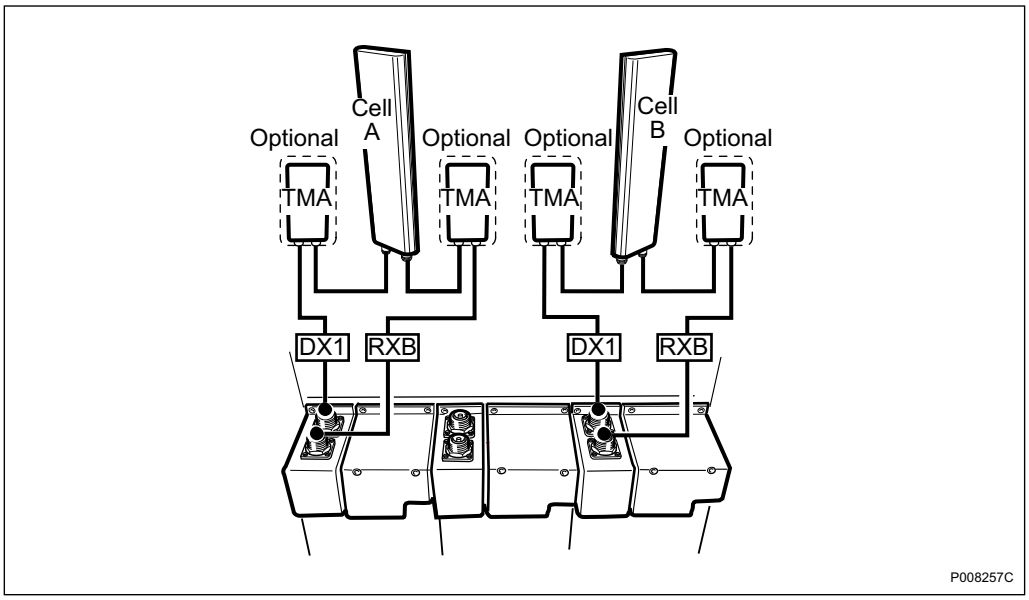
# RBS 2206
## Antenna Configurations
## Description

This document describes the antenna configurations possible for the RBS 2206.

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# 1 Introduction

The various configurations available for cabinets are described according to the following example:

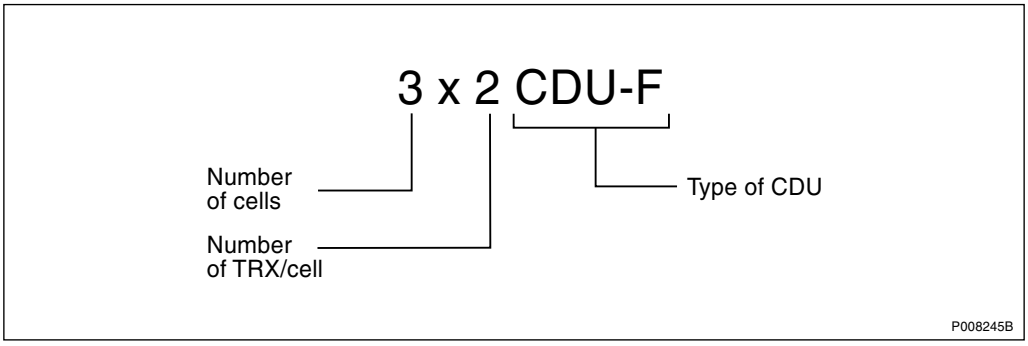



*Figure 1 CDU Configuration Key*

In the example above, the cabinet is configured for three cells, each using two TRXs. The total number TRXs is thus six in this case. The CDU is type CDU-F.

**Note:** If TMA is used the bias injectors must be installed.

# 2 Antenna Connection Field

This section describes the antenna connection fields in the RBS 2206.

Antenna jumpers are connected at the connection field shown in the figure below. The example shown, in this case, is for CDU-G.

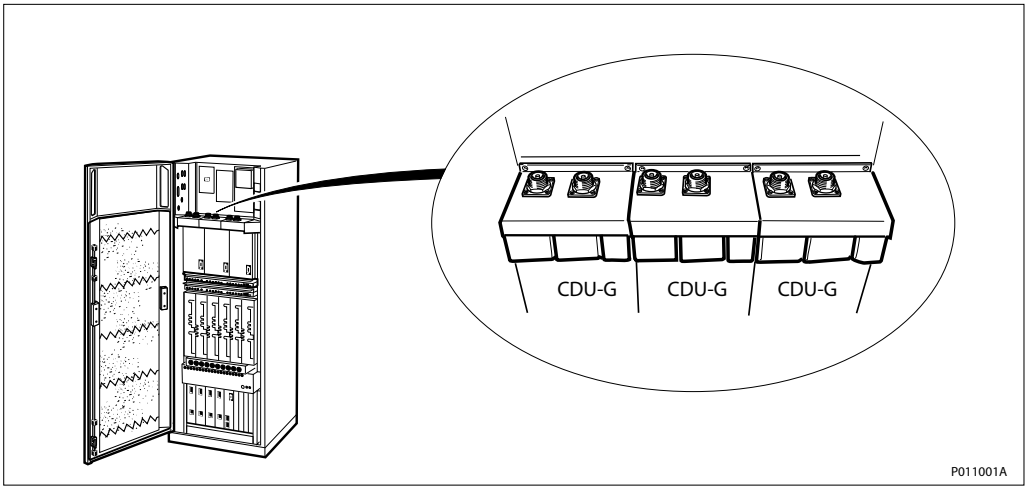



*Figure 2 Antenna Connection Field, the Figure shows CDU-G.*

The RF cables between each CDU and its associated TRUs are standardised and do not normally change.

Certain configurations require the use of an Antenna Sharing Unit (ASU). In these cases, signal is shared between cabinets via the antenna sharing connection fields

The figure below gives an overview of the antenna sharing connectors and the cabling from the ASU.

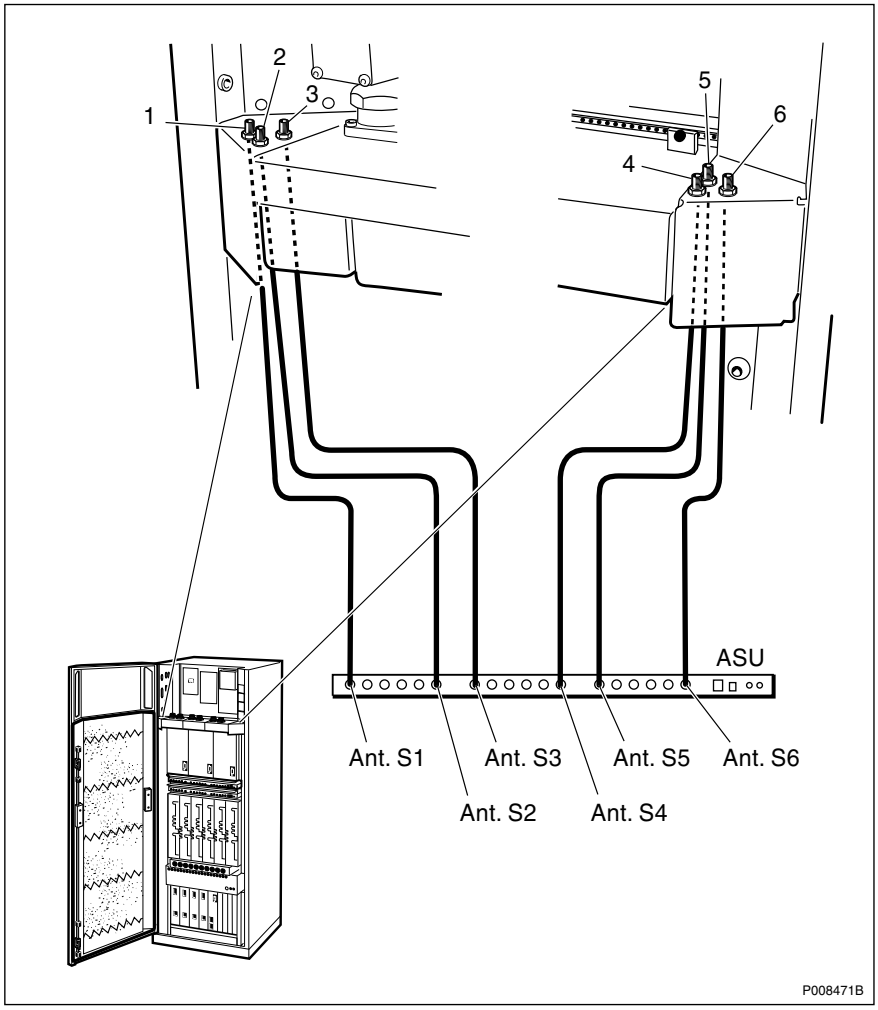



*Figure 3 Cabling between ASU and Antenna Sharing Connectors*

# 3 CDU-F Antenna Connections

The antenna connectors are located on the top of the CDU, *see figures below.*

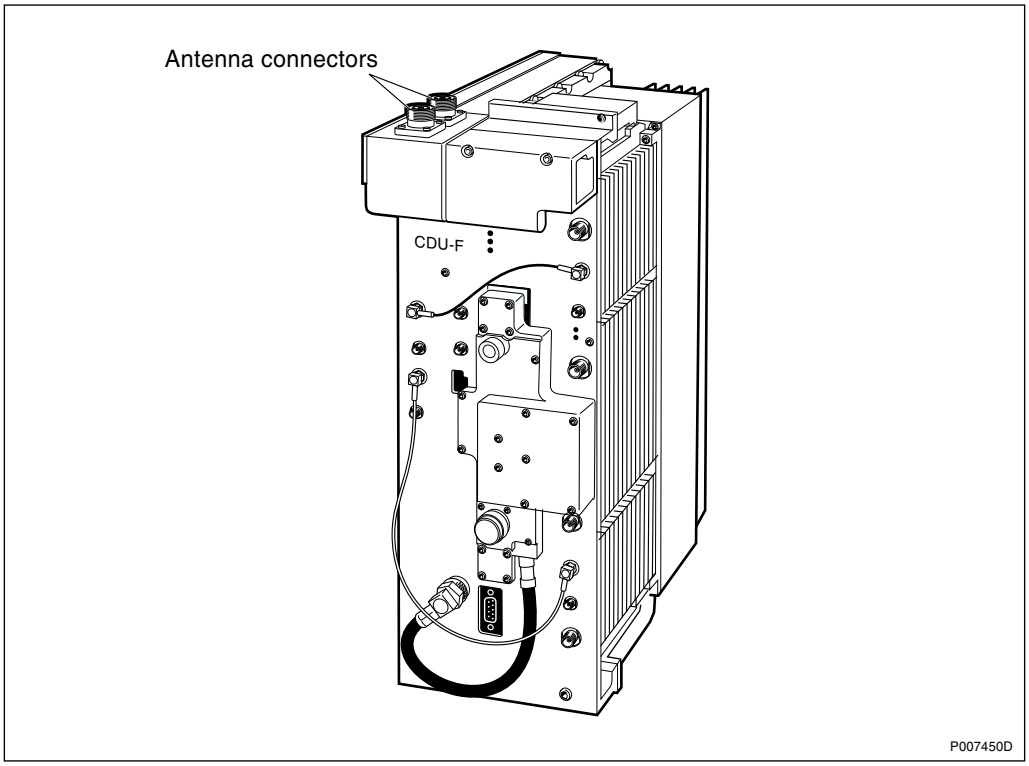



*Figure 4 CDU-F Layout*

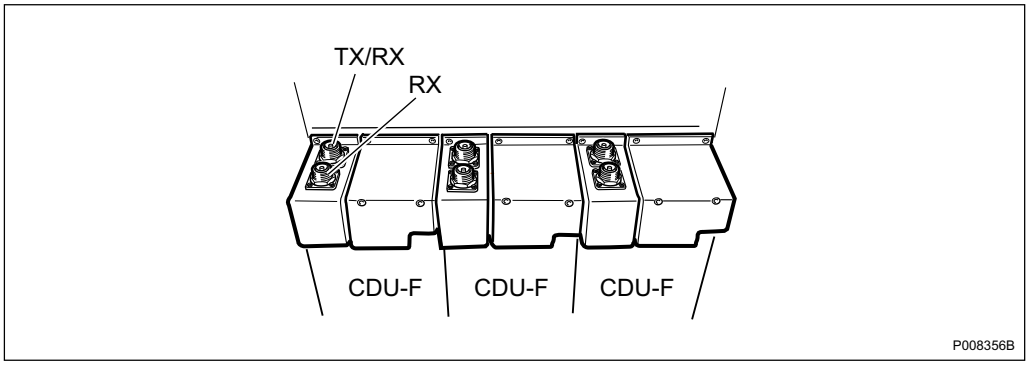



*Figure 5 CDU-F Antenna Feeder Connectors*

# 4 CDU-F Configurations

**Note:** In the figures and tables that follow, only cabinets that are fully-equipped are shown. Configurations consisting of part of the fully-equipped cabinet can also be extracted from the following figures and tables.

*See Figure 3 on page 5* and *Figure 5 on page 6* for a description of the column headers in the tables below.

## 4.1 3x4 CDU-F

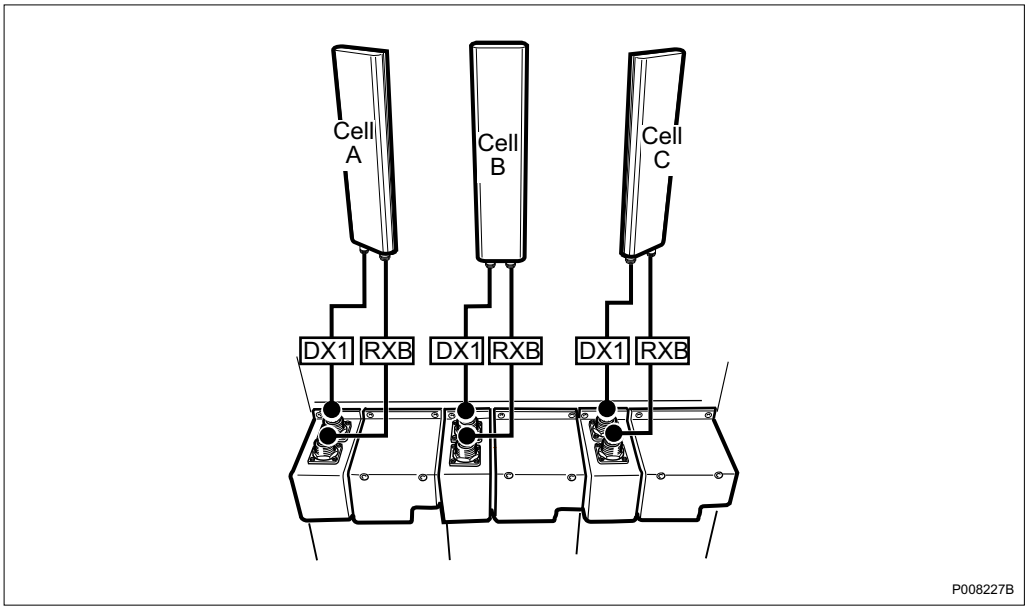



*Figure 6 Configuration without TMA*

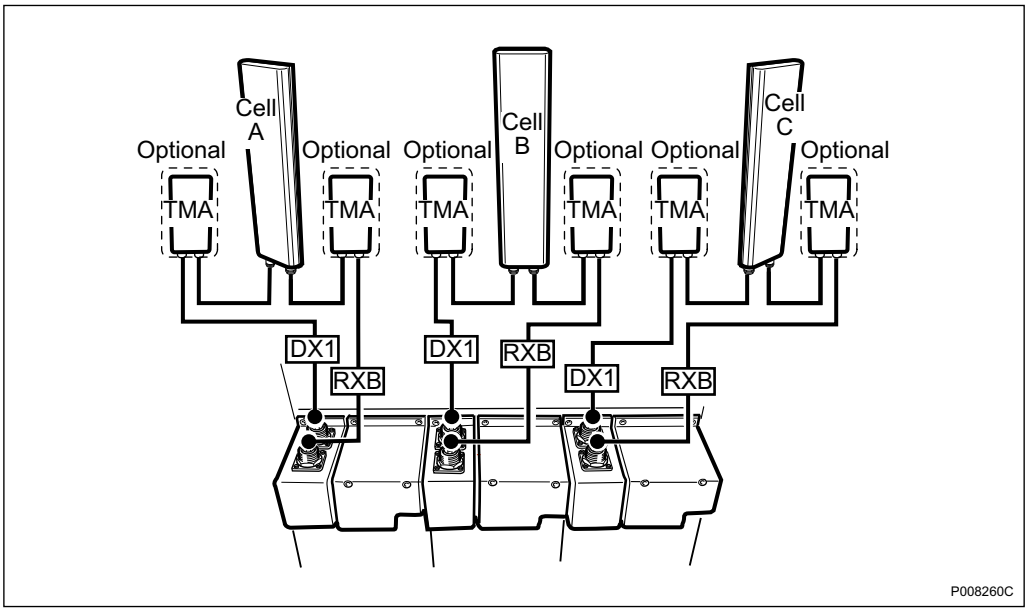



*Figure 7 3x4 CDU-F Configuration*

*Table 1 3x4 CDU-F*

| Cell | CDU | | | | ASU Connector |
|---|---|---|---|---|---|
| | CDU No. | Feeder Label | CDU Connector | Signal | |
| A | 1 | CellA: DX1 | TX/RX | TX/RX A | S1 |
| | | CellA: RXB | RX | RX B | S2 |
| B | 2 | CellB: DX1 | TX/RX | TX/RX A | S3 |
| | | CellB: RXB | RX | RX B | S4 |
| C | 3 | CellC: DX1 | TX/RX | TX/RX A | S5 |
| | | CellC: RXB | RX | RX B | S6 |

## 4.2 1x8 CDU-F

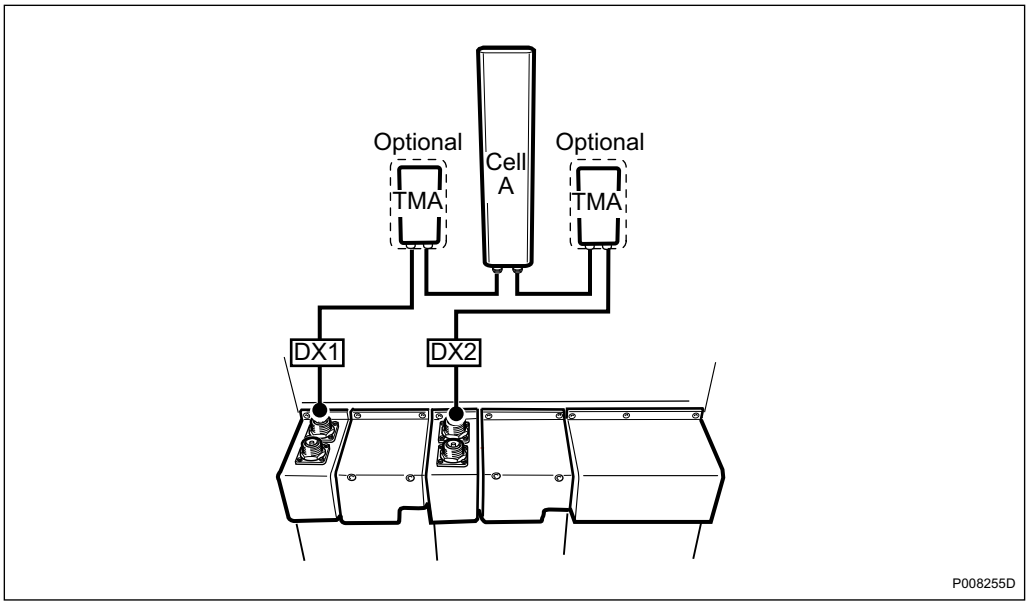



*Figure 8 Configuration with TMA*

*Table 2 1x8 CDU-F*

| Cell | CDU | | | | ASU Connector |
|---|---|---|---|---|---|
| | CDU No. | Feeder Label | CDU Connector | Signal | |
| A | 1 | CellA: DX1 | TX/RX | TX/RX A | S1 |
| | 2 | CellA: DX2 | TX/RX | TX/RX B | S3 |

## 4.3 1x12 CDU-F

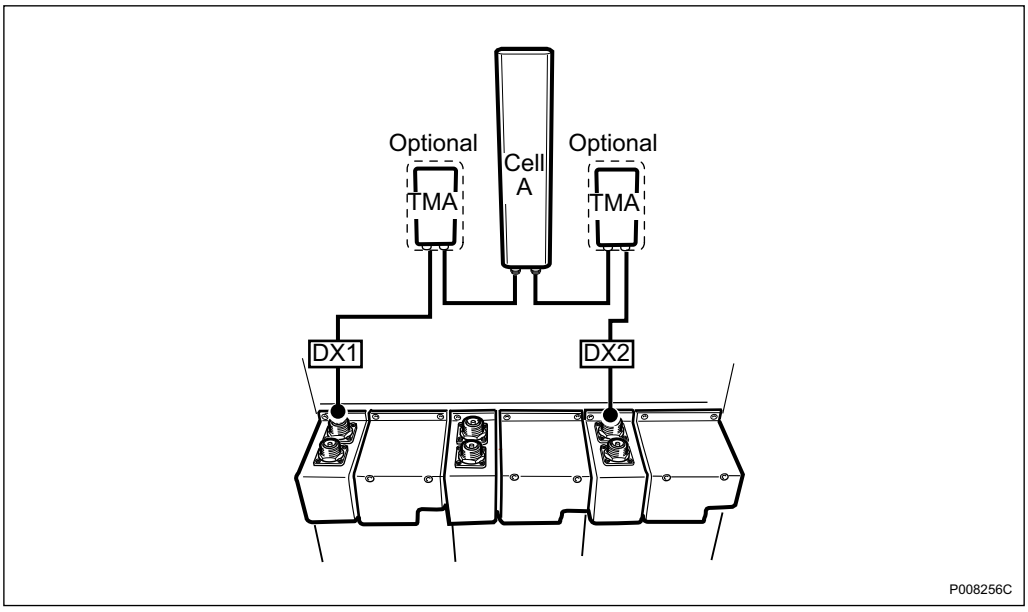



*Figure 9 1x12 CDU-F Configuration*

*Table 3 1x12 CDU-F*

| Cell | CDU | | | | ASU Connector |
|---|---|---|---|---|---|
| | CDU No. | Feeder Label | CDU Connector | Signal | |
| A | 1 | CellA: DX1 | TX/RX | TX/RX A | S1 |
| | 3 | CellA: DX2 | TX/RX | TX/RX B | S5 |

## 4.4 2x6 CDU-F

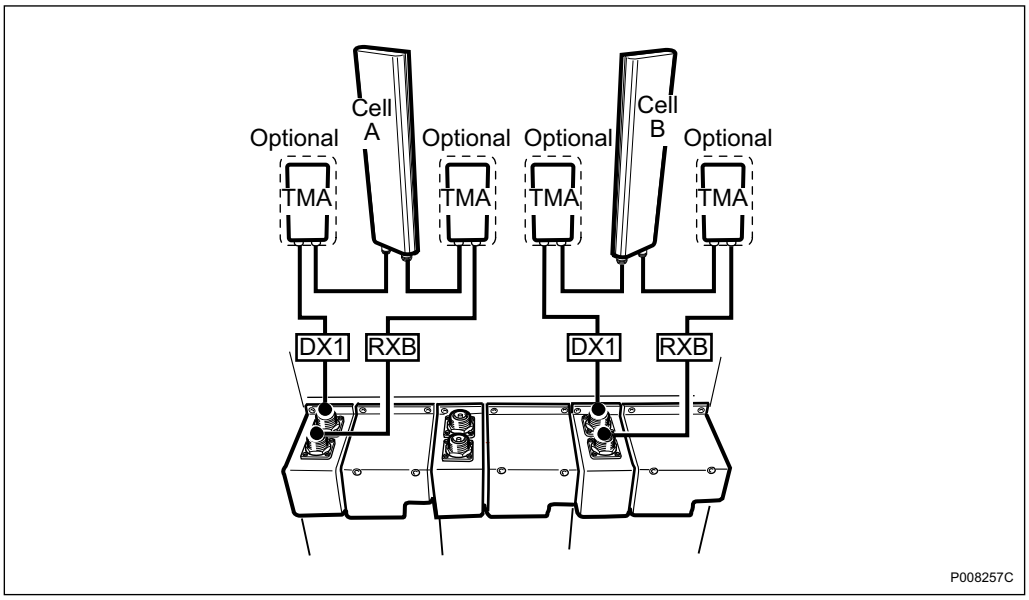



*Figure 10 2x6 CDU-F Configuration*

*Table 4 2x6 CDU-F*

| | CDU | | | | |
|---|---|---|---|---|---|
| **Cell** | **CDU No.** | **Feeder Label** | **CDU Connector** | **Signal** | **ASU Connector** |
| A | 1 | CellA: DX1 | TX/RX | TX/RX A | S1 |
| | | CellA: RXB | RX | RX B | S2 |
| B | 3 | CellB: DX1 | TX/RX | TX/RX A | S5 |
| | | CellB: RXB | RX | RX B | S6 |

## 4.5 1x4 + 1x8 CDU-F

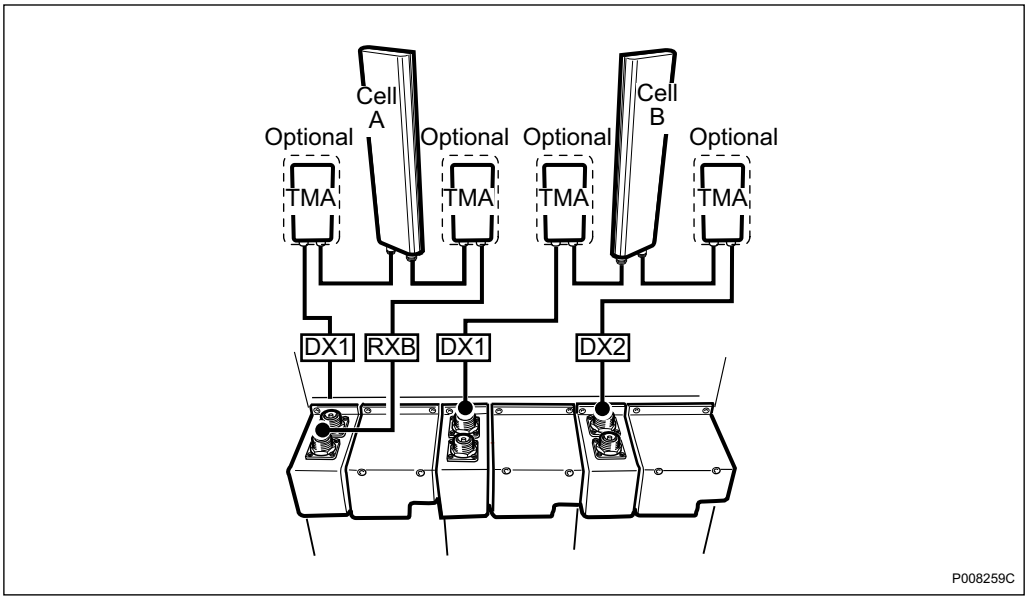



*Figure 11 1x4 + 1x8 CDU-F Configuration*

*Table 5 1x4+1x8 CDU-F*

| | CDU | | | | |
|---|---|---|---|---|---|
| **Cell** | **CDU No.** | **Feeder Label** | **CDU Connector** | **Signal** | **ASU Connector** |
| A | 1 | CellA: DX1 | TX/RX | TX/RX A | S1 |
| | | CellA: RXB | RX | RX B | S2 |
| B | 2 | CellB: DX1 | TX/RX | TX/RX B | S3 |
| | 3 | CellB: DX2 | TX/RX | TX/RX B | S5 |

## 4.6 1x8 + 1x4 CDU-F

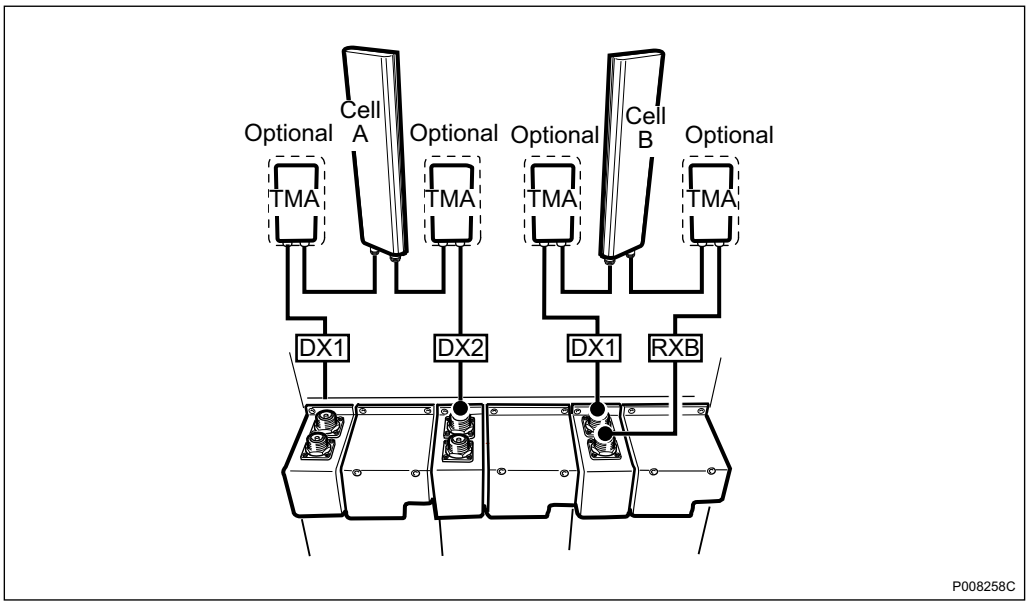



*Figure 12 1x8 + 1x4 Configuration*

*Table 6 1x8+1x4 CDU-F*

| Cell | CDU | | | | ASU Connector |
|---|---|---|---|---|---|
| | CDU No. | Feeder Label | CDU Connector | Signal | |
| A | 1 | CellA: DX1 | TX/RX | TX/RX A | S1 |
| | 2 | CellA: DX2 | TX/RX | TX/RX B | S3 |
| B | 3 | CellB: DX1 | TX/RX | TX/RX A | S5 |
| | | CellB: RXB | RX | RX B | S6 |

## 4.7 3x8 CDU-F

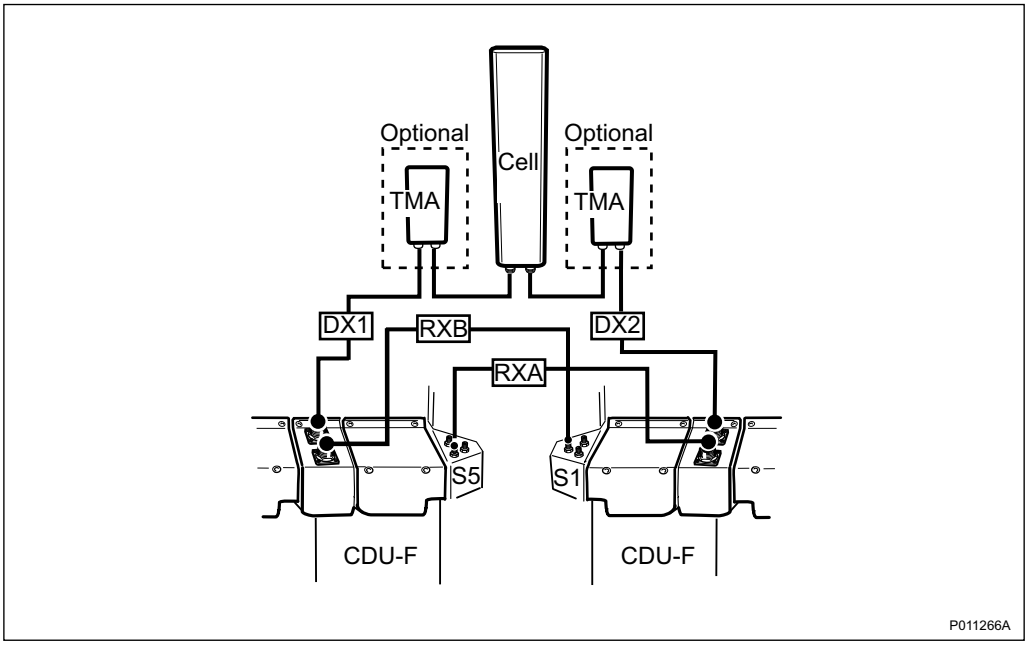



*Figure 13 3x8 CDU-F Configuration*

*Table 7 3x8 CDU-F*

| | CDU | | | | | |
|---|---|---|---|---|---|---|
| | | | Connector | | | |
| **Cell** | **CDU No.** | **Feeder Label** | **CDU** | **Conn. Field** | **Signal** | **ASU Connector** |
| B | 3 | CellB: DX 1 | TX/RX | A5 | TX/RX A | S5 |
| | | CellB: RX B | RX | | RX B | |
| | 1 | CellB: DX 2 | TX/RX | A1 | TX/RX B | S1 |
| | | CellB: RX A | RX | | RX A | |

# 5 CDU-G Antenna Connections

The antenna connectors are located on the top of the CDU, *see figures below.*

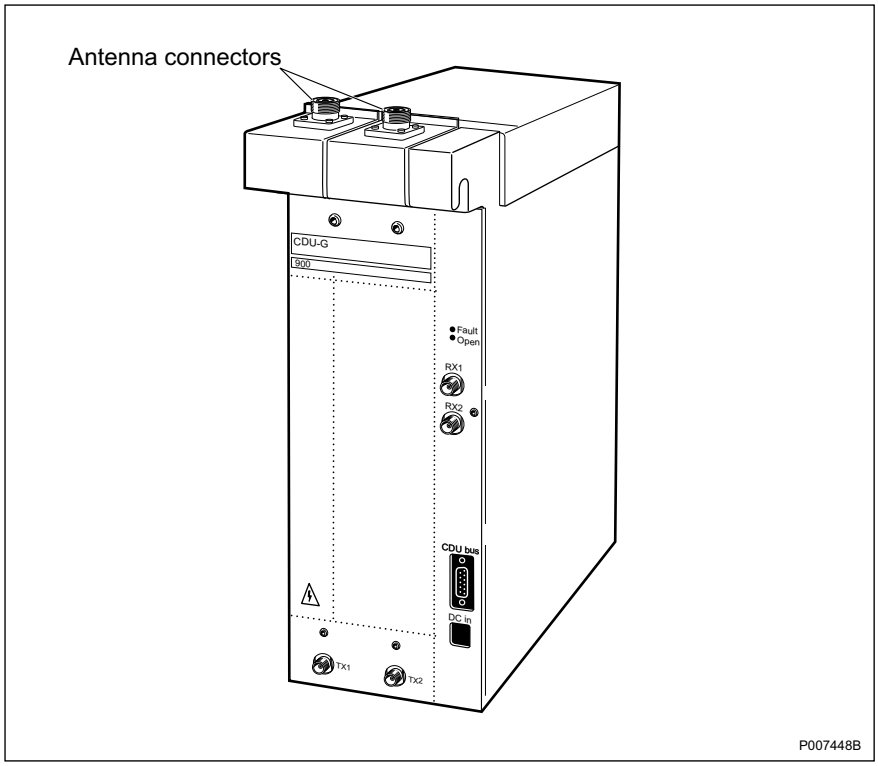



*Figure 14 CDU-G Layout*

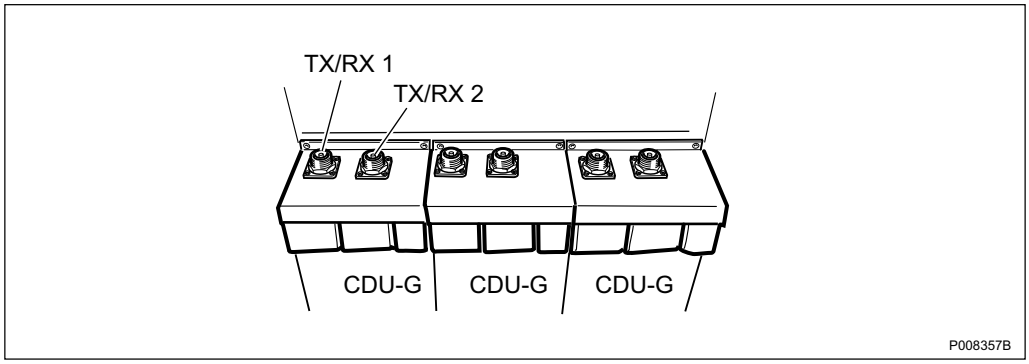



*Figure 15 CDU-G Antenna Feeder Connectors*

# 6 CDU-G Configurations

**Note:** In the figures and tables that follow, only cabinets that are fully-equipped are shown. Configurations consisting of part of the fully-equipped cabinet can also be extracted from the following figures and tables.

*See Figure 3 on page 5* and *Figure 15 on page 15* for a description of the column headers in the tables below.

## 6.1 3x2 CDU-G and 3x4 CDU-G

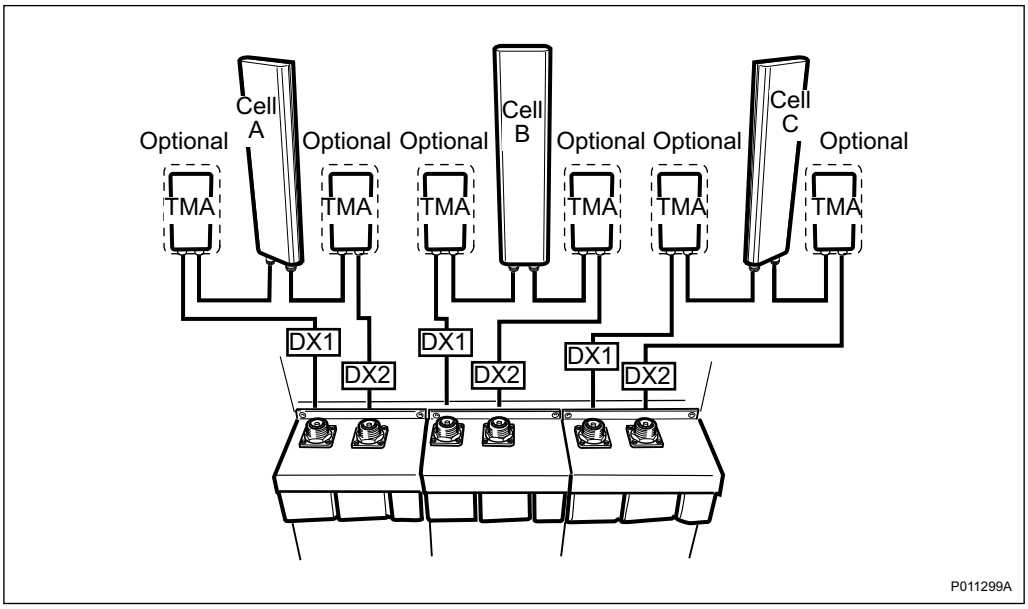



*Figure 16 3x2 and 3x4 CDU-G Configuration*

*Table 8 3x2 CDU-G and 3x4 CDU-G*

| Cell | CDU | | | | ASU Connector |
|---|---|---|---|---|---|
| | CDU No. | Feeder Label | CDU Connector | Signal | |
| A | 1 | CellA: DX1 | TX/RX1 | TX/RX A | 1 |
| | | CellA: DX2 | TX/RX2 | TX/RX B | 2 |
| B | 2 | CellB: DX1 | TX/RX1 | TX/RX A | 3 |
| | | CellB: DX2 | TX/RX2 | TX/RX B | 4 |
| C | 3 | CellC: DX1 | TX/RX1 | TX/RX A | 5 |
| | | CellC: DX2 | TX/RX2 | TX/RX B | 6 |

## 6.2 2x1 CDU-G

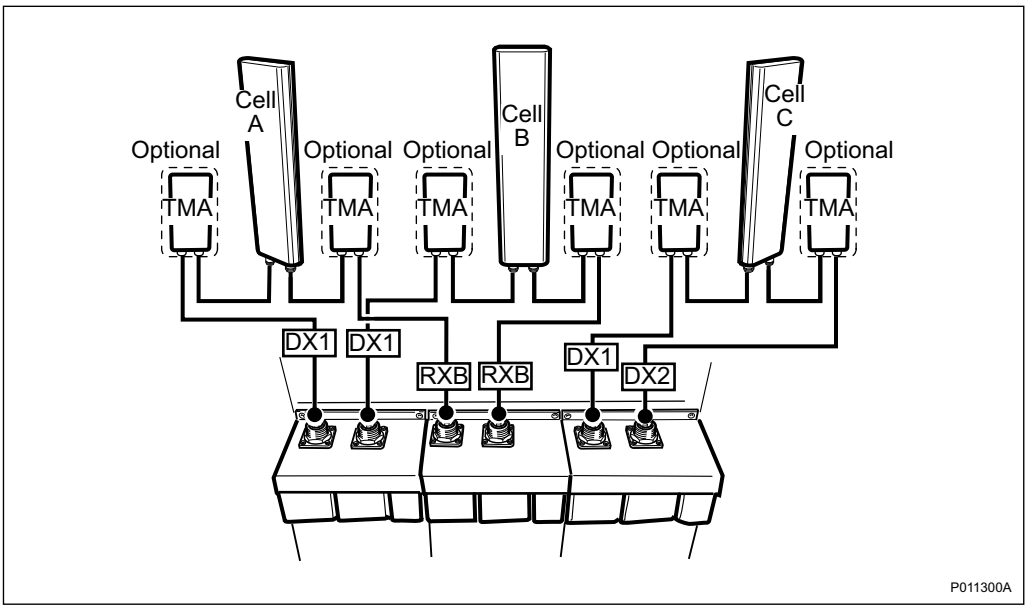



*Figure 17 2x1 CDU-G Configuration*

*Table 9 2x1 CDU-G*

| Cell | CDU | | | | ASU Connector |
|---|---|---|---|---|---|
| | CDU No. | Feeder Label | CDU Connector | Signal | |
| A | 1 | CellA: DX1 | TX/RX1 | TX/RX A | 1 |
| | 2 | CellA: RXB | TX/RX1 | RX B | 3 |
| B | 1 | CellB: DX1 | TX/RX2 | TX/RX A | 2 |
| | 2 | CellB: RXB | TX/RX2 | RX B | 4 |

For configuration for cell C, see *Section 6.1 3x2 CDU-G and 3x4 CDU-G on page 16*

## 6.3 2x3 CDU-G

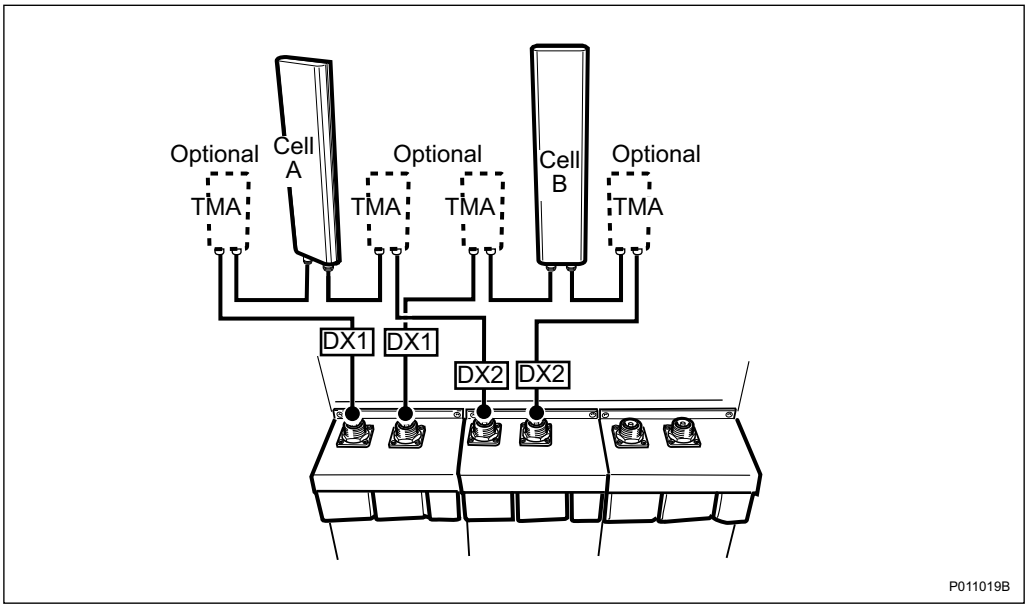



*Figure 18 2x3 CDU-G Configuration*

*Table 10 2x3 CDU-G*

| Cell | CDU | | | | | ASU Connector |
|---|---|---|---|---|---|---|
| | CDU No. | Feeder Label | Connector | | Signal | |
| | | | CDU | Conn. Field | | |
| A | 1 | CellA: DX1 | TX/RX1 | A1 | TX/RX A | 1 |
| | 2 | CellA: DX2 | TX/RX1 | A3 | TX/RX B | 3 |
| B | 1 | CellB: DX1 | TX/RX2 | A2 | TX/RX A | 2 |
| | 2 | CellB: DX2 | TX/RX2 | A4 | TX/RX B | 4 |

For cell C configuration, see *Section 6.1 3x2 CDU-G and 3x4 CDU-G on page 16*

## 6.4 1x4 CDU-G without Hybrid Combiner and 1x8 CDU-G with Hybrid Combiner

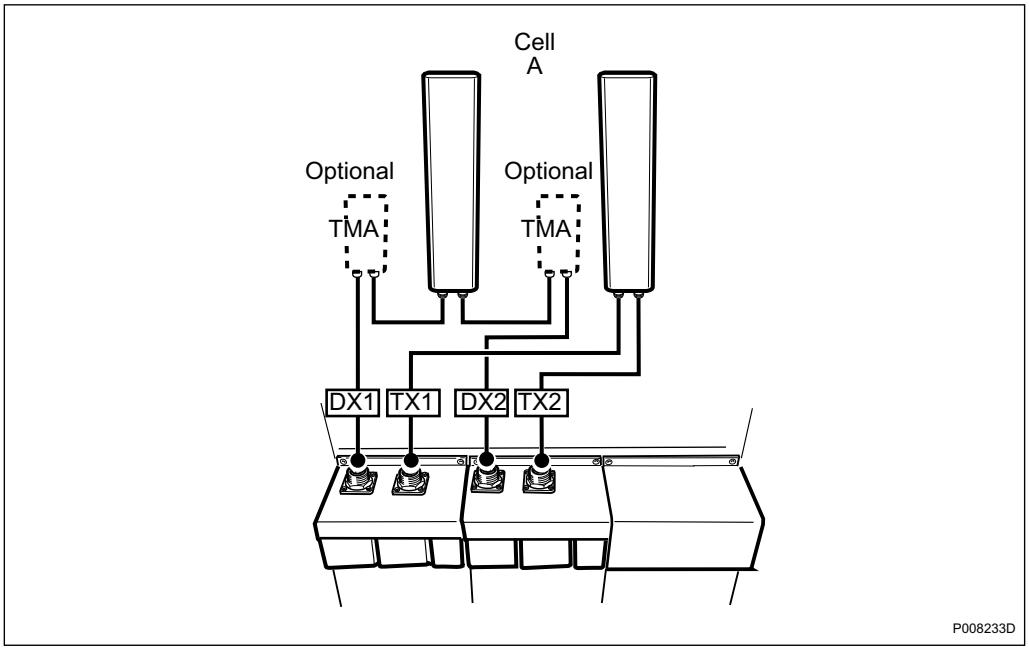



*Figure 19 1x4 CDU-G Configuration*

*Table 11 1x4 CDU-G without Hybrid Combiner and 1x8 CDU-G with Hybrid Combiner*

| Cell | CDU | | | | ASU Connector |
|---|---|---|---|---|---|
| | CDU No. | Feeder Label | CDU Connector | Signal | |
| A | 1 | CellA: DX1 | TX/RX1 | TX/RX A | 1 |
| | | CellA: TX1 | TX/RX2 | TX | |
| | 2 | CellA: DX2 | TX/RX1 | TX/RX B | 3 |
| | | CellA: TX2 | TX/RX2 | TX | |

## 6.5 1x6 CDU-G without Hybrid Combiner and 1x12 CDU-G with Hybrid Combiner

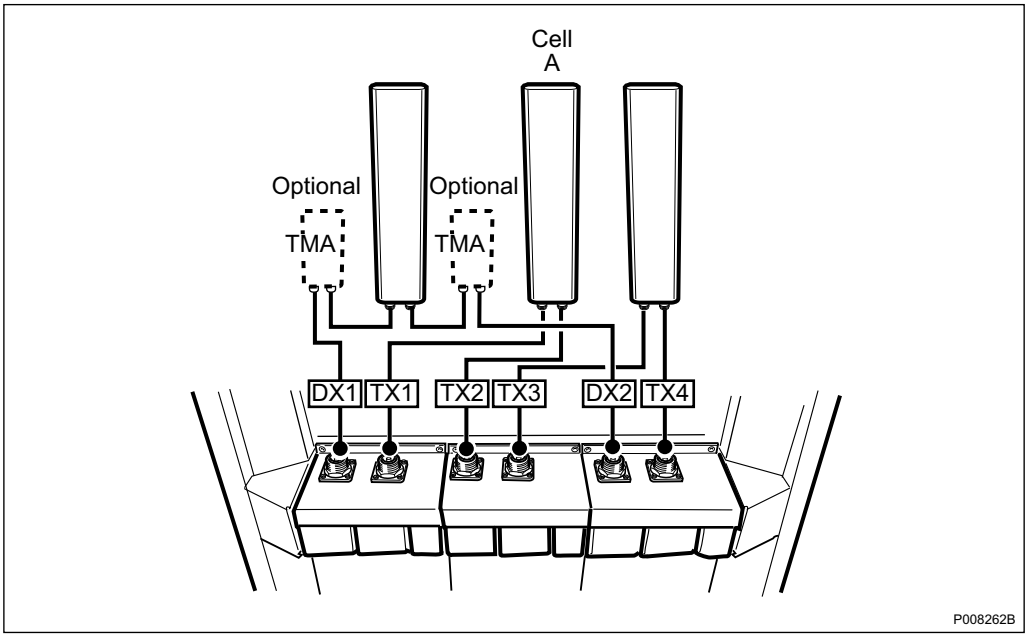



*Figure 20 1x6 CDU-G Configuration*

*Table 12 1x6 CDU-G without Hybrid Combiner and 1x12 CDU-G with Hybrid Combiner*

| Cell | CDU | | | | ASU Connector |
|---|---|---|---|---|---|
| | CDU No. | Feeder Label | CDU Connector | Signal | |
| A | 1 | CellA: DX1 | TX/RX1 | TX/RX A | 1 |
| | | CellA: TX1 | TX/RX2 | TX | |
| | 2 | CellA: TX2 | TX/RX1 | TX | |
| | | CellA: TX3 | TX/RX2 | TX | |
| | 3 | CellA: DX2 | TX/RX1 | TX/RX B | 5 |
| | | CellA: TX4 | TX/RX2 | TX | |

## 6.6 1x8 CDU-G with HCU

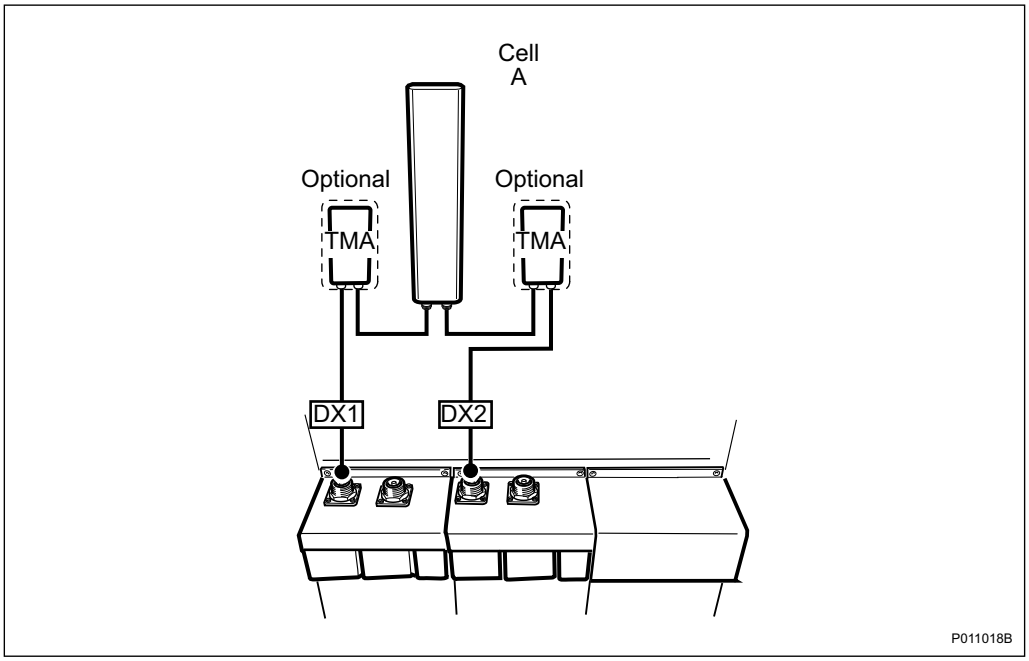



*Figure 21 1x8 CDU-G Configuration*

*Table 13 1x8 CDU-G with HCU*

| Cell | CDU | | | | | ASU Con-nector |
|---|---|---|---|---|---|---|
| | CDU No. | Feeder Label | Connector | | Signal | |
| | | | CDU | Conn. Field | | |
| A | 1 | CellA: DX1 | TX/RX1 | A1 | TX/RX A | S1 |
| | 2 | CellA: DX2 | TX/RX1 | A3 | TX/RX A | S2 |

## 6.7 1x12 CDU-G with HCU

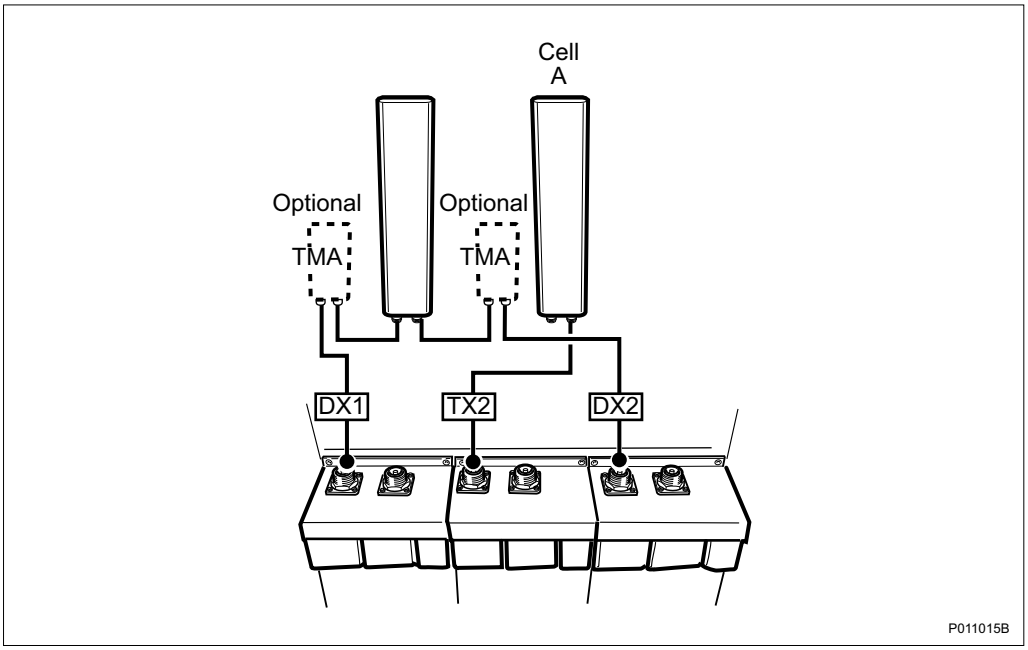



*Figure 22 1x12 CDU-G with HCU and TMA*

*Table 14 1x12 CDU-G with HCU*

| Cell | CDU | | | | | ASU Connector |
|---|---|---|---|---|---|---|
| | CDU No. | Feeder Label | Connector | | Signal | |
| | | | CDU | Conn. Field | | |
| A | 1 | CellA: DX1 | TX/RX 1 | A1 | TX/RX A | S1 |
| | 2 | CellA: TX1 | TX/RX 1 | A3 | TX | |
| | 3 | CellA: DX2 | TX/RX 1 | A5 | TX/RX B | S5 |

## 6.8 2x6 CDU-G

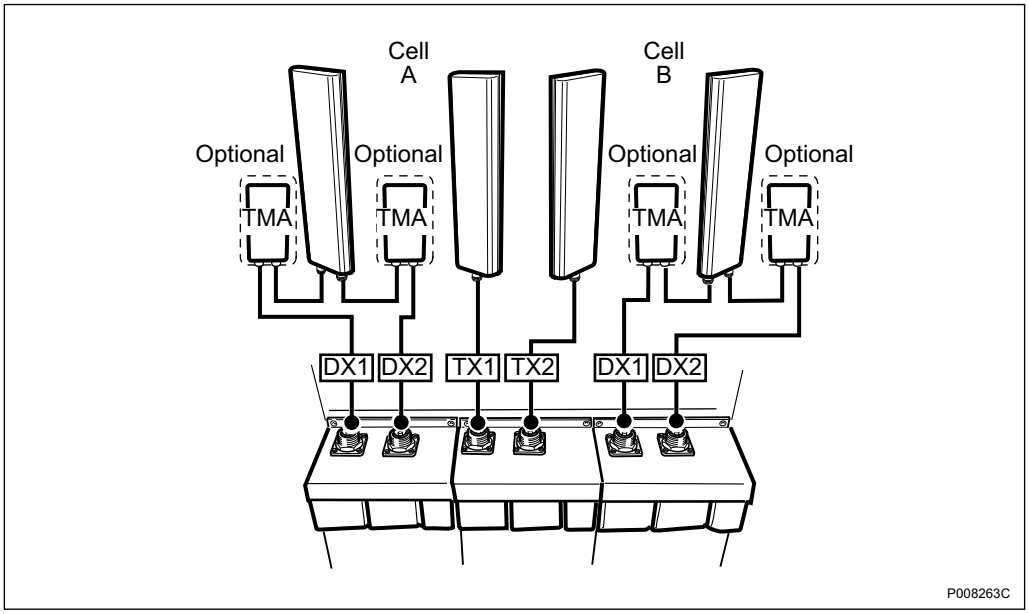



*Figure 23 2x6 CDU-G Configuration*

*Table 15 2x6 CDU-G*

| Cell | CDU | | | | ASU Connector |
|---|---|---|---|---|---|
| | CDU No. | Feeder Label | CDU Connector | Signal | |
| A | 1 | CellA: DX1 | TX/RX1 | TX/RX A | S1 |
| | | CellA: DX2 | TX/RX2 | TX/RX B | S2 |
| | 2 | CellA: TX1 | TX/RX1 | TX | |
| B | | CellB: TX2 | TX/RX2 | TX | |
| | 3 | CellB: DX1 | TX/RX1 | TX/RX A | S5 |
| | | CellB: DX2 | TX/RX2 | TX/RX B | S6 |

## 6.9 3x8 CDU-G with HCU

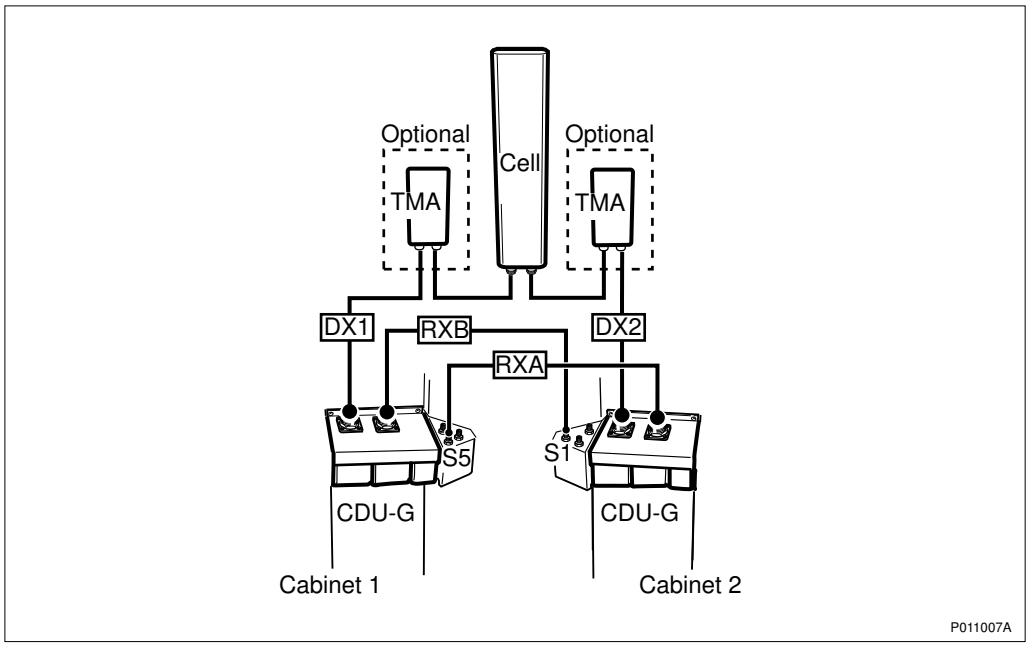



*Figure 24 3x8 CDU-G Configuration*

*Table 16 3x8 CDU-G*

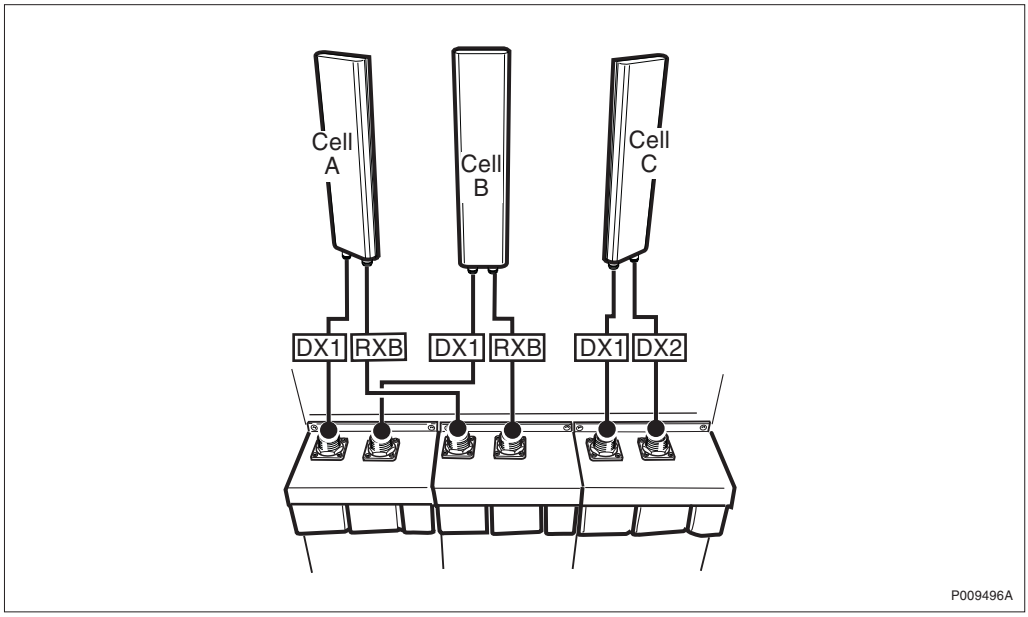
| | CDU | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | Connector | | | | |
| **Cell** | **CDU No.** | **Feeder Label** | **CDU** | **Conn. Field** | **Signal** | **ASU Connector** | **Cabinet** |
| A | 1, cab. 1 | CellA: DX1 | TX/RX1 | A1 | TX/RX A | B1 | 1 |
| | 2, cab. 1 | CellA: DX2 | TX/RX2 | A2 | RX B | B2 | |
| B | 3, cab. 1 | CellB: DX 1 | TX/RX1 | A5 | TX/RX A | B5 | 1 |
| | | CellB: RX B | TX/RX2 | A6 | RX B | B6 | |
| | 1, cab. 2 | CellB: DX 2 | TX/RX1 | A1 | TX/RX B | B1 | 2 |
| | | CellB: RX A | TX/RX2 | A2 | RX A | B2 | |
| C | 2, cab. 2 | CellC: DX1 | TX/RX1 | A3 | TX/RX A | B3 | 2 |
| | | CellC: RX B | TX/RX2 | A4 | RX B | B4 | |
| | 3, cab. 2 | CellC: DX2 | TX/RX1 | A5 | TX/RX A | B5 | |
| | | CellC: RX B | TX/RX2 | A6 | RX B | B6 | |

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

# RBS 2207
## Antenna Configurations

## Description

This document describes the possible antenna configurations for the RBS 2207.

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# 1 Introduction

The various configurations available for cabinets are described according to the following example:

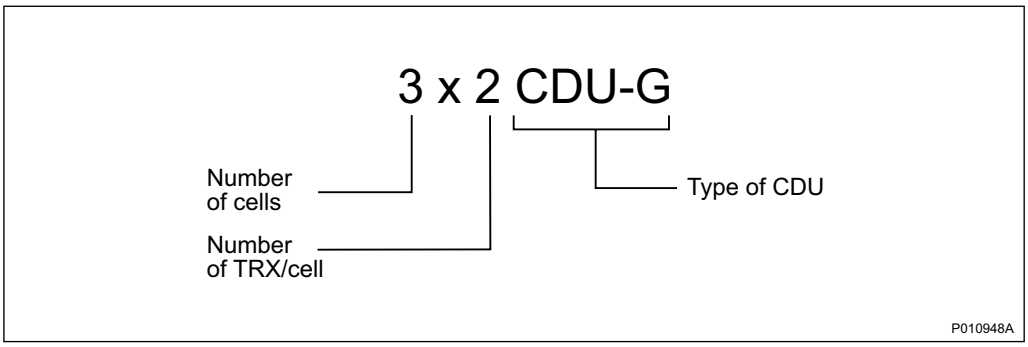


*Figure 1 CDU configuration key*

In the example above, the cabinet is configured for three cells, each using two TRXs. The total number of TRXs is thus six in this case. The CDU is type CDU-G.

**Note:** If a tower mounted amplifier (TMA) is used the bias injectors must be installed.

# 2 CDU-G Antenna Connections

The antenna connectors are located on the top of the CDU, *see figures below.*

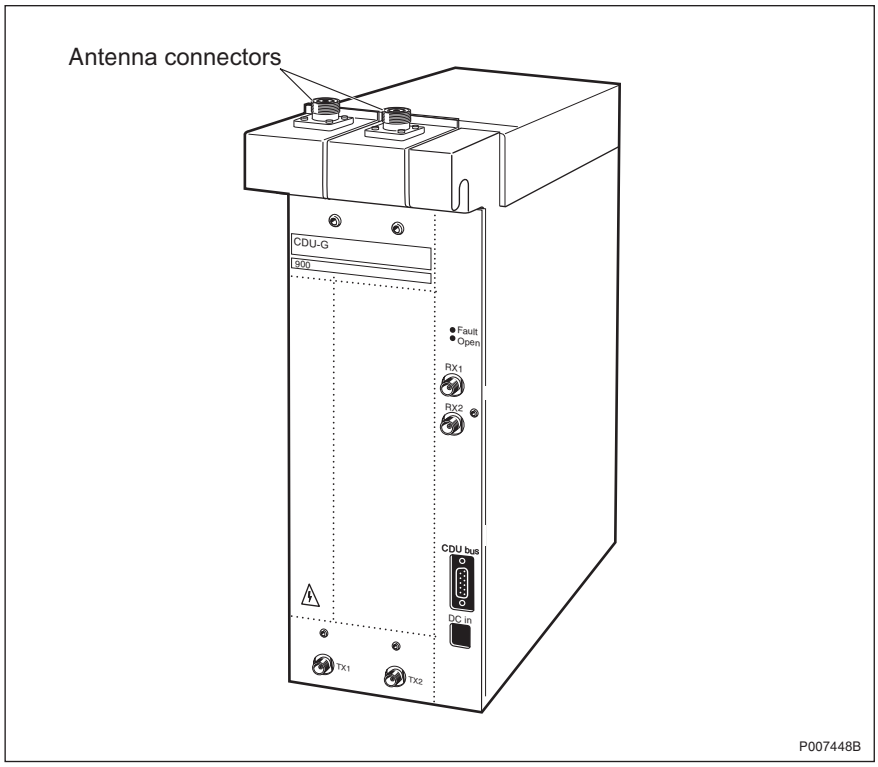


*Figure 2 CDU-G layout*

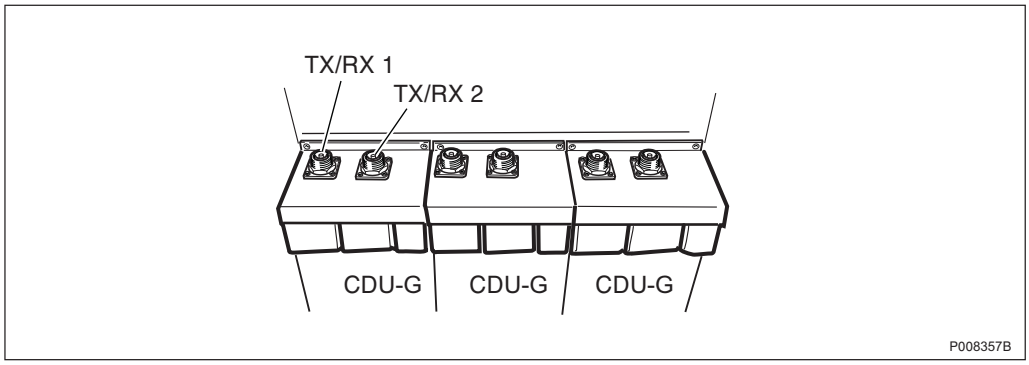


*Figure 3 CDU-G antenna feeder connectors*

# 3 CDU-G Configurations

**Note:** In the figures and tables that follow, only cabinets that are fully-equipped are shown. Configurations consisting of part of the fully-equipped cabinet can also be extracted from the following figures and tables.

## 3.1 3x2 CDU-G

This section describes the 3x2 combined and uncombined CDU-G configurations.

### 3x2 Uncombined CDU-G Configurations

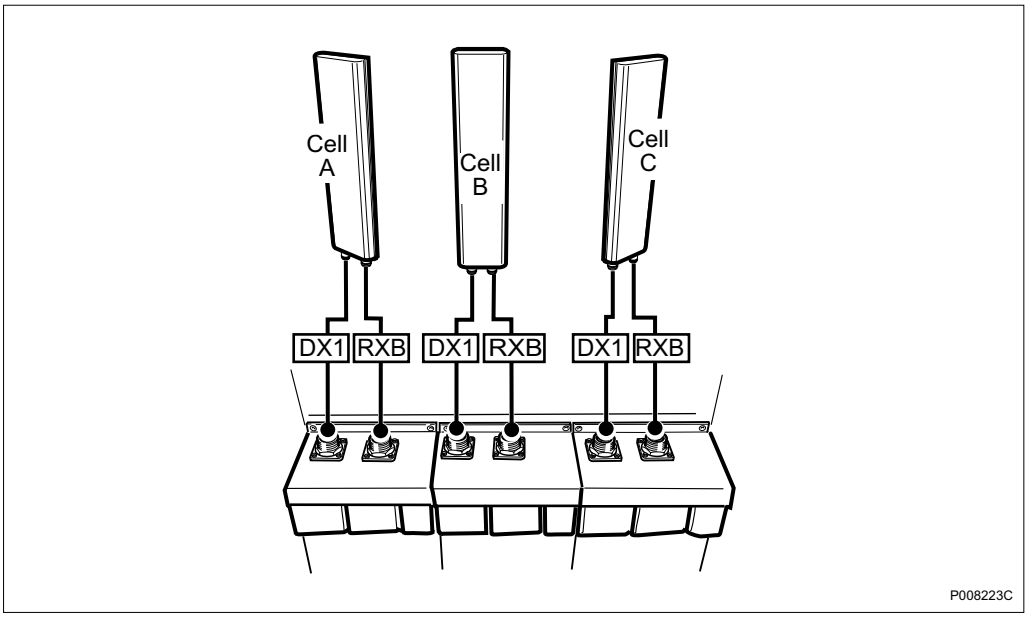


*Figure 4 Uncombined configuration without TMA*

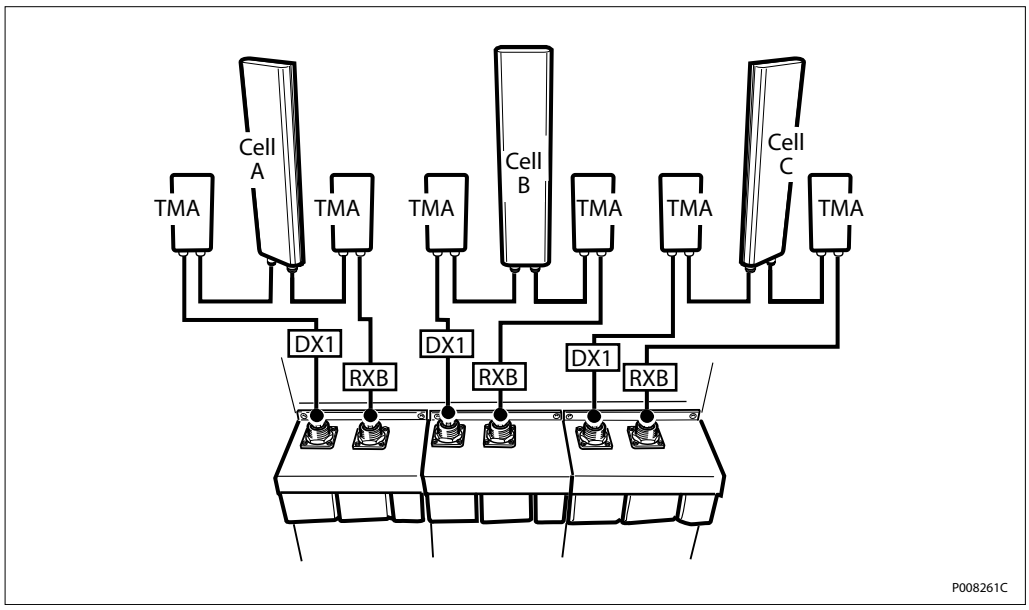


*Figure 5 Uncombined configuration with TMA*

*Table 1 3x2 CDU-G uncombined*

| | **CDU** | | | |
|---|---|---|---|---|
| **Cell** | **CDU No.** | **Feeder label** | **CDU connector** | **Signal** |
| A | 1 | CellA: DX1 | TX/RX1 | TX/RX A |
| | | CellA: DX2 | TX/RX2 | TX/RX B |
| B | 2 | CellB: DX1 | TX/RX1 | TX/RX A |
| | | CellB: DX2 | TX/RX2 | TX/RX B |
| C | 3 | CellC: DX1 | TX/RX1 | TX/RX A |
| | | CellC: DX2 | TX/RX2 | TX/RX B |

From the configuration in the figures and tables above, the following configurations can be derived:

- 1x2 CDU-G uncombined
- 2x2 CDU-G uncombined

### 3x2 Combined CDU-G Configurations

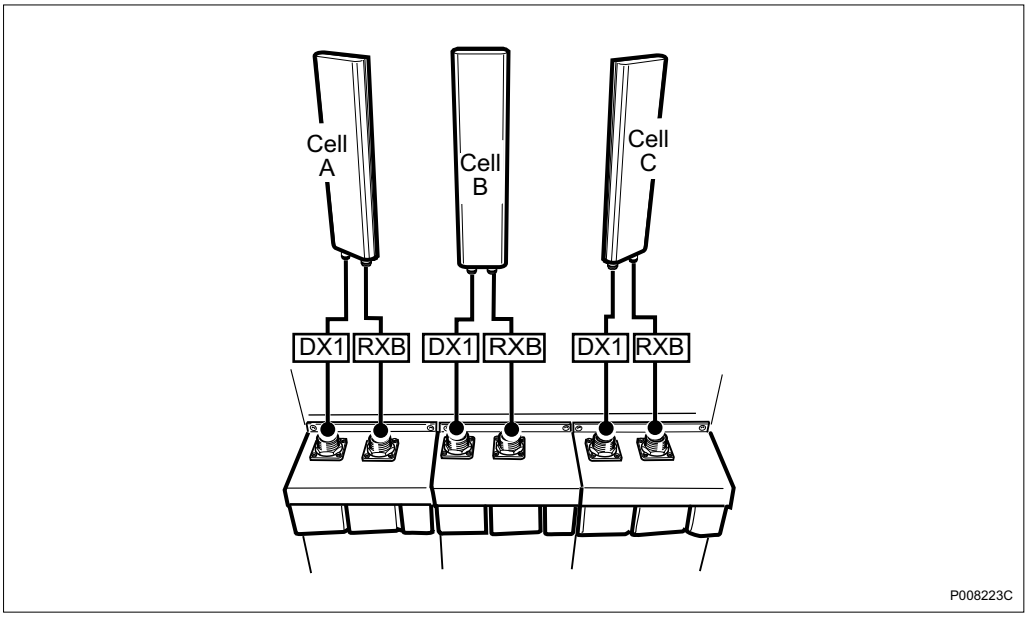


*Figure 6 Combined configuration without TMA*

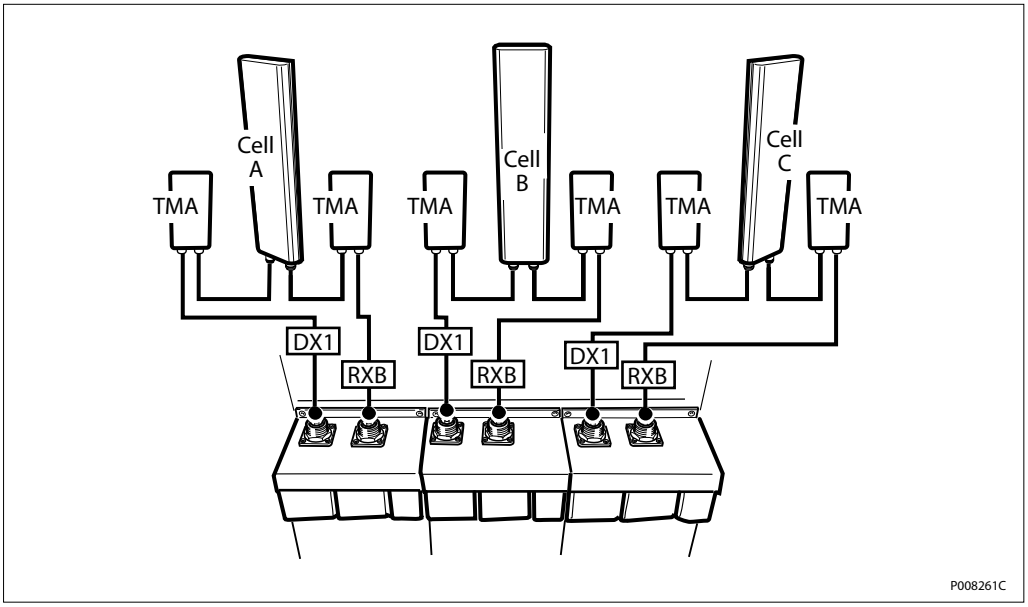


*Figure 7 Combined configuration with TMA*

*Table 2 3x2 CDU-G combined*

| Cell | CDU | | | |
|---|---|---|---|---|
| | **CDU No.** | **Feeder label** | **CDU connector** | **Signal** |
| A | 1 | CellA: DX1 | TX/RX1 | TX/RX A |
| | | CellA: RXB | TX/RX2 | RX B |
| B | 2 | CellB: DX1 | TX/RX1 | TX/RX A |
| | | CellB: RXB | TX/RX2 | RX B |
| C | 3 | CellC: DX1 | TX/RX1 | TX/RX A |
| | | CellC: RXB | TX/RX2 | RX B |

From the configuration in the figures and tables above, the following configurations can be derived:

- 1x2 CDU-G combined
- 2x2 CDU-G combined

## 3.2 1+1+2 CDU-G uncombined

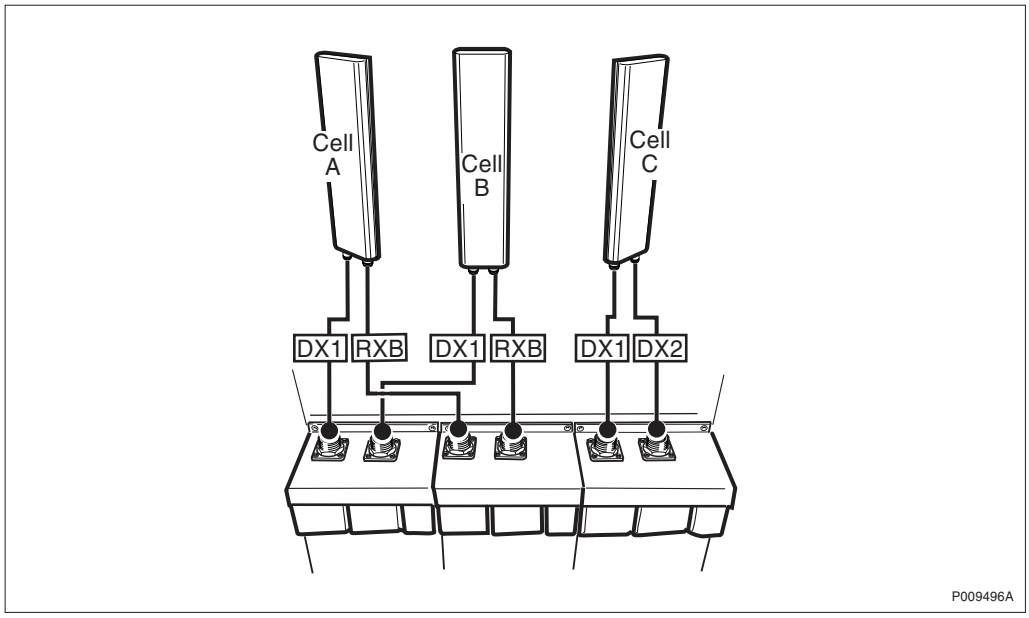


*Figure 8 Configuration without TMA*

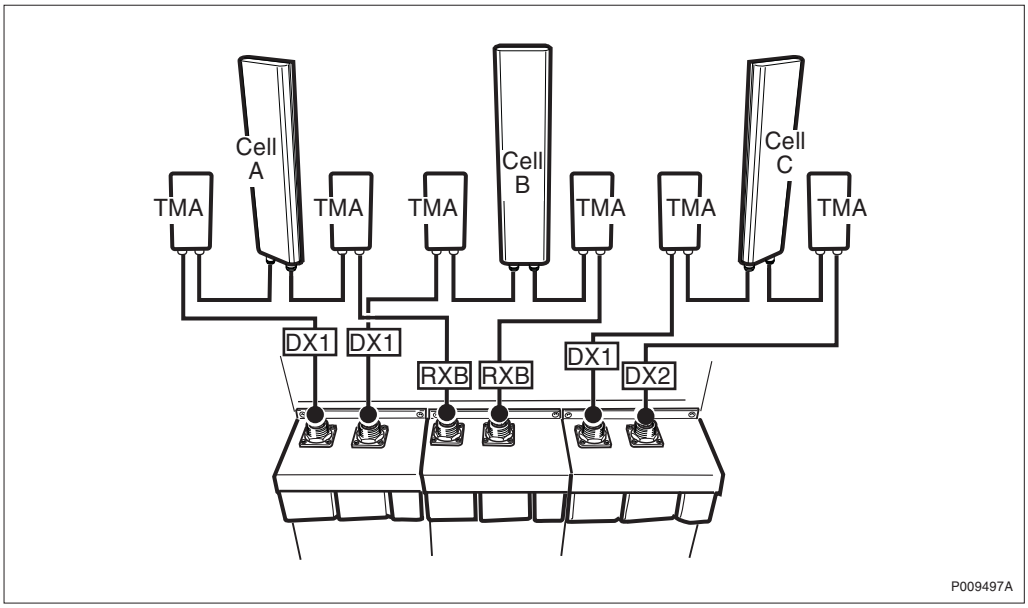


*Figure 9 Configuration with TMA*

*Table 3 1+1+2 CDU-G*

| | **CDU** | | | |
|---|---|---|---|---|
| **Cell** | **CDU No.** | **Feeder label** | **CDU connector** | **Signal** |
| A | 1 | CellA: DX1 | TX/RX1 | TX/RX A |
| | 2 | CellA: RXB | TX/RX1 | RX B |
| B | 1 | CellB: DX1 | TX/RX2 | TX/RX A |
| | 2 | CellB: RXB | TX/RX2 | RX B |
| C | 3 | CellC: DX1 | TX/RX1 | TX/RX A |
| | | CellC: RXB | TX/RX2 | TX/RX B |

From the configuration in the figures and tables above, the following configuration can be derived:

- 2x1 CDU-G uncombined

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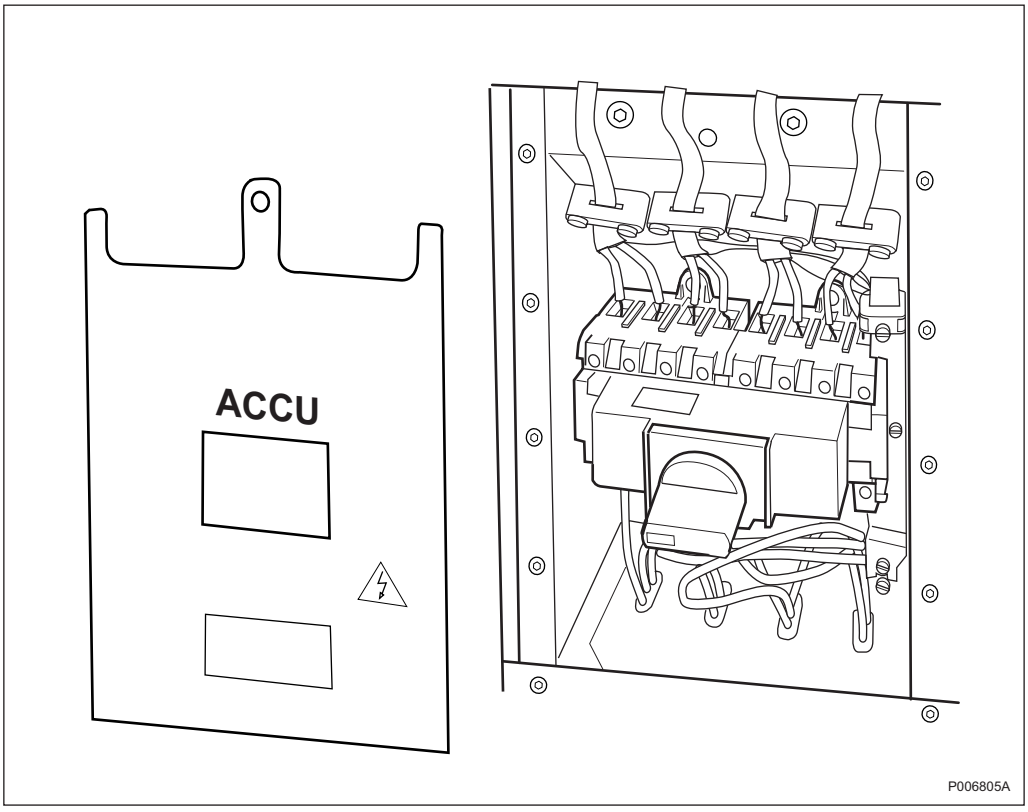
SE-164 80 Stockholm
Sweden

# ACCU-01

## AC Connection Unit
## Unit Description

The AC Connection Unit (ACCU) distributes primary power to the Power Supply Units (PSU).



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# 1 Product Overview

The ACCU distributes primary power to the PSUs. There is only one ACCU in the cabinet, depending on the type of incoming power.

## 1.1 Main Functions

The ACCU has the following functions:

- Terminates incoming AC mains cables
- Disconnects incoming AC mains
- Filters EMC

# 2 Dimensions

The dimensions of the ACCU are shown in the table below.

*Table 1 Size and Weight*

| Height | Width | Depth | Weight |
|---|---|---|---|
| 293.5 mm | 141 mm | 60 mm | 5 kg |

# 3 Function Description

The ACCU consists of a box with:

- A terminal block for incoming AC cables
- Eight-pole main switch (disconnecting device)
- One EMC filter
- Four connection points for cables to the PSUs

# 4 Interfaces

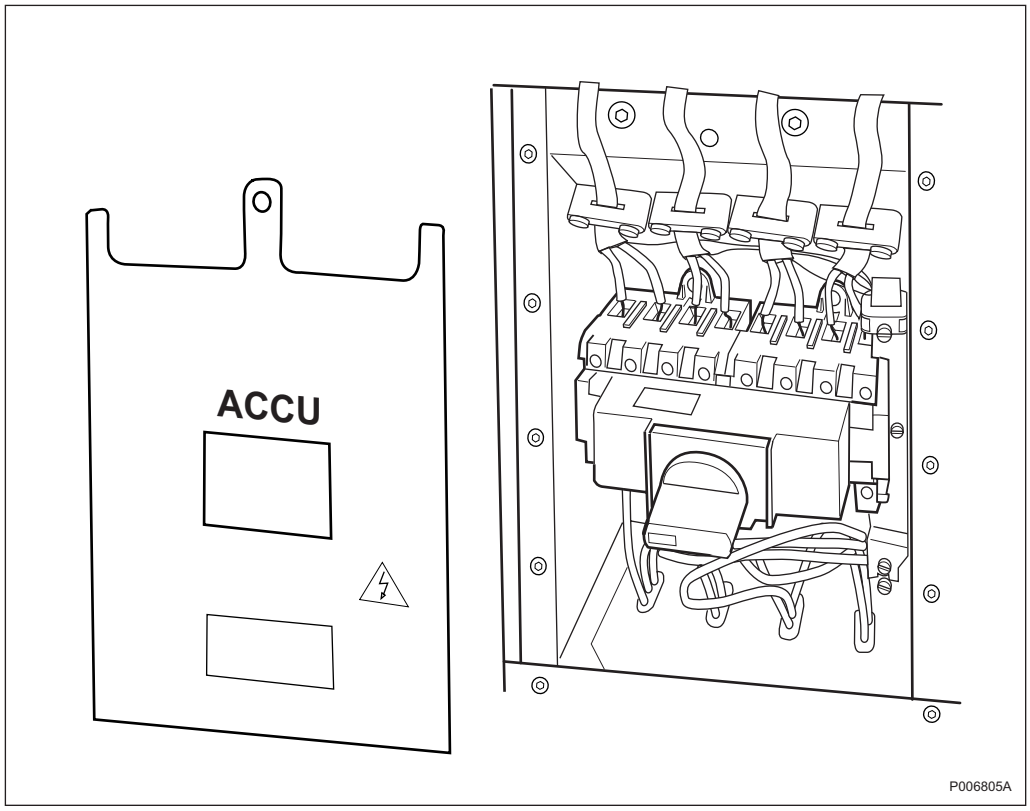



*Figure 1 ACCU Interfaces*

- Terminal block for incoming AC mains cables
- Four connection points for outgoing cables to the PSUs

## 4.1 Signal and Power Interfaces

### Input Data

*Table 2 Input Data*

| | |
|---|---|
| Frequency | 45 - 65 Hz |
| Voltage | 90 - 275 V AC |
| External fuses | 4 pcs, max. 16 A |
| Cable diameter | 8.5 - 12.5 mm |
| Conductor area | 1.5 - 2.5 $mm^2$ |
| Number of conductors | 3 (L, N, PE) |

### Output Data

Four cables with connectors according to IEC 320 and for connection to the PSU AC inlet.

## 4.2 Operator Interface

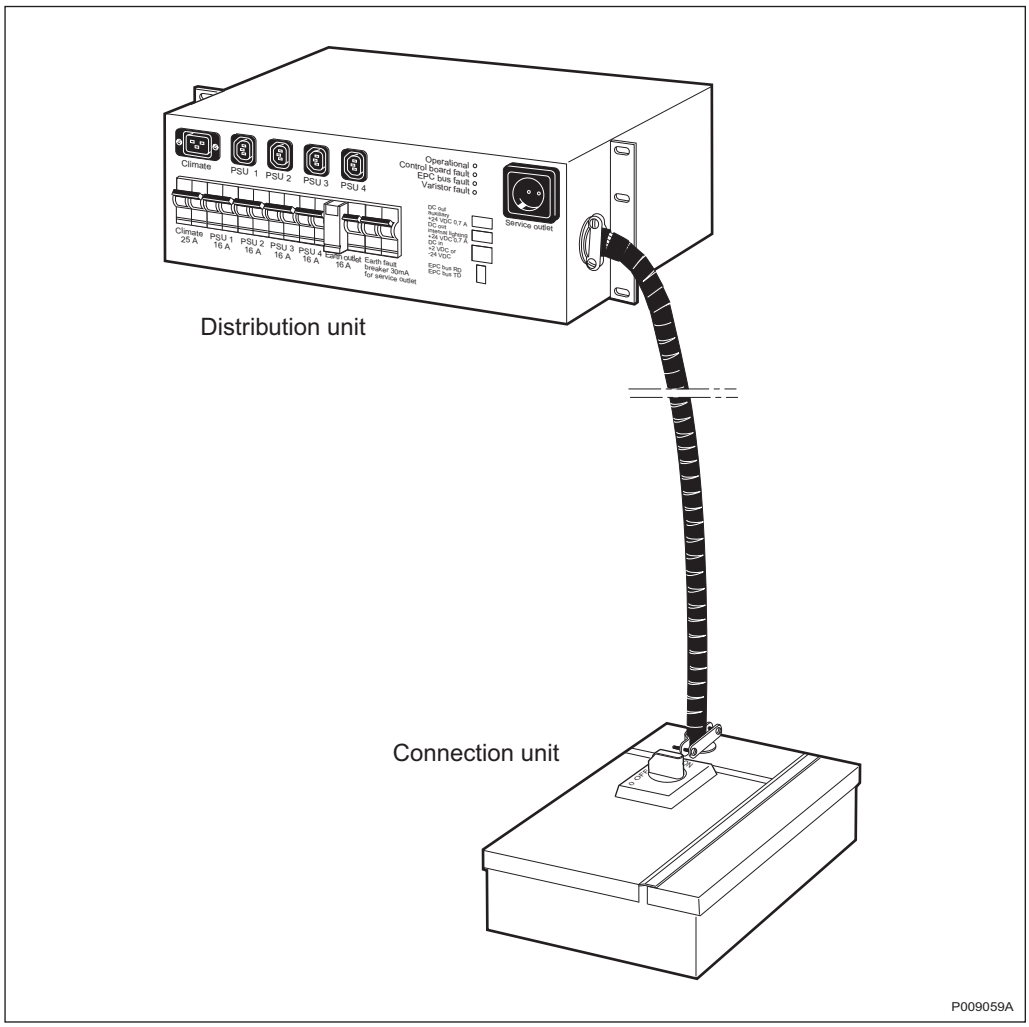
The mains switch on the ACCU that has two states, on (position 1) and off (position 0).

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

# ACCU-02

## AC Connection Unit
## Unit Description

The AC Connection Unit (ACCU-02) distributes and supervises the incoming AC mains to the units in the RBS cabinet.



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# 1 Product Overview

ACCU-02 distributes and supervises the incoming AC mains to the units in the RBS.

It consists of two units, a Connection Unit and a Distribution Unit. The units are connected together with a power cable and a signal cable.

## 1.1 Main Functions

ACCU-02 has the following main functions:

- Distributes AC power to the PSUs and makes it possible to connect and disconnect the PSUs through the EPC bus
- Distributes AC power to the Climate Unit
- Provides EMC filtering and protection against power line disturbances on the incoming AC power
- Acts as a disconnecting device (Mains Switch)
- Supervises the mains supply and triggers an alarm on undervoltage, fuse fault and worn out overvoltage protectors
- Provides +24 V DC outputs to lighting in the cabinet and to auxiliary equipment
- Provides a service outlet for instruments and tools

# 2 Dimensions

The ACCU has the following dimensions:

*Table 1 Size and Weight*

| | **Height** | **Width** | **Depth** |
|---|---|---|---|
| **Connection unit** | 93 mm | 205 mm | 301 mm |
| **Distribution unit** | 149 mm | 435 mm (excluding mounting bracket) | 250 mm |

# 3 Function Description

The ACCU-02 consists of two units, a Connection Unit and a Distribution Unit.

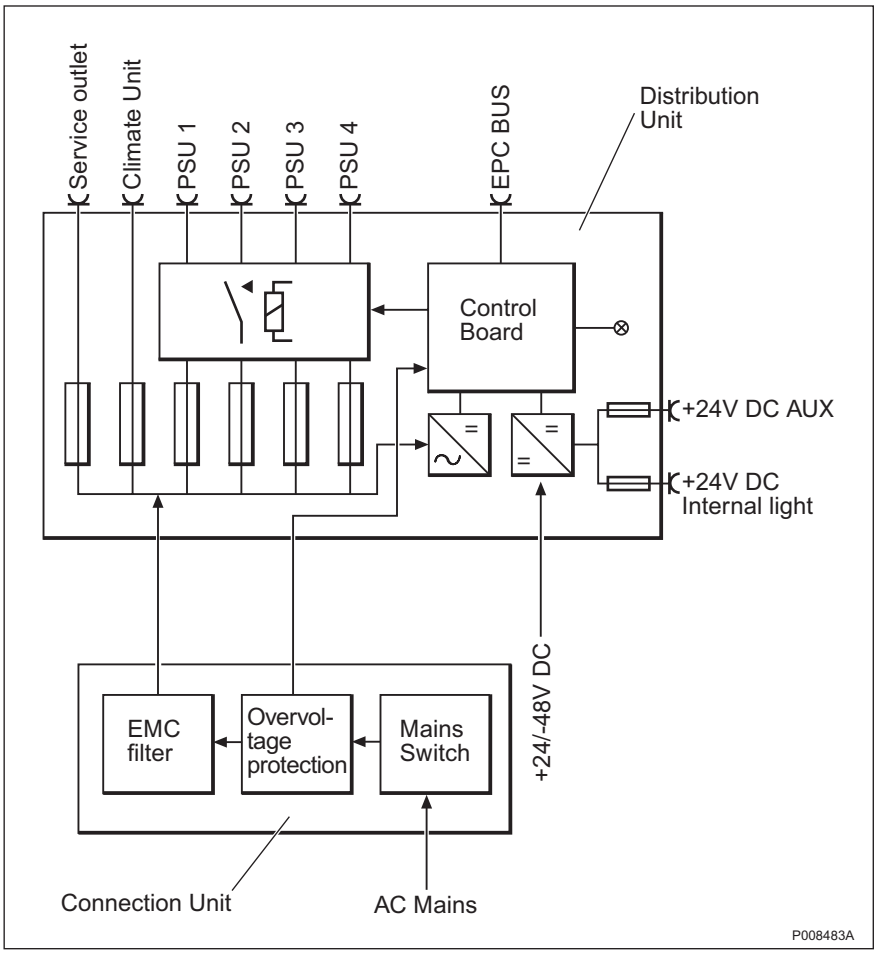



*Figure 1 Block diagram of ACCU-02*

## 3.1 Connection Unit

The Connection Unit consists of:

- Mains Switch
- Overvoltage protectors
- EMC filter

### 3.2 Distribution Unit

The Distribution Unit consists of:

- Four outlets for PSUs, protected by 16 A circuit breakers
- One outlet for Climate Unit, protected by a 25 A circuit breaker
- One service outlet, protected by a 10 A circuit breaker with earth fault breaker
- Two DC outputs for cabinet lighting and auxiliary equipment, protected by 1 A circuit breakers
- Rectifier for supply of Control Unit
- Voltage Regulator for supply of Control Unit and DC outputs from +24 or -48 V DC
- Relays which provide the possibility to turn off and on the PSU outputs
- Control Unit

# 4 Interfaces

## 4.1 Signal and Power Interfaces

#### Input Data

The input terminals accept supply cables with conductor area of 2.5 - 16 $mm^2$. Maximum allowed fuse rating is 63 A per phase.

*Table 2 AC Supply 50 Hz*

| | |
|---|---|
| **Single-phase, four-wire, earthed neutral** | 200 V AC to 250 V AC |
| **Three-phase star, four-wire, earthed neutral**(1) | 346/200 V AC to 433/250 V AC |
| | 208/120 V AC to 220/127 V AC |

*(1) It is also possible to supply the ACCU with a three-phase, five-wire system (separate neutral and earth conductors).*

*Table 3 AC Supply 60 Hz*

| | |
|---|---|
| **Single-phase, three-wire, earthed mid-point** | 200/100 V AC to 240/120 V AC |
| **Three-phase star, four-wire, earthed neutral**(1) | 208/120 V AC to 220/127 V AC |

*(1) It is also possible to supply the ACCU with a three-phase, five-wire system (separate neutral and earth conductors).*

*Table 4 Priority DC Supply to Control Unit*

| Option | Voltage Range | Max. Current |
|---|---|---|
| +24 V DC | +18 to +32 V DC | 1 A(1) |
| -48 V DC | -39 to -60 V DC | 0.6 A(2) |

*(1) mA excluding internal lighting.*
*(2) mA excluding internal lighting.*

**Output Data**

*Table 5 Output Voltages*

| | |
|---|---|
| **PSU 1 – 4** | 180 – 275 V AC |
| **Climate Unit** | 180 – 275 V AC |
| **Service Outlet** | Same as input (line to neutral) |
| **Internal lighting +24 V DC** | +18 to 32 V DC |
| **Auxiliary +24 V DC** | +18 to 32 V DC |

**Note:** The DC output voltages require DC input voltage.

*Table 6 Output Power*

| | |
|---|---|
| **PSU 1 – 4** | 1400 W each |
| **Climate Unit** | 2300 W |
| **Service Outlet** | 1500 W (50 Hz), 1200 W (60 Hz) |
| **Internal lighting +24 V DC** | 1 A |
| **Auxiliary +24 V DC** | 1 A |

## 4.2 Operator Interface

*Table 7 Indicators*

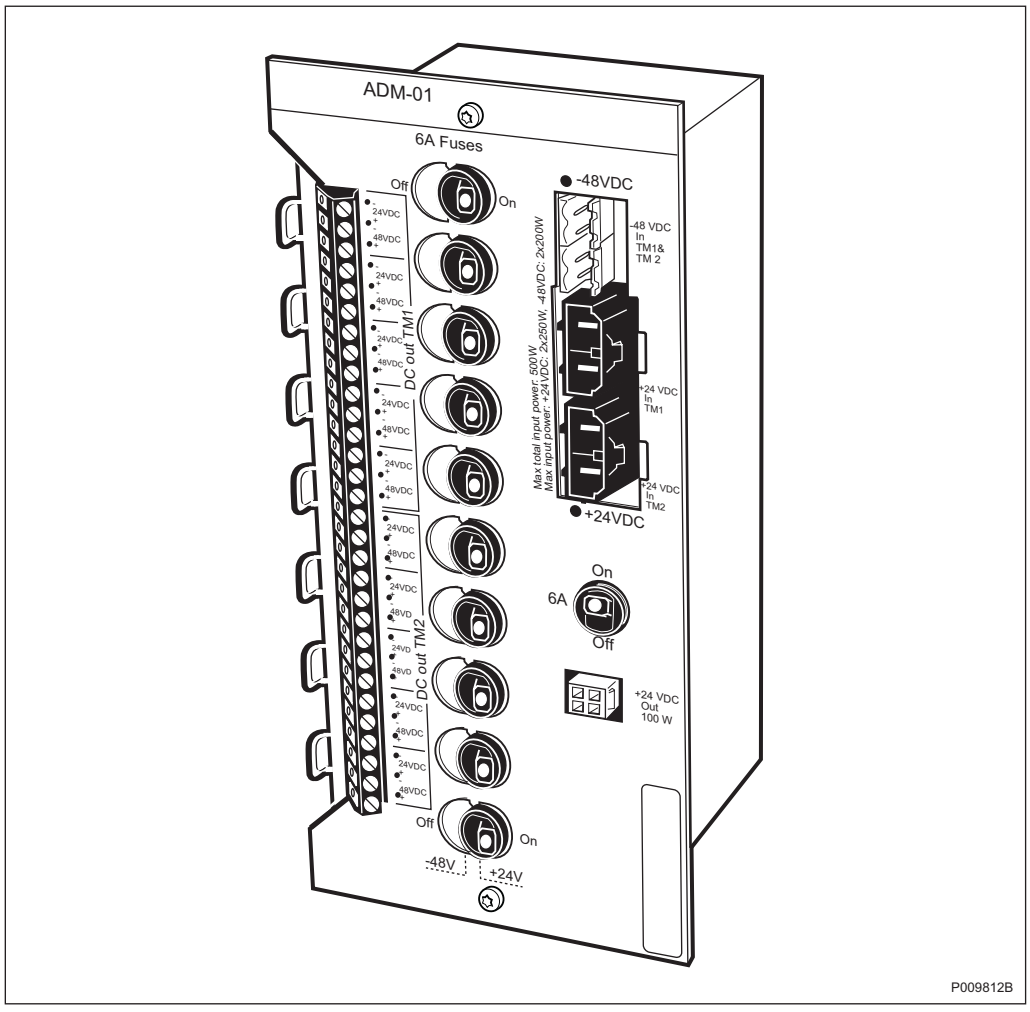
| **Indicators** | **Colors** |
|---|---|
| Operational | Green |
| Control board fault | Yellow |
| EPC bus fault | Yellow |
| Varistor fault | Yellow |

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

# ADM-01

## Auxiliary Distribution Module
## Description

The ADM distributes DC power through circuit breakers to the TM and to the DC-out 100 W in the RBS 2106.



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# 1 Product Overview

The ADM-01 distributes +24 V DC or -48 V DC to the Transport Module (TM) compartment and to the DC out 100 W connection in the DF box.

## 1.1 Main Functions

The ADM-01 has the following main functions:

- Two inputs for +24 V DC
- Two inputs for -48 V DC
- Ten distribution outputs which can be selected for +24 V DC or -48 V DC, protected by 6 A fuses
- One output for +24 V DC, designated "Out 100 W", protected by a 6 A fuse

# 2 Dimensions

This section describes the physical characteristics of the ADM-01.

*Table 1 Size and Weight*

| Height | Width | Depth | Weight |
|---|---|---|---|
| 205 mm | 98 mm | 80 mm | 1 kg |

# 3 Function Description

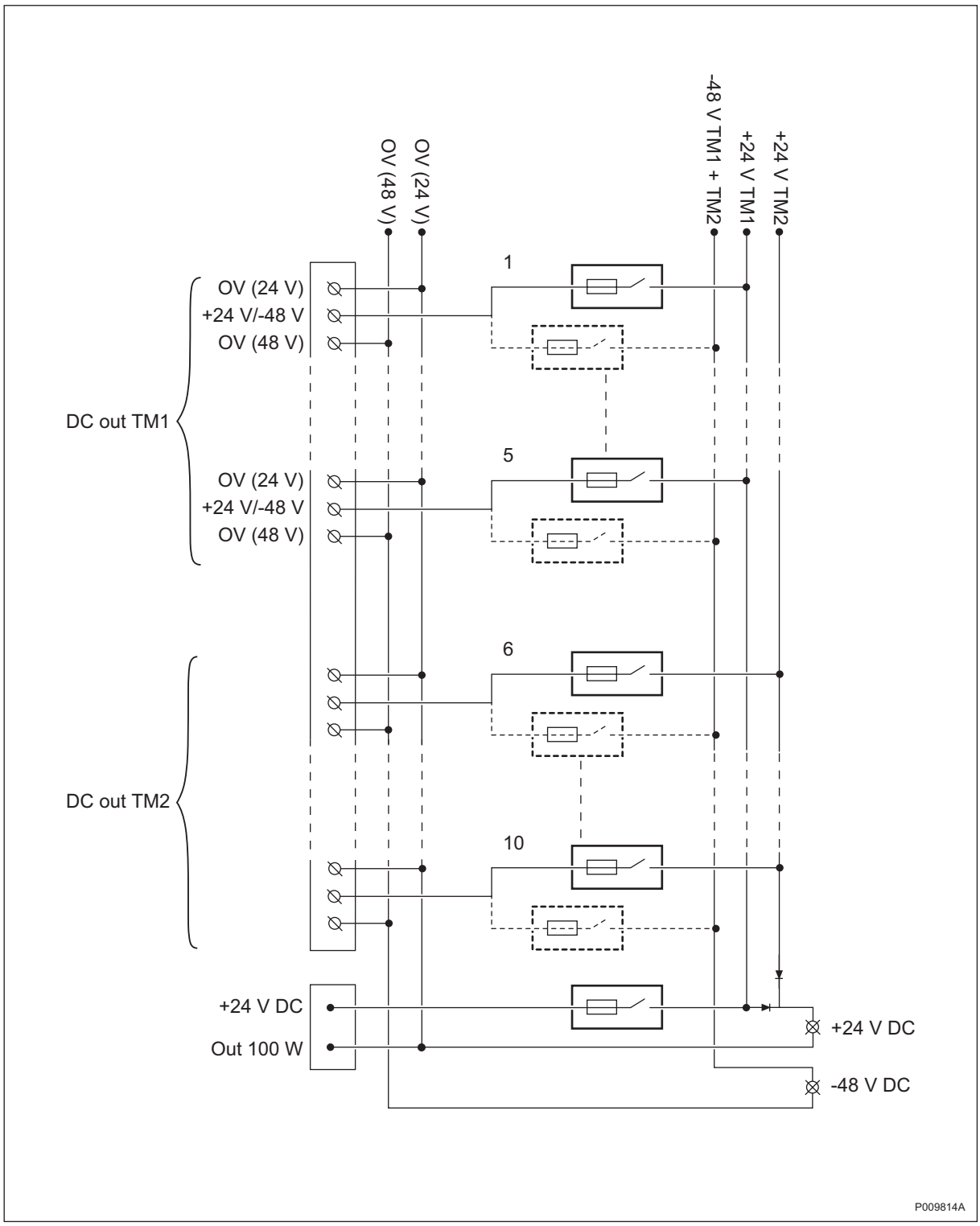



*Figure 1 ADM Circuit Breaker*

The ten outputs on the ADM-01 are divided into two groups: DC out TM1 and DC out TM2. The outputs are protected by circuit breakers that function both as fuses and manual disconnect switches.

It is possible to feed the ADM with either +24 V DC or -48 V DC, or both. The feed used is shown by two indicators on the front panel.

One +24 V DC input is connected to the TM1 output group. The second +24 V DC input is connected to the TM2 output group.

The two -48 V DC inputs are connected in parallel to both the TM1 and TM2 groups.

The ADM is delivered with a +24 V DC configuration. By removing the front panel and moving a fuse to the -48 V DC position, it is possible to configure an output for distribution of -48 V DC. Connection of the voltages is shown on the label on the front panel.

The output "Out 100W" is fed -24 V DC from the TM1 input. These outputs are also protected by circuit breakers that function as fuses and manual disconnect switches.

# 4 Interface

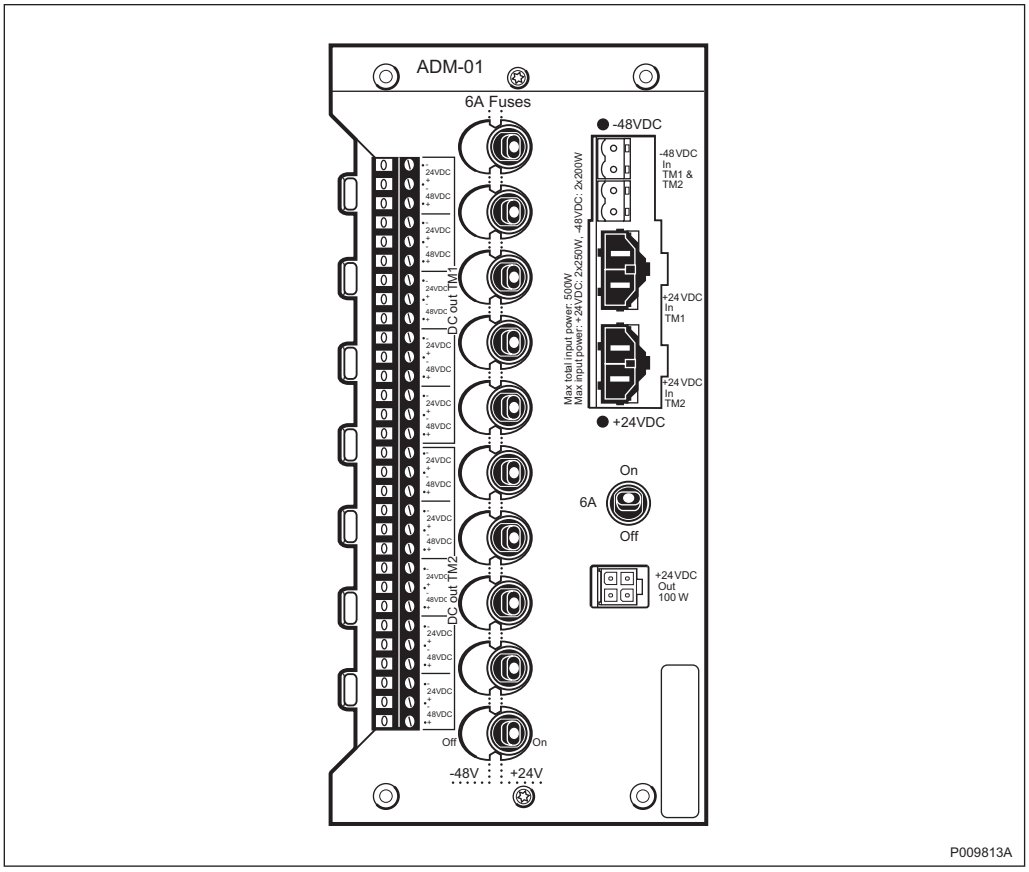



*Figure 2 ADM Interfaces*

## 4.1 Signal and Power Interfaces

### Input Data

*Table 2 Input voltage characteristics*

| **Characteristics** | **Nominal voltage:** | |
|---|---|---|
| | **+24 V DC** | **-48 V DC** |
| Normal voltage | +20.0 to +29.0 V DC | -39.0 to -60.0 V DC |
| Non-destructive | 0 to 32 V DC | 0 to -70 V DC |
| Input power | 2 x 250 W | 2 x 200 W |
| Input fuse rating | 15 A | 10 A |
| Connectors | 2 x RPV 403 099/102 | 2 x RPV 262 001/2 |

*Table 3 Input Power*

| Nominal voltages | Input power | Input fuse rating |
|---|---|---|
| +24 V DC | 2 x 250 W | 2 x 15 A |
| -48 V DC | 2 x 200 W | 2 x 10 A |
| +24 and -48 V DC | 250 + 200 W | 15 A and 10 A |

**Note:** The total input power to the ADM must not exceed 500 W.

**Output Data**

*Table 4 Output Connections*

| Output | Connection | Fuse |
|---|---|---|
| DC out TM1, pos 1 - pos 5 | Screw terminals 0.5 - 2.5 $mm^2$ | 6 A |
| DC out TM2, pos 1 - pos 5 | Screw terminals 0.5 - 2.5 $mm^2$ | 6 A |
| +24 V DC Out | RPV 403 109/604 | 6 A |

## 4.2 Operator Interface

Output power can be manually switched off using the eleven circuit breakers on the front panel.

*Table 5 Indicators*

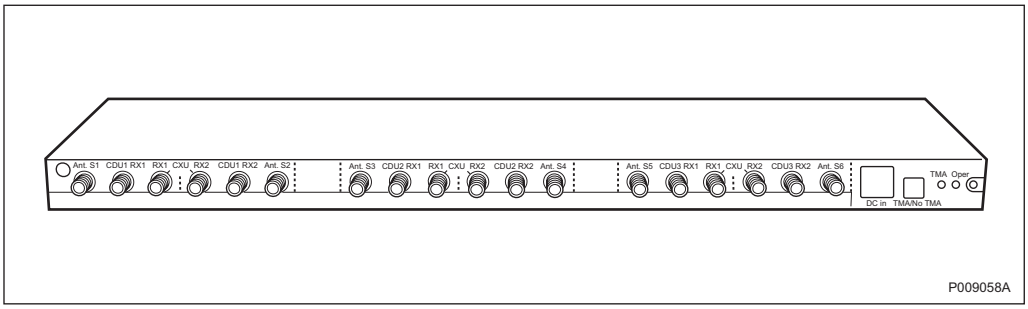
| Indicator | Color |
|---|---|
| +24 V DC present | Green |
| -48 V DC present | Green |

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

# ASU

## Antenna Sharing Unit
## Unit Description

The Antenna Sharing Unit (ASU) is used as a part of co-siting, where a cabinet, operating on another standard, shares antennas with a GSM cabinet in the same sector.



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# 1 Product Overview

## 1.1 Main Functions

Antenna sharing is part of co-siting, that is, using a cabinet operating on another standard together with a GSM cabinet in the same sector. The ASU allows a TDMA (or other) cabinet and a GSM cabinet to share RX antennas. It does this by sharing the RX signals between both cabinets.

The ASU is a broadband product, which means that it covers 800 -1910 MHz.

# 2 Dimensions

*Table 1 Size and Weight*

| Height | Width | Depth | Weight |
|---|---|---|---|
| 22 mm | 437.5 mm | 120 mm(1) | 2 kg |

*(1) (1) The ASU protrudes 40 mm from the rack (including the front panel).*

# 3 Power Consumption and Heat Generation

*Table 2 Power Consumption and Heat Generation*

| Max. power consumption | Max. heat generation |
|---|---|
| 2 W | 2 W |

# 4 Function Description

The general function of the ASU is to take a portion of the RX signal and send it to the co-sited RBS.

The ASU also switches the attenuation according to whether or not a TMA is used. It also indicates the attenuation state via an indicator.

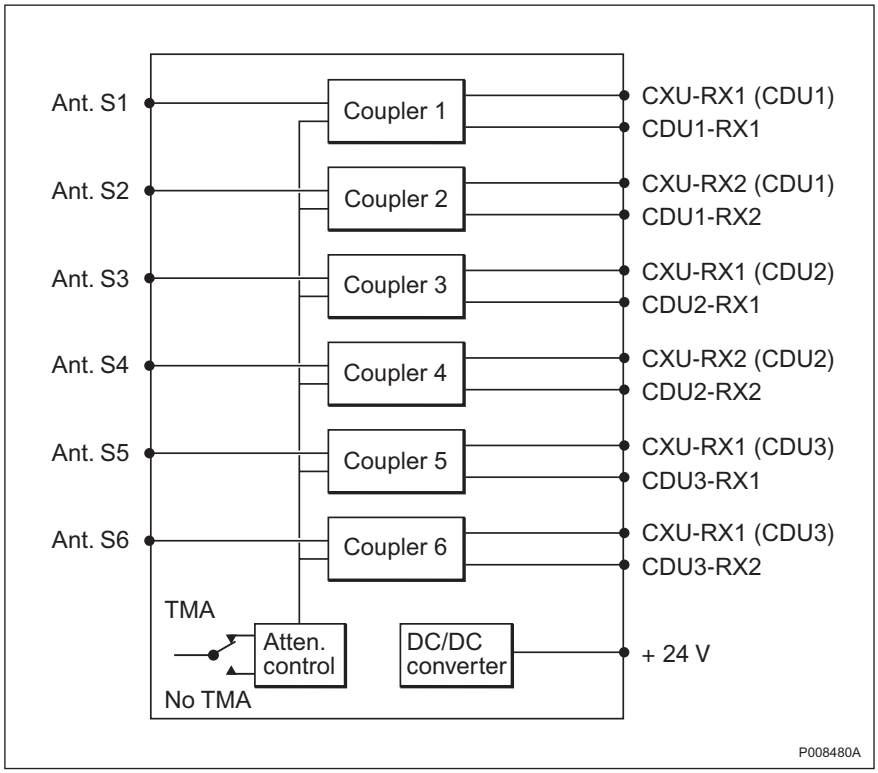


*Figure 1 ASU Block Diagram*

## 4.1 RX Signal Path

The RX signal path is fed from the antennas through the feeders to the Antenna Reference Point (ARP). The signal is then filtered and amplified in the CDU. From the RX output of the CDU, the signal is fed to the ASU where a small portion of the signal is fed to the RX input of the co-sited RBS. This is shown in the figure below.

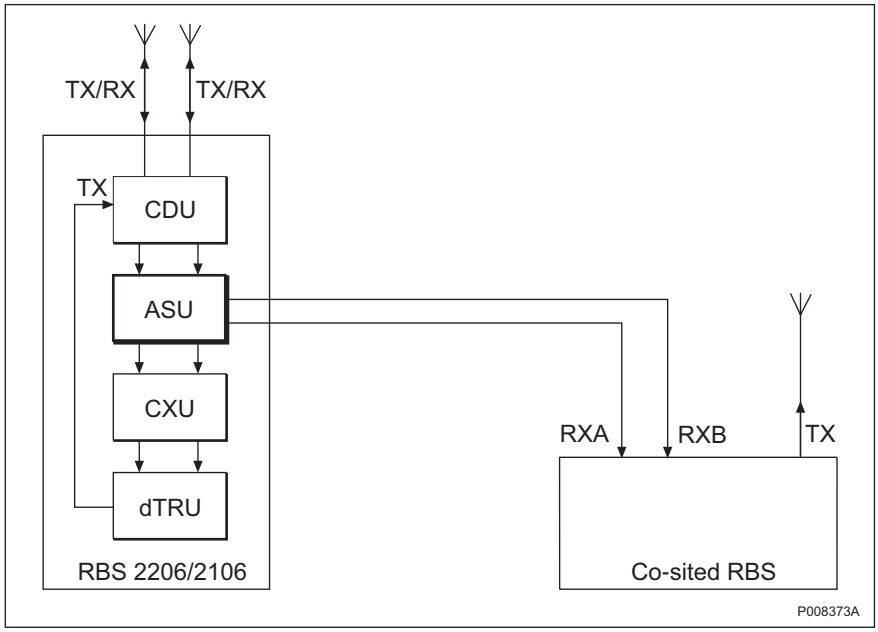


*Figure 2 RX Signal Path*

## 4.2 Cable Path and Supervision

The RF cables between the ASU and the co-sited RBSs can be supervised by the TMA support function in the TDMA cabinet.

# 5 Interfaces

## 5.1 Signal and Power Interfaces

### Connectors

The ASU has the following connectors:

- Six input ports for RX signals from the CDU
- Six output ports for RX signals to the CXU
- Six output ports for RX signals to the co-sited RBS
- Power supply connector

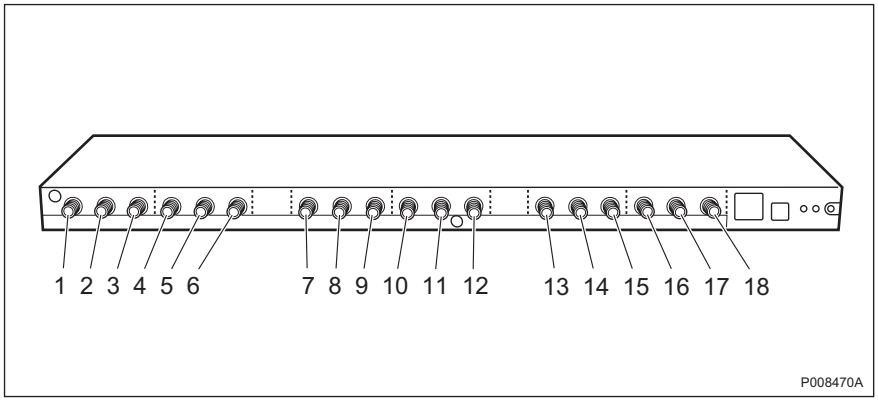


*Figure 3 Connection Ports*

*Table 3 Connection Ports*

| Pos. | ASU label | Connects to | Type of connector |
|---|---|---|---|
| 1 | Ant.S1 | Antenna sharing connectors | QMA |
| 2 | CDU1 RX1 | CDU 1, port RX1 | QMA |
| 3 | RX1 | CXU, port 3 | QMA |
| 4 | RX2 | CXU, port 4 | QMA |
| 5 | CDU1 RX2 | CDU 1, port RX2 | QMA |
| 6 | Ant.S2 | Antenna sharing connectors | QMA |
| 7 | Ant.S3 | Antenna sharing connectors | QMA |
| 8 | CDU2 RX1 | CDU2, port RX1 | QMA |
| 9 | RX1 | CXU port 9 | QMA |
| 10 | RX2 | CXU port 10 | QMA |
| 11 | CDU2 RX2 | CDU 2, port RX2 | QMA |
| 12 | Ant.S4 | Antenna sharing connectors | QMA |
| 13 | Ant.S5 | Antenna sharing connectors | QMA |
| 14 | CDU3 RX1 | CDU 3, port RX1 | QMA |
| 15 | RX1 | CXU port 15 | QMA |
| 16 | RX2 | CXU port 16 | QMA |

*Table 3 Connection Ports*

| | | | |
|---|---|---|---|
| 17 | CDU3 RX2 | CDU 3, port RX2 | QMA |
| 18 | Ant.S6 | Antenna sharing connectors | QMA |

## 5.2 Operator Interface

There is one switch on the front panel to set the internal attenuators for TMA or no TMA.

There are two indicators on the front inducating the status of the ASU.

*Table 4 Indicators*

| **Indicator** | **Color** |
|---|---|
| Operational | Green |
| TMA | Yellow |

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