

M16_24 notes:

This module has a rotary encoder and two 7 segment displays.

There are 3 select jumper positions on this board, which allows a single programmed microcomputer to provide different characteristics for different applications. The '99' jumper position, if a jumper is in place, will allow 99 programs to be selected. If this jumper is not in place, but a jumper is in the '24' position, then the unit is restricted to a different list of 24 programs. If neither jumper is in place, then the unit will only select 16 programs. The program list is different for each of the three possible selections.

The 8051 source code is in a file named FV1_V1.asm. At the bottom of this text file, are lists of numbers (and comments) that define the programs that will result in each program of each set (16, 24, 99). This makes the changing of programs, at least simple changes, like decay time, very convenient.

The programs were written in the SpinAsm assembler and made into a file that is included into the 8051 source code during assembly. This is an 8 program set, where each program has 3 variables. With this 8 program set, many different effect settings are possible, and the entire compiled code fits into an 8K byte processor ROM space. If more programs are desired, then a larger microcomputer ROM will be required to carry them, but the largest processor, with 64K bytes of ROM can hold as many as 125 programs, each with 3 variables, which implies thousands of possible fixed programs to the user.

There is an extra jumper position on the board, labeled 'mix select'. If a jumper is in this position, the effects will always be on, but the effects enable button and the effects-on LED will continue to function. This is so that a control signal (from the LED) can be used to mute the effects returns, separate from this board.

In operation, the user rotates the encoder to the desired program number and presses the encoder knob to 'load' that program. When the display indicates a program number that is different from the one currently loaded, then the display will 'glitter', indicating this condition. Once the program is loaded, the display will become solid again.

The conditions of the unit, such as program number and effects on-off, are saved in the on-board EEPROM, so that when power is discontinued, the same conditions will be loaded on power-up.

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