Introduction

Allgon repeaters are used to fill out uncovered areas in cellular mobile systems, such as base station fringe areas, road tunnels, busirEss and industrial buildings, etc.

A repeater receives signals from a base station, amplifies and retransmits the signals to mobile stations. Also it receives, amplifies and retransmits signals in the opposite direction. Both directions are served simultaneously.

To be able to receive and transmit signals in both directions, the repeater is connected to a donor antenna directed towards the base station and to a service antenna directed towards the area to be covered.

Operation of the repeaters is performed using a desktop or notebook and the Allgon OMT (Operation & Maintenance Terminal) which communicate, locally or remotely via modem, with the repeaters.

There is also an Allgon OMC (Operation & Maintenance Center), which is intended to be used to run many Allgon AR repeaters.

The repeaters and the OMIT is described in this manual. The OMC is described in the *Advanced Repeater 0MG, User's Manual*.

Figure 2-1. Allgon AR Repeater

Installing 24

Volt or 48 Volt DC Power Supply Unit

You can replace an AC PSU with a 24 Volt or 48 Volt DC PSU as follows:

1. Switch the repeater off and remove the mains plug from the PSU, if not already done (1 in Figure 3-9).

2. Disconnect the two connectors on the PSU.

3. Loosen the three fixing screws using a 5mm Allen key.

4. Remove the PSU from the repeater.

5. Mount the 24/48 Volt DC PSU with the three fixing screws (3).

6. Connect the PSU to the DIA board (2).

7. Connect the DC power cable. The supplied cable has a radiation limiter which is a requirement for the 24/48 Volt unit to be type approved. The cable shall be connected as follows:

The + pole shall be connected to one of the left terminals in the PSU connector with the BROWN part of the DC cable.
The – pole shall be connected to one of the right terminals in the PSU connector with the BLUE part of the DC cable.

8. When the connection is completed, switch the repeater on.

9. Make sure the yellow LED is lit on the PSU.

The DC Power Supply Unit must be galvanically separated from the mains supply with an equipment fulfilling the 1EC65 safety requirements.

Figure 3-9. Replacing the PSU

e5ndteIe~tiVf~ repeftter ~·

Figure 5-20. Band selective configuration

The left-hand part of the configuration window contains downlink information (BSA board #1 and PA board #1 located to the left in the cabinet or cover).
The right-hand part of the configuration window contains uplink information (BSA board #2 and PA board #2 located to the right in the cabinet or cover).

The downmost line indicates current band width and the band width status (fixed or adjustable).

Fixed band width operation

For repeaters equipped with fixed band width BSA boards, the following three fields are changeable:

Downlink: Gain

Uplink: Set low band edge Gain

The values in the remaining fields are automatically calculated from the band width and the uplink/downlink frequency difference.

Adjustable band width operation

For repeaters equipped with adjustable band width BSA boards, the uplink 'Set high band edge' field is also available and changeable.

Field descriptions:

Bandselective repeater

The band selective repeater, or the band selective part of a combined repeater, can be turned on/off by clicking this box.

The PA boards and the AGC (Automatic Gain Control) are turned off when the band selective repeater is switched off.

'Downlink' section

Low band edge

Displays the downlink low band edge related to the uplink low band edge.
The difference is depending on the system duplex spacing.

High band edge

The downlink high band edge related to the band width.

Gain

The maximum downlink gain, i.e. the total gain from antenna port to antenna port.

Setting range: 45dB to 90dB

'UpIink' section

Set low band edge

The lower band edge for the uplink signal. The band edge frequency can be increased or decreased by clicking the arrow buttons. The frequency is changed in 12.5KHz steps. Values can be typed into the field as well.

Setting range for this field is depending on the system and BSA boards.

Set high band edge

For fixed BSA boards, this field displays the uplink high band edge related to the band width. This band edge cannot be changed solely.

For adjustable BSA boards, this field is changeable and affects thus the uplink high band edge and thereby the band width.

Gain

The maximum uplink gain, i.e. the total gain from antenna port to antenna port.

Setting range: 45dB to 90dB

Main Window Button Bar

Main window button functions:

Login - see the **File** menu (page 5-103).

Logout - see the **File** menu (page 5-103).

Exit - see the **File** menu (page 5-103).

Configuration - see the Parameters menu (page 5-106).

Read status - see the Status menu (page 5-108).

Board Testpoints - see the Tests menu (page 5-109).

Change **active repeater** part - see the Hardware menu (page 5-111).

Received Repeater Alarms - see the Alarm menu (page 5-112).

Repeater **Event Log** - see the Alarm menu (page 5-112).

Alarm **Reset!** - see the Alarm menu (page 5-112). **About** - see the **Help** menu (page 5-113).