

Re: Long range IR signal

38kHz cycles or in other words about 290us. Have the output of the one shot AND gated with the 38kHz 50% duty cycle oscillator. The output of the AND gate drives the LED (through suitable high current LED driver).

The net result is under normal operation the LED is not driven at all. Then when someone presses the trigger you get one set of ten or eleven LED pulses each lasting about 13us (with 13us gaps in between), and nothing else after that (until the trigger is manually pressed again).

This is the basic idea, but feel free to modify it to suit your needs better.

- > I presume you would have to use a fairly fast RF transistor
- > with a suitable current rating as the current source with a low ESR
- > capacitor (say 4700uF) across the supply close to the circuit. The FET
- > switch should handle the situation OK. I would use the PNP current source
- > with emitter resistor of 0.6 ohm and two diodes to base from + supply
- > – would this work or is there a better solution?
- > What devices would be suitable for this, and what other considerations?

I don't understand your description of your constant current source, so I can't make comments as to its feasibility, but using a constant current source for driving the LED seems rather more complicated than needed. Assuming you have a regulated supply voltage (5V or more would be nice), what is wrong with using a simple resistor to limit the current?

What is your power supply (batteries? regulated? voltage? current capability)? An eleven pulse packet consisting of eleven 13us 1A pulses requires 143 microcoulombs of charge ($Q=I*t$). If this is delivered entirely from a capacitor, then you can approximate the voltage droop for various capacitances using the formula $Q=CV$. For example if we allow a 250mV sag when drawing 143 microcoulombs, then we need $0.000143 = C * 0.25$, so a capacitance C of 572uF. The ESR should be low enough that the output voltage of the capacitor doesn't sag unreasonably at 1A peak current. If you use a resistor to limit the current then you can simply make it smaller to compensate for whatever ESR the capacitor has to enable 1A peak current pulses. None of this is too precise, but neither does the LED need precise current levels. Any standard 470uF or 680uF capacitor or so from 5V should function quite nicely. If the power supply is particularly stiff and easily able to cope with fast 1A+ pulses with minimal droop, then no extra capacitance is strictly required (though a small amount may still be desired for minimizing inductance based overvoltage effects).

- > Thanks for any ideas
- > Richard

- **References:**

- ◆ **Long range IR signal**
 - ◇ From: Richard Hosking
- ◆ **Re: Long range IR signal**
 - ◇ From: Fritz Schlunder
- ◆ **Re: Long range IR signal**
 - ◇ From: Fritz Schlunder
- ◆ **Re: Long range IR signal**
 - ◇ From: Richard Hosking

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