



# GS7000, GainMaker, and 694X Node Transmitter RF Shutdown Technical Bulletin

## Overview

### Introduction

The optical transmitters of the GS7000, GainMaker, and 694X Nodes with specific date codes may have a defective capacitor which results in RF shutdown.

### Purpose

This document details the issue and explains how to get the issue resolved.

### Audience

This technical bulletin applies to all system engineers and managers who are responsible for operating or maintaining Optical Node equipment.

### Qualified Personnel

Only appropriately qualified and skilled service personnel should attempt to install, operate, maintain, and service this product.



#### **WARNING:**

Allow only qualified and skilled personnel to install, operate, maintain, and service this product. Otherwise, personal injury or equipment damage may occur.

### Safe Operation for Software Controlling Optical Transmission Equipment

If this document discusses software, the software described is used to monitor and/or control ours and other vendors' electrical and optical equipment designed to transmit video, voice, or data signals. Certain safety precautions should be observed when operating equipment of this nature.

For equipment specific safety requirements, refer to the appropriate section of the equipment documentation.

For safe operation of this software, refer to the following warning.



**WARNING:**

Ensure that all optical connections are complete or terminated before using this equipment to remotely control a laser device. An optical or laser device can pose a hazard to personnel in remote locations when operated without their knowledge.

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## Affected Units

Customers may experience RF shutdown if they have Optical Node Transmitters with the following characteristics:

- Date codes: April through October 2009 (D2009 - K2009)
- Configured nodes with transmitters (all powers/all wavelengths) and individual transmitters

Refer to *Affected Part Number Series* (on page 4).

## Affected Part Number Series

The following table provides part numbers of the affected transmitters.

Cisco Part Numbers Stand Alone Tx:	Cisco Part Numbers Tx In Box:
<b>GS7000/694X/GM HI GAIN DFB/CWDM TX (See Illustration#1)</b>	<b>GS7000/694X/GM HI GAIN DFB/CWDM TX</b>
4013896.1310-4013896.1610	590936, 4007019-4007026
4013900.1310-4013900.1610	4011952, 4011955, 4011956, 4011957, 4011961, 4011965-4011968
4013901.1310-4013901.1610	4011953, 4011969, 4011970, 4011974-4011977, 4013218, 4013299
4013902.1310-4013902.1610	4011954, 4013542-4013549
4013906.1310-4013906.1610	590938, 4007003, 4013549, 4007005-4007010
4013907.1310-4013907.1610	590939, 4007011-4007018
<b>694X/GM STDGAIN DFB/CWDM TX (See Illustration#2)</b>	<b>694X/GM STDGAIN DFB/CWDM TX</b>
Cisco Part Numbers Stand Alone Tx:	Cisco Part Numbers Tx In Box:
4013903.1310-4013903.1610	590934, 4006971, 4006978
4013904.1310-4013904.1610	590935, 4006979-4006986
4013905.1310-4013905.1610	590932, 4006987-4006994
<b>694X/GM STD GAIN CWDM TX (See Illustration#2)</b>	<b>694X/GM STD GAIN CWDM TX</b>
4006904-4006927	4006904-4006927
<b>GS7000/6940 UNCOOLED BDR TX 2.5G (See Illustration#5)</b>	<b>GS7000/6940 UNCOOLED BDR TX 2.5G</b>
4011942-4011948	4011905, 4011973
4024699-4024700	4024701, 4024702
735544	735544
751362-751369	751362-751369
4000436	4000471
735510-735511	741279.01, 735511
<b>694X/GM/GS7000 FP HI GAIN TX (See Illustration#6)</b>	<b>694X/GM/GS7000 FP HI GAIN TX</b>
4011964	4011958
4012069-4012070	4011959, 4011960
717906-717909	748853, 590940, 748136-748150, 748855, 590943
<b>6940 HIGHGAIN 1550NM TX (See Illustration#6)</b>	<b>6940 HIGHGAIN 1550NM TX</b>
4005114-4005115	4005120-4005121
751494	4005119

## Affected Part Number Series

Cisco Part Numbers Stand Alone Tx:	Cisco Part Numbers Tx In Box:
<b>694X/GM, 1550NM TX</b> <b>(See Illustration#6)</b>	<b>694X/GM, 1550NM TX</b>
4005109	4005117
4005111	4005118
751492	4005116

## Issue and Resolution

### Issue

A small number of reverse transmitters used in the GS7000, GainMaker, and 694X Nodes with specific date codes (identified above) may contain a defective capacitor. In units where this component fails, transmitters may stop sending an upstream RF signal, although the light is still present.

### Resolution

If you have a transmitter that displays this symptom and contains a capacitor with a date code of 916, 917, or 919 (As shown in illustration #4), the transmitter(s) should be returned to our repair facility for replacement.

It has been our experience that all failures caused by this capacitor have occurred within a few hours of installation and power-up. Transmitters that have not failed within hours (up to a week after installation) are not failing beyond that time frame. Not all capacitors in the noted transmitter date code range are defective.

If you have uninstalled (warehoused) transmitters (within the affected part number list and date codes) or nodes containing these potentially affected transmitters in your warehouse, use this bulletin as a guide for how to inspect these units for defective capacitors. **DO NOT ATTEMPT TO OPEN THE TRANSMITTER.**

If the inspection yields a defective capacitor, the unit should be returned for service. Refer to *Support Telephone Numbers* (on page 10).

## Component Reference Information

The following illustrations shows the GS7000 and the GainMaker 6940 Transmitter.



Illustration#1-GS7000 Transmitter

TP



Illustration#2-Gain Maker / 694X Transmitter

TP

The following illustration shows the test point opening for the GS700 transmitter and GainMaker 694X transmitter from illustration #1 and #2. Capacitor C42 (large yellow capacitor) and date code can be inspected via the test point opening using an ostoscope at an angle.

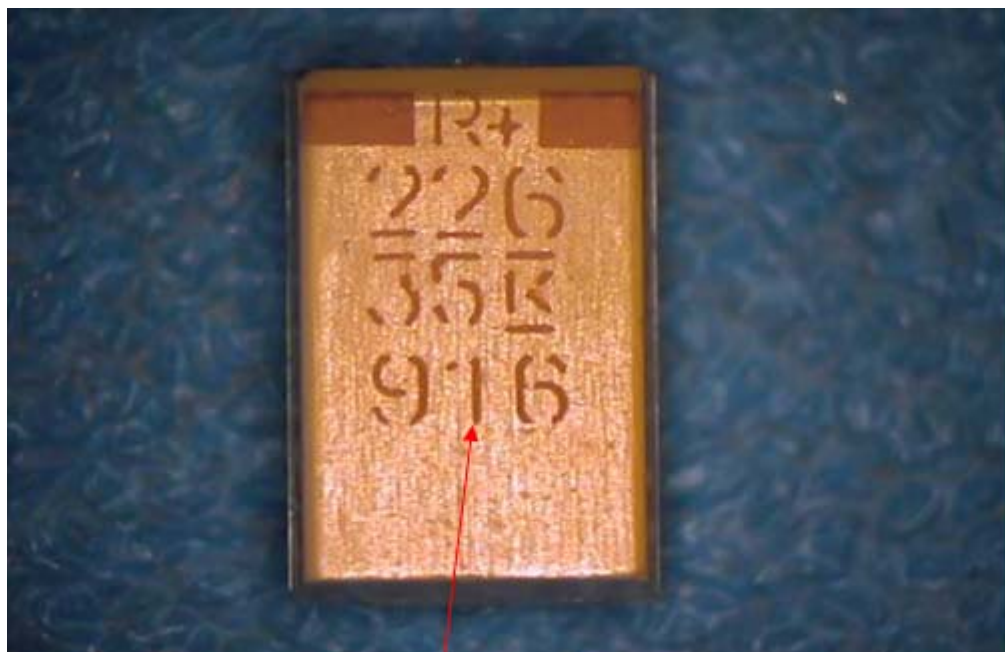


Illustration #3-Test Point opening and view of capacitor

## Component Reference Information

**Note:** If you are not able to determine the date code, return the module for service. Refer to *Support Telephone Numbers* (on page 10).

The following illustration shows the capacitor with the date code.



**Illustration # 4-**The component date code is the bottom number (916)

The following illustration shows BDR 2:1 transmitters ONLY. There is no access to view the capacitor with the cover installed. If the transmitters have date code D2009 - K2009 and they are listed under the affected part number series, return the module for service. Refer to *Support Telephone Numbers* (on page 10).



**Illustration #5-2:1 BDR Transmitter**



The following illustration shows a 6940 transmitter. The capacitor can be inspected via the RF test point opening using an ostoscope at an angle.

**Note:** If you are unable to determine the date code, return the module for service. Refer to *Support Telephone Numbers* (on page 10).



**Illustration #6-6940 Tx**

The following illustration shows the 6940 transmitter and the ostoscope used to inspect the capacitor. Capacitor location reference designator is C32.



**Illustration #7-6940 Tx**

## Support Telephone Numbers

This table lists the Technical Support and Customer Service numbers for your area.

Region	Centers	Telephone and Fax Numbers
North America	Cisco Services Atlanta, Georgia United States	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> <li>■ Toll-free: 1-800-722-2009</li> <li>■ Local: 678-277-1120 (Press <b>2</b> at the prompt)</li> </ul> For <i>Customer Service</i> , call: <ul style="list-style-type: none"> <li>■ Toll-free: 1-800-722-2009</li> <li>■ Local: 678-277-1120 (Press <b>3</b> at the prompt)</li> <li>■ Fax: 770-236-5477</li> <li>■ Email: customer-service@cisco.com</li> </ul>
Europe, Middle East, Africa	Belgium	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 32-56-445-197 or 32-56-445-155</li> <li>■ Fax: 32-56-445-061</li> </ul> For <i>Customer Service</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 32-56-445-444</li> <li>■ Fax: 32-56-445-051</li> <li>■ Email: service-elc@cisco.com</li> </ul>
Japan	Japan	<ul style="list-style-type: none"> <li>■ Telephone: 81-3-5908-2153 or +81-3-5908-2154</li> <li>■ Fax: 81-3-5908-2155</li> </ul>
Korea	Korea	<ul style="list-style-type: none"> <li>■ Telephone: 82-2-3429-8800</li> <li>■ Fax: 82-2-3452-9748</li> <li>■ Email: songk@cisco.com</li> </ul>
China (mainland)	China	<ul style="list-style-type: none"> <li>■ Telephone: 86-21-2401-4433</li> <li>■ Fax: 86-21-2401-4455</li> <li>■ Email: xishan@cisco.com</li> </ul>
All other Asia Pacific countries & Australia	Hong Kong	<ul style="list-style-type: none"> <li>■ Telephone: 852-2588-4746</li> <li>■ Fax: 852-2588-3139</li> <li>■ Email: saapac-support@cisco.com</li> </ul>
Brazil	Brazil	<ul style="list-style-type: none"> <li>■ Telephone: 11-55-08-9999</li> <li>■ Fax: 11-55-08-9998</li> <li>■ Email: fattinl@cisco.com or ecavalhe@cisco.com</li> </ul>
Mexico, Central America, Caribbean	Mexico	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 52-3515152599</li> <li>■ Fax: 52-3515152599</li> </ul> For <i>Customer Service</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 52-55-50-81-8425</li> <li>■ Fax: 52-55-52-61-0893</li> <li>■ Email: sa-latam-cs@cisco.com</li> </ul>
All other Latin America countries	Argentina	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 54-23-20-403340 ext 109</li> <li>■ Fax: 54-23-20-403340 ext 103</li> </ul> For <i>Customer Service</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 770-236-5662</li> <li>■ Fax: 770-236-5888</li> <li>■ Email: keillov@cisco.com</li> </ul>





5030 Sugarloaf Parkway, Box 465447  
Lawrenceville, GA 30042

678.277.1000

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