PRODUCT DESCRIPTION

The TELETESTER 59B will test all parameters and functions of all modern telephones, answering machines, fax machines, computer voice/fax/modem boards, and all specialized telecommunications devices. In auto mode, the unit is totally transparent and can be used in place of two telephone lines. One- or two-line telephone devices may be checked for ring reception, modulation levels, dial-tone, busy signal, DTMF, and CPC recognition.

FEATURES

TELETESTER 69B incorporates two independent channels. One is used for the sending unit and the other is used for the receiving unit. Both channels are independent and provide the proper voltages, currents and tones that most modern telecommunications devices require in order to make them think that they are connected to a real telephone line. The modular jack labeled A is normally used for testing a telephone or a sending fax machine, while the B jack is used for testing the receiving unit, such as another telephone, answering machine or fax. The mode switch can reverse the functions of these jacks.

A multi-color LEVEL indicator measures modulation levels labeled LOw, EUropean, USa, and HIgh, and are calibrated for the proper levels for devices tested as the sending unit.

A digital display will decode DTMF (Touch-Tone) signals and is used for checking the dialing function of the sending unit.

Activity indicators for the send unit and the receive unit show when those units are on-line.

The CPC (calling party control) test signal will simulate this signal to the receiving unit when the sending unit is hung up. Most answering machines and other receiving units require this signal to acknowledge when the calling party has hung up.

The tone circuit can simulate both dial tone and busy signals. The dial tone can be forced on or off, or in the auto mode will stop when any number is dialed, and will resume when the sending unit is hung up.

The ring circuit can also be forced on or off, and in the auto mode will ring the receiving unit when any number is dialed by the sending unit. If the sending unit is hung up, or if the receiving unit is answered, the ring signal will stop automatically. In the forced ring position, the ring signal will start without having to dial any numbers by the sending unit, and will stop when the receiving unit picks up, but will resume ringing as soon as the receiving unit hangs up.

NOTE: The ring signal is designed to ring all modern electronic telecommunications devices. It may not properly ring mechanical bell-type telephones.

The B jack has two-line capability for checking two-line answering machines and telephones. The A jack is wired for single line only.

OPERATION

Turn the power switch on, both the ring and tone switches in the auto positions, the mode switch in A>B and the B line switch to line 1. Plug an ordinary touch-tone telephone in jack A and a receiving device (such as an answering machine) in jack B. Pick up the sending telephone handset and notice that the send indicator will illuminate, and there will be dial tone heard in the earpiece. Dial any number, and you will see the number dialed in the DTMF display. After a few seconds, the receiving unit will start to ring, and there will be indications of this by the RING lamp illuminating and a low ring tone heard in the sending unit.

NOTE: The DTMF display shows numbers 1 through 9 normally, but will display A for *, A for 0, and A for #.

If you hang up the sending unit before the receiving unit picks up, the ring will be canceled and dial tone will return, just like a normal phone line. If you allow the receiving unit to pick up, the receive lamp will indicate this, and normal conversation or digital communication can be carried out between both units. The modulation LEVEL can be checked by the four indicators: the Lo indicator is calibrated for 50 mV, the Eu indicator is set for the 120 mV European standard, the US indicator is set for the 150 mV USA standard, and the Hi indicator shows overmodulation of 275 mV or more. Normally, voice or digital communication should center around the US indicator, while DTMF dialing signals are allowed to exceed the Hi level.

All of the special functions of a receiving unit can be tested. For example, to check an answering machine for its ability to acknowledge the CPC signal that lets it know that the calling party has hung up, simply hang up the sending unit. The TELETESTER will interrupt the line for half a second to the receiving unit. Some answering machines interpret dial tone as indication of a hang up, and you can test this by keeping the sending unit on line, but switching the tone switch from auto to the up (forced on) tone position. You can permanently keep the dial tone off by flipping the tone switch down to the off position.

IMPORTANT: THE SENDING UNIT MUST BE ON LINE AND ACTIVE FOR ANY TONES TO REACH THE RECEIVING UNIT. IF ONLY THE RECEIVING UNIT IS ON LINE, ONLY SILENCE WILL BE HEARD.

You can check specific answering machine features by dialing the appropriate numbers on the sending unit's buttons.

If you are troubleshooting an answering machine that won't always acknowledge the ring signal, you can flip the ring switch up to the forced ring position. The ring signal will stop if the receiving unit goes on line, but will resume ringing as soon as the receiving unit hangs up. This allows you to ring the receiving unit manually without using a telephone for the sending unit. You can permanently disable the ring signal to allow dialing the sending unit without ringing the receiving unit by flipping the ring switch down to the off position.

To check a fax machine, install a phone/fax unit as the sending unit in jack A and the fax under test in the B jack. Both the tone and ring switches should be in the auto positions. You can reverse the direction of communication by flipping the mode switch to the B>A position. In this manner you can now check the unit under test as a sending unit.

Most fax machines and some telephones with auto-redial can recognize a busy signal and this can be tested with the TELETESTER 69B. To do this, first disable the ring by flipping the ring switch to off. Then allow the sending unit to redial the receiving unit. Of course, the receiving unit will not pick up because the ring is off. After a few seconds, flip the top tone selector from dial to busy, and the sending unit should respond by hanging up after only two or three busy signals.

NOTE: Not all auto-redial units are designed to recognize busy signals. Some older units simply keep the line open for a fixed period of time.

Two-line devices can be tested if they are plugged into the B jack. The A jack is primarily used as the monitoring device and the B line switch affects the B jack only.

WARRANTY

EDS, Inc. warrants this product to be free from defects for a period of three years from date of purchase. A copy of the original bill of sale is required for any claims. The customer will call for return authorization and mail the unit to EDS, Inc. for repair or replacement. This warranty does not include any damage caused by shipping, abuse, lightning, or incorrect testing procedures EDS, Inc. shall not be responsible for any consequential damages caused by the user, and assumes no responsibility for liability due to the actions of the user. The user/operator assumes all responsibility while using this product and is expected to conduct their operating procedure in a safe and professional manner.

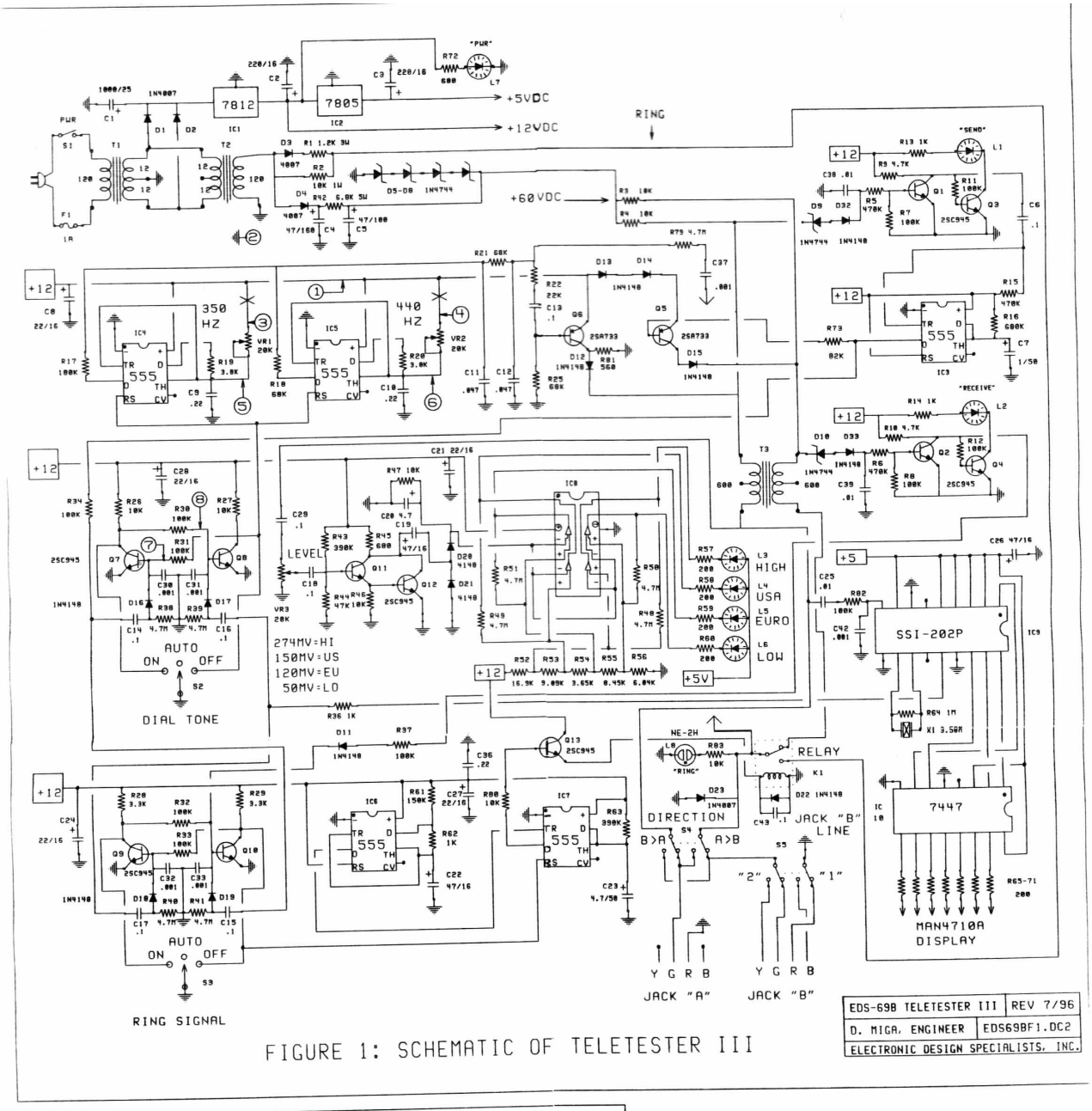


FIGURE 1: SCHEMATIC OF TELETESTER III

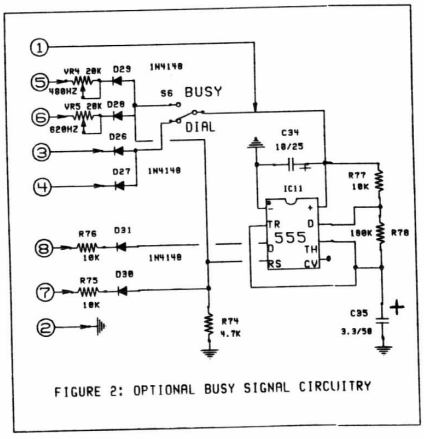


FIGURE 2: OPTIONAL BUSY SIGNAL CIRCUITRY

EDS-69B TELETESTER III PARTS LIST rev 8/96

RESISTORS
1/4 W 5% unless indicated

R1.....1.2K 2W
R2.....10K 1W
R30-34,37.....100K
R5,6,15.....470K
R7,8,11,12,82.....100K
R9,10.....4.7K
R13,14,36,62.....1K
R16.....680K
R78.....180K
R18,21,25.....68K
R19.....3.8K 1% (or 2.7K)
R20.....3.0K 1% (or 2.0K)
R22.....22K
R3,4,26,27,46,47.....10K
R28,29.....3.3K
R17,44.....47K
R38-41,48-51,79.....4.7M
R43,63.....390K
R45,72.....680
R52.....16.9K 1%
R53.....9.09K 1%
R54.....3.65K 1%
R55.....8.45K 1%
R56.....6.04K 1%
R57-60,65-71.....200
R61.....150K
R64.....1M
R73.....82K
R74.....1.5K
R75-77,80,83.....10K
R42.....6.8K 5W CERAMIC
R81.....560
VR1,2,4,5.....20K 20 TURN TRIM
VR3.....20K SINGLE TURN TRIM

SWITCHES
S1,4-6.....DPDT 3A
S2,3.....DPDT CO 3A

TRANSFORMERS
T1,2.....24VCT 1A MCM 28-0015
T3....600:600 STANCORE TTPC-08

MISCELLANEOUS
RELAY..OMRON G2E-184P-M-US-12V
X1.....3.58MHZ CRYSTAL
F1.....1AMP PIGTAIL FUSE

CAPACITORS
values in mFd/DCV/type

C1.....1000/25 ELECTRO
C2,3.....220/25 ELECTRO
C4.....47/160 ELECTRO
C5.....47/100 ELECTRO
C6,13,14-18,29,40,41,43..0.1/50 MYLAR
C7.....1/50 ELECTRO
C8,21,24,27,28.....22/16 ELECTRO
C9,10,36.....0.22/50 MYLAR
C11,12.....0.047/50 MYLAR
C19,22,26.....47/16 ELECTRO
C20,23.....4.7/25 ELECTRO
C25,38,39.....0.01/50 MYLAR
C30-33,37.....0.001/50 MYLAR
C34.....10/16 ELECTRO
C35.....3.3/25 ELECTRO
C42.....0.001/50 MYLAR

DIODES
D1-4,23.....1N4007 1KV 1AMP
D5-10.....1N4744 15V ZENER
D11-22,27-33.....1N4148 SIGNAL

TRANSISTORS
Q1-4,7-13.....2SC945 NPN 50V
Q5,6.....2SA733 PNP 50V

INTEGRATED CIRCUITS
IC1.....7812 12V REGULATOR
IC2.....7805 5V REGULATOR
IC3-7,11.....555 TIMER CHIP
IC8.....339 QUAD COMPARATOR
IC9.....SSI-202P DTMF DECODER
IC10.....7446 or 7447 DISPLAY DRIVER

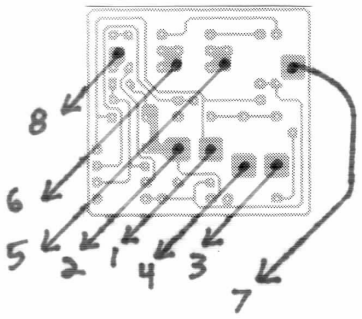
INDICATORS

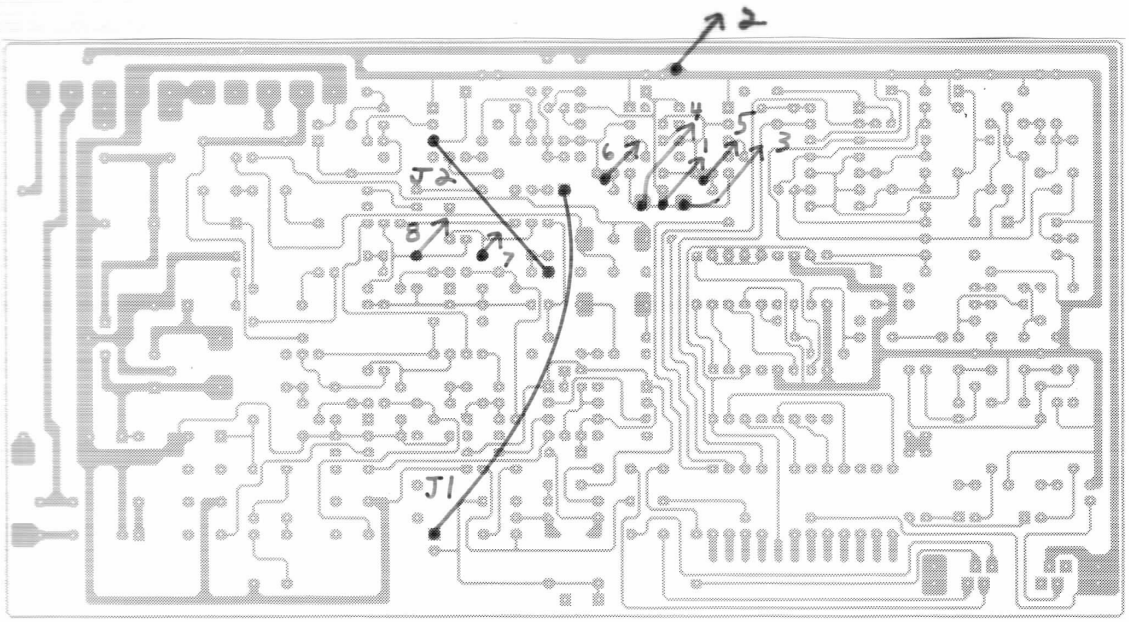
L1,2....T1 3/4 ORANGE DIGI-KEY P305
L3.....T1 ORANGE DIGI-KEY P366
L4.....T1 GREEN DIGI-KEY P364
L5.....T1 YELLOW DIGI-KEY P365
L6.....T1 RED DIGI-KEY P363
L7.....T1 3/4 GREEN DIGI-KEY P302
L8.....NEON, NE-2H
DISP.....COMMON ANODE LED MAN-4710A

J1.....4-COND DUAL MODULAR JACK PC MOUNT DIGI-KEY H9052

ALSO: LINE CORD, STRAIN RELIEF, LED LENSES, AMEREX 570 or SIMCO 250X86
CABINET, HEAT SINK FOR IC1, PC MOUNTING, TRANSFORMER MOUNTING HARDWARE.

Fig 10: Location of jumpers J1 and J2 on bottom of main PCB. Also, wire harness wiring from main board to busy signal PCB.





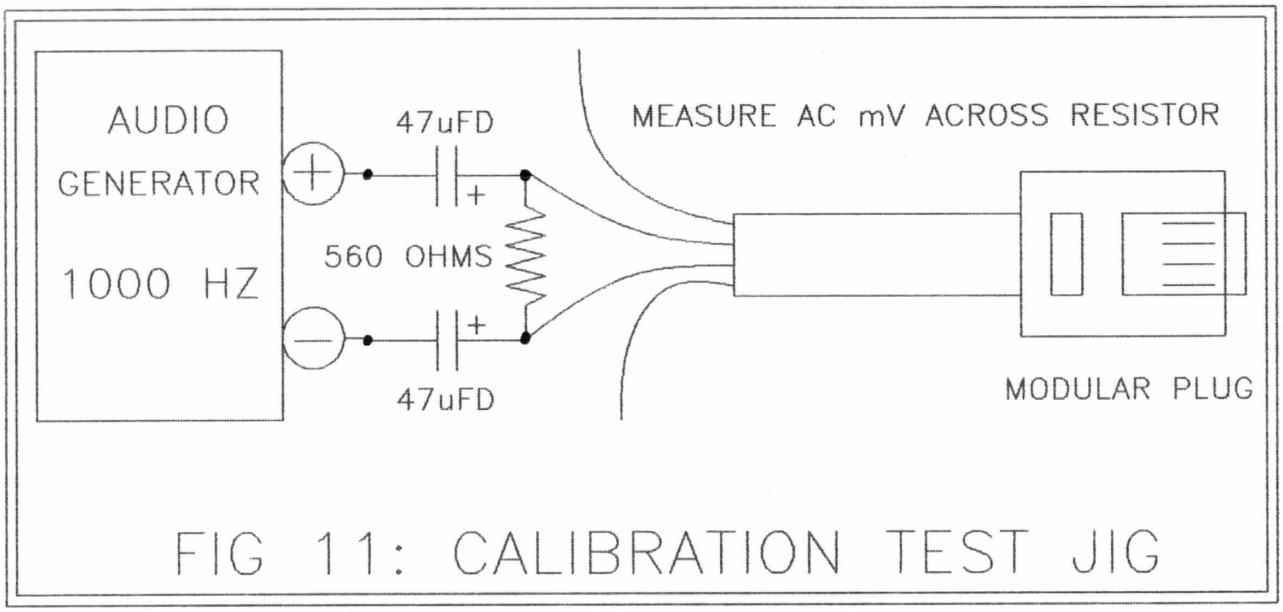


FIG 11: CALIBRATION TEST JIG