ALControl™ remote-control tutorial v1.6

User-interface of the program

The ALControl™ program is designed around the same "Tab" function as the control surface of the Sentinel. Each Tab section has a different function and the subsequent order of folders enables an easy workflow for setting-up and operating the control network.

Devices: there are two sections in this Tab: In the *left* section, the discovered (when network on-line) Sentinel devices can be selected into the project; This can be done both with network in on-line or off-line mode. The type of Sentinel can be selected (S3 or S10), as well as output mode configuration (drop-down menu):
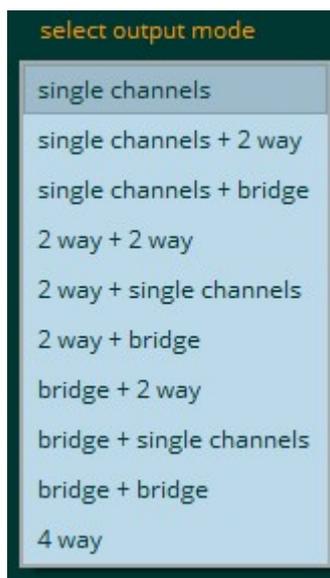

Also, the direction of synchronizing the settings to/from the Sentinels can be selected; This is an important selection, as this will override existing (non-stored) settings:

In the *right* section, you can change the output mode (drop-down menu) as well give the device a name. With the "blink" button, it is possible to let the Alcons logo on the Sentinel blink, to recognize which unit from a group of Sentinels this is. The "power sequencer" setting enables you to select a power-on delay for each Sentinel, in case of a sudden power outage.

Channels: the selected Sentinel devices in the project form a list of channels. In this section, each channel can be configured with the required system factory preset (preset selector), the analogue or digital input signal and input channel. Each channel can also be configured with a manually selected name.

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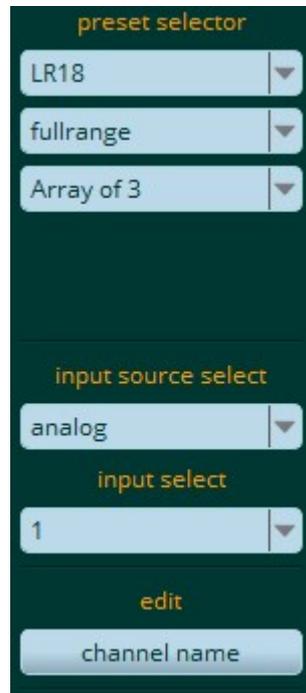
preset selector

LR18

fullrange

Array of 3

input source select

analog

input select

1

edit

channel name

ALControl by Alcons Audio - untitled*

System   Network   Mode   Help

Devices   Channels   **Overview**   Grouping   Group Controllers   Monitoring

<u>Overview</u>: this section gives a complete overview of all channels in the configured system:
For each channel, selected input, gain, mute, delay and equalizing settings are visible, as
well the status of each channel on input signal, limit and amplifier channel temperature. This
page is purely a read-out page and no setting can be changed, except for the input signal
read-out, which can be switched between post-fader (default) and pre-fader (selectable).

ALControl by Alcons Audio - untitled*

System   Network   Mode   Help

Devices   Channels   Overview   **Grouping**   Group Controllers   Monitoring

Grouping: there are two sections in this Tab: In the *left* section ("channel list"), the configured channels can be selected, to be assembled in the groups made in the *right* section ("channel grouping"). By means of the "group editor", the groups can be added/removed. Assigning the channels to the groups can be done through "drag & drop", as well as with the "add channel" button.

Group Controllers: resulting from the channel assignment, groups and sub-groups are formed that can be controlled in the "Group Controllers" Tab. The groups and sub-groups are visualized; This screen is visually free-configurable (drag & drop), without changing the relations between the groups and channels. EQ, delay and FIR filters can be controlled through the pop-up screen, that can also be used separately from the main program screen.

It's also possible to move a complete group of channels simultaneously, by holding the left mouse button to draw a rectangle enclosing all channels.

On the screen, right hand side, display options can be selected; The read-out option per channel can be selected, like input, output, phase, impedance, temperature, a.o.

Monitoring: this section enables close monitoring of all relevant parameters in the system. By clicking the desired device from the list, the pop-up screen shows three sections:

The "data" tab provides general status on temperature per channel and SMPS power, as well as speed stage of the fans and mains voltage. It also provides channel-specific information on output voltage, amps, wattage and impedance; Each parameter can also be traced (+ recorded) in real-time through the "plot" (pop-up) screen.
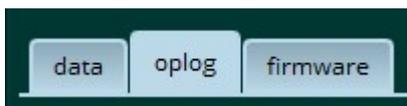
The "oplog" tab provides operational status info of the different sections inside ALC. In case of a problem, the device entry in the list and overview tab line indicate a certain color/status. By consulting the "oplog" tab, the function status is reset (stops blinking), but error remains!

The "firmware" tab shows the current firmware and library versions of the device.

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Working with the program

The instructions below are also part of the on-board help function of the program.

- quick setup
- set up devices
- set up channels
- start project
- create groups
- monitor device
- device error
- power sequencer
- system mode switching
- FIR filtering
- saving

Quick set up to remote control a unit

Make sure the Sentinel has the DHCP option set in the "setup > network" tab. In this case the Sentinel will automatically get an IP address from the network.

Start ALControl, after starting a network scan is performed and found units are displayed in the "discovered ALControl devices" list in the Devices tab. Just drag the unit from the list to the project space table "ALControl device in project" on the right. All settings from the Sentinel are synchronised to ALControl. To see the presets and input routing go to the Channel tab, also check setup channels on how to adjust the preset and routing.

For a complete overview of the imported device settings see the Overview tab. To adjust channel parameters like EQ and gain go to the Grouping tab and double click a channel in the "channel list". This opens a channel controller to quickly adjust parameters.

To see the device status go to the "Monitoring" tab and select the device you want to monitor. This will open a monitor surface.

> Network settings

In the menu Network you can select the network adapter which is used for auto detecting units by selecting it with "Select network interface" To force a scan press Scan or use ctrl+F.

Proceed to setup device to further set up a device.

Proceed to setup channels on how to further set up a channel.

Proceed to start project on how to start a new project

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Set up devices

> Adding devices

Adding a device is done by pressing the "add device" button. A dialog opens to enter the IP address. Note that the IP addresses of units discovered in the network cannot be used. In this case drag the discovered unit to the project area, all settings are taken from the unit into ALControl and can be changed if needed.

> Set up output mode

Make sure you select the correct output mode for the device. The output mode should match with the intended speaker usage ie single channel (VR8 VR12 etc) active two way (LR18 BC543 etc) or four way (LR28) The ALC Sentinel 3 has the option to select a bridge mode on channels 1+2 and or 3+4.

If a discovered unit is added to the project the output mode can be changed by selecting the unit in the "ALControl devices in project" list and then select the needed output mode in the "change output mode" drop down box. All channels are reset (empty preset is loaded) and possibly are removed from their groups. You can change a selection of devices at the same time.

> Set up synchronisation mode

The sync mode determines if settings should be taken from the unit ("Device to ALControl") or synced to the unit from ALControl. In most cases the "ALControl to device" is all you need. When you manually add a unit, you can choose to sync explicitly from the unit to ALControl, this implies ALControl or the host is in an offline state or the unit is not found in the network. When the unit is found (either it is connected or the host or ALControl goes online) ALControl asks how to sync the unit. You can still choose the sync method in the popup menu.

Default the sync method is set to "ALControl to device" and can be changed by selecting the device and choose the "sync mode" in the drop down box. All selected devices are changed simultaneously.

When the "Device to ALControl" method is selected local changes on a device can be imported into ALControl the next time the system switches from an offline to online state. This can be via the "Network > offline" option (to switch ALControls online state) or when the host switches online state ie via the ethernet cable.

> Change device ALControl name

The ALControl name can be edited with the "ALControl name" button or right click menu button, all selected devices are renamed.

> Removing devices

Removing a device is done by pressing the "remove device" button or right click mouse menu. All selected device are removed.

NOTE: these operations do not work in show mode.

see set up channels re. how to set up a channel.

Set up channels

> Input source, speaker preset and name

In the Channels tab you can set the channel speaker presets, input source, input type (digital or analog) and the channel name. Multiple channels can be selected and have their properties changed at the same time.

NOTE: if the selected channels have different output modes. the preset change will only apply to the first channels, starting from the top, it can change and display a message when it cannot change the preset anymore.

For mono sub inputs 1+2 and 3+4 can be summed.

> Preset options

The preset options can also be changed in multiple channel selections; If channels with different presets are selected, the options of the first preset in the list are displayed and the channels with different presets are ignored when applying the selection.

NOTE: all table columns can be sorted by pressing the column header.

Name your channels so that they are easy put in groups ie if you have 4 amps driving the FOH with LR16 then a logic channel name would be "FOH - LR16". This way when you create a group "FOH" you know these channels need to be in there. Channels can also be named in multiple selections.

NOTE: these operations do not work in show mode.

> Gain, mute, output polarity, FIR, delay and EQ

The channel controller, opened by double clicking a channel in the "Grouping" tab channel list can be used to adjust the gain, mute, EQ, delay, FIR filter and polarity of a channel, when not using groups.

To switch polarity press the Ø button.

Some hints on using the EQ: dragging the diamond will directly affect the frequency and gain. Double clicking the diamond will allow you to reset the current band. By clicking and holding the right mouse button on the diamond the q factor can be adjusted; move the mouse to the right and q increases, moving to the left decreases the q.

When a channel is moved to a group settings for the delay, gain, mute and EQ are taken from the group controller. The FIR filter and polarity however will remain and can still be adjusted per channel.

NOTE: when you change the channel preset the FIR filter will be removed.

Starting a project

There are two ways of starting a new project; online with the devices already connected to the network or offline to prepare a project.

Note: make sure you configure your devices with a fixed IP address when using system files, otherwise if DHCP is used, the devices might get a different IP address after a restart. The IP addresses of the devices in the project are stored as part of the system file.

DHCP mode can be useful if connected to a guest network and setup the remote quickly for a single event.

offline situation

online situation

Adding devices in offline situations

In this case we assume there is no connection to a network or a device

 indicates host offline

Or when the host is connected, ALControl is switched to offline mode via the menu "Network > Go offline"

 indicates ALControl offline

You set up the system by adding amps in the "Devices" tab by pressing the "add device" button. It is important to set the device type and the desired output mode of the amp correct

i.e. single channels, 2-way, 4-way, bridge etc. The default sync mode is "ALControl to device". When you add a device you have to assign an IP address. This address should correspond to the actual device IP address. See set device IP address for more info. Note that if for example an ALC Sentinel 3 is added with a certain IP address but on that same IP address an ALC Sentinel 10 device responds when scanning the network then this device cannot be added and an error message will appear. The added device stays offline. In this case you either change the IP address of the actual device or change the IP address of the device controller in the "ALControl devices in project" list.

> Change device ip address

You can change the IP address of a device controller by double clicking the entry in the "ALControl devices in project" table. Note that changing the IP address in ALControl will not change the IP address of the actual device. After the IP address change the actual device will reappear in the discovered devices list.

> ALControl device name

Set the ALControl name by pressing the "ALControl name" button to something useful ie that designates the device. This name can be found on the device itself under the "System > network" tab.

see set up device re. how to set up a device.

> Scanning the network

When ALControl is connected to the network and the menu's "Network > Scan" or ctrl+F is pressed, the units that are found in the network will be synced (all your ALControl settings are copied to the device) and appear "online" in the "ALControl devices in project" table and the "channels" tab list. A channel can now be directly controlled when double clicked in the "Grouping" tab channel list. Note that the sync mode is "ALControl to device"

> Offline preparation not knowing device ip addresses

Another option to prepare the system is to add the devices needed in the project; setup the channel presets and groups etc However when adding the units it could be that the IP addresses of the actual devices is unknown. In this case you use an IP range for example 1.1.1.1 - 1.1.1.2 - 1.1.1.3 etc when adding devices. After connecting to the network and all actual devices are discovered you set ALControl in the offline mode. You can now identify the devices in the "discovered ALControl devices" list by blinking their logo by selecting the devices in the list and press blink, now drag this device to the project device it should be matched with, all settings are copied fromt the project unit to the actual unit when ALControl is switched to online mode. Note that the sync method is set to "ALControl to device" for the units in the project.

This method can be handy in combination with DHCP enabled in the devices.

After matching the units, save the project under a different name so that your "placeholder" IP address template is not overwritten.

NOTE: the device type must match a sentinel 3 cannot be matched to a Sentinel 10.

Proceed to create groups to start making groups.

Adding devices in online situations

In an online situation (devices powered and connected) the amps should appear in the "discovered ALControl devices" list in the Devices tab. Note that with the "Network > select network interface" control it's possible to select on which network the scan/auto discovery takes place. This is useful when having multiple network interface cards installed. Now you have two options for starting a project. Either you open an existing project created before (System > open or ctrl+O) The amps are set back in the state you saved them in. The amps in the discovered device list that are part of this project are removed from the list.

To force a network rescan press Network > scan or crtl+F. If units are found in the network the radar icon lights up.

> Adding device to the project

Devices that are dragged into ALControl always sync their settings to ALControl. The sync method can be changed by selecting the device and choose the sync mode in the drop down box. If "Device to ALControl" is choosen the changes that are made on the device when it was offline (either by switching ALControl to offline or the unit was temporarily not connected) are taken into account when the unit or ALControl comes back online. The system will ask if the changes should be imported or set back to the ALControl settings. NOTE: channels that are in a group always set their EQ to the group master.

You can also move the discovered amp to the project space by pressing the "move to project" button, while having the amp selected in the list. The ALControl settings are synced to the amp's settings so presets input source etc is synced from the amp to the remote, in the grouping tab channel list you can open a channel and directly control it. If you need a different setup proceed as you would have added the amp manually.

> Identifying devices

Units can be visually identified by pressing the "blink logo" button and select the device in the "ALControl devices in project" list. You can select multiple devices at the same time to identify a group of devices.

> Output mode of the device

Note that it might be necessary to change output mode. You can select multiple units and change output mode however units need to be of the same type (the ALC Sentinel 3 has different output modes compared to the ALC Sentinel 10 for example) Changing the output mode sets all presets to empty no signal can come out of the amp anymore, this is important because active presets can have tweeters directly connected to a channel! If a unit with channels in a group changes its output mode the channels will be removed from the group.

> Changing ip address

You can change the IP address of a device by double clicking the entry in the "ALControl devices in project" table. If the device was online it will move back to the "discovered ALControl devices" list and the changed unit will appear offline, until a unit with matching IP address is connected to the network.

Proceed to create groups to start making groups.

Creating groups

> Adding a root group

When the channels are set up you can start creating groups. Press the "add group" button or right mouse click menu to add a root group. Usually you want to have a root group "master" under which you create every part (subgroup) of the system that exists in the same zone. For example the FOH and the subs might need different volume settings but need an overall volume setting from the master so that their relative volumes are changed equally. So you would get:
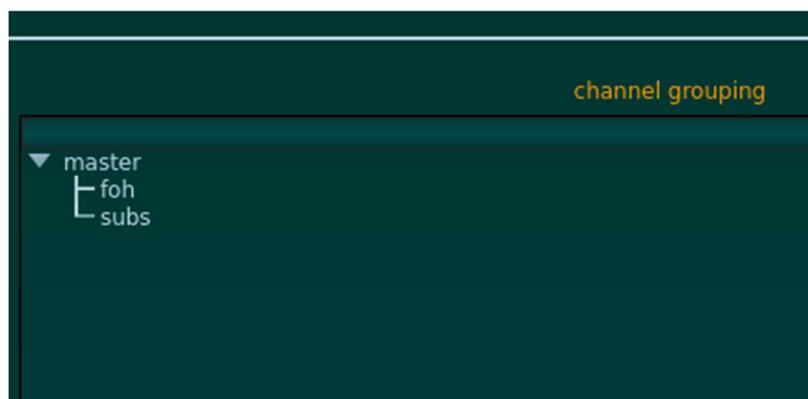
To create a new root entry (root controller) make sure nothing is selected in the tree and then press "add group"

> Adding a sub group

To create a subgroup select the group you want the subgroup to be part of and press "add group" or right mouse click menu.

> Remove a group or sub group

To remove a sub group press the remove group button. Note that channels will also be removed. When a root group is removed also all sub groups and channels will be removed.

> Rename a group

To rename a group right click on the group to be renamed and select "rename group" or use the right mouse click menu.

> Add channel to a group

The needed channels can be selected in the channel list and can be either dragged in a group or moved with the "add channel" button; In this case you also need to select the group you want to have the channels in. The channel now takes over the setting from its group master (gain, eq, delay, mute)

> Remove channels

To remove a channel select it and press remove channel or use the right mouse click menu.. If you would double click a channel in the "channel list" list a channel control opens. It closes automatically when the channel moves to a group. Channels can also be dragged from one group to the other.

> Rename channels

To rename a channel go the the "channels" tab and select the channel you would like to rename. A selection of multiple channel can be renamed at the same time.

NOTE: all channel list table columns can be sorted by pressing the column header items.

A channel can also be dragged into another group within the grouping tree view.

> Group gain control

The group channel controllers have a gain box which sets the relative gain against the group gain. A channel can also be muted separately. The channel has a signal input bar with input clip indication and an output VU meter. The channel has a power indicator between group- and channel name which is green when the device is on, this bar also shows output clip in red. when an active preset is selected additional meters for the active channels are displayed along with a Solo button. The Solo button can be used to solo the individual channels/speaker sections of an active preset to check if the speaker is functioning correctly. This is only possible in setup mode and if channel is not muted, when switching to show mode or mute the group or channel the solo is disengaged.

> Group eq control

To eq the group press the group controller eq/delay button in the Group Controllers tab. A sub group eq slaves to the group above it in the hierarchy, but you can make relative changes. However if you would do this and then afterwards change that same band in a group higher in the tree it would override your setting. Good practice would be to set overall eq settings in the group master, if you need to have a separate eq in a subgroup then use a band which is not in use by groups higher up in the tree.

Some hints on using the EQ: dragging the diamond will directly affect the frequency and gain. Double clicking the diamond will allow you to reset the current band. By clicking and holding the right mouse button on the diamond the q factor can be adjusted; move the mouse to the right and q increases, moving to the left decreases the q.

> Polarity control

To adjust the polarity of a channel select the Ø button in the display control of the "Group Controllers" tab. All channel controllers show their current polarity state, press the channels Ø button to switch its polarity.

> FIR filtering

To show the current FIR filter loaded into the channels press the FIR button in the display control of the "Group Controllers" tab. To load or remove a FIR filter go to the FIR tab in the group editor opened by clicking the "edit" button of the group controller. For more info see Using FIR filters

NOTE: when changing the preset on a channel the FIR filter will be removed.

> Group delay control

To add delays start with setting the delay in the group master if needed. If parts of the system under the same master need different delay settings the subgroup controller can set a relative delay by switching the absolute/relative control to relative. When set to absolute, the subgroup controller slaves to the controller above it in the hierarchy. Then channel can also set its own delay relative to the group, this is handy when creating bass arrays where the channels in the bass group need different delay settings.

> Channel mute to group

The group controller features a "ch. to group mute" button which allows a channel mute to mute the entire group it's in. As of Sentinel front software 1.33 the mutes of the Sentinel can be operated (if option is set in the mute preferences of the Sentinel menu) while being remote controlled. This allows to mute an entire group from a single Sentinel channel.

> Identifying devices in a group

The group controller blink logo button blinks all logos of devices which have one or more channels in this group.

Monitoring a device

To monitor the status of a device or check firmware versions go to the Monitoring tab and double click the device to monitor. This will add a monitor control panel. Multiple panels can be arranged in the monitor space.

> Plotting

The monitor allows to plot a channel parameter. The plotter can be stopped for inspection of the curve by pressing the stop button and will start with a clean plot after pressing start. The range of the y-axis can autoscale (default) or manually be adjusted.

> Operational log (Oplog)

The Oplog tab shows the status of the unit. If an error occurs the device entry in the list will blink red along with the overview tab line. This makes the error visible when not being in the Monitoring tab. Note that by going into the monitor control panel's Oplog tab, the error condition is reset, but not the error itself!

> Downloading log files

The device log files can be downloaded by pressing the log file type in the drop down selector in the Oplog tab.

Device error condition

In case a device encounters an error condition, indicated by a red blinking encoder (ALC Sentinel) ALControl responds by blinking the Monitoring tab text in red, so that in every tab the error condition can be seen. To inspect the situation, press the Monitoring tab and double click the red flashing device entry in the monitor area list. The device's monitor opens and by pressing the "Oplog" tab the error can be inspected and the error condition is reset i.e. stops blinking. Proper steps need to be taken to address the actual error condition if necessary.

> Reset error condition

If the error condition is reset in ALControl the red encoder on the device is also reset. In case an operator needs to inspect the unit the blink logo function in the Devices tab can help identify the device.

Sequencing power-on of multiple devices

This feature can help to automatically switch on multiple devices on the same breaker or Phase without tripping that breaker or overload the Phase (main breaker trips) due to high inrush currents that can occur when switching on more than 5 units at the same time.

> Sequenced on switching

To switch on multiple devices just select the units in the list set a delay time between switch actions and press the ON button. All devices in the list will switch from standby state to ON (if a device in the selection is already on nothing happens with that device) one after the other with the set delay time in between. The default delay time is set at 1 second but can be adjusted between 0 and 5 seconds with steps of 0,5 seconds.

> Switching to standby

To switch multiple devices from ON to standby just select again the desired devices in the list and press OFF, this is not sequenced.

System mode

By default the program starts in setup mode indicated by the "gear" icon on the right. In this mode all editing can be done.

Via the menu Mode selector the system can be put in show mode. In show mode selecting channels is not possible. Mute, standby, delay on/off functions need to be confirmed by the user. The gain slider changes its response to mouse input so that small changes can be made easily. Show mode is indicated by the "spotlights" icon on the right.

Using FIR filters

> How to load FIR filters

Start with generating any kind of magnitude and/or phase EQ-ing using a tool that can create FIR filters. Make sure you set the sample rate to 96kHz, the max number of taps is 664 and should be an even number. The output should be a mono 32bit float *.txt (default) *.dat or

*.bin file and can be applied simultaneous over a selection of channels in the group controller's FIR tab channel list. To load the filter select the channels you want to apply the filter to then press the "load FIR filter" button and select your generated coefficients file. All channels will now apply the filter.

> How to remove FIR filters

To remove the filter just load an empty (no coefficients inside) *.txt file and the filter will be removed or alternatively, when you change the preset on a channel with a FIR filter loaded the FIR filter will also be removed. The amplifier will remember and load the filter the next time it is started. When you do not have the remote you can remove the filter by reselecting or change the preset on that channel. It is only possible to load FIR filters using ALControl.

> Highlight channel selection

You can highlight the channel selection from the FIR tab in the Group Controller tab, all channel controllers in the selection will set their channel name to a green color. To do so make sure the "show ch. selection" check box is set.

Saving

At any point in time you can save your work by the "System > save as" or ctrl+S controls.

To open an existing project, press the "System > open" or ctrl+O control to load in a project; This will remove all added devices and the current grouping structure.

All devices in the project that are in the network will be synced and appear online. If some devices are still unpowered, then they can be connected by the "Network > scan" or ctrl+F control, after power-up.

Note: The above tutorial can also be found aboard the program under "Help" in the menu bar, select "ALControl help", or press F1.

# # # #