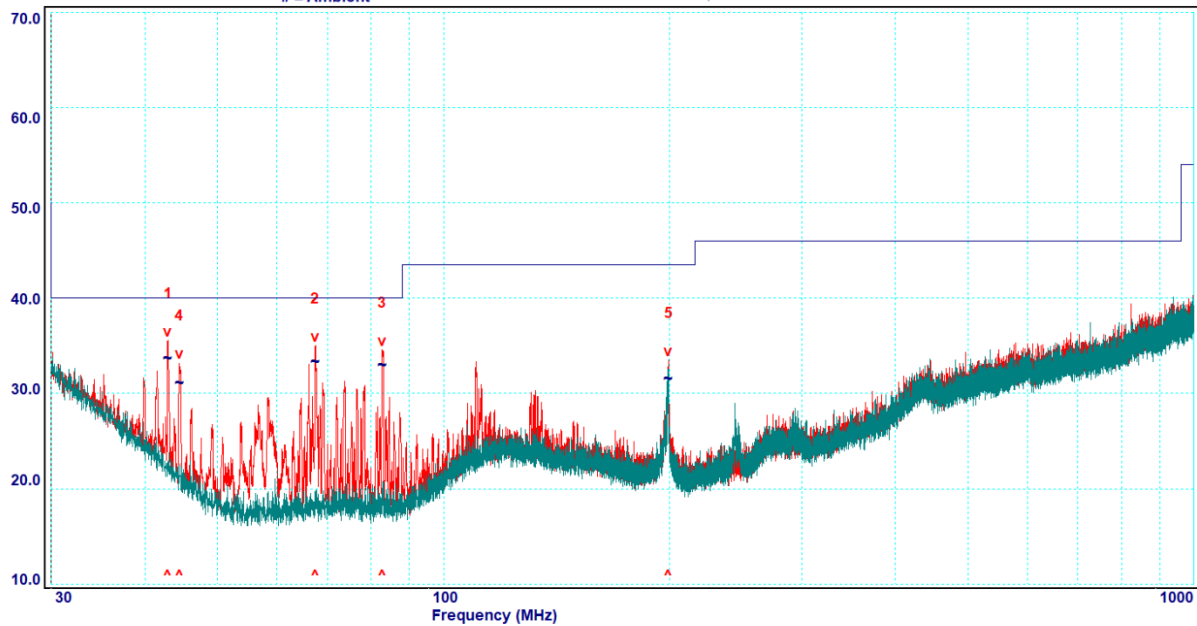
Job No: M2504018
 Test Date:

Trace 2: Vertical Emissions
 Trace 3: Horizontal Emissions

Test Officer: Plot date: 16/06/2025 16:59:12
 tA3630826 c1:CL131125 c2:NONE c3:NONE p:NONE a:NONE IP:OFF
 Site ID: Room#13 Keller Park, Vic

Wintstrs:36.45-Wpilt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2,
 below 1G

Graph No. 20



Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	QP Limit [dBuV/m]	Margin [dB]
1	42.92	Vertical	34.2	40	-5.8
2	67.47	Vertical	33.8	40	-6.2
3	82.84	Vertical	33.4	40	-6.6
4	44.46	Vertical	31.6	40	-8.4
5	199.27	Vertical	32	43.5	-11.5

Comment: N/A

Operating Channel: 2480 MHz
Power Input: 12V DC
Measurement Distance: 3 m
Test Standard: FCC 15.247/RSS 247
Test Date: 23/05/2025
Temperature: 20.2 °C
Humidity: 52.1%

REDARC Technologies Pty Ltd
 M2504018 FCC 15.209
 High Channel - 2480 MHz

Limit1: FCC15209

FCC PART 15.209 3mtr LMTS

FCC 15.209

Radiated Emissions (dBuV/m)

Job No: M2504018

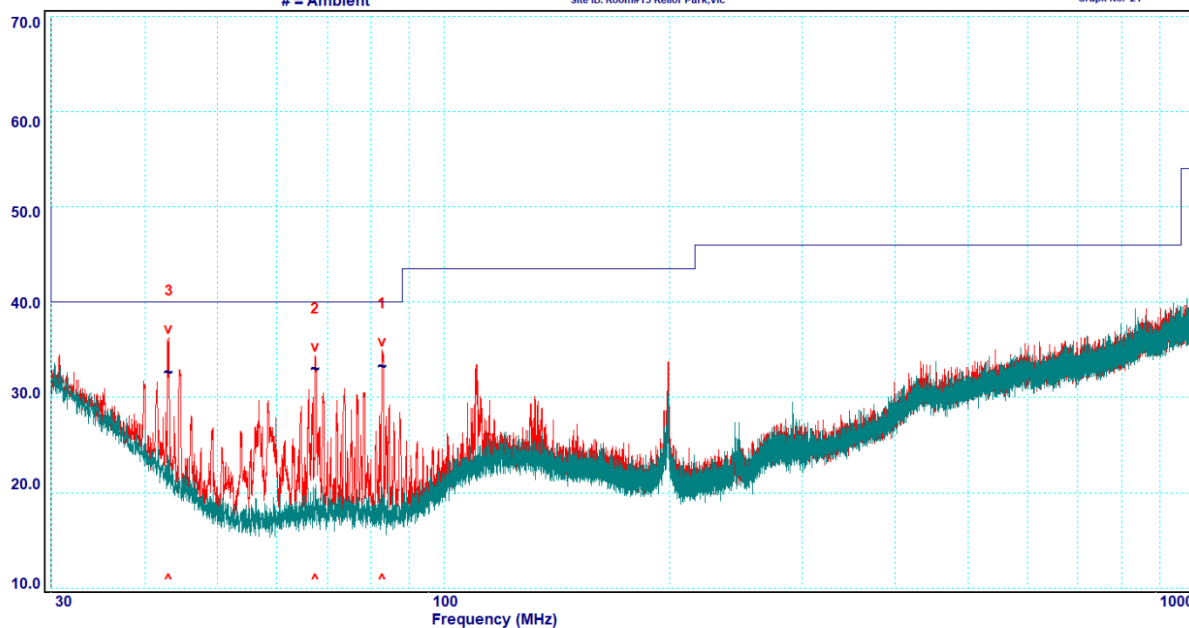
Test Date:

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

Test Officer: Plot date: 16/06/2025 17:01:11
 tA3630826 c1:CL131125 c2:NONE c3:NONE p:NONE a:NONE IP:OFF
 Site ID: Room#13 Kellor Park, Vic

Wintstrs:36.45-Wpilt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2,
 below 1G

Graph No. 21



Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	QP Limit [dBuV/m]	Margin [dB]
1	82.87	Vertical	33.7	40	-6.3
2	67.44	Vertical	33.4	40	-6.6
3	43.06	Vertical	33.1	40	-6.9

Comment: N/A

3.7.7 Transmitter Spurious Emissions – 1 to 18 GHz

Operating Channel:	2402 MHz	Test Date:	22/05/2025
Power Input:	12V DC	Temperature:	19.7 °C
Measurement Distance:	3 m	Humidity:	50.3%
Test Standard:	FCC 15.247/RSS 247		

REDARC Technologies Pty Ltd M2504018 FCC 15.209 Low Channel - 2402MHz Peak FCC 15.209 Radiated Emissions (dBuV/m) # = Ambient	Limit1: FCC15209Pk FCC PART 15.209, 1-18GHz@3mtr, 18-40GHz@1mtr Trace 2: Vertical Emissions Trace 3: Horizontal Emissions Job No: M2504018 Test Date: Test Officer:-Plot date:13/06/2025 11:51:40 t:A4060128 c1:CL131125 c2:NONE c3:NONE p:A2881125 a:F0310126 IP:OFRDO Above 1GHz Site ID: Room#13 Kellor Park,Vic WintstRS:36.45-WpIt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2 Graph No. 5
--	---

Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	PEAK Limit [dBuV/m]	Margin [dB]
1*	2402.6	Vertical	N/A	N/A	N/A
2**	7207.76	Vertical	57.7	79.59	-21.89
3*	2402.6	Horizontal	N/A	N/A	N/A
4**	7207.78	Horizontal	56.8	79.59	-22.79

Comment:

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

** -20 dBc Peak limit applies for nonrestricted bands.

Operating Channel: 2402 MHz Test Date: 22/05/2025
Power Input: 12V DC Temperature: 19.7 °C
Measurement Distance: 3 m Humidity: 50.3%
Test Standard: FCC 15.247/RSS 247

REDARC Technologies Pty Ltd
M2504018 FCC 15.209
Low Channel - 2402 MHz
Av.
FCC 15.209
Radiated Emissions (dBuV/m)

Limit1: FCC15209Av

FCC PART 15.209, 1-18GHz@3mtr, 18-40GHz@1mtr

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

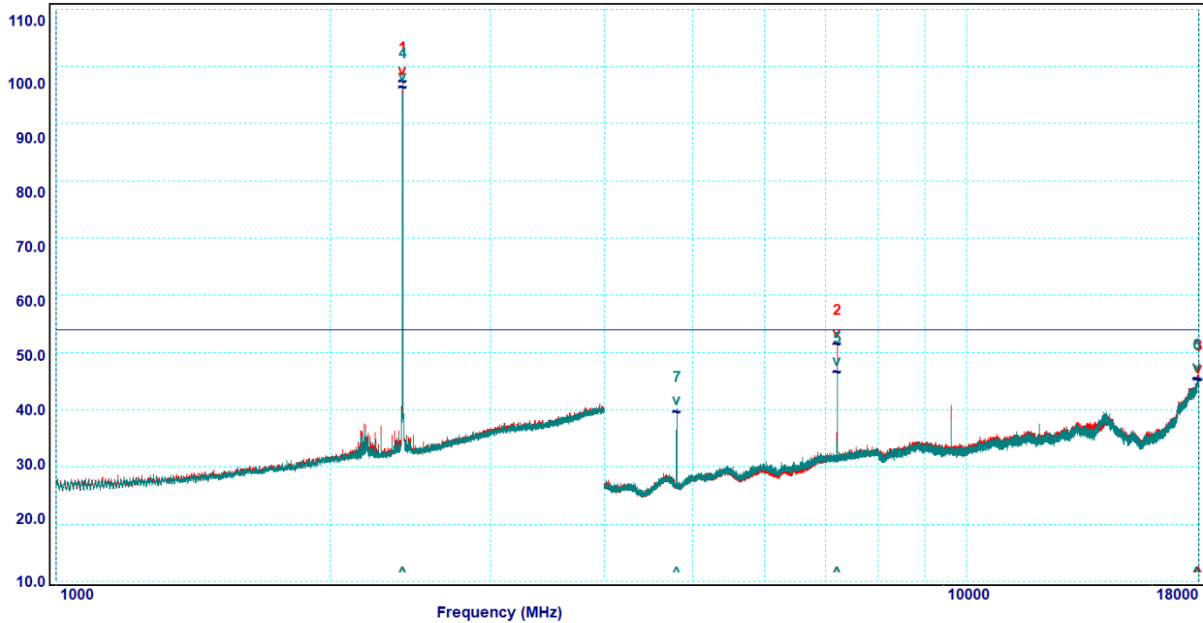
Job No: M2504018

Test Date:

Test Officer:-Plot date:13/06/2025 11:50:21
t:A4060128 c1:CL131125 c2:NONE c3:NONE p:A2881125 a:F0310126 IP:OFRDO Above 1GHz
Site ID: Room#13 Keller Park,Vic

WintstRS:36.45-Wpjt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2.

Graph No. 10



Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	AVE Limit [dBuV/m]	Margin [dB]
1*	2402.17	Vertical	N/A	N/A	N/A
2**	7207.55	Vertical	N/A	N/A	N/A
3	17970.27	Vertical	45.6	54	-8.4
4*	2402.17	Horizontal	N/A	N/A	N/A
5**	7207.51	Horizontal	N/A	N/A	N/A
6	17904.56	Horizontal	45.8	54	-8.2
7	4804.04	Horizontal	40	54	-14

Comment:

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

** -20 dBc Peak limit applies for nonrestricted bands.

Operating Channel: 2440 MHz Test Date: 22/05/2025
Power Input: 12V DC Temperature: 19.7 °C
Measurement Distance: 3 m Humidity: 50.3%
Test Standard: FCC 15.247/RSS 247

REDARC Technologies Pty Ltd
M2504018 FCC 15.209
Mid Channel - 2440 MHz
Peak
FCC 15.209
Radiated Emissions (dBuV/m)

Limit1: FCC15209Pk

FCC PART 15.209, 1-18GHz@3mtr, 18-40GHz@1mtr

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

Job No: M2504018
Test Date:

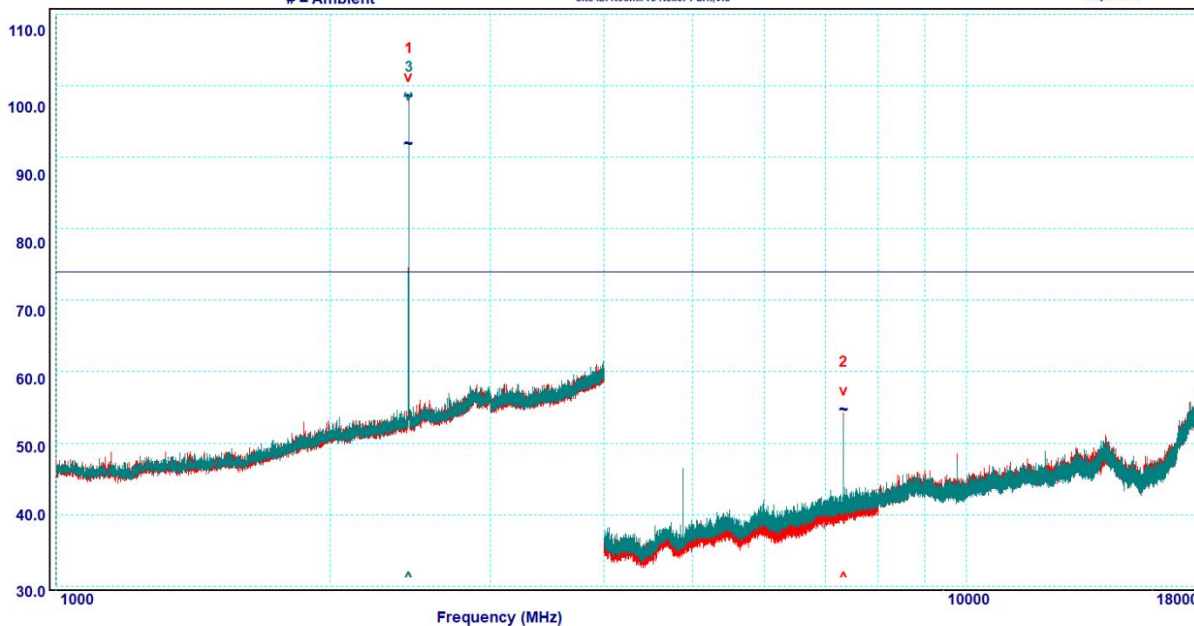
Test Officer:-Plot date:16/06/2025 15:42:29

WintstRS:36.45-WpIt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2.

t:A4060128 c1:CL131125 c2:NONE c3:NONE p:A2881125 a:F0310126 IP:OFRODO Above 1GHz

Site ID: Room#13 Keilor Park,Vic

Graph No. 6



Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	PEAK Limit [dBuV/m]	Margin [dB]
1*	2440.59	Vertical	N/A	N/A	N/A
2	7321.7	Vertical	55.1	74	-18.9
3*	2440.59	Horizontal	N/A	N/A	N/A

Comment:

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

Operating Channel:	2440 MHz	Test Date:	22/05/2025	23/05/2025
Power Input:	12V DC	Temperature:	19.7 °C	20.2 °C
Measurement Distance:	3 m	Humidity:	50.3%	52.1%
Test Standard:	FCC 15.247/RSS 247			

REDARC Technologies Pty Ltd
M2504018 FCC 15.209
Mid. Channel - 2440 MHz
Av.

Limit1: FCC15209Av

FCC PART 15.209, 1-18GHz@3mtr, 18-40GHz@1mtr

FCC 15.209

Radiated Emissions (dBuV/m)

Job No: M2504018

Test Date:

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

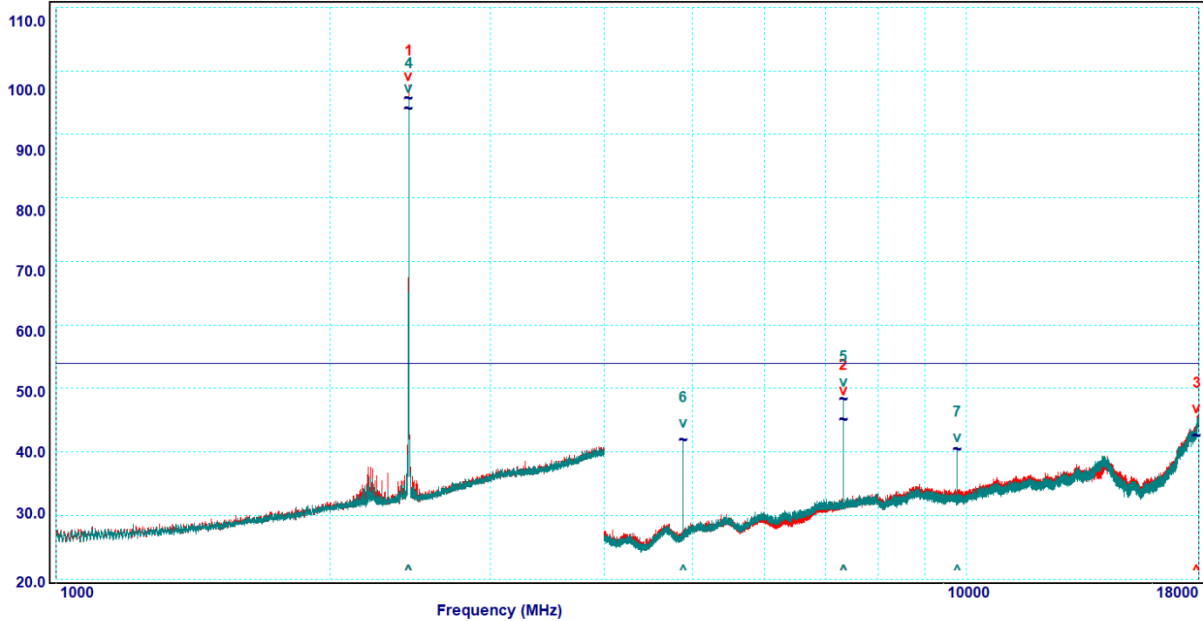
Test Officer:-Plot date:16/06/2025 16:54:29

t:A4060128 c1:CL131125 c2:NONE c3:NONE p:A2881125 a:F0310126 IP:OFRDO Above 1GHz

WintstRS:36.45-Wpjt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2.

Site ID: Room#13 Keller Park,Vic

Graph No. 9



Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	AVE Limit [dBuV/m]	Margin [dB]
1*	2440.18	Vertical	N/A	N/A	N/A
2	7321.37	Vertical	45.6	54	-8.4
3	17904	Vertical	43.1	54	-10.9
4*	2440.17	Horizontal	N/A	N/A	N/A
5	7321.63	Horizontal	48.7	54	-5.3
6	4881.18	Horizontal	42.3	54	-11.7
7**	9762.33	Horizontal	N/A	N/A	N/A

Comment:

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

** -20 dBc Peak limit applies for nonrestricted bands.

Operating Channel:	2480 MHz	Test Date:	22/05/2025	23/05/2025
Power Input:	12V DC	Temperature:	19.7 °C	20.2 °C
Measurement Distance:	3 m	Humidity:	50.3%	52.1%
Test Standard:	FCC 15.247/RSS 247			

REDARC Technologies Pty Ltd
M2504018 FCC 15.209
High Channel - 2480 MHz
Peak
FCC 15.209
Radiated Emissions (dBuV/m)

Limit1: FCC15209Pk

FCC PART 15.209, 1-18GHz@3mtr, 18-40GHz@1mtr

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

Job No: M2504018

Test Date:

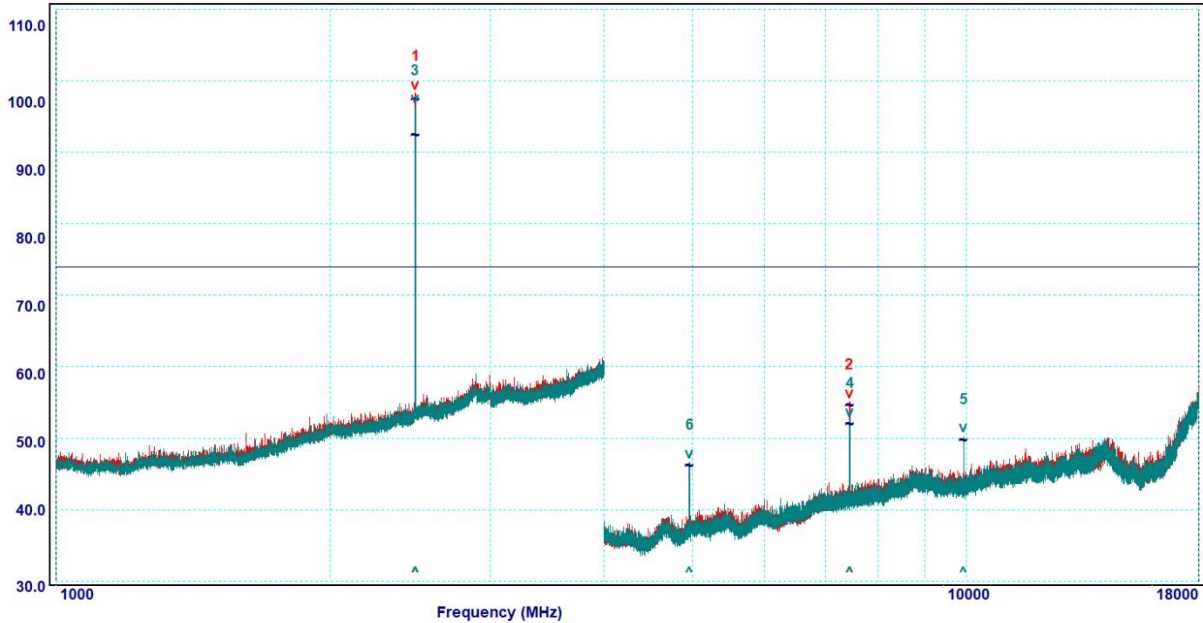
Test Officer: Plot date: 16/06/2025 16:55:59

WintstRS:36.45-Wpjt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2.

tA4060128 c1:CL131125 c2:NONE c3:NONE pA2881125 a:F0310126 IP:OFRDO Above 1GHz

Site ID: Room#13 Kellor Park,Vic

Graph No. 7



Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	PEAK Limit [dBuV/m]	Margin [dB]
1*	2480.57	Vertical	N/A	N/A	N/A
2	7438.84	Vertical	55	74	-19
3*	2480.07	Horizontal	N/A	N/A	N/A
4	7441.54	Horizontal	52.4	74	-21.6
5	9922.28	Horizontal	50.2	79.59	-29.39
6	4961.13	Horizontal	46.6	74	-27.4

Comment:

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

** -20 dBc Peak limit applies for nonrestricted bands.

Operating Channel:	2480 MHz	Test Date:	22/05/2025	23/05/2025
Power Input:	12V DC	Temperature:	19.7 °C	20.2 °C
Measurement Distance:	3 m	Humidity:	50.3%	52.1%
Test Standard:	FCC 15.247/RSS 247			

REDARC Technologies Pty Ltd
M2504018 FCC 15.209
High Channel - 2480 MHz
Av.
FCC 15.209
Radiated Emissions (dBuV/m)

Limit1: FCC15209Av

FCC PART 15.209, 1-18GHz@3mtr, 18-40GHz@1mtr

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

Job No: M2504018

Test Date:

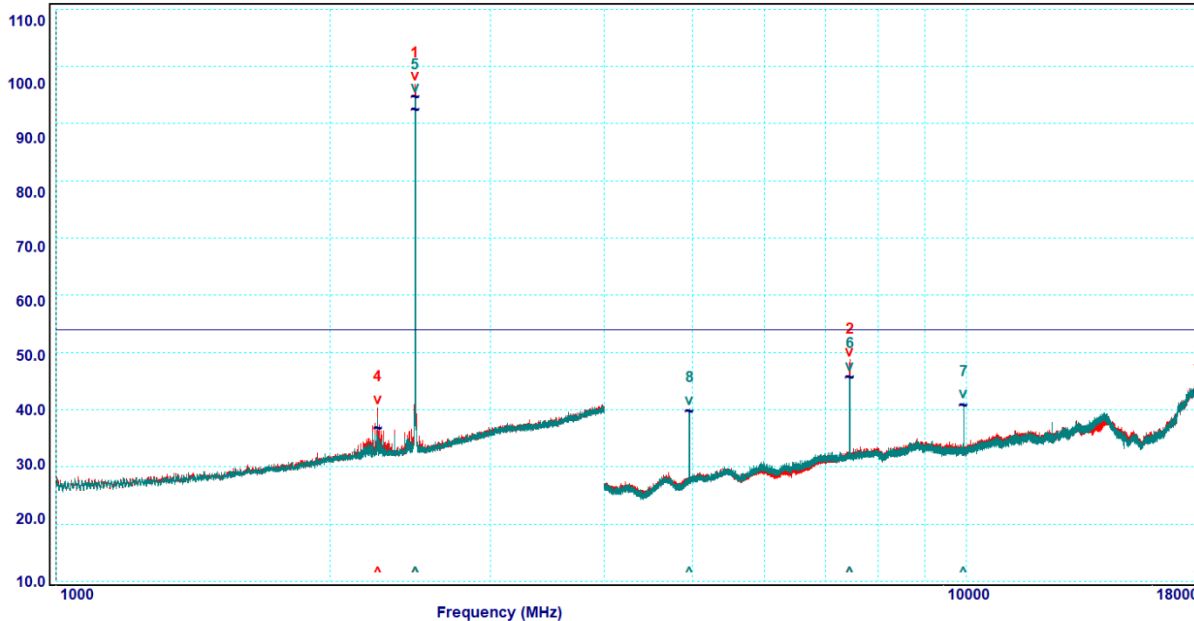
Test Officer:-Plot date:16/06/2025 16:57:46

WintRS:36.45-WpIt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2.

tA4060128 c1:CL131125 c2:NONE c3:NONE pA2881125 a:F0310126 IP:OFRDO Above 1GHz

Site ID: Room#13 Keller Park,Vic

Graph No. 8



Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	AVE Limit [dBuV/m]	Margin [dB]
1*	2480.19	Vertical	N/A	N/A	N/A
2	7441.42	Vertical	46.1	54	-7.9
3	17983.59	Vertical	43.6	54	-10.4
4	2255.99	Vertical	37.2	54	-16.8
5*	2480.2	Horizontal	N/A	N/A	N/A
6	7441.44	Horizontal	46	54	-8
7**	9922.36	Horizontal	N/A	N/A	N/A
8	4960.23	Horizontal	40.1	54	-13.9

Comment:

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

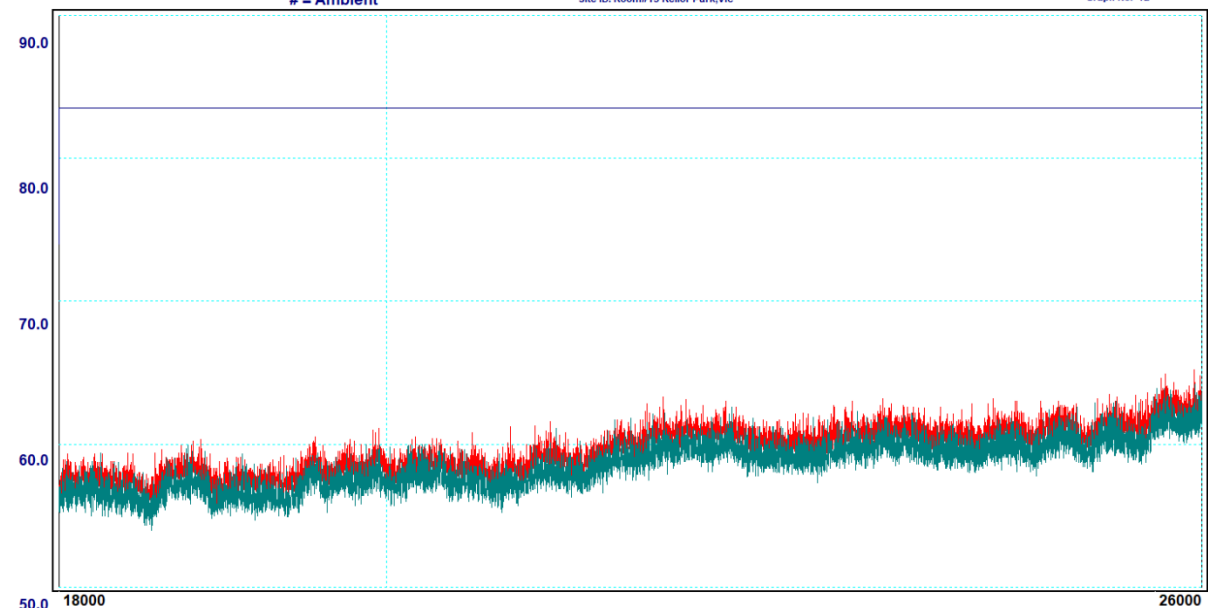
** -20 dBc Peak limit applies for nonrestricted bands.

3.7.8 Transmitter Spurious Emissions – 18 to 26 GHz

Operating Channel:	2402 MHz	Test Date:	23/05/2025
Power Input:	12V DC	Temperature:	20.2 °C
Measurement Distance:	1 m	Humidity:	52.1%
Test Standard:	FCC 15.247/RSS 247		

REDARC Technologies Pty Ltd M2504018 FCC 15.209 Low Channel - 2402MHz Peak FCC 15.209 Radiated Emissions (dBuV/m)	Job No: M2504018 Test Date:	Limit1: FCC15209Pk FCC PART 15.209, 1-18GHz@3mtr, 18-40GHz@1mtr Trace 2: Vertical Emissions Trace 3: Horizontal Emissions Test Officer:-Plot date:16/06/2025 16:52:27 t:A3070127-H c1:C2730126 c2:NONE c3:NONE p:NONE a:NONE IP:OFF Site ID: Room#13 Kellor Park,Vic WintstRS:36.45-WpIt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2 RDO Above 1GHz Graph No. 12
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= Ambient



Frequency (MHz)

Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	PEAK Limit [dBuV/m]	Margin [dB]
-	-	-	-	-	-

Comment: No peaks were measured within 10 dB of the limit.

Operating Channel:	2402 MHz	Test Date:	23/05/2025
Power Input:	12V DC	Temperature:	20.2 °C
Measurement Distance:	1 m	Humidity:	52.1%
Test Standard:	FCC 15.247/RSS 247		

REDARC Technologies Pty Ltd
M2504018 FCC 15.209
Low Channel - 2402 MHz
Av.

Limit1: FCC15209Av

FCC PART 15.209, 1-18GHz@3mtr, 18-40GHz@1mtr

FCC 15.209

Radiated Emissions (dBuV/m)

Job No: M2504018

Test Date:

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

Test Officer:-Plot date:16/06/2025 16:50:25

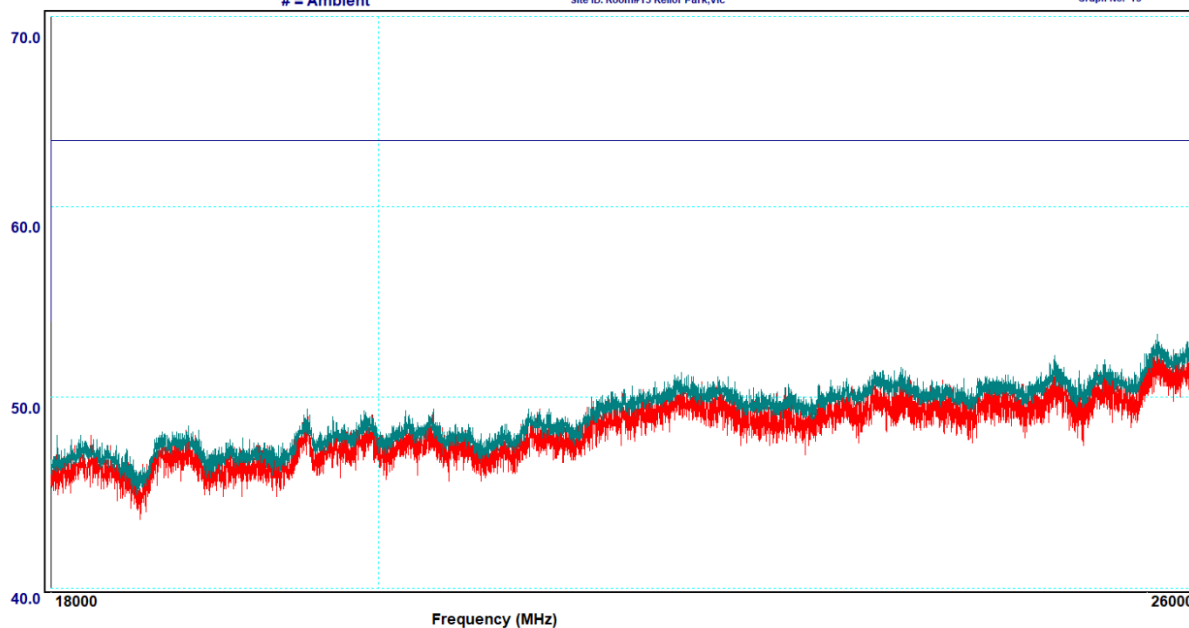
tA3070127-H c1:C2730126 c2:NONE c3:NONE p:NONE a:NONE IP:OFF

Site ID: Room#13 Kellor Park,Vic

WintstRS:36.45-WpIt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2.

RDO Above 1GHz

Graph No. 13



Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	AVE Limit [dBuV/m]	Margin [dB]
-	-	-	-	-	-
Comment: No peaks were measured within 10 dB of the limit.					

Operating Channel:	2440 MHz	Test Date:	23/05/2025
Power Input:	12V DC	Temperature:	20.2 °C
Measurement Distance:	1 m	Humidity:	52.1%
Test Standard:	FCC 15.247/RSS 247		

REDARC Technologies Pty Ltd
M2504018 FCC 15.209
Mid Channel - 2440MHz
Peak
FCC 15.209
Radiated Emissions (dBuV/m)

Limit1: FCC15209Pk

FCC PART 15.209, 1-18GHz@3mtr, 18-40GHz@1mtr

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

Job No: M2504018

Test Officer: Plot date: 16/06/2025 16:48:09

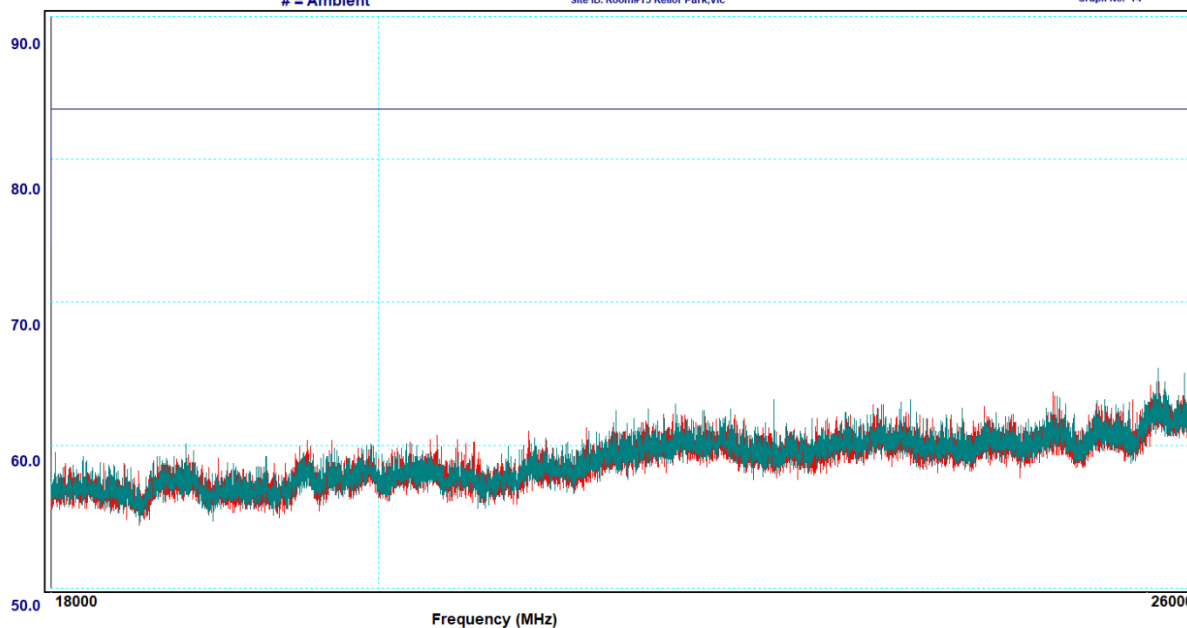
TA3070127-H c1:C2730126 c2:NONE c3:NONE p:NONE a:NONE IP:OFF

WintSR5:36.45-WpIt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2.

Site ID: Room#13 Kellor Park,Vic

RDO Above 1GHz

Graph No. 14



Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	PEAK Limit [dBuV/m]	Margin [dB]
-	-	-	-	-	-

Comment: No peaks were measured within 10 dB of the limit.

Operating Channel:	2440 MHz	Test Date:	23/05/2025
Power Input:	12V DC	Temperature:	20.2 °C
Measurement Distance:	1 m	Humidity:	52.1%
Test Standard:	FCC 15.247/RSS 247		

REDARC Technologies Pty Ltd
M2504018 FCC 15.209
Mid Channel - 2440 MHz
Av.

Limit1: FCC15209Av

FCC PART 15.209, 1-18GHz@3mtr, 18-40GHz@1mtr

FCC 15.209

Radiated Emissions (dBuV/m)

Job No: M2504018

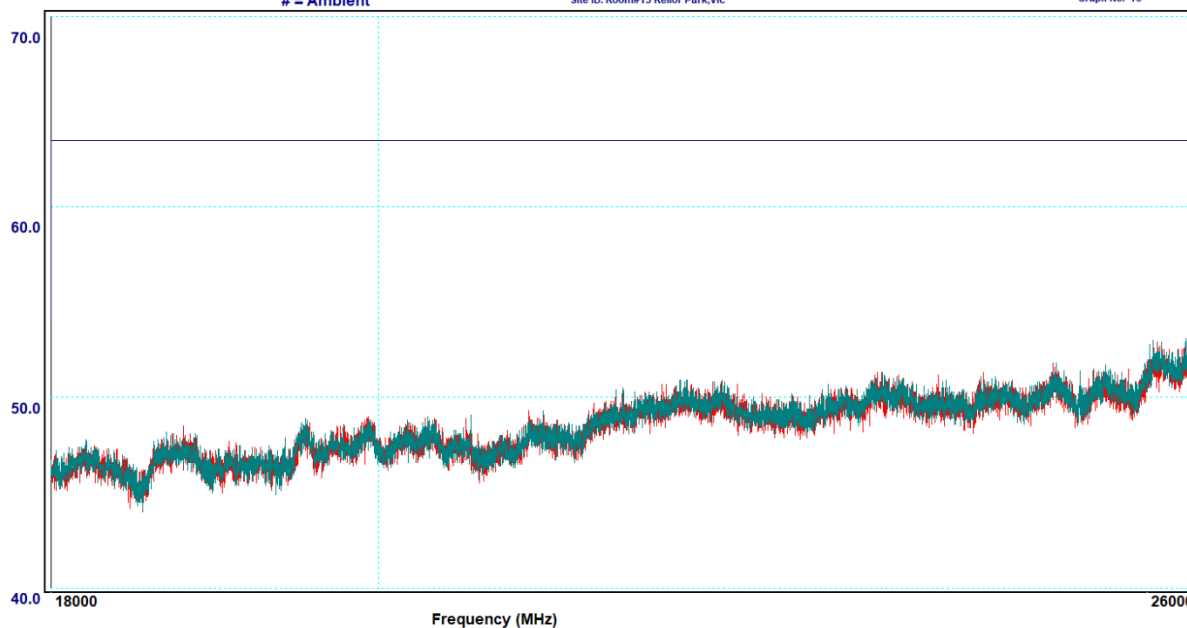
Test Date:

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

Test Officer:-Plot date:16/06/2025 17:09:13
tA3070127-H c1:C2730126 c2:NONE c3:NONE p:NONE a:NONE IP:OFF
Site ID: Room#13 Kellor Park,Vic

WintstRS:36.45-Wpilt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2.
RDO Above 1GHz

Graph No. 15



Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	AVE Limit [dBuV/m]	Margin [dB]
-	-	-	-	-	-

Comment: No peaks were measured within 10 dB of the limit.

Operating Channel:	2480 MHz	Test Date:	23/05/2025
Power Input:	12V DC	Temperature:	20.2 °C
Measurement Distance:	1 m	Humidity:	52.1%
Test Standard:	FCC 15.247/RSS 247		

REDARC Technologies Pty Ltd
M2504018 FCC 15.209
High Channel - 2480MHz
Peak
FCC 15.209
Radiated Emissions (dBuV/m)

Limit1: FCC15209Pk

FCC PART 15.209, 1-18GHz@3mtr, 18-40GHz@1mtr

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

Job No: M2504018
Test Date:

Test Officer:-Plot date:16/06/2025 17:10:57

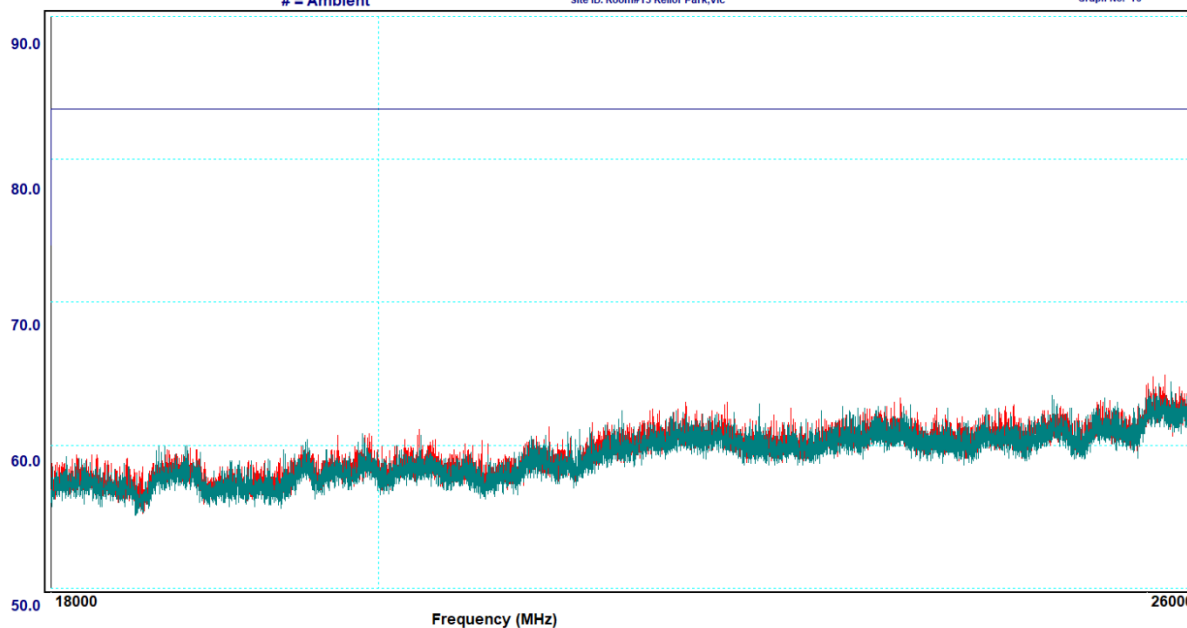
tA3070127-H c1:C2730126 c2:NONE c3:NONE p:NONE a:NONE IP:OFF

Site ID: Room#13 Kellor Park,Vic

WintstRS:36.45-Wpilt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2.

RDO Above 1GHz

Graph No. 16



Peak	Frequency [MHz]	Polarisation	Level [dBuV/m]	PEAK Limit [dBuV/m]	Margin [dB]
-	-	-	-	-	-

Comment: No peaks were measured within 10 dB of the limit.

Operating Channel:	2480 MHz	Test Date:	23/05/2025
Power Input:	12V DC	Temperature:	20.2 °C
Measurement Distance:	1 m	Humidity:	52.1%
Test Standard:	FCC 15.247/RSS 247		

REDARC Technologies Pty Ltd
M2504018 FCC 15.209
High Channel - 2480 MHz
Av.

Limit1: FCC15209Av

FCC PART 15.209, 1-18GHz@3mtr, 18-40GHz@1mtr

FCC 15.209

Radiated Emissions (dBuV/m)

Job No: M2504018

Test Date:

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

Test Officer:-Plot date:16/06/2025 17:12:56

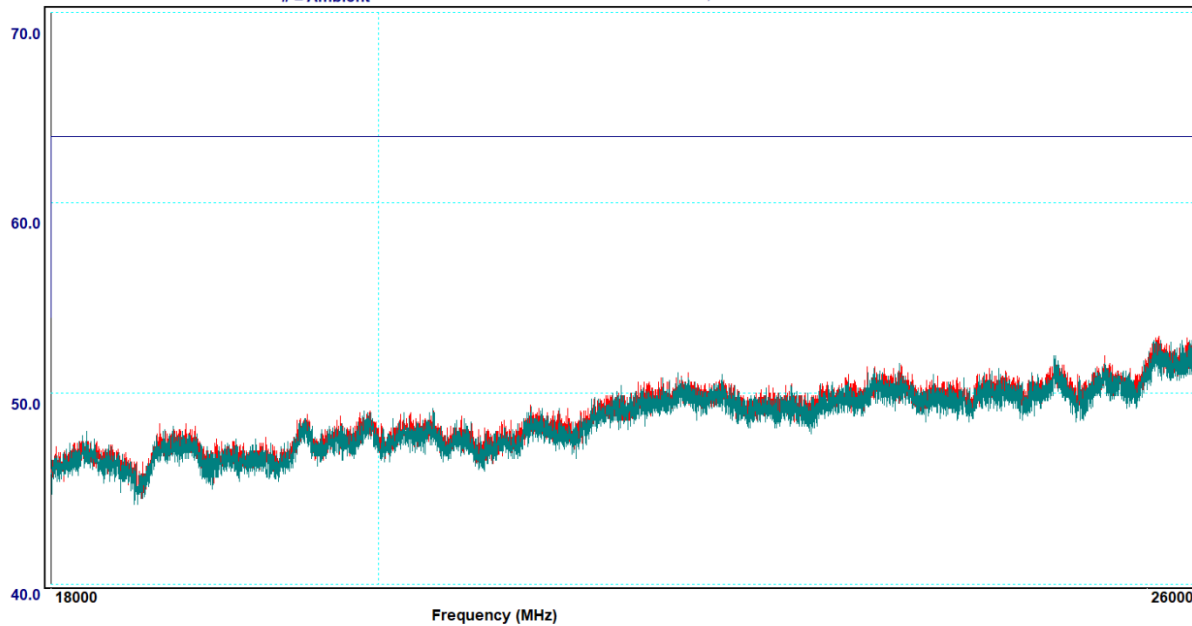
tA3070127-H c1:C2730126 c2:NONE c3:NONE p:NONE a:NONE IP:OFF

Site ID: Room#13 Keller Park,Vic

WintstRS:36.45-WpIt:164.77-Rx:R&S,ESW-26,1328.4100K26/101306.2.

RDO Above 1GHz

Graph No. 17



Peak	Frequency [MHz]	Polarisation	Level [dBµV/m]	AVE Limit [dBµV/m]	Margin [dB]
-	-	-	-	-	-

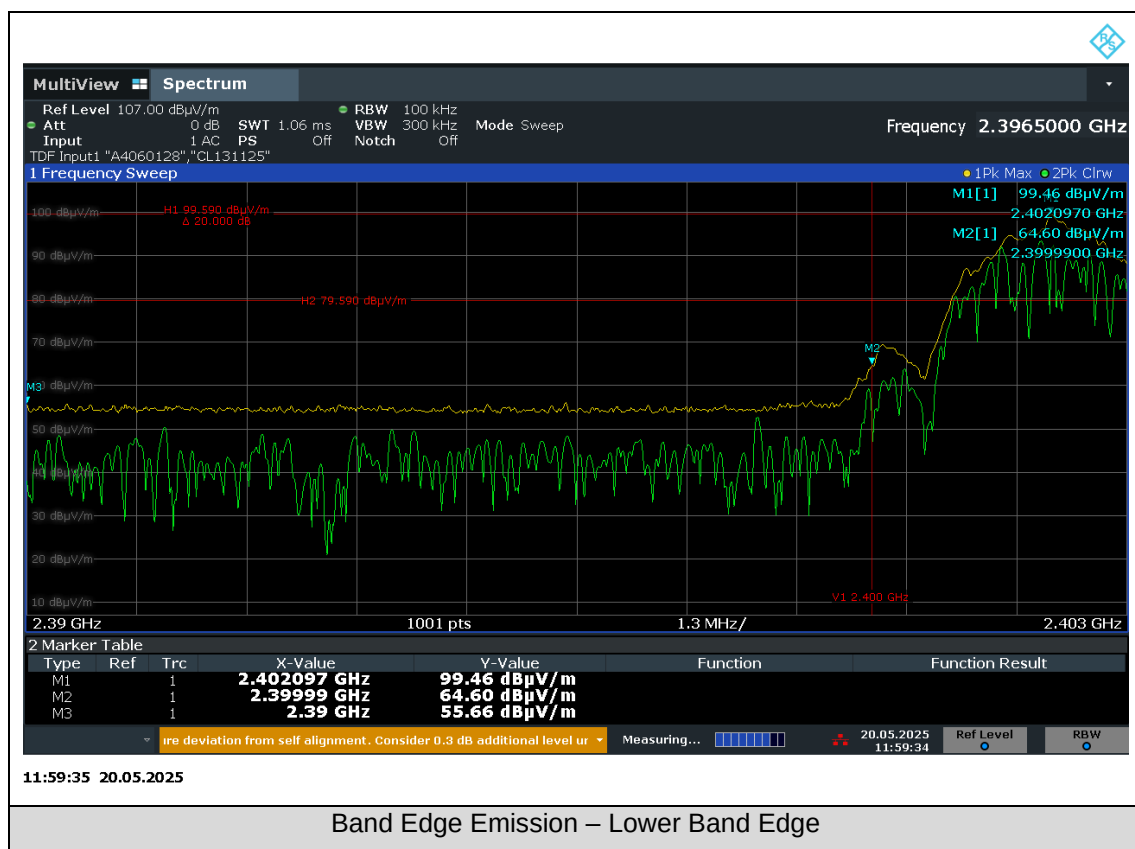
Comment: No peaks were measured within 10 dB of the limit.

3.8 §15.247(d)/ RSS-247 5.5 Band Edge Emission Measurements

Band-edge radiated measurements were done in accordance with ANSI C63.10: 2013 clause 6.10. All emissions measured near the lower and higher band edge complied with the requirements of §15.247 / RSS-247.

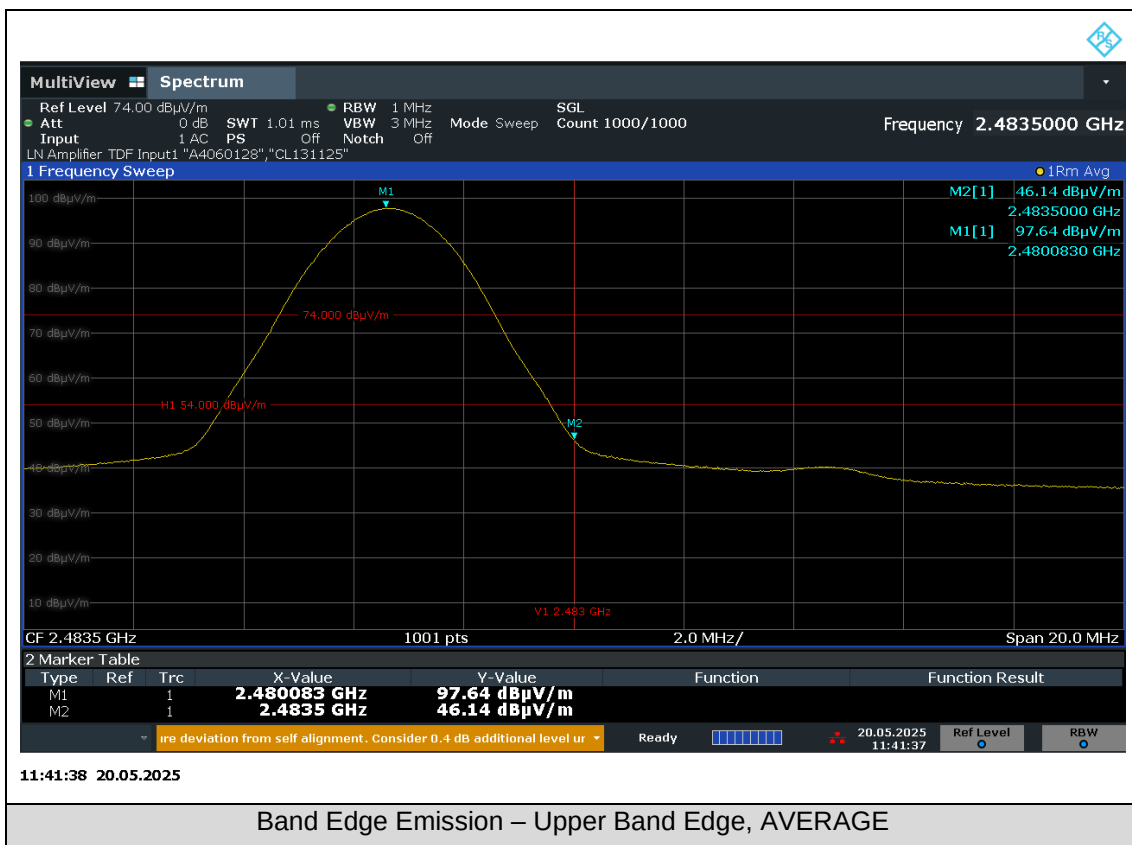
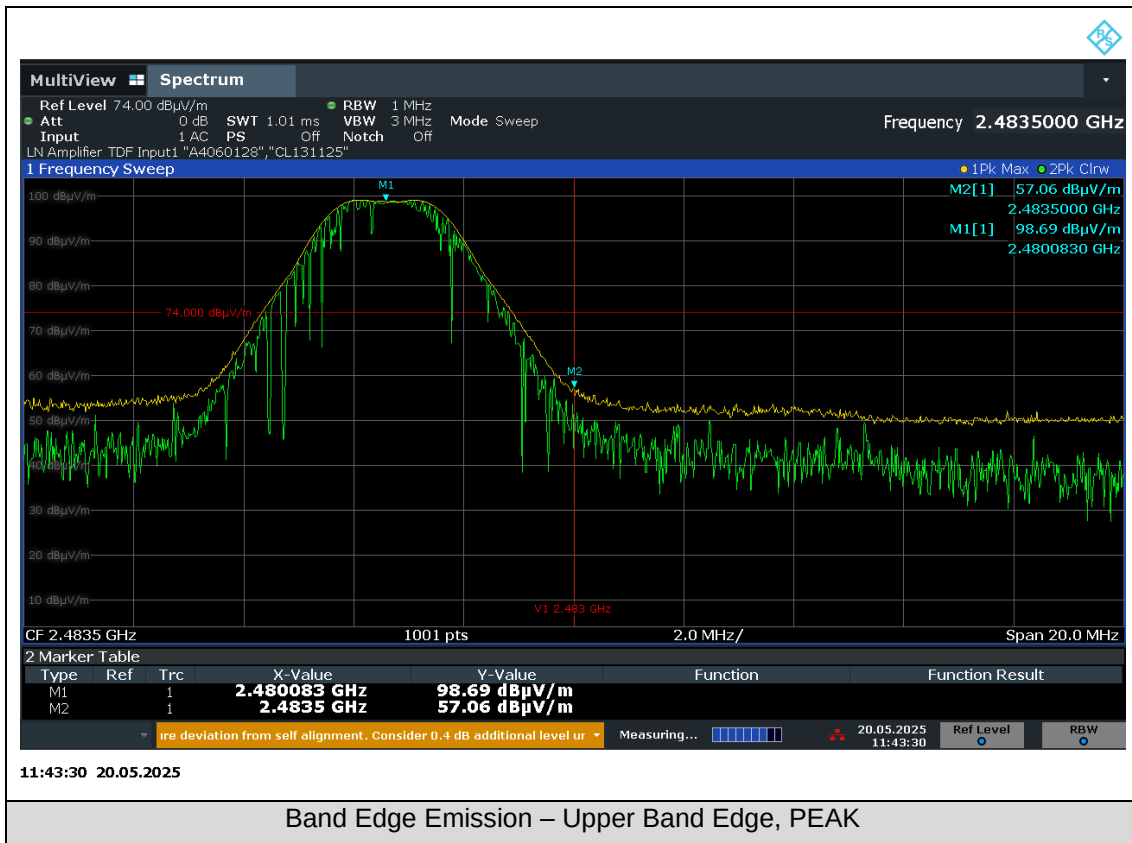
Lower Band Edge:

Marker	Measurement Type	Frequency [MHz]	Measurement [dB μ V/m]	Limit [dB μ V/m]	Result
M2	Peak	2399.99	64.60	79.59	Complied



Upper Band Edge:

Measurement Type	Frequency [MHz]	Measurement [dB μ V/m]	Limit [dB μ V/m]	Result
Peak	2483.5	57.06	74	Complied
Average	2483.5	46.14	54	Complied



3.9 §15.247(e)/ RSS-247 5.2(b) Power Spectral Density

3.9.1 Test Procedure

The maximum power spectral density in the fundamental emission was measured in accordance with ANSI C63.10: 2013 clause 11.10.

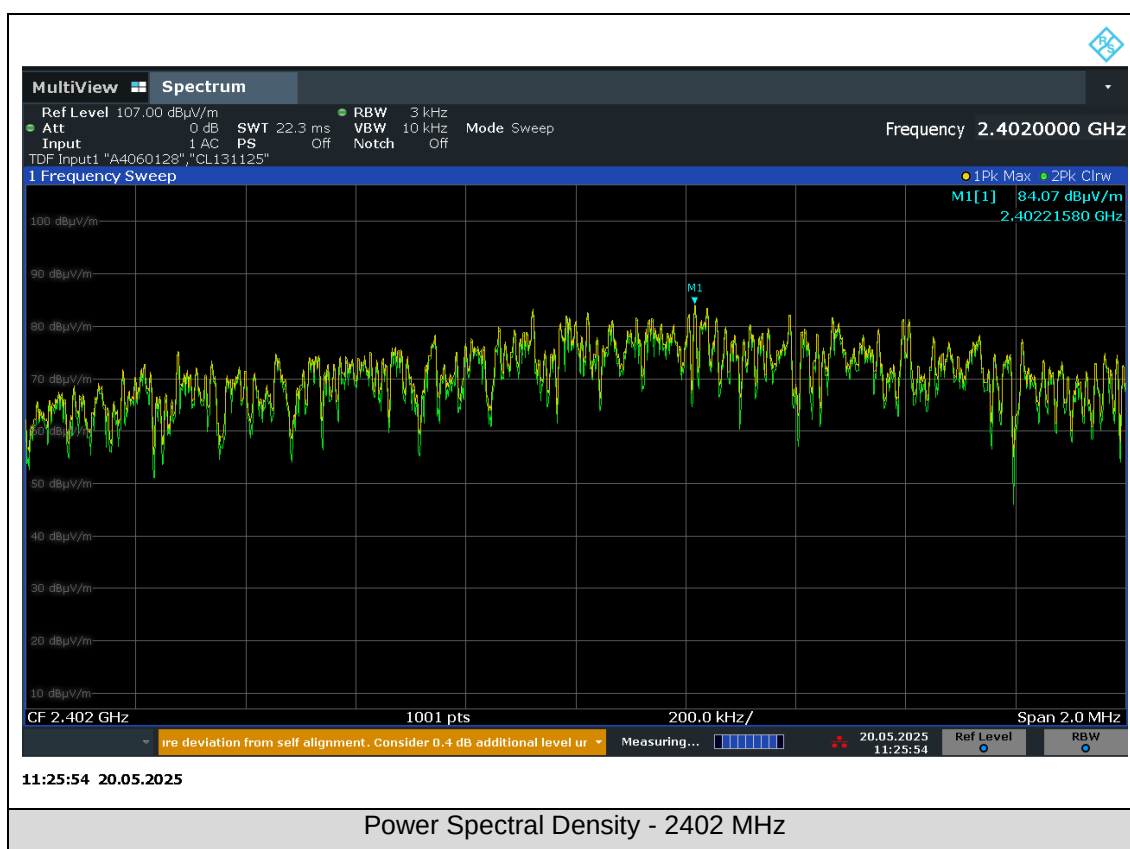
3.9.2 Limits

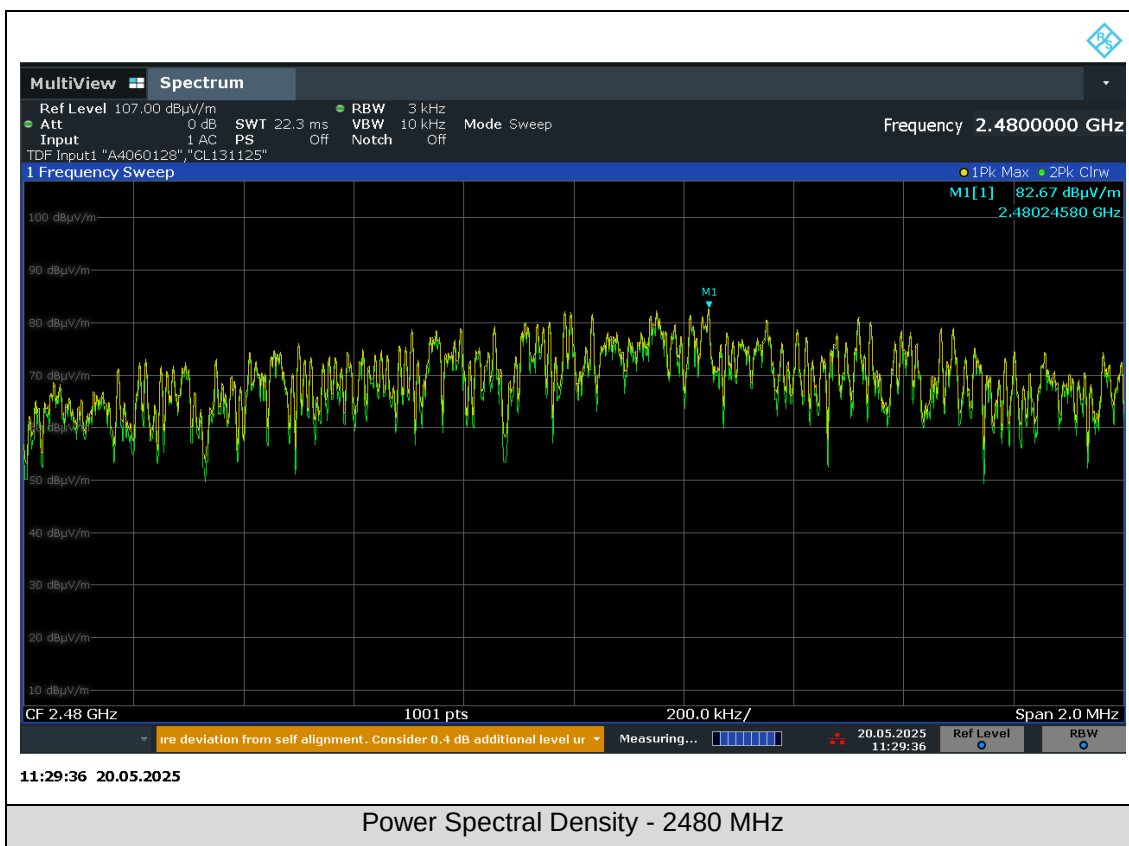
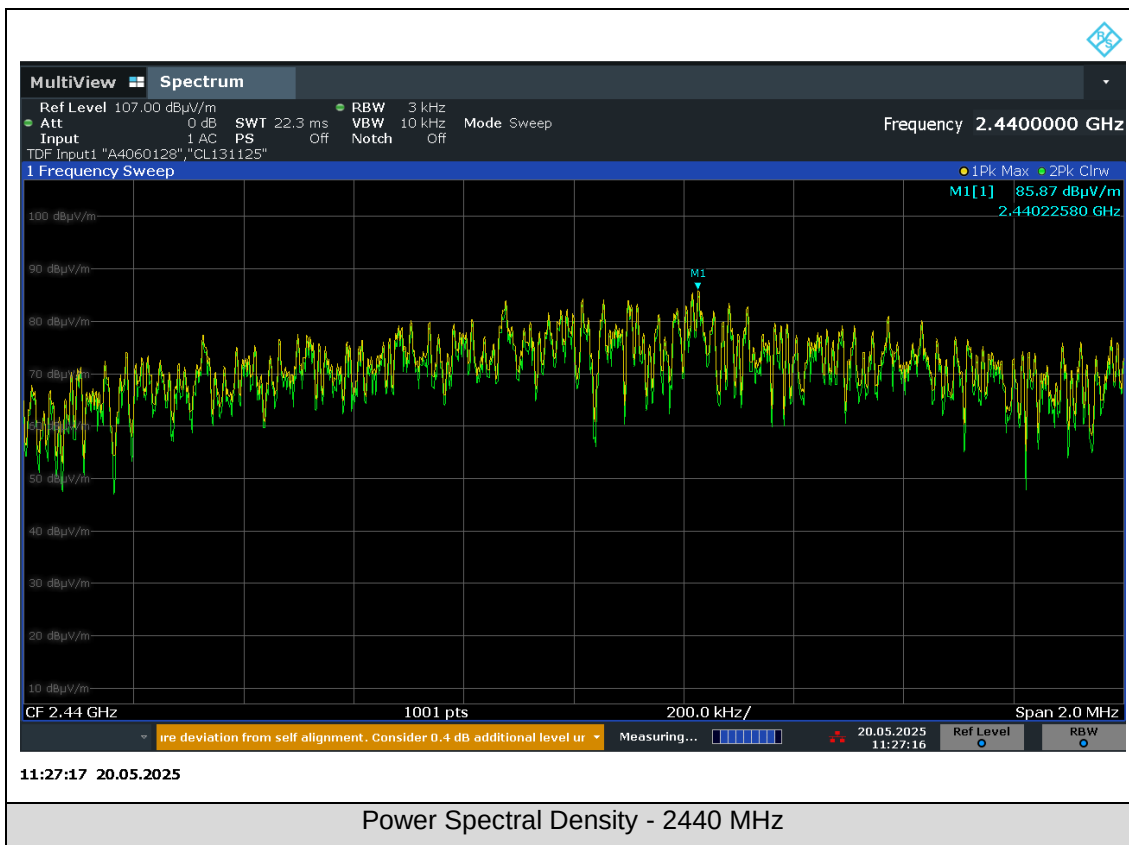
The maximum peak conducted power spectral density (PSD) is 8 dBm per 3 kHz.

3.9.3 Results

The measured radiated field strength is converted to equivalent conducted output power for checking compliance (KDB 558074 D01 Section 3).

Frequency [MHz]	E-Field @ 3 m [dBμV/m]	EIRP [dBm]	Antenna Gain [dBi]	Equivalent Conducted Output PSD [dBm]	Limit [dBm]	Results
2402	84.07	-11.16	1.1	-12.26	8	Complied
2440	85.87	-9.36	1.1	-10.46	8	Complied
2480	82.67	-12.56	1.1	-13.66	8	Complied





3.10 §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 M2504018-2, M2504018-3 and M2504018-4.

3.11 §15.215/ RSS-Gen 6.7 Occupied Bandwidth – 99%

3.11.1 Test Procedure

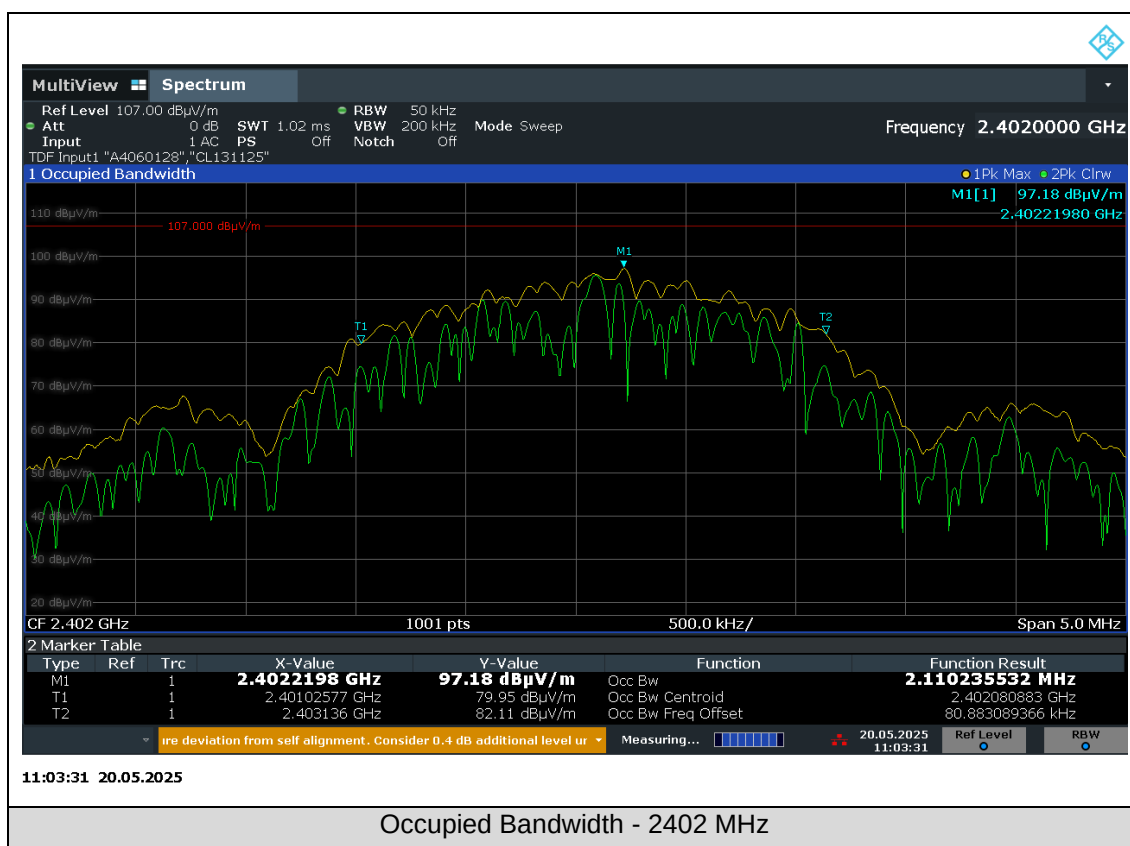
The bandwidth containing 99% of the total transmitted power of the fundamental emission was measured in accordance with ANSI C63.10: 2013 clause 6.9.

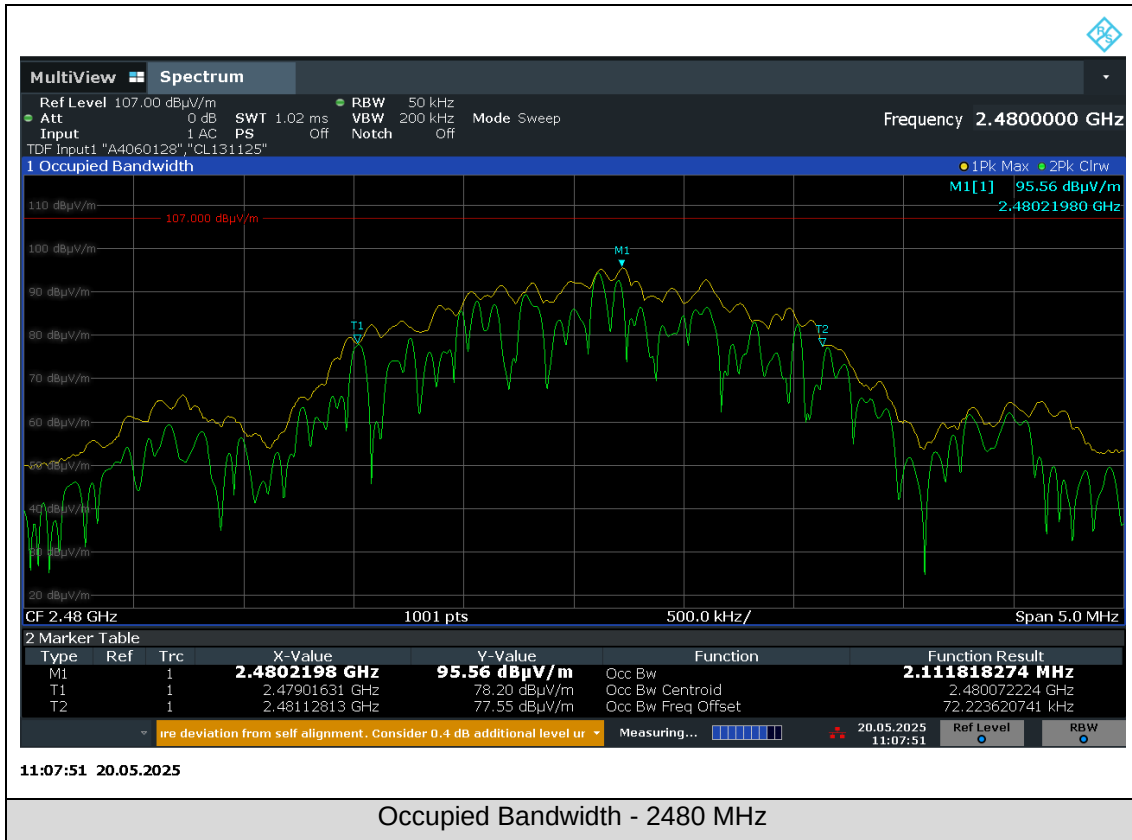
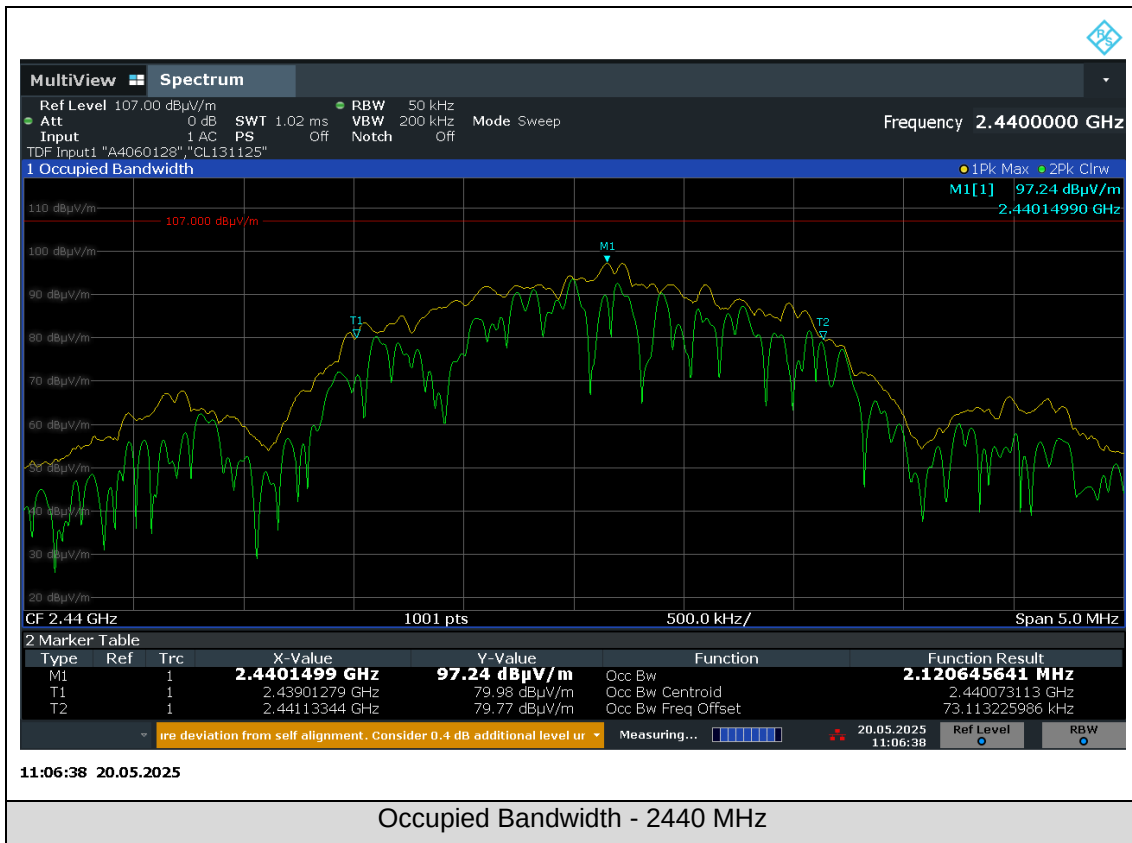
3.11.2 Limits

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

3.11.3 Results

Frequency [MHz]	99% Bandwidth [MHz]	Lower Frequency [MHz]	Upper Frequency [MHz]	Result
2402	2.11023	2401.02577	2403.136	Complied
2440	2.12064	2439.01279	2441.1334	Complied
2480	2.11181	2479.0163	2481.1281	Complied





-- End of Report --