SIMPLWINDOWS NAME:	Mackie DX8 Mixer with DX10e Full Control
CATEGORY:	Mixer
VERSION:	1.0
SUMMARY:	Controls all standard functions on a Mackie DX8 with DX10e Mixer
GENERAL NOTES:	

This module will control all standard functions on a Mackie DX8 Mixer with DX10e expansion card. These functions are:

1. Crosspoint level up/down/mute with feedback
2. Output level up/down/mute with feedback
3. Preset selection
4. Selectable output level meter monitoring
5. Selectable input level meter monitoring

Since this device operates at a baud rate of 115200, it should only be used with a CNMSX-AV/CNMSX-PRO or 2-Series control systems.

Access is provided to control the crosspoint gain/mute for each of 8 inputs to 10 outputs, for a total of 100 crosspoints. To access a crosspoint, you first choose the output (A-J). The mixer will be polled for the current level of each crosspoint associated with that output. You can then adjust the gain and mute for each of the 8 inputs connected to that output. Both buttons and a slider control can be used to make adjustments.

Controls are also provided to allow adjustment of any of the 10 output gains. Both buttons and a slider control can be used to make adjustments.

When the system is first powered on, or after a preset selection, it is necessary to poll the Mackie for the current levels. This is done by pulsing the REQUEST-UPDATE input. The module will automatically poll for the current levels after a preset selection. So you should only need to use this input upon start up of the system.

If it is desired to have changes made on the front panel of the Mackie reflected on the Crestron system, you must pulse the AUTO-LEVEL-UPDATE-ON input. Once this has been activated, all changes made on the front of the Mackie will be reported to the Crestron. If it is desired to de-activate this function, pulse the AUTO-LEVEL-UPDATE-OFF input.

Controls are alos provided to select any of the sixteen available presets. When activated, the preset will be recalled, and all of the input and output levels will be polled for their new settings.

This module also allows you to monitor two separate meters. It allows you to monitor a selectable (A-J) output level, and a selectable (1-8) input level. The meter levels being sent from the Mackie can be enabled and disabled using the METER-MONITOR-ENABLE/DISABLE inputs. It is recemmended that you only enable meter monitoring while on a touch screen that is displaying the meters.

In general, for most systems, the meter monitoring and auto level updating should be turned off at all times except for when the touch panel is on the Mackie control screen. Upon entering the Mackie control screen,

you can pulse the METER-MONITOR-ENABLE, AUTO-LEVEL-UPDATE-ON, and REQUEST-UPDATE inputs to get the current levels and begin monitoring. When exiting the screen, you should pulse the METER-MONITOR-DISABLE and AUTO-LEVEL-UPDATE-OFF inputs.

All digital inputs should be momentary - as if coming from buttons on a touch panel.

CRESTRON HARDWARE REQUIRED:	CNMSX-PRO/CNMSX-AV/Pro2/AV2 Internal com ports only
SETUP OF CRESTRON HARDWARE:	Baud Rate - 115200 Parity - None Data Bits - 8 Stop Bits - 1
VENDOR FIRMWARE:	None
VENDOR SETUP:	None
CABLE NUMBER:	CNSP-121

CONTROL:

OUT-A-IN-*-UP/DOWN	D	Press and hold to ramp the desired input channel for output A up or down
OUT-A-IN-*-MUTE-*	D	Pulse to mute/unmute/toggle mute of the desired input channel for output A
OUT-B-IN-*-UP/DOWN	D	Press and hold to ramp the desired input channel for output B up or down
OUT-B-IN-*-MUTE-*	D	Pulse to mute/unmute/toggle mute of the desired input channel for output B
OUTPUT-*-UP/DOWN	D	Press and hold to ramp the level for each output channel
OUTPUT-*-MUTE-*	D	Pulse to mute/unmute/toggle mute of the desired output channel
SELECT-OUTPUT-*	D	Pulse to select which output you would like to adjust the crosspoint gains for.
INPUT-*-UP/DOWN	D	Press and hold to ramp the crosspoint gain for the appropriate input associated with the previously selected output.
INPUT-*-MUTE-*	D	Pulse to mute/unmute/toggle mute of the appropriate input associated with the previously selected output.
OUTPUT-*-SLIDER	A	Can be connected to a slider object on a touch panel to allow level control of the desired output
INPUT-*-SLIDER	A	Can be connected to a slider object on a touch panel to allow level adjustment of the appropriate crosspoint
PRESET-*	D	Pulse to select the desired preset on the Mackie system
MONITOR-INPUT-*	D	Pulse to select which input channel to receive meter information for.
MONITOR-OUTPUT-*	D	Pulse to select which output channel to receive meter information for.
METER-MONITOR-ENABLE/DIS	D	Pulse to enable/disable the reporting of meter level information
AUTO-LEVEL-UPDATE-ON/OFF	D	Pulse to enable/disable the reporting of front panel changes on the Mackie system
REQUEST-UPDATE	D	Pulse to request all of the current crosspoint

		and output
MACKIE-RX$	S	Serial signal to be routed from a 2-way RS232 port

FEEDBACK:

*-MUTE-FB	D	High when the corresponding input/output is muted
*-LEVEL	A	Analog signal indicating the relative level of the corresponding crosspoint or output channel. Can be routed to a bargraph or slider on a touch panel
MONITOR-INPUT-*-FB	D	Indicates which input has been selected for meter monitoring
MONITOR-OUTPUT-*-FB	D	Indicates which output has been selected for meter monitoring
OUTPUT-METER	A	Analog signal indicating the meter level of the output selected for monitoring. Should be routed to a bargraph on a touch panel
INPUT-METER	A	Analog signal indicating the meter level of the input selected for monitoring. Should be routed to a bargraph on a touch panel
MACKIE-TX$	S	Serial signal to be routed to a 2-way RS232 port

.UPZ FILE USED FOR TESTING:	CNMSX - 5.12.63x.upz Pro2 - 1.012.cuz
COMPILER USED FOR TESTING:	SimplWindows Version 2.01.05
SAMPLE PROGRAM:	Mackie DX8 with DX10e Demo
REVISION HISTORY:	None