

Accessing the Analog Trigger of KPCI-3110 or KPCI-3116

The DriverLINX code below is typical VB or C/C++ for specification of an analog triggering source. In this case, the analog trigger is used as a stop event, but it could be used to specify the start event instead by use of the corresponding properties or members of the Service Request.

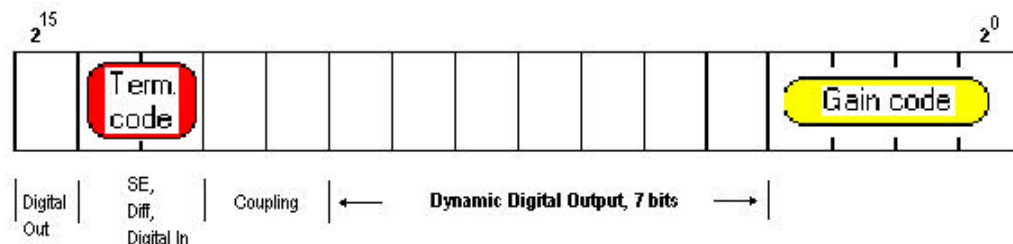
```
SR.Evt_Stp_aiChannel = 0
SR.Evt_Stp_aiGainCode = SR.DLGain2Code(-1)

m_pSR->stop.u.aiEvent.channel = 0;
m_pSR->stop.u.aiEvent.gain = Gain2Code(0,AI,-1);
```

In this case, the board's analog channel 0 will be used as the triggering source. This analog input channel has gains of 1, 2, 4 or 8.

The property of the DriverLINX driver for the gain to apply to the triggering source is defined as 16bits wide. However, it need not be that wide as plug-in boards do not typically have sufficient range options to require it.

The vast majority of plug-in boards have only 8 possible range selections, comprised of the 4 available gains and the unipolar or bipolar selection. However, there are exceptions such as the KPCI-3108, which has 12 gains. These 12 gains combined with the unipolar or bipolar selection results in 24 possible ranges. These 24 ranges would only require 5 bits to uniquely store their values as illustrated below.



DriverLINX makes use of the upper, unused bits for special purpose features that your board may have. In the case of analog input channels, these upper bits can be used to control Single Ended or Differential mode and to access the high speed digital I/O features of the boards covered by the KPCI3100 driver.

For analog triggering with KPCI-3116 or KPCI-3110, indicate that you want to use the dedicated analog trigger input as the triggering source by programming the Service Request to make use of channel 0 but at a gain value of 8000 (hex) to differentiate it from the analog input channel 0.

```
SR.Evt_Stp_aiChannel = 0
SR.Evt_Stp_aiGainCode = &H8000

m_pSR->stop.u.aiEvent.channel = 0;
m_pSR->stop.u.aiEvent.gain = 0x8000;
```