



AMX INCLUDES AND DEMO PROGRAM: Galileo Loudspeaker Management System

OVERVIEW:

These includes handle Input Mute/Volume (Gain), Output Mute/Volume (Gain), and Preset Recall. The .axi files included are:

Galileo Datatypes.axi

Galileo Variables.axi

Galileo Functions.axi

Galileo Startup.axi

Galileo Events.axi

The communications protocol is UDP/IP over port 15006.

The Galileo implements a protocol called OSC. This is a variable length hexadecimal-heavy protocol.

Feedback from the Galileo works on a subscription model. The code 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 code will automatically resubscribe when the connection is again detected.

All of the touchpanel feedback from is live feedback. When a preset is recalled, the volumes will reflect the changes in Galileo. If nothing changes inside the Galileo, however, there is no feedback. I.e. If you send mute on twice, the Galileo will not send feedback the second time. If you think your feedback is out of phase, resubscribe by calling pollGalileoAll(). If a command has incorrect syntax or does not reference something re (ie. An undefined preset), the Galileo will not respond.

The code implements a command queue, so there should be no problem with calling functions directly one after another. The command queue will handle the timing. NOTE: It is recommended, however, that states be saved as presets in the Galileo itself.

This code is created as includes instead of as a module in order to be transparent and flexible.

IMPLEMENTATION:

Include "Galileo Datatypes.axi" in the DEFINE_TYPE section.

Include "Galileo Variables.axi" in the DEFINE_VARIABLE section.

Include "Galileo Datatypes.axi" in the DEFINE_TYPE section.

Include "Galileo Functions.axi" in the subroutine/function section.

Include "Galileo Startup.axi" in the DEFINE_START section.

You will need to edit Galileo Variables to include the Galileo IP Address and connection port as well as channel numbers from your touchpanel file. All of the other includes should be left as they are. You may want to look through the Variables and Functions Files to see what global names are used.

Note the code in the DEFINE_PROGRAM section of the Demo Program. This code is necessary for the includes to act properly and to keep communication with the Galileo.

The includes use a globally defined virtual touchpanel (vdpTP) for events and feedback. If you need to change this, all touchpanel events are in the main Galileo Demo Program. All feedback is in the channelFeedback() function in "Galileo Functions.axi." All channel arrays are in "Galileo Variables.axi."

EDITABLE VARIABLES:

Galileo IP Address: Set this to the URL or IP Address of the Galileo

GalileoPort: This is set by default to FIRST_LOCAL_PORT (which, as of this writing, is 2). If you are using multiple IP devices, set this to an unused port.

EDITABLE VARIABLES CONTINUED:

GalileoInputUp: Up button channels. These are in order from Input 1 – 6.

GalileoInputDown: Down button channels. These are in order from Input 1 – 6.

GalileoInputMute: Pulsing these toggles the mutes. These are in order from Input 1 – 6.

GalileoOutputUp: Up button channels. These are in order from Output 1 – 16.

GalileoOutputDown: Down button channels. These are in order from Output 1 – 16.

GalileoOutputMute: Pulsing these toggles the mutes. These are in order from Output 1 – 16.

GalileoUserPresets & GalileoUserPresetNums: These are parallel arrays listing the button channels and the preset numbers that they recall. In the Galileo, 1 – 53 are factory presets. 54 and above are user presets.

ConnectionStatus: This button will reflect Galileo connection status.

StatusTxt: This dynamic text will display errors and status.

OTHER VARIABLES:

The following names are used by global variables and should be considered reserved

INPUT_CHANNEL

OUTPUT_CHANNEL

RECALL_COMMAND

GAIN_COMMAND

MUTE_COMMAND

GalileoConnectionError

volValues

curInputLevels

curOutputLevels

curInputMutes

curOutputMutes

GalileoAudio

feedbackPen

curStatus

galileoBuffer

tmpCmd

cmdQBuffer

cmdQ

MAX_CMDS

cmdQLen

cmdQIndex

cmdsSent

FUNCTION DETAILS:

The functions that you might use are listed at the top of “Galileo Functions.axi.”

setGalileoVolume

setGalileoVolume(INTEGER chanNum, CHAR chanType[2], CHAR cmdType[2], INTEGER chanLevel)

Sets the Galileo volume or mute for and input or output channel.

Parameters:

chanNum – between 1–6 for an input and 1–16 for an output

chanType – either INPUT_CHANNEL or OUTPUT_CHANNEL. These are global variables defined in “Galileo Variables.axi.”

cmdType – either GAIN_COMMAND or MUTE_COMMAND. These are global variables defined in “Galileo Variables.axi.”

chanLevel – between 1 and 71 (-60 to +10 db) for a GAIN_COMMAND or either 1 or 0 for a MUTE_COMMAND.

FUNCTION DETAILS CONTINUED:

recallGalileoUserPreset

recallGalileoUserPreset (INTEGER presetNum)

Recalls a preset saved in the Galileo.

Parameters:

presetNum – 1-53 are factory defined presets. 54 and above are user defined presets.

galileoVolumeUp

galileoVolumeUp (INTEGER chanNum, CHAR chanType[2])

Raises a channel gain by 1 db.

Parameters:

chanNum – between 1-6 for an input and 1-16 for an output

chanType – either INPUT_CHANNEL or OUTPUT_CHANNEL. These are global variables defined in “Galileo Variables.axi.”

galileoVolumeDown

galileoVolumeDown (INTEGER chanNum, CHAR chanType[2])

Lowers a channel gain by 1 db.

Parameters:

chanNum – between 1-6 for an input and 1-16 for an output

chanType – either INPUT_CHANNEL or OUTPUT_CHANNEL. These are global variables defined in “Galileo Variables.axi.”

galileoMuteOn

galileoMuteOn (INTEGER chanNum, CHAR chanType[2])

Mutes a channel.

Parameters:

chanNum – between 1-6 for an input and 1-16 for an output

chanType – either INPUT_CHANNEL or OUTPUT_CHANNEL. These are global variables defined in “Galileo Variables.axi.”

galileoMuteOff

galileoMuteOff(INTEGER chanNum, CHAR chanType[2])

Unmutes a channel.

Parameters:

chanNum – between 1-6 for an input and 1-16 for an output

chanType – either INPUT_CHANNEL or OUTPUT_CHANNEL. These are global variables defined in “Galileo Variables.axi.”

FUNCTION DETAILS CONTINUED:

galileoMuteToggle

galileoMuteToggle (INTEGER chanNum, CHAR chanType[2])

Toggles a channel mute.

Parameters:

chanNum – between 1–6 for an input and 1–16 for an output

chanType – either INPUT_CHANNEL or OUTPUT_CHANNEL. These are global variables defined in “Galileo Variables.axi.”

pollGalileoVolume

DEFINE_FUNCTION pollGalileoVolume (INTEGER chanNum, CHAR chanType[2])

Polls the gain and mute status of an input or output channel of the Galileo.

Parameters:

chanNum – between 1–6 for an input and 1–16 for an output

chanType – either INPUT_CHANNEL or OUTPUT_CHANNEL. These are global variables defined in “Galileo Variables.axi.”

pollGalileoAll

DEFINE_FUNCTION pollGalileoAll()

Polls gain and mute status of all inputs and outputs. Subscribes to feedback.

AMX – Galileo 05.141.002.04 A

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