

# 4894B/4804B Addendum

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## B.1 INTRODUCTION

This Addendum explains the new escape sequence used in the 4894B/4804B units and how to program the 4894B/4804B GPIB-to-Serial Interfaces.

## B.2 BACKGROUND

When the 4894 and 4804 GPIB-to-Serial Interfaces are being controlled from the GPIB Bus, they have two sub-modes: Data for transparently sending and receiving serial data and Command for querying or setting various parameters. The units power-on in the Data sub-mode and use an escape sequence to switch from the Data sub-mode to the Command sub-mode. The original escape sequence designed in 1990 specified addressing the units to Listen and then Unlisten without sending them any data. Recent high speed computers have made this sequence unreliable so the escape sequence in the 'B' series units has been changed to use the Device Trigger command. All other features and functions of the 'B' version units are identical to the 'A' version units.

## B.3 PROGRAMMING 'B' SERIES UNITS

When used in the G-Mode, the 4894B and 4804B power up in the Data sub-mode and everything sent to them over the GPIB bus is passed transparently to the serial output. Send these units the GPIB Device Trigger command (GET) to switch them to the Command sub-mode. This can be done with a Device trigger command or with a command that outputs GPIB commands to the bus. Refer to your GPIB Controller manual for its Device Trigger command syntax. Do not use the 488.2 "\*TRG" command as that outputs ASCII characters that the 4894B will convert into a serial message. If you are following the directions in the 4894A Manual, substitute a Device Trigger for the 'escape sequence'. Use the 'SYST:OPER DATA' command to switch back to the Data sub-mode. Provide a short 50 ms delay when switching modes before sending the 4894B additional GPIB messages.

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The following are some example Device trigger commands:

For NI compatible Controllers using ib commands:

**Call ibtrg(ud%)**

For NI compatible Controllers using NI-488.2 commands:

**Call Trigger(Bd%, Dev%)**

## **B.4 PROGRAMMING 'A' and 'B' SERIES UNITS**

Programs for older 4894 and 4804s use the 'Listen-Unlisten' type escape sequence that is sent to the GPIB bus with a command that outputs GPIB bus commands. The recommended 'Unlisten Listen Unlisten Listen Unlisten' escape sequence is typically defined in the beginning of the program. These programs can be easily modified so they work with both 'A' and 'B' series units by adding the Device Trigger command to the escape sequence. If the escape sequence was a single command string, the revised sequence becomes:

**Unlisten Listen Unlisten Listen Unlisten Listen DeviceTrigger**

If the escape sequence was sent as separate commands to make it easier for the 4894A to recognize the escape sequence, then add a fourth command as shown below:

**Unlisten  
Listen  
Unlisten  
Listen DeviceTrigger**

The actual coding of the new escape sequence depends upon your GPIB controller. The following examples assume that the 4894B and 4804B are set to address 4 and only show the single escape sequence string for simplicity.

For NI compatible Controllers using ib commands:

**newescape\$ = "?\$?\$?\$" & CHR\$(08)  
Call ibcmd(Bd%, newescape\$)**

or

**char \*newescape = "\x3F\x24\x3F\x24\x3F\x24\x08"  
ibcmd(Bd,newescape,7L)**

**B**

For NI compatible Controllers using NI-488.2 commands:

**newescape\$ = "\$\$\$\$" & CHR\$(08)**

**Call SendCmds(Bd%, newescape\$)**

or

**char \*newescape = "\x3F\x24\x3F\x24\x3F\x24\x08"**

**SendCmds(Bd,newescape,7L)**

For ICS 488-PC2 Controllers using ICS commands:

**newescape\$ = "UNL LISTEN 4 UNL LISTEN 4 UNL LISTEN 4 GET"**

**Call ieSend(newescape\$)**

For Rocky Mountain Basic programs:

**Send 7;UNL LISTEN 4 UNL LISTEN 4 UNL LISTEN 4 GET**