AccessPlus Pin Card Tests

This chapter describes AccessPlus Pin Card tests for i3070 Mux systems.

The AccessPlus Pin Card tests are numbered in the 6000s.

Test Requirements

Table 7-1 shows which tests require a Pin Verification Fixture (PVF), C&D connector, or enabling of the Manual Intervention option.

Table 7-1 Test requirements

Tests	Requires PVF	Requires C&D Connector	Requires PVF and C&D Connector	Requires PVF not Installed	Requires Manual Intervention[1]
6024-28					
6050-55				X	
6060-65	X				
6070-75				X	
6100				X	
6101	X				
6110	X				
6113		X			X
6114			X		X
6115-20		X			X
6121			X		X
6125			X		X
6126		X			X
6127			X		X
6150-75					

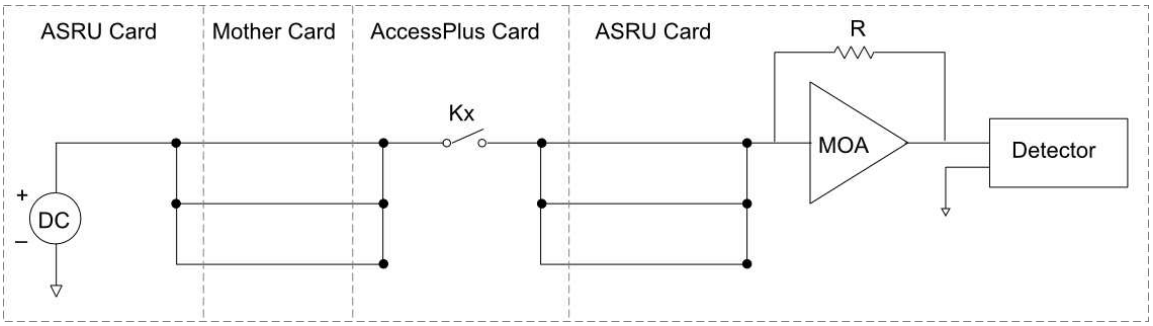
1. Tests requiring manual intervention are not executed in Confirmation.

Test Circuit

Simplified Circuit Diagram

The simplified circuit diagram shown in Figure 7-1 represents a sample case, except for the backplane ground relays, of the open and closed relay tests. When possible, multiple parallel paths are used and series relays are reduced, with the exception of the relay under test, to isolate the relay under test if it should fail. Also, there may be more than one parallel path between the source and the detector.

Figure 7-1 Sample open and closed relay test configuration

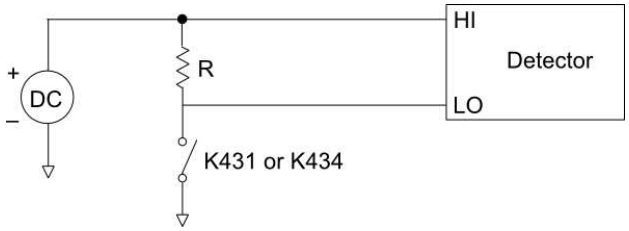


In the open and closed relay tests, a resistance measurement is made and compared to an expected result to determine if the relay under test is bad. All relays are closed except for the relay under test during the open relay test. In the closed relay test all relays in the path of the relay under test are closed.

Backplane Ground Relays

The resistance of relays K434 and K431 cannot be directly measured since one terminal of each relay is connected directly to the backplane ground, which causes the input to the MOA (detector) to short. Therefore, the setup in Figure 7-2 is used to determine the state of these relays. The source used to test these relays is programmed to output 1 VDC, which is interpreted as 0 VDC by the detector when the relay being tested is open, and 1 VDC when the relay being tested is closed.

Figure 7-2 Backplane ground open and closed relay test configuration



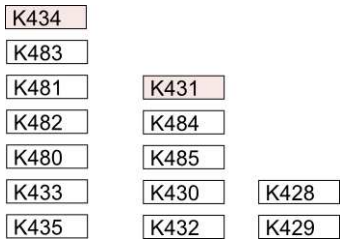
Bus 1 Through Bus 3

Test 6024

Backplane Disconnect Relays

In this test the backplane ground disconnect relays, K434 and K431, are tested.

Figure 7-3 T6024 relays tested (shaded relays only)



Test 6025

X-Bus Disconnect Relays

In this test the X-bus disconnect relays are tested.

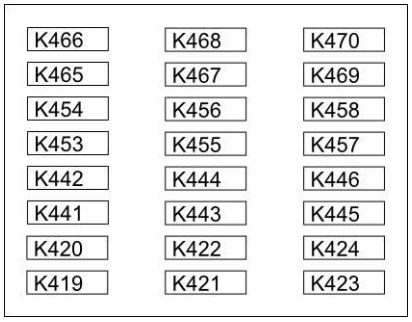
Figure 7-4 T6025 relays tested

Tests 6026-6028

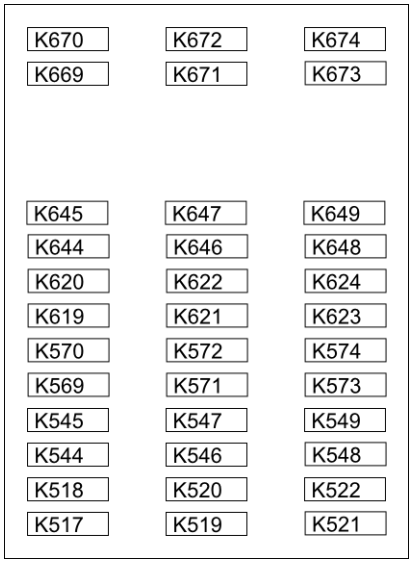
Bus to Channel Interface Relays

In these tests the relays that connect buses 1 through 3, respectively, to the single and quad fixture interface pin channels are tested. These tests will isolate the actual failing relay. No Pin Verificatioin Fixture fixture is required.

Figure 7-5 T6026-6028 relays tested



Subtests 0 to 15



Subtests 16 to 35

Quad Fixture Interface Pin

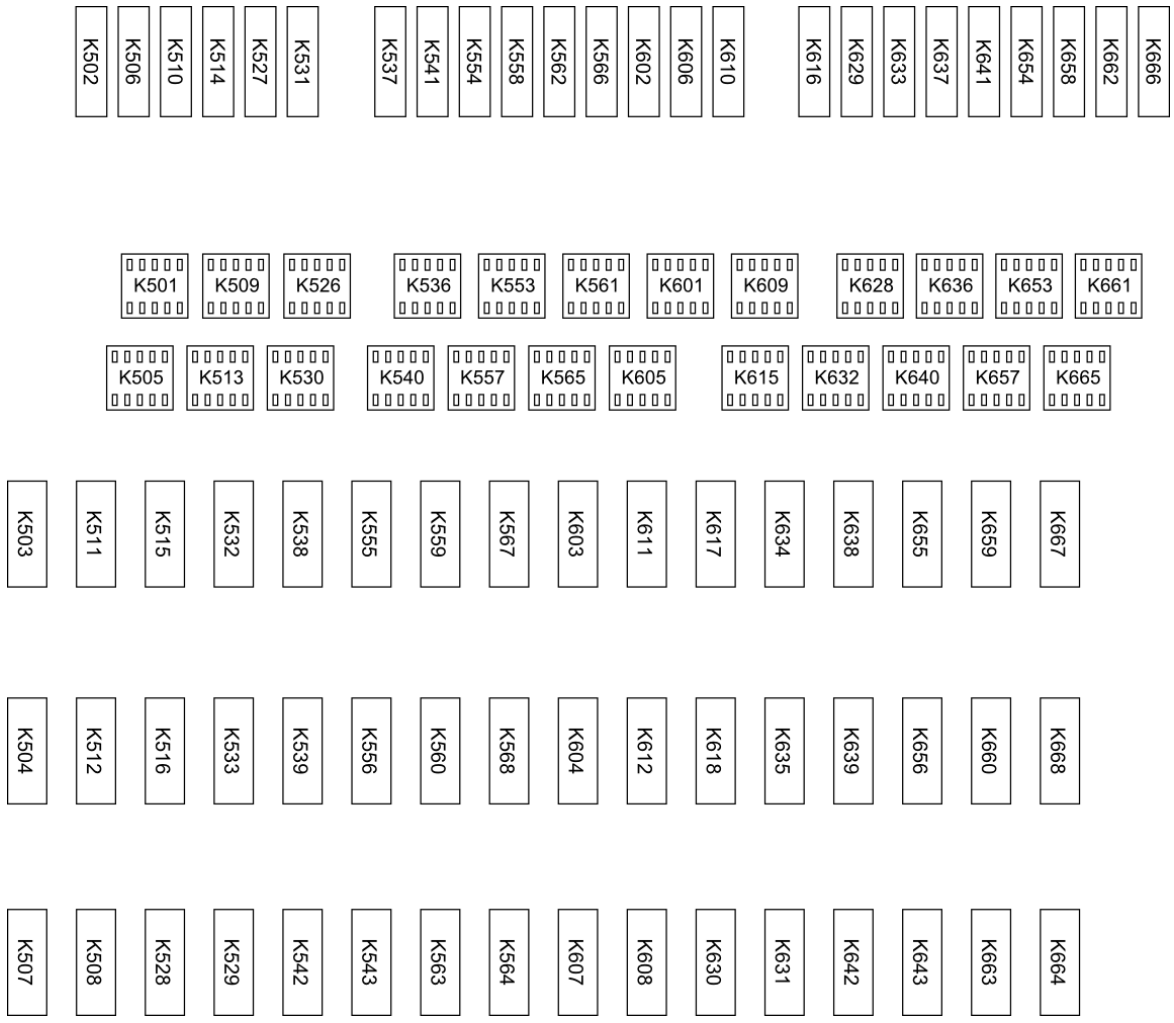
Tests 6050-6055

Quad Fixture Interface MUX Relays

Requires: Pin Verification Fixture

In these tests the relays comprising the 4:1 multiplex structure of the quad fixture interface pin channels 1 through 6, respectively, are tested. The three relays comprising the cable disconnect at the rear ports are left untested. The high and low disconnect relays at the fixture interface pins and the GP relay are tested as a group—that is, if any one of these relays should fail three relay numbers are listed as relay failure possibilities. This test is executed only when a Pin Verifrication Fixture is not present.

Figure 7-6 T6050-6055 relays tested



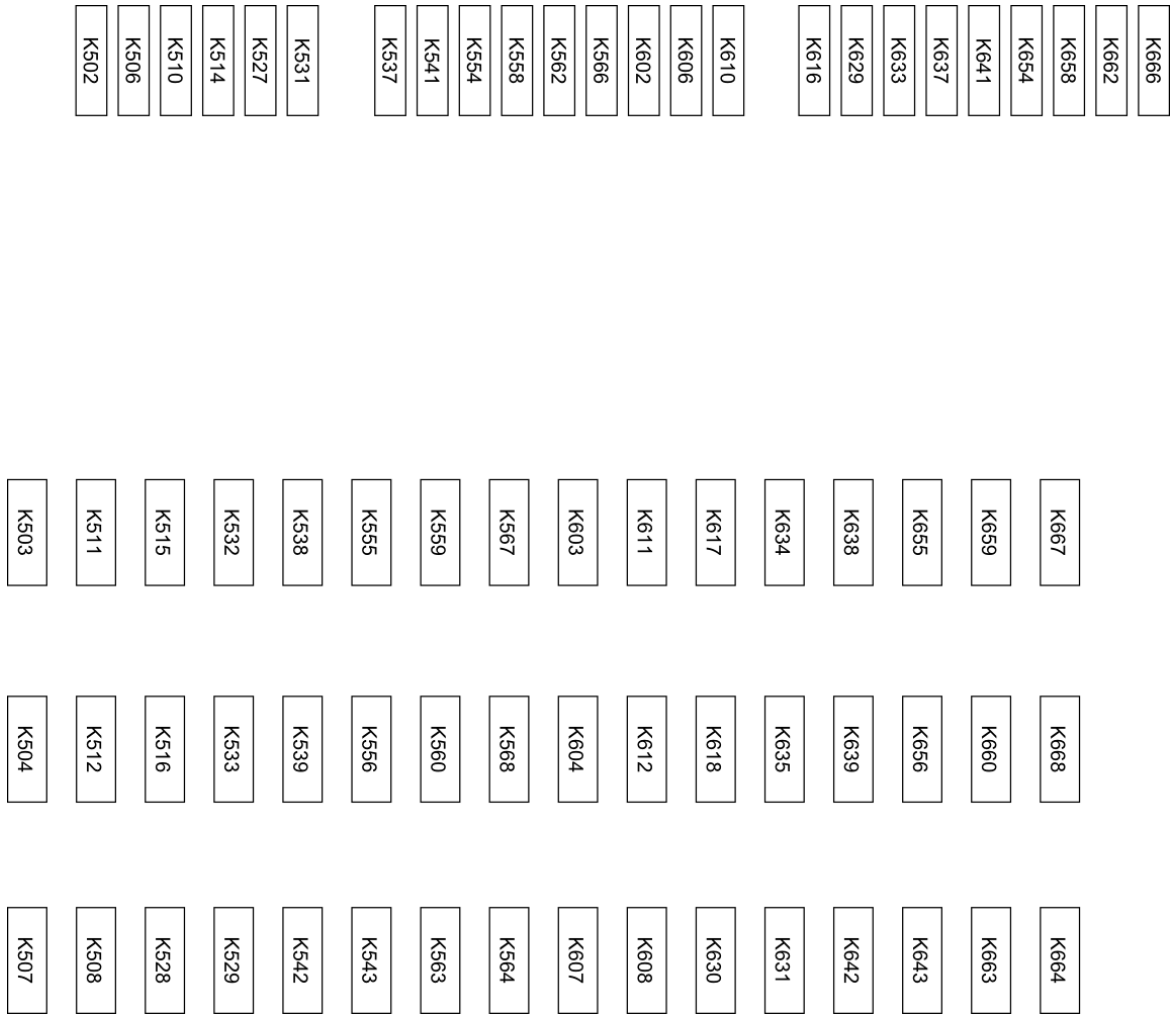
Tests 6060-6065

Quad Fixture Interface MUX Relays

Requires: Pin Verification Fixture

In these tests the relays comprising the 4:1 multiplex structure of the quad fixture interface pin channels 1 through 6, respectively, are tested. The three relays comprising the cable disconnect at the rear ports are left untested. The GP relays are shorted out by the fixture.

Figure 7-7 T6060-6065 relays tested

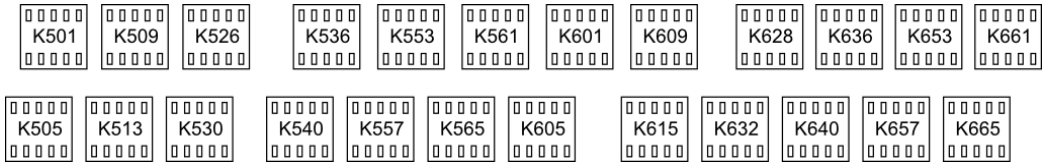


Tests 6070-6075

GP Relays

In these tests the GP relays comprising the 4:1 multiplex structure of quad fixture interface pin channels 1 through 6, respectively, are tested. This test is executed only when a C&D fixture is not present but is executed after the Pin Verification Fixture is released (the Pin Verification Fixture shorts out the GP relays).

Figure 7-8 T6070-6075 relays tested



Single Fixture Interface Pins

Test 6100

Shield and Lo Disconnect Relays

In this test the shield and low disconnect relays for the four single fixture interface pin channels are tested. This test is only executed when a Pin Verification Fixture is not present.

Figure 7-9 T6100 relays tested

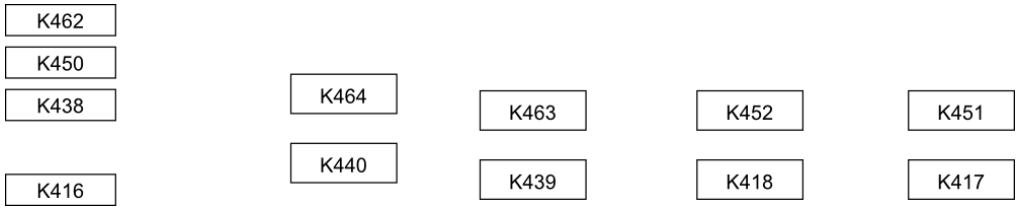
Test 6101

Fixture Interface Channel Relays

Requires: Pin Verification Fixture

In this test the disconnect relays for the four single fixture interface channels are tested.

Figure 7-10 T6101 relays tested



Shield Fixture Interface Pin

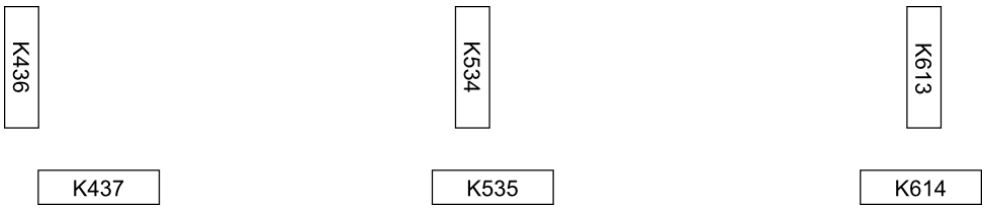
Test 6110

Shield Fixture Interface Pins

Requires: Pin Verification Fixture

In this test the shield fixture interface pin disconnect relays are tested.

Figure 7-11 T6110 relays tested



Manual Intervention

Test 6113

Install AccessPlus Card Pin C&D Rear Connector

This test will query the operator to install the AccessPlus Card Pin C&D rear connector if the twinax cable set is present and the Pin Verification Fixture is not installed.

Test 6114

Install AccessPlus Card C&D Rear Connector

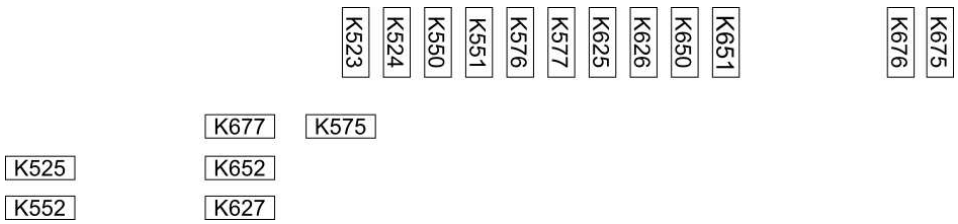
This test will query the operator to install the AccessPlus Card C&D rear connector if either the coax cable set, twinax cable set, or both are present and the Pin Verification Fixture is installed.

Test 6115

Quad Channel Port Relays

In this test, the rear single ports of the quad fixture interface channels are tested. The AccessPlus Card's C&D rear connector is required. Also, make sure you enable manual intervention and that the individual 3-pin port connectors are adequately seated at both ends of the cable.

Figure 7-12 T6115 relays tested



Test 6116

General-Purpose Port Jumpers

This test verifies whether the jumpers for the general-purpose ports are present. The jumpers are only needed if a twinaxial cable set is not connected to the ports. See the *AccessPlus Pin Card Installation* guide.

Test 6120

Single Channel Port Relays

In this test the single rear ports are tested. The AccessPlus Card's C&D rear connector is required. Also, make sure you enable manual intervention and that the individual 3-pin port connectors are adequately seated at both ends of the cable.

Test 6121

High-Frequency Port Jumpers

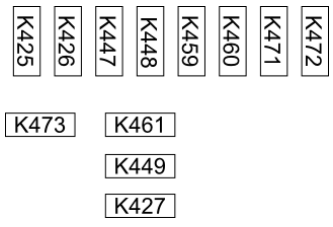
This test verifies whether the jumpers for the high-frequency ports are present. The jumpers are only needed if a coaxial cable set is not connected to the ports. See the *AccessPlus Pin Card Installation* guide.

Test 6125

Coaxial Channel Port Relays

In this test the coaxial channels are tested. Both the Pin Verification Fixture and the AccessPlus Card C&D rear connector are required. Also, make sure you enable manual intervention and that the individual 3-pin port connectors are adequately seated at both ends of the cable.

Figure 7-13 T6125 relays tested



Test 6126

Remove AccessPlus Card C&D Rear Connector

This test will query the operator to remove the AccessPlus Card C&D rear connector if the twinax cable set is present and the Pin Verification Fixture is not installed.

Test 6127

Remove AccessPlus Card C&D Rear Connector

This test will query the operator to remove the AccessPlus Card C&D rear connector if either the coax cable set, twinax cable set, or both are pressent and thePin Verification Fixture is installed.

Relay Driver

Test 6175

Relay Driver Test

The seven relay driver chips, U1001-U1004 and U1101-U1103, will be tested by writing and then reading a sliding one's pattern across the 16-bit data field for each chip.