



# REPORT

issued by an Accredited Laboratory



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Datum/Date

2003-09-25

Beteckning/Reference

F316873-F24

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## Equipment Authorization measurements on GSM Base station Transceiver unit with FCC ID: B5KBRKRC1311004-2 in cabinet RBS 2207

(4 enclosures)

### Test object

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

### Summary

Standard	Compliant	Enclosure	Remarks
FCC CFR 47			
2.1053 Field strength of spurious radiation	Yes	2	

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FCC ID: B5KBR1311004-2

## Description - Equipment Under Test (EUT)

Equipment: GSM Base station transceiver 1900 MHz

Tx Frequency range: 1930.2-1989.2 MHz

Tested Channels:

Radiated measurements:

ARFCN	Frequency	Configuration
512	1930.2 MHz	dTRU with internal combiner plus TCC
635	1954.8 MHz	dTRU with internal combiner
660	1959.8 MHz	dTRU with internal combiner
785	1984.8 MHz	dTRU without internal combiner
810	1989.8 MHz	dTRU without internal combiner

One modulation tested at a time. Three modes tested at the same time to simulate worst case: with internal combiner, without internal combiner and with internal combiner plus TCC.

Manufacturer's representative: Per Helmersson, Ericsson AB

## Purpose of test

The purpose of the tests is to verify compliance to the performance characteristics specified in FCC CFR47 when the EUT is operational in the 2207 cabinet.

## Reservation

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

## Reference

Measurements were done according to relevant parts of the following standards:  
ANSI/TIA/EIA-603-2000  
J-STD007A Vol 1  
ANSI/TIA/EIA 136-280-B-2000

## Delivery of test object

The test object was delivered: 2003-09-12

## Test engineers

Nina Johansson  
Peter Grahn

## Test witness

Mats Iregren, Ericsson AB



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

Date	Temperature	Humidity
2003-09-23	21 °C ± 3 °C	42 % ± 5 %
2003-09-24	21 °C ± 3 °C	42 % ± 5 %

### Test set-up and Procedure

The measurement procedure is per ANSI/TIA/EIA-603. 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. The transmitter was modulated with pseudorandom data during the measurements.

Measurement equipment	Calibration Due	SP number
Anechoic chamber	-	15:115
R&S ESI 40	2004-07	503 125
Control computer	-	503 479
Software: R&S ES-K1, ver. 1.60	-	-
Chase Bilog antenna CBL 6111A	2003-12	503 182
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 610, Temperature and humidity meter	2003-12	502 658

The test set-up during the spurious radiation measurements can be seen in the pictures on page 3.



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## Results

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

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	Horizontal
30-20 000	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	Horizontal
30-20 000	All emission > 20 dB below limit	All emission > 20 dB below limit
Measurement uncertainty		4.7 dB

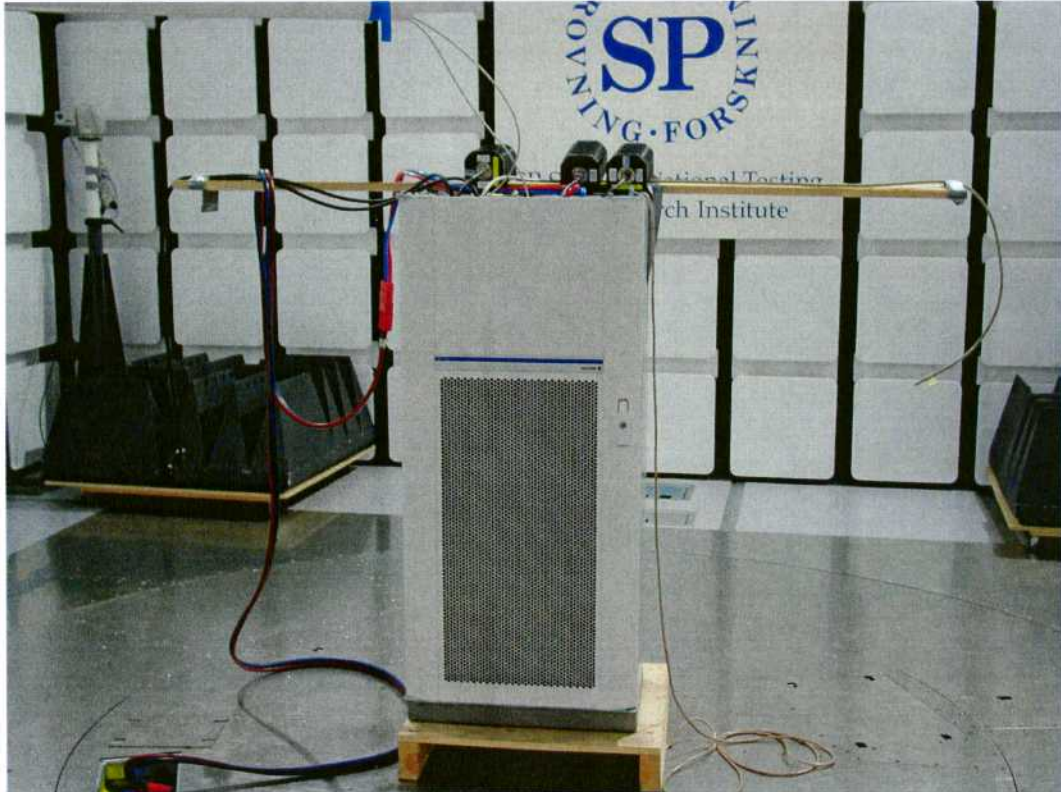
## Limits

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
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Cabinet 2207, 24 V DC:





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## EUT Hardware configuration list RBS 2207

Unit	Product Number	Serial Number	Revision
Cabinet	BFM 107 137/1	A534305579	R1A
ACCU-01	BMG 980 07/1	S792065777	R2A
FCU-01	BGM 136 1001/2	B991152935	R3A
DC FILTER-01	KFE 101 1145/1	X181032307	R1C
CDU shelf	BFL 119 406/1	X71	R3A
CDU-G 19	BFL 119 153/1	A40003K800	R5A
CDU-G 19	BFL 119 153/1	A40003KAUC	R5A
CDU-G 19	BFL 119 153/1	A40003S9K4	R5A
PSU/DXU/TRU shelf	BFX 901 27/1	S76	P1A
IDM 02	BMG 980 28/1	T671100801	RA
PSU-DC	BML 231 202/1	TL92154183	R3B
PSU-DC	BML 231 202/1	TL92121177	R3B
DXU-21A	BOE 602 14/1	X510231705	R10B
Dummy	SXK 107 5029/1	S76	R1C
dTRU-19 EDGE	KRC 131 1004/2	AE50094077	R1G
dTRU-19 EDGE	KRC 131 1004/2	AE50098312	R1G
dTRU-19 EDGE	KRC 131 1004/2	AE50094075	R1G <sup>1)</sup>
dTRU-19	KRC 131 1004/1	AE50235941	R5B <sup>2)</sup>

<sup>1)</sup>This dTRU was only used during the measurements in EDGE mode

<sup>2)</sup>This dTRU was only used during the measurements in GSM mode

Software	Revision
LZY 213 1192_2	P2FD

### Description of EUT

The EUT is a 1900 MHz GSM Base station configured with 3 double transceiver units that are designed to provide mobile telephone users with a connection to a mobile network or the PSTN.

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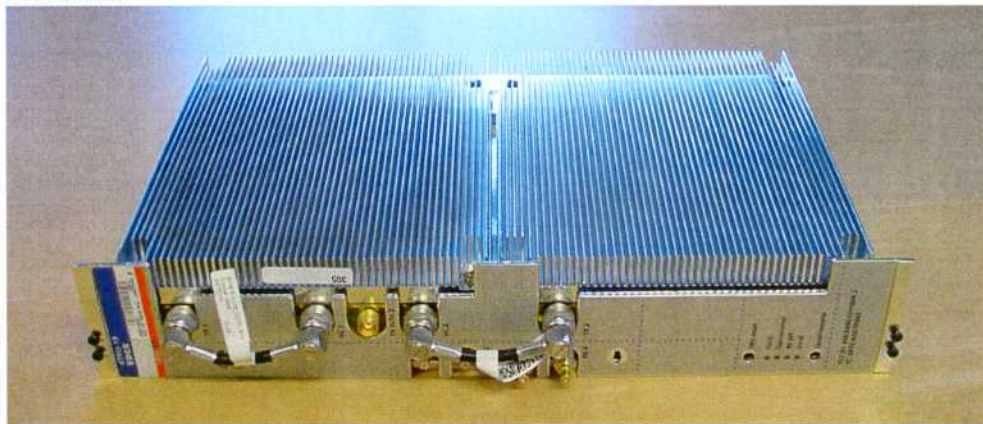
**Photos**

**Transceiver Unit KRC 131 1004/2, R1G**

FCC ID label:



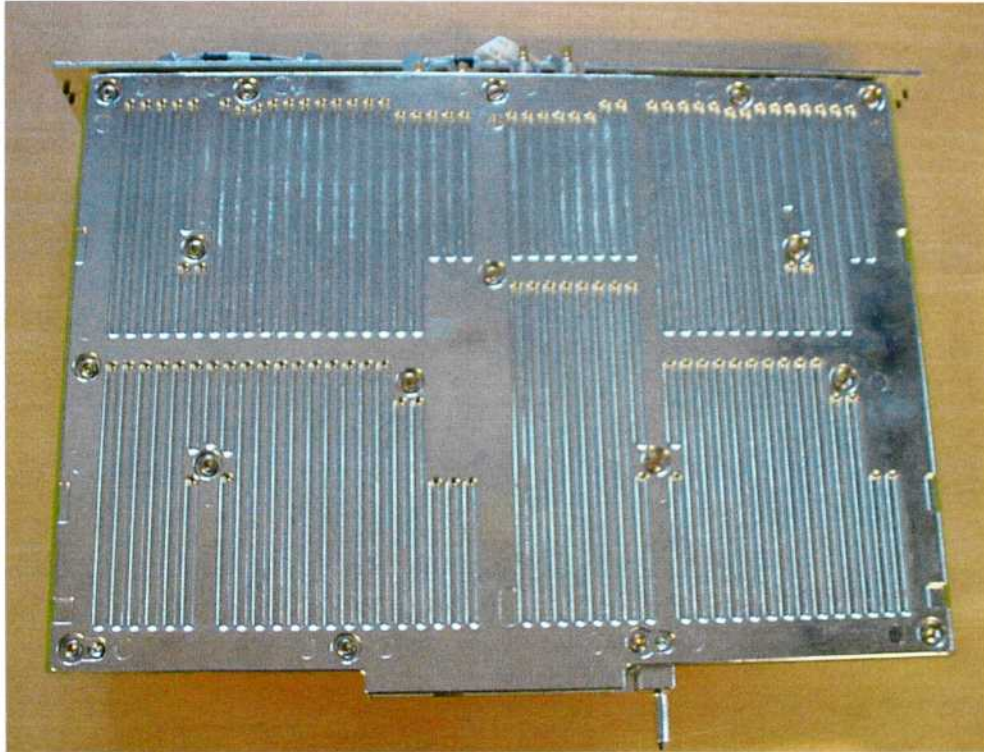
Front side



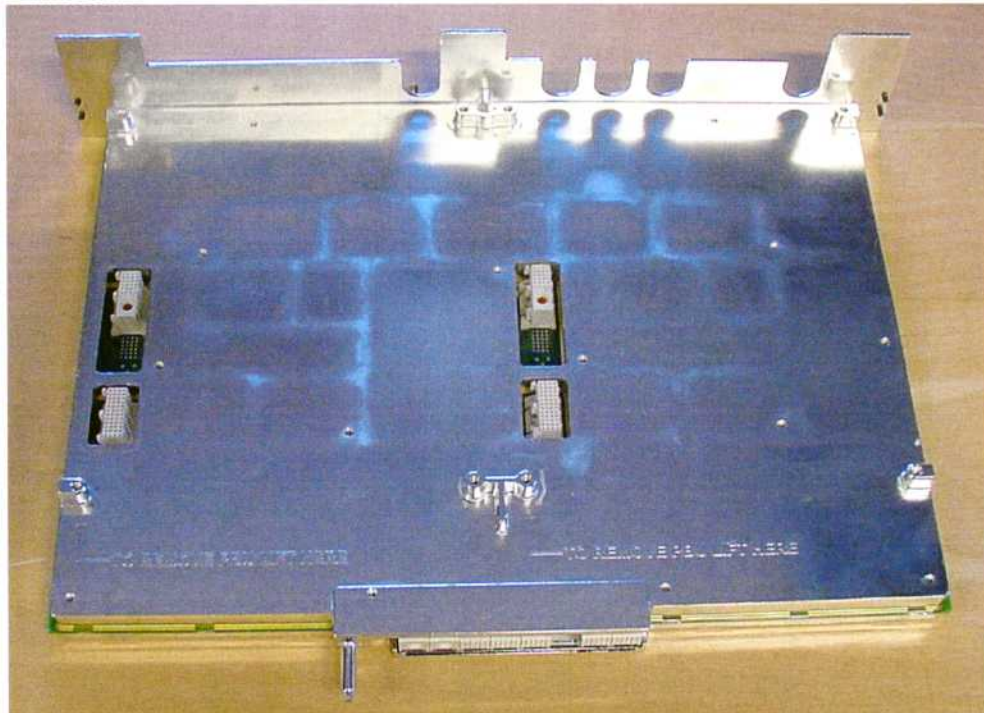
Rear side



Bottom side



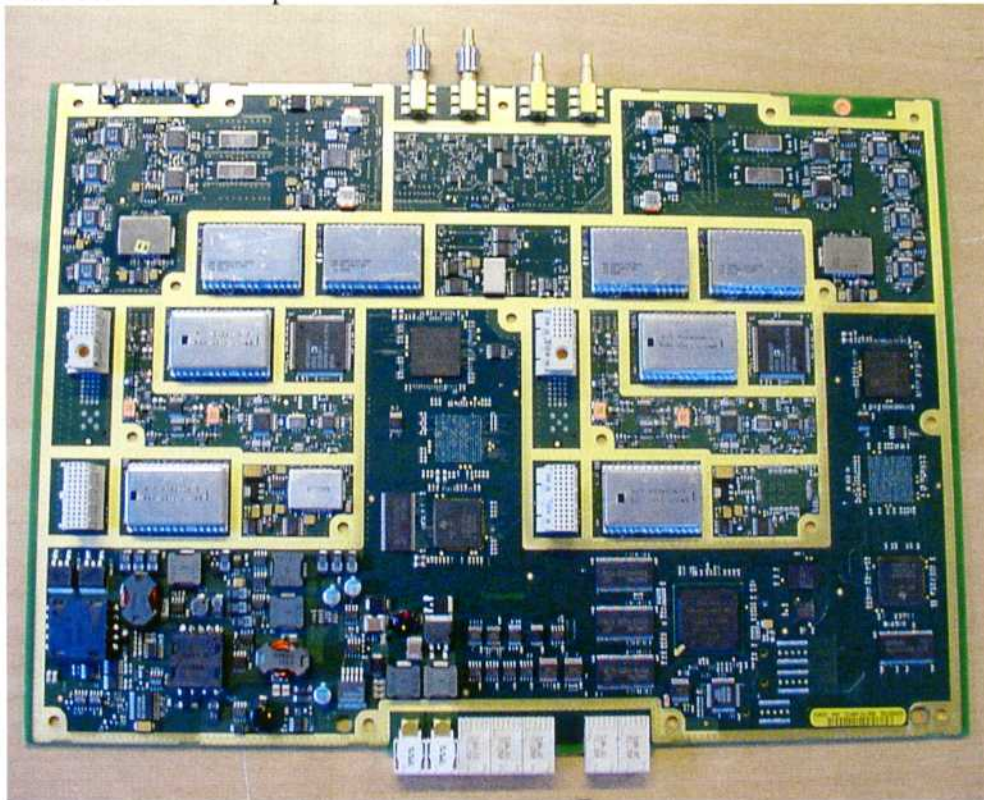
Main board



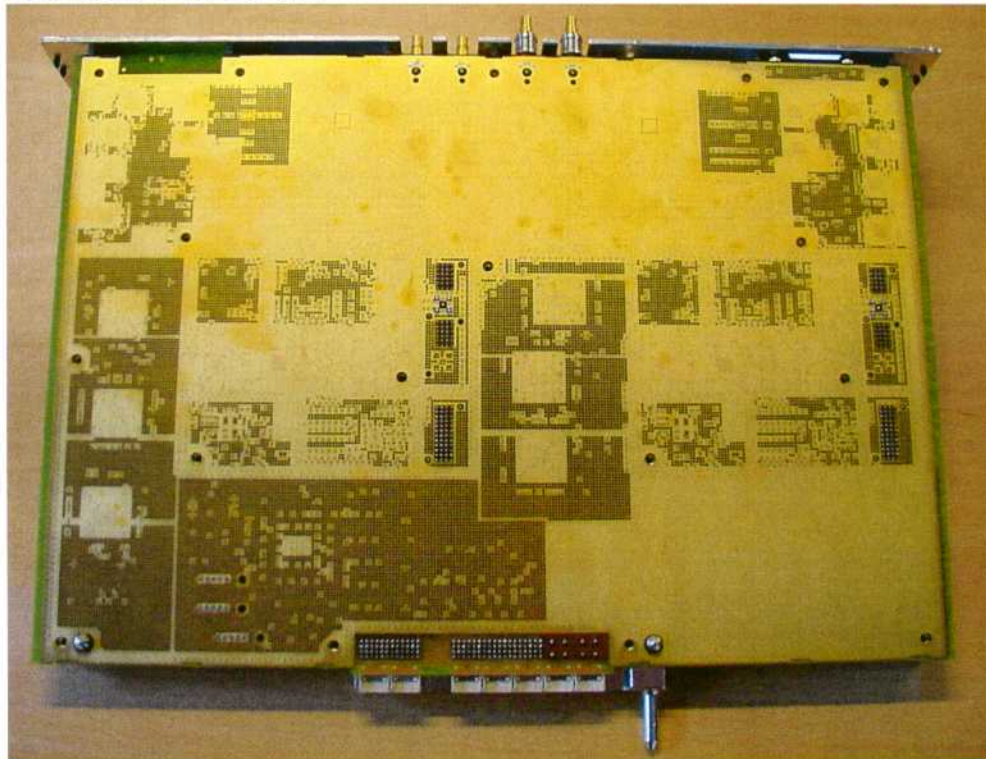


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Main board- PCB component side

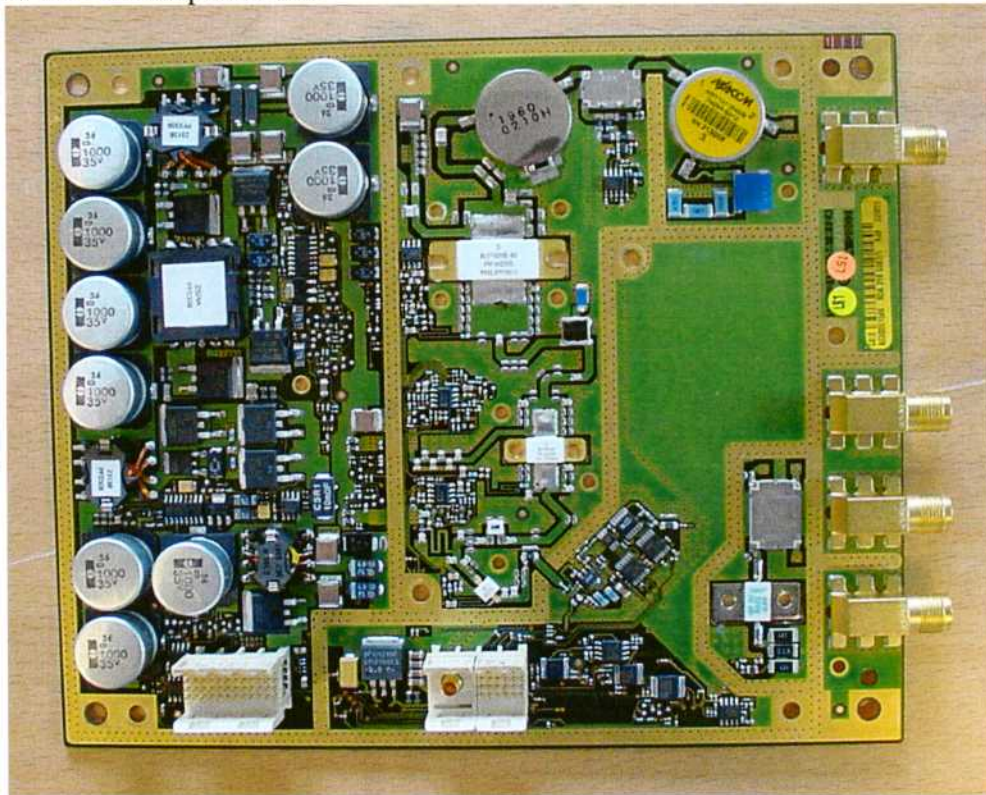


Main board- PCB rear side

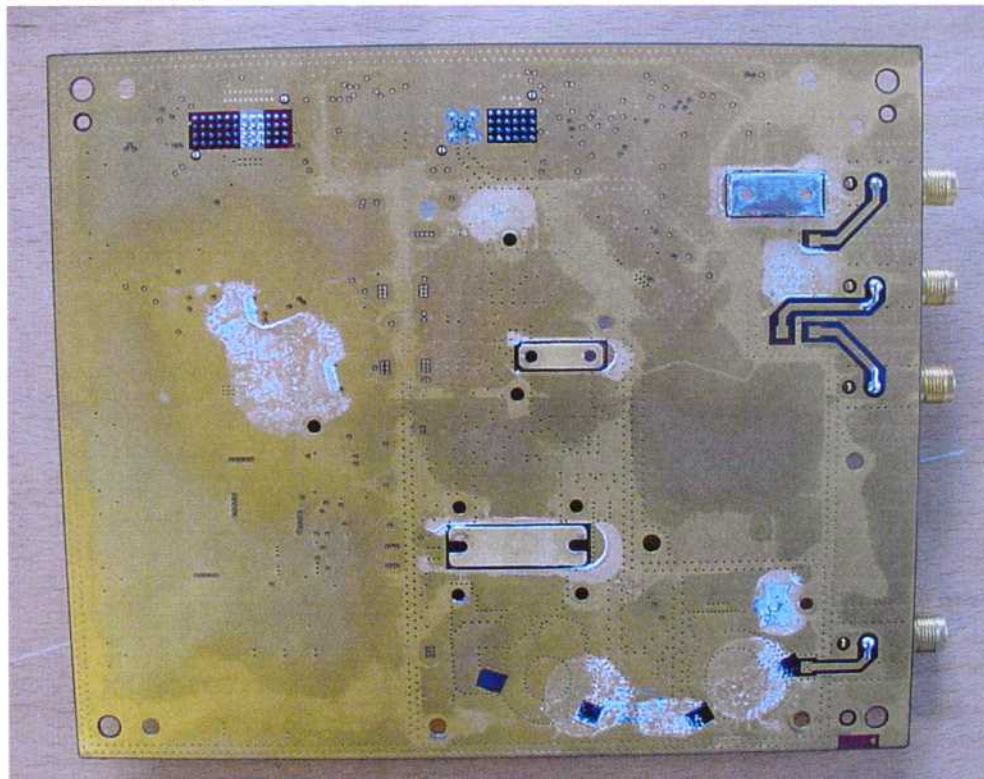


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PA1- PCB component side

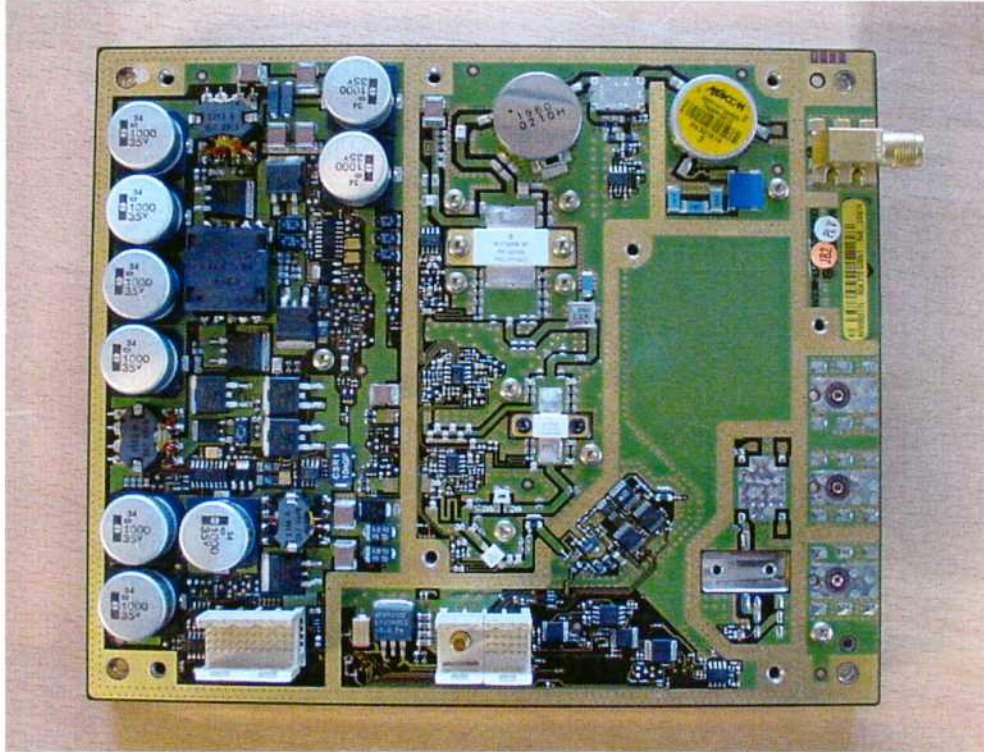


PA1- PCB rear side

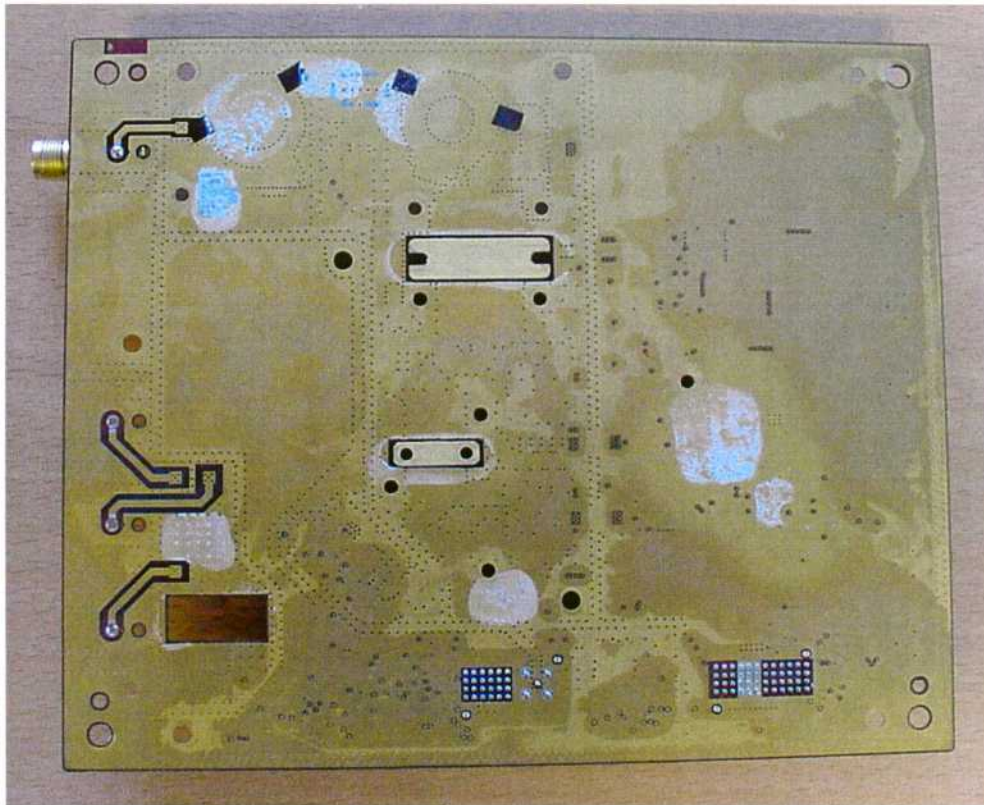


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PA2- PCB component side

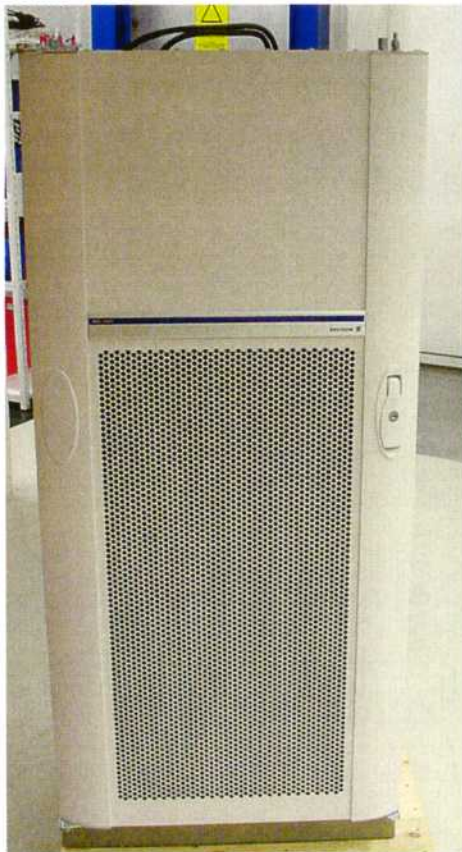


PA2- PCB rear side

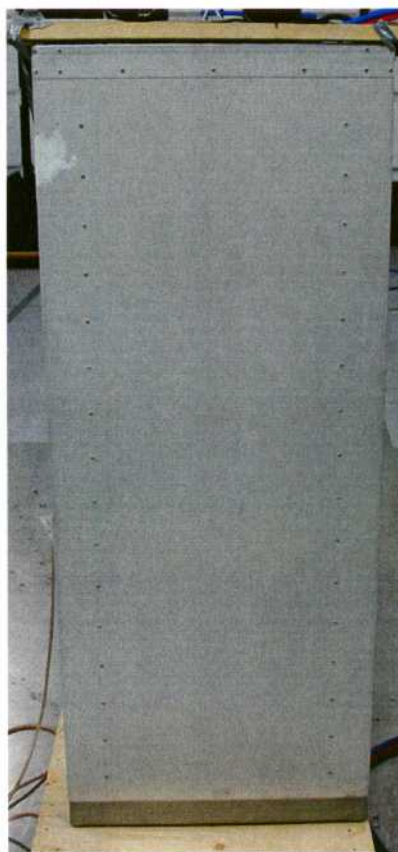


**RBS 2207 Cabinet, 24 Volt DC system**

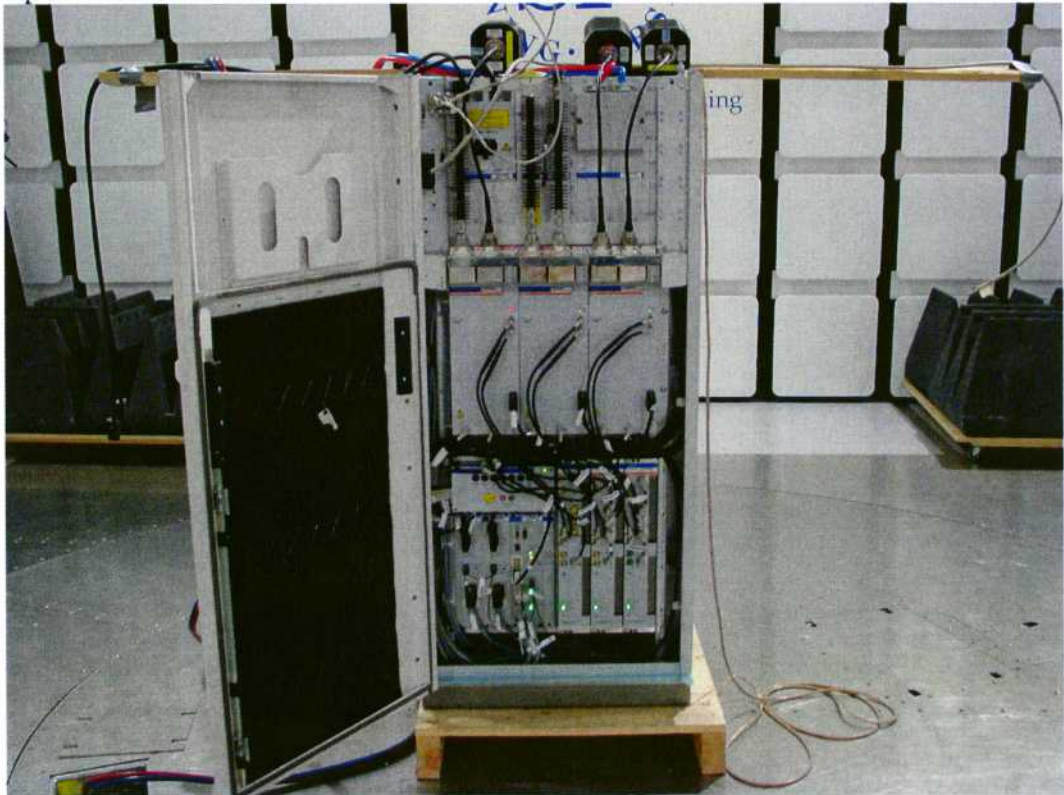
Front view



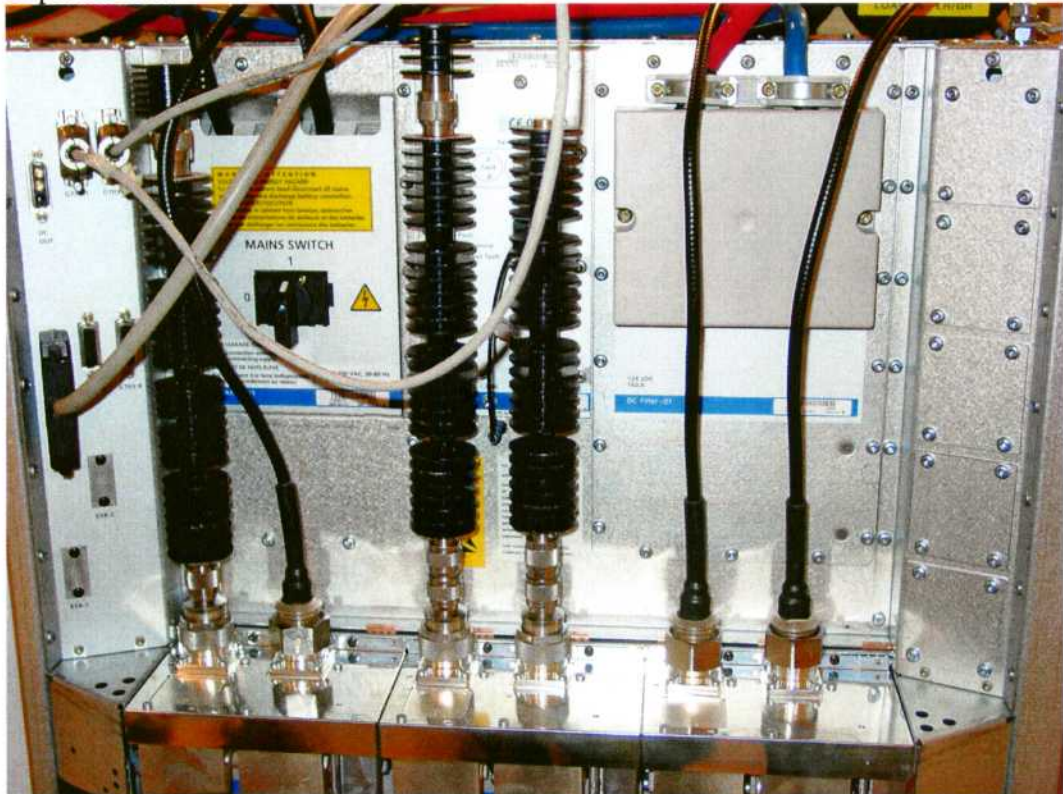
Rear view



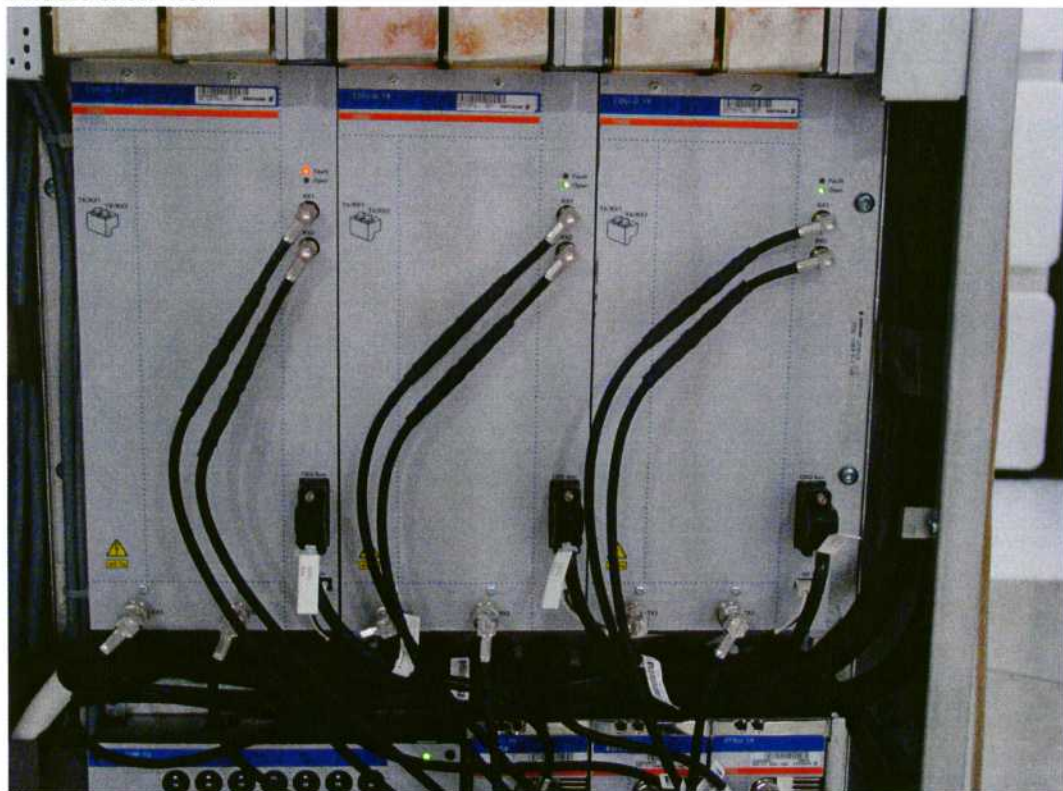
Open door view



Top shelf view



Middle shelf view



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Bottom shelf view

