

K411A ADD-ON CONFERENCE KEY TELEPHONE UNIT (KTU)

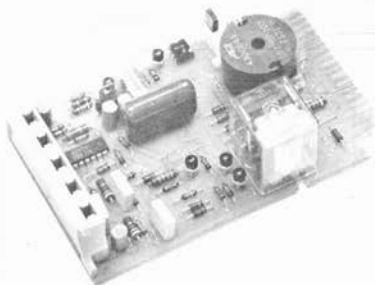


Fig. 1 — K411A Key Telephone Unit

1.00 GENERAL

1.01 The K411A Key Telephone Unit (KTU) is a plug-in unit designed for use in a K36A Key Telephone System (KTS) to permit single-line intercom stations, which normally do not have access to an outside line, to be connected to an outside line.

1.02 Each K411A provides conferencing of any intercom station with one predetermined outside line.

1.03 A K411A KTU will occupy a line card position in the Key Service Unit and thus will reduce CO line capacity by one for each K411A used.

1.04 Each K411A is assigned an intercom number and will reduce the station capacity by one. For example, installing two K411A KTUs in a standard K36A system will reduce the station capacity from 36 to 34.

1.05 A conference call requires an intercom link. For this reason, it is recommended that only one K411A KTU be installed in a system with two links and no more than three K411A KTUs be installed in a system with four links.

1.06 The K411A reacts to ring tone (RT) from the key system. Depending on the application, RT is applied by dialing the intercom number assigned to it or by operating a transfer button at an attendant's key set.

1.07 A K411A should be plugged into the CO line card connector adjacent to the CO line card it will conference.

1.08 The Station Line KTU used with a K411A in a "Normal" installation should be the "busy-off-hook" type, (3641-1, P/N 181851-101). A 3641 Station Line KTU (P/N 181580-101) can be used for the "Hotel/Motel" application.

1.09 The K411A KTU has the following characteristics:

- (1) Performs all functions on power supply voltage from -22 V dc to -26 V dc.
- (2) Operates with 100 Vac $\pm 30\%$ or with 14 Vac $\pm 40\%$ signal voltage inputs.
- (3) Permits the transfer of audible communication from input to output at -3.5 dBv to 0.5 dBv. (Transfer refers to communication between CO lines with 20 to 40 ma of CO line current.) (Total loss through matrix is approximately 9 dB.)
- (4) Frequency reference is one kHz at an amplitude of 1.0 Vrms.
- (5) Strapping Options: (See Figure 4 and paragraph 4.04.)



2.00 APPLICATION

2.01 The K411A is designed for use in K36A key systems only.

2.02 Two applications are covered:
(1) "Normal", and (2) "Hotel/Motel".

2.03 Normal application allows pushbutton dial intercom stations to access an idle outside line directly. Pushbutton or rotary dial intercom stations can be connected to a busy outside line through a multiline key set having access to the line. Normal application is covered in paragraph 3.00.

2.04 "Hotel/Motel" application allows single-line intercom stations to access an outside line only under the control of an attendant. This application is covered in paragraph 4.00.

NOTE: The Hotel/Motel application requires an additional line pickup button on the attendant's set for each K411A used. Line capacity of the attendant's set will thus be decreased by one for each K411A used in this application.

2.05 The "Hotel/Motel" application may also include business office key sets which have full access to outside lines.

3.00 NORMAL APPLICATION

Installation (normal Application)

3.01 Determine the connectors and the intercom number to be used for each Add-On Conference circuit and install jumpers so T, R, A, and RT lead for each circuit are connected as shown in figure 2. Note the diode connected between TBA and TBD. These connections are made at the intermediate terminal blocks.

NOTE: Figure 2 gives specific connections when the line to be conferenced is at J1 Card Connector, the K411A is installed in J2, and Intercom (RT) Number 20 is assigned to the conference circuit.

3.02 After connections have been made, refer to figure 4 and program the K411A KTU for the appropriate ringing option and plug the K411A into its assigned connector.

Operation (Normal Application)

3.03 The conference feature is accessed by dialing the intercom number assigned to it. Ring Tone (RT) activates the K411A which connects the intercom line to the outside line.

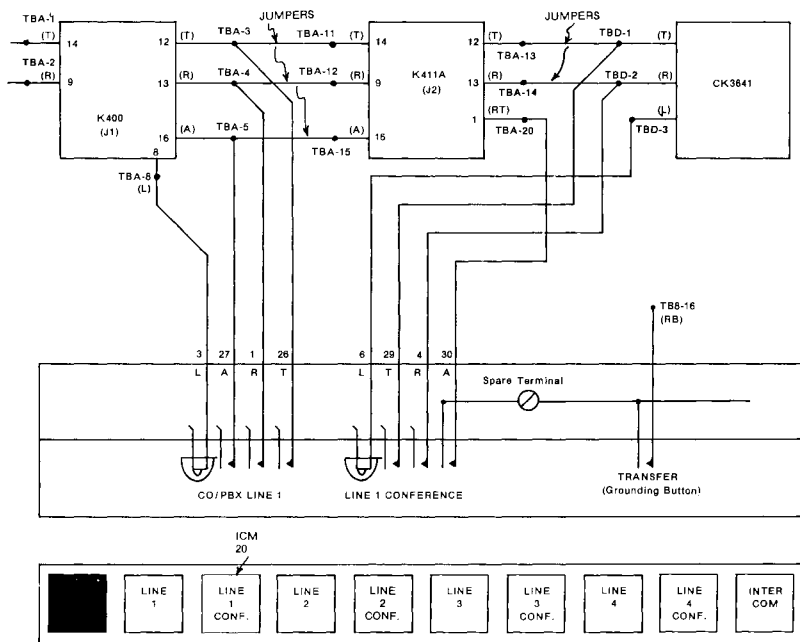
Outgoing Calls (Normal Application)

3.04 An outside call can be placed directly from any intercom station having a pushbutton (tone) dial. The station party dials the intercom number assigned to a conferenced line and, if the line is not busy, receives dial tone and dials the outside number in the usual manner. If the conference line is busy, the intercom station will receive intercom busy tone.

3.05 An intercom station equipped with a rotary dial cannot place an outside call except with the assistance of someone at a key telephone which has a conference line. The procedure is given in paragraph 3.06.

3.06 An outgoing call from rotary-dial intercom station is set up as follows:

- (1) The party at the intercom station calls the attendant, (or anyone at a key set that has a conference line), and asks them to place an outside call for them, and gives them the number desired.
- (2) The attendant leaves intercom and dials the outside number on a conference line, puts the call on HOLD, and returns to intercom and advises the intercom party to hang up and call the conference intercom number.
- (3) Both parties, (the attendant and the intercom party), then hang up.
- (4) The intercom party then goes off-hook and dials the intercom number as directed by the attendant.
- (5) When the connection is made, the line lamp at the attendant's station will change from wink to steady, indicating the call has been picked up by the intercom station.



NOTES: (1) Wiring shown uses CO/PBX line 1, intercom number 20 and installs the K411 in J2.

(2) For maximum convenience the CO/PBX line and its conference line should be on adjacent buttons, as shown.

(3) The transfer button can be any normally open pushbutton switch. An extra line key or a grounding button can be used.

(4) When wired as shown the same transfer button can be used for several circuits since it is connected only to the circuit in use.

Fig. 3 — Typical Connections for "Hotel/Motel" Application

Incoming Calls (Normal Application)

3.07 When an incoming call is to be connected to an intercom station the procedure is as follows:

- (1) The attendant, or someone at a key set having the line, answers the call and puts the call on HOLD. (The line lamp winks indicating it is on HOLD.)
- (2) The attendant then presses the intercom button and dials the intercom station to be conferenced and advises the intercom party to hang up and dial the conference intercom number.
- (3) The intercom party and the attendant both hang up.
- (4) The intercom party then goes off-hook and dials the intercom number as directed by the attendant.
- (5) When the connection is made, the line lamp at the key set changes from wink to steady, indicating the intercom station has picked up the call.

4.00 HOTEL/MOTEL APPLICATION

4.01 In this application the K411A KTU is activated by Ring Tone (RT) applied through a switch at an attendant's set. One switch will serve for all conference lines, as only the conference line with its' PU button depressed will be signaled when the switch is operated.

Installation (Hotel/Motel Application)

4.02 Each conference line will require two CO line card connectors, (one for the 400 line card and one for its' associated K411A KTU), one intercom number, and two pickup buttons at the attendant's set. A transfer button at the attendant's set will serve all conference lines.

4.03 Refer to figure 3 and install jumpers at the connecting blocks as shown.

NOTE: Figure 3 shows specific connections when card connector J1 is used for the line KTU, J2 is used for the K411A KTU and intercom number 20 is used as the intercom number assigned to the conference line. Other connectors and intercom numbers will connect the same, except the TB terminals will vary.

4.04 Refer to figure 4 and install the mini-jumper on the K411A KTU for the appropriate option:

- (1) If ring voltage applied to the K411A KTU RT input is to be 100 V ac ($\pm 30\%$), strap for Option U.
- (2) If ring voltage applied to the K411A KTU RT input is to be 14 V ac ($\pm 40\%$), strap for Option V.

4.05 Plug the K411A KTU into the selected connector.

Operation (Hotel/Motel Application)

4.06 Intercom is unrestricted. A party at any intercom station can dial any other intercom station.

4.07 Business office key sets have unrestricted access to intercom and to selected outside lines.

4.08 Intercom stations have access to conferenced outside lines under control of an attendant at a multiline key set.

Outgoing Calls (Hotel/Motel Application)

4.09 An outgoing call from an intercom station is made as described below.

Inside Party:

- (1) Calls attendant on intercom.
- (2) Gives attendant the number desired and his intercom number.
- (3) Hangs up.

Attendant:

- (1) Selects a CO line and puts it on hold.
- (2) Depresses the conference button associated with the line selected and dials the inside party.
- (3) When the inside party is on the line, returns to the CO line and dials the number requested.
- (4) When the call is answered, puts it on HOLD, depresses the conference button associated with the line, momentarily depresses the transfer button, and leaves the line.

Incoming Calls (Hotel/Motel Application)

- 4.10** Incoming calls are handled as described below:

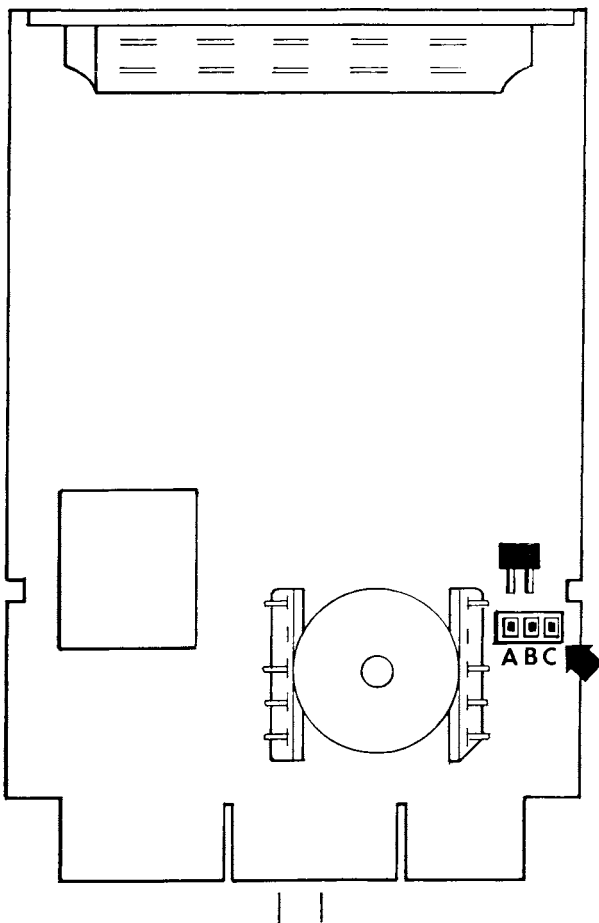
Attendant:

- (1) Answers call and determines who it is for.
- (2) Puts the call on HOLD.
- (3) Depresses the conference button associated with the line and dials the inside party.
- (4) When the inside party answers, presses the transfer button momentarily and leaves the line.

NOTE: When installing a K411A in a 36A key system with connecting blocks mounted on the KSU backboard the terminal designations will vary as follows.

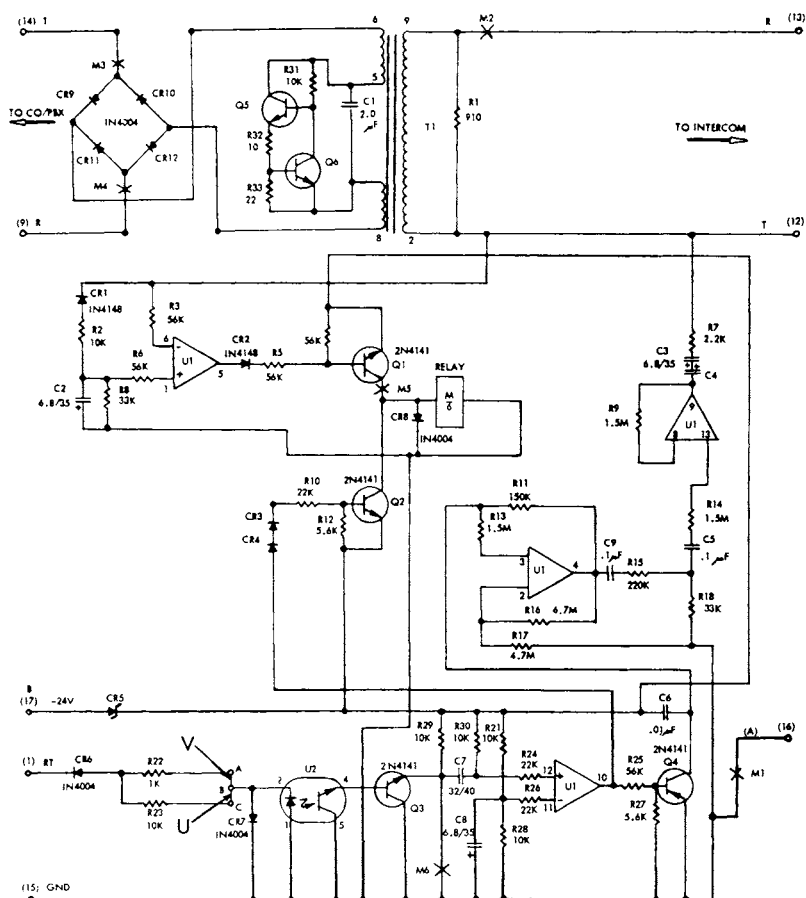
DESIGNATION	CURRENT SYSTEM	EARLIER SYSTEMS
1T	TBA-3	TB7A-3
1R	TBA-4	TB7A-5
1A	TBA-5	TB7A-7
T2	TBA-11	TB7A-16
R2	TBA-12	TB7A-17
2T	TBA-13	TB7A-18
2R	TBA-14	TB7A-20
2A	TBA-15	TB7A-22
2RT	TBA-20	TB7A-27
20T	TBD-1	TB4B-1
20R	TBD-2	TB4B-2
20L	TBD-3	TB4B-3
20RT	TBD-4	TB4B-4

These connections are for J1 and J2 card connectors and Intercom Number 20. Other card connectors and/or intercom numbers will use different terminals.



OPTIONS	JUMPER OPTIONS	CONN. TERMINALS
U	105 VAC RINGING	B TO C
V	10 VAC RINGING	A TO B

Fig. 4 — Location of Option Block on K411A
KTU



OPTIONS	JUMPER OPTIONS	CONN, TERMINALS
U	105 VAC RINGING	B TO C
V	10 VAC RINGING	A TO B

Fig. 5 — Schematic Diagram of K411A KTU