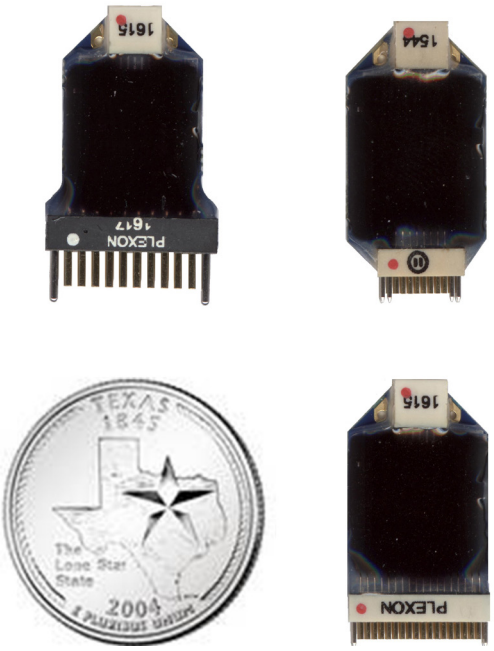
PLEXON
Neurotechnology Research Systems

Digital Headstage Technical Guide

8, 16, 32, and 64 Channel Digital Headstages



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Digital Headstage Technical Guide

Contents

Documentation History

Date	Version	Notes
January 2017	DHSTTN0001b	- Update pinouts
October 2016	DHSTTN0001a	- First issue of the Digital Headstage Technical Guide.

Introduction

This *Digital Headstage Technical Guide* describes the digital headstages that are available from Plexon®, along with connector pin-out configurations and ground and reference information. These headstages are designed for use with the Plexon Digital Headstage Processor (DHP) unit, sold separately.

DIGITAL HEADSTAGE CABLE:

Special cables are used to connect the digital headstages to the Plexon DHP unit. Plexon 8, 16, and 32 channel digital headstages connect through the Plexon HSC/DHSC1 or HSC/DHSC3 cable. Plexon 64 channel headstages connect through the Plexon HSC/DHSC2 cable. These cables are described in this document.

REFERENCE SIGNAL:

Each headstage has at least one Reference pin that can be used to acquire a reference signal from a de-insulated low-impedance electrode. The reference signal can be used to subtract common mode noise and artifacts from the signals on the neural recording channels. For all digital headstages except the 64 channel headstage, the Reference pin may be internally grounded by selecting the "Grounded reference" setting in the Plexon OmniPlex® Neural Data Acquisition System (sold separately).

Some connectors have multiple Reference pins. On any headstage, you only need to connect one reference electrode and you may connect it to any one of the Reference pins. If you have no reference electrode connected, then you should operate the headstage in "Grounded reference" mode.

OPTIONS:

These options can be added to the headstages:

- Mounted LEDs for use in behavioral analysis research using Plexon's CinePlex® and CineLAB® Behavioral Research Systems. The LEDs are available in red, blue, and green (Available on all digital headstages).
- Latching mechanism (clip) to enhance headstage retention with more active animals (Available on headstages with 0.050 pitch input connectors).

NOTES:

The product images in this document are not to scale relative to either actual size or to each other.

The headstage lengths include the longest pin.

The headstage weights may vary slightly due to the hand crafted nature of the products.

The addition of LEDs and/or a latch will impact the weight or increase the dimensions of the headstage slightly.

Digital Headstage Cables

Catalog Number: HSC/DHSC1:

A cable designed for use with any of the Plexon 8, 16, and 32 channel digital headstages.

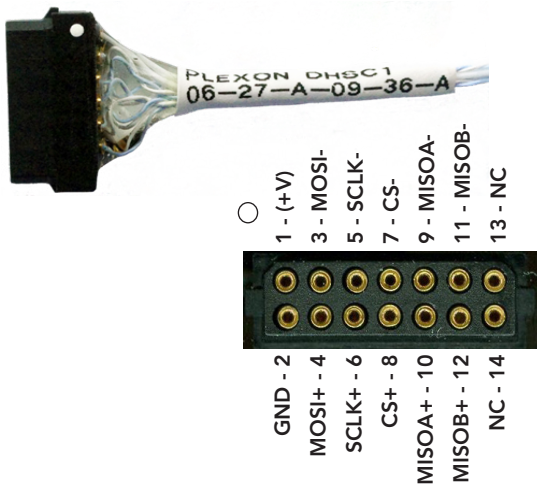
Lengths

Lengths up to 243cm (96in) are available. The default length is 91cm (36in).

Headstage Cable Views

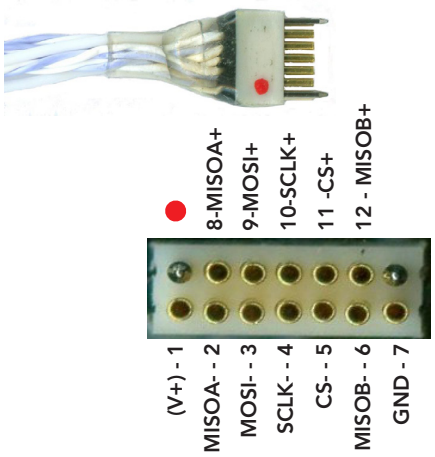
OUTPUT

(to Digital Headstage Processor unit)



INPUT

(from headstage)



Catalog Number: HSC/DHSC3

A cable designed for use with any of the Plexon 8, 16, and 32 channel digital headstages.

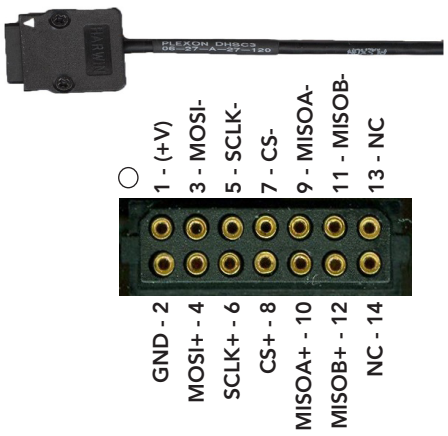
Lengths

Lengths up to 305cm (120in) are available. The default length is 91cm (36in).

Headstage Cable Views

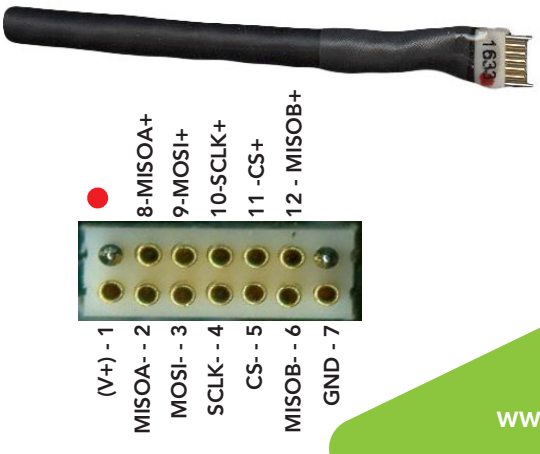
OUTPUT

(to Digital Headstage Processor unit)



INPUT

(from headstage)



Digital Headstage Cables

Catalog Number: HSC/DHSC2

A cable designed for use with the Plexon 64 channel digital headstage.

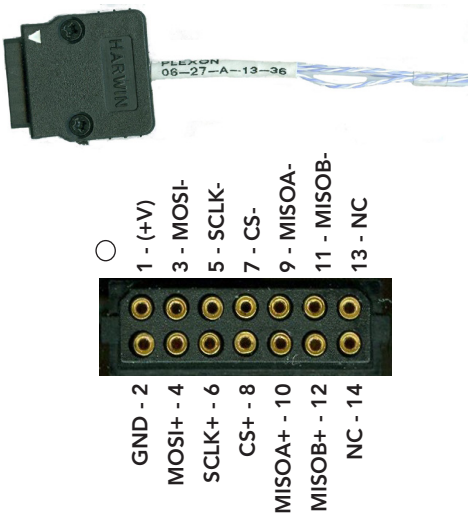
Lengths

Lengths up to 243cm (96in) are available. The default length is 91cm (36in).

Headstage Cable Views

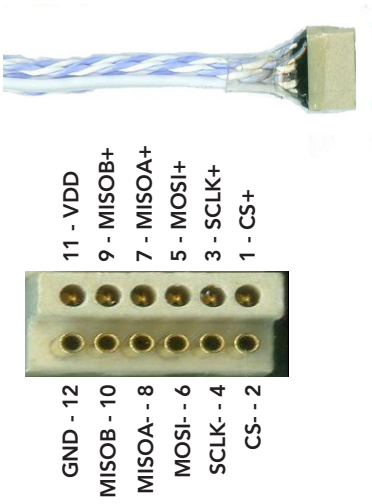
OUTPUT

(to Digital Headstage Processor unit)



INPUT

(from headstage)



Headstage L – 8 channel, 0.050” pitch Digital Headstage

Channels:	8	**Amplifier/Processor Compatibility:** Digital Headstage Processor (DHP)
Pitch:	0.050” (1.27mm)	
Reference pins:	1	**Dimensions:** 1.08L x 0.62W x 0.09D inches (27.4L x 15.8W x 2.3D mm)
Grounding pins:	1	
Guide pins:	2	
Catalog Number:	HST/8o50D Gen2	**Weight:** 0.04oz (1.2g)
Reference:	Dedicated reference; programmably groundable	
Power Supply:	Powered from DHP	
Input Impedance:	13MΩ @ 1kHz	

Description:

An 8 channel digital headstage amplifier containing eight channel input pins, one reference pin, and one grounding pin. The distance between pins (the pitch) is 0.050” (1.27mm).

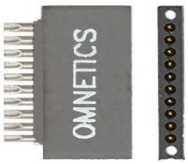
Input Connector Information: Connector #1

Input Mating Connector:

Male

Catalog Number:

CON/8o50m-10P

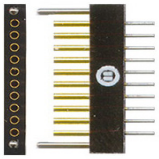


Input Connector:

Female

Catalog Number:

CON/8o50f-10P



Headstage Cable Information:

All Plexon 8, 16, and 32 channel digital headstages connect to the DHP unit through the HSC/DHSC1 or HSC/DHSC3 cable.

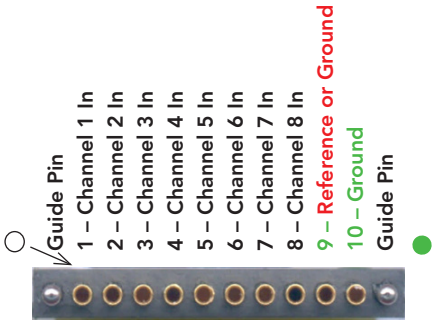
Connector Pin-out, Ground and Reference Information

Dedicated reference; programmably groundable

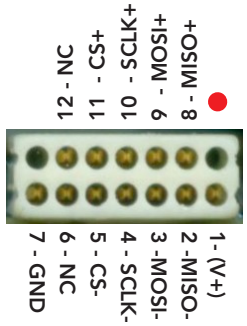
Channels 1-8 are designed for recording from electrodes. Pin 9 is used as a reference input. This reference signal can be used to subtract common mode noise and artifacts from the 8 recording channels. The processor in the headstage subtracts the reference signal (on Pin 9) from the signals on each of the 8 channels, then outputs the resulting signal.

Catalog Number: HST/8o50D Gen2

INPUT



OUTPUT



Input Pin 9: Reference or Ground

- This input can be used to connect a dedicated reference electrode. It can be grounded programmatically from OmniPlex Server if no reference electrode is present or if you want to disregard the signal from the reference (for example, if the reference electrode is broken).
- Set the reference option in OmniPlex Server to "True reference" to subtract the signal from the reference electrode. It is typically connected to a de-insulated electrode and used as a local reference for spike channels.
- Set the reference option in OmniPlex Server to "Grounded reference" to ground the input when no reference electrode is present or when you want to disregard the signal from the reference electrode. This is typically used as a distant reference for field potentials, and also for spike channels.

Input Pin 10: Ground

- Use this pin to ground the animal via skull screw or cannula, and make sure it touches the cerebrospinal fluid.

Headstage L – 16 channel, 0.050” pitch Digital Headstage

Channels:	16	**Amplifier/Processor Compatibility:** Digital Headstage Processor (DHP)
Pitch:	0.050” (1.27mm)	
Reference pins:	2	**Dimensions:** 1.08L x 0.62W x 0.15D inches (27.4L x 15.8W x 3.8D mm)
Grounding pins:	2	
Guide pins:	4	
Catalog Number:	HST/16o50D Gen2	**Weight:** 0.06oz (1.7g)
Reference:	Dedicated reference; programmably groundable	
Power Supply:	Powered from DHP	
Input Impedance:	13MΩ @ 1kHz	

Description:

A 16 channel digital headstage amplifier containing 16 channel input pins, two reference pins, and two grounding pins.

Input Connector Information: Connector #1

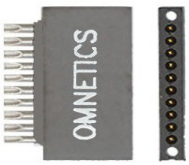
Note: This headstage uses two of these 8-channel connectors, typically glued together.

Input Mating Connector:

Male

Catalog Number:

CON/8o50m-10P

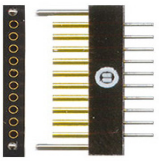


Input Connector:

Female

Catalog Number:

CON/8o50f-10P



Headstage Cable Information:

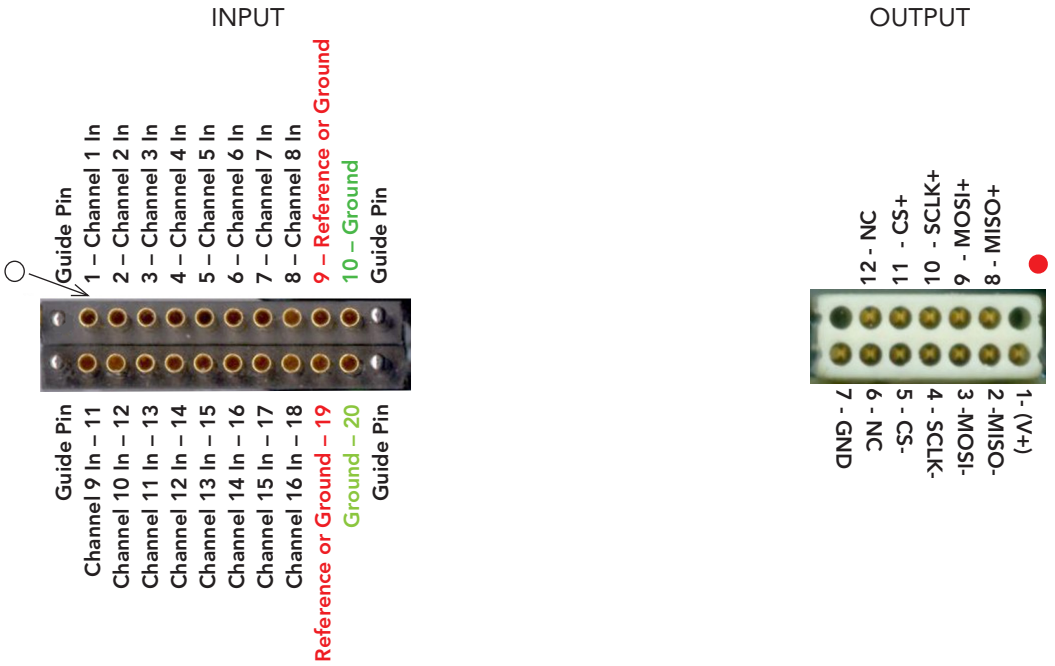
All Plexon 8, 16, and 32 channel digital headstages connect to the DHP unit through the HSC/DHSC1 or HSC/DHSC3 cable.

Connector Pin-out, Ground and Reference Information

Dedicated reference; programmably groundable

Channels 1-16 are designed for recording from electrodes. Pins 9 and 19 can be used as a reference input. This reference signal can be used to subtract common mode noise and artifacts from the 16 recording channels. The processor in the headstage subtracts the reference signal from the signals on each of the 16 channels, then outputs the resulting signal. See the additional discussion about Pins 9 and 19, below.

Catalog Number: HST/16o50D Gen2



Input Pin 9 and 19: Reference or Ground

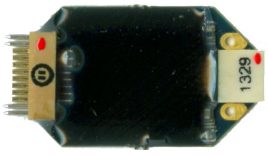
- This input can be used to connect a dedicated reference electrode. It can be grounded programmatically from OmniPlex Server if no reference electrode is present or if you want to disregard the signal from the reference (for example, if the reference electrode is broken).
- Set the reference option in OmniPlex Server to "True reference" to subtract the signal from the reference electrode. It is typically connected to a de-insulated electrode and used as a local reference for spike channels.
- Set the reference option in OmniPlex Server to "Grounded reference" to ground the input when no reference electrode is present or when you want to disregard the signal from the reference electrode. This is typically used as a distant reference for field potentials, and also for spike channels.
- You only need to connect one reference electrode and you may connect it to either of the Reference pins. If you have no reference electrode connected, then you should operate the headstage in "Grounded reference" mode.

Input Pin 10 and 20: Ground

- The ground on Pins 10 and 20 are identical. Use either or both of these pins to ground the animal via skull screw or cannula, and make sure it touches the cerebrospinal fluid.

HST/16D – 16 channel, 0.025” pitch Digital Headstage

(Legacy item, formerly designated Headstage Q)



Channels:	16
Pitch:	0.025” (.64mm)
Reference pins:	1
Grounding pins:	1
Guide pins:	6
Catalog Number:	HST/16D
Reference:	Dedicated reference; programmably groundable
Power Supply:	Powered from DHP
Input Impedance:	13MΩ @ 1kHz

Amplifier/Processor Compatibility:
Digital Headstage Processor (DHP)

Dimensions:
0.97L x 0.52W x 0.10D inches
(24.6L x 13.2W x 2.5D mm)

Weight:
0.035oz
(1.0g)

Description:

This is a legacy part, not currently orderable, originally listed under catalog name HST/16D. It is a 16 channel digital headstage amplifier containing 16 channel input pins, one reference pin, and one grounding pin. The distance between pins (the pitch) is 0.025in.

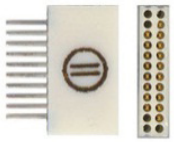
Input Connector Information: Connectors #6 and 7 (Nickel-free)

Input Mating Connector 6:

Male

Catalog Number:

CON/16m-V



Input Connector 6:

Female

Catalog Number:

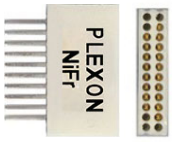
CON/16f-V

Input Mating Connector 7:

Male

Catalog Number:

CON/16m-V-NiFree
(MRI Compatible)



Headstage Cable Information:

All Plexon 8, 16, and 32 channel digital headstages connect to the DHP unit through the HSC/DHSC1 or HSC/DHSC3 cable.

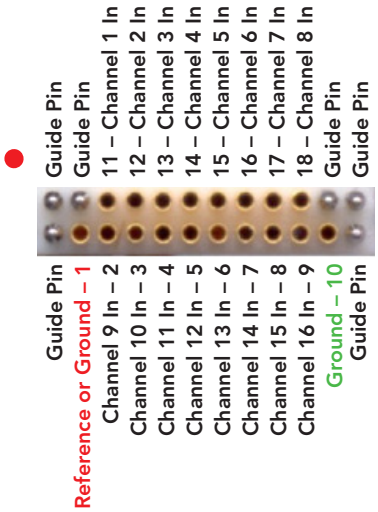
Connector Pin-out, Ground and Reference Information

Dedicated reference; programmably groundable

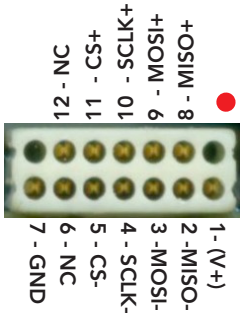
Channels 1-16 are designed for recording from electrodes. Pin 1 can be used as a reference input. This reference signal can be used to subtract common mode noise and artifacts from the 16 recording channels. The processor in the headstage subtracts the reference signal from the signals on each of the 16 channels, then outputs the resulting signal. See the additional discussion about Pins 1 and 10, below.

Catalog Number: HST/16D

INPUT



OUTPUT



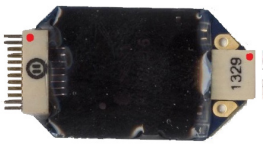
Input Pin 1 : Reference or Ground

- This input can be used to connect a dedicated reference electrode. It can be grounded programmatically from OmniPlex Server if no reference electrode is present or if you want to disregard the signal from the reference (for example, if the reference electrode is broken).
- Set the reference option in OmniPlex Server to "True reference" to subtract the signal from the reference electrode. It is typically connected to a de-insulated electrode and used as a local reference for spike channels.
- Set the reference option in OmniPlex Server to "Grounded reference" to ground the input when no reference electrode is present or when you want to disregard the signal from the reference electrode. This is typically used as a distant reference for field potentials, and also for spike channels.

Input Pin 10: Ground

- Use this pin to ground the animal via skull screw or cannula, and make sure it touches the cerebrospinal fluid.

Headstage Q2- HST/16D Gen2– 16 channel, 0.025” pitch Digital Headstage



Channels:	16	**Amplifier/Processor Compatibility:** Digital Headstage Processor (DHP)
Pitch:	0.025” (0.64 mm)	**Dimensions:** 1.00L x 0.51W x 0.10D inches (25.4L x 13.0W x 2.5D mm)
Reference pins:	1	
Grounding pins:	1	**Weight:** 0.035oz (1.0g)
Guide pins:	6	
Catalog Number:	HST/16D Gen2	
Reference:	Dedicated reference; programmably groundable	
Power Supply:	Powered from DHP	
Input Impedance:	13MΩ @ 1kHz	

Description:

A 16 channel digital headstage amplifier containing 16 channel input pins, one reference pin, and one grounding pin. The distance between pins (the pitch) is 0.025in.

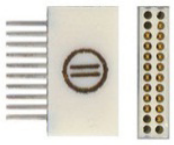
Input Connector Information: Connectors #6 and 7 (Nickel-free)

Input Mating Connector 6:

Male

Catalog Number:

CON/16m-V

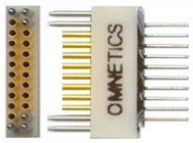


Input Connector 6:

Female

Catalog Number:

CON/16f-V

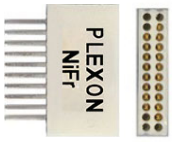


Input Mating Connector 7:

Male

Catalog Number:

CON/16m-V-NiFree
(MRI Compatible)



Headstage Cable Information:

All Plexon 8, 16, and 32 channel digital headstages connect to the DHP unit through the HSC/DHSC1 of HSC/DHSC3 cable.

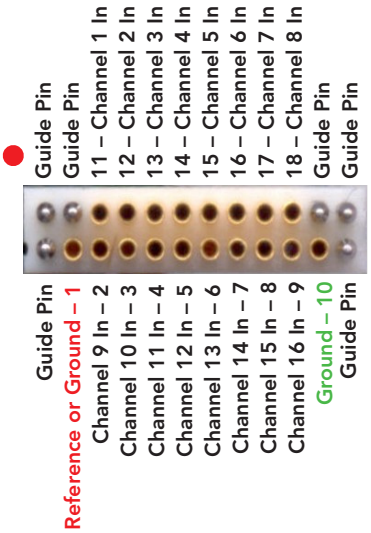
Connector Pin-out, Ground and Reference Information

Dedicated reference; programmably groundable

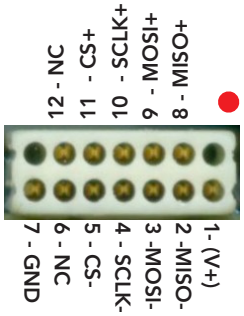
Channels 1-16 are designed for recording from electrodes. Pin 1 can be used as a reference input. This reference signal can be used to subtract common mode noise and artifacts from the 16 recording channels. The processor in the headstage subtracts the reference signal from the signals on each of the 16 channels, then outputs the resulting signal. See the additional discussion about Pins 1 and 10, below.

Catalog Number: HST/16D Gen2

INPUT



OUTPUT



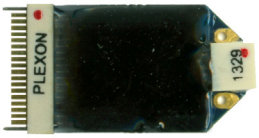
Input Pin 1: Reference or Ground

- This input can be used to connect a dedicated reference electrode. It can be grounded programmatically from OmniPlex Server if no reference electrode is present or if you want to disregard the signal from the reference (for example, if the reference electrode is broken).
- Set the reference option in OmniPlex Server to "True reference" to subtract the signal from the reference electrode. It is typically connected to a de-insulated electrode and used as a local reference for spike channels.
- Set the reference option in OmniPlex Server to "Grounded reference" to ground the input when no reference electrode is present or when you want to disregard the signal from the reference electrode. This is typically used as a distant reference for field potentials, and also for spike channels.

Input Pin 10: Ground

- Use this pin to ground the animal via skull screw or cannula, and make sure it touches the cerebrospinal fluid.

Headstage R – 32 channel, 0.025” pitch Digital Headstage



Channels:	32
Pitch:	0.025” (.64mm)
Reference pins:	1
Grounding pins:	3
Guide pins:	4
Catalog Number:	HST/32D
Reference:	Dedicated reference; programmably groundable
Power Supply:	Powered from DHP
Input Impedance:	13MΩ @ 1kHz

Amplifier/Processor Compatibility:
Digital Headstage Processor (DHP)

Dimensions:
0.97L x 0.52W x 0.10D inches
(24.6L x 13.2W x 2.5D mm)

Weight:
0.039oz
(1.1g)

Description:

A 32 channel digital headstage amplifier containing 32 channel input pins, one reference pin, and three grounding pins. The distance between pins (the pitch) is 0.025in.

Input Connector Information: Connectors #8 and #9 (Nickel-free)

Input Mating Connector 8:

Male

Catalog Number:

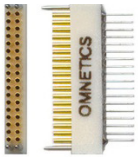
CON/32m-V

Input Connector 8:

Female

Catalog Number:

CON/32f-V



Input Mating Connector 9:

Male

Catalog Number:

CON/32m-V-NiFree
(MRI Compatible)

Headstage Cable Information:

All Plexon 8, 16, and 32 channel digital headstages connect to the DHP unit through the HSC/DHSC1 or HSC/DHSC3 cable.

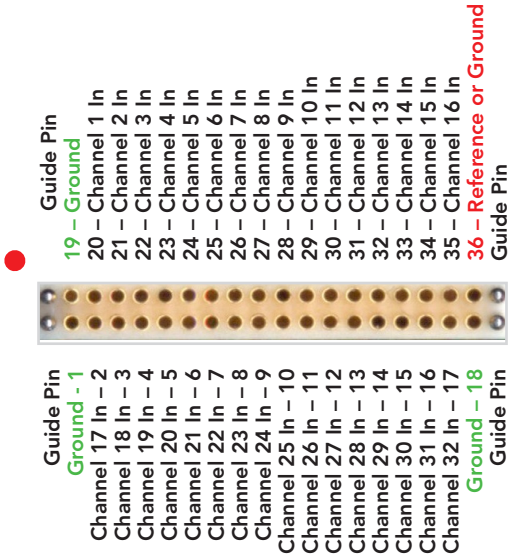
Connector Pin-out, Ground and Reference Information

Dedicated reference; programmably groundable

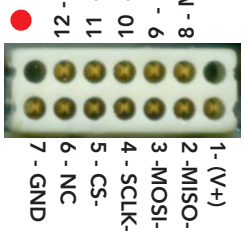
Channels 1-32 are designed for recording from electrodes. Pin 36 can be uused as a reference input. This reference signal can be used to subtract common mode noise and artifacts from the 32 recording channels. The processor in the headstage subtracts the reference signal from the signals on each of the 32 channels, then outputs the resulting signal. See the additional discussion about the reference and grounding pins, below.

Catalog Number: HST/32D

INPUT



OUTPUT



Input Pin 36: Reference or Ground

- This input can be used to connect a dedicated reference electrode. It can be grounded programmatically from OmniPlex Server if no reference electrode is present or if you want to disregard the signal from the reference (for example, if the reference electrode is broken).
- Set the reference option in OmniPlex Server to "True reference" to subtract the signal from the reference electrode. It is typically connected to a de-insulated electrode and used as a local reference for spike channels.
- Set the reference option in OmniPlex Server to "Grounded reference" to ground the input when no reference electrode is present or when you want to disregard the signal from the reference electrode. This is typically used as a distant reference for field potentials, and also for spike channels.

Input Pin 1, 18 and 19: Ground

- The ground on Pins 1, 18 and 19 are identical. Use any or all of these pins to ground the animal via skull screw or cannula, and make sure it touches the cerebrospinal fluid.

Headstage S – 64 channel, 0.025” pitch Digital Headstage

Channels:	64
Pitch:	0.025” (0.64mm)
Grounded Reference Version	
Reference pins:	0
Grounding pins:	8
True Reference Version	
Reference pins:	4
Grounding pins:	4
Guide pins:	8
Catalog Number:	HST/64D
Reference:	Hardware-based; Not selectable in software
Power Supply:	Powered from DHP
Input Impedance:	13MΩ @ 1kHz

Amplifier/Processor Compatibility:
Digital Headstage Processor (DHP)

Dimensions:
1.02L x 0.55W x 0.18D inches
(25.9L x 14.0W x 4.6D mm)

Weight:
0.051oz
(1.8g)

Description:

A 64 channel digital headstage amplifier containing 64 channel input pins.

This headstage is available in two versions – True reference (labelled “TR”) and Grounded reference (labelled “GR”). The True reference version has four reference pins and four grounding pins. The Grounded reference version has no reference pins and eight grounding pins.

Input Connector Information: Connectors #8 and #9 (Nickel-free)

Note: Use two of these 32-channel connectors. If you are building an assembly, observe the gap and center-to-center dimension as shown in the diagram on the next page.

Input Mating Connector 8:

Male

Catalog Number:

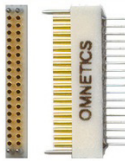
CON/32m-V

Input Connector 8:

Female

Catalog Number:

CON/32f-V



Input Mating Connector 9:

Male

Catalog Number:

CON/32m-V-NiFree
(MRI Compatible)

Headstage Cable Information:

The 64 channel digital headstage connects to the DHP unit through the HSC/DHSC2 cable.

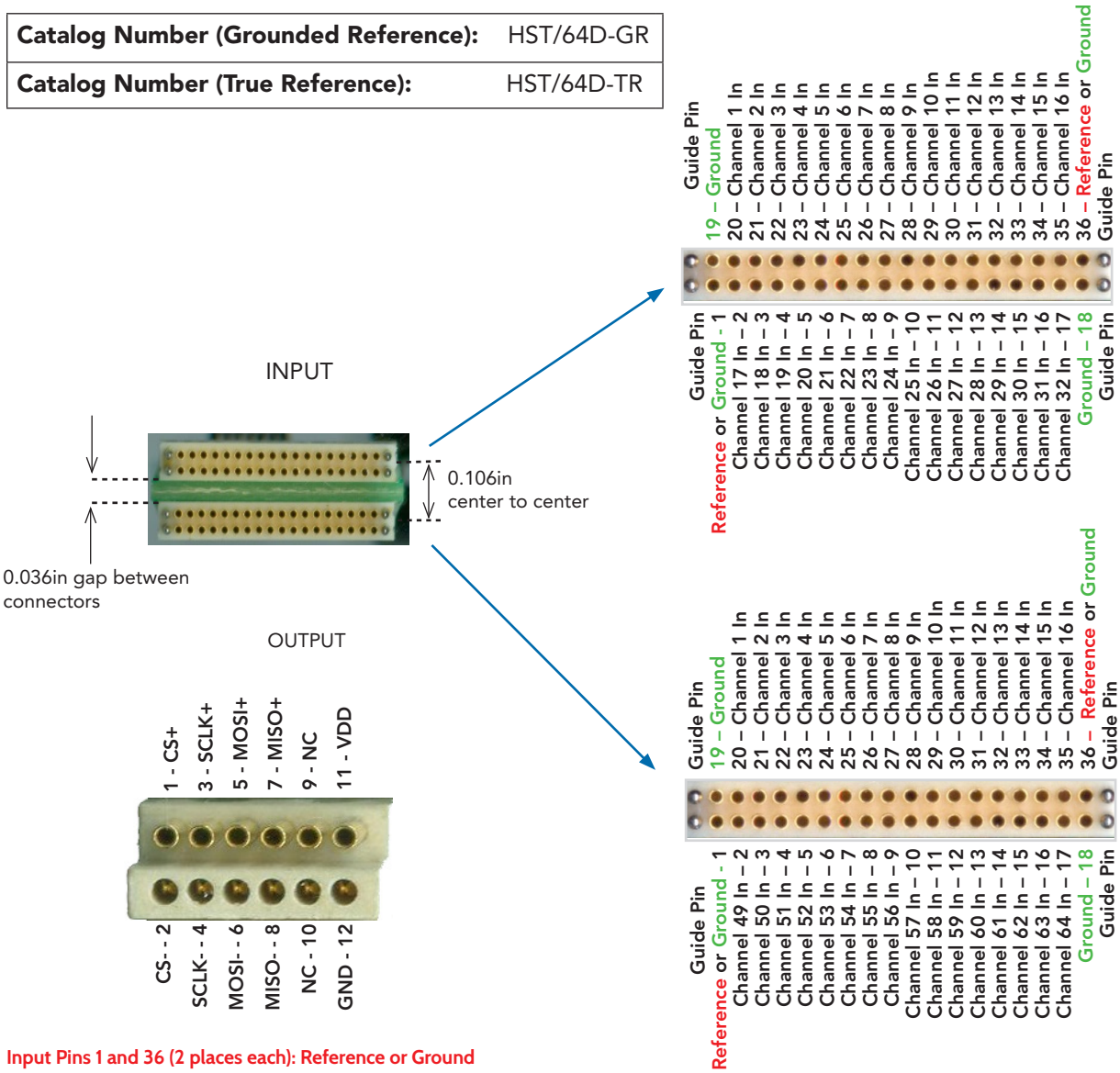
Connector Pin-out, Ground and Reference Information

User Selectable Reference

Channels 1-64 are designed for recording from electrodes. This headstage is available in two versions- True reference and Grounded reference. Pins 1 and 36 on both sides of the connector are pre-set in hardware as either Reference or Ground.

- In the True reference version, Pins 1 and 36 are set as Reference, so the connector has four reference pins and four grouding pins
- In the Grounded reference version, Pins 1 and 36 are set as Ground, so the connector has no reference pins and eight grounding pins.

Catalog Number (Grounded Reference):	HST/64D-GR
Catalog Number (True Reference):	HST/64D-TR



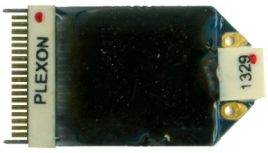
Input Pins 1 and 36 (2 places each): Reference or Ground

- See the INPUT diagram, above. In the True reference version, Pins 1 and 36 are electrically isolated from the Ground pins (Pins 18 and 19). In the Grounded reference version, Pins 1 and 36 are electrically shorted to the Ground pins (Pins 18 and 19).
- Pins 1 and 36 can be used to generate a reference signal from a de-insulated low-impedance electrode. This reference signal can be used to subtract common mode noise and artifacts from the 64 recording channels. The processor in the headstage subtracts the reference signal from the signals on each of the 64 channels, then outputs the resulting signal
- You only need to connect one reference electrode and you may connect it to either of the Reference pins.

Input Pin 1, 18 and 19: Ground

- The ground on Pins 1 and 36 are identical. Use any or all of these pins to ground the animal via skull screw or cannula, and make sure it touches the cerebrospinal fluid.

Headstage T- HST/16D Gen2 DIFF – 16 channel, 0.025” pitch fully differential reference Digital Headstage



Channels:	16
Pitch:	0.025” (0.64mm)
Reference pins:	16
Grounding pins:	4
Guide pins:	4
Catalog Number:	HST/16D Gen2 DIFF
Reference:	Dedicated Not selectable in software
Power Supply:	Powered from DHP
Input Impedance:	13MΩ @ 1kHz

Amplifier/Processor Compatibility:
Digital Headstage Processor (DHP)

Dimensions:
0.97L x 0.52W x 0.10D inches
(24.6L x 13.2W x 2.5D mm)

Weight:
0.039oz
(1.1g)

Description:

A 16 channel fully differential digital headstage amplifier containing 16 channel input pins, 16 dedicated reference pins, and four grounding pins. The distance between pins (the pitch) is 0.025in.

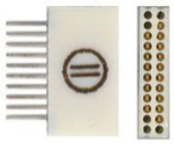
Input Connector Information: Connectors #6 and 7 (Nickel-free)

Input Mating Connector 6:

Male

Catalog Number:

CON/16m-V

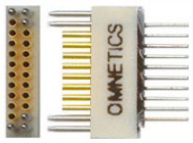


Input Connector 6:

Female

Catalog Number:

CON/16f-V

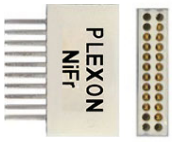


Input Mating Connector 7:

Male

Catalog Number:

CON/16m-V-NiFree
(MRI Compatible)



Headstage Cable Information:

All Plexon 8, 16, and 32 channel digital headstages connect to the DHP unit through the HSC/DHSC1 or HSC/DHSC3 cable.

Connector Pin-out, Ground and Reference Information

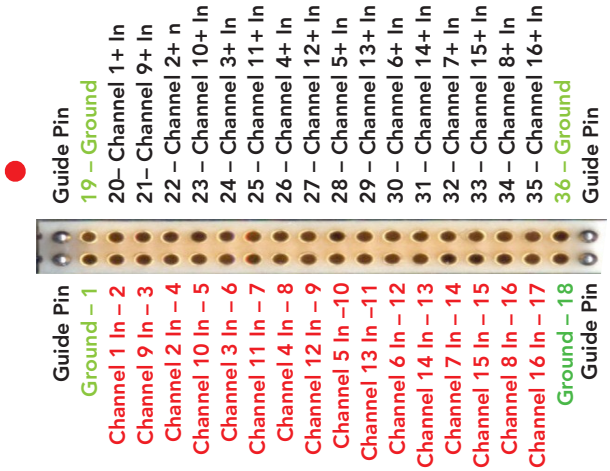
The input and output connectors for this headstage are shown in the image below. On the input connector:

- Pins 20-35 are designed for recording neural data from electrodes. The 16 channels are labeled with a "+" sign: Channel 1+ In, Channel 2+ In, and so forth. These channels are carrying the neural data.
- Pins 2-17 can be used as a reference input for each of the 16 channels. These 16 channels are labeled with a "–" sign: Channel 1- In, Channel 2- In, and so forth. Each reference channel is dedicated to the corresponding data channel. For example:
    - Channel 1- In on Pin 2 is the reference signal that the system subtracts from Channel 1+ In on Pin 20
    - Channel 16- In on Pin 17 is the reference signal that the system subtracts from Channel 16+ In on Pin 35

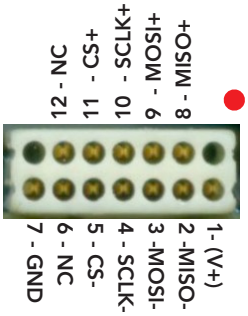
These dedicated reference signals can be used to subtract common mode noise and artifacts from the 16 recording channels. The processor in the headstage subtracts the reference signal from the signals on each of the 16 channels, then outputs the resulting signal.

Catalog Number: HST/16D Gen2 DIFF

INPUT



OUTPUT



Input Pin 2-17: Reference

- These inputs can be used as channel specific reference electrodes. Each reference pin is dedicated to a specific channel pin.

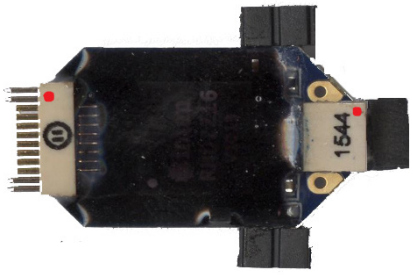
Input Pins 1, 18, 19 and 36: Ground

- The ground on Pins 1, 18, 19, and 36 are identical. Use any or all of these pins to ground the animal via skull screw or cannula, and make sure it touches the cerebrospinal fluid.

Headstage and Conversion Options

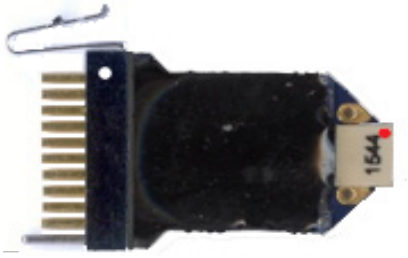
Light Emitting Diode (LED)

Plexon digital headstages can be equipped with mounted LEDs for use in behavioral analysis research using Plexon's CinePlex® Behavioral Research System with CinePlex Tracking. Red, blue, or green LEDs are available. The headstage pictured to the left is a 0.025" pitch 32 channel digital headstage with two LED sockets (HST/32D-2LED) and the headstage pictured on the right is a 0.025" pitch,16 channel headstage with three LED sockets (HST/16D GEN2-3LED).



Latching

More active animals may require an especially secure connection between the mating connector and the headstage. Plexon's 0.050" pitch, digital headstages are available with a special clipping (latching) mechanism that delivers this additional security. The headstage pictured below is a 0.050" pitch, 8 digital channel headstage with the latching option (HST/8o50D Gen2-L).



DHP Connector Pinout, Ground and Reference Information

This section describes the connections and pinouts for the Digital Headstage Processor (DHP) unit. The front panel is shown in the image below.

Sig Com—Signal common is the local zero-voltage reference point of the DHP unit.

Earth—Earth is a direct connection to Earth ground. In the United States, Earth ground connects to the third prong on the wall outlet, which is eventually tied to hard earth at the power service entrance to the building.

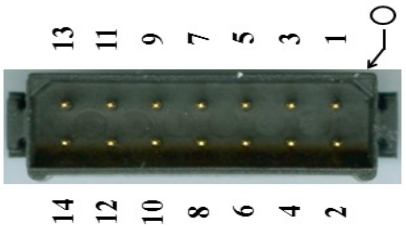
> **NOTE:** Ambient noise in buildings and noise radiated by electronic equipment are very common, and they can interfere with the signals in your experiment. To help reduce noise problems, you can connect the green ground wire from either Sig Com or Earth to metal object(s) near the animal being studied, such as headposts or apparatus framing or plates. It is best to try connecting to Sig Com and observing the noise reduction effect, then connecting instead to Earth and observing the effect, then comparing the results. Use the connection that gives the best results (best noise reduction).

Isolated/Grounded switch—The switch allows you to directly connect Sig Com to Earth ground or not. If Sig Com is not directly connected to Earth ground, the DHP unit is isolated from Earth ground.

HST PWR—The DHP unit is powered through the blue cable, which connects the DHP to the DATA LINK card in the OmniPlex D chassis. The DHP is powered on, and the PWR (power) light on the DHP unit is lit, when the OmniPlex Server application is running and a DHP topology is loaded.

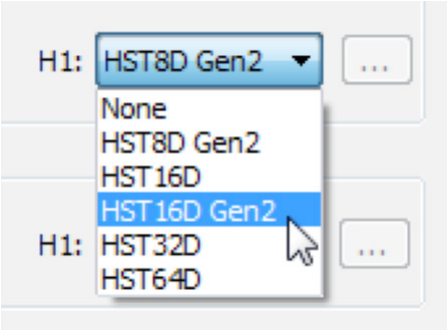
DHP Connector Pinout, Ground and Reference Information

The DHP unit can be supplied with up to four signal cards, each of which can handle up to 128 neural signal channels. The diagram below shows the pinouts for the individual DHP connectors. Connections are made to Plexon 8, 16, 32, and 64 channel digital headstages through the appropriate Plexon digital headstage cables.



Matching Digital Headstage Models to OmniPlex Server Settings

The dropdown list in the OmniPlex Server GUI allows you to identify the specific headstage attached to each connector on the DHP front panel:



When you are configuring the OmniPlex Server, use the following settings:

Headstage Model	Selection from Dropdown
HST/8o50D Gen2	HST8D Gen2
HST/16D	HST16D
HST/16o50D Gen2	HST16D Gen2
HST/16D Gen2	HST16D Gen2
HST/16D Gen2 DIFF	HST16D Gen2
HST/32D	HST32D
HST/64D	HST64D

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Plexon is a pioneer and leading innovator of custom, high-performance data acquisition, behavior and analysis solutions specifically designed for scientific research. We collaborate with and supply thousands of customers including the most prestigious neuroscience laboratories around the globe driving new frontiers in areas including basic science, brain-machine interfaces (BMI), neurodegenerative diseases, addictive behaviors and neuroprosthetics. Plexon offers integrated solutions for *in vivo* neurophysiology, optogenetics, and behavioral research – backed by its industry-leading commitment to quality and customer support. For more information, please visit www.plexon.com.

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Technical Support

If after reviewing this document, you would still like to access Plexon's Technical Support, we are available via several communication channels. You are invited to reach us through email, on the phone, or even over Skype utilizing instant messaging, voice, and/or video as follows:

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