# CETECOM ICT Services GmbH

Radio Satelite Communication
Untertürkheimer Straße 6-10 . D-66117 Saarbrücken Telefon: +49 (0)681 598-9100 Telefax: -9075




## Accredited Testing Laboratory

**DAR-Registration number:**
**TTI-P-G 166/98-10**

**Test report no.: 2-2280-A/00**
**FCC Part 15.247**
**3COM**
**Wireless Access Point WL-306**

## Table of Contents



## 1 General information

### 1.1 Notes

**The test results of this test report relate exclusively to the test item specified in 1.5. The CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM ICT Services GmbH.**

### 1.2 Testing laboratory


CETECOM ICT Services GmbH
66117 Saarbrücken
Untertürkheimer Straße 6 - 10
Deutschland
Telefone: + 49 681 598 - 9100
Telefax : + 49 681 598 - 9075
E-mail : Harro.Ames@ict.cetecom.de
Internet : www.cetecom.de


**Accredited testing laboratory**
**DAR-registration number :** TTI-P-G 166/98-00

### 1.3 Details of applicant

**Name : 3Com Corporation**
**Street : 5400 Bayfront Plaza**
**City : Santa Clara, Cailifornia , 95052-8145**
**Country : USA**
**Telephone : +1 408 326 5000**
**Telefax : +1 408 326 5854**
**Contact : Michael Green**
**Telephone : +1 408 326 2878**

### 1.4 Application details

Date of receipt of application : 23.11.00
Date of receipt of test item : 23.11.00
Date of test : 23.11.00 – 08.12.00

### 1.5 Test item

| | | |
|---|---|---|
| Type of equipment | : | **Wireless LAN Access Point (WLAN)** |
| Type designation | : | **WL-306** |
| Manufacturer | : | applicant |
| Street | : | |
| City | : | |
| Country | : | |
| Serial number | : | |
| **Additional informations:** | **:** | |
| Frequency | : | 2400 – 2483.5 MHz |
| Type of modulation | : | 22M0P7D (DSSS) |
| Number of channels | : | 13 |
| Antenna | : | integral antenna |
| Power supply | : | 48V DC powered by externac power supply (100-240V AC) |
| Output power | : | max. 20 mW |
| Type of equipment | : | Temperature range : -10°C - +55°C |

### 1.6 Test standards: FCC Part 15 §15.247

## 2 Technical test

### 2.1 Summary of test results

**The antenna gain measurement was performed by FOXCONN (Annex 1)**
**All measurement settings are according to FCC 15.35, 15.209 and the „Guidance on measurement for DSSS systems“.**

**No deviations from the technical specification(s) were ascertained in the course of the tests performed.**

**Technical responsibility for area of testing :**

| Date | Section | Name | Signature |
|---|---|---|---|
| 12.12.00 | RSC 8412 | Hausknecht | D. Kausknecht |

**Technical responsibility for area of testing :**

| Date | Section | Name | Signature |
|---|---|---|---|
| 12.12.00 | RSC8414 | Ames | H. Ames |

## 2.2 Testreport

**TEST REPORT**

**Test report no. : 2-2280-A/00**

**TEST REPORT REFERENCE**

**LIST OF MEASUREMENTS**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

## SPECTRUM BANDWITH OF DSSS-SYSTEM SUBCLAUSE § 15.247 (a)(2)

| TEST CONDITIONS | | 6 dB BANDWIDTH ( kHz ) | | |
|---|---|---|---|---|
| Frequency (MHz) | | 2412 | 2442 | 2472 |
| $T_{nom}$( 20 ) °C | $V_{nom}$( 230)V | 10100 | 10300 | 10250 |
| Measurement uncertainty | | ±3dB | | |

**RBW = 100 KHz, Span >> RBW, here 25 MHz**

## LIMIT SUBCLAUSE §15.247(a) (2)

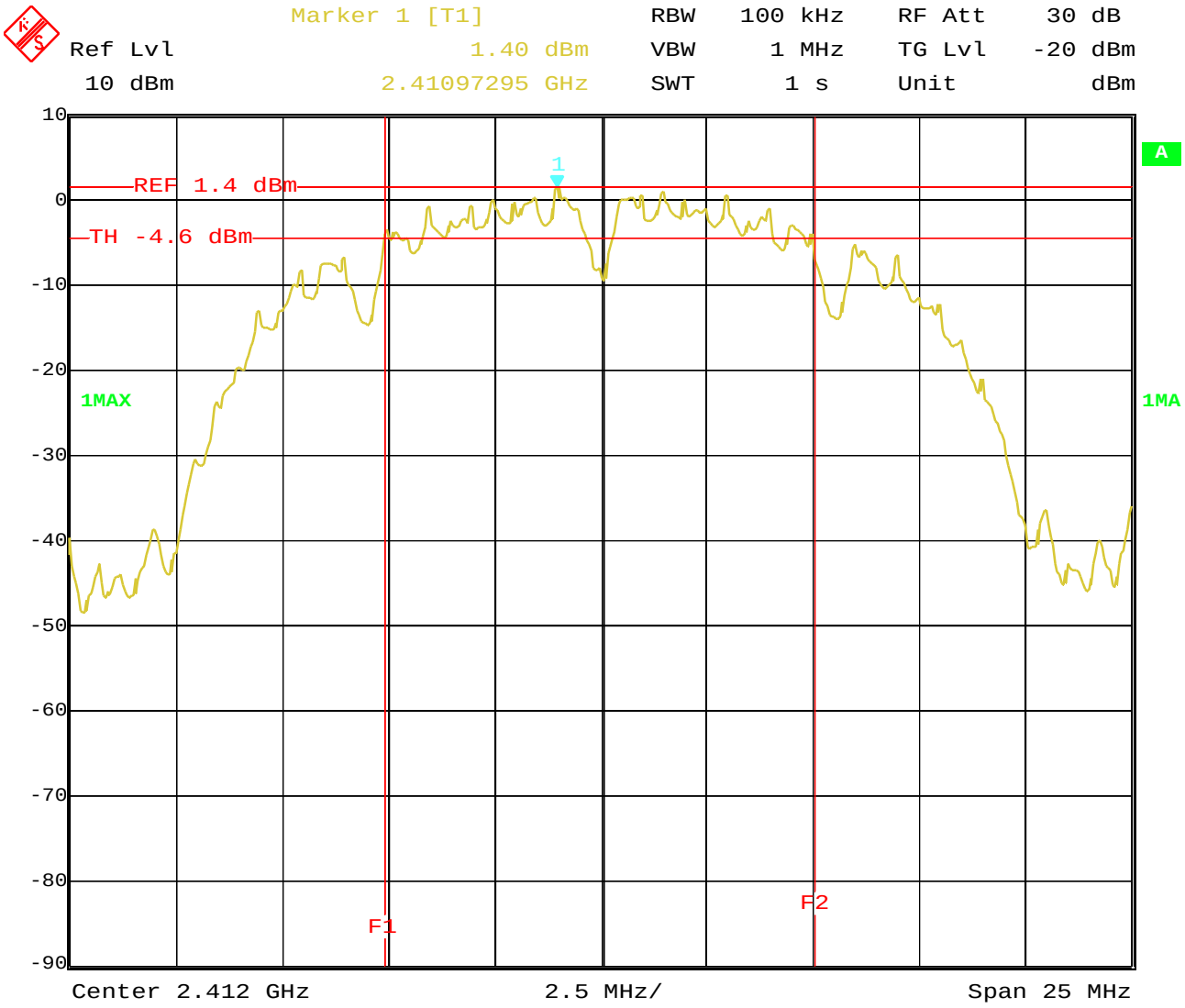
| The minimum 6dB bandwith shall shall be at least 500 KHz |
|---|

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

## SPECTRUM BANDWITH OF DSSS-SYSTEM SUBCLAUSE § 15.247 (a)(2)

**2412 MHz**




Date: 24.OCT.2000 10:44:10

**RBW = 100 KHz, Span >> RBW, here 25 MHz**

## LIMIT SUBCLAUSE §15.247(a) (2)

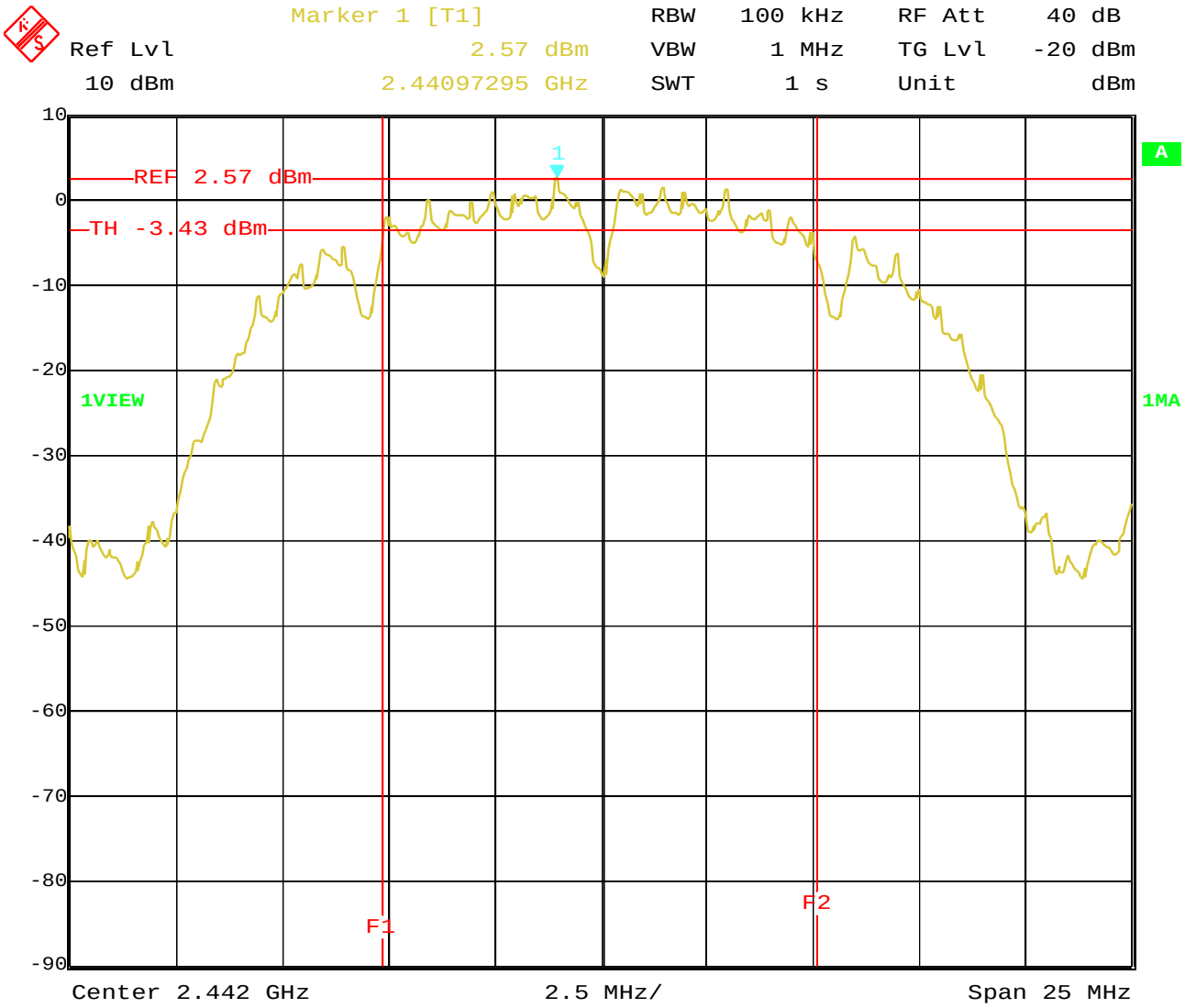
| |
|---|
| **The minimum 6dB bandwith shall shall be at least 500 KHz , here 10.10 MHz** |

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

## SPECTRUM BANDWITH OF DSSS-SYSTEM SUBCLAUSE § 15.247 (a)(2)

**2442 MHz**




Date: 24.OCT.2000 10:50:02

**RBW = 100 KHz, Span >> RBW, here 25 MHz**

## LIMIT SUBCLAUSE §15.247(a) (2)

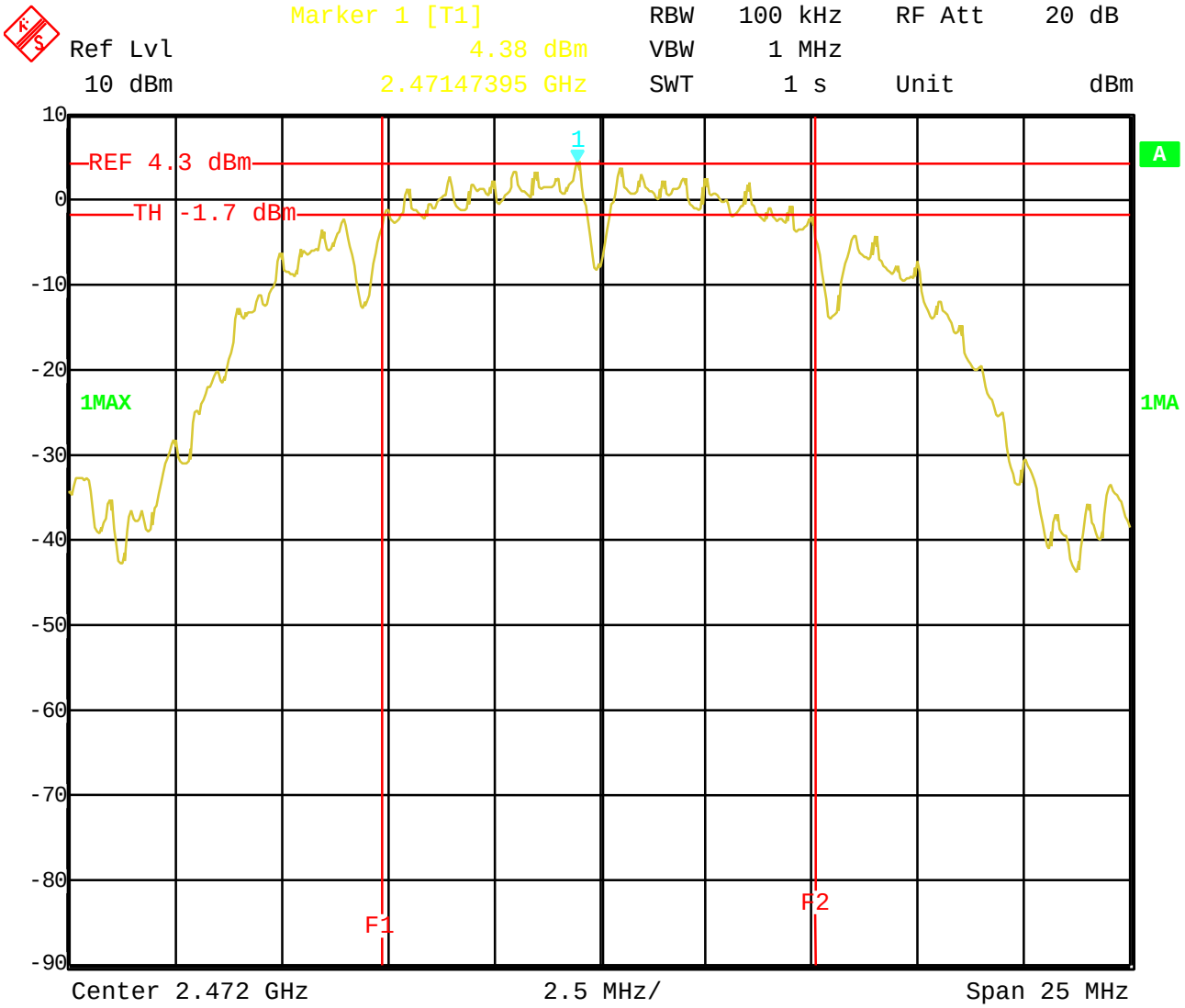
| |
|---|
| **The minimum 6dB bandwith shall shall be at least 500 KHz , here 10.30 MHz** |

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**64**

**Equipment under test : WL-306**
**Ambient temperature : 20 ℃**
**Relative humidity : 51%**

## SPECTRUM BANDWITH OF DSSS-SYSTEM SUBCLAUSE § 15.247 (a)(2)

**2472 MHz**




Date: 6.DEC.2000 14:10:15

**RBW = 100 KHz, Span >> RBW, here 25 MHz**

## LIMIT SUBCLAUSE §15.247(a) (2)

| |
|---|
| **The minimum 6dB bandwith shall shall be at least 500 KHz , here 10.25MHz** |

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**MAXIMUM PEAK OUTPUT POWER (CONDUCTED)** **SUBCLAUSE § 15.247 (b) (1)**

| TEST CONDITIONS | | MAXIMUM PEAK OUTPUT POWER (dBm) | | |
|---|---|---|---|---|
| Frequency (MHz) | | 2412 | 2442 | 2472 |
| $T_{nom}$( 20 ) °C | $V_{nom}$( 230 )V | Peak: 11.1 dB<br>AV: 7.72 dBm | Peak 12.4 dBm<br>AV: 7.96 dBm | Peak 11.5 dBm<br>AV: 8.23 dBm |
| Maximum deviation from output power under extreme test conditions (dBc) | | not performed | not performed | not performed |
| Measurement uncertainty | | ±3dB | | |

**Settings: RBW/VBW 10 MHz**

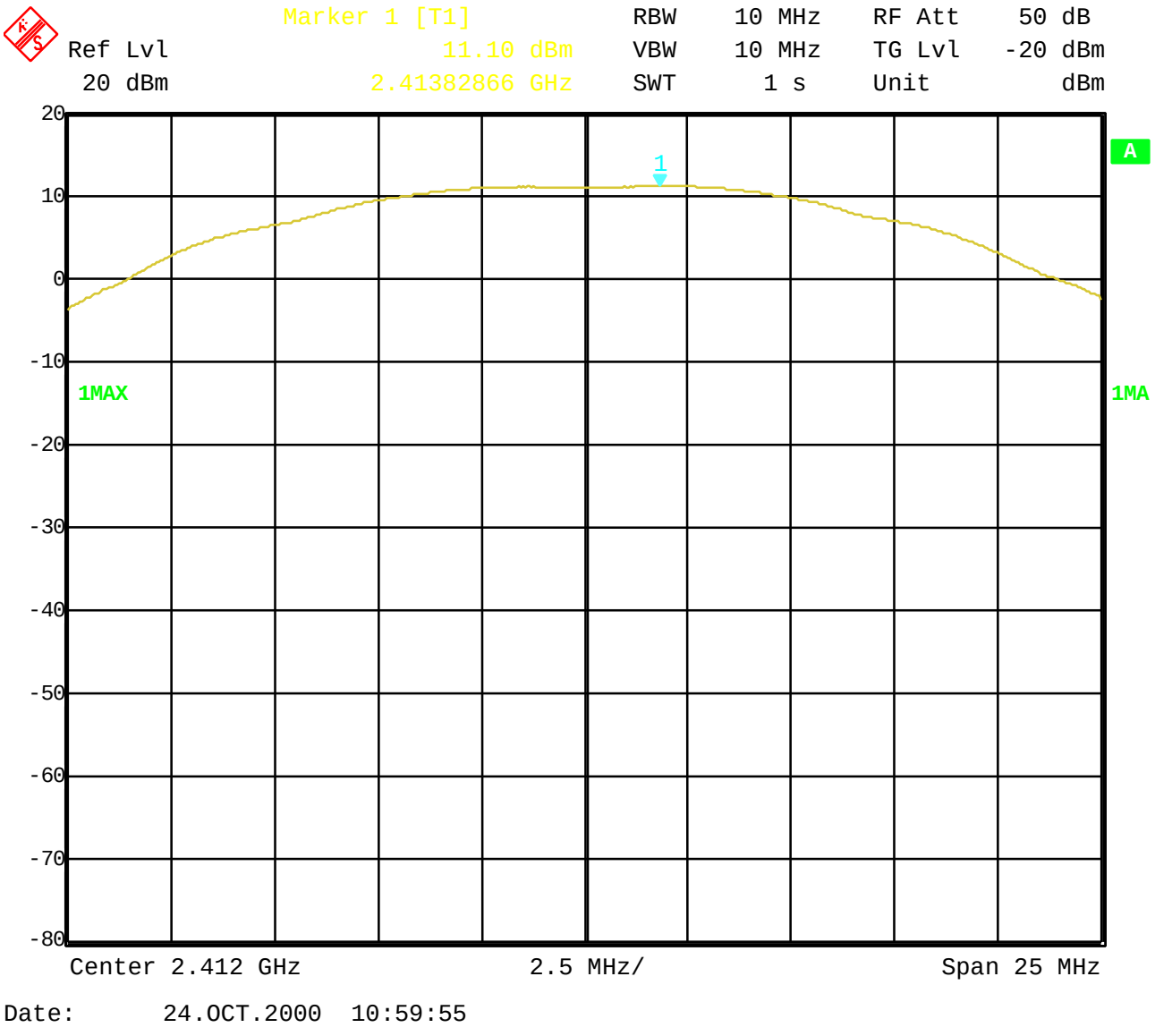
**LIMIT** **SUBCLAUSE § 15.247 (b) (1)**

| Frequency range | RF power output |
|---|---|
| 2400-2483.5 MHz / 5725 – 5850 MHz | 30 dBm |

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

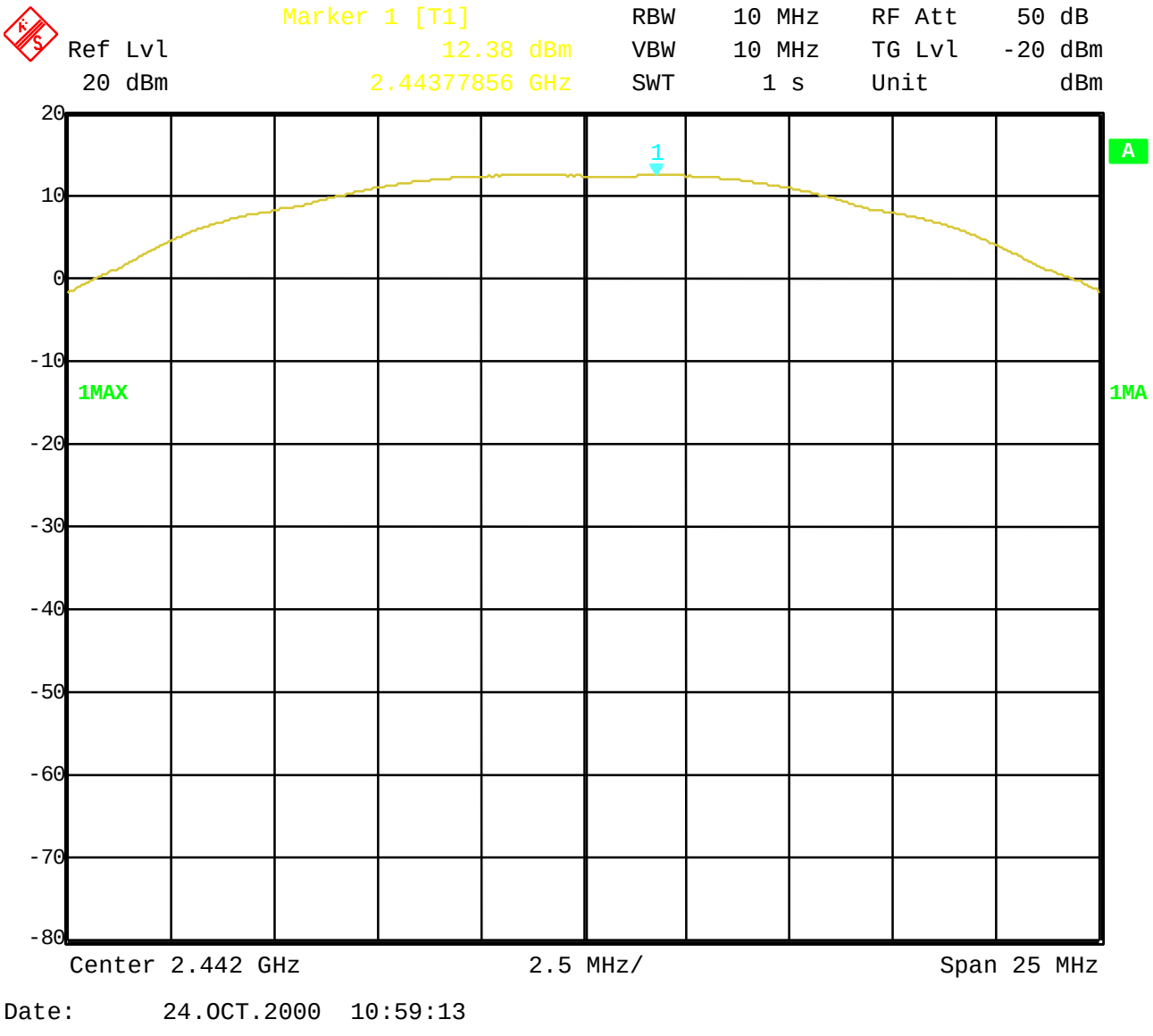
**MAXIMUM PEAK OUTPUT POWER (CONDUCTED)** **SUBCLAUSE § 15.247 (b) (1)**
**2412 MHz**




**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

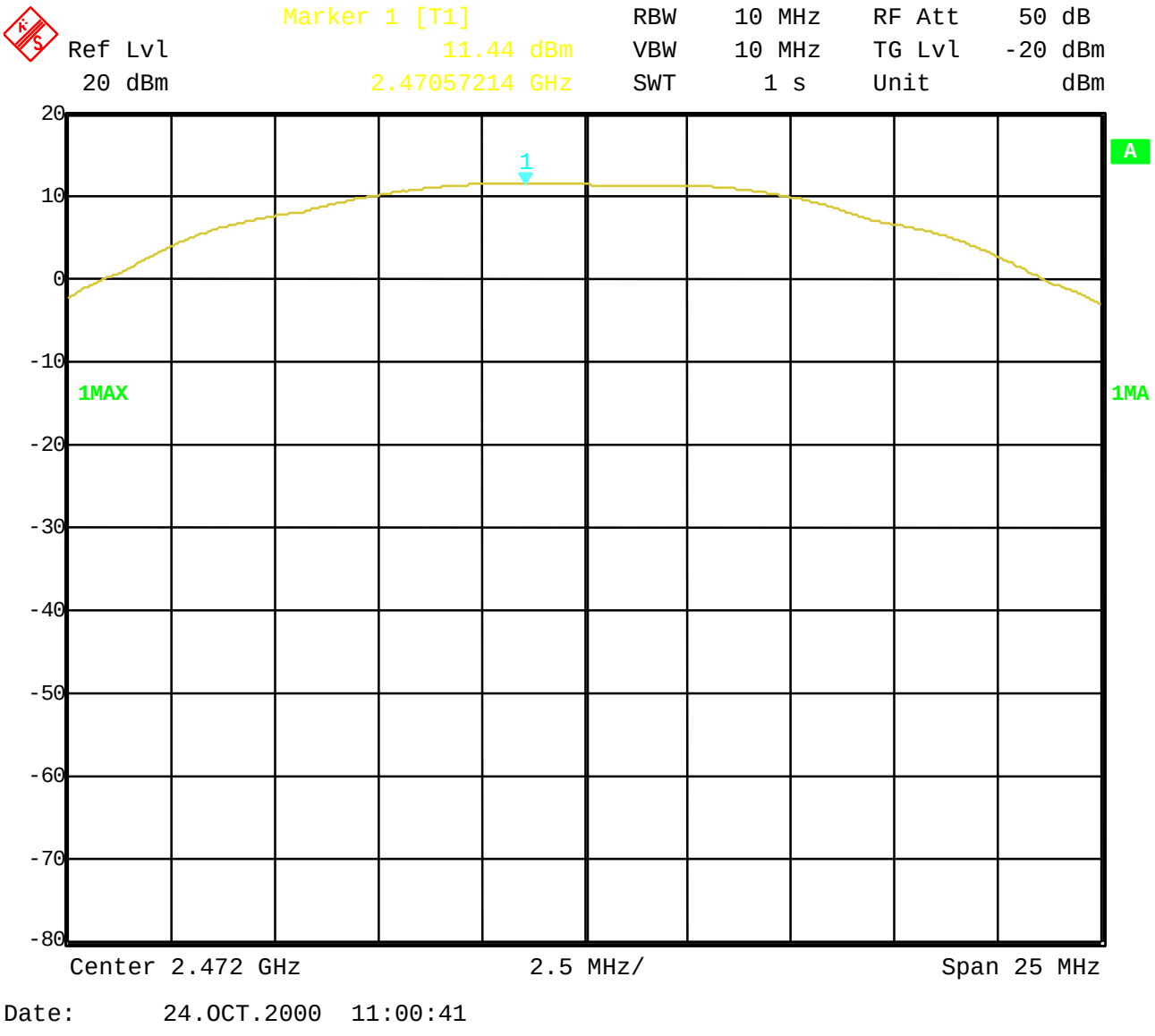
**MAXIMUM PEAK OUTPUT POWER (CONDUCTED)** **SUBCLAUSE § 15.247 (b) (1)**
**2442 MHz**




**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 ℃**
**Relative humidity : 51%**

**MAXIMUM PEAK OUTPUT POWER (CONDUCTED)** **SUBCLAUSE § 15.247 (b) (1)**
**2472 MHz**




**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**MAXIMUM PEAK OUTPUT POWER (RADIATED)** **SUBCLAUSE § 15.247 (b) (1)**

**The maximum output was measured in vertikal polarisation.**
**Emissions in horizontal polarisation were up to 13 dB lower.**

| TEST CONDITIONS | | MAXIMUM PEAK OUTPUT POWER (W) | | |
|---|---|---|---|---|
| Frequency (MHz) | | 2412 | 2442 | 2472 |
| $T_{nom}$( 20 ) °C | $V_{nom}$( 230)V | Peak 7.6 dBm<br>AV: 5.3dBm | Peak 9.9 dBm<br>AV: 6.0dBm | Peak 7.7 dBm<br>AV: 5.0 dBm |
| | | | | |
| Measurement uncertainty | | ±3dB | | |

**Settings: RBW/VBW 10 MHz**

**LIMIT** **SUBCLAUSE § 15.247 (b) (1)**

| Frequency range | RF power output |
|---|---|
| 2400-2483.5 MHz / 5725 – 5850 MHz | 1.0 Watt |

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**EMISSION LIMITATIONS (Transmitter) SUBCLAUSE § 15.247 (c) (1)**

**conducted (radiated emissions in restricted bands see next table)**
**2412 MHz**

| SPURIOUS LIMITATIONS | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **f (MHz)** | | **amplitude of emission (dBm)** | **limit max. allowed emmision** | | **results** |
| **2412** | **cond.** | **2.97** | **30.0 dBm** | | **Operating frequency** |
| **2039.6** | **cond.** | **Peak:-50.5 AV: -54.0** | **-20 dBc** | | **complies** |
| **4601.1** | **cond.** | **Peak:-57.0 AV: -60.8** | **-20 dBc** | **restr. band** | **complies** |
| **7236.0** | **cond.** | **Peak:-56.4 AV: -59.1** | **-20 dBc** | | **complies** |
| **8174.2** | **cond.** | **Peak:-58.2 AV: -62.1** | **-20 dBc** | **restr. band** | **complies** |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| **Measurement uncertainty** | | **± 3dB** | | | |

**The output power of the fundamental was measured with 100 kHz RBW for this for this part only.**
The conducted output is calculated from a measurement in dBµV by –107 dB.

**LIMITS SUBCLAUSE § 15.247 (c)**

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

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**
**EMISSION LIMITATIONS (Transmitter) SUBCLAUSE § 15.247 (c) (2)**

**radiated (Antenna vertikal polarisation, horiz. emissions were up to 13 dB lower)**

**2412 MHz**

| SPURIOUS LIMITATIONS | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **f (MHz)** | | **amplitude of emission (dBµV/m)** | **limit max. allowed emmision** | | **results** |
| **30.05** | **rad.** | **QP:34.6** | **40.0 dBµV/m** | | **complies** |
| **250.02** | **rad.** | **QP:33.5** | **46.0 dBµV/m** | **restr. band** | **complies** |
| **352.05** | **rad.** | **QP:36.8** | **46.0 dBµV/m** | | **complies** |
| **500.0** | **rad.** | **QP:37.8** | **46.0 dBµV/m** | | **complies** |
| **2037.98** | **rad.** | **Peak:53.5 AV: 49.8** | **54.0 dBµV/m** | | **complies** |
| **2412.0** | **rad.** | **Peak:105.1 AV:102.8** | | **operating frequency** | **complies** |
| **4075.8** | **rad.** | **Peak:40.4 AV: 37.4** | **54.0 dBµV/m** | **restr. band** | **complies** |
| | | | | | |
| **no** | **radiated** | **spurs** | **above** | **4075.8 MHz** | |
| | | | | | |
| | | | | | |
| | | | | | |
| **Measurement uncertainty** | | **± 3dB** | | | |

Measurement were performed up to 1 GHz with a CISPR quasi peak adapter and 100/120 kHz BW. Measurements above 1 GHz were performed with RBW/VBW 1 MHz in Peak and Average.

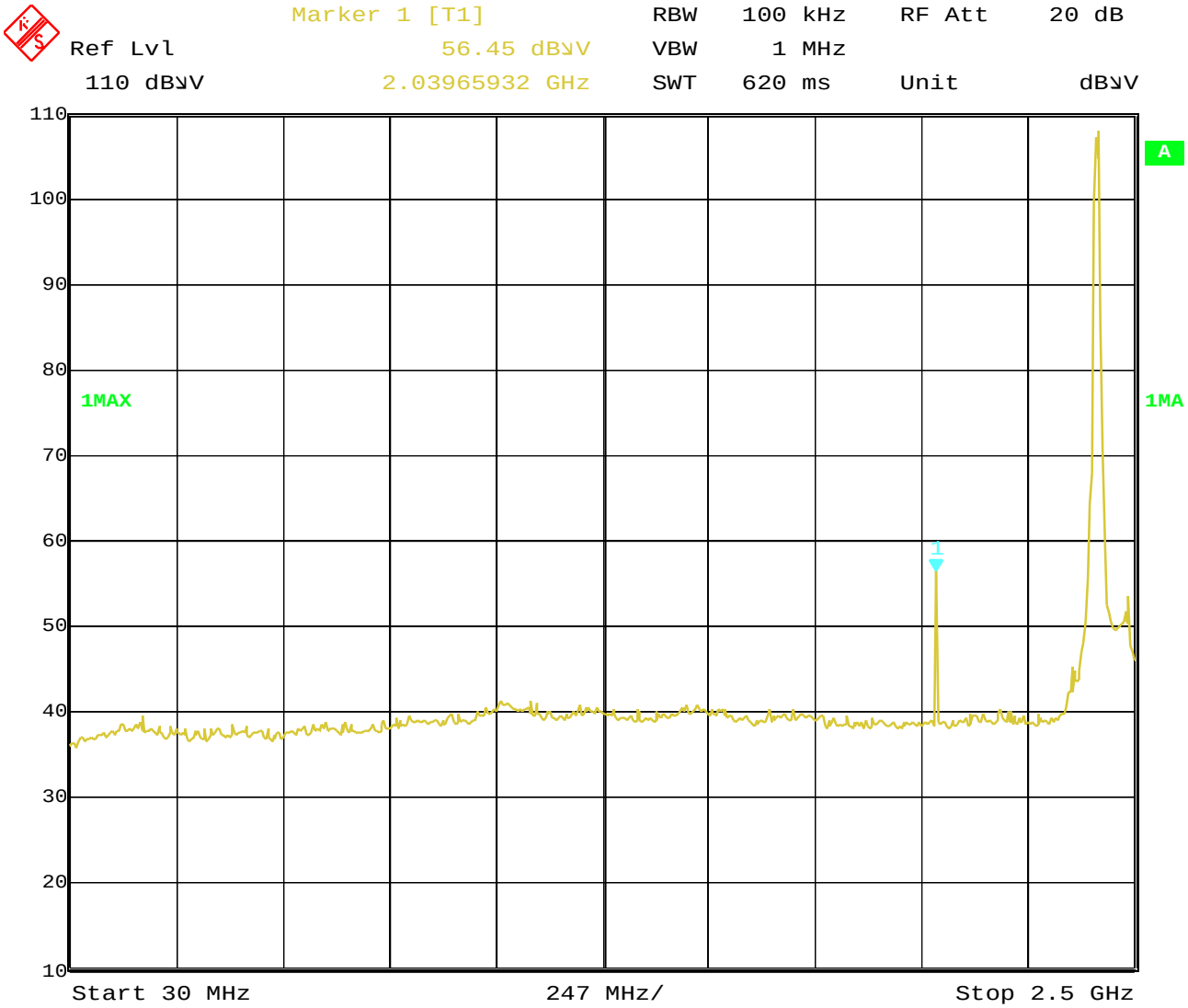
**LIMITS SUBCLAUSE § 15.247 (c)**

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

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 ℃**
**Relative humidity : 51%**

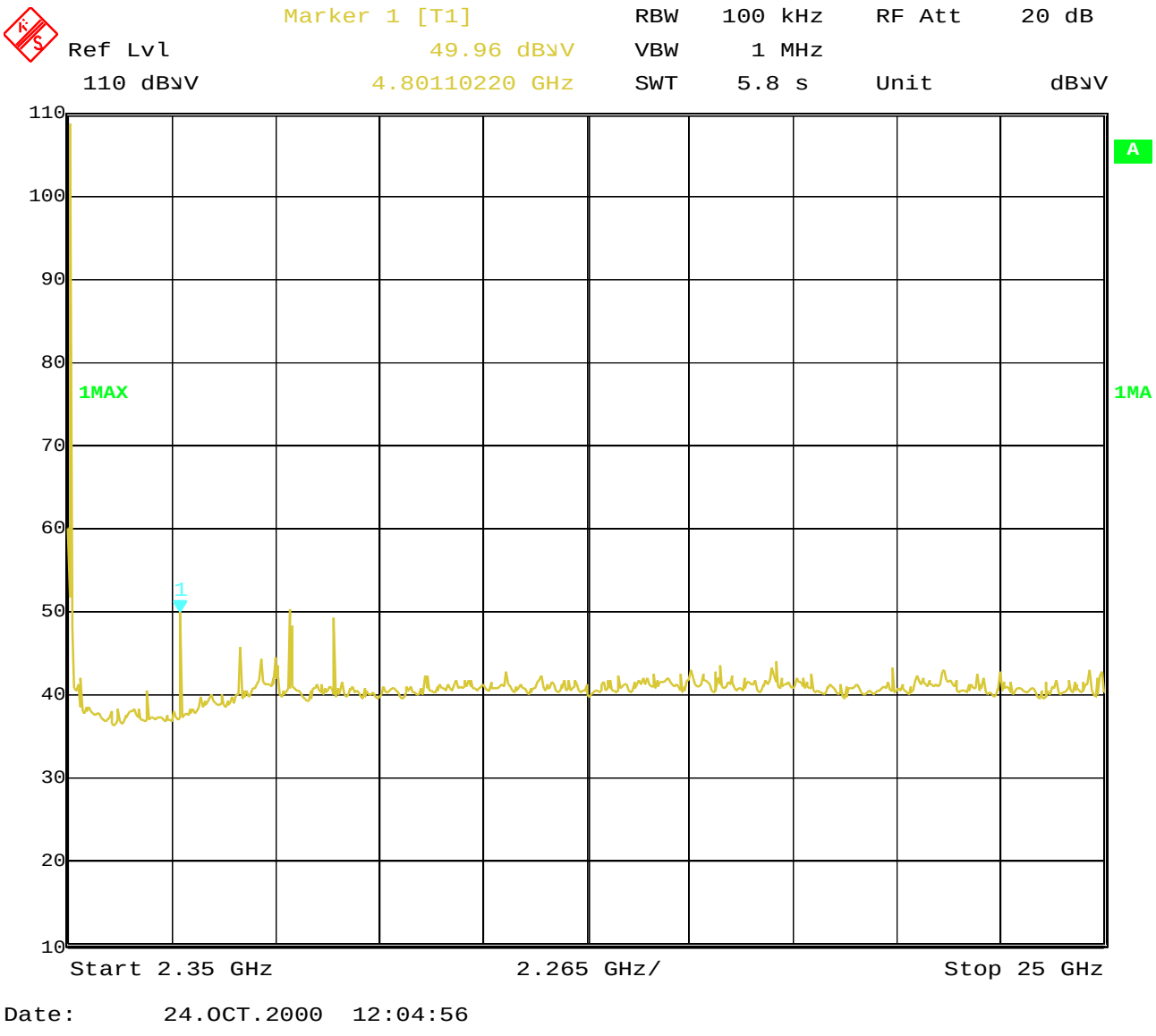
**2412 MHz conducted up to 2500 MHz**




**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 ℃**
**Relative humidity : 51%**

**2412 MHz conducted up to 25 GHz**

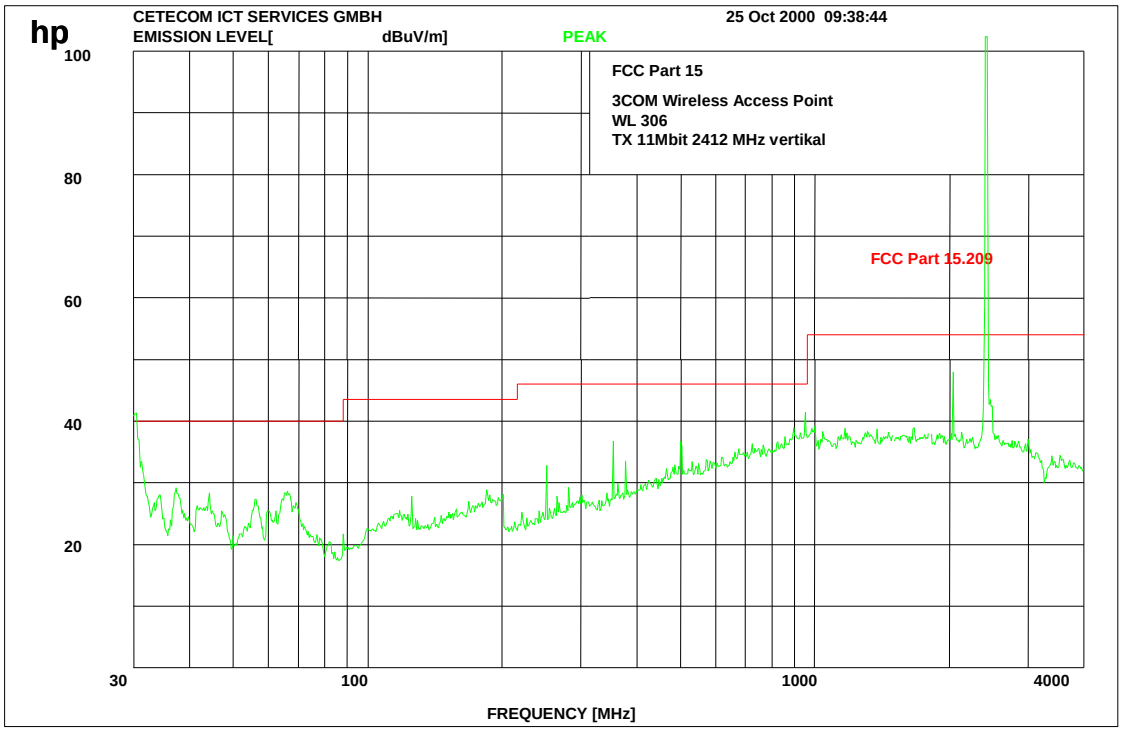



**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 ℃**
**Relative humidity : 51%**

**2412 MHz radiated up to 4000 MHz**

The higher line is the spurious limit FCC 15.209 according to antenna gain and semi-anechoic chamber



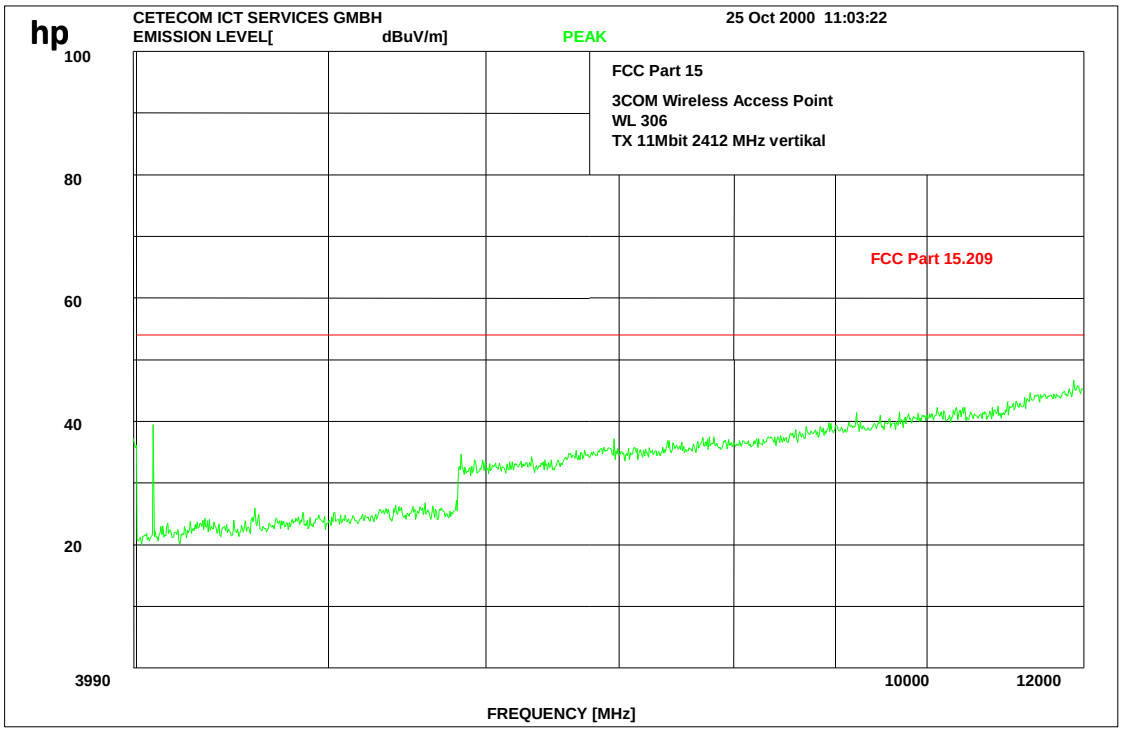

This is only a scan:
Measurements were performed with a CISPR quasi peak adapter and 100/120 kHz BW up to 1 GHz, higher frequencies were measured with 1MHz RBW/VBW in peak and average.

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**2412 MHz radiated up to 12000 MHz**

The higher line is the spurious limit FCC 15.209 according to antenna gain and semi-anechoic chamber




This is only a scan.
Measurements were performed with 1MHz RBW/VBW in peak and average

**LIMITS** **SUBCLAUSE § 15.247 (c)**

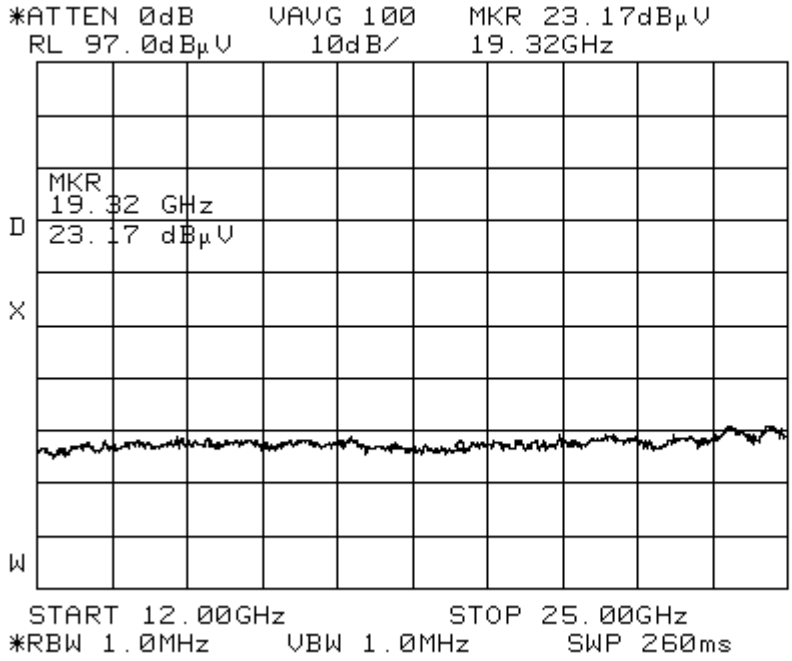
**In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).**

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

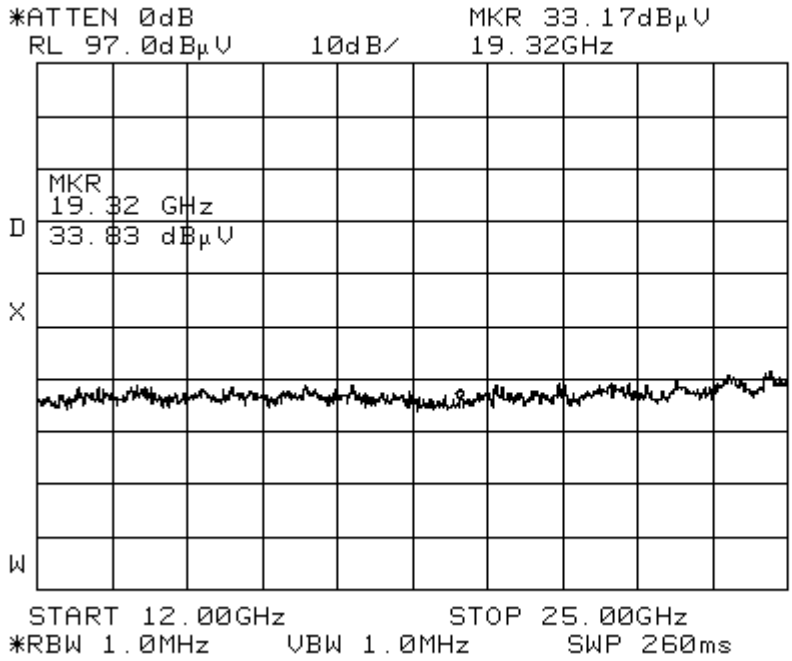
**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**2412 MHz up to 25GHz radiated** (This plot is valid for all three channels, there were no peaks found)

Average




Peak




**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**EMISSION LIMITATIONS (Transmitter) SUBCLAUSE § 15.247 (c) (1)**

**conducted (radiated emissions in restricted bands see next table)**
**2442 MHz**

| SPURIOUS LIMITATIONS | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **f (MHz)** | | **amplitude of emission (dBm)** | **limit max. allowed emmision** | | **results** |
| **2442.0** | **cond.** | **2.90** | **30.0 dBm** | | **Operating frequency** |
| **2068.5** | **cond.** | **Peak:-48.5 AV: -52.0** | **-20 dBc** | | **complies** |
| **4846.5** | **cond.** | **Peak:-49.6 AV: -52.8** | **-20 dBc** | **restr. band** | **complies** |
| **6208.2** | **cond.** | **Peak:-60.1 AV: -62.6** | **-20 dBc** | | **complies** |
| **7297.6** | **cond.** | **Peak:-54.9 AV: -57.1** | **-20 dBc** | **restr. band** | **complies** |
| **8250.8** | **cond.** | **Peak:-57.9 AV: -60.2** | **-20 dBc** | | **complies** |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| **Measurement uncertainty** | | | **± 3dB** | | |

**The output power of the fundamental was measured with 100 kHz RBW for this for this part only.**
The conducted output is calculated from a measurement in dBµV by –107 dB.

**LIMITS SUBCLAUSE § 15.247 (c)**

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

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**EMISSION LIMITATIONS (Transmitter) SUBCLAUSE § 15.247 (c) (2)**

**radiated (Antenna vertikal polarisation, horiz. emissions were up to 13 dB lower)**

**2442 MHz**

| SPURIOUS LIMITATIONS | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **f (MHz)** | | **amplitude of emission (dBµV/m)** | **limit max. allowed emmision** | | **results** |
| **30.05** | **rad.** | **QP:34.6** | **40.0 dBµV/m** | | **complies** |
| **250.02** | **rad.** | **QP:33.5** | **46.0 dBµV/m** | **restr. band** | **complies** |
| **352.05** | **rad.** | **QP:36.8** | **46.0 dBµV/m** | | **complies** |
| **500.0** | **rad.** | **QP:37.8** | **46.0 dBµV/m** | | **complies** |
| **1495.9** | **rad.** | **Peak:48.6 AV: 42.3** | **54.0 dBµV/m** | **restr. band** | **complies** |
| **2067.9** | **rad.** | **Peak:53.5 AV:50.1** | **54.0 dBµV/m** | | **complies** |
| **2442.0** | **rad.** | **Peak:107.4 AV: 103.5** | | **operating frequency** | **complies** |
| **4135.8** | **rad.** | **Peak:42.4 AV: 39.9** | **54.0 dBµV/m** | **restr. band** | **complies** |
| **6204.0** | **rad.** | **Peak:37.9 AV: 34.6** | **54.0 dBµV/m** | | **complies** |
| **no** | **radiated** | **spurs** | **above** | **6204 MHz** | |
| | | | | | |
| | | | | | |
| **Measurement uncertainty** | | **± 3dB** | | | |

Measurement were performed up to 1 GHz with a CISPR quasi peak adapter and 100/120 kHz BW.
Measurements above 1 GHz were performed with RBW/VBW 1 MHz in Peak and Average.

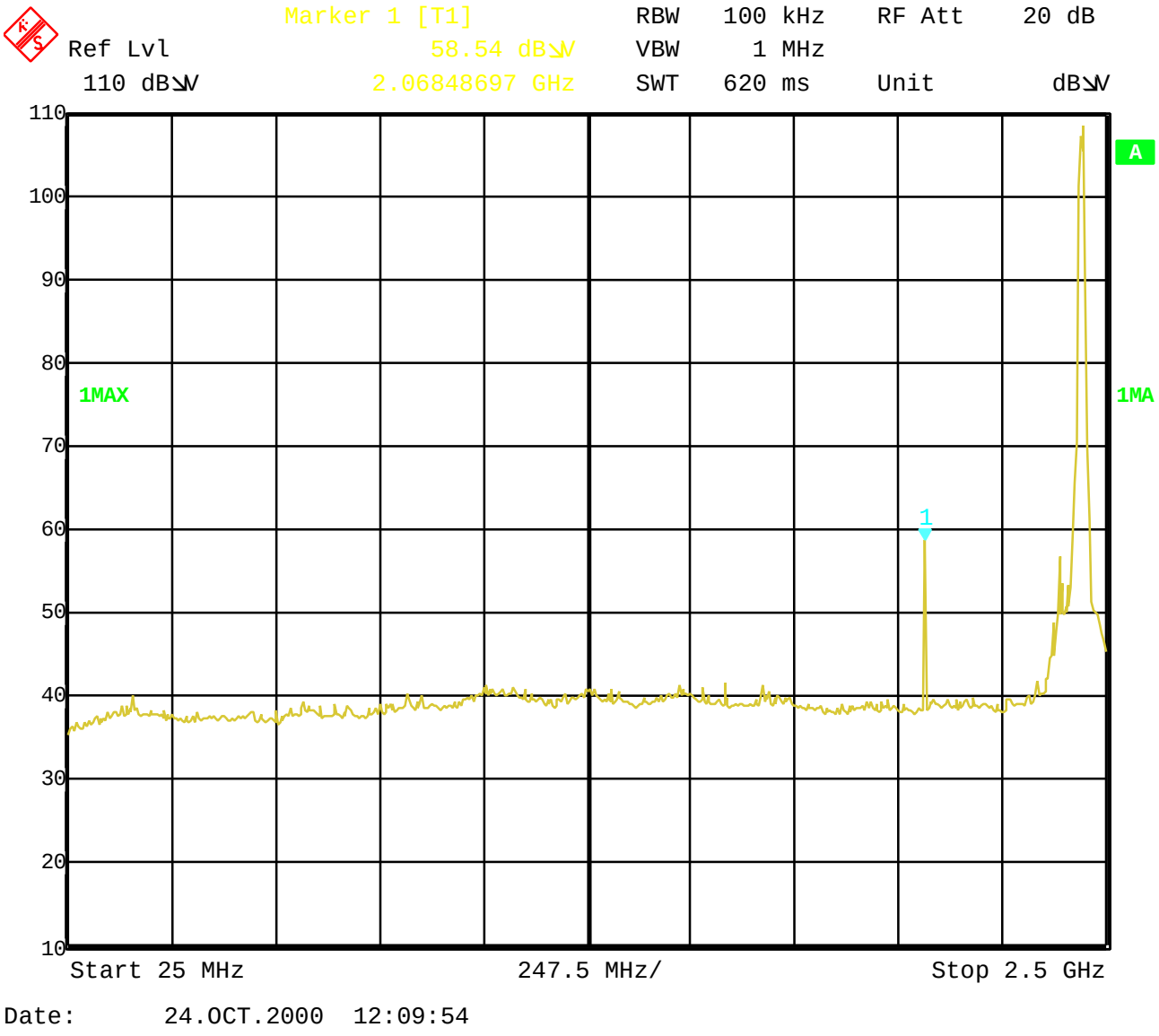
**LIMITS SUBCLAUSE § 15.247 (c)**

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

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

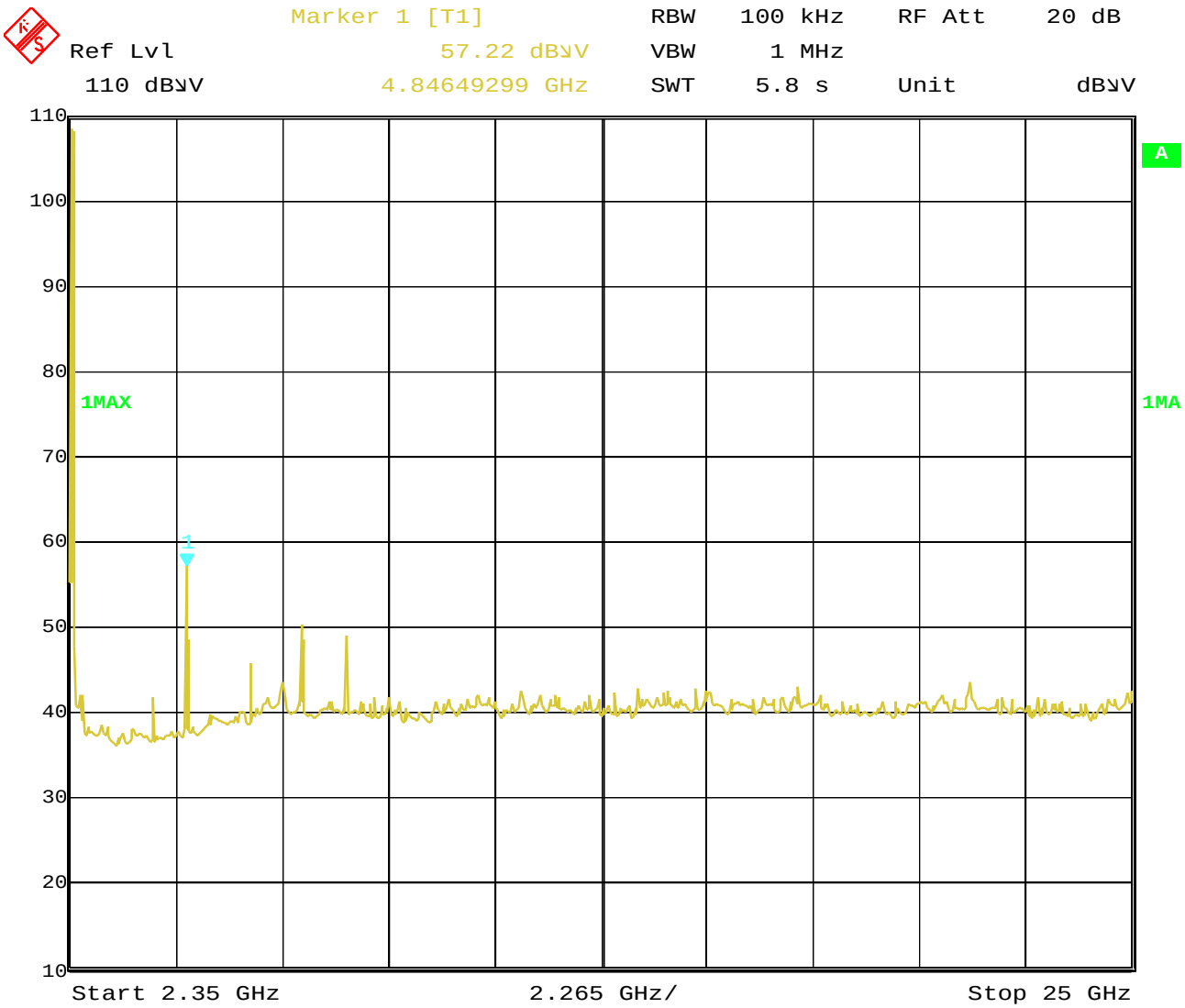
**2442 MHz conducted up to 2500 MHz**




**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 ℃**
**Relative humidity : 51%**

**2442 MHz conducted up to 25 GHz**



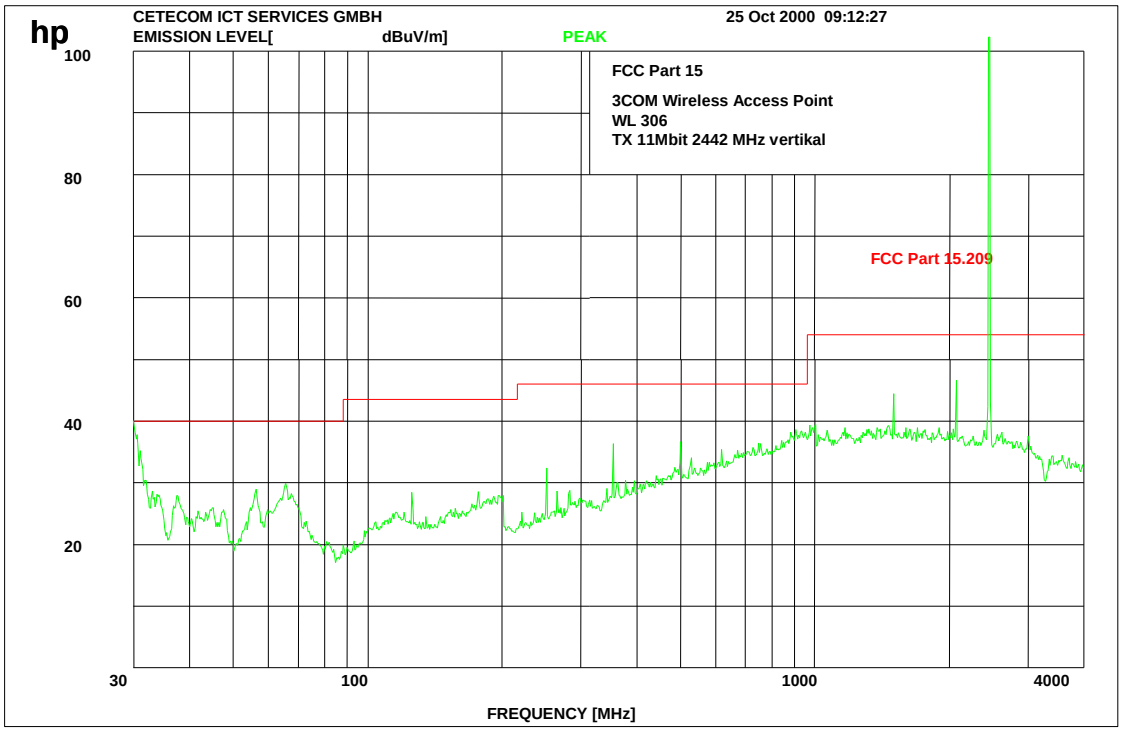

Date: 24.OCT.2000 12:10:26

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**2442 MHz radiated up to 4000 MHz**

The higher line is the spurious limit FCC 15.209 according to antenna gain and semi-anechoic chamber



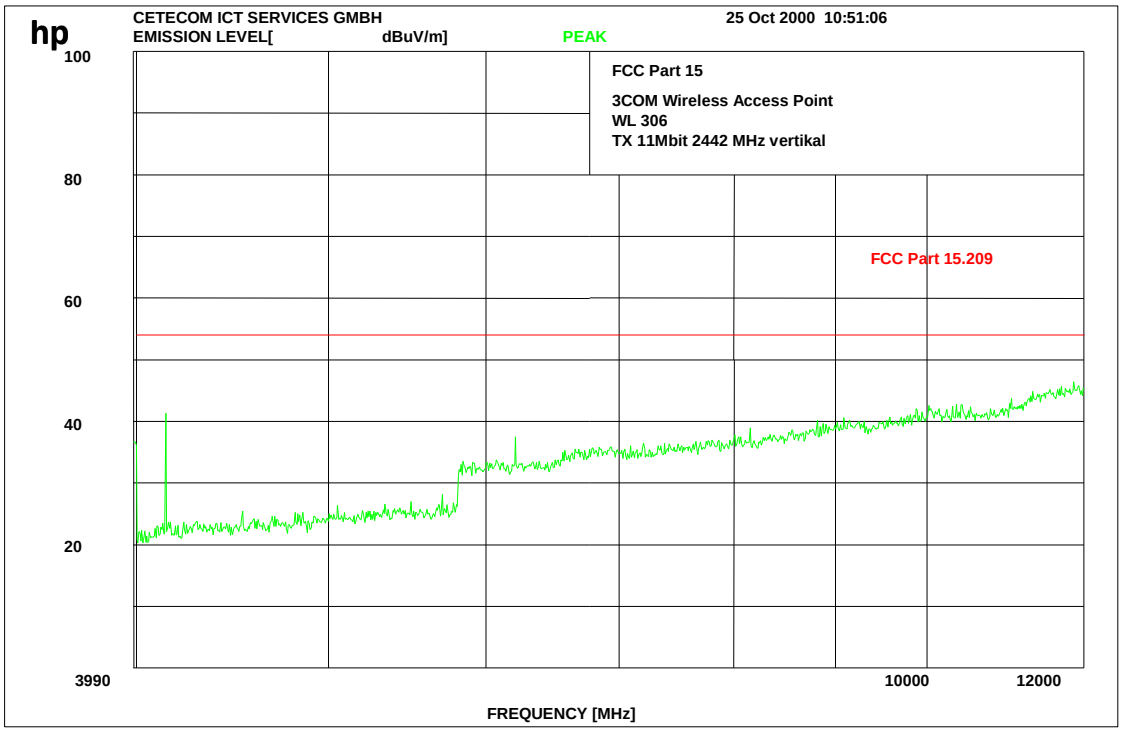

This is only a scan:
Measurements were performed with a CISPR quasi peak adapter and 100/120 kHz BW up to 1 GHz, higher frequencies were measured with 1MHz RBW/VBW in peak and average.

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**2442 MHz radiated up to 12000 MHz**

The higher line is the spurious limit FCC 15.209 according to antenna gain and semi-anechoic chamber




This is only a scan.
Measurements were performed with 1MHz RBW/VBW in peak and average

**LIMITS** **SUBCLAUSE § 15.247 (c)**

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

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**EMISSION LIMITATIONS (Transmitter) SUBCLAUSE § 15.247 (c) (1)**

**conducted (radiated emissions in restricted bands see next table)**

**2472 MHz**

| SPURIOUS LIMITATIONS | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **f (MHz)** | | **amplitude of emission (dBm)** | **limit max. allowed emmision** | | **results** |
| **2472** | **cond.** | **3.2** | **30.0 dBm** | | **Operating frequency** |
| **2098.2** | **cond.** | **Peak:-46.4 AV:-49.2** | **-20 dBc** | | **complies** |
| **4165.6** | **cond.** | **Peak:-62.8 AV: -65.4** | **-20 dBc** | **restr. band** | **complies** |
| **4299.0** | **cond.** | **Peak:-60.9 AV: -64.3** | **-20 dBc** | **restr. band** | **complies** |
| **4937.3** | **cond.** | **Peak:-48.0 AV: -52.1** | **-20 dBc** | **restr. band** | **complies** |
| **7388.4** | **cond.** | **Peak:-58.1 AV:-61.2** | **-20 dBc** | **restr. band** | **complies** |
| | | | | | |
| | | | | | |
| **Measurement uncertainty** | | | **± 3dB** | | |

The output power of the fundamental was measured with 100 kHz RBW for this for this part only. The conducted output is calculated from a measurement in dBµV by –107 dB.

**LIMITS SUBCLAUSE § 15.247 (c)**

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

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**EMISSION LIMITATIONS (Transmitter) SUBCLAUSE § 15.247 (c) (2)**

**radiated (Antenna vertikal polarisation, horiz. emissions were up to 20dB lower)**

**2472 MHz**

| SPURIOUS LIMITATIONS | | | | | |
|---|---|---|---|---|---|
| **f (MHz)** | | **amplitude of emission (dBµV/m)** | **limit max. allowed emmision** | | **results** |
| **129.8** | **rad.** | **QP:34.8** | **43.5 dBµV/m** | **restr. band** | **complies** |
| **194.9** | **rad.** | **QP:37.8** | **43.5 dBµV/m** | | **complies** |
| **259.9** | **rad.** | **QP:39.1** | **46.0 dBµV/m** | **restr. band** | **complies** |
| **389.9** | **rad.** | **QP:36.4** | **46.0 dBµV/m** | | **complies** |
| **496.2** | **rad.** | **QP:41.9** | **46.0 dBµV/m** | | **complies** |
| **951.5** | **rad.** | **QP:37.3** | **46.0 dBµV/m** | | **complies** |
| **1495.2** | **rad.** | **Peak:45.5 AV:36.0** | **54.0 dBµV/m** | **restr. band** | **complies** |
| **2098.9** | **rad.** | **Peak:53.2 AV:49.4** | **54.0 dBµV/m** | | **complies** |
| **2472.0** | **rad.** | **Peak:105.2 AV:102.5** | | **operating frequency** | **complies** |
| **4195.9** | **rad.** | **Peak:39.2 AV: 37.4** | **54.0 dBµV/m** | **restr. band** | **complies** |
| **6294.0** | **rad.** | **Peak:44.7 AV:42.9** | **54.0 dBµV/m** | | **complies** |
| **no** | **radiated** | **spurs** | **above** | **6294 MHz** | |
| **Measurement uncertainty** | | | **± 3dB** | | |

Measurement were performed up to 1 GHz with a CISPR quasi peak adapter and 100/120 kHz BW.
Measurements above 1 GHz were performed with RBW/VBW 1 MHz in Peak and Average.

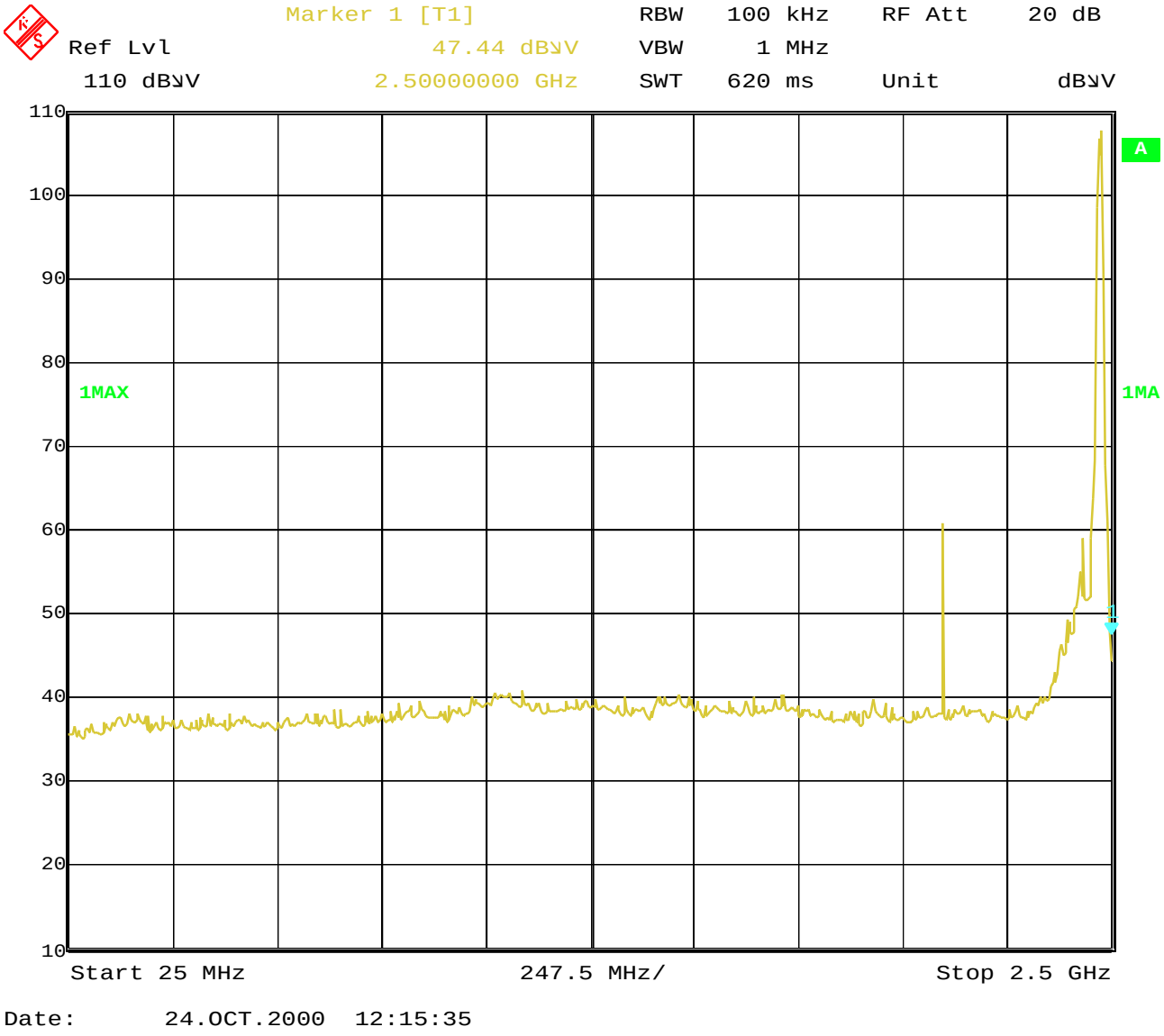
**LIMITS SUBCLAUSE § 15.247 (c)**

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

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 ℃**
**Relative humidity : 51%**

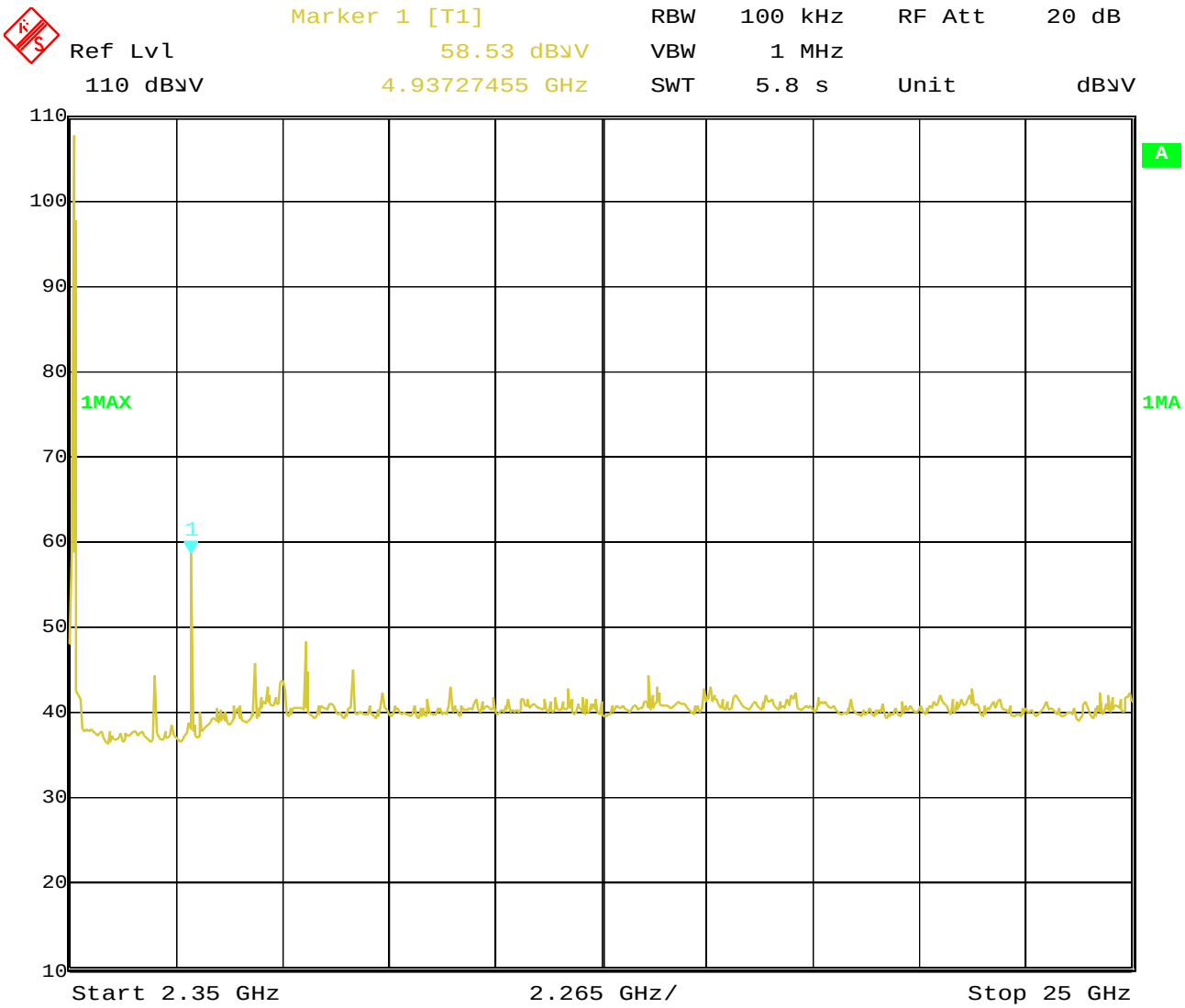
**2472 MHz conducted up to 2500 MHz**




**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 ℃**
**Relative humidity : 51%**

**2472 MHz conducted up to 25 GHz**

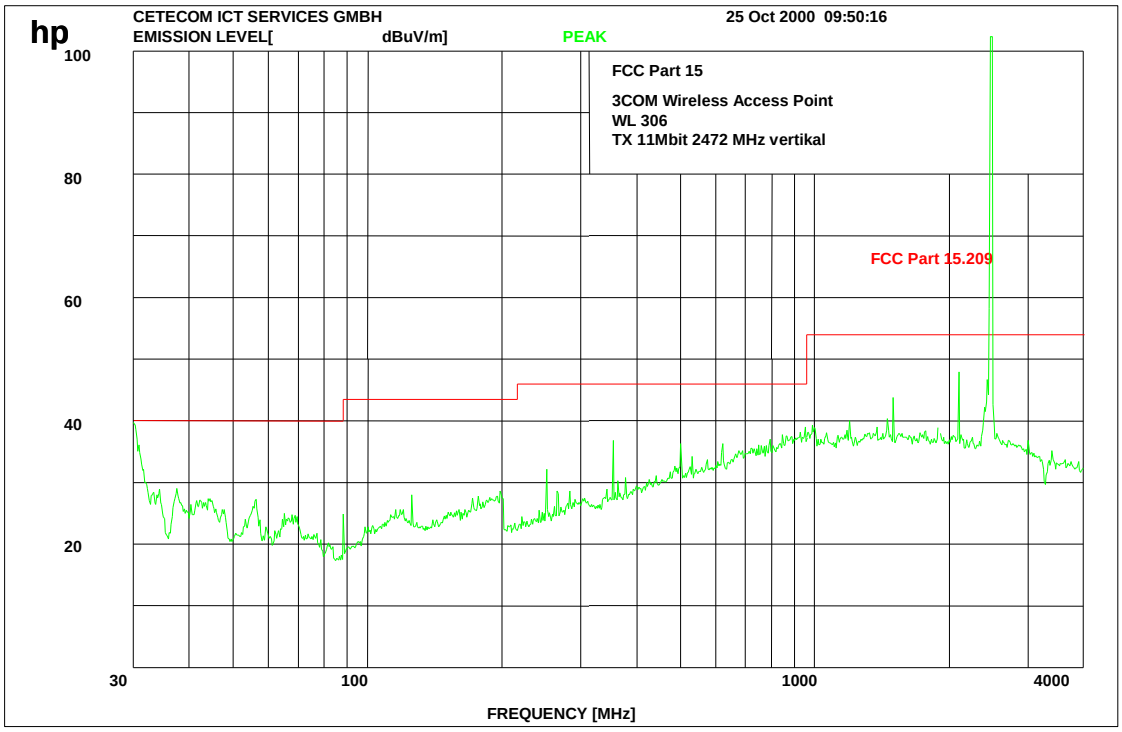



**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**2472 MHz radiated up to 4000 MHz**

The higher line is the spurious limit FCC 15.209 according to antenna gain and semi-anechoic chamber



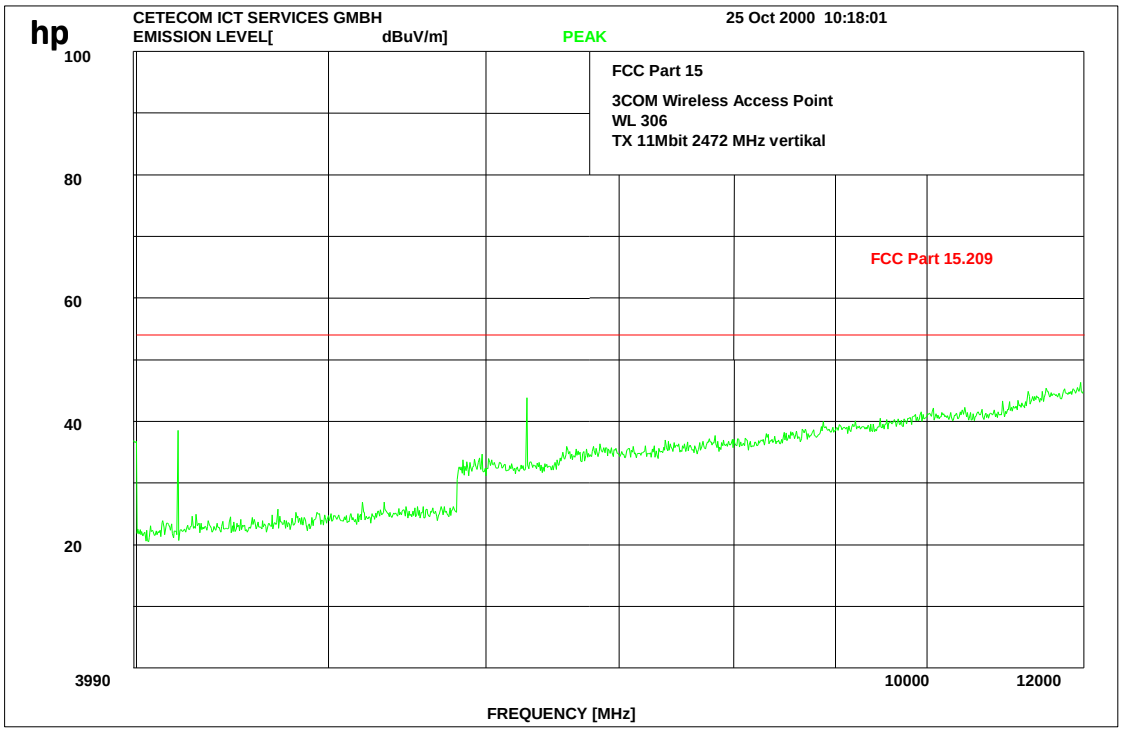

This is only a scan:
Measurements were performed with a CISPR quasi peak adapter and 100/120 kHz BW up to 1 GHz, higher frequencies were measured with 1MHz RBW/VBW in peak and average.

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**2472 MHz radiated up to 12000 MHz**

The higher line is the spurious limit FCC 15.209 according to antenna gain and semi-anechoic chamber




This is only a scan.
Measurements were performed with 1MHz RBW/VBW in peak and average

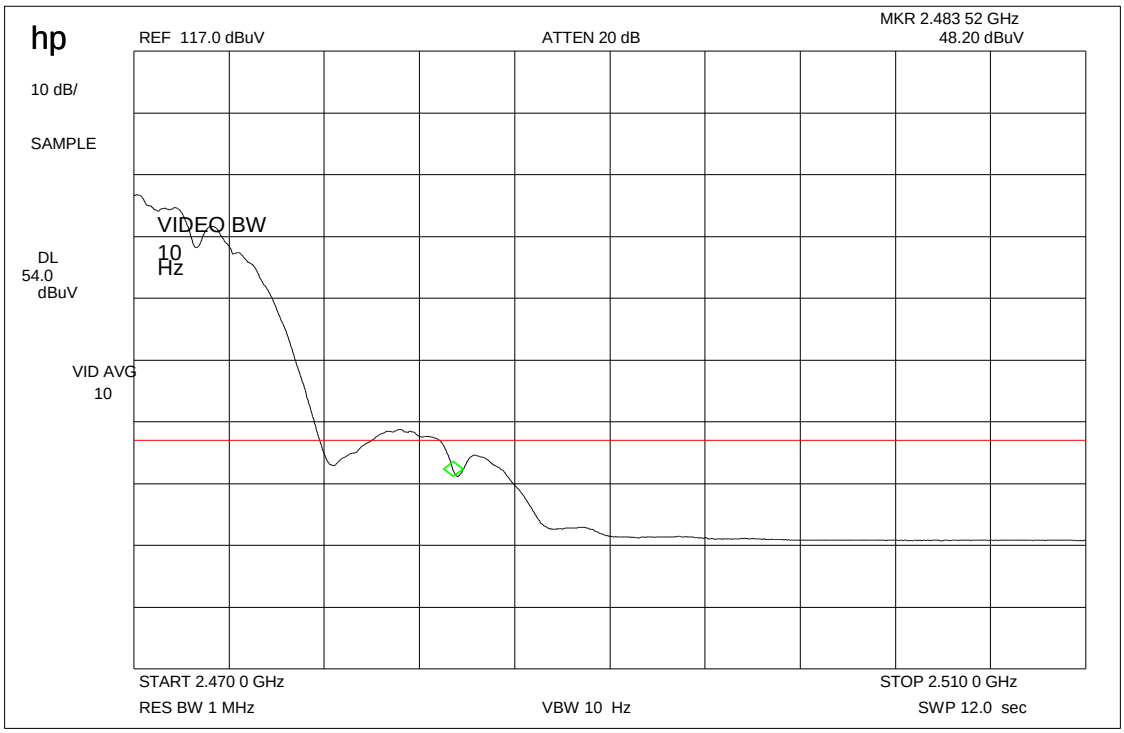
**LIMITS** **SUBCLAUSE § 15.247 (c)**

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

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**Spurious radiations in the restricted band 2483.5 to 2500 MHz**
**Average**




**LIMITS** **SUBCLAUSE § 15.247 (c)**

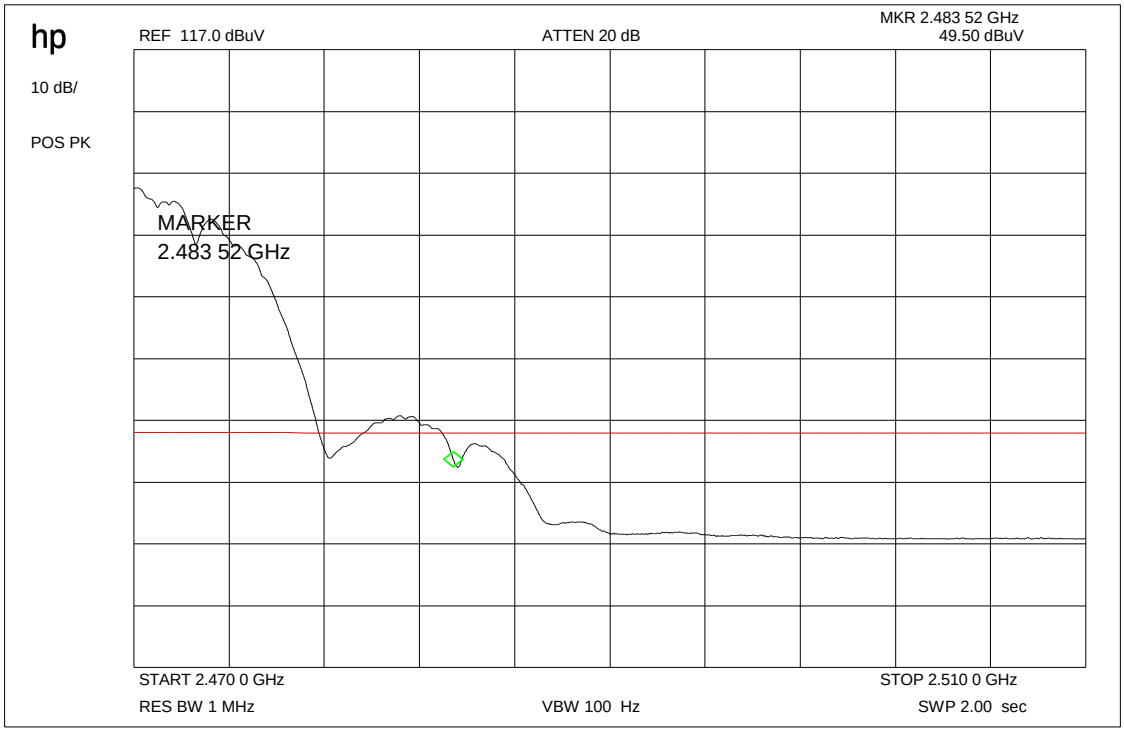
**In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).**

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**Spurious radiations in the restricted band 2483.5 to 2500 MHz**

**RBW 1MHz, VBW 10 Hz**




**LIMITS** **SUBCLAUSE § 15.247 (c)**

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

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**POWER SPECTRAL DENSITY** **SUBCLAUSE § 15.247 (d)**

| TEST CONDITIONS | | RF POWER LEVEL IN 3 kHz BW | | |
|---|---|---|---|---|
| Frequency (MHz) | | 2412 | 2442 | 2472 |
| $T_{nom}$( 23 ) °C | $V_{nom}$( 230 )V | -16.52dBm | -14.49 dBm | -14.87 dBm |
| Maximum deviation from output power under extreme test conditions (dBc) | | | | |
| Measurement uncertainty | | ±3dB | | |

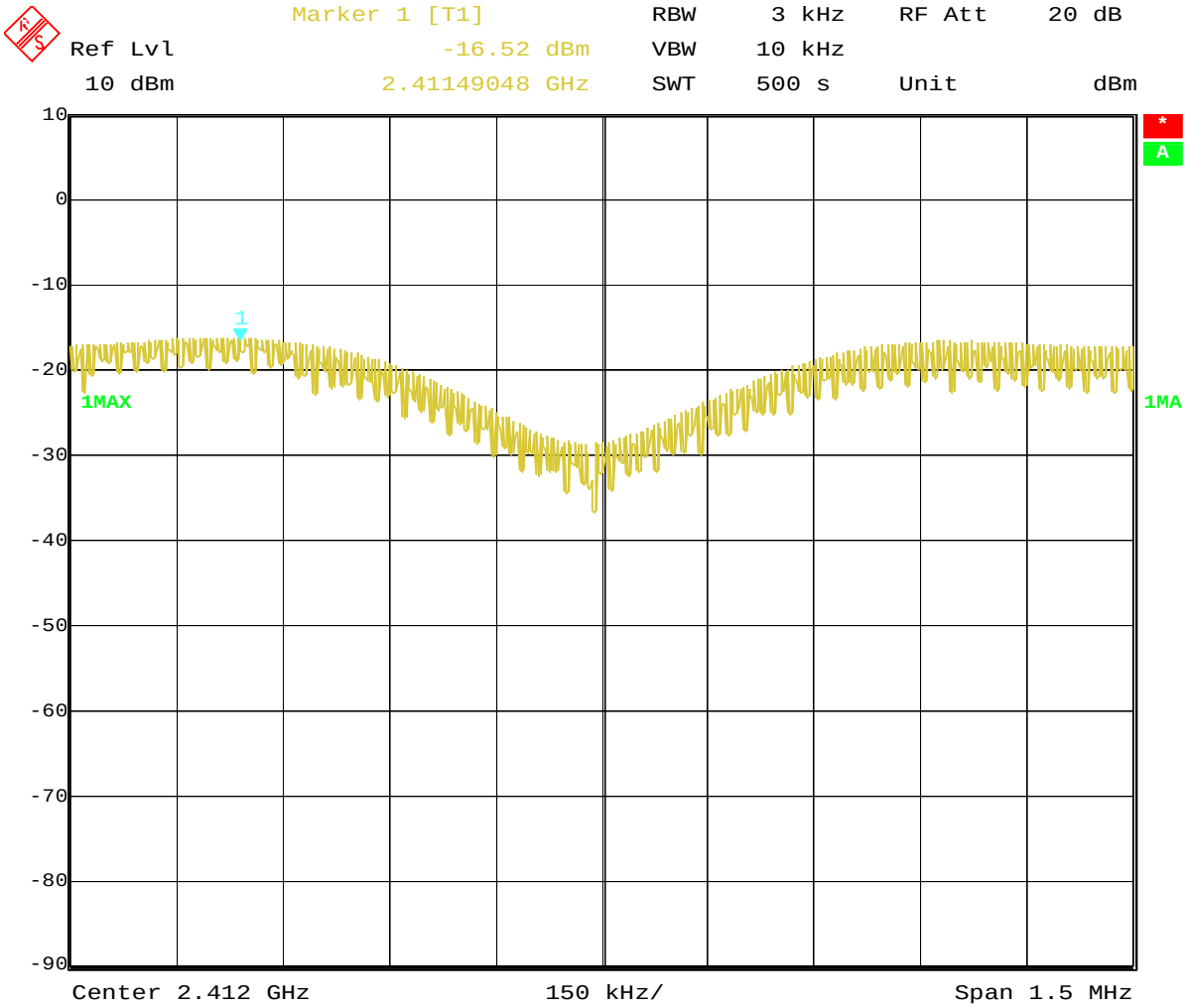
**The measurement was performed with RBW 3 kHz, VBW 10 kHz, Span 1.5 MHz, Sweep 500 sec.**

**LIMIT** **SUBCLAUSE §15.247(d)**

| |
|---|
| **The peak power spectral density shall not be greater than 8 dBm in any 3 kHz band** |

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**18-31,64**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**
**POWER SPECTRAL DENSITY** **SUBCLAUSE § 15.247 (d)**
**2412 MHz**



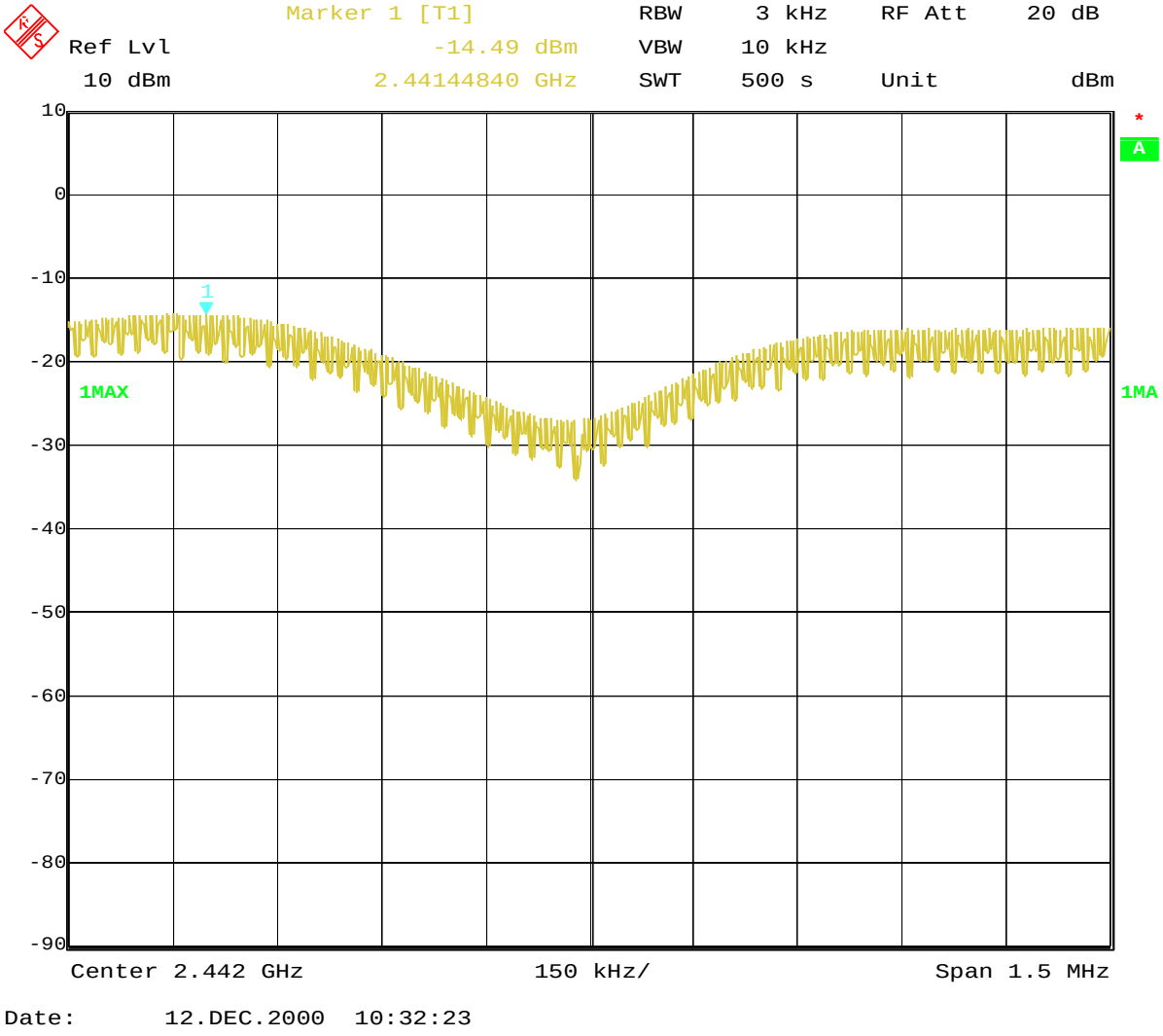

**LIMIT** **SUBCLAUSE §15.247(d)**

| |
|---|
| **The peak power spectral density shall not be greater than 8 dBm in any 3 kHz band** |

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**2442 MHz**

**POWER SPECTRAL DENSITY** **SUBCLAUSE § 15.247 (d)**




Date: 12.DEC.2000 10:32:23

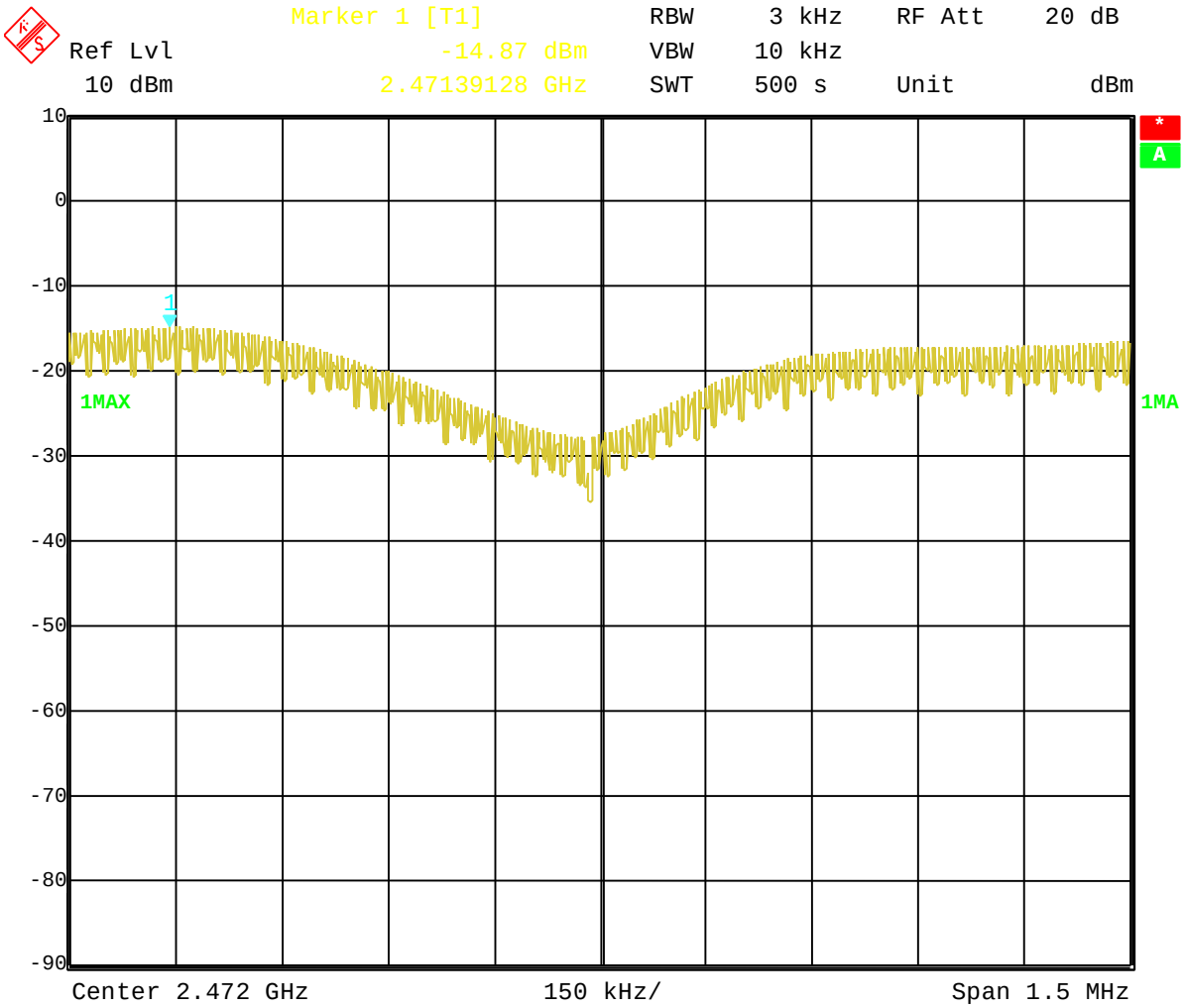
**LIMIT** **SUBCLAUSE §15.247(d)**

| |
|---|
| **The peak power spectral density shall not be greater than 8 dBm in any 3 kHz band** |

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**POWER SPECTRAL DENSITY** **SUBCLAUSE § 15.247 (d)**

**2472 MHz**




**LIMIT** **SUBCLAUSE §15.247(d)**

| |
|---|
| **The peak power spectral density shall not be greater than 8 dBm in any 3 kHz band** |

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**PROCESSING GAIN OF DSSS SYSTEMS SUBCLAUSE §15.247 (e)**

**The processing gain of this product was declared by the sole responsibility of 3COM Corporation.**

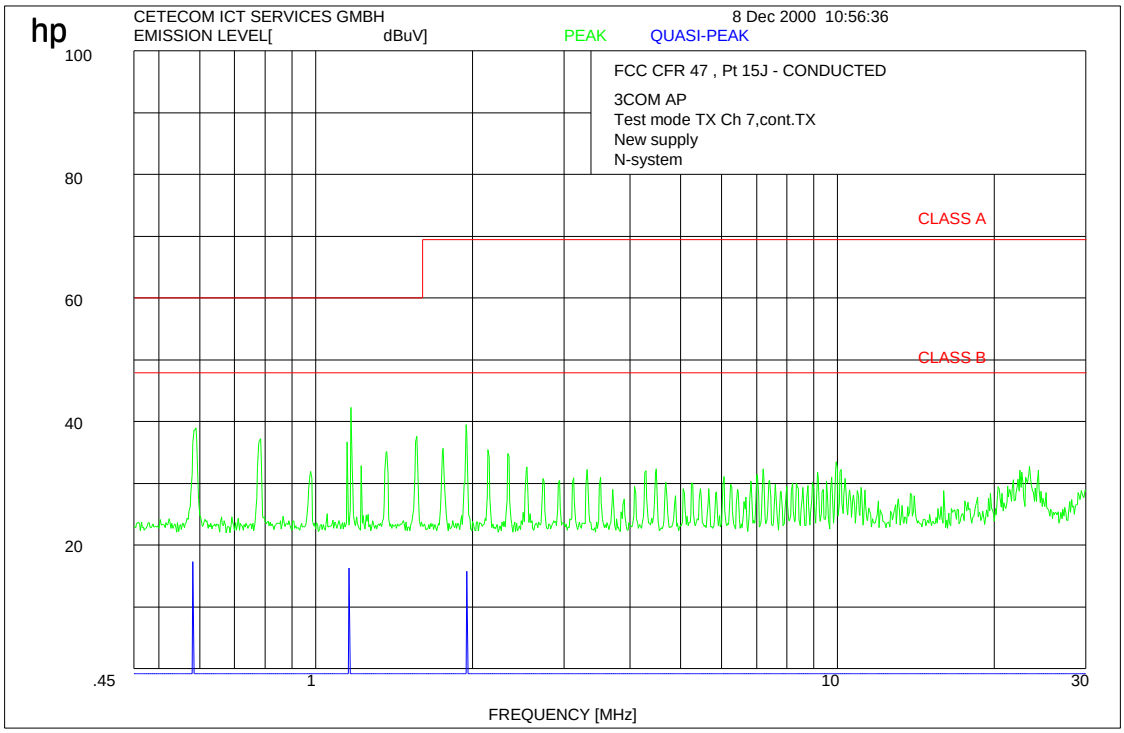
**The product „ 3COM Wireless LAN Access Point (Model WL-306), to which this declaration relates, exhibits a minimum processing gain of 11.4 dB**

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**17 - 24**

**Equipment under test : WL-306**
**Ambient temperature : 20 ℃**
**Relative humidity : 51%**

## CONDUCTED EMISSIONS FCC Rule 47 Part 15

**Neutral to ground**




**The test was performed with a CISPR quasi peak adapter.**
**All spurious were <<below limit.**

**Technical specification : 15.207 (Revised as of October 1, 1991 )**
**Limit**

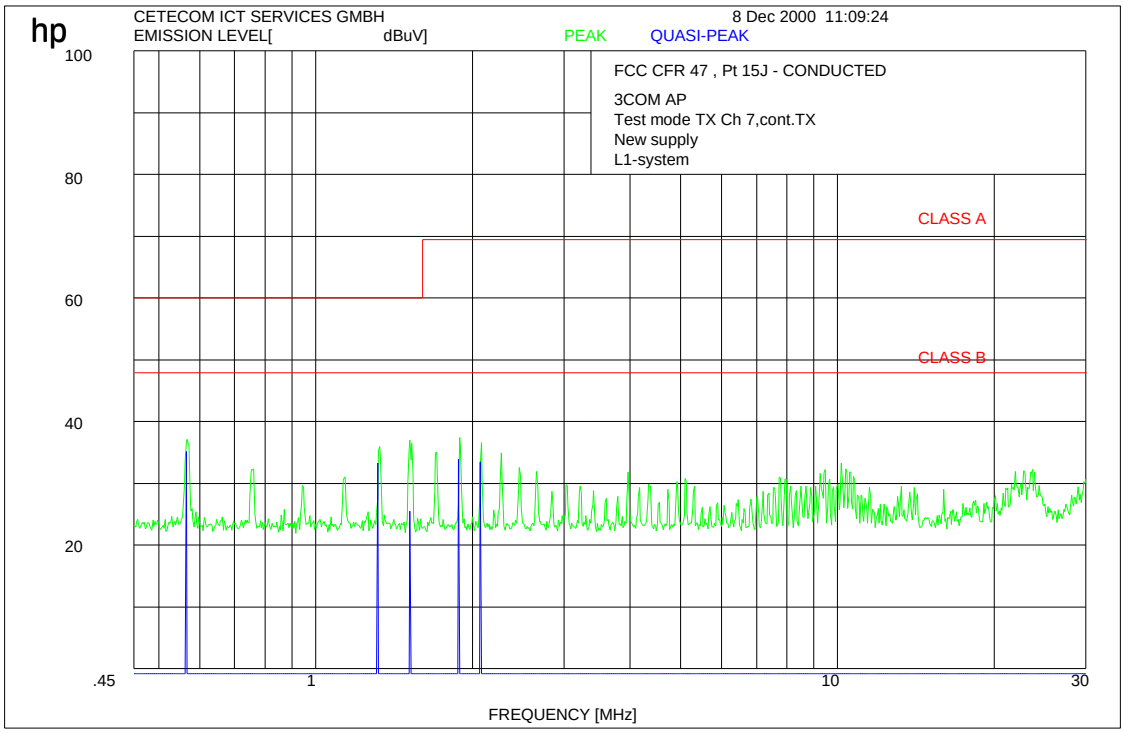
| | |
|---|---|
| 0.45 to 30 MHz | 250 µV / 47.96 dBµV |

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**17 - 24**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

## CONDUCTED EMISSIONS FCC Rule 47 Part 15

**Phase to ground**




**The test was performed with a CISPR quasi peak adapter.**
**All spurious were <<below limit.**

**Technical specification : 15.207 (Revised as of October 1, 1991 )**
**Limit**

| | |
|---|---|
| 0.45 to 30 MHz | 250 µV / 47.96 dBµV |

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**17 - 24**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**RECEIVER SPURIOUS RADIATION § 15.209**

**RBW/VBW up to 1 GHz according to CISPR 100/120 kHz Quasi Peak**
**RBW/VBW over 1 GHz according to FCC 1 MHz Peak and Average.**

**Radiated**

| SPURIOUS EMISSIONS LEVEL (dBµV/m) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2412 MHz | | | 2442 MHz | | | 2472 MHz | | |
| f (MHz) | Detector | Level dBµV/m | f (MHz) | Detector | Level (µV/m) | f (MHz) | Detector | Level (µV/m) |
| 44.0 | QP | 42.0 | 44.0 | QP | 42.0 | 44.0 | QP | 42.0 |
| 250.0 | QP | 31.6 | 250.0 | QP | 31.6 | 250.0 | QP | 31.6 |
| 264.1 | QP | 33.6 | 264.1 | QP | 33.6 | 264.1 | QP | 33.6 |
| 352.0 | QP | 37.8 | 352.0 | QP | 37.8 | 352.0 | QP | 37.8 |
| 1496.0 | Peak<br>AV | 49.0<br>45.6 | 1452.0 | Peak<br>AV | 46.1<br>38.7 | 1544.1 | Peak<br>AV | 43.8<br>34.6 |
| 2038.0 | Peak<br>AV | 53.2<br>50.l6 | 2068.0 | Peak<br>AV | 52.7<br>49.9 | 2098.0 | Peak<br>AV | 53.0<br>50.5 |
| 4075.8 | Peak<br>AV | 32.4<br>29.9 | 4135.9 | Peak<br>AV | 34.6<br>31.3 | 4195.9 | Peak<br>AV | 29.9<br>27.1 |
| 6113.9 | Peak<br>AV | 38.6<br>35.9 | 6203.9 | Peak<br>AV | 43.9<br>40.6 | 6293.9 | Peak<br>AV | 43.7<br>41.0 |
| 8151.9 | Peak<br>AV | 43.4<br>40.9 | 8271.9 | Peak<br>AV | 43.8<br>40.9 | | | |
| Measurement uncertainty | | | ±3 dB | | | | | |

**All spurious including such in restricted bands are below the limits.**

**Measurement distance see table**

**Limits SUBCLAUSE § 15.209**

| Frequency (MHz) | Field strength (dBµV/m) | Measurement distance (m) |
|---|---|---|
| 30 - 88 | 40 | 3 |
| 88 - 216 | 43.5 | 3 |
| 216 - 960 | 46 | 3 |
| above 960 | 54 | 3 |

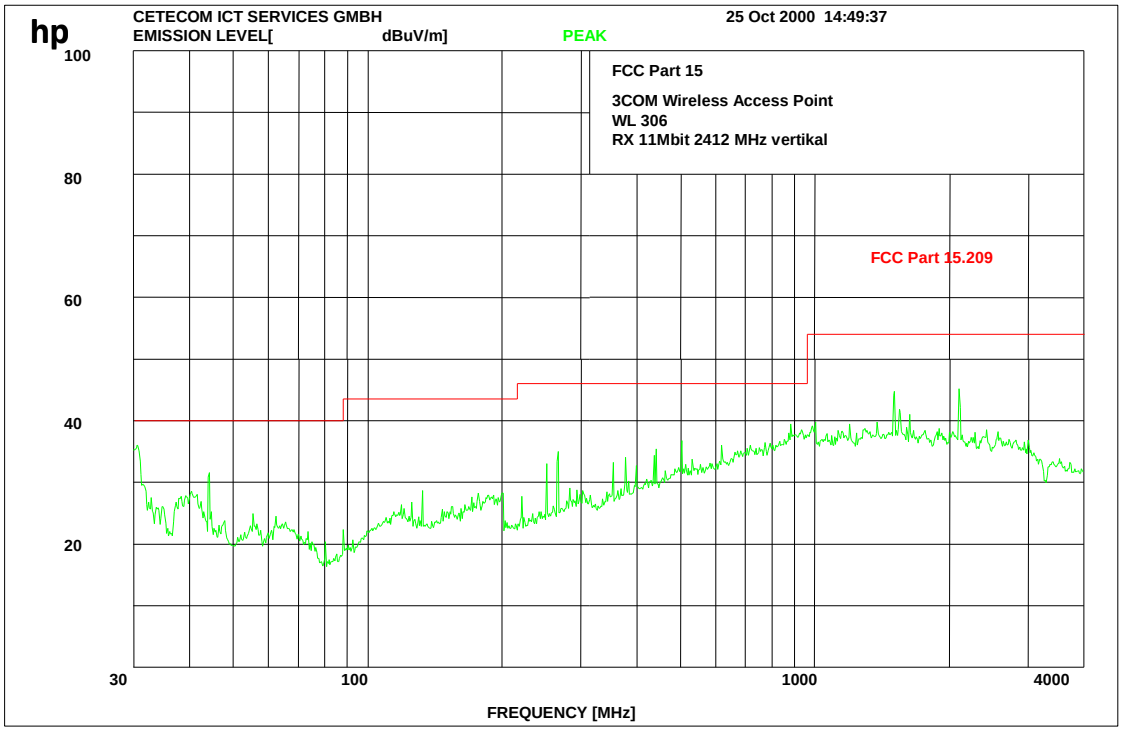
**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**17 - 24**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

## RECEIVER SPURIOUS RADIATION § 15.209

**2412 MHz up to 4000 MHz**

The higher line is the spurious limit FCC 15.209 according to antenna gain and semi-anechoic chamber




This is only a scan:
Measurements were performed with a CISPR quasi peak adapter and 100/120 kHz BW up to 1 GHz, for the frequency range over 1 GHz we used 1 MHz RBW/VBW for Peak and Average.

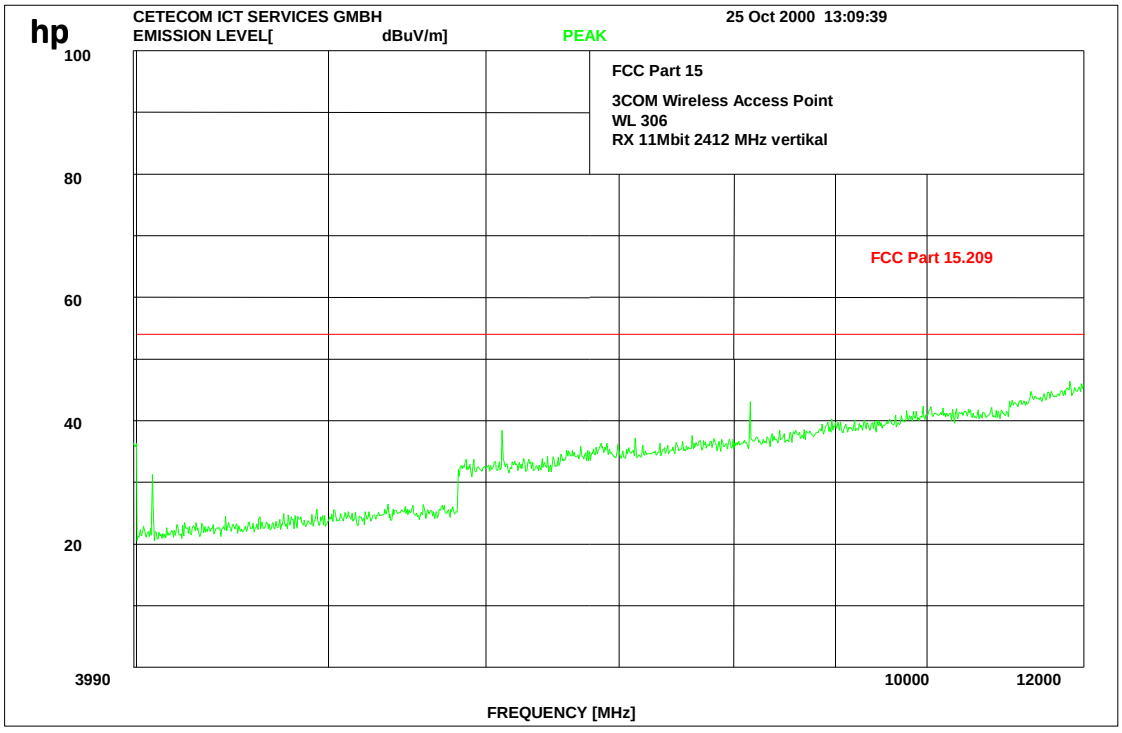
**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**17 - 24**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**RECEIVER SPURIOUS RADIATION** **§ 15.209**

**2412 MHz up to 12 GHz**

The higher line is the spurious limit FCC 15.209 according to antenna gain and semi-anechoic chamber.




This is only a scan:
Measurements were performed with a CISPR quasi peak adapter and 100/120 kHz BW up to 1 GHz, for the frequency range over 1 GHz we used 1 MHz RBW/VBW for Peak and Average.

**The measurements were performed up to 25 GHz. There were no peaks found.**

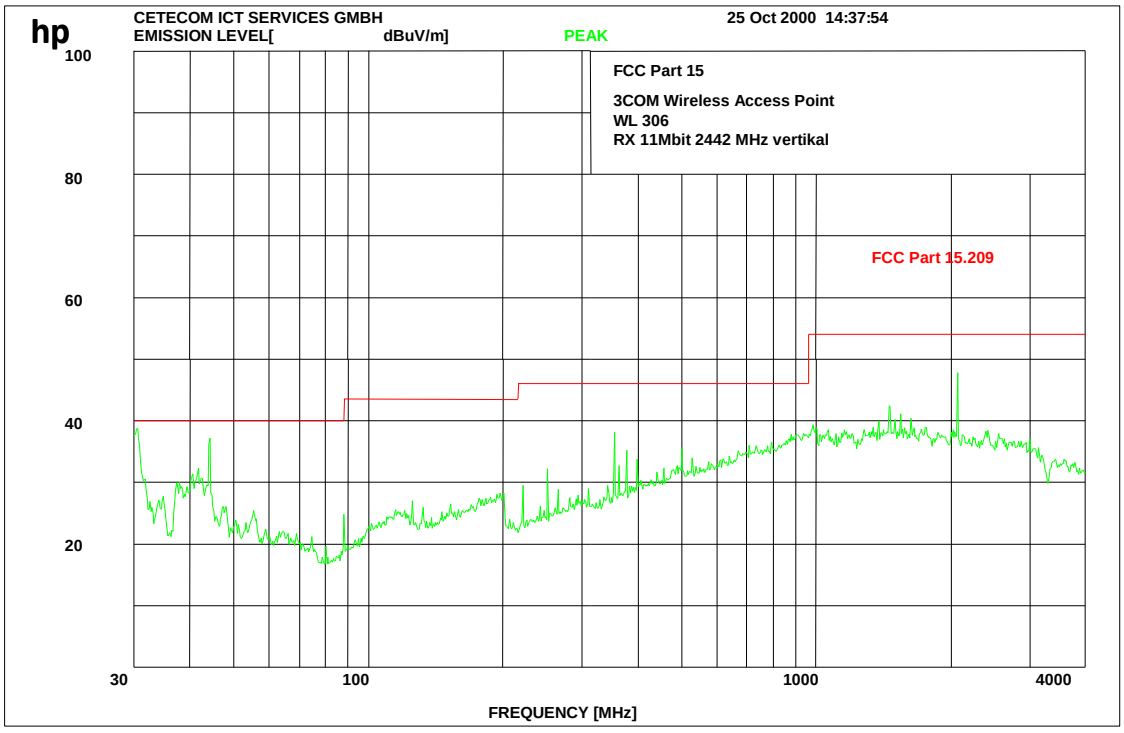
**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**17 - 24**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

## RECEIVER SPURIOUS RADIATION § 15.209

**2442 MHz up to 4000 MHz**

The higher line is the spurious limit FCC 15.209 according to antenna gain and semi-anechoic chamber




This is only a scan:
Measurements were performed with a CISPR quasi peak adapter and 100/120 kHz BW up to 1 GHz, for the frequency range over 1 GHz we used 1 MHz RBW/VBW for Peak and Average.

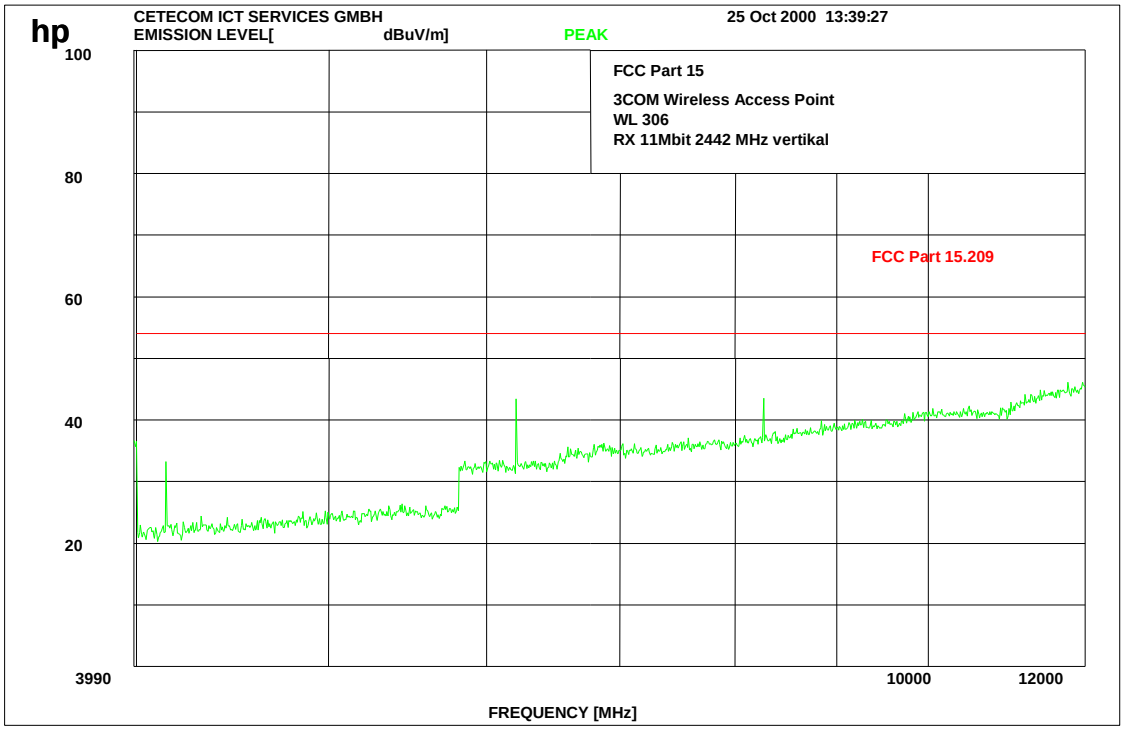
**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**17 - 24**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**RECEIVER SPURIOUS RADIATION** **§ 15.209**

**2442 MHz up to 12 GHz**

The higher line is the spurious limit FCC 15.209 according to antenna gain and semi-anechoic chamber




This is only a scan:
Measurements were performed with a CISPR quasi peak adapter and 100/120 kHz BW up to 1 GHz, for the frequency range over 1 GHz we used 1 MHz RBW/VBW for Peak and Average.

**The measurements were performed up to 25 GHz. There were no peaks found.**

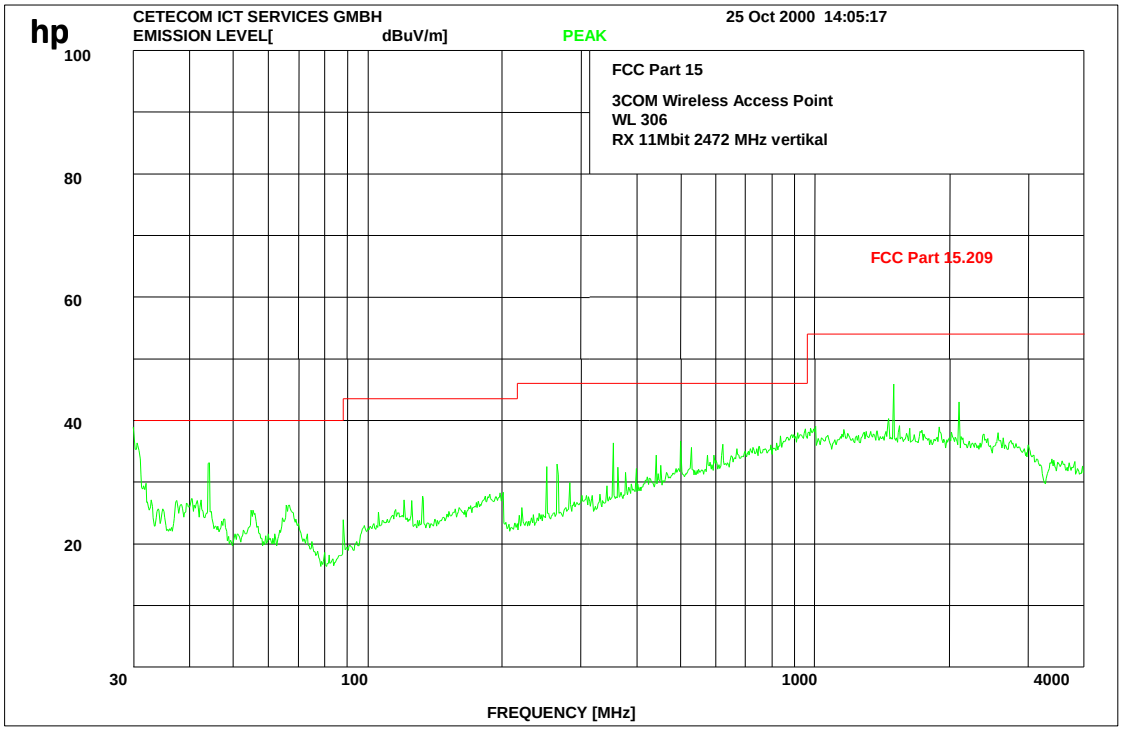
**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**17 - 24**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

## RECEIVER SPURIOUS RADIATION § 15.209

**2472 MHz up to 4000 MHz**

The higher line is the spurious limit FCC 15.209 according to antenna gain and semi-anechoic chamber




This is only a scan:
Measurements were performed with a CISPR quasi peak adapter and 100/120 kHz BW up to 1 GHz, for the frequency range over 1 GHz we used 1 MHz RBW/VBW for Peak and Average.

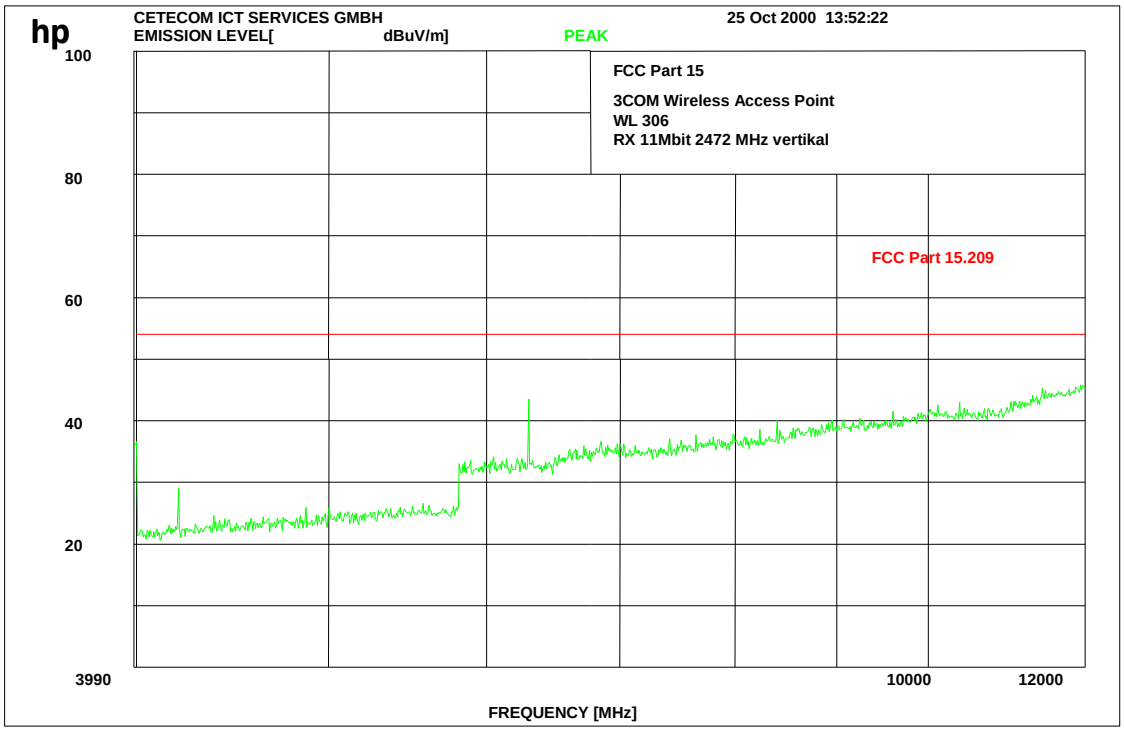
**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**17 - 24**

**Equipment under test : WL-306**
**Ambient temperature : 20 °C**
**Relative humidity : 51%**

**RECEIVER SPURIOUS RADIATION** **§ 15.209**

**2472 MHz up to 12 GHz**

The higher line is the spurious limit FCC 15.209 according to antenna gain and semi-anechoic chamber




This is only a scan:
Measurements were performed with a CISPR quasi peak adapter and 100/120 kHz BW up to 1 GHz, for the frequency range over 1 GHz we used 1 MHz RBW/VBW for Peak and Average.

**The measurements were performed up to 25 GHz. There were no peaks found.**

**REFERENCE NUMBER(S) OF TEST EQUIPMENT USED**
**(for reference numbers see test equipment listing)**
**17 - 24**

## TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

**To simplify the identification on each page of the test equipment used, on each page of the test report, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory, below.**

| No | Instrument/Ancillary | Type | Manufacturer | Serial No. |
|---|---|---|---|---|
| 01 | Spectrum Analyzer | 8566 A | Hewlett-Packard | 1925A00257 |
| 02 | Analyzer Display | 8566 A | Hewlett-Packard | 1925A00860 |
| 03 | Oscilloscope | 7633 | Tektronix | 230054 |
| 04 | Radio Analyzer | CMTA 54 | Rohde & Schwarz | 894 043/010 |
| 05 | System Power Supply | 6038 A | Hewlett-Packard | 2848A07027 |
| 06 | Signal Generator | 8111 A | Hewlett-Packard | 2215G00867 |
| 07 | Signal Generator | 8662 A | Hewlett-Packard | 2224A01012 |
| 08 | Funktionsgenerator | AFGU | Rohde & Schwarz | 862 480/032 |
| 09 | Regeltrenntrafo | MPL | Erfi | 91350 |
| 10 | Netznachbildung | NNLA 8120 | Schwarzbeck | 8120331 |
| 11 | Relais-Matrix | PSU | Rohde & Schwarz | 893 285/020 |
| 12 | Power-Meter | 436 A | Hewlett-Packard | 2101A12378 |
| 13 | Power-Sensor | 8484 A | Hewlett-Packard | 2237A10156 |
| 14 | Power-Sensor | 8482 A | Hewlett-Packard | 2237A00616 |
| 15 | Modulationsmeter | 9008 | Racal-Dana | 2647 |
| 16 | Frequenzzähler | 5340 A | Hewlett-Packard | 1532A03899 |
| 17 | Absorber Schirmkabine | --- | MWB | 87400/002 |
| 18 | Spectrum Analyzer | 85660 B | Hewlett-Packard | 2747A05306 |
| 19 | Analyzer Display | 85662 A | Hewlett-Packard | 2816A16541 |
| 20 | Quasi Peak Adapter | 85650 A | Hewlett-Packard | 2811A01131 |
| 21 | RF-Preselector | 85685 A | Hewlett-Packard | 2833A00768 |
| 22 | Biconical Antenne | 3104 | Emco | 3758 |
| 23 | Log. Per. Antenne | 3146 | Emco | 2130 |
| 24 | Double Ridge Horn | 3115 | Emco | 3088 |
| 25 | EMI-Testreceiver | ESAI | Rohde & Schwarz | 863 180/013 |
| 26 | EMI-Analyzer-Display | ESAI-D | Rohde & Schwarz | 862 771/008 |
| 27 | Biconical Antenne | HK 116 | Rohde & Schwarz | 888 945/013 |
| 28 | Log. Per. Antenne | HL 223 | Rohde & Schwarz | 825 584/002 |
| 29 | Relais-Switch-Unit | RSU | Rohde & Schwarz | 375 339/002 |
| 30 | Highpass | HM985955 | FSY Microwave | 001 |
| 31 | Amplifier | P42-GA29 | Tron-Tech | B 23602 |
| 32 | Absorber Schirmkabine | | Frankonia | |
| 33 | Steuerrechner | PSM 7 | Rohde & Schwarz | 834 621/004 |
| 34 | EMI Test Reciever | ESMI | Rohde & Schwarz | 827 063/010 |
| 35 | EMI Test Receiver | Display | Rohde & Schwarz | 829 808/010 |

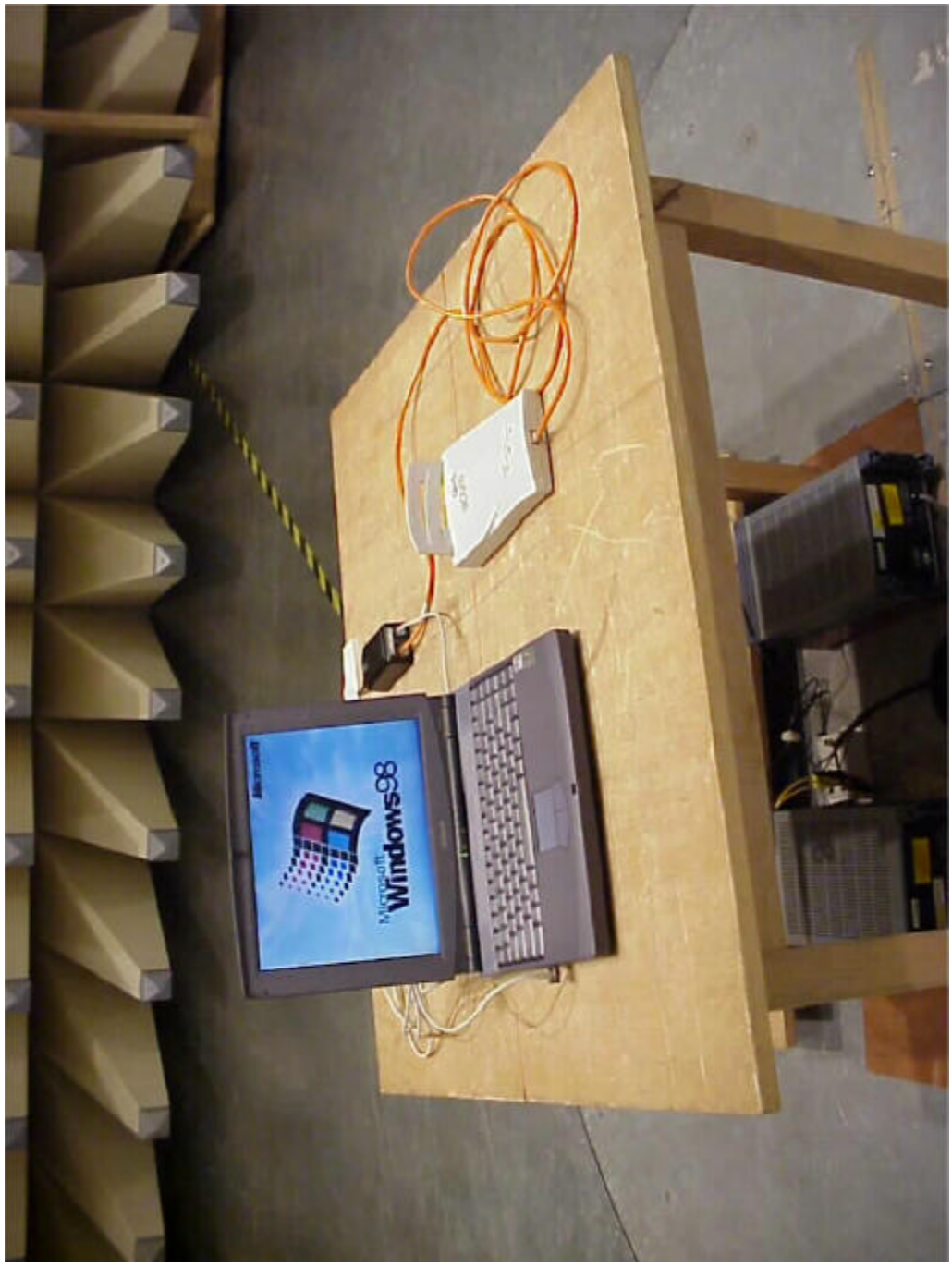
**TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS**

**To simplify the identification on each page of the test equipment used, on each page of the test report, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory, below.**

| No | Instrument/Ancillary | Type | Manufacturer | Serial No. |
|---|---|---|---|---|
| 36 | Controler | HD 100 | Deisel | 100/322/93 |
| 37 | Relais Matrix | PSN | Rohde & Schwarz | 829 065/003 |
| 38 | Control Unit | GB 016 A2 | Rohde & Schwarz | 344 122/008 |
| 39 | Relais Switch Unit | RSU | Rohde & Schwarz | 316 790/001 |
| 40 | Power Supply | 6032A | Hewlett Packard | 2846A04063 |
| 41 | Spektrum Monitor | EZM | Rohde & Schwarz | 883 720/006 |
| 42 | Meßempfänger | ESH 3 | Rohde & Schwarz | 890 174/002 |
| 43 | Meßempfänger | ESVP | Rohde & Schwarz | 891 752/005 |
| 44 | Biconi Ant. 20-300MHz | HK 116 | Rohde & Schwarz | 833 162/011 |
| 45 | Logper Ant. 0.3-1 GHz | HL 223 | Rohde & Schwarz | 832 914/010 |
| 46 | Amplifier 0.1-4 GHz | AFS4 | Miteq Inc. | 206461 |
| 47 | Logper Ant. 1-18 GHz | HL 024 A2 | Rohde & Schwarz | 342 662/002 |
| 48 | Polarisationsnetzwerk | HL 024 Z1 | Rohde & Schwarz | 341 570/002 |
| 49 | Double Ridge G Horn Antenne 1-26.5 GHz | 3115 | EMCO | 9107-3696 |
| 50 | Microw. Sys. Amplifier 0.5- 26.5 GHz | 8317A | Hewlett Packard | 3123A00105 |
| 51 | Audio Analyzer | UPD | Rohde & Schwarz | 1030.7500.04 |
| 52 | Steuerrechner | PSM 7 | Rohde & Schwarz | 883 086/026 |
| 53 | DC V-Netzwerk | ESH3-Z6 | Rohde & Schwarz | 861 406/005 |
| 54 | DC V-Netzwerk | ESH3-Z6 | Rohde & Schwarz | 893 689/012 |
| 55 | AC 2 Phasen V-Netzwerk | ESH3-Z5 | Rohde & Schwarz | 861 189/014 |
| 56 | AC 2 Phasen V-Netzwerk | ESH3-Z5 | Rohde & Schwarz | 894 981/019 |
| 57 | AC-3 Phasen V-Netzwerk | ESH2-Z5 | Rohde & Schwarz | 882 394/007 |
| 58 | Stromversorgung | 6032A | Rohde & Schwarz | 2933A05441 |
| 59 | HF-Test Empfänger | ESVP.52 | Rohde & Schwarz | 881 487/021 |
| 60 | Spectrum Monitor | EZM | Rohde & Schwarz | 883 086/026 |
| 61 | HF-Test Empfänger | ESH3 | Rohde & Schwarz | 881 515/002 |
| 62 | Relais Matrix | PSU | Rohde & Schwarz | 882 943/029 |
| 63 | Relais Matrix | PSU | Rohde & Schwarz | 828 628/007 |
| 64 | Spectrum Analyzer | FSIQ 26 | Rohde & Schwarz | 119.6001.27 |
| 67 | | | | |

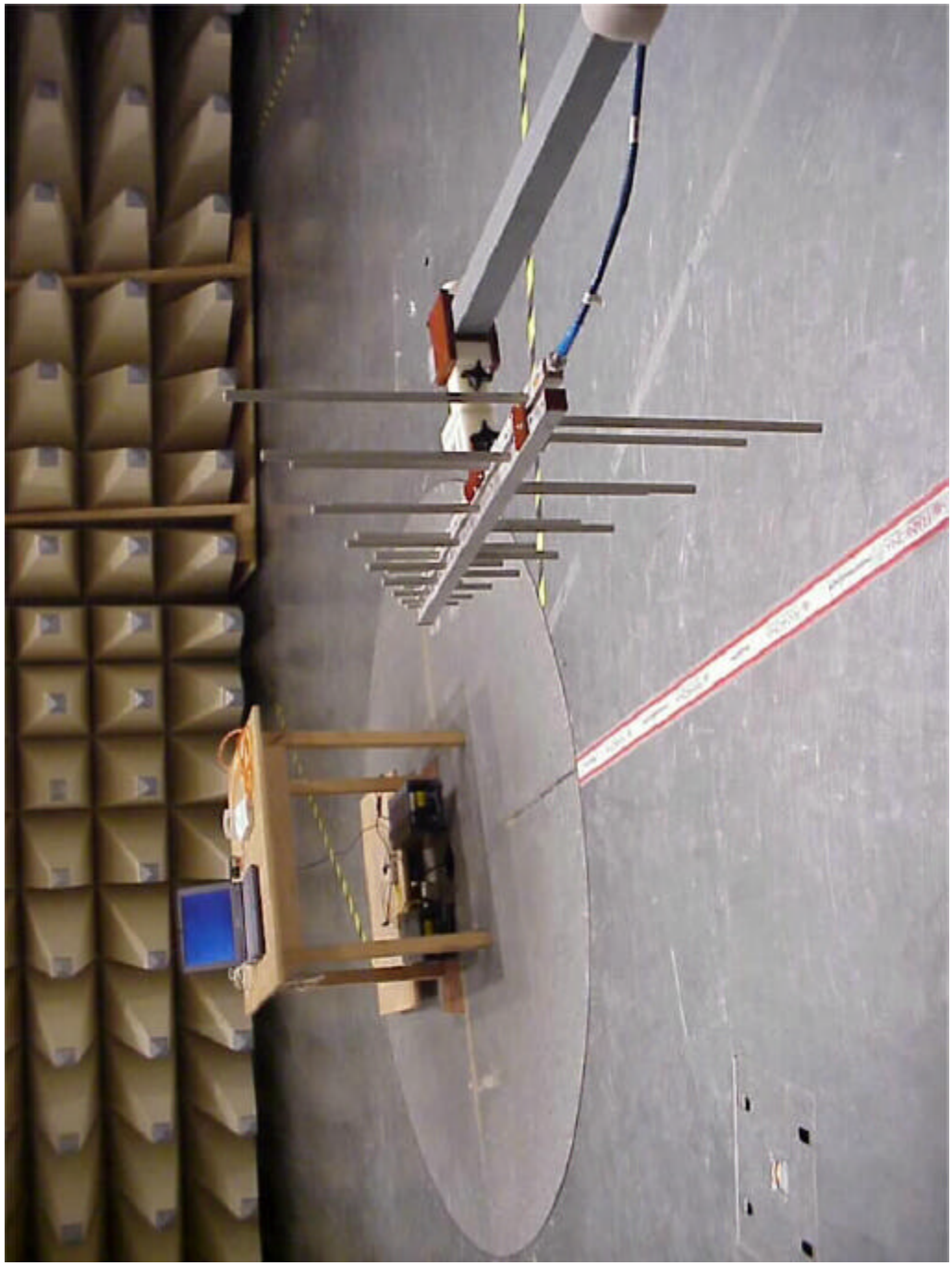
Test site
RADIATED EMISSIONS

Picture 1:



Test site
RADIATED EMISSIONS

Picture 2:



Test site
RADIATED EMISSIONS

Picture 3:

Test site
conducted emissions

Picture 4:

Test site
conducted emissions

Picture 5:

Wireless Access Point WL-306

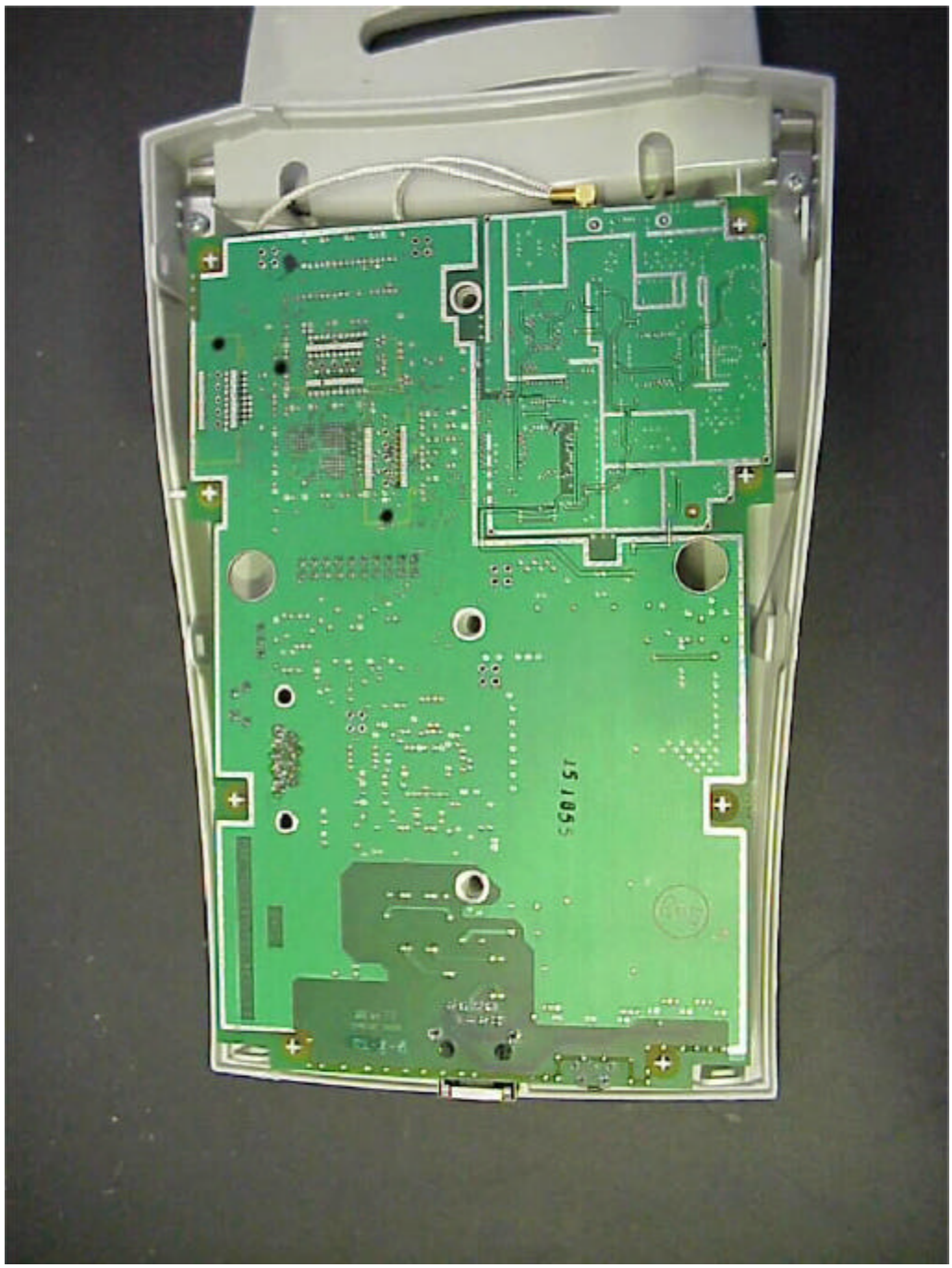
Picture 6:

Wireless Access Point WL-306

Picture 7:

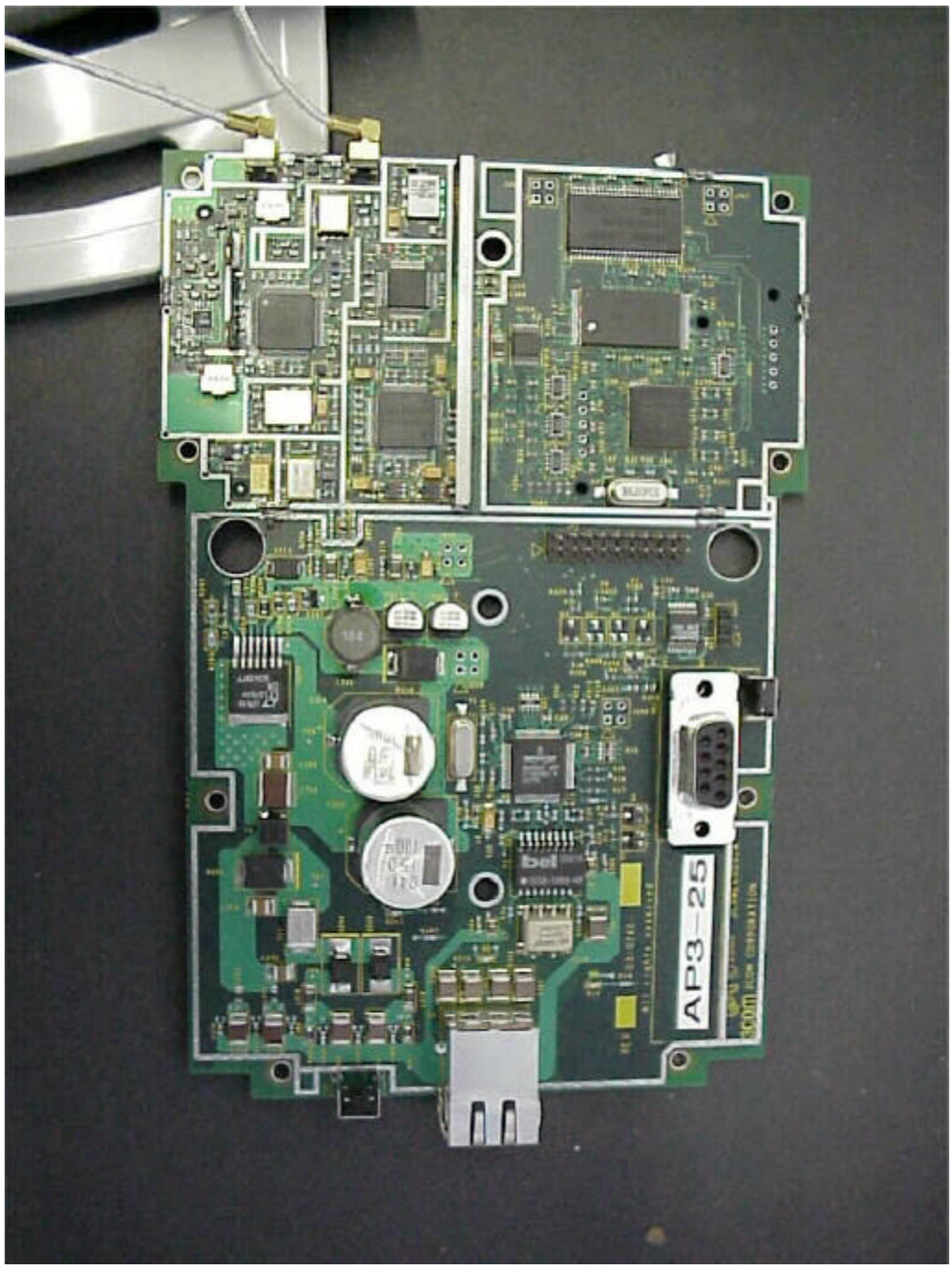
Wireless Access Point WL-306

Picture 8:



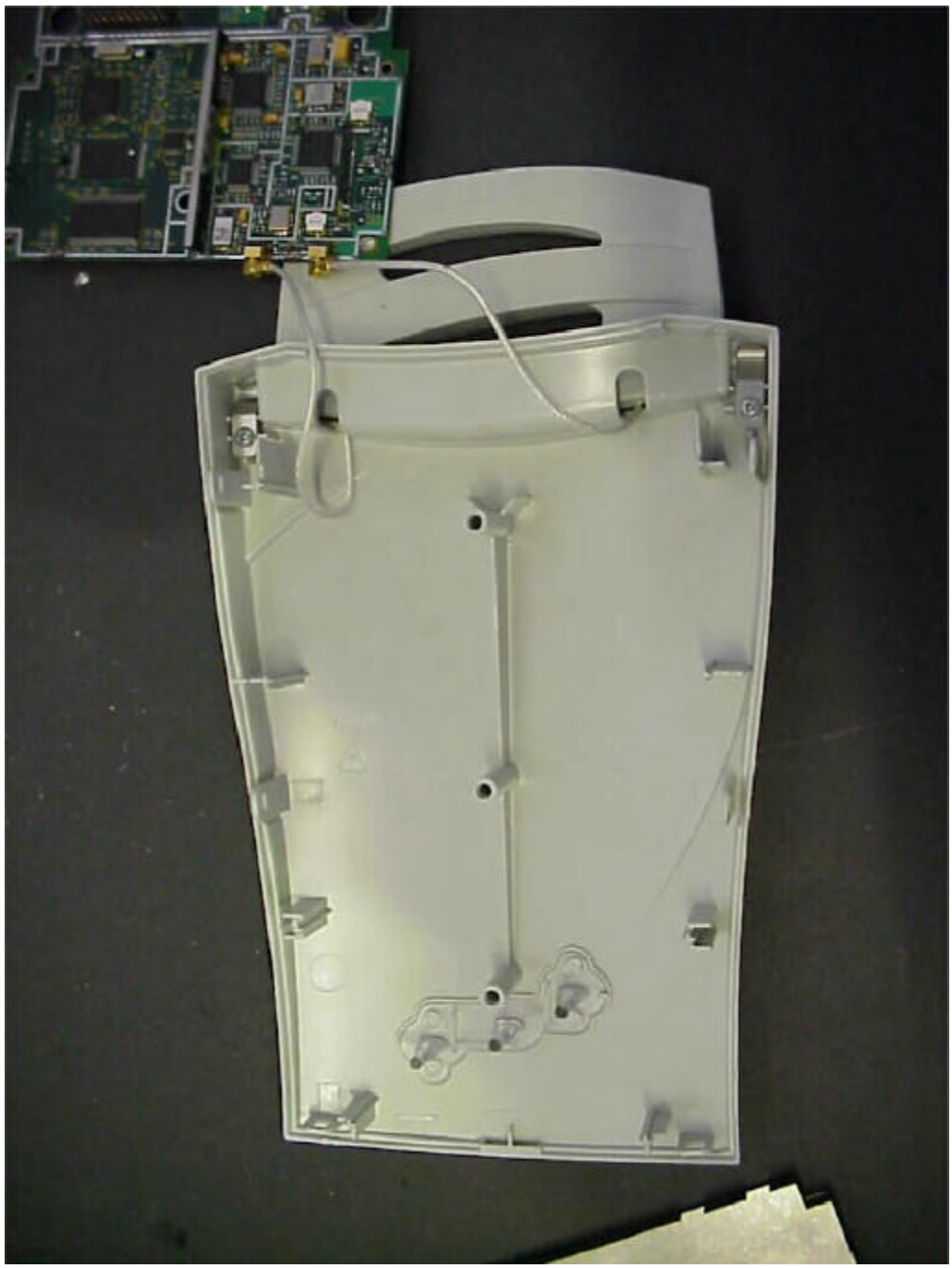
Wireless Access Point WL-306

Picture 9:



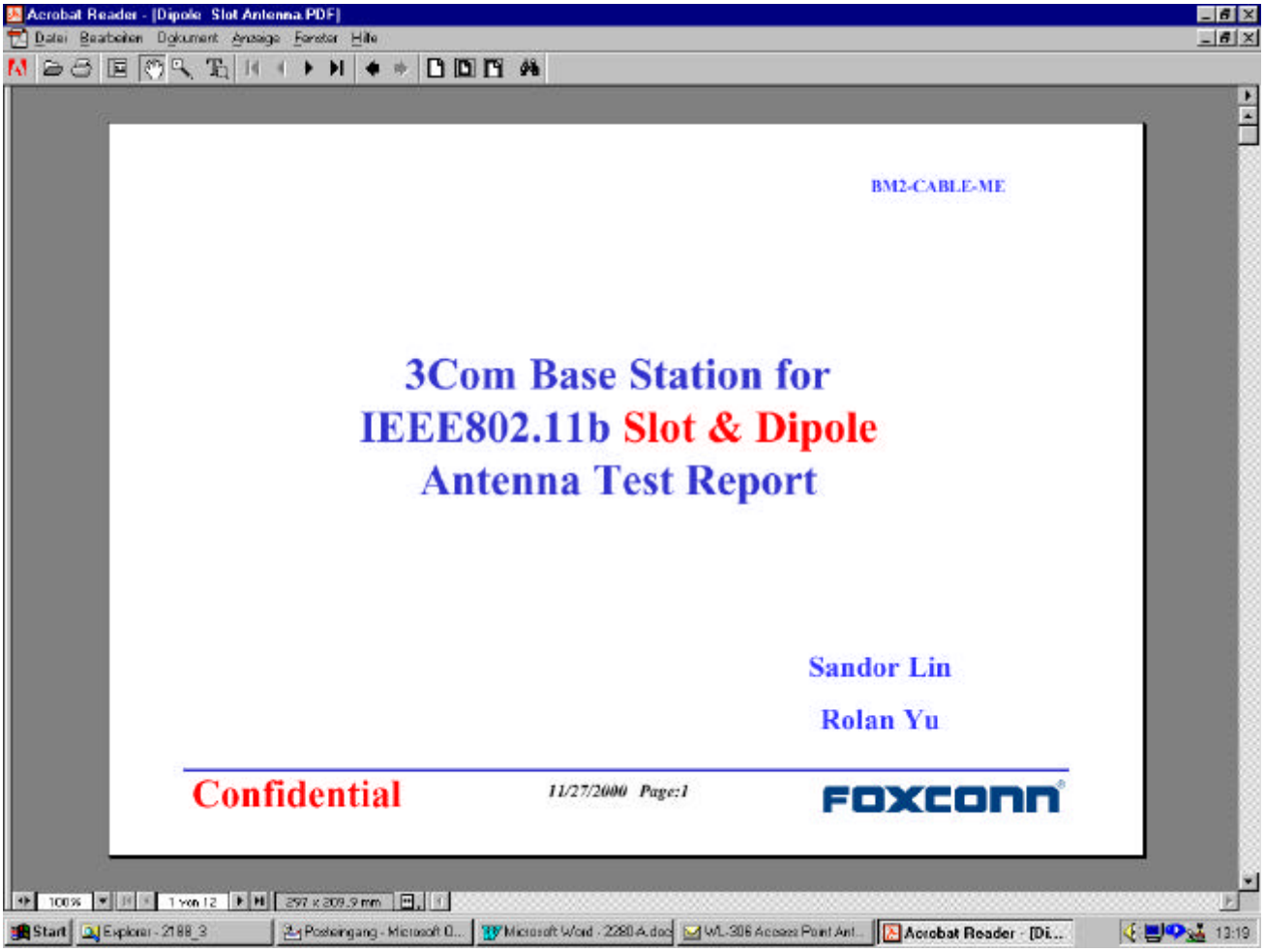
Wireless Access Point WL-306

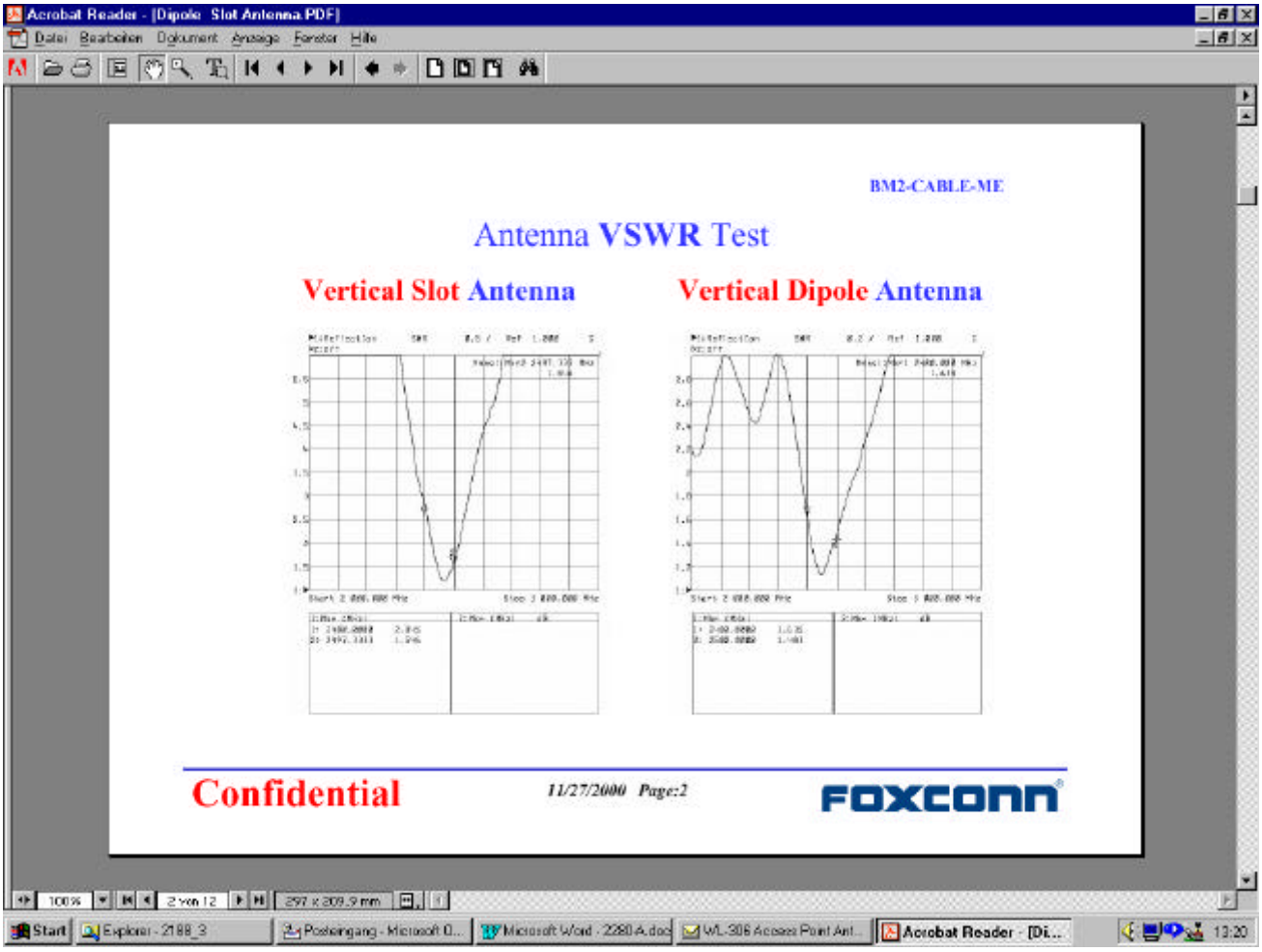
Picture 10:

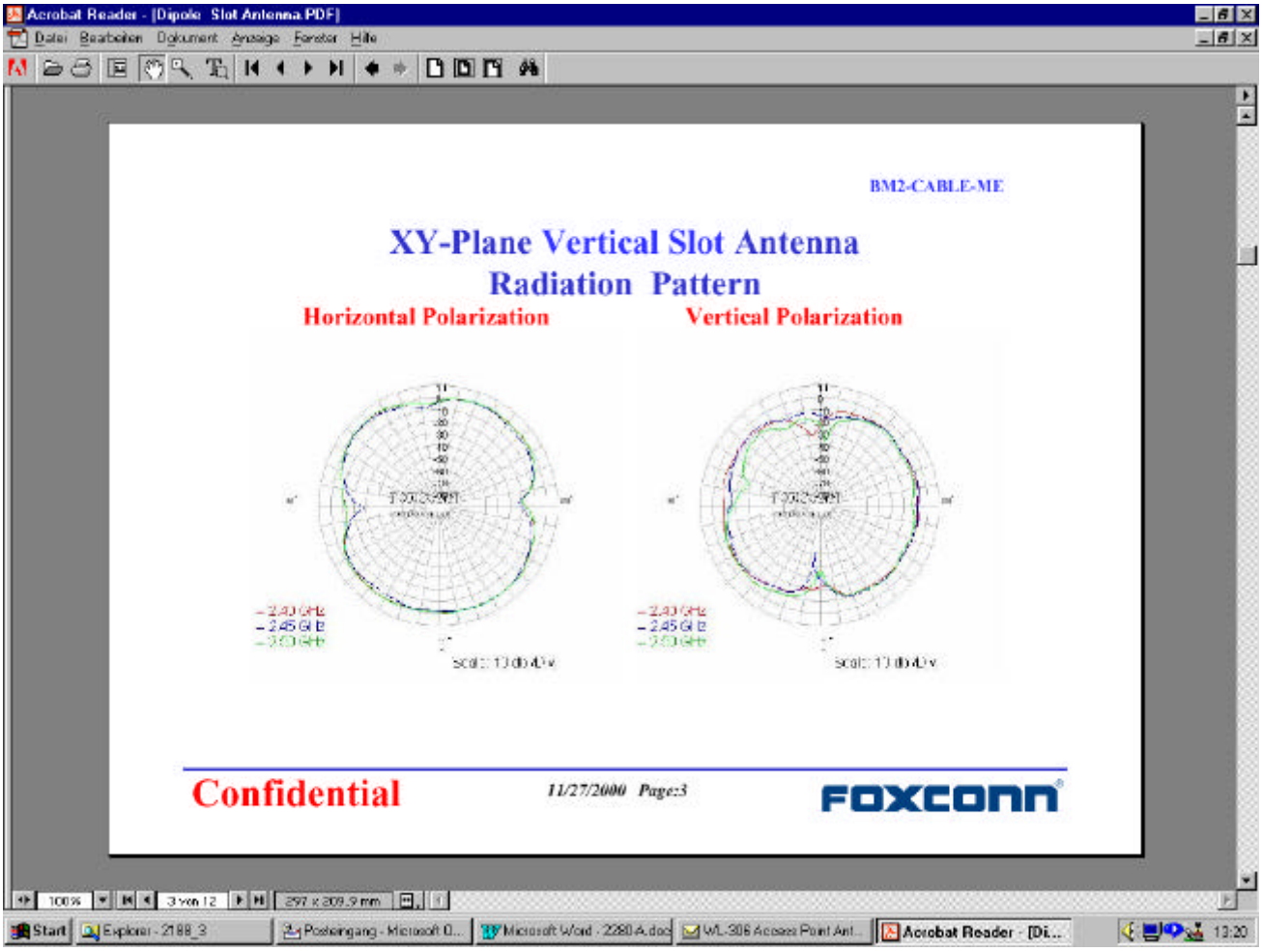


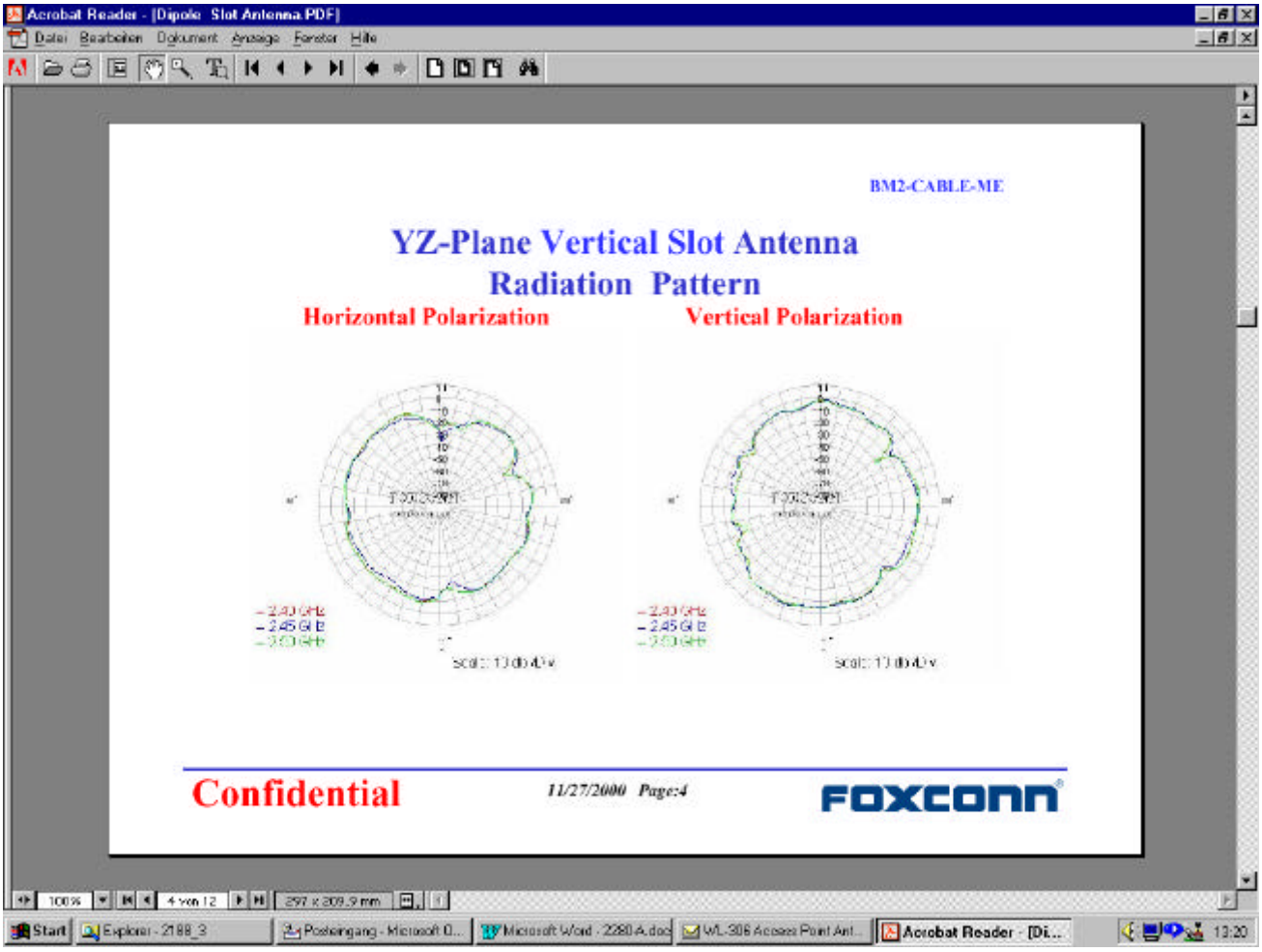
Annex 1: Antenna Gain

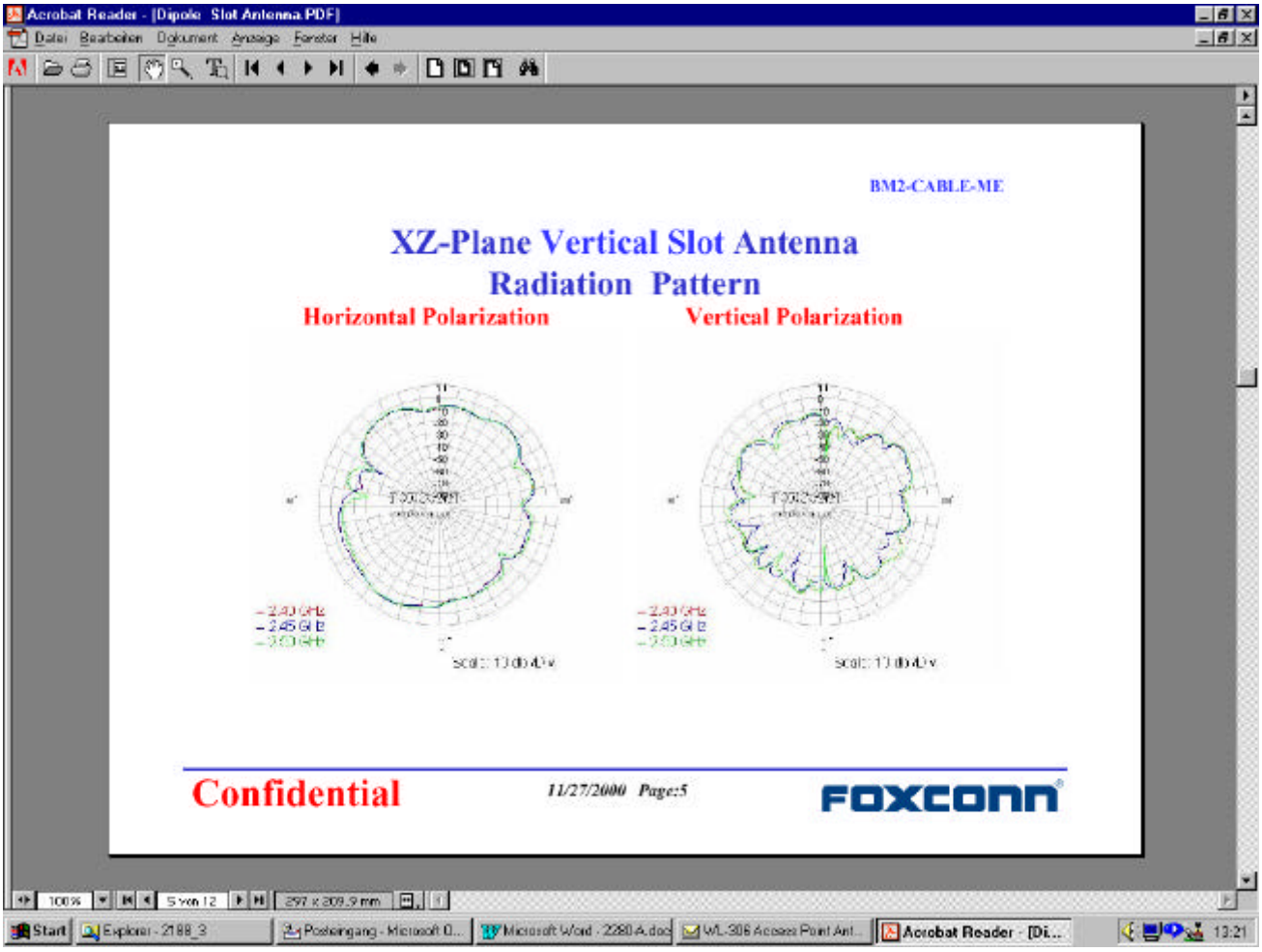
Wireless Access Point WL-306

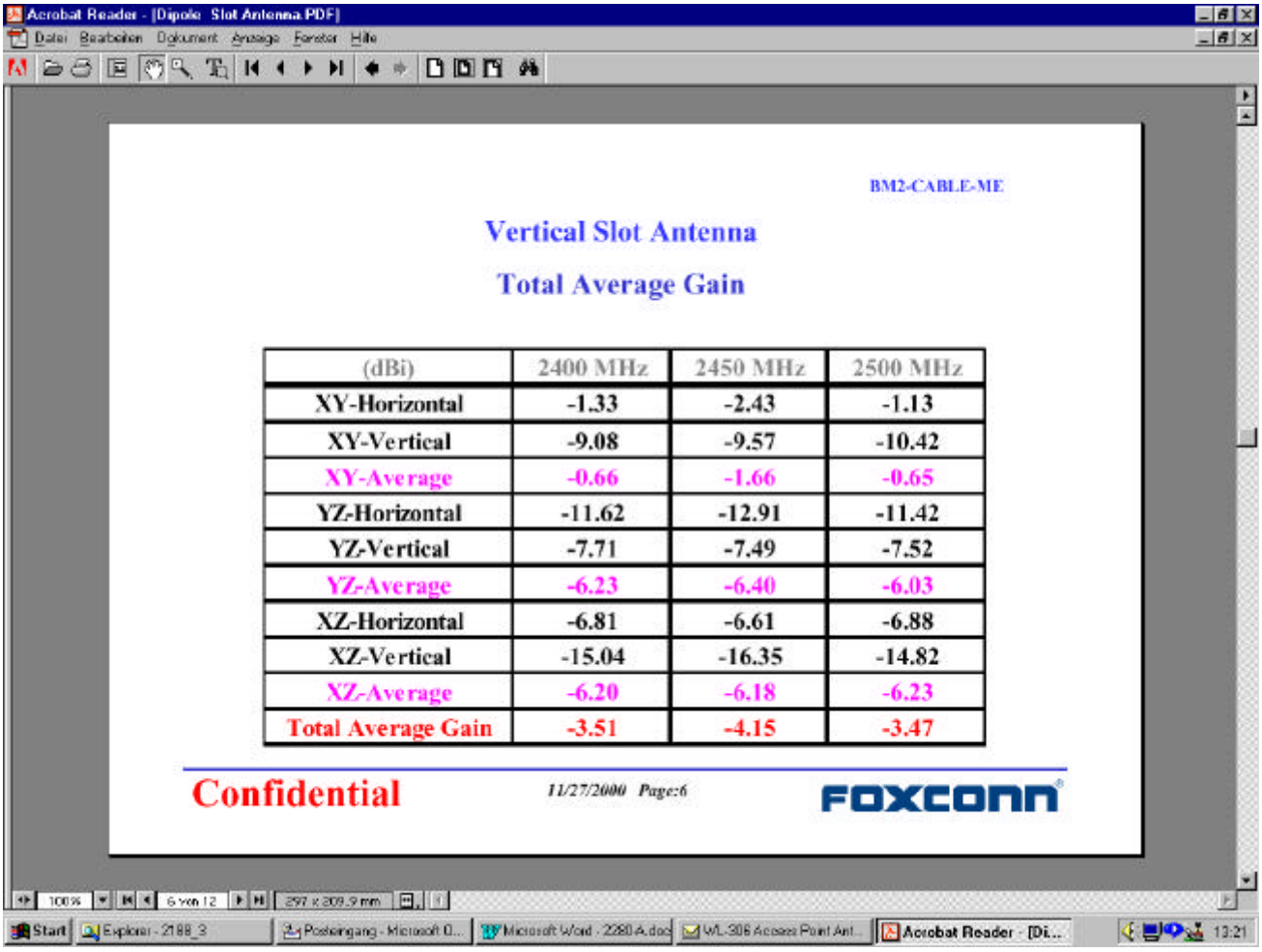



Acrobat Reader - [Dipole Slot Antenna.PDF]
BM2-CABLE-ME
Antenna VSWR Test
Vertical Slot Antenna
Vertical Dipole Antenna
Confidential
11/27/2000 Page:2
FOXCONN

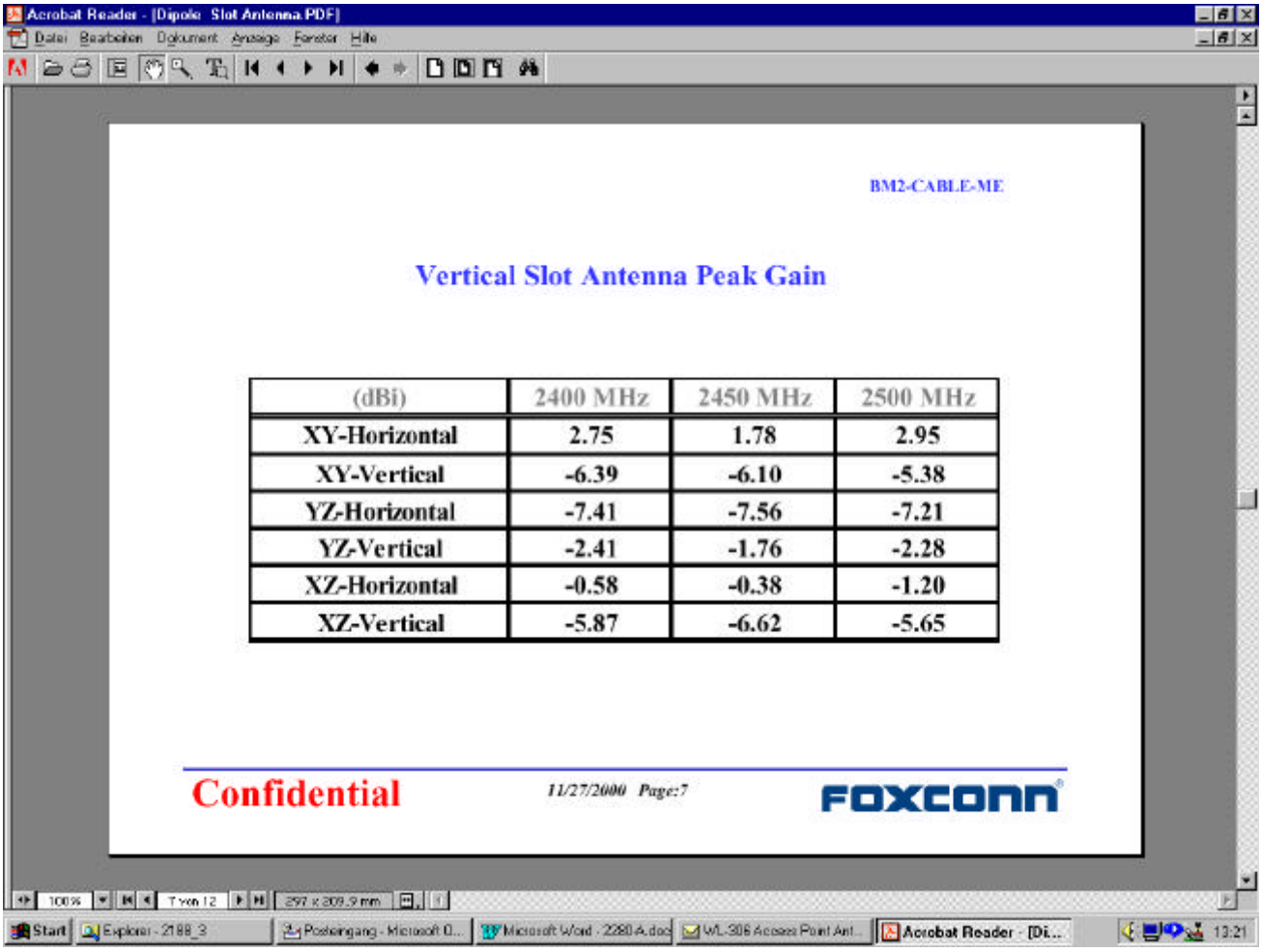

Acrobat Reader - [Dipole Slot Antenna.PDF]
BM2-CABLE-ME
XY-Plane Vertical Slot Antenna
Radiation Pattern
Horizontal Polarization
Vertical Polarization
Confidential
11/27/2000 Page:3
FOXCONN

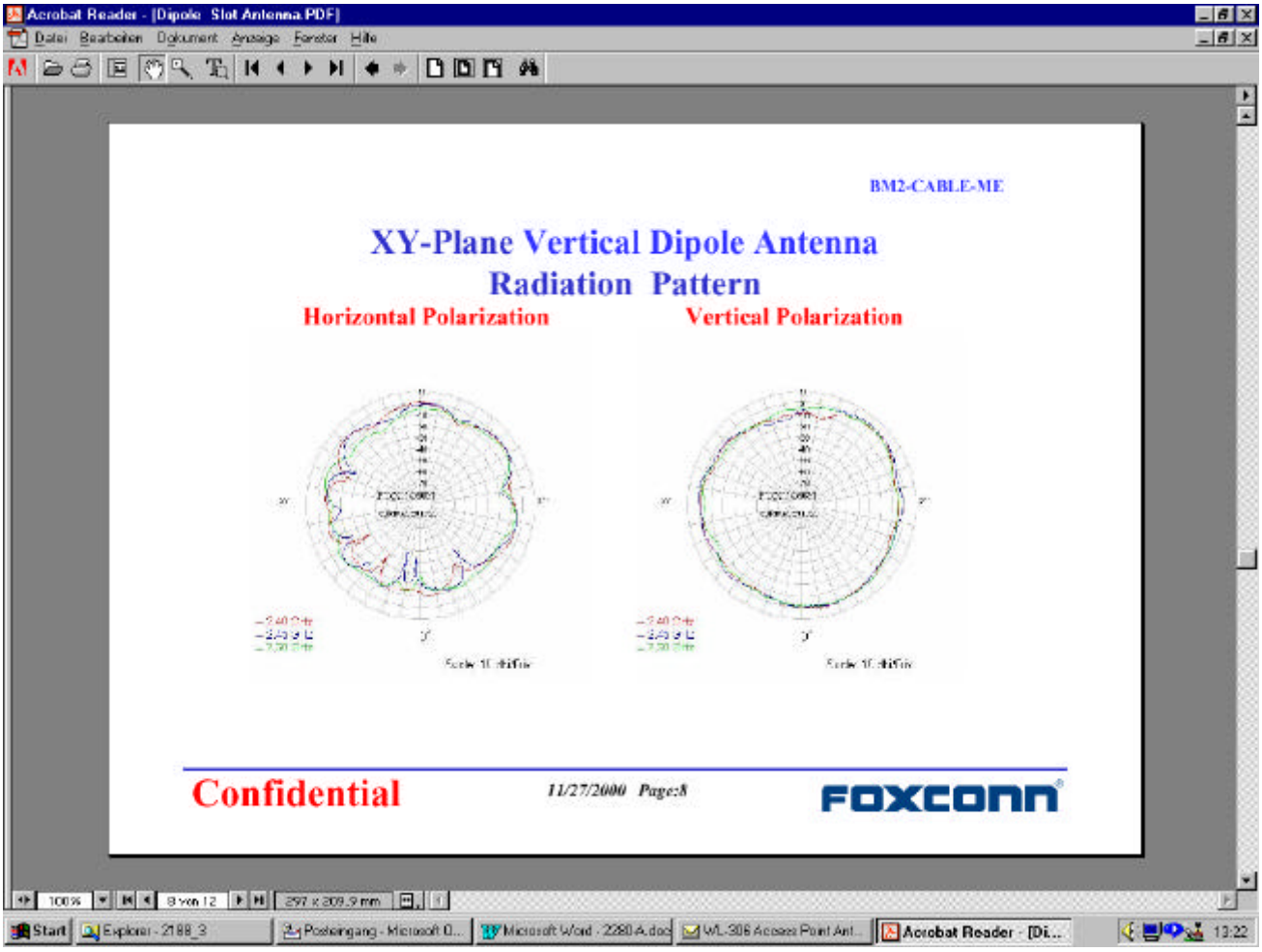

Acrobat Reader - [Dipole Slot Antenna.PDF]
BM2-CABLE-ME
YZ-Plane Vertical Slot Antenna
Radiation Pattern
Horizontal Polarization
Vertical Polarization
Confidential
11/27/2000 Page:4
FOXCONN

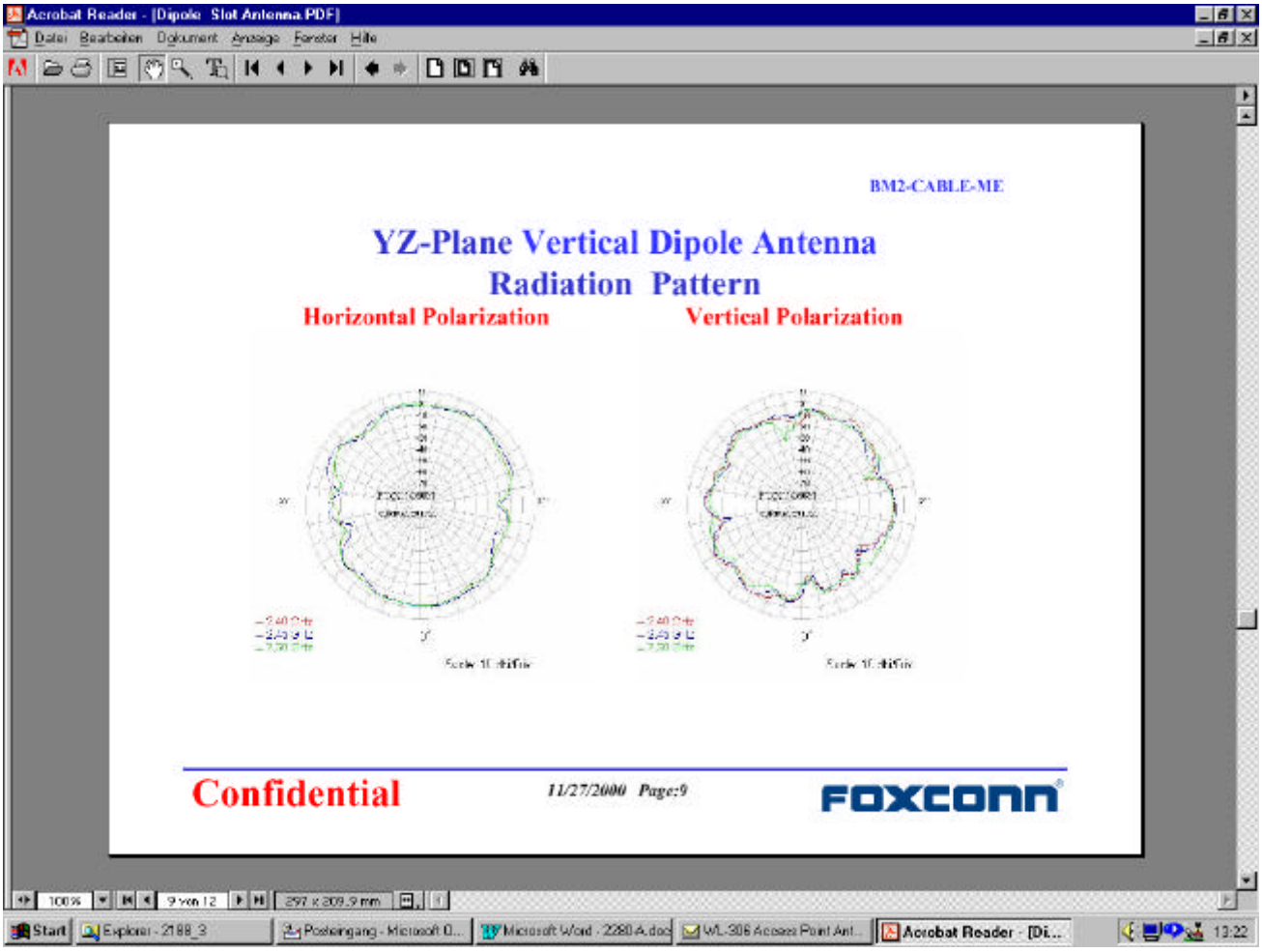

Acrobat Reader - [Dipole Slot Antenna.PDF]
BM2-CABLE-ME
XZ-Plane Vertical Slot Antenna
Radiation Pattern
Horizontal Polarization
Vertical Polarization
Confidential
11/27/2000 Page:5
FOXCONN

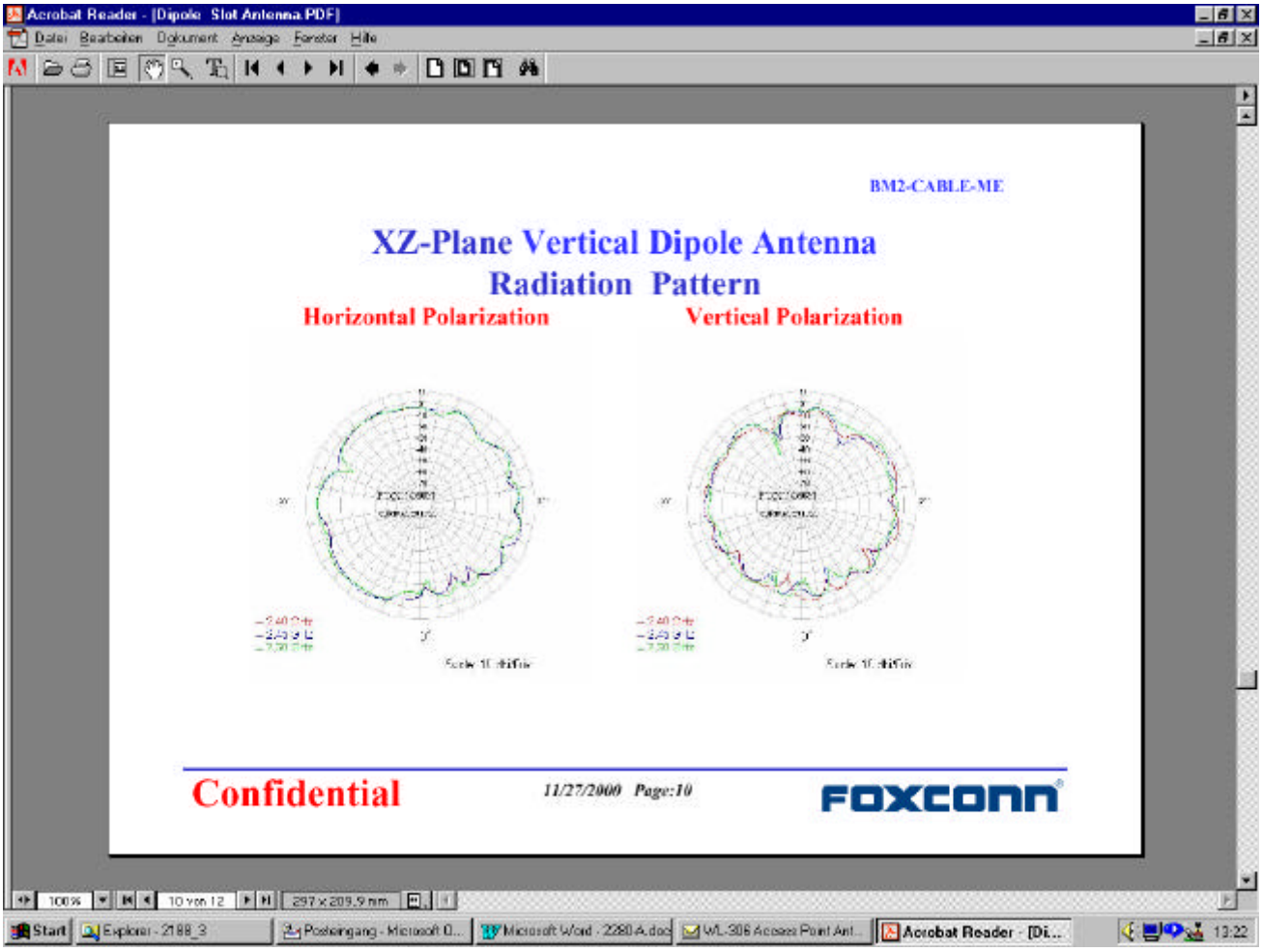


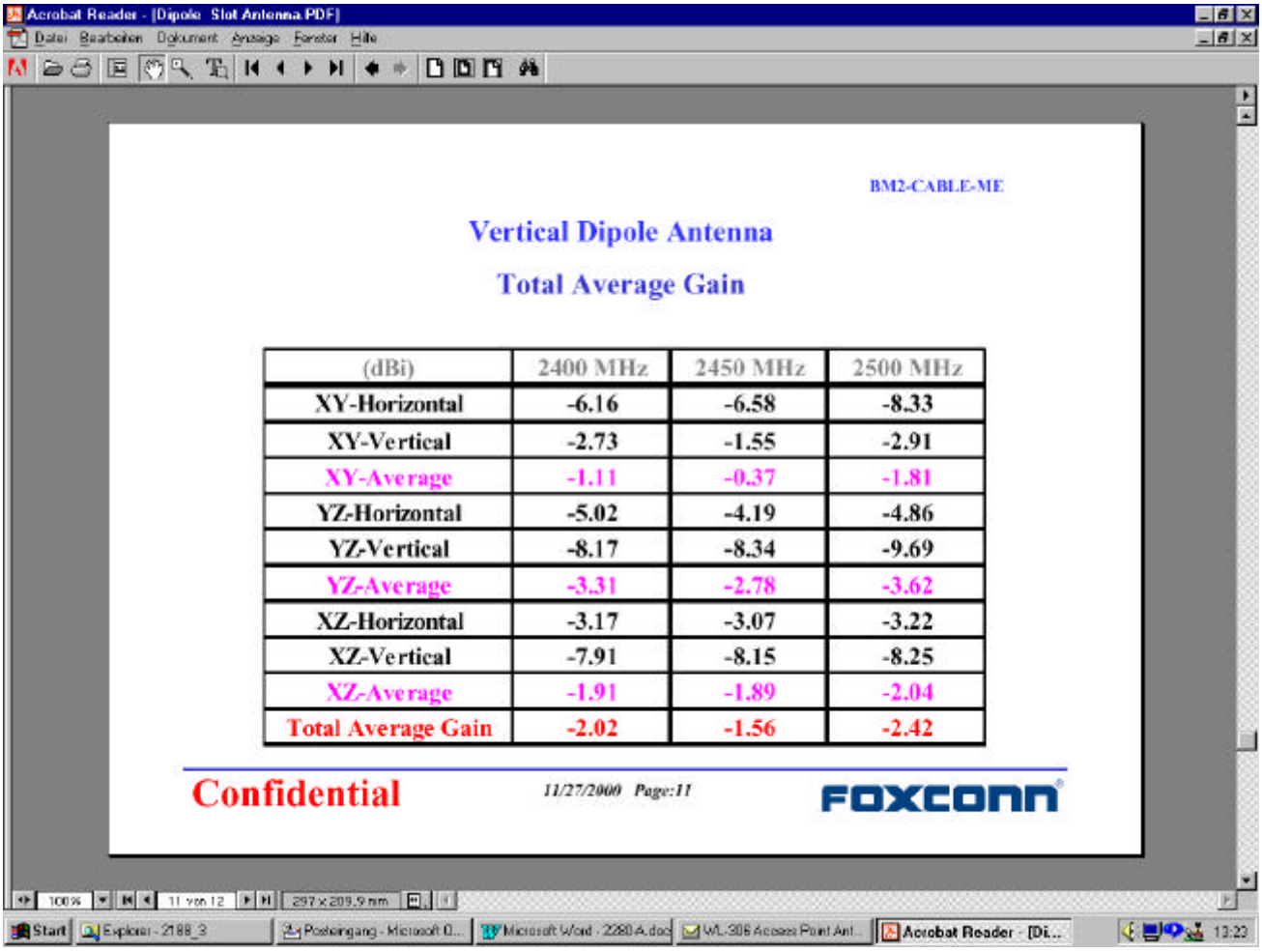

| (dBi) | 2400 MHz | 2450 MHz | 2500 MHz |
|---|---|---|---|
| XY-Horizontal | -1.33 | -2.43 | -1.13 |
| XY-Vertical | -9.08 | -9.57 | -10.42 |
| XY-Average | -0.66 | -1.66 | -0.65 |
| YZ-Horizontal | -11.62 | -12.91 | -11.42 |
| YZ-Vertical | -7.71 | -7.49 | -7.52 |
| YZ-Average | -6.23 | -6.40 | -6.03 |
| XZ-Horizontal | -6.81 | -6.61 | -6.88 |
| XZ-Vertical | -15.04 | -16.35 | -14.82 |
| XZ-Average | -6.20 | -6.18 | -6.23 |
| Total Average Gain | -3.51 | -4.15 | -3.47 |

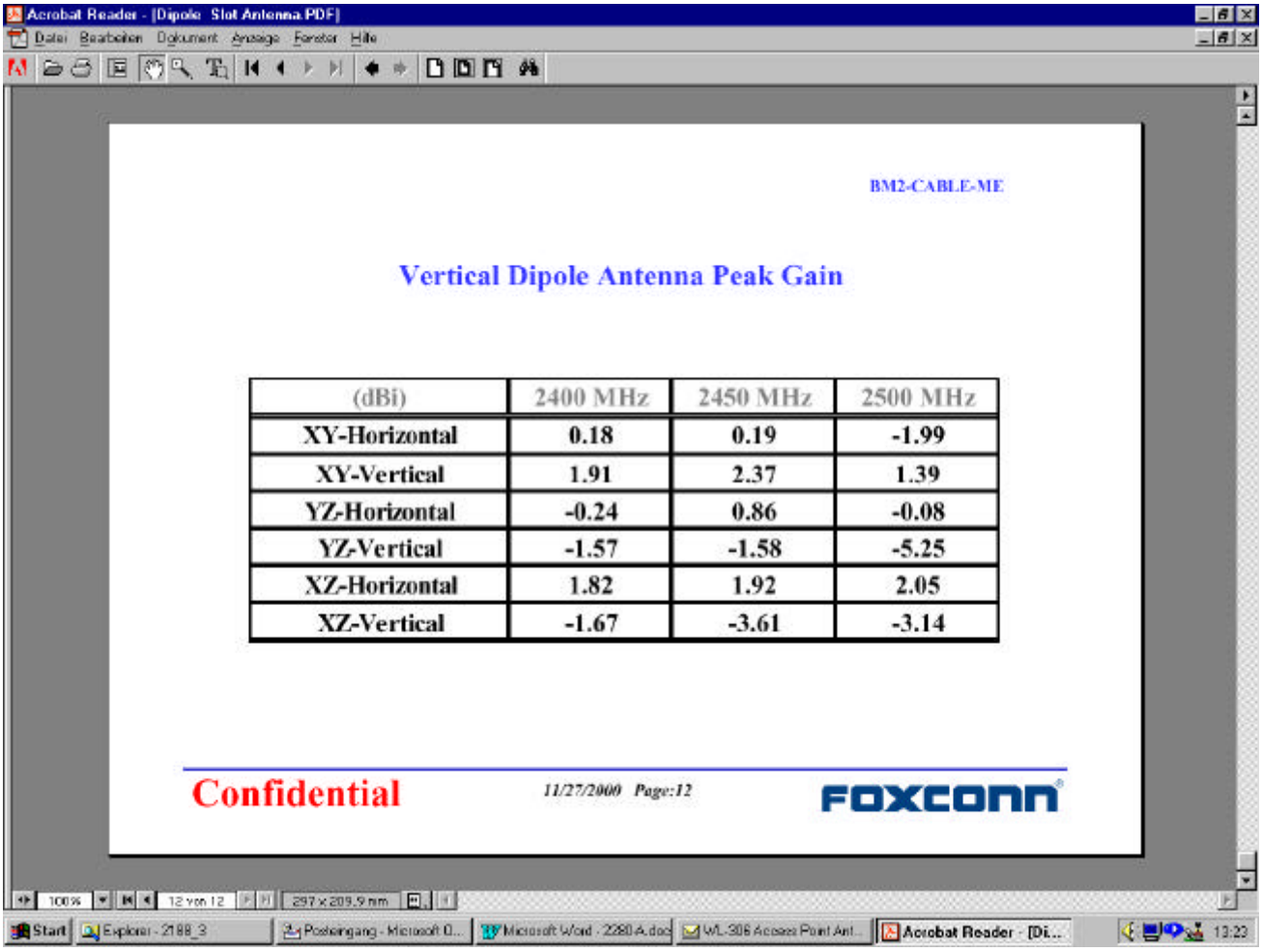

Acrobat Reader - [Dipole Slot Antenna.PDF]
BM2-CABLE-ME
Vertical Slot Antenna Peak Gain
(dBi) 2400 MHz 2450 MHz 2500 MHz
XY-Horizontal 2.75 1.78 2.95
XY-Vertical -6.39 -6.10 -5.38
YZ-Horizontal -7.41 -7.56 -7.21
YZ-Vertical -2.41 -1.76 -2.28
XZ-Horizontal -0.58 -0.38 -1.20
XZ-Vertical -5.87 -6.62 -5.65
Confidential
11/27/2000 Page:7
FOXCONN


Acrobat Reader - [Dipole Slot Antenna.PDF]
BM2-CABLE-ME
XY-Plane Vertical Dipole Antenna
Radiation Pattern
Horizontal Polarization
Vertical Polarization
Confidential
11/27/2000 Page:8
FOXCONN


Acrobat Reader - [Dipole Slot Antenna.PDF]
BM2-CABLE-ME
YZ-Plane Vertical Dipole Antenna
Radiation Pattern
Horizontal Polarization
Vertical Polarization
Confidential
11/27/2000 Page:9
FOXCONN


Acrobat Reader - [Dipole Slot Antenna.PDF]
BM2-CABLE-ME
XZ-Plane Vertical Dipole Antenna
Radiation Pattern
Horizontal Polarization
Vertical Polarization
Confidential
11/27/2000 Page:10
FOXCONN


Acrobat Reader - [Dipole Slot Antenna.PDF]
BM2-CABLE-ME
Vertical Dipole Antenna
Total Average Gain
(dBi) 2400 MHz 2450 MHz 2500 MHz
XY-Horizontal -6.16 -6.58 -8.33
XY-Vertical -2.73 -1.55 -2.91
XY-Average -1.11 -0.37 -1.81
YZ-Horizontal -5.02 -4.19 -4.86
YZ-Vertical -8.17 -8.34 -9.69
YZ-Average -3.31 -2.78 -3.62
XZ-Horizontal -3.17 -3.07 -3.22
XZ-Vertical -7.91 -8.15 -8.25
XZ-Average -1.91 -1.89 -2.04
Total Average Gain -2.02 -1.56 -2.42
Confidential
11/27/2000 Page:11
FOXCONN



BM2-CABLE-ME

## Vertical Dipole Antenna Peak Gain

| (dBi) | 2400 MHz | 2450 MHz | 2500 MHz |
|---|---|---|---|
| XY-Horizontal | 0.18 | 0.19 | -1.99 |
| XY-Vertical | 1.91 | 2.37 | 1.39 |
| YZ-Horizontal | -0.24 | 0.86 | -0.08 |
| YZ-Vertical | -1.57 | -1.58 | -5.25 |
| XZ-Horizontal | 1.82 | 1.92 | 2.05 |
| XZ-Vertical | -1.67 | -3.61 | -3.14 |

Confidential 11/27/2000 Page:12 FOXCONN