



Cisco Clock Module (WS-C6K-CL and WS-C6513-CL) and VTT Module (WS-C6K-VTT) Installation Note

Product Numbers:

WS-C6K-VTT=

WS-C6K-CL=

WS-C6513-CL=

This publication describes how to check the status of the voltage termination (VTT) modules and clock modules and describes how to remove and install the modules on the following Catalyst 6500 series switches and Cisco 7600 series routers:

Catalyst 6500 Series Switches	Cisco 7600 Series routers
Catalyst 6513	Cisco 7613
Catalyst 6509-NEB-A (Uses CLK-7600 clock module. See note below.)	Cisco 7609 (CISCO7609) (Uses CLK-7600 clock module. See note below.)
Catalyst 6509-NEB	Cisco 7609 (OSR-7609)
Catalyst 6006, 6009, 6506, 6509	



Note

For information on replacing the clock module on the Catalyst 6503 and 6509-NEB-A switches, and the Cisco 7603, 7606, and 7609 (CISCO7609) routers, refer to the *Cisco Clock Module CLK-7600 Installation Note* at this URL:

http://www.cisco.com/univercd/cc/td/doc/product/core/cis7600/hardware/78_15002.htm



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Parts List

The following parts are included in the replacement kit:

- WS-C6K-VTT=
 - Three VTT modules
 - One disposable grounding wrist strap
 - One bag of spare module screws (silver)
 - One bag of spare front panel screws (black)
- WS-C6K-CL= and WS-C6513-CL=
 - One clock module
 - One disposable grounding wrist strap
 - One bag of spare module screws (silver)
 - One bag of spare front panel screws (black)

Required Tools

These tools are required to perform the installation:

- Number 1 Phillips screwdriver
- Your own ESD-prevention equipment or the disposable grounding wrist strap included with all upgrade kits, field-replaceable units (FRUs), and spares

Safety Overview

Safety warnings appear throughout this publication in procedures that may harm you if performed incorrectly. A warning symbol precedes each warning statement.

**Warning****IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translations of the warnings that appear in this publication, refer to the translated safety warnings that accompanied this device.

Note: SAVE THESE INSTRUCTIONS

Note: This documentation is to be used in conjunction with the specific product installation guide that shipped with the product. Please refer to the Installation Guide, Configuration Guide, or other enclosed additional documentation for further details.

**Warning**

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

Checking the VTT Module and Clock Module

To check the status of your module, do one of the following:

- On systems running Catalyst software, enter the **show environment** command.

This example shows how to check the status of the VTT modules and clock modules on a system running Catalyst software:

```

Console> show environment
Environmental Status (. = Pass, F = Fail, U = Unknown, N = Not Present)
  PS1:..      PS2:N      PS1 Fan:..   PS2 Fan:N
  Chassis-Ser-EEPROM:..  Fan:..
  Clock(A/B):B      Clock A:F      Clock B:..
  VTT1:..      VTT2:F      VTT3:..
Console>

```

The above example shows a failure with clock module A and VTT module 2.

- On systems running Cisco IOS software, enter the **show environment status** command.

This example shows how to check the status of the VTT modules and clock modules on a system running Cisco IOS software:

```
Router> show environment status
backplane:
  operating clock count:1
  operating VTT count:2
...
VTT 1:
  VTT 1 OK: OK
VTT 2:
  VTT 2 OK: not OK
VTT 3:
  VTT 3 OK: OK
clock 1:
  clock 1 OK: not OK, clock 1 clock-inuse: not-in-use
clock 2:
  clock 2 OK: OK, clock 2 clock-inuse: in-use
...
Router>
```

The above example shows a failure with clock module A (clock 1) and VTT module 2.

Replacing the VTT Modules and Clock Modules

This section consists of these subsections:

- [Removing the Front Panel Safety Cover, page 4](#)
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Removing the Front Panel Safety Cover

To replace the VTT modules or clock module, you must first shut down the switch and remove the front (non-module) panel safety cover of the switch chassis.



Caution

Always use an ESD wrist strap when handling modules or coming into contact with internal components.

To remove the front panel safety cover, perform these steps:

Step 1 On any modules running Cisco IOS software, save the running configuration.

Step 2 Shut down the switch and unplug all power cords to all power supplies.



Warning

Before working on a system that has an on/off switch, turn OFF the power and unplug the power cord.

Step 3 Use a Phillips screwdriver to remove the front panel screws:

- 16 screws on the Catalyst 6006 and 6506 chassis
- 18 screws on the Catalyst 6009 and 6509 chassis
- 8 screws on the Catalyst 6509-NEB and Cisco 7609 (OSR-7609) chassis (4 on the top, 4 on the bottom)
- 20 screws on the Catalyst 6509-NEB-A and Cisco 7609 (CISCO7609) chassis
- 22 screws on the Catalyst 6513 and Cisco 7613 chassis

Locating the VTT Modules and Clock Modules

See [Figure 1](#) for the location of the VTT modules and clock modules on the Catalyst 6500 series switches, and the Cisco 7609 (OSR-7609 and CISCO7609) and 7613 routers.



Note

Do not use the WS-C6K-CL= clock module in the Catalyst 6509-NEB-A switch and Cisco 7609 router (CISCO7609). Instead, use the CLK-7600= clock module. For more information, refer to the *Cisco Clock Module CLK-7600 Installation Note* at this URL:

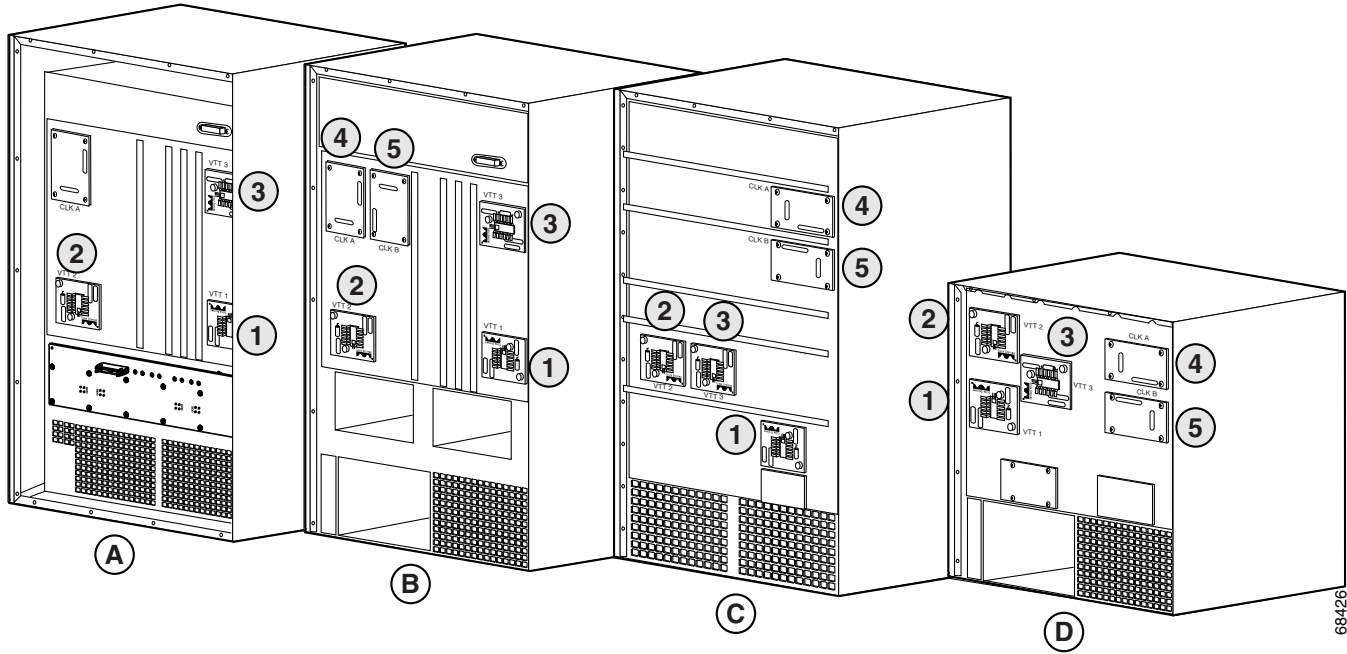
http://www.cisco.com/univercd/cc/td/doc/product/core/cis7600/hardware/78_15002.htm



Note

The location of the VTT modules and clock modules is the same on the Catalyst 6006, 6009, 6506, and 6509 switches.

Figure 1 VTT Module and Clock Module Location



A	Catalyst 6509-NEB-A, Cisco 7609 (CISCO7609)		
B	Catalyst 6509-NEB, Cisco 7609 (OSR-7609)		
C	Catalyst 6513, Cisco 7613		
D	Catalyst 6006, 6009, 6506, 6509		
1	VTT 1	4	Clock A (CLK A)
2	VTT 2	5	Clock B (CLK B)
3	VTT 3		

Replacing the VTT Module



Note

The manufacturing assembly number for the VTT modules on Catalyst 6500 series switches that were shipped since December 2001 is 73-4354-02 Rev A0. If the VTT modules installed on your switch do not have this manufacturing assembly number, you must replace all three VTT modules, regardless of the failure.

If all VTT module manufacturing assembly numbers are 73-4354-02 Rev A0, replace only the failed module.



Caution

Always use an ESD wrist strap when handling modules or coming into contact with internal components.

**Note**

Note the position of the VTT module before you remove it from the switch chassis because you must install the new VTT module in the same position.

To replace the VTT module, perform these steps:

- Step 1** Remove the two screws that secure the VTT module.
- Step 2** Gently lift and remove the VTT module, placing it on an antistatic mat or foam.
- Step 3** Remove the new VTT from the antistatic bag.
- Step 4** Hold the module with the connector away from you.
- Step 5** Carefully press the module onto the connector.
- Step 6** Replace the two securing screws.
- Step 7** Repeat [Step 1](#) through [Step 6](#) to install any additional VTT modules.
- Step 8** Replace the front panel safety cover and power up the switch.

**Warning**

The safety cover is an integral part of the product. Do not operate the unit without the safety cover installed. Operating the unit without the cover in place will invalidate the safety approvals and pose a risk of fire and electrical hazards.

- Step 9** Enter the **show environment** or **show environment status** command to verify the status of the replaced module.

This example shows that the VTT module is functioning properly:

```

Console> show environment
Environmental Status (. = Pass, F = Fail, U = Unknown, N = Not Present)
  PS1:..   PS2:N   PS1 Fan:..   PS2 Fan:N
  Chassis-Ser-EEPROM:..   Fan:..
  Clock(A/B):A   Clock A:..   Clock B:..
  VTT1:..   VTT2:..   VTT3:..
Console>

```

Replacing the Clock Module

**Caution**

Always use an ESD wrist strap when handling modules or coming into contact with internal components.

**Note**

Note the position of the clock module before you remove it from the switch chassis because you must install the new clock module in the same position.

To replace the clock module, perform these steps:

- Step 1** Remove the four screws that secure the clock module.
- Step 2** Gently lift and remove the module, placing it on an antistatic mat or foam.

- Step 3** Remove the new clock from the antistatic bag.
- Step 4** Hold the module with the connector away from you.
- Step 5** Carefully press the module onto the connector.
- Step 6** Replace the four securing screws.
- Step 7** Repeat [Step 1](#) through [Step 6](#) to install any additional clock modules.
- Step 8** Replace the front panel safety cover and power up the switch.

**Warning**

The safety cover is an integral part of the product. Do not operate the unit without the safety cover installed. Operating the unit without the cover in place will invalidate the safety approvals and pose a risk of fire and electrical hazards.

- Step 9** Enter the **show environment** command to verify the status of the replaced module.

This example shows that the clock module is functioning properly:

```

Console> show environment
Environmental Status (. = Pass, F = Fail, U = Unknown, N = Not Present)
  PS1:.      PS2:N      PS1 Fan:.    PS2 Fan:N
  Chassis-Ser-EEPROM:.  Fan:.
  Clock(A/B):A      Clock A:.    Clock B:.
  VTT1:.      VTT2:.    VTT3:.
Console>

```

Related Documentation

For additional information on Catalyst 6500 series switches and command-line interface (CLI) commands, refer to the following publications:

- *Regulatory Compliance and Safety Information for the Catalyst 6500 Series Switches*
- *Catalyst 6000 Series Switch Installation Guide*
- *Catalyst 6500 Series Switch Installation Guide*
- *Catalyst 6500 Series Switch Module Installation Guide*
- *Catalyst 6500 Series Software Configuration Guide*
- *Catalyst 6500 Series Command Reference*
- *Catalyst 6500 Series Cisco IOS Software Configuration Guide*
- *Catalyst 6500 Series Cisco IOS Command Reference*
- *Cisco Clock Module CLK-7600 Installation Note*

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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