Interfacing with Evertz Display Systems Over TCP/IP

This document outlines operation of the Image Video TSI1000 tally controller with Evertz multi-viewer display systems over TCP/IP. Operation of the TSI1000 tally controller using the serial interface is documented elsewhere.

Evertz Umd Display Setup

The Evertz display system appears in the Image Video Tally System Console as a set of two types of UMDs. The first type of UMD, called the "Evertz MVP Screen" type, defines IP addresses used to communicate with the Evertz display system. One "Evertz MVP Screen" UMD represents one IP address within one display system.

The second type of UMD is the "Evertz MVP display" which defines a single UMD within a Evertz display system. The "Evertz MVP display" UMDs are related to a set of "Evertz MVP Screen" UMDs by the names of the UMDs, as explained below.

Note that although the type names contain "MVP", the name of a particular Evertz UMD display product, the TCP/IP interface will also work with Evertz VIP product.

For a display system which has more than one IP address the name of each "Evertz MVP Screen" UMD has the format:

<Port name><Punctuation Character><Number>

For example

MVP1/1
MVP1/2
MVP1/3
MVP2/1
MVP2/2
MVP2/3

The port name is arbitrary and is related to a single display system, which may one or more IP addresses. The punctuation character separates the port name from a numeric value that makes the name of each UMD unique. Note that in the above example there are two display systems, with the port names MVP1 and MVP2 respectively, each with three IP addresses.

"Evertz MVP display" UMDs have name names with the format:

<Port name>::<Umd Name>

The port name must match the port name within the name of an "Evertz MVP Screen" UMD. For example the "Evertz MVP Screen" UMD names for a given system are:

MVP1/1
MVP1/2
MVP1/3
MVP1/4

each having the port name “MVP1”, then the names of the related “Evertz MVP display” UMDs could be:

MVP1::UMD01
MVP1::UMD02
MVP1::UMD03

allowing three UMDs to be update through three different IP addresses. Each UMD belongs to the same display system called MVP1.

The last four digits of the serial number of each “Evertz MVP display” UMDs must match the “Protocol ID” (PID) for a UMD in the Evertz display system. In systems where there is one UMD per Evertz video input, the PID / serial number can track the input number. In systems where there is more than one UMD per Evertz video input, the user must provide a scheme for assigning PIDs to UMDs. The TSI1000 accepts PID values between 1 and 4096 for each display system.

The serial number of an “Evertz MVP Screen” UMD is not meaningful, but must not be repeated in other UMDs of any type. To keep serial numbers unique, they are typically programmed in different numeric ranges for each display system, starting with, for example, serial number 1001 for MVP1, serial number 2001 for MVP2 and so on.

For display systems ***with a single IP address*** it is possible to use an “Evertz MVP Screen” UMD name that is entirely comprised of the port name (no trailing punctuation and number). For example for single-IP-address display system the following “Evertz MVP Screen” and “Evertz MVP display” UMD names could be used:

MVP1
MVP1::UMD01
MVP1::UMD02
MVP1::UMD03

For systems using more than one IP address it is mandatory to use the

<Port name><Punctuation Character><Number>

format described above.

Interface Details

The TSI1000 tally controller always connects to Ethernet port number 9800 to communicate with Evertz TCP/IP devices. This value must be explicitly programmed in the Evertz firmware setup.

Configuring an MVP UMD

To add an MVP UMD to the Tally System Console configuration.

1. Click on "Display Unit" => "Configure".
2. Click "Add".
3. Enter the Name for an "Evertz MVP Screen" UMD, as discussed above, in the "Name" field e.g. "MVP1/1".
4. Enter a unique Serial Number for the UMD.
5. Set the "Type" to "Evertz MVP Screen".
6. Click "Port" and set an IP Address for the display system. "Interface" is usually "2".
7. Repeat steps 1 to 6 to enter other display system IP addresses.
8. Enter the Name for an "Evertz MVP Display" UMD, as discussed above, in the "Name" field e.g. "MVP1::UMD01".
9. Enter a Serial Number" for the UMD, such that the last four characters of the serial number match an Evertz PID (e.g. 0001).
10. Click "Details" and enter the UMD control string.
11. Repeat steps 8 to 10 to enter other UMDs.
12. Click "Close". If the Tally System Console is online with a TSI1000, the information will be transmitted when the dialog box is closed.

The "Configure Display Units" dialog box keeps the last-used setting as defaults when adding a new unit. Therefore when switching from entry of one UMD type to another (say from Image Video RDU1500 to Evertz MVP), take extra care to set all the parameters correctly for the first unit of the new UMD type.

Text colour codes:

The AC embedded function can be used to control text colour in the Evertz UMD. The colour code bits have the following effect:

bit 0 - no effect
bit 1 - Evertz "default" colour
bit 2 - Evertz normally red (can be reprogrammed in Evertz Maestro)
bit 3 - Evertz normally green (can be reprogrammed in Evertz Maestro)

The recommended colour codes for the most common tally situations are "5" for program, "11" for preset, and "2" for the non-tallied (normal) state. This works well for the keeping default Maestro colours and lets the Tally System console approximately reflect the colour change of the Evertz display. For example:

tsx(R1::DST1[1],A,ac(5),ac(11),ac(2))

will cause the UMDs as shown in the MVP and the TSC to appear as follows:

Function	AC function value	Bits	Default MVP colour	Console colour
Program	5	0101	Red	Red
Preset	11	1011	Green	Amber
Normal	2	0010	Default	Green

Virtual GPIs

To use Evertz virtual GPIs (for border tally or tally blocks in the MVP monitor wall, a UMD must be programmed with a control string of the following format:

LIN(16)<VGPI#>=<1 or 0>[LIN(1)UMD text control string as required]

Example

LIN(16)5=1

Will turn on virtual GPI #5.

LIN(16)5=0

Will turn off virtual GPI #5.

Typically:

LIN(16)5=PGM(R1::CAM1)

to turn on virtual GPI #5 if a source goes to air, and

LIN(16)5=PGM(R1::CAM1)LIN(1)CAMERA 1

to control virtual GPI #5 and also display the name “CAMERA 1”. LIN(16) denotes a following virtual GPI control string, while LIN(1) denotes a text control string send. The LIN(1) command is not necessary if the LIN(16) command is not used (defaults to text control string).