RS-232 Protocol for NAD Products v2.02   Aug 1, 2007

Introduction

The purpose of this document is to define the protocol used to communicate to NAD products that have an RS-232 port and use the newer RS232 protocol V2.X. The new protocol, V2.X, is all ASCII based, with the goal of making it easier to use. This protocol allows NAD products with an RS-232 port to be controlled by a PC or any other device which has an RS-232 port.

RS-232 Specifications

The NAD product should use a standard DB-9 female connector with the following pinout:

Pin	Function
2	Transmit Data
3	Receive Data
5	Signal Ground

This pinout allows the NAD product to be connected to a PC with a standard straight throw serial cable.

All communication should be done at a rate of 115200 bps with 8 data bits, 1 stop bit and no parity bits. No flow control should be performed.

Data Format

All commands sent to the device and responses sent back have the following basic format:

<Prefix >   .   <Variable>   <Operator>   <Value>   <CR> (and/or) <LF>

Note 1: All data is both sent and received as ASCII. Therefore, any command can be sent and received using any terminal program capable of communicating with a computer's serial ports.
Note 2: It is a good idea to also send a <CR>(0x0D) and/or a <LF>(0x0A) character at the beginning of any message to get rid of any unwanted data (ie. noise) that may have been sent to the receiving device.

<prefix>   Used to help group the different variables of a unit.

<variable>   Name of the variable to be queried or set.

<operator>   For non-read only <variables>, any 1 of 3 <operators> may be used: + / - / =.

     The "+" and "-" <operator> act as a toggle and will cycle through all the valid <values> for the specified <variable>.

     The "=" operator can be used to set a <variable> to a specific <value>, if the <value> is not valid for the <variable> being set, it will be ignored.

     To query any <variable>, the "?" operator is used. The response will always be returned using the "=" operator.

<value>   The ASCII representation of the <value> to be assigned to the <variable>

Any data received which does not follow this format should be ignored. Also, invalid <values> will be ignored.

Command Set

The different <prefixes>, <variables>, and <values> are documented in a table within a different document specific to the NAD product.

Additions to the <prefix>, and <variable> lists will be done on an ongoing basis as new functions are needed for new products.

Example 1

This example will describe exactly what is sent when the Identification of the unit is queried.

The above is accomplished by sending the following ASCII character sequence:

```
Command: Main.Model?<CR>
```

If the identification string of the unit was "T775" then the response to the above command would be:

```
Response: Main.Model=T775<CR>
```

Example 2

This example will describe how to set the volume to a level of -3 dB.

```
Command: Main.Volume=-3<CR>
```
If the volume is successfully set to -3 dB, then the response sent back would be:

```
Response: Main.Volume=-3<CR>
```

Example 3

This example will describe how to increment the volume.   This will take the existing <value> and increase it by 1.

```
Command: Main.Volume+<CR>
```

If the volume is successfully increment to -2 dB, then the response sent back would be:

```
Response: Main.Volume=-2<CR>
```