



# Cisco RF Gateway 1 Software Release Notes, Release 3.01.01

## Overview

### Introduction

The RF Gateway 1 software version 3.01.01 provides IGMP-related enhancements to the 3.00.XX code base, and fixes a synchronization issue in the interleaver logic that potentially results in an impairment, or spike, present on several RF channels. The 3.00.XX code provided higher channel capacity with no hardware changes from its predecessor releases. It remains fully SDV capable and also provides various stream management improvements. The new 3.X system releases are primarily intended for support of SDV applications. Other video deployments can continue to use 2.02.XX as the preferred release.

### Purpose

The purpose of this document is to notify RF Gateway 1 users of the enhancements included in the current release, and inform users of any special upgrade procedures needed for using Release 3.01.01.

### Audience

This document is intended for system engineers or managers responsible for operating and/or maintaining this product.

### Related Publications

Refer to the following documents for additional information regarding hardware and software.

- *Cisco RF Gateway 1 Configuration Guide*, part number 4025112
- *Cisco RF Gateway 1 System Guide*, part number 4024958

## 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 warnings.



### WARNINGS:

- 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 remotely located personnel when operated without their knowledge.
- Allow only personnel trained in laser safety to operate this software. Otherwise, injuries to personnel may occur.
- Restrict access of this software to authorized personnel only.
- Install this software in equipment that is located in a restricted access area.

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## Operational Enhancements

The following features have been added between 3.00.18 and 3.01.01.

- **Exponential Back-off of Multicast Source Switching.** In 3.00.18, when a multicast stream stops arriving from the current source IP address, the RF Gateway 1 immediately switches to the next source. The RF Gateway 1 then waits for 1 second on that new source IP address before switching to the next source. Every subsequent second another source switch is performed until the stream recovers.

In Software Release 3.00.20 (and in 3.01.01), an exponential back-off algorithm for the IGMP source switching was implemented to prevent the upstream switch or router from getting flooded with IGMP messages in cases of stream outage. In this algorithm, the RF Gateway 1 still immediately switches to the next source on the initial loss of input program, but it now waits for 3 - 6 seconds for the stream to arrive from the new source until switching sources again. The RF Gateway 1 continues to use this 3 - 6 second wait time until all sources of the stream have been attempted. At that point the RF Gateway 1 wraps back to the original source and doubles its wait time to 6 -12 seconds. If the input does not recover the RF Gateway 1 continues doubling its wait time on a source switch up to the maximum of 24 - 48 seconds.

The new algorithm also has a random element to the wait times, hence the time ranges above. Each RF Gateway 1 on start-up calculates a random multiplier to use when calculating the back-off time. So, a group of RF Gateways connected to the same switch or router will spread their source switches over the timeout range to ease the spike of IGMP messages received by the switch.

- **IGMP Report Bundling.** This release of the RF Gateway 1 now bundles up to 120 IGMP Group records into one IP packet upstream. The previous code would only send a maximum of 2 group records into a packet. This bundling drastically reduces the number of upstream IP packets in response to an IGMP General Query, or in the case of a network outage causing many input streams to fail simultaneously.
- **Support for 12 USRM RPC connections (and 3 DNCS connections).** The RF Gateway 1 now supports up to 12 simultaneous USRM RPC connections and can also support up to 3 DNCS RPC connections.

## RF Performance

- **Rare RF impairment on even-numbered channels:** On a very small percentage of units running 03.00.xx, an RF impairment was discovered on even-numbered QAM channels on the top row of cards. The impairment appears as a "spike" on the top of the QAM carrier haystack on a spectrum analyzer. This impairment was caused by an out of sync condition at the input to the ITU encoder's interleaver logic block. Handling for this error condition has been improved to prevent the RF impairment in version 03.01.01.

## Known Issues

The following list identifies known limitations planned to be resolved as part of an upcoming GA release.

- The RF Gateway 1 web management interface provides no events or alarms informing a user about a missing 8 Channels per Port license. The user can easily observe the Summary page to view grayed out channel frequencies and the System/License Management page to confirm an unlicensed unit.
- Over provisioning an unlicensed QAM channel causes an alarm condition on the RF Gateway 1.
- The RF Gateway 1 Web interface is not fully tested with IE-8 and FireFox-3.5.x or newer. The RF Gateway 1 web management interface is tested with IE-6 or FireFox-2.0.0.14 and above. Use of Java 1.6.x is also recommended.
- When using /31 IP addressing, although the RF Gateway 1 allows setting IP addresses and masks that correspond to this point-to-point protocol, it will not respond to ICMP ping requests.

## Licensing

After an upgrade to 3.01.01, a new system license (8 channels per port) must be installed to access full 96 QAM channel support. For information regarding RF Gateway 1 licensing requirements and procedures, see the *Cisco RF Gateway 1 Configuration Guide*, part number 4025112.

The following features require a system license:

- Third Party Encryption
- Data streams requiring use of the DOCSIS® Timing Interface
- DVB® Encryption
- PowerKEY® Encryption
- 8 channels per port

Most systems delivered with 1.02.20 or later using a data part number included a license file pre-installed at the factory. For these systems, an FTP transfer is not necessary.

All systems delivered prior to 1.02.20 and some systems delivered with release 01.02.20 will require that a license file be obtained from Cisco after an upgrade to 3.01.01. Contact your account representative for details on obtaining your license files.

**Note:** Performing an upgrade without a license file will not affect the configuration of a chassis already operating in release 01.03.XX, 02.02.XX, or 01.02.XX. The unit will continue to function as configured earlier until configuration or any license changes are made. No alarms or warnings are currently present that indicate the absence of the 8 channel per port license.

For systems requiring a license upgrade, a licensing-capable RF Gateway 1 provides the operator with a new tree menu item, *License Management*, located under the **System** tab. See the screen below. It provides an FTP mechanism to transfer license files to the device.

The screenshot shows the Cisco configuration interface for a device named 'rfgw1'. The 'System' tab is selected, and the 'License Management' option is highlighted in the left-hand navigation tree. The main content area displays the following information:

- Device Host ID:** 00000006311020
- License Overview Table:**

Type	Installed	Count	Usage	Expiration Date	Remaining Time	Expired	Key
DATA	Yes	1	0	00-000-0000	0	No	7E4164E829C42CD5AFEF8EE0CC9A1EA4
DVB_SCRAMBLING	Yes	1	1	00-000-0000	0	No	80EC99759BF5FBF00F43BAB4CTB06F2F
8_CHANNELS_PER_PORT	Yes	1	1	00-000-0000	0	No	6525539400A24111EFB92CA9F518D5E2
- License File Information:**
  - License File Path:** /SW\_Release/License/
  - License File Name:** 6311020\_AllThree\_Ravi\_license.dat

Buttons for 'Download License' and 'Cancel' are located at the bottom of the License File Information section.

## Upgrade Information

An RF Gateway 1 unit running release 1.02.20, 02.X, or 03.X can be upgraded directly to 03.01.01. See Chapter 3, *General Configuration and Monitoring (Release Management)* of the *Cisco RF Gateway 1 Configuration Guide*, part number 4025112, for more information. When upgrading to 03.01.01 from 1.02.09, an intermediate step of using the bridge release 1.02.19 to arrive at 1.02.20 and finally 3.01.01 must be followed.



## For Information

### 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	For <i>Technical Support</i> , call:
	Atlanta, Georgia United States	<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>

## For Information

<b>Region</b>	<b>Centers</b>	<b>Telephone and Fax Numbers</b>
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>





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