

# BTM AIS (Blue) Errors

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## Contents

**Introduction**

**Prerequisites**

Requirements

Components Used

Conventions

**Error Definition**

**Error Example**

**Troubleshooting**

**Related Information**

## Introduction

This error applies to the IGX broadband trunk module (BTM) with T3, E3, and E1 backcards.

## Prerequisites

### Requirements

There are no specific requirements for this document.

### Components Used

This document is not restricted to specific software and hardware versions.

### Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

## Error Definition

The Blue Signal, also known as an Alarm Indication Signal (AIS), indicates one of two problems:

- Equipment upstream from the trunk interface is in alarm.
- Equipment upstream from the trunk interface is functional, but an intermediate device is in alarm.

The term upstream refers to the relative position of a piece of transmission equipment in the network. The BTM is:

- Downstream from the nearest piece of transmission equipment in the receive direction.
- Upstream from the nearest piece of transmission equipment in the transmit direction.

The T3 or DS3 Blue Signal or AIS is generated on all DS3 outputs of a higher order transmission system during a complete system failure. A Blue Signal triggers to prevent unnecessary tributary alarms. A DS3 Blue Signal (AIS) is a signal with the following:

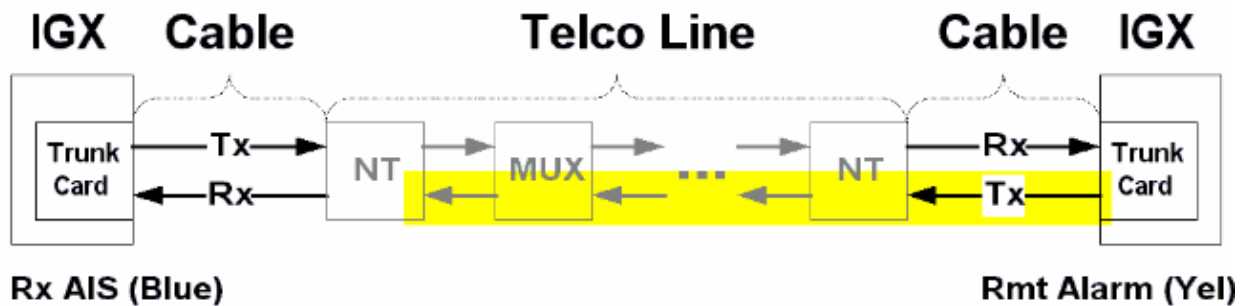
- Valid framing bits.
- A payload bit pattern of 1010... with a one following each overhead bit.
- Valid P-bit parity.
- All C-bits set to zero. This is also known as stuck stuffing.
- All X-bits set to one.

Transmission equipment generates an AIS in the downstream direction if it cannot recover from a problem that occurs with the upstream signal. Transmission equipment includes multiplexers, channel service units (CSUs), and digital cross-connect systems (DCS).

Error conditions such as a loss of signal (LoS) or loss of frame (LoF) prevent the trunk from delivering the signal received from the equipment upstream to the downstream equipment.

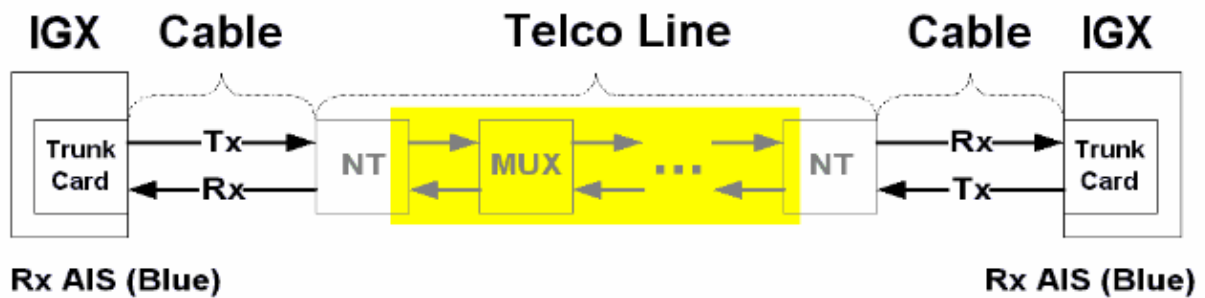
## Error Example

The likely location of equipment errors is highlighted in yellow.



NT = Network Termination      Tx = Transmit  
 MUX = Multiplexer in Telco Line Path      Rx = Receive

18.gif



NT = Network Termination      Tx = Transmit  
 MUX = Multiplexer in Telco Line Path      Rx = Receive

19.gif

## Troubleshooting

The following troubleshooting activities are intrusive. Perform these steps in a maintenance window only if user traffic is affected or if **dsprtrks** indicates an error condition still persists such as when the trunk is not in Clear-OK.

1. Both ends of the trunk must be active during troubleshooting. Issue the **dsprks** command to verify that the trunk is active. If the trunk number is not displayed in the **dsprks** screen, the trunk is not active. To activate a trunk, issue the **uptrk** command.
2. If the remote end of the trunk is in Yellow alarm in the **dsprks** screen, verify that the cabling is correct between the remote IGX and the remote end of the trunk.

The local trunk end will be in an AIS (BLUE) alarm if the transmit direction of the remote IGX trunk cable is not connected. Therefore, the remote Network Termination (NT) would have an LoS.

3. Verify the remote cabling.
  - a. Leave the remote cabling connected to the remote trunk card but remove it from the remote NT.
  - b. Place a hardware loop on the BTM backcard. For E1, use a loopback plug. For T3/E3, use an appropriate BNC connector.
  - c. As an alternative to the hardware loop on the BTM backcard, place the remote NT into the loop toward the customer premises equipment (CPE). The CPE is the BTM at the remote site.
  - d. Issue the **clrtrkerrs** command and then the **dsprkerrs** command.

If errors have stopped incrementing, the cabling and the BTM card set at the remote IGX are working properly.

- e. Monitor **dsprkerrs** for at least five minutes before proceeding.
4. Restore the cabling at the remote IGX.
  5. Ask your Telco to trace the source of the AIS. The problem could exist on an intermediate device.

If the problem persists after performing the troubleshooting steps, please contact the Cisco Systems Technical Assistance Center (TAC) at (800) 553-24HR, (408) 526-7209, the Cisco Technical Support Website, or send e-mail to [tac@cisco.com](mailto:tac@cisco.com).

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## Related Information

- [IGX 8400 BTM Trunk Error Troubleshooting and Definitions](#)
- [How to Distinguish Between Different IGX NTM Models](#)
- [International Telephony Union \(ITU\) Recommendation G.704](#)
- [Cisco WAN Switching Solutions – Cisco Documentation](#)
- [Guide to New Names and Colors for WAN Switching Products](#)
- [Downloads – WAN Switching Software](#)
- [Technical Support – Cisco Systems](#)

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