

DS-FM/DS-SFM/DS-RFM

Fiber Option Modules



Voice Control Systems

General

A fiber option module converts one of the two digital audio ports on a DAA2, DAX, DS-DB or DVC that mounts fiber option modules (DVC-EMPCC version or later) from wire to fiber. One or two fiber option modules may be installed, converting the DAA2, DAX, DS-DB or DVC partially or wholly to fiber optic communication.

A DAL (digital audio loop) can support wire, single-mode fiber, and multi-mode fiber on the same loop with the use of fiber option modules.

Features

- Converts wire DAPs (digital audio ports) to single-mode or multi-mode fiber.
- Plugs onto a DVC that mounts fiber option modules, a DAA2, a DAX, or a DS-DB for easy installation.

Installation

Fiber option modules plug in at clearly marked sites on the boards. A fiber module at one end of a segment connects to a matching fiber module.

Legacy Installation

Legacy fiber DVCs and DAAs have fiber ports built in and use ST® style connections. They are compatible with DAA2s, DAXs, DS-DBs and DVCs that mount fiber option modules, which use LC style connections at their end.

CONNECTING LEGACY “SMF” AND “MF” MODULES

- A single-mode DVC connects to a DS-SFM on a DAA2, DAX, or DS-DB.
- A single-mode DAA connects to a DS-SFM on a DAA2, DAX, DS-DB, or DVC that mounts fiber option modules.
- A multi-mode DVC connects to a DS-RFM on a DAA2, DAX, or DS-DB.
- A multi-mode DAA connects to a DS-RFM on a DAA2, DAX, DS-DB, or DVC that mounts fiber option modules.

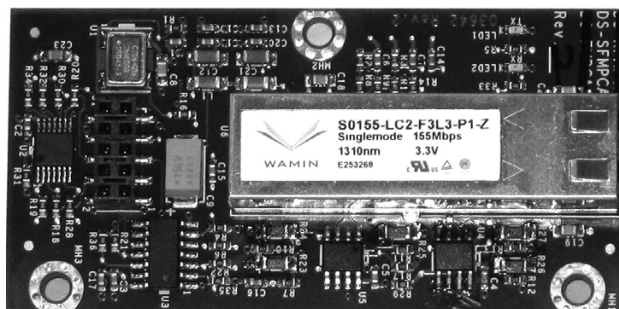
Specifications

Single- and Multi-mode Fiber-Optic Digital Audio Ports

- LC Style Connection.
- Supervised.
- Fiber optic cable, multi-mode: 50/125 or 62.5/125 micrometers.
- Fiber optic cable, single-mode: 9/125 micrometers.
- Attenuation of cabling between two nodes (fiber-optic circuits are point-to-point) must not exceed the maximum attenuation, specified below.

To determine attenuation:

1. Find the rated dB loss per foot within the cable manufacturer's specifications. Determine the total attenuation between the two nodes due to the cable.
2. Establish the dB loss for each connector and splice. Sum all the losses.



3. Total the attenuation factors obtained in steps 1 and 2. This will provide an approximate attenuation total. The actual attenuation should be measured end-to-end with fiber-optic industry standard equipment.

DS-FM and DS-SFM (except when directly connected to a fiber DAA):

The maximum attenuation:

- 6.5dB for multi-mode with 50/125 micrometer cable @ 1310 nm.
- 10dB for multi-mode with 62.5/125 micrometer cable @ 1310 nm.
- 30dB for single-mode with 9/125 micrometer cable @ 1310 nm.

DS-SFM/Single-mode fiber DAA Connection

The maximum attenuation:

- 17dB for single-mode with 9/125 micrometer cable at 1310 nm going *from* the DS-SFM to the fiber DAA.
- 4dB for single-mode with 9/125 micrometer cable going *from* fiber DAA to the DS-SFM.

The minimum attenuation:

- 12dB minimum* going *from* the DS-SFM to the fiber DAA.
*If the length of the fiber run results in an attenuation of less than 12dB, a suitable attenuator must be used.

DS-RFM/Multi-mode fiber DAA Connection

Attenuation going from the fiber DAA to the DS-RFM:

- 2dB maximum for multi-mode with 50/125 micrometer cable @ 850 nm for the DS-RFM.
- 4dB maximum for multi-mode with 62.5/125 micrometer cable @ 850 nm for the DS-RFM.

Attenuation going *from* the DS-RFM to the fiber DAA:

- 12dB minimum*, 16dB maximum for both cable types.
*If the length of the fiber run results in an attenuation of less than 12dB, a suitable attenuator must be used.

Standards and Codes

The DS-FM, DS-SFM and DS-RFM comply with the following standards:

- NFPA 72 2007 National Fire Alarm Code
- Underwriter Laboratories Standard UL 864

Listings and Approvals

These listings and approvals apply to the DS-FM, DS-SFM and DS-RFM fiber option boards. In some cases, certain modules may not be listed by certain agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S635
- **ULC Listed:** S635
- **CSFM:** 7165-0028:0224 (NFS2-3030); 7165-0028:0243 (NFS2-640).
- **FDNY:** COA#6065 (NFS2-3030); COA#6085 (NFS2-640).

Product Line Information

DS-RFM: Fiber option module for multi-mode fiber. Allows fiber digital audio loop segments between:

- a legacy DVC or DAA and a DAA2, DAX, or DS-DB.
- a DVC that mounts fiber option modules (DVC-EMPCC version or later) and a DAA.

DS-FM: Fiber option module for multi-mode fiber. Allows fiber digital audio loop segments between DVCs that can mount fiber option boards, DAA2s, DAXs and DS-DBs.

DS-SFM: Fiber option module for single mode fiber. Allows fiber digital audio loop segments between any digital audio loop devices.

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