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SDI Matrix Switch Ethernet Control

8 X 8 (8 in, 8 out) SDI Matrix Switch 98-111- 0808
8 X 16 (8 in, 16 out) SDI Matrix Switch 98-111- 1608
16 X 8 (16 in, 8 out) SDI Matrix Switch 98-111- 0816
16 X16(16 in, 16 out) SDI Matrix Switch 98-111- 1616

This family of SDI Matrix Switches uses a new Brick form factor which includes an integrated heat sink and cooling blowers. The basic package is epoxy encapsulated electronics with an outer layer of conducting epoxy to form an outer EMI shield. The heat sink is bonded to the epoxy during the encapsulation process. Small blowers provide air movement over the heat sink fins.

These units are non-blocking matrix switches. The control of the switch is performed through the Ethernet port. A USB port is provided for loading new code and also to provide access to the Maintenance Mode for system debug and access to customer accessible internal parameters. The USB port can also be used to connect to an LCD status monitor that displays the current state of each input (any active video) and the current routing matrix for the switch. The LCD display can be used to help with both overall system debug and software development.

The video connections are HD-BNC connectors. The power connector is a Lemo 1B series 3 pin mini snap connector.

The unit will operate correctly on 10-32 VDC (est. 10 watts). The internal switcher power supply provides isolated (from the input rails) power to the internal electronics. Four 6-32 mounting inserts are molded into the bottom of the unit to provide a means to mount the unit to a flat surface.

Figure 1 shows a block diagram of the unit(s). Each of the inputs is received as a single ended 75 Ohm terminated input and equalized to compensate for external signal degradation due to cables. The matrix switch is non-blocking, any input can be routed to any or all of the outputs. Each of the outputs is re-clocked before being sent to the output cable driver. A small uProcessor is used to control the switch, connect to the Ethernet port, and connect to the USB port. A power-up routing configuration can be loaded into the unit so the switch powers up to a known, user defined state.

Three LEDs provide status to the user. A Green LED indicates the unit has power, the uProcessor is running, and the code is operating normally. A Yellow LED indicates the unit has detected a thermal issue. Two thermal sensors monitor the temperature of the unit. A Red LED indicates the unit has a major problem and needs diagnostics performed on it to resolve the issue.

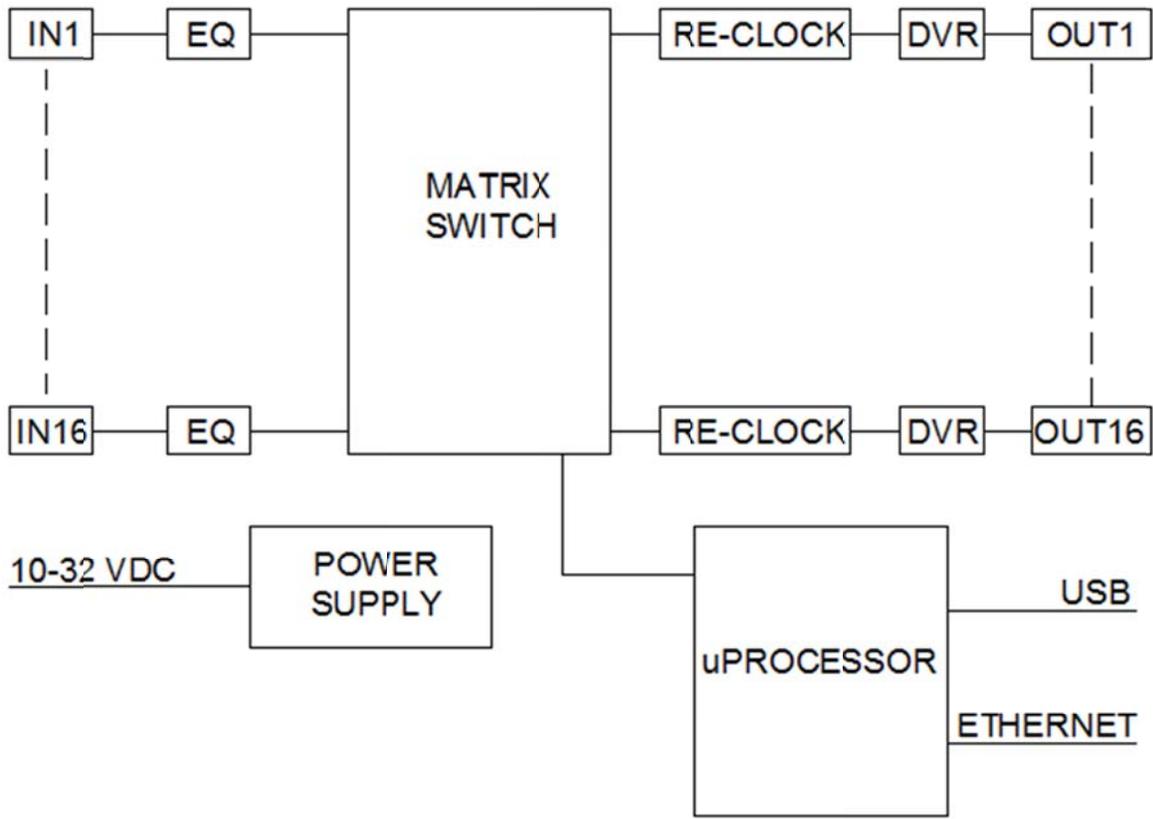


Figure 1 – Unit Block Diagram

Overall Specifications

| | | | |
|------------------------------|---|-----------------|-----------------|
| Video Formats: | SMPTE 292M | (1.48Gbit/s) | |
| | SMPTE 259M | (270/360Mbit/s) | |
| | SMPTE 424M | (2.97Gbit/s) | |
| Input Connectors | HD-BNC | | |
| Input Termination | 75 Ohms, Ac coupled | | |
| Output Terminations: | 75 Ohms (series), AC coupled | | |
| Output Connectors: | HD-BNC | | |
| USB Interface (ASCII data) | 8 bit 9600 baud 1 stop No parity XON/XOFF flow control | | |
| Ethernet: | RJ45 (10/100/1G) HTTP2 server, Telnet server, PC GUI interface | | |
| LEDs: | Green (Indicates uP is running) Yellow (Indicates unit has a thermal issue) Red (Indicates unit has a major detected fault) | | |
| Operating Temperature Range: | -40C to +70C | | |
| Power: | 10-32V DC (either polarity on PWR connector) | | |
| Supply Current: | 98-111-0808 (8 in, 8 out) | 28 VDC | < 275 ma (est.) |
| | 98-111-0816 (16 in, 8 out) | 28 VDC | < 300 ma (est.) |
| | 98-111-1608 (8 in, 16 out) | 28 VDC | < 325 ma (est.) |
| | 98-111-1616 (16 in, 16 out) | 28 VDC | < 350 ma (est.) |
| Power Connector: | 3pin Lemo 1B series mini snap | | |
| Package: | 4.4" X 4.4" X 3.15" | | |
| Mounting: | Four 6-32 threaded inserts | | |
| Weight: | 4.0 lb. (est.) | | |

Package Drawing

The following diagram shows the 16 X 16 unit. The 8 X 8, 8 X 16 and 16 X 8 units are the same size with fewer HD-BNC connectors.

