DFR22 Serial String Protocol

Specifications

Baud: 19200
Data bits: 8
Stop bits: 1
Parity: none
Flow control: none

Serial Strings

Prefix and Suffix
Prefix: <D0h>
Suffix: <D1h>

Basic structure
<D0h>DFR22<unit number><command><identifiers><sub-command><value><D1h>

Query versus Action:
In general, omitting the value from a message triggers a query. The device will respond with the current value of that parameter.

Unit Number field:
A three-character field - the device id of one of the devices (i.e "001")

Command field:
Must be one of the following
"QRY" - The state of all parameters will be returned as if each had been queried individually
"PRE" - Controls the current preset
"INP" - Controls the parameters of input channels
"OUT" - Controls the parameters of output channels
"MIX" - Controls the parameters of the matrix mixer

Query Command -
Identifiers: none
Subcommands: none
Example: "DFR22001QRY"

Preset Command -
Identifier: a three character field that contains the preset to switch to
Subcommands: none
Query Form Exists: Yes
Example 1:
　　　"<D0h>DFR22001PRE001<D1h>" -> sets the preset to 1
　　　"<D0h>DFR22001PRE001<D1h>" -> device response
Example 2:
　　　"<D0h>DFR22001PRE<D1h>" -> queries the preset
　　　"<D0h>DFR22001PRE001<D1h>" -> device response

<u>Input and Output Commands:</u>
Identifier: "001" or "002" ,the channel number or "ALL" for both channels
Subcommands:

"L" - Level, sets the gain to a value 0-127, conversion to dB to be supplied

<value> is in the form "00<byte>" where <byte> is an 8 bit number 0-127

<byte>	Gain value (dB)
0	-Infinity
1-26	-105 to –42.5, in 2.5 dB steps
27-127	-40.0 to +10.0, in 0.5 dB steps

"I" - Increment, increases the gain level by the supplied value
"D" - Decrement, decreases the gain level by the supplied value
"M" - Mute, values are "000" Mute off, "001" Mute on, "002" Mute Toggle
"S" - Sensitivity, values are "001" -10 dBV, "000" +4 dBu, "002" toggle
"P" - Polarity, values are "001" negative, "000" positive, "002" toggle
"C" - Clipping (pad adjust, OUTPUT ONLY) - "000" no pad, "001" 18dB, "002" 12dB
Query form exists: Yes, for all except Increment and Decrement.
When a command is sent to "ALL" channels, a separate response comes back from each channel

Example 1:
"<D0h>DFR22001INP001L00<100d><D1h>" - sets input level to 100
"<D0h>DFR22001INP001L00<100d><D1h>" - device response

Example 2:
"<D0h>DFR22001INP001I005<D1h>" - increases level by 5 increments as defined in the above table
"<D0h>DFR22001INP001L00<105d><D1h>" - device response

Example 3:
"<D0h>DFR22001OUT001C001<D1h>" - engages 18dB pad
"<D0h>DFR22001OUT001C001<D1h>" - device response

Example 4:
"<D0h>DFR22001INP002M<D1h>" - queries mute status
"<D0h>DFR22001INP002M001<D1h>" - device response

Example 5:
"<D0h>DFR22001INPALLL00<100d><D1h>" - sets input level to 100
"<D0h>DFR22001INP001L00<100d><D1h>" - device response
"<D0h>DFR22001INP002L00<100d><D1h>" - device response

Mixer Commands:
Identifier:
 First Field: "001" or "002", the mixer number (output strip number)
 Second Field: "001", "002", or "OUT", the channel number (input strip number, OUT for output fader)
Subcommands:
 "L" - Level, sets the gain to a value 0-127, conversion to dB to be supplied
  <value> is in the form "00<byte>" where <byte> is an 8 bit number 0-127
  See above table for dB values
 "I" - Increment, increases the gain level by the supplied value
 "D" - Decrement, decreases the gain level by the supplied value
 "M" - Mute, values are "000" Mute off, "001" Mute on, "002" Mute Toggle
 "P" - Polarity, values are "001" negative, "000" positive, "002" toggle
 "C" - Connection, input is routed to output, "OUT" is not acceptable for second identifier
Query form exists: Yes, for all except Increment and Decrement.

Example 1:
 "<D0h>DFR22001MIX001OUTL100<D1h>" - sets input level of first output fader to 100
 "<D0h>DFR22001MIX001OUTL100<D1h>" - device response

Example 2:
 "<D0h>DFR22001MIX001001I005<D1h>" - increases level of first input to first output mixpoint
 "<D0h>DFR22001INP001001L105<D1h>" - device response

Example 3:
 "<D0h>DFR22001MIX001001C001<D1h>" - routes input one to output one
 "<D0h>DFR22001OUT001001C001<D1h>" - device response