

Modulated optical signal source with variable output

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The values of the 10K pot and the 470 Ω resistor may need to be changed to suit the characteristics of the LED. With the pot set at 0 Ω , the LED should be at the maximum desired brightness. With the pot set at maximum resistance, the LED current should be low enough that no light is emitted. Ideally the pot should have a calibrated dial.

Test the receiver in a darkened room as ambient light will affect the results (it certainly should do or else your receiver is very insensitive!) Set the pot until no output is seen from the optical receiver under test (an oscilloscope is better than the ear). Note the dial reading. Make adjustments to the receiver and repeat the reading – if the dial reading is lower, the receiver is now more sensitive, etc. Obviously, this is only a qualitative test but should still prove useful for receiver optimisation in the shack.

The LED output is modulated with a 1 kHz square wave. The frequency can be changed by altering the two 47K resistors and / or the 10nF capacitor.

