



# Troubleshooting

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This appendix lists some troubleshooting procedures for Cisco Transport Planner. They are classified as:

- [Traffic Mapping Troubleshooting](#), on page 1
- [Amplifier Troubleshooting](#), on page 6



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**Note**

In the System Messages, Cisco Transport Planner will replace {n} with a Site name, an Unit name, an Optical design rule, or a Number as applicable.

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- [Traffic Mapping Troubleshooting](#), page 1
- [Amplifier Troubleshooting](#), page 6

## Traffic Mapping Troubleshooting

The following procedures help you resolve traffic mapping problems with the network design.

### Wavelength Exceeded

**Symptom:** Cisco Transport Planner warns you that all network analysis solutions exceed the wavelengths. The following table describes the potential causes of the symptom and the solution.

**Table 1: Wavelength Exceeded**

Possible Problem	Solution
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<p>A span in the ring must carry more than 32 wavelengths to implement the traffic demands.</p>	<p>Remove the forced path routing on unprotected channels:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Service Demands folder, right-click the appropriate demand and choose <b>Edit</b> from the shortcut menu.</li> <li>2 In the Path column, choose <b>Auto</b> from the drop-down list.</li> <li>3 Re-analyze the network.</li> </ol>
<p>A span in the ring must carry more than 16/8 wavelengths.</p>	<p>Change the traffic mapping design rules under the related subnet and choose an option that allows a greater number of channels:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Subnets folder, expand Traffic Mapping and click <b>System Release</b>.</li> <li>2 In the Properties pane, choose the new rules option from the C-Band Rules or L-Band Rules drop-down list.</li> <li>3 Re-analyze the network.</li> </ol>

## Invalid Routing

**Symptom:** Cisco Transport Planner warns you of invalid routing (out of network boundary).

The following table describes the potential causes of the symptom and the solution.

**Table 2: Invalid Routing**

Possible Problem	Solution
<p>In a linear network, the direction of each service demand is restricted by the topology but the user applied an unfeasible direction forcing.</p>	<p>Remove the forced path routing:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Service Demands folder, right-click the appropriate demand and choose <b>Edit</b> from the shortcut menu.</li> <li>2 In the Path column of the Edit &lt;demand&gt; dialog box, choose <b>Auto</b> from the drop-down list.</li> <li>3 Re-analyze the network.</li> </ol>

## Cannot Find Alternate Route

**Symptom:** Cisco Transport Planner warns you that it cannot find an alternate route due to multiple hub nodes along the path.

The following table describes the potential causes of the symptom and the solution.

**Table 3: Cannot Find Alternate Route**

Possible Problem	Solution
Because a hub node does not allow express channels, if multiple hub nodes are present, not all point-to-point connections are possible.	Remove the hub functionality constraints: <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>C-Band</b> or <b>L-Band</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the Functionality drop-down list.</li> <li>3 Re-analyze the network.</li> </ol>

## Cannot Route Service

**Symptom:** Cisco Transport Planner warns you that it cannot route service through a hub node.

The following table describes the potential causes of the symptom and the solution.

**Table 4: Cannot Route Service**

Possible Problem	Solution
Since a hub node does not allow express channels, not all service routes are possible.	Remove the path routing forcing or the hub functionality constraints. <p>To remove the path routing forcing:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Service Demands folder, right-click the appropriate demand and choose <b>Edit</b> from the shortcut menu.</li> <li>2 In the Path column of the Edit &lt;demand&gt; dialog box, choose <b>Auto</b> from the drop-down list.</li> <li>3 Re-analyze the network.</li> </ol> <p>To remove the hub functionality constraints:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>C-Band</b> or <b>L-Band</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the Functionality drop-down list.</li> <li>3 Re-analyze the network.</li> </ol>

## Overlapped Services Assigned to the Same Wavelength

**Symptom:** Cisco Transport Planner warns you that overlapped services are assigned to the same wavelength.

The following table describes the potential causes of the symptom and the solution.

**Table 5: Overlapped Services Assigned to the Same Wavelength**

Possible Problem	Solution
Some unprotected channels with assigned wavelengths and directions overlap along the ring.	<p>Remove path routing forcing and/or wavelengths on the specific channels.</p> <p>To remove the path routing forcing:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Service Demands folder, right-click the appropriate demand and choose <b>Edit</b> from the shortcut menu.</li> <li>2 In the Path column of the Edit &lt;demand&gt; dialog box, choose <b>Auto</b> from the drop-down list.</li> <li>3 Re-analyze the network.</li> </ol> <p>To remove the wavelength forcing:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Service Demands folder, right-click the appropriate demand and choose <b>Edit</b> from the shortcut menu.</li> <li>2 In the Wavelength column of the Edit &lt;demand&gt; dialog box, choose <b>Auto</b> from the drop-down list.</li> <li>3 Re-analyze the network.</li> </ol>

## Protected Services Assigned to the Same Wavelength

**Symptom:** Cisco Transport Planner warns you that protected services are assigned to the same wavelength.

The following table describes the potential causes of the symptom and the solution.

**Table 6: Protected Services Assigned to the Same Wavelength**

Possible Problem	Solution
In ring networks, each protected/P-ring request allocates one wavelength. If more than one protected service is forced on the same wavelength and aggregation is not possible, the network is not feasible.	<p>Remove forced wavelengths on the specific channels:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Service Demands folder, right-click the appropriate demand and choose <b>Edit</b> from the shortcut menu.</li> <li>2 In the Wavelength column of the Edit &lt;demand&gt; dialog box, choose <b>Auto</b> from the drop-down list.</li> <li>3 Re-analyze the network.</li> </ol>

## Cannot Route Service Because of Add/Drop Constraints

**Symptom:** Cisco Transport Planner warns you that it cannot route service because of add/drop equipment constraints.

The following table describes the potential causes of the symptom and the solution.

**Table 7: Cannot Route Service Because of Add/Drop Constraints**

Possible Problem	Solution
Add/drop equipment forcing might prevent express channels in a node, which makes unfeasible some channel routes.	Remove add/drop equipment constraints. <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>C-Band</b> or <b>L-Band</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the Functionality drop-down list.</li> <li>3 Re-analyze the network.</li> </ol>

## Design Requires a ROADM or Full Mux/Demux Site

**Symptom:** Cisco Transport Planner warns you that the design requires a ROADM or full multiplexer/demultiplexer site, but no valid site was found.

The following table describes the potential causes of the symptom and the solution.

**Table 8: Cannot Route Service Because of Add/Drop Constraints**

Possible Problem	Solution
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<p>The traffic mapping algorithm might not be able to find a valid solution that respects both the user forcing and the system specifications (in terms of maximum site losses and layout constraints). In such cases, the only possible countermeasure for the algorithm is to upgrade one node to a full capacity node (ROADM or full Mux/Demux). If no valid node is found due to user forcing or equipment locking, the process stops and the network is unfeasible.</p>	<p>Remove any forcing/locking that prevents at least one node from being upgraded to ROADM or full multiplexer/demultiplexer. Conditions that prevent upgrading a node to ROADM or full multiplexer/demultiplexer are:</p> <ul style="list-style-type: none"> <li>• Site functionality is forced to Add/Drop and site type is forced to OADM</li> <li>• During an upgrade procedure, OADM equipment is locked at the site</li> </ul> <p>To change site functionality and type forcing:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>C-Band</b> or <b>L-Band</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the Functionality drop-down list.</li> <li>3 Choose <b>Auto</b> from the Type drop-down list.</li> <li>4 Re-analyze the network.</li> </ol> <p>To unlock OADM equipment:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>Add/Drop</b> under the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the OADM Forcing drop-down list.</li> <li>3 Re-analyze the network.</li> </ol>
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## Amplifier Troubleshooting

The following procedures help you resolve amplifier related problems with the network design.

### Incompatible DCUs (C-Band)

**Symptom:** Cisco Transport Planner warns you that DCUs are incompatible.

The following table describes the potential causes of the symptom and the solution.

**Table 9: Incompatible DCUs (C-Band)**

Possible Problem	Solution
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<p>If the DCUs in the same site are both SMF slope compensating, the cumulative negative dispersion should not be over 1600 ps/nm.</p>	<p>Remove or change one of the forced DCUs:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane, click <b>C-Band Amplifiers</b>.</li> <li>2 In the Properties pane, choose the desired DCU from the DCU1 and/or DCU2 drop-down lists.</li> <li>3 Re-analyze the network.</li> </ol>
<p>If the DCUs in the same site belong to different types, only the following DCU combinations are allowed: DCU-E-200 and DCU-100, or DCU-E-350, and DCU-100.</p>	
<p>Two E-LEAF slope compensating DCUs are not allowed at the same site.</p>	

## MMU Does Not Have Correct Amplifier (L-Band)

Cisco Transport Planner warns you that an L-band node with an MMU requires that the OPT-AMP-L card is forced as the preamplifier (PRE) and booster amplifier (BST).

The following table describes the potential causes of the symptom and the solution.

**Table 10: MMU Does Not Have the Correct Amplifier (L-Band)**

Possible Problem	Solution
<p>In L-band, a node with an MMU installed has amplifier forcing other than two OPT-AMP-L amplifier units, one as PRE and one as BST.</p>	<p>Remove any amplifier forcing in the node:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>L-Band Amplifiers</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the PRE and BST drop-down lists.</li> <li>3 Re-analyze the network.</li> </ol>

## MMU Does Not Have Correct Amplifier (C-Band)

**Symptom:** Cisco Transport Planner warns you that a C-band node with an MMU requires both a preamplifier (OPT-PRE) and a booster (OPT-BST).

The following table describes the potential causes of the symptom and the solution.

**Table 11: MMU Does Not Have the Correct Amplifier (C-Band)**

Possible Problem	Solution
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<p>In C-band, a node with an MMU installed requires both OPT-PRE and OPT-BST.</p>	<p>Remove any amplifier forcing in the node:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>C-Band Amplifiers</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the PRE and BST drop-down lists.</li> <li>3 Re-analyze the network.</li> </ol>
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## Output Power or Tilt are Out of Range

**Symptom:** Cisco Transport Planner warns you that the output power or tilt are out of range for the amplifier selected.

The following table describes the potential causes of the symptom and the solution.

**Table 12: Output Power or Tilt are Out of Range**

Possible Problem	Solution
<p>The output power or tilt forced by the user is not within the allowed range based on the algorithm selected and the type of amplifier selected.</p>	<p>Remove or change the forced value:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>C-Band Amplifiers</b> or <b>L-Band Amplifiers</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the Tilt drop-down list in the From Fiber and To Fiber areas. If you force a value, the tilt value limits are -3.0 to +3.0.</li> <li>3 Re-analyze the network.</li> </ol>

## Invalid Fiber Values, Types, and Loss Values

**Symptom:** Cisco Transport Planner warns you of one of the following:

- Fiber pairs are of invalid types or values
- Fibers have a start of life (SOL) total loss greater than an end of life (EOL) total loss

The following table describes the potential causes of the symptom and the solution.

**Table 13: Invalid Fiber Values, Types, and Loss Values**

Possible Problem	Solution
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<p>An attenuator is forced in a site where there is no place to connect.</p>	<p>Remove the attenuator forcing or verify that the attenuator is inserted on the correct side and wavelength:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>C-Band Amplifiers</b> or <b>L-Band Amplifiers</b> for the appropriate site.</li> <li>2 In the Properties pane, complete one of the following:</li> <li>3 Choose <b>Auto</b> from the Attenuator drop-down list in the From Fiber area to remove the forcing.</li> <li>4 Verify that the attenuator is inserted on the correct side and wavelength. If not, revise accordingly.</li> <li>5 Re-analyze the network.</li> </ol>
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## Attenuator Forcing Not Allowed

**Symptom:** Cisco Transport Planner warns you that attenuator forcing on channels is not allowed; no add/drop ports are available.

The following table describes the potential causes of the symptom and the solution.

**Table 14: Attenuator Forcing Not Allowed**

Possible Problem	Solution
<p>Cisco Transport Planner has an attenuator forced in a site where there is no place to connect.</p>	<p>Remove the attenuator forcing or verify that the attenuator is inserted on the correct side and wavelength:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>C-Band Amplifiers</b> or <b>L-Band Amplifiers</b> for the appropriate site.</li> <li>2 In the Properties pane, complete one of the following:</li> <li>3 Choose <b>Auto</b> from the Attenuator drop-down list for the appropriate amplifier.</li> <li>4 Verify that the attenuator is inserted on the correct side and wavelength. If not, revise accordingly.</li> <li>5 Re-analyze the network.</li> </ol>

## Unavailable Add/Drop Channels

**Symptom:** Cisco Transport Planner warns you that an attenuator was present, but add/drop channels are no longer available.

The following table describes the potential causes of the symptom and the solution.

**Table 15: Unavailable Add/Drop Channels**

Possible Problem	Solution
After a network upgrade, a client was removed but the add/drop attenuator is still forced.	Unlock the add/drop attenuator: <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>Client</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the drop-down list for the appropriate Rx and Tx attenuator.</li> <li>3 Re-analyze the network.</li> </ol>

## Tilt Forced When No Tilt Design Is Selected

**Symptom:** Cisco Transport Planner warns you that tilt is forced for an amplifier although No Tilt Design was selected for the network.

The following table describes the potential causes of the symptom and the solution.

**Table 16: Tilt Forced When No Tilt Design is Selected**

Possible Problem	Solution
The user forced one or more amplifier tilt setting, but the No Tilt Design option is also selected.  <b>Note</b> To view that No Tilt Design is selected in the Project Explorer, click the appropriate system release under DWDM Design Rules settings in the Subnets folder.	Remove forced tilt for the amplifier: <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>C-Band Amplifiers</b> or <b>L-Band Amplifiers</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the Tilt drop-down list for the appropriate amplifier.</li> <li>3 Re-analyze the network.</li> </ol>

## Cannot Replace 32-DMX with 32DMX-0

**Symptom:** Cisco Transport Planner warns you that 32-DMX cannot be replaced with 32DMX-0 as needed because of user forcing.

The following table describes the potential causes of the symptom and the solution.

**Table 17: Cannot Replace 32-DMX with 32DMX-0**

Possible Problem	Solution
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<p>Cisco Transport Planner attempts to use the 32DMX-O card but the 32-DMX card is forced by the user. This could cause an overload of alarms or, if no channel is alarmed, problems during network installation.</p>	<p>If channels dropped at the site are alarmed, allow the use of add/drop attenuators:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Subnets folder, expand DWDM Design Rules and click <b>System Release</b>.</li> <li>2 In the Properties pane, uncheck <b>No TXT/Line-Card RX Bulk Attenuator Design</b>.</li> <li>3 Re-analyze the network.</li> </ol> <p>If no channel is alarmed, remove the 32-DMX forcing:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>Add/Drop</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the Demux drop-down list.</li> <li>3 Re-analyze the network.</li> </ol>
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## Preamplifier Working in Invalid Mode

**Symptom:** Cisco Transport Planner warns you that a preamplifier is working in an invalid mode.

The following table describes the potential causes of the symptom and the solution.

**Table 18: Preamplifier Working in Invalid Mode**

Possible Problem	Solution
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<p>A preamplifier is working in power control mode. Based on the traffic matrix, channel survivability might not be guaranteed if the fiber is cut or the equipment fails.</p>	<p>If the booster amplifier preceding the preamplifier is forced as None by the user, remove the None forcing on the booster amplifier:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>C-Band Amplifiers</b> or <b>L-Band Amplifiers</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the Tilt drop-down list for the From Fiber (BST) amplifier.</li> <li>3 Re-analyze the network.</li> </ol> <p>If the span preceding the preamplifier is within the 27 to 30 dB range, use a higher powered C- or L-band rules algorithm (such as, 32 Chs + 5 dBm/ch):</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Subnets folder, expand Traffic Mapping and click <b>System Release</b>.</li> <li>2 In the Properties pane, choose the new rules option from the C-Band Rules or L-Band Rules drop-down list.</li> <li>3 Re-analyze the network.</li> </ol> <p>If span is greater than 30 dB, the error is unavoidable.</p>
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## Gain Too Low for an Amplifier

**Symptom:** Cisco Transport Planner warns you that an amplifier is working with a gain that is too low.

The following table describes the potential causes of the symptom and the solution.

**Table 19: Gain Too Low for an Amplifier**

Possible Problem	Solution
<p>An amplifier is working with a gain lower than its minimum capabilities. This could be caused by a span that is too short or by compensation problems (L-band only) coupled with the “Use in-line attenuator” option not selected.</p>	<p>If attenuators are forced or inline attenuators were disabled, remove the forcing on the attenuators:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>Add/Drop</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the Attenuator drop-down list.</li> <li>3 Re-analyze the network.</li> </ol>

## Gain Too High for an Amplifier

**Symptom:** Cisco Transport Planner warns you that an amplifier is working with a gain that is too high.

The following table describes the potential causes of the symptom and the solution.

**Table 20: Gain Too High for an Amplifier**

Possible Problem	Solution
An amplifier is working with a gain that is greater than its physical capabilities.	Remove the forcing on the attenuators: <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>Add/Drop</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the Attenuator drop-down list.</li> <li>3 Re-analyze the network.</li> </ol>

## User Forcing Overridden

**Symptom:** Cisco Transport Planner warns you that user forcing will not be allowed.



**Note**

This is a warning and does not prevent the network from being fully functional. The message is displayed in situations where a forcing configured by the user cannot be respected due to physical constraints since the problem may appear only after several calculation steps. The algorithm notifies the user and ignores the setting to avoid interrupting the analysis.

The following table describes the potential causes of the symptom and the solution.

**Table 21: User Forcing Overridden**

Possible Problem	Solution
If the warning appears during a network upgrade, this means the installation parameters must be updated because the upgrade is traffic affecting. This warning could also appear after importing a Cisco MetroPlanner 2.5.x network with all output as forcings.	For a network upgrade, unlock the site with the warning. For a 2.5.x import, if you cannot update the installation parameters, open the design in Cisco MetroPlanner 2.5.x.



**Note**

In the upgrade mode, Cisco Transport Planner remembers all the parameters from last analysis and not from its parent network. A warning with respect to the installation parameters is displayed only when there is a difference between the new values and the values from previous analysis. For example: Create a network design and analyse it. Upgrade the network design and modify some spans. Analyse the upgraded network. A warning message is displayed since some of the installation parameters have changed. Re-analyse the network with making modifications. The warning is no longer displayed since none of the installation parameters have changed. You can create a diff report to identify all the modified installation parameters, see [Viewing Report Differences](#).

## Unsupported Configuration

**Symptom:** Cisco Transport Planner warns you that the configuration is unsupported because of an excessive number of amplifiers or OSC regeneration sites.

The following table describes the potential causes of the symptom and the solution.

**Table 22: Unsupported Configuration**

Possible Problem	Solution
The system is working over its specifications.	Revise the design and re-analyze.

## Channel Power Near the Fail Threshold

**Symptom:** Cisco Transport Planner warns you that the channel power is near the fail threshold.

The following table describes the potential causes of the symptom and the solution.

**Table 23: Channel Power Near the Fail Threshold**

Possible Problem	Solution
Some thresholds are set to the minimum value allowed; this could lead to some false alarms during network life.	Remove the forcing: <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>C-Band Amplifiers</b> or <b>L-Band Amplifiers</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the PRE and BST drop-down lists.</li> <li>3 Re-analyze the network.</li> </ol>

## Channel Power Below the Fail Threshold

**Symptom:** Cisco Transport Planner warns you that the channel power is below the fail threshold.

The following table describes the potential causes of the symptom and the solution.

**Table 24: Channel Power Below the Fail Threshold**

Possible Problem	Solution
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<p>The channel power received by the site is too low, and the fail threshold cannot be set.</p>	<p>Remove the forcing:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>C-Band Amplifiers</b> or <b>L-Band Amplifiers</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the PRE and BST drop-down lists.</li> <li>3 Re-analyze the network.</li> </ol>
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## OSC Channel Power Below the Fail Threshold

**Symptom:** Cisco Transport Planner warns you that the OSC channel power is below the fail threshold and that the network is not feasible.

The following table describes the potential causes of the symptom and the solution.

**Table 25: OSC Channel Power Below the Fail Threshold**

Possible Problem	Solution
<p>The OSC channel is not working.</p>	<p>Remove the forcing:</p> <ol style="list-style-type: none"> <li>1 In the Project Explorer pane under the Sites folder, click <b>C-Band Amplifiers</b> or <b>L-Band Amplifiers</b> for the appropriate site.</li> <li>2 In the Properties pane, choose <b>Auto</b> from the OSC drop-down list.</li> <li>3 Re-analyze the network.</li> </ol> <p>If the span where the OSC fails is longer than 37 dB, the error is unavoidable.</p>

