

Mercury Photographic MicroSync MS0100

Theory of Operations:

Transmitter: the transmitter consists of a microprocessor and a RF transmitter, in addition to a fire-flash switch and a change-channel switch. The input from the camera is via the flash boot connector.

The transmitter hardware is normally asleep, which means all the electronics are in a power-down mode. The current consumption in this state is so low (a few micro amps) that no power switch is required to get long battery life. Typically the battery has about 230 mA-Hr capacity, which allows the product to maintain the sleep mode for 50 to 100 thousand hours.

When an input is detected from the flash switch, the change channel switch, or the camera boot connector the processor is interrupted and the sleep mode is terminated. The processor then proceeds to enable the transmitter, transmit the desired code, and go back to sleep. The transmit process takes about 1.2 millisecond. If the transmit button is held down, the processor remains awake and continues to transmit the flash signal every 100 milliseconds until the button is released. In the case of the boot or the channel change button, only the input change of state wakes the processor, and as soon as the operation is done the flash unit goes back into the low power sleep mode.

The channel change button selects between 4 codes the transmitter can transmit. This allows the user, or multiple users, to have simultaneous use of radio strobe controls without interference. Each time the change-code button is pressed the transmitter increments to the next code and transmits a special channel change character to the receiver. Flashing an LED on the transmitter 1 to 4 times when a channel change is initiated indicates the channel selected.