

NEUTRINO COMMUNICATION PROTOCOL STRINGS

Every string is dependent on a number of variables, so the generic format for different type of controls will be shown first with full examples given in the next page.

Variable Definitions

CS: Checksum, calculated by add all bytes excluding START (0x04), STOP (0x05), and the checksum itself.

XX XX XX XX XX XX: MAC address of device sending the string.

YY YY YY YY YY YY: MAC address of device receiving the string.

CC: Channel number, start counting from zero. (ie. Ch #1 = 0, Channel #2 = 1, etc)

##: Data value as *Signed Integer*.
For Mute, 0x00000001 = ON and 0x00000000 = OFF
For Gain, 1 = 0x00000001 = 0.001dB and -1 = 0xFFFFFFFF = -0.001dB

Generic Strings

Input – Mute ON

04 00 24 CS 01 XX XX XX XX XX XX YY YY YY YY YY YY 00 00 49 6E 41 6E 6C
67 5F 30 00 80 0B CC 00 01 ## ## ## ## 05

Input – Mute OFF

04 00 24 CS 01 XX XX XX XX XX XX YY YY YY YY YY YY 00 00 49 6E 41 6E 6C
67 5F 30 00 80 0B CC 00 01 ## ## ## ## 05

Output – Mute ON

04 00 24 CS 01 XX XX XX XX XX XX YY YY YY YY YY YY 00 00 4F 75 74 41 6E
6C 67 30 00 80 0C CC 00 01 ## ## ## ## 05

Output – Mute OFF

04 00 24 CS 01 XX XX XX XX XX XX YY YY YY YY YY YY 00 00 4F 75 74 41 6E
6C 67 30 00 80 0C CC 00 01 ## ## ## ## 05

Input – Set Gain to certain value

04 00 24 CS 01 XX XX XX XX XX XX YY YY YY YY YY YY 00 00 49 6E 41 6E 6C
67 5F 30 00 80 0B CC 00 00 ## ## ## ## 05

Output – Set Gain to certain value

04 00 24 CS 01 XX XX XX XX XX XX YY YY YY YY YY YY 00 00 4F 75 74 41 6E
6C 67 30 00 80 0C CC 00 00 ## ## ## ## 05

Example Strings

These string used [00 00 00 00 00 00] as the source MAC address for simplistic. It is acceptable to use [00 00 00 00 00 00] if the sending device is not expecting any reply messages.

Currently the system only accepts ABSOLUTE gain value. There is no UP/DOWN (RELATIVE) volume control at this moment, a separate DSP module to handle this feature will be added in the future.

Input 1 – Mute ON

04 00 24 3E 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 49 6E 41 6E 6C 67 5F 30 00
80 0B 00 00 01 00 00 00 01 05

Checksum = 00+24+01+00+00+00+00+00+00+60+35+12+86+97+00+00+49+6E
+41+6E+6C+67+5F+30+00+80+0B+00+00+01+00+00+00+01 = 0x53E

We just need 1 byte, so the final checksum will be 0x3E.

Input 8 – Mute OFF

04 00 24 44 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 49 6E 41 6E 6C 67 5F 30 00
80 0B 07 00 01 00 00 00 00 05

Output 5 – Mute ON

04 00 24 65 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 4F 75 74 41 6E 6C 67 30 00
80 0C 04 00 01 00 00 00 01 05

Output 16 – Mute OFF

04 00 24 6F 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 4F 75 74 41 6E 6C 67 30 00
80 0C 0F 00 01 00 00 00 00 05

Input 1 – Set Gain to +3.3dB

04 00 24 2C 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 49 6E 41 6E 6C 67 5F 30 00
80 0B 00 00 00 00 00 0C E4 05

Since 1 = 0.001dB, so 3300 = +3.3dB = 0x00000CE4 (signed integer).

Output 10 – Set Gain to -40.7dB

04 00 24 CB 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 4F 75 74 41 6E 6C 67 30 00
80 0C 09 00 00 FF FF 61 04 05

Since -1 = -0.001dB, so -40700 = -40.7dB = 0xFFFF61043.3 (signed integer).

More Example Strings

Input 1 – Set Gain to 0dB

04 00 24 3C 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 49 6E 41 6E 6C 67 5F 30 00
80 0B 00 00 00 00 00 00 05

Input 1 – Set Gain to -3dB

04 00 24 76 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 49 6E 41 6E 6C 67 5F 30 00
80 0B 00 00 00 FF FF F4 48 05

Input 1 – Set Gain to -6dB

04 00 24 B2 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 49 6E 41 6E 6C 67 5F 30 00
80 0B 00 00 00 FF FF E8 90 05

Input 1 – Set Gain to -9dB

04 00 24 EE 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 49 6E 41 6E 6C 67 5F 30 00
80 0B 00 00 00 FF FF DC D8 05

Input 1 – Set Gain to -18dB

04 00 24 A3 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 49 6E 41 6E 6C 67 5F 30 00
80 0B 00 00 00 FF FF B9 B0 05

Input 1 – Set Gain to -100dB (off)

04 00 24 12 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 49 6E 41 6E 6C 67 5F 30 00
80 0B 00 00 00 FF FE 79 60 05

Preset – Recall Preset #1

04 00 18 0F 01 00 00 00 00 00 00 00 60 35 12 86 97 01 00 00 31 00 00 00 00 05

Note that Preset Recall utilizes a different payload format:

04 00 18 CS 01 00 00 00 00 00 00 00 60 35 12 86 97 01 00 00 31 ## ## 00 00 05

The data value is a 16-bit unsigned integer. For current Neutrino system, preset # ranges from 0x0000 to 0x0045 (70 presets in total, first preset numbered as zero)

Please note that these strings only works for the given schematic, the dynamic Module Number might change if the schematic is modified.

For example, if another DSP module is added in front of the Low Filter, the Low Filter's and High Filter's (and all other DSP modules' in the chain) Module Number will be affected.

Low Filter – Set Level to +6dB

```
04 00 24 9A 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 4C 53 46 5F 5F 5F 5F 30 00
80 1A FF 00 00 00 00 17 70 05
```

Low Filter – Set Level to +3dB

```
04 00 24 D6 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 4C 53 46 5F 5F 5F 5F 30 00
80 1A FF 00 00 00 00 0B B8 05
```

Low Filter – Set Level to 0dB

```
04 00 24 13 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 4C 53 46 5F 5F 5F 5F 30 00
80 1A FF 00 00 00 00 00 00 05
```

Low Filter – Set Level to -3dB

```
04 00 24 4D 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 4C 53 46 5F 5F 5F 5F 30 00
80 1A FF 00 00 FF FF F4 48 05
```

Low Filter – Set Level to -6dB

```
04 00 24 89 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 4C 53 46 5F 5F 5F 5F 30 00
80 1A FF 00 00 FF FF E8 90 05
```

High Filter – Set Level to +6dB

```
04 00 24 95 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 48 53 46 5F 5F 5F 5F 30 00
80 19 FF 00 00 00 00 17 70 05
```

High Filter – Set Level to +3dB

```
04 00 24 D1 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 48 53 46 5F 5F 5F 5F 30 00
80 19 FF 00 00 00 00 0B B8 05
```

High Filter – Set Level to 0dB

```
04 00 24 0E 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 48 53 46 5F 5F 5F 5F 30 00
80 19 FF 00 00 00 00 00 00 05
```

High Filter – Set Level to -3dB

```
04 00 24 48 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 48 53 46 5F 5F 5F 5F 30 00
80 19 FF 00 00 FF FF F4 48 05
```

High Filter – Set Level to -6dB

04 00 24 84 01 00 00 00 00 00 00 00 60 35 12 86 97 00 00 48 53 46 5F 5F 5F 5F 30 00
80 19 FF 00 00 FF FF E8 90 05