

Calibration Procedure, MUX-to-DMX Translator

“DMX-lator II”

P/N 6425120

1. Tools and test equipment

- a. Programmable power supply w/ XLR cable
- b. Calibrated oscilloscope
- c. Lightronics FC-816 controller (scenes 1 & 2 preset) w/ short XLR cable
- d. American DJ “PocketScan” #2 w/ 3-pin XLR cable
- e. Small straight-blade screwdriver
- f. Glyptol

2. Inspection

- a. Examine the solder side of the UUT (Unit Under Test) for solder bridges, un-trimmed leads, un-soldered connections, etc.
- b. Examine the component side of the board for missing parts and for polarized parts (ICs, transistors, electrolytic capacitors) installed backward. Verify the serial number of the UUT matches the serial number on the inspection report, then initial the “PCB Visual Inspection” blank on the inspection report.
- c. Verify that the microcontroller (U1) is marked with the correct part number (6425122) and the most current revision letter. Initial the “Firmware Revision” blank on the inspection report.

3. Calibration Setup

- a. Set power supply to 15.0 volts, current limit at 250 milliamps. Turn off.
- b. Set Oscilloscope horizontal to 500 uSec/division
- c. Set oscilloscope vertical to 1 volt/division
- d. With input selector set to GND, set vertical position (ground reference) two divisions below centerline.
- e. Connect power supply to J2 (MUX-64 OUT)
- f. Connect FC-816 to J1 (MUX-64 IN)
- g. Connect “PocketScan” to J3 (DMX-512 OUT). Energize PocketScan.
- h. Connect oscilloscope probe to TP1, ground clip to TP2

4. Initial Observation

- a. Energize power supply
- b. Observe that current does not exceed 150 milliamps. If it does, de-energize, disconnect UUT (Unit Under Test) and return for repair.

- c. Observe “ALIVE LED” – it should flash with about a 1 second duty cycle. If it does not, de-energize, disconnect UUT and return for repair.

5. Calibration

- a. On the FC-816, select BLACKOUT
- b. The oscilloscope should display a square wave with an amplitude of less than $\frac{1}{2}$ volt.
- c. Adjust R11, the zero-adjust pot, such that the top of the square wave is at 0 volts and the bottom is less than 0.5 volt (1/2 division) below that. See Figure 1.

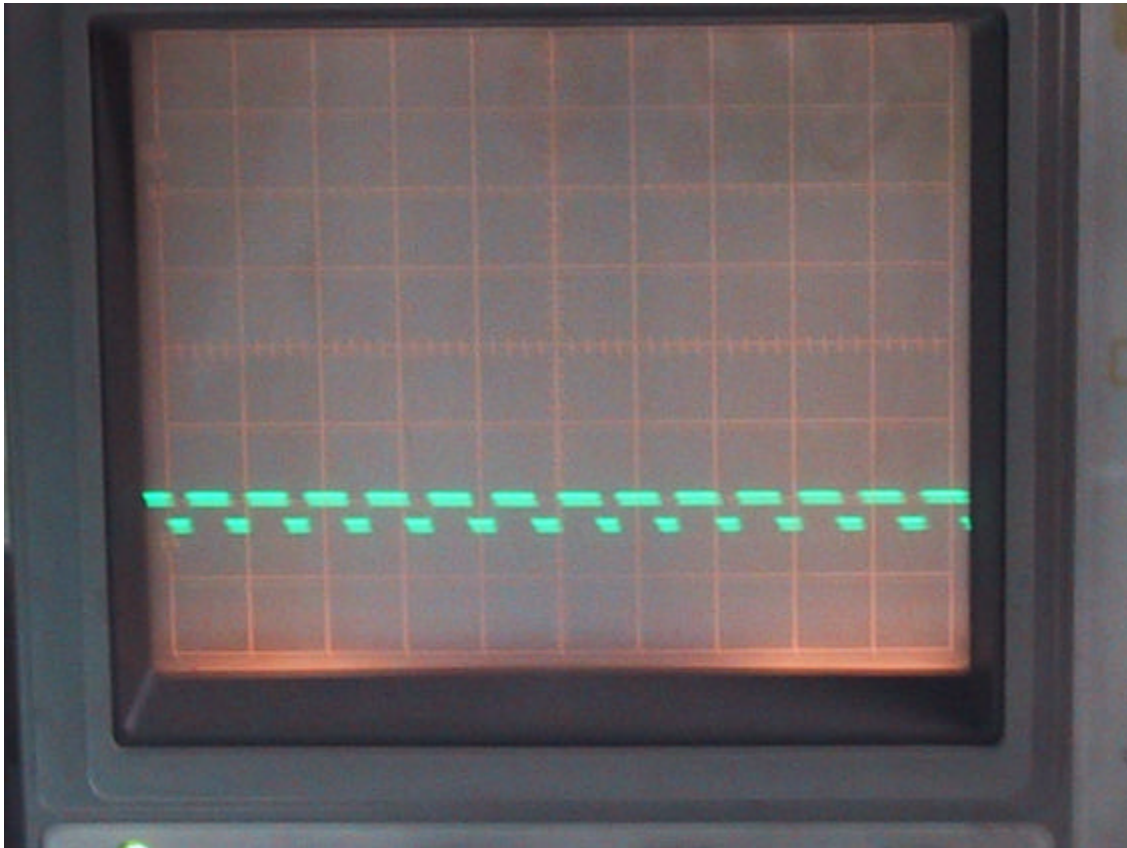


Figure 1

- d. On the FC-816, select “SCENE 1”
- e. The oscilloscope display should change to resemble figure 2 – the top of the first square wave will be appreciably higher than the tops of the remaining waves.

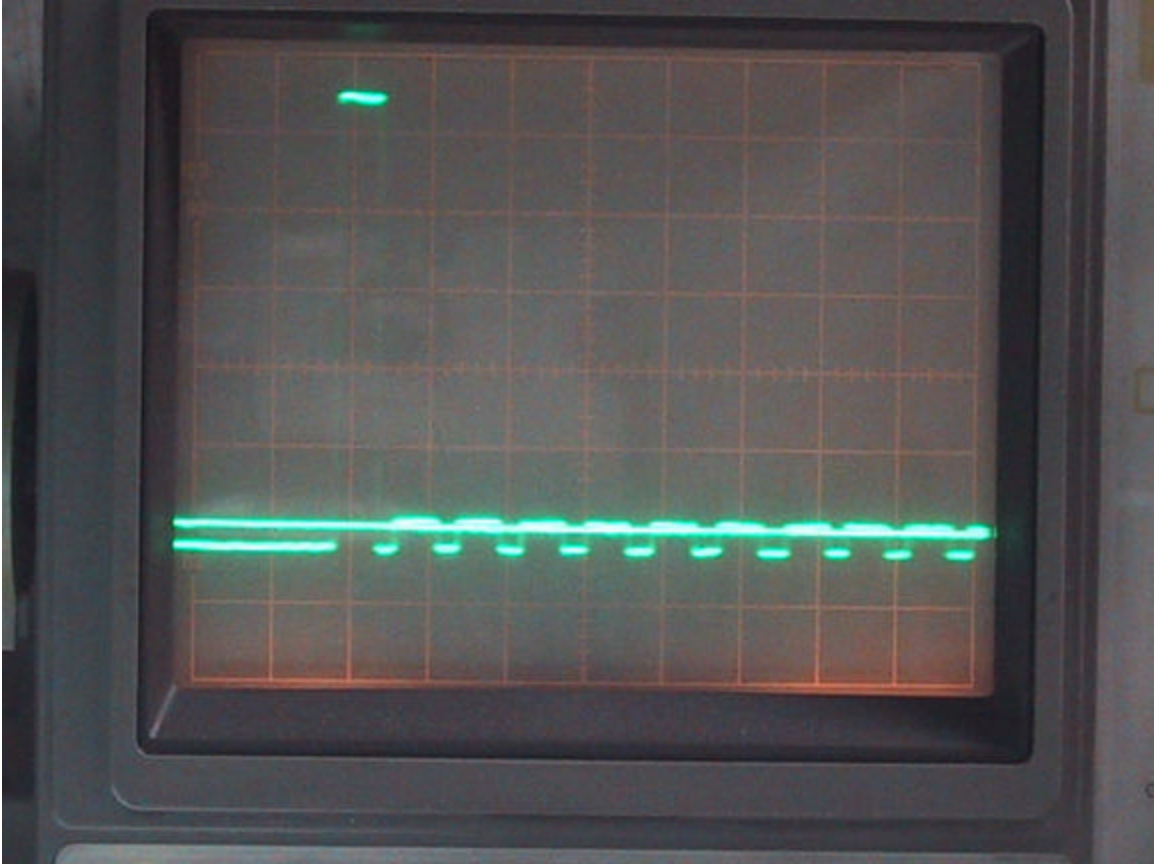


Figure 2

- f. Adjust R10, the gain pot, such that the peak of the first wave is at 5.2 volts (5 1/5 divisions above the ground reference).
- g. Recheck R11 (the zero-adjust pot). The tops of the remaining waves should still be at 0 volts and the base line should be less than 0.5 volts below that.
- h. If it was necessary to readjust R11, recheck R10 to ensure 5.2 volts for the first wave.

6. Final Verification

- a. On the FC-816, select "SCENE 2"
- b. The PocketScan should move to place a green STAR pattern on the target. A red dot (the PocketScan's laser) should be flashing, approximately centered in the star, and appear within the circle of the target. See figure 3.

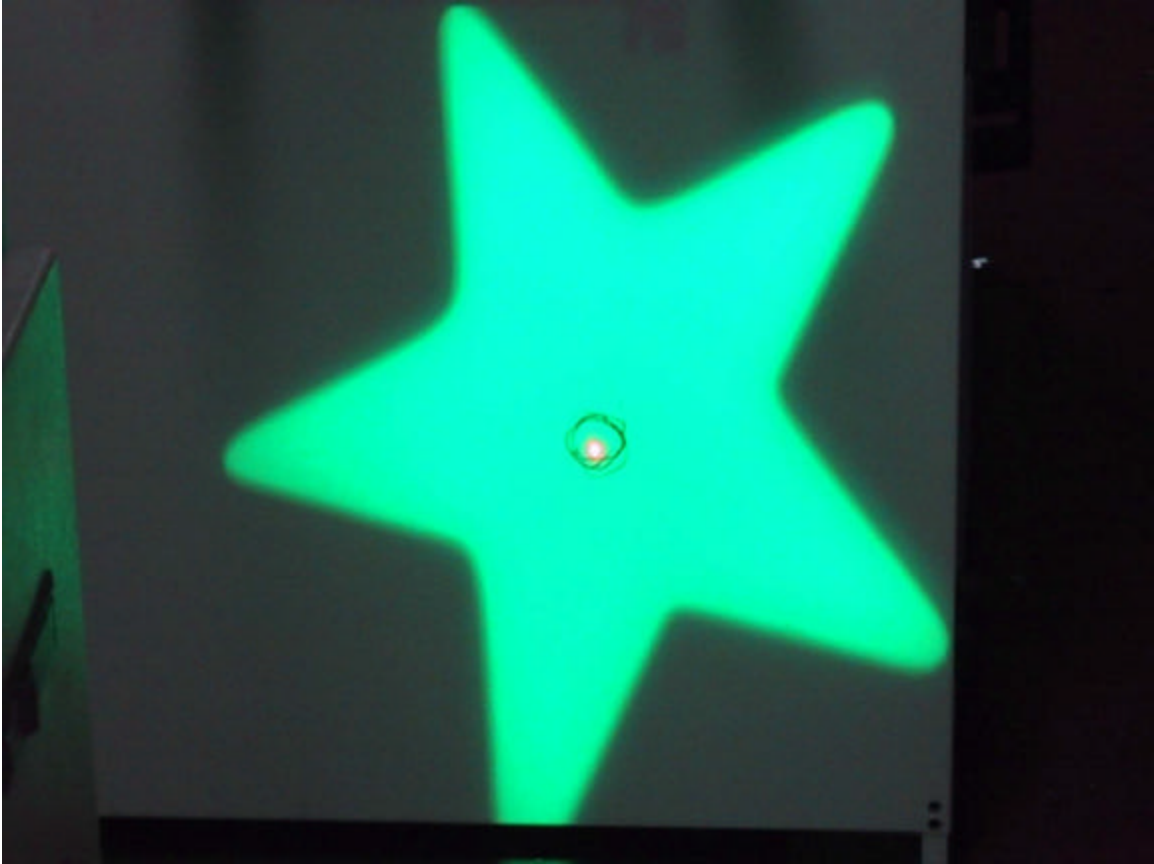


Figure 3

7. Cleanup

- a. On the FC-816, press the “BLACKOUT” button.
- b. De-energize the power supply
- c. Disconnect all cables, clips and probes from the UUT.
- d. Place a dab of glyptol on the adjuster for each pot.
- e. Initial the “calibration” section of the report.
- f. Pass the board and its inspection report to final assembly