Essential Systems Programming

250 Mark Trail S. Wetumpka, Alabama 36093

G-M24 Series AV Over IP Switching Matrix Control Modules

Kanex Pro Inc.
3753 Howard Hughes Parkway, Suite 200.1083
Las Vegas, Nevada 89169

Device Version (IP): **MATRIX TELNET V1.00**

Crestron: **RMC4**
Firmware Version- v2.8000.00010
SIMPL Windows Version- 4.28 (build: 4.2800.00)
Device Database- 200.325 (build: 200.32500.002.00
Crestron Database- (cnctrldb22000.mdb) : 223.00 (build: 223.0000.001.00)
Crestron Toolbox- 3.13p30 (build: 3.1330.0008.0)
SIMPL+ Version- 4.06 (build: 4.0600.00)
SIMPL+ Cross Compiler- 1.3
VT Pro-e- 6.2.02
Smart Graphics Controls Version- 2.19.00.09
TS-1070
Firmware Version- v2.004.1054

Demo Files: **SIMPL- AT-G-M24-RMC4Demo-V1.1.smw**
VT Pro-e- AT-G-M24-TS1070Demo-V1.1.vtz

Summary

Modules are broken into specific control types, as detailed below in each section.

IP connection- Standard Telnet Port 23- No username or password required.
RS232 connection- 115200, n, 8, 1

1- **Standard Global Routing (G-M24SeriesSwitcher-Routingv1.1.umc)**

This module is used for discrete routing to all 120 potential outputs of the Matrix. There are several ways that it may be used as follows-

*Select an Input, then an Output, then Take.

*Select an Output, then an Input, then Take.

*Lock the Take state HIGH, select an Input, then multiple Outputs. Similarly, if an Input is then selected, it will be routed to the LAST Output that was selected.

----------Inputs And Outputs----------

CEC Power On/Off- Pulse to power on or off the devices as defined in the **CECStart** and **CECStop** parameter at the bottom of the module. *CEC must be available and enabled on each device*.

Route Take- Pulse to refresh the route to whichever input and output were selected LAST.

Input Source- Integer value of the physical input you wish to route.

Output Destination- Integer value of the physical output to which you wish to route.

Clear All Routes- Sends a command to the router to clear all of the routes from Output 1 through the **MaxOutputs** parameter as defined at the bottom of the module.

Out1-120 Src Fb- The integer value of the sources that are currently routed to each of the outputs.

----------Parameters----------

CECStart / CECStop- Literal serial value of the outputs you wish to start and end the global CEC Power commands triggers if you choose to use them. Ex- if you are using the power commands for outputs 10 through 32, the values entered would be “10” and “32”.

MaxOutputs- Depending on your router capacity, this will represent the maximum number of outputs in your configuration which will be used for the **Clear All Routes** press. This MUST be a three-digit representation of the LAST output in your config. Ex- if your router has 32 outputs, this would be entered as “032”.

2- Single Output Routing (G-M24SeriesSwitcher-SingleOutputv1.1.umc)

Each instance of this module is used for routing and control of a single output of the Matrix. There are several expanded controls based upon specific potential needs of the endpoint.

----------Inputs And Outputs----------

CEC Power On/Off- Pulse to power on or off the display via CEC *CEC must be available and enabled on the device*.
CEC Power On Fb/Off Fb- Corresponding feedback indicating the CEC power state of the device.
CEC Input 1/3- Pulse to change the input on the endpoint device based on availability for CEC control.
CEC Input 1/3 Fb- Indicated the selected input on the endpoint device based on availability for CEC control.
Image Mute On/Off/Toggle- Pulse to show/hide the video image of the display.
Image Mute On Fb/Off Fb- Corresponding feedback indicating the Normal or Black state of the video image.
Send Scaler Config- Sends the scaler setup command to the display based upon the selected parameter **ScalerConfig**.
Current Scaler Config$- Displays in text format the last scaler configuration sent to the endpoint.
Input Src- Integer value of the physical input you wish to route to the display.
Input Src Fb- The integer value of the source that is currently routed to the display.

----------Parameters----------

Output- Literal serial value of the output you wish to define each module to control Ex- if you are using the module to control output 10, the value entered would be "10".
ScalerConfig- From the dropdown menu, select from the available scaler configurations that will be sent to the endpoint when the **Send Scaler Config** button is pulsed.

3- EDID Selection (G-M24SeriesSwitcher-EDIDv1.1.umc)

Only one instance of this module is required per system. This allows for EDID setup of each of 24 max inputs.

----------Inputs And Outputs----------

Send EDID Pulse to send the currently selected EDID to the previously selected input.
Get EDID- Pulse to refresh the text value EDID settings of the LAST selected input.
Input Sel- Integer value of the physical input that you wish to either send an updated EDID entry to or verify the input's current entry. *A value of 0 (zero) will send to ALL inputs.
EDID Selections- Pulse to select the available EDID configuration based on the pre-defined parameters.
EDID Selected$- Displays in text format the last EDID entry selected to be sent to an endpoint.
Input (x) Current EDID$- Displays in text format the current EDID setting for each of the 24 inputs of the system.

4- Video Walls (G-M24SeriesSwitcher-VideoWallv1.1.umc)

A separate module should be used for each wall required. Up to 30 walls can be created (M24/120). All walls and quad views MUST start at the first output of a specified card. These selections have been accounted for in this module.

When routing to the displays, the examples below should be followed. On the module, outputs are labelled as 1-100, however, these do NOT necessarily correspond to the physical outputs of the matrix. For example, if you are creating a 3x3 wall of Type 1 below, but starting the wall on output 5, on the module itself, after the Config is pulsed, the routing destinations will automatically be re-mapped starting always at 1 on the module, but it is re-mapped to 5. In other words, you will ALWAYS start at module output route 1 and ascend to your max. in the case of the 3x3 starting at Matrix out 5, Module 1 is Matrix 5, Module 2 is Matrix 6, etc. until reaching Module 9 which will be Matrix 13. The reason for 100 possible sources is because the module was built for a 10x10 wall maximum.

----------Inputs And Outputs----------

Configure- Pulse ONCE after the program is started to establish the remapping and wall parameters. The wall module WILL NOT function after a processor reboot until this is pulsed.
Configured Fb- Corresponding feedback will show high when the wall is configured.
CEC Power On/Off- Pulse to power on or off all of the displays in the wall via CEC *CEC must be available and enabled on each device*.
CEC Power On Fb/Off Fb- Corresponding feedback indicating the CEC power state of the wall.
Single Image On/Off- Pulse to create or destroys the video wall for a single large image or separate individual images.
Single Image On Fb/Off Fb- Corresponding feedback indicating the state of the wall.
Image Mute On/Off/Toggle- Pulse to show/hide the images of all of the displays in the wall configuration.
Image Mute On Fb/Off Fb- Corresponding feedback indicating the Normal or Black state of the wall.
Disp(x) Src- Analog value for routing a source to the respective window in the quad. When the quad mode is OFF, this route will selectively
Disp(x) Src Fb- Analog value indicating the source currently routed to each window in the quad.
Tx$/Rx$- Serial I/O to be routed to the management connection module.

----------Parameters----------

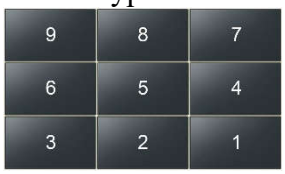
Wall SizeH/V- From the dropdown, select the size of the wall such as H3xV3, H4xV5 etc.
Wall Resolution- From the dropdown, select the overall resolution for the wall.
Wall Start- From the dropdown, select the output of the first display of the wall.
Wall Type- From the dropdown, select the position and assignment of the outputs of the wall. Since there are literally an infinite number of possibilities, for the sake of simplicity this module allows for two possibilities which are detailed as follows using a 3x3 wall as an example-

Type 1-



Top to bottom, left to right

Type 2-



Bottom to top, right to left

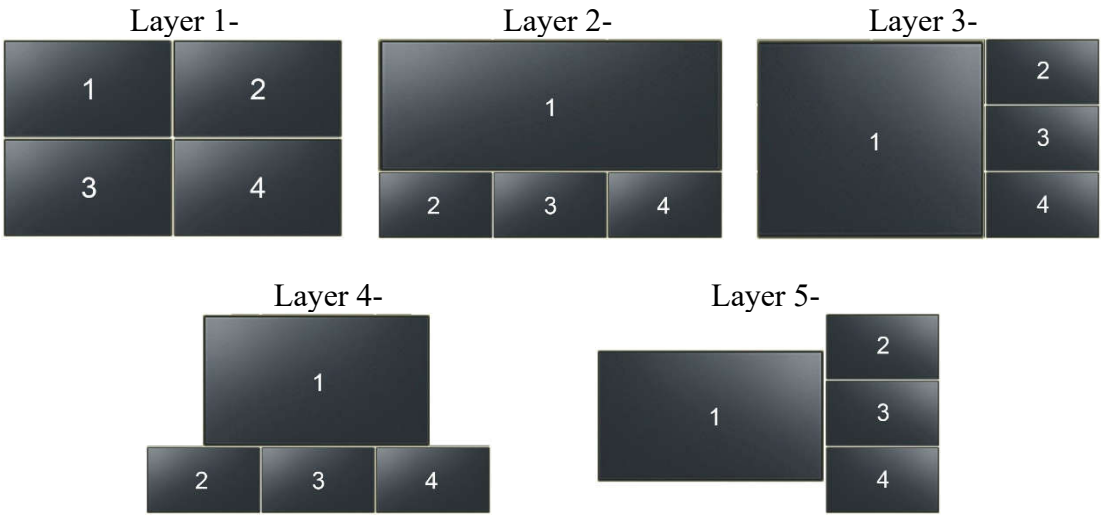
For routing to the video wall, as a standard, when the configuration is ON, a route to any of the outputs in the config will route to ALL outputs. When the wall config is OFF, routes will be sent singularly to each output. *******When using specific outputs for a Video Wall or Quad View, do not use the routes on the standard routing module directly. Although routing and feedback will always function on the main routing module, there are no discretions for the Wall or Quad View nor their respective configurations.

5- Quad View (G-M24SeriesSwitcher-QuadViewv1.1.umc)

A separate module should be used for each wall required. All walls and quad views MUST start at the first output of a specified card. These selections have been accounted for in this module.

When routing to the displays, the examples below should be followed. On the module, outputs are labelled as Window 1-4, however, these do NOT necessarily correspond to the physical outputs of the matrix. For example, if you are creating a Quad View of Layer 1 type below, but starting the wall on output 5, on the module itself, after the Config is pulsed, the routing destinations will automatically be re-mapped starting always at 1 on the module, but it is re-mapped to 5. In other words, you will ALWAYS start at module output routes 1 2, 3, 4.

When Quad mode is NOT engaged, changing the Layer value between 1-5 will automatically trigger the Quad View mode to engage. If a Laver value has not been previously selected, selecting Quad mode to ON will default to the Layer 1 type. While Quad View is engaged, the Layer style may be changed on the fly via an integer value between 1 and 5. When Quad View is turned OFF, the next time it is turned ON, it will start in the LAST selected Layer style prior to turning OFF.



----------Inputs And Outputs----------

Configure- Pulse ONCE after the program is started to establish the remapping and Quad View parameters. The wall module WILL NOT function after a processor reboot until this is pulsed.
Configured Fb- Corresponding feedback will show high when the Quad View is configured.
CEC Power On/Off- Pulse to power on or off all of the displays in the Quad via CEC *CEC must be available and enabled on each device*.
CEC Power On Fb/Off Fb- Corresponding feedback indicating the CEC power state of the quad.
Single Image On/Off- Pulse to enable or disable the Quad View for separate individual images or four images per output.
Single Image On Fb/Off Fb- Corresponding feedback indicating the state of the Quad.

Quad Image Mute On/Off/Toggle- Pulse to shows/hide the images of all of the Windows in the quad configuration.

Quad Image Mute On Fb/Off Fb- Corresponding feedback indicating the Normal or Black state of all of the windows in the quad configuration.
Window 1-4 Mute On/Off/Toggle- Pulse to shows/hide the images of each of the windows in the quad configuration based upon the selected layout.
Window 1-4 Mute On Fb/Off Fb- Corresponding feedback indicating the Normal or Black state of each of the windows in the quad based upon the selected layout.

Window(x) Src- Analog value for routing a source to the respective display. When the wall mode is ON, a single source to any of the displays will perform the route to all as needed.
***Use ONLY the number of lines necessary for the total number of displays in the wall (horizontal number x vertical number) and ALWAS begin with Disp1 regardless of the physical output locations on the matrix.
Window(x) Src Fb- Analog value indicating the source currently routed to each display in the wall.
Tx$/Rx$- Serial I/O to be routed to the management connection module.

6- Preset Save, Recall, Clear, View (G-M24SeriesSwitcher-Presetsv1.1.umc)

Only one instance of this module is required per system. This allows recalling, saving, clearing, and viewing each of the available 8 (eight) system presets. *Note- preset values DO NOT contain any wall or QV setups. They contain input to output routes ONLY.

----------Inputs And Outputs----------

Recall Preset (1-8)- Pulse to recall a previously saved preset.
Save Preset (1-8)- Pulse to save the current state of ALL input to output routes in the system.
Clear Preset (1-8)- Pulse to clear the saved value of the preset. *This will NOT clear any routes, it simply clears the preset. To clear the routes, see the Global Routing module.
Info Preset (1-8)- Pulse to recall via the **Out1-120 Src** outputs the current values of the routes to each output based upon the selected preset. This will NOT change the status of the router, this simply displays the values of the routes saved for each of the presets.
Out1-120 Src- Integer value of the physical input that is assigned to each output based upon the preset selected.