GSM1800 Channel Selective Repeater

RD-1822

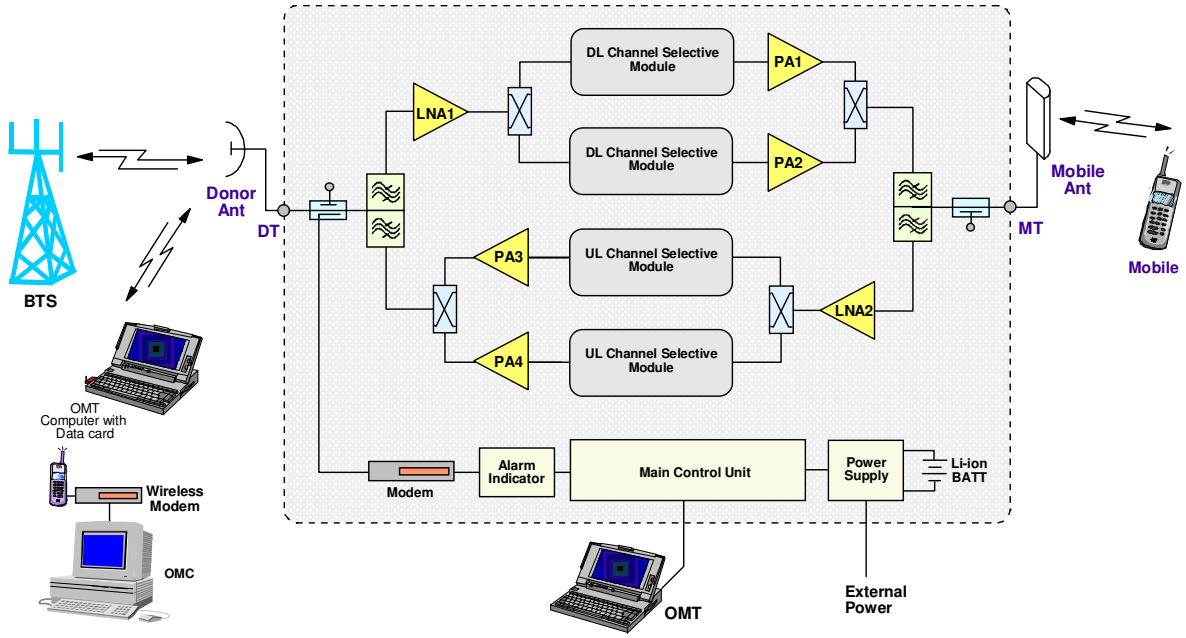
Features

- Permits rapid selection of frequency when operating in a tightly spaced channel environment.
- 75MHz operating bandwidth.
- Integrated wireless modem for remote configuration, monitoring and control.
- Internal backup battery keeps the alarm unit running for up to three hours after power failure.
- Optional OMC is available for remote operation and maintenance of a group of repeaters.
- Designed for all outdoor application – waterproof, damp-proof and omni-sealed (IP65).
- EDGE Compatible.
- ETS 300 609-4 Compliant.

Product Description

The RD-1822 channel-selective repeater is designed for GSM1800 network. Channel-specific linear amplifier and filtering effectively amplifies the desired BTS carriers and provides superior out-of-band rejection. The unit can incorporate up to eight pairs (uplink and downlink) of channel modules with frequencies programmed to specific requirements of the network. Remote configuration and surveillance is possible through Comba's remote control and monitoring system via PC or wireless modem to the OMT/OMC. Internal Li-ion backup battery ensures alarm signals are sent out during power failure. The RD-1822 comes in a sealed, cast aluminum enclosure, suitable for operation in all weather conditions.

Functional Block Diagram



Technical Specifications

Electrical					
Frequency Range, Uplink		MHz	1710 – 1785		
Frequency Range, Downlink			1805 – 1880		
Number of Channels			2	4	6
Output Power per Channel, Uplink		dBm	33 ± 1	30 ± 1	26 ± 1.5
Output Power per Channel, Downlink		dBm	33 ± 1	30 ± 1	26 ± 1.5
Maximum System Gain		dB	90 ± 2	87 ± 2	80 ± 2
Gain Adjustment Range (1dB step)		dB	0 – 30		
Channel Selectivity	at ±100KHz	dB	> -2		
	at ±400KHz	dB	≤ -45		
	at ±600KHz	dB	≤ -55		
	at ±1MHz	dB	≤ -60		
Spurious and Intermodulation	9kHz to 1GHz	dBm	≤ -36		
	1GHz to 12.75GHz	dBm	≤ -30		
Pass Band Ripple, 200kHz Channel, p-p		dB	≤ 2		
System Noise Figure at Maximum Gain		dB	≤ 6		
System Group Delay		μsec	≤ 8		
Input VSWR			≤ 1.5		
Absolute Maximum RF Input Power		dBm	+10		
Impedance		Ω	50		
Power, Mechanical & Environmental					
Dimensions, H x W x D		mm	600 x 450 x 195		600 x 450 x 295
Weight (approx.)		kg	37		51
Power Supply		VAC	100 – 240 / 47 – 63Hz		
Power Consumption (approx.)		W	220		450
Power Up Waiting Time (approx.)		sec	60		
MCU Battery Backup Time (approx.)		hr	3		
Enclosure Cooling			Convection		
RF Connectors			N-Female		
Operating Temperature		°C	-33 to +55		
Operating Humidity		%	≤ 95		
Environmental Class			IP65		
MTBF		hr	≥ 50,000		

Note: Typical specifications at room temperature.

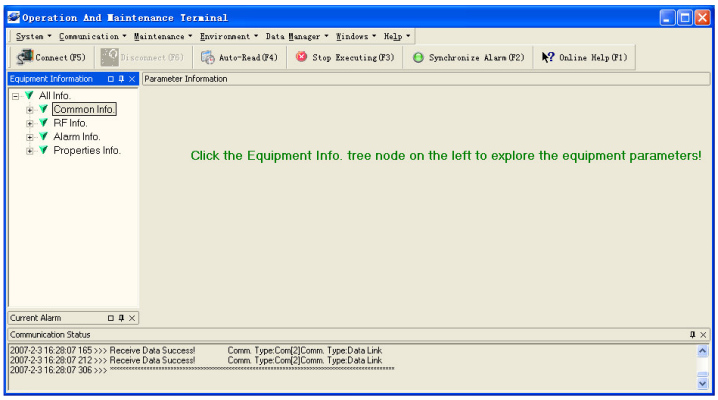
Operation and Maintenance

Using a direct serial connection to a PC, installation and commissioning of the RD-1822 is accomplished by the OMT. Using the integrated wireless modem (data or SMS mode), the equipment parameters can be monitored and controlled remotely.

Controlled equipment parameters include: Channel No. Range, ATT, Carrier Switch, RF Switch, Over-Temp Threshold, DL Input Power Overload Threshold, DL Output Power Low Threshold, VSWR Threshold and Alarm Report Enable.

Monitored equipment parameters include: Alarms (LNA, PA, PLL unlock, Power Down, PSU Fault, Chassis Lock, Self-Oscillation, DL Output Power Low, DL Input Power Overload, Over Temp, VSWR), DL Output Power and DL Input Power

The RD-1822 has been developed to take advantage of advanced network operation, where the OMC (optional) provides an effective solution for central monitoring of a group of Comba products.



Outline Drawing