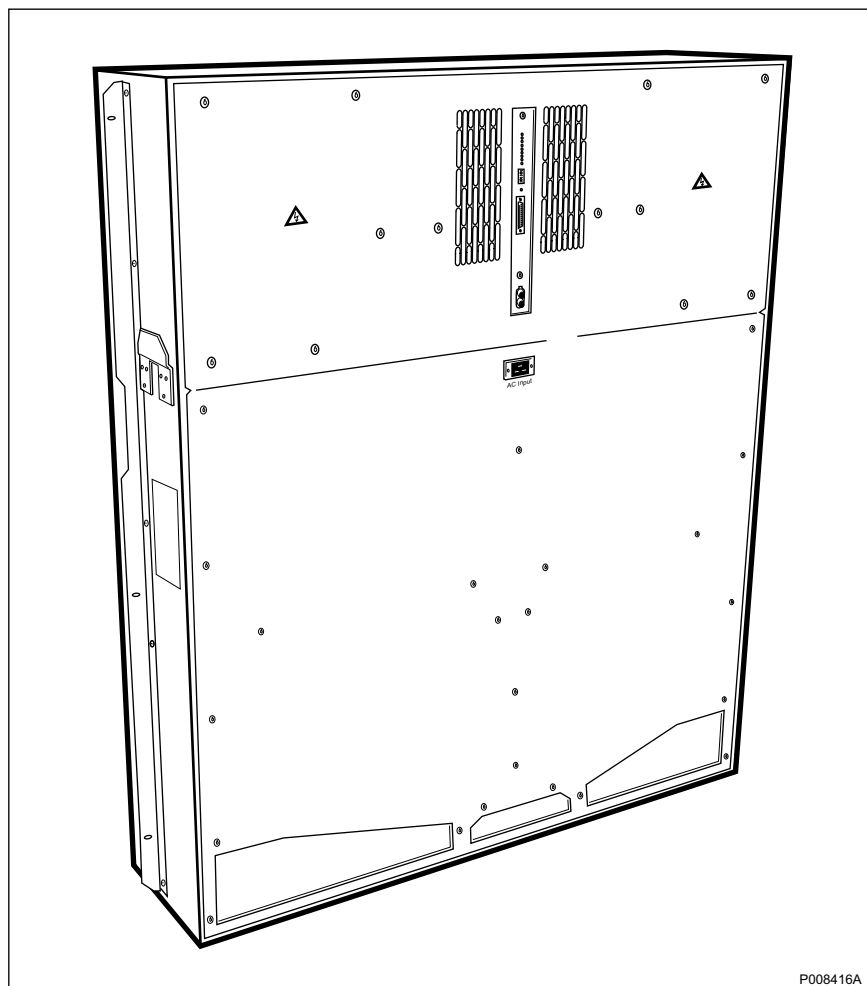


Heat Exchanger Climate Unit

Climate Unit for RBS 2106

Unit Description

The Heat Exchanger Climate Unit heats or cools the RBS 2106 in order to keep the cabinet's operating temperature within specified limits. The unit contains a heat exchanger, a heater, air-ducts and fans.



Contents

1	Product Overview	3
1.1	Main Functions	3
2	Dimensions	3
3	Power Consumption	3
4	Function Description	3
4.1	Heat Exchanger	5
4.2	Heater	5
4.3	CCU	5
4.4	AC/DC Converter	6
4.5	Autotransformer	6
5	Interfaces	7
5.1	Signal and Power	7
5.2	Operator Interface	7

1 Product Overview

1.1 Main Functions

The Heat Exchanger Climate Unit maintains the cabinet operating temperature within specified limits by heating or cooling.

2 Dimensions

The physical characteristics of the Heat Exchanger Climate Unit are shown in the table below.

Table 1 Heat Exchanger Climate Unit Size and Weight

Height	Width	Depth	Weight
1250 mm	1050 mm	250 mm	97 kg

3 Power Consumption

The power consumption information for the Heat Exchanger Climate Unit is shown in the table below.

Table 2 Power Consumption

Max. AC Power Consumption	Max. DC Power Consumption
2100 W (at 230 V 50 Hz)	600 W

4 Function Description

The block diagram of the Heat Exchanger Climate Unit is shown in the figure below.

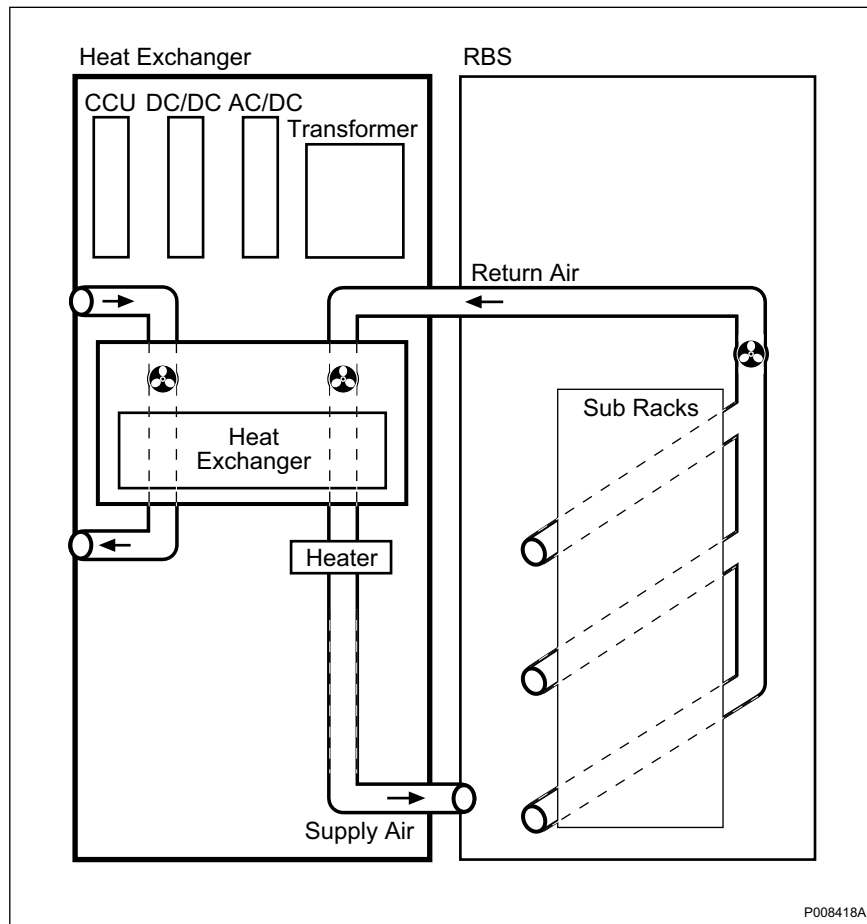


Figure 1 Block Diagram

The Heat Exchanger Climate Unit consists of the following units:

- Heat exchanger
- Heater
- Climate Control Unit (CCU)
- AC/DC Converter
- Transformer

4.1 Heat Exchanger

The heat exchanger consists of a cross-flow heat exchanger and internal and external air circuit fans.

Outside (ambient) air is forced through one side of the heat exchanger by DC-powered fans. Once there it cools the inside air, which circulates through the other side of the heat exchanger.

Ambient air is used on the 'cool' side of the heat exchanger, and therefore cooling capacity is limited to the temperature outside the cabinet. If the ambient temperature is higher than the cabinet return air temperature, then the external air circulation fan stops to prevent the outside air warming the cabinet.

4.2 Heater

The heater is placed in the internal air circuit and heats the air if the ambient temperature is too low for startup.

The heater is powered by mains voltage, and heats the inside air if the startup temperature inside the cabinet is below -5° C. The heater has a capacity of 2 kW.

The CCU measures the return air temperature and controls the heater.

4.3 CCU

The Climate Control Unit (CCU) is a processor-based plug-in unit, controlling and supervising the climate unit. The CCU provides the following main functions:

- Monitors internal and external temperatures
- Monitors and controls the internal and external fans
- Monitors and controls the heater
- Handles alarms
- Supervises Mains Voltage
- Tests the Heat Exchanger Climate Unit

Backplane and Front Panel

The backplane connectors contain the climate unit internal interfaces to the following:

- DC power

- AC power
- Fans
- Temperature sensors
- Other equipment

The front panel contains the following:

- Indicators
- Connectors for the Environmental and Power Control (EPC) bus
- Connectors for test and control

4.4 AC/DC Converter

The AC/DC converter is used when +24 V DC power supply is shut off. It changes the mains voltage to +24 V DC to supply the internal air circuit fan, the external circuit fan in the heat exchanger, and the CCU.

4.5 Autotransformer

The transformer converts different AC mains input voltages to 230 V AC for feeding the heater, the AC/DC converter and fans.

The transformer has windings for mains input voltages of 200, 208/220, 230, 240 and 250 V AC. The mains voltage is selected with the Voltage Selector Switch.

Connection to 120 V AC is made between phases with 208 V AC selected. Other voltages are connected between phase and neutral.

5 Interfaces

5.1 Signal and Power

The Heat Exchanger Climate Unit has the following external interfaces:

- DC power
- AC mains power
- EPC bus (on the CCU)
- Test and general signals (25-pole D-sub on the CCU)

5.2 Operator Interface

The CCU front panel has the following Man-Machine Interfaces (MMI):

- Test and general signals connector
- EPC bus connectors
- Test button
- Indicators

Test and Control Connector

The test and general signals connector is a 25-pole D-sub connector.

Table 3 Indicators

Indicator	Description	Colour
CCU FAULT	Fault	Red
OPERATION	Operational	Green
EPC BUS	EPC-bus fault	Yellow
HEAT FAULT	Heater fault	Yellow
HE.INT.FAN	Heat exchanger internal fan fault	Yellow
HE.EXT.FAN	Heat exchanger external fan fault	Yellow
PWR.FAULT	Power fault	Yellow

EPC Bus Connectors

The EPC bus is an optional communication bus used for RBS communication.

Table 4 EPC Bus Connectors

Connector	Function
TD	Transmit
RD	Receive

Test Button

The test button on the front panel of the CCU activates the test function. After the test has been completed, the indicators present the status for two minutes. No alarm is sent if there is a malfunction.

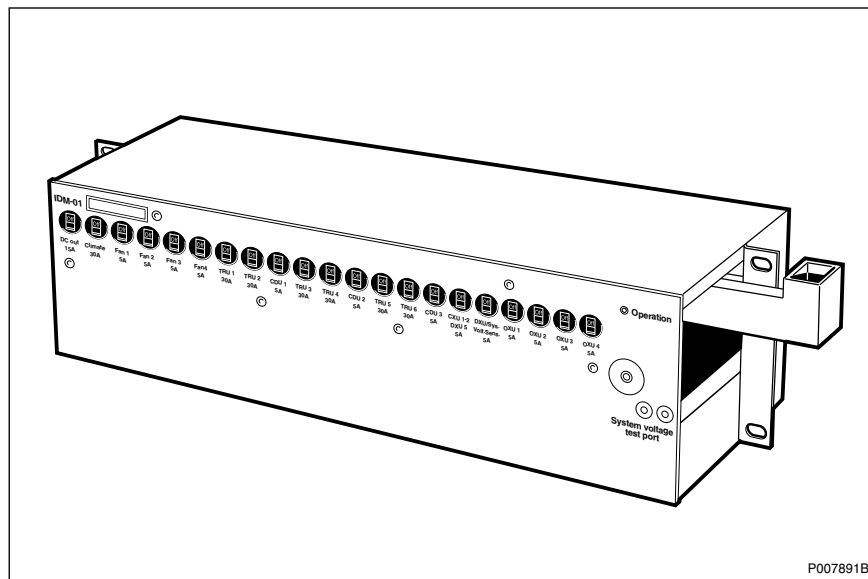
The total test time is approximately 6.5 minutes. During that time, the following are checked:

- External fan
- Internal fan
- Heater active
- Normal operation/failure information from the indicators

IDM

Internal Distribution Module Unit Description

The Internal Distribution Module (IDM) distributes +24 V DC to all DC-powered units in the RBS.



Contents

1	Product Overview	3
1.1	Main Functions	3
2	Dimensions	3
3	Function Description	3
4	Interface	3
4.1	Signal and Power Interfaces	3
4.2	Operator Interface	5

1 Product Overview

The IDM distributes +24 V DC to all DC powered units in the RBS. Distribution circuits are protected by circuit breakers.

1.1 Main Functions

The IDM consists of a unit with 21 circuit breakers, four PSU cables and connectors to the different DC powered units.

2 Dimensions

The physical characteristics of the IDM are shown in the table below.

Table 1 IDM Size and Weight

Height	Width	Depth	Weight
133 mm	483 mm	80 mm	5 kg

3 Function Description

The IDM has the following external interfaces:

- Four Power Supply Units (PSU) cables
- +24 V DC connection (positive)
- +24 V DC connection (negative) and earth connection
- System voltage test port
- ESD wrist-strap connector
- Power distribution connectors, Table 4 on page 5

4 Interface

4.1 Signal and Power Interfaces

Input Data

The input data is shown in the table below.

Table 2 Input Data

Nominal Input Voltage Range	24 V DC
Input Voltage	+20.0 to +29.0 V DC
Non-destructive Range	0.0 to +32.0 V DC
Input Power	4800 W

Output Data

The maximum voltage drop from the input to the output of the IDM is 0.3 V DC.

Table 3 Circuit Breaker Capacity

Circuit Breaker	Capacity	Quantity
CXU 1 – 2, OXU 5	5 A	1
Fan 1 – 4	5 A	4
OXU 1 – 4	5 A	4
DXU	5 A	1
CDU 1 – 3	5 A	3
DC out	15 A	1
TRU 1 – 6	30 A	6
Climate unit	30 A	1

Power Distribution Connectors

The connectors are shown in the table below.

Table 4 Connectors

Connector	Function
P3	DC out
P4	Climate unit
P5	Fan 1 – 4
P6	TRU 1
P7	TRU 2
P8	CDU 1
P9	TRU 3
P10	TRU 4
P11	CDU 2
P12	TRU 5
P13	TRU 6
P14	CDU 3
P15	CXU 1
P16	CXU 2
P17	OXU 5
P18	DXU/System voltage sensor/OXU 1 – 4
P19	Test connector
P20	Indicator

4.2 Operator Interface

Indicator

The indicator is shown in the table below.

Table 5 Indicator

Indicator	Colour
Operational	Green

Ericsson AB
SE-164 80 Stockholm
Sweden
asq.us@ericsson.com

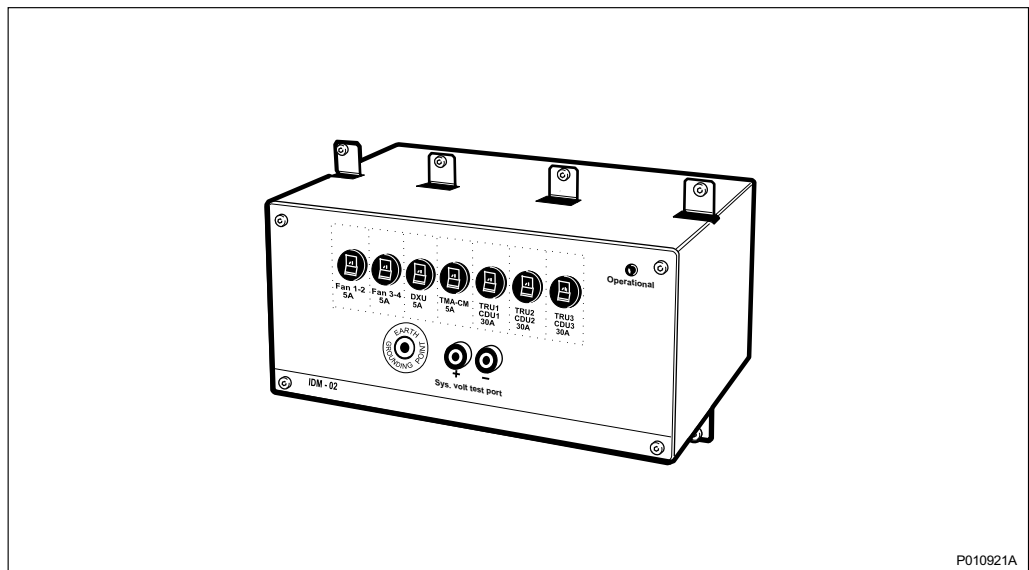
No part of this document may be reproduced in any form without the written permission of the copyright owner. The contents of this document are subject to revision without notice due to continued progress in methodology, design and manufacturing. Ericsson shall have no liability for any error or damage of any kind resulting from the use of this document.
© Ericsson AB 2004 — All Rights Reserved

IDM-02

Internal Distribution Module

Unit Description

The Internal Distribution Module (IDM-02) distributes +24 V DC power supply to all DC powered units in the RBS.



Contents

1	Product Overview	3
1.1	Main Functions	3
2	Dimensions	3
3	Function Description	3
4	Interface	3
4.1	Signal and Power Interfaces	3
4.2	Operator Interface	5

1 Product Overview

The IDM-02 distributes +24 V DC power supply to all DC-powered units in the RBS. Distribution circuits are protected by circuit breakers.

1.1 Main Functions

The IDM consists of a unit and the following:

- Seven circuit breakers
- Two Power Supply Unit (PSU) cables
- Connectors to the different DC powered units

2 Dimensions

The physical characteristics of the IDM-02 are shown in the table below.

Table 1 IDM-02 Size and Weight

Height	Width	Depth	Weight
128 mm	217 mm	80 mm	2 kg

3 Function Description

The IDM has the following external interfaces:

- Two PSU cables
- Connection to DC filter (positive)
- Connection to DC filter (negative) and earth connection
- System voltage test port
- ESD wrist-strap connector
- Power distribution connectors, see Table 4 on page 4

4 Interface

4.1 Signal and Power Interfaces

Input Data

The input data for the IDM-02 is shown in the table below.

Table 2 Input Data

Nominal Input Voltage Range	24 V DC
Non-destructive Voltage	0.0 – 32.0 V DC

Output Data

The output data for the IDM-02 is shown in the table below.

Table 3 IDM-02 Circuit Breaker Capacity

Circuit Breaker	Capacity	Quantity
Fan 1 – 2	5 A	1
Fan 3 – 4	5 A	1
DXU	5 A	1
TMA-CM	5 A	1
TRU 1, CDU 1	30 A	1
TRU 2, CDU 2	30 A	1
TRU 3, CDU 3	30 A	1

Power Distribution Connectors

The connectors for the IDM-02 are shown in the table below.

Table 4 IDM-02 Power Distribution Connectors

Connector	Function
P3	DC out, current limited 0.25 A
P5	Fan 1 – 4
P6	TRU 1
P7	TRU 2
P8	CDU 1
P9	TRU 3
P11	CDU 2
P14	CDU 3
P18	DXU/System voltage sensor/TMA-CM
P19	Test connector
P20	Indicator

4.2 Operator Interface

Indicator

The indicator for the IDM-02 is shown in the table below.

Table 5 IDM-02 Indicator

Indicator	Colour
Operational	Green

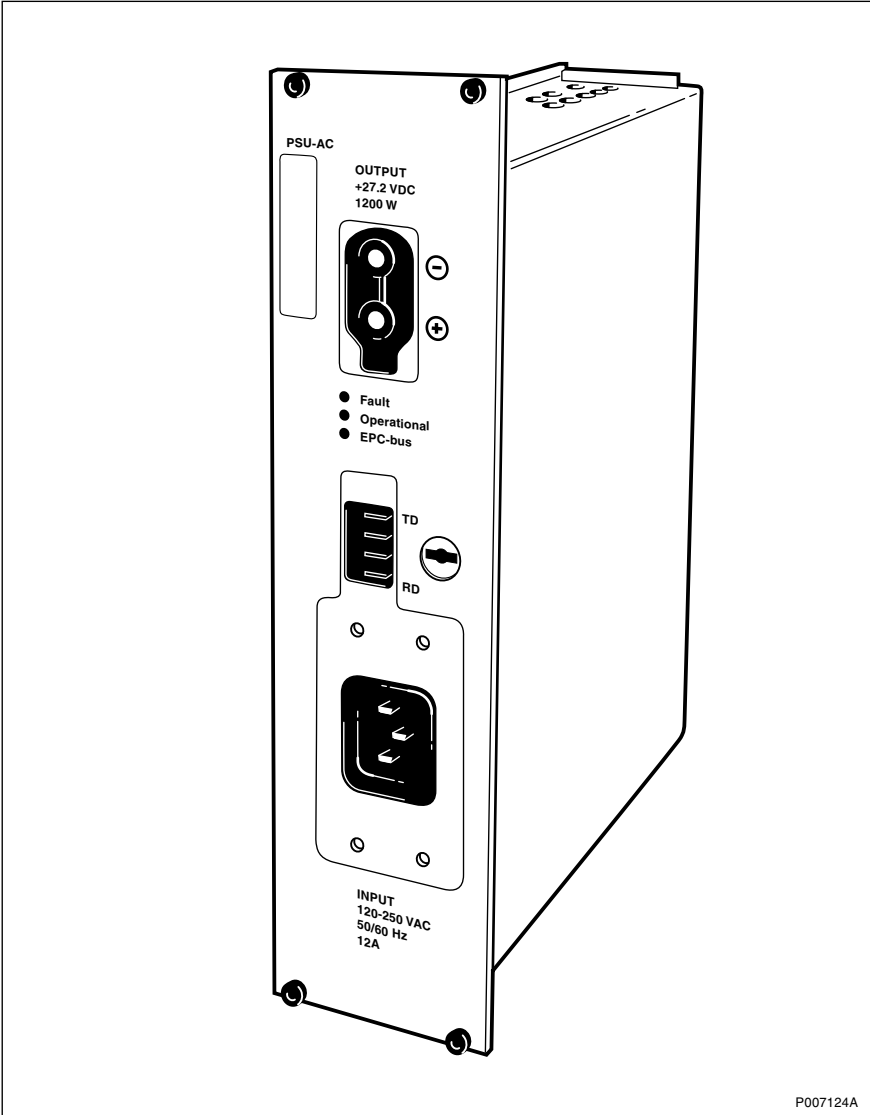
Ericsson AB
SE-164 80 Stockholm
Sweden
implementation.GSMsupport@era.ericsson.se

No part of this document may be reproduced without the written permission of the copyright owner. The contents of this document are subject to revision without notice due to continued progress in methodology, design and manufacturing. Ericsson shall have no liability for any error or damages of any kind resulting from the use of this document.
© Ericsson AB 2004 — All Rights Reserved

PSU AC

Power Supply Unit Unit Description

This document describes the function of the Power Supply Unit AC (PSU AC).



Contents

1	Product Overview	3
1.1	Main Functions	3
2	Dimensions	3
3	Power Consumption and Heat Generation	3
4	Function Description	3
4.1	Input Filter	4
4.2	Bridge	4
4.3	Boost Converter	4
4.4	DC/DC Converter	4
4.5	Output Filter	4
5	Interfaces	4
5.1	Signal and Power Interfaces	4

1 Product Overview

The PSU AC converts incoming AC power to DC. The PSU AC rectifies the incoming AC power and delivers 1200 W power over the whole output range from 22 – 29 V DC.

1.1 Main Functions

The PSU AC does the following:

- Communicates with the Distribution Switch Unit (DXU)
- Adjusts voltage
- Performs sharing between parallel units
- Indicates alarms

2 Dimensions

The physical characteristics of the PSU AC are shown in the table below.

Table 1 PSU AC Dimensions

Height	Width	Depth	Weight
262 mm	61 mm	225 mm	3.3 kg

3 Power Consumption and Heat Generation

Power consumption and heat generation are shown in the table below.

Table 2 Power Consumption and Heat Generation

Max. Power Consumption	Max. Heat Generation
1446 W	246 W

4 Function Description

The PSU AC consists of the following main units:

- Input filter [ElectroMagnetic Compatibility (EMC) filter]
- Bridge
- Boost converter
- DC/DC converter

- Output filter (EMC filter)
- Control and supervision circuits

4.1 Input Filter

The incoming sine voltage first passes through an internal fuse and then the input filter, where it is filtered to prevent unwanted signals from being radiated from the PSU AC.

4.2 Bridge

The bridge rectifies the incoming AC.

4.3 Boost Converter

The boost converter draws a sinusoidal input current in phase with the input voltage, enabling the power supply to have a high power factor and low distribution on input current. The output from the boost converter is 400 V DC.

4.4 DC/DC Converter

The DC/DC Converter is a phase-shifted, soft-switched, full-bridge converter that converts the incoming 400 V AC to 24 V DC output voltage.

The output provides constant power regulation, rather than the more common current limited regulation, and delivers 1200 W over the whole output range from 22 – 29 V DC.

4.5 Output Filter

The output voltage is filtered to prevent unwanted signals from being radiated from the PSU AC.

5 Interfaces

5.1 Signal and Power Interfaces

Input Data

The input data for the PSU AC is shown in the table below.

Table 3 Input Data

Nominal Input Voltage	120 – 250 V AC
Frequency	45 – 65 Hz
Non-destructive Voltage	0 – 300 V AC

Output Data

The output data for the PSU AC is shown in the table below.

Table 4 Output Data

Nominal Output Data	24 V DC
Default Output Voltage	27.2 V DC
Voltage Range	22.0 – 29.0 V DC
Output Power	1200 W

Note: The PSU AC does not have any backplane connections.

Indicators

The indicators for the PSU AC are shown in the table below.

Table 5 Indicators

Indicator	Colour
Fault	Red
Operational	Green
EPC Bus Fault	Yellow

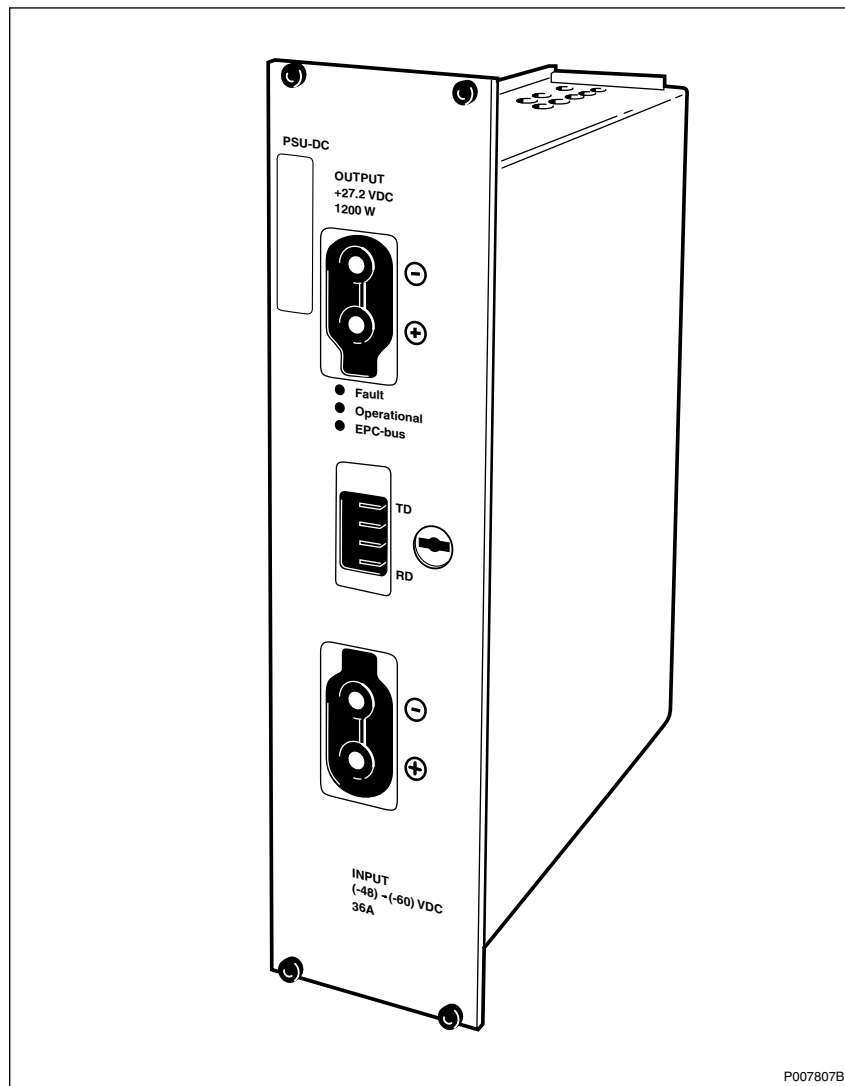
Ericsson AB
SE-164 80 Stockholm
Sweden
asq.us@ericsson.com

No part of this document may be reproduced in any form without the written permission of the copyright owner. The contents of this document are subject to revision without notice due to continued progress in methodology, design and manufacturing. Ericsson shall have no liability for any error or damage of any kind resulting from the use of this document.
© Ericsson AB 2004 — All Rights Reserved

PSU DC

Power Supply Unit Unit Description

This document describes the function of the Power Supply Unit DC (PSU DC).



Contents

1	Product Overview	3
1.1	Main Functions	3
2	Dimensions	3
3	Power Consumption and Heat Generation	3
4	Function Description	3
4.1	Input Filter	4
4.2	DC/DC Converter	4
4.3	Output Filter	4
5	Interfaces	4
5.1	Signal and Power Interfaces	4
5.2	Operator Interface	5

1 Product Overview

The PSU DC converts incoming voltage ranging from -39 to -72 V DC to the regulated DC voltage of 27.2 V DC. The maximum output power is 1200 W.

1.1 Main Functions

The PSU DC has the following functions:

- Communicates with the Distribution Switch Unit (DXU)
- Indicates alarms

2 Dimensions

The physical characteristics of the PSU DC are shown in the table below.

Table 1 PSU DC Dimensions

Height	Width	Depth	Weight
262 mm	61 mm	225 mm	3.1 kg

3 Power Consumption and Heat Generation

The power consumption and heat generation are shown in the table below.

Table 2 Power Consumption and Heat Generation

Max. Power Consumption	Max. Heat Generation
1411 W	211 W

4 Function Description

The PSU DC consists of the following main units:

- Input filter [ElectroMagnetic Compatibility (EMC) filter]
- DC/DC converter
- Output filter (EMC filter)
- Control and supervision circuits

4.1 Input Filter

The incoming voltage first passes through the input filter (EMC filter), where it is filtered to prevent unwanted signals from being radiated from the PSU DC.

4.2 DC/DC Converter

The DC/DC converter is a phase-shifted, full-bridge converter that converts the DC voltage into a square wave. This is then fed into the primary side of the transformer. The converter limits the current in case of overload.

In the transformer, the voltage is converted to a 24 V AC square wave. This wave is rectified to DC voltage through a diode rectifier.

The output provides constant power regulation, rather than the more common current limited regulation, and delivers 1200 W over the output voltage.

4.3 Output Filter

The output filter (EMC filter) filters the output voltage to prevent the radiation of unwanted signals from the PSU DC.

5 Interfaces

5.1 Signal and Power Interfaces

Input Data

The input data for the PSU DC is shown in the table below.

Table 3 Input Data

Nominal Input Voltage	-48 to -60 V DC
Input Voltage Range	-39 to -72 V DC
Non-destructive Voltage	0 to -80 V DC

Output Data

The output data for the PSU DC is shown in the table below.

Table 4 Output Data

Default Output Voltage	+27.2 V DC
Output Power	1200 W

5.2 Operator Interface

The PSU DC has the following interfaces, all located on the front panel:

- Power supply DC
- Power control bus (opto)

Indicators

The indicators for the PSU DC are shown in the table below.

Table 5 PSU DC Indicators

Indicator	Colour
Fault	Red
Operational	Green
EPC Bus	Yellow

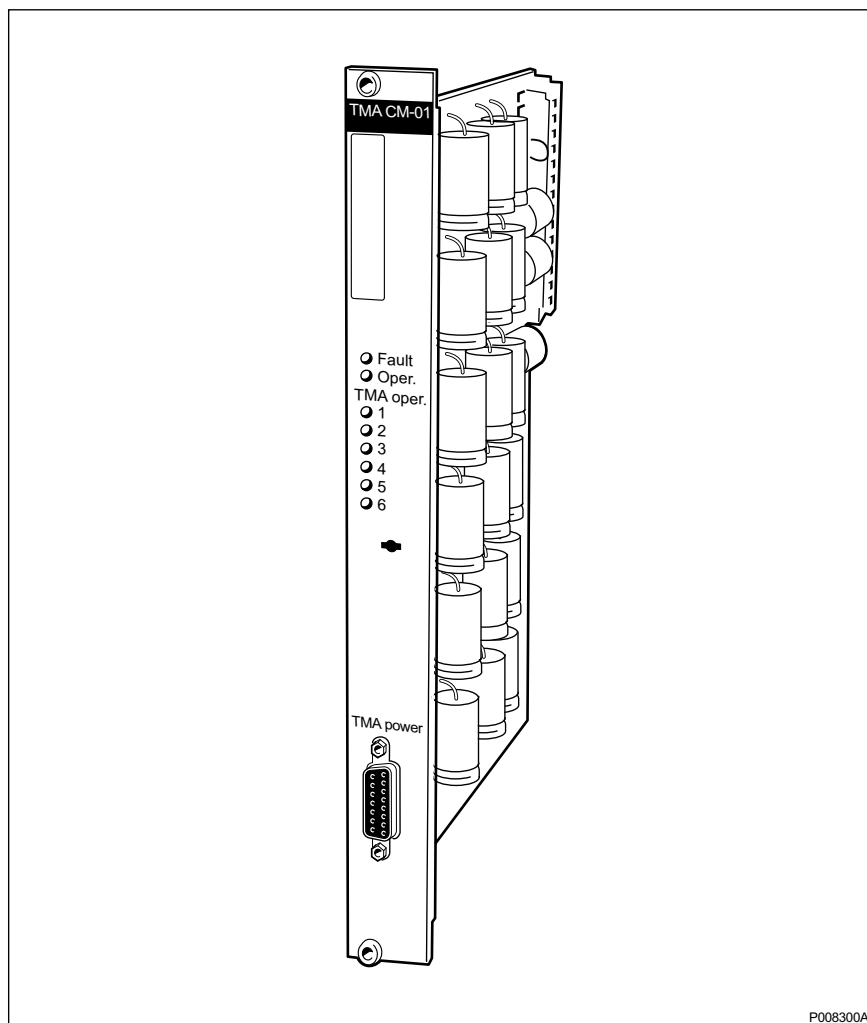
Ericsson AB
SE-164 80 Stockholm
Sweden
asq.us@ericsson.com

No part of this document may be reproduced in any form without the written permission of the copyright owner. The contents of this document are subject to revision without notice due to continued progress in methodology, design and manufacturing. Ericsson shall have no liability for any error or damage of any kind resulting from the use of this document.
© Ericsson AB 2004 — All Rights Reserved

TMA-CM

Tower Mounted Amplifier - Control Module Unit Description

The Tower Mounted Amplifier Control Module (TMA-CM), together with the bias injectors, supplies power to the TMA. It also monitors and controls the TMAs.



Contents

1	Product Overview	3
1.1	Main Functions	3
2	Dimension	3
3	Function Description	3
4	Interface	5
4.1	Signal and Power Interfaces	5
4.2	Operator Interface	5

1 Product Overview

1.1 Main Functions

The TMA-CM has the following functions:

- Supplies power to the TMAs through bias injectors
- Monitors the TMAs
- Controls the TMAs
- Supplies power for up to six TMAs
- Measures DC and voltage
- Supervises indicators
- Provides short circuit protection
- Supervises cables

2 Dimension

The physical characteristics of the TMA-CM are shown in the table below.

Table 1 TMA-CM Dimensions

Height	Width
6 HE	5 TE

3 Function Description

The block diagram of the TMA-CM is shown in the figure below.

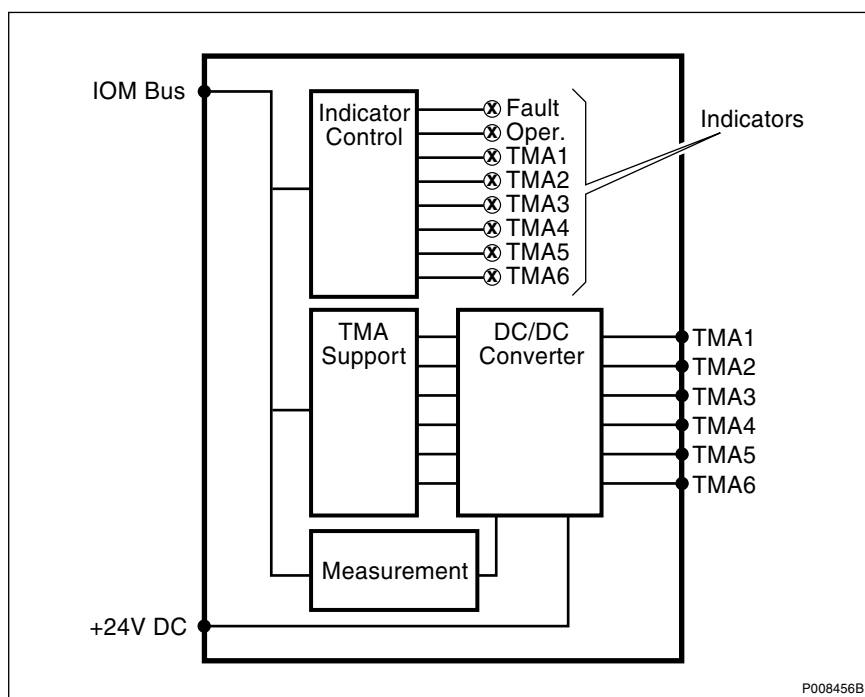


Figure 1 TMA-CM Block Diagram

The TMA-CM supplies up to six TMAs with 15 V DC and a maximum of 500 mA to each TMA. The power output is a 15-pole D-sub connector on the front of the TMA-CM. In general a TMA consumes 70 – 200 mA.

The TMAs can be individually switched on and off by commands from the Distribution Switch Unit (DXU).

The current and voltage to each TMA is measured and an alarm is generated if the values are outside the specified range, this indicate that a TMA is not working properly, the values can be changed in the Operation and Maintenance Terminal (OMT). The alarm is transmitted to the DXU on the Internal Operation and Maintenance (IOM) bus.

The TMA is always used together with its connection cable and connection plate for bias injectors. The connection plate contains filtering equipment.

An indicator on the front panel is illuminated for each TMA in operational mode. Whether or not an indicator is illuminated also depends on the actual configuration. See Chapter Radio Configurations, RBS 2106 and RBS 2206.

If the TMA or the feeder cable short-circuits, the TMA-CM limits the current to 500 mA.

The power cable to the bias injector is supervised and an alarm is generated if the cable is not connected. The alarm is transmitted on the IOM bus.

4 Interface

4.1 Signal and Power Interfaces

Input Data

The input data is shown in the table below.

Table 2 Input Data

Nominal Input Voltage	+24 V DC
Input Voltage Range	+20.0 to 29.5 V DC
Non-destructive Voltage	0 to +32 V DC
Maximum Input Power	60 W

Output Data

The output data is shown in the table below.

Table 3 Output Data

Voltage per Output (1 – 6)	+15 V DC ⁽¹⁾
Current per Output	Maximum 500 mA

(1) Tolerance ± 1.0 V at TMA Current 0 – 300 mA. Tolerance ± 1.5 V at TMA Current 300 – 500 mA.

4.2 Operator Interface

The TMA-CM has the following external interfaces:

- Power in (+24 V DC)
- IOM bus
- TMA power connector

Indicators

The TMA-CM has eight indicators on the front panel that show the status of each TMA and the status of the TMA-CM.

The Fault and Operational indicators show the status of the TMA-CM only, and not the status of the TMAs.

Table 4 Indicators

Indicator	Colour
Fault	Red
Operational	Green
TMA1 operating	Green
TMA2 operating	Green
TMA3 operating	Green
TMA4 operating	Green
TMA5 operating	Green
TMA6 operating	Green

RBS 2000 Glossary

This document provides a glossary of terms and abbreviations used in RBS 2000 Customer Product Information (CPI).

Contents

1	Introduction	3
2	Terms and Abbreviations	3

1 Introduction

This glossary lists abbreviations and acronyms used in texts dealing with RBS 2000 cabinets. Some basic terms and acronyms needed for cross-reference are included in the list.

An arrow \Rightarrow is used to indicate a reference to another entry in the list.

Where there are several meanings for the same term and the terms are cabinet size dependent, this is indicated using **Macro** and **Micro** where applicable..

The following RBSs are **Macro** cabinets:

- RBS 2101
- RBS 2102
- RBS 2103
- RBS 2106
- RBS 2202
- RBS 2205
- RBS 2206

The following RBSs are **Micro** cabinets:

- RBS 2301
- RBS 2302
- RBS 2401
- Maxite

2 Terms and Abbreviations

1-P	One-Pair connection with echo cancellation (= two wires)
2-P	Two-Pair connection with echo cancellation (= four wires)
AAU	Active Antenna Unit
Abis	GSM interface standard defining attributes of the communication between the BSC and the BTS.
AC	Alternating Current

ACB	Alarm Collection Board
ACCU	Alternating Current Connection Unit
ACCU-CU	ACCU Connection Unit
ACCU-DU	ACCU Distribution Unit
A/D converter	Analog to Digital converter
AFS	AMR Full-rate speech
AGW	Abis Gateway
AHR	AMR Half-rate speech
Air conditioner	One version of the climate unit (Active cooler)
AIS	Alarm Indication Signal
ALBO	Automatic Line Build Out
ALNA	Antenna Low Noise Amplifier
ALPU	Antenna Lightning Protection Unit
AMR	Adaptive Multi-Rate
AO	Application Object
ARAE	Antenna Related Auxiliary Equipment
ARFCN	Absolute Radio Frequency Channel Number
ARP	Antenna Reference Point
ARU	Active Replaceable Unit
ASIC	Application Specific Integrated Circuit
Astra	ASIC in the TRU
ASU	Antenna Sharing Unit
AT	Alphanumeric Terminal
ATRU	Adaptive Transceiver Unit
ATSR	Air Time Slot Resource

AU	Antenna Unit GSM 900 = CEU + Passive Antenna GSM 1800/1900 = AAU
BALUN	BALance and UNbalance transformer
Batt	Battery
BB	Battery Box
BBS	Battery Back-up System
BCCH	Broadcast Control CHannel Downlink only broadcast channel for broadcast of general information at a base station, on a base station basis.
BCS	Block Check Sequence
BDM	Battery Distribution Module The BDM is an IDM with a battery and a local processor.
BER	Bit Error Rate
BFF	Bit Fault Frequency
BFI	Bad Frame Indication
BFU	Battery Fuse Unit
Bias injector	A unit which injects DC power into the coaxial cable to feed the TMA. Isolates the DC power from the RF signal fed to the CDU.
Bm	Denotes a full-rate traffic channel
BPC	Basic Physical Channel Denotes the air interface transport vehicle formed by repetition of one time slot on one or more radio frequency channels.
BS	Base Station
BSC	Base Station Controller GSM network node for control of one or more BTSs.

BSCSim	Base Station Controller Simulator
BSS	Base Station System GSM network logical unit comprising one BSC and one or more BTSs.
BTS	Base Transceiver Station GSM network unit operating on a set of radio frequency channels in one cell.
burst	A portion of digital information, the physical content, that is transferred within the time interval of one time slot.
cabinet	The physical housing of a base station
Cascade connections	Connection of several cabinets by the PCM cable. Similar to serial connection. ⇒ Cascading
Cascading	Connection of several cabinets by the PCM cable. Similar to serial connection. ⇒ Cascade connections
CBCH	Cell Broadcast CHannel This is a downlink only channel used by the GSM defined SMSCB function.
CCCH	Common Control CHannel Channel combining the following common control channels: <ul style="list-style-type: none">• PCH Paging CHannel• RACH Random Access CHannel• AGCH Access Grant CHannel
CCU	Climate Control Unit
CDU	Combining and Distribution Unit
CE	Conformité Européenne
cell	An area of radio coverage identified by the GSM network by means of the cell identity.

CEU	Coverage Extension Unit
CF	Central Functions
channel	The common term channel denotes the virtual connection, consisting of physical and logical channels, between BSS and MS, during a call in progress. ⇒ Logical Channel ⇒ Physical Channel
Channel Combination	A physical channel on an air interface carrying a defined set of logical channels.
Channel group	A channel group is a group of dedicated logical channels to a specific MS.
CM	Macro = Control Module (for TMA) Micro = Common Mode
CMD	Digital Radio Communication Tester
CMRU	Central Main Replaceable Unit. The RBS is physically connected to the Base Station Controller (BSC) via the CMRU. There is only one CMRU in each RBS. Macro: CMRU = DXU Micro: CMRU = The whole RBS
CNU	Combining Network Unit
Compr	Compressor
CON	LAPD concentrator LAPD concentration is used to reduce the number of required physical links between the BSC and BTS.
Config	Configuration
Co-siting	Co-siting is the operation of radio equipment from more than one mobile telephone system and/or frequency on the same site sharing common equipment.
CPI	Communication and Power Interface
CPI	Customer Product Information

CPU	Central Processing Unit
CRC	Cyclic Redundancy Check
CS	Coding Scheme
CSA	Canadian Standards Association
CSES	Consecutive Severely Errored Second
CSU	Macro = Channel Service Unit Micro = Customer Service Unit
CU	Combining Unit (RU in CDU_D)
CXU	Configuration Switch Unit
Dannie	ASIC in the TRU
DB	DataBase
DC	Direct Current
DCC	Digital Cross Connector
DCCH	Dedicated Control CHannel Dedicated control channels carry signalling data.
DCCU	DC Connection Unit
ddTMA	dual duplex Tower Mounted Amplifier This type needs only one combined TX/RX feeder from the BTS to the TMA. ⇒ dTMA ⇒ rTMA ⇒ TMA ⇒ BTS
DF	Distribution Frame
DF	Disturbance Frequency
DFU	Distribution and Fuse Unit
DIP	Digital Path The name of the function used for supervision of the connected PCM lines.
Dixie	ASIC in the TRU
DM	Degraded Minute

DM	Distribution Module
DM	Micro = Differential Mode
DMRU	Distributed Main Replaceable Unit
	If a Main RU is subordinated to the CMRU, it is said to be distributed.
downlink	Signalling direction from the system to the MS.
DP	Digital Path
DP	Distribution Panel
DPX	Duplexer
DS1	Digital Signal level 1 (1544 kbit/s)
DSP	Digital Signal Processor
DT	Data Transcript
DTE	Data Terminal Equipment
DTF	Distance To Fault
dTMA	duplex TMA
	dTMA is similar to the old ALNA except for different characteristics. ⇒ ddTMA ⇒ rTMA ⇒ TMA
dTRU	double TRansceiver Unit
DU	Distribution Unit (RU in CDU-D)
DUT	Device Under Test
DX	Direct Exchange
DXB	Distribution Switch Board
DXC	Digital Cross Connector
DXU	Distribution Switch Unit
DXX	Ericsson Cellular Transmission System including NMS
E1	Transmission standard, G.703, a 2048 kbit/s PCM link
E-GSM	Extended GSM

EACU	External Alarm Connection Unit
EC1	External Condition Map Class 1
EC2	External Condition Map Class 2
ECU	Energy Control Unit
EDGE	Enhanced Data rate for Global Evolution
EDGE dTRU	EDGE double TRansceiver Unit ⇒ EDGE
EDT	Electrical Down Tilt
EEPROM	Electrically Erasable Programmable Read-Only Memory
EIRP	Effective Isotropic Radiated Power
EMC	ElectroMagnetic Compatibility
EMF	ElectroMotive Force
EMF	ElectroMagnetic Field
EMI	Electromagnetic Interference
ENV	Environmental
EOC	Embedded Operations Channel
EPC	Environmental and Power Control
ES	Errored Second
ESB	External Synchronization Bus
ESD	ElectroStatic Discharge
ESF	Extended Superframe Format
ESO	Ericsson Support Office
ETS	European Telecommunication Standard
EXT	External
FACCH	Fast Associated Control CHannel Main signalling channel in association with a TCH.

FCC	Federal Communications Commission
FCCH	Frequency Correction CHannel
FCOMB	Filter COMBiner
FCU	Fan Control Unit
FDL	Facility Data Link
FDU	Feeder Duplexer Unit
FER	Frame Erasure Ratio
FIU	Fan Interface Unit
FS	Function Specification
FSC	Field Support Centre
FU	Filter Unit (RU in CDU-D)
FUd	Filter Unit with duplexer (RU in CDU-D)
FXU	Future Expansion Unit
G01	MO model for RBS 200
G12	MO model for RBS 2000
G.703	Physical/electrical characteristics of hierarchical digital interfaces, as defined by the ITU.
G.704	Synchronous frame structures used at 1544, 6312, 2048, 8448 and 44 736 kbit/s, as defined by the ITU.
GPRS	General Packet Radio Services
GS	General Specification
GSL	GPRS Signalling Link
GSM	Global System for Mobile communications International standard for a TDMA digital mobile communication system. Originally, GSM was an abbreviation for Group Special Mobile, which is a European mobile telecommunication interest group, established in 1982.

GSM 800	GSM system 800 MHz (generic)
GSM 900	GSM system 900 MHz (generic)
GSM 1800	GSM system 1800 MHz (generic)
GSM 1900	GSM system 1900 MHz (generic)
HCE	HDSL Central Equipment
HCOMB	Hybrid COMBiner
HDLC	High level Data Link Control
HDSL	High bit rate Digital Subscriber Line
Heat Exchanger	A version of the climate unit
HEU	Heat Exchanger Unit
HISC	Highway Splitter Combiner
HLIN	High Level IN
HLOUT	High Level OUT
HMS	Heat Management System
Hum	Humidity
HW	HardWare
HWU	HardWare Unit
	An HWU consists of one or more SEs. An HWU is a functional unit within the RBS. The HWU is either active (equipped with a processor) or passive (without processor).
I1A	Internal Fault Map Class 1A
I1B	Internal Fault Map Class 1B
I2A	Internal Fault Map Class 2A
IA	Immediate Assignment
IC	Integrated Circuit
ICMI	Initial Codec Mode Indicator

ID	IDentification
IDB	Installation DataBase
IDM	Internal Distribution Module
IEC	International Electric Commission
IF Box	Interface Box
IMSI	International Mobile Subscriber Identity
INIT	Initial
INT	Internal
IOG	Input/Output Group
IOM	Internal Operation and Maintenance bus
IR	InfraRed
IS	Interface Switch
IWD	InterWork Description
JTC	Joint Technical Committee
LAN	Local Area Network
LAPD	Link Access Procedures on D-channel LAPD is the data link layer (layer 2) protocol used for communication between the BSC and the BTS on the Abis interface. Abis layer 2 is sometimes used synonymously with LAPD.
LBO	Line Build Out
LED	Light Emitting Diode
LLB	Line Loop Back
LNA	Low Noise Amplifier
Local bus	The local bus offers communication between a central main RU (DXU) and distributed main RUs (TRU and ECU).

Local mode	When the RU is in Local mode, it is not communicating with the BSC.
Local/Remote switch	A switch used by the operator to order the RU to enter Local or Remote mode.
LOF	Loss Of Frame
Logical Channel	<p>A logical channel represents a specified portion of the information carrying capacity of a physical channel.</p> <p>GSM defines two major categories of logical channels:</p> <ul style="list-style-type: none"> • TCHs – Traffic CHannels, for speech or user data • CCHs – Control CHannels, for control signalling <p>⇒ Physical Channel ⇒ Channel Combination</p>
Logical RU	<p>A unit which can be referred to, but is not a single physical unit. There are three different kinds of logical RUs:</p> <ul style="list-style-type: none"> • Antennas • Buses • Environment
LOS	Loss Of Signal
LVD	Low Voltage Directive
LVF	Low Voltage Filter
MAC	Medium Access Controller
MADT	Mean Accumulated DownTime
magazine	A magazine is a reserved space in the cabinet, which may hold one or more RUs.
Main RU	Contains one or more processors, to which software can be downloaded from the BSC. A Main RU is either Central (CMRU) or Distributed (DMRU). A Main RU may or may not have a direct signalling link to the BSC.
Main RU	A main replaceable unit is a replaceable unit that contains one or more processors, to which software can be downloaded from the BSC.

MCB	MultiCasting Box
MHS	Modification Handling System Ericsson trouble report database
MMI	Man-Machine Interface
MO	Managed Object
MR	Measurement Receiver
MRT	Mean Repair Time
MS	Mobile Station
MSC	Mobile services Switching Centre GSM network unit for switching, routing and controlling calls to and from the Public Switched Telephone Network (PSTN) and other networks.
MSTP	Mobile Station Test Point
MTBF	Mean Time Between Failure
MTBCF	Mean Time Between Catastrophe Failure
Multidrop	Two or more RBSs connected in a chain to the same transmission system. All the relevant time slots are dropped out by each RBS. (This function is sometimes called cascading.)
NCS	National Colour System
NEBS	Network Equipment Building System
NMS	Ericsson Network Management System in DXX
Nominal Power	The nominal power is the power level defined when configuring the transceiver.
N terminal	Neutral terminal in an AC mains connection
NTU	Network Terminating Unit
OL/UL	Overlaid/Underlaid

O&M	Operation and Maintenance General term for activities such as configuration, utilization of channels (frequency bands), cell planning, system supervision, hardware and software maintenance, subscriber administration, and so on.
OMC	Operation and Maintenance Centre
OML	Operation and Maintenance Link Layer 2 communication link for operation and maintenance services on Abis.
OMT	Operation and Maintenance Terminal The OMT is a terminal that supports functions for handling the RBS on site. The terminal can be a portable PC.
Operation	Operation is the normal, everyday running of the RBS with full functions.
OPI	Operational Instructions
OVP	OverVoltage Protection
OXU	Space for Optional Expansion
P-GSM	Primary GSM
PA	Power Amplifier
PAM	Power Amplifier Module
Passive RU	A passive replaceable unit has a very low level of intelligence and is independent of the processor system.
PBA	Printed Board Assembly
PBC	Power and Battery Cabinet
PC	Personal Computer
PCAT	Product CATalogue A web-based ordering system on Ericsson's Intranet.
PCB	Printed Circuit Board

PCH	Paging CHannel Downlink only subchannel of CCCH for system paging of MSs. ⇒ CCCH
PCM	Pulse Code Modulation
PCU	Packet Control Unit
PDCH	Packet Data Channel
PE terminal	Protective Earth terminal in an AC mains connection
PFWD	Power Forward
Physical Channel	An air interface physical channel carries one or more logical channels. A physical channel uses a combination of frequency and time division multiplexing and is defined as a sequence of radio frequency channels and time slots. ⇒ TDMA frame ⇒ Logical channel
PIN	Personal Identification Number
PLB	Payload Loop Back
PLMN	Public Land Mobile Network A network, established and operated by an administration or its licensed operator(s), for the specific purpose of providing land mobile communication services to the public. It provides communication possibilities for mobile users. For communication between mobile and fixed users, interworking with a fixed network is necessary.
PPE	Personal Protective Equipment
PREFL	Power Reflected
PSA	Power Supply Adapter
PSTN	Public Switch Telephone Network
PSU	Power Supply Unit
PWU	Power Unit

RACH	Random Access CHannel Uplink only subchannel of CCCH for MS request for allocation of a dedicated channel. ⇒ CCCH
RAI	Remote Alarm Indication
RAM	Random Access Memory
RBER	Radio Bit Error Ratio
RBS	Radio Base Station All equipment forming one or more Ericsson base station. ⇒ BTS
RCB	Radio Connection Box
RD	Receive Data
Remote mode	When the RU is in RU Remote mode, a link is established between the BSC and the Central Main RU (CMRU).
RF	Radio Frequency
RFCH	Radio Frequency CHannel A radio frequency carrier with its associated bandwidth.
RFTL	Radio Frequency Test Loop
RLC	Radio Link Control
RLC	Repair Logistic Centre
RSL	Radio Signalling Link
R-state	Release state
RS232	American standard for term/MODEM interconnection.
rTMA	Receiver TMA rTMA has no duplexers. It is used for amplification of the RX signal. ⇒ ddTMA ⇒ dTMA ⇒ TMA

RTN	Return
RU	Replaceable Unit An RU consists of one or more HWUs. An RU may be replaced by another RU of the same type. The RU is the smallest unit that can be handled on site.
RX	Receiver
RX1	Receiver antenna branch 1
RX2	Receiver antenna branch 2
RXA	Receiver antenna branch A
RXB	Receiver antenna branch B
RXD	Receiver Divider
RXDA	Receiver Divider Amplifier
RXDP	Receiver Distribution Plane
RXLEV	Measure of signal strength as defined in GSM:05.08:8.1.4
RXQUAL	Measure of signal quality as defined in GSM:05.08:8.2.4
SACCH	Slow Associated Control CHannel
SCH	Synchronization CHannel
SDCCH	Stand alone Dedicated Control CHannel Main dedicated signalling channel on the air interface, mainly used for call locating and establishment.
SCU	Switching and Combining Unit
SE	Supervised Entity
SES	Severely Errored Second
SF	Slip Frequency
SID	Silence Descriptor
SIG	Signalling
SIM	Subscriber Identity Module

SIR	Small Indoor RBS
SMS	Short Message Service (point to point) A short message, up to 160 alphanumeric characters long, can be sent to or from an MS (point to point).
SO	Service Object
SS	Swedish Standard
Sub-RU	A sub-replaceable unit is always connected to a superior Main RU. This connection is used for example for retrieval of the RU identity. A sub-RU normally does not have a processor. Note that an RU with a processor, which cannot be loaded, is classified as a sub-RU.
SVS	System Voltage Sensor
SW	SoftWare
SWR	Standing Wave Ratio
SYNC	Synchronous
T1	Transmission standard, G.703, a 1544 kbit/s PCM link
TA	Timing Advance A signal sent by the BTS to the MS which the MS uses to advance its timing of transmissions to the BTS to compensate for propagation delay.
TC	Transaction Capabilities
TCB	Transceiver Control Board
TCH	Traffic CHannel The traffic channels carry either encoded speech or user data.
TCH/F	Traffic Channel, Full-rate
TCH/H	Traffic Channel, Half-rate
TCC	Transmission Coherent Combining
TCH SIG	Traffic CHannel Signalling

TD	Transmit Data
TDMA	Time Division Multiple Access Multiplexing of several channels in a common frequency band. Each channel is assigned a certain time division, a time slot.
TDMA frame	GSM air interface time frame comprising eight time slots.
TEI	Terminal Endpoint Identifier TEI is an identification code carried by a LAPD frame as a terminal connection endpoint within a Service Access Point (SAP).
TEMS	TEst Mobile Station
TF	Timing Function
TG	Transceiver Group
Timing bus	The timing bus carries air timing information from the timing unit in the DXU to the TRUs.
TLS	Terrestrial Link Supervision
TM	Transport Module The Transport module is non-RBS equipment belonging to the transport network.
TMA	Tower Mounted Amplifier There are three types of TMAs: dTMA, rTMA and ddTMA. ⇒ dTMA ⇒ rTMA ⇒ ddTMA
TMA-CM	Tower Mounted Amplifier – Control Module
TN	Time slot Number
TN O&M	Transport Network Operation and Maintenance (in general)
Tora	ASIC in the TRU

TRA	Transcoder Rate Adapter The TRA Unit (TRAU) in BSC performs transcoding of speech information and rate adaptation of data information.
Tracy	ASIC in the TRU
TRS	Transceiver System
TRU	Transceiver Unit
TRX	Transceiver (combined transmitter and receiver)
TRXC	Transceiver Controller
TS	Time Slot A 0.577 ms period (TDMA frame subunit) corresponding to 156.25 raw bits of information. The eight time slots of each TDMA frame are numbered 0...7.
TT	Total Time
TU	Timing Unit
TX	Transmitter
TXA	Transmitter Antenna A
TXB	Transmitter Antenna B
TXBP	Transmitter BandPass filter
TXU	Radio Transmitter Unit
UAS	Unavailable Seconds
UAST	UnAvailable State supervision
UL	Underwriter Laboratories
uplink	Signalling direction from the MS to the system.
UPS	Uninterrupted Power Supply
VCO	Voltage Controlled Oscillator
VSWR	Voltage Standing Wave Ratio RF signal measure. The quotient between transmitted and reflected voltage.

X bus	The X bus carries transmit air data frames between transceivers.
Y link	The interface between the DXU and each DSP System in core based TRUs.

Ericsson AB
SE-164 80 Stockholm
Sweden
implementation.GSMsupport@era.ericsson.se

The contents of this document are subject to revision without notice due to continued progress in methodology, design and manufacturing.
Ericsson shall have no liability for any error or damages of any kind resulting from the use of this document.
© Ericsson 2002 — All Rights Reserved