



CRESTRON MODULES AND DEMO PROGRAM: Galileo Loudspeaker Management System

OVERVIEW:

These modules handle Input Mute/Volume, Output Mute/Volume, and Preset Recall. The modules included are:
Galileo 616 Processing
Galileo 616 Volume (Gain) / Galileo 616 Volume +
Galileo 616 Presets

The communications protocol is UDP/IP over port 15006.

The Galileo implements a protocol called OSC. This is a variable length hexadecimal-heavy protocol. The plain english-like protocol between the processing module and the volume and presets module is not OSC. Sending "INPUT1GAIN10\x0D" to the Galileo will do nothing.

Feedback from the Galileo works on a subscription model. The processing module automatically subscribes to feedback when a connection is first detected. If you wish to poll an individual input or output, that is fine, but it is not necessary to do so on startup of your program. If a connection is dropped, the processing module will automatically resubscribe when the connection is again detected.

All of the feedback from the modules is live feedback. When a preset is recalled, the volume modules will reflect the changes in Galileo. If nothing changes inside the Galileo, however, there is no feedback. Ie. If you pulse Mute_On twice, the Galileo will not send feedback the second time. If you think your feedback is out of phase, pulse resubscribe on the processing module.

The processing module implements a command queue, so there should be no problem with sending multiple commands to various modules at the same time. The processing module will handle the timing. NOTE: It is recommended, however, that states be saved as presets in the Galileo itself.

IMPLEMENTATION:

1. You need a "UDP/IP Communications module" in your program to communicate with the Galileo. This is found in the Configure view under Ethernet Control Modules > Ethernet Intersystem/Device Communication.

Put the Galileo's IP Address in the comm module in the configuration view.

Enter 15006 for the port in the programming view.

See the demo program for an example.

2. Add one "Galileo 616 Processing" module to your Logic. You only need one per Galileo. This sits between the UDP/IP comm module and the rest of the Galileo Modules.

3. Add as many "Galileo 616 Volume" modules as inputs and outputs that you are controlling.

This provides real feedback of the state of a galileo input or output. This uses a "Galileo 616 Volume +" Module within it. Do not add the "Galileo 616 Volume +" module separately. You will enter in the channel type (INPUT or OUTPUT) and channel number in the parameters for the modules.

4. If you are using presets, add one "Galileo 616 Presets" module. You will only need one per Galileo.

MODULE DESCRIPTIONS:

Galileo Processing

INPUTS:

resubscribe: Feedback to the Galileo must be “subscribed” to. The processing module “pings” the galileo every 15 seconds to keep up the subscription. If you feel like your feedback is incorrect, pulse “resubscribe” to renew the subscriptions. This will likely take about 3–5 seconds to complete.

test_connection: Pulsing this “pings” the galileo. If “connection_status” does not go high after pulsing “test_connection,” there is most likely a physical connection problem.

From_Galileo_Modules: This should be hooked up to “to_galileo_proc_module” of the other Galileo Modules.

Galileo_rx\$: This should be hooked up to the rx\$ from the UDP/IP module.

OUTPUTS:

connection_status: This goes high whenever valid feedback is received and stays high until no feedback has been received for 60 seconds. Since the processing module pings every 15 sec, this should always be high during normal operation. If the connection drops and then picks back up, the processing module will automatically re-subscribe to feedback.

Galileo_tx\$: This should be hooked up to the tx\$ to the UDP/IP module.

To_Galileo_Modules: This should be hooked up to “from_galileo_proc_module” of the other Galileo Modules.

status_txt: This will reflect current status and errors.

Galileo Volume (Gain)

INPUTS:

Volume: Volume_Up and Volume_Dn ramps the volume between -10 and +60 db at whole db steps.

Mute: Mute_On, Mute_Off, and Mute_Toggle should be pulsed.

Poll: All feedback should be real. To manually update, however, pulse poll.

Volume_In: This can be connected to the output of another module, a slider, or an analog init (to name a few). It takes input between 0 and 65535.

from_galileo_proc_module: This should be connected to the “To_Galileo_Modules” output of the Galileo Processor Module.

OUTPUTS:

Volume_fb: This can be connected directly to a volume bar on a touchpanel. The output is between 0 and 65535.

Mute: This is live mute feedback.

To_Galileo_Proc_Module: Connect this is to the From_Galileo_Modules input on the Galileo Processor Module.

PARAMETERS:

channel_type (string): The Channel type can either be INPUT or OUTPUT.

channel_number (decimal): The Channel number can either be 1d – 6d (for an input) or decimal 1d – 16d (for an output).

GALILEO PRESETS:

Change preset_num to the preset number to recall and then pulse recall. Make sure that you change preset_num before recalling.

to_galileo_proc_module: This should be hooked up to From_Galileo_Modules of the Galileo 616 Processing Module.

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Meyer Sound Laboratories Inc.

MEYER SOUND LABORATORIES INC.
2832 San Pablo Avenue
Berkeley, CA 94702

T: +1 510 486.1166
F: +1 510 486.8356

galileo@meyersound.com
www.meyersound.com