

K-357A KEY TELEPHONE UNIT 9-STATION ROTARY AND PUSHBUTTON DIAL SELECTIVE INTERCOM CIRCUIT

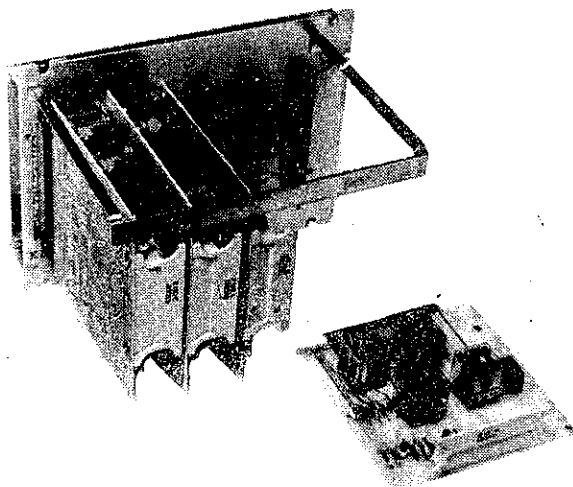


Fig. 1 - K 357A KTU with Basic Circuit Cards and Expansion KTU.

1.00 SCOPE

1.01 This Key System Practice (KSP) covers identification, installation and circuit diagrams for the K357A Key Telephone Unit (KTU).

1.02 This KSP is reissued to revise mounting instructions (paragraph 3.02) and notes on Table B.

2.00 IDENTIFICATION

2.01 The KTU can be identified by a code number (K357A) stamped on the mounting panel. Approximate dimensions of the K357A are 9 1/4" W x 7" H x 8 1/2" D.

2.02 The basic 9-station KTU consists of a mounting panel, three plug-in printed circuit cards (K160C, K166A, and K166B) and a card retaining bracket with associated hardware.

NOTE: The unit can be built up by ordering only components desired. (See Table A.)

PURPOSE OF EQUIPMENT

2.03 The K357A KTU is designed for use in a K501 or K512 Key Telephone System (KTS) to

provide pushbutton and rotary dial selective intercom. It provides a single common talking path and single spurt selective signaling for nine stations, but can be expanded to 18, 27, or 36 station capacity by the addition of one K160B KTU for each additional nine stations. Slots are provided to accept the additional KTU's, but additional connecting points (66-type connecting block), will be required if more than 18 stations are connected.

DESCRIPTION OF COMPONENTS

2.04 K160C, Dial Intercom Card. One is used per system to permit dial selection of nine signal paths. (This KSU is a modified version of the K160A KTU as used in the 76A Key Telephone System.) Dimensions in inches are approximately 5 3/8" W x 5 5/8" L x 1 1/4" D. (22 dual dual contacts.) See fig. 4.

2.05 K166A, Pushbutton (Tone) Dial Detector Card. One is used per system in conjunction with a K166B Translator Card to adapt the intercom system to accommodate pushbutton dialing. Approximate dimensions in inches are 5 3/8" W x 5 5/8" L x 1 1/4" D. (22 dual contacts.) Refer to fig. 5.

2.06 K166B Pushbutton (Tone) Dial Translator Card. One is used per system in conjunction with a K166A Detector Card to adapt intercom system to accommodate pushbutton dialing. Approximate dimensions in inches are 5 3/8" W x 5 5/8" L x 1 1/4" D. (22 dual contacts.) See fig. 6.

2.07 K160B, Dial Intercom KTU. One KTU is used for each additional nine dial codes. K160B KTUs are not furnished with the basic K357A unit but can be purchased separately to expand to 18, 27, or 36 intercom stations as required. See fig. 7.

3.00 INSTALLATION

3.01 The K357A is designed to mount on the hinged frame of a K501 or K512 Key Service Unit (KSU). See fig. 2.

TABLE A. IDENTIFICATION

Number	Description
000357-00A-963	KTU, 9-Station Dial Intercom Circuit (Includes one each of the following fo
182723-101	*Panel, Card Mounting
182713-101	*CARD, Dial Intercom, 9-Station (K-160C)
182516-101	*CARD, T-T Detector. (K166A)
182520-101	*CARD, T-T Translator. (K166B)
182481-101	KTU, Dial Intercom Expansion. (To add 9 dial codes,) (K160B.)
183035-101	Interconnect Cable For K-501A (9 or 18 Stations)
183046-101	Interconnect Cable For K-512A (9 or 18 Stations)
KSP 357-00A	Key System Practice

Order these two units
only for 9-station
rotary intercom.

CAUTION: Turn off all power before making any connections or plugging in any KTU.

MOUNTING THE K357A PANEL

3.02 The method of mounting the K357A will vary with the cabinet it is being installed in, as follows:

- (1) **Current 501A Key Service Units.** Use the four 3/8-inch screws provided and mount the K357A Panel on the front of the equipment frame.
- (2) **Current 512A Key Service Units.** Use two of the fiber spacers and the four long (1 1/4-inch) screws provided and mount the K357A Panel behind the equipment frame as shown in figure 2.
- (3) **Old 501 Floorstand Key Service Units.** Use the four 3/8-inch screws provided and mount the K357A Panel behind the equipment frame.
- (4) **Old 501 and 512 Wall Key Service Units.** Use the four fiber spacers and four long (1 1/4-inch) screws provided and mount the K357A Panel behind the equipment frame.

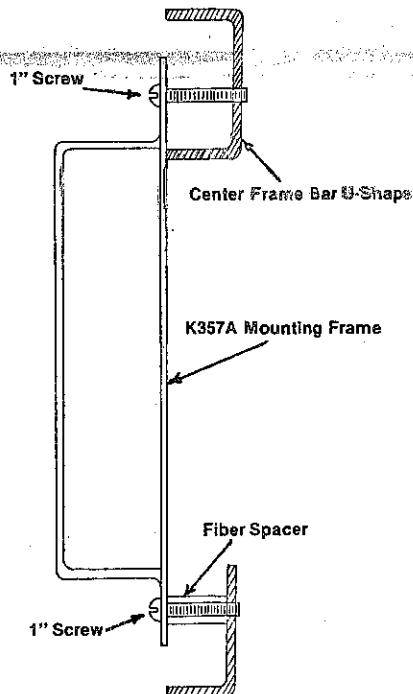


Figure 2. Mounting of K357A Frame in New K512 Systems

NOTE: In some cases a K512 KSU may not permit use of the supplied fiber spacers because of interference with the "T" section of the center mounting frame. In such cases, use the 1" machine screws supplied. Install the four 1" screws from the front of the frame approximately 6" apart so each corner of the K357A panel will rest against the ends of the screws. Install the 1 1/4" screws from the rear.

Strapping

3.03 Terminals on the K-357A KTU must be strapped according to the number of stations, (9, 18, 27, or 36). Refer to Table B for strapping instructions.

Connections Between K357A KTU and the KTS Connecting Blocks

3.04 For 9 or 18-stations, order separately the appropriate cable in Table A for making connections in a K-501A or K-512A KSU for 18-stations. If interconnect cable is not ordered use seven lengths of 22-gauge wire, (any color), and strap from the KTS Connecting Blocks to T, R, L, LB, RB, AB, and AG terminals of the K-357A KTU as shown in Table B. Use two other lengths and connect from P5 - 28 and P5 - 4 to TB1 - 6 of K-512A KSU. In a K-501A connect from TBA - 43 to TBC - 39 and from TBB - 49 to TBC - 49.

3.05 When the interconnect cable is used refer to Table C and make the appropriate connections for 9 or 18-stations. If more stations are desired it will be necessary to make other arrangements.

NOTE: If more than 18 stations are used in a system, additional connecting points for signaling leads will be required.

3.06 To expand to 27 stations, use 10 lengths 24-gauge wire and, beginning with R31 connect the next ten (R) leads to terminals 21B through 30B. (Station codes are 4 through 9, and 0, and 20 through 39.) Disconnect the GN-BK lead from 3B.

3.07 To expand to 36 stations, use 10 lengths of 24-gauge wire and, beginning with

R41 connect the ten (R) leads to terminals 31B through 40B. (Station codes are 5 through 9, 0, and 21 through 49.) Disconnect the BK-BN lead from 4B.

Plugging in Printed Circuit Cards

3.08 Each printed circuit card is identified by a code stamped on the pull handle and each slot of the K357A Panel is stamped with a matching code.

3.09 For nine stations, plug the three basic cards, (Codes K160C, K166A, and K166B), into the appropriate slots of the K357A Panel with the printed circuit side to the installer's left. For each additional nine stations, plug a K160B KTU into succeeding slots as required.

NOTES:

- (1) Connect yel-slt and slt-yel audible signal leads to B and R terminals respectively for desired station number.
- (2) Terminate intercom lamp ground leads from telephones to LG terminals of KSU blocks.

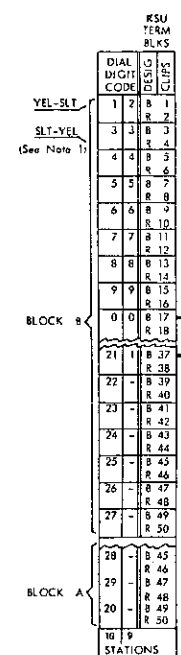
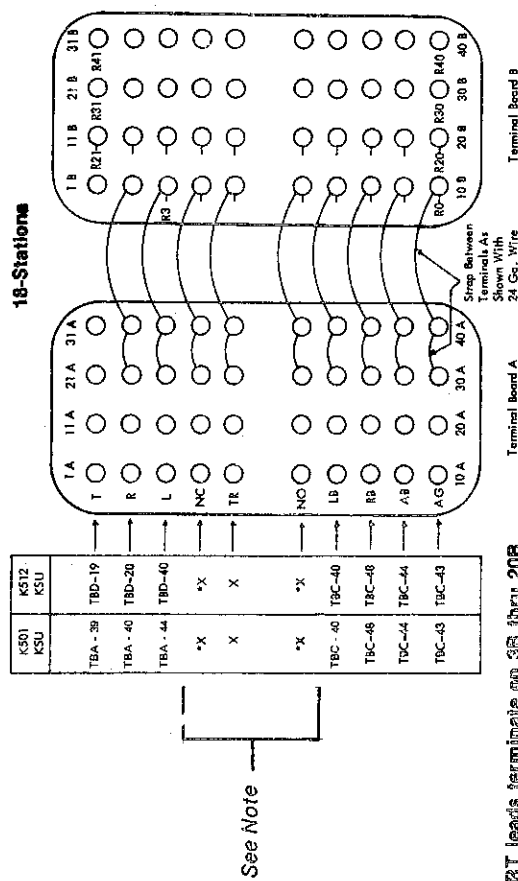
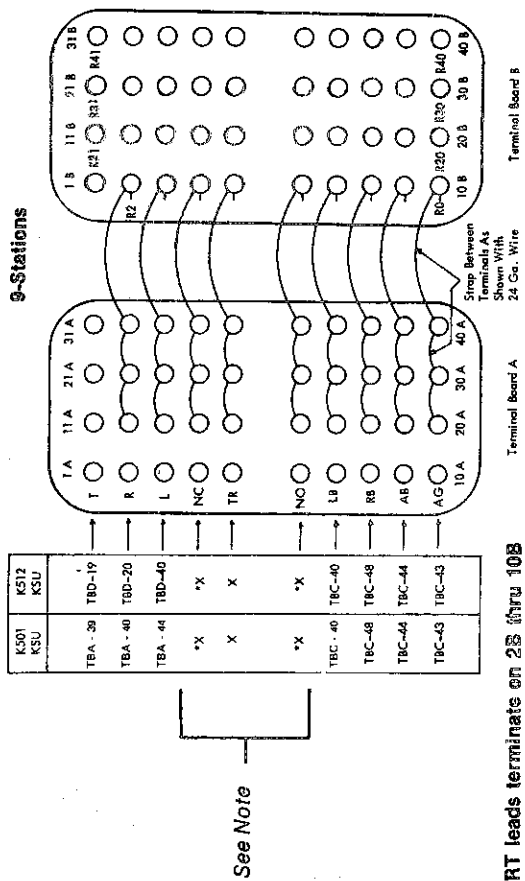
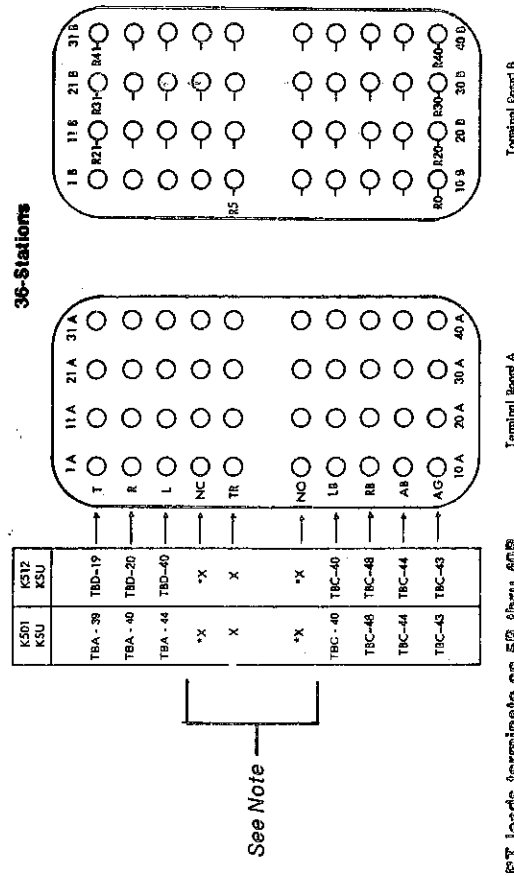
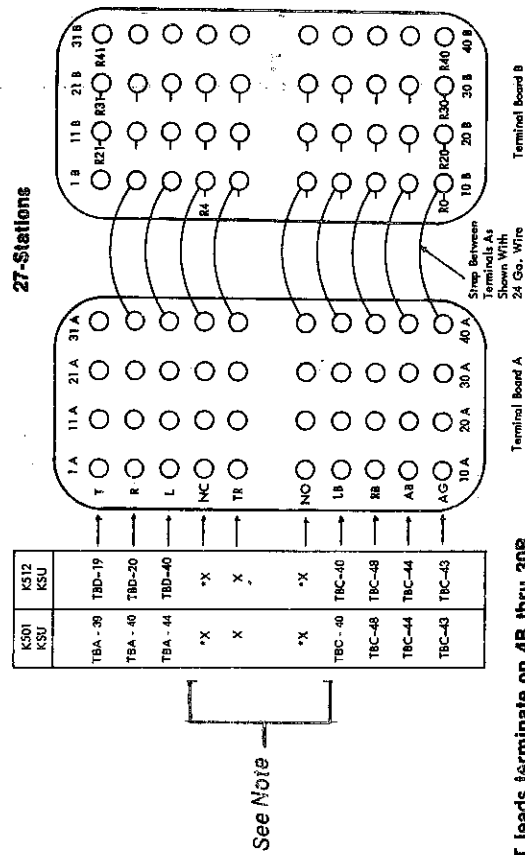


Fig. 3 - Intercom Station Digit Assignment on KTS Connection Blocks, K501 KSU.

Table B. Strapping and KSU Connections for K357A



NOTE: Terminals 4A and 5A are connected to normally-closed relay contacts on the K160C card. If a K401PA or K401CAP KTU is installed, one of these terminals must be connected to pin 16 of the K401PA or K401CAP and the other terminal to circuit ground. Terminals 5A and 8A provide a normally open contact set to be used if required by the application.

TABLE C. CONNECTIONS BETWEEN KSU AND K-357A KTU

K-357A LEAD DESIGNATION	K-501 KSU	K-501A KSU	K-512 KSU	K-512A KSU	CABLE COLOR	K357A TERMINAL	POWER SUPPLY TERMINAL
T	TBA-39	TBA-39	TBD-19	P5-26	WH-BL	A1	
R	TBA-40	TBA-40	TBD-20	P5-1	BL-WH	A2	
LG	NA	TBA-43	NA	P5-2*	WH-GN	A3	TB1-6 TBC-39**
L	TBA-44	TBA-44	TBD-40	P5-3	GN-WH		
RG	NA	TBB-49	NA	P5-4	BN-WH		TB1-6 TBC-49**
RT1						B1	
RT2	TBB-2*	TBB-2*	TBE-4*	P5-38*	BK-GN	B2*	
RT3	TBB-4		TBE-6	P5-13	GN-BK	B3	
RT4	TBB-6		TBE-8	P5-39	BK-GN	B4	
RT5	TBB-8		TBE-10	P5-14	BN-BK	B5	
RT6	TBB-10		TBE-12	P5-40	BK-SL	B6	
RT7	TBB-12		TBE-14	P5-15	SL-BK	B7	
RT8	TBB-14		TBE-16	P5-41	YL-BL	B8	
RT9	TBB-16		TBE-18	P5-16	BL-YL	B9	
RT0	TBB-18		TBE-20	P5-42	YL-OR	B10	
RT21	TBB-38		TBE-22	P5-17	OR-YL	B11	
RT22	TBB-40		TBE-24	P5-43	YL-GN	B12	
RT23	TBB-42		TBE-26	P5-18	GN-YL	B13	
RT24	TBB-44		TBE-28	P5-44	YL-BN	B14	
RT25	TBB-46		TBE-30	P5-19	BN-YL	B15	
RT26	TBB-48		TBE-32	P5-45	YL-SL	B16	
RT27	TBB-50	TBB-50	TBE-34	P5-20	SL-YL	B17	
RT28	TBA-46	TBA-46	TBE-36	P5-46	VI-BL	B18	
RT29	TBA-48	TBA-48	TBE-38	P5-21	BL-VI	B19	
RT20	TBA-50	TBA-50	TBE-40	P5-47	VI-OR	B20	
NC						A4	
TF or TR						A5	
NO						A6	
LB	TBC-40	TBC-40	TBC-40		WH-SL	A7	TB1-2**
RB	TBC-48	TBC-48	TBC-48		WH-BR	A8	TB1-5**
AB	TBC-44	TBC-44	TBC-44		WH-OR	A9	TB1-3**
AG	TBC-43	TBC-43	TBC-43		OR-WH	A10	TB1-7**

*9-Station Only
 **K-512A KSU Only

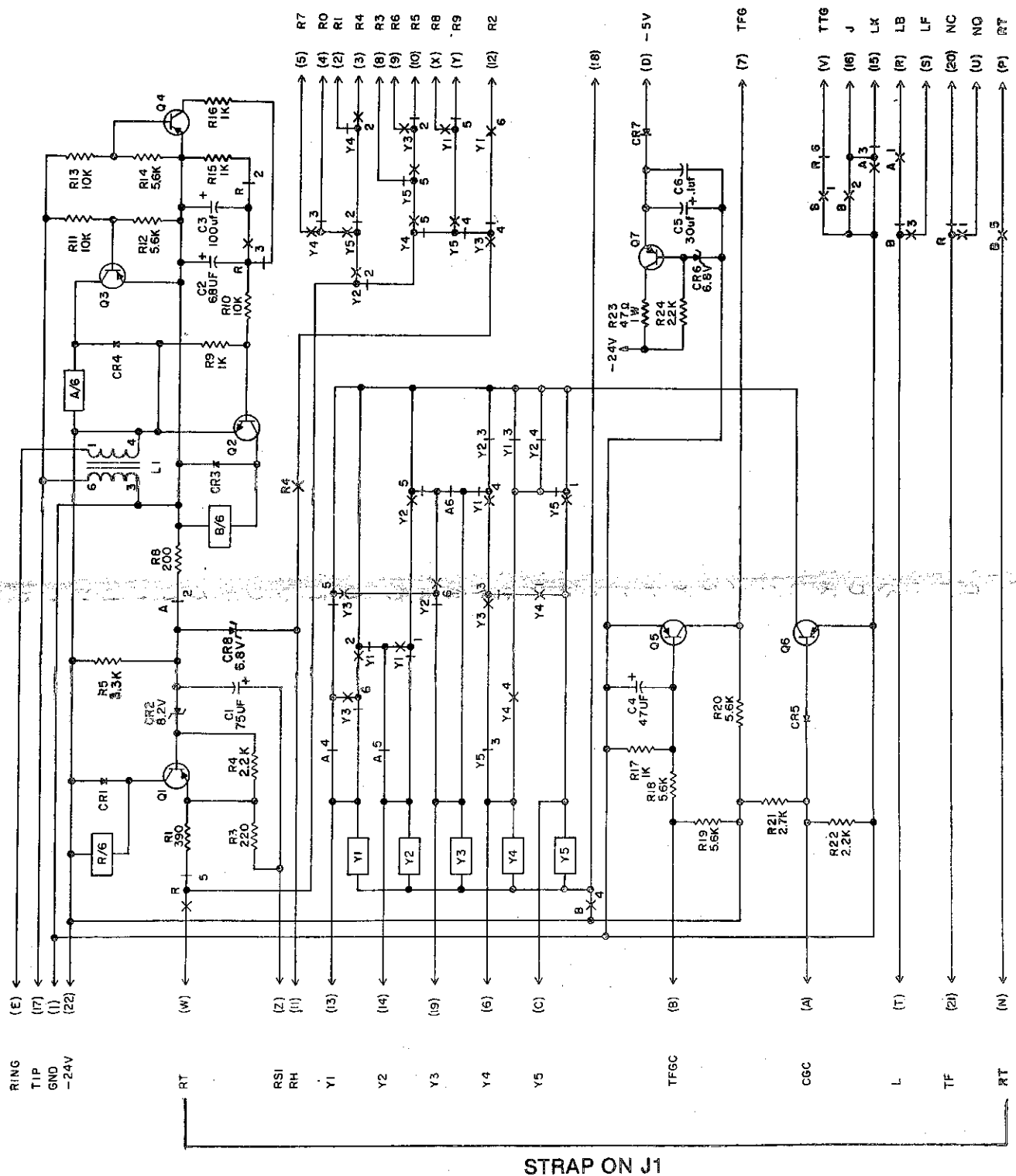


Fig. 4 - Circuit Diagram, K160C KTU

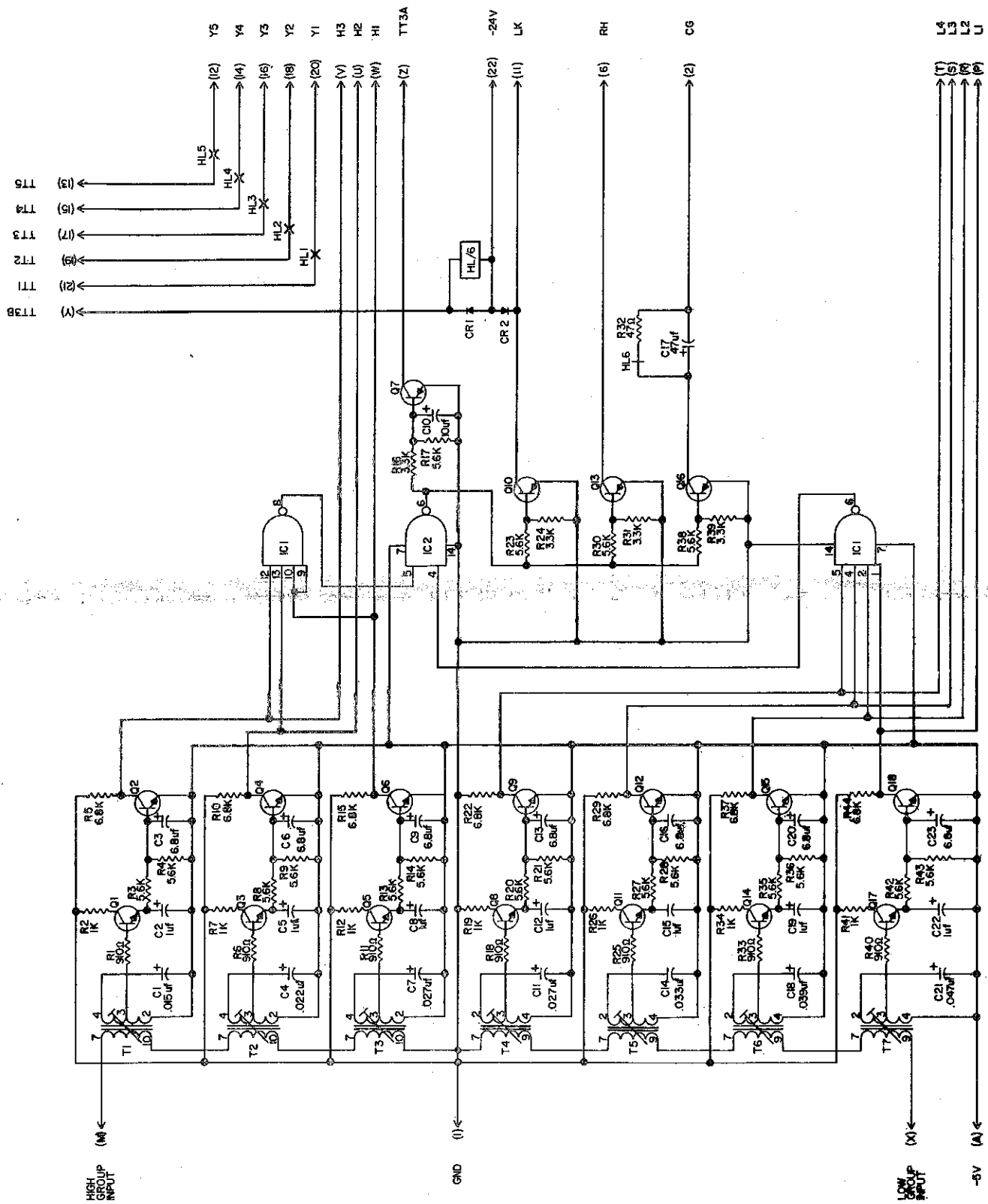


Fig. 5 - Circuit Diagram, K166A KTU

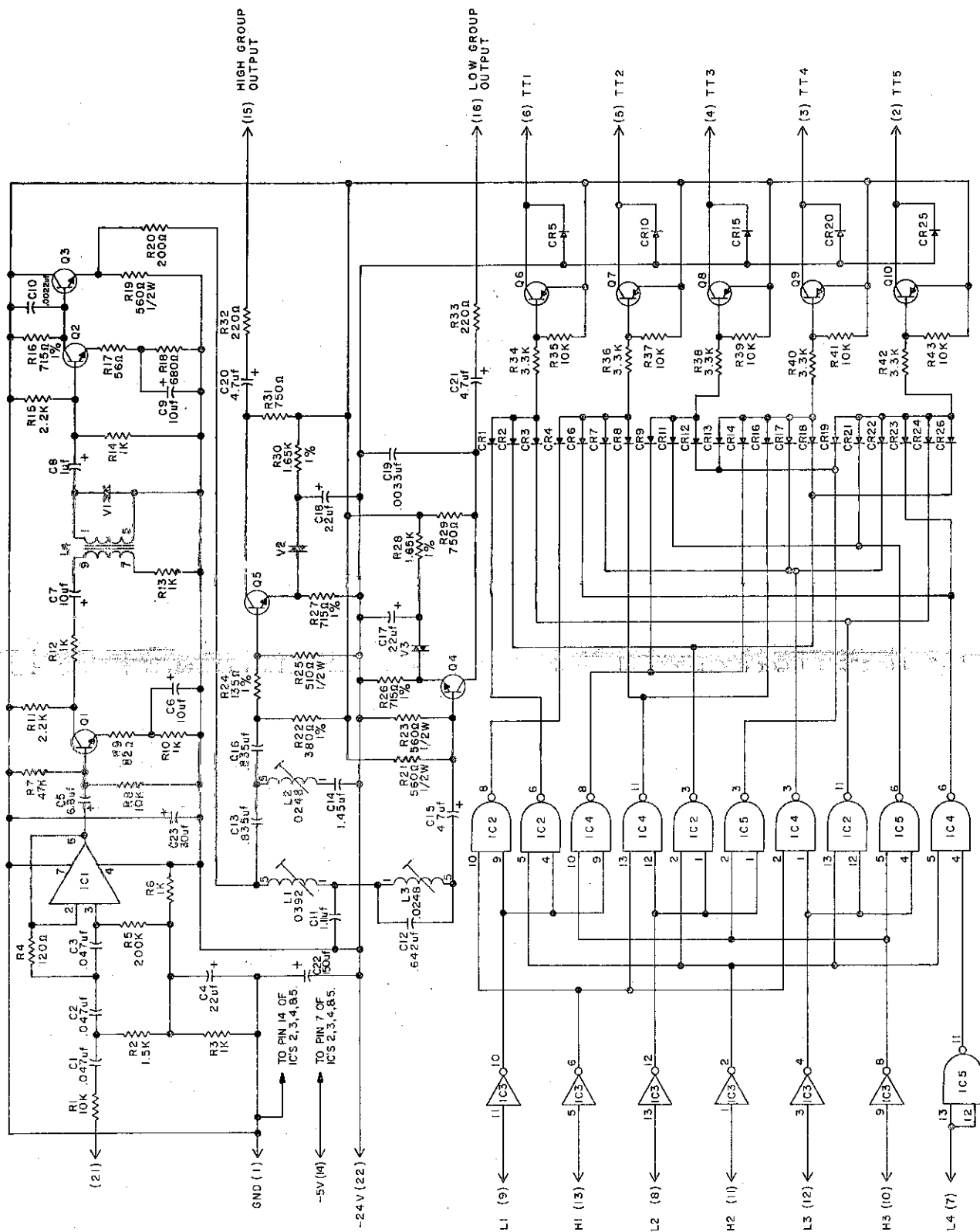


Fig. 6 - Circuit Diagram, K1608 KTU

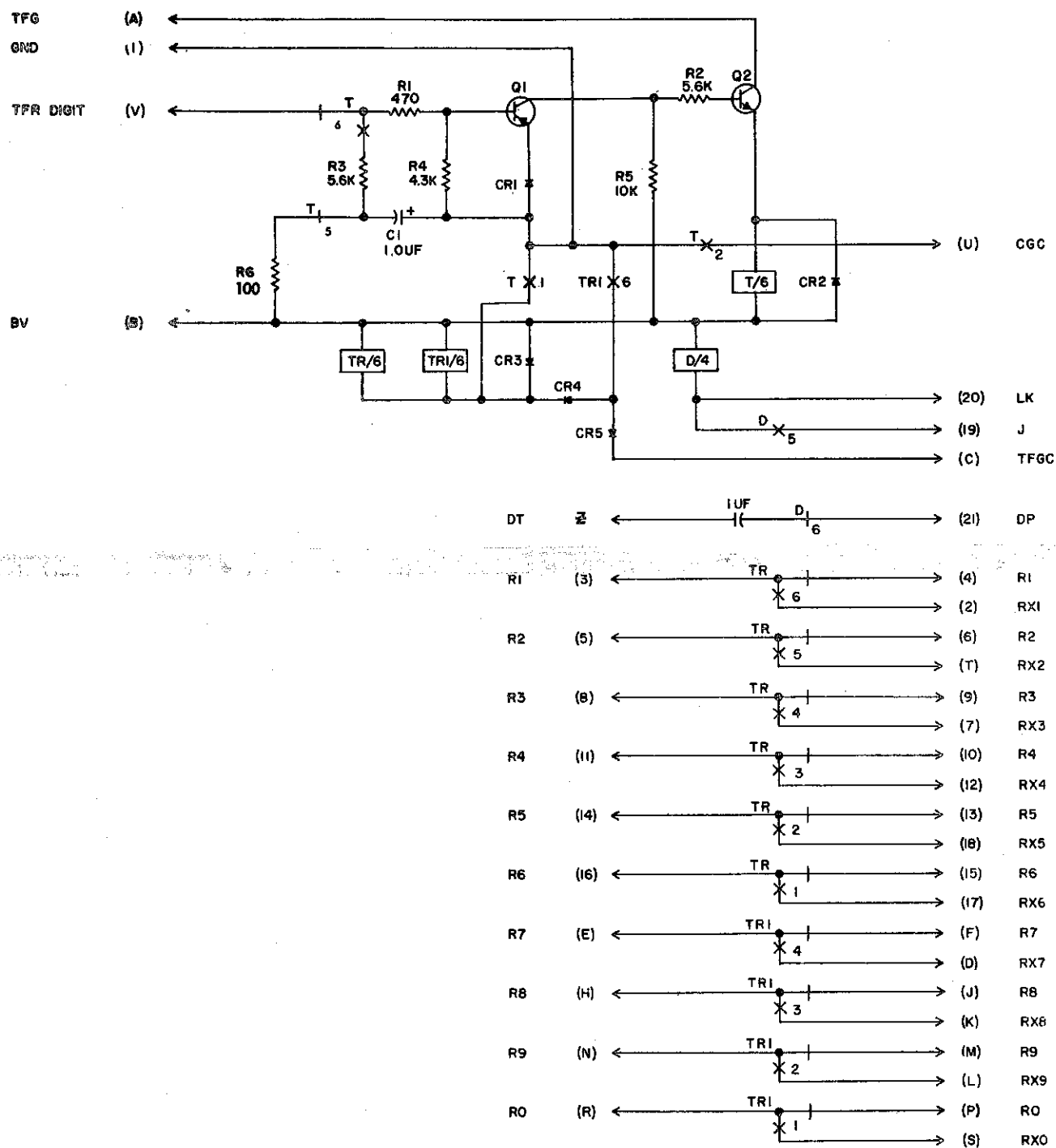


Fig. 7 - Circuit Diagram, K160B KTU

KTU Interconnection

31	J5-4	BK/BL	21	J4-4	R/BL	11	J1-2	V	1	J1-17	BL
32	J5-6	BL/BK	22	J4-6	BL/R	12	J1-12	Y	2	J1-E	O
33	J5-9	BK/O	23	J4-9	R/O	13	J1-8	R	3	J1-T	W
34	J5-10	O/BK	24	J4-10	O/R	14	J1-3	W	4	J1-20	V
35	J5-13	BK/GN	25	J4-13	R/GN	15	J1-10	SL	5	J1-21	GN
36	J5-15	GN/BK	26	J4-15	GN/R	16	J1-9	BK	6	J1-U	O
37	J5-F	BK/BN	27	J4-F	R/BN	17	J1-5	GN	7	J1-R	GN
38	J5-J	BN/BK	28	J4-J	BN/R	18	J1-X	O	8	J1-P	BN
39	J5-M	BK/SL	29	J4-M	R/SL	19	J1-Y	BL	9	J1-22	R
40	J5-P	SL/BK	30	J4-P	SL/R	20	J1-4	BN	10	J1-I	BK

TERMINAL BOARD A

31	J6-2	W/BL	21	J5-2	W/BL	11	J4-2	W/BL	1	J6-4	V
32	J6-T	BL/W	22	J5-T	BL/W	12	J4-T	BL/W	2	J6-6	W
33	J6-7	W/O	23	J5-7	W/O	13	J4-7	W/O	3	J6-9	W
34	J6-12	O/W	24	J5-12	O/W	14	J4-12	O/W	4		
35	J6-18	W/GN	25	J5-18	W/GN	15	J4-18	W/GN	5	J6-13	SL
36	J6-17	GN/W	26	J5-17	GN/W	16	J4-17	GN/W	6	J6-15	BK
37	J6-D	W/BN	27	J5-D	W/BN	17	J4-D	W/BN	7	J6-F	GN
38	J6-K	BN/W	28	J5-K	BN/W	18	J4-K	BN/W	8	J6-J	O
39	J6-L	W/SL	29	J5-L	W/SL	19	J4-L	W/SL	9	J6-M	BL
40	J6-S	SL/W	30	J5-S	SL/W	20	J4-S	SL/W	10	J6-P	BN

TERMINAL BOARD B

Fig. 8 - K357A Terminal Boards A and B

K1668		K166A		K166C	
TERMINAL	DESIGNATION	TERMINAL	DESIGNATION	TERMINAL	DESIGNATION
1	AG	1	AG	1	AG
2	TT5	2	CG	2	CGC
3	TT4	3		3	TFGC
4	TT3	4		4	Y5
5	TT2	5		5	-5
6	TT1	6		6	R
7	L4	7		7	TFG
8	L2	8		8	R3
9	L1	9		9	R6
10	H3	10		10	R5
11	H2	11	K	11	RH
12	L3	12	5	12	R2
13	H1	13	TT5	13	Y1
14	-5	14	Y4	14	Y2
15	HG0	15	TT4	15	LK
16	LGO	16	Y3	16	J
17		17	TT3	17	T
18		18	Y2	18	BV
19		19	TT2	19	Y3
20		20	Y1	20	NC
21	TT	21	TT1	21	TR
22	BV	22	TT3A	22	AB

Fig. 9 - Connectors J1, J2, and J3

Fig. 10 - Connectors J4, J5, and J6