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Composite/YC Matrix Switch Ethernet Control

8 X 8 (8 in, 8 out) Comp/YC Matrix Switch 81-111- 0808
8 X 16 (8 in, 16 out) Comp/YC Matrix Switch 81-111- 1608
16 X 8 (16 in, 8 out) Comp/YC Matrix Switch 81-111- 0816
16 X 16 (16 in, 16 out) Comp/YC Matrix Switch 81-111- 1616

This family of Composite and YC video 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. 6 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 DC coupled 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. Input and output ports can be 'paired' to provide switching of YC video signals. 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.

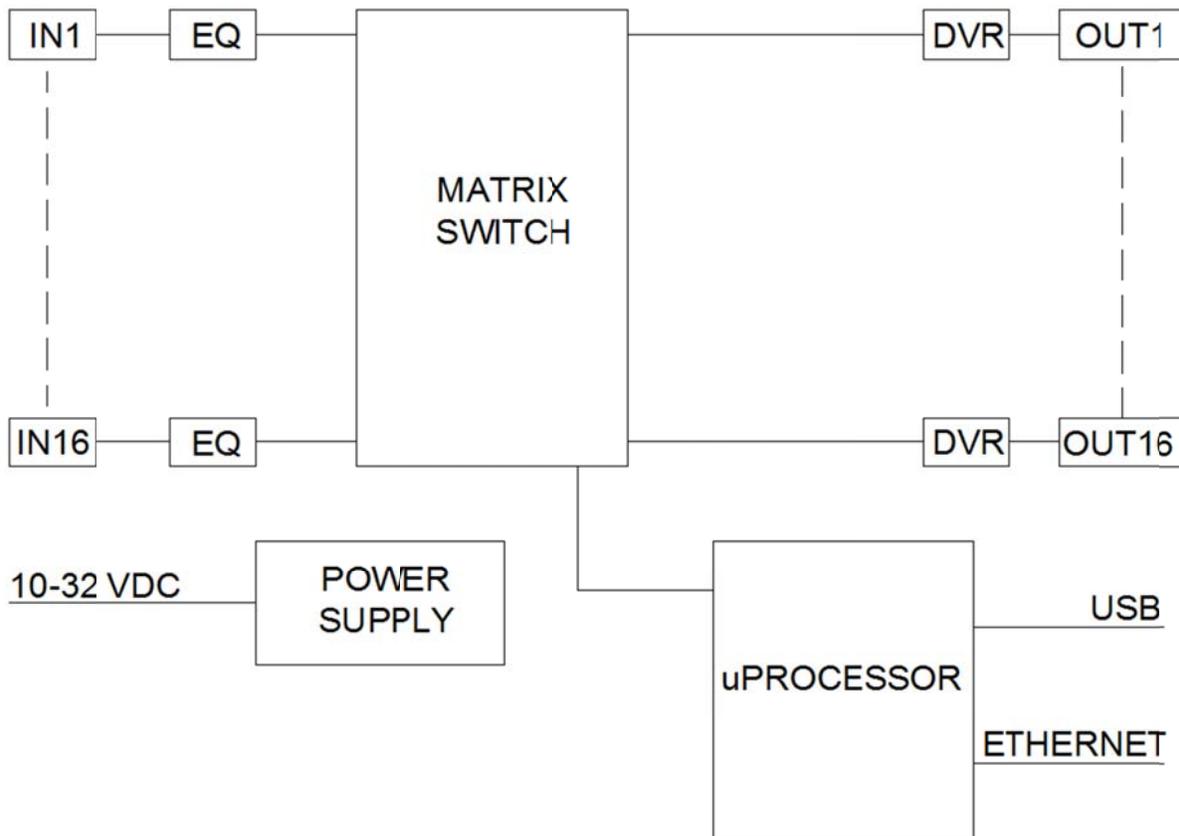


Figure 1 – Unit Block Diagram

Overall Specifications

Video Formats:	NTSC or PAL (composite or YC)		
Input Connectors	HD-BNC		
Input Termination	75 Ohms, DC coupled		
Output Terminations:	75 Ohms (series), DC 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		
Altitude	Non-operating	-500 to 60,000 feet	
	Operating	-500 to 25,000 feet	
Power:	10-32V DC (either polarity on PWR connector)		
Supply Current:	81-111-0808 (8 in, 8 out)	28 VDC	< 175 ma (est.)
	81-111-0816 (16 in, 8 out)	28 VDC	< 200 ma (est.)
	81-111-1608 (8 in, 16 out)	28 VDC	< 225 ma (est.)
	81-111-1616 (16 in, 16 out)	28 VDC	< 250 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.

