



# Installing the Fan-Tray Assembly in the Cisco ONS 15454 and Cisco ONS 15454 SDH

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**Product Name:** 15454-CC-FTA (Cisco ONS 15454) and 15454E-CC-FTA (Cisco ONS 15454 SDH)

This document explains how to install the fan-tray assembly in the Cisco ONS 15454 and Cisco ONS 15454 SDH. It also contains a description of the fan-tray assembly, installation equipment and procedures, and a list of specifications. As appropriate, use this document in conjunction with the *Cisco ONS 15454 Procedure Guide* or *Cisco ONS 15454 SDH Procedure Guide*, the *Cisco ONS 15454 Reference Manual* or *Cisco ONS 15454 SDH Reference Manual*, and the *Cisco ONS 15454 Troubleshooting Guide* or *Cisco ONS 15454 SDH Troubleshooting Guide* when working with the fan-tray assembly.

This document contains the following sections:

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## Fan-Tray Assembly Description

The fan-tray assembly is located at the bottom of the ONS 15454 or ONS 15454 SDH shelf assembly. The fan tray is a removable drawer that holds fans and fan-control circuitry for the ONS 15454 or ONS 15454 SDH. The front door of the shelf assembly can be left in place or removed before installing the fan-tray assembly. After you install the fan tray, you should only need to access it if a fan failure occurs or if you need to replace or clean the fan-tray air filter.

[Figure 1](#) shows the location of the fan tray.

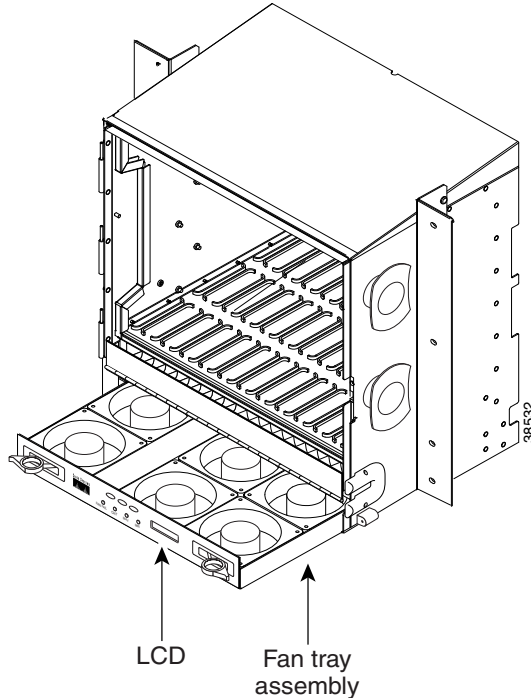


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**Figure 1** Installing the Fan-Tray Assembly



The front of the fan-tray assembly has an LCD screen that provides slot- and port-level information for all ONS 15454 or ONS 15454 SDH card slots, including the number of Critical, Major, and Minor alarms. For optical cards, you can use the LCD to determine if a port is in working or protect mode and is active or standby. The LCD also tells you whether the software load is SONET or SDH and the software version number.



**Note**

The 15454-SA-ANSI or 15454-SA-HD shelf assembly is required with any ONS 15454 that has XC-10G, XC-VXC-10G, OC-192, or OC-48 any slot (AS) cards.



**Note**

The fan-tray assembly is compatible with Software Release 2.2.2 and greater and shelf assemblies 15454-SA-HD and 15454-SA-ANSI.



**Note**

The fan-tray assembly is I-temp compliant. To obtain an I-temp tray, install the fan-tray assembly in a shelf assembly (15454-SA-ANSI or 15454-SA-HD).

## Fan Speed and Power Requirements

Fan speed is controlled by TCC2/TCC2P card temperature sensors. The sensors measure the input air temperature at the fan-tray assembly.

## Fan Speed

Fan speed options are low, medium, and high. If the TCC2/TCC2P card fails, the fans automatically shift to high speed. The temperature measured by the TCC/TCC2P2 sensors is displayed on the LCD screen.

## Fan Failure

If one or more fans fail on the fan-tray assembly, replace the entire assembly. You cannot replace individual fans. The red Fan Fail LED on the front of the fan tray illuminates when one or more fans fail. For fan tray replacement instructions, refer to [“Replacing the Fan-Tray Assembly” section on page 5](#). The red Fan Fail LED clears after you install a working fan tray.



### Caution

As with the FTA3, the 15454-CC-FTA or 15454E-CC-FTA Fan Fail LED on the front of the fan-tray assembly illuminates when one or more fans fail to indicate that a fan-tray assembly or AIP replacement is required. But the Fan Fail LED on the 15454-CC-FTA or 15454E-CC-FTA will also illuminate when only one power source is connected to the chassis, and or any fuse blows. In such conditions, the Fan Alarm is triggered and the fans run at maximum speed.

## Air Filter

The ONS 15454 or ONS 15454 SDH contains a reusable air filter; Model 15454-FTF4= or 15454E-FTF4=, that is installed either beneath the fan-tray assembly or in the optional external filter brackets. Earlier versions of the ONS 15454 or ONS 15454 SDH used a disposable air filter that is installed beneath the fan-tray assembly only. However, the reusable air filter is backward compatible.

The reusable filter is made of a gray, open-cell, polyurethane foam that is specially coated to provide fire and fungi resistance. All versions of the ONS 15454 or ONS 15454 SDH can use the reusable air filter. Spare filters should be kept in stock.



### Caution

Do not operate an ONS 15454 or ONS 15454 SDH without the mandatory fan-tray air filter.



### Caution

Inspect the air filter every 30 days, and clean the filter every three to six months. Replace the air filter every two to three years. Avoid cleaning the air filter with harsh cleaning agents or solvents. Refer to the *Cisco ONS 15454 Troubleshooting Guide* or *Cisco ONS 15454 SDH Troubleshooting Guide* for information about cleaning and maintaining the fan-tray air filter.

## Fan-Tray Assembly Specifications

- Environmental
  - Operating temperature: 0 to +55 degrees Celsius; –40 to +65 degrees Celsius with industrial temperature rated cards
  - Operating humidity: 5 to 95 percent, noncondensing
- Power

- 115 W, 2.4 Amps (at 12 V), 393 BTU/hr
- Dimensions
  - Height: 18.5 in. (40.7 cm)
  - Width: 19 or 23 in. (41.8 or 50.6 cm) with mounting ears attached
  - Depth: 12 in. (26.4 cm) (5 in. or 12.7 cm projection from rack)
  - Weight: 55 lb (24.947 kg) empty

## Installing the Fan-Tray Assembly

The following parts are needed to install the fan-tray assembly.

- #2 Phillips screwdriver
- Medium slot-head screwdriver
- Small slot-head screwdriver
- Fan-tray assembly
- Fan filter



**Caution**

Do not operate an ONS 15454 or ONS 15454 SDH without a fan-tray air filter. A fan-tray air filter is mandatory in order to comply with Telcordia GR-78-CORE, except for applications in an outside plant cabinet.



**Caution**

You must place the edge of the air filter flush against the front of the fan-tray assembly compartment when installing the fan tray on top of the filter. Failure to do so could result in damage to the filter, the fan tray, or both.



**Caution**

Do not force a fan-tray assembly into place. Doing so can damage the connectors on the fan tray and/or the connectors on the back panel of the shelf assembly.



**Caution**

If the fan tray does not slide all the way to the back of the shelf assembly, pull the fan tray out and readjust the position of the reusable filter until the fan tray fits correctly. Be sure that the grid on the reusable filter is on the side facing the fan tray.



**Note**

If you are installing the ONS 15454 or ONS 15454 SDH in an outside plant cabinet, remove the air filter to provide maximum cooling capabilities and to comply with Telcordia GR-487-CORE.



**Note**

To install the fan-tray assembly, it is not necessary to move any of the cable-management facilities.

- Step 1** Install the air filter. The air filter can be installed internally between the fan tray and shelf assembly, or externally by mounting the air filter bracket on the bottom of the shelf assembly. Slide the air filter into the bracket.
- Step 2** Slide the fan tray into the shelf assembly until the electrical plug at the rear of the tray plugs into the corresponding receptacle on the backplane.
- Step 3** To verify that the tray has plugged into the backplane, look at the fan tray and listen to determine that the fans are running.

## Replacing the Fan-Tray Assembly



### Caution

As with the FTA3, the 15454-CC-FTA or 15454E-CC-FTA Fan Fail LED on the front of the fan-tray assembly illuminates when one or more fans fail to indicate that a fan-tray assembly or AIP replacement is required. But the Fan Fail LED on the 15454-CC-FTA or 15454E-CC-FTA will also illuminate when only one power source is connected to the chassis, and or any fuse blows. In such conditions, the Fan Alarm is triggered and the fans run at maximum speed.



### Note

The 15454-SA-ANSI or 15454-SA-HD shelf assembly and 15454-CC-FTA or 15454E-CC-FTA fan-tray assembly are required with any ONS 15454 that has XC-10G, XC-VXC-10G, OC-192, or OC-48 any slot (AS) cards.



### Note

To replace the fan-tray assembly (FTA), it is not necessary to move any of the cable management facilities.

- Step 1** Review [Table 1](#) to ensure that you have compatible components when replacing the fan-tray assembly and note the alarms that will occur when an incompatibility occurs.



### Note

If you need to determine the hardware that has been installed on a node, click the Inventory tab in node view.

**Table 1** *Incompatibility Alarms*

Shelf Assembly <sup>1</sup>	Fan Tray <sup>2</sup>	AIP <sup>3</sup>	10G Cards <sup>4</sup>	Ethernet Cards <sup>5</sup>	Alarms
—	—	No fuse	—	—	Mismatch of Equipment Attributes (MEA) on alarm interface panel (AIP)
NEBS3E or NEBS3	2A	2A	No	—	None
NEBS3E or NEBS3	2A	2A	Yes	—	MEA on 10G
NEBS3E or NEBS3	2A	5A	No	—	None

**Table 1** *Incompatibility Alarms (continued)*

Shelf Assembly <sup>1</sup>	Fan Tray <sup>2</sup>	AIP <sup>3</sup>	10G Cards <sup>4</sup>	Ethernet Cards <sup>5</sup>	Alarms
NEBS3E or NEBS3	2A	5A	Yes	—	MEA on 10G
ANSI or HD	2A	2A	No	—	None
ANSI or HD	2A	2A	Yes	2.5G compatible	MEA on fan tray, AIP, and Ethernet
ANSI or HD	2A	2A	Yes	10G compatible	MEA on fan tray and AIP
ANSI or HD	2A	5A	No	Either	None
ANSI or HD	2A	5A	Yes	2.5G compatible	MEA on fan tray and Ethernet
ANSI or HD	2A	5A	Yes	10G compatible	MEA on fan tray
ANSI or HD	5A	2A	No	Either	MEA on AIP
ANSI or HD	5A	2A	Yes	2.5G compatible	MEA on AIP and Ethernet
ANSI or HD	5A	2A	Yes	10G compatible	MEA on AIP
ANSI or HD	5A	5A	No	Either	None
ANSI or HD	5A	5A	Yes	Either	None

1. 15454-SA-NEBS3E (P/N: 800-07149-xx) or 15454-SA-NEBS3 (P/N: 800-06741-xx) = shelf assemblies released before ONS 15454 Release 3.1  
 15454-SA-ANSI (P/N: 800-19857-xx) = ONS 15454 Release 3.1 and later shelf assembly  
 15454-SA-HD (P/N: 800-24848-xx) = ONS 15454 Release 3.1 and later shelf assembly
2. 5A Fan Tray = 15454-CC-FTA (P/N: 800-27558-xx)  
 2A Fan Tray = 15454-FTA2 (P/Ns: 800-07145-xx, 800-07385-xx, 800-19591-xx, 800-19590-xx)
3. 5A AIP (P/N: 73-7665-xx), 2A AIP (P/N: 73-5262-xx)
4. 10G cards include the XC-10G, OC-192, and OC-48 AS.
5. 2.5G indicates cards that are compatible with the XC and XCVT cross-connect cards: E100T-12, E1000-2, E100T-G, E1000-2-G, G1K-4, ML100T-12, ML1000-2. 10G indicates cards that are compatible with the XC10G cross-connect card: E100T-G, E1000-2-G, G1000-4, G1K-4, ML100T-12, ML1000-2.

**Step 2** Open the front door of the shelf assembly. If the shelf assembly does not have a front door, continue with [Step 4](#).

**a.** Open the front door lock.

The ONS 15454 or ONS 15454 SDH comes with a pinned hex key for locking and unlocking the front door. Turn the key counterclockwise to unlock the door and clockwise to lock it.

**b.** Press the door button to release the latch.

**c.** Swing the door open.

**Step 3** Remove the front door (optional). If you do not want to remove the door, proceed to [Step 4](#).

**a.** Detach the ground strap from either the door or the chassis by removing one of the Kepnuts.

**b.** Place the Kepnut back on the stud after the ground strap is removed to avoid misplacement.

**c.** Secure the dangling end of the ground strap to the door or chassis with tape.

**Step 4** Push the outer side of the handles on the fan-tray assembly to expose the handles.

**Step 5** Fold out the retractable handles at the outside edges of the fan tray.

- Step 6** Pull the handles and slide the fan-tray assembly one half inch (12.7 mm) out of the shelf assembly and wait until the fans stop.
- Step 7** When the fans have stopped, pull the fan-tray assembly completely out of the shelf assembly.
- Step 8** If you are replacing the fan-tray air filter and it is installed beneath the fan-tray assembly, slide the existing air filter out of the shelf assembly and replace it before replacing the fan-tray assembly.
- If you are replacing the fan-tray air filter and it is installed in the external bottom bracket, you can slide the existing air filter out of the bracket and replace it at anytime.
- Step 9** Slide the new fan tray into the shelf assembly until the electrical plug at the rear of the tray plugs into the corresponding receptacle on the backplane.
- Step 10** To verify that the tray has plugged into the backplane, check that the LCD on the front of the fan tray is activated.
- Step 11** If you replace the door, be sure to reattach the ground strap.

## Related Documentation

- *Cisco ONS 15454 Procedure Guide*
- *Cisco ONS 15454 SDH Procedure Guide*
- *Cisco ONS 15454 Reference Manual*
- *Cisco ONS 15454 SDH Reference Manual*
- *Cisco ONS 15454 Troubleshooting Guide*
- *Cisco ONS 15454 SDH Troubleshooting Guide*

## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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