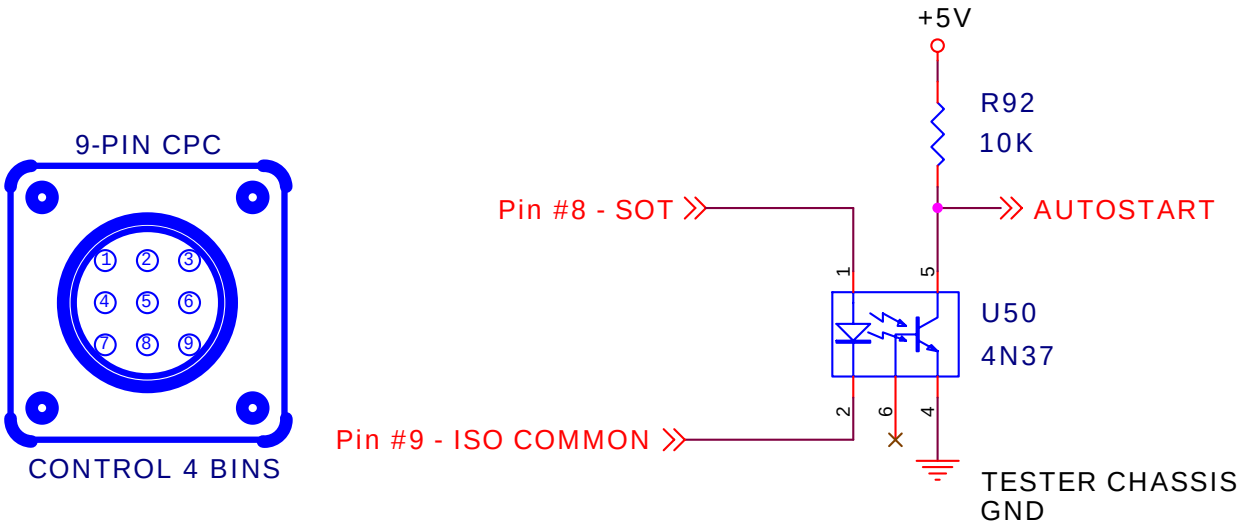
ITC55x00 UIS Tester Series
Application Note 3.0
Understanding the Handler Interface

The Handler interface on the ITC55x00 testers is designed to be adaptable to many different configurations and it is galvanically isolated using opto-isolators. The binning output signals and the End-of-Test, or EOT, can be either positive or negative polarity in the voltage range from TTL to as high as +12V. Additionally, these output signals can be set for either Level or Pulse. An isolated +5V DC-DC converter can be selected from the LCD touchscreen on the tester to power the interface. This DC-DC converter can be easily replaced with a different voltage unit, if needed.

The circuitry of the interface is simple and straightforward. To begin with, the Start-of-Test, SOT input to the ITC55x00 tester is basically a LED input of an opto-isolator to ground as shown below:



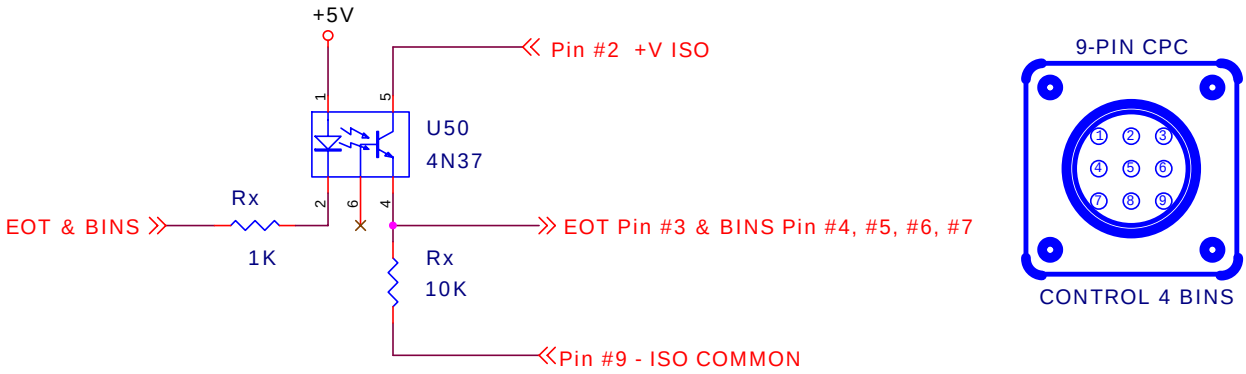
There are several important factors to consider when generating the SOT signal from the handler.

1. The SOT signal MUST be current limited in the range of 2mA to 20mA.
2. The SOT signal should be a pulse of current in the range 2mSec to 20mSec in length.
3. The tester begins testing after about 1mSec of the leading edge of the SOT signal.
4. The tester must see the SOT signal go low (no current) for at least 2mSec before another test can be performed. In other words, constant SOT current will NOT cause the tester to run tests continuously.

The binning and End-of-Test, EOT, outputs are programmable. The output signals can be either a 50mSec pulse or a positive or negative logic level. The Test Modes Menu 2 selects these options. Also the binning type is also programmable as explained below:

1. When using the 9-pin “CONTROL 4 BINS” rear panel handler connector, select either 5510L(level output) or 5510P(pulse output).
2. When using the 19-pin “CONTROL 15 BINS” rear panel handler connector, select either 55X00L(level output) or 55X00P(pulse output).

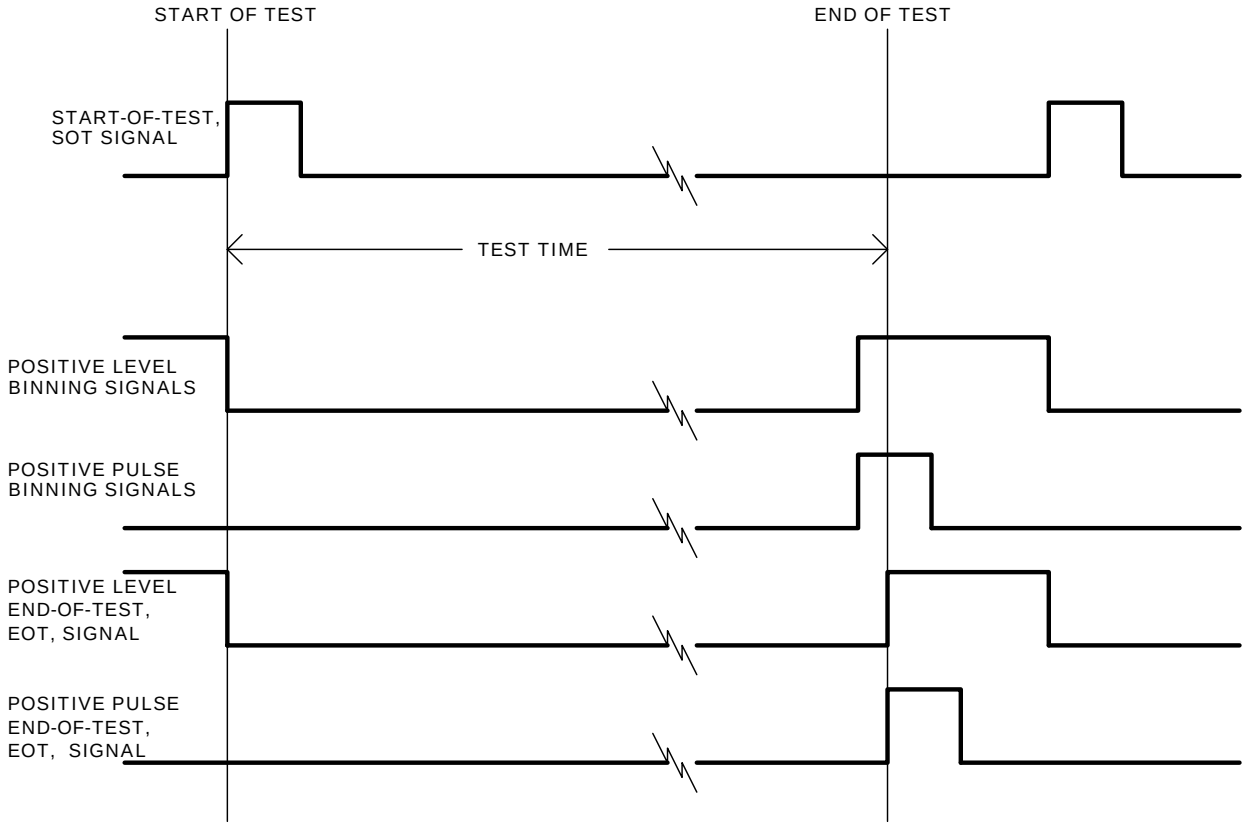
The output circuitry for the bins and EOT is the same as shown below:



There are several important factors to consider when interfacing the EOT and binning signals to the handler.

1. The output polarity is the same for the EOT and bins.
2. The output current is limited to +2mA of current while sourcing current and a 10K pull-down resistor for sinking current to ISO Common.
3. The +V ISO supply is limited to a maximum of +15V. This +V ISO supply can be supplied by the handler, by an external power supply, or by the ITC55x00 tester. The ITC tester is shipped with an isolated +5V power supply that is turned ON and OFF in the Test Modes Menu 2 LCD touchscreen.
4. Note the handler signals are isolated from the chassis ground of the tester.

The timing of the handler signals is shown below:



There are several important factors to consider concerning the timing handler signals.

1. At SOT, with LEVEL-type EOT/bin signals, the levels are reset to a logical LOW.
2. The tester begins testing within 2mSec of the SOT signal going active.
3. When testing is finished, the bins signals, whether PULSE or LEVEL, will be set 1mSec before the EOT signal goes active.
4. If PULSE-type handler signals are selected, the tester will not start a new test until after the 50mSec EOT signal has timed out.