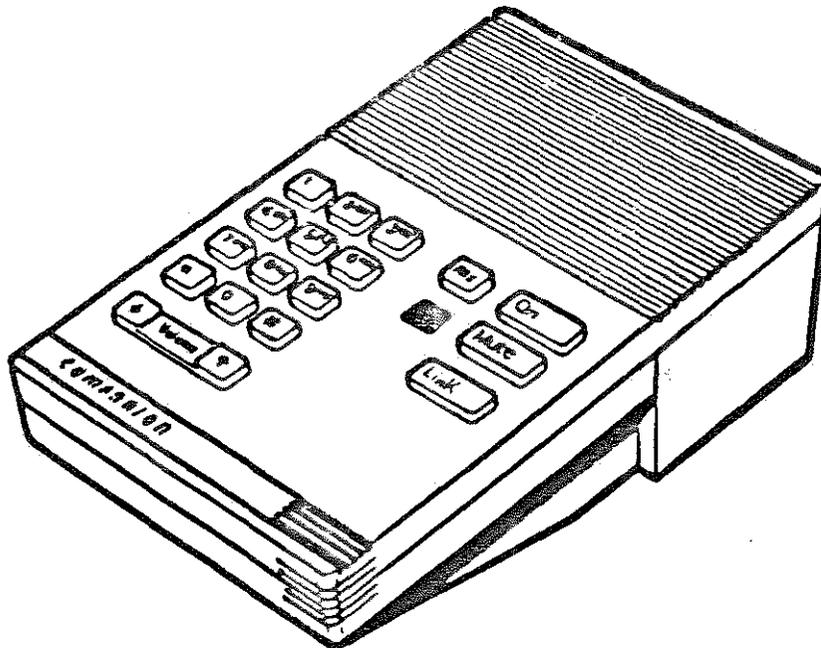


UNITY CONFERENCING PRODUCT

**COMPANION\* 4M HANDSFREE UNIT**

**NT1L07AA TYPE**

**DESCRIPTION, FEATURES, INSTALLATION AND OPERATION**



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\* COMPANION is a trademark of Northern Telecom

## 1. GENERAL

1.01 This practice covers the description, features, installation, operation tests and fault location procedures for the COMPANION 4M handsfree unit.

1.02 The NT1L07AA type handsfree unit permits voice-switched handsfree conversation to be carried out. The unit can be used with a traditional single line or multiline telephone set. Dialing from the handsfree unit is possible since the NT1L07AA is equipped with its own DIGITONE\* dial pad. The telephone set provides the alerting device as well as the use of a handset if privacy is preferred.

## 2. DESCRIPTION AND FEATURES

2.01 A dial pad, a voice-switching circuit, and a built-in microphone and loudspeaker comprise the COMPANION 4M handsfree unit. This wedge-shaped unit is housed in a two-piece, high impact plastic base and cover. A wall plug-in power supply and connector cord are included.

2.02 This handsfree unit is available in chameleon gray only.

2.03 The NT1L07AA handsfree assembly includes the following components:

- Component board assembly
- Keyboard assembly
- Speaker assembly
- Microphone assembly
- Plastics, line cord, etc.

2.04 The power to this handsfree unit is provided by a 2012B type ac power supply.

2.05 On units, provisions are made for the following features:

- (a) Receiving incoming calls on either the handsfree unit or the associated telephone set.
- (b) Transferring calls between the handsfree unit and the associated telephone set.
- (c) Dialing outgoing calls from either the dial pad on the handsfree unit (handset on-hook) or the associated telephone set (off - hook).

(d) Automatic cut-off of the handsfree unit when the handset of the associated telephone set is taken off-hook.

(e) Manual CO line cut-off of the handsfree unit by use of the RELEASE button (symbol Rls ).

(f) Transmit muting, which cuts off transmission when the MUTE button is depressed, without affecting reception.

(g) The LINK\* button activates a timer circuit in the network/dial which provides a link break 400 ms to 600 ms, that can be used to access Custom Calling features provided by the telephone company.

(h) Volume adjustment by means of a rocker-arm type volume control. Pressing the right side of the control increases the volume, while pressing the left side of the control decreases the volume. This control has no affect on the transmitted signal.

(i) Selection of handsfree operation by means of an ON button and an LED to provide visual indication of the unit status. The LED is lit when the unit is on, goes out when the unit is off and flashes when the unit is muted.

(j) Provides "A" lead closure for use behind 1A2 key systems.

2.06 This handsfree unit employs voice-switching circuitry which allows the direction of transmission to be controlled by the party who is speaking.

2.07 The NT1L07AA COMPANION 4M handsfree unit is designed for desk-top installation. Wall mounting can be accomodated with some degradation in performance expected.

2.08 The handsfree unit housing cover contains the PCB assembly, keyboard assembly, microphone assembly and loudspeaker assembly. The base contains the line cord, a mounting clamp assembly to secure the cord and four screws assembled through mounting posts within the housing.

2.09 The handsfree unit dimensions are 180 mm (7.1 in) deep, 120 mm (4.7 in) wide and the unit tapers in height from 51 mm (2.0 in) at the back to 25.4 mm (1.0 in) at the front.

\*UNITY, DIGITONE, AND LINK are registered trademarks of Northern Telcom

### 3. INSTALLATION

3.01 The NT1L07AA COMPANION 4M should be installed directly on a hard surface, such as table, desk or counter top, and as far as possible from sources of noise such as typewriters, radios or home appliances.

3.02 In order to avoid degradation in speech quality do not place the handsfree unit between parallel hard surfaces which are less than 1.8 m (6 ft) apart (e.g., a narrow corridor).

3.03 The handsfree unit should not be placed in hard surfaced corners or under low, hard surfaced shelves less than 610 mm (2 ft) in height above the unit.

3.04 The front edge of the handsfree unit, containing the microphone, should be at least 51 mm (2 in) in from the edge of the desk, counter top or other surface on which it is resting. No obstacles should be placed close to the microphone.

### 4. CONNECTIONS

4.01 To prepare the handsfree unit for operation, insert the modular plug, on one end of the line cord, into the jack in the base of the unit. Ensure that the plug is properly seated (audible click). Route the cord under the tabs in cord channel; continue fitting cord to the edge of the base.

4.02 The connections between the unit and its associated telephone set are made at the telephone set. Fig. 4 and 5 provide information for connecting the unit to the telephone set.

4.03 Plug the power supply cord into any well grounded 115 Vac, 60 Hz power outlet.

4.04 An NT1L0701 handsfree assembly, a 2012B type power supply and modular cord comprise the NT1L07AA handsfree unit.

### 5. OPERATION TESTS AND FAULT LOCATION GUIDE

5.01 The operation tests are listed in Chart 1 and a fault location guide is given in Chart 2.

5.02 The operation tests listed in Chart 1 shall be performed on the handsfree unit after completing all connections.

5.03 The fault location guide given in Chart 2 can be used in conjunction with Chart 1 to determine specific sources of faulty operation. If the suggested action does not correct the fault, the unit should be tagged and returned for repair.

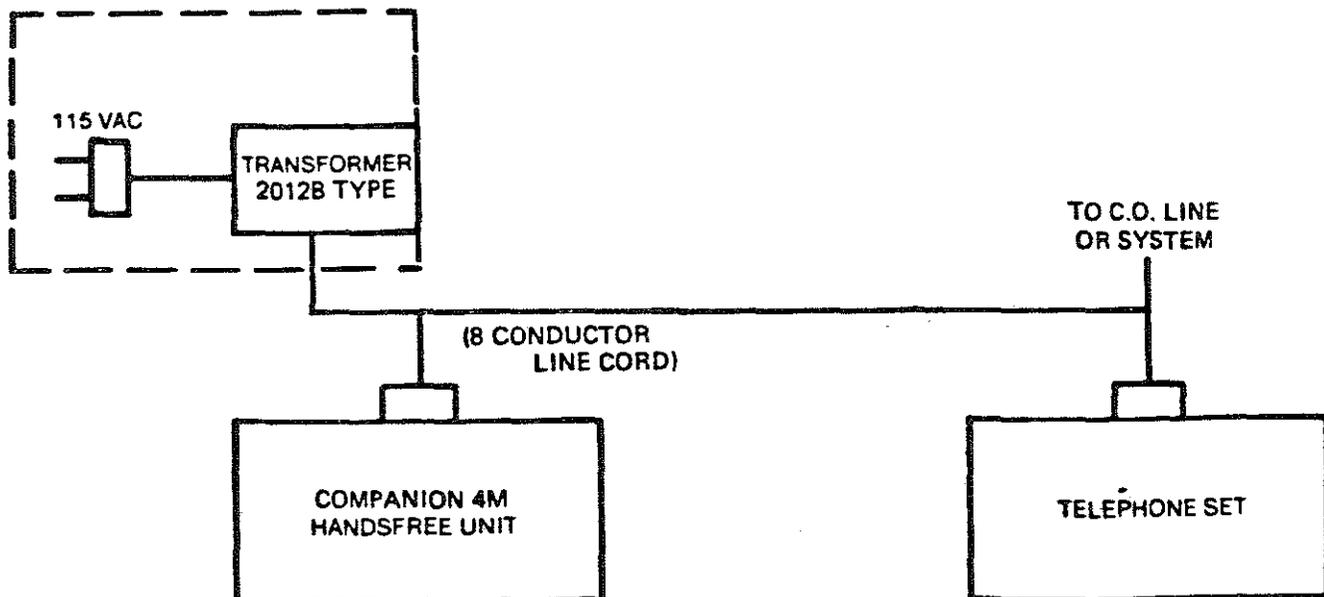


Fig. 1 - NT1L07AA Handsfree Unit - Connections

**CHART 1**  
**NT1L07AA OPERATION TESTS**

This procedure tests all the operating features of a NT1L07AA installation. If a test cannot be completed satisfactorily, refer to the fault location guide (Chart 2).

STEP	PROCEDURE	INDICATION
1	Depress ON button momentarily.	Indicator LED lights. Dial tone is heard.
2	Dial test center number from handsfree unit dial pad.	Ring back heard, test center answers.
3	Operate volume control for increase ( ↑ ) and decrease ( ↓ ).	Volume of test center audio signal increases or decreases.
4	Press MUTE button. Pause and press MUTE button again.	Test center should not hear transmission while the LED flashes. Transmission should return to normal when the LED returns to a steady state.
5	Lift handset.	LED indicator OFF. Test center voice is heard in handset (speech is transferred from unit speaker to handset).
6	Replace handset, pause 3 sec. and lift handset again.	Dial tone heard.
7	Dial test center number from telephone.	Test center answers.
8	Depress ON button and replace handset.	Indicator LED lights and test center audio signal is heard on loudspeaker.
9	Depress OFF button.	LED indicator OFF. Test center audio signal no longer heard.

**TABLE A**  
**NT1L06AA HANDSFREE UNIT**  
**IDENTIFICATION OF PARTS**  
(REFER TO FIG. 2)

ITEM	IDENTIFICATION	DESCRIPTION	QTY.
1	A0328721	NT1L0701 Handsfree Assembly**	1
2	C0056338	NE2012B-03 Power Supply	1
5	P0673720	User's Guide	1
6	C0053976	NE-D8QT-87* Modular Cord, (8-conductor, 7 ft)	1
8	P0673721	Installation Guide	1
* Silver satin.			
** Fig. 3 and Table B.			

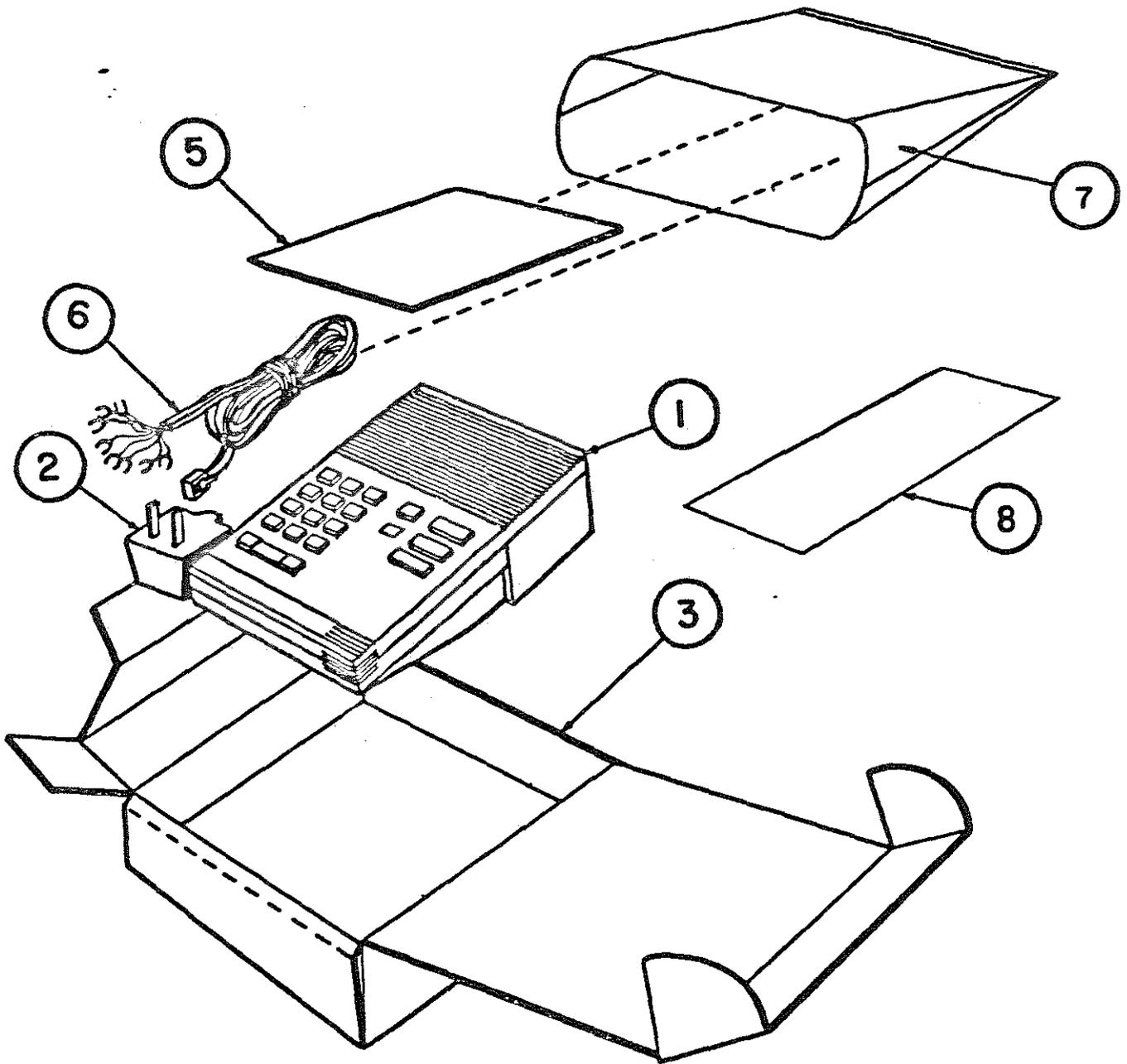


Fig. 2 - Identification of Parts

**CHART 2  
FAULT LOCATION GUIDE**

FAULT SYMPTOMS	POSSIBLE CAUSE(S)	CORRECTIVE MEASURE
No dial tone.	Volume control turned down. Improper connections. Defective transformer. Associated telephone handset is not in cradle. Defective COMPANION line cord. Defective set.	Press volume 'up' key. Check connections. Replace power supply. Place handset in cradle. Replace COMPANION line cord. Replace set. Check for DIGITONE service.
Cannot break dial tone.	Not a touch tone line interface. Defective COMPANION.	Replace COMPANION.
Cannot hear calling/called party.	Defective transformer. Defective COMPANION line cord. Defective set.	Replace power supply. Replace COMPANION line cord. Replace set.
Cannot be heard by calling/called party.	'Mute' is engaged; light is flashing. Defective set.	Press 'Mute' button; light is steady. Replace set.
Cannot stop incoming ringing.	Defective COMPANION line cord. Defective transformer. Defective set.	Replace COMPANION line cord. Replace power supply. Replace set.
Volume control does not work.	Defective set.	Replace set.
Indicator lamp does not light.	Defective COMPANION line cord. Defective transformer. Defective COMPANION.	Replace COMPANION line cord. Replace power supply. Replace COMPANION.
'Mute' key does not operate (i.e., light does not flash, or called/calling party still hears conversation).	Defective COMPANION.	Replace COMPANION.
Transfer from handsfree-to-telephone set operation (and vice-versa) does not function.	Improper connections. Defective line cord(s). Defective transformer. Defective COMPANION.	Check connections. Replace line cord(s). Replace power supply. Replace COMPANION.

**Note:** When checking connections, unplug and re-insert all modular plug-jack combinations (including wall-mounted transformer) to ensure proper seating.

\*Ensure line pick-up key remains in place, i.e. down on 1A-2 type multiline sets.

**TABLE B**  
**NT1L0601 HANDSFREE ASSEMBLY**  
**IDENTIFICATION OF PARTS**

ITEM	IDENTIFICATION	DESCRIPTION	QTY.	NOTES
1	P0601001	Captive Screw M3.5 x 1.27-16	5	
2	P096D326	Foot	4	
3	P0653935	Base	1	
4	P0661035	Cover	1	
5	P0643988	Release Key	1	
6	P0652736	Mute Key	1	
7	P0652737	On Key	1	
8	P0652729	LED Lens	1	
9	P0643987	Volume Key	1	
10	P0643984	'0' Key	1	
11	P0643975	'1' Key	1	
12	P0643976	'2' Key	1	
13	P0643977	'3' Key	1	
14	P0643978	'4' Key	1	
15	P0643979	'5' Key	1	
16	P0643980	'6' Key	1	
17	P0643981	'7' Key	1	
18	P0643982	'8' Key	1	
19	P0643983	'9' Key	1	
20	P0643985	'*' Key	1	
21	P0643986	'#' Key	1	
22	A0320832	NPS-25176-14 Elastomer	1	
23	P0600951	8mm Screw	5	
24	A0327515	NT1L0602 Combination Board Assembly	1	
25	P0652734	Speaker Cover Microphone Assembly	1	
26	A0315920	(NT1F0605)	1	
27	P0652726	F00300H02 Microphone Retainer	1	
28	P0652757	Seal	1	
29	A0315921	Speaker Assembly (NT1F0606)	1	
30	P0652732	Front Foam	1	
31	P0652733	Back Foam	1	
32	P0652796	Link Key		
34	P0665356	Foam Spacer	1	
35	P0665357	Foam Collar	1	
36	P0657705	FCC Label	1	
38		Hot Melt		
39	P0679022	Label		

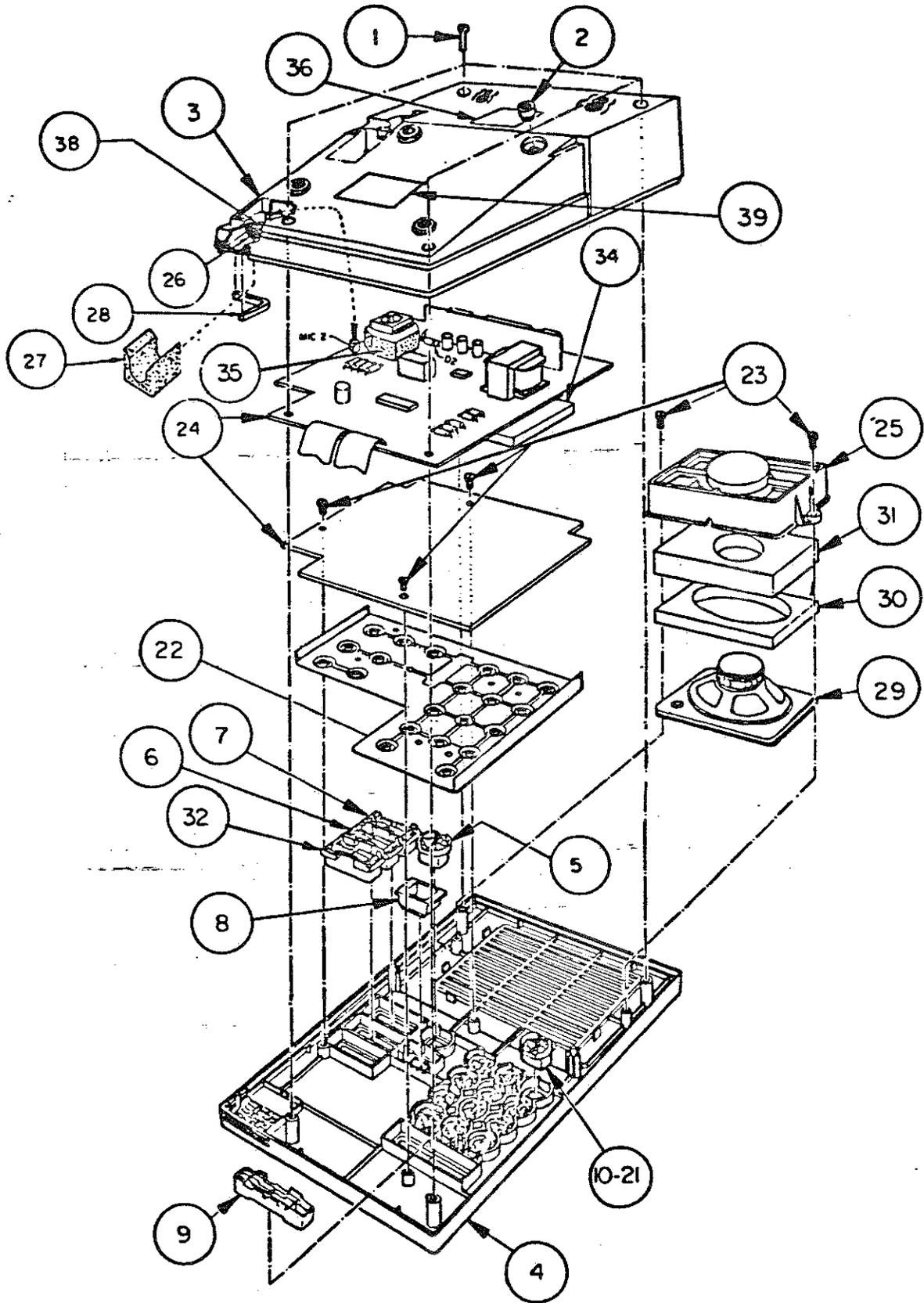


Fig. 3 - NT1L0701 Handsfree Assembly - Assembly of Parts



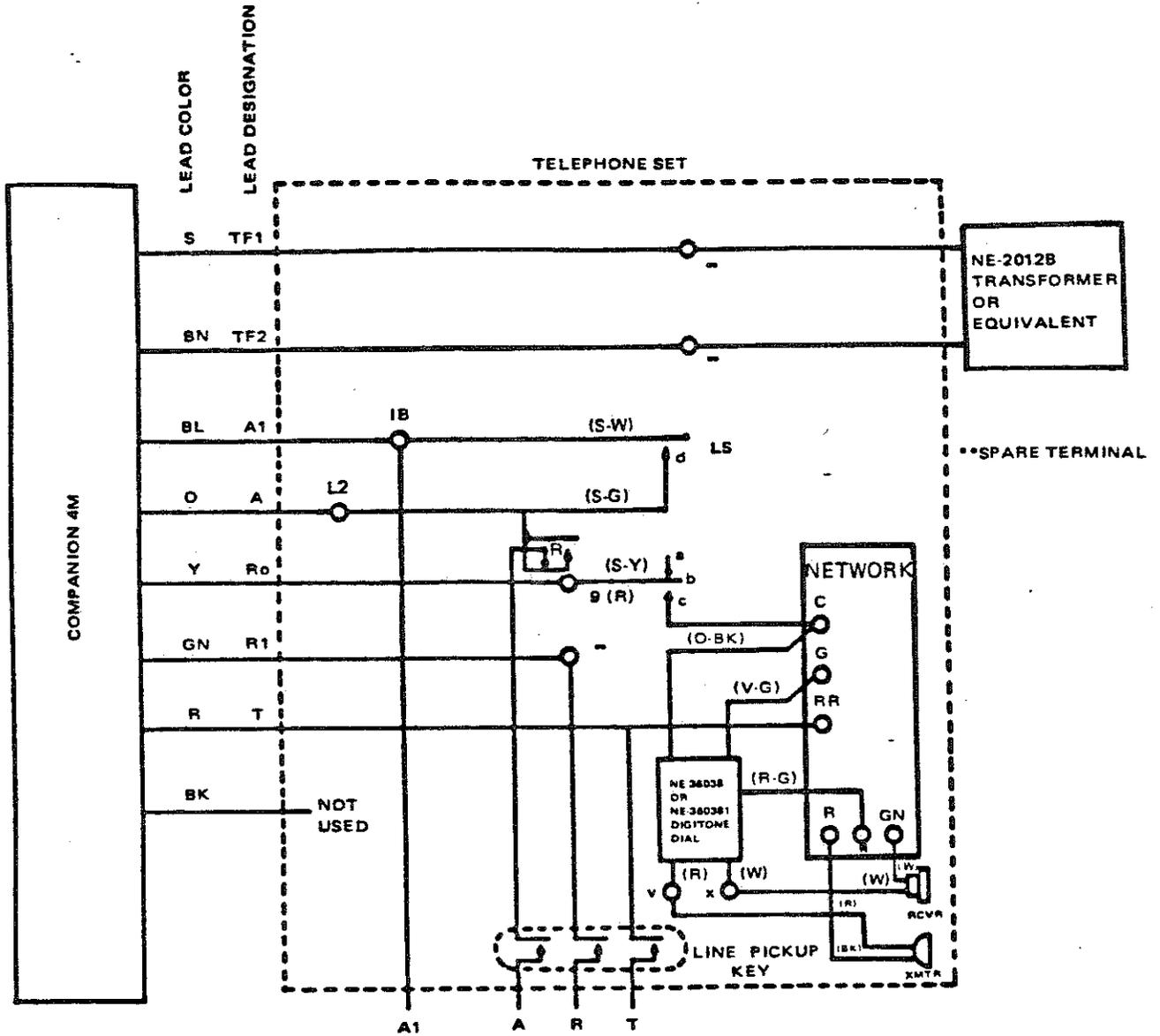


Fig. 5 – Connection to a traditional Multiline Set