Fiber-optic Cable

If you choose to make your own fiber-optic cables, consider the following:

- Fiber-optic Communication Cable Specifications

Attribute	1756-RM2/A	1756-RM2XT	1756-RM/A or 1756-RM/B	1756-RMXT
Temperature, operating	0…60 °C (32…140 °F)	-25…70 °C (-13…158 °F)	0…60 °C (32…140 °F)	-25…70 °C (-13…158 °F)
Connector type	LC-type (fiber-optic)			
Cable type	8.5/125 micron single-mode fiber-optic cable			
Channels	1 (transmit and receive fiber)			
Length, max	10 km (10,000 m, 10936.13 yd		4 km (4000 m, 4,374.45 yd)(1)	
Transmission	1000 Mbps		Less than or equal to 100 Mbps	
Wavelength	1310 nm		1300 nm	
SFP transceiver	Transceiver Rockwell PN-91972 Connector/cable: LC duplex connector, 1000BASE-LX-compliant		—	—

(1) Longer distances are supported based on the systems' optical power budget. See the Optical Power Budget Ranges on page 67.

- Determine Optical Power Budget

  You can determine the maximum optical-power budget in decibels (dB) for a fiber-optic link by computing the difference between the minimum transmitter-output optical power (dBm avg) and the lowest receiver sensitivity (dBm avg).

  The optical-power budget provides the necessary optical-signal range to establish a working fiber-optic link. You must account for the cable lengths and the corresponding link penalties. All penalties that affect the link performance must be accounted for within the link optical power budget.

Table 12 - Optical Power Budget Ranges

Transmitter	Min	Typical	Max	Unit
Output optical power	-15	—	-8	dBm
Wavelength	1261	—	1360	nm
Receiver	**Min**	**Typical**	**Max**	**Unit**
Receiver sensitivity	—	-38	-3	dBm avg
Receiver overload	-8	—	—	dbm avg
Input operating wavelength	1261	—	1580	nm

Step 4: Update Redundant Chassis Firmware

Use ControlFLASH software to upgrade the firmware of each module in each chassis.

IMPORTANT Apply power ONLY to the chassis containing modules on which you are upgrading firmware.

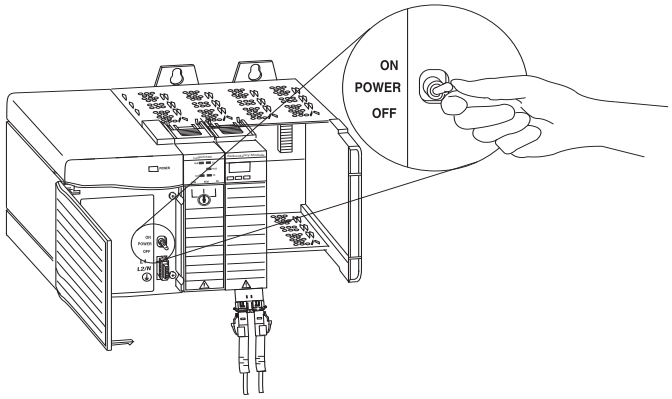
Upgrade firmware on only one module at a time.

IMPORTANT Redundancy module firmware contained in the enhanced redundancy system firmware bundle is designed for use with the 1756-RM, 1756-RM2/A, 1756-RMXT, and 1756-RM2XT redundancy modules.

Upgrade the Firmware in the First Chassis

Complete these steps to upgrade the firmware in the first chassis.

1. Apply power to the chassis.



2. Set the mode switch on the controller to REM.