

Description

This module allows 2-way control of the USB input and output levels. Volume control for input A and B, mute states, direct level control and level feedback are all supported.

Supported Processors

This module may be used with any 2-Series or 3-Series Crestron processor with Ethernet or Serial port capable of 115,200 baud.

Communication setup

This module is intended to be used with the Bose_EX-1280C_Communication_Manager_v1. Please see the Communication Manager for communications setup.

Module Setup and Unsolicited Changes

Each ControlSpace Designer object contains a Label property. This Label is used in the Crestron Module parameter to control that object. The Label for any object can be found by opening the properties for that object in ControlSpace Designer. When entering the label into the Crestron Module, you must surround the label in quotes. Additionally the label must be an exact match to the Label in ControlSpace Designer.

The recommended practice is to prefix the label with # in both ControlSpace Designer and in the Crestron Module to enable unsolicited feedback when the object's values change. If the label is not prefixed with a #, it will limit the functionality of the Crestron Modules. When prefixing a label with #, you must surround the label with quotes in SIMPL.



Image 1: Example Label Parameter in SIMPL Windows



Image 2: Example Label Property in ControlSpace Designer

Inputs, Outputs, and Parameter Descriptions

Digital Inputs

| | |
|--------------------|--|
| [usbx_volume_up] | Pulse or latch high this input to raise the volume level. Pulsing the input will increment the level as defined in the Step Size parameter. Latching high will increment the level as defined in the Step Size parameter and then start auto incrementing every .25 seconds thereafter until the signal is low or has reached the Incoming Volume Upper Limit . |
| [usbx_volume_down] | Pulse or latch high this input to lower the volume level. Pulsing the input will increment the level as defined in the Step Size parameter. Latching high will increment the level as defined in the Step Size parameter and then start auto incrementing every .25 seconds thereafter until the signal is low or has reached the Incoming Volume lower Limit . |
| [usbx_mute_on] | Pulse to mute the audio. |
| [usbx_mute_off] | Pulse to unmute the audio. |
| [usbx_mute_toggle] | Pulse to toggle the mute state. |
| [request_settings] | Pulse to poll the USB control object for all values. |

Analog Inputs

| | |
|-----------------------------|---|
| [usbx_volume_level_set(dB)] | Analog input to set the volume to specific level. Valid ranges are -605d to +120d in tenths of a db. Half steps are only valid, thus the tenths digit may only be 0d or 5d. Example: 65d = 6.5 dB and -340d = -34.0 dB Use with an analog initialize symbol. Range is -605d to 120d in 0.5 dB increments. |
|-----------------------------|---|

Serial Inputs

| | |
|-------------------------------|---|
| from_communications_manager\$ | Tie to Bose EX-1280C Communications manager output. |
|-------------------------------|---|

Digital Outputs

| | |
|-------------------------|------------------------------------|
| [usbx_mute_on_fb] | High when the volume is muted. |
| [usbx_mute_off_fb] | High when the volume is not muted. |
| [request_settings_busy] | |

Analog Outputs

| | |
|---------------------------|---|
| [usbx_volume_fb(dB)] | Analog output indicating the volume level in dB. Range is -605d to 120d in 0.5 dB increments. |
| [usbx_volume_fb(0%-100%)] | Analog output indicating the volume level in percent. Output values are calculated with the Incoming Volume Upper Limit and Incoming Volume Lower Limit . |

Serial Outputs

| | |
|-----------------------------|---|
| to_communications_manager\$ | Tie to Bose EX-1280C Communications manager output. |
|-----------------------------|---|

Paramaters

| | |
|--------------------|--|
| Label | Enter in the Label of the USB object as defined in ControlSpace Designer properties. This parameter must be enclosed in quotes. Use a # before the label name in both ControlSpace Designer and the module to enable unsolicited feedback. |
| Step Size | Select a step size to increment the volume by when holding a volume up or down digital input. Available step sizes range from 0.5dB to 6.0dB in 0.5dB increments. |
| Volume Upper Limit | Set the volume upper limit. This input is used to limit the user's ability to raise the volume past a certain value. Range is -605d to 120d in 0.5 dB increments. Example: 65d = 6.5 dB and -340d = -34.0 dB |
| Volume Lower Limit | Set the volume lower limit. This input is used to limit the user's ability to lower the volume past a certain value. Range is -605d to 120d in 0.5 dB increments. Example: 65d = 6.5 dB and -340d = -34.0 dB |

Testing Environment

| | |
|-----------------------|-------------------|
| EX-1280C | v0.201_build4 |
| EX-8ML | v1.000 |
| ControlSpace Designer | v5.0.0.805 |
| Crestron AV3 | v1.501.2867.26681 |
| SIMPL Windows | 4.07.03 |
| Device Database | 86.05.003.00 |
| Crestron Database | 63.06.002.00 |

Distribution Files

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|---|---|
| Bose_EX-1280C_USB_v1.0.umc | User module containing the USB level control logic. |
| Bose_EX-1280C_Volume_Processor_v1.0.usp | SIMPL+ module for use inside the USB module. |
| Bose_EX-1280C_Volume_Processor_v1.0.ush | SIMPL+ header for use inside the USB module. |

Revision History

V1.0 – Initial Release