Rantelon
RF/Microwave Electronics

DR-900
DIGITAL E-GSM REPEATER

Selective four band-segment repeater DR-900 is an indoor bi-directional digitally controlled amplifier that offers an increase of signal strength in medium-sized rooms.

KEY FEATURES

- Digital processing based filtering
- Fully reconfigurable through software
- Four band-segments in DL/UL directions
- Bi-directional
- Compact design for easy installation
- Integrated antenna (or connector for indoor delivery network) *(on request)*
- UL & DL gain is separately adjustable
- Intellectual autogain feature
- Basic automatic gain control
- Extended range of supply voltages: +9V up to +24V
- Small dimensions and light weight
- Status indicating LEDs
- Local and remote control: USB,GSM, LAN *(LAN will be available in Q2-Q3 2012)*
- Alarm messages
- Usage statistics LOG
- Compliance with all regulatory agencies
- Plastic decorating cover for best solution in room design
- Different configurations on-Board
- Smart Timer option: configuration change on built-in timer event

APPLICATION AREAS

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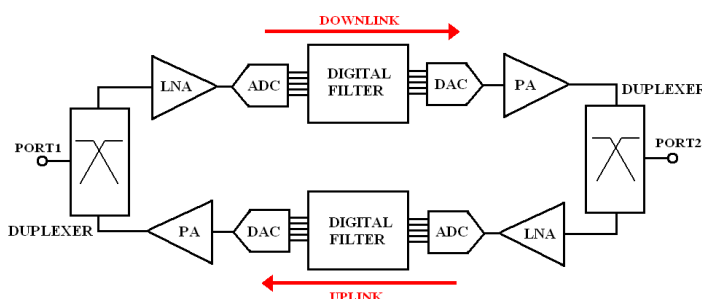- Factories
- Underground parking lots

Figure 1: Repeater DR-900 simplified block diagram.

PRODUCT DESCRIPTION

DR-900 is based on digital filtering approach thanks to what DR-900 is very flexible in continuously changing conditions of mobile communication standards. Four-segment filter can be reconfigured in custom desired way:
- adjustable bandwidth and center frequency of band-segment
- adjustable number of band-segments
- adjustable gain of band-segment

Universal base of DR-900 allows solutions not for EGSM900 only. UMTS and LTE signals could be amplified also by DR-900.

Optionally based on GSM-modem or LAN remote control interface can be ordered. In case of remote control option it is possible to reprogram DR-900 directly from office.

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.

Digital indoor repeater DR-900 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.

DR-900 is equipped with new switching power module allowing extended range of supply voltages: +9V up to +24V. LEDs on the front panel indicate proper power supply, activity of automatic gain control circuits and activity of digital nodes.

TECHNICAL SPECIFICATIONS

Parameter	Specification
Frequency range*	UL: 880-915MHz & DL: 925-960MHz
Number of independent band-segments	Uplink: 1 up to 4 Downlink: 1 up to 4
Band-segment center frequencies	Adjustable through software
Band-segment bandwidth Reconfigurable through software	Defined by software 200kHz-34.8MHz
Minimum tuning step	200kHz
Max. gain	70dB ±3dB
Manual gain adjust range	30dB (step 1dB)
Automatic gain control	30dB
Downlink output power*	+19dBm @ one carrier +16dBm @ two carriers
Uplink output power*	+19dBm @ one carrier +16dBm @ two carriers
Noise figure	7.0dB
Return loss	10dB
Spurious emission	According to ETSI standards: < -36dBm
Supply voltage	DC: +9…+24V
Current consumption	2.9A@9V, 1.1A@24V
RF connector	N-Female (SMA optionally)
Operating temperature range	-0 … +40 ºC
Pure dimensions	170 x 200 x 60mm

* Ask Rantelon for other parameters. See www.rantelon.com for more information.
  Rantelon reserves the right to change the specification.

ORDERING INFORMATION

Model	Description
DR-900M	With integrated GSM modem
DR-900	Without integrated GSM modem

All possible new software options could be installed (locally or remotely) using DR-900 built-in update function. You do not need any de-installation procedure!
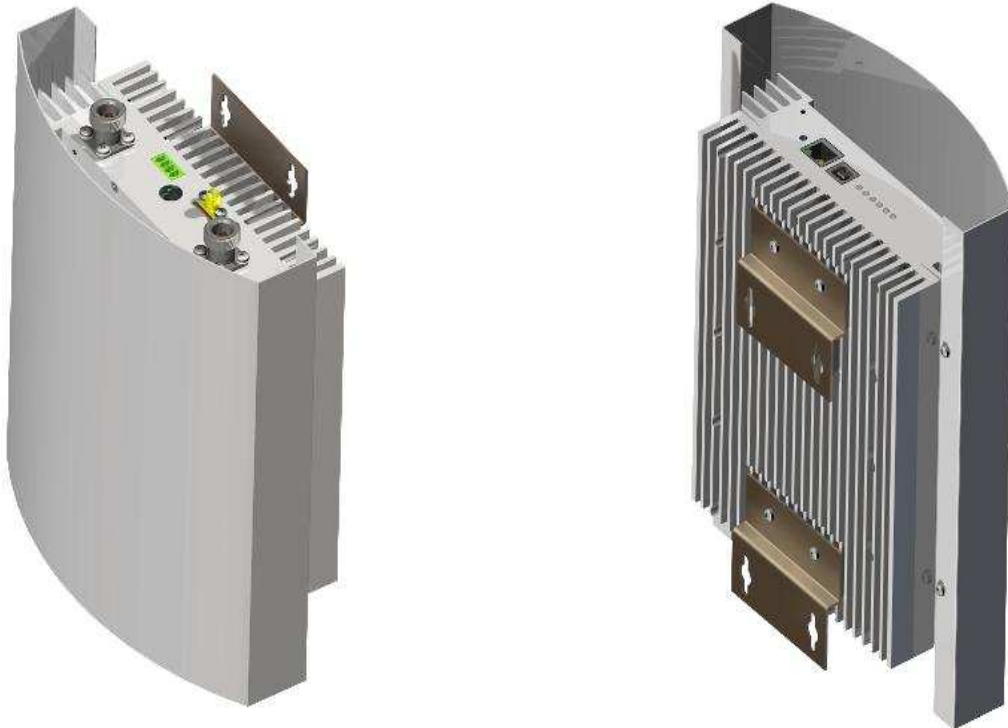
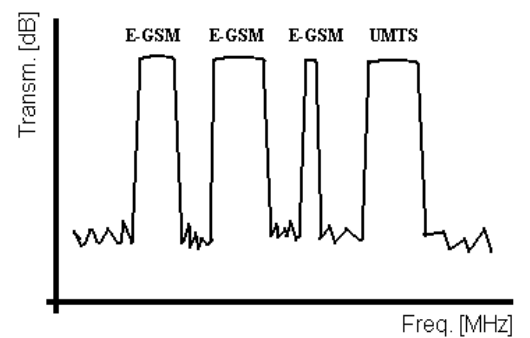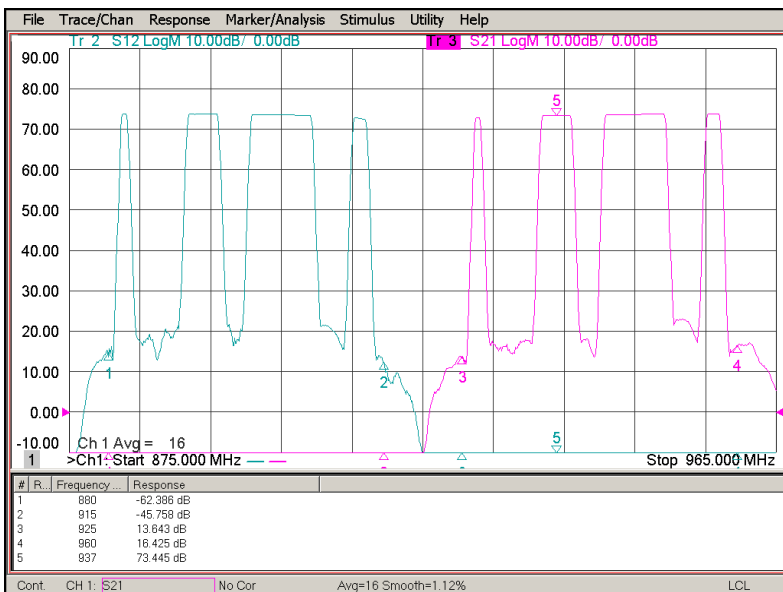**Figure 2: Front and rear views of DR-900 (with plastic decorating cover).**

Figure 3: Example of digital filter transfer function.