

# Configuring MC3810 for TDM Cross Connect

Document ID: 14008

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## Introduction

This document illustrates the MC3810 configuration necessary for the sample network scenario in the Network Diagram section.

The Cisco MC3810 has built-in time-division multiplexing (TDM) buses. TDM buses allow the MC3810 to perform TDM the cross-connect (drop and insert) function.

The MC3810 named 3810-dig-3 in the network diagram performs these tasks:

- Passes channel 1–16 as uncompressed voice. This allows the PBX to be connected to the PSTN.
- Passes channel 17–18 as 128K data channel to another device (via interface Serial 0)
- Transmits data and compressed voice over channel 19–24

## Prerequisites

### Requirements

There are no specific requirements for this document.

### Components Used

This document is based on Cisco IOS<sup>®</sup> Software Release 12.2T and later.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

### Conventions

Refer to the Cisco Technical Tips Conventions for more information on document conventions.

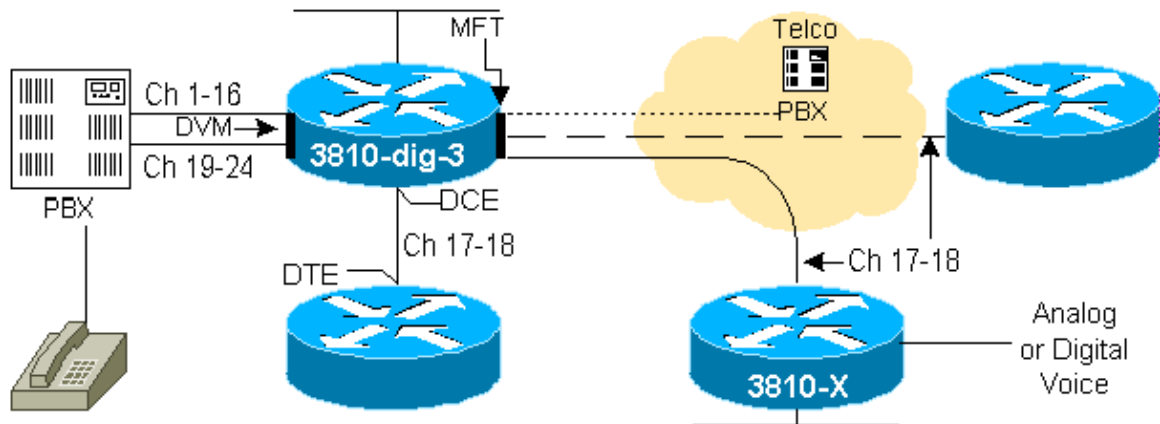
# Configure

In this section, you are presented with the information to configure the features described in this document.

**Note:** Use the Command Lookup Tool (registered customers only) to obtain more information on the commands used in this section.

## Network Diagram

This document uses this network setup:



## Configurations

This configuration allows 3810-dig-3 to perform the tasks listed in the Introduction.

```
3810-dig-3
3810-dig-3#show run

network-clock base-rate 64k
!
controller T1 0
mode cas
tdm-group 1 timeslots 1-16 type e&m
tdm-group 2 timeslots 17-18
framing esf
linecode b8zs
channel-group 0 timeslots 19-24 speed 64
!
controller T1 1
mode cas
tdm-group 1 timeslots 1-16 type e&m
voice-group 0 timeslots 19-24 type e&m-wink-start
framing esf
linecode b8zs
!
interface Serial0
no ip address
encapsulation clear-channel
clockrate network 128000; map to channel 17 & 18
!
cross-connect 0 T1 0 1 T1 1 1
cross-connect 2 Serial0 T1 0 2
end
```

**Note:** The **type e&m** command argument under the T1 interface configuration must be configured for channels that carry uncompressed voice. This ensures the integrity of A/B or A/B/C/D bit. The A/B and A/B/C/D bits show the signaling information for on-hook and off-hook status of the phone connected to the PBX.

## Verify

There is currently no verification procedure available for this configuration.

## Troubleshoot

This section provides information you can use to troubleshoot your configuration.

Issue the **debug dsx signaling** or the **debug serial interface** command in order to see the A/B or A/B/C/D bit on the MFT or DVM. The **debug dsx signaling** command shows the A/B bits in real time as they pass through the router from interface to interface. The **debug serial interface** command, on the other hand, shows a snapshot in time of the A/B bit as it passes through the router. Issue the **clear counter** command in order to clear the log of A/B bit information before you enter either debug command, because you can see many pages of stored information otherwise.

It is important to view the A/B and A/B/C/D bit information, because you can then see in which timeslot the bits fall in the T1 frame. In a cross connect situation, you want to ensure that the A/B and A/B/C/D bits fall in the same timeslots for each cross connected interface, the MFT and the DV in this case.

When you enable the **debug serial interface** command, you must enter the **show controller interface t1 1** command in order to view the results.

Issue the **show controller t1 1** command in order to ensure that the router functions properly in the network.

```
3810-dig-3#show controller t1 1
T1 1 is up.
  Applique type is Channelized T1
  Cablelength is short
  No alarms detected.
  Slot 4 DSX Serial #09556414 Model TEB HWVersion 4.70
  Framing is ESF, Line Code is B8ZS, Clock Source is Line.
  Data in current interval (5 seconds elapsed):
    0 Line Code Violations, 0 Path Code Violations
    0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
    0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
  Robbed bit signals state:
    timeslots      rxA rxB rxC rxD      txA txB txC txD
    1              1  1  1  1      1  1  1  1
    2              1  1  1  1      1  1  1  1
    3              1  1  1  1      1  1  1  1
    4              1  1  1  1      1  1  1  1
    5              1  1  1  1      1  1  1  1
    6              1  1  1  1      1  1  1  1
    7              1  1  1  1      1  1  1  1
    8              1  1  1  1      1  1  1  1
    9              1  1  1  1      1  1  1  1
    10             1  1  1  1      1  1  1  1
    11             1  1  1  1      1  1  1  1
    12             1  1  1  1      1  1  1  1
    13             1  1  1  1      1  1  1  1
    14             1  1  1  1      1  1  1  1
    15             1  1  1  1      1  1  1  1
    16             1  1  1  1      1  1  1  1
```

17	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1

## Related Information

- **Voice Technology Support**
- **Voice and Unified Communications Product Support**
- **Troubleshooting Cisco IP Telephony**
- **Technical Support & Documentation – Cisco Systems**

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Updated: Feb 02, 2006

Document ID: 14008

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