



# PhoneBeam™, Echoless Infrared Speakerphone Models IR 101-01, IR 101-02, IR 101-03, IR 101-04



**Installation Manual**

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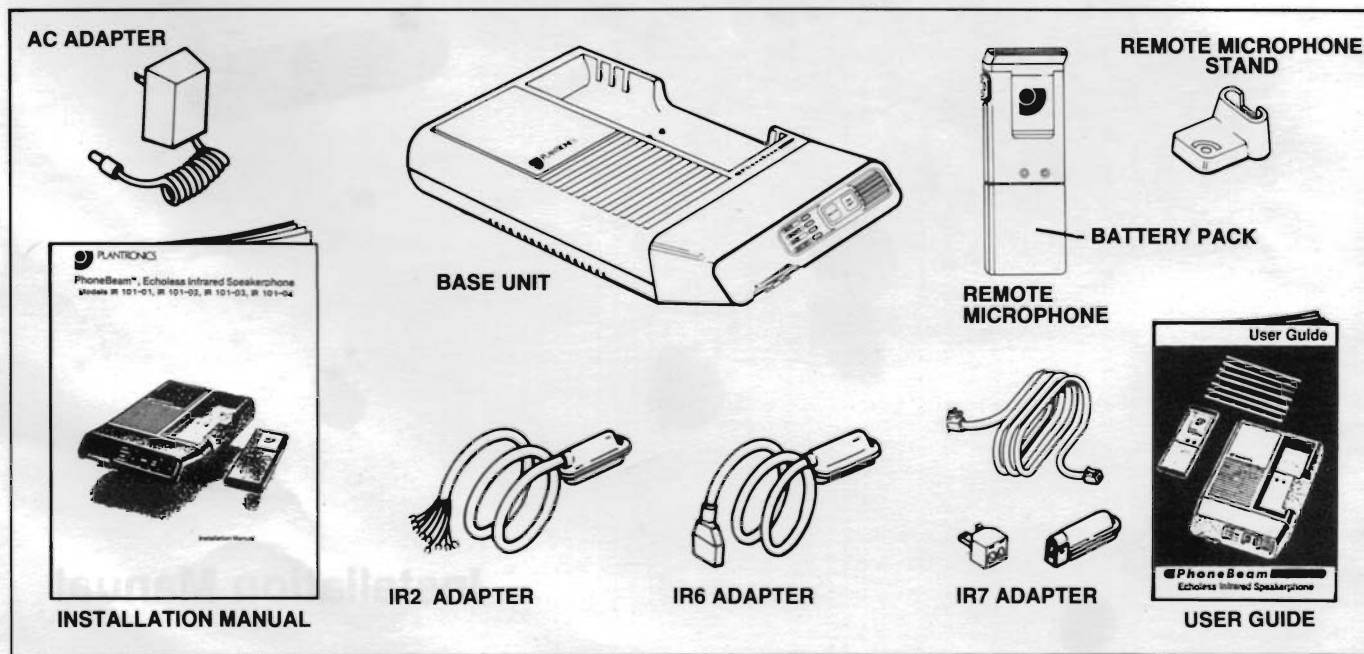
  

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**Figure 1.** Components, PhoneBeam™ Echoless Infrared Speakerphone



**TABLE A**  
**PhoneBeam Models and Telephone Applications**

PhoneBeam Model No.	Termination	Application
<b>IR 101-01</b> (Note 1)	50 pin connector RJ21X (U.S.) Type "O" CA21A (Canada)	Direct replacement for most Bell 4A and PC 4A and 4B Speakerphones.
<b>IR 101-02</b> (Note 2)	Model IR 101-01 PhoneBeam plus a 50 pin to RJ 11C (U.S.) or type "H" CA 11A (Canada) modular connector adapter (IR7* Adapter)	The IR7 adapter (50 pin to modular connector) installed on the model IR 101-01 50 pin connector (RJ21X) facilitates ease of installation on 2500 type single line telephones.
<b>IR 101-03</b> (Note 1)	Model IR 101-01 PhoneBeam plus a 50 pin to spade tip termination adapter (IR2* adapter)	The IR2 adapter (50 pin to spade lug termination) is required for new installations on 1A2 10 and 20 button as well as some electronic telephones.
<b>IR 101-04</b> (Note 3)	Model IR 101-01 PhoneBeam plus a 50 pin to Northern Telecom SLI & Logic System telephone connector (IR6* adapter)	The IR6 adapter (50 pin to Northern Telecom SLI and Logic System connector) is required for installations on Northern Telecom SLI and Logic System telephones.
*Appropriate adapters (IR2, IR6 or IR7) are standard equipment with the above PhoneBeam models.		
NOTES:		
1. Installation should be done by trained authorized personnel only.		
2. Customer installable. Used with single line analog type desk sets. DO NOT connect directly into electronic telephones. On hook dialing not available with this installation.		
3. Installation by trained authorized personnel may be required. Refer to Figure 8.		

## 1. GENERAL

**1.01** PhoneBeam uses state-of-the-art technology to reduce annoying echo—until now, the major problem with speakerphones.

**1.02** Through the use of diffuse infrared light, PhoneBeam creates an invisible link between the Base Unit and the Remote Microphone. This gives the user the freedom to move anywhere in an office while maintaining crisp, clear, and echo-free conversations. PhoneBeam also permits the user to answer or terminate phone calls without returning to the telephone equipment.

**1.03** The Mute Switch on the Base Unit allows the user to hear callers but they cannot hear the user if a private conversation with someone else in the room is desired.

**1.04** The mobility of the Remote Microphone makes the PhoneBeam ideal in a small conference environment. (The microphone should never be more than two feet away from the user.)

**1.05** The charging well in the Base Unit stores the Remote Microphone and recharges its batteries when not in use.

## 2. DESCRIPTION

**2.01** PhoneBeam consists of the Base Unit, Remote Microphone, Battery pack, AC adapter and Remote Microphone Stand. Cable adapters are included with models IR 101-02, IR 101-03 and IR 101-04. A User Guide and Installation Manual are also provided.

**2.02** The Base Unit contains the ON/OFF and MUTE controls; volume control; Base, Mute, Remote and Battery Indicator Lights; speaker, Base Unit microphone, Remote Microphone battery charger; infrared receiving window (lens); and AC adapter receptacle. The interfacing cable with 50 pin connector is attached to the Base Unit.

**2.03** The Remote Microphone includes the transmitting head and microphone; ON/OFF switch; battery charging points; metal clothing clip; battery pack (when installed).

**2.04** The Remote Microphone battery pack is a self contained 7.2 volt NiCad battery. It must be charged for 12 hours prior to first use.

**2.05** The AC adapter has an input of 120 volts, 60 Hz. It is rated at 5 watts with an output of 16 volts D.C., 0.5 amp continuous.

**2.06** The Remote Microphone Stand permits the Remote Microphone to be used in desk-top fashion for conferencing or when it is not convenient to attach the Remote Microphone to one's clothing.

**2.07** The adapter cables included with PhoneBeam models IR 101-02, IR 101-03 and IR 101-04 permit installation of the 50 pin connector model, IR 101-01, to telephone systems requiring other methods of installation.

**2.08** The User Guide contains step-by-step operating instructions as well as information required by the FCC. Installation instructions, specifications, warranty and factory service information are given in the Installation Manual.

**2.09** PhoneBeam is offered in 4 models, each differing in the manner in which the Base Unit interconnect cord or interfacing accessory cable is terminated for connection to various telephone installations. See Table A.

## 3. INSTALLATION

**3.01** **IMPORTANT:** Only PhoneBeam Model IR 101-02 should be customer installed. It is made for any six position modular plug telephone (RJ11C or equivalent). Customers should determine if their telephone is modular plug terminated. If not, have a modular wall plug installed. See Figures 10, 11, and 12.

For protection during shipment, the PhoneBeam Base Unit is packaged with a sheet of transparent plastic covering the infrared receiving window (lens). Please remove before using by simply peeling it off of the window.

**3.02** Models IR 101-01, IR 101-03 and IR 101-04 should be installed by a trained telephone installer. This is generally a representative from the company which installed the telephone system. To assure proper function of all features a speakerphone compatible telephone is required for these three models. If such a telephone is not already available, contact Plantronics for information on how to obtain one. See page 21.

### 3.03 FCC Required Information:

The customer must provide the telephone company with the following information (also found on bottom of Base Unit):

Models—IR 101-01, IR 101-02, IR 101-03, IR 101-04  
FCC Registration Number—AL87GA-11759-WT-N  
Ringer Equivalence—0.0B

PhoneBeam has been approved and registered for direct connection to single and multi-line telephone service.

PhoneBeam must not be connected to party line or coin operated telephone systems. See other FCC Required information on back cover of User Guide.

**3.04** Refer to pages 12 through 18 for detailed connection instructions. Be sure that all power to the PhoneBeam and telephone equipment is disconnected during installation. After installation apply power and test the PhoneBeam.

**3.05** Figures 2, 3 and 4 are analogous to 4A connections with 223 adapter and/or 82 type connecting block.

**3.06 CAUTION:** If the PhoneBeam is being used to replace an existing speakerphone, any power source from the old system must be removed (an example of this is the WECO type 85 transformer).

If the power transformer also supplies power for purposes in addition to the speakerphone, remove only the speakerphone power. An example of this is the WECO type 95 transformer which may be used to power the automatic dialer of the Touch-A-Matic type telephone. For this particular application the transformer leads on terminal block connections marked "AC" must be removed, insulated and stored. See figure 9.

**3.07** Model IR 101-02 (Single line telephones with modular plugs); if your telephone service does not have a modular telephone jack (RJ11C, RJ11W, or equivalent), have your telephone company install one.

**3.08** In some cases the existing telephone equipment will not accept the standard 50 pin connector provided with the IR 101-01, and the tip/ring interface of the IR 101-02 is not desirable.

Model IR 101-03 is designed for those installations where either individual wiring to a connecting block or special modification to a telephone is required. The detailed installation instructions starting on page 12 are provided to the installer for this type of installation. Figure 13 illustrates the wire and pin assignments for the basic PhoneBeam IR 101 system including the IR2 Adapter cable.

**3.09** Model IR 101-04 is specifically designed for installations to Northern Telecom SL1 and Logic system telephones. See Figure 8 for installation illustration and instructions.

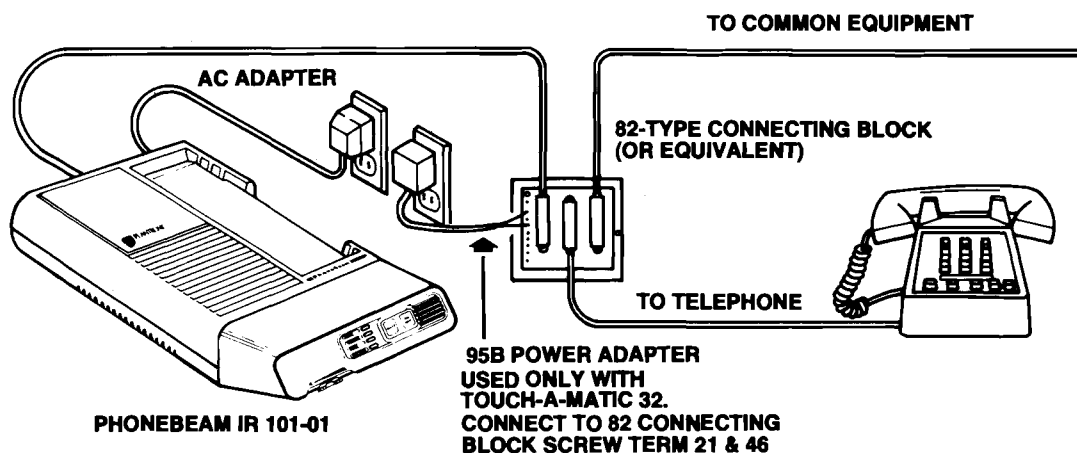
#### 4. PHONEBEAM INSTALLATIONS USING IR 101 SERIES SPEAKERPHONES

**4.01** For replacement of 4A/4B Bell or PC type speakerphones, disconnect the 4A/4B speaker-

phone from the 223 adapter or 82 connecting block and install the IR 101-01 PhoneBeam in its place. Note: The Plantronics IR2 adapter is a direct replacement for the 223D type adapter.

**4.02** For new installations, refer to the illustrations and detailed installation instructions on pages 5 through 18.

**FIGURE 2.** 82 Type Connecting Block Used With Most 5 Line Telephones



#### TELEPHONE MODIFICATIONS

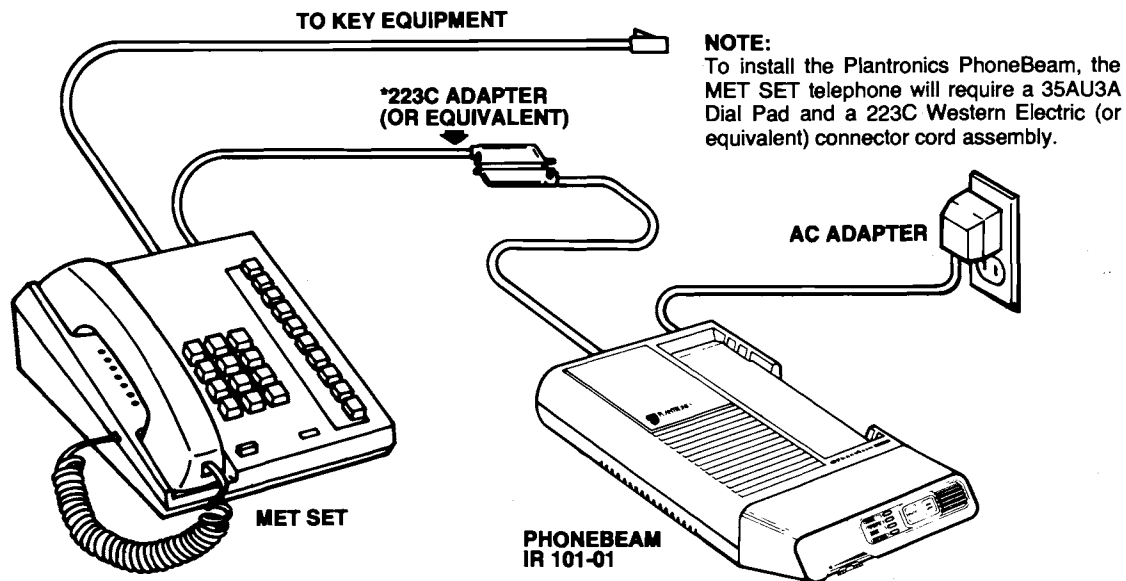
If the PhoneBeam is replacing a 4A or 4B type Speakerphone, ignore the following steps; perform the following only if this is a new (first time) installation.

1. Touch-A-Matic 32, Model 2872. A D180492 kit of parts must be installed in the telephone by an AT&T technician.
2. AT&T/Western Electric 2565 HK, HKM & HKMS. In the telephone, connect G-V wire to terminal 9 and V-G to G network. On HKMS models, also move the green hookswitch wire from network L2 to network F.
3. COMDIAL 2864-42/46. Modify telephone per the following table:

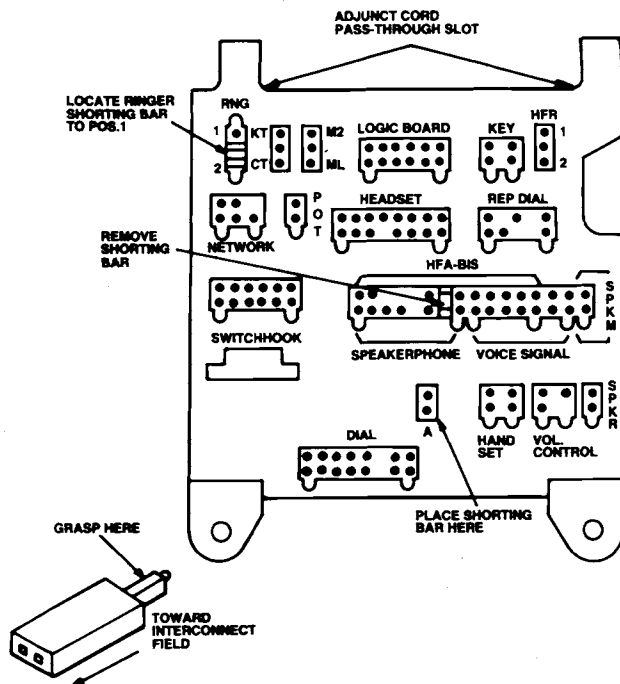
WIRE COLOR	FROM	TO
G-V	Term. 2	Dial Pad 3
V-G	Term. 1	Term. 25
BR-V	Term. 4	Term. 24
V10-BR	Term. 5	Term. 30
SL-V	Term. 3	Term. 29

\*82 type connecting blocks are available through major telephone equipment distributors.

**FIGURE 3. PhoneBeam Installation To 10 Button Met Set**



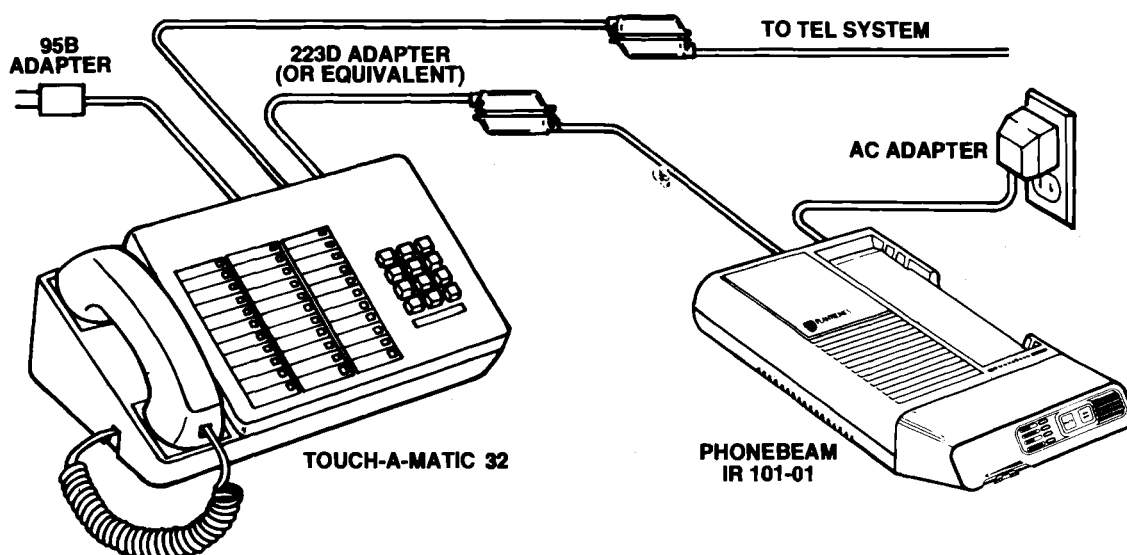
**FIG. 3.1—MET SET INTERCONNECTION FIELD**



1. Insert a thin bladed instrument between the faceplate and housing at the top side of the telephone and pry the faceplate loose from the telephone. The interconnect field as shown in Figure 3.1 will now be exposed.
2. Remove the yellow shorting bar from the speakerphone connecting slot. Insert into slot "A" if one is not already present.
3. Insert the small 16 pin connector end of the 223C cable through the large opening on the bottom of the telephone.
4. Bring the connector up through the upper end of the interconnect field (adjunct cord slot) and connect to the "speakerphone" slot.
5. Move the "ring" shorting bar (if not already done) to the upper position in the ring slot.
6. After installation, check telephone for proper operation with PhoneBeam turned off, then turn PhoneBeam on and test per Installation Manual and User Guide.
7. Replace telephone faceplate.

\*Contact AT&T service or a major telephone supply distributor for 223C adapter and 35AU3A dial pad.

**FIGURE 4.** PhoneBeam Installation To Single Line AT&T Touch-A-Matic 32



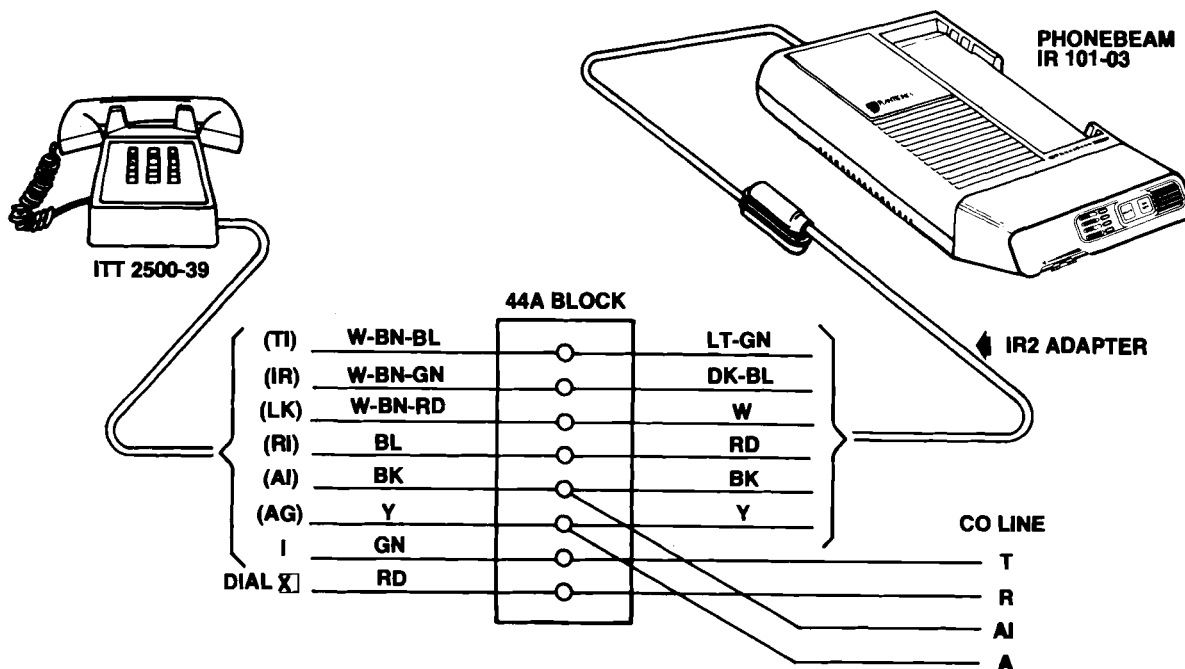
### TELEPHONE MODIFICATIONS

If the PhoneBeam is replacing a 4A or 4B type Speakerphone, no modifications are necessary. Disconnect the 4A/4B Speakerphone from the 223D adapter and install the PhoneBeam in its place.

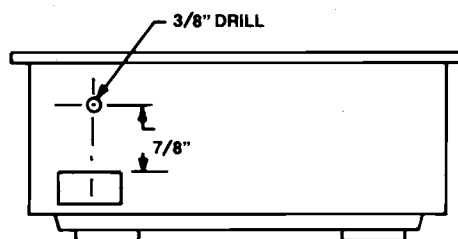
For new (first time) Speakerphone installations, the Touch-A-Matic 32 requires the following modifications by a qualified AT&T technician:

1. For the 870 Rotary: a D180568 kit of parts and a 223D adapter.
2. For the 2870 Touch Tone: a D180492 kit of parts and a 223D adapter.

**FIGURE 5.** PhoneBeam Installation To ITT 2500-39

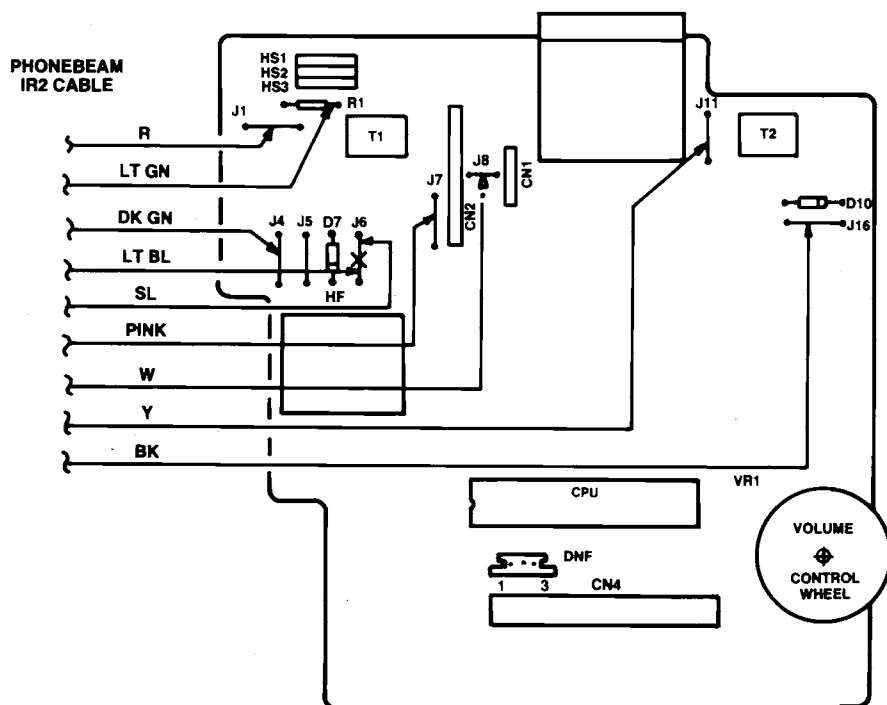


1. Drill cable entry as shown in Figure 6.1 for cable entry.



**FIGURE 6.1: CABLE ENTRY**

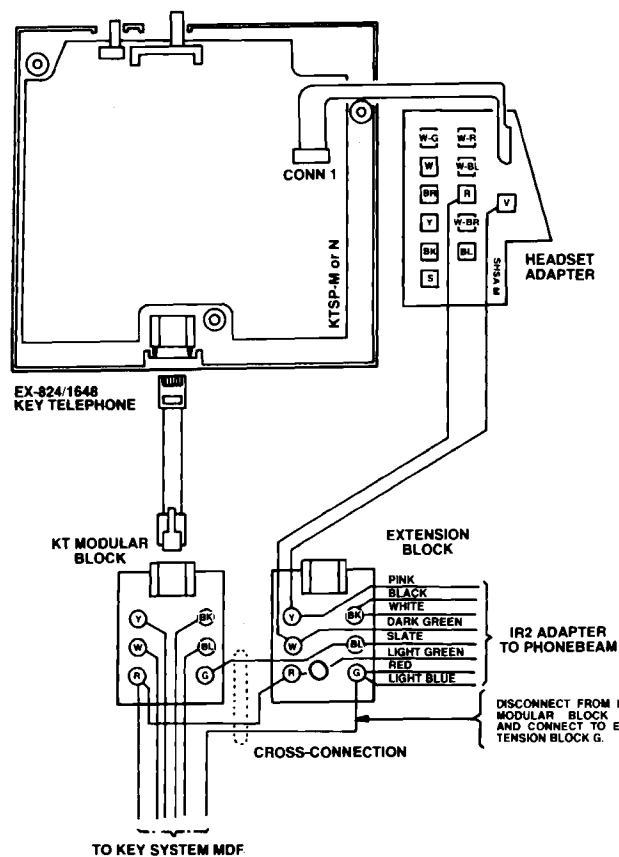
2. It is necessary to remove dial connector CN2 to access J7, for connecting B-B1.
3. Cut wire jumper J6 at center of length. Connect light blue to one side and slate to other side.



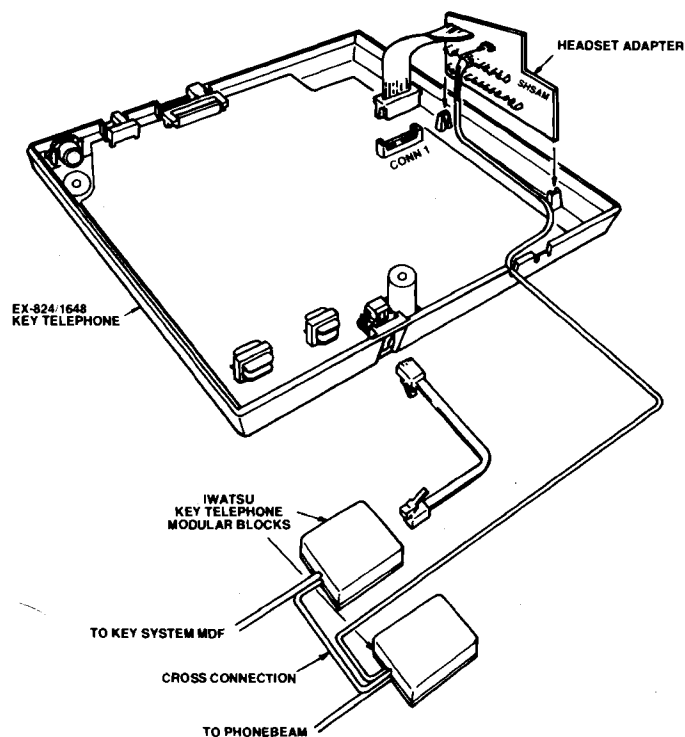
**FIGURE 6.2: CONNECTION DETAIL**



**FIGURE 7. PhoneBeam Installation To Iwatsu Omega 824/1648**

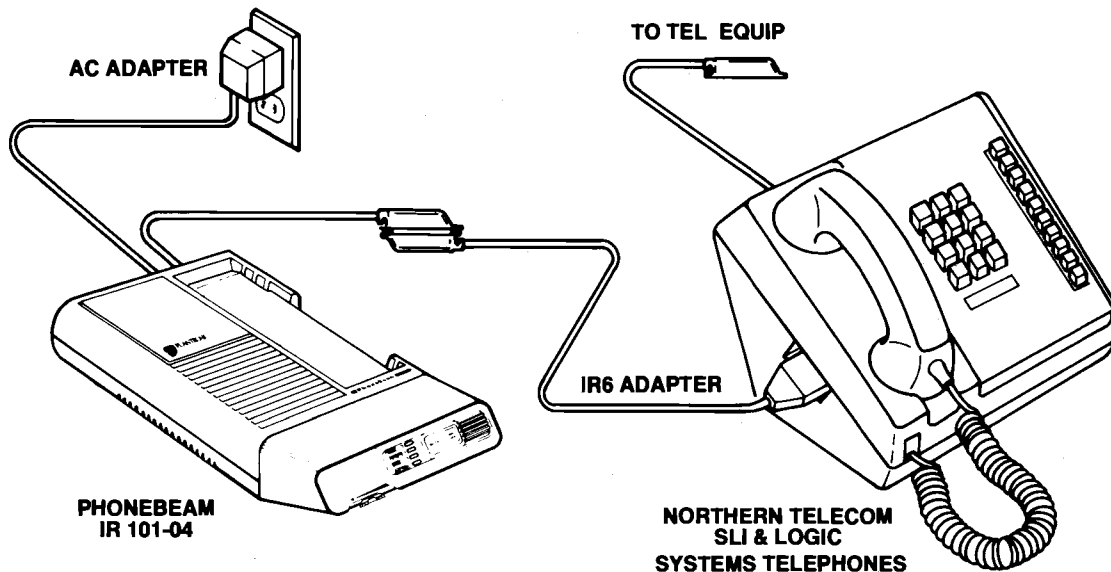


**FIGURE 7.1: CONNECTION DETAIL**



**FIGURE 7.2: PHONEBEAM AND EX-824/1648 KEY TELEPHONE**

**FIGURE 8.** PhoneBeam Installation To Northern Telecom SL-1 And Logic Series Telephones

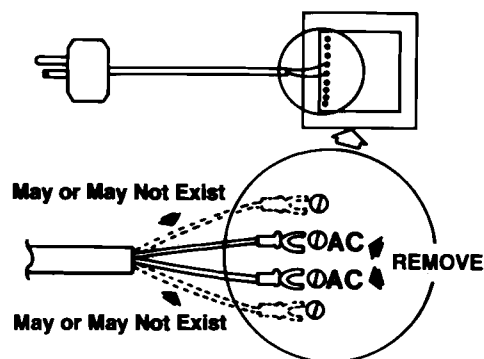


### TELEPHONE MODIFICATIONS

If the PhoneBeam is replacing a companion Speakerphone, no modifications are necessary. Disconnect the companion Speakerphone and install the Plantronics PhoneBeam in its place using the IR6 adapter.

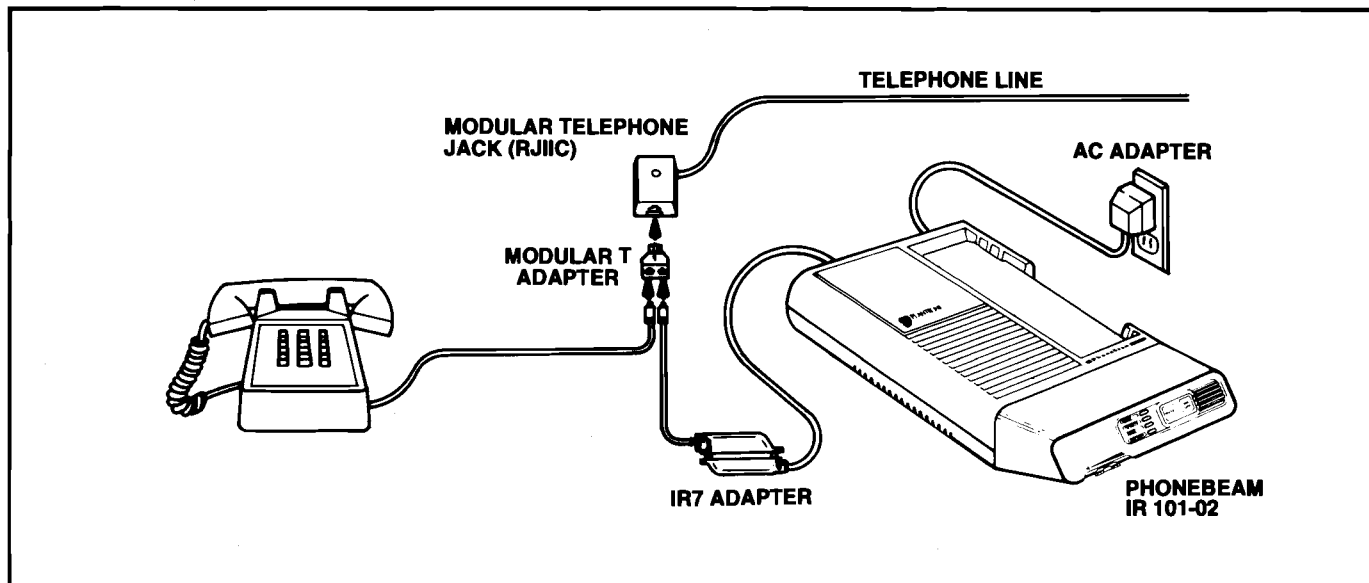
For new (first time) installations, the telephone may require a QKK Speakerphone interface kit. Contact your local Northern Telecom service organization for installation.

**FIGURE 9.** Modification Of Previous Speakerphone Transformer Connections For IR 101-03 Installation

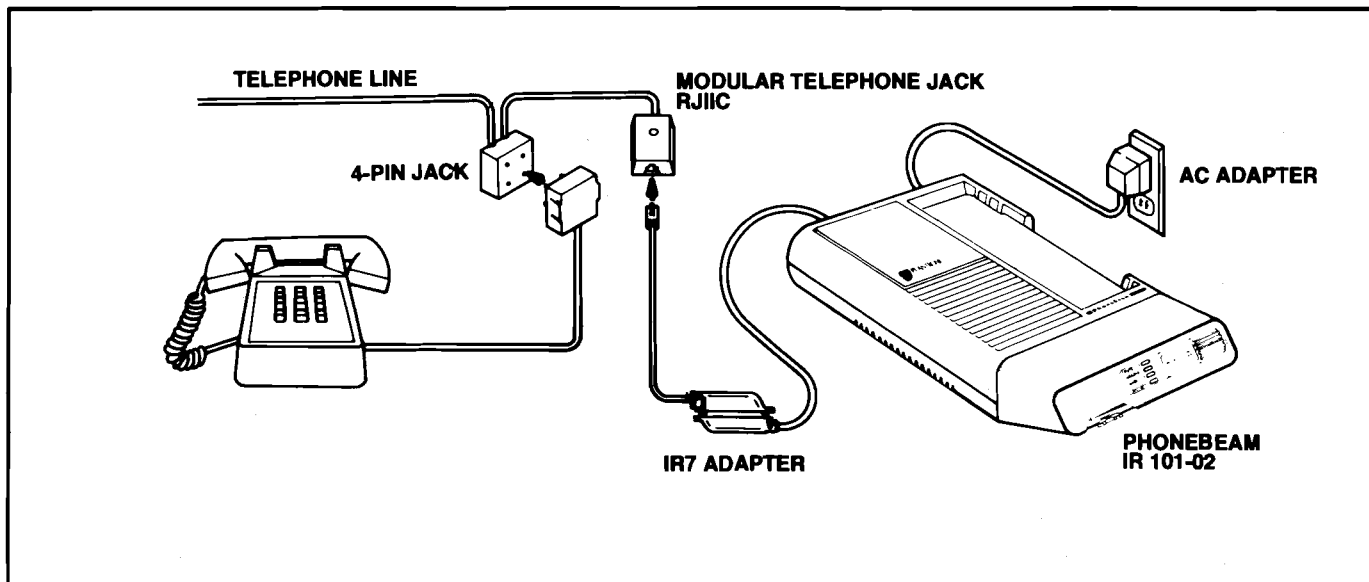


If there are wires which powered a previously installed speakerphone, they must be removed, insulated and stored.

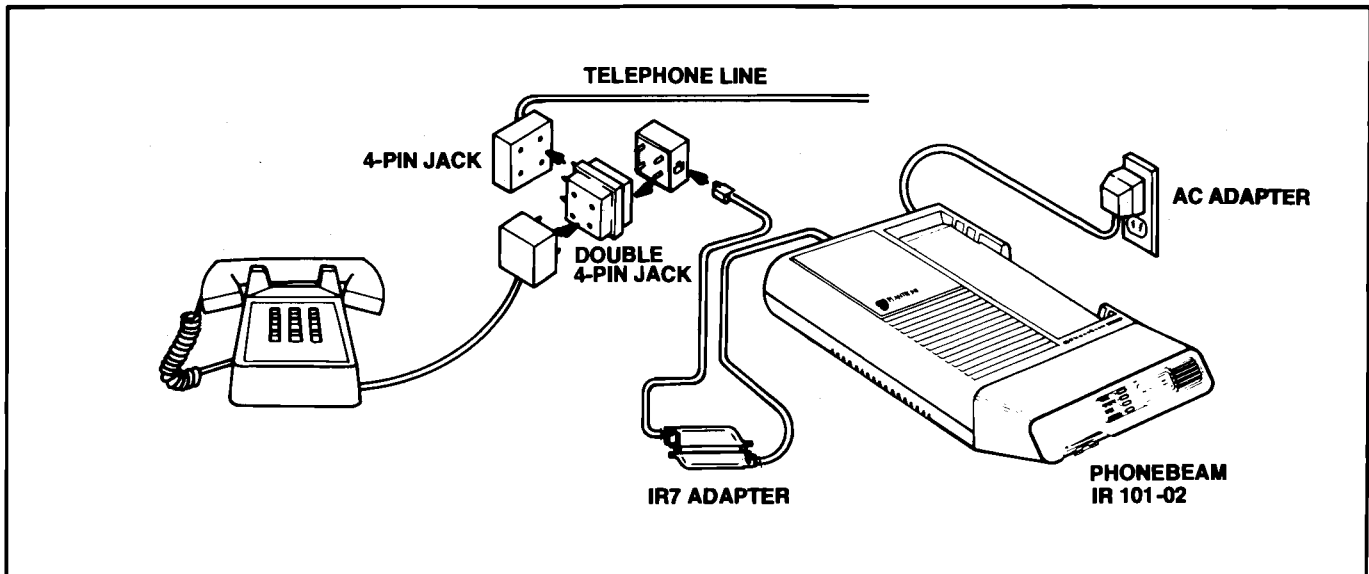
**FIGURE 10.** Telephone With Modular Plug



**FIGURE 11.** Modular Telephone Jack RJ11C And 4-Pin Jack Combined



**FIGURE 12.** Telephone To 4-Pin Jack To Modular Adapter

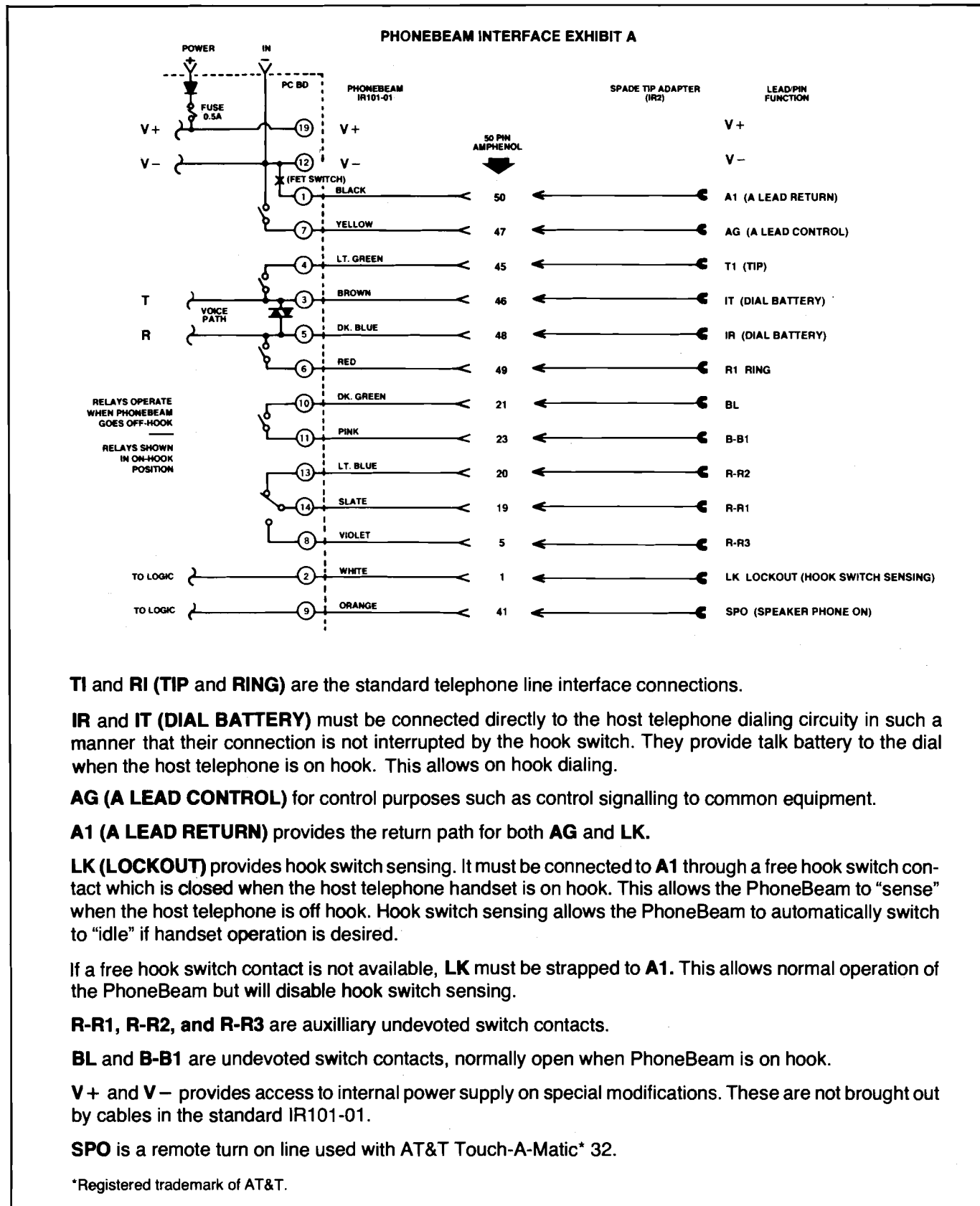


## 5. PHONEBEAM CONNECTOR DETAIL

5.01 If the PhoneBeam is not a 4A/4B replacement refer to the detailed installation instructions starting with page 13.

Figure 13 provides additional PhoneBeam connector detail. If further assistance is required contact Plantronics Application Engineering Dept. (see page 21).

FIGURE 13.



**DETAILED  
PHONEBEAM INSTALLATION INSTRUCTIONS**

<b>SPADE TIP IR2 ADAPTER / PHONEBEAM WIRE COLORS TO TELEPHONE TERMINALS</b>													
<b>TEL. MFG.</b>	<b>TEL. MODEL</b>	<b>RED</b>	<b>YEL</b>	<b>BK</b>	<b>LT-G</b>	<b>DK-BL</b>	<b>BR</b>	<b>WHT</b>	<b>DK-G</b>	<b>PINK</b>	<b>LT-BL</b>	<b>SL</b>	<b>VIO.</b>
AT&T	2500SM	2	4	3	L2 NTWK	L1 NTWK	E2	E1					
	565GK/GKMS Note 1	N	M	1B	1	7	8	L1 NTWK					
	565HK/HKMS LK/LKMS Note 1	9	N	1B	RR NTWK	7	8	L1 NTWK					
	2565 Note 1												
	0630/0631	13	7	8	RR NTWK	24	30	29					
	0632A	1	G NTWK	4	RR NTWK	W DP	BB DP	L1 NTWK					
	0632C	2	5	1	RR NTWK	12	11	9					
	2630/2631	13	7	8	9	14	4						
	2632C	2	5	1	10	11	12	9					
	0830/0831 Note 2	6	22	10	RR NTWK	24	30	29					
	2830/2831 Note 3	6	22	10	25	24	30	29					
	0832/0833 Note 4	6	8	10	RR NTWK	24	30	29					

**NOTES:**

1. May be installed using 82 Type Connecting Block (See Fig. 2).
2. Mfr. after 1/77, move green wire from Term 16 to Term 8; before 2/77, move green wire from TB16 to Network F.
3. Mfr. after 1/77, move green wire from Term 16 to Term 8; before 2/77, move green wire from Term 8 to Term 16.
4. On modular (CM) series, move the orange wire from Term 27 to Term 22.

DETAILED  
PHONEBEAM INSTALLATION INSTRUCTIONS

SPADE TIP IR2 ADAPTER / PHONEBEAM WIRE COLORS TO TELEPHONE TERMINALS													
TEL. MFG.	TEL. MODEL	RED	YEL	BK	LT-G	DK-BL	BR	WHT	DK-G	PINK	LT-BL	SL	VIO.
AT&T	2832/2833 Note 1	6	8	10	25	24	30	29					
	851 CM Note 2	13	3	4	RR NTWK	17	15	20					
	2851 CM	13	3	4	G NTWK	17	15	20					
	852 A/AM Notes 2 & 3	1	11	3	RR NTWK	8		10					
	2852 A	1	11	3	19	L1 NTWK		10					
	2852 AM Note 3	1	11	3	19	Note 4		10					
	MET SETS 2900 Series	See Fig. 3 For MET SETS											
TOUCH-A-MATIC 32		Note 6											
COMDIAL	500 RS	G NTWK	3	2	L1	3	4	1					
	2500 S 35C1 Dial	L2 NTWK	E1 NTWK	E2 NTWK	6	5		1					
	2500 S 35C3AP & 35C-15 Dial	L2 NTWK	3	2	6	5		1					
	2507 TAP/FLASH Phone Note 5	L2 NTWK		Note 5	2 DP			Note 5					
	2800 Series IMAGE I	3 DP	24	20	26	E1 NTWK		25					

NOTES:

1. On modular type telephones, move the orange wire from Term 27 to Term 22.
2. Models 851 and 852 must have an 8CA type dial. The yellow leads from the dial pad must be connected to the same points as the PhoneBeam DK-BL and BR.
3. Models 852 AM and 2852 AM, remove the green leads from Term 2 or 4 and connect to F on the NTWK.
4. Connect PhoneBeam DK BL wire to same terminal as violet lead from the dial.
5. Remove SL-R hookswitch wire from dial pad position 1 and splice to IR2 adapter BK wire. Remove S-BK hookswitch wire from RR on NTWK and splice to IR2 adapter WHT wire. Lift the Red handset wire from Term. 3 on the dial pad and splice to IR2 Light Blue. Install 1R2 Slate to Term. 3 on the dial pad.
6. For Touch-A-Matic 32, see Fig. 2 for 5-line (2872) hookup; and Fig. 4 for single-line (2870) hookup.

DETAILED  
PHONEBEAM INSTALLATION INSTRUCTIONS

SPADE TIP IR2 ADAPTER / PHONEBEAM WIRE COLORS TO TELEPHONE TERMINALS

TEL. MFG.	TEL. MODEL	RED	YEL	BK	LT-G	DK-BL	BR	WHT	DK-G	PINK	LT-BL	SL	VIO.
COMDIAL	830/831/864 -42/46	6	22	10	RR NTWK	24	30	29					
	2830/2854 -42/46	3 DP	22	10	25	24		29					
	2831/2835 -42/46	3 DP	22	10	25	24		29					
	861/862 -42/46/56	7	15	11	RR NTWK	29	32	36					
	2861/2862 -42/46	7	15	11	32	29		36					
	2864-42/46 Note 1	3 DP	22	10	25	24		29			A8	A9	
	2500 ASCW000 35A11 Dial	J2 DP	Note 6		L2 NTW				J1 DP	L1 NTW			
	2500 ASCW007 35B11 Dial	J2 DP	G NTW	E2 NTW	L2 NTW		Note 5	E2 NTW					
	3519 MAX KEY Note 2	A7	A5	G2	A6		C2						
	3525S/3528S MAXPLUS	L2	AG	A1	T1			LK	KM	KC	KC	KB	
EXECUTONE	Encore Note 7	C39 One Side			C39 Other Side				1 HKSW PCB	2 HKSW PCB			
ITT	2500-39 Note 4	2	4	3	5	6		E1					
NOTE 3	565/567 -42/46	9	N	1B	RR NTWK	7	8	L1 NTWK					
	2565/2567 -42/46	E1 NTWK	N	1B	G NTWK	7		L1 NTWK					
	830/831 -42/46	6	22	10	RR NTWK	24	30	29					

NOTES:

1. Model 2864 may be connected to PhoneBeam using 82 Type Connecting Block. See Fig. 2.
2. Strap G2 to C1 in the Max Key telephone.
3. Models 565, 567, 2565 & 2567 may be connected to PhoneBeam using 82 Type Connecting Block, See Fig. 2.
4. See Fig. 5 for alternate installation method.
5. Store SL-BK HKSW wire on RR, and SL HKSW wire on L1. Lift red handset wire from J3 dial and splice to IR2 light blue. Connect IR2 slate to J3 dial.
6. Remove the SL-BLK HKSW from GN and splice to IR2 BLK. Remove SL-R HKSW wire from R and splice to IR2 white. Remove the red handset wire from E2 and splice to IR2 LT. Blue. Connect the slate IR2 wire to E2.
7. Cut brown wire on position 1 of handset PCB one inch from PCB. Splice IR2 LT. BLU to one end of the cut brown wire and IR2 slate to the other end. Splice IR2 BLK and WHT.

DETAILED  
PHONEBEAM INSTALLATION INSTRUCTIONS

SPADE TIP IR2 ADAPTER / PHONEBEAM WIRE COLORS TO TELEPHONE TERMINALS

TEL. MFG.	TEL. MODEL	RED	YEL	BK	LT-G	DK-BL	BR	WHT	DK-G	PINK	LT-BL	SL	VIO.
ITT	2830/2831 -42/46	6	22	10	25	24	30	29					
	2835/2854 -42/46	6	22	10	25	24	30	29					
	861-56	7	13	11	RR NTWK	29	32	36					
	2861-56	7	13	11	32	29		36					
	2870/2871 -42/46	6	22	10	30	24		29					
	930-69	1		3	RR NTWK	G NTWK	L1 NTWK	2	HS	HS			
	2930-69 Note 1	1		3	4	A NTWK		2	HS	HS			
	EKS 701 Note 4	J1	J11	J16	R1			J8	J4	J7	J6	J6	
ITT 801	2803/2804 45 MOE	Y			L1				HS	HSG	Note 3	T2	
ITT 3100 Series	2630/2631 CL29M	Z		X	L1			M	HS	HSG			
				Note 2									
	2630/2631 CL29T	Z		X	SP			M	HS	HSG			
				Note 2									

NOTES:

1. Remove and reconnect the following telephone leads:

LEAD	FROM	TO
Red MTG Cord	NTWK L2	2 Pos. Term. on Dial Pad
Brn HKSW	2 Pos. Term. on Dial Pad	NTWK C
Wht-Red Dial	NTWK	NTWK L2

2. On ITT 3100 series, if telephone is equipped with Call Announce, move the slate lead from Terminal Z on PCB to E+ on Call Announce Board.
3. Short PhoneBeam BK and WHT leads together, tape and store. Remove Red handset wire from T2 and splice to LT-BL PhoneBeam wire. Connect PhoneBeam Slate wire to T2 in the telephone, strap L2 to F4.
4. Cut J6 strap; connect LT. BLUE to one side of J6 and Slate to other side, see Fig. 6.



**DETAILED  
PHONEBEAM INSTALLATION INSTRUCTIONS**

SPADE TIP IR2 ADAPTER / PHONEBEAM WIRE COLORS TO TELEPHONE TERMINALS													
TEL. MFG.	TEL. MODEL	RED	YEL	BK	LT-G	DK-BL	BR	WHT	DK-G	PINK	LT-BL	SL	VIO.
ITT 3100 Series	2672/2673 CL29M	Z		E-	L1			E-	HS	HSG	Z	E +	
	2672/2672 CL29T	Z		E-	SP			E-	HS	HSG	Z	E +	
IWATSU	OMEGA III Note 1	2		7	8			7	6	3			
	OMEGA IV 824/1648	See Fig. 7											
NEC	ELECTRA 6-16	Note 2		L1	VT			L1	K1	K2	Note 2	VR	
	ELECTRA 16-48 Note 3	6		17	5			17	15	16	6	11	
	16-48 For BOC ET16H-3/ET16-3 Note 4	L2		L1	VT			L1	K1	K2	L2	VR	
	ELECTRA 28 Note 5	8		18	10			13	11	14	7	8	
NORTHERN TELECOM	SL-1 & Logic Series	See Fig. 8											
ROLM	ETS 100/A Note 6	BR			RD				BK	BL			
	ETS 100AS Note 7	BK			OR				BL	YEL			
	2507 FLASH PHONE	L2 NTWK	Note 8		L1 NTWK		Note 8		L2 NTWK	2 DP	Note 8	3 DP	

**NOTES:**

1. PhoneBeam connections are made to the Omega III ET-SPB speakerphone adapter. In addition to PhoneBeam connections, strap terminals 9 to 1 and 8 to 4 on the ET-SPB board, then cut jumper SJ2 on the telephone main pc board.
2. Lift the red line cord wire from VR & splice to IR2 adapter Red & Light Blue. Short IR2 adapter BLK & WHT wires together.
3. On 16-48 Electra, remove strap S3 on telephone pc board.
4. On ET16 (16-48 for BOC's), move the red line cord wire from VR to L2.
5. On Electra 28, remove strap 7 to 8 on telephone pc board.
6. PhoneBeam connections are made to Rolm speakerphone adapter PN 18-54007. Short BK & WHT PhoneBeam/IR2 leads together, tape and store.
7. On ETS 100AS, connections are made to speakerphone adapter supplied with telephone, short BK & WHT PhoneBeam/IR2 leads together, tape and store.
8. Remove S-R hookswitch wire from dial pad and splice to IR2 BLK wire. Remove S-BK from RR and splice to IR2 white wire. Remove red handset wire from term. 3 on dial pad and splice to IR2 SL.

DETAILED  
PHONEBEAM INSTALLATION INSTRUCTIONS

SPADE TIP IR2 ADAPTER / PHONEBEAM WIRE COLORS TO TELEPHONE TERMINALS

TEL. MFG.	TEL. MODEL	RED	YEL	BK	LT-G	DK-BL	BR	WHT	DK-G	PINK	LT-BL	SL	VIO.
TELRAD	Key Bx Note 1	J18		J19	J19			J23	J22	J17			
TIE	TC12/22	F1		LK	L1			SG	K1	SG			
	Ultracom Meritor 820 1236 2260	TLAR	HSD See Note 2	L1			RB	RB	HRD	MT	SP1		
	EK308 Tone Dial	R1 See Note 3		X2	T1	P4		X2		K2	K2	K1	
	EK516 Tone Dial	R1 See Note 3		X2	T1	P4		X2	AG	K2	K2	K1	
TOSHIBA	210X 220X Series	CD11 Cath. Side			CD12 Cath. Side	See Note 5			CD4 Cath. Side	CD20 Anode Side	SW2 One Side	SW2 Other Side	
	310X Series	CD17 Cath. Side			CD19 Cath. Side	See Note 5			CD29 Cath. Side	CD30 Anode Side	SW2 One Side	SW2 Other Side	
WALKER	Reliant 16, 32, 50	4 See Note 4		8	1			7	5	6	1	2	

NOTES:

1. Add a jumper wire from J23 to vacant pin on the hookswitch.
2. On Anu-A Board, strap L1 to TLAT and remove strap MT to SP1.
3. Requires TD KC 35C2 or LTS 251 type dial. On EK308 strap D connector 1 to 2. On EK516 strap D connector 3 to 4 and 5 to 6.
4. IR2 adapter leads are connected to the speakerphone interface screw terminals. Remove strap between terminals 1 and 2.
5. Cut strap SW2 at mid point. Solder IR2 light blue to one side and slate to other side. Short IR2 adapter black and WHT leads together.

## 6. TEST OPERATIONS AND PROBLEM SOLVING

After the PhoneBeam is fully installed and power is connected, perform the following tests. This will assure that the installation is correct and the PhoneBeam is operating properly.

### 6.01 Base Unit

TEST	CORRECT OPERATION	TROUBLE INDICATORS	POSSIBLE CAUSES/ CORRECTIVE ACTION
1. Press "ON/OFF" Button	a) BASE Indicator Light goes on  b) Dial tone should be audible	a) BASE Indicator Light does not go on  b) No dial tone  c) No dial tone BASE Indicator Light flashing	Are all connectors secure? Is power at the AC receptacle? Try an alternate AC adapter. Try an alternate PhoneBeam Base Unit.  Is dial tone present at handset? Be sure telephone line is connected. Hang up, (turn PhoneBeam off and hang up handset) and repeat test. Be sure volume adjustment is adequate. Try alternate PhoneBeam Base Unit.  Is the telephone handset in its cradle? Telephone must be on hook. Verify proper "LK" connection (see Figure 13). Try alternate PhoneBeam Base Unit.
2. Dial test number using dialpad on telephone	Call goes through	Call doesn't go through	Try normal telephone dialing. If okay, try on-hook (PhoneBeam-mode) dialing again.  Tip/ring is reversed from the common equipment.  Be sure the telephone used is made for speakerphone operation.
3. Assess speaker volume (with test person on the line, speak in normal tone)	Adequate volume	Inadequate volume or too loud	Adjust volume control.
4. Press MUTE Button	MUTE Indicator Light ON  Test person unable to hear your voice.	No MUTE Indicator Light  Test person still able to hear your voice.	Try pressing MUTE Button again.  Try alternate PhoneBeam Base Unit.

TEST	CORRECT OPERATION	TROUBLE INDICATORS	POSSIBLE CAUSES/ CORRECTIVE ACTION
5. Press MUTE Button second time to return to two-way conversation.	Test person again able to hear your voice.  MUTE Indicator Light turns OFF.	No return to two-way conversation.  MUTE Indicator Light does not turn off.	Try pressing MUTE Button again.  Try alternate PhoneBeam Base Unit.

## 6.02 Remote Microphone

Slide the battery pack into the Remote Microphone as described in the User Guide, page 1.

TEST	CORRECT OPERATION	TROUBLE INDICATORS	POSSIBLE CAUSES/ CORRECTIVE ACTION
1. Remote Microphone ON/OFF Switch OFF, place in Base Unit charging well.	Remote Microphone fits in Base Unit properly (see User Guide).  BATTERY Indicator Light ON.	No BATTERY Indicator Light.	Is Remote ON/OFF Switch in OFF position?  Is Remote Microphone placed in Base Unit charging well correctly? (See User Guide).  Place Remote Microphone in correct charging position (User Guide, page 1).  Is AC Adapter plugged in? Does receptacle have power?
2. Remove Remote Microphone from Base Unit charging well. Turn it on.	REMOTE Indicator Light goes ON, dial tone is audible.	BATTERY Indicator Light flashes.  No REMOTE Indicator Light.	Battery not adequately charged (charge for 12 hours).  Is Remote Microphone within 20 feet of Base Unit?  Is the Remote Microphone near a large window?  Is the battery pack charged and securely in place?  See User Guide sections "Remote Microphone Battery" and "Before You Start."
3. Dial test number.	Call should go through.	No dial tone.  Call doesn't go through.	See 6.01, Test 1.  Try placing a call in BASE mode with Remote Microphone turned OFF. See BASE UNIT TEST PROCEDURES.

TEST	CORRECT OPERATION	TROUBLE INDICATORS	POSSIBLE CAUSES/ CORRECTIVE ACTION
4. Talk to someone to conduct voice test.	Outgoing voice quality should be good.	The party you called cannot hear you or says your voice quality is poor.	<p>Be sure Base Unit connections are good.</p> <p>Is BATTERY Light flashing? Be sure Remote Microphone is properly charged.</p> <p>Speak in normal tone, do not shout.</p> <p>Is Remote Microphone transmitting head blocked?</p> <p>Transmitting head and microphone must not be obstructed.</p> <p>Is Remote Microphone facing a large window?</p> <p>Is the Base Unit receiving lens obstructed or exposed to excessive light (such as direct sunlight)?</p> <p>Is the telephone line circuit good? Hang up and try again or request operator assistance.</p>

### 6.03 Hook Switch Control (Models -01, -03 and -04 Only)

TEST	CORRECT OPERATION	TROUBLE INDICATORS	POSSIBLE CAUSES/ CORRECTIVE ACTION
1. While talking, pick up telephone handset, PhoneBeam automatically goes to standby. (BASE Indicator Light flashes.)	Hang up handset. PhoneBeam turns ON, (BASE Indicator Light steady).	On-hook dialing worked but no hook switch control.	Check LK (lock out) connection.

**NOTE:** If installation problems cannot be overcome, contact the Applications Engineering Department by calling (408) 426-5858.

## **7. MAINTENANCE**

- 7.01** PhoneBeam contains no field serviceable components. Any attempt to open the case will void the warranty.
- 7.02** PhoneBeam should be kept free of dust and should not be exposed to temperatures exceeding 150°F (60°C).
- 7.03** Clean the surface with a dry, lint free cloth.
- 7.04** PhoneBeam should be placed in a safe location and not dropped.
- 7.05** Batteries should be replaced if they fail to hold a charge for more than 1 hour of usage.

**7.06** To prolong the useful life of your Remote Microphone battery pack, it should be properly discharged, then fully recharged about once per month. To do this, simply do not replace your Remote Microphone in the charging well in between usages. When the BATTERY Light flashes you may assume your battery pack is in a near-fully discharged state. **Under no circumstances should you leave your Remote Microphone ON for more than 3 hours without recharging it or permanent damage to the battery pack may occur.**

## **8. LIMITED WARRANTY**

The Plantronics PhoneBeam is warranted to be free from defects in workmanship and materials for a period of one (1) year from date of shipment from Plantronics. During the warranty period, Plantronics, at its option, shall repair or replace without charge any part or subassembly (not including battery), which is found to be defective under normal installation, use and service, provided the product is returned to Plantronics, postage prepaid, as a complete assembly. The battery pack shall be warranted for a period of ninety (90) days. Plantronics reserves the right to effect repair by replacement of the defective unit with a factory-rebuilt unit of "like-new" condition. This warranty does not extend to material which has been subjected to abuse, misuse, neglect, accident or improper installation, wiring or alteration, or to any defects or damage directly or indirectly caused by the use of unauthorized replacement parts and/or service performed by unauthorized personnel. In such cases, all repairs will be billed at current rates for labor and materials, even during the warranty period.

The warranty period shall be one (1) year from date of manufacture as indicated on the unit. To obtain warranty repairs, return your unit, shipping prepaid, direct to: Plantronics/Santa Cruz Service Center, 108 DuBois Street, Santa Cruz, California 95060. Include the following information: (1) Bill to address, (2) Ship to address, (3) Purchase order number, (4) Number and description of units shipped, (5) Name and telephone number of person to call should contact be necessary, and, (6) Descriptive statement of defect or failure. Please pack the unit in a sturdy carton with sufficient packing material to prevent shipping damage. Damage occurring during shipment is not the responsibility of Plantronics and any claims for shipment damage must be made directly with the carrier.

Any replacement or repair performed by Plantronics shall be warranted for ninety (90) days or the remainder of the original warranty period, whichever is longer and shall be based on the date repair service was completed. Return freight from Plantronics to the customer for a unit requiring any repair covered by the warranty shall be prepaid by Plantronics.

EXCEPT AS PROVIDED HEREIN, PLANTRONICS MAKES NO OTHER WARRANTY EXPRESS OR IMPLIED, WITH RESPECT TO THIS PRODUCT, INCLUDING ANY WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED. IT IS EXPRESSLY UNDERSTOOD THAT THE SOLE AND EXCLUSIVE REMEDY PROVIDED TO PURCHASER SHALL BE REPAIR OR REPLACEMENT OF DEFECTIVE PRODUCTS OR PARTS.

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