Simplex

TrueAlarm® Network/Multiplex Systems

Network Options
4120 Network Interconnections
Physical Bridge Modules

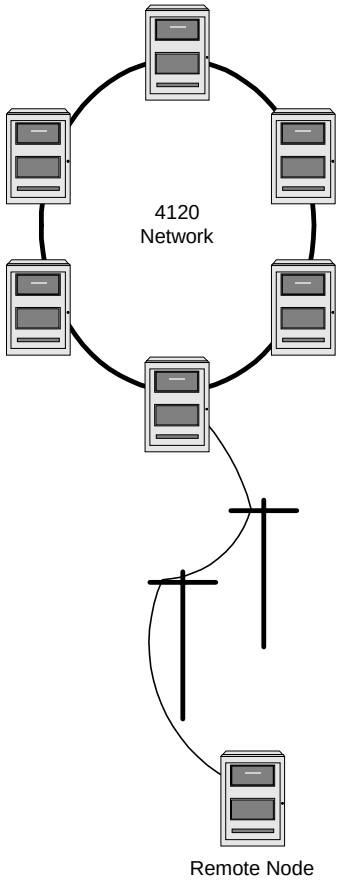
UL, ULC Listed
FM Approved

FEATURES

- **Provides 4120 Network connection flexibility using modem communications:**
  - Network topologies include ring (loop), star (hub), and combinations
  - Connections can include linking of two 4120 Network loops into one network
  - Total Network/System linking can include passing communications through up to three physical bridge links
- **Star connections via hub nodes simplify expansion and retrofit of existing Simplex 2120 Multiplex systems**
- **Available for Simplex 4120 and 4020 series Fire Alarm Control Panels:**
  - 4120 Series nodes support Class A (Style 7) and Class B (Style 4) Physical Bridge connections
  - 4020 Series nodes support Style 4 Physical Bridge connections
- **Modular design uses 4120 Network media cards for communications***

SPECIFICATIONS*

Modem Connection Wiring Requirements	
"Short Haul" Twisted Pair Lines	
Maximum Distance	# 26 AWG, 9500 ft (2.85 km)
	# 24 AWG, 15,000 ft (4.5 km)
"Long Haul" Leased Telco Lines	
Maximum Distance	Essentially Unlimited
Characteristics	Private leased lines for analog data, point-to-point, full duplex, no line conditioning or signaling required, two wire line interface
Connections and Data Information	
Style 4 Connection	One, 2-wire RJ-11 Interface
Style 7 Connection	Two, 2-wire RJ-11 Interfaces
Data Rate	Up to 14.4 kbps
Throughput	Up to 38.4 kbps using MNP-5 compression and error correction
Panel Power Requirements (Includes Media Cards)	
4120-6023, Style 4	198 mA @ 24 VDC (445 mA on 8 V bus)
4120-6024, Style 7	267 mA @ 24 VDC (600 mA on 8 V bus)
4020-6023, Style 4	125 mA @ 24 VDC



Physical Bridge Module Link Shown Connected to a Single Remote Node

INTRODUCTION

Physical bridge modules provide an intelligent network link that increases the flexibility of Simplex 4120 Networks. Communications between the physical bridge modules use a proprietary, full duplex, two-wire modem protocol for efficient information transfer. Additionally, each physical bridge module functions as a "proxy" for its remote node information to maintain overall network performance.

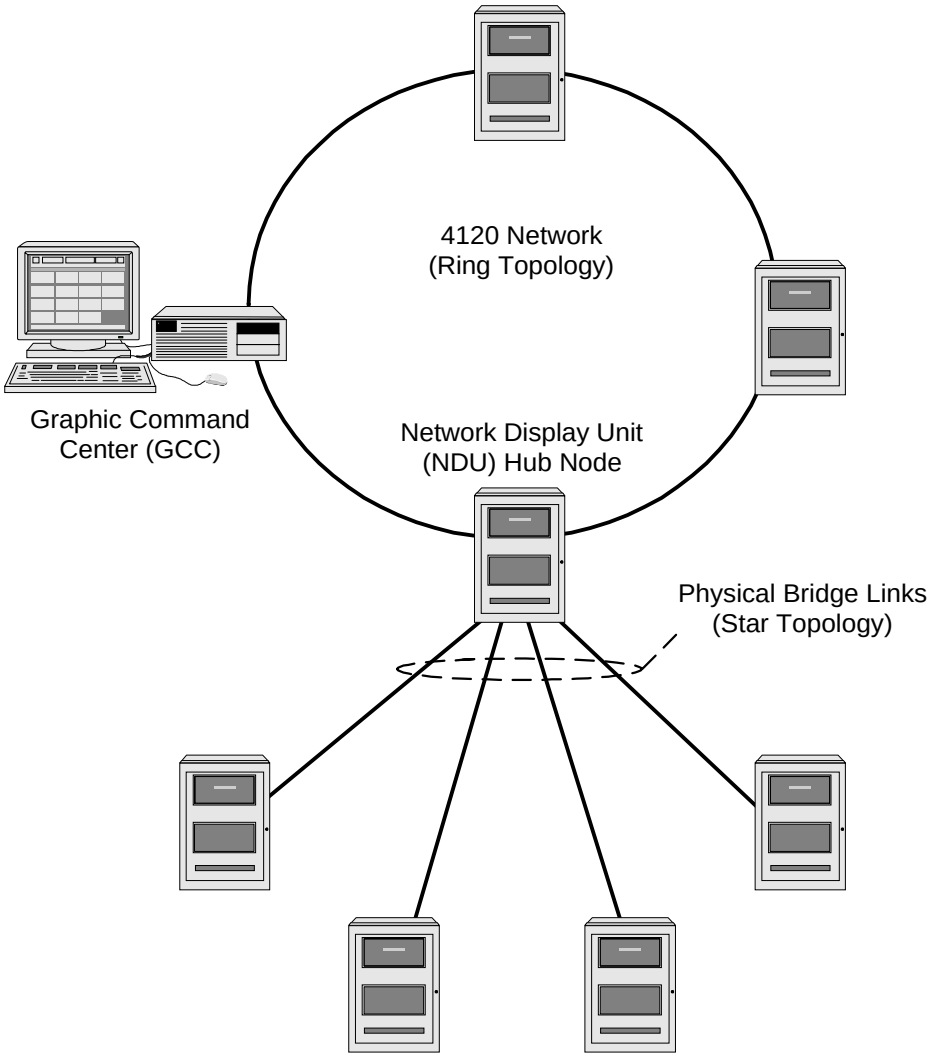
Connection options include linking of two network loops into one network, branching to single or multiple remote nodes using existing two-wire connections, creating hub nodes to form star configuration systems, and combinations of these connections, providing convenient networking flexibility.

* Refer to data sheet S4120-0003 for additional 4120 Network communications specifications.

APPLICATIONS

The diagram on this page illustrates the use of multiple physical bridge modules to allow a conventional token ring topology 4120 Network to interface into a star topology. Each physical bridge link requires a physical bridge module at each end. A network interface module is required at each node to complete the network communications path (refer to block diagram on pages 3 and 4).

This example illustrates the flexibility available when retrofitting existing star connection topology systems such as the Simplex 2120 series.

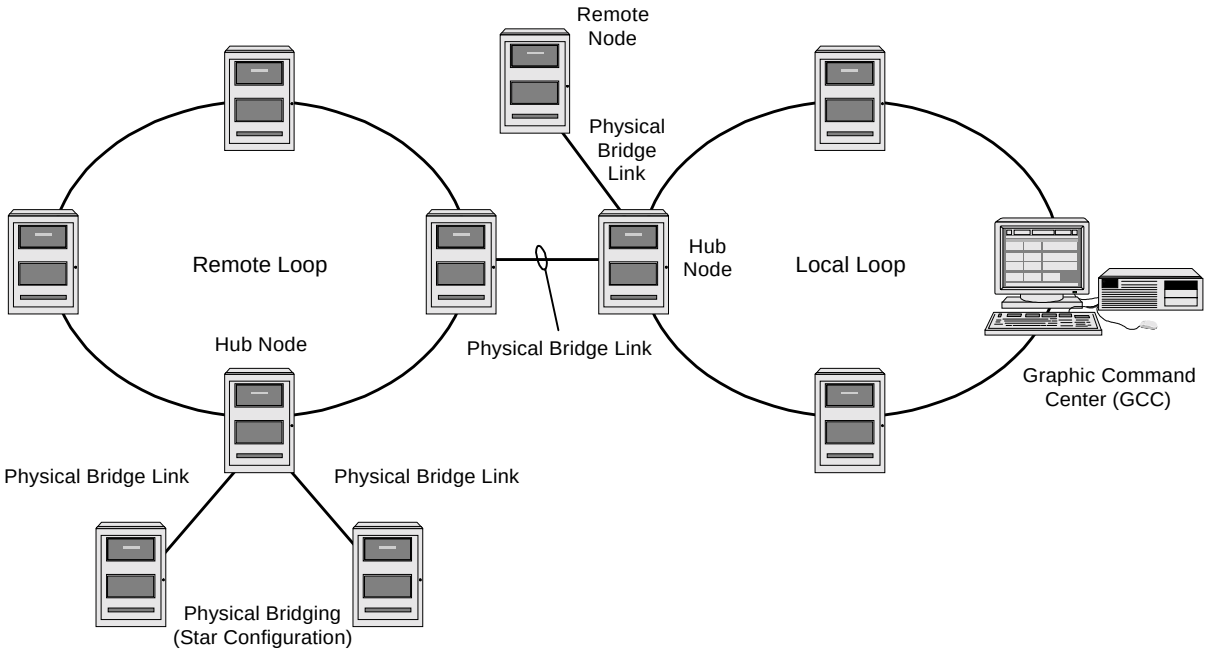


Hub Nodes, such as this NDU, House the Physical Bridge Modules Required to Interconnect Different Network Topologies

ADDITIONAL APPLICATIONS

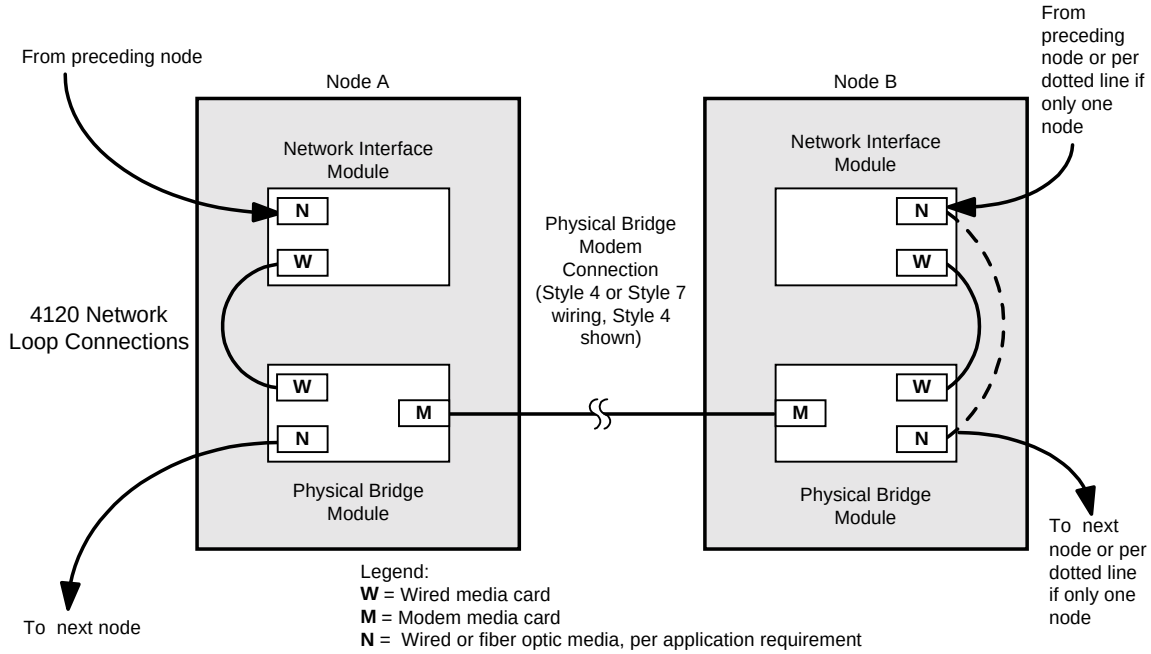
The following diagram illustrates a combination of connecting two 4120 Network loops into one network and branching out to star topology remote nodes. As this sample illustrates, multiple physical bridge connections can be used to complete the total network.

Total linking of physical bridges throughout the network is three. This means that from any node linked by physical bridge to any other also linked by physical bridge, communications may pass through three physical bridge links.



Network Nodes Can Connect Through up to Three Physical Bridge Links, Providing Network Configuration Flexibility

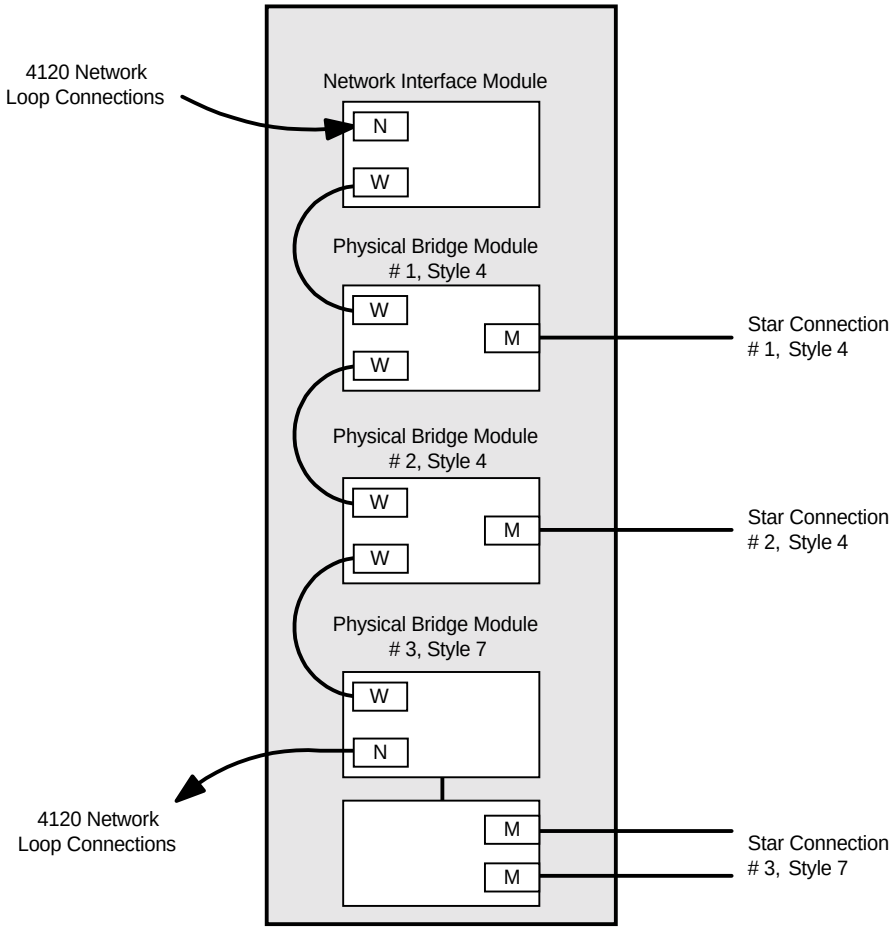
BASIC PHYSICAL BRIDGE BLOCK DIAGRAM



Physical Bridge Modules Connect to Standard Network Interface Modules and Communicate Using Standard Network Media Cards

PHYSICAL BRIDGE MODULE PRODUCT SELECTION CHART

Model	Description	Details	Mounting	Compatibility
4120-6023	**Style 4** Physical Bridge Module	Includes two Wired Media Modules and **one** Physical Bridge Modem Media Module	2” slot width	**4120** Series Fire Alarm Control Panels
4120-6024	**Style 7** Physical Bridge Module	Includes two Wired Media Modules and **two** Physical Bridge Modem Media Modules	4” slot width	
4120-0156	8 V DC-DC Converter Module	• Provides 8 VDC @ 3 A, powered from 28 V tap of main or expansion power supply • Use when multiple physical bridge modules in Hub Nodes require additional power • Each converter can power up to 4, Style 7 modules or up to 6, Style 4 modules, intended to power a single cabinet rack	Mounts on 4120 cabinet rack end	
4020-6023	**Style 4** Physical Bridge Module	Includes two Wired Media Modules and **one** Physical Bridge Modem Media Module	Requires 4 or 6 unit cabinet	**4020** Series Fire Alarm Control Panels



Legend:
W = wired media card
N = wired or fiber optic media, per application requirement

Block Diagram of a Typical Hub Node Using Physical Bridge Modules for Multiple Star Connections

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Simplex®

Gardner, Massachusetts 01441-0001 U. S. A.
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