



# **Configuring V.150.1 on Avaya G450 and G430 Branch Gateway**

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#### How to Get Help

For additional support telephone numbers, go to the Avaya support Website: <http://www.avaya.com/support>. If you are:

- Within the United States, click the Escalation Contacts link that is located under the Support Tools heading. Then click the appropriate link for the type of support that you need.
- Outside the United States, click the Escalation Contacts link that is located under the Support Tools heading. Then click the International Services link that includes telephone numbers for the international Centers of Excellence.

#### Providing Telecommunications Security

Telecommunications security (of voice, data, and/or video communications) is the prevention of any type of intrusion to (that is, either unauthorized or malicious access to or use of) your company's telecommunications equipment by some party.

Your company's "telecommunications equipment" includes both this Avaya product and any other voice/data/video equipment that could be accessed via this Avaya product (that is, "networked equipment").

An "outside party" is anyone who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf. Whereas, a "malicious party" is anyone (including someone who may be otherwise authorized) who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either to/through synchronous (time-multiplexed and/or circuit-based), or asynchronous (character-, message-, or packet-based) equipment, or interfaces for reasons of:

- Utilization (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there may be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company (including but not limited to, human/data privacy, intellectual property, material assets, financial resources, labor costs, and/or legal costs).

#### Responsibility for Your Company's Telecommunications Security

The final responsibility for securing both this system and its networked equipment rests with you - Avaya's customer system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources including but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure:

- Your Avaya-provided telecommunications systems and their interfaces
- Your Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products

#### TCP/IP Facilities

Customers may experience differences in product performance, reliability and security depending upon network configurations/design and topologies, even when the product performs as warranted.

#### Product Safety Standards

This product complies with and conforms to the following international Product Safety standards as applicable:

- IEC 60950-1 latest edition, including all relevant national deviations as listed in the IECEE Bulletin—Product Category OFF: IT and Office Equipment.
- CAN/CSA-C22.2 No. 60950-1 / UL 60950-1 latest edition.

This product may contain Class 1 laser devices.

- Class 1 Laser Product
- Luokan 1 Laserlaitte
- Klass 1 Laser Apparat

#### Electromagnetic Compatibility (EMC) Standards

This product complies with and conforms to the following international EMC standards, as applicable:

- CISPR 22, including all national standards based on CISPR 22.
- CISPR 24, including all national standards based on CISPR 24.
- IEC 61000-3-2 and IEC 61000-3-3.

Avaya Inc. is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Avaya Inc. The correction of interference caused by such unauthorized modifications, substitution or attachment will be the responsibility of the user. Pursuant to Part 15 of the Federal Communications Commission (FCC) Rules, the user is cautioned that changes or modifications not expressly approved by Avaya Inc. could void the user's authority to operate this equipment.

#### Federal Communications Commission Part 15 Statement:

For a Class A digital device or peripheral:

##### Note:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

For a Class B digital device or peripheral:

##### Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

#### Equipment With Direct Inward Dialing ("DID"):

Allowing this equipment to be operated in such a manner as to not provide proper answer supervision is a violation of Part 68 of the FCC's rules.

Proper Answer Supervision is when:

1. This equipment returns answer supervision to the public switched telephone network (PSTN) when DID calls are:
  - answered by the called station,
  - answered by the attendant,
  - routed to a recorded announcement that can be administered by the customer premises equipment (CPE) user
  - routed to a dial prompt
2. This equipment returns answer supervision signals on all (DID) calls forwarded back to the PSTN.

Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received

Avaya attests that this registered equipment is capable of providing users access to interstate providers of operator services through the use of access codes. Modification of this equipment by call aggregators to block access dialing codes is a violation of the Telephone Operator Consumers Act of 1990.

#### Automatic Dialers:

When programming emergency numbers and (or) making test calls to emergency numbers:

- Remain on the line and briefly explain to the dispatcher the reason for the call.
- Perform such activities in the off-peak hours, such as early morning or late evenings.

#### Toll Restriction and least Cost Routing Equipment:

The software contained in this equipment to allow user access to the network must be upgraded to recognize newly established network area codes and exchange codes as they are placed into service.

Failure to upgrade the premises systems or peripheral equipment to recognize the new codes as they are established will restrict the

customer and the customer's employees from gaining access to the network and to these codes.

#### For equipment approved prior to July 23, 2001:

This equipment complies with Part 68 of the FCC rules. On either the rear or inside the front cover of this equipment is a label that contains, among other information, the FCC registration number, and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

#### For equipment approved after July 23, 2001:

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the Administrative Council on Terminal Attachments (ACTA). On the rear of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXX. If requested, this number must be provided to the telephone company.

The REN is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed 5.0.

L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas cinq.

To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAAEQ##TXXX. The digits represented by ## are the REN without a decimal point (for example, 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

#### Means of Connection:

Connection of this equipment to the telephone network is shown in the following table:

Manufacturer's Port Identifier	FIC Code	SOC/REN/A.S. Code	Network Jacks
Off premises station	OL13C	9.0F	RJ2GX, RJ21X, RJ11C
DID trunk	02RV2.T	AS.2	RJ2GX, RJ21X, RJ11C
CO trunk	02GS2	0.3A	RJ21X, RJ11C
	02LS2	0.3A	RJ21X, RJ11C
Tie trunk	TL31M	9.0F	RJ2GX
Basic Rate Interface	02IS5	6.0F, 6.0Y	RJ49C
1.544 digital interface	04DU9.B N	6.0F	RJ48C, RJ48M
	04DU9.1K N	6.0F	RJ48C, RJ48M

Manufacturer's Port Identifier	FIC Code	SOC/REN/A.S. Code	Network Jacks
	04DU9.1S N	6.0F	RJ48C, RJ48M
120A4 channel service unit	04DU9.D N	6.0Y	RJ48C

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, please contact the Technical Service Center at 1-800-242-2121 or contact your local Avaya representative. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

#### Installation and Repairs

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. It is recommended that repairs be performed by Avaya certified technicians.

#### FCC Part 68 Supplier's Declarations of Conformity

Avaya Inc. in the United States of America hereby certifies that the equipment described in this document and bearing a TIA TSB-168 label identification number complies with the FCC's Rules and Regulations 47 CFR Part 68, and the Administrative Council on Terminal Attachments (ACTA) adopted technical criteria.

Avaya further asserts that Avaya handset-equipped terminal equipment described in this document complies with Paragraph 68.316 of the FCC Rules and Regulations defining Hearing Aid Compatibility and is deemed compatible with hearing aids.

Copies of SDoCs signed by the Responsible Party in the U. S. can be obtained by contacting your local sales representative and are available on the following Web site: <http://support.avaya.com/DoC>.

#### Canadian Conformity Information

This Class A (or B) digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A (ou B) est conforme à la norme NMB-003 du Canada.

This product meets the applicable Industry Canada technical specifications/Le présent matériel est conforme aux spécifications techniques applicables d'Industrie Canada.

#### European Union Declarations of Conformity



Avaya Inc. declares that the equipment specified in this document bearing the "CE" (Conformité Européenne) mark conforms to the European Union Radio and Telecommunications Terminal Equipment Directive (1999/5/EC), including the Electromagnetic Compatibility Directive (2004/108/EC) and Low Voltage Directive (2006/95/EC).

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#### If this is a Class A device:

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

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#### If this is a Class B device:

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

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# Chapter 1: Introduction

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## Purpose

This document describes the procedure used to configure V.150.1 on Avaya G450 and G430 Branch Gateway.

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## Intended audience

The information in this book is intended for use by Avaya technicians, provisioning specialists, business partners, and customers.

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## Related resources

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## Documentation

Title	Description	Number
Installation		
Quick Start for Hardware Installation for the Avaya Branch Gateway G450	Describes how to install G450 in a concise manner. This includes the G450 assembly and basic configuration.	03-602053
Installing and Upgrading the Avaya Branch Gateway G450	Describes how to install and upgrade G450 , prepare it for software configuration, and perform certain basic configurations. Also describes how to insert media modules and connect external devices to G450 and media module ports.	03-602054

Title	Description	Number
Administration		
Administration for the Avaya Branch Gateway G450	Describes how to configure and manage the G450 after installation. Contains detailed information about all the features of G450 and how to implement them.	03-602055
Avaya Branch Gateway G450 CLI Reference	Describes the commands in the G450 CLI.	03-602056
Maintenance		
Maintenance Alarms for Avaya Aura <sup>®</sup> Communication Manager, Branch Gateways and Servers	Describes MOs and how to resolve alarms.	03-300430
Maintenance Commands for Avaya Aura <sup>®</sup> Communication Manager, Branch Gateways and Servers	Describes all the commands across platforms.	03-300431
Maintenance Procedures for Avaya Aura <sup>®</sup> Communication Manager, Branch Gateways and Servers	Describes maintenance procedures such as network recovery.	03-300432

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## Training

The following courses are available on <https://www.avaya-learning.com>. To search for the course, in the **Search** field, enter the course code and click **Go**.

Course code	Course title
ATC00838VEN	Avaya Media Servers and Gateways Implementation Workshop
AVA00821H00	Avaya CM Architecture and Gateways: H.248, H.323, and Proprietary

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## Avaya Mentor videos

Avaya Mentor is an Avaya-run channel on YouTube that includes technical content on how to install, configure, and troubleshoot Avaya products.

Go to <http://www.youtube.com/AvayaMentor> and perform one of the following actions:

- Enter a key word or key words in the Search Channel to search for a specific product or topic.
- Scroll down Playlists, and click the name of a topic to see the available list of videos posted on the site.

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## Support

Visit the Avaya Support website at <http://support.avaya.com> for the most up-to-date documentation, product notices, and knowledge articles. You can also search for release notes, downloads, and resolutions to issues. Use the online service request system to create a service request. Chat with live agents to get answers to questions, or request an agent to connect you to a support team if an issue requires additional expertise.

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## Warranty

Avaya provides a 90-day limited warranty on Branch Gateway. To understand the terms of the limited warranty, see the sales agreement or other applicable documentation. In addition, the standard warranty of Avaya and the details regarding support for Branch Gateway in the warranty period is available on the Avaya Support website at <https://support.avaya.com> under **Help & Policies > Policies & Legal > Warranty & Product Lifecycle**. See also **Help & Policies > Policies & Legal > License Terms**.



# Chapter 2: Requirements

---

## V.150.1 requirements

The requirements are as follows:

- G450 Branch Gateway.
  - Hardware version 1.x or 2.x and greater
  - Firmware 32.16 or higher
- At least one MP160 Media Processor Module installed on the G450 main board. See [Adding and removing the MP160](#) on page 15 for instructions on installing the MP160.
- G430 Branch Gateway.
  - Hardware version G430 v1 or v2 and greater
  - Firmware 35.8 or higher
- At least one MP120 Media Processor Module installed on the G430 main board. See [Adding and removing the MP120 VoIP module](#) on page 21 for instructions on installing MP120.
- Avaya Aura<sup>®</sup> Communication Manager 6.3.



**Note:**

For information about the service pack, see the Avaya Support website: <http://support.avaya.com/>.



# Chapter 3: Installing the MP160 VOIP module

---

## Adding and removing MP160

### Before you begin

The G450 main board has four slots for VoIP engines. You can install up to two MP160s (Media Processor 160). An MP160 provides 160 channels for voice transport. Alternatively, if no standard voice is required, a maximum of 120 channels of V.150.1 call traffic is supported. A combination of voice calls and V.150.1 calls is supported per the Avaya configuration guidelines.

#### **Note:**

G450 supports up to 320 active channels for voice transport. You can install up to two MP160 modules, or a combination of Media Processor modules with a total of up to 320 channels for voice transport, for example, one MP160 and two MP80s.

See the table below for permitted combinations of Media Processor modules:

Combination of cards	MP20	MP80	MP160
Combination #1	-	-	1 or 2
Combination #2	1 or 2	-	1
Combination #3	-	1 or 2	1
Combination #4	1	1	1

#### **Important:**

You can only install MP160 in slots 2 and 4 on the G450 1.x or slots 1 and 2 on the G450 2.x. (see [Figure 2: Location of DSP module slots in a G450 1.x](#) on page 17 and [Figure 3: Location of DSP module slots in a G450 2.x](#) on page 18) On the G450 1.x, the ASB button is to the *right* of the RST button. On the G450 2.x, the RST button is *above* the ASB button.

You can also use the `show system` command in the command line interface to identify the mainboard HW vintage (version).

**⚠ Electrostatic alert:**

Hold modules only by the edges to avoid damage from static electricity. Do not touch the top or bottom of the circuit board. If possible, wear a wrist-strap and use an anti-static bag.

**⚠ Caution:**

The connector pins can get bent or damaged if you handle the module roughly or if you misalign the module before forcing the module into position.

**⚠ Caution:**

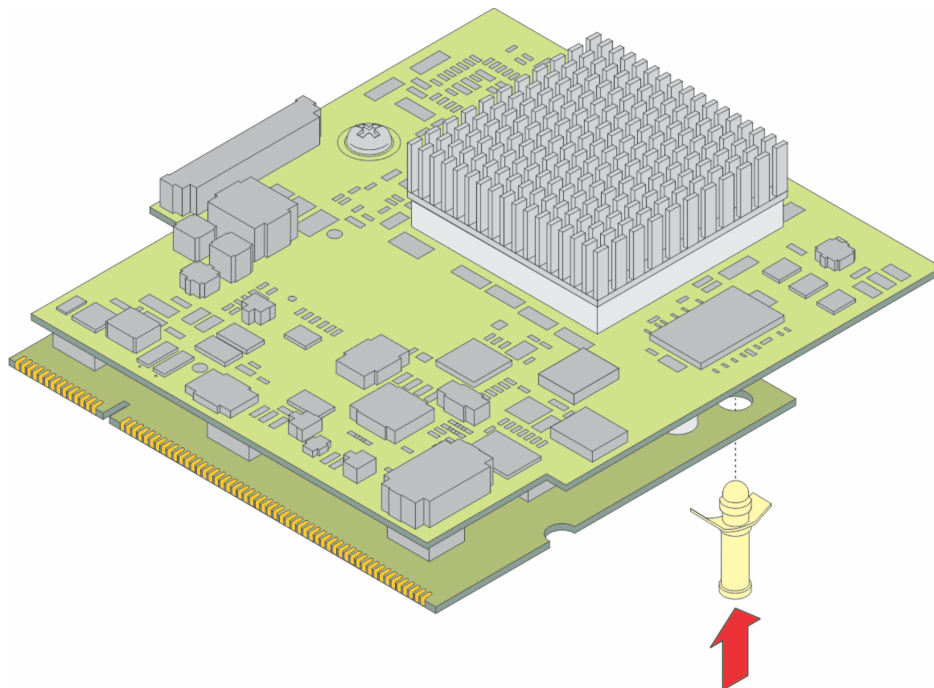
Attach the correct standoff according to the hardware version of the G450. Using the wrong standoff will prevent you from installing the MP160 correctly.

### About this task

You do not need to configure the G450 when you install an MP160. However, you must configure V.150.1 in Communication Manager in order to support V.150.1 applications such as modem-over-ip. See [Configuring V.150.1](#) on page 29.

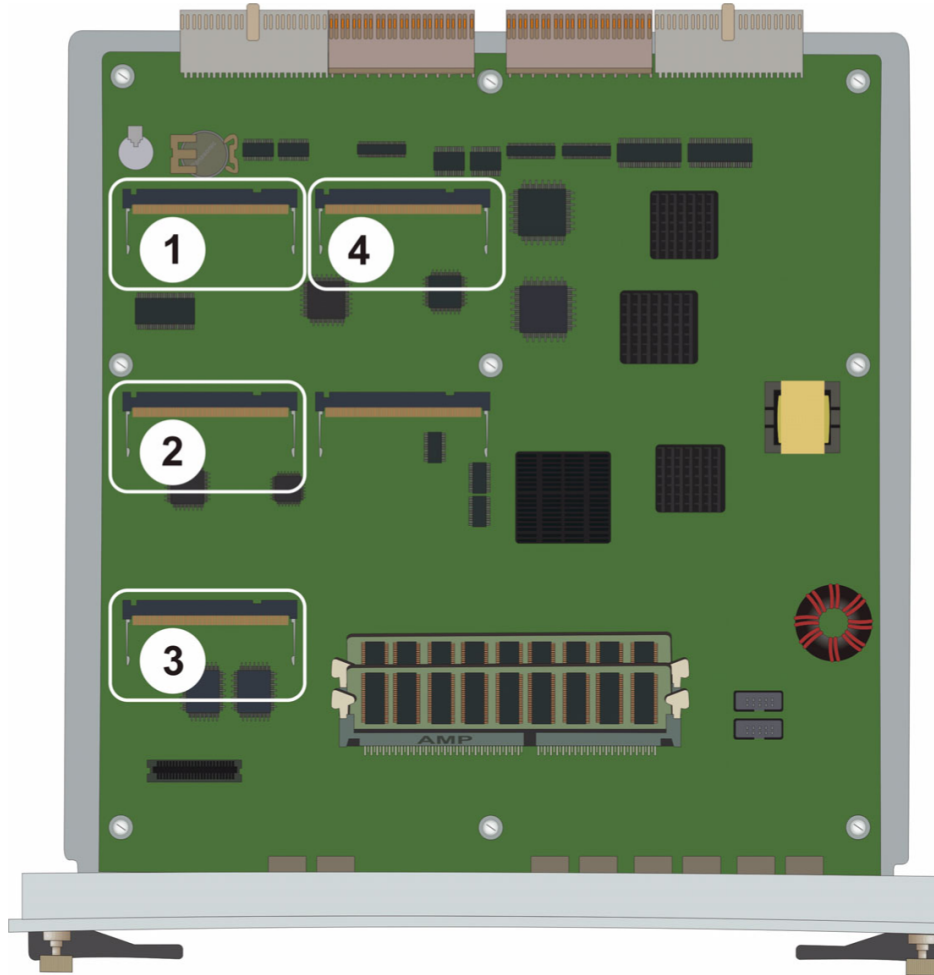
### Procedure

1. Insert the provided plastic standoff in the hole.  
The standoff type differs depending on the hardware version of the G450. Ensure you use the correct standoff.



**Figure 1: Location of Standoff on MP160**

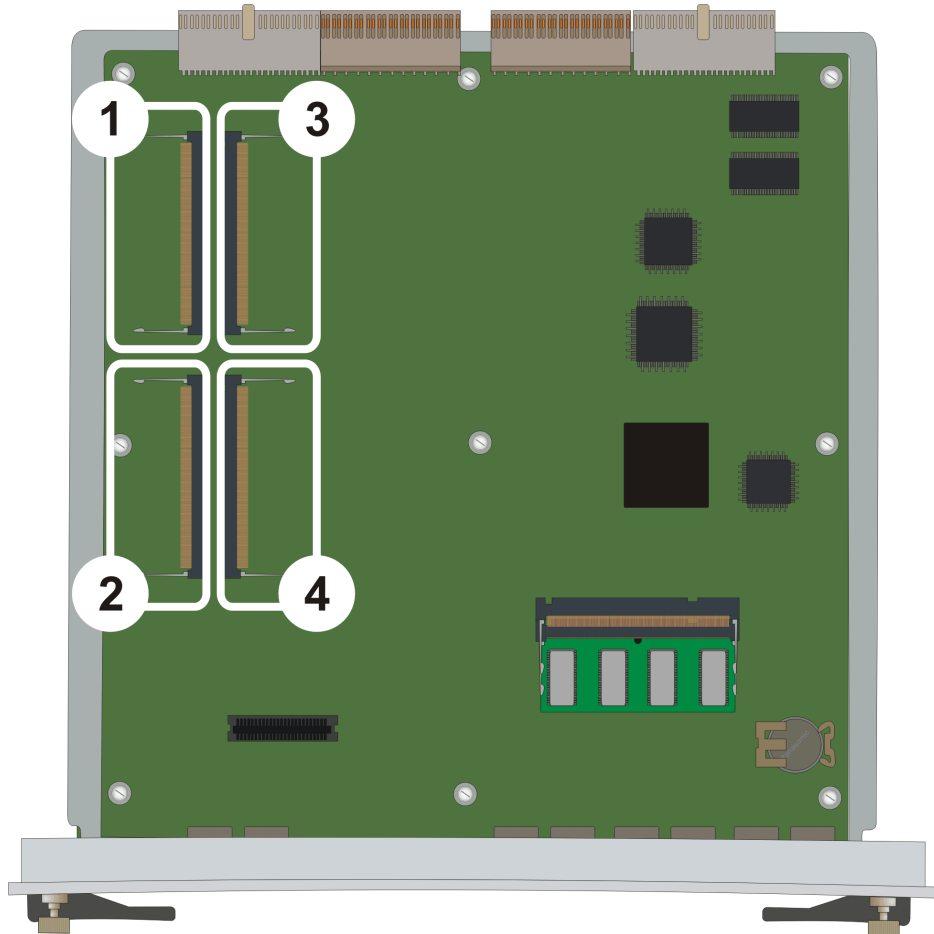
- Use the *short* standoff for the G450 1.x.
  - Use the *long* standoff for the G450 2.x.
2. Locate the MP160 module slot. The location differs depending on the hardware version of the G450, see [Figure 2: Location of DSP module slots in a G450 1.x](#) on page 17 and [Figure 3: Location of DSP module slots in a G450 2.x](#) on page 18.



**Figure 2: Location of DSP module slots in a G450 1.x**

**Table 1: Figure notes:**

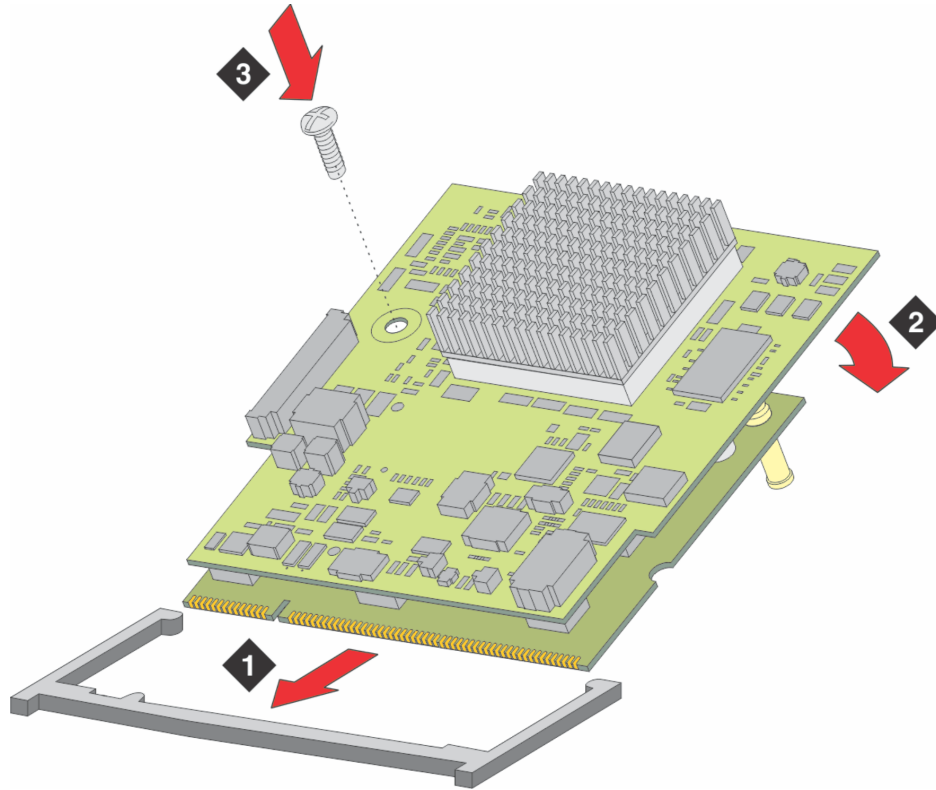
1. MP20 or MP80 module slot
2. MP20, MP80 or MP160 module slot
3. MP20 or MP80 module slot
4. MP20, MP80 or MP160 module slot



**Figure 3: Location of DSP module slots in a G450 2.x**

**Table 2: Figure notes:**

1. MP20, MP80 or MP160 module slot
  2. MP20, MP80, or MP160 module slot
  3. MP20 or MP80 module slot
  4. MP20 or MP80 module slot
3. To insert the module into the slot, position the module at a 45 degree angle to the main board.



**Figure 4: Adding or removing an MP160 in a G450**

4. Push the module in all the way. Do not use too much force.
5. Flatten the module to flush with the main board.  
The latches at both sides click shut.
6. Insert the M3 X 5 screw provided with the kit.
7. Tighten the screw to secure the VoIP module to the motherboard

### Next steps

After powering up, use the `show platform mainboard` CLI command to verify the installation.



# Chapter 4: Installing the MP120 VOIP module

---

## Adding and removing the MP120 VOIP module

### About this task

G430 v1 has one on-board VoIP module providing 25 VoIP channels for G.711 and G.726 and 20 channels for G.729, and an additional slot for the optional insertion of an MP10, MP20, MP80, or MP120 VoIP module. If an MP120 is installed on G430 v1, the on-board VOIP module is disabled. G430 v2 has no on-board VOIP module.

### Note:

The MP120 is capable of supporting new media services such as V.150.1. In the past, all DSP cards were capable of supporting all codec types, albeit with various performance differences in terms of point costs. However, the V.150.1 protocol is not supported on the older DAR cards.

G430 supports a maximum of 120 channels. If an MP120 is installed on a G430 v1, the on-board VoIP module will be disabled.

The field replaceable VoIP module slot is located on the G430 main board. You must remove the G430 cover to insert or remove a VoIP module.

### Procedure

1. [Removing the G430 cover](#) on page 22
2. [Inserting a VoIP module](#) on page 24
3. [Removing a VoIP module](#) on page 26 — Skip this step if you are inserting a module into an empty slot.
4. [Replacing the G430 cover](#) on page 26

---

### Related topics:

[Removing the G430 cover](#) on page 22

[Inserting a VoIP module](#) on page 24

[Removing a VoIP module](#) on page 26

[Replacing the G430 cover](#) on page 26

---

## Removing the G430 cover

### About this task



#### **Voltage:**

Disconnect the G430 from the external power source before proceeding.



#### **Electrostatic alert:**

Do not touch any components on the printed circuit board.

### Procedure

1. Disconnect the G430 power cable from the mains power supply.
2. Note to which connector each cable is connected, so that you can reconnect them correctly.
3. Disconnect all cables (data and power) connected to the G430 and the media modules, both front and rear.
4. Remove the G430 from the rack or wall, if it is wall or rack mounted.
5. If mounting brackets are attached to the G430, remove them.
6. Unscrew the 8 cover screws, indicated by small arrows etched into the cover:
  - Remove one screw from the top (see [the figure](#) on page 22).
  - Remove four screws from the right side (see [the figure](#) on page 23).
  - Remove three screws from the left side (see [the figure](#) on page 23).
7. Lift the cover off the G430.



**Figure 5: Removing the G430 cover screw from the top of the device**

**Table 3: Figure notes:**

G430 top cover screw



**Figure 6: Removing G430 cover screws from the right side**

**Table 4: Figure notes:**

- a. G430 right-side cover screw
- b. G430 right-side cover screw
- c. G430 right-side cover screw
- d. G430 right-side cover screw



**Figure 7: Removing G430 cover screws from the left side**

**Table 5: Figure notes:**

- a. G430 left-side cover screw
- b. G430 left-side cover screw
- c. G430 left-side cover screw

## Inserting a VoIP module

### About this task

#### **Electrostatic alert:**

Hold modules only by the edges to avoid damage from static electricity. Do not touch the top or bottom of the circuit board. If possible, wear a wrist-strap and use an anti-static bag.

#### **Caution:**

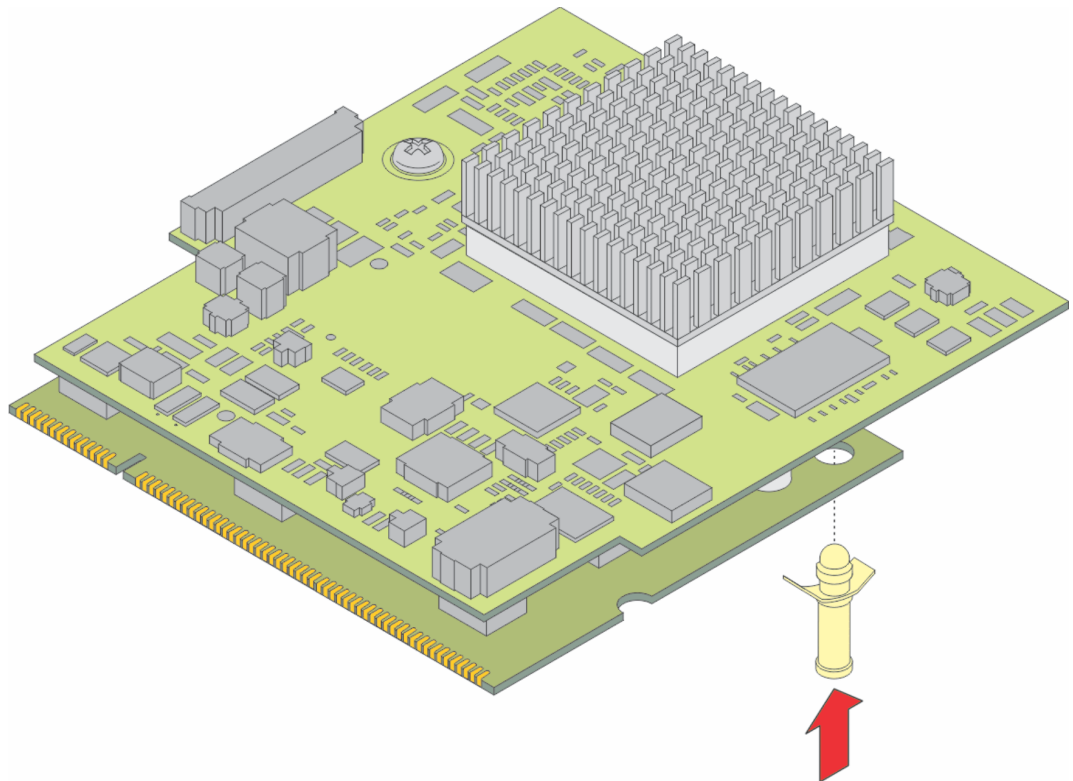
The connector pins can be bent or damaged if the module is handled roughly, or if misaligned and then forced into position.

### Procedure

1. The lower board for the MP120 has a plastic standoff. Insert the plastic standoff to MP120.

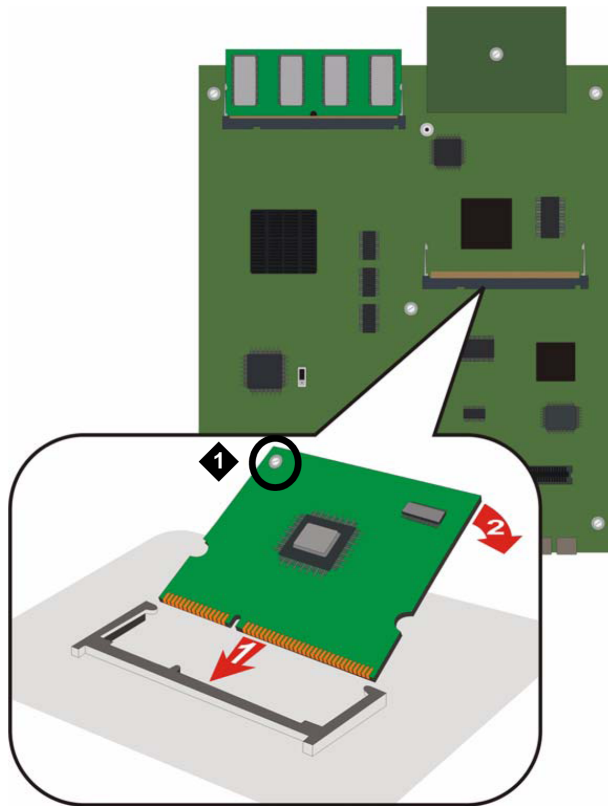
#### **Note:**

This step is applicable only for MP120 installation.



**Figure 8: Insert plastic standoff**

2. Locate the VoIP module slot (see [the figure](#) on page 25).
3. Position the VoIP module at a 45 degree angle to the main board, and start inserting it into the VoIP module slot (see [the figure](#) on page 25).



**Figure 9: Inserting a VoIP module into the VoIP module slot**

**Table 6: Figure notes:**

VoIP module locking screw

4. Push the module in all the way.  
Do not use too much force.
5. Flatten the module so it is flush with the main board.  
The latches at both sides click shut.
6. Tighten the locking screw affixed to the VoIP module.  
This secures the VoIP module to the motherboard.

---

## Removing a VoIP module

### About this task



#### Electrostatic alert:

Hold the module only by its edges to avoid damage from static electricity. Do not touch the top or bottom of the circuit board. If possible, wear a wrist-strap and use an anti-static bag.



#### Caution:

The connector pins can be bent or damaged if the module is handled roughly, or if misaligned and then forced into position.

### Procedure

1. Locate the VoIP module slot (see [the figure](#) on page 24).
  2. Unscrew the locking screw attaching the VoIP module to the motherboard (see [the figure](#) on page 24).
  3. Open the latches on both sides of the module slot.  
The module lifts up.
  4. Pull out the module.  
Hold the module only at the edges.
- 

---

## Replacing the G430 cover

### About this task



#### Electrostatic alert:

Do not touch any components on the printed circuit board.

### Procedure

1. Place the G430 cover back on the unit.
2. Screw in the 8 cover screws you previously removed.  
Their locations are indicated by small arrows etched into the cover:
  - One screw on the top (see [the figure](#) on page 22).
  - Four screws on the right side (see [the figure](#) on page 22).

- Three screws on the left side (see [the figure](#) on page 22).
3. Attach the mounting brackets to the G430, if applicable.
  4. Replace the G430 in the rack or mount on the wall, if applicable.
  5. Re-connect all cables (data and power) that you disconnected from the G430 and its media modules, both front and rear.
  6. Connect the G430 power cable into a mains socket.
  7. Use the **show platform mainboard** CLI command to make sure the G430 is working properly.

For example, when the G430 is working properly, output includes:

```
MAINBOARD BOARD
-----
Type                : G430
Description          : Avaya Inc., G430 Media Gateway
Serial Number       : 08IS26191007
HW Vintage          : 4
HW Suffix           : F
FW Version           : 29.18.0
No Fault Messages   : No Fault Messages
```

When a VoIP module is successfully installed in the optional VoIP module slot, output for the slot includes:

```
MEDIA SOCKET #2
-----
Type                : MP80 VoIP DSP Module
Description          : VoIP DSP resource with 80 channels
Serial Number       : 07IS15812717
HW Vintage          : 0
HW Suffix           : B
Faults              : No Fault Messages
```

When no VoIP module is installed in the optional VoIP module slot, the output for the slot includes:

```
MEDIA SOCKET #2
-----
Type                : UNKNOWN
Description          : UNKNOWN
Serial Number       : UNKNOWN
HW Vintage          : UNKNOWN
HW Suffix           : UNKNOWN
Faults              : NOT PRESENT
```



# Chapter 5: Configuring V.150.1 in Communication Manager

---

## Configuring V.150.1

### Before you begin

V.150.1 is supported by MP160 Media Processor modules installed in G450. To provide flexibility in the installation sequence, you can configure Communication Manager Gateway features before the hardware is installed in the gateway.

V.150.1 is supported by MP120 Media Processor modules installed in G430.

### Procedure

1. Access the Communication Manager administrative SAT interface.  
To open a connection directly to the SAT application in the MGC, add **sat** to the command.  
For example:  

```
Gxxx-001(super)# session mgc sat
```
2. On the SAT terminal, enter **change signaling-group *n***, where *n* is the signaling group number  
The system opens the change signaling group screen.
3. Access page 1.
4. In the **DTMF over IP** field, type `rtp-payload`.
5. At the SAT enter **change system-parameters ip-options** to open the system-parameters ip-options screen.
6. Access page 2.
7. In the **Intra-System IP DTMF Transmission Mode** field, type `rtp-payload`.
8. At the SAT enter **change ip-codec-set [*n*]** to open the change ip-codec-set screen.  
*n* is the codec set number (1–7).
9. Access Page 2.  
For example:

```
change ip-codec-set 1
```

```
IP Codec Set
```

```
Page 2 of 2
```

		Allow Direct-IP Multimedia?	n
	Mode	Redundancy	
FAX	off	0	
Modem	v150mr	0	
TDD/TTY	US	3	
Clear Channel	n	0	

10. In the **FAX** field, type .
11. In the **Modem** field , type v150mr.
12. Access Page 3.

You must enter v150mr in the Modem field (on page 2 of the ip-codec-set form) before you can access Page 3.

For example:

```
change ip-codec-set 1                                     Page 3 of 3

                                V.150 MODEM RELAY PARAMETERS

Note: Maximum SPRT Payload sizes may vary across different gateways
      dependent on firmware/hardware version

SPRT Payload Sizes (bytes)    TC0    TC1    TC2    TC3
SPRT Window Sizes (packets)  -      32     8      -
SPRT Timer TA01 (msec)       -      90    90     -
SPRT Timer TA02 (msec)       -     130   500    -
SPRT Timer TR03 (msec)       -     500   500    -

SPRT Retransmissions: 3

SSE Repetition Redundancy (packets): 3
SSE Inter-Packet Interval (ms): 20
Modem Relay Preferred (NoAudio)? N

Modulation Mode
V.32? y   V.34? y   V.90? n   V.92? n

                                V.42 Error Correction? n
```

## IP codec set

Use this screen to specify the type of codec used for voice encoding and companding (compression/decompression).

The default codec is set for G711. The G711 provides the highest voice quality, but G711 uses the maximum bandwidth. If G711 does not meet the required voice-quality or bandwidth trade-off specification, you can change the G711 default setting.

To modify the values of the fields on this screen, use the following command:

`change ip-codec-set n`, where *n* is the IP codec set number.

**Related topics:**

[IP codec set: page 2](#) on page 31

[IP codec set: page 3](#) on page 35

---

## IP codec set: page 2

You can configure the following capabilities on the codec set:

- Enable or disable Direct-IP Multimedia for videophone transmissions.
- Enable or disable endpoints in the assigned network region to send fax, modem, or TTY calls over IP trunks.
- Define the mode that the system uses to route the fax, modem, or TTY calls.
- Determine whether redundancy must be added to the transmission for higher reliability and quality.

You must assign these capabilities to the codec set, and assign the codec set to a network region for endpoints in that region to be able to use the capabilities established on this screen.

Using V.150.1, you can configure fax and modem so that both use a relay mode together in an IP codec set. You can set the **FAX Mode** field to t.38—standard for fax calls to use t.38. However, modem calls use V.150.1.

 **Note:**

Transporting modem signals over IP between Avaya Communication Manager systems and media gateways is a proprietary implementation. The selection of the V.150.1 Modem Relay codec choice is not proprietary. For modem transport interoperability with third-party gateways, v150mr is the recommended mode of operation.

**Related topics:**

[Allow Direct-IP Multimedia](#) on page 32

[Clear-channel Mode](#) on page 32

[FAX Mode](#) on page 32

[Maximum Bandwidth Per Call for Direct-IP Multimedia \(units\)](#) on page 33

[Maximum Bandwidth Per Call for Direct-IP Multimedia \(value\)](#) on page 33

[Maximum Call Rate for Priority Direct-IP Multimedia](#) on page 33

[Maximum Call Rate for Direct-IP Multimedia](#) on page 33

[Modem Mode](#) on page 34

[Packet Size](#) on page 34

[Redundancy](#) on page 34

[TDD/TTY Mode](#) on page 35

## Allow Direct-IP Multimedia

To enable or disable direct multimedia, use the following codecs:

- H.261
- H.263
- H.264 (video)
- H.224
- H.224.1 (data, far-end camera control).

## Clear-channel Mode

Enables or disables supporting this codec set for BRI data calls.

## FAX Mode

Valid entry	Usage
off	For users using this mode, Communication Manager treats a fax call as an ordinary voice call. Turn off <b>special fax handling</b> .
relay	For users using this mode, Communication Manager uses the Avaya proprietary relay mode for fax transmissions over IP network facilities only between Avaya devices. This mode may be coupled with Redundancy.
pass-through	For users using this mode, Communication Manager uses the Avaya proprietary pass-through mode for in-band fax transmissions over IP network facilities only between Avaya devices. This mode may be coupled with Redundancy.
T.38-standard	For users using this mode, Communication Manager uses the T.38 protocol for fax transmission over IP network facilities.
T.38-G711-fallback	For users using this mode, Communication Manager uses the T.38 protocol for fax transmission only if the protocol can be successfully negotiated with the peer SIP entity. Otherwise, Communication Manager falls back to G.711 for fax transmission. This mode requires a G.711 codec to be administered on the ip-codec-set screen.

 **Note:**

If you have a telephone on an IP trunk that is close to a fax machine, the telephone can pick up the tones from the fax machine and change into the fax mode. To prevent the telephone

from changing into fax mode, set the **FAX mode** to off and place the fax machines in an Automatic Route Selection (ARS) partition that uses only circuit switched trunks, even for inter-gateway fax calls.

## Maximum Bandwidth Per Call for Direct-IP Multimedia (units)

This field appears only if **Allow Direct-IP Multimedia** is enabled.

Valid Entry	Usage
kbits mbits	The unit of measure corresponding to the value entered for bandwidth limitation. The default measure is kbits.

## Maximum Bandwidth Per Call for Direct-IP Multimedia (value)

This field appears only if **Allow Direct-IP Multimedia** is enabled.

Valid Entry	Usage
1 to 9999	The bandwidth limit for Direct-IP Multimedia transmissions on this codec set. The default value is 256.


## Maximum Call Rate for Priority Direct-IP Multimedia

The system displays this field only if **Allow Direct-IP Multimedia** is set to y.


## Maximum Call Rate for Direct-IP Multimedia

Use this field to limit the size of bandwidth used for video calls. The system displays this field appears only if **Allow Direct-IP Multimedia** is set to y. The default value is 384 kilobits. You can enter a value between 64 kilobits and 15360 kilobits, with an increment of 64 kilobits. A typical video endpoint does not require more than 2048 kilobits.

## Modem Mode

Valid entry	Usage
off	In the off mode, a modem call is treated as an ordinary voice call. The default mode for new installations and upgrades is off.
relay	In the Avaya proprietary relay mode, Avaya devices detect the tones of the call and use the appropriate modulation protocol or TTY to terminate or originate the modem calls over IP network.
pass-through	In the Avaya proprietary pass-through mode, Avaya devices detect the tones of the modem call and use G.711 encoding to process the call over the IP network.
v150mr	<p>In the v150mr mode, Avaya devices detect the tones of the modem call and use V.150.1 protocol to transmit V-series modem signals between secure terminals and third-party SIP gateways.</p> <p> <b>Note:</b> V.150.1 protocol is a standard recommended by International Telecommunication Union (ITU) to use a modem over IP networks that support dialup modem calls.</p>

## Packet Size

Valid Entry	Usage
10 to 60 mSec (increments of 10 mSec)	<p>Depending on the codec type, the value of this field has restrictions.</p> <p> <b>Note:</b> Use the Avaya default values.</p>

## Redundancy

Use this field to assign the number of duplicate or redundant packets that must be sent in addition to the primary packet. You can enter a value from 1 to 3. The default value is 0.

 **Note:**

For the **pass-through** and the **clear-channel** modes, you can use the default value or assign 1. This field does not apply to the v150mr mode. If you set the **Modem Mode** field to v150mr, the system sets the **Redundancy** field to display-only with the default value.

## TDD/TTY Mode

Valid entry	Usage
off	Turn off special TTY handling when using this codec set. In this case, the TTY transmission is treated like an ordinary voice call. With a codec set that uses G.711, this setting must send TTY calls to non-Avaya systems. However, there might be errors in character transmissions.
US	For users in regions using this codec, use U.S. Baudot 45.45 mode for TTY transmissions over IP network facilities. This is the default value for new installations and upgrades.
UK	For users in regions using this codec, use U.K. Baudot 50 mode for TTY transmissions over IP network facilities.
pass-through	For users in regions using this codec, use the Avaya proprietary pass-through mode for TTY transmissions over IP network facilities.

---

## IP codec set: page 3

The system displays this page only when you set the **Modem Mode** field to v150mr.

## Modem Relay Preferred (NoAudio)

If you set this field to y, Communication Manager includes the NoAudio codec in the SIP SDP offer/answer message. Enable this field when a gateway interoperates with the devices that support offer/answer NoAudio codec. The default value is n.

## Modulation Mode

Avaya V.150.1 supports the V.32, the V.34, the V.90, and the V.92 modem modulations. For users who need other modulations, you must set the **Modem Mode** field to pass-through. The following fields show whether V.150.1 is enabled to transport the respective modulations as Modem Relay:


**V.32**

Valid entry	Usage
y	Use this entry to enable V.32 modem modulation. The default value is y.
n	Use this entry to disable V.32 modem modulation.


**V.34**

Valid entry	Usage
y	Use this entry to enable V.34 modem modulation. The default value is y.
n	Use this entry to disable V.34 modem modulation.

**V.90**

Valid entry	Usage
y	<p>Use this entry to enable the V.90 digital modem modulation. The default value is y.</p> <p> <b>Note:</b> The system sets the <b>V.34</b> field to display-only with the default value y.</p>
n	Use this entry to disable the V.90 digital modem modulation.

**V.92**

Valid entry	Usage
y	<p>Use this entry to enable the V.92 digital modem modulation.</p> <p> <b>Note:</b> The system sets the <b>V.34</b> field to display-only with the default value y.</p>
n	Use this entry to disable the V.92 digital modem modulation. The default value is n.

## SPRT Retransmissions

Use this field to assign the maximum number of data retransmissions to Transport Channel 1 (TC1) and Transport Channel 2 (TC2). You can assign a value from 1 to 32. The default value is 3.

## SPRT TC0 Payload Size

Use this field to assign the maximum payload size to SPRT Transport Channel 0. You can enter a value from 140 to 256. The default value is 140 bytes.

 **Note:**

Maximum SPRT payload sizes might vary across different gateways depending on the firmware and the hardware version.

## SPRT TC1 Payload Size

Use this field to assign the maximum payload size for SPRT Transport Channel 1. You can enter a value between 132 to 256. The default value is 132 bytes.

 **Note:**

Maximum SPRT payload sizes might vary across different gateways depending on the firmware and the hardware versions.

## SPRT TC1 Window Size

Use this field to assign the window size to SPRT Transport Channel 1. You can enter a value from 32 to 96. The default value is 32 bytes.

## SPRT TC2 Payload Size

Use this field to assign the maximum payload size to SPRT Transport Channel 2. You can enter a value from 132 to 256. The default value is 132 bytes.

 **Note:**

Maximum SPRT payload sizes might vary across different gateways depending on the firmware and the hardware versions.

## SPRT TC2 Window Size

Use this field to assign the window size to SPRT Transport Channel 2. You can enter a value from 8 to 32. The default value is 8 bytes.

## SPRT TC3 Payload Size

Use this field to assign the maximum payload size to SPRT Transport Channel 3. You can enter a value from 140 to 256. The default value is 140 bytes.

 **Note:**

Maximum SPRT payload sizes might vary across different gateways depending on the firmware and the hardware versions.

## SPRT Timer TC1-TA01

Use this field to set the value of the acknowledgement timer of Transport Channel 1. This field accepts values between 50 and 1000 but only in multiples of 10. The default value is 90.

## SPRT Timer TC1-TA02

Use this field to set the value of the acknowledgement update timer of Transport Channel 2. This field accepts values between 50 and 1000 but only in multiples of 10. The default value is 130.

## SPRT Timer TC1-TR03

Use this field to set the value of the retransmit timer of Transport Channel 1. This field accepts values between 50 and 1000 but only in multiples of 10. The default value is 500.

## SPRT Timer TC2-TA01

Use this field to set the value of the acknowledgement timer of Transport Channel 2. This field accepts values between 50 and 1000 but only in multiples of 10. The default value is 90.

## SPRT Timer TC2-TA02

Use this field to set the value of the acknowledgement update timer of Transport Channel 2. This field accepts values between 50 and 1000 but only in multiples of 10. The default value is 500.

## SPRT Timer TC2-TR03

Use this field to set the value of the retransmit timer of Transport Channel 2. This field accepts values between 50 and 1000 but only in multiples of 10. The default value is 500.

## SSE Inter-Packet Interval

Use this field to assign an interval between the State Signaling Events (SSE) packets. You can enter a value between 10 to 40 with the increments of 10. The default value is 20 mSec.

## SSE Repetition Redundancy (Packets)

Use this field to assign the number of redundant SSE packets for transmission. The redundancy option provides robust transport of data packets across an IP-based network. You can enter a value from 0 to 3. The default value is 3.

## V.42 Error Correction

V.42 is an error correction protocol for V.150.1 media transport between modems. If you set this field to y, the gateways use the **V.42 Error Correction** protocol. The default value is n.

---

# Performance and Diagnostics

Additional performance and diagnostic information for V.150 Modem over IP calls is added to the Communication Manager List Trace and List Measurement reports.

For more information on the List Trace and List Measurement features refer to *Maintenance Commands for Avaya Aura® Communication Manager, Branch Gateways and Servers*.



## Index

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