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Anechoic chamber registration no.: 90462 (FCC)
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TCB ID: DE 0001



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



Accredited Bluetooth[®] Test Facility (BQTF)

Test report no. : 2-4689-01-10/07
Applicant : Ads-tec GmbH
Type : WLAN AP/Client RAP/RAC1X1(2)X
Test Standard : FCC Part 15.247 / 15.407
RSS 210 Issue 7
FCC ID : T9GRAX1X1X / T9GRAX1X2X
IC Certification No. : 6275A-RAX1X1X / 6275A-RAX1X2X

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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, Michael Berg Phone: +49 681 598 0 Fax: +49 681 598 9075 email: info@ict.cetecom.de



Responsible for testing laboratory
(Harro Ames)

1.1.2 Organizational items

Reference No.:	2-4689-01-10/07
Order No.:	
Responsible for test report and project leader:	Harro Ames, Michael Berg
Receipt of EUT:	2007-10-22
Date(s) of test:	2007-10-22 to 2007-12-17
Date of report:	2007-12-17
Number of report pages:	110
Number of diagram pages (annex):	

Version of template:	1.6



Responsible for test report
(Michael Berg)

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:	ads-tec GmbH
Address:	Raiffeisenstr. 14 D- 70771 Leinfelden-Echterdingen Germany
Contact person:	Mr. Steffen Pfendtner Tel: +49 (0)711 45894-380 Fax: +49 (0)711 45894-987 email: s.pfendtner@ads-tec.de

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	Product ID	Description	S/N serial number	HW hardware status	SW software status
RAP1X1(2)X RAC1X1(2)X		Dual WLAN AP / Client single/dual card version	-	-	-
Frequency Band [MHz]	Type of Modulation	Number of channels	Antenna	Power Supply	Temperature Range
ISM 2.400 - 2.483.5 5.150 – 5.250 5.725 – 5.850	DSSS / OFDM	11/4/5	up to 2*2 external antennas see report	External AC power supply	-20°C to +55°C

for more infos see subpart 1.3.3

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						

1.3.3 Additional EUT information

The sample is a dual access point / dual client for dualband use. (2.4 and 5 GHz).

Inside the AP there is only one RF part, able to work on 2.4 and 5 GHz.

The only difference between AP and client is the software setting, RF-part is identical.

There are no differences in RF behaviour between AP and client.

In this report we test the AP with additional antennas for the 2.4, 5.2 and 5.7 GHz range

The results are valid for the Ap and for the Client as well as for single and dual-card versions.

The RF-behavior is similar at all samples.

Access Point	RAP1110	RAP1111	RAP1210	RAP1211	RAP1120	RAP1121	RAP1220	RAP1221
1 WLAN Module	X	X	X	X				
2 WLAN Modules					X	X	X	X
1xCU Ethernet Port (RJ45)	X	X			X	X		
5xCU Ethernet Port (integrated switch) (RJ45)								
1xOptical Ethernet Port			X	X			X	X
PoE (IEEE 802.3af) 48V DC	X	X			X	X		
24 V DC	X		X		X		X	
AC integrated 110-230 V AC		X		X		X		X
Client Mode available	X	X	X	X	X	X	X	X
Access Client	RAC1110	RAC1111	RAC1510	RAC1511	RAC1120	RAC1121	RAC1220	RAC1221
1 WLAN Module	X	X	X	X				
2 WLAN Modules					X	X	X	X
1xCU Ethernet Port	X	X			X	X		
5xCU Ethernet Port (integrated switch)			X	X				
1xOptical Ethernet Port							X	X
PoE (IEEE 802.3af) 48V DC	X	X	X	X	X	X		
24 V DC	X		X		X		X	
AC integrated 110-230 V AC		X		X		X		X

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1.3.4 Additional EUT information For IC Canada (appendix 2)

n.a.

1.3.5 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.

1.3.6 Extreme conditions testing values

Description	Shortcut	Unit	Value
Nominal Temperature / humidity	T _{nom}	°C / %	22°C / 33%
Low Temperature	T _{low}	°C	-20°C
High Temperature	T _{high}	°C	55°C
Nominal Power Source	V _{nom}	V	115V AC
Low Power Source	V _{low}	V	100V AC
High Power Source	V _{high}	V	130V AC

Type of powersource: External AC power supply with 24V DC output, delivered by the customer

2 Test standard & summary list of all performed test cases

TC identifier	Description	verdict	date	Remark
RF-Testing	FCC Part 15 §15.247 - CANADA RSS-210	pass	2007-11-21	

Test Specification Clause	Test Case	Pass	Fail	Not applicable	Not performed
§15.247 (e)	Peak power spectral density				Yes
§15.247(a2)	Spectrum Bandwidth of a DSSS /OFDMSystem 6dB/20dB/26dB BW				Yes
§ 15.247 (b) (3)	Maximum output power (conducted)				Yes
§ 15.247 (b) (3)	Max. peak output power (radiated)				Yes
§15.247 (d)	Band-edge compliance of conducted emissions				Yes
§15.205	Band-edge compliance of radiated emissions				Yes
§15.247 (d)	Spurious Emission - conducted (Transmitter)				Yes
§ 15.209	Spurious Emission -radiated (Transmitter)	Yes			
§ 15.247 (d)	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 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 setups 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 kHz: Quasi Peak measurement, 200 Hz Bandwidth, passive loop antenna.

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

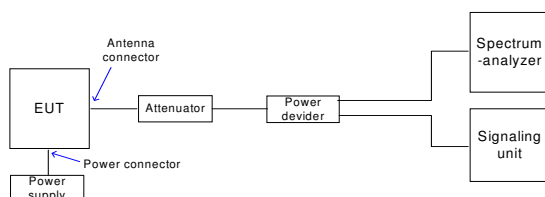
30 MHz - 200 MHz: Quasi Peak measurement, 120KHz Bandwidth, biconical antenna

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

>1GHz: Average, RBW 1MHz, VBW 10 MHz, waveguide horn with lownoise preamp

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 paths 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.



3.1.3 AC-conducted measurements

We used the dedicated power supply delivered by the customer.

3.2 Referenced Documents

none

3.3 Additional comments

This test report covers all type of hosts .

We tested the spurious emissions with all antennas and all frequency ranges.

In the 2.4 Ghz range we tested 4 different antennas.

- | | | | |
|---|--------|--------|-----------------|
| - | OB-002 | 9 dBi | DZ-PCKO-11034-0 |
| - | OB-003 | 12 dBi | DZ-PCKO-11034-1 |
| - | PA-M01 | 12 dBi | DZ-PCKO-11035-0 |
| - | PA-L01 | 18 dBi | DZ-PCKO-11035-1 |

In the 5.2 GHz range we tested 3 different antennas

- | | | | |
|---|--------|--------|-----------------|
| - | OB-008 | 12 dBi | DZ-PCKO-11036-0 |
| - | PA-M02 | 14 dBi | DZ-PCKO-11037-0 |
| - | PA-L02 | 20 dBi | DZ-PCKO-11037-1 |

In the 5.7 GHz range we tested 2 different antennas

- | | | | |
|---|--------|--------|-----------------|
| - | PA-M02 | 14 dBi | DZ-PCKO-11037-0 |
| - | PA-L02 | 20 dBi | DZ-PCKO-11037-1 |

We tested the lowest, the middle and the highest channel with each antenna.

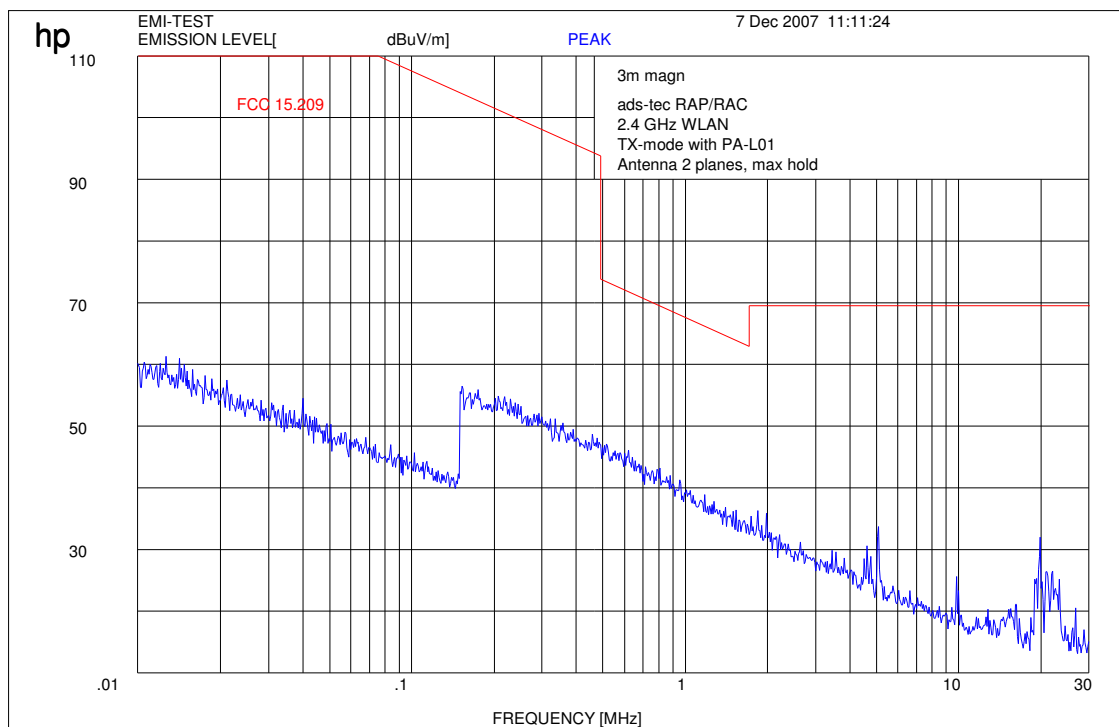
The antenna gain is taken from the customers data sheets.

3.4 Spurious Emissions - radiated (Transmitter) (2.4 GHz)

§15.209

Antenna type: OB-002

9 kHz to 30 Mhz (valid for all antennas, all frequency ranges and all channels)



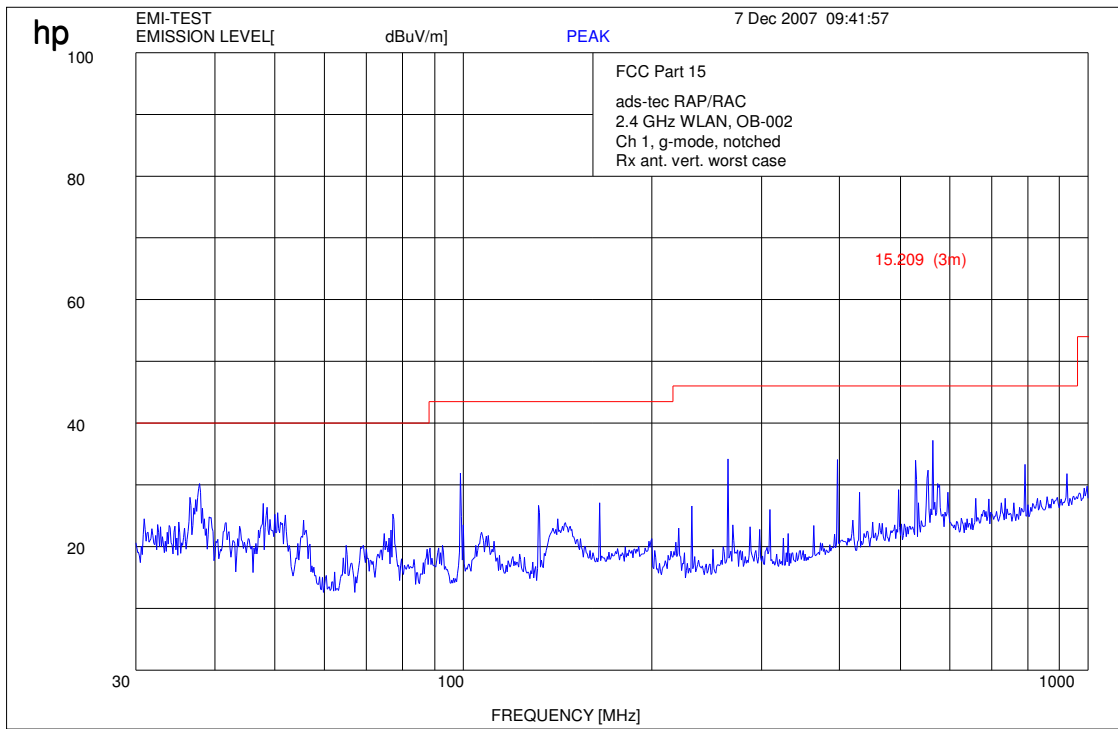
Measured at 3 m distance.

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

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

lowest channel up to 1 GHz



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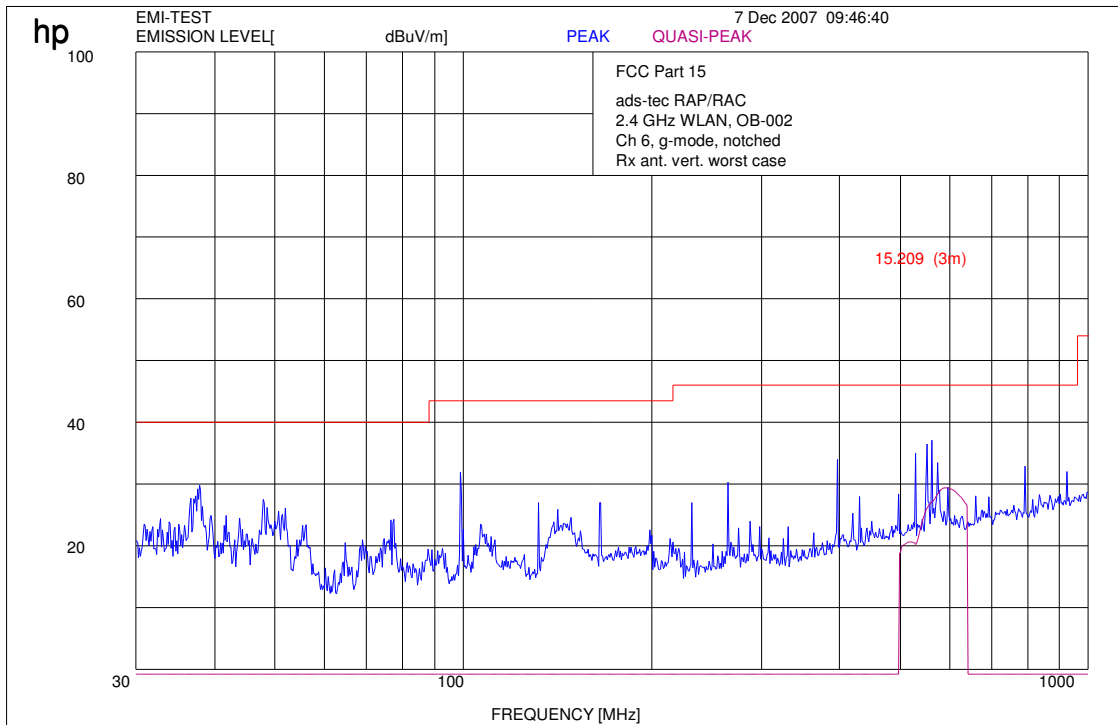


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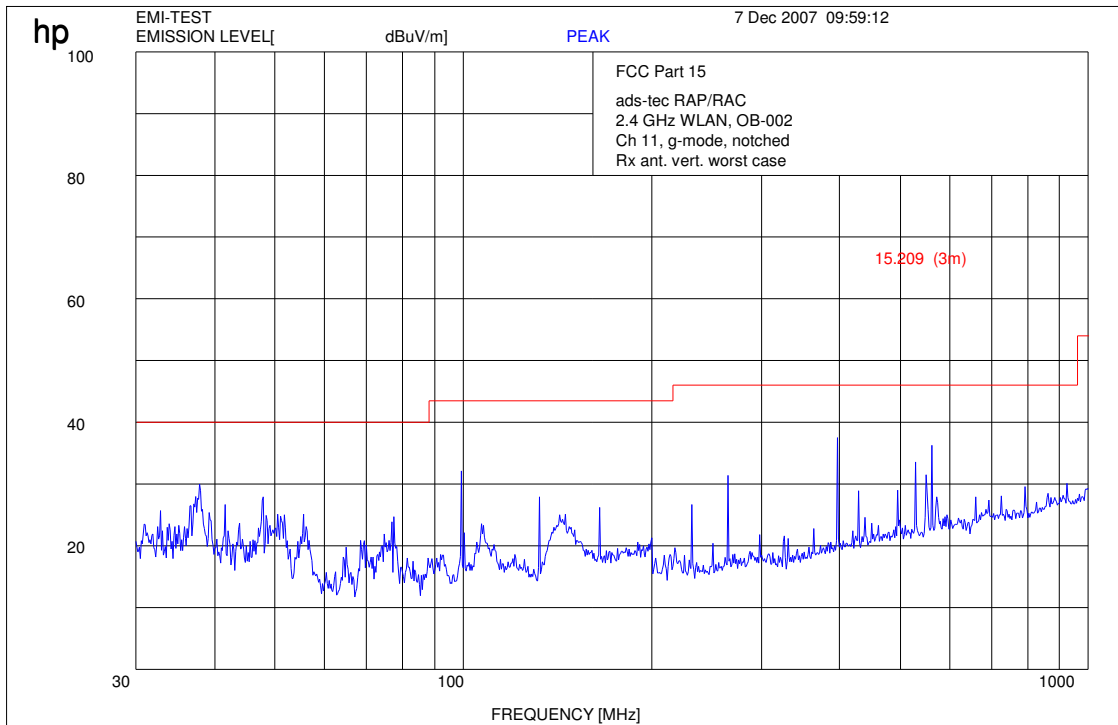


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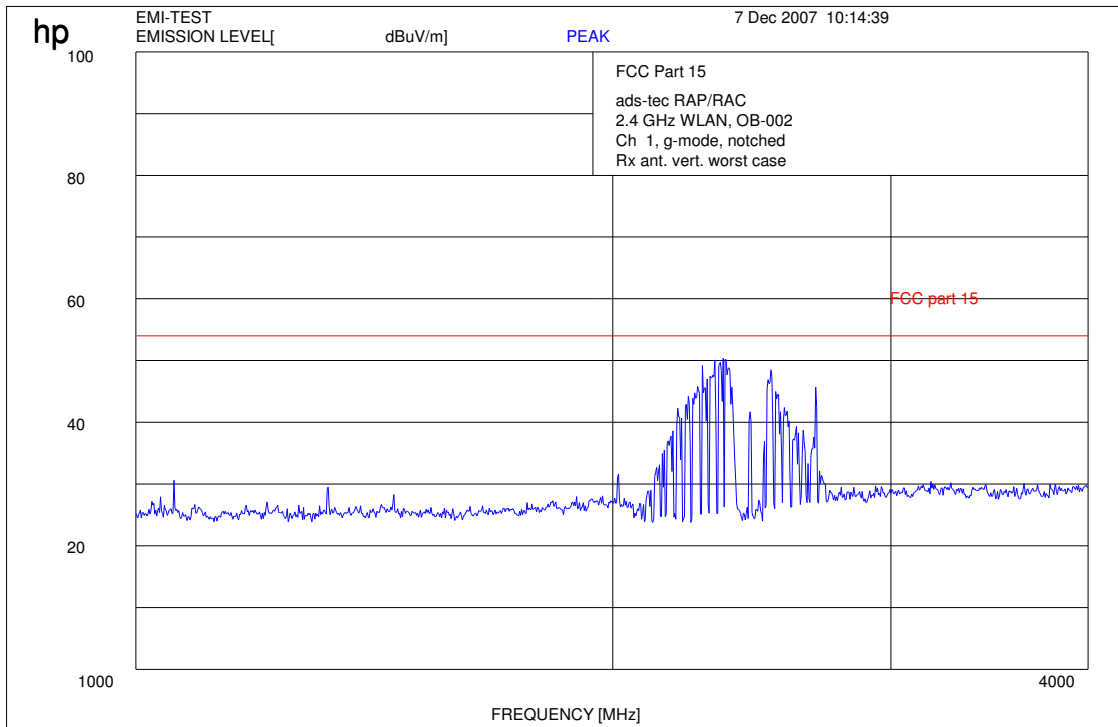


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lowest channel up to 4 GHz



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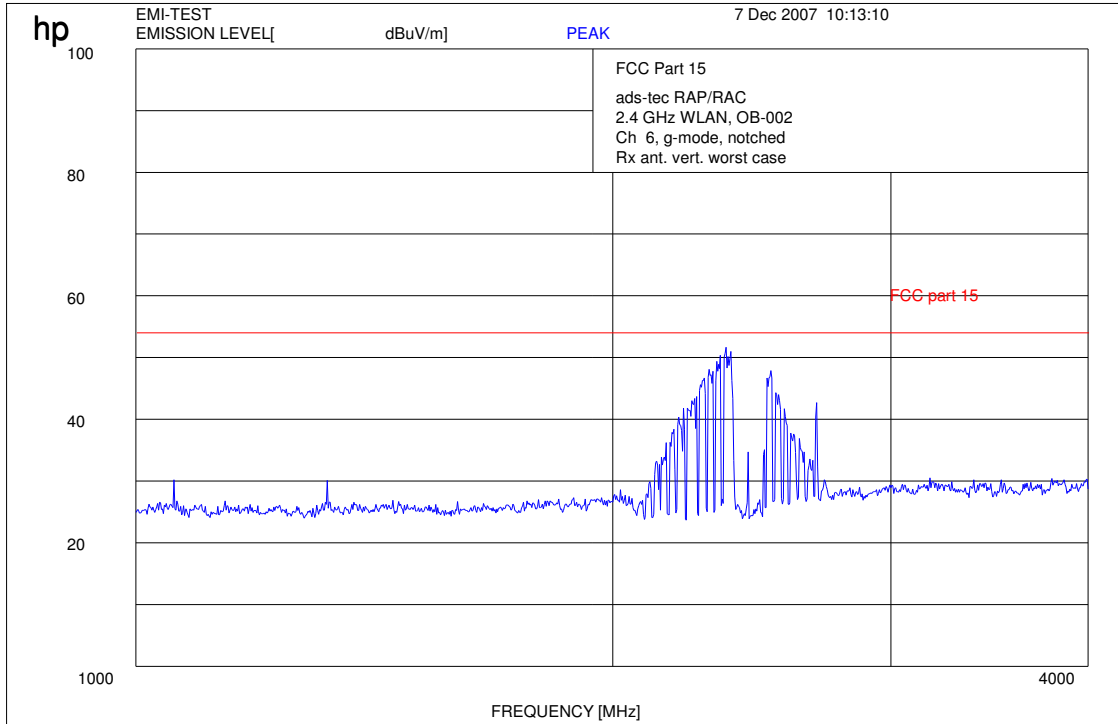


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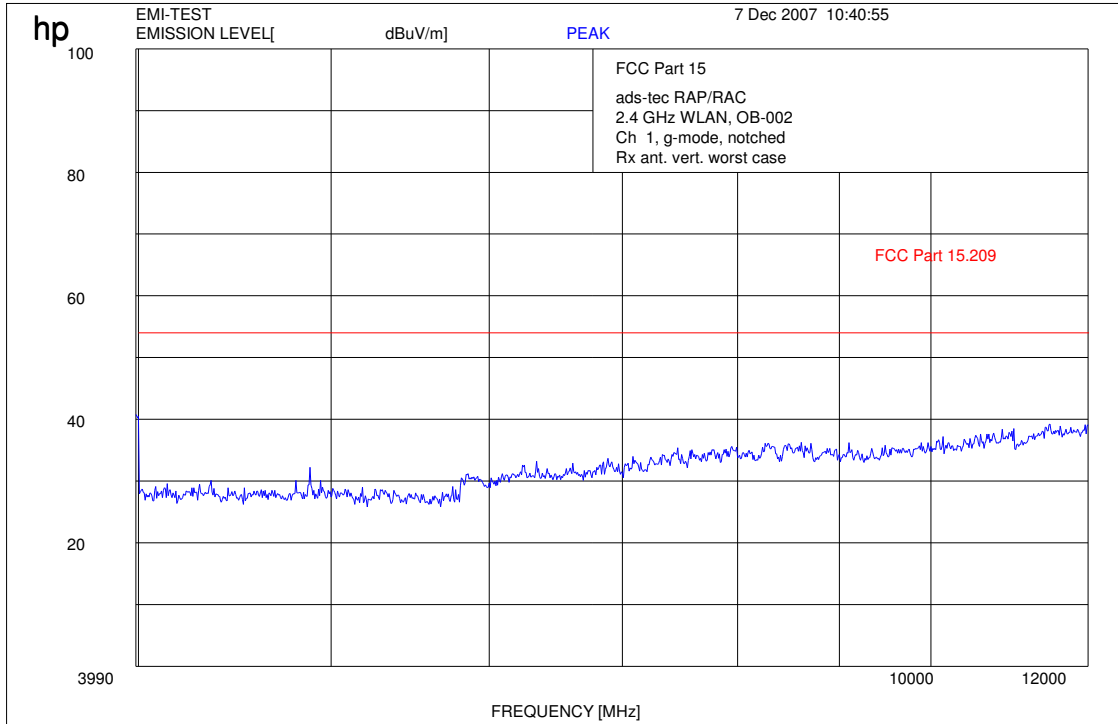


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lowest channel up to 12 GHz



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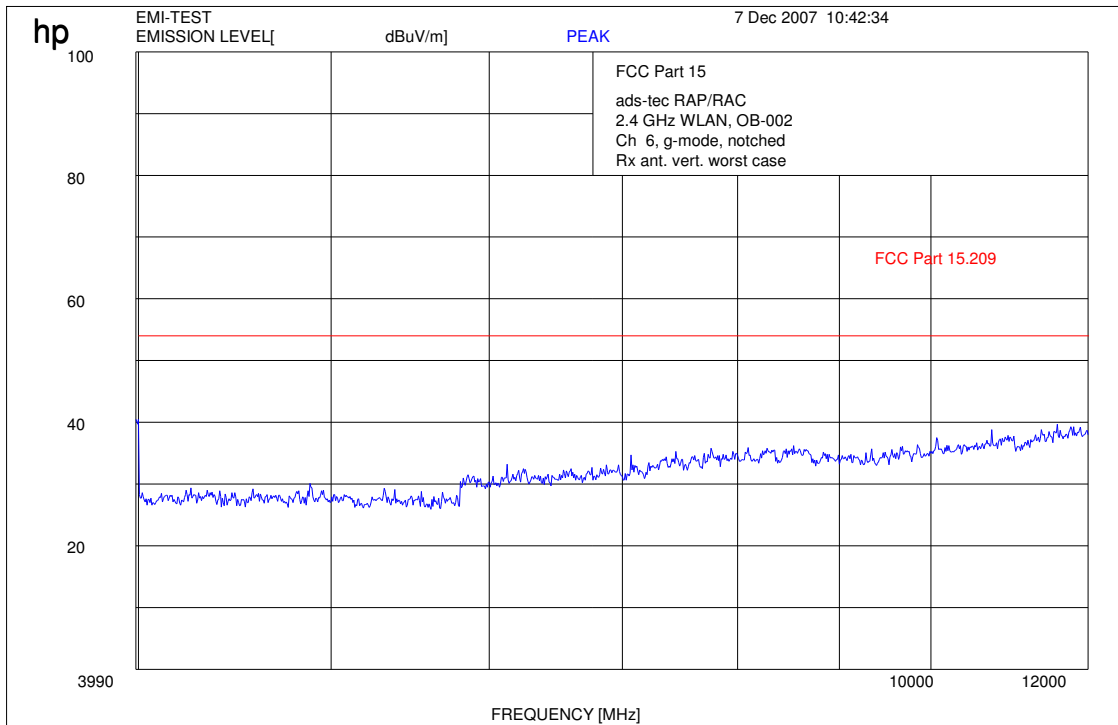


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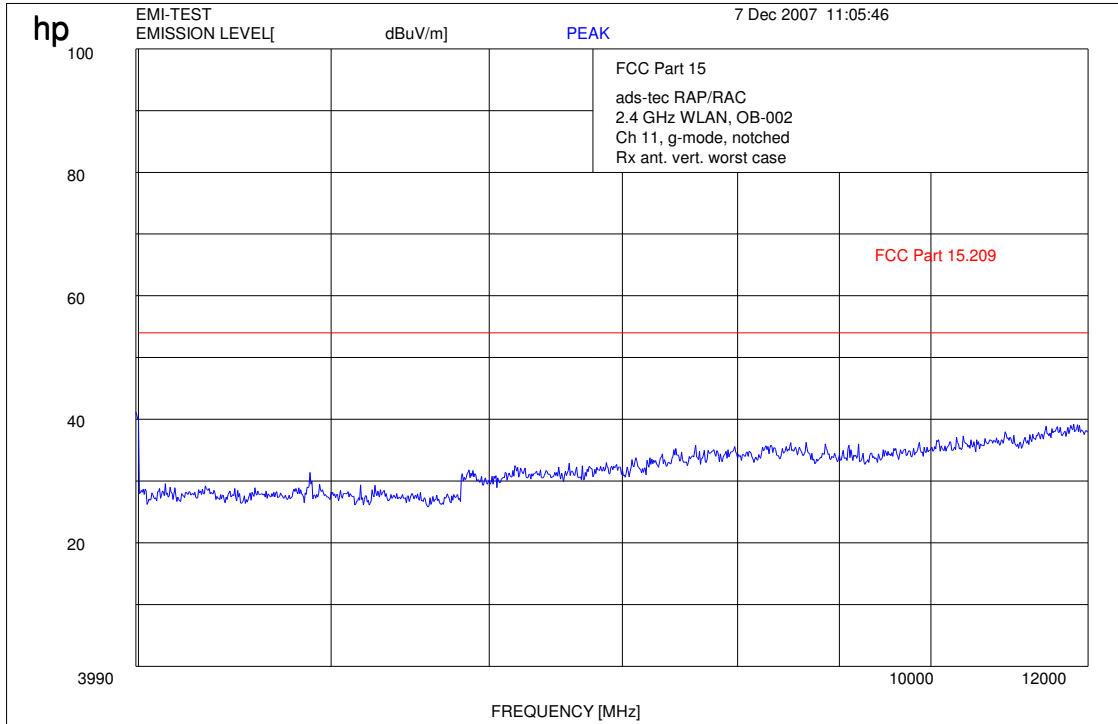


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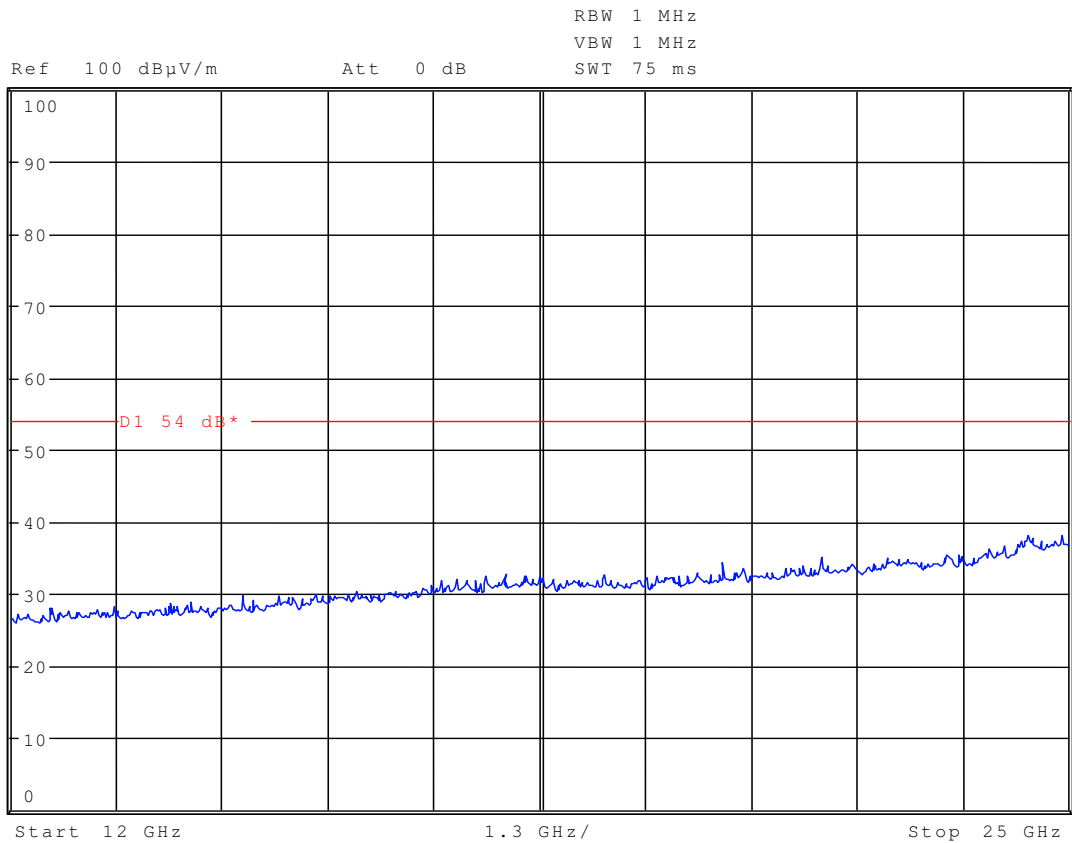
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highest channel up to 12 GHz



12 – 25 GHz (valid for all three frequencies and for all antennas)



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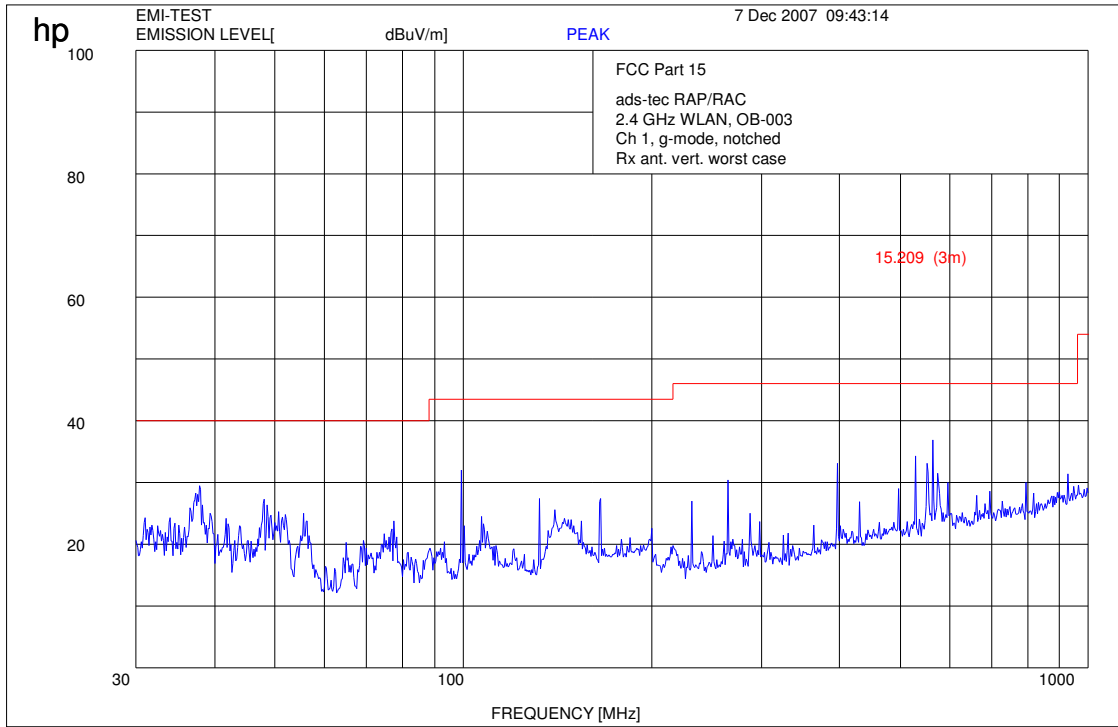
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Antenna type: OB-003

lowest channel up to 1 GHz



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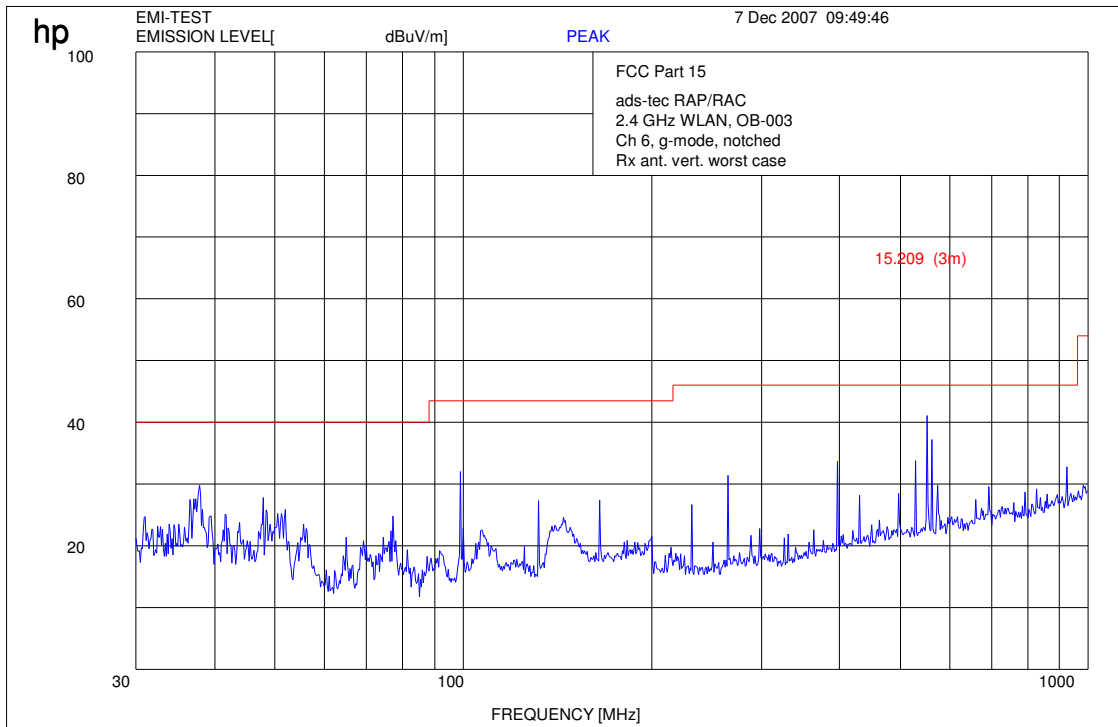


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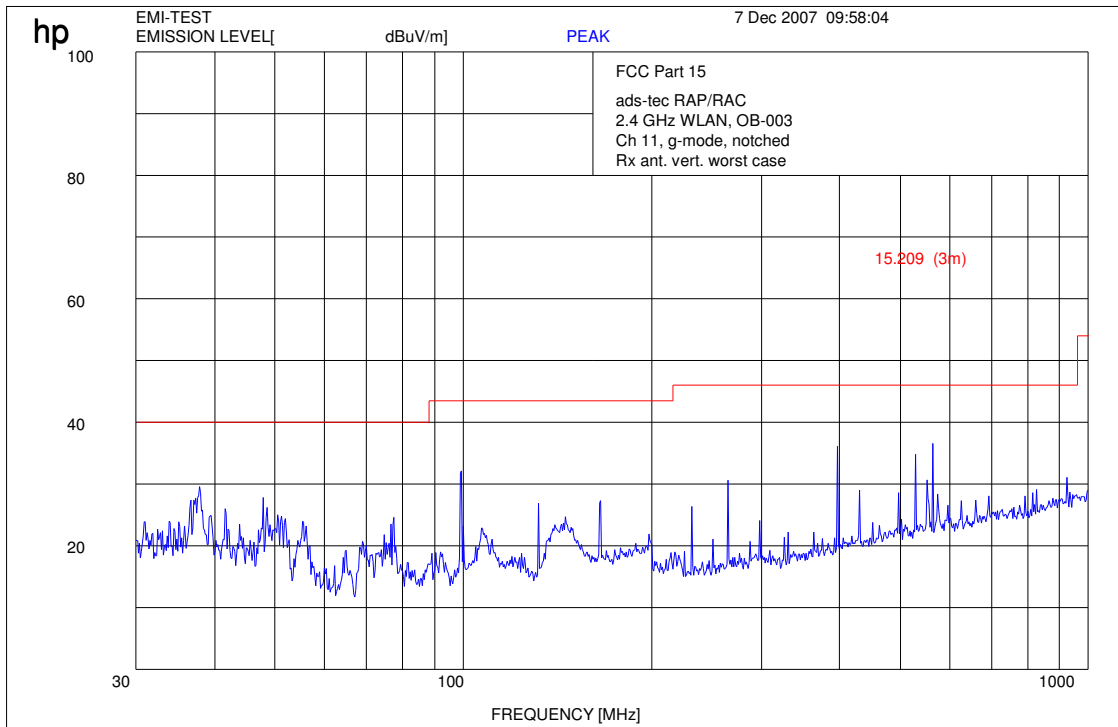


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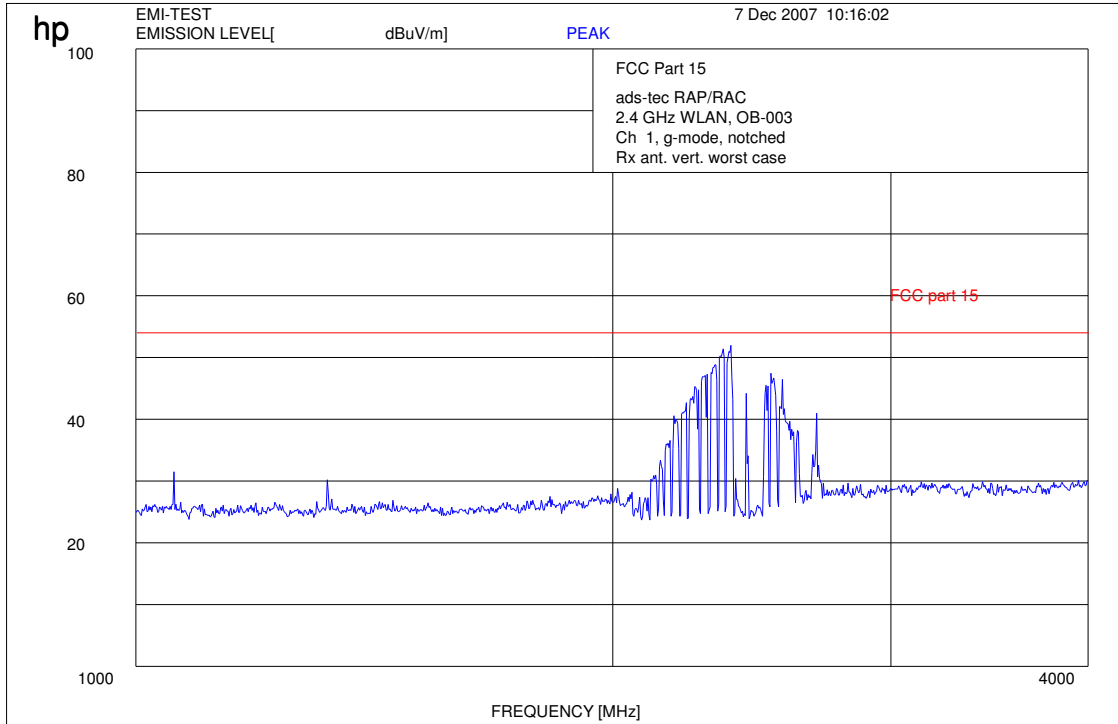


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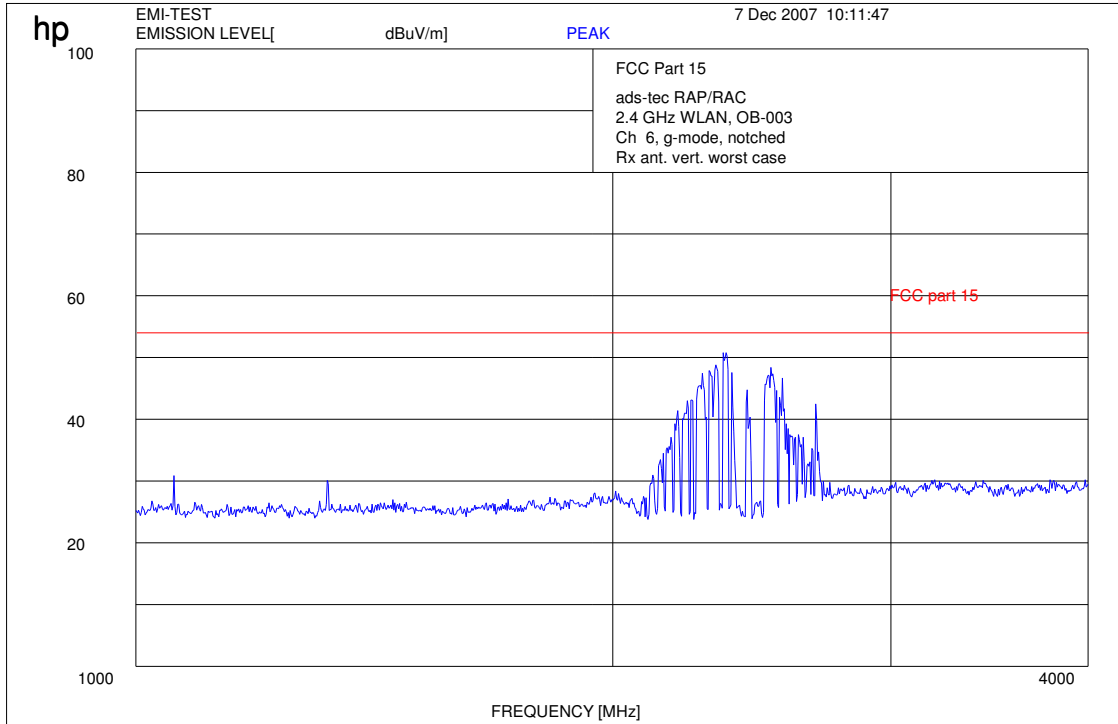


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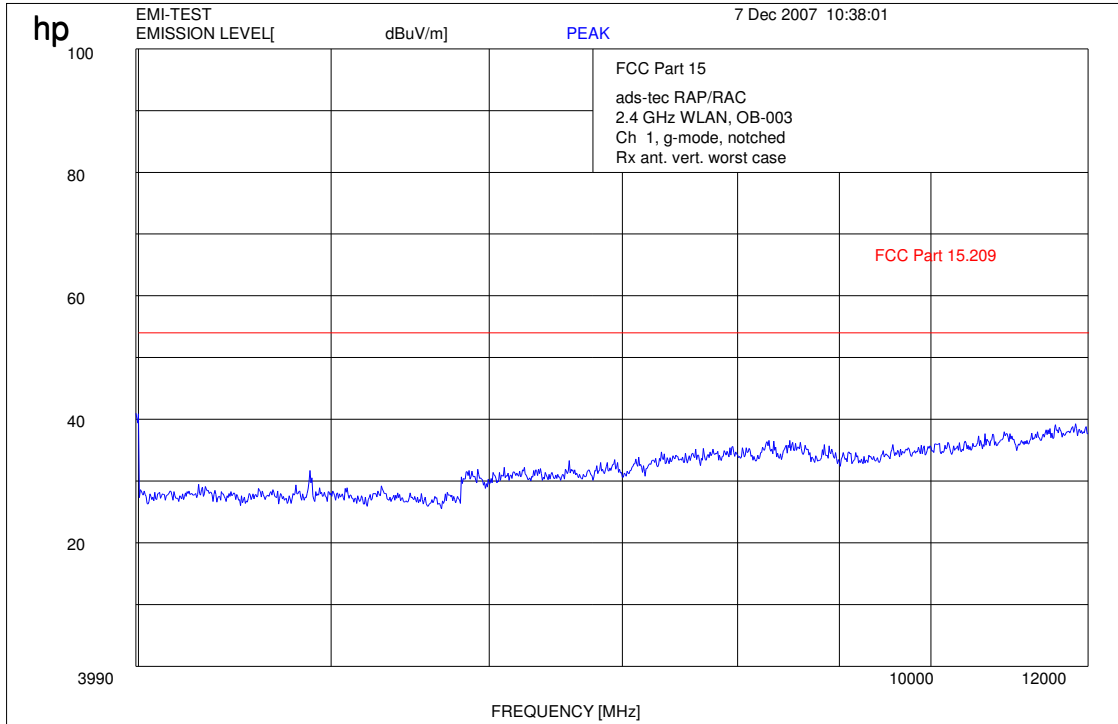


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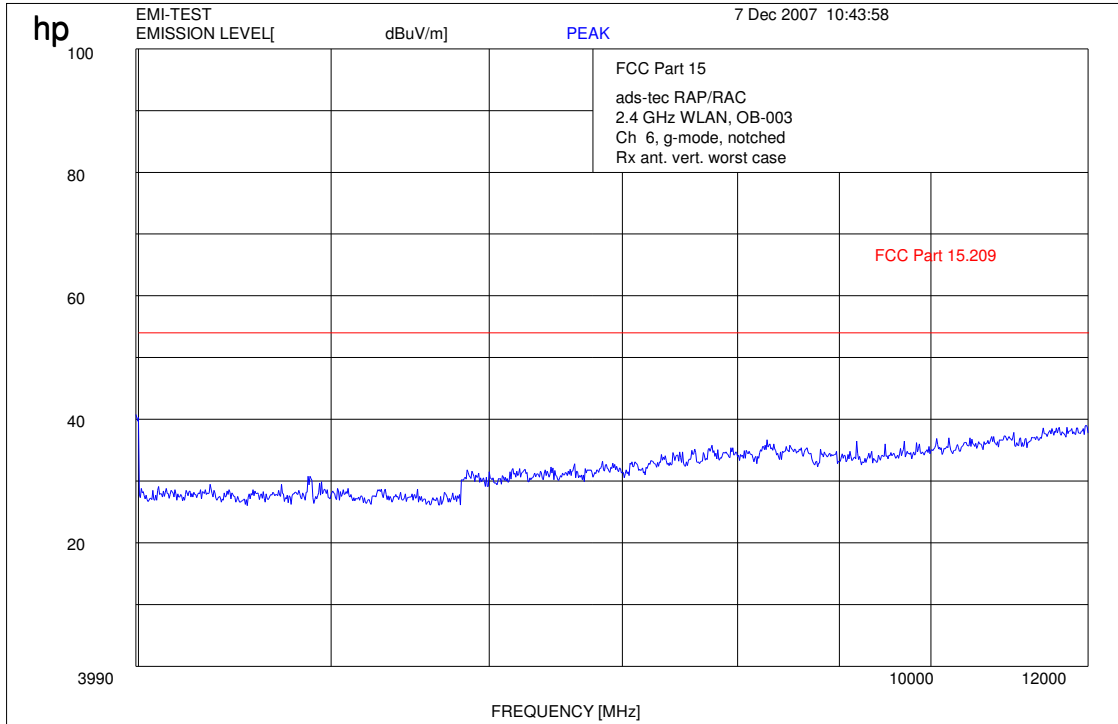


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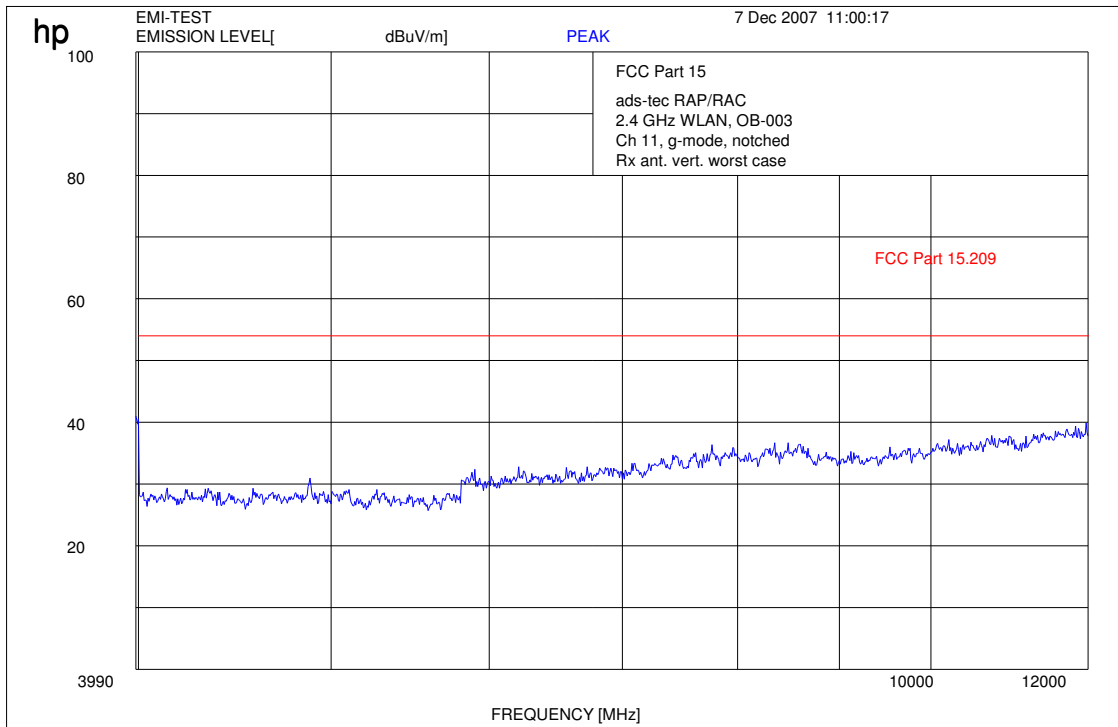


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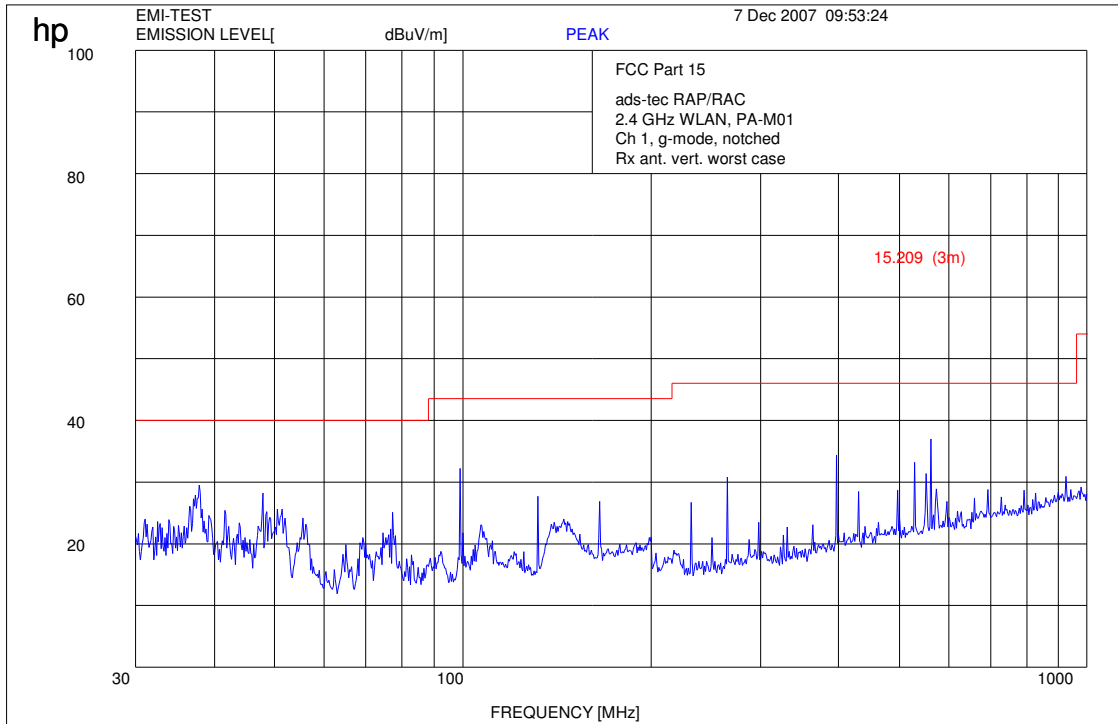
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Antenna type: PA-M01

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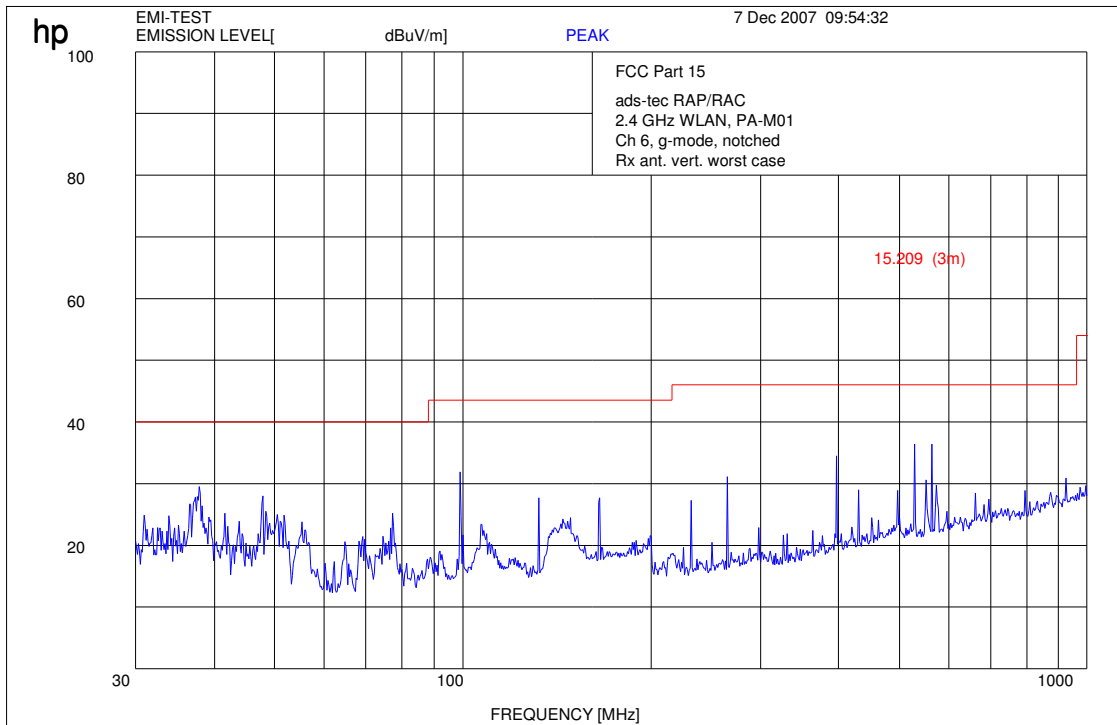


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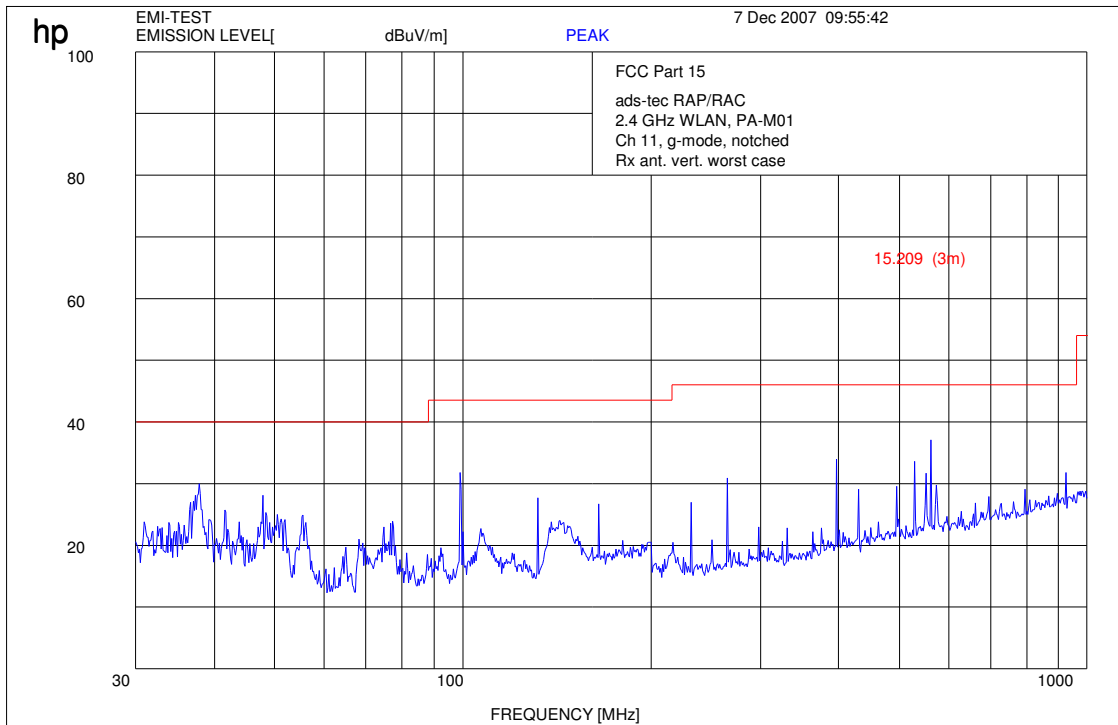


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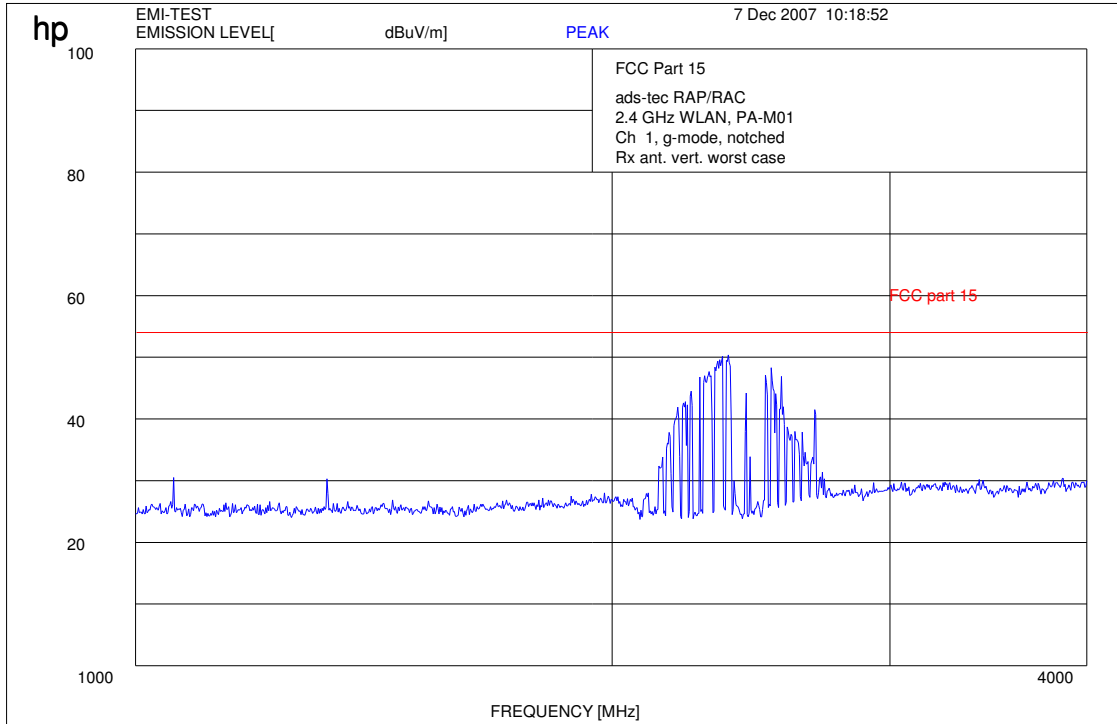


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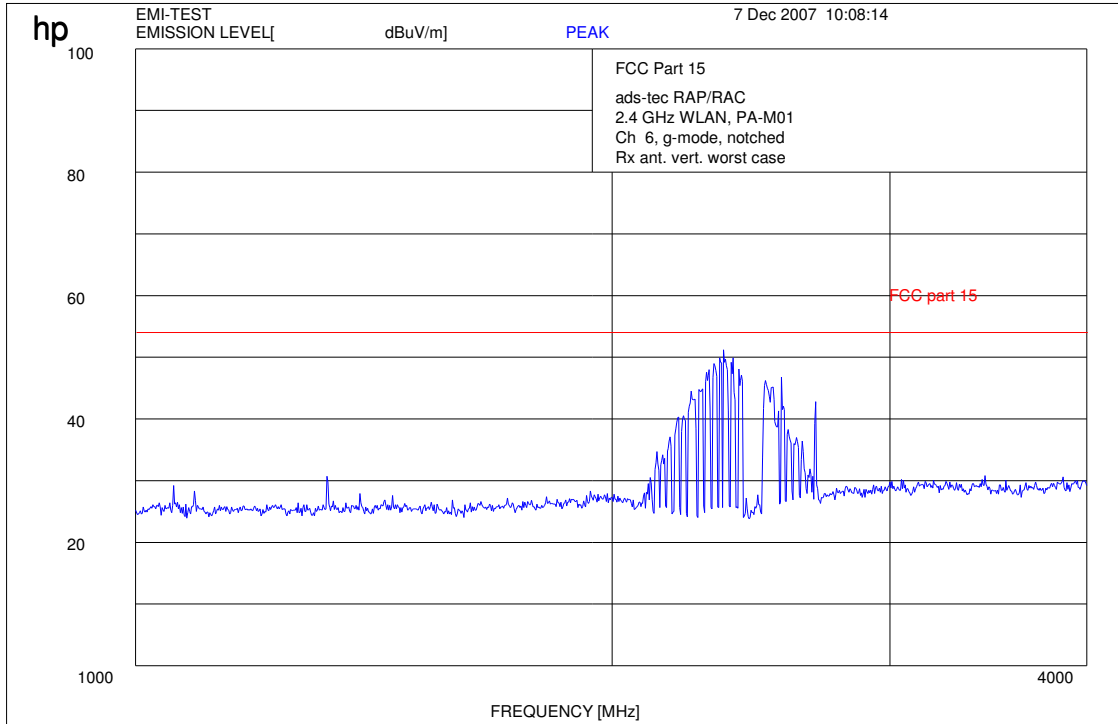


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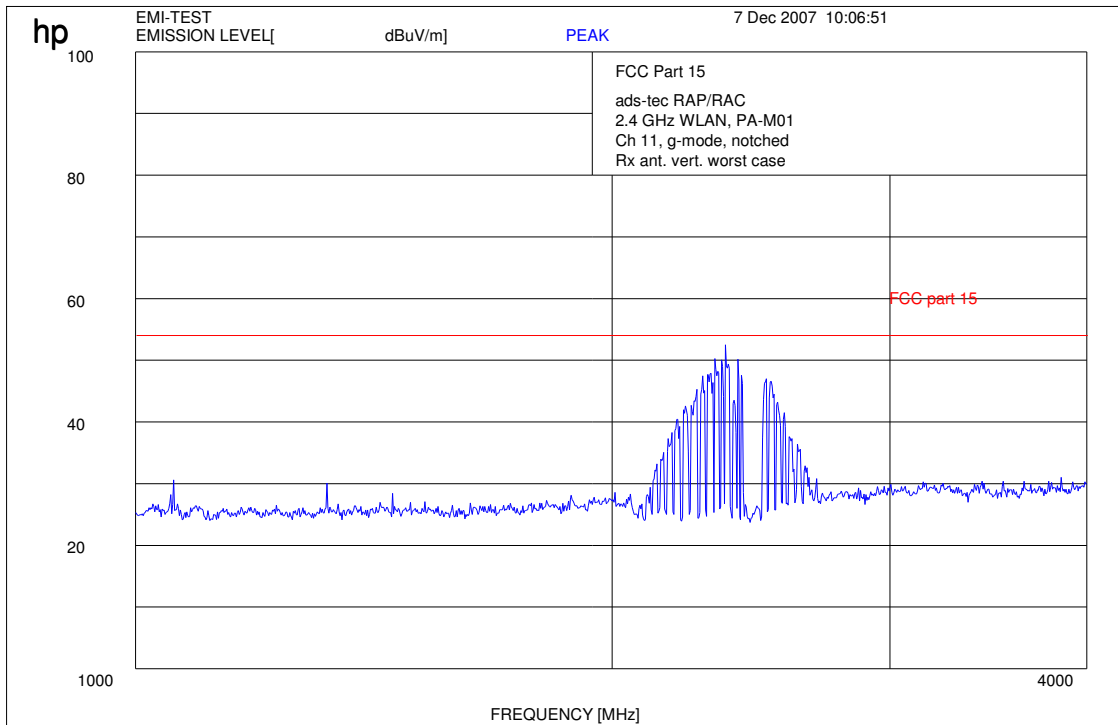


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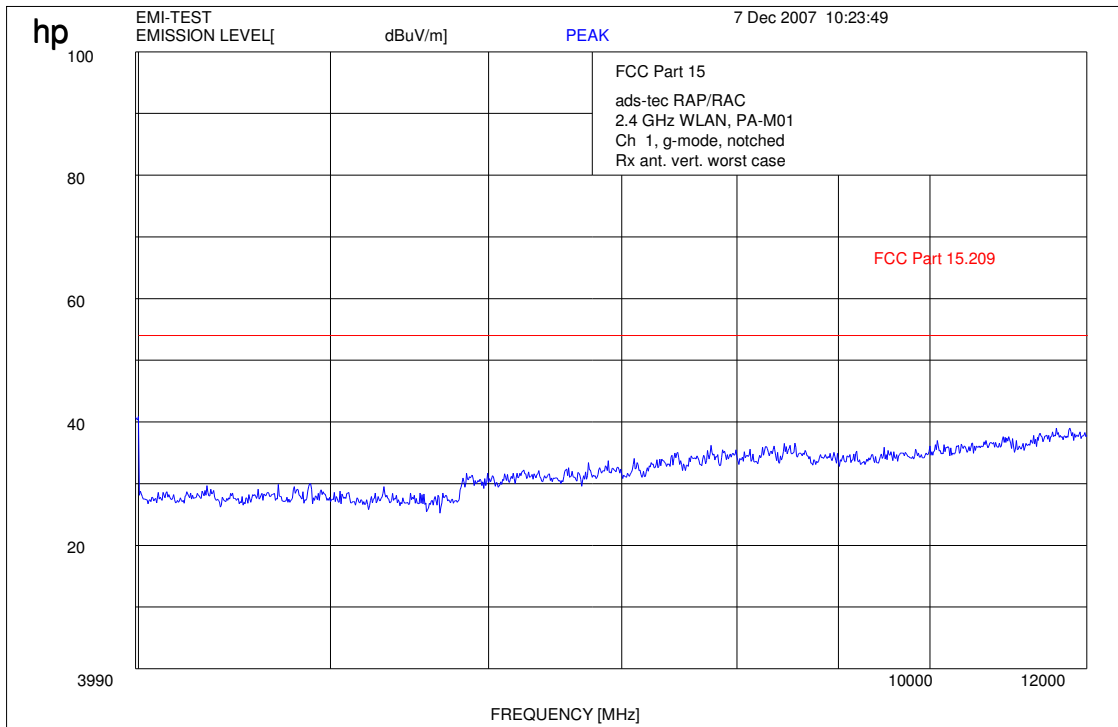


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lowest channel up to 12 GHz



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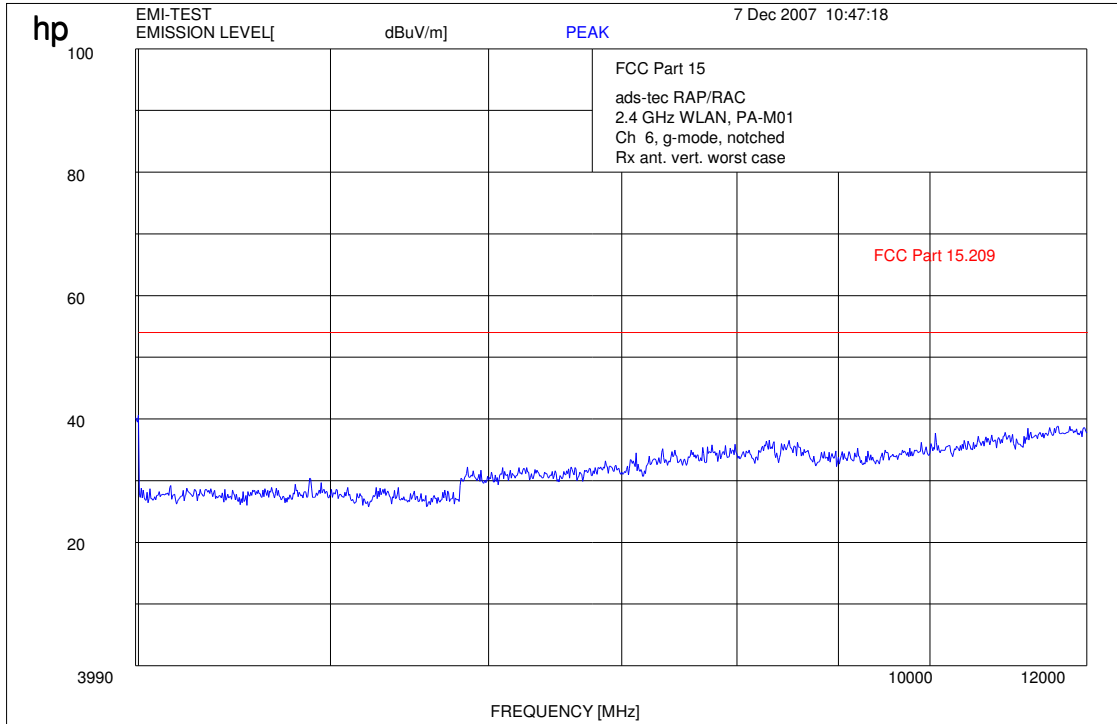


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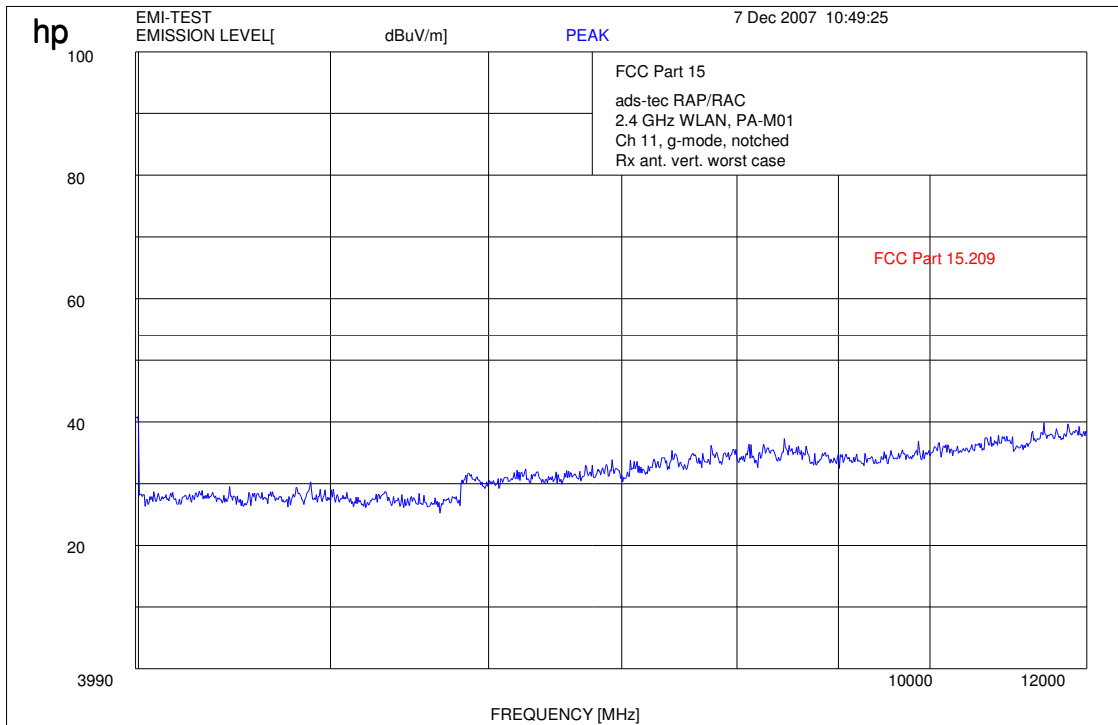


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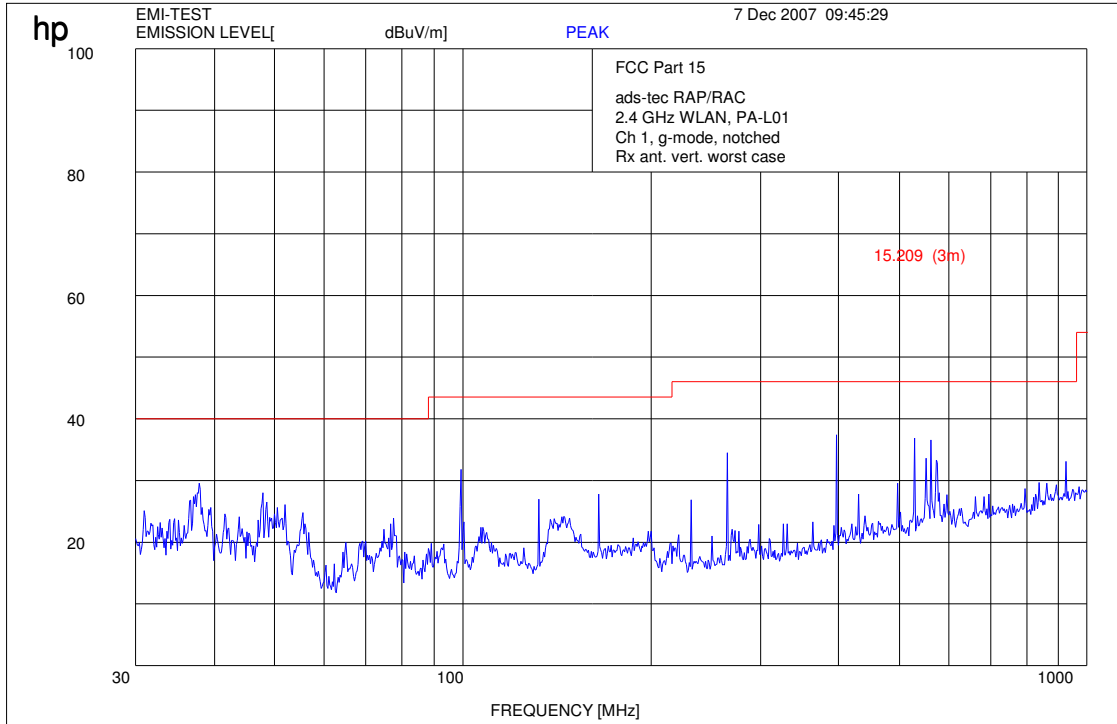
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Antenna type: PA-L01

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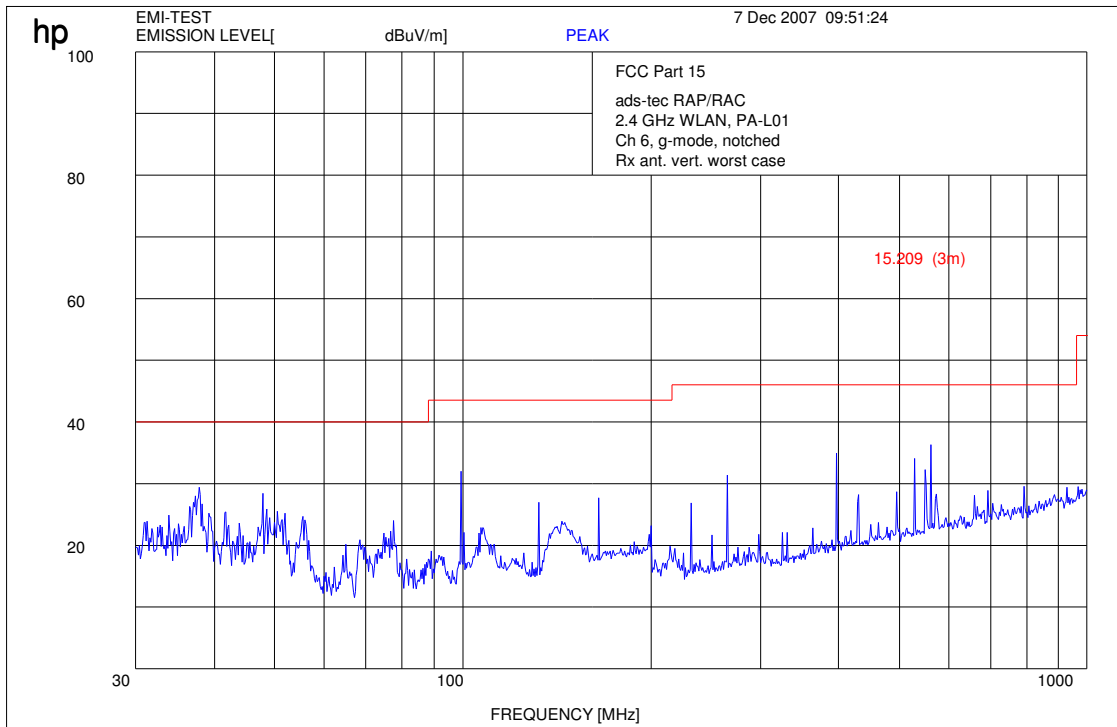


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middle channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

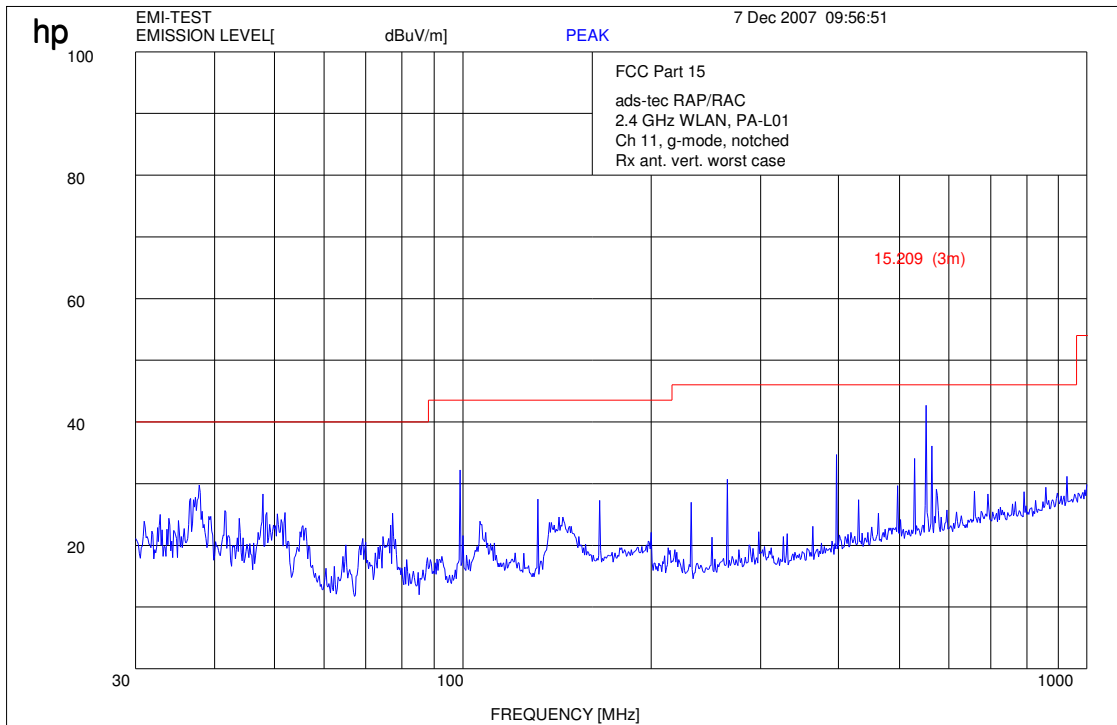


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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highest channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

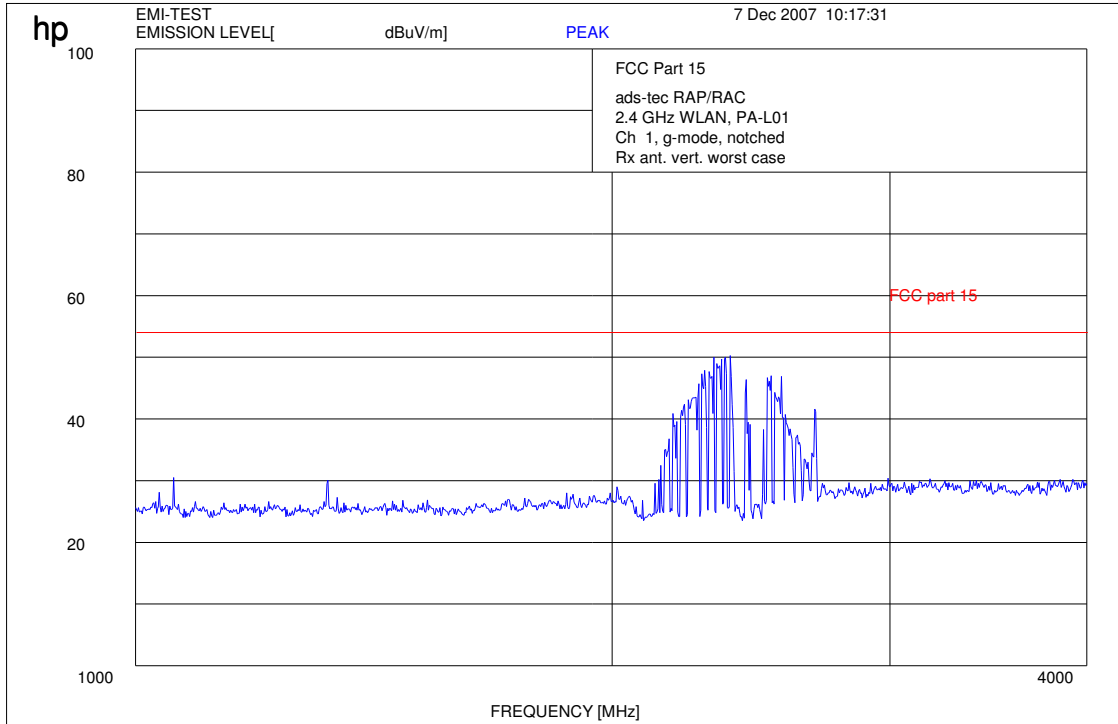


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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lowest channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

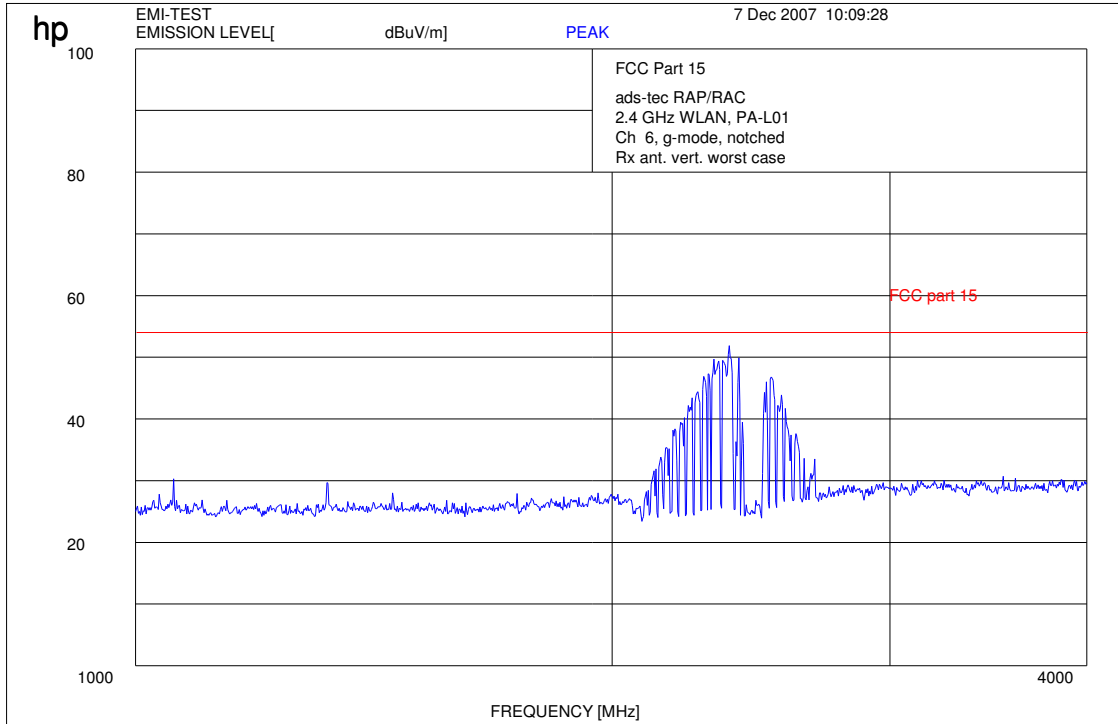


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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middle channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

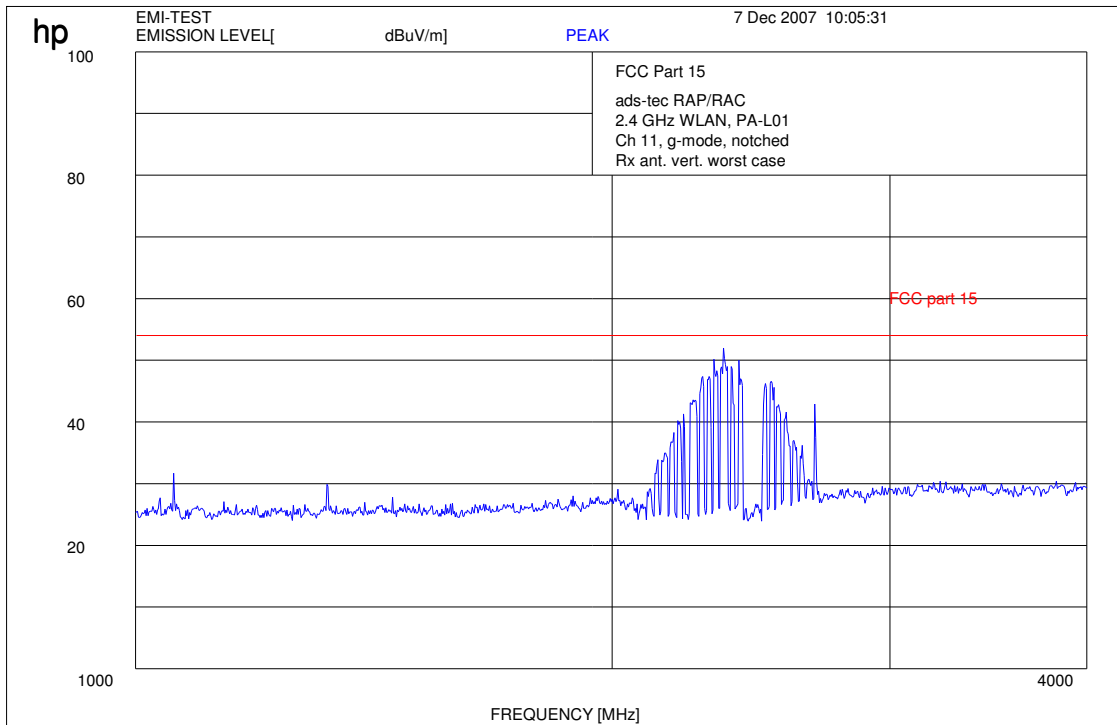


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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highest channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

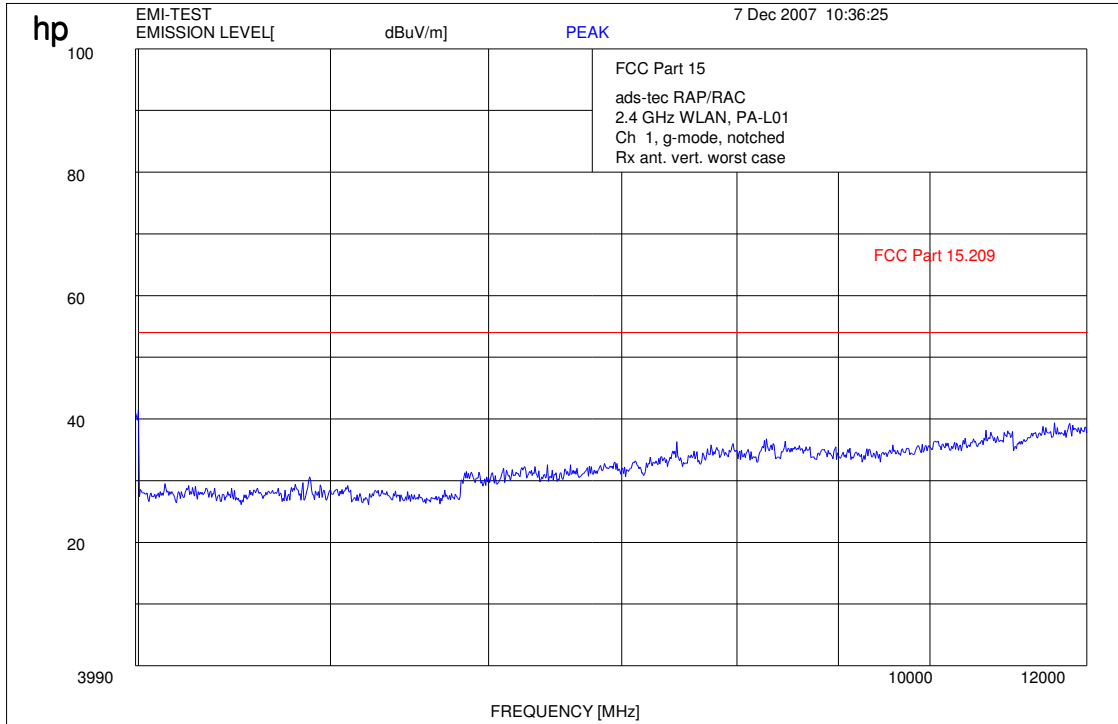


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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lowest channel up to 12 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

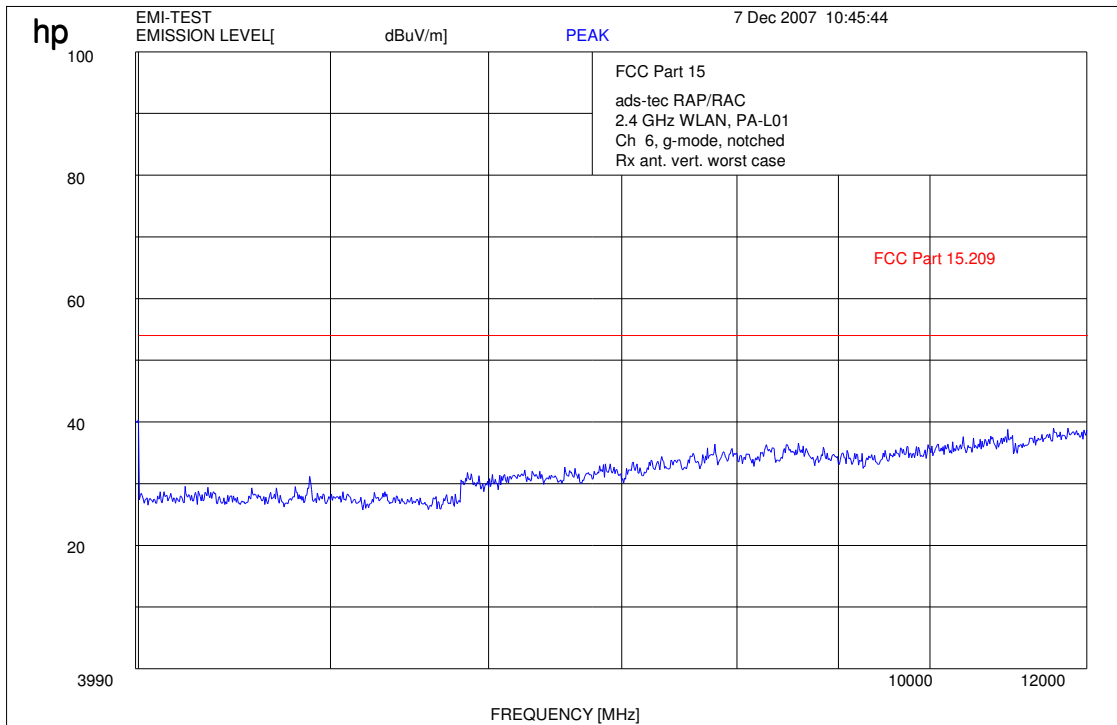


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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middle channel up to 12 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

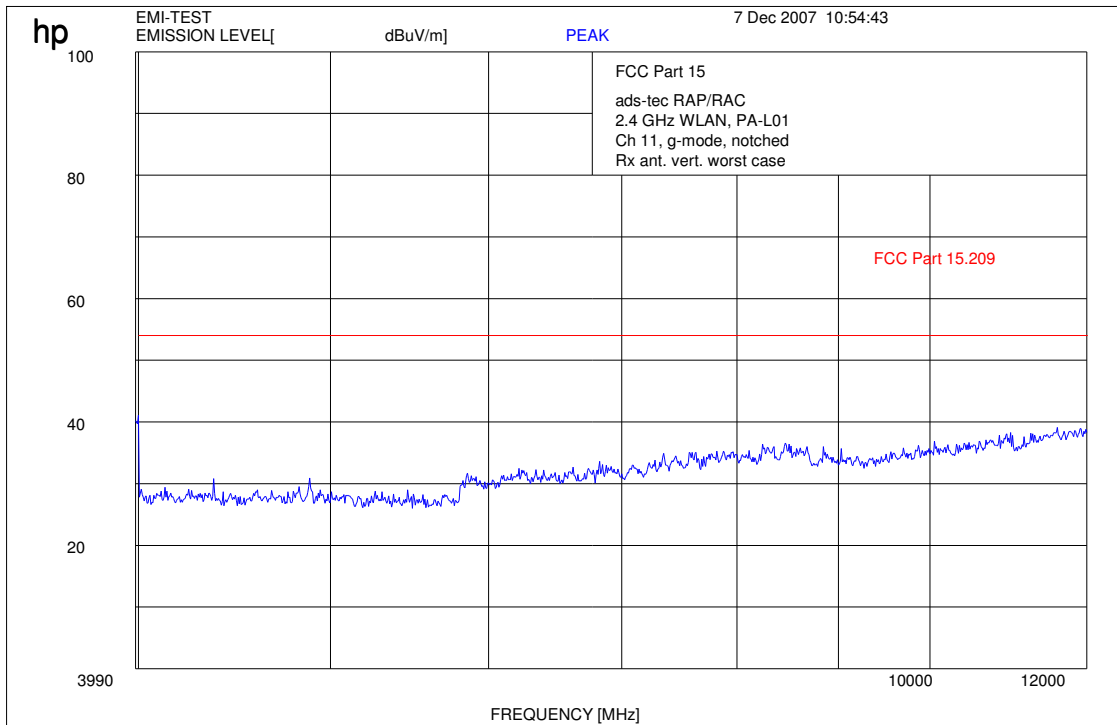


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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highest channel up to 12 GHz

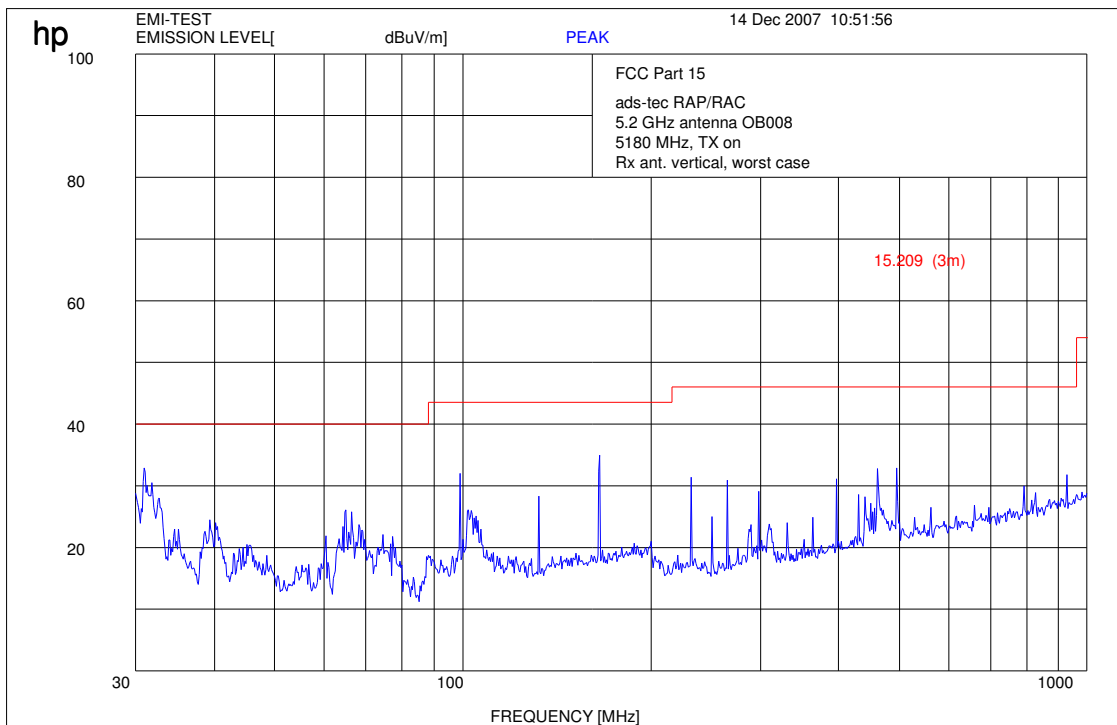


3.5 Spurious Emissions - radiated (Transmitter) (5.2 GHz)

§15.209

Antenna type: OB-008

lowest channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

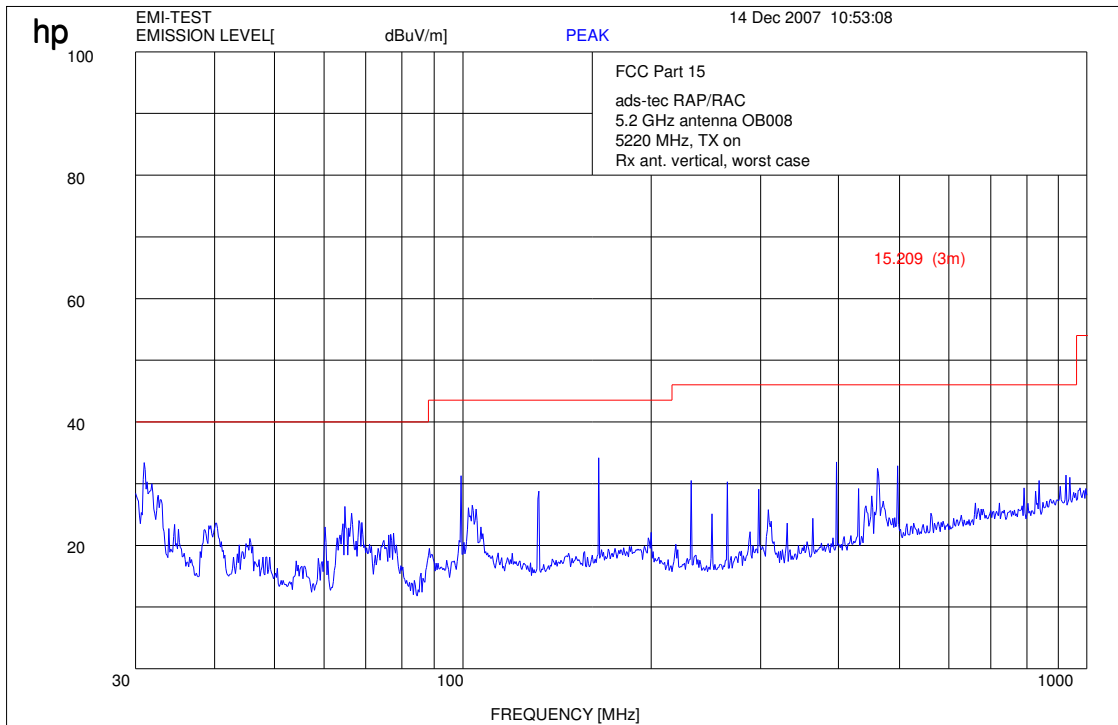


Test report No.: 2-4689-01-10/07

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middle channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

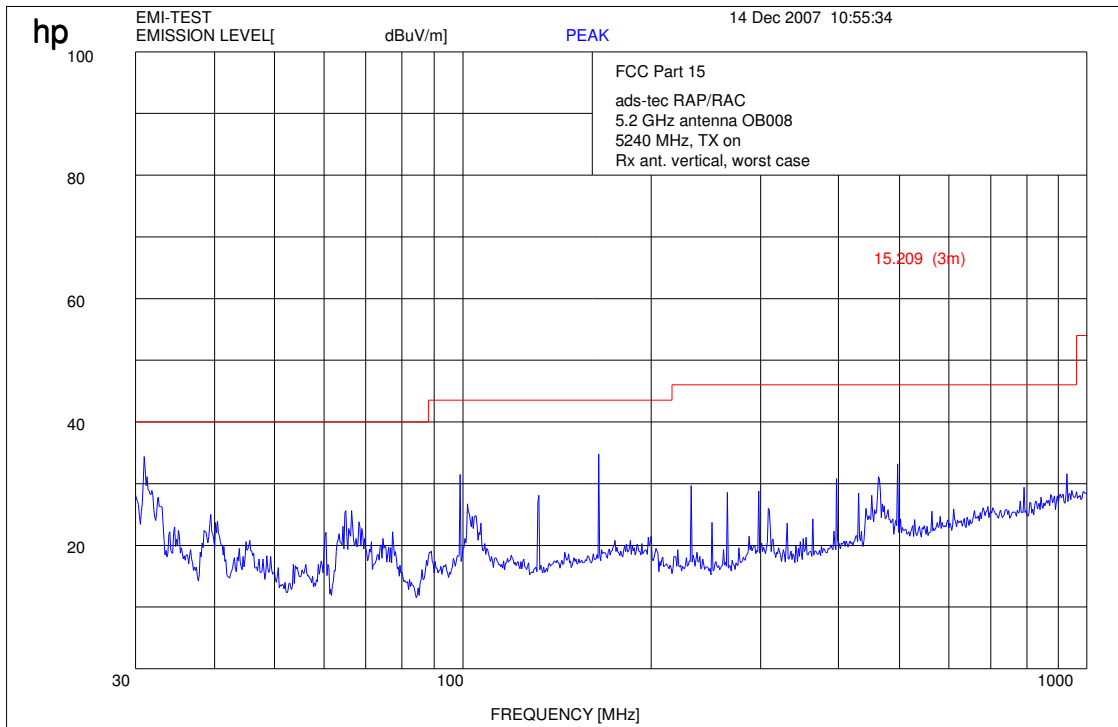


Test report No.: 2-4689-01-10/07

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highest channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

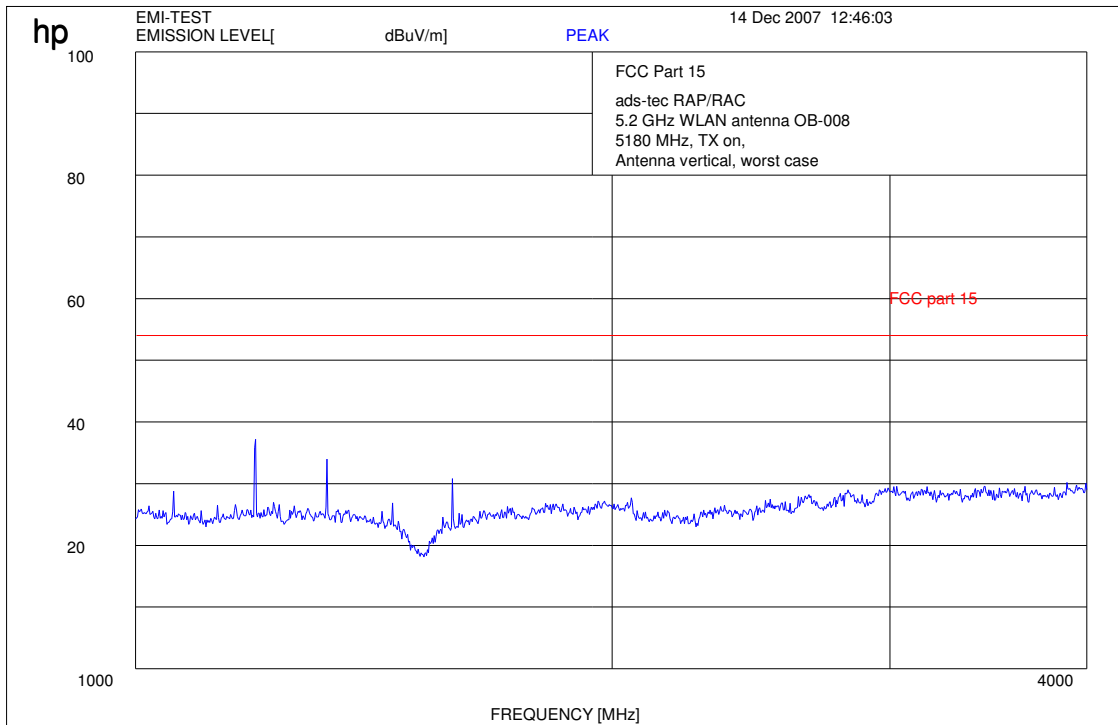


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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lowest channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

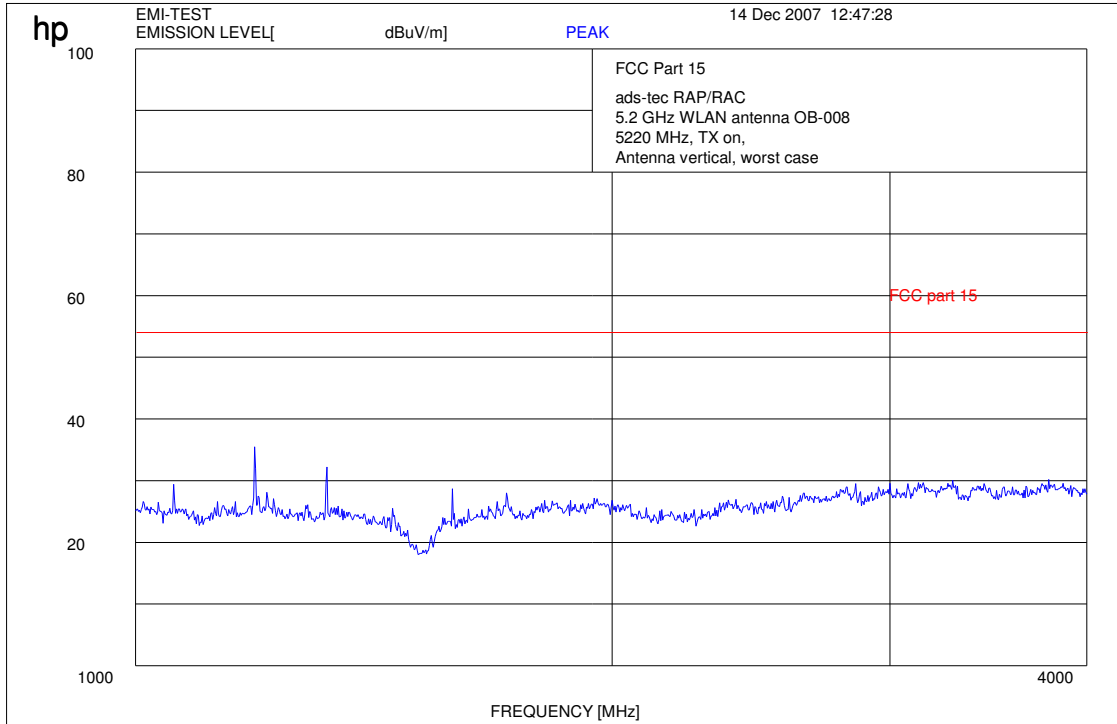


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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middle channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

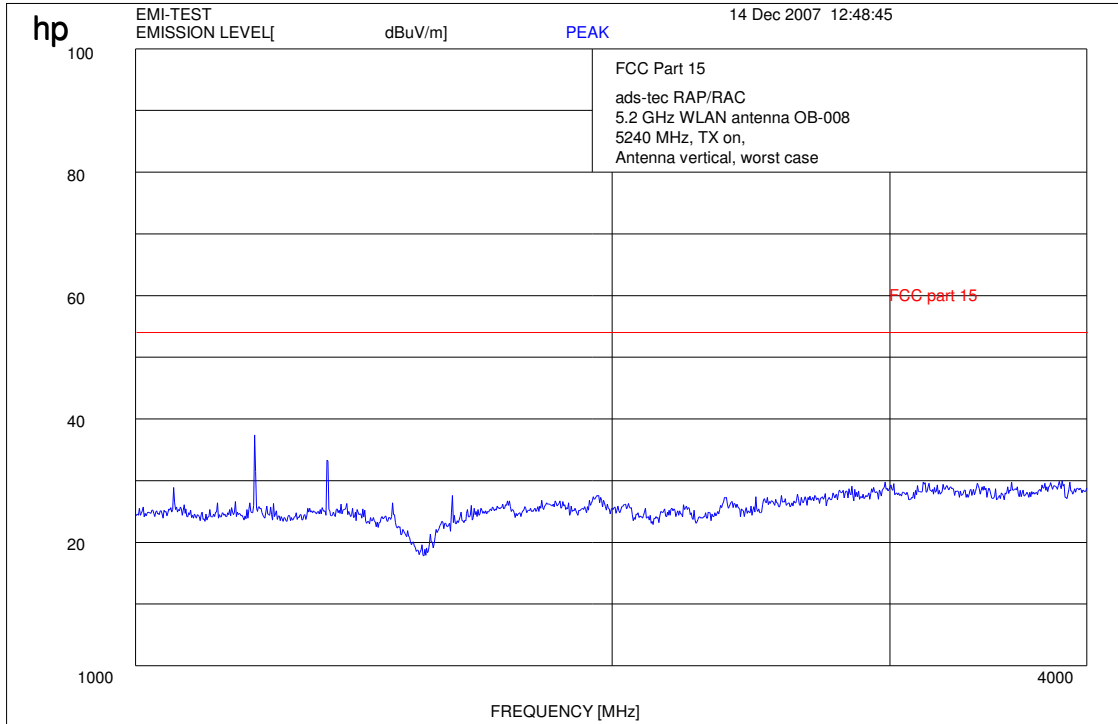


Test report No.: 2-4689-01-10/07

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highest channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

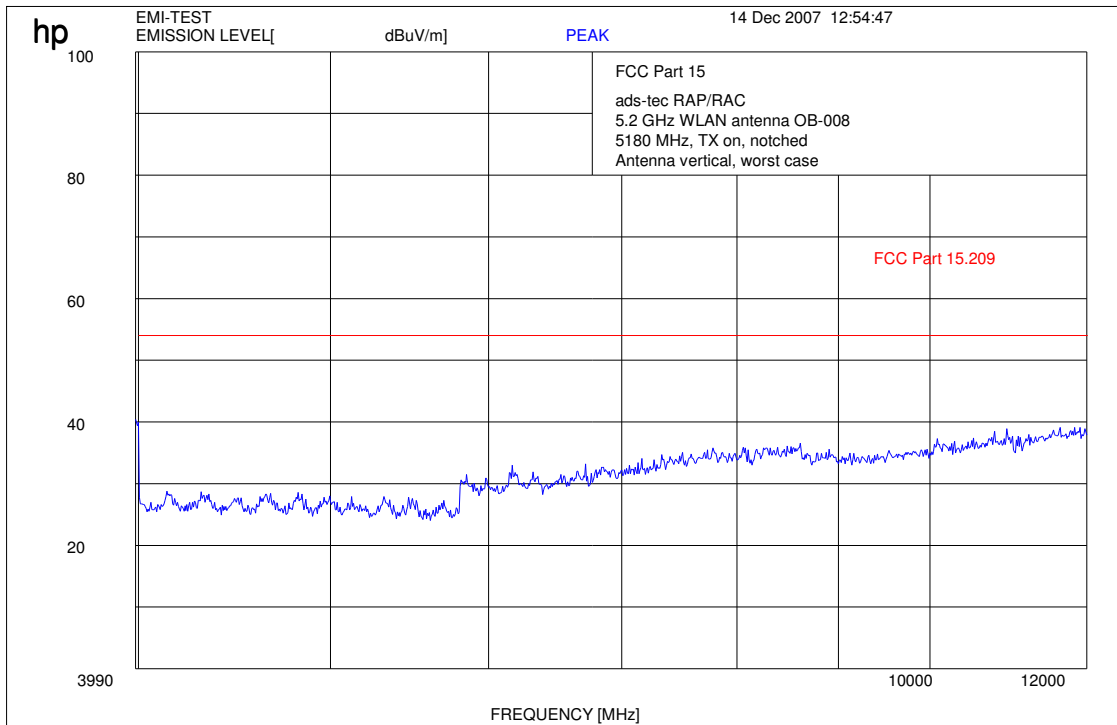


Test report No.: 2-4689-01-10/07

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lowest channel up to 12 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

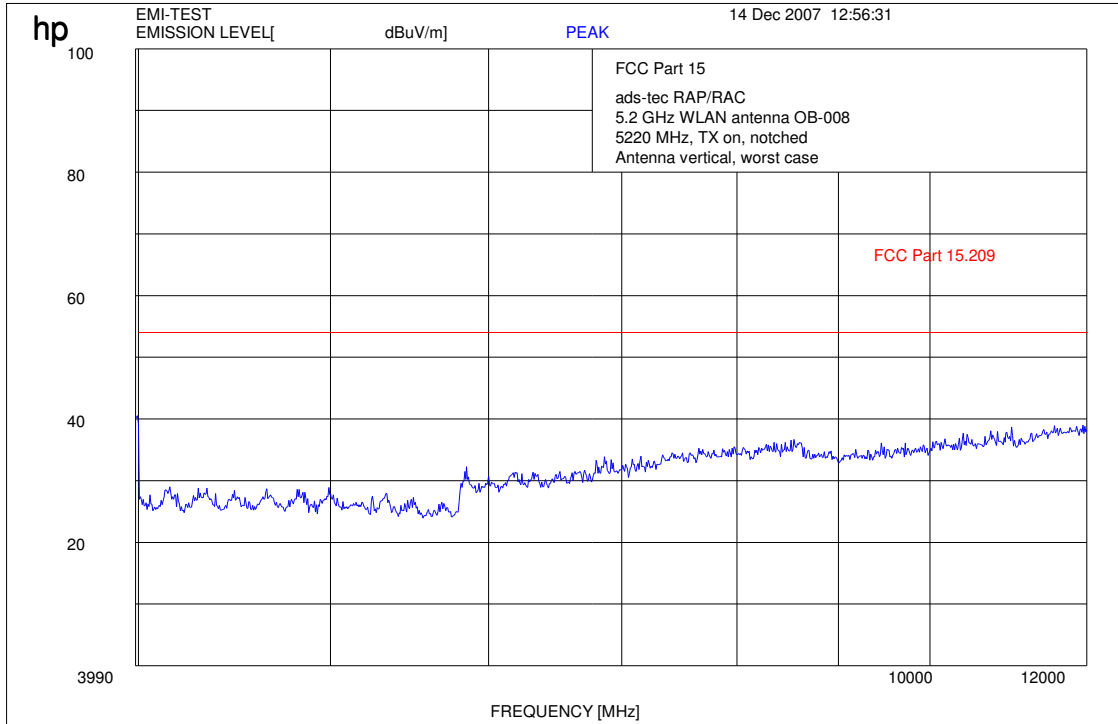


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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middle channel up to 12 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

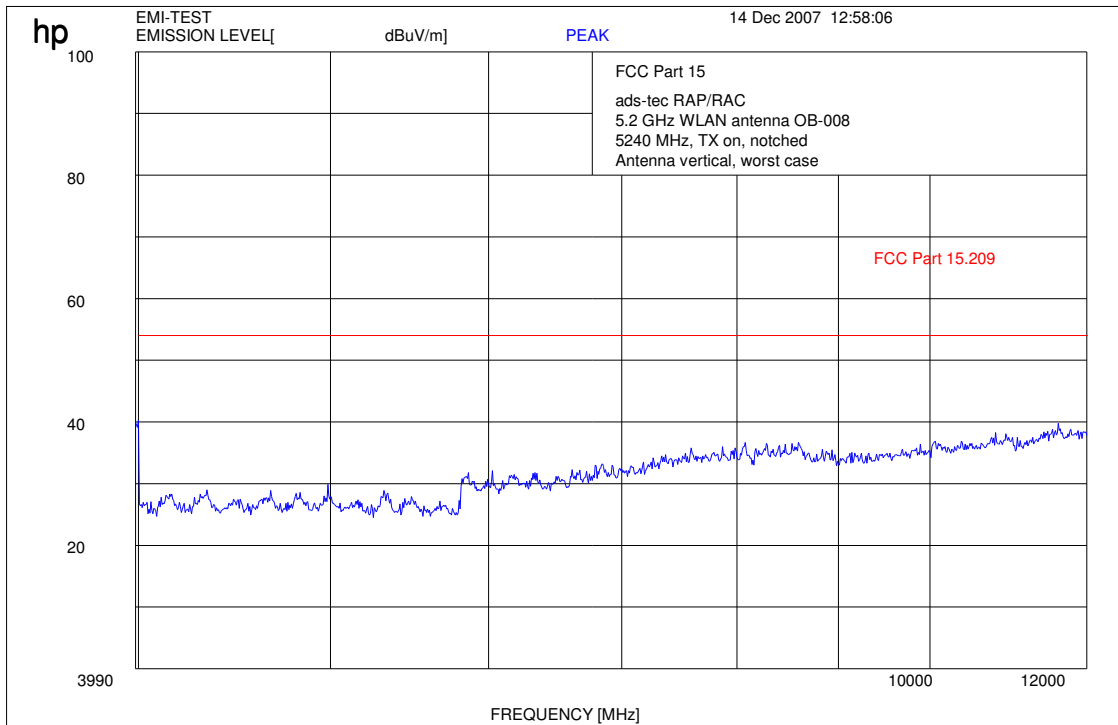


Test report No.: 2-4689-01-10/07

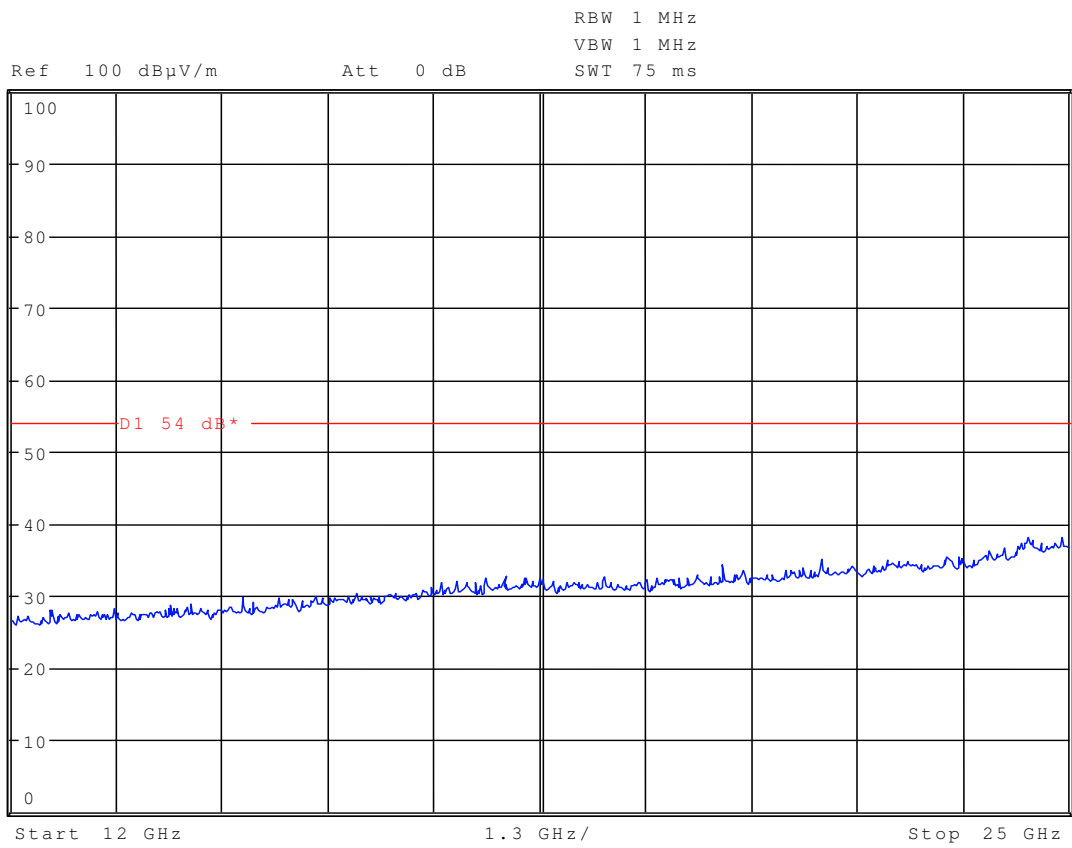
Date: 2007-12-17

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highest channel up to 12 GHz



12 – 25 GHz (valid for all three frequencies and for all antennas)



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany



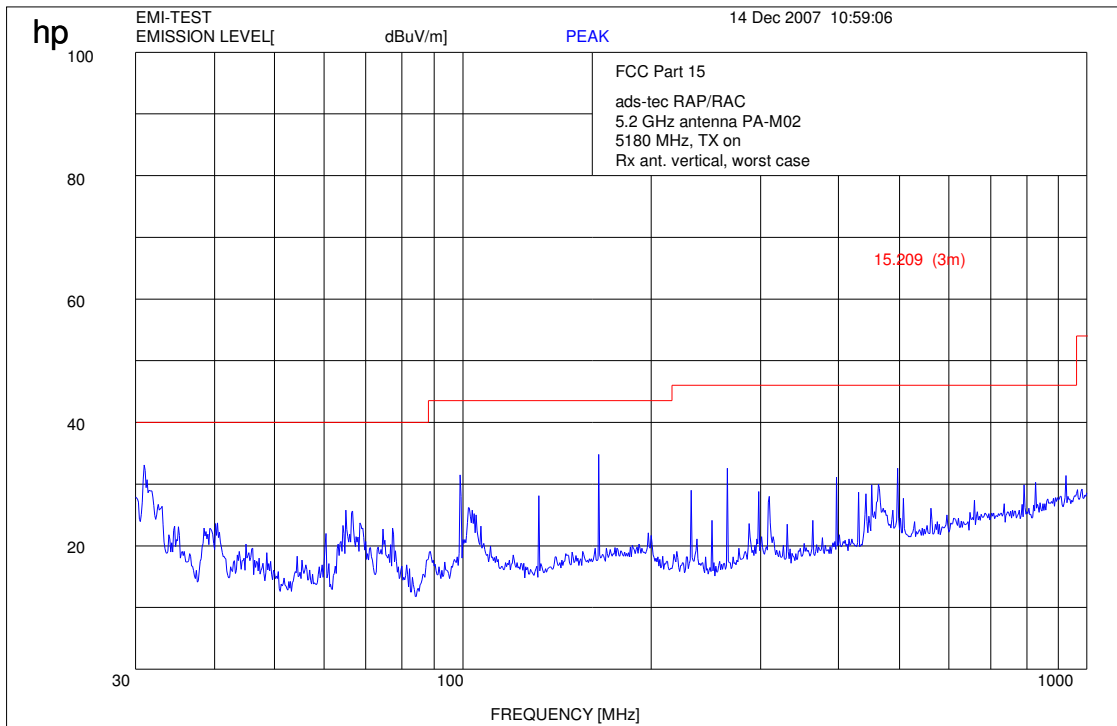
Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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Antenna type: PA-M02

lowest channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

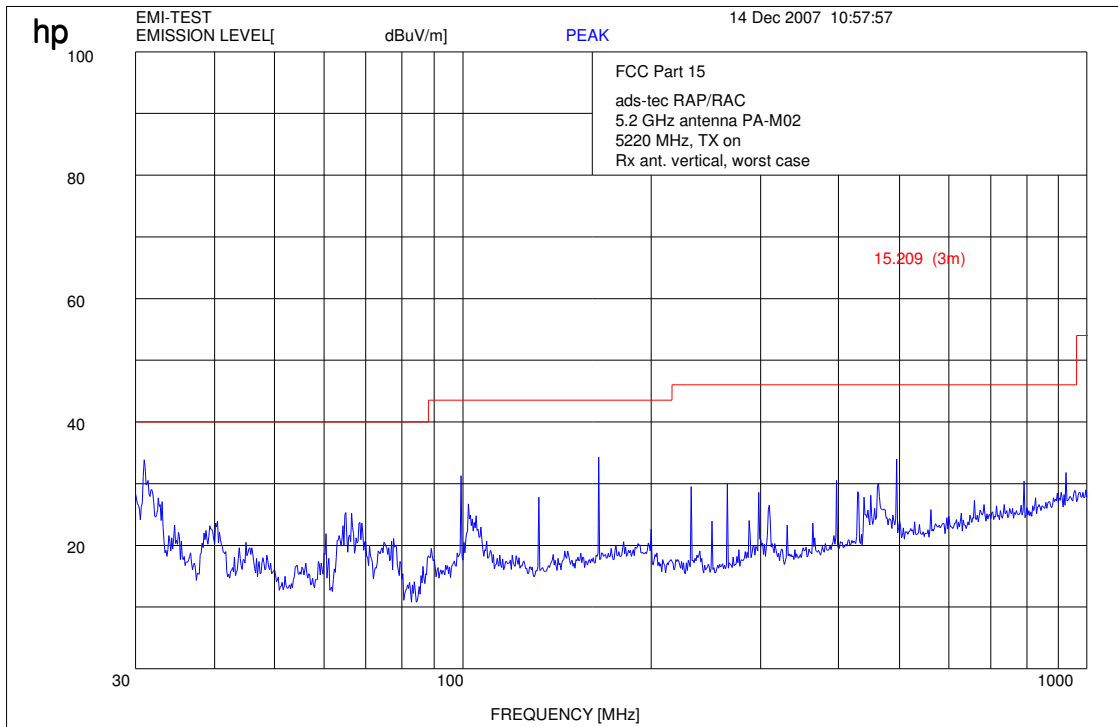


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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middle channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

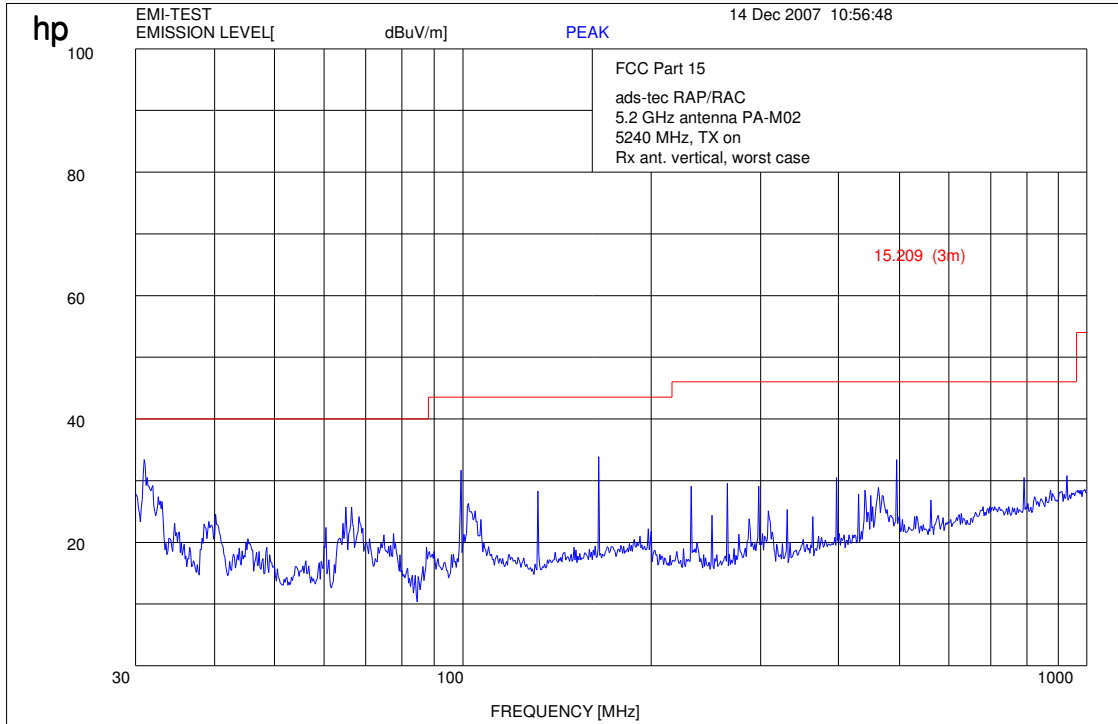


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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highest channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

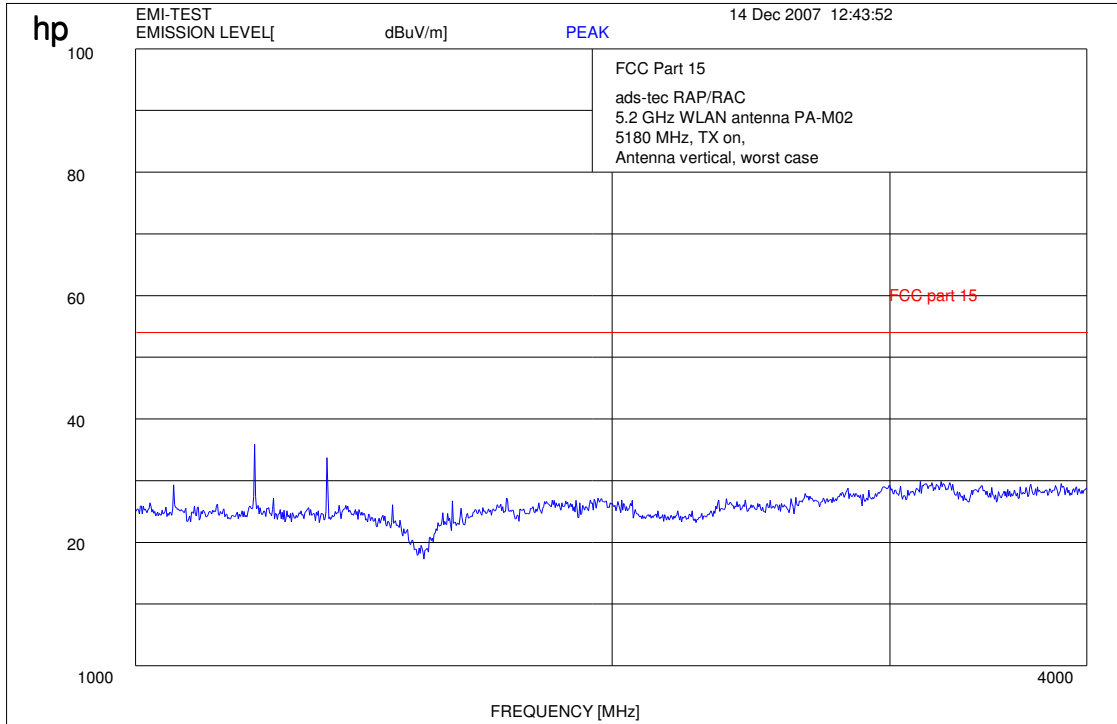


Test report No.: 2-4689-01-10/07

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lowest channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

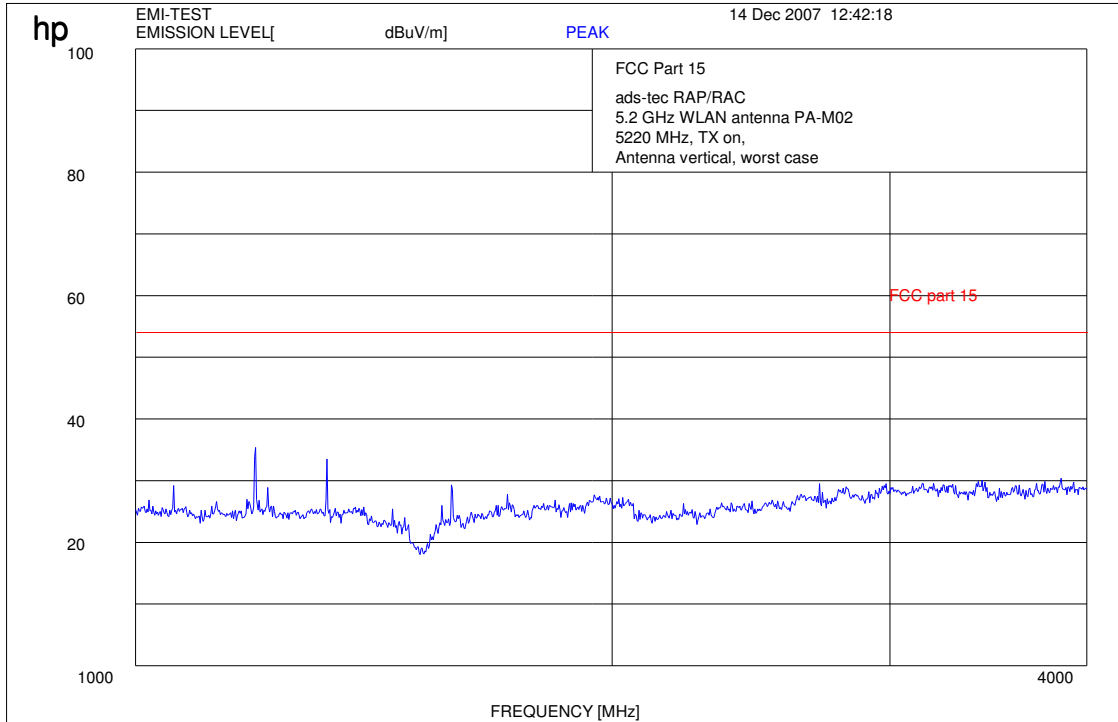


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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middle channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

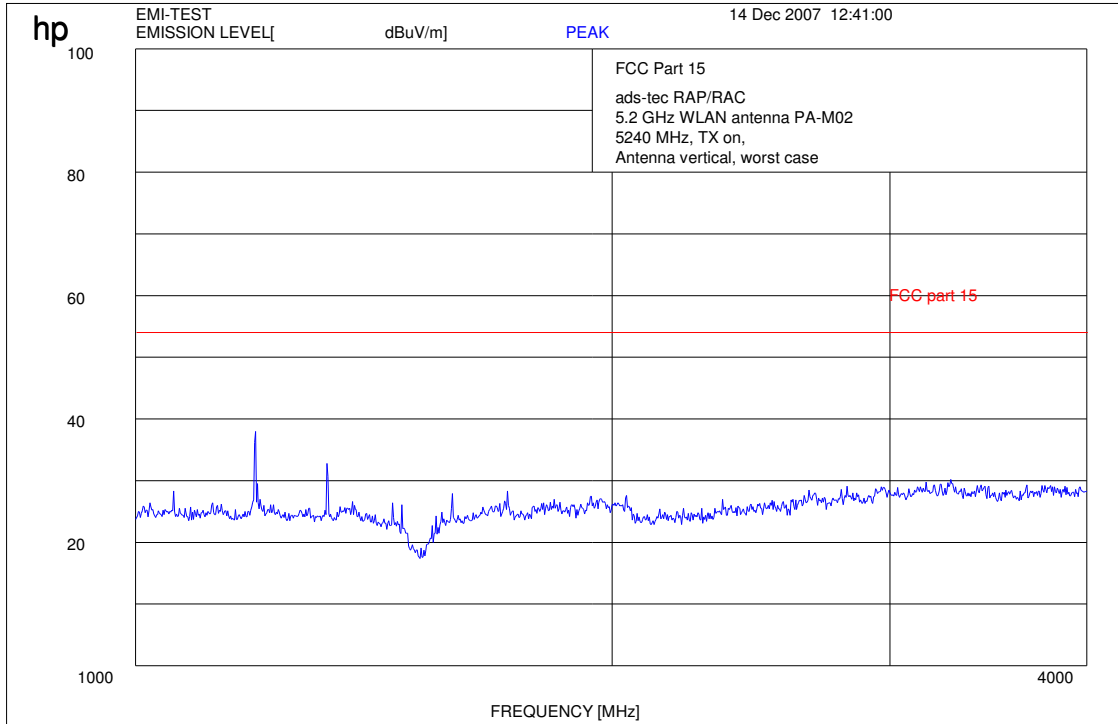


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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highest channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

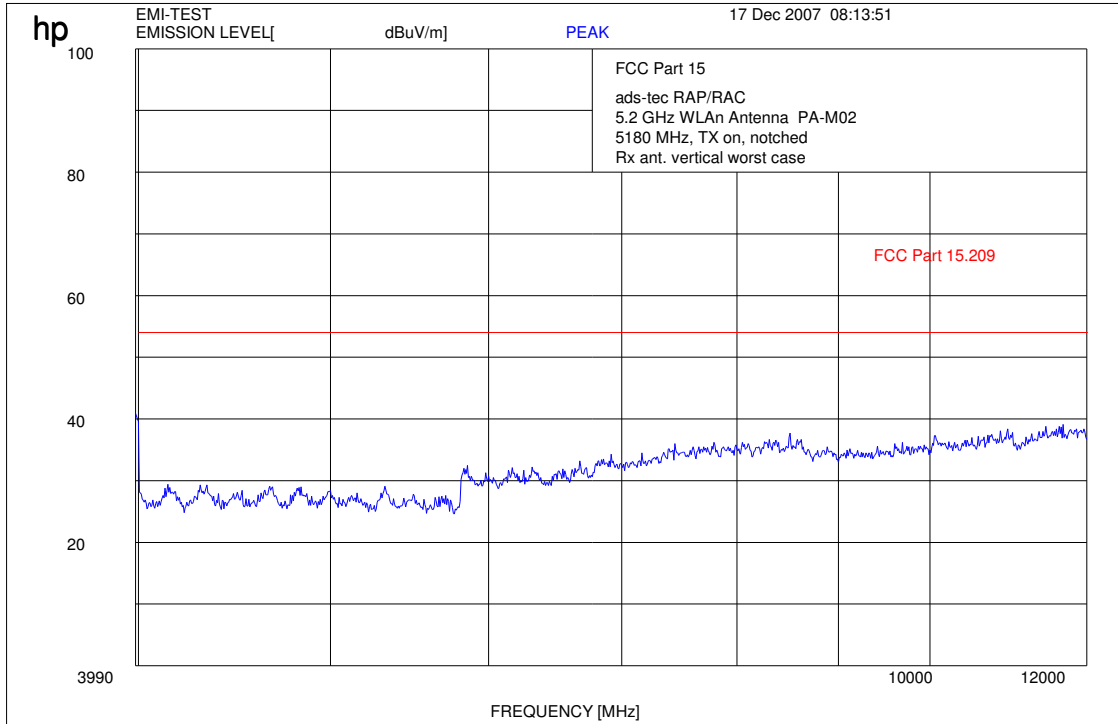


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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lowest channel up to 12 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

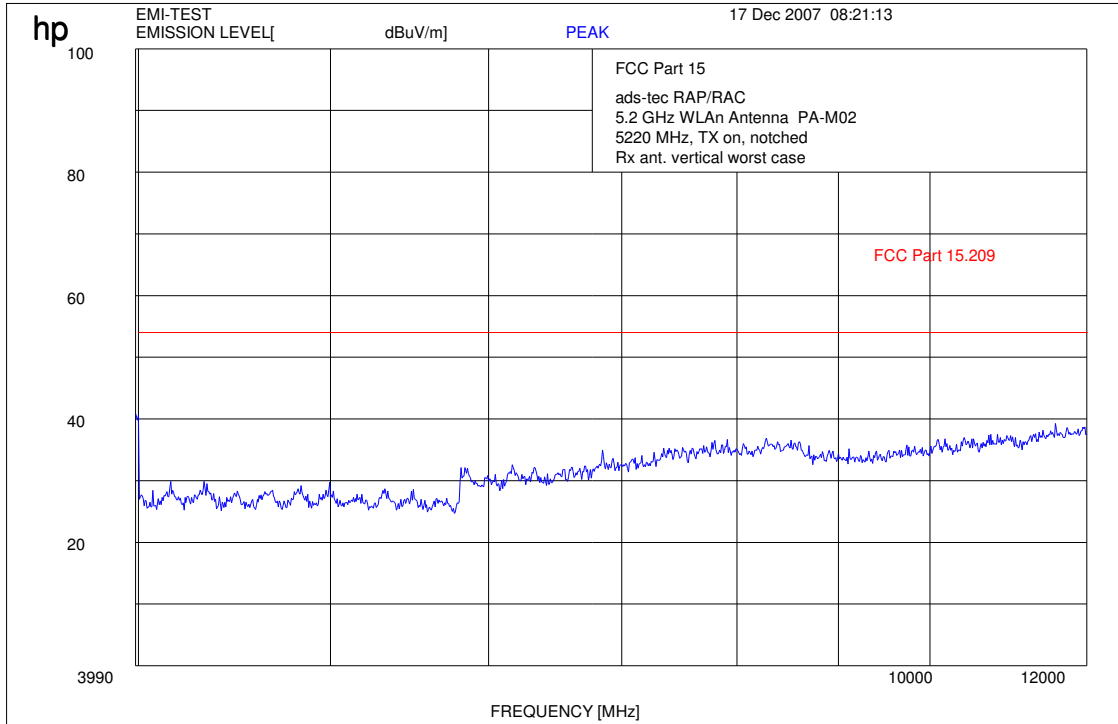


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Date: 2007-12-17

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middle channel up to 12 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

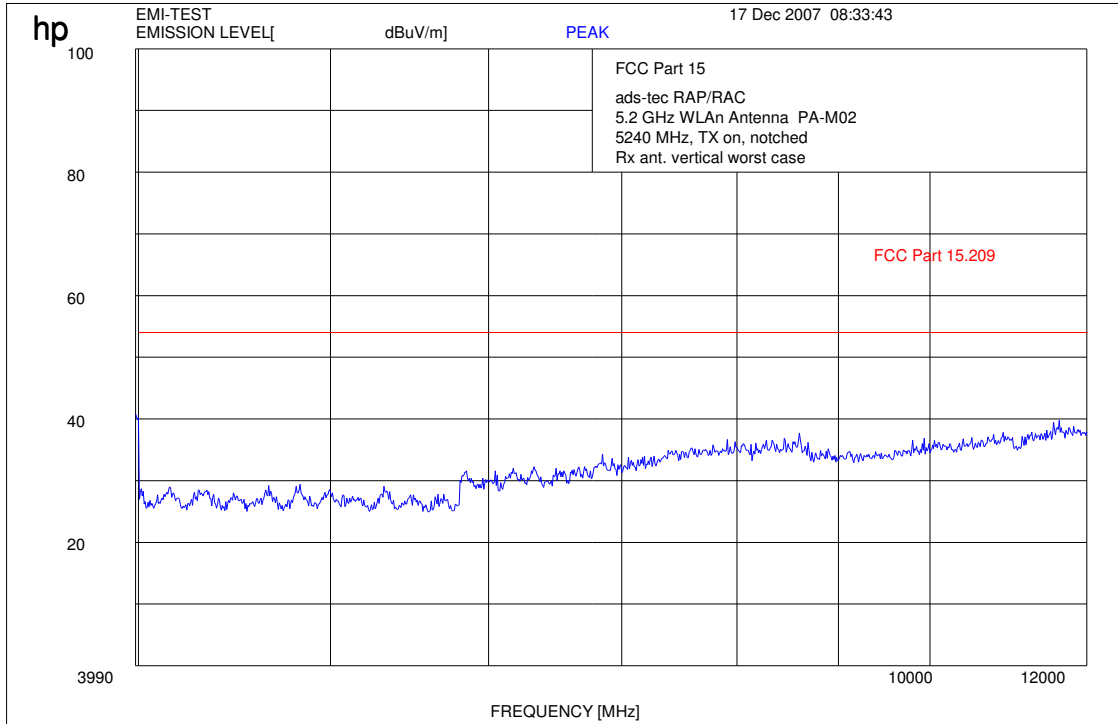


Test report No.: 2-4689-01-10/07

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highest channel up to 12 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany



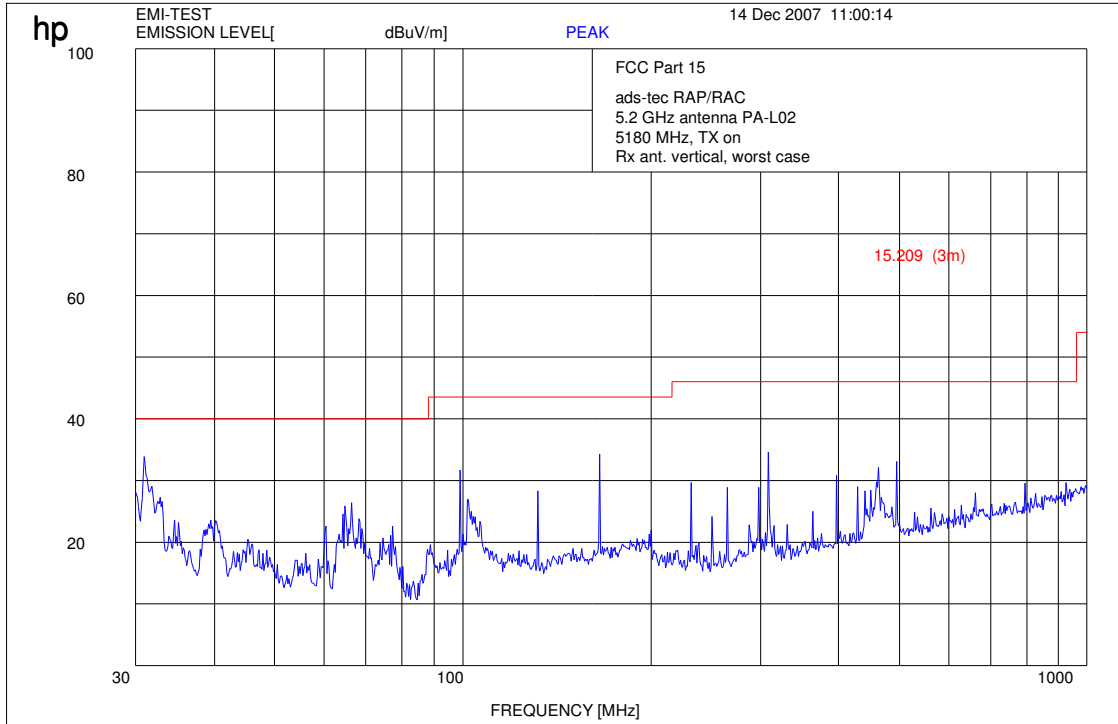
Test report No.: 2-4689-01-10/07

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Antenna type: PA-L02

lowest channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

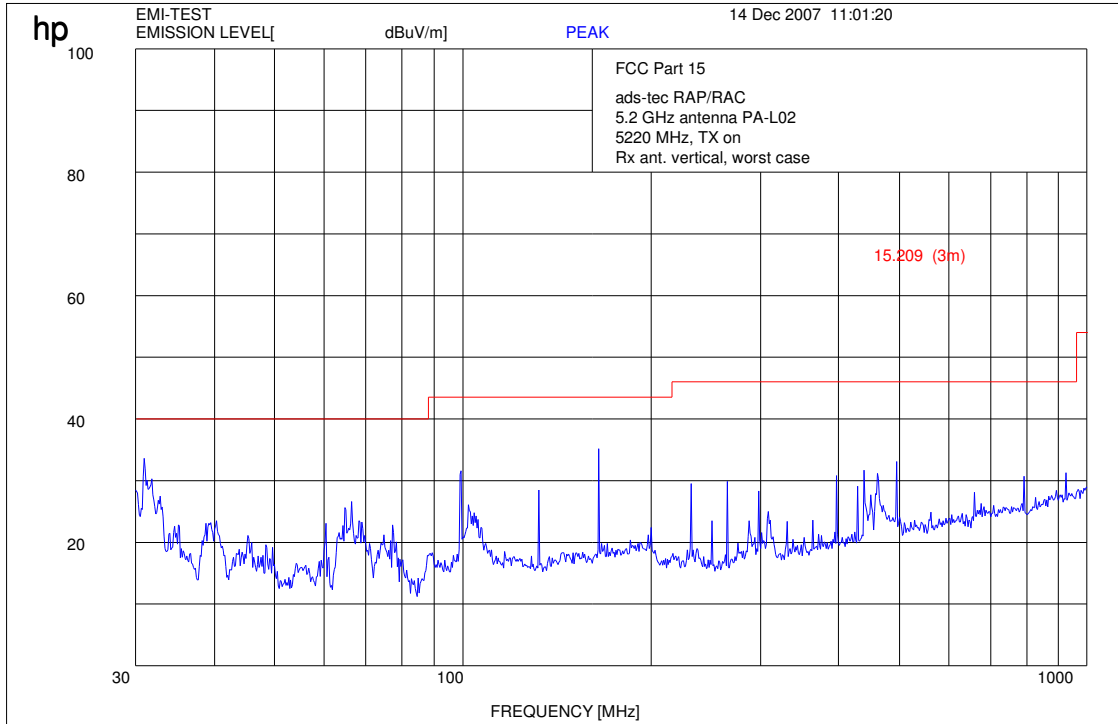


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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middle channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

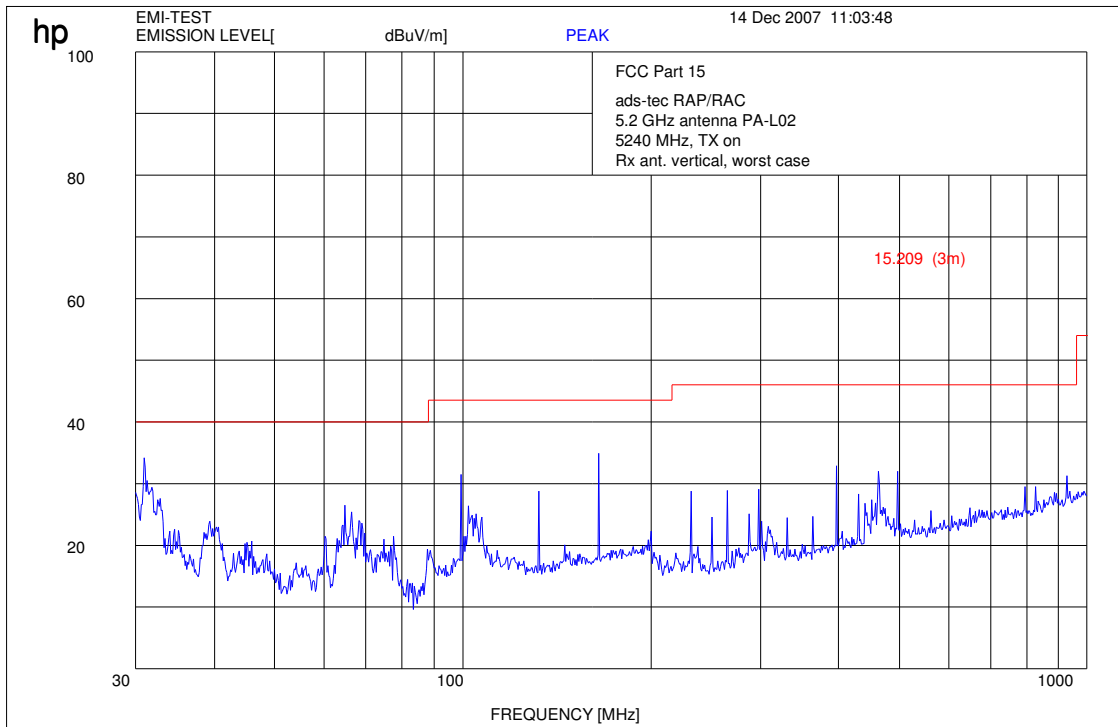


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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highest channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

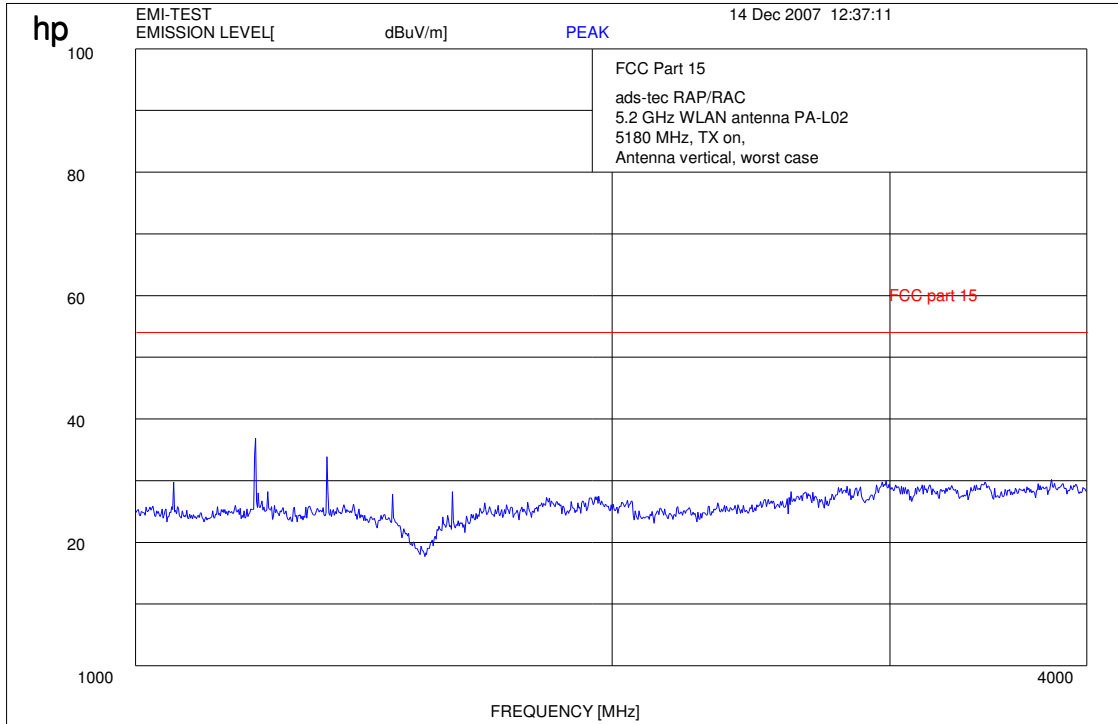


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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lowest channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

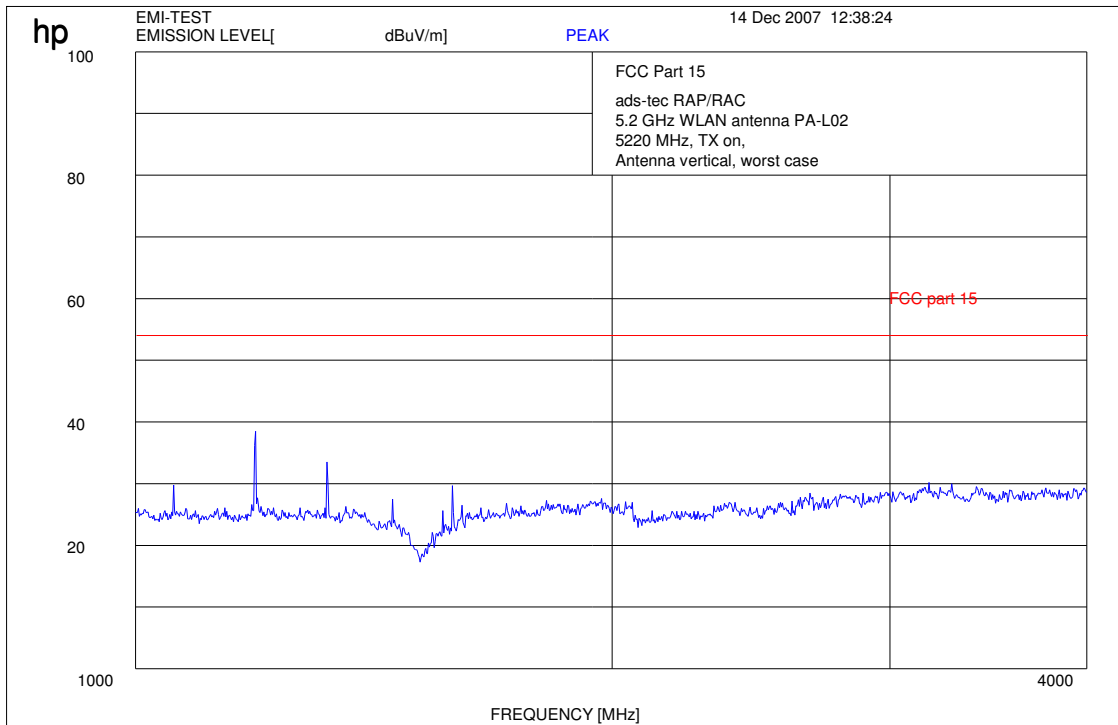


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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middle channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

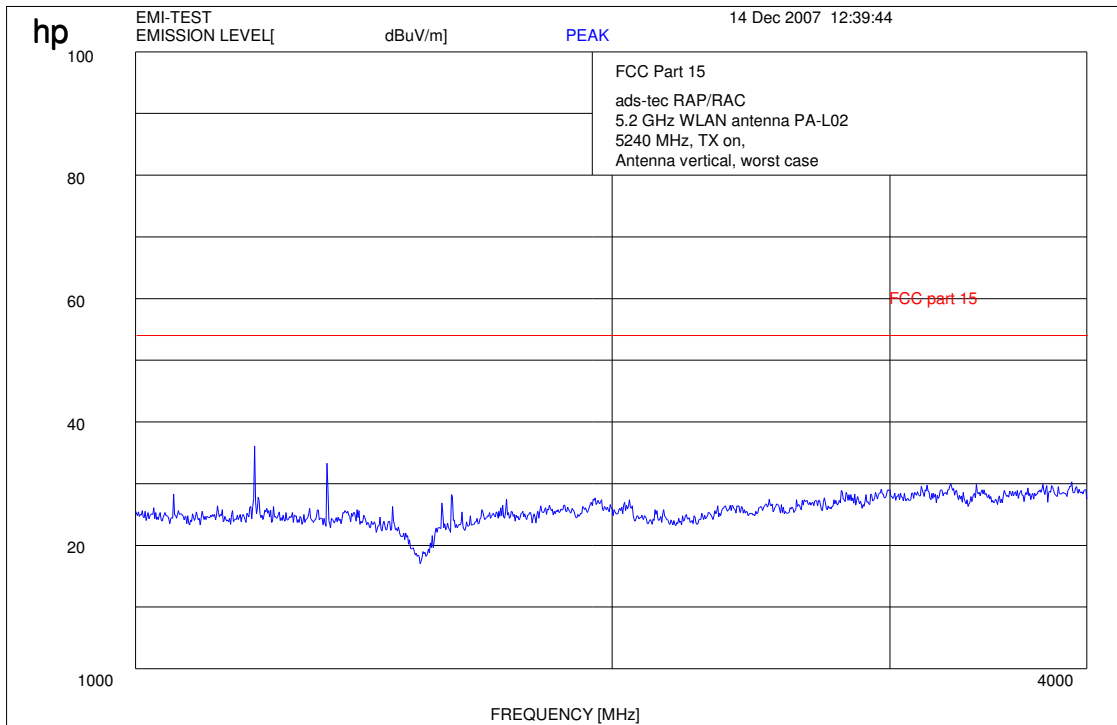


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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highest channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

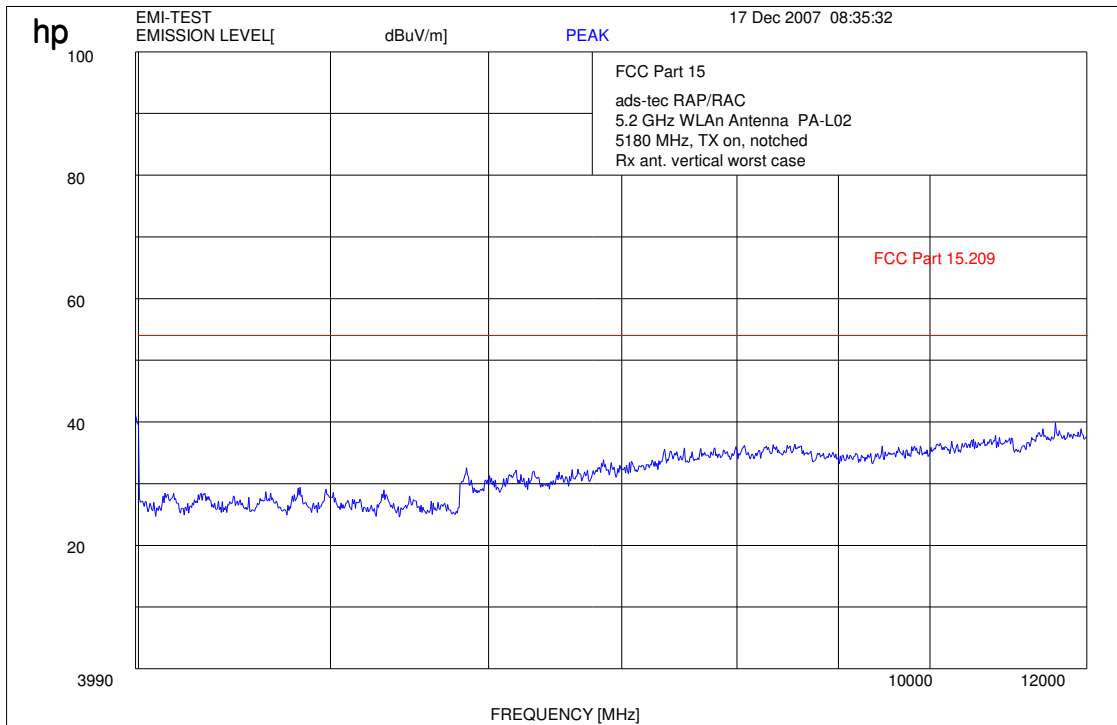


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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lowest channel up to 12 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

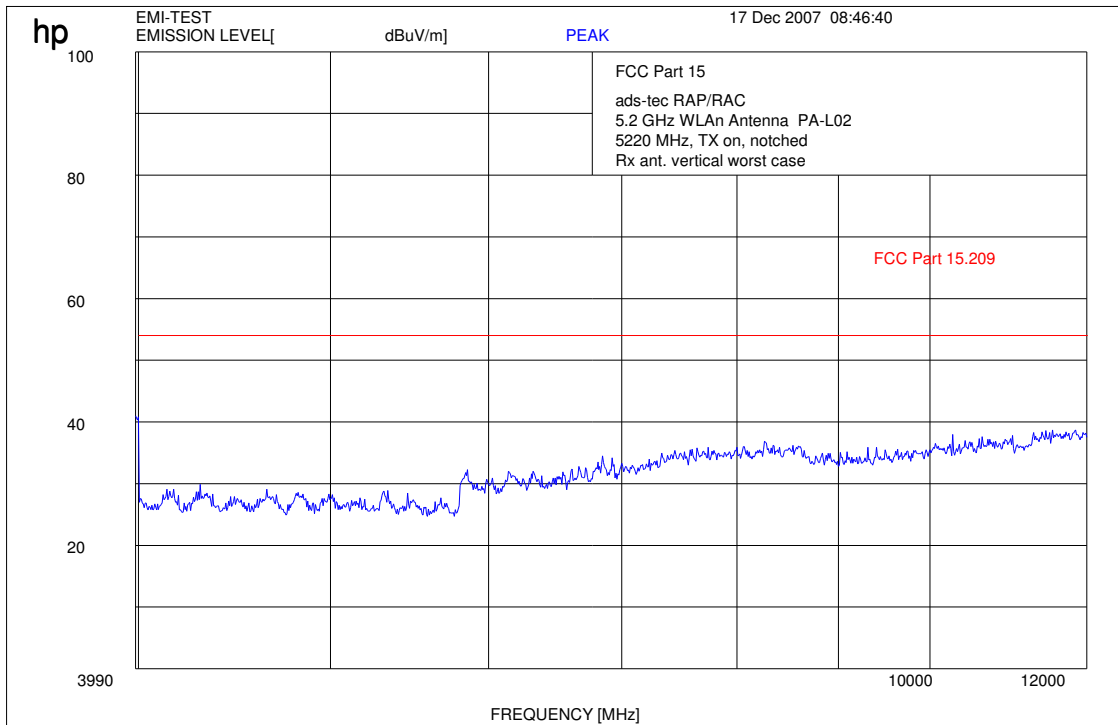


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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middle channel up to 12 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

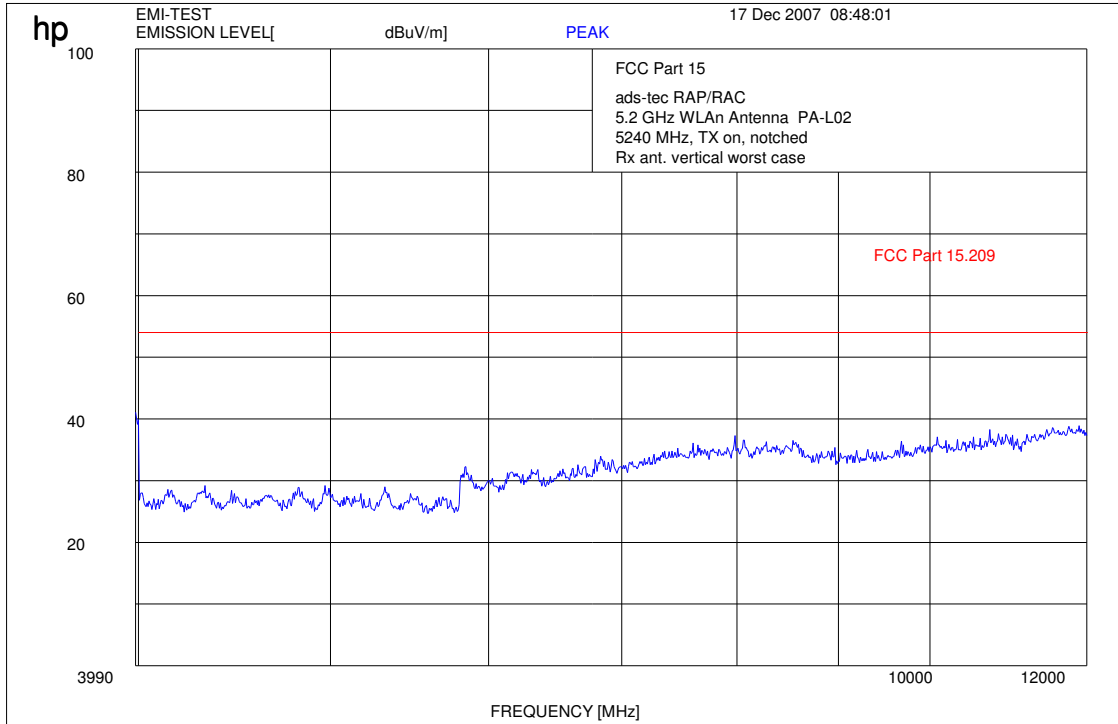


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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highest channel up to 12 GHz



3.6 Spurious Emissions - radiated (Transmitter) (5.7 GHz)

§15.209

Antenna type: PA-L02

lowest channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

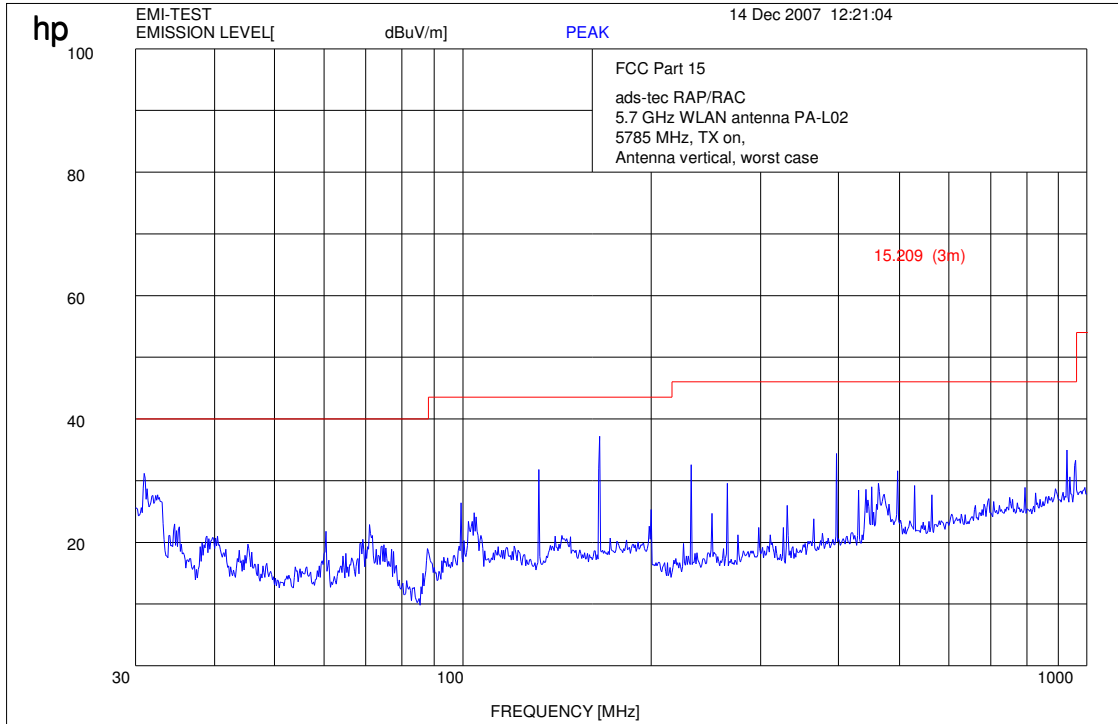


Test report No.: 2-4689-01-10/07

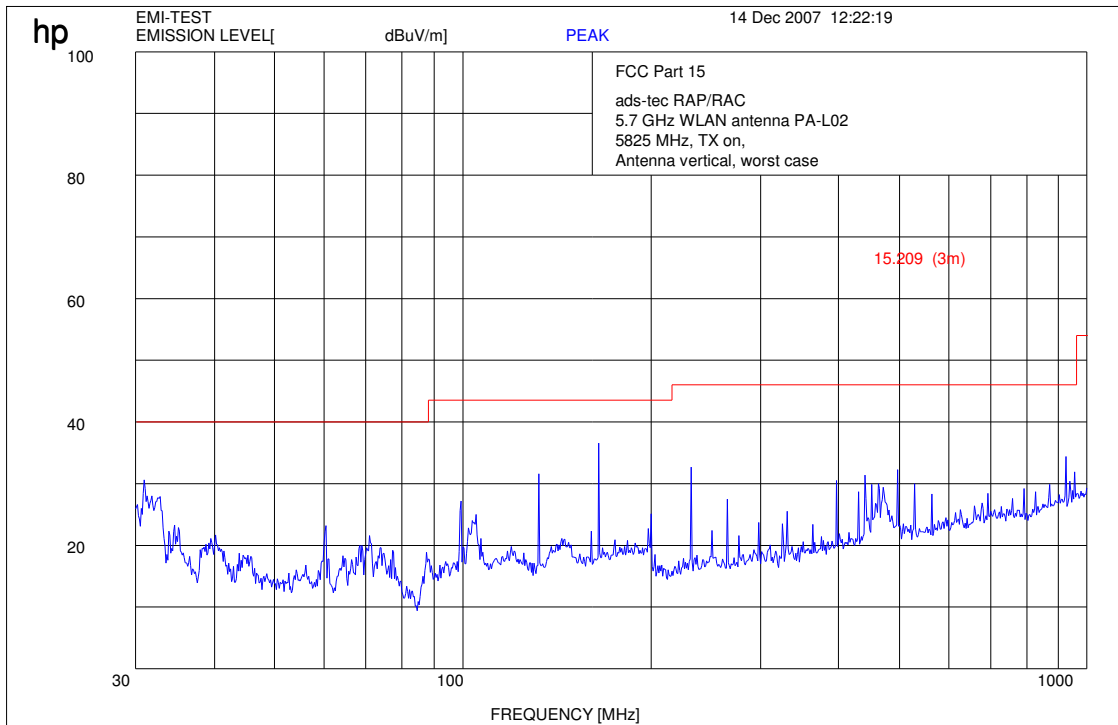
Date: 2007-12-17

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middle channel up to 1 GHz



highest channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

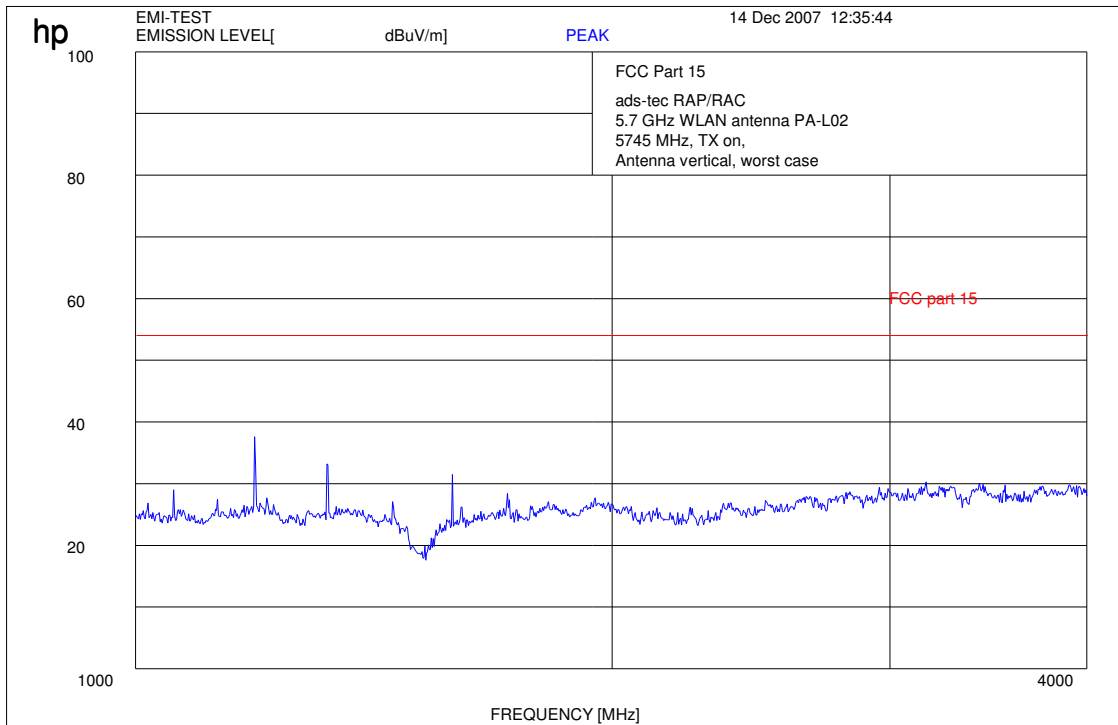


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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lowest channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

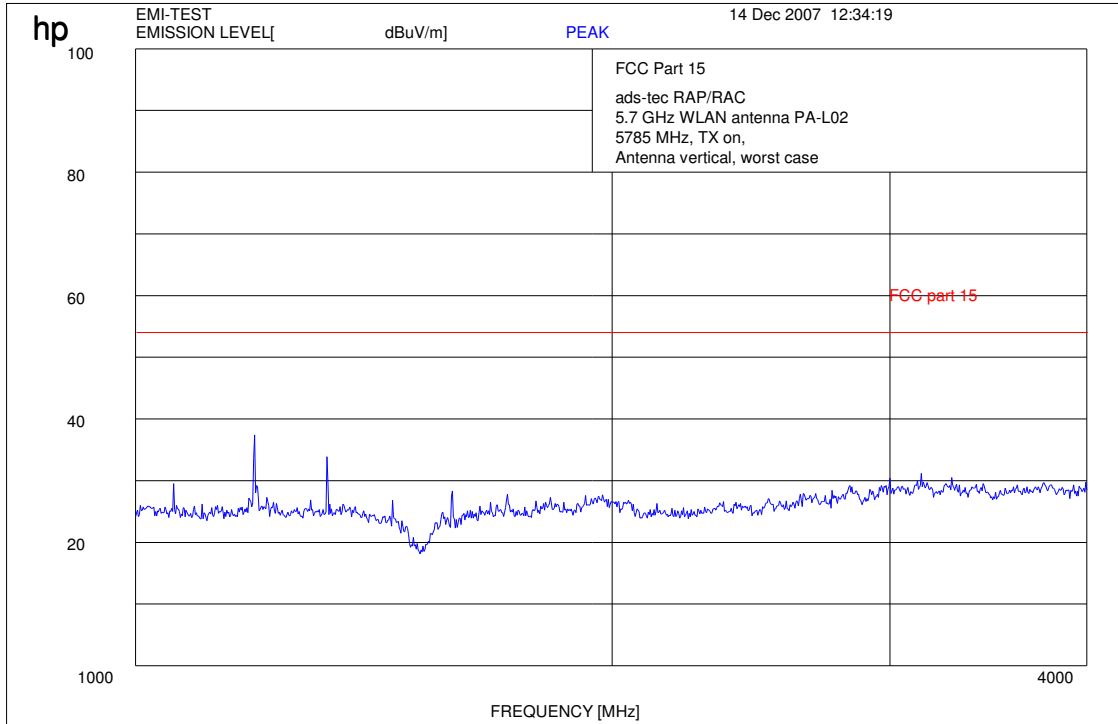


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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middle channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

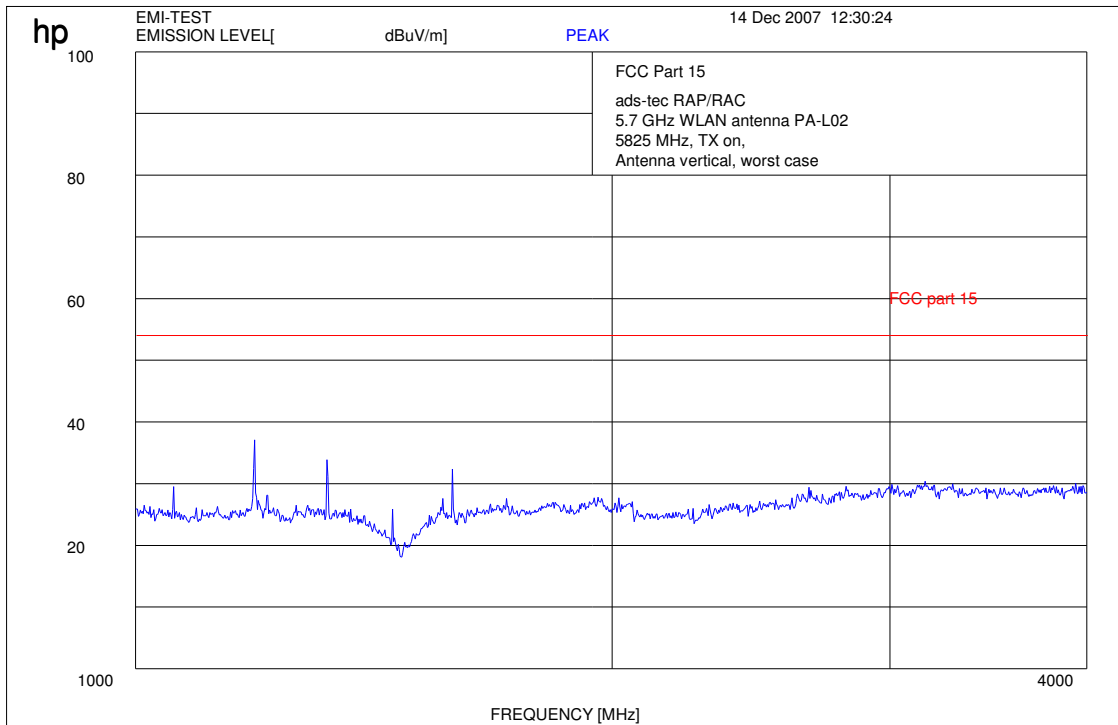


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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highest channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

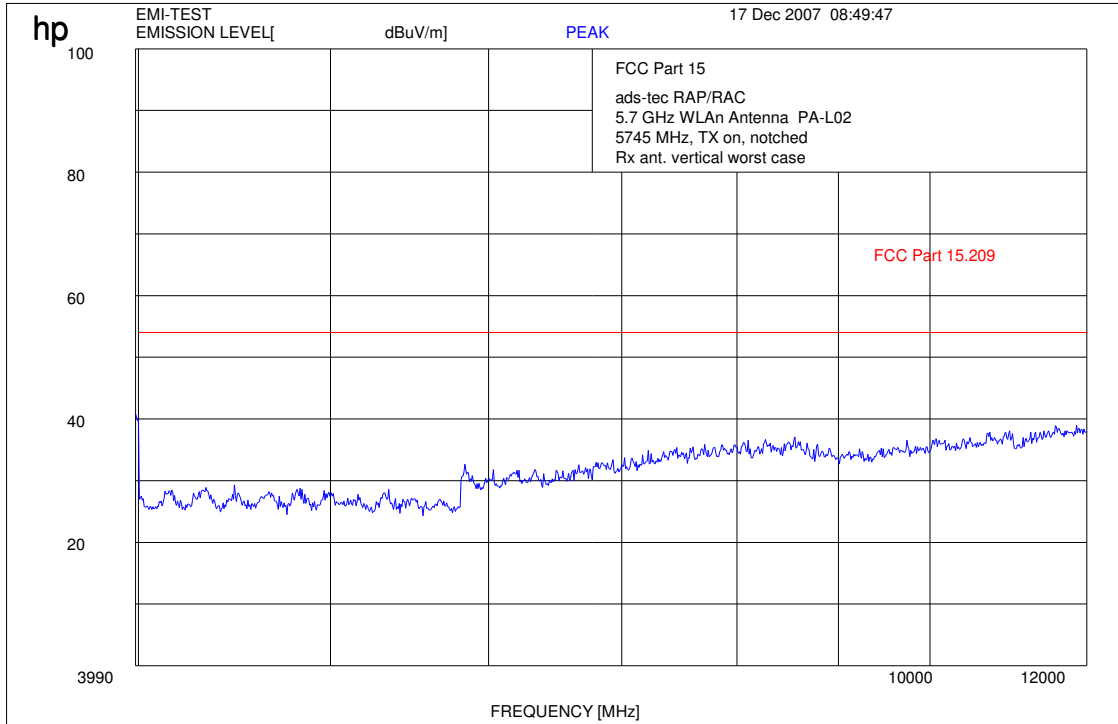


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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lowest channel up to 12 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

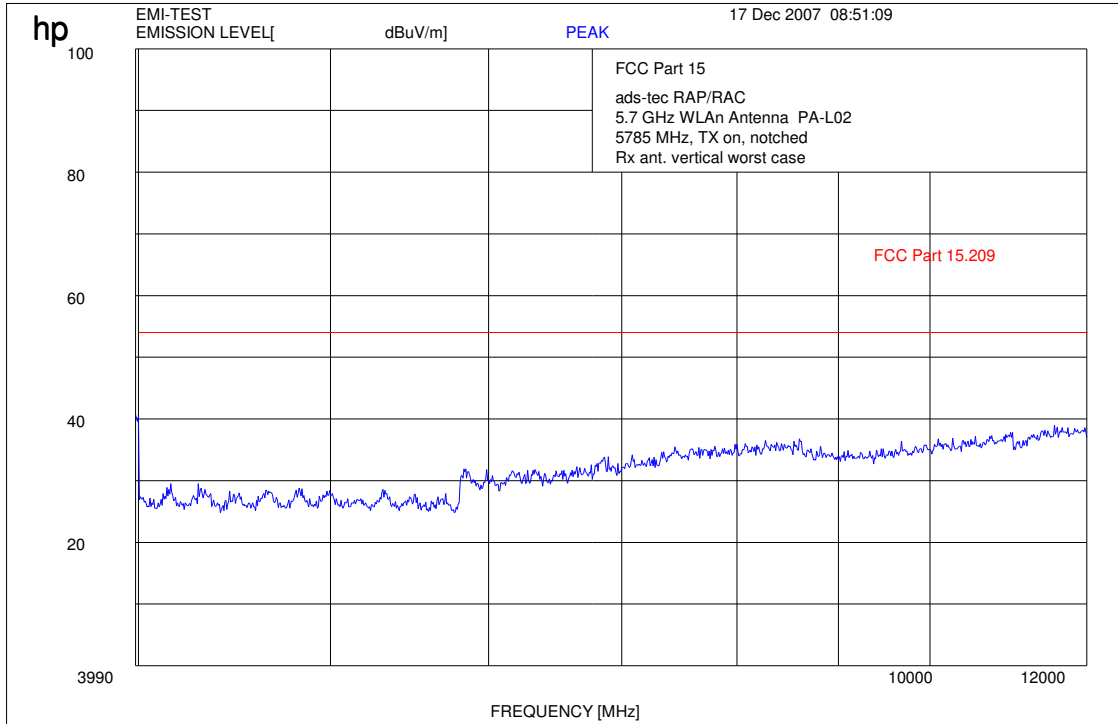


Test report No.: 2-4689-01-10/07

Date: 2007-12-17

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middle channel up to 12 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

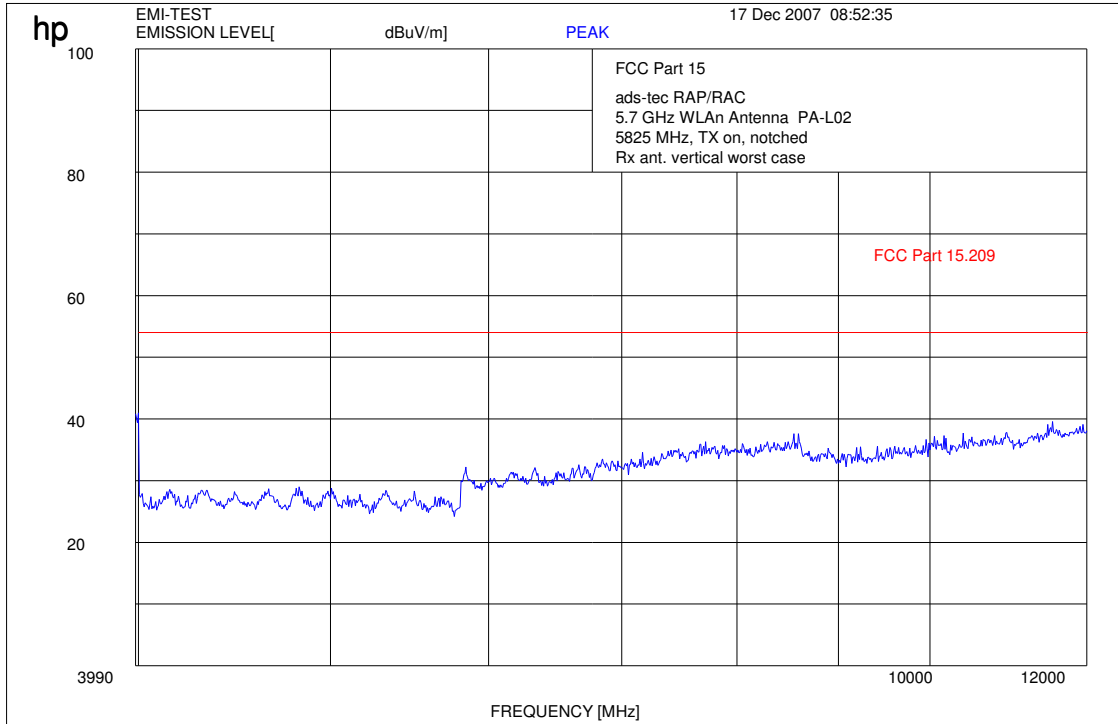


Test report No.: 2-4689-01-10/07

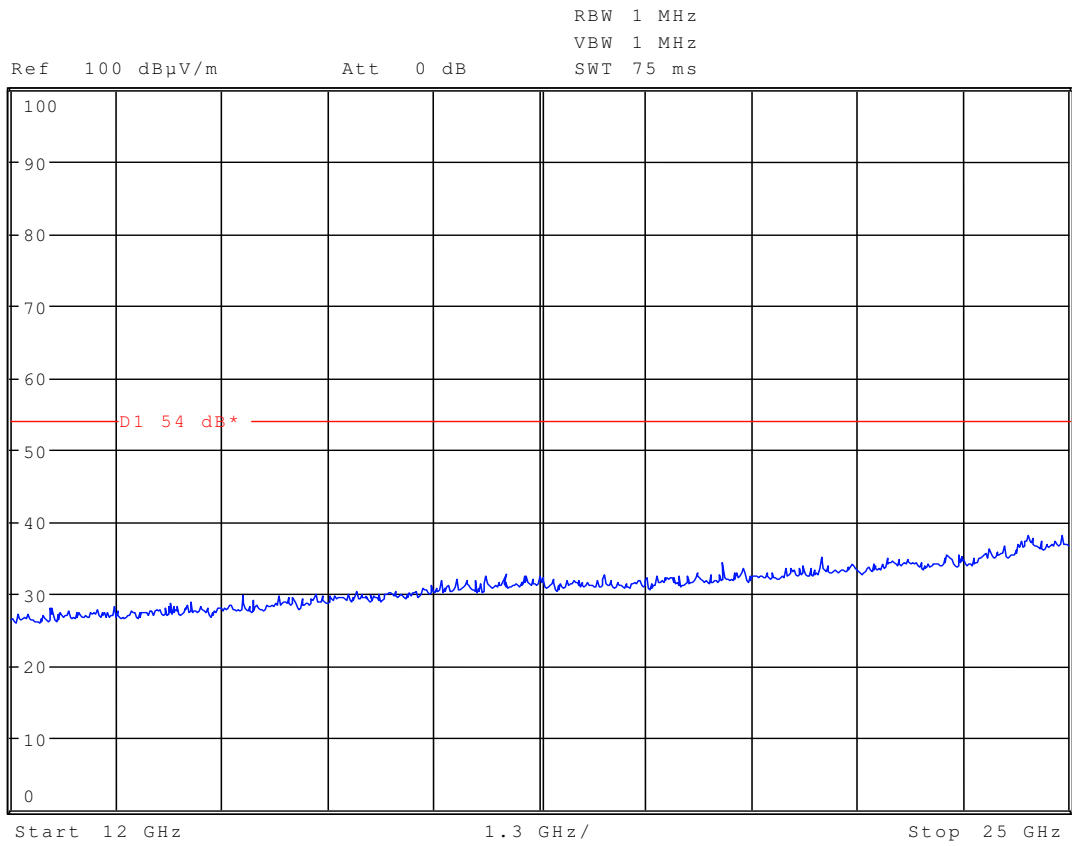
Date: 2007-12-17

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highest channel up to 12 GHz



12 – 25 GHz (valid for all three frequencies and for all antennas)



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany



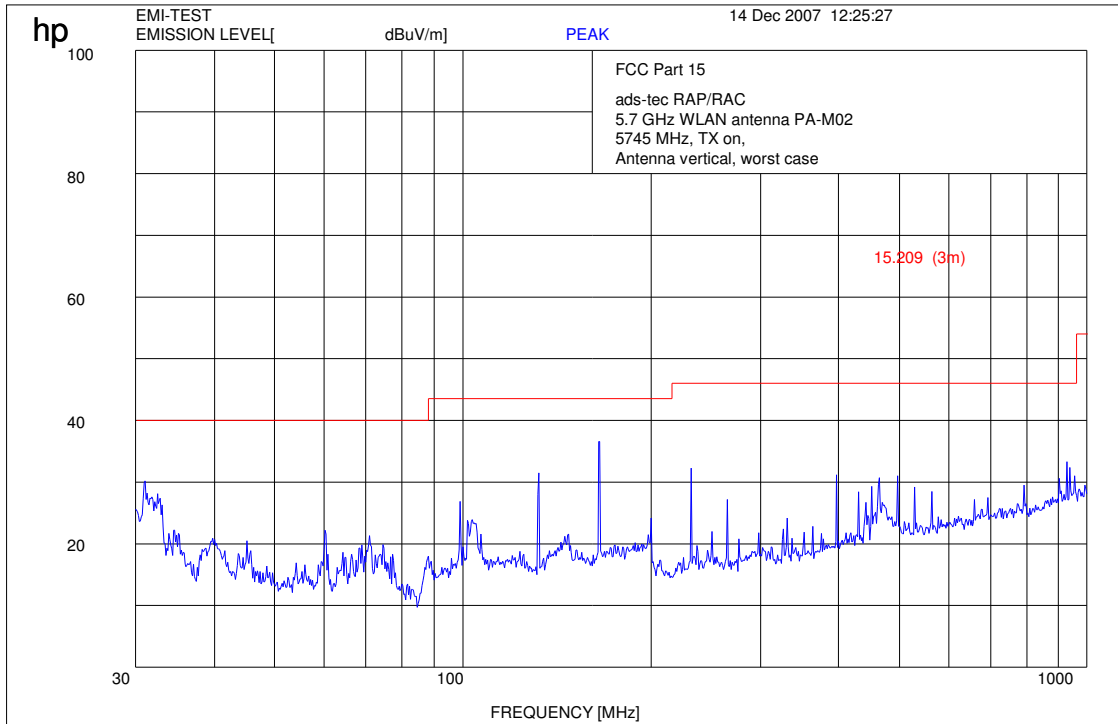
Test report No.: 2-4689-01-10/07

Date: 2007-12-17

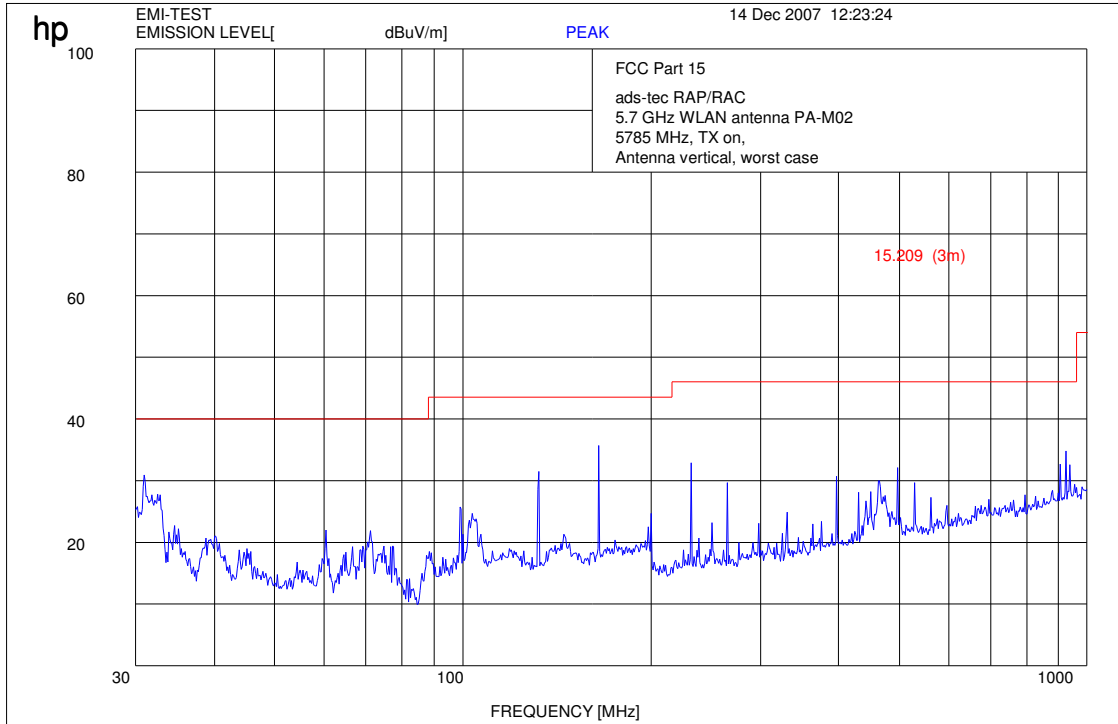
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Antenna type: PA-M02

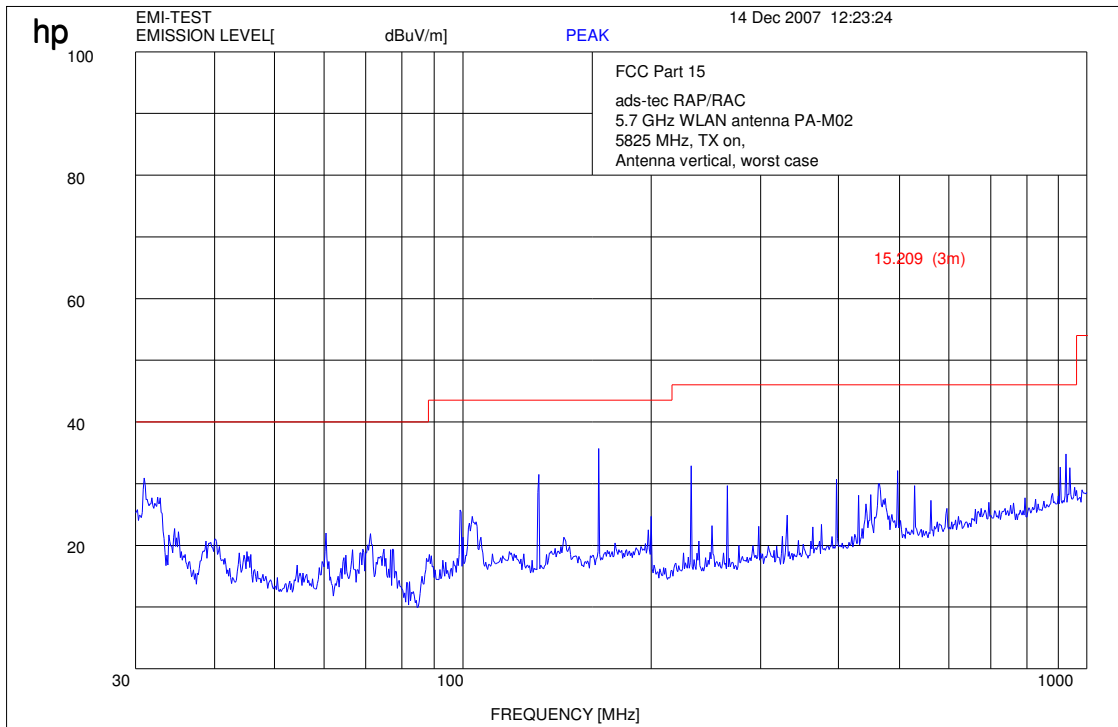
lowest channel up to 1 GHz



middle channel up to 1 GHz



highest channel up to 1 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

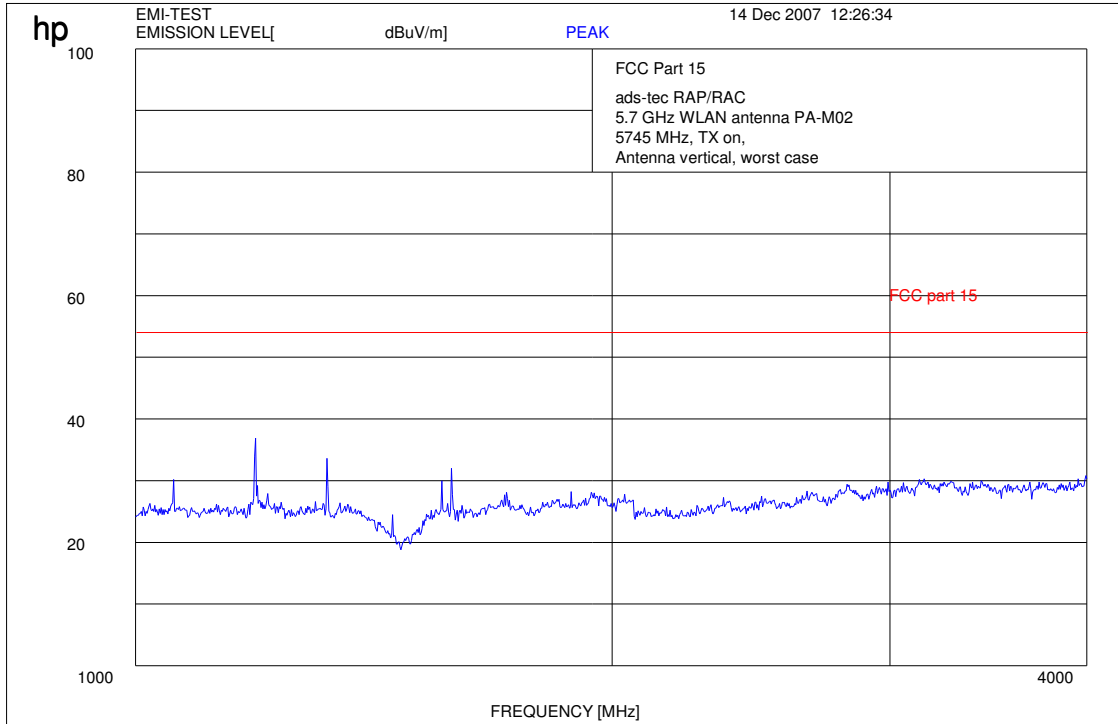


Test report No.: 2-4689-01-10/07

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lowest channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

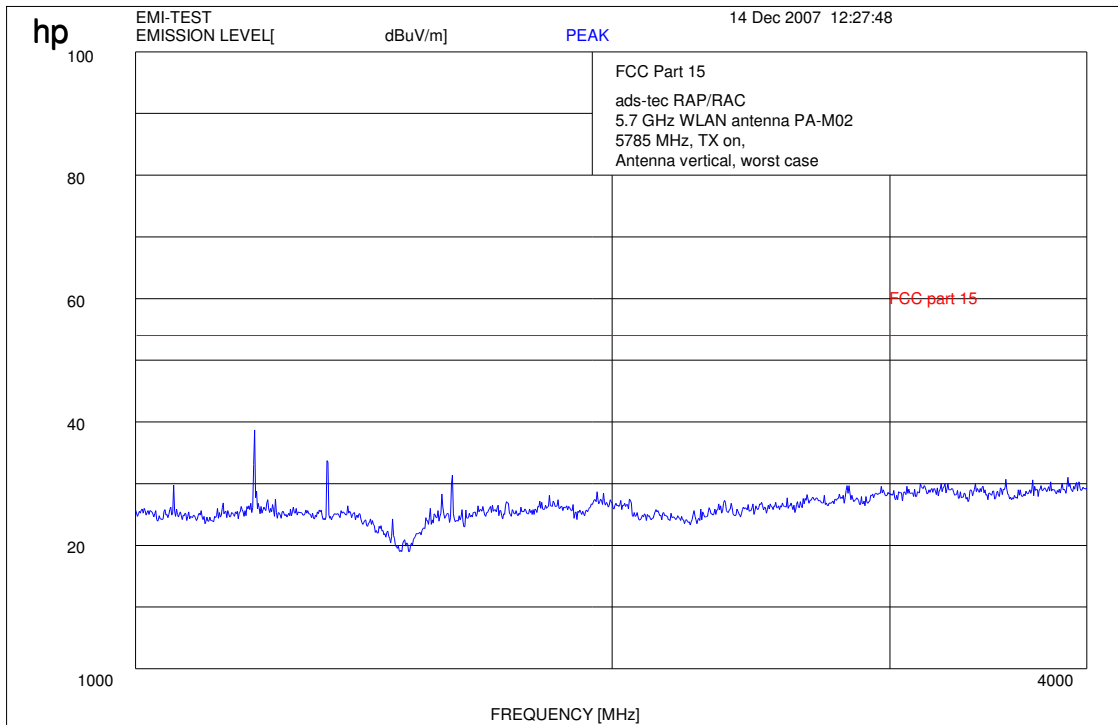


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middle channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

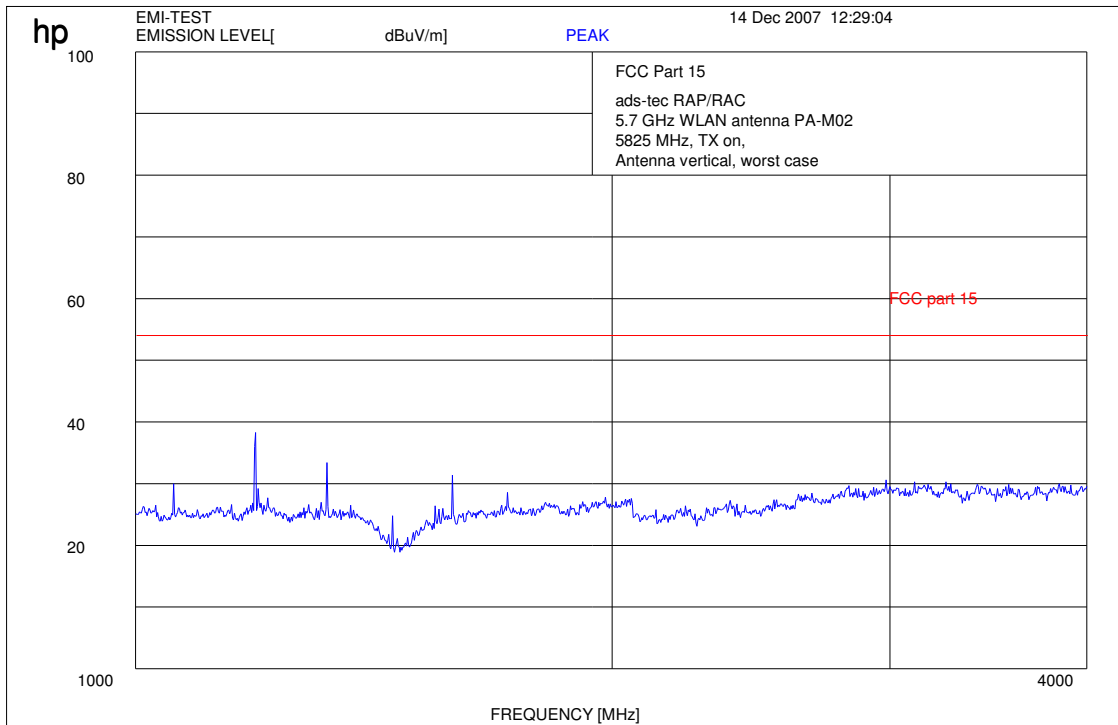


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highest channel up to 4 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

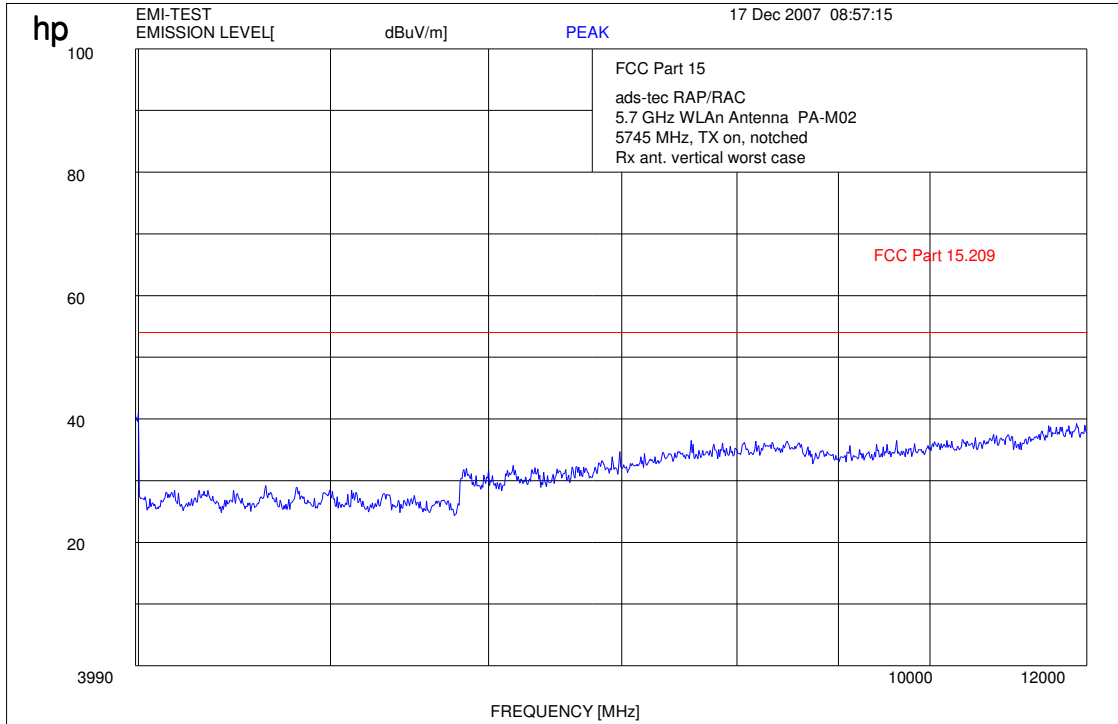


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lowest channel up to 12 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

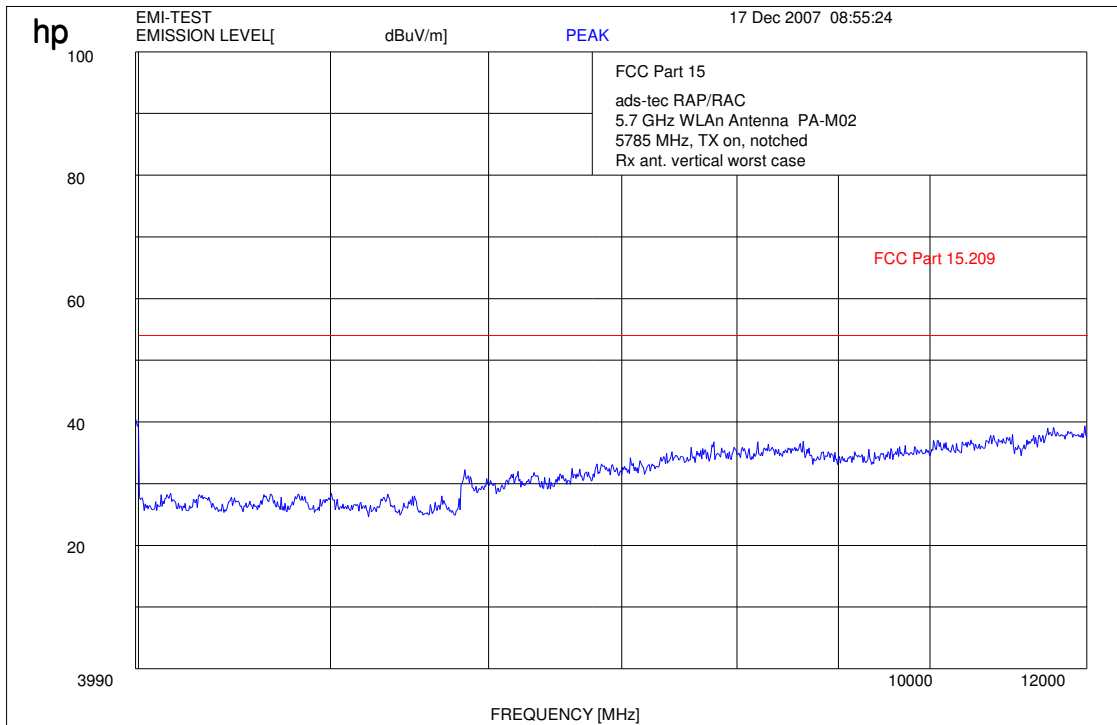


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middle channel up to 12 GHz



SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany

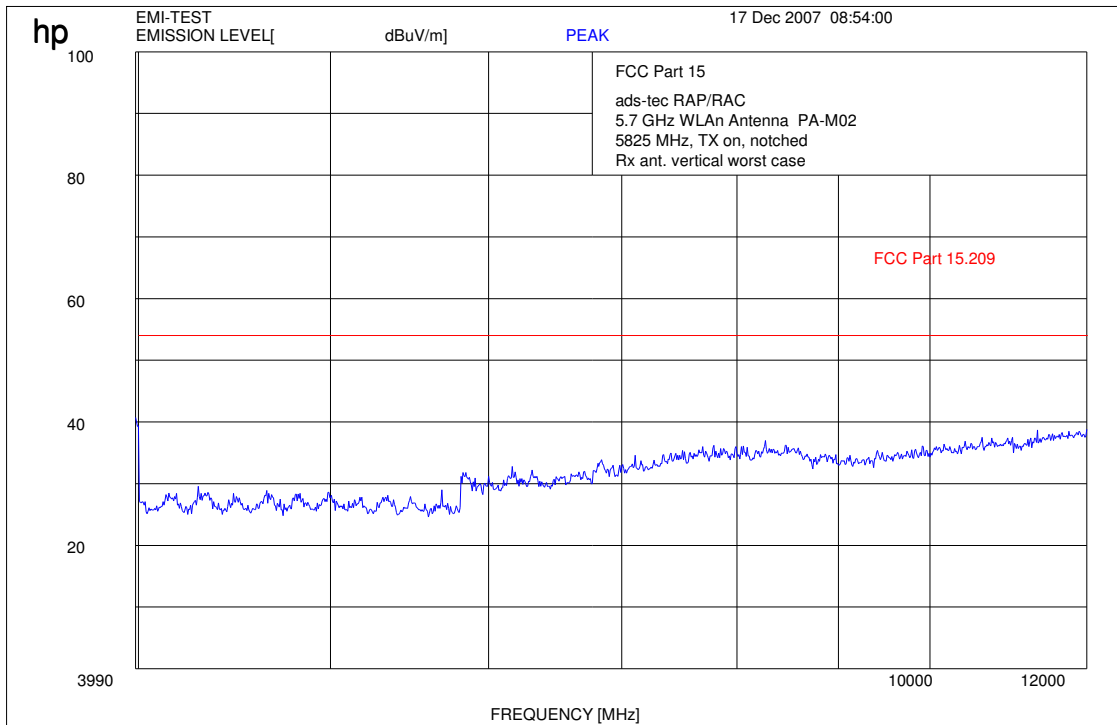


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highest channel up to 12 GHz



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Results:

Spurious Emissions level [$\mu\text{V/m}$]								
CH 1 / 2 / 3 (2.4 GHz range)			5.2 GHz range			5.7 GHz range		
f[MHz]	Detector	Level [$\mu\text{V/m}$]	f[MHz]	Detector	Level [$\mu\text{V/m}$]	f[MHz]	Detector	Level [$\mu\text{V/m}$]
All found peaks were below the limits.								
Measurement uncertainty			± 3 dB					

$f < 1$ GHz : RBW/VBW: 100 kHz
see above plots

$f \geq 1$ GHz : RBW/VBW: 1 MHz

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

3.7 Conducted Emissions <30 MHz

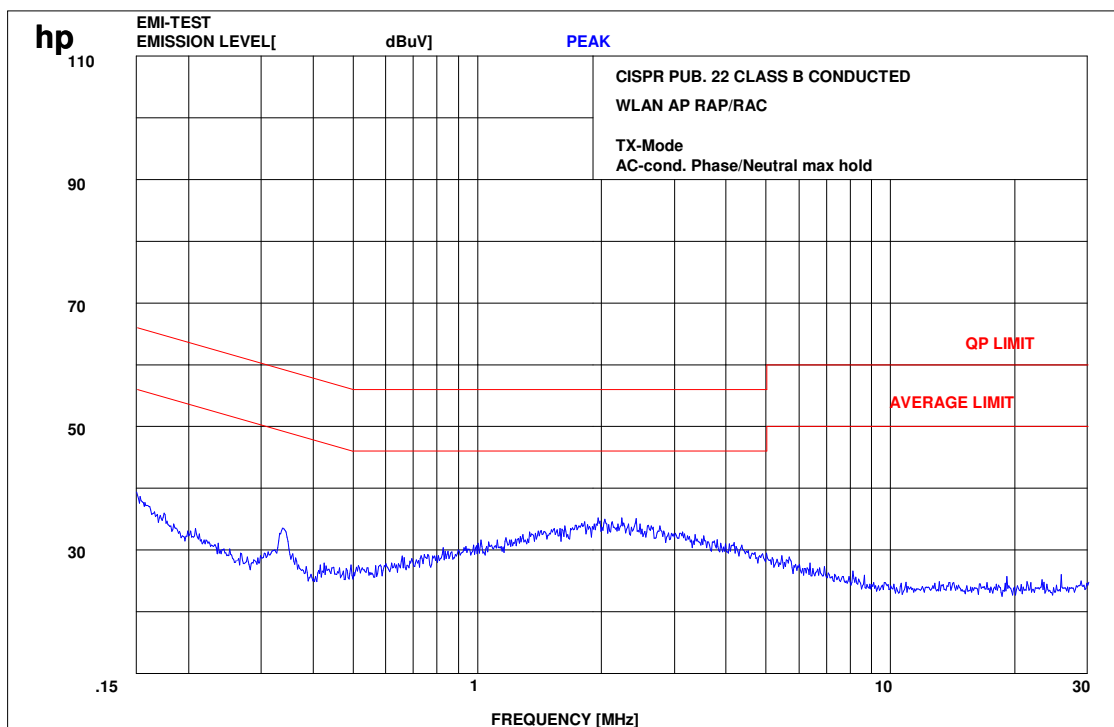
§15.107/207

(measured with the 115V AC power supplied by the customer)

Transmit mode

Valid for all antennas, frequency ranges and channels

Plot 1: CISPR 22



We measured L1 and N floating and grounded, max value was hold.

Limits :

Under normal test conditions only	0.15 to 0.5 MHz, 66-56 dB μ V QP, 56-46 dB μ V AV 0.5 to 5.0 MHz, 56 dB μ V QP, 46 dB μ V AV 5.0 to 30 MHz, 60 dB μ V QP, 50 dB μ V AV
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SRD-Testreport

CETECOM ICT Services GmbH Saarbruecken, Germany



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SRD Laboratory Room 002:

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	System Controller PSM 12	R&S	835259/007	3000002681-00xx	n.a.		
2	Memory Extension PSM-K10	R&S	To 1	3000002681	n.a.		
3	Operating Software PSM-B2	R&S	To 1	3000002681	n.a.		
4	19" Monitor		22759020-ED	3000002681	n.a.		
5	Mouse		LZE 0095/6639	3000002681	n.a.		
6	Keyboard		G00013834L 461	3000002681	n.a.		
7	Spectrum Analyser FSIQ 26	R&S	835540/018	3000002681-0005	01.08.2006	24	01.08.2008
8	Tracking Generator FSIQ-B10	R&S	835107/015	3000002681	s.No.7		
10	RF-Generator SMIQ03 (B1 Signal)	R&S	835541/056	3000002681-0002	01.08.2006	36	01.08.2009
11	Modulation Coder SMIQ-B20	R&S	To 10	3000002681	s.No.10		
12	Data Generator SMIQ-B11	R&S	To 10	3000002681	s.No.10		
13	RF Rear Connection SMIQ-B19	R&S	To 10	3000002681	s.No.10		
14	Fast CPU SM-B50	R&S	To 10	3000002681	s.No.10		
15	FM Modulator SM-B5	R&S	835676/033	3000002681	s.No.10		
16	RF-Generator SMIQ03 (B2 Signal)	R&S	835541/055	3000002681-0001	01.08.2006	36	01.08.2009
17	Modulation Coder SMIQ-B20	R&S	To 16	3000002681	s.No.16		
18	Data Generator SMIQ-B11	R&S	To 16	3000002681	s.No.16		
19	RF Rear Connection SMIQ-B19	R&S	To 16	3000002681	s.No.16		
20	Fast CPU SM-B50	R&S	To 16	3000002681	s.No.16		
21	FM Modulator SM-B5	R&S	836061/022	3000002681	s.No.16		
22	RF-Generator SMP03 (B3 Signal)	R&S	835133/011	3000002681-0003	01.08.2006	36	01.08.2009
23	Attenuator SMP-B15	R&S	835136/014	3000002681	S.No.22		
24	RF Rear Connection SMP-B19	R&S	834745/007	3000002681	S.No.22		
25	Power Meter NRVD	R&S	835430/044	3000002681-0004	01.08.2006	24	01.08.2008
26	Power Sensor NRVD-Z1	R&S	833894/012	3000002681-0013	01.08.2006	24	01.08.2008
27	Power Sensor NRVD-Z1	R&S	833894/011	3000002681-0010	01.08.2006	24	01.08.2008
28	Rubidium Standard RUB	R&S		3000002681-0009	01.08.2006	24	01.08.2008
29	Switching and Signal Conditioning Unit SSCU	R&S	338864/003	3000002681-0006	01.08.2006	24	01.08.2008
30	Laser Printer HP Deskjet 2100	HP	N/A	3000002681-0011	n.a.		
31	19" Rack	R&S	11138363000 004	3000002681	n.a.		
32	RF-cable set	R&S	N/A	3000002681	n.a.		
33	IEEE-cables	R&S	N/A	3000002681	n.a.		
34	Sampling System FSIQ-B70	R&S	835355/009	3000002681	s.No.7		

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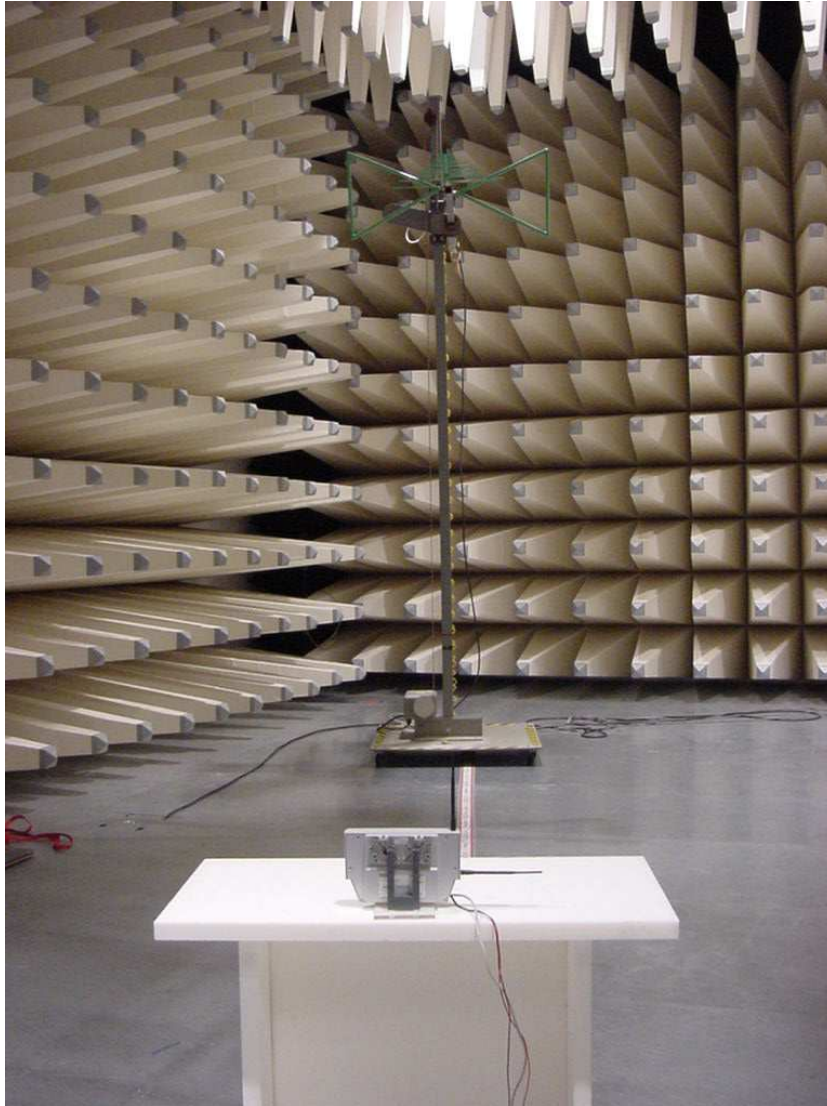
35	RSP programmable attenuator	R&S	834500/010	3000002681-0007	01.08.2006	24	01.08.2008
36	Signalling Unit	R&S	838312/011	3000002681	n.a.		
37	NGPE programmable Power Supply for EUT	R&S	192.033.41	3000002681			
38	Climatic box VT 4002	Heraeus Vötsch	58566046820010	300003019	11.05.2007	24	11.05.2009
39	Signaling Unit CMU200	R&S	832221/0055	300002862	12.01.2006	24	12.01.2008
40	Power Splitter 6005-3	Inmet Corp.	none	300002841	23.12.2006	24	23.12.2008
41	SMA Cables SPS-1151-985-SPS	Insulated Wire	different	different	n.a.		
42	CBT32 with EDR Signaling Unit	R&S					
43	Coupling unit	Narda	N/A	--	n.a.		
44	2xSwitch Matrix PSU	R&S	872584/021	300001329	n.a.		
45	RF-cable set	R&S	N/A	different	n.a.		
46	IEEE-cables	R&S	N/A	--	n.a.		

SRD Laboratory Room 005:

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	Spektrum Analyzer 8566B	HP	2747A05275	300000219	08.11.2006	24	08.11.2008
2	Spektrum Analyzer Display 85662A	HP	2816A16497	300001690	08.11.2006	24	08.11.2008
3	Quasi-Peak-Adapter 85650A	HP	2811A01135	300000216	08.11.2006	24	08.11.2008
4	Power Supply	Heiden	003202	300001187	12.05.2007	36	12.05.2010
5	Power Supply	Heiden	1701	300001392	12.05.2007	36	12.05.2010

5 Photographs of test site

Test site Radiated Emissions:



here the test sample with the dedicated rod antennas.

6 Photographs of the antennas

Photograph No.: 1 PA-M02



Photograph No.: 2 PA-M02



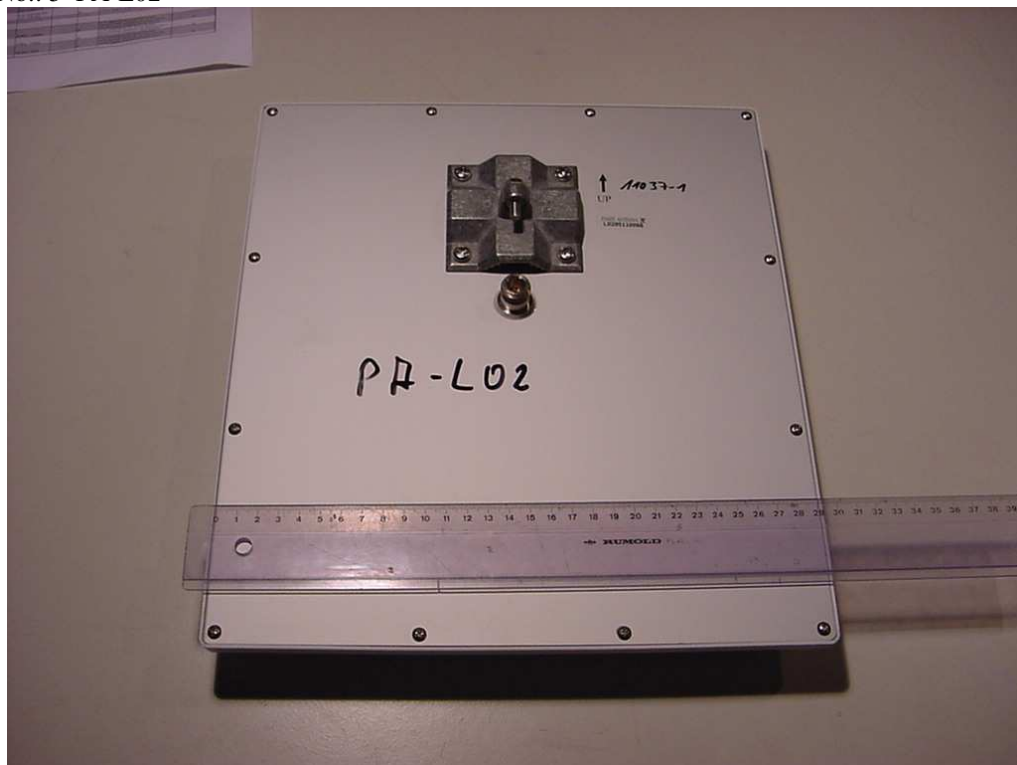
Photograph No.: 3 OB-008



Photograph No.: 4 OB-002



Photograph No.: 5 PA-L02



Photograph No.: 6 PA-L02



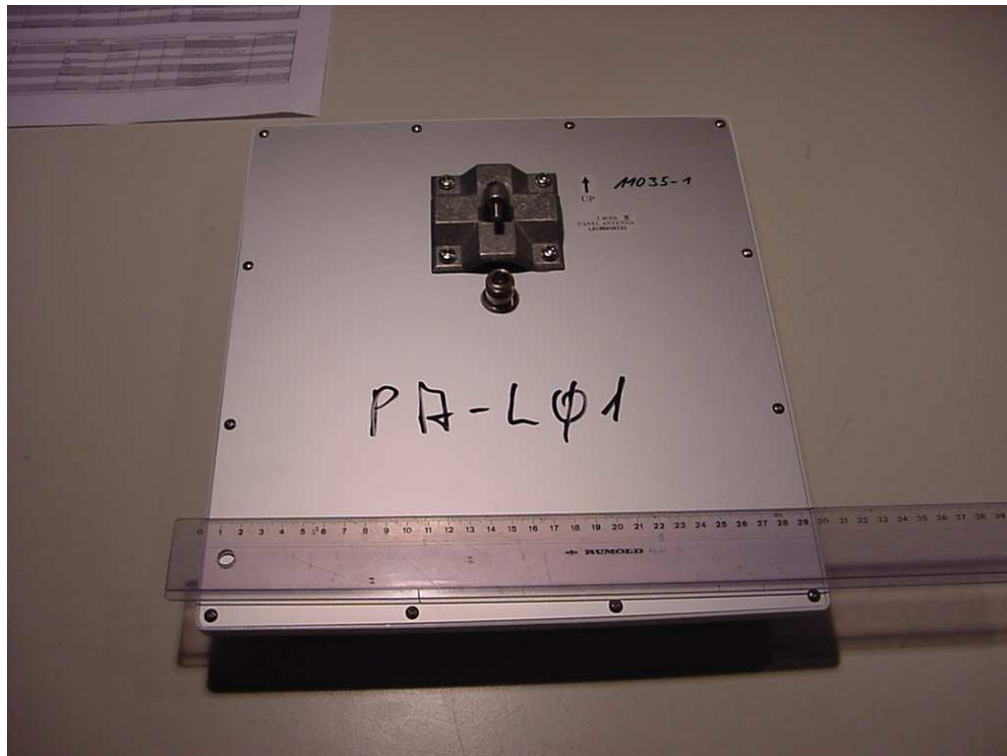
Photograph No.: 7 PA-M01



Photograph No.: 8 PA-M01



Photograph No.: 9 PA-L01



Photograph No.:10 PA-L01



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Photograph No.: 11 OB-003



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7 Antenna Specifications

see files: DZ-PCKO-11034-0_OB-002.pdf
 DZ-PCKO-11035-0_PA-M01.pdf
 DZ-PCKO-11036-0_OB-008.pdf
 DZ-PCKO-11037-0_PA-M02.pdf
 DZ-PCKO-11034-1_OB-003.pdf
 DZ-PCKO-11035-1_PA-L01.pdf
 DZ-PCKO-11037-1_PA-L02.pdf