Doc. No. 78-0682-03

Installing the CSC-MT Enhanced Memory Card

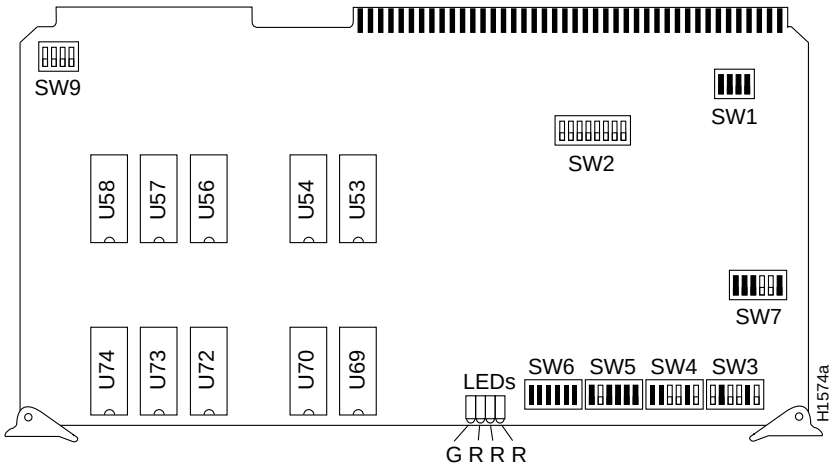
Product Number: CSC-MT=

Introduction

The CSC-MT is a memory card for the A-type (except the AGS+) and M chassis. The CSC-MT stores 32 kilobytes (KB) of configuration information in nonvolatile random-access memory (NVRAM) and provides 48 KB of Multibus memory. The CSC-MT is based on the CSC-M memory card, but with more memory space available than the CSC-M card provides. The upgrade of the CSC-M card to the CSC-MT card requires a simple card swap. The CSC-MT card comes equipped with built-in lithium batteries for NVRAM backup in case of power failure.

If you suspect that your CSC-MT card is not working correctly, check the switch settings against those shown in Figure 1. The CSC-M card is identical to the CSC-MT card except for the following: on the CSC-M card all six switches on SW5 are open, and there are no NVRAM devices installed in U72 through U74 and U56 through U58.

Figure 1 CSC-MT Enhanced Memory Card—Component-Side View



Preventing Electrostatic Discharge Damage

Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. It occurs when electronic components are improperly handled and can result in complete or intermittent failures.

Following are guidelines for preventing ESD damage:

- Before you open a chassis, ensure that power to the unit is turned OFF, but that the power cord is connected to the wall receptacle. Having the power cord connected ensures a ground path for any ESD voltages.
- Always use an ESD wrist strap or ankle strap and ensure that it makes good skin contact.
- Connect the equipment end of the strap to an unpainted surface of the chassis frame or another proper grounding point or surface. We recommend that you attach it to the inside bottom of the chassis, or to the rear panel (inside or outside), without making contact with any connectors or appliques.
- Avoid contact between equipment and clothing. The wrist strap only protects the equipment from ESD voltages on the body; ESD voltages on clothing can still cause damage.
- Handle printed circuit cards and appliques by the edges only; avoid touching the components, traces, or any connector pins.
- Place a removed card component side up on an antistatic surface or in a static shielding bag. If the component will be returned to the factory, immediately place it in a static shielding bag.
- Do not remove the wrist strap until the installation is complete.

Caution For safety, periodically check the resistance value of the antistatic strap. The measurement should be within the range of 1 and 10 Mohms.

Installation Prerequisites

The CSC-MT card can be used by all A-type (except AGS+) and M chassis, which are configured with the CSC-R Token Ring or CSC-P parallel printer interface cards. The CSC-MT cannot be used in the C chassis because this chassis has only one card slot. A CSC-MT NVRAM card should be used in the C chassis.

It is strongly recommended that *in all cases* you upload the running configuration file before you install the CSC-MT, and download it after. Doing this will safeguard the integrity of the configuration.

Caution The CSC-MT can be used to replace a failed CSC-MT or replace another memory card (CSC-M or CSC-MC). It will be necessary to upload the running configuration to a file server (using Trivial File Transfer Protocol [TFTP]) *before* removing the Multibus memory card to be replaced. If this is not done, the entire configuration will be lost (inside the removed Multibus memory card), and it will be necessary to reenter the entire configuration manually.

Copying the Configuration File

Follow these steps to copy your configuration file to a remote host. You will retrieve the file after the new CSC-MT is installed. The following procedure includes the steps for creating a temporary file; skip step 1 if you already have a usable file.

Step 1 Log on to a TFTP file server and create a temporary file. Most hosts will require that you create the destination file first and that it be "world-writable."

Step 2 Return to the router enable mode.

Step 3 Upload the configuration to the temporary file using the privileged command **write network**.

Step 4 The system will prompt you for a host name or address and the file name. Enter the address and name of the file you just created, or select a host that can act as a TFTP server. Sample output of the preceding steps follows:

```
router# write network
Remote host []? 131.131.101.101
Name of configuration file to write [router-confg]? gsxx-confg
Write file gsxx-confg on host 131.131.101.101?[confirm]<Return>
Writing gsxx-confg:!!!! [ok]
```

The !!!! and [ok] indicate that the operation was successful and that the configuration is safely stored in the temporary file on the TFTP file server. A failure is indicated with ... [timed out] or [failed]. A failure indicates a net fault or the lack of a writable, readable file on the TFTP server.

Retrieving the Configuration File

When the CSC-MT is installed correctly, retrieve the configuration file you stored as follows:

Step 1 Upload the configuration file from the TFTP server using the command **config net**. When prompted, supply the host address of the TFTP server and the file name containing the configuration data. A sample output of the **config net** command follows:

```
router# config net
Host or network configuration file [host]? <Return>
IP address of remote host[255.255.255.255]? 131.131.101.101
Name of configuration file [router-config]? gsxx-confg
Booting gsxx-confg from 131.131.101.101:!!!! [ok]
```

Step 2 Use the command **write term** to verify that the configuration is present in the running memory of the router. The configuration will be written to the terminal screen.

Step 3 Save the configuration into the nonvolatile memory with the command **write memory.**

Opening the Chassis

Given your chassis model, use one of the following procedures to open the chasses:

Tools Required

The following tools are required for accessing the chassis interior:

- Flat-blade screwdriver: Medium sized for the A-type and M chassis front panel
- Phillips screwdriver: No. 1 and No. 2 for the M and C chassis front panel and cover
- ESD-preventive wrist strap

A-Type Chassis Access Procedure

Following is the procedure for accessing the A-type chassis interior.

Warning Before accessing the chassis interior, turn OFF power to the chassis and unplug the power cord because hazardous voltages may exist in or near the power supply. Use extreme caution when working near the power supply.

Step 1 Turn OFF power to the chassis and unplug it from AC power.

Step 2 If the chassis is rack-mounted, disconnect all external cables from the chassis rear panel. Note where these cables were connected, for reinstallation.

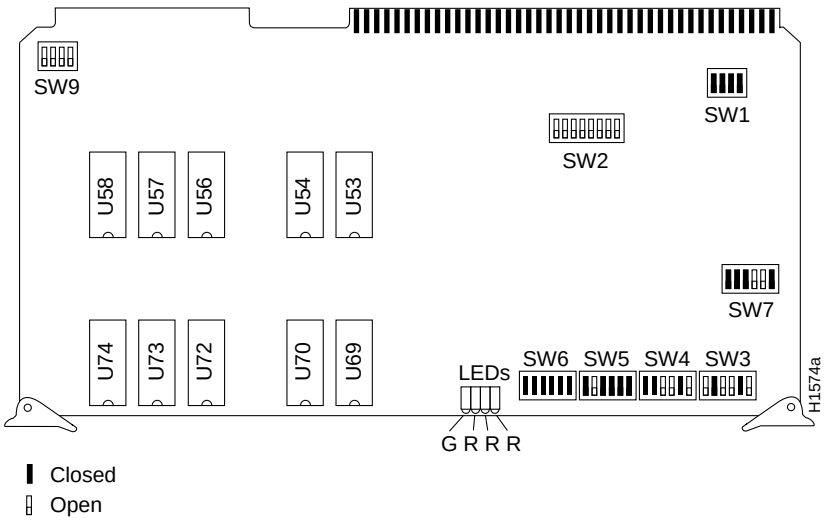
Step 3 Remove the chassis from the rack and transfer it to a desktop or work table.

Step 4 If you will need to handle any electronic components (cards, and so forth), attach appropriate ESD protection and attach the AC power cord, but to prevent a shock hazard, make certain the chassis power is OFF.

Step 5 To access cards in the card cage, loosen the two thumbscrews and remove the front panel from the chassis. (See Figure 2.) If you want to access cards in the card cage only, skip the next step.

Step 6 To access other system components, locate and remove the seven No. 1 Phillips screws that secure the top cover. (See Figure 2.) Set the top cover and screws aside.

Figure 2 Chassis Front and Top Panels



Note To reassemble the chassis, reverse all steps.

M Chassis Access Procedure

Following is the procedure for accessing the M chassis interior.

Warning Before accessing the chassis interior, turn OFF power to the chassis and unplug the power cord because hazardous voltages may exist in or near the power supply. Use extreme caution when working near the power supply.

Step 1 Turn OFF power to the chassis and unplug it from AC power.

Step 2 If the chassis is rack-mounted, disconnect all external cables from the chassis rear panel. Note where these cables were connected, for reinstallation.

Step 3 Remove the chassis from the rack and transfer it to a desktop or work table.

Step 4 If you need to handle any electronic components (cards, and so forth) attach appropriate ESD protection and attach the AC power cord, but to prevent a shock hazard, make certain the chassis power is OFF.

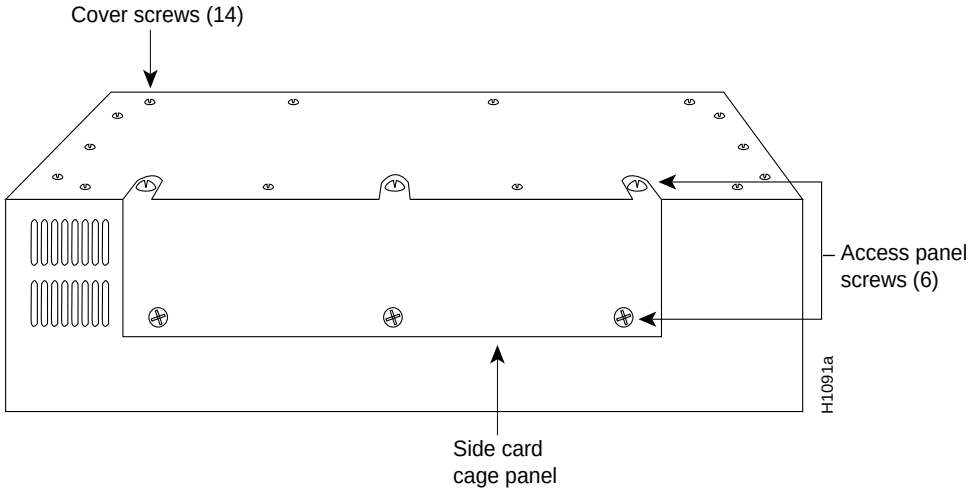
Step 5 To access the cards in the card cage, locate the three flat-blade screws that secure the card cage access panel. (See Figure 3.) These screws are located on the top of the MGS chassis access panel.

Step 6 Using the flat-blade screwdriver, turn each of these screws 1/4 to 1/2 turn counterclockwise until the screw pops up.

Step 7 Using the No. 2 Phillips screwdriver, loosen the three screws at the bottom edge of the card cage cover. (Do not remove these screws completely.) Carefully remove the card cage cover and set it aside.

Step 8 To access the other chassis components, use the No. 1 Phillips screwdriver to remove the 14 screws that secure the top cover of the MGS chassis. (See Figure 3.) Set the top cover aside.

Figure 3 Screw Locations on the MGS Chassis Exterior—Side View



Note To reassemble the chassis, reverse all steps.

CSC-MT Installation

The CSC-MT card is installed inside the card cage. Following is the procedure to install the CSC-MT:

Step 1 Turn OFF power, but to channel ESD voltages to ground, do not unplug the power cord.

Step 2 Access the chassis interior using the appropriate procedure in the section "Opening the Chassis."

Step 3 Disconnect only those cables that are blocking the CSC-MT card.

Step 4 Remove the old memory card.

Caution You must upload the running configuration to a file server (using Trivial File Transfer Protocol [TFTP]) *before* removing the Multibus memory card to be replaced. If this is not done, the entire configuration will be lost (inside the removed Multibus memory card), and it will be necessary to reenter the entire configuration manually.

Step 5 Install the new CSC-MT card.

Step 6 Reattach all remaining cables.

Warning The next part of this procedure requires operation with chassis covers removed. Use extreme caution around the chassis because potentially harmful voltages are present within.

Step 7 Plug in the power cord and turn ON power to the chassis for an installation check.

Step 8 The CSC-MT card has one green light emitting diode (LED) and three red LEDs. The green LED indicates whether power is correctly supplied to the card and should be on when power is on.

If the green LED is not on, turn OFF the power and reseat the CSC-MT in the slot. If the LED fails to come on, contact Cisco.

If any one of the red battery LEDs comes on, it indicates a problem. Contact Cisco for a replacement.

Step 9 Turn OFF power.

Step 10 Replace the front panel (A-type chassis) or the card access panel (M chassis).

Step 11 Turn ON power to the chassis on and allow the system to boot.

Note If you uploaded the running configuration to the file server *before* you installed the new CSC-MT, proceed to the section "*Retrieving the Configuration File*."

The chassis is now ready to be reinstalled in the network.

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