



Configuring Video Support

This chapter describes how to configure the Cisco MC3810 multiservice access concentrator for video support, and includes the following sections:

- [Configuring Video in Pass-Through Mode, page 13-1](#)
- [Configuring Video over ATM AAL1, page 13-2](#)
- [CES Video Traffic Configuration Example, page 13-4](#)

The Cisco MC3810 supports video traffic within a data stream in two ways:

- Video in pass-through mode—Using this method, video traffic received from a video codec connected to a universal input/output (UIO) serial port can be transported on a dedicated timeslot between systems using the time-division multiplexing (TDM) functionality of the T1/E1 trunk.
- Video over ATM AAL1—A serial stream from a video codec connected to a Cisco MC3810 on serial port 0 or 1 can be converted to Asynchronous Transfer Mode (ATM) and transported across an ATM network using AAL1 Circuit Emulation Services (CES) encapsulation.



Note

Only V.35 cable is supported for video traffic over serial port 0 or 1.

Configuring Video in Pass-Through Mode

To configure support for video in pass-through mode, complete the following steps from global configuration mode:

Step	Command	Purpose
1	<code>router(config)# network-clock base-rate {56k 64k}</code>	Configure the network-clock base-rate. The default is 56k .
2	<code>router(config)# interface serial number</code>	Enter serial interface configuration mode for either serial port 0 or 1. If the video connection will be over a point-to-point network, specify the point-to-point option. The default option, multipoint , assumes you have a fully meshed network.
3	<code>router(config-if)# encapsulation clear-channel</code>	Configure the serial interface to be in clear-channel mode for pass-through traffic.

Step	Command	Purpose
4	<code>router(config-if)# clock rate network rate</code>	If the interface is in DCE mode, configure the network clock speed. The maximum rate supported is 2048 MB.
5	<code>router(config-if)# no shutdown</code>	Activate the interface.
6	<code>router(config-if)# dce terminal-timing enable</code>	Enable DCE terminal timing to prevent phase shifting of the data with respect to the clock.
7	<code>router(config-if)# exit</code>	Exit interface configuration mode.
8	<code>router(config)# controller t1 0</code>	Enter controller configuration mode for controller T1 0.
9	<code>router(config-controller)# tdm-group tdm-group-no timeslot timeslot-list</code>	Configure a list of time slots for creating clear channel groups (pass-through) for TDM cross-connect.
10	<code>router(config)# cross-connect id interface-serial controller tdm-group-no</code>	Configure cross-connect pass-through from UIO serial port 0 or 1 to a controller.

This completes the configuration for video traffic in pass-through mode.

Configuring Video over ATM AAL1

To configure support for video streaming data over ATM AAL1 encapsulation using CES, complete the following steps from global configuration mode:

Step	Command	Purpose
1	<code>router(config)# network-clock base-rate 64k</code>	Configure the Cisco MC3810 network clock base-rate to 64 kbps if you have not done so already.
2	<code>router(config)# controller {t1 e1} 0</code>	Select T1 or E1 controller 0. ATM is supported only on controller 0.
3	<code>router(config-controller)# mode atm</code>	Specify that the controller will support ATM encapsulation, and to create virtual ATM interface 0, which you will use to create the ATM permanent virtual circuits (PVCs).
4	<code>router(config-controller)# exit</code>	Exit controller configuration mode.
5	<code>router(config)# interface atm 0</code>	Enter interface configuration mode to configure ATM interface 0.
6	<code>router(config-if)# pvc [vpi/vci] vci]</code>	Create an ATM PVC and enter virtual circuit configuration mode.
7	<code>router(config-if-pvc)# encapsulation aal1</code>	Set the PVC to support AAL1 encapsulation for video.

Step	Command	Purpose
8	<code>router(config-if-pvc)# cbr rate</code>	Enable constant bit rate (CBR) calculation on the PVC. By default, the <i>rate</i> value used is the value configured with the vc-class command. The valid rate is 56–10,000 kbps. The formula to calculate the CBR is 1.14 times the clock rate on the serial port.
9	<code>router(config-if-pvc)# exit</code>	Exit ATM virtual circuit interface configuration mode.
10	<code>router(config-if)# exit</code>	Exit interface configuration mode.
11	<code>router(config)# interface serial number</code>	Enter serial interface configuration mode for either serial port 0 or 1.
12	<code>router(config)# clock rate network rate</code>	If the interface is in DCE mode, configure the network clock speed on the interface to support video traffic. The maximum rate supported is 2048 Mb. The value must be a multiple of 64 kbps.
13	<code>router(config-if)# no shutdown</code>	Activate the interface.
14	<code>router(config-if)# dce terminal-timing enable</code>	Enable DCE terminal timing to prevent phase shifting of the data with respect to the clock.
15	<code>router(config)# encapsulation atm-ces</code>	Configure the ATM encapsulation type to ATM-CES.
16	<code>router(config)# ces connect atm0 pvc [name [vpi/] vci]</code>	Map the CES service to the PVC. To do this, you must specify the ATM 0 interface, and configure the ATM PVC.

This completes the configuration for video traffic over AAL1. For information about tuning CES settings, see the next section, “[Tuning Circuit Emulation Services Settings](#).”

Tuning Circuit Emulation Services Settings

Video streaming traffic over AAL1 uses CES. The default CES settings are sufficient for most configurations. However, you can tune the CES settings as needed.

To change the CES settings, perform the following steps in interface configuration mode:

Step	Command	Purpose
1	<code>router(config-if)# ces initial-delay delay</code>	Configure the maximum size of the CES circuit transmit buffer. The range is 1–16,000 bytes, and the default is 4000.
2	<code>router(config-if)# ces partial-fill octets</code>	Configure the number of user octets per cell for CES. The default is 47.

CES Video Traffic Configuration Example

The following is an example for configuring video traffic over ATM AAL1 using Circuit Emulation Services (CES) on a Cisco MC3810:

```
network-clock base-rate 64k

controller T1 0
 mode atm

interface Serial0 point-to-point
 no ip address
 encapsulation atm-ces
 clockrate network-clock 768000
 ces connect 25 atm0 pvc 25/100

interface ATM0 point-to-point
 ip address 223.223.224.229 255.255.255.0
 no ip mroute-cache
 no ip route-cache
 map-group atm1
 pvc 25 25 100
 encapsulation aal1
 cbr 870

no ip classless

map-list atm1
 ip 223.223.224.228 atm-vc 26 broadcast

line con 0
 exec-timeout 0 0
line aux 0
line vty 0 4
 login

end
```