HILEVEL Technology, Inc.

Q'n Apps #S30

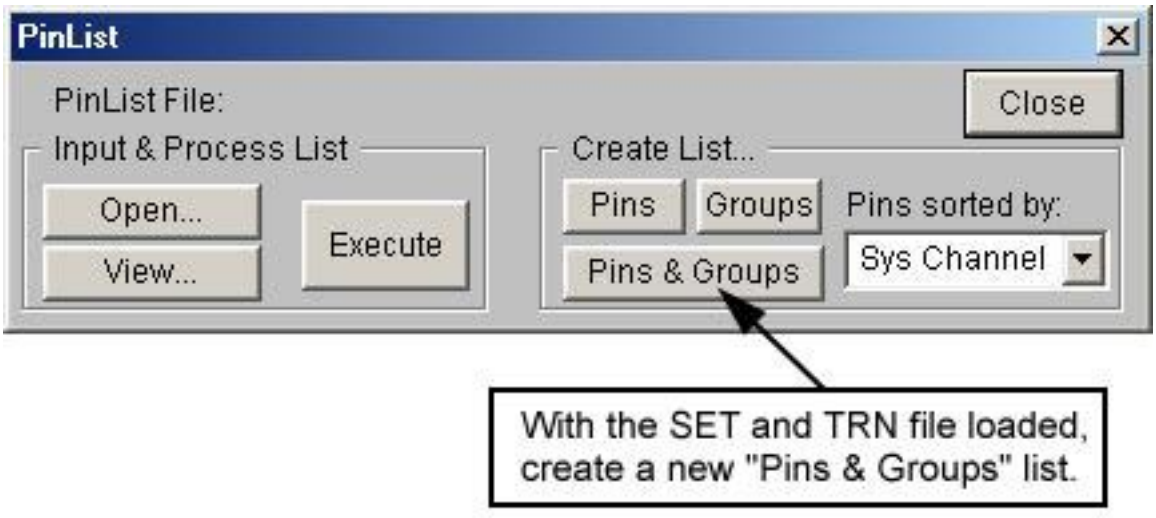
**Q: How do I use the Swap Pins function?**

# Channel Reassignment Using Swap Pins

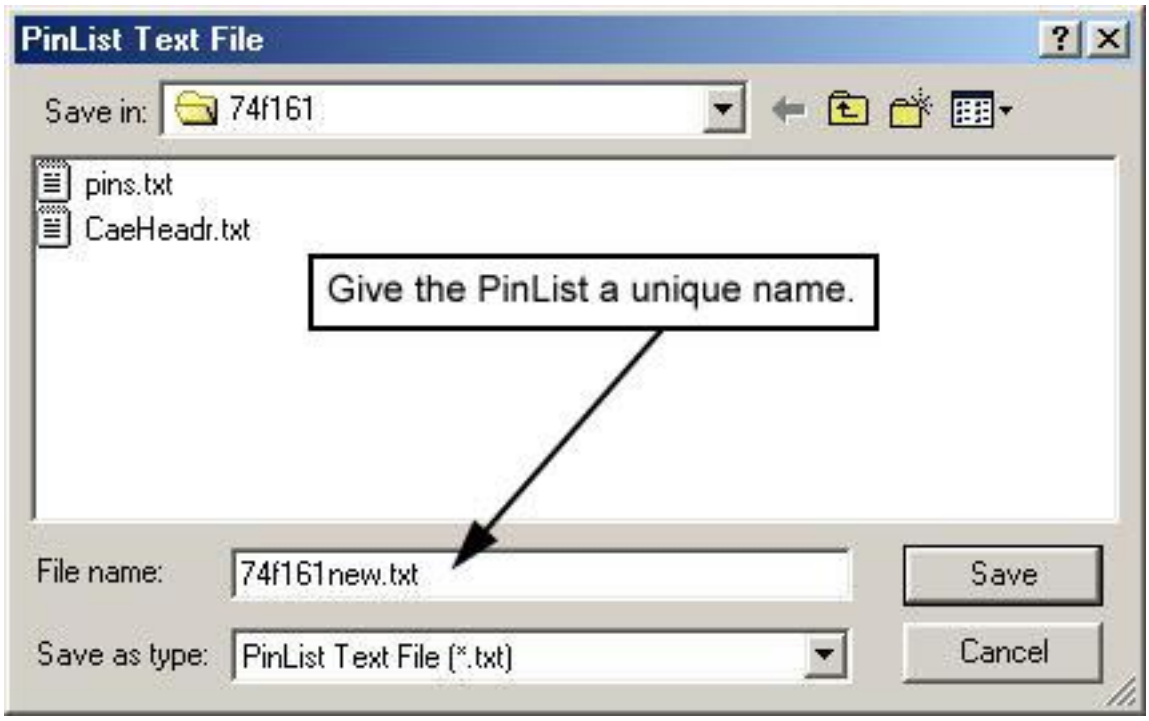
At times it may become necessary to change your pin assignments. Perhaps your DUT board was wired incorrectly, or worse yet, you may have built a custom DUT board with some erroneous channel assignments. There may even be other reasons, but HiLevel has a tool to simplify the software end of this situation, rather than rewiring your DUT board.

When you use the Pin Assignment window in the Main Setup to tell the software about your channel change, sure, this will facilitate the definition of the new pin assignment. But this does not correct your vector file. Vector files are "hard-wired" to load into the RAM of a specific channel, and simply changing the SET file pin assignments is not enough. You could save your vector file as ASCII and then retranslate it with CaeLink, but this can be tedious when editing very large vector files. Why not save this extra step and just use the Swap Pins function? Here's how.

Let's say we have a SET and TRN vector file for our device that was created with the clock pin on channel 15, but our DUT board has been made with the clock pin on channel 1. To use Swap Pins, your tester must be on and connected, with the Symphony software running and the tester initialized. Load the SET and TRN file you wish to change. Then open the PinList window from the Main sidebar to create a new PinList:




Don't change the channel number using the Pin Assignment window in the Main setup; it will be changed for you automatically. We're going to create the new PinList with a new name:




When you click Save, the new PinList file opens in your editor. The left-hand column shows the system channel assignments, where we see channel 15 assigned to the CLK pin:

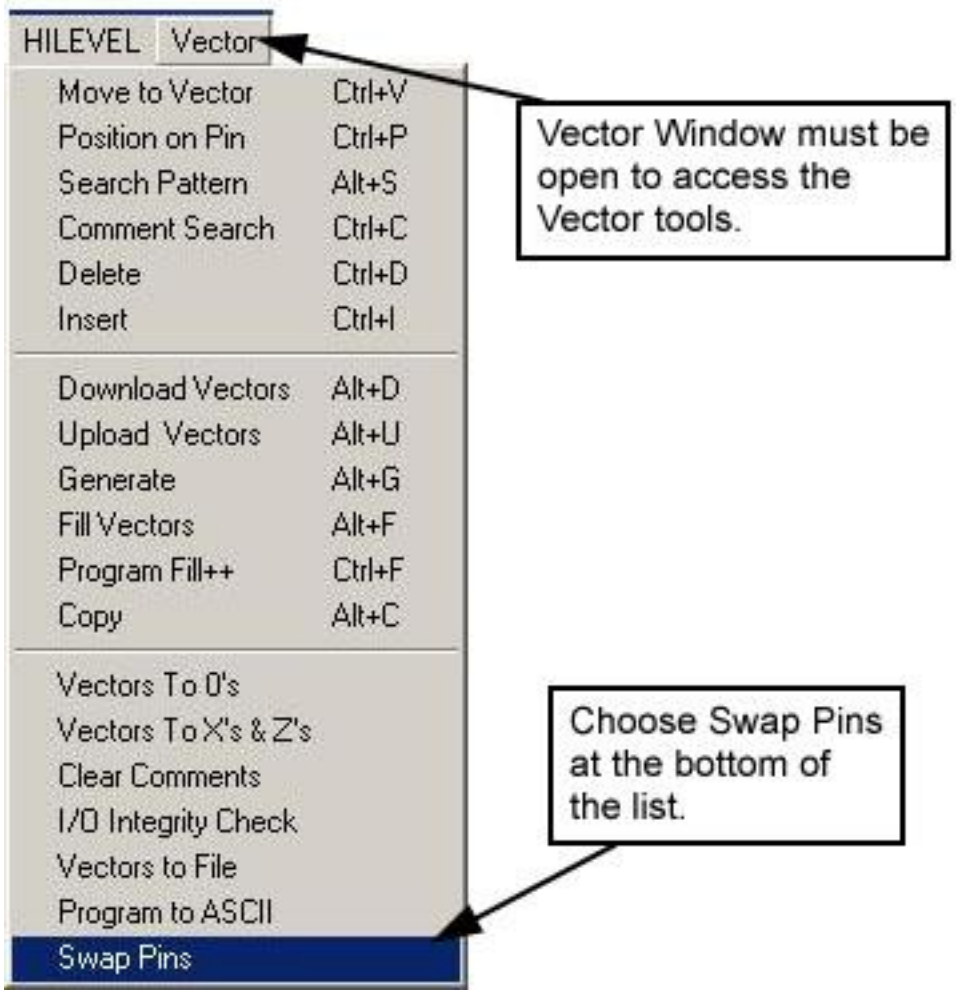
```
PinList and GroupList for C:\74f161\74f161new.txt

$SetFile 'C:\74f161\74F161.SET'
$VectorFile  '74F161.TRN'
$ProgramFile  (none specified)
$ScanFile  (none specified)

;SysCh  Pin#     Name        Grp   Type(IOBS)
  10      7      CEP          5      I   ; S= 0.50
  11      6       D3          4      I   ; S= 0.50
  12      5       D2          4      I   ; S= 0.50
  13      4       D1          4      I   ; S= 0.50
  14      3       D0          4      I   ; S= 0.50
  15      2      CLK          3      I   ; RZ 12.00, 25.00
  16      1       MR          7      I   ; RO 0.00, 30.00
  25      9       PE          6      I   ; S= 0.50
  26     10      CET          5      I   ; S= 0.50
  27     11       Q3          2      O   ; C= 25.00
  28     12       Q2          2      O   ; C= 25.00
  29     13       Q1          2      O   ; C= 25.00
  30     14       Q0          2      O   ; C= 25.00
  31     15       TC          1      O   ; C= 25.00
```

Change to System Channel 1.

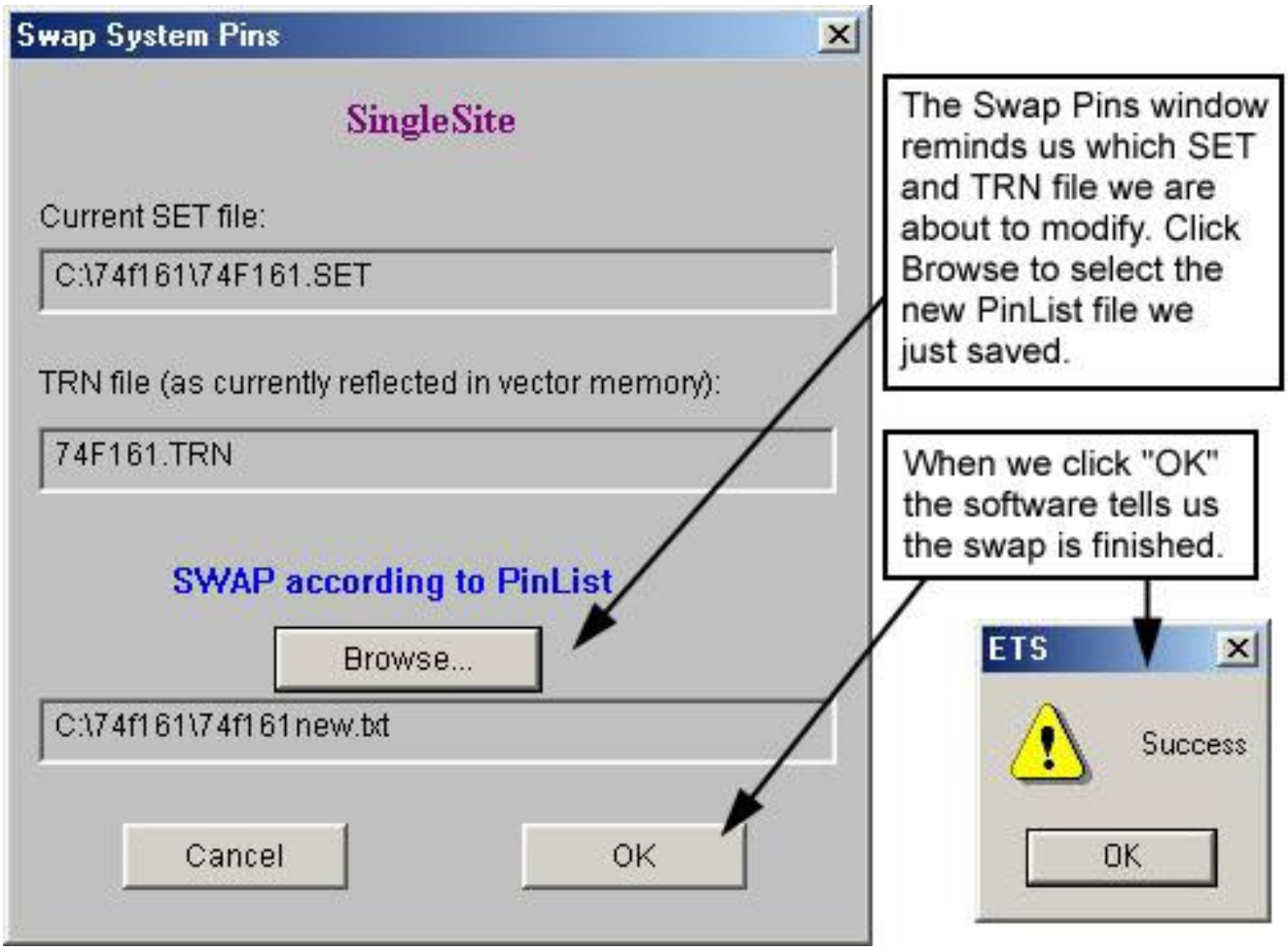
We simply change the channel number from 15 to 1, then save the PinList file:

```
13      4       D1          4       I   ; S= 0.50
14      3       DO          4       I   ; S= 0.50
 1      2       CLK         3       I   ; RZ 12.00, 25.00
16      1       MR          7       I   ; RO 0.00, 30.00
25      9       PE          6       I   ; S= 0.50
```

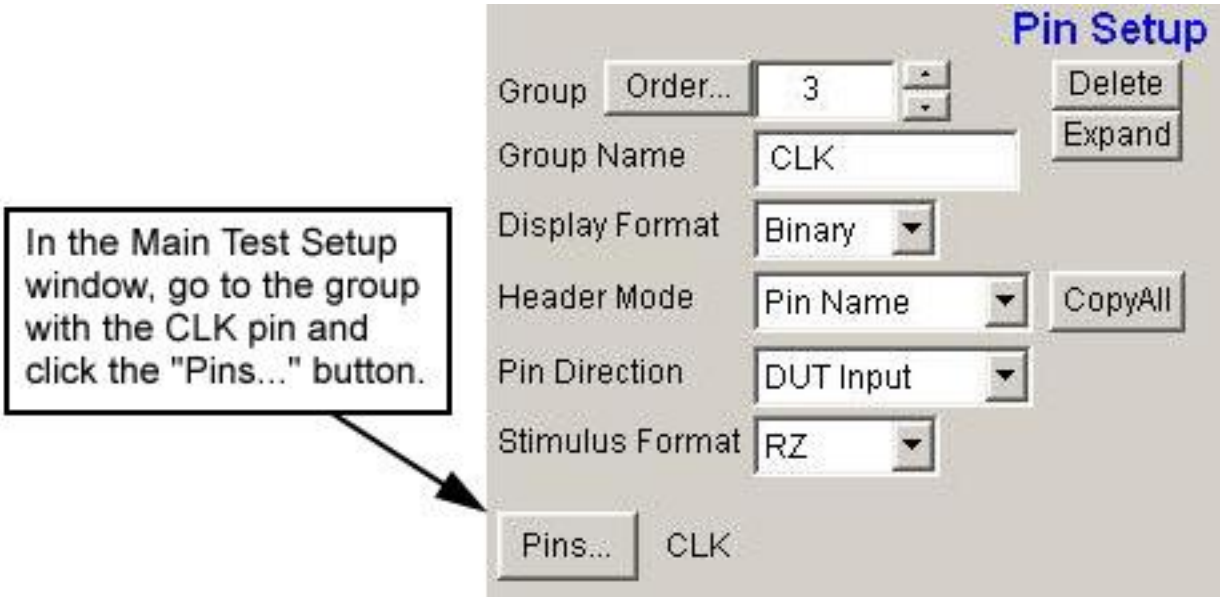
Remember, our original SET file and vectors are still loaded. We now open the Vectors window from the Main sidebar. This gives us access to the vector tools and the Swap Pins function. Let's open that now:

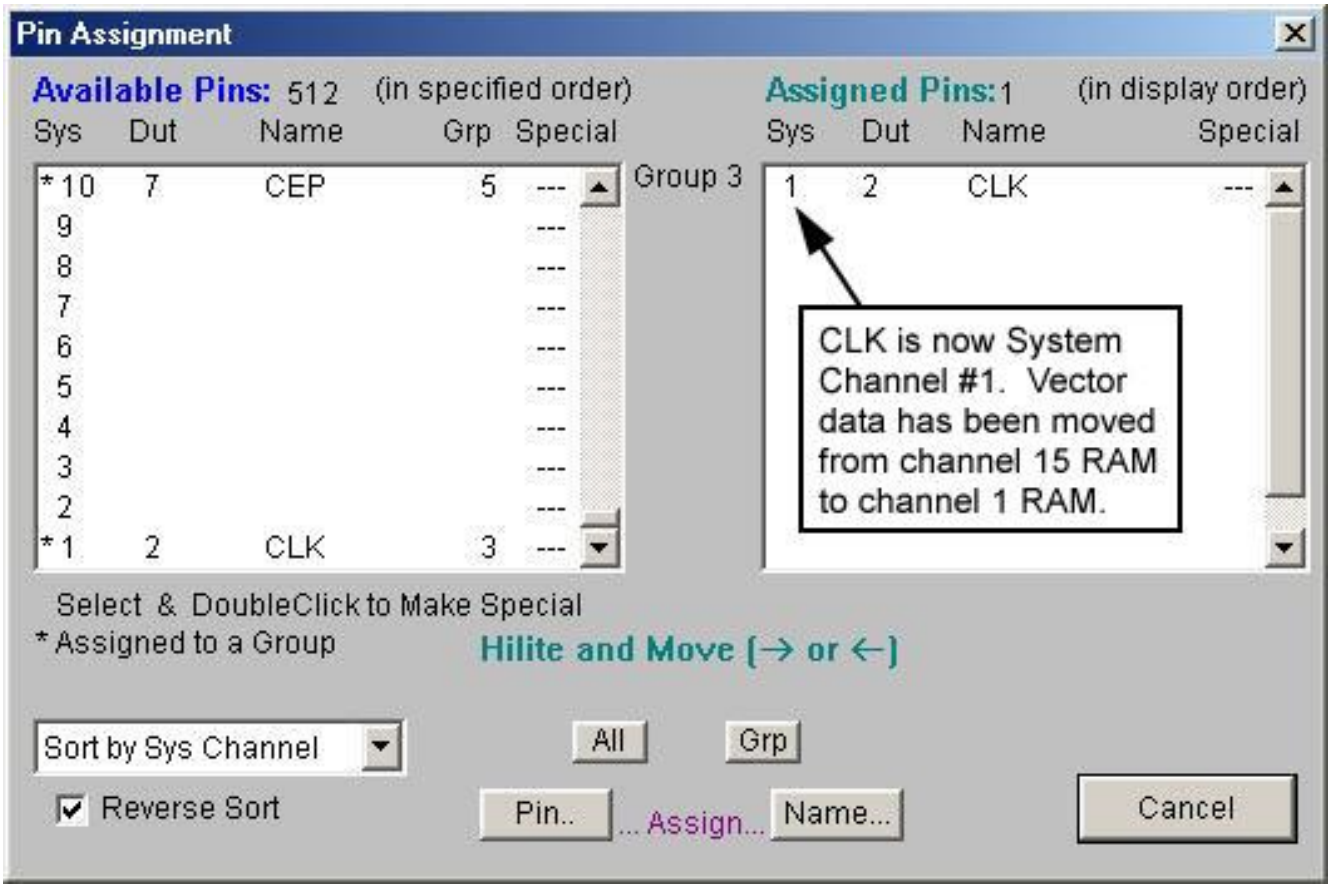



Now to do the Swap. Just browse for the new PinList file and click OK:




Let's see the effects of the change:






The important thing to note is that your files have *not* been changed. To complete the process, you must save your SET file and your TRN file. This allows you to retain the old versions if needed. Furthermore, this must be done for each SET and/or TRN file that you need to swap. If you overwrite the original files, you do not need to make any modifications to AutoTest programs you may have created because the SET and TRN filenames will be the same.

**Please Note:** To use Swap Pins, you must be operating the software with the tester on and initialized. Also, you must have pins installed in slots defined as the source slots from which pins will be swapped, as well as the destination pins.