

**SYC-88**  
**CONTROL PANEL**  
**OPERATOR'S MANUAL**



SIGMA ELECTRONICS, INC.  
P.O. Box 448  
1027 COMMERCIAL AVE.  
EAST PETERSBURG, PA 17520  
(717) 569-2681  
(10-97)

## **SYC-88 PANEL OPERATION**

### **GENERAL**

The SYC-88 is a control panel capable of switching up to four LEVELS in an 8x8 matrix. There are individual selection buttons for each of the eight inputs and eight outputs. This panel provides source status via the LEDs within the button. Switching of levels is provided via the configuration of a DIP switch. Source and destination devices may be identified in the label area provided above each button.

### **SYSTEM SETUP**

Located through the rear of the unit is an eight position DIP switch (S33). The DIP switch performs two functions, setting of the panel's COMM address and activation of input LEVEL(s). The DIP switch is only tested once at power up, so if any switch settings are changed, power must be cycled to the panel to read the new switch settings.

### **COMM ADDRESS**

The SYC-88 needs to have its own unique COMM address to distinguish it from other control panels that may be in the system. There are sixteen possible addresses, and therefore the system can have up to sixteen panels. If there is more than one panel controlling the router, or additional panels are being added to an existing system, make sure they each have a unique address. See the table located later in this document for address setup.

### **ACTIVE LEVELS**

The panel can switch one or more input LEVEL(S). The active levels are determined by DIP switch S33,5-8, located on the rear of the control panel. When the appropriate switch is set, that LEVEL will follow whatever is selected by the INPUT keys. However, if no LEVELS are made active the panel will default to LEVEL 1 only. The status displayed by the input keys is always the lowest active LEVEL selected for that panel. For example, if Level's 1 and 2 are active, the status displayed is for LEVEL 1. See the table located later in this document for active LEVEL setup.

### **INPUTS**

When not in a preset mode (input not flashing), the INPUT keys display the current status for the selected OUTPUT. Also note that the displayed status is for the lowest selected active LEVEL, as explained previously. To change an input, select a new input key. The LED incorporated into the input key will begin flashing, indicating a preset mode. If a wrong input is selected you can correct it anytime by pressing the desired input key before pressing an OUTPUT key. The preset mode can be canceled at any time by pressing the same INPUT key twice.

### **OUTPUTS**

Once an input is selected (preset mode active), pressing the desired OUTPUT key will cause the panel to generate a TAKE. The TAKE will cause only those LEVELS set active on the panel (S33,5-8) to switch. When the TAKE is accepted by the SCI, the preset mode will be cleared on the panel and the panel will reflect the current status of the system for that OUTPUT (relative to the lowest active LEVEL set on the panel). If the OUTPUT LED remains flashing after a STATUS or TAKE operation, the panel is unable to communicate with the SCI. This is most often caused by an open COMM line.

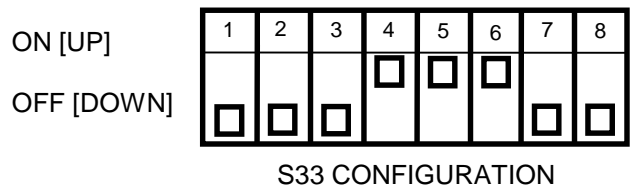
### **STATUS**

To obtain the status of any given OUTPUT the output button can be depressed. The active input to the selected output is represented by the LED which is illuminated among the input buttons.

Anytime an LED is flashing in the input buttons the indication is that the selected input is in a preset mode and has not yet been commanded to switch the source to the selected output.

The INPUT status display for the selected OUTPUT is relative to the lowest active LEVEL selected on the control panel as explained previously. The status for two different panels could indicate different sources to a specific output based on the level setting for each control panel. One panel may be set to switch video only (Level 1) whereas another control panel may be configured to switch audio only (Level 2). Each panel will indicate the source for the Level selected.

## **SYC-88 COMM ADDRESS SELECTOR SWITCH [S33,1-4]**



ADDRESS	S33,1	S33,2	S33,3	S33,4
1	OFF	OFF	OFF	ON
2	OFF	OFF	ON	OFF
3	OFF	OFF	ON	ON
4	OFF	ON	OFF	OFF
5	OFF	ON	OFF	ON
6	OFF	ON	ON	OFF
7	OFF	ON	ON	ON
8	ON	OFF	OFF	OFF
9	ON	OFF	OFF	ON
10	ON	OFF	ON	OFF
11	ON	OFF	ON	ON
12	ON	ON	OFF	OFF
13	ON	ON	OFF	ON
14	ON	ON	ON	OFF
15	ON	ON	ON	ON
16	OFF	OFF	OFF	OFF

**SYC-88 ACTIVE LEVEL SWITCH SELECTOR [S33,5-8]**

When the appropriate switch is on, the Level will follow the input as selected on the panel. If all switches are OFF the panel will default to LEVEL 1 only. Any combination of switches is acceptable. A typical audio follow video would have both levels 1 and 2 activated. Video only switch would have level 1 activated. An audio only switch can be performed by activating level 2 only. These examples assume the default factory level configurations of the switch modules.

- |           |             |
|-----------|-------------|
| S33,5 OFF | LEVEL 1 OFF |
| S33,5 ON  | LEVEL 1 ON  |
| S33,6 OFF | LEVEL 2 OFF |
| S33,6 ON  | LEVEL 2 ON  |
| S33,7 OFF | LEVEL 3 OFF |
| S33,7 ON  | LEVEL 3 ON  |
| S33,8 OFF | LEVEL 4 OFF |
| S33,8 ON  | LEVEL 4 ON  |

## **SYC-88 THEORY OF OPERATION**

### **POWER SUPPLY**

Power to the remote panel is supplied by a 9-12 VDC wall pack power supply through J1. Polyswitch RT1 provides fault current protection to the wall pack supply and the remote panel. Diode D3 (in combination with RT1) also provides reverse voltage protection should a wrong polarity power supply accidentally be connected to the remote panel. The 9-12 VDC input is regulated to 5 VDC by U3.

### **MICROPROCESSOR, I/O**

All functions of the remote panel are controlled by U1, an 8051 type microprocessor. The microprocessor is complete with a serial port, RAM, counters, I/O lines and program storage EEPROM. Y1, C8 and C9 make up the 14.7 MHz oscillator clock for U1.

U2 combines the individual microprocessor TXD and RXD lines into a single COMM line. It also provides the necessary drive and level conversion between the microprocessor serial I/O lines and the COMM line interface. Resistors R2 and R3 provide a bias for the COMM input signal comparator. The direction of the COMM line is controlled by P3.7, and is normally in the receive mode except when a panel transaction is made.

### **DISPLAY AND KEYBOARD**

The display and keyboard are controlled by the microprocessor through U4 and U5. U4 contains the column data and U5 the row data for the display/keyboard matrix. Data is serially transmitted from the microprocessor to U4 and U5 via the P1.0 and P1.1 lines. Data in U4 and U5 is latched by a strobe signal on P1.2. To turn on a display LED, the respective row line goes high, and the corresponding column line goes low. The display mux rate is about 10mS per column digit.

The keys are scanned by turning off all row drivers and testing the KROW1, KROW2, KROW3 and KROW4 lines while the column transistors are turned on one at a time.