ZIF-Clip® Headstage Adapters

Hardware Reference

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ZIF-Clip® Headstage Adapters

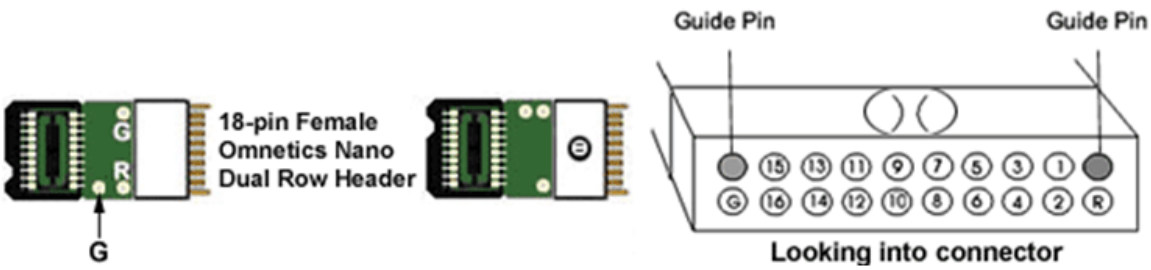
ZIF-Clip® headstage adapters are available for use with a variety of electrode styles. When using adapters, keep in mind that standard operation (referential vs single-ended) may vary for acute and chronic preparations. Carefully note and understand the use of the ground (G) and reference (R) connections provided on each adapter.

Standard operation for ZIF-Clip® headstages is referential. Headstage adapters can be configured for single-ended operation by tying ground (G) and reference (R) connections together on the adapter (if available). Refer to the electrode manufacturer's documentation for information on single-ended or referential configurations.

> **Note**
>
> When using these adapters with NeuroNexus, Gray Matter, or CyberKinetics probes, keep in mind that there may be updates to pin configurations. Check the suppliers' website for pin diagrams. Also see the Channel Mapper gizmo in Synapse for a description and examples on how to re-order channel numbers.

ZCA-OMN16 ZIF-Clip® Headstage to Chronic Probe (16 Channels)

The ZCA-OMN16 adapter connects a 16-channel chronic Omnetics based probe to a 16-channel ZIF-Clip® headstage. Ground and reference pins may be tied together for single-ended operation with a jumper wire between the G and R pads. Otherwise the adapter operates in referential mode.

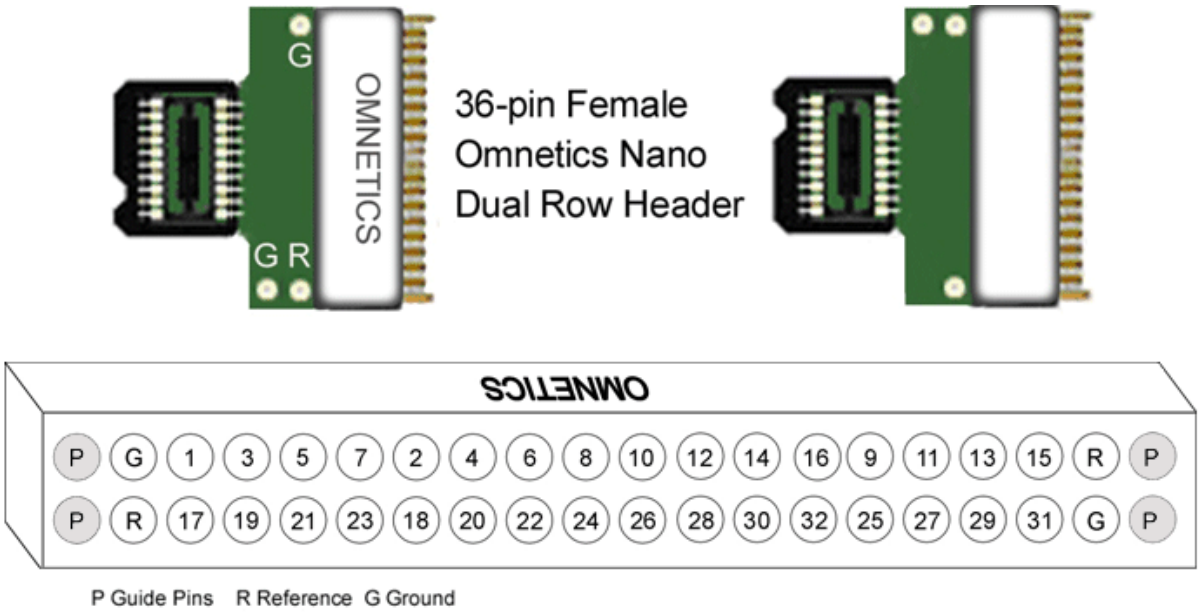


Pinouts are looking into the connector and reflect the preamplifier channels

ZCA-OMN32 ZIF-Clip® Headstage to Chronic Probe (32 Channels)

The ZCA-OMN32 adapter connects a 32-channel chronic Omnetics based probe to a 32-channel ZIF-Clip® headstage.

Ground and reference pins may be tied together for single-ended operation with a jumper wire between the G and R pads. Otherwise the adapter operates in referential mode.



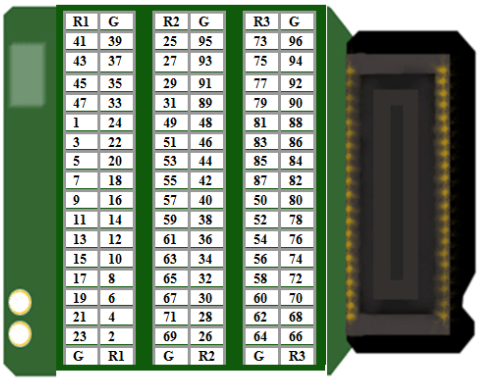
Pinouts are looking into the connector and reflect the preamplifier channels

ZCA-OMN96 ZIF-Clip® Headstage to 96-Channel Omnetics Probe

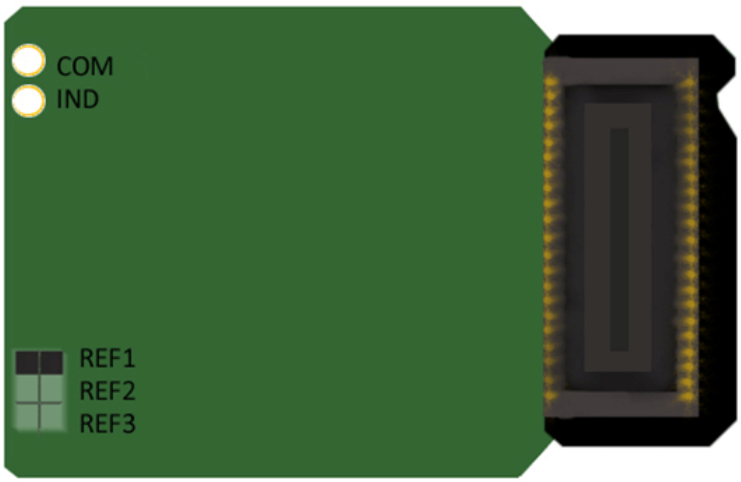
The ZCA-OMN96 adapter connects a 96-channel chronic Omnetics connector to a 96-channel ZIF-Clip® headstage. For single-ended operation, tie COM (ground) and IND (indifferent reference) together. IND is the global headstage reference.

Important

The pinouts below are for the ZC96 analog headstages only. If you are using a ZD96 digital headstage, please refer to the ZD96 Headstage section of this manual for the pinout.



Pinouts are looking into the connector and reflect the preamplifier channels



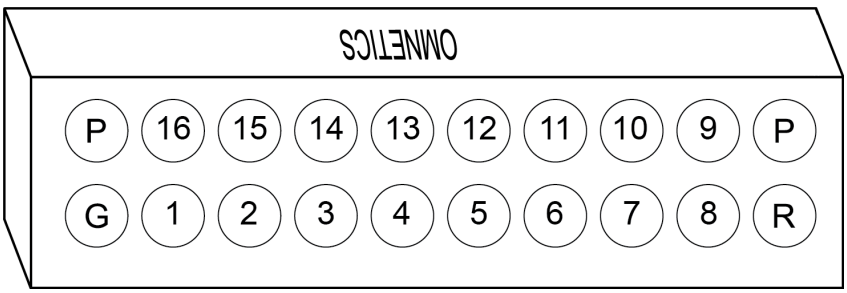
Use jumper to choose which reference (R1, R2, R3) to use for all channels. Only one reference may be selected.

ZCA-FLEX-OMNX2 ZIF-Clip® Headstage to Chronic Probe (2 x 16 Channels)

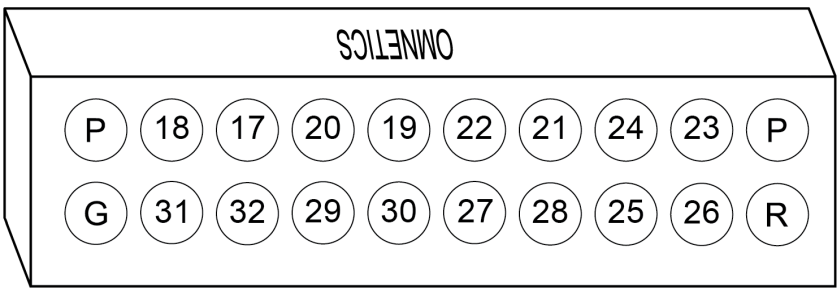
The ZCA-FLEX-OMNX2 adapter connects two 16-channel chronic Omnetics based probe to a 32-channel ZIF-Clip® headstage with flex cable.

ZCA-FLEX-OMNX2 (Side A on top, Side B on bottom)

The standard cable length is two inches. The reference pins on each connector are shared on the PCB. The ground pins are also shared. The ground and reference are independent and can only be shorted on the probe or by choosing the 'None' reference option on the PZ5/SIM amplifier if using an analog ZIF-Clip® headstage.



Side A pinouts are looking into the connector and reflect the preamplifier channels



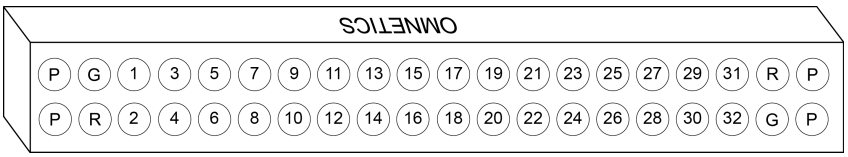
Side B pinouts are looking into the connector and reflect the preamplifier channels

ZCA32-FLEX-OMN ZIF-Clip® Headstage to Chronic Probe (32 Channels)

The ZCA32-FLEX-OMN adapter connects a 32-channel chronic Omnetics based probe to a 32-channel ZIF-Clip® headstage with flex cable.

ZCA32-FLEX-OMN (Side A shown)

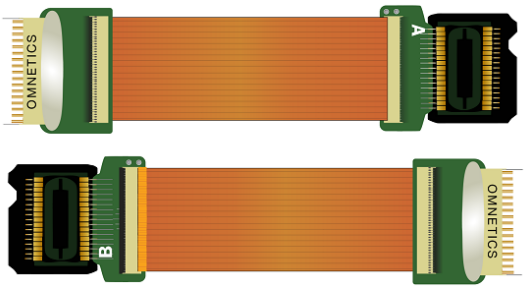
The standard cable length is two inches. A jumper location on the PCB can be used to short ground and reference together for single-ended operation. Otherwise the adapter operates in referential mode.



Pinouts are looking into the connector and reflect the preamplifier channels

ZCA64-FLEX-OMN ZIF-Clip® Headstage to Chronic Probe (2 x 32 Channels)

The ZCA64-FLEX-OMN adapter connects two 32-channel chronic Omnetics based probe to a 64-channel ZIF-Clip® headstage with flex cable.

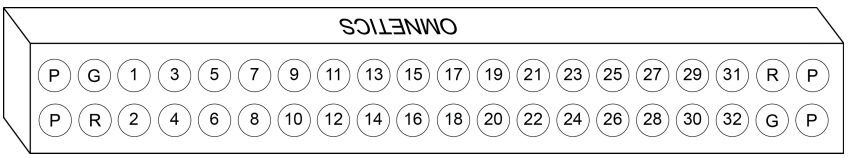


ZCA64-FLEX-OMN (Side A on top, Side B on bottom)

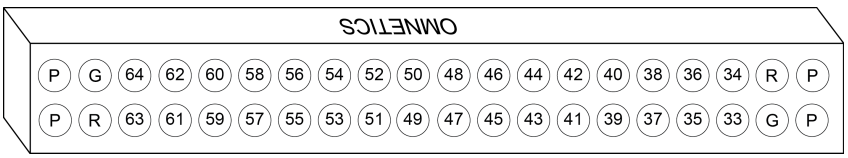
The standard cable length is two inches. The reference pins on each connector are shared on the PCB. A jumper location on the PCB can be used to short ground and reference together for single-ended operation. Otherwise the adapter operates in referential mode.

Important

The pinout below is for the ZC64 analog headstages only. If you are using a ZD64 digital headstage, please refer to the ZD64 Headstage section of this manual for the pinout.



Side A pinouts are looking into the connector and reflect the preamplifier channels



Side B pinouts are looking into the connector and reflect the preamplifier channels

ZCA96-FLEX-OMN ZIF-Clip® Headstage to Chronic Probe (3 x 32 Channels)

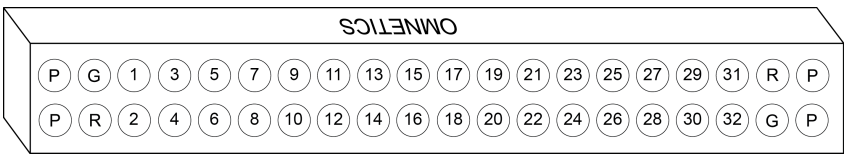
The ZCA96-FLEX-OMN adapter connects three 32-channel chronic Omnetics based probe to a 96-channel ZIF-Clip® headstage with flex cable.

ZCA96-FLEX-OMN (Side A on top, Side B on bottom)

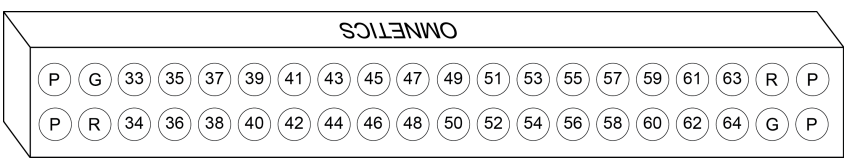
The standard cable length is two inches. The reference pins on each connector are shared on the PCB. A jumper location on the PCB can be used to short ground and reference together for single-ended operation. Otherwise the adapter operates in referential mode.

Important

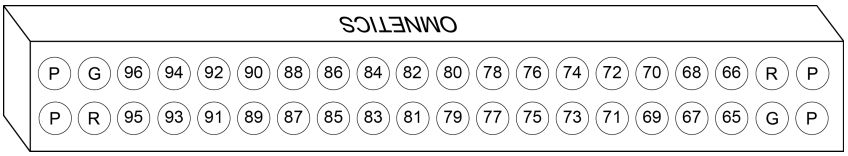
The pinouts below are for the ZC96 analog headstages only. If you are using a ZD96 digital headstage, please refer to the ZD96 Headstage section of this manual for the pinout.



Side A 1-32 pinout looking into the connector, reflects the preamplifier channels



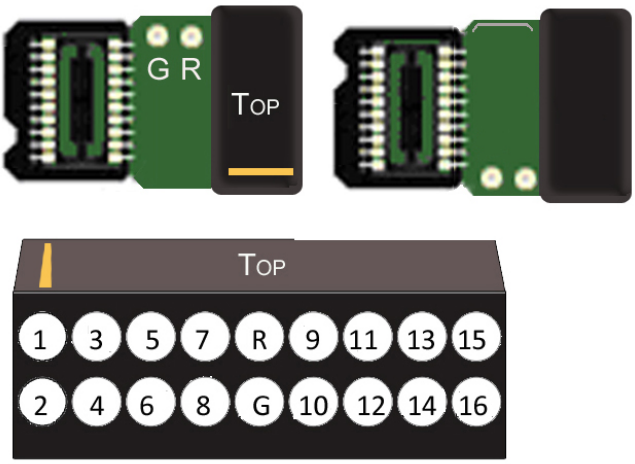
Side A 33-64 pinout looking into the connector, reflects the preamplifier channels



Side B 65-96 pinout looking into the connector, reflects the preamplifier channels

ZCA-MIL16 ZIF-Clip® Headstage to Mill-Max connector (16 Channels)

The ZCA-MIL16 adapter connects a 18-channel Mill-Max based probe to a 16-channel ZIF-Clip® headstage. By default, the inputs are single ended, with Reference (R) and Ground (G) tied together. To make the inputs referential, sever the jumper trace on the board between R and G (shown below).



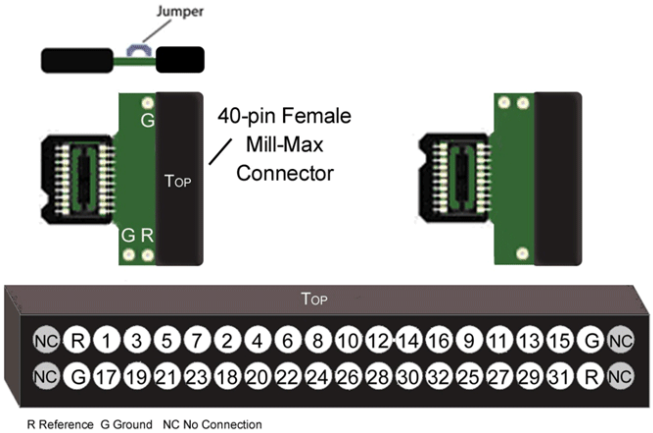
Pinouts are looking into the connector and reflect the preamplifier channels

Mill-Max Connector Specifications:

Pitch	0.050" (1.27 mm)
Row Spacing:	0.050" (1.27 mm)

ZCA-MIL32 ZIF-Clip® Headstage to Mill-Max connector (32 Channels)

The ZCA-MIL32 adapter connects a 32-channel Mill-Max based probe to a 32-channel ZIF-Clip® headstage. By default, the inputs are single ended, with Reference (R) and Ground (G) tied together. To make the inputs referential, cut the jumper between R and G (shown below).



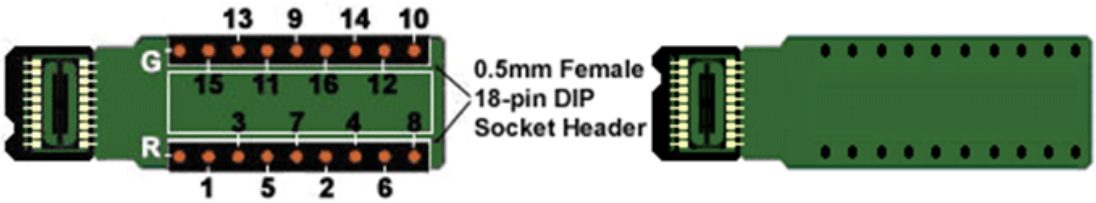
Pinouts are looking into the connector and reflect the preamplifier channels

Mill-Max Connector Specifications:

Pitch	0.050" (1.27 mm)
Row Spacing:	0.050" (1.27 mm)

ZCA-DIP16 ZIF-Clip® Headstage to Acute Probe (16 Channels)

The ZCA-DIP16 adapter allows the user to connect a 16-channel acute probe (such as NeuroNexus) to a 16-channel ZIF-Clip® headstage. Ground and reference pins are located on the DIP connector and may be tied together for single-ended operation.

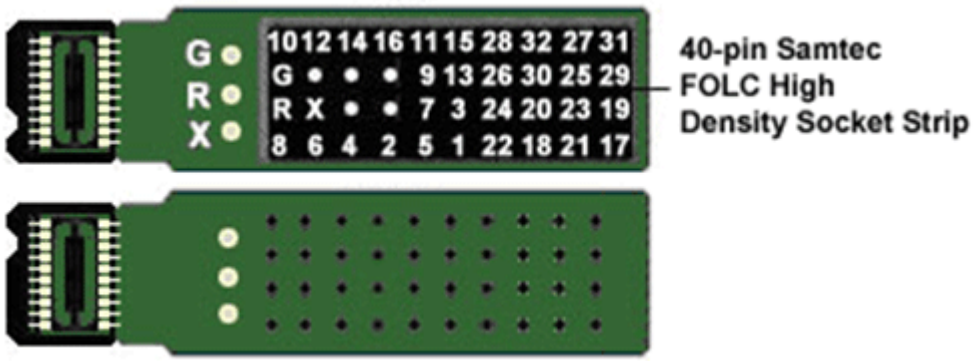


Pinouts are looking into the connector and reflect the preamplifier channels

ZCA-NN32 ZIF-Clip® Headstage to 32 Channel Acute Probe)

The ZCA-NN32 adapter connects a 32-channel acute NeuroNexus probe to a 32-channel ZIF-Clip® headstage.

> **Note**
>
> X (Ref) is a reference pin that is connected from the adapter to the probe only. See the jumper configuration below for more information.



Pinouts are looking into the connector and reflect the preamplifier channels.

ZCA-NN64 ZIF-Clip® Headstage to 64 Channel Acute Probe)

The ZCA-NN64 adapter connects a 64-channel acute NeuroNexus probe to a 64-channel ZIF-Clip® headstage.

> **Note**
>
> X (Ref) is a reference pin that is connected from the adapter to the probe only. See the jumper configuration below for more information.

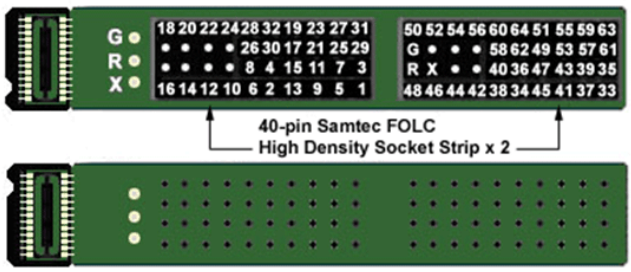
Jumper Configuration

The following table describes the jumper configurations for both the ZCA-NN32 and ZCA-NN64.

Jumper Connections	Operation
G R X (Ref)	Shorts headstage Ground and Reference inputs together, yielding single-ended amplification of signals relative to ground.
G R X (Ref)	Shorts headstage Reference input to the pin labeled X (a low impedance site on the probe) yielding referential amplification of signals relative to the voltage of the X (Ref) site.
G R X (Ref)	Headstage Ground and Reference separated and X (Ref) pin is not used, yielding referential amplification of signals relative to the voltage of the Reference

Pinout

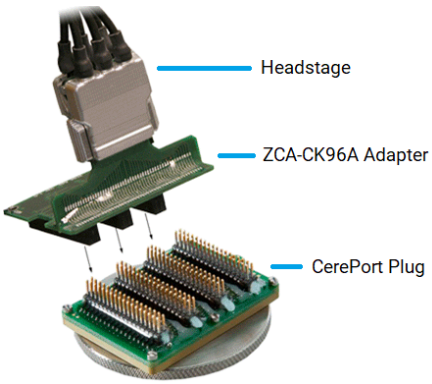
> **Important**
>
> The pinout below is for the ZC64 analog headstages only. If you are using a ZD64 digital headstage, please refer to the ZD64 Headstage section of this manual for the pinout.



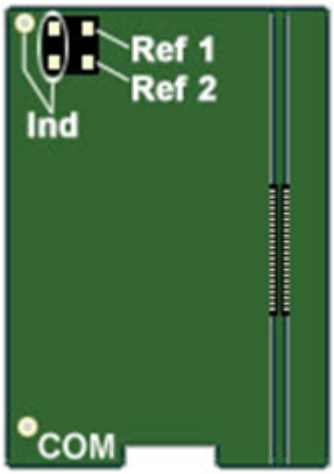
Pinouts are looking into the connector and reflect the preamplifier channels.

ZCA-CK96A ZIF-Clip® Headstage to 96-Channel Chronic Probe

The ZCA-CK96A adapter connects a 96-channel chronic CyberKinetics CerePort connector to a 96-channel ZIF-Clip® headstage. For single-ended operation, tie the ground and reference pins (shown in diagram) together.



ZCA-CK96A Connection Diagram.



A four-pin header located on the backside of the adapter is provided for access to two probe reference pins. These pins are separate references and are connected internally to the adapter.

Connecting a jumper between the headstage reference pins (Ind) and either of the probe reference pins (Ref1 or Ref2) connects the headstage reference to the desired probe reference (see table below for more information).

Jumper Configuration

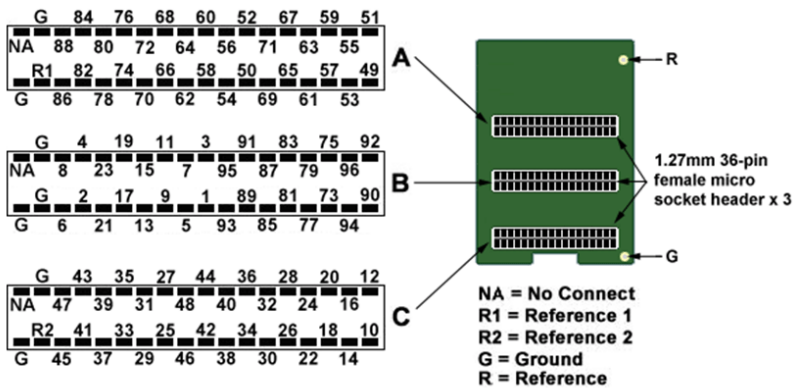
The following table describes the jumper configurations for the ZCA-CK96A.

Jumper Connections	Operation
Ind Ref_1 Ind Ref_2	Headstage Ground and Reference separated and Ref1, Ref2 pins are not used, yielding referential amplification of signals relative to the voltage of the Reference (Ind). An external connection for the headstage reference (Ind) must be used for referential amplification.
Ind Ref_1 Ind Ref_2	Shorts headstage Reference input (Ind) to the pin labeled Ref1 (a low impedance site on the probe) yielding referential amplification of signals relative to the voltage of the Ref1 site.
Ind Ref_1 **Ind Ref_2**	Shorts headstage Reference input (Ind) to the pin labeled Ref2 (a low impedance site on the probe) yielding referential amplification of signals relative to the voltage of the Ref2 site.

Pinouts

Important

The pinouts below are for the ZC96 analog headstages only. If you are using a ZD96 digital headstage, please refer to the ZD96 Headstage section of this manual for the pinout.



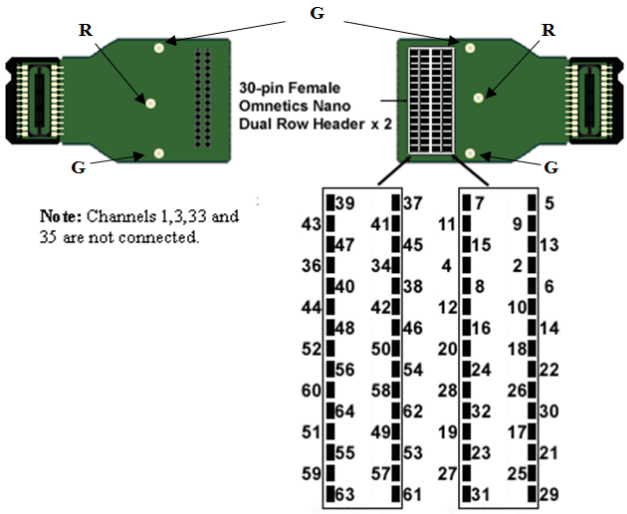
Pinouts are looking into the connector and reflect the preamplifier channels

ZCA-GM60 ZIF-Clip® Headstage to 60-Channel Chronic Probe

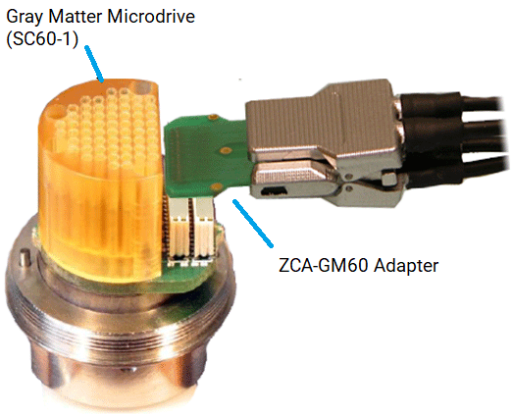
The ZCA-GM60 adapter connects a 60-channel chronic Gray Matter microdrive (SC60-1) to a 64-channel ZIF-Clip® headstage. Ground and reference pins are located on the adapter for access to single-ended and referential modes of operation. See the diagram below for connection details.

Important

The pinout below is for the ZC64 analog headstages only. If you are using a ZD64 digital headstage, please refer to the ZD64 Headstage section of this manual for the pinout.



Pinouts are looking into the connector and reflect the preamplifier channels.



ZCA-GM60 Connection Diagram

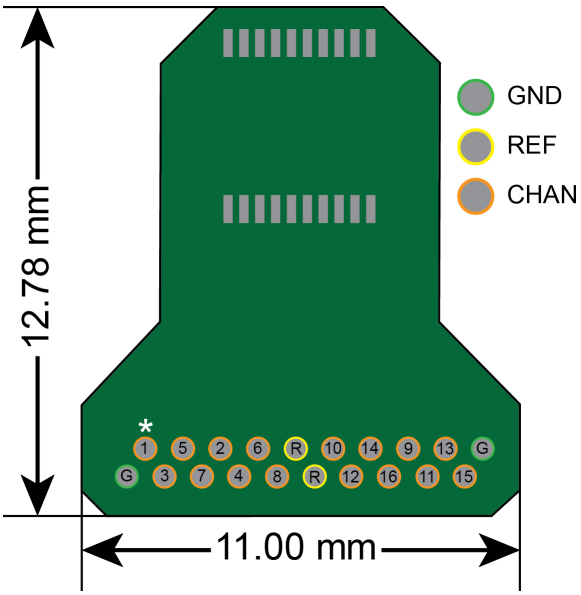
ZCA-EIB16 ZIF-Clip® Headstage to Electrode Interface Board (16 Channels)

The ZCA-EIB16 adapter allows the user to connect 16 channels of electrode wire to a 16-channel ZIF-Clip® headstage plus ground and reference.

Wires can be soldered to holes or connected using EIB pins, such as the small EIB tapered pins available from NeuraLynx.

To guard against noise pickup, the lengths of any additional wires should be minimized and the wires should be bundled together to avoid creating open loops that can pick up inductive interference.

Specifications	
Hole diameter	0.3 mm
Row Spacing	0.69 mm from center to center



ZCA-EIB16 Pinout and Dimensions Diagram

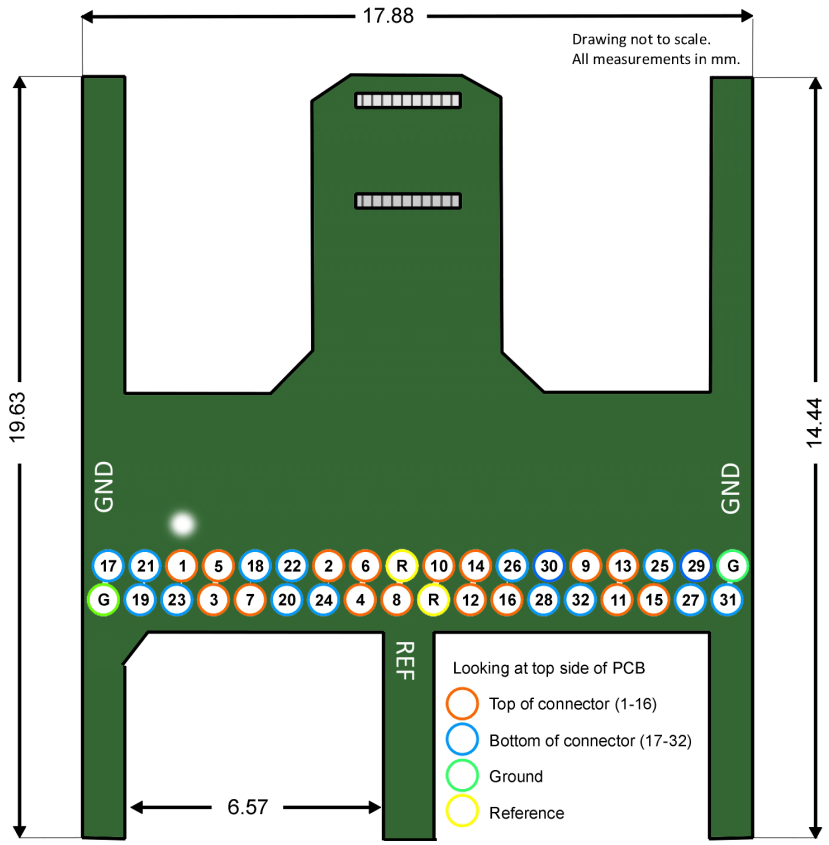
ZCA-EIB32 ZIF-Clip® Headstage to Electrode Interface Board (32 Channels)

The ZCA-EIB32 adapter allows the user to connect 32 channels of electrode wire to a 32-channel ZIF-Clip® headstage plus ground and reference.

Wires can be soldered to holes or connected using EIB pins, such as the small EIB tapered pins available from NeuraLynx.

To guard against noise pickup, the lengths of any additional wires should be minimized and the wires should be bundled together to avoid creating open loops that can pick up inductive interference.

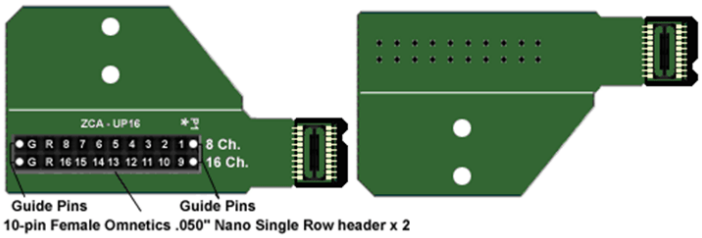
Specifications	
Hole diameter:	0.3 mm
Row Spacing	0.69 mm from center to center



ZCA-EIB32 Pinout and Dimensions Diagram

ZCA-UP16 16-Channel Plextrode U-Probe to ZIF-Clip® headstage

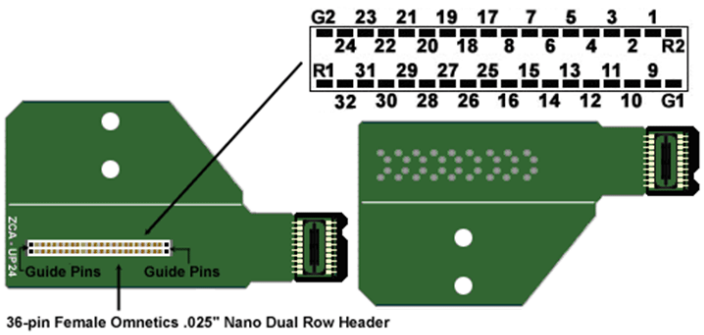
The ZCA-UP16 adapter connects an 8 or 16-channel acute Plextrode U-Probe connector to a 16-channel ZIF-Clip® headstage. The adapter includes mounting holes for attachment to a micromanipulator. Configuration for single-ended or referential operation is provided on the electrode. Refer to the Plextrode documentation for jumper configurations.



Pinouts are looking into the connector and reflect the preamplifier channels

ZCA-UP24 24-Channel Plextrode U-Probe to ZIF-Clip® headstage

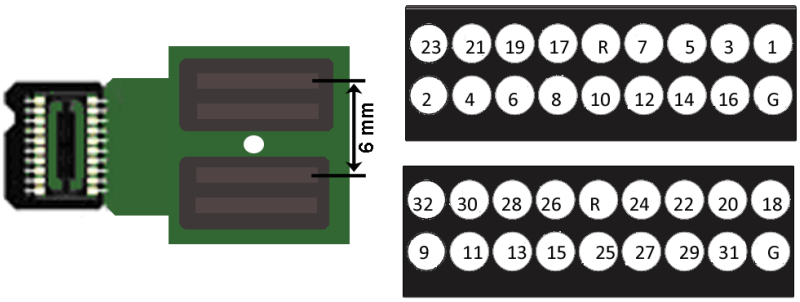
The ZCA-UP24 adapter connects a 24-channel acute Plextrode U-Probe connector to a 32-channel ZIF-Clip® headstage. The adapter includes mounting holes for attachment to a micromanipulator. Configuration for single-ended or referential operation is provided on the electrode. Refer to the Plextrode documentation for jumper configurations.



Pinouts are looking into the connector and reflect the preamplifier channels

ZCA-VD8 ZIF-Clip® Headstage to Versa Drive connector (32 Channels)

The ZCA-VD8 adapter connects a Versa Drive (Versa-8 Optical) via two Mill-Max connectors to a 32-channel ZIF-Clip® headstage.



Pinouts are looking through the connector and reflect the preamplifier channels

Mill-Max Connector Specifications:

Pitch	0.050" (1.27 mm)
Row Spacing:	0.050" (1.27 mm)

Connector to Connector Specification:

Pitch	0.236" (6 mm), Pin 1 to Pin 18