GSM1800 Hybrid Repeater

RD-1840(2W)

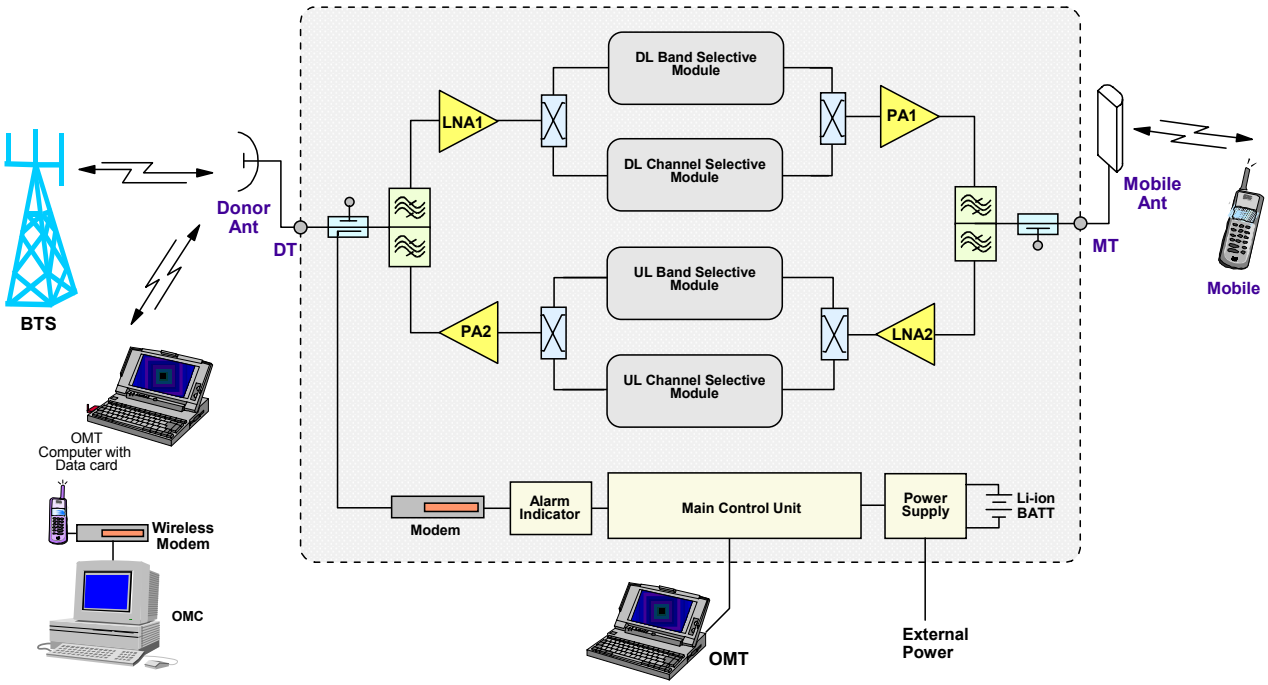
Features

- Featuring one bandwidth adjustable module and one channel selective module integrated into one repeater system unit.
- Output power can be adjusted via OMT software.
- Permits easy selection of donor broadcast channel when operating in a tightly spaced channel environment with synthesized frequency hopping.
- Integrated wireless modem for remote configuration, monitor 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).

Product Description

The RD-1840 hybrid repeater is designed for GSM1800. This unique repeater incorporates both band and channel selective module, making it suitable for synthesized frequency hopping applications. The RD-1840 provides an adjustable band selective bandwidth from 2 to 15MHz and a channel module with channel frequency programmed to specific requirements of the network. The channel selective and bandwidth adjustable filtering modules permit the selection of the desired BTS broadcast channel (BCCH) and hopping traffic channels (TCH) respectively to provide superior rejection for unwanted donor signals. 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 in the event of power failure. The RD-1840 comes in a sealed, cast aluminum enclosure, suitable for all weather conditions.

Functional Block Diagram



Technical Specifications

Electrical			
Frequency Range, Uplink		MHz	1710 – 1785
Frequency Range, Downlink		MHz	1805 – 1880
Operating Bandwidth	Bandwidth Adjustable Module	MHz	2 – 15
	Channel Selective Module	MHz	0.2
Total Output Power	With ALC Multi Carrier Mode	dBm	27 ± 1
	With ALC Single Carrier Mode	dBm	33 ± 1
Maximum System Gain		dB	83 ± 2
Gain Adjustment Range (1dB step)		dB	0 – 30
Pass Band Ripple, p-p		dB	≤ 6
System Noise Figure at Maximum Gain		dB	≤ 7
System Group Delay		μsec	≤ 8
Channel Selectivity	at ±100KHz	dB	> -3
	at ±400KHz	dB	≤ -40
	at ±600KHz	dB	≤ -60
	at ±1MHz	dB	≤ -65
Out-of-band Gain	Offset ≥ 400KHz	dB	≤ 50
	Offset ≥ 600KHz	dB	≤ 40
	Offset ≥ 1MHz	dB	≤ 35
	Offset ≥ 5MHz	dB	≤ 25
Spurious	9KHz to 1GHz	dBm	≤ -36
	1GHz to 12.75GHz	dBm	≤ -30
Intermodulation (multi carries mode)		dBm	≤ -30
Absolute Maximum RF Input Power		dBm	+10
Input VSWR			≤ 1.5
Impedance		Ω	50
Power, Mechanical & Environmental			
Dimensions, HxWxD		mm	600x450x195
Weight (approx.)		kg	37
Power Supply		VAC	85 – 135 / 47 – 63Hz
			176 – 264 / 47 – 63Hz
Power Consumption (approx.)		W	240
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

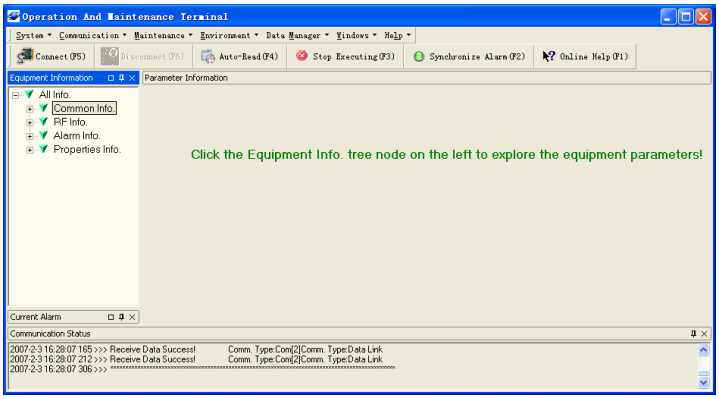
Operation and Maintenance

Using a direct serial connection to a PC, installation and commissioning of the RD-1840 is accomplished by the OMT. Using the integrated wireless modem (data or SMS mode), equipment parameters can be monitored remotely.

Controlled equipment parameters include: Carrier Switch, Channel No. Range, ATT, RF Switch, Over-Temp Threshold, DL Input Power Threshold, DL Output Power 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-1840 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