



STAND-ALONE/PARALLEL INTERFACE PRODUCTS

Single-Chip Board Layout Diagrams

EXAMPLE PC BOARD LAYOUT

The printed circuit layout example in this chapter shows an implementation of the circuit shown in Figure 2 under the section "Circuit Examples for ISD1000A and ISD2500 Products." A dip switch (SW1) for addresses and pull-up resistors on the control inputs has been added. Additionally, two new address inputs and a pulse stretcher (U2A) for the overflow output (pin 22) have been added to the circuit so that this PC board will also work with the ISD2500 series. Also, one-shot pulse generator (U2B) adds the ability to generate short duration \overline{CE} pulses for Message Cueing experimentation. The schematic of this board is shown in Figure 4, Single Chip Demo Board.

NOTE The following PC board drawings are not to scale.

The PC board layout incorporates the recommendations in "Good Audio Design Practices." Power feeds from the right-hand side of the board at the two points labeled "+" and "–". C8 is physically located at the branch of the V_{CC} traces that feed V_{CCD} on the top (going to pin 28) and V_{CCA} on the bottom (going to pin 16).

High-frequency ESR decoupling capacitors C2 and C7 are located adjacent to the supply pins they serve. C2, the decoupling cap for the $V_{\rm CCD}$ supply pin, has its own separate ground trace going directly back to the "—" input of the board. C7 picks up its ground from the major ground plane area on the "bottom" end of the board. The major power traces are greater than 30-mils wide and as direct as possible.

ISD 1

EOM LED 000000 D1 000000 R10 R12 R9 **78** 000000 000000000 $\circ \Box$ 000000000 IC1 SW1 000000000 0 \bigcirc 0000 0 0 0 0 0 0 000 00 0 0 0 0 R19 0 0 \Box + 5 0 0 0 0 0 0 0 R18 0 C8 0 0 0 C3 0 0 0 0 $\bigcirc \square$ 0 0 0 0 0 0 □ R2 0 0 0 0 0 0 0 0 ○□)C5 0 0 0 OC4($\circ \Box$ AUX IN 🖾 0 0 **P** R16 0 0 0 **SPEAKER** RΊ C6 R25 0 $\circ \Box$ R3 (0 \bigcirc 0 R24 PLAYBACK/RECORD R5 U2 JP1 0 0 (+) REC \bigcirc C9 C12 CHIP ENABLE 0 0 0 C10 (+) PLAYL 0 0 0 0 C11 POWER-DOWN Q1 0 0 □ R20 **ELECTRET** (+) PLAYE 0 O 🗖 R23 0 **MICROPHONE** 0 0 □ R26 0 0 0 C13 OVF LED R25 C14+ PULSE CE

Figure 1: Single-Chip Demo Board Silk Screen

NOTE: (*) = ISD2500 series devices only. (+) = ISD1100, ISD1200, and ISD1400 series devices only.

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Figure 2: Single-Chip Demo Board Component Side PC Layout

Figure not drawn to scale.

NOTE:

(*) = ISD2500 series devices only.

(+) = ISD1100, ISD1200, and ISD1400 series devices only.

Figure not drawn to scale.

Figure 3: Single-Chip Demo Board Solder Side PC Layout

COMPONENT SIDE (TOP)

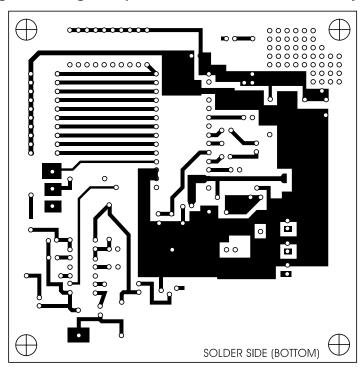


Figure not drawn to scale.

NOTE:

(*) = ISD2500 series devices only.

(+) = ISD1100, ISD1200, and ISD1400 series devices only.

Figure not drawn to scale.

ISD 3

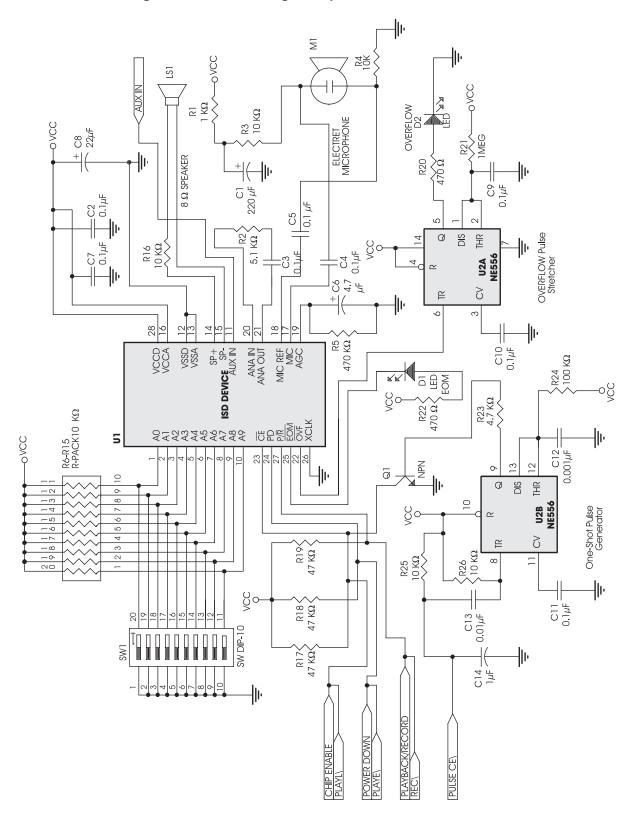


Figure 4: ISD2500 Single-Chip Demo Board Schematic

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