

PRODUCT INFORMATION: Rev 1D, Issue Jun 2014, Revised May 2015

**Repeater DR380-SS is TETRA full band bi-directional digitally controlled amplifier with built-in DSP-filtering that offers communication improvement in TETRA emergency and government systems.**

## KEY FEATURES

- Full band repeater
- Digital processing based filtering
- Fully reconfigurable through software
- Four band-segments in DL/UL directions
- Bi-directional
- UL & DL gain is separately adjustable
- Automatic gain control
- Compact design for easy installation
- Small dimensions and light weight
- Status indicating LEDs
- Local and remote control
- Alarms

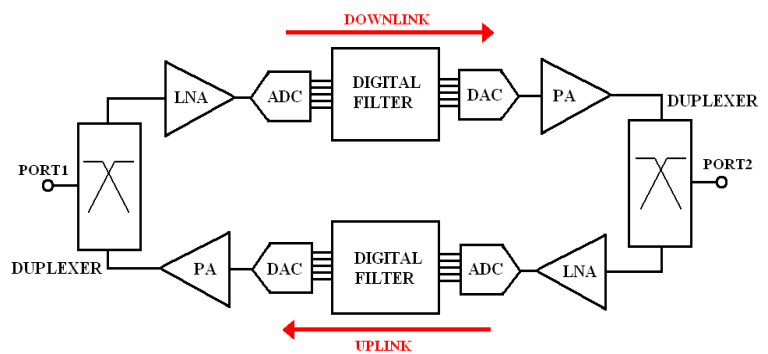


Figure 1: Repeater DR380-SS simplified block diagram.

## APPLICATION AREAS

- Inside buildings
- Airports
- Underground stations
- Tunnels

## PRODUCT DESCRIPTION

Full band DR380-SS is based on digital filtering approach thanks to what this repeater is very flexible in configuration on site. Four-segment filter can be reconfigured in custom desired way:

- **Full band (5MHz) is default configuration (factory settings)**
- Additionally there is possible to adjust bandwidth and center frequency of band-segment
- Possible number of band-segments is 1-4
- adjustable gain of individual band-segment

DR380-SS can be configured in both ways locally and remotely. Locally repeater can be adjusted using USB interfaces. Based on "2G/3G"-modem remote control can be used to reprogram DR380-SS directly from office.

Generally TETRA repeaters are used in emergency services and government systems to provide signal coverage for areas with poor or no signal (e.g. blind spot). Rantelon Ltd came across the insufficient coverage within buildings, airports, tunnels, etc. Digital repeater DR380-SS 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.

DR380-SS is equipped with highly efficient switching power module. 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*	<b>Uplink: 380-385MHz &amp; Downlink: 390-395MHz</b>
Number of independent band-segments	Uplink: 1 up to 4 Downlink: 1 up to 4
Band-segment center frequencies	Adjustable through software within specified above frequency range with step 12.5kHz
Bandwidth	<b>Full band mode: 5MHz</b> Selectivity mode 1: 25kHz-1MHz with step 25kHz (adjustable through software) Selectivity mode 2: 1.1-4.9MHz with step 100kHz (adjustable through software)
Max. gain	<b>70dB</b>
Manual gain adjust range	60dB totally: hardware input attenuator 30dB (step 0.5dB) DSP interstage attenuator for each band-segment 30dB (step 1dB)
Automatic gain control	>60dB
Downlink output power*	<b>+19dBm @ one carrier</b> +16dBm @ two carriers +13dBm @ four carriers
Uplink output power*	<b>+19dBm @ one carrier</b> +16dBm @ two carriers +13dBm @ four carriers
Noise figure	<b>4.0dB</b>
Group delay	<500ns
Input RF-range	-110...-15dBm
Spurious emission	According to ETSI standards TS 101 789-1
Supply voltage	AC: 230V, 50Hz
RF inputs	<b>N-Female, 50Ω</b>
Local control interface	USB
Remote control interface	Options: a) by default "2G/3G"-modem module (TCP/IP) b) by special request Ethernet c) by special request any other custom interface (RS485, RS232, TETRA-modem, etc.)

Parameter	Specification
Alarms	Active alarms via SMS or "polling"-system using OMC
Operating temperature range	0 ... +40 °C
Power consumption	27W (full activity)
Enclosure	IP54 case, 300x291x103mm, mounting on wall (see figures 5, 6)

\* Ask Rantelon for other parameters. See [www.rantelon.com](http://www.rantelon.com) for more information.  
Rantelon reserves the right to change the specification without notice.

### ABSOLUTE MAXIMUM

Parameter	Specification
RF Input	+15dBm

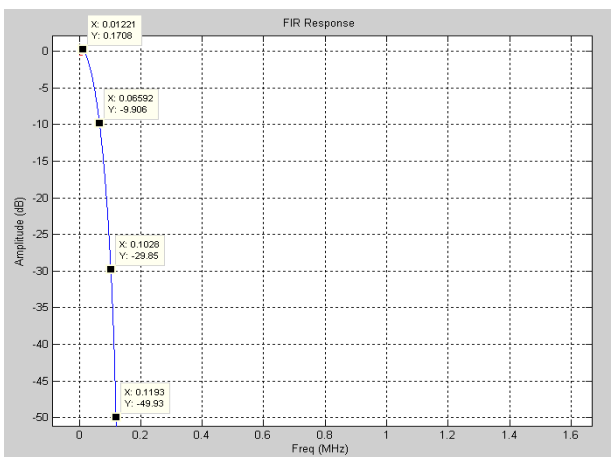


Figure 2: Selectivity mode – 25kHz (half BW).

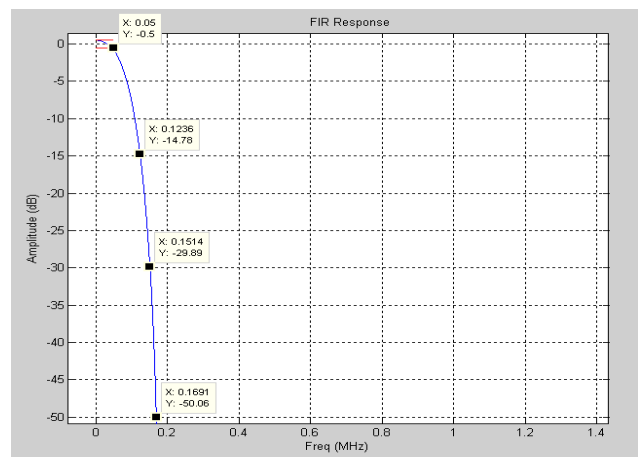


Figure 3: Selectivity mode – 100kHz (half BW).

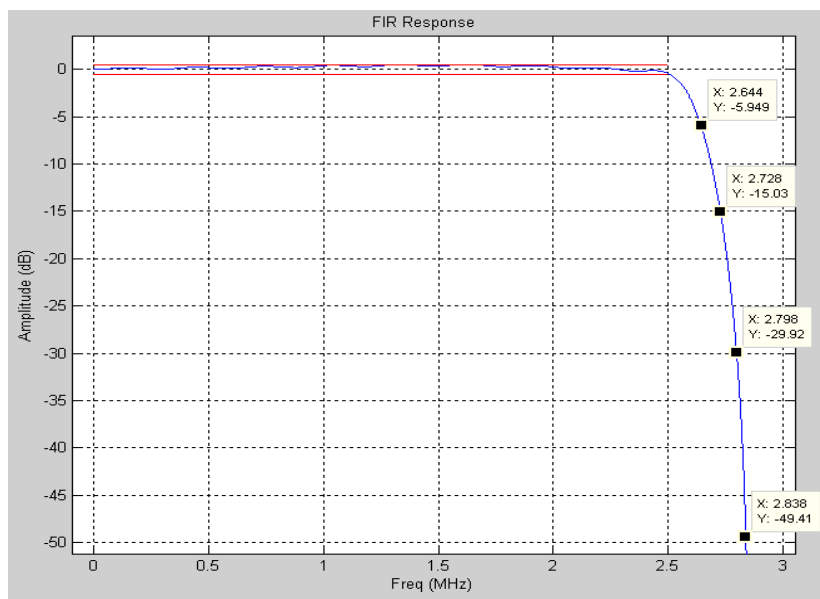
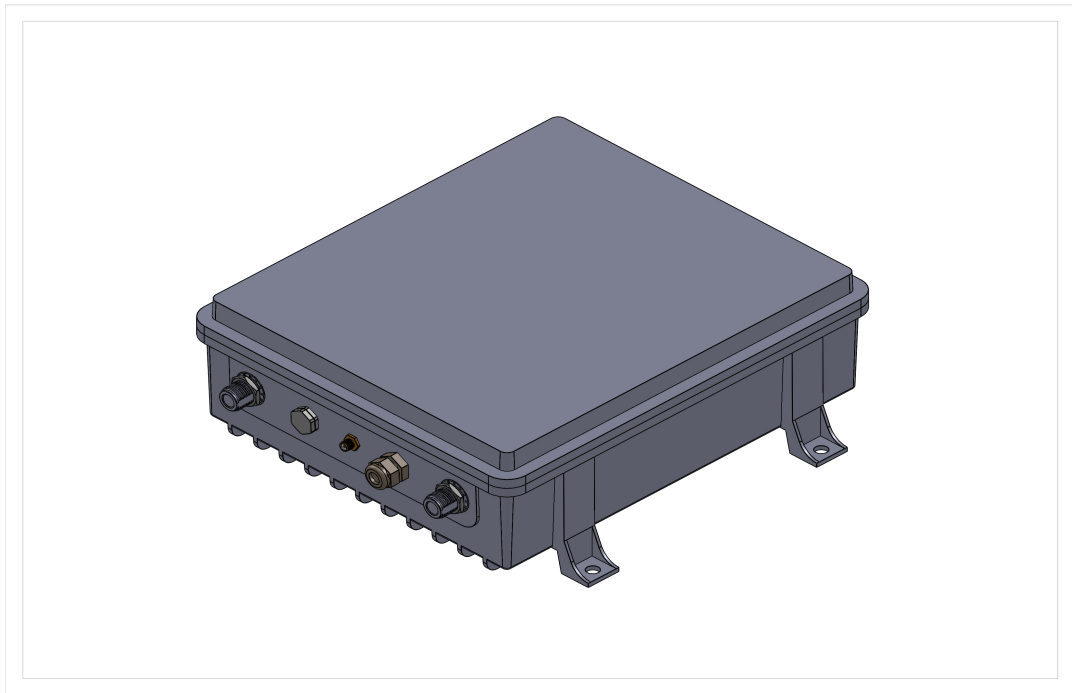
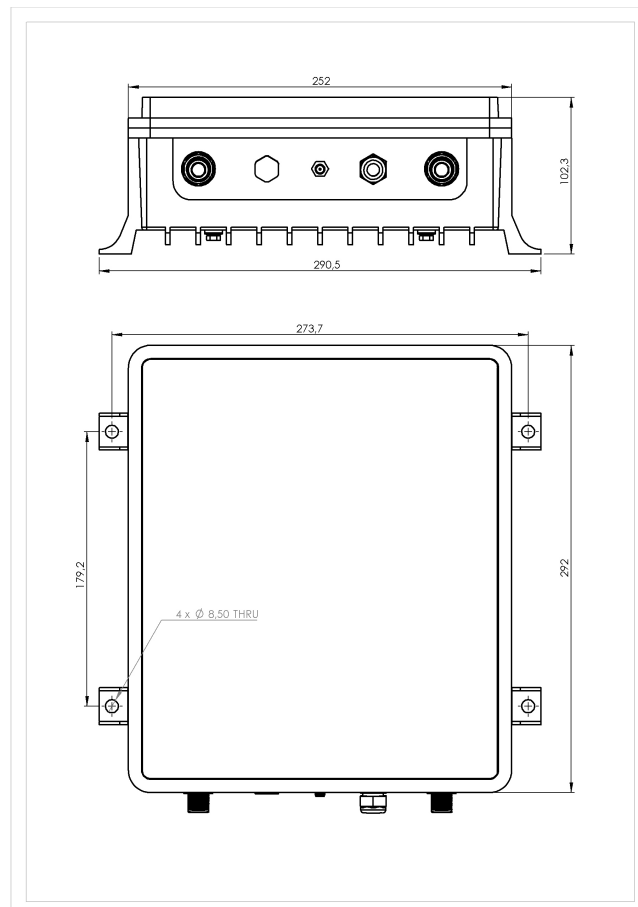


Figure 4: Full band mode – 5MHz (half BW).



**Figure 5: DR380-SS view, IP54 enclosure.**



**Figure 6: DR380-SS dimensions, IP54 enclosure.**