



NOTES:

1. Design intended for compatibility with microsecond-scale 0-5V upgoing pulses. Not for use with inverted logic (downgoing pulses) or long pulses.
2. Suggest orienting switch so momentary position is closer to operator when held in the hand; this is easier to hold down temporarily by thumb.
3. Quality of transmitted infrared pulse depends completely on quality of incoming electrical pulse. A poor electrical source will provide poor infrared signaling.

SELECTED DIGI-KEY PART NUMBERS AS OF JUNE 2010:

3778: 501-1037-ND
1593DBK: HM861-ND
HSDL-4220: 516-1261-ND
7107SYZBE: CKN1470-ND
HLMP-0103: 516-1394-ND

DESCRIPTION:

The Acousonde™ allows time synchronization and main-oscillator discipline via infrared. The discipline operation requires a precise 1 pulse-per-second (PPS) source. Time synchronization requires only a single pulse, but it must be transmitted at the top of the minute according to accurate time-of-day. This top-of-minute pulse can also be provided by a 1 PPS source if it is hand-gated by an operator monitoring a time-of-day clock.

The most common source of accurate and precise 1 PPS is a GPS-synchronized clock. Such clocks commonly supply 1 PPS via a BNC jack operating at 5V (TTL logic).

This design allows the 5V pulse from a GPS-synchronized clock to be converted to an infrared pulse inside a small, handheld box connected by BNC cable. The three-position toggle switch is normally open in the center position. When synchronizing time, the operator awaits the 59-second time mark on a time-of-day clock, and then activates the momentary position to transmit the next 5V pulse by infrared. For discipline operations, the non-momentary switch position is used to transmit 1 PPS indefinitely.



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6060 Graham Hill Rd Fl 2 #F	Felton, CA 95018	831-335-9600
TITLE	IR Pulse Converter	ASSY REV A
ENGINEER	William Burgess	
PROJECT	Opti-sync Box	
DATE	Wed, Jun 2, 2010	Sheet 1 of 1