

FX Supervisory Controller Sedona Framework™ Option Card

Installation Instructions

LP-FXSED-0

Part No. 24-10564-33, Rev. —
Issued October 29, 2010

Refer to the [QuickLIT Web site](#) for the most up-to-date version of this document.

Applications

This document covers the mounting and wiring of a Sedona Framework™ (LP-FXSED-0) option card in an FX Supervisory Controller (FX20/FX60, FX22/FX62, and FX70 Series).

The Sedona option card is based on the Sedona SED-M04 module and Jennic JN5139 microcontroller for Institute of Electrical and Electronics Engineers (IEEE) 802.15.4 wireless network and IPv6 over LoW Power Wireless Area Networks (6LoWPAN) bridge support. The Sedona option card also supports wired RS-485 Master-Slave/Token-Passing (MS/TP) networking.

This Sedona option card enables an FX Supervisory Controller to integrate both wireless and wired Sedona-based devices into its station.

The option card includes an adjustable angle Reverse Polarity-SubMiniature version A (RP-SMA) coax stub antenna.

Four status Light-Emitting Diodes (LEDs) are on the top surface of the option card:

- Two LEDs are for monitoring RS-485 activity.
- One LED is for heartbeat; the other LED is for future use.

An optional antenna extension kit (LP-KITSEDAT-0) allows you to locate the included antenna 6.56 ft (2 m) away from the option card.

The Sedona option card adds one COM port on the FX Supervisory Controller. See [COM Port Usage](#) on page 4.

Note: The FX Supervisory Controller requires Niagara^{AX}-3.4 or later to support operation of the Sedona option card.

For information on software installation and configuration required for FX Supervisory Controllers or Sedona option cards, refer to the *FX Workbench User's Guide (LIT-12011149)*. For related mounting and wiring details, refer to the appropriate installation instructions:

- *FX20/FX60 Installation Instructions (Part No. 24-10174-77)*

- *FX22/FX62 Supervisory Controller Installation Instructions (Part No. 24-10564-9)*
- *FX70 Supervisory Controller Installation Instructions (Part No. 24-10564-17)*

North American Emissions Compliance

United States

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 this 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/her own expense.

Canada

This Class (A) digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe (A) respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Installation

Parts Included

This package includes the following items:

- Sedona option card with pre-attached endplate, including a 3-position removable connector plug for RS-485 wiring.
- An RP-SMA coax-mounted stub antenna.
- This document: *FX Supervisory Controller Sedona Framework™ Option Card Installation Instructions (Part No. 24-10564-33)*.

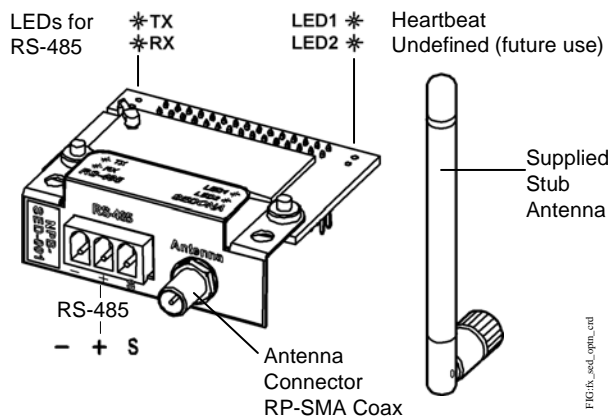


Figure 1: FX Supervisory Controller Sedona Framework Option Card

Tools Needed

The following supplies and tools are required:

- #2 phillips screwdriver: used to install the Sedona option card.
- Small flat blade screwdriver: used for making wiring connections to the RS-485 network.

Mounting

Safety Precautions

The following information relates to the installation and startup of the Sedona option card.



WARNING: Risk of Electric Shock.

Disconnect the power supply before making electrical connections. Contact with components carrying hazardous voltage can cause electric shock and may result in severe personal injury or death.

IMPORTANT: Be careful to plug any option card into its connector properly (pins aligned).

Mount the Sedona option card in either of the option card slots of the FX Supervisory Controller, as needed.

Note: The FX22/FX62 has only one option card slot.

1. **Remove power** from the FX Supervisory Controller.
2. Remove the FX Supervisory Controller cover (FX20/FX60/FX70) or covers (FX22/FX62). For the FX20/FX60/FX70, press in the four tabs on both ends of the unit, and lift the cover off.

Note: If accessory modules are plugged into the FX Supervisory Controller, you may need to slide them away from the unit to access the cover tabs.

If an FX22/FX62, first remove the right cover, then the left cover, retaining the two screws that secure each cover.

3. If an FX20/FX60, remove the battery and bracket assembly by taking out the screws holding it in place. Set the screws aside for later. If an FX22/FX62 or FX70, remove the option slot blanking plate and retain the two screws.

Note: Slot 2 option card installation in an FX70 controller requires careful attention. Refer to the *FX70 Supervisory Controller Installation Instructions (Part No. 24-10564-17)* for more details. This *FX Supervisory Controller Sedona Framework™ Option Card Installation Instructions (Part No. 24-10564-33)* focuses on installation in an FX20/FX60 controller.

4. Remove the battery and bracket assembly by taking out the four screws holding it in place, and set the screws aside for later. Unplug the battery from the connector on the FX Supervisory Controller.

Figure 2 shows an exploded view of an FX20/FX60.

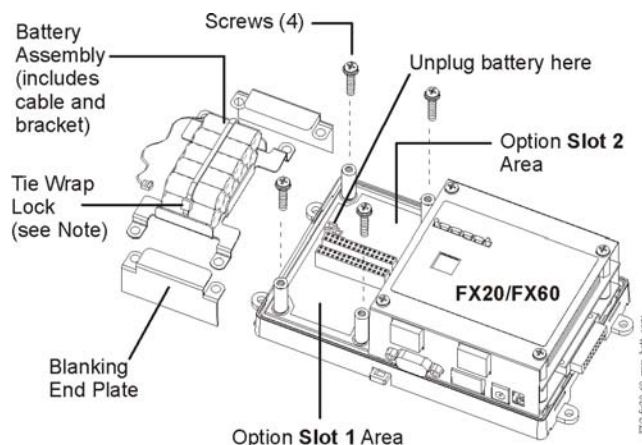


Figure 2: Remove Screws and Battery Assembly

Note: The tie wrap on the battery pack should have its lock knot on **top**, as shown in Figure 2. If not, cut and remove the tie, and then reinstall another tie wrap with the lock tab on top. (If the tie lock is at the bottom, it interferes with the option card).

5. Remove the blanking end plate for the slot into which you are installing the option card. (Retain the blanking end plate in case the option card must be removed at a later date.)

- Carefully insert the pins of the Sedona option card into the socket of the appropriate option card slot. Make sure the mounting holes on the option card board line up with the standoffs on the base board. If they do not line up, the connector is not properly aligned. Once aligned, press the option card until it is completely seated.

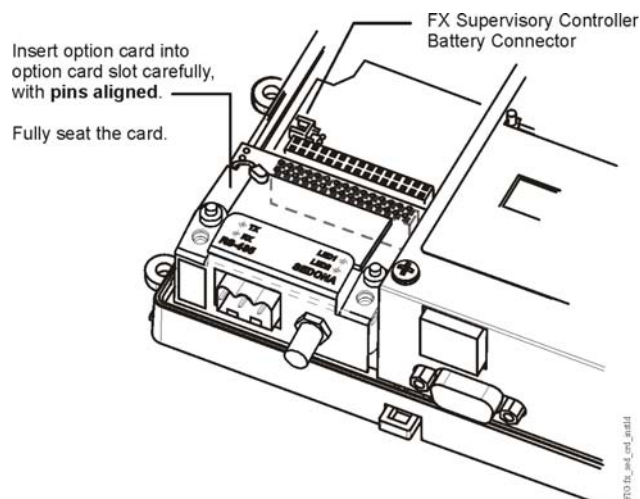


Figure 3: Sedona Option Card Inserted with End Plate on Top

- Plug the battery cable into the battery connector on the FX Supervisory Controller (see Figure 3 for battery connector location).
- If an FX20/FX60/FX70, set the battery and bracket assembly back over the option card slots, with the mounting holes aligned with the standoffs.
- Place the four screws through the battery bracket, end plates, and into the standoffs on the FX Supervisory Controller base board. Hand tighten these screws.

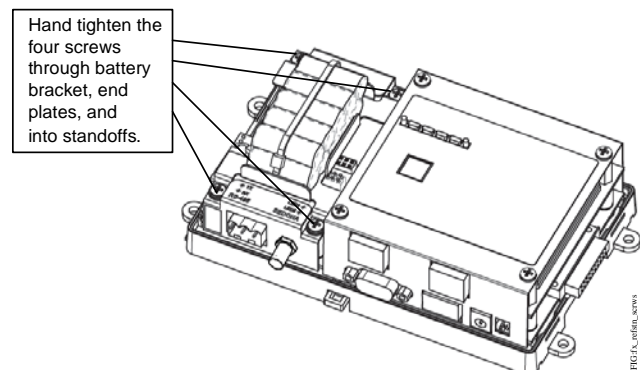


Figure 4: Re-fasten the Screws Through the Battery Bracket

- Replace the FX Supervisory Controller cover(s). If accessory modules are unplugged, plug them back into the FX Supervisory Controller as before, and secure.

Attaching Antenna

A 2.4 GHz adjustable-angle antenna with RP-SMA coax connector is provided for use with an FX20/FX60 or FX70 Supervisory Controller. To attach the antenna, insert the antenna into the coax jack on the option card, and finger-tighten the knurled nut (see Figure 5).

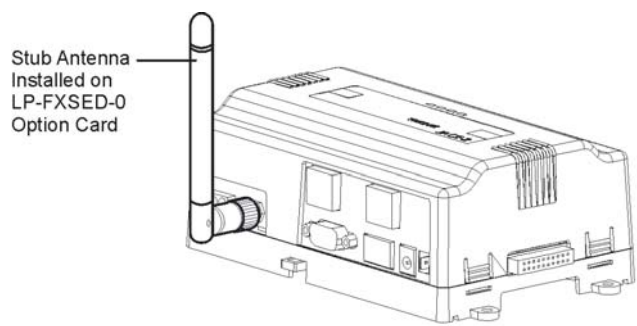


Figure 5: RP-SMA Stub Antenna on FX20/FX60

Rotate the antenna to whatever position you need for mounting clearance and/or best reception. If needed, use the [Antenna Extension Option](#) on page 3.

Antenna Extension Option

To locate the included stub antenna up to 6.56 ft (2 m) away from the FX Supervisory Controller, order and install the LP-FXSEEXT-0 option. This antenna extension option includes a 6.56 ft (2 m) RP-SMA-type coax extension cable and steel bracket for wall or panel mounting. See Figure 6 for details and dimensions.

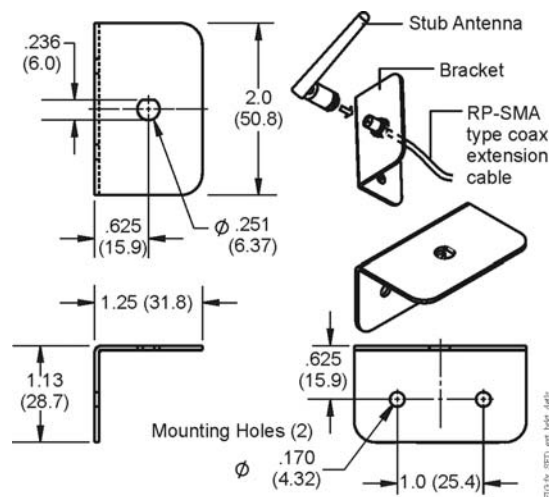


Figure 6: Antenna Extension Option Dimensions, in. (mm)

Some installations may require a different external antenna.

Note: For Federal Communications Commission (FCC) compliance, use only the antenna supplied with the Sedona option card, or an antenna listed by Jennic as FCC-compatible with the Jennic JN5139 microcontroller.

Wiring

RS-485 Wiring

To connect to an RS-485 multipoint network, use the 3-position screw terminal connector plug and shielded 18-22 AWG wiring. Refer to the Telecommunications Industry Association/Electronic Industries Alliance (TIA/EIA) 485 standard for more details.

Screw terminals are minus (–), plus (+), and shield (S), as seen on the end plate label (see Figure 1).

Operation

LEDs

The Sedona option card has four LEDs for RS-485 and other status. All LEDs are on the top of the card (you must remove the FX Supervisory Controller cover to view the LEDs). See Figure 1 for LED locations.

RS-485: Two LEDs monitor RS-485 activity. The RS-485 LEDs include:

- **TX** (yellow) — Transmit, the FX Supervisory Controller is **sending** data to a device connected on the RS-485 trunk.
- **RX** (green) — Receive, the FX Supervisory Controller is **receiving** data from a device connected on the RS-485 trunk.

Other: The other two LEDs are described as follows:

- **LED1** (green) — Heartbeat. After initialization completes, flashes at 1 second On, 1 second Off.
- **LED2** (green) — Blinks once during initialization. Other uses may be defined at a future date.

COM Port Usage

The LP-FXSED-0 option card has an onboard Universal Asynchronous Receiver/Transmitter (UART) and so adds **one** COM port on the installed FX Supervisory Controller. The hosted station automatically resolves the option's COM address. The COM port assignment for the Sedona option card depends on the type of host Supervisory Controller and which option slot the option card is installed. See Table 1 for the COM port assignments.

Table 1: COM Slot Assignments for the FX Supervisory Controller with a Sedona Option Card

FX20/FX60		FX70		FX22/FX62
Only 1 Sedona card supported		Only 1 Sedona card supported		Only 1 Sedona card supported
Option Slot 1	Option Slot 2	Option Slot 1	Option Slot 2	Option Slot
Sedona = COM3		Sedona = COM5		Sedona = COM3
RS-232 = COM3	Sedona = COM4	RS-232 = COM5	Sedona = COM6	
RS-485 = COM3, COM4	Sedona = COM5	RS-485 = COM5, COM6	Sedona = COM7	
LON = LON1	Sedona = COM3	LON = LON1	Sedona = COM5	
Wireless TEC = COM1	Sedona = COM3	Wireless TEC = COM3	Sedona = COM5	
Modem = COM1	Sedona = COM3	Modem = COM3	Sedona = COM5	
GPRS = COM3, COM4	Sedona = COM5	GPRS = COM5, COM6	Sedona = COM7	

Repair Information

Options and Parts

Table 2 lists the standard options and replacement parts:

Table 2: Parts for Sedona Option Card

Option/Part	Description
LP-FXSEEXT-0	6.56 ft (2 m) RP-SMA type coax extension cable, and mounting bracket. See <i>Antenna Extension Option</i> on page 3.
LP-KITSEDAT-0	Replacement adjustable-angle 2.4 GHz RP-SMA coax-mounted stub antenna.
LP-KITSED3T-0	3-terminal wiring plug for RS-485

If the Sedona option card fails to operate within its specifications, replace the unit. For a replacement option card, contact the nearest Johnson Controls® representative.



Building Efficiency

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