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## Permissible change measurements on WCDMA Base Station 1900 MHz Radio Unit with FCC ID: TA8AKRC11819-1 (7 appendices)

### Test object

Radio Unit KRC 118 19/1

### Summary

| Standard                                      | Compliant | Appendix | Remarks |
|-----------------------------------------------|-----------|----------|---------|
| <b>FCC CFR 47</b>                             |           |          |         |
| 2.1046 RF power output                        | Yes       | 2        | -       |
| 2.1049 Occupied bandwidth                     | Yes       | 3        | -       |
| 2.1051 Band edge                              | Yes       | 4        | -       |
| 2.1051 Spurious emission at antenna terminals | Yes       | 5        | -       |
| 2.1053 Field strength of spurious radiation   | Yes       | 6        | -       |
| 2.1055 Frequency error                        | N/A       | -        | Note    |

Note This test is not applicable for this permissible change.

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FCC ID: TA8AKRC11819-1

**Table of contents**

|                                        |            |
|----------------------------------------|------------|
| Description of the test object         | Appendix 1 |
| Operation mode during measurements     | Appendix 1 |
| Test setups                            | Appendix 1 |
| Purpose of test                        | Appendix 1 |
| RF power output                        | Appendix 2 |
| Occupied bandwidth                     | Appendix 3 |
| Band edge                              | Appendix 4 |
| Spurious emission at antenna terminals | Appendix 5 |
| Field strength of spurious radiation   | Appendix 6 |
| Photos                                 | Appendix 7 |

**Description – Test object**

Equipment: WCDMA Radio Unit (RU) 1900 MHz, single and double carrier

Tx Frequency range: 1932.4-1987.6 MHz

Modulations: QPSK and 16QAM

Maximum output power: Single carrier: 1x46 dBm (40W)  
Multi carrier: 2x43 dBm (2x20W)

Nominal power voltage: -48 VDC

**Tested channels**

| UARFCN | Frequency  |
|--------|------------|
| 9662   | 1932.4 MHz |
| 9712   | 1942.4 MHz |
| 9762   | 1952.4 MHz |
| 9788   | 1957.6 MHz |
| 9812   | 1962.4 MHz |
| 9813   | 1962.6 MHz |
| 9888   | 1977.6 MHz |
| 9938   | 1987.6 MHz |

**Operation mode during measurements****Test models**

All measurements were performed with the test object transmitting the Test models 1 and 5 defined in 3GPP TS 25.141. Test model 1 use the QPSK modulation only, and Test model 5 includes the 16QAM modulation.

**Conducted measurements**

All RF conducted measurements were performed with the test object installed in a RBS 3206 cabinet powered with -48 VDC. All measurements were done at the output connector (Ant A) of the Filter Unit (FU) KRC 118 20/1. All measurements were performed at maximum output power with both modulations.

The settings below was found to be representative for all traffic scenarios when several settings were tested to find the setting for worst case.

**Single carrier**

Test model 1: 64 DPCH:s at 30 ksps (SF=128)

Test model 5: 30 DHCP:s at 30 ksps (SF=128) and 8 HS-PDSCH:s at 240 ksps (SF=16)

**Multi carrier**

Test model 1: 32 DPCH:s at 30 ksps (SF=128)

Test model 5: 30 DHCP:s at 30 ksps (SF=128) and 8 HS-PDSCH:s at 240 ksps (SF=16)

**Radiated measurements**

All radiated measurements were performed with the test object installed in a RBS 3206 cabinet powered with -48 VDC. The RBS model was selected to represent worst case.

The RU units were activated as Single Carrier 3x1 (1x46 dBm) and Multi Carrier 3x2 (2x43 dBm). The RF output power ports were terminated with 50 ohm loads.

The RU units were allocated to the following UARFCN:

**Single Carrier:**

| RU         | 1                    | 2                    | 3                    |
|------------|----------------------|----------------------|----------------------|
| Downlink   | 9662<br>(1932.4 MHz) | 9788<br>(1957.6 MHz) | 9938<br>(1987.6 MHz) |
| Uplink     | 9262<br>(1852.4 MHz) | 9388<br>(1877.6 MHz) | 9538<br>(1907.6 MHz) |
| Test model | 1                    | 5                    | 1                    |

**Multi Carrier:**

| RU         | 1                    |                      | 2                    |                      | 3                    |                      |
|------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Cell       | 1                    | 2                    | 3                    | 4                    | 5                    | 6                    |
| Downlink   | 9662<br>(1932.4 MHz) | 9712<br>(1942.4 MHz) | 9762<br>(1952.4 MHz) | 9813<br>(1962.6 MHz) | 9888<br>(1977.6 MHz) | 9938<br>(1987.6 MHz) |
| Uplink     | 9262<br>(1852.4 MHz) | 9312<br>(1862.4 MHz) | 9362<br>(1872.4 MHz) | 9413<br>(1882.6 MHz) | 9488<br>(1897.6 MHz) | 9538<br>(1907.6 MHz) |
| Test model | 5                    | 1                    | 1                    | 5                    | 1                    | 5                    |

Test model 1: 16 DPCH:s at 30 ksps (SF=128)

Test model 5: 6 DHCP:s at 30 ksps (SF=128) and 2 HS-PDSCH:s at 240 ksps (SF=16)

**Purpose of test**

The purpose of the tests is to verify compliance to the performance characteristics specified in FCC CFR 47.

**References**

Measurements were done according to relevant parts of the following standards:  
ANSI/TIA/EIA-603-B-2002  
3GPP TS 25.141

**Reservation**

The test results in this report apply only to the particular test object as declared in the report.

**Delivery of test object**

The test object was delivered: 2006-06-05

FCC ID: TA8AKRC11819-1

Appendix 1

**Manufacturer's representative**

Larry Lindström, Ericsson AB

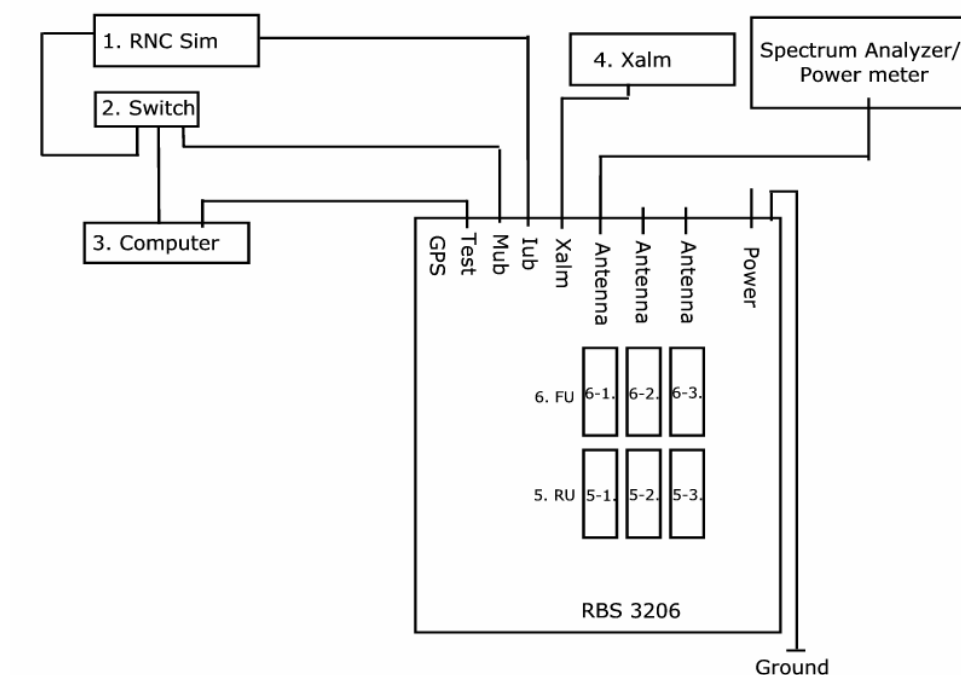
**Test engineers**

Stefan Larsson, Jörgen Wassholm, and Jonas Bremholt.

**Test witnesses**

Larry Lindström, Christer Gustavsson, and Thomas Odén Ericsson AB

## Test set-up, conducted measurements



RBS 3206: Product number: 3/BFE 401 1012 R1A, Serial No: A534716880 with software CXP 901 0809/1 P30AG. More information about the RBS hardware units are shown in SP document F610688-H

1. RNC Sim CES 4780BA Mini-sim #53, Asset ID: ETE 212119
2. Switch, Netgear Ethernet switch DS108
3. Computer SUN Microsystems, Ericsson no.: ETE-203521
4. Xalm unit ZHA 901 01/3, Serial No: TE72314306
- 5-1. RU KRC 118 19/1 Rev. R2C, Serial No: AE52479025 (FCC id: TA8AKRC11819-1)
- 6-1. FU KRC 118 20/1 Rev. R1D, Serial No: A400213244

### Interfaces:

Power, -48 VDC  
Coaxial cable with N connector and adaptor to 7/16"  
Iub, configured as T1 by CBU, shielded multi-wire with RJ-45 connector  
Mub, shielded multi-wire with RJ-45 connector  
Test, shielded multi-wire with RJ-45 connector  
Xalm, shielded multi-wire with RJ-45 connector  
GPS, not supported

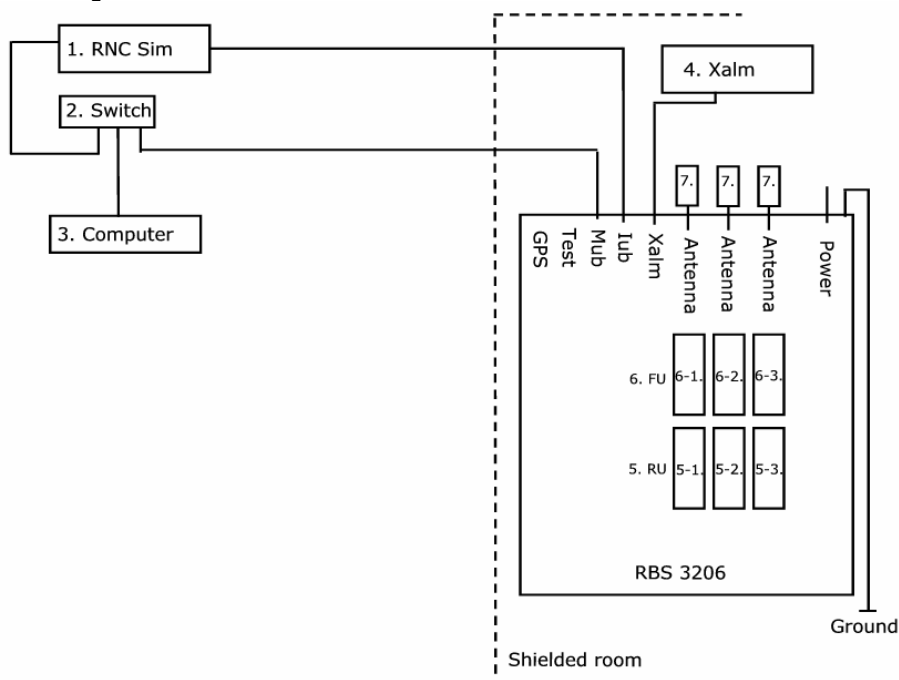
### Type of port:

DC power  
Antenna  
Telecom  
Test purpose  
Test purpose  
Signal  
Signal

FCC ID: TA8AKRC11819-1

Appendix 1

## Test set-up, radiated measurements



RBS 3206: Product number: 3/BFE 401 1012 R1A, Serial No: A534716880 with software CXP 901 0809/1 P30AG. More information about the RBS hardware units are shown in SP document F610688-H

1. RNC Sim 4780 DA, mini-SIM#33, Asset ID ETE-203565
2. Switch, Netgear Ethernet switch DS108
3. Computer, SunBlade, Asset ID: ETE-203521
4. Xalm unit ZHA 901 01/3, Serial No: TE72314306
5. RU KRC 118 19/1 Rev. R2C (FCC id: TA8AKRC11819-1)
- 5-1. Serial No: AE52479025
- 5-2. Serial No: AE52479028
- 5-3. Serial No: AE52479020
6. FU KRC 118 20/1 Rev. R1D
- 6-1. Serial No: A400213244
- 6-2. Serial No: A400250316
- 6-3. Serial No: A400236449
7. 50 ohm Termination

### Interfaces:

Power, -48VDC  
Coaxial cable with N connector and adaptor to 7/16"  
Iub, configured as T1 by CBU, shielded multi-wire with RJ-45 connector  
Mub, shielded multi-wire with RJ-45 connector  
Test, shielded multi-wire with RJ-45 connector  
Xalm, shielded multi-wire with RJ-45 connector  
GPS, not supported

### Type of port:

DC power  
Antenna  
Telecom  
Test purpose  
Test purpose  
Signal  
Signal

## RF power output measurements according to 47 CFR 2.1046

| Date       | Temperature  | Humidity   |
|------------|--------------|------------|
| 2006-06-20 | 23 °C ± 3 °C | 54 % ± 5 % |
| 2006-06-29 | 22 °C ± 3 °C | 44 % ± 5 % |

### Test set-up and procedure

The output was connected to a Peak power analyzer. The transmitter was set up according to Test model 1 and Test model 5 during the measurements.

| Measurement equipment                     | Calibration Due | SP number |
|-------------------------------------------|-----------------|-----------|
| Boonton RF Peak power meter/analyzer      | 2007-08         | 503 144   |
| Boonton Power sensor 56518-S/4            | 2007-08         | 503 145   |
| Multimeter Fluke 87                       | 2006-11         | 502 190   |
| Testo 610, Temperature and humidity meter | 2006-12         | 502 658   |

**Measurement uncertainty:** 0.5 dB

### Results

#### Single carrier

Rated output power level after FU unit (maximum): 1x46 dBm

| Test conditions<br>$T_{nom}$ 22 °C/ $V_{nom}$ -48 V DC | Transmitter power (dBm)<br>Average |                     |                     |
|--------------------------------------------------------|------------------------------------|---------------------|---------------------|
|                                                        | Frequency<br>1932.4                | Frequency<br>1957.6 | Frequency<br>1987.6 |
| QPSK                                                   | 45.7                               | 45.9                | 45.9                |
| 16QAM                                                  | 45.8                               | 45.9                | 45.9                |

#### Multi carrier

Rated output power level after FU unit (maximum): 2x43 dBm

| Test conditions<br>$T_{nom}$ 22 °C/ $V_{nom}$ -48 V DC | Transmitter combined power (dBm)<br>Average |                                 |                                 |
|--------------------------------------------------------|---------------------------------------------|---------------------------------|---------------------------------|
|                                                        | Frequencies<br>1932.4<br>1942.4             | Frequencies<br>1952.4<br>1962.4 | Frequencies<br>1977.6<br>1987.6 |
| QPSK                                                   | 45.5                                        | 45.8                            | 45.8                            |
| 16QAM                                                  | 45.6                                        | 45.8                            | 45.9                            |

### Limit

§24.232: Maximum output power shall not exceed 100W (50dBm).

|           |     |
|-----------|-----|
| Complies? | Yes |
|-----------|-----|

## Occupied bandwidth measurements according to 47 CFR 2.1049

|                    |                             |                        |
|--------------------|-----------------------------|------------------------|
| Date<br>2006-06-29 | Temperature<br>22 °C ± 3 °C | Humidity<br>44 % ± 5 % |
|--------------------|-----------------------------|------------------------|

### Test set-up and procedure

The measurements were made per definition in §2.1049. The output was connected to a spectrum analyzer. The spectrum analyzer was connected to an external 10 MHz reference standard during the measurements. The transmitter was set up according to Test model 1 and Test model 5 during the measurements.

| Measurement equipment                     | Calibration Due | SP number |
|-------------------------------------------|-----------------|-----------|
| R&S FSIQ                                  | 2006-07         | 503 738   |
| Testo 610, Temperature and humidity meter | 2006-12         | 502 658   |

**Measurement uncertainty:** 3.7 dB

### Results

The results are shown in appendix 3.1

#### QPSK

|           | Frequency  | OBW     |
|-----------|------------|---------|
| Diagram 1 | 1932.4 MHz | 4.2 MHz |
| Diagram 2 | 1957.6 MHz | 4.2 MHz |
| Diagram 3 | 1987.6 MHz | 4.2 MHz |

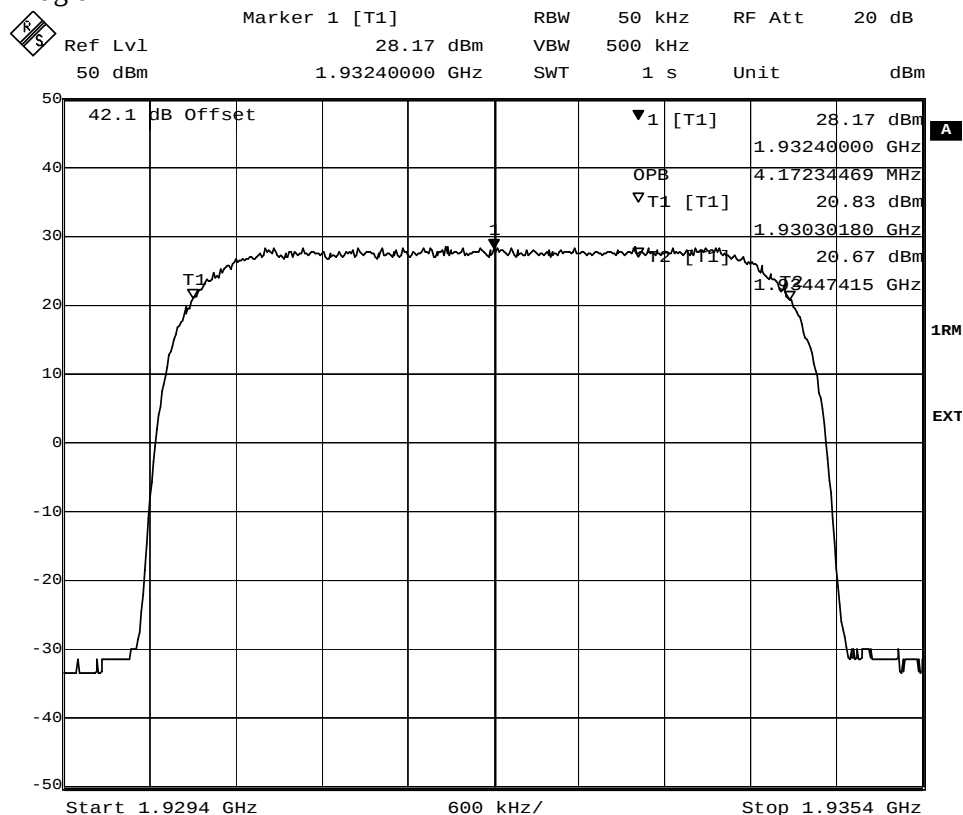
#### 16QAM

|           | Frequency  | OBW     |
|-----------|------------|---------|
| Diagram 4 | 1932.4 MHz | 4.2 MHz |
| Diagram 5 | 1957.6 MHz | 4.2 MHz |
| Diagram 6 | 1987.6 MHz | 4.2 MHz |

FCC ID: TA8AKRC11819-1

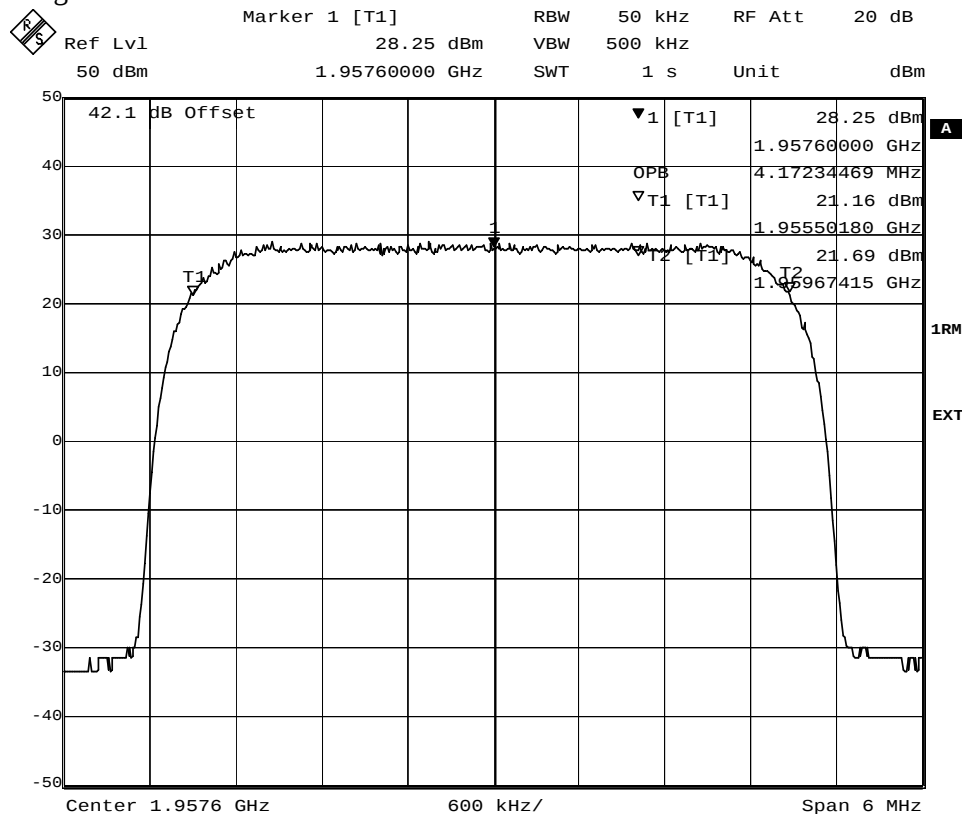
Appendix 3.1

Diagram 1



Date: 29.JUN.2006 16:38:55

Diagram 2

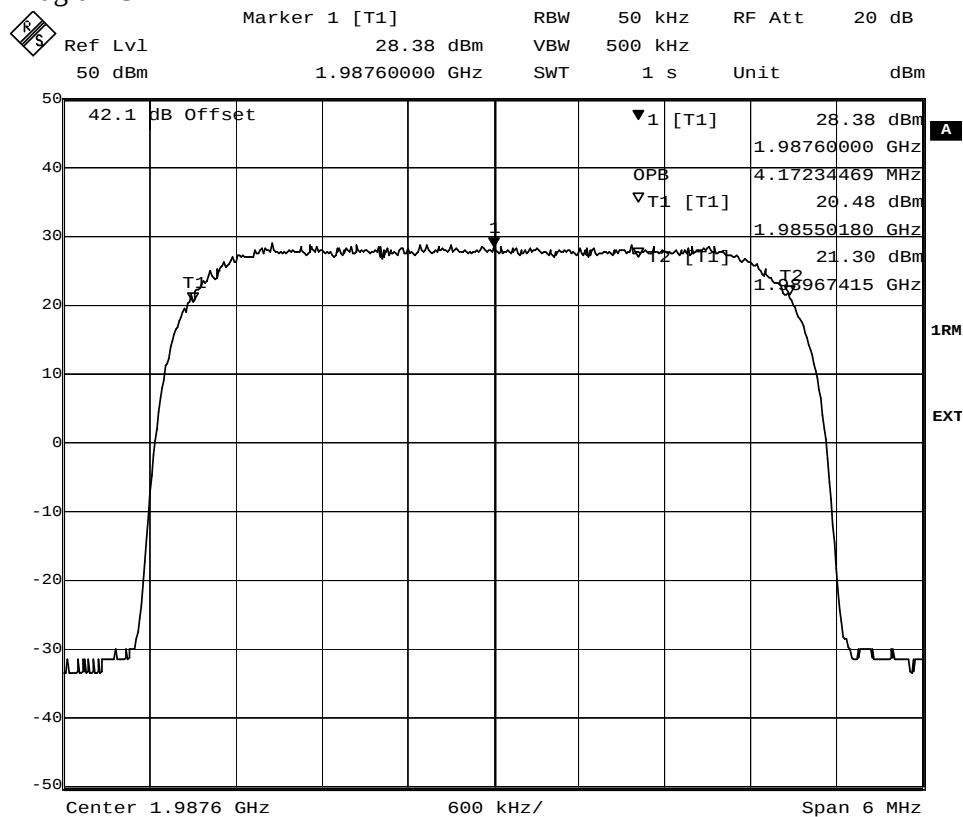


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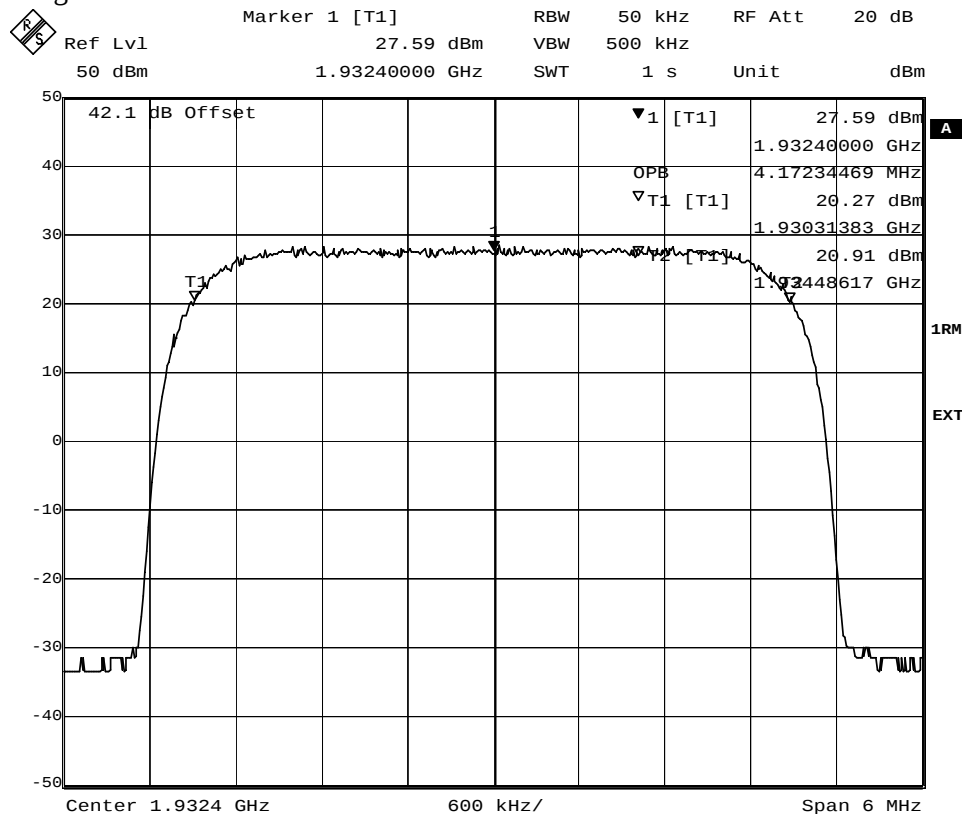
Appendix 3.1

Diagram 3



Date: 29.JUN.2006 21:53:24

Diagram 4

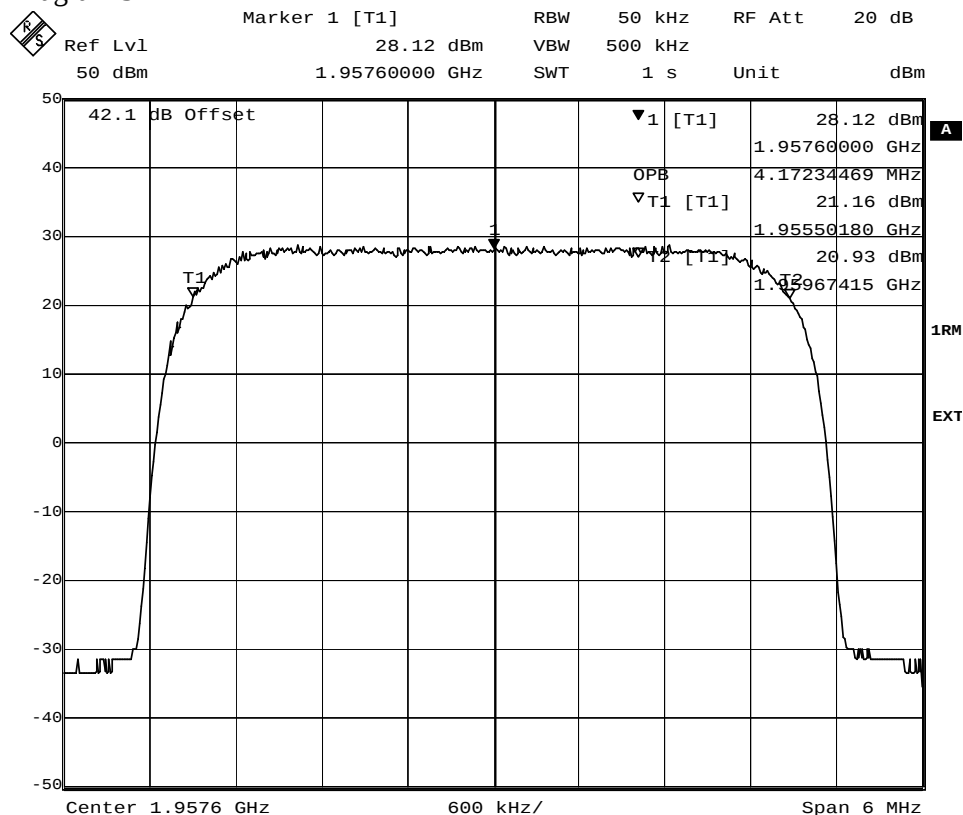


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FCC ID: TA8AKRC11819-1

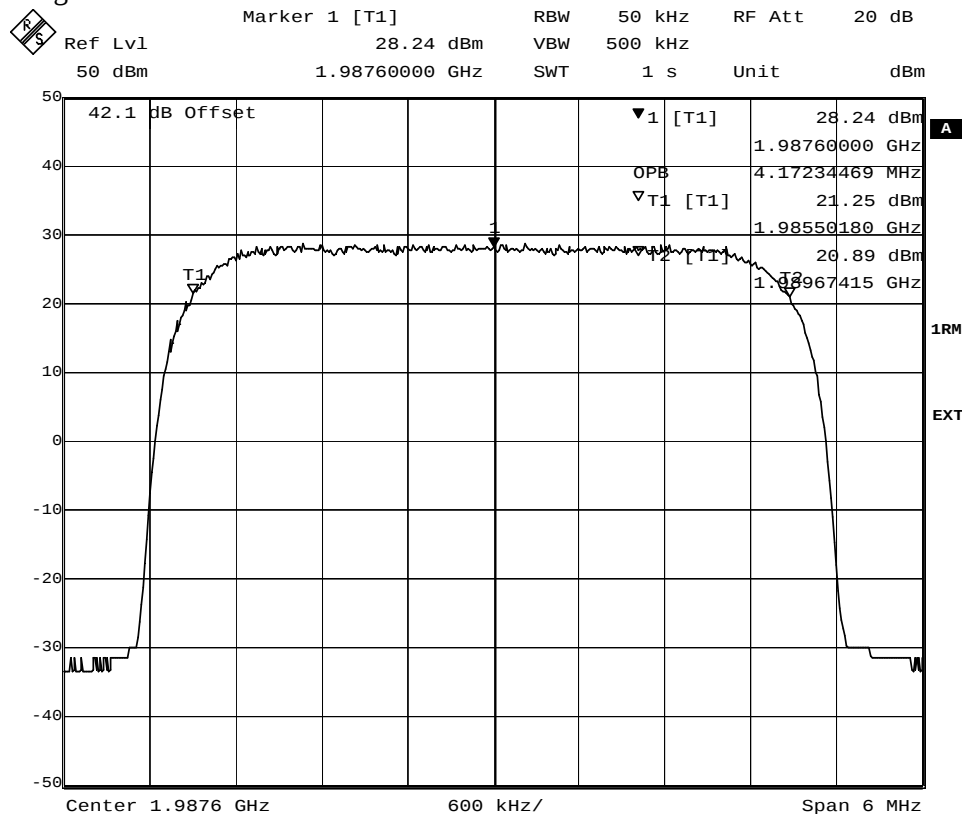
Appendix 3.1

Diagram 5



Date: 29.JUN.2006 16:52:57

Diagram 6



Date: 29.JUN.2006 21:56:18

## Band edge measurements according to 47 CFR 2.1051

| Date       | Temperature  | Humidity   |
|------------|--------------|------------|
| 2006-06-20 | 23 °C ± 3 °C | 54 % ± 5 % |
| 2006-06-29 | 22 °C ± 3 °C | 44 % ± 5 % |

## Test set-up and procedure

The measurements were made per definition in §24.238. The output was connected to a spectrum analyzer with the average detector activated. The spectrum analyzer was connected to an external 10 MHz reference standard during the measurements. A resolution bandwidth of 30 kHz was used up to 1 MHz away from the band edges. 30 kHz is <1% of the Emission BW(4.25 MHz between the 26 dB points). The limit was adjusted with 1.5 dB to -14.5 dBm to compensate for the reduced bandwidth. A RBW of 50 kHz was used between 1 to 5 MHz away from the band edges. As the FCC rules specify a RBW of 1 MHz for measurements of emissions >1 MHz away from the band edges, the limit was adjusted with 13 dB to -26 dBm to compensate for the reduced measurement bandwidth. The transmitter was set up according to Test model 1 and Test model 5 during the measurements.

| Measurement equipment                     | Calibration Due | SP number |
|-------------------------------------------|-----------------|-----------|
| R&S FSIQ                                  | 2006-07         | 503 738   |
| Testo 610, Temperature and humidity meter | 2006-12         | 502 658   |

**Measurement uncertainty:** 3.7 dB

## Results

The results are shown in appendix 4.1

### Single carrier

#### QPSK

Diagram 1: 1932.4 MHz  
Diagram 2: 1987.6 MHz

#### 16QAM

Diagram 3: 1932.4 MHz  
Diagram 4: 1987.6 MHz

### Multi carrier

#### QPSK

Diagram 5: 1932.4+1942.4 MHz  
Diagram 6: 1977.6+1987.6 MHz

#### 16QAM

Diagram 7: 1932.4+1942.4 MHz  
Diagram 8: 1977.6+1987.6 MHz

## Limits

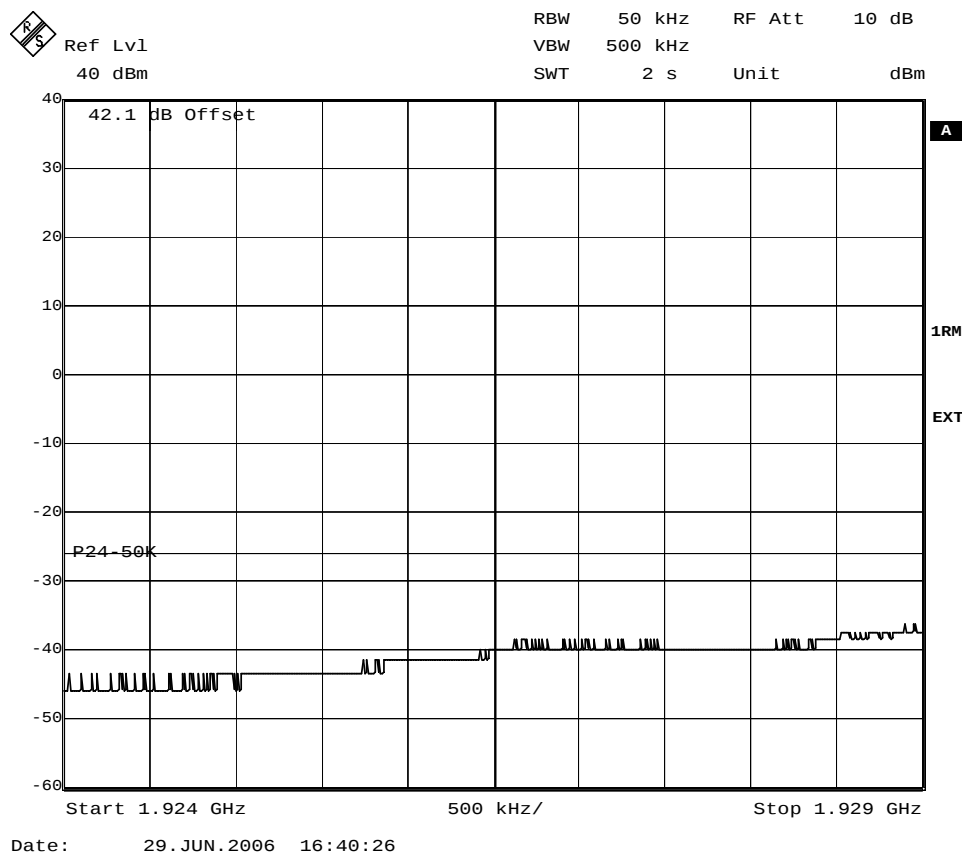
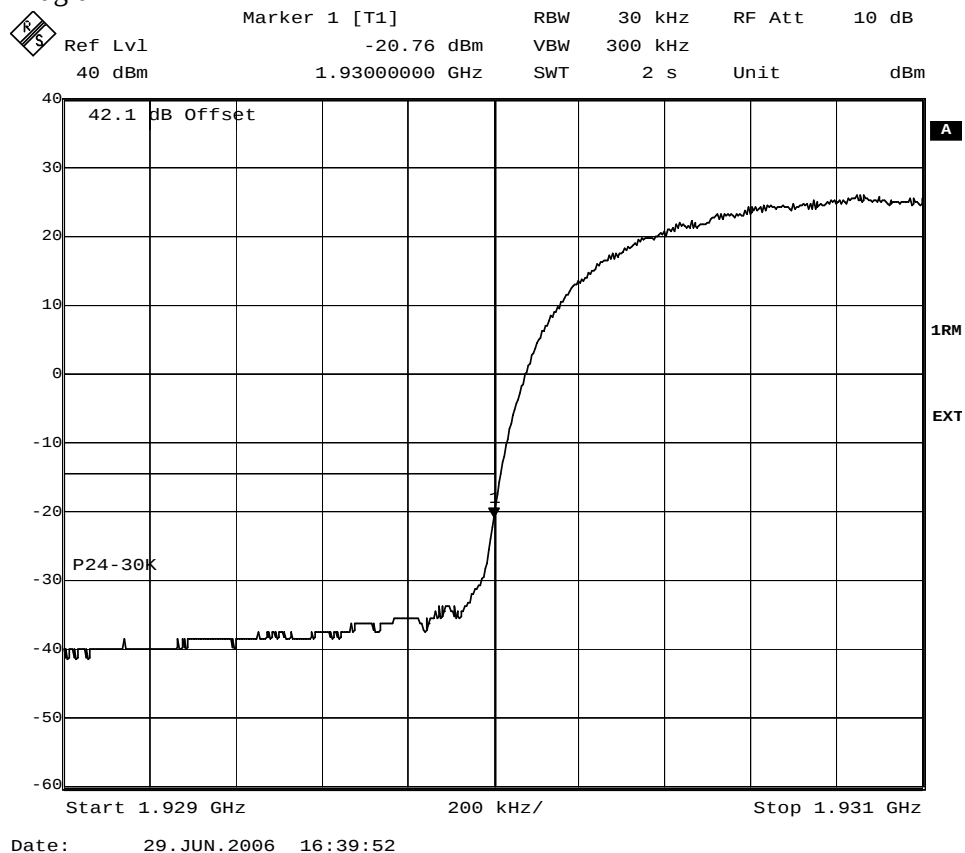
The power of any emission outside the frequency band shall be attenuated below the transmitter power (P) by at least 43 + 10 log P dB.

|           |     |
|-----------|-----|
| Complies? | Yes |
|-----------|-----|

FCC ID: TA8AKRC11819-1

Appendix 4.1

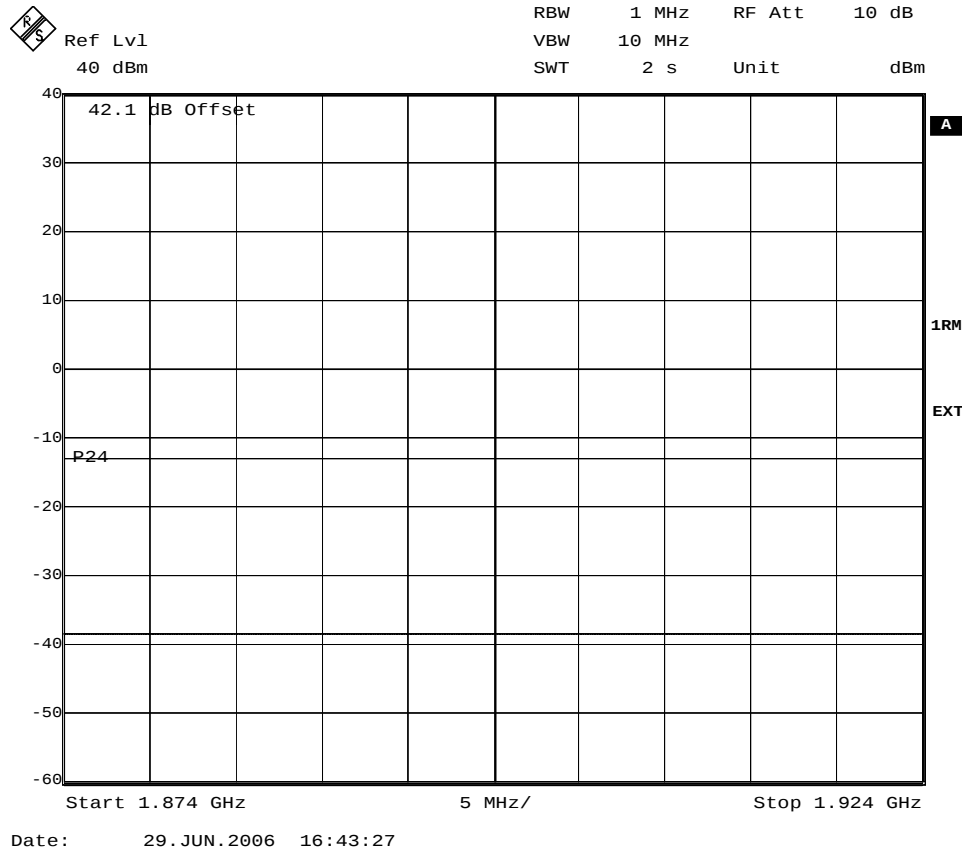
Diagram 1





FCC ID: TA8AKRC11819-1

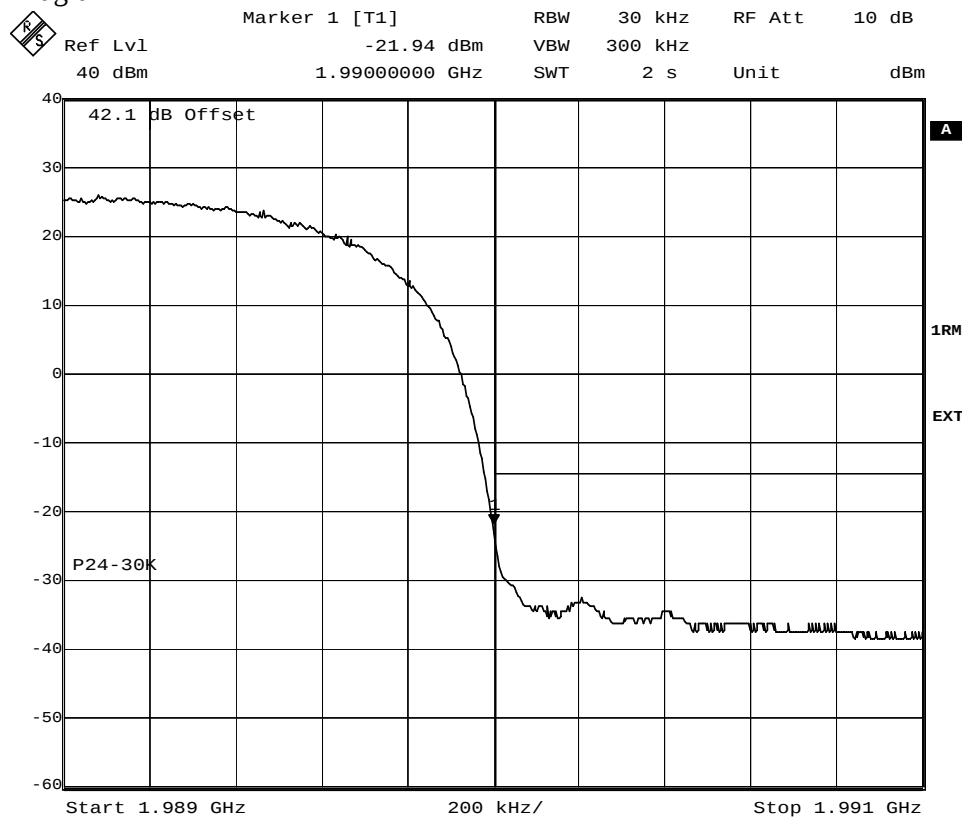
Appendix 4.1



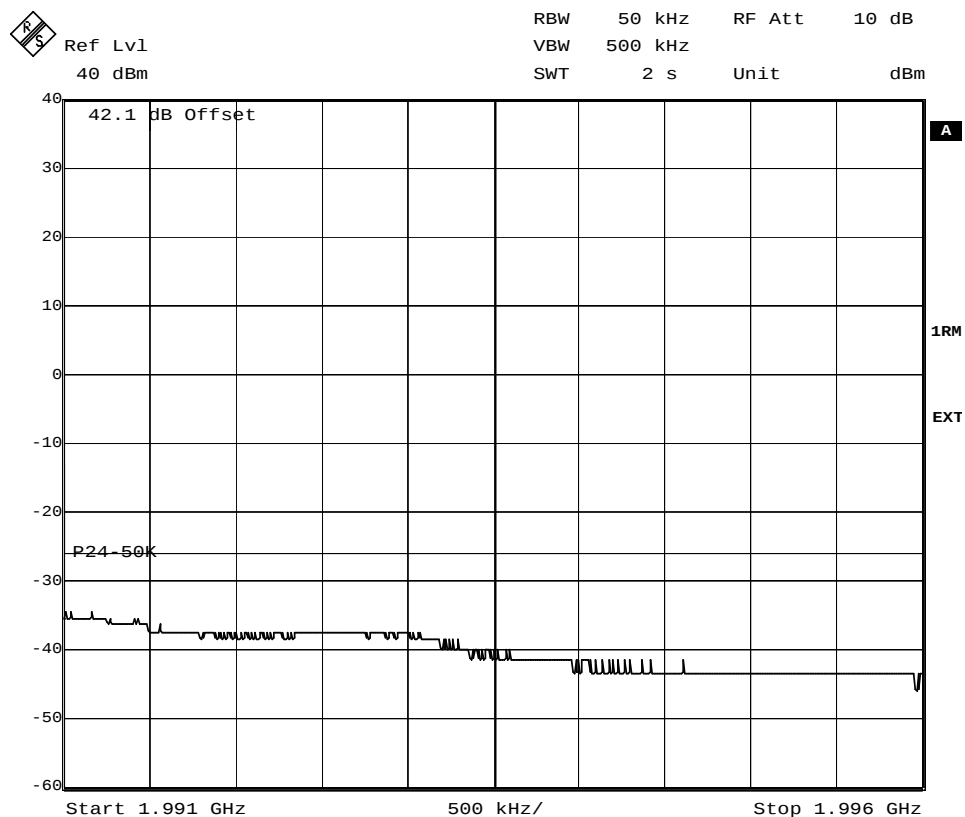
FCC ID: TA8AKRC11819-1

Appendix 4.1

Diagram 2



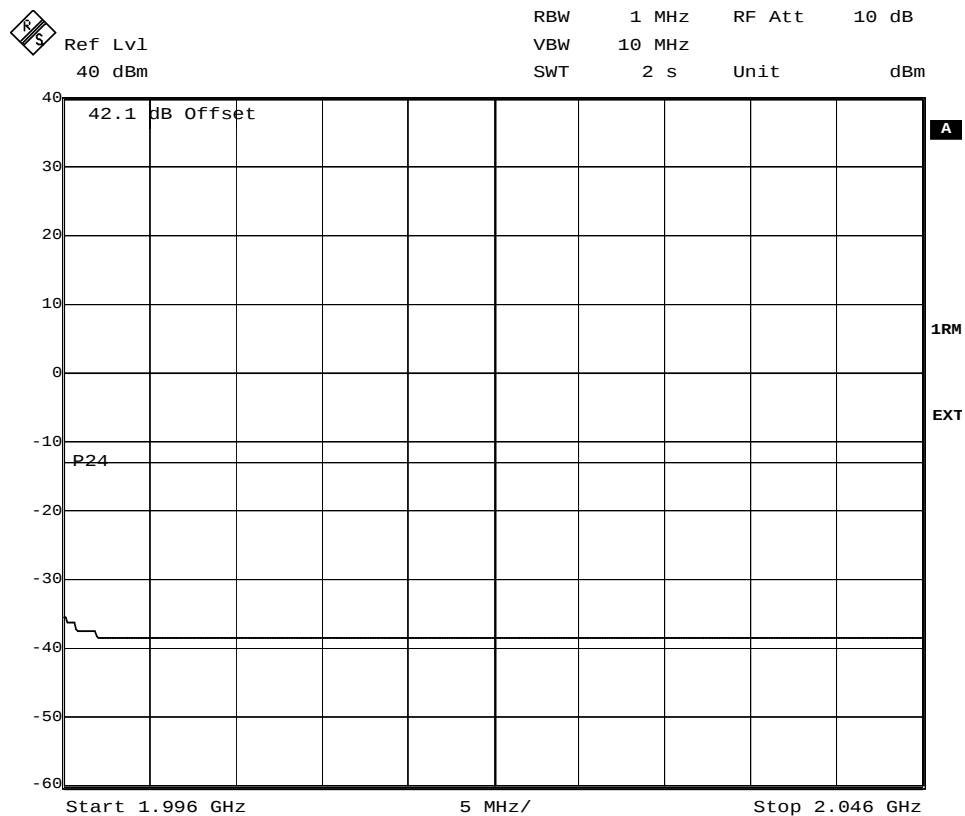
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Date: 29.JUN.2006 21:51:24

FCC ID: TA8AKRC11819-1

Appendix 4.1

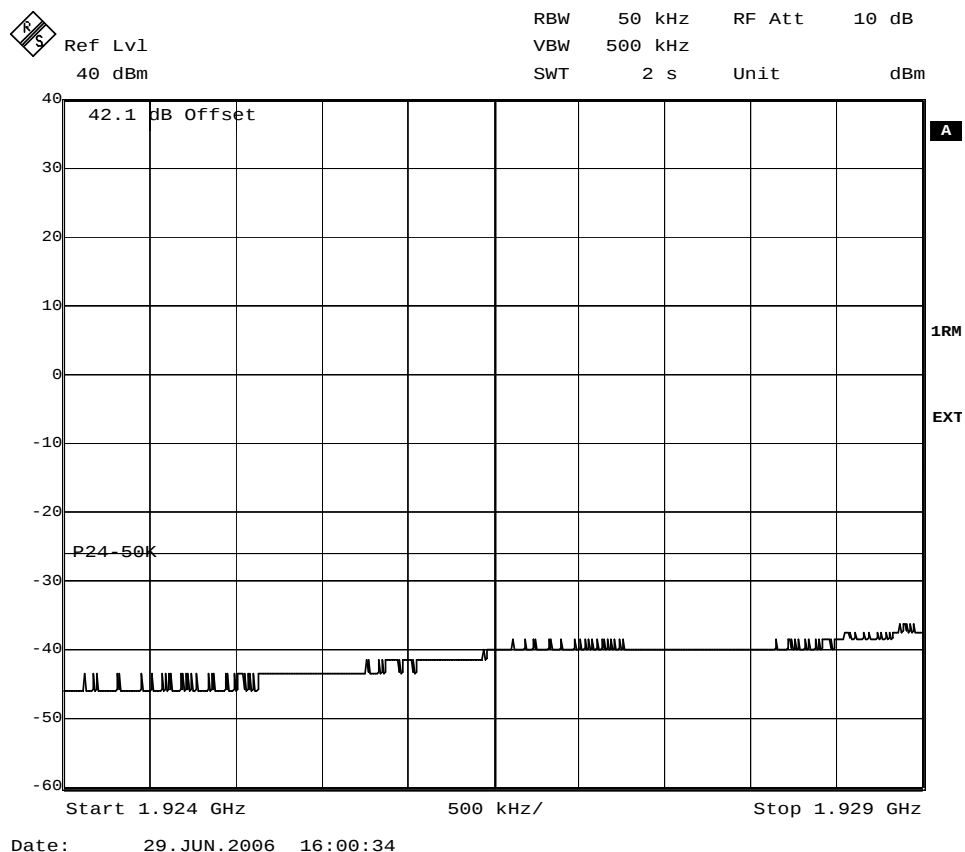
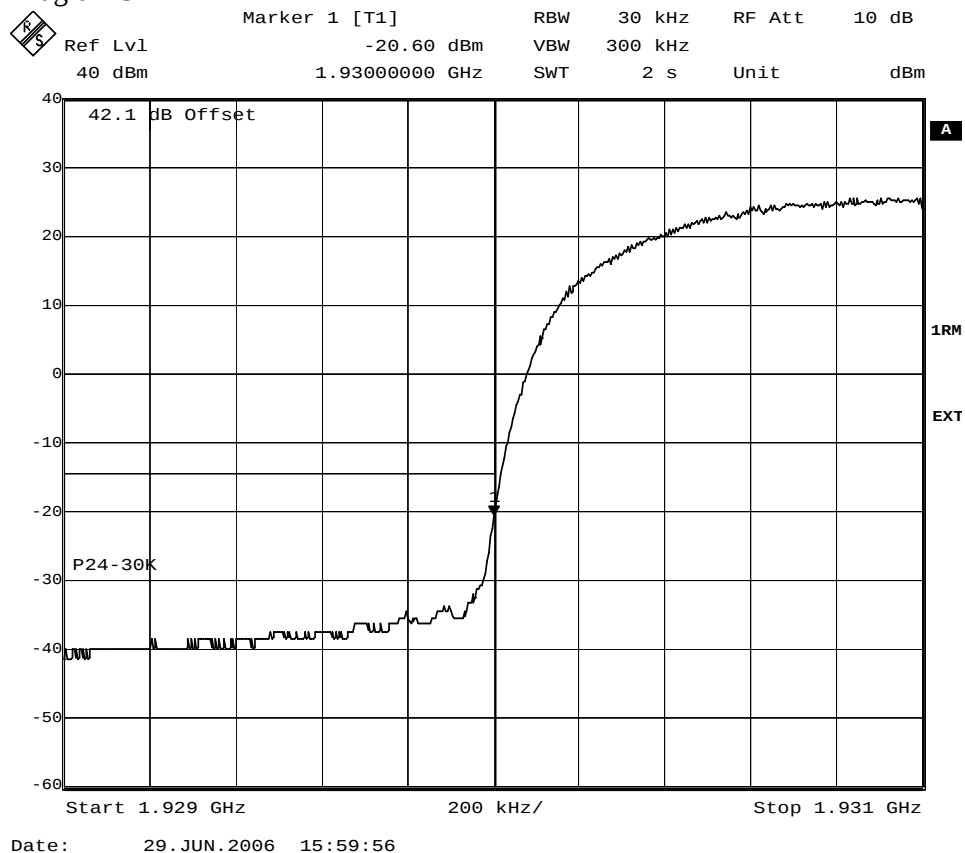


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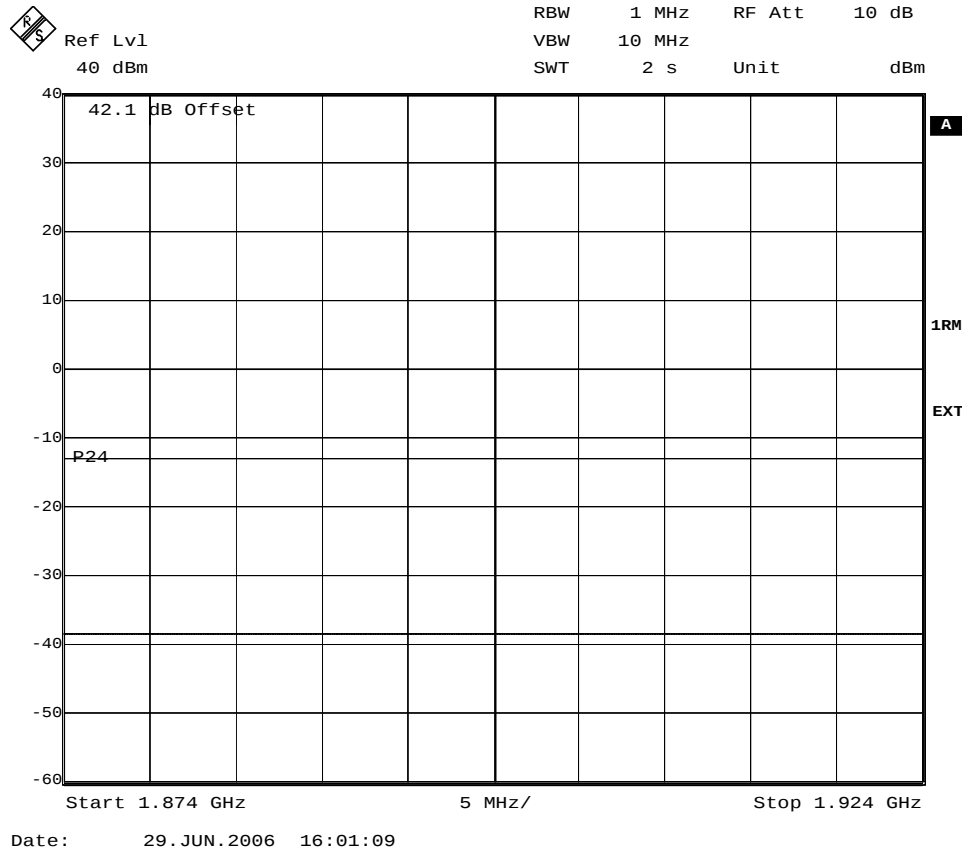
Appendix 4.1

Diagram 3



FCC ID: TA8AKRC11819-1

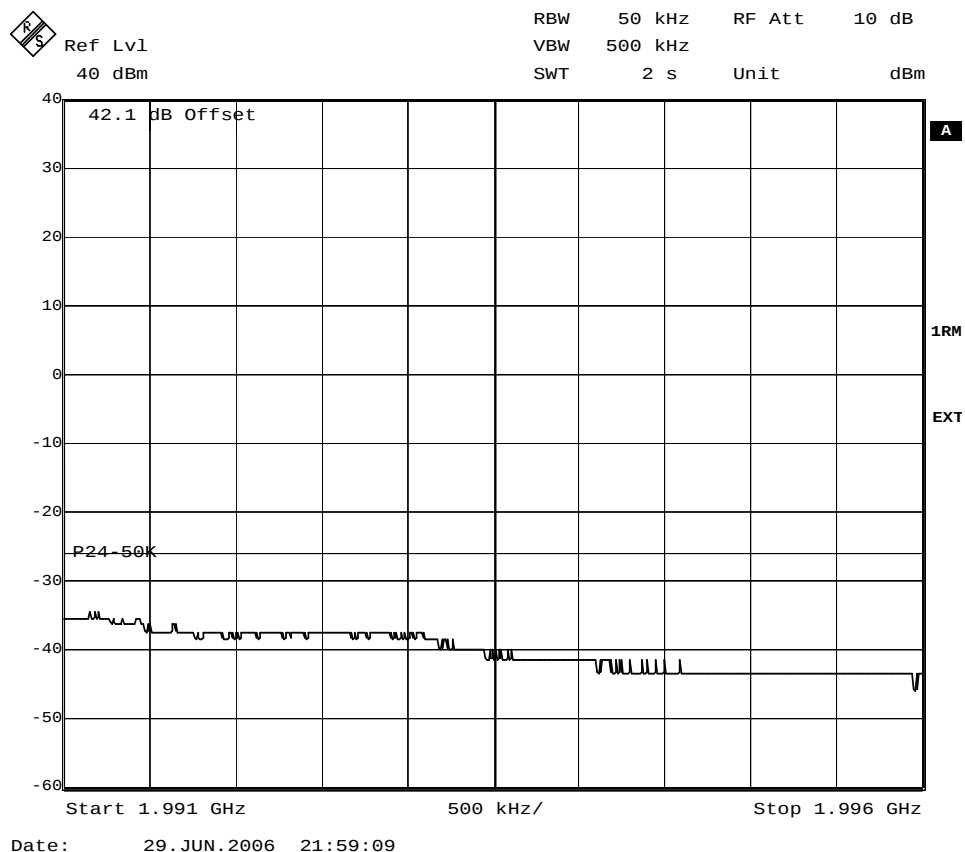
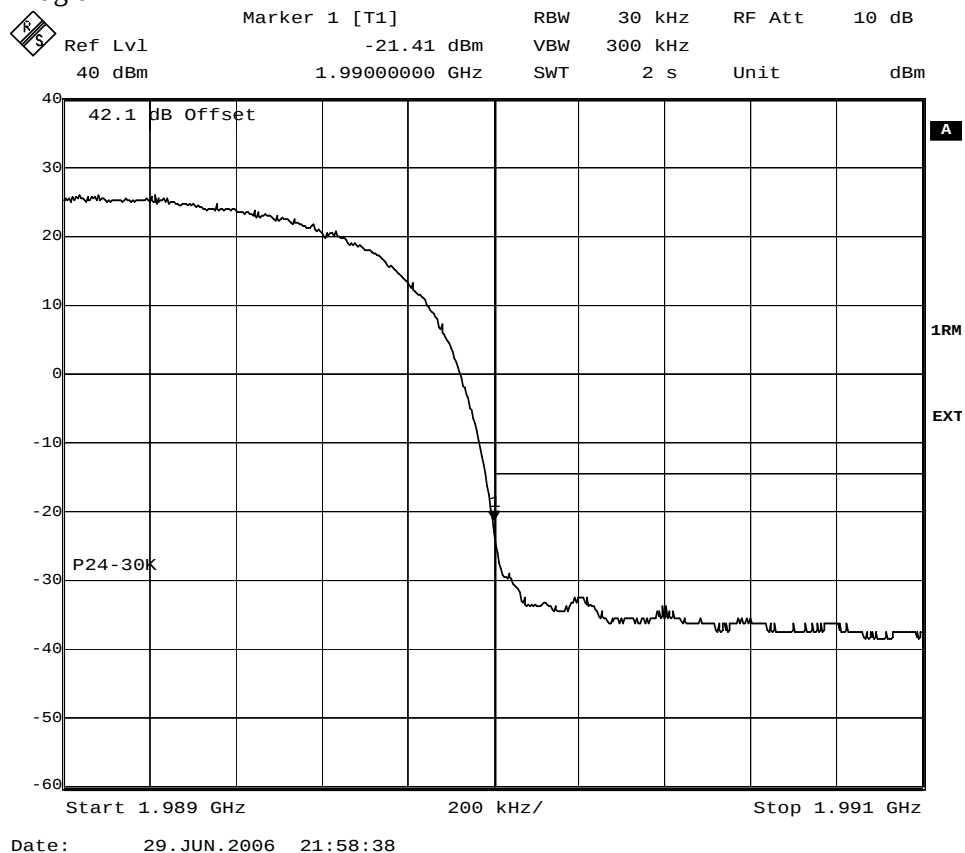
Appendix 4.1



FCC ID: TA8AKRC11819-1

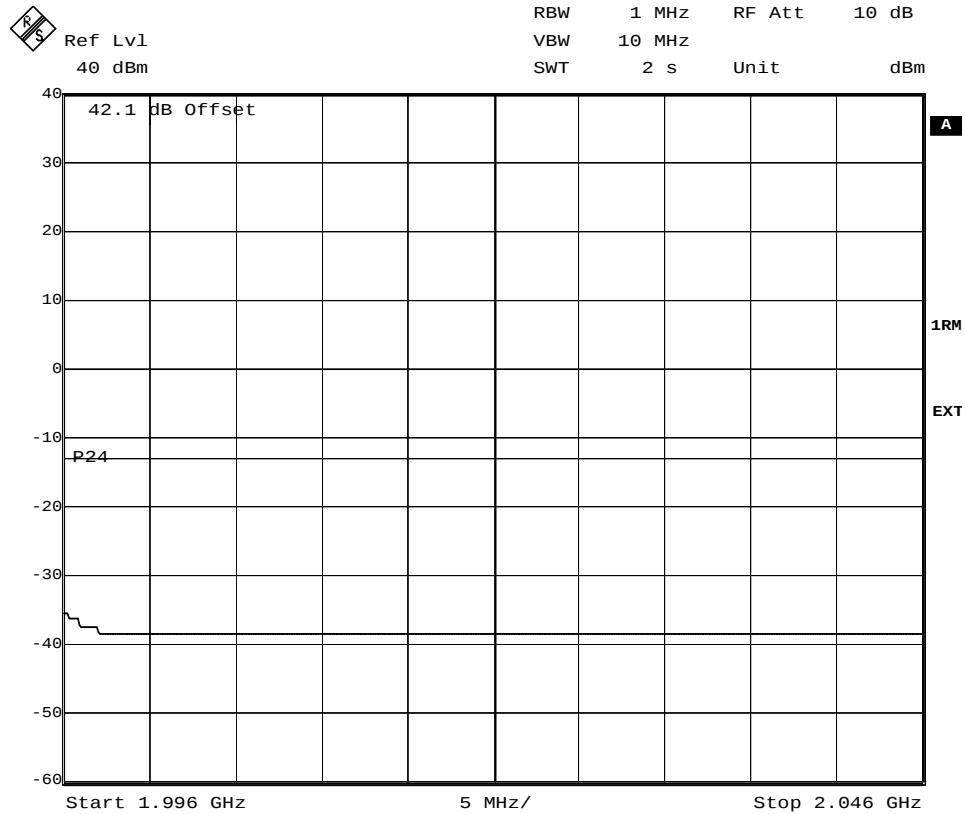
Appendix 4.1

Diagram 4



FCC ID: TA8AKRC11819-1

Appendix 4.1

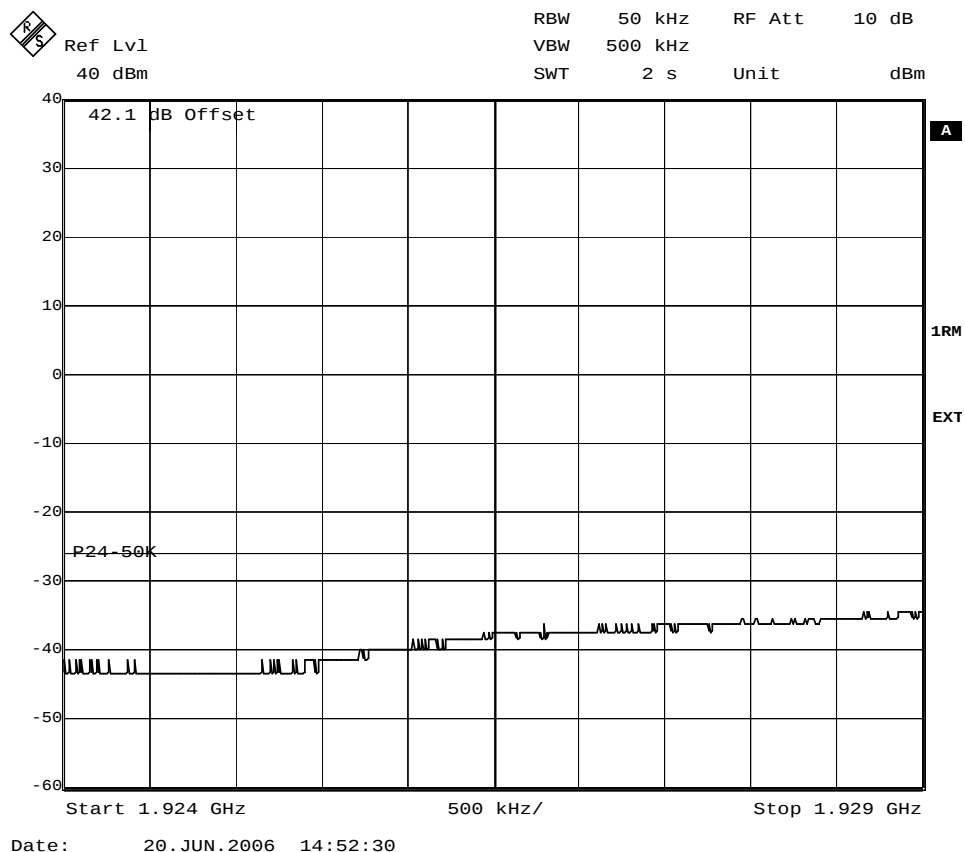
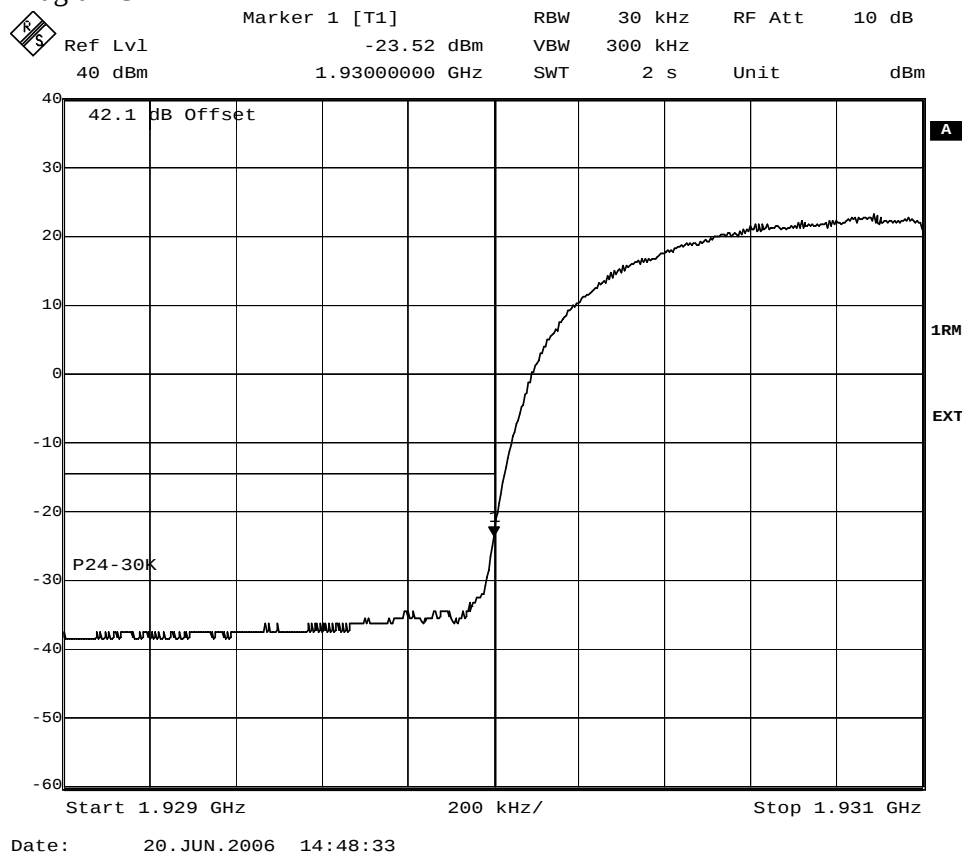


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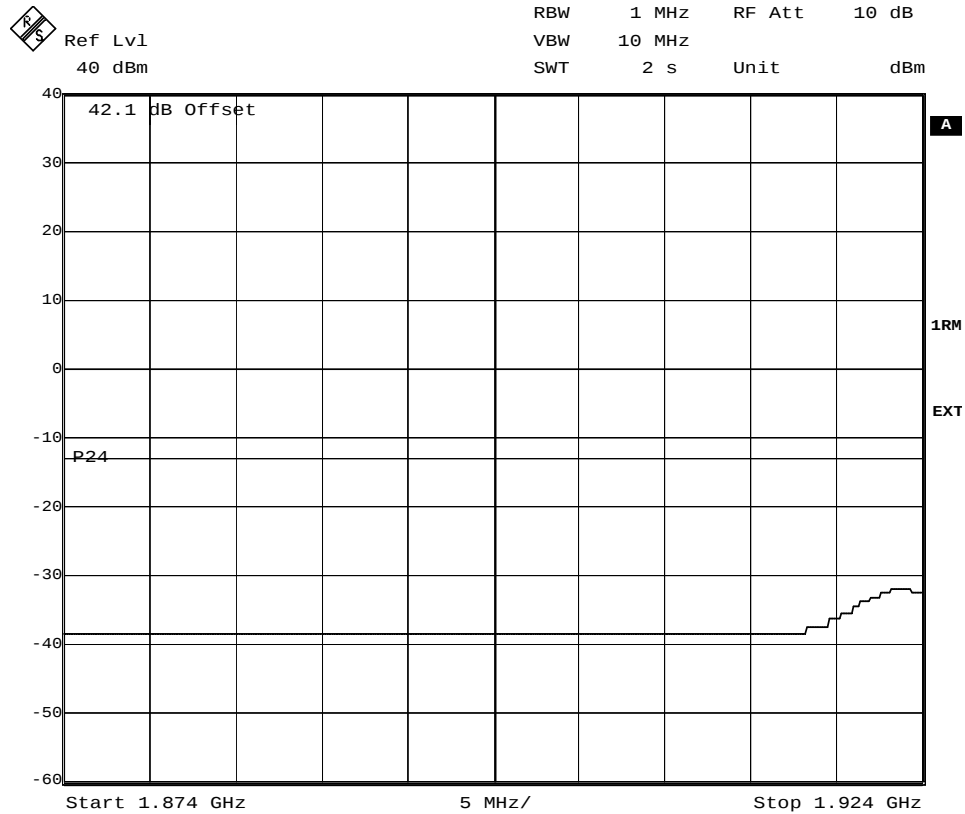
Appendix 4.1

Diagram 5



FCC ID: TA8AKRC11819-1

Appendix 4.1

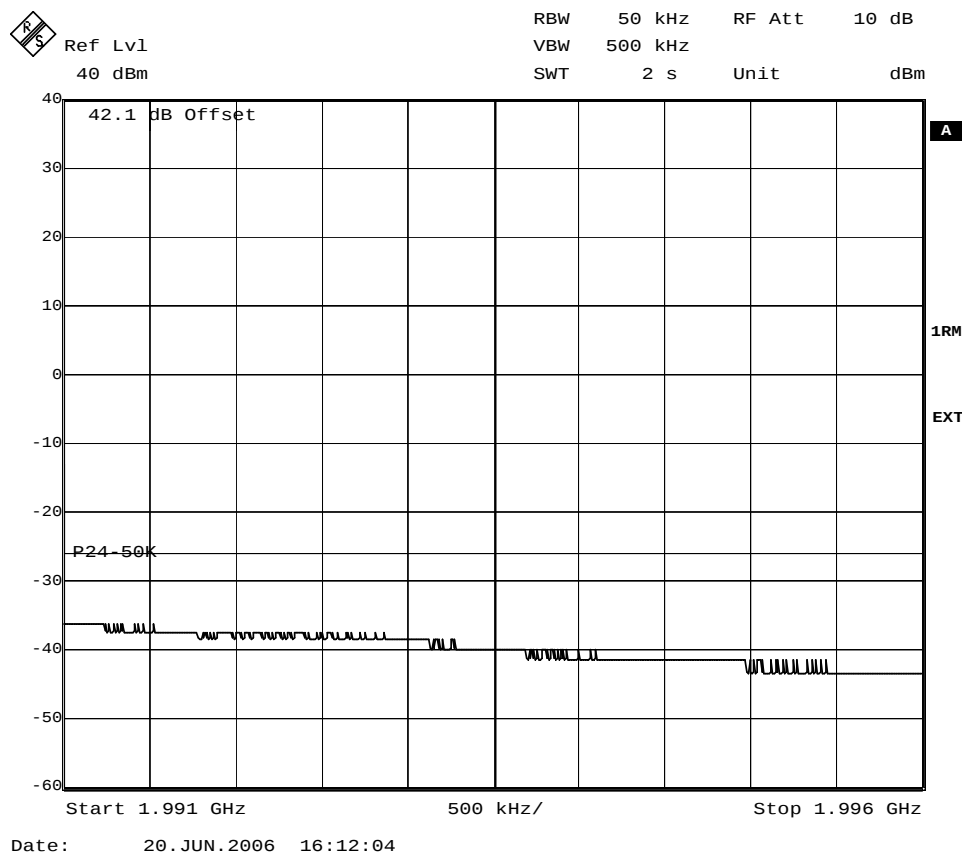
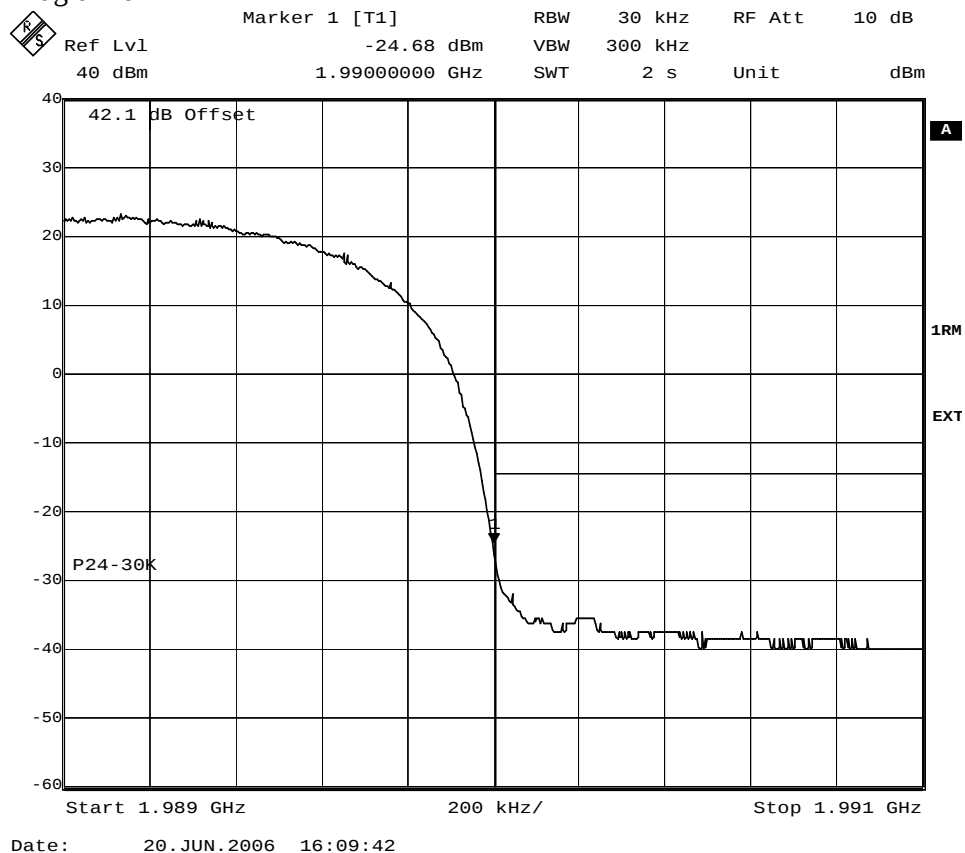


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FCC ID: TA8AKRC11819-1

Appendix 4.1

Diagram 6



FCC ID: TA8AKRC11819-1

Appendix 4.1

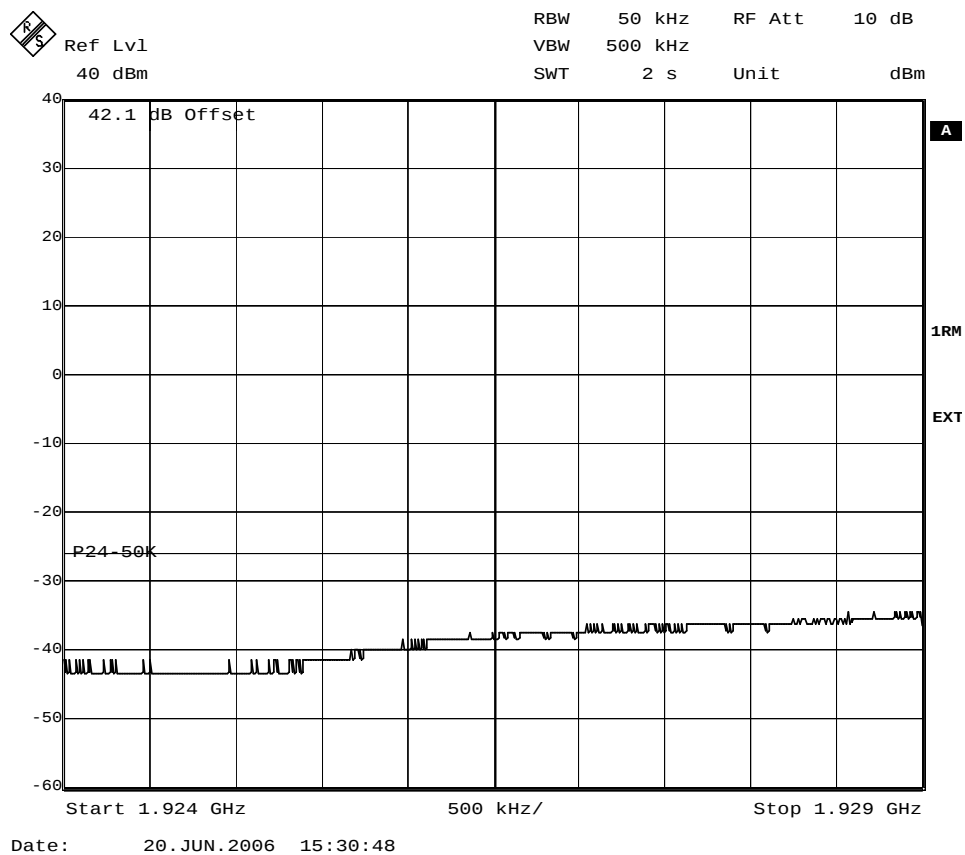
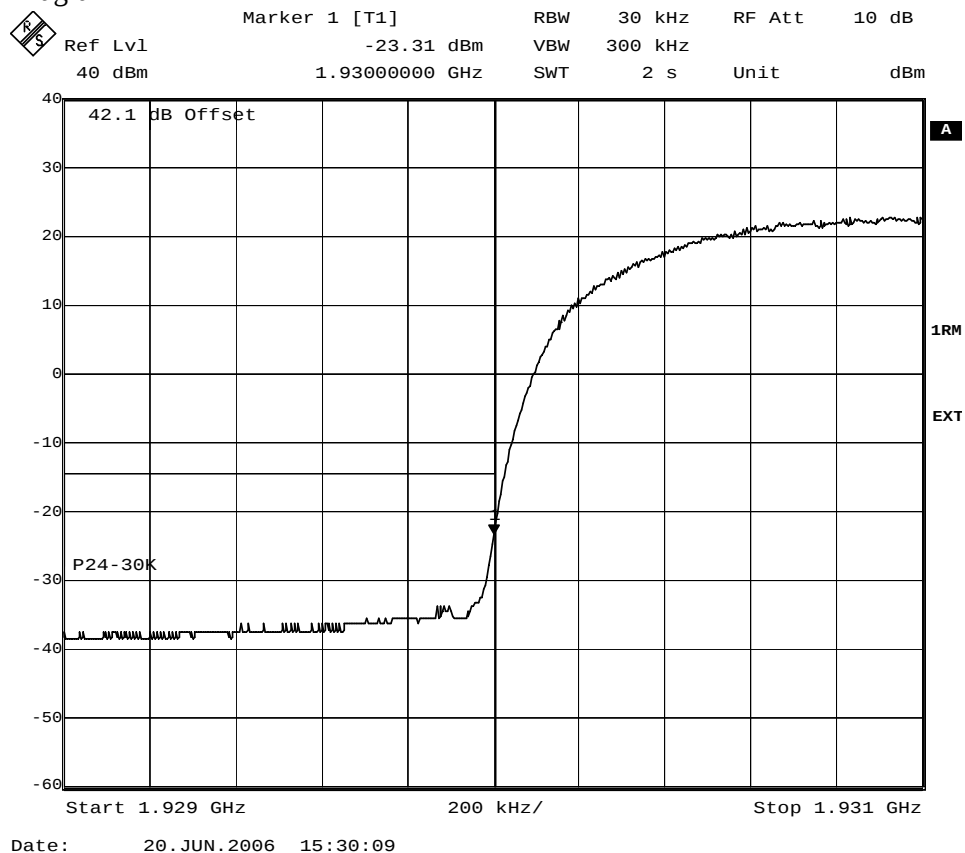


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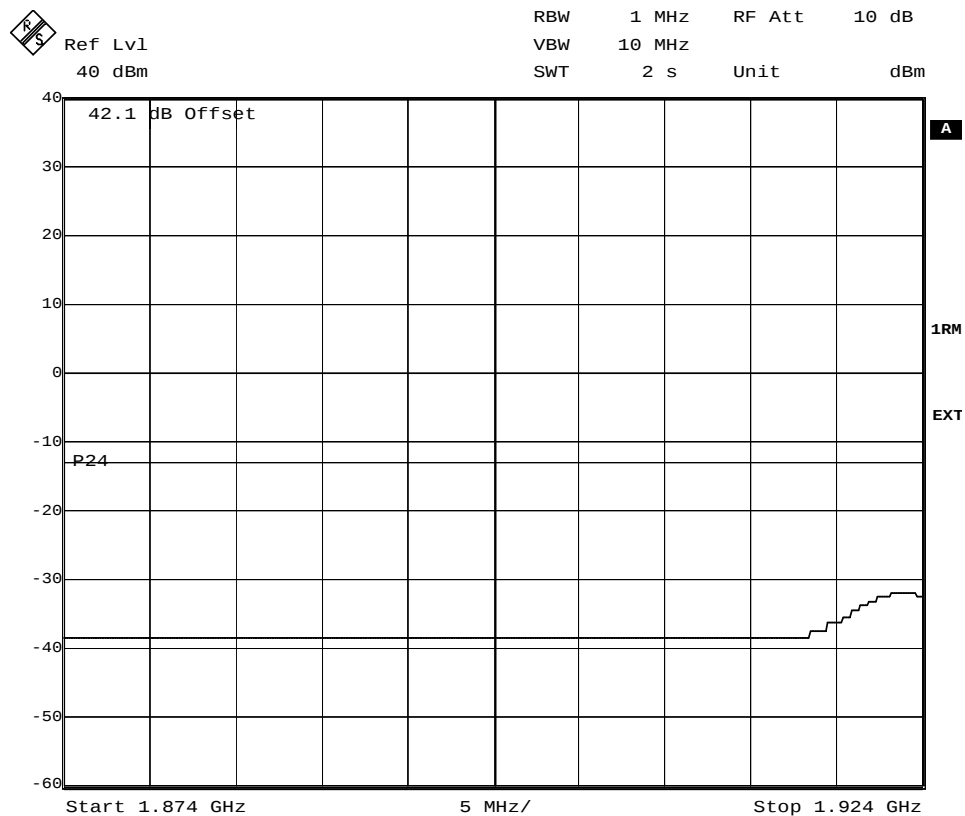
Appendix 4.1

Diagram 7



FCC ID: TA8AKRC11819-1

Appendix 4.1

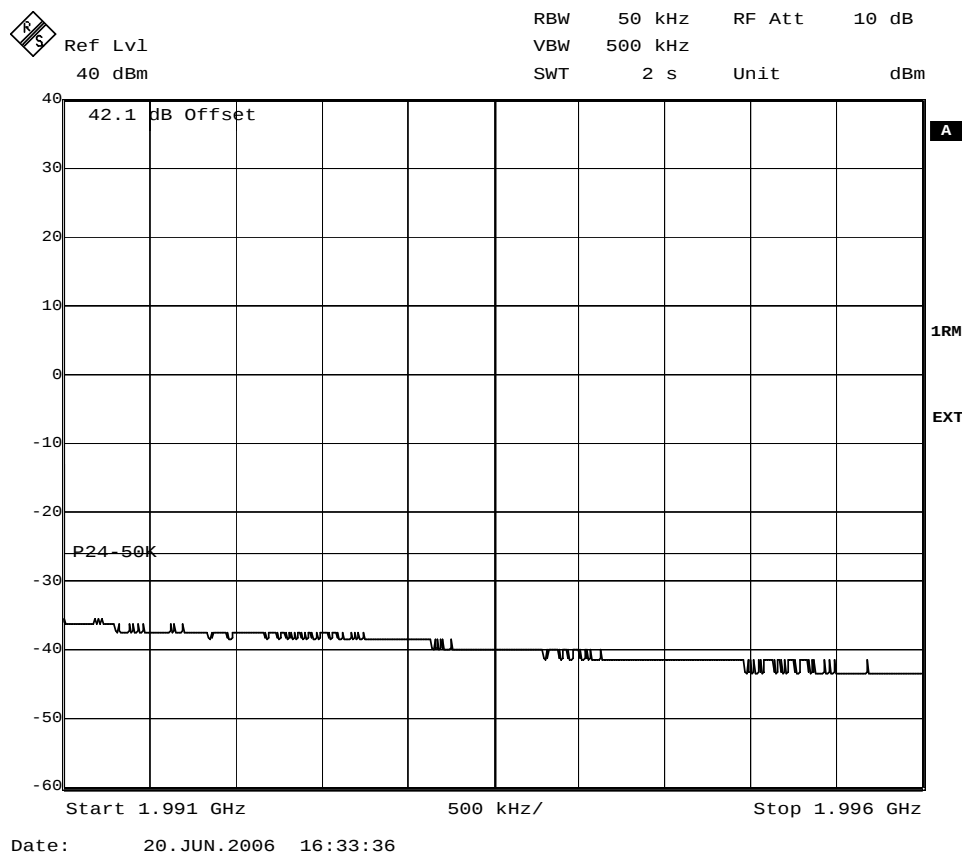
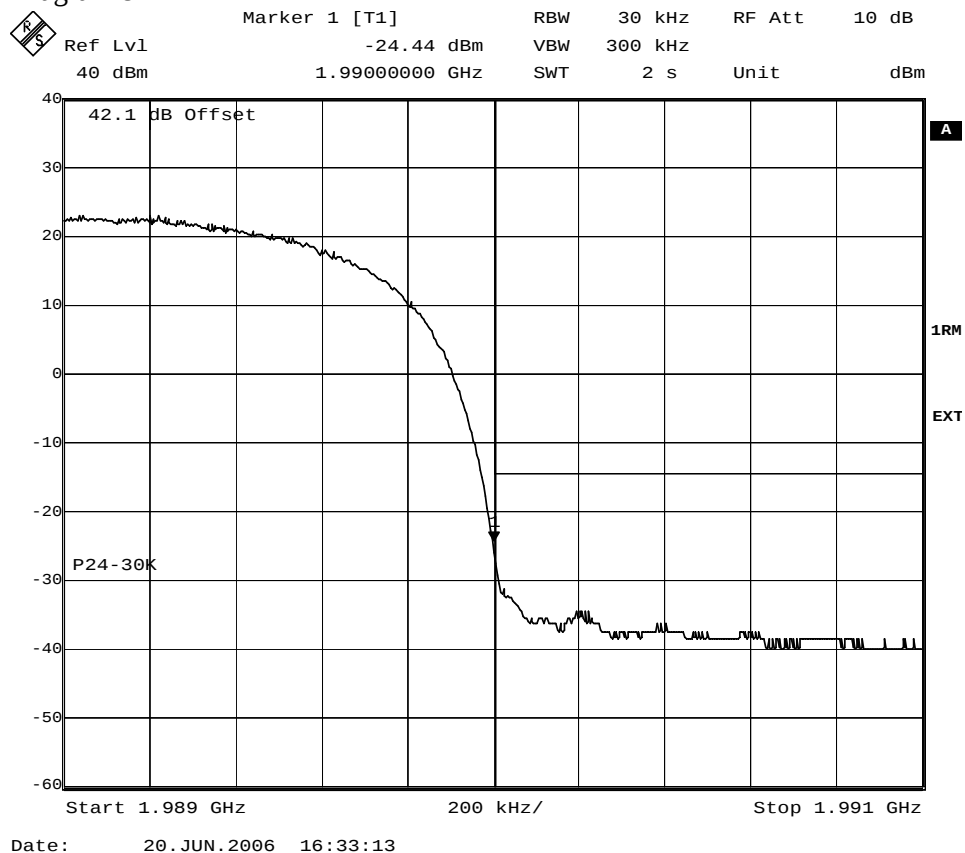


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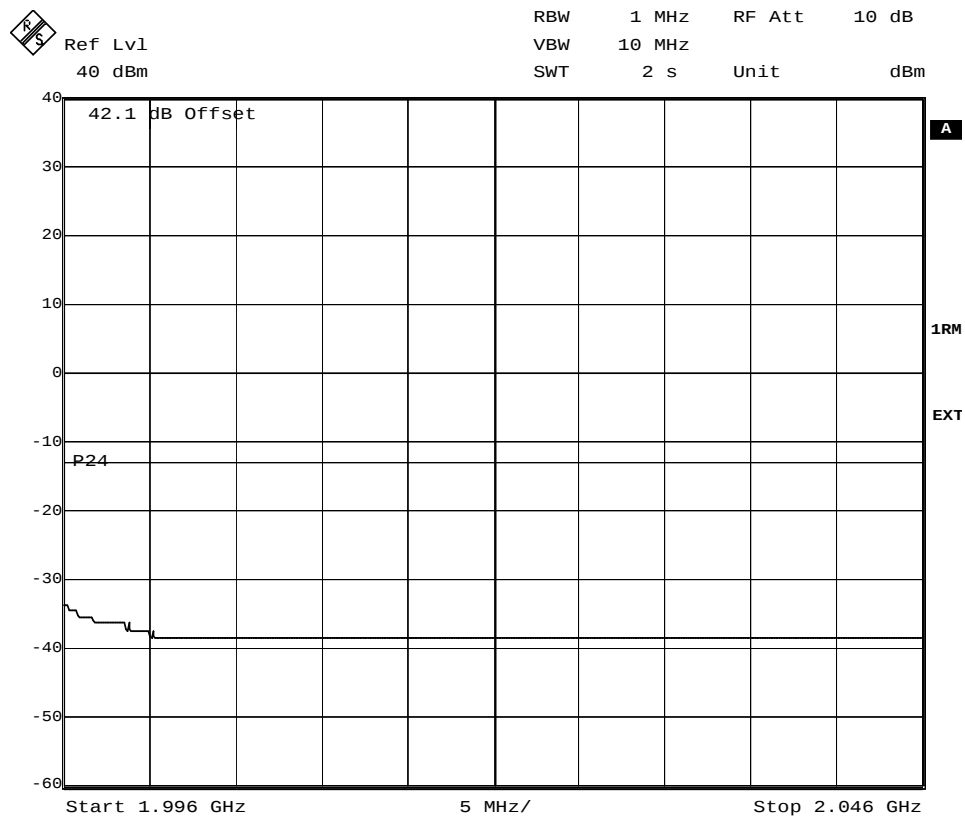
Appendix 4.1

Diagram 8



FCC ID: TA8AKRC11819-1

Appendix 4.1



Date: 20.JUN.2006 16:33:59

**Conducted spurious emission measurements according to 47 CFR 2.1051**

| Date       | Temperature  | Humidity   |
|------------|--------------|------------|
| 2006-06-20 | 23 °C ± 3 °C | 54 % ± 5 % |
| 2006-06-29 | 22 °C ± 3 °C | 44 % ± 5 % |

**Test set-up and procedure**

The measurements were made per definition in §24.238. The output was connected to a spectrum analyzer with the average detector activated. The spectrum analyzer was connected to an external 10 MHz reference standard during the measurements. The transmitter was set up according to Test model 1 and Test model 5 during the measurements.

| Measurement equipment                     | Calibration Due | SP number |
|-------------------------------------------|-----------------|-----------|
| R&S FSIQ                                  | 2006-07         | 503 738   |
| HP filter                                 | 2006-07         | 502 739   |
| Testo 610, Temperature and humidity meter | 2006-12         | 502 658   |

**Measurement uncertainty:** 3.7 dB

**Results**

The results are shown in appendix 5.1

**Single carrier****QPSK**

Diagram 1: 1932.4 MHz  
Diagram 2: 1957.6 MHz  
Diagram 3: 1987.6 MHz

**16QAM**

Diagram 4: 1932.4 MHz  
Diagram 5: 1957.6 MHz  
Diagram 6: 1987.6 MHz

**Multi carrier****QPSK**

Diagram 7: 1932.4+1942.4 MHz  
Diagram 8: 1952.4+1962.4 MHz  
Diagram 9: 1977.6+1987.6 MHz

**16QAM**

Diagram 10: 1932.4+1942.4 MHz  
Diagram 11: 1952.4+1962.4 MHz  
Diagram 12: 1977.6+1987.6 MHz

**Limits**

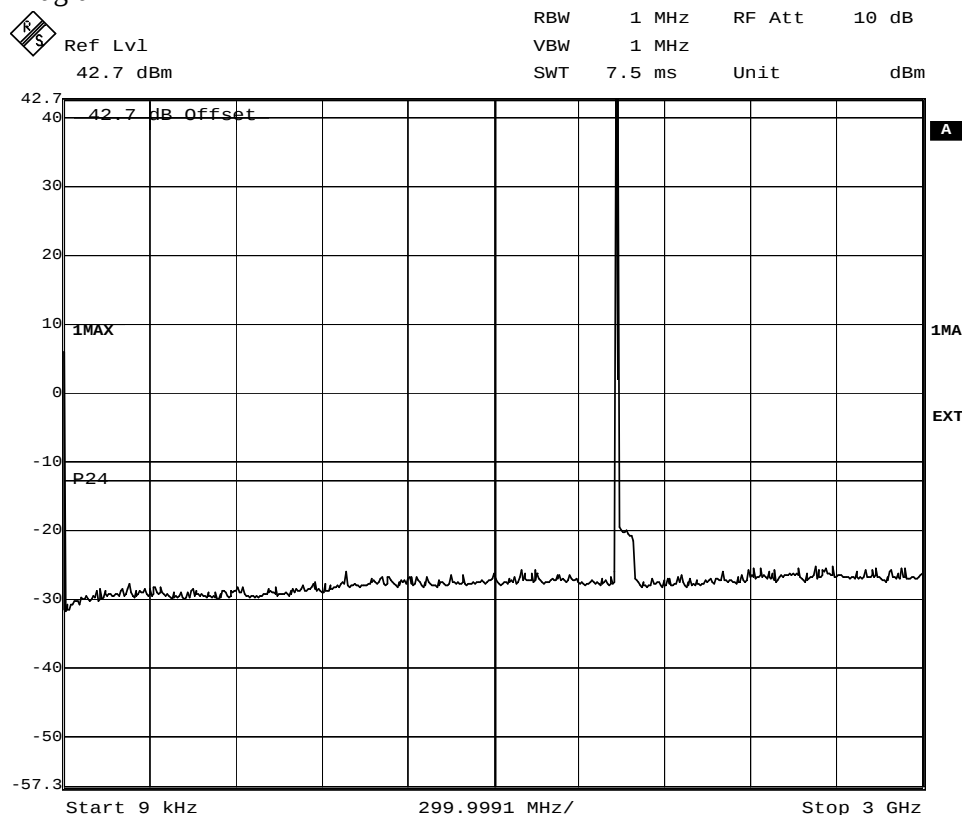
The power of any emission outside the frequency band shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log P$  dB.

|           |     |
|-----------|-----|
| Complies? | Yes |
|-----------|-----|

FCC ID: TA8AKRC11819-1

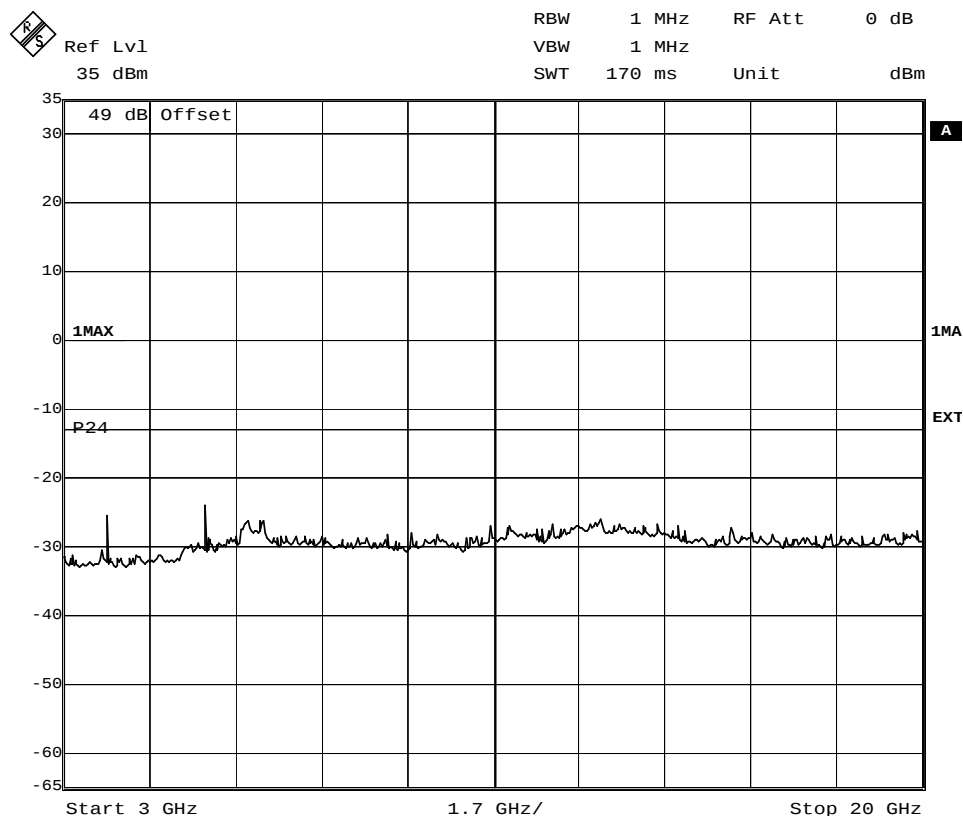
Appendix 5.1

Diagram 1



Date: 29.JUN.2006 16:37:51

Note: The emission at 9 kHz was related to the LO feedthrough. A complementary measurement was performed with a smaller RBW to verify that there were no emission in the frequency range 9k-10MHz.

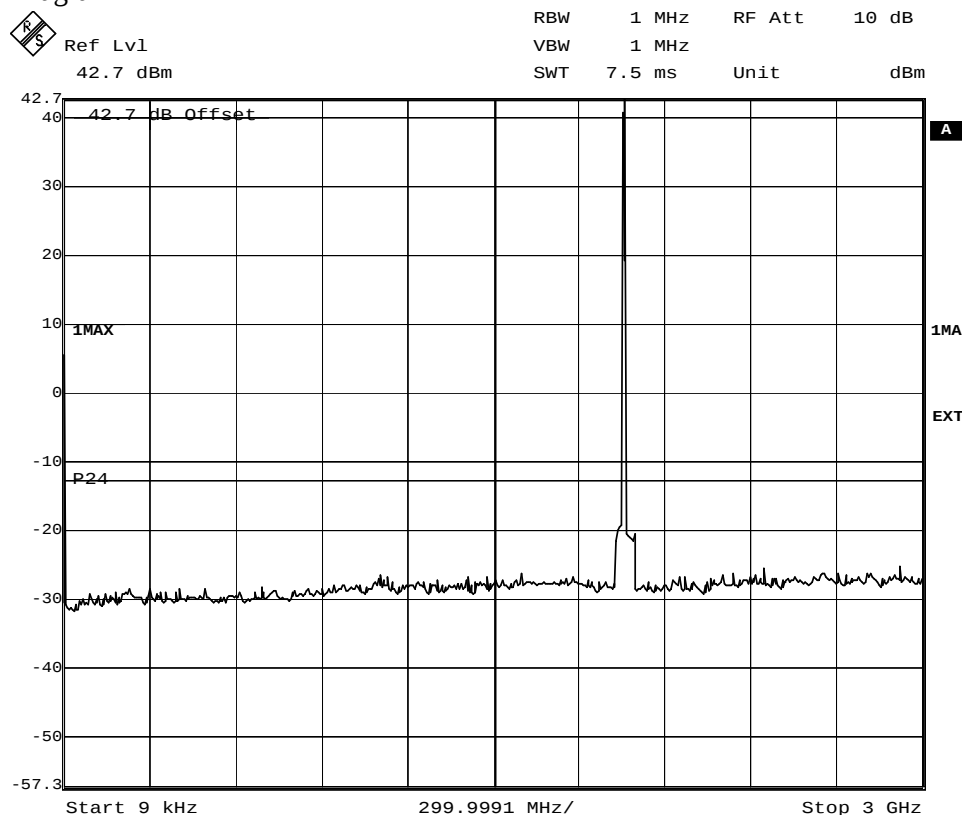


Date: 29.JUN.2006 16:44:49

FCC ID: TA8AKRC11819-1

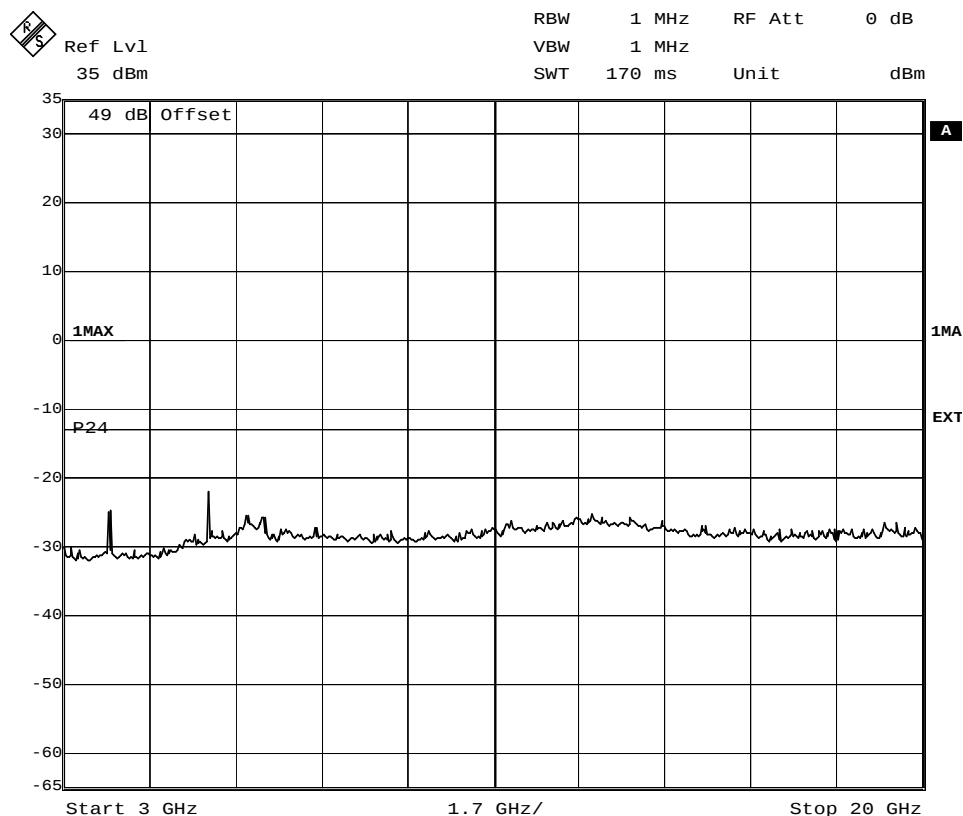
Appendix 5.1

Diagram 2



Date: 29.JUN.2006 21:00:48

Note: The emission at 9 kHz was related to the LO feedthrough. A complementary measurement was performed with a smaller RBW to verify that there were no emission in the frequency range 9k-10MHz.

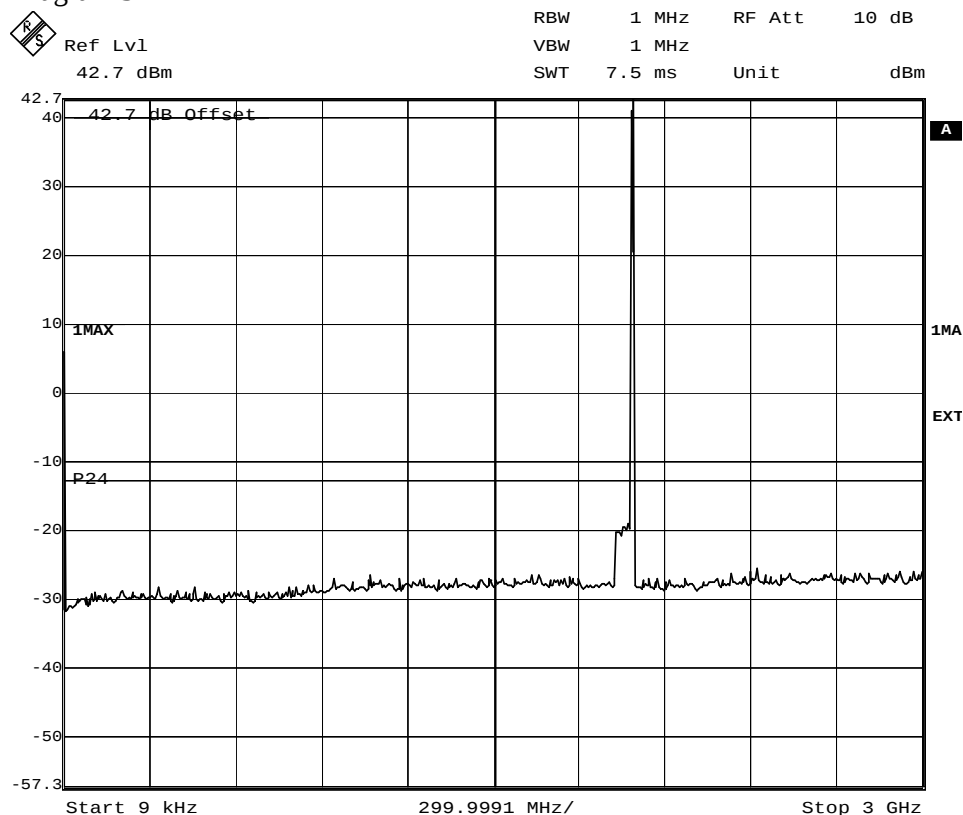


Date: 29.JUN.2006 20:59:47

FCC ID: TA8AKRC11819-1

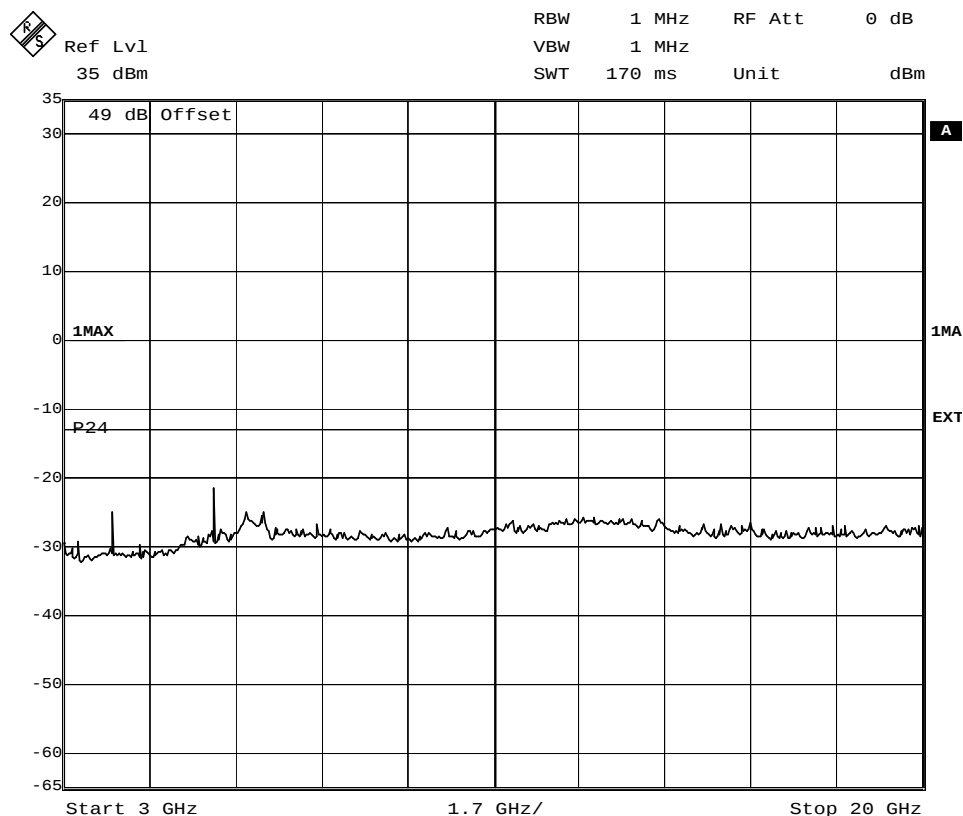
Appendix 5.1

Diagram 3



Date: 29.JUN.2006 21:39:16

Note: The emission at 9 kHz was related to the LO feedthrough. A complementary measurement was performed with a smaller RBW to verify that there were no emission in the frequency range 9k-10MHz.

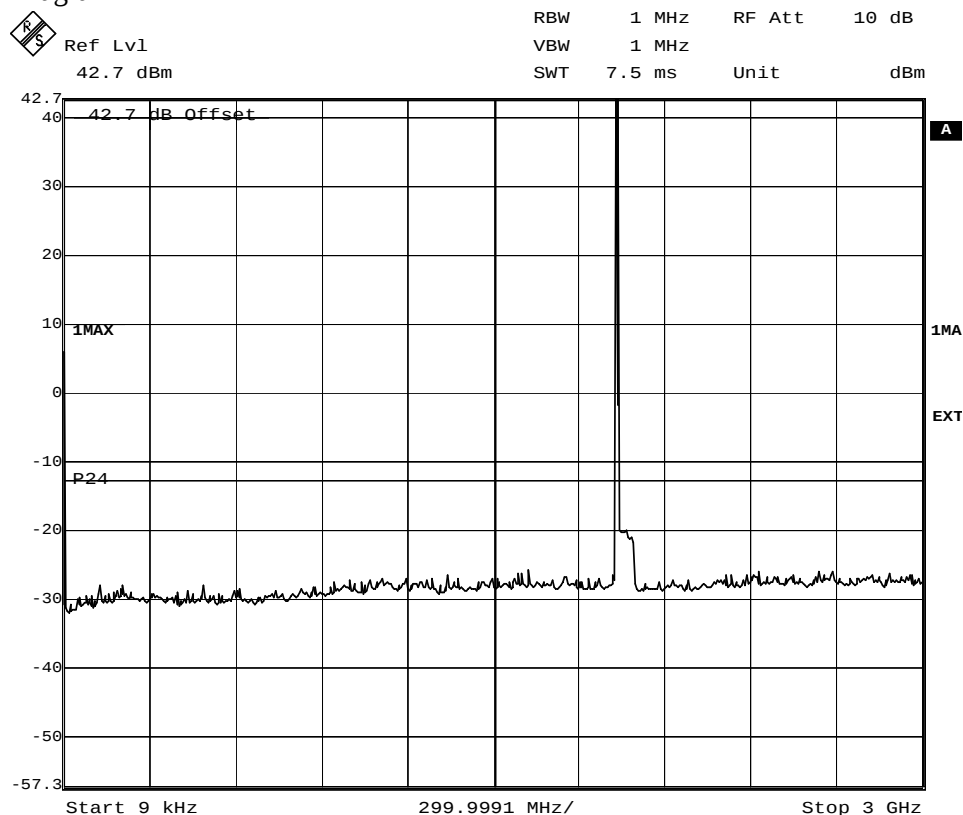


Date: 29.JUN.2006 21:28:20

FCC ID: TA8AKRC11819-1

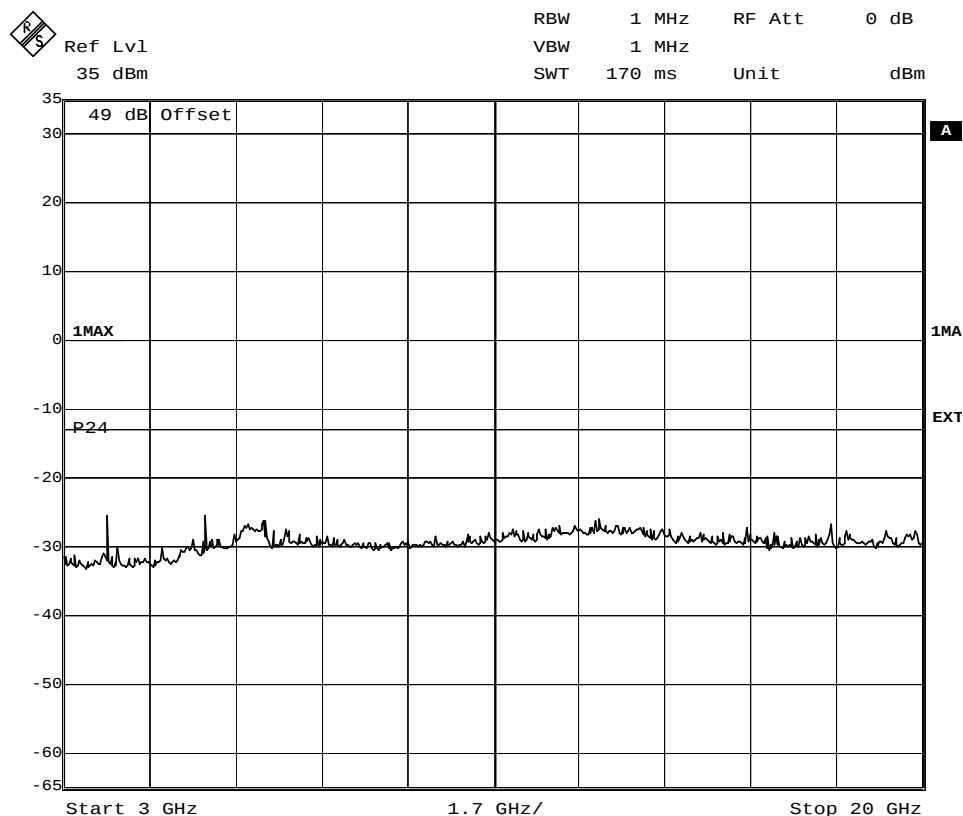
Appendix 5.1

Diagram 4



Date: 29.JUN.2006 16:02:22

Note: The emission at 9 kHz was related to the LO feedthrough. A complementary measurement was performed with a smaller RBW to verify that there were no emission in the frequency range 9k-10MHz.

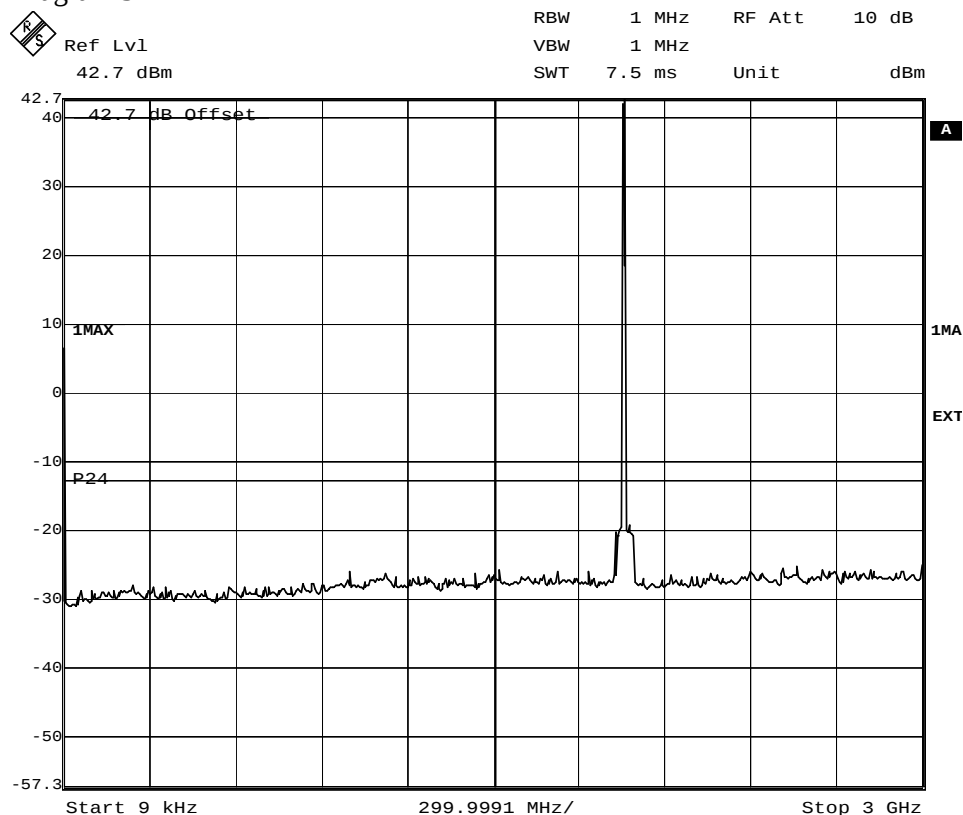


Date: 29.JUN.2006 16:04:58

FCC ID: TA8AKRC11819-1

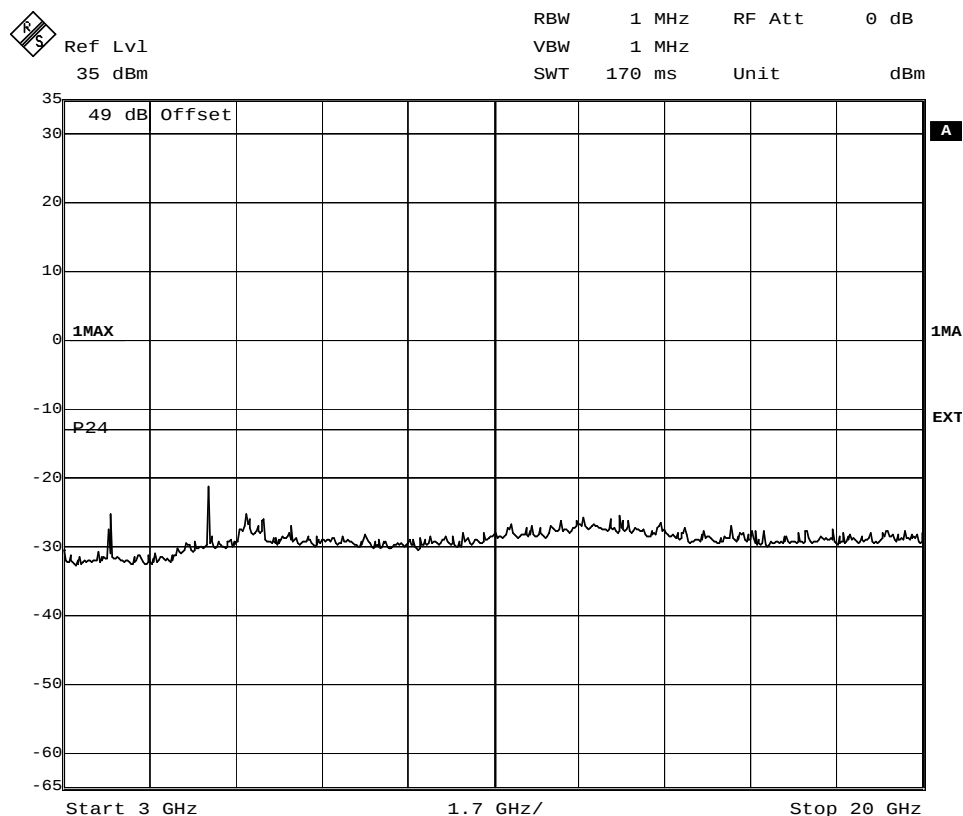
Appendix 5.1

Diagram 5



Date: 29.JUN.2006 21:07:26

Note: The emission at 9 kHz was related to the LO feedthrough. A complementary measurement was performed with a smaller RBW to verify that there were no emission in the frequency range 9k-10MHz.

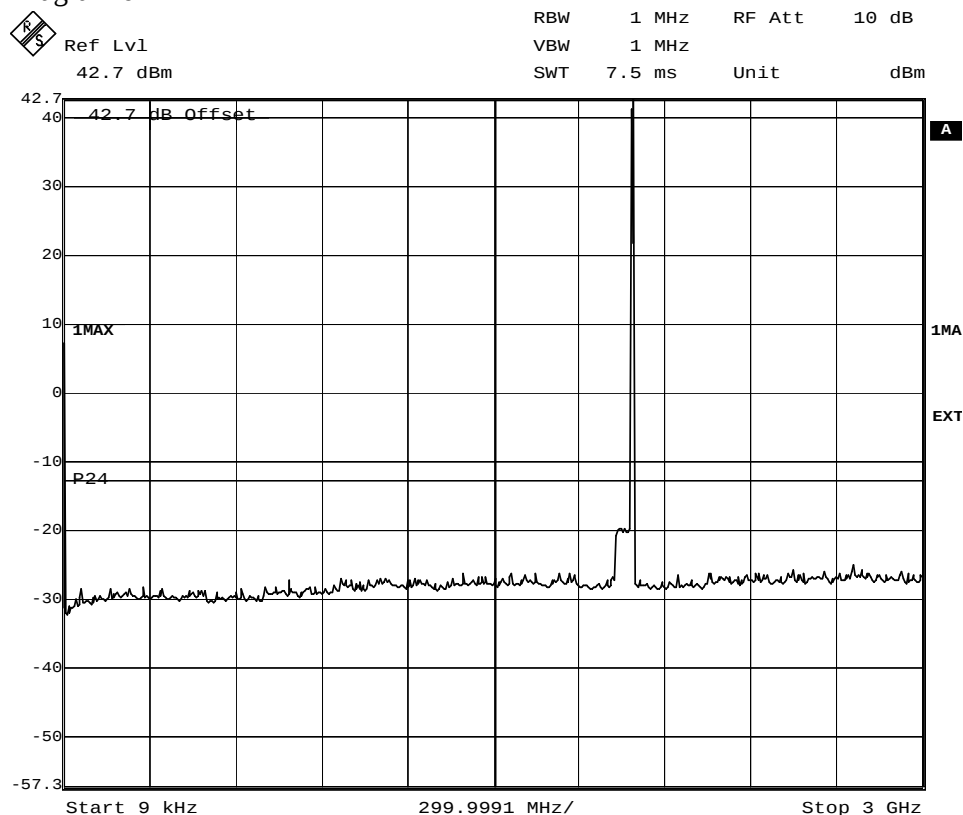


Date: 29.JUN.2006 21:08:29

FCC ID: TA8AKRC11819-1

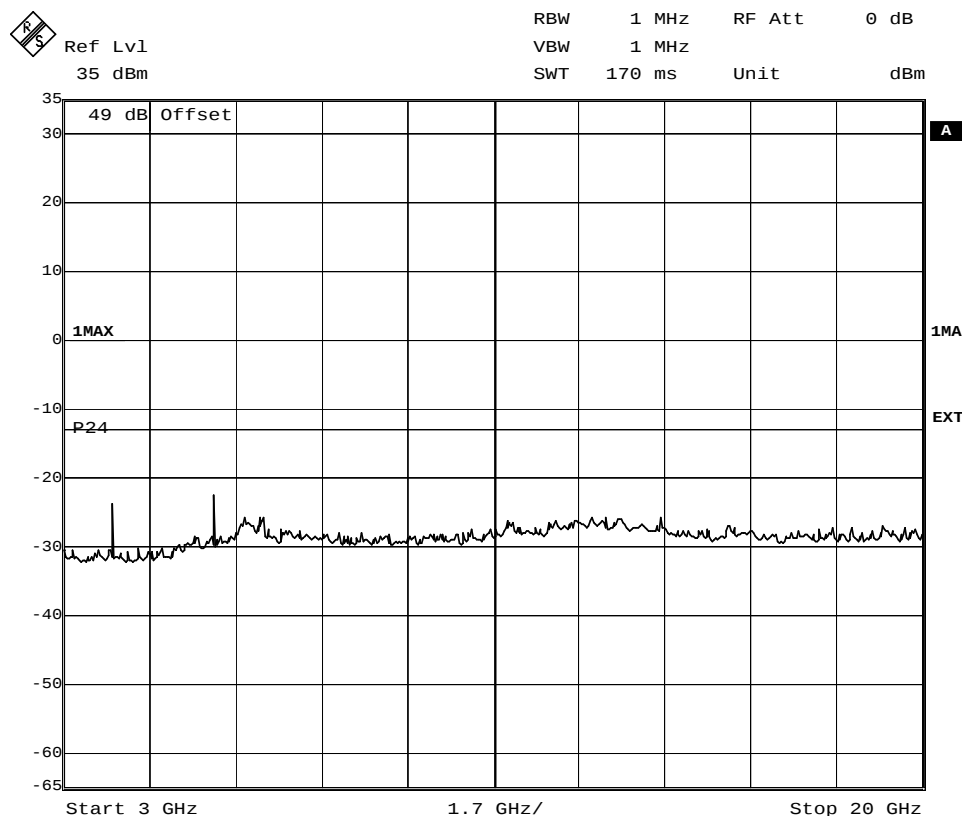
Appendix 5.1

Diagram 6



Date: 29.JUN.2006 21:57:57

Note: The emission at 9 kHz was related to the LO feedthrough. A complementary measurement was performed with a smaller RBW to verify that there were no emission in the frequency range 9k-10MHz.

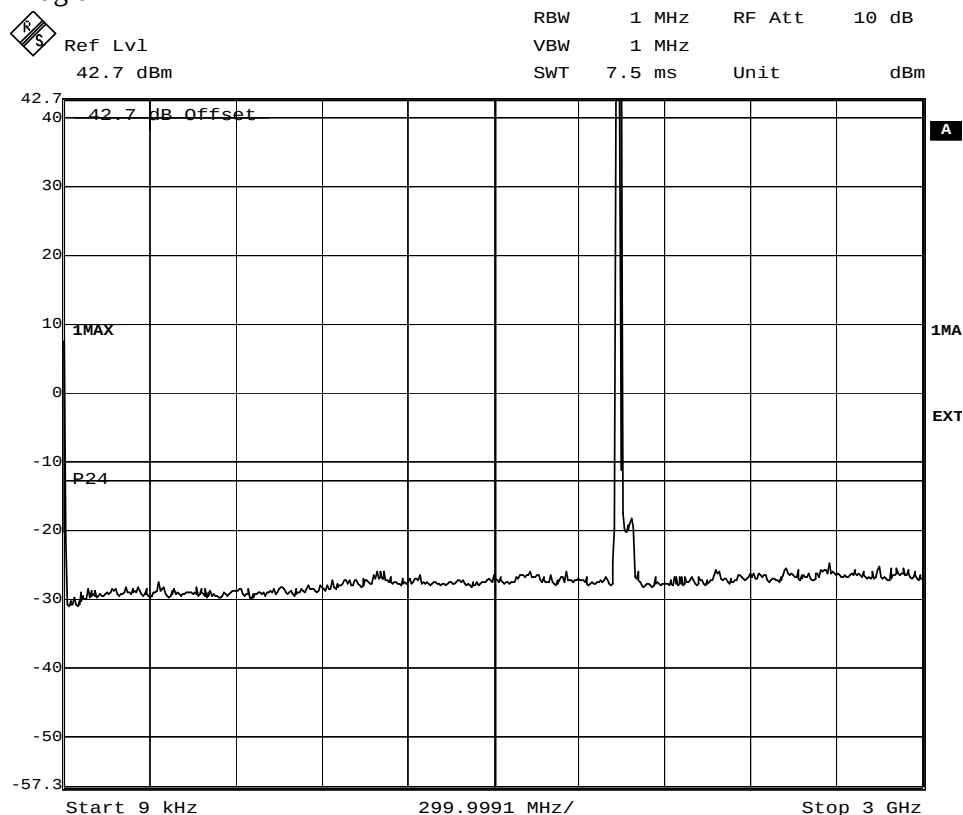


Date: 29.JUN.2006 22:01:41

FCC ID: TA8AKRC11819-1

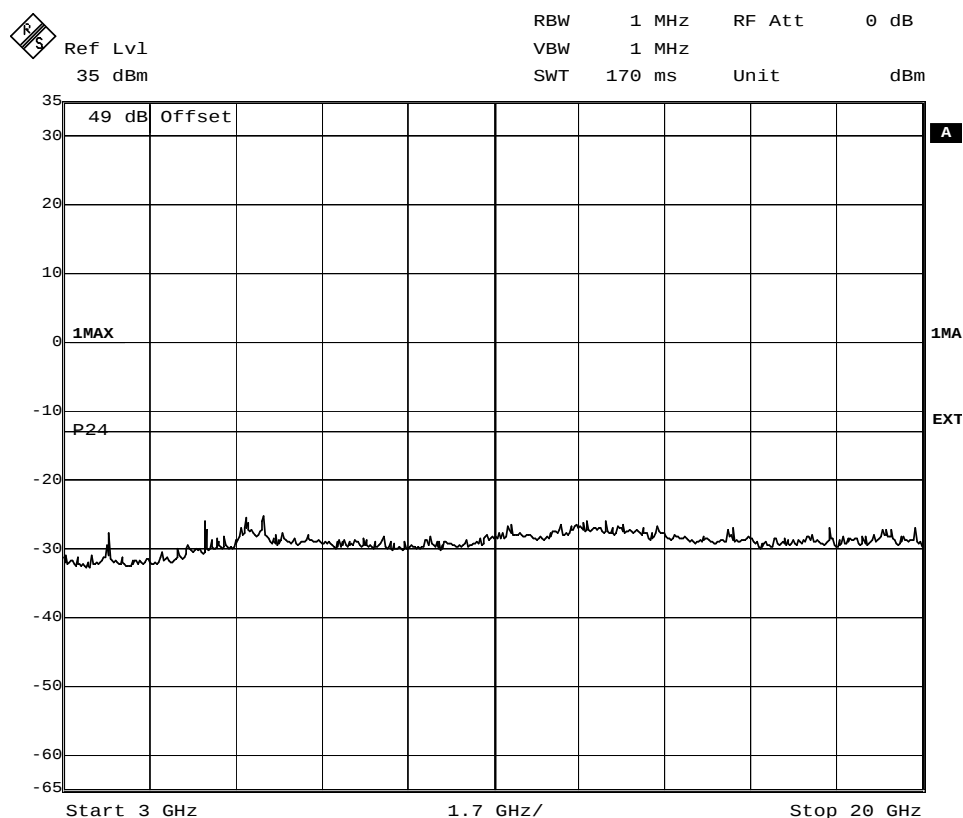
Appendix 5.1

Diagram 7



Date: 20.JUN.2006 15:01:54

Note: The emission at 9 kHz was related to the LO feedthrough. A complementary measurement was performed with a smaller RBW to verify that there were no emission in the frequency range 9k-10MHz.

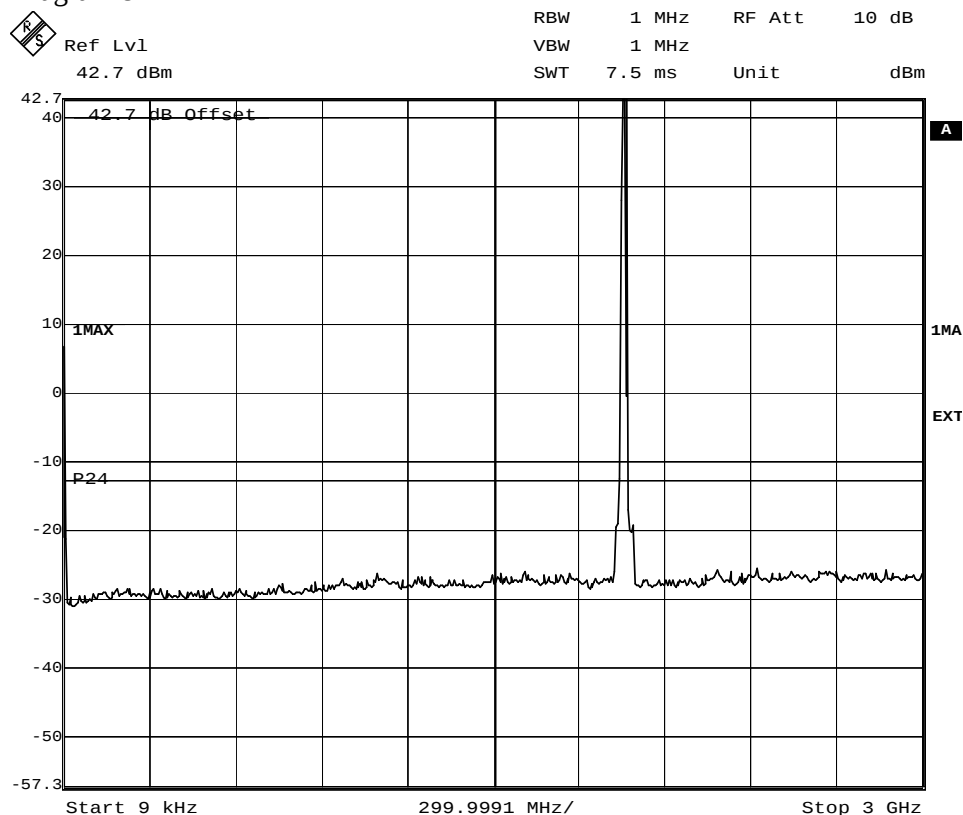


Date: 20.JUN.2006 15:10:05

FCC ID: TA8AKRC11819-1

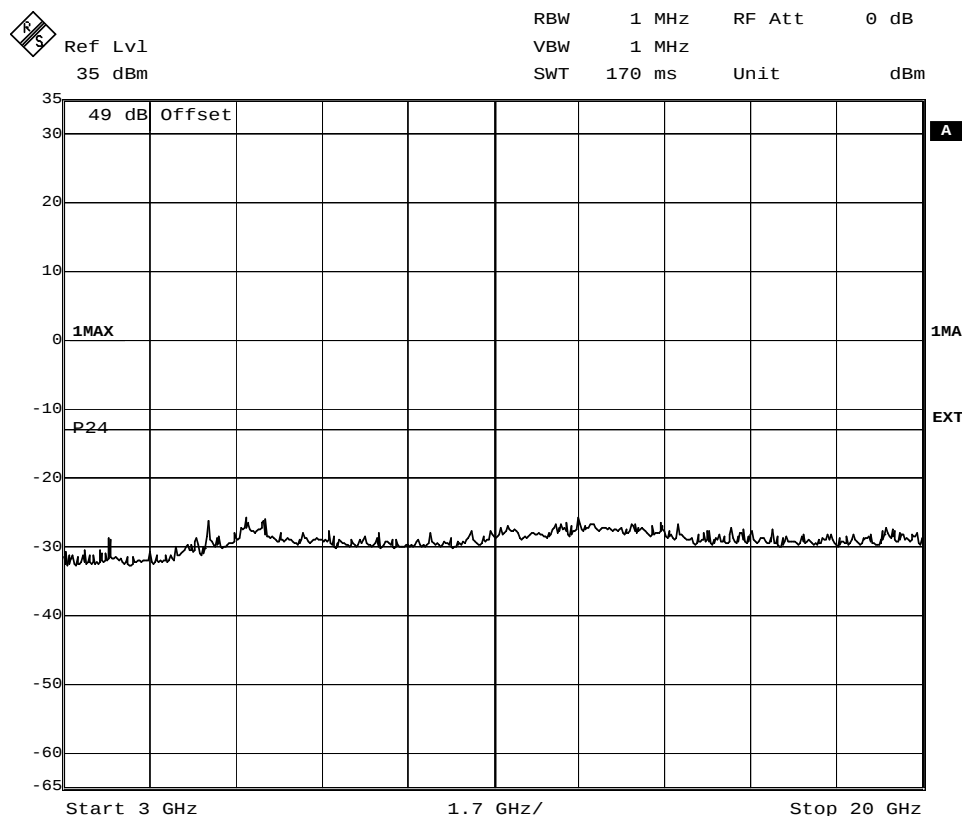
Appendix 5.1

Diagram 8



Date: 20.JUN.2006 15:55:54

Note: The emission at 9 kHz was related to the LO feedthrough. A complementary measurement was performed with a smaller RBW to verify that there were no emission in the frequency range 9k-10MHz.

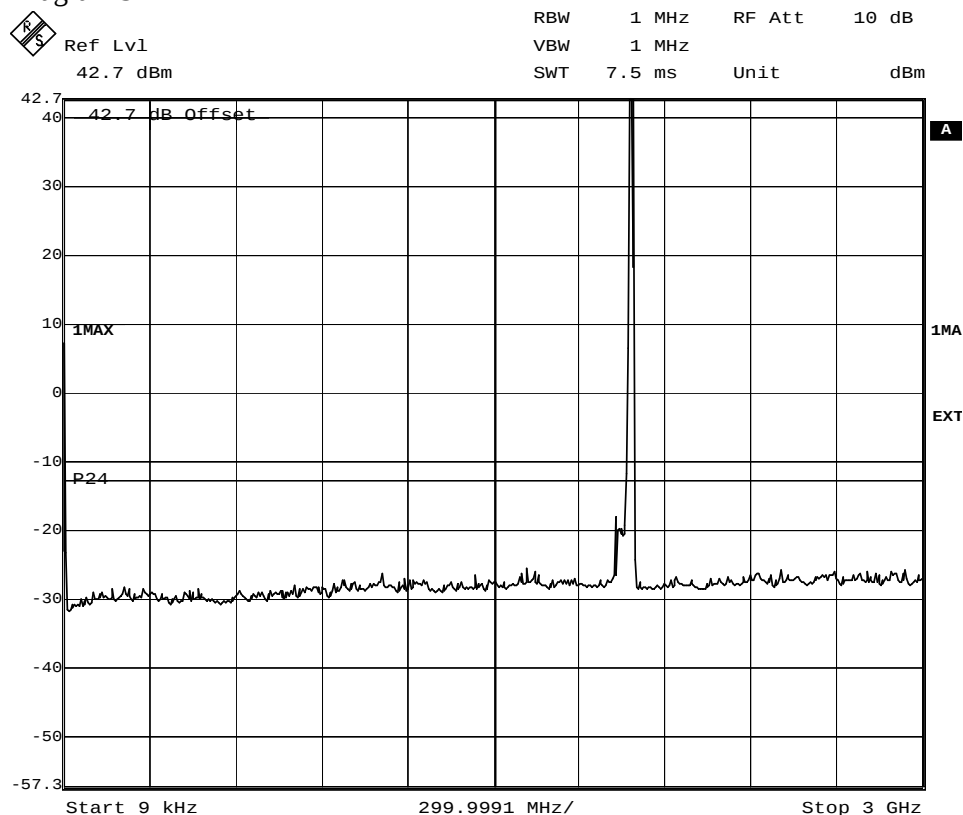


Date: 20.JUN.2006 15:53:32

FCC ID: TA8AKRC11819-1

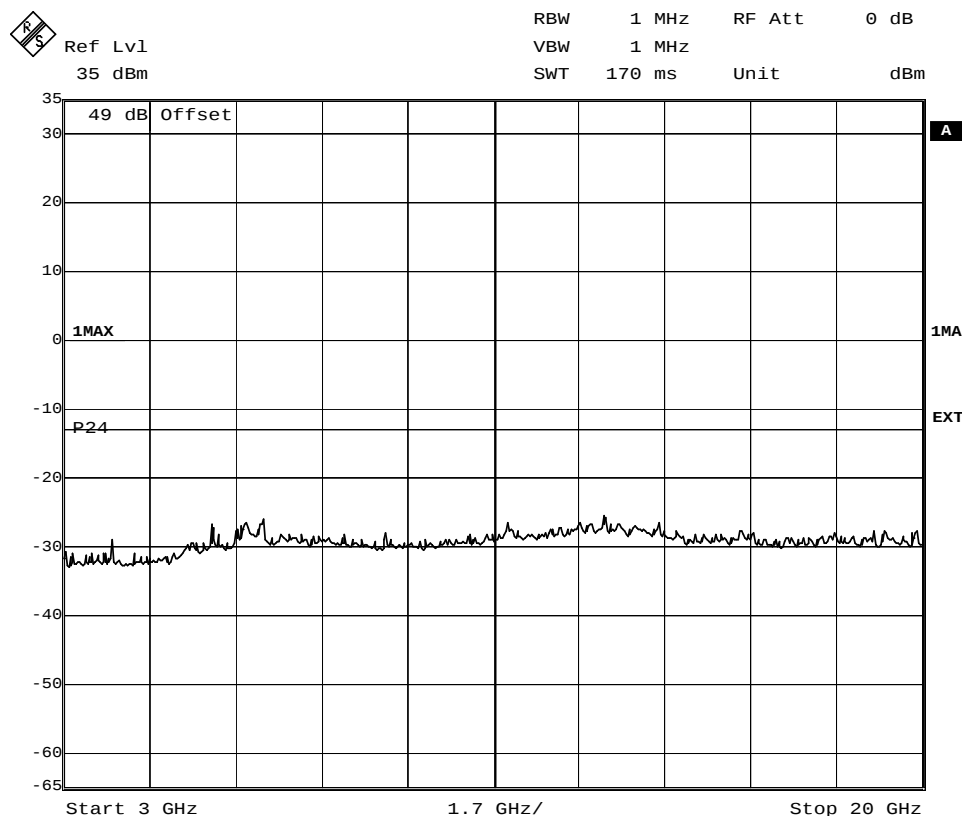
Appendix 5.1

Diagram 9



Date: 20.JUN.2006 16:13:37

Note: The emission at 9 kHz was related to the LO feedthrough. A complementary measurement was performed with a smaller RBW to verify that there were no emission in the frequency range 9k-10MHz.

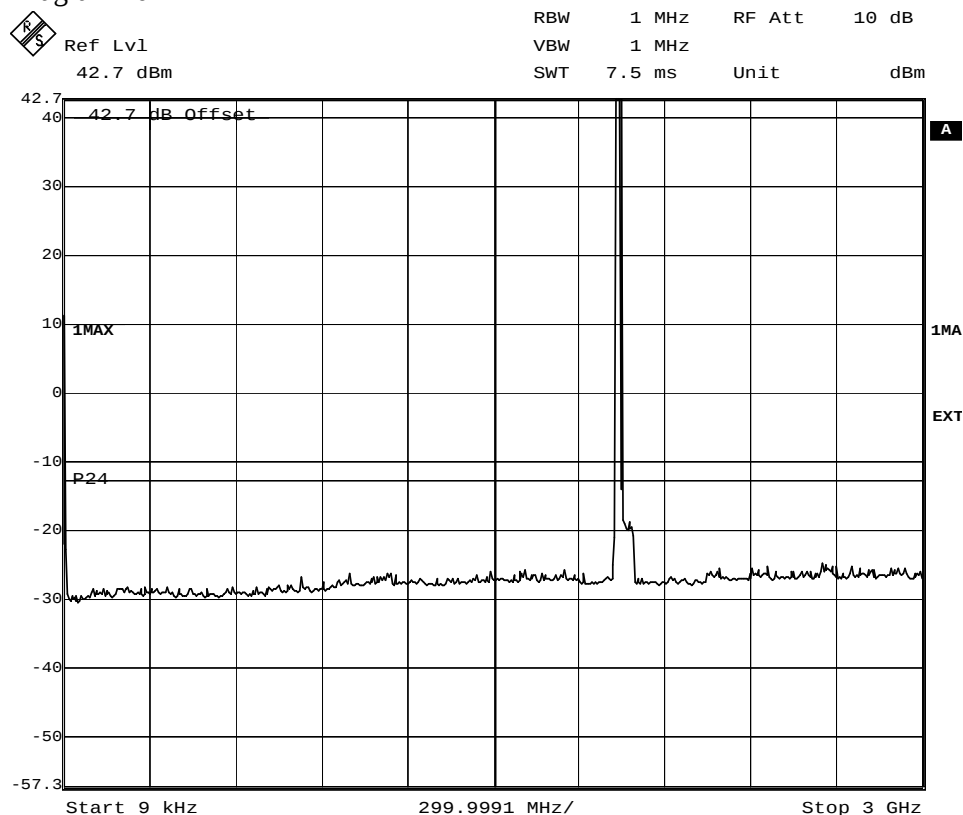


Date: 20.JUN.2006 16:23:56

FCC ID: TA8AKRC11819-1

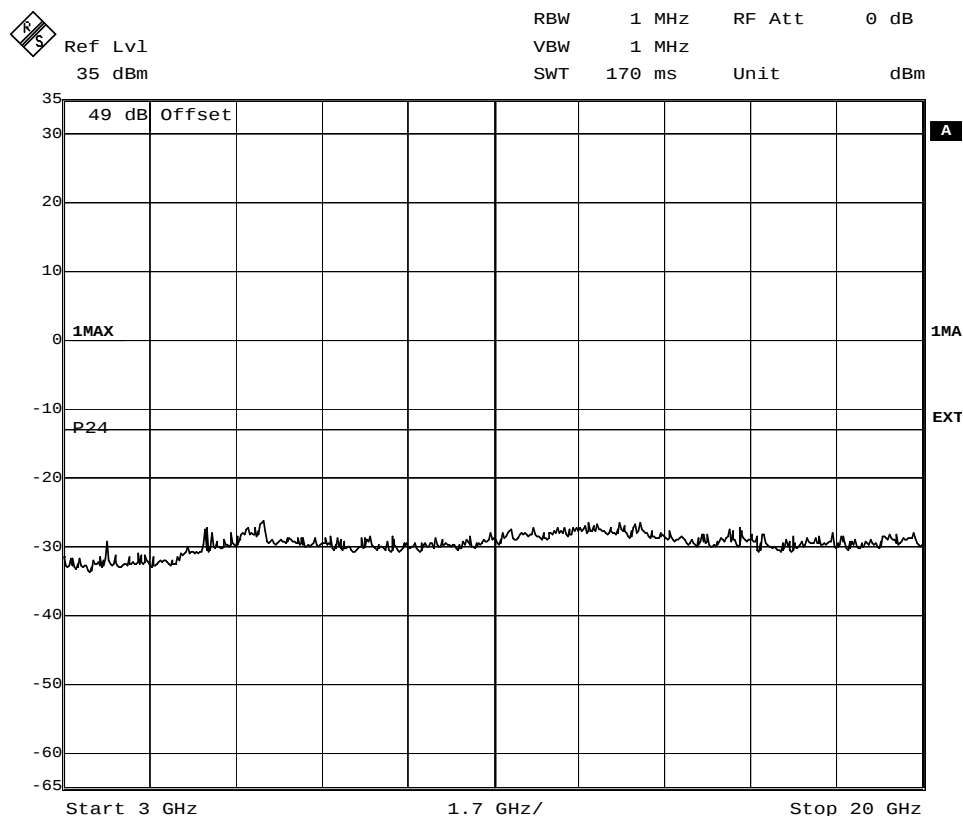
Appendix 5.1

Diagram 10



Date: 20.JUN.2006 15:20:34

Note: The emission at 9 kHz was related to the LO feedthrough. A complementary measurement was performed with a smaller RBW to verify that there were no emission in the frequency range 9k-10MHz.

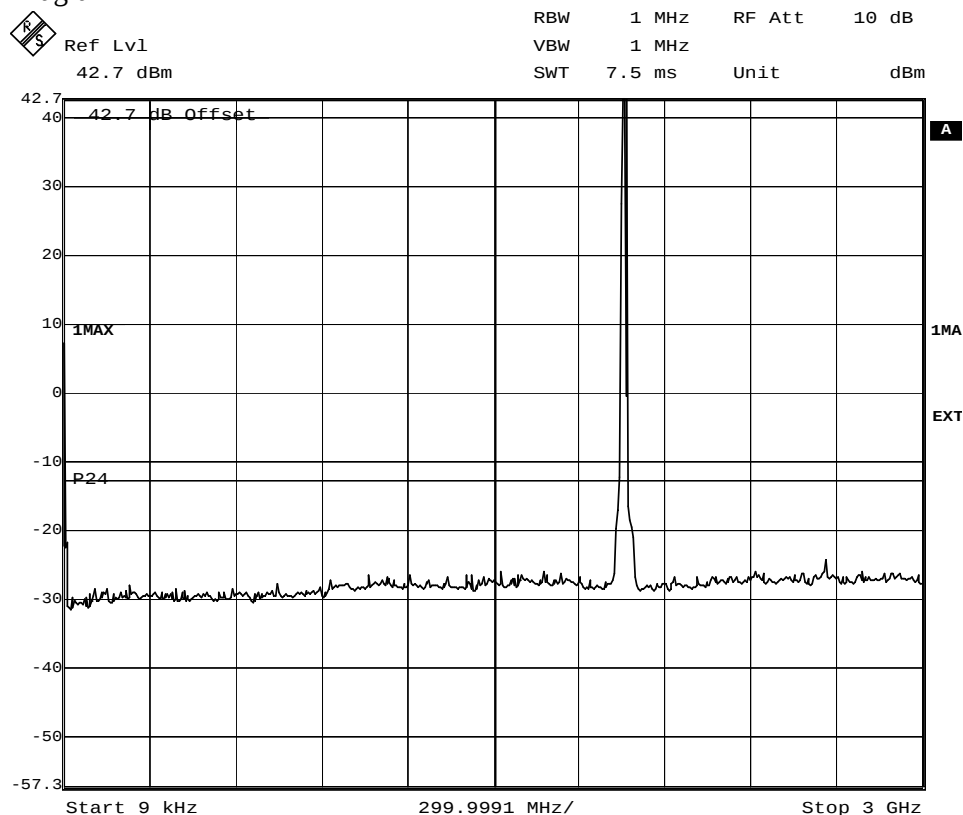


Date: 20.JUN.2006 15:18:34

FCC ID: TA8AKRC11819-1

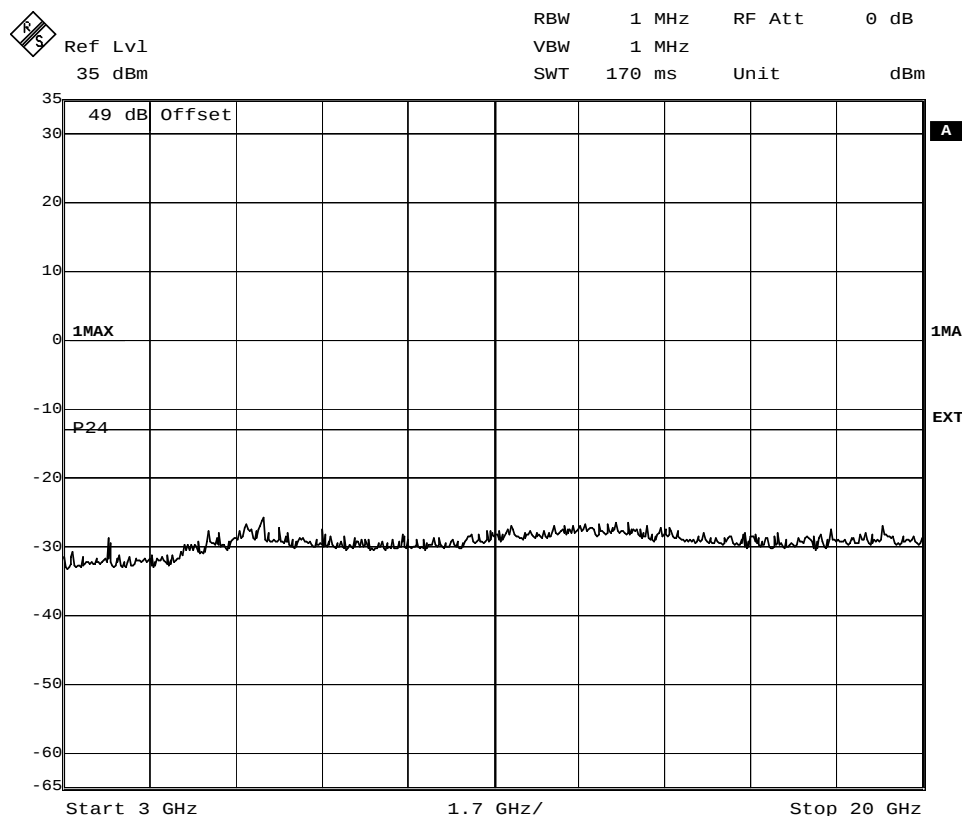
Appendix 5.1

Diagram 11



Date: 20.JUN.2006 15:47:14

Note: The emission at 9 kHz was related to the LO feedthrough. A complementary measurement was performed with a smaller RBW to verify that there were no emission in the frequency range 9k-10MHz.

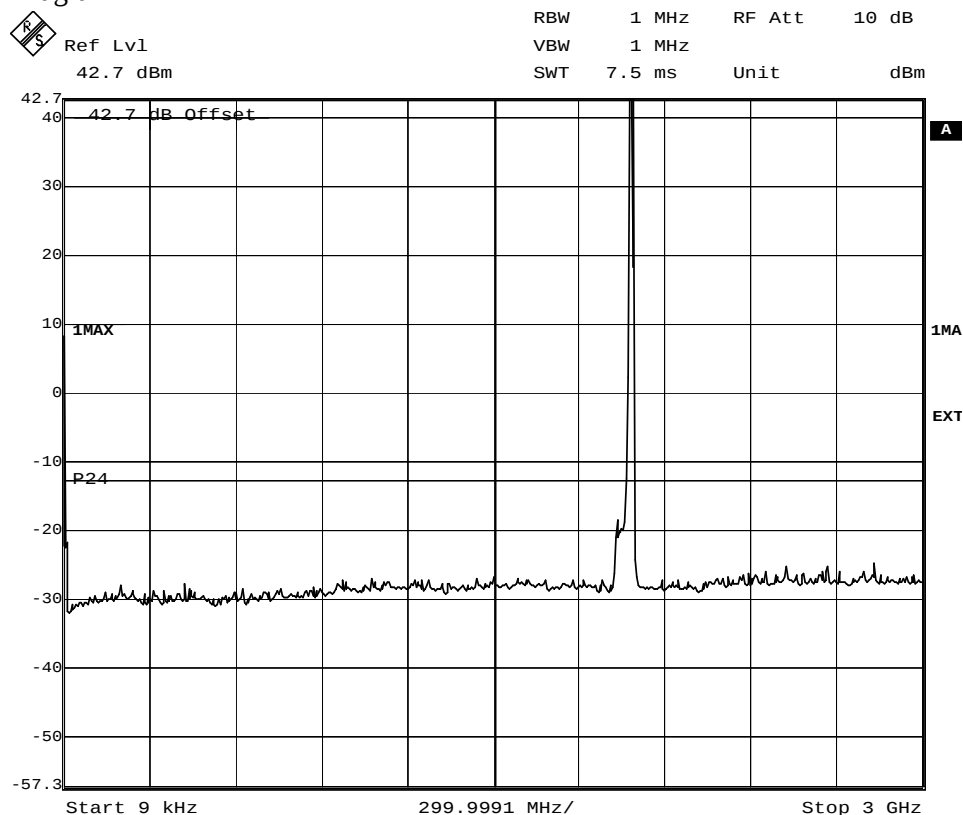


Date: 20.JUN.2006 15:49:19

FCC ID: TA8AKRC11819-1

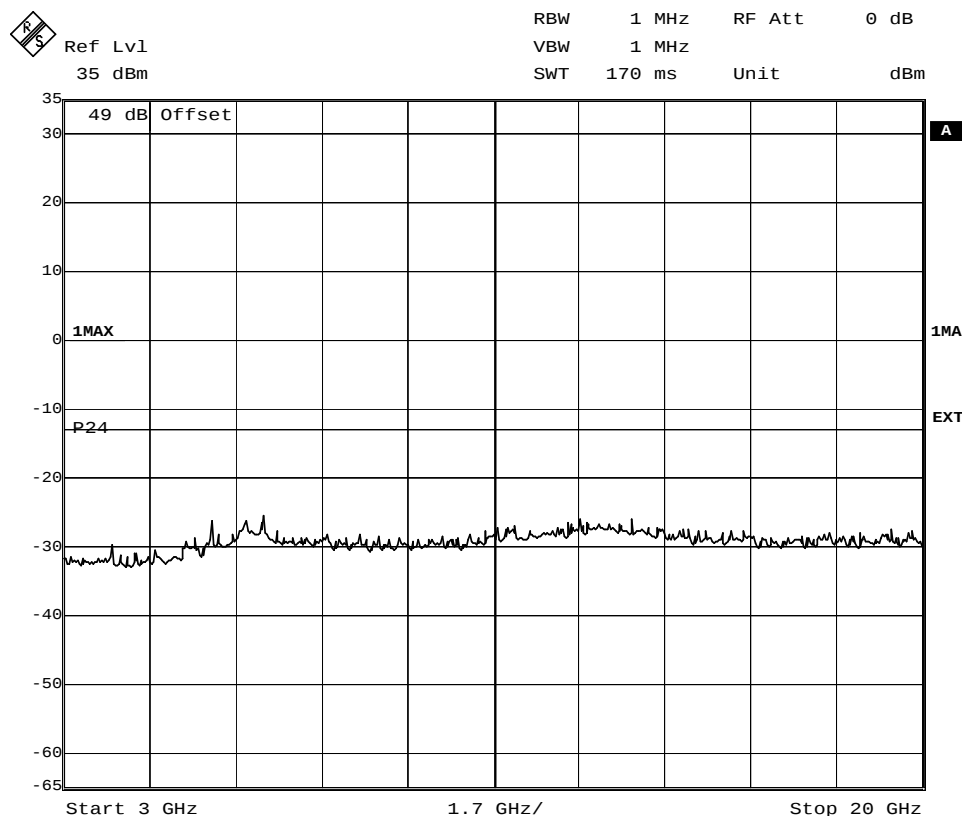
Appendix 5.1

Diagram 12



Date: 20.JUN.2006 16:34:39

Note: The emission at 9 kHz was related to the LO feedthrough. A complementary measurement was performed with a smaller RBW to verify that there were no emission in the frequency range 9k-10MHz.



Date: 20.JUN.2006 16:35:51

## Field strength of spurious radiation measurements according to 47 CFR 2.1053

| Date       | Temperature | Humidity   |
|------------|-------------|------------|
| 2006-06-08 | 22°C ± 3 °C | 40 % ± 5 % |
| 2006-06-09 | 21°C ± 3 °C | 44 % ± 5 % |
| 2006-06-12 | 20°C ± 3 °C | 56 % ± 5 % |

### Test set-up and procedure

The test site is listed at FCC, Columbia with registration number: 93866. The test site also complies with RSS 212, Issue 1, Industry Canada file no.:IC 3482.

The transmitter was modulated with pseudorandom data during the measurements. The antenna ports were terminated with 50 ohm loads.

The measurements were performed with both horizontal and vertical polarisation of the antenna. The antenna distance was 3 m in the frequency range 30 MHz – 18 GHz and 1m in the frequency range 18-20 GHz.

A pre-measurement was first performed:

In the frequency range 30 MHz-20 GHz the measurement was performed in power with a RBW of 1 MHz. A propagation loss in free space was calculated. The used formula was,

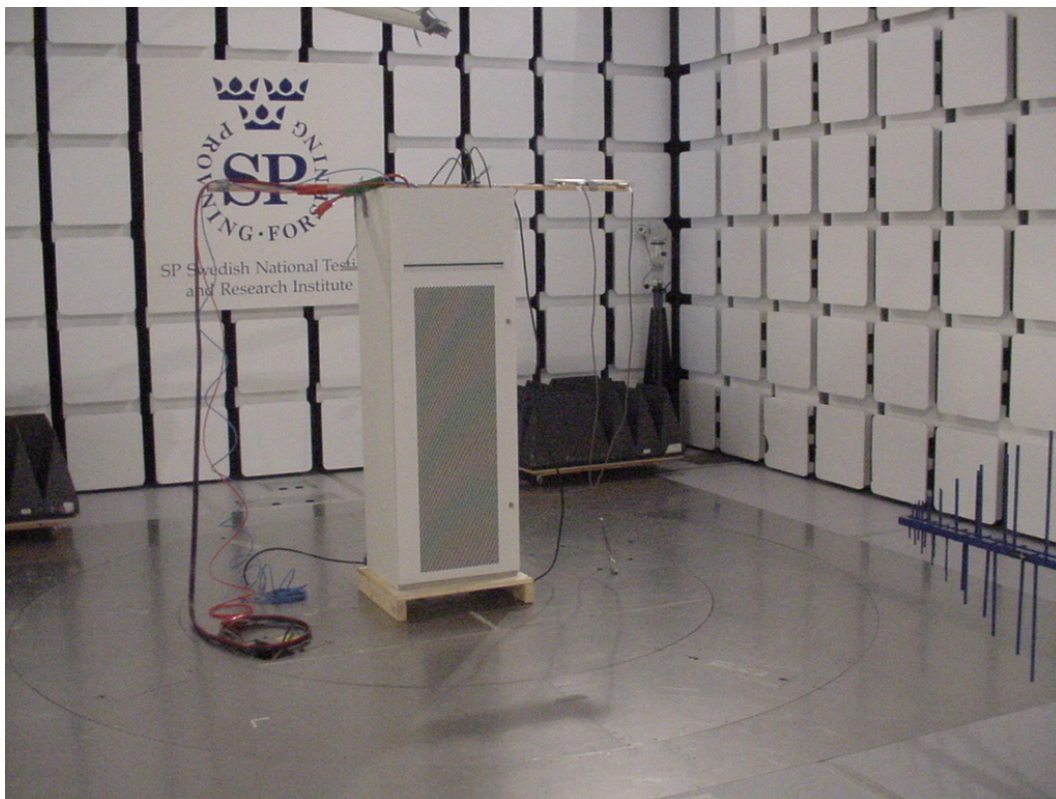
$$\gamma = 20 \log \left( \frac{4\pi D}{\lambda} \right), \gamma \text{ is the propagation loss and } D \text{ is the antenna distance.}$$

The measurement procedure was as the following:

1. The pre-measurement was first performed with peak detector. The EUT was measured in eight directions and with the antenna at three heights, 1.0 m, 1.5 m and 2.0 m.
2. Spurious radiation on frequencies closer than 20 dB to the limit is scanned 0-360 degrees and the antenna is scanned 1-4 m for maximum response. The emission is then measured with the average detector and the average value is reported, frequencies closer than 10 dB to the limit measured with the average detector was measured with the substitution method according to the standard.

| Measurement equipment                     | Calibration Due | SP number |
|-------------------------------------------|-----------------|-----------|
| Test site                                 | 2008-11         | 503 881   |
| R&S ESI 26                                | 2006-07         | 503 292   |
| Control computer                          | -               | 503 479   |
| Software: R&S ES-K1, ver. 1.60            | -               | -         |
| Chase Bilog antenna CBL 6111A             | 2008-11         | 503 182   |
| EMCO Horn Antenna 3115                    | 2007-11         | 502 175   |
| MITEQ Low Noise Amplifier                 | 2006-07         | 503 285   |
| Testo 615, Temperature and humidity meter | 2007-09         | 503 505   |

The test set-up during the spurious radiation measurements is shown in the picture below.



## Results

Single carrier and multi carrier

| Frequency<br>(MHz)      | Spurious emission level (dBm)    |                                  |
|-------------------------|----------------------------------|----------------------------------|
|                         | Vertical                         | Horizontal                       |
| 30-20 000               | All emission > 20 dB below limit | All emission > 20 dB below limit |
| Measurement uncertainty |                                  | 4.7 dB                           |

## Limits

The power of any emission outside the frequency band shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log P$  dB.

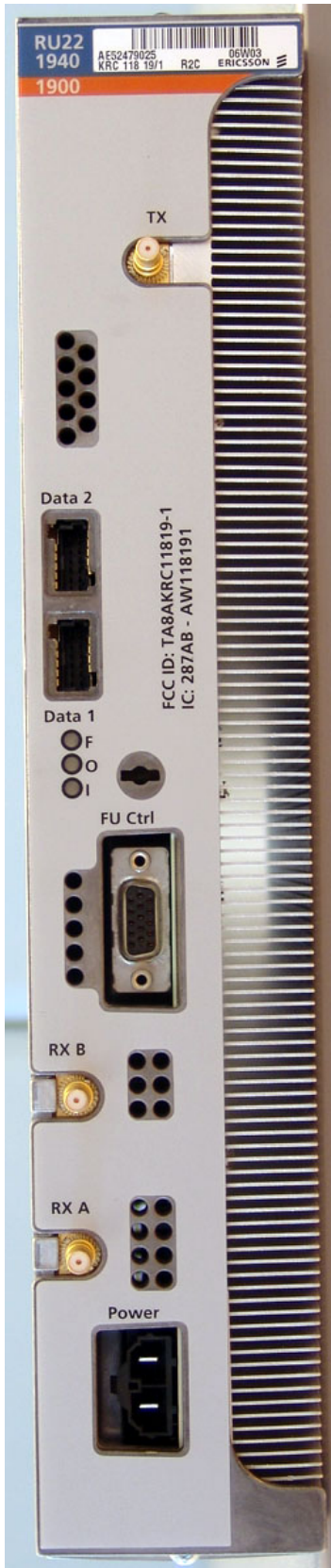
|           |     |
|-----------|-----|
| Complies? | Yes |
|-----------|-----|

FCC ID: TA8AKRC11819-1

Appendix 7

## Photos Radio Unit KRC 118 19/1

Front side



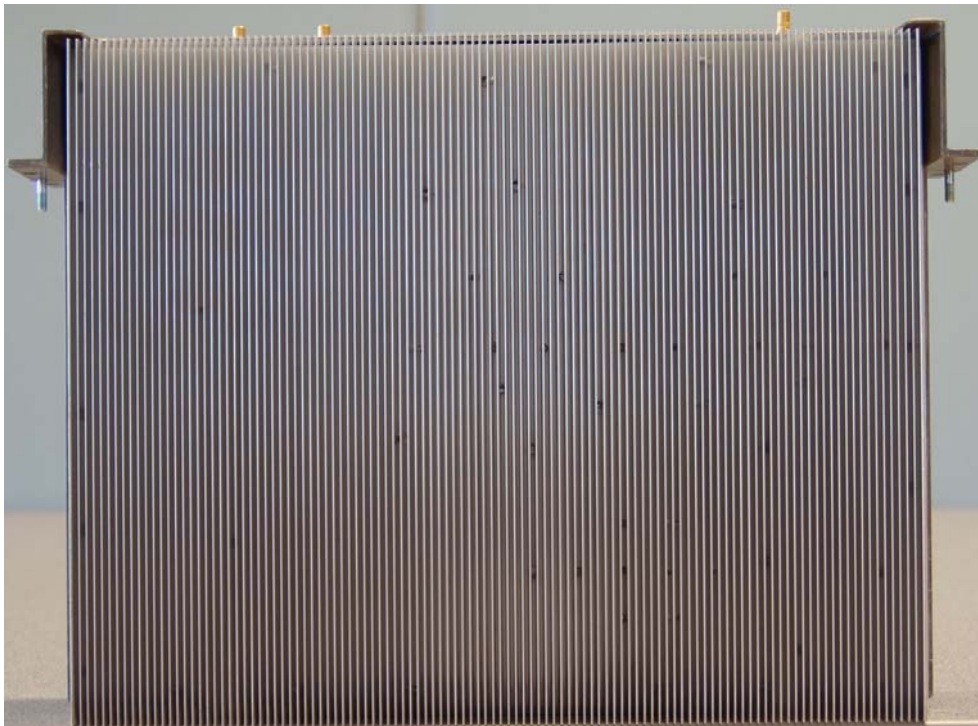
Rear side



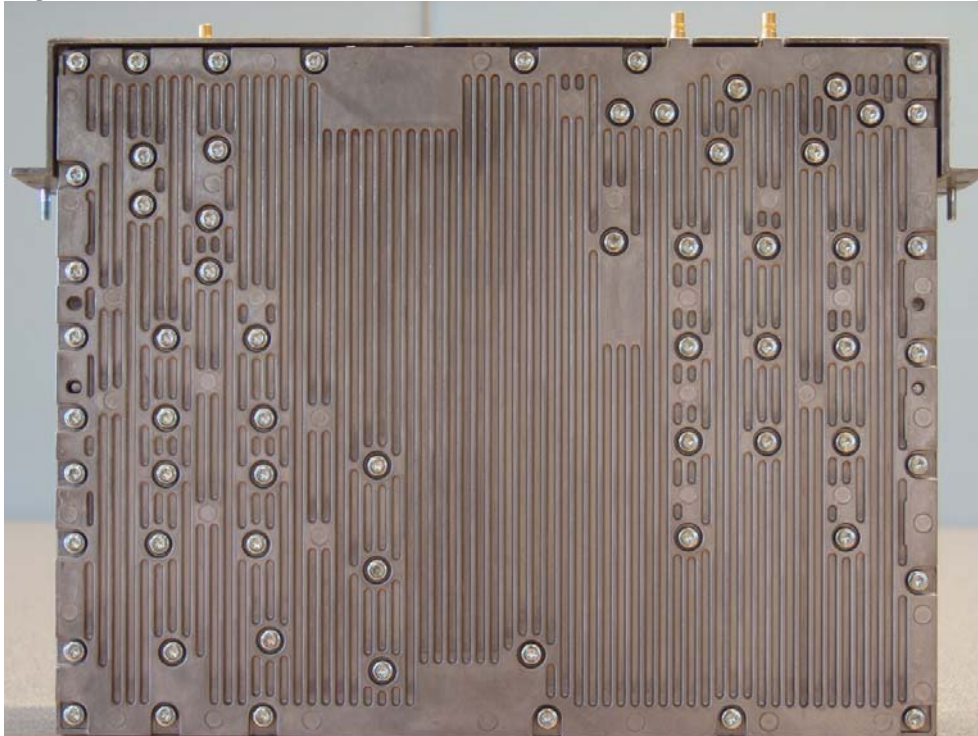
FCC ID: TA8AKRC11819-1

Appendix 7

Left side



Right side

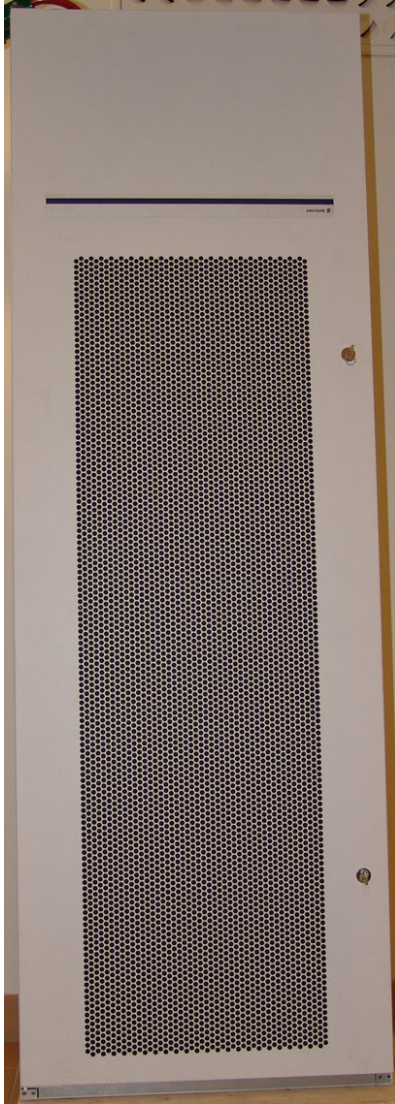


FCC ID: TA8AKRC11819-1

Appendix 7

## RBS 3206

Front side



Rear side

