4007 / 4010 / 4100 / 4190 -6301, -6302, -6303, -6304 4120 Duplex Fiber Media Modules installation instructions

Introduction

This document describes the installation procedure for the 4007-6301, 4010-6301, 4100-6301, 4190-6301, 4007-6302, 4010-6302, 4100-6302, 4190-6302, 4007-6303, 4010-6303, 4100-6303, 4190-6303, 4007-6304, 4010-6304, 4100-6304 and 4190-6304 4120 Duplex Fiber Media Modules for the following network interface cards (NICs):

- 4100-6078 NIC (4100ES)
- 4010-9922 NIC (4010ES)
- 4007-9810 NIC (4007ES)
- 4190-6061/9829 NIC (TrueSite Workstation)

Related documentation

- 579-182 - 4100/4120-6014, 4120-6078 NICs and 4100/4120-Series Media Modules Installation Instructions
- 579-834 - TrueSite Workstation Installation & Checkout Instructions
- 579-956 - 4010ES and 4007ES Network Interface and Media Cards Installation Instructions
- 900-143 - Fiber Optic System Tutorial and Installation Recommendations

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Rev. A

Cautions, Warnings, and Regulatory Information

READ AND SAVE THESE INSTRUCTIONS. Follow the instructions in this installation manual. These instructions must be followed to avoid damage to this product and associated equipment. Product operation and reliability depend upon proper installation



DO NOT INSTALL ANY SIMPLEX® PRODUCT THAT APPEARS DAMAGED. Upon unpacking your Simplex product, inspect the contents of the carton for shipping damage. If damage is apparent, immediately file a claim with the carrier and notify an authorized Simplex product supplier.



ELECTRICAL HAZARD. Disconnect electrical field power when making any internal adjustments or repairs. All repairs should be performed by a representative or an authorized agent of your local Simplex product supplier.



STATIC HAZARD. Static electricity can damage components. Handle as follows:

- Ground yourself before opening or installing components.
- Prior to installation, keep components wrapped in anti-static material at all times.



EYE SAFETY HAZARD. Under certain fiber-optic application conditions, the optical output of this device may exceed eye safety limits. Do not use magnification (such as a microscope or other focusing equipment) when viewing the output of this device.

FCC RULES AND REGULATIONS – PART 15. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

SYSTEM REACCEPTANCE TEST AFTER SOFTWARE CHANGES. To ensure proper system operation, this product must be tested in accordance with NFPA72 after any programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

4120 Duplex Fiber Media Module

Overview

Use the 4120 Duplex Fiber Media Modules on the 4120 network when a fiber-optic cable is required to link nodes. Depending on the card you use, the duplex fiber transceiver allows you to use:

- single-mode 9/125µm (25km reach) SC connector fiber-optic cable for both directions or
- multi-mode 50/125µm or 62.5/125µm (5km reach) SC connector fiber-optic cable for both directions.

Each version has a transceiver of opposite wavelengths (Right: Tx 1310/Rx 1550nm) and (Left: Tx 1550/Rx 1310nm), that allows network links over a single fiber-optic cable. There are four versions of the 4120 Duplex Fiber Media Module:

- 4007-6301, 4010-6301, 4100-6301, 4190-6301 - 4120 SM-L Duplex Fiber Media Card: (566-1198)
- 4007-6302, 4010-6302, 4100-6302, 4190-6302 - 4120 SM-R Duplex Fiber Media Card: (566-1197)
- 4007-6303, 4010-6303, 4100-6303, 4190-6303 - 4120 MM-L Duplex Fiber Media Card: (566-1200)
- 4007-6304, 4010-6304, 4100-6304, 4190-6304 - 4120 MM-R Duplex Fiber Media Card: (566-1199)

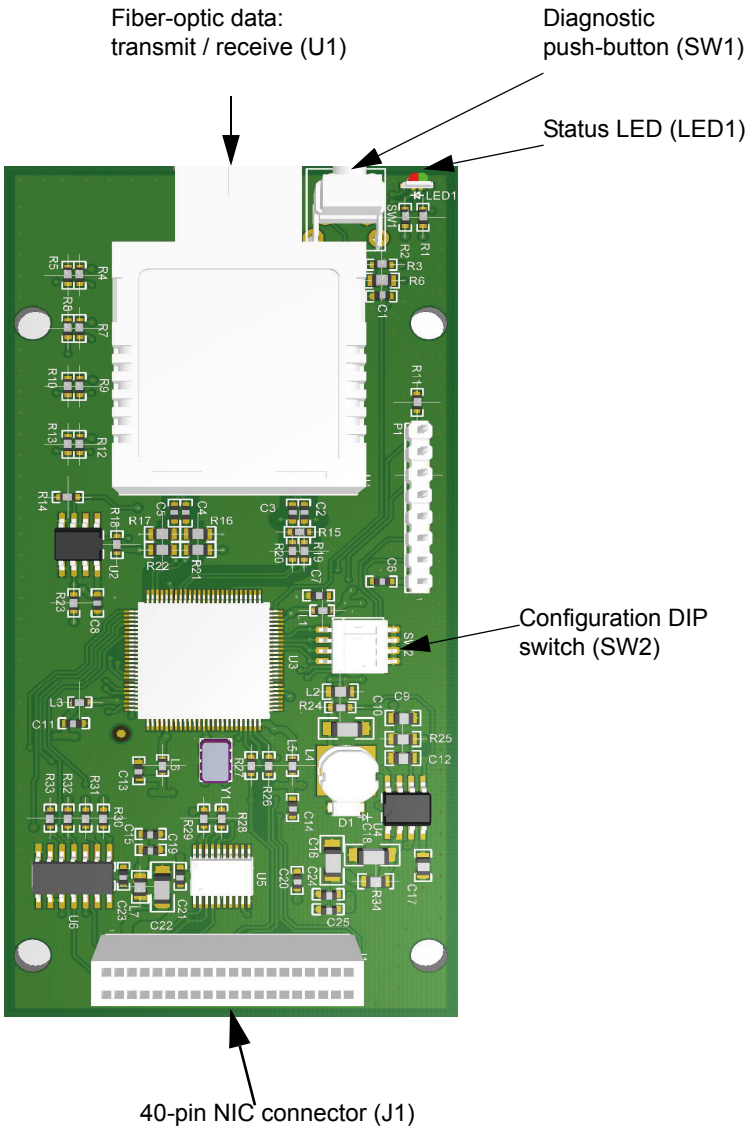


Figure 1. 566-1197, 566-1198, 566-1199, or 566-1200 Duplex Fiber Media Cards

4120 Duplex Fiber Media Module

Specifications Electrical and environmental specifications for the 4120 Duplex Fiber Media Module are as follows:

Table 1: Electrical, environmental, and fiber-optic specifications

Electrical specifications			
Duplex Fiber Media Card 566-1197, 566-1198, 566-1199, 566-1200	5 VDC at 220 mA max or 24VDC at 55mA max.		
Environmental specifications			
Operating Temperature	32° to 120° F (0° to 49° C)		
Humidity	10% to 93% relative humidity at 90° F (32° C)		
Duplex fiber-optic specifications			
Fiber type	Multi-mode	Right: 566-1199, Left: 566-1200	
	Single-mode	Right: 566-1197, Left: 566-1198	
Interface	SC connector		
Wavelength	Right media (SM and MM)	1310 nm transmit; 1550 nm receive	
	Left media (SM and MM)	1550 nm transmit; 1310 nm receive	
Allowed losses / distances	Multi-mode	50/125 um fiber	18dB / 5km
		62.5/125 um fiber	18dB / 5km
	Single-mode	9/125 um fiber	22dB / 25km
If you encounter communication problems, ensure fiber connections comply with ANSI/TIA/EIA 568-C.3 or later industry standards.			

Initial acceptance test requirements for fiber-optic installations are as follows:

- An initial acceptance test of each fiber link shall be performed as stated in NFPA 72. A fiber link is defined as all fiber segments, including patch cords, which create a fiber path from one fiber media board to another. The fiber lines shall be tested using an OTDR. The OTDR will measure the attenuation of the fiber as well as indicate the presence and location of connectors and any defects in the link. The fiber infrastructure shall be accepted for use only after it has been determined it meets or exceeds industry standard ANSI TIA/EIA 568-C.3 or later (Electronic Industries Alliance/ Telecommunications Industry Association, Optical Fiber Cabling Components Standard).
- OTDR Launch and Receive cables of appropriate length shall be used. If a single cable is used, each link shall be tested in both directions.
- Multi-mode fiber links shall be measured at 850 nm and 1300 nm.
- Single-mode fiber links shall be measured at 1310 nm and 1550 nm.

Fiber media diagnostics

Fiber media diagnostics

SW1 displays the diagnostics on the diagnostic LEDs. Press to display the type and thresholds reached. Hold for 3 seconds to toggle between the normal and advanced diagnostics mode. Hold for 6 seconds to clear the counters.

Note: If SW2-4 is set to advanced diagnostics, and if you press and hold SW1 for 3 seconds, the card does not toggle between the diagnostic modes. The mode is set to advanced.

SW2 configures the diagnostics display and the offline test modes. Refer to document *579-1233* for more information on 4120 Duplex Fiber Media Card diagnostics. From left to right, these switches are SW2-1 to SW2-4.

Configuration switch

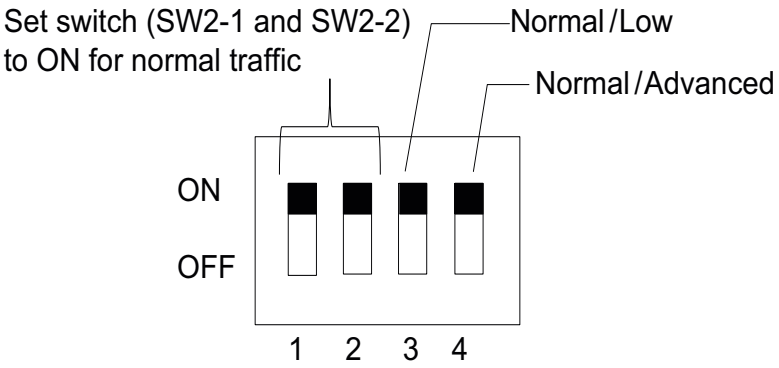


Figure 2. DIP switch SW-2

Table 2: DIP switch SW2

Position	Description	ON	OFF
1	Offline test mode	Disable	Enable
2	Fiber data loopback	Disable	Enable
3	Select normal / low thresholds to monitor diagnostic LEDs	Normal	Low
4	Select normal / advanced diagnostics	Normal	Advanced

Mounting media cards to the NIC

Media card retainer

The media card retainer is required for compliance with California Administrative Code Chapter 6, Seismic Evaluation Procedures for Hospital Buildings and is recommended for all installations. Do not discard the media card retainer.

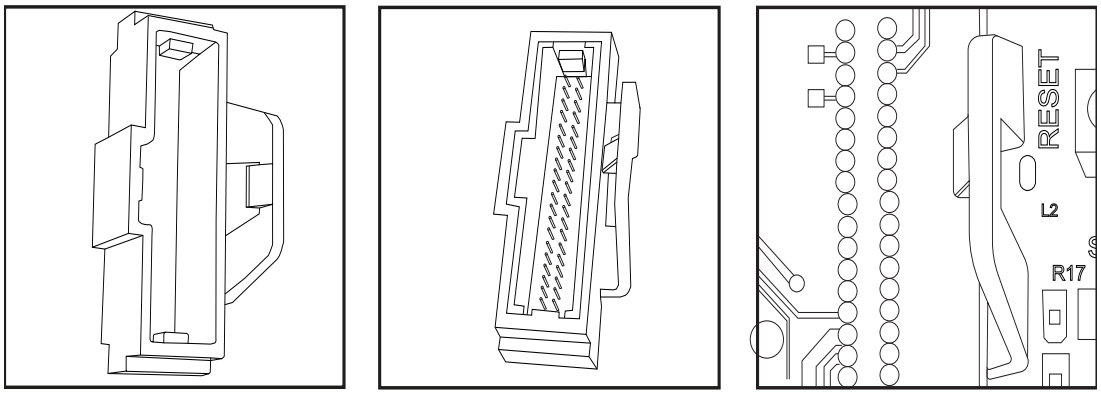


Figure 3. Media card retainer

Note: If your card does not have a retainer installed, or to order replacements for a broken retainer, use part number 650-1732. Two retainers per card are required.

Mounting the media board - 4010ES, 4007ES

Connect J1 on the fiber media cards to P8 (the left port) on the NIC. Ensure the card clicks into the media card retainer. To connect a second media card to the same NIC, connect it as described previously, but use P5 (the right port) on the NIC.

The 4007-6301, 4010-6301,4100-6301,4190-6301 and 4007-6303, 4010-6303,4100-6303,4190-6303 Duplex Fiber Media cards are left cards. Insert the cards in the corresponding network card left port (P8).

The 4007-6302, 4010-6302, 4100-6302, 4190-6302 and 4007-6304, 4010-6304, 4100-6304, 4190-6304 Duplex Fiber Media cards are right cards. Insert the cards in the corresponding network card right port (P5).

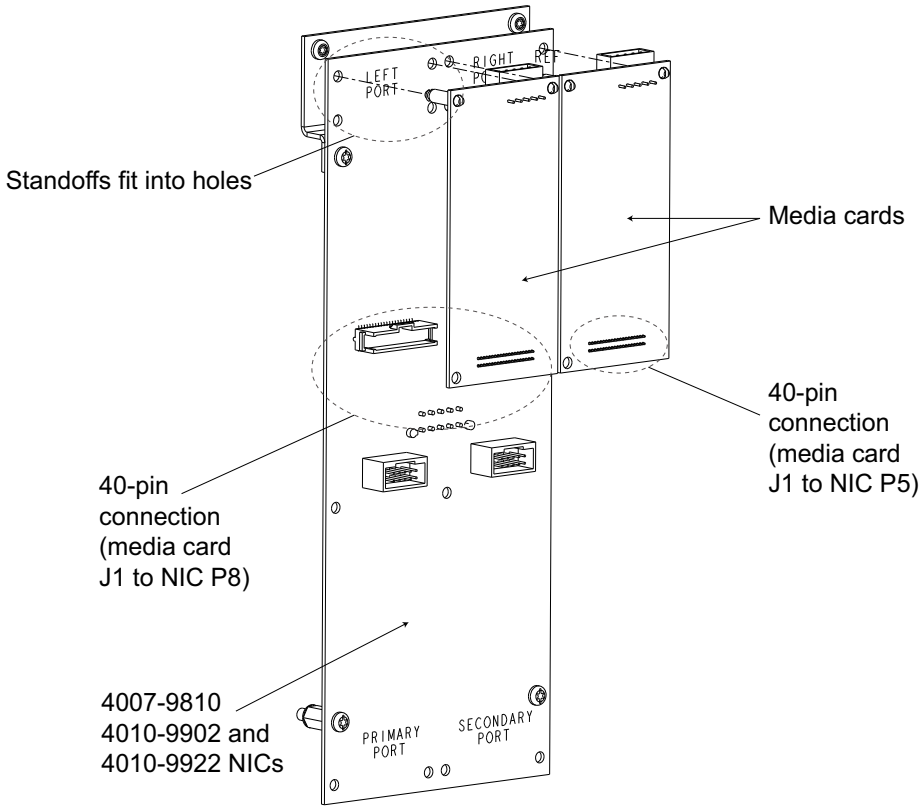


Figure 4. Mounting the media cards (4010ES, 4007ES)

Mounting media cards to the NIC

Mounting the media board - 4100ES

Connect J1 on the modem or fiber media cards to P5 (the left port) on the NIC. Ensure the card clicks into the media card retainer.

To connect a second media card to the same NIC, connect it as described above, but use P6 (the right port) on the NIC.

The 4007-6301, 4010-6301, 4100-6301, 4190-6301 and 4007-6303, 4010-6303, 4100-6303, 4190-6303 Duplex Fiber Media cards are left cards. Insert the cards in the corresponding network card left port (P5).

The 4007-6302, 4010-6302, 4100-6302, 4190-6302 and 4007-6304, 4010-6304, 4100-6304, 4190-6304 Duplex Fiber Media cards are right cards. Insert the cards in the corresponding network card right port (P6).

Note: Any two types of media cards can be connected to the same NIC.

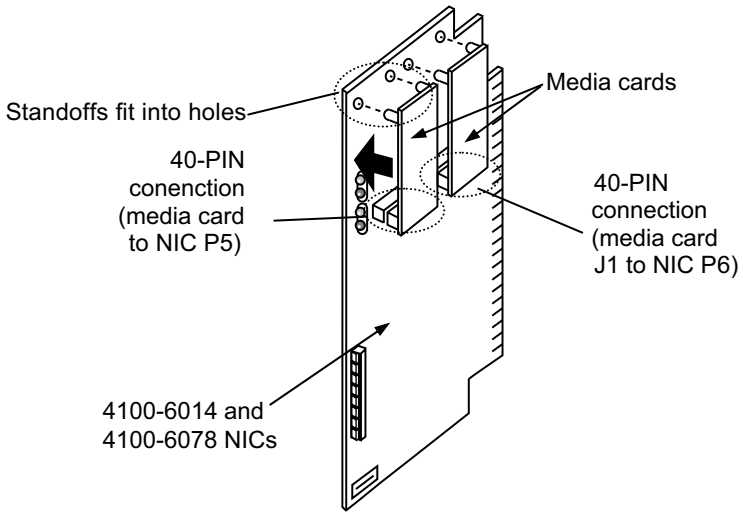


Figure 5. Mounting the media cards (4100ES)

Mounting the media cards - TSW

To mount media cards on the 4190-6061/9829 TrueSite Workstatation NICs, follow the steps below:

1. Backup the system and notify all building personnel and occupants that the TSW is offline until the system upgrade is complete.
2. Shut down the Simplex UL864 listed PC.
3. Push the switch situated at the back of the PC tower to disable the power supply to the Simplex UL864 listed PC.
4. Strip off the tower case. To do this:
   - Remove the screws in the back of the unit. Keep them in a bag or a container to avoid losing them.
   - Slide the case forward once the screws are removed.
   - Lift up the case to expose the components inside the PC tower.
   - Insert the duplex fiber media module in the 4120 Fire Network Interface Card.
5. Power the PC back up.

4007-6301, 4010-6301, 4100-6301, 4190-6301 and 4007-6303, 4010-6303, 4100-6303, 4190-6303 Duplex Fiber Media cards are left cards. Insert the cards in the corresponding network card left port (P4).

4007-6302, 4010-6302, 4100-6302, 4190-6302 and 4007-6304, 4010-6304, 4100-6304, 4190-6304 Duplex Fiber Media cards are right cards. Insert the cards in the corresponding network card right port (P3).

Wiring on the NICs

General wiring guidelines

The type of wiring used depends on the type of media cards in use in the system. All connections terminate directly to the media card in use. Ensure these guidelines are followed before wiring:

- All wires must be 18 AWG, or as the local code dictates.
- Conductors must test free of all grounds.
- All wiring must be done using copper conductors only, unless noted otherwise.
- If shielded wire is used;
  - The metallic continuity of the shield must be maintained throughout the entire cable length.
  - The entire length of the cable must have a resistance greater than 1 Megohm to earth ground.
- Underground wiring must be free of all water.
- Only system wiring can be run together in the same conduit.

NIC wiring guidelines

- Network nodes must be wired right to left port, regardless of the media type selected. Media types for each link must match (i.e., wired to wired, fiber to fiber).
- Class X (Style 7) protection is achieved by wiring the nodes in a loop fashion. A single fault (except an Earth fault) causes the network to reconfigure for degraded Class X (Style 7) Class B (Style 4) operation. A second fault (except an Earth fault) results in the network dividing into two separate networks.
- Class B (Style 4) is achieved by wiring the nodes in a linear fashion. Class B (Style 4) networks are not fault-tolerant and a single fault (except an Earth fault) will result in the network dividing into two separate networks.
- For wired links, Earth fault detection is performed on the left port only. When a network Earth fault occurs, the trouble is only reported on the node whose left port is connected to the span.
- All 18 AWG wiring used with 4010-9818 and 4007-9813 Wired Media Cards must be twisted shielded pair. When shielded cable is used, the shield must be terminated to chassis Earth on the left port only.
- It is permissible to use mixed media in a network. For example, some spans may be wired media while others are optical fiber.
- Each NIC has a jumper for selecting between network data rates of 57.6 kbps and 9.6 kbps. All cards in the network must be set for the same rate. (When physical bridging is used in the network, the data rate must be set for 9.6 kbps).
- Each NIC has a jumper for selecting between 8-bit and 9-bit network protocols. All cards in the network must be set for the same network protocol. (When physical bridging is used in the network, the protocol must be set for 8-bit).
- All network wiring except the shield is supervised.
- When wiring leaves the building, 2081-9044 overvoltage protectors are required. Install one overvoltage protector where wiring leaves the building; install another where wiring enters the next building.

Fiber-optic wiring (566-1197, 566-1198, 566-1199, or 566-1200 only)

Use the transceiver U1 on the fiber optic media card to connect 4100ES NICs across parts of a 4120 network.

- Do not mix single-mode and multi-mode cards on the same link (that is, do not connect a single-mode right card to a multi-mode left card).
- The 4007-6301, 4010-6301, 4100-6301, 4190-6301, 4007-6302, 4010-6302, 4100-6302, 4190-6302, 4007-6303, 4010-6303, 4100-6303, 4190-6303, 4007-6304, 4010-6304, 4100-6304, and 4190-6304 series duplex fiber cards are not compatible with dual fiber optic media cards. Replace existing media cards at both ends of the link. Order service kits 650-2013 (for 62.5/125um installations) or 650-2014 (for 50/125um installations).
- The 4007-6301, 4010-6301, 4100-6301, 4190-6301, 4007-6302, 4010-6302, 4100-6302, 4190-6302, 4007-6303, 4010-6303, 4100-6303, 4190-6303, 4007-6304, 4010-6304, 4100-6304, and 4190-6304 series duplex fiber cards are not compatible with all modular network cards. Refer to Appendix A for additional information. Order service kits 650-2016 (for 62.5/125um installations) or 650-2015 (for 50/125um installations) when replacing non-compatible 4010 legacy network cards.
- When you use fiber optic cable, use SC connectors with long strain relief boots.

Wiring on the NICs

When you service dual fiber optic media cards (on retrofit jobs where multimode fibers with ST connectors are already installed), order service kits 650-2013/650-2016 for 62.5/125um installations or 650- 2014/650-2015 for 50/125um installations.

Table 3: Fiber media card service kits

650-2013 Fiber Media Card Service Kit MM 62.5um 650-2016 Fiber Media Card Service Kit MM 62.5um w/566-807 4010 NIC			**650-2014 Fiber Media Card Service Kit MM 50um 650-2015 Fiber Media Card Service Kit MM 50um w/566-807 4010 NIC**		
Qty	Part #	Description	Qty	Part #	Description
1	743-2032	4120 MM-R Duplex Fiber Media Assy	1	743-2032	4120 MM-R Duplex Fiber Media Assy
1	743-2031	4120 MM-L Duplex Fiber Media Assy	1	743-2031	4120 MM-L Duplex Fiber Media Assy
2	171-100	Multi-Mode 62.5/125 ST-SC Patch Cord.46m	2	171-099	Multi-Mode 50/125 ST-SC Patch Cord.46m
2	166-747	ST- ST Coupler	2	166-747	ST- ST Coupler
2	156-087	Wire Clamp	2	156-087	Wire Clamp
2	650-2077	Insulating Sleeve	2	650-2077	Insulating Sleeve

4100ES NIC wiring

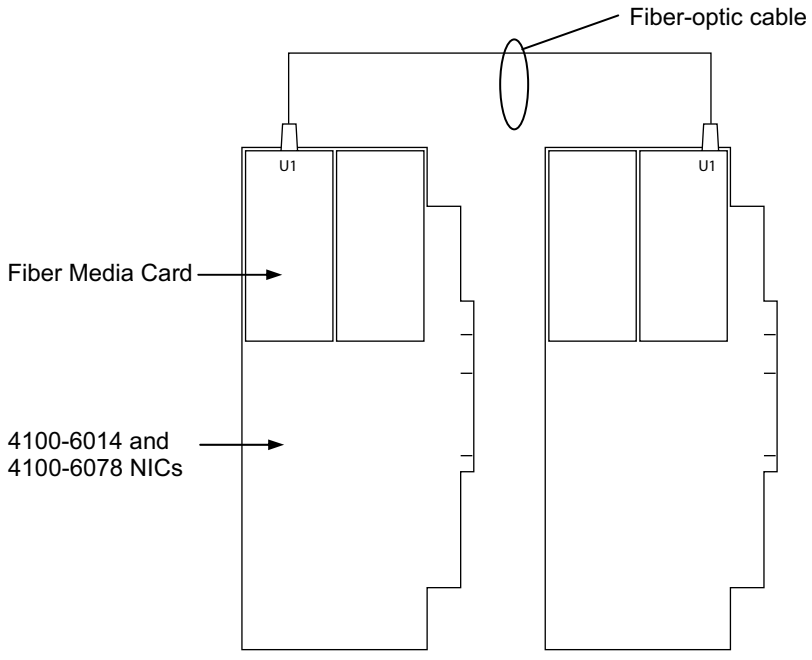


Figure 6. Fiber wiring 4100ES

Note: There are different models for right and left ports. Install the correct model in its respective port on the network card.

4007ES/4010ES NIC Wiring

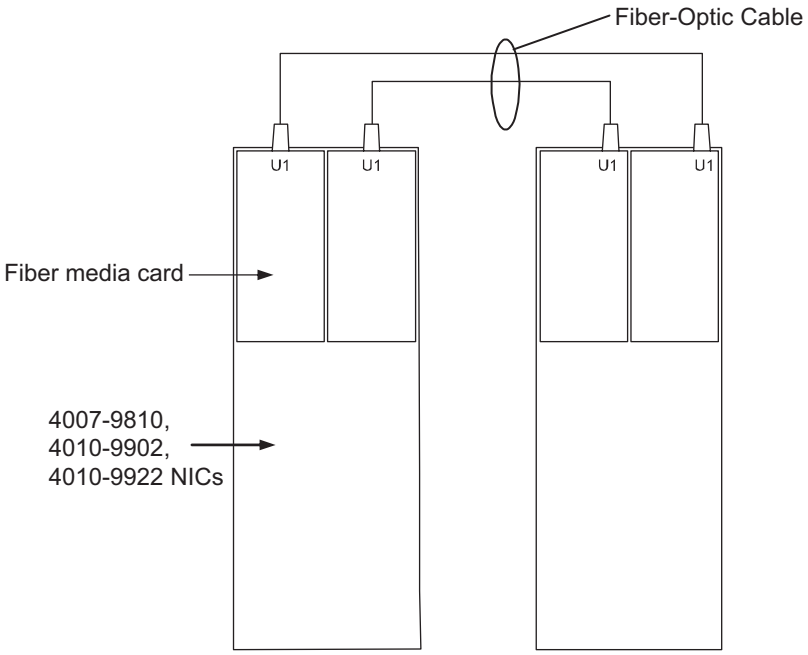


Figure 7. Fiber wiring 4010ES and 4007ES

Fiber-Optic Cable Distance Specifications (566-1197, 566-1198, 566-1199, 566-1200)

The available communications distance is determined by the properties of the specific fiber cable used, the overall link topology, and the available power budget.

Table 4: Duplex fiber-optic cable communications distance examples

	Fiber type [1]	MIFL [2]	Power margin	Distance [3]	Budget [3,5]	Coupler/Splice Loss
Multi-mode	**50/125 or 62.5/125** numerical aperture = 0.275	1.5dB/km @1300nm	3db	5km	18db	.75dB max for each mated pair connection
Single-mode	**9/125** numerical aperture = 0.2	1dB/km @1310nm	3db	25km	22db	.30dB max for each fusion splice

Notes:

1. Fiber type: Cable specifications are for:
   - 9 micron core with 125 micron cladding, single-mode graded index fiber or
   - 50 or 62.5 micron core with 125 micron cladding, multi-mode graded index fiber.
2. **MIFL:** Maximum Individual Fiber Loss. Numbers in Table 4 are for example reference only. Refer to the specific cable for exact specifications.
3. **Distance:** The maximum distance between nodes is determined by the total loss from the transmitter to the associated receiver (fiber loss, connector loss, splice loss, and safety margin), or the maximum distance listed, whichever is smaller.
4. **Wavelength:** Left media = Tx 1550/Rx1310 nm. Right media = Tx 1310/Rx1550.
5. **Link Budget:** Measure attenuation at the following wavelengths.
   - Multi-mode @ 1300nm
   - Single-mode @ 1310nm

Fiber optic Class X (Style 7) wiring

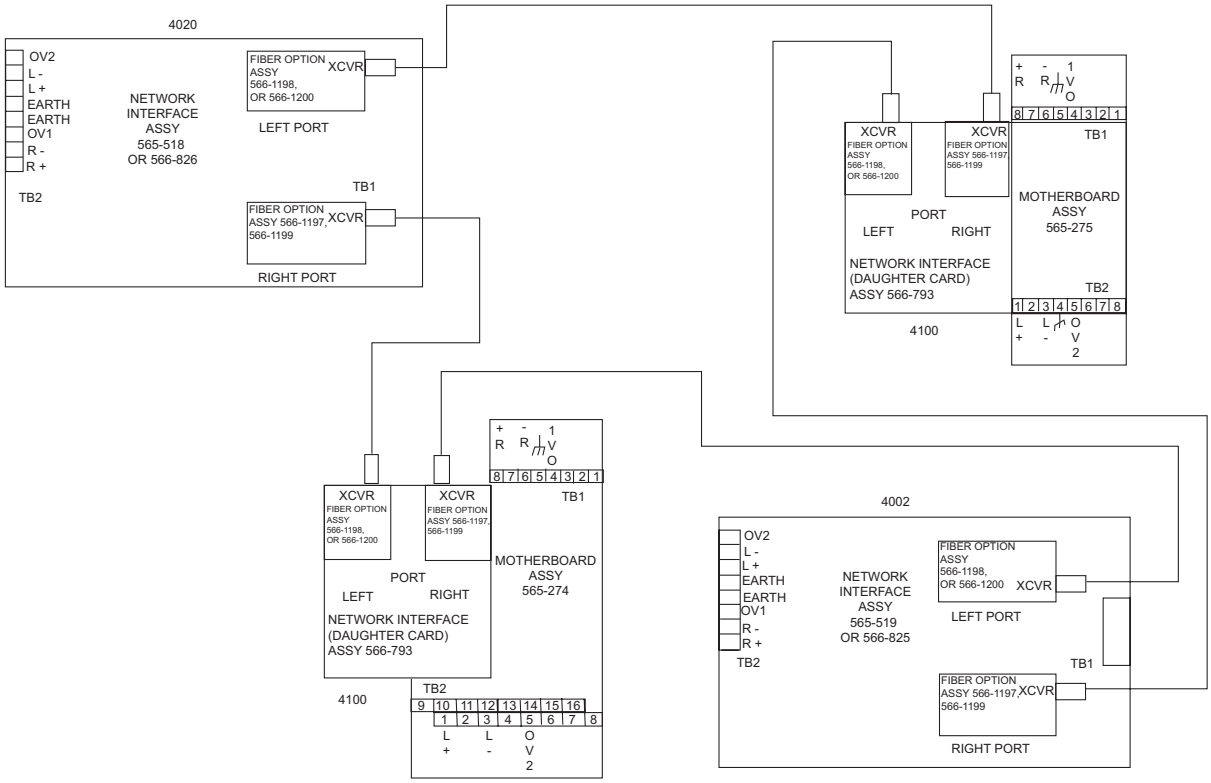


Figure 8. Fiber optic Class X (Style 7) wiring

Notes:

1. Refer to *General wiring guidelines* in this document. For specific information about fiber-optic wiring, refer to the *900-143 Fiber and System Tutorial* available on simplex-fire.com.
2. The available communications distance is determined by the properties of the specific fiber cable used, and the available power budget. The maximum distance between nodes is determined by the total loss from the transmitter to the associated receiver (fiber loss, or connector losses, splice loss, safety margin, etc) or the maximum distance listed, whichever is smaller.
3. Use cable clamps supplied with 748-531, 650-2013, 650-2014, 650-2015, and 650-2016 to secure the fiber cable.
4. Use fiber media service kits 650-2013, 650-2014, 650-2015, and 650-2016 on retrofit jobs where fibers with ST connectors are already installed.

Fiber-optic
Class X (Style 7)
wiring

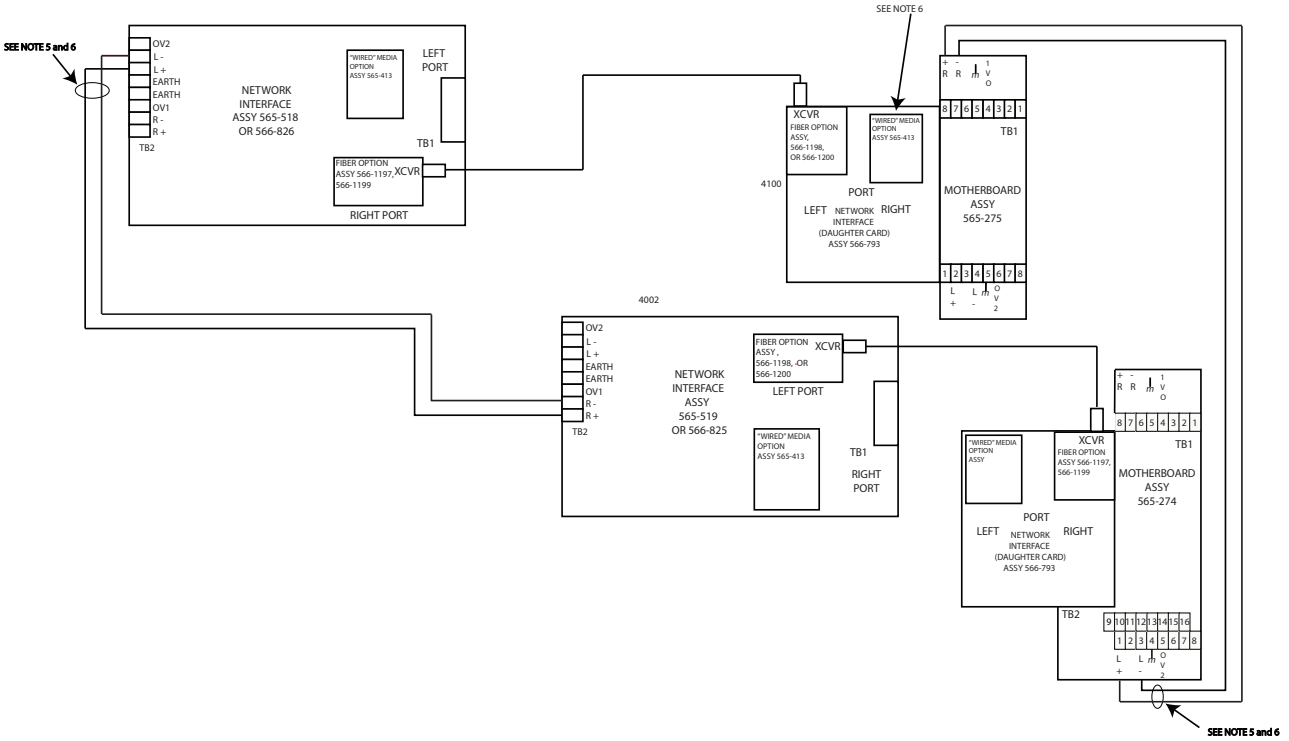


Figure 9. Wired media and fiber optic Class X (Style 7) wiring

Notes:

1. Refer to general *General wiring guidelines* in this document. For specific information about fiber-optic wiring, refer to the *900-143 Fiber and System Tutorial* available on simplex-fire.com.
2. The available communications distance is determined by the properties of the specific fiber cable used and the available power budget. The maximum distance between nodes is determined by the total loss from the transmitter to the associated receiver (fiber loss, or connector losses, splice loss, safety margin and so on) or the maximum distance listed, whichever is smaller.
3. Use cable clamps supplied with 748-531, 650-2013, 650-2014, 650-2015, and 650-2016 to secure the fiber cable.
4. When the 565-413 Interface Card is used with the 566-793 Network Card, TB1 on the 565-413 Interface Card cannot be used. Connection to the motherboard is required.
5. The shield should only be connected at one end of the line. The shield is connected to the left port.
6. Each wired media cable requires two ferrite beads, one at each end (included in the shipping group). Refer to *574-041 Installing Ferrite Beads with Wired Media Cards* for bead mounting instructions.
7. When wiring leaves the building, use 2081-9044 overvoltage protectors. Install one overvoltage protector where wiring leaves the building; install another where wiring enters the next building.
8. Use fiber media service kits 650-2013, 650-2014, 650-2015, and 650-2016 on retrofit jobs where fibers with ST connectors are already installed.

Fiber-optic Class X (Style 7) wiring

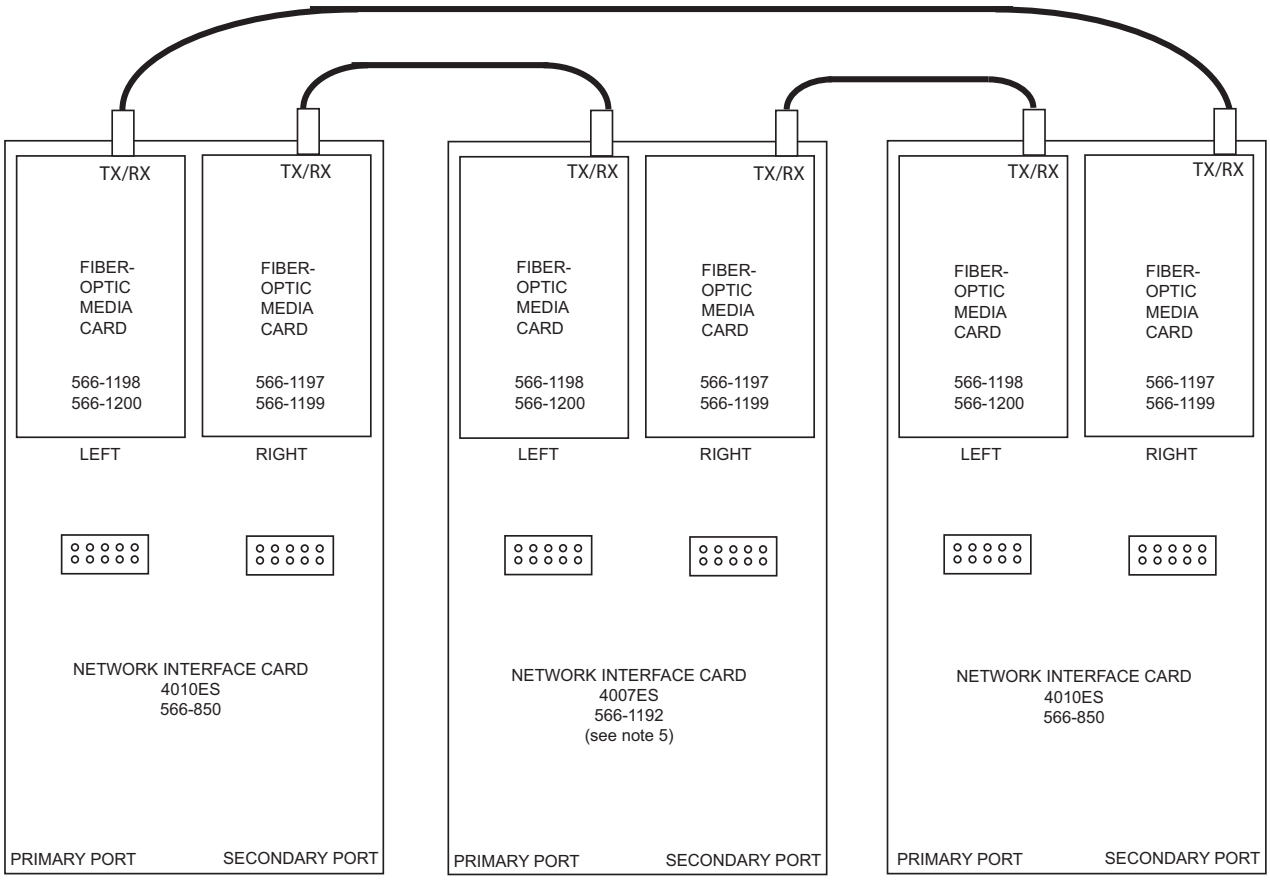


Figure 10. Duplex fiber-optic media cards, Class X (Style 7) wiring

Notes:

1. Refer to *General wiring guidelines* in this document. For specific information about fiber-optic wiring, refer to the *900-143 Fiber and System Tutorial* available on simplex-fire.com.
2. The available communications distance is determined by the properties of the specific fiber cable used and the available power budget. The maximum distance between nodes is determined by the total loss from the transmitter to the associated receiver (for example, fiber loss, connector loss, splice loss and safety margin) or the maximum distance listed, whichever is smaller.
3. When using fiber-optic cable, use SC connectors with long strain relief boots.
4. Use cable clamps supplied with 748-531, 650-2013, 650-2014, 650-2015, and 650-2016 to secure the fiber cable.
5. If at least one of the cards is a fiber-optic media card, install the 4007ES NIC with the media cards pointing downward.
6. Use fiber media service kits 650-2013, 650-2014, 650-2015, and 650-2016 on retrofit jobs where fibers with ST connectors are already installed.

Wired and fiber-optic media cards, Class X (Style 7) wiring

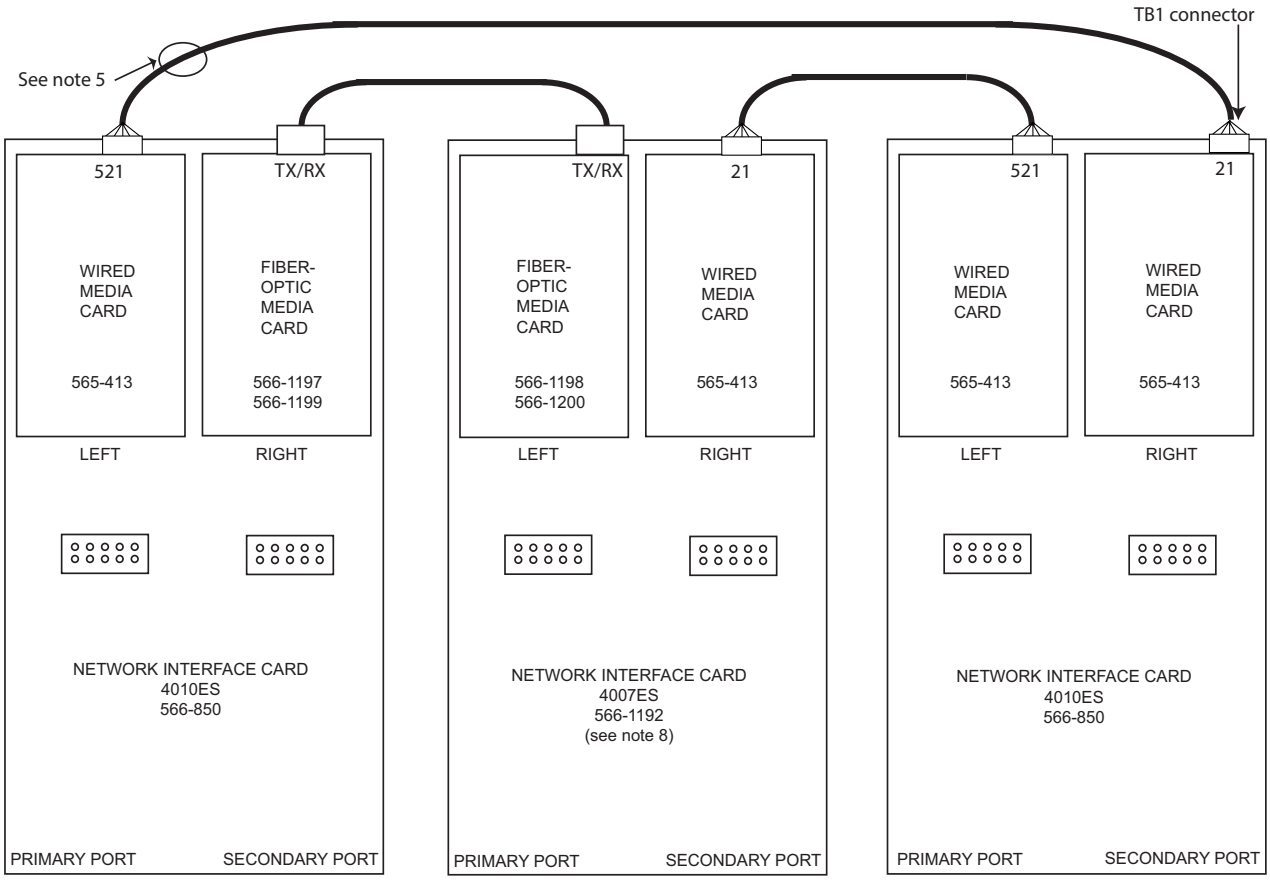


Figure 11. Wired and duplex fiber-optic media cards, Class X (Style 7) wiring

Notes:

1. Refer to *General wiring guidelines* in this document. For specific information about fiber-optic wiring, refer to the *900-143 Fiber and System Tutorial* available on simplex-fire.com.
2. The available communications distance is determined by the properties of the specific fiber cable used, and the available power budget. The maximum distance between nodes is determined by the total loss from the transmitter to the associated receiver (for example, fiber loss, connector loss, splice loss and safety margin) or the maximum distance listed, whichever is smaller.
3. When using fiber-optic cable, use SC connectors with long strain relief boots.
4. Use cable clamps supplied with 748-531, 650-2013, 650-2014, 650-2015, and 650-2016 to secure the fiber cable.
5. If a shield is used, it should only be connected to the left port.
6. Each wired media cable requires two ferrite beads, one at each end (included in the shipping group). Refer to *574-041 Installing Ferrite Beads with Wired Media Cards* for bead mounting instructions.
7. When wiring leaves the building, use 2081-9044 overvoltage protectors. Install one overvoltage protector where wiring leaves the building. Install another where wiring enters the next building.
8. Install the 4007ES NIC with the media cards pointing downward if at least one of the cards is a fiber optic media card.
9. Use fiber media service kits 650-2013, 650-2014, 650-2015, and 650-2016 on retrofit jobs where fibers with ST connectors are already installed.

Checkout procedure

Checkout procedure	The network is running normally. Status LED1 of new Fiber Media Card is GREEN.

Appendix A

Modular network card compatibility

4007-6301, 4010-6301, 4100-6301, 4190-6301, 4007-6302, 4010-6302, 4100-6302, 4190-6302, 4007-6303, 4010-6303, 4100-6303, 4190-6303, 4007-6304, 4010-6304, 4100-6304, and 4190-6304 Duplex Fiber Media Cards Modular Network Card Compatibility			
Part #	**PID**	**Description**	**Compatible**
4100/4100U/4100ES			
566-793	4100-6014/6078	4100/4100ES SMT 2D Modular Network Card	Yes
566-793	4100-9863/9864	4100/4100ES SMT TCP/IP Physical Bridge Card	Yes
566-794	4100-6101/6102 4100-6036/6037	4100/4100ES SMT Modem Physical Bridge Card (a 566-793 card with Physical Bridge firmware)	Yes
565-649	4100-6023/6024 4120-6023/6024	4100/4120 2D Modem Physical Bridge Card (a 565-516 card with Physical Bridge firmware)	No
565-516	4100-9849/9850	4100/4120 TCP/IP 2D Modular Physical Bridge Card	No
565-516	4100-6014 4120-6014/0149	4100/4120 2D Modular Network Card	No
565-409		4100 1D Modular Network Card	No
565-245		4100 Modular Network Card	No
4010ES			
566-850	4010-9922	4010ES SMT Modular Network Card	Yes
566-851	4010-9903/9904 4010-9924/9925	4010ES SMT Modem Physical Bridge Card	Yes
566-857	4010-9926/9927	4010ES TCP /IP Physical Bridge Card	Yes
4007ES			
566-1192	4007-9810	4007ES SMT Modular Network Card (Flat)	Yes
4020			
566-826	N/A	4020 SMT 2D Modular Network Card	Yes
566-827	N/A	4020 SMT Modem Physical Bridge Card	Yes
565-518	4020-6014	4020 2D Modular Network Card	Yes
565-411		4020 1D Modular Network Card	No
565-277		4020 Modular Network Card	No
565-650	4020-6023	4020 Modem Physical Bridge Card (a 565-518 card with Physical Bridge firmware)	Yes
4002			
566-825	N/A	4002 SMT 2D Modular Network Card	Yes
565-519	4002-6012	4002 2D Modular Network Card	Yes
565-432		4002 1D Modular Network Card	No
NSI			
566-829	4190-9830/9831	Network System Integrator	Yes
566-729	4190-9826/9827	Network System Integrator (Old)	Yes
IMS/TSW			
746-208	4190-6033/6061	TSW PCI Modular Network Card	Yes
655-272	4190-9821/9829	IMS/TSW PCI Modular Network Card	No
655-222		IMS/TSW PCI Modular Network Card	No
GCC/NPU			
565-695	4190-6031	GCC/NPU ISA Modular Network Card (short card)	No
565-202		GCC/NPU ISA Modular Network Card (long card)	No
4010			
566-807	4010-9817	4010 SMT Modular Network Card (Rev-C and later)	Yes
566-807		4010 SMT Modular Network Card (Rev-B and earlier)	No
565-818		4010 SMT Modular Network Card	No