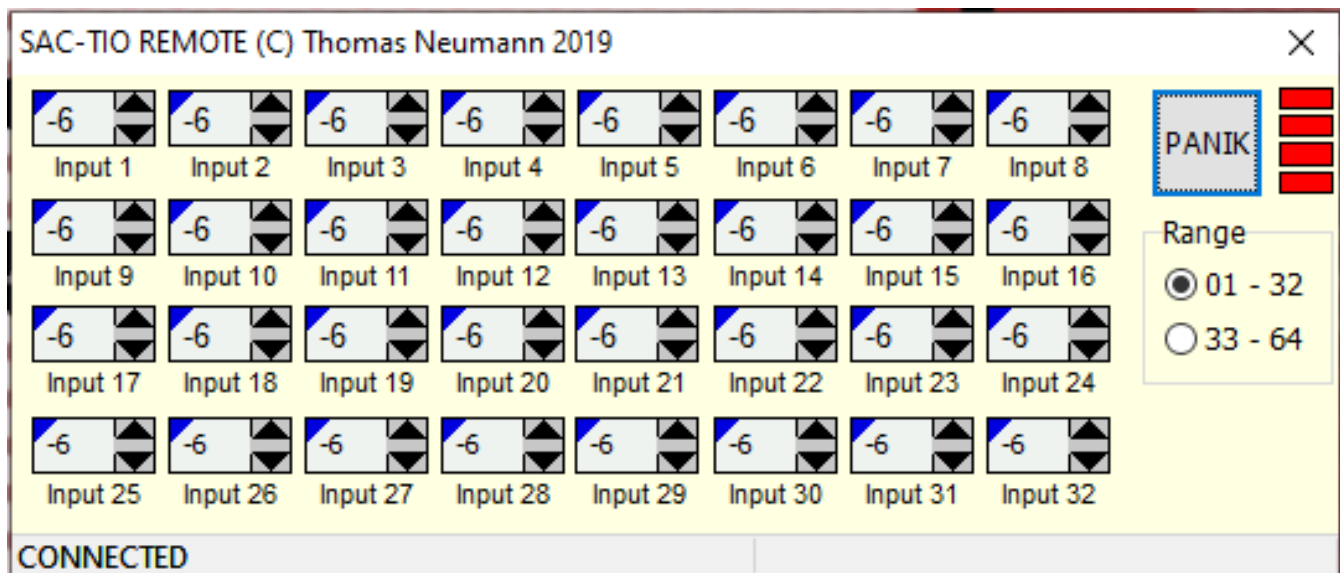


SAC-TIO

Gain Plugin for SAC



Manual for Version: 1.0.0.3

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SAC-Remote Controller for Yamaha TIO1608

Introduction

The TIO – Gain Controller allows you to control up to four yamaha© TIO 1608D units directly in SAC.

Warnings:

- **This software uses the same network connection as your SAC-REMOTE. So it might interfere your connection. Make sure you did sufficient testing before you use the software in a 'real life' situation. No liability can be take for any kind of damage or problems which might arise from the use of this software or the miss-function of the software.**
- **There had been reports for older version of SAC showing that adding or removing network aware plug-ins and or closing all remotes with such plug-ins might stop the TCP/IP Host/Master mode, which will make your SAC Host uncontrollable from any remote.**

Content of this package:

- The software **TIOCONTROL.EXE**, which interfaces the plug-in to the TIO – units. It also takes care for the synchronization of the gain settings between host and remote instances of SAC. This software must run only once and it should run on the same computer as your main SAC app.
- The plug-in **TioInterface.DLL**, which is a native SAC/SAW plug-in.
You need to install it on any computer that runs SAC (either host or remote) in order to allow gain settings from any instance of SAC.
- The software **LocalGain** allows you to operate the plug-in without the need to run SAC.

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Basic Concept

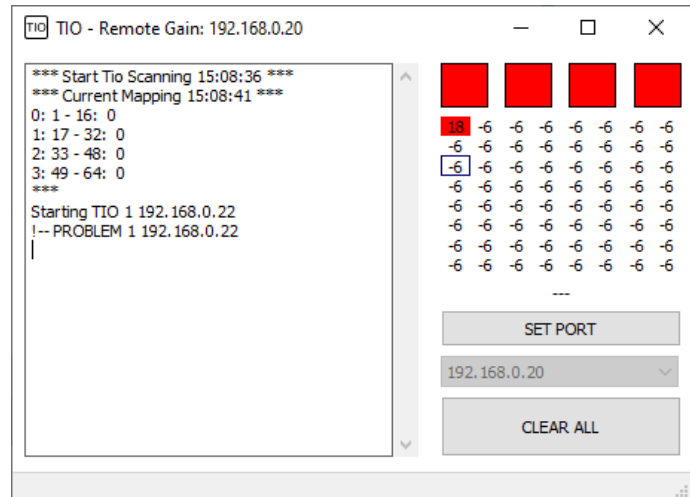
- The TIOControl app converts the gain and phantom-power information received from the plugin into commands for the TIO units. Furthermore it takes care of the Ip – addresses used.
- The connection to the plug-in and to the TIO is established using default TCP/IP, routeable network protocol. Therefore there is no need for additional connections. With the amount of data used being very small it will not interfere with Dante© or SAC-Remote traffic on the network.
- All commands received from one plug – in will be sent to all other plug – ins as well in order to keep all plug – ins synchronized.
- The TIOControl app will also handle master – phantom messages received from the TIOs.
- The plug-in DLL will run either as a plug-in in SAC or standalone using the LOCALGAIN.EXE software. The plug-in sends commands via network to control the devices and receives information about changes issued by other plug-ins.
- The plug-in can run on the same machine as the GAINCombi software or on an other machines, if a valid TCP/IP connection is active to the control pc.

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Installation

Installation of the GAINCombi software.

1. Store the TIOControl.EXE file to a folder.
2. The TIOControl app should start at the same time as the SAC hardware on the host.
3. Start the TIOControl..EXE. It will start minimized, so you'll see only its icon in the taskbar.
4. If a window pops up, allow the software to access the network.
5. Double-click on the icon to open the window of the app.
6. Notice the IP shown in the header. You'll need this later for the setup of the plug-in(s).
7. Click on the window to open the pop – up menu and edit the ip – addresses of the TIO(s). See page 5 for details.
8. If you want to change the default port (14) used for the TCP/IP connection then click the SET PORT button and enter the desired value.
9. Close the TIOControl app in order to save your settings.
10. Restart the TIOControl app software.

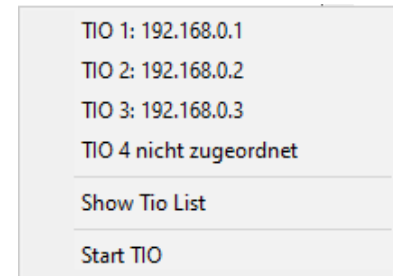


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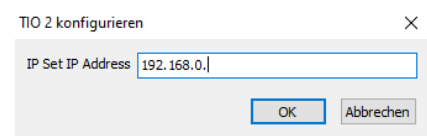
The Pop – up menu of the TIOControl App

The TIOControl app features a pop – up menu which allows you to configure it. To open the pop – up menu click on the TIOControl window, but not on the list on the right and not on the IP – port edit area.

The pop-up menu contains those items:



- **TIO 1: - TIO 4:** These entries show the control – IP of each TIO.
 - To change this IP just click on the entry in the menu. Now an edit window will show up. Leave it blank when no TIO is available. If a valid IP was entered the app tries to start the TIO when you close the window using the OK button.
 - TIO 1 will connect to the settings 1 to 16 of the plug in, TIO 2 will connect to settings 17 to 32 and so on.
 - Please note: Use the control – IP of the TIO here. You can configure this IP using the switches on the TIO and the R – Remote software. This IP might differ from the Dante® IP used. You must use fixed settings for the control IP in order for the plug – in to work properly.
- **Show TIO List:** click on this entry to start a scan for the TIOs and their current control IPs. The scan might take a few seconds to complete.
Note: The scan will work only when R – Control is not currently running.
- **Start TIO:** this entry will start all TIOs.



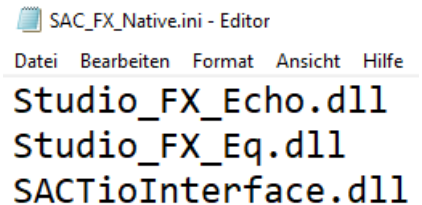
The four squares at the upper right will indicate the current state of each TIO.

- RED: No IP assigned or no TIO available using the IP set.
- GREEN: Control – Connection working as expected.
- BLUE: Start of IP connection.

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Installation of the SACTioInterface Plugin

1. The plug-in is a **native SAC** plug-in. Therefore you need to put the SACTioInterface.DLL file into the Native_Plugins folder in the SAC directory.
2. You need to add the line SACCombi.DLL into the SAC_NATIVE_FX.INI file. Just double-click on the file's name and the file will open up in the editor.
Add the line and save the file. Make sure to end each line (the last line also) with a RETURN, otherwise the last entry will not appear in SAC.
3. Now the installation is completed.
4. Start your SAC Host.
5. The plug – in should show in the FX list.
6. Insert the plug – in into a channel.
7. Open the setup of the plug-in. See page 10 for details about the setup.
8. In the setup enter the IP of the TIOControl app.
9. Confirm with OK.



SAC_FX_Native.ini - Editor

Datei Bearbeiten Format Ansicht Hilfe

Studio_FX_Echo.dll
Studio_FX_Eq.dll
SACTioInterface.dll



Installation of the LocalGain tool

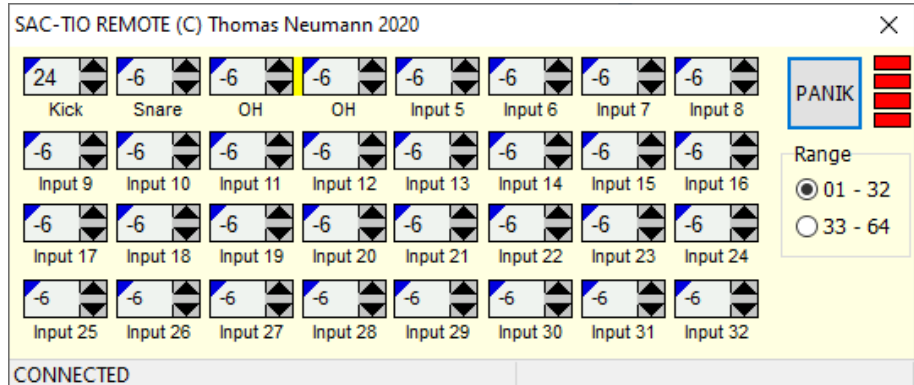
1. Put the software LocalGain.Exe into the desired folder.
2. Put a copy of the SACTioInterface.DLL into the same folder.
3. To start the gain – control just run LocalGain.exe and click on the SHOW button.



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Operation of the Plug – In.

- Insert the SAC-GAIN Plug-in into a FX slot in SAC or run the LocalGain software.



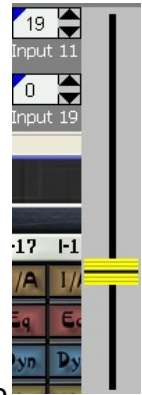
- The gain settings reflect the TIOs according to their setup in the TIOControl app.
 - Gain setting 1 to 16 will control the inputs 1 to 16 of TIO 1.
 - Gain setting 17 to 32 will control the inputs 1 to 16 of TIO 2.
 - Gain setting 33 to 48 will control the inputs 1 to 16 of TIO 3.
 - Gain setting 49 to 64 will control the inputs 1 to 16 of TIO 4.
 - Use the setup (see page 10) to define the number of TIOs connected.
 - Use the range selection on the right to toggle the gain settings.
- Use the PANIK button on the upper right to set all gain values to – 6 dB.
- The values shown are dB values.
- The four rectangles right to the panik – button indicate the state of the TIOs. The topmost rectangle represents TIO 1.
 - Red: Not connected.
 - Blue: Trying to connect.
 - Green: Connected.
 - Yellow: Connected, but master – phantom switch is off.
- To restart a connection just click on the rectangle.

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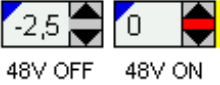
Set the gain for a channel

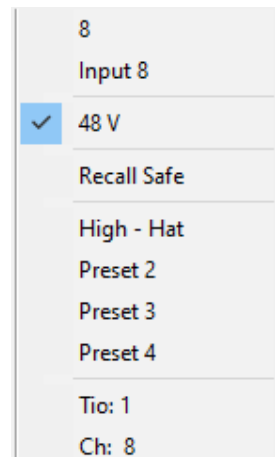
The control of the gain settings is similar to the control used in SAC.

- Click on the arrows on the right to change the gain-value in steps of one.
- Hold down the mouse button while the mouse is over one of the keys at the right and a slider will show up.
- Click on the number to open a pop – up menu. You can choose a value from it. It also contains four presets.
 - To recall a value assigned to a preset or one of the values just click on the entry.
 - To assign the current value of this input to a preset, hold the shift key and click on the preset you want to change. A small window will show up.
Enter the label in this window, then confirm.
- Clicking the right mouse – button while holding the left one down will set the gain to the lowest value (- 6 dB).



Enable/Disable the phantom power

- To enable or disable the phantom power of a certain channel (or of a pair of channels if linked) just open the pop - up menu and check/un-check the 48V entry.
-  If the phantom power is enabled, the space between the arrows on the right of the gain – setting will turn red.
- With the option *Min Gain on 48V on* (see page 10) enabled the gain will reset to – 6 dB each time you'll enable the phantom power.
- A preset will also set the phantom – power setting.

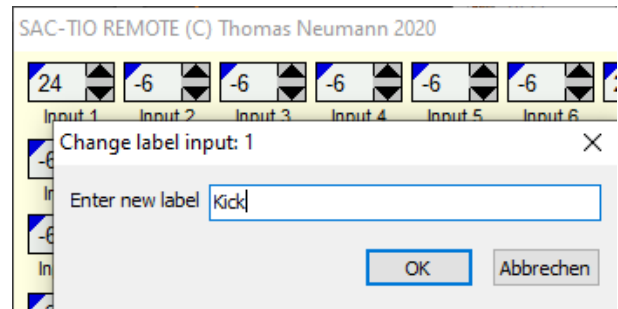


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Change the label of a channel

To change a label, hold down the shift – key on the keyboard and click on the label to change. This opens a small window where you can edit the label.

Holding down the Ctrl key while clicking on a label will enable the consecutive label – edit mode. In this mode the edit window for the next channel opens up when you confirm your entry using either by hitting the return key or by clicking on the *OK* button.



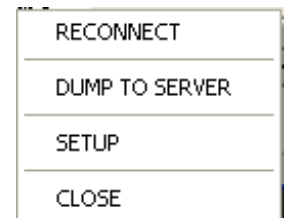
Set all Gains to Zero (PANIK)

The *PANIK* button on the right will set all gain values to the lowest gain (-6 dB).

The pop – up menu of the plug-in

The plug-in contains a second pop – up menu, which will pop up when you click outside of the gain-control areas.

- **Reconnect:** Try to restore the connection to the GAINCombi software. This breaks an existing connection and starts it again.
- **Dump to Server:** Send all Data to the TIOcontrol app. Try is if the settings on the devices differs from the settings on the plug – in.
- **Setup:** Opens the setup-window. See page 10 for details about the setup-window.
- **Close:** Closes the plug – in window.

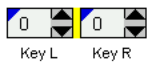


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Configure the plugin (Setup-Window)

To configure the plug-in invoke the setup-window using the entry SETUP in the pop – up menu of the plugin.

- **Stereolink:** link two inputs.



When two inputs are linked, then a yellow bar will show between the two value displays. The linked

input's gain values and phantom – power setting will change simultaneously.

When you exit the setup, the plug – in will reduce the higher gain of both inputs to fit the lower value. The names will not link.

- **Number of TIOs:** Select the amount of TIOs available.
- **IP-Address:** The IP of the computer which hosts the TIOcontrol app. This is the IP that shows in the header of the TIOControl app.
- **IP-Port:** Use this setting to change the port used for the IP connection to the TIOControl app. This setting must fit the port – setting in the TIOControl app.
- **Min Gain on 48V on:** With this option checked the gain of input will lower to – 6 dB each time you'll activate the phantom power.

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Hints:

- The TIOControl app will mirror all changes of the link – settings and of the channel – count settings to all clients currently connected.
- Configuration and IP settings are not shared to other plug-ins. We strongly suggest that you edit this settings only on the host. The clients will update when they connect again.
- You should use the IP value that the TIOControl app will show in its header order to allow the remotes to access the TIOControl app, too.

Using the localhost IP (127.0.0.1) on the host will work fine for the host itself, but the remotes will fail to connect.

Using the Plug-in with SAC's Scene Control

The SACCombi plugin manages the gain of different channels, but it is plugged into only one slot of SAC. So, if you're saving or recalling scenes using SAC's Scene control, the settings of a plug – in will save or recall only if the plug-in is plugged into one of the selected channels. This allows you to recall either the setting of all channels or of none at all.

You can use the **Recall Safe** setting of each channel to exclude this channel from the recall.

To enable or disable the setting, open the pop – up menu of the channel and click on the entry **Recall – Safe**.

A channel with *Recall – Safe* enabled is not affected when the gain-values are recalled.

The status of each channel is indicated by the color of the triangle in the upper left corner.

A red triangle indicates that this channel is recall-safe, a blue one indicates that it's value changes when the settings of the plug-in are recalled by the scene – recall functionality of SAC.



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Hint

- **Closing all remotes might disable the TCP-Host setting in the SAC-host when you use older versions of SAC. To avoid this, run a remote on your host and minimize it.**
- **The plugin and the TIOControl app had been tested with one to three TIO units.**
- **A 64 bit version of the TIOControl app is available on request.**
- **Due to the missing api documentation of the 64 bit version of SAC the plug – in is currently available for 32 bit SAC only.**

Release Notes

- 01-08-2020: Improved manual, fixed fader issue in plug – in.
- 01-01-2020: First public release

Notes:

- The copyright of both software and documentation is owned by Dipl.-Ing. (FH) Thomas Neumann.
- We offer other audio related apps products also. You might take a look on our Dual – FFT audio – measurement app SATlive (www.satlive.audio) or our SPL monitoring and reporting app LevelCheck (www.levelcheck.de).
- Feel free to send us feedback and suggestions via the e-mail address sac@take-sat.de
- I'd like to thank yamaha for the information they supply.
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