

Preliminary product Information: Rev 1A, Issue Jan 2014, Revised Jan 2014

Band selective digitally controlled RF repeater GR1831 is an indoor bi-directional amplifier that offers an increase of signal strength in medium-sized rooms.

KEY FEATURES

- Band selective operation
- Adjustable bandwidth and gain
- Digital control
- Compact design for easy installation
- Integrated antenna (or connector for indoor delivery network)
- Uplink & Downlink gain is separately adjustable
- Basic automatic gain control
- Auto-Gain feature
- USB and COM connectivity
- User friendly GUI
- Low power consumption
- Status indicating LEDs



Figure 1: Repeater GR1831 front view

APPLICATION AREAS

- Shopping centers
- Hotels, offices
- Factories
- Underground parking lots

PRODUCT DESCRIPTION

Generally repeaters are used in mobile communication systems to provide signal coverage for an area with poor or no signal (e.g. blind spot). Rantelon Ltd came across the insufficient coverage within buildings such as offices, parking lots, apartment buildings, shopping malls, subways and tunnels. RF repeater GR1831 series can solve these problems by amplifying the available signal from an outdoor antenna into weak coverage area via built-in antenna or indoor delivery network with multiple antennas.

One adjustable through software band provides for possibility to improve signals on any frequencies within DCS1800 frequency range. GR1831 is equipped with new switching power module allowing extended range of supply voltages: +9V up to +33V. LEDs on the front panel indicate proper power supply, activity of automatic gain control circuits and activity of digital nodes. Optionally external modem can be ordered. In case of remote control option it is possible to reprogram GR1831 directly from office. For details about all options please see figure 2: block diagram of GR1831.

TECHNICAL SPECIFICATIONS (see also figure 2: block diagram)

Parameter	Specification
Frequency range*	UL: 1710-1785MHz & DL: 1805-1880MHz
Number of independent band-segments	Uplink: 1 / Downlink: 1
Band-segment properties	Adjustable bandwidth through software GUI
Band-segment bandwidth	1..25MHz with step 200kHz
Max. gain	70dB ±2dB
Manual gain adjust range	30dB with step 1dB (on order 0.5dB)
Automatic gain control	30dB
Downlink output power*	+18dBm @ one carrier
Uplink output power*	+18dBm @ one carrier
Noise figure	4.0dB
Return loss	10dB
Spurious emission	According to ETSI standards: < -36dBm up to 1GHz; < -30dBm above 1GHz
Supply voltage	DC: +9V..+33V
Current consumption	1.5A @ +9V; 0.4A @ +33V;
RF connector	N-Female (SMA optionally)
Operating temperature range	-20 ... +60 °C
Pure dimensions	120 x 190 x 60mm

* Ask Rantelon for other parameters. See www.rantelon.com for more information.

ORDERING INFORMATION

Model	Description
GR1831-01/xN	With integrated coverage (indoor) antenna
GR1831-01/xNN	With RF output (coverage/indoor) connector

Rantelon reserves the right to change the specification without notice.

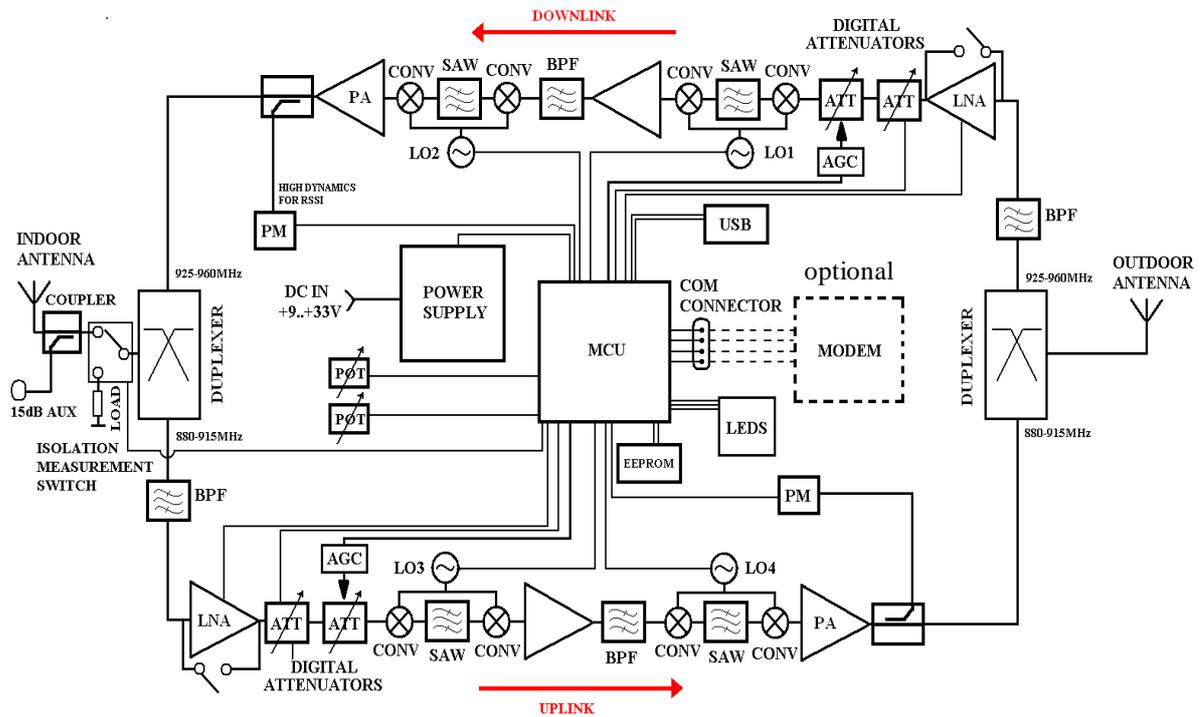


Figure 2: Repeater GR1831 block diagram.

Additionally available options (see figure 2):

- USB and COM connectivity
- GSM/UMTS modem (on extra order)
- Temperature stability
- RSSI measurements
- By-pass switch on input LNA
- Auto-Gain feature
- Isolation detection
- Software ON/OFF
- Coupled coverage port (15dB)