

Using Graphite To Perform a Skype Call

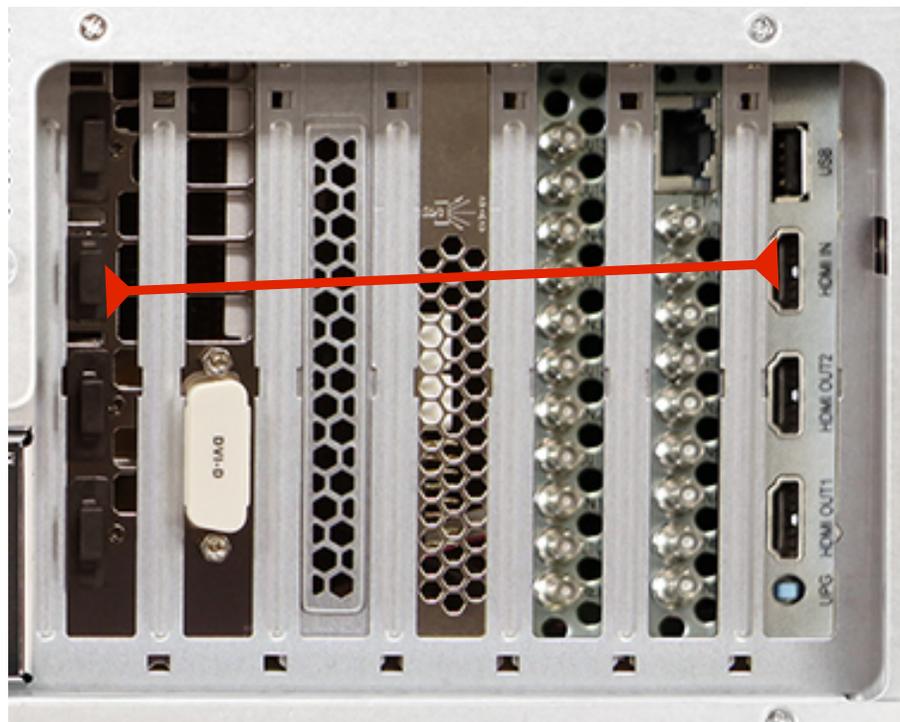
Graphite is a feature packed all in one production solution. The system was built and designed in a way to allow simple productions all the way up to high end productions that don't require as many external input sources. With this goal in mind Graphite offers a ton of features and



power that users can shape to the need of each individual application or event. Essentially Graphite is a production toolbox with all kinds of neat little abilities that are just waiting to be explored and cultivated.

Two of these tools are going to be used in this Application note to harness the power and deliver on a Skype call in scenario. This same application approach can be leveraged and applied to a breadth of applications and workflows for getting content on air with Graphite.

HDMI Input: Connecting the Video Card Output as a Source.



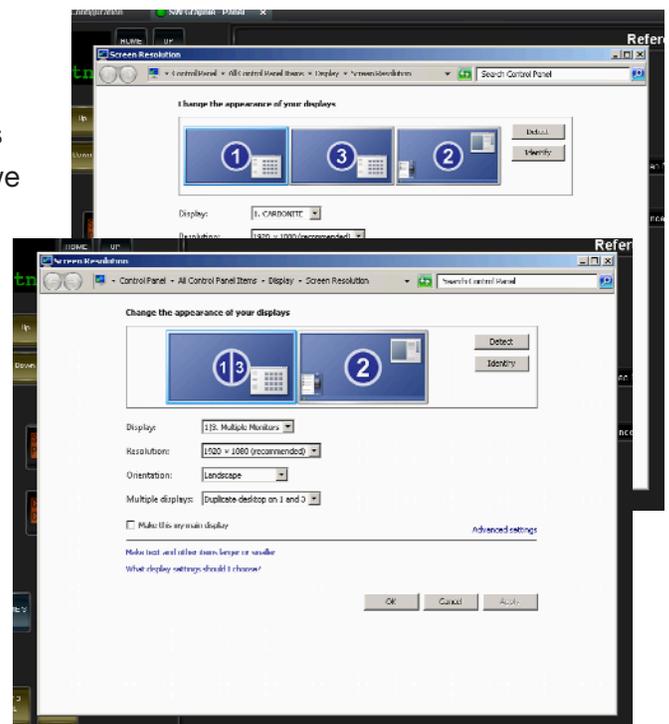
So First Up Let's explore the most straight forward of the two features - HDMI In

The HDMI input does have a dedicated Frame Sync on it. This input will expect the native operating resolution and frame rate.

This is fine since the Nvidia GTX 1080 card has a HDMI Output (in Addition to 3 Display Port and 1 DVI Port) and fully supports the Video resolutions and frame rates that we work in. Even 1080i at 59.94 is fully support and will auto detect when connected and turned on.

Right clicking on the Desktop and making sure that the resolution and format are correct is the same as checking an additional desktop monitor — Which we will need to do since the point will be to either extend the desktop or decide to Mirror one of the desktop monitors to the HDMI output.

In connecting to the Video Card we are now able to maximize our internal Graphics and Server channels since we will not require sending any video down the Frame Buffer channels for the Skype Video Call. Additionally operators can leverage the high end platform that Graphite is built on and not require the need to use a separate PC for fear of resource loss. Graphite is running the Switcher and Audio Mixer on the Graphite Card in an FPGA and it's own CPU!



Skype in Full Screen Mode on Graphite HDMI Input



Move the Skype application on to the PC Monitor Output that is connected to the HDMI input of the Graphite. Graphite will now have the “Camera” from the Caller on the HDMI Source selection. This will enable an efficient workflow for adding remote callers to the production and increasing the Content value. System design for an additional Computer and wiring of Audio into a RAVE Analog Audio Breakout Module or into the PC Audio Card is no longer required. Note that this similar approach can be used for getting any PC Application content onto the screen.

 **TIP:** Don't forget to use the “Full Screen” mode once you have placed the window on the “Monitor” that is feeding the HDMI input on Graphite. That will make sure to result in removal of the bezels and borders to give that quality look!

PC Audio Input: Configuring the Ross Audio Sound Device

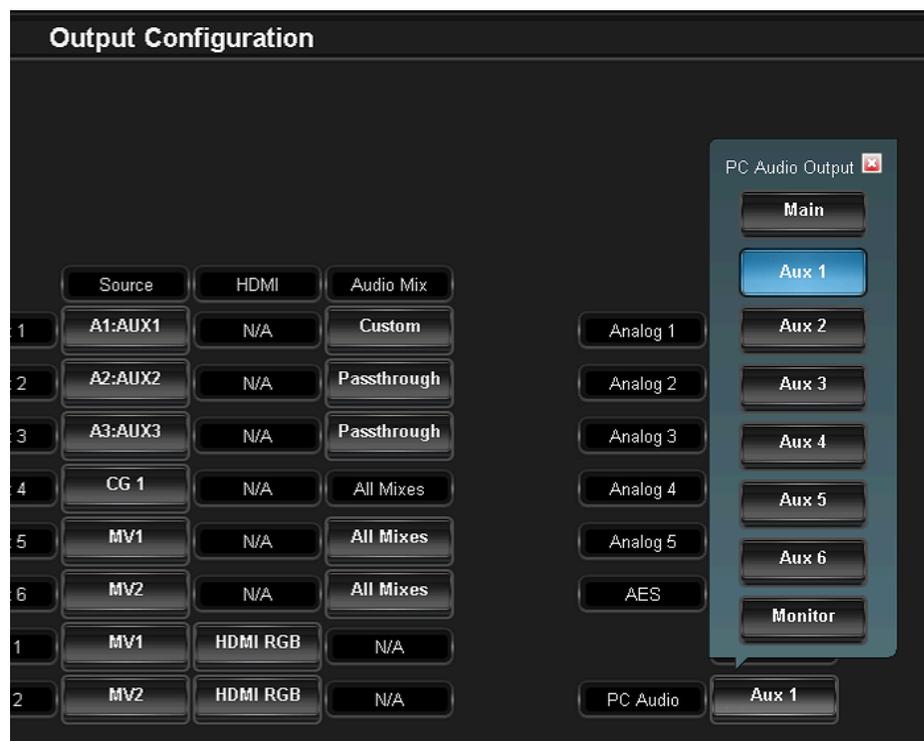
Feature number two is the Audio integration. Graphite has an extra Windows Audio Device. This is the Ross Digital Audio device that shows up in the RAVE Audio Mixer.

The RAVE windows driver provides essentially the equivalent of an additional Digital Audio Sound Card to the Windows system. This has a Stereo “Output” that allows applications, that support selecting their Audio Devices (i.e. Skype, VLC, GoToMeeting..), to send Audio from the Application into the Graphite Systems Audio Mixer.

Audio can be sent back to the system via the Ross Audio Device which has a Stereo “Input” that comes from the RAVE Audio mixer. This allows the user to pick any of the Mixers that they would like to send up the PCI Bus and back into any application. Operationally this is like any additional Audio Sound Card installed into the computer.



In The Graphite Configuration menu, found via DashBoard, the operator has a section for output configuration. For all of the Video Outputs the operator is able to define the Audio that will be embedded with the Video. On the right hand side any of the 3 optional RAVE Audio Breakout Modules will show up when connected. Additionally there is a “PC AUDIO”



assignment parameter. Clicking on this will allow the operator to Assign the “source” audio that will be present inside of windows as an audio input source. This will be what is selected in Skype to be used as the Microphone.

Just before moving over to Skype configuration finish setting up the Audio that will be sent back to the caller.

One of the many terms used within in the production world is a “Mix Minus”. Now most people reading this already know this term but for some this might not be something that they have heard or have known it as.

A “Mix Minus” is essentially an additional Mix the Audio Mixer is performing but it will “MINUS” selected Audio Inputs that should not be heard on this alternate audio output.

The example where the caller might have a hard time dealing with the sound of their voice coming back to them, especially since this will have some amount of delay. Due to these problems it is

important we setup a Mix Minus.

Example: AUX 1 (use any Aux you like) will have the identical Audio as Program but with a “MINUS” of the PC Audio Input (The Skype Callers Voice).



First thing is to set all of the faders to “Post” mode and double click on the “Fader Slider Control” so that it opens to 0 db. This will set the audio to unity gain “AFTER / POST” the Main Mix Faders.

If the Fader on the Main mix is closed then no audio will come through. The Faders purpose on the Aux in this mode will be to “add” or “subtract” from the Main Mix Level. Leaving the Faders at 0 db the individual levels will match that of the Main Mix. Use of the Aux Master Fader will allow the operator to Increase or Decrease the overall level being sent through to the Caller.

Now the easiest thing to do when using the Aux as a Mix Minus is to leave the Fader at 0 db and then simply use the Mute Button to MINUS this Audio Source from the Mix being generated for the Caller.

Skype Audio Setup

Now that we have defined the Destination and Source for the Caller Audio we will need to make sure that our application is configured accordingly.

Skype is a widely used and very popular application for this, but the workflow is not limited to just Skype. Similar settings can be found in other popular applications like Google Hangouts, WebEx and GoToMeeting.

Once the application is launched you will go into the Settings page and configure the source for the Microphone to be the RossAudio device. This will assign the Aux 1 Stereo feed that was setup as the Mix Minus Audio to transmit back to the caller.

Next the Operator will configure the Speakers to also use the RossAudio device. This will make sure that the Audio from the Caller is going to sent to the Audio Mixer as the "PC Audio" Fader.

 **TIP:** Don't forget that all of the Audio Faders in the RAVE Mixer

are user configurable including the Name. These Names can be independent of the "Video" input names. If a Mic is coming in via an Embedded Channel on CAM 1 it can renamed MIC X in the Audio Mixer!!

