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REPORT
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Date	Reference	Page
2005-02-10	F501800-F22	1 (1)

Handled by, department
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Equipment Authorization measurements on GSM Base station Transceiver unit with FCC ID: B5KCKRC1311005-1 in the RBS 2107 cabinet

(4 appendices)

Test object

Transceiver Unit dTRU-8, KRC 131 1005/1, R2A

Summary

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

SP Swedish National Testing and Research Institute
Electronics - EMC

Jan Welinder
Technical Manager

Jonas Bremholt
Technical Officer

Description - Equipment Under Test (EUT)

Equipment: GSM Base station transceiver 800 MHz

Tx Frequency range: 869.2-893.8 MHz

Tested Channels:

dTRU	ARFCN	Frequency	Configuration
No 1	128	869.2 MHz	With internal combiner
	153	874.2 MHz	With internal combiner
No 2	190	881.6 MHz	With internal combiner+TCC
No 3	226	893.6 MHz	Without internal combiner
	251	893.8 MHz	Without internal combiner

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

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 RBS 2107 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

Delivery of test object

The test object was delivered: 2005-02-07

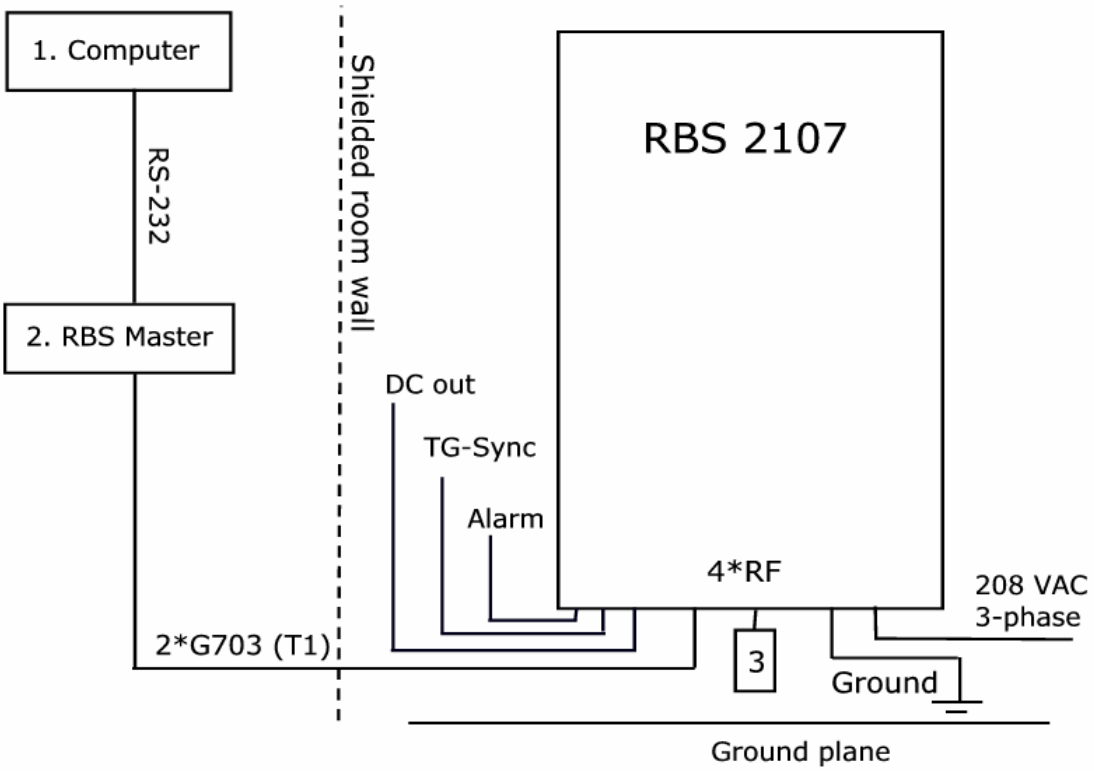
Test engineers

Jonas Bremholt and Fredrik Isaksson

Test witnesses

Dan Westberg and Björn Rosenquist, Ericsson AB

Test set-up



1. Computer, with software RBSMMI ver. R9A02
2. Ericsson RBS Master 2 LPY 107 1007/1 software ver. R4C01
3. 4 Dummy loads (50 ohm)

Interfaces:	**Type of port:**
Power: 3 phase 208 VAC phase – to – phase voltage	AC mains
Antenna: Coaxial cable 50 ohm	Antenna
G703: T1, shielded multi-wire (120 ohm)	Telecom
TG-sync: Shielded multi-wire	Signal
Alarm: Unshielded 4 wire	Signal
DC output power: Unshielded 2-wire	DC power

Field strength of spurious radiation measurements according to 47CFR 2.1053

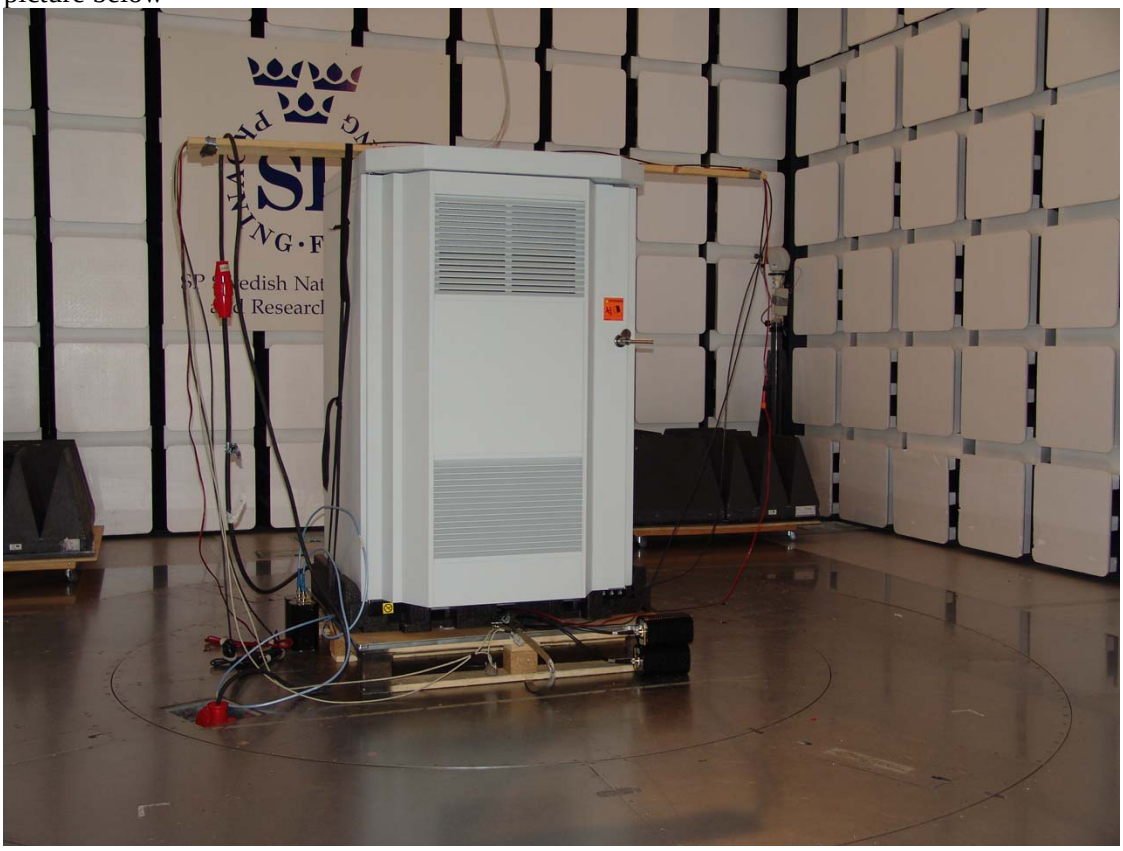
Date	Temperature	Humidity
2005-02-08	21 °C ± 3 °C	20 % ± 5 %

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 26	2005-08	503 292
Control computer	-	503 479
Software: R&S ES-K1, ver. 1.60	-	-
Chase Bilog antenna CBL 6111A	2006-08	503 182
EMCO Horn Antenna 3115	2006-11	502 548
MITEQ Low Noise Amplifier	2005-04	503 285
Testo 615, Temperature and humidity meter	2005-09	503 505

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



Results

The three modes tested at the same time: with internal combiner, without internal combiner and with internal combiner+TCC.
Nominal Voltage: 208 V AC (Phase-to-phase voltage)
Output power TCC: 49 dBm
Output power without internal combiner: 46 dBm
Output power with internal combiner: 43 dBm

Modulation: **GMSK**

Frequency (MHz)	Spurious emission level (dBm)	
	Vertical	Horizontal
30-10 000	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

EUT Hardware configuration list RBS 2107

Unit	Product Number	Serial Number	Revision
Cabinet	1/SEB 112 1140/8	TU85378846	R5A
Cabinet Gray	BYB 415 04/08	TU85378858	R2A
CLU	BPD 104 101/1	S781279119	R2B
FCU-01	BGM 136 1001/3	B991837670	R2B
IDM 03	BMG 980 29/1	T671221998	R3A
PSU-shelf	BFL 119 431/1	TU85378882	R1A
PSU-AC	BML 231 202/1	TL93439764	R3C
PSU-AC	BML 231 202/1	TL93439633	R3C
PSU-AC	BML 231 202/1	TL93439690	R3C
BFU-21	BMG 980 13/1	B991617972	R2B
CDU shelf	BFL 119 424/1	- -	R1A
CDU-J 8	BFL 119 429/1	A40004VY2V	R1B
CDU-J 8	BFL 119 429/1	A40004VY2W	R1B
CDU-J 8	BFL 119 429/1	A40004VY2X	R1B
6xBias injectors	KRY 101 1587/1	- -	R3A
TRU shelf	BFX 901 39/1	TU85378834	R1A
Dummy	SXK 107 9314/1	- -	R1C
Dummy	SXK 107 9314/1	- -	R1C
DXU-21A	BOE 602 14/1	TU84969162	R14A
TMA-CM-01	SDK 107 881/1	BF31259330	R1C
dTRU-8	KRC 131 1005/1	AE51162048	R2A
dTRU-8	KRC 131 1005/1	AE51162047	R2A
dTRU-8	KRC 131 1005/1	AE51162049	R2A
Dummy	SXK 107 5031/2	- -	R1B
Dummy	SXK 107 5031/2	- -	R1B
ACCU-32	BMG 980 26/1	T341010404	R3A
EIM-T1	NCD 901 26/11	- -	R1A
EIM-T1	NCD 901 26/11	- -	R1A
EIM-S1	NCD 901 26/13	- -	R1A

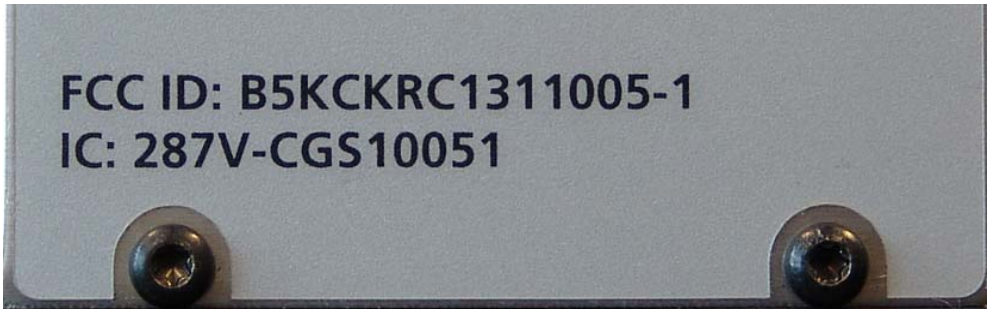
Software	Revision
R11A	R07A

Description of EUT

The EUT is a dTRU that can be installed in a 800 MHz GSM Base station configured with up to 3 double transceiver units that are designed to provide mobile telephone users with a connection to a mobile network or the PSTN.

Photos
Transceiver Unit KRC 131 1005/1, R2A

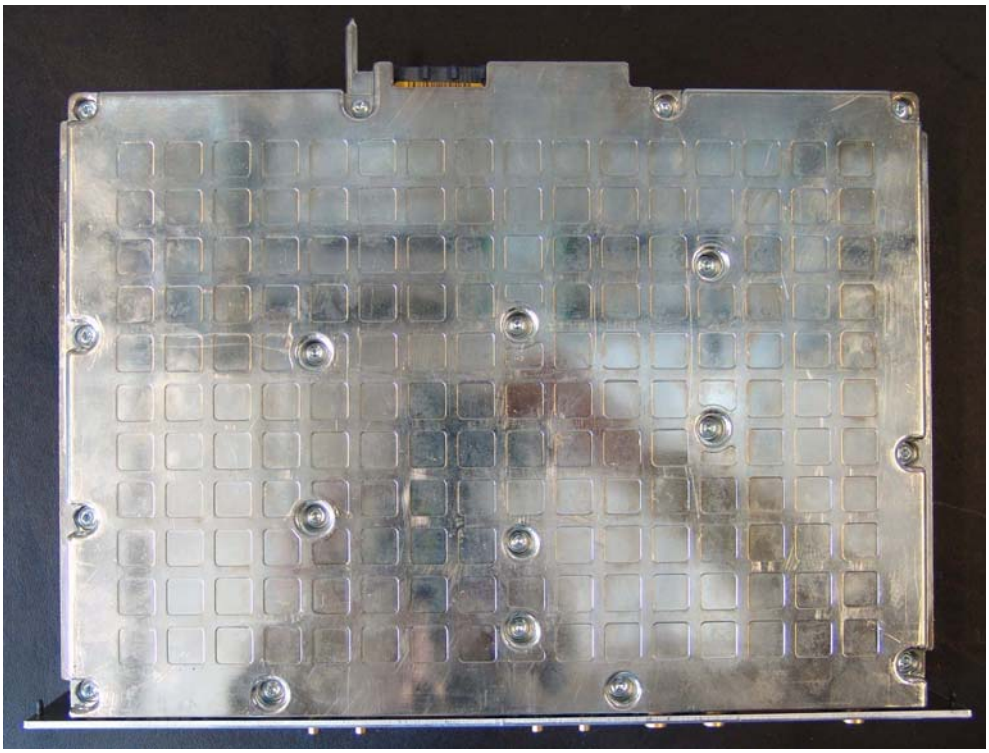
FCC ID Label:



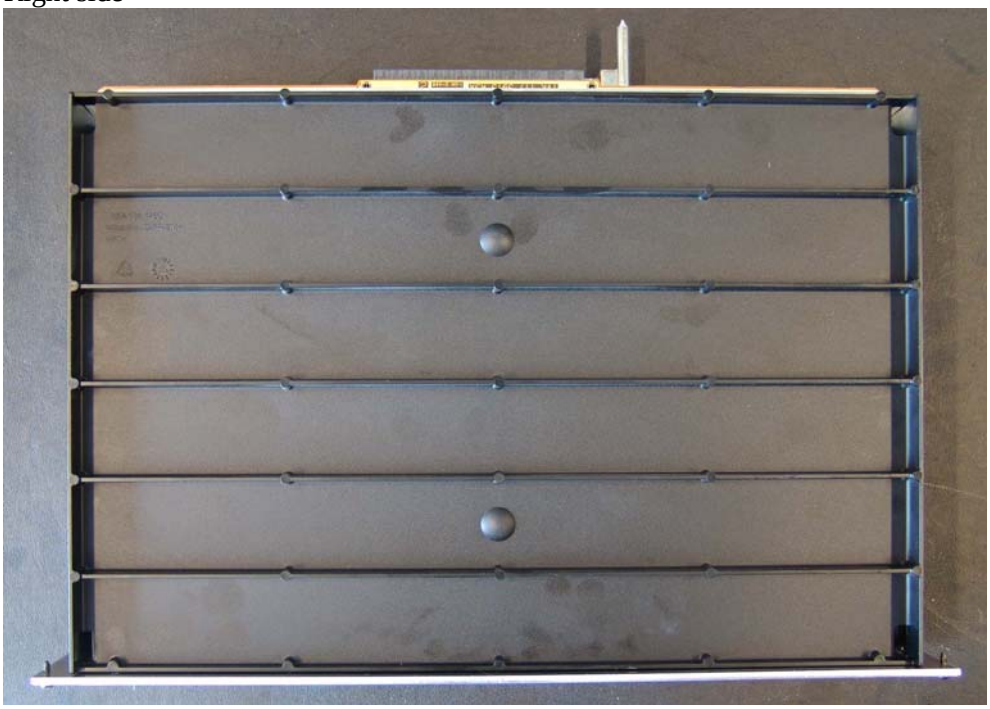
Front side

Rear side

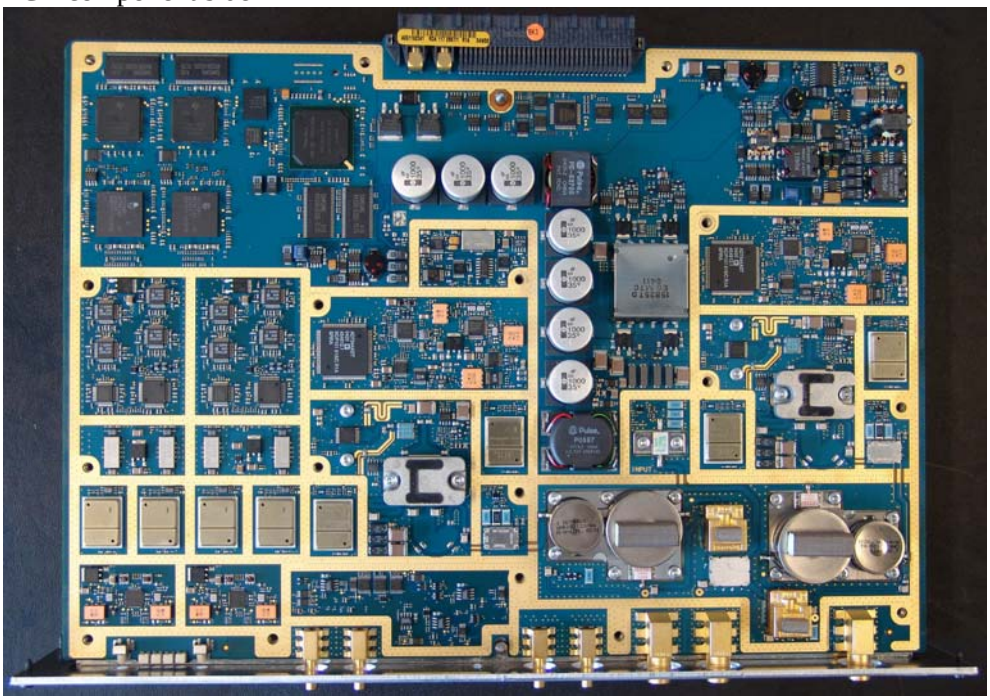
Left side



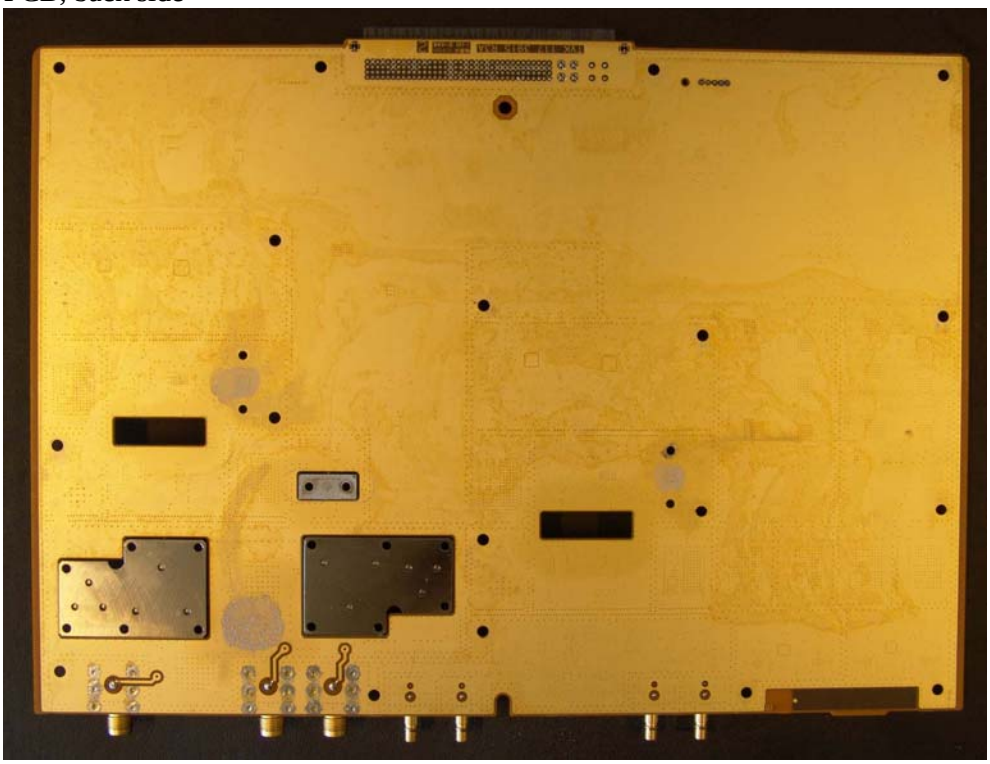
Right side



PCB component side



PCB, back side



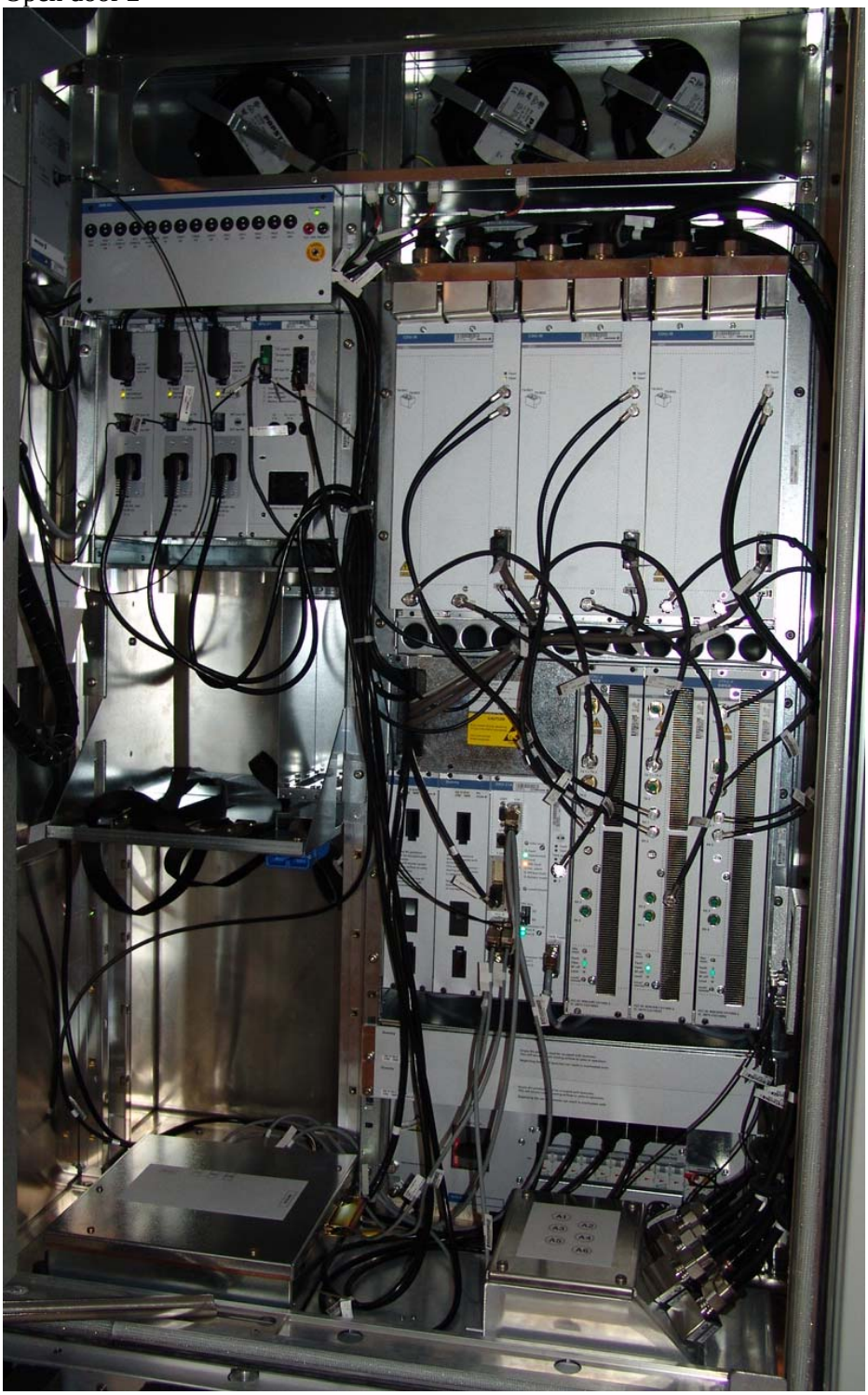
RBS 2107 Cabinet

Front view

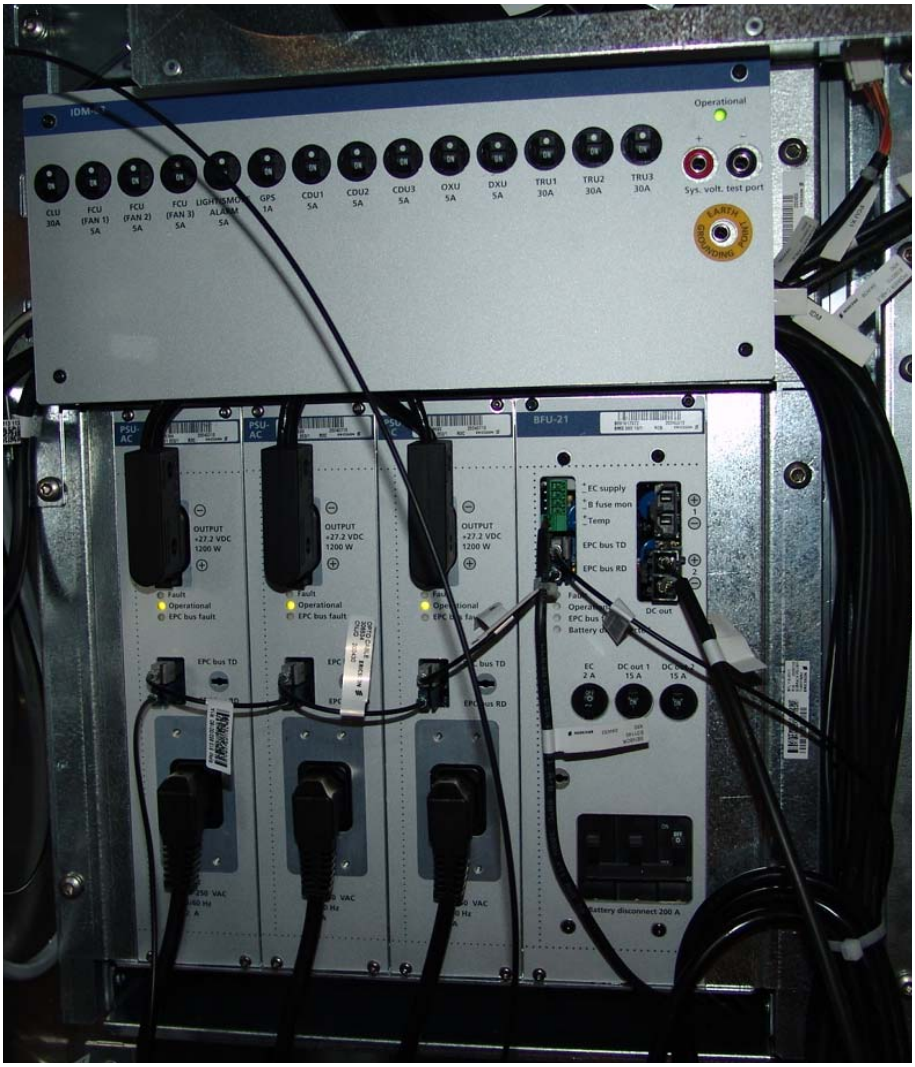
Rear view

Open door 1

Open door 2



PSU shelf


Operational
Sys. volt. test port
BFU-21
OUTPUT
+27.2 VDC
1200 W
Fault
Operational
EPC bus fault
EC supply
B fuse mon
Temp
EPC bus TD
EPC bus RD
DC out
Battery disconnect 200 A

CDU shelf view

dTRUshelf view