

## SK-FML/SK-FSL Fiber Option Modules Installation Instructions

### Section 1: Description

The Silent Knight/Farenhyt Emergency Communication Systems that use the ECS-NVCM (Network Voice Control Module) and the Silent Knight/Farenhyt Fire Alarm Control Panels that use the SK-NIC (Network Interface Card) support two types of fiber-option modules to convert wire to fiber.

- SK-FML (Fiber-Optic Multi-Mode, Receiver)
- SK-FSL (Fiber-Optic Single-Mode, Transmitter)

#### SK-FML (Fiber-Optic Multi-Mode, Receiver)

The SK-FML is a fiber module that is used as one channel to transmit or receive communications with the ECS-NVCM (Network Voice Control Module) or SK-NIC (Network Interface Card). It allows the multi-mode fiber to network between the SK-FML module boards.

Figure 1.1 illustrates the SK-FML fiber module.

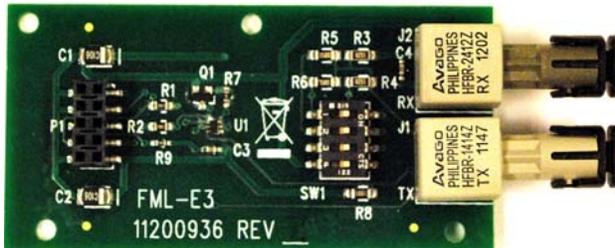


Figure 1.1 SK-FML Circuit Board

#### SK-FSL (Fiber-Optic Single-Mode, Transmitter)

The SK-FSL is a fiber module that is used as one channel to transmit or receive communications with the ECS-NVCM (Network Voice Control Module) or SK-NIC (Network Interface Card). It allows the single-mode fiber to network between the SK-FSL module boards.

Figure 1.2 shows the SK-FSL fiber module.

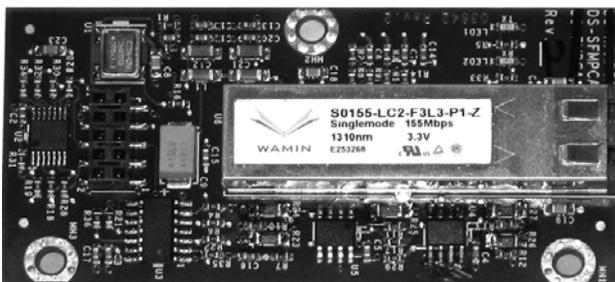


Figure 1.2 SK-FSL Circuit Board

Table 1.1 lists the models that are assigned to the ECS-NVCM and SK-NIC.

ECS-NVCM	SK-NIC		
IFF-2100ECS	IFP-75	IFP-2100	6808
IFF-300ECS	IFP-300	6700	6820/6820EVS

Table 1.1 Network Voice and Interface Card Modules

### Section 2: SK-FML/SK-FSL Specifications

Table 2.1 lists the SK-FML multi-mode fiber-optic digital audio ports specifications.

SK-FML Specifications	
Type of Connector:	Type ST
Maximum Attenuation:	8 dB for multi-mode with 62.5/125 micrometer cable @ 200 μ.
<b>Current Draw:</b>	
Standby Current:	0.053 A
Alarm Current:	0.053 A
Environment Rating:	32° to 120°F (0° to 49°C), 0% to 93%
Relative Humidity:	Non-condensing at 90°F (30°C)

Table 2.1 SK-FML

Table 2.2 lists the SK-FSL single-mode fiber-optic digital audio ports specifications.

SK-FSL Specifications	
Type of Connector:	Type LC
Maximum Attenuation:	30 dB for multi-mode with 9/125 micrometer cable @ 1310 nm.
<b>Current Draw:</b>	
Standby Current:	0.079 A
Alarm Current:	0.079 A
Environment Rating:	32° to 120°F (0° to 49°C), 0% to 93%
Relative Humidity:	Non-condensing at 90°F (30°C)

Table 2.2 SK-FSL

## Section 3 Installation

### Section 3.1 Installation Requirements

**CAUTION: STATIC SENSITIVE EQUIPMENT:**  
THIS EQUIPMENT IS SENSITIVE TO STATIC ELECTRICITY. IT MAY BE DAMAGED IF NOT PROPERLY HANDLED. TRANSPORT AND STORE THIS UNIT IN A STATIC-SHIELDING BAG. FAILURE TO OBSERVE THIS REQUIREMENT COULD CAUSE LATENT DAMAGE TO THE EQUIPMENT WHICH MIGHT NOT MANIFEST ITSELF UNTIL AFTER THE EQUIPMENT IS PLACED IN SERVICE.

**DISCONNECT ALL POWER:**  
REMOVE ALL SOURCES OF POWER BEFORE YOU SERVICE, REMOVE OR INSTALL ANY UNITS.

All components should be located per the following requirements:

- Installations are to be indoors only, in dry locations, protected from rain, water, and rapid changes in temperature that could cause condensation. Equipment must be securely mounted on rigid, permanent walls.
- Operating temperature shall not exceed the range of 32° to 120° F (0 to 49° C).
- Operating humidity not to exceed 93% non-condensing at 90° F (32° C).
- All sub-assemblies and components are to be located in compliance with the local, the national codes and the manufacturer's recommendations.
- All installation field wiring shall be in compliance with the local code, the national code and the manufacturer's recommendations.
- Use the Architects and Engineering Specifications for detailed information on your Facility's Configuration.

### Section 3.2 SK-FML/SK-FSL Installation

1. Remove the unit from its static-shield bag, observing proper static protection measures.
2. Visually inspect the unit for damage. If any components are damaged, notify the shipping carrier immediately. Report missing components to the Silent Knight Customer Service.
3. Use the Hardware Kit provided with the unit.
4. Plug the Fiber Module #1 into P6 of the ECS-NVCM or SK-NIC circuit as shown in Location 1 in Figure 3.2.1 and Figure 3.2.2.
5. To connect the Fiber Module # 1 to the ECS-NVCM or SK-NIC, insert and secure three screws (#4-40 x 1/4") as shown in Location 2 in Figure 3.2.1 and Figure 3.2.2.

### Section 3.2 SK-FML/SK-FSL Installation (continued)

6. Plug the Fiber Module #1 into P5 of the ECS-NVCM or SK-NIC circuit as shown in Location 3 in Figure 3.2.1 and Figure 3.2.2.
7. To connect the Fiber Module #1 to the ECS-NVCM or SK-NIC, insert and secure three screws (#4-40 x 1/4") as shown in Location 4 in Figure 3.2.1 and Figure 3.2.2.

Figure 3.2.1 illustrates the SK-FML/SK-FSL installed to the SK-NIC.

**Note:** FIBER MODULES:SK-FSL AND SK-FML. INSTALL A MAXIMUM OF TWO BOARDS PER INSTALLATION.THE FIBER MODULES CAN BE COMBINED.

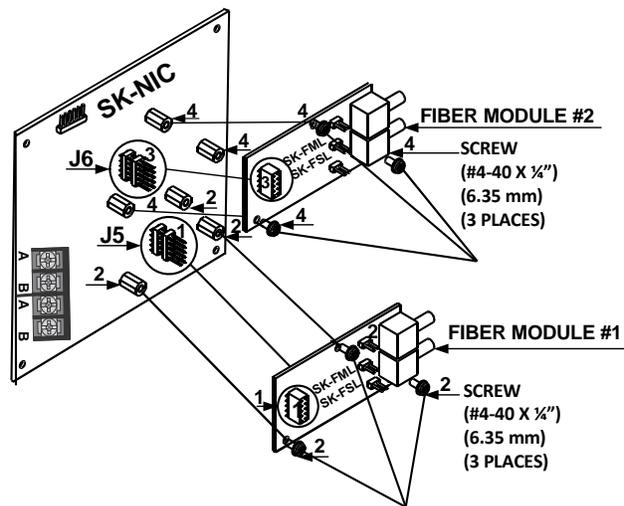


Figure 3.2.1 SK-FML Installation

Figure 3.2.2 illustrates the SK-FML/SK-FSL installed to the ECS-NVCM.

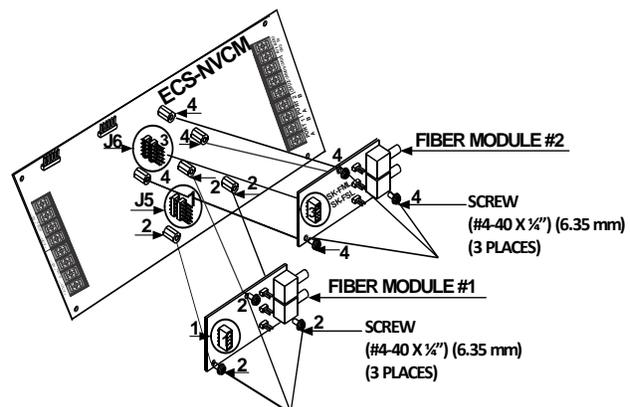


Figure 3.2.2 SK-FSL Installation

## Section 4 Wiring

Section 4.2 and Section 4.4 list the wiring for the fiber-optic modules.

- Fiber-Optic Multi-Mode Module (SK-FML)
- Fiber-Optic Single-Mode Module (SK-FSL)

### Section 4.1 SK-FML Circuit Board Diagram

Figure 4.1.1 illustrates the SK-FML PCB circuit board diagram.

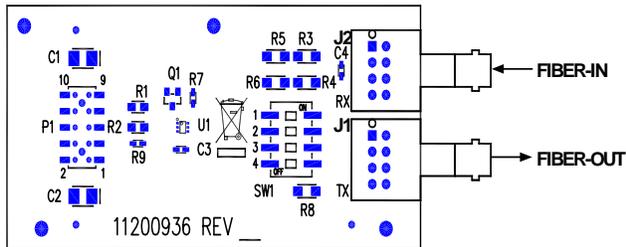


Figure 4.1.1 SK-FML Circuit Board Diagram

### Section 4.2 SK-FML Installation Wiring Terminals

Table 4.2.1 lists the SK-FML installation wiring terminals.

Designation	Description
J1	Connects to the transmitting fiber. (See Note)
J2	Connect to the receiving fiber. (See Note)
SW1-1	Sets the optical output power for the transmitting fiber. (See Table 4.2.2)
SW1-2	Sets the optical output power for the transmitting fiber. (See Table 4.2.2)
SW1-3	Sets the optical output power for the transmitting fiber. (See Table 4.2.2)
SW1-4	Not used.
P1	Plugs onto P5 (Port 1) or P6 (Port 2) of the ECS-NVCM or SK-NIC.

**NOTE:** Use standard ST connector fiber-optic cable, multi-mode, up to 200  $\mu$  (optimized for 62.5/125  $\mu$ ). Signal loss up to 8dB maximum between nodes.

Table 4.2.1 SK-FML Terminal Wiring Designations

Table 4.2.2 lists the SK-FML switch settings and drive currents.

SW1-1	SW1-2	SW1-3	Drive Current
OFF	OFF	OFF	10 mA
OFF	OFF	ON	20 mA
OFF	ON	OFF	32 mA
OFF	ON	ON	42 mA
ON	OFF	OFF	54 mA
ON	OFF	ON	64 mA
ON	ON	OFF	76 mA
ON	ON	ON	86 mA

**NOTE:** SW1-4 is not used.

Table 4.2.2 SK-FML Switch Settings/Drive Currents

### Section 4.3 SK-FSL Circuit Board Diagram

Figure 4.3.1 illustrates the SK-FSL, PCB circuit board diagram.

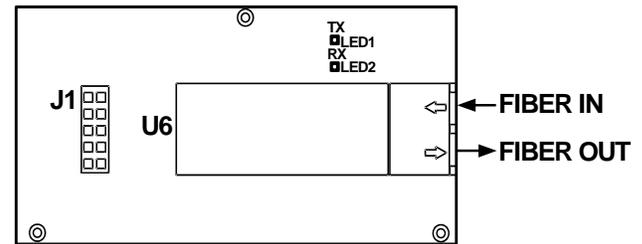


Figure 4.3.1 SK-FSL Circuit Board Diagram

### Section 4.4 SK-FSL Installation Wiring Terminals

Table 4.4.1 lists the SK-FML installation wiring terminals.

Designation	Description
J1	Plugs on to P5 (Port 1) or P6 (Port 2) of the ECS-NVCM or SK-NIC.
U6	Top connection connects to the receiving fiber (IN). Bottom connection connects to the transmitting fiber (OUT).

**NOTE:** Use LC connector fiber-optic cable, single mode, up to 1310 nm (optimized for 9/125  $\mu$ ). Signal loss up to 30 dB maximum between nodes.

Table 4.4.1 SK-FML Terminal Wiring Designations

Table 4.4.2 lists the SK-FSL LED Indicators.

LED #	Name	Color	Description
1	TX	Green	Lights while data is transmitted on the Repeater. When activity is detected, the TX light flickers and turns ON. If no activity is detected, the TX light turns OFF.
2	RX	Green	Lights while data is received on the Repeater. When activity is detected, the RX light flickers and turns ON. When no activity is detected, the RX light turns OFF.

**Table 4.4.2 SK-FSL LED Indicators**

## Section 5:Reference Documentation

Table 5.1 lists the UL-Controlled documentation assigned to the Silent Knight Systems. If you require detailed installation instructions on cabinetry, wiring and specifications, you can download the following UL-Controlled documents from the ESD site on the Silent Knight Website ([www.silentknight.com](http://www.silentknight.com)).

Part Number	Title
LS10143-001SK-E	IFP-2100/ECS Installation and Operation Manual
LS10144-001SK-E	6820-EVS Installation and Operation Manual
LS10145-001SK-E	IFP-300/ECS Installation and Operation Manual
LS10146-001SK-E	6808 Installation and Operation Manual
LS10147-001SK-E	IFP-75 Installation and Operation Manual
LS10148-001SK-E	6700 Installation and Operation Manual
LS10169-001SK-E	ECS-NVCM Installation Sheet
LS10171-001SK-E	SK-NIC Installation Sheet

**Table 5.1 Reference Documentation**

### Honeywell

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 Northford, CT 06472-1610 USA  
 203-484-7161  
 Fax: 203-484-7118  
[www.farenhyt.com](http://www.farenhyt.com)  
[www.silentknight.com](http://www.silentknight.com)

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