

MAIN FEATURES

- ❖ Digital filter technology (SDR)
- ❖ High selectivity
- ❖ High dynamic range
- ❖ Automatic gain control per channel
- ❖ On-channel / Frequency shifting repeater
- ❖ Built-in break-in system
- ❖ Automatic RDS recognition for break-in
- ❖ SNMP support
- ❖ Web user interface

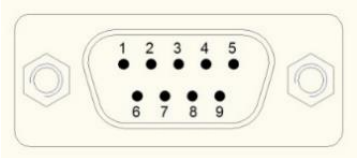


DESCRIPTION

BRRF19 is an 8 channel SDR-based on-channel / frequency shifting repeater equipped with Voice Break-In transmitters. The unit is part of BHE's Broadcast repeater solution. All FM channels are independently programmable. The Voice Break-In transmitters operate at the output frequency in case of frequency shifting. This unit can be used together with devices from BHE's TETRA portfolio to provide a comprehensive solution for the special communications needs of places like road and railway tunnels or underground installations.

SPECIFICATIONS

| ELECTRICAL PARAMETERS | |
|-----------------------------------|---|
| Frequency band | 87.5 – 108 MHz |
| Frequency step | 50 kHz |
| Operating frequency bandwidth | 20.5 MHz |
| Mode of operation | Channel selective up to 8 channels; programmable independently of each other |
| Input power range | -80 ... -30 dBm |
| Input return loss | <-10 dB |
| Noise figure @ max. gain | 8 dB max. |
| Selectivity (typically) | -3 dB @centre frequency +/-100 kHz -50 dB @centre frequency +/-300 kHz |
| Linear output power | +10 dBm / 2 Channels, 0 dBm / 8 Channels meets with ETSI |
| Output IP3 | 33 dBm @ 2 tone |
| Maximum gain | 106 dB |
| Gain setting range | 16 – 106 dB (60 dB digital, 30 dB analog) adjustable in 1 dB steps |
| Gain ripple | ±1.5 dB typical |
| Gain stability | <±1.5 dB (within operating temp. range) |
| Automatic level equalization | Yes |
| Spurious radiation | According to the ETSI regulation |
| External audio level for break-in | 1 V _{RMS} /(1 kHz, max. 75 kHz MPX deviation) |
| FM deviation at break-in mode | ±75 kHz max. |
| Automatic RDS recognition | Yes, at the pre-programmed channels |
| Power supply voltage | 230 VAC, 50 – 60 Hz |
| Power consumption | <20 W |

| MECHANICAL PARAMETERS | | | | |
|---|---|---------|-------------------------------|---|
| Type of RF connectors | N – female | | | |
| Number of RF connectors | 3, RF Input & RF Output & RF Monitor / VBI-out | | | |
| Monitor output | RF Output - 30 dB (N – female) | | | |
| Control connectors | RJ45 (LAN) and D-Sub 9 pin male connector (direct) | | | |
| Power supply plug | IEC C14 male (accessory Plug Type F) | | | |
| Weight | 5 kg | | | |
| Dimensions | 19" 1U (see outline dimensions) | | | |
| ENVIRONMENTAL PARAMETERS | | | | |
| Operating temperature range | 0 °C ... +45 °C | | | |
| Storage temperature range | -30 °C ... +70 °C | | | |
| Cooling | Passive cooling | | | |
| Degree of protection | IP20 Indoor | | | |
| SOFTWARE PARAMETERS | | | | |
| Monitoring & control | Via Ethernet, using SNMP v1/v2c protocol or the web user interface | | | |
| Monitored parameters | Input/Output level, internal DC voltages, temperature | | | |
| Alarm I/O | Status LED on front panel (two-color), SNMP trap messages, dry contact (summary alarm) output | | | |
| Digital inputs | Mute, break-in, short to GND to activate | | | |
| Digital outputs | Dry contact (summary alarm), configurable polarity ⁽¹⁾ | | | |
| Analog input | Audio signal for break-in | | | |
| MONITORING & CONTROL CONNECTOR PINOUT (D-SUB MALE) ⁽¹⁾ | | | | |
| Pin no. | Function | Pin no. | Function |  |
| 1 | Audio in, 600 Ohm symmetrical | 6 | Audio in, 600 Ohm symmetrical | |
| 2 | Dry Contact | 7 | Break-in, Active low | |
| 3 | Dry Contact | 8 | Mute-in, Active low | |
| 4 | Audio in, single ended ⁽²⁾ | 9 | - | |
| 5 | GND | - | - | |

Specifications are subject to change without notice.

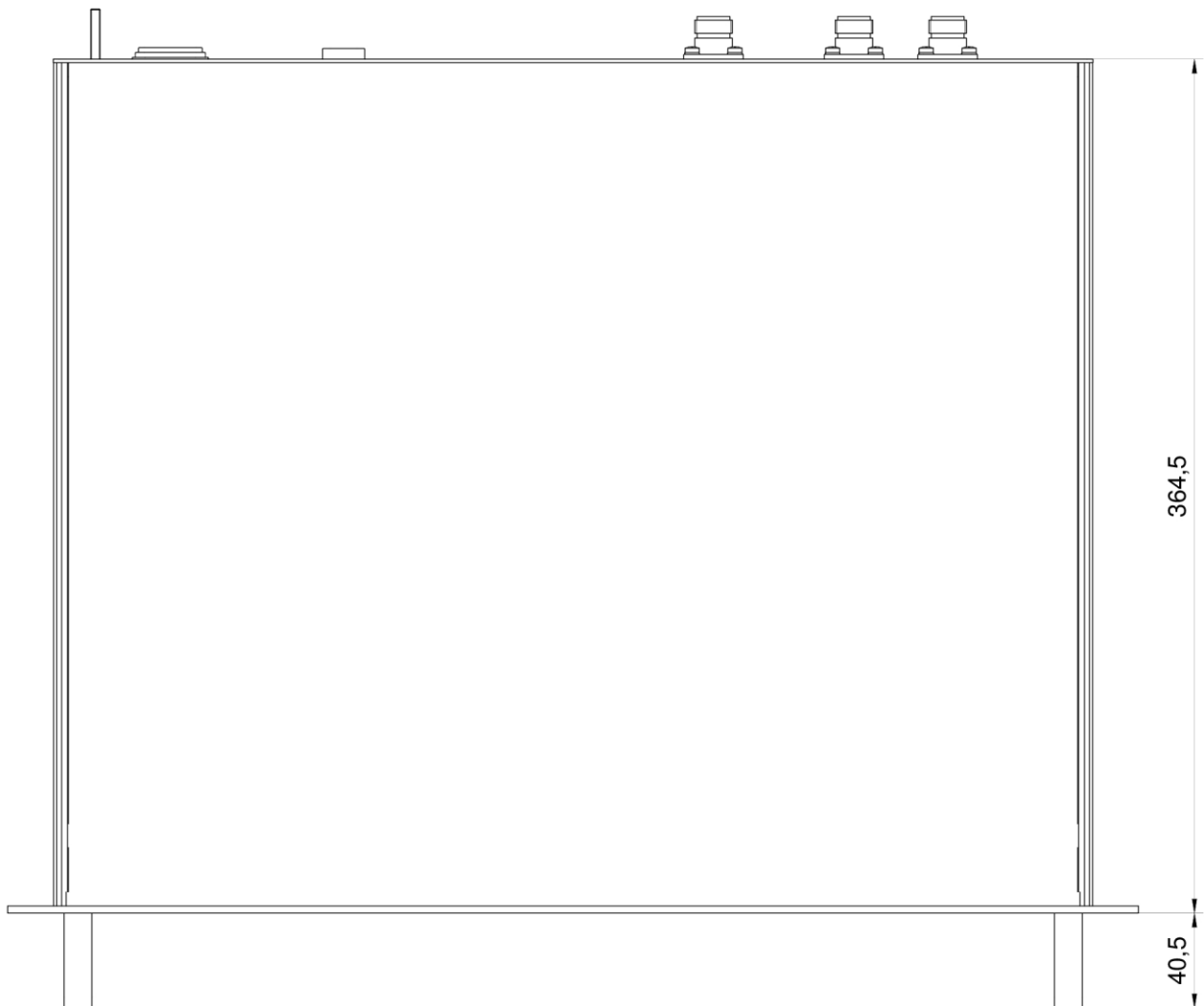
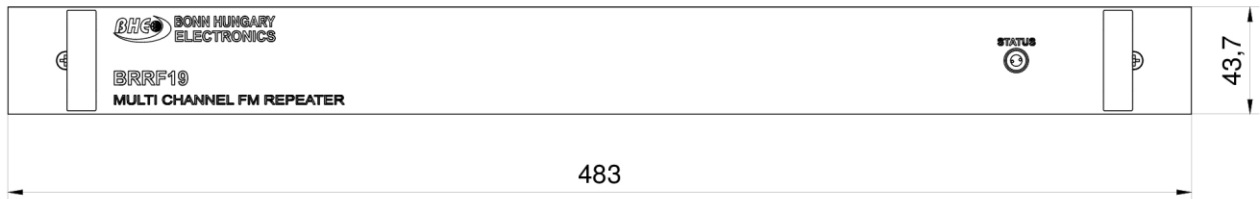
(1) In POWERED OFF state the relay will be open. The operation of the Dry Contact relay is configurable by the user.

(2) Mutually exclusive with Pin 1 & 6 symmetrical inputs.



BRRF19 FM 8 Channel Selective Digital Repeater

OUTLINE DRAWING (mm)





BRRF19 FM 8 Channel Selective Digital Repeater

ORDERING INFORMATION

| MODEL NUMBER | DESCRIPTION |
|--------------|---|
| BRRF19K10013 | BRRF19 Digital FM Repeater with VBI transmitters, 87.5-108MHz, 230 VAC, 19" 1U, black plate |
| BRRF19K10459 | BRRF19 Digital FM Repeater with VBI transmitters, 87.5-108 MHz, +12 VDC, 19" 1U |
| BRRF19K10717 | BRRF19 Digital FM Repeater with VBI transmitters, 87.5-108MHz, 2x48 VDC, 19" 1U |
| BRRF19K11240 | BRRF19 Digital FM Repeater with VBI transmitters, 87.5-108MHz, 230 VAC, 19" 1U, plug type I |
| BRRF19K11253 | BRRF19 Digital FM Repeater with VBI transmitters, 87.5-108MHz, 48 VDC, 19" 1U |

DOCUMENT REVISION

| DOCUMENT NAME | REVISION | DATE |
|---------------|----------|------------|
| BRRF19 | V01 | 2023-03-31 |