

SB4452A CONFERENCE INTERCONNECTION CARD

CONTENTS	PAGE
1.0 GENERAL	1
2.0 SPECIFICATIONS	1
3.0 INSPECTION	1
4.0 MOUNTING	2
5.0 INSTALLER CONNECTIONS	2
6.0 CIRCUIT DESCRIPTION	3
7.0 TESTING	4

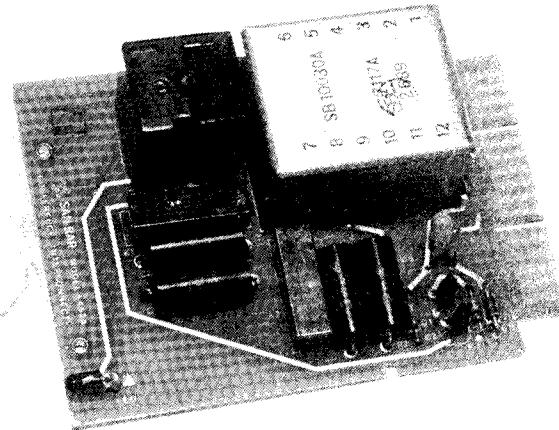


FIGURE 1

SB4452A Conference Interconnection Card

1.0 GENERAL

The SAN/BAR 4452A Conference Interconnect Card provides a means of connecting two calls at an attendant's key telephone set to allow conference between the two parties. After connecting the two parties, the attendant or key phone user may hang up or access an unused line without causing a disconnect of either of the two conferencing parties. The SB4452A inserts into a standard line card slot and is compatible with standard key system panel wiring. (See Figure 1). The SB4452A features "A" lead control and automatic release when the local Central Office provides an open loop after the distant party hangs up.

2.0 SPECIFICATIONS

2.1 List of Applicable Drawings

- a) Schematic Drawing SD-4452-000 (Fig. 4)
- b) Equipment Drawing ED-4452-000 (Fig. 5)

2.2 Electrical Specifications

- a) Power Requirements: 18-30VDC
- b) Current Consumption: there is no idle current consumption. Maximum operating current is 40 mA.
- c) Operating Temperature: 0°C to +70°C.
- d) Humidity: 0 to 95%
- e) Maximum Loop Resistance: 85 ohms added to each loop

f) Minimum Loop Current: 20mA, each loop

g) Maximum Insertion loss (at 600 ohms): 0.5 db

h) Frequency Response: + 1.0 dB, 300 to 3 kHz

i) Release Time: An open loop in one or both loops of at least 0.5 seconds will effect a release of both loops. An open loop in one or both loops of less than 0.4 seconds will not effect a release.

j) Busy Indicator: A light emitting diode on the card provides indication to the installer that the card is in use.

2.3 Mechanical Specifications

- a) Dimensions: 4.75"L x 3.5"W x 1.25"H
- b) Key Location: 18 pins on non-component side, keyed between pins 5 and 6 and between pins 12 and 13.
- c) Pin Spacing: 0.150 inches between centers.

3.0 INSPECTION

Inspect the unit thoroughly, as soon as possible after delivery. If any part of the unit has been damaged in transit, report the extent of damage to the transportation company immediately. If the unit is to be stored for some time before installation, make an operational check at

once. The purpose of this check is to make sure that the unit is in proper working order as received from the factory. If the check indicates satisfactory performance, the unit may be stored for future installation. If the system is to be installed at once, make an operational check after the installation is completed.

4.0 MOUNTING

The SB4452A is the same physical size and has the same tab key and lock capability as the Western Electric 400 series line card and will mount in any SAN/BAR 300 series mounting shelf, or any standard line card slot. For those installations where only two (2) units are required, the SAN/BAR 302A apparatus box may be used.

5.0 INSTALLER CONNECTIONS

Figure 2 shows wiring details for hard wiring the SB4452A between any two lines which are accessible at the user's key telephone. The user is limited to conferencing between these two lines only. Figure 3 shows wiring details for a more flexible system using two additional key strip assemblies to select any combination of two lines. An initiate button is always required between pins 1 and 15 to set up a conference connection between the selected lines. A normally closed release button is required to disconnect the SB4452A at the end of the conference when the local Central Office does not provide an open loop after the distant party hangs up. If the local C.O. does provide at least 0.5 seconds open loop, pin 1 may be connected to pin 3 directly and no release button is required.

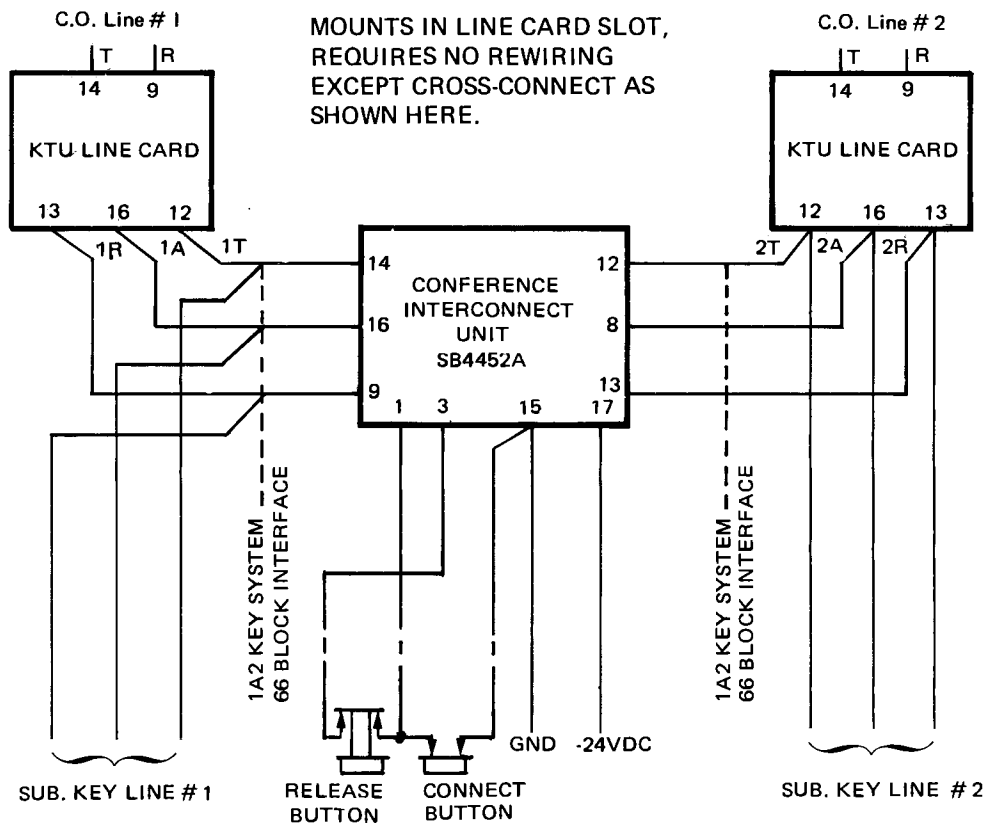
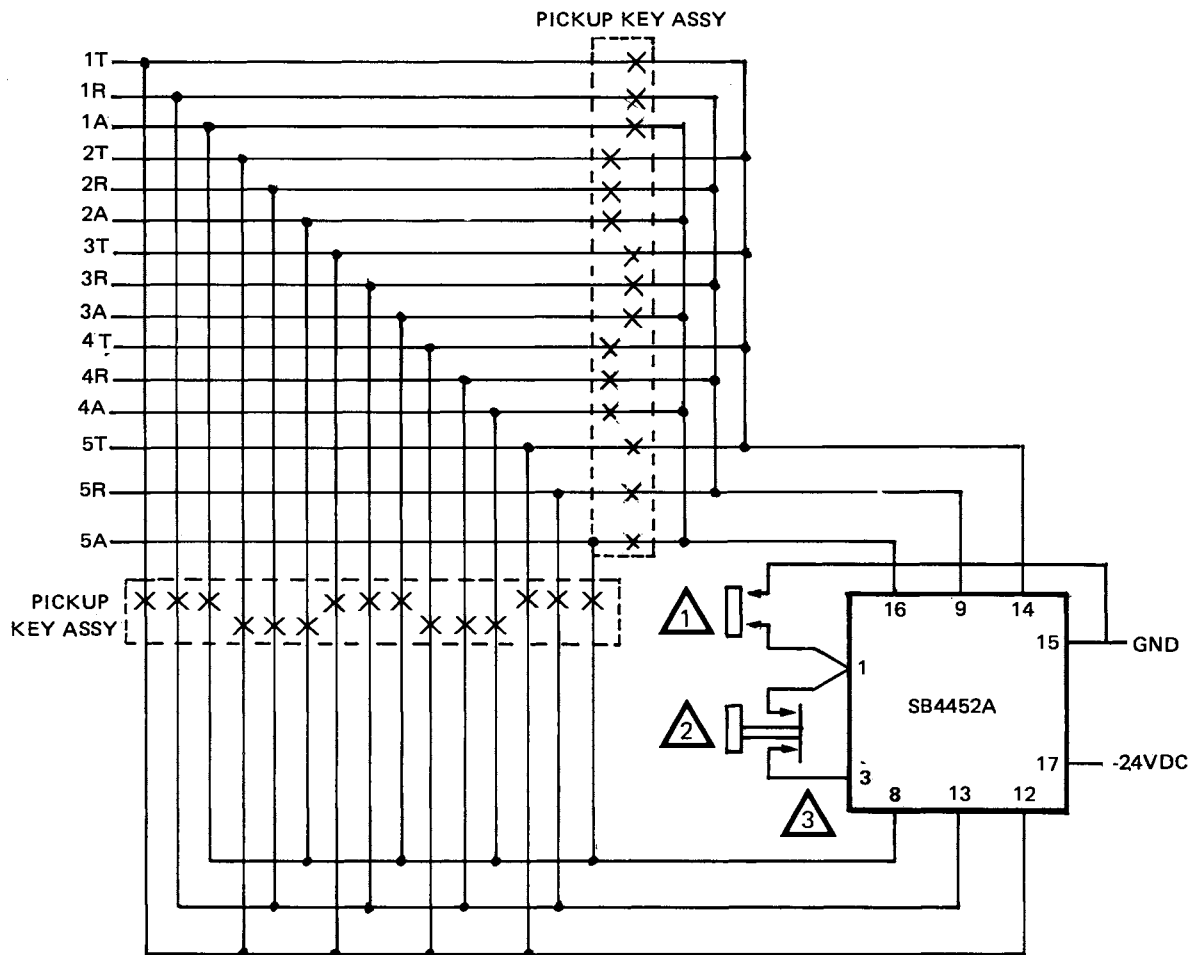


Figure 2



- 1 NON-LOCKING (N.O) BUTTON TO INITIATE CONFERENCE INTERCONNECT CARD
- 2 NON-LOCKING (N.C.) BUTTON TO RELEASE LINES AFTER CALL IS COMPLETED. PIN 1 MAY BE CONNECTED TO PIN 3, ELIMINATING THIS SWITCH, IF THE CENTRAL OFFICE PROVIDES AN OPEN LOOP OF MORE THAN 0.5 SECONDS WHEN THE DISTANT PARTY HANGS UP.
- 3 PIN 3 OF THE SB442A CONNECTOR MUST BE ISOLATED AND A SEPARATE WIRE RUN FROM PIN 3 OF THE SB4452A CONNECTOR TO A TYPE 66 BLOCK PUNCHING OR EQUIVALENT.

FIGURE 3

Method for conferencing any combination of two lines using one SB4452A and two key strip assemblies.

6.0 CIRCUIT DESCRIPTION

Please refer to Figure 4 for the following discussion.

Pins 14 and 9 connect to a tip-ring pair which run to one of the lines at the user's key telephone set, as described in Figure 2. Pins 12 and 13 similarly run to another line at the user's key telephone set. These two lines are coupled together through transformer T1 whenever the contacts of relay K3 close. The loop current passing through pins 14 and 9 is sensed by dual-winding relay K1. The loop current pas-

sing through pins 12 and 13 is sensed by dual-winding relay K2. Pin 3 connects to pin 1 either directly or through normally closed contacts. Pin 1 is grounded through a normally open non-locking button on or near the user's key telephone set. Transistors Q1 and Q2 turn on and K3 is operated. The K3 contacts close, connecting the two lines described above and loop current is established in both loops. Relays K1 and K2 operate with loop current. The now closed K1, K2 contacts provide a ground to pin 1 through pin 3 and the

normally closed switch. Thus after momentarily grounding pin 1 with an external ground, pin 1 remains grounded so long as both K1 and K2 contacts remain closed. When loop current ceases in either loop, one of the K1, K2 contacts will open. Resistors R1 and R2 and capacitor C5 form a time constant, so that 450 milliseconds after K1 or K2 open Q1, Q2 and K3 turn off and the loops are released. Capacitors C1 through C4 are needed to provide a talk path around the relay coils and to maintain good longitudinal balance. The LED provides visual indication to the installer that the card is in use. Diode CR1 is needed for relay coil transient suppression. Diode CR2 protects against polarity reversal of applied power to the card.

7.0 TESTING

If trouble is encountered with the operation of the SB4452A, use a multimeter to make the following tests:

a) With the meter set to the proper scale,

verify the presence of -24VDC at pin 17, referenced to pin 15 (ground).

b) Verify that pin 3 and pin 1 are connected together (a few ohms on the meter) by either direct connection or through a normally closed non-locking button at the user's key telephone set.

c) Verify that the LED on the card illuminates and K3 operates when a jumper is placed between pin 15 and pin 1 (or pin 3). If the LED does not stay illuminated when the jumper is removed, one or both of the loops may not have loop current.

d) If trouble can be isolated to the card, return the card to SAN/BAR Corporation for repair or replacement. For technical assistance call SAN/BAR at: (714) 546-6500

e) The SB4452 is warranted for two years from date of sale against defects of materials and workmanship. Return to SAN/BAR Corp., 17422 Pullman St., Santa Ana, Calif., 92705.

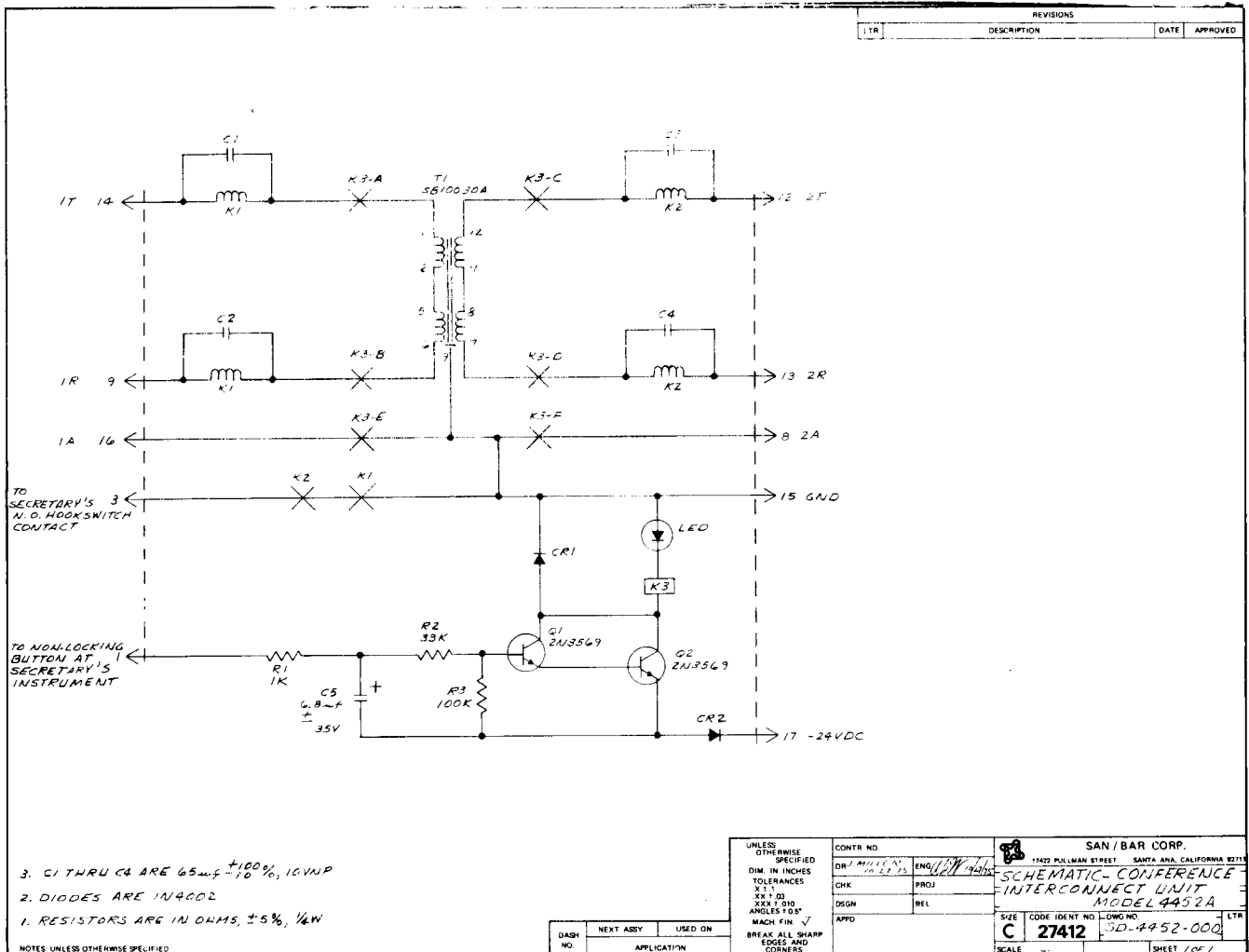
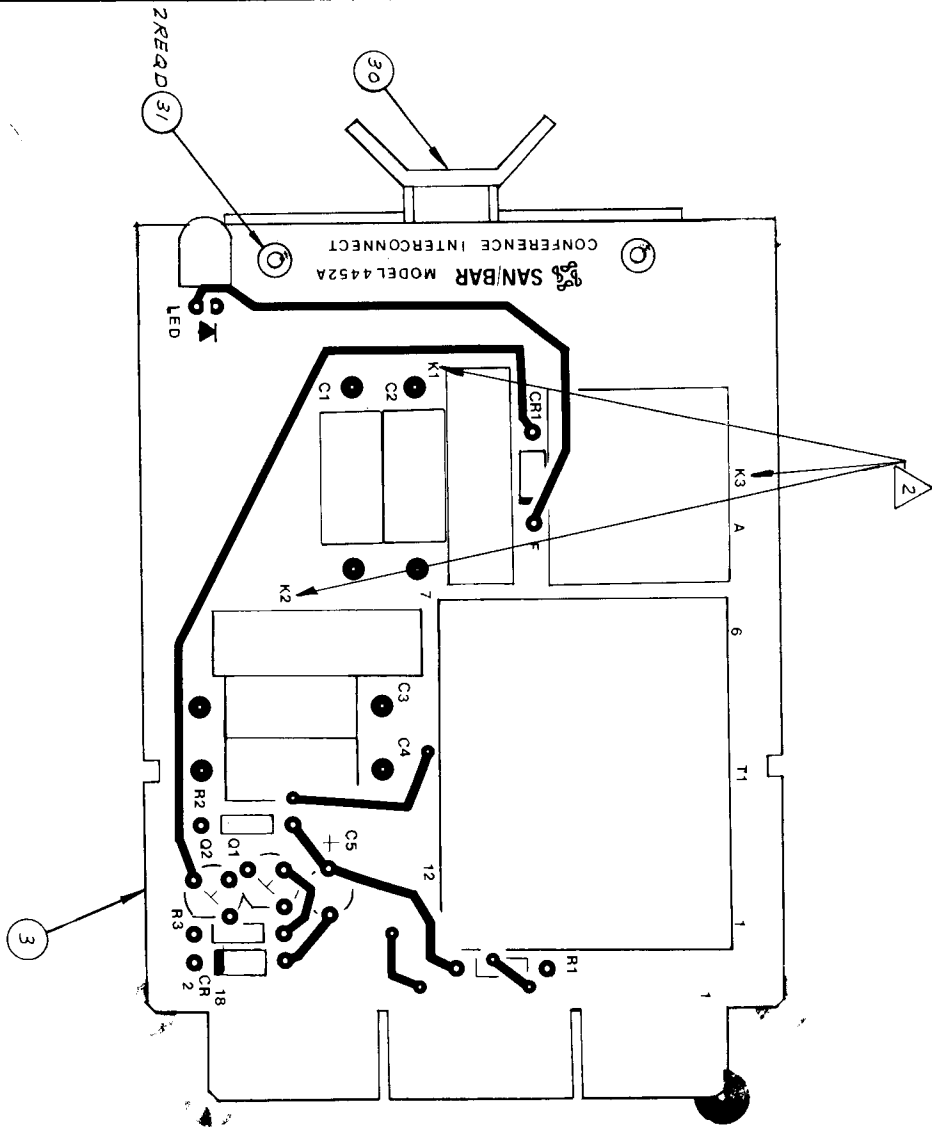


FIGURE 4

REVISIONS		DATE	APPROVED
A	SEE OCM DWGS	1/4/80	S



2 K1-K3 TO BE HAND SOLDERED
 1. COMPONENTS MAY BE FLOW SOLDERED

NOTES UNLESS OTHERWISE SPECIFIED

SEE SEPARATE BM-4452-000

UNLESS OTHERWISE SPECIFIED		CONTR. NO.		SAN/BAR CORP.	
DIM. IN INCHES	DR. V. M. L. G. R.	ENG.	10-22-78	1422 BULLMAN STREET	SANTA ANA, CALIFORNIA 92701
TOL. DIMENSIONS	CHK. S. H. K. P. R. O. I.	HEL.		EQUIPMENT DWG-CONFERENCE INTERCONNECT UNIT	
XX: 03	OSGN			MODEL 4452 A	
AXX: 00	APPR			SCALE 2/1/1	
AXX: 00				SIZE CODE IDENT NO. DWG NO. 27412 ED-4452-000 A	
MACH FIN.				SHEET 1 OF 1	
BREAK ALL SHARP CORNERS					

Figure 5