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RADIO TEST REPORT

REPORT NUMBER: M2012010-4

TEST STANDARD: FCC PART 15 SUBPART C SECTION 15.247
ISED RSS-247 SECTION 5.0

CLIENT: PLANET INNOVATION
ON BEHALF OF PINE TREES HEALTH

DEVICE: PINE TREES HEALTH READER

MODEL: 10

FCC ID: 2AYYC-2232021

IC: 27017-2232021

DATE OF ISSUE: 5 MAY 2021

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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.

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REVISION TABLE

Version	Sec/Para Changed	Change Made	Date
1		Initial issue of document	5/05/2021

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RADIO TEST REPROT

CERTIFICATE OF COMPLIANCE

Device:	Pine Trees Health Reader
Model:	10
Serial No:	00-00-0000023
Manufacturer:	Pine Trees Health LabCentral Inc. – Cambridge, MA 02139 USA
Radio Module:	BT Chip STM32WB55RG (Bluetooth Low Energy)
FCC ID:	FCC ID: 2AYYC-2232021
IC ID:	IC: 27017-232021
Tested for:	Planet Innovation on behalf of Pine Trees Health
Address:	436 Elgar Rd, Box Hill VIC 3128
Phone Number:	+61 424 330 672
Contact:	Saeed Safari
Email:	Mirsaeed.safari@planetinnovation.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 Pine Trees Health Reader complied with the applicable requirements of the above standards. Refer to Report M2012010-4 for full details.
Test Date(s):	20 – 22 January 2021
Issue Date:	5 May 2021
Test Engineer(s):	Wilson Xiao
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.*
Authorised Signatory:	Shabbir Ahmed Lead Engineer – RF & Wireless

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RADIO REPORT FOR CERTIFICATION

1 TEST SUMMARY

Section	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	Radiated emission limits; general requirements	§15.209	§RSS-Gen 8.9	Complied
6.4	Conducted Limits	§15.207	§RSS-Gen 8.8	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

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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)	05/06/2020	05/06/2021	1 Year*2
Antennas	EMCO 6502 Active Loop Antenna Sn: 2021 (A-310)	31/08/2020	31/08/2022	2 Year*2
	SUNOL JB1 Sn. A061917 (A-425)	04/09/2019	04/09/2021	2 Year*2
	EMCO 3115 Horn Antenna Sn: 8908-3282 (A-004)	16/01/2019	16/01/2022	3 Year*1
	ETS-Lindgren Horn Antenna Sn:66032 (A-307)	12/06/2018	12/06/2021	3 Year*2
Cables*3	Huber & Suhner Sucoflex 104A Sn: 503055 (C-457)	05/01/2021	05/01/2022	1 Year*1
	Huber & Suhner Sucoflex 104A Sn: 800448 (C-520)	05/01/2021	05/01/2022	1 Year*1
	Huber & Suhner Sucoflex 102DC Sn: 27319/2 (C-273)	06/01/2021	06/01/2022	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 without taking into account measurement instrumentation uncertainty. However, the measurement uncertainty shall appear in the test report.

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5 Device Details

(Information supplied by the Client)

Pine Trees Health Reader is a point-of-care device that performs a COVID-19 test which is a rapid molecular *in vitro* diagnostic test utilizing isothermal nucleic acid amplification technology and detection of the resulting amplicon using CRISPR-mediated collateral reporter unlocking. Intended for the qualitative detection of nucleic acid from SARS-Cov-2 viral RNA in nasal swabs from individuals who are suspected of COVID-19 infection by a healthcare professional.

5.1 EUT (Transmitter) Details

Radio:	BT Chip STM32WB55RG
Bluetooth Type	Bluetooth Low Energy (DTS)
Number of Channels:	40
Frequency Band:	2400 – 2483.5 MHz
Operating Frequency:	Low Channel: 2402 MHz Mid Channel: 2442 MHz High Channel: 2480 MHz
Data Rate:	1 Mbps and 2 Mbps
Modulation:	GFSK
Antenna:	Inverted F – PCB Antenna
Antenna Peak Gain:	2 dBi

5.2 EUT (Host) Details

Test Sample:	Pine Trees Health Reader
Model:	10
Serial No:	00-00-0000023
Supply Plug:	APD AC Adapter Model: WA-24B12FU Input: 100-240 V AC 50-60 Hz Output: 12V DC, 2A

5.3 Test Configuration

Testing was performed with the transceiver set to transmit continuously at Low channel (2402 MHz), Mid Channel (2442 MHz) and High Channel (2480 MHz).

5.4 Modifications

No modifications were required to achieve compliance.

5.5 Deviations from the Standard

No deviations.

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6 RESULTS

6.1 §15.203 / RSS-Gen 6.8 Antenna Requirement

The transceiver incorporates an integral PCB antenna that cannot be replaced by another type.

Antenna Type: Inverted F PCB Antenna
Antenna gain: 2 dBi
Connector: Not Applicable

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 §15.209 / 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

6.4 §15.207 / RSS-Gen 8.8 Conducted Limits

6.4.1 Test Procedure

The arrangement specified in ANSI C63.10: 2013 was adhered to for the conducted EMI measurements. The EUT was placed in the RF screened enclosure and a CISPR EMI Receiver as defined in ANSI C63.2: 2009 was used to perform the measurements.

The specified 0.15 MHz to 30 MHz frequency range was sub-divided into sub-ranges to ensure that all short duration peaks were captured. For each of the sub-ranges, the EMI receiver was set to continuous scan with the Peak detector set to Max-Hold mode. The Quasi-Peak detector and the Average detector were then invoked to measure the actual Quasi-Peak and Average level of the most significant peaks, which were detected.

All data rates were checked. Measurements on the worst data rate is presented below.

6.4.2 Limits

The limit applied was in accordance to the conducted limits defined in §15.207 / RSS-Gen 8.8.

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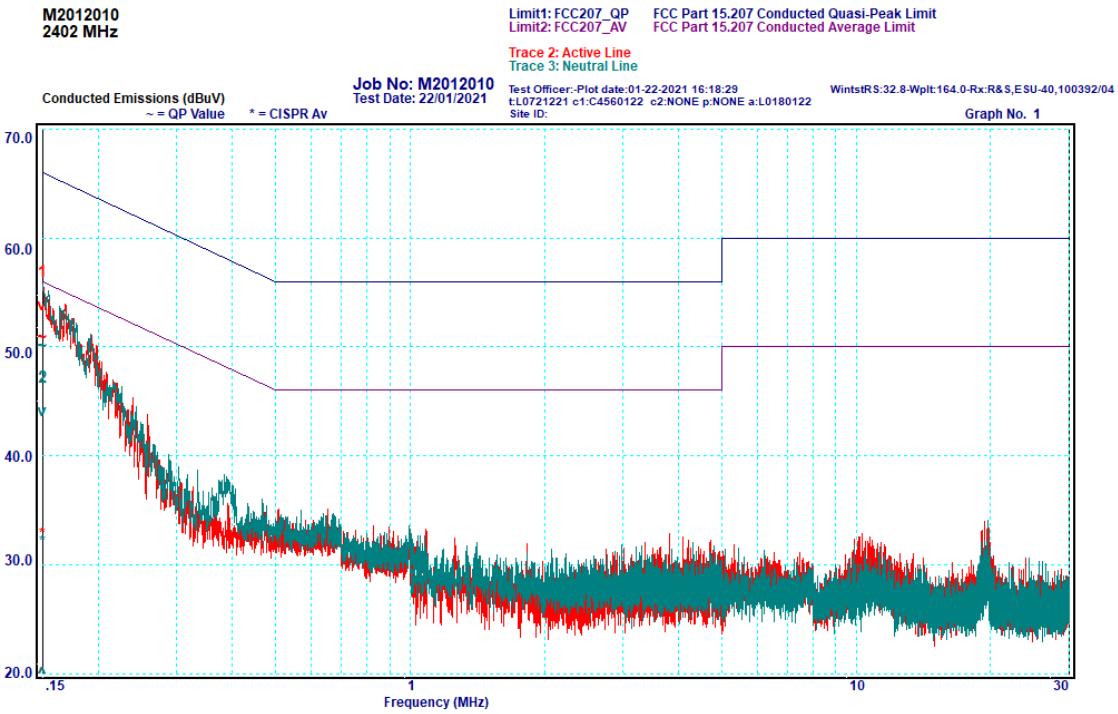
6.4.3 Results



Graph 6-1: AC Conducted Emission, 2402 MHz, 1 Mbps

Table 6-1: AC Conducted Emission, 2402 MHz, 1 Mbps

Peak	Frequency [MHz]	Line	Quasi-Peak			Average		
			Level [dBµV]	Limit [dBµV]	Margin [dB]	Level [dBµV]	Limit [dBµV]	Margin [dB]
1	0.15	Active	50.8	66	-15.2	32.7	56	-23.3
2	0.15	Neutral	50.1	66	-15.9	32	56	-24

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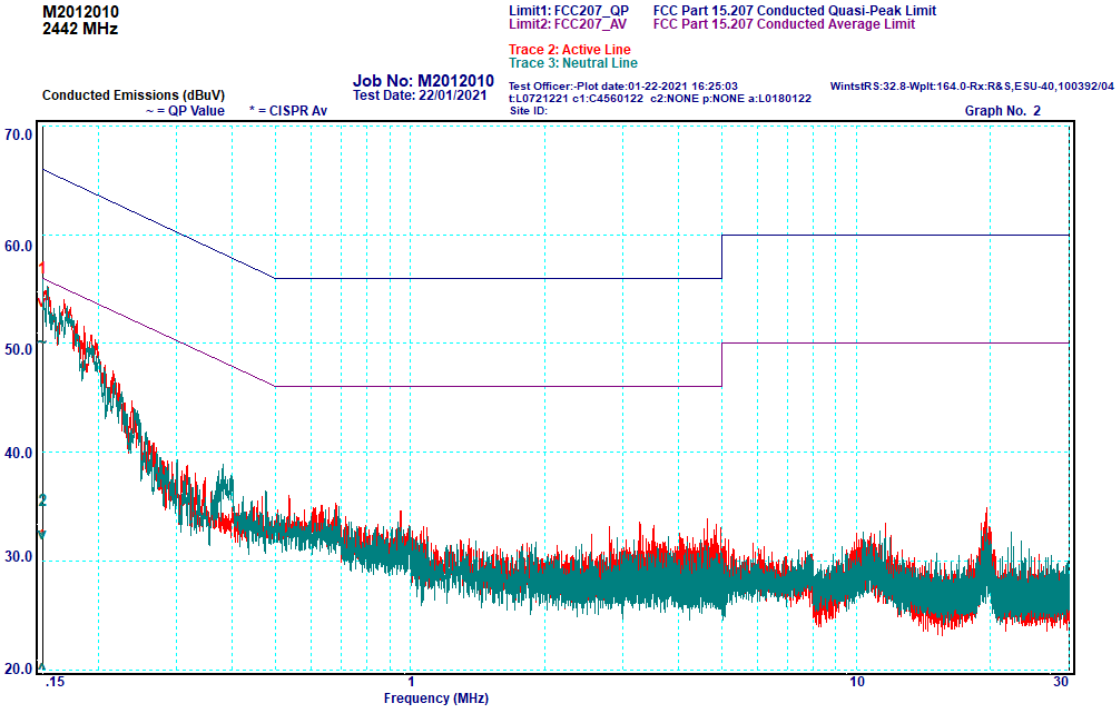

Graph 6-2: AC Conducted Emission, 2442 MHz, 1 Mbps

Table 6-2: AC Conducted Emission, 2442 MHz, 1 Mbps

Peak	Frequency [MHz]	Line	Quasi-Peak			Average		
			Level [dBµV]	Limit [dBµV]	Margin [dB]	Level [dBµV]	Limit [dBµV]	Margin [dB]
1	0.15	Active	50	66	-16	32.2	56	-23.8
2	0.15	Neutral	50	66	-16	32	56	-24

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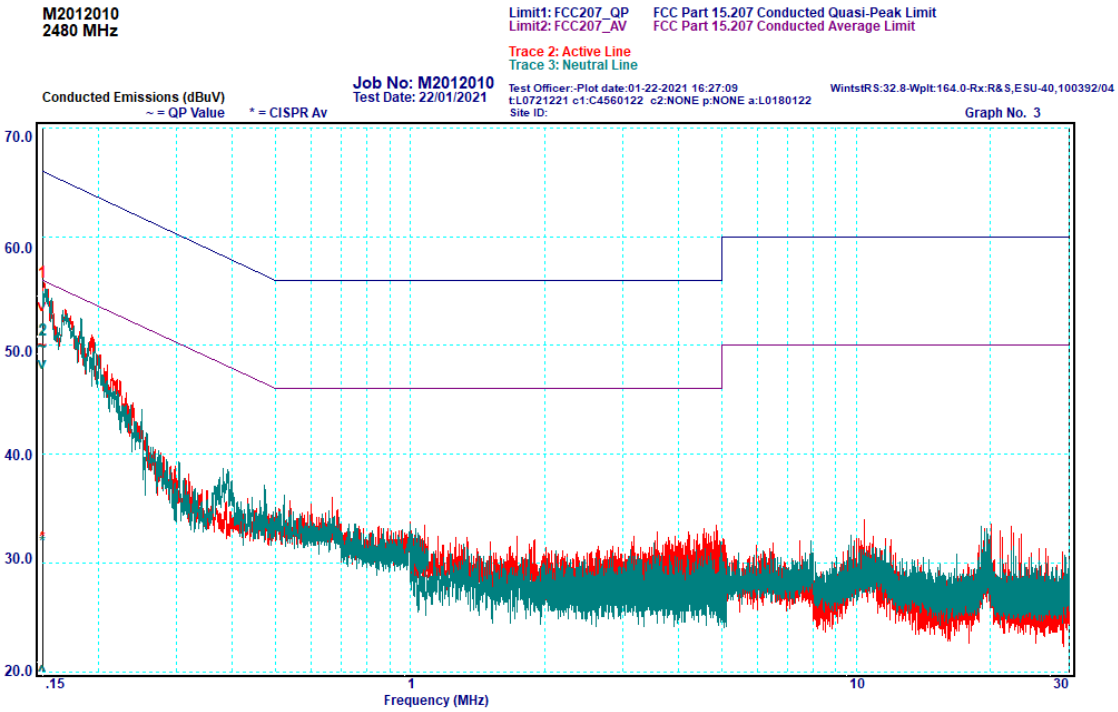

Graph 6-3: AC Conducted Emission, 2480 MHz, 1 Mbps

Table 6-3: AC Conducted Emission, 2480MHz, 1 Mbps

Peak	Frequency [MHz]	Line	Quasi-Peak			Average		
			Level [dBµV]	Limit [dBµV]	Margin [dB]	Level [dBµV]	Limit [dBµV]	Margin [dB]
1	0.15	Active	50	66	-16	32.2	56	-23.8
2	0.15	Neutral	49.9	66	-16.1	31.8	56	-24.2

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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 – 2483.5 MHz, the minimum 6 dB bandwidth is to be at least 500 kHz.

6.5.3 Results

Table 6-4: 6dB Bandwidth

Test Mode	Freq. [MHz]	6 dB Bandwidth [kHz]	Limit [kHz]
1 Mbps	2402	665.3	>= 500
	2442	663.3	>= 500
	2480	667.3	>= 500
2 Mbps	2402	1138.8	>= 500
	2442	1138.8	>= 500
	2480	1138.8	>= 500

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

6.6.1 Test Procedure

The field strength of the fundamental transmitted frequency was measured inside a semi-anechoic chamber compliant with ANSI C63.4: 2014 in accordance to ANSI C63.10: 2013 clause 11.9.1.1.

The EUT was positioned on a test turn-table and rotated through 360° to determine the highest emissions. The measurement antenna was also varied between 1 and 4 metres height. Different orientations of the EUT (x, y and z-axis) and measurement antenna polarisations (vertical and horizontal) were investigated to produce the highest emission EIRP.

All measurements were made at a distance of 3 metres. Measurements on the worst EUT orientation and measurement antenna polarisation presented below.

6.6.2 Limits

The maximum conducted output power (EIRP) at 2400 – 2483.5 MHz is 1W or 30 dBm.

6.6.3 Results

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

Table 6-5: Maximum EIRP, EUT y-axis, Horizontal

Test Mode	Freq. [MHz]	E-Field@ 3 m dBuV/m	EIRP (dBm)	Antenna Gain (dBi)	Equivalent Conducted Output Power (dBm)	Limit (dBm)	Results
1 Mbps	2402	101.96	6.73	2	4.73	30	Complied
	2442	99.81	4.58	2	2.58	30	Complied
	2480	98.38	3.15	2	1.15	30	Complied
2 Mbps	2402	101.43	6.20	2	4.20	30	Complied
	2442	99.86	4.63	2	2.63	30	Complied
	2480	98.37	3.14	2	1.14	30	Complied

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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 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 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 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.

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.

EUT was investigated on all three axes (x, y, and z) and data rates. Measurements on the worst EUT orientation axis and data rate are presented below.

6.7.2 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 channels according to ANSI C63.10-2013 clause 11.11.2. The maximum PSD level was used to establish the limit for nonrestricted frequency bands. However, the general limits of §15.209 apply for the restricted bands of operation defined in §15.205.

Table 6-6: 100 kHz reference level measurement, EUT y-axis, Horizontal, 1Mbps

Freq. (MHz)	Peak at 3 m (dBµV/m)	Established Limit (dBµV/m)	
		@ 3 m	@ 1 m
2402	101.62	81.62	91.16

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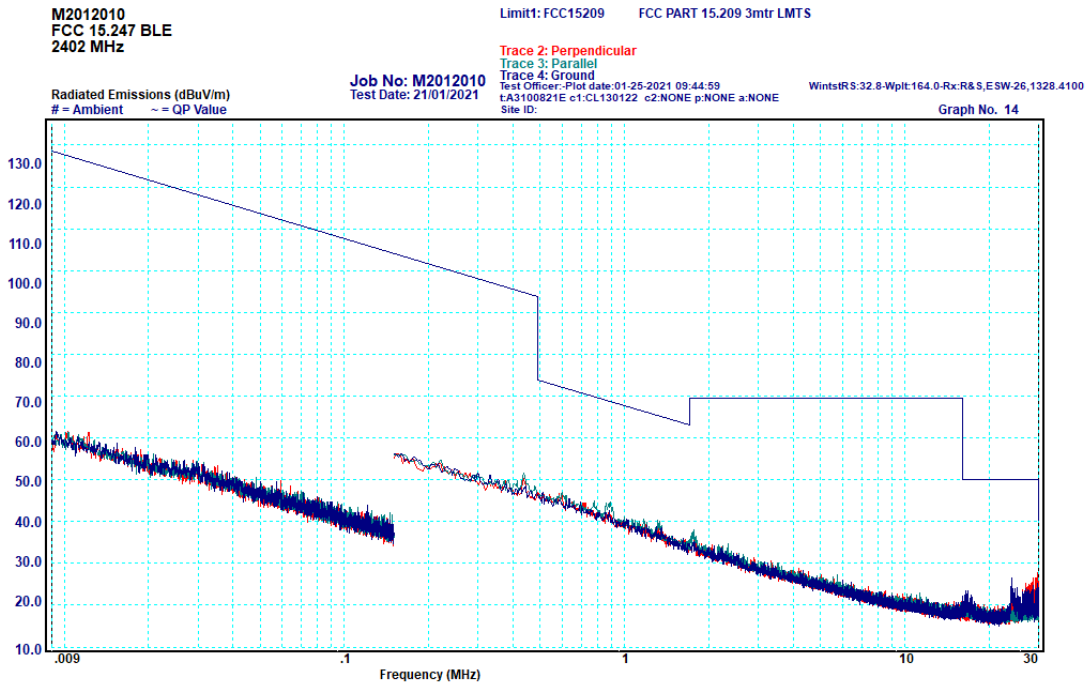
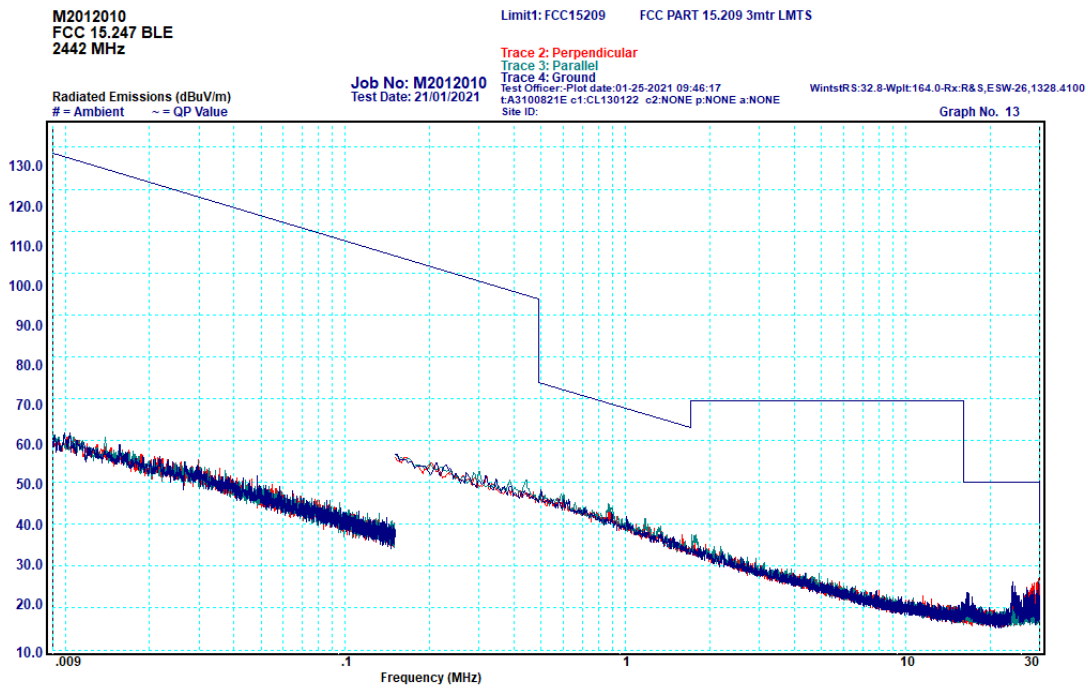
6.7.3 Transmitter Spurious Emissions: 9 kHz to 30 MHz

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



Graph 6-4: Transmitter Spurious Emissions, 9kHz – 30 MHz, 2402 MHz, 1 Mbps

No peaks were measured within 10 dB of the limit.



Graph 6-5: Transmitter Spurious Emissions, 9kHz – 30 MHz, 2442 MHz, 1 Mbps

No peaks were measured within 10 dB of the limit.

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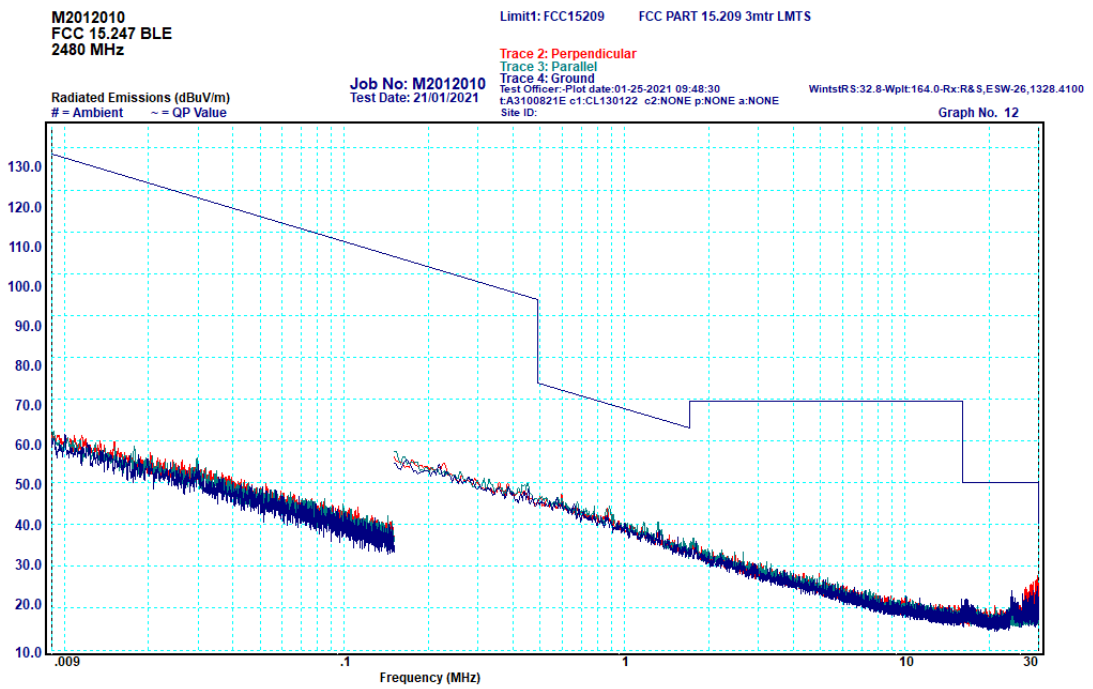
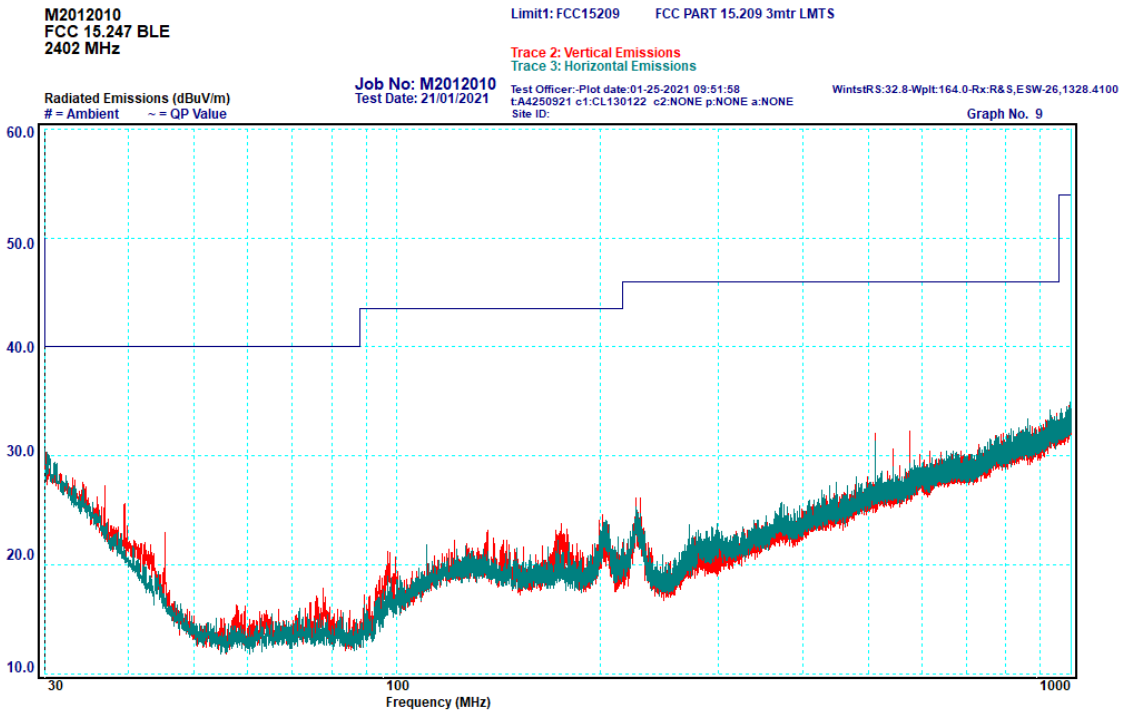


Graph 6-6: Transmitter Spurious Emissions, 9kHz – 30 MHz, 2480 MHz, 1 Mbps

No peaks were measured within 10 dB of the limit.

6.7.4 Transmitter Spurious Emissions: 30 - 1000 MHz

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



Graph 6-7: Transmitter Spurious Emissions, 30 – 1000 MHz, 2402 MHz, 1 Mbps

No peaks were measured within 10 dB of the limit.

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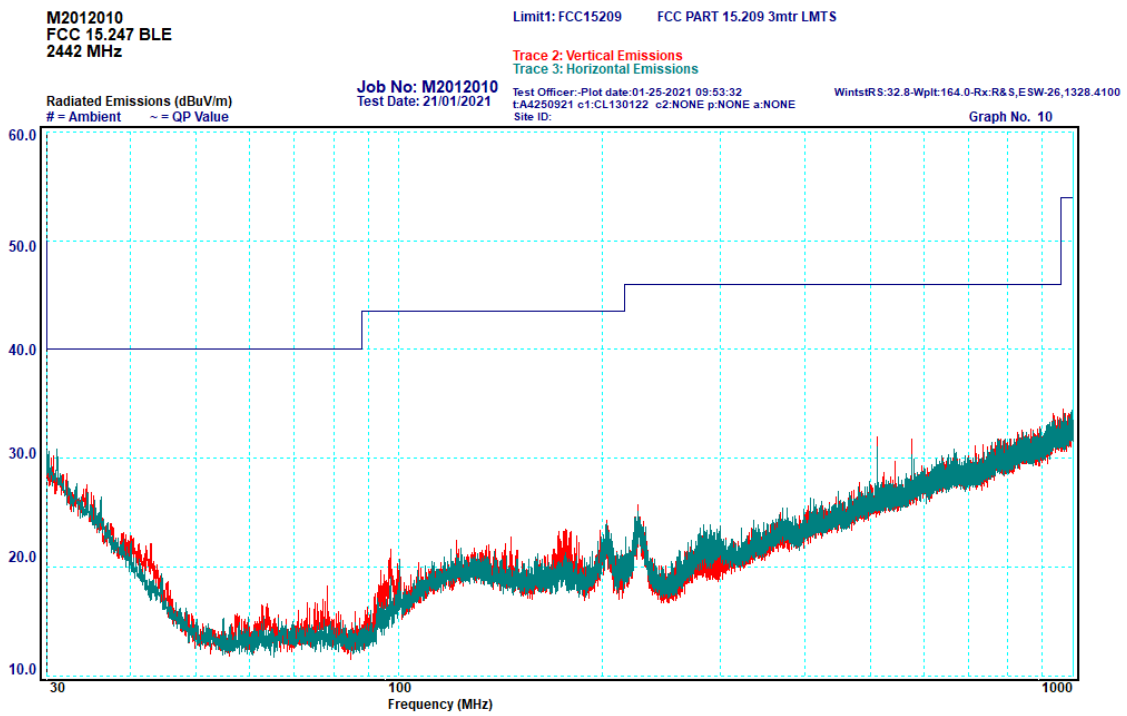
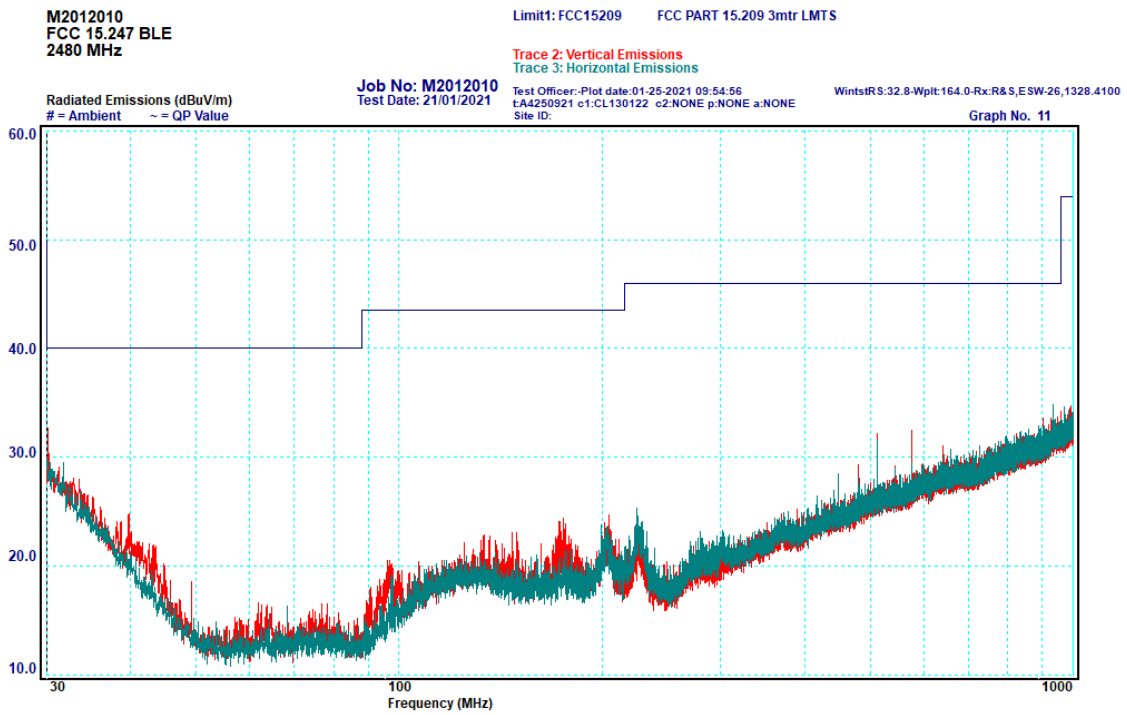


Graph 6-8: Transmitter Spurious Emissions, 30 – 1000 MHz, 2442 MHz, 1 Mbps

No peaks were measured within 10 dB of the limit.



Graph 6-9: Transmitter Spurious Emissions, 30 – 1000 MHz, 2480 MHz, 1 Mbps

No peaks were measured within 10 dB of the limit.

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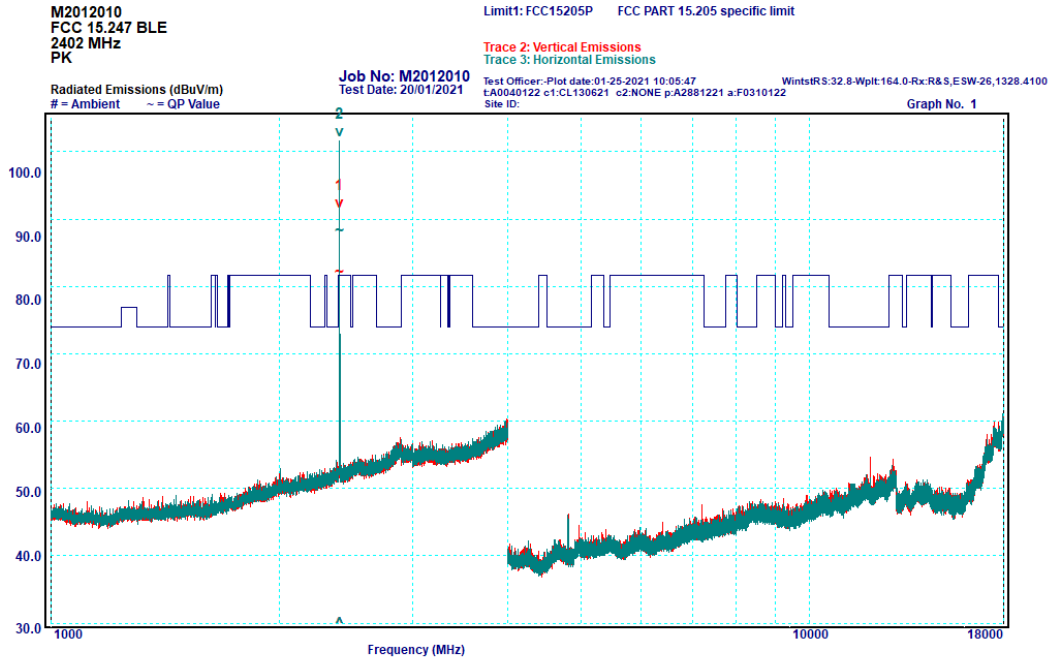
6.7.5 Transmitter Spurious Emissions: 1 - 18 GHz

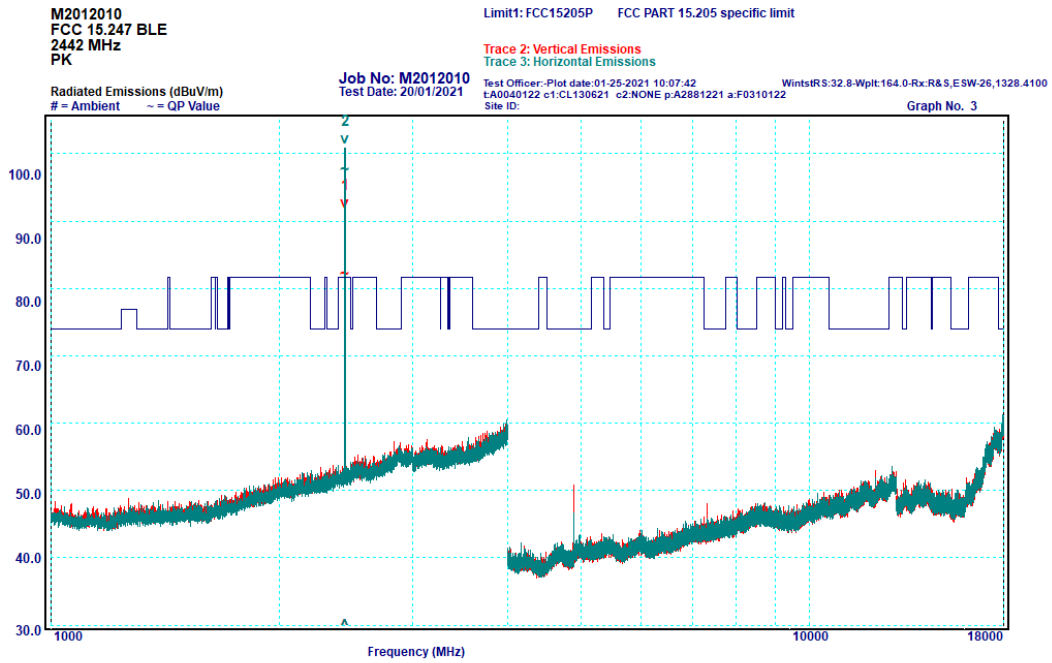
All emissions measured in the frequency band 1 – 18 GHz complied with the requirements of the standard.

Peak Measurements:



Graph 6-10: Transmitter Spurious Emissions, 1 – 18 GHz, 2402 MHz, Peak, 1 Mbps

*The Peak in the above plot is the fundamental transmission and is not subject to the spurious emissions limit of the standard.



Graph 6-11: Transmitter Spurious Emissions, 1 – 18 GHz, 2442 MHz, Peak, 1 Mbps

*The Peak in the above plot is the fundamental transmission and is not subject to the spurious emissions limit of the standard.

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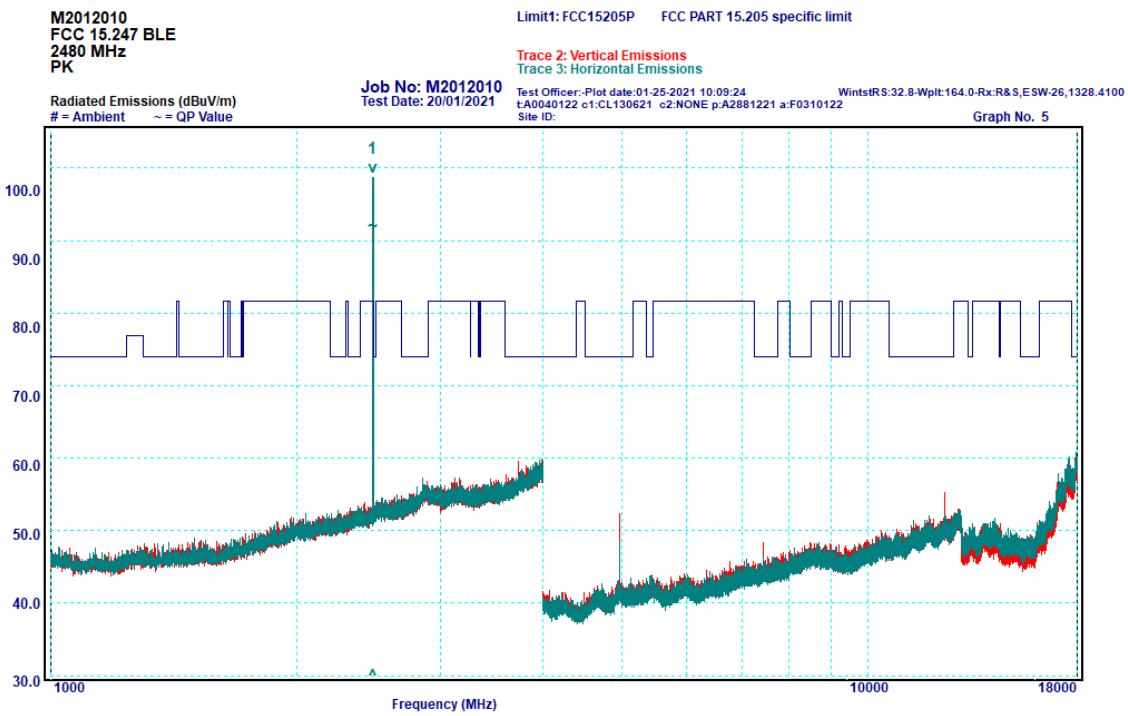
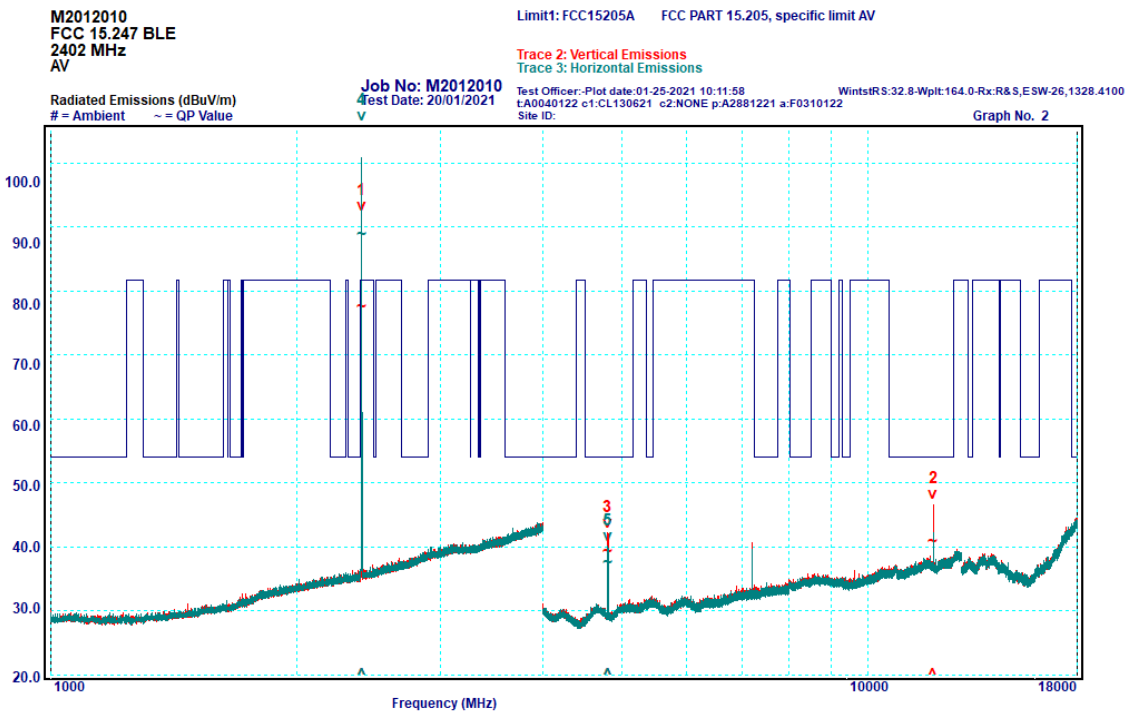


Graph 6-12: Transmitter Spurious Emissions, 1 – 18 GHz, 2480 MHz, Peak, 1 Mbps

*The Peak in the above plot is the fundamental transmission and is not subject to the spurious emissions limit of the standard.

Average Measurements:



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

Table 6-7: Transmitter Spurious Emissions, 1 – 18 GHz, 2402 MHz, Average, 1 Mbps

Peak	Frequency [MHz]	Polarisation	Avg		
			Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]
1*	2401.97	Vertical	N/A	N/A	N/A
2	12010.04	Vertical	40.8	54	-13.2
3	4803.9	Vertical	39.2	54	-14.8
4*	2402	Horizontal	N/A	N/A	N/A
5	4803.92	Horizontal	37.4	54	-16.6

*Peaks 1 and 4 are the fundamental transmissions and are not subject to the spurious emissions limit of the standard.

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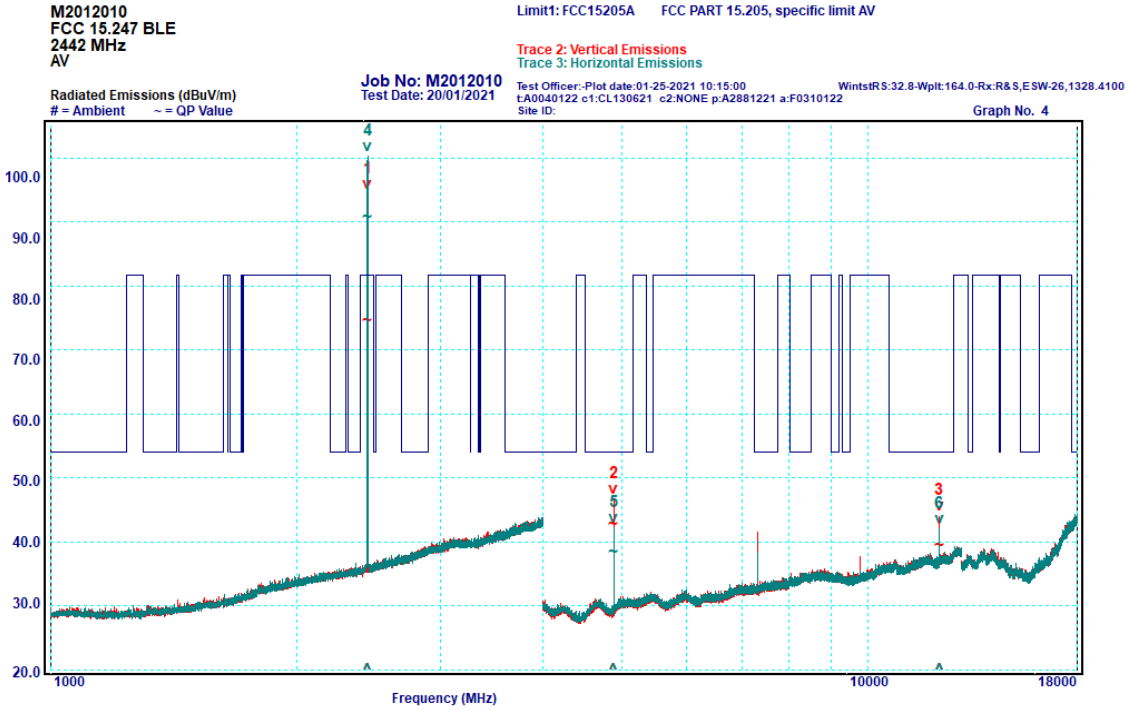

Graph 6-14: Transmitter Spurious Emissions, 1 – 18 GHz, 2442 MHz, Average, 1 Mbps

Table 6-8: Transmitter Spurious Emissions, 1 – 18 GHz, 2442 MHz, Average, 1 Mbps

Peak	Frequency [MHz]	Polarisation	Avg		
			Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]
1*	2441.95	Vertical	N/A	N/A	N/A
2	4883.99	Vertical	42.7	54	-11.3
3	12209.94	Vertical	39.4	54	-14.6
4*	2441.99	Horizontal	N/A	N/A	N/A
5	4883.88	Horizontal	38.4	54	-15.6
6	12209.95	Horizontal	37.2	54	-16.8

*Peaks 1 and 4 are the fundamental transmissions and are not subject to the spurious emissions limit of the standard.

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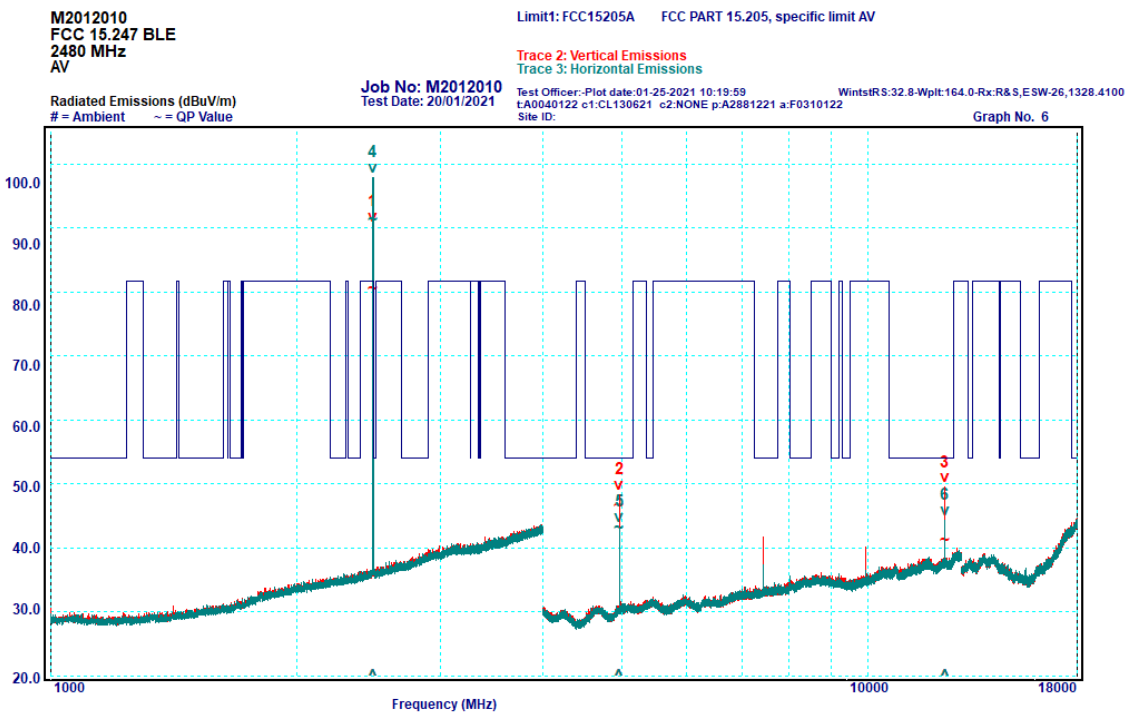

Graph 6-15: Transmitter Spurious Emissions, 1 – 18 GHz, 2480 MHz, Average, 1 Mbps

Table 6-9: Transmitter Spurious Emissions, 1 – 18 GHz, 2480 MHz, Average, 1 Mbps

Peak	Frequency [MHz]	Polarisation	Avg		
			Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]
1*	2479.96	Vertical	N/A	N/A	N/A
2	4959.9	Vertical	46.5	54	-7.5
3	12400.03	Vertical	41.2	54	-12.8
4*	2479.98	Horizontal	N/A	N/A	N/A
5	4959.89	Horizontal	43.1	54	-10.9
6	12399.96	Horizontal	37.5	54	-16.5

*Peaks 1 and 4 are the fundamental transmissions and are not subject to the spurious emissions limit of the standard.

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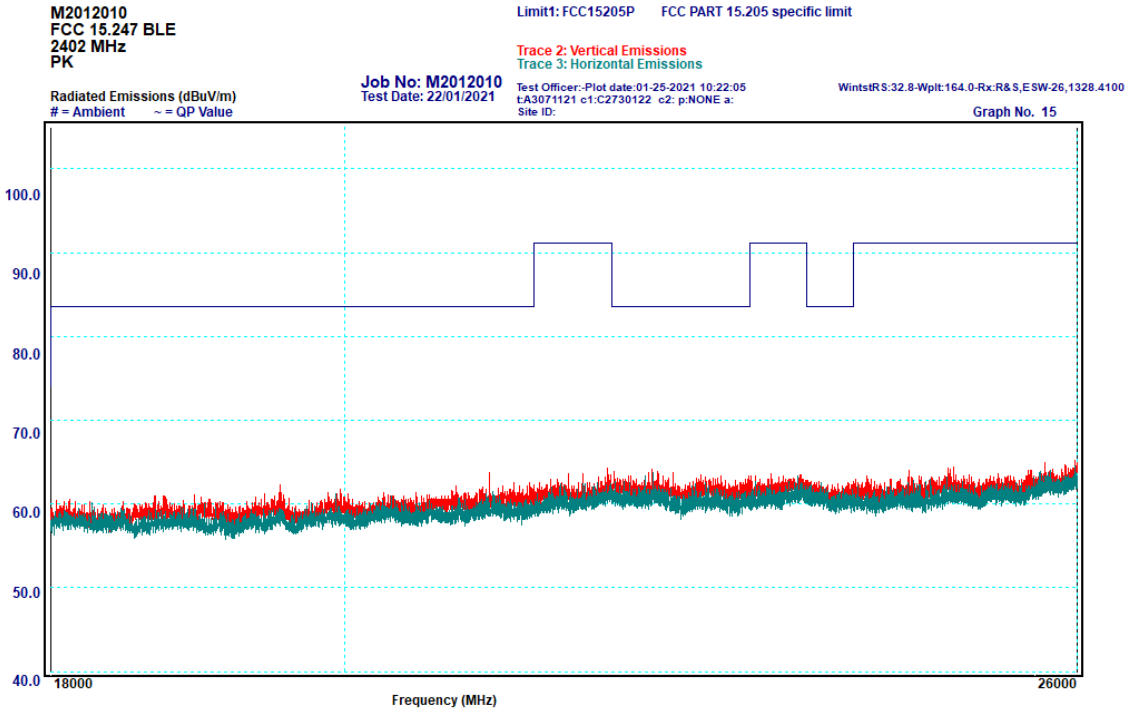
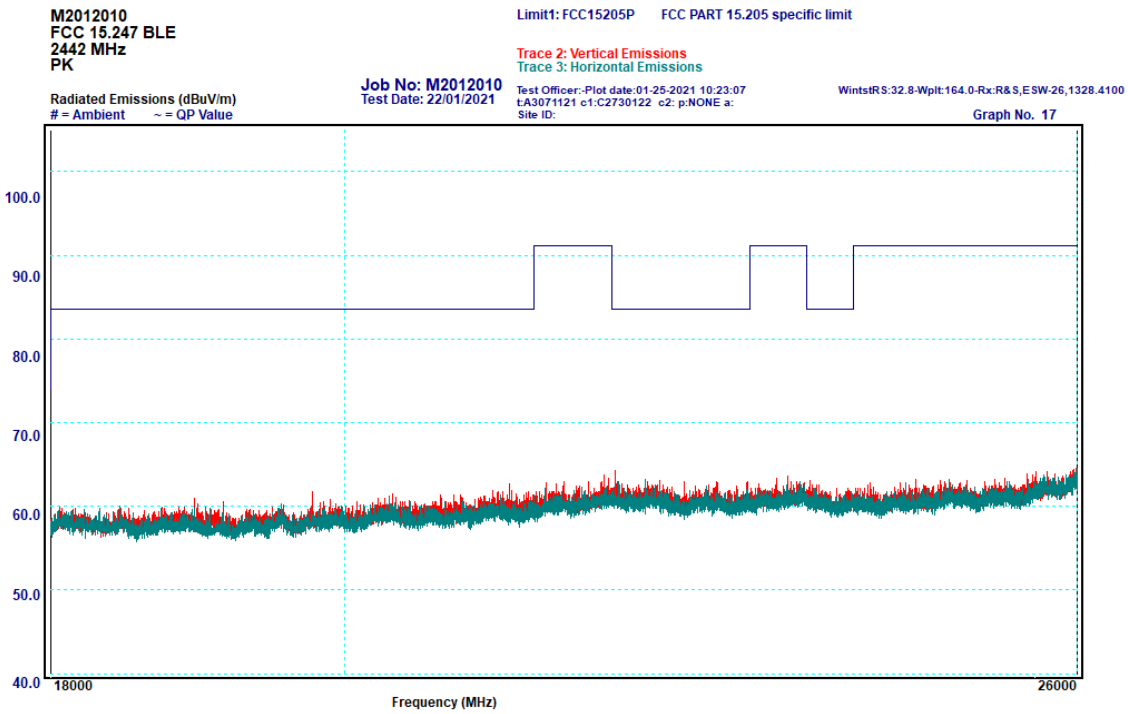
6.7.6 Transmitter Spurious Emissions: 18 - 26 GHz

All emissions measured in the frequency band 18 – 26 GHz complied with the requirements of the standard. No peaks were measured within 10 dB of the limit.

Peak Measurements:



Graph 6-16: Transmitter Spurious Emissions, 18 – 26 GHz, 2402 MHz, Peak, 1 Mbps



Graph 6-17: Transmitter Spurious Emissions, 18 – 26 GHz, 2442 MHz, Peak, 1 Mbps

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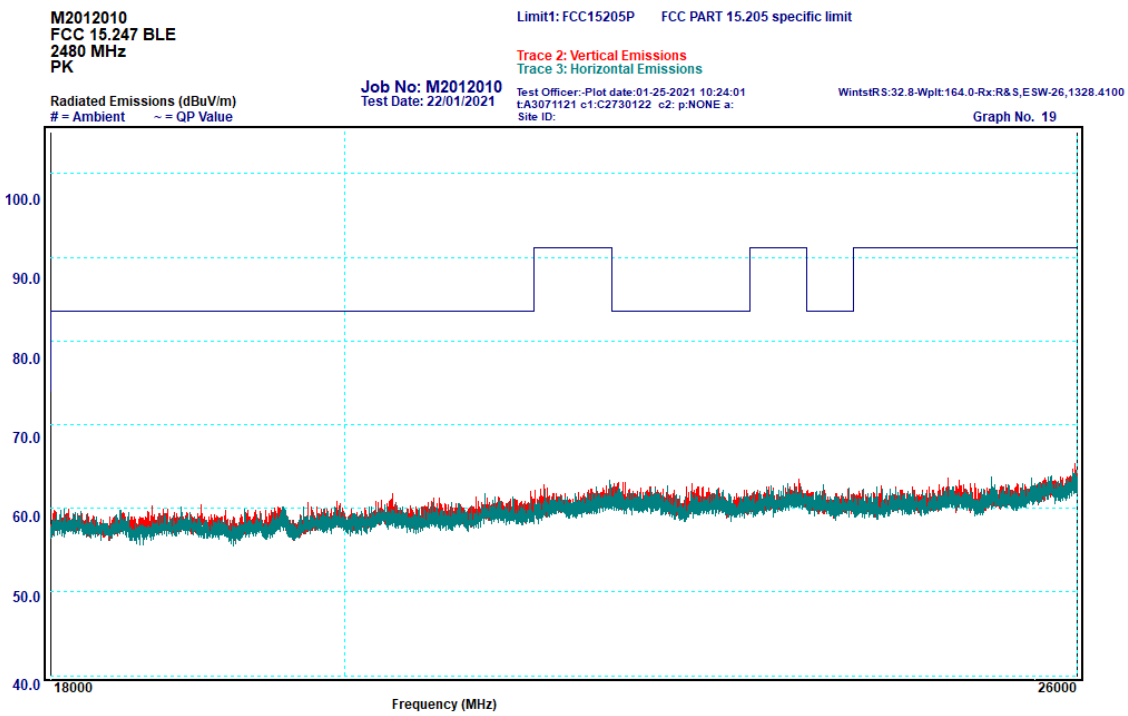
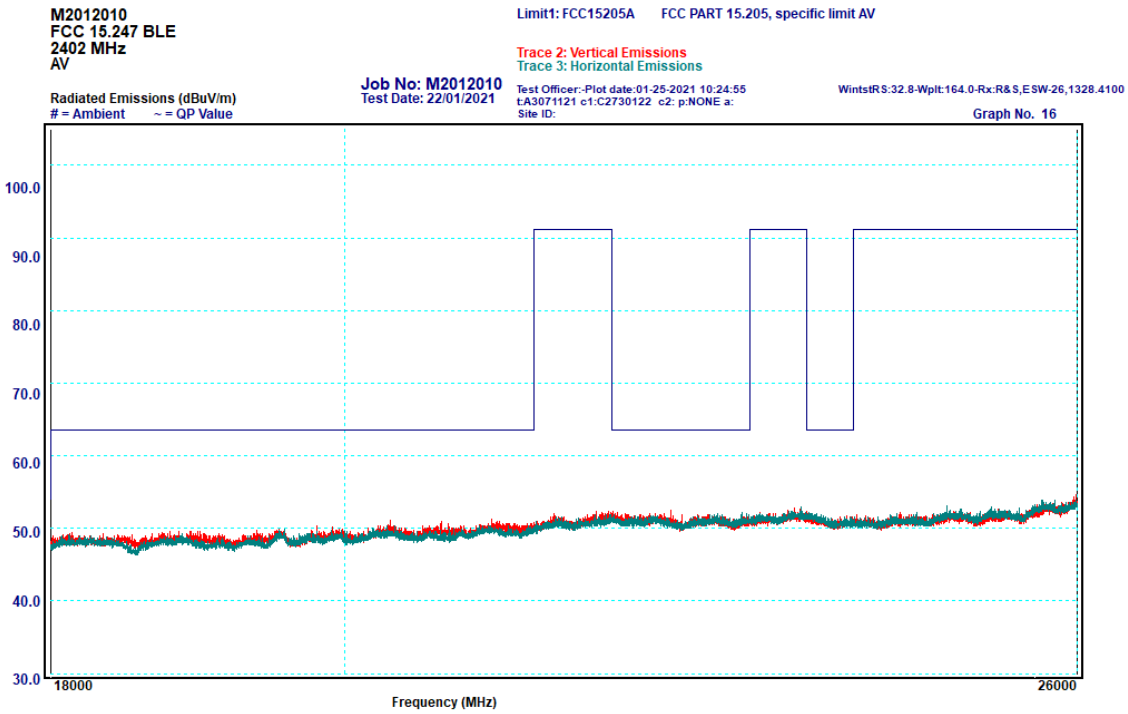


Graph 6-18: Transmitter Spurious Emissions, 18 – 26 GHz, 2480 MHz, Peak, 1 Mbps

Average Measurements:



Graph 6-19: Transmitter Spurious Emissions, 18 – 26 GHz, 2402 MHz, Average, 1 Mbps

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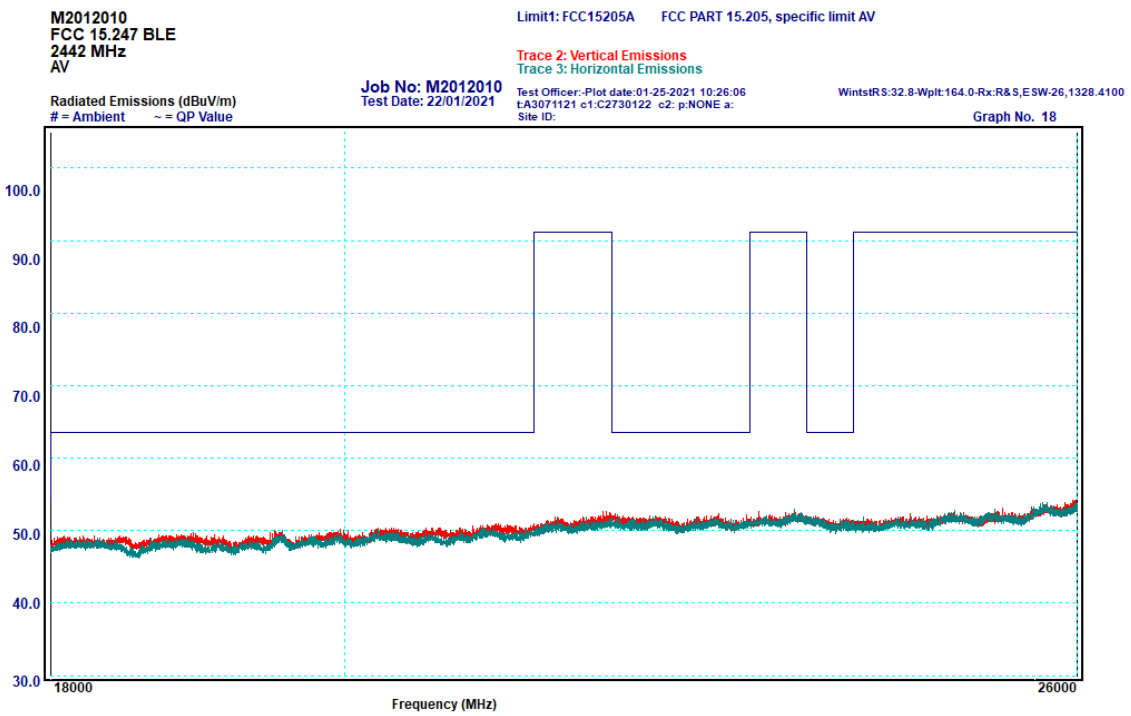
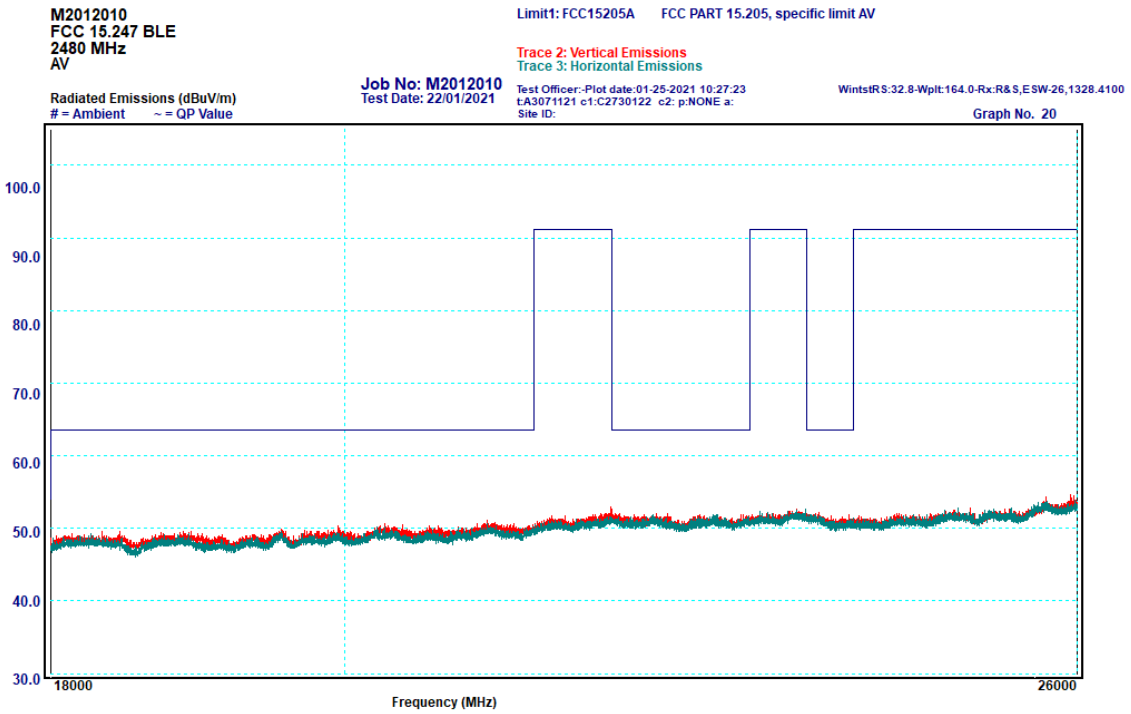


Graph 6-20: Transmitter Spurious Emissions, 18 – 26 GHz, 2442 MHz, Average, 1 Mbps



Graph 6-21: Transmitter Spurious Emissions, 18 – 26 GHz, 2480 MHz, Average, 1 Mbps

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

Band-edge measurements were done using radiated in accordance to ANSI C63.10 clause 11.13.1. All emissions measured near the lower and upper band edge complied with the requirements of §15.247 / §RSS-247. Authorised-band band-edges were measured in the lower end and Restricted-band band-edges were measured in the upper end.

Table 6-10: Band Edge Measurement

Test Mode	Measurement Type	Freq [MHz]	Measurement [dBuV/m]	Limit [dBuV/m]	Result
1 Mbps	Peak	2400	53.32	81.62	Complied
	Peak	2483.5	57.06	74	Complied
	Average	2483.5	46.77	54	Complied
2 Mbps	Peak	2400	69.29	81.62	Complied
	Peak	2483.5	58.70	74	Complied
	Average	2483.5	46.96	54	Complied

Graph 6-22: Lower Band edge (Authorised-band), 2402 MHz, 1 Mbps, Peak

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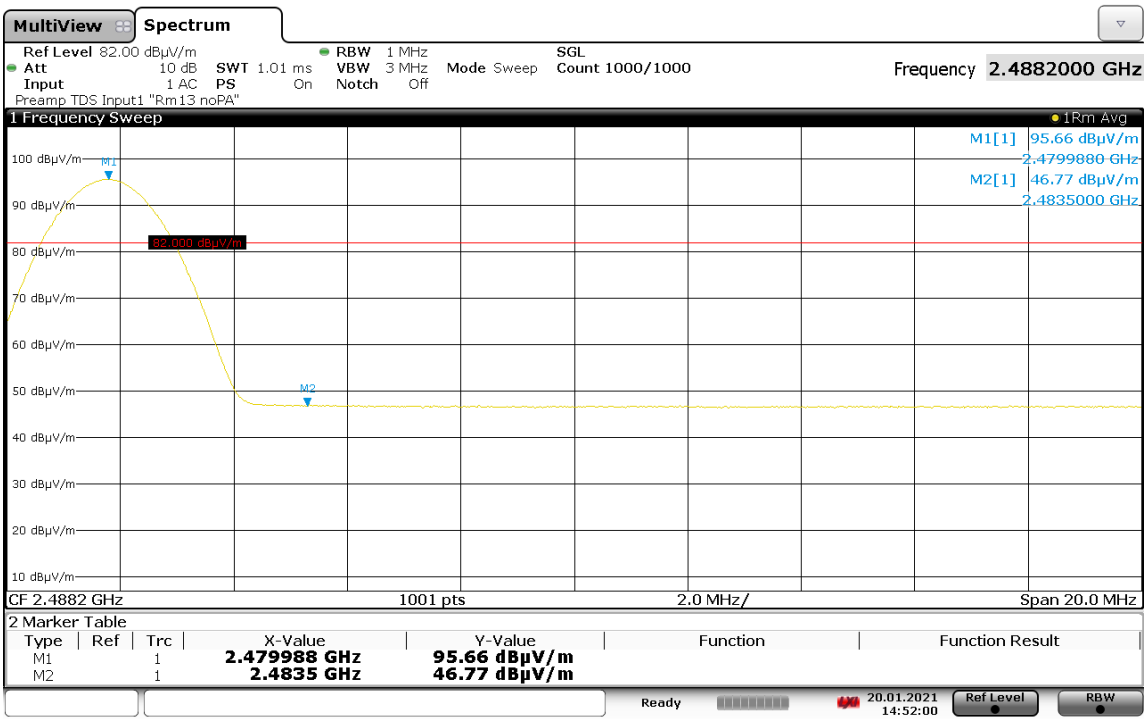
14:50:10 20.01.2021

Graph 6-23: Upper Band edge (Restricted-band), 2480 MHz, 1 Mbps, Peak



14:52:00 20.01.2021

Graph 6-24: Upper Band edge (Restricted-band), 2480 MHz, 1 Mbps, Average

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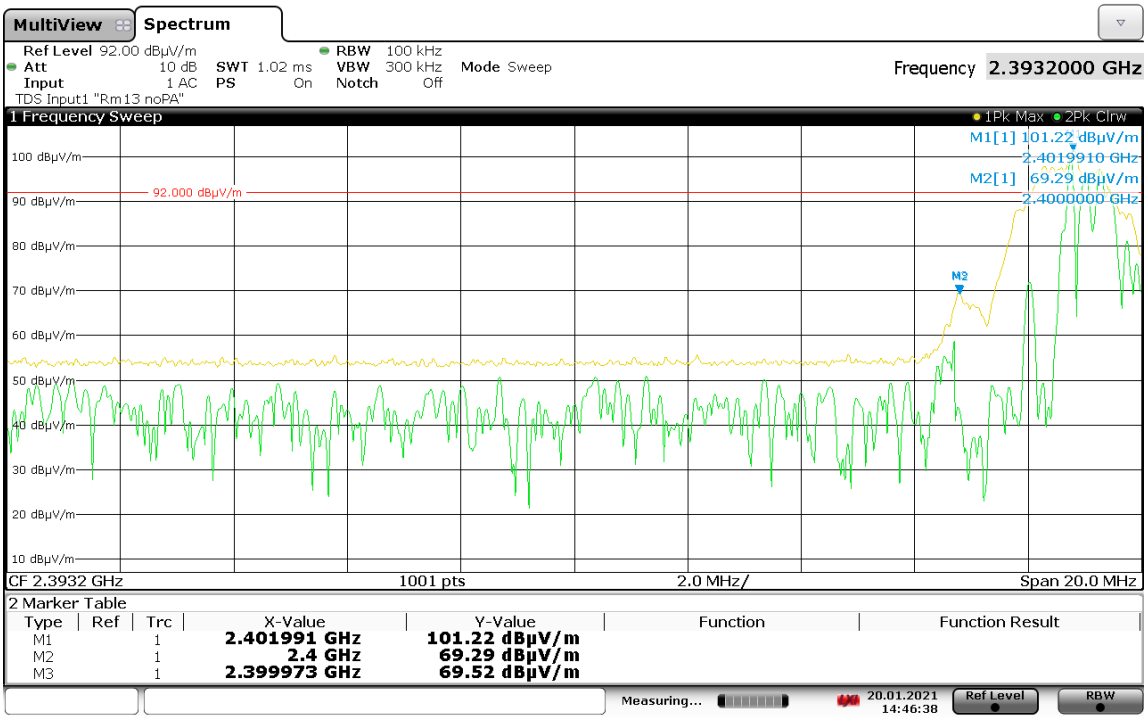
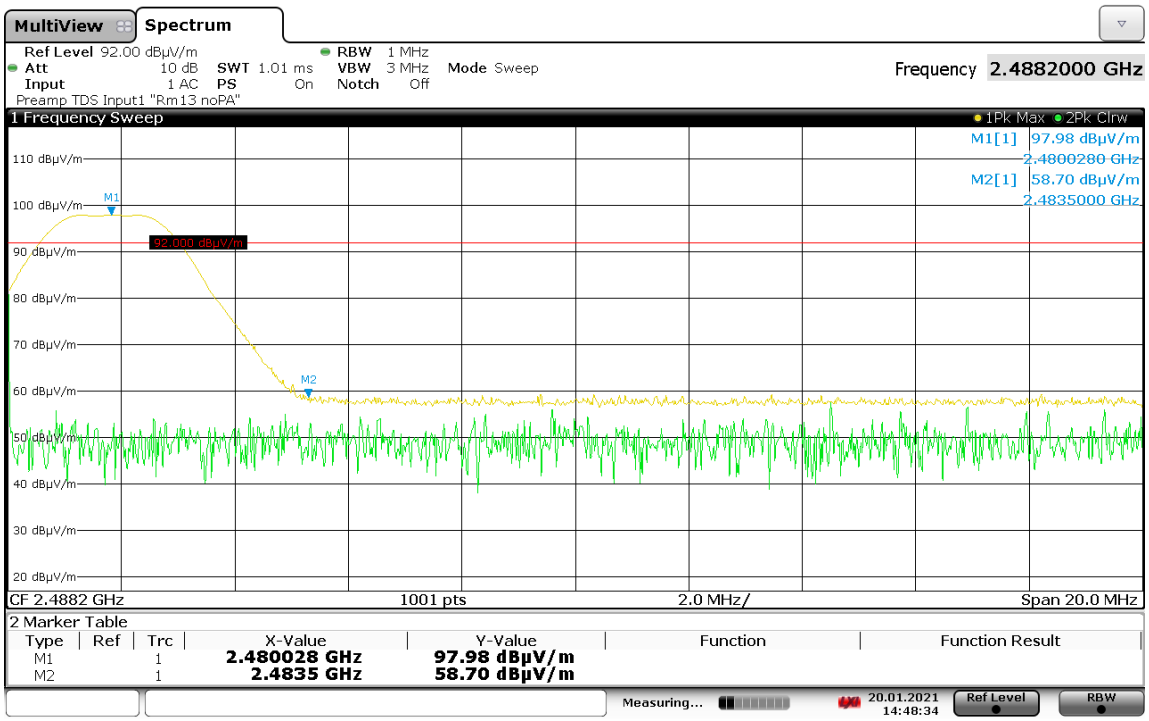


14:46:38 20.01.2021

Graph 6-25: Lower Band edge (Authorised-band), 2402 MHz, 2 Mbps, Peak



14:48:34 20.01.2021

Graph 6-26: Upper Band edge (Restricted-band), 2480 MHz, 2 Mbps, Peak

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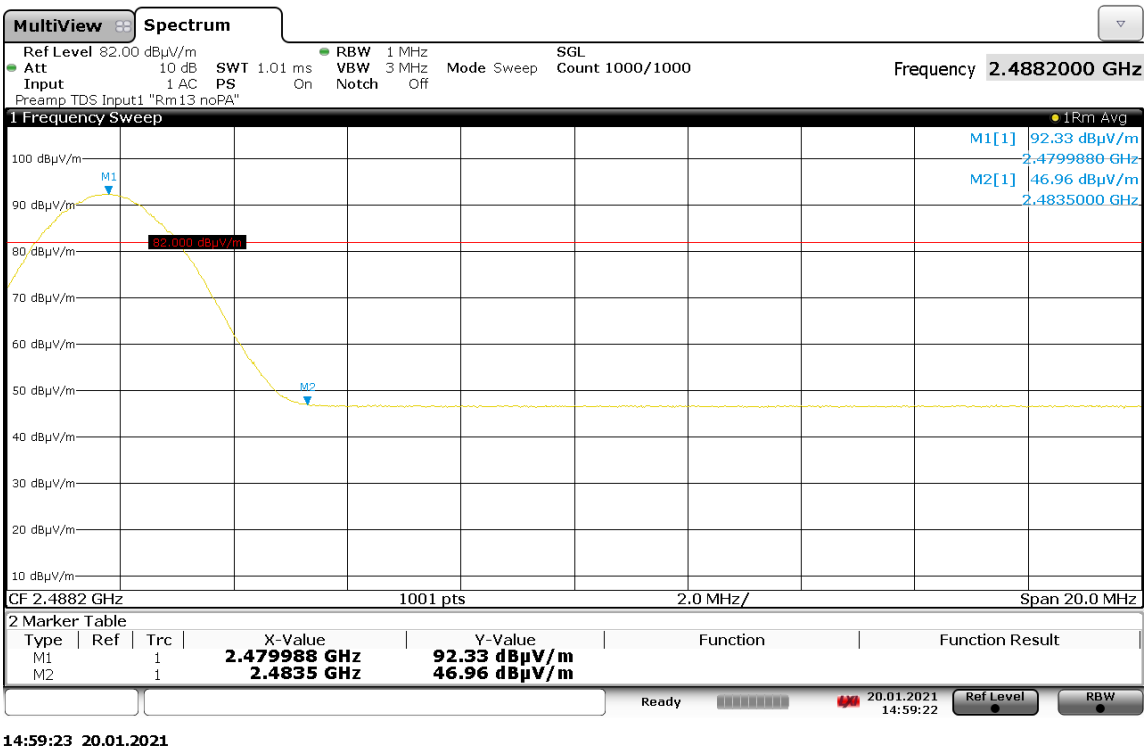

Graph 6-27: Upper Band edge (Restricted-band), 2480 MHz, 2 Mbps, Average

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

6.9.1 Test procedure

The tests were performed in accordance with ANSI C63.10: 2013 Clause 11.10 Maximum power spectral density level in the fundamental emissions.

Power spectral density measurements were made at 3 metres. The measurement resolution bandwidth was 3 kHz. The orientation of the EUT and the measurement antenna height and polarisation that produced the highest EIRP was used.

6.9.2 Limits

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

6.9.3 Results

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

Table 6-11: Power spectral density, EUT y-axis, Horizontal

Test Mode	Freq. [MHz]	E-Field@ 3 m dBuV/m	EIRP (dBm)	Antenna Gain (dBi)	Equivalent Conducted Output PSD (dBm)	Limit (dBm)	Results
1 Mbps	2402	86.58	-8.65	2	-10.65	8	Complied
	2442	84.93	-10.30	2	-12.30	8	Complied
	2480	83.94	-11.29	2	-13.29	8	Complied
2 Mbps	2402	86.42	-8.81	2	-10.81	8	Complied
	2442	84.94	-10.29	2	-12.29	8	Complied
	2480	83.31	-11.92	2	-13.92	8	Complied

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

The EUT complied with the applicable maximum permissible exposure levels. Refer to EMC Technologies report M2012010-5 and M2012010-6.

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

6.11.1Test 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

Table 6-12: Occupied Bandwidth

Test Mode	Freq. [MHz]	99% Bandwidth [MHz]	Low Frequency [MHz]	High Frequency [MHz]	Result
1 Mbps	2402	1.01	2401.48	2402.50	Complied
	2442	1.03	2441.48	2442.51	Complied
	2480	1.05	2479.46	2480.52	Complied
2 Mbps	2402	2.06	2400.97	2403.03	Complied
	2442	2.08	2440.95	2443.04	Complied
	2480	2.25	2478.88	2481.13	Complied

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