

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

RF INPUT 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
RF OUTPUT PARAMETERS	
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
MECHANICAL PARAMETERS	
Type of RF connectors	N – female
Number of RF connectors	3, RF Input & RF Output & RF Monitor / VBI-out

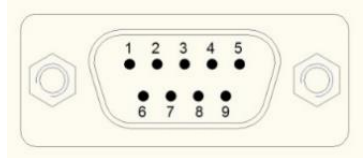
Monitor output	RF Output - 30 dB (N – female)
Control connectors	RJ45 (LAN) and D-Sub 9 pin male connector (direct)
Power supply voltage	230 VAC, 50-60Hz
Power supply plug	IEC C14 male (accessory Plug Type F)
Power consumption	<20 W
Weight	5 kg
Dimension	19" 1U (see outline dimensions)
Operating temperature 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 PIN OUT (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.

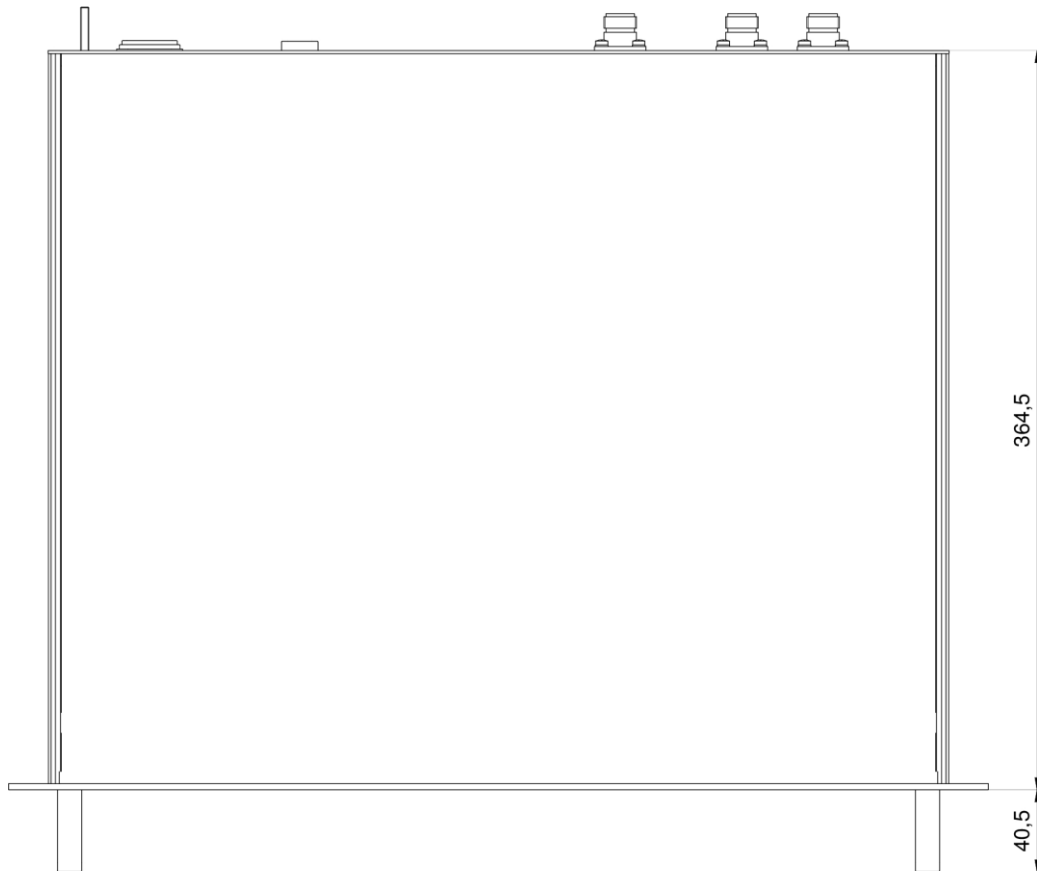
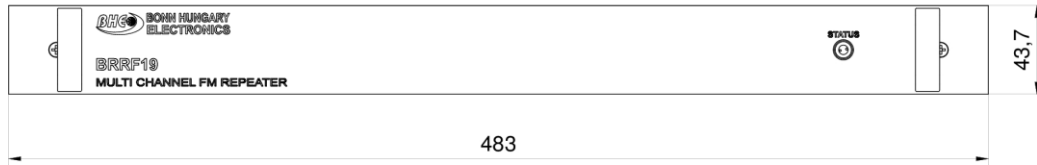
(1) In POWERED OFF state the relay will be open. The operation of the Dry Contact relay is configurable by the user.

(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	2022-09-15