

Band Selective Compact Repeater Block Diagram

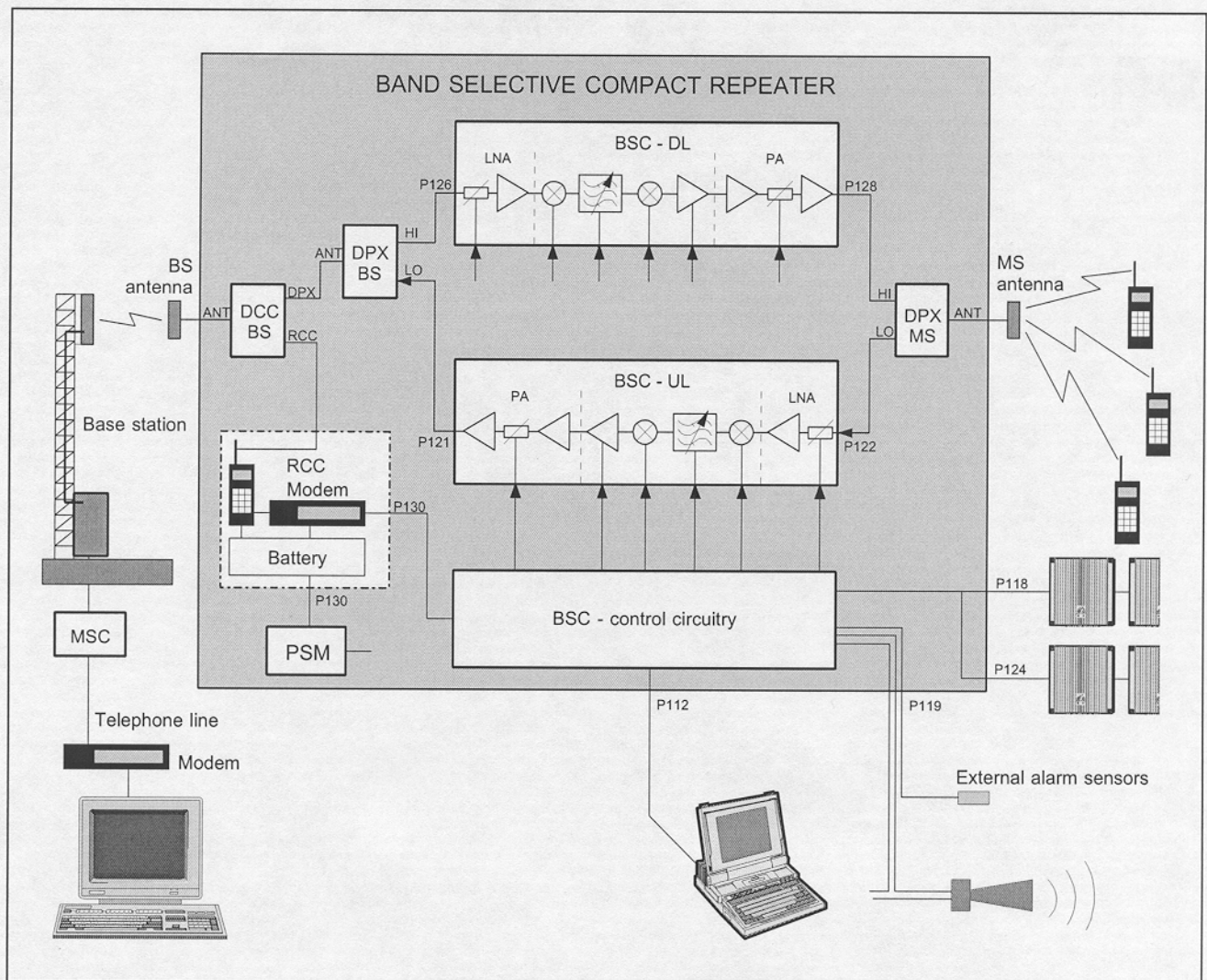


Figure 5-2. Block diagram

Figure 5-2 shows a block diagram of the band selective compact repeater. This diagram is applicable to repeaters for e.g. NMT, GSM, TACS/ETACS, AMPS/DAMPS and CDMA systems.

Downlink signal path

The signal from the base station is received via the repeater BS antenna and is forwarded through a directional coupler (DCC) to the ANT input of a duplex filter (DPX). The signal from the HI output of the duplex filter is, via the P126 port, fed to the BSC board. On the BSC board, the signal is amplified in a low noise amplifier (LNA) and is then entered the band selective amplifier circuitry.

The first mixer stage in the BSC amplifier, which is controlled by a synthesizer, converts the received frequency down to the IF frequency. The signal is then filtered by SAW bandpass filters and, not shown in the

Block Diagram

A band selective compact repeater block diagram is found on page 5-5.

The signal path and some of the most important features are described after the block diagram.

Downlink Signal Path

The downlink signal path (HI), i.e. from the base station through the repeater to the mobile station, is described after the block diagram.

Uplink Signal Path

The uplink signal path (LO), i.e. from the mobile station through the repeater to the base station, is identical to the downlink path the other way round. Only some levels and component values differ.

figure, amplified before it is fed to the second mixer stage for conversion back to the original frequency.

The SAW filter combination is adjustable and can be software changed from within OMT32 (or OMS) to cover various band widths.

The following power amplifier (PA) is controlled by the BSC control circuitry. The amplifier gain will be reduced to avoid instability due to poor antenna isolation.

A detector in the PA stage measures continuously the output level. The signal from this detector is used by the automatic gain control, AGC, to supervise and, if necessary, reduce the output power to keep it under a maximum level. The AGC gain control affects several of the amplification stages.

The output signal from the BSC board is taken from the P128 port and it is fed to the HI port of a duplex filter (DPX). The output signal from the ANT port of the duplex filter is fed to the repeater MS antenna.