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**RADIO TEST REPORT FOR CERTIFICATION
to
FCC Part 15 Subpart C (Section 15.247)**

Test Sample: Back Strain Monitoring Device
Model: V6B4T
FCC ID: PTK-MDMV6B
Tested for: dorsaVi Pty Ltd

Report Number: M160713-1
Issue Date: 2 May 2017

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.



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to
FCC Part 15 Subpart C (Section 15.247)

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RADIO REPORT **FOR CERTIFICATION**

Issued by: EMC Technologies Pty. Ltd.,
176 Harrick Road, Keilor Park, VIC 3042, Australia.
Phone: +61 3 9365 1000, **E-mail:** sales@emctech.com.au, **Web:** www.emctech.com.au
FCC registration number: 90560 and ISED Canada iOATS number: IC 3569B

Test Sample: Back Strain Monitoring Device
Model: V6B4T

Equipment Type: Intentional Radiator (Transceiver)

Manufacturer: dorsaVi Pty Ltd
Address: Level 1, 120 Jolimont Road,
East Melbourne, 3002 Australia
Phone: +614 3434 1008
Contact: Edgar Charry
Email: echarry@dorsavi.com

Test Standards: **CFR FCC Part 15** – Radio Frequency Devices
Subpart C – Intentional Radiators
Section 15.247 – Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

Test Dates: 11th August, 5th and 6th September 2016, 3rd April 2017
Issue Date: 02 May 2017

			
Test Engineers:	Mahan Ghassempouri	James Fitzgerald	Hamse Mohamed

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: Chris Zombolas
Technical Director
EMC Technologies Pty Ltd



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1.0 INTRODUCTION

Radio testing was performed on the V6B4T Back Strain Monitoring device.

Test results and procedures were performed in accordance with the following Federal Communications Commission (FCC) standards/regulations:

47 CFR, Part 15, Subpart C:	Rules for intentional radiators (particularly section 15.247)
Section 15.203:	Antenna requirements
Section 15.205:	Restricted bands of operation
Section 15.207:	Conducted Emission Limits
Section 15.209:	Radiated Emission Limits (General requirements)
Section 15.247:	Operation in the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5850 MHz

The test sample **complied** with the requirements of 47 CFR, Part 15 Subpart C - Section 15.247.

1.1 Test Procedure

Radio measurements were performed in accordance with the procedures of ANSI C63.10: 2013. KDB 558074 v03r05 - Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 was used to demonstrate compliance with FCC part 47CFR15.247. The instrumentation conformed to the requirements of ANSI C63.2: 2009.

1.2 Summary of Results

FCC Part 15 Subpart C	Test Performed	Results
15.203	Antenna requirement	Complied
15.205	Operation in restricted Band	Complied
15.207	Conducted emissions limits	Complied
15.209	Radiated emissions limits	Complied
15.247 (a)(2)	Minimum 6 dB Bandwidth	Complied
15.247 (b)(3)	Peak Output Power	Complied
15.247 (c)	Antenna Gain > 6 dBi	N/A as EUT uses integral antenna with less than 6 dBi gain with no external antenna connector
15.247 (d)	Out of Band Emissions	Complied
15.247 (e)	Peak Power Spectral Density	Complied
15.247 (f)	Hybrid Systems	N/A assessed to digital modulation requirements
15.247 (g)	Hopping channel application	N/A assessed to digital modulation requirements
15.247 (h)	Incorporation of intelligence within FHSS	N/A assessed to digital modulation requirements
15.247 (i)	Radio Frequency Hazard	Complied
2.1049	Occupied Bandwidth	1.045 MHz

N/A: Not Applicable

1.2 Modifications by EMC Technologies

No modifications were required to achieve compliance.



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2.0 GENERAL INFORMATION

(Information supplied by the Client)

2.1 EUT (Transmitter) Details

The RF transmitter was a Bluetooth Low Energy (BLE) device operating in 2.4 GHz band used for sending data from sensor to the paired mobile phone. It used a PCB antenna. A temporary UFL connector was mounted on the device to provide a means for measuring conducted output power. Transmitter specifications are shown in below table.

Test Sample:	Back Strain Monitoring Device
Model Number:	V6B4T
Supply Voltage:	3.3 VDC, Internal battery
Operating Frequency Range:	2400-2483.5 MHz Low: 2402 MHz Middle: 2442 MHz High: 2480 MHz
Nominal Output Power:	-3 dBm
Number of Channels:	40
Maximum Gain of Antenna Assembly:	1 dBi (Taoglas LA02)
Operating Temperature Range:	0 °C to 50 °C
USB Charger Model:	UE10WCP2-050100SPC-M2
Charger Input Voltage:	100-240 V, 50/60 Hz

The EUT was supplied with a test firmware loaded to enable continuous transmission on a single channel.

2.2 EUT (Host) Details

The test sample has two operating modes: normal and test modes. In normal mode, the system advertises, pairs and sends sensor data via Bluetooth to a smartphone, namely an iPhone 5 provided by dorsaVi. In test mode, the system can operate on three specific channels with centre frequencies of 2404, 2446 and 2480 MHz

This medical device comprises of two identical movement sensors (MDMs) which are attached to the skin surface of the body. The sample can be configured to transmit data to the smartphone. The sensor will instantly transmit accelerometer, gyroscope and magnetometer data at 20Hz and these samples are displayed on the screen. This data is used to derive lumbar spine position and is used by health practitioners.

2.4 Test Facility

2.4.1 General

Measurements were performed at EMC Technologies' laboratory in Keilor Park, Victoria Australia. EMC Technologies Pty Ltd is listed by the FCC as a test laboratory able to perform compliance testing for the public. EMC Technologies is listed as an FCC part 47CFR2.948 test lab and may perform the testing required under Parts 15 and 18 – **FCC Registration Number 90560**

EMC Technologies Pty Ltd has also been accredited 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 & 18 of the FCC Commission's rules – **Registration Number 494713 & Designation number AU0001.**

EMC Technologies' indoor open area test site (iOATS) has been accepted by Industry Canada for the performance of radiated measurements in accordance with RSS-Gen Issue 8 - **Industry Canada iOATS number - IC 3569B**



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2.4.2 NATA Accreditation

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), NPL (UK), NIST (USA) and an internal quality system to ISO 9002. NATA has mutual recognition agreements with the National Voluntary Laboratory Accreditation Program (NVLAP) and the American Association for Laboratory Accreditation (A²LA).

EMC Technologies is accredited in Australia by the National Association of Testing Authorities (NATA). All testing in this report has been conducted in accordance with EMC Technologies' scope of NATA accreditation.

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

It also includes a large number of emissions, immunity, SAR, EMR and Safety standards.

2.5 Test Equipment Calibration

Measurement instrumentation and transducers were calibrated in accordance with the applicable standards by an independent NATA registered laboratory such as Agilent Technologies (Australia) Pty Ltd, Rohde and Schwarz, NMI, NPL or NIST. All equipment calibration is traceable to Australia national standards at the National Measurements Institute. The reference antenna calibration was performed by NPL and the working antennas (BiLog and horn) calibrated by EMC Technologies.

Equipment Type	Make/Model/Serial Number	Last Cal. dd/mm/yyyy	Due Date dd/mm/yyyy	Cal. Interval
Chamber	Frankonia SAC-10-2 (R-139)	08/01/2016	08/01/2017	1 Year, *1
EMI Receiver	R&S ESU40 20 Hz – 40 GHz Sn: 100182 (R-037)	18/02/2016	18/02/2017	1 Year, *2
	R&S ESCI 9 kHz – 3 GHz Sn: 100011 (R-028)	25/05/2016	25/05/2017	1 Year, *2
Antennas	EMCO 6502 Active Loop 9 kHz – 30 MHz Sn. 9311-2801 (A-231)	20/07/2015	20/07/2018	3 Year, *2
	SUNOL JB6 Biconilog 30 – 6000 MHz Sn. A012312 (A-363)	26/05/2016	26/05/2018	2 Year, *2
	EMCO 3115 Double Ridge Horn 1 – 18 GHz Sn: 8908-3282 (A-004)	15/07/2016	15/07/2019	3 Year, *1
Cables	Room 12 inbuilt cable Panel 1 to 10 m (C-422)	09/05/2016	09/05/2017	1 Year, *1
	Room 12 inbuilt cable Panel 1 to 3 m (C-421)	09/05/2016	09/05/2017	1 Year, *1
	Room 12 Antenna cable (C-437)	09/05/2016	09/05/2017	1 Year, *1

Note *1. Internal NATA calibration.

Note *2. External NATA / A2LA calibration



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FCC PART 15 Subpart C (Section 15.247)**3.0 ANTENNA REQUIREMENT (§15.203)**

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

EUT used a permanently attached PCB antenna and therefore considered sufficient to comply with the provisions of this section. There was no external antenna connector available to the user.

4.0 CONDUCTED EMISSIONS (§15.207)**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 EMI Receiver was operated under program control using the Max-Hold function and automatic frequency scanning, measurement and data logging techniques. 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.

The various operating modes of the system were investigated. 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.

The voltage levels were automatically measured in software and compared to the test limit. The method of calculation was as follows:

$$V_{EMI} = V_{Rx} + L$$

Where:

V_{EMI}	= The Measured EMI voltage in dBμV to be compared to the limit.
V_{Rx}	= The Voltage in dBμV read directly at the EMI receiver.
L	= The insertion loss in dB of the LISN, cables and transient Limiter.

4.2. Results

The measurement data pertaining to each frequency sub-range were concatenated to form a single graph of (peak) amplitude versus frequency. This was performed for both Active and Neutral lines and the composite graph was subsequently plotted. A list of the highest relevant peaks and the respective Quasi-Peak and Average values were also plotted on the graph.



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Active Line, 0.15 - 30 MHz

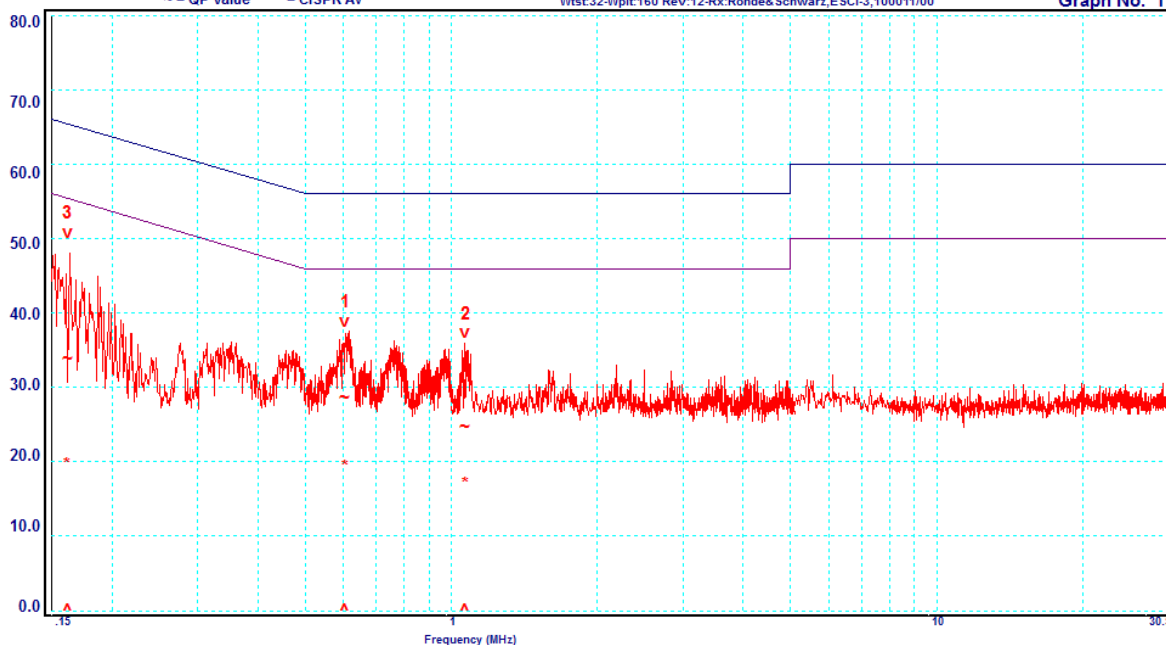
dorsaVi Ltd
Conducted emissions
Active line

Limit1: FCC_BQPN FCC PART 15 CLASS B CONDUCTED QP LIMITS (2002)
Limit2: FCC_BAVN FCC PART 15 CLASS B CONDUCTED AVERAGE LIMIT (2002)

Conducted Emissions (dBuV) Job No: M160113
~ = QP Value * = CISPR Av Test Date: 06/09/2016

r:\fmelb\2016\Ju\160713 dorsaVi\Conducted Files\160713C\gaaa.txt
t:L0191016 c1:NONE c2:C2840117 p:NONE a:NONE
Site ID: Test Officer:-Plot date:09-12-2016 09:50:49
Wtst:32-Wplt:160 Rev:12-Rx:Rohde&Schwarz,ESCI-3,100011/00

Graph No. 1



Peak	Frequency [MHz]	Line	Quasi-Peak			Average		
			Level [dBμV]	Limit [dBμV]	Margin [±dB]	Level [dBμV]	Limit [dBμV]	Margin [±dB]
1	0.606	Active	28.6	56.0	-27.4	19.2	46.0	-26.8
2	1.072	Active	24.7	56.0	-31.3	16.9	46.0	-29.1
3	0.162	Active	33.8	65.3	-31.5	19.6	55.3	-35.7

Graph 1: 0.15 – 30 MHz, active line, conducted emissions

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Neutral Line, 0.15 - 30 MHz

dorsaVi Ltd
Conducted emissions
Neutral line

Limit1: FCC_BQPN
Limit2: FCC_BAVN

FCC PART 15 CLASS B CONDUCTED QP LIMITS (2002)
FCC PART 15 CLASS B CONDUCTED AVERAGE LIMIT (2002)

Conducted Emissions (dBuV)
~ = QP Value * = CISPR Av

Job No: M160113
Test Date: 06/09/2016

r:\melb\2016\Ju\160713 dorsaVi\Conducted Files\160713C\gaaa.txt

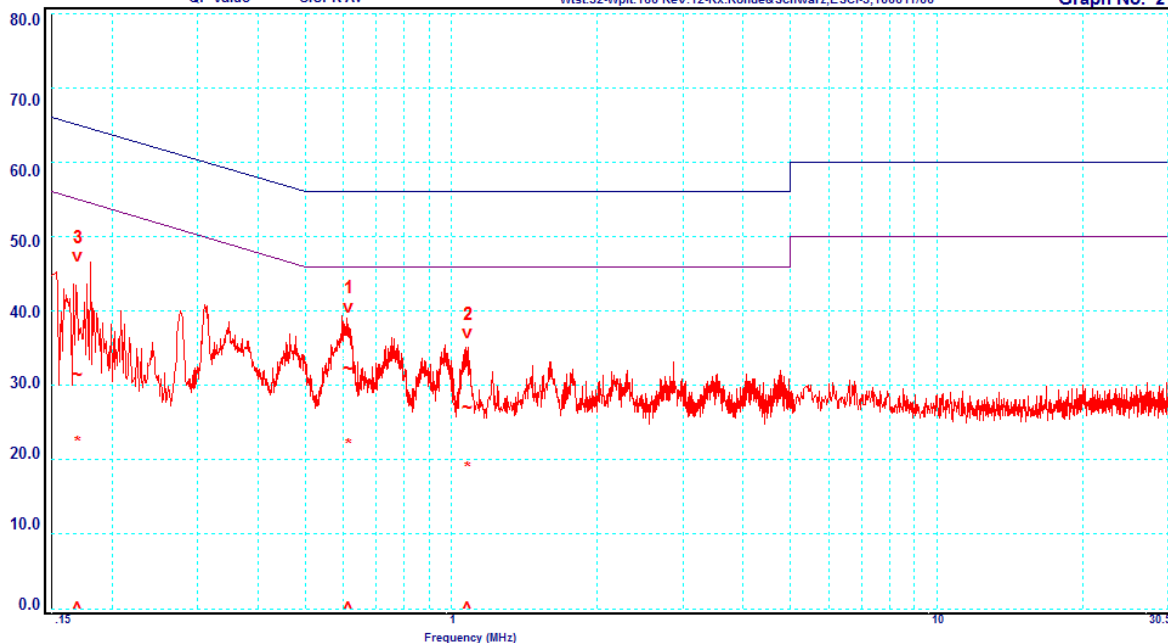
t:L0191016 c1:NONE c2:C2840117 p:NONE a:NONE

Site ID:

Test Officer: Plot date: 09-12-2016 09:54:38

Wtst:32-Wplt:160 Rev:12-Rx:Rohde&Schwarz,ESCI-3,100011/00

Graph No. 2



Peak	Frequency [MHz]	Line	Quasi-Peak			Average		
			Level [dBμV]	Limit [dBμV]	Margin [±dB]	Level [dBμV]	Limit [dBμV]	Margin [±dB]
1	0.615	Active	32.2	56.0	-23.8	21.8	46.0	-24.2
2	1.082	Active	27.0	56.0	-29.0	18.7	46.0	-27.3
3	0.171	Active	31.4	64.9	-33.5	22.2	54.9	-32.7

Graph 2: 0.15 – 30 MHz, neutral line conducted emissions



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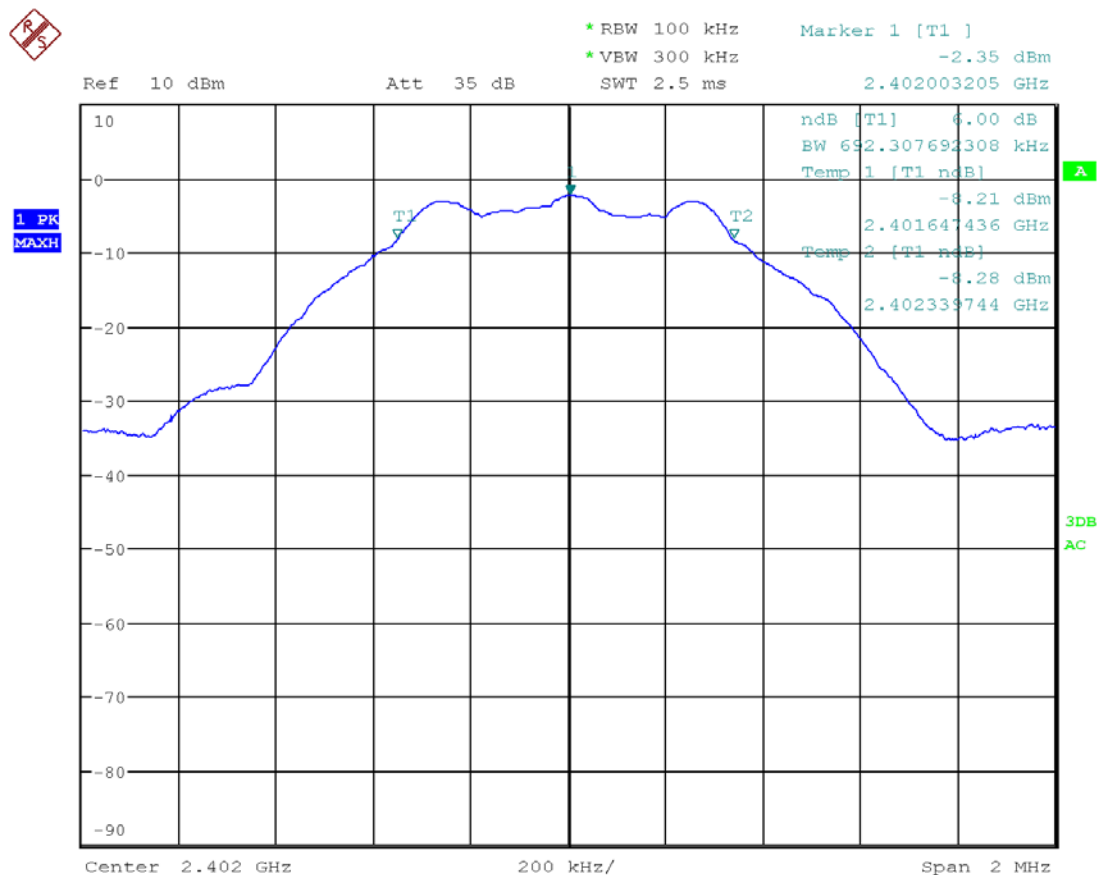
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5.0 DTS 6 dB BANDWIDTH (§15.247 (a)(2))

Minimum 6 dB bandwidth shall be at least 500 kHz. Care was taken so that the bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.

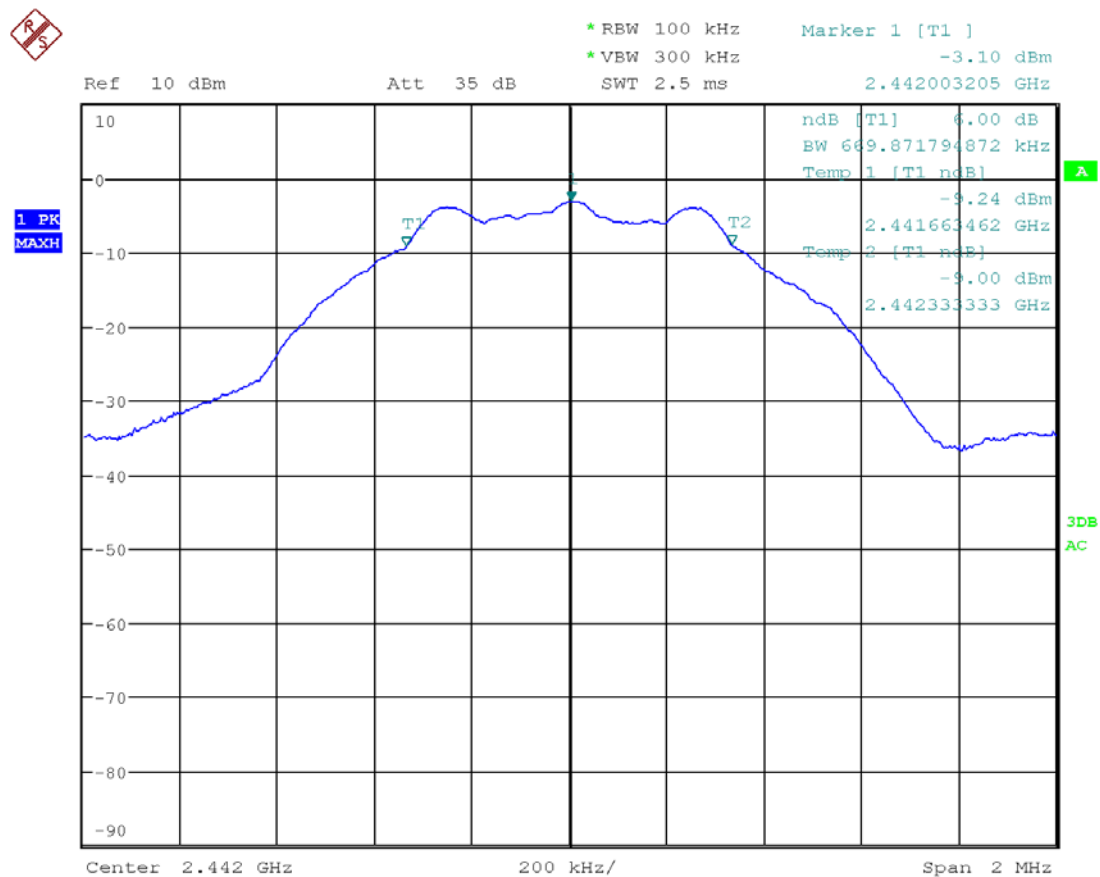
5.1. Results

Measurement results are shown in the following graphs.



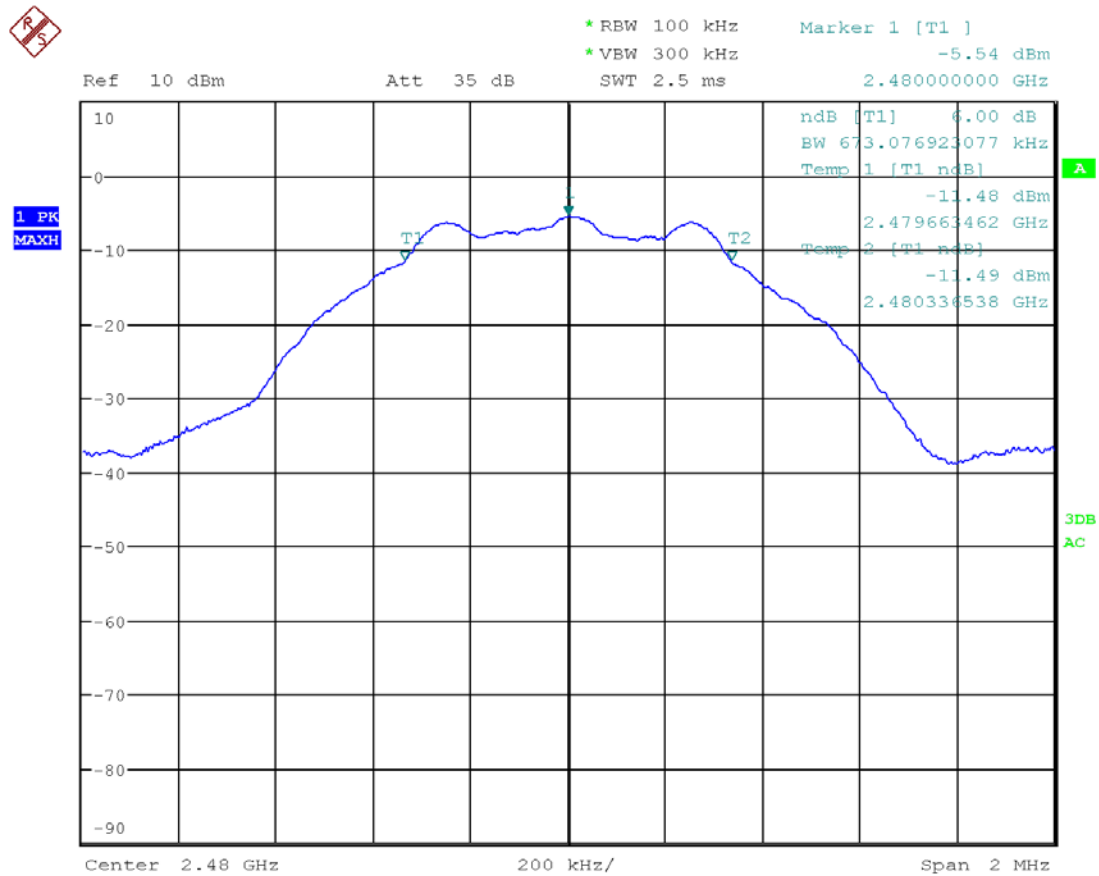
Centre Frequency [MHz]	Measured 6 dB Bandwidth [kHz]	Limit [kHz]	Result
2402	692	> 500	Pass

Graph 3: 6 dB bandwidth, low channel



Centre Frequency [MHz]	Measured 6 dB Bandwidth [kHz]	Limit [kHz]	Result
2442	670	> 500	Pass

Graph 4: 6 dB bandwidth, middle channel



Centre Frequency [MHz]	Measured 6 dB Bandwidth [kHz]	Limit [kHz]	Result
2480	673	> 500	Pass

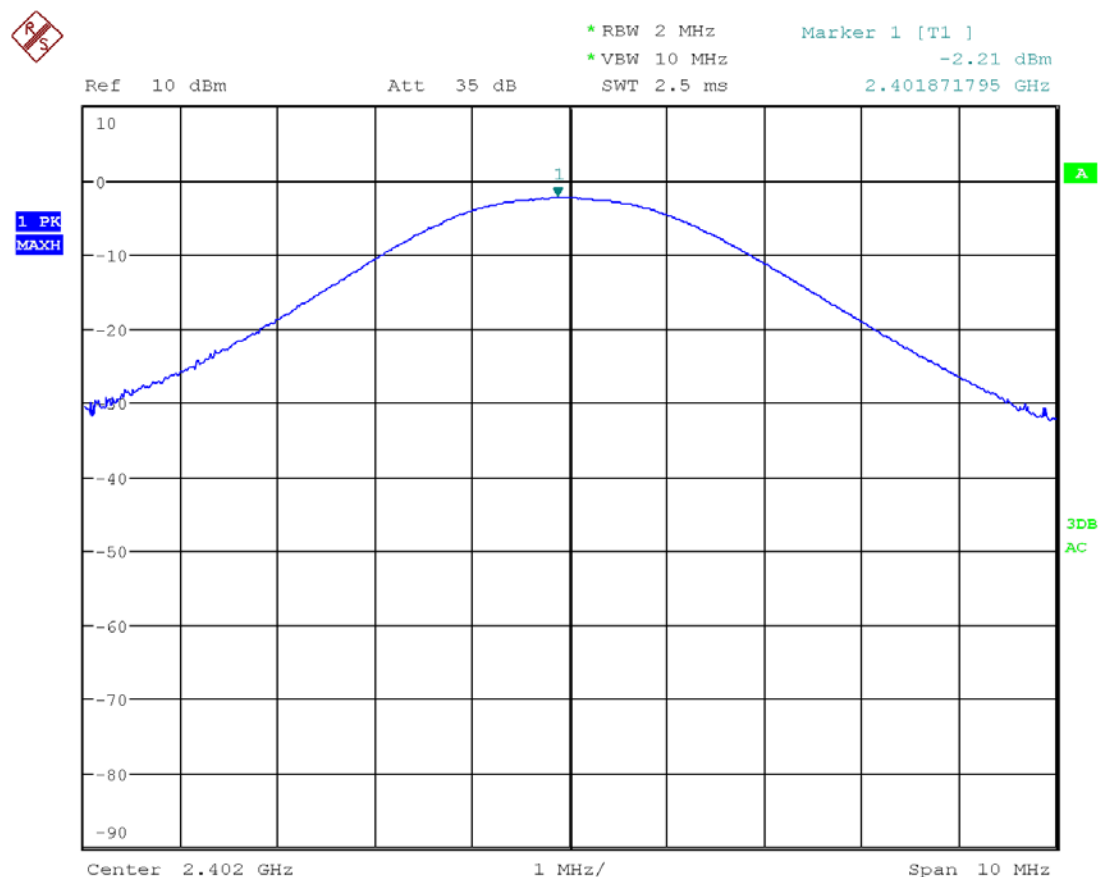
Graph 5: 6 dB bandwidth, high channel

6.0 PEAK OUTPUT POWER (§15.247 (b)(3))

As there was a temporary antenna connector available the test was performed using conducted measurement. Maximum peak conducted power method (clause 9.1.1 of KDB 558074 v03r04) was used for measurement.

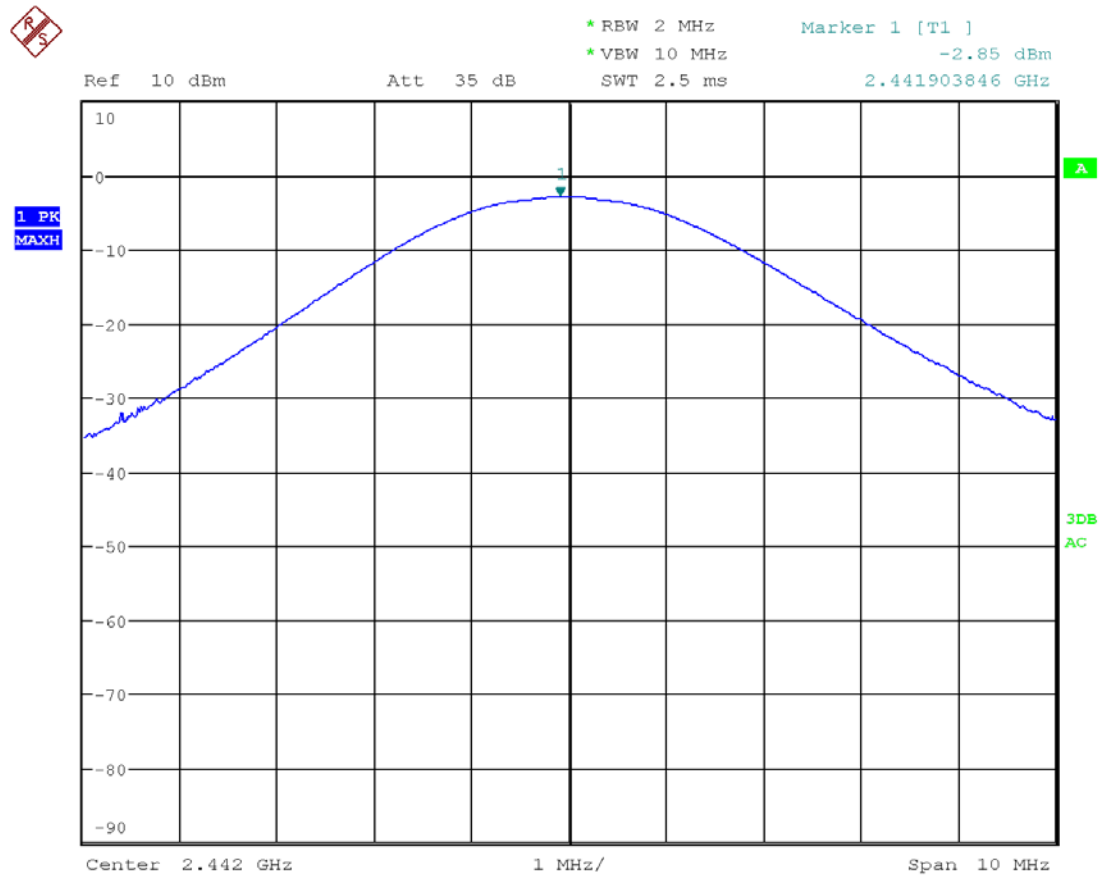
6.1. Results

Measurement results are shown in the following graphs.



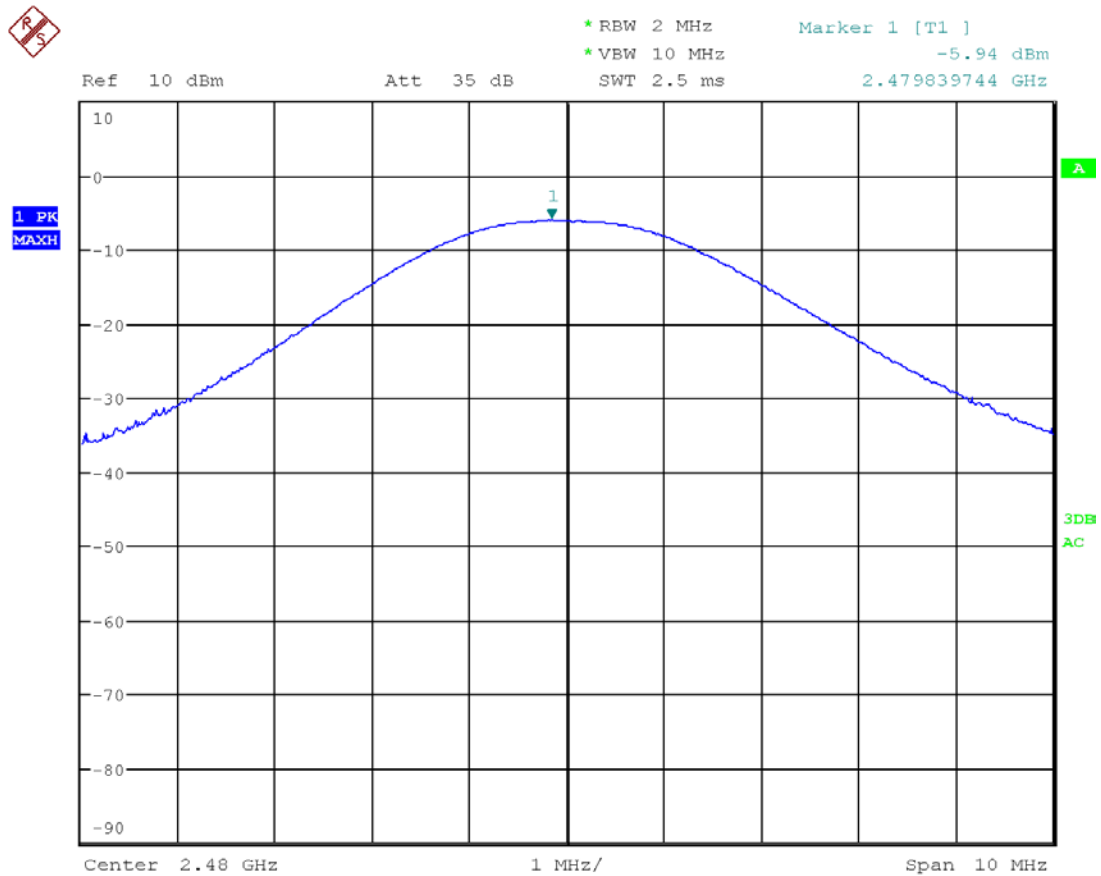
Conducted Power (dBm)	Conducted Power (W)	Limit (W)	Result
-2.2	603×10^{-6}	1	Pass

Graph 6: Conducted power, low channel



Conducted Power (dBm)	Conducted Power (W)	Limit (W)	Result
-2.9	513×10^{-6}	1	Pass

Graph 7: Conducted power, middle channel



Conducted Power (dBm)	Conducted Power (W)	Limit (W)	Result
-5.9	257×10^{-6}	1	Pass

Graph 8: Conducted power, high channel

Calculated E.I.R.P.:

Channel	Conducted Power (dBm)	Antenna Gain (dBi)	E.I.R.P. (dBm)
Low	-2.2	+1.0	-1.2
Middle	-2.9	+1.0	-1.9
High	-5.9	+1.0	-4.9

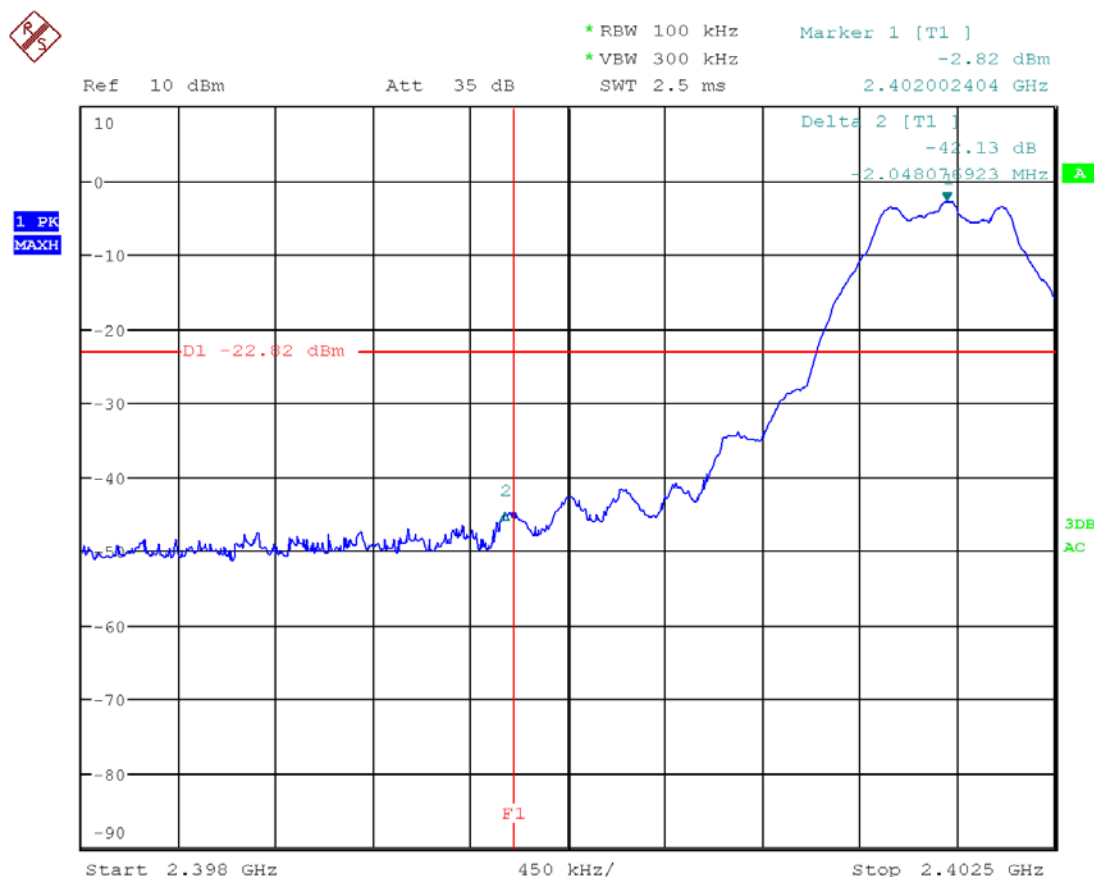
7.0 BAND-EDGE EMISSION MEASUREMENTS (§15.247 (d))

Emissions within 2 MHz of an authorized band edge were measured using the marker-delta method. The in-band emission of section 6.0 was used while applying marker-delta method. Emissions were measured using conducted method.

7.1. Results

All emissions above and below the edge of the authorised band were more than 20 dB below the in band intentional emission.

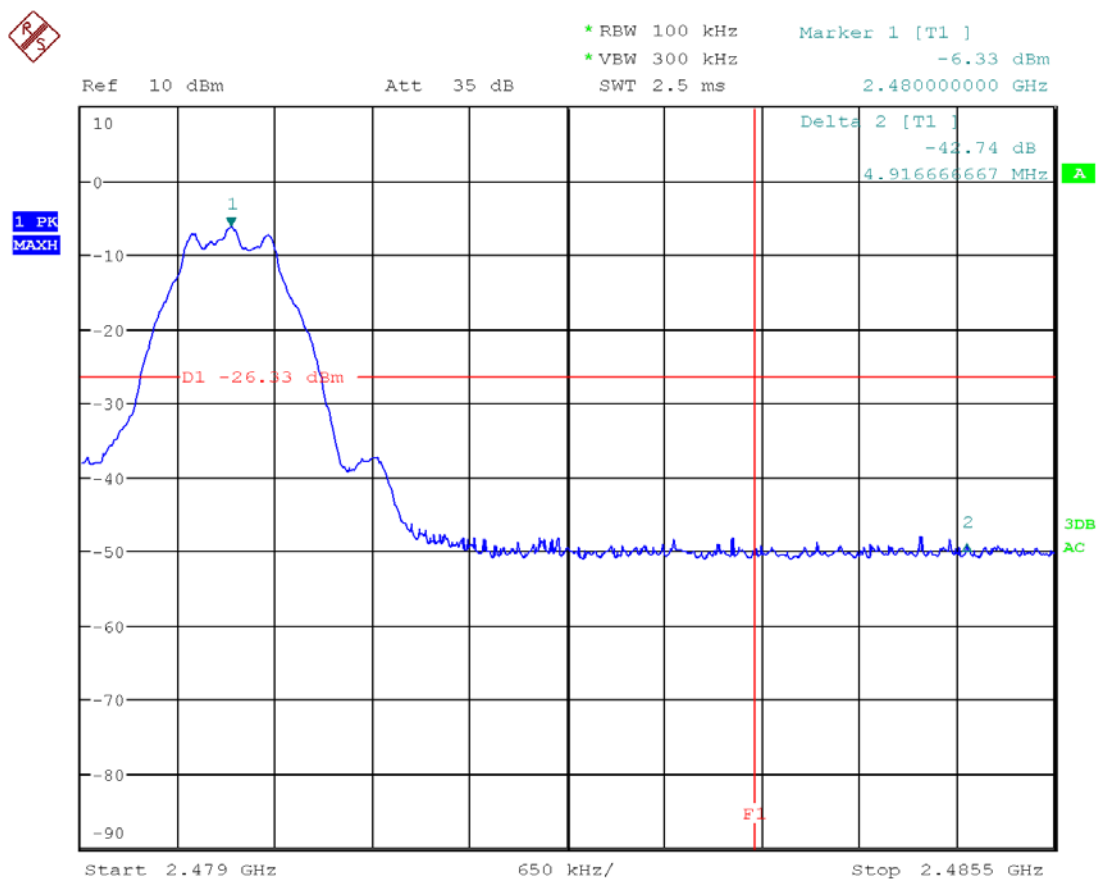
Measurement results are shown in the following graphs.



Vertical line F1 was set at 2400 MHz. Marker 1 shows the peak in band emission and marker 2 shows the peak band edge emission.

In Band Emission (dBm)	Delta (dB)	Band Edge Emission (dBm)	Limit (dBm)	Margin (dB)	Result
-2.2	-42.1	-44.3	-22.2	-22.1	Pass

Graph 9: Lower band-edge emissions



Vertical line F1 was set at 2483.5 MHz. Marker 1 shows the peak in band emission and marker 2 shows the peak band edge emission.

In Band Emission (dBm)	Delta (dB)	Band Edge Emission (dBm)	Limit (dBm)	Margin (dB)	Result
-5.9	-42.7	-48.6	-25.9	-22.7	Pass

Graph 10: Upper band-edge emissions

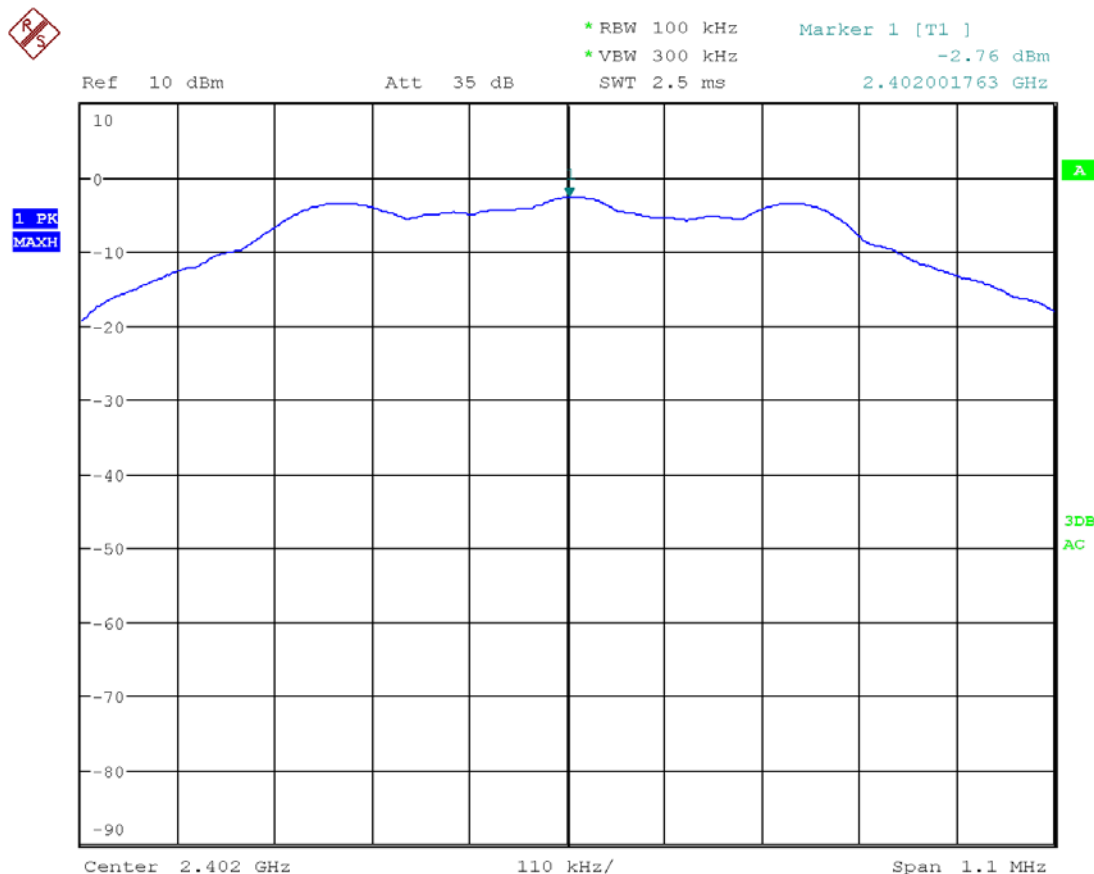
All emissions were more than 20 dB below the maximum in-band emission.

8.0 SPURIOUS EMISSION MEASUREMENTS (§15.247 (d))

8.1. Conducted Spurious Emissions

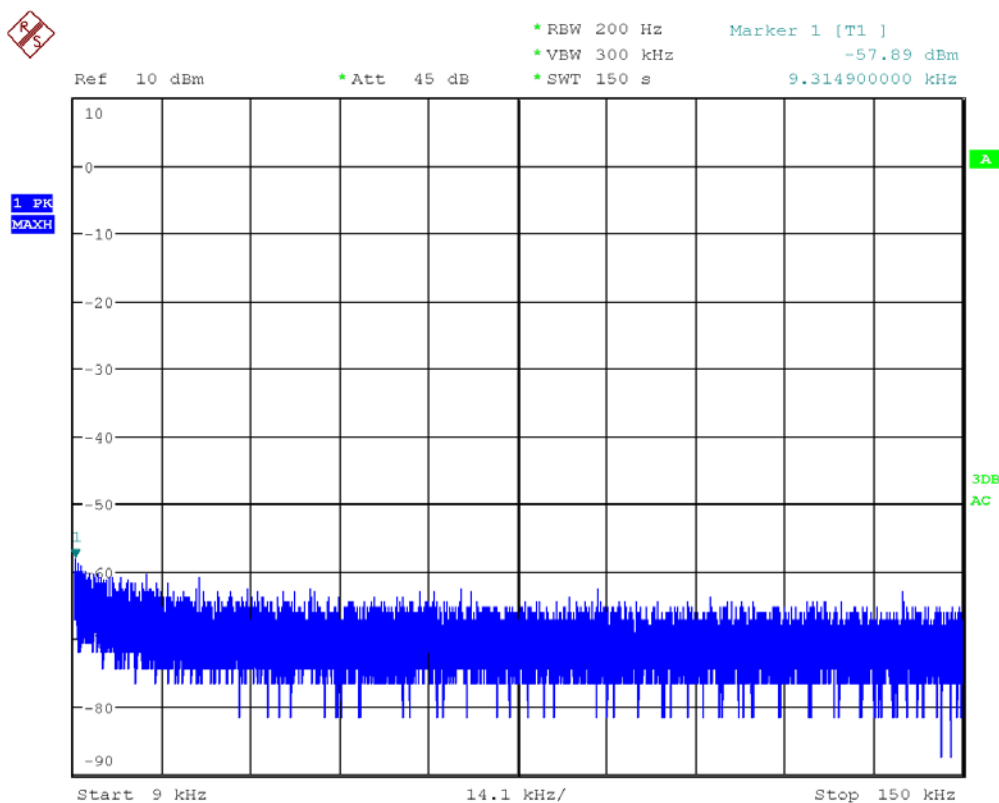
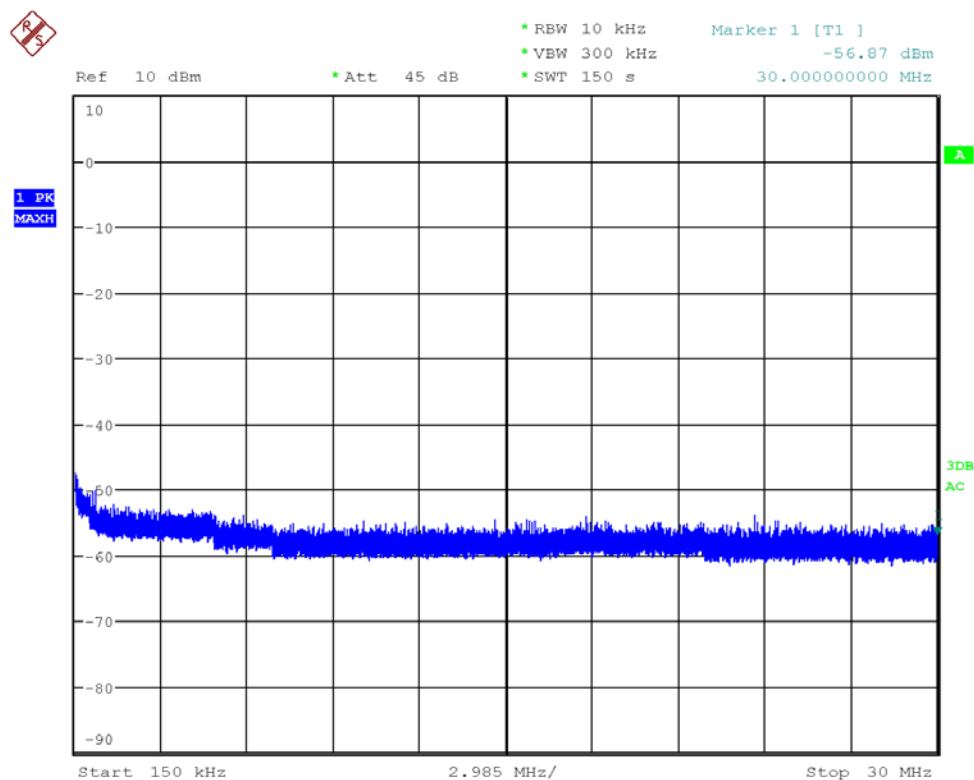
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. Conducted method was used according to clause 11 of KDB 558074 D01.

8.1.1. Results



Peak	Frequency (MHz)	Measured (dBm)	Limit (dBm)
1	2402.00	-2.8	-22.8

Graph 11: Reference level measurement (in band emission)

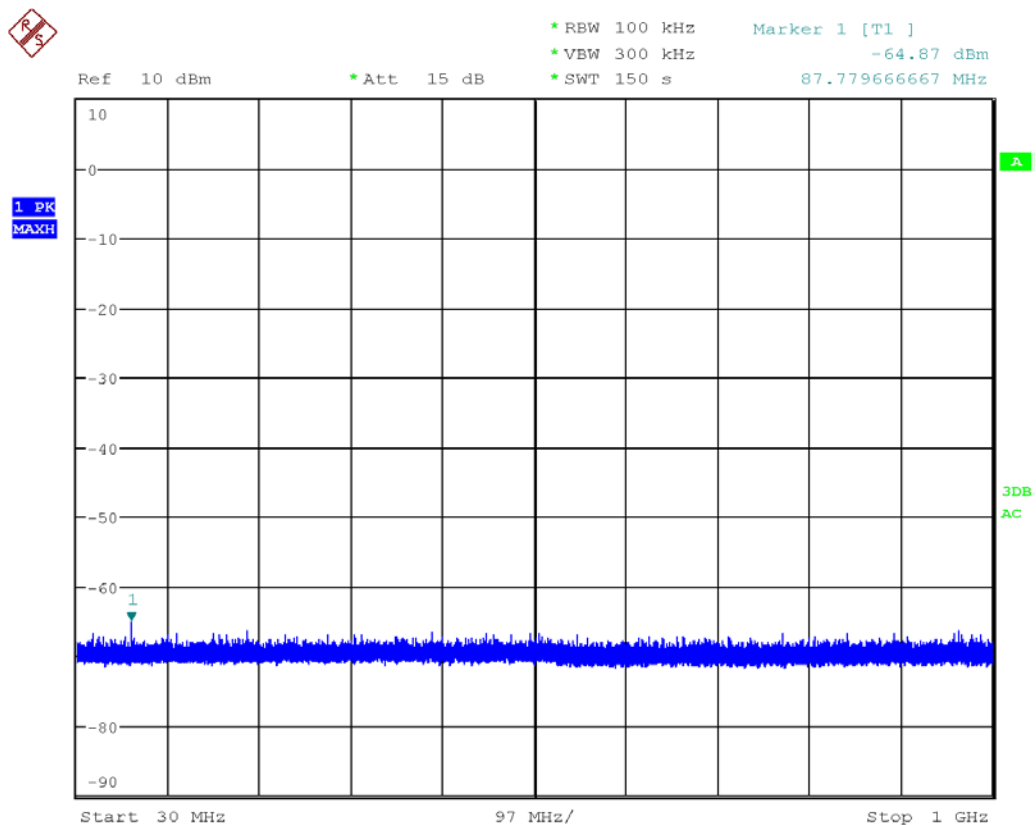
**Graph 12: Conducted spurious emissions, 9 kHz-150 kHz****Graph 13: Conducted spurious emissions, 150 kHz-30 MHz**

All emissions were more than 20 dB below the maximum in-band emission.

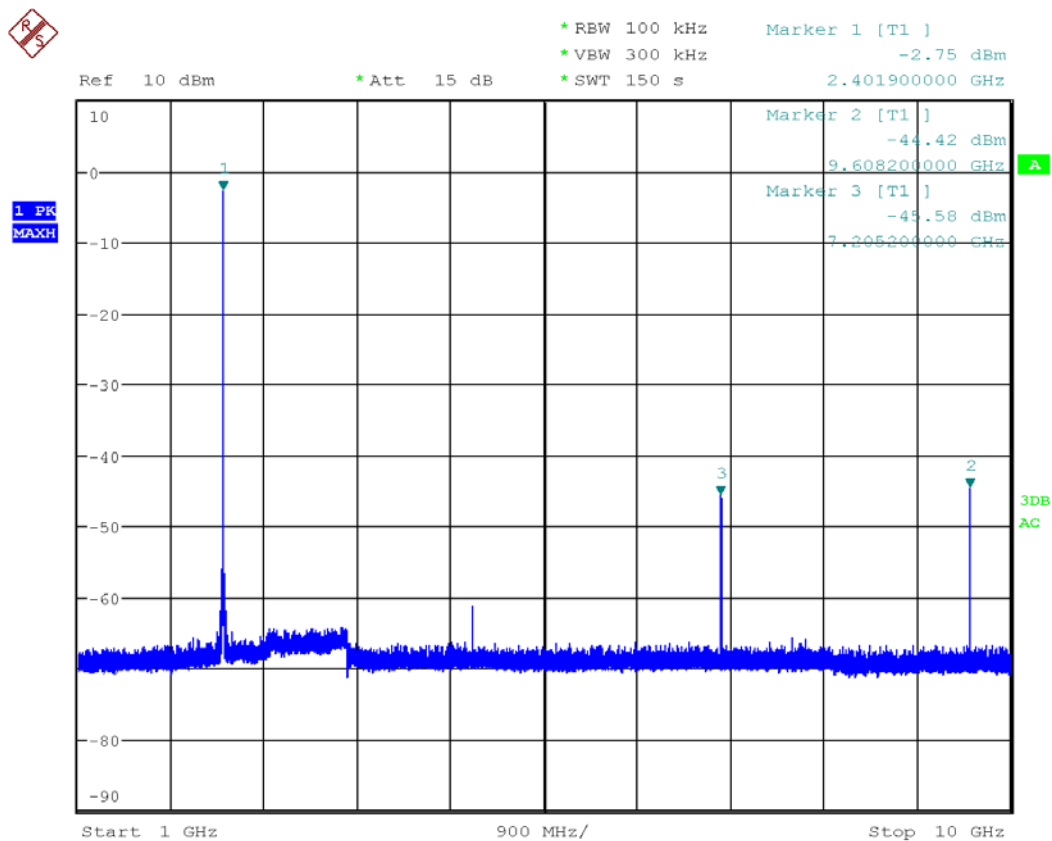


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Graph 14: Conducted spurious emissions, 30 MHz-1 GHz



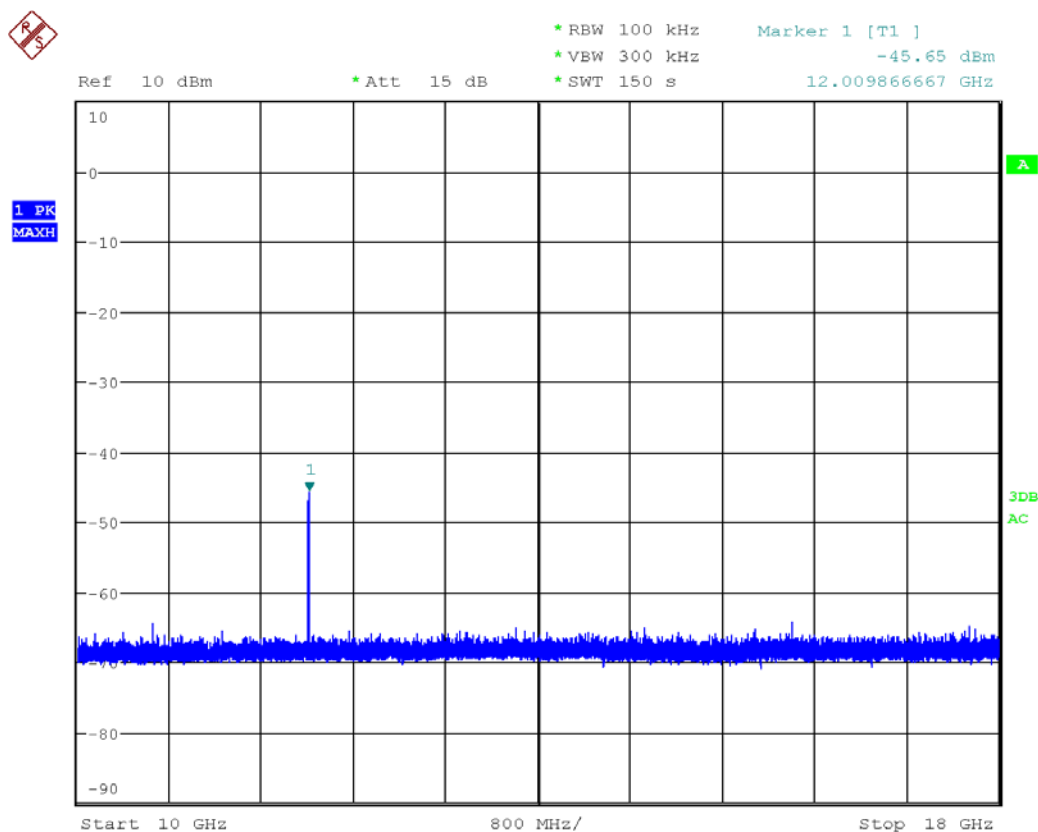
Graph 15: Conducted spurious emissions, 1 GHz-10 GHz

All emissions were more than 20 dB below the maximum in-band emission.

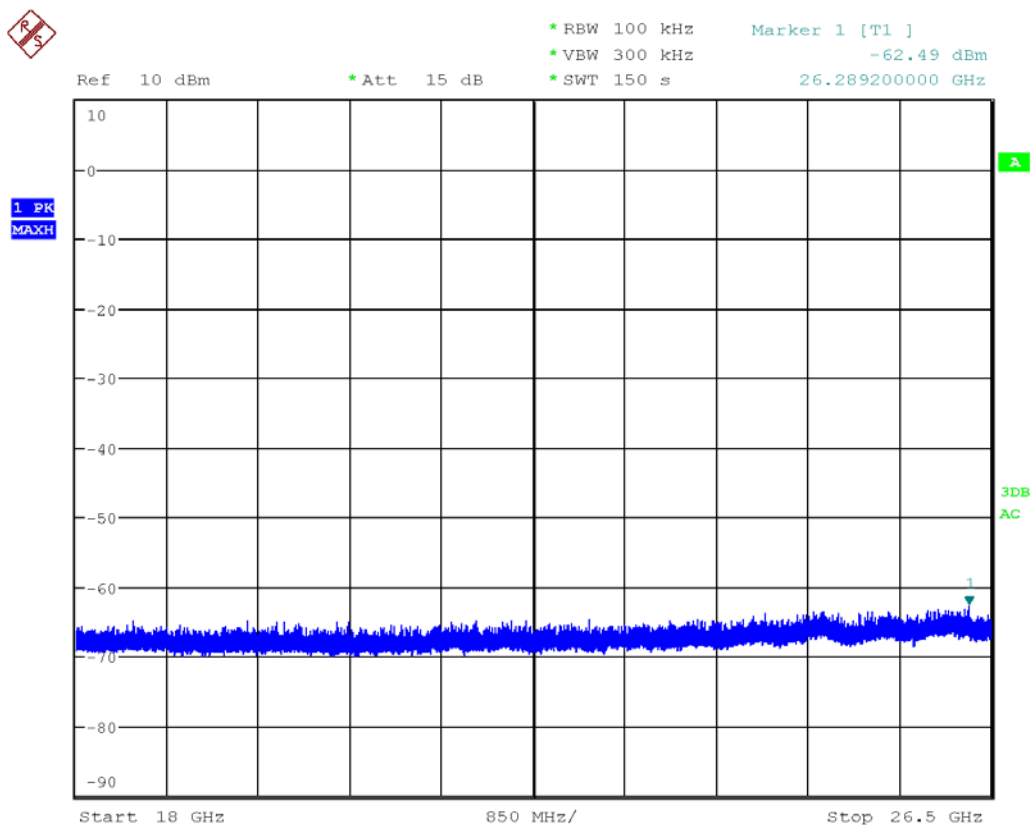


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Graph 16: Conducted spurious emissions, 10 GHz-18 GHz



Graph 17: Conducted spurious emissions, 18 GHz-26.5 GHz

All emissions were more than 20 dB below the maximum in-band emission.



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8.2. Radiated Emissions

In order to ensure the compliance to the requirements of emission in restricted bands, radiated measurements were performed. Frequency range of 9 kHz to 26.5 GHz was investigated for any emissions falling in restricted frequency bands. Provisions of FCC 15.35 were observed selecting the detector and bandwidth. Limits of FCC 15.209 were applied.

The EUT was placed 0.8 m and 1.5 m above the floor during the test for frequency range of below 1 GHz and above 1 GHz respectively. The EUT was checked in three orthogonal planes to determine maximum emission, only the worst case is reproduced for the report.

Radiated EMI tests were performed inside a compliant CISPR16-1-4 semi-anechoic chamber for a 2m x 2m x 2m test volume up to 18 GHz, at a test distance of 10, 3 and 1 metres. The EUT was set up on the table top (placed on turntable). The test frequency range was subdivided into smaller bands with sufficient frequency resolution to permit reliable display and identification of possible EMI peaks while also permitting fast frequency scan times. A calibrated loop antenna was used for measurements between 9 kHz and 30 MHz. A calibrated Biconilog antenna was used for measurements between 30 MHz and 1000 MHz. Calibrated horn antenna were used for measurements between 1 to 26.5 GHz.

The measurement of emissions between 30 - 1000 MHz was measured with the resolution bandwidth of 120 kHz and the video bandwidth of 300 kHz.

The measurement of emissions above 1000 MHz was measured using a following setting:
Peak measurements setting: RBW = VBW = 1 MHz
Average measurements setting: RBW = 1 MHz and VBW = 10 Hz

The receiver bandwidth was set to 6 dB.

The EUT was slowly rotated with the Peak Detector set to Max-Hold. This was performed for 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. The procedure was repeated with the device orientated in three orthogonal axis to further maximise the emission.

Each significant peak was investigated with the Quasi-peak, Peak or Average Detectors as appropriate. 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 antenna polarisations.

The field strength was calculated automatically by the software using all the 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. (measured value)
- AF** = Antenna Factor in dB. (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)

• Example Field Strength Calculation

Assuming a receiver reading of 34.0 dB μ V is obtained at 90 MHz, the Antenna Factor at that frequency is 9.2 dB (1/m). The cable loss is 1.9 dB while the preamplifier gain is 20 dB. The resulting Field Strength is therefore as follows:

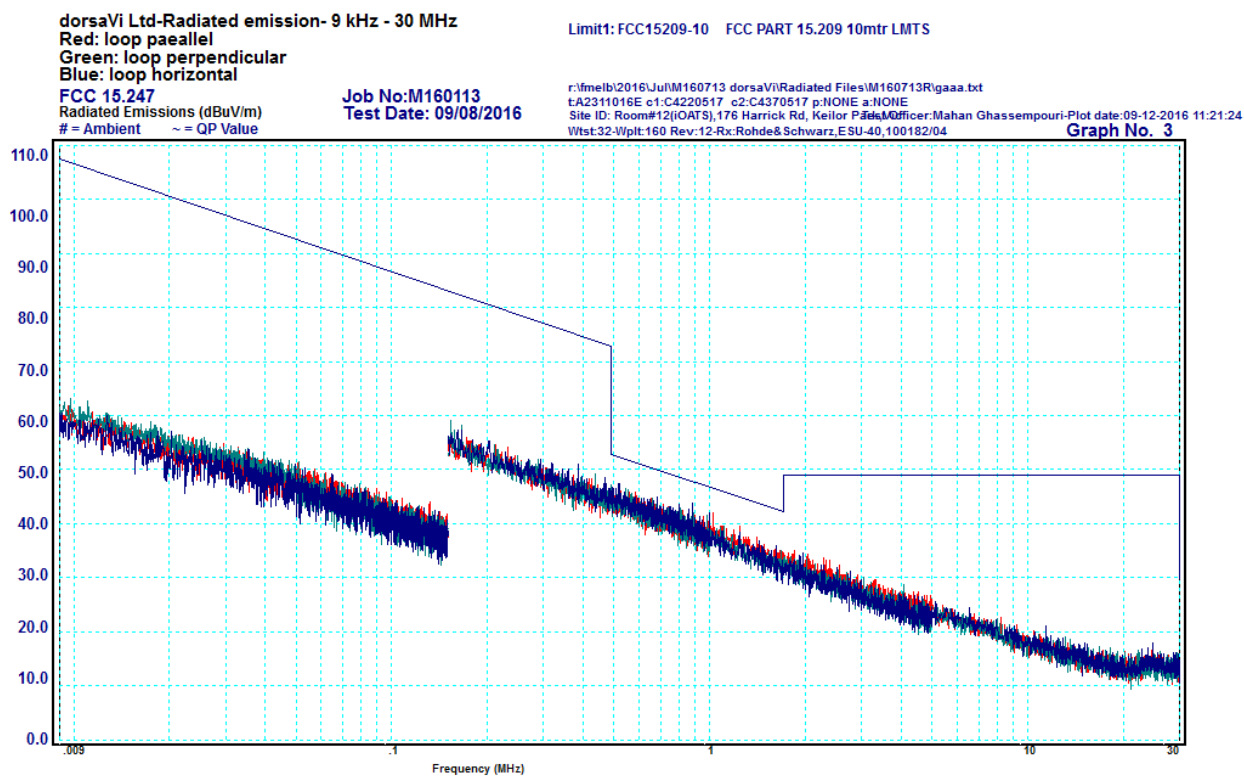
$$34.0 + 9.2 + 1.9 - 20 = 25.1 \text{ dB}\mu\text{V/m}$$



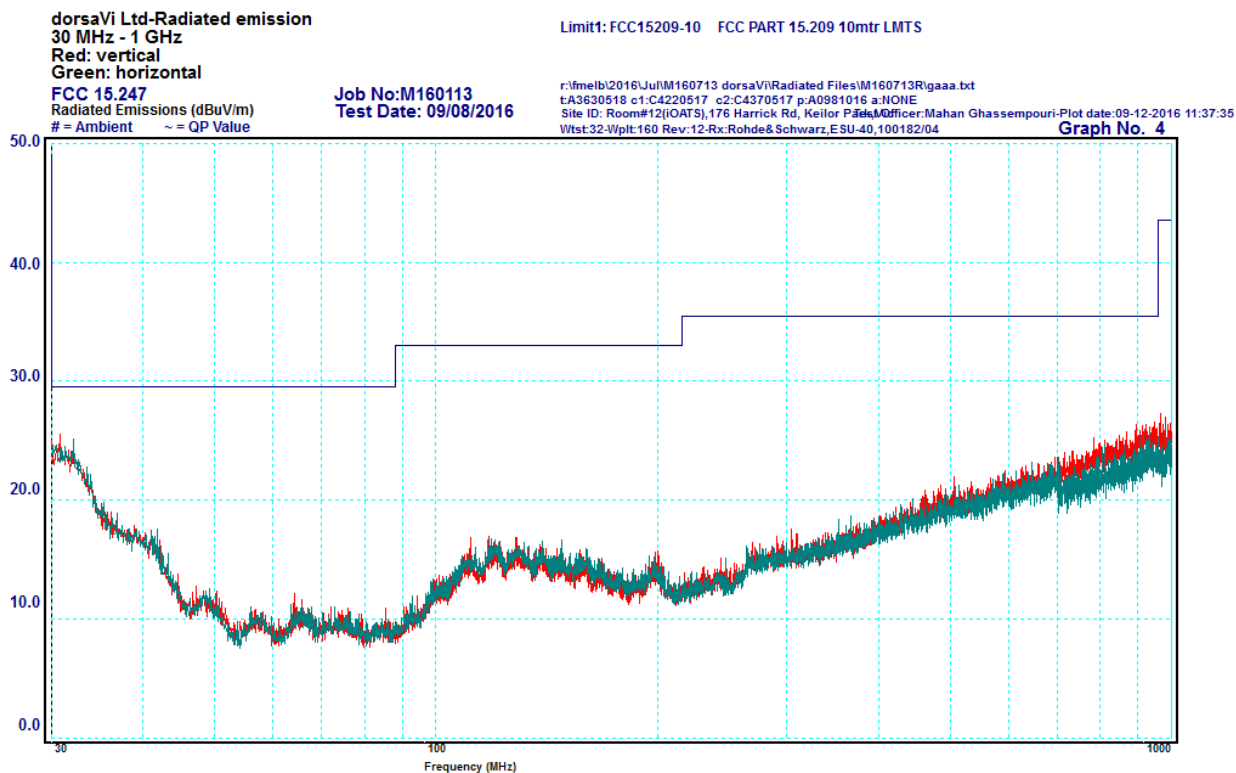
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8.2.1 Results



Graph 18: 9 kHz-150 kHz, radiated emissions

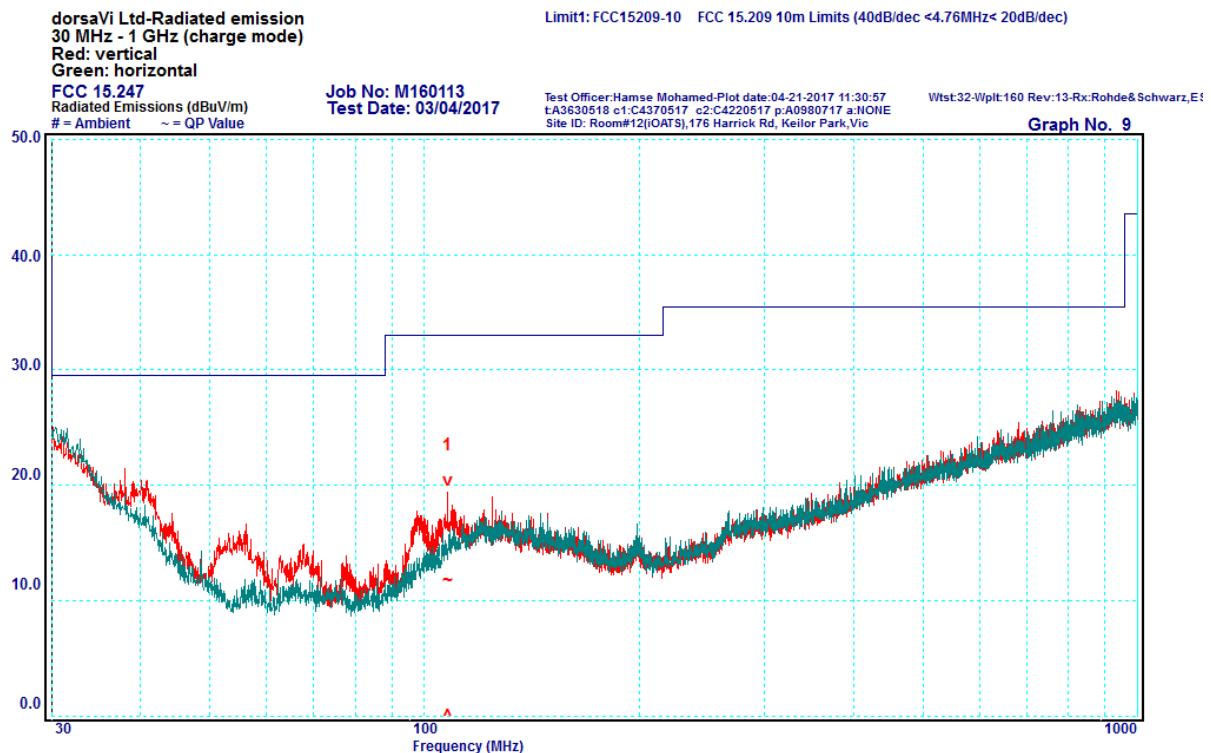


Graph 19: 30 MHz – 1 GHz, radiated emissions



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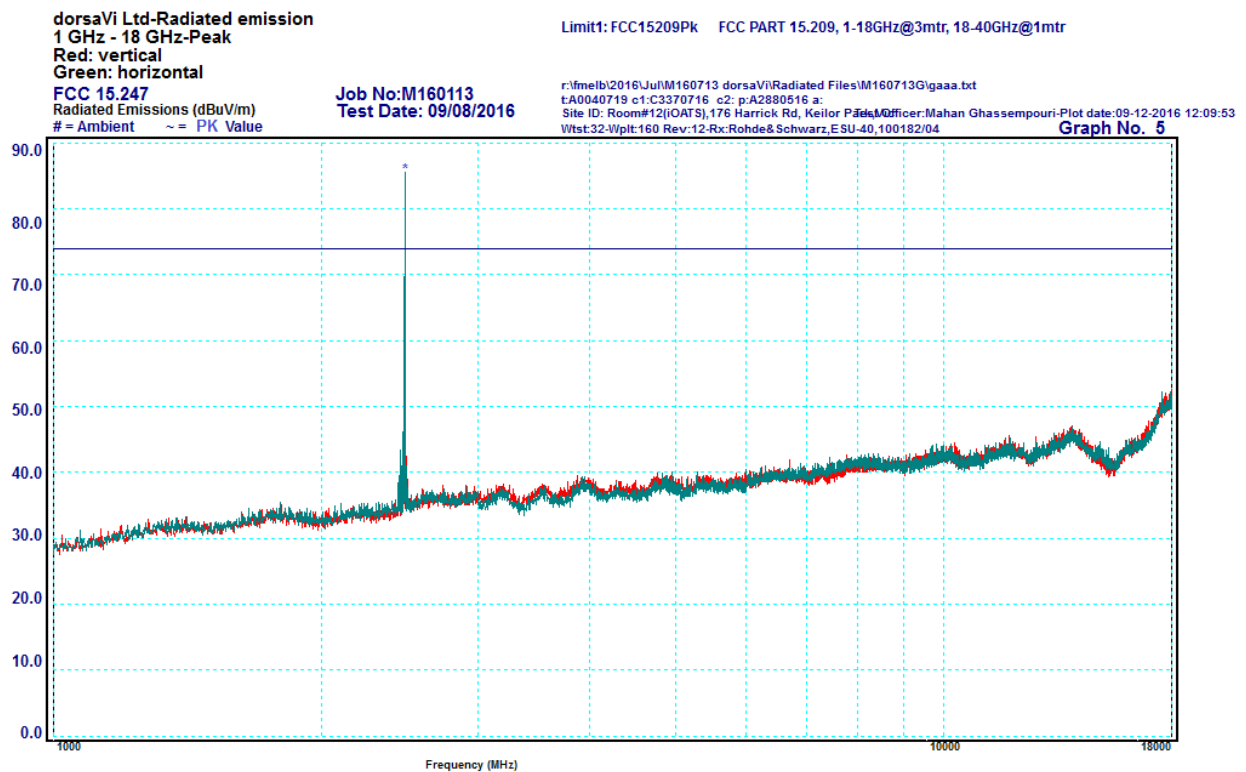
Peak	Frequency (MHz)	Polarisation	Measured Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Δ Average $\pm$ dB
1	107.89	Vertical	11.8	33.0	-21.2

Graph 20: 30 MHz – 1 GHz, radiated emissions (charge mode)



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* Intentional transmitter was not subjected to spurious emission limit.

Graph 20: 1 GHz – 18 GHz, radiated emissions, peak detector



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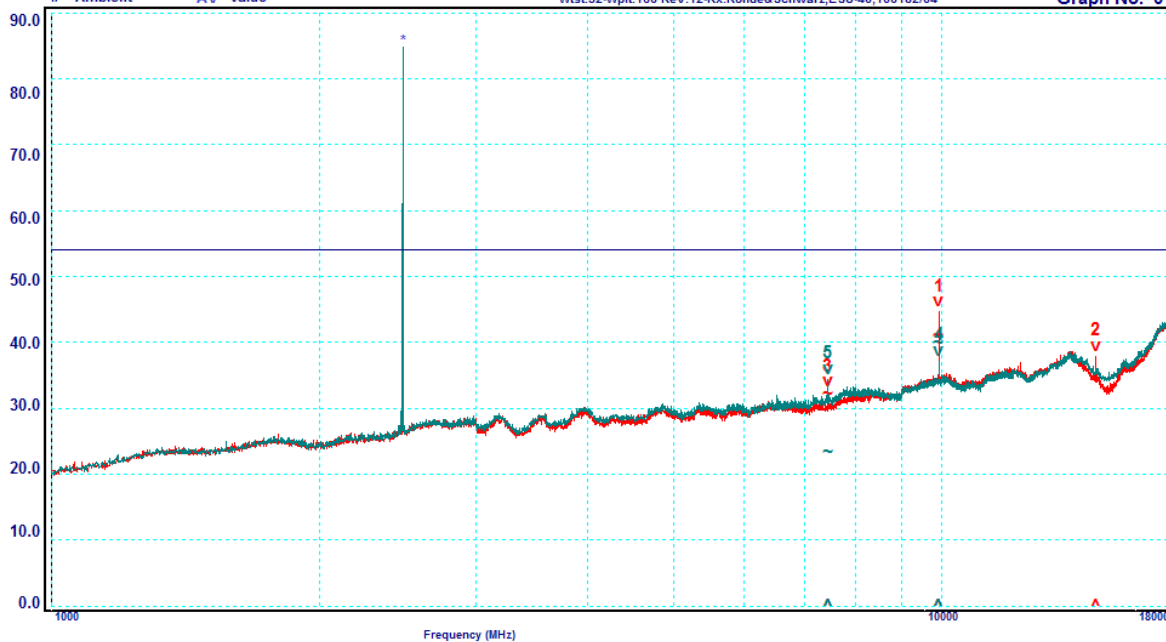
dorsaVi Ltd-Radiated emission
1 GHz - 18 GHz-Average
Red: vertical
Green: horizontal
FCC 15.247
Radiated Emissions (dBuV/m)
= Ambient ~ = AV Value

Job No:M160113
Test Date: 09/08/2016

Limit1: FCC15209Av FCC PART 15.209, 1-18GHz@3mtr, 18-40GHz@1mtr

r:\melb\2016\Jul\M160713_dorsaVi\Radiated Files\M160713Gigaa.txt
t:A0040719 c1:C3370716 c2:p:A2880516 a:
Site ID: Room#12(iQATS),176 Harrick Rd, Keilor Park, Vic 3049
File No: M160713-1
Tester: Mahan Ghassempouri-Plot date:09-12-2016 13:00:48
Wtst:32-Wplt:160 Rev:12-Rx:Rohde&Schwarz,ESU-40,100182/04

Graph No. 6



Peak	Frequency (MHz)	Polarisation	Measured Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Δ Average $\pm$ dB
1	9919.15	Vertical	41.0	54	-13.0
2	14878.49	Vertical	34.3	54	-19.7
3	7440.11	Vertical	32.1	54	-21.9
4	9920.05	Horizontal	39.8	54	-14.2
5	7439.98	Horizontal	23.4	54	-30.6

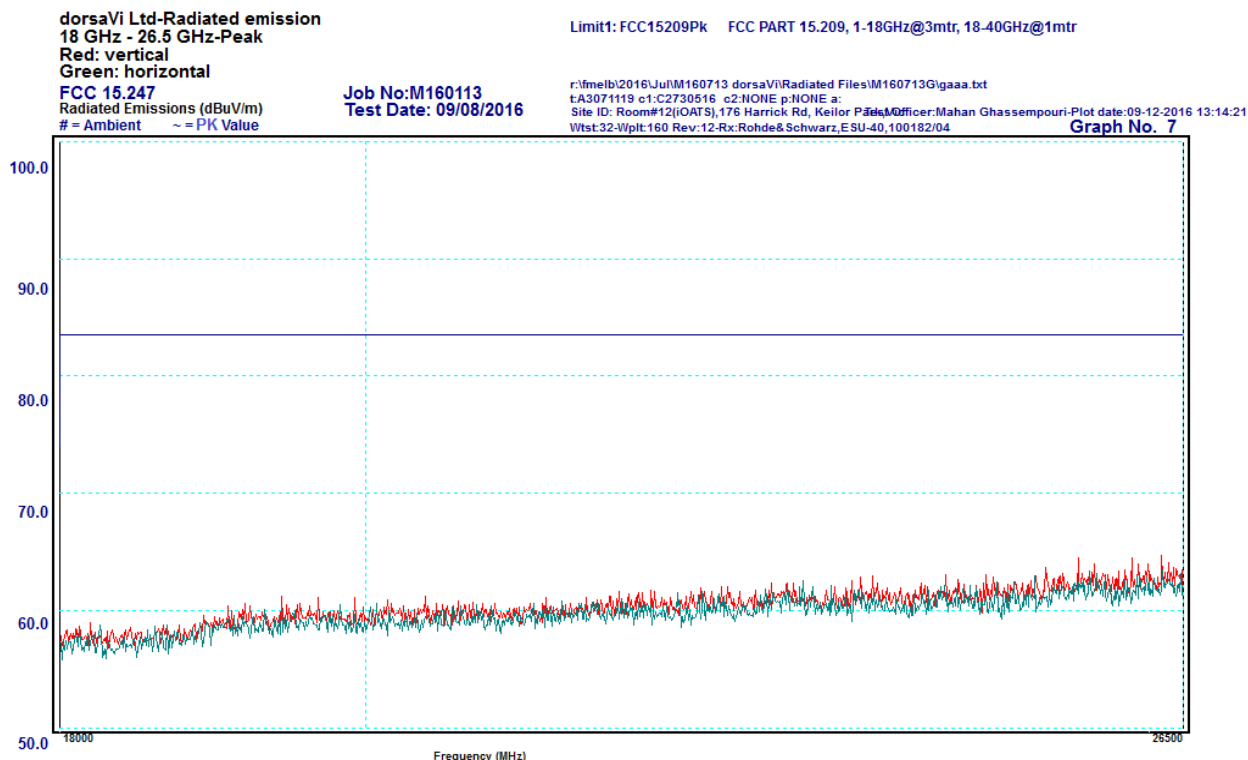
* Intentional transmitter was not subjected to spurious emission limit.

Graph 21: 1 GHz – 18 GHz, radiated emissions, average detector

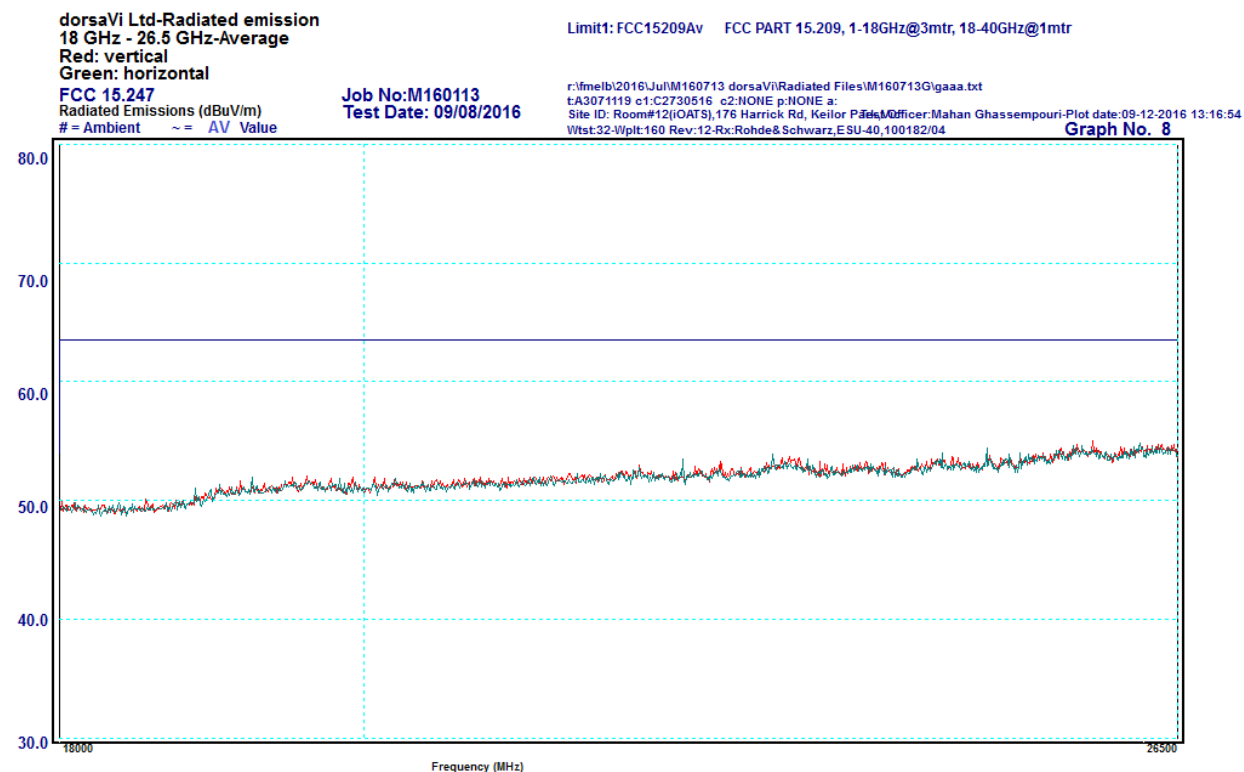


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Graph 22: 18 GHz – 26.5 GHz, radiated emissions, peak detector



Graph 23: 18 GHz – 26.5 GHz, radiated emissions, average detector

8.2.2 Conclusion

No emissions exceeded the applicable §15.209 limits and therefore the sample complied with the §15.247(d) and §15.205 limits.



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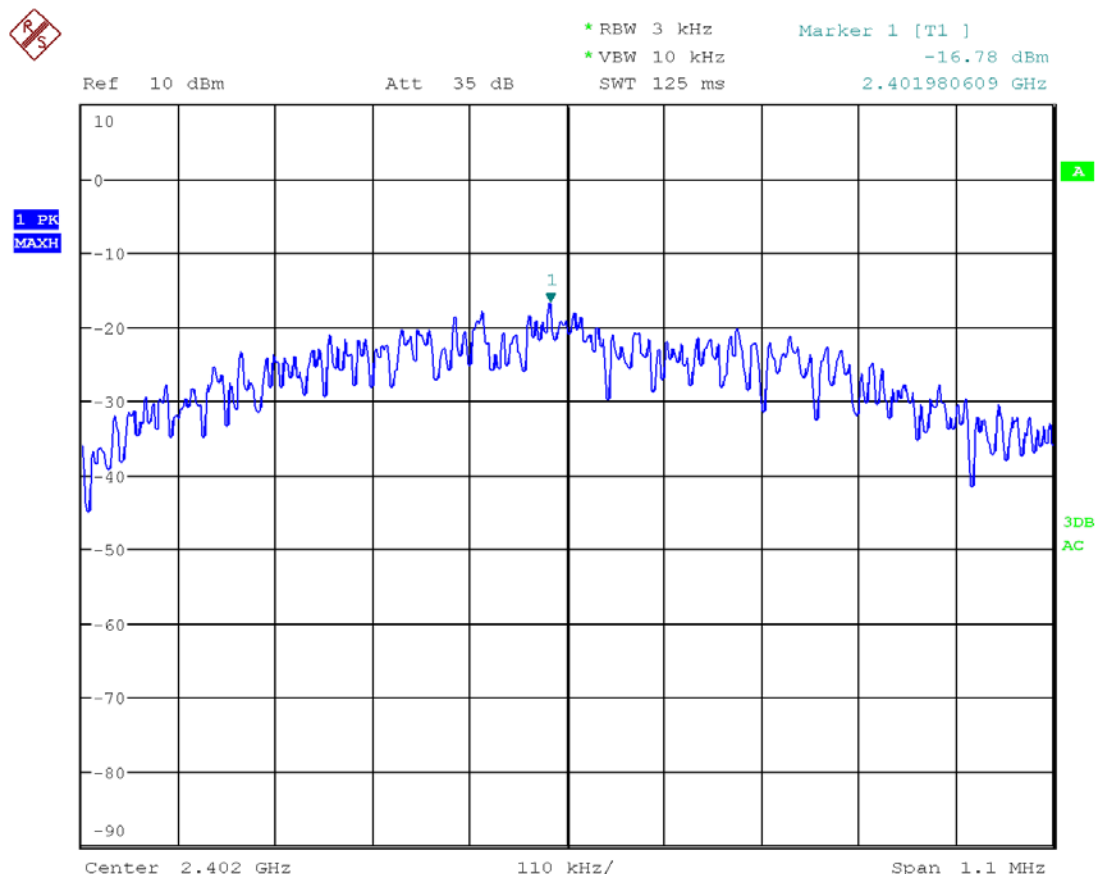
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9.0 POWER SPECTRAL DENSITY (§15.247 (e))

The PKPSD method according to KDB 558074 was used to demonstrate compliance.

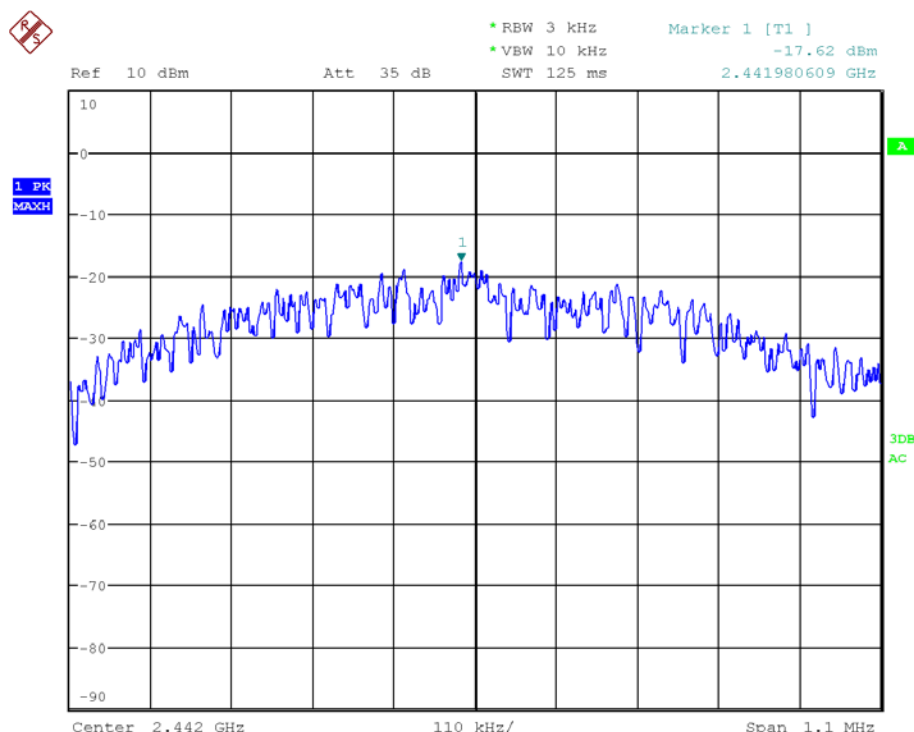
9.1. Results

Measurement results are shown in the following graphs.



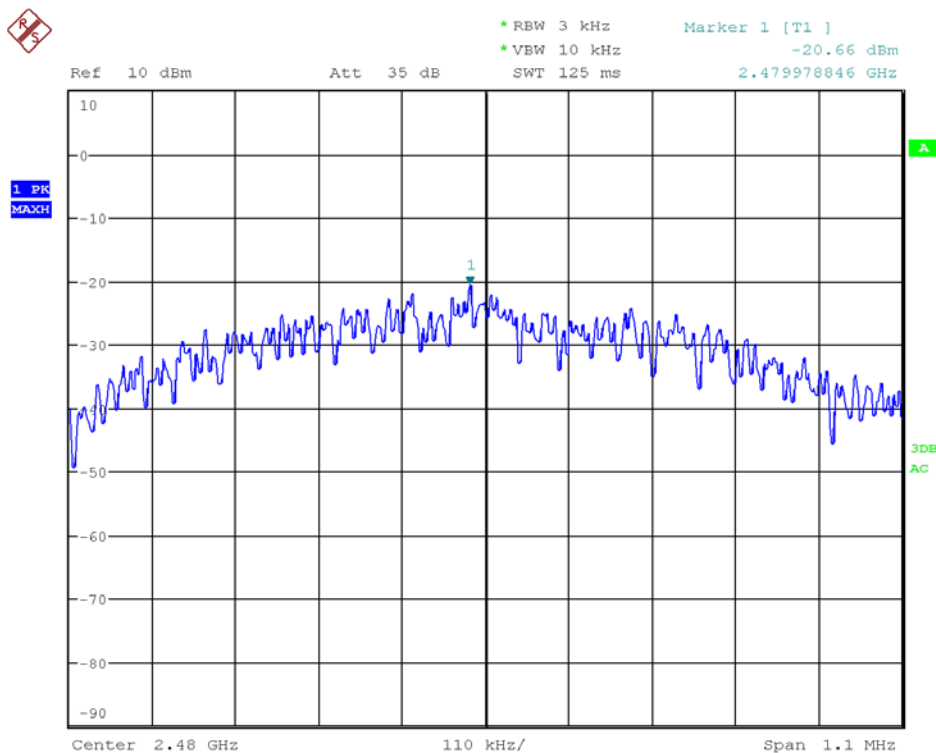
Peak PSD (dBm/3 kHz)	Limit (dBm)	Margin (dB)	Result
-16.8	8.0	-24.8	Pass

Graph 24: Transmitter peak power spectral density, low



Peak PSD (dBm/3 kHz)	Limit (dBm)	Margin (dB)	Result
-17.6	8.0	-25.6	Pass

Graph 25: Transmitter peak power spectral density, middle



Peak PSD (dBm/3 kHz)	Limit (dBm)	Margin (dB)	Result
-20.7	8.0	-28.7	Pass

Graph 26: Transmitter peak power spectral density, high



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10.0 RADIO FREQUENCY EXPOSURE (HAZARD) (§15.247 (i))

The EUT is exempted from SAR testing thus it is deemed to comply with FCC requirements for human exposure.

1-g Head or body:

$$\left[\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot \sqrt{f_{\text{(GHz)}}} \leq 3.0$$

10-g Extremity:

$$\left[\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot \sqrt{f_{\text{(GHz)}}} \leq 7.5$$

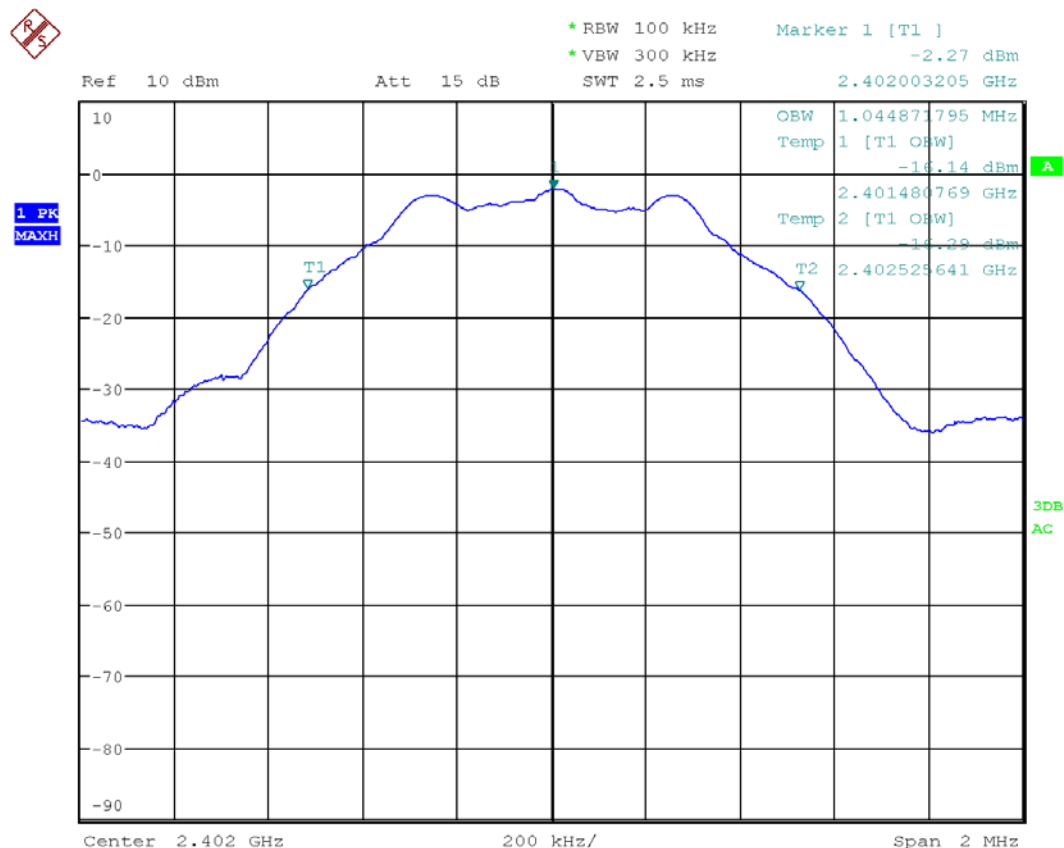
$$\text{E.I.R.P.} = -1.2 \text{ dBm} = 0.8 \text{ mW}$$

$$[(0.8 \text{ mW} \div 5 \text{ mm}) \times \sqrt{2.480 \text{ GHz}}] = 0.25$$

11.0 §2.1049 OCCUPIED BANDWIDTH – 99% POWER

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

The 99% power bandwidth was **1.045 MHz**.



Graph 278: Occupied Bandwidth

12.0 COMPLIANCE STATEMENT

The V6B4T Back Strain Monitoring device tested on behalf of DorsaVi Pty Ltd, **complied** with the requirements of 47 CFR, Part 15 Subpart C - Rules for Radio Frequency Devices (intentional radiators), Section 15.247 - Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

13.0 UNCERTAINTY

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

Conducted Emissions:	9 kHz to 30 MHz	±3.2 dB
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 26 GHz	±5.1 dB
Peak Output Power:		±1.5 dB
Peak Power Spectral Density:		±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%.



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