5050 40th Street NE
Calgary, Alberta
Canada (T3J 4P8)

# EXHIBIT 2B

# TEST REPORT NTS 1

# Applicant: Nortel Networks
# For original Equipment
# Application on:

# FCC: AB6NT2100V3231
# IC: 332D-2G1V3231

*Product Integrity Laboratory*

5151-47th Street, NE
Calgary, Alberta T3J 3R2
Tel: (403) 568-6605
Fax : (403) 568-6970

# FCC Part 27 Radiated Emission Test Report
# Project Code CG-778

**(Report CG-778-EM-1-1)**

## NORTEL Networks Wireless AWS 3231

**Revision: 1**
**(Supersedes report CG-778-EM-1-0)**

**February 15, 2008**

| | |
|---|---|
| **Prepared for**: | Nortel Networks Wireless |
| **Author:** | Deniz Demirci<br>EMC Specialist |
| **Approved by:** | Nick Kobrosly<br>Director of Operations |

## Report Summary

| | |
|---|---|
| **Test Facility:** | **National Technical Systems, Canada**<br>Product Integrity Laboratory<br>5151-47th Street, N.E.<br>Calgary Alberta T3J 3R2 |
| **Accreditation Numbers:** | FCC 101386<br>IC 46405-3978 - File # IC3978-2<br>**Accredited by Standards Council of Canada**<br>Accredited Laboratory No. 440(Conforms with requirements of CAN−P−4D (ISO/IEC 17025))<br><br>CLIENTS SERVED: All interested parties<br>FIELDS OF TESTING: Electrical/Electronic, Mechanical/Physical<br>ISSUED ON: 2005−06−02 VALID TO: 2009−03−20 |
| **Performed For:** | Nortel Network Wireless<br>5050-40th Street, N.E.<br>Calgary Alberta T3J 4P8 |
| **Customer Representative:** | Name: Daryl Therens<br>Phone #: 403-769-4103<br>Email Address: dtherens@nortel.com |
| **Responsible Manager:** | Name: Rick Kerslake<br>Phone #: 403-769-5090<br>Email Address: kerslake@nortel.com |

## Test Summary

| Appendix | Test/Requirement Description | Deviations* from: | | | Status | Applicable Rule Parts |
|---|---|---|---|---|---|---|
| | | Base Standard | Test Basis | NTS Procedure | | |
| A | TX Radiated Spurious Emissions 30 MHz- 22 GHz | No | No | No | PASS | FCC CFR 47 Part 27 |
| B | Test Equipment List | No | No | No | NA | NA |

Test Result: The product presented for testing complied with test requirements as shown above.

## Test Log

| Appendix | Test Case | Start | End | Tester |
|---|---|---|---|---|
| A | Radiated Emissions 30 MHz – 22 GHz FCC CFR 47 Part 27 | Jan 31, 2008 | Feb 04, 2008 | Lixin Wang<br>Deniz Demirci<br>James Mackay |

The test outlined may not be inclusive of all testing required by the Base Standards or fulfill the applicable regulatory requirements in their entirety.

**Test Result:** The product presented for testing complied with test requirements as shown above.

Prepared By: _____
Deniz Demirci
EMC Specialist

Reviewed By: Alex Mathews 2008.02.15 15:00:46 -07'00'
Alex Mathews
Compliance Specialist

Checked By: Robyn Zuehlke 2008.02.15 16:58:30 -07'00'
Robyn Zuehlke
Quality Representative

## Table of Contents

## Register of Revisions

| Revision | Date | Description of Revisions |
|---|---|---|
| 0 | February 7, 2008 | Draft release for Review |
| 1 | February 15, 2008 | EUT information added |

# 1.0 INTRODUCTION

## 1.1 PURPOSE

The purpose of this document is to describe the tests applied by NTS Canada to demonstrate compliance of the AWS 3231 from Nortel Networks Wireless to FCC CFR 47 Part 27

**The client directed the operation and configuration of the system under test and was responsible for its monitoring and proper operation during the testing**,

## 1.2 ABBREVIATIONS AND DEFINITIONS

The following are the abbreviations and definitions that may be relevant to this document.

| Abbreviation | Explanation |
|---|---|
| A | Amps |
| AC | Alternating Current |
| AE | Ancillary Equipment |
| AF | Antenna Factor |
| ANSI | American National Standards Institute |
| AWG | American Wire Gauge |
| BTS | Base Transceiver Station |
| C | Celsius |
| CAM | Customer Alarm Module |
| CDMA | Code Division Multiple Access |
| CEM | Channel Element Module |
| CF | Correction Factor |
| CFR | Code of Federal Regulations |
| CH | Channel |
| CISPR | Comite International Special des Perturbations Radioelectriques (The International Special Committee on Radio Interference) |
| CL | Cable Loss |
| cm | centimetre |
| CM | Control Module |
| dB | Decibel |
| dBm | Decibel relative to 1 milliwatt |
| dBµV | Decibel relative to 1 uV |
| DC | Direct Current |
| DM | Digital Module |
| EMC | Electromagnetic Compatibility |
| EMI | Electromagnetic Interference |
| EN | European Norms |
| EUT | Equipment UnderTest |
| FCC | Federal Communications Commission |
| FRU | Flexible Radio Unit |
| GHz | Gigahertz |
| GPS | Global Positioning System |
| GPSTM | Global Positioning System Timing Module |
| GR | Generic Requirements |
| Hpol | Horizontal Polarization |
| HSSL | High Speed Serial Link |

| Abbreviation | Explanation |
|---|---|
| Hz | Hertz |
| IC | Industry Canada |
| kHz | kilohertz |
| LO | Local Oscillator |
| LNA | Low Noise Amplifier |
| m | Metre |
| MHz | Megahertz |
| ms | Milli Second |
| NTS | National Technical Systems |
| NA | Not Available |
| N/A | Not Applicable |
| PA | Power Amplifier |
| PI | Product Integrity |
| PK | Peak |
| PLL | Phase Lock Loop |
| P/N | Part Number |
| PS | Power Supply |
| PSU | Power Supply Unit |
| QP | Quasi-Peak |
| Qty | Quantity |
| RE | Radiated Emissions |
| RF | Radio Frequency |
| RM | Radio Module |
| Rx | Receive |
| TDMA | Time Division Multiple Access |
| TT | Turn Table |
| Tx | Transmit |
| V | Volts |
| VDC | Volts Direct Current |
| Vpol | Vertical Polarization |
| W | Watt |
| XCEM | X Channel Element Module |
| Zt | Transfer Impedance |

**Definitions:**

*Equipment Under Test (EUT):* A representative ITE or functionally interactive group of ITE (that is a system), which includes one or more host units and is used for evaluation purposes.

*Electromagnetic compatibility (EMC)*: The ability of an equipment or system to function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment.

### 1.3 REFERENCES

US Code of Federal Regulations

- 47 CFR Part 27 Federal Communications Commission, Part 27

American National Standards Institute

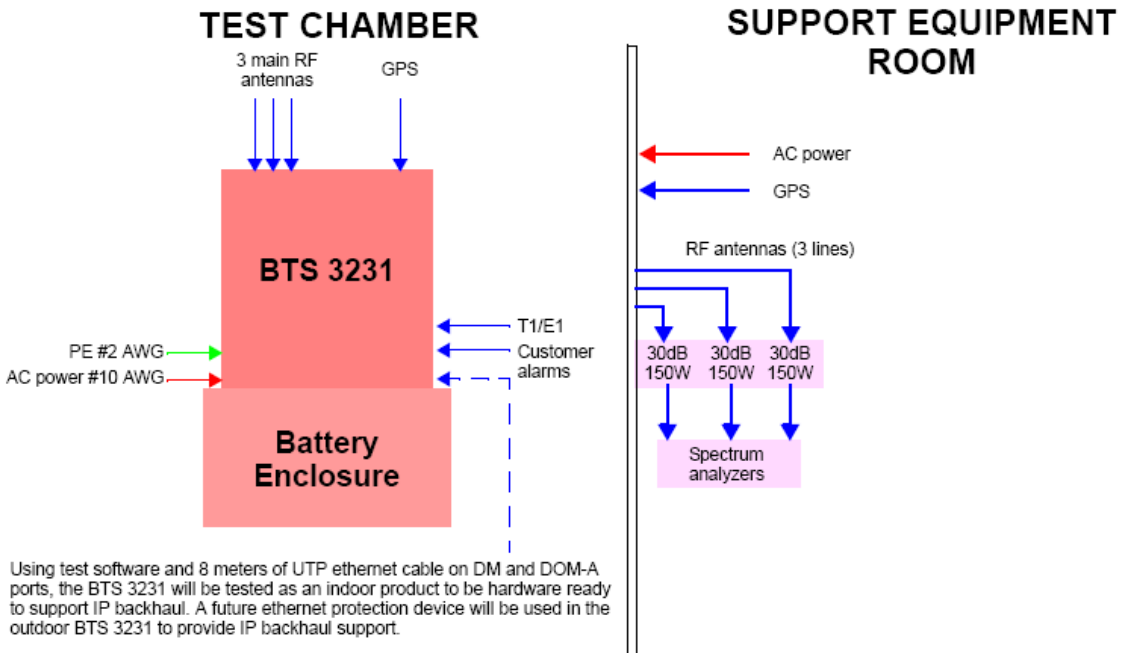
- ANSI C63.4-2003 American National Standards for Methods of Measurements of Radio-Noise Emissions from Low Voltage Electrical and Electronic Equipments in the range of 9 kHz to 40 GHz, December 11, 2003

NTS Documentation

- NTS Radiated Emissions 30 MHz – 1 GHz Automated Test Method SOP CAG EMC 01
- NTS Radiated Emissions 1 GHz – 40 GHz Manual Test Method SOP CAG EMC 01

# 2.0 EUT

## 2.1 CONFIGURATION




**BTS 3231 Emissions Configuration**

**Notes to Emissions Configuration:**

- The test lab provided a nominal 200 to 240 Vrms / 15A, 50 to 60 Hz (a 20A BTS input circuit breaker is recommended).
- For AC power into the BTS 3231, used 3-wire power cable (L1, L2, and N) with ACEG (10 meters long, #10 AWG). Tie-wrap the L1, L2, N, and ACEG wires every 30 centimeters to ensure close coupling. Used a #2 AWG PE cable to connect the BTS principal ground to the lab safety ground
- For the 3 main RF antenna cables, and the GPS antenna cable, used LMR-400 or equivalent (approximately 8 meters in length).
- Terminated all unused RF ports with 50 Ohm loads.
- Configured the system as 3 carrier - 3 sector, and maximum transmit RF power output.
- Channel 25, Channel 50, Channel 75
- For the external T1/E1 connection used 8 meters of #22 AWG indoor cable. For each span (12 spans), loop the Tx pair to its Rx pair.
- For the external customer alarm connection used 8 meters of #22 AWG indoor cable. For each alarm pair (6 alarms), loop the + lead to its - lead for <no alarm> status.
- The PC is not connected to the BTS during emissions scans.
- During emissions testing, special monitoring equipment is not required. However, a spectrum analyzer used to ensure the BTS is operational during test.

## 2.2 DESCRIPTION OF EUT

### 2.2.1 EUT DIMENSIONS

| Hardware | Width (inches) | Height (inches) | Depth (inches) |
|---|---|---|---|
| BTS 3231 | 22.44 | 36.7 | 17.7a |
| Battery enclosure with heater | 23.25 | 23.25 | 14.5 |

a. This depth includes the 2 inches for the BTS 3231 redesigned door assembly.

### 2.2.2 EUT WEIGHTS

| Hardware | Weight (pounds) |
|---|---|
| BTS 3231Fully Loaded | 210 |
| Battery enclosure with heater | 65 |
| GNB Lead acid batteries | 119 |

### 2.2.3 EUT POWER

| | |
|---|---|
| Voltage | 208 VAC 60 Hz |
| Number of Feeds | 3 |
| Gauge of cable | 10 |
| Current Draw | 6.5 Amps |

## 2.3 CABLES

### 2.3.1 EUT CABLE LIST

| Qty | Routing | | Cable Length (m) |
|---|---|---|---|
| | From | To | |
| 3 | EUT RF | RF Load | 8 |
| 1 | EUT GPS | GPS Feed | 15 |
| 1 | T1/E1 | Looped back | 8 |
| 1 | Customer Alarm | Looped back | 8 |

### 2.3.2 EUT FREQUENCY LIST

| Module | Signal | Frequency (MHz) |
|---|---|---|
| VCAM | Fan power supply | 0.030 |
| VCAM | Main power supply | 0.050 |
| VCAM | I²C interfaces | 0.100 |
| VCAM | µP | 32 |
| DM | T1/E1 and PLD reference, time switch, BCN packet switch FPGA, FALCS TDM sync | .008 |
| DM | I²C interfaces | 0.100 |
| DM | Chip rate (fc) | 1.2288 |
| DM | T1 | 1.544 |
| DM | E1, T1/E1 and PLD reference, FALCS | 2.048 |
| DM | T1/E1 and PLD reference | 4.096 |
| DM | T1/E1 and PLD reference, I/O slave processor | 5.0 |
| DM | T1/E1 reference, FALCS, TDM clock time switch, BCN packet switch FPGA | 8.192 |
| DM | 8fc, LVDS signal | 9.8304 |
| DM | Reference signal for test | 10 |
| DM | 16fc | 19.6608 |
| DM | T1/E1 and PLD reference, ethernet reference | 25 |
| DM | xCEM bus clock | 33 |
| DM | xCEM PCI clock | 33.25 |
| DM | 32fc, T1/E1 and PLD reference | 39.3216 |
| DM | 52fc | 63.8976 |
| DM | Bus clock, 755, I/O slave processor, BCN packet switch FPGA, SDRAM, FLIC+, PSC+, T1/E1+, PLD+ | 66.666 |
| DM | CM-2+ L2 cache, xCEM processor clock | 133 |
| DM | 520fc | 638.976 |
| RM | I²C interfaces | 0.100 |
| RM | Power supply switching (-48V and +24V powe | 0.330 |
| RM | Chip rate (fc) | 1.2288 |
| RM | 8fc | 9.8304 |
| RM | 16fc | 19.6608 |
| RM | 32fc | 39.3216 |
| RM | 52fc | 63.8976 |
| RM | 64fc | 78.6432 |
| RM | 520fc | 638.976 |
| RM | Rx frequency - 32fc | AWS ADC 1st Alias B |

| Module | Signal | Frequency (MHz) |
|---|---|---|
| RM | BBPD RF local oscillator frequency | Tx F req+ 96 |
| AC Rectifier | Power supply switching | 0.330 |
| XCEM 192 | I²C interfaces | 0.100 |
| XCEM 192 | Chip rate (fc) | 1.2288 |
| XCEM 192 | Ethernet reference (10Base-T) | 2.5 |
| XCEM 192 | 8fc | 9.8304 |
| XCEM 192 | 16fc | 19.6608 |
| XCEM 192 | Ethernet reference (100Base-T) | 25 |
| XCEM 192 | PCI, CSM5000 | 33 |
| XCEM 192 | BIR FPGA, PCI | 33.25 |
| XCEM 192 | 32fc | 39.3216 |
| XCEM 192 | 52fc | 63.8976 |
| XCEM 192 | System clock, SDRAM | 133 |
| XCEM 192 | 520fc | 638.976 |
| XCEM 192 | Processor core frequency | 997.5 |
| DOM-A | I²C interfaces | 0.100 |
| DOM-A | Chip rate (fc) | 1.2288 |
| DOM-A | T1 | 1.544 |
| DOM-A | E1 | 2.048 |
| DOM-A | 8fc | 9.8304 |
| DOM-A | 16fc | 19.6608 |
| DOM-A | Ethernet reference (100Base-T) | 25 |
| DOM-A | PCI | 33 |
| DOM-A | FPGA | 33.25 |
| DOM-A | 32fc | 39.3216 |
| DOM-A | 52fc | 63.8976 |
| DOM-A | System clock, SDRAM | 133 |
| DOM-A | 520fc | 638.976 |

### 2.4 SET UP CONFIGURATION

**EUT Modules**

| PEC | REL | SN | Description |
|---|---|---|---|
| NTDV60DA | B1 | NNTMEE6W100B | 3031-E Outdoor North American Enclosure |
| NTDV61DA | B1 | NNTMEE7W100A | 3231 Outdoor Enclosure AC Assembly |
| NTDV64BA | B1 | NNTMEE8W100B | Outdoor Enclosure Assembly |
| NTDV65AA | 01 | N/A | GNB Battery Box |
| NTDV6590 | 01 | N/A | GNB Battery String |
| NTDV22BA | 02 | NNTM7860CXKX | Fan Inner Door |
| NTDV22BA | 02 | NNTM7860D4T3 | Fan Outer Front |
| NTDV22BA | 02 | NNTM8400000Y | Fan Back |
| NTDV6102 | 01 | APWM016B0716 | Heat Exchanger |
| NTDV21CA | 02 | NNTM74XL84CC | VCAM |
| NTDV55AAE5 | C1 | NNTMEE5W100D | 3231 3C 3S Digital Module |
| NTDV51AAE5 | C4 | NNTMEE1W1031 | BTS 3231 RADIIO MODULE 1.7/2.1 GHZ 3C3S -48V |
| NTDV42AAE6 | N1 | FING010JY006 | Duplexer (A-Band) |
| NTDV24AA | 02 | NNTM74XL83YV | ACIM |
| NTDV62CA | 01 | N/A | Rectifier *(Tyco 1:2 SN:06LD72005237)* |
| NTGS4993E5 | 01 | NNTM74XL7N2F | TCCM |
| NTDV2401 | 01 | N/A | AC Outlet Box North American |
| NTDV3187 | 02 | N/A | Alarm Lightning Protector 1 |
| NTDV3188 | 02 | N/A | T1 Lightning Protector 1 |
| NTDV3188 | 02 | N/A | T1 Lightning Protector 2 |
| NTDV80BA | 52 | NNTMDV037H4W | XCEM-192 *(slot 1)* |
| NTDV80BA | 52 | NNTMDV037H26 | XCEM-192 *(slot 2)* |
| NTDV80BA | 52 | NNTMDV037H4T | XCEM-192 *(slot 3)* |
| NTDV80BA | 52 | NNTMDV037H6L | XCEM-192 *(slot 4)* |

### 2.5 SOFTWARE

| Software | Version |
|---|---|
| Vortex | Release 15.0 151_07wk42 |
| Lip file | 150jn |

# APPENDICES

# APPENDIX A: RADIATED E-FIELD EMISSIONS – 30 MHZ – 22 GHZ

## A.1. Base Standard & Test Basis

| | | |
|---|---|---|
| **Base Standard** | ☒ | CFR Title 47 – Telecommunications, Chapter I, Subchapter B,<br>FCC Part 27 – Miscellaneous Wireless Communications Services |
| **Test Basis** | ☒ | EIA/TIA 603 |
| **Test Method** | • NTS Radiated Emissions 30 MHz – 1 GHz Automated Test Method<br>• NTS Radiated Emissions 1 GHz – 40 GHz Manual Test Method<br>• NTS Radiated Emissions Signal Substitution Method 30 MHz – 40 GHz. EMC Test Method 11.0, Revision 01 | |

## A.2. Specifications

| **Frequency** | **47 CFR FCC Part 27** | |
|---|---|---|
| | **Theoretical Peak @ 3m[1]** | **ERP[2]** |
| **MHz** | **dBμV/m** | **dBm** |
| 1000 - 22000 | 84.3 | -13 |

Note 1: Calculated using: Pd-(43 + 10 log(Pw)
where Pd is the EUT power in dBm and Pw is the EUT power in watts
Note 2: Calculated using: 120+20log(SQRT(49.2*Pw)/3)
where Pw is the EUT power in watts

## A.3. Measurement Uncertainty

| **Radiated Emissions (dB)** | **Measurement Uncertainty** | **Expanded Uncertainty (K=2)** |
|---|---|---|
| **30 MHz – 1 GHz** | +2.32/-2.36 | +4.65/-4.72 |
| **1 GHz – 22 GHz** | +3.48/-3.51 | +6.96/-7.02 |

## A.4. Deviations

| **Deviation Number** | **Time & Date** | **Descriptions** | **Deviation Reference** | | | **Approval** |
|---|---|---|---|---|---|---|
| | | | **Base Standard** | **Test Basis** | **NTS Procedure** | |
| None | | | | | | |

## A.5. Special Considerations

None

## A.6. Test Results

Product Integrity Laboratory V2.5

**Project Number:** CG-778 **Tester:** Deniz
**Model:** Nortel Networks Wireless AWS 3231 **Test ID:** RE03-10m-778
**Comments:** Conf86: 208VAC 60Hz,4xcem192,NEW 6039,ACIMfix,CRs933,733,725,470,688,211,28A0593 ferr 6072,two28B1531 ferr 6033,gskt on radio supr &dr to DM,dr adjt,no paint tdpm

**Standard:** FCC Part 27 **Measurement Distance:** <1GHz 10 meters; >1GHz 3 meters

| Antenna Polarization | Frequency (MHz) | Measured Level (dBµV) | Measurement Detector | Correction Factors (dB/m) | Emission Level (dBµV/m) | Signal Generator Level (dBm) | Transmit Cable loss (dB) | ERP (dBm) | ERP Limit (dBm) | Mast Height (cm) | Turntable Angle (degrees) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Horizontal | 4226.47 | 48.78 | Peak | 3.71 | 52.49 | -42.80 | 2.16 | -44.96 | -13.00 | 152 | 277 |
| Horizontal | 6334.00 | 50.95 | Peak | 7.44 | 58.39 | -33.00 | 2.67 | -35.67 | -13.00 | 105 | 320 |
| Vertical | 4225.00 | 47.40 | Peak | 3.70 | 51.10 | -41.00 | 2.16 | -43.16 | -13.00 | 150 | 280 |
| Vertical | 6335.93 | 51.88 | Peak | 7.48 | 59.36 | -32.80 | 2.67 | -35.47 | -13.00 | 103 | 311 |

**Positive Margin indicates a Pass**

The highest emission measured was 59.36 dBµV/m with vertical antenna polarization at 6335.93 MHz. It has 22.47 dB margin to the FCC CFR47 Part 27 limit.

The EUT is in compliance with FCC CFR47 Part 27 Radiated Emission requirements.

## A.7. Observations

None

## A.8. Sample Calculation

3m Limit = 10m Limit – 20 * log (3/10)
Emission Level = Measured Level + Correction Factors
Margin = Limit – Emission Level
ERP Limit (dBm) = Pd-(43 + 10 log(Pw)
where Pd is the EUT power in dBm and Pw is the EUT power in watts
Theoretical ERP Limit (dBuV/m) 120+20log(SQRT(49.2*Pw)/3)
where Pw is the EUT power in watts

## A.9. Test Data & Photographs

The test data and photographs collected during this test appear following this page.

Note: In some bands, a lower RBW detector was used to identify and detect emissions with better measurement system sensitivity.

## A.10. Tested By

This testing was conducted in accordance with the ISO 17025:2005 scope of accreditation table 1; Quality Manual.

| Name: | Deniz Demirci | Lixin Wang | James Mackay |
|---|---|---|---|
| Function: | EMC Specialist | EMC Specialist | EMC Specialist |

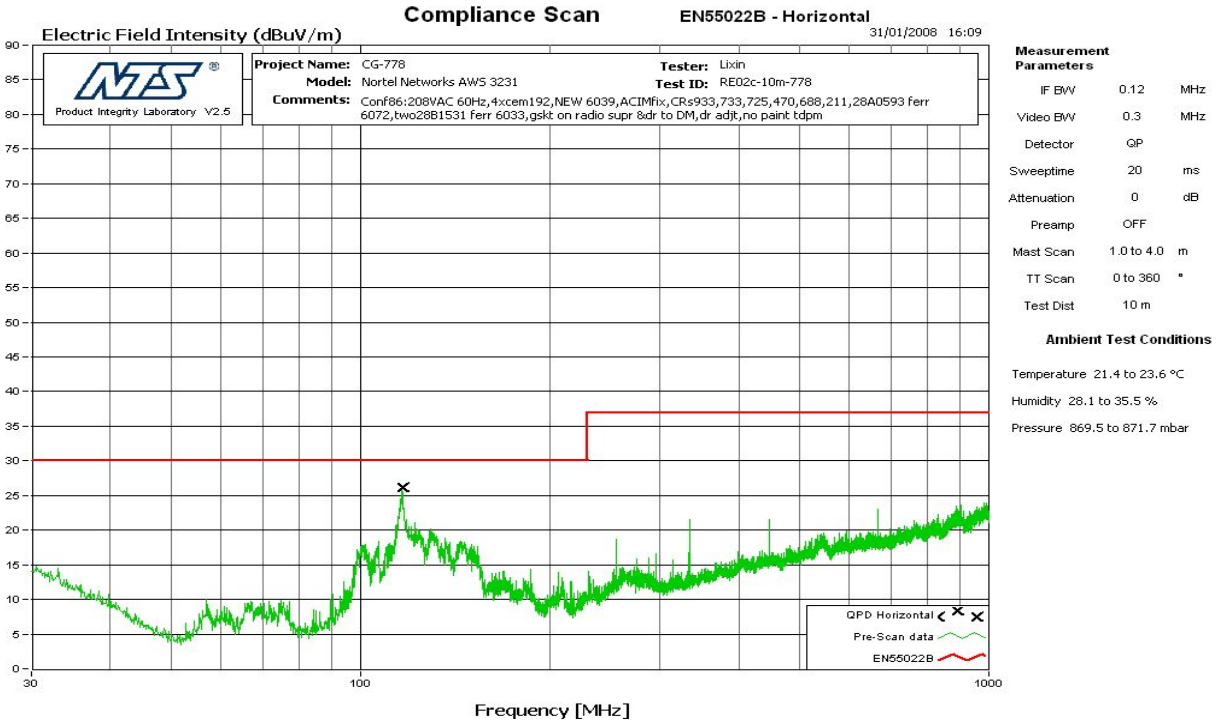



**Figure 1: Radiated Emission – Horizontal - 30 MHz – 1 GHz**

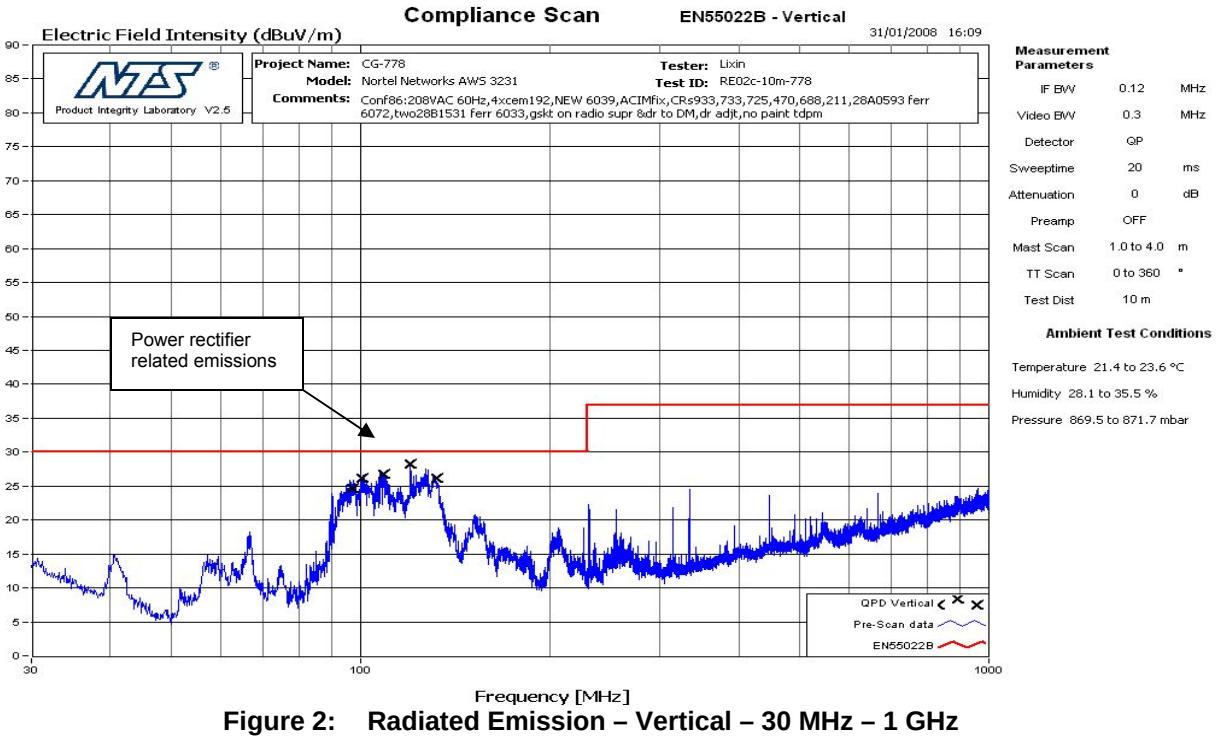



**Figure 2: Radiated Emission – Vertical – 30 MHz – 1 GHz**

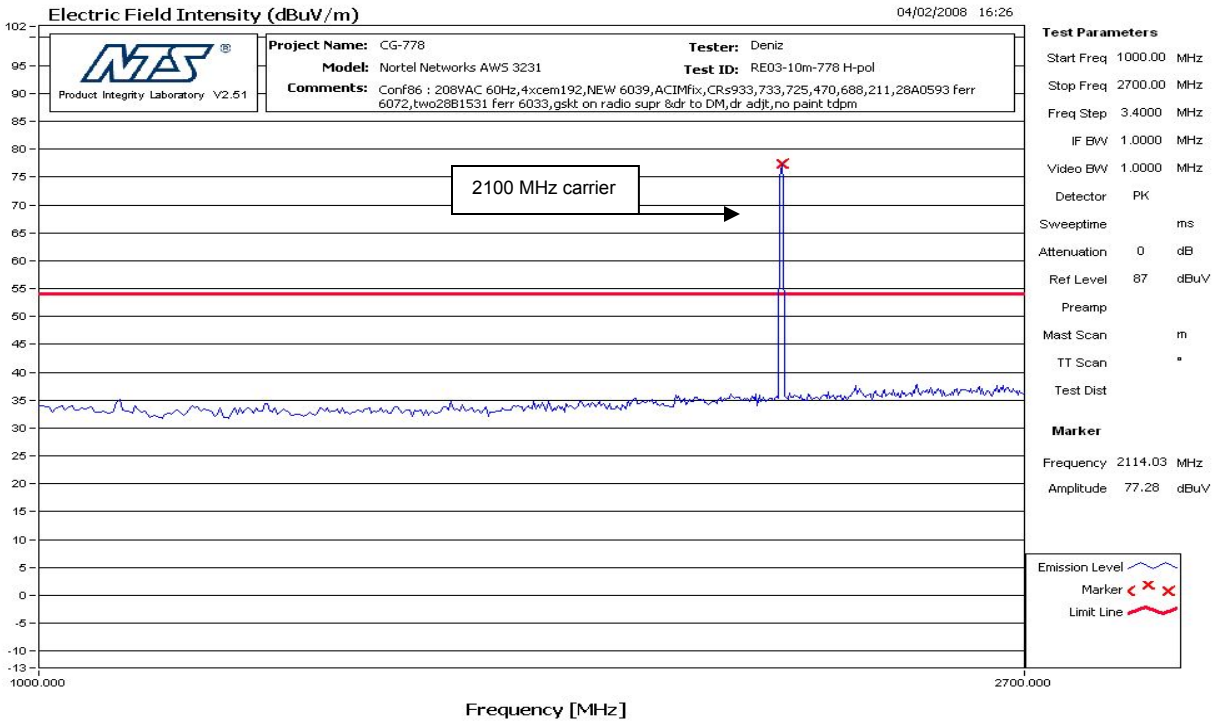



**Figure 3: Radiated Emission – Horizontal - 1 GHz – 2.7 GHz**

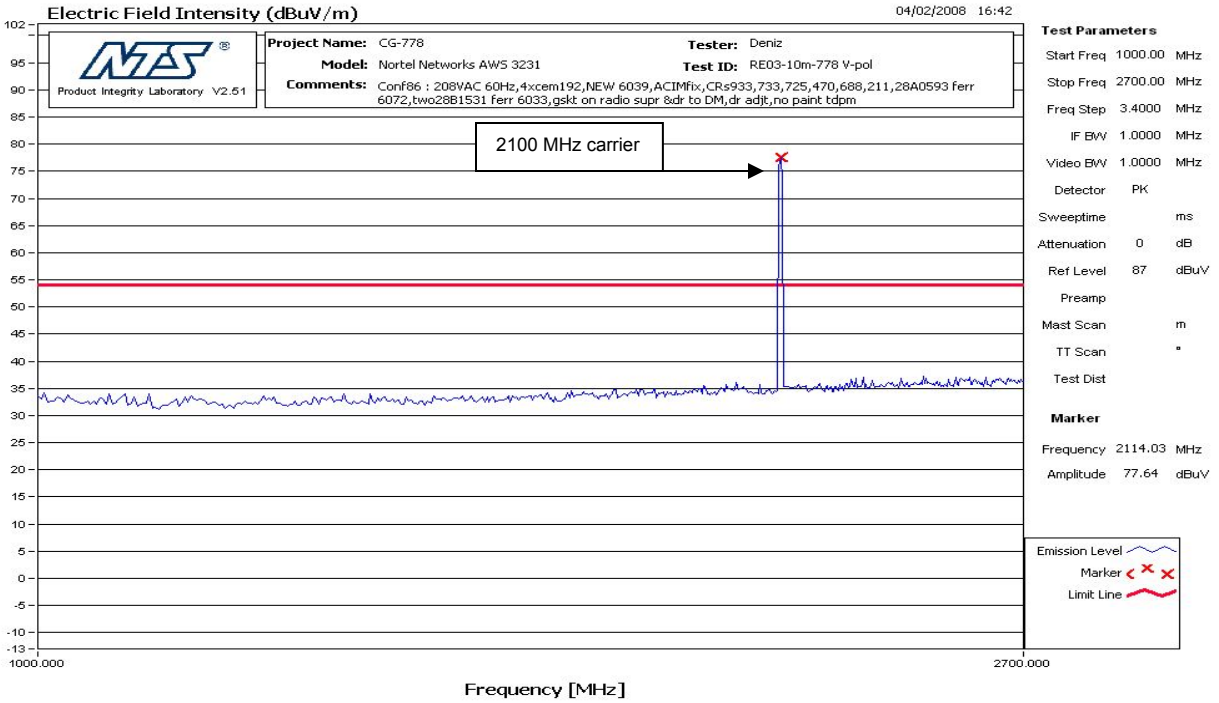



**Figure 4: Radiated Emission – Vertical - 1 GHz – 2.7 GHz**

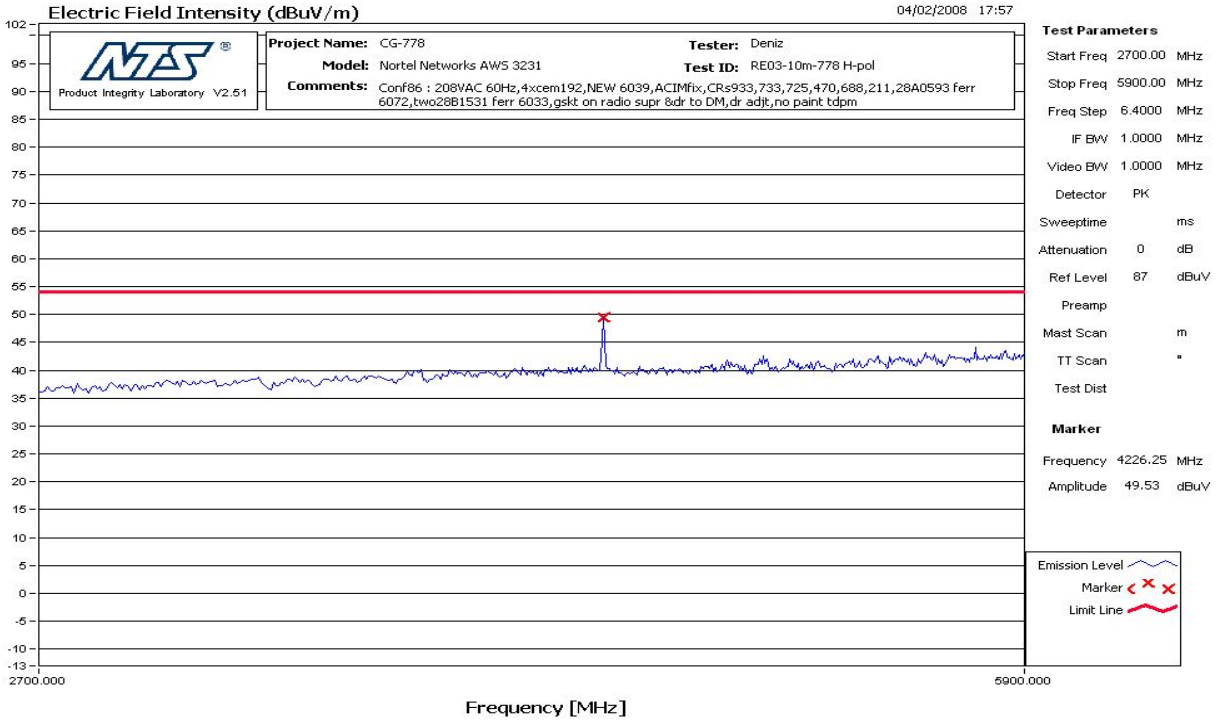



**Figure 5: Radiated Emission - Horizontal – 2.7 GHz – 5.9 GHz**

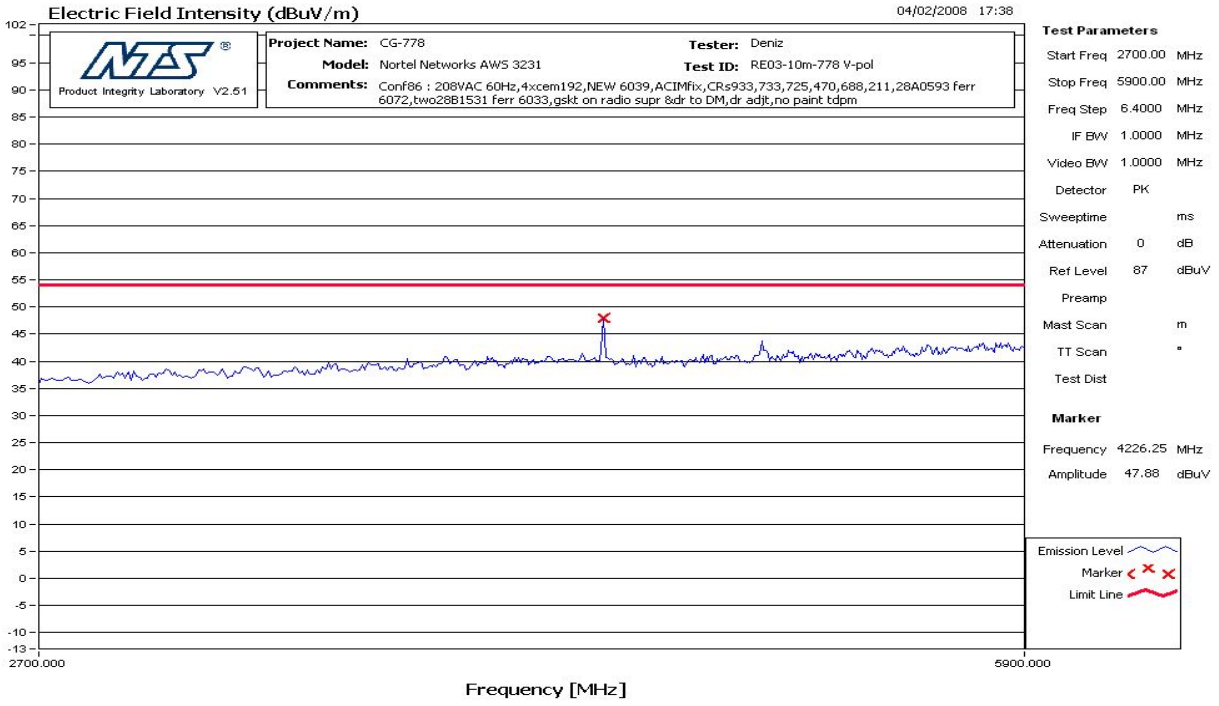



**Figure 6: Radiated Emission - Vertical – 2.7 GHz – 5.9 GHz**

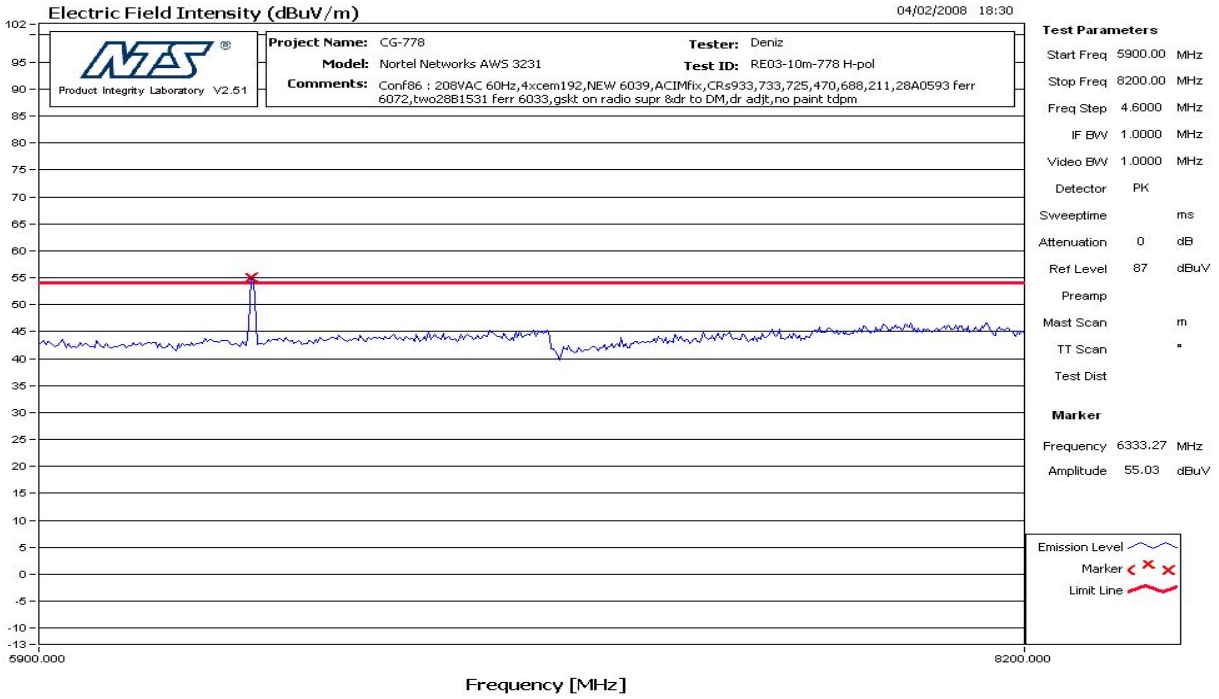



**Figure 7: Radiated Emission - Horizontal – 5.9 GHz – 8.2 GHz**

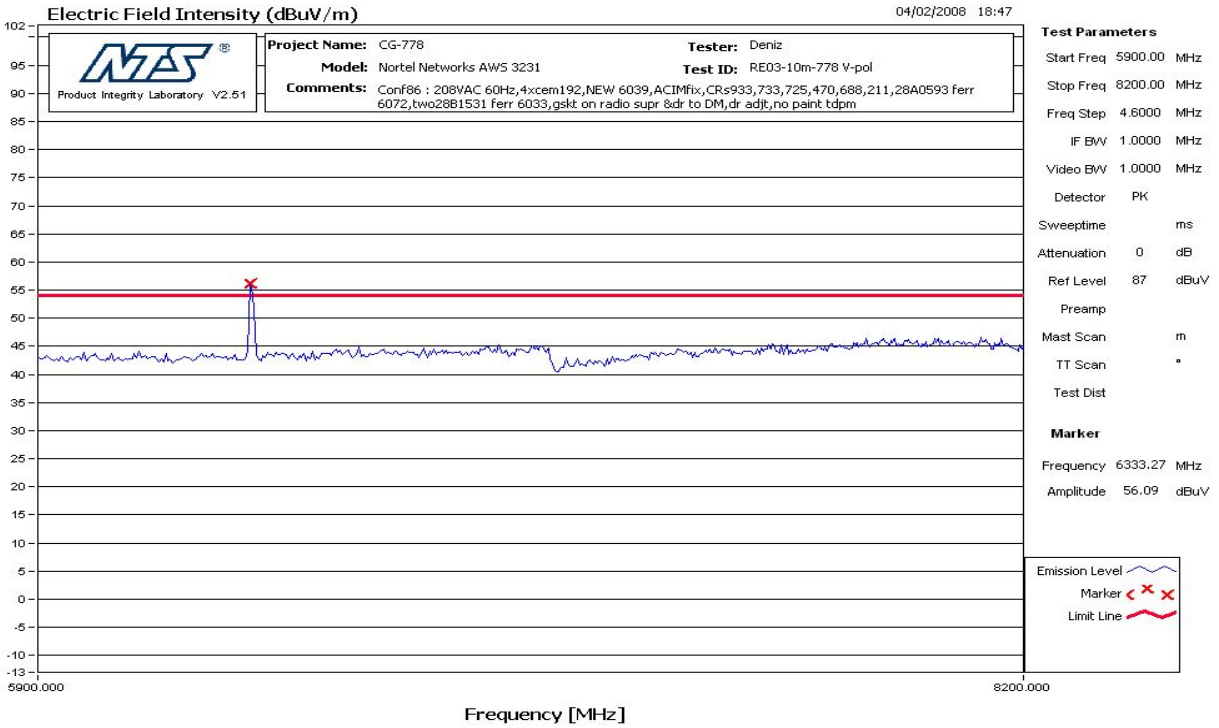



**Figure 8: Radiated Emission - Vertical – 5.9 GHz – 8.2 GHz**

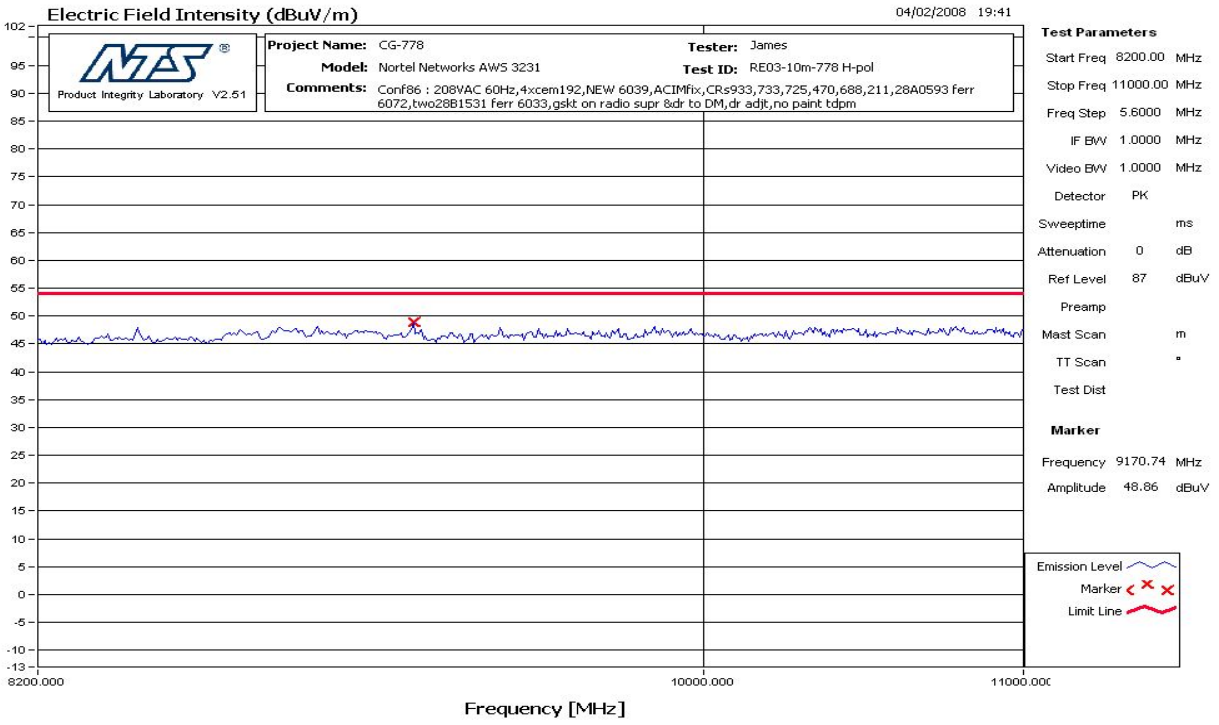



**Figure 9: Radiated Emission - Horizontal – 8.2 GHz – 11 GHz**

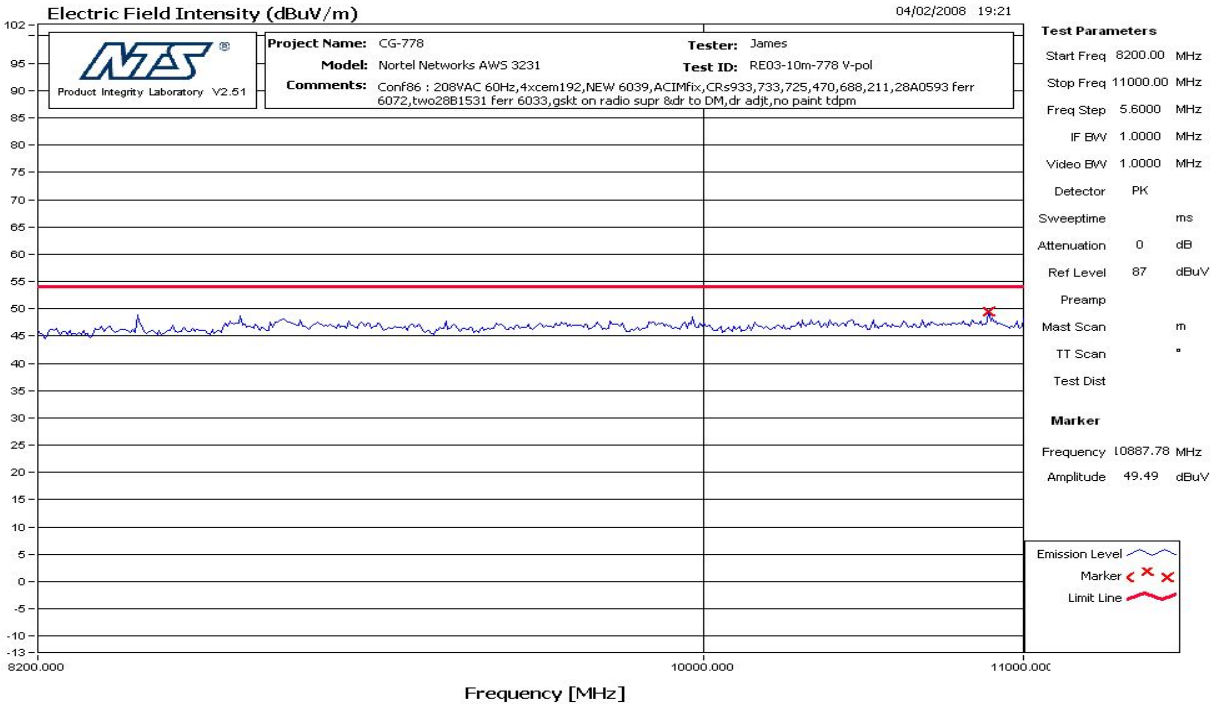



**Figure 10: Radiated Emission - Vertical – 8.2 GHz – 11 GHz**

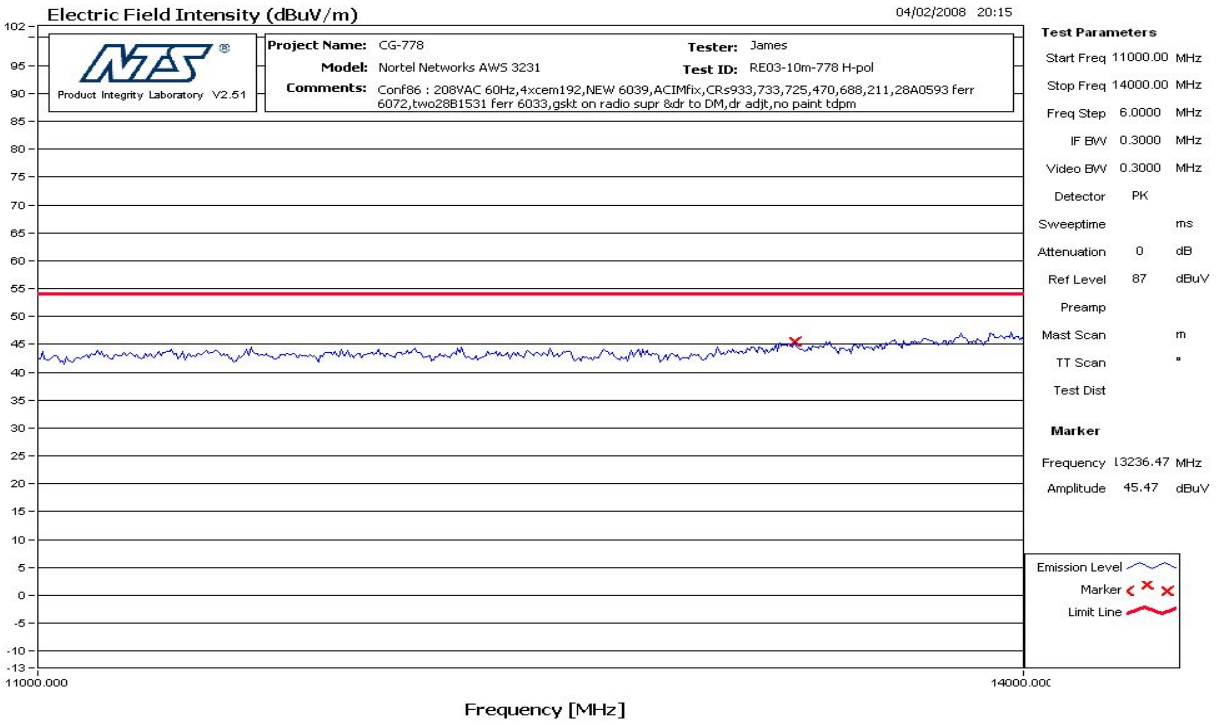



**Figure 11: Radiated Emission - Horizontal – 11 GHz – 14 GHz**

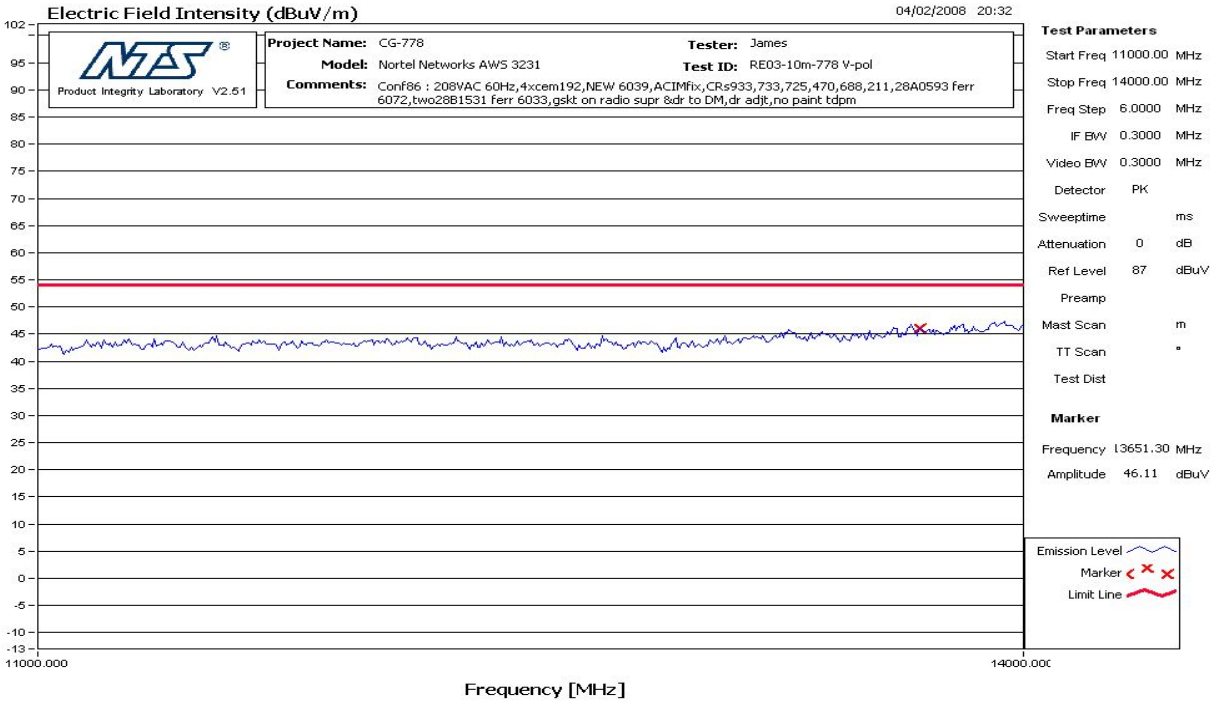



**Figure 12: Radiated Emission - Vertical – 11 GHz – 14 GHz**

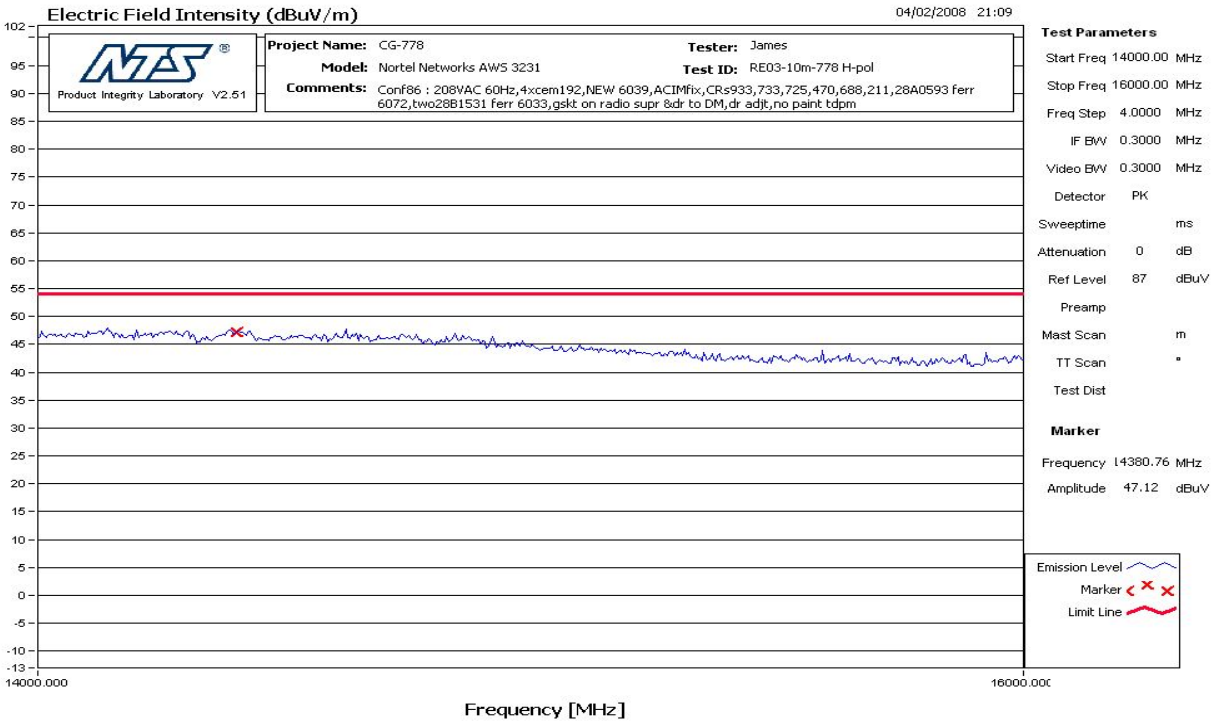



**Figure 13: Radiated Emission - Horizontal – 14 GHz – 16 GHz**

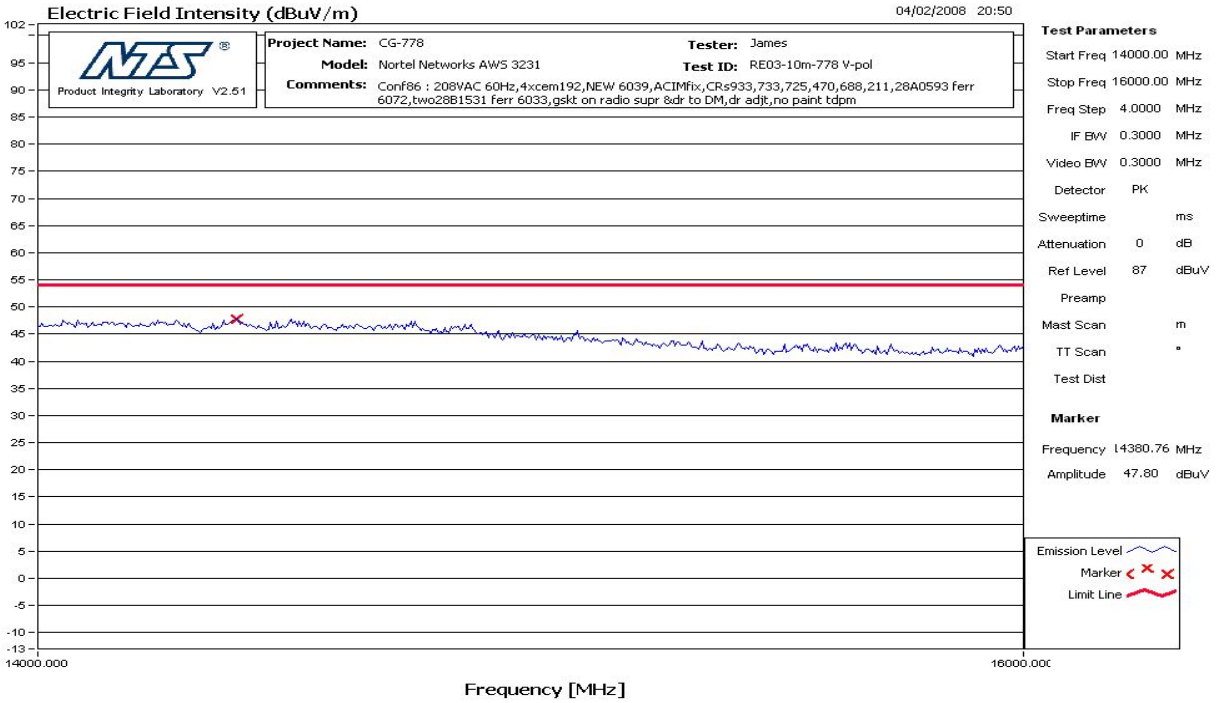



**Figure 14: Radiated Emission - Vertical – 14 GHz – 16 GHz**

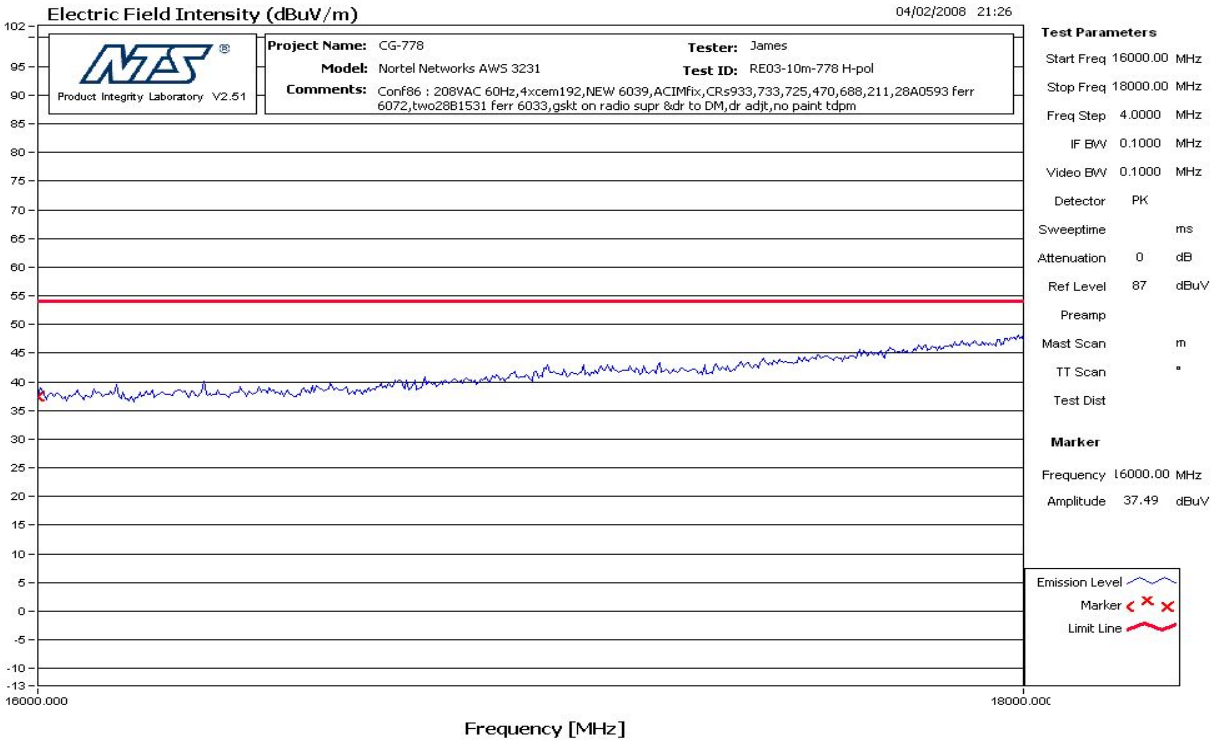



**Figure 15: Radiated Emission - Horizontal – 16 GHz – 18 GHz**

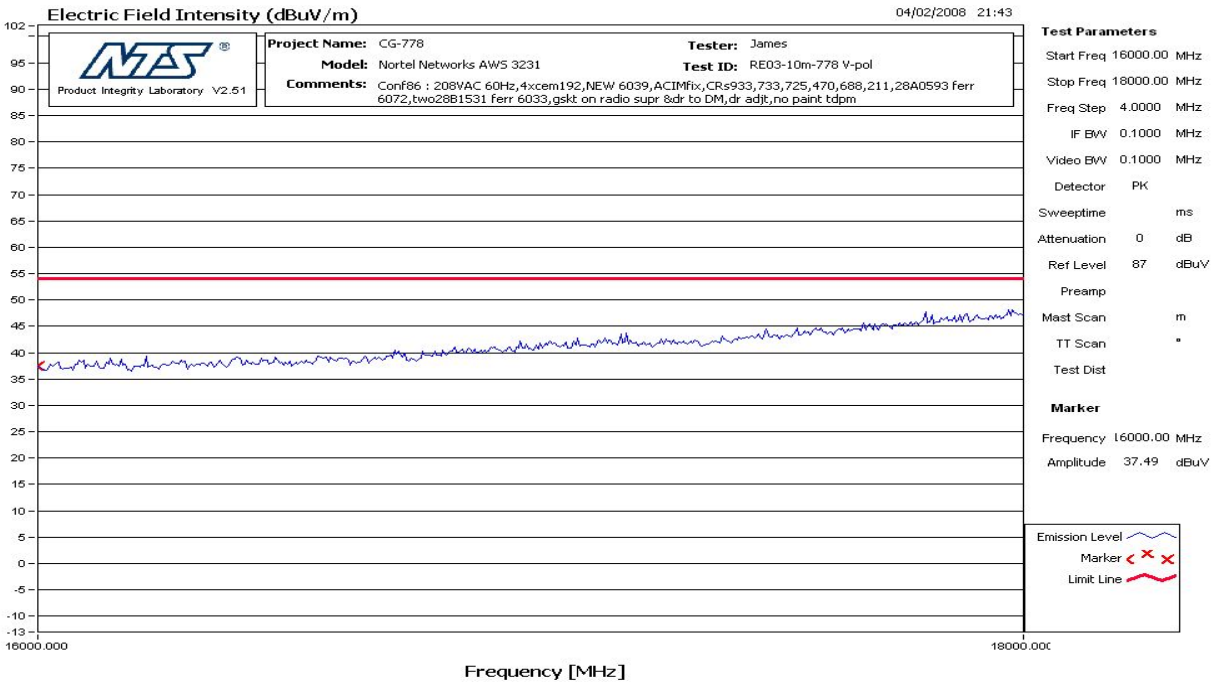



**Figure 16: Radiated Emission - Vertical – 16 GHz – 18 GHz**

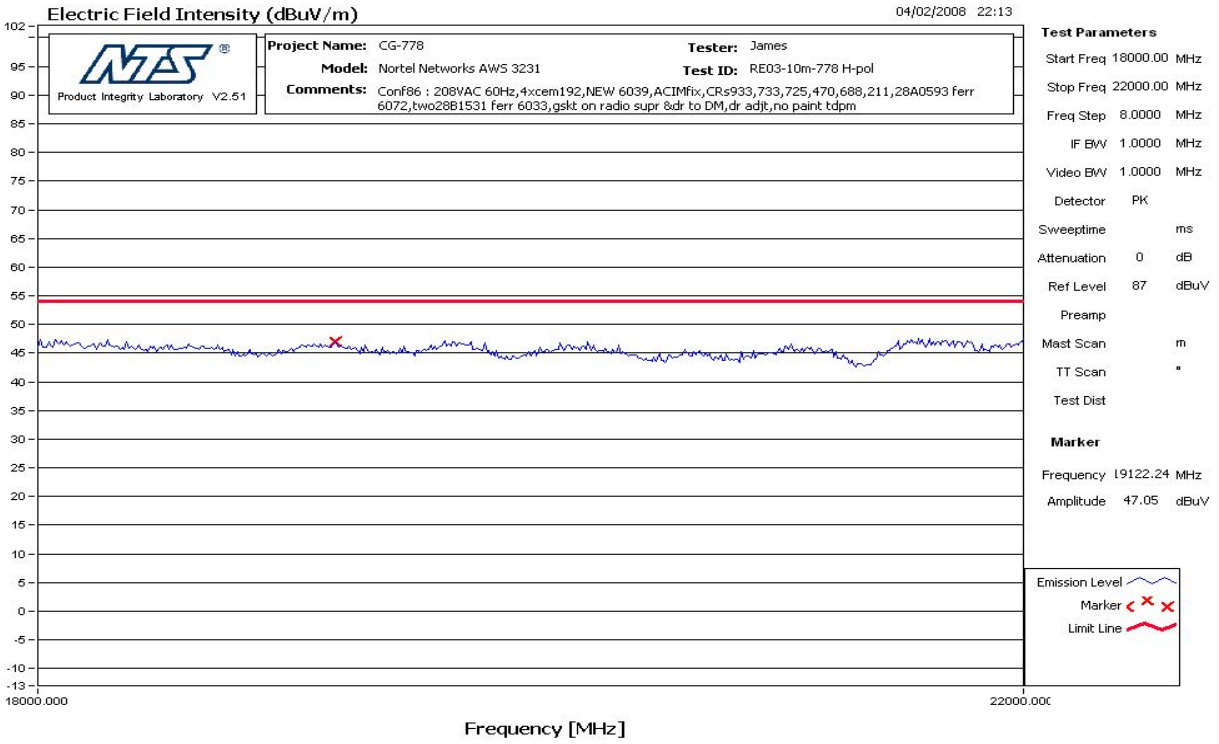



**Figure 17: Radiated Emission - Horizontal – 18 GHz – 22 GHz**

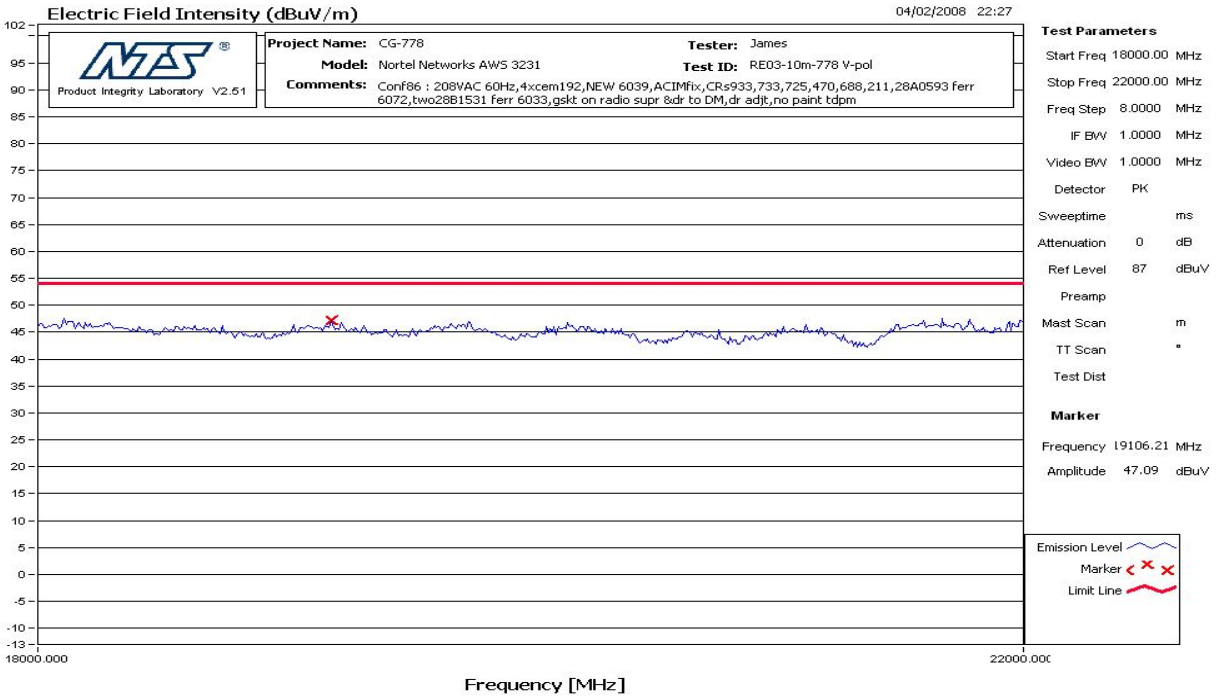



**Figure 18: Radiated Emission - Vertical – 18 GHz – 22 GHz**

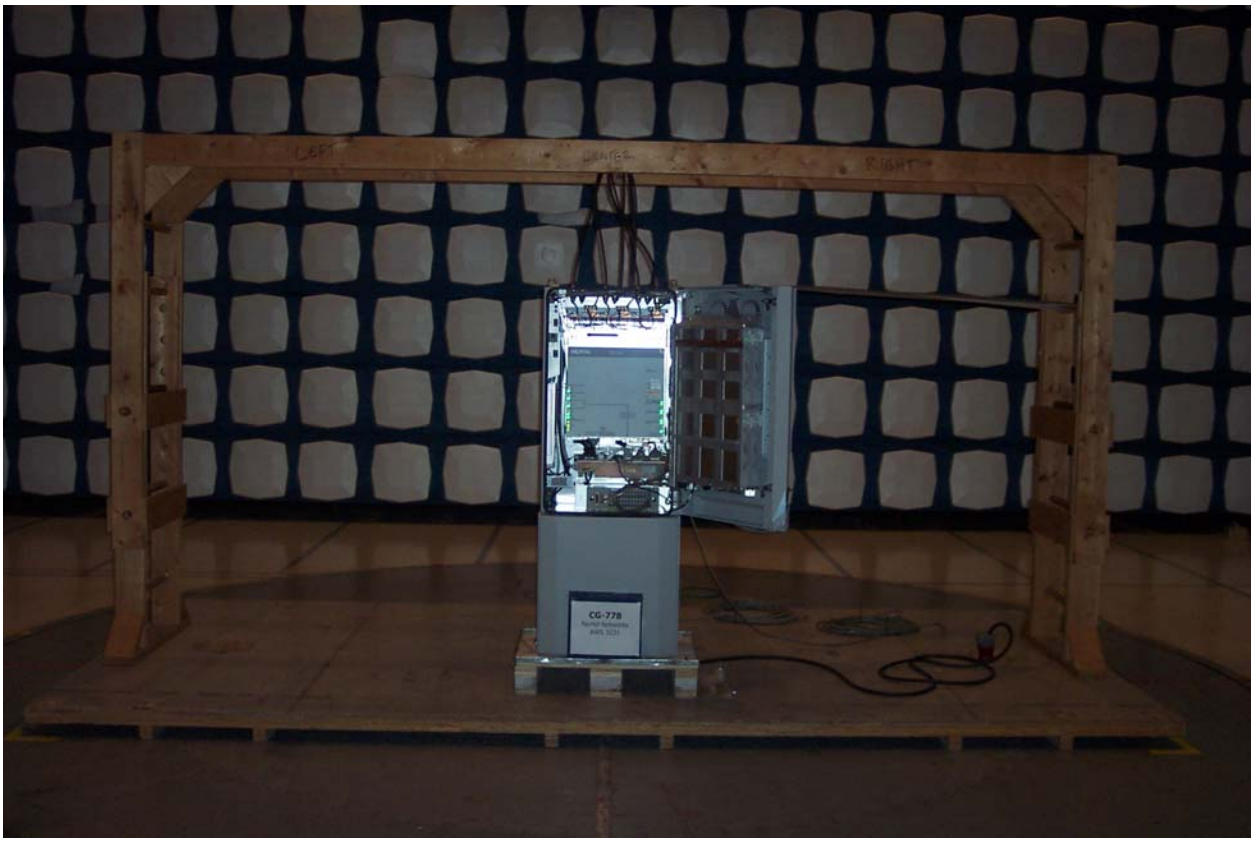



**Figure 19: Radiated Emission – Test Setup***

***** EUT door was closed during radiated emission tests

# APPENDIX B: TEST EQUIPMENTS LIST

## B.1. Radiated Emissions 30 MHz – 1 GHz Measurement Equipment

| Description | Manufacturer | Type/Model | Asset # | Cal Due | Cal Date |
|---|---|---|---|---|---|
| **10m ANECHOIC CHAMBER** | | | | | |
| Bilog Antenna | Schaffner | CBL 6112D | CG1177 | 10OCT08 | 10OCT07 |
| RF Cable | Suhner Sucoflex | Ferrite bead loaded cable | CG0398 | 13APR08 | 13APR06 |
| Digital Barometer / Thermometer | Cole-Parmer | 1870 | CG0728 | 19JUN08 | 19JUN07 |
| **CONTROL ROOM** | | | | | |
| Test Receiver | Rohde & Schwarz | ESMI | CG0433/ CG0434 | 27FEB08 | 27FEB07 |
| Mast Controller | EMCO | 2090 | CG0179 | N/A | N/A |
| Multi Device Controller TT1 (Turntable) | EMCO | 2090 | CG0178 | N/A | N/A |
| RF 10m East site Link | | | | 13APR08 | 13APR06 |
| - Cable 1 | Suhner Sucoflex | NA | CG0690 | | |
| - Cable 2 | Suhner Sucoflex | NA | CG0634 | | |
| - Cable 3 | Suhner Sucoflex | NA | CG0660 | | |
| - Cable 4 | Suhner Sucoflex | NA | CG0661 | | |
| - Amplifier | Hewlett Packard | 8447F | CG0177 | | |

### B.2. Radiated Emissions 1 GHz – 22 GHz Measurement Equipment

| Description | Manufacturer | Type/Model | Asset # | Cal Due | Cal Date |
|---|---|---|---|---|---|
| **10m ANECHOIC CHAMBER** | | | | | |
| Horn Antenna (Rx) 1 GHz – 18 GHz | EMCO | 3115 | CG0368 | 23AUG08 | 23AUG07 |
| Standard Gain Horn (Rx) 18 GHz – 26.5 GHz | EMCO | 3160-09 | CG0075 | N/A (1) | 27NOV01 |
| High pass filter f>1000 MHz | MicroTronics | HPM14576 | CG0963 | 10AUG08 | 10AUG06 |
| LNA 1 GHz<f<18 GHz | Miteq | JSD00121 | CG0317 | 10AUG08 | 10AUG06 |
| LNA 18 GHz<f<26.5 GHz | Miteq | JSD00119 | CG0482 | 19JAN09 | 19JAN07 |
| Cable from Antenna to LNA | Sucoflex 104 | 2422774A | CG0686 | 10AUG08 | 10AUG06 |
| Cable from LNA to SA | Sucoflex 100 | 115757-4 | CG0686 | 10AUG08 | 10AUG06 |
| Spectrum Analyzer 9 kHz – 40 GHz | Rohde & Schwarz | FSEK-20 | CG0118 | 19JUN08 | 19JUN07 |
| LNA DC Power Supply | Xantrex | LXO 30-2 | CG0493 | N/A | N/A |
| HPIB Extender | HP | 37204 | CG0110 | N/A | N/A |
| Digital Barometer / Thermometer | Cole-Parmer | 1870 | CG0728 | 19JUN08 | 19JUN07 |
| **CONTROL ROOM** | | | | | |
| PC with FSEK Manual ctrl S/W | N/A | N/A | N/A | N/A | N/A |
| HPIB Extender | HP | 37204 | CG0181 | N/A | N/A |
| Mast Controller | EMCO | 2090 | CG0179 | N/A | N/A |
| Multi Device Controller TT1 | EMCO | 2090 | CG0178 | N/A | N/A |

(1): As per manufacturer recommend, this item does not require periodic calibration. Its electromagnetic performance is almost exclusively depended on the physical dimension of the horn. A thorough mechanical check is all that is needed to guarantee the antenna performance.

| **SUBSTITUTION EQUIPMENT** | | | | | |
|---|---|---|---|---|---|
| Horn Antenna (Tx) | EMCO | 3115 | CG0103 | 30AUG08 | 30AUG06 |
| Standard Gain Horn (Rx) 18 GHz – 26.5 GHz | EMCO | 3160-09 | CG0075 | N/A (1) | 27NOV01 |
| Signal Generator | Rohde & Schwarz | SMP-04 | CG0435 | 29MAY08 | 29MAY07 |
| Cable TX antenna to Signal Generator | Sucoflex | 115745-4 | CG0635 | 19JAN09 | 19JAN07 |

## APPENDIX C: TEST PLAN

Nortel Networks
CDMA BTS 3231 1710-2155 MHz
Product Integrity
Test Plan

# END OF DOCUMENT