



Global Product Certification
EMC-EMF Safety Approvals

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RADIO REPORT FOR CERTIFICATION
to
47 CFR Part 15 Subpart C (Section 15.247)

FCC ID: PN2-DSK1

Report Number: S180212R-6

Tested For: Adherium(NZ) Ltd

Device under Test : SmartDisk

Model Number : NF0100

Serial Number: EMC002

Issue Date: 30 October 2018

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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REVISION TABLE

Version	Sec/Para Changed	Change Made	Date
1		Initial issue of document	04/10/2018
2	3.3	Amended to include Conducted Emission Measurements	30/10/2018

RADIO REPORT FOR CERTIFICATION

47 CFR Part 15 Subpart C (Section 15.247)

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RADIO REPORT FOR CERTIFICATION

Product : SmartDisk

Model Number: NF0100
Serial Number: EMC002

Manufacturer: Adherium (NZ) Ltd.

Tested for: Adherium (NZ) Ltd.
Address: Level 2, 204 Quay Street,
 Auckland 1010, New Zealand.

Phone: +64 9 307 2771

Contact: Hemant Pundpal
Email: HemantP@adherium.com

Standards: **47 CFR 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 April 2018 to 13th April 2018, 27th July 2018

Issue Date 30 October 2018

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.

Test Engineer:

A handwritten signature in black ink, appearing to read "Jm. Guo".

James Guo

**Authorised
Signatory:**

A handwritten signature in black ink, appearing to read "Robert Middleton".

Robert Middleton
Sydney Manager
EMC Technologies Pty Ltd.

Issued by: EMC TECHNOLOGIES PTY. LTD.

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RADIO REPORT FOR CERTIFICATION
to
47 CFR Part 15 Subpart C (section 15.247)

1.0 INTRODUCTION

Radio tests were performed on SmartDisk for use with medication inhalers with Model: NF0100 in accordance with the applicable requirements of 47 CFR, Part 15 Subpart C – Section 15.247 operating within the band: 2400 MHz to 2483.5 MHz.

1.1 Test Procedure

Radio measurements were performed in accordance with the appropriate procedures of ANSI C63.10: 2013 and KDB 558074 D01 v04 - Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247.

The measurement instrumentation conformed to the requirements of ANSI C63.2: 2016.

1.2 Summary of 47 CFR Part 15 Subpart C Results

FCC Part 15 Subpart C	Test Performed	Results
15.203	Antenna requirement	Complied
15.204	Antenna information	Complied
15.205	Restricted bands of operation	Complied
15.207	Disturbance voltage on AC Mains	Complied
15.247(c)	Spurious radiated emission 15.209 limit applied	Complied
15.247 (a2)	6 dB Bandwidth	Complied: 720 kHz
15.247 (e)	3 kHz Peak Power Density	Complied: -11.13 dBm/3kHz
15.247 (b)	Peak Output Power	Complied: 0.55 dBm
15.247 (c)	Antenna Gain > 6 dBi	Not Applicable Antenna gain < 6 dBi
15.247 (d)	Out of Band Emissions	Complied
15.247 (f)	Hybrid Systems	Not Applicable Did not employ a hybrid system
15.247 (i)	Radio Frequency Hazard	Complied
	99% Occupied bandwidth	Complied

1.3 Modifications by EMC Technologies

No modifications were performed.

2.0 GENERAL INFORMATION

The EUT is a medication reminder and actuation monitor for use with medication inhalers.

2.1 EUT (Transmitter) Details

Product :	SmartDisk
Model Number:	NF0100
Serial Number:	EMC002
Radio:	BlueTooth Low Energy
Frequency Band:	2400 to 2483.5 MHz
Frequency Range:	2402 to 2480 MHz
Modulation:	GFSK (1Mbps)
Emission Designator:	F1D
Number of Channels:	40
Antenna type and gain:	Integral omnidirectional Antenna, 1dBi
Power Supply Voltage:	Lithium Coin Battery

2.2 Test Configuration

EUT was configured to operate on top, middle, bottom channels and transmit a modulated signal continuously. Channel and operation modes can be changed by pressing the button on EUT itself. An external USB connection was required to maintain the continuous transmission.

2.3 Test Facility

2.3.1 General

EMC Technologies Pty Ltd has 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 and 18 of the FCC Commission's rules – **Registration Number 411702 & Designation number AU0002**.

Measurements in this report were performed at EMC Technologies' laboratory in Seven Hills, New South Wales Australia.

2.3.2 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) 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

2.4 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 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/YY	Due Date DD/MM/YY
EMI Receivers	ESCI EMI Test Receiver (Asset No: R029) SN: 100012 9kHz – 3GHz	04/05/17	04/05/18 *1
	Model: ESU40 (Asset No: R038) S/N: 100183 20Hz – 40GHz	06/04/18	06/04/19 *1
Antennas	EMCO 3146 Log Periodic (Asset No: A003-1) S/N: 2066 300-1000MHz	17/02/17	17/05/18 *2
	Active Loop Antenna (Asset No: A008) Model: 6502 S/N: 9108-2660	26/11/15	26/11/18 *3
	ETS Lindgren Standard Gain Horn Antenna (Asset No: A262) 12.4 to 18GHz Model: 3160-08 S/N: 28245	29/01/16	29/01/19 *2
	EMCO 3110B Biconical (Asset No: A111) S/N: 9612-2790 20-300 MHz	18/02/16	18/05/18 *2
	Double Ridged Horn Antenna (Asset No: A324) Model: EMCO 3115 S/N: 3823 1-18GHz	29/01/18	29/01/21 *2
	Standard Gain Horn Antenna (Asset No: A305) Model: 3160-09, S/N: 00066033 18 GHz-26.5GHz	31/05/16	31/05/19 *2
LISN	Rohde & Schwarz ESH3-Z5 (Asset No: L036) S/N 832479/014	29/01/18	29/01/20 *3
Limiter Transient	11947A (Asset No: L010) S/N: 3107A01261	10/08/17	10/08/18 *3
Power Meter	P145 HP437B	18/01/18	18/01/19 *4
Cables	3m Sucoflex Blue Cable (Asset No: SC024)	10/08/17	10/08/18 *2
	13m RG214 MIL-C-17 N-Type Cable (Asset No: C028)	10/08/17	10/08/18 *2
	Sucoflex 104 4m Cable (Asset No: C041)	10/08/17	10/08/18 *2
Preamplifier	HP 8449B (Asset No: A138) S/N: 3008A01113	14/08/17	14/08/18 *2

Note *1: NATA Calibration by Rohde & Schwarz.

Note *2 : In-house calibration. Traceable to Australian National Standards

Note *3: NATA Calibration by NPL.

Note *4: NATA Calibration by Keysight.

TEST SITES

Equipment Type	Make/Model Serial Number	Last Cal. DD/MM/YY	Due Date DD/MM/YY
Shielded Room/ Test Laboratory	7.23m x 4.83m x 2.45m	N/A	N/A
Indoor Open Area Test Site (iOATS)	RFI Industries S800 Serial Number: 876, 3 metre site iOATS situated at Seven Hills, NSW	20/04/17	20/04/19

3.0 TEST RESULTS

3.1 §15.203 Antenna Requirement

Requirement:

No antenna other than that furnished by the responsible party shall be used with the device.

Results:

The antenna was integral to the device ensuring that it could not be replaced.
EUT was fully enclosed.

Conclusion: Complied

3.2 §15.204 Antenna Information

Requirement:

Provide information for every antenna proposed for the use with the EUT.

Results:

a) Antenna type:	Integral omnidirectional
b) Manufacture and model No.:	NA
c) Gain with reference to an isotropic radiator:	1 dBi

Conclusion: Complied

3.3 §15.207 Disturbance Voltage on AC Mains

3.3.1 Test Climatic Conditions

Shielded Room Temperature:	20°C
Relative Humidity:	48%

3.3.2 Test Results

Freq (MHz)	Line	Quasi Peak (dB μ V)	Quasi Peak Limit (dB μ V)	Δ Quasi Peak Limit (dB)	Average (dB μ V)	Average Limit (dB μ V)	Δ Average Limit (dB)
0.500	Neutral	39.7	56.0	-16.3	36.4	46.0	-9.6
0.501	Active	41.1	56.0	-14.9	36.0	46.0	-10.0

All measured frequencies complied with the Class B, quasi peak and average limits by margins of greater than 10dB and at least 9.6dB.

Graph 1**Active Line****0.145 to 30.5MHz**

Adherium (NZ) Pty Ltd
SmartDisk
Model No. NF0100, Serial No. EMC002
120Vac, 60Hz. Charging Mode

FCC Part 15 B
Conducted Emissions (dBuV)

~ = QP Value * = CISPR Av

Job No: S180212
Test Date: 27/07/2018

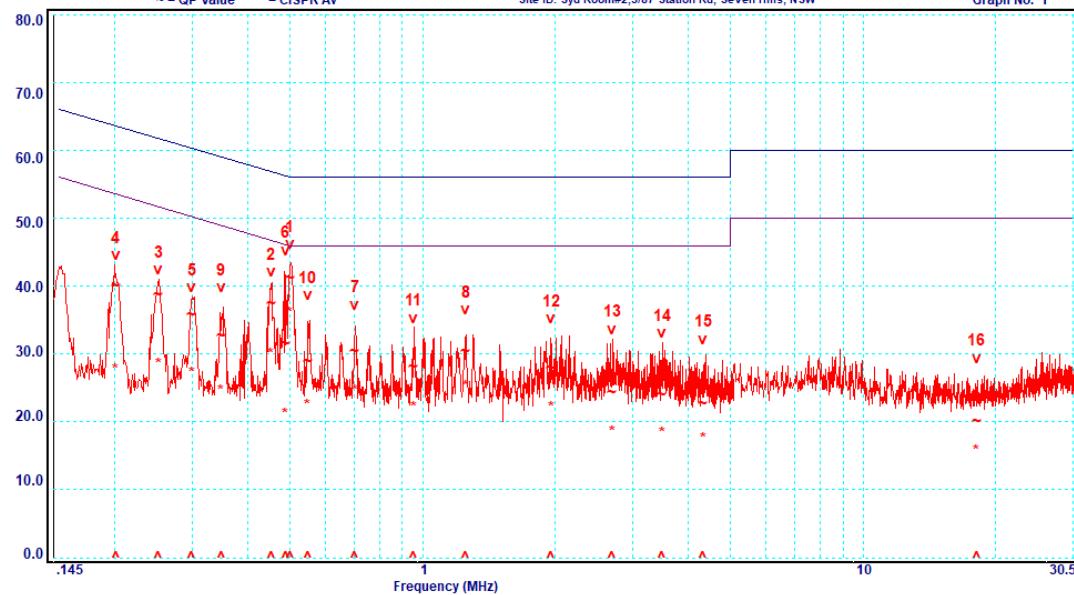
Limit1: FCCN_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)
Limit2: FCCN_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)

Trace 2: Active Line

Test Officer:Rheyjane Zano-Plot date:10-30-2018 15:36:38 WinstRS:32.8-Wplt:160.16-Rx:R&S,ESCI-3,100012/00
tL0360220 c1:C0010818 c2:NONE p:NONE a:L0100818

Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW

Graph No. 1

**Graph 2****Neutral Line****0.145 to 30.5MHz**

Adherium (NZ) Pty Ltd
SmartDisk
Model No. NF0100, Serial No. EMC002
120Vac, 60Hz. Charging Mode

FCC Part 15 B
Conducted Emissions (dBuV)

~ = QP Value * = CISPR Av

Job No: S180212
Test Date: 27/07/2018

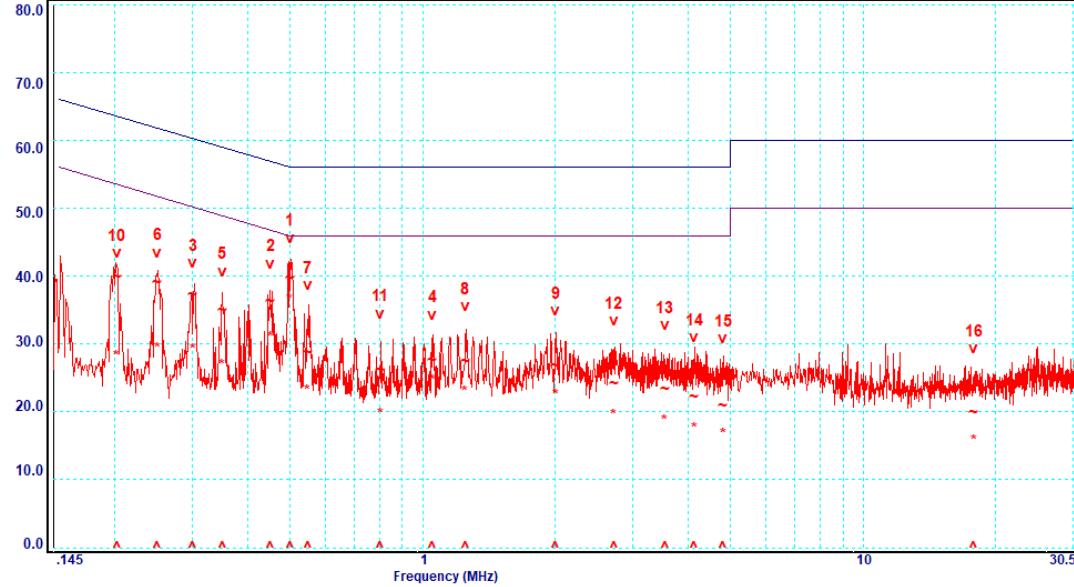
Limit1: FCCN_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)
Limit2: FCCN_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)

Trace 2: Neutral Line

Test Officer:Rheyjane Zano-Plot date:10-30-2018 15:36:07 WinstRS:32.8-Wplt:160.16-Rx:R&S,ESCI-3,100012/00
tL0360220 c1:C0010818 c2:NONE p:NONE a:L0100818

Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW

Graph No. 2



3.4 §15.247(a2) Carrier Frequency Separation

Requirement:

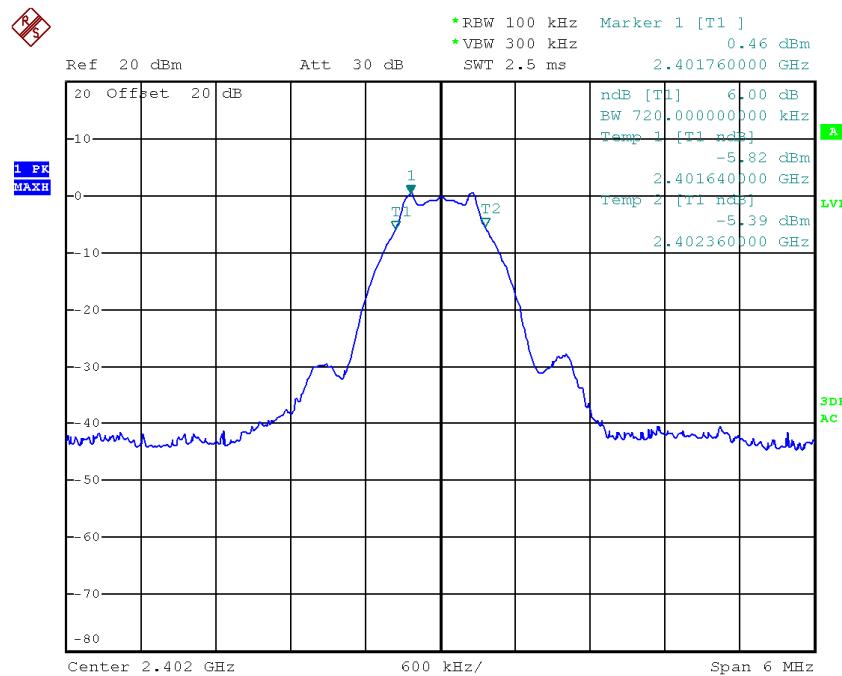
Systems using digital modulation techniques may operate in the 902-928MHz, 2400- 2483.5MHz, and 5725-5850MHz bands. The minimum 6dB bandwidth shall be at least 500kHz.

Results:

6 dB Emission Bandwidth:

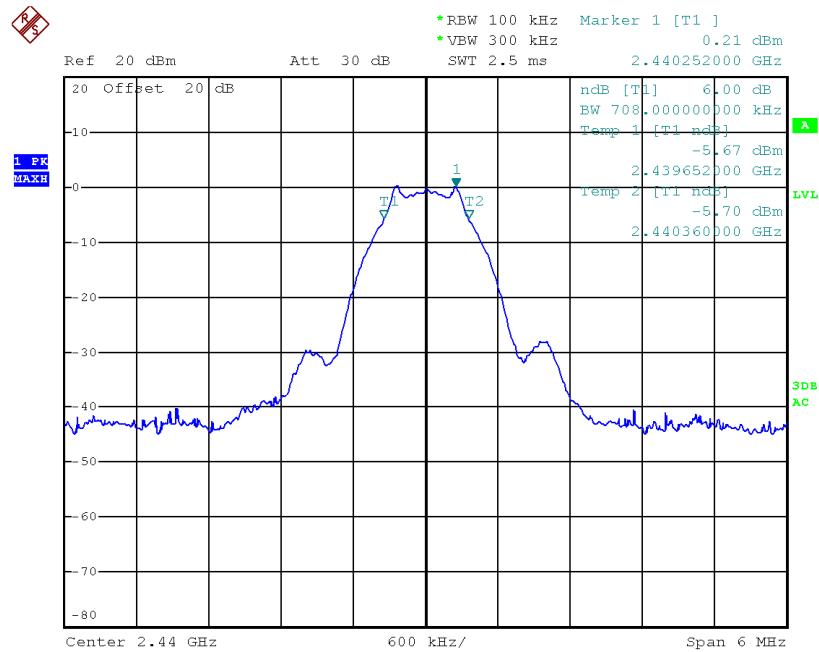
Centre Frequency [MHz]	6 dB Bandwidth [kHz]
2402	720
2440	708
2480	708

Channel 2402 MHz



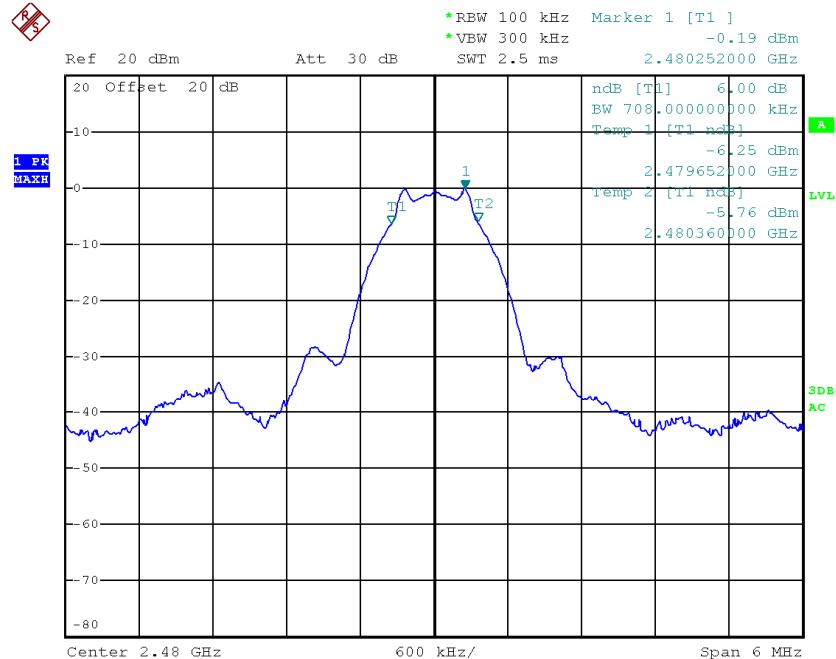
Date: 5.MAR.2018 13:42:55

Channel 2440 MHz



Date: 5.MAR.2018 13:43:43

Channel 2480 MHz



Date: 5.MAR.2018 13:45:04

Conclusion: Complied

3.5 §15.247(e) 3 kHz Peak Power Density

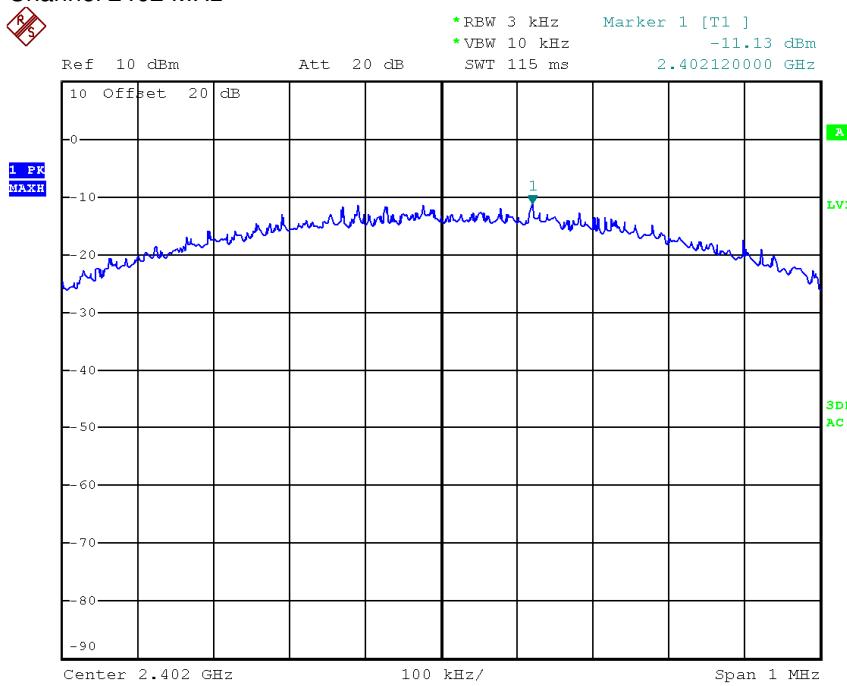
Requirement:

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Results:

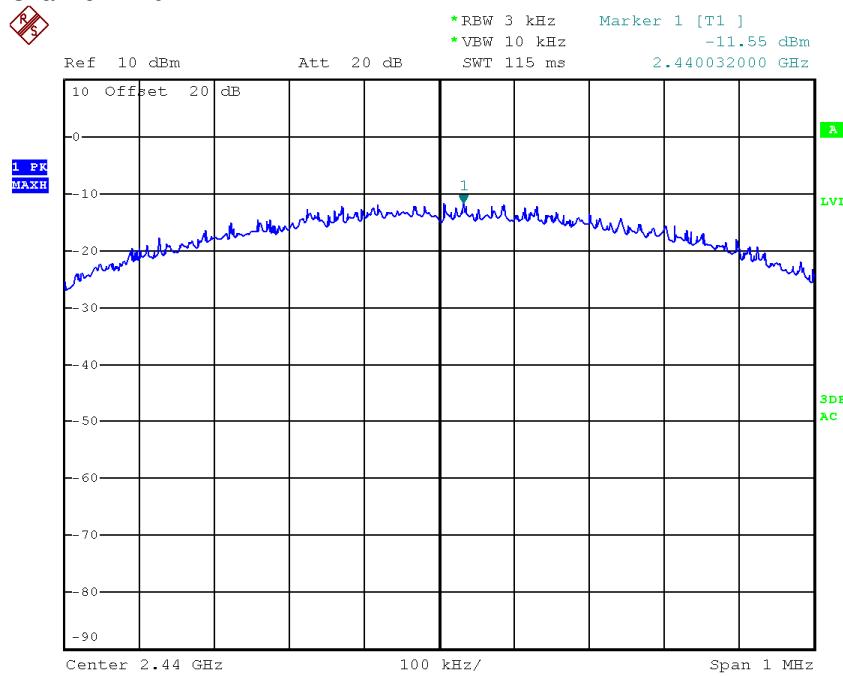
Centre Frequency [MHz]	3 kHz Peak Power density [dBm]
2402	-11.13
2440	-11.55
2480	-12.03

Channel 2402 MHz



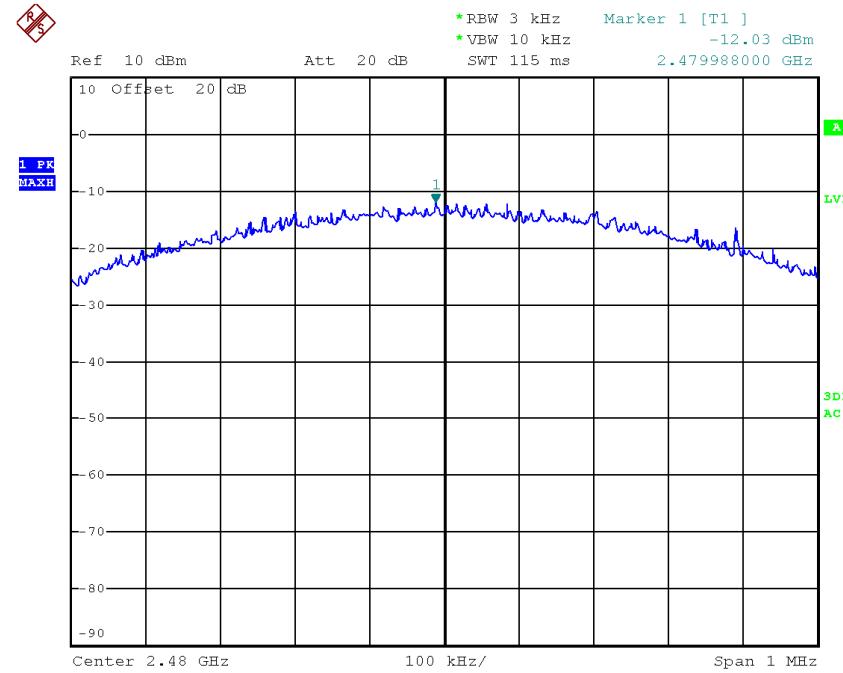
Date: 5.MAR.2018 13:50:54

Channel 2440 MHz



Date: 5.MAR.2018 13:51:49

Channel 2480 MHz



Date: 5.MAR.2018 13:52:46

Conclusion: Complied.

3.6 §15.247(b) Peak Output power

Requirement:

For system using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz Bands: 1 Watt.

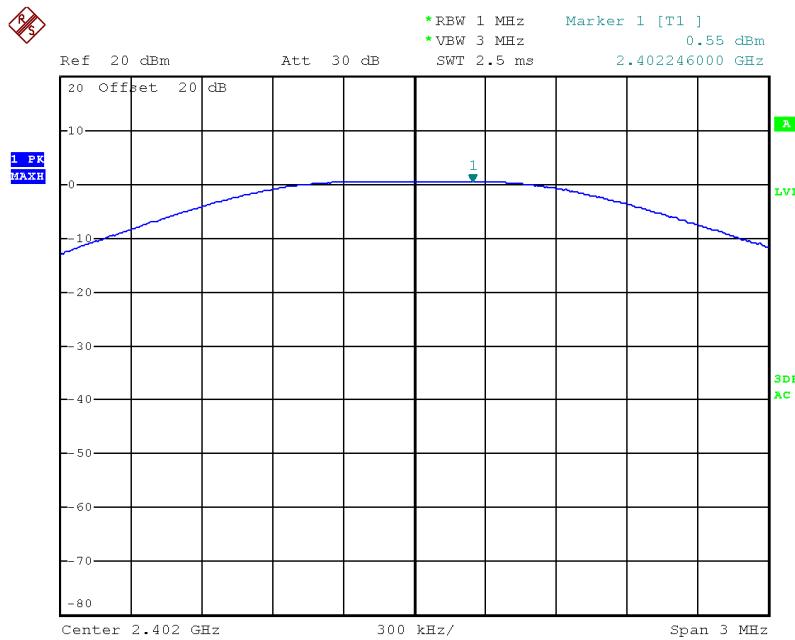
1W=30dBm.

The antenna gain of integral antenna is 1 dBi.

Results:

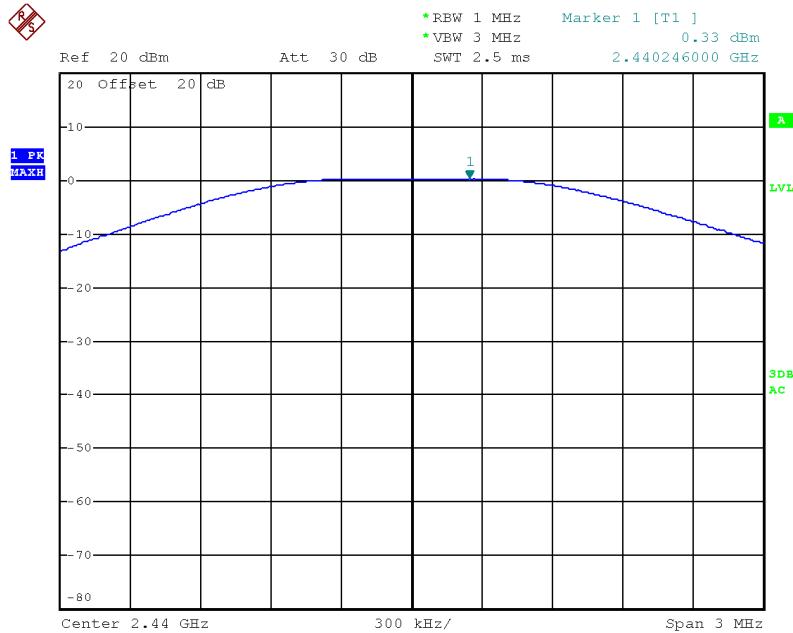
Frequency (MHz)	Conducted Power Measured (dBm)
2402	0.55
2440	0.33
2480	0.03

Channel 2402 MHz



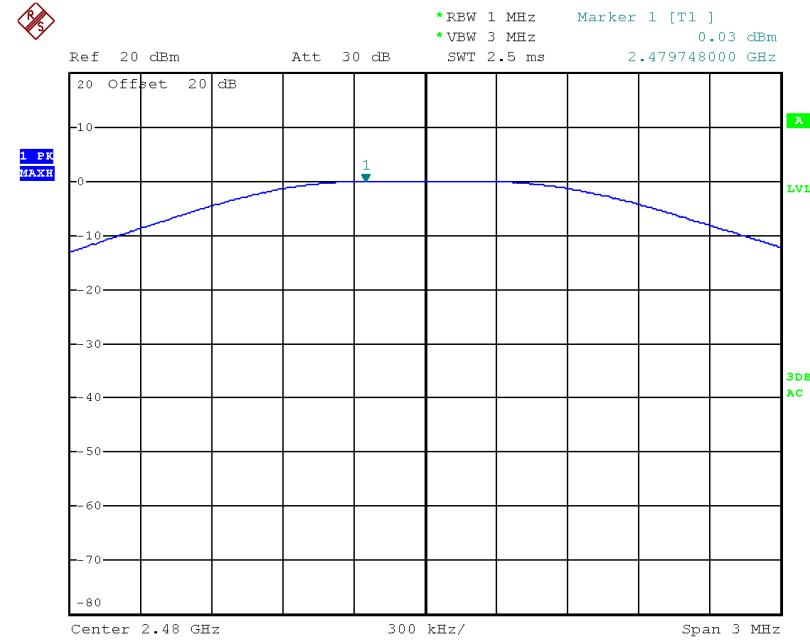
Date: 5.MAR.2018 13:47:32

Channel 2440 MHz



Date: 5.MAR.2018 13:48:14

Channel 2480 MHz



Date: 5.MAR.2018 13:48:55

Conclusion: Complied

3.7 §15.205 Restricted Bands of Operation

Requirement:

Radiated emissions which fall in the restricted bands, as defined in 15.205(a), Must also comply with the radiated emission limits specified in 15.209(a).

Results:

The 15.209 limit was applied across the applicable spectrum and therefore complied with the restricted band requirements. Refer to result plots in 3.8 of this report. Two restricted bands are located either side of operating band: 2310-2390MHz, 2483.5-2500MHz. 2390MHz was checked as band edge of bottom channel and 2483.5MHz was checked as band edge of top channel. Refer to result plots in 3.9 of this report.

Conclusion: Complied

3.8 §15.247(c) Spurious Radiated Emission

Requirement:

In any 100KHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in section 15.205(a), must also comply with the radiated emission limits specified in section 15.209(a)

Results

Radiated spurious emission 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 sufficient frequency resolution to permit reliable display and identification of emissions.

Frequency range [MHz]	Measurement Bandwidth [kHz]	Measurement Distance [m]	Antenna
0.009 to 30	9	3	Active loop antenna
30 to 1000	120	3	Biconical and log periodic antennas
1000 to 18 000	1000	3	Broad band horn
18 000 to 25 000	1000	1	Broad band horn

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. Devices design for a fixed position were tested in that position, portable devices were prescanned in three orthogonal orientations to decide maximum emission direction.

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.

Calculation of field strength

The field strength was calculated automatically by 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. (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)

3.8.1 Frequency Band: 0.009 - 30 MHz

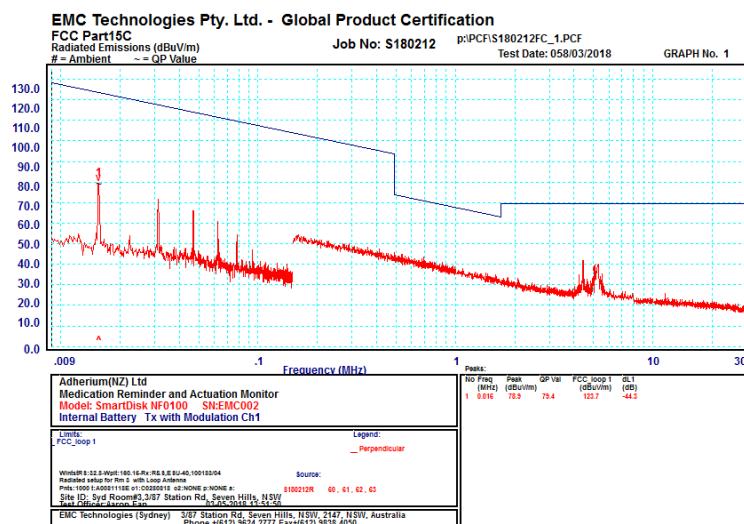
Measurements were made at a distance of 3 metres. The measurement of emissions between 0.009 - 30 MHz were made with a resolution bandwidth (RBW) of 9 kHz and the video bandwidth (VBW) of 30 kHz.

The §15.209 limit applied

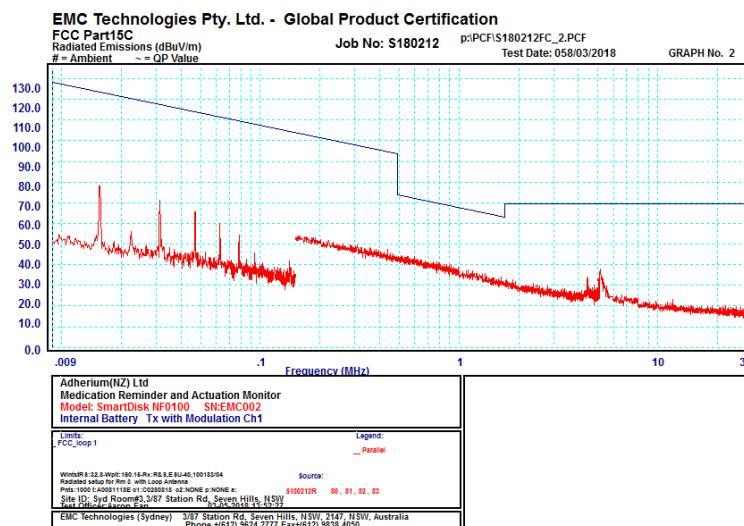
Test Result:

All measured frequencies complied with the Limit by a margin of greater than 10dB.

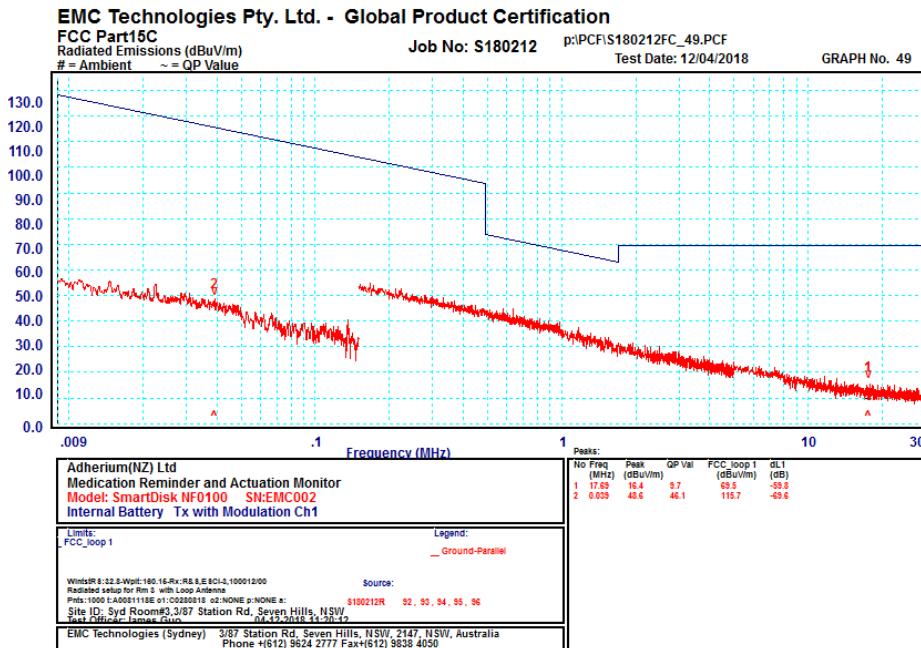
Channel 2402, Perpendicular Polarisation



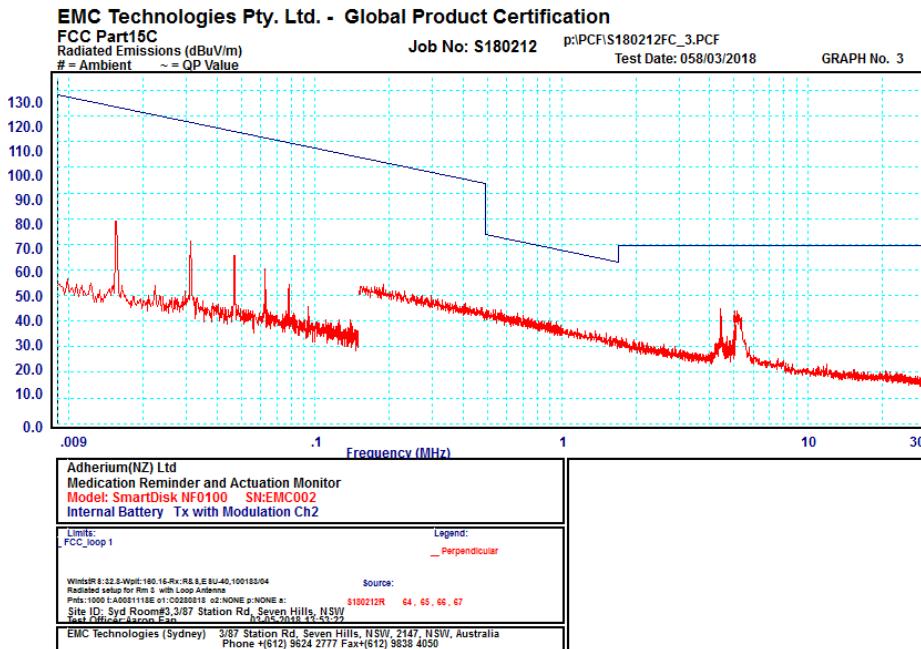
Channel 2402, Parallel Polarisation



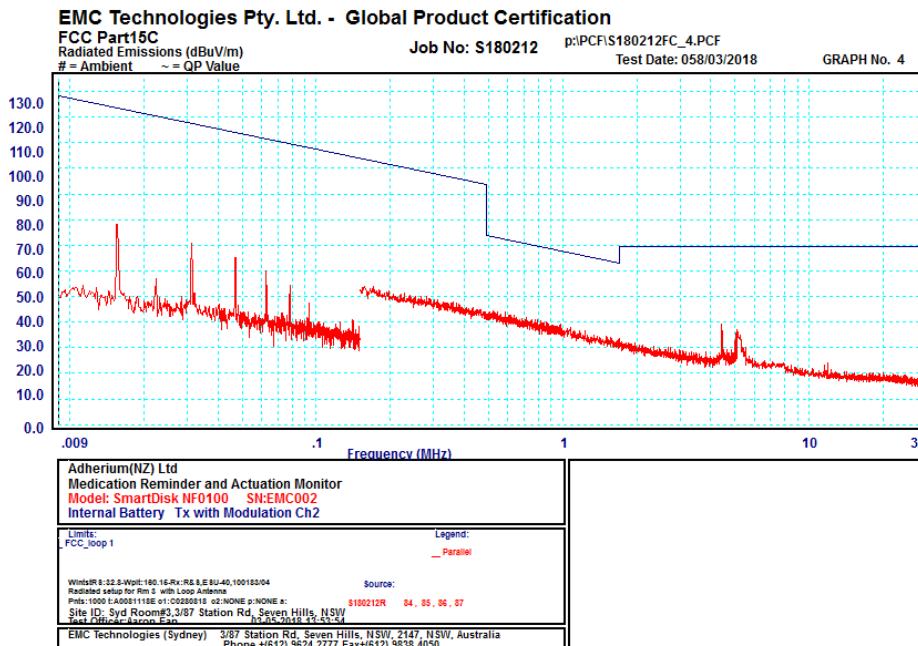
Channel 2402, Ground-Parallel Polarisation



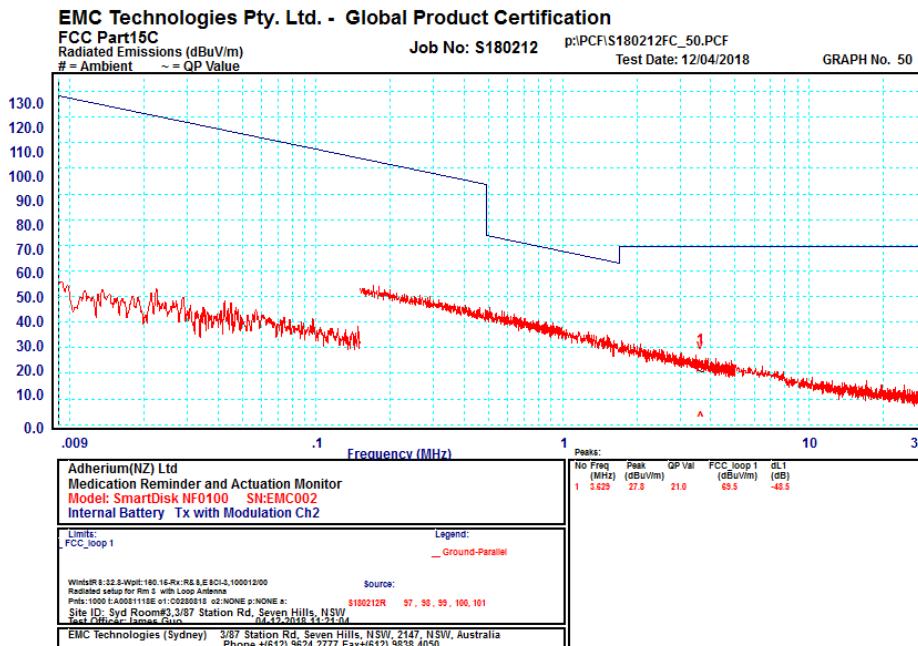
Channel 2440, Perpendicular Polarisation



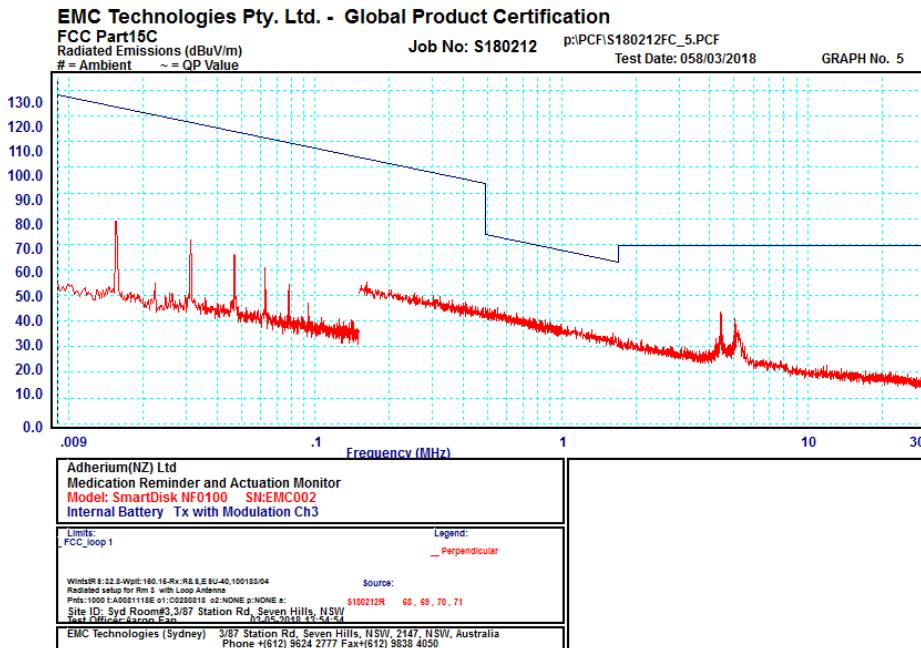
Channel 2440, Parallel Polarisation



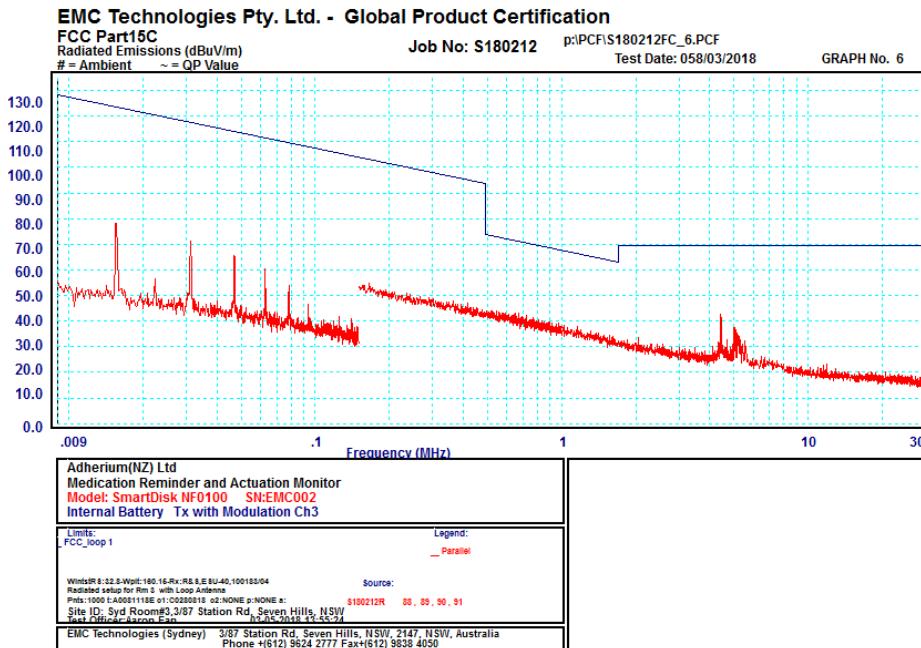
Channel 2440, Ground-Parallel Polarisation



Channel 2480, Perpendicular Polarisation



Channel 2480, Parallel Polarisation



Channel 2480, Ground-Parallel Polarisation

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FCC Part15C

Radiated Emissions (dBuV/m)

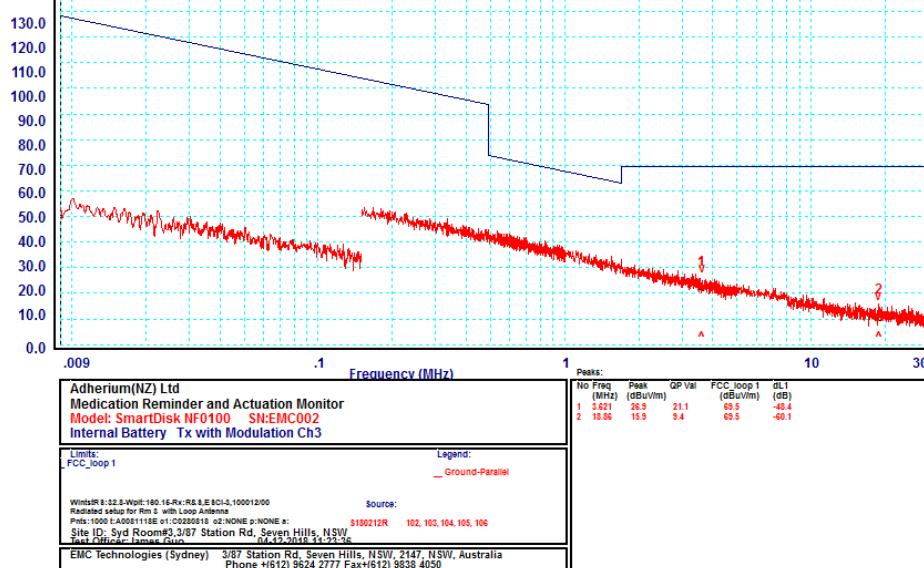
= Ambient ~ = QP Value

Job No: S180212

p:PCF1S180212FC_51.PCF

Test Date: 12/04/2018

GRAPH No. 51



3.8.2 Frequency Band: 30 - 1000 MHz

Measurements were made at a distance of 3 metres. The measurement of emissions between 30 - 1000 MHz were made with a resolution bandwidth (RBW) of 120 kHz and the video bandwidth (VBW) of 300 kHz.

The §15.209 limit applied

Test Result:

All measured frequencies complied with the Limit by a margin of greater than 10dB.

Channel 2402, Vertical Polarisation

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FCC Part15C

Radiated Emissions (dBuV/m)

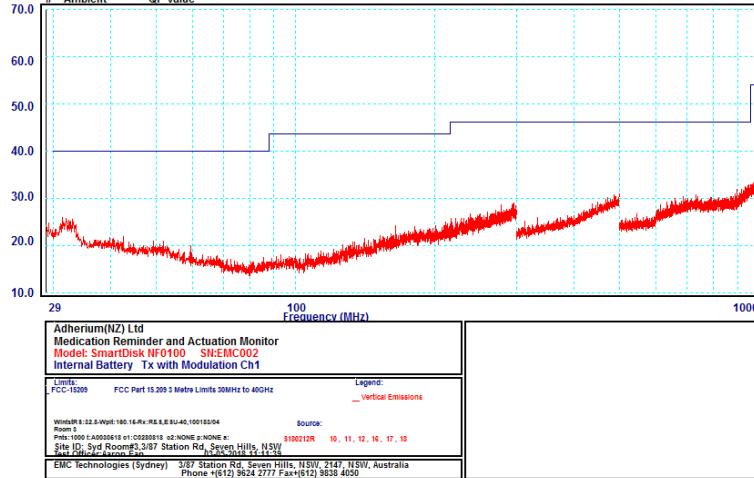
= Ambient ~ = QP Value

Job No: S180212

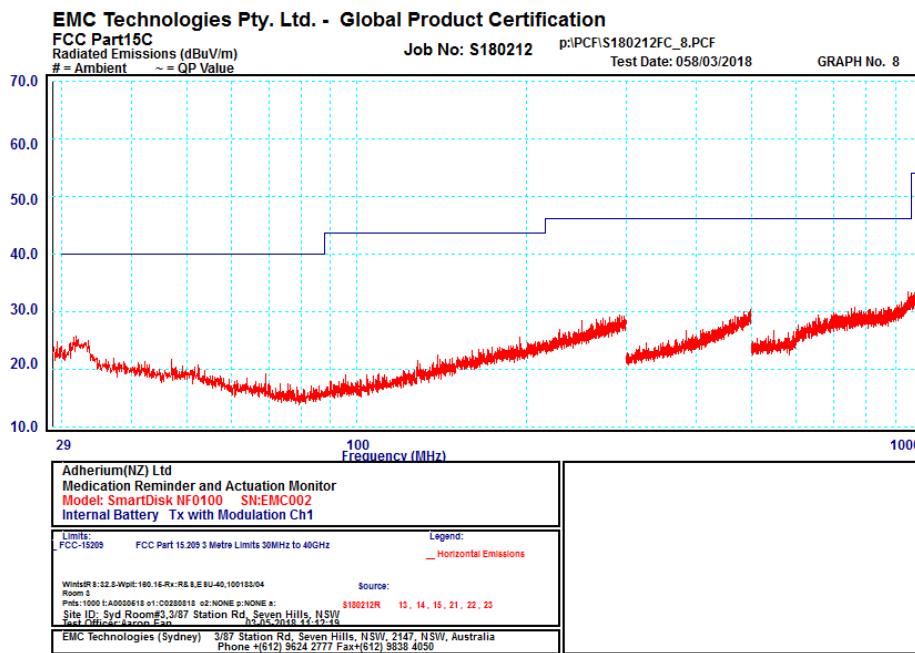
p:PCF1S180212FC_7.PCF

Test Date: 05/03/2018

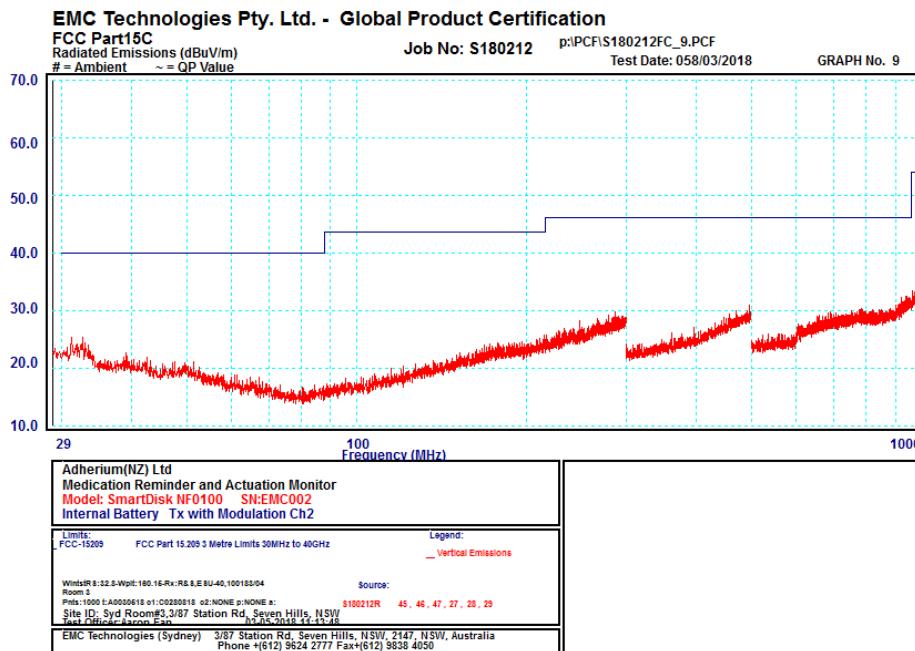
GRAPH No. 7



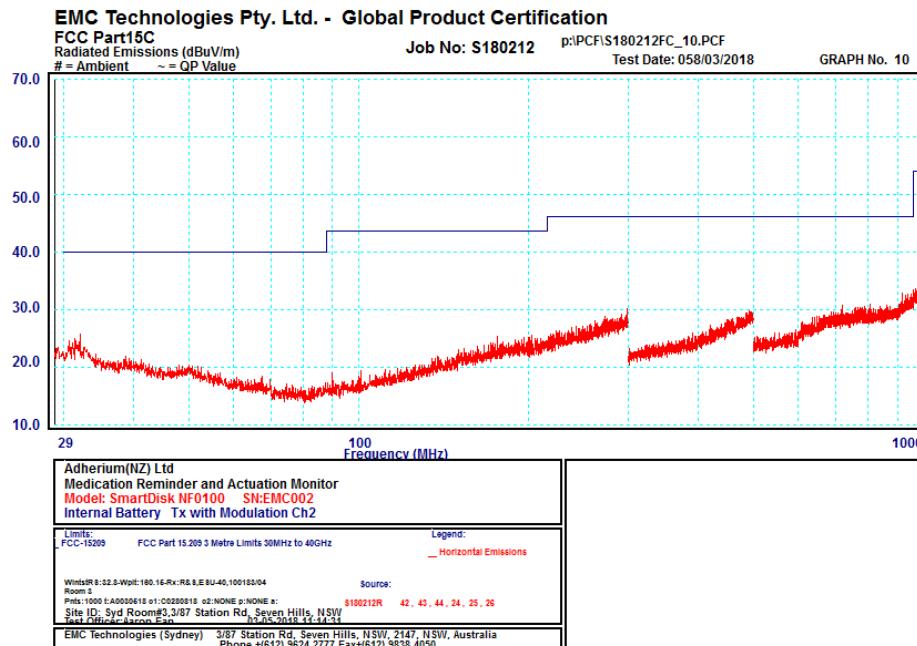
Channel 2402, Horizontal Polarisation



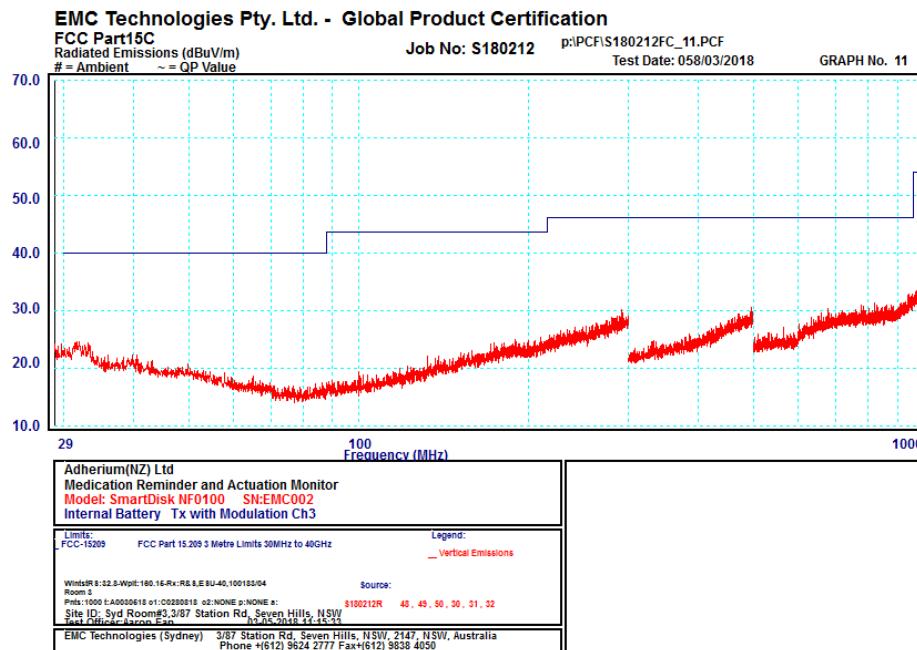
Channel 2440, Vertical Polarisation



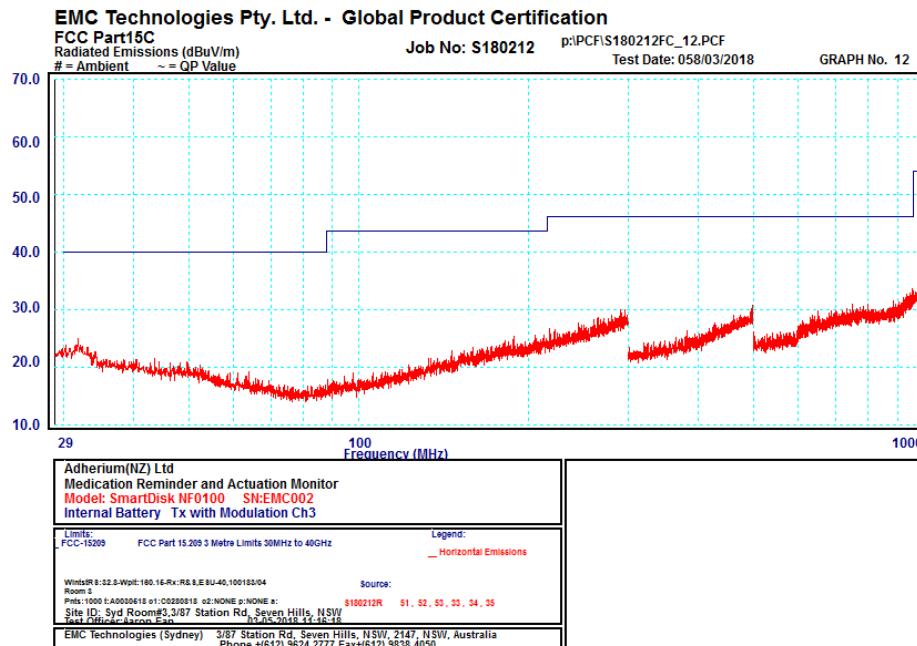
Channel 2440, Horizontal Polarisation



Channel 2480, Vertical Polarisation



Channel 2480, Horizontal Polarisation



3.8.3 Frequency Band: 1 000 – 25 000 MHz

Measurements to 18 GHz were made at a distance of 3 metres and 18 to 25 GHz at 1 metre. The peak measurements were made with a resolution bandwidth (RBW) of 1000 kHz and the video bandwidth (VBW) of 1000 kHz. The average measurement were made with a resolution bandwidth(RBW) of 1000kHz and the video bandwidth(VBW) of 10kHz. 2.4G Band stop notch filter was used from above 3GHz.

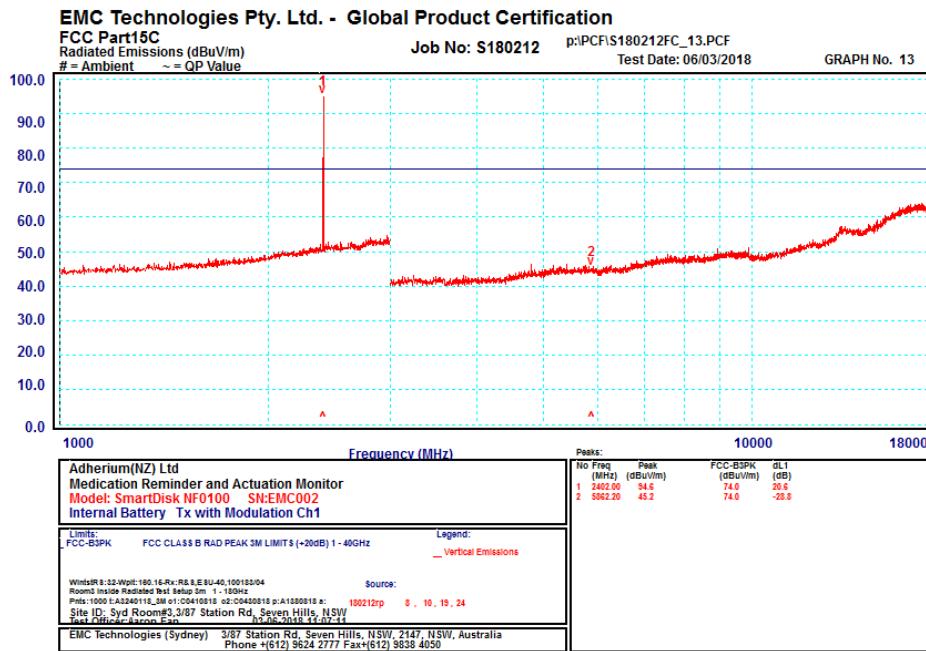
The §15.209 limits applied.

Test Result:

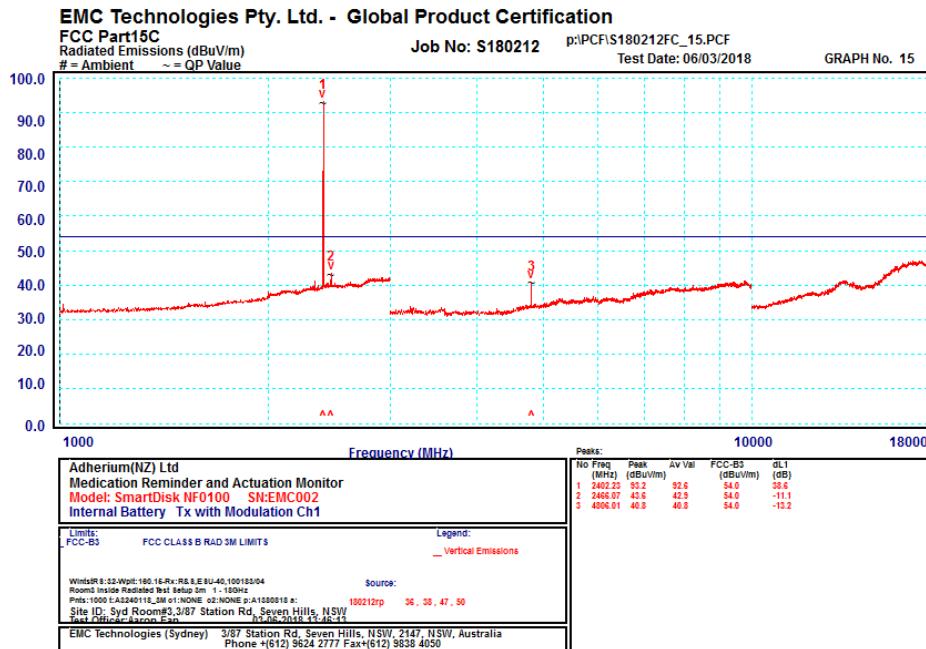
All measured frequencies complied with the Limit by a margin of greater than 10dB.

Channel 2402 MHz – Vertical, 1 to 18 GHz

Peak Measurement

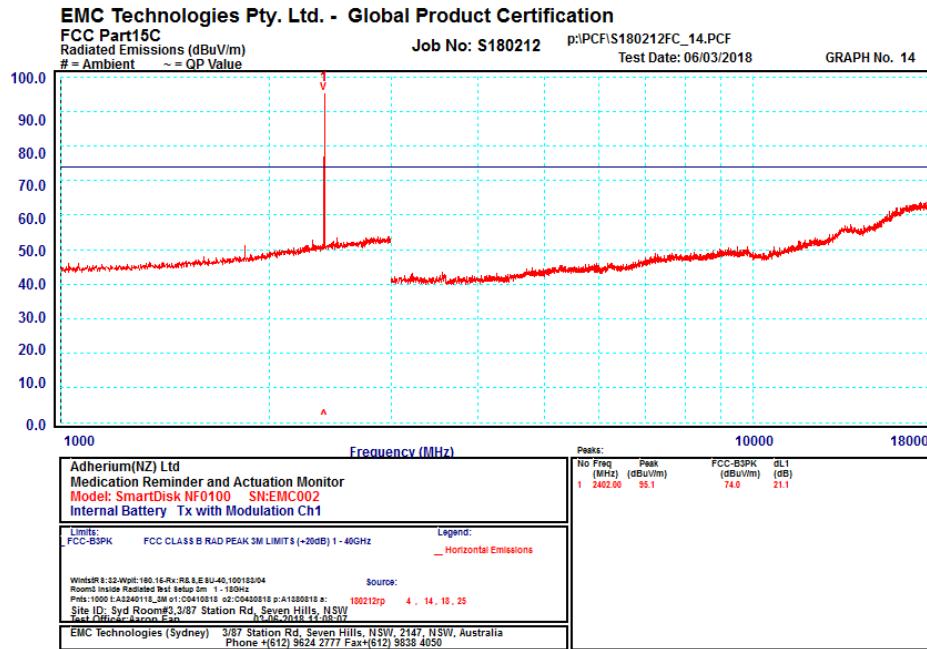


Average Measurement

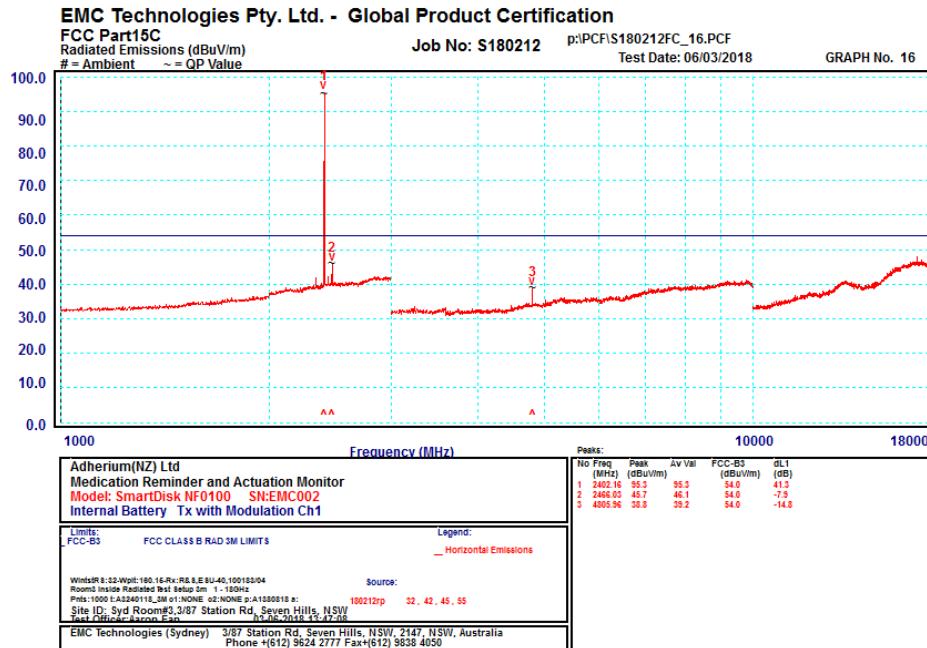


Channel 2402 MHz – Horizontal, 1 to 18 GHz

Peak Measurement

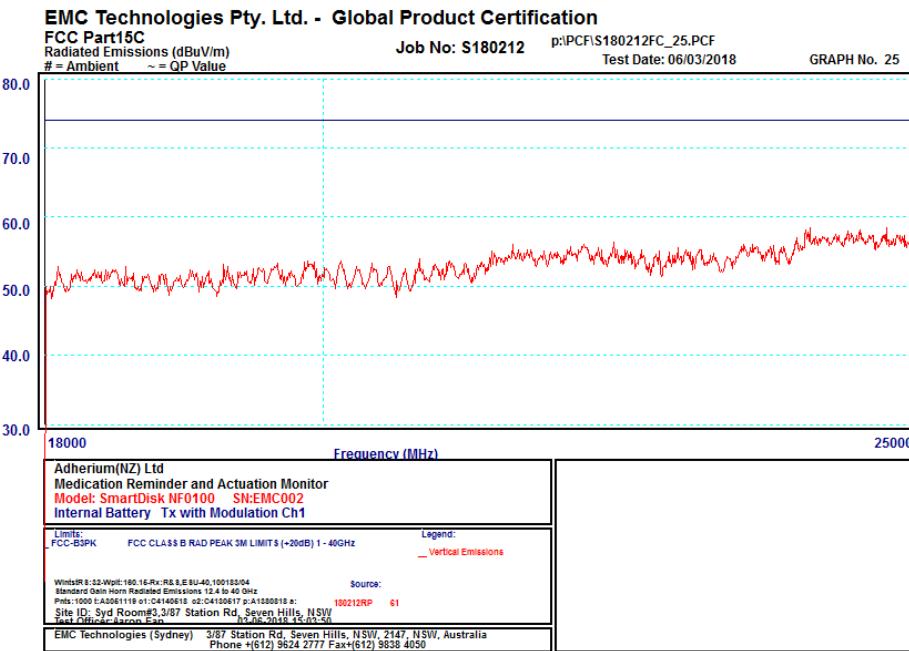


Average Measurement

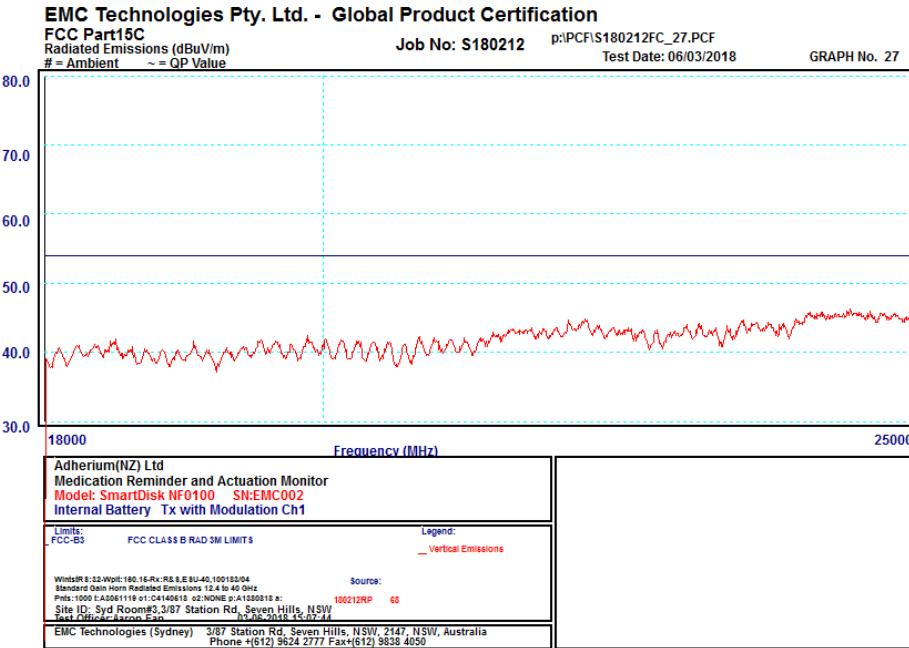


Channel 2402 MHz – Vertical 18 to 25 GHz

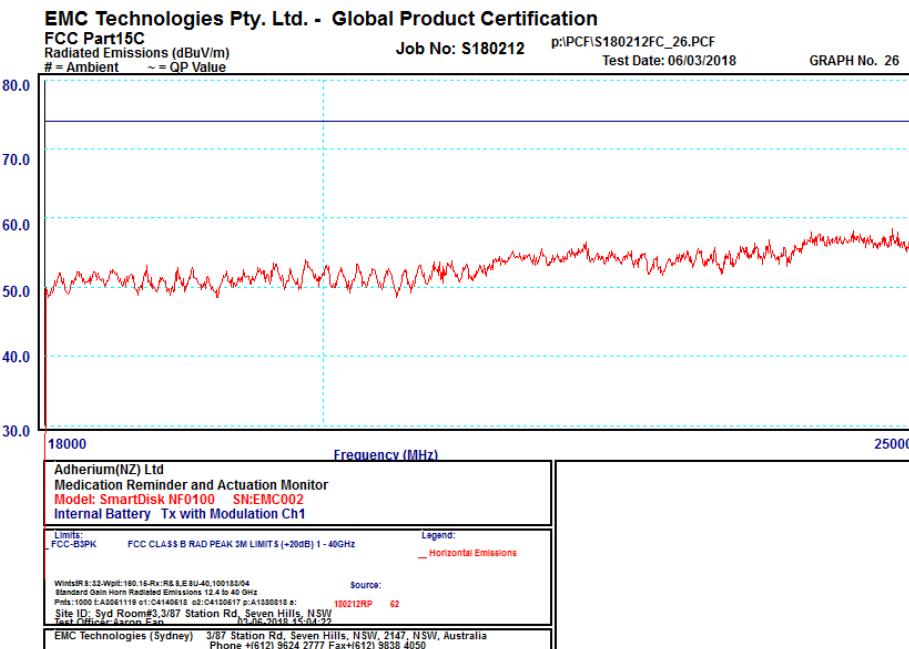
Peak Measurement



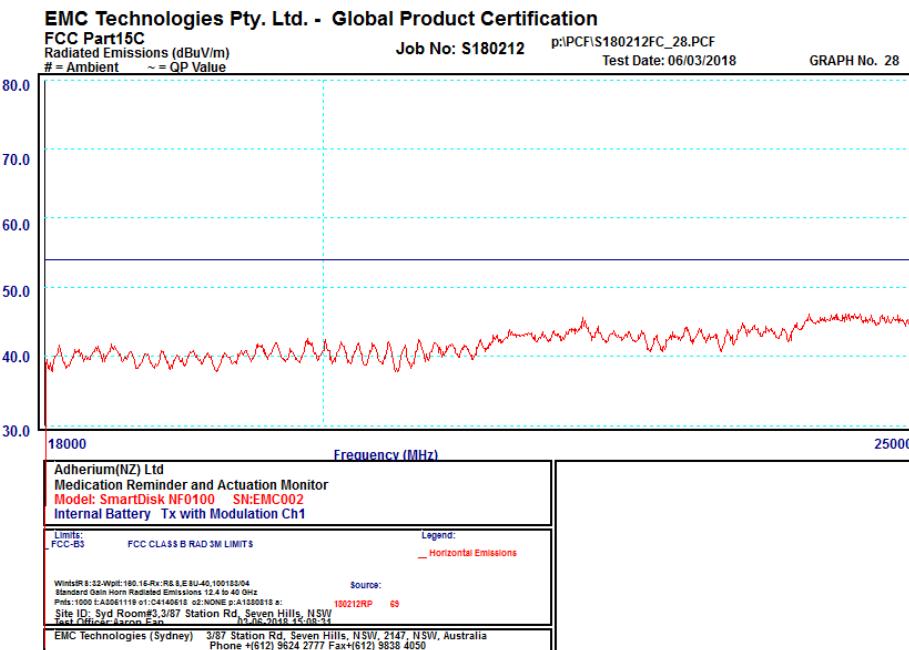
Average Measurement



Channel 2402 MHz – Horizontal 18 to 25 GHz Peak Measurement

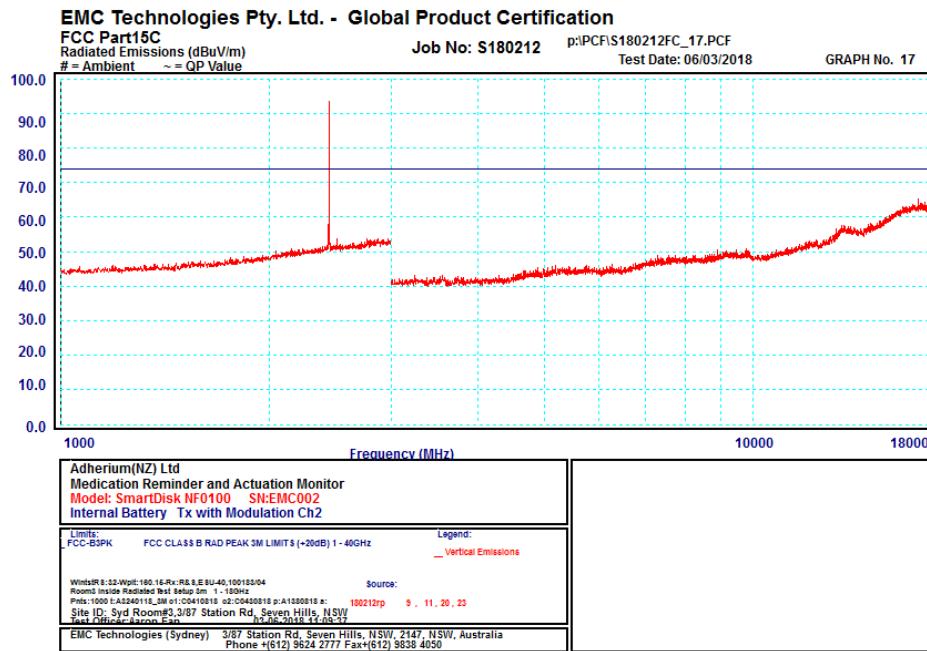


Average Measurement

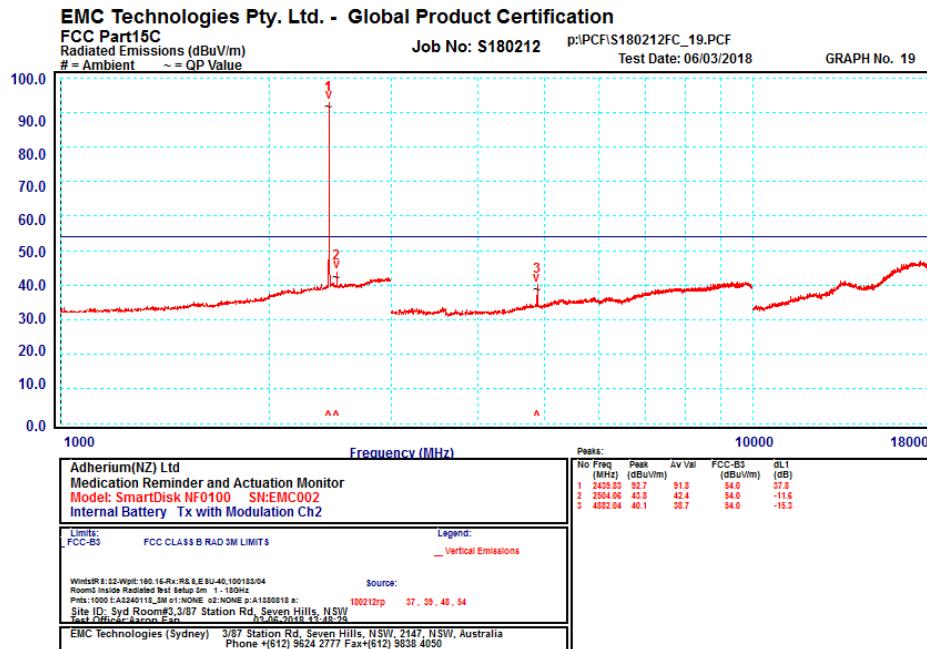


Channel 2440 MHz – Vertical, 1 to 18 GHz

Peak Measurement

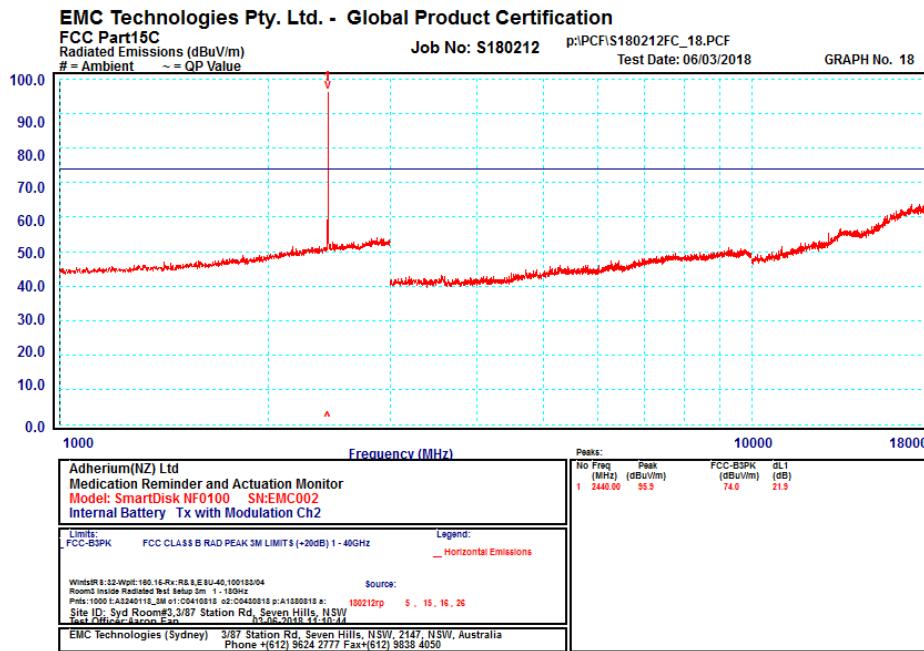


Average Measurement

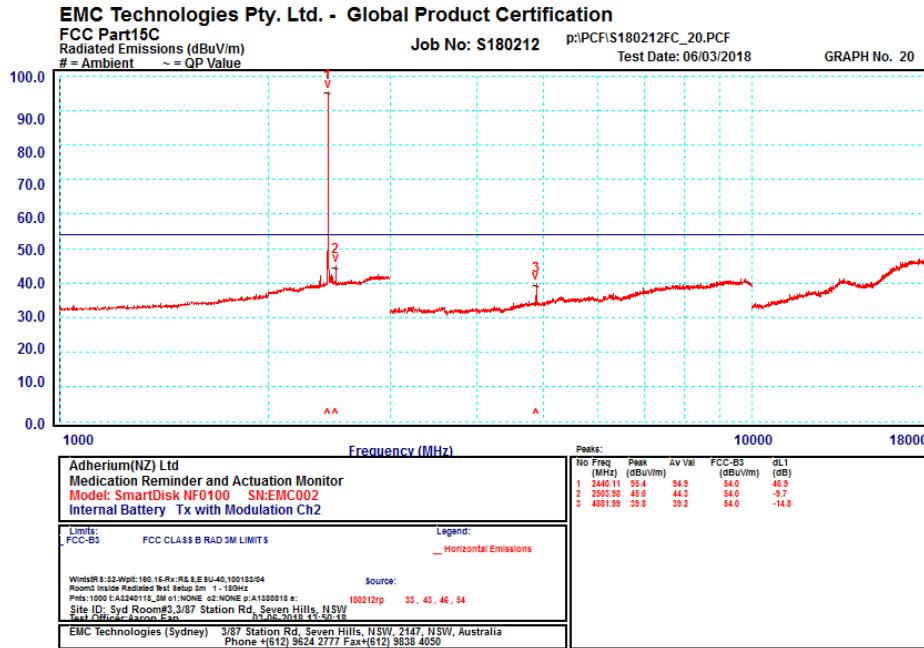


Channel 2440 MHz – Horizontal, 1 to 18 GHz

Peak Measurement

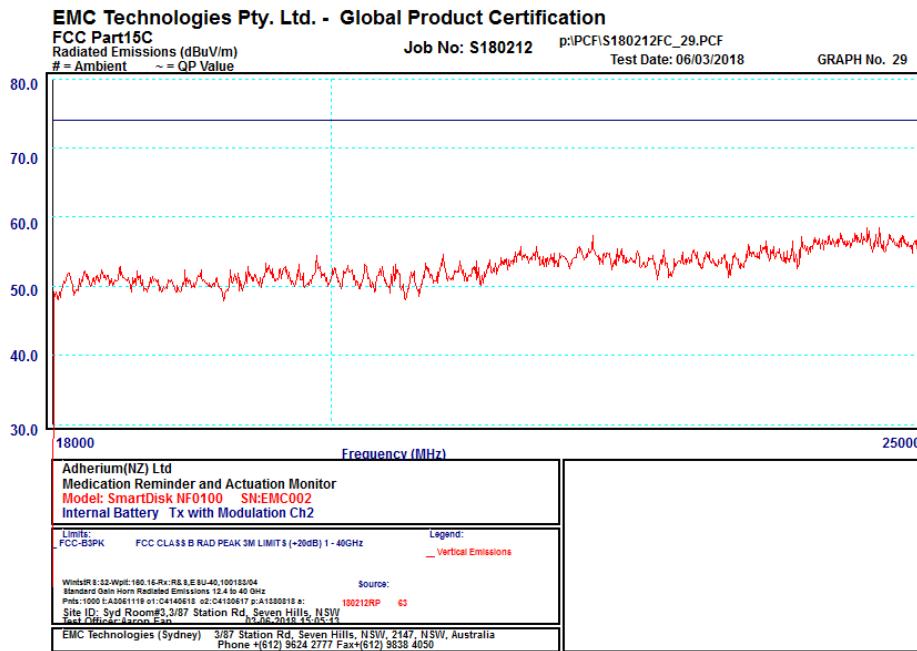


Average Measurement

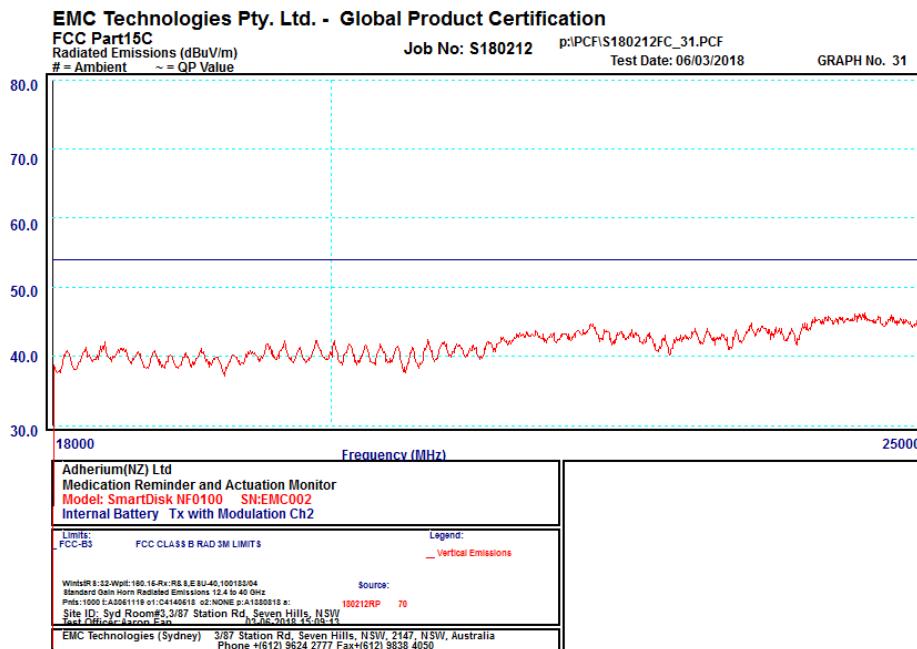


Channel 2440 MHz – Vertical 18 to 25 GHz

Peak Measurement

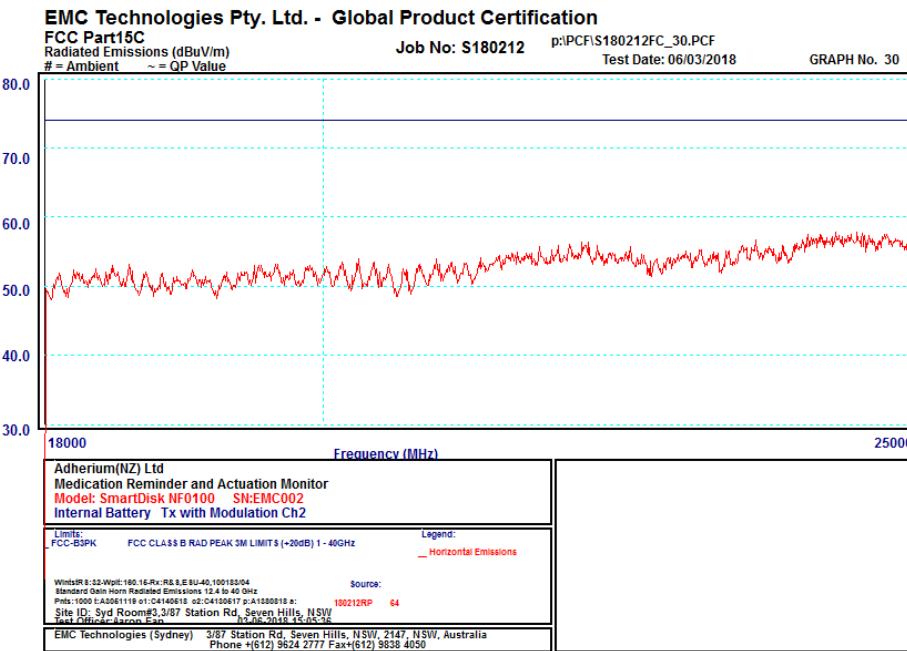


Average Measurement

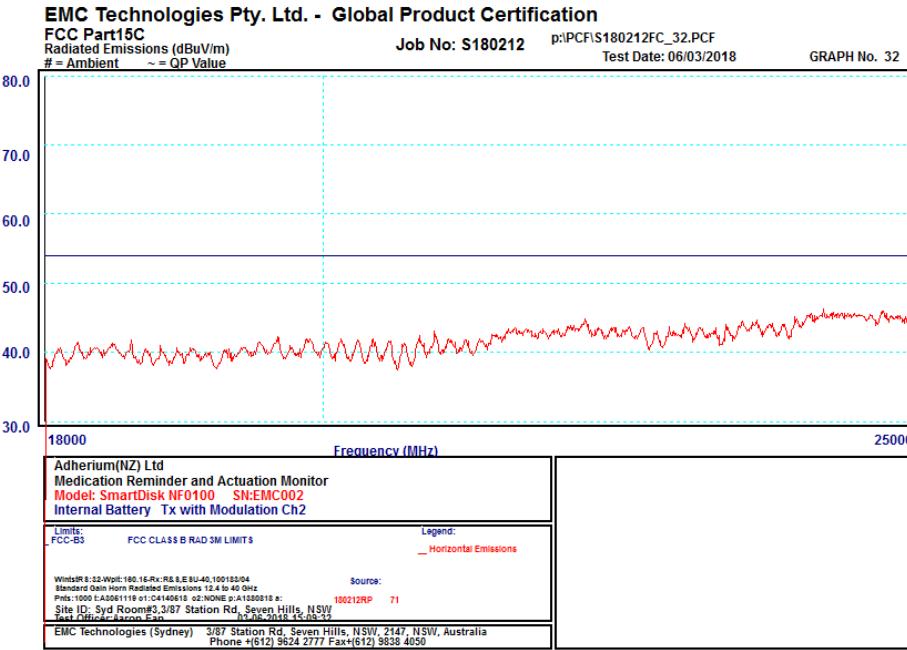


Channel 2440 MHz – Horizontal 18 to 25 GHz

Peak Measurement

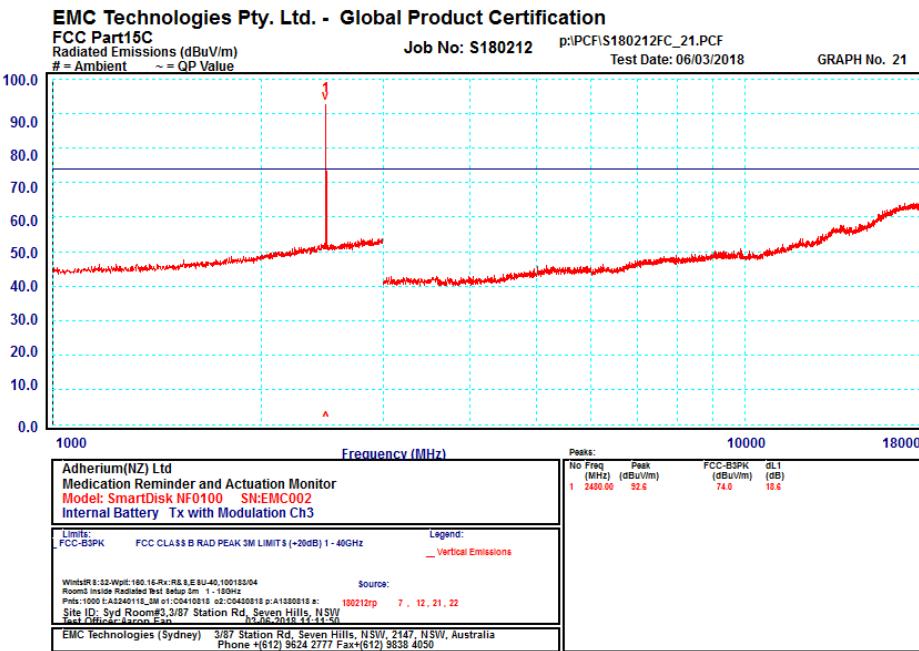


Average Measurement

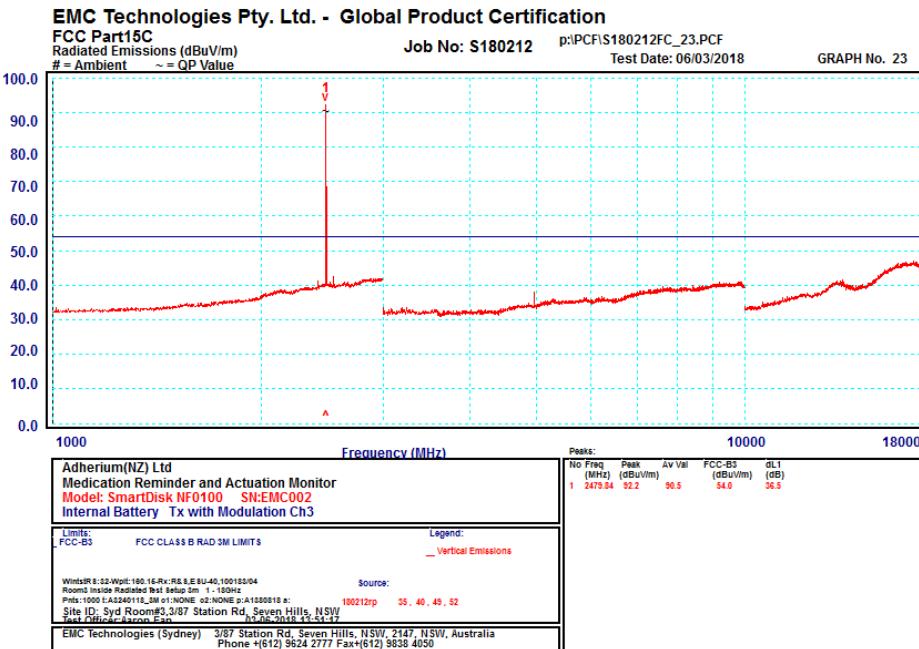


Channel 2480 MHz – Vertical, 1 to 18 GHz

Peak Measurement

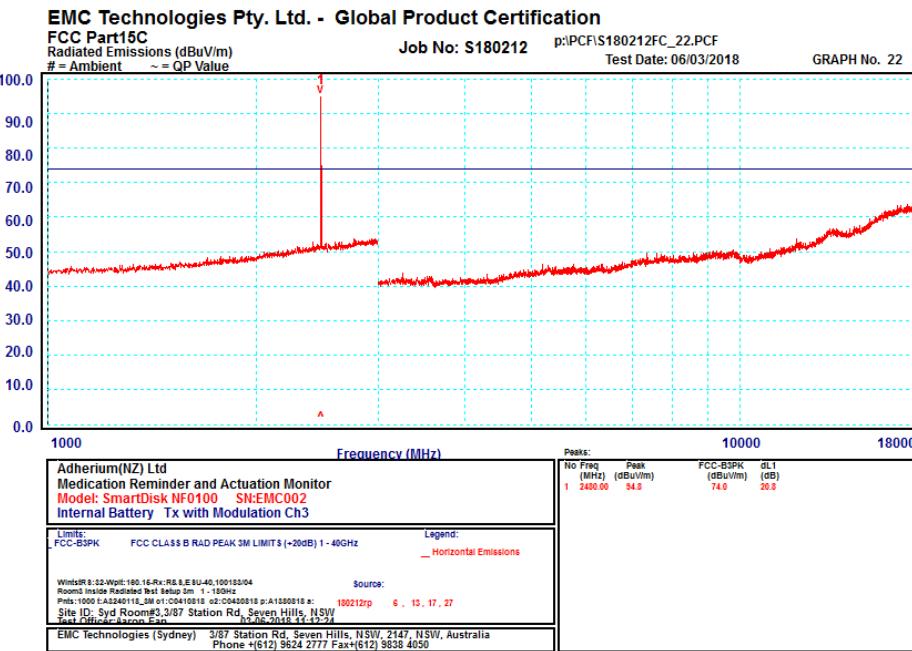


Average Measurement

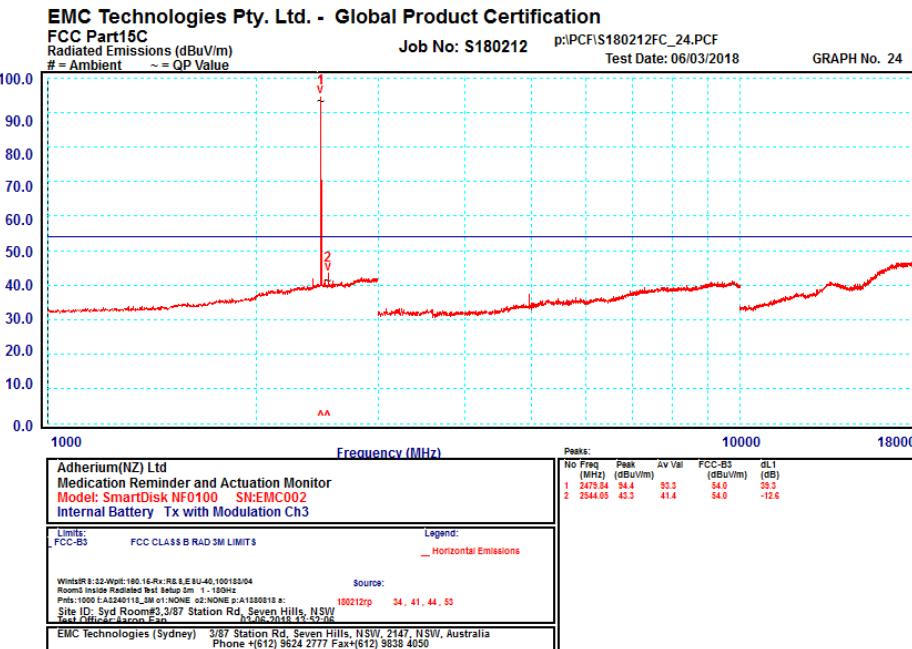


Channel 2480 MHz – Horizontal, 1 to 18 GHz

Peak Measurement

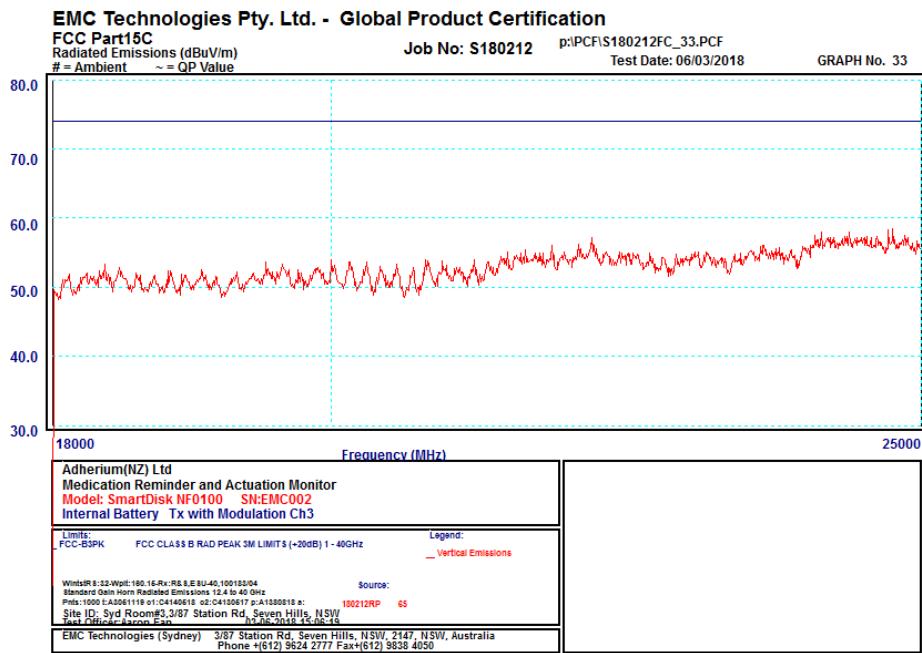


Average Measurement

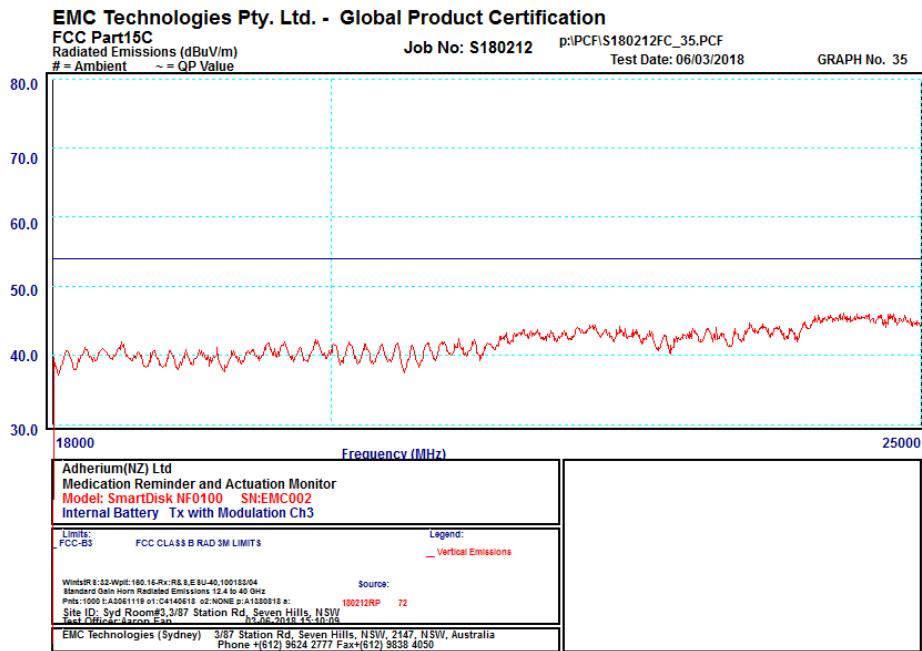


Channel 2480 MHz – Vertical 18 to 25 GHz

Peak Measurement

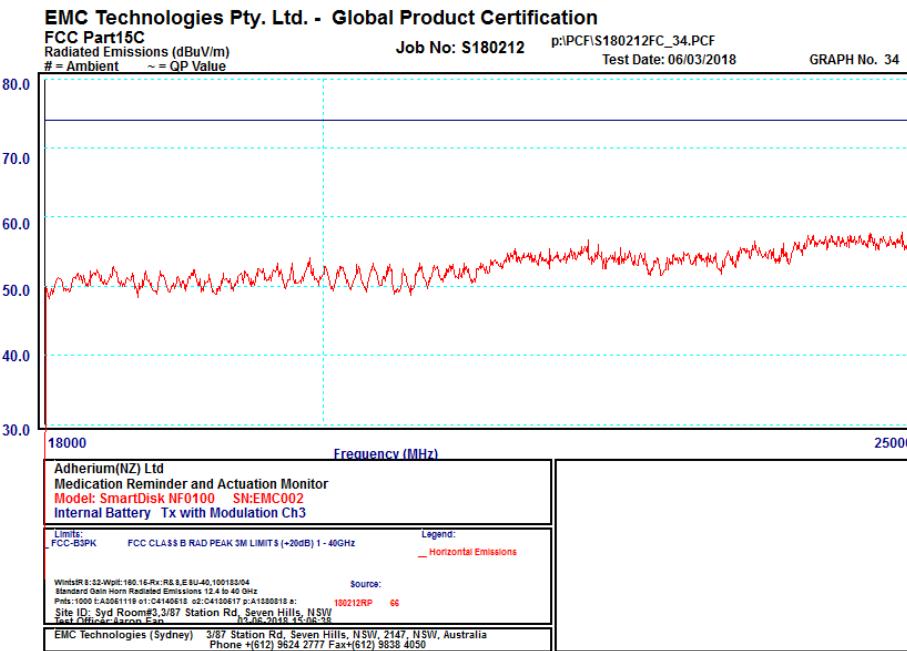


Average Measurement

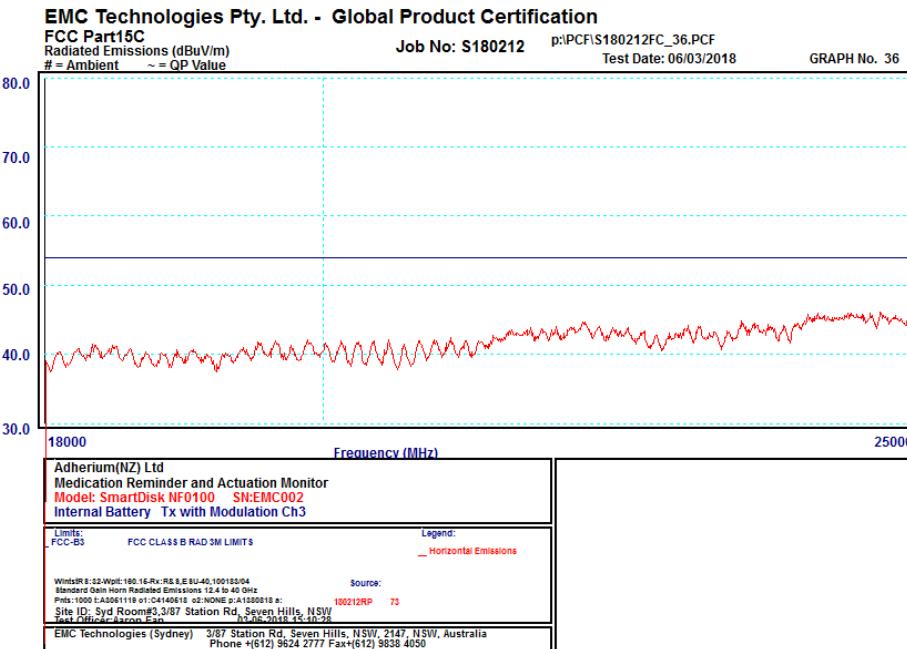


Channel 2480 MHz – Horizontal 18 to 25 GHz

Peak Measurement



Average Measurement



Conclusion:

The EUT complied with the limits of FCC Rule Part 15 Subpart C, 15.209.

3.9 15.247(d) Out of Band Emissions

Requirement:

In any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

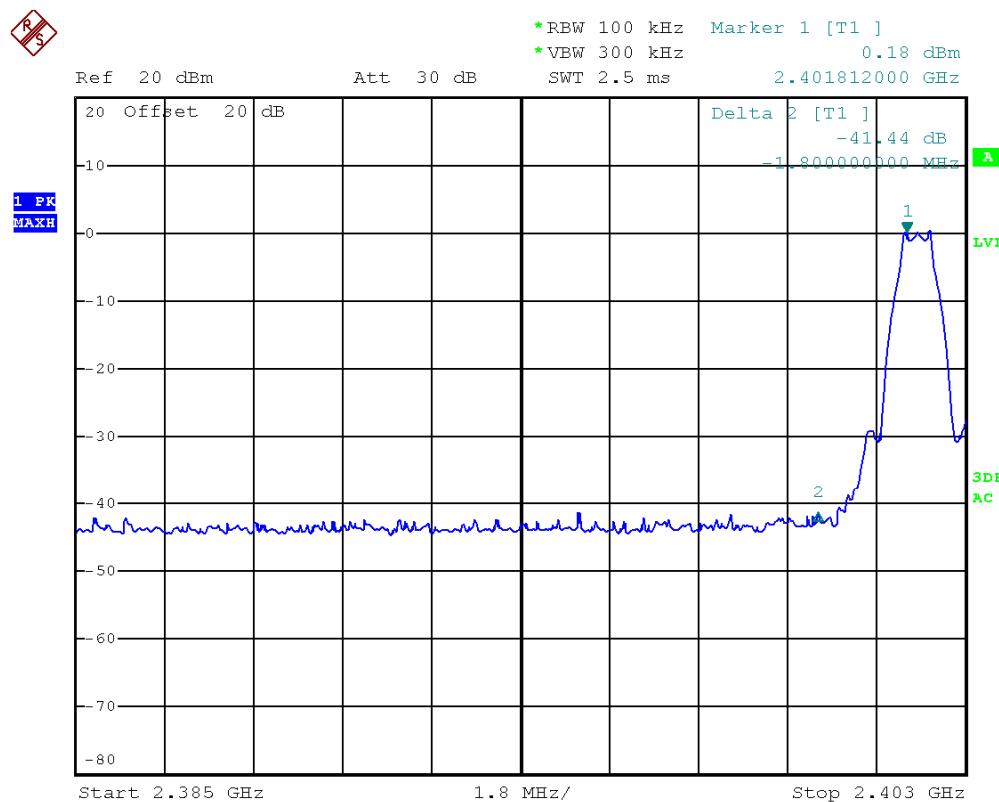
3.9.1 Authorized-band band-edge

Test was done by conducted measurement according to C63.10 Clause 6.10.4

Results:

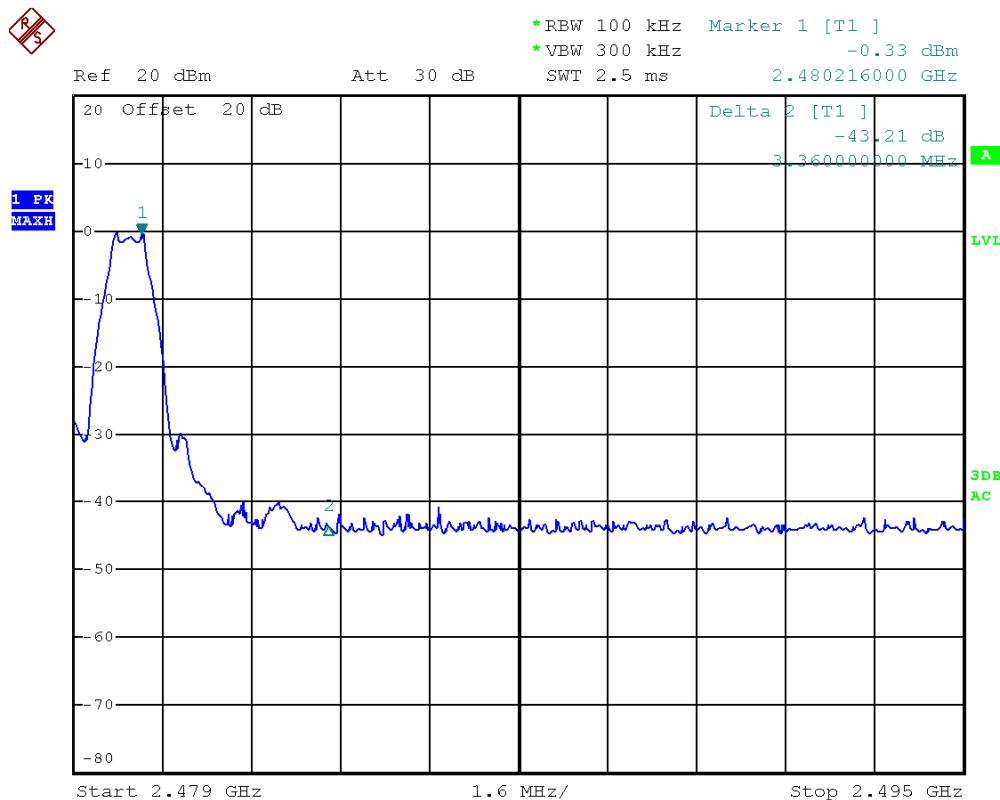
Channel 2402 MHz, Bottom Band Edge:

Hopping off, Delta2 was 41.44dB down at 2400 MHz.



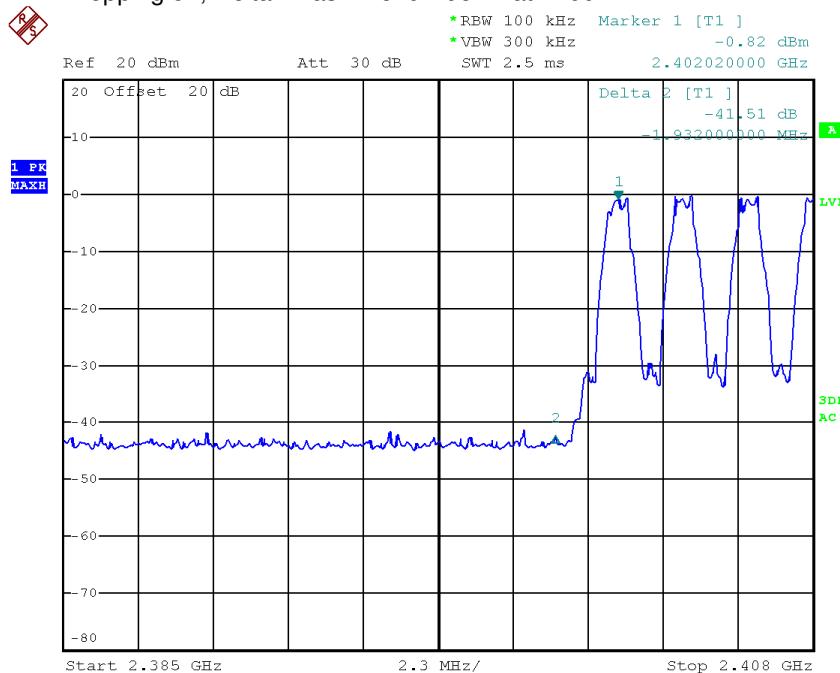
Date: 5.MAR.2018 14:39:56

Channel 2480 MHz, Top Band Edge:
Hopping off, Delta2 was 43.21dB down at 2483.57 MHz.



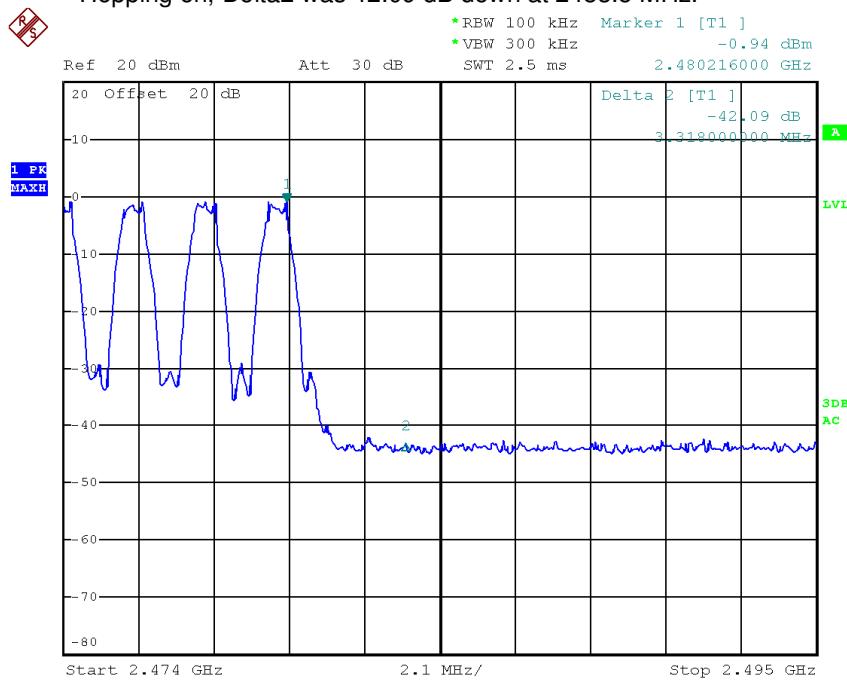
Date: 5.MAR.2018 14:42:21

Channel 2402 MHz, Bottom Band Edge:
Hopping on, Delta2 was 41.51dB down at 2400 MHz.



Date: 5.MAR.2018 14:44:20

Top Band Edge:
Hopping on, Delta2 was 42.09 dB down at 2483.5 MHz.



Date: 5.MAR.2018 14:46:21

Conclusion: Complied.

3.9.2 Restricted-band band-edge

This was done by radiated measurement according to C63.10 Clause 6.10.5

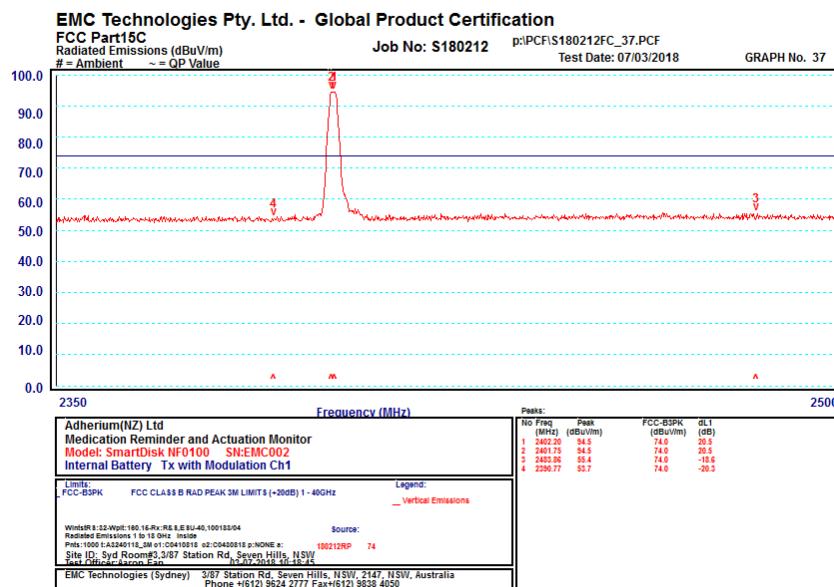
The peak measurements were made with a resolution bandwidth (RBW) of 1000 kHz and the video bandwidth (VBW) of 1000 kHz. The average measurement were made with a resolution bandwidth(RBW) of 1000kHz and the video bandwidth(VBW) of 10kHz.

Results:

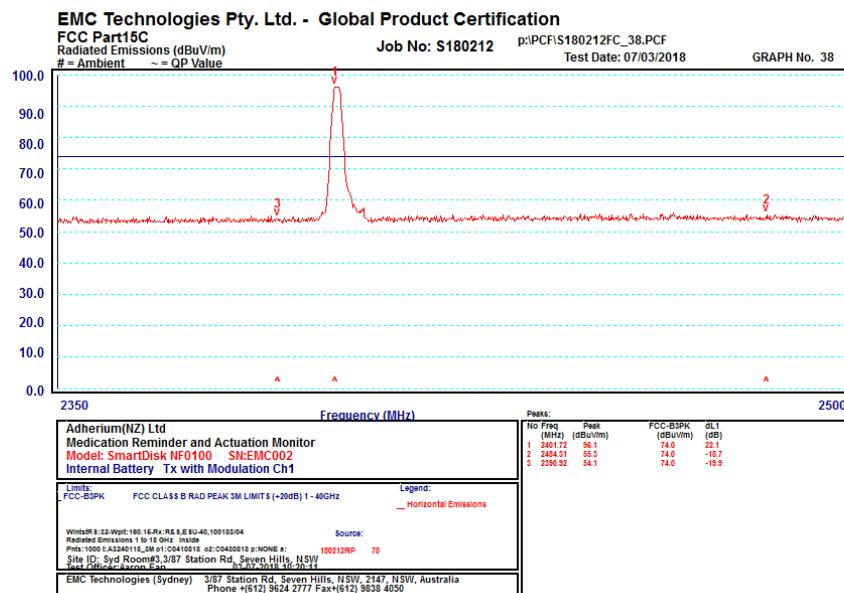
Channel 2402 MHz, Bottom Band Edge:

Hopping off, Mark1 and Mark2 being set to around 2390MHz and 2483.5MHz

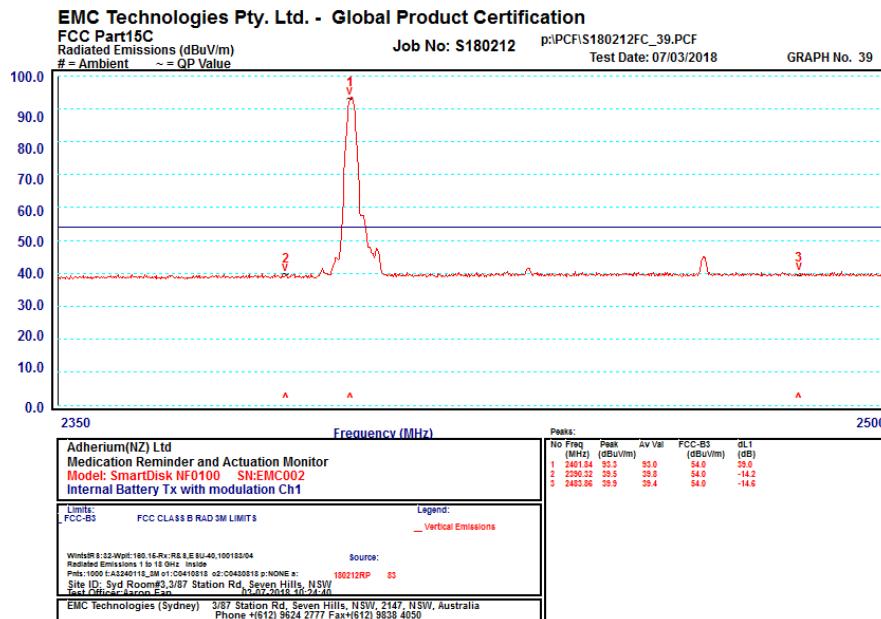
Peak measurement – Vertical Polarisation



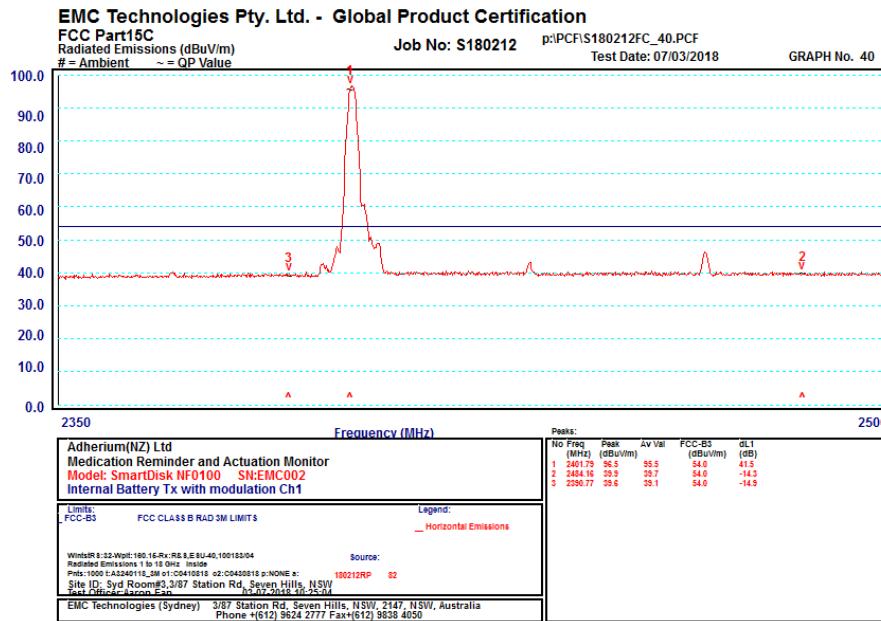
Peak measurement – Horizontal Polarisation



Average measurement – Vertical Polarisation

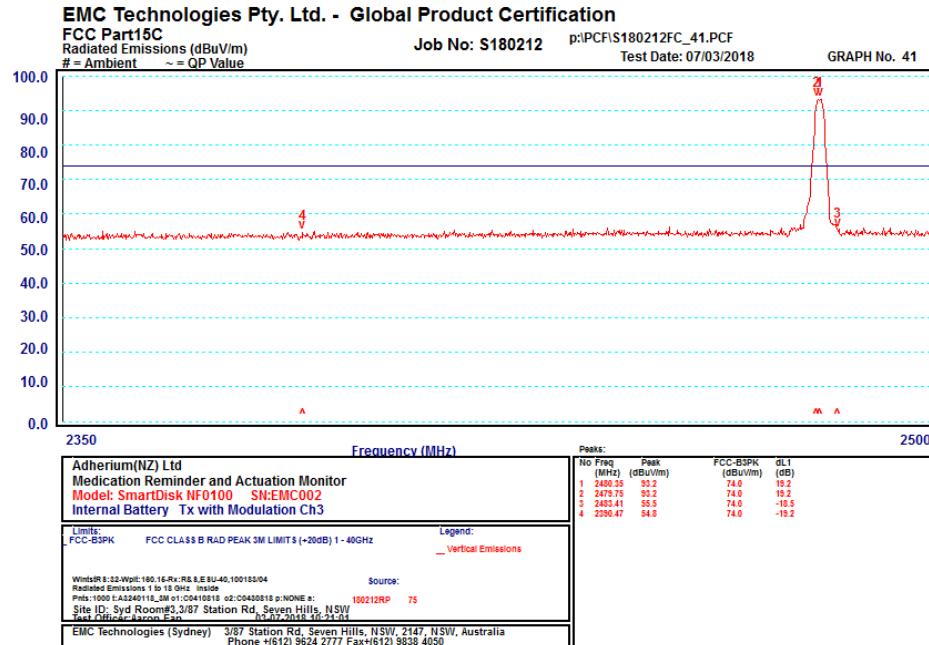


Average measurement – Horizontal Polarisation

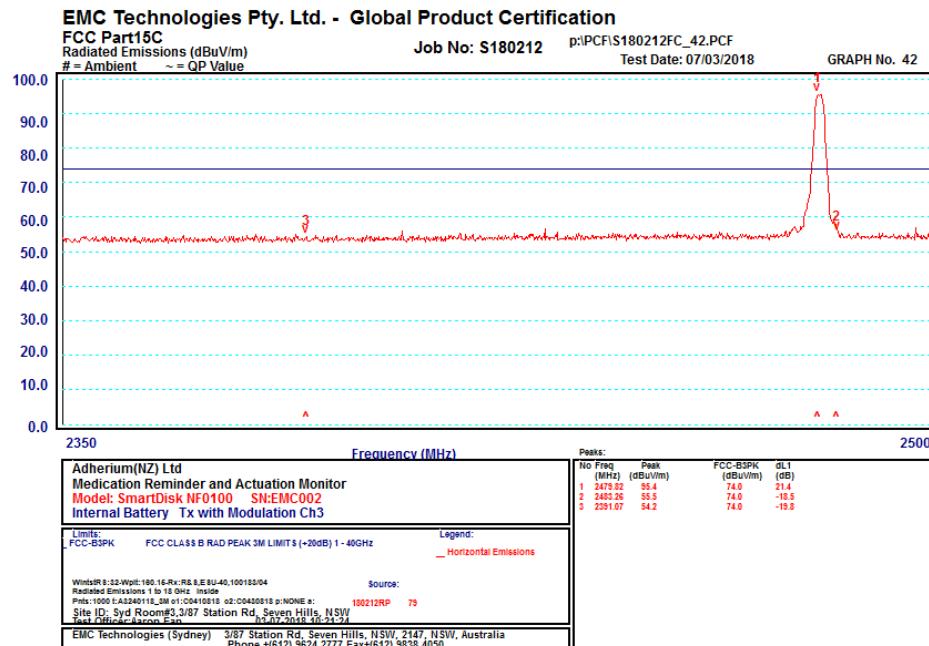


Channel 2480 MHz, Top Band Edge:
Hopping off, Mark1 and Mark2 being set to around 2390MHz and 2483.5MHz

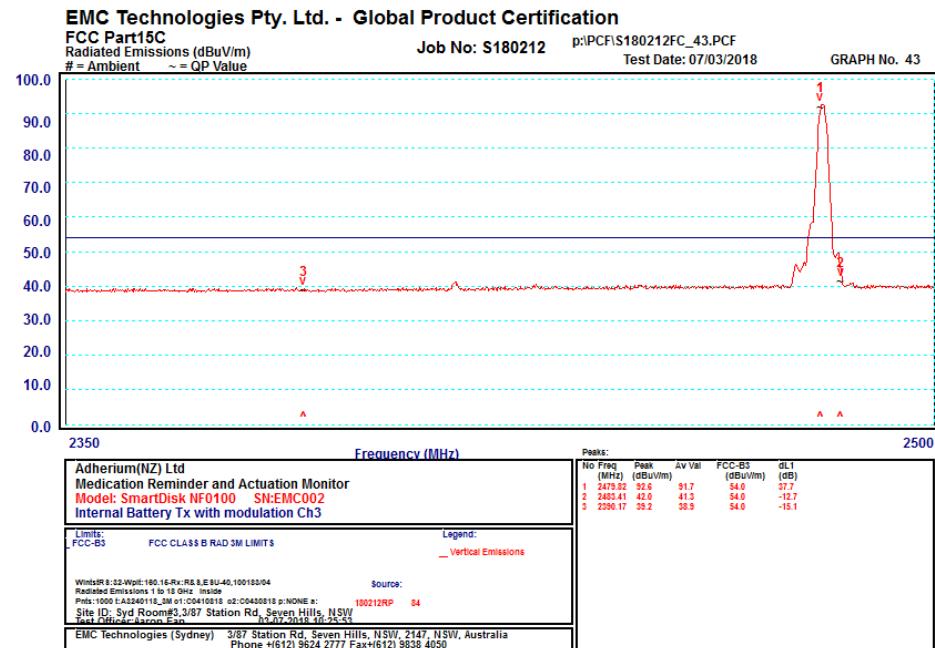
Peak measurement – Vertical Polarisation



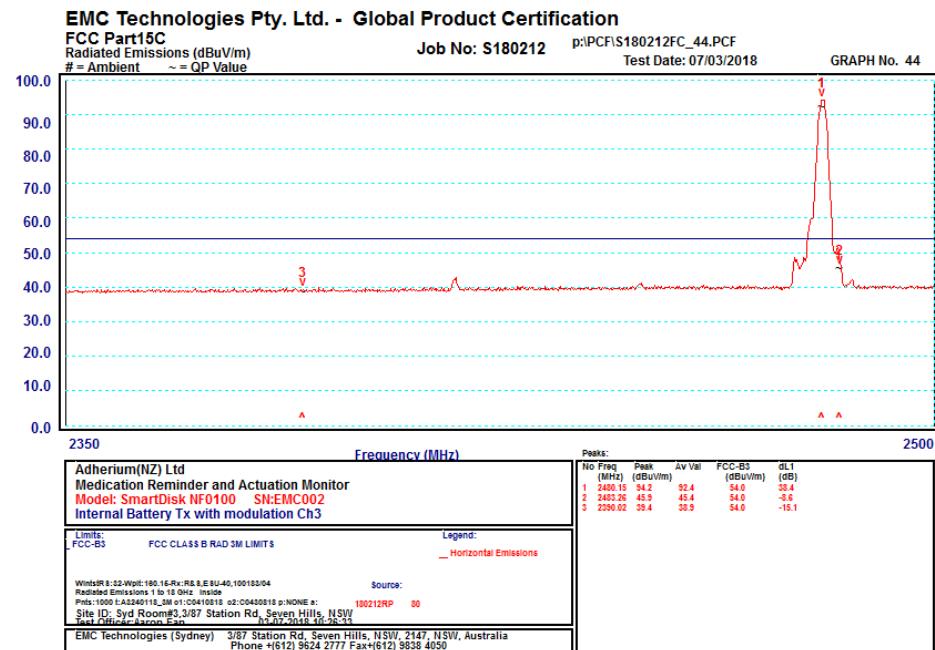
Peak measurement – Horizontal Polarisation



Average measurement – Vertical Polarisation

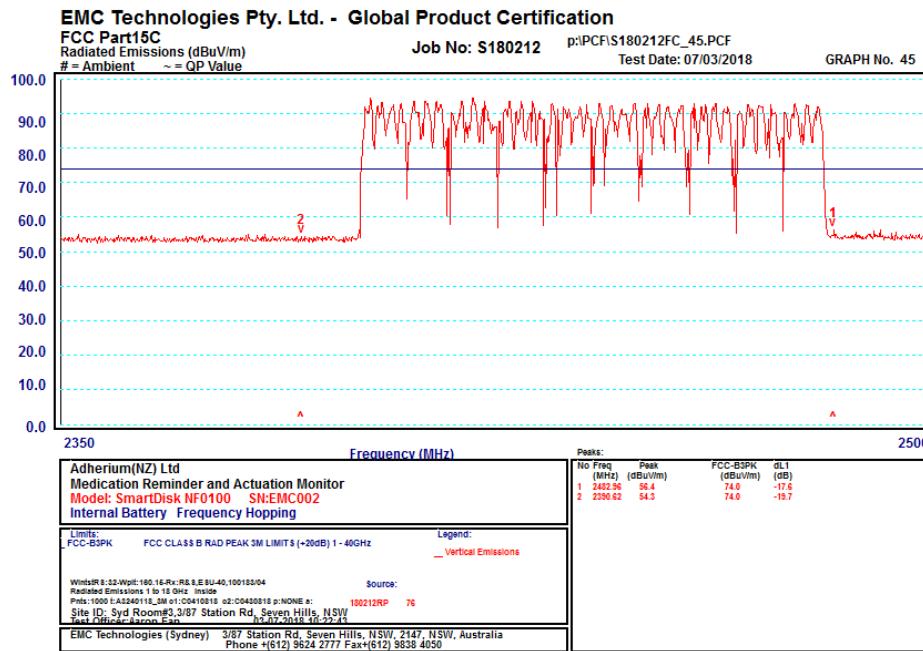


Average measurement – Horizontal Polarisation

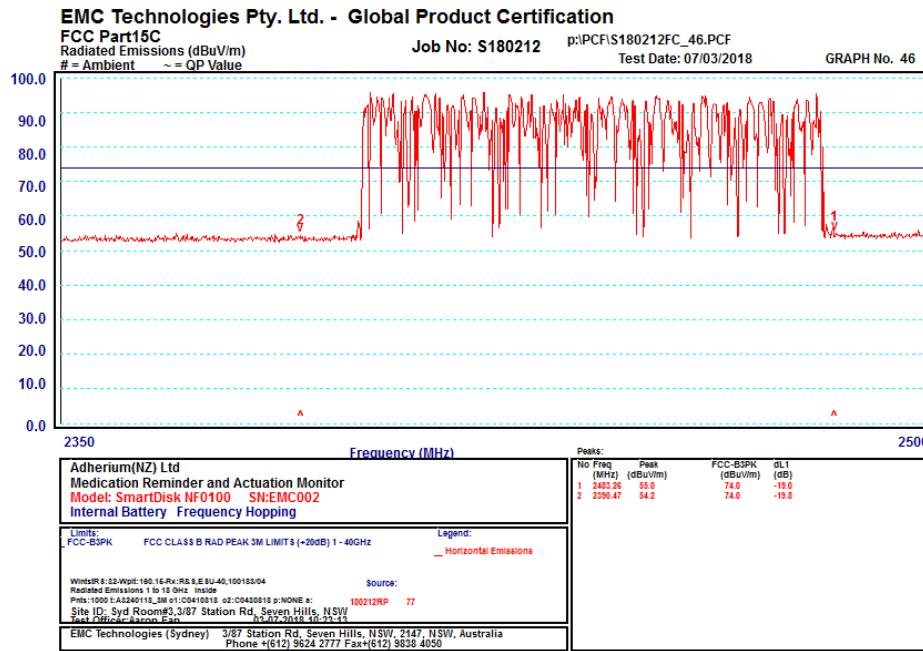


Hopping on, Mark1 and Mark2 being set to around 2390MHz and 2483.5MHz

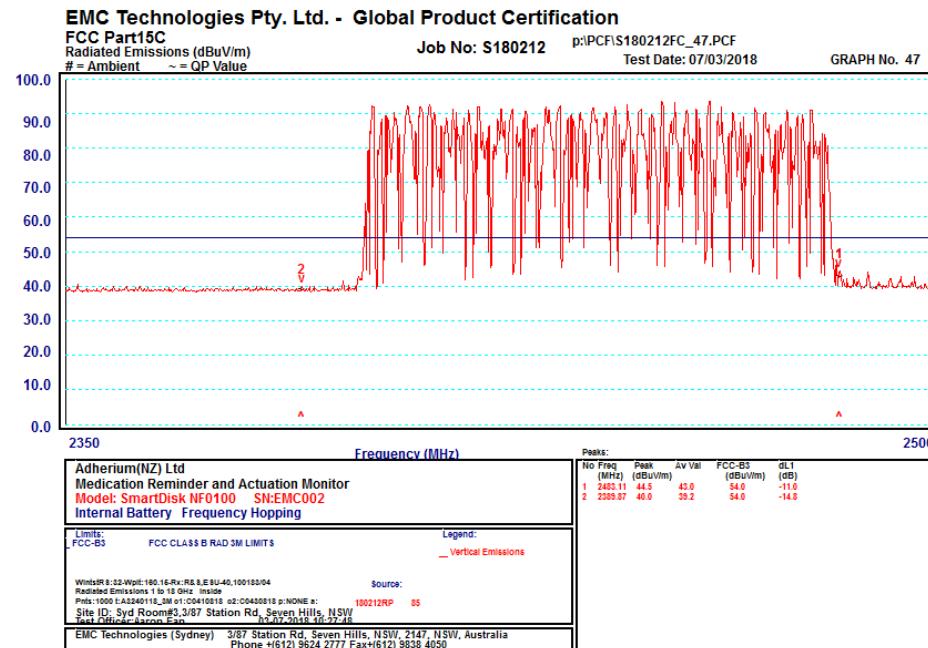
Peak measurement – Vertical Polarisation



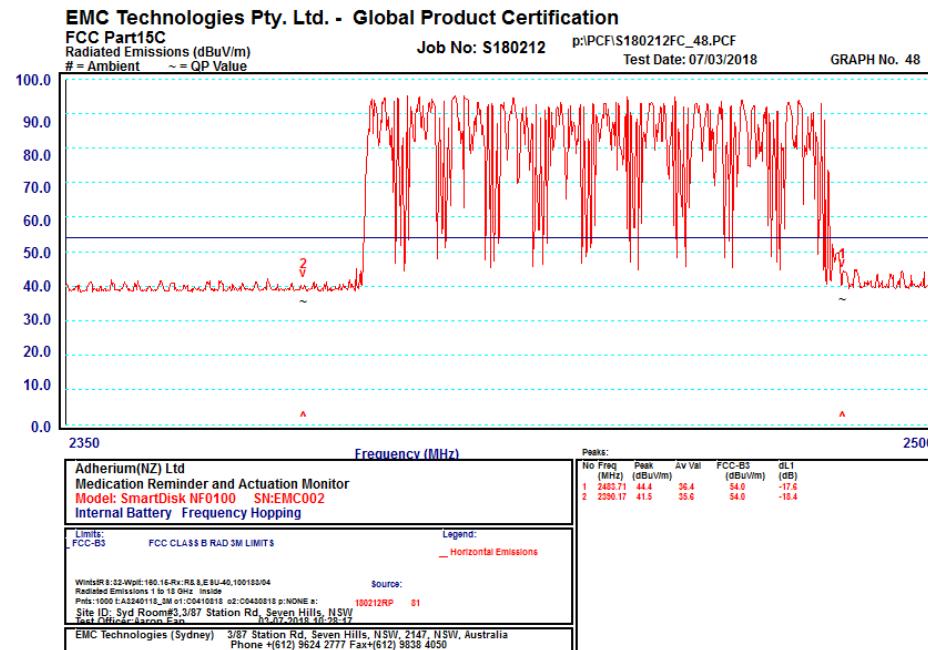
Peak measurement – Horizontal Polarisation



Average measurement – Vertical Polarisation



Average measurement – Horizontal Polarisation



3.10 §15.247(i) Maximum Permissible Exposure

Requirement:

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the commission's guidelines. See §1.1307(b)(1) of this chapter.

Due to the nature of EUT, Calculations were performed according to devices used within 20 cm of person (FCC2.1093) - < 50mm test separation.

KDB 447498 D01 V06 was used to calculate the minimum separation distance allowed before SAR measurements were required.

1-g Head or Body SAR:

$$\left(\frac{\text{max.channel power, mW}}{\text{min.separation distance, mm}} \right) \times \sqrt{f(\text{GHz})} \leq 3.0$$

10-g Extremity SAR:

$$\left(\frac{\text{max. channel power, mW}}{\text{min. separation distance, mm}} \right) \times \sqrt{f(\text{GHz})} \leq 7.5$$

Result:

Maximum measured power, E.I.R.P. = 0.55dBm + 1dBi = 1.55dBm = 1.43mW

Minimum separation distance = 5mm

Highest frequency = 2.48 GHz

$$1.43\text{mW} / 5 \text{ mm} \times \sqrt{2.48 \text{ GHz}} = 0.45 < 3.0 \text{ and } 7.5$$

Conclusion: Complied.

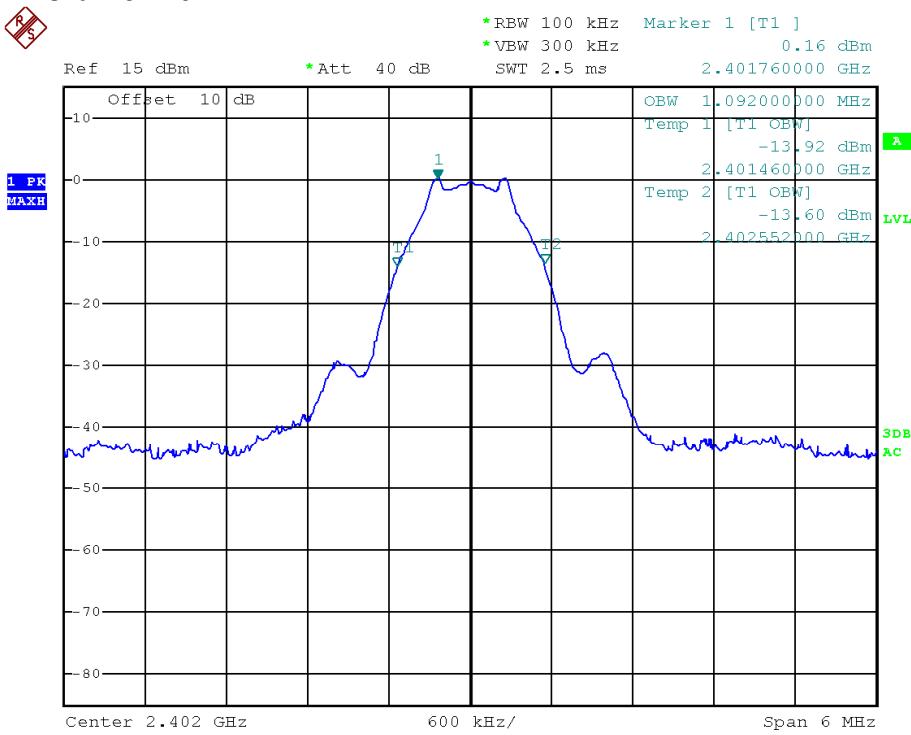
3.11 §2.1049 Occupied bandwidth – 99% power

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

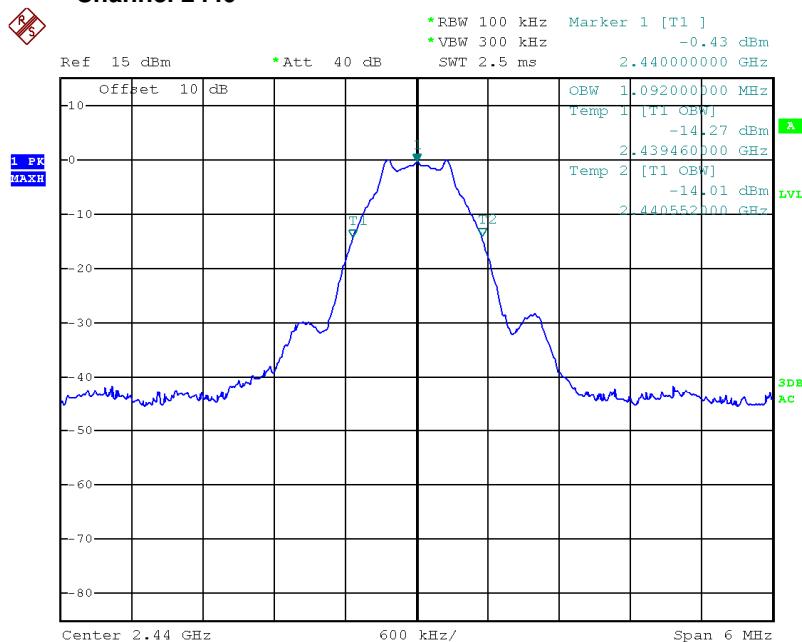
Channel [kHz]	99% Bandwidth [MHz]	Low Frequency [GHz]	High Frequency [GHz]
2402	1.092	2.40146	2.402552
2440	1.092	2.43946	2.440552
2480	1.092	2.47946	2.480552

99% Occupied Bandwidth

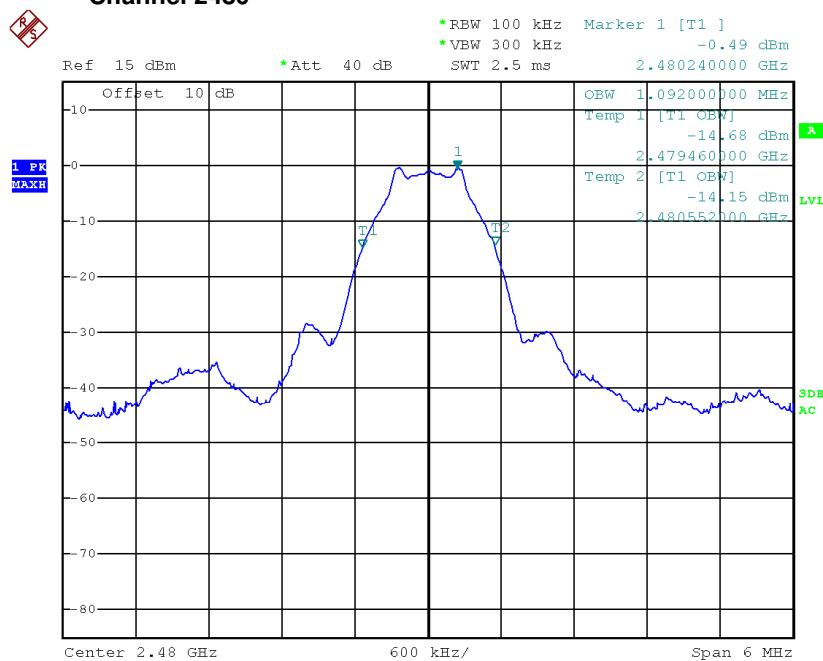
Channel 2402



Date: 11.APR.2018 12:24:04

99% Occupied Bandwidth**Channel 2440**

Date: 11.APR.2018 12:25:29

99% Occupied Bandwidth**Channel 2480**

Date: 11.APR.2018 12:27:12

4.0 COMPLIANCE STATEMENT

The Medication reminder and actuation monitor for use with medication inhalers, with Model: SmartDisk tested on behalf of Adherium(NZ) Ltd. complied with the requirements of 47 CFR, Part 15 Subpart C - Rules for Radio Frequency Devices (intentional radiators) operating within the band: 2400 MHz to 2483.5 MHz.

5.0 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

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%.