



1 GHz GainMaker System Amplifier Low Forward Band Roll-off Technical Bulletin

Overview

An issue was discovered recently with 1 GHz GainMaker® System Amplifiers exhibiting signal roll-off in the lower portion of the forward frequency band. The roll-off occurs when one or more capacitors in the pre-amplifier section become fractured. The effect of the damaged capacitor(s) on performance is most significant and noticeable in the lower portion (channels 2-6) of the forward band.

Our experience has shown that units containing these fractured capacitors will fail within a few days of installation and power-up. If an amplifier exhibits the trouble symptom described in this document, we recommend returning the unit to Cisco for repair or replacement. Refer to *For Information* (on page 5).

Important! This phenomenon only occurs in GainMaker 1 GHz High Gain Dual (HGD) and High Gain Balanced Triple (HGBT) amplifiers and nodes, and in Low Gain Dual (LGD) amplifiers.

Purpose

This technical bulletin explains to customers using any of the above amplifiers or nodes how to identify units possibly affected by this issue, and how to initiate return of any affected units.

Audience

This document is intended for authorized service personnel who have experience working with similar equipment. The service personnel should have the background and knowledge required to understand and verify the information provided in this document.

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.

Related Publications

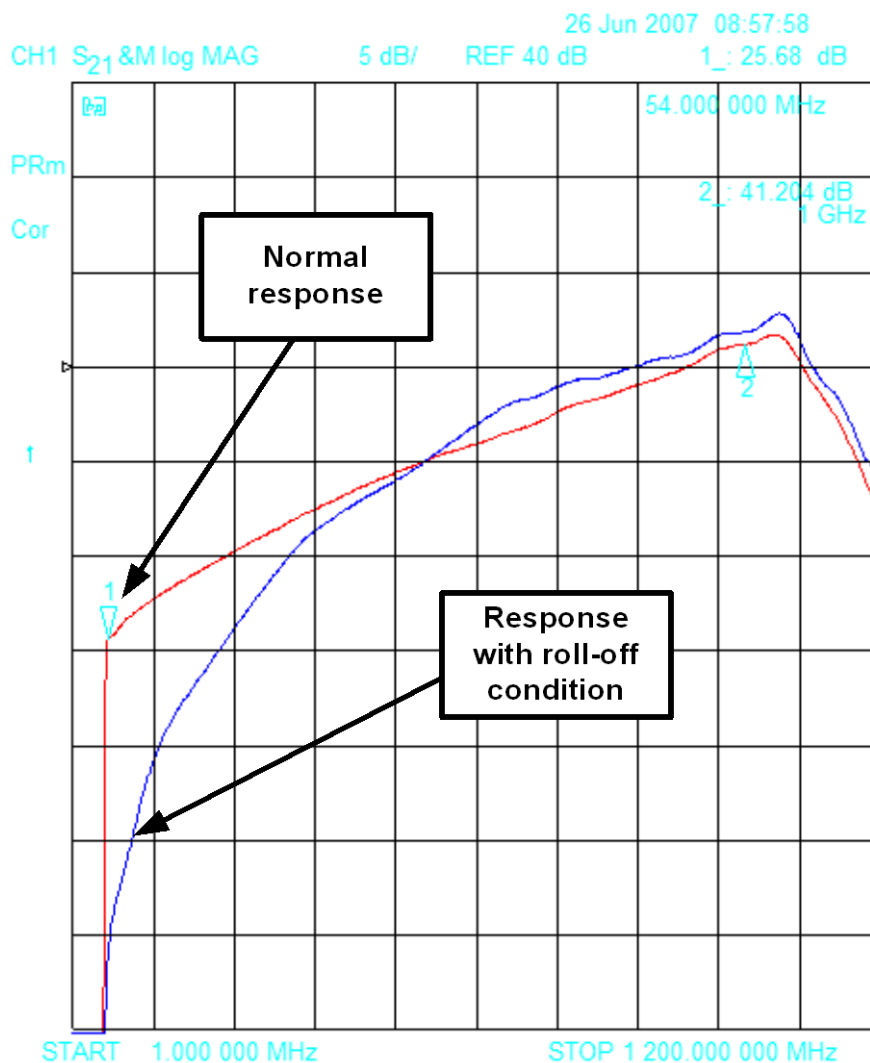
You may find the following publications useful as you implement the procedures in this document.

- *1 GHz GainMaker Broadband Amplifier Platform Reverse Segmentable High Gain Balanced Triple Node Installation and Operation Guide, part number 4015253*
- *1 GHz GainMaker Broadband High Gain Balanced Triple (HGBT) RF Redundant Node Installation and Operation Guide, part number 4011881*
- *1 GHz GainMaker Broadband Amplifier Platform System Amplifier Modules and Housings Installation and Operation Guide, part number 4009928*
- *1 GHz GainMaker Broadband Amplifier Platform Node Installation and Operation Guide, part number 4008353*

Identifying Units Containing Fractured Capacitor(s)

The fractured-capacitor condition described above only exists in the 1 GHz GainMaker amplifiers and nodes identified earlier. The capacitors were added to these units as part of new circuits required for conversion to a 1 GHz product.

Reduced gain in the forward band, particularly at low frequencies, is a symptom of a possible fractured-capacitor condition. In the figure below, the plot labeled **Normal response** shows typical amplifier or node gain at 54 MHz. The plot labeled **Response with roll-off condition** shows the greatly reduced gain at the lower end of the band.



Note: This plot shows a gain reduction of nearly 15 dB at 54 MHz, but as little as 5 dB gain reduction at 54 MHz may indicate a fractured-capacitor condition.

Recommended Customer Action

The roll-off symptom associated with the fractured-capacitor issue described above may be intermittent in nature. However, our experience has shown that units containing these fractured capacitors will fail within a few days of installation and power-up.

If an amplifier exhibits the trouble symptom described in this document, we recommend returning the unit to Cisco for repair or replacement. Refer to *For Information* (on page 5).

For Information

If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.



Cisco Systems, Inc.
5030 Sugarloaf Parkway, Box 465447
Lawrenceville, GA 30042

678 277-1120
800 722-2009
www.cisco.com

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL:
www.cisco.com/go/trademarks

Third party trademarks mentioned are the property of their respective owners.
The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

Product and service availability are subject to change without notice.

© 2008, 2012 Cisco and/or its affiliates. All rights reserved.

August 2012 Printed in USA

Part Number

78-4021314-01 Rev D