

## Introduction

This document contains information on the 4500-CILK-\* interlock cable. This cable is used to connect the 451x-QIVC card interlock circuits to a test fixture switch to inhibit source outputs when the test fixture lid is open.

## Connection precautions

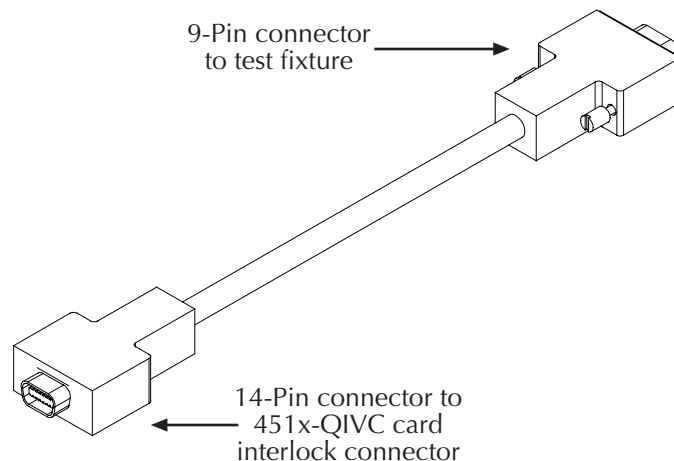
**WARNING** The interlock is required for safe operation. The test fixtures must ensure that the interlock circuit is disabled (source outputs inhibited) so that an operator is not exposed to any harmful conditions.

## Description

### Cable configuration

The overall configuration of the 4500-CILK-\* interlock cable is shown in Figure 1. The cable includes a 14-pin male connector that mates with the 451x-QIVC card interlock connector on one end, and a 9-pin D-sub female connector on the other end for connections to a test fixture.

*Figure 1*  
**4500-CILK-\* cable configuration**



## Cable lengths

As summarized in Table 1, the 4500-CILK-\* interlock cable is available in four different lengths. The 2m length cable (4500-CILK-2) is supplied with the 451x-QIVC card.

*Table 1*  
**4500-CILK-\* cable lengths**

Model	Length (meters)
4500-CILK-0.5	0.5
4500-CILK-1	1
4500-CILK-2*	2
4500-CILK-3	3

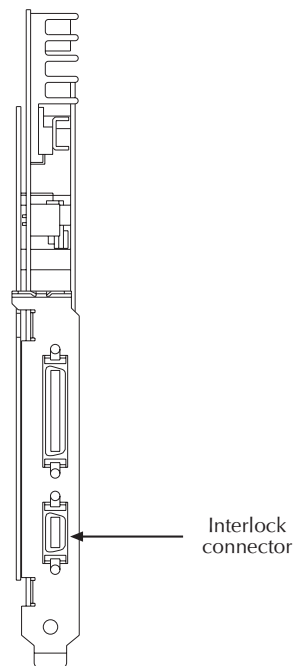
\* Cable supplied with 451x-QIVC card

## Connections

### Card connections

To connect the interlock cable, connect the 14-pin male cable connector to the interlock connector on the 451x-QIVC card (Figure 2).

*Figure 2*  
**451x-QIVC card interlock connector**



## Interlock connections

### Connector terminal designations

Table 2 lists card connector terminal designations for the 14-pin and 9-pin connectors.

*Table 2*  
*Interlock cable terminal designations*

14-Pin cable connector	9-Pin cable connector	Signal description
1	1	+5VD (+5V digital supply)
2	6	DIAG – RX (not implemented)
3	2	DIAG – TX (not implemented)
4	7	Interlock Channel A Enable
5	3	Interlock Channel B Enable
6	8	Interlock Channel C Enable
7	4	Interlock Channel D Enable
8	9	D – GND (digital ground)
9 – 14	N.C.	---

### Typical interlock connections

Figure 3 shows typical connections between the 451x-QIVC card interlock connector and an interlock switch in a test fixture using a 4500-CILK-\* cable. In this instance, a single interlock switch is connected to the enable lines of all four channels. Other applications that require the output of each channel to be individually controlled will require a separate switch for each channel. In either case, outputs will be enabled (turned on) when the switch is closed. When the switch is open, output(s) will be turned off and cannot be turned on.

**CAUTION** Do not short the +5V signal to ground. Doing so will result in system damage.

**The interlock is not designed to protect the DUT during an interlock event. In the interest of protecting the operator, the output relays of the interlock circuit close immediately and before the output is driven to a low voltage potential. As a result, the DUT will see the energy in the DUT cable. This energy may display as a significant negative (opposite polarity of the source current) voltage at the DUT. Activating the interlock may damage the DUT.**

*NOTE* The +5V line on the interlock connector (pin 1) is internally protected with a 0.75A fuse. Inadvertently shorting this line to chassis ground will trip the fuse, disabling the interlock control circuits, and outputs cannot be turned on. The fuse will automatically reset a few minutes after the overload condition is removed.

Figure 3  
Interlock connections

