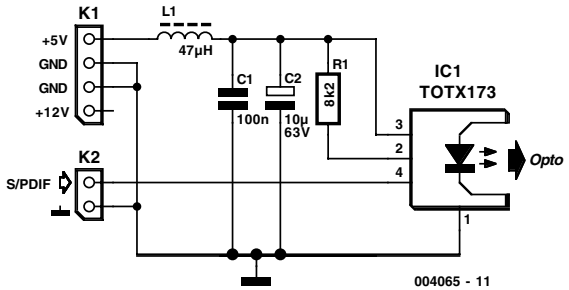
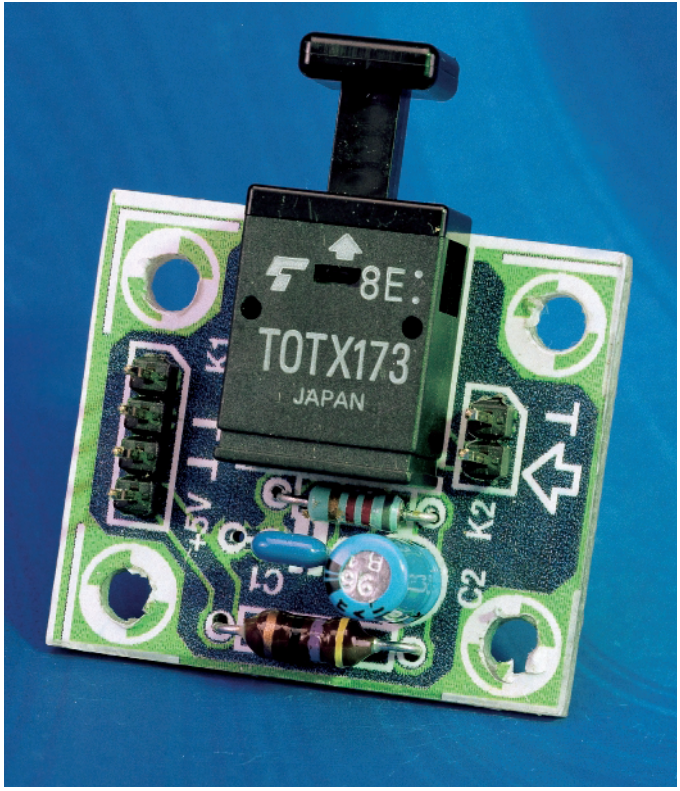
037 Optical S/PDIF Output





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This little circuit is intended to be used to provide external access to an unused digital output of a CD or DVD drive in a PC. It provides an electrically isolated interface. In addition, this circuit is also handy for connecting a (portable) MD recorder, since these devices usually only have optical digital inputs.

The circuit is a standard application for the Toshiba Toslink transmitter module. On account of the large amount of interference present in the PC environment, extra decoupling for the transmitter module is provided by L1, C1 and C2. A small PC power connector can be attached to the pin header K1 (pay careful attention to the orientation; +5 V is red). The cable for the S/PDIF output of the CD or DVD player can be connected to K2. Make sure that the signal and earth leads are correctly

connected. A suitable screened cable is often provided with a player that has an S/PDIF output. Otherwise, you can make your own single-lead screened cable, with a two-pole connector for a pin header at each end.
Most drives provide a standard logic level at the digital audio output, and this signal can be connected directly to the input of the Toslink transmitter without any modifications. The circuit draws approximately 13 mA.
There is only on additional remark. It seems that certain CD and DVD drives provide a signal at the S/PDIF output only when a CD is actually being played (there is not even a S/PDIF clock present if no disc is being played). This means that a recorder will miss a small part of the signal when an audio CD starts playing, since the PLL of the clock extraction circuit must re-lock to the clock signal.
The PCB shown here is unfortunately not available ready-made through the Publishers' Readers Services.

(004065-1)

COMPONENTS LIST

Resistor:
R1 = 8kΩ2

Capacitors:
C1 = 100nF ceramic
C2 = 10μF 63V radial

Inductor:
L1 = 47μH

Semiconductor:
IC1 = TOTX173 (Toshiba) (Eurodis)

Miscellaneous:
K1 = 4-pin SIL-header
K2 = 2-pin SIL-header