

Ground and Reference Wiring

NeuroNexus probe packages include ground and reference wires to help remove common sources of noise to produce clear signals.



The ground and reference wires are typically on opposites of the probe package, with the ground wire being green and the reference wire or wires being blue and white. The reference wire is internally connected to the R pins in the probe package connector, and likewise the ground wire is connected to the pins marked G in the mapping documents.

Wire Material

NeuroNexus probes are assembled using stainless steel G&R wires by default for their strength, and other wire materials are available upon request before placing an order. Choice of wire material generally will not improve signal quality.

Wire material types with brief description?

All lab environments are different, so some trial and error may be required to find a wiring configuration that works best. One common method is to tie the G&R wires together and attach them to a skull screw. Generally, the reference should be placed close to the implant site. Other common locations to place the ground wire are attaching on skin or in muscle, depending on the type of recordings being performed.

Internal Reference Sites

Some NeuroNexus probes are fabricated with an internal reference site, typically located about 1 mm from the proximal recording site. Internal reference sites can be disabled in favor of using the external wires on the connector package. For instruction on how to do this and other wiring information, please refer to the detailed wiring diagrams for each NeuroNexus probe package which can be found on our website in the Support section.

Note: It is common practice for some acquisition system manufacturers to short the ground and reference together at the headstage, which may nullify some of the wiring configurations unless there is a method for keeping the two signals discrete. For example, the NeuroNexus Smartlink headstages include jumpers allowing for easy shorting or opening of this connection. Refer to the system manufacturer for details.