

Recognized by the
Federal Communications Commission
Anechoic chamber registration no.: 90462 (FCC)
Anechoic chamber registration no.: 3463 (IC)
TCB ID: DE 0001



Accredited by the
German Accreditation Council
DAR-Registration Number
DAT-P-176/94-D1



Independent ETSI
compliance test house



Accredited Bluetooth® Test Facility (BQTF)

| | |
|-----------------------------|---|
| Test report no. | : 2-4279-01-03a/06 |
| Applicant | : Siemens Home and Office Communication Devices GmbH & Co. KG |
| Type | : Gigaset SX762 WLAN dsl Gigaset SX763 WLAN dsl Gigaset SX765 WLAN dsl |
| Test Standard | : FCC Part 15.247 RSS-210 |
| FCC ID | : TVU-SX762-SX765 |
| Certification No. IC | : 267U-SX762765 |

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1. Administrative data

1.1. Administrative data of the test facility

1.1.1 Identification of the testing laboratory

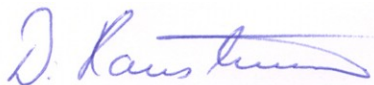
| | |
|-------------------------------------|---|
| Company name: | Cetecom ICT Services GmbH |
| Address: | Untertürkheimerstr. 6-10 D-66117 Saarbruecken Germany |
| Laboratory accreditation: | DAR-Registration No. DAT-P-176/94-D1 Bluetooth Qualification Test Facility (BQTF) |
| Responsible for testing laboratory: | Harro Ames Phone: +49 681 598 0 Fax: +49 681 598 9075 email: info@ict.cetecom.de |



.....
Responsible for testing
(Harro Ames)

1.1.2 Organizational items

| | |
|----------------------------------|--------------------------|
| Reference No.: | 2-4279-01-03a/06 |
| Order No.: | |
| Receipt of EUT: | 2006-05-17 |
| Date(s) of test: | 2006-05-17 to 2005-05-18 |
| Date of report: | 2006-05-22 |
| Number of report pages: | 84 |
| Number of diagram pages (annex): | |
| ----- | |
| Version of template: | 1.2 |



.....
Responsible for laboratory
(Dirk Hausknecht)

Note:

The test results of this test report relate exclusively to the item tested as specified in this report. The CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

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During the test no hardware and software changes are allowed to be performed at the EUT.

1.1.3 Applicant's details

| | |
|------------------|--|
| Applicant's name | Siemens Home and Office Communication Devices GmbH & Co. KG |
| Address: | Frankenstrasse 2 D-46395 Bocholt Germany |
| Contact person: | Mr. Martin Zavelberg Phone: +49 (0) 2871 91 2029 Fax: +49 (0) 2871 91 62029 email: Martin.Zavelberg@Siemens.com |

1.2 Administrative data of manufacturer / member

| | |
|----------------------|---------------|
| Manufacturer's name: | - applicant - |
| Address: | |

1.3 Description of the Equipment under test (EUT)

1.3.1 EUT: Type, S/N etc.

| | |
|------------------------|--|
| Product Name: | Gigaset SX762 WLAN dsl Gigaset SX763 WLAN dsl Gigaset SX765 WLAN dsl |
| Product ID: | |
| Product Description: | Wireless AP for 2.4 GHz |
| Manufacturer: | Siemens Home and Office Communication Devices GmbH & Co. KG Frankenstrasse 2 D-46395 Bocholt Germany |
| S/N serial number: | |
| HW Hardware Status: | S30853-Q709-B138 A5B00900208994 Change NO.: 36941 Dlf.:2.1 |
| SW Software Status: | SW 14 |
| Frequency Range [MHz]: | 2412 – 2462 MHz |
| Type of Modulation: | DSSS. OFDM |
| Number of Channels: | 11 |
| Antenna: | 1 external rod / 1 internal printed |
| Power Supply: | External power supply |
| Temperature Range: | -20°C to +55°C |

FCC ID: TVU-SX762-SX765

IC: 267U-SX762765

1.3.2 If RF component testing only, description of additional used HW/SW

| | Product name | Product ID | Description | S/N serial number | HW hardware status | SW software status |
|---|--------------|------------|-------------|----------------------|-----------------------|--------------------------|
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |

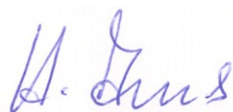
1.3.3 Additional EUT information For IC Canada (appendix 2)

| | |
|---|--|
| Company Number: | 267U |
| Model Name: | Gigaset SX762 WLAN dsl Gigaset SX763 WLAN dsl Gigaset SX765 WLAN dsl |
| Manufacturer: | Siemens Home and Office Communication Devices GmbH & Co. KG Frankenstrasse 2 D-46395 Bocholt Germany |
| Tested to Radio Standards Specification (RSS) No.: | RSS-210, Issue 6 |
| Open Area Test Site Industry Canada Number: | 3463A-1 |
| Frequency Range (or fixed frequency) [MHz]: | 2412 – 2462 MHz |
| RF: Power [W] (max): | Rad. : 27.5 dBm (562 mW) (g-mode) Cond. : 25.1 dBm (324 mW) (g-mode) |
| Antenna Type: | External rod antenna, internal printed ant. |
| Occupied Bandwidth (99% BW) [kHz]: | 17.8 MHz DSSS, 18.4 MHz OFDM, |
| Type of Modulation: | DSSS / OFDM |
| Emission Designator (TRC-43): | 17M8G1D (DSSS) 18M4G7D (OFDM) |
| Transmitter Spurious (worst case) [μ V/m in 3m]: | < 500 dB μ V/m@3m |
| Receiver Spurious (worst case) [μ V/m in 3m]: | < 500 dB μ V/m@3m |

ATTESTATION:**DECLARATION OF COMPLIANCE:**

I declare that the testing was performed or supervised by me; that the test measurements were made in accordance with the above-mentioned Industry Canada standard(s); and that the equipment identified in this application has been subjected to all the applicable test conditions specified in the Industry Canada standards and all of the requirements of the standard have been met.

Signature:



Date: 2006-05-22

Test engineer: Harro Ames

1.3.4 EUT operating modes

| EUT operating mode no. *) | Description of operating modes | Additional information |
|---------------------------|--------------------------------|--|
| Op. 0 | Normal mode | Normal temperature and power source conditions |
| Op. 1 | | low temperature, low power source conditions |
| Op. 3 | | low temperature, high power source conditions |
| Op. 4 | | high temperature, low power source conditions |
| Op. 5 | | high temperature, high power source conditions |

*) EUT operating mode no. is used to simplify the test report.

1.3.5 Extreme conditions testing values

| Description | Shortcut | Unit | Value |
|--------------------------------|-------------------|--------|----------|
| Nominal Temperature / humidity | T _{nom} | °C / % | +23 / 43 |
| Low Temperature | T _{low} | °C | -20 |
| High Temperature | T _{high} | °C | +55 |
| Nominal Power Source | V _{nom} | V | 115 |
| Low Power Source | V _{low} | V | 100 |
| High Power Source | V _{high} | V | 130 |

Type of powersource: V AC

During extreme voltage tests there were no change of behavior on the sample.
Output power, power density and bandwidth did not change.

2 Teststandard & summary list of all performed test cases

| TC identifier | Description | verdict | date | Remark |
|---------------|--------------------------------------|---------|------------|--------|
| RF-Testing | FCC Part 15 §15.247 - CANADA RSS-210 | pass | 2006-05-22 | |

| Test Specification Clause | Test Case | Pass | Fail | Not applicable | Not performed |
|---------------------------|--|------|------|----------------|---------------|
| | | | | | |
| None | Antenna Gain | Yes | | | |
| | | | | | |
| §15.247 (e) | Peak power spectral density | Yes | | | |
| | | | | | |
| §15.247(a)(2) | Spectrum Bandwidth of a DSSS System / 6dB BW | Yes | | | |
| | | | | | |
| § 15.247 (b)(3) | Maximum output power (conducted) | Yes | | | |
| | | | | | |
| § 15.247 (b)(3) | Max. peak output power (radiated) | Yes | | | |
| | | | | | |
| §15.247 (c) | Band-edge compliance of conducted emissions | Yes | | | |
| | | | | | |
| §15.205 | Band-edge compliance of radiated emissions | Yes | | | |
| | | | | | |
| §15.247 (c) | Spurious Emission - conducted (Transmitter) | Yes | | | |
| | | | | | |
| § 15.209 | Spurious Emission -radiated (Transmitter) | Yes | | | |
| | | | | | |
| § 15.247 (c) | Spurious Emissions-radiated (Receiver) | Yes | | | |
| | | | | | |
| § 15.109 | Spurious Emissions-radiated <30 MHz | Yes | | | |
| | | | | | |
| § 15.107/207 | Conducted Emissions <30 MHz | Yes | | | |

3 RF measurement testing

3.1 Description of test set-up

3.1.1 Radiated measurements

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 9 kHz to 25 GHz in semi-anechoic and fully-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber.

The receiving antennas conform with specifications ANSI C63.2-1996 clause 15 and ANSI C63.4-2003 clause 4.1.5. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test set-ups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received.

The wanted and unwanted emissions are received by spectrum analysers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63.4-2003 clause 4.2.

Antennas conform with ANSI C63.2-1996 item 15.

9 kHz - 150 MHz: Quasi Peak measurement, 200 Hz Bandwidth, passive loop antenna.

150 kHz - 30 MHz: Quasi Peak measurement, 9 kHz Bandwidth, passive loop antenna.

30 MHz - 200 MHz: Quasi Peak measurement, 120 kHz Bandwidth, biconical antenna

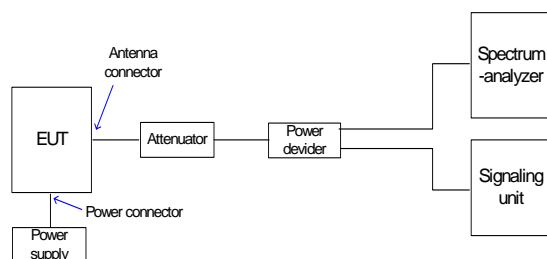
200 MHz - 1 GHz: Quasi Peak measurement, 120 kHz Bandwidth, log periodic antenna

>1 GHz: Average, RBW 1 MHz, VBW 10 Hz, wave guide horn

All measurement settings are according to FCC 15.209 and 15.207

3.1.2 Conducted measurements

The EUT's RF signal is coupled out by the antenna connector which is supplied by the manufacturer. The signal is connected to the spectrum analyzer. The specific losses for signal path are first checked within a calibration. The measurement readings on the spectrum analyzer are corrected by the specific test set-up loss. The attenuator, power divider, signaling unit and the spectrum analyzer are impedance matched on 50 Ohm.



3.2 Referenced Documents

none

3.3 Additional comments

The Gigaset SX7.. series consists of 4 types,

- Gigaset SX763 WLAN dsl
- Gigaset SX765 WLAN dsl
- Gigaset SX762 WLAN dsl
- Gigaset SX761 dsl

that are hardware variants of “Gigaset SX763 WLAN dsl” based on population options and software.

Gigaset SX765 WLAN dsl (smart home gateway): same as “Gigaset SX763 WLAN dsl” but with more memory and another application software.

Gigaset SX762 WLAN dsl: same as “Gigaset SX763 WLAN dsl” but uses baseband controller variant without WLAN SuperG modus (802.11b/g only).

Gigaset SX761 dsl: as “Gigaset SX763 WLAN dsl” but without WLAN part, without USB host port and without PSTN access (FXO port).

In this report we tested the Gigaset SX763 WLAN dsl as worst case.

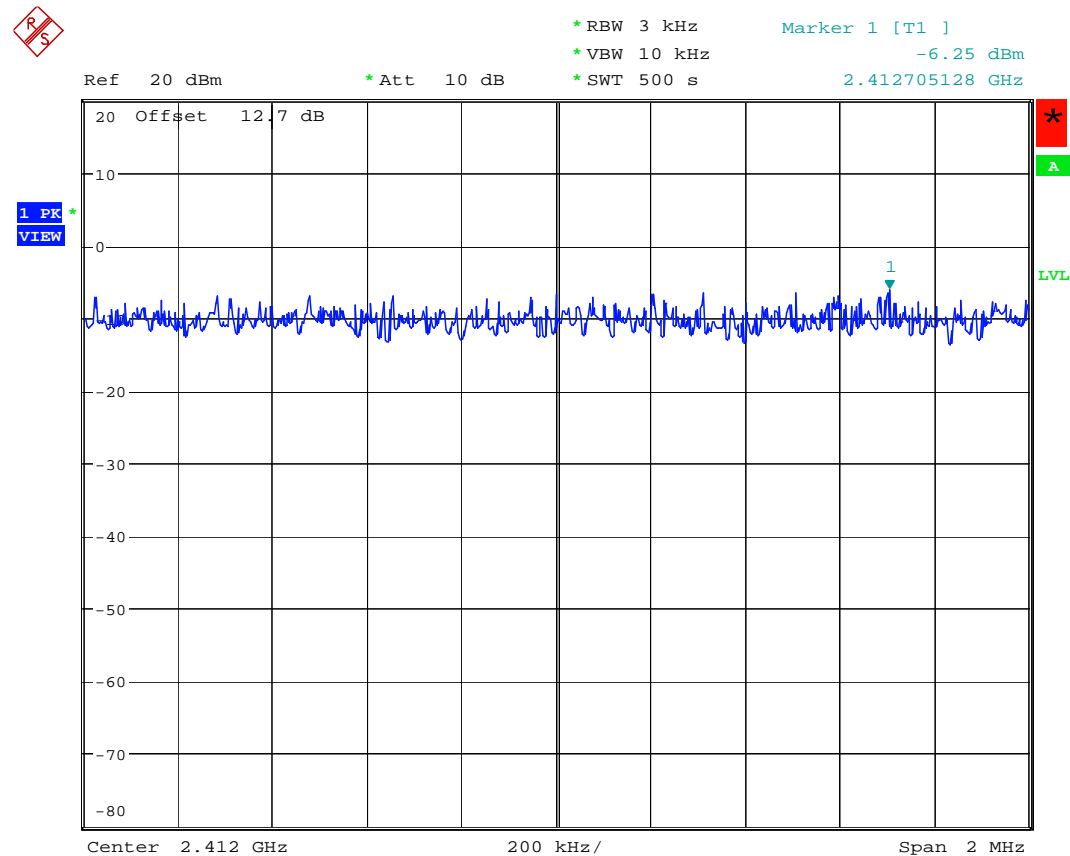
3.4 Antenna gain

The antenna gain was calculated by subtracting the conducted power from the radiated power.

| TESTS | | Antenna Gain [dBi] | | |
|----------------------------------|----------------------|--------------------|------------------|-------------------|
| T _{nom} [°C] | V _{nom} [V] | lowest frequency | middle frequency | highest frequency |
| Antenna 1 (build-in on PCB) | | -3.9 | -3.1 | -1.0 |
| Antenna 2 (external rod antenna) | | +1.4 | +1.6 | +2.4 |

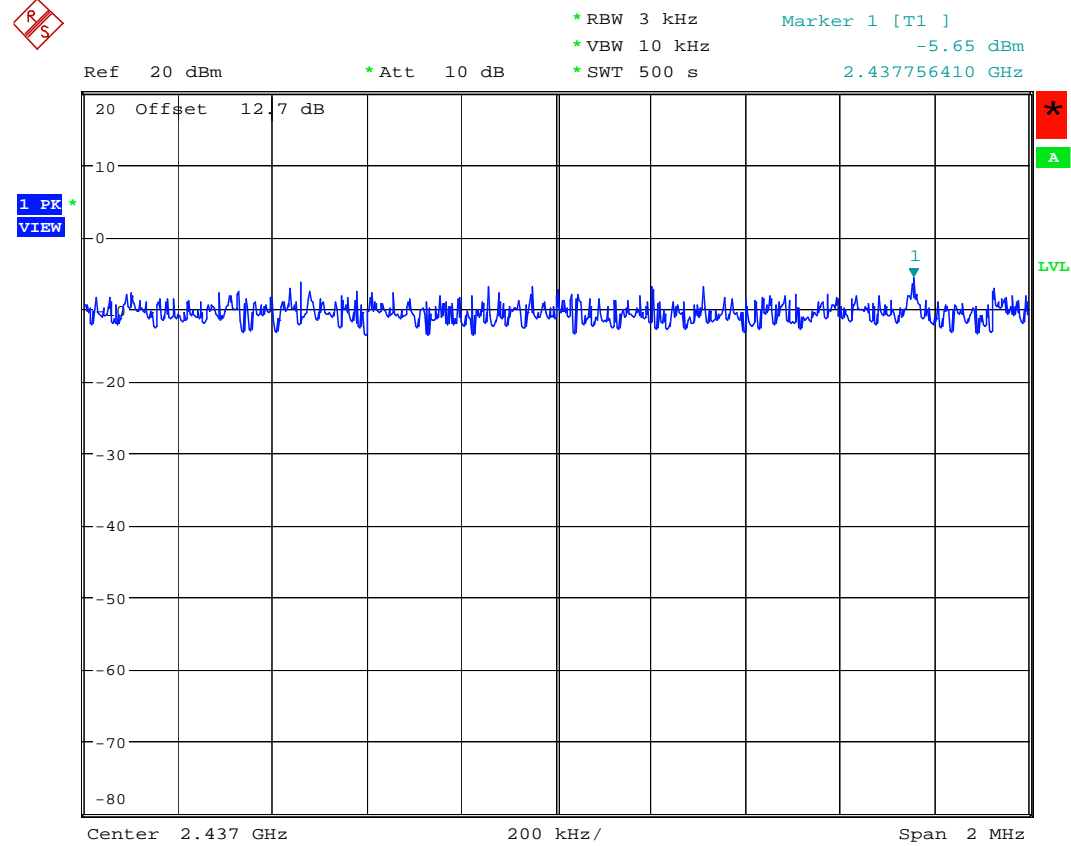
3.5 Peak Power Spectral density (DSSS) §15.247(e)

Plot 1: (result calculated by the Signal analyzer FSIQ 26 from Rohde & Schwarz)



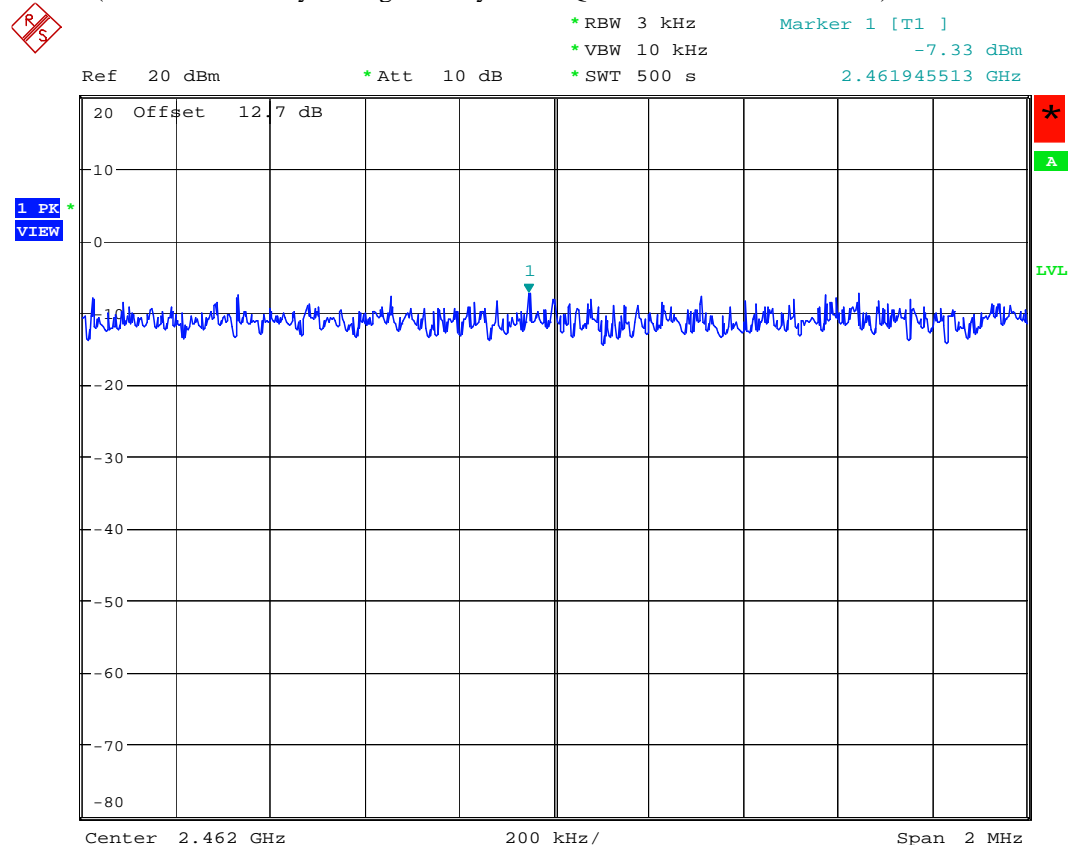
Date: 17.MAY.2006 14:30:34

Plot 2: (result calculated by the Signal analyzer FSIQ 26 from Rohde & Schwarz)



Date: 17.MAY.2006 14:26:51

Plot 3: (result calculated by the Signal analyzer FSIQ 26 from Rohde & Schwarz)



Date: 17.MAY.2006 14:34:18

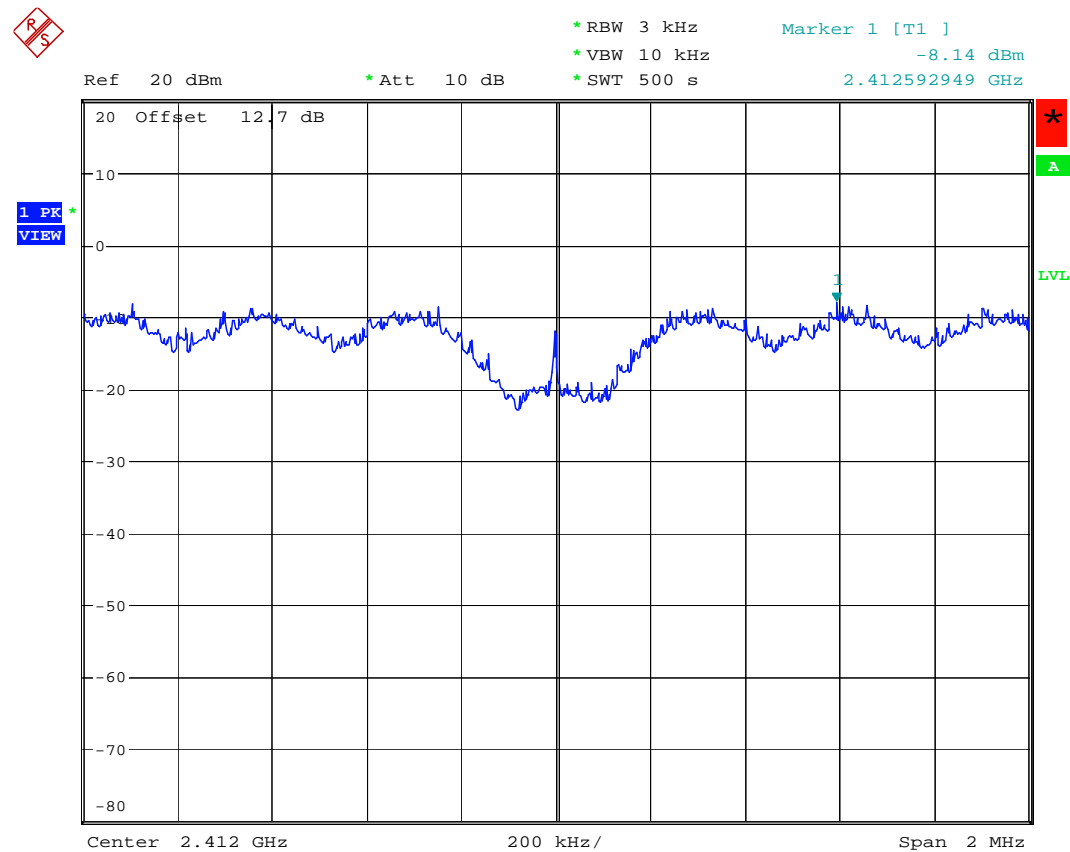
Results: Plot 1: Power density : - 6.25 dBm / 3 KHz
 Plot 2: Power density : - 5.65 dBm / 3 KHz
 Plot 3: Power density : - 7.33 dBm / 3 KHz

Limits :

| | |
|-----------------------------------|---|
| Under normal test conditions only | For digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmission |
|-----------------------------------|---|

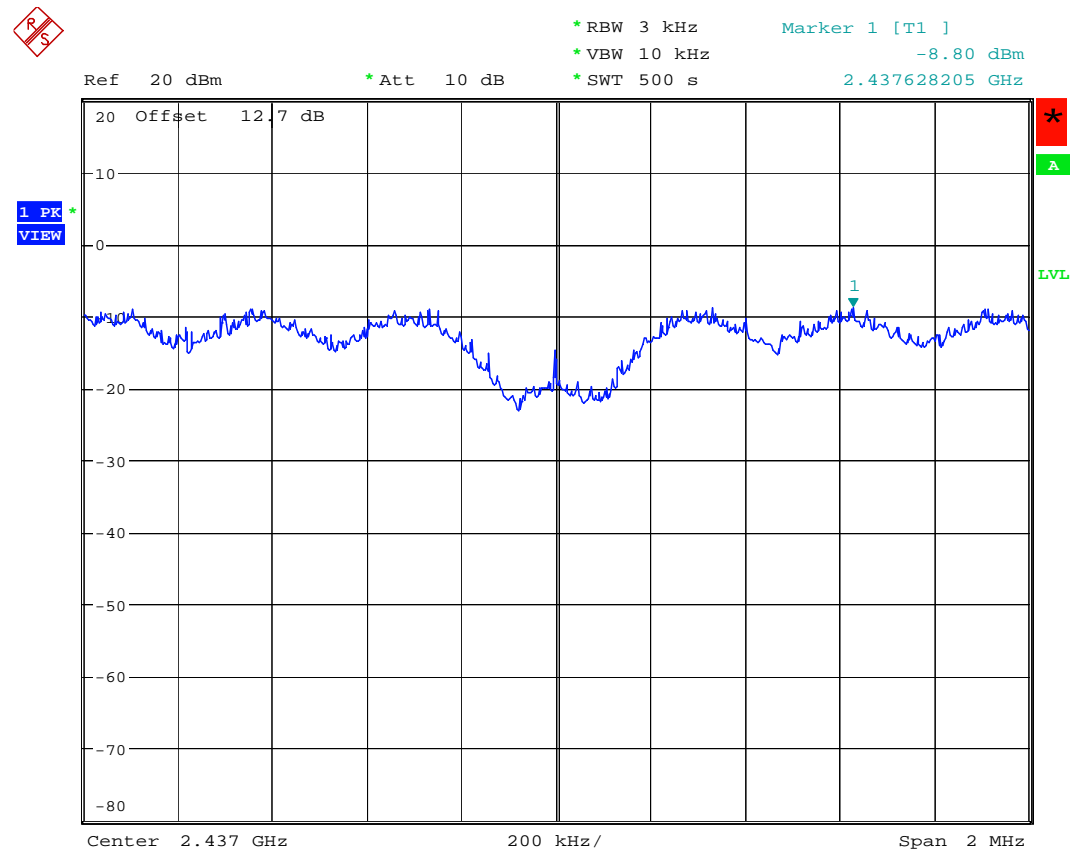
3.5 Peak Power Spectral density (OFDM) §15.247(e)

Plot 1: (result calculated by the Signal analyzer FSIQ 26 from Rohde & Schwarz)



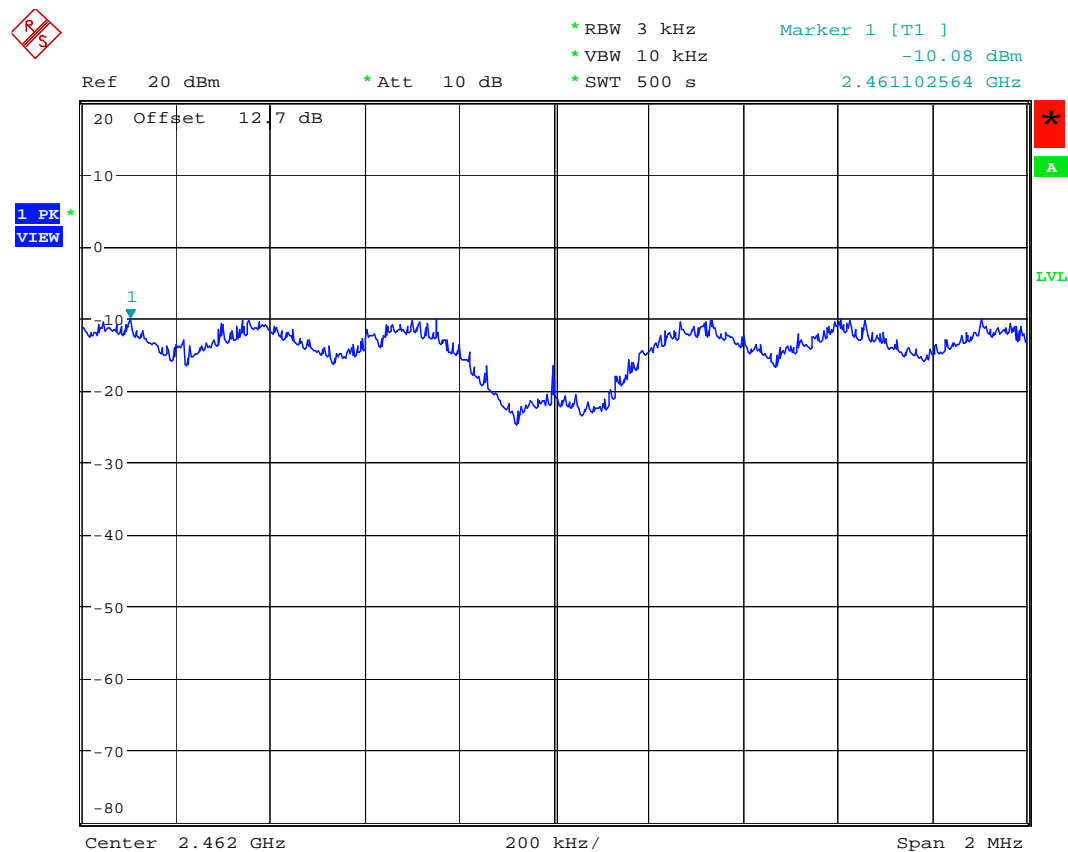
Date: 17.MAY.2006 14:41:38

Plot 2: (result calculated by the Signal analyzer FSIQ 26 from Rohde & Schwarz)



Date: 17.MAY.2006 14:39:03

Plot 3: (result calculated by the Signal analyzer FSIQ 26 from Rohde & Schwarz)



Date: 17.MAY.2006 14:36:23

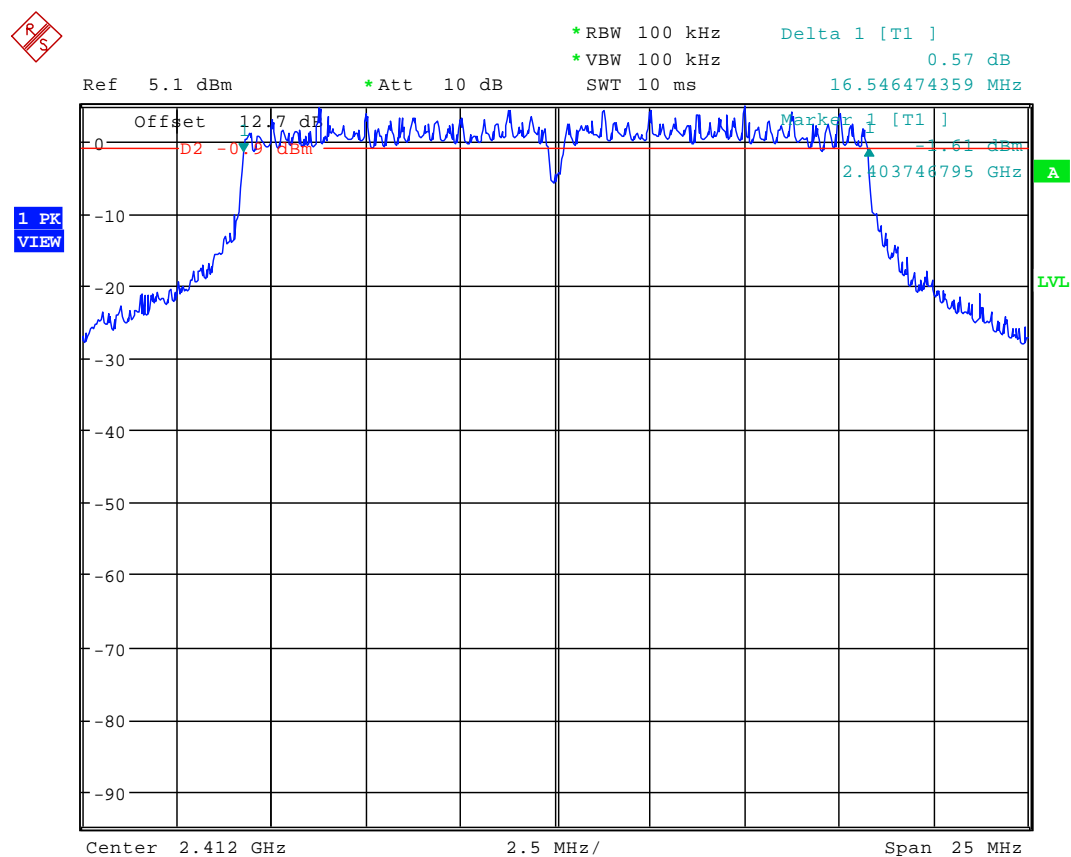
Results: Plot 1: Power density : - 8.14 dBm / 3 KHz
Plot 2: Power density : - 8.80 dBm / 3 KHz
Plot 3: Power density : - 10.03 dBm / 3 KHz

Limits :

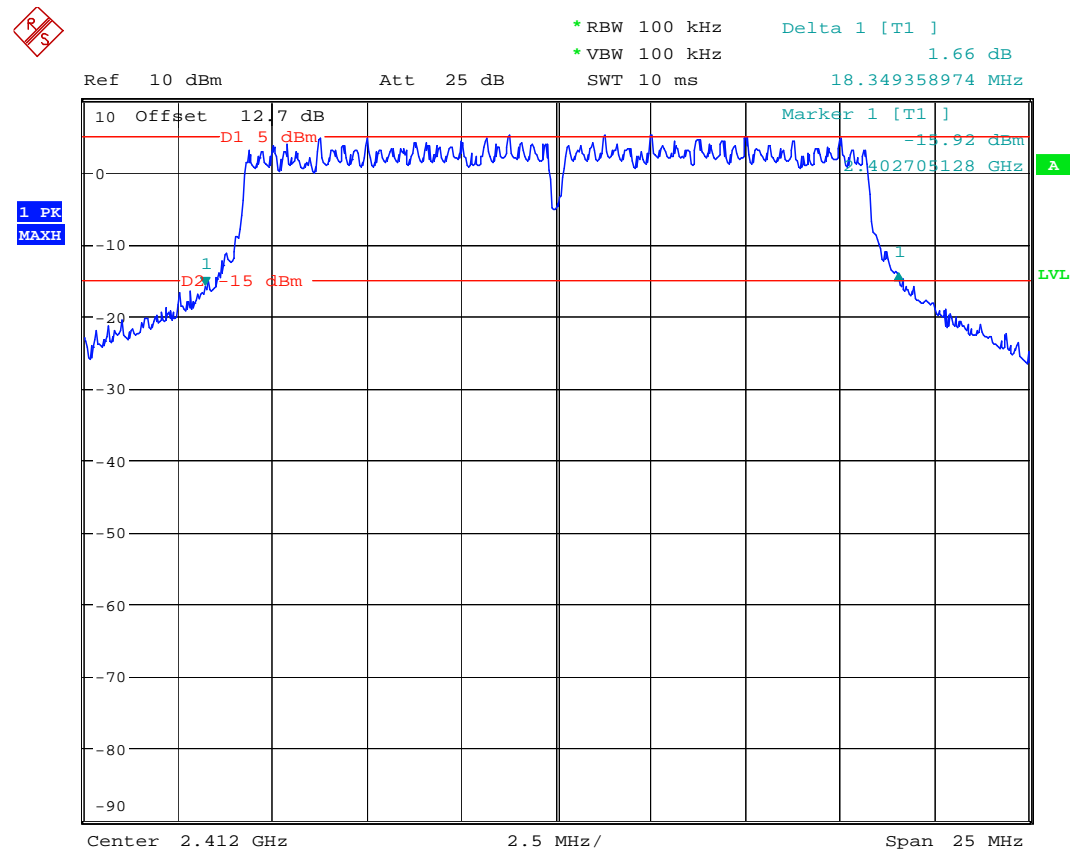
| | |
|-----------------------------------|---|
| Under normal test conditions only | For digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmission |
|-----------------------------------|---|

3.6 Spectrum Bandwidth of a OFDM System / 6 dB / 20 dB Bandwidth §15.247(a)(2)

Plot 1 : 2412 MHz

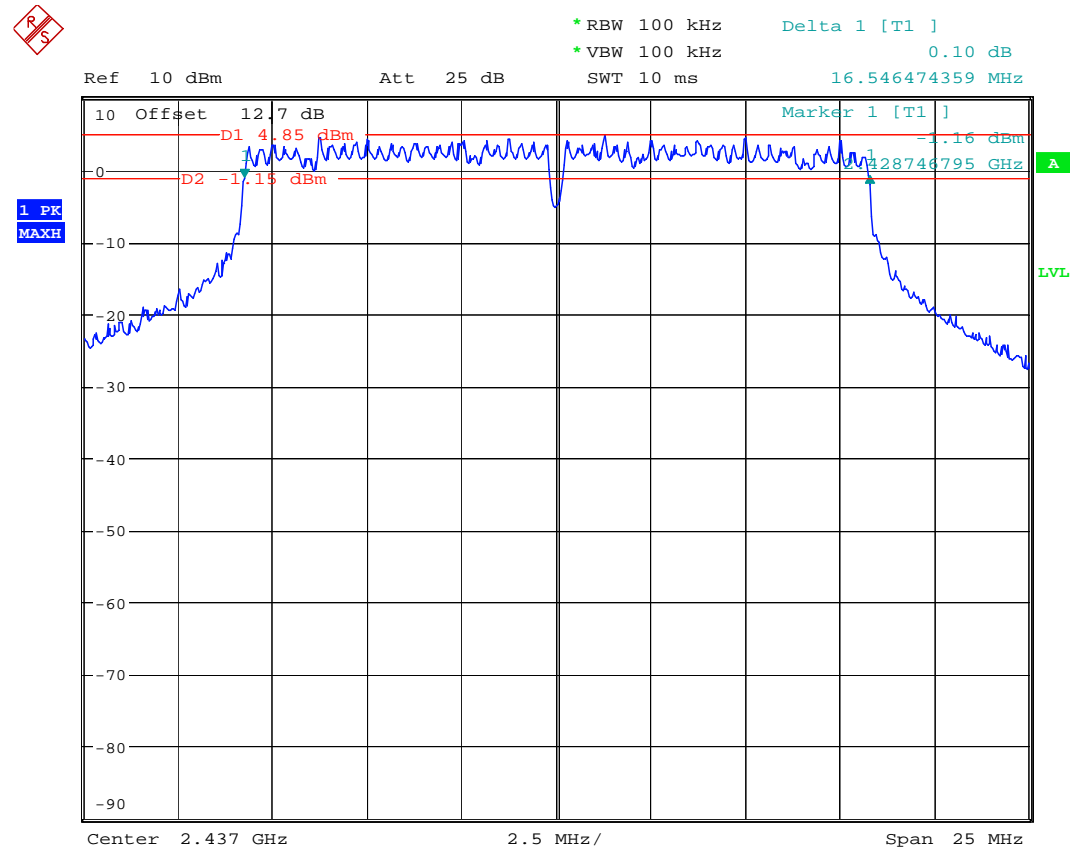


Plot 2:

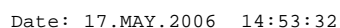


Date: 17.MAY.2006 14:54:51

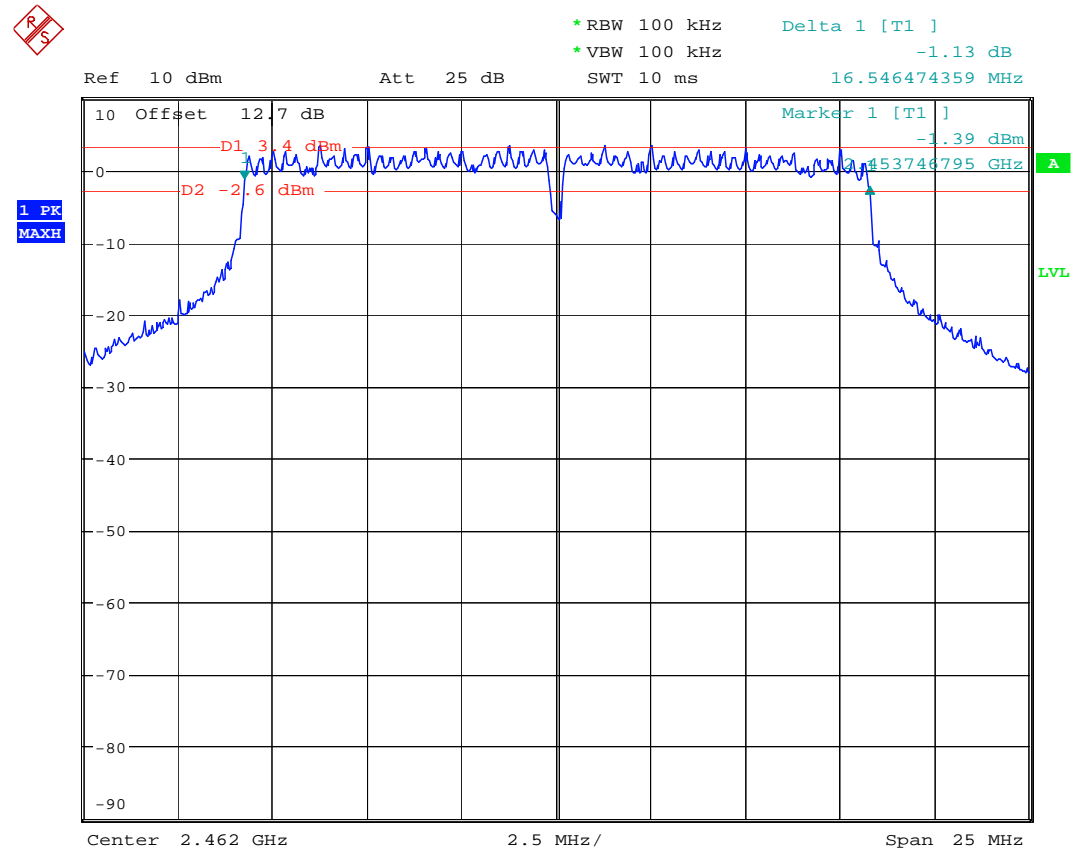
Plot 3: 2437 MHz



Date: 17.MAY.2006 14:48:49

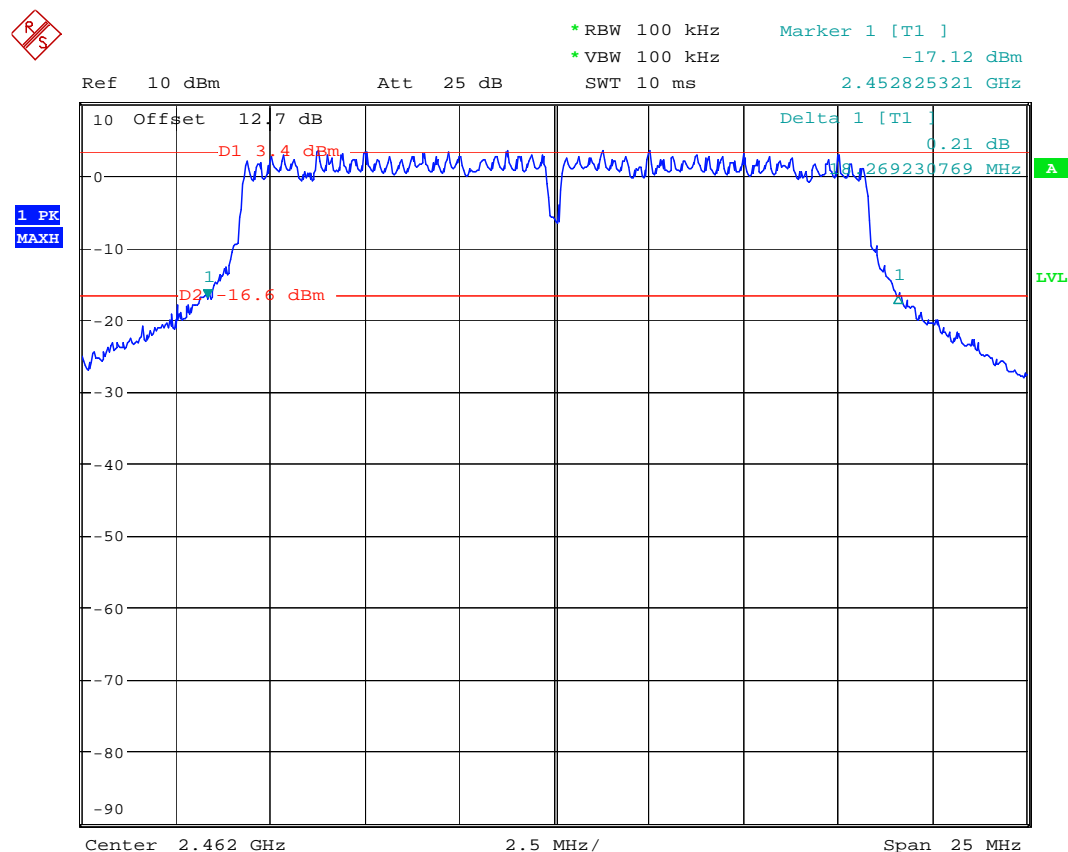


Plot 5: 2462 MHz



Date: 17.MAY.2006 14:50:42

Plot 6:



Date: 17.MAY.2006 14:51:47

Results:

| Test conditions | | BANDWIDTH [MHz] | | |
|-------------------------|-------|-----------------|----------|----------|
| Frequency [MHz] | | 2412 | 2437 | 2462 |
| | 6 dB | 16.54650 | 16.54645 | 16.54647 |
| | 20 dB | 18.34936 | 18.26923 | 18.26923 |
| Measurement uncertainty | | ±1kHz | | |

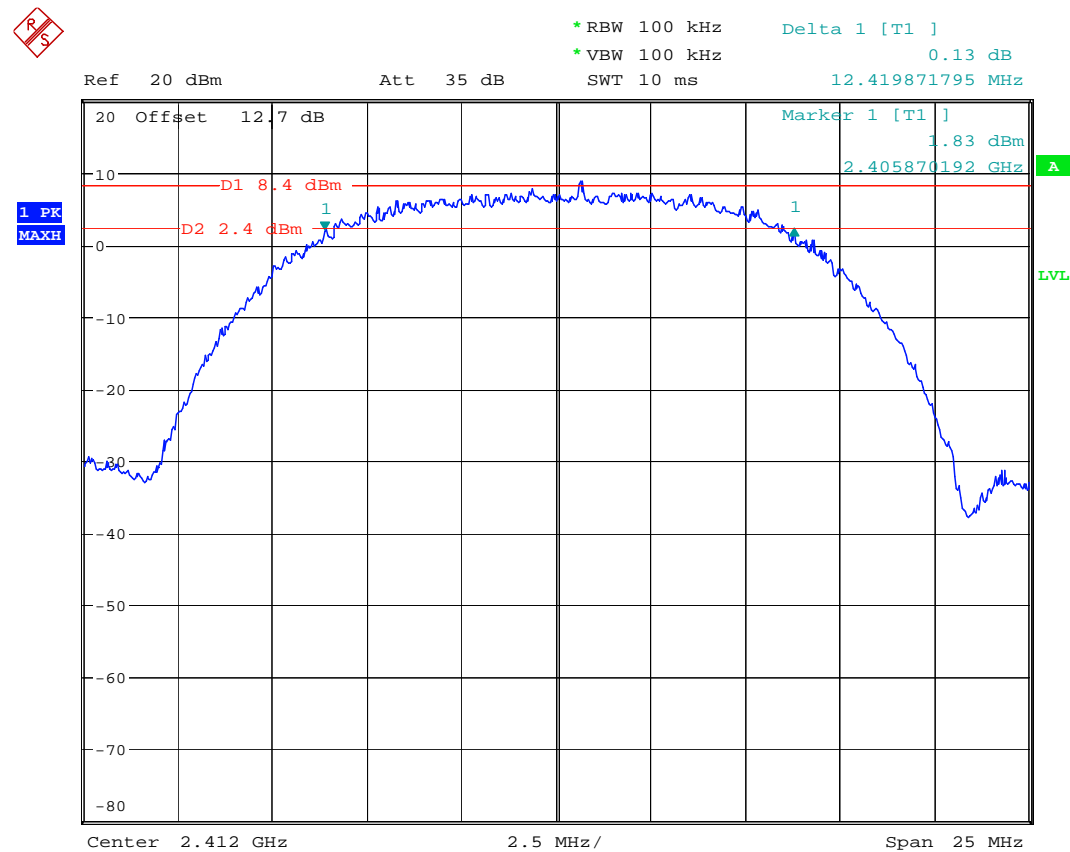
RBW: 100 kHz / VBW 100 kHz

Limits :

| | |
|-----------------------------------|-----------|
| Under normal test conditions only | > 500 KHz |
|-----------------------------------|-----------|

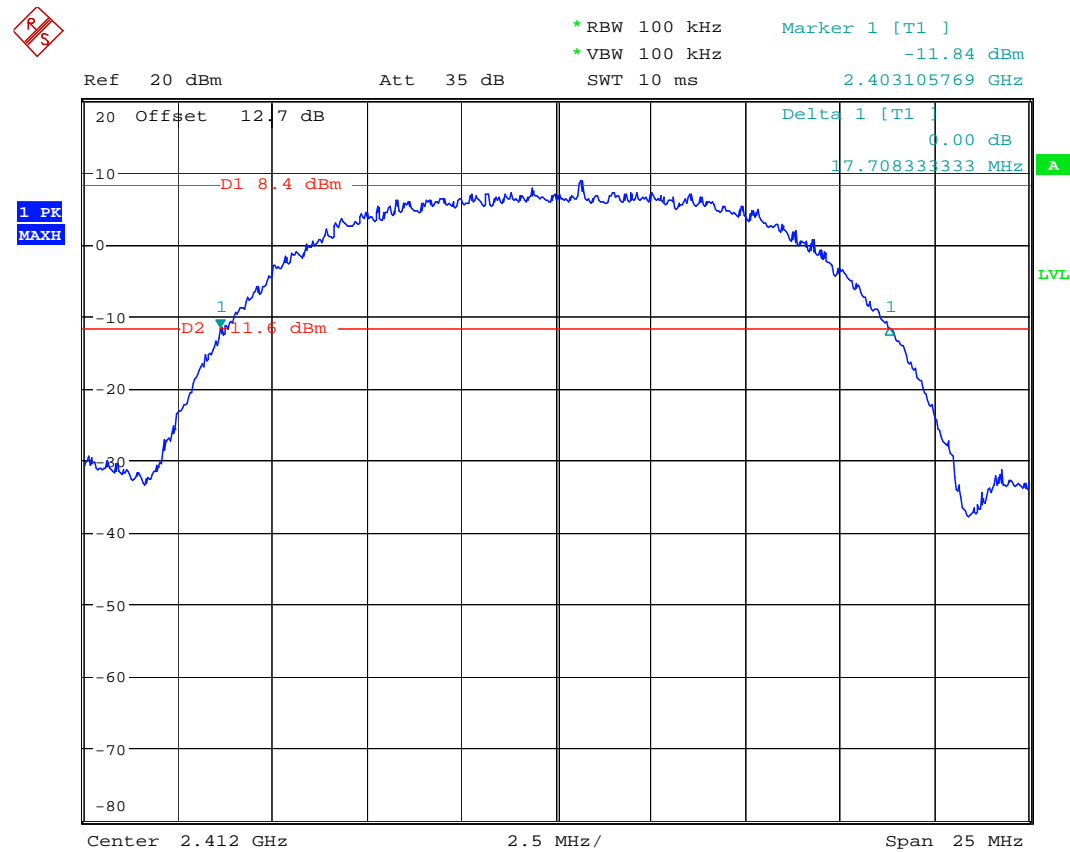
3.6 Spectrum Bandwidth of a DSSS System / 6 dB / 20 dB Bandwidth §15.247(a)(2)

Plot 1 : 2412 MHz



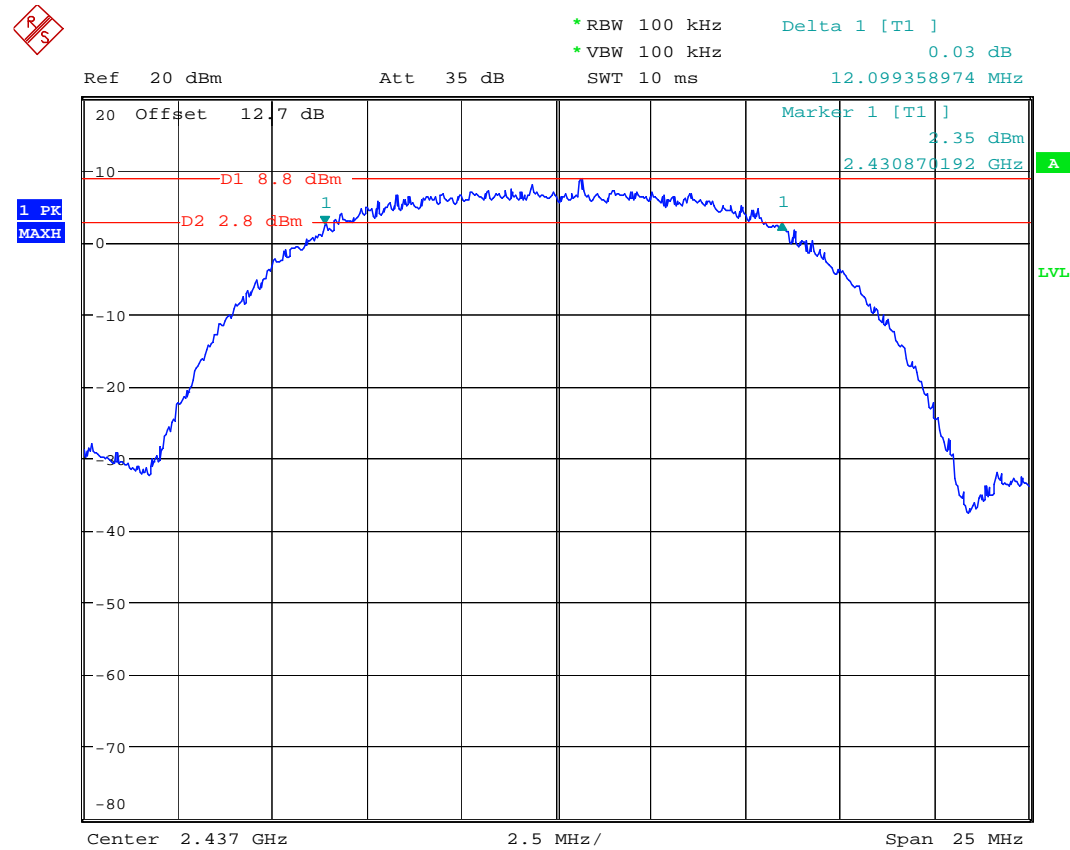
Date: 17.MAY.2006 14:58:29

Plot 2:



Date: 17.MAY.2006 14:57:39

Plot 3: 2437 MHz



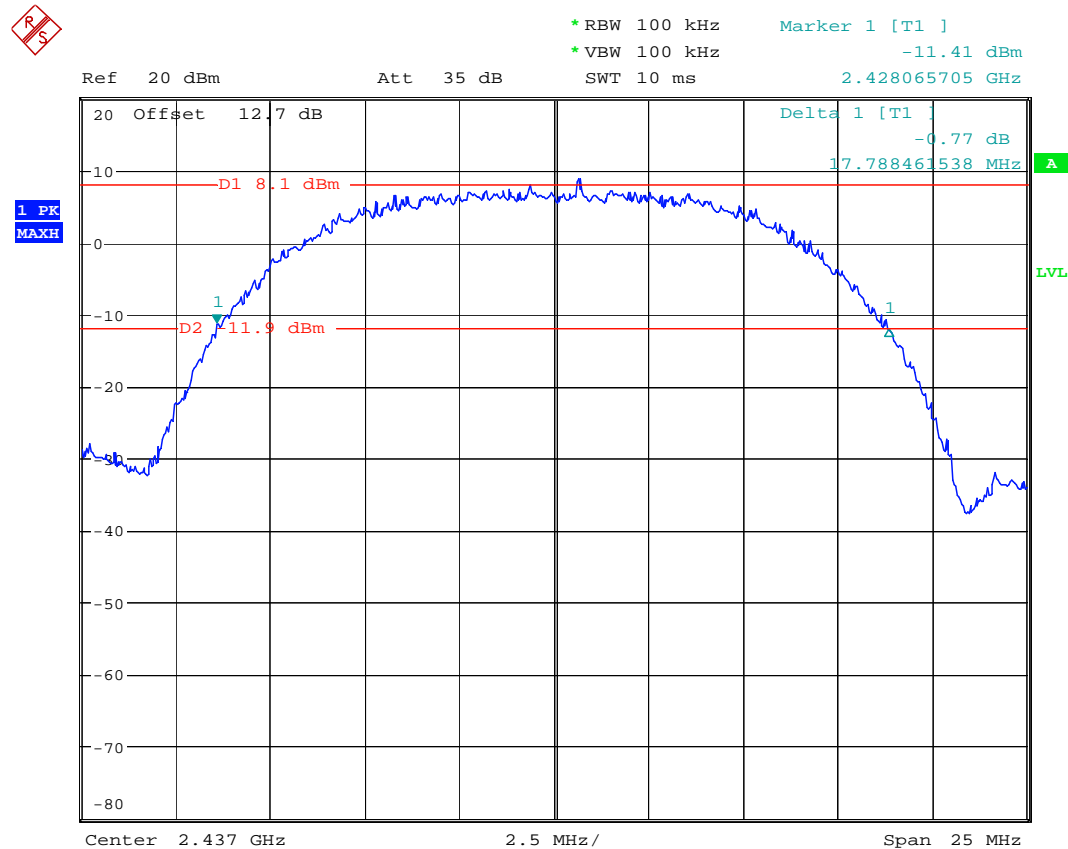
Date: 17.MAY.2006 15:02:16

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Plot 4:



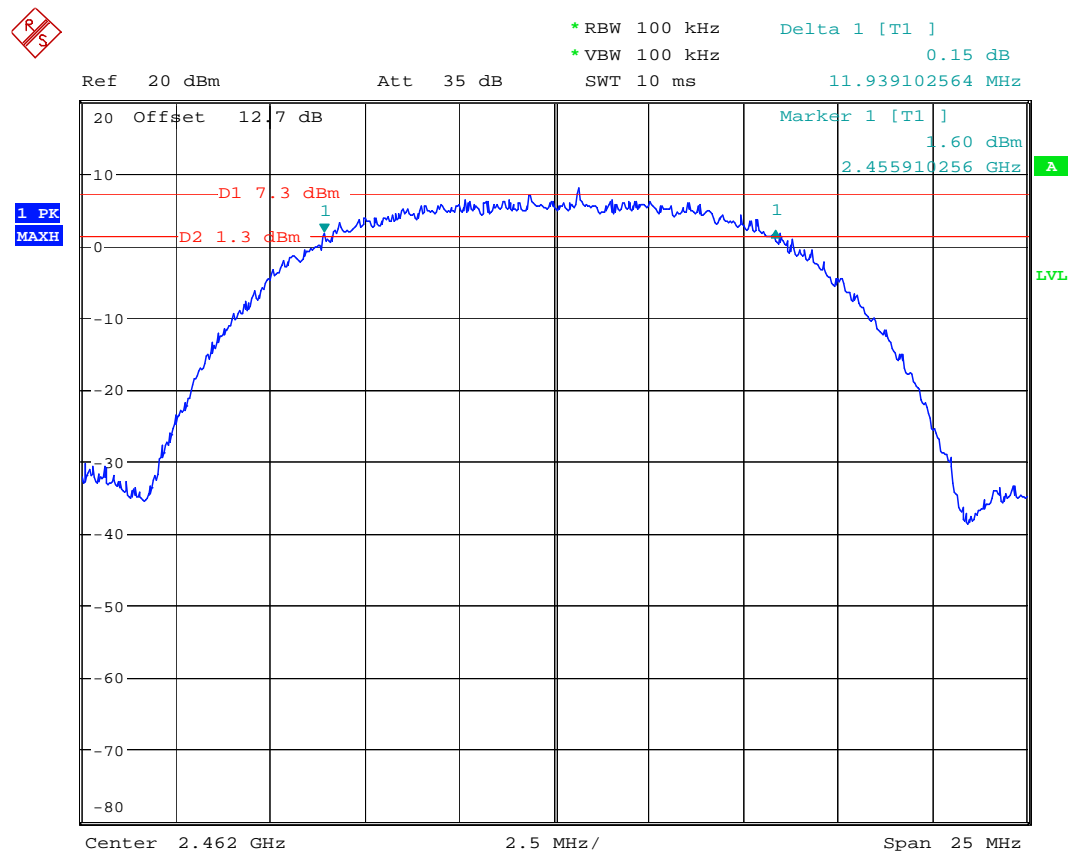
Date: 17.MAY.2006 15:01:19

Test report no.: 2-4279-01-03a/06

Date: 2006-05-22

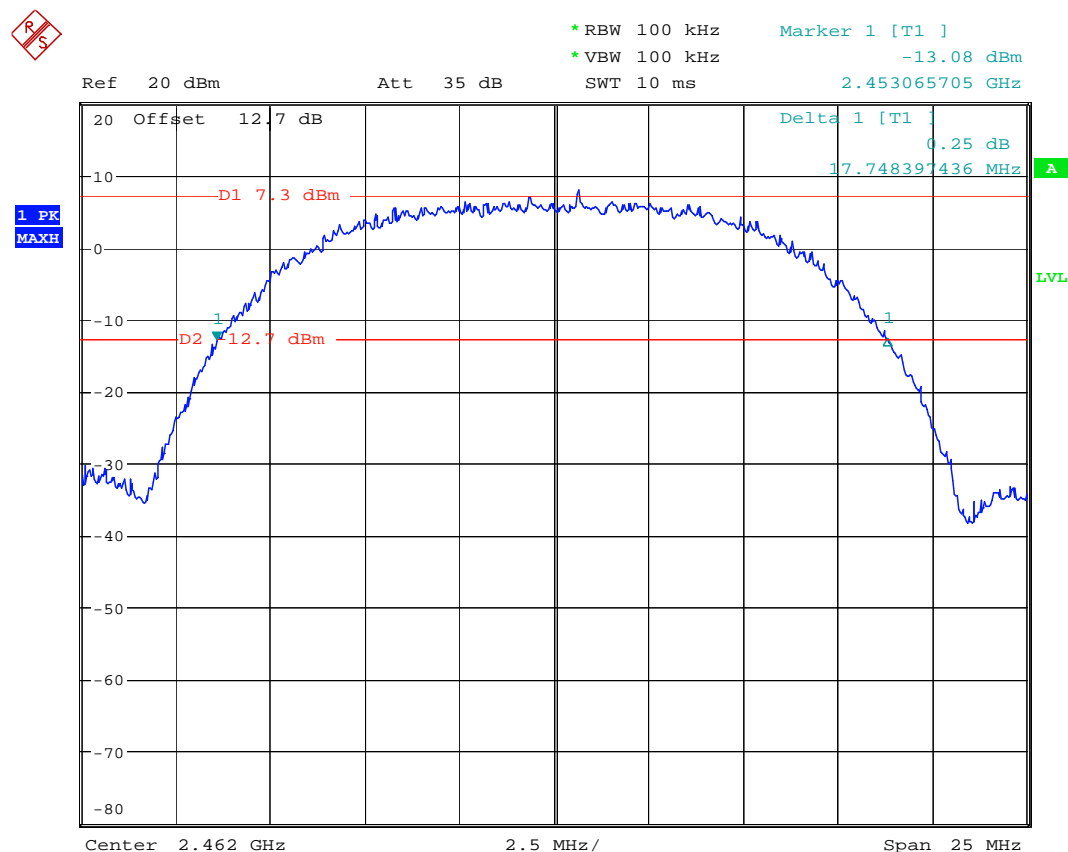
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Plot 5: 2462 MHz



Date: 17.MAY.2006 15:03:57

Plot 6:



Date: 17.MAY.2006 15:04:53

Results:

| Test conditions | | BANDWIDTH [MHz] | | |
|-------------------------|-------|-----------------|----------|----------|
| Frequency [MHz] | | 2412 | 2437 | 2462 |
| | 6 dB | 12.41987 | 12.09936 | 11.93910 |
| | 20 dB | 17.70833 | 17.78846 | 17.74840 |
| Measurement uncertainty | | ±1kHz | | |

RBW: 100 kHz / VBW 100 kHz

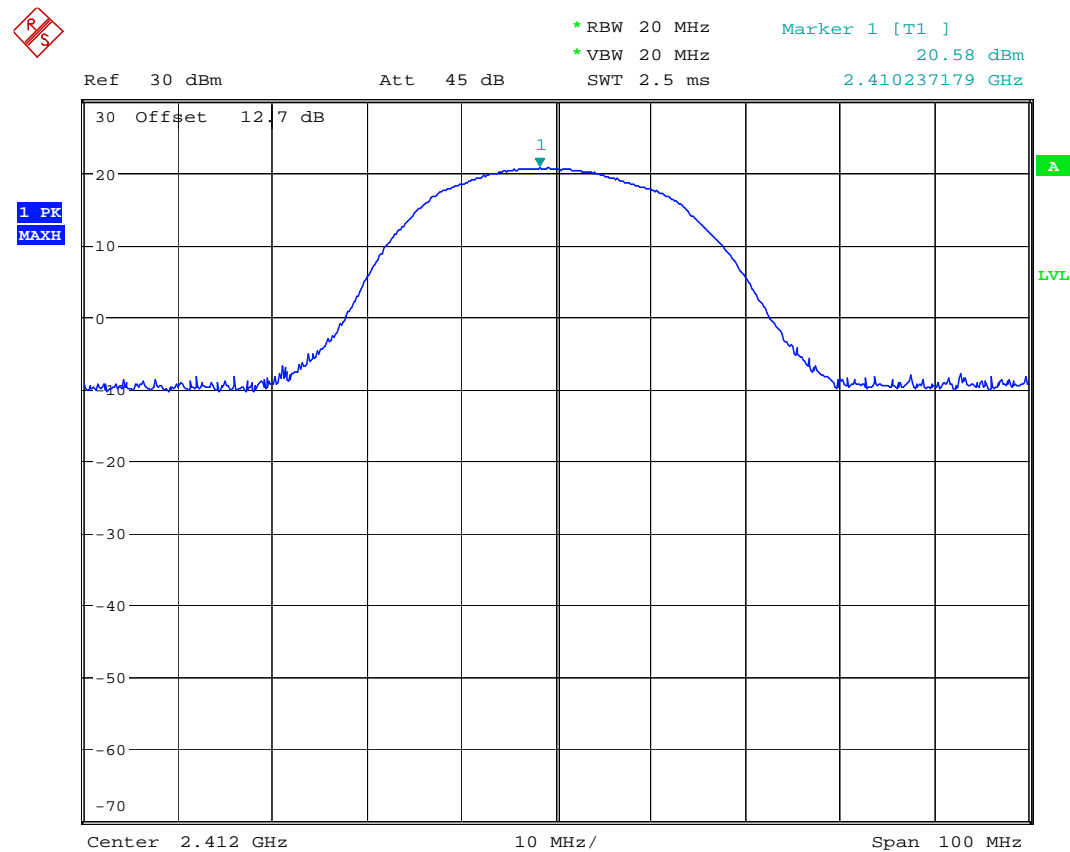
Limits :

| | |
|-----------------------------------|-----------|
| Under normal test conditions only | > 500 KHz |
|-----------------------------------|-----------|

3.7 Maximum output power (conducted) (DSSS)

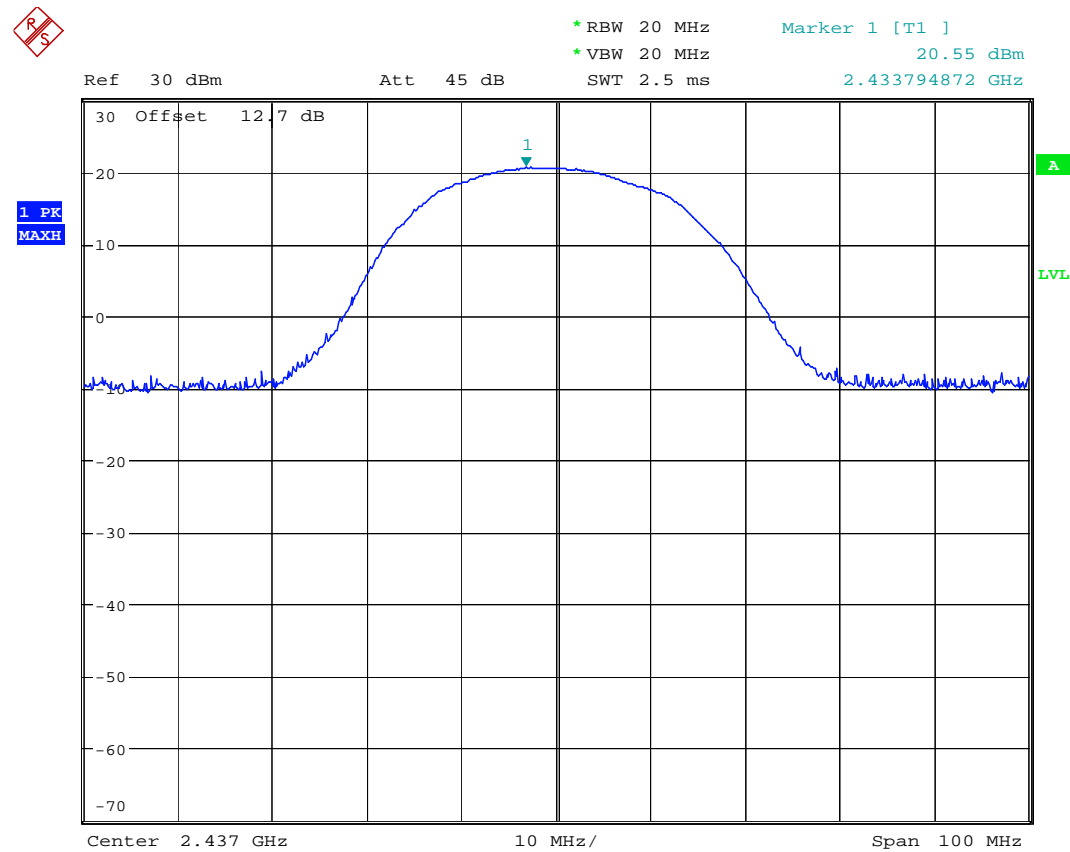
§15.247 (b)(1)

Plot 1: 2412 MHz (Peak)



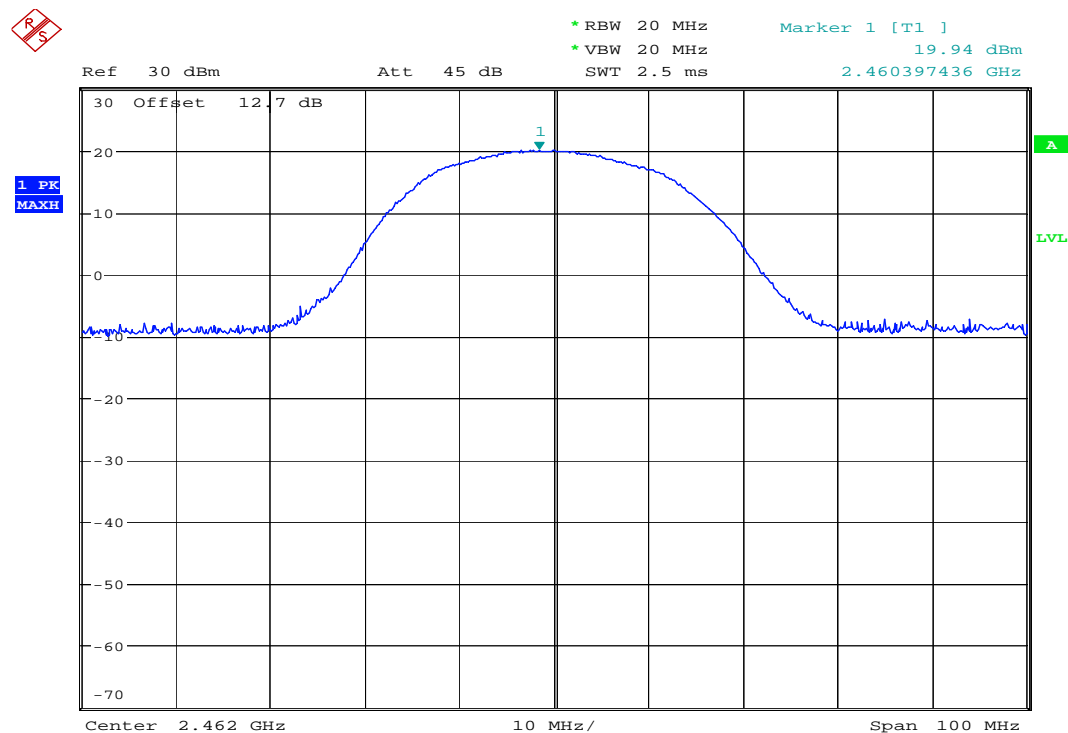
Date: 17.MAY.2006 15:08:48

Plot 2: 2437 MHz (Peak)



Date: 17.MAY.2006 15:08:06

Plot 3: 2462 MHz (Peak)



Date: 17.MAY.2006 15:07:31

Results:

| Test conditions | | Max. peak output power [dBm] | | | |
|----------------------------|------------------|------------------------------|-------|----------|----------|
| Frequency [MHz] | | | | | |
| | | 2412 | 2437 | 2462 | |
| T _{nom} | V _{nom} | PK | 20.58 | 20.55 | 19.94 |
| De facto EIRP (Peak) [dBm] | | 21.98 | | 22.15 | 22.34 |
| Antenna gain: [dBi] | | +1.4 dBi | | +1.6 dBi | +2.4 dBi |
| External antenna | | | | | |
| Measurement uncertainty | | ±3dB | | | |

RBW / VBW : 10 MHz

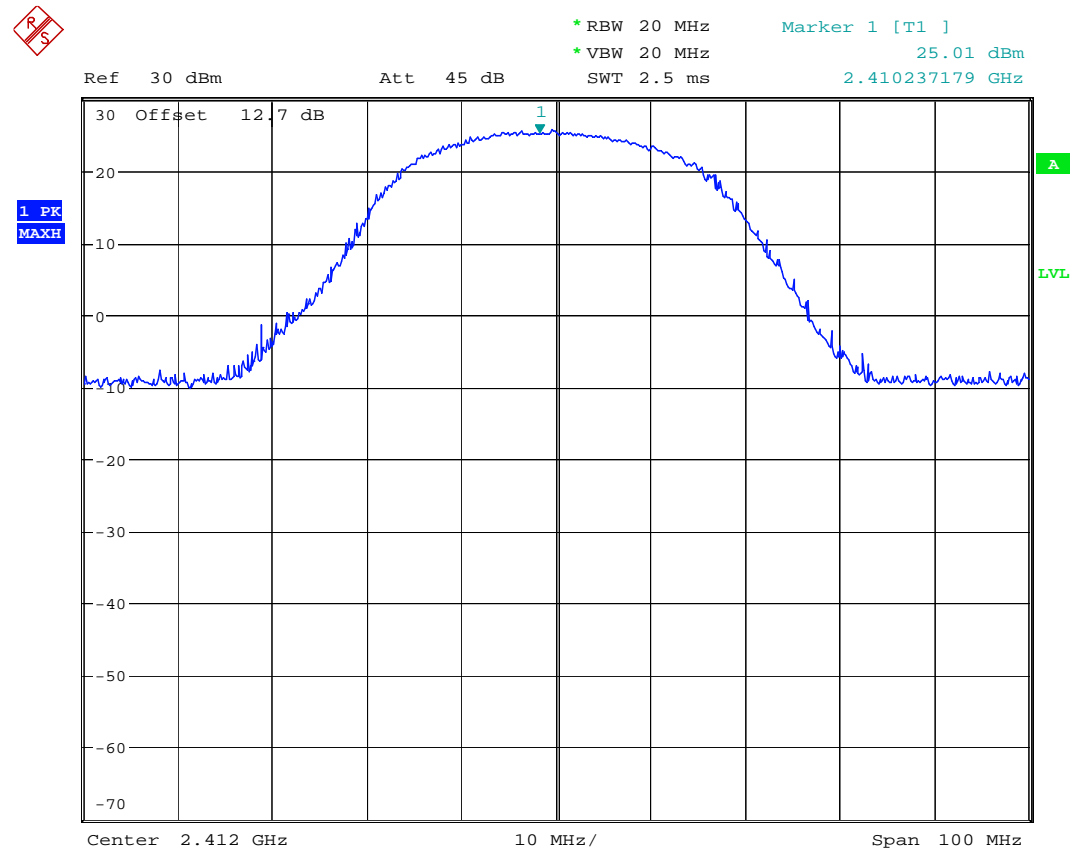
Limits:

| | |
|--|------------------------|
| Under normal test conditions only, for frequency range 2400-2483.5 MHz | Max. 1.0 Watt / 30 dBm |
|--|------------------------|

3.7 Maximum output power (conducted) (OFDM)

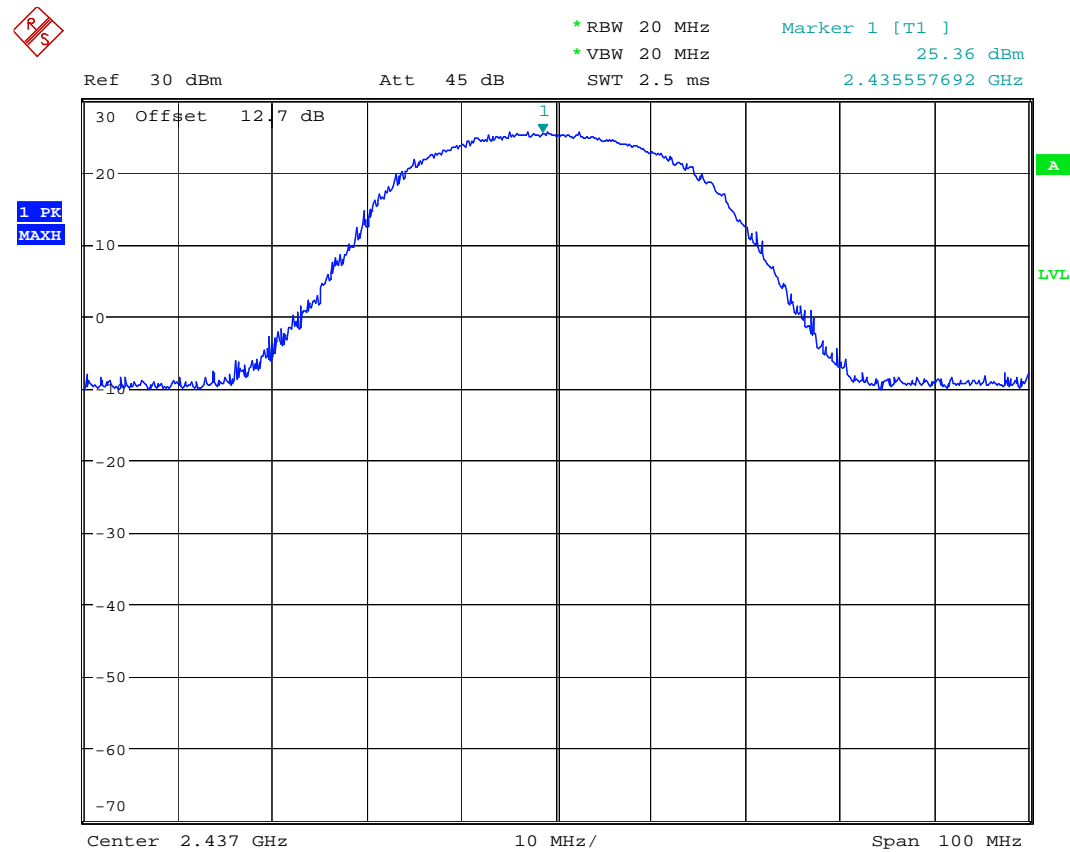
§15.247 (b)(1)

Plot 1: 2412 MHz (Peak)



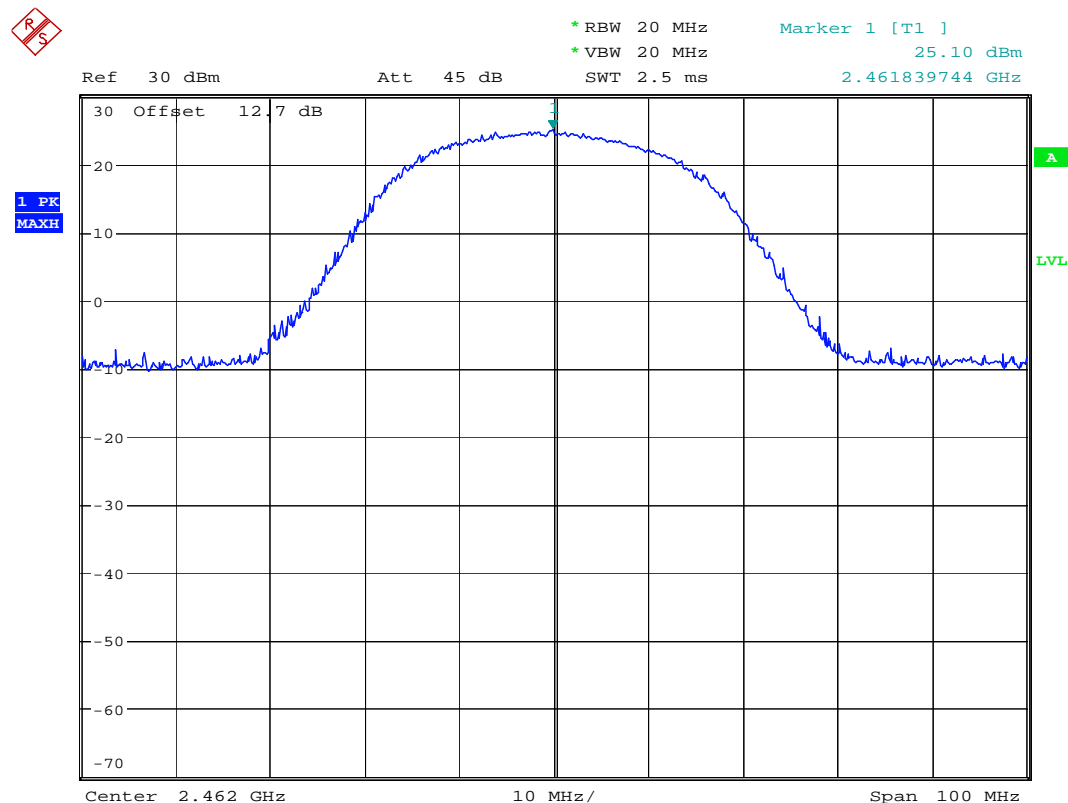
Date: 17.MAY.2006 15:11:43

Plot 2: 2437 MHz (Peak)



Date: 17.MAY.2006 15:12:42

Plot 3: 2462 MHz (Peak)



Date: 17.MAY.2006 15:13:50

Results:

| Test conditions | | Max. peak output power [dBm] | | | |
|---|------------------|------------------------------|----------|----------|----------|
| Frequency [MHz] | | | | | |
| T _{nom} | V _{nom} | | | | |
| | | PK | 2412 | 2437 | 2462 |
| | | | 25.01 | 25.36 | 25.10 |
| De facto EIRP (Peak) [dBm] | | | 26.41 | 26.96 | 27.50 |
| Antenna gain: [dBi] External antenna | | | +1.4 dBi | +1.6 dBi | +2.4 dBi |
| Measurement uncertainty | | | ±3dB | | |

RBW / VBW : 10 MHz

Limits:

| | |
|--|------------------------|
| Under normal test conditions only, for frequency range 2400-2483.5 MHz | Max. 1.0 Watt / 30 dBm |
|--|------------------------|

MPE calculation

These equations are generally accurate in the far field of an antenna but will over predict power density in the near field, where they could be used for making a “worst case” prediction.

$$S = PG/4\pi R^2$$

where S = power density (in appropriate units, e.g. mW/cm²)
P = power input to the antenna (in appropriate units e.g. mW)
G = power gain of the antenna in the direction of interest relative to the isotropic radiator
R = distance to the center of radiation of the antenna (appropriate units e.g. cm)

Or

$$S = EIRP/4\pi R^2$$

where EIRP = equivalent isotropically radiated power

Calculation:

(Calculated for max. EIRP)

EIRP: 27.5 dBm (562 mW)

calculated at distance of 20 cm:

$$\text{power density} = 562/4\pi 20^2 = 0.11 \text{ mW/cm}^2$$

Limit:

1mW/ cm² is the reference level for general public exposure according to the OET Bulletin 65,
Edition 97-01 Table 1.

3.8 Max. peak output power (radiated) §15.247 (b)(3)

Results: measured with external antenna (worst case) (Peak)

| Test conditions | | Max. peak output power EIRP [dBm] | | |
|-------------------------|------------------|-----------------------------------|------|------|
| Frequency [MHz] | | 2412 | 2437 | 2462 |
| T _{nom} | V _{nom} | 22.0 | 22.2 | 22.3 |
| DSSS | | | | |
| T _{nom} | V _{nom} | 26.4 | 27.0 | 27.5 |
| OFDM | | | | |
| Measurement uncertainty | | ±3dB | | |

Results: measured with internal antenna (Peak)

| Test conditions | | Max. peak output power EIRP [dBm] | | |
|-------------------------|------------------|-----------------------------------|------|------|
| Frequency [MHz] | | 2412 | 2437 | 2462 |
| T _{nom} | V _{nom} | 16.7 | 17.5 | 18.9 |
| DSSS | | | | |
| T _{nom} | V _{nom} | 21.1 | 22.3 | 24.1 |
| OFDM | | | | |
| Measurement uncertainty | | ±3dB | | |

RBW / VBW : 20 MHz

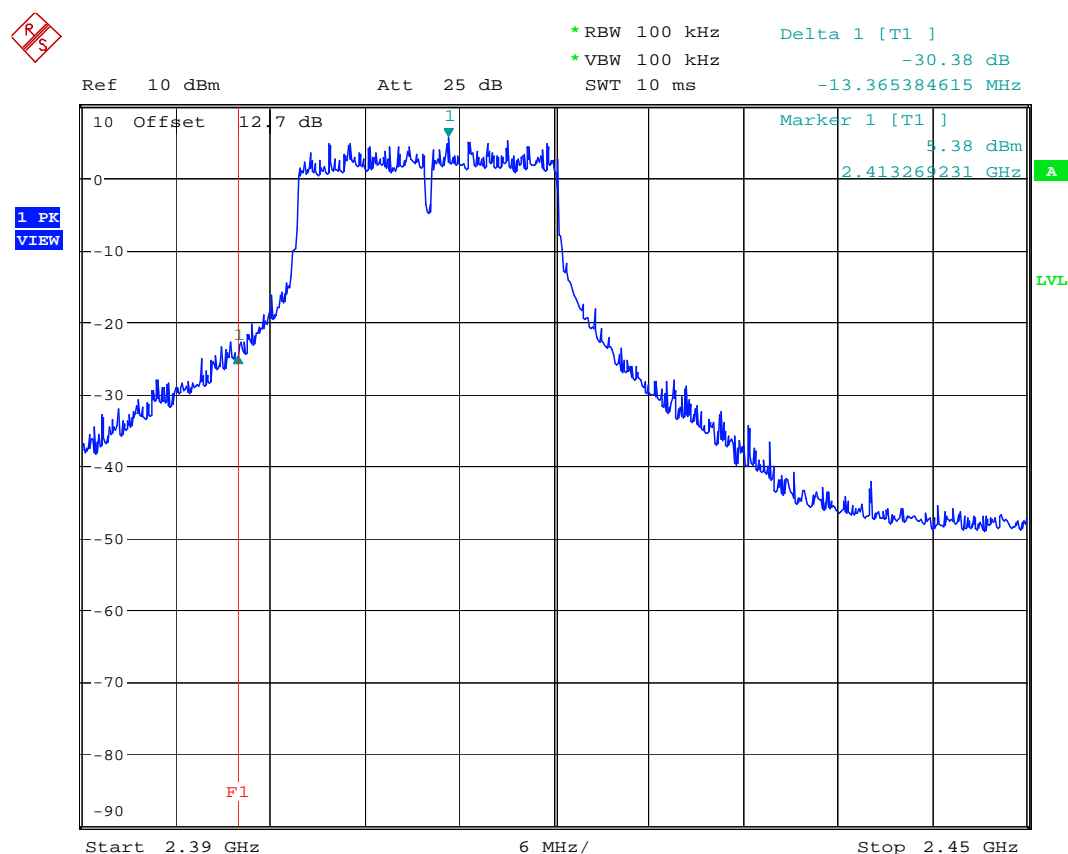
Measured at a distance of 3m and the max hold function of the analyzer

Limits:

| | |
|--|---------------|
| Under normal test conditions only, for frequency range 2400-2483.5 MHz | Max. 1.0 Watt |
|--|---------------|

3.9 Band-edge compliance of conducted emissions §15.247 (c)

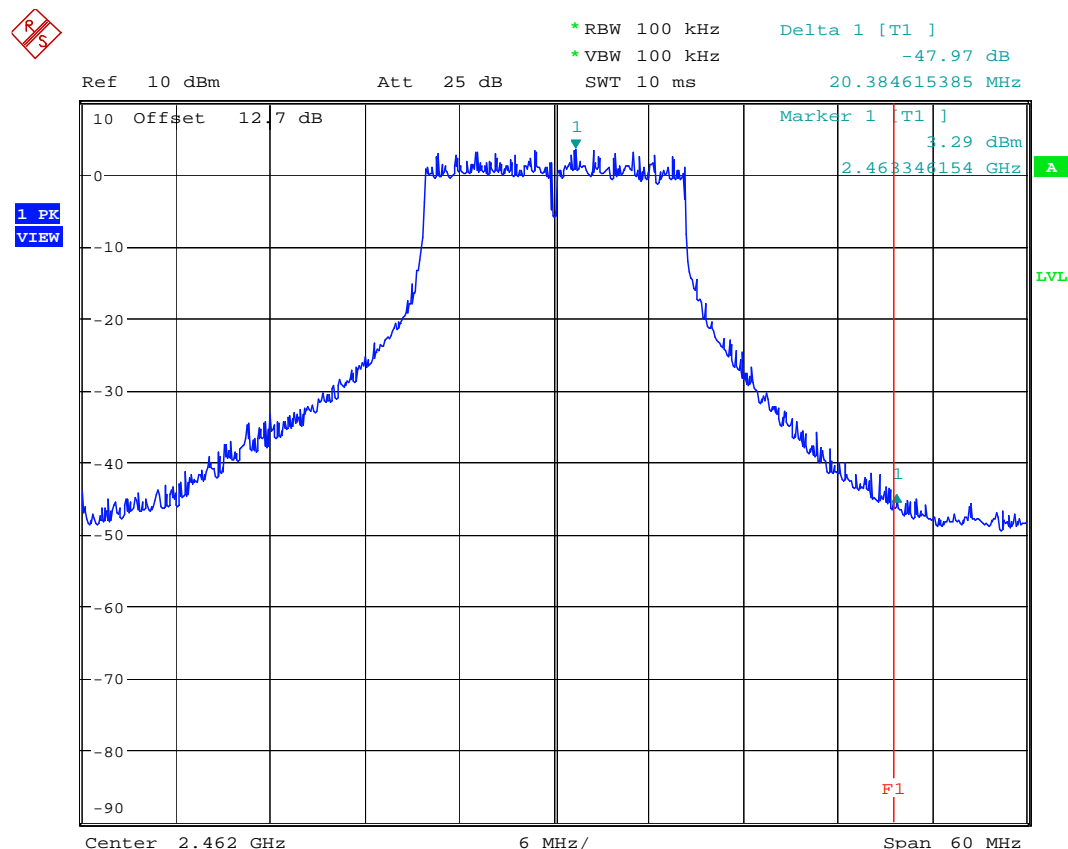
Plot 1, lowest channel



Date: 17.MAY.2006 15:18:47

We used OFDM modulation as this is the worst case regarding occupied BW.

Plot 2, highest channel



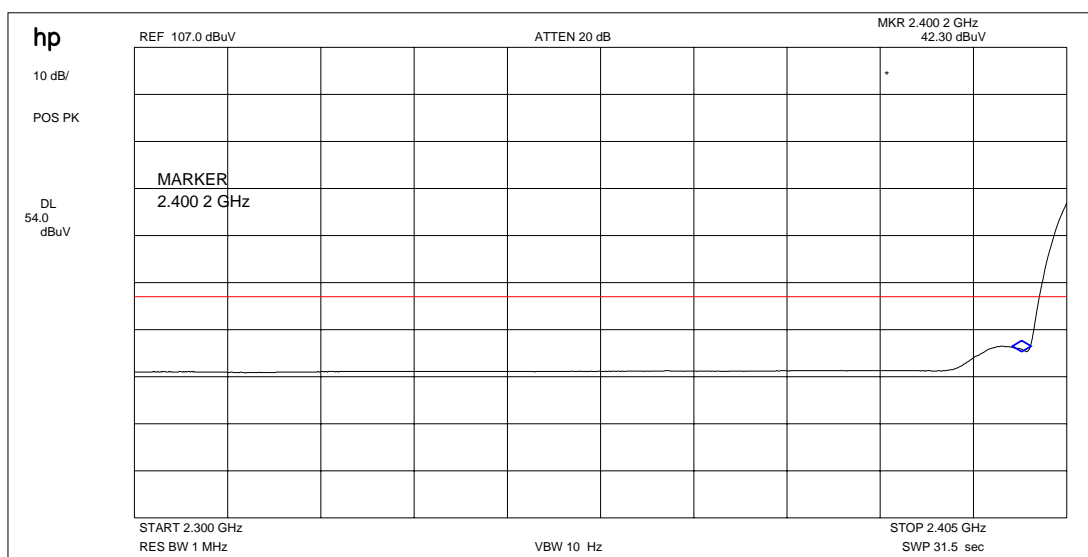
Date: 17.MAY.2006 15:20:31

Limits:

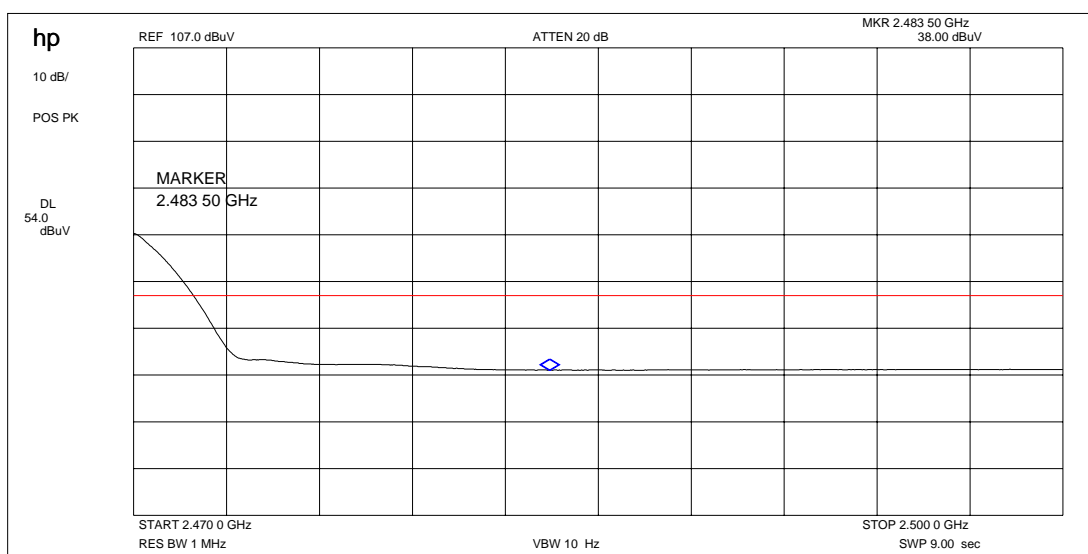
| | |
|-----------------------------------|--|
| Under normal test conditions only | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 5.205(c)). |
|-----------------------------------|--|

3.10 Band-edge compliance of radiated emissions §15.205

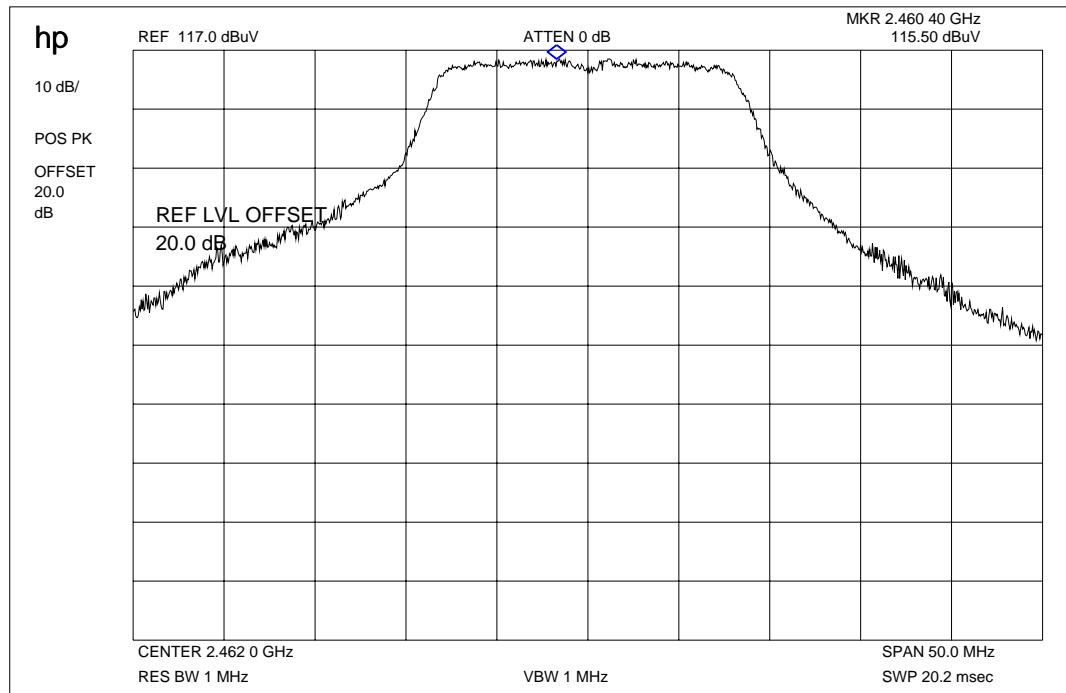
Plot 1: Low channel (2412 MHz) with external antenna (same for DSSS and OFDM)



Plot 2: high channel (2462 MHz) (same for DSSS and OFDM)



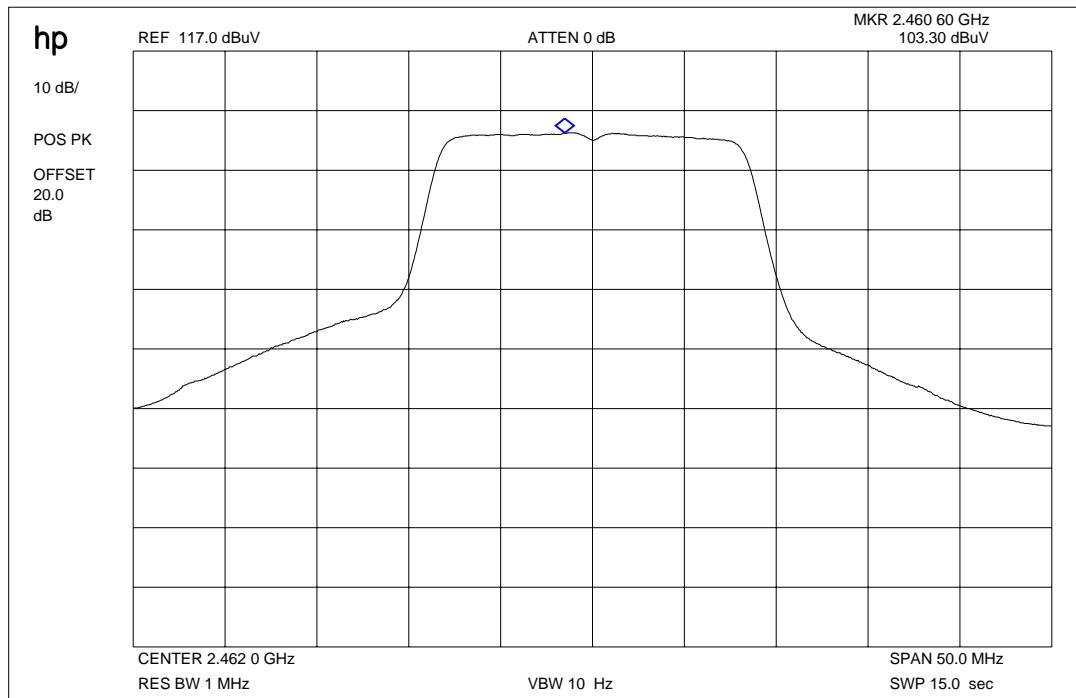
Plot 3 : Max field strength in 3m distance (single frequency) peak (OFDM)



Result:

| Frequency | | Cable loss | Antenna factor | Results |
|-----------|--|------------|----------------|-----------------|
| 2462 MHz | | 22.8 dB | -7.2 | 115.5 dBuV/m@3m |
| | | | | |

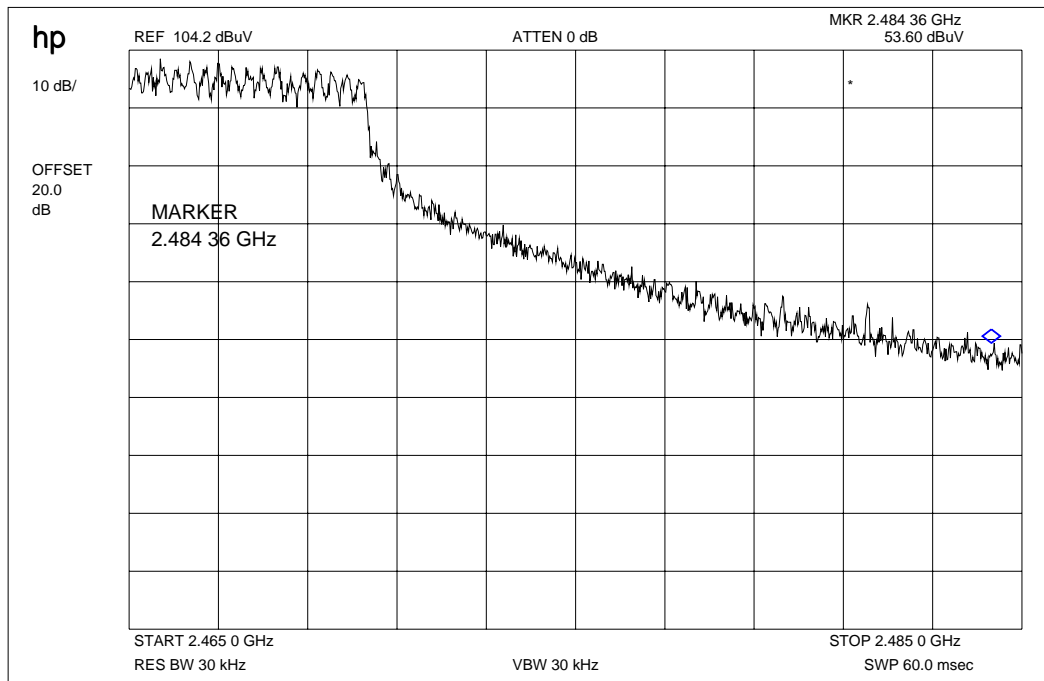
Plot 4 : Max field strength in 3m distance (single frequency) average (OFDM)



Result:

| Frequency | | Cable loss | Antenna factor | Results |
|-----------|--|------------|----------------|-----------------------|
| 2462 MHz | | 22.8 dB | -7.2 | 103.3 dB μ V/m@3m |
| | | | | |

Plot 3: Marker-Delta Method RBW/VBW ~ 1% of span (not < 30 kHz)



Result:

Marker-Delta-Value : 50.6dB

This measurement was made to show that the behavior of the system is conform to FCC 15.205 (restricted bands)

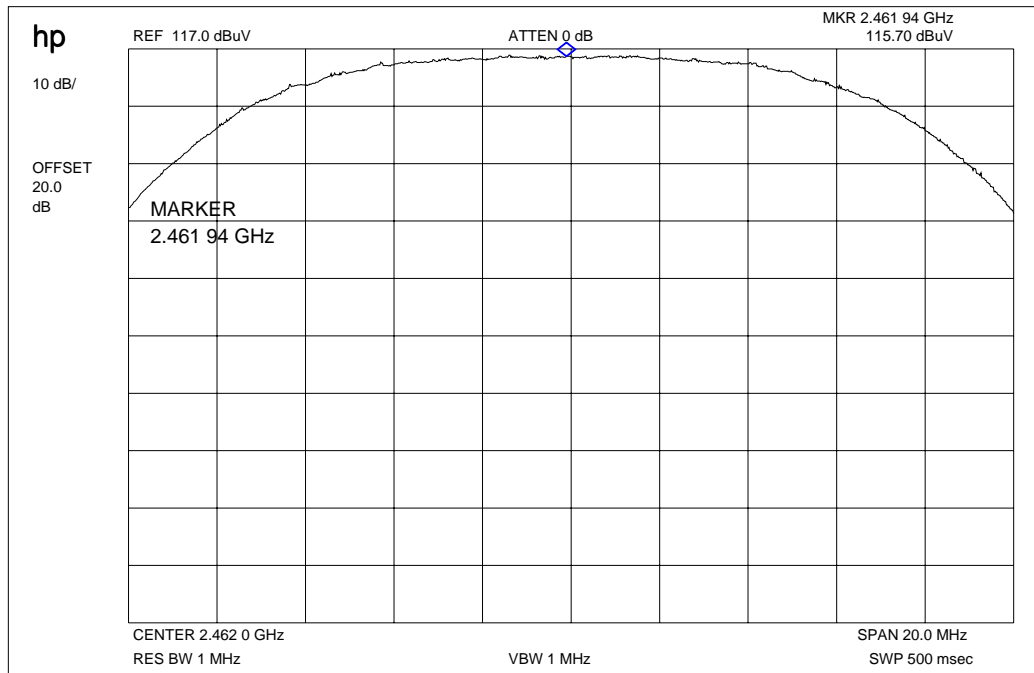
Results & Limits:

Radiated field strength

The field strength was measured with an EMI measuring receiver and 1 MHz RBW / VBW for peak and with 1MHz RBW / 10Hz VBW for average at a distance of 3m.

| high channel | setup | measured value (3m) | correction factor (3m) | calculated value (3m) |
|--------------------|----------------------------|---------------------|------------------------|-----------------------|
| Max. peak value | 1 MHz RBW 1 MHz VBW | 99.9dB μ V/m | +15,6 dB | 115.5dB μ V/m |
| Max. average value | 1 MHz RBW 10 Hz VBW | 87.7dB μ V/m | +15.6 dB | 103.3dB μ V/m |
| Delta value | Peak 300 kHz RBW/VBW | 50.6dB | | |
| Value at band edge | limit 54 dB μ V/m | | | 52.7 dB μ V/m |
| Statement: | | | | Complies |

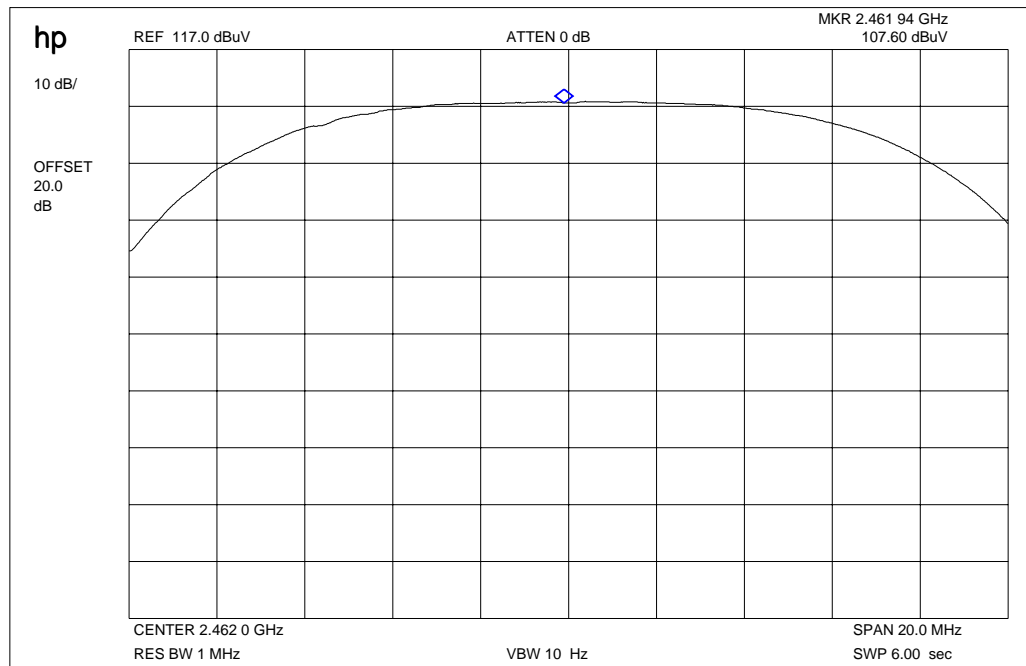
Plot 4 : Max field strength in 3m distance (single frequency) peak (DSSS)



Result:

| Frequency | Cable loss | Antenna factor | Results |
|-----------|------------|----------------|-----------------------|
| 2462 MHz | 22.8 dB | -7.2 | 115.7 dB μ v/m@3m |
| | | | |

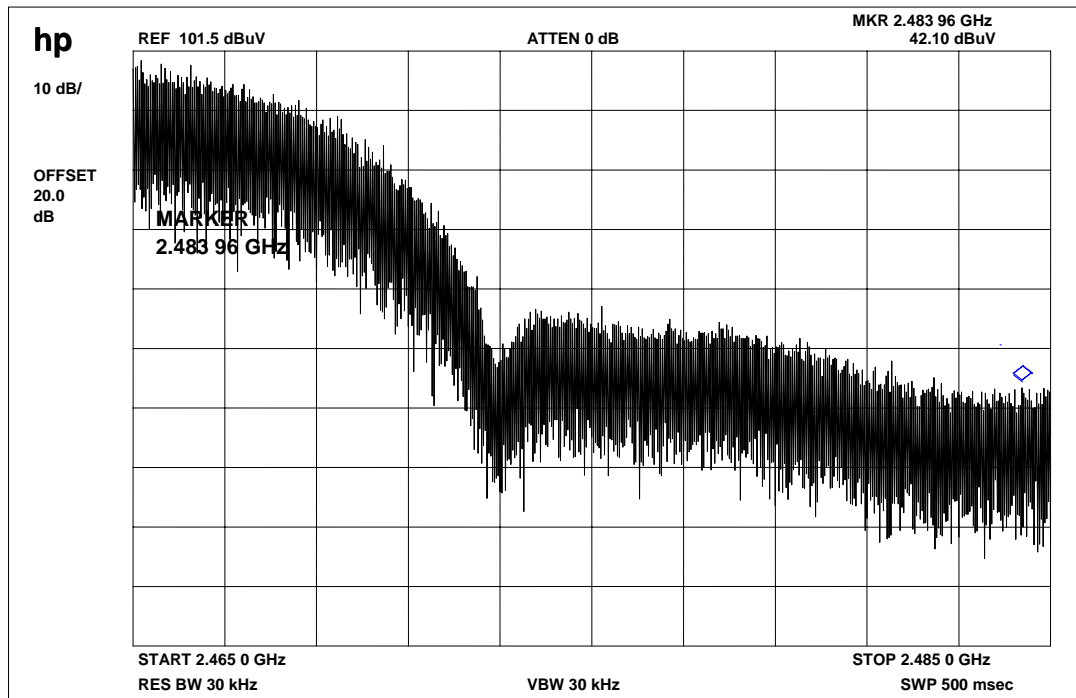
Plot 5 : Max field strength in 3m distance (single frequency) average (DSSS)



Result:

| Frequency | | Cable loss | Antenna factor | Results |
|-----------|--|------------|----------------|-----------------------|
| 2462 MHz | | 22.8 dB | -7.2 | 107.6 dB μ V/m@3m |
| | | | | |

Plot 6: Marker-Delta Method RBW/VBW ~ 1% of span (not < 30 kHz)



Result:

Marker-Delta-Value : 60.4 dB

This measurement was made to show that the behavior of the system is conform to FCC 15.205 (restricted bands)

Results & Limits:

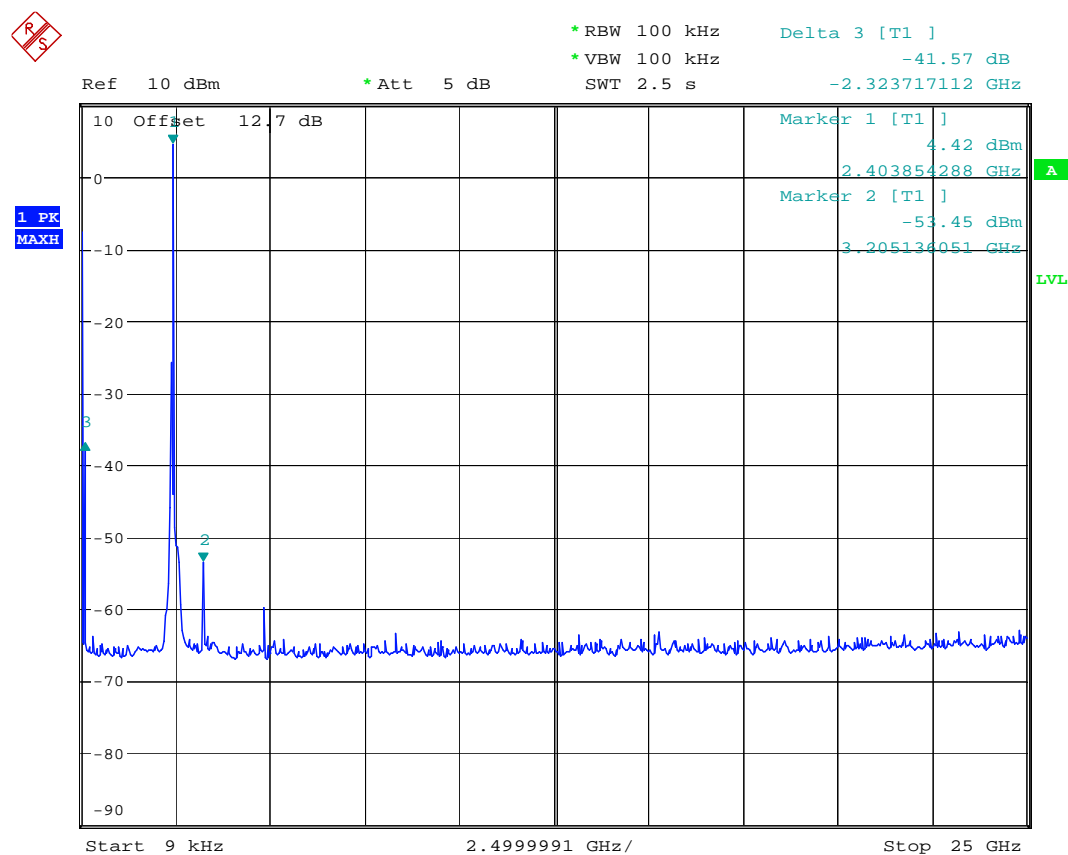
Radiated field strength

The field strength was measured with an EMI measuring receiver and 1 MHz RBW / VBW for peak and with 1MHz RBW / 10Hz VBW for average at a distance of 3m.

| high channel | setup | measured value (3m) | correction factor (3m) | calculated value (3m) |
|--------------------|----------------------------|---------------------|------------------------|-----------------------|
| Max. peak value | 1 MHz RBW 1 MHz VBW | 101.4 dB μ V/m | +15,6 dB | 117.0dB μ V/m |
| Max. average value | 1 MHz RBW 10 Hz VBW | 92.0 dB μ V/m | +15.6 dB | 107.6dB μ V/m |
| Delta value | Peak 300 kHz RBW/VBW | 60.4 dB | | |
| Value at band edge | limit 54 dB μ V/m | | | 47.2 dB μ V/m |
| Statement: | | | | Complies |

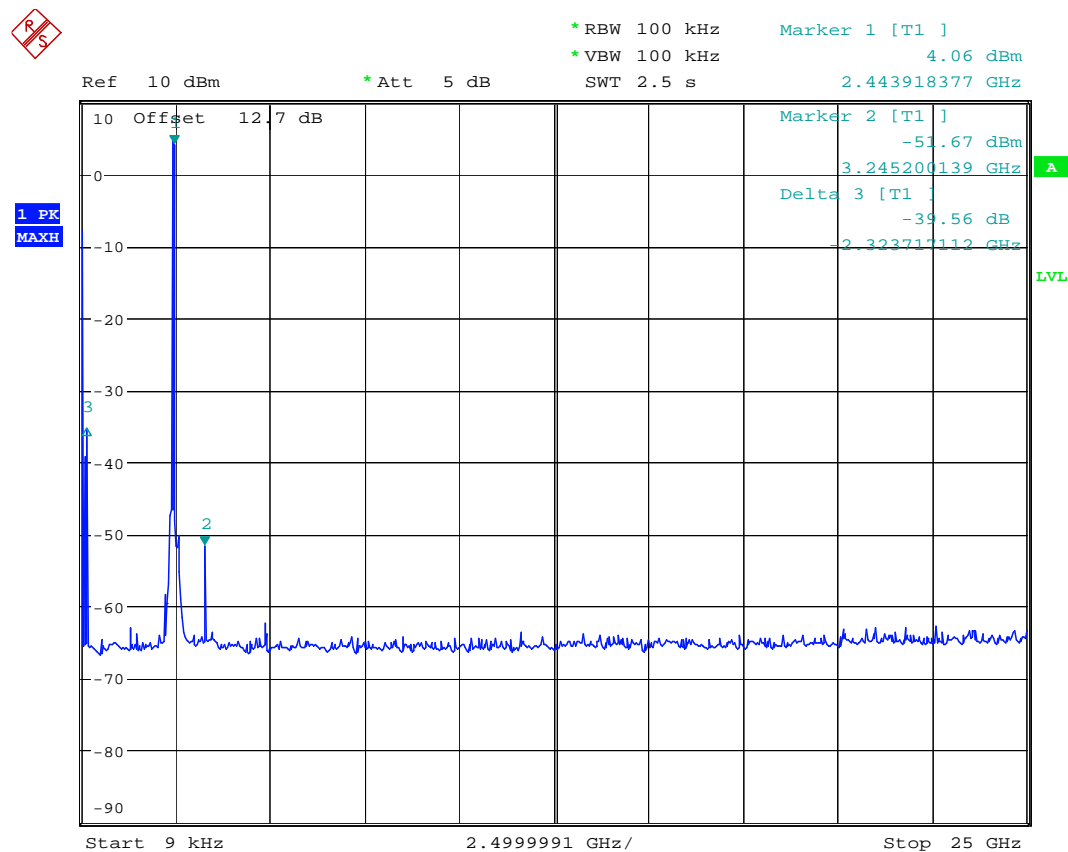
3.11 Spurious Emissions - conducted (Transmitter) §15.247 (c)

Plot 1: 2412 MHz (both modulations were measured, DSSS shows the worst case.)



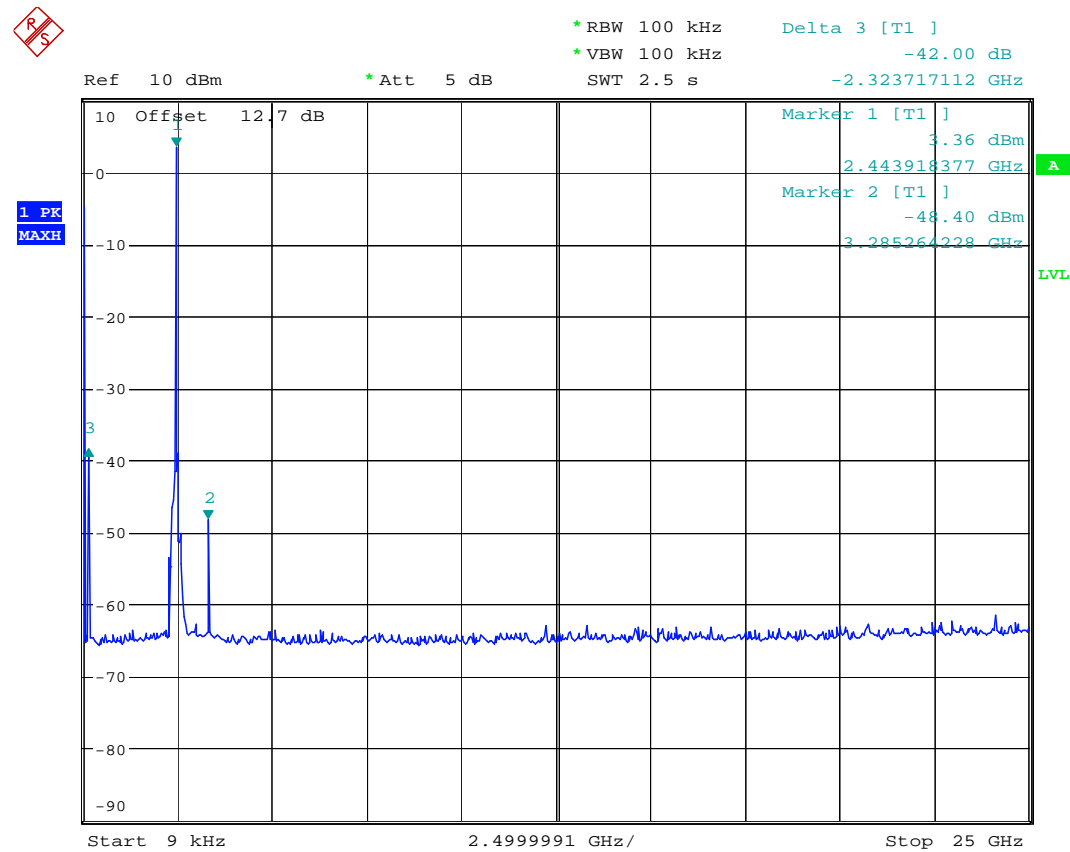
Date: 17.MAY.2006 15:31:10

Plot 2: 2437 MHz (DSSS) (worst case)



Date: 17.MAY.2006 15:30:22

Plot 3: 2462 MHz (DSSS) (worst case)



Date: 17.MAY.2006 15:29:00

Result & Limits:

| Emission Limitations | | | | | |
|-------------------------|--|-----------------------------|-----------------------------------|--|---------------------|
| f [MHz] | | amplitude of emission [dBm] | limit max. allowed emission power | actual attenuation below frequency of operation [dB] | results |
| 2412 | | 20.6 | 30 dBm | - | Operating frequency |
| 3205 | | -53.5 | -20 dBc | > 20 dB | pass |
| 120.2 | | -37.2 | | > 20 dB | pass |
| | | | | | |
| | | | | | |
| 2437 | | 20.6 | 30 dBm | | Operating frequency |
| 3245 | | -51.7 | -20 dBc | > 20 dB | pass |
| 120.2 | | -35.6 | | > 20 dB | pass |
| | | | | | |
| | | | | | |
| 2462 | | 19.9 | 30 dBm | | Operating frequency |
| 3285 | | -48.4 | -20 dBc | > 20 dB | pass |
| 120.2 | | -38.6 | | > 20 dB | pass |
| | | | | | |
| Measurement uncertainty | | ± 3dB | | | |

RBW : 100 kHz VBW: 100 kHz

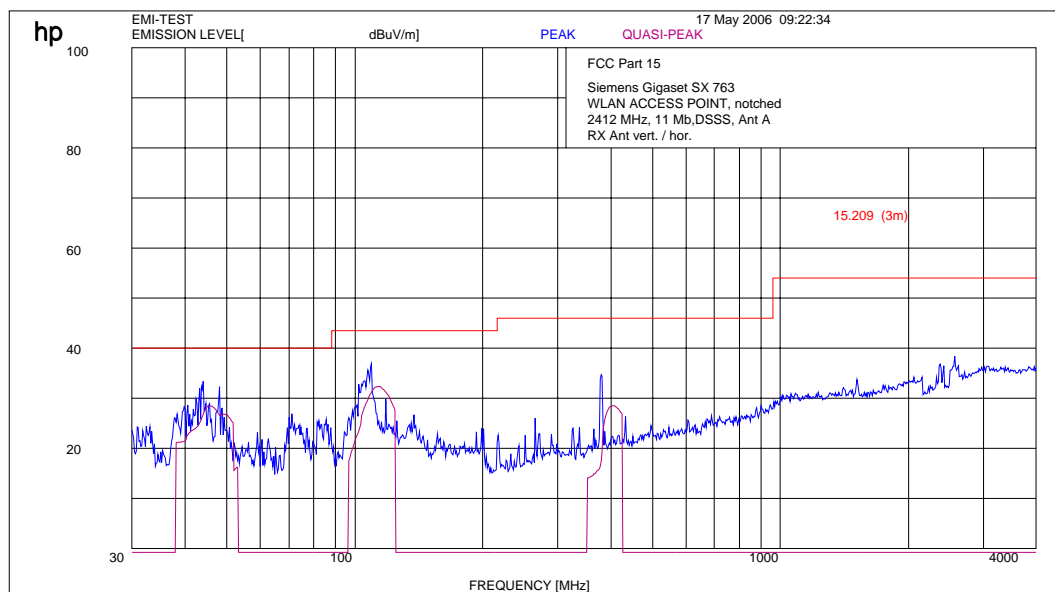
| | |
|-----------------------------------|--|
| Under normal test conditions only | In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also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

Note: For emissions that fall into restricted bands you find the radiated emissions later in the report.

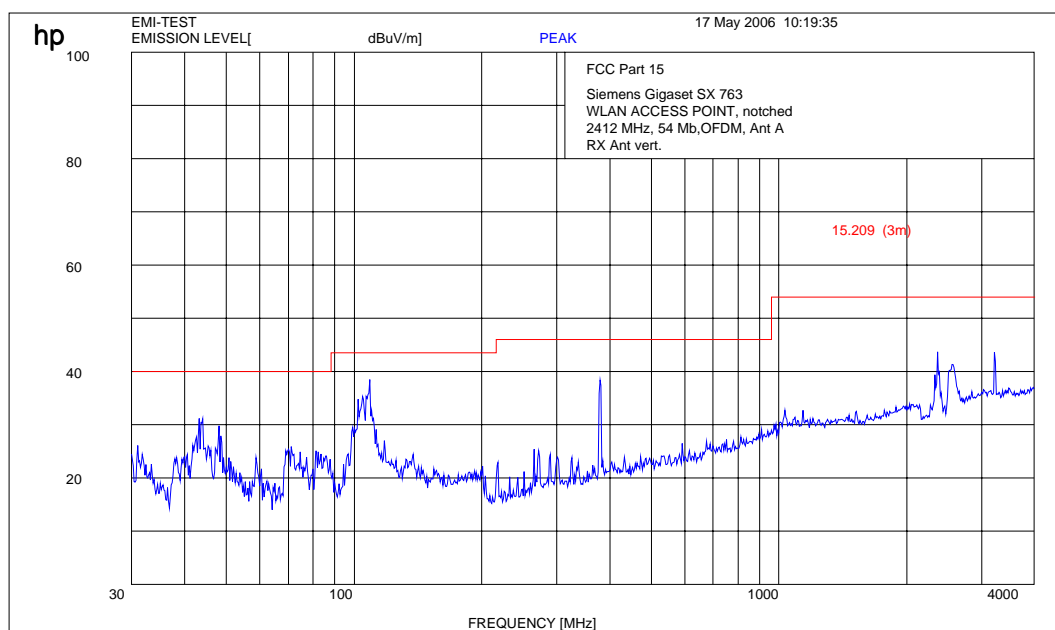
3.12 Spurious Emissions - radiated (Transmitter) §15.209

measured with external antenna.

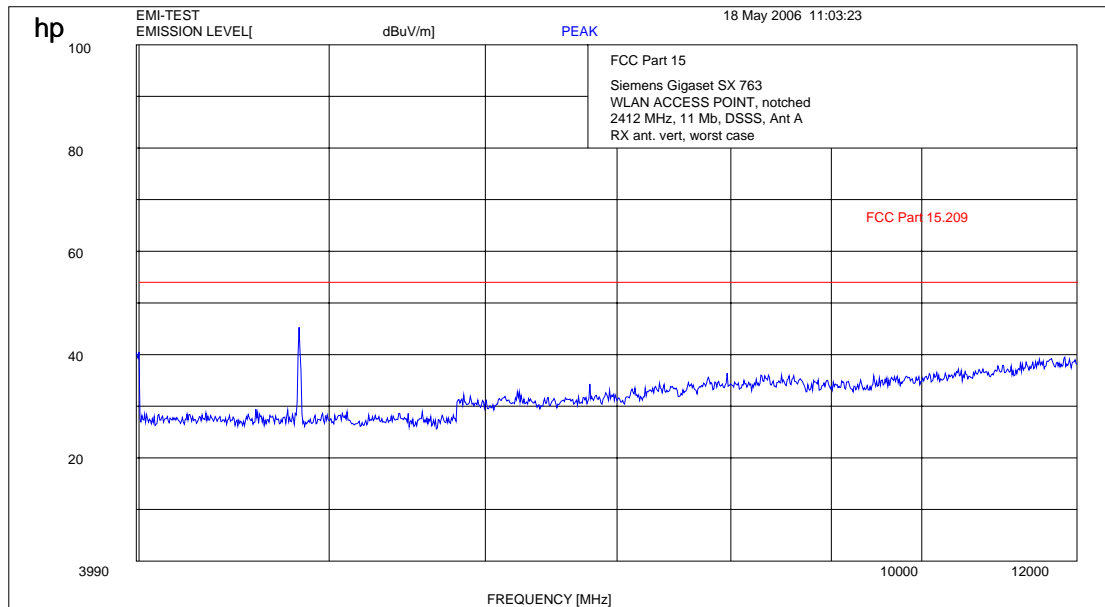
Plot 1: 0.03 - 4 GHz vertical / horizontal (lowest channel) (DSSS)



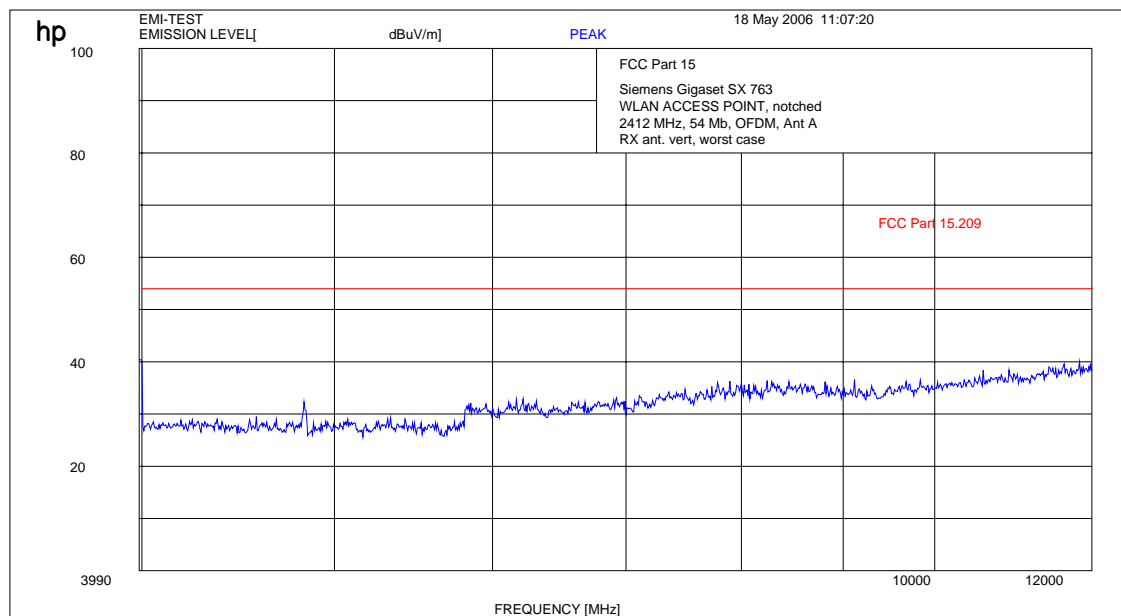
Plot 2: 0.03 - 4 GHz vertical / horizontal (lowest channel) (OFDM)



Plot 3: 4- 12 GHz (lowest channel)(DSSS)



Plot 4: 4- 12 GHz (lowest channel)(OFDM)

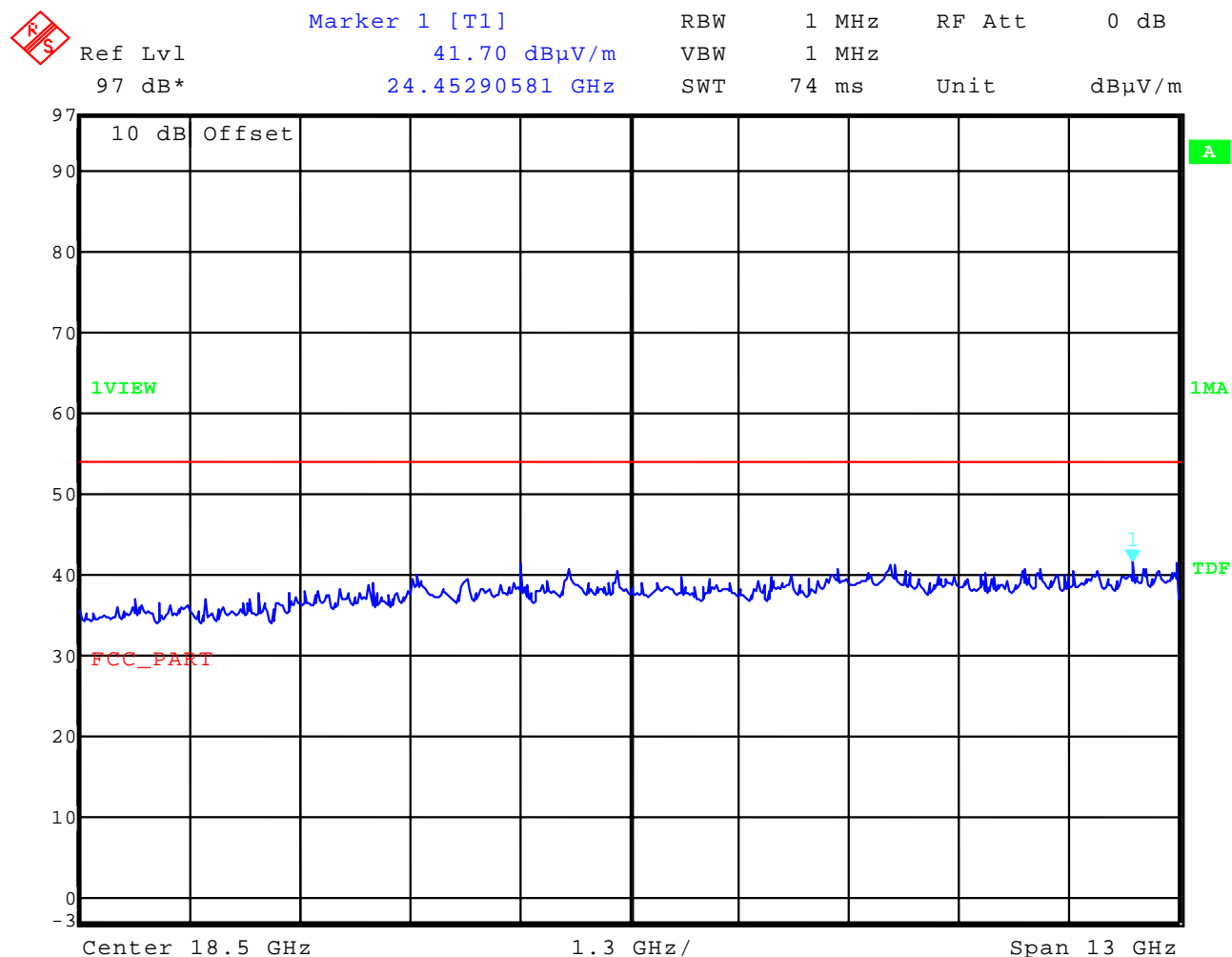


Test report no.: 2-4279-01-03a/06

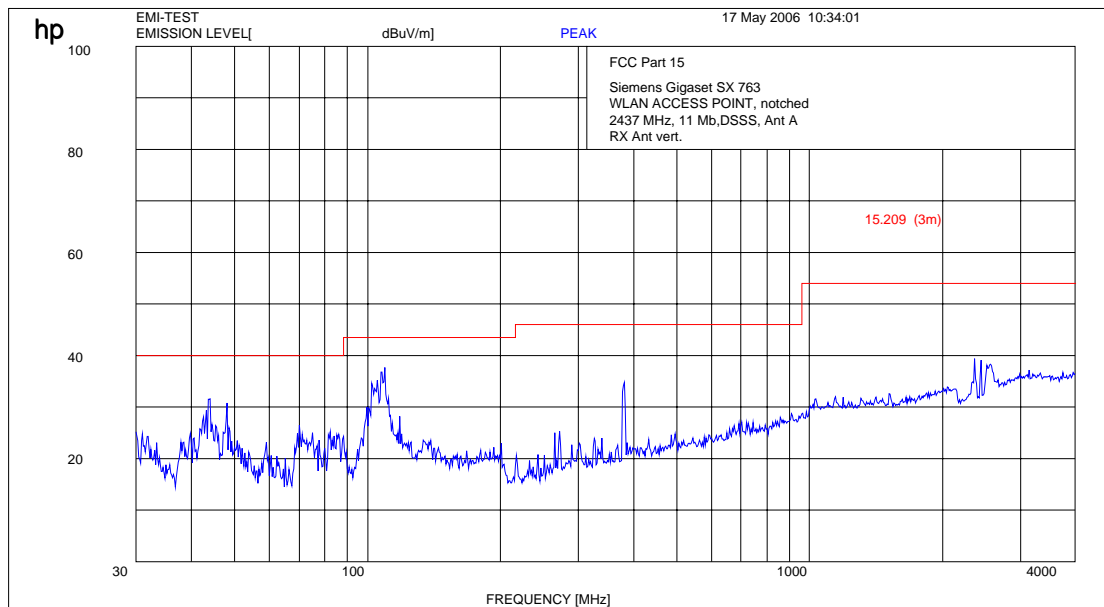
Date: 2006-05-22

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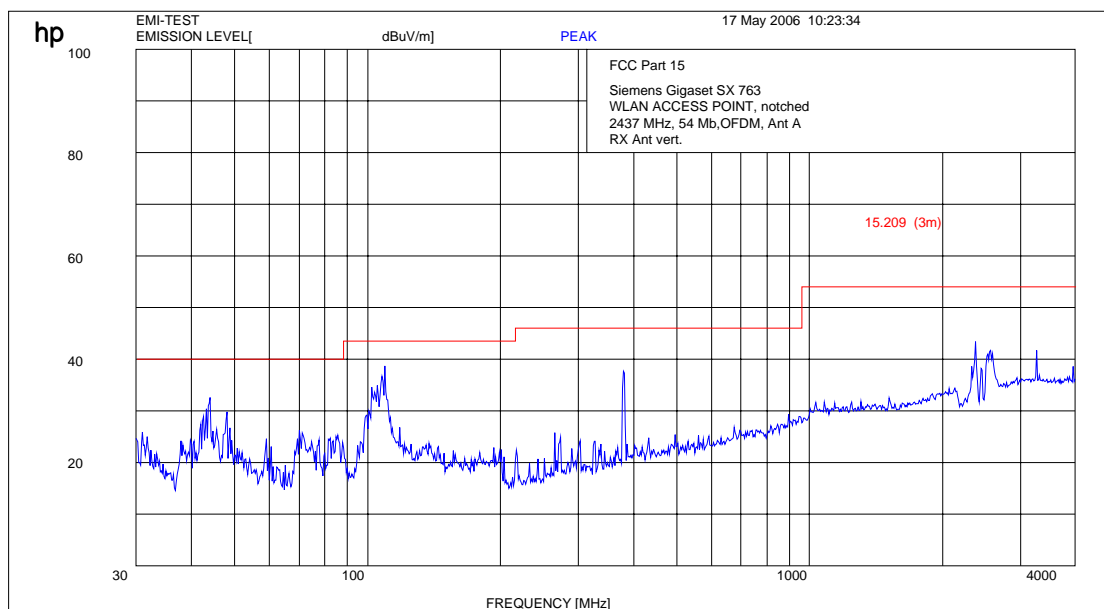
Plot 5: 12 – 25 GHz horizontal / vertical (valid for all three channels and all modulations)



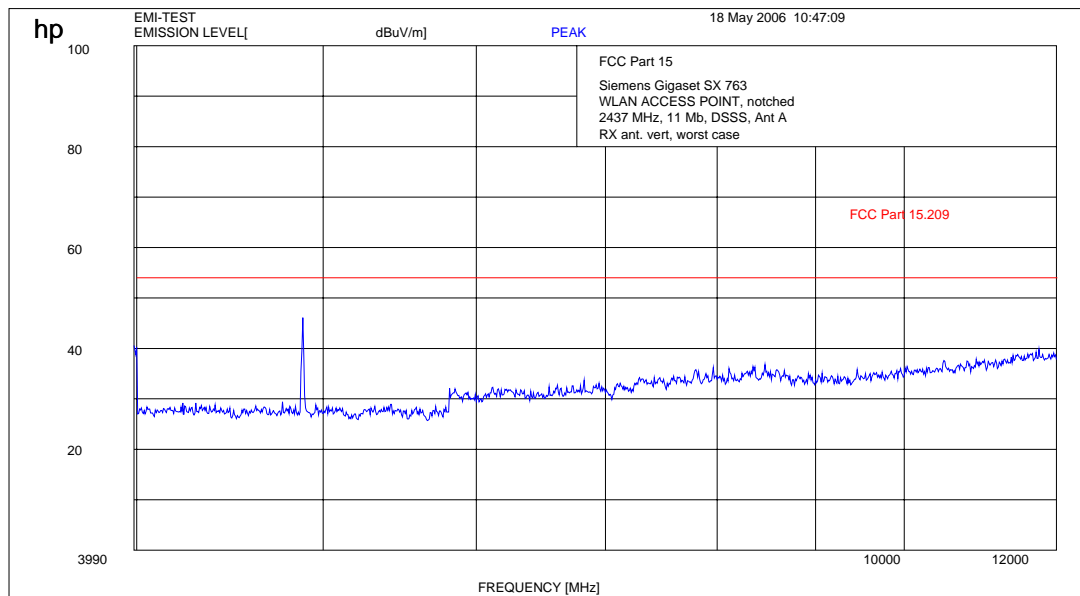
Plot 6: 0.03 - 4 GHz vertical / horizontal (middle channel) (DSSS)



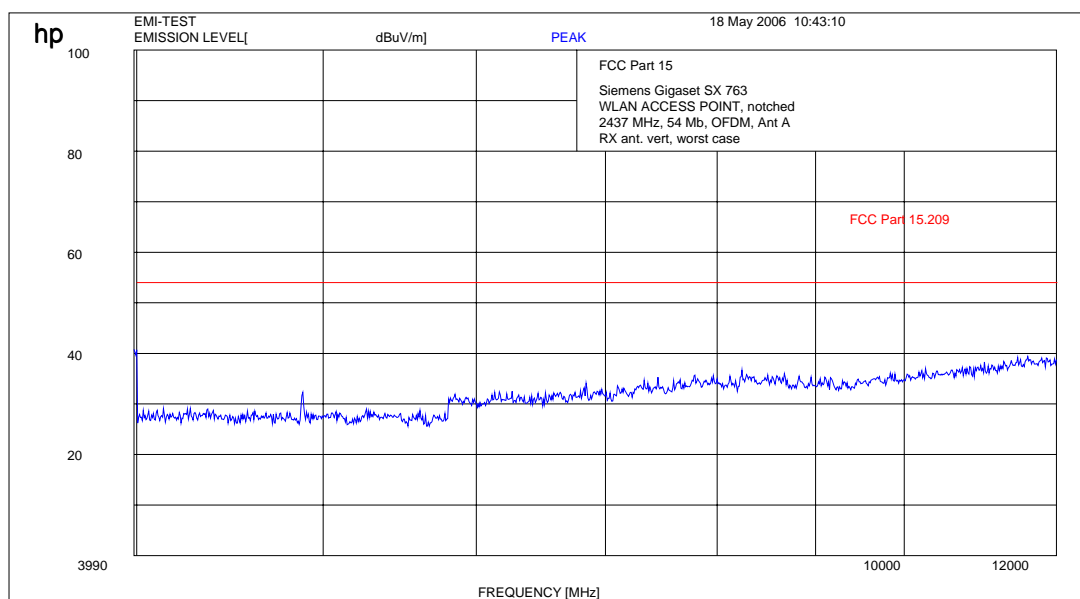
Plot 7: 0.03 - 4 GHz vertical / horizontal (middle channel) (OFDM)



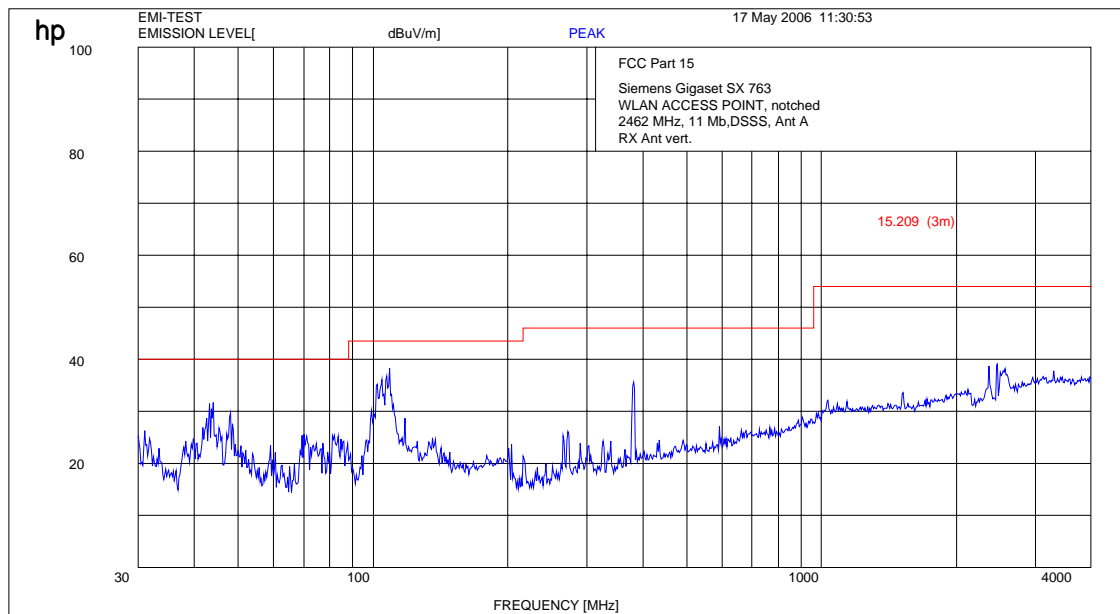
Plot 8: 4- 12 GHz (middle channel) (DSSS)



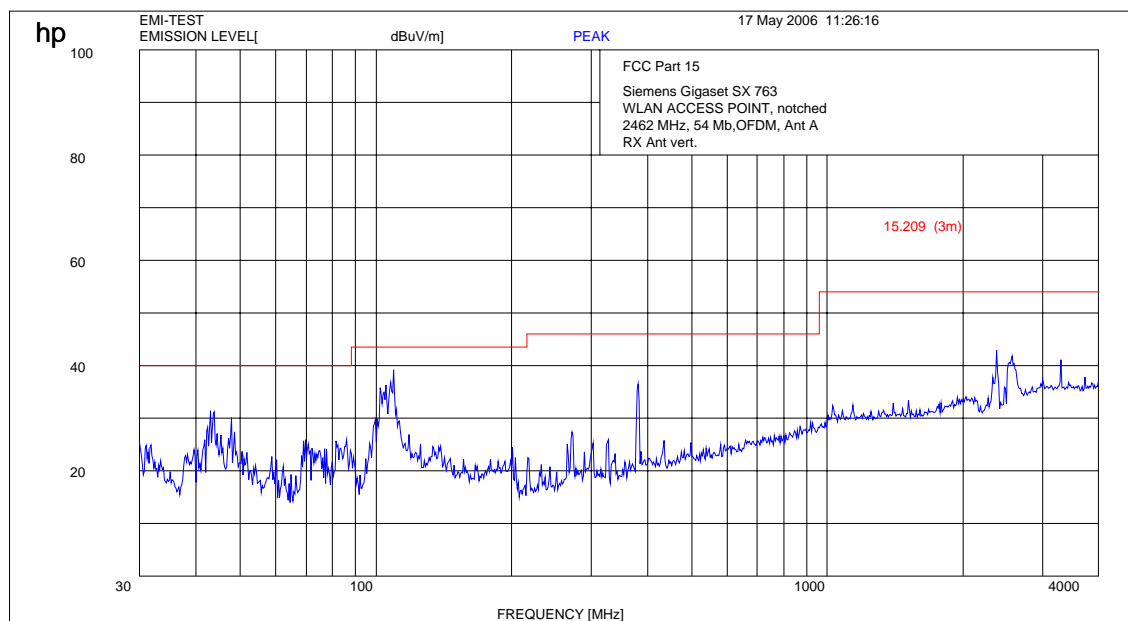
Plot 9: 4- 12 GHz (middle channel) (OFDM)



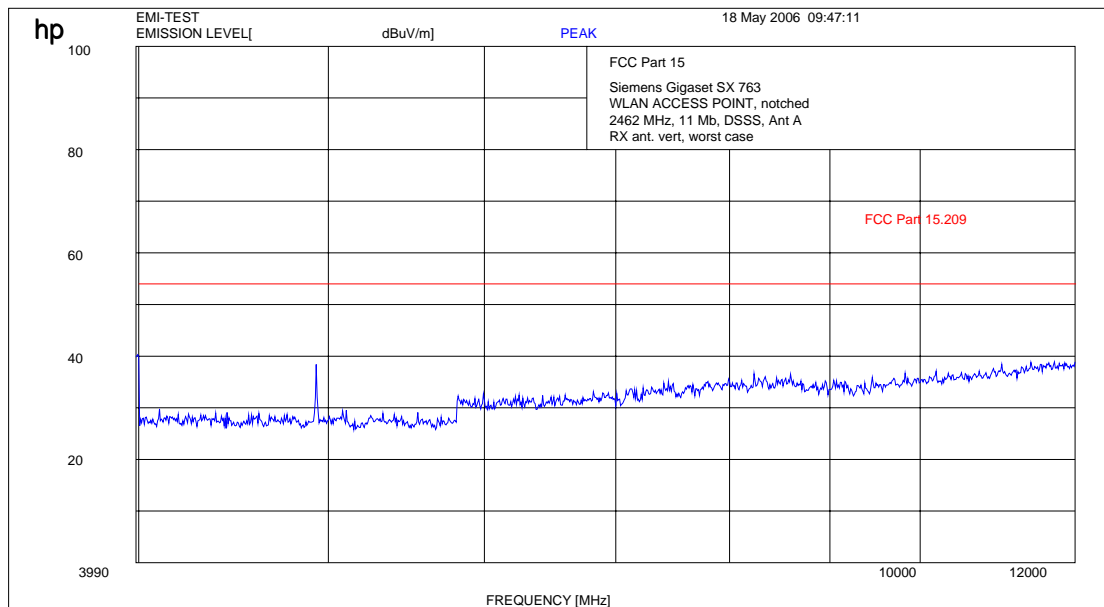
Plot 10: 0.03 - 4 GHz vertical / horizontal (highest channel) (DSSS)



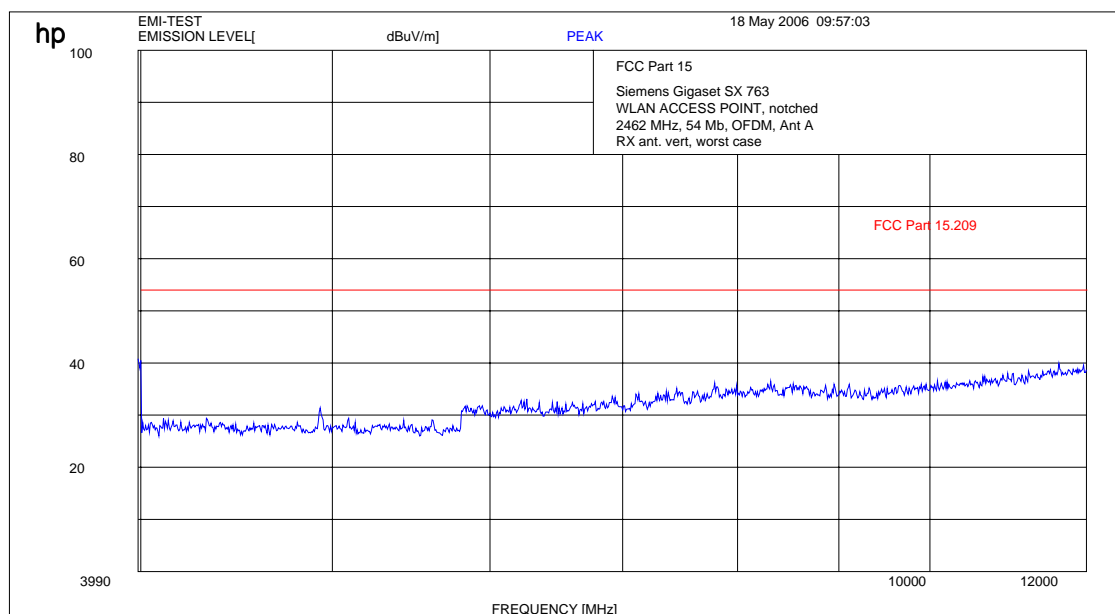
Plot 11: 0.03 - 4 GHz vertical / horizontal (highest channel) (OFDM)



Plot 12: 4- 12 GHz (highest channel) (DSSS)



Plot 13: 4- 12 GHz (highest channel) (OFDM)



| SPURIOUS EMISSIONS LEVEL §15.209 | | | | | | | | |
|----------------------------------|----------|----------------|----------|----------|----------------|----------|----------|----------------|
| 2412 MHz | | | 2437 MHz | | | 2462 MHz | | |
| F [MHz] | Detector | Level [dBμV/m] | F [MHz] | Detector | Level [dBμV/m] | F [MHz] | Detector | Level [dBμV/m] |
| 114.0 | Peak | 32.4 | 114.0 | Peak | 32.4 | 114.0 | Peak | 32.4 |
| 379.25 | Peak | 39.8 | 379.25 | Peak | 39.8 | 379.25 | Peak | 39.8 |
| 4824 | peak | 43.7 | 4874 | peak | 44.1 | 4924 | Peak | 40.8 |
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| Measurement uncertainty | | | ±3 dB | | | | | |

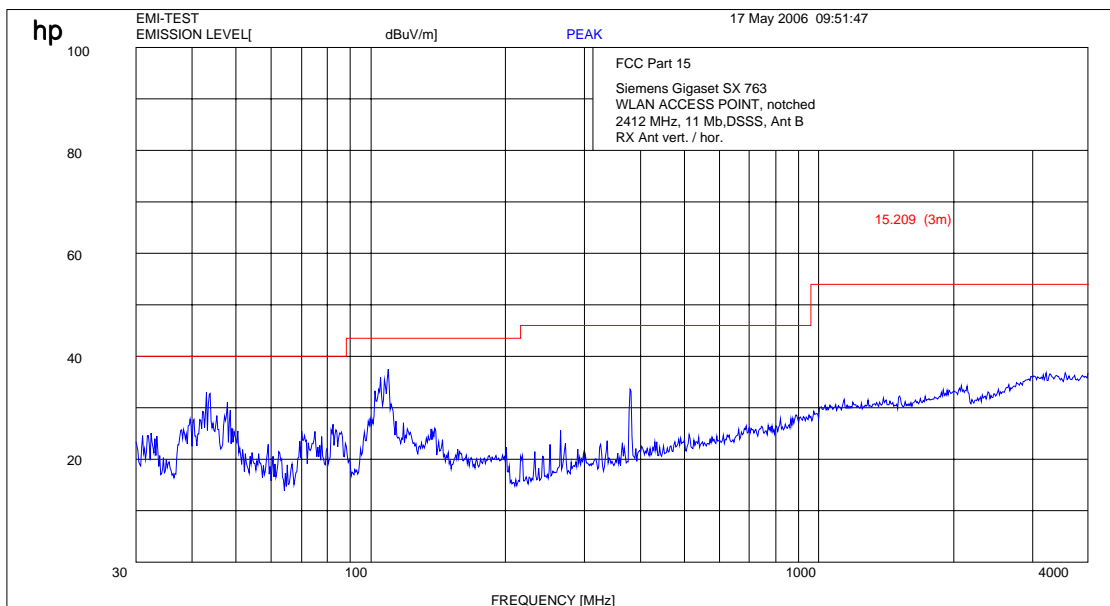
f ≥ 1GHz : RBW/VBW: 1 MHz

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)).

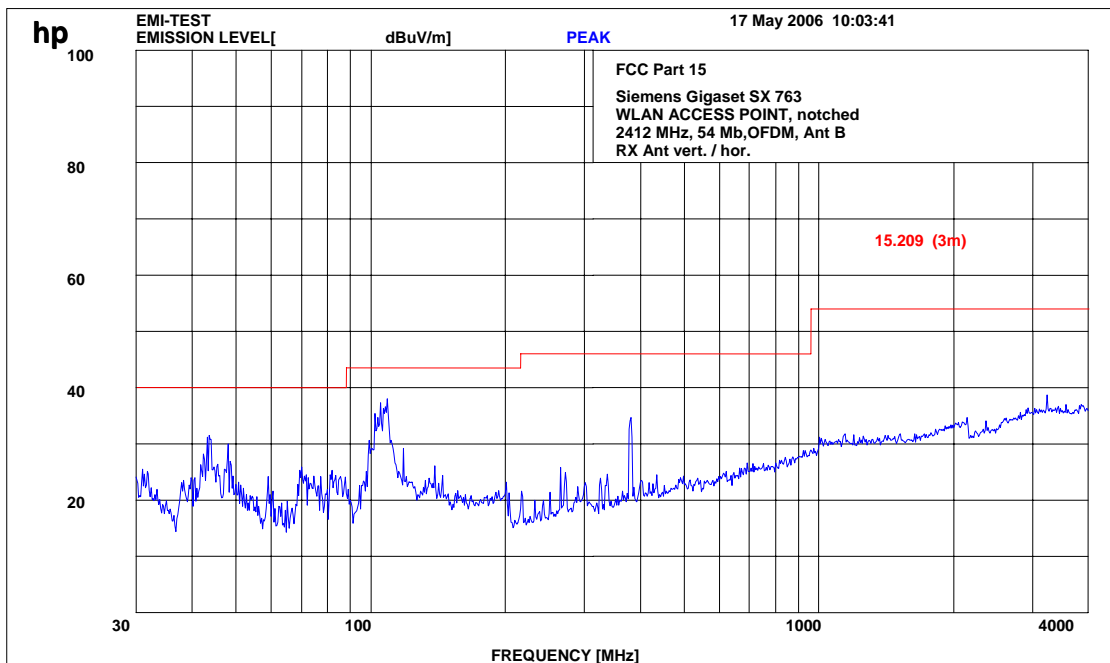
| Frequency [MHz] | Field strength [$\mu\text{V/m}$] | Measurement distance (m) |
|-----------------|------------------------------------|--------------------------|
| 30 - 88 | 100 (40 dB $\mu\text{V/m}$) | 3 |
| 88 - 216 | 150 (43.5 dB $\mu\text{V/m}$) | 3 |
| 216 - 960 | 200 (46 dB $\mu\text{V/m}$) | 3 |
| above 960 | 500 (54 dB $\mu\text{V/m}$) | 3 |

measured with internal antenna.

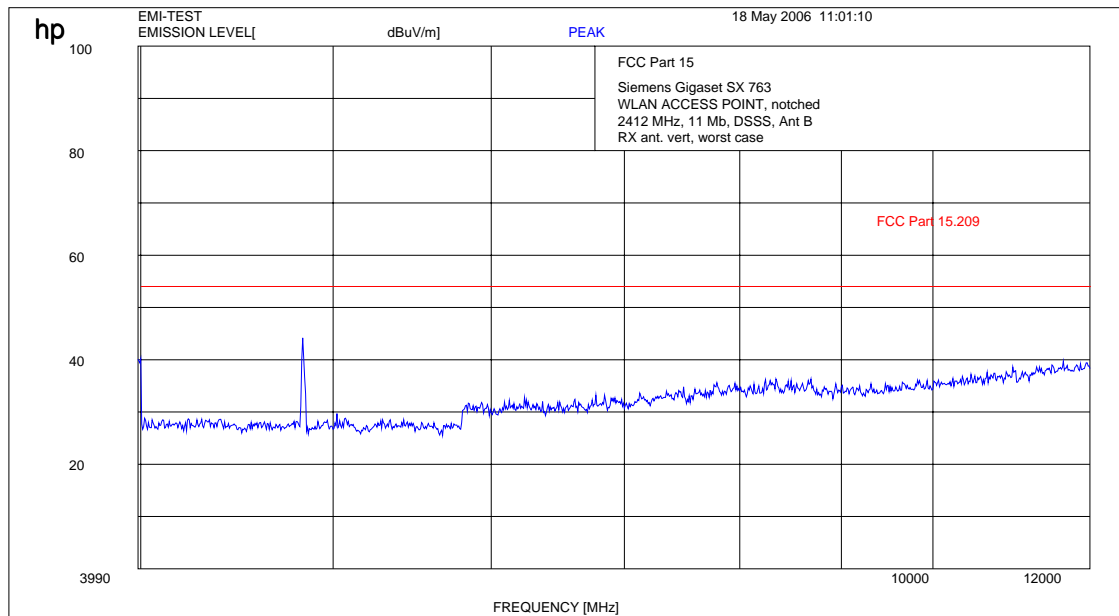
Plot 1: 0.03 - 4 GHz vertical / horizontal (lowest channel) (DSSS)



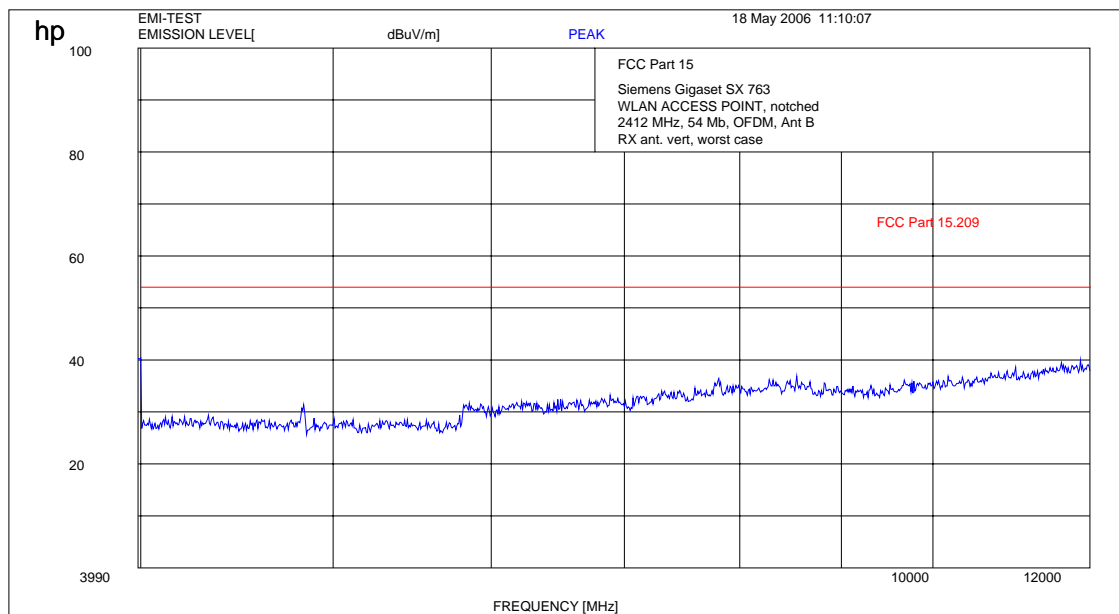
Plot 2: 0.03 - 4 GHz vertical / horizontal (lowest channel) (OFDM)



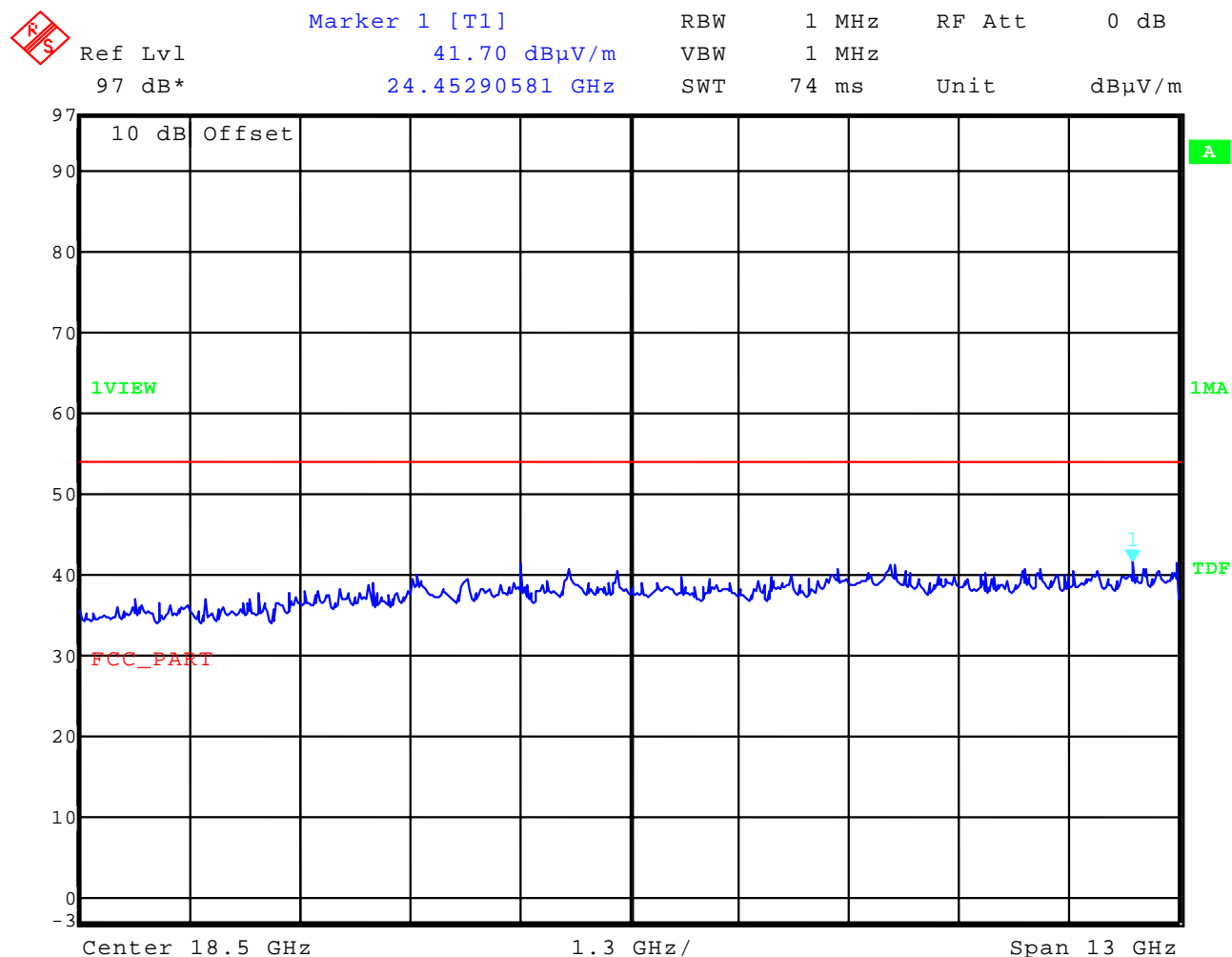
Plot 3: 4- 12 GHz (lowest channel)(DSSS)



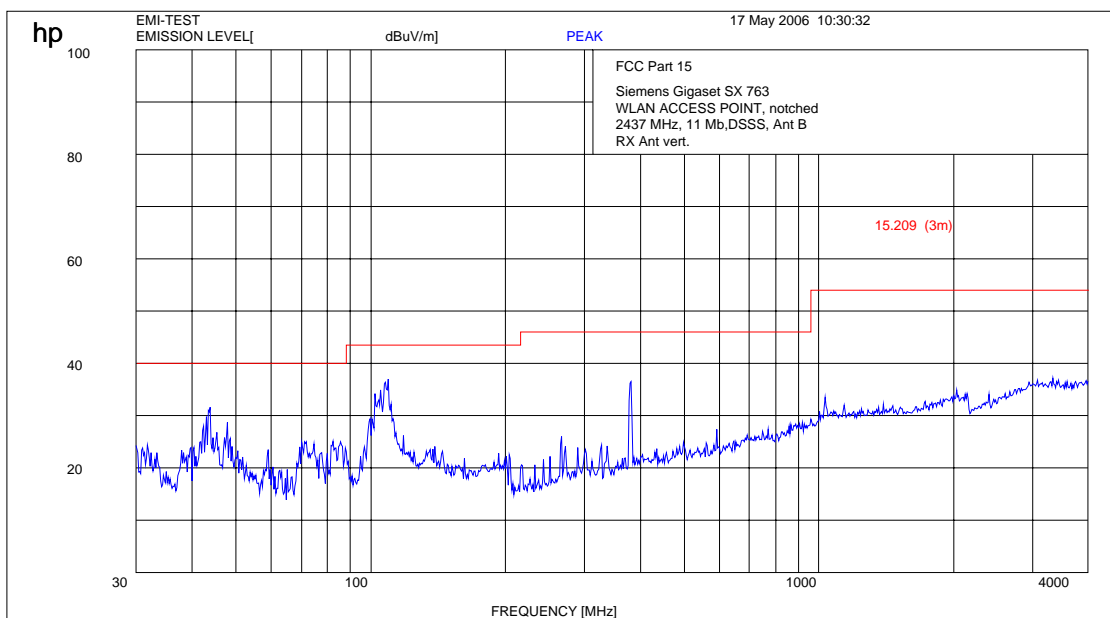
Plot 4: 4- 12 GHz (lowest channel)(OFDM)



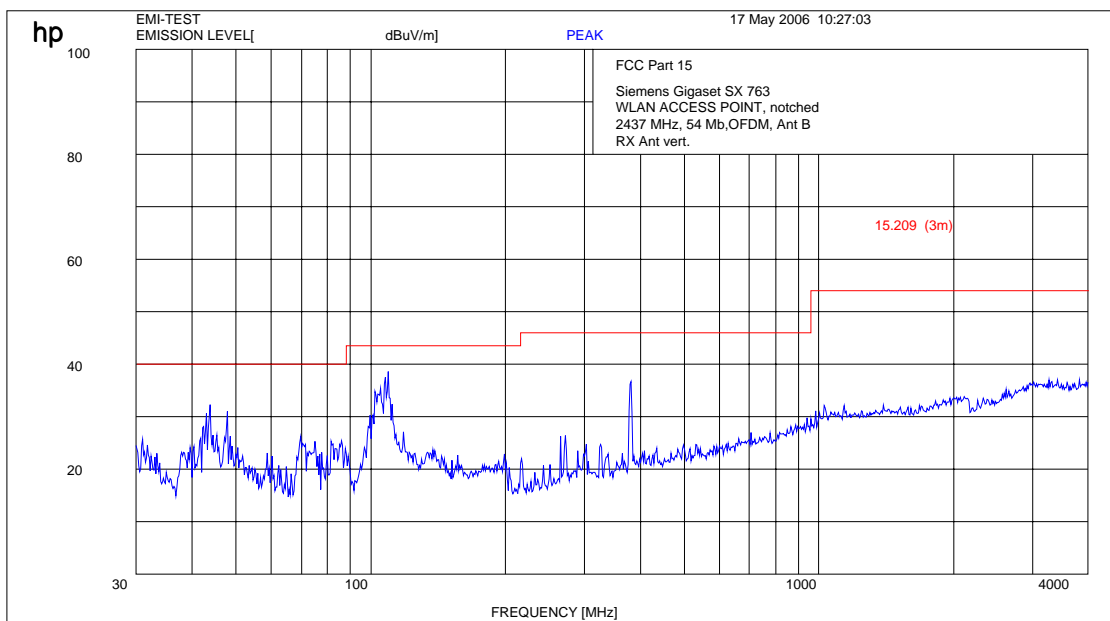
Plot 5: 12 – 25 GHz horizontal / vertical (valid for all three channels and all modulations)



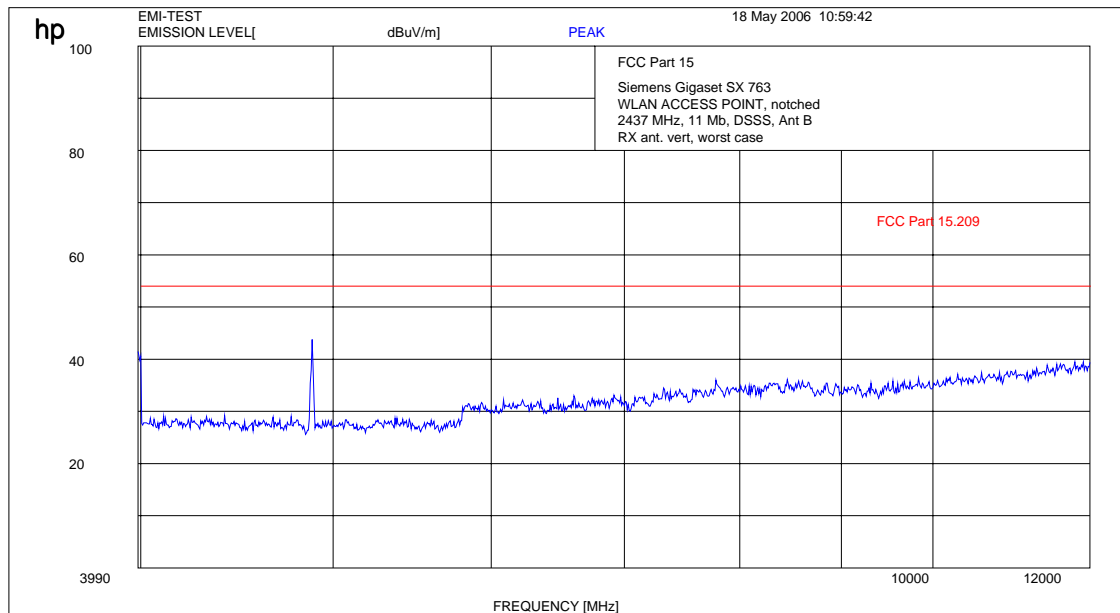
Plot 6: 0.03 - 4 GHz (middle channel) (DSSS)



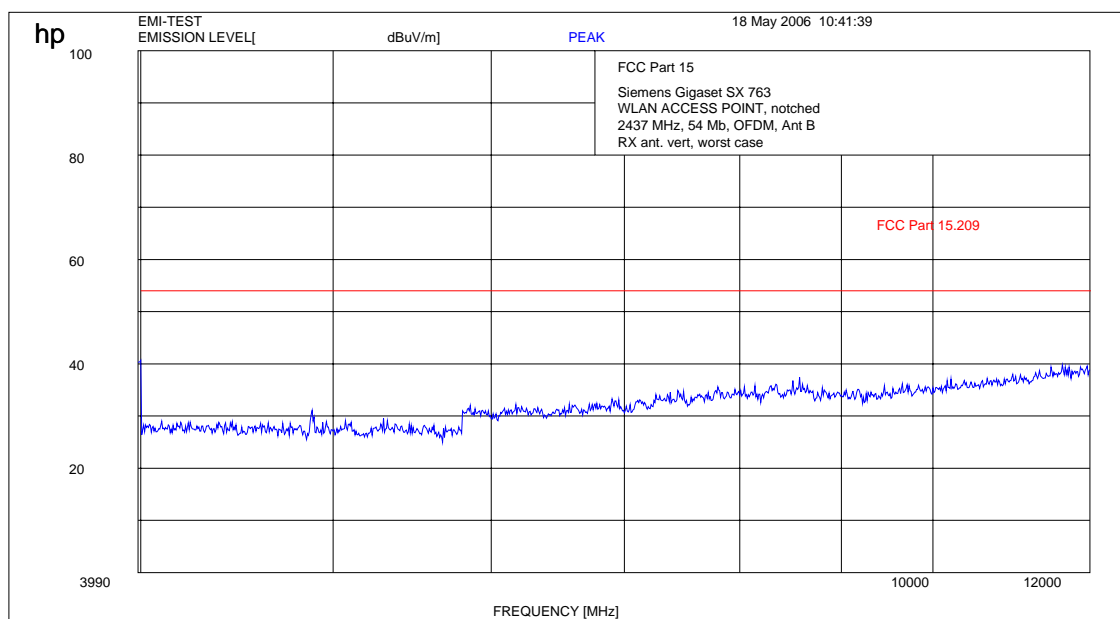
Plot 7: 0.03 - 4 GHz (middle channel) (OFDM)



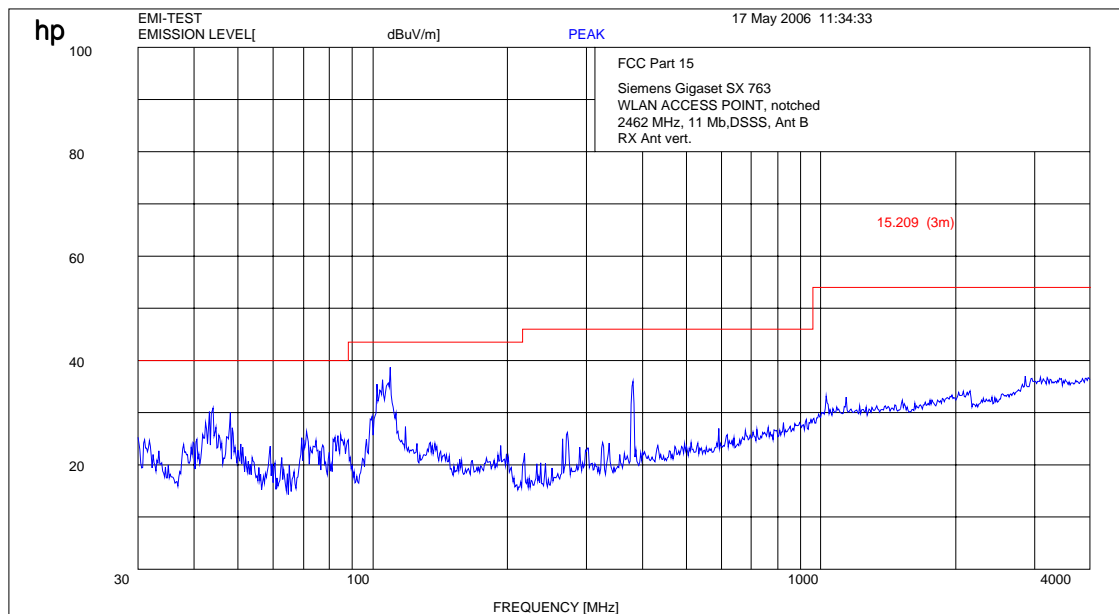
Plot 8: 4- 12 GHz (middle channel) (DSSS)



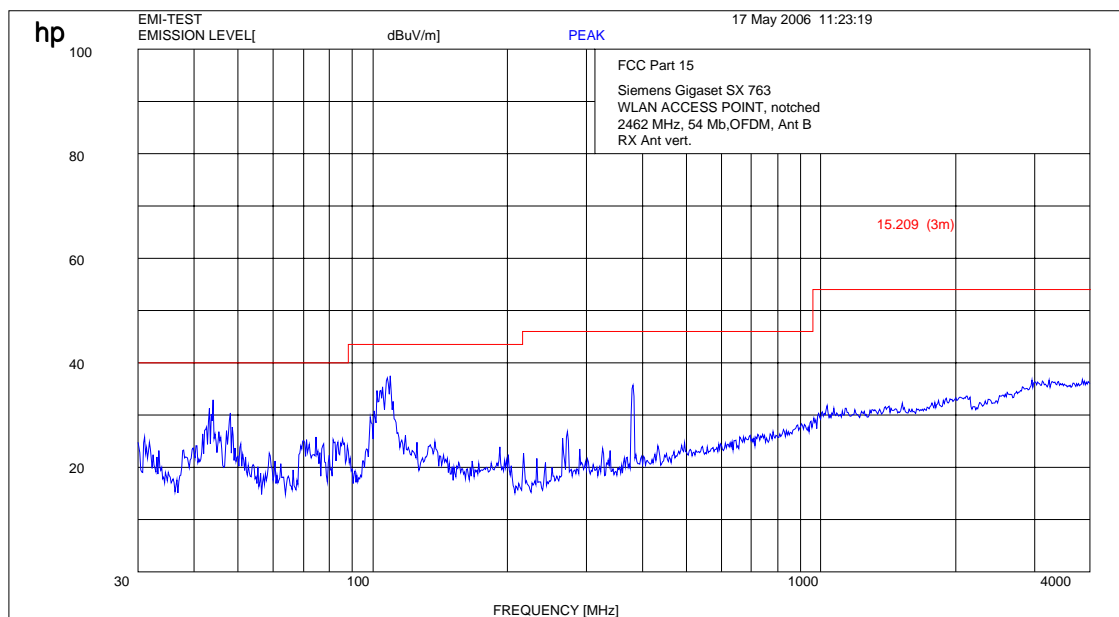
Plot 9: 4- 12 GHz (middle channel) (OFDM)



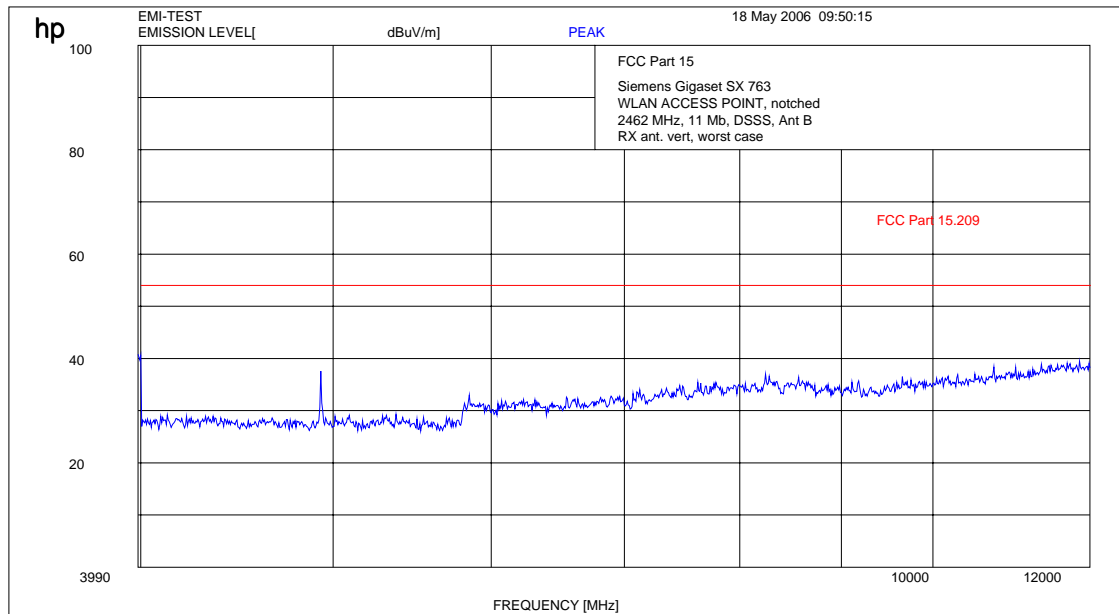
Plot 10: 0.03 - 4 GHz vertical / horizontal (highest channel) (DSSS)



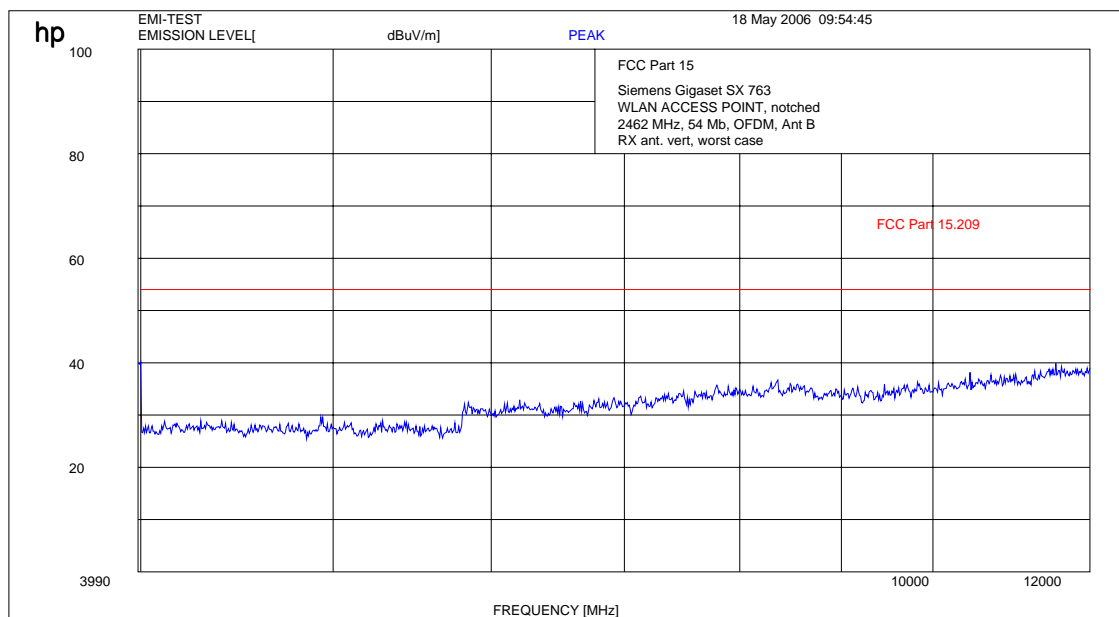
Plot 11: 0.03 - 4 GHz vertical / horizontal (highest channel) (OFDM)



Plot 12: 4- 12 GHz (highest channel) (DSSS)



Plot 13: 4- 12 GHz (highest channel) (OFDM)



Results:

| SPURIOUS EMISSIONS LEVEL §15.209 | | | | | | | | |
|----------------------------------|----------|----------------|----------|----------|----------------|----------|----------|----------------|
| 2412 MHz | | | 2437 MHz | | | 2462 MHz | | |
| F [MHz] | Detector | Level [dBμV/m] | F [MHz] | Detector | Level [dBμV/m] | F [MHz] | Detector | Level [dBμV/m] |
| 114.0 | Peak | 32.4 | 114.0 | Peak | 32.4 | 114.0 | Peak | 32.4 |
| 379.25 | Peak | 39.8 | 379.25 | Peak | 39.8 | 379.25 | Peak | 39.8 |
| 4824 | Peak | 44.6 | 4874 | Peak | 43.9 | 4924 | Peak | 38.7 |
| | | | | | | | | |
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| | | | | | | | | |
| Measurement uncertainty | | | ±3 dB | | | | | |

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits: § 15.247 (c)

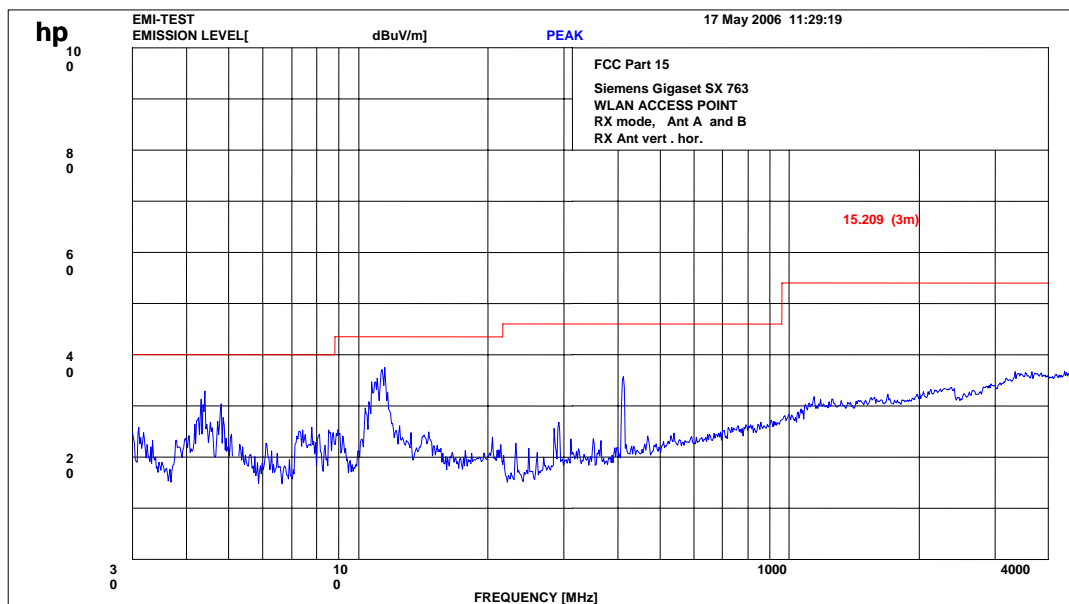
In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Limits: § 15.209

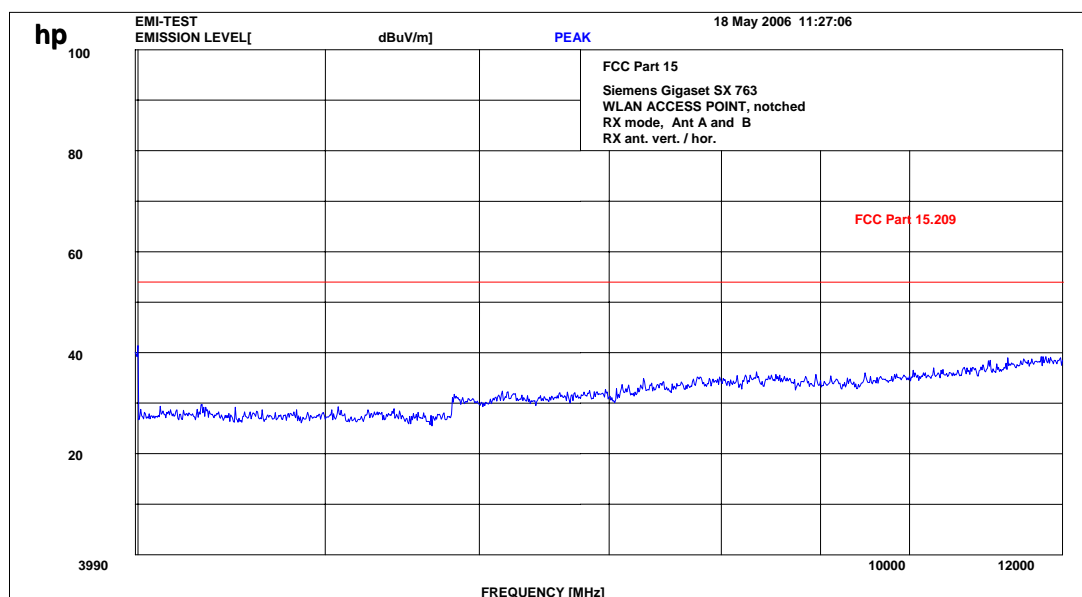
| Frequency [MHz] | Field strength [μV/m] | Measurement distance (m) |
|-----------------|-----------------------|--------------------------|
| 30 - 88 | 100 (40 dBμV/m) | 3 |
| 88 - 216 | 150 (43.5 dBμV/m) | 3 |
| 216 - 960 | 200 (46 dBμV/m) | 3 |
| above 960 | 500 (54 dBμV/m) | 3 |

3.13 Spurious Emissions - radiated (Receiver) §15.109 / 209

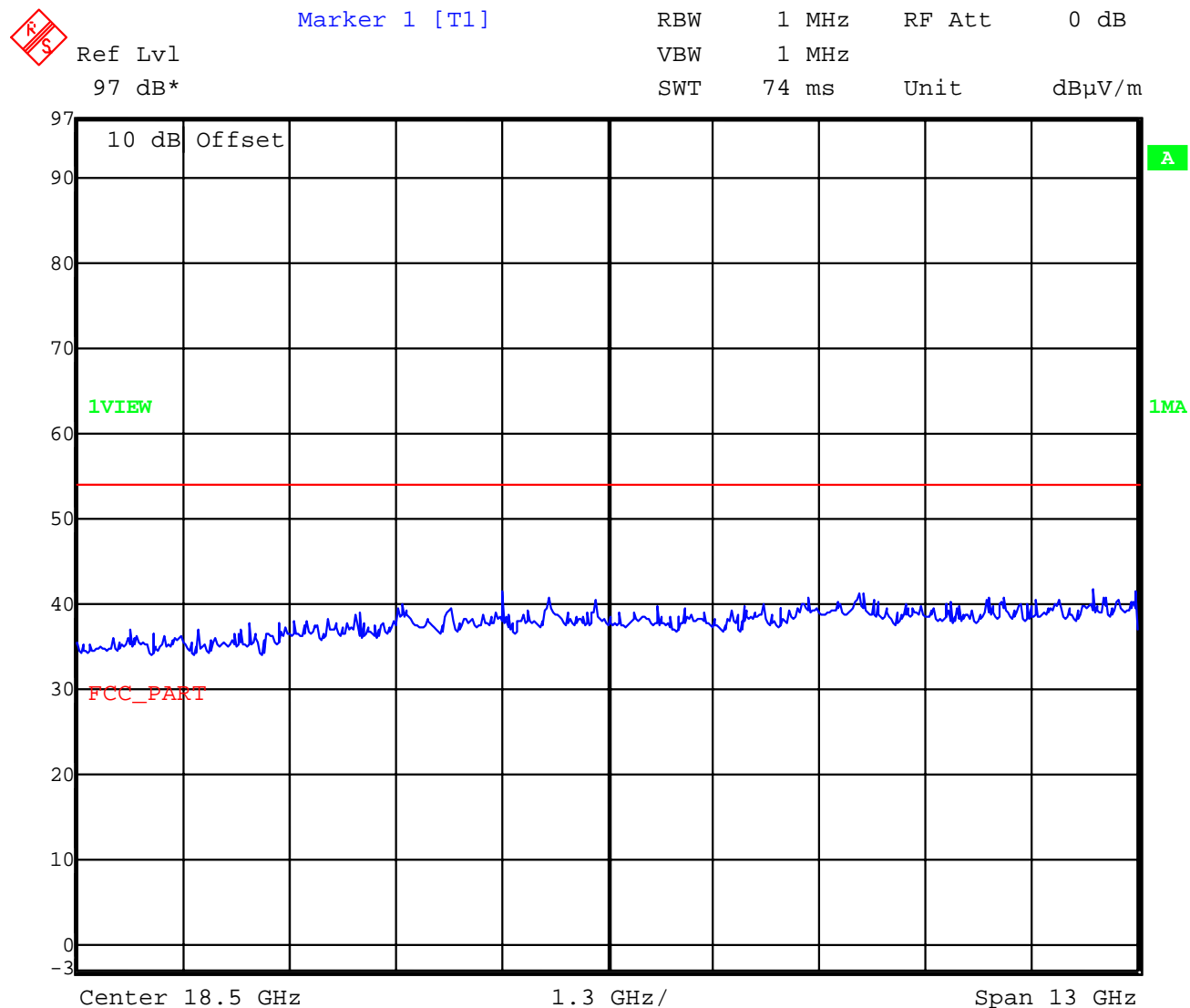
Plot 1: 0.03 - 4 GHz (receiver) (worst case) (both antennas working)



Plot 2: 4- 12 GHz (receiver)



Plot 3: 12- 25 GHz (receiver)



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Results:

| Spurious Emissions level [$\mu\text{V/m}$] | | | | | | | | |
|--|----------|---------------------------|-------------------|----------|---------------------------|--------|----------|---------------------------|
| CH 1 / 2 / 3 | | | | | | | | |
| f[MHz] | Detector | Level [$\mu\text{V/m}$] | f[MHz] | Detector | Level [$\mu\text{V/m}$] | f[MHz] | Detector | Level [$\mu\text{V/m}$] |
| 114.0 | Peak | 32.4 | 114.0 | Peak | 32.4 | 114.0 | Peak | 32.4 |
| 379.25 | Peak | 39.8 | 379.25 | Peak | 39.8 | 379.25 | Peak | 39.8 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Measurement uncertainty | | | $\pm 3\text{ dB}$ | | | | | |

$f < 1\text{ GHz}$: RBW/VBW: 100 kHz

$f \geq 1\text{ GHz}$: RBW/VBW: 1 MHz

see above plots

Measurement distance see table

Limits : § 15.109 / 209

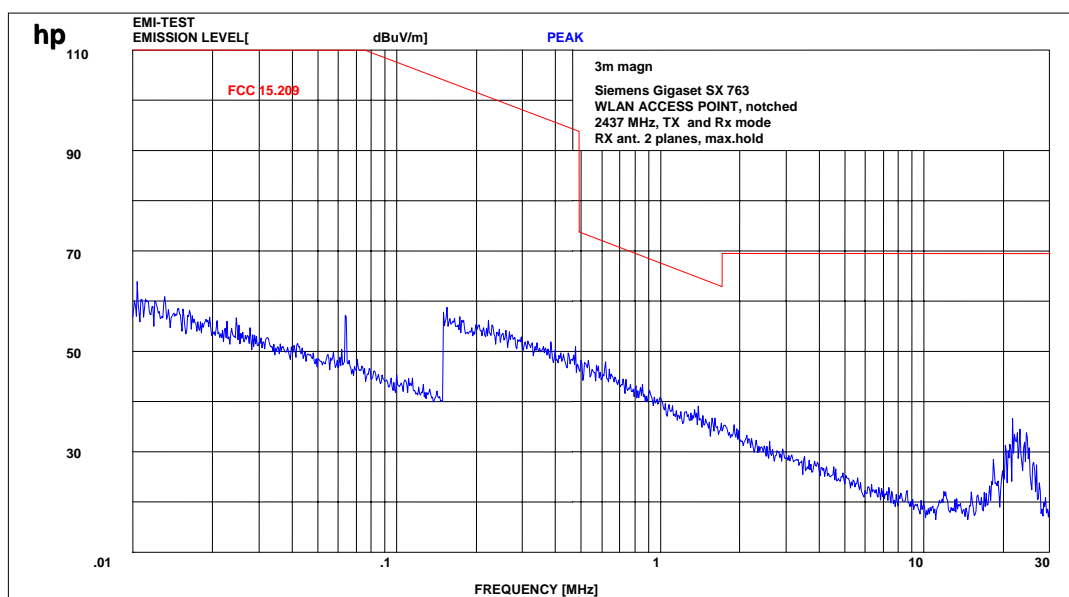
| Frequency (MHz) | Field strength ($\mu\text{V/m}$) | Measurement distance (m) |
|-----------------|------------------------------------|--------------------------|
| 30 - 88 | 100 (40 dB $\mu\text{V/m}$) | 3 |
| 88 - 216 | 150 (43.5 dB $\mu\text{V/m}$) | 3 |
| 216 - 960 | 200 (46 dB $\mu\text{V/m}$) | 3 |
| above 960 | 500 (54 dB $\mu\text{V/m}$) | 3 |

3.14 Spurious Emissions - radiated <30 MHz §15.109

Measured at 3 m distance.

Values recalculated with 40 dB/decade according to FCC rules.

Plot 1:

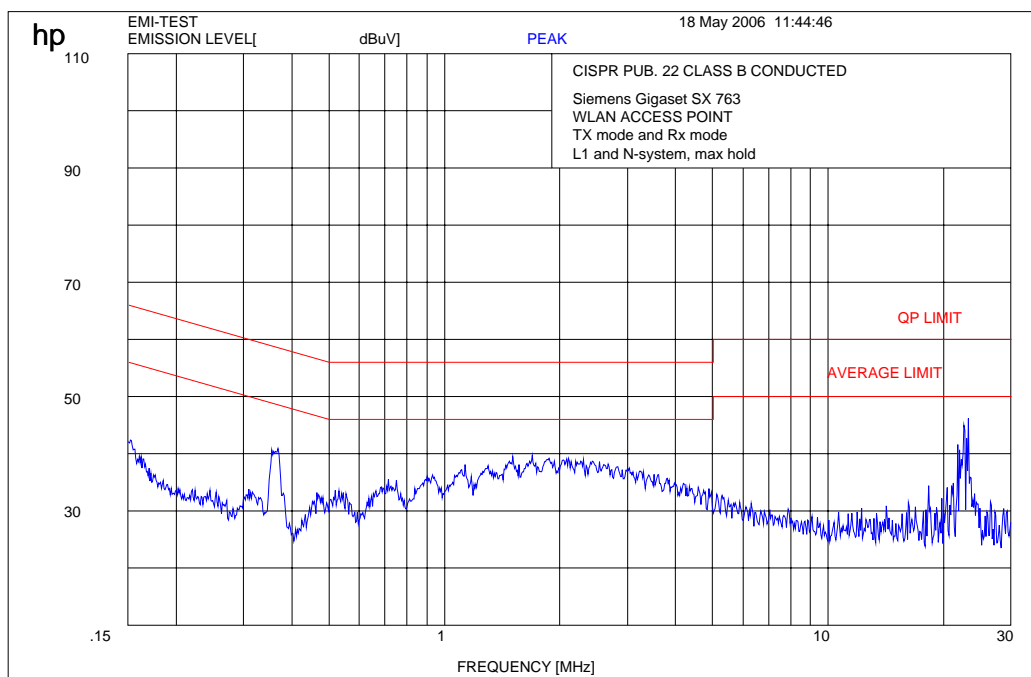


Limits:

| Frequency (MHz) | Field strength ($\mu\text{V/m}$) | Measurement distance (m) |
|-----------------|------------------------------------|--------------------------|
| 0.009 – 0.490 | 2400/F(kHz) | 300 |
| 0.490 – 1.705 | 24000/F(kHz) | 30 |
| 1.705 – 30.0 | 30 / 29.5 dB $\mu\text{V/m}$ | 30 |
| 30 - 88 | 100 / 40 dB $\mu\text{V/m}$ | 3 |
| 88 - 216 | 150 / 43.5 dB $\mu\text{V/m}$ | 3 |
| 216 - 960 | 200 / 46 dB $\mu\text{V/m}$ | 3 |
| above 960 | 54 dB $\mu\text{V/m}$ | 3 |

3.15 Conducted Emissions <30 MHz §15.107/207

Plot 1: CISPR 22



We measured in TX and RX mode, L1 and N, max value was hold.

Limits :

| | |
|-----------------------------------|-----------------------|
| Under normal test conditions only | See red lines on plot |
|-----------------------------------|-----------------------|

3.16 Used Testequipment

Anechoic chamber C:

| Device | Manufacturer | Type | S/N Number | Inv. No. Cetecom |
|---------------------------|--------------|-----------|------------|------------------|
| Spektrum Analyser | HP | 8566B | 2747A05306 | 300001000 |
| Spektrum Analyser Display | HP | 85662A | 2816A16541 | 300002297 |
| Quasi-Peak-Adapter | HP | 85650A | 2811A01131 | 300000999 |
| Power Dupply | HP | 6032A | 2818A03450 | 300001040 |
| Power Attenuator | Byrd | 8325 | 1530 | 300001595 |
| Bikonical Antenna | EMCO | 3104 | 3758 | 300001602 |
| Log. Period. Antenna | EMCO | 3146 | 2130 | 300001603 |
| Double Ridged Antenna | EMCO | HP 3115P | 3088 | 300001032 |
| Active Loop Antenna | EMCO | 6502 | 2210 | 300001015 |
| Antenna VDE/FCC | | HP11965B | | 300002298 |
| SRM-Drive | HP | 9144A | 2823e46556 | 300001044 |
| Software | HP | EMI | | 300000983 |
| Busisolator | Kontron | | | 300001056 |
| Absorberhalle | MWB | | 87400/02 | 300000996 |
| Salzsäule | Kontron | | | 300001055 |
| Antenna | R&S | HMO20 | 832211/003 | 300002243 |
| Indukt. Tast Antenna | R&S | HFH 2 Z4 | 881468/026 | 300001464 |
| System-Rack | HP I.V. | 85900 | * | 300000222 |
| Spectrum Analyzer | HP | 8566B | 2747A05275 | 300000219 |
| Quasi-Peak-Adapter | HP | 85650A | 2811A01135 | 300000216 |
| RF-Preselector | HP | 85685A | 2837A00779 | 300000218 |
| Rahmen Antenne | R&S | HFH2-Z2 | 891847-35 | 300001169 |
| Leitungsteiler | HP | 11850C | | 300000997 |
| Breitband-Hornantenne EMI | HP | 35155P | | 300002300 |
| PC | HP | Vectra VL | | 300001688 |
| VHF Meßantenne | Schwarzbeck | VHA 9103 | | 300001778 |
| Spectrum Analyzer Display | HP | 85662A | 2816A16497 | 300001690 |
| VHF Meßantenna | Schwarzbeck | VHA 9103 | | 300001780 |
| Biconical Antenna | EMCO | 3104 C | 9909-4868 | 300002590 |

SRD Laboratory:

| Device | 300001207 | Type | S/N Number | Inv. No. Cetecom |
|---------------------------------|-----------|----------------|------------|------------------|
| Spectrum Analyzer | 300001208 | 494AP | B010241 | 300000863 |
| Spectrum Analyzer | HP | 71210A (70000) | 2731A02347 | 300000321 |
| Spectrum Analyzer Display | HP | 70206A | 2840A01553 | 300002017 |
| Reference Frequency | HP | 70310A | 2736A00707 | 300002018 |
| Local Oscillator | HP | 70900A | 2842A02221 | 300002019 |
| ZF-Modul 10Hz-300 kHz | HP | 70902A | 2840A02145 | 300002020 |
| ZF-Modul 100 kHz-3 MHz | HP | 70903A | 2835A01069 | 300002021 |
| HF-Teil für 71210A 100Hz- 22GHz | HP | 70908A | | 300002022 |
| Spectrum Analyzer 2 | HP | 85660B | 3138A07614 | |
| Spectrum Analyzer Display 2 | HP | 85662A | 3144A20627 | |

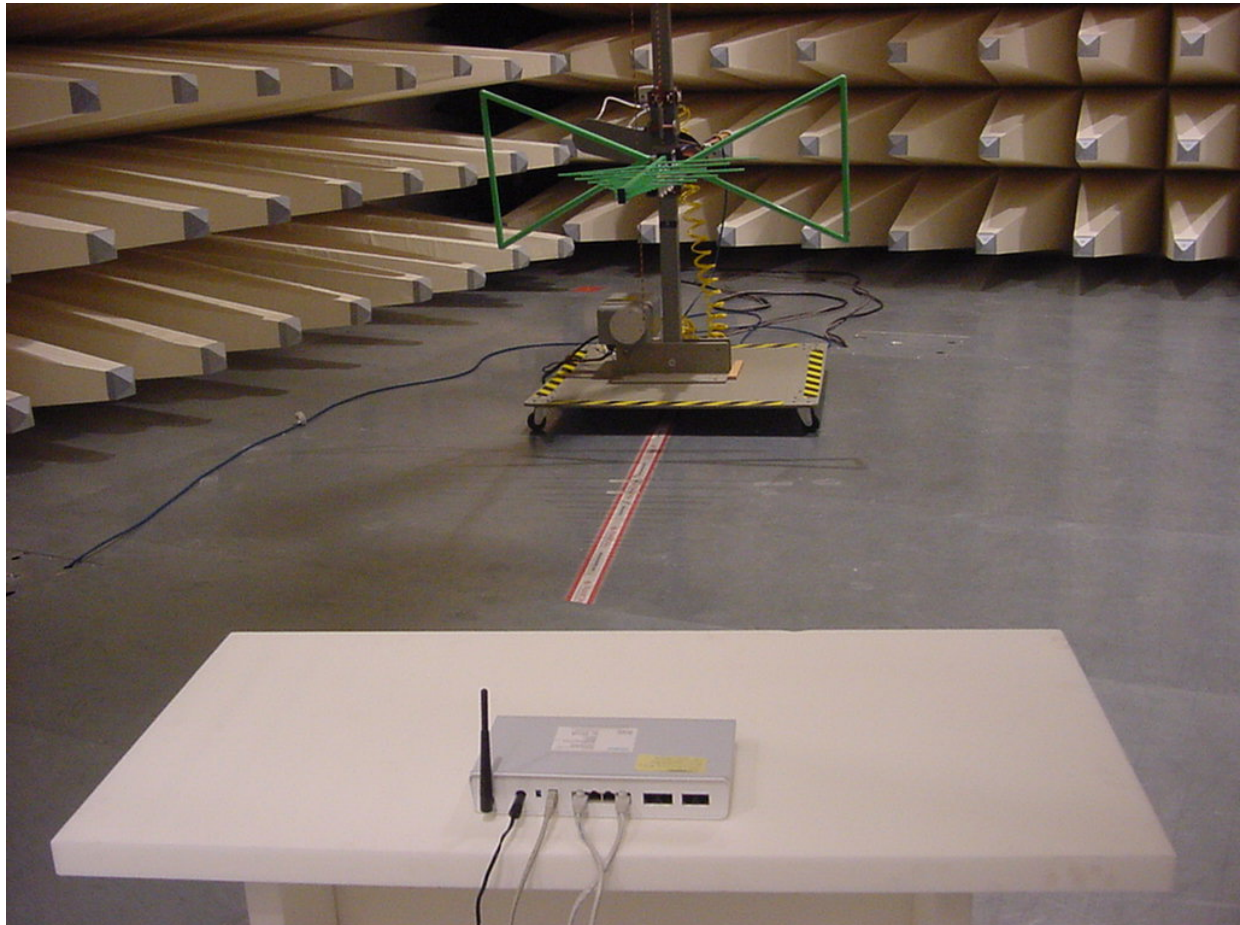
| | | | | |
|--------------------------------|-----------------|-----------|------------|-----------|
| Signal Generator DC-600 KHz | HP | 8904A | 2822A01213 | 300001157 |
| Signal Generator DC-600 KHz | HP | 8904A | 2822A01214 | 300001158 |
| Powersupply | HP | 6038A | 3122A11097 | 300001204 |
| Netznachbildung | R&S | ESH3-Z5 | 828576/020 | 300001210 |
| Amplituden Controller | R&S | SMDU-Z2 | 871829/051 | 300002309 |
| Trenntrafo | ErFi | 913501 | | 300001205 |
| Trenntrafo | Grundig | RT5A | 9242 | 300001627 |
| Relais Matrix | HP | 3488A | 2719A15013 | 300001156 |
| Multimeter | Siemens | Multizet | | 300001102 |
| Peak Power Calibrator | HP | 8900B | | 300001084 |
| Schallgeber | Schomandl | SG 1 | 10159 | 300001209 |
| Schallgeber | Schomandl | SG 2 | 10176 | 300002473 |
| Filter | FSY Microwave | | | 300001206 |
| Attenuatorer | Pro Nova | | | 300002476 |
| Klimaschrank | Heraeus Voetsch | VUK04/500 | | 300001012 |
| Spectrum Analyzer 3 | HP | 8566A | 1925A00257 | 300001098 |
| Spectrum Analyzer Display 3 | HP | 85662 | 1925A00860 | 300002306 |
| Oszilloscope | Tektronix | 2432 | 110261 | 300001165 |
| Radiocom. Analyzer | R&S | CMTA 54 | 894043/010 | 300001175 |
| Powersupply | HP | 6038A | 2848A07027 | 300001174 |
| Signal Generator 0.01-1280 MHz | HP | 8662A | 2224A01012 | 300001110 |
| Signal Generator (Funktionen) | R&S | AFGU | 862490/032 | 300001201 |
| Trenntrafo | ErFi | MPL | 91350 | 300001155 |
| Relais Matrix | R&S | PSU | 893285/020 | 300001173 |
| Power Meter | HP | 436A | 2101A12378 | 300001136 |
| Powersensor | HP | 8484A | 2237A10156 | 300001140 |
| Powersensor | HP | 8482A | 2237A06016 | 300001139 |
| Relais Matrix | R&S | PSU | 282628/004 | 300001214 |
| Powersupply | Zentro | | 2007 | 300001109 |
| Oszilloscope | Tektronix | 7633 | | 300001111 |
| Klimaschrank | Heraeus Voetsch | VUK04/500 | 32926 | 300001500 |
| Quasi-Peak Adapter | HP | 85650A | 2811A01204 | 300002308 |
| Radiocom. Analyzer | R&S | CMTA 84 | 894199/012 | 300001176 |
| Oszilloscope | HP | 54510A | 3022A02062 | 300001202 |
| Funkmeßplatz | Schomandl | FD1000 | 34982 | 300001115 |
| Signal Generator | R&S | SMPC | 882416/019 | 300001162 |
| Frequency counter | HP | 5340A | 2116A08138 | 300001104 |
| Power Meter | HP | 436A | 2031U01461 | 300001105 |
| Powersensor | HP | 8482A | | 300001106 |
| Powersensor | HP | 8484A | | 300001107 |
| Powersensor | HP | 8485A | | 300001108 |
| Powersupply | HP | 6038A | 2752A04866 | 300001161 |
| Reflectionsmeter | R&S | NAP | 879191 | 300001132 |
| Signal Generator NF | R&S | SPN | 880139/068 | 300001142 |
| Trenntrafo | ErFi | MPL | 91350 | 300001151 |
| Attenuator | JFW | 30 db | 1350h/104 | 300001703 |
| Attenuator | JFW | 10 db | 1350h/103 | 300001704 |
| Attenuator | JFW | 20 db | 1350h/106 | 300001705 |
| Attenuator | JFW | 20 db | 1350h/105 | 300001766 |
| Filter | Spinner | 153755 | | 300001791 |

| | | | | |
|--------------------------------|-----------------|-----------|------------|-----------|
| Powersensor | HP | 8484A | 2237A10494 | 300001666 |
| Powersupply | HP | 6038A | 3122A11097 | 300001204 |
| Netznachbildung | R&S | ESH3-Z5 | 828576/020 | 300001210 |
| Amplituden Controller | R&S | SMDU-Z2 | 871829/051 | 300002309 |
| Trenntrafo | Erft | 913501 | | 300001205 |
| Trenntrafo | Grundig | RT5A | 9242 | 300001627 |
| Relais Matrix | HP | 3488A | 2719A15013 | 300001156 |
| Multimeter | Siemens | Multizet | | 300001102 |
| Peak Power Calibrator | HP | 8900B | | 300001084 |
| Schallgeber | Schomandl | SG 1 | 10159 | 300001209 |
| Schallgeber | Schomandl | SG 2 | 10176 | 300002473 |
| Filter | FSY Microwave | | | 300001206 |
| Attenuatorer | Pro Nova | | | 300002476 |
| Klimaschrank | Heraeus Voetsch | VUK04/500 | | 300001012 |
| Spectrum Analyzer 3 | HP | 8566A | 1925A00257 | 300001098 |
| Spectrum Analyzer Display 3 | HP | 85662 | 1925A00860 | 300002306 |
| Oszilloscope | Tektronix | 2432 | 110261 | 300001165 |
| Radiocom. Analyzer | R&S | CMTA 54 | 894043/010 | 300001175 |
| Powersupply | HP | 6038A | 2848A07027 | 300001174 |
| Signal Generator 0.01-1280 MHz | HP | 8662A | 2224A01012 | 300001110 |
| Signal Generator (Funktionen) | R&S | AFGU | 862490/032 | 300001201 |
| Trenntrafo | Erft | MPL | 91350 | 300001155 |
| Relais Matrix | R&S | PSU | 893285/020 | 300001173 |
| Power Meter | HP | 436A | 2101A12378 | 300001136 |
| Powersensor | HP | 8484A | 2237A10156 | 300001140 |
| Powersensor | HP | 8482A | 2237A06016 | 300001139 |
| Relais Matrix | R&S | PSU | 282628/004 | 300001214 |
| Powersupply | Zentro | | 2007 | 300001109 |
| Oszilloscope | Tektronix | 7633 | | 300001111 |
| Klimaschrank | Heraeus Voetsch | VUK04/500 | 32926 | 300001500 |
| Quasi-Peak Adapter | HP | 85650A | 2811A01204 | 300002308 |
| Radiocom. Analyzer | R&S | CMTA 84 | 894199/012 | 300001176 |
| Oszilloscope | HP | 54510A | 3022A02062 | 300001202 |
| Funkmeßplatz | Schomandl | FD1000 | 34982 | 300001115 |
| Signal Generator | R&S | SMPC | 882416/019 | 300001162 |
| Frequency counter | HP | 5340A | 2116A08138 | 300001104 |
| Power Meter | HP | 436A | 2031U01461 | 300001105 |
| Powersensor | HP | 8482A | | 300001106 |
| Powersensor | HP | 8484A | | 300001107 |
| Powersensor | HP | 8485A | | 300001108 |
| Powersupply | HP | 6038A | 2752A04866 | 300001161 |
| Reflectionsmeter | R&S | NAP | 879191 | 300001132 |
| Signal Generator NF | R&S | SPN | 880139/068 | 300001142 |
| Trenntrafo | Erft | MPL | 91350 | 300001151 |
| Attenuator | JFW | 30 db | 1350h/104 | 300001703 |
| Attenuator | JFW | 10 db | 1350h/103 | 300001704 |
| Attenuator | JFW | 20 db | 1350h/106 | 300001705 |
| Attenuator | JFW | 20 db | 1350h/105 | 300001766 |
| Filter | Spinner | 153755 | | 300001791 |
| Powersensor | HP | 8484A | 2237A10494 | 300001666 |

| | | | | |
|-------------------------------|--------------------|--------------------------|------------|-----------|
| Powersensor | HP | 8485A | 2238A00849 | 300001668 |
| Bandfilter | Telonic | TTF7255EE | 20293-11 | 300001300 |
| Bandfilter | Telonic | TTF12555EE | 20292-6 | 300001302 |
| Bandfilter | Telonic | TTF25055EE | 20291-8 | 300001304 |
| Bandfilter | Telonic | TTF50055EE | 20290-7 | 300001305 |
| Bandfilter | Telonic | TTF100055EE | 20289-7 | 300001307 |
| Bandfilter | Telonic | TTA300055EESN | 20370-2 | 300001312 |
| Bandstop | Telonic | TTR3753EE1 | 30013-1 | 300001314 |
| Bandstop | Telonic | TTR723EE | 20417-2 | 300001316 |
| Bandstop | Telonic | TTR95-3EE | 20372-4 | 300001318 |
| Bandstop | Telonic | TTR1903EE | 30036-4 | 300001320 |
| Bandstop | Telonic | TTR3753EE | 20369-5 | 300001321 |
| Bandstop | Telonic | TTR750-3EE1 | 90177-1 | 300002387 |
| Highpass | Pro Nova | HDP120-6GG | ohne | 300001348 |
| Highpass | Pro Nova | HMC500-6AA | HJ67-01? | 300001350 |
| Highpass | Narda | NHP 9000 | 0004 | 300001362 |
| Highpass | Narda | HDP16-6GH | JV70-01 | 300001364 |
| Highpass | RSD | HDP50-6GH, HDP200-6GG | | 300001371 |
| Highpass | RSD | 2099-02-01 | | 300000370 |
| Signal Generator 0.1-2060 MHz | HP | 8657A | 2838U00736 | 300001009 |
| Radio Code Analyzer | Schlumberger | SL4922 | | 300001038 |
| Signal Analyzer | B&K | 2033 | | 300001047 |
| Frequency counter | HP | 5386A | 2704A01243 | 300000998 |
| Laufzeitelement | WR-Elektronik | | | 300001036 |
| Powersupply Stromversorgung | Systron | M5P 40/15A | 828233 | 300001291 |
| Powersupply | Heiden | 1108-32 | 1701 | 300001392 |
| Powersupply | Heiden | 1108-32 | 1802 | 300001383 |
| Powersupply | Heiden | 1108-32 | 003202 | 300001187 |
| Powersupply | Zentro | LA 2x30/5GB1 | 2011 | 300001276 |
| Powersupply | Zentro | LA 2x30/5GB2 | 2012 | 300001275 |
| Powersupply | Zentro | LA 30/5GA | 2041,2042 | 300001287 |
| Trenntrafo | Grundig | RT5A | 8781 | 300001277 |
| Trenntrafo | Grundig | RT5A | 9242 | 300001263 |
| Multimeter | Goerz Elektro | Unigor 6e P | 911 355 | 300001625 |
| Multimeter | Goerz Elektro | Unigor 6e P | 911 391 | 300001281 |
| Climatic Box | Heraeus Voetsch | VUK04/500 | 32679 | 300000299 |
| Powersensor + Att. | HP | 8482B | 2703A02586 | 300001492 |
| Attenuator 30 dB | HP | 8498A | 1801A02445 | 300001475 |
| Signal Generator NF | HP | | 2822A01203 | 300001004 |
| Attenuator | Spinner | BN 534171 D | 51881 | 300001516 |
| Attenuator coaxial | Bird | 8325 | 2429 | 300001513 |
| Impulsbegrenzer | R&S | ESH 3 Z2 | | 300001460 |
| 4Port Box | R&S | 4Port Box | 860457/005 | 300001472 |
| Signal Generator 0.1-4200 MHz | HP | 8665A | 2833A0011 | 300002299 |
| NF-Spektrumanalyzer | B&K | 2033A | | 300002301 |
| Swissphone Freifeld-Messbox | Swissphone Schweiz | | | 300002302 |
| Trenntrafo regelbar | Grundig | RT5H | 9242 | 300001628 |
| Signal Generator | HP | 8111A | 2215G00867 | 300001117 |

4 Photographs

Test site:



Test site:



AC-conducted:



Test sample:





