Basic Syntax of Series 7000 Native Protocol (In Hex):

Below is the hex command you would send to set router destination 111 to source 103:

01, 4E, 30, 54, 49, 09, 30, 30, 06, 45, 09, 30, 30, 36, 36, 32, 43, 04

01 – SOH (start of heading)
4E – N (protocol identification)
30 – 0 (sequence number, normally 0 in this application)
54, 49 – TI (requested command, use 'TI' for 'Take Index')
09 – TAB (horizontal tab)
30, 30, 36, 45 – Destination (selects destination "0111", four hex numbers, see note below)
09 – TAB (horizontal tab)
30, 30, 36, 36 – Source (selects source "0103", four hex numbers, see note below)
32 – Checksum byte0 (character "2") (see note below)
43 – Checksum byte1 (character "C") (see note below)
04 – EOT (end of transmission)

Destination/Source parameter translation:

The Grass Valley 7000 Protocol transmits the characters as hex numbers. You must send four characters, this means leading zeros if necessary. For example, if you wanted to select the destination of 1 you would need to send the characters of '0001', translated to hex would be '30, 30, 30, 31'. The same parameters apply to the source also.

Checksum Calculation Algorithm:

The checksum is calculated on those items following *SOH* and before the inserted checksum value. The calculation is the negative sum mod 256 of those values.

4E + 30 + 54 + 49 + 09 + 30 + 30 + 36 + 45 + 09 + 30 + 30 + 36 + 36 = 2D4

Mod 256(hex 100) of 2D4 = D4

To negate that value: (+FF) + (-D4) + (+01) = 2C

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