



DUAL CHANNEL DUPLEX VHF REPEATER

- **HIGH SELECTIVITY**
- **HIGH DYNAMIC RANGE & HIGH GAIN**
- **3U HIGH, 19" RACK (MOUNTABLE TO WALL)**
- **ETHERNET CONTROL**

The BRRV16 is a 19" rack mounted, 2-2 uplink and downlink channels frequency repeater with built in duplexers. BRRV16 includes four independent BRRV14 VHF channel selective amplifiers with ETHERNET control. The unit can be combined with BHE rackmount TETRA, FM Broadcast and DAB repeaters fulfilling the various communications need of special places like tunnels or underground stations.

Electrical characteristics:

Specification	BRRV16 dual VHF duplex repeater
Input characteristics (per channels)	
Frequencies	Uplink channel 1:161.125MHz
	Uplink channel 2:161.325MHz
	Downlink channel 1:168.35MHz
	Downlink channel 2:168.90MHz
	Other frequencies also are selectable in 148 – 174MHz range, (fixed by the factory) Distance of the uplink channels must be $\leq 800\text{kHz}$ Distance of the downlink channels must be $\leq 800\text{kHz}$ Duplex frequency distance $> 6\text{MHz}$
Channel spacing	25kHz nominal (optionally 20kHz or 12.5kHz can be shipped)
Frequency step	25kHz nominal, (according to the channel spacing)
Input power range	-80...-30dBm nominal, (Then the output level can be +13dBm nominal) Absolute. maximum is +10dBm
Input & Output return loss	$< -10\text{dB}$
Selectivity (typical)	-3dB @centre freq +/-7.5kHz (at 25kHz channel) -75dB @centre freq +/-25kHz-
Sensitivity at 20dB SINAD	-113dBm typical
Output characteristics (per channels)	
Frequencies	Same as the received frequency
Max. Gain	93dB typ.
Programmable attenuation	0 - 93dB in 1dB step
Output P1dB	+15dBm min.
Output IP3	+33dBm min.
Harmonics	-85dBc typ.,
Output threshold level	0 to +13dBm (warning level), settable in 1dB
Spurious @ max. gain	$< -70\text{dBm}$
Residual FM	10Hz typical
Start delay	0 to 100msec, settable in 1msec step

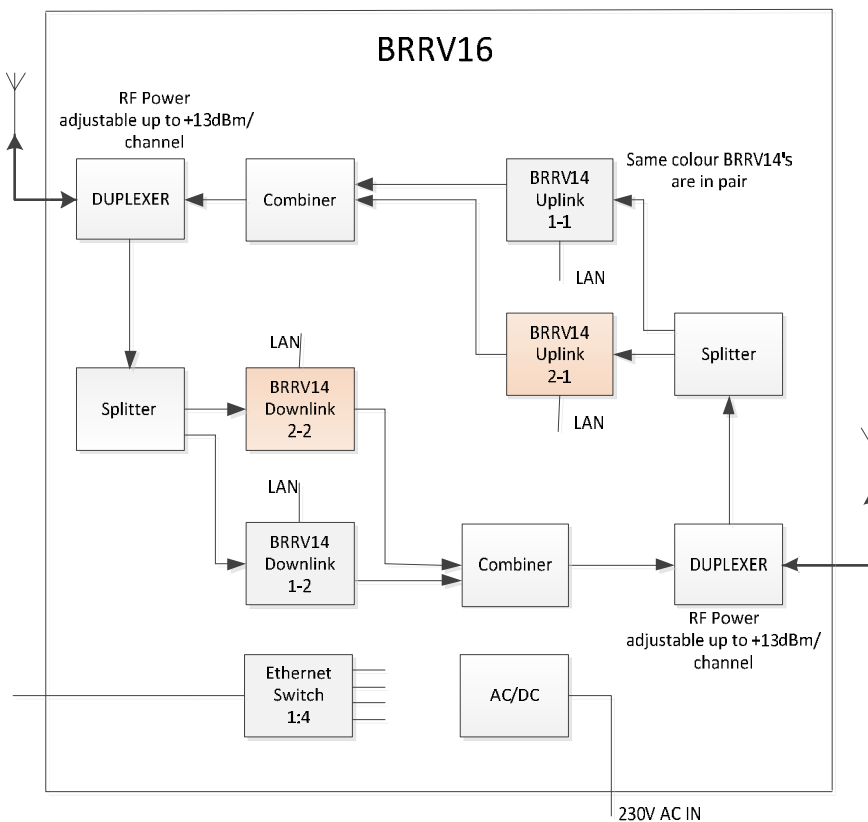


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Other parameters	
Control and monitoring	via LAN, SNMP Web server
Connectors	Control :RJ45 for ETHERNET.
	RF: N type female connectors
Status LEDs on front & rear panel / per channels	continuous GREEN light in normal operation, various flashing at warning
Monitoring / per channels	Input/Output level, Lock status, Internal DC voltages, Temperature
Control / per channels	Input/Output attenuations (Gain), Squelch level, Output threshold level, Start delay
Power Supply	100 to 250VAC @ 47 to 63Hz, 230VAC & 50Hz nominal,
Power Consumption	30W typ. @ 230VAC & 50Hz
Operating temperature	0°C ... +50°C
Dimension	3U high, 19" rack,
Weight	12kg

Blockdiagram



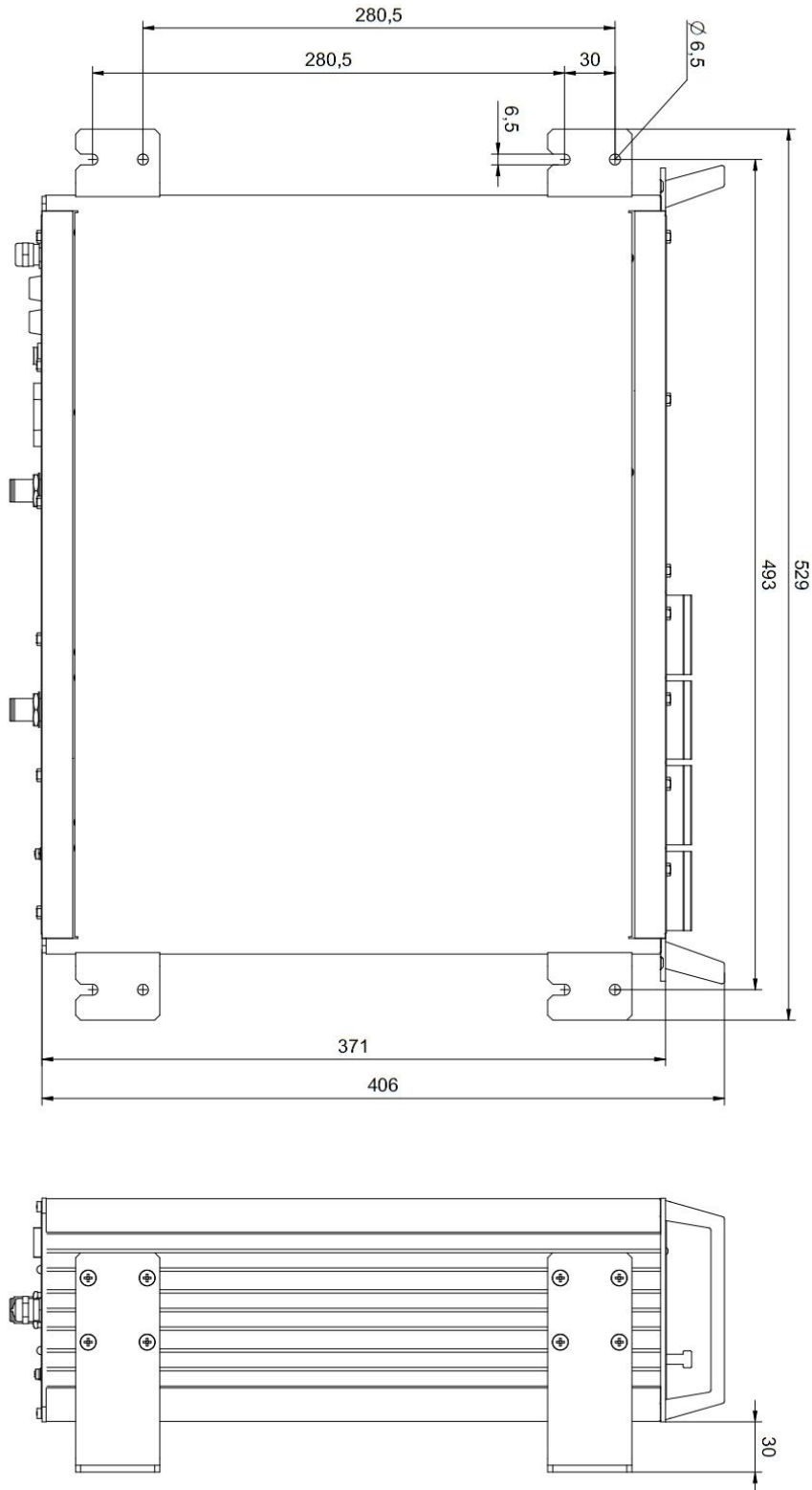
Dual Duplex system Uplink BW and Downlink BW < 800kHz



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Outline dimensions (mm) BRRV16

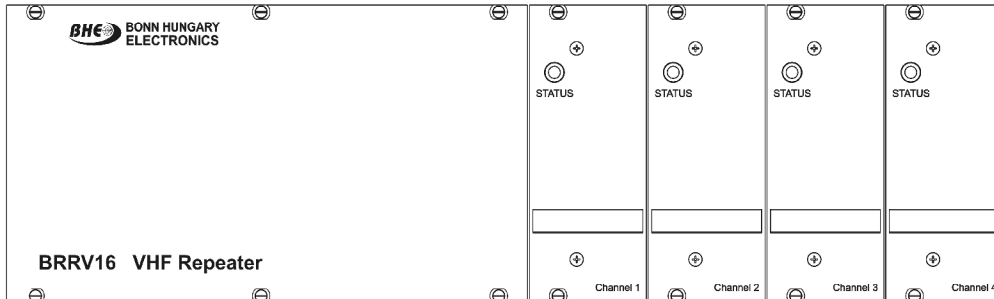




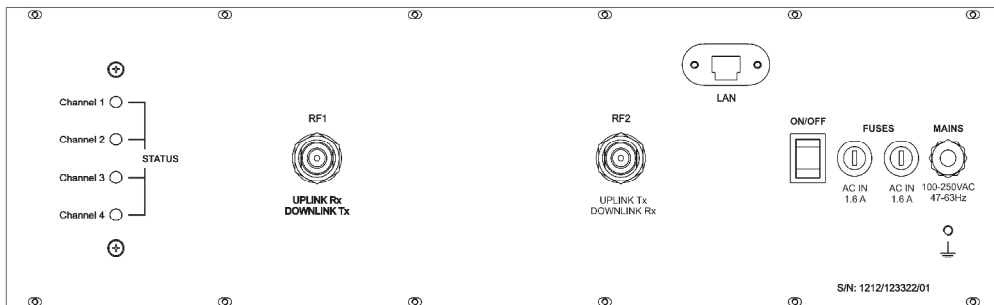
BRRV16

**DUAL CHANNEL
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Front view



Rear view



Pictures





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Control Software

The screenshot shows the BRRV16 Control Software v1.2 interface. It features a main window with a title bar and standard Windows window controls. The interface is divided into several sections:

- CH1 / CH2:** A tabbed interface with 'CH2' selected. It contains a list of parameters: Status, Mute, Temperature, Input Voltage, Internal Voltage (+3.3V), Internal Voltage (+5.0V), RF Output Power, RF Input Power, IF Power, Gain, Actual IP Address, Frequency, Input Attenuator, Output Attenuator, Squelch Level, Output Level, Start Delay, Mute by Control Software, and Saved IP Address.
- UPLINK CH2:** Monitored Parameters (CONNECTED, Muted, 43 °C, 11.9 V, 3.3 V, 5.0 V, No Output Power, -79.2 dBm, -69.3 dBm, 86 dB, 192.168.16.227) and Controlled Parameters (161,325 MHz, 3 dB, 3 dB, -70 dBm, 13 dBm, 1 ms, ON/OFF, 192.168.16.227).
- DOWNLINK CH2:** Monitored Parameters (CONNECTED, Muted, 44 °C, 12.0 V, 3.3 V, 5.0 V, No Output Power, -84.3 dBm, -69.7 dBm, 86 dB, 192.168.16.228) and Controlled Parameters (168,9 MHz, 3 dB, 3 dB, -70 dBm, 13 dBm, 1 ms, ON/OFF, 192.168.16.228).
- BRRV16 PARAMETERS:** BRRV16 Parameters (ALL DEVICES CONNECTED, Device: BRRV16, Serialnum: 00001, Date: 2012. 12. 18., Last Email Sent) and Alarm Settings (Email Server IP, Email Server Port, Server username, Server Password, Mail From, Mail To, Send Interval: 0 h / 10 m, Enable Email, Test Email).
- ERRORS:** A section at the bottom left showing no errors.