Engineering and Testing for EMC and Safety Compliance

# CERTIFICATION APPLICATION REPORT
## FCC PART 15.247 & INDUSTRY CANADA RSS-210 AND RSS-139

| | |
|---|---|
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| | | | |
|---|---|---|---|
| **FCC ID:** | MFMSAMP24W | **GRANTEE FRN NUMBER:** | 0007415805. |
| **PLAT FORM:** | N/A | **RTL WORK ORDER NUMBER:** | 2002123 |
| **MODEL(S):** | Extended Amplified WLAN System (SMARTAMP 1W) | **RTL QUOTE NUMBER:** | QRTL02-495 |
| **TEST REPORT DATE:** | September 12, 2002 | | |

| | |
|---|---|
| **American National Standard Institute:** | ANSI/TIA/EIA603 and ANSI/TIA/EIA 603-1 |
| **FCC Classification:** | DSS – Spread Spectrum Transmitter |
| **FCC Rule Part(s):** | Part 15.247: Operation within the bands 920-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz<br>Direct Sequence System |
| **Industry Canada Standard:** | RSS-210: Low Power License-Exempt Radio Communication Devices (All Frequency Bands)<br>RSS-139: Licensed Radio communications Devices (All Frequency Bands) |
| **Digital Interface Information** | Digital Interface was found to be compliant |
| **Receiver Information** | Receiver was found to be compliant |

| Frequency Range (MHz) | Output Power (W) | Frequency Tolerance | Emission Designator |
|---|---|---|---|
| 2422-2452 | 0.87 | N/A | N/A |

We, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this test report. No modifications were made to the equipment during testing in order to achieve compliance with these standards.

Furthermore, there was no deviation from, additions to, or exclusions from the FCC Part 2, FCC Part 15, Industry Canada RSS-210 & RSS-139, ANSI C63.4, ANSI/TIA/EIA603, and ANSI/TIA/EIA 603-1.

Signature: _____ Date: September 12, 2002

Typed/Printed Name: Desmond A. Fraser Position: President

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# 1 GENERAL INFORMATION

## 1.1 SCOPE

FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz.

IC RSS-210 Section 6.2.2(o): Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz.

IC RSS-139 appendix (B): Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz.

A direct sequence (DS) system is a spread spectrum (SS) system in which the carrier has been modulated by a high speed spreading code and an information data stream. The high-speed code sequence dominates the "modulating function" and is the direct cause of the wide spreading of the transmitted signal.

## 1.2 TEST FACILITY

The open area test site and conducted measurement facility used to collect the radiated data is located at 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report and approved by the Federal Communications Commission to perform AC line conducted and radiated emissions testing (ANSI C63.4 1992).

## 1.3 RELATED SUBMITTAL(S)/GRANT(S)

This is an original application for Certification for the Teletronics International Inc. Extended Range Amplified WLAN System, SMARTAMP 1W, FCC ID: MFMSAMP24W. It consists of the Cisco WLAN card with the Teletronics 1W SmartAmp amplifier, Teletronics DC Power Injector, antenna(s), and cabling. The IF, LO and up to the 2$^{nd}$ LO were investigated and tested.

# 2 TEST INFORMATION

## 2.1 TEST JUSTIFICATION

The EUT was tested in all three orthogonal planes in order to determine worst-case emissions. Channel 3 at 2422 MHz, Channel 6 at 2437 MHz and channel 9 at 2452 MHz were tested and investigated from 9 kHz to 24 GHz. Data for all three channels is presented in this report.

In order to complete the configuration required for testing, a WLAN PCMCIA card, Cisco 352 series, inserted in an Access Point configured with a Cisco 352 WLAN card, was connected to a notebook computer through its Ethernet port. The PCMCIA WLAN radio output port was connected to a DC injector, in turn the DC injector was connected to a 1Watt amplifier; the output of the amplifier was connected to different families of external antennas (Omni, Patch, Grid, Dish). The lowest and the highest antenna gain of each family type has been tested.

Because the LMR 600 (nominal cable loss 4.4 dB/100 ft) provides a lower cable loss than the LMR 400 (nominal cable loss 6.8 dB/100 ft), the LMR 600 was used for all testing, to produce the worst case configuration.

The DC injector and the amplifier were connected with 3' LMR 600 cable. The cable length between the amplifier and the antenna used for the testing was minimized to provide a worst case configuration.

The antenna transmits, receives, and connects to the only antenna port available. The worst-case data taken in this report represents the highest data rate at 11 MBPS. Data rates of 5.5 MBPS, 2 MBPS and 1 MBPS were investigated and found to be in compliance. The change in envelope did not cause the EUT to be non-compliant in any of the aforementioned modes.

**TABLE 2-1: SYSTEM CONFIGURATIONS**

| Antenna Part # (Antenna Type) | Specified Antenna Gain (dBi) | Maximum Cisco Aironet Radio Output Power (dBm) | Maximum Amplifier Output Power (dBm) | Minimum Cable Length (dB loss) Between Antenna & Power Amplifier for LMR 600/LMR 400 | Maximum Extended Range WLAN System EIRP (dBm) | Maximum Permissible Exposure (MPE) Distance cm (inches) |
|---|---|---|---|---|---|---|
| ANT-O2412 (Omni directional) | 12 | 100mW (+20dBm) | 1 Watt (+30dBm) | 150'/98' (6.6 dB) | 35.0 | 20cm (7.9 inches) |
| ANT-O2409 (Omni directional) | 9 | 100mW (+20dBm) | 1 Watt (+30dBm) | 113'/74' (5.0 dB) | 34.0 | 20cm (7.9 inches) |
| ANT-O2408 (Omni directional) | 8 | 100mW (+20dBm) | 1 Watt (+30dBm) | 100'/65' (4.4 dB) | 34.0 | 20cm (7.9 inches) |
| ANT-P2419 (Patch) | 19 | 100mW (+20dBm) | 1 Watt (+30dBm) | 305'/197' (13.4 dB) | 35.8 | 200cm (79 inches) |
| ANT-P2418 (Patch) | 18 | 100mW (+20dBm) | 1 Watt (+30dBm) | 277'/179' (12.2 dB) | 35.8 | 200cm (79 inches) |
| ANT-P2415 (Patch) | 15 | 100mW (+20dBm) | 1 Watt (+30dBm) | 216'/140' (9.5 dB) | 35.7 | 200cm (79 inches) |
| ANT-P2413 (Patch) | 13 | 100mW (+20dBm) | 1 Watt (+30dBm) | 159'/103' (7.0 dB) | 35.7 | 200cm (79 inches) |
| ANT-P2412 (Patch) | 12 | 100mW (+20dBm) | 1 Watt (+30dBm) | 152'/99' (6.7 dB) | 35.7 | 200cm (79 inches) |
| ANT-G2418 (Grid) | 18 | 100mW (+20dBm) | 1 Watt (+30dBm) | 150'/98' (6.6 dB) | 41.0 | 200cm (79 inches) |
| ANT-G2424 (Grid) | 24 | 100mW (+20dBm) | 1 Watt (+30dBm) | 250'/162 (11.0 dB)' | 43.0 | 200cm (79 inches) |
| ANT-D2421 (Dish) | 20.5 | 100mW (+20dBm) | 1 Watt (+30dBm) | 150'/98' (6.6 dB) | 44.0 | 200cm (79 inches) |

## 2.2 EXERCISING THE EUT

The EUT was provided with software to continuously transmit during testing. The carrier was also checked to verify that the information was being transmitted.

## 2.3 TEST RESULT SUMMARY

**TABLE 2-2: TEST RESULT SUMMARY WITH FCC RULES AND REGULATIONS**

| STANDARD | TEST | PASS/FAIL OR N/A |
|---|---|---|
| FCC 15.205 | Compliance with the Restricted Band Edge | Pass |
| FCC 15.207 | Conducted Emissions | Pass |
| FCC 15.209 | Radiated Emissions | Pass |
| FCC 15.247(a)(2) | Modulated Bandwidth | Pass |
| FCC 15.247(b) | Power Output | Pass |
| FCC 15.247(c) | Antenna Conducted Spurious Emissions | Pass |
| FCC 15.247(d) | Power Spectral Density | Pass |

## 2.4 TEST SYSTEM DETAILS

The FCC Identifiers for all equipment, plus descriptions of all cables used in the tested system are in Table 2-3:

**TABLE 2-3: EQUIPMENT UNDER TEST (EUT)**

| PART | MANUFACTURER | MODEL | SERIAL NUMBER | FCC ID | CABLE DESCRIPTION | RTL BAR CODE |
|---|---|---|---|---|---|---|
| AMPLIFIER | TELECTRONICS | SMART AMP 1W | NA | MFMSAMP24W | NA | 14530 |
| DC INJECTOR | TELECTRONICS | DC INJECTOR | NA | NA | NA | 14529 |
| ACCESS POINT | CISCO | AP 350 SERIES | VDF0536517K | LDK102040 | NA | 14315 |
| AMPLIFIER | TELECTRONICS | SMART AMP 1W | NA | NA | NA | 14525 |
| CABLE | NA | LMR 600 | NA | NA | 250’ | NA |
| CABLE | NA | LMR 600 | NA | NA | 100’ | NA |
| CABLE | NA | LMR 600 | NA | NA | 50’ | NA |
| CABLE | NA | LMR 600 | NA | NA | 3’ | NA |

**TABLE 2-4: EXTERNAL COMPONENTS IN TEST CONFIGURATION**

| PART | MANUFACTURER | MODEL | SERIAL NUMBER | FCC ID | CABLE DESCRIPTION | RTL BAR CODE |
|---|---|---|---|---|---|---|
| NOTEBOOK PC | SAMSUNG ELECTRONICS | STORM | 019492/B | A3LSQ10 | NA | |

## 2.5 CONFIGURATION OF TESTED SYSTEM

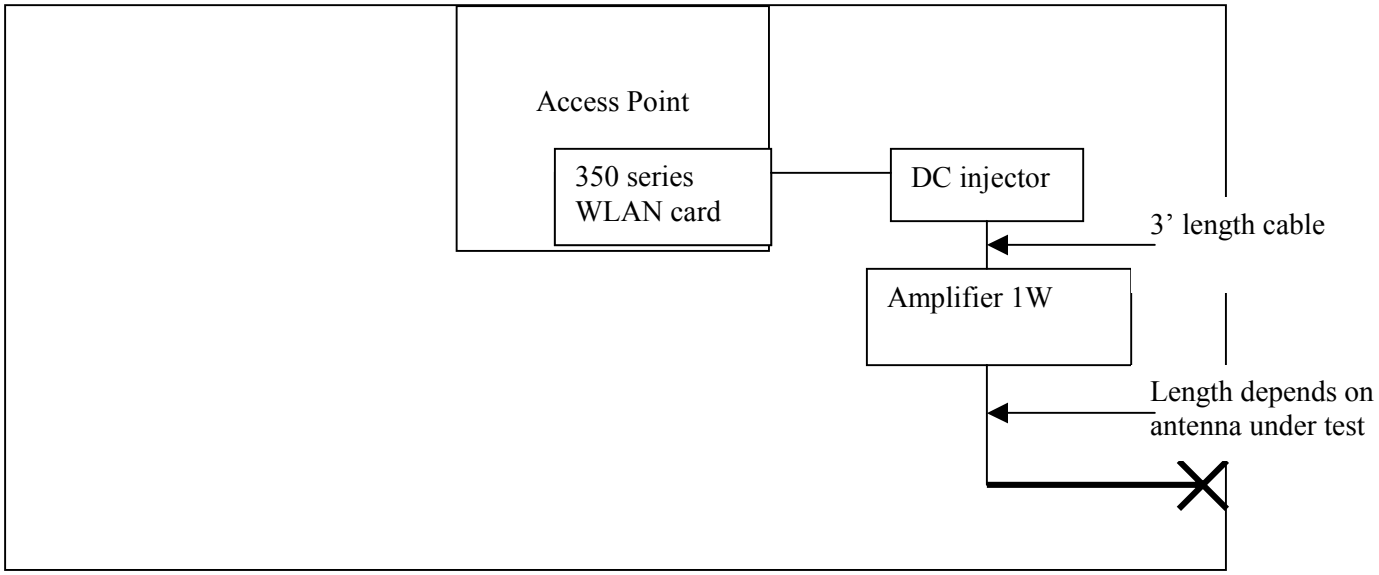



**FIGURE 1: WORST CASE CONFIGURATION OF SYSTEM UNDER TEST**

# 3 COMPLIANCE WITH THE RESTRICTED BAND EDGE - §15.205

## 3.1 TEST PROCEDURE

Compliance with the band edges was performed using the rules found in FCC parts 15.205 and 15.209 respectively. The final data derived below were from radiated measurements applying absolute detector values only. The data taken in this report represents the worst case at 11 MBPS. Data rates of 5.5MBPS, 2 MBPS and 1 MBPS were investigated and found to be in compliance.

## 3.2 COMPLIANCE WITH THE RESTRICTED BAND EDGE TEST DATA

**Operating Frequency (MHz):** 2422-2452
**Channel:** 3 & 9
**Distance (m):** 3
**Limit (dBuV/m):** 54

**TABLE 3-1: RESTRICTED BAND EDGE TEST DATA ANT-OMNI-8**

| Channel Set to | Frequency tested (MHz) | Detector | Field Strength Level (dBµV/m) | Level Corrected (dBµV/m) | FCC Limit (dBµV/m) | FCC Margin (dB) |
|---|---|---|---|---|---|---|
| 3 | 2390.0 | Absolute measurement | 24.1 | 50.5 | 54 | -3.5 |
| 9 | 2483.5 | Absolute measurement | 22.3 | 48.7 | 54 | -5.3 |

**TABLE 3-2: RESTRICTED BAND EDGE TEST DATA ANT-OMNI-12**

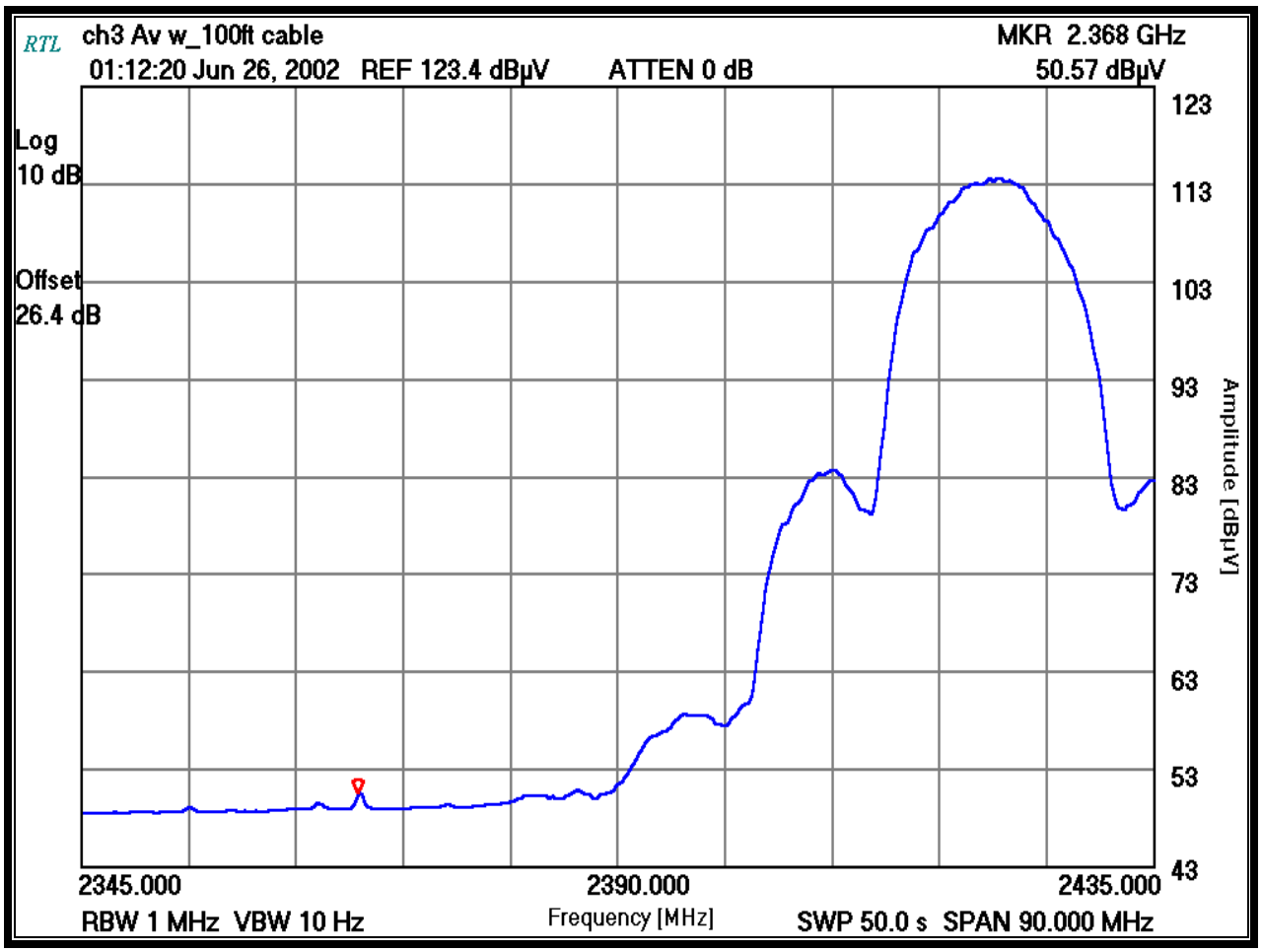
| Channel Set to | Frequency tested (MHz) | Detector | Field Strength Level (dBµV/m) | Level Corrected (dBµV/m) | FCC Limit (dBµV/m) | FCC Margin (dB) |
|---|---|---|---|---|---|---|
| 3 | 2390.0 | Absolute measurement | 23.5 | 49.9 | 54 | -4.1 |
| 9 | 2483.5 | Absolute measurement | 22.5 | 48.9 | 54 | -5.1 |

**TEST PERSONNEL:**

| Franck Schuppius | | 06/26/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-1: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 3 (ANT-OMNI-8)**

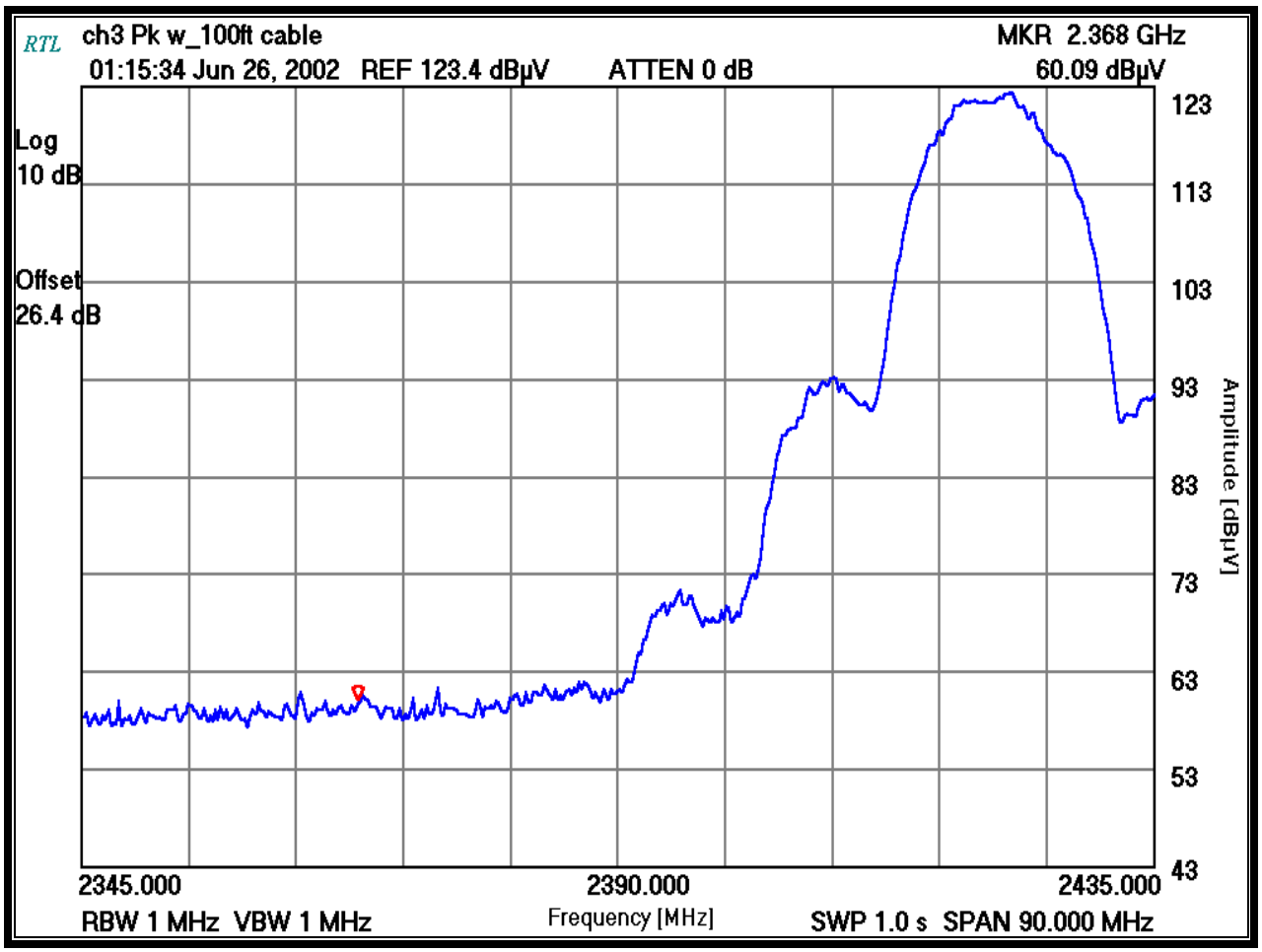



**TEST PERSONNEL:**

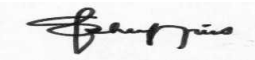
| Franck Schuppius | | 06/26/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time (s):** | 1.0 |

**PLOT 3-2: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 3 (ANT-OMNI-8)**

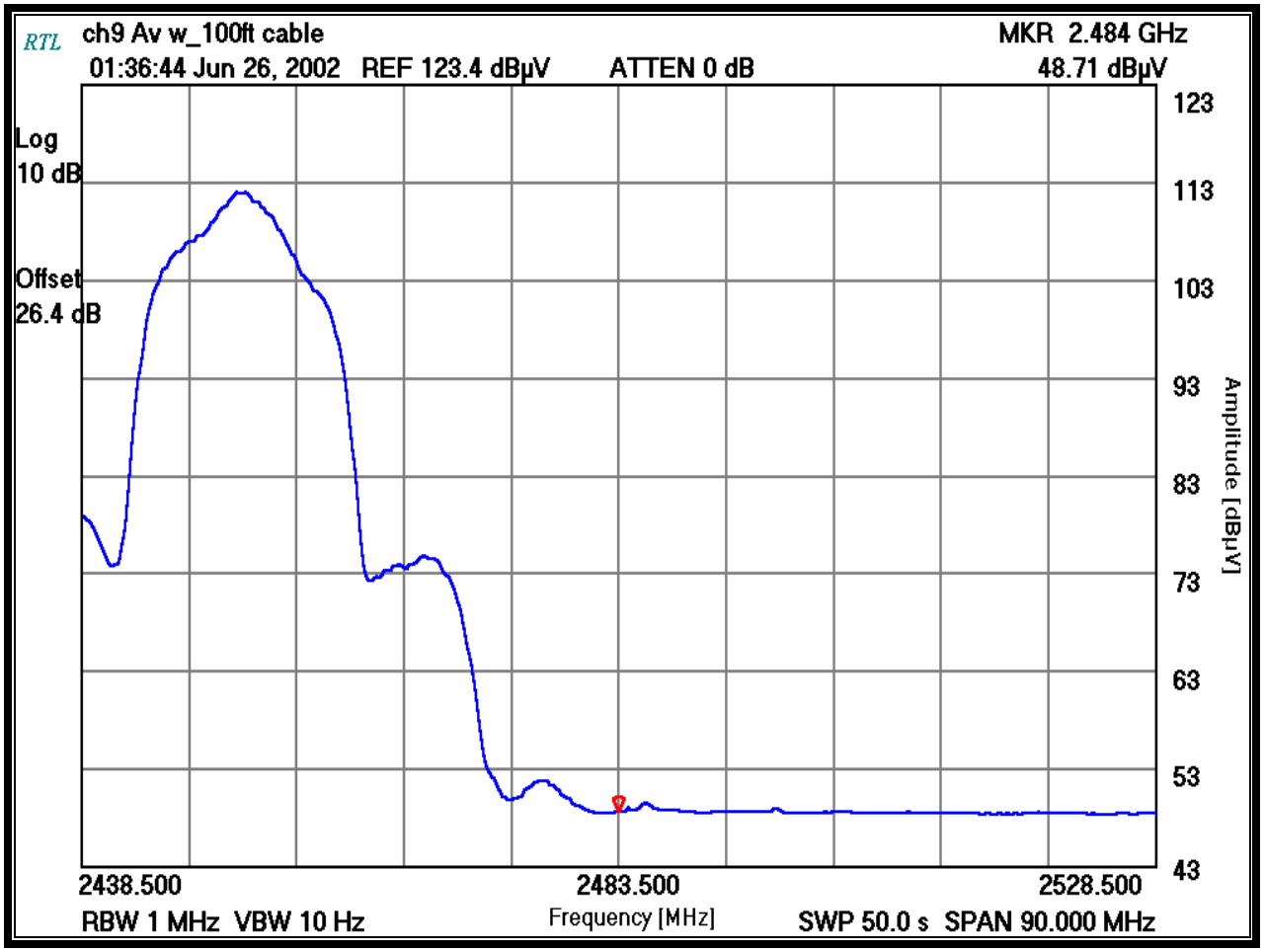



**TEST PERSONNEL:**

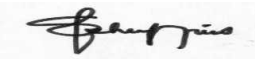
| Franck Schuppius |  | 06/26/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-3: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 9 (ANT-OMNI-8)**

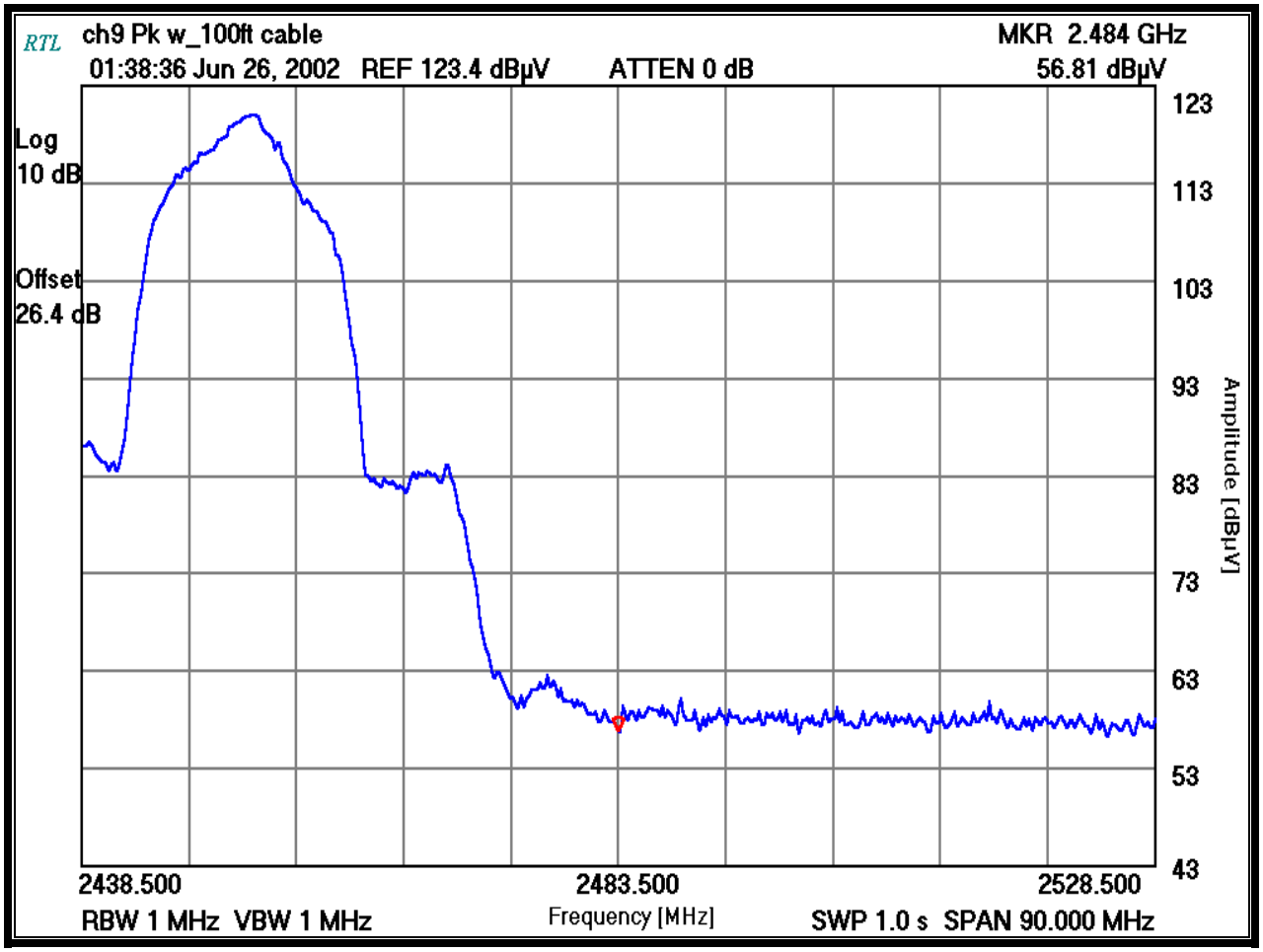



**TEST PERSONNEL:**

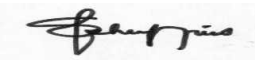
| Franck Schuppius |  | 06/26/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time:** | 1.0s |

**PLOT 3-4: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 9 (ANT-OMNI-8)**

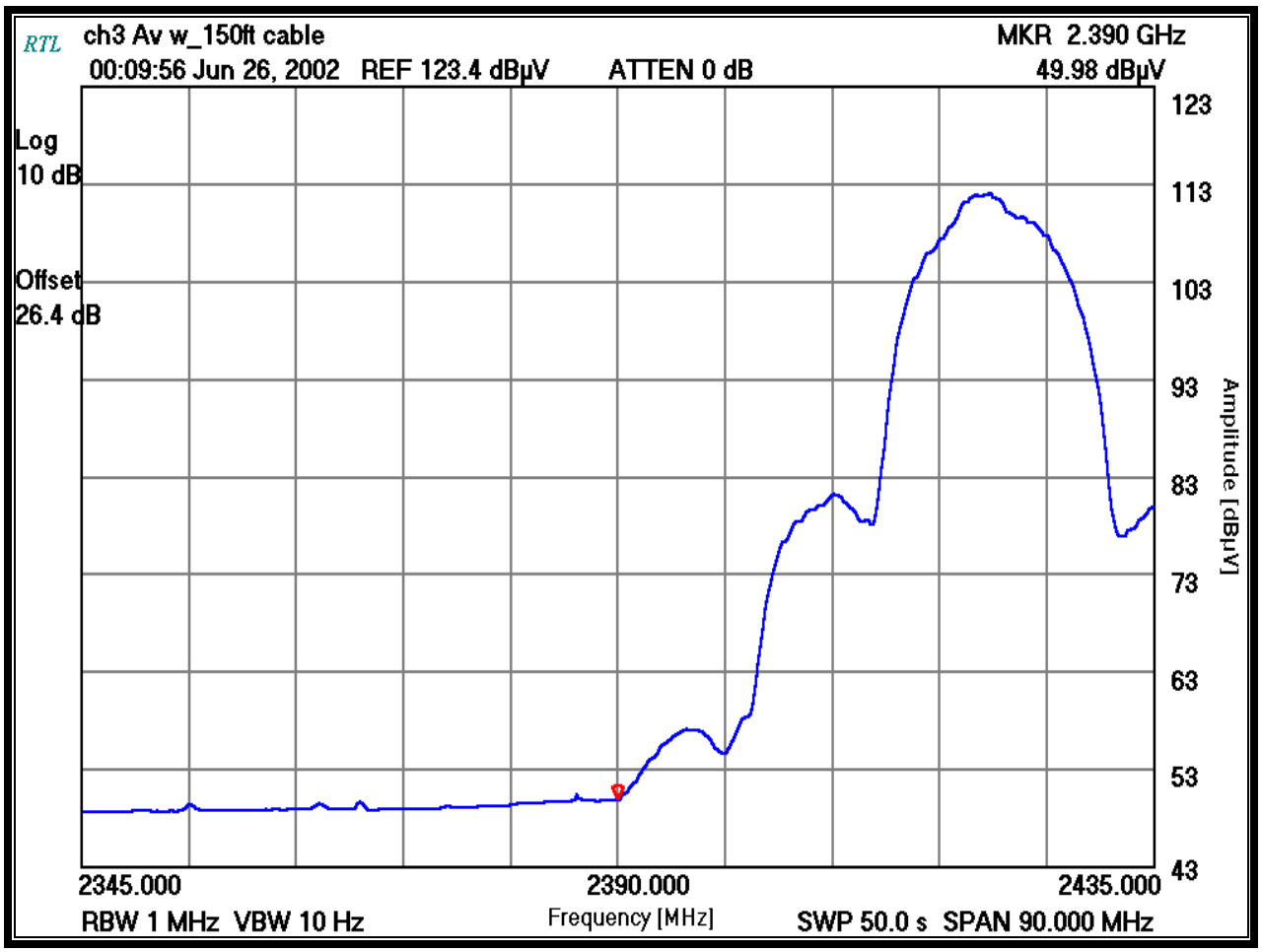



**TEST PERSONNEL:**

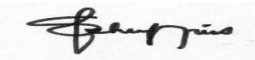
| Franck Schuppius |  | 06/26/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-5: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 3 (ANT-OMNI-12)**

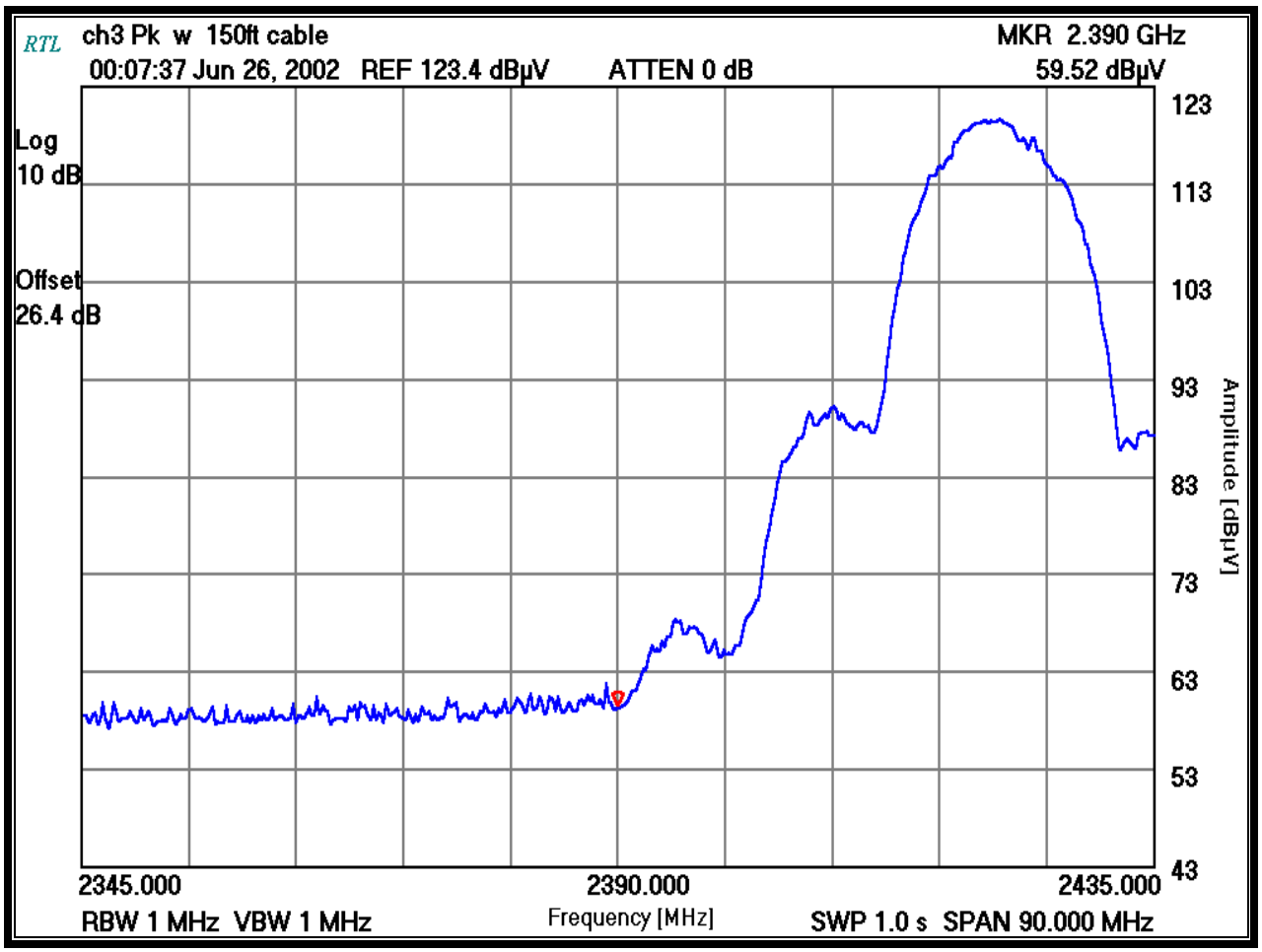



**TEST PERSONNEL:**

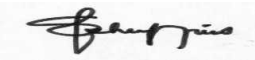
| Franck Schuppius |  | 06/26/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Bandwidth Resolution (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time (s):** | 1.0 |

**PLOT 3-6: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 3 (ANT-OMNI-12)**

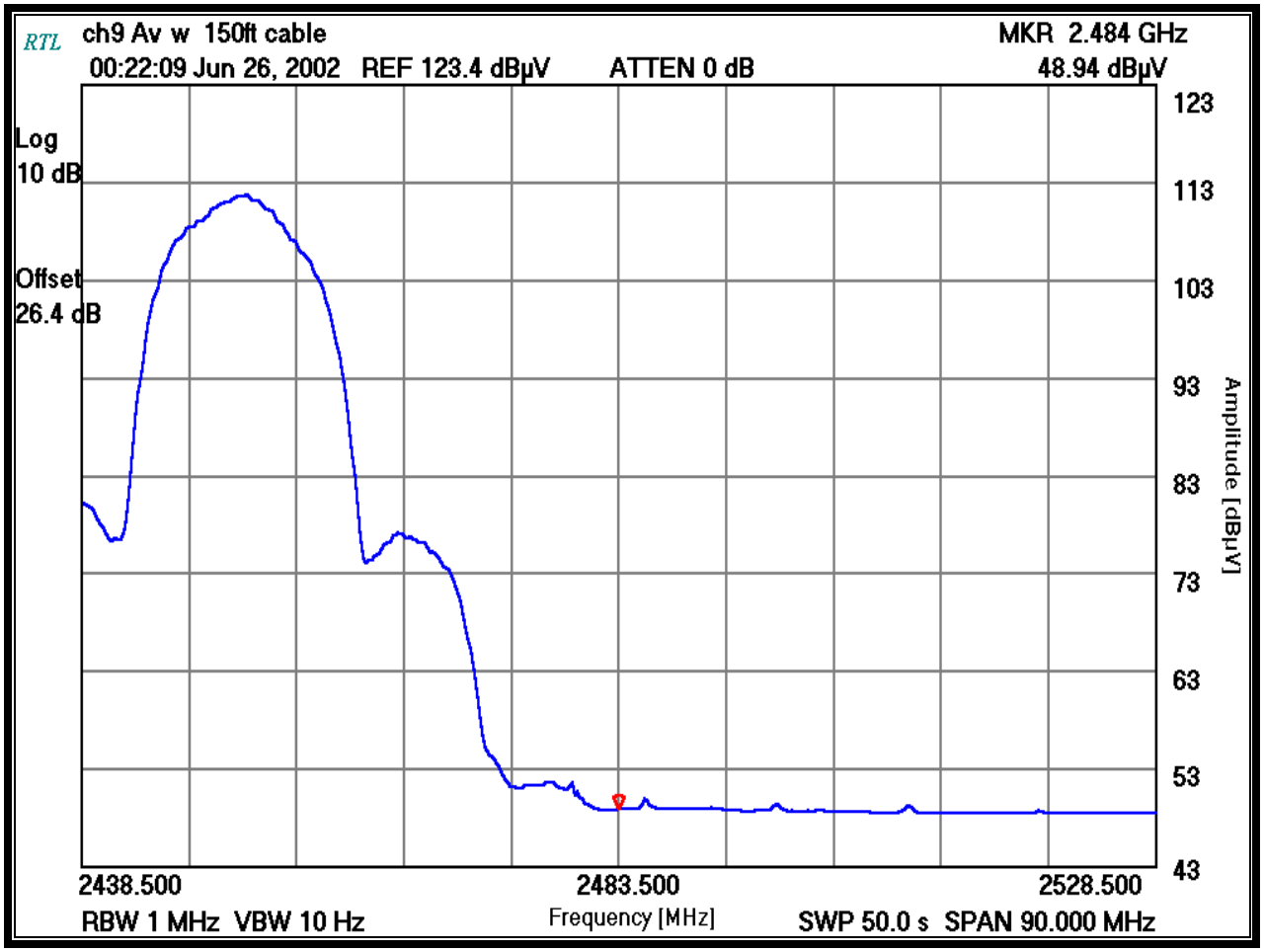



**TEST PERSONNEL:**

| Franck Schuppius |  | 06/26/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-7: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 9 (ANT-OMNI-12)**

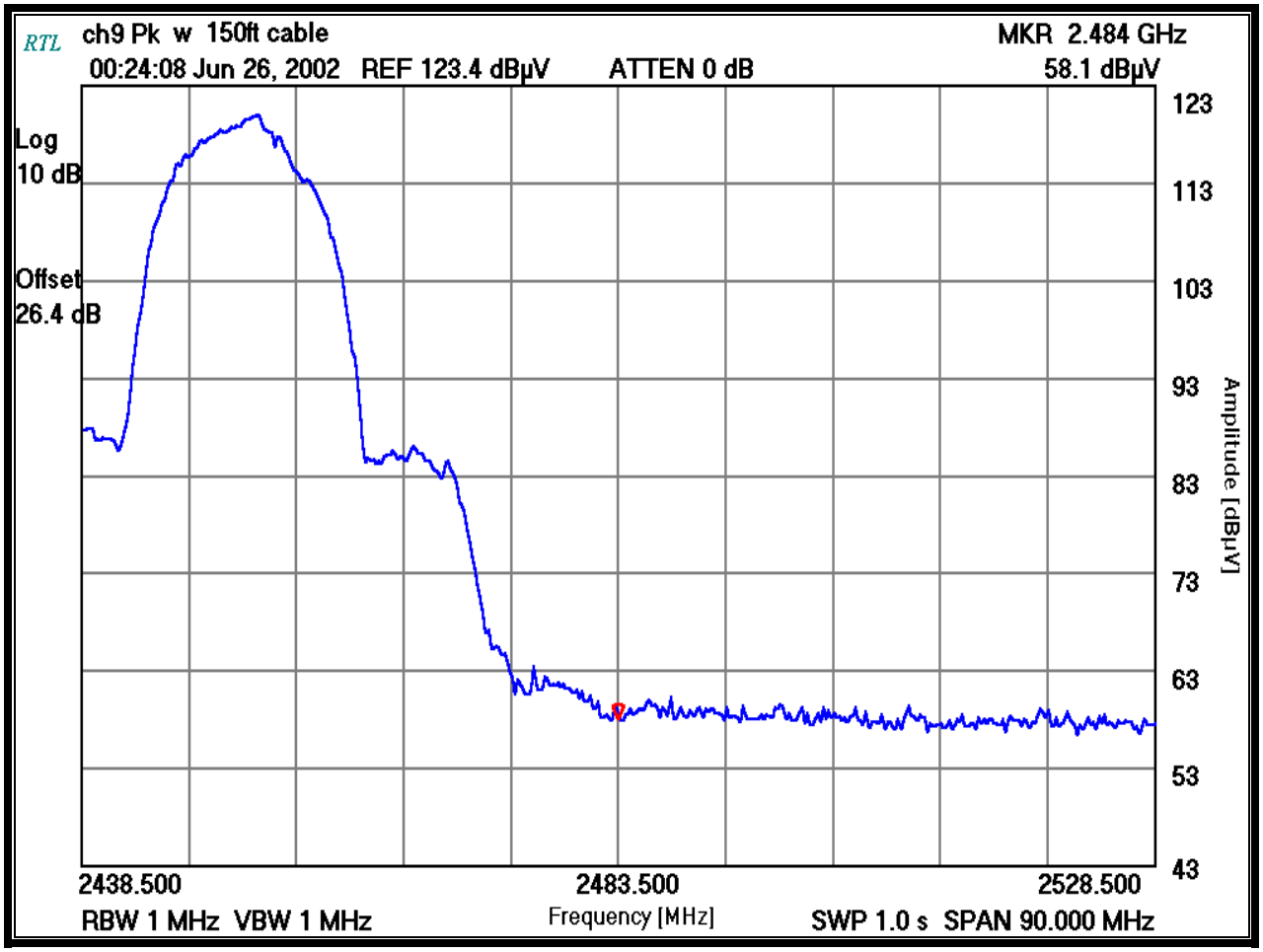



**TEST PERSONNEL:**

| Franck Schuppius | | 06/26/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time (s):** | 1.0 |

**PLOT 3-8: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 9 (ANT-OMNI-12)**




**TEST PERSONNEL:**

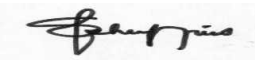
| Franck Schuppius |  | 06/26/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

**TABLE 3-3: RESTRICTED BAND EDGE TEST DATA ANT-PATCH-12**

| Channel Set to | Frequency tested (MHz) | Detector | Field Strength Level (dBµV/m) | Level Corrected (dBµV/m) | FCC Limit (dBµV/m) | FCC Margin (dB) |
|---|---|---|---|---|---|---|
| 3 | 2390.0 | Absolute measurement | 23.8 | 50.2 | 54 | -3.8 |
| 9 | 2483.5 | Absolute measurement | 22.8 | 49.2 | 54 | -4.8 |

**TABLE 3-4: RESTRICTED BAND EDGE TEST DATA ANT-PATCH-19**

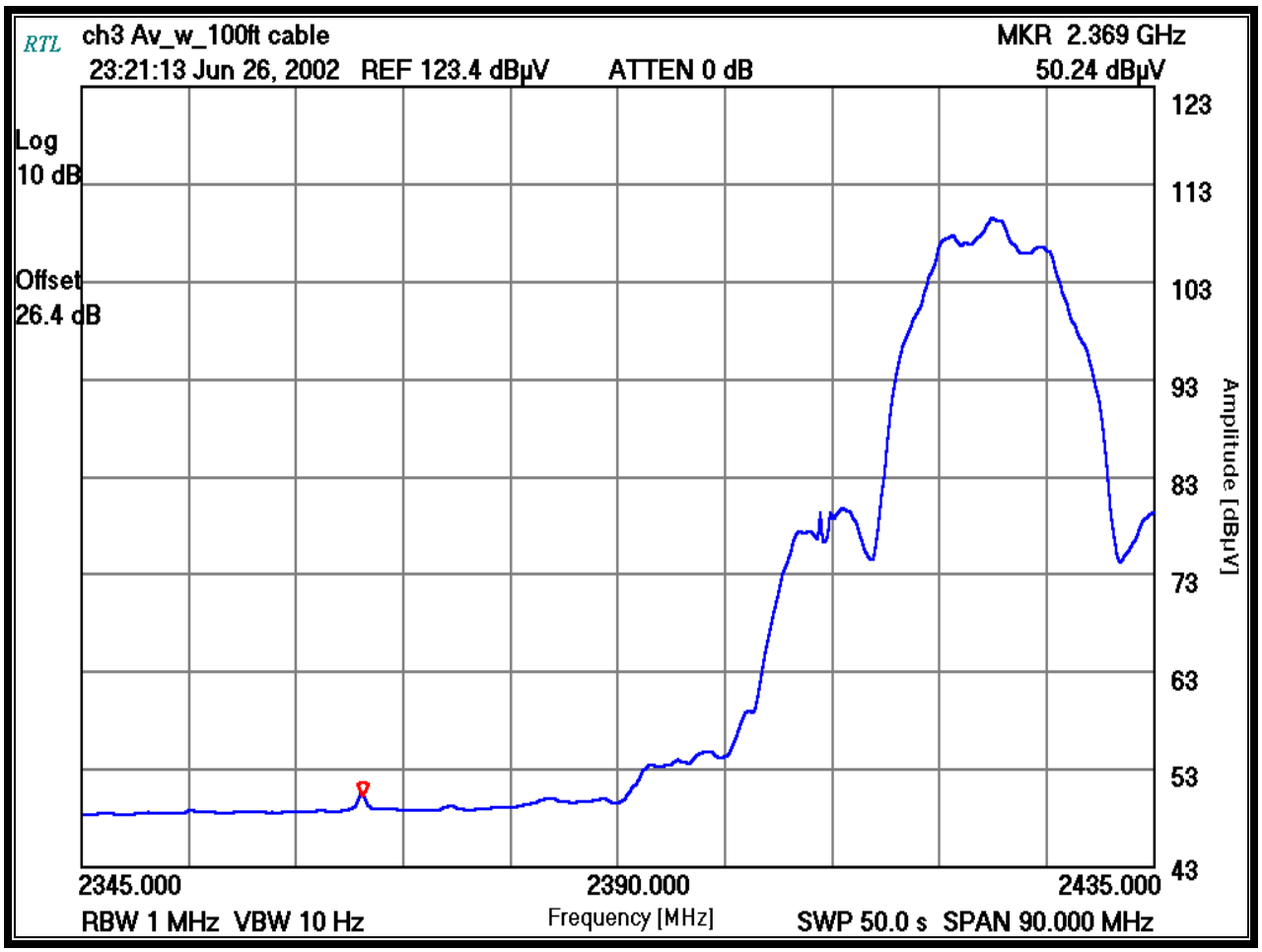
| Channel Set to | Frequency tested (MHz) | Detector | Field Strength Level (dBµV/m) | Level Corrected (dBµV/m) | FCC Limit (dBµV/m) | FCC Margin (dB) |
|---|---|---|---|---|---|---|
| 3 | 2390.0 | Absolute measurement | 25.1 | 51.5 | 54 | -2.5 |
| 9 | 2483.5 | Absolute measurement | 26.3 | 52.7 | 54 | -1.3 |

**TEST PERSONNEL:**

| Franck Schuppius | | 06/26/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-9: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 3 (ANT-PATCH-12)**

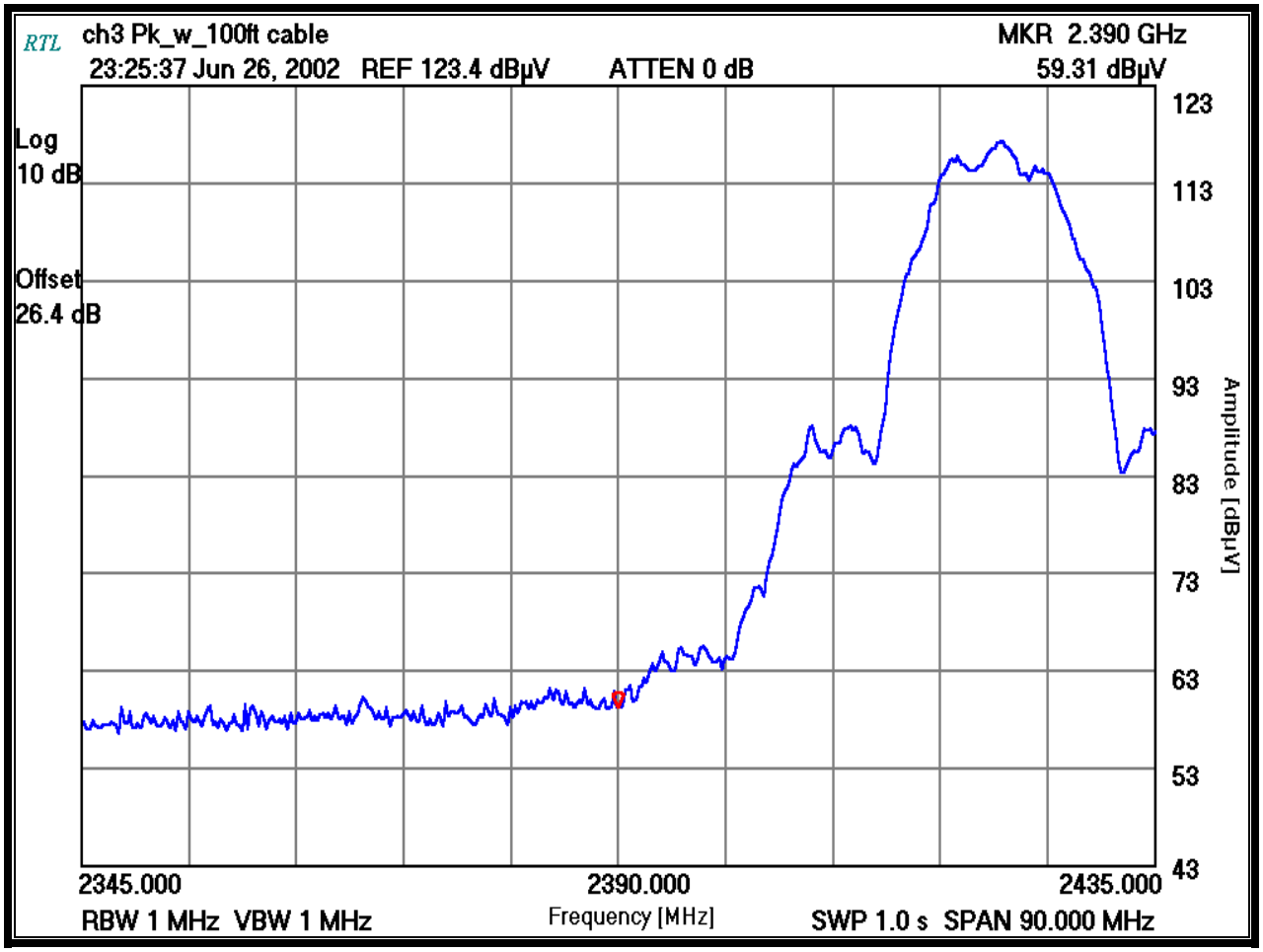



**TEST PERSONNEL:**

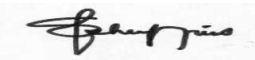
| Franck Schuppius | | 06/26/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Bandwidth Resolution (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time (s):** | 1.0 |

**PLOT 3-10: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 3 (ANT-PATCH-12)**

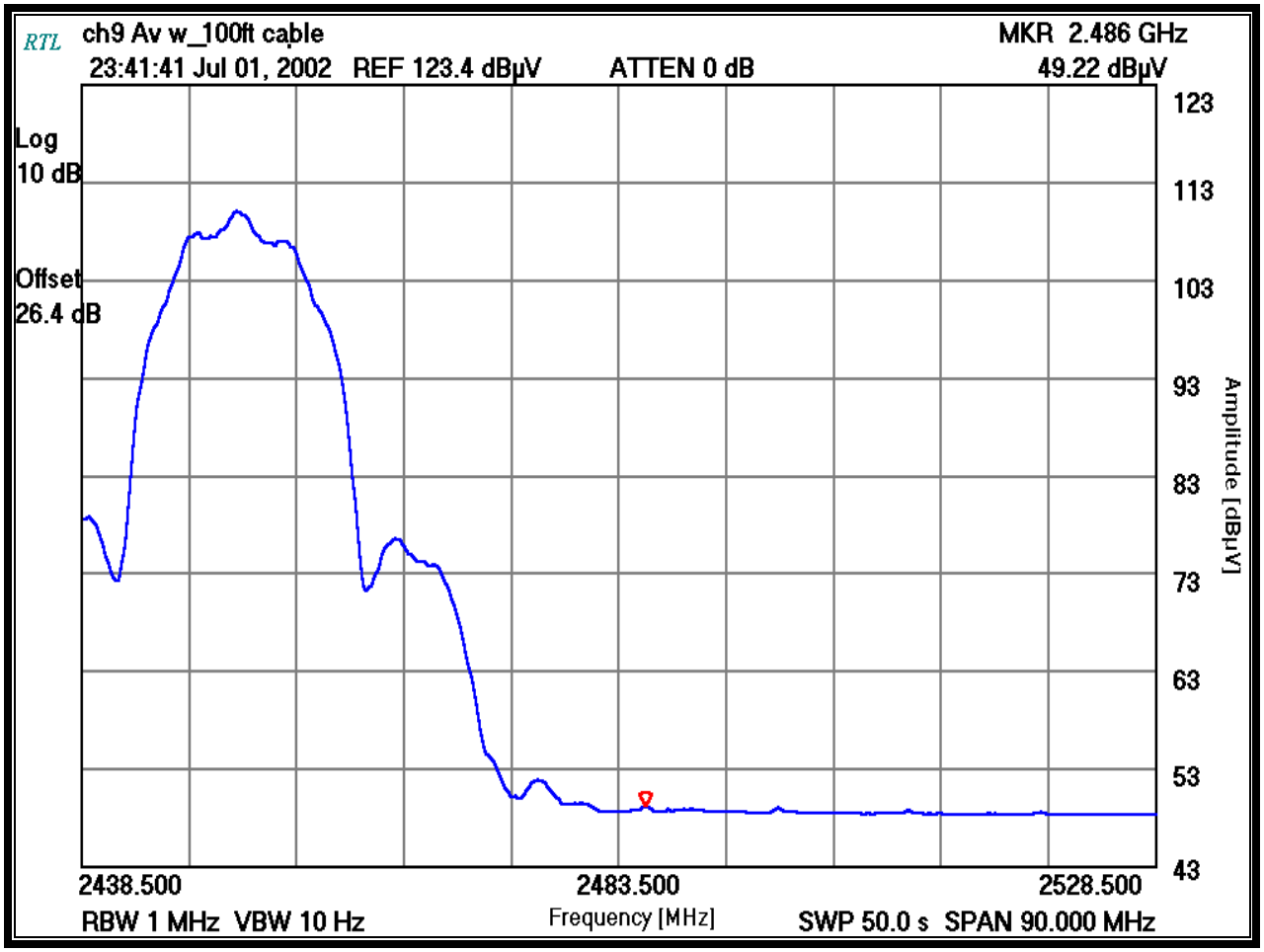



**TEST PERSONNEL:**

| Franck Schuppius |  | 06/26/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-11: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 9 (ANT-PATCH-12)**

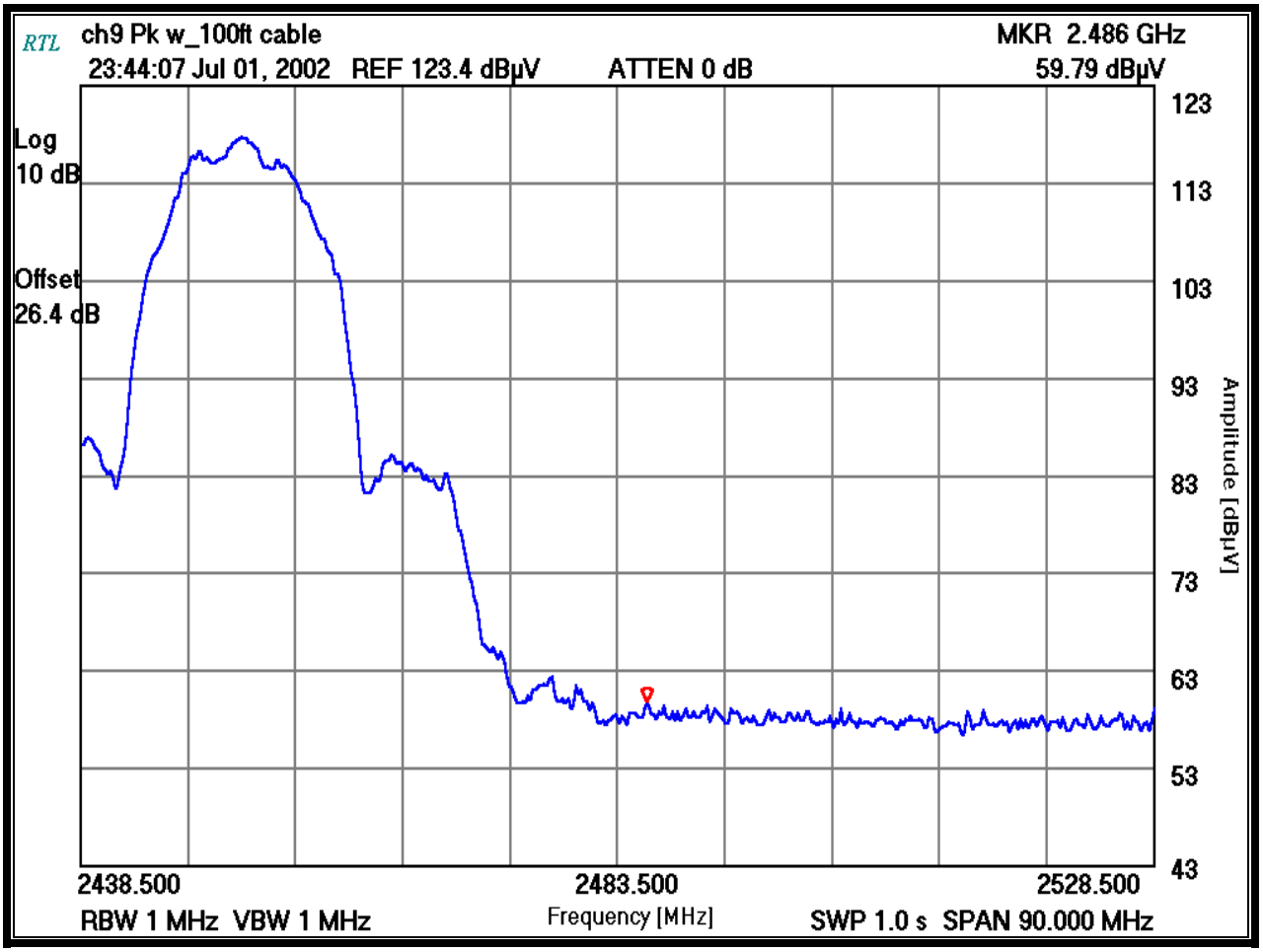



**TEST PERSONNEL:**

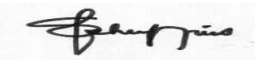
| Franck Schuppius | | 07/01/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time (s):** | 1.0 |

**PLOT 3-12: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 9 (ANT-PATCH-12)**

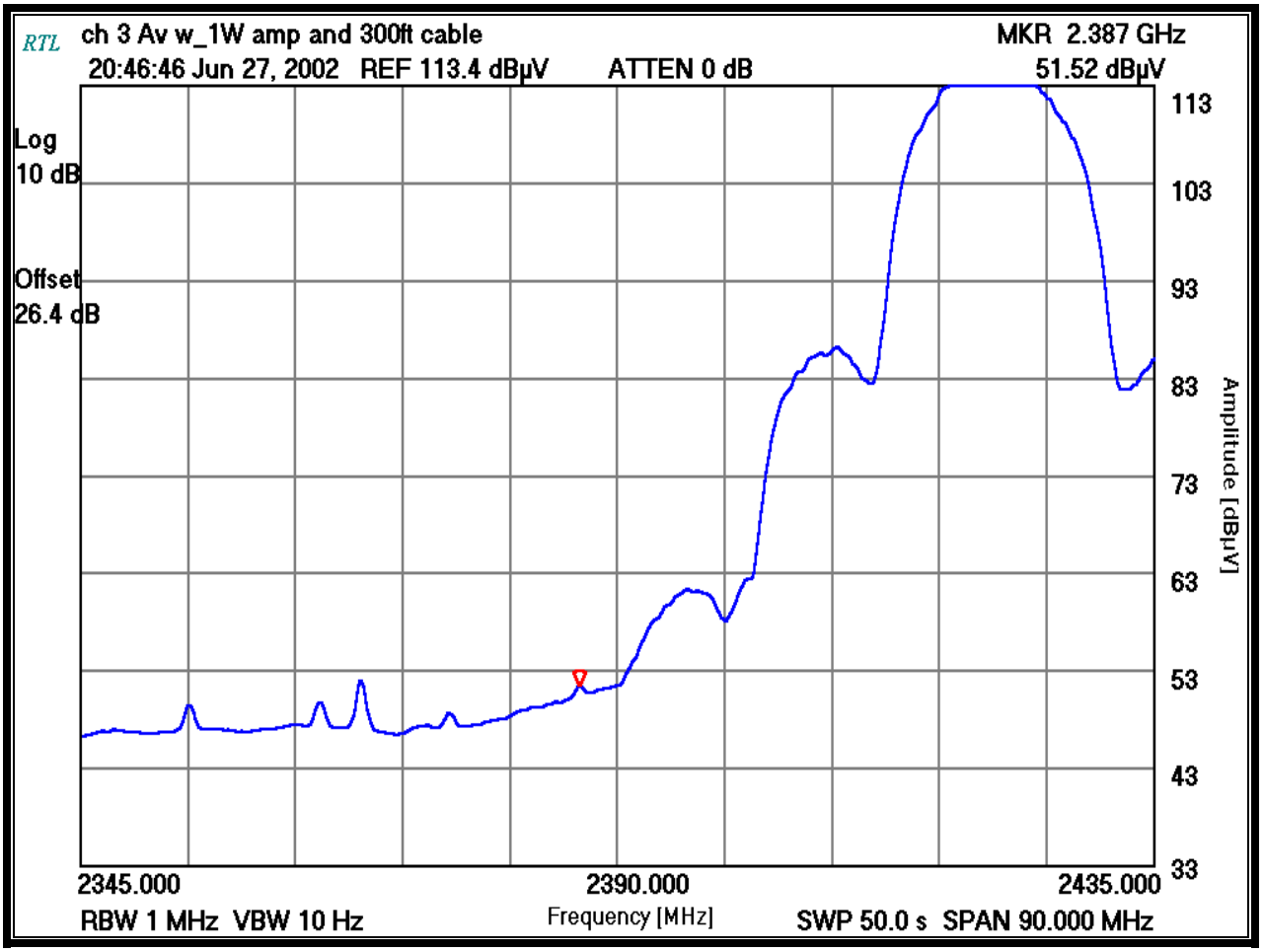



**TEST PERSONNEL:**

| Franck Schuppius |  | 07/01/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-13: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 3 (ANT-PATCH 19)**

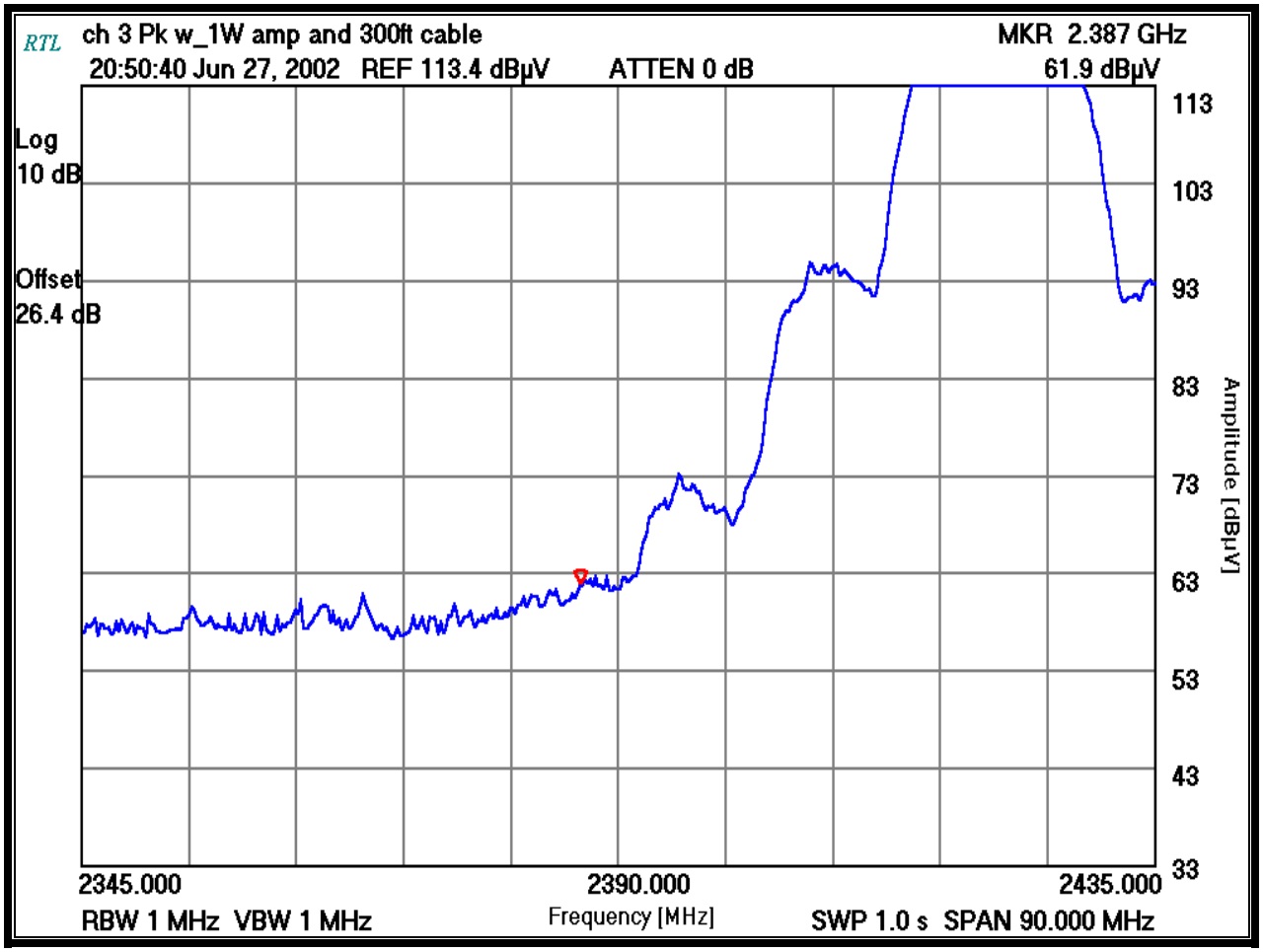



**TEST PERSONNEL:**

| Franck Schuppius | | 06/27/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Bandwidth Resolution (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time (s):** | 1.0 |

**PLOT 3-14: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 3 (ANT-PATCH-19)**

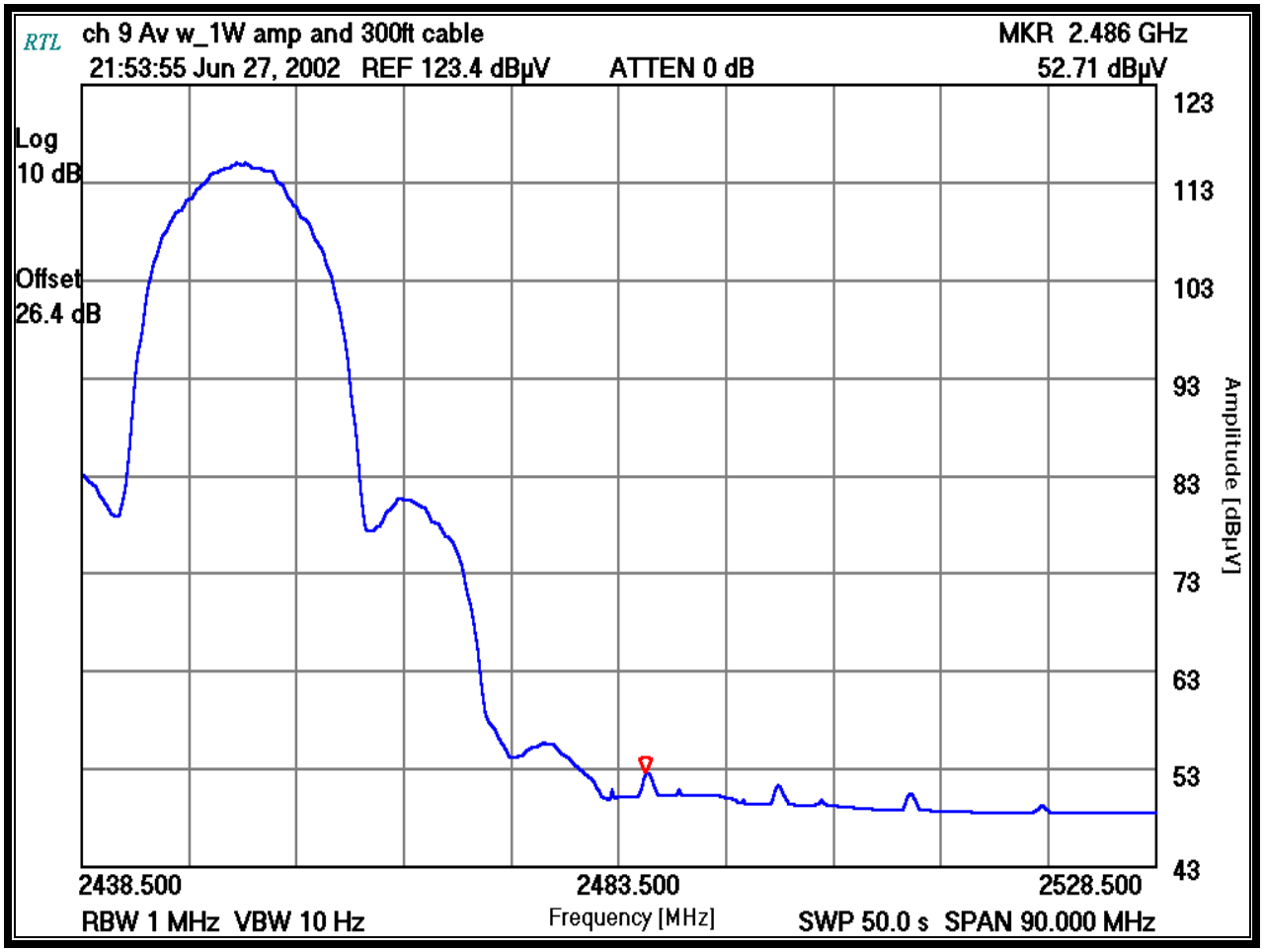



**TEST PERSONNEL:**

| Franck Schuppius | | 06/27/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-15: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 9 (ANT-PATCH-19)**

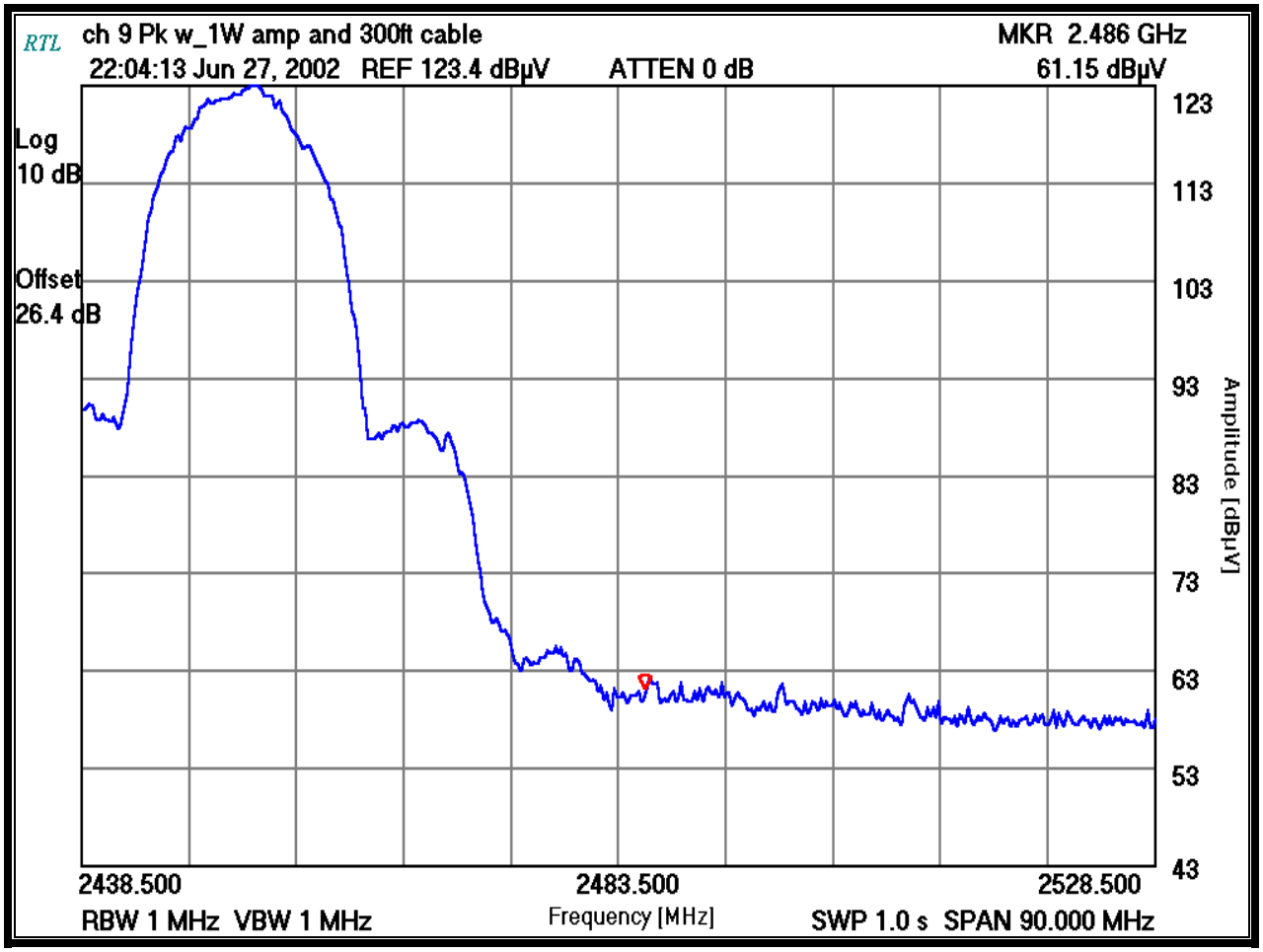



**TEST PERSONNEL:**

| Franck Schuppius | | 06/27/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time (s):** | 1.0 |

**PLOT 3-16: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 9 (ANT-PATCH-19)**




**TEST PERSONNEL:**

| Franck Schuppius | | 06/27/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

**TABLE 3-5: RESTRICTED BAND EDGE TEST DATA ANT-RFLCTR-24**

| Channel Set to | Frequency tested (MHz) | Detector | Field Strength Level (dBµV/m) | Level Corrected (dBµV/m) | FCC Limit (dBµV/m) | FCC Margin (dB) |
|---|---|---|---|---|---|---|
| 3 | 2390.0 | Absolute measurement | 24.3 | 50.7 | 54 | -3.3 |
| 9 | 2483.5 | Absolute measurement | 23.1 | 49.5 | 54 | -4.5 |

**TABLE 3-6: RESTRICTED BAND EDGE TEST DATA ANT-RFLCTR-18**

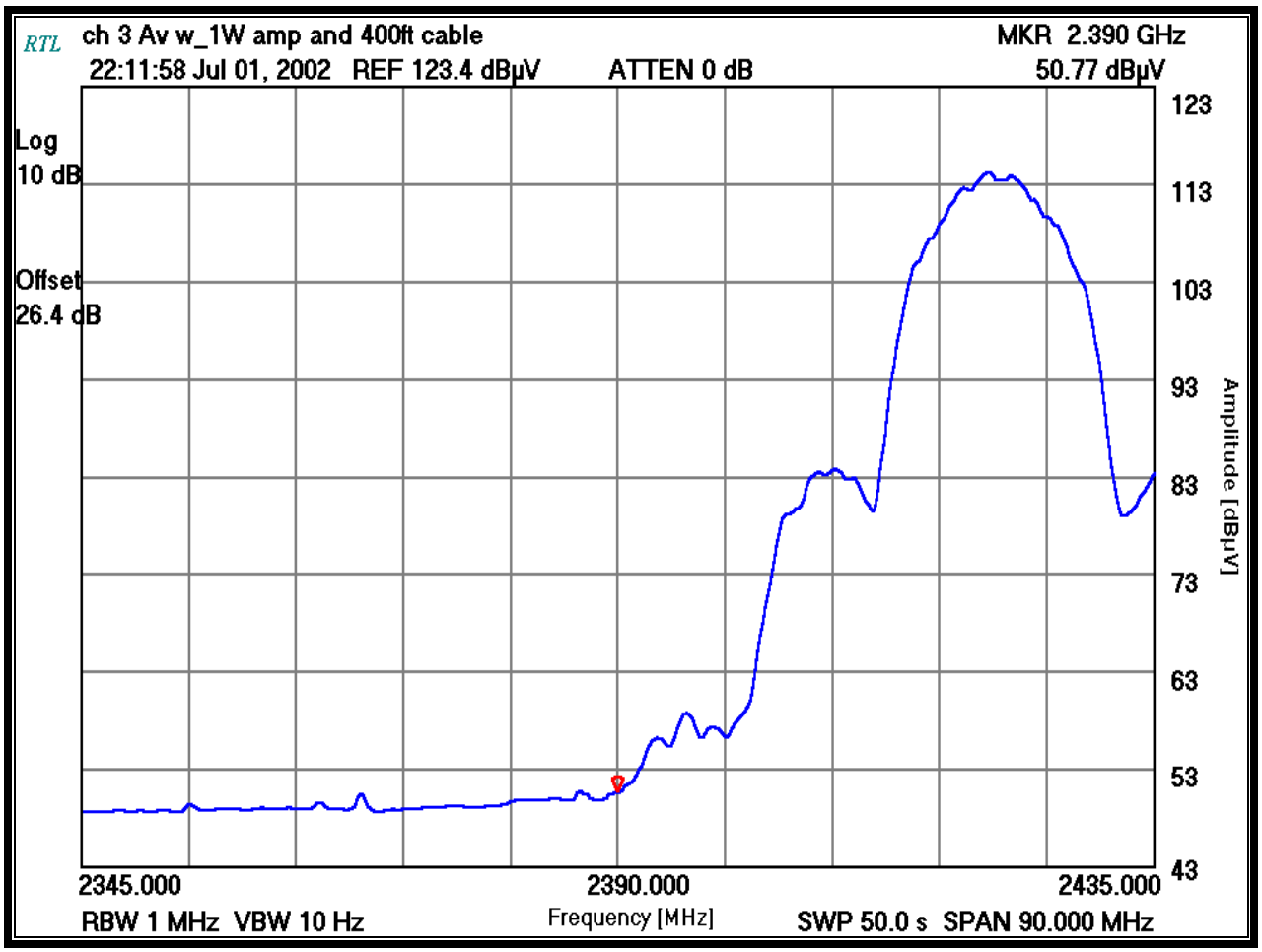
| Channel Set to | Frequency tested (MHz) | Detector | Field Strength Level (dBµV/m) | Level Corrected (dBµV/m) | FCC Limit (dBµV/m) | FCC Margin (dB) |
|---|---|---|---|---|---|---|
| 3 | 2390.0 | Absolute measurement | 24.5 | 50.9 | 54 | -3.1 |
| 9 | 2483.5 | Absolute measurement | 23.6 | 50 | 54 | -4 |

**TEST PERSONNEL:**

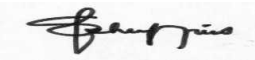
| Franck Schuppius | | 07/02/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-17: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 3 (ANT-RFLCTR-24)**

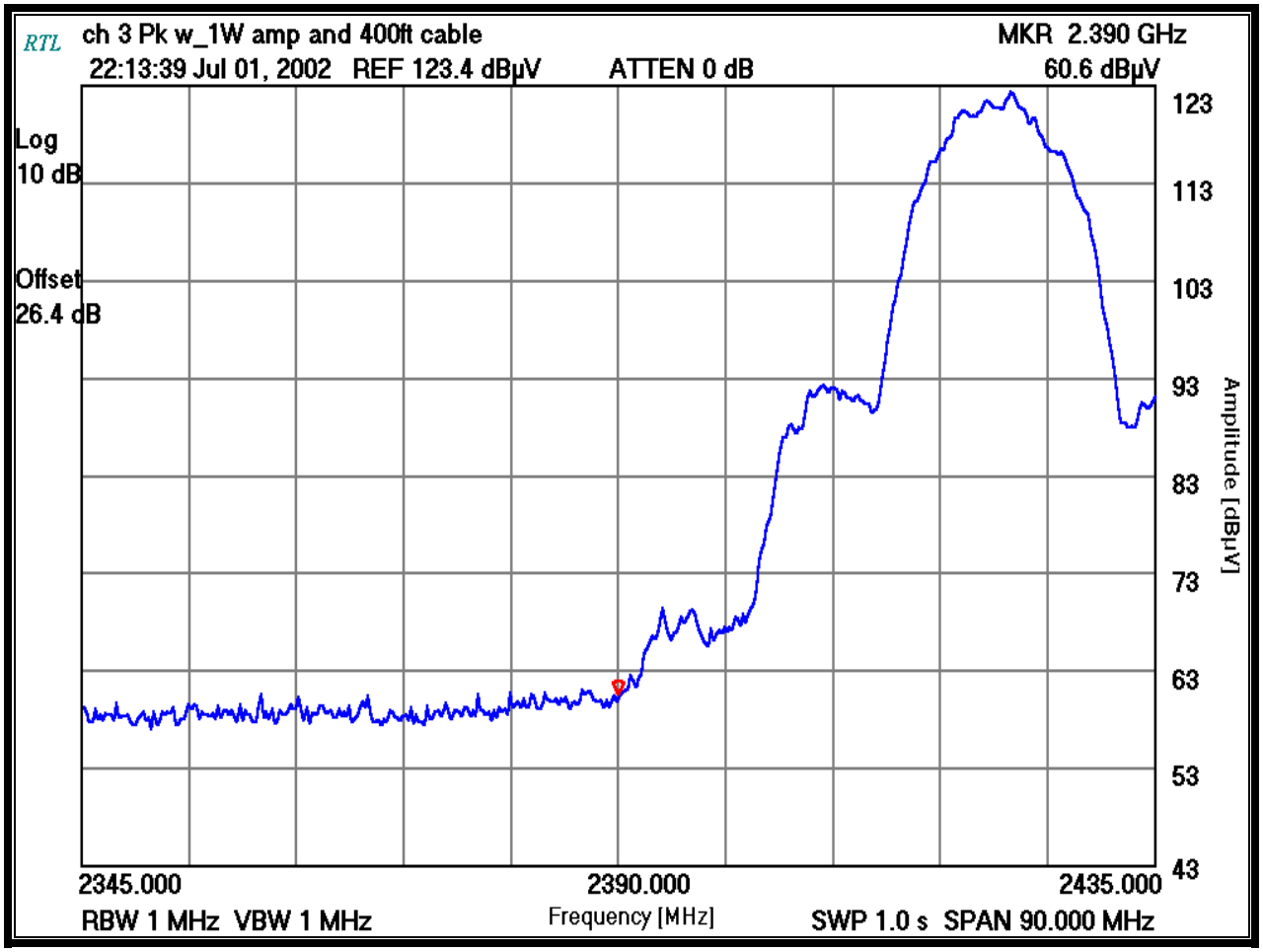



**TEST PERSONNEL:**

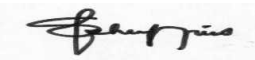
| Franck Schuppius |  | 07/01/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Bandwidth Resolution (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time (s):** | 1.0 |

**PLOT 3-18: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 3 (ANT-RFLCTR-24)**

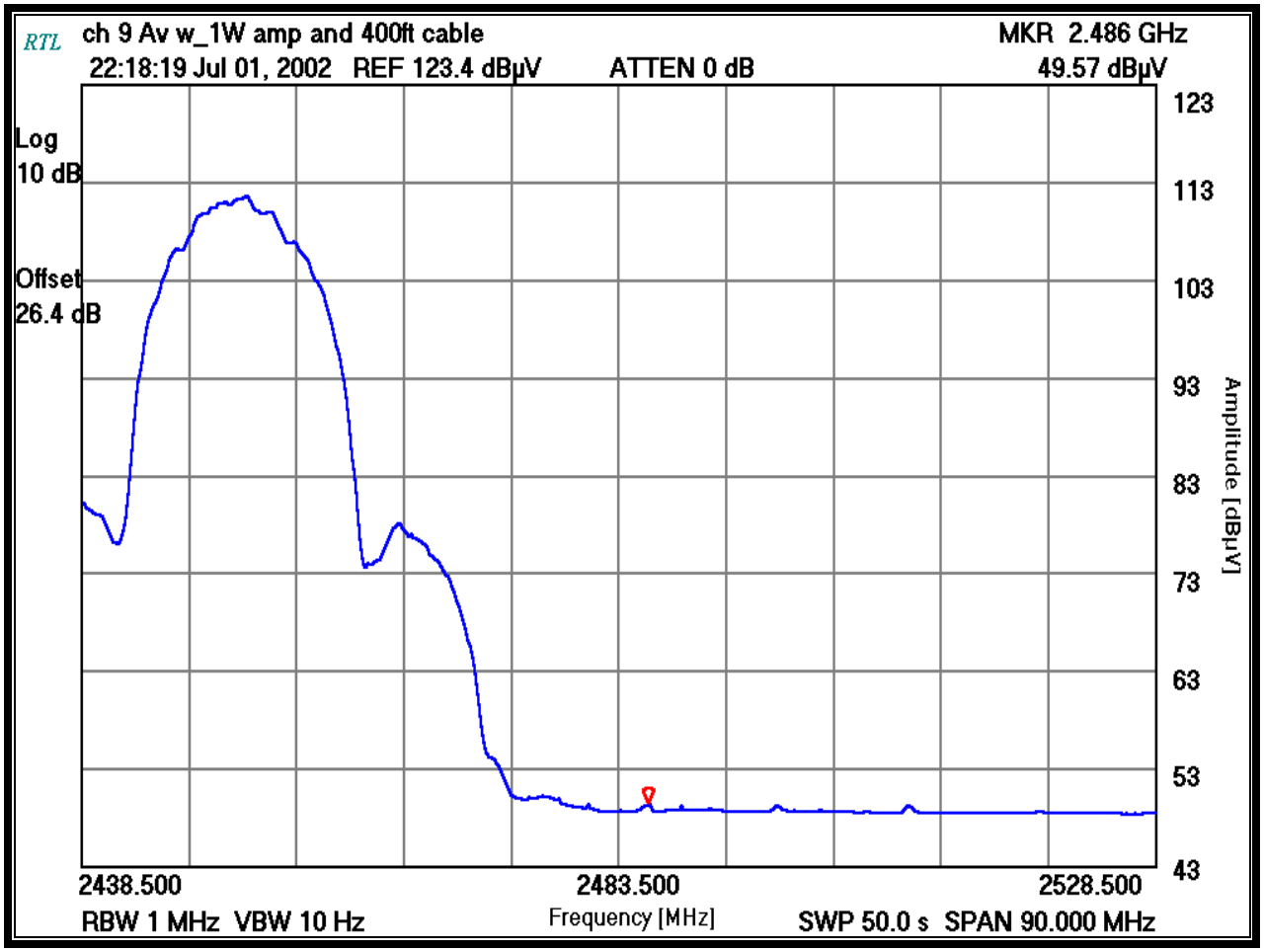



**TEST PERSONNEL:**

| Franck Schuppius |  | 07/01/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-19: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 9 (ANT-RFLCTR-24)**

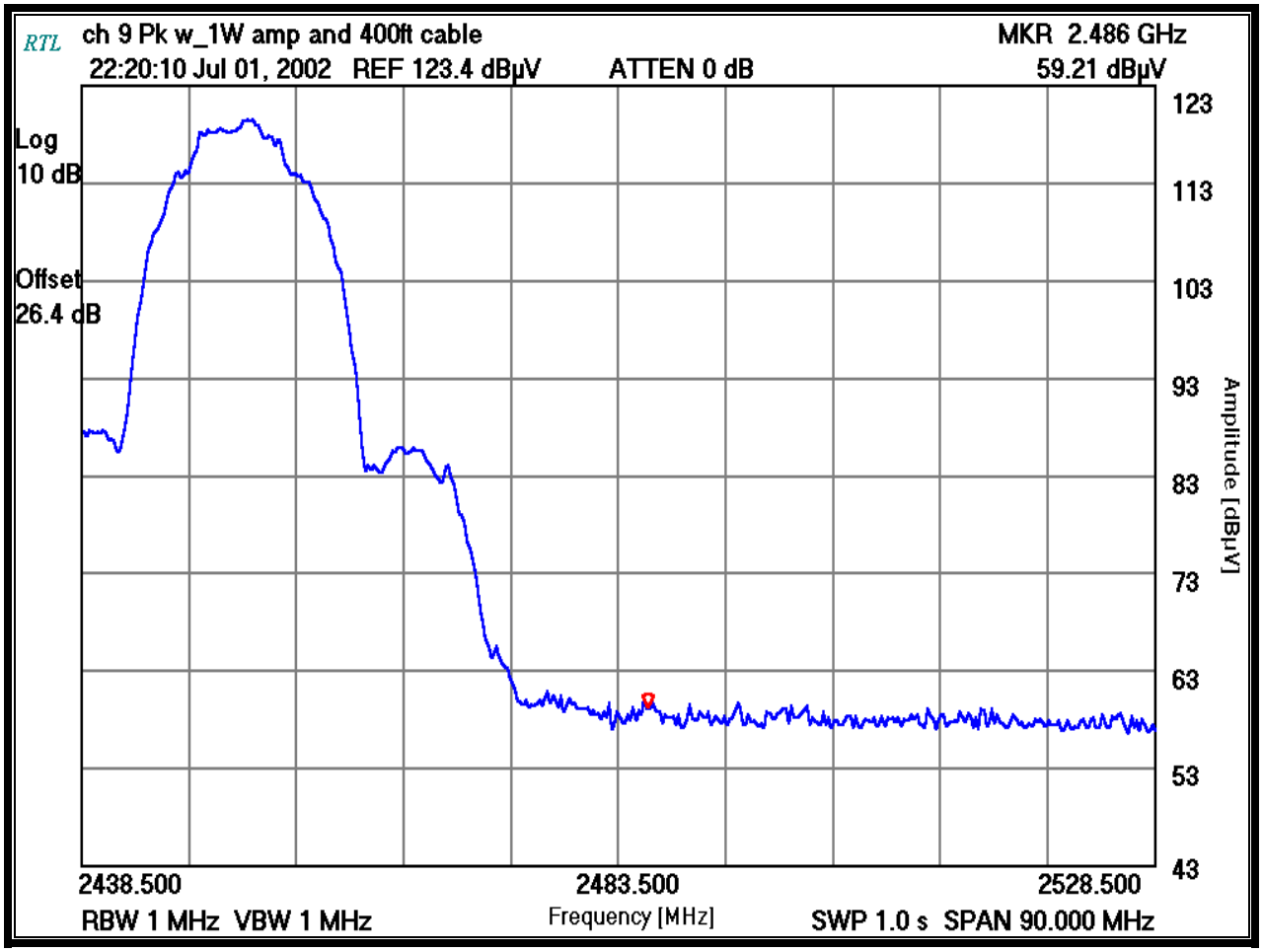



**TEST PERSONNEL:**

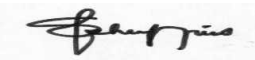
| Franck Schuppius | | 07/01/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time (s):** | 1.0 |

**PLOT 3-20: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 9 (ANT-RFLCTR-24)**

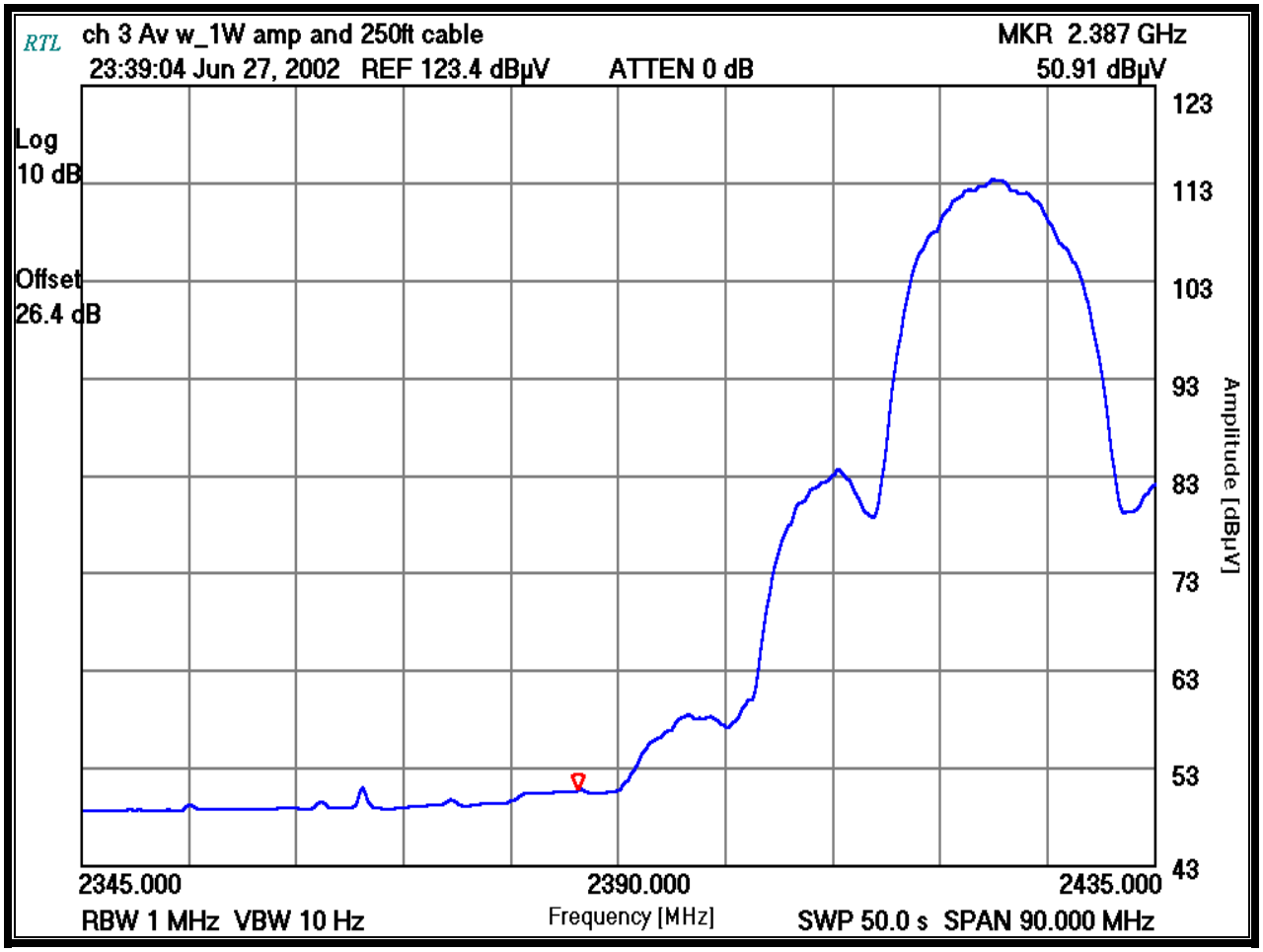



**TEST PERSONNEL:**

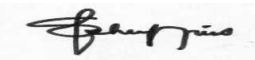
| Franck Schuppius |  | 07/01/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-21: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 3 (ANT-RFLCTR-18)**

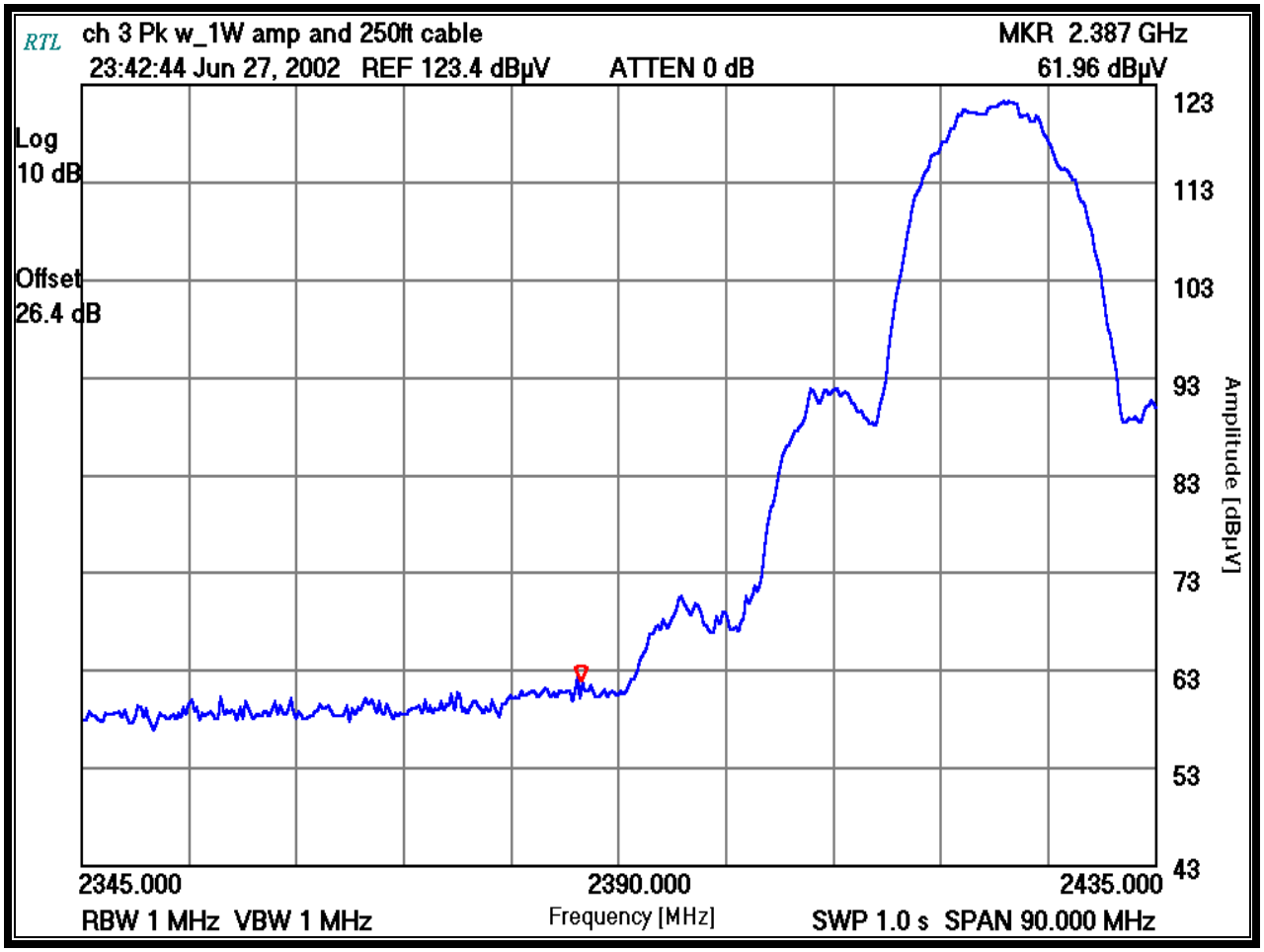



**TEST PERSONNEL:**

| Franck Schuppius |  | 06/27/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Bandwidth Resolution (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time (s):** | 1.0 |

**PLOT 3-22: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 3 (ANT-RFLCTR-18)**

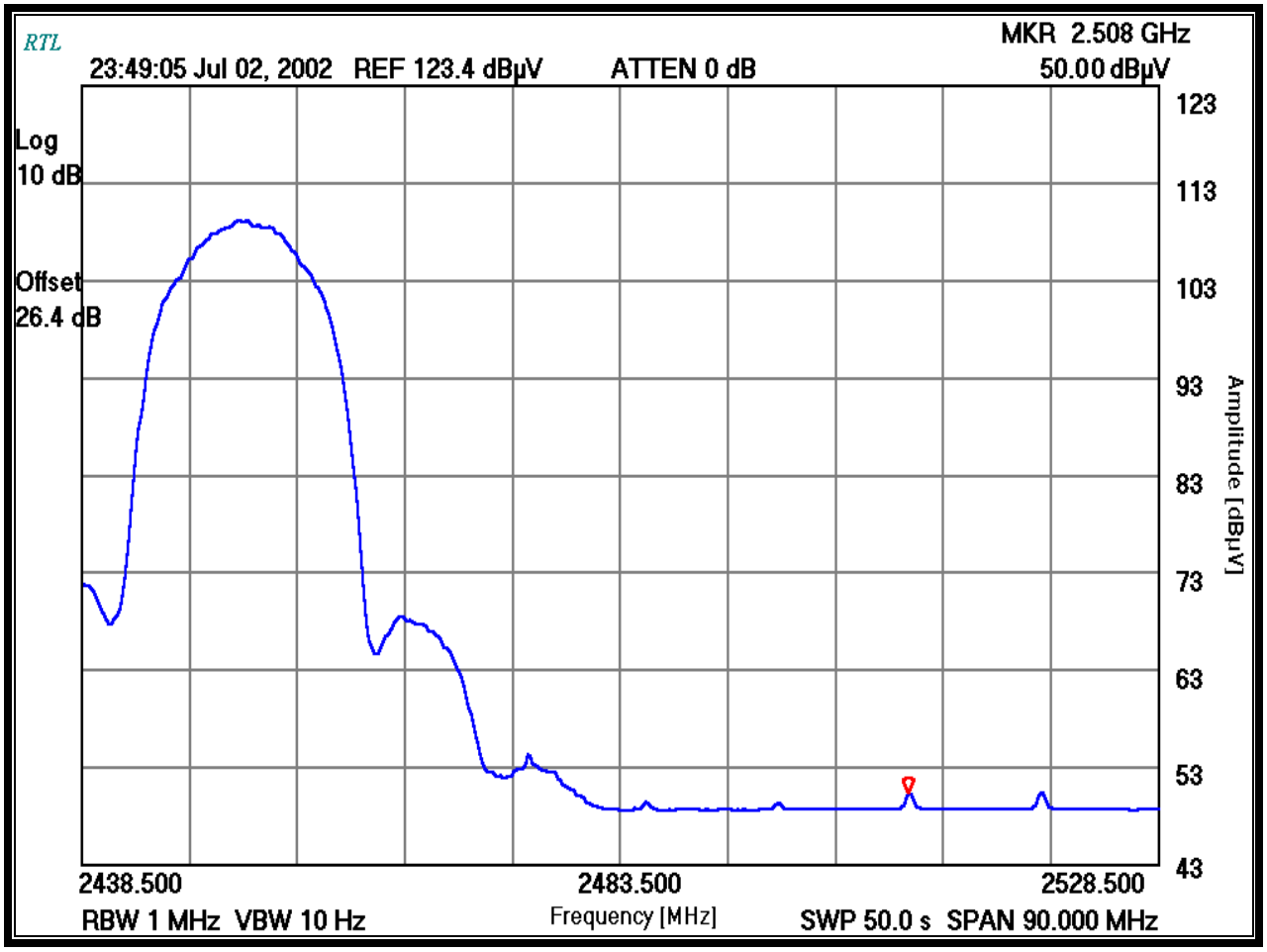



**TEST PERSONNEL:**

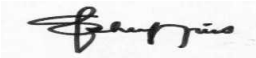
| Franck Schuppius | | 06/27/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-23: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 9 (ANT-RFLCTR-18)**

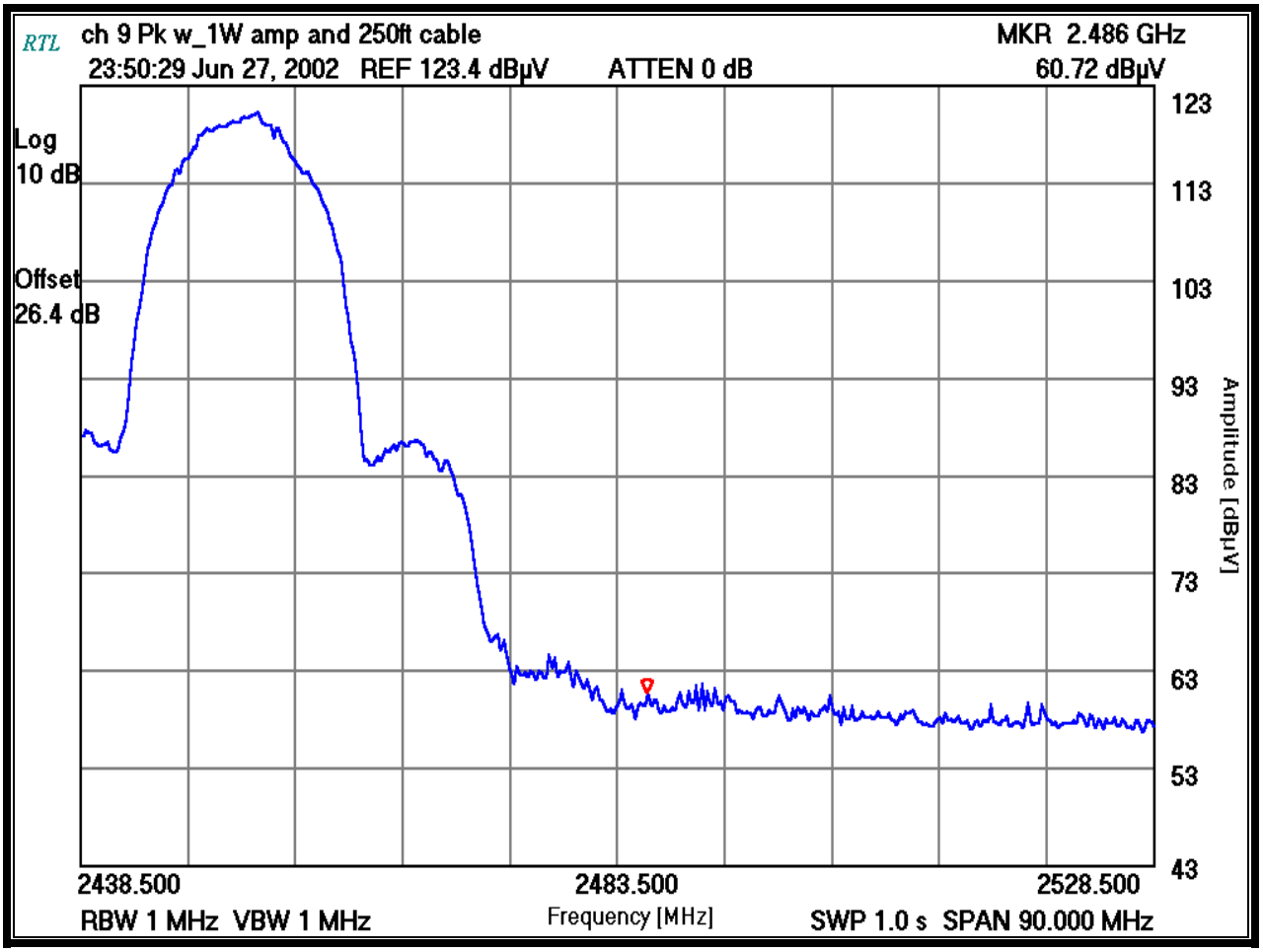



**TEST PERSONNEL:**

| Franck Schuppius |  | 07/02/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time (s):** | 1.0 |

**PLOT 3-24: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 9 (ANT-RFLCTR-18)**




**TEST PERSONNEL:**

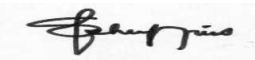
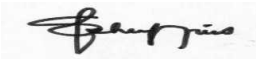
| Franck Schuppius |  | 06/27/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

**TABLE 3-7: RESTRICTED BAND EDGE TEST DATA ANT-D2421**

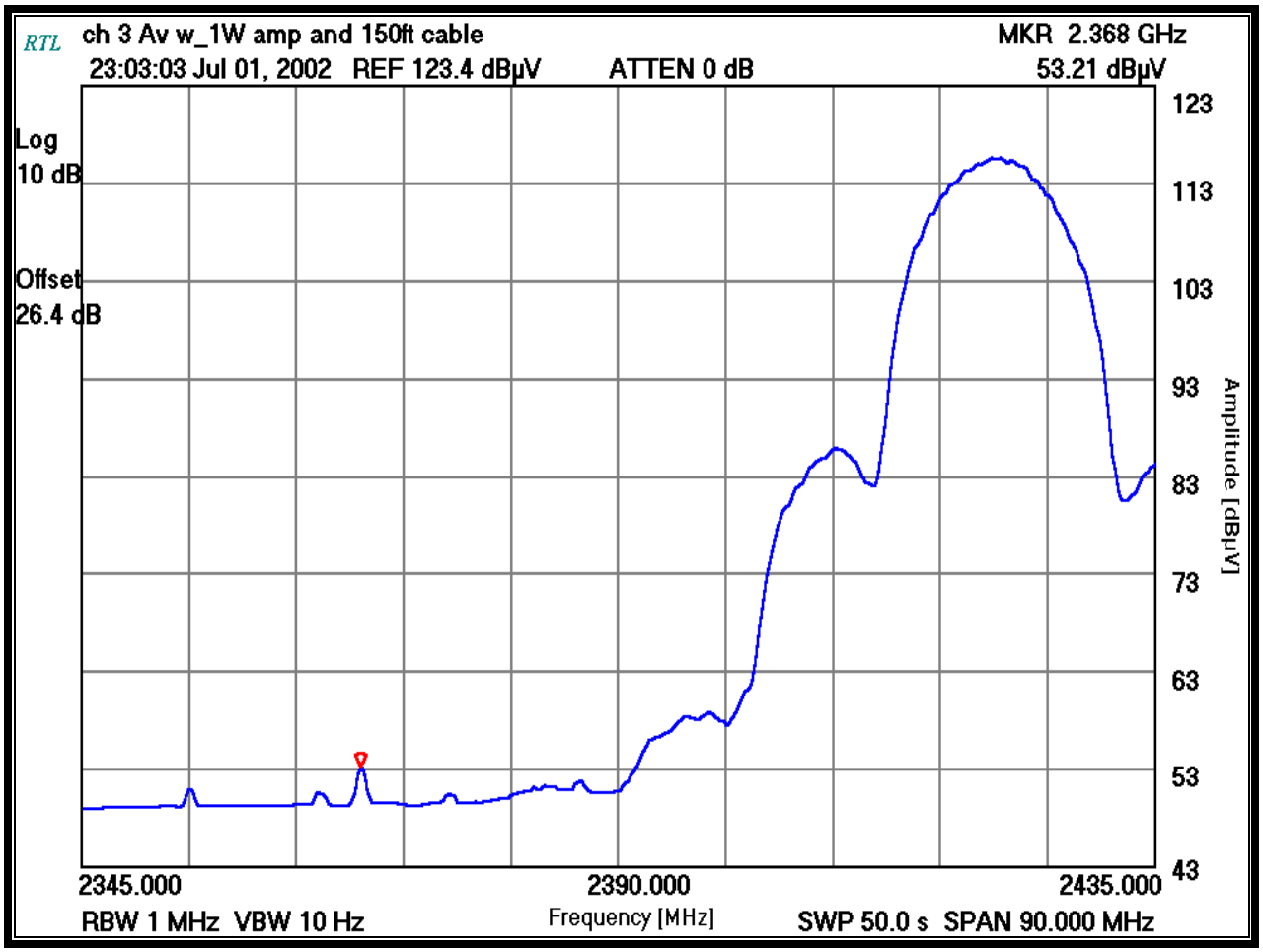
| Channel Set to | Frequency tested (MHz) | Detector | Field Strength Level (dBµV/m) | Level Corrected (dBµV/m) | FCC Limit (dBµV/m) | FCC Margin (dB) |
|---|---|---|---|---|---|---|
| 3 | 2390.0 | Absolute measurement | 26.8 | 53.2 | 54 | -0.8 |
| 9 | 2483.5 | Absolute measurement | 23.8 | 50.2 | 54 | -3.8 |

**TEST PERSONNEL:**

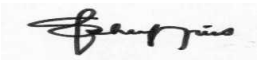
| Franck Schuppius |  | 07/01/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-25: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 3 (ANT-D2421)**

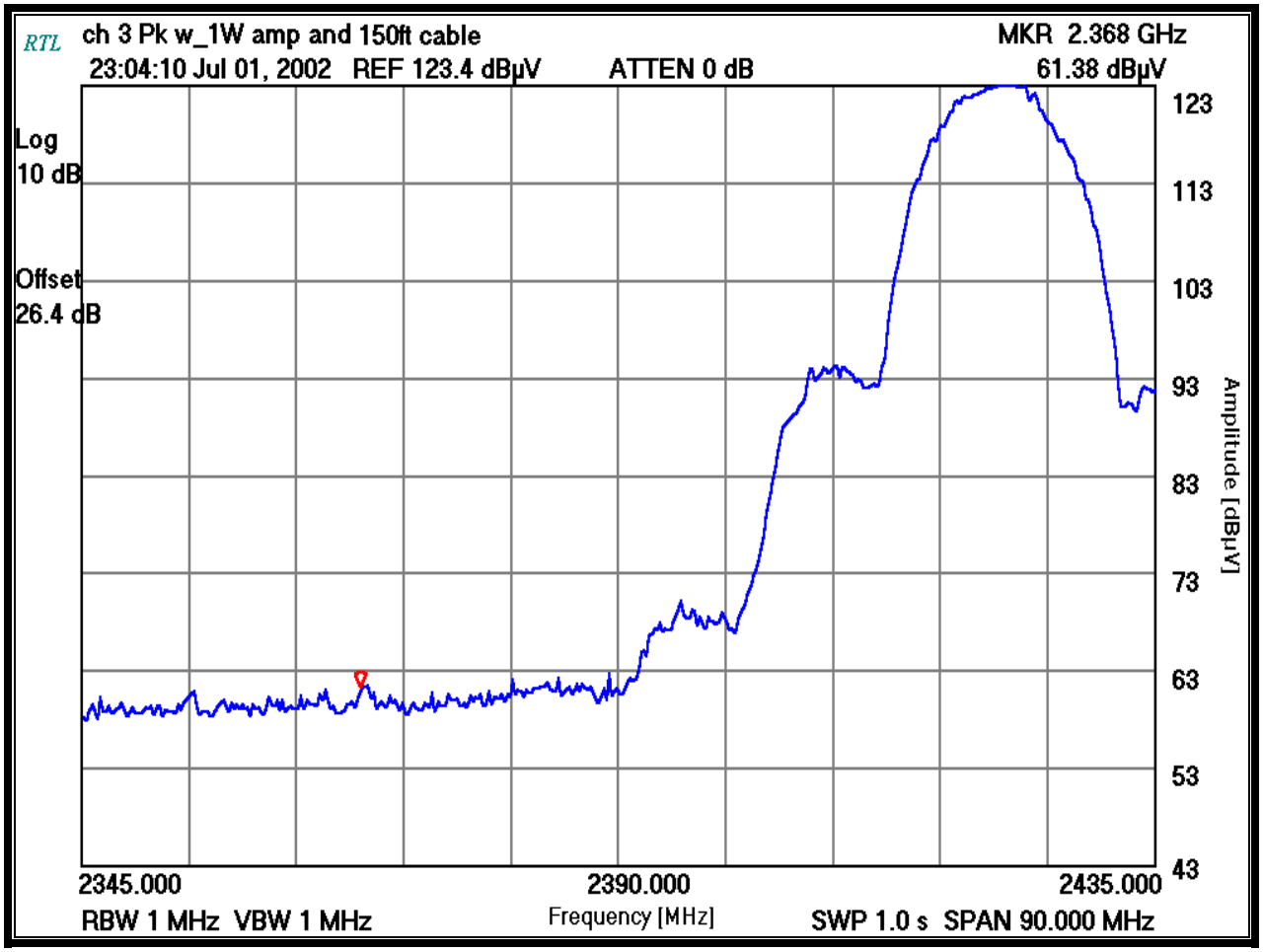



**TEST PERSONNEL:**

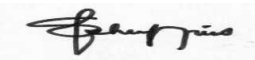
| Franck Schuppius |  | 07/01/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Bandwidth Resolution (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time (s):** | 1.0 |

**PLOT 3-26: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 3 (ANT-D2421)**

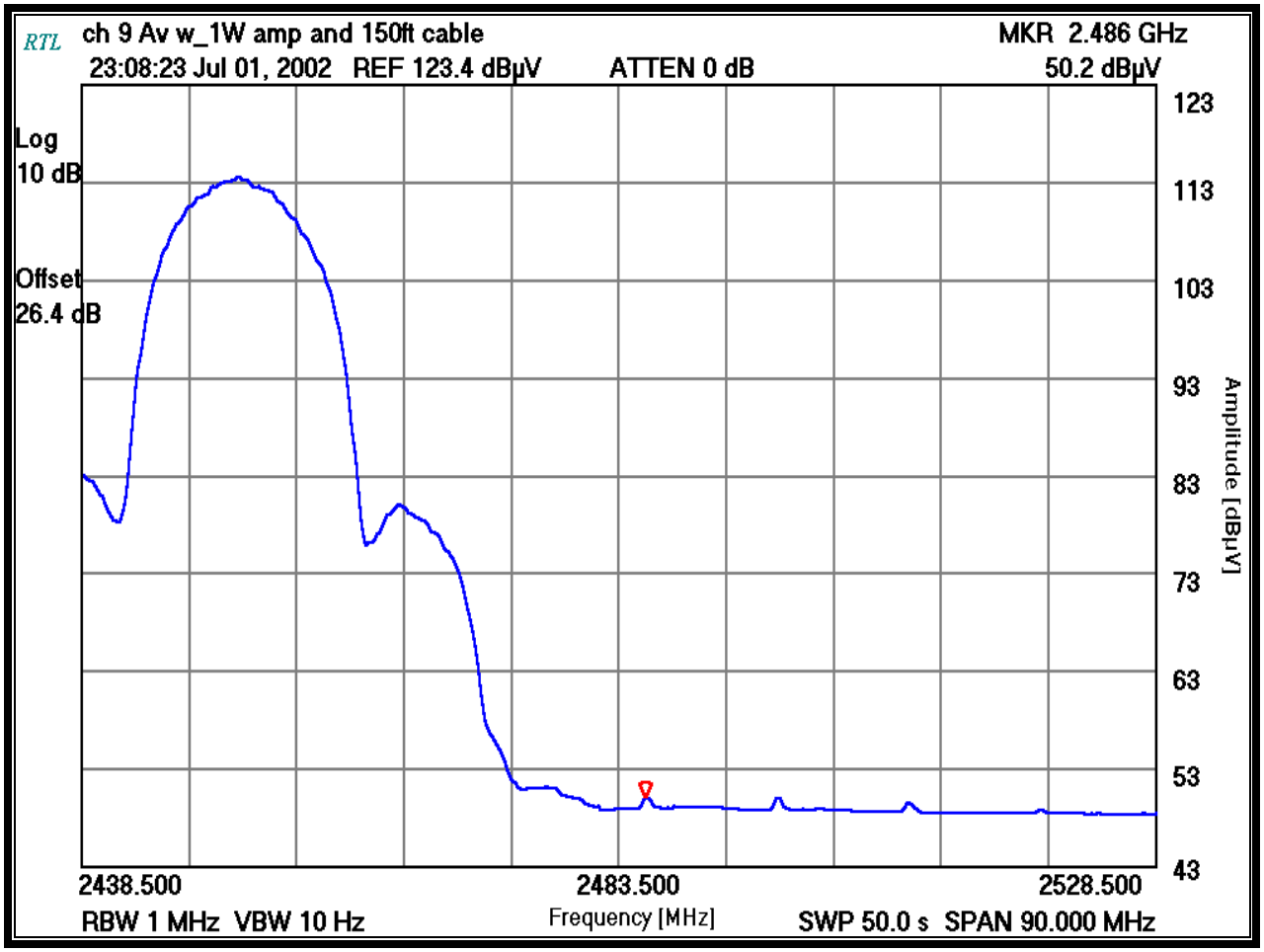



**TEST PERSONNEL:**

| Franck Schuppius |  | 07/01/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (Hz):** | 10 |
| **Sweep Time (s):** | 50.0 |

**PLOT 3-27: BAND EDGE: AVERAGE MEASUREMENT FOR CHANNEL 9 (ANT-D2421)**

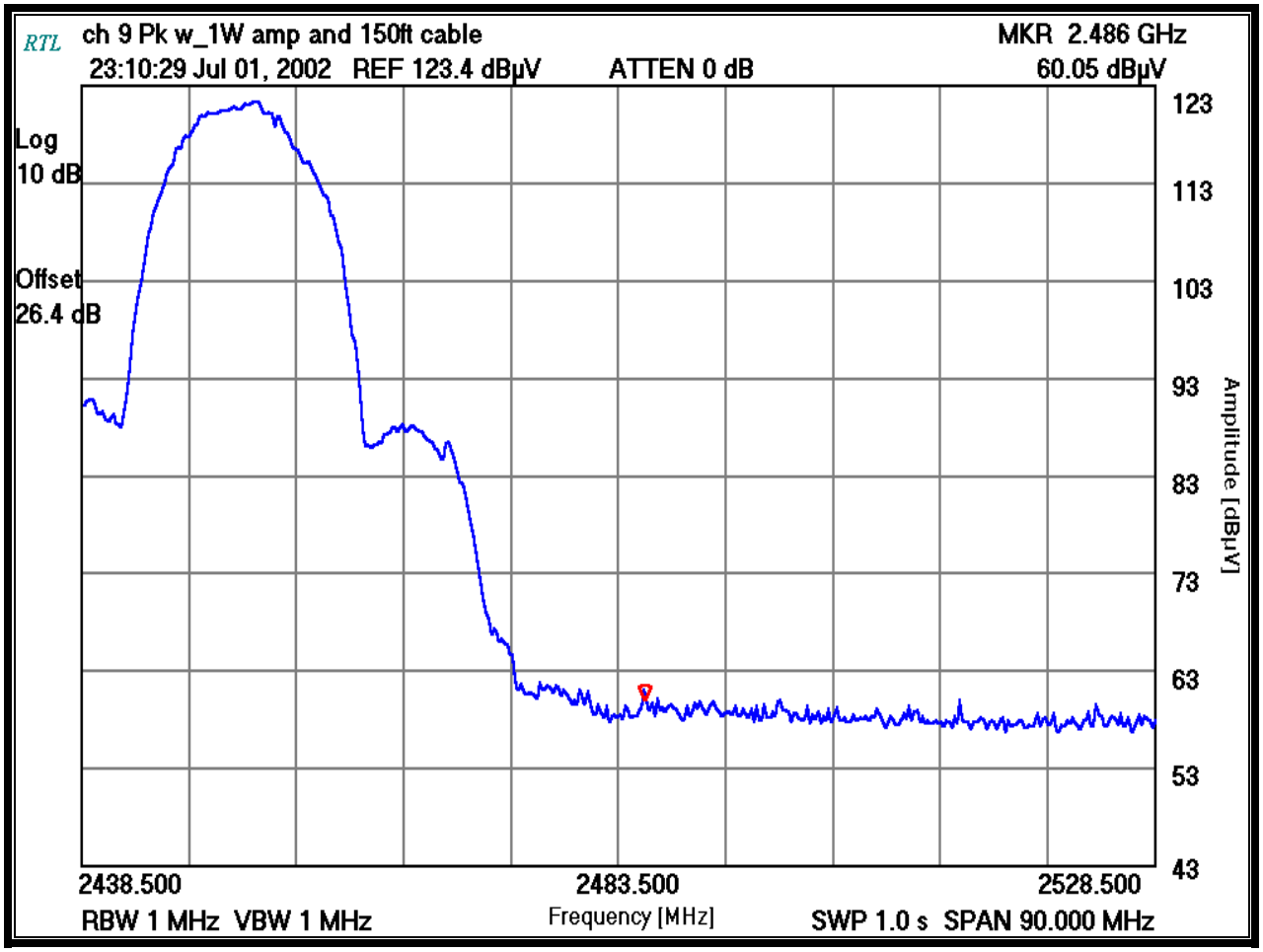



**TEST PERSONNEL:**

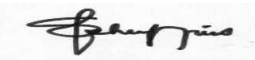
| Franck Schuppius | | 07/01/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (MHz):** | 1 |
| **Video Bandwidth (MHz):** | 1 |
| **Sweep Time (s):** | 1.0 |

**PLOT 3-28: BAND EDGE: PEAK MEASUREMENT FOR CHANNEL 9 (ANT-D2421)**




**TEST PERSONNEL:**

| Franck Schuppius |  | 07/01/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

# 4 CONDUCTED LIMITS - §15.207

## 4.1 TEST METHODOLOGY FOR CONDUCTED EMISSIONS MEASUREMENTS

The power line conducted emission measurements were performed in a Series 81 type shielded enclosure manufactured by Rayproof. The EUT was assembled on a wooden table 80 centimeters high. Power was fed to the EUT through a 50 ohm / 50 microhenry Line Impedance Stabilization Network (EUT LISN). The EUT LISN was fed power through an A.C. filter box on the outside of the shielded enclosure. The filter box and EUT LISN housing are bonded to the ground plane of the shielded enclosure. A second LISN, the peripheral LISN, provides isolation for the EUT test peripherals. This peripheral LISN was also fed A.C. power. A metal power outlet box, which is bonded to the ground plane and electrically connected to the peripheral LISN, powers the EUT host peripherals.

The spectrum analyzer was connected to the A.C. line through an isolation transformer. The 50-ohm output of the EUT LISN was connected to the spectrum analyzer input through a Solar 400 kHz high-pass filter. The filter is used to prevent overload of the spectrum analyzer from noise below 400 kHz. Conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak mode (or peak mode if applicable). The analyzer's 6 dB bandwidth was set to 9 kHz. No video filter less than 10 times the resolution bandwidth was used. Average measurements are performed in linear mode using a 10 kHz resolution bandwidth, a 1 Hz video bandwidth, and by increasing the sweep time in order to obtain a calibrated measurement. The emission spectrum was scanned from (150/450) kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in this report.

*Note: Rhein Tech Laboratories, Inc. has implemented procedures to minimize errors that occur from test instruments, calibration, procedures, and test setups. Test instrument and calibration errors are documented from the manufacturer or calibration lab. Other errors have been defined and calculated within the Rhein Tech quality manual, section 6.1. Rhein Tech implements the following procedures to minimize errors that may occur: yearly as well as daily calibration methods, technician training, and emphasis to employees on avoiding error.*

## 4.2 CONDUCTED EMISSION TEST

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. If the conducted emissions exceed the limit with the instrument set to the quasi-peak mode, then measurements are made in the average mode. If the quasi-peak measurement is at least 6dB higher than the amplitude in the average mode, the level measured in the quasi-peak mode may be reduced by 13dB before comparing it to the limit.

The conducted test was performed with the EUT exercise program loaded, and the emissions were scanned between 450 kHz to 30 MHz on the NEUTRAL SIDE and PHASE SIDE. The EUT is composed of the Access Point and the DC Injector, each part has been tested and investigated, and only the worst case for the DC Injector will be listed in the Tables 4-2 and 4-3 below. The EUT was investigated and tested in channels namely 3, 6, and 9; the worst case conducted data for both transmitting and receiving is for channel 6, and is provided in this report.

## 4.3 TEST EQUIPMENT USED FOR TESTING

**TABLE 4-1: CONDUCTED EMISSIONS TEST EQUIPMENT**

| RTL Asset # | Manufacturer | Model | Part Type | Serial Number |
|---|---|---|---|---|
| 900931 | HP | 8566B | Spectrum Analyzer (100 Hz - 22 GHz) | 3138A07771 |
| 900070 | Solar | | LISN | |

## 4.4 CONDUCTED EMISSIONS TEST DATA

### TABLE 4-2: CONDUCTED EMISSIONS (NEUTRAL SIDE) TRANSMITTING CH 6

| Temperature: 72°F Humidity: 45% | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Emission Frequency (MHz)** | **Test Detector** | **Analyzer Reading (dBuV)** | **Site Correction Factor (dB)** | **Emission Level (dBuV)** | **FCC B QP Limit (dBuV)** | **FCC B QP Margin (dBuV)** | **FCC B AV Limit (dBuV)** | **FCC B AV Margin (dBuV)** |
| 0.508 | Pk | 45.7 | 0.1 | 45.8 | 48.0 | -2.2 | 48.0 | -2.2 |
| 0.684 | Pk | 40.4 | 0.1 | 40.5 | 48.0 | -7.5 | 48.0 | -7.5 |
| 1.204 | Pk | 37.8 | 0.1 | 37.9 | 48.0 | -10.1 | 48.0 | -10.1 |
| 12.250 | Pk | 33.5 | 0.5 | 34.0 | 48.0 | -14.0 | 48.0 | -14.0 |
| 14.480 | Pk | 31.8 | 0.5 | 32.3 | 48.0 | -15.7 | 48.0 | -15.7 |
| 21.500 | Pk | 41.7 | 0.7 | 42.4 | 48.0 | -5.6 | 48.0 | -5.6 |

### TABLE 4-3: CONDUCTED EMISSIONS (PHASE SIDE) TRANSMITTING CH 6

| Temperature: 72°F Humidity: 40% | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Emission Frequency (MHz)** | **Test Detector** | **Analyzer Reading (dBuV)** | **Site Correction Factor (dB)** | **Emission Level (dBuV)** | **FCC B QP Limit (dBuV)** | **FCC B QP Margin (dBuV)** | **FCC B AV Limit (dBuV)** | **FCC B AV Margin (dBuV)** |
| 0.512 | Pk | 44.1 | 0.1 | 44.2 | 48.0 | -3.8 | 48.0 | -3.8 |
| 0.680 | Pk | 36.3 | 0.1 | 36.4 | 48.0 | -11.6 | 48.0 | -11.6 |
| 1.204 | Pk | 37.0 | 0.1 | 37.1 | 48.0 | -10.9 | 48.0 | -10.9 |
| 12.480 | Pk | 32.9 | 0.5 | 33.4 | 48.0 | -14.6 | 48.0 | -14.6 |
| 14.600 | Pk | 33.0 | 0.5 | 33.5 | 48.0 | -14.5 | 48.0 | -14.5 |
| 21.080 | Pk | 40.3 | 0.7 | 41.0 | 48.0 | -7.0 | 48.0 | -7.0 |

**TEST PERSONNEL:**

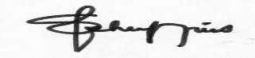
| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

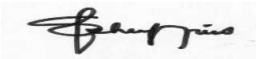
**TABLE 4-4: CONDUCTED EMISSIONS (PHASE SIDE) RECEIVING CH 6**

| Temperature: 70°F Humidity: 45% | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Emission Frequency (MHz)** | **Test Detector** | **Analyzer Reading (dBuV)** | **Site Correction Factor (dB)** | **Emission Level (dBuV)** | **FCC B QP Limit (dBuV)** | **FCC B QP Margin (dBuV)** | **FCC B AV Limit (dBuV)** | **FCC B AV Margin (dBuV)** |
| 0.508 | Pk | 45.1 | 0.1 | 45.2 | 48.0 | -2.8 | 48.0 | -2.8 |
| 0.684 | Pk | 38.9 | 0.1 | 39.0 | 48.0 | -9.0 | 48.0 | -9.0 |
| 1.204 | Pk | 37.8 | 0.1 | 37.9 | 48.0 | -10.1 | 48.0 | -10.1 |
| 12.350 | Pk | 33.6 | 0.5 | 34.1 | 48.0 | -13.9 | 48.0 | -13.9 |
| 14.580 | Pk | 33.5 | 0.5 | 34.0 | 48.0 | -14.0 | 48.0 | -14.0 |
| 20.630 | Pk | 39.4 | 0.7 | 40.1 | 48.0 | -7.9 | 48.0 | -7.9 |

**TABLE 4-5: CONDUCTED EMISSIONS (NEUTRAL SIDE) RECEIVING CH 6**

| Temperature: 70°F Humidity: 45% | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Emission Frequency (MHz)** | **Test Detector** | **Analyzer Reading (dBuV)** | **Site Correction Factor (dB)** | **Emission Level (dBuV)** | **FCC B QP Limit (dBuV)** | **FCC B QP Margin (dBuV)** | **FCC B AV Limit (dBuV)** | **FCC B AV Margin (dBuV)** |
| 0.507 | Pk | 44.4 | 0.1 | 44.5 | 48.0 | -3.5 | 48.0 | -3.5 |
| 0.682 | Pk | 36.8 | 0.1 | 36.9 | 48.0 | -11.1 | 48.0 | -11.1 |
| 1.204 | Pk | 36.9 | 0.1 | 37.0 | 48.0 | -11.0 | 48.0 | -11.0 |
| 12.300 | Pk | 36.0 | 0.5 | 36.5 | 48.0 | -11.5 | 48.0 | -11.5 |
| 14.550 | Pk | 32.4 | 0.5 | 32.9 | 48.0 | -15.1 | 48.0 | -15.1 |
| 21.130 | Pk | 41.1 | 0.7 | 41.8 | 48.0 | -6.2 | 48.0 | -6.2 |

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

# 5 RADIATED EMISSION LIMITS RECEIVER/DIGITAL INTERFACE - §15.209

## 5.1 RADIATED EMISSION LIMITS TEST PROCEDURE

Radiated Spurious Emissions applies to harmonics and spurious emissions that fall in the restricted and non-restricted bands. The restricted bands are listed in Part 15.205. The maximum permitted average field strength for the restricted band is listed in Part 15.209. The IF, LO and up to the 2nd LO were investigated and tested. Channels 3, 6, and 9 were tested and investigated in the transmitting and receiving mode between 10kHz and 1GHz. The worst –case, channel 6 in both modes and both setups, is presented in the table below.

## 5.2 RADIATED EMISSION LIMITS TEST DATA RECEIVER/DIGITAL MODE CH6

**TABLE 5-1; RADIATED EMISSION LIMITS TEST DATA RECEIVER/DIGITAL MODE CH6**

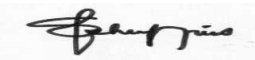
| Temperature: 48°F Humidity: 80% | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Emission Frequency (MHz)** | **Test Detector** | **Antenna Polarity (H/V)** | **Turntable Azimuth (deg)** | **Antenna Height (m)** | **Analyzer Reading (dBuV)** | **Site Correction Factor (dB/m)** | **Emission Level (dBuV/m)** | **Limit (dBuV/m)** | **Margin (dB)** |
| 47.435 | Qp | H | 180 | 1.0 | 29.2 | -15.0 | 14.2 | 40.0 | -25.8 |
| 132.006 | Qp | H | 180 | 3.0 | 36.8 | -10.5 | 26.3 | 43.5 | -17.2 |
| 189.618 | Qp | H | 275 | 2.0 | 32.7 | -12.1 | 20.6 | 43.5 | -22.9 |
| 215.210 | Qp | H | 275 | 2.0 | 26.0 | -11.0 | 15.0 | 43.5 | -28.5 |
| 220.214 | Qp | H | 315 | 1.0 | 26.9 | -10.9 | 16.0 | 46.0 | -30.0 |
| 250.377 | Qp | H | 180 | 2.0 | 33.7 | -7.9 | 25.8 | 46.0 | -20.2 |

## 5.3 RADIATED EMISSION LIMITS TEST DATA TX/DIGITAL MODE CH6

**TABLE 5-2: RADIATED EMISSION LIMITS TEST DATA TX/DIGITAL MODE CH6**

| Temperature: 48°F Humidity: 80% | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Emission Frequency (MHz)** | **Test Detector** | **Antenna Polarity (H/V)** | **Turntable Azimuth (deg)** | **Antenna Height (m)** | **Analyzer Reading (dBuV)** | **Site Correction Factor (dB/m)** | **Emission Level (dBuV/m)** | **Limit (dBuV/m)** | **Margin (dB)** |
| 72.839 | Qp | V | 215 | 2.0 | 32.4 | -18.1 | 14.3 | 40.0 | -25.7 |
| 156.095 | Qp | H | 275 | 1.0 | 31.8 | -11.5 | 20.3 | 43.5 | -23.2 |
| 220.112 | Qp | V | 315 | 1.0 | 38.4 | -11.0 | 27.4 | 46.0 | -18.6 |
| 255.618 | Qp | H | 215 | 1.0 | 34.5 | -7.5 | 27.0 | 46.0 | -19.0 |
| 301.712 | Qp | H | 215 | 1.0 | 28.3 | -6.3 | 22.0 | 46.0 | -24.0 |
| 402.281 | Qp | V | 180 | 1.0 | 31.0 | -2.9 | 28.1 | 46.0 | -17.9 |

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

# 6 RADIATED EMISSION LIMITS RADIATED HARMONICS - §15.247

## 6.1 RADIATED EMISSION LIMITS TEST PROCEDURE

Radiated Spurious Emissions applies to harmonics and spurious emissions that fall in the restricted and non-restricted bands. The restricted bands are listed in Part 15.205. The maximum permitted average field strength for the restricted band is listed in Part 15.209. The EUT was tested in the X-Y, X-Z and Y-Z orthogonal planes.

## 6.2 RADIATED EMISSION TEST DATA

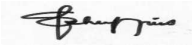
**Operating Frequency (MHz):** 2422
**Channel:** 3
**Measured Cond. Pwr. (dBm):** 29.4
**Antenna:** ANT-OMNI-8

**TABLE 6-1: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 3) (ANT-OMNI-8)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4844.00 | Av | V | 20 | 1.3 | 35.5 | 13.3 | 48.8 | 54.0 |
| 4844.00 | Pk | V | 20 | 1.3 | 48.7 | 13.3 | 62.0 | |
| 7266.00 | Av | V | 20 | 1.2 | 38.5 | 11.8 | 50.3 | 54.0 |
| 7266.00 | Pk | V | 20 | 1.3 | 50.6 | 11.8 | 62.4 | |
| 9688.00 | Av | V | 20 | 1.2 | 28.6 | 16.9 | 45.5 | 54.0 |
| 9688.00 | Pk | V | 20 | 1.2 | 41.0 | 16.9 | 57.9 | |
| 12110.00 | Av | V | 20 | 1.3 | 28.7 | 19.7 | 48.4 | 54.0 |
| 12110.00 | Pk | V | 20 | 1.2 | 40.4 | 19.7 | 60.1 | |

PEAK: RES. =1 MHZ, VID= 1MHZ; AVERAGE: RES. =1 MHZ, VID= 10HZ; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

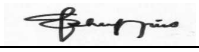
**Operating Frequency (MHz):** 2437
**Channel:** 6
**Measured Cond. Pwr. (dBm):** 28.9
**Antenna:** ANT-OMNI-8

## TABLE 6-2: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 6) (ANT-OMNI-8)

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4874.00 | Av | V | 30 | 1.3 | 32.5 | 13.9 | 46.4 | 54.0 |
| 4874.00 | Pk | V | 30 | 1.3 | 45.0 | 13.9 | 58.9 | |
| 7311.00 | Av | V | 20 | 1.2 | 33.1 | 11.8 | 44.9 | 54.0 |
| 7311.00 | Pk | V | 20 | 1.3 | 43.4 | 11.8 | 55.2 | |
| 9748.00 | Av | V | 40 | 1.2 | 30.6 | 16.7 | 47.3 | 54.0 |
| 9748.00 | Av | V | 40 | 1.2 | 41.1 | 16.7 | 57.8 | |
| 12185.00 | Pk | V | 20 | 1.3 | 30.2 | 18.2 | 48.4 | 54.0 |
| 12185.00 | Av | V | 10 | 1.2 | 41.5 | 18.2 | 59.7 | |

AVERAGE: RES. =1 MHZ, VID= 10Hz; <20dB= 20dB BELOW THE LIMIT

## TEST PERSONNEL:

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

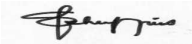
**Operating Frequency (MHz):** 2452
**Channel:** 9
**Measured Cond. Pwr. (dBm):** 28.4
**Antenna:** ANT-OMNI-8

**TABLE 6-3: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 9) (ANT-OMNI-8)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4904.00 | Av | V | 20 | 1.3 | 30.0 | 13.8 | 43.8 | 54.0 |
| 4904.00 | Pk | V | 20 | 1.3 | 41.7 | 13.8 | 55.5 | |
| 7356.00 | Av | V | 20 | 1.2 | 29.7 | 12.0 | 41.7 | 54.0 |
| 7356.00 | Pk | V | 20 | 1.3 | 40.5 | 12.0 | 52.5 | |
| 9808.00 | Av | V | 20 | 1.2 | 30.5 | 16.4 | 46.9 | 54.0 |
| 9808.00 | Pk | V | 20 | 1.2 | 41.0 | 16.4 | 57.4 | |
| 12260.00 | Av | V | 20 | 1.3 | 30.3 | 18.5 | 48.8 | 54.0 |
| 12260.00 | Pk | V | 20 | 1.2 | 40.3 | 18.5 | 58.8 | |

AVERAGE: RES. =1 MHZ, VID= 10Hz; NF = NOISE FLOOR; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

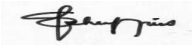
**Operating Frequency (MHz):** 2422
**Channel:** 3
**Measured Cond. Pwr. (dBm):** 29.4
**Antenna** ANT-OMNI-12

**TABLE 6-4: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 3) (ANT-OMNI-12)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 2353.82 | Av | V | 20 | 1.3 | 23.3 | 26.4 | 49.7 | 54.0 |
| 2353.72 | Pk | V | 20 | 1.3 | 34.2 | 26.4 | 60.6 | |
| 2368.56 | Av | V | 20 | 1.2 | 23.3 | 26.4 | 49.7 | 54.0 |
| 2368.67 | Pk | V | 20 | 1.2 | 33.0 | 26.4 | 59.4 | |
| 2376.04 | Av | V | 20 | 1.2 | 23.6 | 26.4 | 50.0 | 54.0 |
| 2376.04 | Pk | V | 20 | 1.2 | 33.0 | 26.4 | 59.4 | |
| 4844.00 | Av | V | 20 | 1.2 | 34.9 | 13.3 | 48.2 | 54.0 |
| 4844.00 | Pk | V | 20 | 1.2 | 48.4 | 13.3 | 61.7 | |
| 7266.00 | Av | V | 20 | 1.2 | 31.2 | 11.6 | 42.8 | 54.0 |
| 7266.00 | Pk | V | 20 | 1.2 | 42.3 | 11.6 | 53.9 | |
| 9688.00 | Av | V | 20 | 1.2 | 30.6 | 16.9 | 47.5 | 54.0 |
| 9688.00 | Pk | V | 20 | 1.2 | 41.1 | 16.9 | 58.0 | |
| 12110.00 | Av | V | 10 | 1.2 | 30.8 | 19.7 | 50.5 | 54.0 |
| 12110.00 | Pk | | 10 | 1.2 | 42.1 | 19.7 | 61.8 | |

PEAK: RES. =1 MHZ, VID= 1MHZ; AVERAGE: RES. =1 MHZ, VID= 10HZ; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

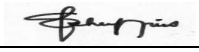
**Operating Frequency (MHz):** 2437
**Channel:** 6
**Measured Cond. Pwr. (dBm):** 28.9
**Antenna:** ANT-OMNI-12

**TABLE 6-5: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 6) (ANT-OMNI-12)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 2437.00 | Av | V | 20 | 1.3 | 83.4 | 26.4 | 109.8 | Fundamental |
| 2437.00 | Pk | V | 20 | 1.3 | 94.5 | 26.4 | 120.9 | Fundamental |
| 4874.00 | Av | V | 20 | 1.2 | 31.7 | 13.9 | 45.6 | 54.0 |
| 4874.00 | Pk | V | 20 | 1.2 | 43.2 | 13.9 | 57.1 | |
| 7311.00 | Av | V | 20 | 1.2 | 30.8 | 11.8 | 42.6 | 54.0 |
| 7311.00 | Pk | | 20 | 1.2 | 42.0 | 11.8 | 53.8 | |
| 9748.00 | Av | V | 20 | 1.2 | 31.1 | 16.7 | 47.8 | 54.0 |
| 9748.00 | Pk | | 20 | 1.2 | 42.6 | 16.7 | 59.3 | |
| 12185.00 | Av | V | 10 | 1.2 | 30.8 | 18.2 | 49.0 | 54.0 |
| 12185.00 | Pk | | 10 | 1.2 | 42.3 | 18.2 | 60.5 | |

AVERAGE: RES. =1 MHZ, VID= 10HZ; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

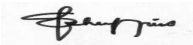
**Operating Frequency (MHz):** 2452
**Channel:** 9
**Measured Cond. Pwr. (dBm):** 28.4
**Antenna:** ANT-OMNI-12

**TABLE 6-6: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 9) (ANT-OMNI-12)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 2486.00 | Av | V | 20 | 1.3 | 23.2 | 26.4 | 49.6 | 54.0 |
| 2486.00 | Pk | V | 20 | 1.2 | 33.0 | 26.4 | 59.4 | |
| 4904.00 | Av | V | 20 | 1.2 | 30.6 | 13.8 | 44.4 | 54.0 |
| 4904.00 | Pk | V | 20 | 1.2 | 41.7 | 13.8 | 55.5 | |
| 7356.00 | Av | V | 20 | 1.2 | 30.5 | 12.0 | 42.5 | 54.0 |
| 7356.00 | Pk | V | 20 | 1.2 | 41.5 | 12.0 | 53.5 | |
| 9808.00 | Av | V | 20 | 1.2 | 31.1 | 16.4 | 47.5 | 54.0 |
| 9808.00 | Pk | V | 10 | 1.2 | 42.7 | 16.4 | 59.1 | |
| 12260.00 | Av | V | 10 | 1.2 | 30.6 | 18.5 | 49.1 | 54.0 |
| 12260.00 | Pk | V | 10 | 1.0 | 43.0 | 18.5 | 61.5 | |

AVERAGE: RES. =1 MHZ, VID= 10HZ; NF = NOISE FLOOR; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

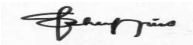
**Operating Frequency (MHz):** 2422
**Channel:** 3
**Measured Cond. Pwr. (dBm):** 29.4
**Antenna:** ANT-PATCH-12

**TABLE 6-7: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 3) (ANT-PATCH-12)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 2354.00 | Av | V | 20 | 1.3 | 25.0 | 26.4 | 51.4 | 54.0 |
| 2354.00 | Pk | V | 20 | 1.3 | 36.1 | 26.4 | 62.5 | |
| 4844.00 | Av | V | 20 | 1.2 | 33.1 | 13.3 | 46.4 | 54.0 |
| 4844.00 | Pk | V | 20 | 1.2 | 42.1 | 13.3 | 55.4 | |
| 7266.00 | Av | V | 20 | 1.2 | 38.8 | 11.6 | 50.4 | 54.0 |
| 7266.00 | Pk | V | 20 | 1.2 | 48.0 | 11.6 | 59.6 | |
| 9688.00 | Av | V | 20 | 1.2 | 36.6 | 16.9 | 53.5 | 54.0 |
| 9688.00 | Pk | V | 20 | 1.2 | 45.0 | 16.9 | 61.9 | |
| 12110.00 | Av | V | 10 | 1.2 | 33.2 | 19.7 | 52.9 | 54.0 |
| 12110.00 | Pk | V | 10 | 1.2 | 44.1 | 19.7 | 63.8 | |

PEAK: RES. =1 MHZ, VID= 1MHZ; AVERAGE: RES. =1 MHZ, VID= 10HZ; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

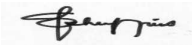
**Operating Frequency (MHz):** 2437
**Channel:** 6
**Measured Cond. Pwr. (dBm):** 28.9
**Antenna:** ANT-PATCH-12

**TABLE 6-8: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 6) (ANT-PATCH-12)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4874.00 | Av | V | 20 | 1.0 | 38.9 | 13.9 | 52.8 | 54.0 |
| 4874.00 | Pk | V | 20 | 1.0 | 52.1 | 13.9 | 66.0 | |
| 7311.00 | Av | V | 20 | 1.0 | 38.8 | 11.8 | 50.6 | 54.0 |
| 7311.00 | Pk | V | 20 | 1.0 | 48.5 | 11.8 | 60.3 | |
| 9748.00 | Av | V | 10 | 1.2 | 36.6 | 16.7 | 53.3 | 54.0 |
| 9748.00 | Pk | V | 10 | 1.2 | 46.7 | 16.7 | 63.4 | |
| 12185.00 | Av | V | 10 | 1.2 | 38.2 | 18.2 | 56.4 | 54.0 |
| 12185.00 | Pk | V | 10 | 1.2 | 47.1 | 18.2 | 65.3 | |

AVERAGE: RES. =1 MHZ, VID= 10Hz; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

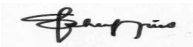
**Operating Frequency (MHz):** 2452
**Channel:** 9
**Measured Cond. Pwr. (dBm):** 28.4
**Antenna:** ANT-PATCH-12

**TABLE 6-9: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 9) (ANT-PATCH-12)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 2486.00 | Av | V | 20 | 1.2 | 19.7 | 26.4 | 46.1 | 54.0 |
| 2486.00 | Pk | V | 20 | 1.2 | 35.3 | 26.4 | 61.7 | |
| 2496.60 | Av | V | 20 | 1.2 | 23.0 | 26.4 | 49.4 | 54.0 |
| 2496.50 | Pk | V | 20 | 1.2 | 32.5 | 26.4 | 58.9 | |
| 2508.10 | Av | V | 20 | 1.2 | 22.9 | 26.4 | 49.3 | 54.0 |
| 2507.90 | Pk | V | 20 | 1.2 | 33.3 | 26.4 | 59.7 | |
| 4904.20 | Av | V | 20 | 1.2 | 16.8 | 13.8 | 30.6 | 54.0 |
| 4904.10 | Pk | V | 20 | 1.2 | 27.9 | 13.8 | 41.7 | |
| 7356.00 | Av | V | 10 | 1.2 | 18.5 | 12.0 | 30.5 | 54.0 |
| 7356.00 | Av | V | 10 | 1.2 | 29.5 | 12.0 | 41.5 | |
| 9808.00 | Av | V | 10 | 1.0 | 14.7 | 16.4 | 31.1 | 54.0 |
| 9808.00 | Av | V | 10 | 1.0 | 26.3 | 16.4 | 42.7 | |
| 12260.00 | Av | V | 10 | 1.0 | 12.1 | 18.5 | 30.6 | 54.0 |
| 12260.00 | Av | V | 10 | 1.2 | 24.5 | 18.5 | 43.0 | |

AVERAGE: RES. =1 MHZ, VID= 10HZ; NF = NOISE FLOOR; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

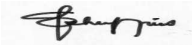
**Operating Frequency (MHz):** 2422
**Channel:** 3
**Measured Cond. Pwr. (dBm):** 29.4
**Antenna:** ANT-PATCH-19

**TABLE 6-10: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 3) (ANT-PATCH-19)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4845.88 | Av | V | 10 | 1.0 | 39.7 | 13.3 | 53.0 | 54.0 |
| 4844.04 | Pk | V | 10 | 1.0 | 53.4 | 13.3 | 66.7 | |
| 7265.46 | Av | V | 10 | 1.0 | 33.8 | 11.8 | 45.6 | 54.0 |
| 7277.48 | Pk | V | 10 | 1.0 | 49.6 | 11.8 | 61.4 | |
| 9697.68 | Av | V | 20 | 1.0 | 32.9 | 16.9 | 49.8 | 54.0 |
| 9695.62 | Pk | V | 20 | 1.0 | 46.3 | 16.9 | 63.2 | |
| 12105.19 | Av | V | 10 | 1.0 | 15.1 | 19.7 | 34.8 | 54.0 |
| 12113.60 | Pk | V | 10 | 1.0 | 28.2 | 19.7 | 47.9 | |

PEAK: RES. =1 MHZ, VID= 1MHZ; AVERAGE: RES. =1 MHZ, VID= 10HZ; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

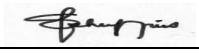
**Operating Frequency (MHz):** 2437
**Channel:** 6
**Measured Cond. Pwr. (dBm):** 28.9
**Antenna:** ANT-PATCH-19

## TABLE 6-11: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 6) (ANT-PATCH-19)

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4871.90 | Av | V | 20 | 1.2 | 37.9 | 13.9 | 51.8 | 54.0 |
| 4874.18 | Pk | V | 20 | 1.2 | 50.3 | 13.9 | 64.2 | |
| 7312.06 | Av | V | 20 | 1.0 | 33.2 | 11.8 | 45.0 | 54.0 |
| 7304.91 | Pk | V | 20 | 1.0 | 48.0 | 11.8 | 59.8 | |
| 9752.38 | Av | V | 10 | 1.2 | 32.8 | 16.7 | 49.5 | 54.0 |
| 9753.11 | Pk | V | 20 | 1.0 | 46.3 | 16.7 | 63.0 | |
| 12184.60 | Av | V | 10 | 1.0 | 31.7 | 18.2 | 49.9 | 54.0 |
| 12178.60 | Pk | V | 10 | 1.2 | 44.0 | 18.2 | 62.2 | |

AVERAGE: RES. =1 MHZ, VID= 10Hz; <20dB= 20dB BELOW THE LIMIT

## TEST PERSONNEL:

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

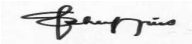
**Operating Frequency (MHz):** 2452
**Channel:** 9
**Measured Cond. Pwr. (dBm):** 28.4
**Antenna:** ANT-PATCH-19

**TABLE 6-12: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 9) (ANT-PATCH-19)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4901.89 | Av | V | 20 | 1.2 | 32.3 | 13.8 | 46.1 | 54.0 |
| 4904.11 | Pk | V | 20 | 1.2 | 45.6 | 13.8 | 59.4 | |
| 7360.43 | Av | V | 20 | 1.2 | 37.6 | 12.0 | 49.6 | 54.0 |
| 7357.40 | Pk | V | 20 | 1.2 | 49.6 | 12.0 | 61.6 | |
| 9810.28 | Av | V | 10 | 1.2 | 35.9 | 16.4 | 52.3 | 54.0 |
| 9810.04 | Pk | V | 20 | 1.2 | 49.5 | 16.4 | 65.9 | |
| 12184.66 | Av | V | 10 | 1.0 | 17.8 | 18.5 | 36.3 | 54.0 |
| 12185.41 | Pk | V | 10 | 1.0 | 30.4 | 18.5 | 48.9 | |

AVERAGE: RES. =1 MHZ, VID= 10HZ; NF = NOISE FLOOR; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

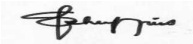
**Operating Frequency (MHz):** 2422
**Channel:** 3
**Measured Cond. Pwr. (dBm):** 29.4
**Antenna:** ANT-RFLCTR-24

**TABLE 6-13: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 3) (ANT-RFLCTR-24)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4844.00 | Av | V | 10 | 1.0 | 33.8 | 13.3 | 47.1 | 54.0 |
| 4844.00 | Pk | V | 10 | 1.0 | 47.4 | 13.3 | 60.7 | |
| 4844.11 | Av | V | 10 | 1.0 | 22.0 | 11.8 | 33.8 | 54.0 |
| 4844.00 | Pk | V | 10 | 1.0 | 32.8 | 11.8 | 44.6 | |
| 7266.11 | Av | V | 20 | 1.0 | 20.0 | 16.9 | 36.9 | 54.0 |
| 7266.09 | Pk | V | 20 | 1.0 | 29.2 | 16.9 | 46.1 | |
| 12110.00 | Av | V | 10 | 1.0 | 18.7 | 19.7 | 38.4 | 54.0 |
| 12109.94 | Pk | V | 10 | 1.0 | 26.5 | 19.7 | 46.2 | |

PEAK: RES. =1 MHZ, VID= 1MHZ; AVERAGE: RES. =1 MHZ, VID= 10HZ; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

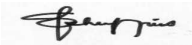
**Operating Frequency (MHz):** 2437
**Channel:** 6
**Measured Cond. Pwr. (dBm):** 28.9
**Antenna:** ANT-RFLCTR-24

**TABLE 6-14: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 6) (ANT-RFLCTR-24)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4874.09 | Av | V | 20 | 1.2 | 27.6 | 13.9 | 41.5 | 54.0 |
| 4874.09 | Pk | V | 20 | 1.2 | 40.6 | 13.9 | 54.5 | |
| 7310.91 | Av | V | 20 | 1.0 | 26.1 | 11.8 | 37.9 | 54.0 |
| 7310.97 | Pk | V | 20 | 1.0 | 34.3 | 11.8 | 46.1 | |
| 9748.06 | Av | V | 10 | 1.2 | 20.8 | 16.7 | 37.5 | 54.0 |
| 9747.94 | Pk | V | 20 | 1.0 | 29.8 | 16.7 | 46.5 | |
| 12185.00 | Av | V | 10 | 1.0 | 19.6 | 18.2 | 37.8 | 54.0 |
| 12185.11 | Pk | V | 10 | 1.2 | 28.3 | 18.2 | 46.5 | |

AVERAGE: RES. =1 MHZ, VID= 10Hz; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

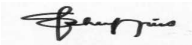
**Operating Frequency (MHz):** 2452
**Channel:** 9
**Measured Cond. Pwr. (dBm):** 28.4
**Antenna:** ANT-RFLCTR-24

**TABLE 6-15: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 9) (ANT-RFLCTR-24)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4904.03 | Av | V | 10 | 1.2 | 26.4 | 13.8 | 40.2 | 54.0 |
| 4904.14 | Pk | V | 20 | 1.2 | 38.9 | 13.8 | 52.7 | |
| 7355.97 | Av | V | 10 | 1.0 | 26.2 | 12.0 | 38.2 | 54.0 |
| 7356.03 | Pk | V | 10 | 1.0 | 35.0 | 12.0 | 47.0 | |
| 9807.89 | Av | V | 10 | 1.0 | 21.7 | 16.4 | 38.1 | 54.0 |
| 9808.06 | Pk | V | 10 | 1.2 | 30.9 | 16.4 | 47.3 | |
| 12260.11 | Av | V | 10 | 1.0 | 28.3 | 18.5 | 46.8 | 54.0 |
| 12260.06 | Pk | V | 10 | 1.0 | 19.6 | 18.5 | 38.1 | |

AVERAGE: RES. =1 MHZ, VID= 10HZ; NF = NOISE FLOOR; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

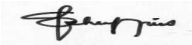
**Operating Frequency (MHz):** 2422
**Channel:** 3
**Measured Cond. Pwr. (dBm):** 29.4
**Antenna:** ANT-RFLCTR-18

**TABLE 6-16: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 3) (ANT-RFLCTR-18)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4845.88 | Av | V | 10 | 1.0 | 39.7 | 13.3 | 53.0 | 54.0 |
| 4844.04 | Pk | V | 10 | 1.0 | 53.4 | 13.3 | 66.7 | |
| 7265.46 | Av | V | 10 | 1.0 | 33.8 | 11.8 | 45.6 | 54.0 |
| 7277.48 | Pk | V | 10 | 1.0 | 49.6 | 11.8 | 61.4 | |
| 9697.68 | Av | V | 20 | 1.0 | 32.9 | 16.9 | 49.8 | 54.0 |
| 9695.62 | Pk | V | 20 | 1.0 | 46.3 | 16.9 | 63.2 | |
| 12105.19 | Av | V | 10 | 1.0 | 15.1 | 19.7 | 34.8 | 54.0 |
| 12113.60 | Pk | V | 10 | 1.0 | 28.2 | 19.7 | 47.9 | |

PEAK: RES. =1 MHZ, VID= 1MHZ; AVERAGE: RES. =1 MHZ, VID= 10HZ; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

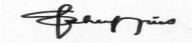
**Operating Frequency (MHz):** 2437
**Channel:** 6
**Measured Cond. Pwr. (dBm):** 28.9
**Antenna:** ANT-RFLCTR-18

## TABLE 6-17: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 6) (ANT-RFLCTR-18)

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4871.90 | Av | V | 20 | 1.0 | 37.9 | 13.9 | 51.8 | 54.0 |
| 4874.18 | Pk | V | 20 | 1.0 | 50.3 | 13.9 | 64.2 | |
| 7312.06 | Av | V | 10 | 1.2 | 33.2 | 11.8 | 45.0 | 54.0 |
| 7304.91 | Pk | V | 20 | 1.0 | 48.0 | 11.8 | 59.8 | |
| 9752.38 | Av | V | 10 | 1.0 | 32.8 | 16.7 | 49.5 | 54.0 |
| 9753.11 | Pk | V | 10 | 1.2 | 46.3 | 16.7 | 63.0 | |
| 12184.60 | Av | V | 10 | 1.0 | 31.7 | 18.2 | 49.9 | 54.0 |
| 12178.60 | Pk | V | 10 | 1.0 | 44.0 | 18.2 | 62.2 | |

AVERAGE: RES. =1 MHZ, VID= 10Hz; <20dB= 20dB BELOW THE LIMIT

## TEST PERSONNEL:

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

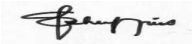
**Operating Frequency (MHz):** 2452
**Channel:** 9
**Measured Cond. Pwr. (dBm):** 28.4
**Antenna:** ANT-RFLCTR-18

## TABLE 6-18: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 9) (ANT-RFLCTR-18)

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4901.89 | Av | V | 20 | 1.3 | 32.3 | 13.8 | 46.1 | 54.0 |
| 4904.11 | Pk | V | 20 | 1.3 | 45.6 | 13.8 | 59.4 | |
| 7360.43 | Av | V | 20 | 1.2 | 37.6 | 12.0 | 49.6 | 54.0 |
| 7357.40 | Pk | V | 20 | 1.2 | 49.6 | 12.0 | 61.6 | |
| 9810.28 | Av | V | 10 | 1.2 | 35.9 | 16.4 | 52.3 | 54.0 |
| 9810.04 | Pk | V | 20 | 1.2 | 49.5 | 16.4 | 65.9 | |
| 12184.66 | Av | V | 10 | 1.0 | 17.8 | 18.5 | 36.3 | 54.0 |
| 12185.41 | Pk | V | 10 | 1.0 | 30.4 | 18.5 | 48.9 | |

AVERAGE: RES. =1 MHZ, VID= 10HZ; NF = NOISE FLOOR; <20dB= 20dB BELOW THE LIMIT

## TEST PERSONNEL:

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

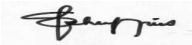
**Operating Frequency (MHz):** 2422
**Channel:** 3
**Measured Cond. Pwr. (dBm):** 29.4
**Antenna:** ANT-D2421

**TABLE 6-19: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 3) (ANT-D2421)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4840.51 | Av | V | 10 | 1.0 | 38.7 | 13.3 | 52.0 | 54.0 |
| 4843.97 | Pk | V | 10 | 1.0 | 52.6 | 13.3 | 65.9 | |
| 7266.74 | Av | V | 10 | 1.0 | 36.4 | 11.8 | 48.2 | 54.0 |
| 7266.06 | Pk | V | 10 | 1.0 | 48.6 | 11.8 | 60.4 | |
| 9689.08 | Av | V | 10 | 1.0 | 34.0 | 16.9 | 50.9 | 54.0 |
| 9689.59 | Pk | V | 10 | 1.0 | 45.3 | 16.9 | 62.2 | |
| 12110.08 | Av | V | 20 | 1.0 | 15.1 | 19.7 | 34.8 | 54.0 |
| 12110.52 | Pk | V | 20 | 1.0 | 43.7 | 19.7 | 63.4 | |

PEAK: RES. =1 MHZ, VID= 1MHZ; AVERAGE: RES. =1 MHZ, VID= 10HZ; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

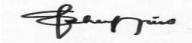
**Operating Frequency (MHz):** 2437
**Channel:** 6
**Measured Cond. Pwr. (dBm):** 28.9
**Antenna:** ANT-D2421

**TABLE 6-20: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 6) (ANT-D2421)**

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4871.84 | Av | V | 20 | 1.2 | 35.6 | 13.9 | 49.5 | 54.0 |
| 4873.57 | Pk | V | 20 | 1.2 | 48.4 | 13.9 | 62.3 | |
| 7303.43 | Av | V | 20 | 1.0 | 35.0 | 11.8 | 46.8 | 54.0 |
| 7322.45 | Pk | V | 20 | 1.0 | 47.8 | 11.8 | 59.6 | |
| 9752.18 | Av | V | 10 | 1.2 | 35.1 | 16.7 | 51.8 | 54.0 |
| 9743.66 | Pk | V | 20 | 1.0 | 47.1 | 16.7 | 63.8 | |
| 12180.02 | Av | V | 10 | 1.2 | 18.5 | 18.2 | 36.7 | 54.0 |
| 12188.86 | Pk | V | 10 | 1.0 | 31.4 | 18.2 | 49.6 | |

AVERAGE: RES. =1 MHZ, VID= 10Hz; <20dB= 20dB BELOW THE LIMIT

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

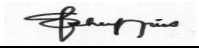
**Operating Frequency (MHz):** 2452
**Channel:** 9
**Measured Cond. Pwr. (dBm):** 28.4
**Antenna:** ANT-D2421

## TABLE 6-21: RADIATED EMISSIONS HARMONICS/SPURIOUS (CHANNEL 9) (ANT-D2421)

| Emission Frequency (MHz) | Test Detector | Antenna Polarity (H/V) | Turntable Azimuth (deg) | Antenna Height (m) | Analyzer Reading (dBuV) | Site Correction Factor (dB/m) | Emission Level (dBuV/m) | Limit (dBuV/m) |
|---|---|---|---|---|---|---|---|---|
| 4901.78 | Av | V | 20 | 1.2 | 30.9 | 13.8 | 44.7 | 54.0 |
| 4904.91 | Pk | V | 20 | 1.2 | 44.4 | 13.8 | 58.2 | |
| 7355.05 | Av | V | 20 | 1.2 | 37.3 | 12.0 | 49.3 | 54.0 |
| 7379.18 | Pk | V | 20 | 1.2 | 50.1 | 12.0 | 62.1 | |
| 9803.84 | Av | V | 10 | 1.2 | 34.2 | 16.4 | 50.6 | 54.0 |
| 9807.54 | Pk | V | 20 | 1.2 | 47.2 | 16.4 | 63.6 | |
| 12258.90 | Av | V | 10 | 1.0 | 15.7 | 18.5 | 34.2 | 54.0 |
| 12263.47 | Pk | V | 10 | 1.0 | 43.9 | 18.5 | 62.4 | |

AVERAGE: RES. =1 MHZ, VID= 10HZ; NF = NOISE FLOOR; <20dB= 20dB BELOW THE LIMIT

## TEST PERSONNEL:

| Franck Schuppius |  | 5/19/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

## 6.3 TEST EQUIPMENT USED FOR TESTING

### TABLE 6-22: RADIATED SPURIOUS EMISSIONS TEST EQUIPMENT

| RTL ASSET # | MANUFACTURER | MODEL | PART TYPE | SERIAL NUMBER |
|---|---|---|---|---|
| 900931 | HP | 8566B | Spectrum Analyzer (100Hz – 22 GHz) | 3138A07771 |
| 900772 | EMCO | 3161-02 | Horn Antenna (2-4 GHz) | 900772 |
| 900321 | EMCO | 3161-03 | Horn Antennas (4-8.2 GHz) | 9508-1020 |
| 900356 | EMCO | 3160-08 | Horn Antennas (12.4 – 18 GHz) | 9607-1044 |
| 900323 | EMCO | 3160-7 | Horn Antennas (8.2-12.4 GHz) | 9605-1054 |
| 900325 | EMCO | 3160-9 | Horn Antennas (18 - 26.5 GHz) | 9605-1051 |
| 900791 | Schaffner - Chase | CBL6112 | Antenna (25 MHz - 2 GHz) | 2099 |
| 900723 | Miteq | NA | AMP 100MHz-26GHz | N/A |

# 7 MODULATED BANDWIDTH - §15.247(A)(2)

## 7.1 MODULATED BANDWIDTH TEST PROCEDURE

The minimum 6 dB bandwidth per FCC 15.247 (a)(2) was measured using a 50 ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at 300 kHz. The minimum 6 dB modulated bandwidths for the 1W configuration follow below. The worst case bandwidth plots for the 1W configuration are included.

## 7.2 TEST EQUIPMENT USED FOR TESTING

**TABLE 7-1: MODULATED BANDWIDTH TEST EQUIPMENT**

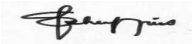
| RTL Asset # | Manufacturer | Model | Part Type | Serial Number |
|---|---|---|---|---|
| 900931 | HP | 8566B | Spectrum Analyzer (100Hz – 22 GHz) | 3138A07771 |

## 7.3 MODULATED BANDWIDTH TEST DATA

**TABLE 7-2: MINIMUM 6 DB MODULATED BANDWIDTHS**

| CHANNEL | 1W 6 dB BANDWIDTH (MHz) |
|---|---|
| 3 | 10.5 |
| 6 | 10.3 |
| 9 | 11.0 |

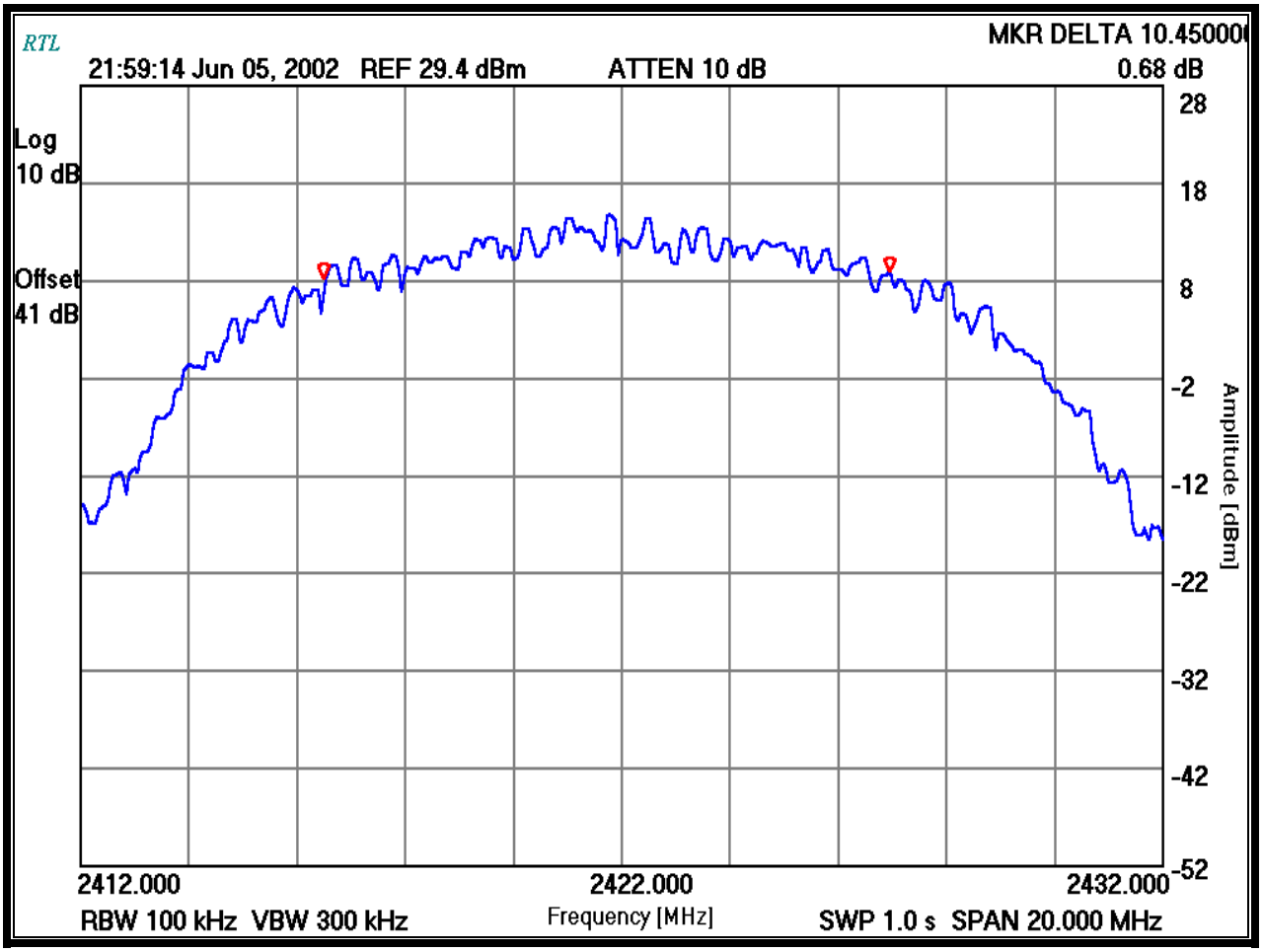
**TEST PERSONNEL:**

| Franck Schuppius |  | 06/05/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

## 7.4 MODULATED BANDWIDTH PLOTS

| | |
|---|---|
| **Channel Number:** | 3 |
| **Frequency (MHz):** | 2422 |
| **Resolution Bandwidth (kHz)):** | 100 |
| **Video Bandwidth (kHz):** | 300 |
| **Sweep Time (s):** | 1.0 |

**PLOT 7-1: MODULATED BANDWIDTH CHANNEL 3-1W MODE**

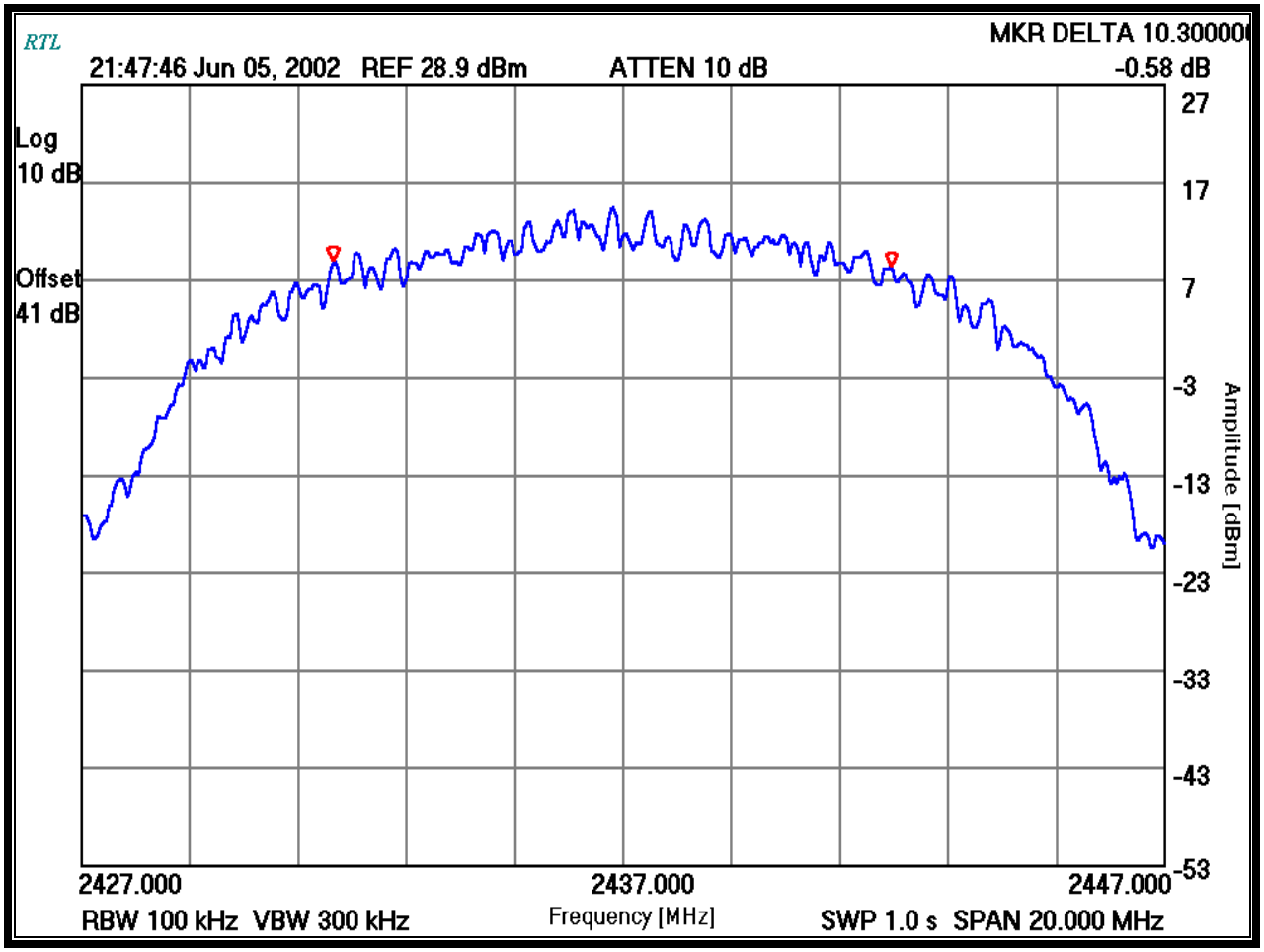



**TEST PERSONNEL:**

| Kinh Ly | Kinh Ly | 06/05/02 |
|---|---|---|
| Test Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 6 |
| **Frequency (MHz):** | 2437 |
| **Resolution Bandwidth (kHz):** | 100 |
| **Video Bandwidth (kHz):** | 300 |
| **Sweep Time (s):** | 1.0 |

**PLOT 7-2: MODULATED BANDWIDTH CHANNEL 6-1W MODE**

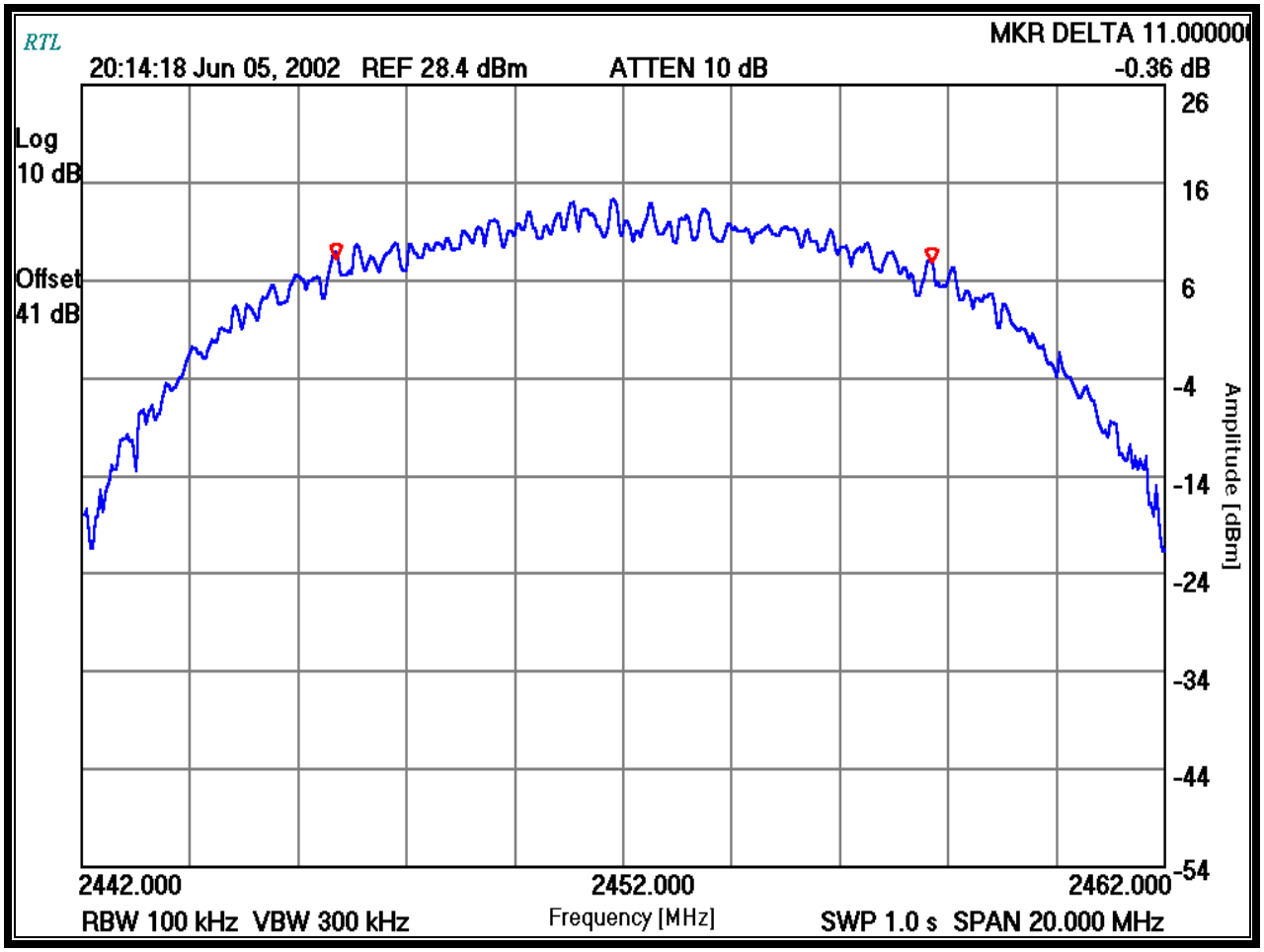



**TEST PERSONNEL:**

| Kinh Ly | Kinh Ly | 06/05/02 |
|---|---|---|
| Test Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Channel Number:** | 9 |
| **Frequency (MHz):** | 2452 |
| **Resolution Bandwidth (kHz):** | 100 |
| **Video Bandwidth (kHz):** | 300 |
| **Sweep Time (s):** | 1.0 |

**PLOT 7-3: MODULATED BANDWIDTH CHANNEL 9-1W MODE**




**TEST PERSONNEL:**

| Kinh Ly | Kinh Ly | 06/05/02 |
|---|---|---|
| Test Engineer | Signature | Date Of Test |

# 8 POWER OUTPUT - §15.247(B)

## 8.1 POWER OUTPUT TEST PROCEDURE

The peak conducted output power of the EUT was measured using an Agilent 4416A EPM-P Series Power Meter with an E9323A Peak and Average Power Sensor. The EIRP measurement was calculated as follows:
Power Output + Antenna Gain - Cable Loss.

## 8.2 TEST EQUIPMENT USED FOR TESTING

**TABLE 8-1: RADIATED RF OUTPUT – EIRP TEST EQUIPMENT**

| RTL ASSET # | MANUFACTURER | MODEL | PART TYPE | SERIAL NUMBER |
|---|---|---|---|---|
| 901186 | Agilent Technologies | E9323A (50MHz-6GHz) | Peak & Avg. Power Sensor | US40410380 |
| 901184 | Agilent Technologies | E4416A | EPM-P Power Meter, single channel | GB41050573 |
| 900931 | HP | 8566B | Spectrum Analyzer (100Hz – 22 GHz) | 3138A07771 |

## 8.3 POWER OUTPUT TEST DATA

**TABLE 8-2: POWER OUTPUT TEST DATA**

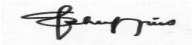
**Operating Frequency (MHz):** 2422, 2437 & 2452
**Channel:** 3, 6 & 9
**Measured Cond. Pwr. (dBm):** 29.4, 28.9 & 28.4

**TABLE 8-3: POWER OUTPUT TEST DATA**

| CHANNEL | POWER CONDUCTED OUTPUT (dBm) |
|---|---|
| 3 | 29.4 |
| 6 | 28.9 |
| 9 | 28.4 |

*Measurement accuracy is +/- 1.5 dB

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/18/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

# 9 ANTENNA CONDUCTED SPURIOUS EMISSIONS - §15.247(C)

## 9.1 ANTENNA CONDUCTED SPURIOUS EMISSIONS TEST PROCEDURES

Antenna spurious emission per FCC 15.247(c) was measured from the EUT antenna port using a 50 ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at 300 kHz. The modulated carrier was identified at 2.422GHz for Channel 3, 2.437GHz for Channel 6 and 2.452GHz for Channel 9. No other harmonics or spurs were found within 20 dB of the carrier level, and from 9kHz to the carriers 10$^{th}$ harmonic. See the antenna conducted spurious noise table below. Channels 3, 6, and 9 were investigated and tested.

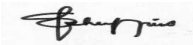
## 9.2 ANTENNA CONDUCTED SPURIOUS EMISSIONS TEST DATA

**Operating Frequency (MHz):** 2422
**Channel:** 3
**Measured Cond. Pwr. (dBm):** 29.4
**Peak@100KHz(dBm):** 17
**Limit (dBm):** -3

**TABLE 9-1: ANTENNA CONDUCTED SPURIOUS EMISSIONS**

| Frequency (MHz) | Measured Level (dBm) | Notch Filter Insertion Loss (dB) | Corrected Measured Level (dBm) | Margin (dB) |
|---|---|---|---|---|
| 4844 | -30.3 | 2.2 | -28.2 | -25.2 |
| 7266 | -34.0 | 1.5 | -32.5 | -29.5 |
| 9688 | -35.2 | 6.8 | -28.3 | -25.3 |
| 12110 | -33.5 | 7.8 | -25.7 | -22.7 |
| 14532 | -31.2 | 4.7 | -26.5 | -23.5 |
| 16954 | -32.5 | 10.3 | -22.2 | -19.2 |
| 19376 | -32.3 | 11.5 | -20.8 | -17.8 |
| 21798 | -32.7 | 11.3 | -21.4 | -18.4 |
| 24220 | -30.8 | 11.5 | -19.3 | -16.3 |

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/17/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

**Operating Frequency (MHz):** 2437
**Channel:** 6
**Measured Cond. Pwr. (dBm):** 28.9
**Peak@100KHz(dBm):** 17.2
**Limit (dBm):** -2.8

**TABLE 9-2: ANTENNA CONDUCTED SPURIOUS EMISSIONS**

| Frequency (MHz) | Measured Level (dBm) | Notch Filter Insertion Loss (dB) | Corrected Measured Level (dBm) | Margin (dB) |
|---|---|---|---|---|
| 4874 | -33.2 | 1.8 | -31.3 | -28.5 |
| 7311 | -33.3 | 4.2 | -29.1 | -26.3 |
| 9748 | -34.7 | 3.5 | -31.2 | -28.4 |
| 12185 | -34.0 | 9.8 | -24.2 | -21.4 |
| 14622 | -30.8 | 7.8 | -23.0 | -20.2 |
| 17059 | -34.2 | 8.8 | -25.3 | -22.5 |
| 19496 | -33.0 | 14.2 | -18.8 | -16.0 |
| 21933 | -32.2 | 14.0 | -18.2 | -15.4 |
| 24370 | -31.7 | 14.3 | -17.4 | -14.6 |

**TEST PERSONNEL:**

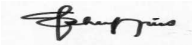
| Franck Schuppius | | 5/17/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

**Operating Frequency (MHz):** 2452
**Channel:** 9
**Measured Cond. Pwr. (dBm):** 28.4
**Peak@100KHz(dBm):** 16.7
**Limit (dBm):** -3.3

**TABLE 9-3: ANTENNA CONDUCTED SPURIOUS EMISSIONS**

| Frequency (MHz) | Measured Level (dBm) | Notch Filter Insertion Loss (dB) | Corrected Measured Level (dBm) | Margin (dB) |
|---|---|---|---|---|
| 4904 | -33.2 | 1.5 | -31.7 | -28.4 |
| 7356 | -31.8 | 4.5 | -27.3 | -24.0 |
| 9808 | -33.0 | 8.8 | -24.2 | -20.9 |
| 12260 | -34.3 | 12.0 | -22.3 | -19.0 |
| 14712 | -31.5 | 5.7 | -25.8 | -22.5 |
| 17164 | -32.3 | 8.3 | -24.0 | -20.7 |
| 19616 | -32.2 | 13.2 | -19.0 | -15.7 |
| 22068 | -31.7 | 13.3 | -18.4 | -15.1 |
| 24520 | -28.7 | 13.3 | -15.4 | -12.1 |

**TEST PERSONNEL:**

| Franck Schuppius |  | 5/17/2002 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

# 10 POWER SPECTRAL DENSITY - §15.247(D)

## 10.1 POWER SPECTRAL DENSITY TEST PROCEDURE

The power spectral density per FCC 15.247(d) was measured using a 50 ohm spectrum analyzer with the resolution bandwidth set at 3kHz, the video bandwidth set at 30kHz, and the sweep time set at 1000 second. . The spectral lines were resolved for the modulated carriers at 2.422GHz, 2.437GHz, and 2.452GHz respectively. These levels are well below the +8 dBm limit. See the power spectral density test data and plots.

## 10.2 TEST EQUIPMENT USED FOR TESTING

**TABLE 10-1: POWER SPECTRAL DENSITY TEST EQUIPMENT**

| RTL ASSET # | MANUFACTURER | MODEL | PART TYPE | SERIAL NUMBER |
|---|---|---|---|---|
| 900931 | HP | 8566B | Spectrum Analyzer (100Hz – 22 GHz) | 3138A07771 |

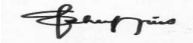
## 10.3 POWER SPECTRAL DENSITY TEST DATA

**Operating Frequency (MHz):** 2422, 2437 & 2452
**Channel:** 3, 6 & 9
**Measured Cond. Pwr. (dBm):** 29.4, 28.9 & 28.4
**Limit (dBm):** 8

**TABLE 10-2: POWER SPECTRAL DENSITY DATA**

| CHANNEL | 1000mW-POWER SPECTRAL DENSITY LIMIT = +8dBm |
|---|---|
| 3 | 1.6 |
| 6 | 1.4 |
| 9 | 0.5 |

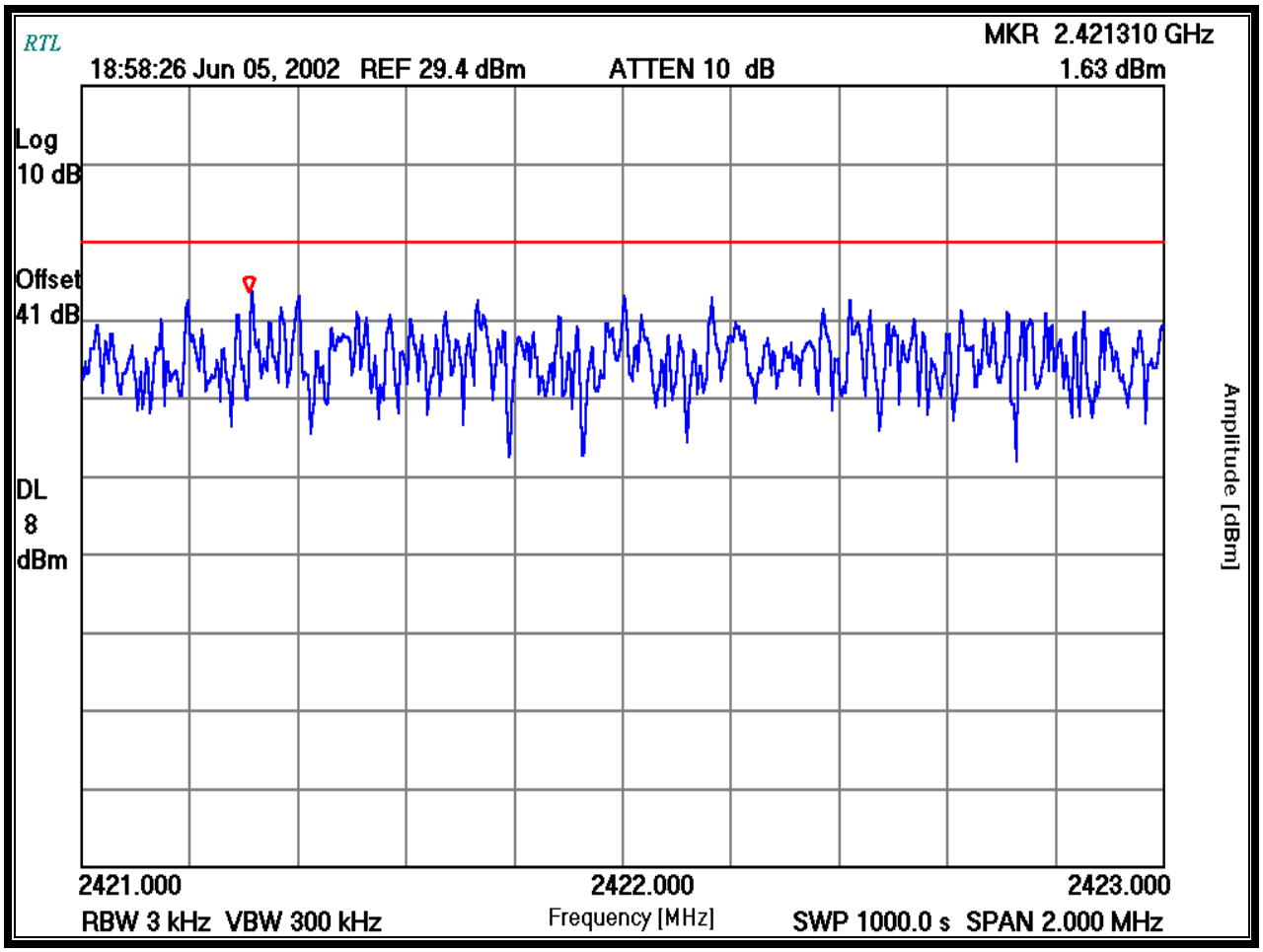
**TEST PERSONNEL:**

| Franck Schuppius |  | 06/05/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

## 10.4 POWER SPECTRAL DENSITY PLOTS

| | |
|---|---|
| **Operating Frequency (MHz):** | 2422 |
| **Channel:** | 3 |
| **Measured Cond. Pwr. (dBm):** | 29.4 |
| **Bandwidth Resolution (kHz):** | 3 |
| **Bandwidth Video (kHz):** | 300 |
| **Sweep Time (s):** | 1000.0 |

**PLOT 10-1: POWER SPECTRAL DENSITY: CHANNEL 3**

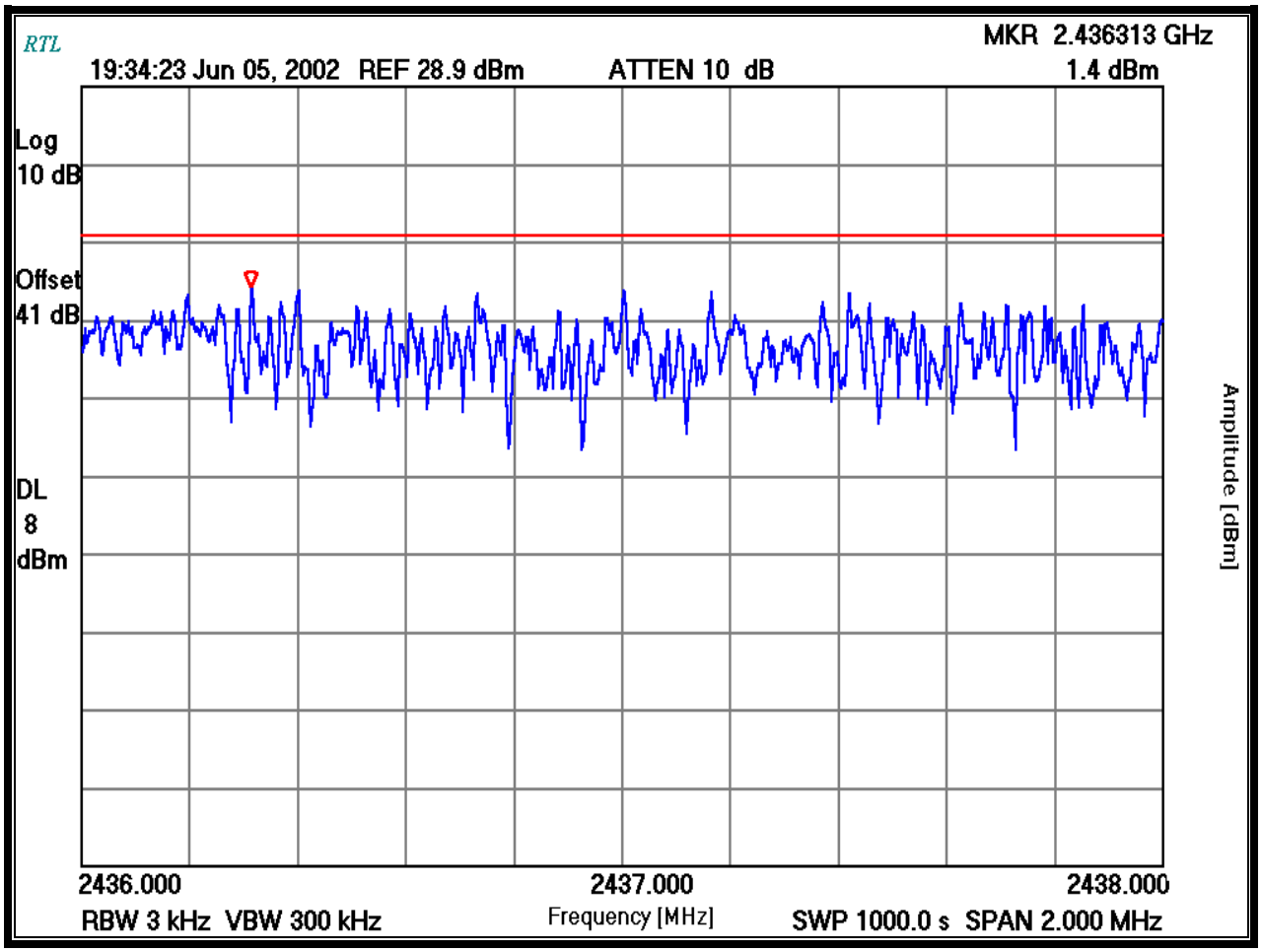



**TEST PERSONNEL:**

| Franck Schuppius | | 06/05/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Operating Frequency (MHz):** | 2437 |
| **Channel:** | 6 |
| **Measured Cond. Pwr. (dBm):** | 28.9 |
| **Bandwidth Resolution (kHz):** | 3 |
| **Bandwidth Video (kHz):** | 300 |
| **Sweep Time (s):** | 1000.0 |

**PLOT 10-2: POWER SPECTRAL DENSITY: CHANNEL 6**

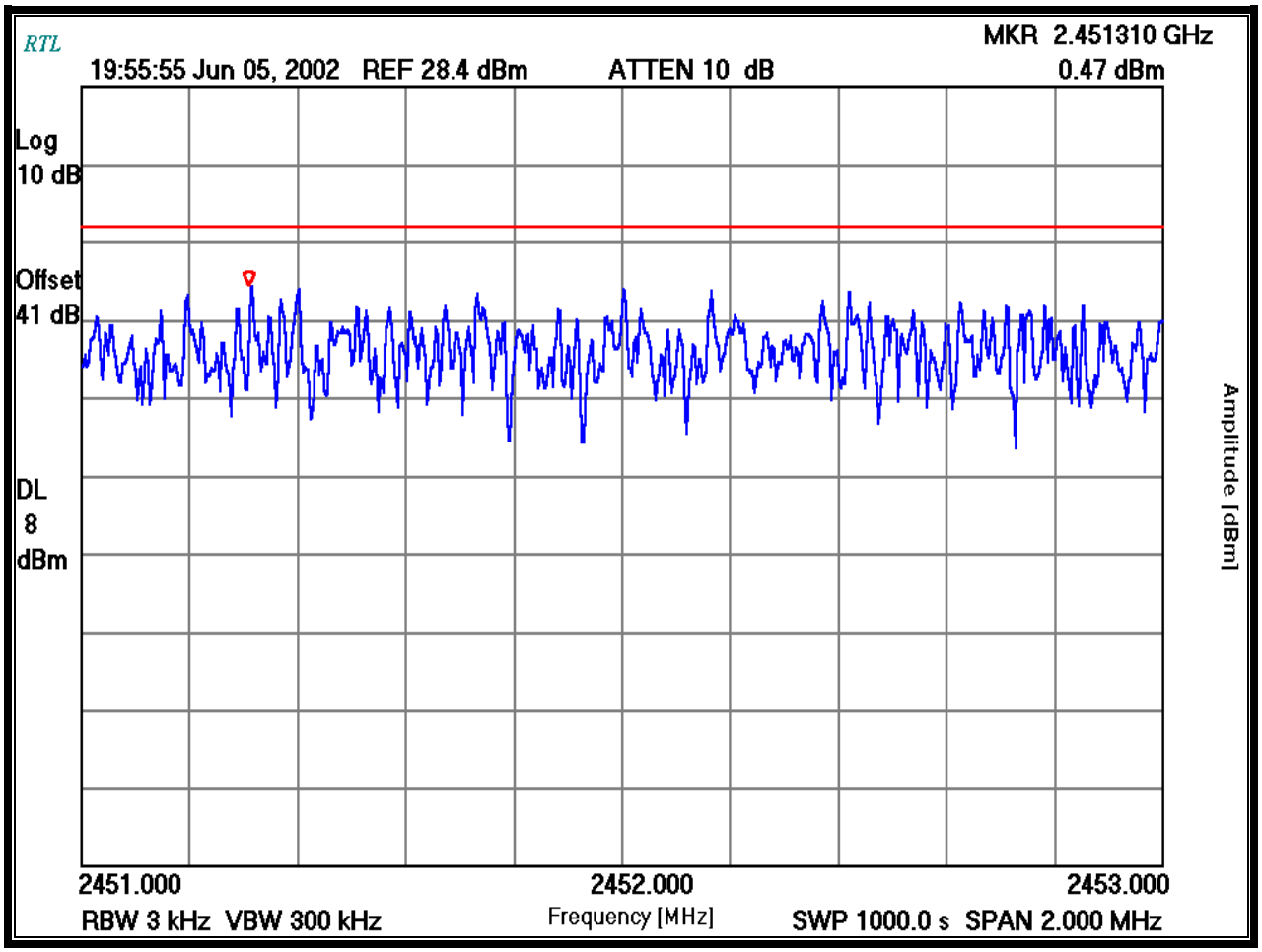



**TEST PERSONNEL:**

| Franck Schuppius | | 06/05/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

| | |
|---|---|
| **Operating Frequency (MHz):** | 2452 |
| **Channel:** | 9 |
| **Measured Cond. Pwr. (dBm):** | 28.4 |
| **Bandwidth Resolution (kHz):** | 3 |
| **Bandwidth Video (kHz):** | 300 |
| **Sweep Time (s):** | 1000.0 |

**PLOT 10-3: POWER SPECTRAL DENSITY: CHANNEL 9**




**TEST PERSONNEL:**

| Franck Schuppius | | 06/05/02 |
|---|---|---|
| Test Technician/Engineer | Signature | Date Of Test |

# 11 CONCLUSION

The data in this measurement report shows that the Teletronics, Inc. Model: Extended Amplified WLAN System (SMARTAMP 1W) FCC ID: MFMSAMP24W, complies with all the requirements of Parts 2 and 15 of the FCC Rules and Industry Canada RSS-139 and RSS-210.