

K161A/K161A1 SIGNAL KTU, (P/N 182583-101)

1.00 GENERAL

1.01 This publication covers installation of the K161A or K161A1 KTU in ITT K76A Key Telephone Systems.

1.02 This KSP is reissued to show the numbering of strapping blocks on the K161A1 KTU in figure 2.

CAUTION: The K161A1 is not included in the following Key System KSPs:
KSP76A-218, Issue 8 and earlier
KSP76A-336, Issue 7 and earlier
KSP76A-454, Issue 5 and earlier
It is recommended that the installer not use the listed KSPs when installing a K161A1 but follow instructions herein.

Purpose of Equipment

1.03 The K161A or K161A1 is designed for use in a K76A Key Telephone System (KTS) to provide either of two options, voice paging adapter or 5-station alert.

Voice Paging Adapter

1.04 One KTU is used in a system to permit dial access to a public address (PA) system from the intercom stations.

NOTES: A K76A KTS with Call Announcers will provide dial access to a PA system without using a K161A or K161A1 if music muting or amplifier switching is not required.

An all-ringer system will require a K161A1 to permit voice paging—a K161A will not provide the break contacts required.

5-Station Alert (or Zone Paging)

1.05 One K161A or K161A1 KTU is used per system to permit dial access to a maximum of five predetermined Call Announcers. Dialing the assigned intercom number will connect the caller to the five (or less) Call Announcers for tone and voice signaling.

NOTES: The 5-Station Alert option cannot be used in Key Telephone Systems wired for ringers only. This feature requires Call Announcer units at the connected stations.

If the 5-Station Alert number is dialed from one of the alert stations, there will be a possibility of feedback from the Call Announcer to the handset at that station. Arrange 5-Station Alert Call Announcers so as to avoid feedback.

Additional Equipment Required

1.06 A 182615-101 KTU Mounting Assembly will be required to permit installing the KTU in a System II, (K76A336 KTS).

1.07 A 182615-102 KTU Mounting Assembly will be required to permit installing the KTU in a System III, (K76A454 KTS).

1.08 A KTU Mounting Assembly is not required for installing the KTU in a System I, (K76A218 KTS).

1.09 An additional 66-type connecting block will be required for Systems II and III. No additional connecting block is required for System I.

2.00 IDENTIFICATION**K161A KTU**

2.01 The K161A KTU includes two miniature relays, various electronic components, four option blocks, and a pull handle mounted on a printed circuit board. Dimensions in inches are approximately 3½W x 5½L x 1¼D. The P.C. board has 18 contacts.

K161A1 KTU

2.02 The K161A1 KTU is similar to the K161A KTU with an additional option block, additional break contacts (pins 8 and 11) to allow voice paging in an all-ringer system, and an impedance matching circuit for improved performance when used for 5-station alert.

Option Blocks

2.03 The option blocks facilitate strapping the KTU for the option desired. For 5-Station Alert option, all mini-jumpers must be in A-B position. For Paging Adapter option, all mini-jumpers must be in B-C position.

3.00 INSTALLATION, 5-STATION ALERT OPTION

3.01 Install all mini-jumpers of the KTU in position A-B.

CAUTION: Check the designations carefully. "A" and "C" are not in the same relative position at all blocks on the K161A.

3.02 For system 76A336, install a 182615-101 Card Mounting Assembly, (must be separately furnished), and an additional 66-type connecting block. Instructions are included with the 182615-101 unit.

3.03 For system 76A454, install a 182615-102 Card Mounting Assembly, (must be separately furnished), and an additional 66-type connecting block. Instructions are included with the 182615-102 unit.

3.04 Refer to Table A and install jumpers as indicated.

3.05 Plug the K161A or K161A1 KTU into the slot indicated. (J15 for 76A218 System; J31 for 76A336 System; J19 for 76A454 System)

TABLE A.—JUMPER CONNECTIONS AT CONNECTING BLOCKS FOR 5-STATION ALERT OPTION

PIN NO. (K161A1)	DESIGNATION	KEY TELEPHONE SYSTEM (KTU SLOT)		
		76A218 (J15)	76A336 (J31)	76A454 (Slot J19)
1	Ground	Provided in J15	C50 -E1	F50 -G1
2	1st Call Announcer	B* -C19	C* -E2	D* or E* -G2
3	2nd Call Announcer	B* -C20	C* -E3	D* or E* -G3
4	4th Call Announcer	B* -C21	C* -E4	D* or E* -G4
5	5th Call Announcer	B* -C22	C* -E5	D* or E* -G5
7	3rd Call Announcer	B* -C23	C* -E7	D* or E* -G7
8	-	-	-	-
9	RT Input	B** -C25	C** -E9	D** -G9
11	-	-	-	-
18	BV	Provided in J15	D16 -E19	F37 -G18

*RT Terminal

**RT Terminal assigned to 5-Station Alert Option

3.06 Check all jumpers for correctness—especially in a previously installed system.

3.07 Plug in power cord and check operation of the 5-Station Alert feature.

4.00 INSTALLATION, VOICE PAGING ADAPTER, ALL-RINGER SYSTEM (K161A1 KTU ONLY.)

4.01 Install all mini-jumpers of the KTU in position B-C.

4.02 For System 76A336, install a 182615-101 Card Mounting Assembly and a 66-type connecting block. (Must be separately furnished.) Instructions are included with the unit.

4.03 For System 76A454, install a 182615-101 Card Mounting Assembly and a 66-type connecting block. (Must be separately furnished.) Instructions are included with the unit.

4.04 Refer to Table B and make connections as indicated:

- (1) Connect shield of PA Amplifier input cable to system ground.

(2) Connect conductor of PA Amplifier input cable to terminal indicated.

(3) Connect jumpers as indicated.

4.05 Disconnect following jumpers if previously installed:

(1) 76A218 system, disconnect B43-B36 from B43.

(2) 76A336 system, disconnect D8-D15 from D8.

(3) 76A454 system, disconnect F15-F21 from F15.

NOTE: Refer to KSP on system for additional strapping for "all-ringer" system.

4.06 If the PA system is used for background music, connect the shield of the music source output cable to system ground and the conductor of the cable to the terminal indicated in table B. When the paging number is dialed, music will be switched off and only the voice of the caller will be heard over the PA system.

NOTE: Amplifier switching is not available for All-Ringer system.

TABLE B.—CONNECTIONS FOR VOICE PAGING ADAPTER IN ALL-RINGER SYSTEM

PIN NO. (K161A1)	DESIGNATION	KEY TELEPHONE SYSTEM (SLOT)		
		76A218 (J15)	76A336 (J31)	76A454 (J19)
1	Ground	-C30	-E1-C50	-G1-F50
2	Amplifier Input	-C19	-E2	-G2
3	Music Source	-C20	-E3	-G3
4	CART	C38 -C21	D14 -E4	F26 -G4
5	RT IN	B36 -C22	D8 -E5	F15 -G5
7	-	-	-	-
8	105V RN	B43 -C24	D15 -E8	F21 -G8
9	RT Input	* -C25	* -E9	* -G9
11	RN (CO) Tone	B37 -C26	D9 -E11	F16 -G11
18	BV	Provided in J15	D16 -E18	F37 -G18
Disconnect jumpers if previously installed		From B43	From D8	From F15

*RT Terminal assigned to Voice Paging.

NOTE: Refer to KSP on system for additional strapping for "all-ringer" system.

4.07 Plug the K161A1 into the indicated slot.
(J15 for 76A218, J31 for 76A336, and J19 for 76A454 systems.)

4.08 Check all connections, especially in a previously installed system, for correctness.

4.09 Plug in the power cord and check operation of the voice paging feature.

5.04 Refer to Table C and make the connections indicated:

- (1) Connect shield of PA Amplifier input cable to system ground.
- (2) Connect conductor of PA Amplifier input cable to terminal indicated.
- (3) Connect jumpers as indicated.

TABLE C.—CONNECTIONS FOR VOICE PAGING ADAPTER IN ALL-CALL ANNOUNCER SYSTEM

PIN NO. (K161A1)	DESIGNATION	KEY TELEPHONE SYSTEM (SLOT)		
		76A218 (J15)	76A336 (J31)	76A454 (J19)
1	Ground	-C30	-E1-C50	-G1-F50
2	Amplifier Input	-C19	-E2	-G2
3	Music Source	-C20	-E3	-G3
4	Amplifier Switch	-C21	-E4	-G4
5	Amplifier Switch Voltage in	-C22	-E5	-G5
9	RT Input	* -C25	* -E9	* -G9
18	BV	Provided in J15	D16 -E18	F36 -G18
Additional jumper		B36 -C38	D14 -D8	F26 -F15

*RT Terminal assigned to Voice Paging.

5.00 INSTALLATION, VOICE PAGING ADAPTER IN AN ALL CALL ANNOUNCER SYSTEM.

5.01 Install all mini-jumpers of the KTU in position B-C.

CAUTION: Check the designations carefully. "A" and "C" are not in the same relative position at all option blocks on K161A KTU.

5.02 For System 76A336, install a 182615-101 Card Mounting Assembly and a 66-type connecting block. (Must be separately furnished.) Instructions are included with the unit.

5.03 For System 76A454, install a 182615-102 Card Mounting Assembly and a 66-type connecting block. (Must be separately furnished.) Instructions are included with the unit.

5.05 If the PA system is used for background music, connect the shield of the music source output cable to system ground and the conductor of the cable to the terminal indicated in table C. When the paging number is dialed, the music will be switched off and only the voice of the caller will be heard over the PA system.

NOTE: If amplifier switching is required, it can be accomplished by using the make contact across pins 4 and 5 of the KTU.

5.06 Plug the K161A or K161A1 into the indicated slot.

5.07 Check all connections for correctness.

5.08 Plug in the power cord and check operation of the voice paging feature by dialing the intercom number assigned to it.

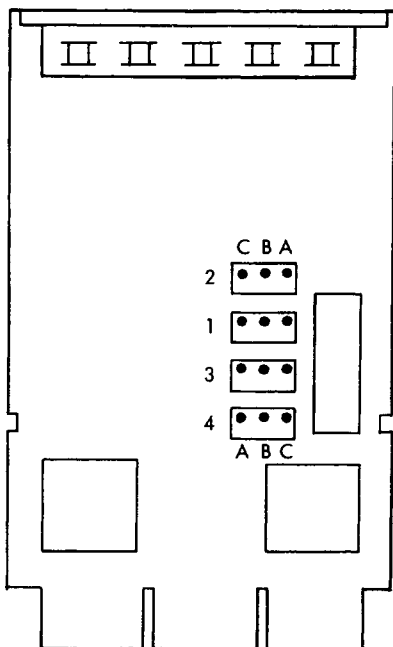


Fig. 1—Option Block Locations, K161A KTU.

NOTE: Lower block is reversed in relation to other blocks.

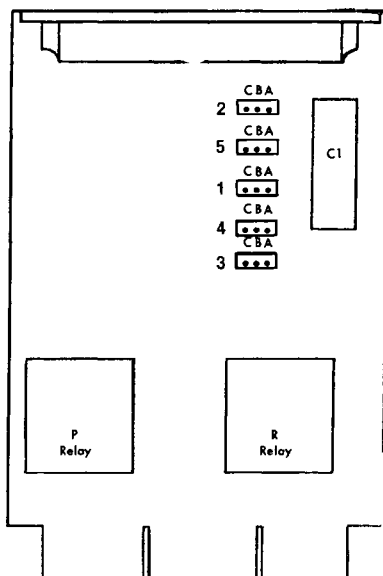


Fig. 2—Option Block Locations, K161A1 KTU

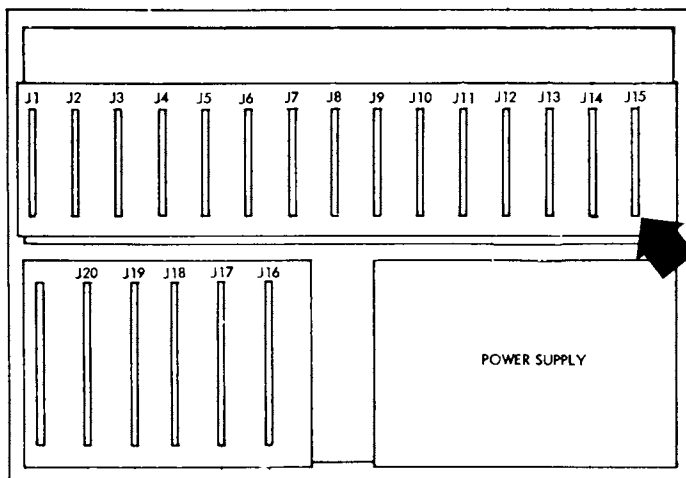


Fig. 3—Location of K161A1 KTU in System I, (K76A218 KTS)

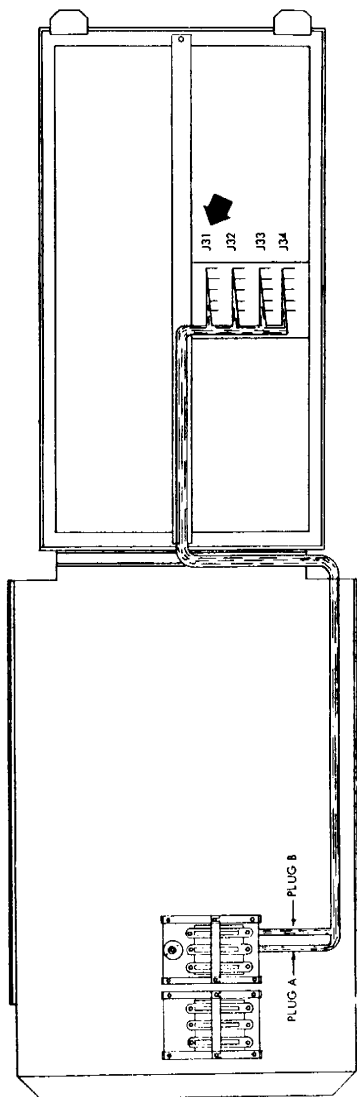


Fig. 4—Location of K161A1 KTU in System II, (K76A336 KTS)

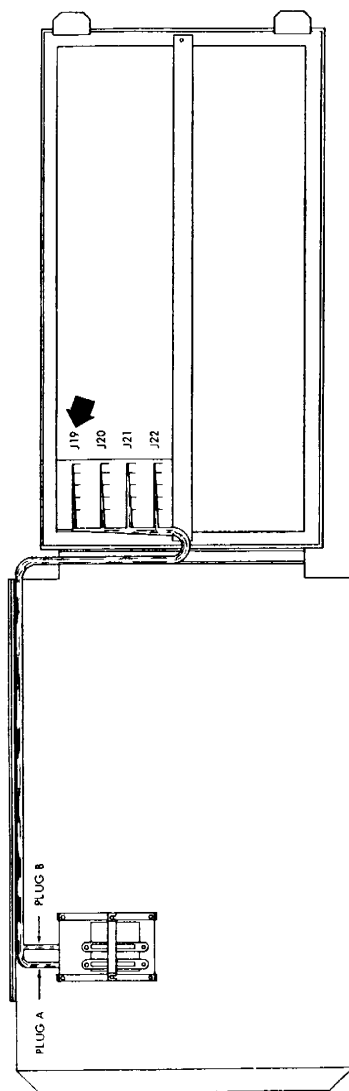


Fig. 5—Location of K161A1 KTU in System III, (K76A454 KTS)

**6.00 INSTALLATION, VOICE PAGING ADAPTER IN A MIXED SYSTEM
(Ringers and Call Announcers)**

6.01 Install all mini-jumpers of the KTU in position B-C.

CAUTION Check the designations carefully. "A" and "C" are not in the same relative position at all option blocks on K161A KTU.

6.02 For system 76A336, install a 182615-101 Card Mounting Assembly and a 66-type connecting block. (Must be separately furnished.) Instructions are included with the unit.

6.03 For system 76A454, install a 182615-102 Card Mounting Assembly and a 66-type connecting block. (Must be separately furnished.)

Connections

6.04 If the intercom (RT) number assigned to the voice paging feature is in a Call Announcer group, make connections shown in table D.

6.05 If the intercom (RT) number assigned to the voice paging feature is in a Ringer group, make connections shown in table E.

6.06 Refer to table D or E and make the connections indicated:

- (1) Connect shield of PA amplifier input cable to system ground.
- (2) Connect conductor of PA amplifier input cable to terminal indicated.
- (3) Connect jumpers as indicated in table.

6.07 If the PA system is used for background music, connect the shield of the music source output cable to system ground and the conductor of the music source output cable as indicated in the table.

NOTE: Amplifier switching is possible when the voice paging number is in a Call Announcer group, (Table D), but is not possible when the voice paging number is in a ringer group.

6.08 Check all connections for correctness.

6.09 Plug the KTU into the slot indicated in Table D or E.

6.10 Plug in power cord and check operation of paging adapter by dialing the assigned intercom number.

TABLE D.—CONNECTIONS FOR VOICE PAGING, MIXED SYSTEM, PAGING NUMBER IN A CALL ANNOUNCER GROUP

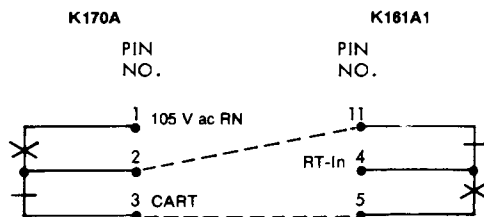
PIN NO. (K161A1)	DESIGNATION	KEY TELEPHONE SYSTEM		
		76A218 (J15)	76A336 (J31)	76A454 (J19)
1	Ground	-C30	-E1-C50	-G1-F50
2	Amplifier Input	-C19	-E2	-G2
3	Music Source	-C20	-E3	-G3
4	AMP Switch Lead	-C1	-E4	-G4
5	AMP Switch	-C22	-E5	-G5
9	RT Input	* -C25	* -E9	* -G9
18	BV	Provided in J15	D16 -E18	F37 -G18

*RT Terminal assigned to Voice Paging

NOTE: Refer to KSP170-00A for additional strapping required for mixed systems.**TABLE E.—CONNECTIONS FOR VOICE PAGING, MIXED SYSTEM, PAGING NUMBER IN RINGER GROUP**

PIN NO. K161A1	DESIGNATION	KEY TELEPHONE SYSTEM		
		76A218	76A336	76A454
1	GND	- C30	-E1, C50	-G1, G50
2	Amp In	- C19	- E2	- G2
3	Music	- C20	- E3	- G3
4	RT In	B36 - C21	D8 - E4	F15 - G4
5	CART	C38 - C22	D14 - E5	F26 - G5
9	Paging Digit	* - C25	* - E9	* - G9
11	RT In	C2 - C26	K170A Pin 2 - E11	K170A Pin 2 - G11
18	BV	Provided in J15	D16 - E18	F37 - G18
On K170A Disconnect Jumper		C2 - B36	D8 - K170A Pin 2	F15 - K170A Pin 2

*RT Terminal assigned to Voice Paging Feature

NOTE: Refer to KSP170-00A for additional strapping required for a mixed system.**Fig. 6—Schematic of Paging Number in Mixed Group**

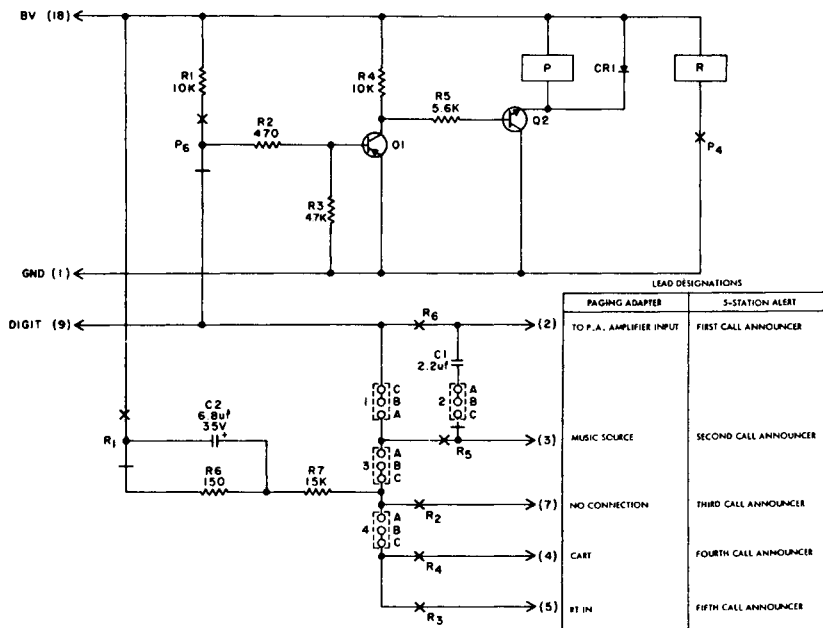


Fig. 7—Circuit Schematic, K161A KTU



