CCP1116

Commentary Panel



Quick Guide

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1 CONTROL ELEMENTS - DESCRIPTION



Nr.	Function	Description
1	AUX 1 ON	Activating the button: Mixes analog input "AUX 1" from the rear side to the Headphones (depending of the dip-settings on the rear side to the left-, right- or both ears). The button will light up in yellow. With the Levelmeter you can adjust the listen level.
2	AUX 2 ON	Activating the button: Mixes analog input "AUX 2" from the rear side to the Headphones (depending of the dip-settings on the rear side to the left-, right- or both ears). The button will light up in yellow. With the Levelmeter you can adjust the listen level.
3	MIC B ON	Activating the button: Mixes the MIC B from 2 nd commentator to the Headphones (depending of the dip-settings on the rear side to the left-, right- or both ears). The button will light up in yellow. With the Levelmeter you can adjust the listen level.
4a	MIC A	Sidetone: Mixes the "MIC A" signal to the Headphones A (depending of the dip- settings on the rear side to the left-, right- or both ears). With the Dip switch "Always" you can choose to activate the Sidetone always or only when ON AIR is pressed
4b	MIC A Signal LED	Indicates green, as soon a signal from MIC A is coming into the CCP-1116. LED- color changes to orange, when the signal is clipping
5	PHONES A	Adjust the outgoing volume to Phones A
6	ON AIR A (Latching)	Activates the "ON AIR" function. When activated, the Button light up red. The "MIC A" is sent to the analog outputs "AIR A OUT" and "AIR A+B OUT". Also GPI IN 1 is internally activated and can be used within the Artist configuration. The Level meter is showing the ON AIR Mic level with green and orange LEDs
7	MIC A MUTE (Momentary)	Mute the " <i>MIC A</i> " input. When activated the button light up yellow. If "ON AIR" is activated, also this button changes color to yellow. The "MIC MUTE" buttons can also be activated via GPO 1 (A) and 2 (B) within the Artist configuration



8	Intercom Mic	Connector for standard Artist microphones. Normally not used for commentary mode, only when the CCP-1116 is used as ordinary Intercom panel.
9	Function keys	Standard Artist panel function keys (Shift, HS, OPT, F1, F2) + Master Volume. ATTENTION: The Master Volume is not influencing the volume of Phones A or B
10	Speaker	Panel speaker. Normally not used for commentary mode, only when the CCP- 1116 is used as ordinary Intercom panel.
11	Intercom OLED keys	Standard keys, to be configured within the Artist configuration

1-7 is identically also for Commentator B

2 CONNECTORS

2.1 Connectors front side

Ę	Mica/ Phones/	HEADSET A INTERCOM		ADSET B MIC B / O O O O O O O O O O O O O O O O O O
Nr.	Function	Connector Type	Artist Director	Pin out
1	PHONES A	6,35mm Stereo Jack	Audio Patch: Audio OUT A	Tip: Left Ring: Right Sleeve: GND
2	MIC A	XLR3 female	Audio Patch: Audio IN A	Pin 1 : Shield Pin 2 : Signal + (hot) Pin 3 : Signal – (cold)
3	HEADSET A INTERCOM (only for pure Intercom use)	XLR4 male	Audio Patch: Headset A	Pin 1: Shield (Mic -) Pin 2: MIC + (+4V - switchable within Director) Pin 3: Phones – Pin 4: Phones +
4	HEADSET B INTERCOM (only for pure Intercom use)	XLR4 male	Audio Patch: Headset B	Pin 1: Shield (Mic -) Pin 2: MIC + (+4V - switchable within Director) Pin 3: Phones – Pin 4: Phones +
5	MIC B	XLR3 female	Audio Patch: Audio IN B	Pin 1 : Shield Pin 2 : Signal + (hot) Pin 3 : Signal – (cold)
6	PHONES B	6,35mm Stereo Jack	Audio Patch: Audio OUT B	Tip: Left Ring: Right Sleeve: GND



2.2 Connectors rear side

	:			
		SPIO MATRIX MATRIX EXT. SI	PEAKER LINE IN AUX 1 IN A	$\begin{array}{c} \text{ux 2 In} \\ \textbf{0} \\ \textbf{0} \\ \textbf{0} \\ \textbf{0} \\ \textbf{10} \\ \textbf{11} \\ \textbf{12} \\ \textbf{13} \\ \textbf{14} \end{array}$
Nr.	Function	Connector Type	Artist	Pin out
1	Main Input	•••		90-265V, 47-63Hz
2	DC EXT. 12V	XLR4 male		Pin 1: GND Pin 2: n.c. Pin 3: n.c. Pin 4: +10+14VDC (3A)
3	GPIO	XLR5 female	Panel GPI IN 3 Panel GPI Out 3	Pin 1: OUT - (> Director: GPI Out 3) Pin 2: OUT + (> Director: GPI Out 3) Pin 3: IN - (> Director: GPI IN 3) Pin 4: IN + (> Director: GPI IN 3) Pin 5: +5V (250mA) Shield: Ground
4	MATRIX (BNC)	BNC		Pin: Tx/RX Data + Shield: Tx/Rx Data -
5	MATRIX (CAT5)	CAT5		Pin 1: TxD + Pin 2: TxD - Pin 3: RxD + Pin 6: RxD -
6	Ext. Speaker	XLR3 male	Audio Patch: Ext. OUT	Tip: Left Ring: Right Sleeve: GND
7	LINE IN	XLR3 female	Audio Patch: External MIC (only available in Speaker Mode)	Pin 1 : Shield Pin 2 : Signal + (hot) Pin 3 : Signal – (cold)
8	AUX 1 IN	XLR3 female	n.a.	See 7
9	AUX 2 IN	XLR3 female	n.a.	See 7
10	DIRECT B OUT (permanent)	XLR3 male	n.a.	See 6
11	AIR B OUT	XLR3 male	n.a.	See 6
12	AIR A+B OUT	XLR3 male	n.a.	See 6
13	DIRECT A OUT (permanent)	XLR3 male	n.a.	See 6
14	AIR A OUT	XLR3 male	n.a.	See 6



3 REAR SIDE - DIP SWITCHES



Example for Commentator A. Identical functionality for Commentator B

Nr.	Function Group	Function	Description
1	PHONES MODE	MIC A	Routes MIC A signal (Sidetone) to left-(L), right- (R), or both ears (M)
2	PHONES MODE	MIC B	Routes MIC B signal to left-(L), right- (R), or both ears (M)
3	PHONES MODE	I/COM	Routes Intercom signal to left-(L), right- (R), or both ears (M)
4	PHONES MODE	AUX 1	Routes AUX 1 signal to left-(L), right- (R), or both ears (M)
5	PHONES MODE	AUX 2	Routes AUX 2 signal to left-(L), right- (R), or both ears (M)
6	ALWAYS	MIC A	Sidetone MIC A: Always routed to the phones A, or only when "ON AIR A" is pressed
7	ALWAYS	MIC B	MIC B signal always routed to the phones or only when "ON AIR B" is pressed. Only works when " <i>MIC B ON</i> " is activated.
8	MIC Settings	GAIN	Adjust Mic Input gain
9	MIC Settings	-20dB	Switch between Dynamic- (OFF) and Electret Microphone (-20dB ON)
10	MIC Settings	48V	Switch 48V Phantom power ON/OFF



4 AUDIO BLOCK DIAGRAM

MIC Block Diagram









5 DIRECTOR CONFIGURATION OF A CCP-1116

When you want to use the CCP-1116 Commentary panel with its full functionality for 2 commentators, you have to adapt some configuration settings in the Director.

First you have to create a new CCP-1116 on an odd digital port (for 2channel operation) and activate "*enable 2nd Audio channel"* in the properties of the port.

C Untitled Artist Configuration* - Director							
File Edit View Settings Extras Help							
D 🛎 🖬 🚔 🕵 🚾 🗖 🗖 🔤 P PI 🚾 B	D 🖆 🖬 🎒 👷 🚾 🗖 🗖 🕅 🖻 🖩 🗑 🧠 🍀 🤻 🛦 🖻 🏭 🛛 tr 🚔 🎒 tr 🚔						
					Node #1		
Groups + Confs 💱 Users	Bay	Card Type	Port	Туре	Expansions Long Name Audio In		
Ctg Errors Log of Logic & Trunking	Α	CPU-128F 🔻					
	B	CPU-128F		0.000 404.000	- Internet Destate		
Untitled Artist Configuration	1	CUAX-108 💌	1.1	RCP-1012E			
⊖-© Net #1			1.2	<unused></unused>			
EU Events			1.4	<unused></unused>	<unused></unused>		
			1.5	<unused></unused>	RCP-1012F (12 Key FD-Panel 19" 1RU)		
			1.6	<unused></unused>	CCP.1116 (16. key OLED Commentator Panel)		
			1.7	<unused></unused>			
			1.8	<unused></unused>	RCP-1112 (12-key OLED Panel 19" 1RD)		
	2	CAT5-108 💌	2.1	<unused></unused>	DCP-2016P (16 Key LCD-Panel Desktop)		
			2.2	<unused></unused>	1000 Series		
			2.3	<unused></unused>	1100 Series RCD-1112 (12-key OLED Danel 10" 181)		
			2.5	<unused></unused>			
			2.6	<unused></unused>	2000 Series • KCP-1128 (28-key OLED Panel 19" 2RU)		
			2.7	<unused></unused>	3000 Series DCP-1116 (16-key OLED Desktop Panel)		
			2.8	<unused></unused>	5000 Series CCP-1116 (16-key OLED Commentator Panel)		
A subset of the second se	3 4	MADE 100-0	3 Jack and	<unued></unued>			

Open the Panel view with a double click on the port.

🔀 Configuration	ගිර Live State 🔊	Remote Control 🏾 🏓 A	udio Patches		
6 CCP-1116		-			
					4
ALX 1 ON ALX 2 ON	0 R	F1 OPT			
					ON MIKE SETNAL
Virtual Function Always: no F Vox: no F On Call: no F	s GPIO Functions 1: Functions 2: Functions 3:	Ins GPIC not defined 1: not defined 2: not defined 3:	O Outs The fined The fined The fined		
	and the first strength of the second		and the second sec	and planted at a	
Properties of Panel 'CCP-1116' (type CCP-1116)				
General Details 1 Details 2 T	runking GPIO Virt. Keys Usage	e Rights			
Long Name: CCP-1116					
8-char Labels Local: PORT 1.1	Scroll List: X <no selection<="" td=""><td>1> ▼</td><td></td><td></td><td></td></no>	1> ▼			
Alias: If an Alias is entered, it overri 8-char local label.	des the The 2nd band band band band band band band ba	dio channel hel can be lently or for			

<u>Hint:</u> Up from Director 6.60 the CCP will be created automatically as a 2-channel port, when you add it to an odd port and the following port is unused.



5.1 Key assignment Commentator A/B

Attention: The commentator Function buttons, like *"ON AIR, MIC Mute, AUX1, AUX2, etc"* cannot be configured and monitored in Remote control in the Director. They are just showing the Design of the CCP-1116.

Now you can add all needed functions and calls to the keys of the CCP-1116 with drag and drop. When you want to use the panel with 2 commentators you can virtually split the keys for example in the middle and configure functions for Commentator A on the left and for commentator B on the right keys.



Please keep in mind that on all functions for the **Commentator B** the **2nd audio channel** as source has to be enabled. You can find this option in the properties of the audio functions.

So open the properties of the keys with audio functionality for **Commentator B** one after the other and **enable the 2nd audio channel** as source **for "Call to..."** functions, and also as **source for "Listen to..."** functions.

Properties of Key 4 (standard page) on Panel 'COM A B' (type CCP-1116)	Properties of Key 7 (standard page) on Panel 'COM A B' (type CCP-1116)
General Cal Rights Destination © Local Port find Director	General Listen Bights Source © Local Port Cl N-1 From 2nd channel
Trunking address Net: Port:	Trunking address Net: Port: 0 Port: 0
Priority: Stendard Trunkcal priority: Stendard Torukcal priority: Stendard	Priority: <u>Standard</u> • Trunkcall priority: <u>Standard</u> •
Disable Crosspoint volume adjust at Destination Uses 2nd channel on this port as the audio source Uses Destination on Col	Disable Crosspoint volume adjust Use 2nd channel on this port (instead of 1st) as the audio destination) Milliow the "Set Tonuit During Can" function to adjust the source port from this panel
beep Desination on Lear Autoleten from Destination Autoleten from Destination Advort the "Set Input/Output Gain" function to adjust the destination port from this panel	Note that the source port is not yet configured to use this type of function for gain control.
OK Cancel Apply	OK Cancel Apply

When commentator **A** needs to talk directly with commentator **B** and reverse, just drag and drop this CCP-1116 panel to both sides of the panel to create "*Call to port*" functionality. Afterwards it is recommended to edit the key label of both keys manually.

ATTENTION: The other possibility is to activate the keys *"MIC B ON"*, resp. *"MIC A ON"* direct on the CCP-1116 to route the Mic signal of the other commentator permanently to the own Phone-mix.





Commentator A -> B

Properties of Key 13 (standard page) on Panel 'COM A B' (type CCP-1116)	Properties of Key 13 (standard page) on Panel 'COM A B' (type CCP-1116)
General Call Rights	General Cal Rights
Key Label COM B Define automatically Key Mode: Momentary (PTT)	Destination Local Port
Latching Tmeout: Net Default (currently Permanent) Radio Button: Conce> Action when muted key is pressed: Literation even writingting for the second se	Priority: Standard Trunkcall priority: Standard Standard Standard
Scroll enable	Disable Crosspoint volume adjust at Destination
Dim the panel speaker when this key is activated	Use 2nd channel on this port as the audio source
Restore volume level	Beep Destination on Call
	Autolisten from Destination
	Allow the "Set Input/Output Gain" function to adjust the destination port from this panel
OK Cancel Apply	OK Cancel Apply

Commentator B -> A

Properties of Key 16 (standard page) on Panel 'COM A B' (type CCP-1116)	Properties of Key 16 (standard page) on Panel 'COM A B' (type CCP-1116)
General Call Rights	General Call Rights
Key Mode: Momentary (PTT)	Destination © Local Port fills COM A B Trunking address Net: 0 Port: 0 Trunking address Net: 0 Port: 0
Latching Timeout: Net Default (currently Permanent) Radio Button: Action when muted key is pressed: Ummute on key activation Sroll enable O in the panel speaker when this key is activated	Priority: Standard Trunkcal priority: Standard Standar
	Beep Destination on Cal Autolistem from Destination Allow the "Set Input/Output Gain" function to adjust the destination port from this panel CK Cancel Apply

Please keep in mind, that on audio functions on other ports to call/listen to the Commentator B also the 2^{nd} audio channel of the CCP-1116 have to be used. Therefore you have to activate the flag "to 2^{nd} channel" in the properties of the function. It is useful to manually label the key in "Com B" or similar.

ATTENTION: For the Commentator B there are some limitations at the moment:

- Reply is not working correctly for the Commentator B (for the 2nd audio channel)
- It is not possible, to use an IFB from the IFB-Tabelle for the 2nd Commentator. Here you have to configure an IFB in the *"manual"* way for the 2nd audio channel.



5.2 GPIO functions

Open the "*Properties*" of the CCP-1116 to define the GPIOs.

GPIO IN 1 and **2** can be used within the Artist system to signalize activated "*ON AIR*" buttons on the CCP-1116 somewhere and somehow in the system.

GPIO Out 1 and **2** are used internally in the CCP-1116 to activate the "*MIC Mute*" buttons, for example when the Commentator is talking to an Intercom destination while he is on air.

Both GPIOs will be labeled automatically with the panel name and functionality.

Properties of Panel 'CCP-1116' (type CCP-1116)					
General Details 1 Details 2 Tru	unking GPIO Virt. Keys Usage Rights				
GPIO In 1: normal 👻	CCP-1116 is on air A				
GPIO In 2: normal 👻	CCP-1116 is on air B				
GPIO In 3: <a> <unused></unused>					
GPIO Out 1: norm. open	CCP-1116 mute on air A				
GPIO Out 2: norm. open 👻	CCP-1116 mute on air B				
GPIO Out 3: <a>(
	OK Cancel Apply				

GPIO IN 3 and GPIO OUT 3 are the only ones, which can be used individually.

The GPIO 3 is available on a XLR5 pin connector on the rear side of the CCP-1116.

Now you can drag and drop GPO 1 and 2 to all the intercom buttons, that are able to activate the microphone of the panel (Call to Port, Call to Group, Call to Conference), to automatically activate the On Air "*MIC MUTE*" button of the corresponding Commentator-side.

For only listen functions (Listen to) an assigned GPO is not necessary.

Key 1 (standard page), Momentary	(PTT), Dim		
GPIO-Out COM A B mute on air	Α		Call from 2nd channel to Director (prio Standard)
Director		Movirector	GPIO-Out COM A B mute on air B
Sional Sound		N-1 L Found M	Sið MAL
	M Trees M C	Tech M	
		š. š/	
Virtual Functions	GPIO Ins	GPIO Outs	
Always: ^o no Functions	1: [*] no Functions	1: no Functions	
Vox: no Functions	2: no Functions	2: no Functions	
On Call: [®] no Functions	3: not defined	3: not defined	



5.3 Commentary Audiopatch settings

Finally you have to adjust the internal audio routing of the Audio patches in the CCP-1116.

Up to Director Version 6.50 the audio in-and outputs of the Audio patches are used inside the CCP-1116 as follows:

Audiopatch INPUT	CCP-1116 connector
Panel MIC	Standard panel gooseneck microphone (only when the CCP-1116 is used as a pure intercom panel)
Headset A	Headset A Intercom (XLR 5pol. front side) (only when the CCP-1116 is used as a pure intercom panel)
External MIC	LINE IN Input (XLR 3pol. rear side) only available in Speaker-Mode
Headset B	Headset B Intercom (XLR 5pol. front side) (only when the CCP-1116 is used as a pure intercom panel)
AUDIO IN A	MIC A (XLR 3pol. front side) The key " <i>MIC MUTE A</i> " take effect always on this input signal. Exclusive this signal is routed hard wired to the XLR " <i>AIR A OUT</i> " and " <i>AIR A+B OUT</i> " analog outputs and can be affected by the "ON AIR A" key.
AUDIO IN B	MIC B (XLR 3pol. front side) The key " <i>MIC MUTE B</i> " takes effect always on this input signal. Exclusive this signal is routed hard wired to the XLR " <i>AIR B OUT</i> " and " <i>AIR A+B OUT</i> " analog outputs and can be affected by the " <i>ON AIR B</i> " key.
Matrix CH. 1	Audio channel 1 (Commentator A), Intercom coming from the matrix to the CCP-1116
Matrix Ch. 2	Audio channel 2 (Commentator B), Intercom coming from the matrix to the CCP- 1116
Audiopatch OUTPUT	CCP-1116 connector
Speaker	Standard panel loudspeaker
Headset A	Headset A Intercom (XLR 5pol. front side)
External Out	Ext. Speaker (XLR 3pol. rear side)
Headset B	Headset B Intercom (XLR 5pol. front side)
AUDIO OUT A	PHONES A (Stereo-jack, front side)
AUDIO OUT B	PHONES B (Stereo-jack front side)
Matrix CH. 1	Audio channel 1 (Commentator A), Intercom going from the CCP-1116 to the matrix
Matrix Ch. 2	Audio channel 2 (Commentator B), Intercom going from the CCP-1116 to the matrix



Up to Director Version 6.50:

For the basic commentator functionality you have to adjust the **Audiopatch** for Speaker AND *Headset mode minimum* as follows:



Up from <u>Director 6.60</u> the labels of the audio IOs are showing the correct names of a CCP and the basic crosspoints within the Audiopatch are already set as default.

<u>**Hint:</u>** It is recommended to also add an additional Audiopatch with standard panel settings (Gooseneck Microphone + Speaker) to the Panel.</u>

This preset can be activated by a "Select Audiopatch" function (for example on the Shift page of the Commentary Panel) to activate a standard Intercom audio routing during rehearsals or when the commentary headset is not yet available. For details please refer the Director User Manual.

6 PANEL TEST / CONFIG MODE

The CCP-1116 panel also has an internal Setup-Menu available, to edit basic settings of the panel or for testing.

Therefore you have to press **"Shift"+"F1"+"F2**" <u>simultaneous</u> to reboot the panel.

Immediately press the "F1" - button and keep it pressed until the panel has started the Service menu.



6.1 Info

Press the "Info"- button, to show the current installed firmware versions for the front board.



Press any button to go back to the main menu.

6.2 Key Test

Press **"Test"** to get into the test mode. Press **"Key Test"** to start the Key Test mode. Please do not use the "**FlashTst**", it is just for internal service. It will delete all lcons from the flash memory.





In the "Key Test" mode you can test all key-contacts, rotary encoders, encoder switches and LEDs.

Every time you press a button or turn an encoder, the half side color on the responsible OLEDdisplay will change.

By turning and pressing the Master volume encoder, the 8 Volume LEDs will change the color.



To stop the "Key Test" mode, you have to reset the panel by pressing "Shift"+"F1"+"F2".

6.3 Config

In the "**Config**" menu, you can adjust the default display color and if the panel should be detected by the Director as a "**DCP-1116**" or "**CCP-1116**".

6.3.1 Config: Text Color

In this menu you can set the default text color. This default color is shown, as long the panel is in the *"Wait for"* mode when it is not connected to the matrix.

Press "Config" in the main menu



Select the color by pressing the desired color button.



With "
back>" you can go back to the config menu. After resetting the panel, it will show the selected color in the "Wait for" mode.

As soon the panel is connected to an Artist system, the Artist configuration assigns the colors to the buttons.



6.3.2 Pan Type

For some reasons it is necessary, to change the panel type information that is sent to the Director. For example if you want to use the CCP panel with an Artist version older 6.40 where the CCP is not directly supported. Therefore you have to adjust the mode to "DCP-1116".

Also if you get an Alarm message within the Director, that a wrong panel type is connected (DCP instead of a CCP) you have to change the mode to CCP.

Alarms						
Time Create	Time Update	Alarm Type	Alar	Sev	Description	
16-Nov-201	16-Nov-2012	Detected panel type incompatible with configuration	Node/	Major	The panel described in the configuration does not match the following detected panel type: DCP-1116	

Press the button "Pan Type"

- And the Add			de la competencia de	
				\cap
Text Col	Рац, Туре	<pre></pre>		
		No	Arrestone and	

Then press the button with the panel type you want to use.



After resetting the panel it will log on in the Artist as the assigned type.

6.4 Demo Mode

By pressing **"Demo"** you can start a demo mode, where all buttons are labeled with different caracter sets.



To stop the "Key Test" mode, you have to reset the panel by pressing "Shift"+"F1"+"F2".



7 SPECIFICATIONS

PUWER

Internal Power Supply	90 - 253V AC (47-63Hz) max 35VA
Power supply redundancy via external power supply	10 – 16V DC via XLR4

MICROPHONE INPUT (MIC A IN, MIC B IN)

Coupling	Transformer
Phantom Power	48V
Gain Range	10 - 70dB
Gain Switch	-20dB
Maximum Input Level	+6dBu
High-Pass Filter	100Hz
Limiter	@ +6dBu
Input Noise Voltage	-126dBu @200Ω Source
CMRR	>60dB @ 1kHz

AUDIO LINE INPUT (AUX 1 IN, AUX 2 IN)

Coupling	Transformer
Impedance	≥10kΩ
Maximum Input Level	+18dBu
Nominal Input Level	+6dBu
Input Noise Voltage	-73dBu (20Hz-22kHz)
THD+N	<0,1% (+18dBu, 1kHz)
CMRR	>60dB @ 1kHz

AUDIO LINE INPUT (LINE IN)

Coupling	Transformer
Impedance	≥ 10 kΩ
Input Level	10 - +18dBu
Nominal Input Level	-+6dBu
Input Noise Voltage	-73dBu (20Hz-22kHz)
THD+N	<0,2% (<0,05% @ 1kHz)
SNR	>91dB

AUDIO LINE OUTPUT (DIRECT OUT A, DIRECT OUT B, AIR A OUT, AIR B OUT, AIR A+B OUT)

Coupling	Transformer
Impedance	≤50Ω
Maximum Output Level	+18dBu
Nominal Ouput Level	-+6dBu
Output Noise Voltage	-100dBu (20Hz-22kHz)
	<0,02% (+6dBu @ 1kHz)
	<0,2% (+6dBu @ 40Hz)
HEADPHONE (PHONE A, PHONE B)	
Load	>25Ω
Maximum Output Level	+25dBu
Output Noise Voltage	-75dBu
THD+N	<0,05% (+18dBu @ 1kHz)



8 SERVICE

We offer comprehensive customer service options for this product, if you have further questions or suggestions. Service includes:

- Telephone service
- E-mail service
- Skype service
- Fax service
- Configuration support
- Trainings
- Repairs

Your first contact should always be your local distributor / dealer. In addition, Riedel Customerservice in Wuppertal, Germany is always available to help you.

Telephone: +49 (0) 202 292 9400 (Monday - Friday, 8:00 – 17:00 Central European Time)

Fax: +49 (0) 202 292 9419

Skype: riedel.communications.service

Or use the contact form on our website: www.riedel.net

For repairs, please contact your local distributor. Your distributor will help you with the repair process and with securing replacement parts.

The address for sending repairs directly to Riedel Communications GmbH & Co. KG is:

Riedel Communications GmbH & Co. KG - Repairs -Uellendahler Str. 353 D-42109 Wuppertal Germany



9 NOTES







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