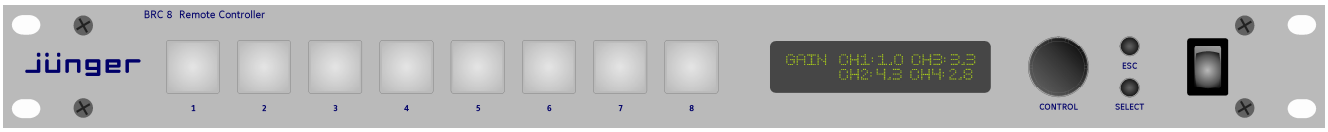
jünger

C8000 LEGACY

BRC 8

Remote Controller

Manual



Hardware features

• **1RU remote panel**	19", 1RU panel
• **Rotary encoder (turn&push)**	rotary encoder for programming of the brc buttons and gain control of certain c8k modules**.** <ENTER> push function to confirm settings
• **8 Function Keys**	illuminated multi color buttons
• **SELECT** button	
• **EXIT** button	
• **Display**	2 rows 40 character LCD display
• **Power switch**	
• **CAN bus** connectors	for connection with a dedicated c8k frame
• **External power supply**	5V DC input

Software features

• **Button** setup	setup of GPIs issued by a respective operating button Setup of tally lights if a certain GPO is received by the BRC 8
• **Gain** control	remote gain control of e selected number of c8k processing modules of a frame

Introduction

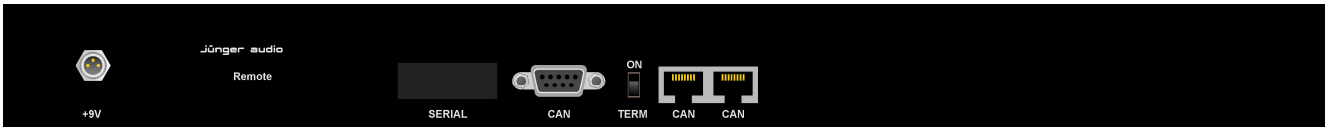
The **BRC 8 Remote Controller** is designed to offer a simple remote control hardware interface for a dedicated C8k.
Mainly to control GPI related functions by a push button (like loading presets) and display a tally style feedback for the operator.

For a selected number of c8k modules it also allows to directly control the GAIN setting of audio channels or programs.

The physical interface and the communication protocol is CAN (Controller Area Network) that is also used inside a c8k frame for module intercommunication.

The **BRC 8 Remote Controller** functions are limited to operating needs rather than setting up a device that should be done via the browser based GUI.

Hardware concept (rear view)

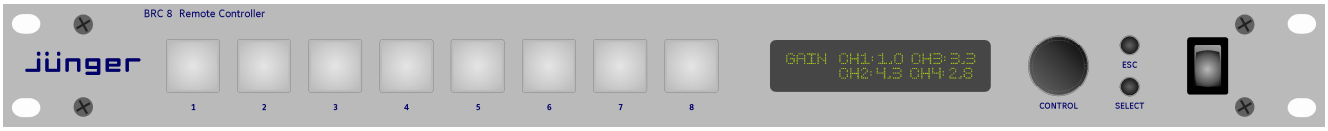


The **BRC 8 Remote Controller** is powered by an external **5V** power supply that comes with the panel.

A 9 pin D-Sub and two RJ45 connectors are looped through to connect to the C8702 frame controller and other panels (up to eight) on the same CAN bus.

CAN bus termination switch (must turned on only at the far most panel on the bus).
Up to 300m distance from the far most **BRC 8 Remote Controller to the C8702.**

Hardware concept (front view)



8 illuminated push buttons	these operating buttons may be setup for different color schemes (tallies), GPIs and button behavior
2x 20charcter LCD display	info and setup display
Rotary encoder with push function	multi turn rotary encoder, integrated push button
2 micro switches	to control the setup and operating function
Power switch	rocker switch

Control concept

The communication between the **BRC 8 Remote Controller**, and the C8k frame, is based on the CAN bus. Up to 8 panels may be connected in a daisy chain to control one frame. It is not possible to control multiple frames with one panel.

GPI/Os of a c8k system are transmitted over the CAN bus independent from the type of module or from a GPI/O device. I.e. the C8817 physical GPI/O module behaves the same way as the **BRC 8 Remote Controller**. A physical GPI may be given a virtual number from 1 to 127. Virtual GPOs also may have a number from 1 – 127. Such virtual numbers must be mapped to physical interfaces. GPIs and GPOs do not "see" each other on the CAN bus. I.e. you can not control a module by the GPO of another module! In this case you must use the GPI/O conversion function of the C8817 GPI/O module.

The **BRC 8 Remote Controller** has 8 operating buttons. Each button may issue a virtual GPI number and a virtual GPO my be mapped to the tally lights of that button.

As an extra feature of the **BRC 8 Remote Controller** allows to control the GAIN(s) of audio channels of selected modules. Depending on the audio channel setup this could be done for linked channels (e.g. for the surround channels of a 5.1 program) or for grouped channels (independent channels will be grouped for gang style gain setting).

Getting started – CAN bus setup

The **BRC 8 Remote Controller** must be connected via a twisted pair cable. This can easily be done by using one pair of the Ethernet (e.g. CAT5) infrastructure of a facility including patch panels.
Maximum cable length is 300m.

Important Note! The CAN interface must not be connected to active Ethernet components like hubs, routers or switches. This may damage one or both sides of the components of network equipment or the **BRC 8 Remote Controller** itself.

The pin out of the RJ45 connectors at rear allows a 1:1 connection with the RJ45 CAN socket at the front panel of the frame controller C8702.

It is mandatory that the CAN bus is terminated at both ends. A c8k frame has a built in CAN termination on the back plane and either the frame controller or the sync module has the second one activated by a DIP switch. If a **BRC 8 Remote Controller** will be connected to the frame one must turn **CAN Term** switch **off** at the frame controller (if no sync module is installed) or at the sync module. See respective manuals for details.

Now the **TERM** switch at rear of the **BRC 8 Remote Controller** must be switched **ON.**
If multiple **BRC 8 Remote Controllers** are installed in a daisy chain only the **TERM** switch of the fare most panel must be **ON**.

Getting started – Power up

If you turn power on the following sequence will appear in the display:

JUENGER AUDIO

C8000 CONTROLLER

SOFTWARE VERSION
C: xy

Power up display – depends on the setting if gain control is enabled or not.

Principal of operation – the menu structure

The LCD display gives the necessary feedback to set up functions of the panel itself and the operating buttons. When you **hold <SELECT>** and briefly **press** the rotary encoder **<CONTROL>** button the **BRC 8 Remote Controller** enters the setup menu and the first of the eight operating buttons starts flashing. The display shows the initial setup screen :

BUTTON > BEHAVIOR < NR x "*behavior*"

"BUTTON > BEHAVIOR <" is the menu item
"NR x" shows the number of the selected operating button that is flashing as well, it will change if you press another operating button
"*behavior*" stands for the GPI function of that button

The little arrows ">" and "<" encircle the menu item **or** the parameter that one may change by **turning** the **<CONTROL>** knob.
One may move them up and down by **pressing** the **<CONTROL>** button repeated.

The setup menu works in a circle by turning the **<CONTROL>** knob.
Below the possible contents of that display :

BUTTON > BEHAVIOR < [TOGGLE 1GPI / TOGGLE 2GPI / PUSH 1GPI / PUSH 2GPI]

BUTTON > GPI STATIC < [1 … 127]
In case TOGGLE 1GPI or PUSH 1GPI has been selected for behavior

BUTTON > GPI START < [1 … 127]
In case TOGGLE 2GPI or PUSH 2GPI has been selected for behavior

BUTTON > GPI STOP < [1 … 127]
In case TOGGLE 2GPI or PUSH 2GPI has been selected for behavior

BUTTON > TALLY GREEN < [1 … 127]

BUTTON >TALLY YELLOW < [1 … 127]

BUTTON > TALLY BLUE < [1 … 127]

BUTTON > TALLY WHITE < [1 … 127]

BUTTON > FLASH RED < [1 … 127]

> BUTTON + SELECT < [ON / OFF]
One must press both buttons to prevent from pressing an operating button by accident. This is a general setting for the panle and applies to all operating buttons.

> CONTRAST < [0 … 7]

> BRIGHTNESS < [0 … 7]

> REMOTE NUMBER < [0 … 7]

> GAIN CONTROL < [OFF / LINKED GAIN / GROUPED GAIN]
OFF no gain control – the initial display shows : "C8000 controller"

LINKED GAIN - controls the linked audio channels

GROUPED GAIN - controls all audio channels which belong to a program

Principal of operation – setting up one example operating button

We assume to setup operating button #2 to issue a GPI #10 when pushed. It shall load a preset in a module. If the preset is loaded that module issues GPO #10. On reception of GPO # 10 the button must light green.

Hold the **<SELECT>** and press **<CONTROL>**

Push operating button #2

Push the **<CONTROL>** button to enter "*behavior*" settings.

Turn the **<CONTROL>** knob to change "*behavior*" : > PUSH 1GPI <

Push the **<CONTROL>** button to leave "behavior" settings
Turn the **<CONTROL>** knob to select > GPI STATIC <
Push the **<CONTROL>** button to enter the virtual GPI number selection
Turn the **<CONTROL>** knob to select the desired virtual GPI number > 10 <
Push the **<CONTROL>** button to leave GPI number selection
Turn the **<CONTROL>** knob to select the desired tally color > TALLY GREEN<
Push the **<CONTROL>** button to enter virtual GPO number selection
Turn the **<CONTROL>** knob to select the desired virtual GPO number < 10 <
Push the **<CONTROL>** button to leave the virtual GPO number selection

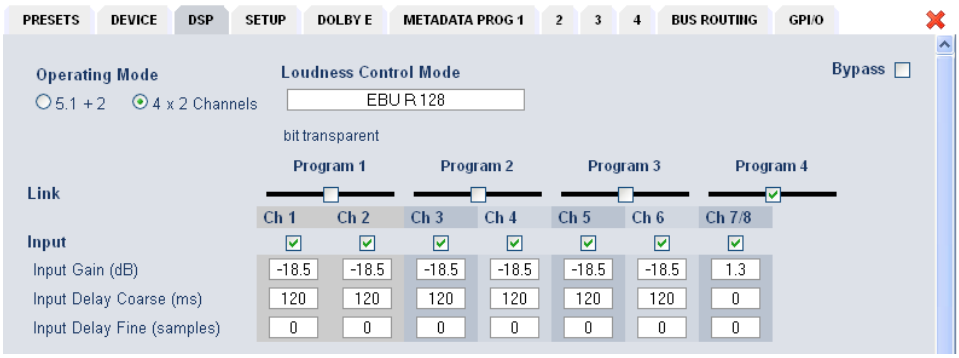
Principal of operation – controlling gain of an example module

If the **BRC 8** is setup for controlling gains (GAIN CONTROL = LINKED GAIN or GROUPED GAIN)
The display after power uo sequence shows the fist module that one may remote control gain settings :

8086 Loudness Proc 0 2L/2R Gain: x.y dB	module type / module name channel / "Gain:" / value

You must press the **<CONTROL>** button to enter gain setting. The value will be encircled by the little arrows, Now turn the **<CONTROL>** knob to alter the gain setting of the channel(s).

If you press the **<CONTROL>** button twice a "<" arrow in the bottom indicates that you may change the channel(s) which will be controlled. The display depends on the setup of the processor and the type of module. E.g. if the 8086+ is set for 4x2 operation :



And the audio channels for Program 1, 2, 3 are not linked, you will be able to individual control Ch 1, 2, 3, 4, 5, 6 but Ch 7/8 together because they are linked.
Similar applies if the 8086+ is set up fro 5.1 + 2.

Initialize to factory defaults

After a firmware update or if the **BRC 8** does not work properly you can perform a general reset of the panel. Hold down operating button #1 and turn power on. Wait until the display shows "C8000 controller".
Pls. keep in mind that this will erase all button settings.

Technical data – **BRC 8 Remote Controller**

• **Power supply**	5V external wall plug power supply.
• **Consumption**	6 W
• **Max cable length**	300m UTP (unshielded twisted pair) between panel and c8k frame.
• **Dimensions**	19", 1RU, depth 6 cm
• **Environmental**	operating temperature 0 ºC to 50 ºC non operating temperature -20 ºC to 70 ºC humidity 90%, non condensing
• **Weight**	net weight approx. 0.5 kg shipping weight 1.0 kg

Safety information

Electrical

Safety classification :	Class 1 – grounded product / Schutzklasse 1 Corresponding to EN 60065:2002.
Power connection :	The device must be connected to the 5V wall plug power supply that comes with the panel.
Water protection :	The device must not be exposed to splash or dripping water. It is permitted to place a container filled with liquids (e.g. vases) on top of the device.

Service safety — Only qualified personnel should perform service procedures.

Do not service alone :	Do not perform internal service or adjustments of the device unless another person capable of rendering first aid and resuscitation is present.

To avoid fire or personal injury

Mounting :	It must be placed on a flat surface or must be mounted into an 19" rack.
Do not operate without covers	Do not operate this product with covers or panels removed.
Do not operate with suspected failures	If you suspect that there is damage to this product, have it inspected by by qualified service personnel.

Warranty

standard Junger Audio two-year warranty on parts and labor.

Specifications are subject to change without notice

LEGACY **C8000**

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