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Datum/Date 2003-06-23 Beteckning/Reference F310972-F24 rev1 1(1) Sida/Page

Equipment Authorization measurements on GSM Base station 1900 MHz with FCC ID: B5KBRKRC1311004-2 (10 enclosures)

Test object

Transceiver Unit dTRU-19 EDGE, KRC 131 1004/2, R1G

Summary

Standard	Compliant	Enclosure	Remarks
FCC CFR 47			
2.1046 RF Power output	Yes	2	
2.1047 Modulation characteristics	Yes	3	
2.1049 Occupied bandwidth	Yes	4	
2.1049 Band Edge	Yes	5	Note 1
2.1051 Spurious emission at antenna	Yes	6	
2.1053 Field strength of spurious radiation	Yes	7	
2.1055 Frequency stability	Yes	8	

Note 1: It was not possible to reduce the transmit power enough for the channels adjacent to each frequency block edge to fulfil the requirements, thus the channels adjacent to each frequency block edge must be excluded in order to comply.

SP Swedish National Testing and Research Institute
Electronics - EMC


Bengt Andersson
Deputy Technical Manager


Peter Grahn
Technical Officer

Description - Equipment Under Test (EUT)

Equipment: GSM Base station transceiver 1900 MHz

Tx Frequency range: 1930.2-1989.8 MHz

Tested Channels:

Radiated measurements:

512: 1930.2 MHz	dTRU with internal combiner plus TCC
537: 1935.2 MHz	dTRU with internal combiner
562: 1940.2 MHz	dTRU with internal combiner
660: 1959.8 MHz	dTRU without internal combiner
685: 1964.8 MHz	dTRU without internal combiner
760: 1979.8 MHz	dTRU with internal combiner
785: 1984.8 MHz	dTRU with internal combiner
810: 1989.8 MHz	dTRU with internal combiner plus TCC

One mode tested at a time: with internal combiner, without internal combiner and with internal combiner plus TCC.

Conducted measurements:

512: 1930.2 MHz
513: 1930.4 MHz
537: 1935.2 MHz
584: 1944.6 MHz
588: 1945.4 MHz
609: 1949.6 MHz
613: 1950.4 MHz
661: 1960.0 MHz
684: 1964.6 MHz
688: 1965.4 MHz
709: 1969.6 MHz
713: 1970.4 MHz
734: 1974.6 MHz
738: 1975.4 MHz
785: 1984.8 MHz
809: 1989.6 MHz
810: 1989.8 MHz

Product number: dTRU-19 EDGE: KRC 131 1004/2

Serial number: See Hardware list in enclosure 9

Two dTRU were used during RF conducted measurements,
dTRU-19 EDGE: KRC 131 1004/2, R1G, with s/n: AE50126501 and s/n AE50126520
All RF conducted measurements were done at the output connectors of CDU-G.
CDU-G19: BFL 119 153/1, R5A, s/n: A40003S9K2

Manufacturer's
representative:

Per Helmersson, Ericsson AB

Sign:.....

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F310972-F24 rev1 2 (2)

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FCC ID: B5KBRRC1311004-2

Purpose of test

The purpose of the tests is to verify compliance to the performance characteristics specified in FCC CFR47.

Reservation

The test results in this report apply only to the particular Equipment Under Test (EUT) as declared in the report.

Delivery of test object

The test object was delivered: 2002-06-05

Test engineers

Jonas Bremholt
Peter Grahm
Fredrik Isaksson

Test witnesses

Larry Hagbjörk, Ericsson AB
Mats Iregren, Ericsson AB

Sign:.....

RF Power output measurements according to 47CFR 2.1046

Date 2003-06-26	Temperature 22 °C ± 3 °C	Humidity 49 % ± 5 %
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Test set-up and Procedure

The measurements were made per J-STD-007A Vol 1 and TIA/EIA-139-280-B. Measurements were made at CDU-G output connectors. The output was connected to a Peak power analyser via a 50 ohm attenuator. Test was performed on 24 V DC supply voltage system. The transmitter was modulated with 270.8 kbs pseudorandom data and with maximum power in all the time slots during the measurements.

Measurement equipment	Calibration Due	SP number
Boonton RF Peak power meter/analyzer	2004-01	503 144
Boonton Power sensor 56518-S/4	2004-01	503 145
Multimeter Fluke 87	2003-09	502 190
Testo 610, Temperature and humidity meter	2003-12	502 658

Results

Mode: **GMSK**

dTRU, output 1+2 (TCC).

Nominal power 24 V DC

Rated output power level after CDU-G (maximum): 47 dBm

Test conditions		Transmitter power (dBm) Peak/Average		
		Channel 512	Channel 661	Channel 810
T _{nom} 22 °C	V _{nom} 24 V DC	47.2/46.7	47.6/47.1	47.2/46.7
Measurement uncertainty		0.5 dB		

dTRU, output 1, without internal combiner:

Nominal power 24 V DC

Rated output power level after CDU-G (maximum): 45 dBm

Test conditions		Transmitter power (dBm) Peak/Average		
		Channel 512	Channel 661	Channel 810
T _{nom} 22 °C	V _{nom} 24 V DC	44.9/44.4	45.2/44.8	44.9/44.4
Measurement uncertainty		0.5 dB		

dTRU, output 2, without internal combiner:

Nominal power 24 V DC

Rated output power level after CDU-G (maximum): 45 dBm

Test conditions		Transmitter power (dBm) Peak/Average		
		Channel 512	Channel 661	Channel 810
T _{nom} 22 °C	V _{nom} 24 V DC	44.8/44.4	45.2/44.7	44.8/44.3
Measurement uncertainty		0.5 dB		

dTRU, output 1, with internal combiner:

Nominal power 24 V DC

Rated output power level after CDU-G (maximum): 41.5 dBm

Test conditions		Transmitter power (dBm) Peak/Average		
		Channel 512	Channel 661	Channel 810
T _{nom} 22 °C	V _{nom} 24 V DC	41.5/41.0	41.8/41.3	41.5/41.0
Measurement uncertainty		0.5 dB		

dTRU, output 2, with internal combiner:

Nominal power 24 V DC

Rated output power level after CDU-G (maximum): 41.5 dBm

Test conditions		Transmitter power (dBm) Peak/Average		
		Channel 512	Channel 661	Channel 810
T _{nom} 22 °C	V _{nom} 24 V DC	41.7/40.8	41.8/41.2	41.5/40.9
Measurement uncertainty		0.5 dB		

Mode: **EDGE**

dTRU, output 1+2 (TCC):

Nominal power 24 V DC

Rated output power level after CDU-G (maximum): 47 dBm

Test conditions		Transmitter power (dBm) Peak/Average		
		Channel 512	Channel 661	Channel 810
T _{nom} 22 °C	V _{nom} 24 V DC	47.1/43.5	47.5/43.9	47.1/43.6
Measurement uncertainty		0.5 dB		

dTRU, output 1, without internal combiner:

Nominal power 24 V DC

Rated output power level after CDU-G (maximum): 45 dBm

Test conditions		Transmitter power (dBm) Peak/Average		
		Channel 512	Channel 661	Channel 810
T _{nom} 22 °C	V _{nom} 24 V DC	44.9/41.2	45.2/41.6	44.9/41.3
Measurement uncertainty		0.5 dB		

dTRU, output 2, without internal combiner:

Nominal power 24 V DC

Rated output power level after CDU-G (maximum): 45 dBm

Test conditions		Transmitter power (dBm) Peak/Average		
		Channel 512	Channel 661	Channel 810
T _{nom} 22 °C	V _{nom} 24 V DC	45.0/41.3	45.2/41.6	45/41.3
Measurement uncertainty		0.5 dB		

dTRU, output 1, with internal combiner:

Nominal power 24 V DC

Rated output power level after CDU-G19 (maximum): 41.5 dBm

Test conditions		Transmitter power (dBm)		
		Peak Average		
		Channel 512	Channel 661	Channel 810
T _{nom} 22 °C	V _{nom} 24 V DC	41.4/37.5	41.7/38.0	41.4/37.7
Measurement uncertainty		0.5 dB		

dTRU, output 2, with internal combiner:

Nominal power 24 V DC

Rated output power level after CDU-G19 (maximum): 41.5 dBm

Test conditions		Transmitter power (dBm)		
		Peak/Average		
		Channel 512	Channel 661	Channel 810
T _{nom} 22 °C	V _{nom} 24 V DC	41.4/37.6	41.7/38.0	41.4/37.7
Measurement uncertainty		0.5 dB		

Remark

dTRU with serial number AE50126501 was used during the test.

Limits

The deviation of output power shall not be greater than ± 2 dB of the maximum rated output power.

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

Complies?	Yes
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Modulation characteristics measurements according to 47CFR 2.1047

Date 2003-06-13	Temperature 22 °C ± 3 °C	Humidity 44 % ± 5 %
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Test set-up and Procedure

The measurement was made per J-STD-007A Vol 1 and TIA/EIA-139-280-B. Measurements were made at CDU-G output connectors. The output was connected to a spectrum analyser. The spectrum analyser was connected to an external 10 MHz reference standard during measurement. The transmitter was modulated with 270.8 kbs pseudorandom data during the measurements.

Measurement equipment	Calibration Due	SP number
R&S FSIQ	2004-03	503 738
Testo 610, Temperature and humidity meter	2003-12	502 658
Multimeter Fluke 87	2003-09	502 190

Results

Nominal Voltage 24 V DC

45 dBm output power at Channel 661 (1960.0 MHz)

Mode: **GMSK**

Test conditions		Phase error (°)	
Supply voltage DC (V)	T (°C)	TRU Output 0	TRU Output 1
24.0	+20	1.3	1.3
Maximum phase error (°)		1	

Mode: **EDGE**

Test conditions		EVM (% _{RMS})	
Supply voltage DC (V)	T (°C)	TRU Output 0	TRU Output 1
24.0	+20	3.1	2.5
Maximum EVM (% _{RMS})		2.2	

Test conditions		Origin offset (dB)	
Supply voltage DC (V)	T (°C)	TRU Output 0	TRU Output 1
24.0	+20	-42.0	-43.4
Minimum origin offset (dB)		-42.0	

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Remark

dTRU with serial number AE50126501 was used during the test.

Limits

GMSK: The tolerance of the maximum output phase error shall not be greater than 5 degrees.

EDGE: The Error Vector Magnitude (EVM) shall be less than 12.5 %_{RMS}
The origin offset in any burst shall be less than -30 dBc.

Complies?	Yes
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Sign:.....

Occupied bandwidth measurements according to 47CFR 2.1049

Date	Temperature	Humidity
2003-06-10	22 °C ± 3 °C	49 % ± 5 %
2003-06-11	23 °C ± 3 °C	54 % ± 5 %

Test set-up and Procedure

The measurements were made per definition in §24.238. Measurements were made at CDU-G output connectors. The output was connected to a spectrum analyser. The spectrum analyser was connected to an external 10 MHz reference standard during the measurements. The transmitter was modulated with 270.8 kbs pseudorandom data during the measurements.

Measurement equipment	Calibration Due	SP number
R&S FSIQ	2004-03	503 738
Testo 610, Temperature and humidity meter	2003-12	502 658

Measurement uncertainty: 3.7 dB

Results

Mode: **GMSK**

dTRU Output 1, without internal combiner:

- Diagram 1 Ch 661 Reference level +45 dBm output power
Diagram 2 Ch 661 26 dB points +45 dBm output power

dTRU Output 2, without internal combiner:

- Diagram 3 Ch 661 Reference level +45 dBm output power
Diagram 4 Ch 661 26 dB points +45 dBm output power

Mode: **EDGE**

dTRU Output 1, without internal combiner:

- Diagram 5 Ch 661 Reference level +45 dBm output power
Diagram 6 Ch 661 26 dB points +45 dBm output power

dTRU Output 2, without internal combiner:

- Diagram 7 Ch 661 Reference level +45 dBm output power
Diagram 8 Ch 661 26 dB points +45 dBm output power

Remarks

dTRU with serial number AE50126501 was used during the test.

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
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Sign:.....

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FCC ID: B5KBRRC1311004-2

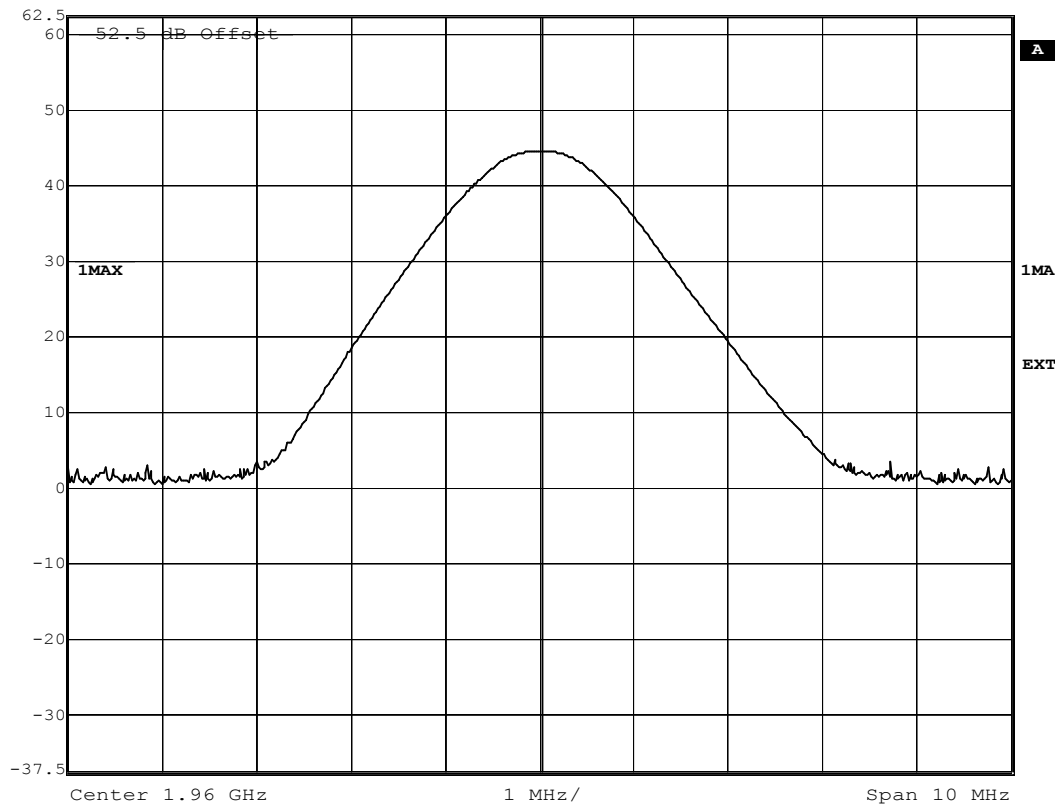
Datum/Date
2003-06-23

Beteckning/Reference Sida/Page
F310972-F24 rev1 Diagram 1 (8)
Encl. 4.1



Ref Lvl
62.5 dBm

RBW 1 MHz RF Att 30 dB
VBW 1 MHz
SWT 5 ms Unit dBm



Date: 10.JUN.2003 16:26:39

Sign:.....

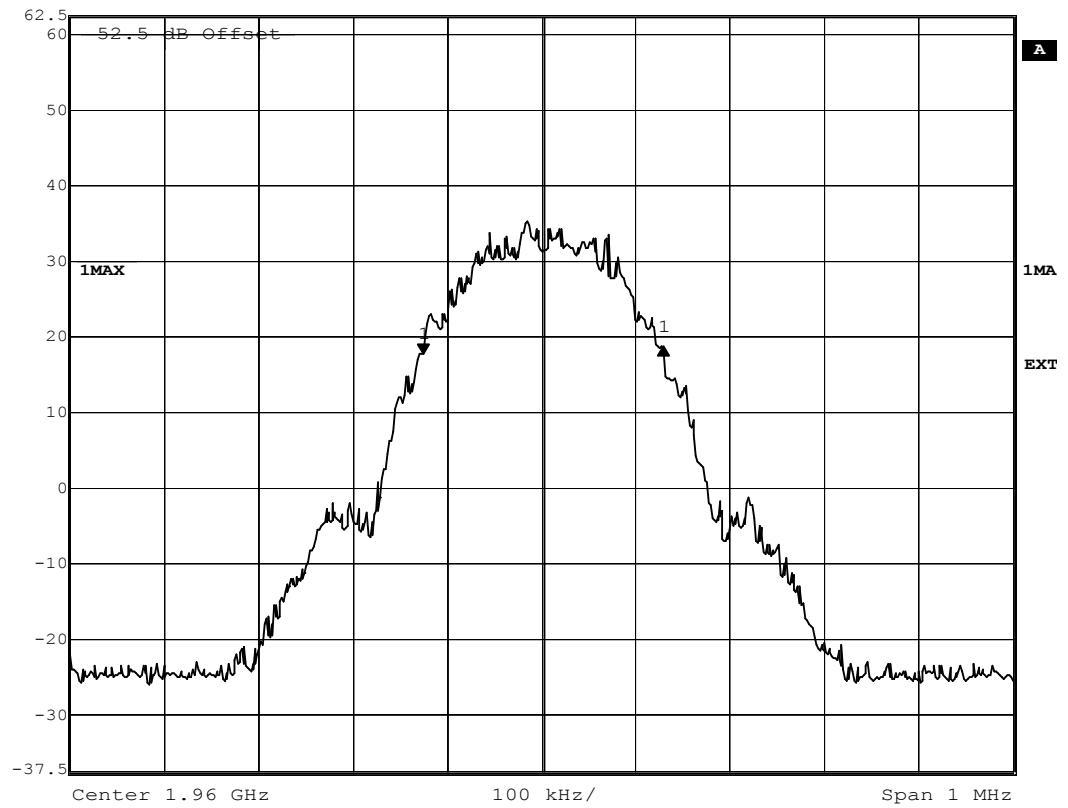
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2003-06-23

Beteckning/Reference Sida/Page
F310972-F24 rev1 Diagram 2 (8)
Encl. 4.1

FCC ID: B5KBRKRC1311004-2

 Delta 1 [T1] RBW 3 kHz RF Att 30 dB
Ref Lvl 0.93 dB VBW 3 kHz
62.5 dBm 255.51102204 kHz SWT 280 ms Unit dBm



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REPORT

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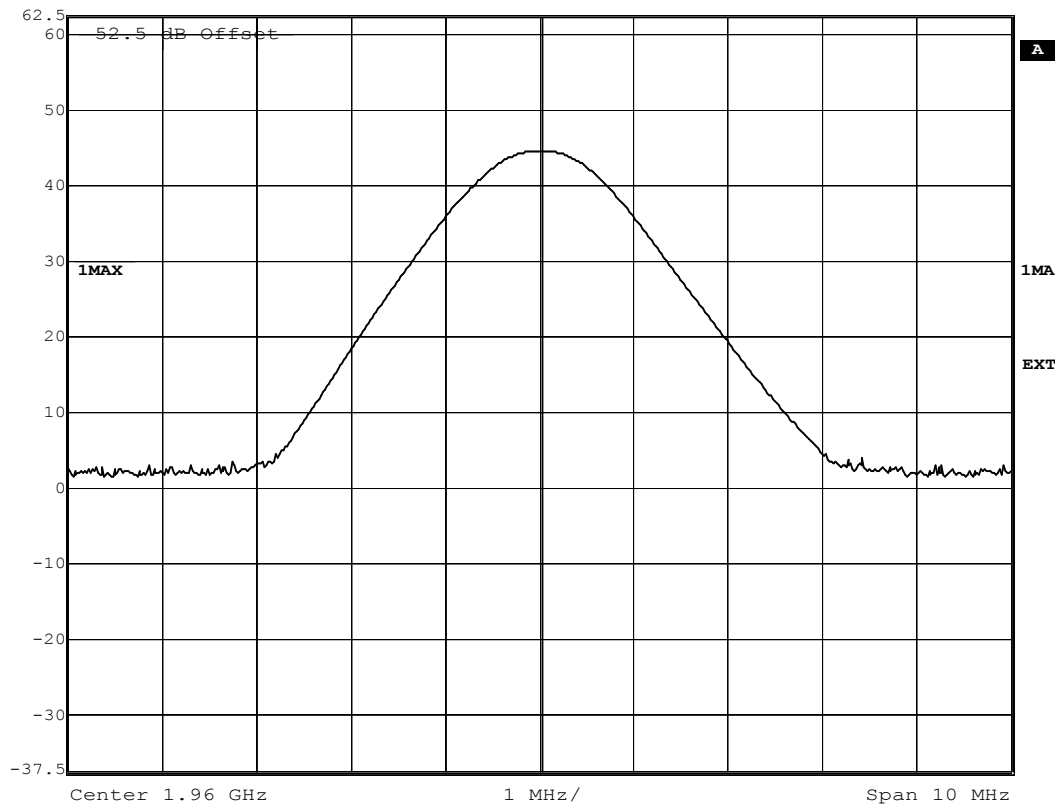
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2003-06-23

Beteckning/Reference Sida/Page
F310972-F24 rev1 Diagram 3 (8)
Encl. 4.1



Ref Lvl
62.5 dBm

RBW 1 MHz RF Att 30 dB
VBW 1 MHz
SWT 5 ms Unit dBm



Date: 10.JUN.2003 16:23:00

Sign:.....

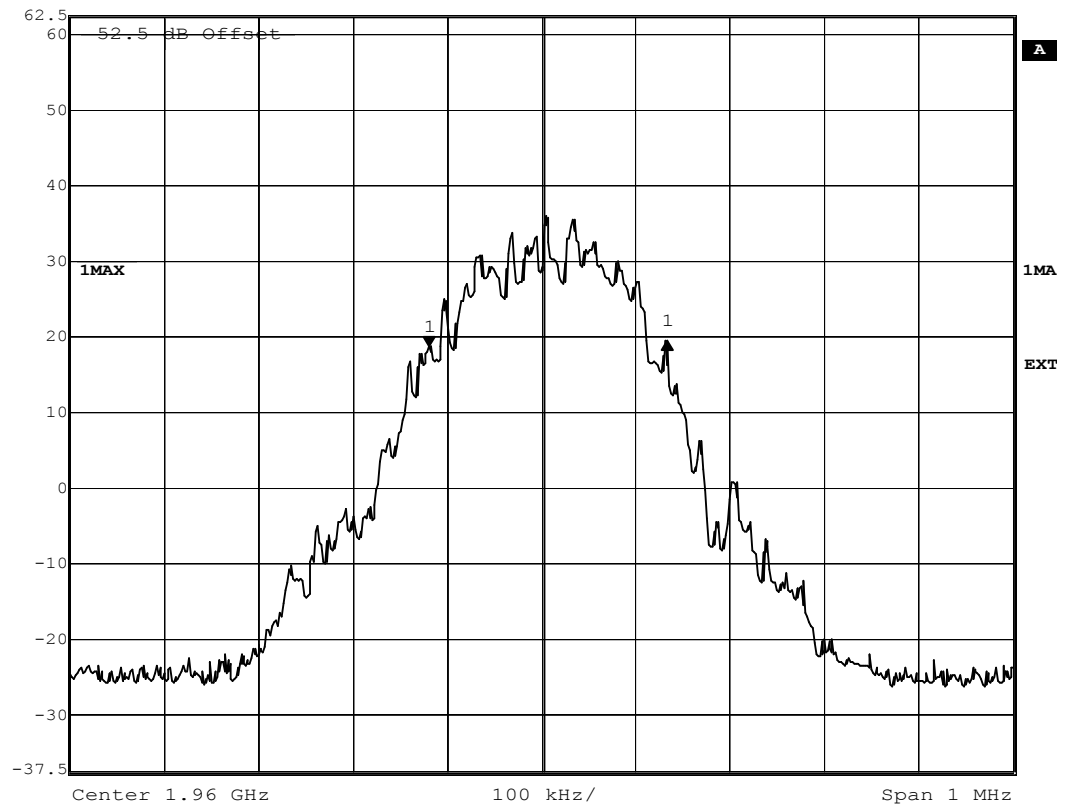
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Datum/Date
2003-06-23

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F310972-F24 rev1 Diagram 4 (8)
Encl. 4.1

FCC ID: B5KBRKRC1311004-2

 Delta 1 [T1] RBW 3 kHz RF Att 30 dB
Ref Lvl 0.58 dB VBW 3 kHz
62.5 dBm 251.50300601 kHz SWT 280 ms Unit dBm



Date: 10.JUN.2003 16:28:56

Sign:.....

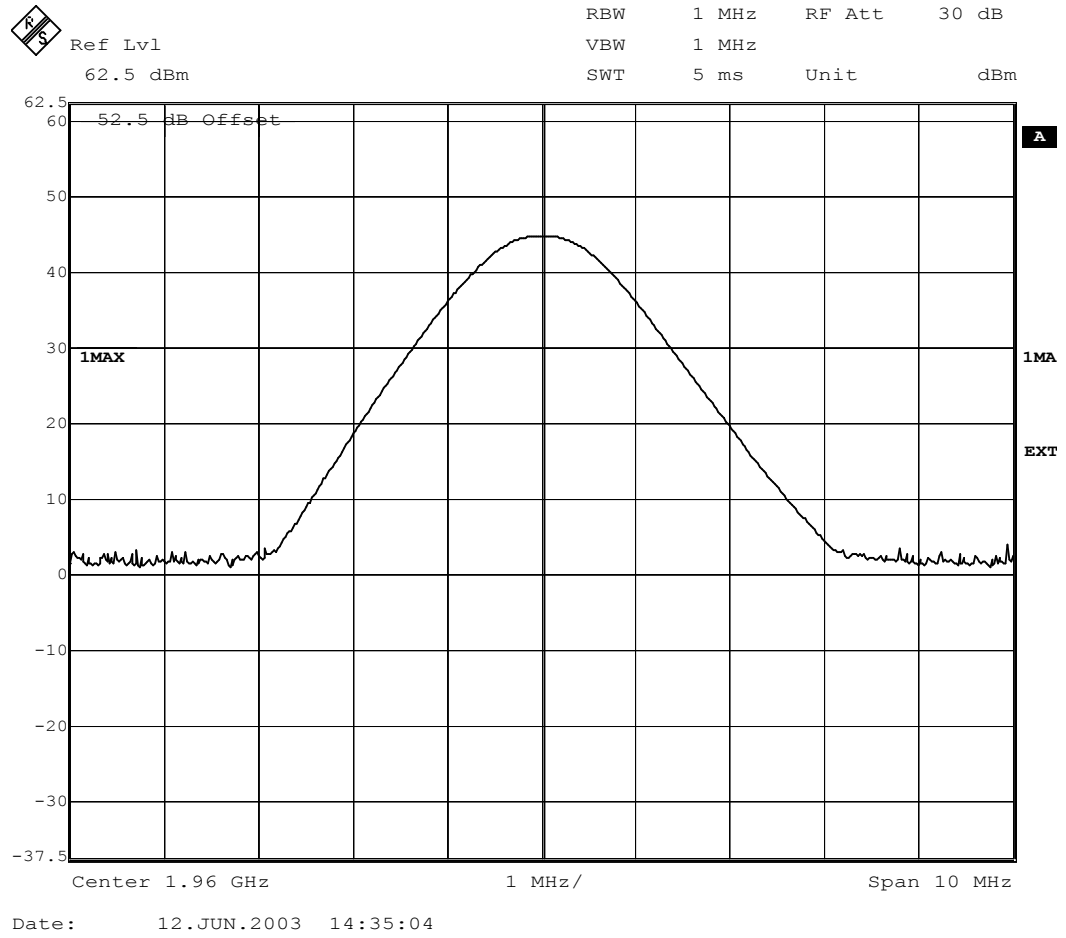
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Diagram 5 (8)
Encl. 4.1



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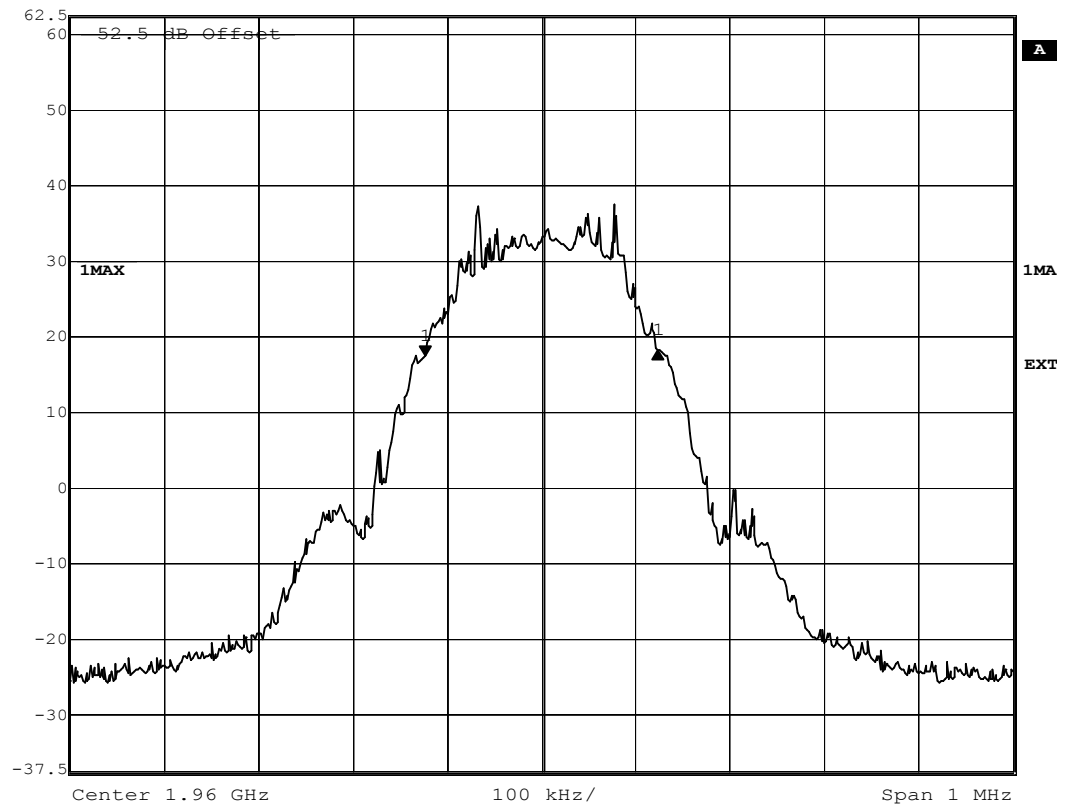
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Beteckning/Reference Sida/Page
F310972-F24 rev1 Diagram 6 (8)
Encl. 4.1

FCC ID: B5KBRKRC1311004-2

 Delta 1 [T1] RBW 3 kHz RF Att 30 dB
Ref Lvl 0.65 dB VBW 3 kHz
62.5 dBm 246.49298597 kHz SWT 280 ms Unit dBm

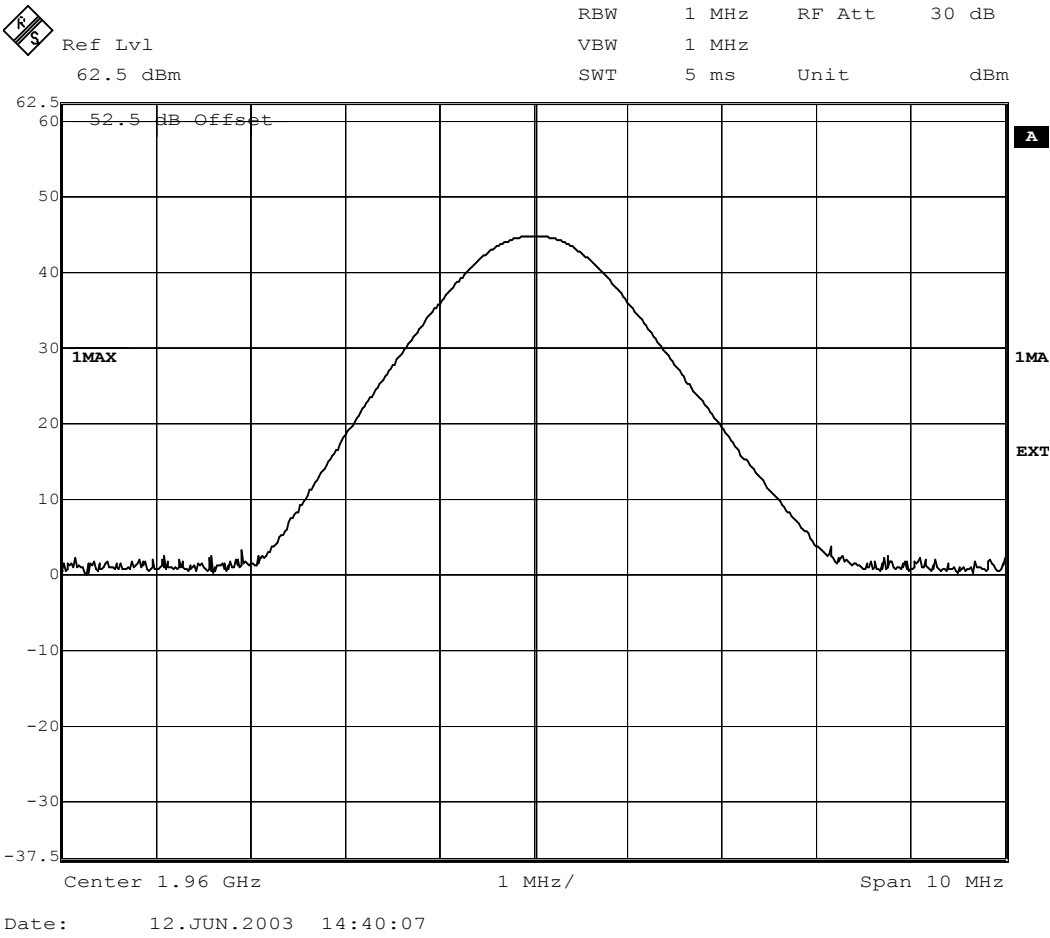


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REPORT

FCC ID: B5KBKRC1311004-2



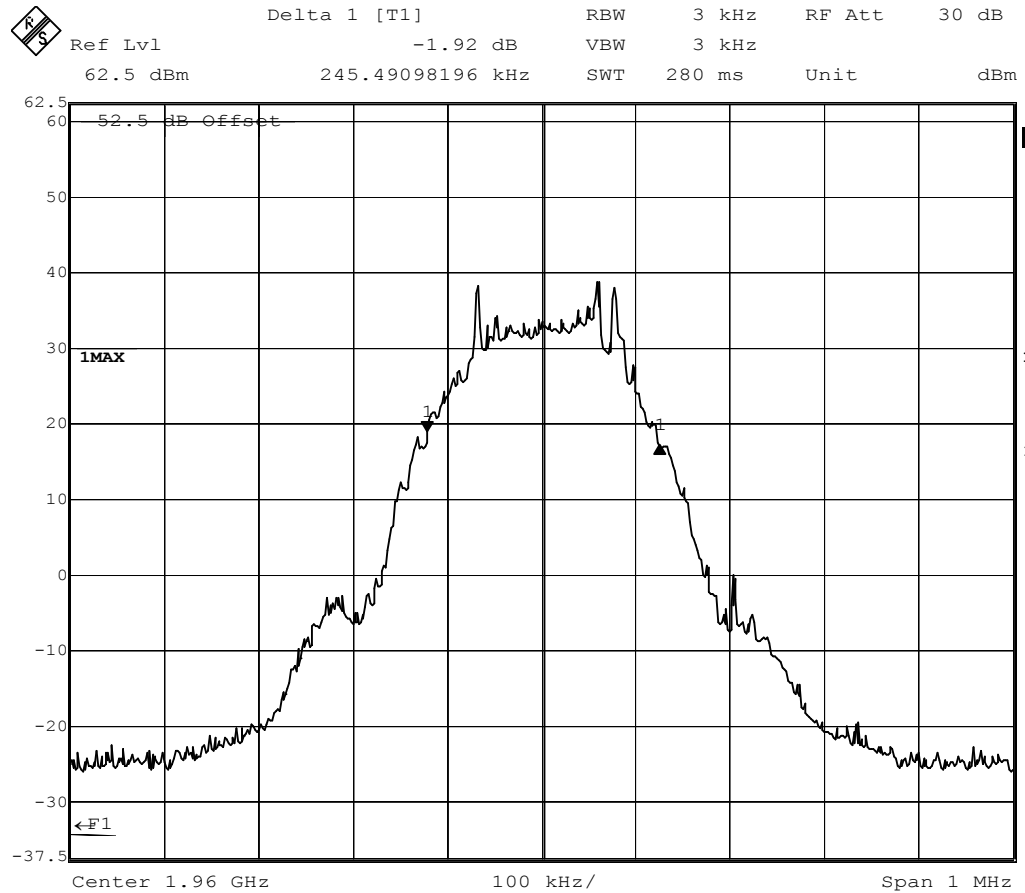
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F310972-F24 rev1 Diagram 8 (8)
Encl. 4.1

FCC ID: B5KBKRC1311004-2



Date: 12.JUN.2003 14:41:58

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Band edge measurements according to 47CFR 2.1049

Date	Temperature	Humidity
2003-06-11	23 °C ± 3 °C	54 % ± 5 %
2003-06-12	22 °C ± 3 °C	47 % ± 5 %

Test set-up and Procedure

The measurements were made per J-STD-007A Vol 1 and TIA/EIA-139-280-B. Measurements were made at CDU-G output connectors. The output was connected to a spectrum analyser. The spectrum analyser was connected to an external 10 MHz reference standard during the measurements. According to §24.238 a resolution bandwidth of 1% of the emission bandwidth was used in the 1 MHz band adjacent to the block edge. At frequencies more than 1 MHz away from the block edge the spectrum was integrated over 1MHz bandwidth. The transmitter was modulated with 270.8 kbs pseudorandom data during the measurements.

Measurement equipment	Calibration Due	SP number
R&S FSIQ	2004-03	503 738
Testo 610, Temperature and humidity meter	2003-12	502 658

Measurement uncertainty: 3.7 dB**Results**Mode: **GMSK****dTRU Output 1, without internal combiner:**

- Diagram 1 Ch 513 Band edge +45 dBm output power
Diagram 2 Ch 809 Band edge +45 dBm output power

dTRU Output 2, without internal combiner:

- Diagram 3 Ch 513 Band edge +45 dBm output power
Diagram 4 Ch 809 Band edge +45 dBm output power

(TCC), dTRU Output 1+2 (TX1+TX2):

Block A

- Diagram 5 Ch 513 Band edge +47 dBm output power
Diagram 6 Ch 584 Band edge +47 dBm output power

Block D

- Diagram 7 Ch 588 Band edge +47 dBm output power
Diagram 8 Ch 609 Band edge +47 dBm output power

Block B

- Diagram 9 Ch 613 Band edge +47 dBm output power
Diagram 10 Ch 684 Band edge +47 dBm output power

Block E

- Diagram 11 Ch 688 Band edge +47 dBm output power
Diagram 12 Ch 709 Band edge +47 dBm output power

Block F

- Diagram 13 Ch 713 Band edge +47 dBm output power
Diagram 14 Ch 734 Band edge +47 dBm output power

Block C

- Diagram 15 Ch 738 Band edge +47 dBm output power
Diagram 16 Ch 809 Band edge +47 dBm output power

Sign:.....

Mode: **EDGE**

dTRU Output 1, without internal combiner:

- Diagram 17 Ch 513 Band edge +45 dBm output power
Diagram 18 Ch 809 Band edge +45 dBm output power

dTRU Output 2, without internal combiner:

- Diagram 19 Ch 513 Band edge +45 dBm output power
Diagram 20 Ch 809 Band edge +45 dBm output power

(TCC), dTRU Output 1+2 (TX1+TX2):

Block A

- Diagram 21 Ch 513 Band edge +47 dBm output power
Diagram 22 Ch 584 Band edge +47 dBm output power

Block D

- Diagram 23 Ch 588 Band edge +47 dBm output power
Diagram 24 Ch 609 Band edge +47 dBm output power

Block B

- Diagram 25 Ch 613 Band edge +47 dBm output power
Diagram 26 Ch 684 Band edge +47 dBm output power

Block E

- Diagram 27 Ch 688 Band edge +47 dBm output power
Diagram 28 Ch 709 Band edge +47 dBm output power

Block F

- Diagram 29 Ch 713 Band edge +47 dBm output power
Diagram 30 Ch 734 Band edge +47 dBm output power

Block C

- Diagram 31 Ch 738 Band edge +47 dBm output power
Diagram 32 Ch 809 Band edge +47 dBm output power

Remarks

dTRU with serial number AE50126501 was used during the test.

It was not possible to reduce the transmit power enough for the channels adjacent to each frequency block edge to fulfil the requirements, thus the channels adjacent to each frequency block edge must be excluded in order to comply.

Limits

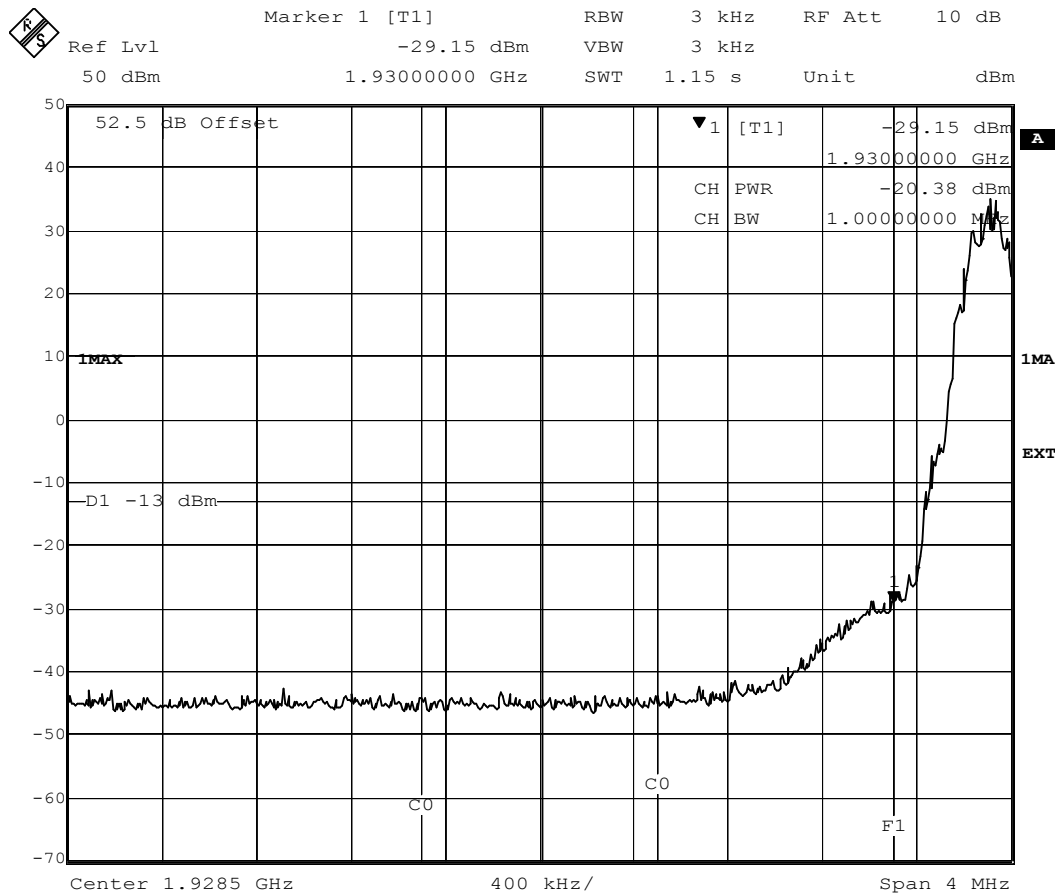
The power of any emission outside the frequency band shall be attenuated below the transmitter power (P) by at least $43 + 10 \log P$ dB.

Complies?	Yes
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F310972-F24 rev1	Diagram 1 (32)
	Encl. 5.1



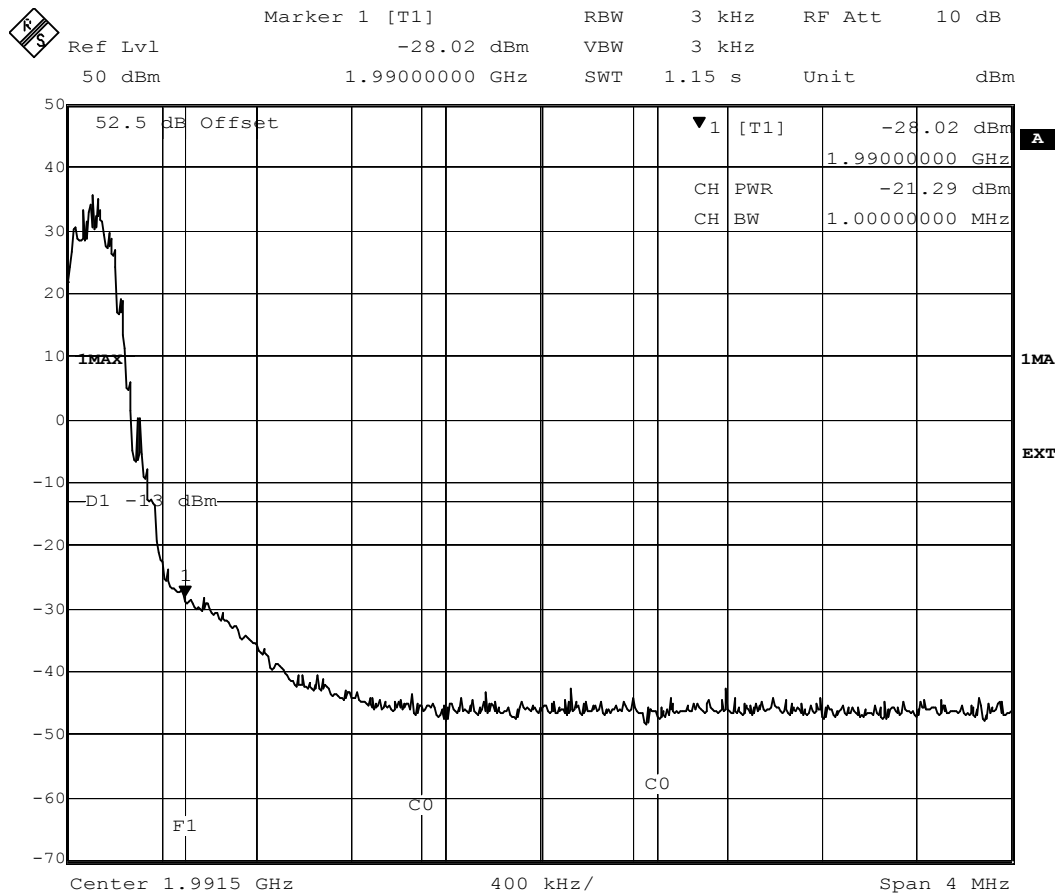
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Beteckning/Reference	Sida/Page
F310972-F24 rev1	Diagram 2 (32)
	Encl. 5.1



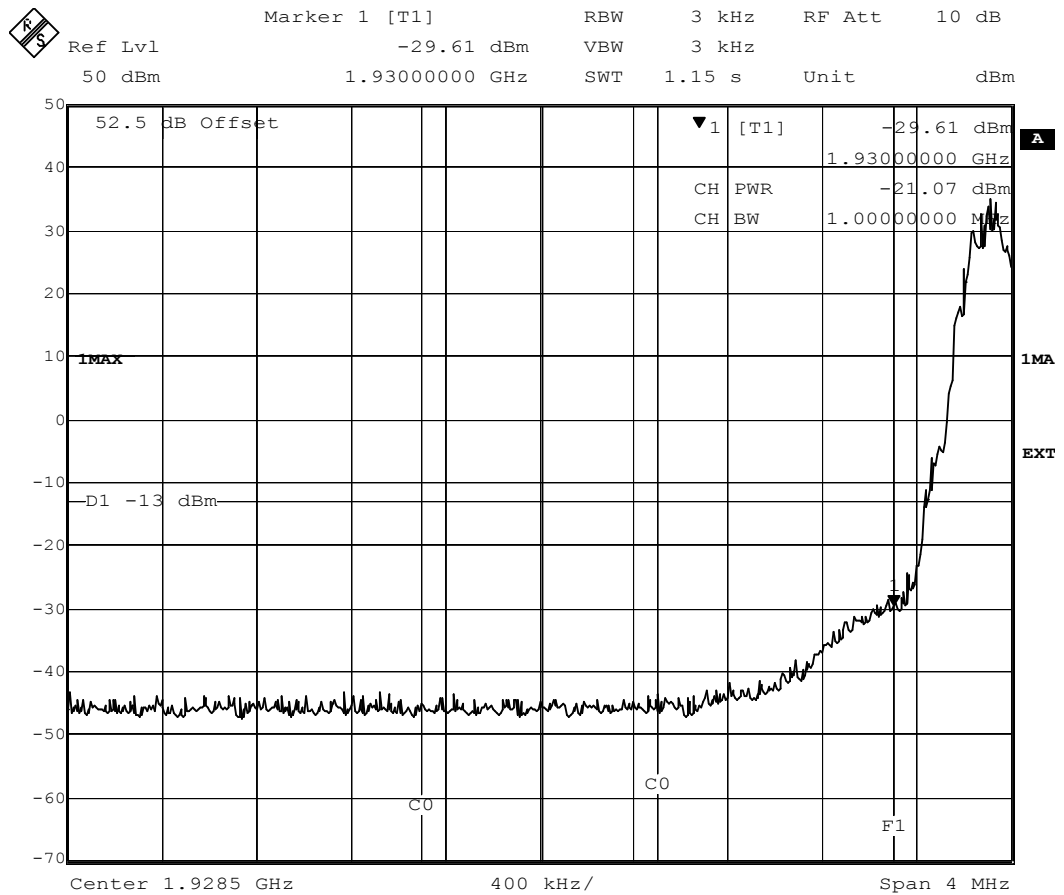
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Beteckning/Reference	Sida/Page
F310972-F24 rev1	Diagram 3 (32)
	Encl. 5.1

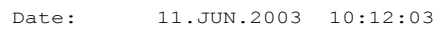


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FCC ID: B5KBRRC1311004-2

Beteckning/Reference	Sida/Page
F310972-F24 rev1	Diagram 4 (32)
	Encl. 5.1



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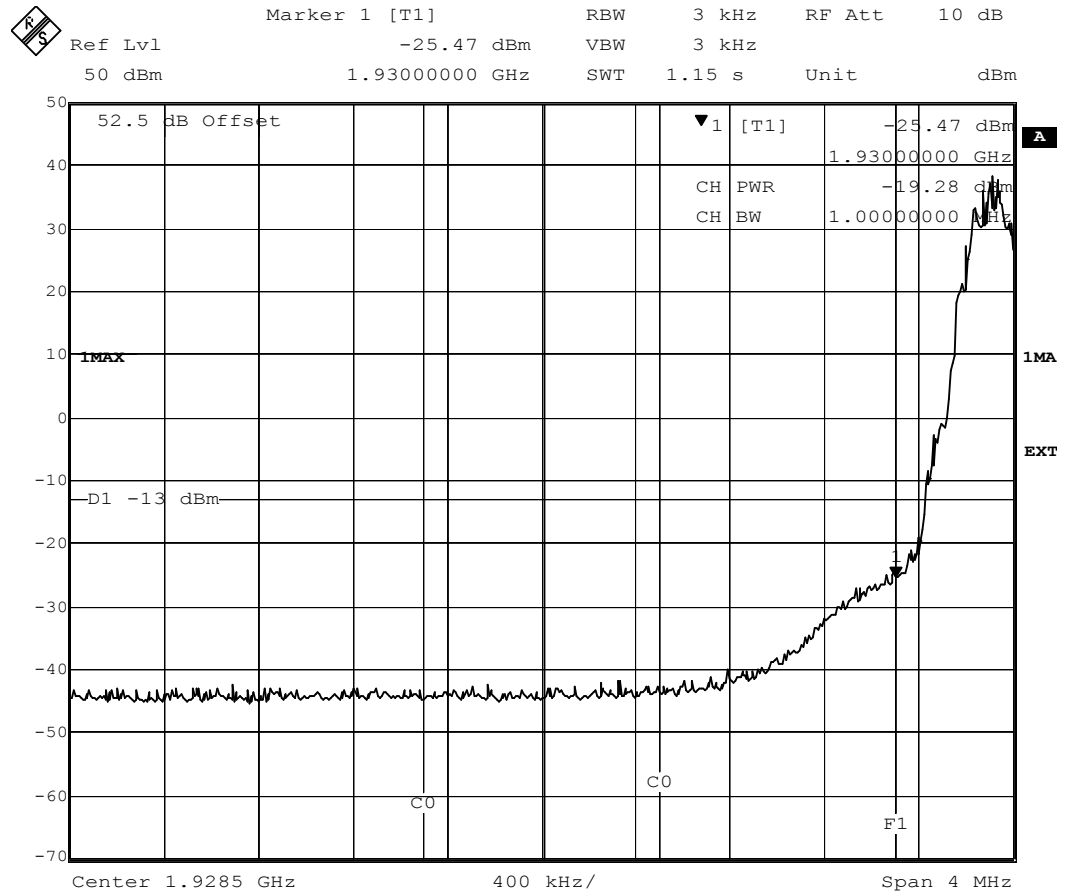
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F310972-F24 rev1

Sida/Page

Diagram 5 (32)

Encl. 5.1

FCC ID: B5KBKRC1311004-2

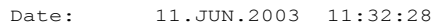


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FCC ID: B5KBRRC1311004-2

Beteckning/Reference	Sida/Page
F310972-F24 rev1	Diagram 6 (32)
	Encl. 5.1

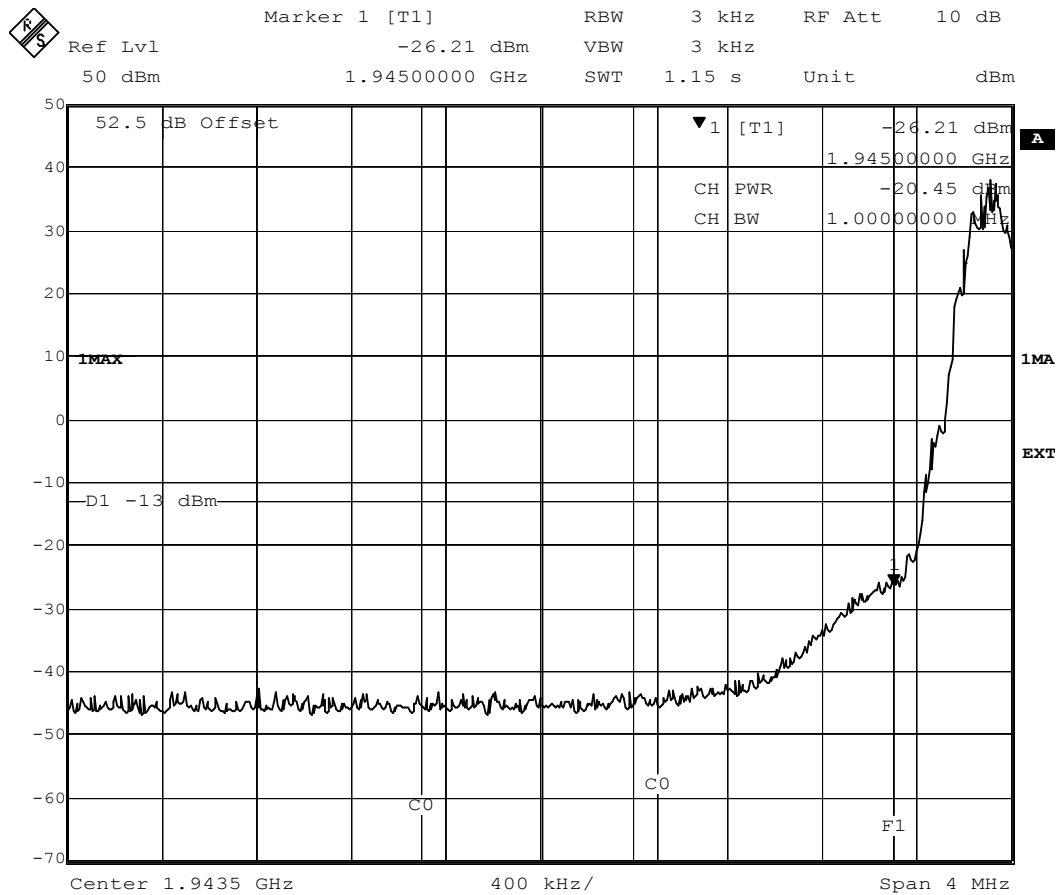


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FCC ID: B5KBRRC1311004-2

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F310972-F24 rev1	Diagram 7 (32)
	Encl. 5.1



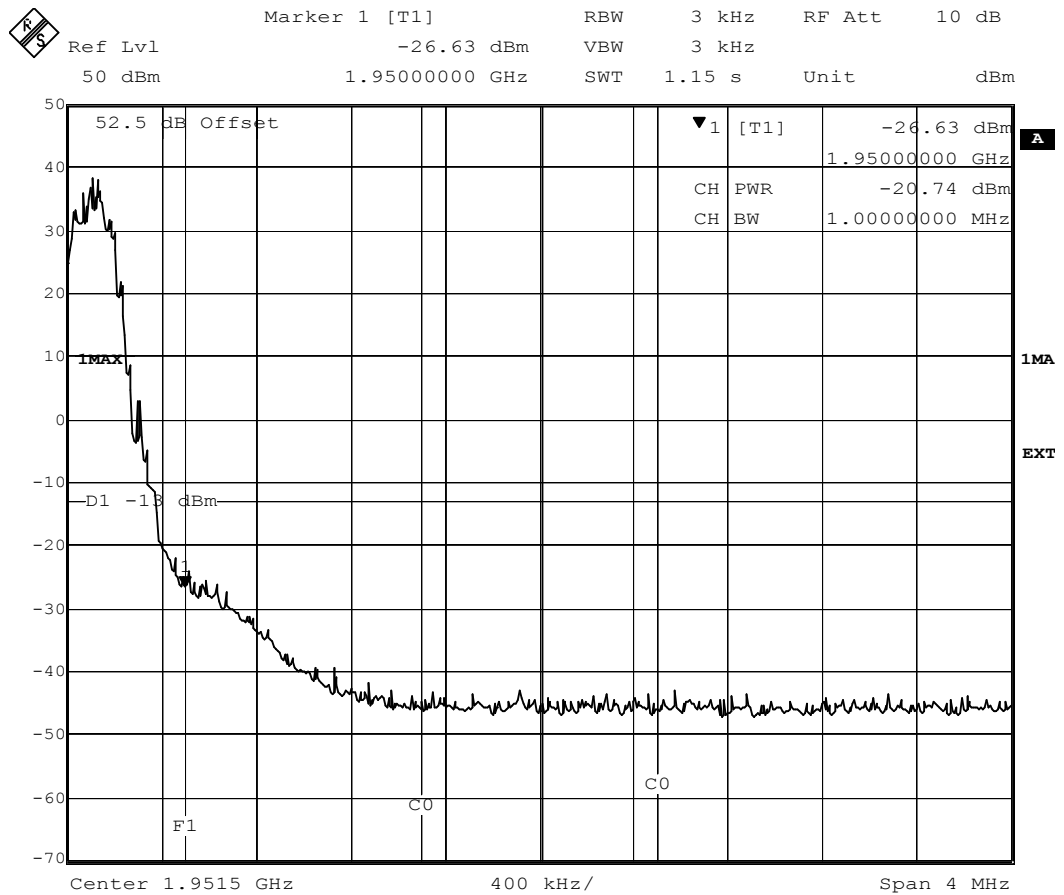
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2003-06-23

Beteckning/Reference	Sida/Page
F310972-F24 rev1	Diagram 8 (32)
	Encl. 5.1



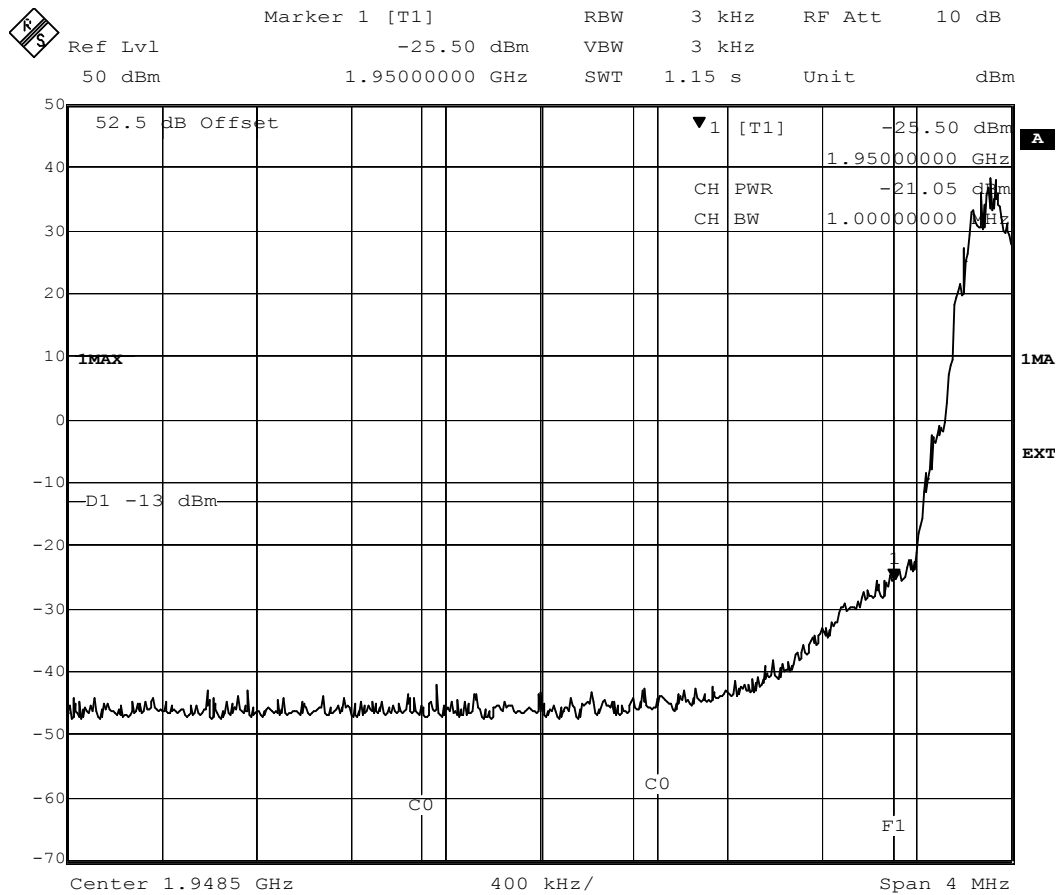
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FCC ID: B5KBRRC1311004-2

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2003-06-23

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F310972-F24 rev1	Diagram 9 (32)
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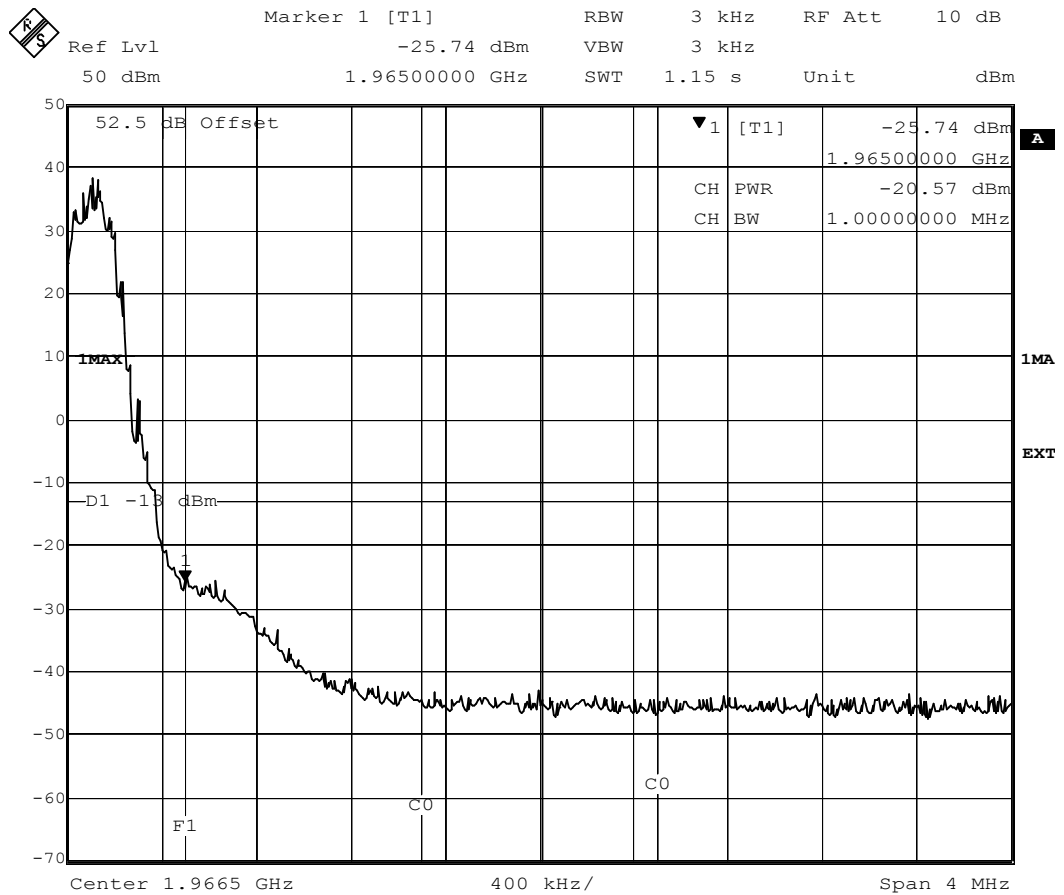
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2003-06-23

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F310972-F24 rev1	Diagram 10 (32)
	Encl. 5.1



Date: 11.JUN.2003 11:28:21

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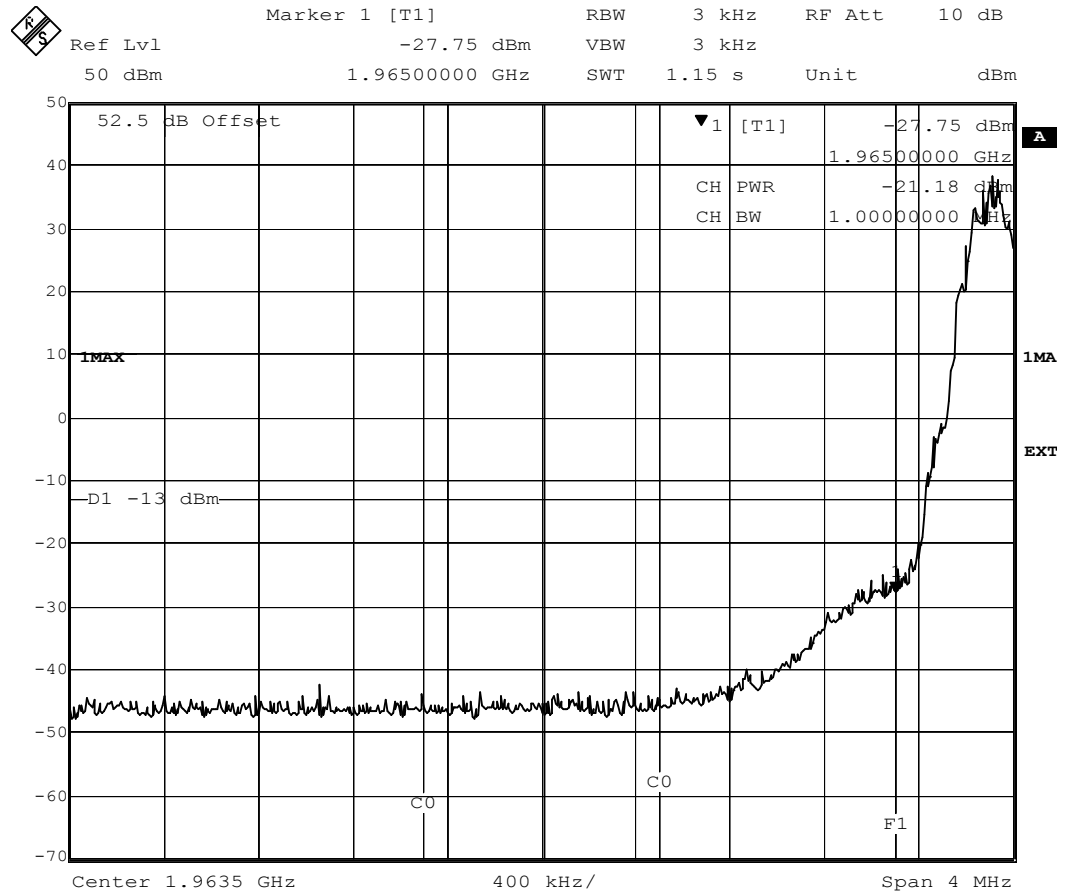
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2003-06-23

Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 11 (32)
Encl. 5.1

FCC ID: B5KBKRC1311004-2



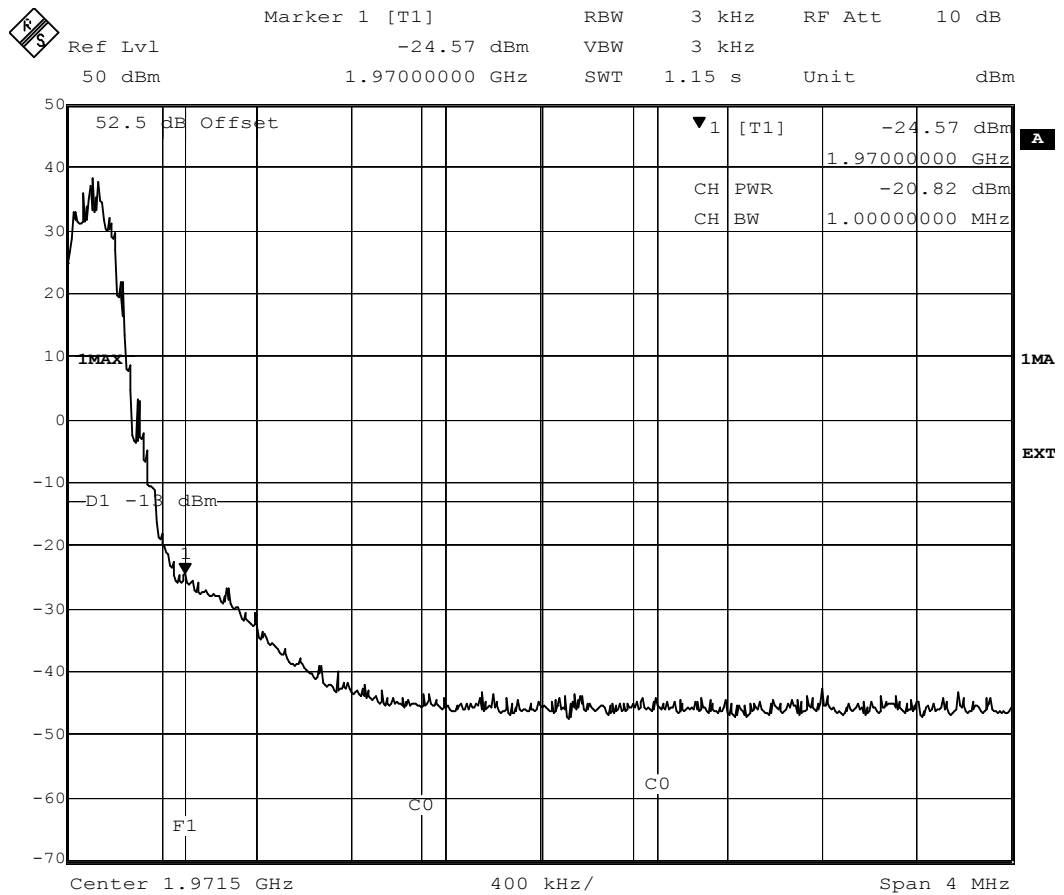
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FCC ID: B5KBRRC1311004-2

Datum/*Date*
2003-06-23

Beteckning/Reference	Sida/Page
F310972-F24 rev1	Diagram 12 (32)
	Encl. 5.1



Date: 11.JUN.2003 11:26:12

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REPORT

Datum/Date
2003-06-23

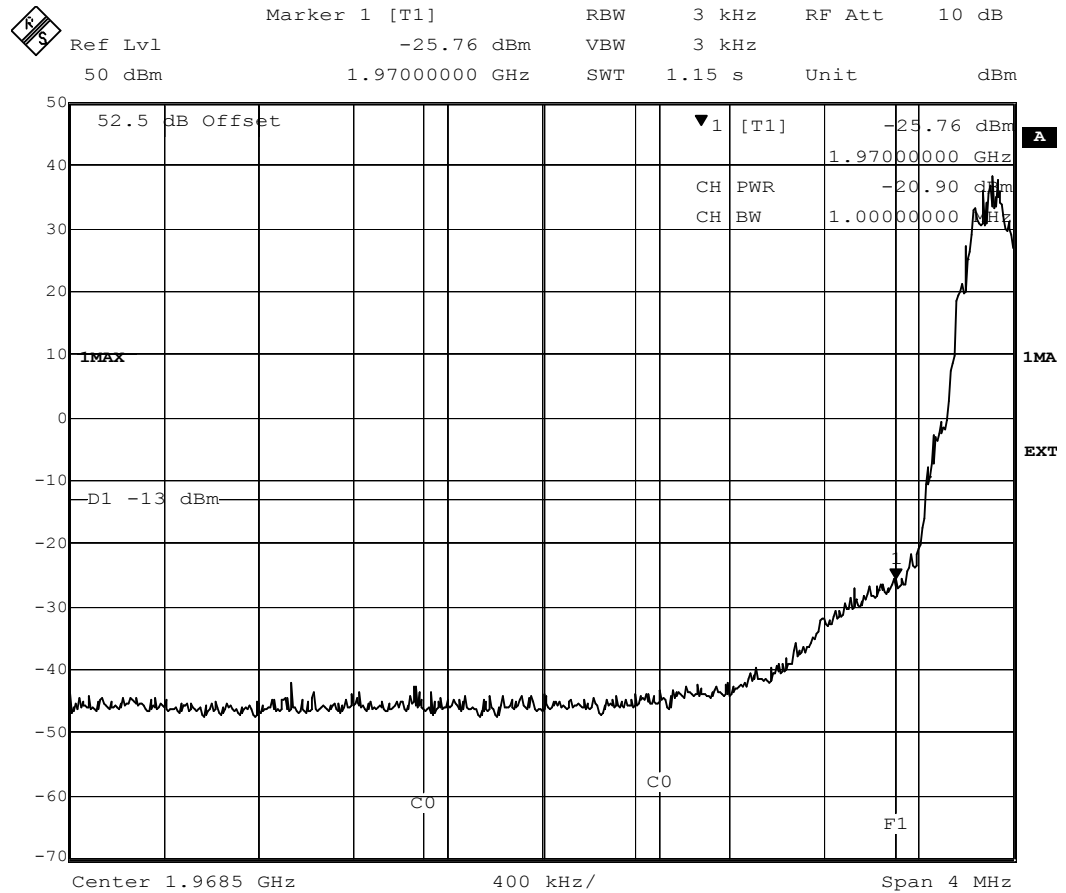
Beteckning/Reference
F310972-F24 rev1

Sida/Page

Diagram 13 (32)

Encl. 5.1

FCC ID: B5KBKRC1311004-2



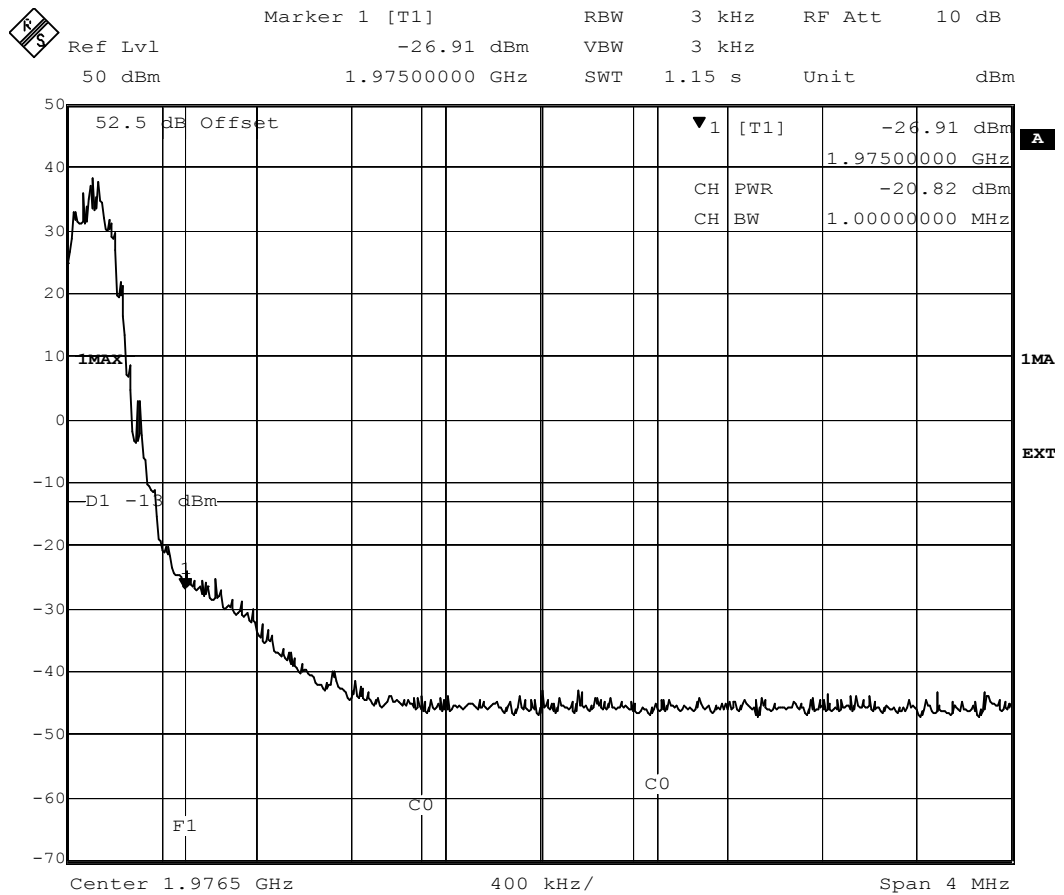
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FCC ID: B5KBRRC1311004-2

Datum/*Date*
2003-06-23

Beteckning/Reference	Sida/Page
F310972-F24 rev1	Diagram 14 (32)
	Encl. 5.1



Date: 11.JUN.2003 11:24:32

Sign:.....

REPORT

Datum/Date
2003-06-23

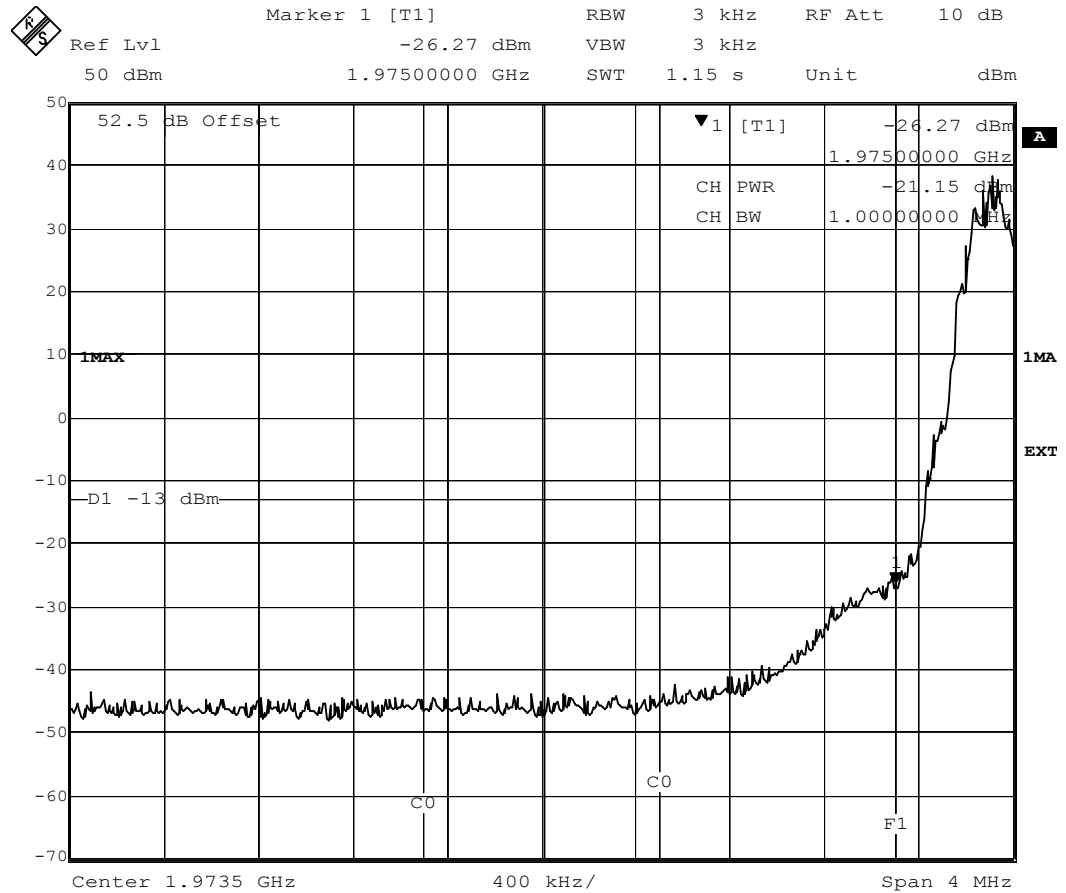
Beteckning/Reference
F310972-F24 rev1

Sida/Page

Diagram 15 (32)

Encl. 5.1

FCC ID: B5KBKRC1311004-2



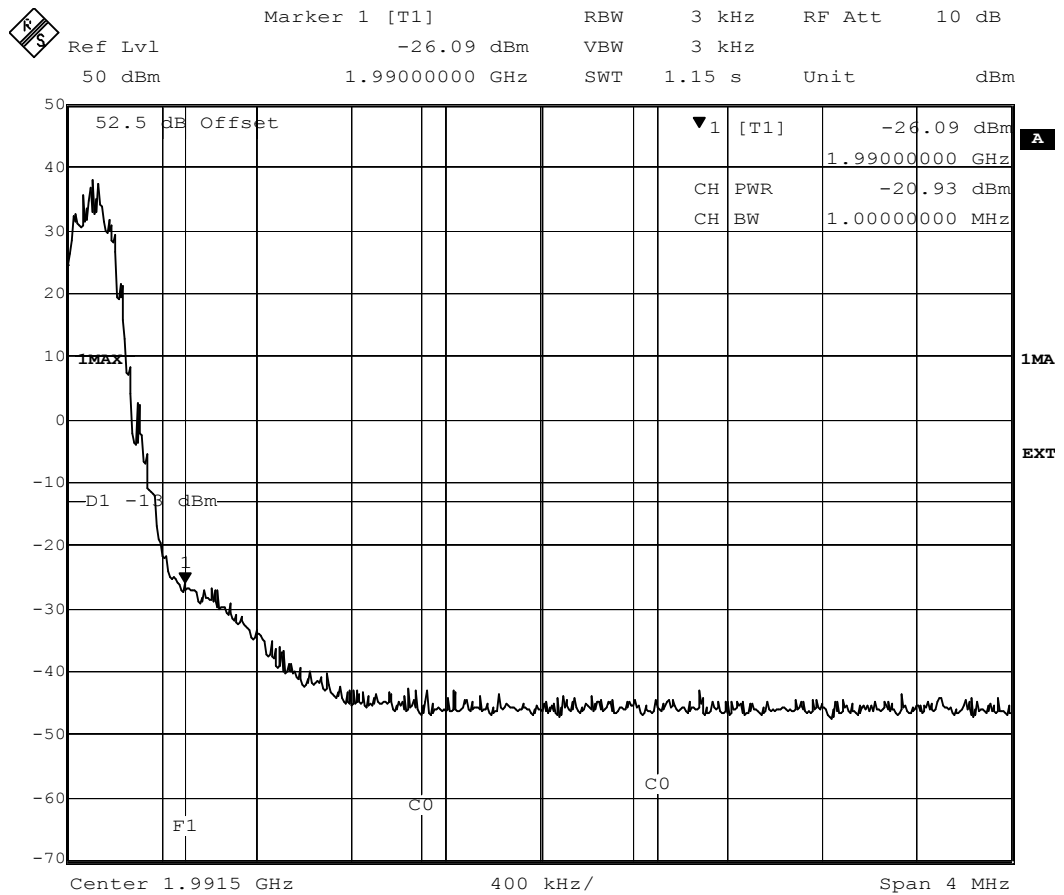
Date: 11.JUN.2003 11:20:24

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FCC ID: B5KBRRC1311004-2

Datum/*Date*
2003-06-23

Beteckning/Reference	Sida/Page
F310972-F24 rev1	Diagram 16 (32)
	Encl. 5.1



Date: 11.JUN.2003 11:22:47

Sign:.....

REPORT

Datum/Date
2003-06-23

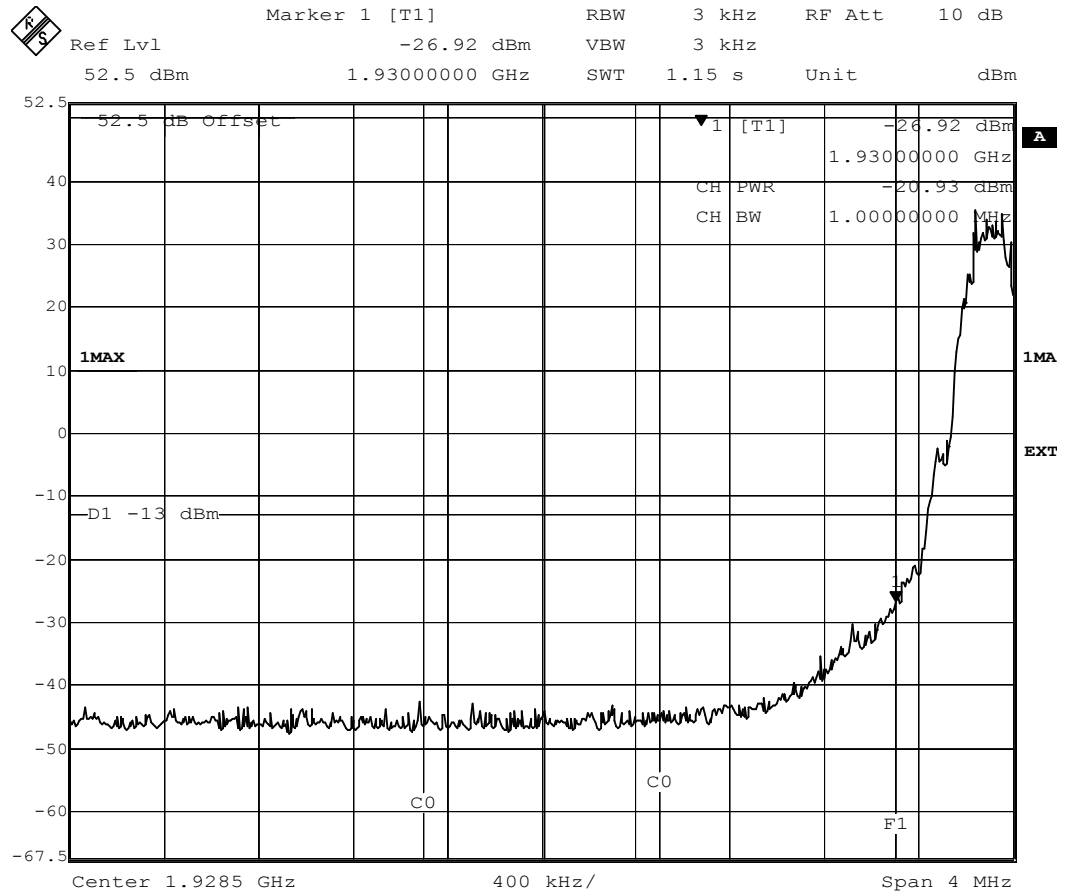
Beteckning/Reference
F310972-F24 rev1

Sida/Page

Diagram 17 (32)

Encl. 5.1

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Date: 12.JUN.2003 15:33:02

Sign:.....

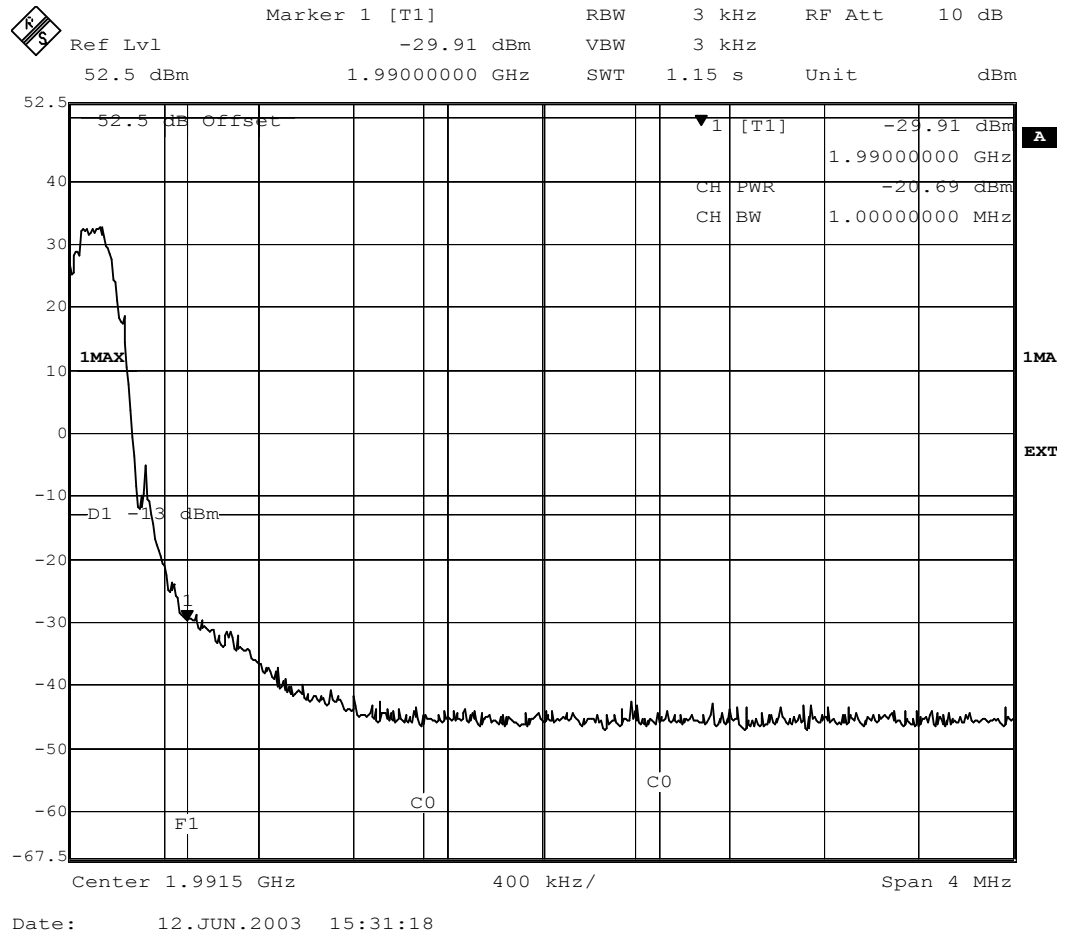
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2003-06-23

Beteckning/Reference
F310972-F24 rev1

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Diagram 18 (32)
Encl. 5.1

FCC ID: B5KBRRC1311004-2



Sign:.....

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Datum/Date
2003-06-23

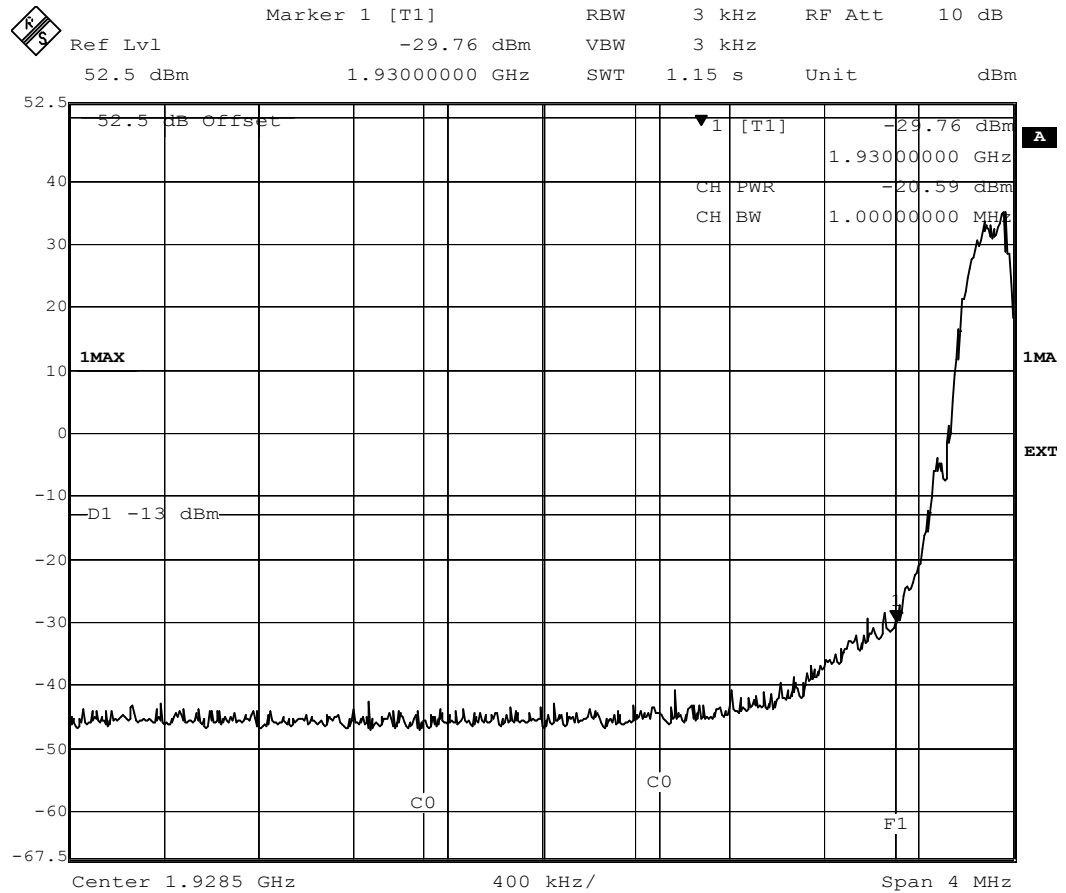
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F310972-F24 rev1

Sida/Page

Diagram 19 (32)

Encl. 5.1

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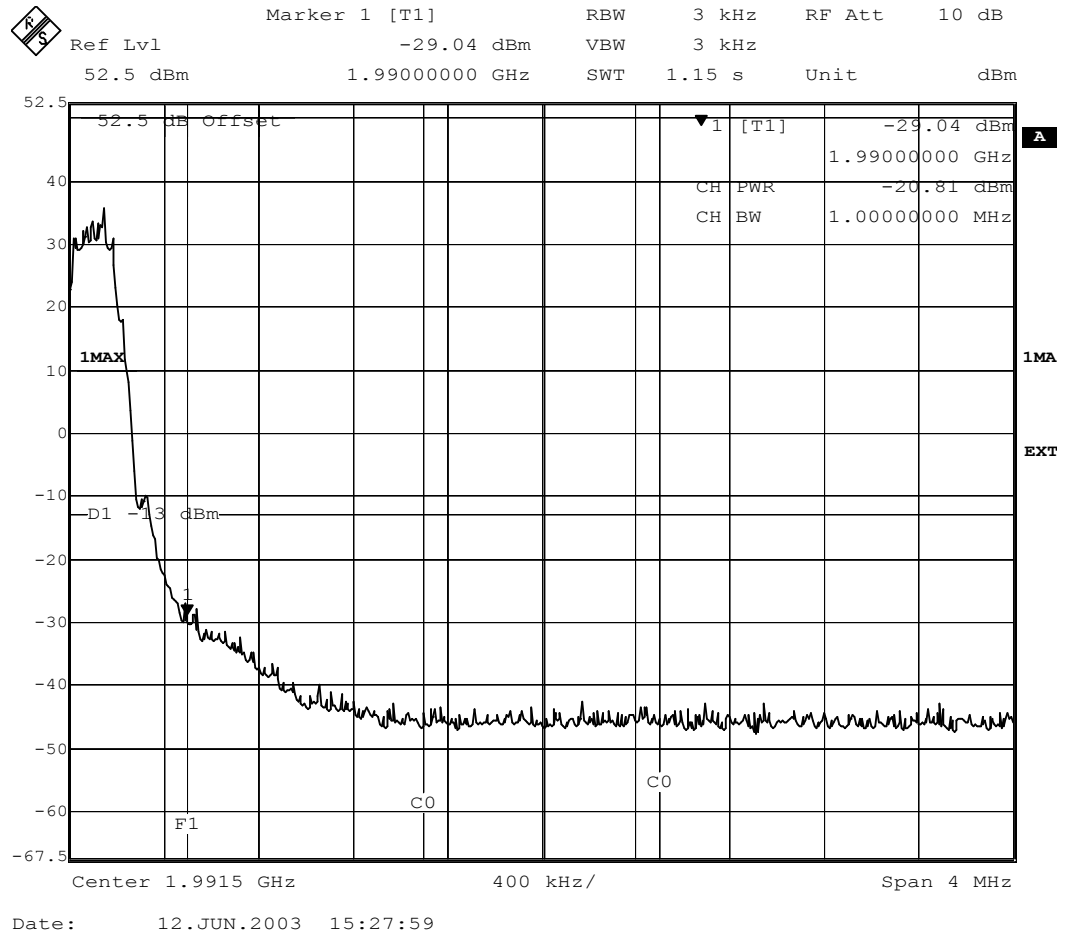
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REPORT

Datum/Date 2003-06-23 Beteckning/Reference F310972-F24 rev1 Sida/Page Diagram 20 (32)
 Encl. 5.1

FCC ID: B5KBRRC1311004-2

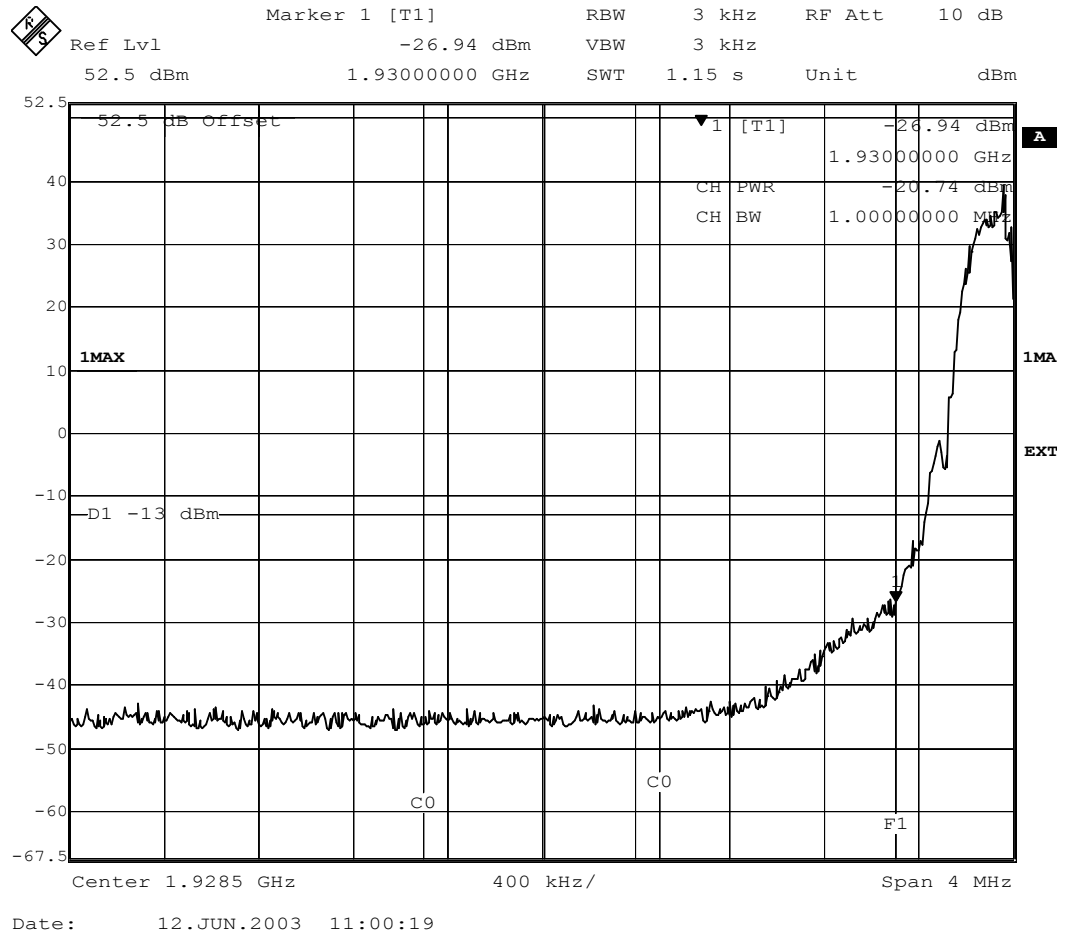


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REPORT

Datum/Date 2003-06-23 Beteckning/Reference F310972-F24 rev1 Sida/Page Diagram 21 (32)
 Encl. 5.1

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REPORT

Datum/Date
2003-06-23

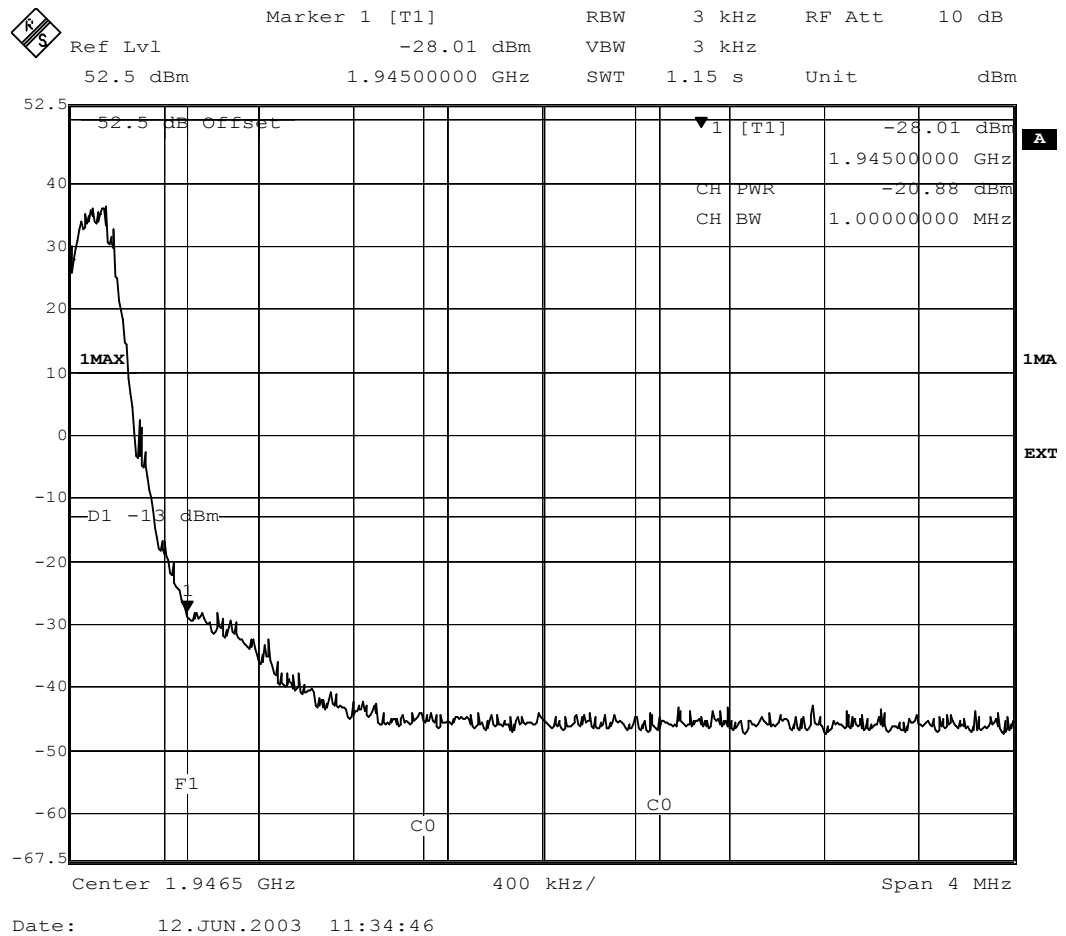
Beteckning/Reference
F310972-F24 rev1

Sida/Page

Diagram 22 (32)

FCC ID: B5KBRKRC1311004-2

Encl. 5.1



Sign:.....

REPORT

Datum/Date
2003-06-23

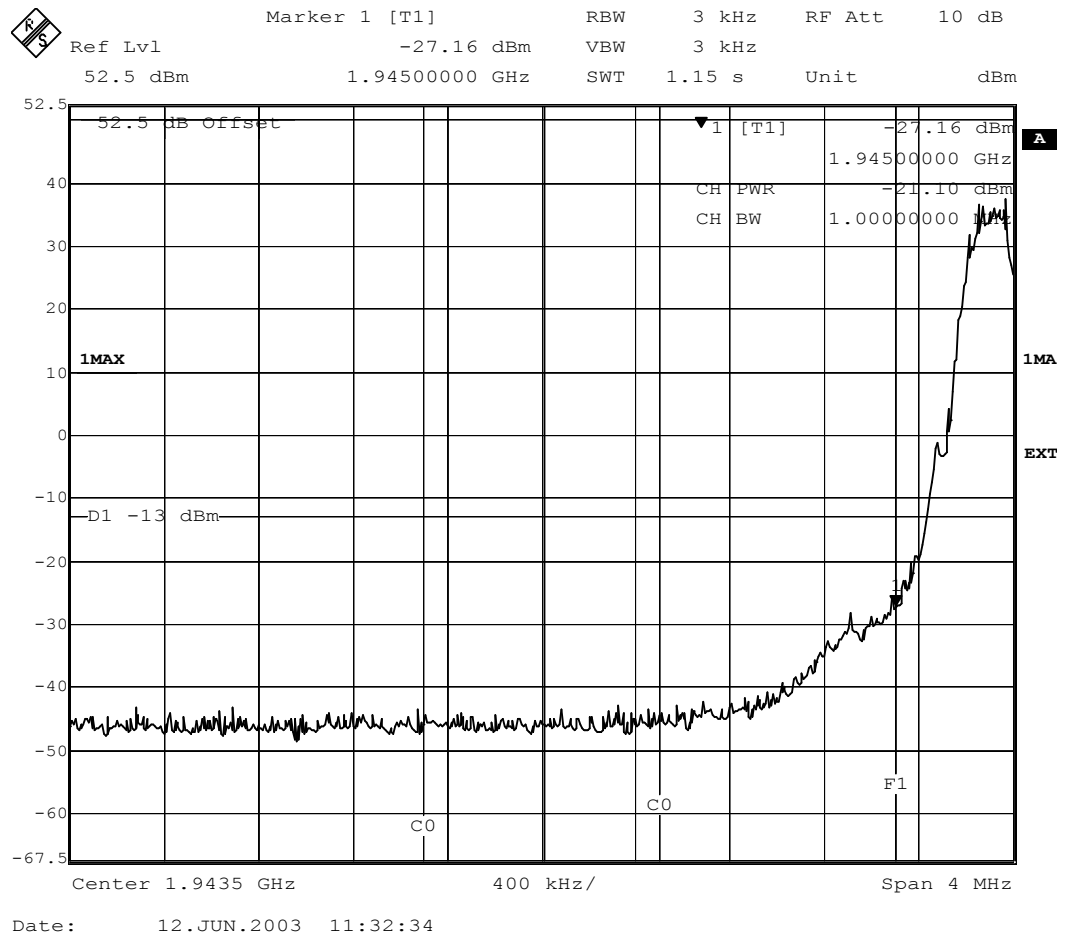
Beteckning/Reference
F310972-F24 rev1

Sida/Page

Diagram 23 (32)

FCC ID: B5KBKRC1311004-2

Encl. 5.1

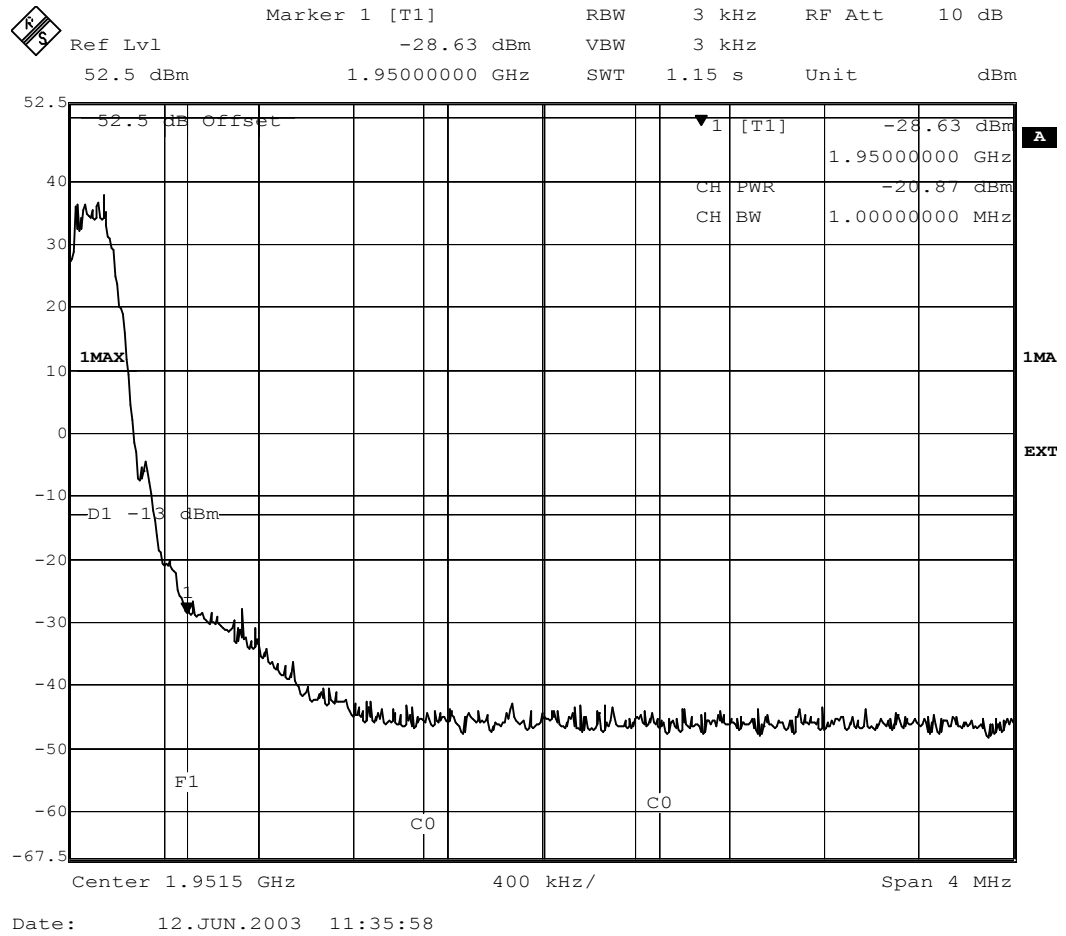


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REPORT

Datum/Date 2003-06-23 Beteckning/Reference F310972-F24 rev1 Sida/Page Diagram 24 (32)
 Encl. 5.1

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Sign:.....

REPORT

Datum/Date
2003-06-23

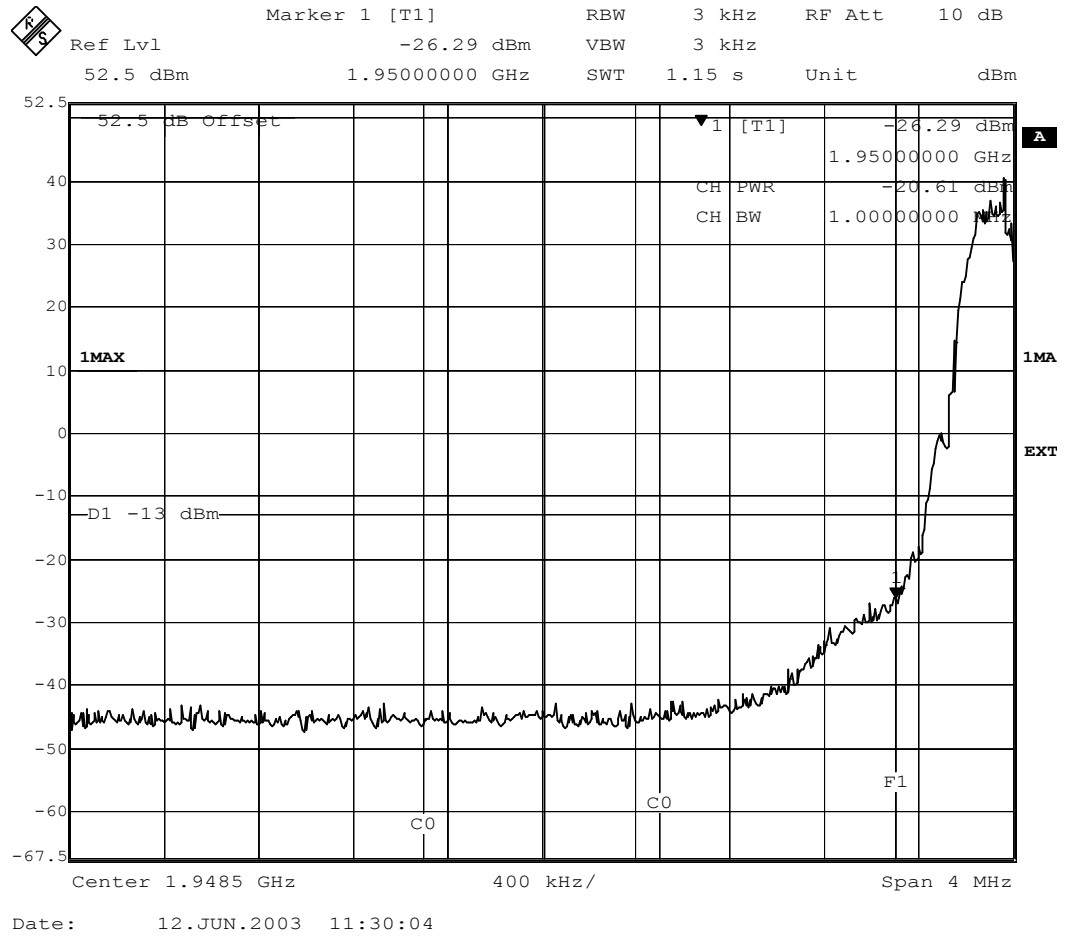
Beteckning/Reference
F310972-F24 rev1

Sida/Page

Diagram 25 (32)

FCC ID: B5KBKRC1311004-2

Encl. 5.1

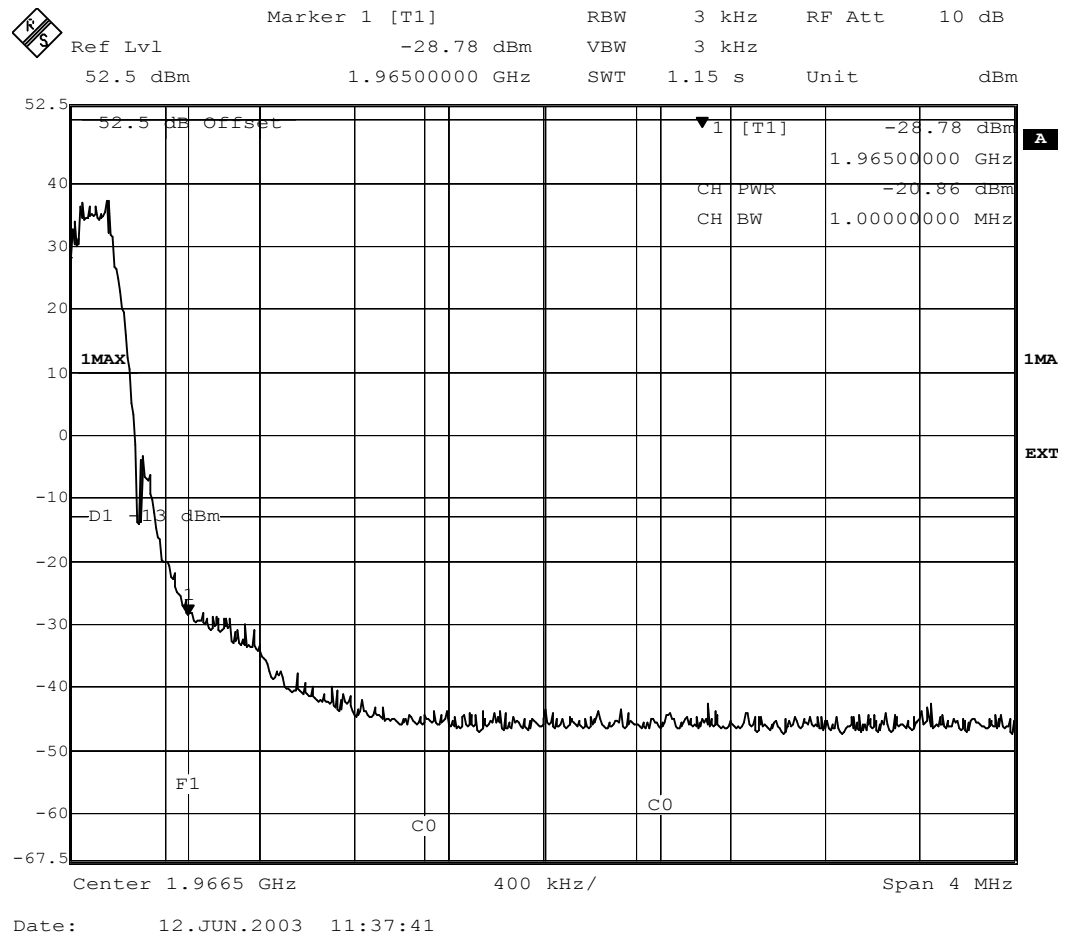


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FCC ID: B5KBRRC1311004-2

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2003-06-23

Beteckning/Reference	Sida/Page
F310972-F24 rev1	Diagram 26 (32)
	Encl. 5.1



Sign:.....

REPORT

Datum/Date
2003-06-23

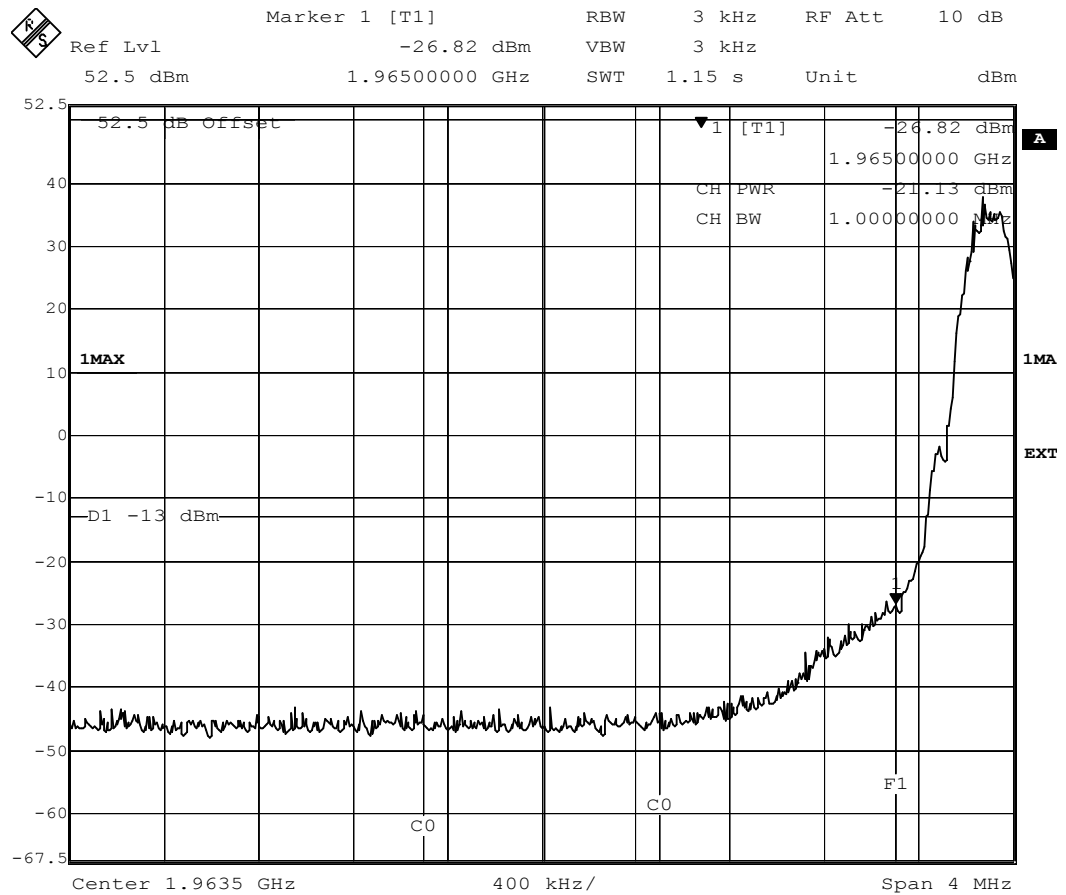
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F310972-F24 rev1

Sida/Page

Diagram 27 (32)

Encl. 5.1

FCC ID: B5KBKRC1311004-2



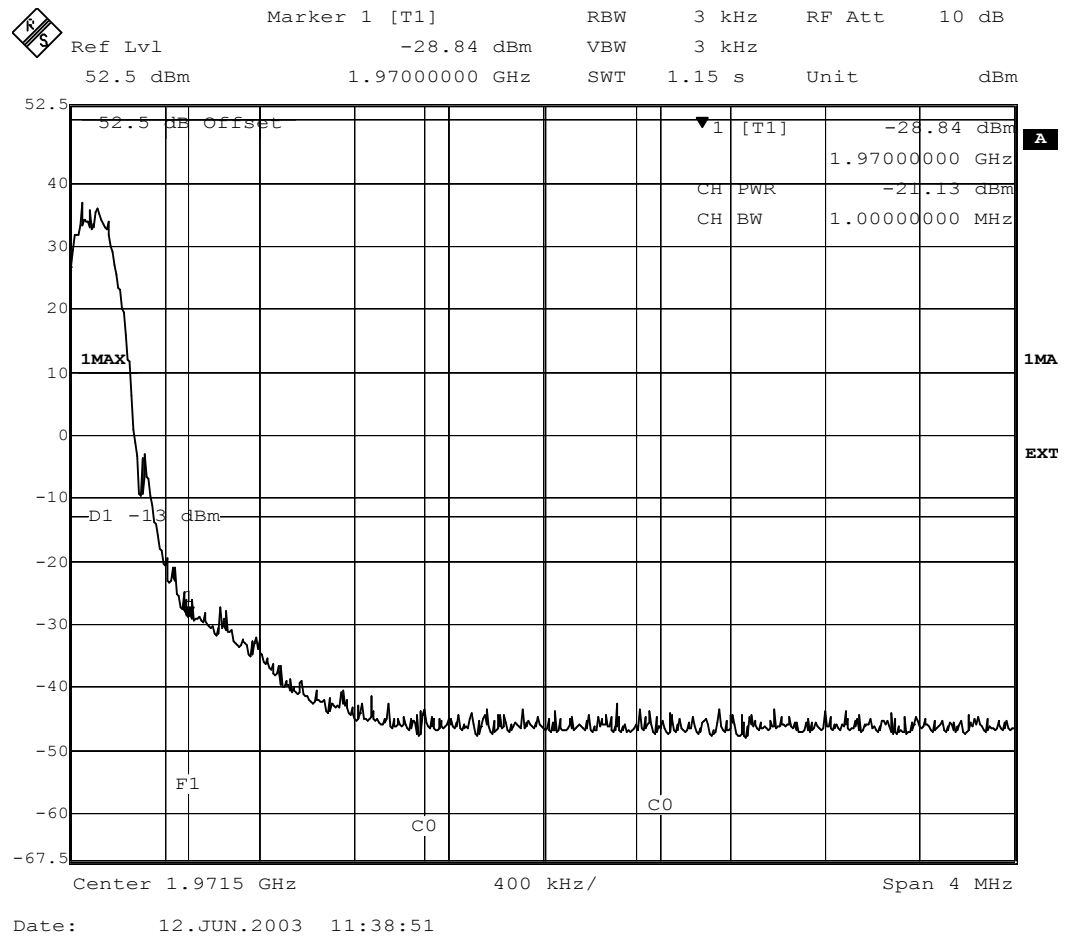
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2003-06-23

Beteckning/Reference	Sida/Page
F310972-F24 rev1	Diagram 28 (32)
	Encl. 5.1



Sign:.....

REPORT

Datum/Date
2003-06-23

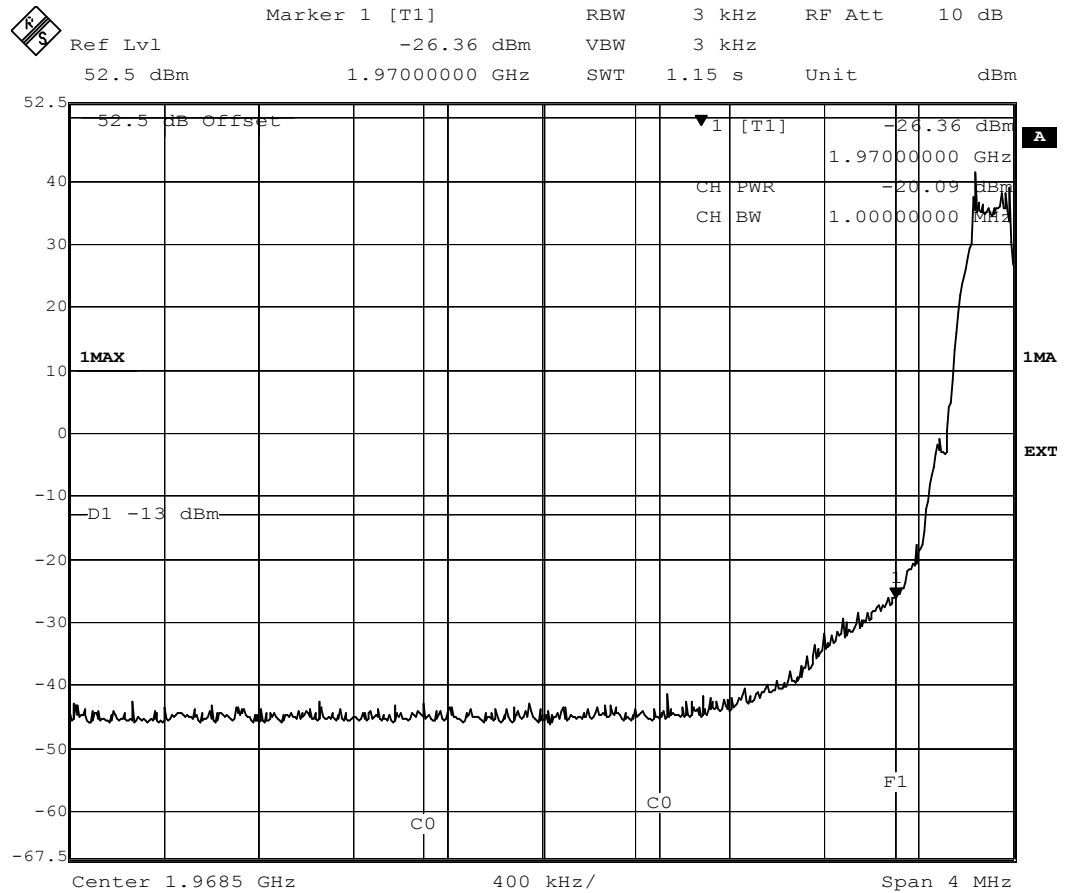
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F310972-F24 rev1

Sida/Page

Diagram 29 (32)

Encl. 5.1

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REPORT

Datum/Date
2003-06-23

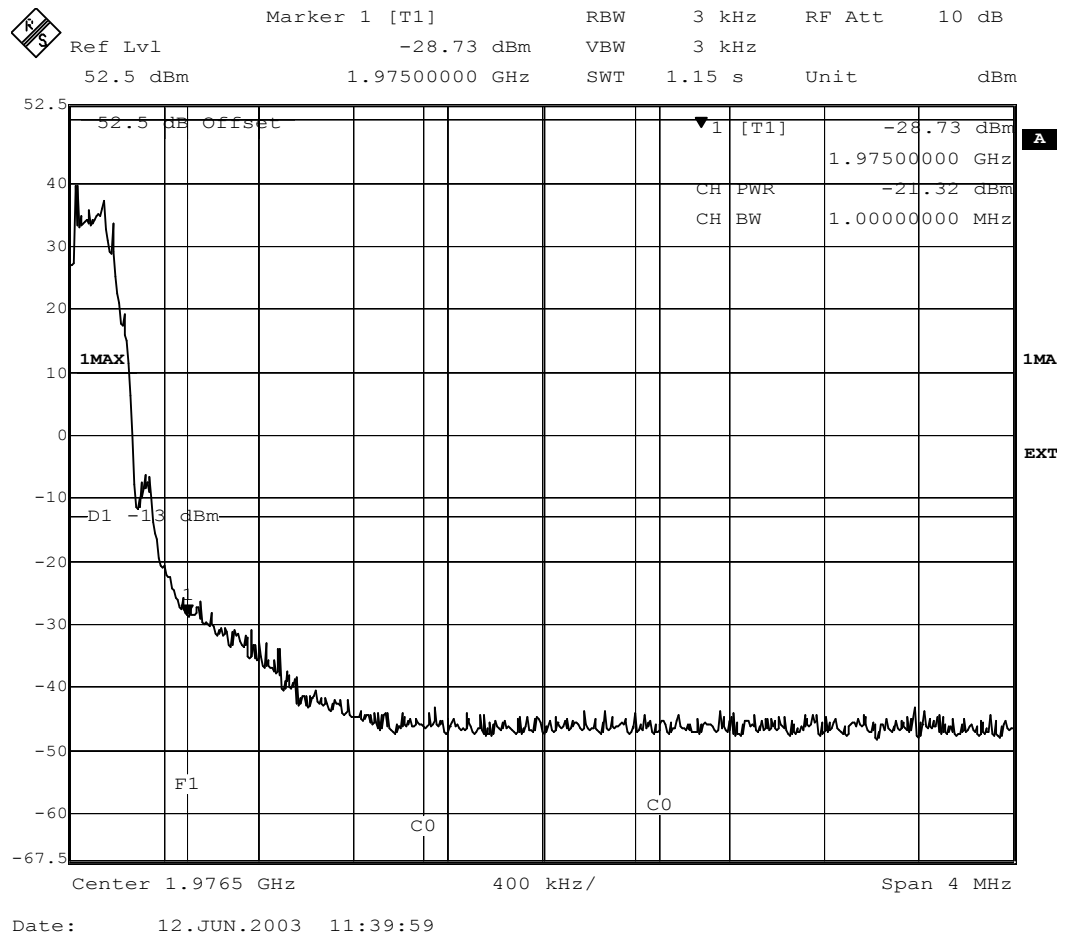
Beteckning/Reference
F310972-F24 rev1

Sida/Page

Diagram 30 (32)

FCC ID: B5KBKRC1311004-2

Encl. 5.1



Sign:.....

REPORT

Datum/Date
2003-06-23

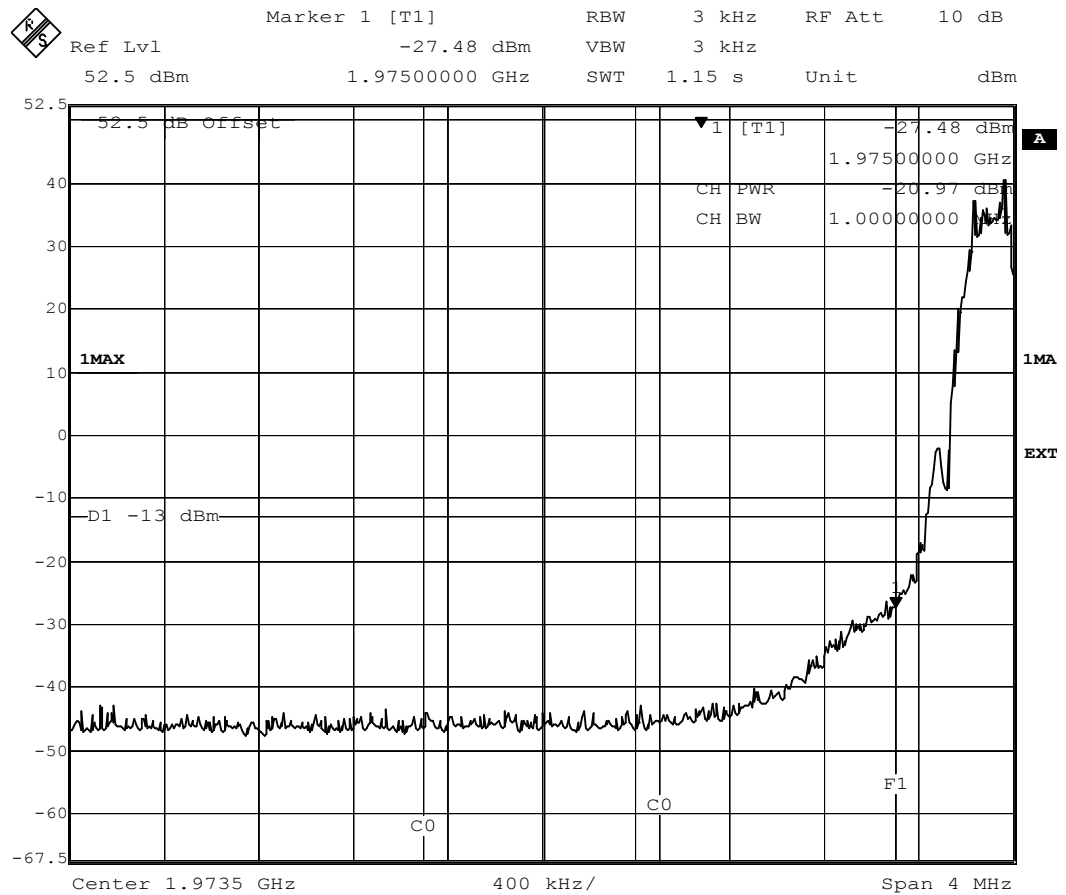
Beteckning/Reference
F310972-F24 rev1

Sida/Page

Diagram 31 (32)

Encl. 5.1

FCC ID: B5KBRRC1311004-2



Date: 12.JUN.2003 11:23:22

Sign:.....

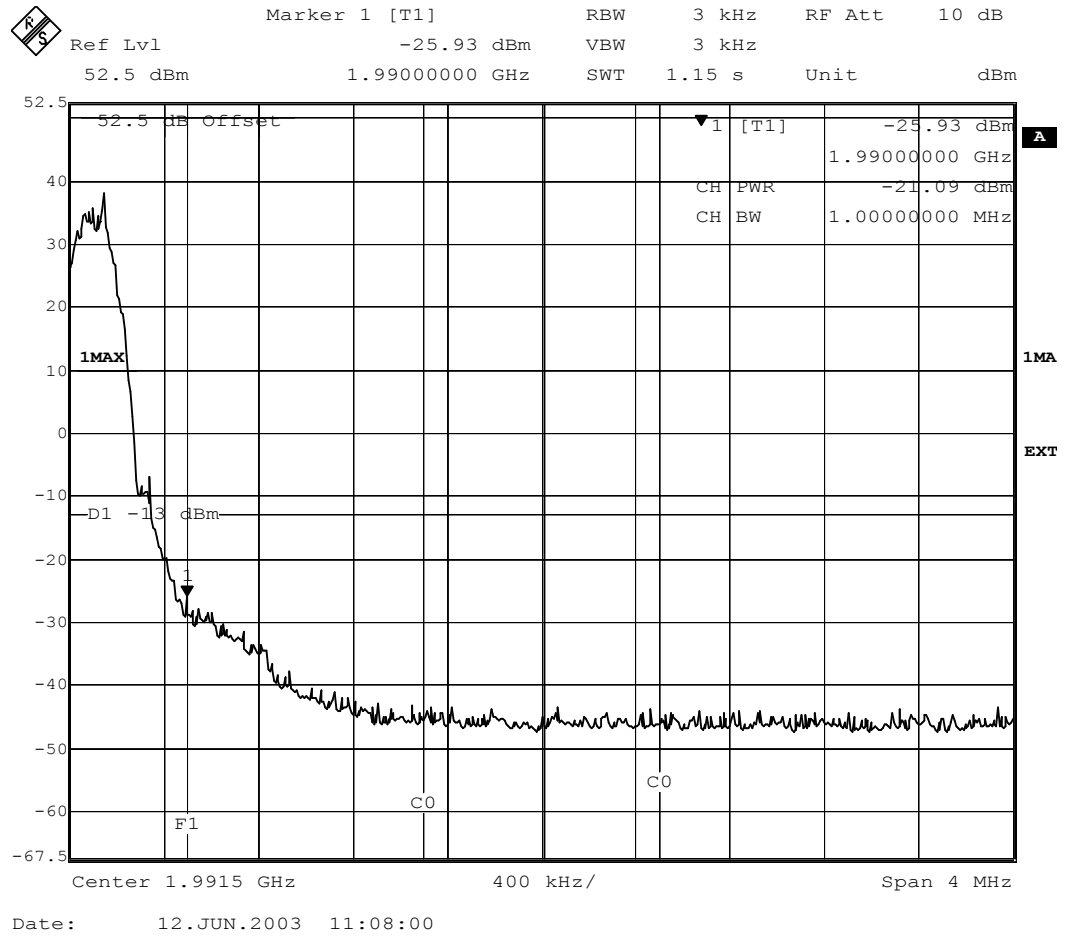
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Datum/Date
2003-06-23

Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 32 (32)
Encl. 5.1

FCC ID: B5KBKRC1311004-2



Sign:.....

Conducted spurious emission measurements according to 47CFR 2.1051

Date	Temperature	Humidity
2003-06-11	23 °C ± 3 °C	54 % ± 5 %
2003-06-12	22 °C ± 3 °C	47 % ± 5 %

Test set-up and Procedure

The measurement were made per J-STD-007A Vol 1 and TIA/EIA-139-280-B. Measurements were made at CDU-G output connectors. The output was connected to a spectrum analyser. The spectrum analyser was connected to an external 10 MHz reference standard during the measurements. The transmitter was modulated with 270.8 kbs pseudorandom data during the measurements.

Measurement equipment	Calibration Due	SP number
R&S FSIQ	2004-03	503 738
Band reject filter 1900	2004-04	503 636
HP filter	2004-04	503739
Testo 610, Temperature and humidity meter	2003-12	502 658

Measurement uncertainty: 3.7 dB

Results

Mode: **GMSK**

dTRU, without internal combiner:

- Diagram 1: TRX output 1, Ch 512, +45 dBm
- Diagram 2: TRX output 1, Ch 810, +45 dBm
- Diagram 3: TRX output 2, Ch 512, +45 dBm
- Diagram 4: TRX output 2, Ch 810, +45 dBm

dTRU, with internal combiner:

- Diagram 5: Ch 512, +41,5 dBm and ch 537, +41.5 dBm
- Diagram 6: Ch 785, +41,5 dBm and ch 810, +41.5 dBm

dTRU, (TCC), (TX1+TX2):

- Diagram 7: Ch 512, +47 dBm
- Diagram 8: Ch 810, +47 dBm

Mode: **EDGE**

dTRU, without internal combiner:

- Diagram 9: TRX output 1, Ch 512, +45 dBm
- Diagram 10: TRX output 1, Ch 810, +45 dBm
- Diagram 11: TRX output 2, Ch 512, +45 dBm
- Diagram 12: TRX output 2, Ch 810, +45 dBm

dTRU, with internal combiner:

- Diagram 13: Ch 512, +41,5 dBm and ch 537, +41.5 dBm
- Diagram 14: Ch 785, +41,5 dBm and ch 810, +41.5 dBm

dTRU, (TCC), (TX1+TX2):

- Diagram 15: Ch 512, +47 dBm
- Diagram 16: Ch 810, +47 dBm

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2003-06-23

Beteckning/Reference
F310972-F24 rev1 2 (2)

Sida/Page
Encl. 6

FCC ID: B5KBRRC1311004-2

Remark

dTRU with serial number AE50126501 was used during the test.

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
-----------	-----

Sign:.....

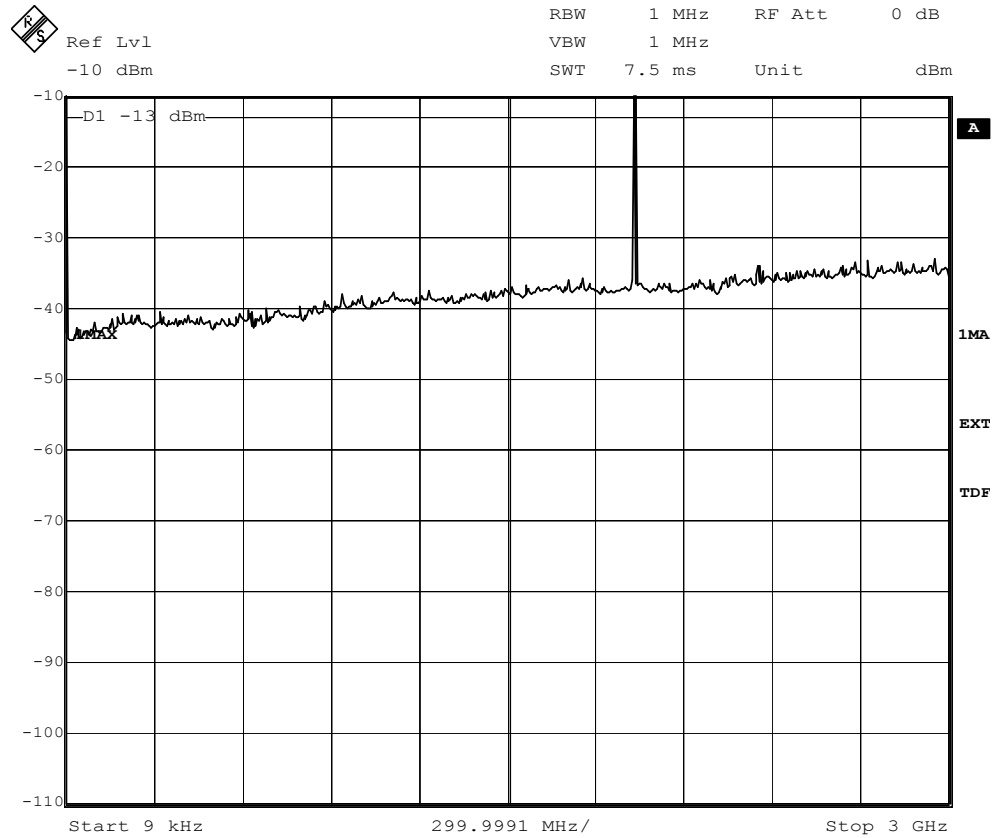
REPORT

Datum/Date
2003-06-23

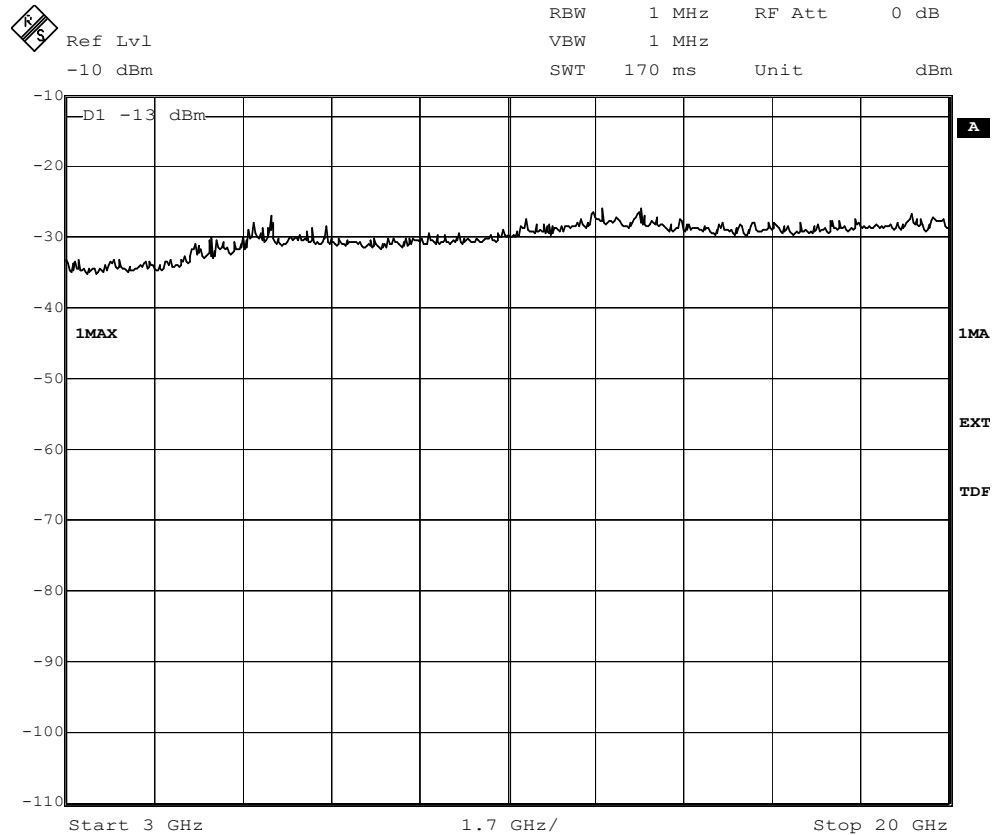
Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 1 (16)
Encl. 6.1

FCC ID: B5KBR1311004-2



Date: 12.JUN.2003 14:23:19



Date: 12.JUN.2003 13:50:46

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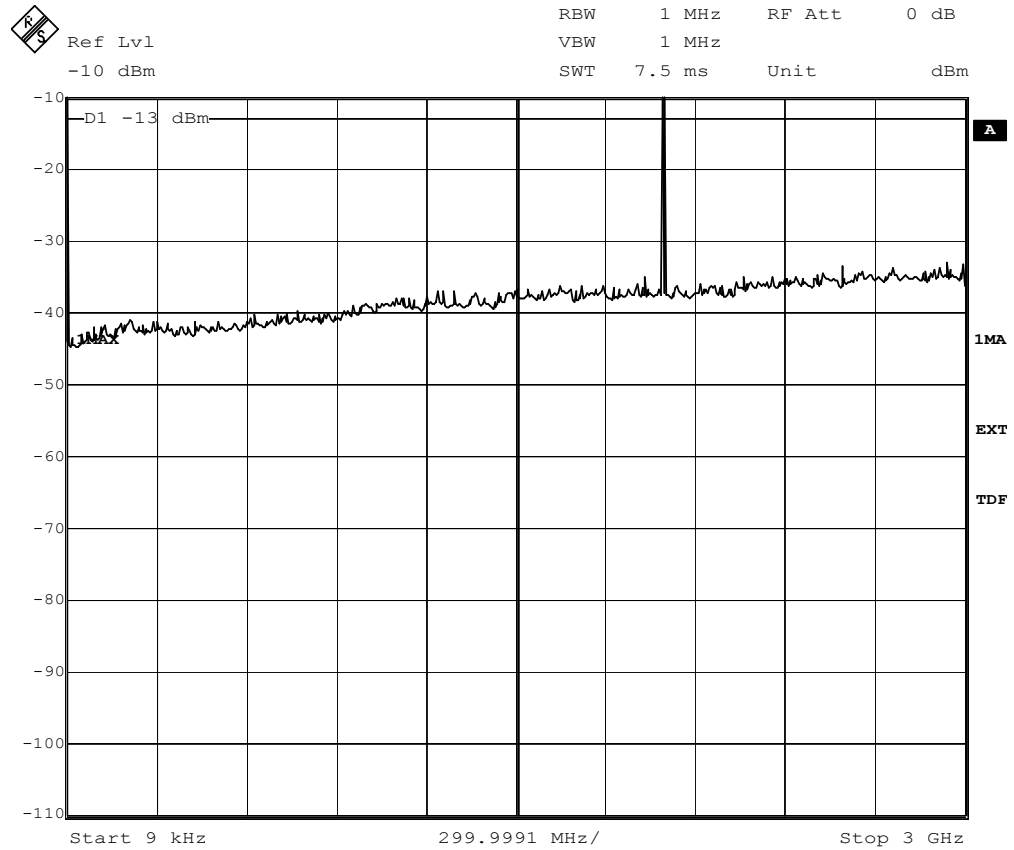
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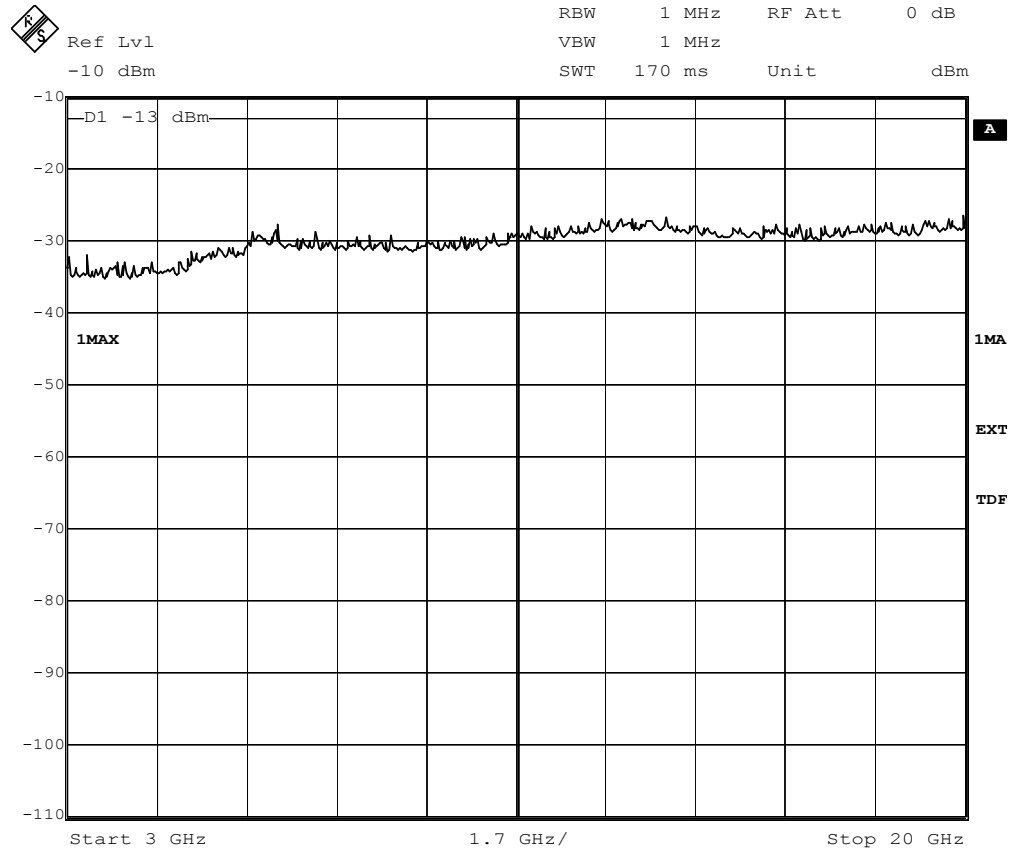
Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 2 (16)
Encl. 6.1

FCC ID: B5KBR1311004-2



Date: 12.JUN.2003 14:22:36



Date: 12.JUN.2003 13:51:20

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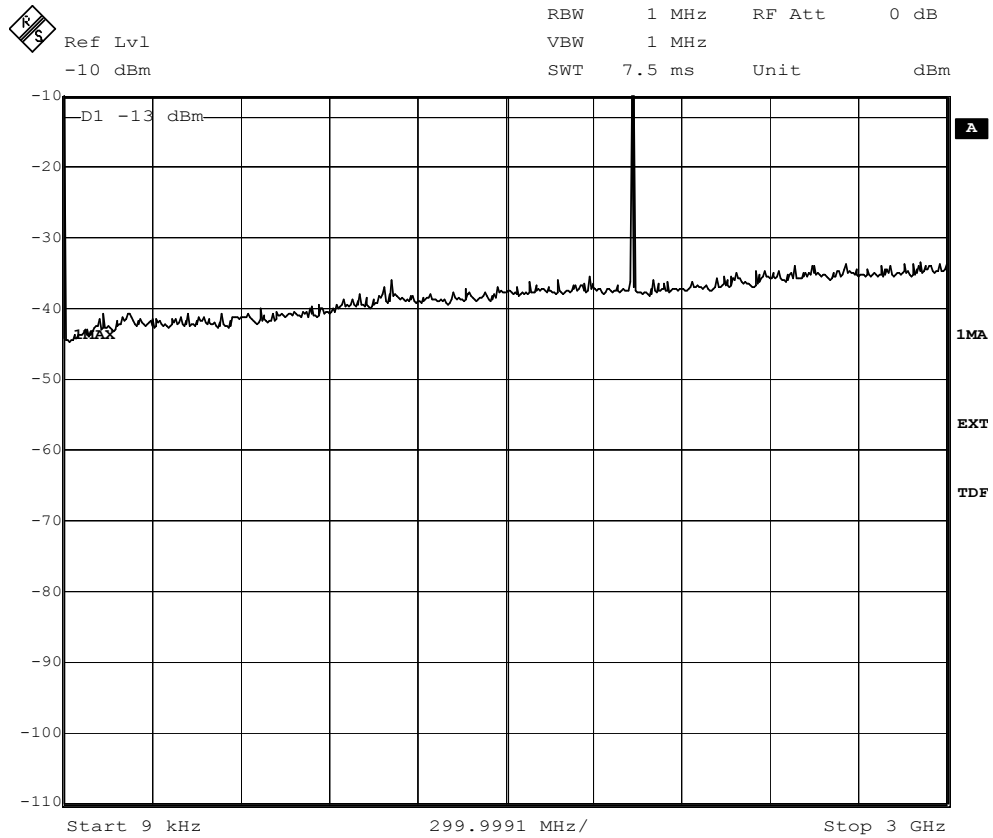
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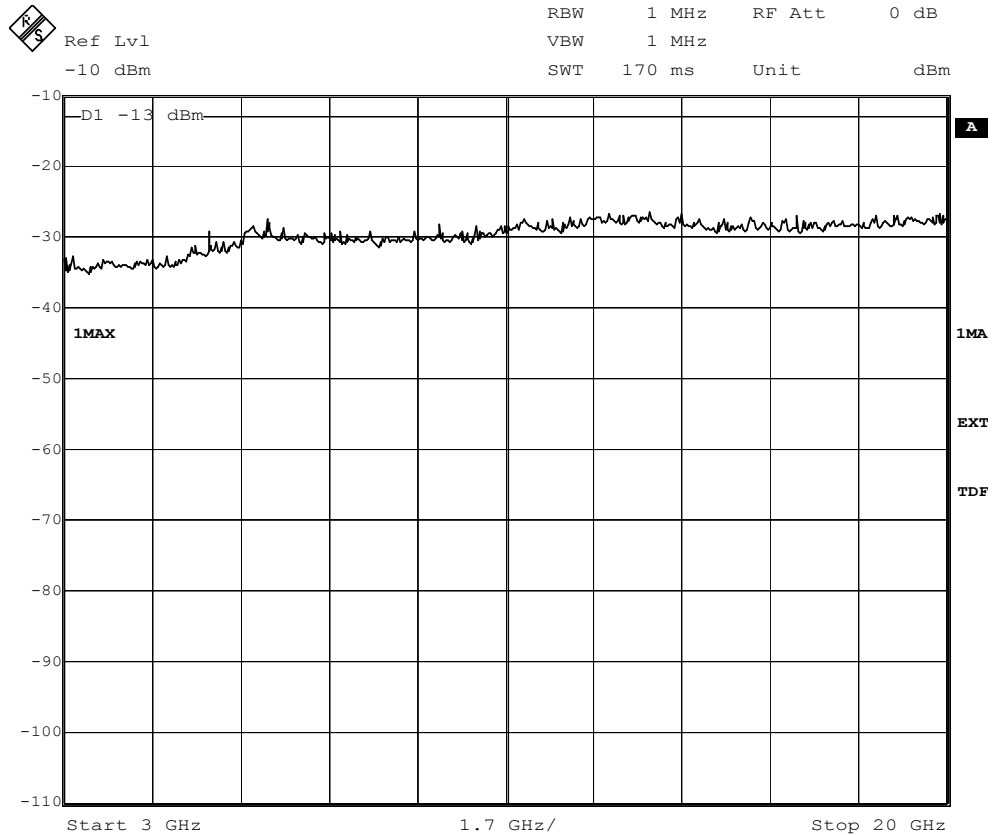
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2003-06-23

Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 3 (16)
Encl. 6.1



Date: 12.JUN.2003 14:18:18



Date: 12.JUN.2003 13:54:04

Sign:.....

REPORT

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Datum/Date
2003-06-23

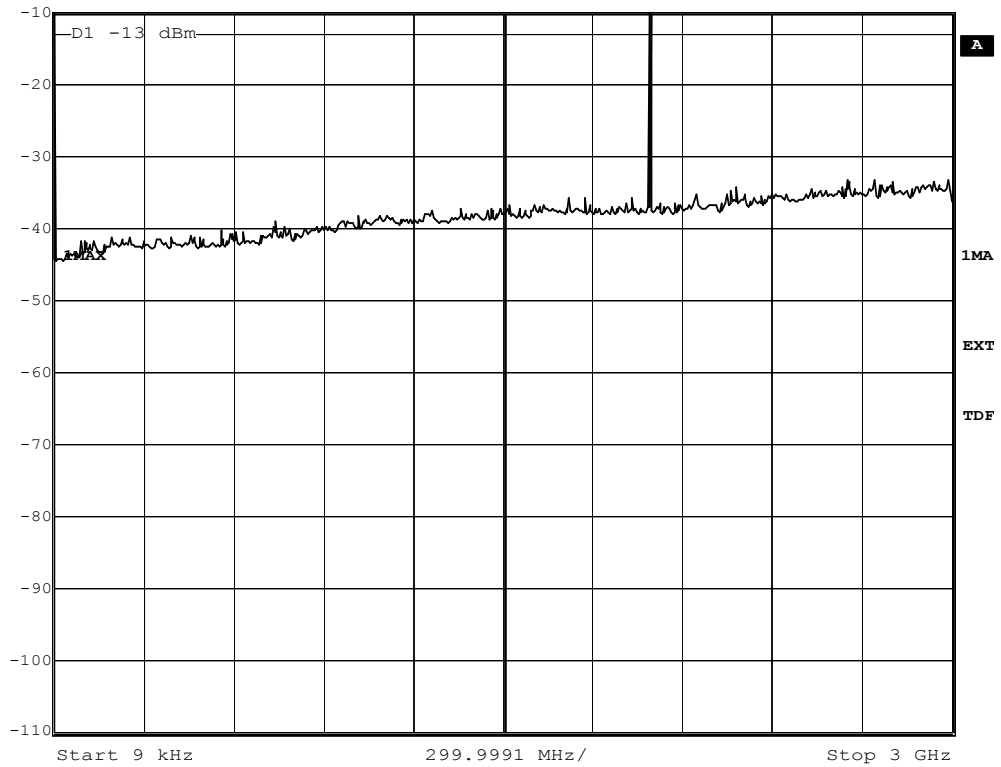
Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 4 (16)
Encl. 6.1



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 7.5 ms Unit dBm

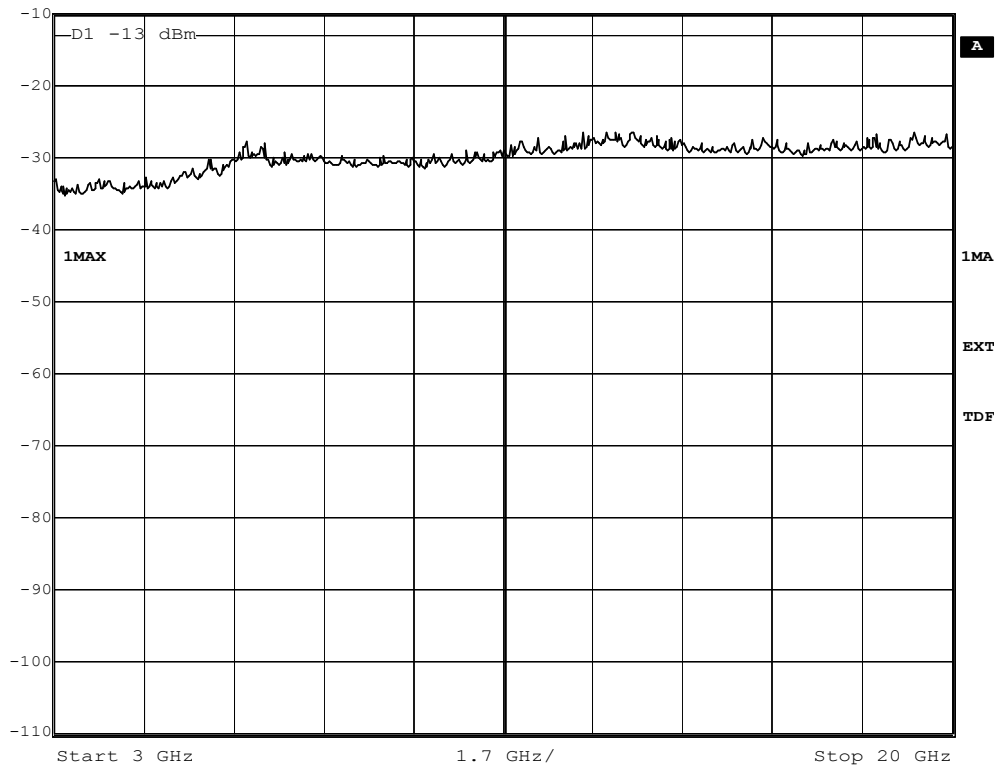


Date: 12.JUN.2003 14:19:41



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 170 ms Unit dBm



Date: 12.JUN.2003 13:53:13

Sign:.....

REPORT

FCC ID: B5KBR1311004-2

Datum/Date
2003-06-23

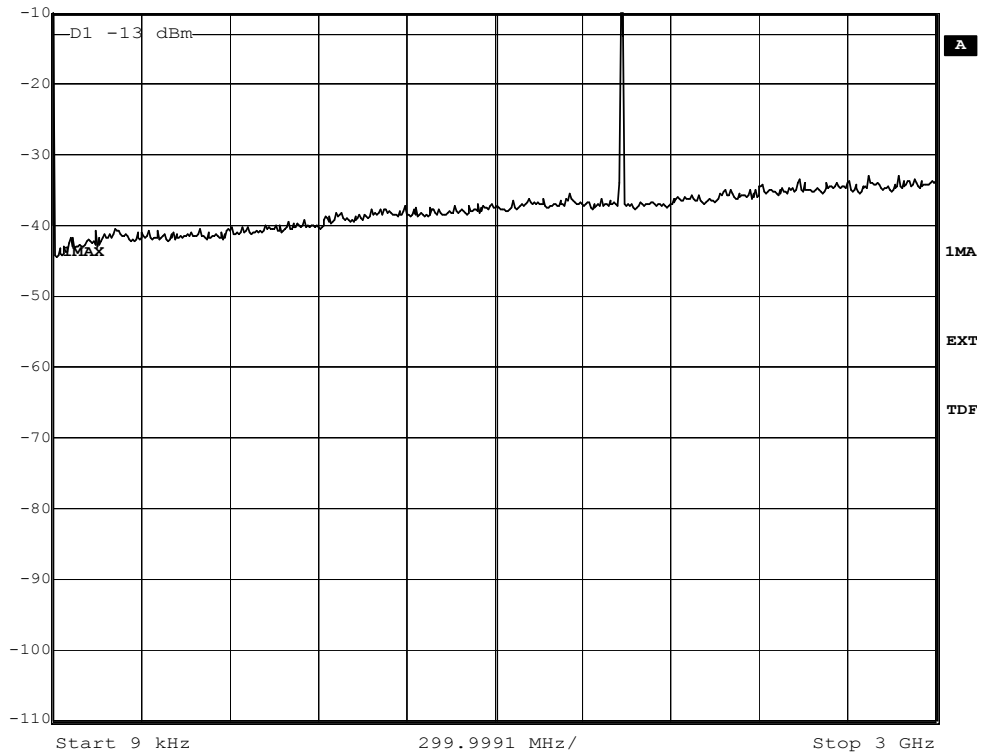
Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 5 (16)
Encl. 6.1



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 7.5 ms Unit dBm

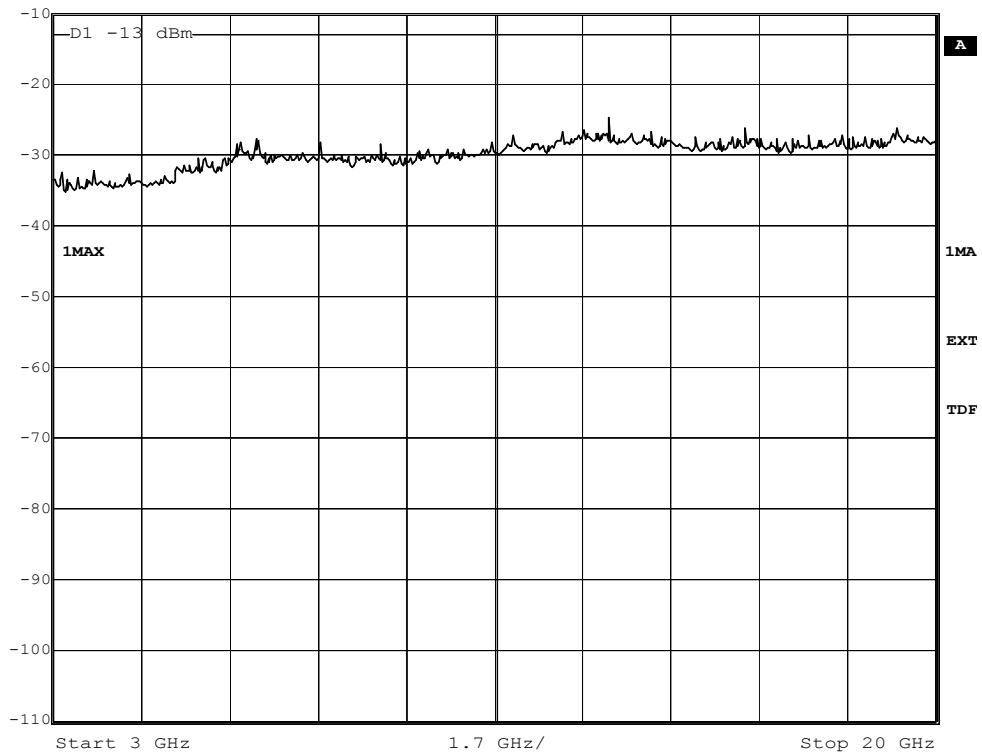


Date: 11.JUN.2003 13:55:34



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 170 ms Unit dBm



Date: 12.JUN.2003 13:43:55

Sign:.....

REPORT

FCC ID: B5KBRKRC1311004-2

Datum/Date
2003-06-23

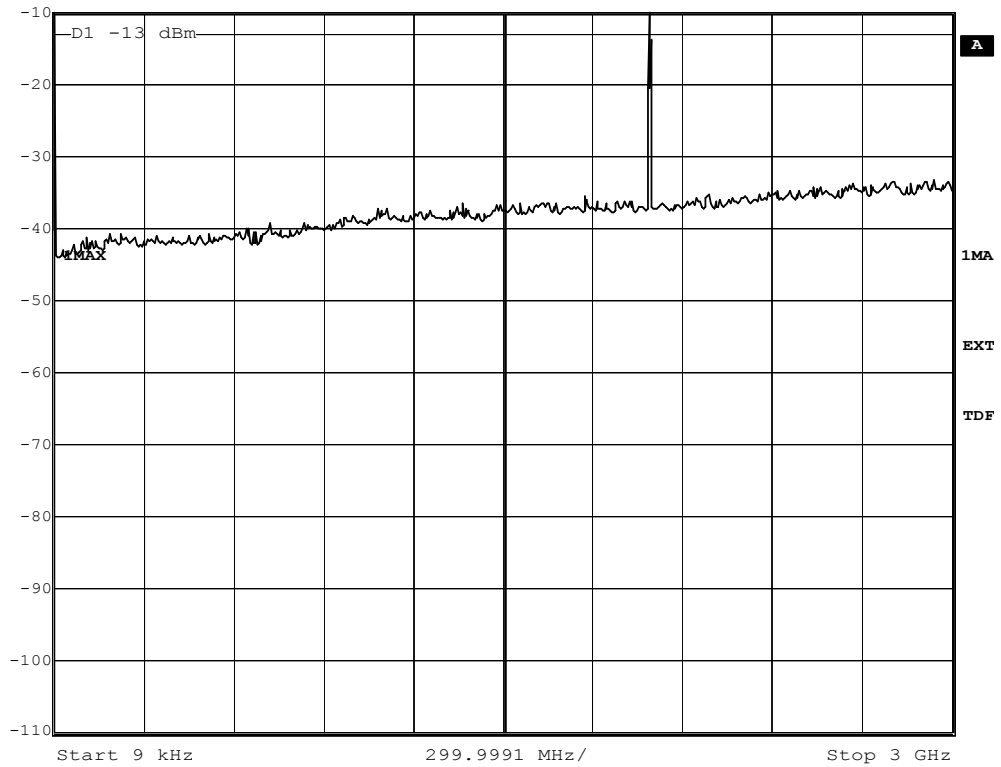
Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 6 (16)
Encl. 6.1



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 7.5 ms Unit dBm

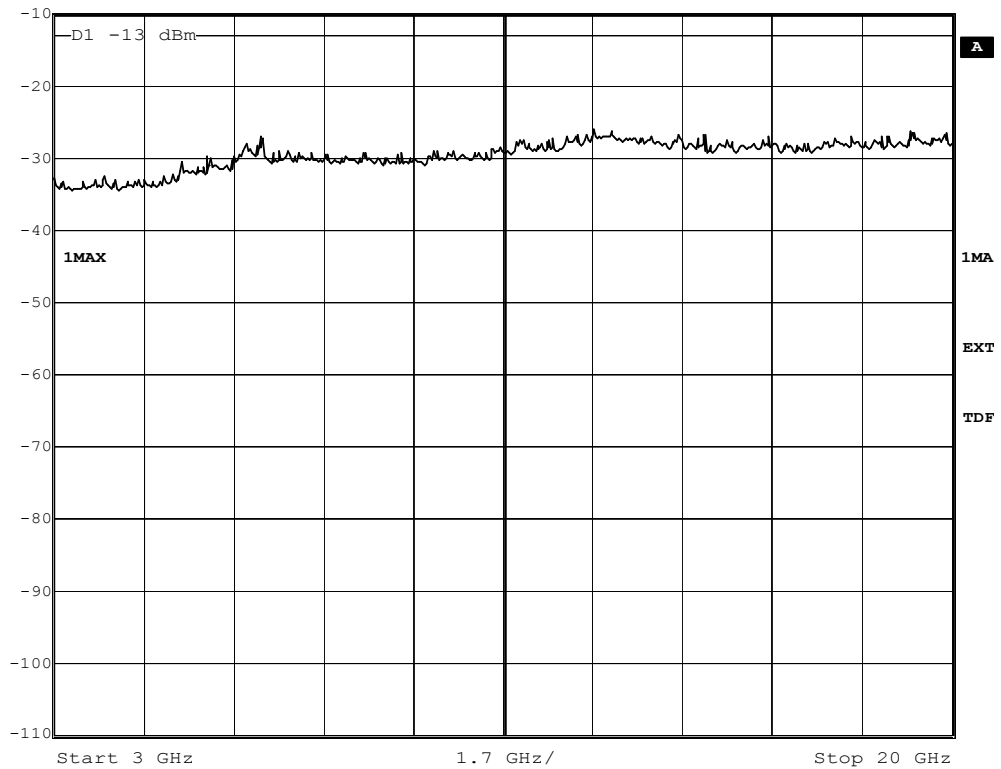


Date: 11.JUN.2003 13:57:30



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 170 ms Unit dBm



Date: 12.JUN.2003 13:43:08

Sign:.....

REPORT

FCC ID: B5KBR1311004-2

Datum/Date
2003-06-23

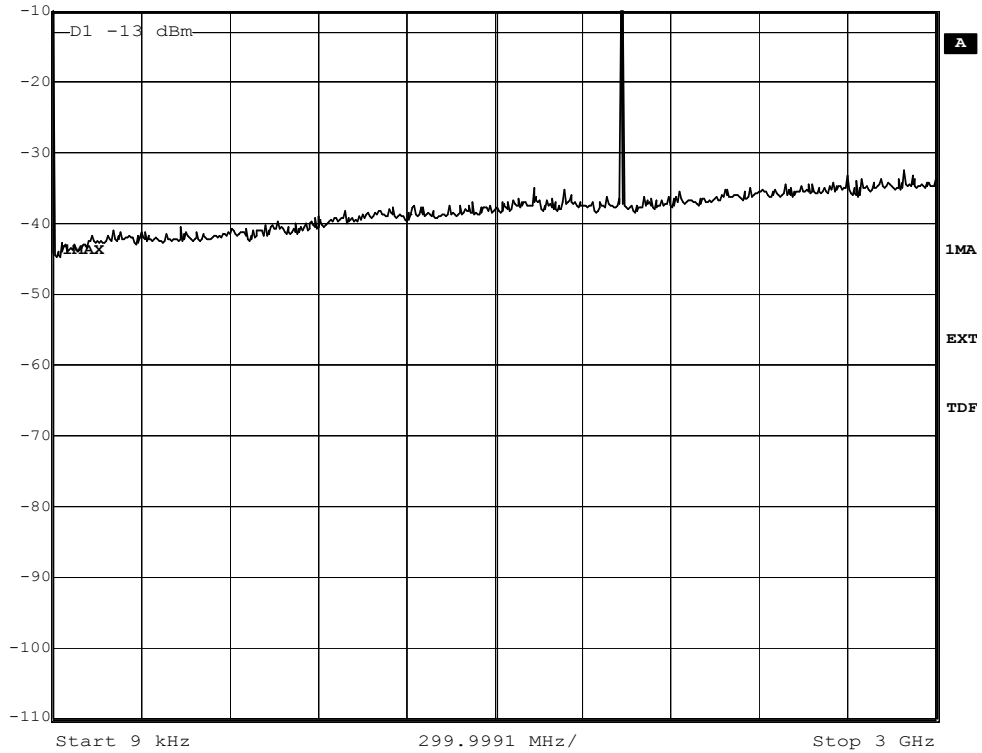
Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 7 (16)
Encl. 6.1



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 7.5 ms Unit dBm

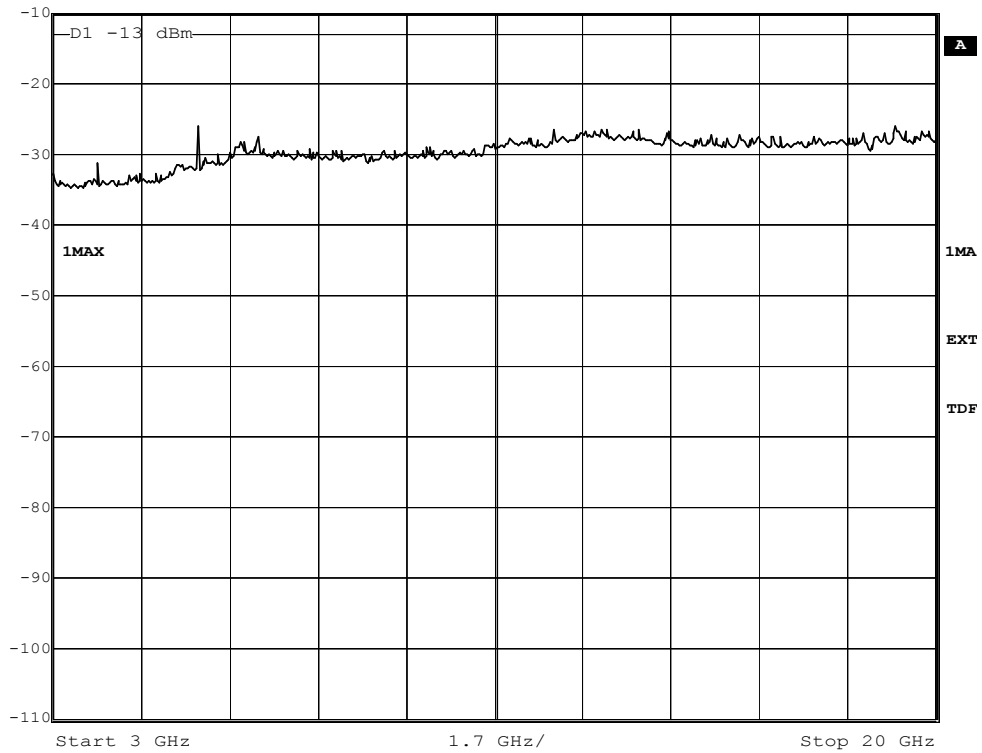


Date: 11.JUN.2003 14:02:02



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 170 ms Unit dBm



Date: 12.JUN.2003 13:38:46

Sign:.....

REPORT

FCC ID: B5KBRRC1311004-2

Datum/Date
2003-06-23

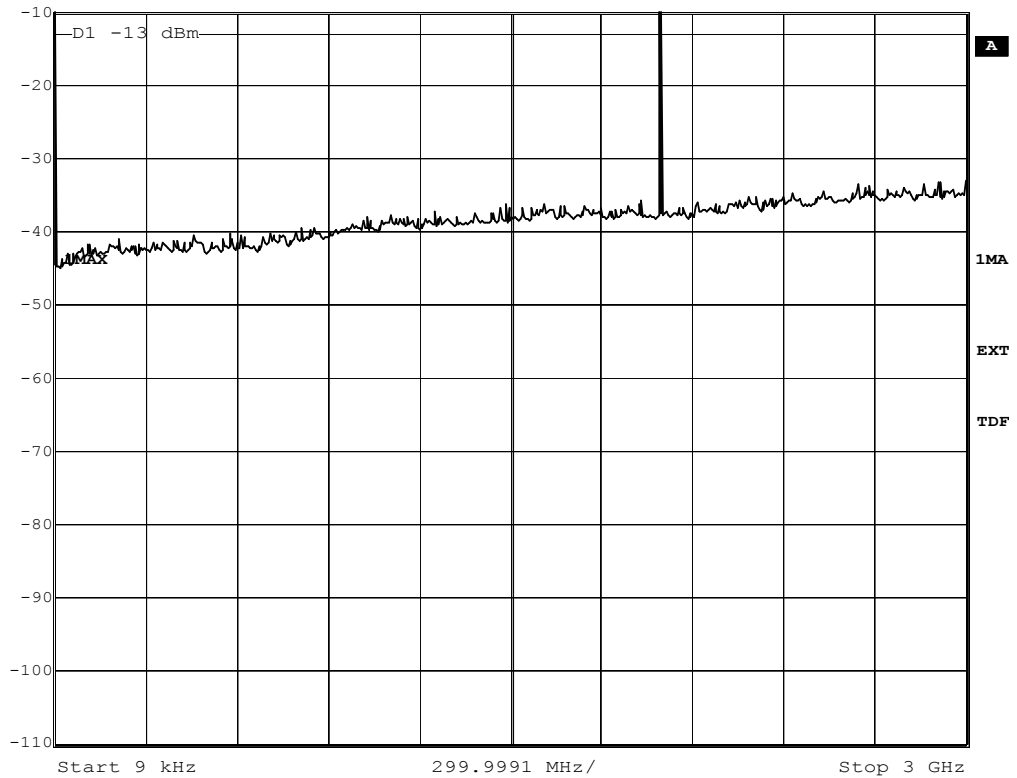
Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 8 (16)
Encl. 6.1



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 7.5 ms Unit dBm

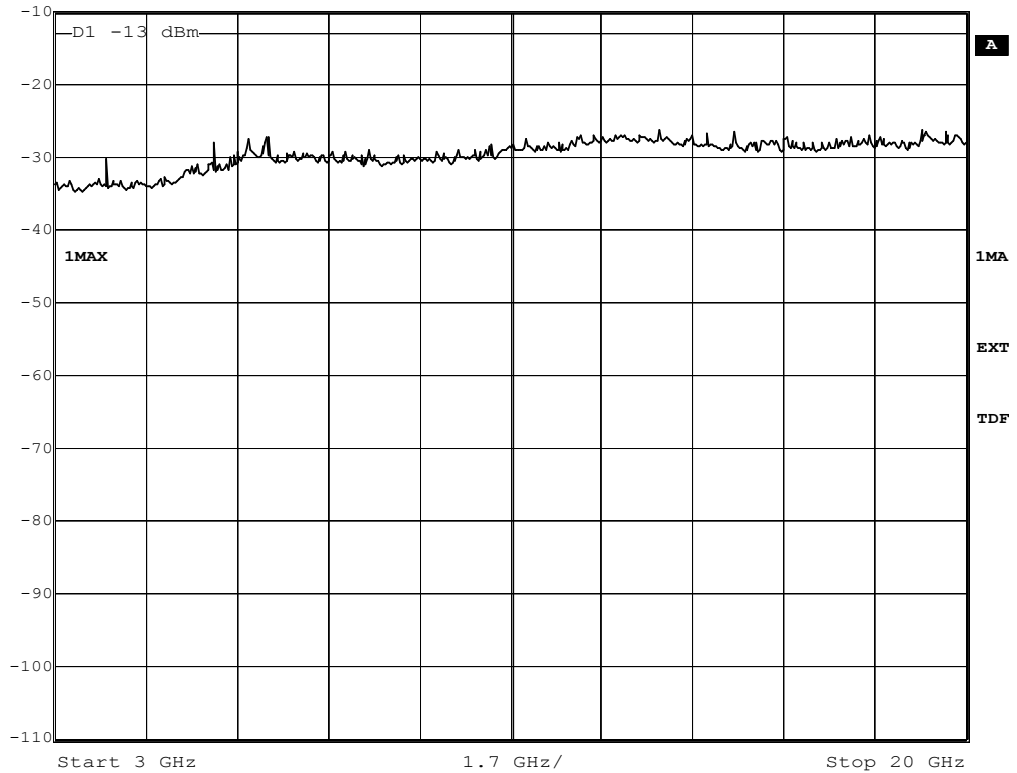


Date: 11.JUN.2003 14:01:24



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 170 ms Unit dBm



Date: 12.JUN.2003 13:39:45

Sign:.....

REPORT

FCC ID: B5KBR1311004-2

Datum/Date
2003-06-23

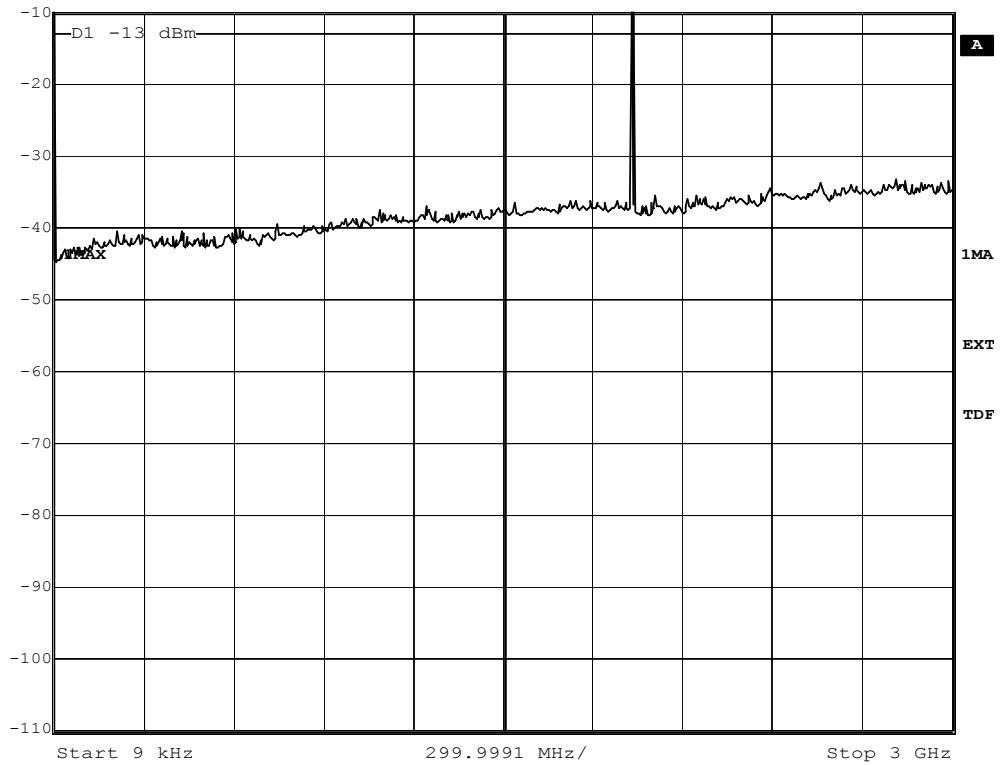
Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 9 (16)
Encl. 6.1



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 7.5 ms Unit dBm

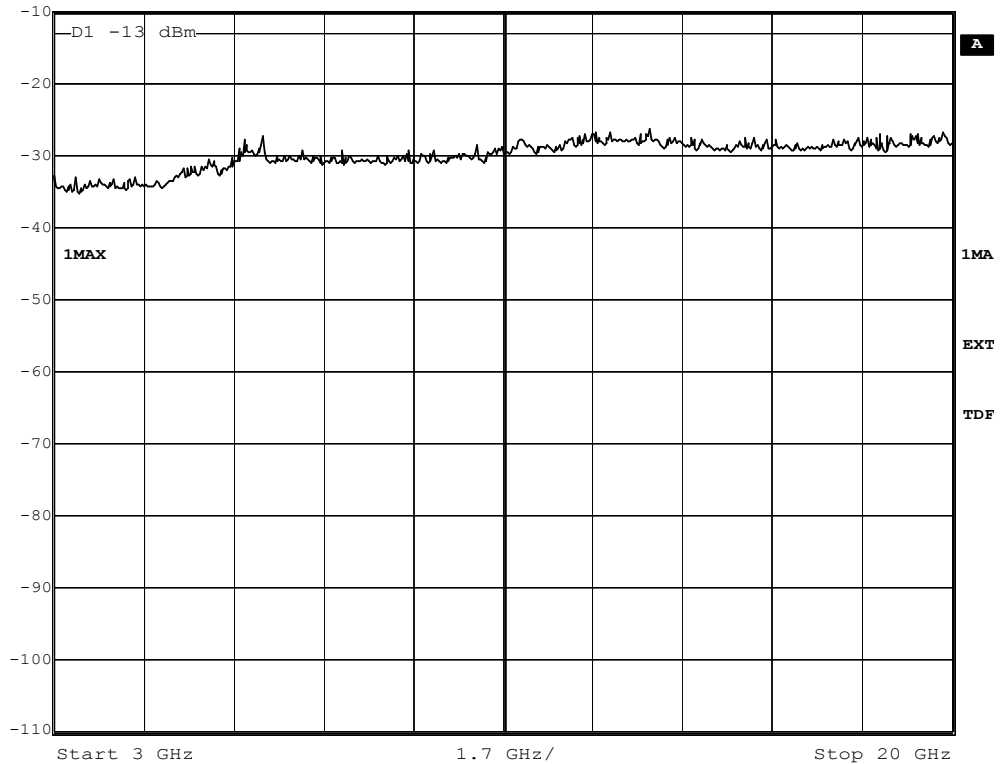


Date: 12.JUN.2003 14:11:12



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 170 ms Unit dBm



Date: 12.JUN.2003 14:02:05

Sign:.....

REPORT

FCC ID: B5KBR1311004-2

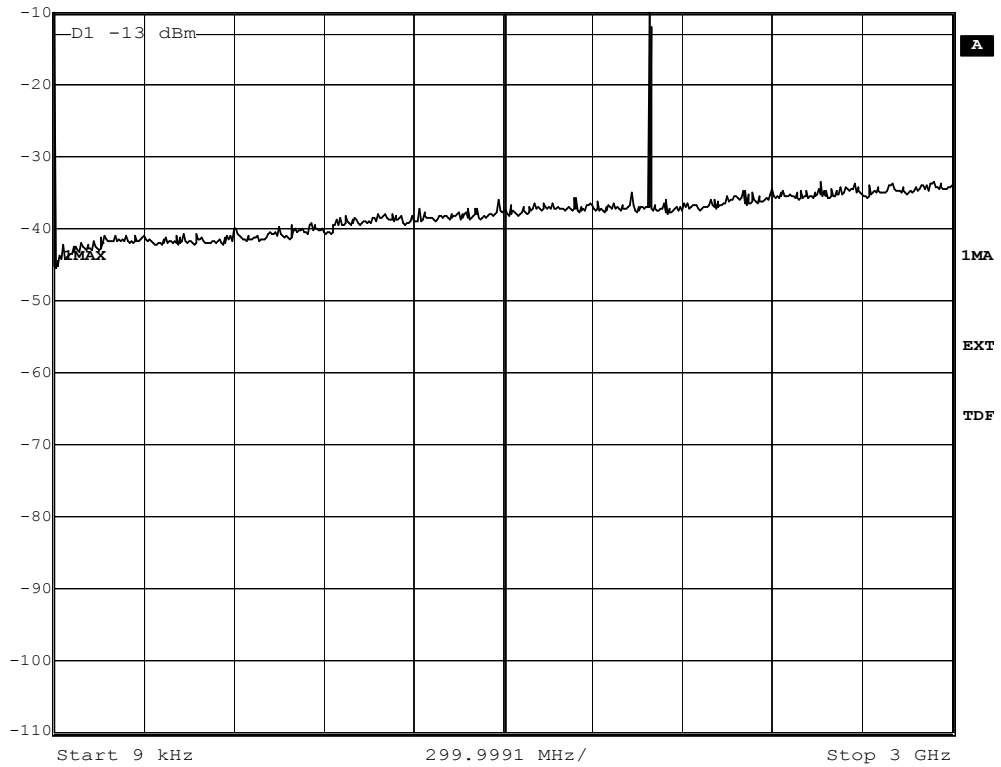
Datum/Date
2003-06-23

Beteckning/Reference
F310972-F24 rev1
Sida/Page
Diagram 10 (16)
Encl. 6.1



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 7.5 ms Unit dBm

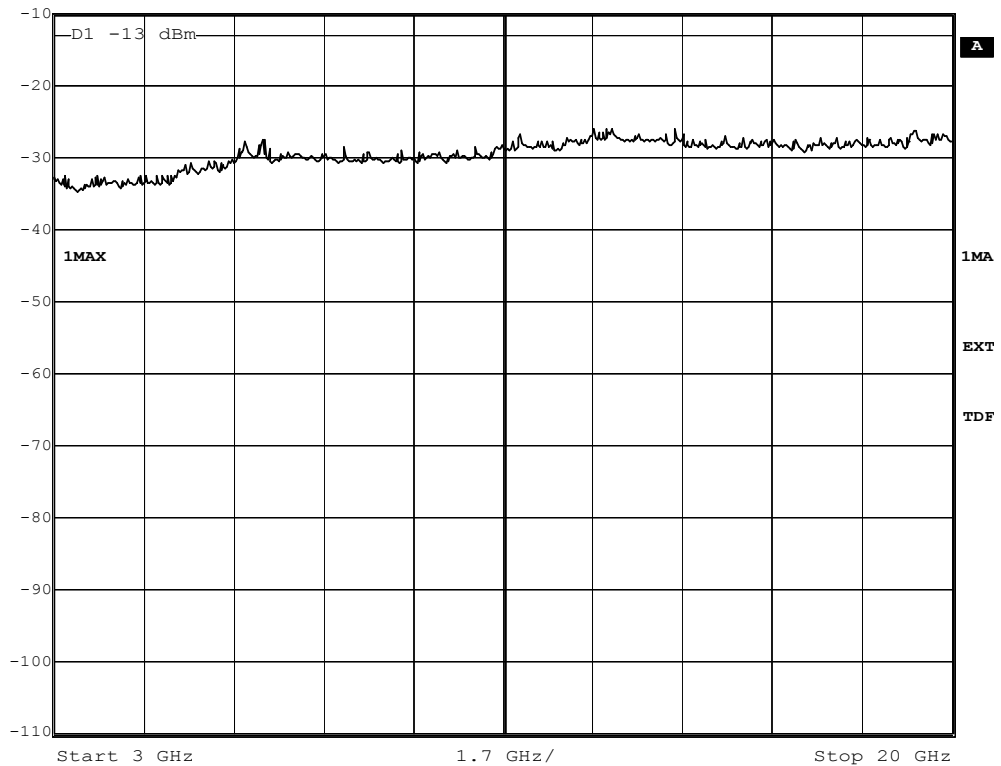


Date: 12.JUN.2003 14:09:42



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 170 ms Unit dBm



Date: 12.JUN.2003 14:04:12

Sign:.....

REPORT

FCC ID: B5KBR1311004-2

Datum/Date
2003-06-23

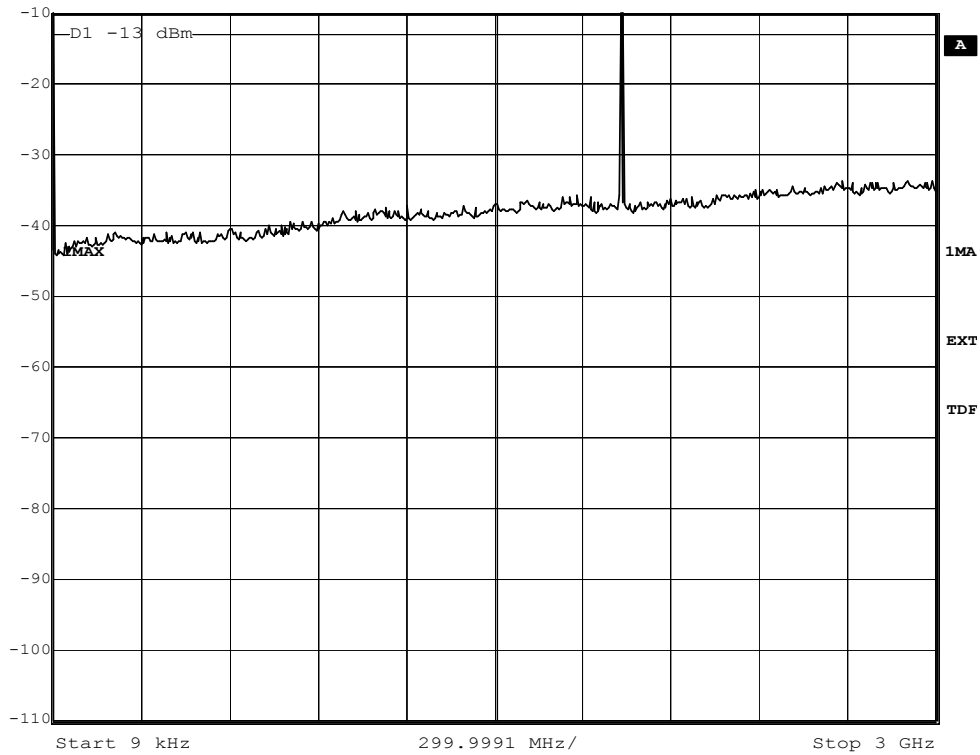
Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 11 (16)
Encl. 6.1



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 7.5 ms Unit dBm

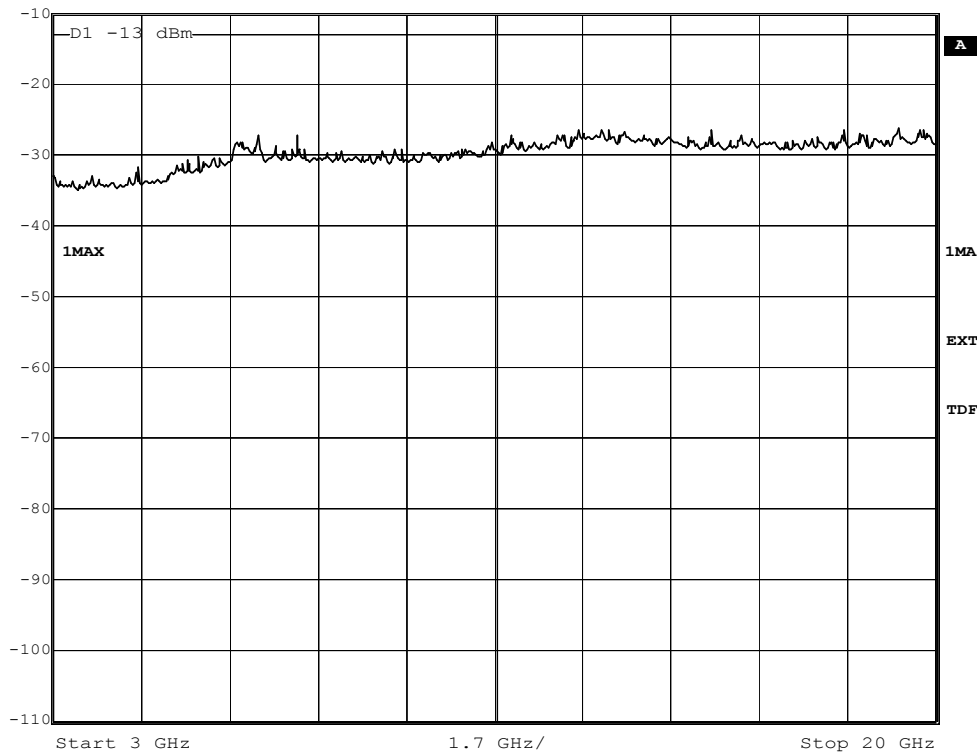


Date: 12.JUN.2003 14:14:22



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 170 ms Unit dBm



Date: 12.JUN.2003 13:57:40

Sign:.....

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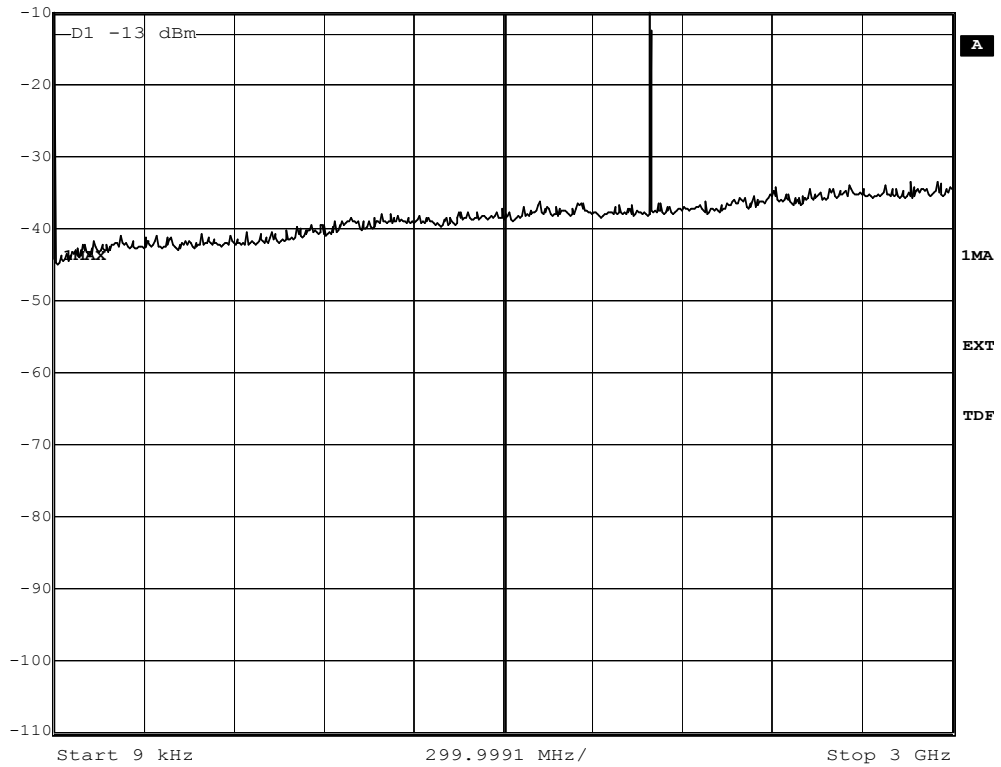
Datum/Date
2003-06-23

Beteckning/Reference Sida/Page
F310972-F24 rev1 Diagram 12 (16)
Encl. 6.1



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 7.5 ms Unit dBm

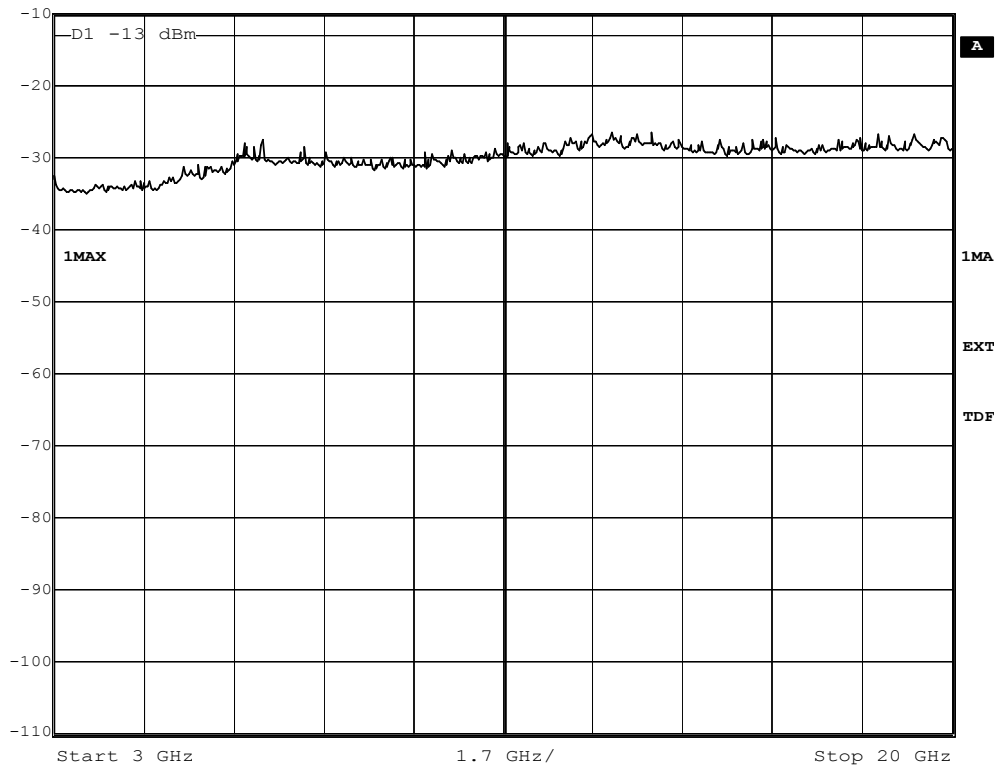


Date: 12.JUN.2003 14:13:17



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 170 ms Unit dBm



Date: 12.JUN.2003 13:59:01

Sign:.....

REPORT

FCC ID: B5KBRKRC1311004-2

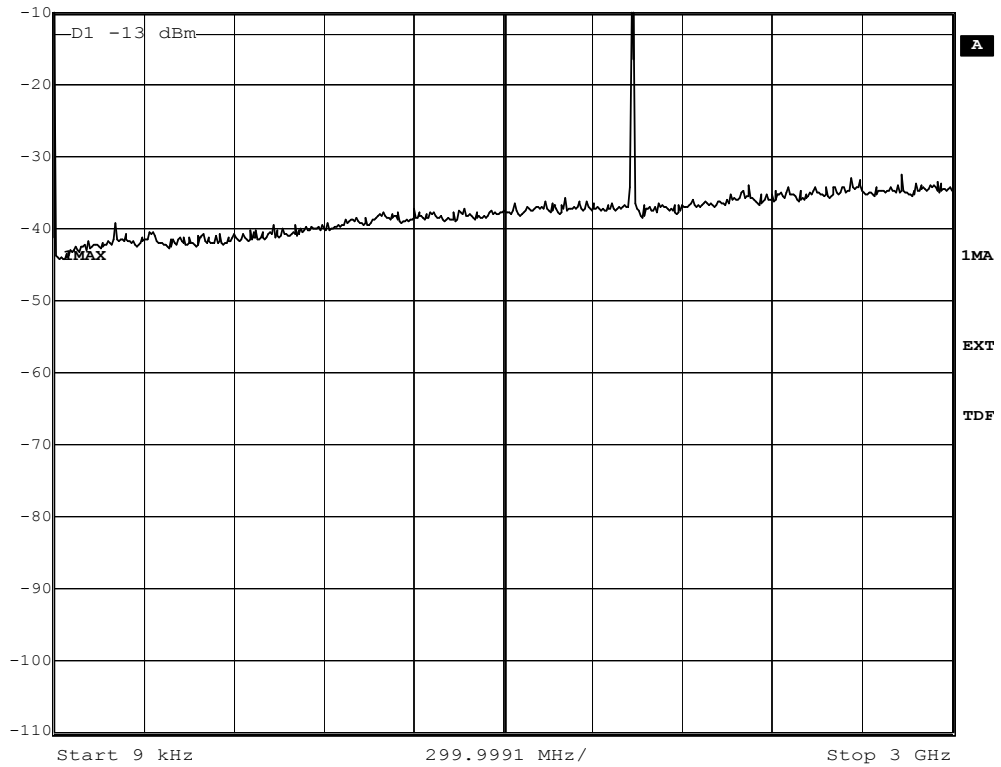
Datum/Date
2003-06-23

Beteckning/Reference
F310972-F24 rev1
Sida/Page
Diagram 13 (16)
Encl. 6.1



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 7.5 ms Unit dBm

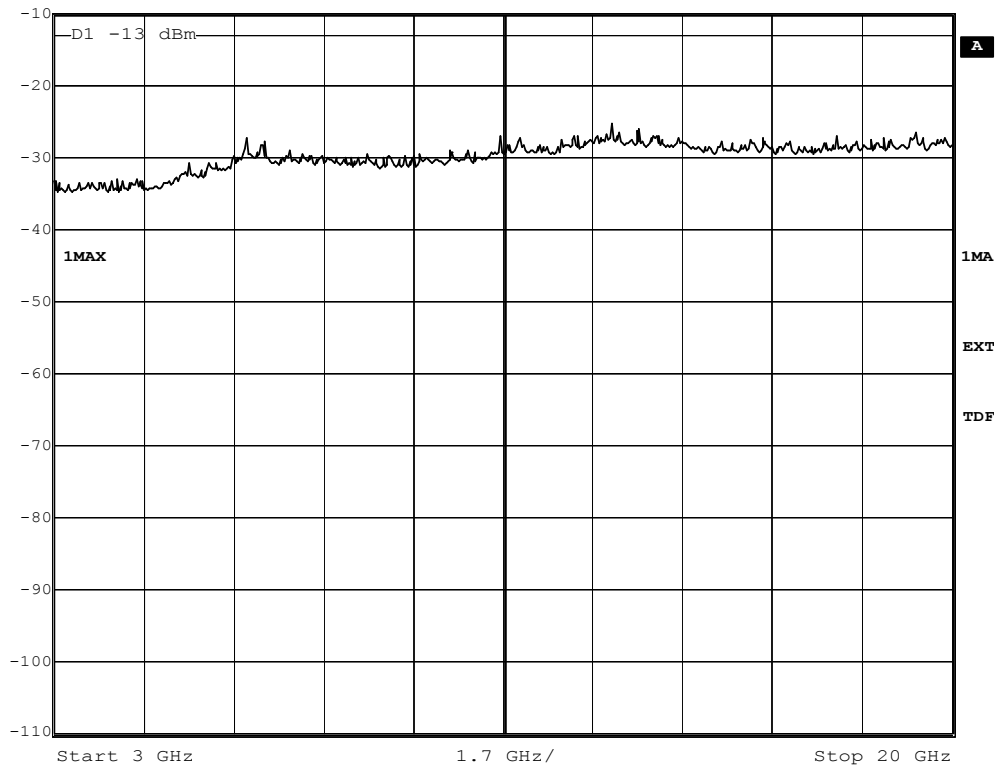


Date: 12.JUN.2003 13:07:57



Ref Lvl
-10 dBm

RBW 1 MHz RF Att 0 dB
VBW 1 MHz
SWT 170 ms Unit dBm



Date: 12.JUN.2003 13:23:48

Sign:.....

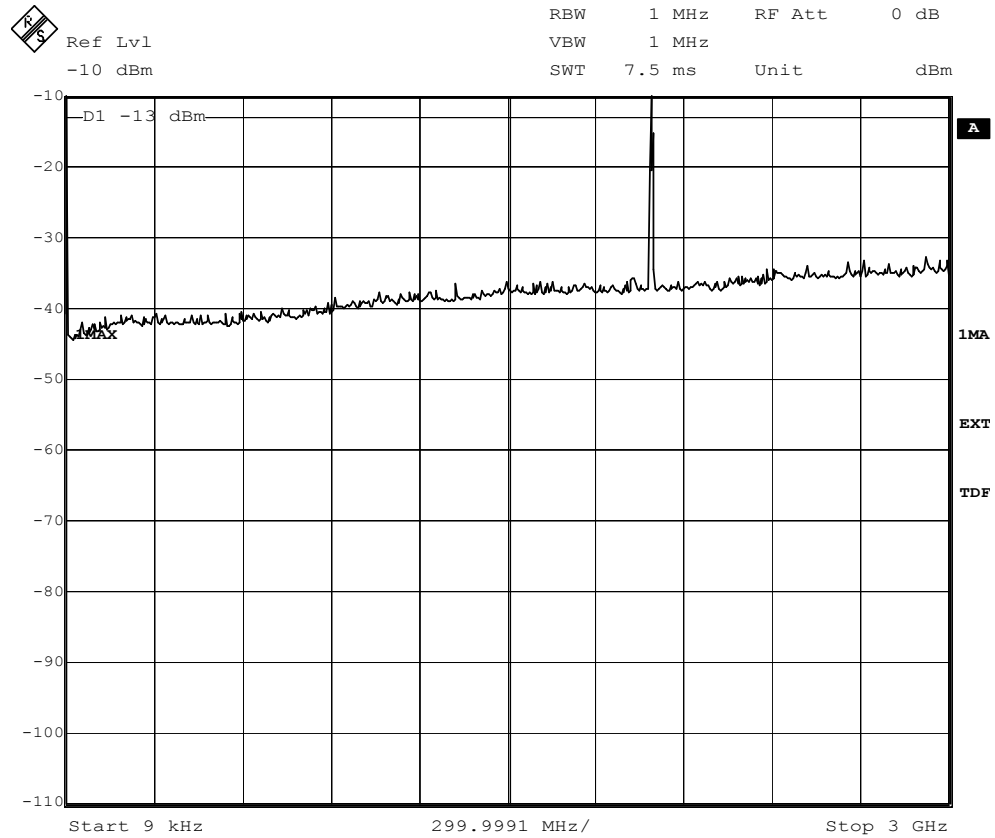
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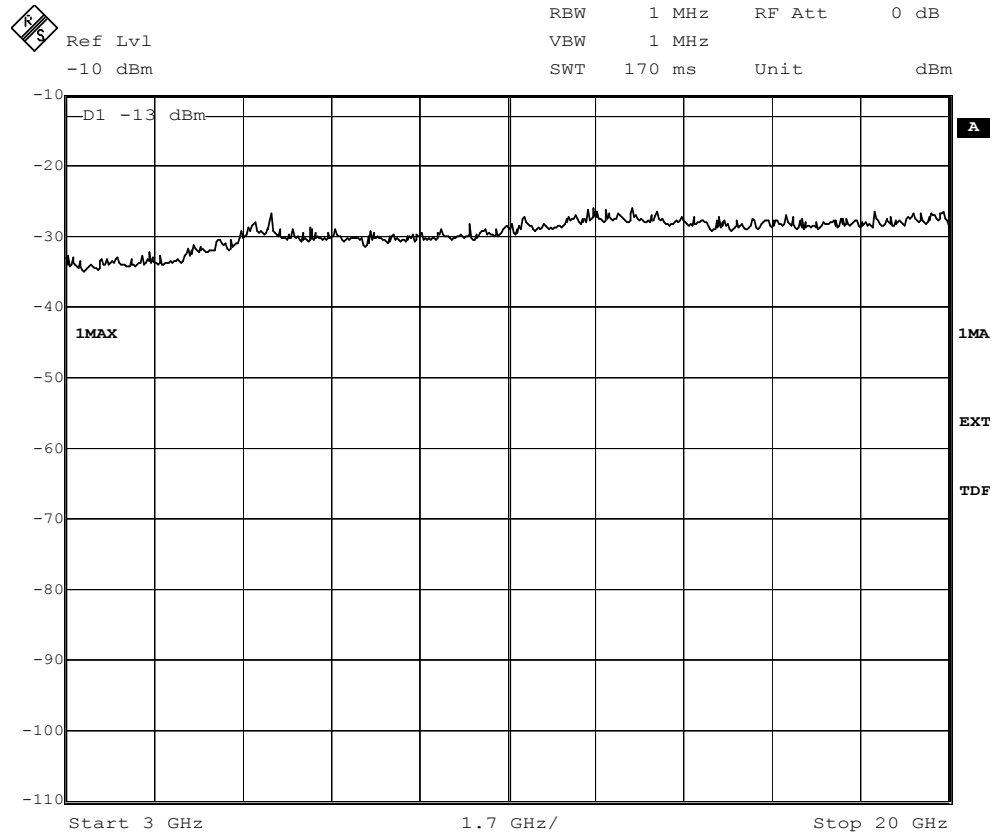
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2003-06-23

Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 14 (16)
Encl. 6.1



Date: 12.JUN.2003 13:10:41



Date: 12.JUN.2003 13:21:13

Sign:.....

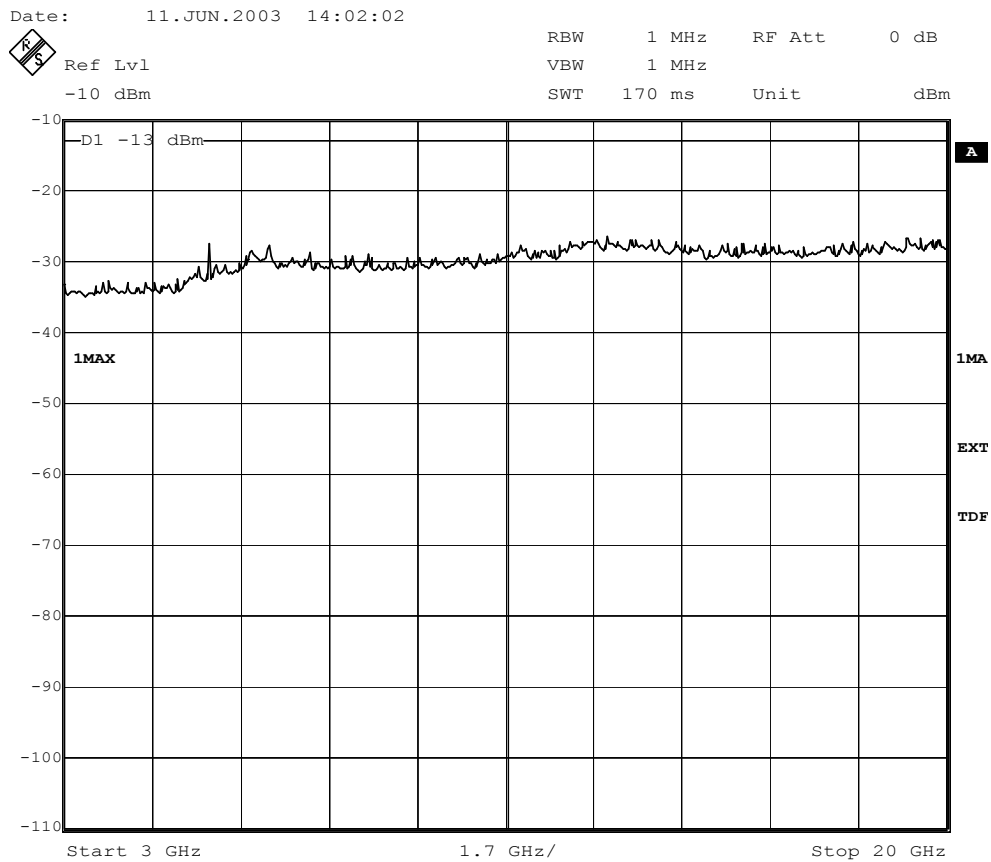
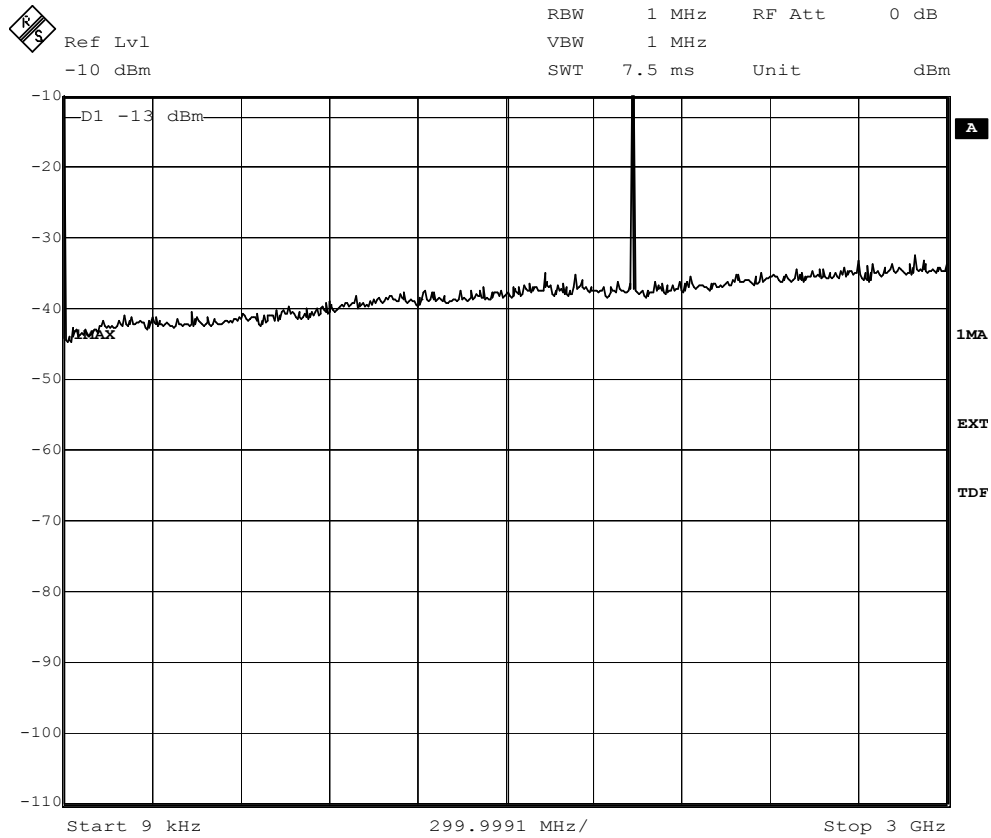
REPORT

FCC ID: B5KBRKRC1311004-2

Datum/Date
2003-06-23

Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 15 (16)
Encl. 6.1



Date: 12.JUN.2003 13:31:11

Sign:.....

REPORT

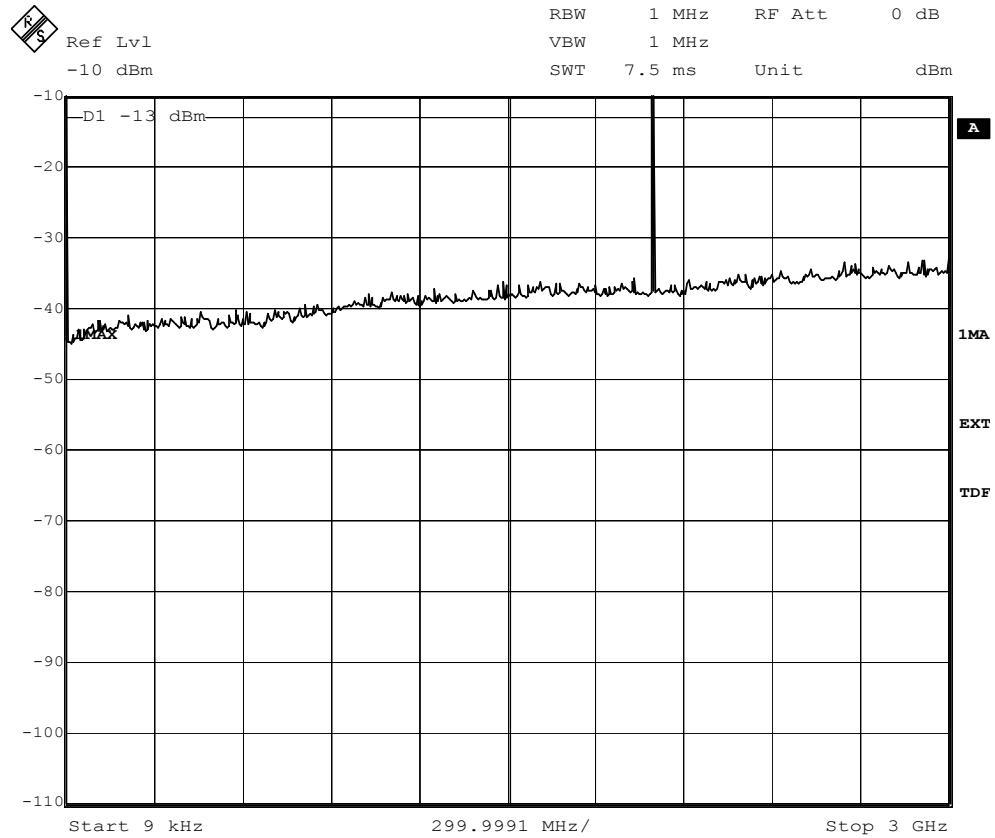
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Datum/Date
2003-06-23

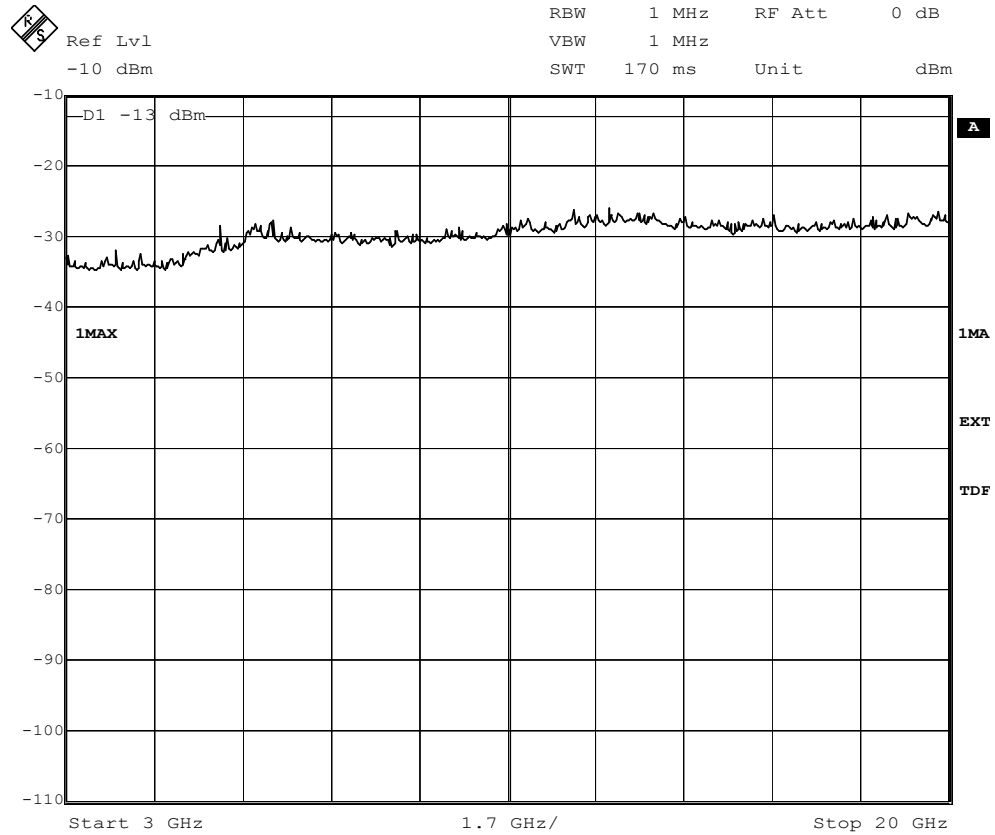
Beteckning/Reference
F310972-F24 rev1

Sida/Page
Diagram 16 (16)

Encl. 6.1



Date: 11.JUN.2003 14:01:24



Date: 12.JUN.2003 13:32:12

Sign:.....

Field strength of spurious radiation measurements according to 47CFR 2.1053

Date	Temperature	Humidity
2003-06-19	22 °C ± 3 °C	52 % ± 5 %
2003-06-23	21 °C ± 3 °C	48 % ± 5 %
2003-06-24	21 °C ± 3 °C	49 % ± 5 %
2003-06-25	21 °C ± 3 °C	52 % ± 5 %
2003-06-25	21 °C ± 3 °C	60 % ± 5 %

Test set-up and Procedure

The measurement procedure is per ANSI/TIA/EIA-603-1992. The chamber 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.

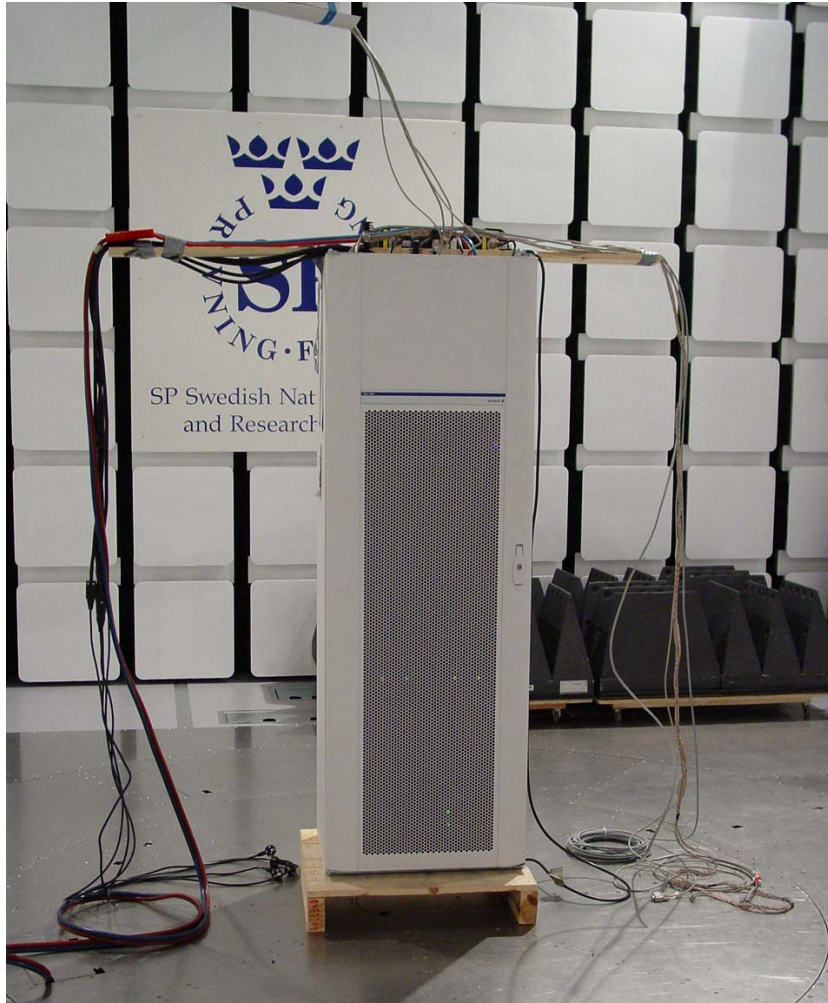
Measurements were done at 3 m distance in the frequency range 9 kHz-18 GHz and at 1 m in the range 18-20 GHz. The transmitter was modulated with 270.8 kbs pseudorandom data during the measurements.

Measurement equipment	Calibration Due	SP number
Anechoic chamber	-	15:115
R&S ESI 40	2003-08	503 125
R&S FSIQ	2004-03	503 738
Control computer	-	503 479
Software: R&S ES-K1, ver. 1.60	-	-
Chase Bilog antenna CBL 6111A	2003-12	503 182
EMCO loop antenna 6502	2003-09	502 916
EMCO Horn Antenna 3115	2004-11	502 175
EMCO Horn Antenna 3116	2003-09	503 279
MITEQ Low Noise Amplifier	2004-04	503 277
Testo 615, Temperature and humidity meter	2003-08	503 505

The test set-up during the spurious radiation measurements can be seen in the pictures below.

FCC ID: B5KBRRC1311004-2

Cabinet 2206, 24 V DC:

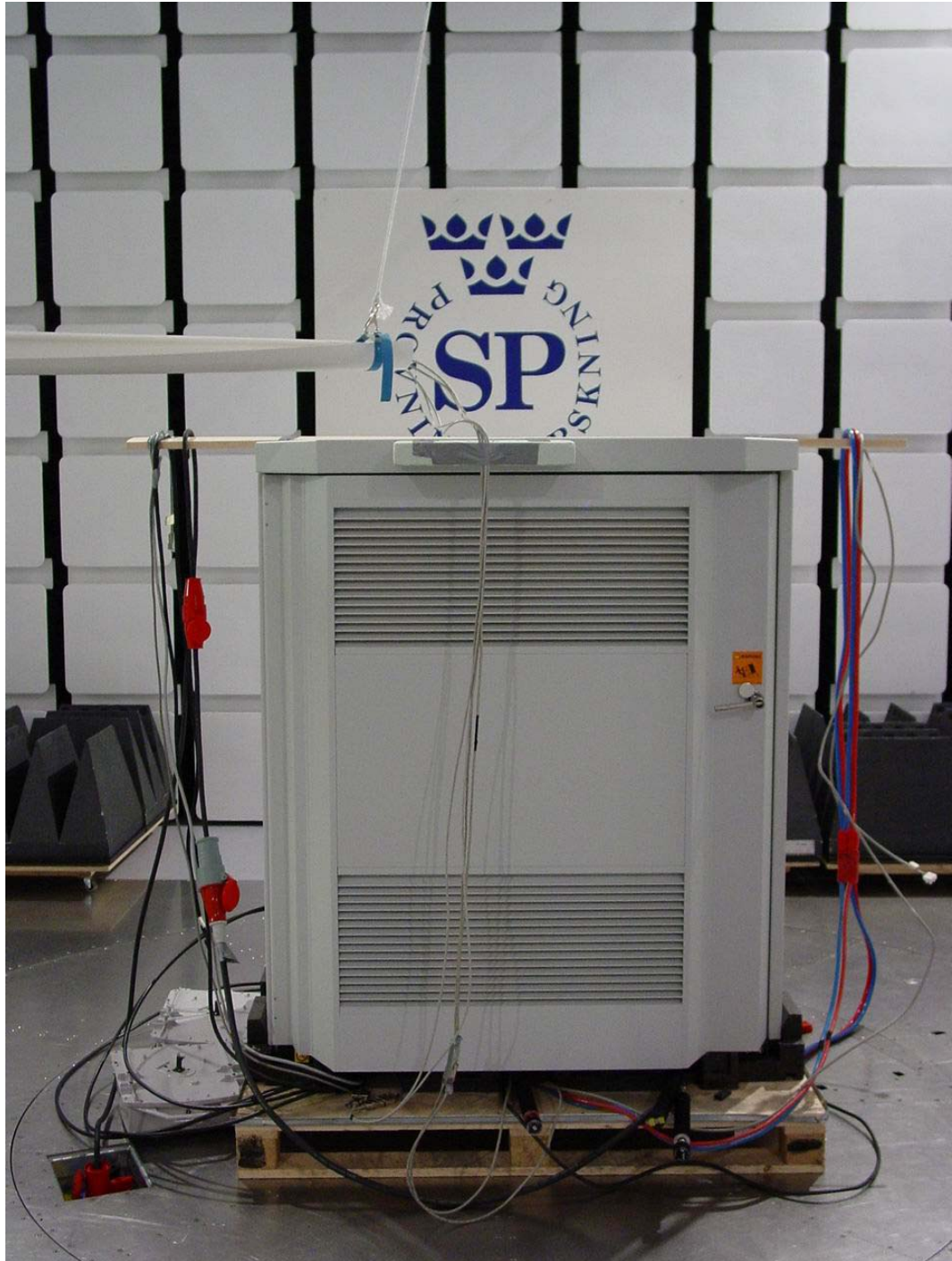


Sign:.....

FCC ID: B5KBRRC1311004-2

Cabinet 2106, three phase 208 V AC (phase-to-phase voltage):

Front:



Sign:.....

REPORT

FCC ID: B5KBRRC1311004-2

Datum/Date
2003-06-23

Beteckning/Reference
F310972-F24 rev1 4 (7)

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Encl. 7

Rear:



Sign:.....

ResultsCabinet 2206

EDGE: the three modes tested at the same time: with internal combiner, without internal combiner and with internal combiner plus TCC

GMSK: the three modes mentioned above at the same time

Nominal Voltage: 24 V DC

Output power TCC: +47 dBm

Output power without internal combiner: +45 dBm

Output power with internal combiner: +41.5 dBm

Mode: GMSK

Frequency (MHz)	Spurious emission level (dBm)	
	Vertical (9k-30MHz: Longitudinal)	Horizontal (9k-30MHz: Perpendicular)
0.01037	-27.4	—
0.01209	-30.5	—
0.01384	-31.4	—
0.01559	-32.5	—
3 979.60	-28.5	—
0.009-20 000	All other emission > 20 dB below limit	All other emission > 20 dB below limit
Measurement uncertainty		4.7 dB

Mode: **EDGE**

Frequency (MHz)	Spurious emission level (dBm)	
	Vertical (9k-30MHz: Longitudinal)	Horizontal (9k-30MHz: Perpendicular)
0.00975	-29.7	—
0.01027	-28.7	—
0.01051	-29.2	—
0.01215	-26.4	—
0.01392	-31.0	—
0.01556	-29.1	—
0.01913	-32.6	—
0.009-20 000	All other emission > 20 dB below limit	All other emission > 20 dB below limit
Measurement uncertainty		4.7 dB

Remark

Due to some problem with last dTRU during the test in the frequency range 9 kHz-30 MHz, the dTRU was exchanged to a new unit from s/n AE50126502 to s/n AE50126477.

Cabinet 2106

EDGE: three mode tested at a time: with internal combiner, without internal combiner and with internal combiner plus TCC

GMSK: the three modes mentioned above at the same time

The climate equipment was in standby mode during the test.

Nominal voltage: 208 V AC (phase-to-phase voltage)

Output power TCC: +47 dBm

Output power without internal combiner: +45 dBm

Output power with internal combiner: +41.5 dBm

Mode: **GMSK**

Frequency (MHz)	Spurious emission level (dBm)	
	Vertical (9k-30MHz: Longitudinal)	Horizontal (9k-30MHz: Perpendicular)
0.04814	—	-33.0
0.009-20 000	All emission > 20 dB below limit	All emission > 20 dB below limit
Measurement uncertainty		4.7 dB

Mode: **EDGE**

Frequency (MHz)	Spurious emission level (dBm)	
	Vertical (9k-30MHz: Longitudinal)	Horizontal (9k-30MHz: Perpendicular)
0.009-20 000	All emission > 20 dB below limit	All emission > 20 dB below limit
Measurement uncertainty		4.7 dB

Remark

During the test with cabinet 2106 in the frequency range 9 kHz-18 GHz some Mini-Link equipment were connected to the RBS 2106.

Mini-Link-units according to hardware list, see enclosure 9.

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
-----------	-----

Frequency stability measurements according to 47CFR 2.1055

Date	Temperature	Humidity
2003-06-13	22 °C ± 3 °C	44 % ± 5 %
2003-06-16	22 °C ± 3 °C	44 % ± 5 %
2003-06-30	22 °C ± 3 °C	52 % ± 5 %

Test set-up and Procedure

The measurement was made per J-STD-007A Vol 1 (GMSK) and TIA/EIA-136-280-B (EDGE).

The test was made with the dTRU mounted in the RBS 2206 cabinet.

Measurements were made at CDU-G output connectors. The output was connected to a spectrum analyser. The spectrum analyser was connected to an external 10 MHz reference standard during measurement.

The transmitter was modulated with 270.8 kbs pseudorandom data during the measurements.

Measurement equipment	Calibration Due	SP number
Climate chamber	2004-02	503 546
R&S FSIQ	2004-03	503 738
Multimeter Fluke 87	2003-09	502 190
Testo 610, Temperature and humidity meter	2003-12	502 658

Results

Nominal Voltage 24 V DC

45 dBm output power at Channel 661 (1960.0 MHz)

Mode: **GMSK**

Test conditions		Frequency error (Hz)	
Supply voltage DC (V)	T (°C)	TRU Output 0	TRU Output 1
24.0	+20	-8	-10
27.6	+20	-12	-16
20.4	+20	-11	-14
24.0	+30	8	12
24.0	+40	8	7
24.0	+50	-10	10
24.0	+10	13	10
24.0	0	-10	-9
24.0	-10	-12 Note 1	-12 Note 1
24.0	-20	-10 Note 1	-12 Note 1
24.0	-30	-9 Note 1	-10 Note 1
Maximum freq. error (Hz)		-16	
Measurement uncertainty		$< \pm 1 \times 10^{-7}$	

Mode: **EDGE**

Test conditions		Frequency error (Hz)	
Supply voltage DC (V)	T (°C)	TRU Output 0	TRU Output 1
24.0	+20	-17	-11
27.6	+20	-19	-12
20.4	+20	-15	-16
24.0	+30	11	10
24.0	+40	13	10
24.0	+50	14	11
24.0	+10	-12	-13
24.0	0	13	-12
24.0	-10	-16 Note 1	-16 Note 1
24.0	-20	-16 Note 1	-16 Note 1
24.0	-30	-16 Note 1	-14 Note 1
Maximum freq. error (Hz)		-19	
Measurement uncertainty		$< \pm 1 \times 10^{-7}$	

Note 1: At -10 °C it was not possible to enable the dTRU, mounted in the RBS 2206 cabinet.
To be able to perform the test at -10°C – -30°C the dTRU was mounted in the outdoor cabinet RBS 2106.

Remark

dTRU with serial number AE50126501 was used during the test.

Limits

The maximum frequency error shall not be greater than 0.05 ppm (98 Hz).

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

Sign:.....

EUT Hardware configuration list RBS 2206

Unit	Product Number	Serial Number	Revision
Cabinet	SEB 112 1095/1	TU81362438	R5B
CDU shelf	BFL 119 406/1	- -	R3A
6xBias Injector	KRY 101 1587/1	--	R2B
CDU-G19	BFL 119 153/1	A40003S9K2	R5A
CDU-G19	BFL 119 153/1	A40003KCB5	R5A
CDU-G19	BFL 119 153/1	A40003K57R	R5A
ASU-01	KRY 112 54/1	A40003DWKP	R2A
Dummy	SXK 107 5031/1	- -	R1B
CXU-10	KRY 101 1856/1	S690013KNW	R3C
Dummy	SXK 107 5031/1	- -	R1B
TRU shelf	BFL 119 407/1	- -	R3B
dTRU-19 EDGE	KRC 131 1004/2	AE50126501	R1G
dTRU-19 EDGE	KRC 131 1004/2	AE50126520	R1G
dTRU-19 EDGE	KRC 131 1004/2	AE50126386	R1G
dTRU-19 EDGE	KRC 131 1004/2	AE50126387	R1G
dTRU-19 EDGE	KRC 131 1004/2	AE50126519	R1G
dTRU-19 EDGE	KRC 131 1004/2	AE50126502	R1G
Dummy	SXK 107 5031/2	- -	R1B
IDM 01	BMG 980 06/1	T671080937	R3A
PSU-shelf	BFL 119 408/1	- -	R2A
PSU-AC	BML 231 202/1	A082261658	R2F
PSU-AC	BML 231 202/1	A082261662	R2F
PSU-AC	BML 231 202/1	A082261624	R2F
PSU-AC	BML 231 202/1	A082261663	R2F
DXU-21 A	BOE 602 14/1	X510231694	R10B
TMA-CM-01	SDK 107 881/1	SA22251364	R2A
Dummy	SXK 107 5029/1	- -	R1B
Dummy	SXK 107 5030/1	- -	R1C
Dummy	SXK 107 5030/1	- -	R1C
FCU-01	BGM 136 1001/2	B991030355	R3A
DC-filter	KFE 101 1145/3	TR21004032	P1B
ACCU-01	BMG 980 07/1	S792068835	P1B

Software	Revision
R91B	R086Z

EUT Hardware configuration list RBS 2106

Unit	Product Number	Serial Number	Revision
Cabinet	SEB 112 1035/04	S773150373	R4B
Climate	BPD 104 36/1	S781146934	R8A
IDM-01	BMG 980 06/1	T671069621	R2B
PSU shelf	BFL 119 408/1	--	R2A
PSU-AC	BML 231 202/1	A083653058	R2G
PSU-AC	BML 231 202/1	A083652970	R2G
PSU-AC	BML 231 202/1	A083657816	R2G
PSU-AC	BML 231 202/1	A083655160	R2G
DXU-21 A	BOE 602 14/1	X510231696	R10B
TMA-CM-01	SDK 107 881/1	SA22300480	R1B
Dummy	SXX 107 5029/1	--	R1B
Dummy	SXX 107 5030/1	--	R1C
Dummy	SXX 107 5030/1	--	R1C
ACCU-02-DU	BMG 980 11/1	A441557347	R2D
FCU-01	BMG1361001/2	A083766414	R3A
DC/DC	BMR 960 011/1	A082515490	R2E
DC/DC	BMR 960 011/1	A082515491	R2E
ADM-01	BMG 980 12/1	T671042211	R2A
BFU-21	BMG 980 13/1	A0882538353	R1A
CDU shelf	BFL 119 406/1	--	R3A
CDU G19	BFL 119 153/1	A40003S9K4	R5A
CDU G19	BFL 119 153/1	A40003KCAB	R5A
CDU G19	BFL 119 153/1	A40003L2VU	R5A
ASU-01	KRY 112 54/1	A40003F78V	R2B
Dummy	SXX 107 5031/1	--	R1B
CXU-10	KRY 101 1856/1	S690013GJU	R3C
Dummy	SXX 107 5031/1	--	R1B
TRU shelf	BFL 119 407/1	--	R3B
dTRU 19 edge	KRC 131 1004/2	AE50098316	R1G
dTRU 19 edge	KRC 131 1004/2	AE50098314	R1G
dTRU 19 edge	KRC 131 1004/2	AE50098318	R1G
dTRU 19 edge	KRC 131 1004/2	AE50098312	R1G
dTRU 19 edge	KRC 131 1004/2	AE50098315	R1G
dTRU 19 edge	KRC 131 1004/2	AE50098313	R1G
ACCU-02-CU	--	--	--

Software	Revision
R91B	R086Z

Description of EUT

The EUT is a dTRU that can be installed in a 1900 MHz GSM Base station configured with up to 6 double transceiver units that are designed to provide mobile telephone users with a connection to a mobile network or the PSTN.

EUT Hardware configuration list MINI-LINK equipment

Unit	Product Number	Serial Number	Revision
MINI-LINK 18E RAU 18/32	UKL 401 09/32	A23001F351	R1E
MINI-LINK 18E RAU 18/32	UKL 401 09/32	A23001F34H	R1E
MINI-LINK 18E RAU 18/36HP	UKL 401 09/36HP	A23001KNFY	R1E
MINI-LINK 18E RAU 18/36	UKL 401 09/36	A23000XUTT	R1D
SMU 16XDS1	HRV 901 06/1	FA1G324380	R1A
SMU 16XDS1	HRV 901 06/1	FA1G324375	R1A
SMU 16XDS1	HRV 901 06/1	FA1G324370	R1A
MMU 4-16XDS1	HRV 901 08/1	A23001SSKK	R1A
MMU 4-16XDS1	HRV 901 08/1	A23001SSKJ	R1A
MMU 4-16XDS1	HRV 901 08/1	A23001SSKA	R1A
MMU 4-16XDS1	HRV 901 08/1	A23001SSKB	R1A
AMM 2U-3	-	-	R2
AMM 2U-3	-	-	R2
AMM 2U-3	-	-	R1

Software product number	Revision
CAH 1090165	R1C01
CAH 1090162	R1D
CAU 1191100	R5A
CAU 1191100	R4E

REPORT

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Datum/Date
2003-06-23

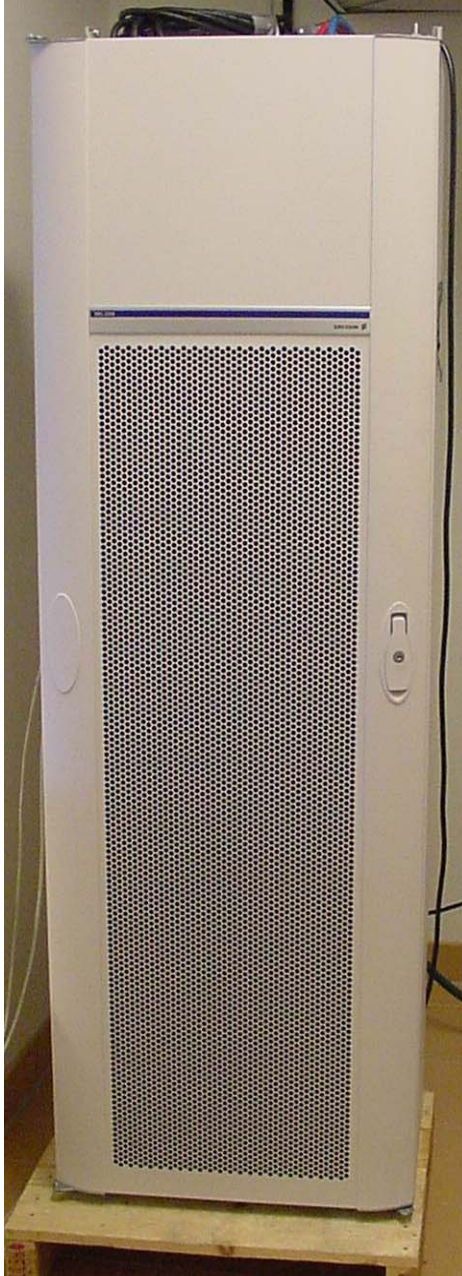
Beteckning/Reference
F310972-F24 rev1

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1 (15)
Encl. 10

Photos

RBS 2206 Cabinet, 24 Volt DC system

Front view



Rear view



Sign:.....

REPORT

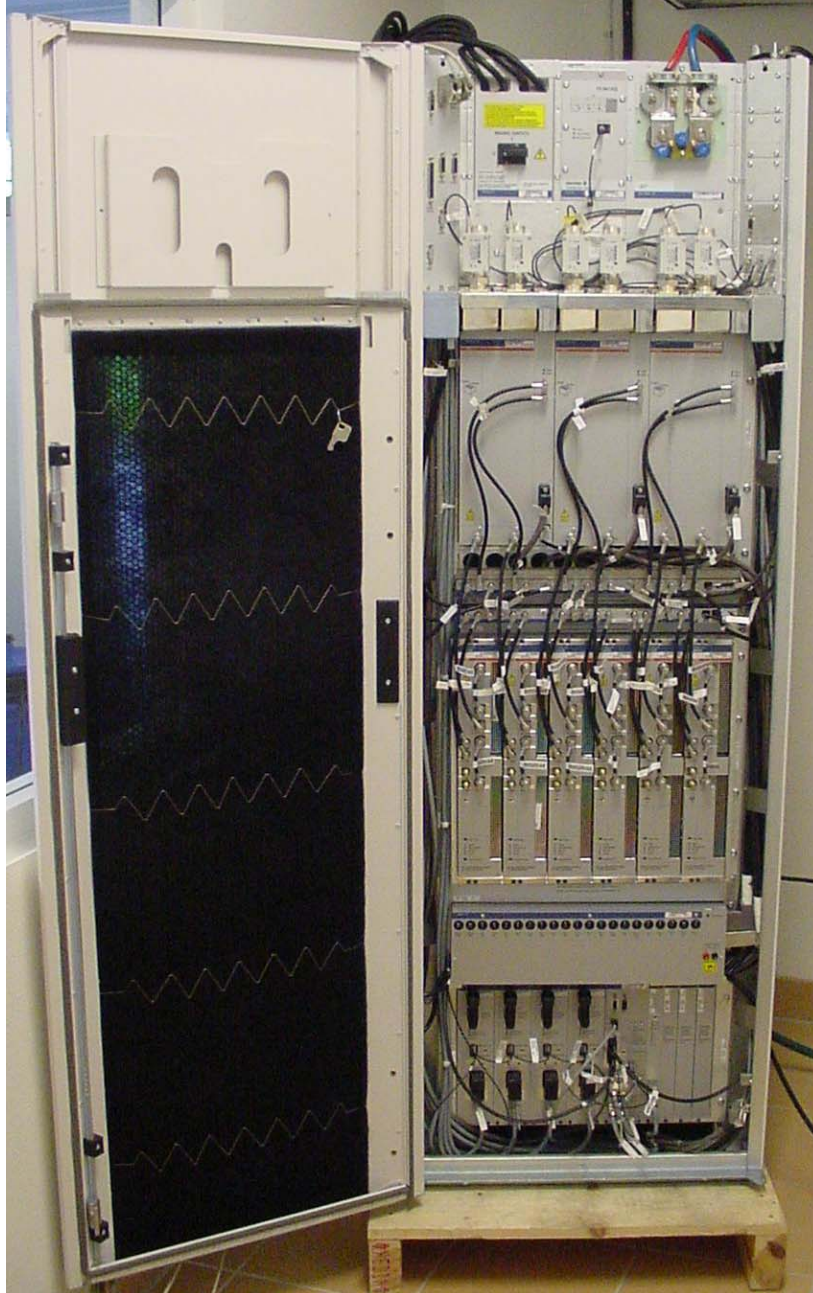
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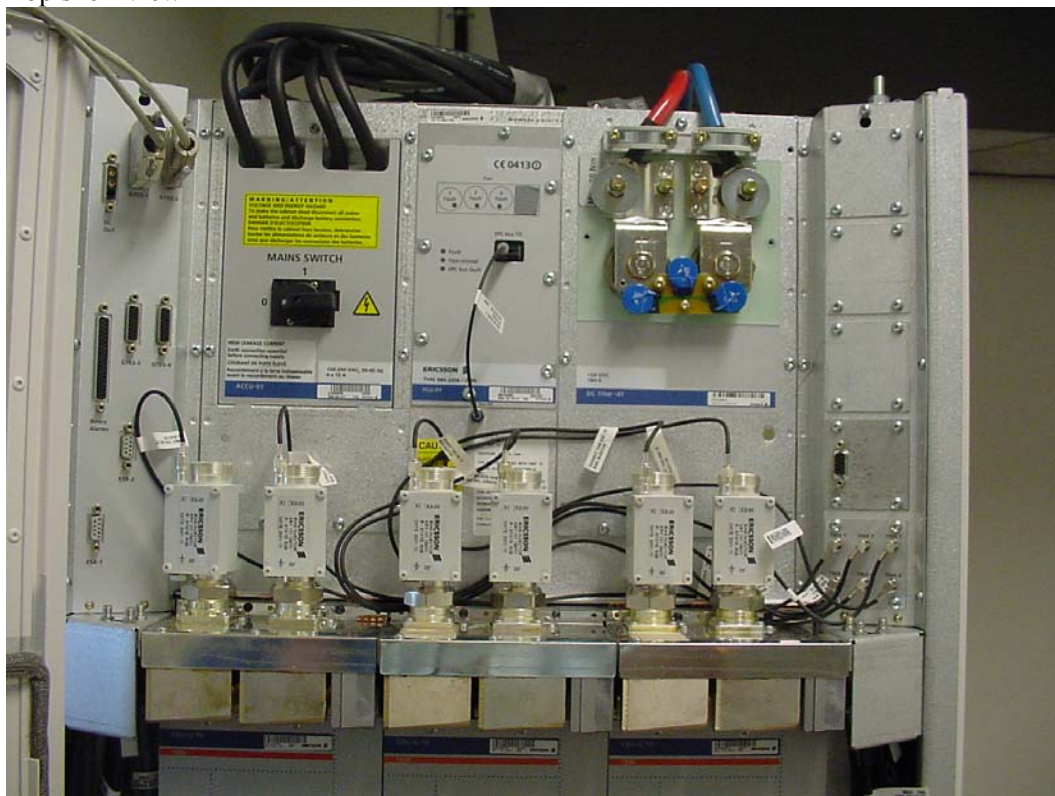
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Open door view



Sign:.....

Top shelf view



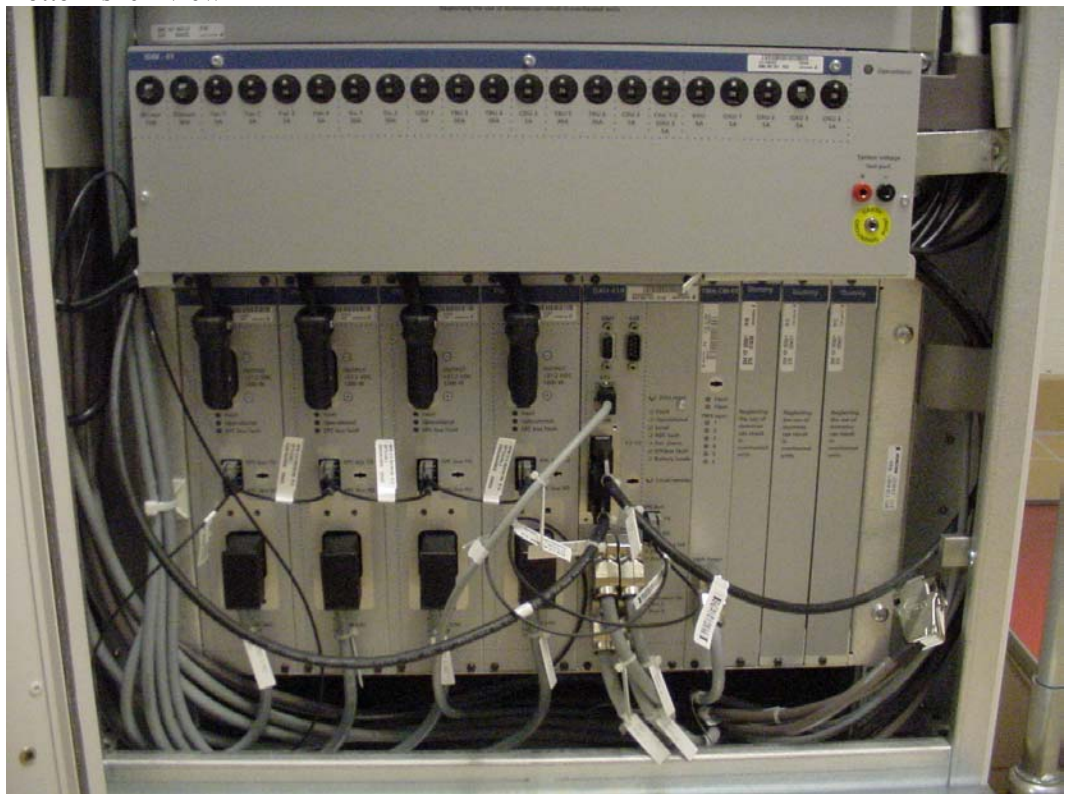
Upper middle shelf view



Lower middle shelf view



Bottom shelf view



REPORT

FCC ID: B5KBRRC1311004-2

Datum/Date
2003-06-23

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F310972-F24 rev1 5 (15)
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RBS 2106 Cabinet

Front view



Rear view



Sign:.....

REPORT

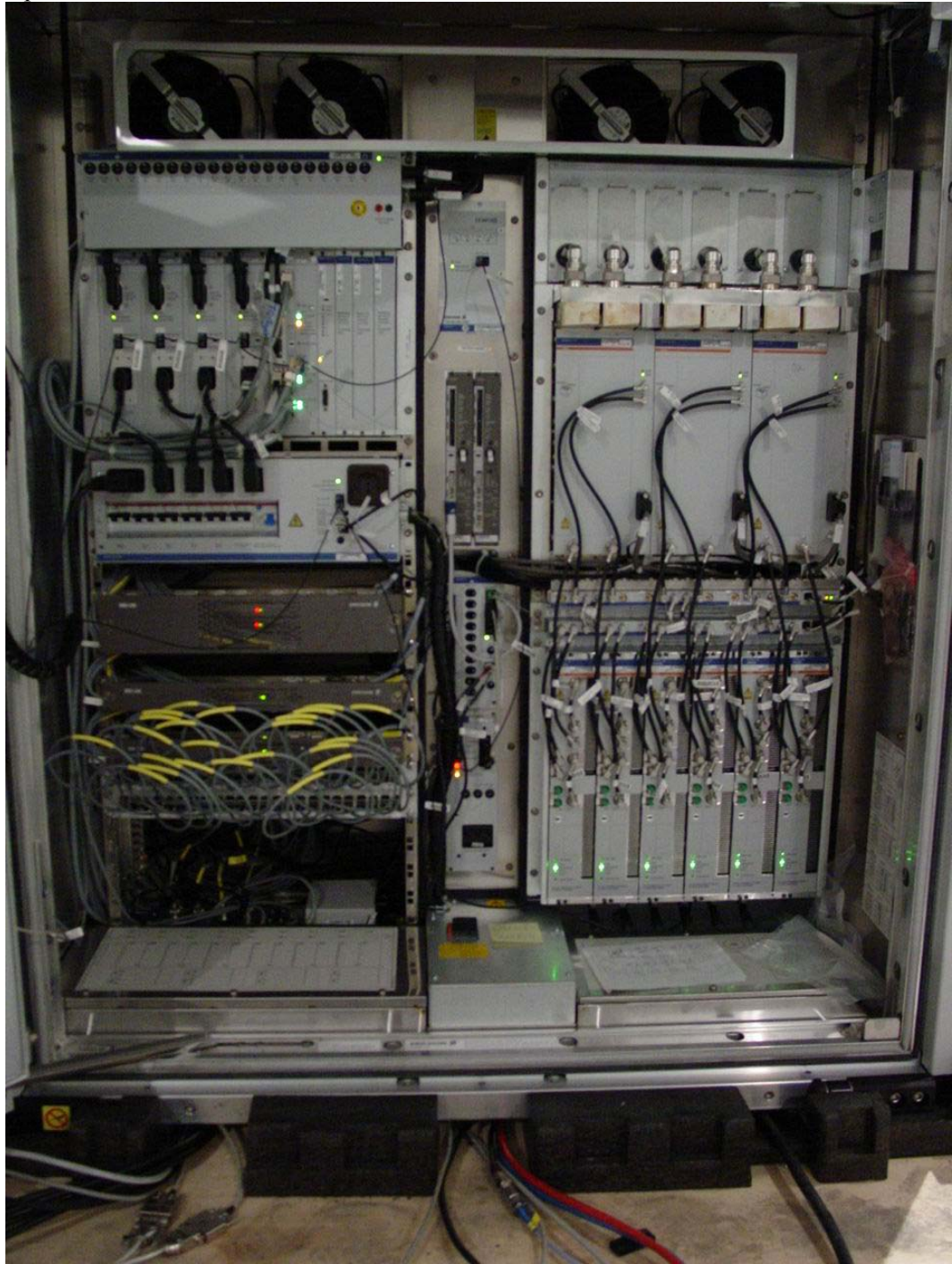
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Datum/Date
2003-06-23

Beteckning/Reference
F310972-F24 rev1 6 (15)

Sida/Page
Encl. 10

Open door view



Sign:.....

REPORT

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2003-06-23

Betekning/Reference
F310972-F24 rev1 7 (15)

Sida/Page
Encl. 10

FCC ID: B5KBKRC1311004-2

Top right shelf view



Sign:.....

REPORT

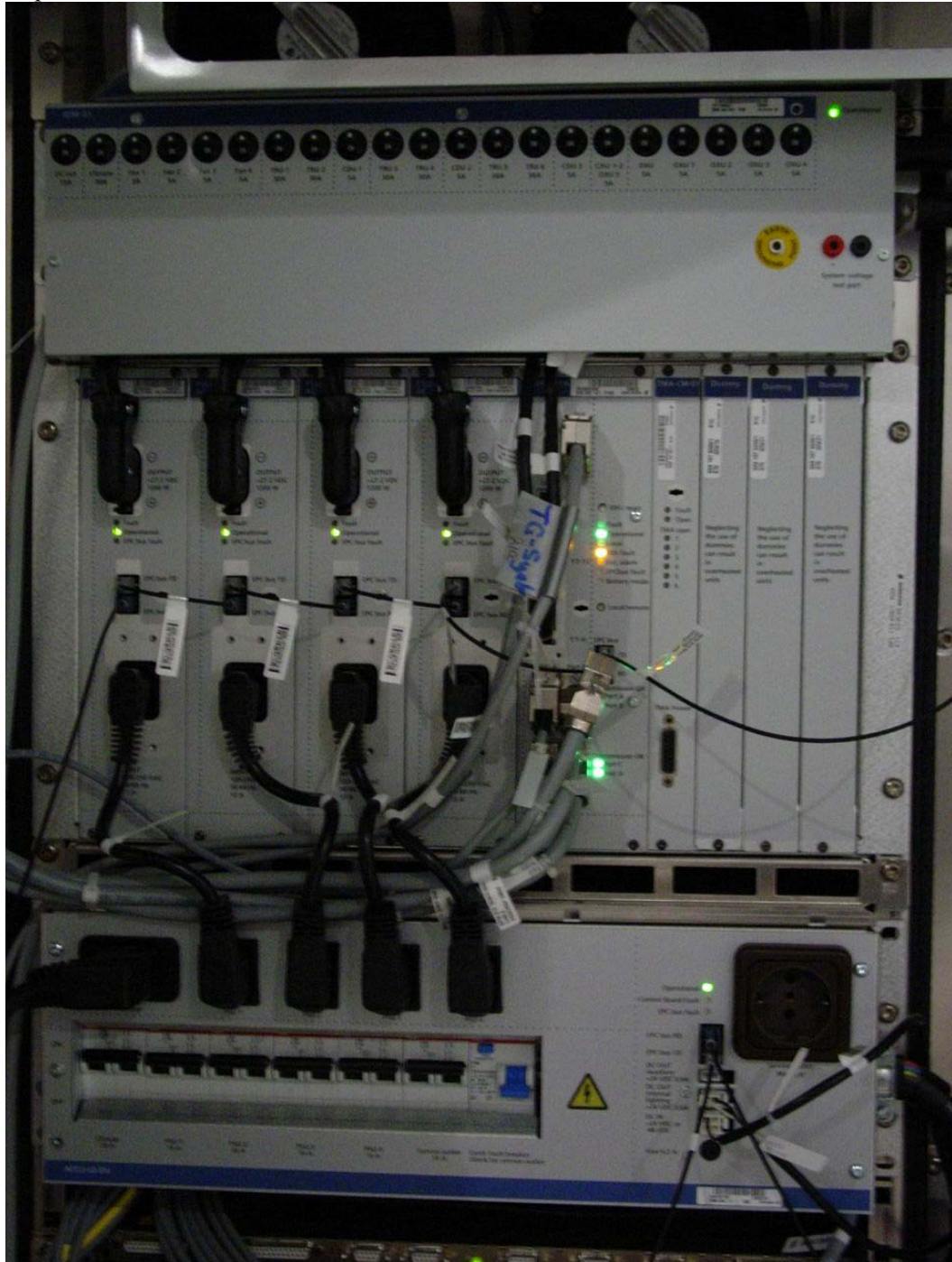
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Betekning/Reference
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FCC ID: B5KBKRC1311004-2

Top left shelf view



Sign:.....

REPORT

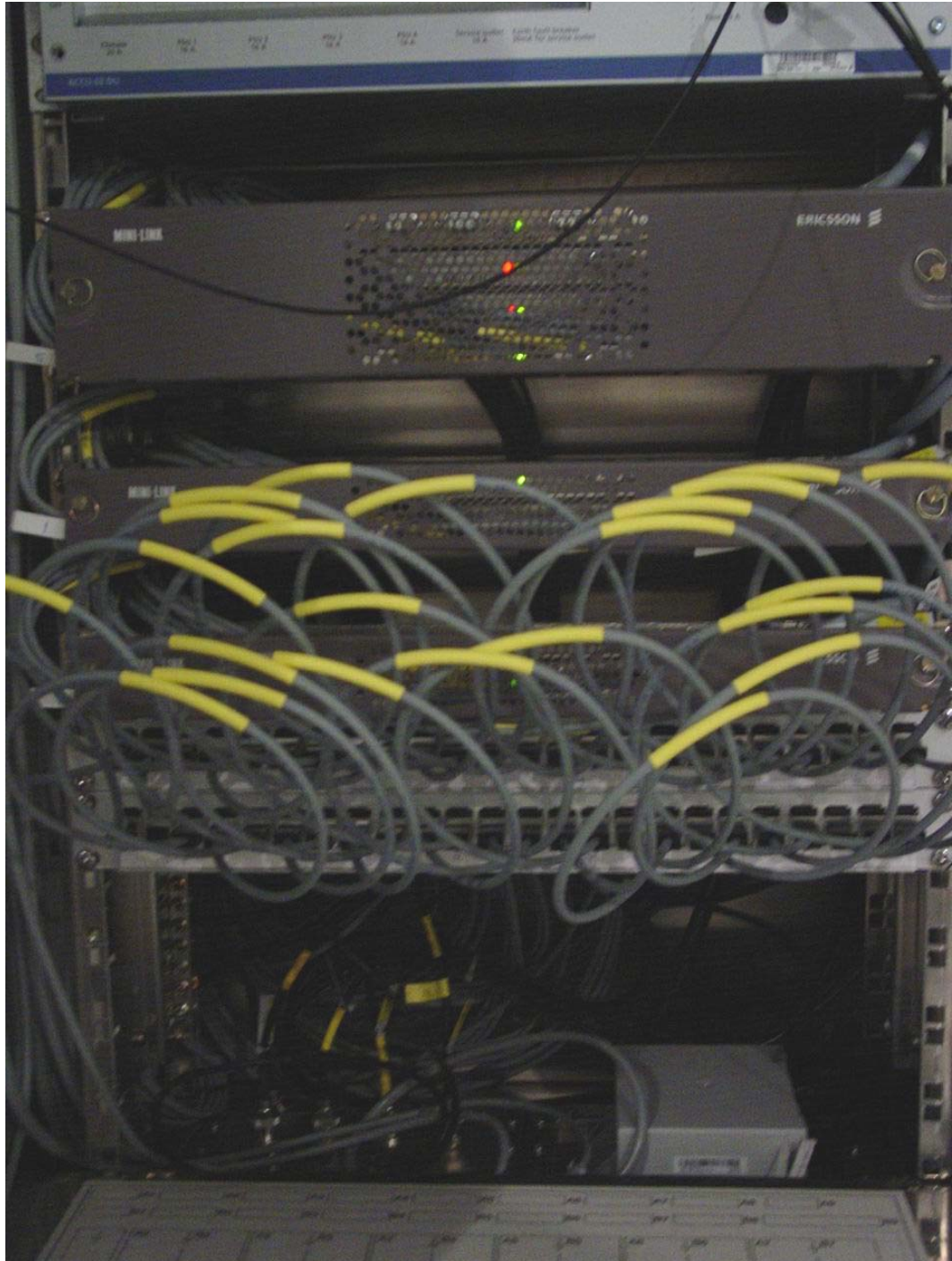
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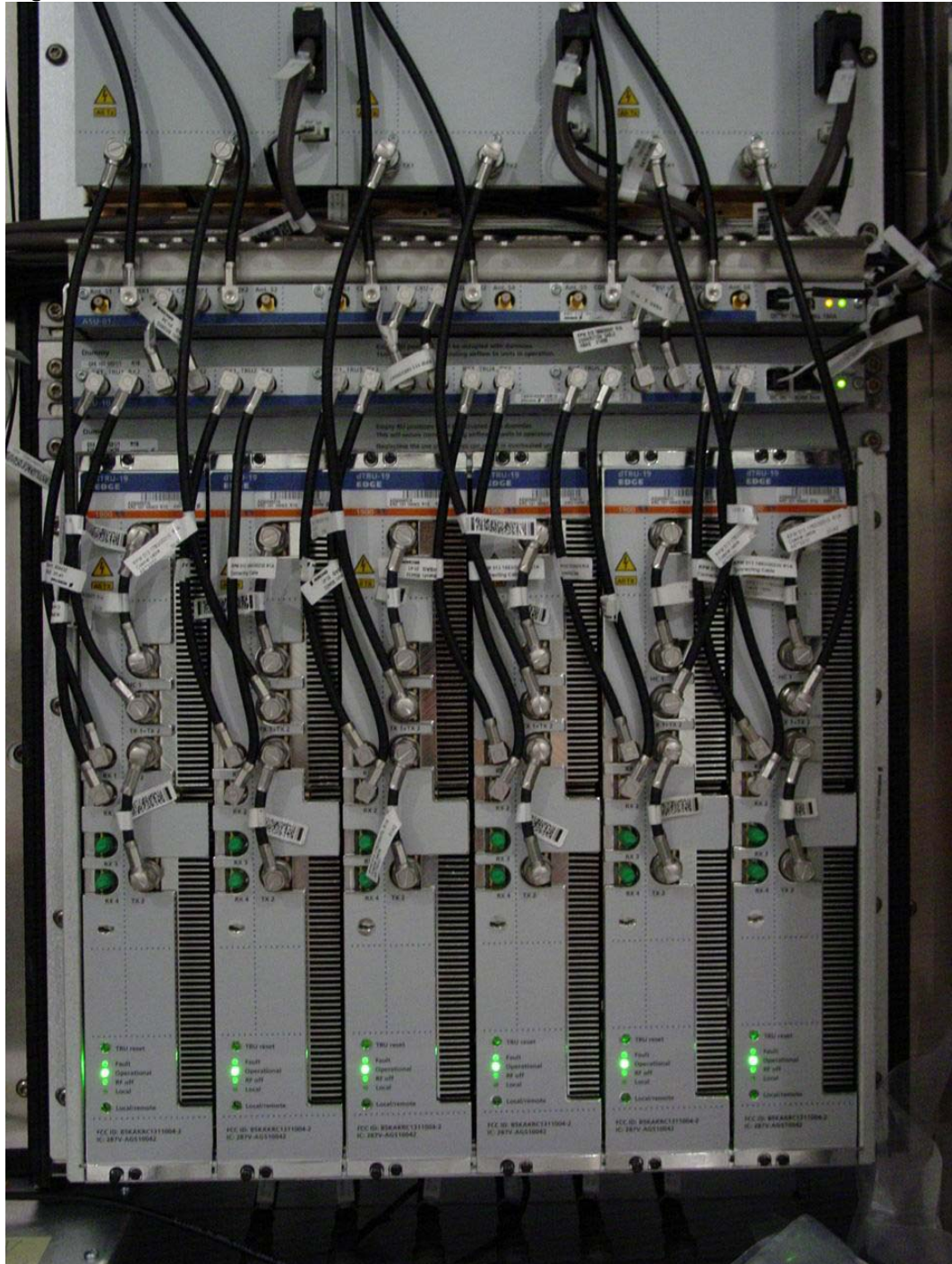
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Left bottom shelf view



Sign:.....

Right bottom shelf view



FCC ID: B5KBKRC1311004-2

Transceiver Unit KRC 131 1004/2, R1B

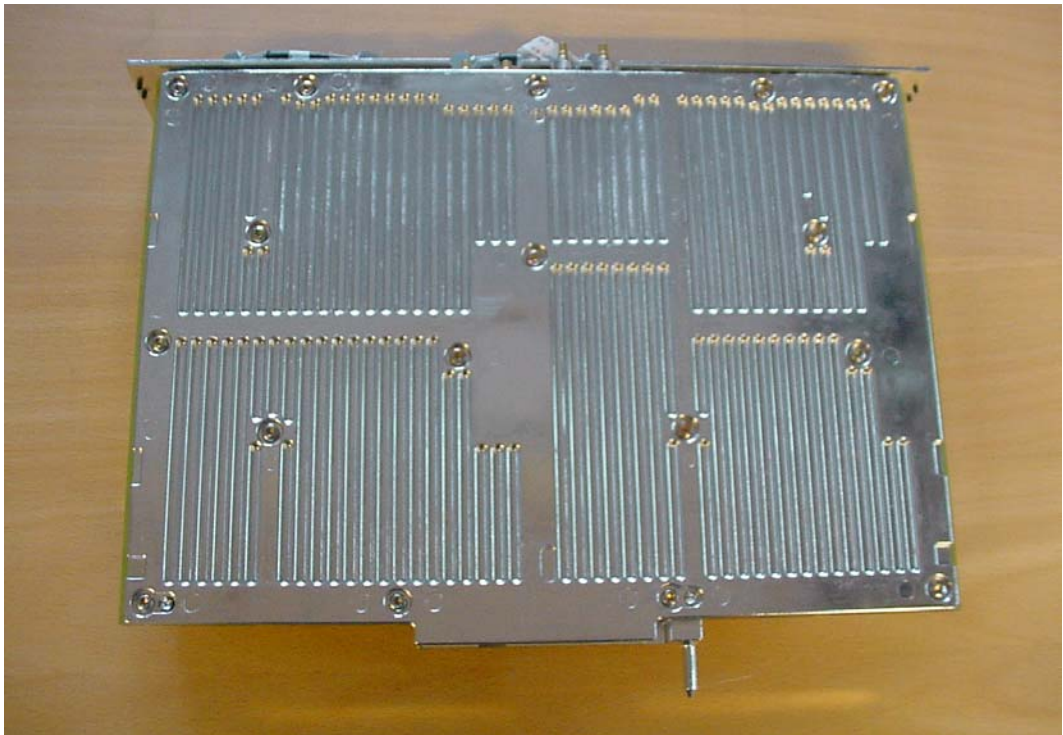
Front side



Rear side



Bottom side



Sign:.....

REPORT

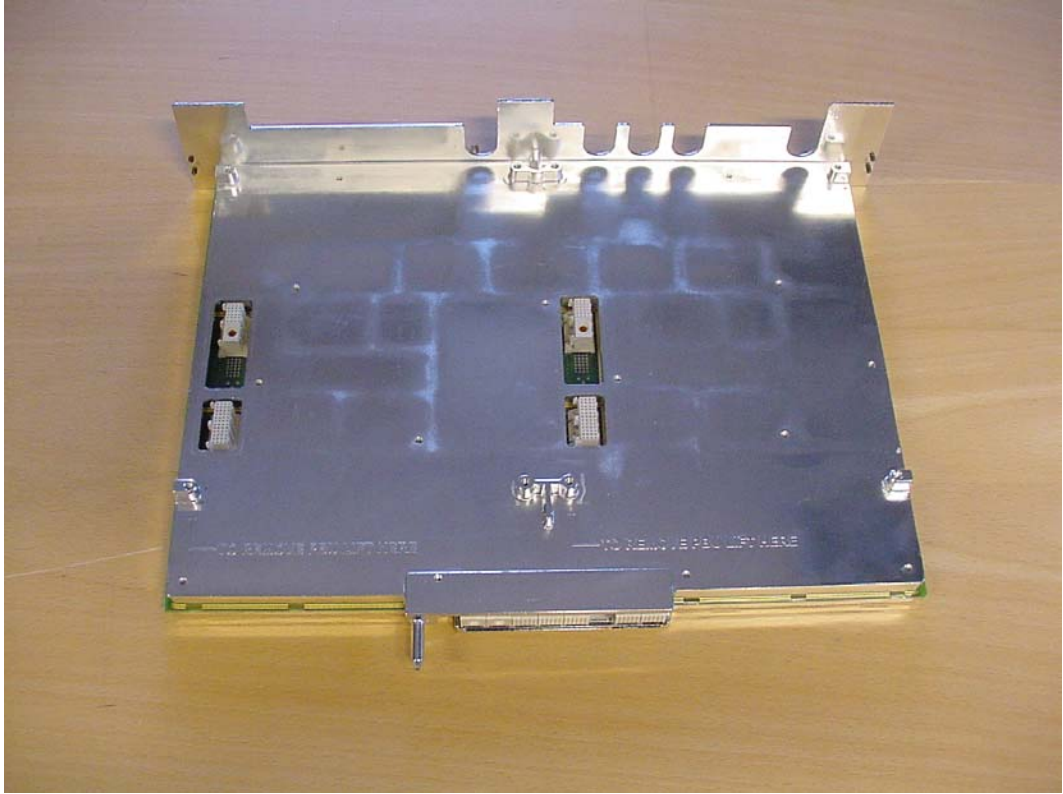
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Beteckning/Reference
F310972-F24 rev1

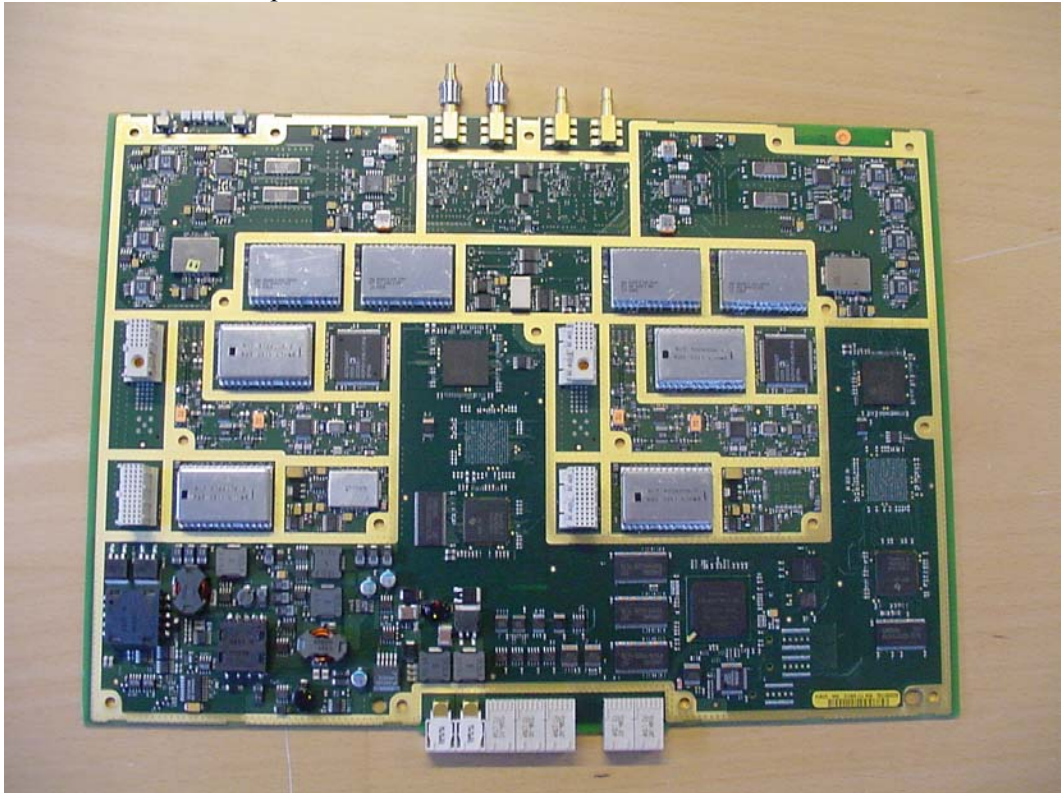
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Main board

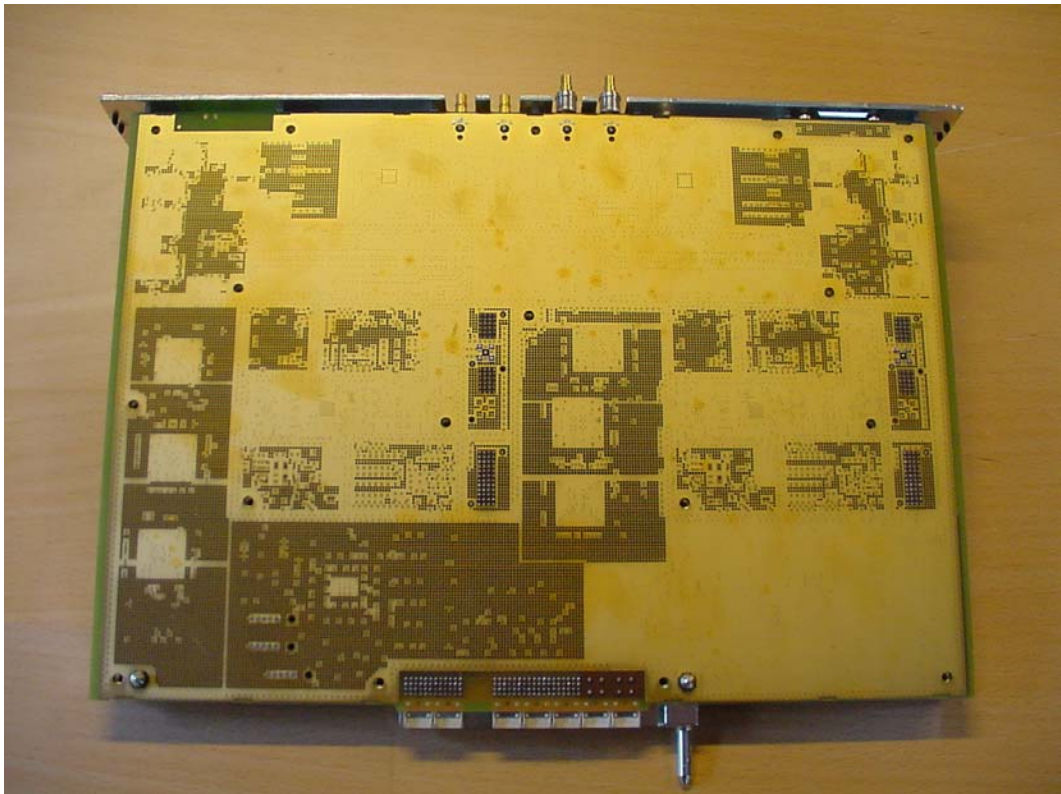


Sign:.....

Main board- PCB component side

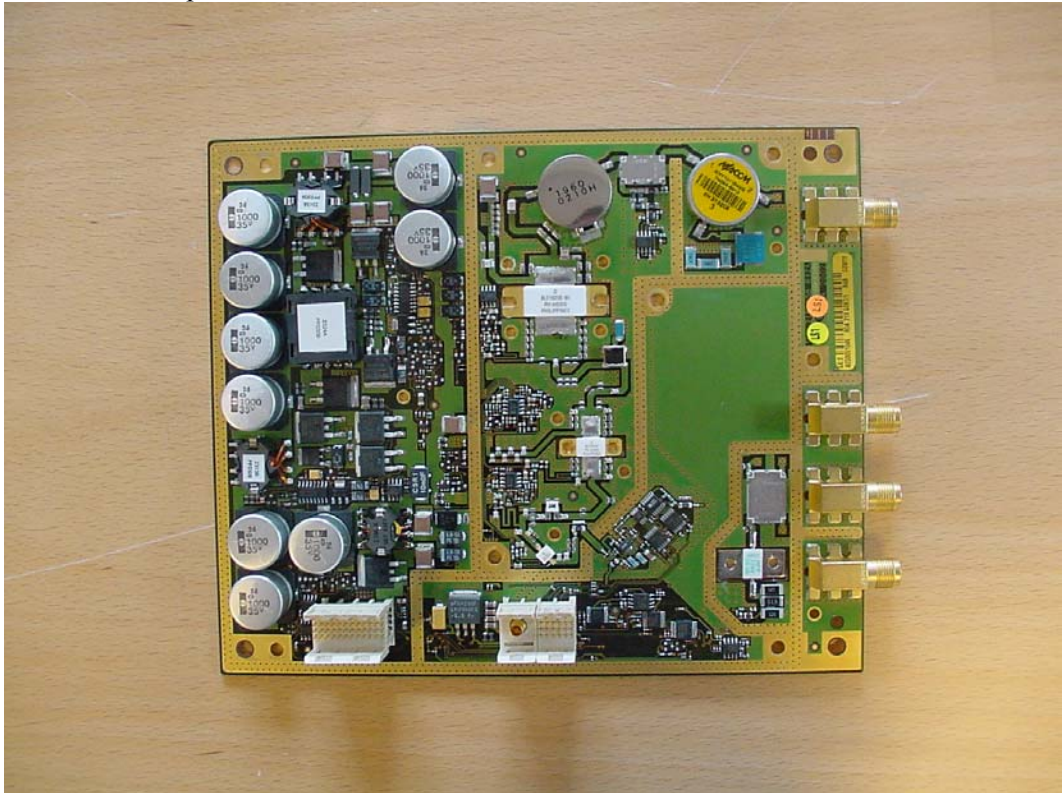


Main board- PCB rear side

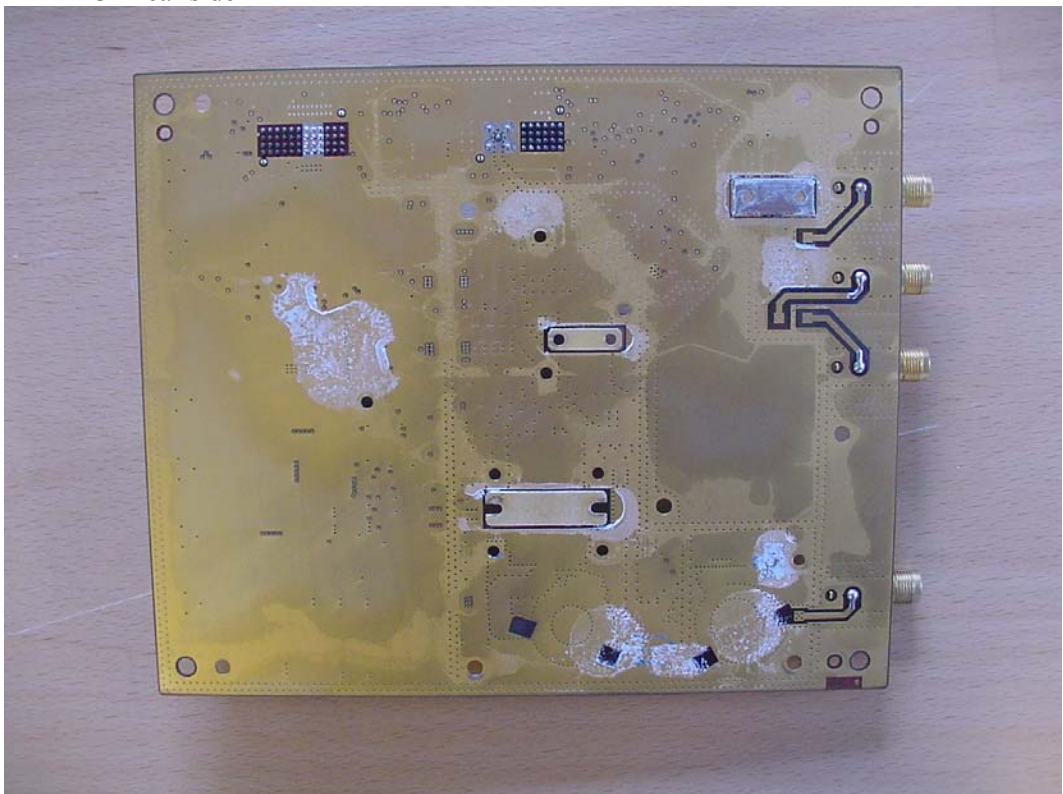


FCC ID: B5KBR1311004-2

PA1- PCB components side



PA1- PCB rear side



Sign:.....

REPORT

FCC ID: B5KBRRC1311004-2

Datum/Date
2003-06-23

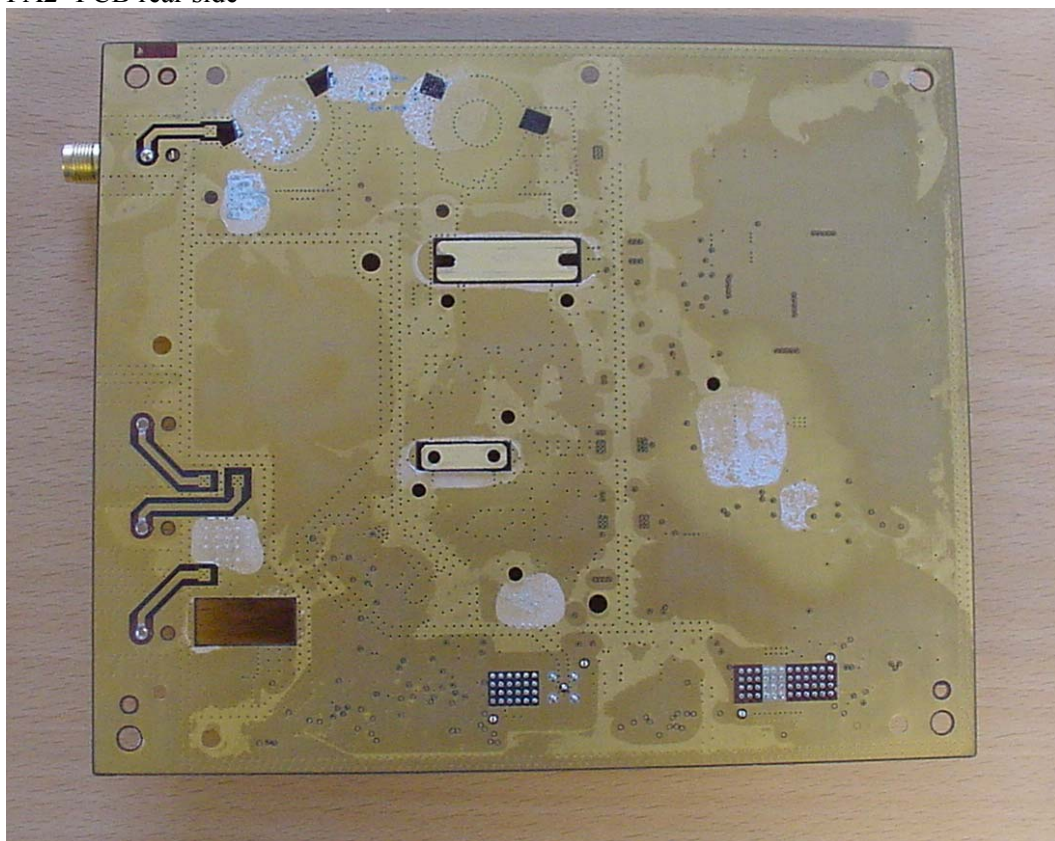
Betekning/Reference
F310972-F24 rev1

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PA2- PCB components side



PA2- PCB rear side



Sign:.....