

Applied Electronics Company

3132 Brown Street • Boise, ID 83714
Phone (208) 344-2015 • Fax (208) 344-2103

February 10, 2008

RE : Circuit Description for MPJ Series Transmitter
Author : Darrell Downam

Users interface with the transmitter through a keypad on the front of the transmitter. By pressing a button on the keypad a signal is sent to the microprocessor. That signal in turn is converted into a number that is compiled with an address code, that is pre-selected and set by jumpers. This compiled number is the sent serially at 2.4KB/s to TX module. This signal is then processed by the tx module and radiated at 315.0 Mhz at a level not to exceed FCC standards. The tx module has an onboard 9.84 Mhz crystal oscillator that is used to generate the RF signal. The radiated signal is modulated at the 2.4KB/s rate in a Frequency Shift Modulation manor.

The unit is battery powered and is controlled by an on/off switch. The battery voltage is obtained from 4 "AA" batteries that are converted to 5 VDC by a "boost/buck" DC-DC converter. This converter operates at 19Khz (approx.) and should not radiate any detrimental signals. Low battery conditions are indicated by a LED mounted in the case of the transmitter. The indicator will flash red when a button is pushed on the transmitter keypad. Under normal operation the LED will be a constant green indication.