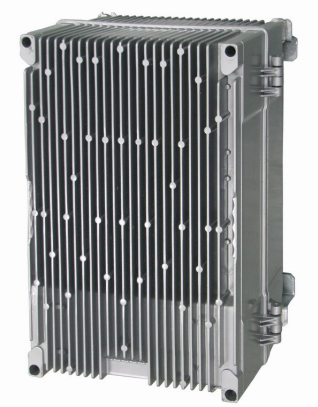
GSM1800 Bandwidth Adjustable + WCDMA2100 Channel Selective Dual Band Repeater

RD-7843

Features

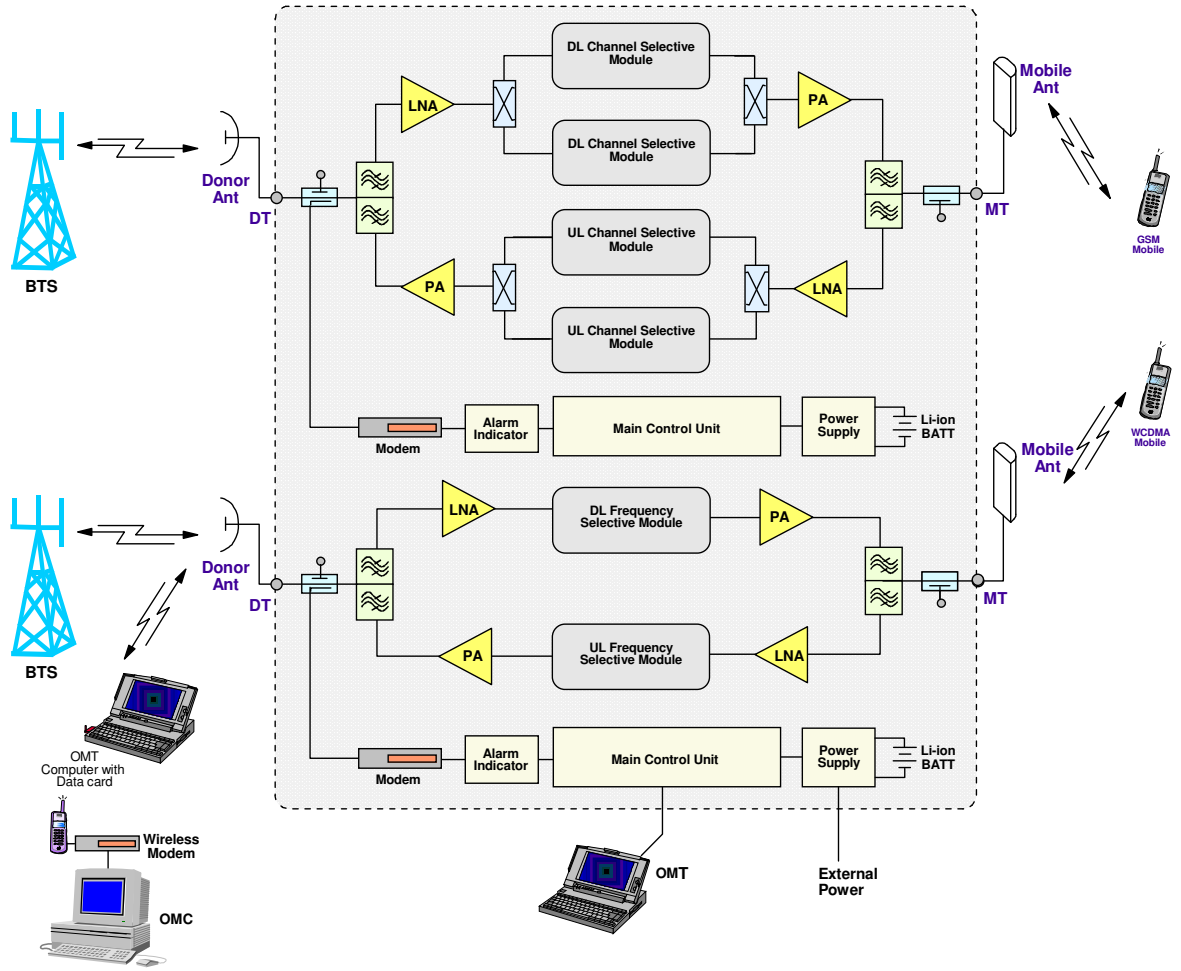


- Dual band configuration consists of GSM1800 (2W, 5W, 10W) and WCDMA (5W) in a single unit minimized installation footprint.
- GSM1800 - Adjustable bandwidth from 2 to 25MHz, WCDMA – Channel Selective 1-2 channel
- Integrated wireless modem for remote configuration, monitoring and control.
- Internal 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 weather outdoor installation – waterproof, damp-proof and omni-sealed (IP65).

Product Description

RD-7843 outdoor dualband repeater is designed for dualband GSM1800/WCDMA2100 application. Independent Band-specific linear amplifier and filtering effectively amplifies the desired BTS carriers and provides superior out-of-band rejection. 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-7843 comes in a completely sealed, cast aluminum enclosure, suitable for all weather conditions.

Functional Block Diagram



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Technical Specifications

Model			GSM + WCDMA		
Electrical – GSM Unit					
Frequency Range, Uplink		MHz	1710 – 1785		
Frequency Range, Downlink		MHz	1805 – 1880		
Maximum System Gain		dB	90 ± 2		
Gain Adjustment Range (1dB step)		dB	0 – 30		
Operating Bandwidth		MHz	2 – 25		
Uplink Total Output Power		dBm	33 ± 1		
Downlink Total Output Power		dBm	33 ± 1	37 ± 1	40 ± 1
Downlink 3rd Order Intercept, OIP3		dBm	≥ 52	≥ 56	≥ 56
Pass Band Ripple, p-p		dB	≤ 5		
System Noise Figure at Maximum Gain		dB	≤ 5		
Group Delay		µsec	≤ 6		
Out-of-band Gain	Offset ≥ 600KHz	dBm	≤ 40		
	Offset ≥ 1MHz	dBm	≤ 35		
	Offset ≥ 5MHz	dBm	≤ 25		
Spurious	9kHz to 1GHz	dBm	≤ -36		
	1GHz to 12.75GHz	dBm	≤ -30		
Input VSWR			≤ 1.5		
Absolute Maximum RF Input Power		dBm	+10		
Impedance		Ω	50		
Electrical – WCDMA Unit					
Frequency Range, Uplink		MHz	1920 – 1980		
Frequency Range, Downlink		MHz	2110 – 2170		
Number of Channels			2		
Output Power per Channel, Uplink	1 Channel	dBm	23 ± 1		
	2 Channel		19 ± 1		
Output Power per Channel, Downlink	1 Channel	dBm	37 ± 1		
	2 Channel		33 ± 1		
Maximum System Gain		dB	95 ± 2		
Gain Adjustment Range (1dB Step)		dB	0 - 30		
Pass Band Ripple within 3.84MHz, p-p		dB	≤ 2		
System Noise Figure at Maximum Gain		dB	≤ 5		
System Group Delay		µsec	≤ 5		
Out-of-Band Emission			3GPP TS 25.106 compliant		
Out-of-Band Gain					
Spurious and Intermodulation					
Modulation Accuracy					
Input VSWR			≤ 1.5		
Absolute Maximum RF Input Power		dBm	+13		
Impedance		Ω	50		
Power, Mechanical & Environmental					
Dimensions, H x W x D		mm	606 x 390 x 336		
Weight		kg	46		
Power Supply		VAC	85 – 135 / 47 – 63Hz		
			176 – 264 / 47 – 63Hz		
Power Consumption (approx.)		W	360		
Power Up Waiting Time (approx.)		sec	60		
MCU Battery Backup Time (approx.)		hr	3		
Enclosure Color			Grey		
Enclosure Material			Aluminum		
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 specification at room temperature

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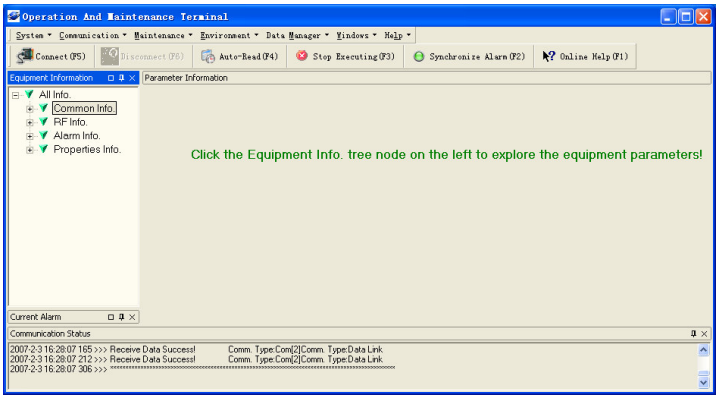
Operation and Maintenance

Using only a direct serial connection to a PC, installation and commissioning of the RD-7843 is accomplished with OMT, and using the integrated wireless modem (data or SMS), equipment parameters can be monitored remotely.

Controlled equipment parameters include: **GSM Unit**: Operating Frequency, Gain, RF Switch, Over-Temp Threshold, UL / DL Output Power Threshold and Alarm Report Enable.
WCDMA Unit: Carrier Switch, Operating Frequency, Gain, RF Switch, Over-Temp Threshold, UL / DL Output Power Threshold and Alarm Report Enable.

Monitored equipment parameters include: **GSM Unit**: 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.
WCDMA Unit: 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.

RD-7843 has been developed to take advantage of advanced network operation, with the OMC (optional) being an effective solution to monitoring a group of Comba products centrally.



Outline Drawing