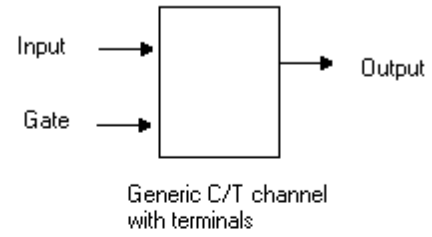
These frequency measurement examples were tested with the KPCI-3140 and KPCI-3104 in Win98SE with Visual Basic 6.0 and Visual C++ 6.0.

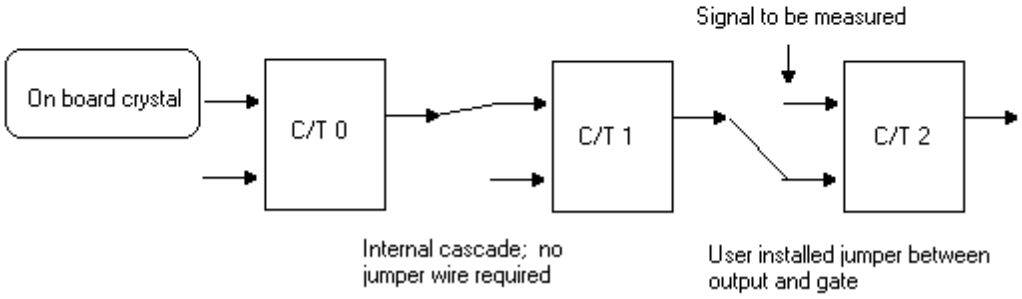
Frequency measurement should be thought of as gated event counting. If pulses from the unknown signal are counted over a known time interval, then the number of counted pulses divided by the time interval is frequency. Use of the gate terminal of a counter allows precise control of the time interval during which counting can take place.

The example performs a 16bit-frequency measurement. This means that only one 16bit counter will be used to accumulate counts during a known interval; if accumulated counts exceed 65535 then the counter will roll over and the measurement result will be incorrect.

To accomplish the task, the example makes use of three C/T channels to perform the measurement. Two channels are used (C/T 0 and C/T 1) to generate a gate signal from the KPCI's on-board time base (20MHz or 40MHz for KPCI-3140). A third channel, C/T 2, is used to do the measurement. You must use a jumper wire to connect the output from C/T 1 to the gate input of C/T 2.



Generic C/T channel
with terminals



Internal cascade; no
jumper wire required

User installed jumper between
output and gate

For more information, consult the Counter/Timer Programming Guide (ctmguide.pdf) section on Using Task-Oriented Functions.