

ADPT-NZ-VERSA User Manual

Adapter for interfacing the nanoZ to Versa drives

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1 Document Revision

07/21/11	Rev 1.0	Initial Creation
09/15/11	Rev 1.1	Added removal section.
07/09/12	Rev 1.2	Updated product photo, added labeled adapter picture.

2 Document Overview

This user manual will guide you through the setup and use of your adapter.

3 Adapter Overview

The ADPT-NZ-VERSA interfaces with the nanoZ© distributed by Neuralynx Inc. The nanoZ allows impedance measurement and probe reconditioning. Please refer to the nanoZ documentation for instructions on using the nanoZ.

4 Glossary

<i>EIB</i>	<i>An Electrode Interface Board (EIB) is the interface between experiment electrodes in a microdrive and the appropriate headstage.</i>
<i>ESD</i>	<i>Electrostatic discharge.</i>
<i>Header</i>	<i>Vertical pins on board for accessing signals.</i>
<i>nanoZ</i>	<i>Probe impedance measurement and plating device.</i>
<i>NZRef</i>	<i>Return path for nanoZ.</i>
<i>Mill-Max</i>	<i>Provider of custom connectors</i>
<i>SDK</i>	<i>Matlab Software Development Kit for the nanoZ</i>
<i>Versa Drive</i>	<i>Small animal implants useful in a wide range of neuroscientific work</i>

5 Setup and Configuration.

5.1 Setup

There is no setup required for the adapter as shipped from Neuralynx. Although the adapter is not ESD sensitive, it is good practice to ground yourself before handling any electronic equipment.

5.2 Software and Mapping

The nanoZ channels are mapped to the electrodes in two stages. The first identifies the adapter and the other identifies the EIB, probe, or drive. This allows flexibility for multiple connections without defining a mapping for every possible combination.

The electrode.ini file defines the adapter and probe mappings. If you modify or update definitions, follow these steps to replace the old file with the new one.

5.2.1 XP

Locate the electrode.ini file from the setup CD or download the latest version from www.neuralynx.com.

Copy it to 'C:\Documents and Settings\USERNAME\Local Settings\Application Data\nanoZ'. Where USERNAME is your windows login account. If you do not see the nanoZ folder, look in another 'C:\Documents and Settings' folder, see figure below.

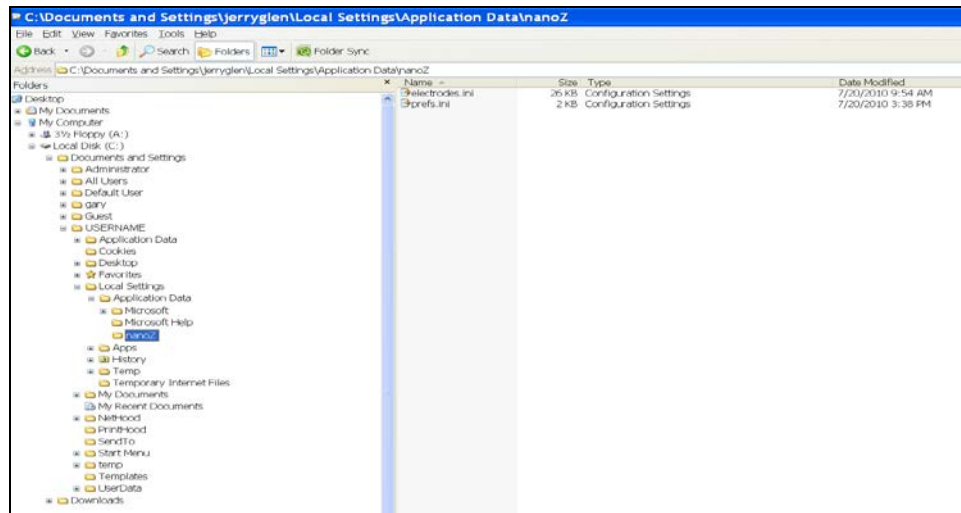


Figure 1: Location for electrode.ini

5.2.2 Windows 7

Locate the electrode.ini file from the setup CD or download the latest version from www.neuralynx.com.

Copy it to C:\Users\admin\AppData\Local\nanoZ.

5.2.3 Reloading the Mapping file

Open the nanoZ program and reload the electrode.ini file by selecting File| Reload definitions.

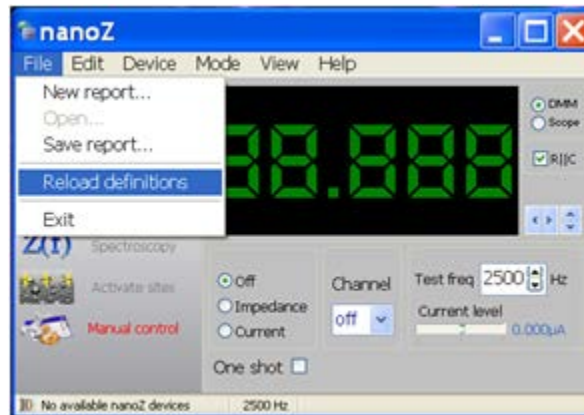


Figure 2: Reloading the Electrodes.ini File

In the upper left hand corner you will see two pull down windows. The top window identifies the adapter. Select ADPT-NZ-VERSA.



Figure 3: Adapter Mapping

The window below the adapter identifies the electrode or EIB. Choose Probe Not Selected.

5.3 Header Connections

There are signals available on the APDT-NZ-VERSA by means of standard 100mil pitch headers. They are summarized in the table below.

<i>Signal</i>	<i>NZ Channel</i>	<i>Pin</i>
NzRef	R1	J3-1
Rsvd 2	R2	J3-2
Rsvd 3	R3	J3-3
Ch13	13	J4-2
Ch14	14	J4-1
Ch21	21	J5-1
Ch22	22	J5-2

Table 1: Signal Access for ADPT-NZ-VERSA
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5.3.1 NZ Reference and Reserved Channels

Header J3, shown in the figure below, provides access to three nanoZ reference channels. A three pin connector with an alligator clip is provided with the nanoZ for this purpose.

NzRef is used as a return path for plating and impedance measurement. **As such it must be submersed in the plating solution, connected to the test material or connected to the animal.**

Two additional references labeled Rsvd2 and Rsvd3 are for future use and are not used. The three pin to alligator clip ties NzRef, Rsvd2, and Rsvd3 together, and thus the connector has no specific orientation.

5.3.2 Additional Channels

Four additional channels of the nanoZ are accessible for use on headers J4 and J5, and their location can be seen in the figure below.

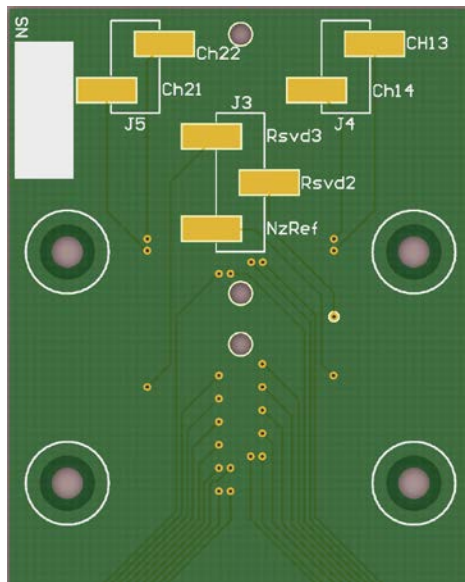


Figure 4: Header Locations

5.3.3 nanoZ Channel Mapping

The nanoZ maps to the Neuralynx signals in the following order: input channels, GND and Ref, and additional channels. See table below.

Neuralynx	nanoZ interface	nanoZ Native, (SDK)
In1	1	61
In2	2	62
In3	3	63
In4	4	64
In5	5	38

In6	6	36
In7	7	15
In8	8	34
In9	9	33
In10	10	24
In11	11	15
In12	12	16
In13	13	57
In14	14	58
In15	15	59
In16	16	60
In17	17	51
In18	18	52
In19	19	49
In20	20	50
In21	21	39
In22	22	42
In23	23	41
In24	24	44
In25	25	43
In26	26	46
In27	27	45
In28	28	48
In29	29	53
In30	30	56
In31	31	55
In32	32	54
PNL Gnd	33	37
Ref1	34	23
PNL Gnd	35	40
Ref2	36	47
CH13	37	13
CH14	38	14
CH21	39	21
CH22	40	22

Table 2: nanoZ to Neuralynx Channel Mapping

The NZ Native channels are used when controlling the nanoZ with the SDK. Whereas, the nanoZ interface channels are what are shown on the nanoZ software and impedance report.

5.3.4 Pinouts

The figures below show the pinouts for the connectors. Orange pin locations correspond with Mill-Max connector J7. Green pin locations correspond with Mill-Max connector J6. Mill-Max pinout is oriented as looking at the end of the adapter.

25	26	27	28	29	31	17	19	21	23	57	58	59	60	61	63	49	51	53	55
R2	R3			30	32	18	20	22	24	R2	R3			62	64	50	52	54	56
R1				5	7	9	11	13	15	R1				37	39	41	43	45	47
1	2	3	4	6	8	10	12	14	16	33	34	35	36	38	40	42	44	46	48

J1 J2

Figure 5: Samtec Connectors

Ch61 (in1)	1	J7	2	Ch60 (in16)	Ch51 (in17)	1	J6	2	Ch54 (in32)
Ch62 (in2)	3		4	Ch59 (in15)	Ch52 (in18)	3		4	Ch55 (in31)
Ch63 (in3)	5		6	Ch58 (in14)	Ch49 (in19)	5		6	Ch56 (in30)
Ch64 (in4)	7		8	Ch57 (in13)	Ch50 (in20)	7		8	Ch53 (in29)
Ch37 (PNL Gnd)	9		10	Ch23 (Ref1)	Ch40 (PNL Gnd)	9		10	Ch47 (Re2)
Ch38 (in5)	11		12	Ch16 (in12)	Ch39 (in21)	11		12	Ch48 (in28)
Ch36 (in6)	13		14	Ch15 (in11)	Ch42 (in22)	13		14	Ch45 (in27)
Ch35 (in7)	15		16	Ch24 (in10)	Ch41 (in23)	15		16	Ch46 (in26)
Ch34 (in8)	17		18	Ch33 (in9)	Ch44 (in24)	17		18	Ch43 (in25)

Figure 6: Mill-Max Connectors

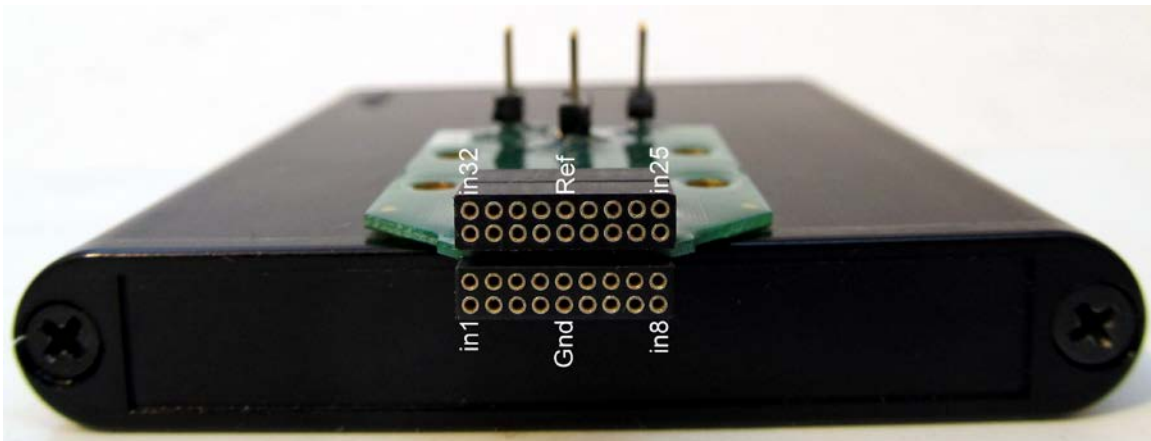


Figure 7: Labeled Adapter

5.4 Removal

It is very important to take care when removing the adapter from the nanoZ. Do not pull on the header pins or connectors of the adapter to remove it. Gently rock the adapter from side to side using a pry tool, or your fingernails, until it is free from the nanoZ.

6 Appendix

6.1 *Software and manual updates*

Please visit our site periodically to check for software updates at www.neuralynx.com.