Crestron Module Information

Partner: Yamaha

Model: MTX3/MTX5

Device Type: Digital Signal Processor

General Information

Simple Windows Name: Yamaha MTX5 Module (Yamaha MTX3 Module)

Category: Mixer

Summary: This module controls a Yamaha MTX5 (or MTX3) Matrix Mixer Device

General Notes:

This module is designed to control a Yamaha MTX3 or MTX5 via a Crestron Control System. It can use either serial and/or Ethernet connection although we strongly recommend using Ethernet. Both of which have been tested on Crestron System-2 as well as System-3 devices.

The archive contains the following files:

Yamaha MTX3 Module (V.1.X).usp	The Simple+ module as an interface for MTX3
Yamaha MTX3 Module.umc	A macro as a “wrapper” for the Simple+ Module
Yamaha MTX5 Module (V.1.X).usp	The Simple+ Module as an interface for MTX5
Yamaha MTX5 Module.umc	A macro as a “wrapper” for the Simple+ Module
Sample App MTX5 Ethernet.smw	Sample Application for controlling MTX5 via Ethernet
Sample App MTX5 Serial.smw	Sample Application for controlling MTX5 via serial port
Sample App MTX3 Ethernet.smw	Sample Application for controlling MTX3 via Ethernet
Sample App MTX3 Serial.smw	Sample Application for controlling MTX3 via serial port
MTX5-Demo_XPanel.vtp	XPanel UI for MTX5 Sample
MTX3-Demo_XPanel.vtp	XPanel UI for MTX3 Sample

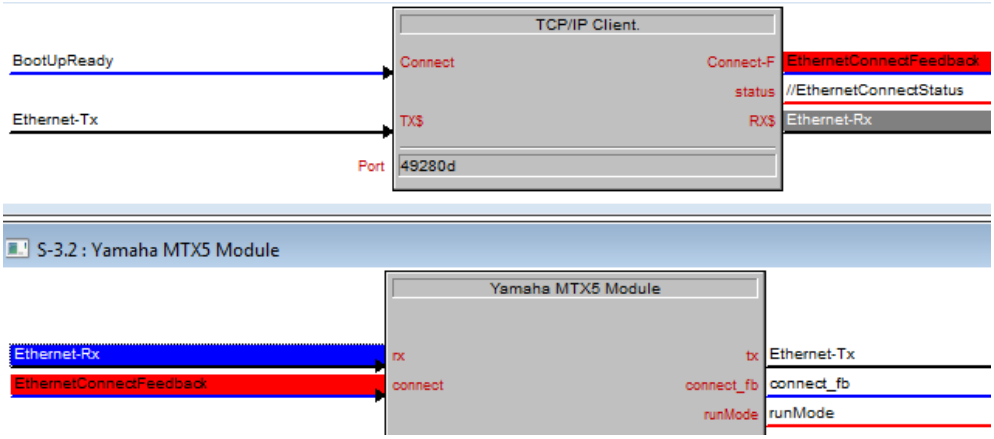
The complete functionality is in the User-Plus-Module (*.usp). The User-Macro (*.umc) is a wrapper for more order and clarity of the signals. It is possible to use the *.usp directly, but there is no disadvantage compared to using the *.umc in between (especially no higher processor load).

Wiring:

Depending on which connection is used, the following remarks should be noted:

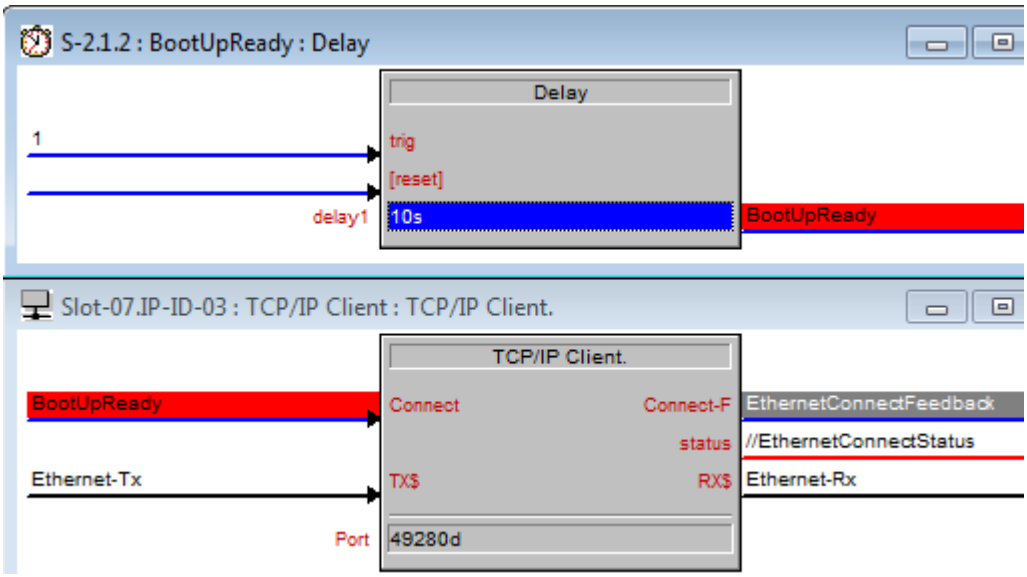
Ethernet:

We recommend to use the “Connect-F” signal (feedback if TCP/IP connection is successful) as an input for the connect signal of the module:



It is not recommended to use a “1” signal at the “Connect”-input of the TCP/IP-Client module. Because of the heavy work load for the Crestron-CPU during the boot-up phase, some signal may not have a consistent state.

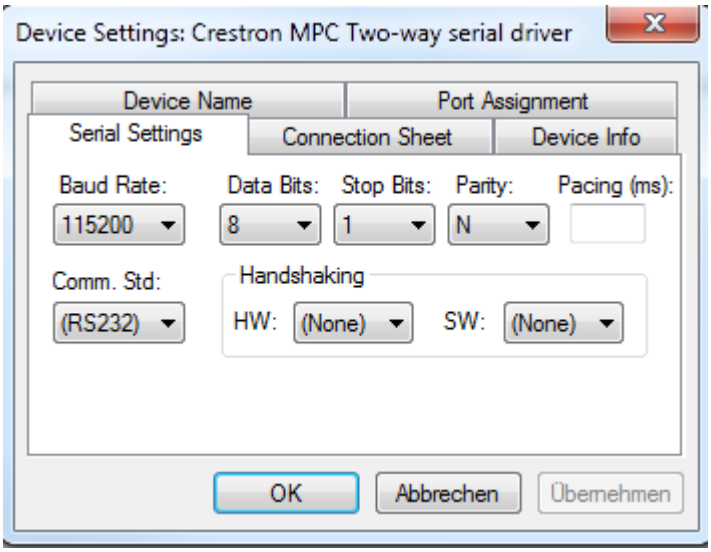
Use a small delay instead (approx. 10-30s):



The default Port Number of the MTX is “49280”

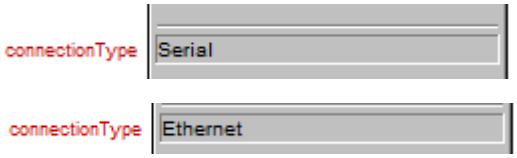
Serial:

Despite the fact strongly recommend using Ethernet, you can use a serial connection. However, you should use the highest possible speed then, which is 115200 kBaud:



In contrast to an Ethernet Connection where a constant connection monitoring takes place (and is advertised by the “Connect-F” Signal at the TCP/IP Client symbol) the serial connection does not have such functionality, therefore a “Watchdog-Functionality” is implemented.

To switch on the Watchdog, set the Connection type parameter at the “Yamaha MTX5 Module” (Yamaha MTX3 Module) from “Ethernet” to “Serial”



The watchdog causes a “sign of life”-ping between the Crestron and the MTX5 (MTX3). The time period is about 30s. If there is no answer after that time, the Crestron CPU assumes a broken connection and tries to re-connect.

(It is no problem to have this switched on during an Ethernet-Connection, but there is no real reason for it and it simply causes additional traffic.)

Signals:

The module is grouped into sections:

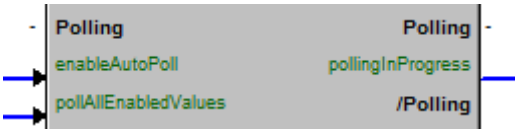
Head-Section

Controls	
rx	Rx-Data (usually connected to the RX Signal of the TCP/IP-Client Module or the Serial-Driver Module)
connect	1: causes the module to connect to the MTX 0: causes disconnect
Feedback	
tx	TX-Data (usually connected to the TX Signal of the TCP/IP-Client Module or the Serial-Driver Module)
connect_fb	“1” if the module is successfully connected to the MTX
runMode	“0”: Module is not Connected “1”: Runmode “Normal” “2”: Runmode “Update” “3”: Runmode “Emergency”

Preset-Section

Control	
presetNumber	0..50: preselection of preset-number to Recall
presetRecall	A Pulse performs a preset recall of the specified preset number
Feedback	
currentPreset	0..50: shows the current preset number
presetRecallDetected	Pulse: Preset recall was detected

Polling Section



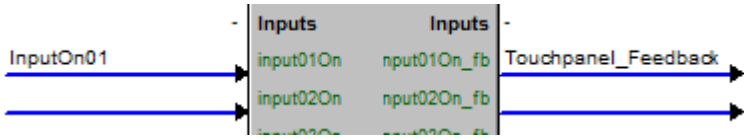
After a preset recall there is no opportunity to figure out which parameters are change. To monitor which parameters have been changed, there is an adjustable polling function implemented.

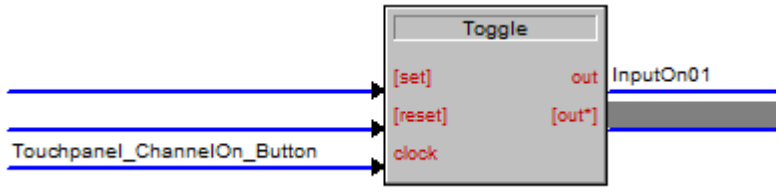
Control	
enableAutoPoll	If “1” after a detected preset recall, all parameters where polling is enabled will be polled
pollAllEnabledValues	Manually triggers a polling of all paremeters where polling is enabled
Feedback	
pollingInProgress	Is “1” during a polling is in progress

Level, Matrix-Sends, Mute-Groups, and DCA’s

All MTX parameters have a control and feedback signal.

All binary parameters are momentary. If a toggle-function is needed, you have to use the toggle symbol from Crestron. For example:





Analog Parameters, such as Level or DCA are in the range of 0…65535, so you can directly connect a Touchpanel-Fader with the MTX-module and the Feedback with the Tochpanel-Feedback.

The Poll-Enable signals are binary and cause a polling of a specific parameter or parameter group in two cases:

1. A pulse on “pollAllEnabledValues” in the polling section
2. If a preset recall is detected and “enableAutoPoll” is “1”

Because polling and parsing lots of parameters can require a lot of time (about 15s on a slow System2 control system for about 500 parameters) you should enable polling only for the parameters you need!

For every pair of Channel-On and Channel-Level there is a “enableXXXPoll”. For example:

enableInput01Poll enables the polling for the Input01On and input01Level parameter.

The only exception is within the matrix functions where only one poll enabler is responsible for all the sends on one channel, and another one is responsible for all the send levels on one channel.

For example:

“enableInput01ToMatrixOnPoll” enables Polling of “input01ToMatrix01On” … “input01ToMatrix08On” and “enableInput01ToMatrixLevelPoll” enables Polling of “input01ToMatrix01Level” … “input01ToMatrix08Level”.

Device-Info Section:

The device info section delivers some information about the connected device.

This Information will be available on the signals as soon as the device goes online and will be cleared if the devices goes offline.

protocolVersion	The protocol version of the connected device
paramSetVersion	The Parameter Set Version of the connected device
firmwareVersion	The Firmware Version of the connected device
productName	The product name of the connected device
serialNumber	The serial Number of the connected device
deviceId	The Device ID of the connected device