





Plexon o50 Headsets

8-channel, 1x Gain HST/8o50-G1	8-channel, 20x Gain HST/8o50-G20	16-channel, 1x Gain HST/16o50-G1	16-channel, 20x Gain HST/16o50-G20
			
.93" (23.5 mm)	1.06" (27 mm)	.93" (23.5 mm)	1.06" (23.5 mm)
0.75" (2.0 mm)	0.10" (2.5 mm)	0.150" (.40 mm)	0.18" (4.5 mm)

Plexon o50 headsets are miniature amplifiers designed to strengthen and buffer the signal picked up from high impedance recording electrodes. They are intended to be the first stage in the signal processing chain and should be placed as close to the recording electrodes as possible. These headsets are available in 8, 16, and 32 channel versions. Gains of 1x (0 dB) and 20x (+26 dB) are standard.

The input connector has 10 input pins as well as two guide pins to facilitate alignment of the headset with the mating (electrode) connector. The center-to-center spacing of the input pins is 0.050".

Plexon o50 headsets are recommended for recording from micro wire bundles as well as from multiple individual stiff-wire electrodes, using an appropriate adaptor.

Channel Count

The 8-channel Plexon o50 headset is the basic unit. Plexon pre-assembles the 16- and 32-channel versions using the 8-channel headset. The size of the combined units may be a determining factor: A 16- or 32-channel, 1x gain headset is the same size as two (or four) individual 8-channel headsets placed side by side. However, a pre-assembled 16- or 32-channel, 20x gain headset can be made slightly thinner than two 8-channel, 20x gain headsets placed side by side. Contact Plexon for more details.

Gain

Plexon o50 headsets are available with a gain of 1x (standard unity gain) or with a gain of 20x. The 8-channel, 20x gain headset is slightly thicker than the 8-channel, 1x gain headset (0.10" vs 0.075" (2.5 mm vs 2.0 mm)). The additional thickness of the 8-channel, 20x headset affects the density at which electrodes may be implanted when using 8-channel, 20x gain headsets.

Side Stackability

Plexon o50 headsets can be side stacked, i.e., placed side-by-side to connect with the headset input connector and the connector used to make electrode implants, with one exception. The exception is with two 8-channel, 20x gain headsets. In general, if an implant is made from two connectors placed side by side, one of the following headset configurations can be used:

- Two 8-channel, 1x gain headsets

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Headsets & Cables

Connectors

Electrode Drives

- One 16-channel, 1x gain headset
- One 16-channel, 20x gain headset

The headset input connector and the electrode connector are both 0.075" (2 mm) thick. Comparatively, the headsets measure:

- 8-channel, 1x gain = 0.075" (2 mm)
- 8-channel, 20x gain = 0.10" (2.5 mm)
- 16-channel, 1x gain = 0.150" (4 mm)
- 16-channel, 20x gain = 0.18" (4.5 mm)

Referencing

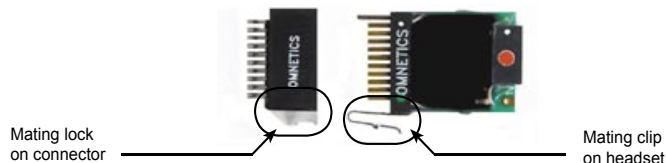
All Plexon headsets have additional "reference" channels. The signal from these reference channels is typically used at the preamplifier level to subtract out common mode artifacts, such as electro-magnetic interference and motion artifacts, in the recorded signals.

The o50 headsets have one reference channel per eight recording channels. There are two possible configurations for the reference channel. The input to the reference amplifier is typically grounded inside the headset (grounded reference configuration - the "GR" extension in the product number). This also causes pin 9 of the input connector to be grounded. However, the researcher may choose to connect the reference amplifier to a special reference electrode inside the brain. In this case, the input to the reference amplifier is disconnected from ground and pin 9 of the input connector becomes the input to the reference amplifier (true reference configuration - the "TR" extension in the product number).

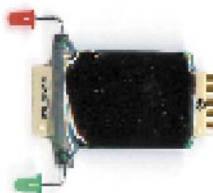
In 16-channel headsets, there are two reference amplifiers, one associated with channels 1-8 (the "top" reference) and the other associated with channels 9-16 (the "bottom" reference). There are four possible configurations of the two references: both grounded (-R00), top grounded, bottom true (-R01), top true, bottom grounded (-R10), and both true (-R11).

Other Options

- **Locking Clip Headsets** - These headsets are available with a special clip which enables them to lock to the mating (electrode) connector.



- **LED Headsets** - These headsets are available with mounted LEDs for use with animal tracking applications, such as VideoTracker, a real-time animal position tracking system.



Connectors for Headsets

HST/8o50, HST/16o50

Electrode	CON/8o50m-10P (Omnetics A11365-001)
Electrode (w/latch)	CON/8o50m-10P-L (Omnetics A12623-001)
Input	CON/8o50f-10P (Omnetics A11862-001)
Input (w/latch)	CON/8o50f-10-L (Omnetics A12624-001)
Output	CON/8o25m-12P (Omnetics A7562-001)

Ordering Information

When ordering, reference the Plexon part number HST/xxo50-Gyy-zzz, where
 xx = channel count (8, 16, or 32 channels)
 yy = gain (yy=1 or 20)
 zzz= reference option - for 8-channel headsets, zzz = GR or TR
 for 16-channel headsets,
 zzz = (R00, R01, R10, or R11)



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