GSM1800 Channel Selective Repeater

RD-1822



Features

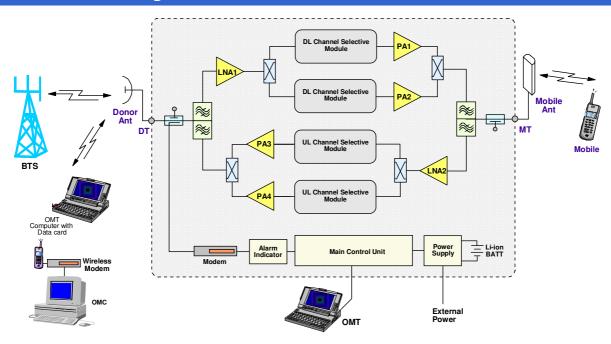
- Permits rapid selection of frequency when operating in a tightly spaced channel environment.
- 75MHz operating bandwidth.
- Integrated wireless modem for remote configuration, monitoring and control.
- Internal backup battery keeps the alarm unit running for up to three hours after power failure.
- 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



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Technical Specifications

Frequency Range, Uplink Frequency Range, Downlink Number of Channels 2	Electrical					
Frequency Range, Downlink Number of Channels 2 4 6 6				1710 - 1785		
Number of Channels	1 7 3 7 1		MHz			
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 0 Channel Selectivity dB > -2 3 at ±400KHz dB ≤ -45 3 4 4 6 3 -2 3 4 5 -2 4 4 6 4 5 -5 -2 4 4 6 4 5 -5 -2 4 4 4 6 4 -2 -3 -4 5 -2 -45 4 4 4 6 -45 4 4 8 -5 -5 -60 9 -4 6 8 -4 -2 -36 18 -4 -2 -2 -36 -4 -2 -3 -2 -3						
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 Spurious and Ripple, 200kHz Channel, p-p dB ≤ 2 30 Pass Band Ripple, 200kHz Channel, p-p dB ≤ 2 59 System Group Delay µsec ≤ 8 1.5 Absolute Maximum RF Input Power dBm ± 1.5 Absolute Maximum RF Input Power dBm ± 1.5 Absolute Maximum RF Input Power dBm ± 1.5 Power, Mechanical & Environmental 50 50 Dimensions, H x W x D mm 600 x 450 x 195 600 x 450 x 2 Weight (approx.) kg 37 51			dBm			
Maximum System Gain dB 90 ± 2 87 ± 2 80 ± 2 2						
Cain Adjustment Range (1dB step) at ±100KHz dB dB dB dB dB dB dB d						
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Power, Mechanical & Environmental Dimensions, H x W x D mm 600 x 450 x 195 600 x 450 x 20 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	Absolute Maximum RF Input Power		dBm	+10		
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Weight (approx.) kg 37 51 Power Supply VAC 100 - 240 / 47 - 63Hz	Power, Mechanical 8	& Environmenta	l			
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	Dimensions, H x W x D		mm	600 x 4	50 x 195	600 x 450 x 29!
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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	Power Supply		VAC	100 - 240 / 47 - 63Hz		
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	Power Consumption (approx.)		W	220 450		450
MCU Battery Backup Time (approx.)hr3Enclosure CoolingConvectionRF ConnectorsN-FemaleOperating Temperature°C-33 to +55Operating Humidity%≤ 95Environmental ClassIP65			sec	60		
RF ConnectorsN-FemaleOperating Temperature $^{\circ}$ C -33 to $+55$ Operating Humidity% ≤ 95 Environmental ClassIP65			hr	3		
Operating Temperature °C -33 to +55 Operating Humidity % ≤ 95 Environmental Class IP65	, , , , , , , , , , , , , , , , , , , ,			Convection		
Operating Humidity % ≤ 95 Environmental Class IP65	RF Connectors			N-Female		
Environmental Class IP65	Operating Temperature		°C	-33 to +55		
	Operating Humidity		%	<u>≤ 95</u>		
MTDE h _w > 50,000	Environmental Class			IP65		
MIDE UL 250,000	MTBF		hr	≥ 50,000		

Note: Typical specifications at room temperature.

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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

