



TEST REPORT nr. R08036801_rev30

This test report cancel and replace document nr. R08036801_rev20 date 18.06.08

Federal Communication Commission (FCC)

Test item

Description.....: A528 - OEM UHF multiregional Compact Reader
 Trademark.....: CAEN RFID
 Model/Type.....: A528

Test Specification

Standard: See inside at page 3

Client's name.....: CAEN RFID

Address: Via Vetraia, 11 - 55049 Viareggio (LU) – ITALY

Manufacturer's name.: Same ad client

Address:

Report

Tested by.....: A. Bertezolo - *Technician*

Approved by.....: R. Beghetto - *Laboratory Manager*

Date of issue.....: 20.06.08

Contents: 109 pages

This test report shall not be reproduced except in full without the written approval of CMC.
 The test results presented in this report relate only to the item tested.



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| 1. Summary | | | |
|---|-----------------------------|----------------|----------|
| Emission: FCC Rules & Regulations, Title 47 | | | |
| Test specifications | Environmental Phenomena | Tests sequence | Result |
| Part 15.247(a) | Bandwidth | 1 | Complies |
| Part 15.247(a) | Channel Separation | 2 | Complies |
| Part 15.247(a) | Time of Occupancy | 3 | Complies |
| Part 15.247(a) | Number of Hopping Frequency | 4 | Complies |
| Part 15.247(b) | Peak Output Power conducted | 5 | Complies |
| Part 15.247(c) | Band Edge | 6 | Complies |
| Part 15.247(c) Part 15.209 | Radiated Spurious | 7 | Complies |
| Part 15.247(c) Part 15.209 | Conducted Spurious | 8 | Complies |
| Part 15.207 | Conducted Emission | 9 | Complies |

The Test Report was given to the Client representatives for necessary documentation of ratification of the tested equipment and it is valid for the FCC certification.



2. Description of Equipment under test (EUT)

Power supply..... : 5 Vdc from USB

Type of equipment : Transmitter Unit Receiver Unit
 Fixed station Portable station Mobile station

Receiver class : --

Alignment range..... : 902,75 – 927,25 MHz

Switching frequency : 902,75 – 927,25 MHz

Number of channels : --

Channel separation..... : --

Modulation : Link Profile 0: DSK-ASK 40kHz
 Link Profile 2: RSK-ASK 40kHz
 Link Profile 4: DSB-ASK 160kHz

Extreme conditions : --

Maximum transmitter output power..... : --

Information on antenna..... : Integrated
 Extern
 Other: See user's manual

Remark..... : The A528 Module, which is rated at 500mW output, cannot use an antenna with more than 3 dBi of gain. Use of any other antenna with a gain greater than 3 dBi may void the user's authority to operate the equipment.

2.1 Test Site

Company..... : CMC Centro Misure Compatibilità S.r.l.

Address : Via dell'Elettronica, 12/C – 36016 Thiene (VI) – ITALY

3. Testing and sampling

Date of receipt of test item : 22.02.08

Testing start date..... : 02.04.08

Testing end date..... : 10.04.08

Samples tested nr. : 1

Sampling procedure..... : Equipment used for testing was picked up by the manufacturer, at the end of the production process with random criterion

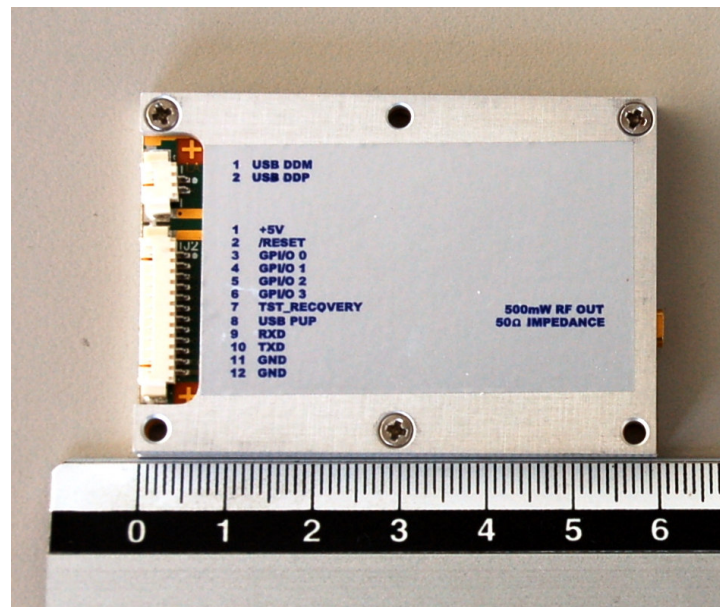
Internal identification..... : adhesive label with the product number P080235

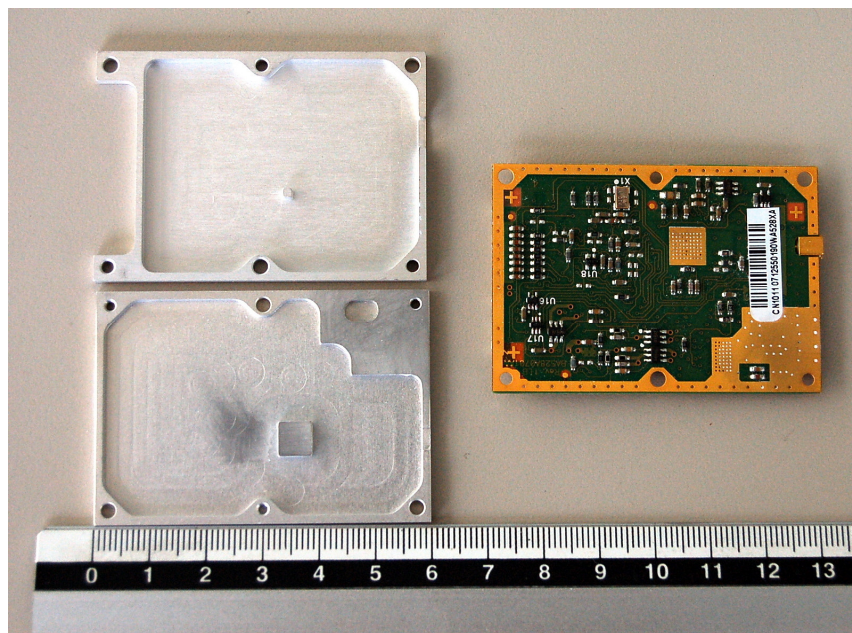
4. Operative conditions

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5. Photograph(s) of EUT







6. Equipment list

| <i>Id. number</i> | <i>Manufacturer</i> | <i>Model</i> | <i>Description</i> | <i>Serial number</i> | <i>Last calibration</i> | <i>Due date calibration</i> |
|-------------------|---------------------|--------------|---------------------------|----------------------|-------------------------|-----------------------------|
| CMC S001 | Rohde & Schwarz | ESHS30 | EMC interference receiver | 862024/003 | January '08 | January '09 |
| CMC S108 | Emco | 3115 | Horn antenna | 9811-5622 | April '07 | April '09 |
| CMC S129 | Rohde & Schwarz | ESPI7 | Receiver | 836.914/004 | June '07 | June '09 |
| CMC S136 | Schwarzbeck | VULB 9163 | Broadband Antenna | 9136-205 | May '07 | May '09 |
| CMC S164 | Rohde & Schwarz | ESU26 | EMC interference receiver | 100052 | December '07 | December '08 |



7. Measurement uncertainty

| <i>Test</i> | <i>Value</i> |
|--|---------------------------------|
| Conducted disturbance test – continuous and discontinuous - (9 kHz – 30 MHz) | 2.1 dB |
| Insertion loss test | 1.9 dB |
| Radiated electromagnetic disturbance test (loop antenna) | 1.9 dB |
| Radiated disturbance test | 4.7 dB |
| Disturbance power test | 2.0 dB |
| Harmonic current emissions test | 0.8 % |
| Voltage fluctuation and flicker test | 6,2 % |
| Electrostatic discharge immunity test | < 10 % I_{pk} |
| | < 30 % I(30 ns) |
| | < 30 % I(60ns) |
| Electrical fast transients / burst immunity test | < 10 % V_{pk} |
| | < 30 % Tr |
| | < 30 % Td |
| Radiated electromagnetic field immunity test | 0.7 V/m at 3V/m |
| Pulse modulated radio-frequency electromagnetic field immunity test | 0.7 V/m at 3V/m |
| Surge immunity test | < 10 % V_{pk} |
| | < 20 % Tr |
| | < 20 % Td |
| Injected currents immunity test (150 kHz – 230 MHz) | 0.5 V at 3V |
| Power frequency magnetic field immunity test | 0.6 A/m at 3 A/m |
| Short interruption immunity test | < 5 % |



8. Reference documents

| <i>Reference no.</i> | <i>Description</i> |
|--|--|
| FCC Rules and Regulation Title 47 part 15 | -- |
| ANSI C63.4 | American National Standard for Methods of Measuring of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz – 40GHz |
| Internal Procedure PM001 rev. 2.0 (Quality Manual) | Measure Procedure |
| Internal procedure INC_M rev. 6.0 (Quality Manual) | Measurement uncertainty calculation |



9. Deviation from test specification

In agreement with the client, emission tests were performed with peak detector .
 At the frequencies where the measures exceed the limit or within 6dB from it, the test was repeated with quasi-peak detector and/or average detector.

10. Test case verdicts

Test case does not apply to the test object..... : N / N.A.
 Test item does meet the requirement : P / Pass / Complies
 Test item does not meet the requirement..... : F / Fail / Does not comply
 Test not performed : NE / Not Executed

11. Results

In this clause tests results are reported.
 All measurements are done in accordance with the Filling and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems DA-705
 Measurement uncertainty is in accordance with document CMC INC_M rev. 6.0.



11.1 Bandwidth

Test configuration and test method

Test site Laboratory
 Auxiliary equipment See clause 4 of this test report

Environmental conditions

Temperature 20 °C Atmospheric pressure 99 kPa Relative humidity 48 %

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(a)
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

Test specification

Port: Antenna;

EUT exercising

See clause 4 of this test report

Result

| Channel | Modulation | Frequency | Graph(s) | Bandwidth | Remark |
|---------|----------------|------------|-----------|-----------|--------|
| 0 | Link profile 0 | 902,75 MHz | G08036801 | 88 kHz | -- |
| 0 | Link profile 2 | 902,75 MHz | G08036802 | 84 kHz | -- |
| 0 | Link profile 4 | 902,75 MHz | G08036803 | 335 kHz | -- |
| 25 | Link profile 0 | 915,25 MHz | G08036804 | 88 kHz | -- |
| 25 | Link profile 2 | 915,25 MHz | G08036805 | 87 kHz | -- |
| 25 | Link profile 4 | 915,25 MHz | G08036806 | 399 kHz | -- |
| 49 | Link profile 0 | 927,25 MHz | G08036807 | 88 kHz | -- |
| 49 | Link profile 2 | 927,25 MHz | G08036808 | 86 kHz | -- |
| 49 | Link profile 4 | 927,25 MHz | G08036809 | 320 kHz | -- |

Measurement uncertainty: ±1 kHz

Remarks //////////////

Reference documents See clause 8 of this test report

Test equipment used (Id number – see clause 6 of this test report)

CMC S129

Result The requirements are met



11.2 Channel Separation

Test configuration and test method

Test site Laboratory
 Auxiliary equipment See clause 4 of this test report

Environmental conditions

Temperature 20 °C Atmospheric pressure 99 kPa Relative humidity 48 %

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(a)
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

Test specification

Port: Antenna;

EUT exercising

See clause 4 of this test report

Acceptance limits

Limit: Minimum 25kHz or the 20dB Bandwidth of the hopping system

Result

| <i>Port</i> | <i>Modulation</i> | <i>Graph(s)</i> | <i>Channel Separation</i> | <i>Remark</i> |
|-------------|-------------------|-----------------|---------------------------|---------------|
| Enclosure | Link profile 0 | G08036810 | 500 kHz | -- |
| Enclosure | Link profile 2 | G08036811 | 500 kHz | -- |
| Enclosure | Link profile 4 | G08036812 | 500 kHz | -- |

Measurement uncertainty: ±1kHz

Remarks

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Reference documents

See clause 8 of this test report

Test equipment used (Id number – see clause 6 of this test report)

CMC S129

Result

The requirements are met



11.3 Average Time of Occupancy

Test configuration and test method

Test site Laboratory
 Auxiliary equipment See clause 4 of this test report

Environmental conditions

Temperature 21 °C Atmospheric pressure 99 kPa Relative humidity 49 %

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(a)
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

Test specification

Port: Antenna;

EUT exercising

See clause 4 of this test report

Acceptance limits

0.4 s within 20 s period

Result

| Channel | Modulation | Graph(s) | Dwell time | Remark |
|---------|----------------|-----------|------------|--------|
| 25 | Link profile 0 | G08036813 | 49,8 ms | -- |
| 25 | Link profile 2 | G08036814 | 30,0 ms | -- |
| 25 | Link profile 4 | G08036815 | 9,2 ms | -- |

| Channel | Modulation | Time between two transmission | Nr. of hopping frequency | Nr. of transmission for channel | Time of Occupancy | Remarks |
|---------|----------------|-------------------------------|--------------------------|---------------------------------|------------------------|---------|
| 25 | Link profile 0 | 74,2 ms | 50 | 20s/0,0742/50 = 5,39 | 5,39x49,8= 268,4 ms | -- |
| 25 | Link profile 2 | 64,2 ms | 50 | 20s/0,0642/50 = 6,23 | 6,23x30,0= 186,9 ms | -- |
| 25 | Link profile 4 | 30,2 ms | 50 | 20s/0,0302/50 = 13,24 | 13,24x9,2= 121,8 ms | -- |

Measurement uncertainty: $\pm 1\mu\text{s}$ x nr. of channels



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Remarks

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Reference documents

See clause 8 of this test report

Test equipment used (Id number – see clause 6 of this test report)

CMC S129

Result

The requirements are met



11.4 Number of Hopping Channels

Test configuration and test method

Test site Laboratory
 Auxiliary equipment See clause 4 of this test report

Environmental conditions

Temperature 22 °C Atmospheric pressure 99 kPa Relative humidity 46 %

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(a)
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

Test specification

Port: Antenna;

EUT exercising

See clause 4 of this test report

Result

| Port | Modulation | Graph(s) | Number of Hopping Frequency | Remark |
|-----------|----------------|-----------|-----------------------------|--------|
| Enclosure | Link profile 0 | G08036816 | 50 | -- |
| Enclosure | Link profile 2 | G08036817 | 50 | -- |
| Enclosure | Link profile 4 | G08036818 | 50 | -- |

Remarks

//////////

Reference documents

See clause 8 of this test report

Test equipment used (Id number – see clause 6 of this test report)

CMC S129

Result

The requirements are met



11.5 Peak Output Power

Test configuration and test method

Test site Laboratory
Auxiliary equipment None

Environmental conditions

Temperature 22 °C Atmospheric pressure 99 kPa Relative humidity 46 %

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(b)
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

Test specification

Port: Antenna;

EUT exercising

See clause 4 of this test report

Acceptance limits

| Frequency range | RF power output |
|-----------------|-----------------|
| 902 – 928 MHz | 1,0 W / 30dBm |

Result

| Channel | Modulation | Graphs | Results | Remark |
|---------|----------------|------------|----------|--------|
| 0 | Link profile 0 | G08036887* | 26,6 dBm | -- |
| 0 | Link profile 2 | G08036888* | 26,5 dBm | -- |
| 0 | Link profile 4 | G08036889* | 26,5 dBm | -- |
| 25 | Link profile 0 | G08036890* | 26,5 dBm | -- |
| 25 | Link profile 2 | G08036891* | 26,4 dBm | -- |
| 25 | Link profile 4 | G08036892* | 26,3 dBm | -- |
| 49 | Link profile 0 | G08036893* | 26,0 dBm | -- |
| 49 | Link profile 2 | G08036894* | 25,9 dBm | -- |
| 49 | Link profile 4 | G08036895* | 26,0 dBm | -- |

Remarks

* Used +20dBm of attenuation during the test.

Reference documents

See clause 8 of this test report

Test equipment used (Id number – see clause 6 of this test report)

CMC S129

Result

The requirements are met



11.6 Band Edge

Test configuration and test method

Test site Laboratory
 Auxiliary equipment See clause 4 of this test report

Environmental conditions

Temperature 20 °C Atmospheric pressure 99 kPa Relative humidity 46 %

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(c)
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

Test specification

Port: Antenna;

EUT exercising

See clause 4 of this test report

Acceptance limits

In any 100kHz 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 20dB below that in the 100kHz 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 emission 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 15.205(c)).

Result

| Channel | Modulation | Graph(s) | Attenuation Band Edge | Remark |
|-------------------------------|----------------|-----------|-----------------------|-----------------|
| 0 | Link profile 0 | G08036828 | > 20dBc | Hopping disable |
| 0 | Link profile 2 | G08036829 | > 20dBc | Hopping disable |
| 0 | Link profile 4 | G08036830 | > 20dBc | Hopping disable |
| 49 | Link profile 0 | G08036831 | > 20dBc | Hopping disable |
| 49 | Link profile 2 | G08036832 | > 20dBc | Hopping disable |
| 49 | Link profile 4 | G08036833 | > 20dBc | Hopping disable |
| 0 | Link profile 0 | G08036834 | > 20dBc | Hopping enable |
| 0 | Link profile 2 | G08036835 | > 20dBc | Hopping enable |
| 0 | Link profile 4 | G08036836 | > 20dBc | Hopping enable |
| 49 | Link profile 0 | G08036837 | > 20dBc | Hopping enable |
| 49 | Link profile 2 | G08036838 | > 20dBc | Hopping enable |
| 49 | Link profile 4 | G08036839 | > 20dBc | Hopping enable |
| Measurement uncertainty: ±1dB | | | | |



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Remarks

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Reference documents

See clause 8 of this test report

Test equipment used (Id number – see clause 6 of this test report)

CMC S129

Result

The requirements are met



11.7 Conducted Spurious

Test configuration and test method

Test site Semi-anechoic chamber
 Auxiliary equipment None

Environmental conditions

Temperature 19 °C Atmospheric pressure 100 kPa Relative humidity 42 %

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(c) and Part 15.209
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

Test specification

Port: Antenna;

EUT exercising

See clause 4 of this test report

Acceptance limits

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

Result

| Channel | Modulation | Graph(s) | Remarks | Result |
|---------|----------------|-----------|---------|----------|
| 0 | Link profile 0 | G08036876 | -- | Complies |
| 0 | Link profile 2 | G08036877 | -- | Complies |
| 0 | Link profile 4 | G08036878 | -- | Complies |
| 25 | Link profile 0 | G08036879 | -- | Complies |
| 25 | Link profile 2 | G08036880 | -- | Complies |
| 25 | Link profile 4 | G08036881 | -- | Complies |
| 49 | Link profile 0 | G08036882 | -- | Complies |
| 49 | Link profile 2 | G08036883 | -- | Complies |
| 49 | Link profile 4 | G08036884 | -- | Complies |

Remarks

//////////

Reference documents

See clause 8 of this test report

Test equipment used (Id number – see clause 6 of this test report)

CMC S164

Measurement uncertainty: See clause 7 of this test report

Result The requirements are met



11.8 Radiated Spurious

Test configuration and test method

Test site Semi-anechoic chamber
 Auxiliary equipment None

Environmental conditions

Temperature 19 °C Atmospheric pressure 100 kPa Relative humidity 42 %

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247(c) and Part 15.209
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

Test specification

Port: Antenna;

For measurements below 1GHz the resolution bandwidth is set to 100kHz.

For measurements above 1GHz the resolution bandwidth is set to 1MHz.

EUT exercising

See clause 4 of this test report

Acceptance limits

In any 100kHz 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 cl. 15.205(a), must also comply with the radiated emission limits specified in cl. 15.209(a) (see cl.15.205(c)).

Result

| Channel | Modulation | Polarization | Frequency Range (MHz) | Graph(s) (peak measurements) | Remarks | Result |
|---------|----------------|--------------|-----------------------|------------------------------|---------|----------|
| 0 | Link profile 0 | Horizontal | 30 – 1000 | G08036840 | -- | Complies |
| 0 | Link profile 0 | Vertical | 30 – 1000 | G08036841 | -- | Complies |
| 0 | Link profile 2 | Horizontal | 30 – 1000 | G08036842 | -- | Complies |
| 0 | Link profile 2 | Vertical | 30 – 1000 | G08036843 | -- | Complies |
| 0 | Link profile 4 | Horizontal | 30 – 1000 | G08036844 | -- | Complies |
| 0 | Link profile 4 | Vertical | 30 – 1000 | G08036845 | -- | Complies |
| 25 | Link profile 0 | Horizontal | 30 – 1000 | G08036846 | -- | Complies |
| 25 | Link profile 0 | Vertical | 30 – 1000 | G08036847 | -- | Complies |
| 25 | Link profile 2 | Horizontal | 30 – 1000 | G08036848 | -- | Complies |
| 25 | Link profile 2 | Vertical | 30 – 1000 | G08036849 | -- | Complies |
| 25 | Link profile 4 | Horizontal | 30 – 1000 | G08036850 | -- | Complies |
| 25 | Link profile 4 | Vertical | 30 – 1000 | G08036851 | -- | Complies |
| 49 | Link profile 0 | Horizontal | 30 – 1000 | G08036852 | -- | Complies |
| 49 | Link profile 0 | Vertical | 30 – 1000 | G08036853 | -- | Complies |
| 49 | Link profile 2 | Horizontal | 30 – 1000 | G08036854 | -- | Complies |
| 49 | Link profile 2 | Vertical | 30 – 1000 | G08036855 | -- | Complies |
| 49 | Link profile 4 | Horizontal | 30 – 1000 | G08036856 | -- | Complies |
| 49 | Link profile 4 | Vertical | 30 – 1000 | G08036857 | -- | Complies |



| <i>Channel</i> | <i>Modulation</i> | <i>Polarization</i> | <i>Frequency Range (MHz)</i> | <i>Graph(s) (peak measurements)</i> | <i>Remarks</i> | <i>Result</i> |
|----------------|-------------------|---------------------|------------------------------|-------------------------------------|----------------|---------------|
| 49 | Link profile 0 | Horizontal | 1000 – 10000 | G08036858 | -- | Complies |
| 49 | Link profile 0 | Vertical | 1000 – 10000 | G08036859 | -- | Complies |
| 49 | Link profile 2 | Horizontal | 1000 – 10000 | G08036860 | -- | Complies |
| 49 | Link profile 2 | Vertical | 1000 – 10000 | G08036861 | -- | Complies |
| 49 | Link profile 4 | Horizontal | 1000 – 10000 | G08036862 | -- | Complies |
| 49 | Link profile 4 | Vertical | 1000 – 10000 | G08036863 | -- | Complies |
| 25 | Link profile 0 | Horizontal | 1000 – 10000 | G08036864 | -- | Complies |
| 25 | Link profile 0 | Vertical | 1000 – 10000 | G08036865 | -- | Complies |
| 25 | Link profile 2 | Horizontal | 1000 – 10000 | G08036866 | -- | Complies |
| 25 | Link profile 2 | Vertical | 1000 – 10000 | G08036867 | -- | Complies |
| 25 | Link profile 4 | Horizontal | 1000 – 10000 | G08036868 | -- | Complies |
| 25 | Link profile 4 | Vertical | 1000 – 10000 | G08036869 | -- | Complies |
| 0 | Link profile 0 | Horizontal | 1000 – 10000 | G08036870 | -- | Complies |
| 0 | Link profile 0 | Vertical | 1000 – 10000 | G08036871 | -- | Complies |
| 0 | Link profile 2 | Horizontal | 1000 – 10000 | G08036872 | -- | Complies |
| 0 | Link profile 2 | Vertical | 1000 – 10000 | G08036873 | -- | Complies |
| 0 | Link profile 4 | Horizontal | 1000 – 10000 | G08036874 | -- | Complies |
| 0 | Link profile 4 | Vertical | 1000 – 10000 | G08036875 | -- | Complies |

Remarks

During the test, the EUT was connected with antenna mod. WANTENNAX010.

Reference documents

See clause 8 of this test report

Test equipment used (Id number – see clause 6 of this test report)

CMC S108, CMC S136, CMC S164

Measurement uncertainty: See clause 7 of this test report

Result

The requirements are met



11.9 Emission of mains terminal disturbance voltage (continuous disturbance)

Test configuration and test method

Test site Laboratory
 Auxiliary equipment See clause 4 of this test report

Environmental conditions

Temperature 20 °C Atmospheric pressure 99 kPa Relative humidity 45 %

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.207
- Internal Procedure PM001
- See clause 4 of this test report

Test specification

Port: AC mains

EUT exercising

See clause 4 of this test report

Acceptance limits

| <i>Limits</i> | | |
|------------------------------|--------------------------|-----------------------|
| <i>Frequency range (MHz)</i> | <i>dB(μV) Quasi-peak</i> | <i>dB(μV) Average</i> |
| 0,15 to 0,50 | 66 to 56 | 56 to 46 |
| 0,50 to 5 | 56 | 46 |
| 5 to 30 | 60 | 50 |

Result

| <i>Line</i> | <i>Graphs</i> | <i>Remarks</i> | <i>Result</i> |
|-------------|---------------|----------------|---------------|
| Line – (0V) | G08036885 | -- | Complies |
| Line + (5V) | G08036886 | -- | Complies |

Graphs Legend

PK: Peak; QP [1s] (quasi-peak at 1 second) values are marked with a X
 AV: Average; AV [1s] (average at 1 second) values are marked with a +

Remarks

//////////

Reference documents

See clause 8 of this test report

Test equipment used (Id number – see clause 6 of this test report)

CMC S001
 Measurement uncertainty: See clause 7 of this test report

Result

The requirements are met



11.10 Maximum permissible Exposure

Test configuration and test method

Test site Laboratory
 Auxiliary equipment See clause 4 of this test report

Environmental conditions

Temperature 21 °C Atmospheric pressure 100 kPa Relative humidity 45 %

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 1.1310
- DA 00-705, march 30, 2000
- Internal Procedure PM001
- See clause 4 of this test report

Test specification

Port: Antenna;

EUT exercising

See clause 4 of this test report

Acceptance limits

915/1500 mW/cm² = 0,61 mW/cm² max at 20cm of distance

Result

| Power Density Limit (mW/cm ²) | Output Power (mW) | Antenna Gain (G) | Power Density at 20cm (mW/cm ²) | Remarks |
|--|----------------------|---------------------|---|----------|
| 0,61 | 457,1 | 2 | 0,18 | Measured |
| 0,61 | 500 | 2 | 0,20 | Declared |

Remarks

Power Density = (P x G) / (4πR²)

Reference documents

See clause 8 of this test report

Test equipment used (Id number – see clause 6 of this test report)

CMC S129

Measurement uncertainty: See clause 7 of this test report

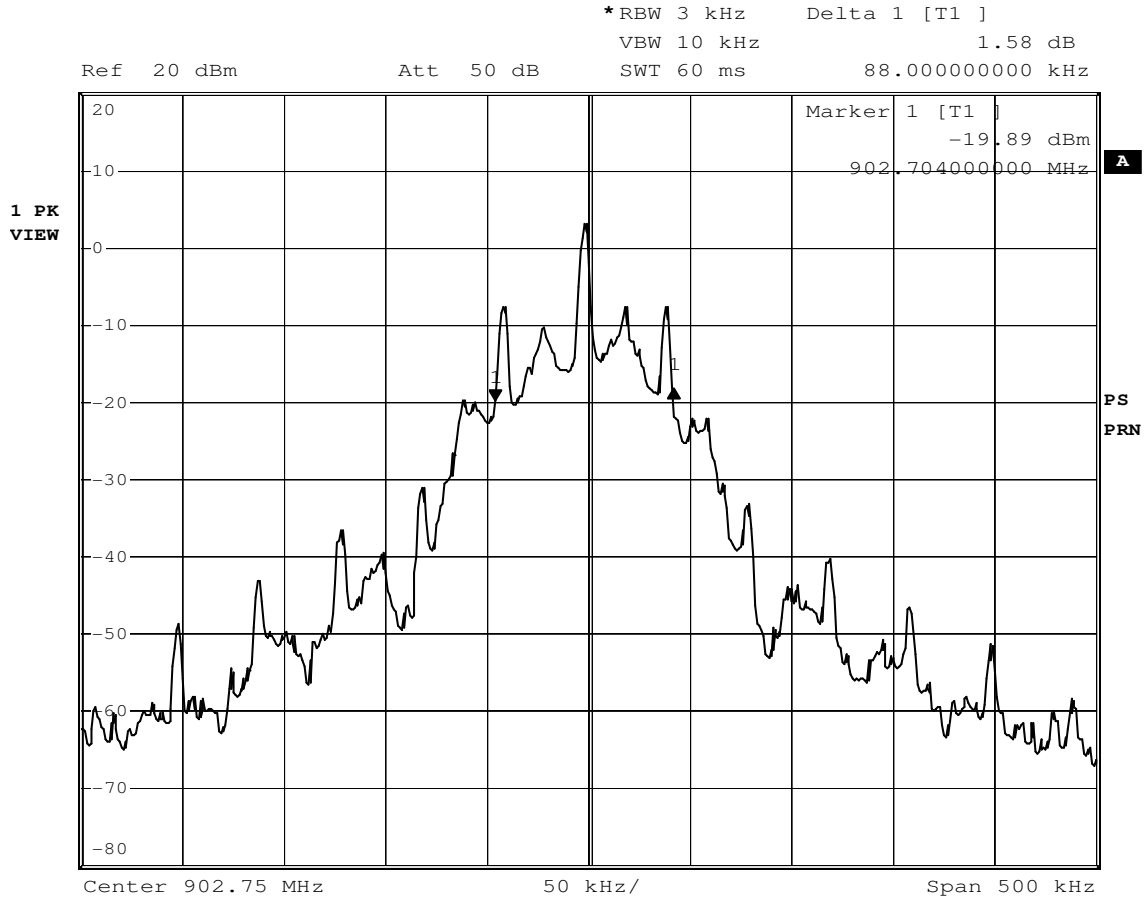
Result

The requirements are met



12. Graphs and Tables

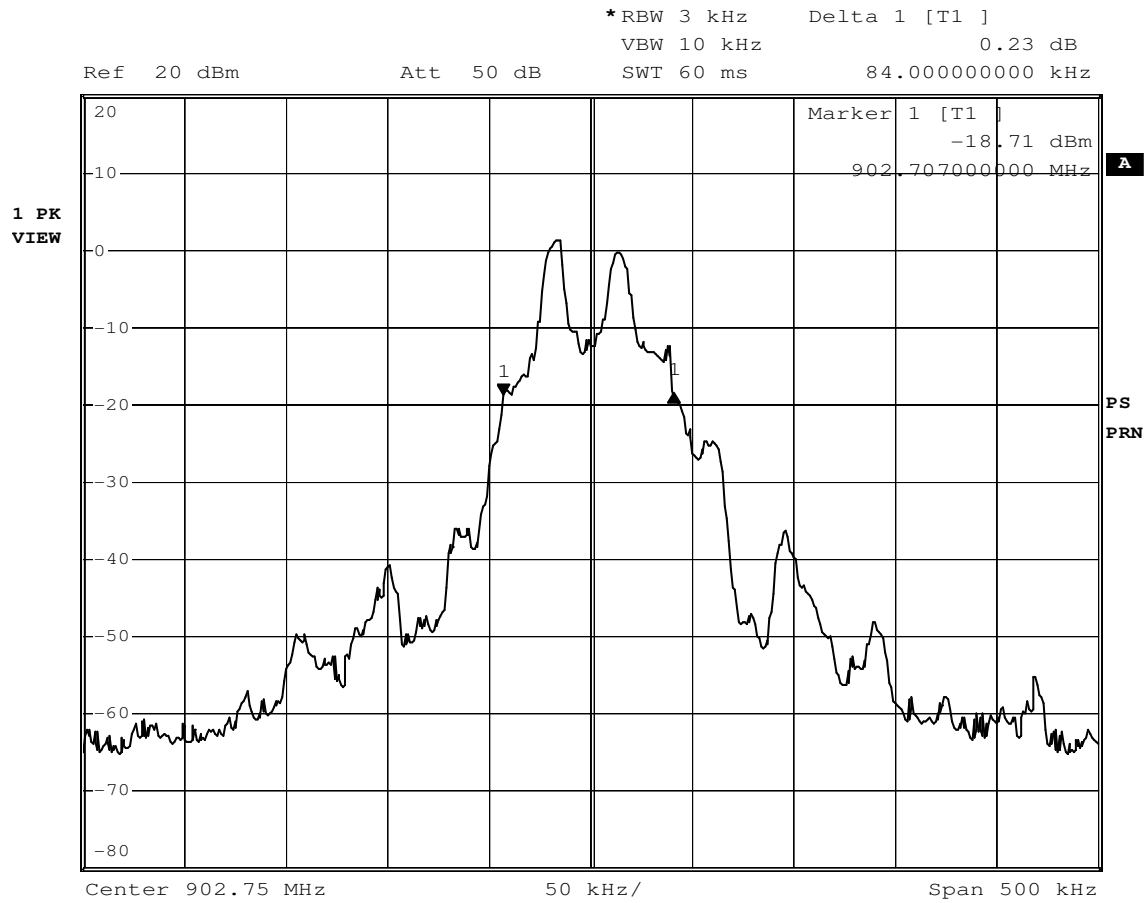
G08036801



Date: 2.APR.2008 15:27:02



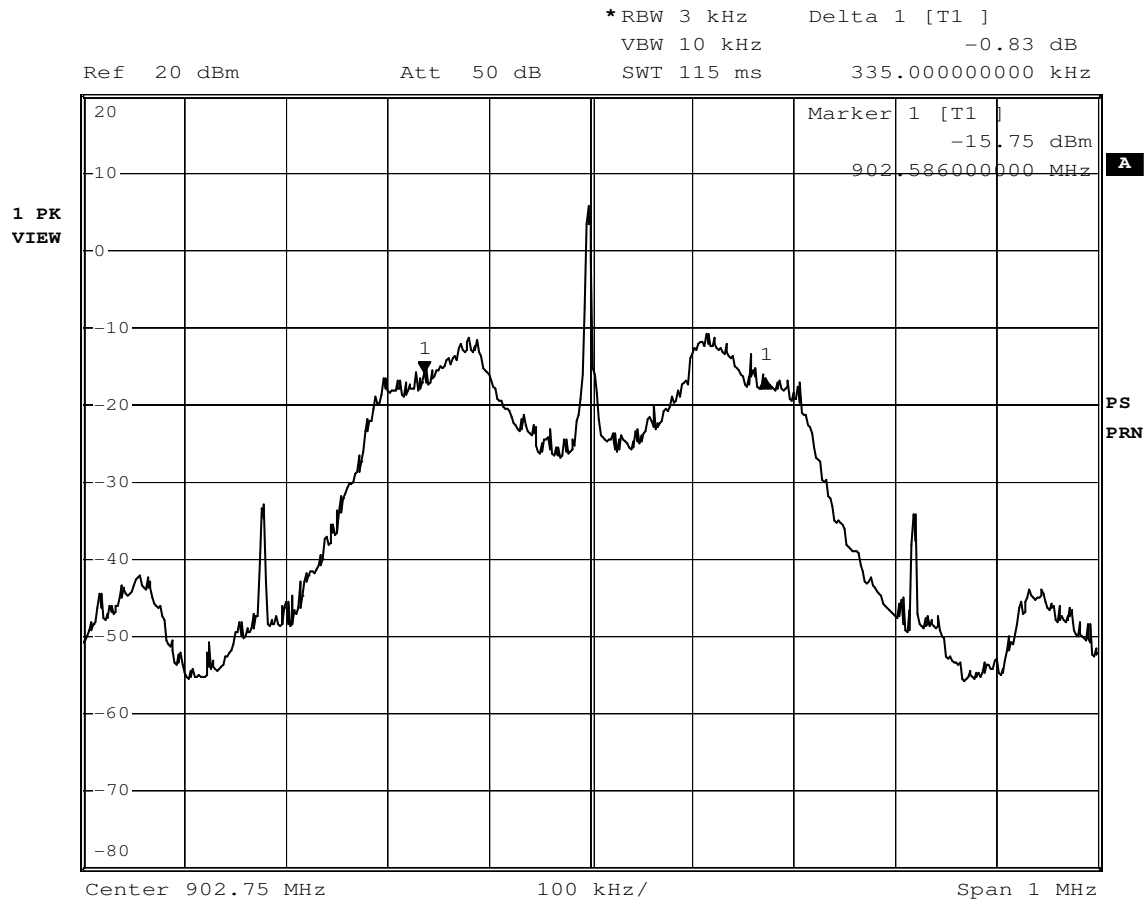
G08036802



Date: 2.APR.2008 15:28:22



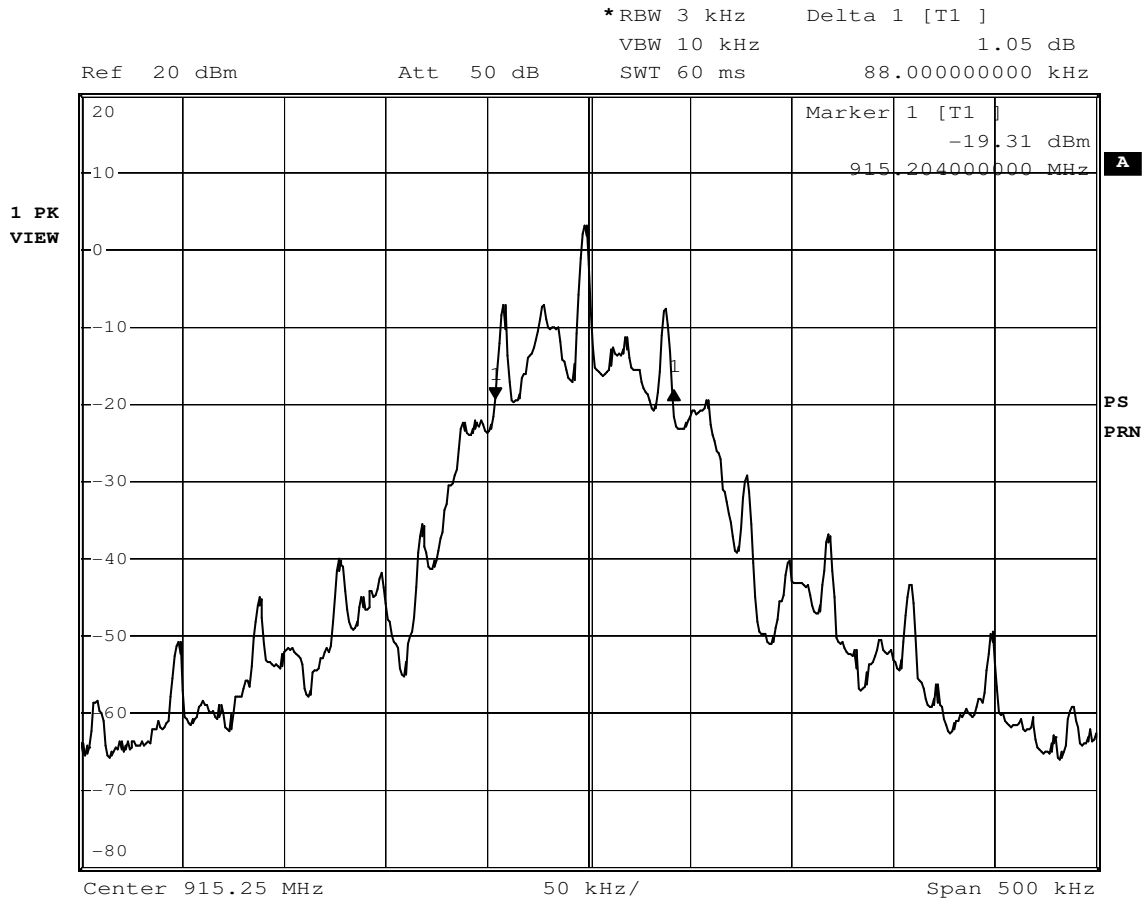
G08036803



Date: 2.APR.2008 15:31:57



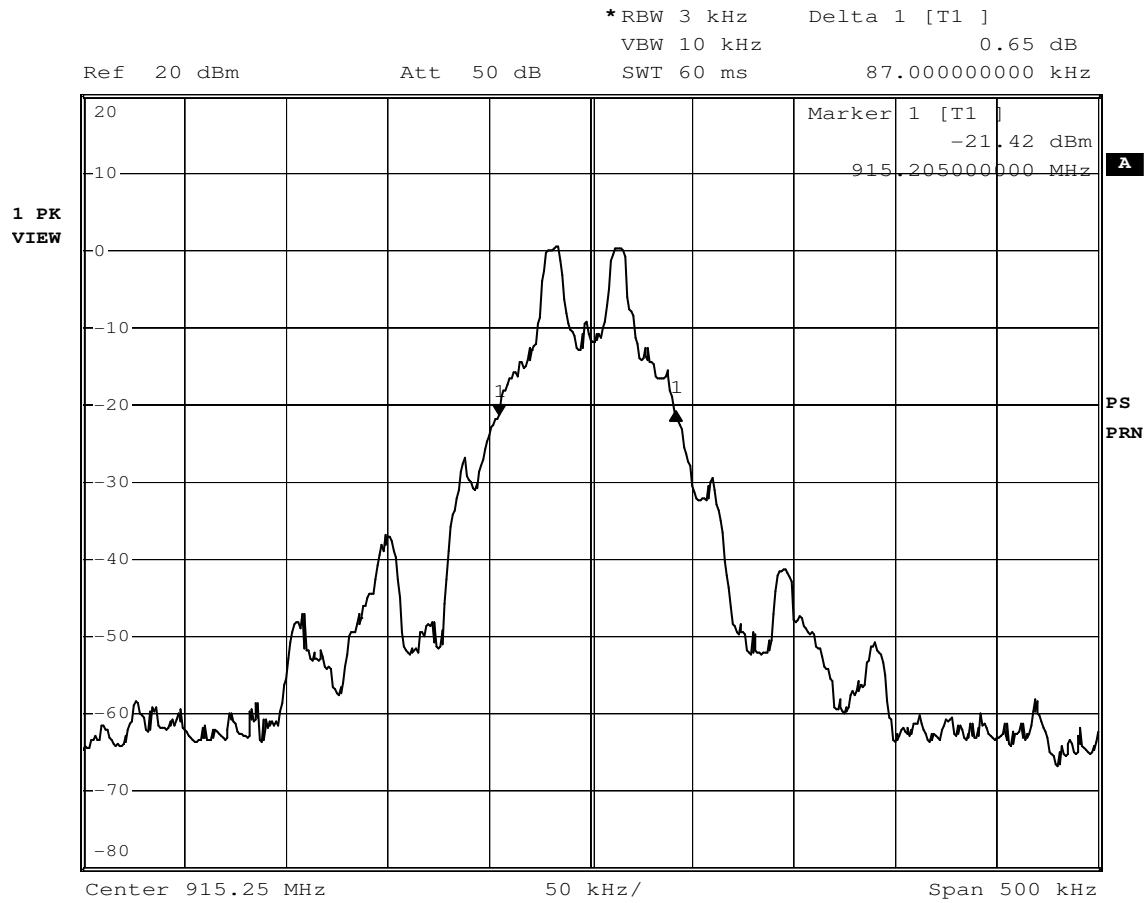
G08036804



Date: 2.APR.2008 15:25:19



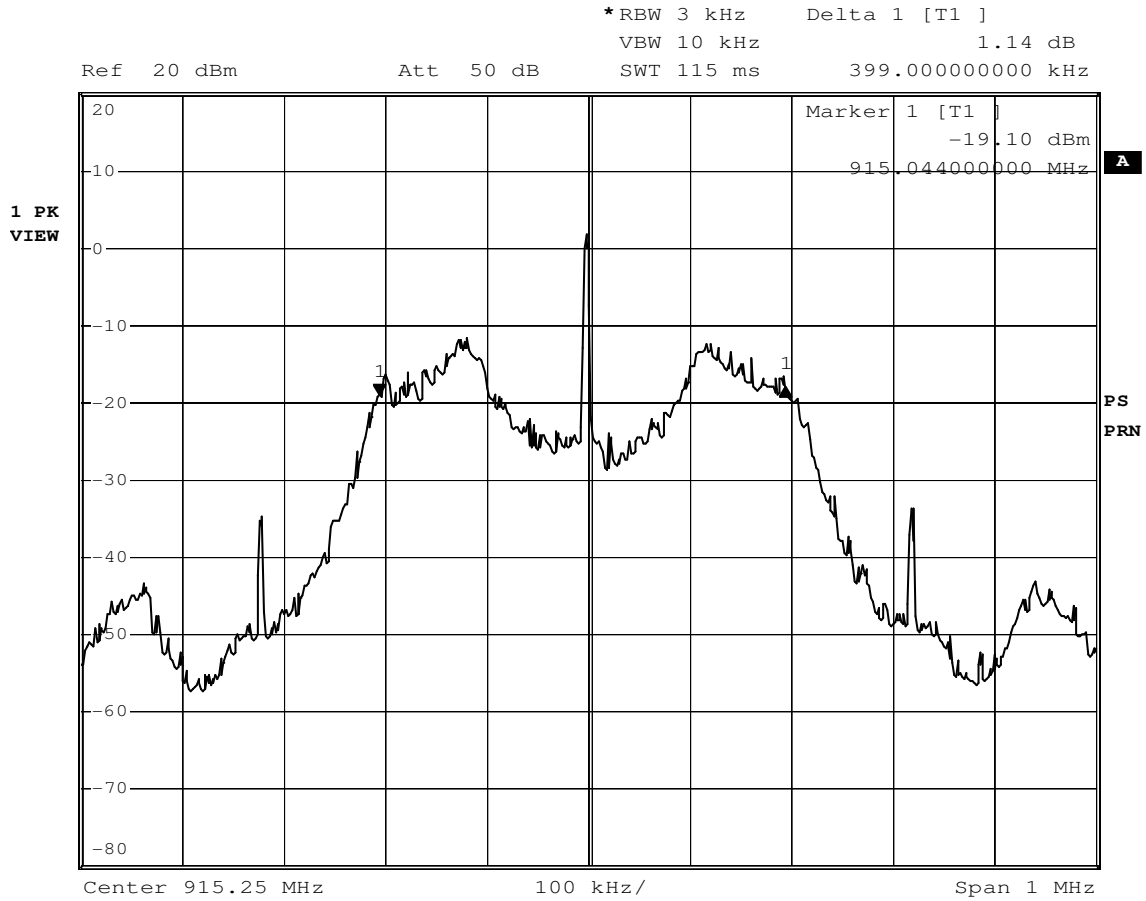
G08036805



Date: 2.APR.2008 15:22:53



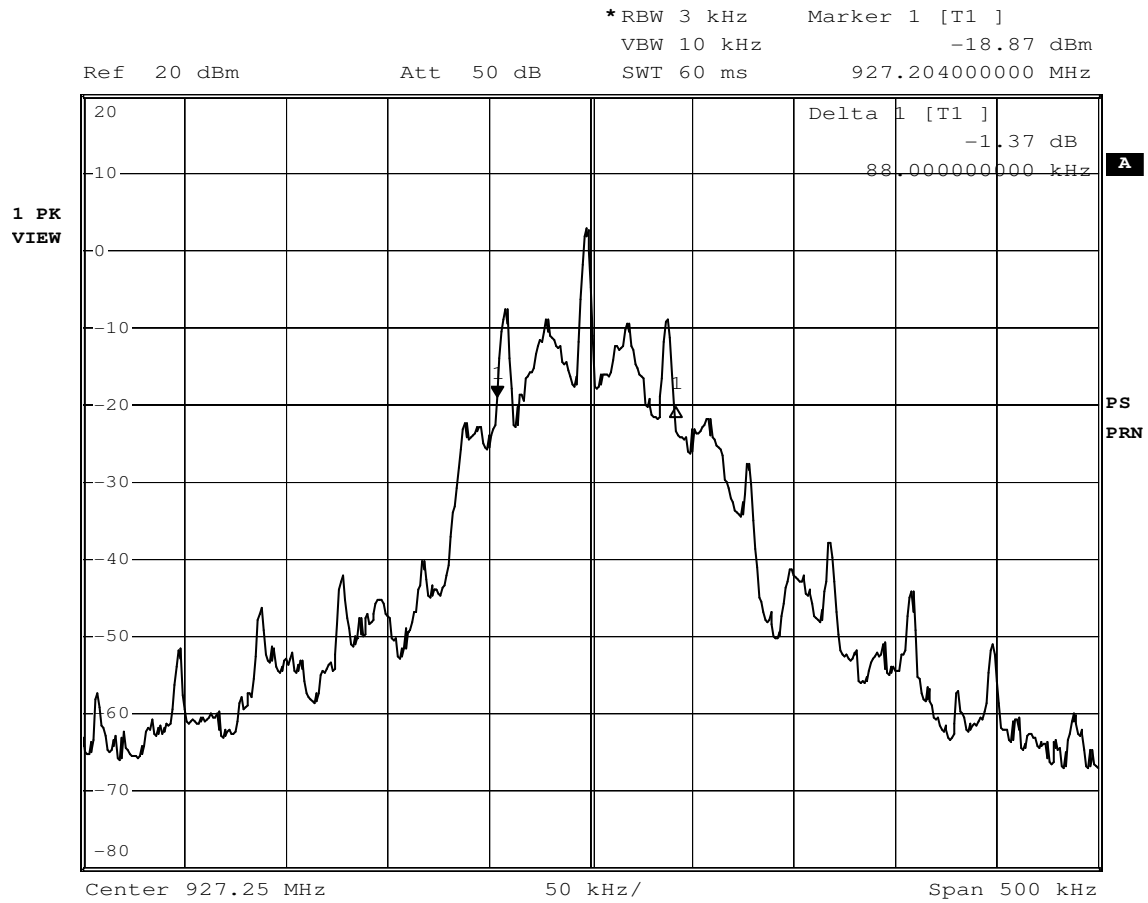
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Date: 2.APR.2008 15:21:05



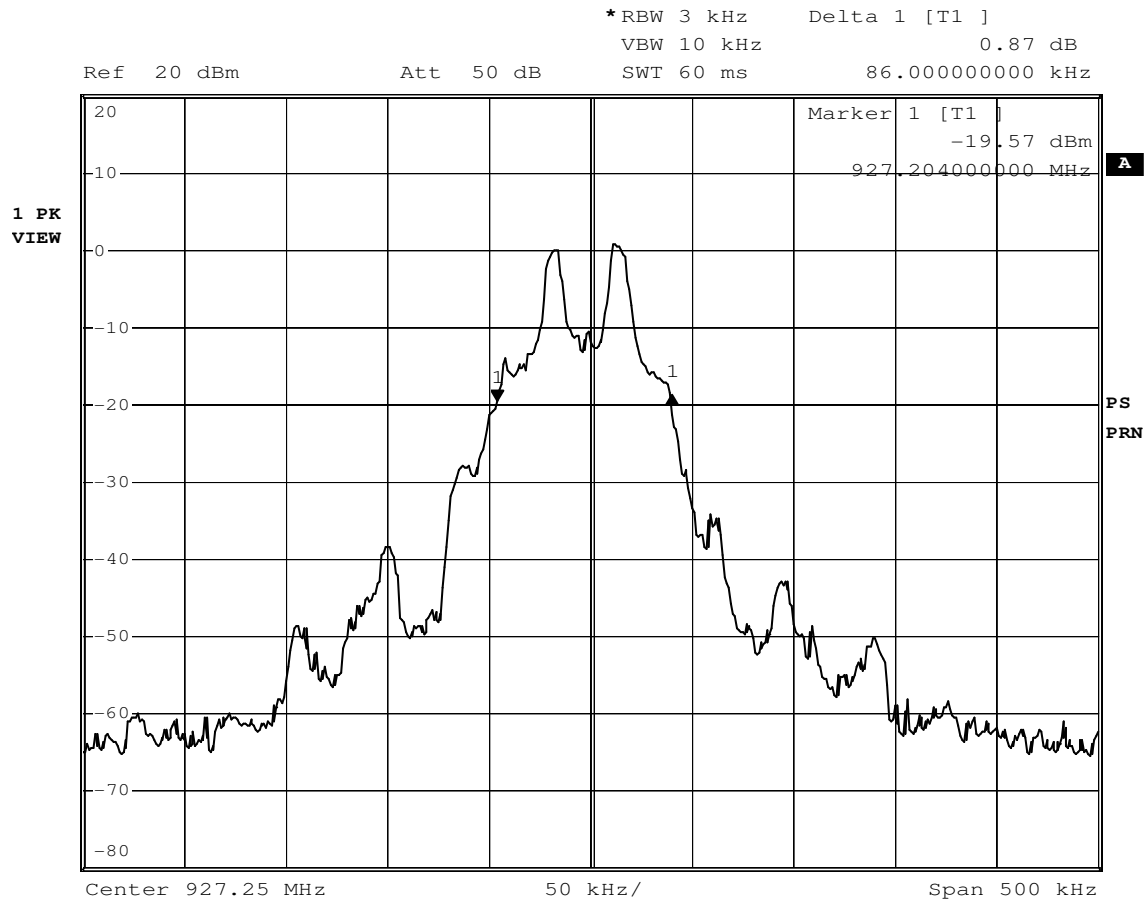
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Date: 2.APR.2008 15:38:23



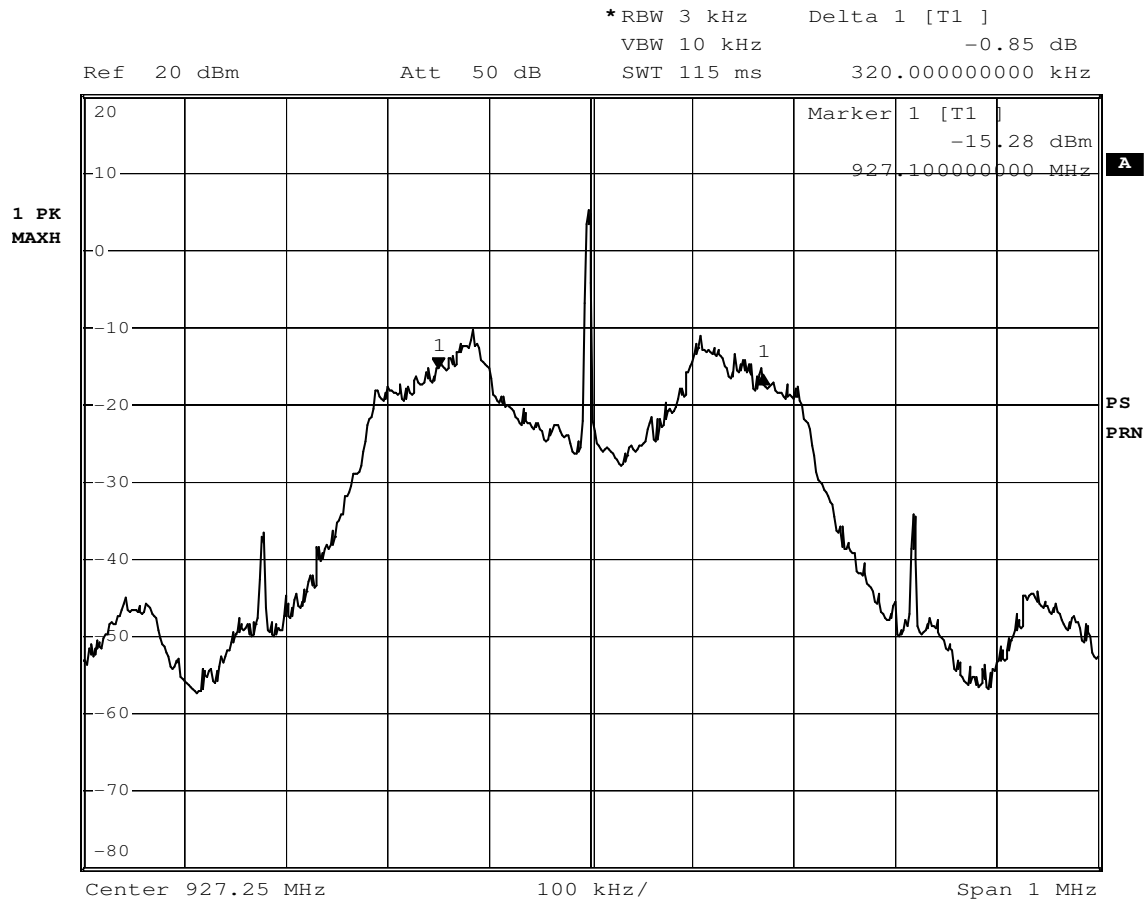
G08036808



Date: 2.APR.2008 15:39:49



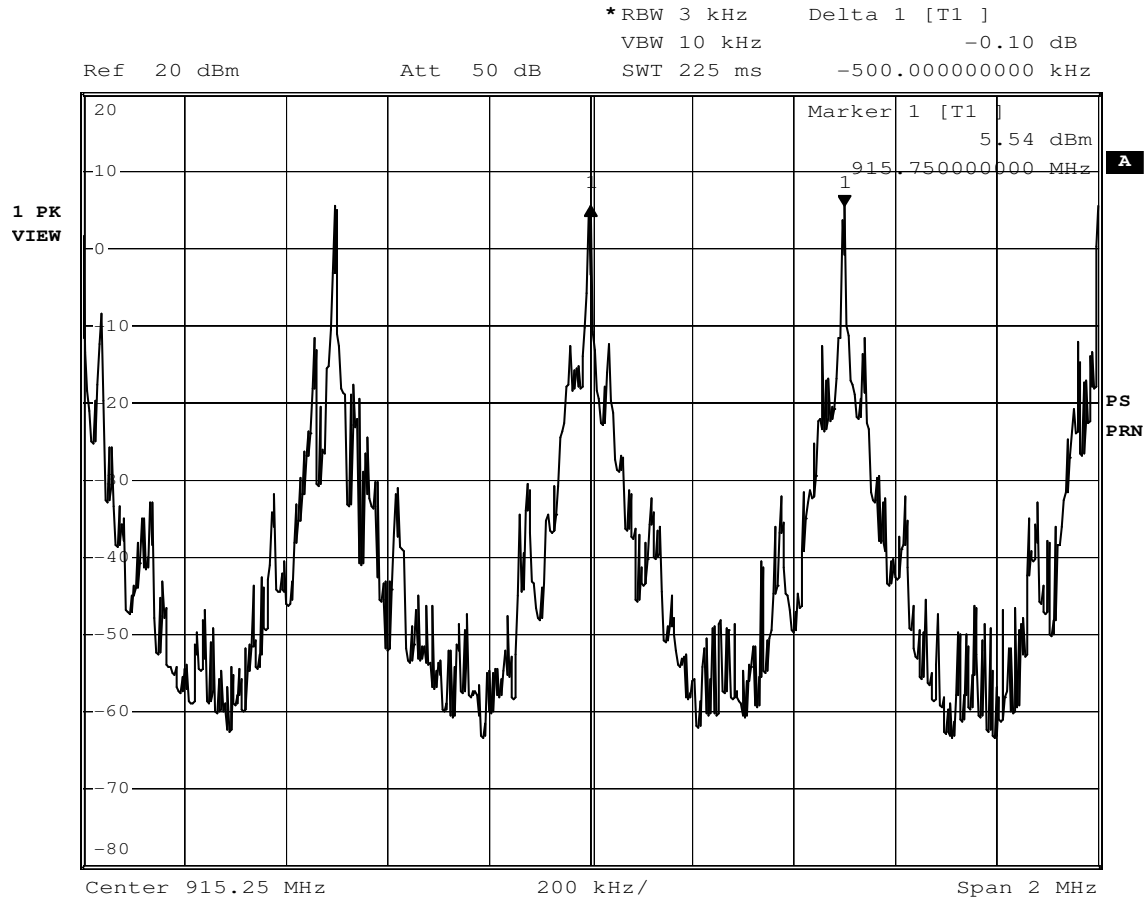
G08036809



Date: 2.APR.2008 15:41:45



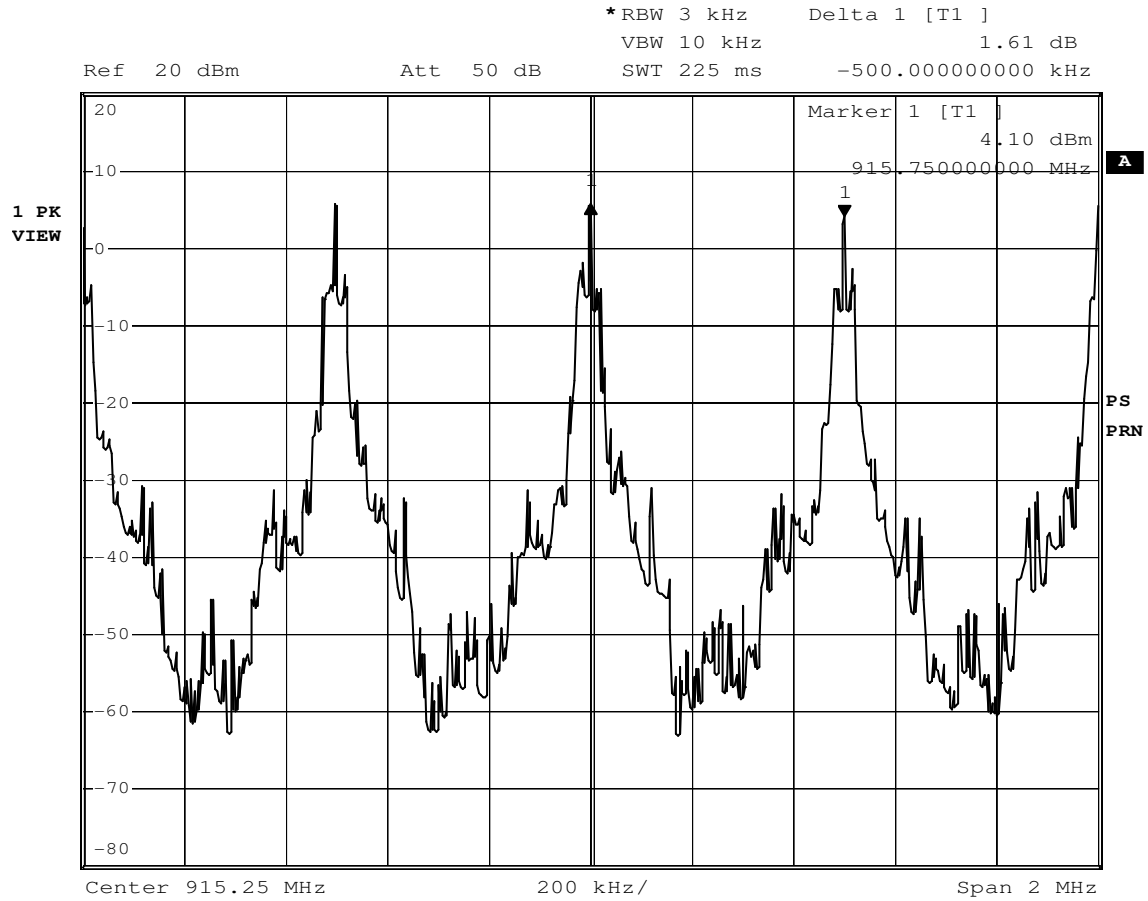
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Date: 2.APR.2008 15:54:44



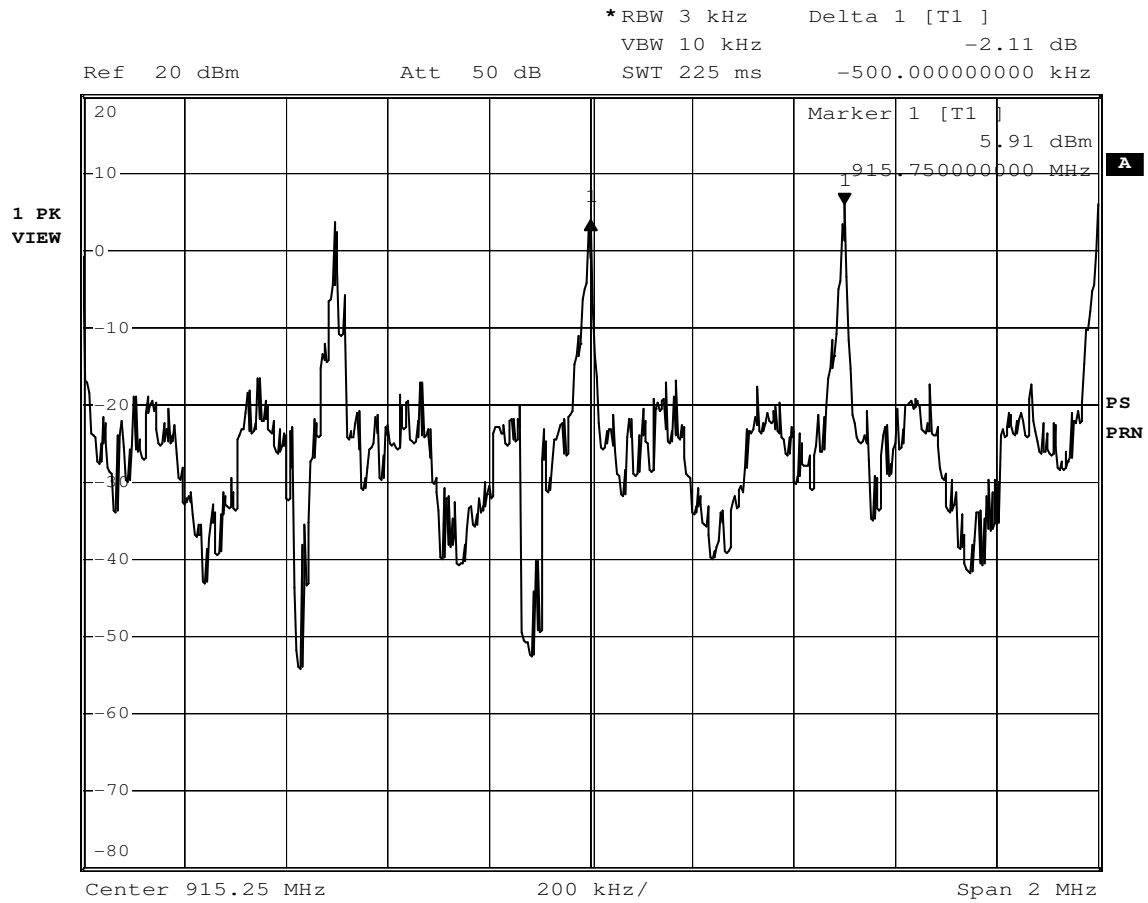
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Date: 2.APR.2008 15:59:57



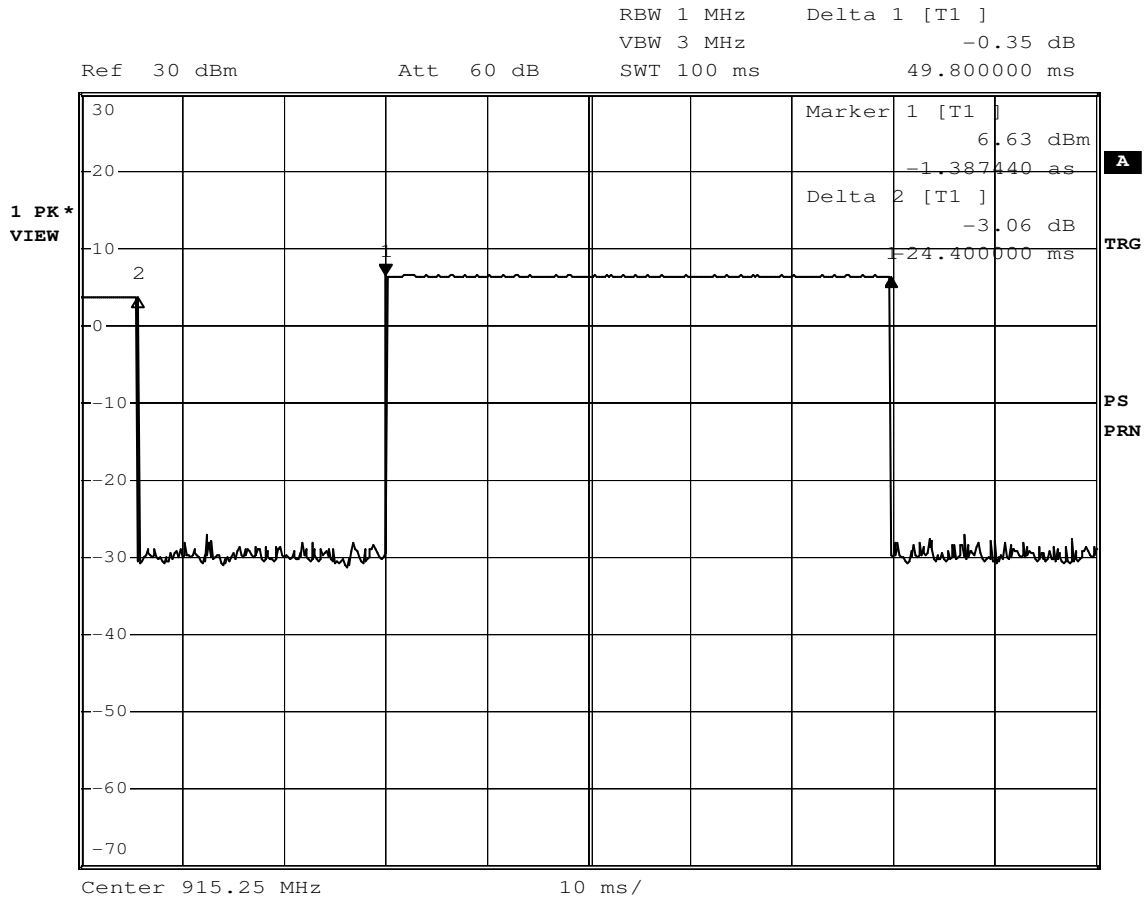
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Date: 2.APR.2008 16:04:49



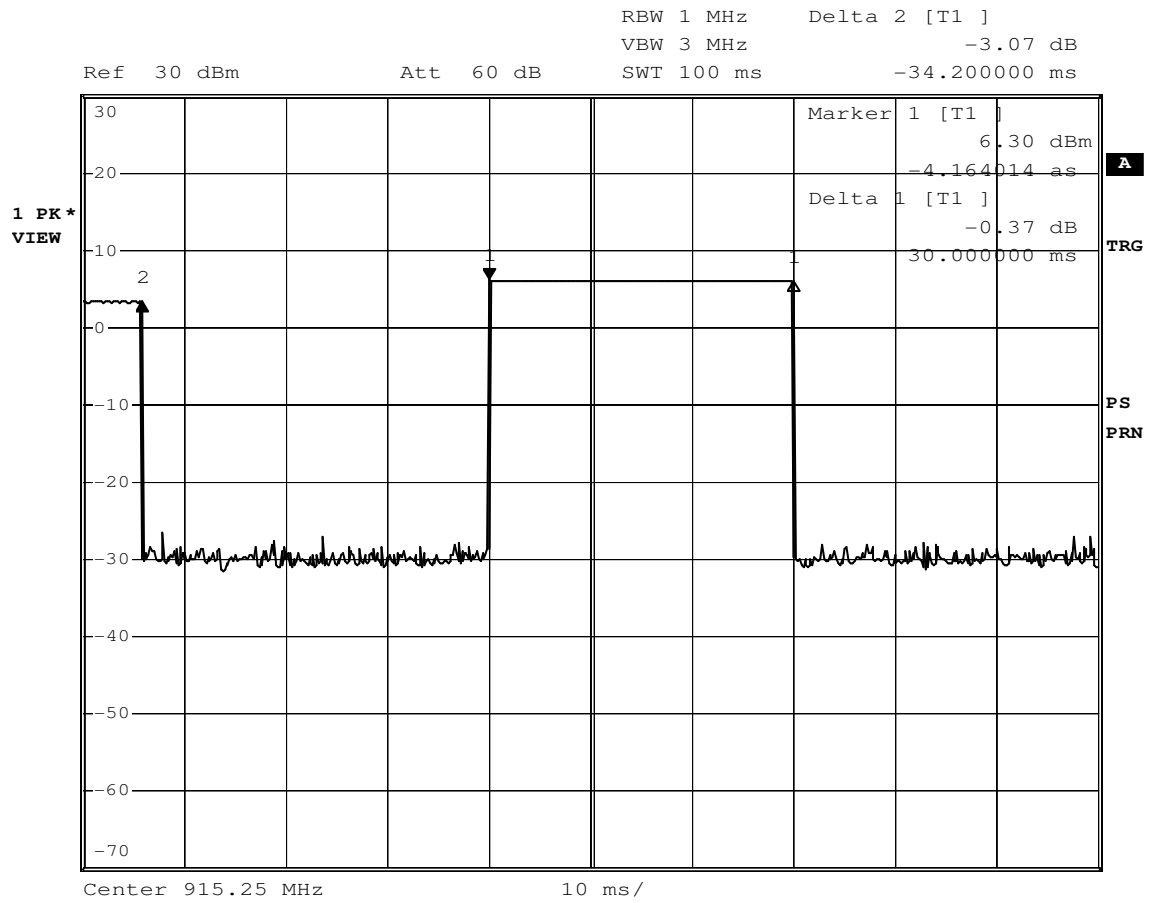
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Date: 3.APR.2008 08:50:06



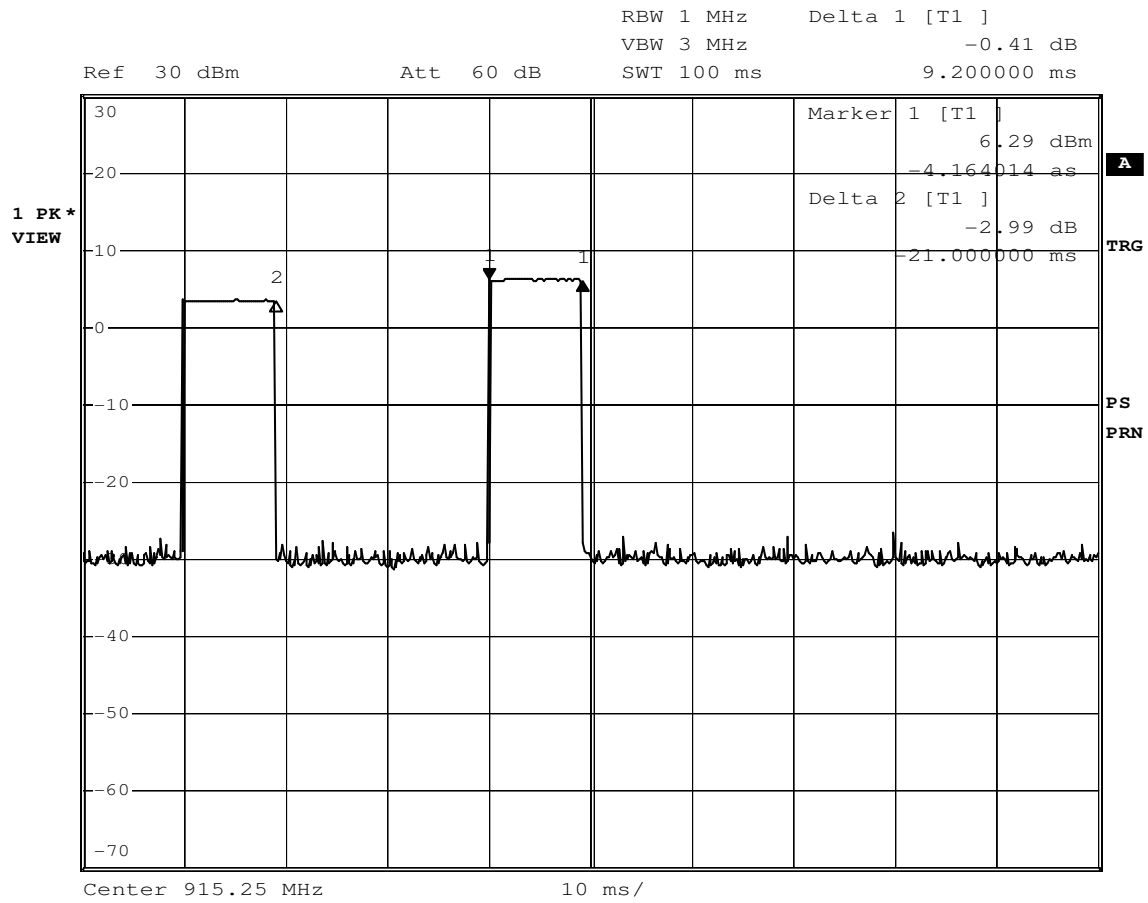
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Date: 3.APR.2008 08:54:55



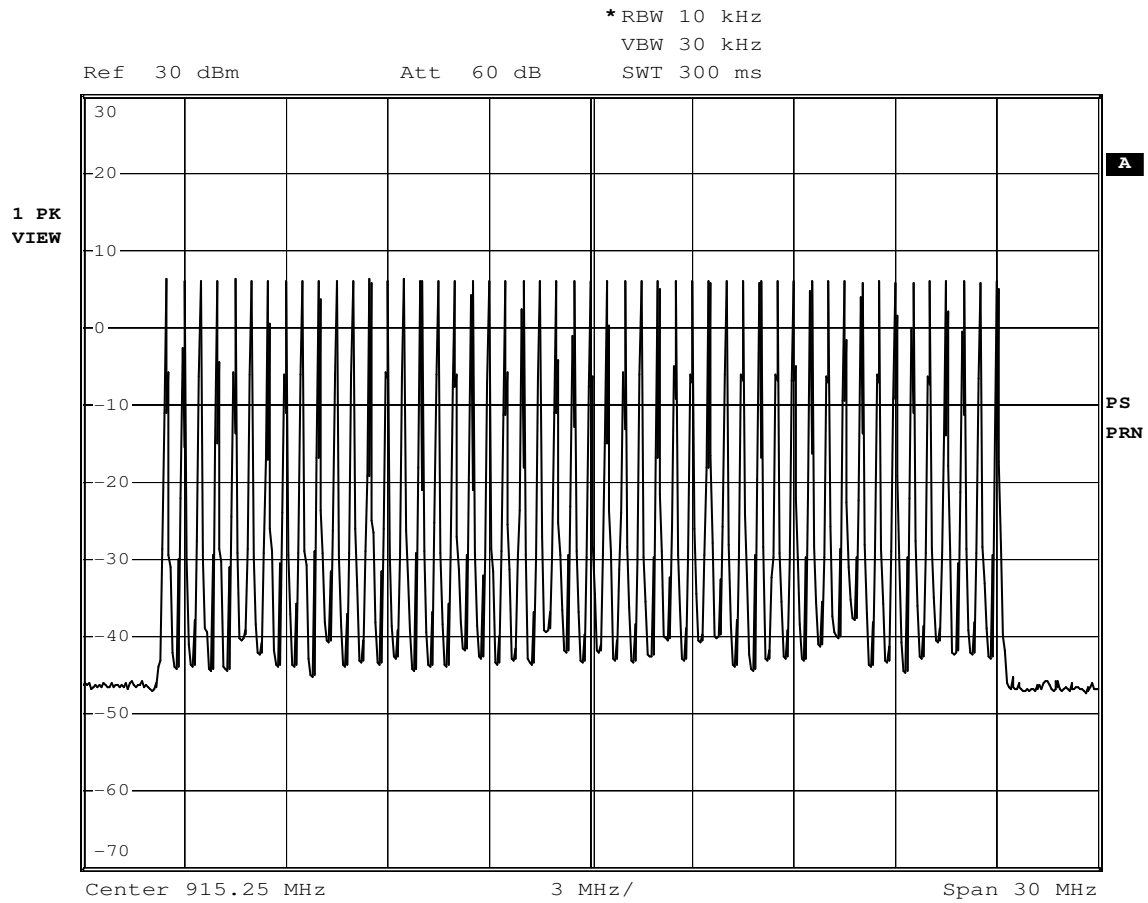
G08036815



Date: 3.APR.2008 09:10:19



G08036816



Date: 3.APR.2008 09:43:15



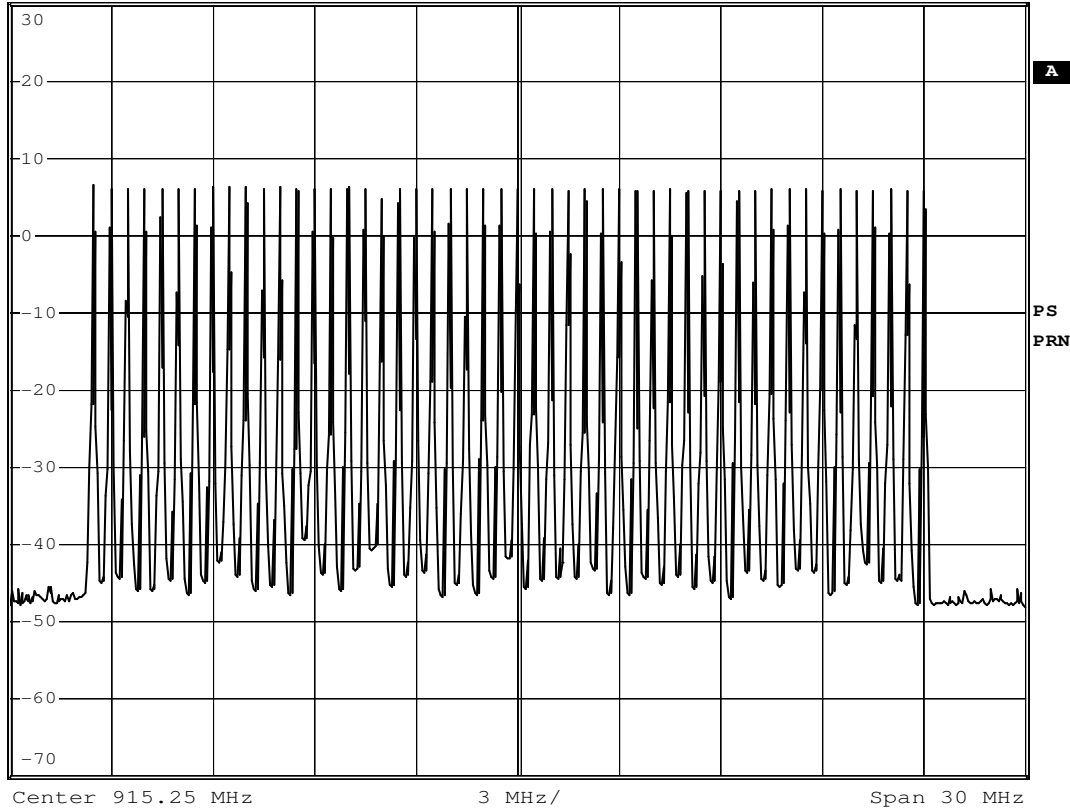
G08036817

*RBW 10 kHz
 VBW 30 kHz
 SWT 300 ms

Ref 30 dBm

Att 60 dB

1 PK
 VIEW

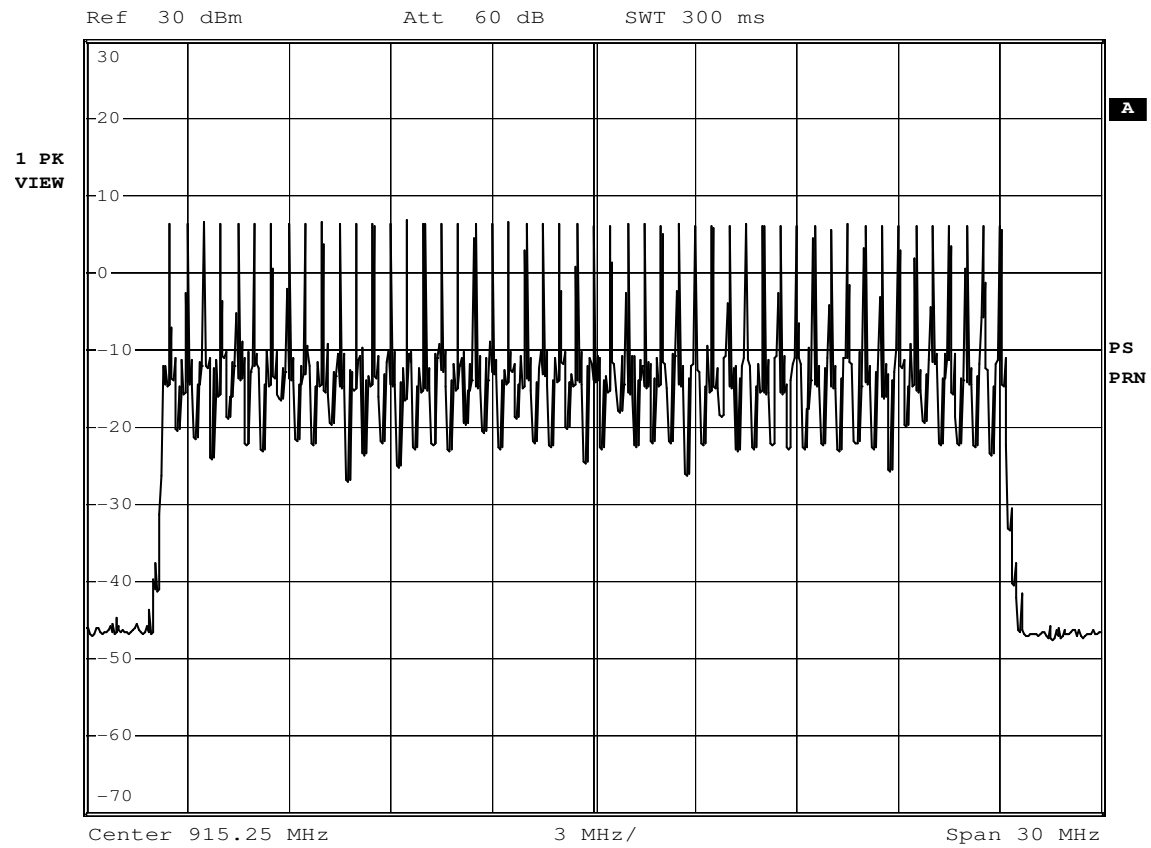


Date: 3.APR.2008 09:49:28



G08036818

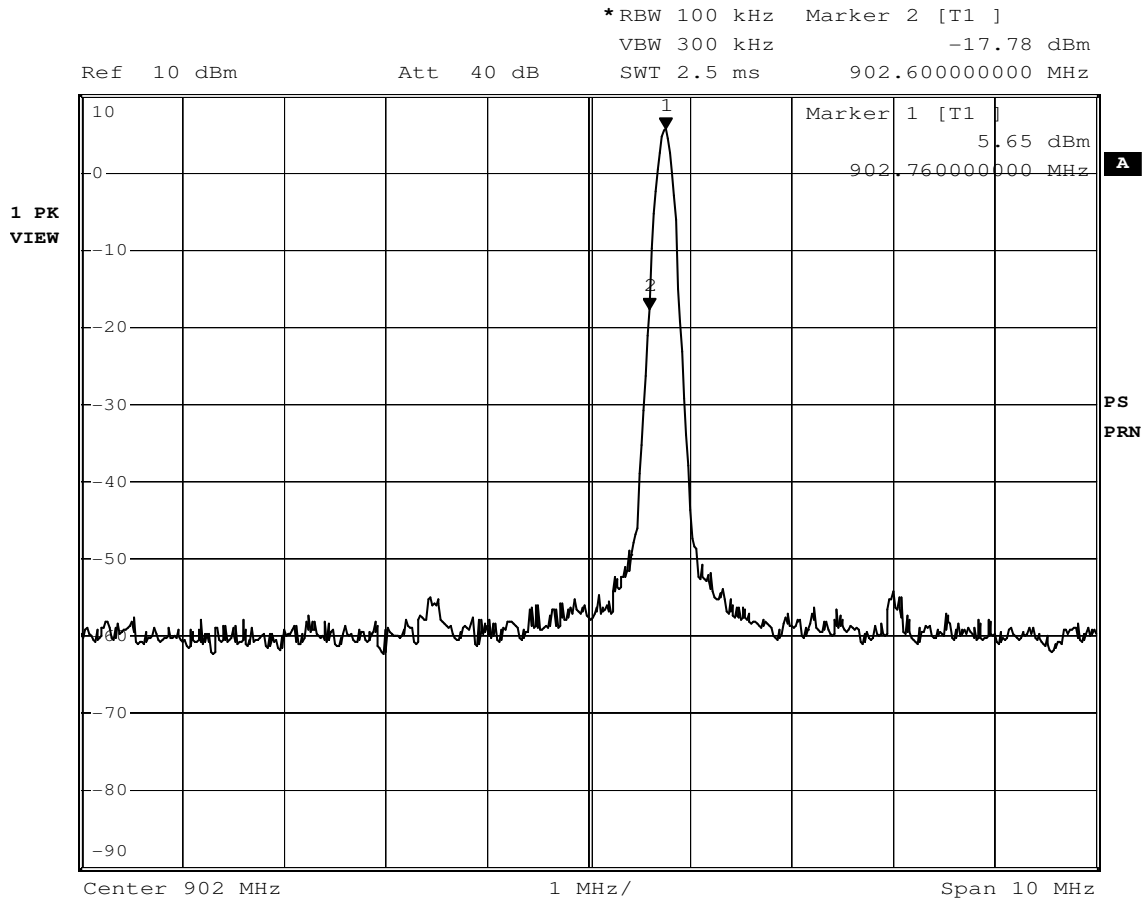
*RBW 10 kHz
VBW 30 kHz
SWT 300 ms



Date: 3.APR.2008 10:12:50



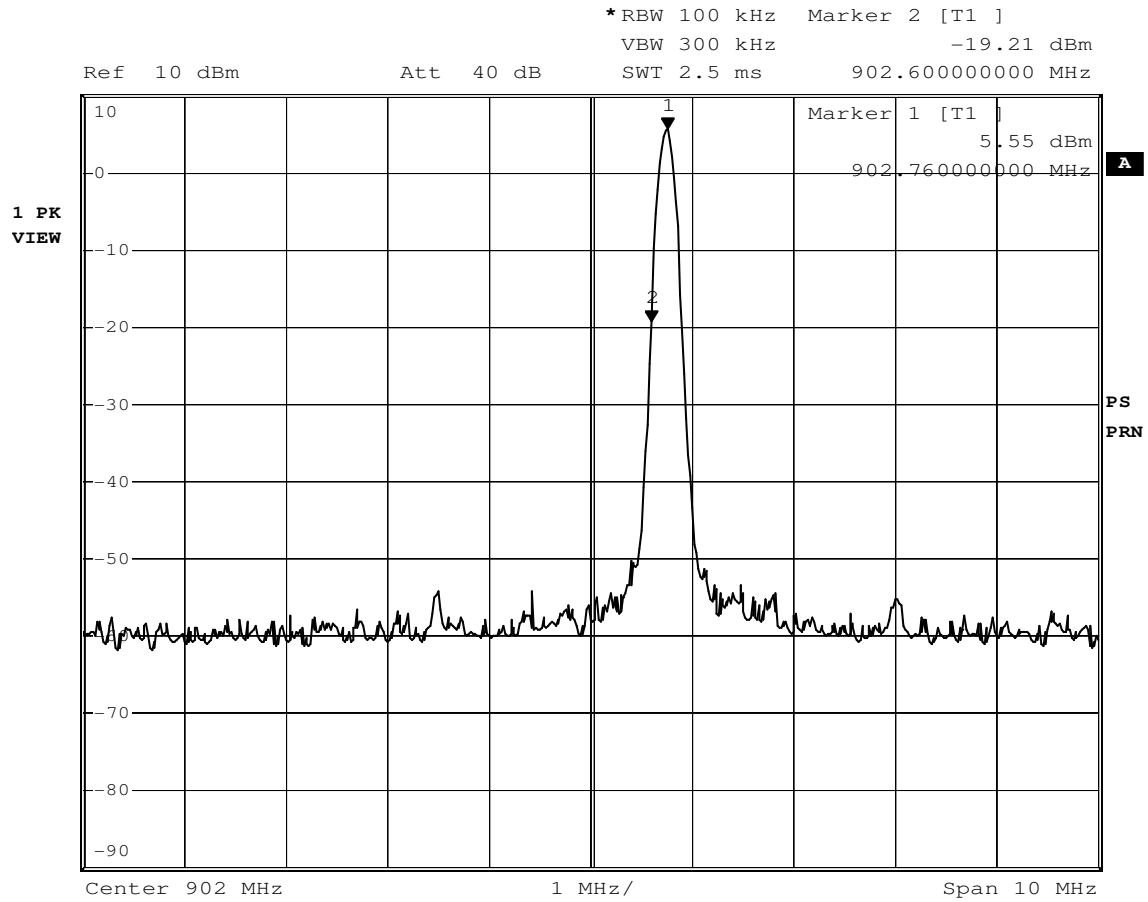
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Date: 3.APR.2008 13:34:33



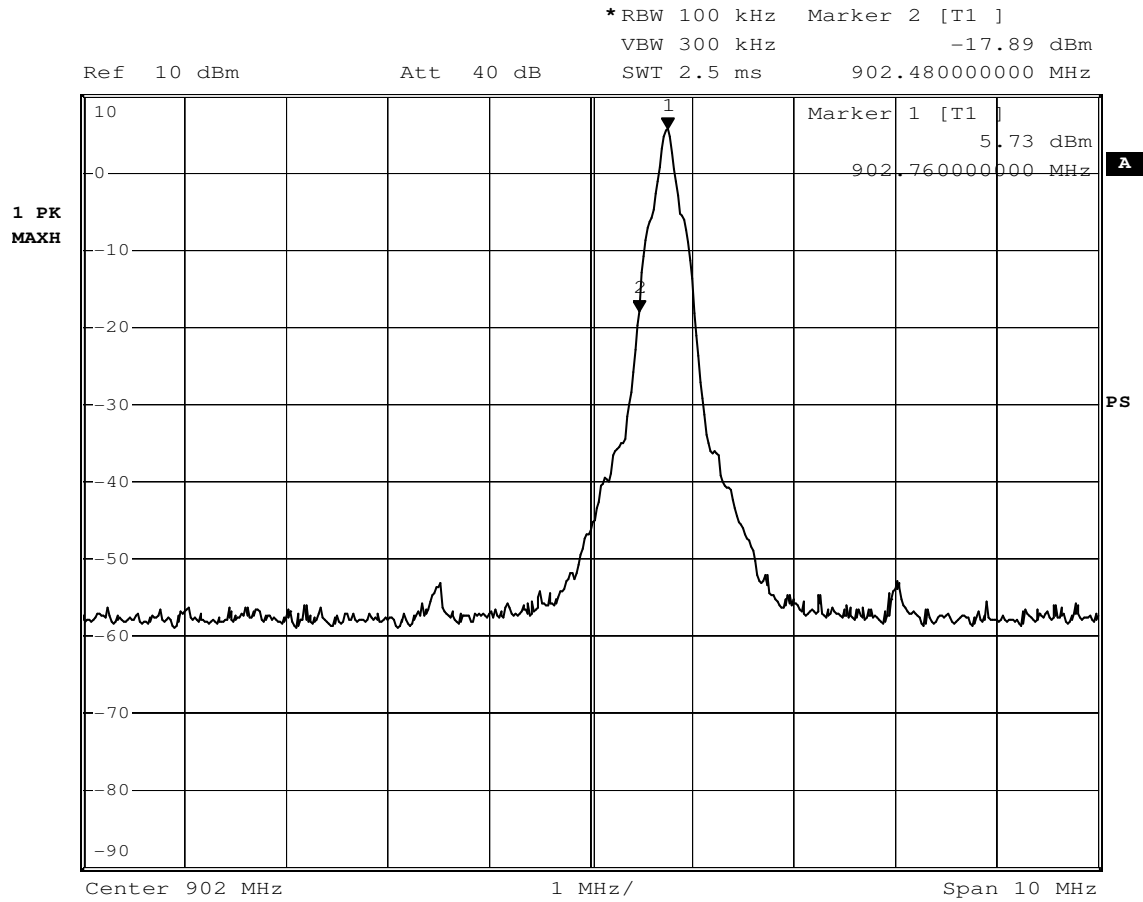
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Date: 3.APR.2008 13:35:18



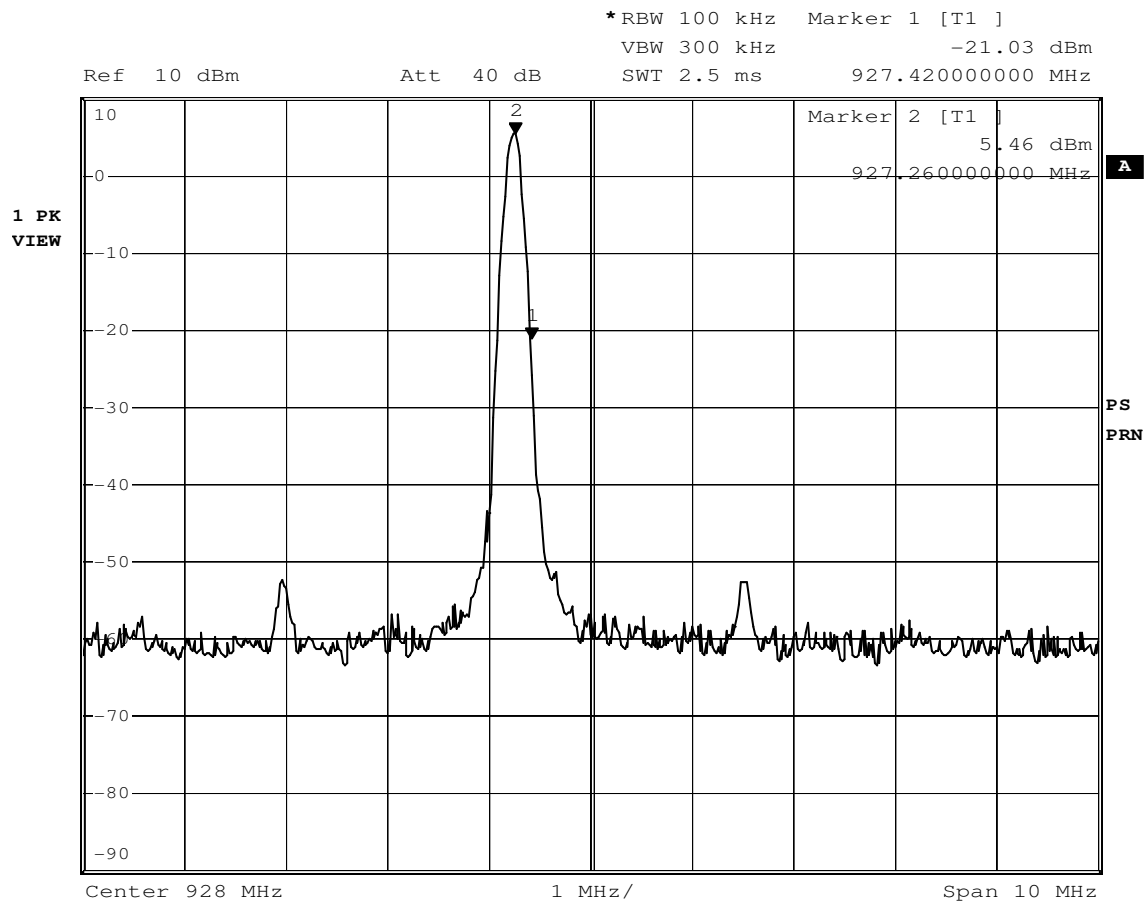
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Date: 3.APR.2008 13:37:10



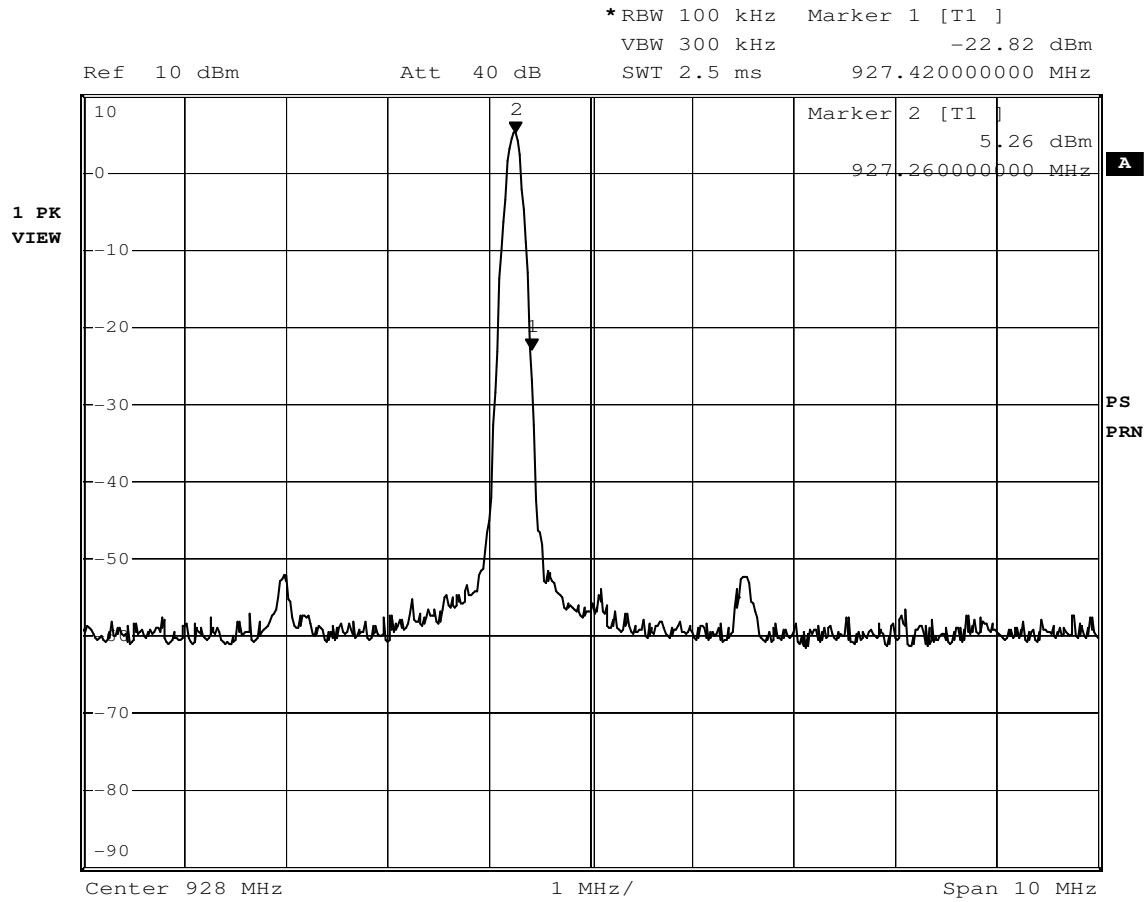
G08036831



Date: 3.APR.2008 13:41:10



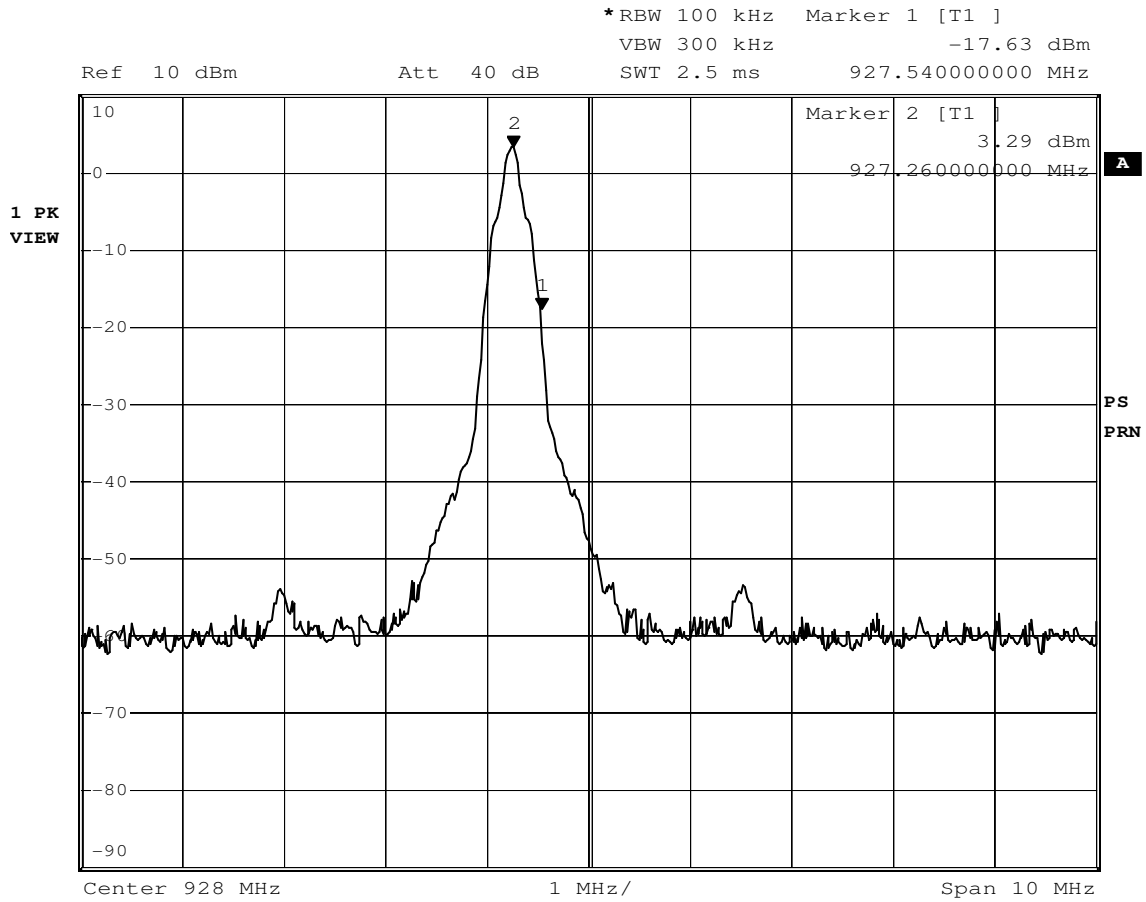
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Date: 3.APR.2008 13:42:43



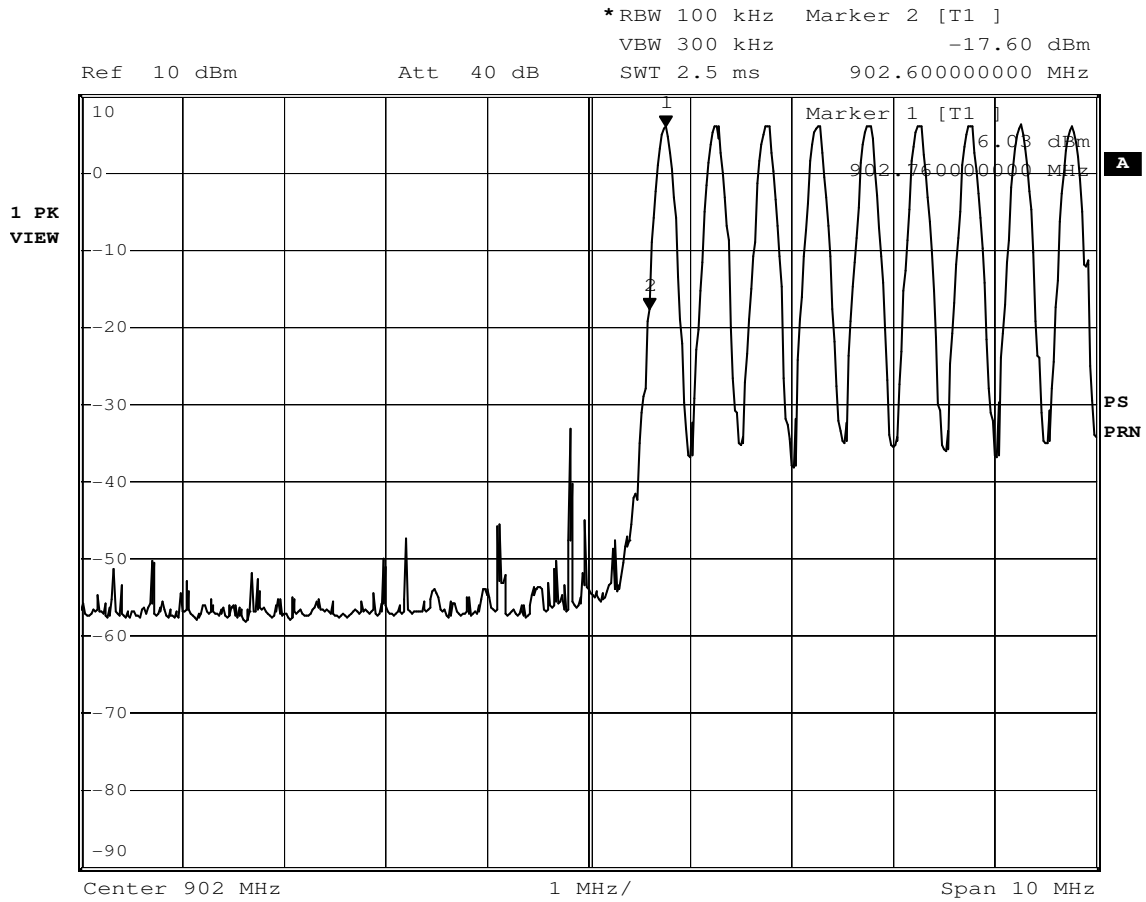
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Date: 3.APR.2008 13:44:28



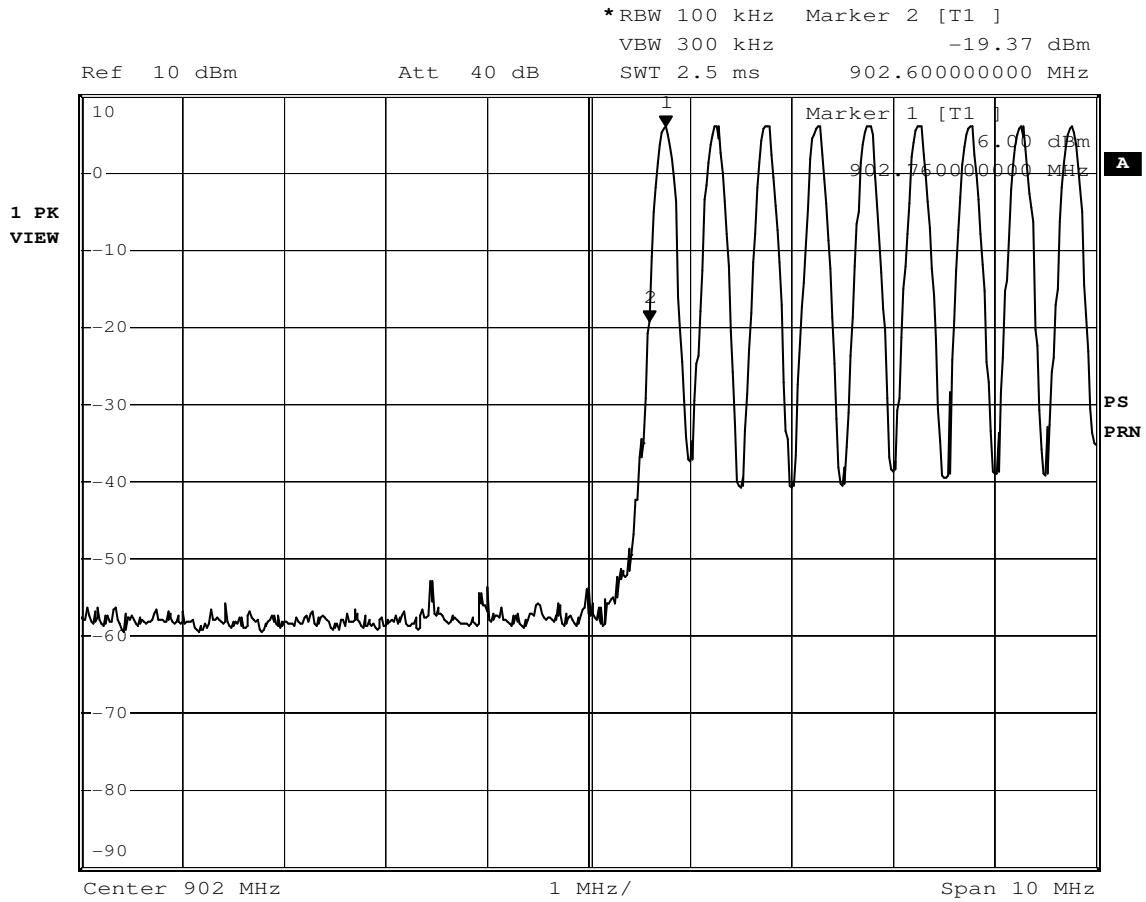
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Date: 3.APR.2008 13:52:26



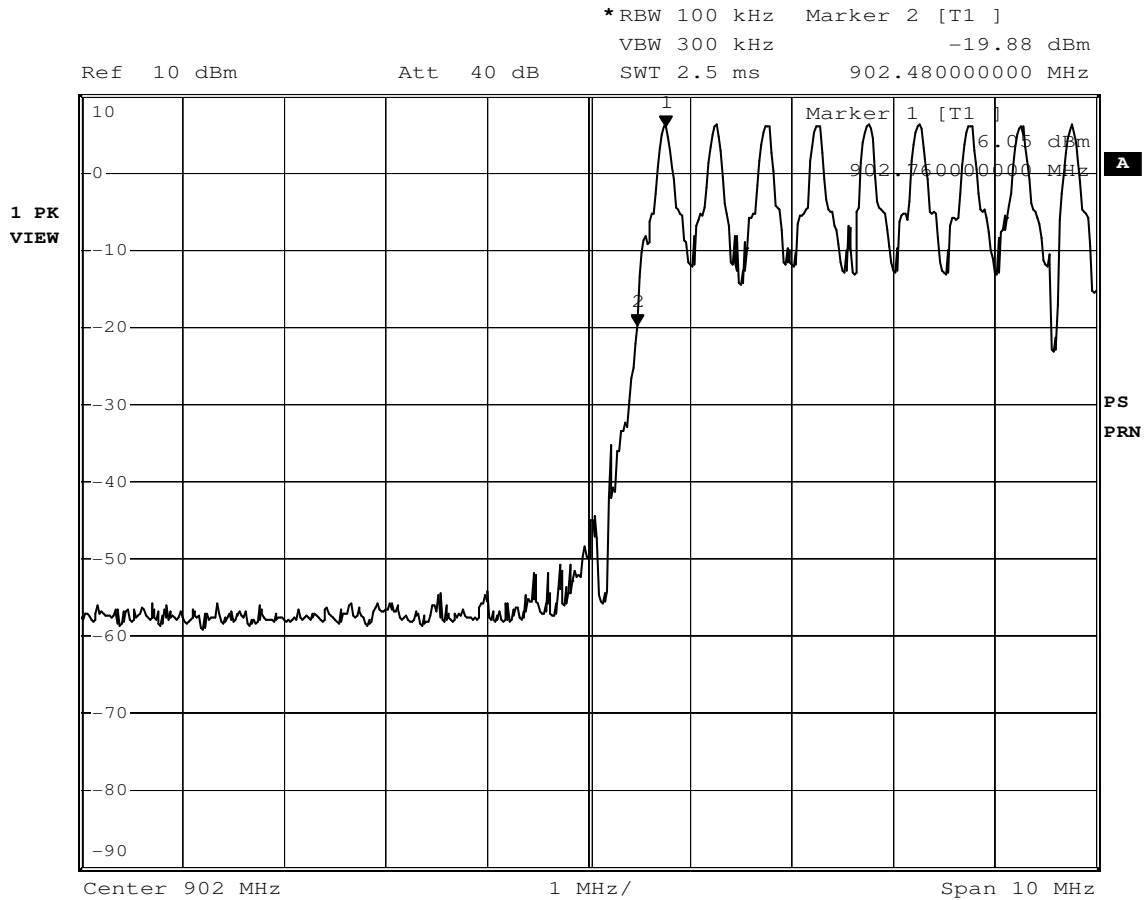
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Date: 3.APR.2008 13:53:54



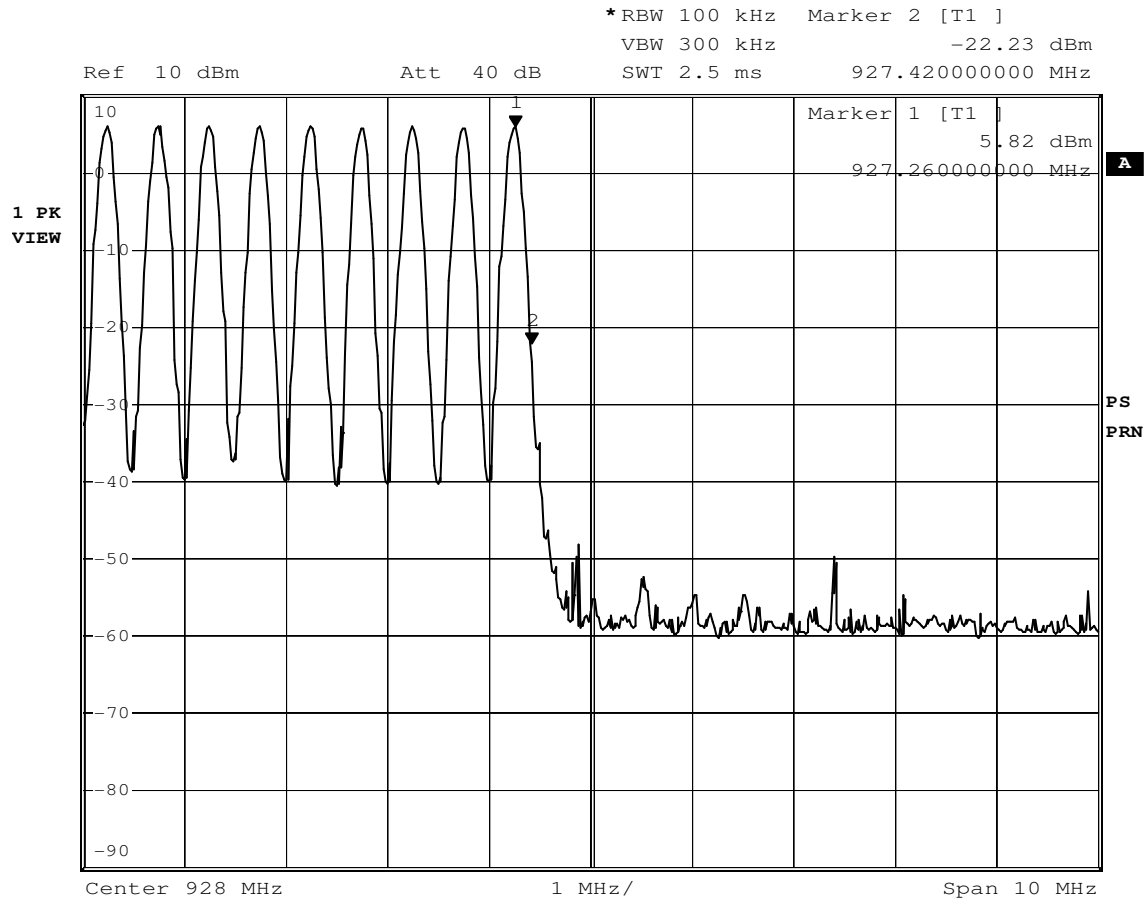
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Date: 3.APR.2008 13:56:13



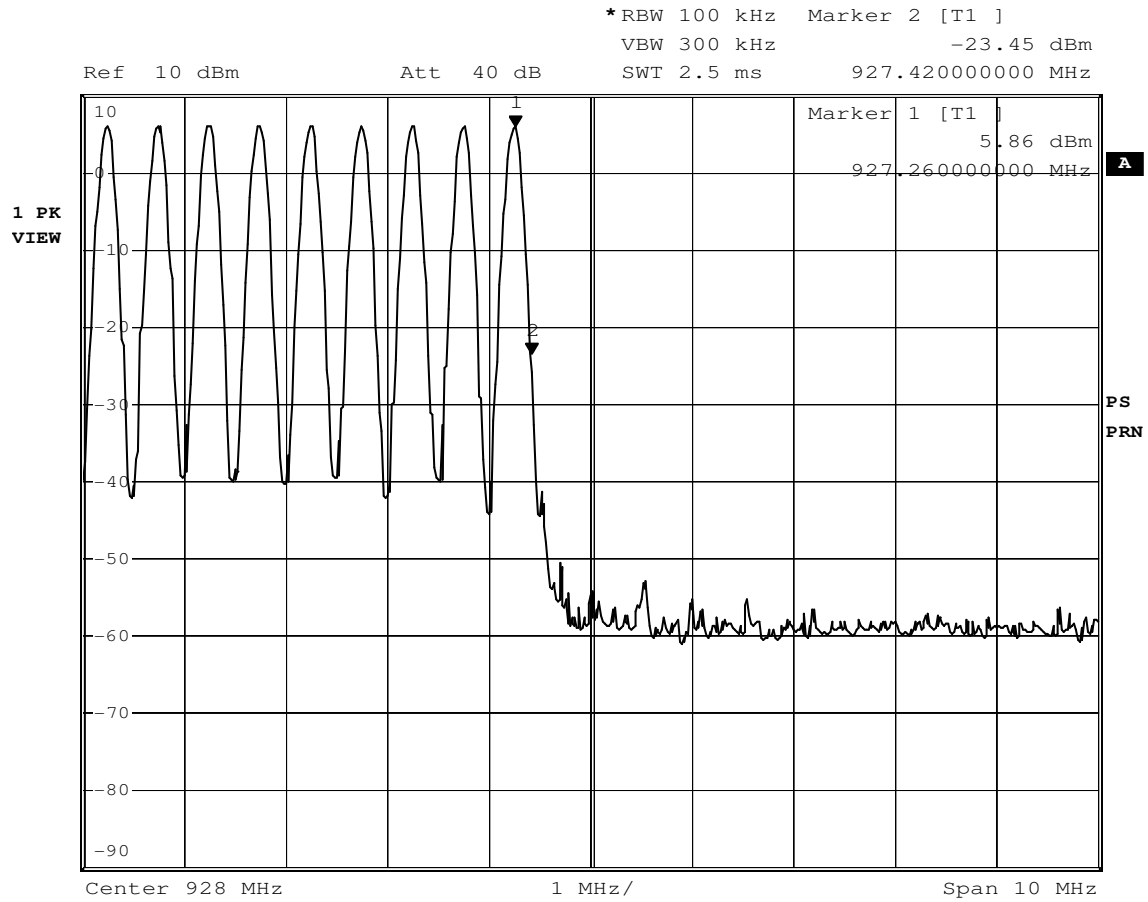
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Date: 3.APR.2008 13:58:20



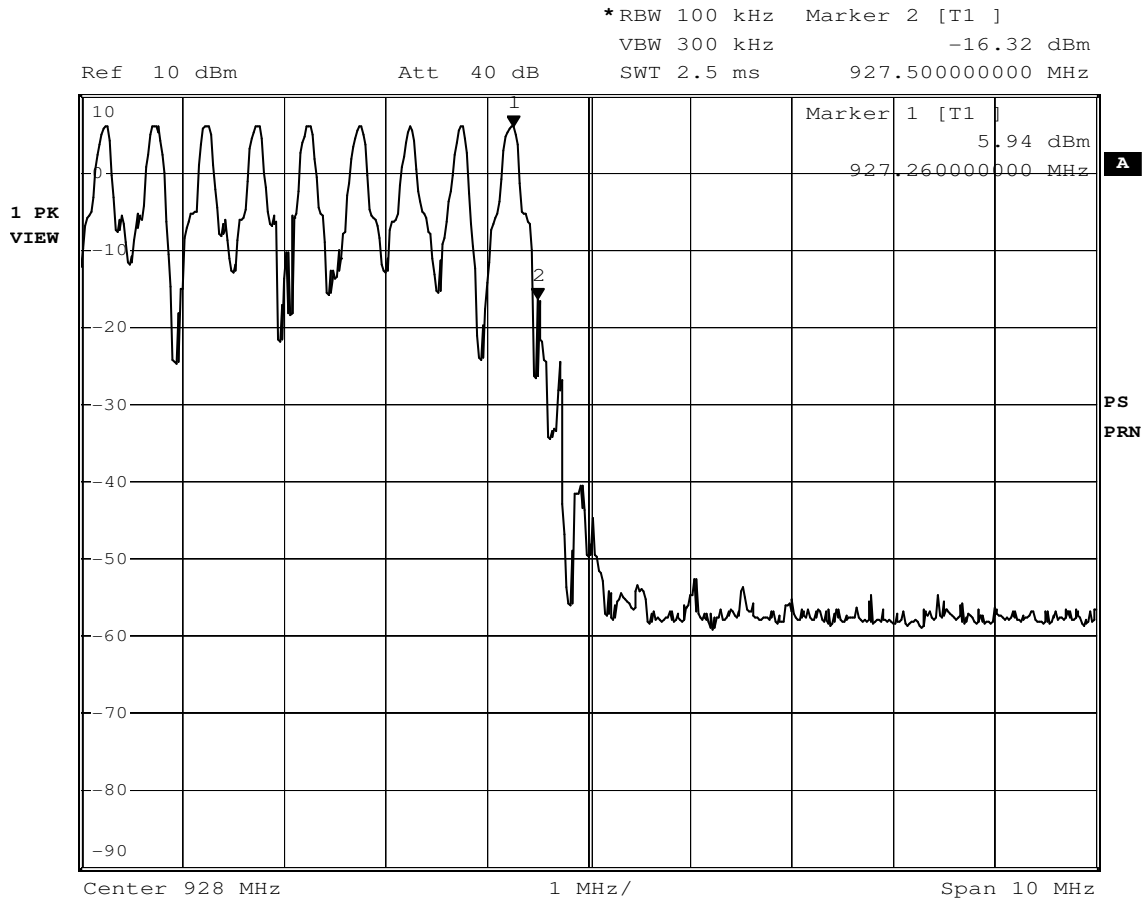
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Date: 3.APR.2008 13:59:22



G08036839



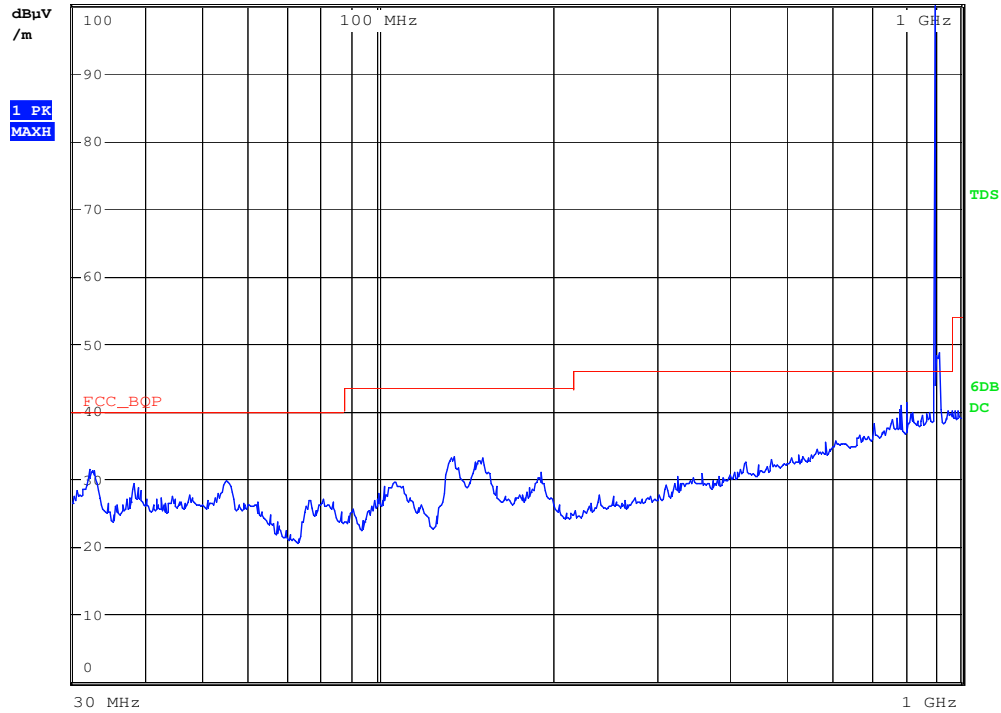
Date: 3.APR.2008 14:02:30



G08036840

RBW 120 kHz
MT 20 ms

Att 10 dB AUTO PREAMP ON



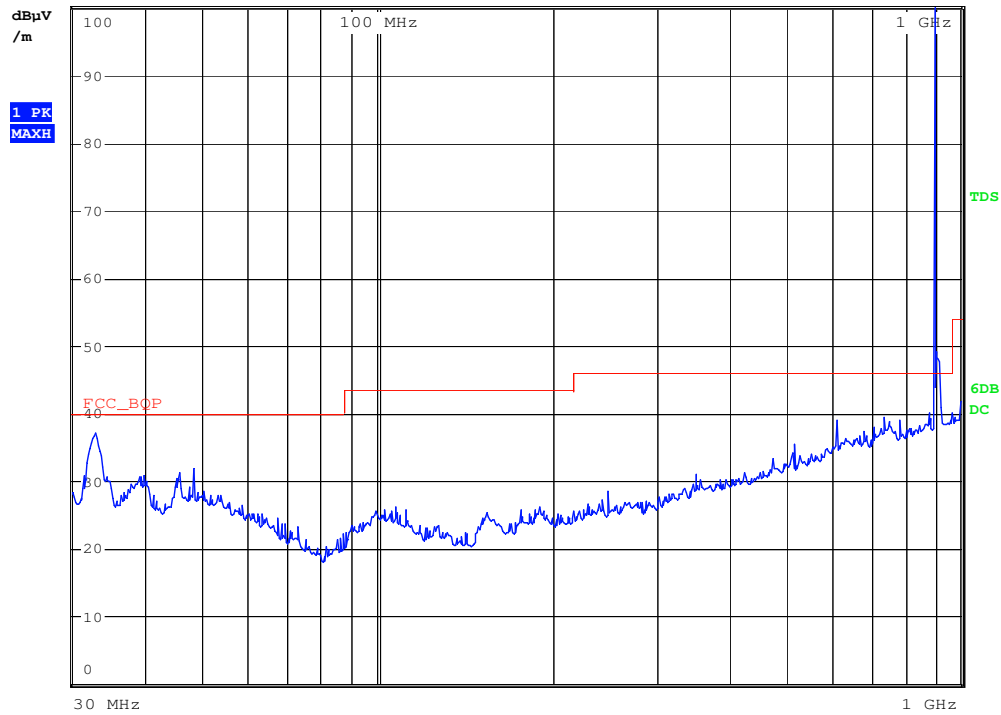
Date: 4.APR.2008 10:30:38



G08036841

RBW 120 kHz
MT 20 ms

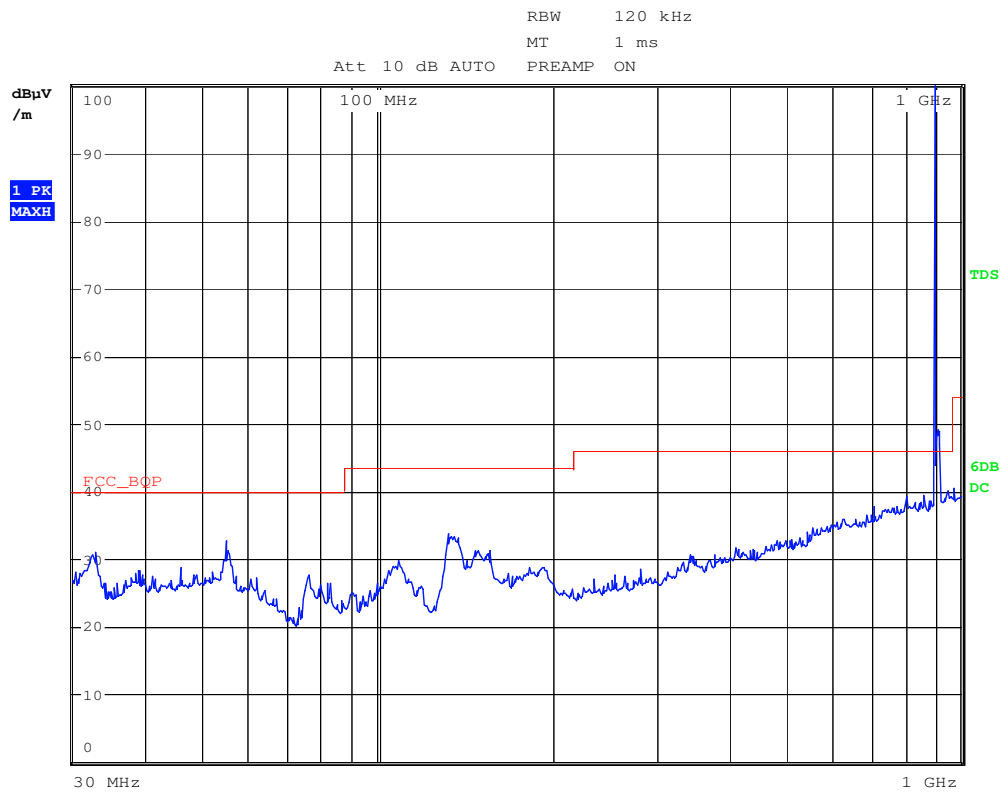
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Date: 4.APR.2008 10:46:43



G08036842



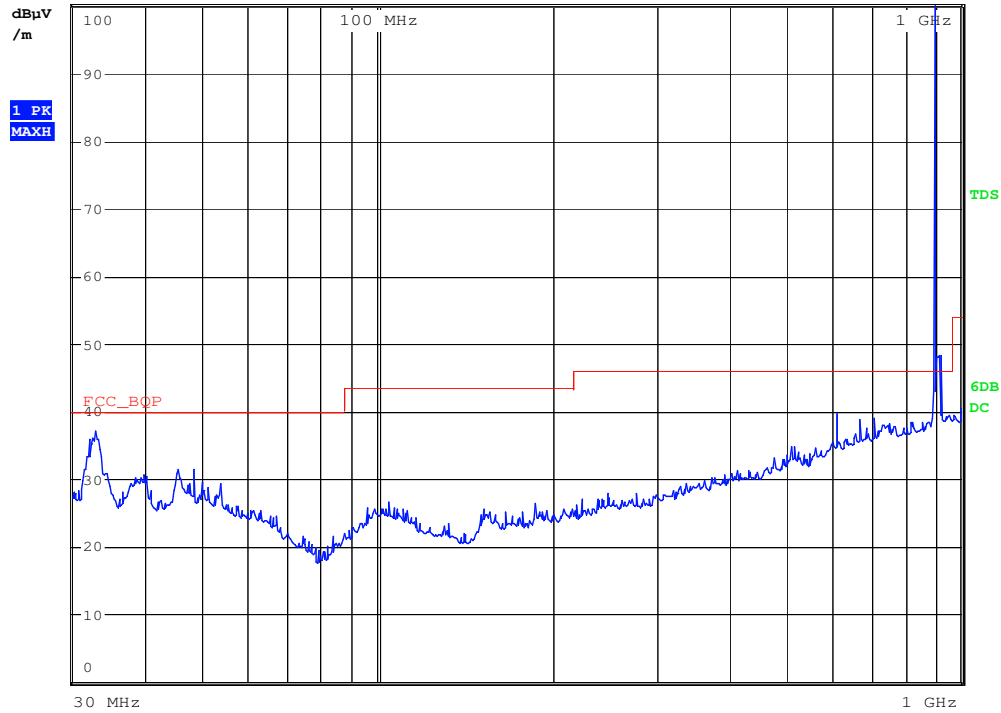
Date: 4.APR.2008 10:33:13



G08036843

RBW 120 kHz
MT 20 ms

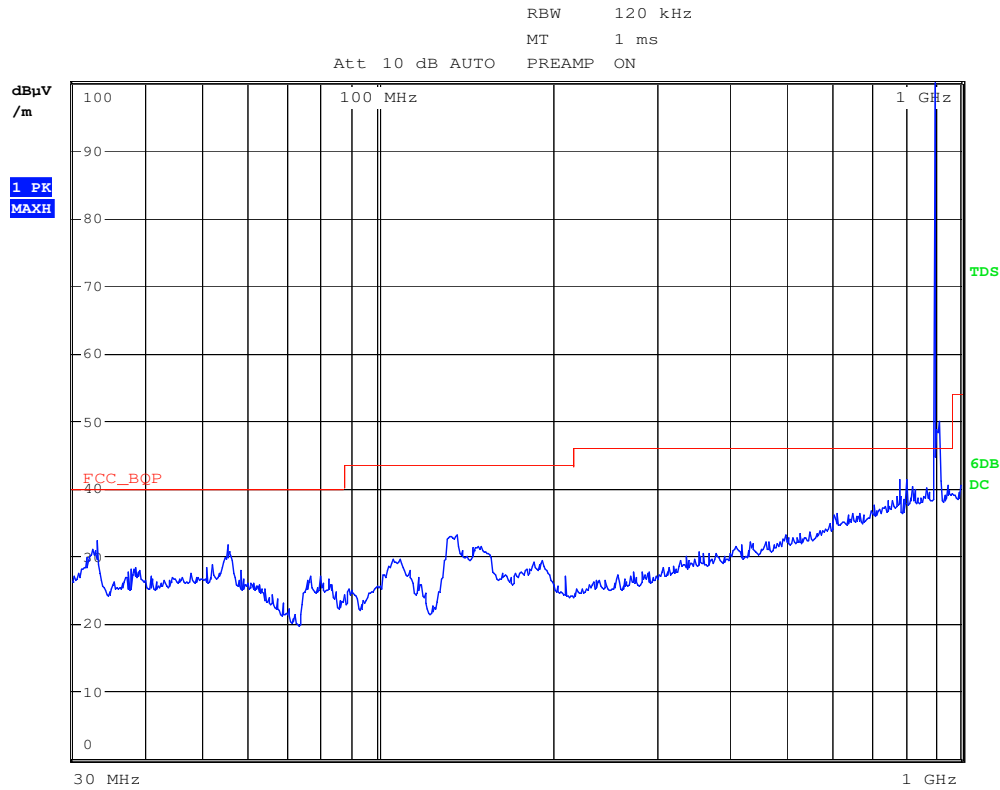
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Date: 4.APR.2008 10:45:24



G08036844



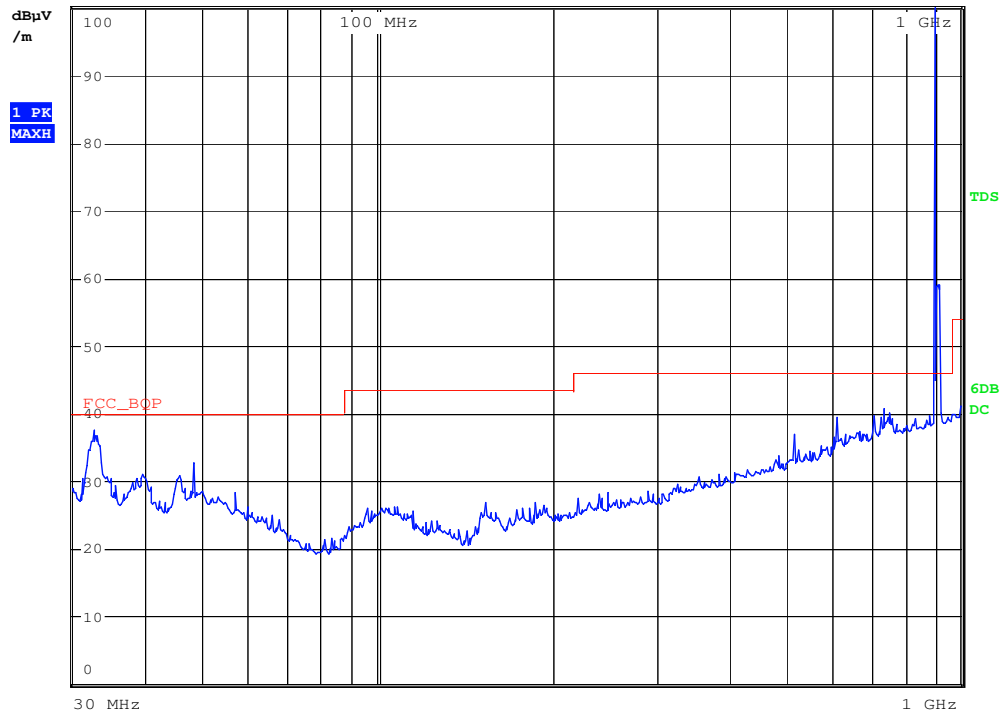
Date: 4.APR.2008 10:34:19



G08036845

RBW 120 kHz
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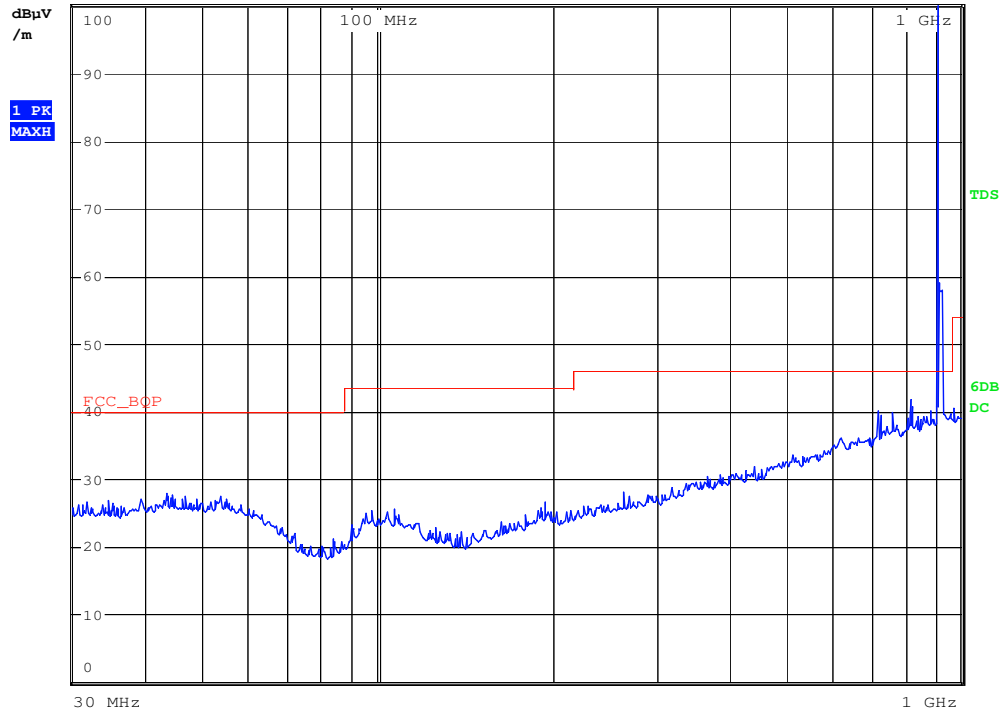
Date: 4.APR.2008 10:43:41



G08036846

RBW 120 kHz
MT 20 ms

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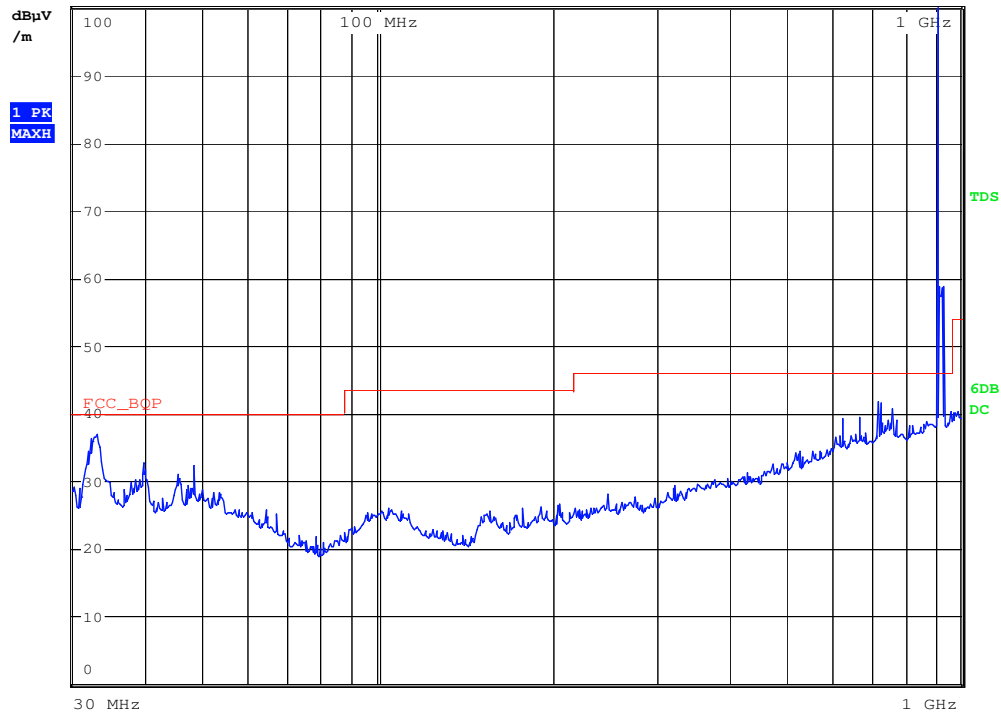
Date: 4.APR.2008 11:10:33



G08036847

RBW 120 kHz
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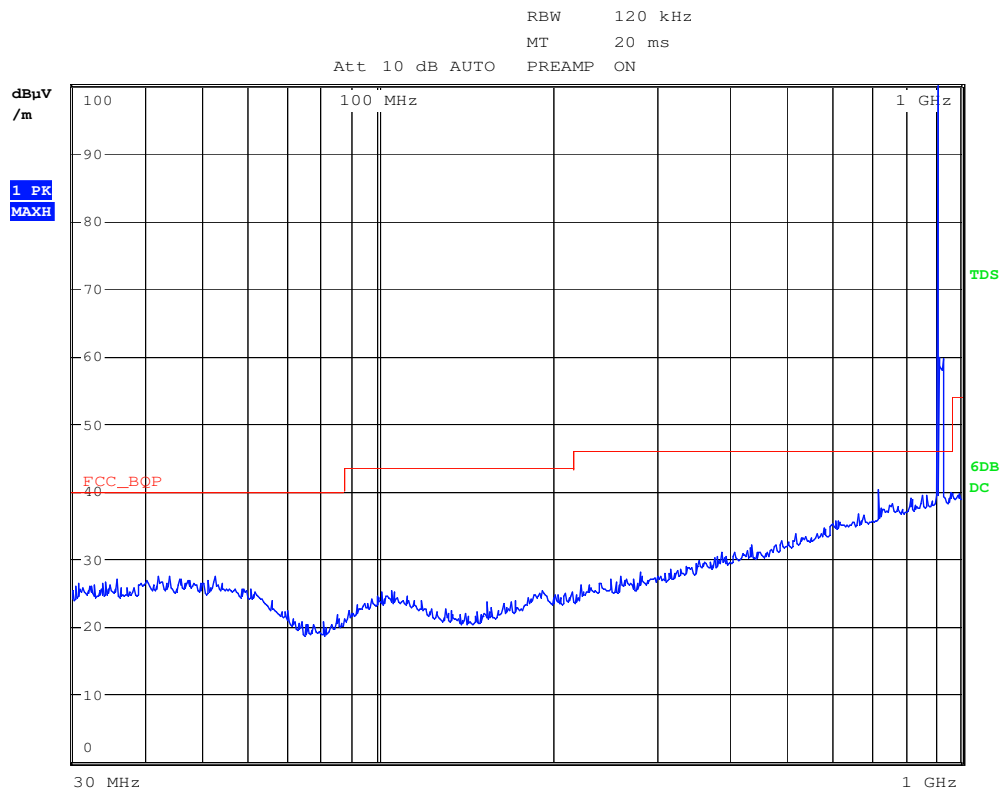
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Date: 4.APR.2008 10:49:17



G08036848



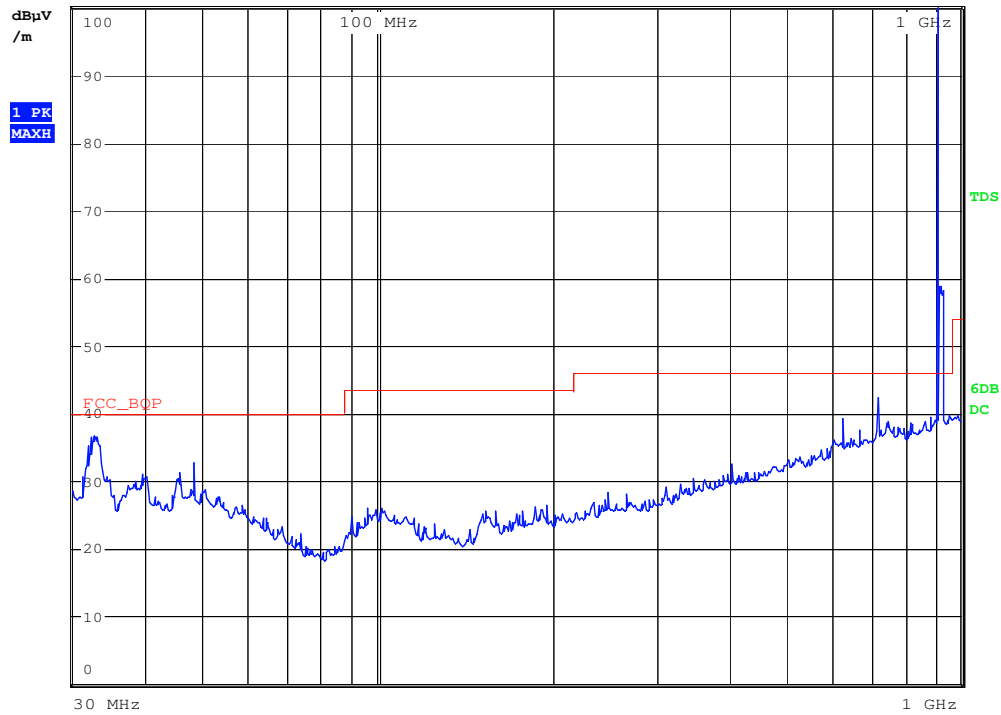
Date: 4.APR.2008 11:09:22



G08036849

RBW 120 kHz
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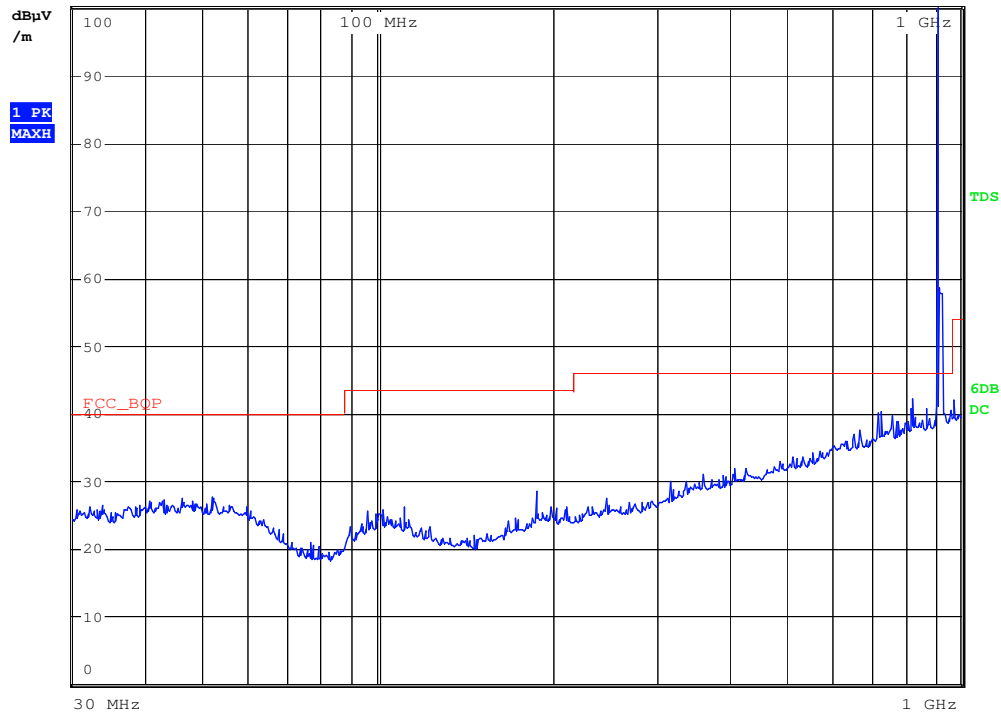
Date: 4.APR.2008 10:50:29



G08036850

RBW 120 kHz
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Att 10 dB AUTO PREAMP ON



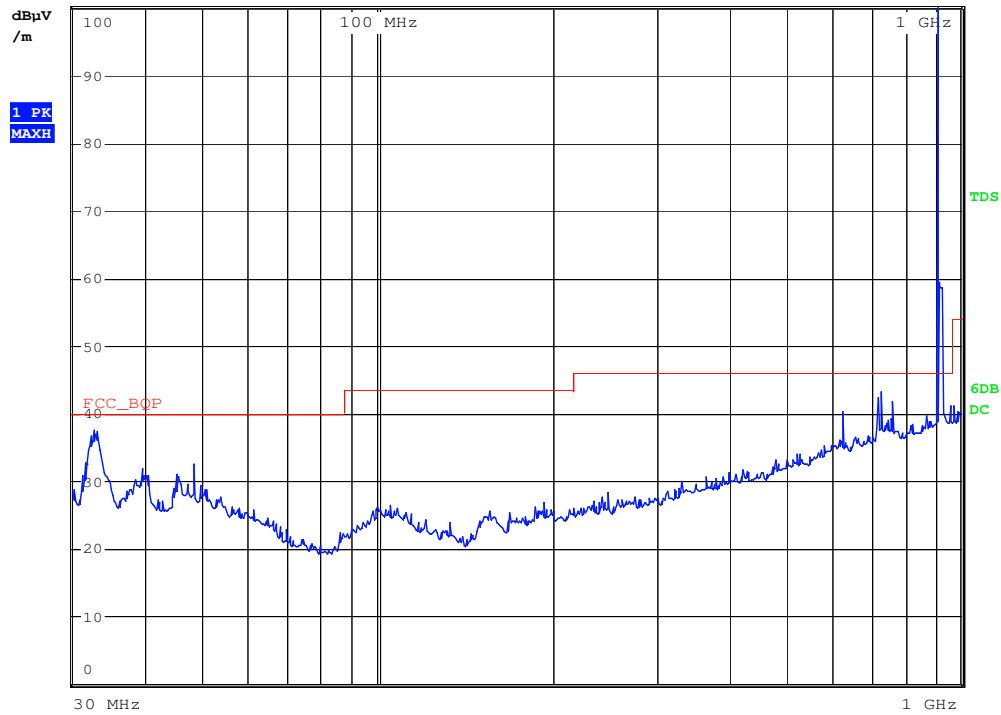
Date: 4.APR.2008 11:08:07



G08036851

RBW 120 kHz
MT 20 ms

Att 10 dB AUTO PREAMP ON



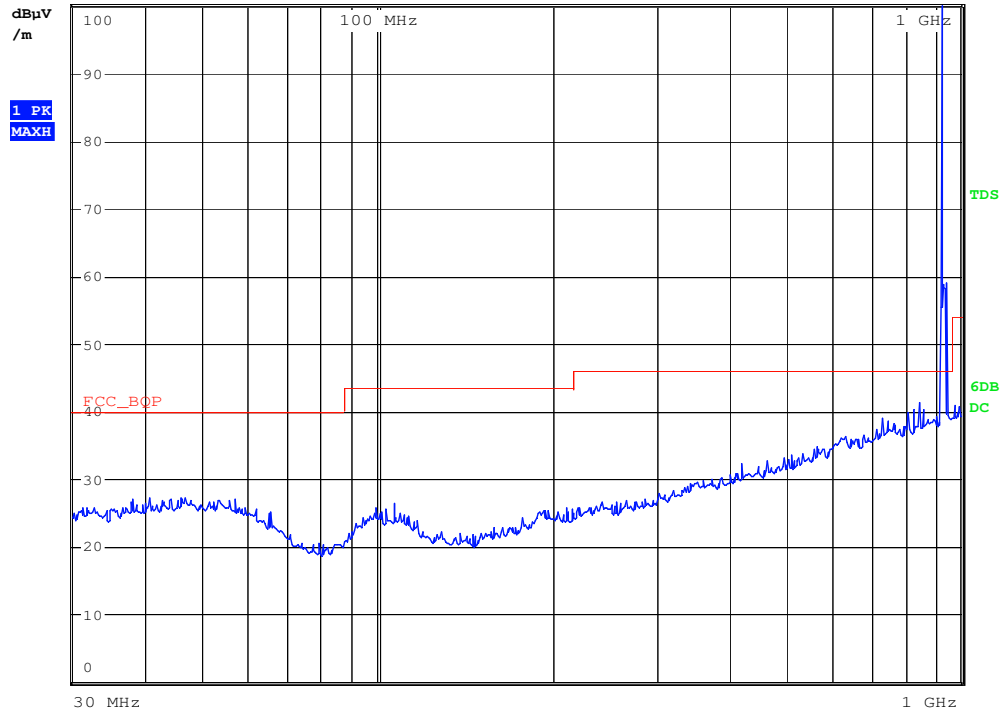
Date: 4.APR.2008 11:06:43



G08036852

RBW 120 kHz
MT 20 ms

Att 10 dB AUTO PREAMP ON



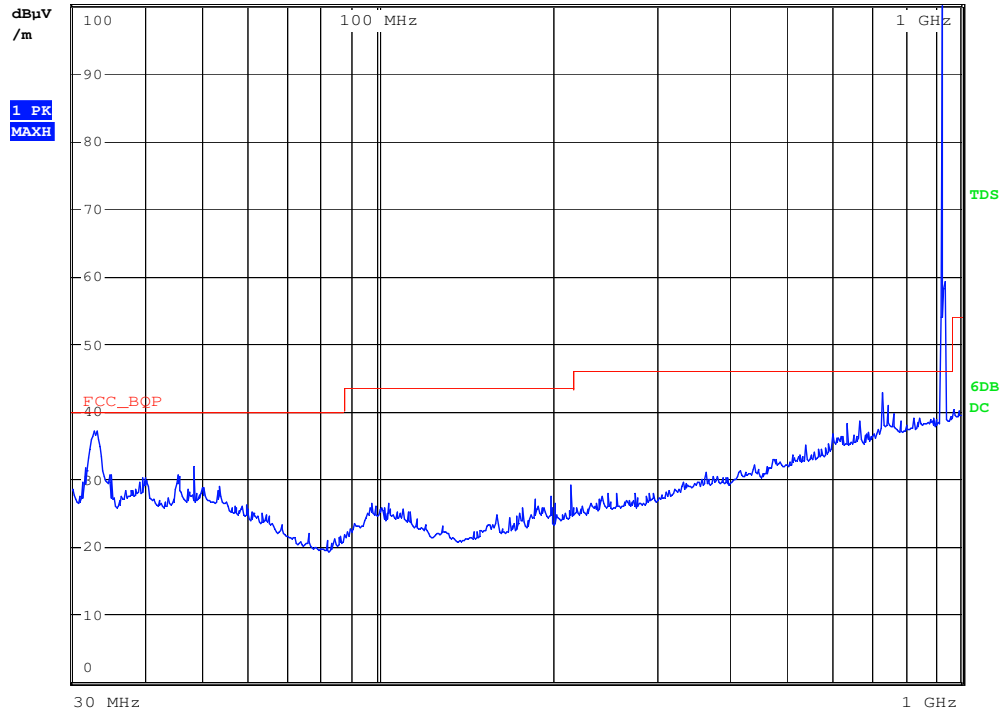
Date: 4.APR.2008 11:12:11



G08036853

RBW 120 kHz
MT 20 ms

Att 10 dB AUTO PREAMP ON



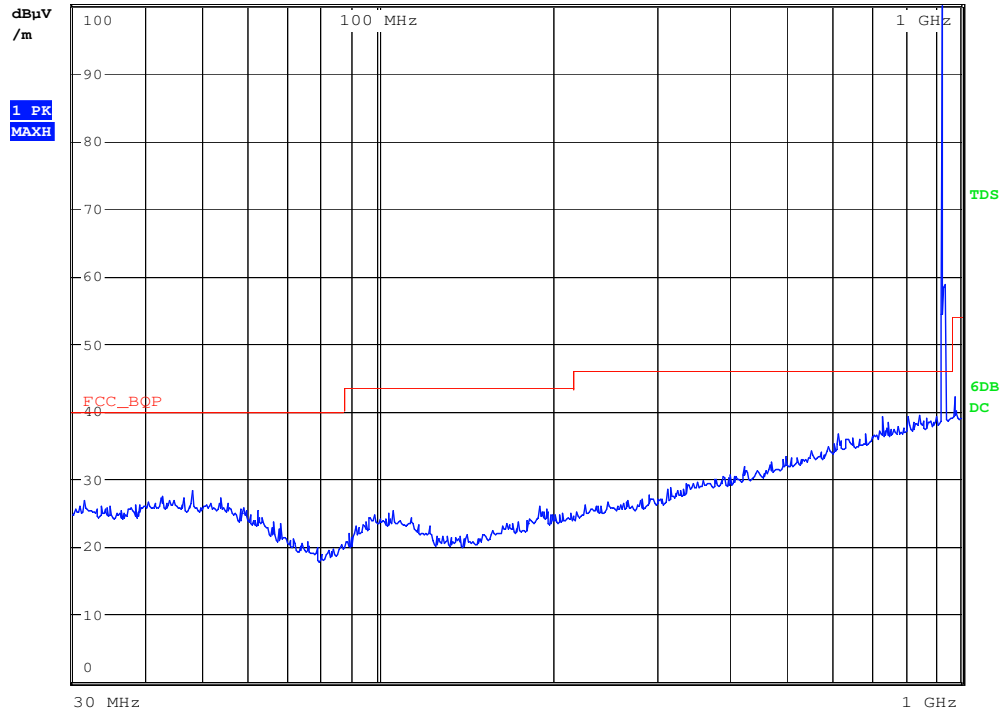
Date: 4.APR.2008 11:23:59



G08036854

RBW 120 kHz
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Att 10 dB AUTO PREAMP ON



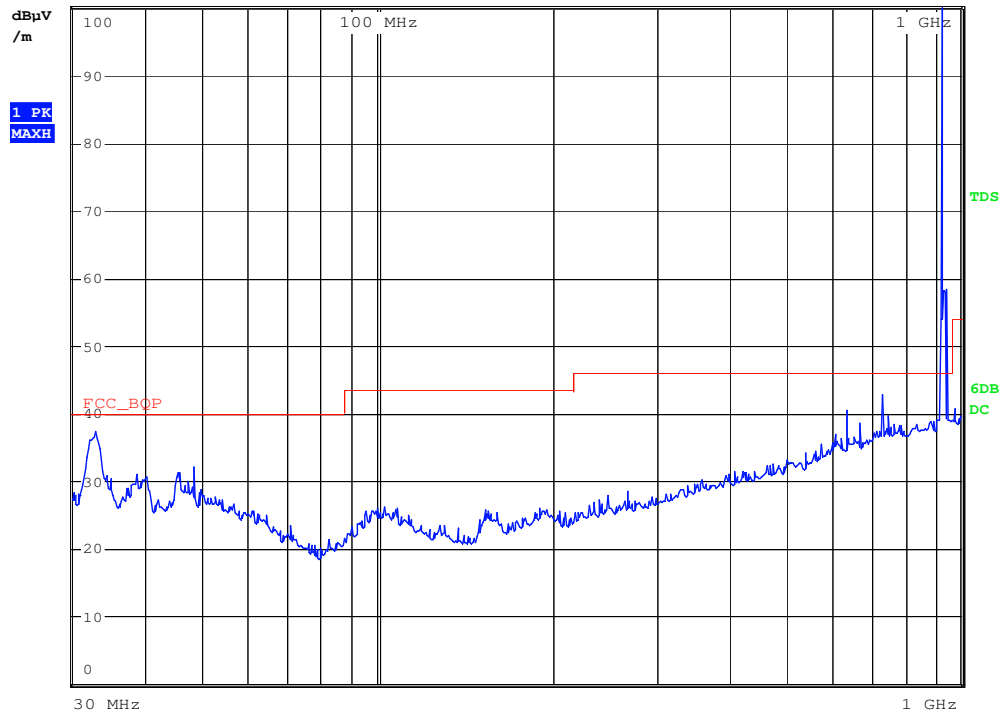
Date: 4.APR.2008 11:18:27



G08036855

RBW 120 kHz
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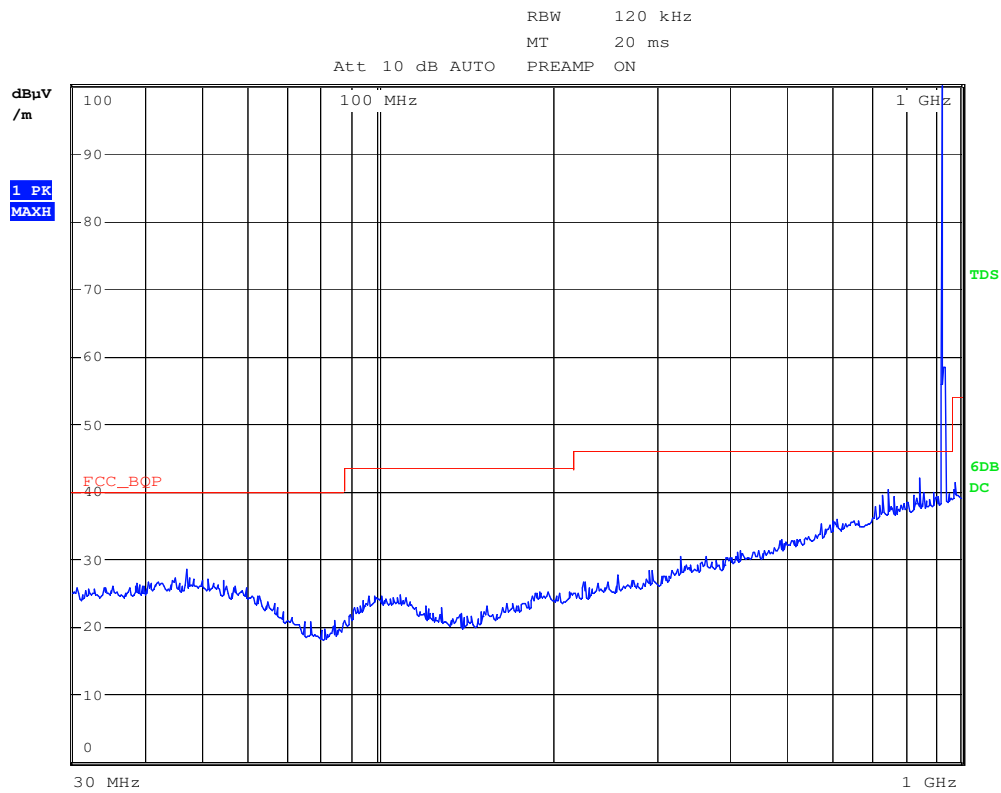
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Date: 4.APR.2008 11:22:18



G08036856



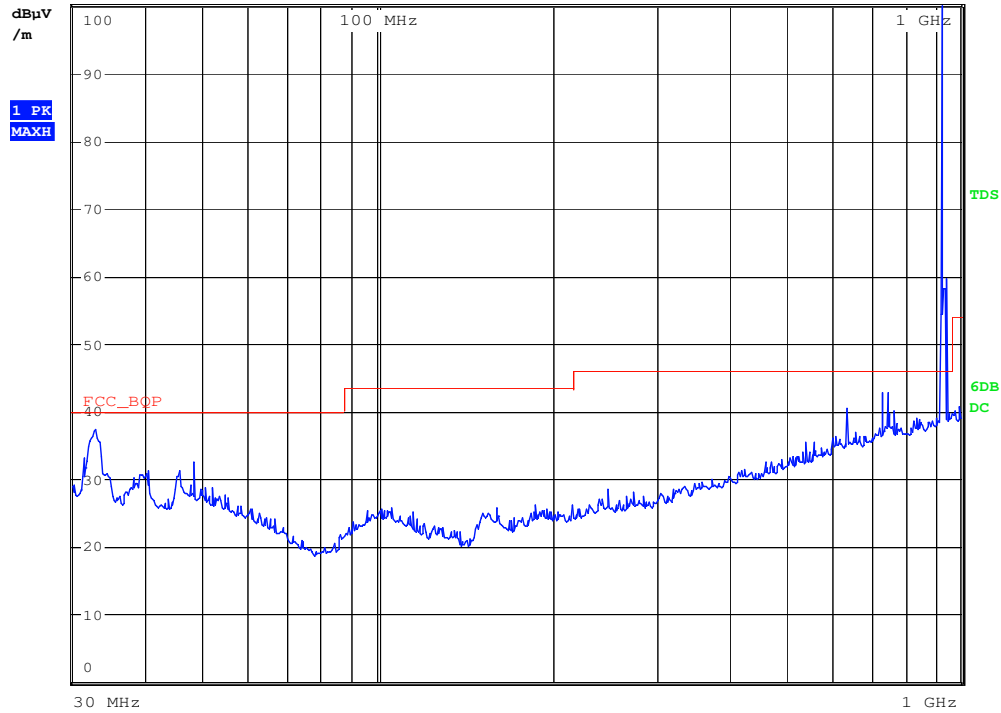
Date: 4.APR.2008 11:19:40



G08036857

RBW 120 kHz
MT 20 ms

Att 10 dB AUTO PREAMP ON

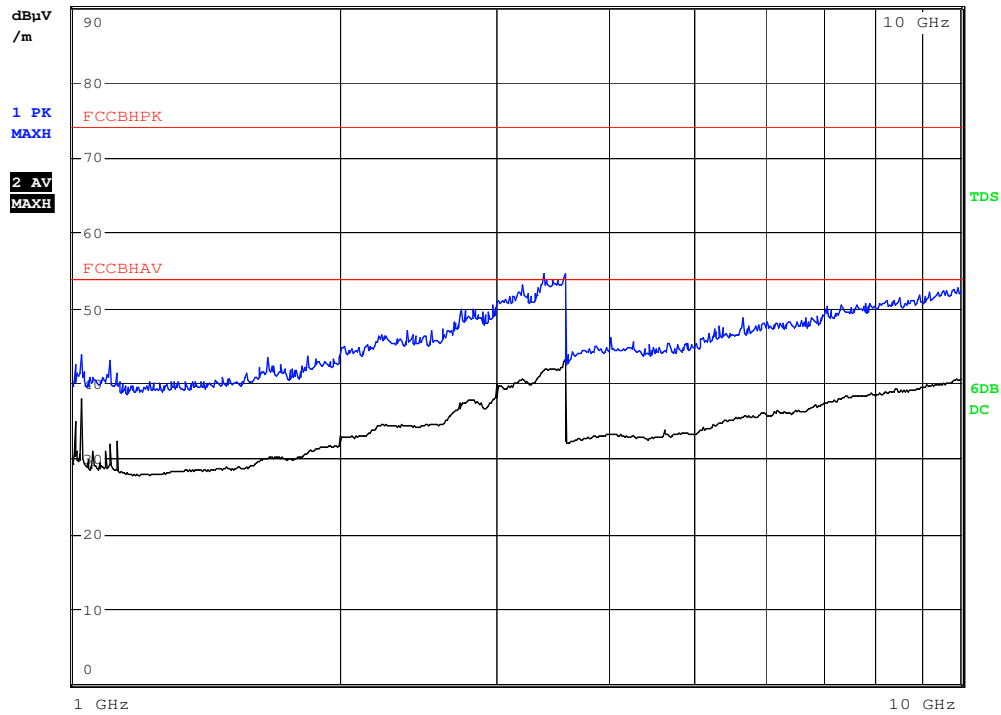


Date: 4.APR.2008 11:21:01



G08036858

RBW 1 MHz
MT 20 ms
Att 10 dB AUTO PREAMP ON

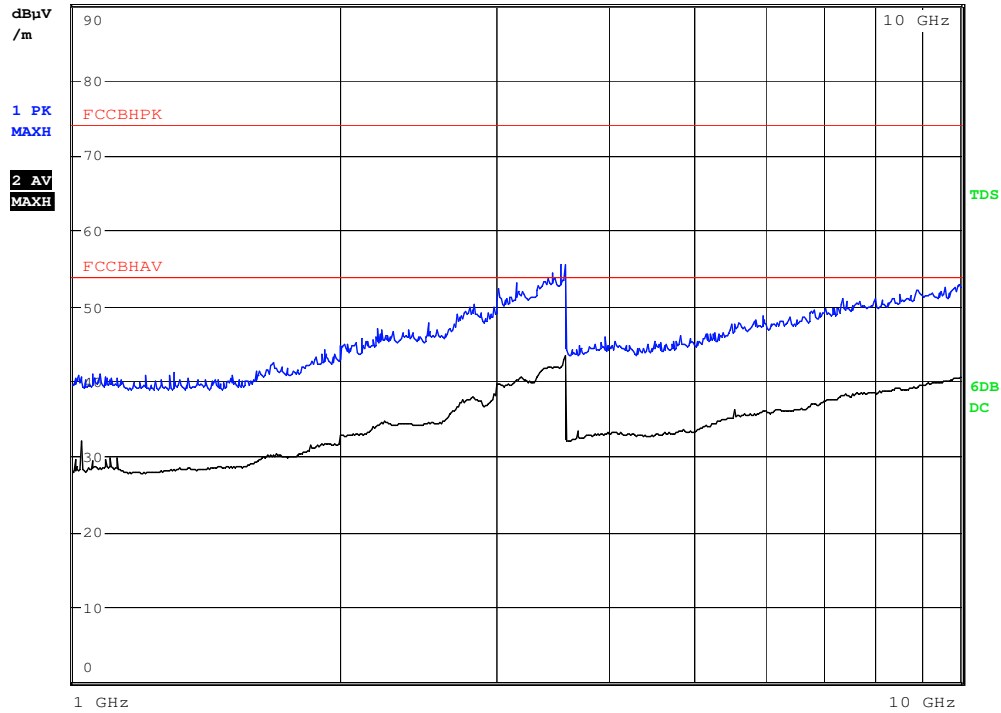


Date: 4.APR.2008 11:43:56



G08036859

RBW 1 MHz
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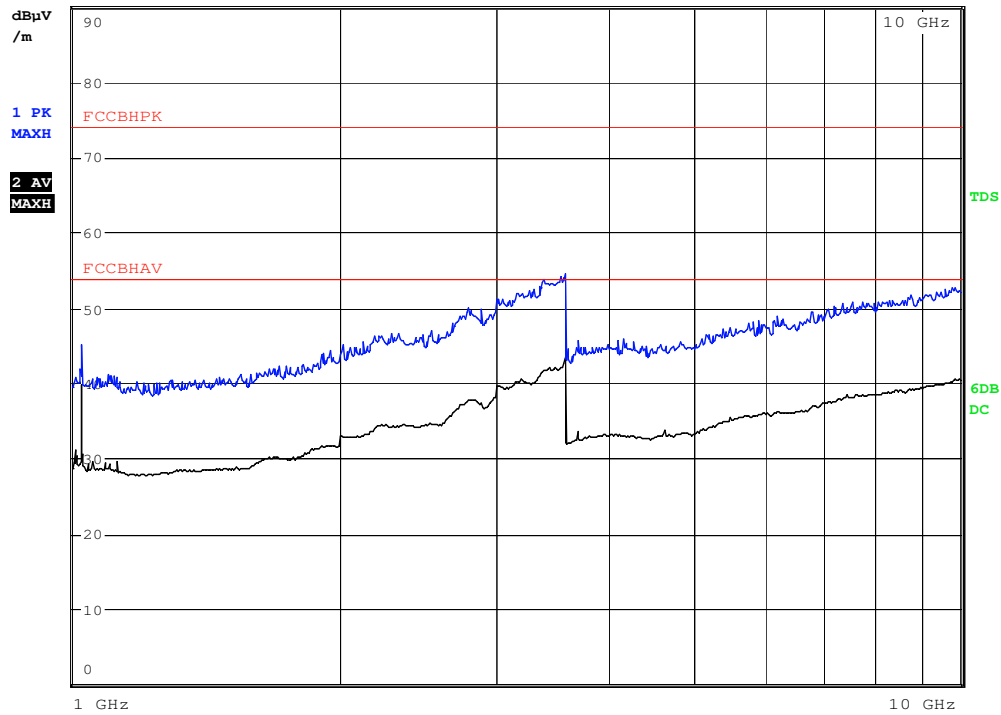


Date: 4.APR.2008 11:48:08



G08036860

RBW 1 MHz
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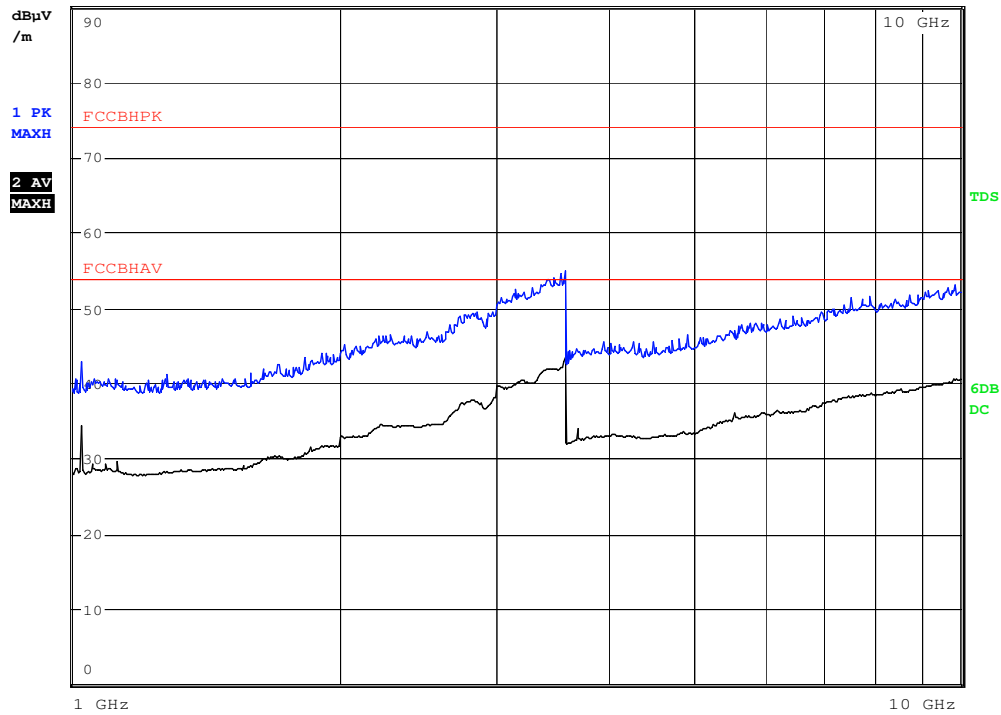


Date: 4.APR.2008 11:42:25



G08036861

RBW 1 MHz
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Att 10 dB AUTO PREAMP ON

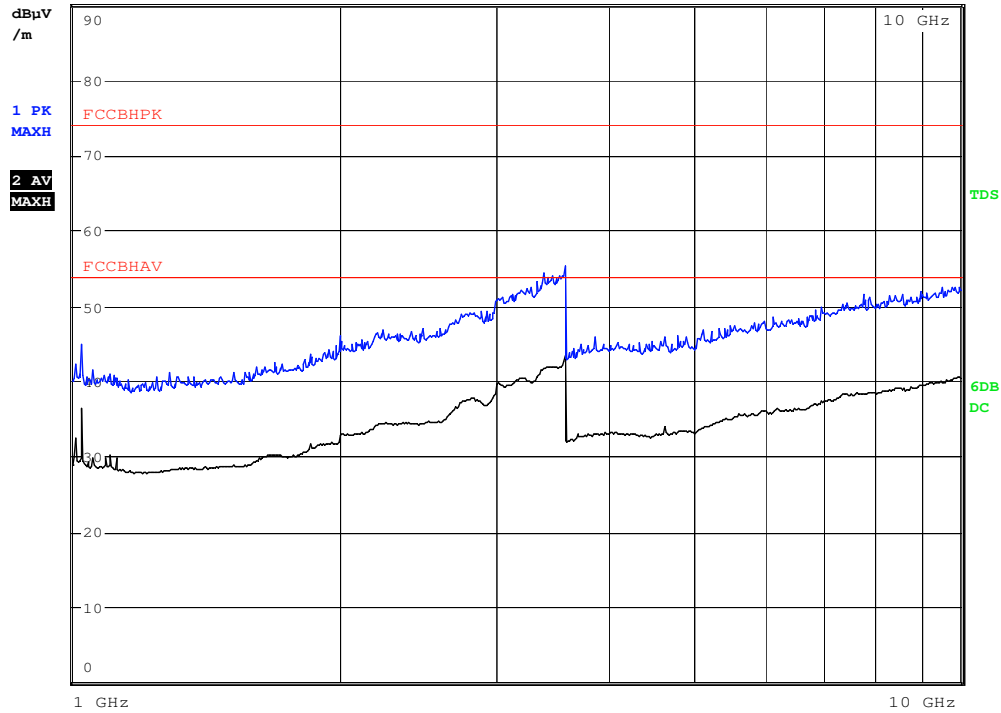


Date: 4.APR.2008 11:47:03



G08036862

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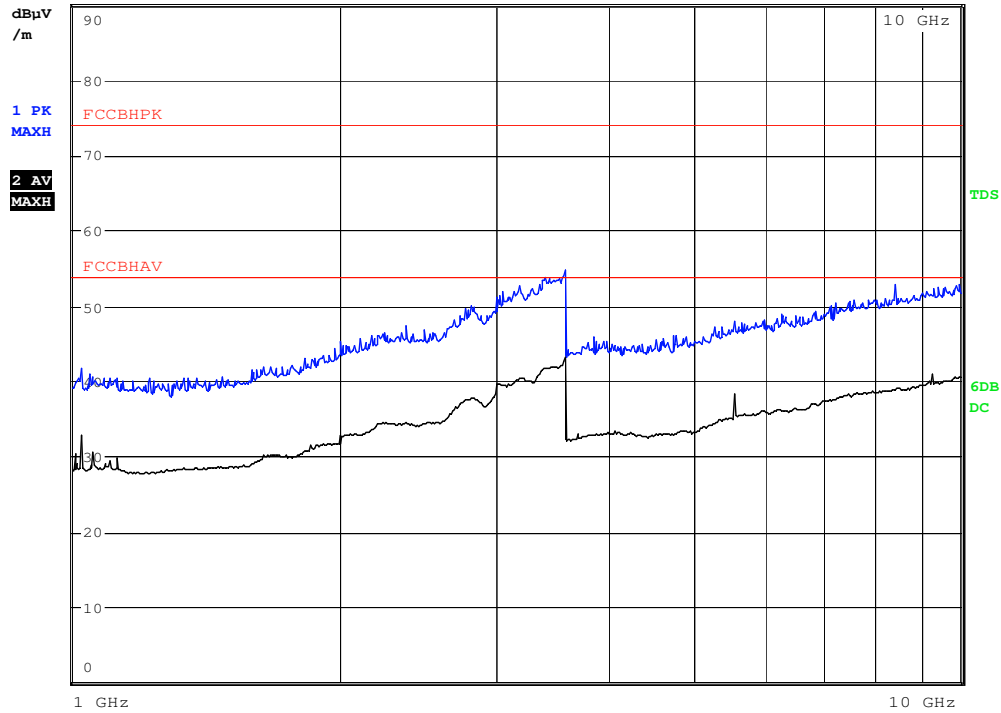


Date: 4.APR.2008 11:40:32



G08036863

RBW 1 MHz
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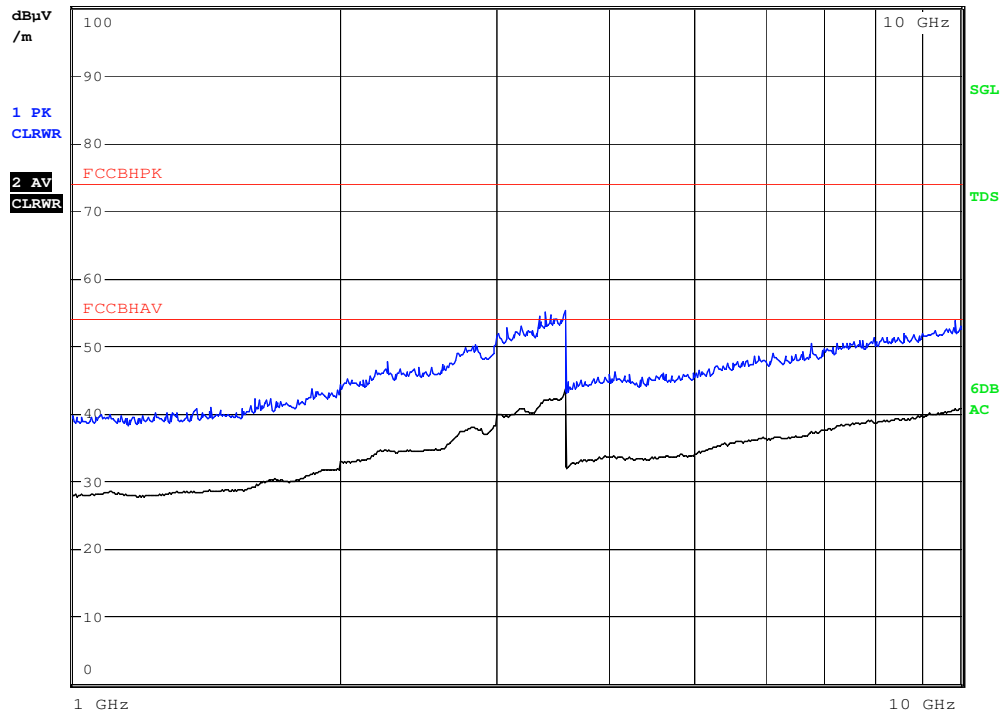
Date: 4.APR.2008 11:45:33



G08036864

08036864

RBW 1 MHz
MT 20 ms
Att 0 dB AUTO
PREAMP ON

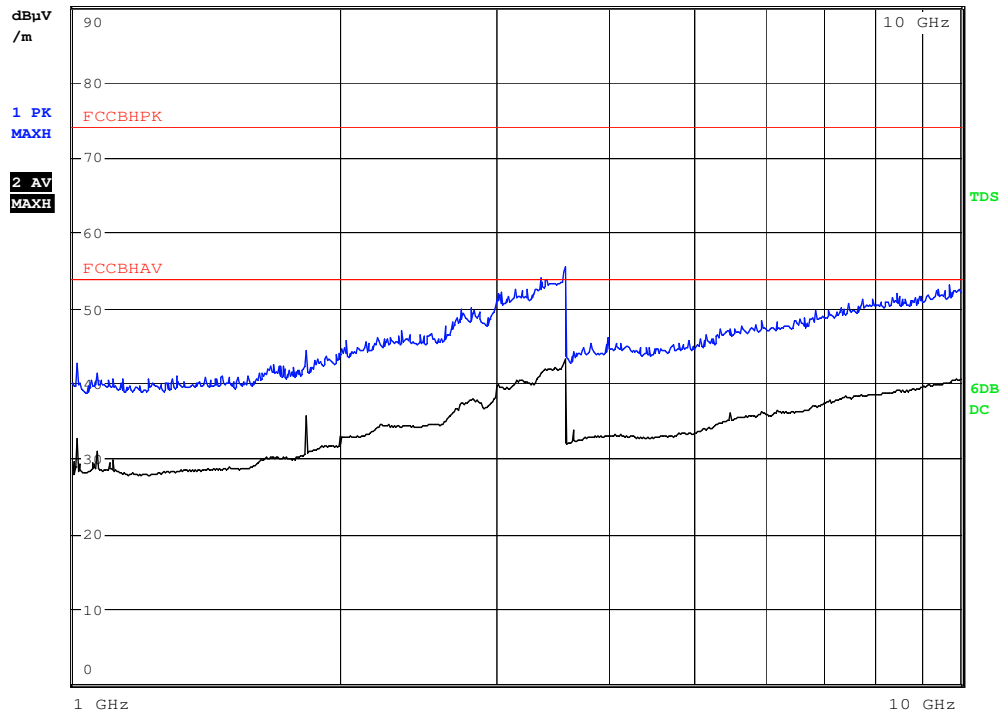


Date: 28.APR.2008 14:41:16



G08036865

RBW 1 MHz
MT 20 ms
Att 10 dB AUTO PREAMP ON



Date: 4.APR.2008 11:49:35



G08036866

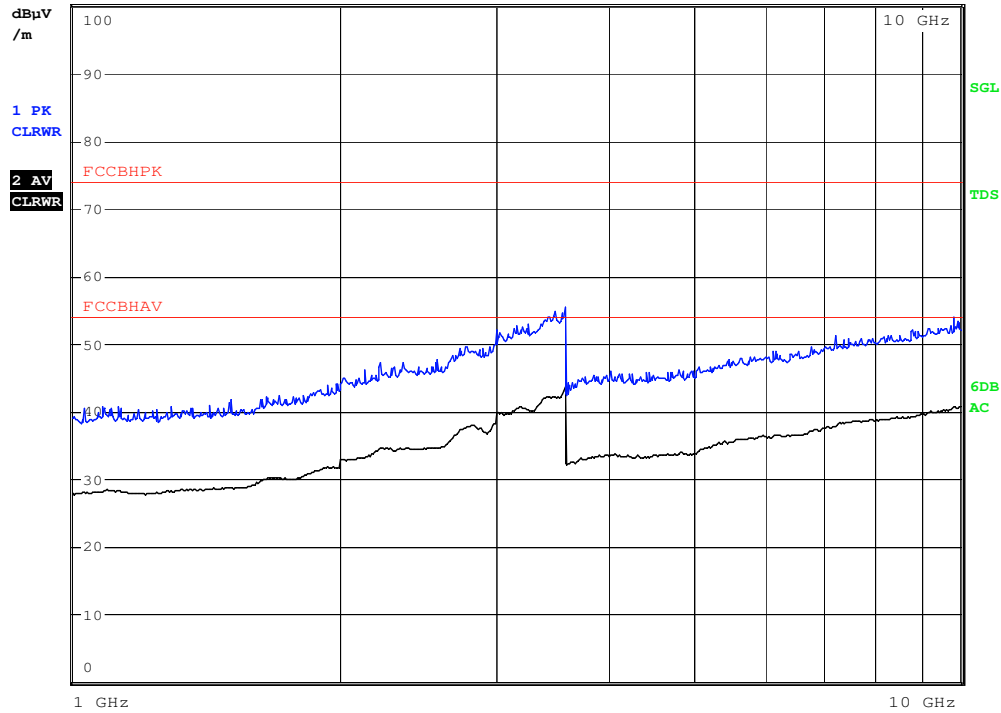
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RBW 1 MHz

MT 20 ms

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PREAMP ON

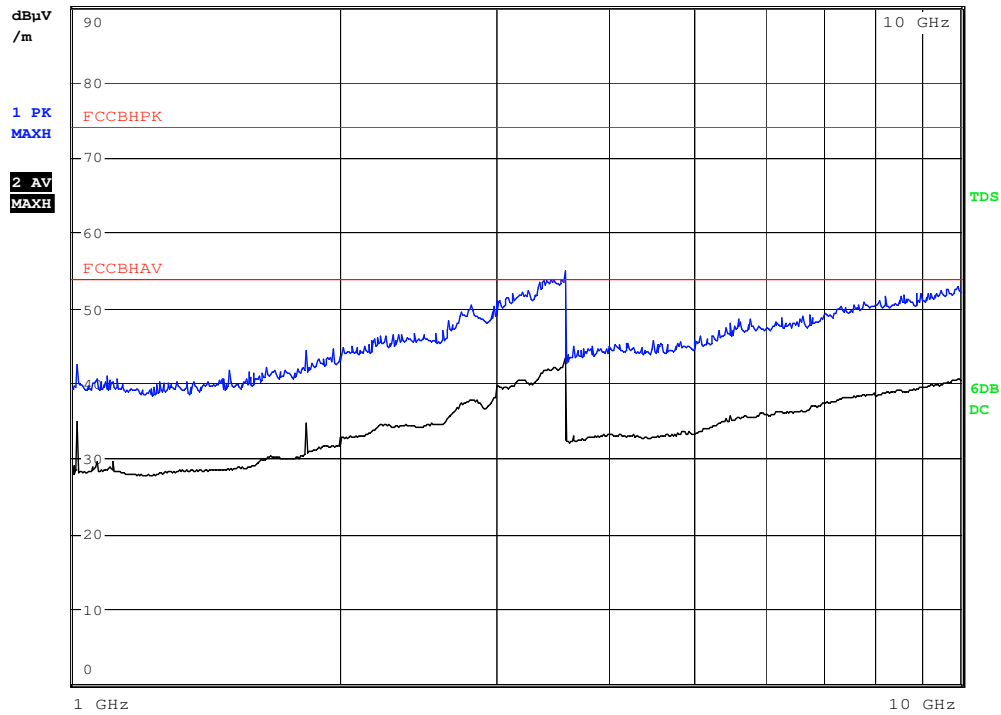


Date: 28.APR.2008 14:42:00



G08036867

RBW 1 MHz
MT 20 ms
Att 10 dB AUTO PREAMP ON



Date: 4.APR.2008 11:50:54



G08036868

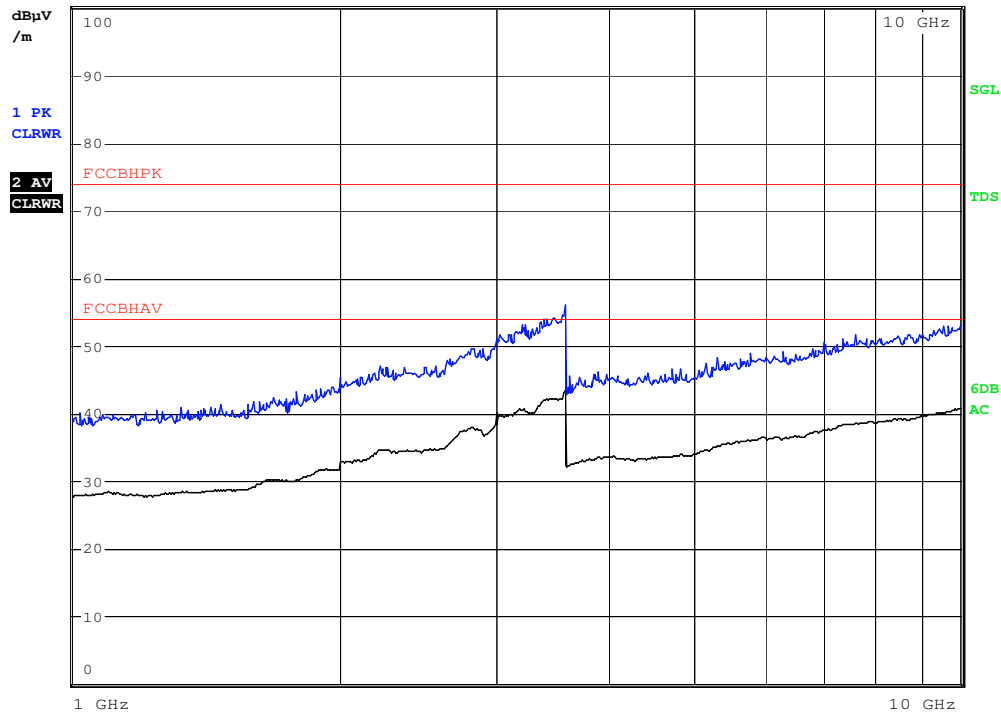
08036868

RBW 1 MHz

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PREAMP ON

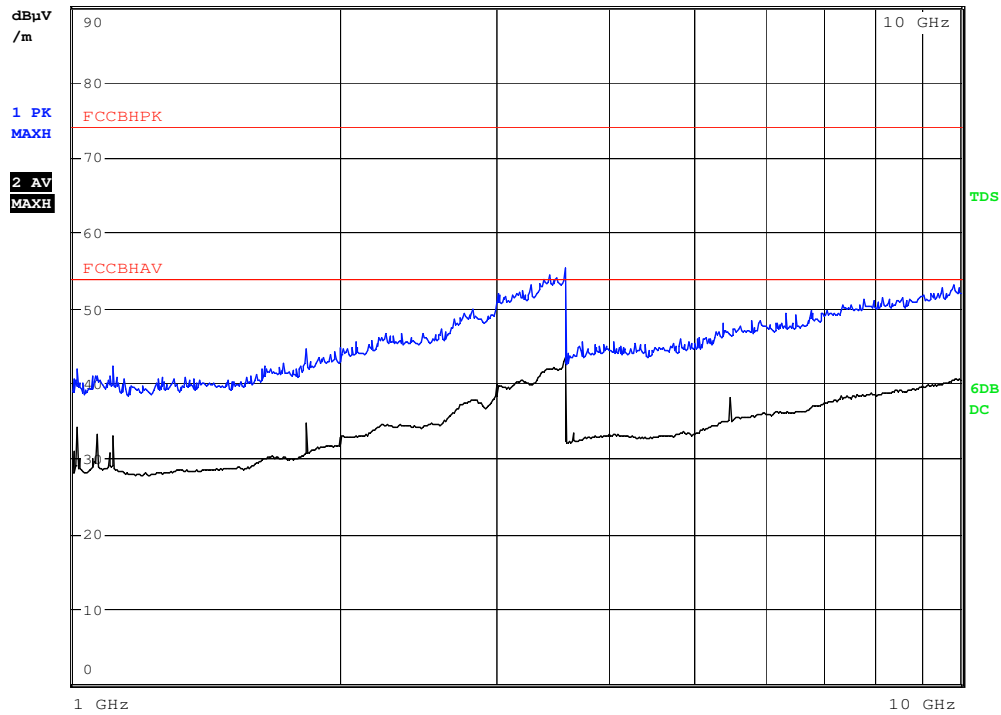


Date: 28.APR.2008 14:42:42



G08036869

RBW 1 MHz
MT 20 ms
Att 10 dB AUTO PREAMP ON



Date: 4.APR.2008 11:52:00



G08036870

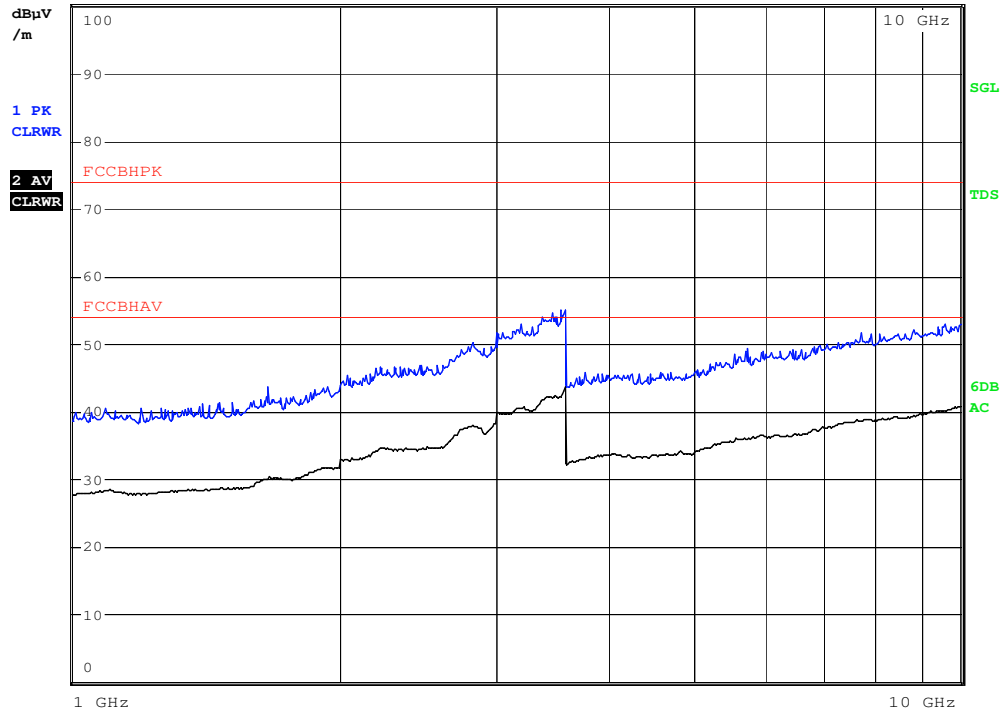
08036870

RBW 1 MHz

MT 20 ms

Att 0 dB AUTO

PREAMP ON



Date: 28.APR.2008 14:36:19



G08036871

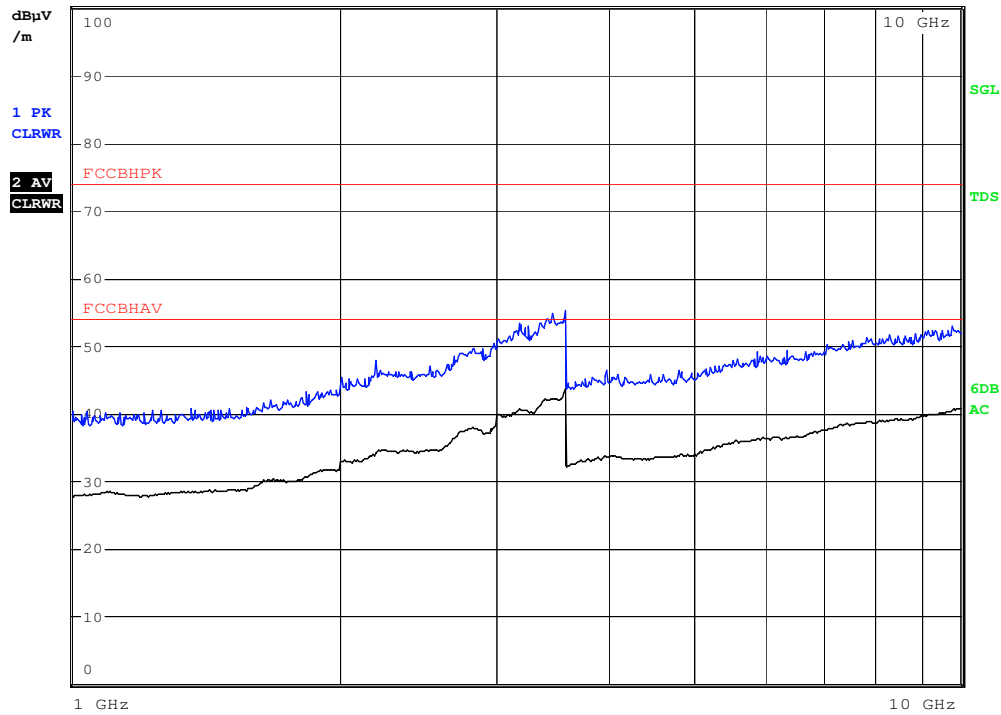
08036871

RBW 1 MHz

MT 20 ms

Att 0 dB AUTO

PREAMP ON



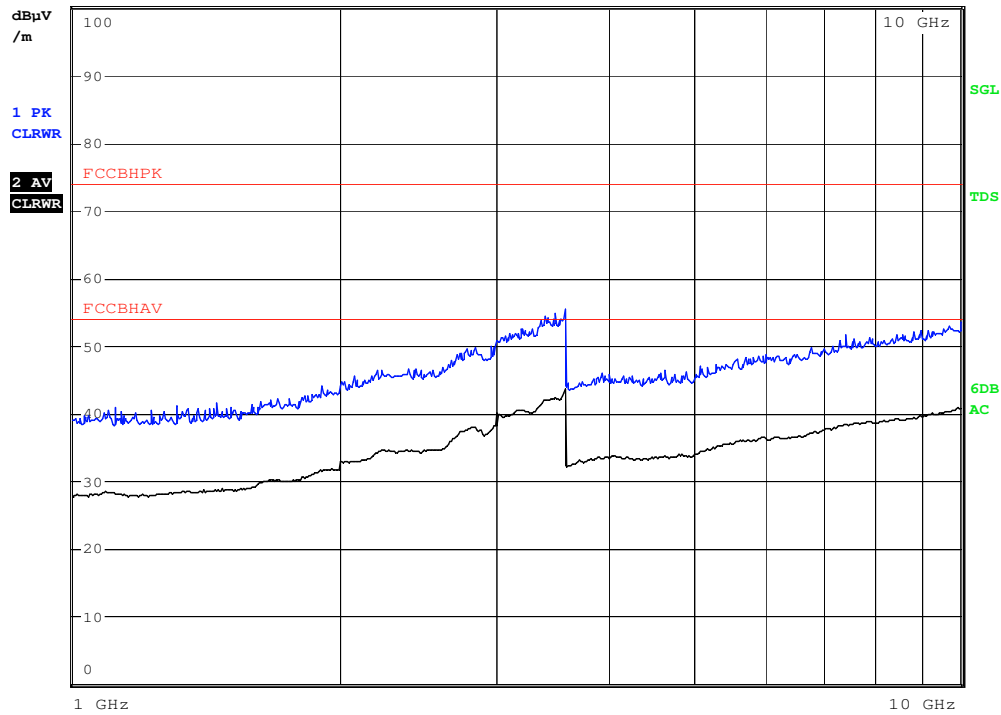
Date: 28.APR.2008 14:37:02



G08036872

08036872

RBW 1 MHz
MT 20 ms
Att 0 dB AUTO
PREAMP ON



Date: 28.APR.2008 14:37:50



G08036873

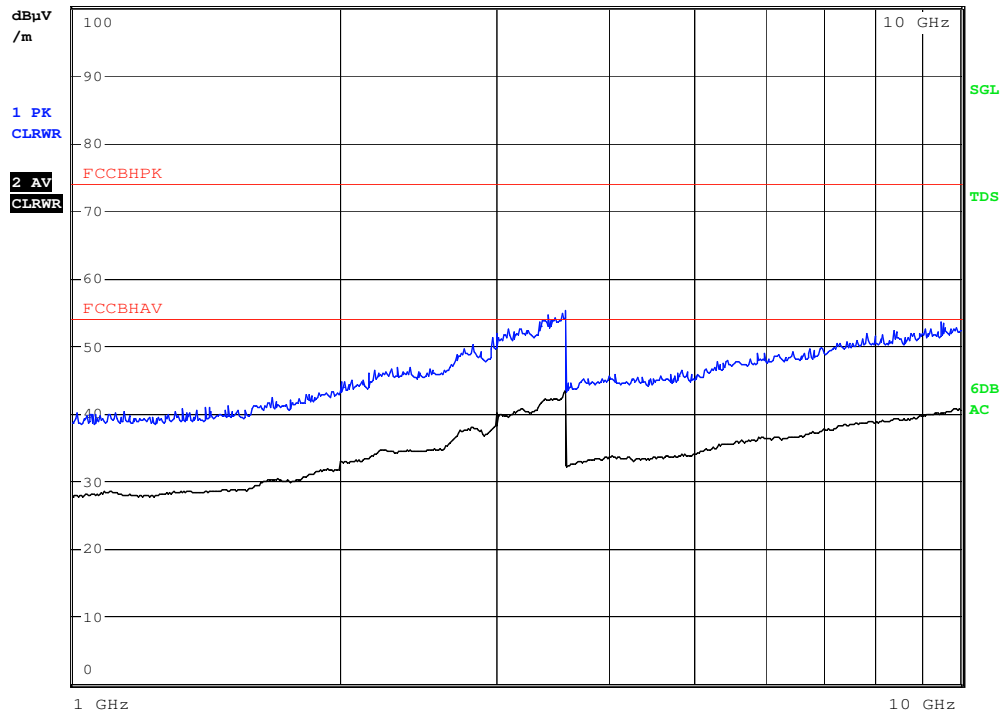
08036873

RBW 1 MHz

MT 20 ms

Att 0 dB AUTO

PREAMP ON



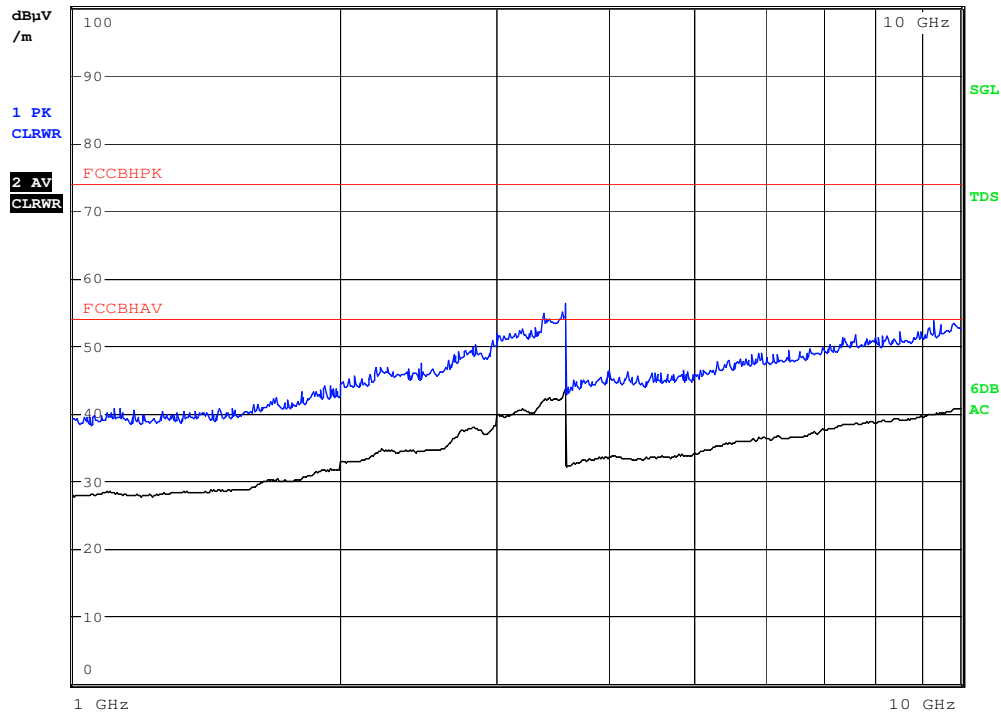
Date: 28.APR.2008 14:38:39



G08036874

08036874

RBW 1 MHz
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PREAMP ON



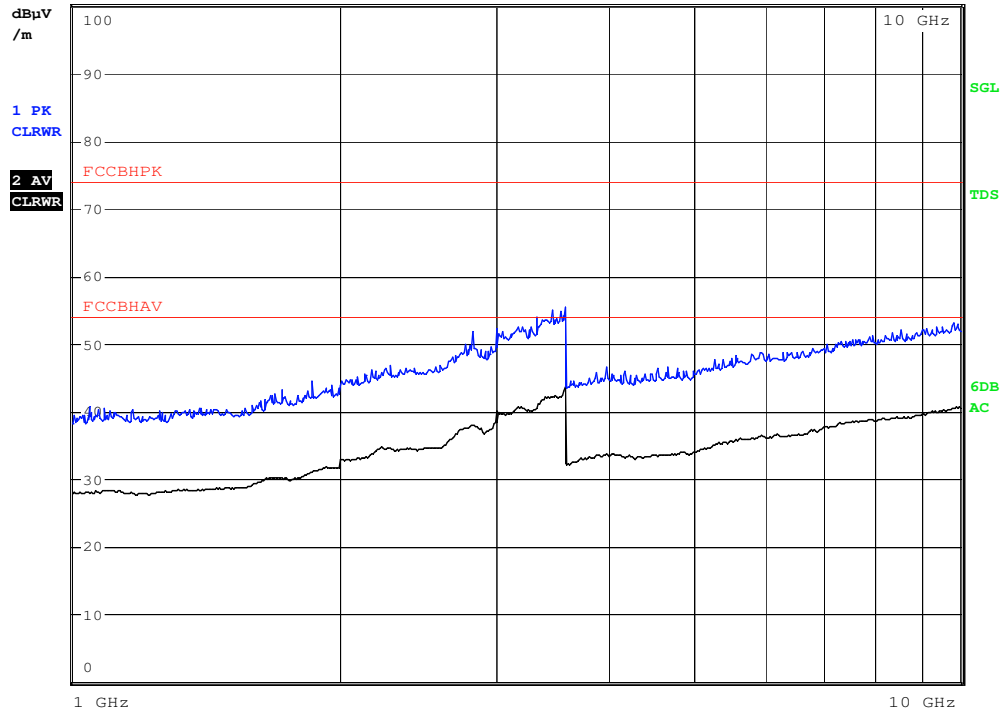
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G08036875

08036875

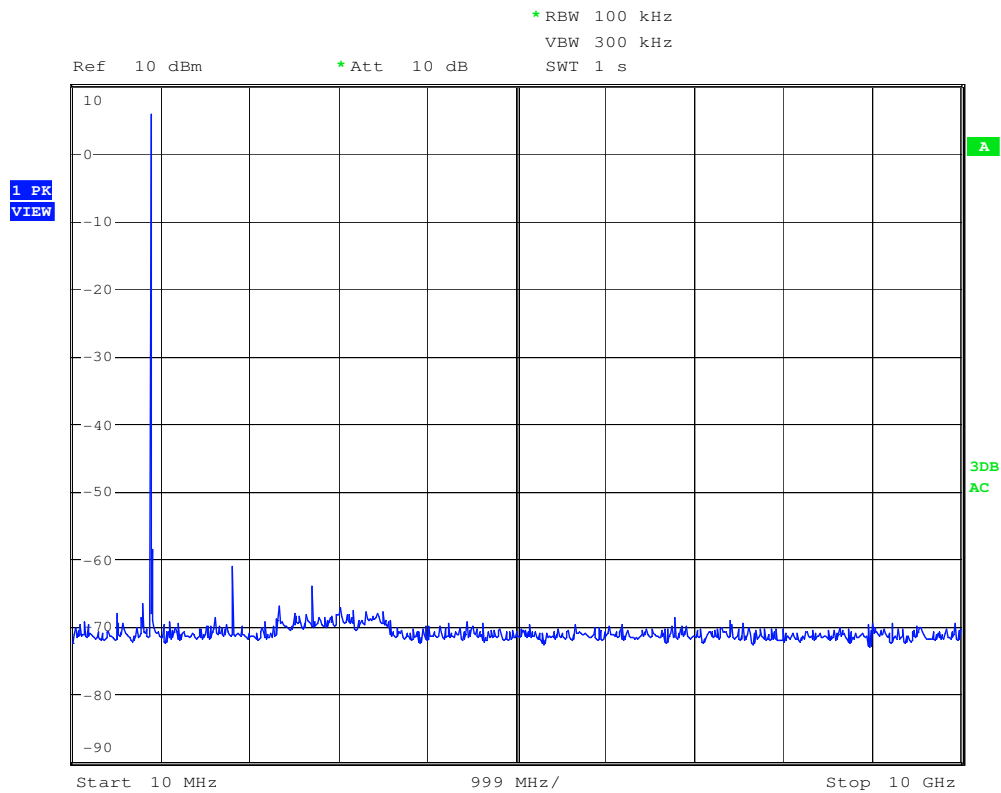
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Att 0 dB AUTO
PREAMP ON



Date: 28.APR.2008 14:40:18



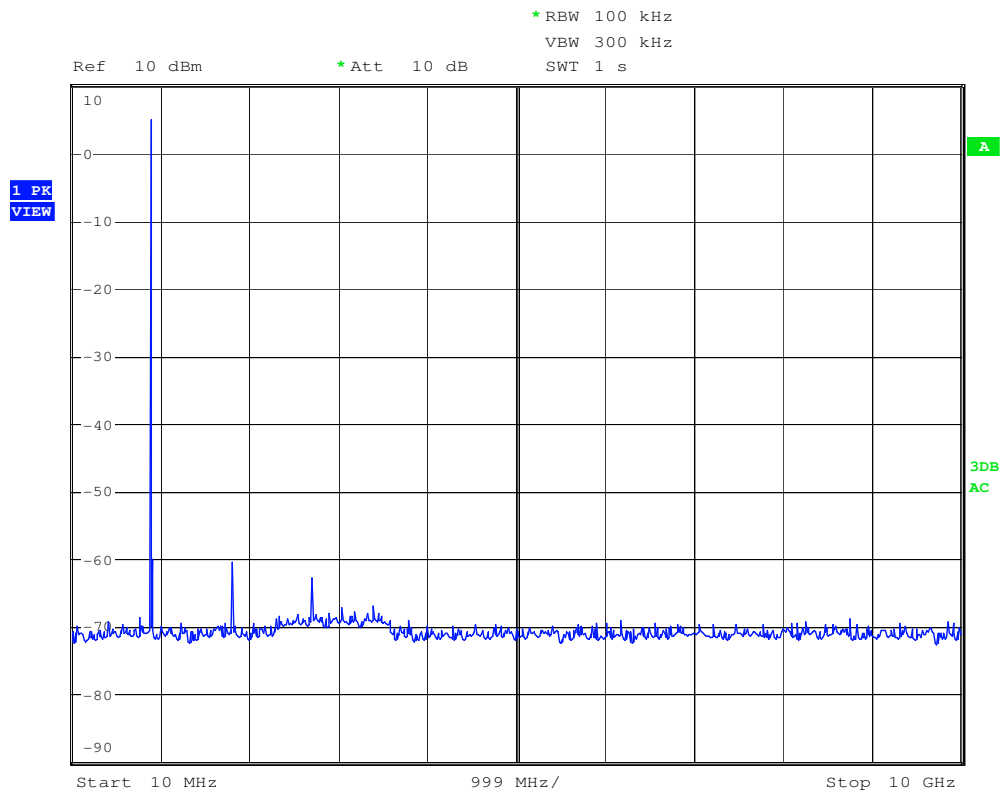
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Date: 4.APR.2008 15:54:48



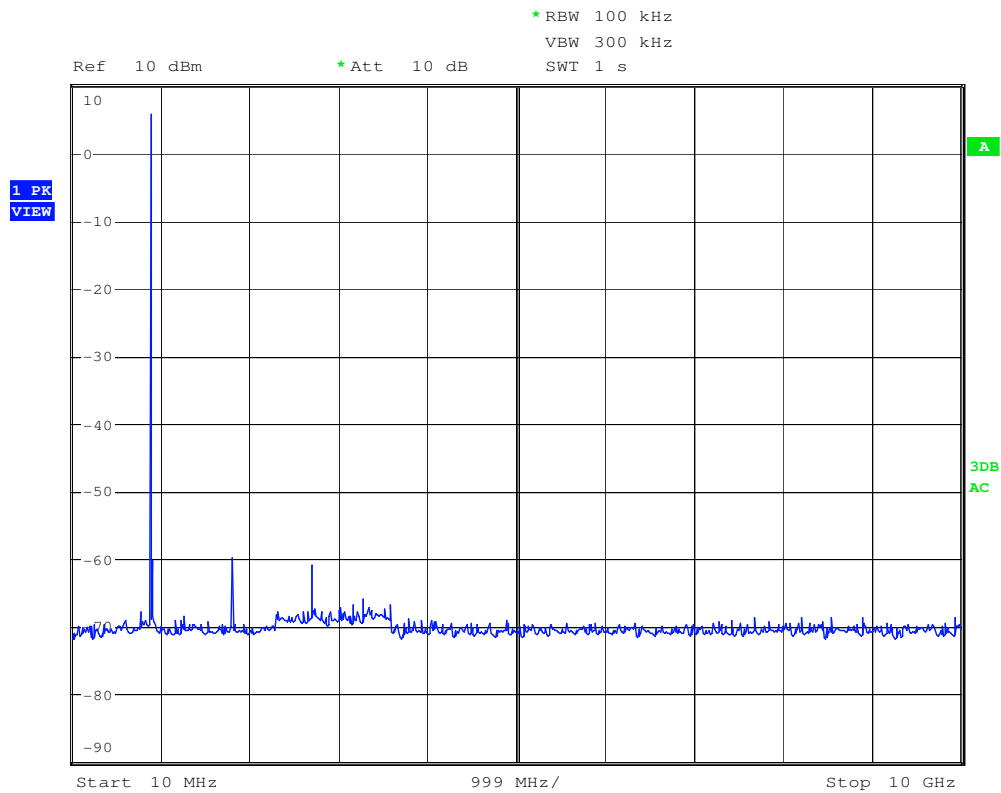
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Date: 4.APR.2008 15:56:13



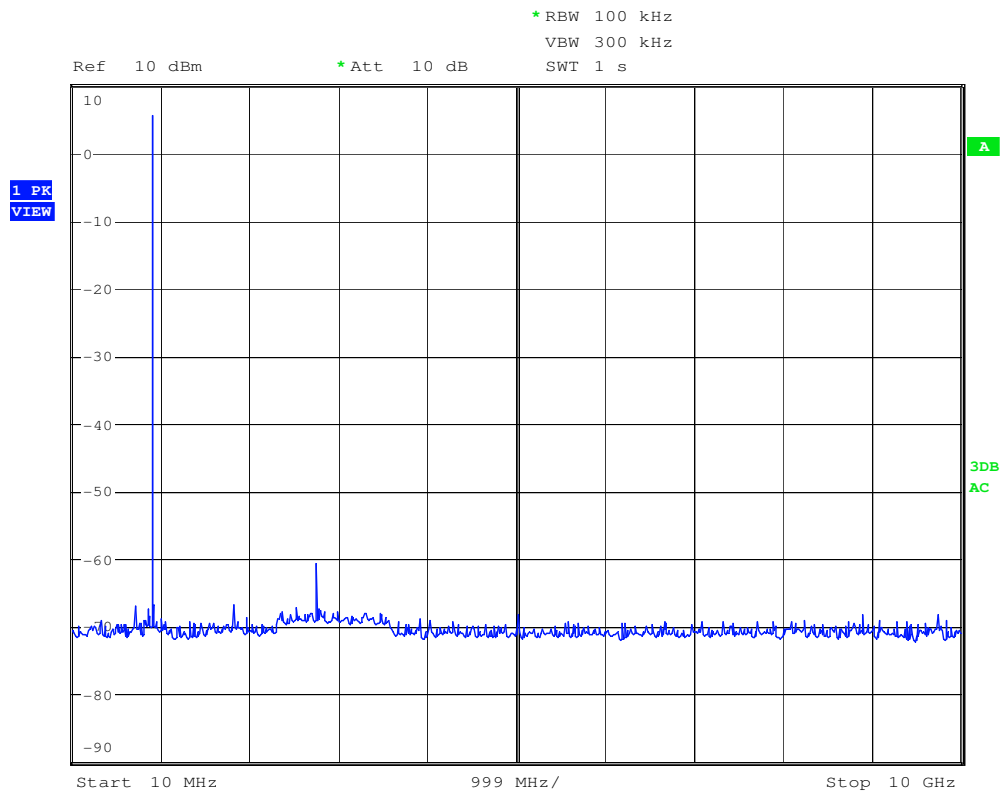
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Date: 4.APR.2008 15:57:27



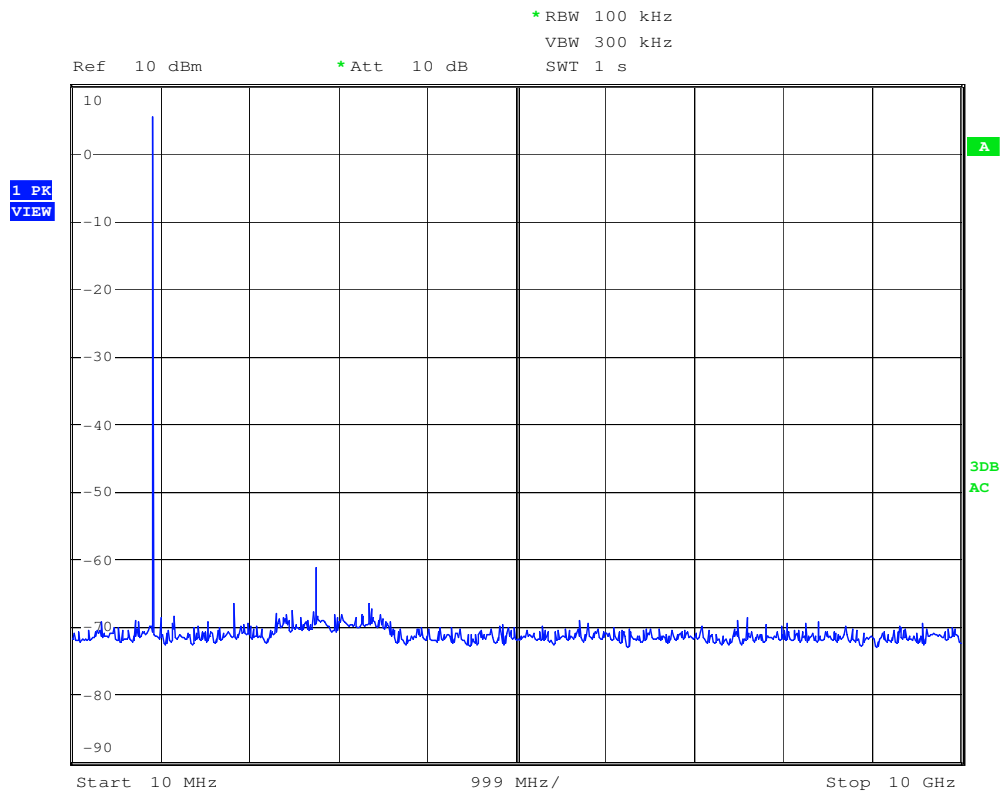
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Date: 4.APR.2008 15:59:04



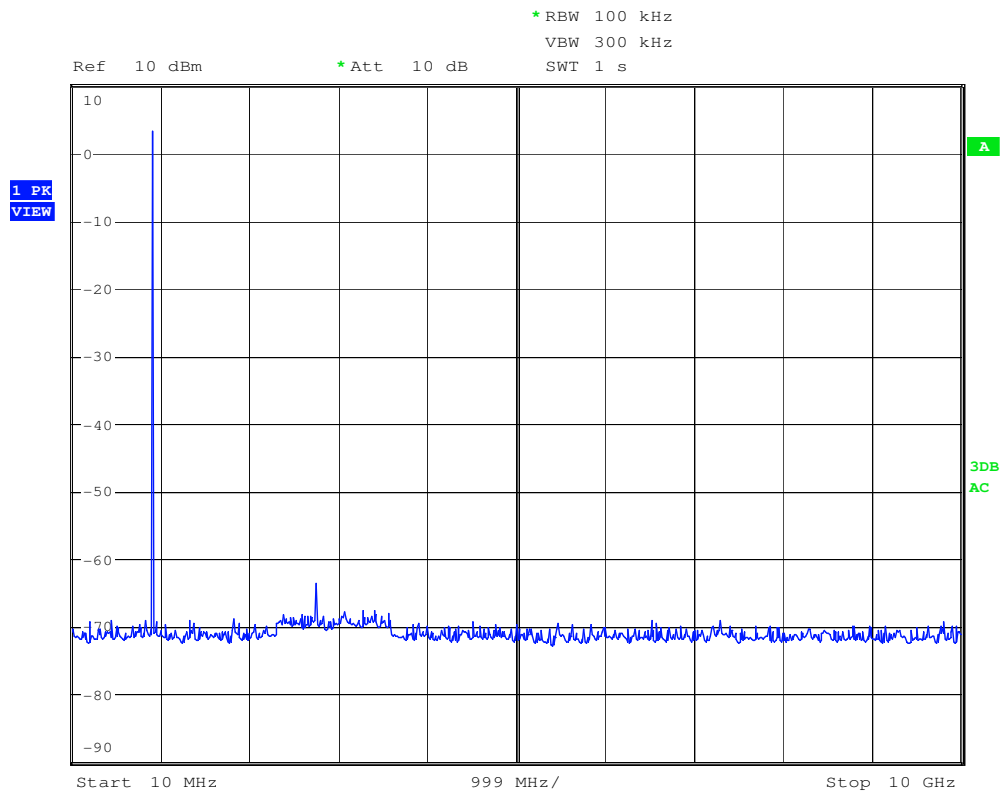
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Date: 4.APR.2008 15:59:46



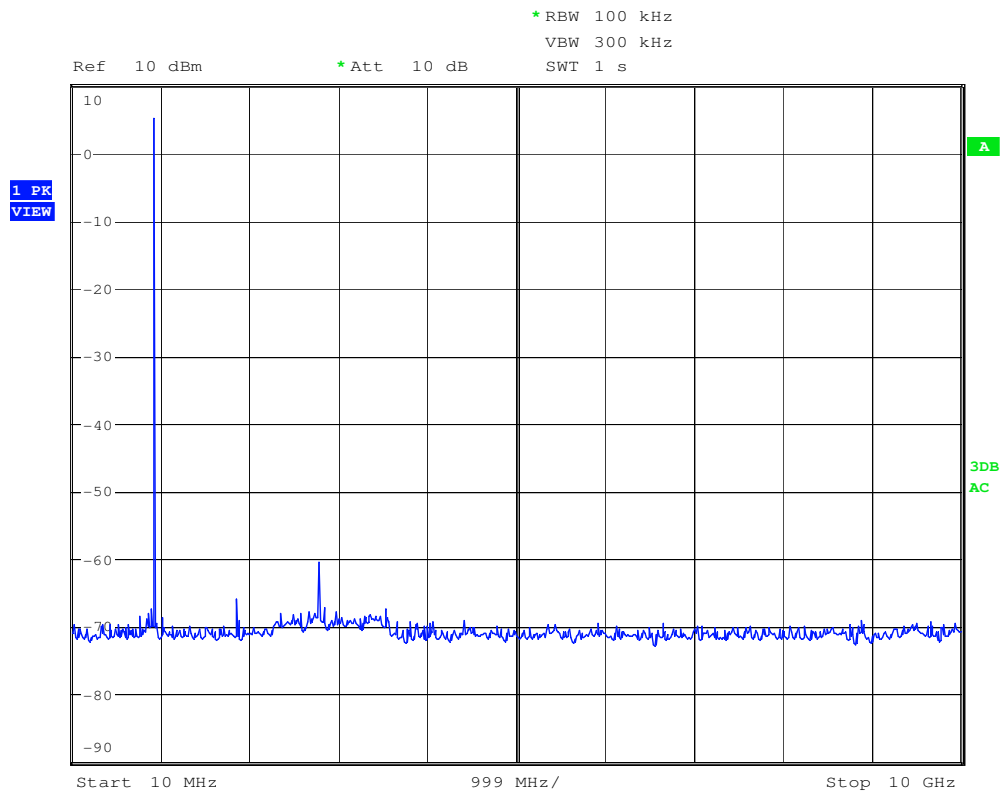
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Date: 4.APR.2008 16:00:30



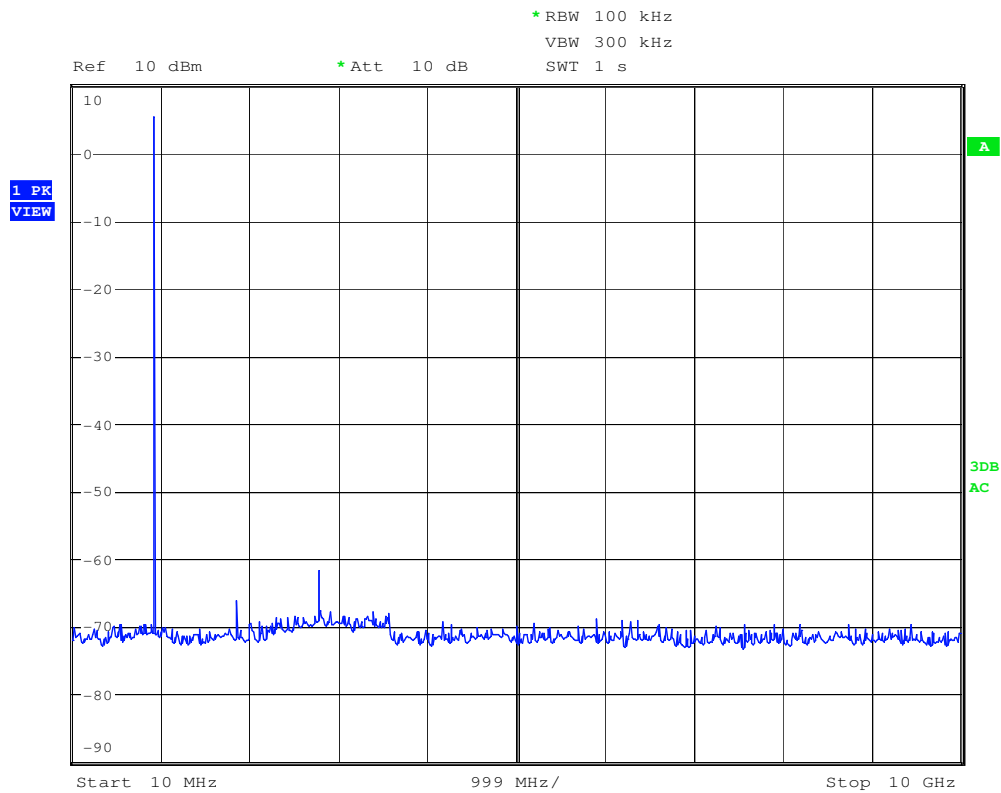
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Date: 4.APR.2008 16:01:41



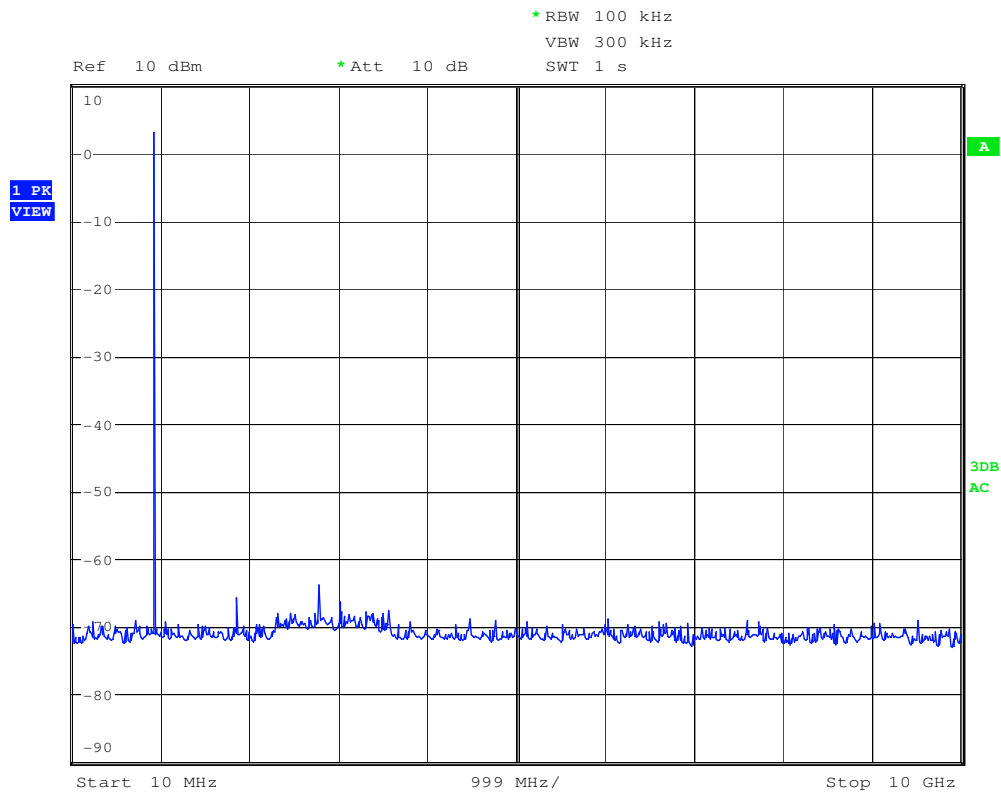
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Date: 4.APR.2008 16:02:23



G08036884



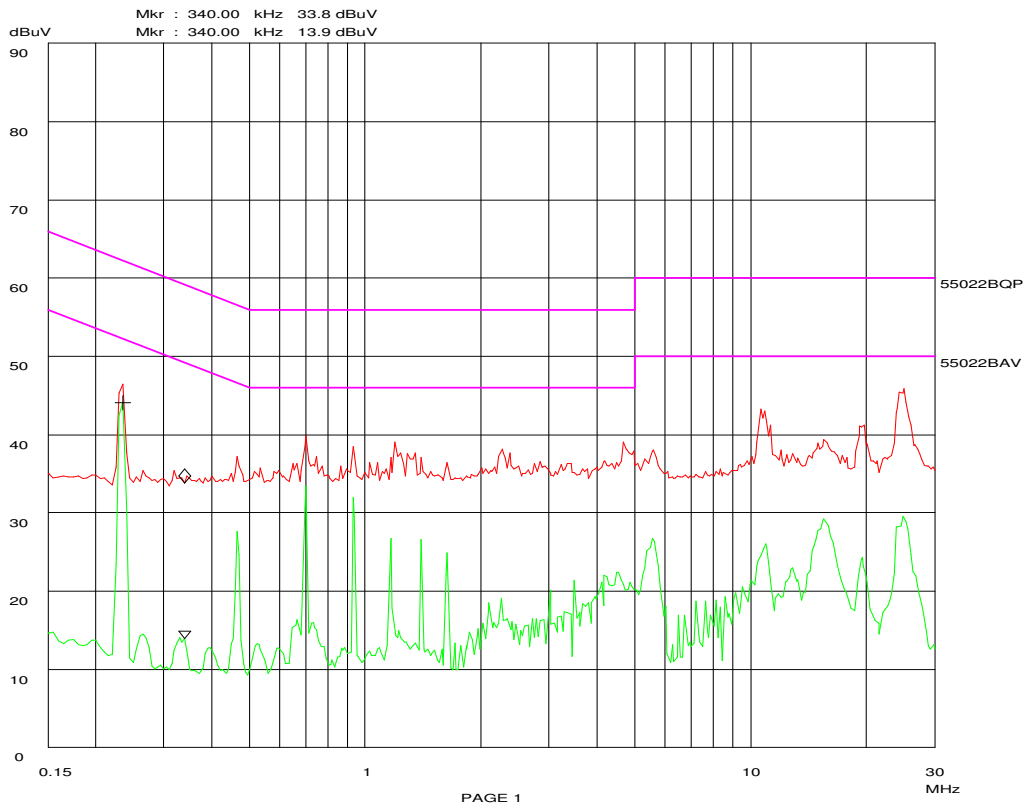
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G08036885

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In trasmissione
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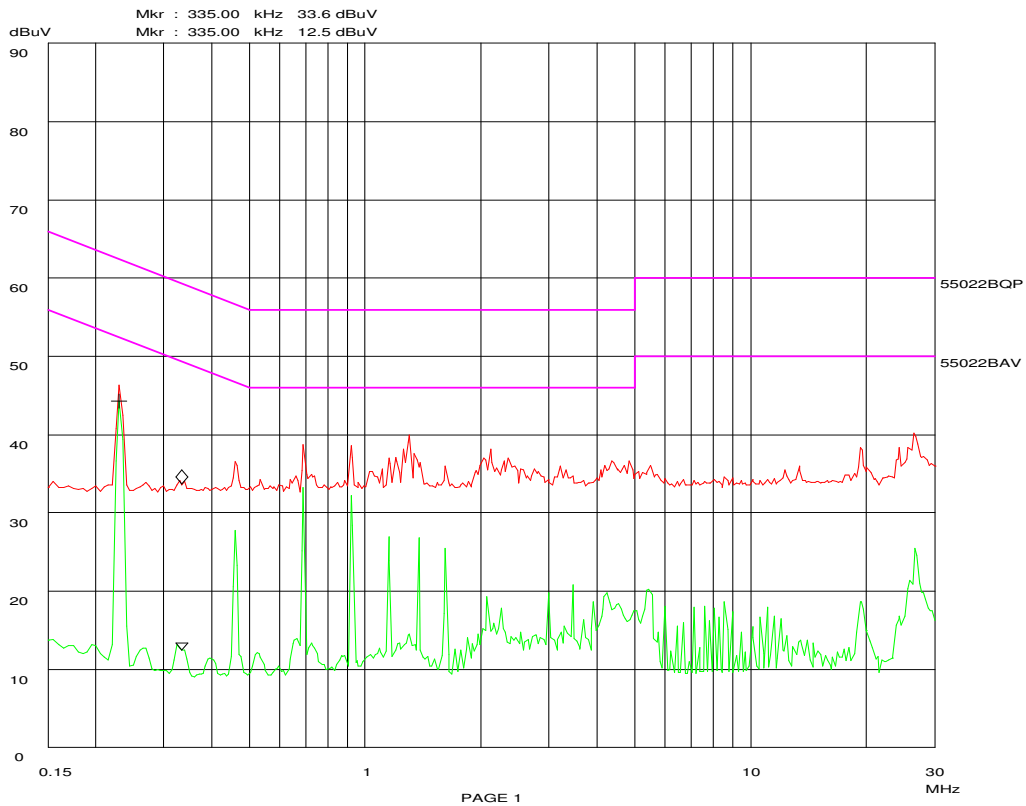




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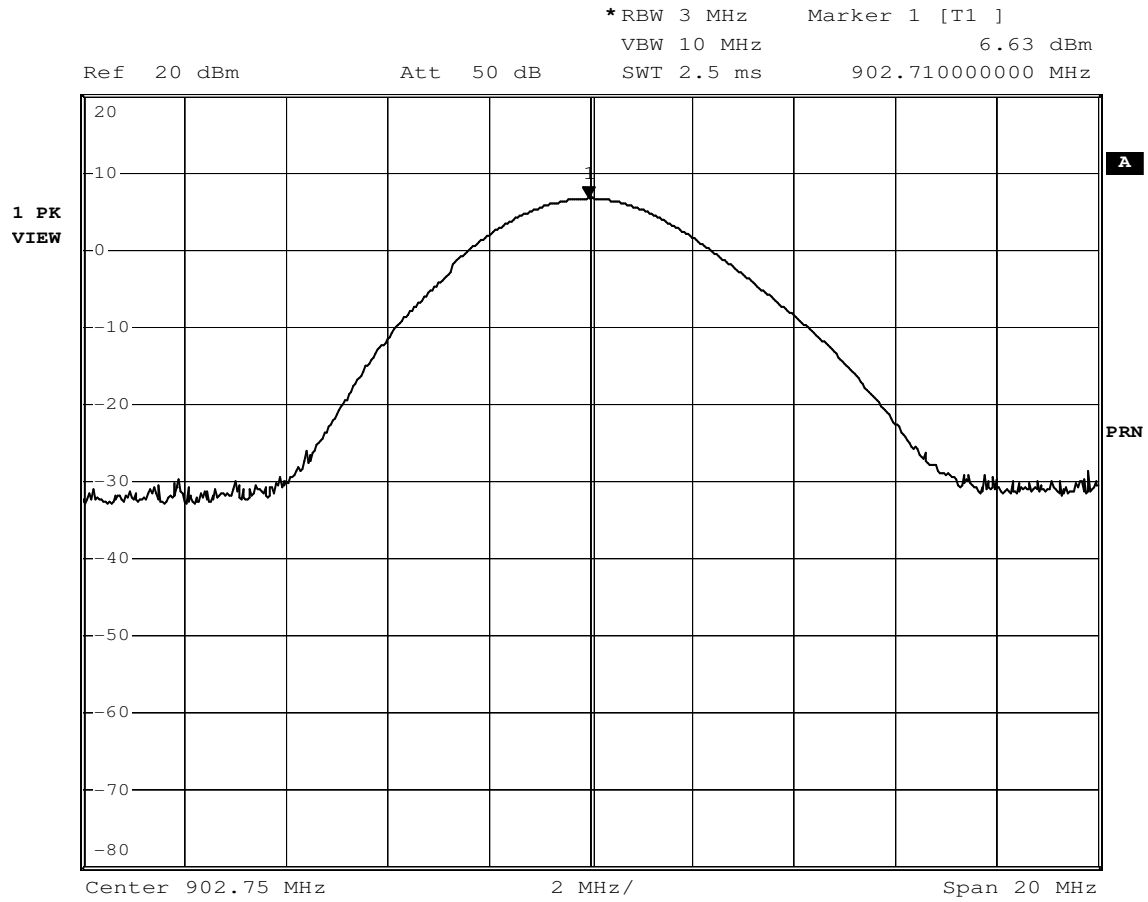
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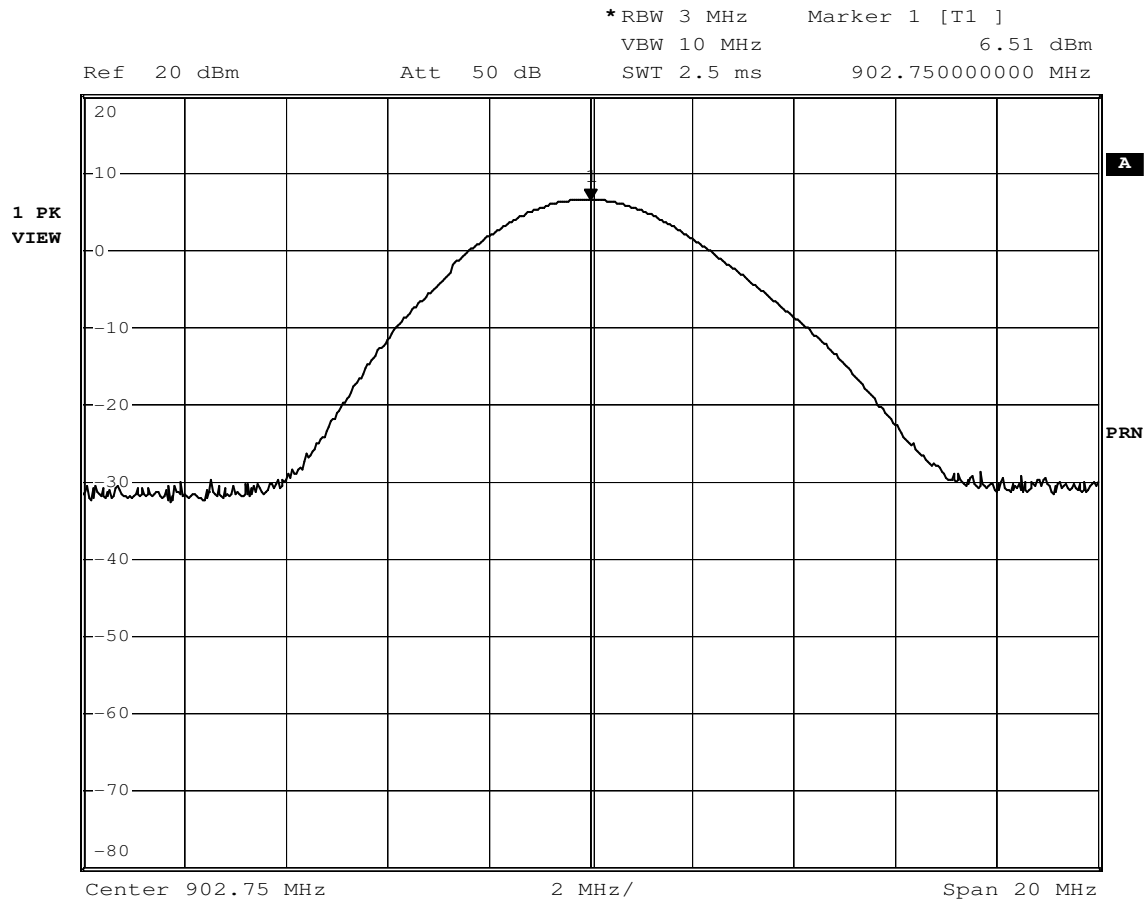


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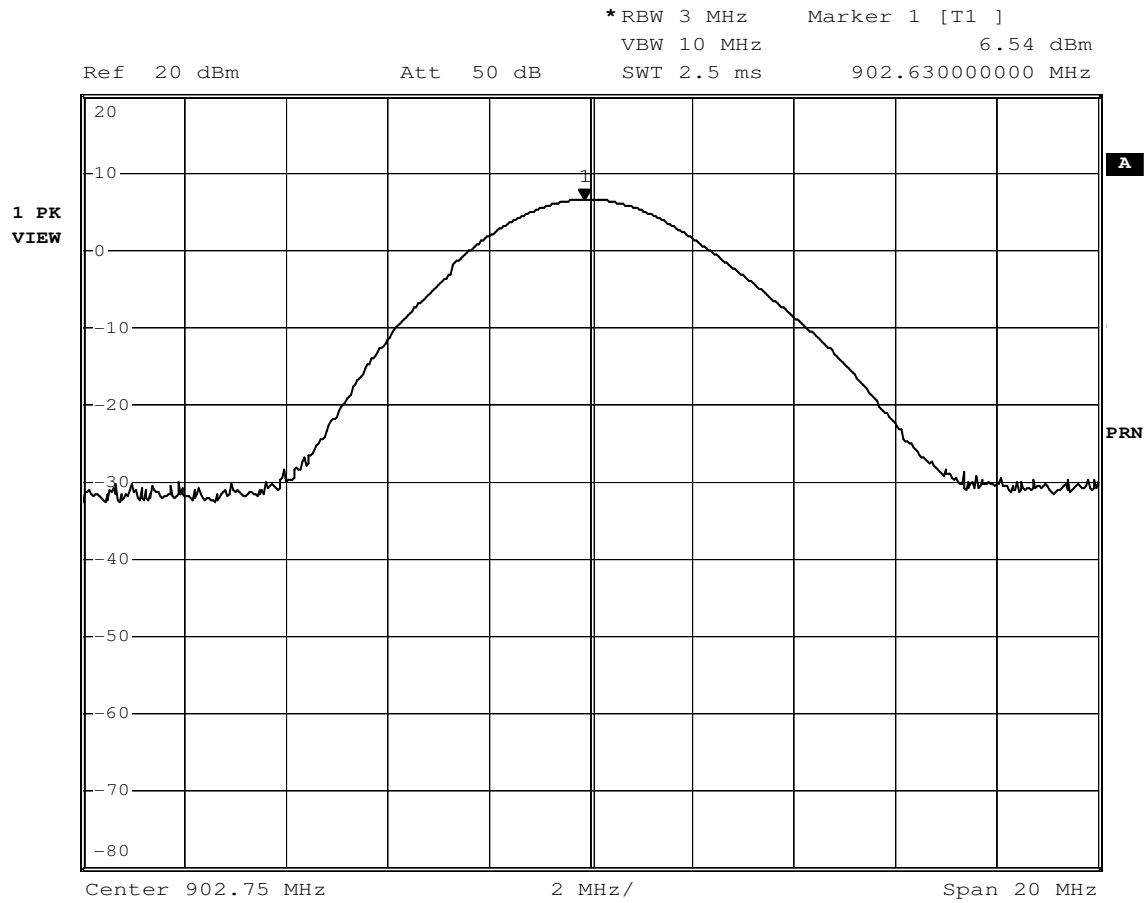


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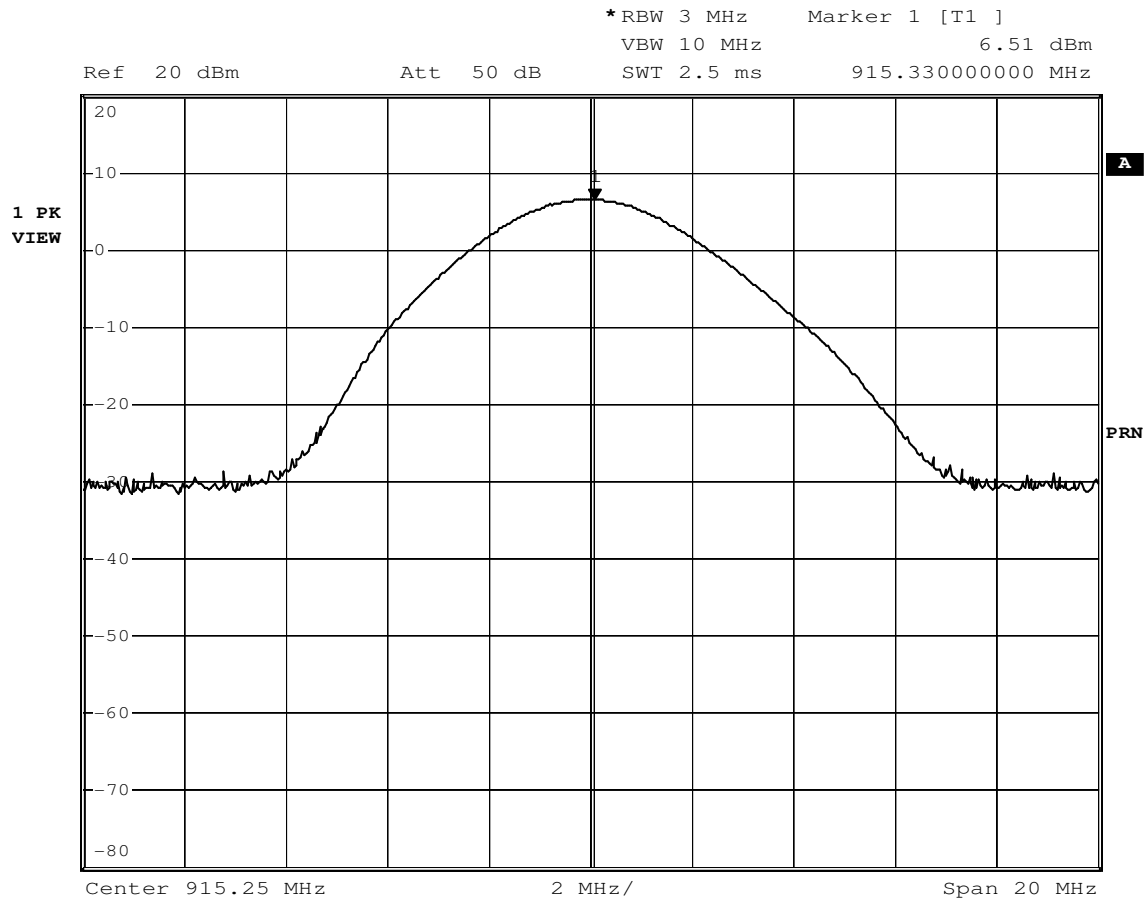


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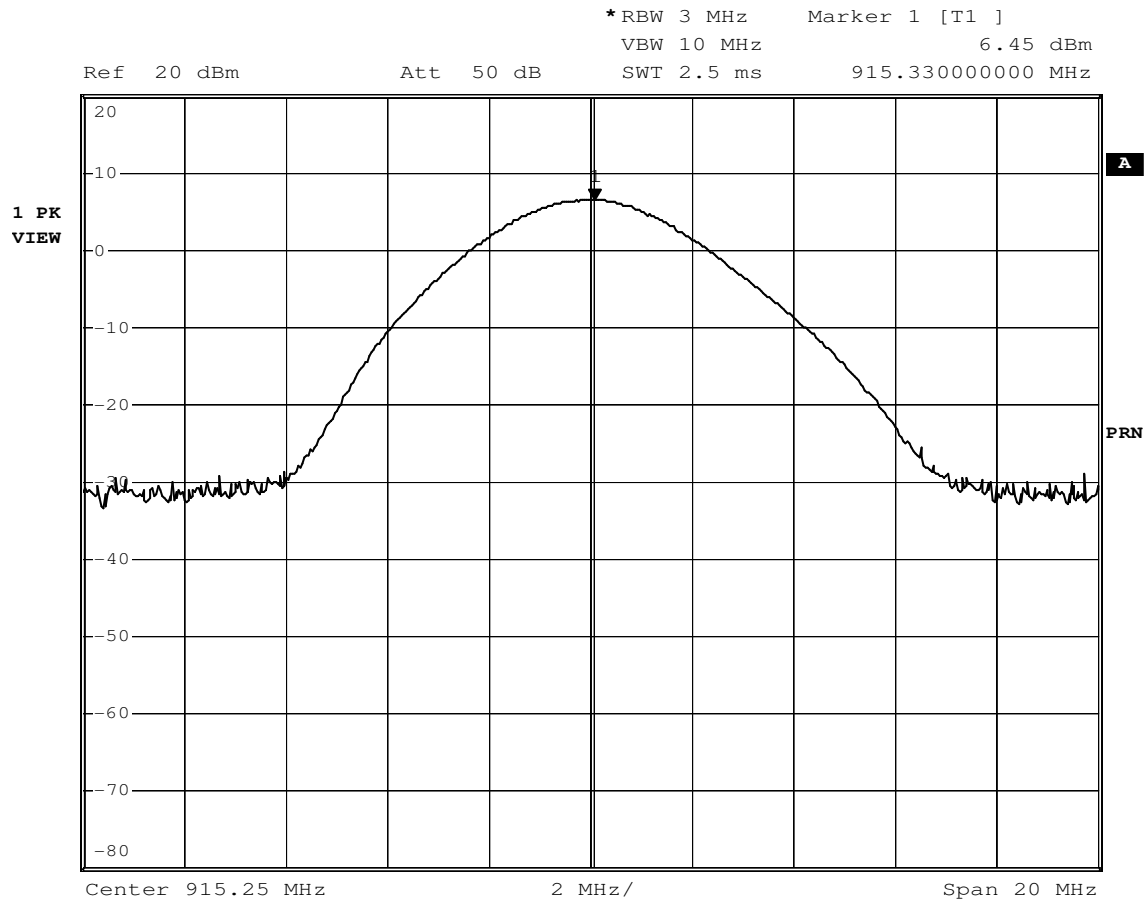


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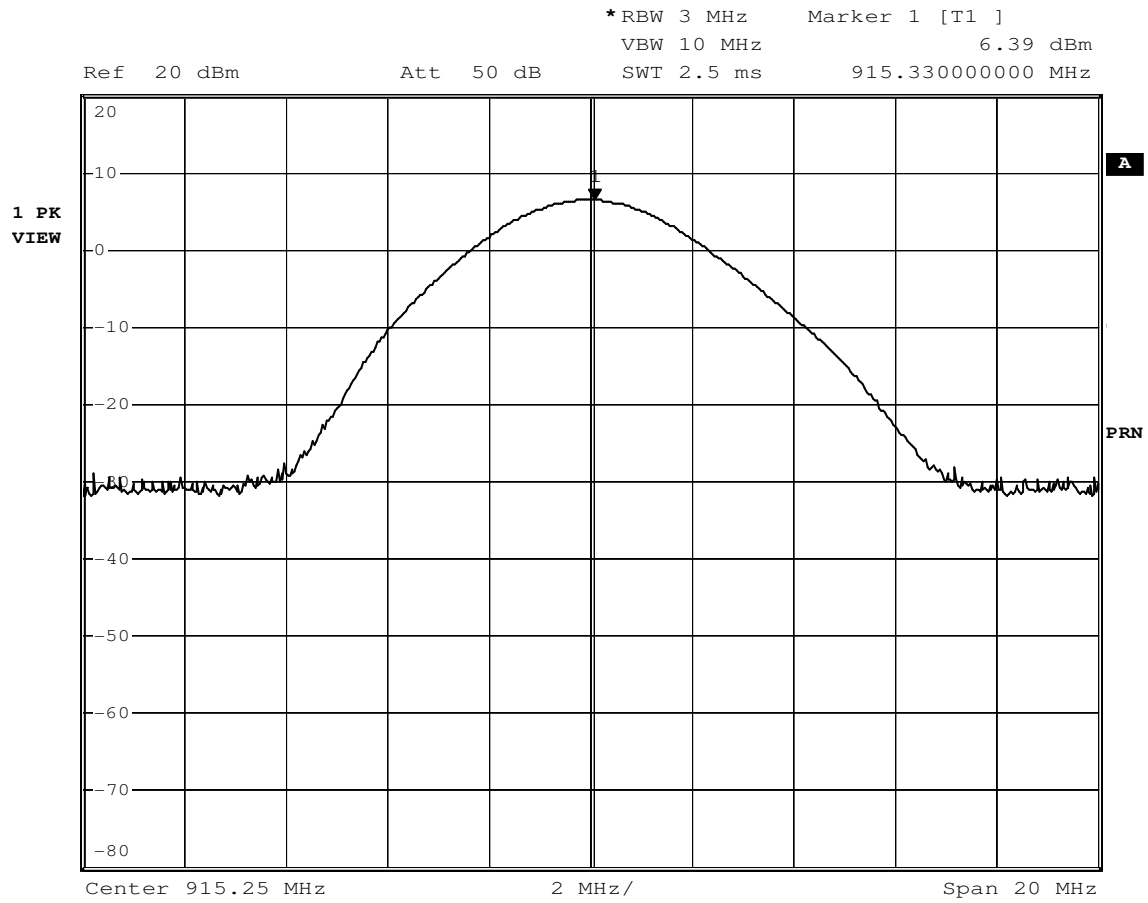


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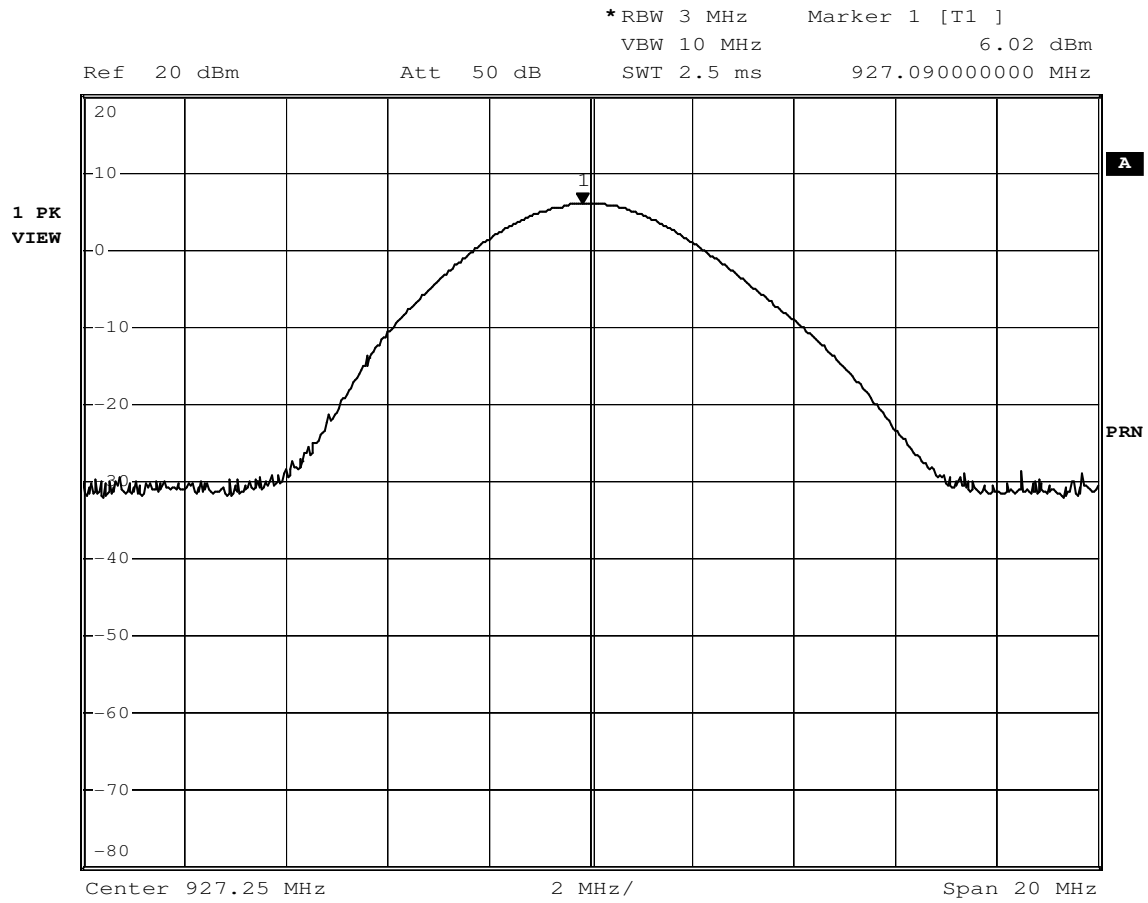


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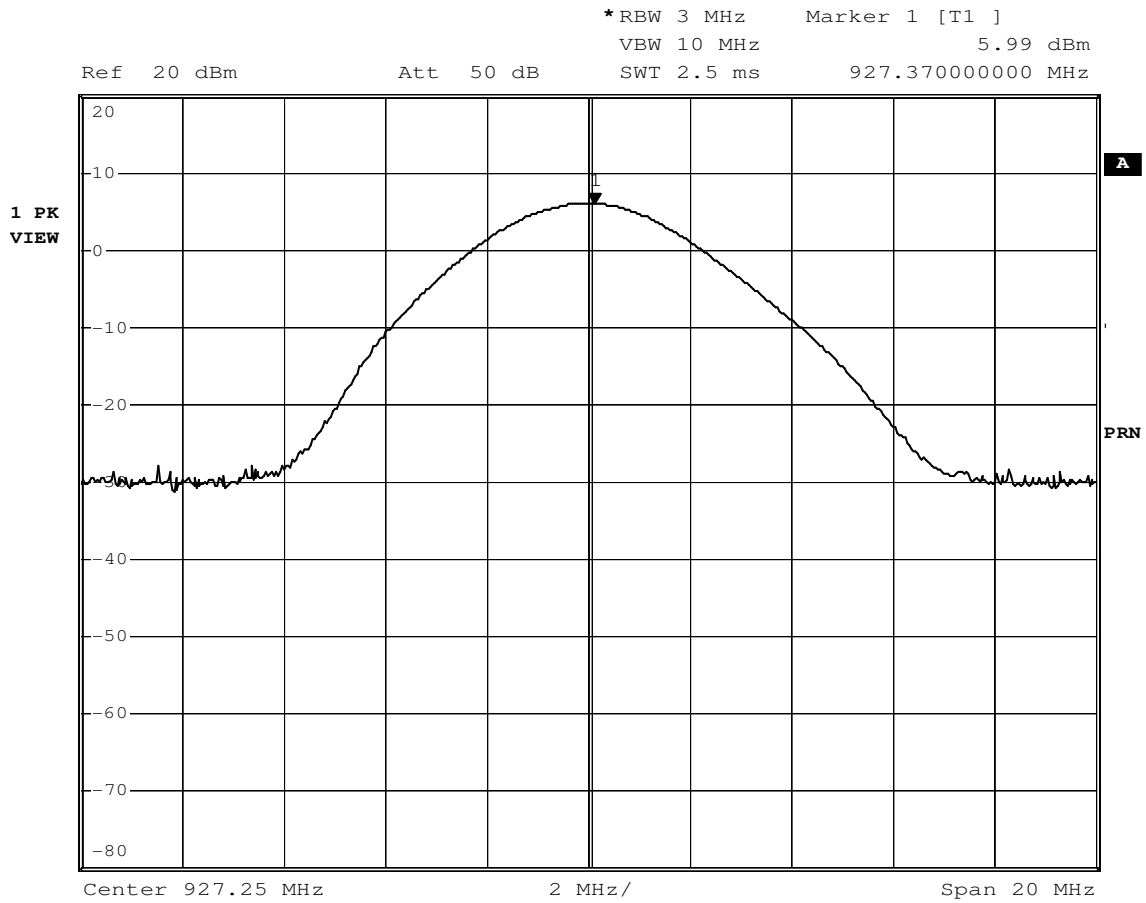


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G08036894





G08036895

