

Melbourne

176 Harrick Road
Keilor Park, Vic 3042
Tel: +61 3 9365 1000

Sydney

Unit 3/87 Station Road
Seven Hills, NSW 2147
Tel: +61 2 9624 2777

Email: emc-general@emctech.com.au

Web: www.emctech.com.au

RADIO REPORT FOR CERTIFICATION

REPORT NUMBER: M1911041-1R1

**TEST STANDARDS: FCC PART 15 SUBPART C
SECTION 15.247**

ISED RSS-247 SECTION 5.0

**CLIENT: AUTOMATIC TECHNOLOGY
AUSTRALIA PTY LTD**

DEVICE: NETWORK TRANSCEIVER MODULE

MODEL: NTR-1V1

DATE OF ISSUE: 18 FEBRUARY 2020

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Accreditation No.5292

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Equipment Under Test: Network Transceiver Module

REVISION TABLE

| Version | Sec/Para Changed | Change Made | Date |
|---------|------------------|---|------------|
| 1 | | Initial issue of document | 14/02/2020 |
| 2 | | ISED RSS-247 Standard added to this test report | 18/02/2020 |
| | | | |
| | | | |

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CERTIFICATE OF COMPLIANCE

Device: Network Transceiver Module
Model Number: NTR-1V1
Manufacturer: Automatic Technology Australia Pty Ltd

FCC ID: X4K-TRX02403
IC ID: 8880A-TRX02403

Tested for: Automatic Technology Australia Pty Ltd
Address: 6–8 Fiveways Boulevard, Keysborough, VIC 3172
Phone Number: +61 3 9791 0200
Contact: Nikolai Klepikov
Email: nikolai.klepikov@ata-aust.com.au

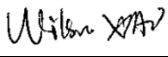
Standard: FCC Part 15, Subpart C, Section 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz (Partial testing)

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 (Partial testing)

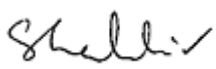
Result: The test sample complied with the tested requirements of the above standards.

Test Date(s): 6th and 13th December, 2019

Issue Date: 18 February 2020

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, PhD
Senior EMC and RF Engineer

Issued by: EMC Technologies Pty. Ltd.,
176 Harrick Road, Keilor Park, VIC, 3042, Australia.
Phone: +61 3 9365 1000
E-mail: emc-general@emctech.com.au **Web:** www.emctech.com.au

RADIO REPORT FOR CERTIFICATION

1 TEST SUMMARY

| Sec. | Description | FCC | ISED | Result(s) |
|------|--|------------|-------------------------------|-----------|
| 6.1 | Antenna Requirement | §15.203 | §RSS-Gen 6.8 | Complied |
| 6.2 | Restricted Bands of Operation | §15.205 | §RSS-Gen 8.10 /RSS-247 3.3 | Complied |
| 6.3 | Conducted Limits | §15.207 | §RSS-Gen 8.8 | Complied |
| 6.4 | Radiated emission limits; general requirements | §15.209 | §RSS-Gen 8.9 | Complied |
| 6.5 | Out-of-Band/Spurious Emissions | §15.247(d) | §RSS-247 5.5 | 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 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 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 similar to ISO 9002. NATA has mutual recognition agreements with the National Voluntary Laboratory Accreditation Program (NVLAP) and the American Association for Laboratory Accreditation (A²LA).

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

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

3 TEST EQUIPMENT CALIBRATION

Measurement instrumentation and transducers were calibrated in accordance with the applicable standards by an independent NATA accredited 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-10-2 (R-139) | 10/01/2019 | 10/01/2022 | 3 Year* ¹ |
| EMI Receiver | Rhode & Schwarz ESR7 Sn: 101804 (R-142) | 06/08/2019 | 06/08/2020 | 1 Year* ² |
| | R&S ESCI Sn:100011 (R-028) | 02/07/2019 | 02/07/2020 | 1 Year* ² |
| Antennas | SUNOL JB1 Sn. A012312 (A-363) | 05/06/2019 | 05/06/2021 | 2 Year* ² |
| | EMCO 3115 Horn Antenna Sn: 9501-4398 (A-406) | 16/01/2019 | 16/01/2022 | 3 Year* ² |
| | EMCO 6502 Active Loop Antenna Sn: 9311-2801 (A-231) | 16/11/2018 | 16/11/2020 | 2 Year* ² |
| Cables* ³ | Huber & Suhner Sucoflex 104A Sn: 507095/4A (C-486) | 29/01/2019 | 29/01/2020 | 1 Year* ¹ |
| | Huber & Suhner Sucoflex 104A Sn: 503056 (C-458) | 25/01/2019 | 25/01/2020 | 1 Year* ¹ |
| | Huber & Suhner Sucoflex 104A Sn: 503056 (C-487) | 29/01/2019 | 29/01/2020 | 1 Year* ¹ |

Note *1. Internal NATA calibration.

Note *2. External NATA / A2LA calibration.

Note *3. Calibration date was valid during the time of testing.

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:

| | | |
|-----------------------------|---------------------|---------|
| 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 |
| 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%.

5 DEVICE DETAILS

(Information supplied by the Client)

The NTR-1V1 was a radio transceiver which plugged into a garage door or gate controller. The connection provided power and allowed commands and status to be exchanged so that the garage door or gate could be controlled and monitored via the home network.

5.1 EUT (Transmitter) Details

| | |
|-----------------------------|---|
| Radio: | 915MHz radio transceiver |
| Operating Frequency: | Low Channel: 912.5 MHz Mid Channel: 919.7 MHz High Channel: 926.9 MHz |
| Modulation: | 2GFSK, 40 kb/s |
| Number of Channels: | 25 |
| Antenna: | Monopole Wire Antenna |
| Antenna gain: | unknown |

5.2 EUT (Host) Details

| | |
|-----------------------|---|
| Test Sample: | Network Transceiver Module |
| Model Number: | NTR-1V1 |
| Serial Number: | 14817 |
| Manufacturer: | Automatic Technology Australia Pty Ltd |
| Supply Rating: | Power Adapter Input: 100- 240 V AC, 50/60Hz,0.3A Output: 5V DC, 2000mA |

5.3 Test Configuration

Testing was performed with the EUT set to transmit continuously (with modulation applied) at low, mid and high channel with maximum transmit power.

5.4 Modifications

No modification was required to achieve compliance.

Note:

The EUT was perviously tested in 2016 and refer to Report M160424-1Rev3 for all other test results.

The following changes have been made on the EUT:

- The method of powering the board from a dual power supply (+24Vdc and +5Vdc) to a single (+5Vdc) has been changed.
- Type of voltage regulator changed from DC/DC converter to linear (LDO).

The RF part and interface remained unchanged.

6 RESULTS

6.1 §15.203/ RSS-Gen 6.8 Antenna Requirement

The 915 MHz radio transceiver incorporates a wire antenna which is soldered directly to the PCB and cannot be replaced by another type.

Antenna Type: Wire antenna

Antenna gain: Unknown

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

The provisions of the §15.205 restricted bands of operation and §15.209 radiated emissions limits have been met, refer to section 6.5

6.3 §15.207/ RSS-Gen 8.8 Conducted Limits

6.3.1 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.

6.3.2 Limits

The limit applied was in accordance to the conducted limits defined in §15.207.

6.3.3 Results

The sample complied with the conducted emission limits of §15.207.

M1911041
Automatic Technology Australia
Network Transceiver Module (Model:NTR-1V1AM)
Low Channel: 912.5MHz

Job No: M1911041
Test Date: 13/12/2019

Limit1: FCC207_QP
Limit2: FCC207_AV

FCC Part 15.207 Conducted Quasi-Peak Limit
FCC Part 15.207 Conducted Average Limit

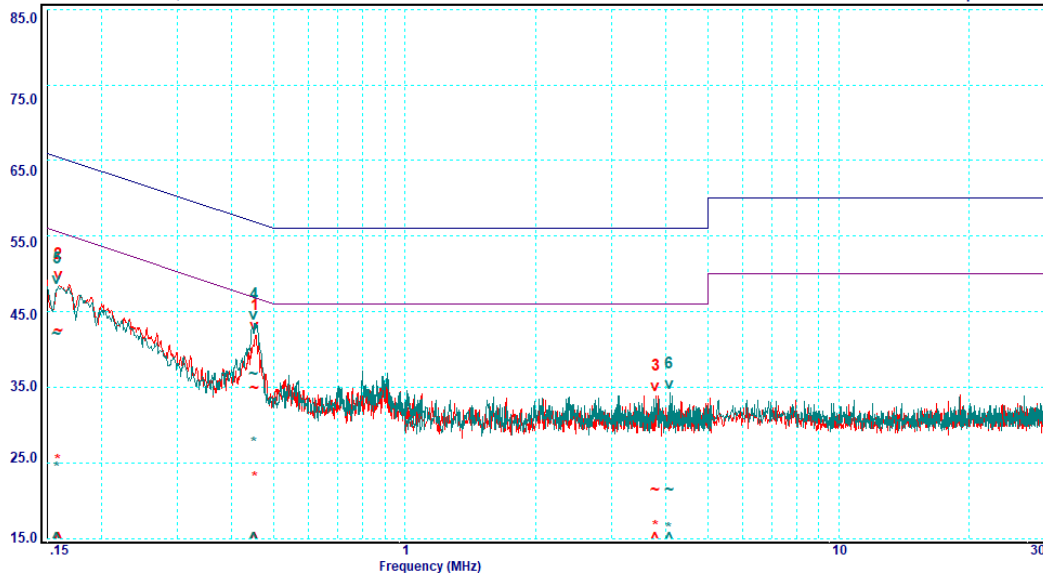
Trace 2: Active Line
Trace 3: Neutral Line

Test Officer-Plot date:01-20-2020 17:21:11
t:L0721220 c1:C3990120 c2:C2840120 p:NONE a:L0170720
Site ID:

WintRS:32.8-Wpit:160.16-Rx:R&S,ESCI-3,100011/00

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

Graph No. 2



Graph 6-1: Conducted AC mains emission, 0.15 – 30 MHz, Low channel – 912.5 MHz

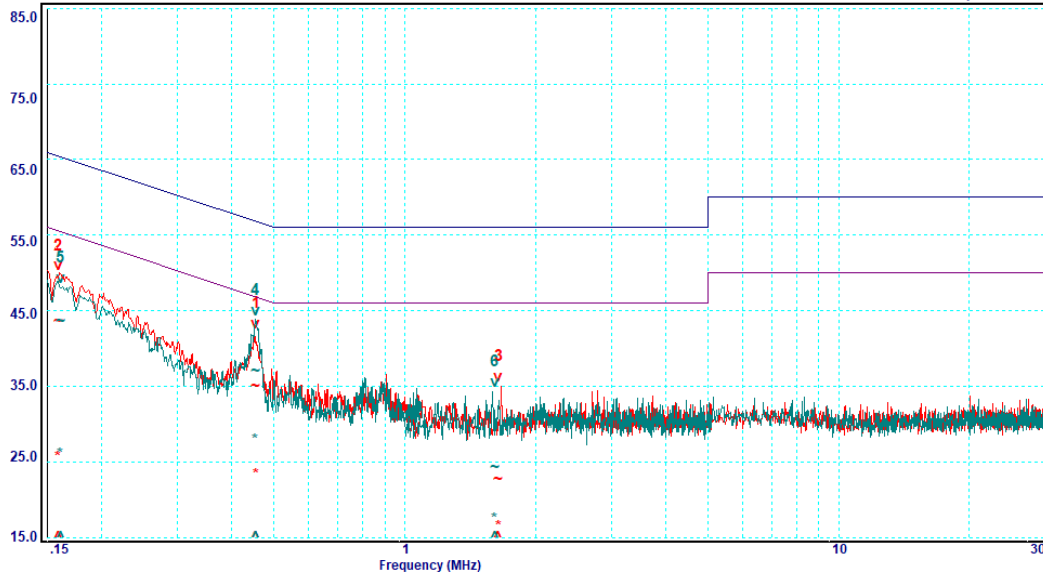
Table 6-1: Conducted AC mains emission, 0.15 – 30 MHz, Low channel – 912.5 MHz

| Peak | Frequency [MHz] | Line | Quasi-Peak | | | Average | | |
|------|-----------------|---------|--------------|--------------|---------------|--------------|--------------|---------------|
| | | | Level [dBμV] | Limit [dBμV] | Δ Limit [±dB] | Level [dBμV] | Limit [dBμV] | Δ Limit [±dB] |
| 1 | 0.452 | Active | 34.9 | 56.8 | -21.9 | 23 | 46.8 | -23.8 |
| 2 | 0.159 | Active | 42.5 | 65.5 | -23 | 25.2 | 55.5 | -30.3 |
| 3 | 3.792 | Active | 21.3 | 56 | -34.7 | 16.5 | 46 | -29.5 |
| 4 | 0.45 | Neutral | 36.7 | 56.9 | -20.2 | 27.6 | 46.9 | -19.3 |
| 5 | 0.158 | Neutral | 41.9 | 65.6 | -23.7 | 24.3 | 55.6 | -31.3 |
| 6 | 4.064 | Neutral | 21.4 | 56 | -34.6 | 16.2 | 46 | -29.8 |

M1911041
Automatic Technology Australia
Network Transceiver Module (Model:NTR-1V1AM)
Mid Channel: 919.7MHz

Limit1: FCC207_QP FCC Part 15.207 Conducted Quasi-Peak Limit
Limit2: FCC207_AV FCC Part 15.207 Conducted Average Limit
Trace 2: Active Line
Trace 3: Neutral Line

Job No: M1911041 Test Date: 13/12/2019 Test Officer: Plot date: 01-20-2020 17:23:12 WinstRS: 32.8-Wpit:160.16-Rx:R&S,ESCI-3,100011/00
~ = QP Value * = CISPR Av t:L0721220 c1:C3990120 c2:C2840120 p:NONE a:L0170720 Site ID: Graph No. 3



Graph 6-2: Conducted AC mains emission, 0.15 – 30 MHz, Mid channel – 919.7 MHz

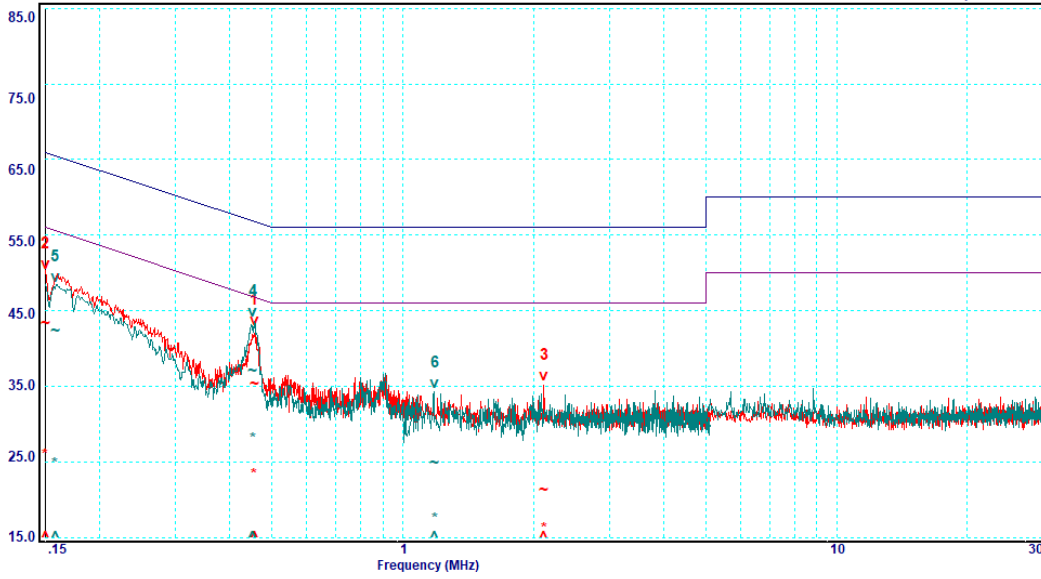
Table 6-2: Conducted AC mains emission, 0.15 – 30 MHz, Mid channel – 919.7 MHz

| Peak | Frequency [MHz] | Line | Quasi-Peak | | | Average | | |
|------|-----------------|---------|--------------|--------------|---------------|--------------|--------------|---------------|
| | | | Level [dBμV] | Limit [dBμV] | Δ Limit [±dB] | Level [dBμV] | Limit [dBμV] | Δ Limit [±dB] |
| 1 | 0.454 | Active | 35 | 56.8 | -21.8 | 23.2 | 46.8 | -23.6 |
| 2 | 0.159 | Active | 43.6 | 65.5 | -21.9 | 25.6 | 55.5 | -29.9 |
| 3 | 1.647 | Active | 22.6 | 56 | -33.4 | 16.4 | 46 | -29.6 |
| 4 | 0.453 | Neutral | 37 | 56.8 | -19.8 | 27.8 | 46.8 | -19 |
| 5 | 0.161 | Neutral | 43.5 | 65.4 | -21.9 | 25.9 | 55.4 | -29.5 |
| 6 | 1.614 | Neutral | 24.2 | 56 | -31.8 | 17.4 | 46 | -28.6 |

M1911041
Automatic Technology Australia
Network Transceiver Module (Model:NTR-1V1AM)
High Channel: 926.9MHz

Limit1: FCC207_QP FCC Part 15.207 Conducted Quasi-Peak Limit
Limit2: FCC207_AV FCC Part 15.207 Conducted Average Limit
Trace 2: Active Line
Trace 3: Neutral Line

Job No: M1911041 Test Date: 13/12/2019 Test Officer: Plot date: 01-20-2020 17:25:01 WinstRS: 32.8-Wpit160.16-Rx: R&S, ESCI-3, 100011/00
~ = QP Value * = CISPR Av t: L0721220 c1: C3990120 c2: C2840120 p: NONE a: L0170720 Site ID: Graph No. 1



Graph 6-3: Conducted AC mains emission, 0.15 – 30 MHz, High channel – 926.9 MHz

Table 6-3: Conducted AC mains emission, 0.15 – 30 MHz, High channel – 926.9 MHz

| Peak | Frequency [MHz] | Line | Quasi-Peak | | | Average | | |
|------|-----------------|---------|--------------|--------------|---------------|--------------|--------------|---------------|
| | | | Level [dBµV] | Limit [dBµV] | Δ Limit [±dB] | Level [dBµV] | Limit [dBµV] | Δ Limit [±dB] |
| 1 | 0.456 | Active | 35.2 | 56.8 | -21.6 | 23.2 | 46.8 | -23.6 |
| 2 | 0.151 | Active | 43.3 | 66 | -22.7 | 25.8 | 56 | -30.2 |
| 3 | 2.119 | Active | 21.3 | 56 | -34.7 | 16.1 | 46 | -29.9 |
| 4 | 0.452 | Neutral | 37 | 56.8 | -19.8 | 27.9 | 46.8 | -18.9 |
| 5 | 0.159 | Neutral | 42.4 | 65.5 | -23.1 | 24.7 | 55.5 | -30.8 |
| 6 | 1.189 | Neutral | 24.8 | 56 | -31.2 | 17.3 | 46 | -28.7 |

6.4 §15.209/ RSS-Gen 8.9 Radiated emission limits; general requirements

The provisions of the §15.205 restricted bands of operation and §15.209 radiated emissions limits have been met, refer to section 6.5

6.5 §15.247(d)/ RSS-247 5.5 Out-of-Band/Spurious Emissions

6.5.1 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 | 10 | 0.6 metre loop antenna |
| 0.150 to 30 | 9 | 10 | |
| 30 to 1000 | 120 | 10 | 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 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.

Measurements on the worst axis presented below.

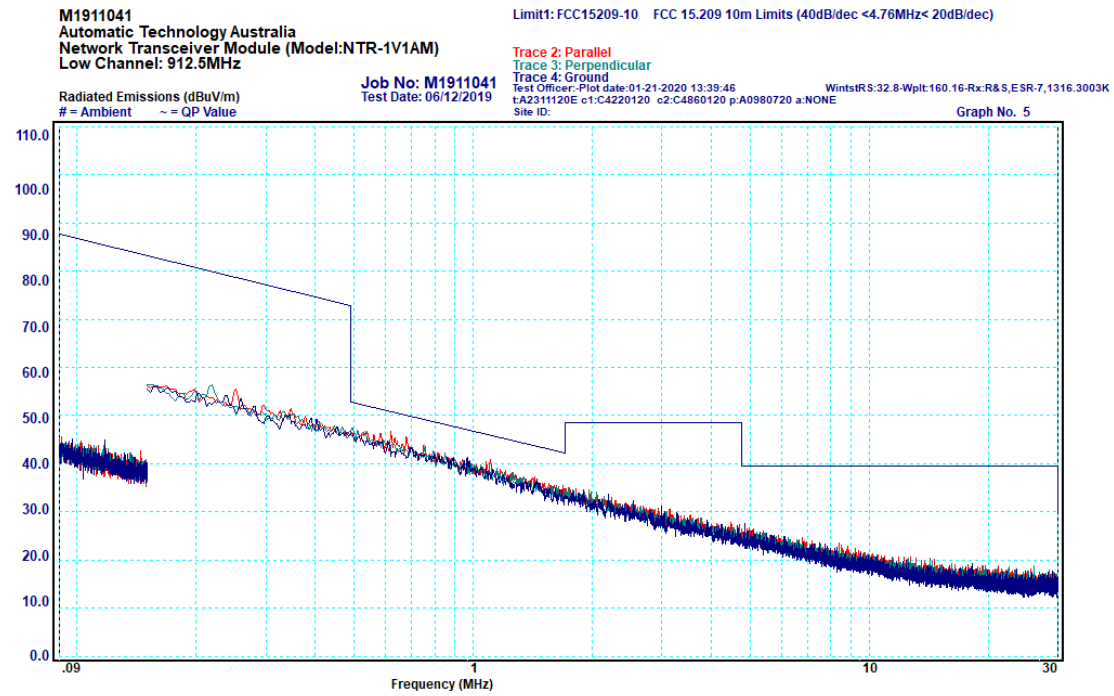
The measurement data for each frequency range was corrected for cable losses, antenna factors and preamplifier gain. This process was performed for both horizontal and vertical polarisations of the measurement antenna.

6.5.2 Limits

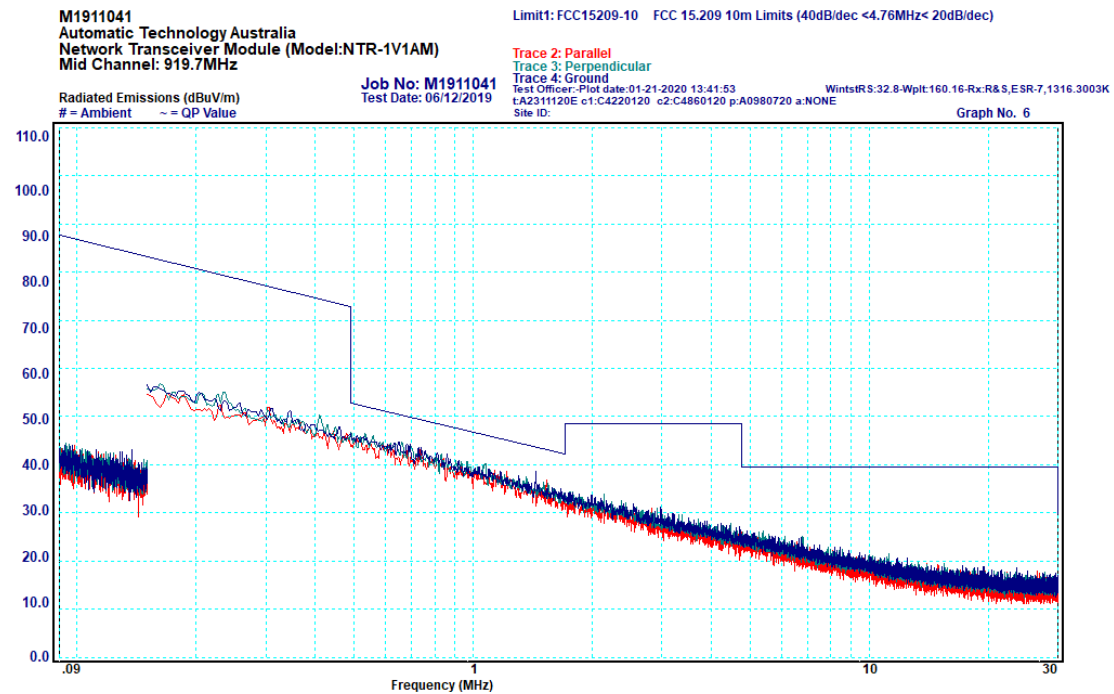
The limit applied is in accordance with the out-of-band/spurious emissions limit defined in §15.247(d).

6.5.3 Results: Frequency Band: 9 kHz - 30 MHz

All emissions measured in the frequency band 9 kHz to 30 MHz complied with the requirements of §15.247. The emissions were 10 dB or more below the limit.



Graph 6-4: Spurious emissions 9 kHz – 30 MHz, 912.5 MHz, Low Channel



Graph 6-5: Spurious emissions 9 kHz – 30 MHz, 919.7 MHz, Mid Channel

M1911041
Automatic Technology Australia
Network Transceiver Module (Model:NTR-1V1AM)
High Channel: 926.9MHz

Limit1: FCC15209-10 FCC 15.209 10m Limits (40dB/dec <4.76MHz< 20dB/dec)

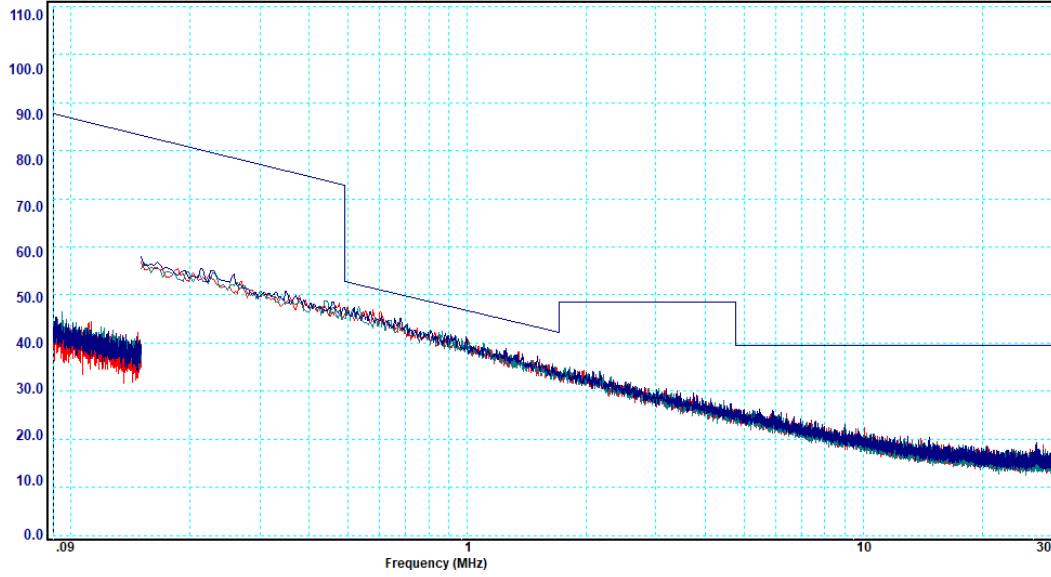
Trace 2: Parallel
Trace 3: Perpendicular
Trace 4: Ground
Test Officer: Plot date: 01-21-2020 13:43:14
t:A231120E c1:C4220120 c2:C4860120 p:A0980720 a:NONE
Site ID:

WintsRS:32.0-WpIt:160.16-Rx:R&S,ESR-7,1316.3003K

Radiated Emissions (dBuV/m)
= Ambient ~ = QP Value

Job No: M1911041
Test Date: 06/12/2019

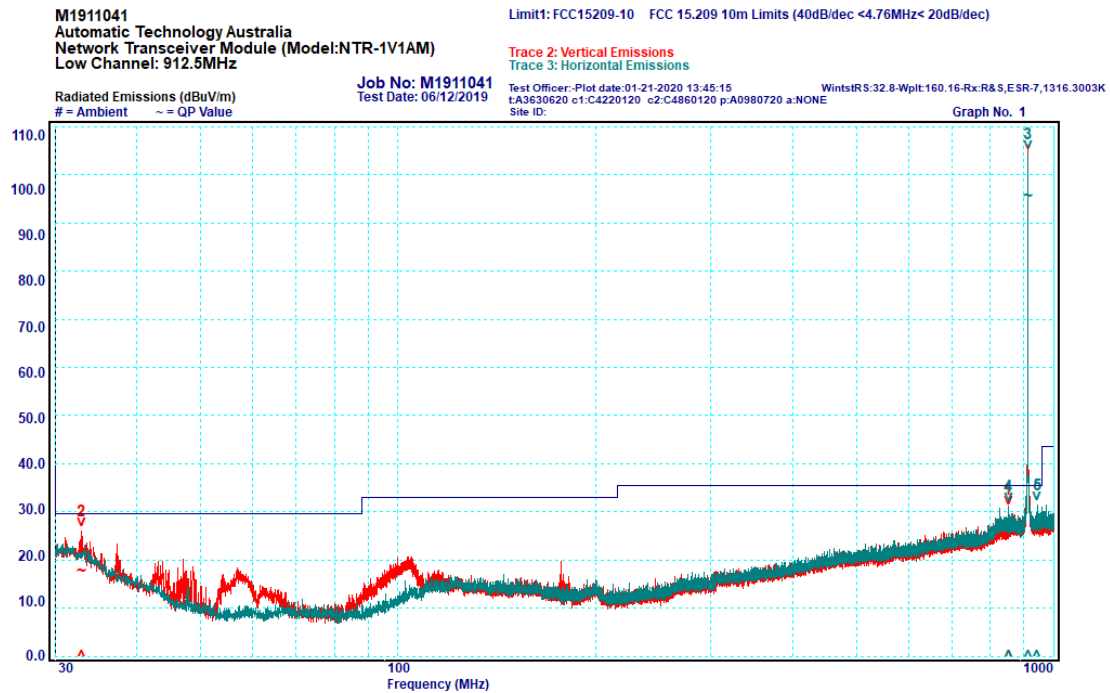
Graph No. 4



Graph 6-6: Spurious emissions 9 kHz – 30 MHz, 926.9 MHz, High Channel

6.5.4 Results: Frequency Band: 30 - 1000 MHz

All spurious emissions measured in the frequency band 30 MHz to 1000 MHz complied with the requirements of §15.247.

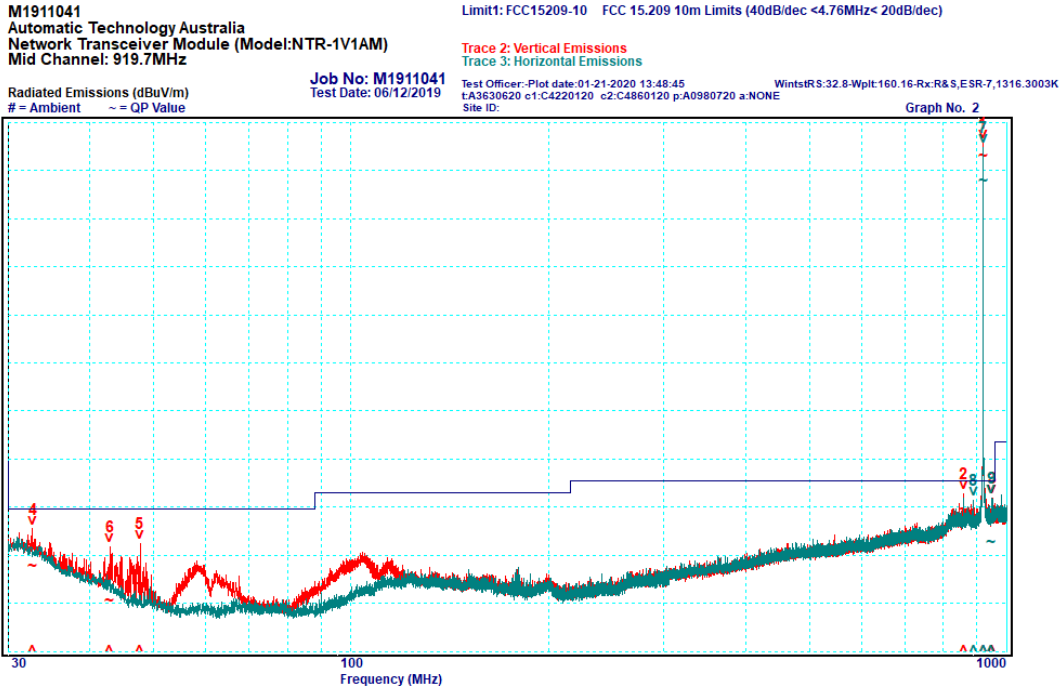


Graph 6-7: Spurious Emissions, 30 – 1000 MHz, 912.5 MHz, Low Channel

Table 6-4: Spurious Emissions, 30 - 1000 MHz, 912.5 MHz, Low Channel

| Peak | Frequency (MHz) | Polarisation | Quasi-Peak (dBµV/m) | Limit (dBµV/m) | Delta Limit (dB) |
|------|-----------------|--------------|---------------------|----------------|------------------|
| 1 | 852.44 | Vertical | 27.6 | 35.5 | -7.9 |
| 2 | 32.96 | Vertical | 17.6 | 29.5 | -11.9 |
| 3* | 912.51 | Horizontal | N/A | N/A | N/A |
| 4 | 852.38 | Horizontal | 28.3 | 35.5 | -7.2 |
| 5 | 942.68 | Horizontal | 26.4 | 35.5 | -9.1 |

*Peak 3 is the fundamental transmission and is not subject to the spurious limits of the standard.



Graph 6-8: Spurious Emissions, 30 – 1000 MHz, 919.7 MHz, Mid Channel

Table 6-5: Spurious Emissions, 30 - 1000 MHz, 919.7 MHz, Mid Channel

| Peak | Frequency (MHz) | Polarisation | Quasi-Peak (dBµV/m) | Limit (dBµV/m) | Delta Limit (dB) |
|------|-----------------|--------------|---------------------|----------------|------------------|
| 1* | 919.71 | Vertical | N/A | N/A | N/A |
| 2 | 859.78 | Vertical | 29.5 | 35.5 | -6 |
| 3 | 949.86 | Vertical | 28.6 | 35.5 | -6.9 |
| 4 | 32.74 | Vertical | 17.7 | 29.5 | -11.8 |
| 5 | 47.66 | Vertical | 13.9 | 29.5 | -15.6 |
| 6 | 42.9 | Vertical | 10.5 | 29.5 | -19 |
| 7* | 919.7 | Horizontal | N/A | N/A | N/A |
| 8 | 889.82 | Horizontal | 27.5 | 35.5 | -8 |
| 9 | 947.35 | Horizontal | 22.6 | 35.5 | -12.9 |

*Peaks 1 and 7 are the fundamental transmissions and are not subject to the spurious limits of the standard

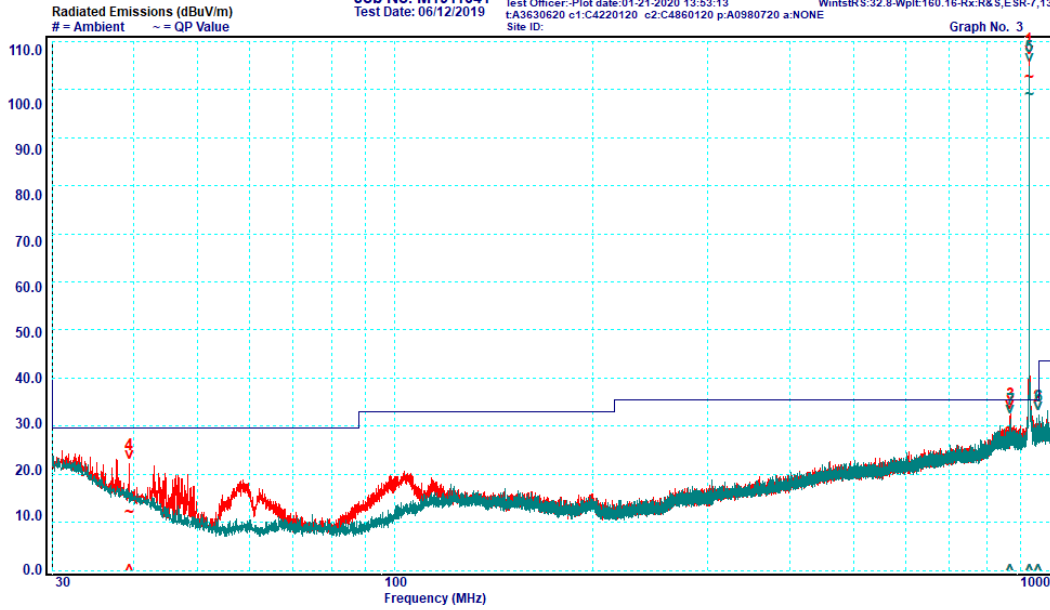
M1911041
Automatic Technology Australia
Network Transceiver Module (Model:NTR-1V1AM)
High Channel: 926.9MHz

Limit1: FCC15209-10 FCC 15.209 10m Limits (40dB/dec <4.76MHz< 20dB/dec)

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

Job No: M1911041
Test Date: 06/12/2019

Test Officer: Plot date: 01-21-2020 13:53:13 WinstRS:32.8-Wpl:160.16-Rx:R&S,ESR-7,1316.3003K
t:A3630620 c1:C4220120 c2:C4860120 p:A0980720 a:NONE
Site ID:



Graph 6-9: Spurious Emissions, 30 – 1000 MHz, 926.9 MHz, High Channel

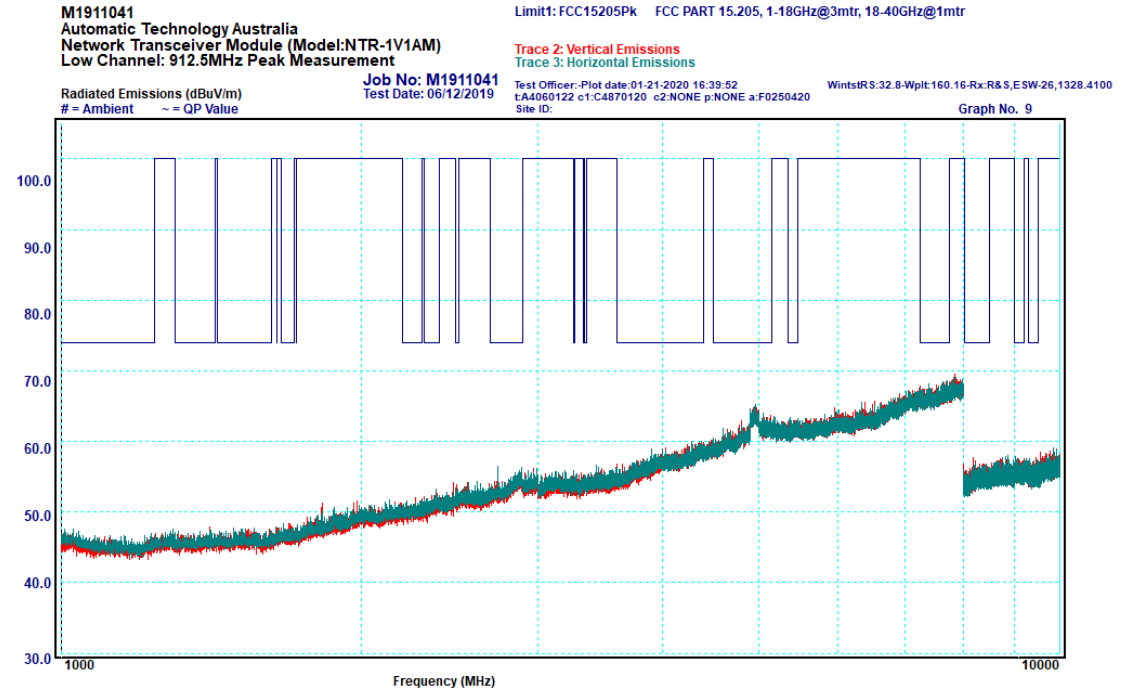
Table 6-6: Spurious Emissions, 30 - 1000 MHz, 926.9 MHz, High Channel

| Peak | Frequency (MHz) | Polarisation | Quasi-Peak (dBµV/m) | Limit (dBµV/m) | Delta Limit (dB) |
|------|-----------------|--------------|---------------------|----------------|------------------|
| 1* | 926.91 | Vertical | N/A | N/A | N/A |
| 2 | 956.78 | Vertical | 29.5 | 35.5 | -6 |
| 3 | 866.98 | Vertical | 29.3 | 35.5 | -6.2 |
| 4 | 39.39 | Vertical | 12 | 29.5 | -17.5 |
| 5* | 926.9 | Horizontal | N/A | N/A | N/A |
| 6 | 957.03 | Horizontal | 28.8 | 35.5 | -6.7 |
| 7 | 866.96 | Horizontal | 28.7 | 35.5 | -6.8 |

*Peaks 1 and 5 are the fundamental transmissions and are not subject to the spurious limits of the standard

6.5.5 Results: Frequency Band: 1000 – 10000 MHz

All spurious emissions measured in the frequency band 1000 MHz to 10000 MHz complied with the requirements of §15.247.



Graph 6-10: Spurious Emissions, 1000 - 10000 MHz, Low Channel 912.5 MHz, Peak

M1911041
 Automatic Technology Australia
 Network Transceiver Module (Model:NTR-1V1AM)
 Low Channel: 912.5MHz Average Measurement

Limit1: FCC15205Av FCC PART 15.205, 1-18GHz@3mtr, 18-40GHz@1mtr

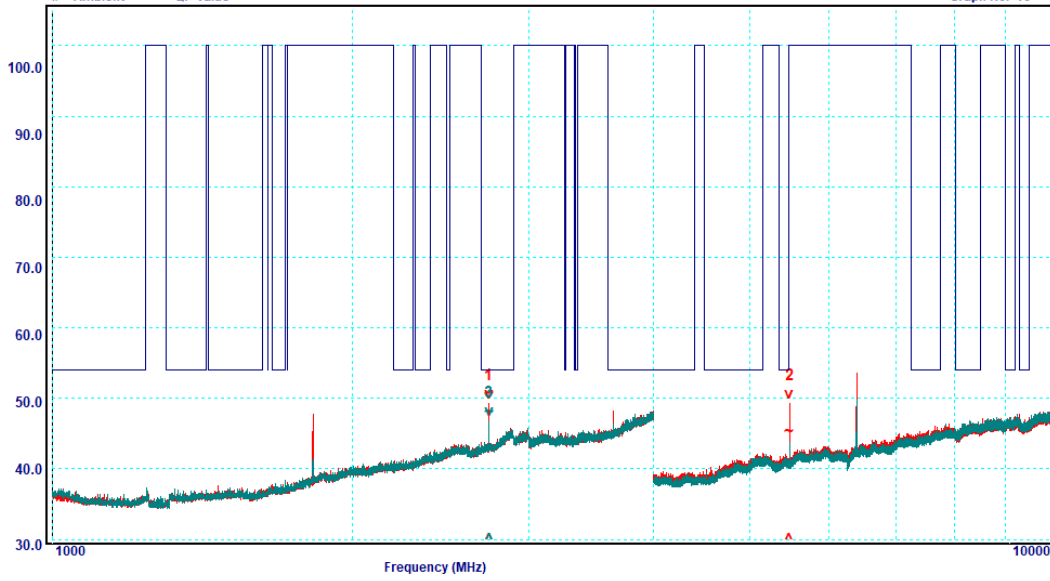
Trace 2: Vertical Emissions
 Trace 3: Horizontal Emissions

Job No: M1911041
 Test Date: 06/12/2019

Test Officer: Plot date:01-21-2020 16:41:34
 t:A4060122 c1:C4870120 c2:NONE p:NONE a:F0250420
 Site ID: WinstRS:32.8-Wpit:160.16-Rx:R&S,ESW-26,1328.4100

Radiated Emissions (dBuV/m)
 # = Ambient ~ = QP Value

Graph No. 10



Graph 6-11: Spurious Emissions, 1000 - 10000 MHz, Low Channel 912.5 MHz, Average

Table 6-7: Spurious Emissions, 1000 - 10000 MHz, Low Channel 912.5 MHz, Average

| Peak | Frequency (MHz) | Polarisation | Average (dBuV/m) | Limit (dBuV/m) | Delta Limit (dB) |
|------|-----------------|--------------|------------------|----------------|------------------|
| 1 | 2737.56 | Vertical | 50.7 | 54 | -3.3 |
| 2 | 5475.77 | Vertical | 45.3 | 100 | -54.7 |
| 3 | 2737.45 | Horizontal | 48.1 | 54 | -5.9 |

M1911041
 Automatic Technology Australia
 Network Transceiver Module (Model:NTR-1V1AM)
 Mid Channel: 919.7MHz Peak Measurement

Limit1: FCC15205Pk FCC PART 15.205, 1-18GHz@3mtr, 18-40GHz@1mtr

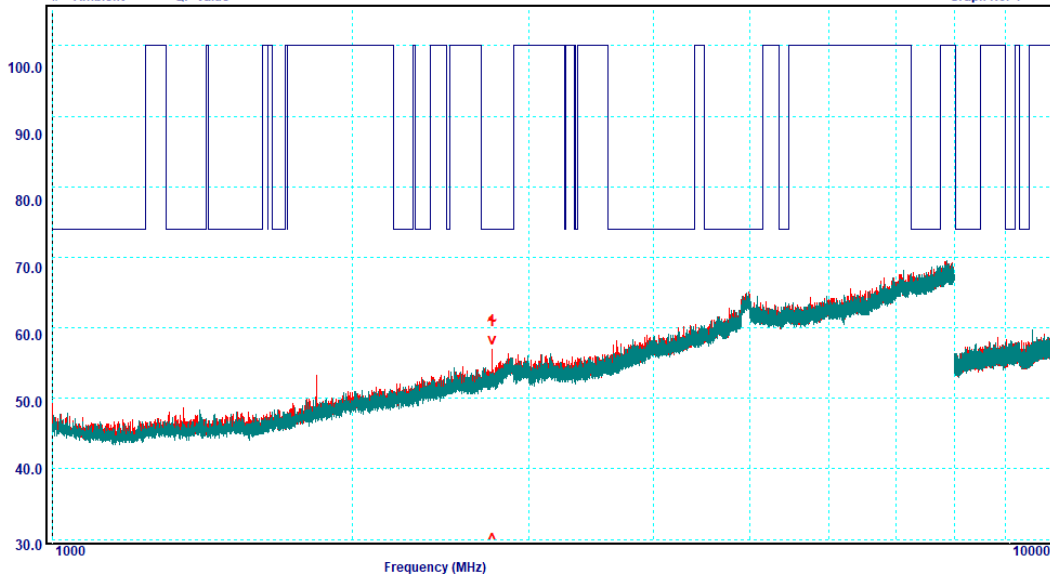
Trace 2: Vertical Emissions
 Trace 3: Horizontal Emissions

Job No: M1911041
 Test Date: 06/12/2019

Test Officer: Plot date: 01-21-2020 14:12:45
 t:A4060122 c1:C4870120 c2:NONE p:NONE a:F0250420
 Site ID: WinstRS:32.8-Wpit:160.16-Rx:R&S,ESW-26,1328.4100

Radiated Emissions (dBuV/m)
 # = Ambient ~ = QP Value

Graph No. 7



Graph 6-12: Spurious Emissions, 1000 - 10000 MHz, Mid Channel 919.7 MHz, Peak

Table 6-8: Spurious Emissions, 1000 - 10000 MHz, Mid Channel 919.7 MHz, Peak

| Peak | Frequency (MHz) | Polarisation | Peak (dBuV/m) | Limit (dBuV/m) | Delta Limit (dB) |
|------|-----------------|--------------|---------------|----------------|------------------|
| 1 | 2759.13 | Vertical | 61.0 | 74.0 | -13.0 |

M1911041
 Automatic Technology Australia
 Network Transceiver Module (Model:NTR-1V1AM)
 Mid Channel: 919.7MHz Average Measurement

Limit1: FCC15205Av FCC PART 15.205, 1-18GHz@3mtr, 18-40GHz@1mtr

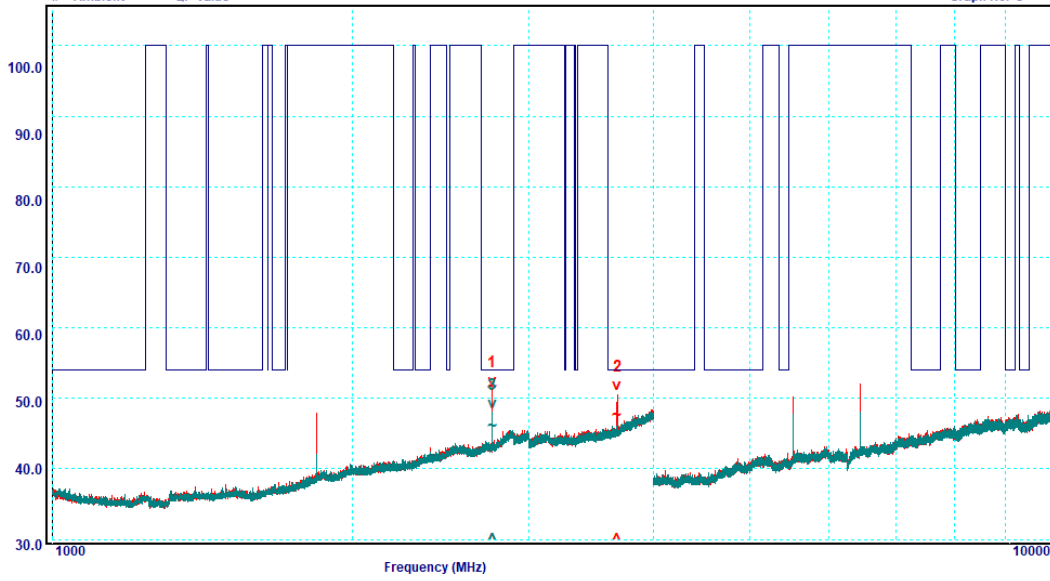
Trace 2: Vertical Emissions
 Trace 3: Horizontal Emissions

Job No: M1911041
 Test Date: 06/12/2019

Test Officer: Plot date: 01-21-2020 14:16:48
 t:A4060122 c1:C4870120 c2:NONE p:NONE a:F0250420
 Site ID: WinstRS:32.8-Wpit:160.16-Rx:R&S,ESW-26,1328.4100

Radiated Emissions (dBuV/m)
 # = Ambient ~ = QP Value

Graph No. 8



Graph 6-13: Spurious Emissions, 1000 - 10000 MHz, Mid Channel 919.7 MHz, Average

Table 6-9: Spurious Emissions, 1000 - 10000 MHz, Mid Channel 919.7 MHz, Average

| Peak | Frequency (MHz) | Polarisation | Average (dBuV/m) | Limit (dBuV/m) | Delta Limit (dB) |
|------|-----------------|--------------|------------------|----------------|------------------|
| 1 | 2759.27 | Vertical | 51.5 | 54 | -2.5 |
| 2 | 3679.28 | Vertical | 47.5 | 54 | -6.5 |
| 3 | 2759.12 | Horizontal | 46 | 54 | -8 |

M1911041
Automatic Technology Australia
Network Transceiver Module (Model:NTR-1V1AM)
High Channel: 926.9MHz Peak Measurement

Limit1: FCC15205Pk FCC PART 15.205, 1-18GHz@3mtr, 18-40GHz@1mtr

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

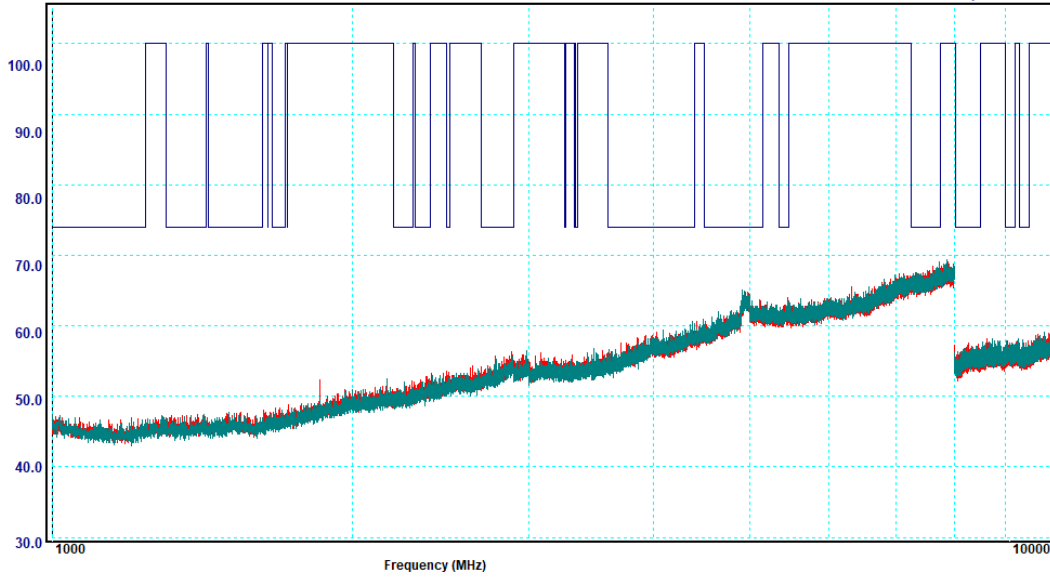
Radiated Emissions (dBuV/m)
= Ambient ~ = QP Value

Job No: M1911041
Test Date: 06/12/2019

Test Officer: Plot date: 01-21-2020 16:44:27
t:A4060122 c1:C4870120 c2:NONE p:NONE a:F0250420
Site ID:

WinstRS:32.8-Wplit:160.16-Rx:R&S,ESW-26,1328.4100

Graph No. 11



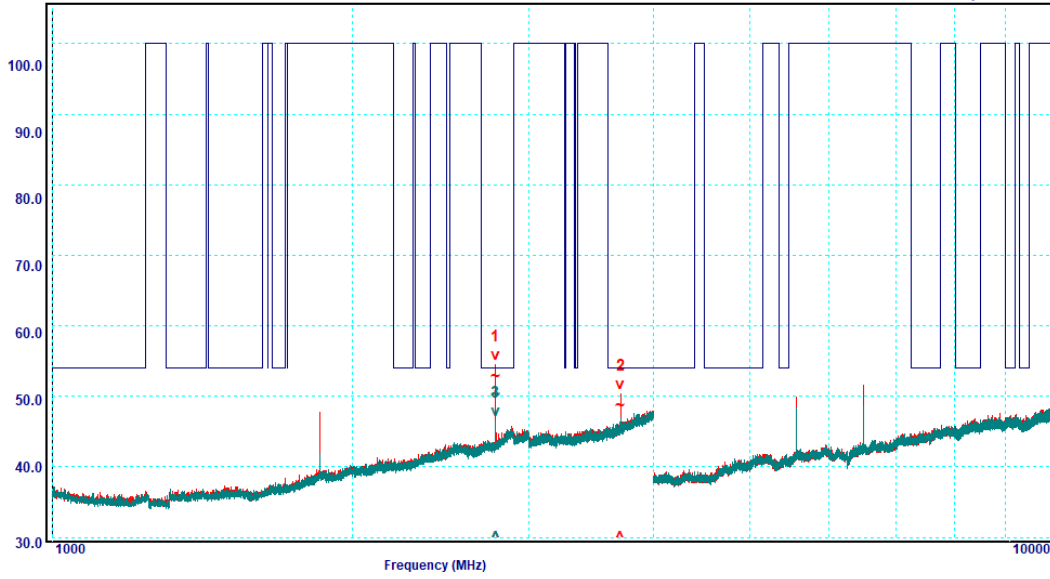
Graph 6-14: Spurious Emissions, 1000 - 10000 MHz, High Channel 926.9 MHz, Peak

M1911041
Automatic Technology Australia
Network Transceiver Module (Model:NTR-1V1AM)
High Channel: 926.9MHz Average Measurement

Limit1: FCC15205Av FCC PART 15.205, 1-18GHz@3mtr, 18-40GHz@1mtr

Trace 2: Vertical Emissions
Trace 3: Horizontal Emissions

Job No: M1911041 Test Date: 06/12/2019
Test Officer: Plot date: 01-21-2020 16:52:00
t:A4060122 c1:C4870120 c2:NONE p:NONE a:F0250420
WinstRS:32.8-Wplit:160.16-Rx:R&S,ESW-26,1328.4100
Site ID: Graph No. 12



Graph 6-15: Spurious Emissions, 1000 - 10000 MHz, High Channel 926.5 MHz, Average

Table 6-10: Spurious Emissions, 1000 - 10000 MHz, High Channel 926.5 MHz, Average

| Peak | Frequency (MHz) | Polarisation | Average (dBµV/m) | Limit (dBµV/m) | Delta Limit (dB) |
|------|-----------------|--------------|------------------|----------------|------------------|
| 1 | 2780.69 | Vertical | 52.8 | 54 | -1.2 |
| 2 | 3707.99 | Vertical | 48.7 | 54 | -5.3 |
| 3 | 2780.81 | Horizontal | 50.2 | 54 | -3.8 |

END OF REPORT