

## Tech Note: Comrex Gagl Instructions

### What is Gagl?

Gagl is a cloud service offered by Comrex. Depending on the tier selected, it allows between one and five users to send and receive audio from computers and smartphones, as well as one phone caller in HD quality. That audio is combined (if more than one user), and delivered to a Comrex hardware codec (such as ACCESS or BRIC-Link, usually in a studio). All participants can hear other participants and the codec “send” audio back to them.

### So it's like Zoom?

Gagl was designed from the ground up with audio in mind. It doesn't send video at all, meaning it requires less Internet bandwidth and therefore has higher stability. And unlike video-oriented conferencing offerings, audio quality is the first priority for Gagl. It uses the well regarded Opus audio encoder and a bitrate that delivers excellent voice and music quality. It also delivers audio directly to your Comrex codec with all the stability enhancements, pro-grade audio connections and features that you've come to expect from our hardware.

In addition, the Gagl + Hotline option provides a phone line that can be used to take calls and add them to a Gagl conference. If these calls are made from a U.S. based mobile carrier, they will be presented with full fidelity audio, rather than narrowband “telephone quality” audio.

### What application is Gagl designed for?

Gagl can be the entire hub for a round-robin reporting program. It can run an entire morning zoo radio show. Latency is low enough for call-in talk radio. Or it can simply be a portal for a single contributor to connect back to the studio over a computer or smartphone.

## How Gagl Works

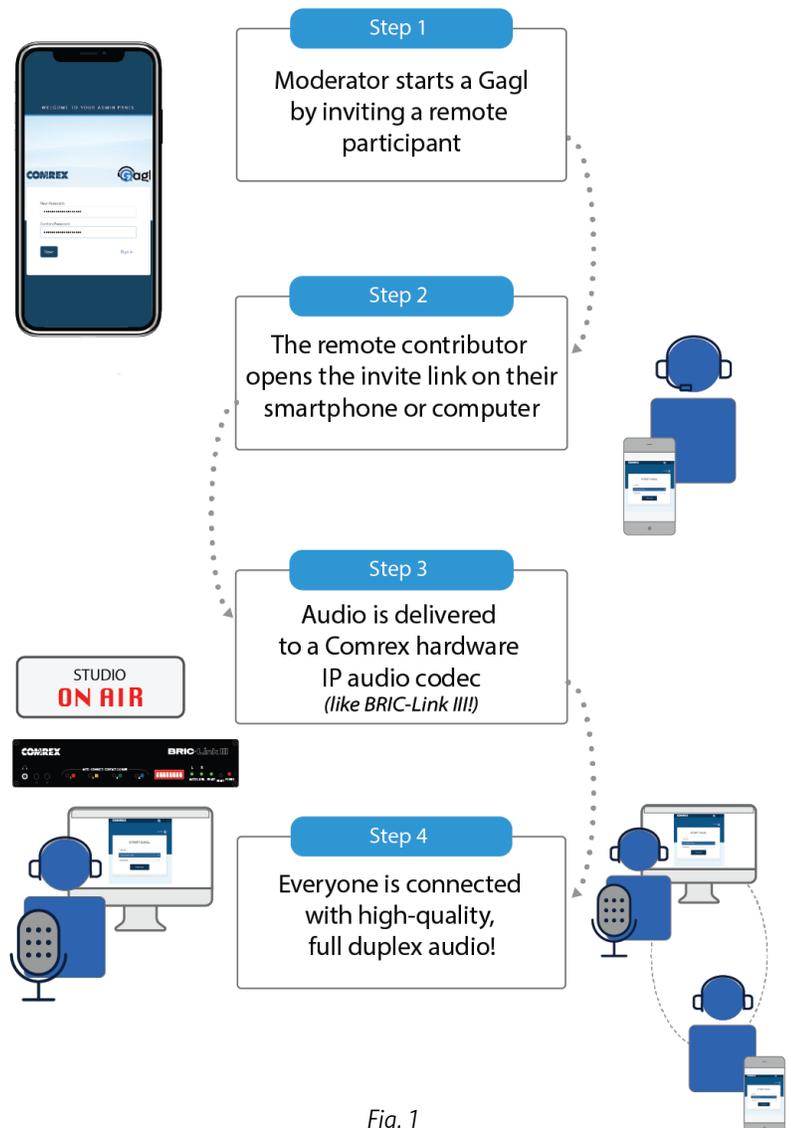


Fig. 1

## Does it use an app?

Gagl doesn't require anything to be installed on your computer or phone, other than a browser. All functionality happens in the browser or your regular mobile phone.

## What else is required?

Because audio is paramount for Gagl, we highly recommend the use of headsets for Guests on computers or phones. This removes any audio distortion that can be caused by acoustic echo cancellation.

The exception is when using the Hotline feature to connect with normal phone calls. Headsets are not required for best quality, although use of speakerphone mode is discouraged.

## Sounds great! How do I get started?

The rest of this document will describe how to start up and use Gagl!

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## Admin vs Moderators vs Guests vs Callers vs Codec

Someone is designated as the Gagl account **Admin**, and this is the person who handles the Gagl subscription. The Admin's email address is used to create an Admin account on Gagl. Within this account, the Admin can set up the Comrex codec parameters and create a list of Moderators by logging into the Admin dashboard at <https://gagl-admin.comrex.com/>.

A **Moderator** is the person who creates a Gagl at airtime. This is a person who has the rights to log into the Gagl landing page (<https://gagl.comrex.com/>) with a username and password. While using Gagl, the Moderator has certain rights that Guests don't have, like the ability to mute Guests and make a Gagl connection to the studio codec.

**Guests** are contributors to the Gagl. They don't have login rights. Guests access the Gagl with a link provided by the Moderator. Guests can mute themselves, but not other participants.

In the case where only one contributor is using Gagl (e.g. a reporter calling into the studio on their smart phone) the concept of Guests doesn't apply. The contributor will be the Moderator.

**Callers** are participants using the Gagl + Hotline feature. Calls are either received or initiated by the Gagl Moderator to/from regular mobile phone numbers for enhanced audio quality.

**Codec** is the Comrex ACCESS or BRIC-Link codec located in the studio, pre-configured by the Admin account. Firmware 4.5p11 or higher is recommended, as the Gagl user agent is added to the codec SIP whitelist by default on these releases.

## Gagl Tiers

Based on the level of Gagl subscription chosen by the Admin at signup, Gagl will present one of three tiers of service:

**Gagl Solo** (*free tier*): A Moderator can create a Gagl via a browser and connect to a Comrex codec. No invites for other participants can be issued and no Hotline functionality is provided.

**Gagl Standard**: A Moderator can create a Gagl and invite up to four additional participants (five total). Users will all be conferenced and connected to a Comrex codec.

**Gagl + Hotline:** All features of Gagl Standard plus a phone number for incoming or outgoing phone calls. If calls are made to/from US mobile carriers, they will be carried in “HD Voice” which enhances the audio bandwidth of the person on the mobile phone.

### Setting up your Comrex Codec

The codec must be configured for unregistered SIP operation and the following SIP ports should be open or forwarded in your network: UDP 5060, UDP 6014, and UDP 6015. These default ports can be reassigned to your codec if needed. Additionally, select the System Settings section and enable the Show Advanced Settings slider (lower left-hand corner). Go to Alternate Modes/EBU 3326/SIP and confirm that the parameters “Accept Incoming Connections”, and “Use STUN Server” are configured to “Yes”. For more information, please refer to your codec manual or contact [techies@comrex.com](mailto:techies@comrex.com).

### Setting up the Gagl dashboard

You can sign up for Gagl on [comrex.com/products/gagl](http://comrex.com/products/gagl). The links on that page will take you to the Gagl billing site, where you will set up payment for your account. Once that’s complete, you’ll receive an email from Gagl to your Admin email account. This email will contain a link to allow you to create your Admin Gagl account. (Fig. 2)

Enter a password (one letter, number, and special character required). Once this is complete you’ll be taken to the Admin dashboard. (Fig. 3)

Click “Add Moderator” in the upper right corner, and enter your Moderator’s details. Create up to five Moderators per master account. Once the Moderator is created, they will receive an email with a link to create their password. Moderators may be edited or deleted by the Admin at any time.

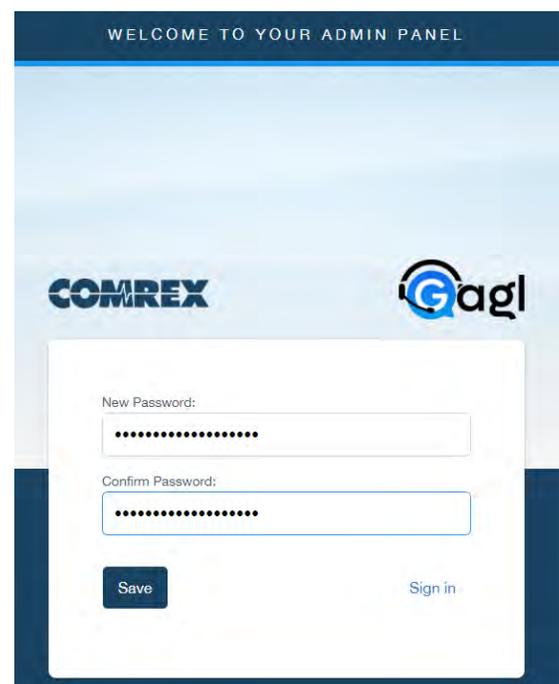


Fig. 2

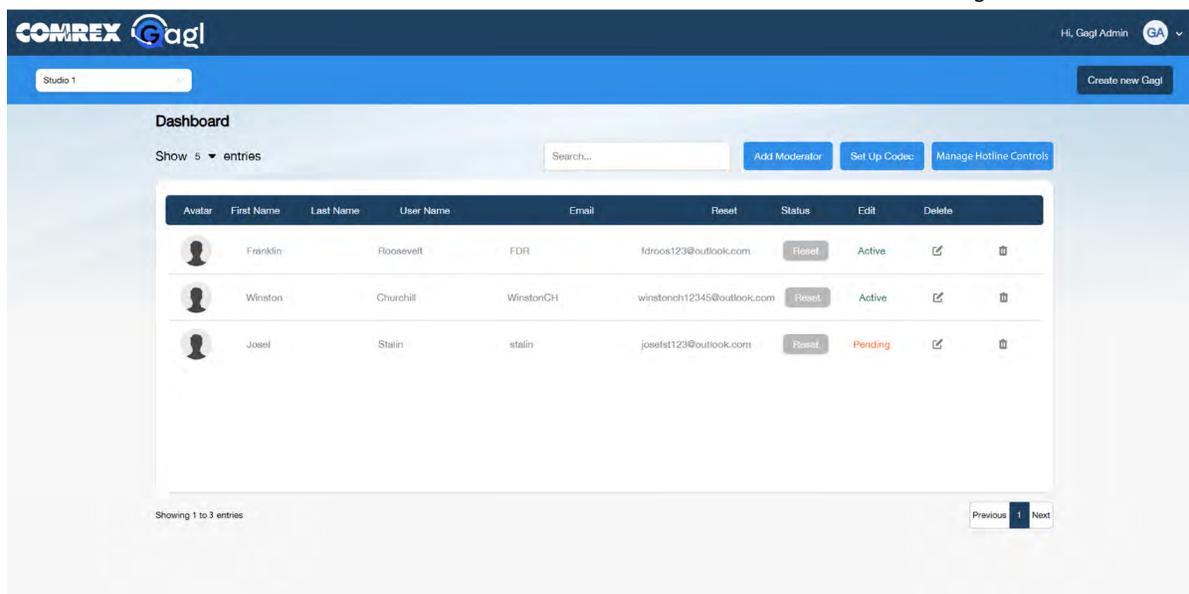


Fig. 3

The next step within the dashboard is to set up the Comrex codec connection by clicking “Set Up Codec” in the upper right corner.

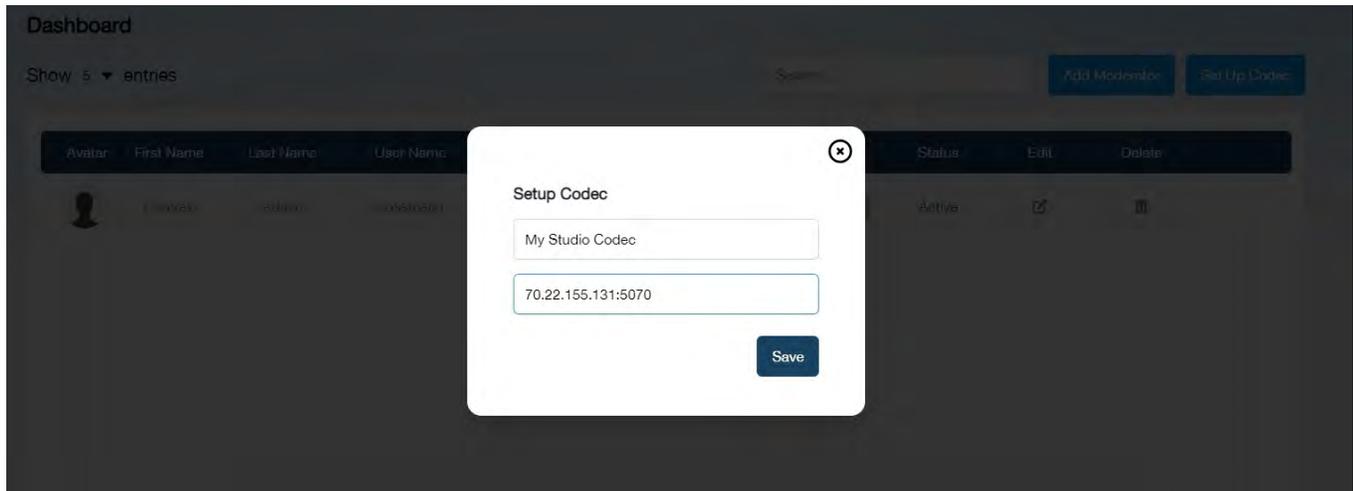


Fig. 4

Here you will give a name to your codec connection (to be displayed on the Gagl connection page) along with the IP address of your codec. Note: If you’ve changed the SIP port in your codec settings, make sure you add the port number here (e.g. 70.22.155.131:5070)

## Creating a Gagl

Once you have Moderator credentials, log into Gagl at [gagl.comrex.com](http://gagl.comrex.com). You can log in either with the user name created on the Admin page, or your Moderator email address.

Create a unique name for your Gagl in the name field. This name will be cached in your browser the next time you log on. You’ll need to name your Gagl in order to issue invites. If you change the name, you’ll need to issue new invites.

You have a choice of inviting Guests here (Fig. 5), or after the Gagl is created on the next screen. If you want to issue invites now (e.g. for a future Gagl), click “Invite people to Gagl”, and enter their names and emails. Only when the Gagl is started, these Guests will receive an email link to join in “Guest mode”.

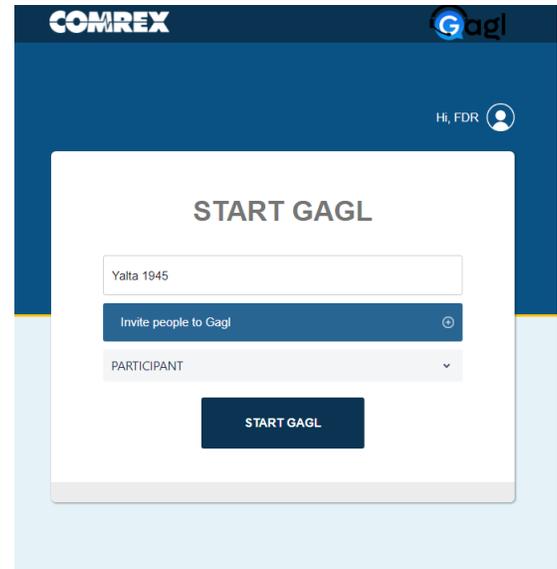


Fig. 5

Before creating your Gagl, you must choose how to participate. This is done via the selection box at the bottom of this page. The choices are:

**Participant:** Moderator computer joins the Gagl along with Guests, all can hear each other and Codec (when connected) can hear all. Besides Gagl sessions, in the case of only one contributor, this is the choice to make.

**Silent:** Moderator's entry does not appear in the Guest list, and no Moderator audio is sent to Guests or Codec. (This mode is best if Moderator will use the studio console/codec connection to join the Gagl). Moderator can still mute and disconnect Guests.

**Producer:** Moderator is heard by Guests, and Moderator can hear all. Moderator audio is not sent to Codec. Moderator can still mute and disconnect Guests. *(coming soon)*

## Running a Gagl

Figure 6 shows the Moderator Guest list screen:

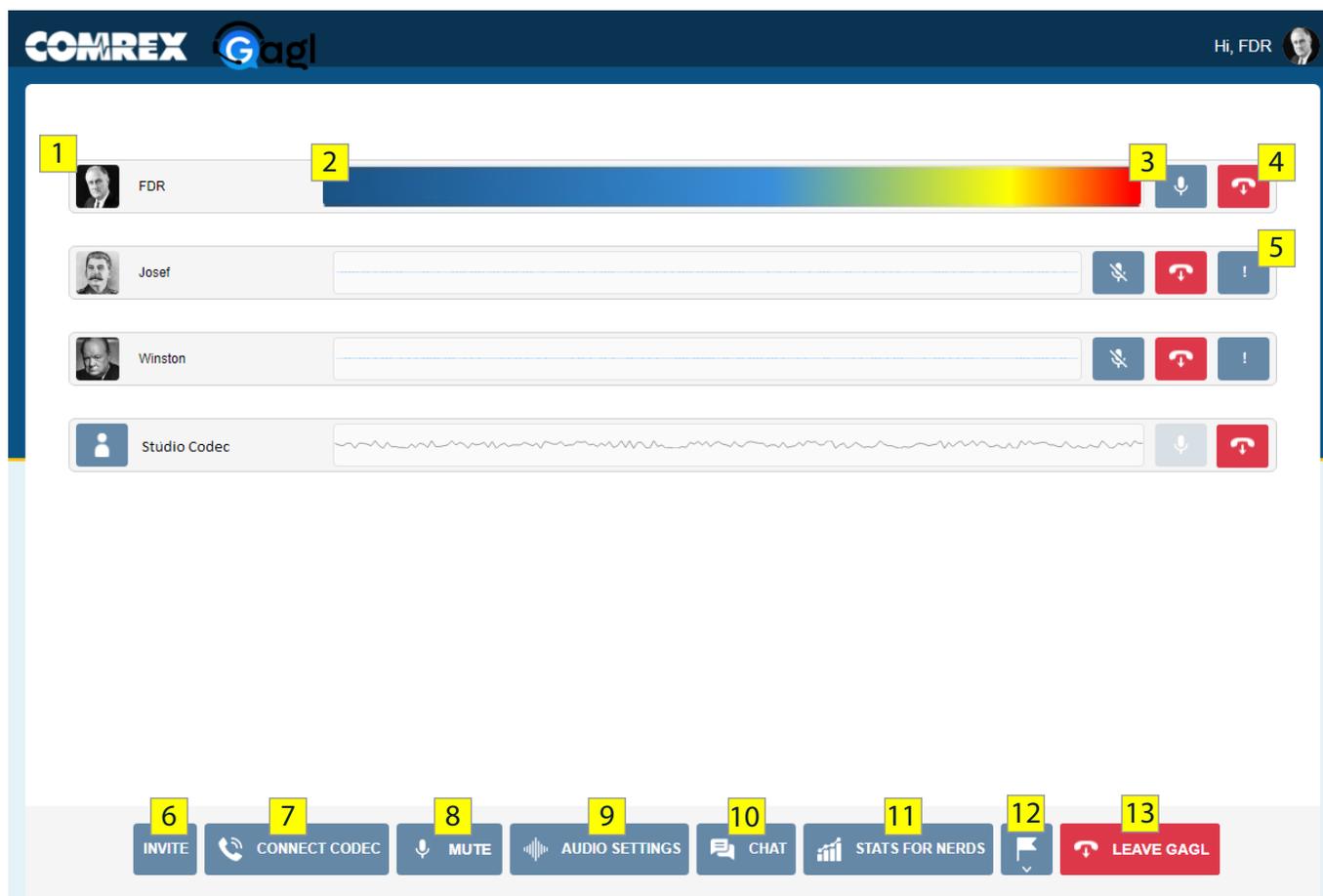


Fig. 6

The functions are outlined below:

1. **Guest list:** An entry will appear for each Moderator, Guest and Codec participating in the Gagl.
2. **Audio meter:** When a Gagl participant speaks, their audio will be reflected here.
3. **"Mute/Unmute Guest" button:** The Moderator can mute and unmute each Guest via these buttons.
4. **"Leave Gagl" button:** The Moderator can remove each Guest from the Gagl via these buttons.
5. **"Request Unmute" button:** The Moderator can send an "unmute" request to Guests who have muted themselves.

6. **"Invite" button:** Issue email invites to additional Guests (works the same as Invite function on Gagl creation page).
7. **"Connect Codec":** Make a connection to the pre-configured codec address and add it to the Gagl.
8. **"Mute/Unmute Mod" button:** Mute the local Moderator's output audio to Guests and Codec.
9. **"Audio Settings":** Choose the input (microphone) and output (speaker) devices on the local computer/phone. Also allows for a simple audio sanity check.
10. **"Chat":** Open a text chat window visible to all Guests.
11. **"Stats for Nerds":** Displays basic participant info. (*Will display connection stats in the future.*)
12. **"Raise/Lower Flag":** Sends a notice to Guests that the Moderator wishes to speak next.
13. **"Leave Gagl":** Ends current Gagl and disconnects all Guests.

The Guest Gagl page (Fig. 7) is similar but with fewer options:

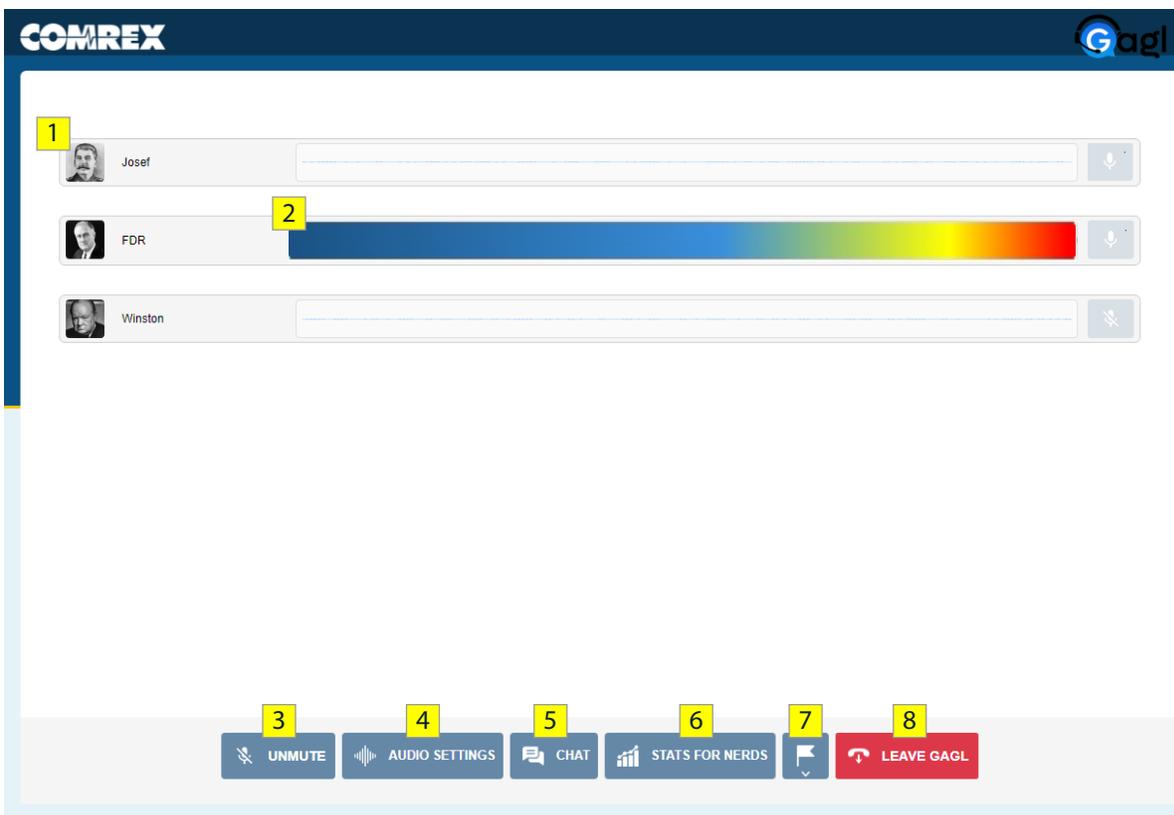


Fig. 7

1. **Guest list:** An entry will appear for each Moderator, Guest and Codec participating in the Gagl.
2. **Audio Meter:** When a Gagl participant speaks, their audio will be reflected here.
3. **"Mute/Unmute Guest" button:** Mute the local Guest's output audio to Moderator, Guests and Codec.

4. **“Audio Settings”**: Choose the input (microphone) and output (speaker) devices on the local computer/phone. Also allows for a simple audio sanity check.
5. **“Chat”**: Open a text chat window visible to all Guests
6. **“Stats for Nerds”**: Displays basic participant info. *(Will display connection stats in the future.)*
7. **“Raise/Lower Flag”**: Sends a notice to the Moderator and other Guests that this Guest would like to speak.
8. **“Leave Gagl”**: Disconnects local Guest from Gagl.

## Gagl Solo (Free Tier)

Gagl Solo offers a subset of Gagl Standard features. It’s designed to allow one user on a browser to connect to the studio codec.

When a Gagl Solo is created, the landing page is shown in Fig 8. This is identical to Fig. 6 in Gagl Standard, except only one contributor (Moderator) will be shown. All functions are the same as Gagl Standard, except that no invites can be sent either before or during the Gagl.

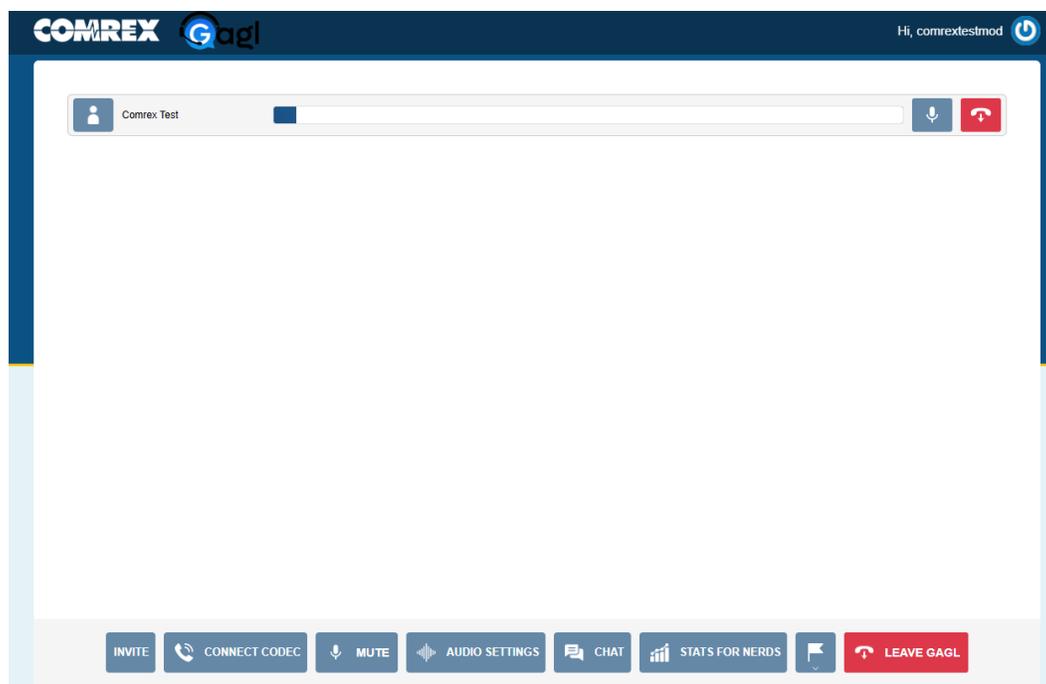


Fig. 8 - Gagl Solo landing page

## Gagl Hotline (Premium Tier)

Gagl + Hotline adds the ability to make and to receive a single phone call from an active Gagl. To allow for this feature, the Admin must be subscribed as a “Gagl + Hotline” user, otherwise none of the Hotline specific options will be available.

The most useful feature of Hotline is when it is used in conjunction with U.S.-based mobile phone providers. This is because modern mobile carriers deliver voice between their subscribers (and to other

mobile carriers) using different, better encoders than are traditionally used on Plain Old Telephone Service (POTS) and VoIP networks. But calls to non-mobile phones (like typical studio telephone interfaces) are cut down in quality to match legacy phone networks.

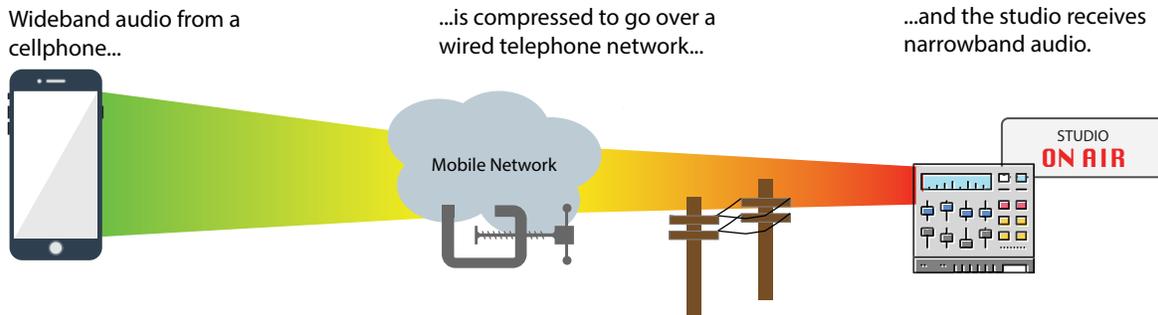


Fig. 9

As shown in Fig 9, the enhanced quality of mobile phone encoders is destroyed when these calls are connected to legacy networks like POTS for compatibility reasons. But (as shown in Fig 10) Gagl maintains connections directly to the U.S. mobile phone providers, so calls are not “transcoded” down to poor quality anywhere in the link.



Fig. 10

When a Gagl + Hotline account is created, the account is automatically assigned a phone number for inbound calls. The system will attempt to find a number in a geographical location close to the Admin’s address. If not possible, a number in the upper central U.S. will be assigned randomly.

Gagl + Hotline Admin Dashboards will have an extra button labeled “Manage Hotline Controls” as shown in Fig 11.

When clicked, a pop-up will appear as in Fig 12. This allows the user to control the Hotline functions in Gagl.

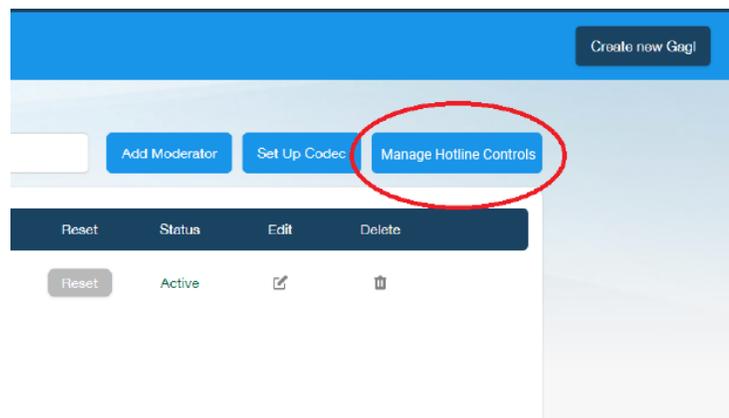


Fig. 11

**Hotline calling:** This switch enables and disables Hotline calling completely. When turned off, Gagl will no longer present the incoming phone number, and the number will be disabled for incoming and outgoing calls.

**Automatic call answering:** When this switch is turned on, incoming callers will be automatically added to the existing Gagl without manual approval by the Moderator.

**Security PIN required for incoming calls:** If this switch is on, the Admin is presented with a field where they may enter a four digit security PIN. Incoming calls will be prompted for this PIN before they are allowed into a Gagl (either automatically or prompted by the Moderator).

**Route Hotline Callers Directly to Codec:** This option is intended for unattended phone-in operation without a Moderator. When enabled, an incoming Hotline call will be relayed directly to the destination codec without any Gagl login being required. When this option is engaged, the "Hotline Calling" switch will be disabled, as a Moderator will no longer be able to send or receive calls within a Gagl. This option disables outbound Hotline calling completely.

**Special note regarding Verizon Wireless calls:** As of this writing, high quality voice calls are not supported inbound to Gagl from the Verizon Wireless network. Callers will hear an option to choose if they are calling from Verizon and - if chosen - will be given an option to have the system call them back on the number detected by their caller ID. Because outbound calls to Verizon are "HD Voice", callers will only be delivered in high quality if this option is chosen. If the caller ID of the incoming call is incorrect or blocked, or from a non-U.S. number, Gagl will not be able to complete the "call-back" process.

### Receiving inbound Hotline calls

If the Admin account is subscribed to the Hotline service, there will be a new entry on the bottom of the Invite tab that can be accessed during a Gagl session as shown in Fig 13.

This is the number that should be dialed by your remote Guest. If auto-answer is enabled, the caller will appear in the Gagl as soon as they have entered the correct prompts. If auto-answer is not enabled, the Moderator will be prompted to accept their call.

*Note:* If the Verizon call-back function is used, there will be a delay between accepting the call and the caller being added to the Gagl (a notification of this will appear on the Moderator page).

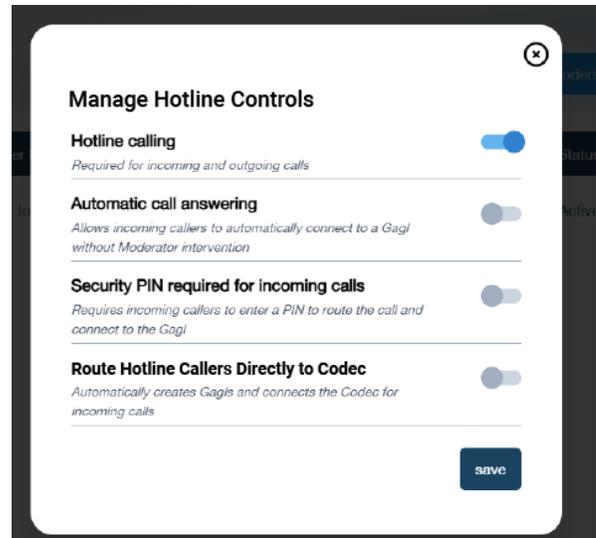


Fig. 12

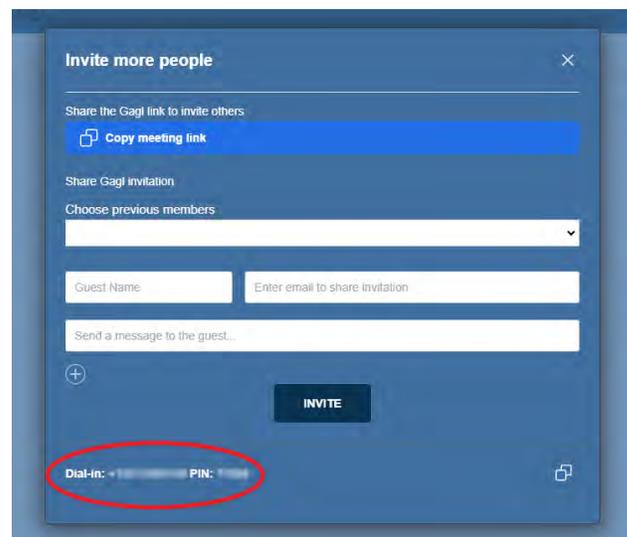


Fig. 13

## Making outbound Hotline calls

A Gagl created using a Hotline subscribed and enabled account will have an additional option shown in the “invite” tab as shown in Fig 12.

Clicking this option will allow an outgoing call to be made via a pop-up keypad. Only calls to U.S. numbers are allowed.

## Current Hotline limitations

In current software, Hotline callers can’t be muted by the Moderator. But calls can be ended any time with the “kick out” button next to the caller.

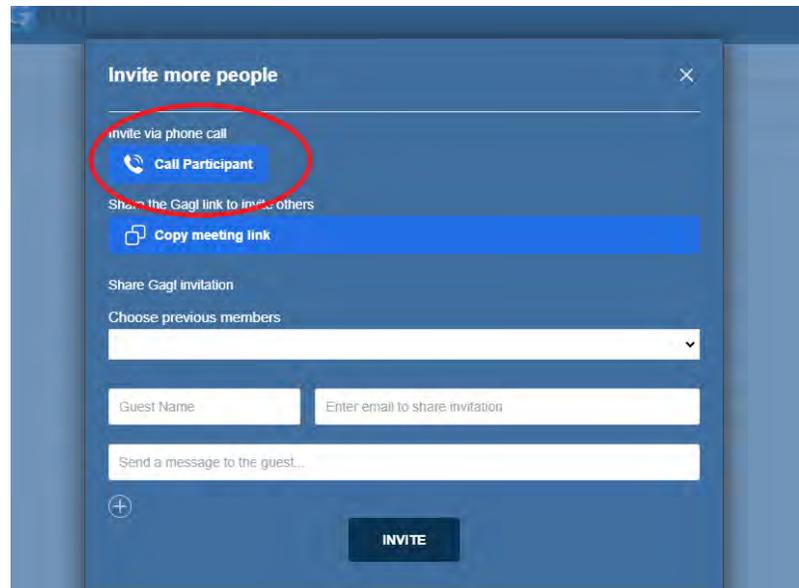


Fig. 12

## Troubleshooting FAQ

**Q: I can’t connect to my codec--It says “connected” then a short time later “disconnected”.**

**A:** Here are a few ideas:

1. Make sure your codec is configured to accept incoming SIP calls. (See page 2)
2. Make sure your SIP ports are open for incoming connections on your firewall. (See page 2)
3. Make sure you’re running firmware 4.5p11 on your codec (or you’ve added “gagl” to your SIP whitelist).
4. Try to make an unregistered SIP call to your target codec from another codec or a softphone like Comrex FieldTap. (See [www.comrex.com/support/fieldtap](http://www.comrex.com/support/fieldtap))

**Q: I’m getting dropouts on one of my Guests.**

**A:** While Gagl is optimized for slower networks, it still needs a reasonably consistent streaming ability on the Guest’s network. Avoid using Wi-fi if you can. If you’re sharing your bandwidth with other users like streaming and gaming, you may have congestion issues.

**Q: Guests and Mods complain that they can’t hear themselves in their headphones.**

**A:** The design of Gagl prevents the system from sending users’ audio back to themselves without distracting delay. Local audio connection between a user’s microphone and speaker is available in Windows and Mac settings. Or use a headset with only one headphone side (or remove one side from your ear when using Gagl).

**Q: We can't hear one Guest, or they can't hear us.**

A: Obviously each Guest must have a source of microphone audio and a speaker or headphone. Have them select the "Audio Settings" option on their Gagl page and choose which audio device to use. Sometimes Guests can miss the prompt to allow use of their microphone when they first click a Gagl Guest link. Have them try again.

**Q: What browsers are supported?**

A: Chrome and Edge have been tested the most. Firefox and Safari may have some incompatibilities, but we're working on more testing.

**Q: Our Guests invites are not being received.**

A: Have them check their spam folders. Sometimes the link embedded in the message triggers the spam filters.

**Q: One of my Guests sounds much worse than the others.**

A: Get them a headset. When using a phone or computer in "speakerphone" mode, the Acoustic Echo Cancellation required causes a colorization of the audio, often described as the "Skype effect". [See our Tech Note on recommended headsets.](#)

**Q: Can I change the default avatar for me or my Guests?**

A: You can use a free third-party service called Gravatar to assign a picture to use for each mod and Guest. If the email address used for Gagl aligns with a pre-defined gravatar, that picture will appear in Gagl.

**Q: I want to permanently ban one of my Guests.**

A: Create a new Gagl with a new name, and re-invite the Guests you want to keep.

**Q: I'm using Gagl as a "reporter phone" to my codec. How do they proceed?**

A: Make your reporter a Moderator on the Mod list. They'll get a link to create a password. Once they've done that, have them log in and create a new Gagl with a unique name. They can select "connect codec" to start the connection. Have the reporter save the Gagl link in bookmarks, and the rest should be cached in the browser for the next call.

**Q: How many participants can be in a Gagl?**

A: Currently Gagl Standard and Gagl + Hotline are limited to five active users (Mods and Guests). Gagl Solo supports one active user.

**Q: I don't see any Hotline options in my Gagl.**

A: If you were a Gagl user before the Hotline feature was available, please clear your browser cache. If that doesn't help, contact Comrex to confirm your account is subscribed to the Gagl + Hotline tier.

**Q: My Hotline caller sounds like a normal phone.**

A: If the caller is on Verizon Wireless, they'll need to engage the "call-back" function to get the best quality. Calls to or from POTS, VoIP and some mobile MVNO services will not be high quality. Finally, there may be some calls that for other network reasons simply can't be supported in high quality.

**Q: The caller ID of calls coming from Gagl isn't something I recognize.**

A: Due to the architecture of Gagl, the Caller ID presented on outgoing calls is different from the incoming Gagl number. Calls to the CID number will not be answered.

**Q: I'm trying to use the Verizon call-back feature, but I never get a call back.**

A: If your Caller ID doesn't match your incoming mobile number or is blocked, Gagl can't call you back. Try making an outbound call to this caller from the Moderator invite screen instead.

**Q: One of our Mods has left the company. How can I remove their rights?**

A: The Admin can log into the dashboard and delete the user as a Moderator.

**Q: The Admin has left the company. How do I proceed?**

A: Contact Comrex support for an "Admin reset".

**Need technical support? Email [techies@comrex.com](mailto:techies@comrex.com), or call + 1-978-784-1776 between 9AM and 5PM Eastern Time.**

**Para apoyo técnico en español por favor mandar un correo electrónico a [soporte@comrex.com](mailto:soporte@comrex.com) o un mensaje de WhatsApp al +1 217 607 3483.**