

MODEL 184059

10/20 CALL ANNOUNCE PCB

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1. INTRODUCTION

1.01 This section covers the Model 184059 10/20 call announce PCB (Printed Circuit Board). (See Figure 1.) A general description as well as information on removal, disassembly, replacement parts, and installation is included.

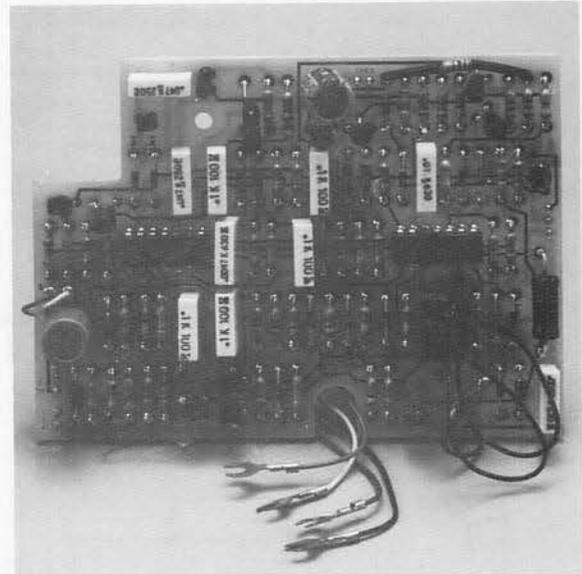
1.02 Whenever this section is reissued, reason for reissue will be listed in this paragraph.

1.03 For information concerning telephones that the 10/20 call announce PCB is used in, refer to the appropriate section in Volume 1 of the ITT Telephone Apparatus Practices Manual.

2. GENERAL DESCRIPTION

2.01 The Model 184059 PCB is a call announce circuit for use in ITT multibutton telephones equipped with a built-in call announcer. (See Figure 2.) The circuit and associated call announcer components provide handsfree intercom operation for tone and voice signaling, call announcing, and handsfree answerback.

2.02 The call announcer circuit is activated by an incoming intercom call. The circuit applies a signal to the LED indicator on the telephone, a one-second confirmation tone to the calling station, and a one-second alerting tone to the called station.



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Figure 1: Model 184059 10/20 Call Announce PCB

2.03 The circuit is switched to the receive mode for the call announce message. At the end of the message the circuit switches to the transmit mode for handsfree answerback operation through the call announcer. The transmit mode can be deactivated by placing the PRIVATE/NORMAL switch in the PRIVATE position. This will prevent the calling party from overhearing conversation near the called station.

2.04 The circuit is connected to a volume control on the telephone that can be adjusted for the desired listening level of the call announcer.

2.05 The circuit is released when the station user goes off-hook during normal handset operation.

2.06 The 10/20 call announce PCB is a printed circuit assembly. (See Figure 3.) It is designed for field replacement; it is mounted on brackets inside the telephone. The PCB is connected to the telephone circuit using spade-tip connectors.

2.07 The 10/20 call announce PCB is identified by a code number etched on the PCB. Refer to ordering information in Table A for an explanation of the code number.

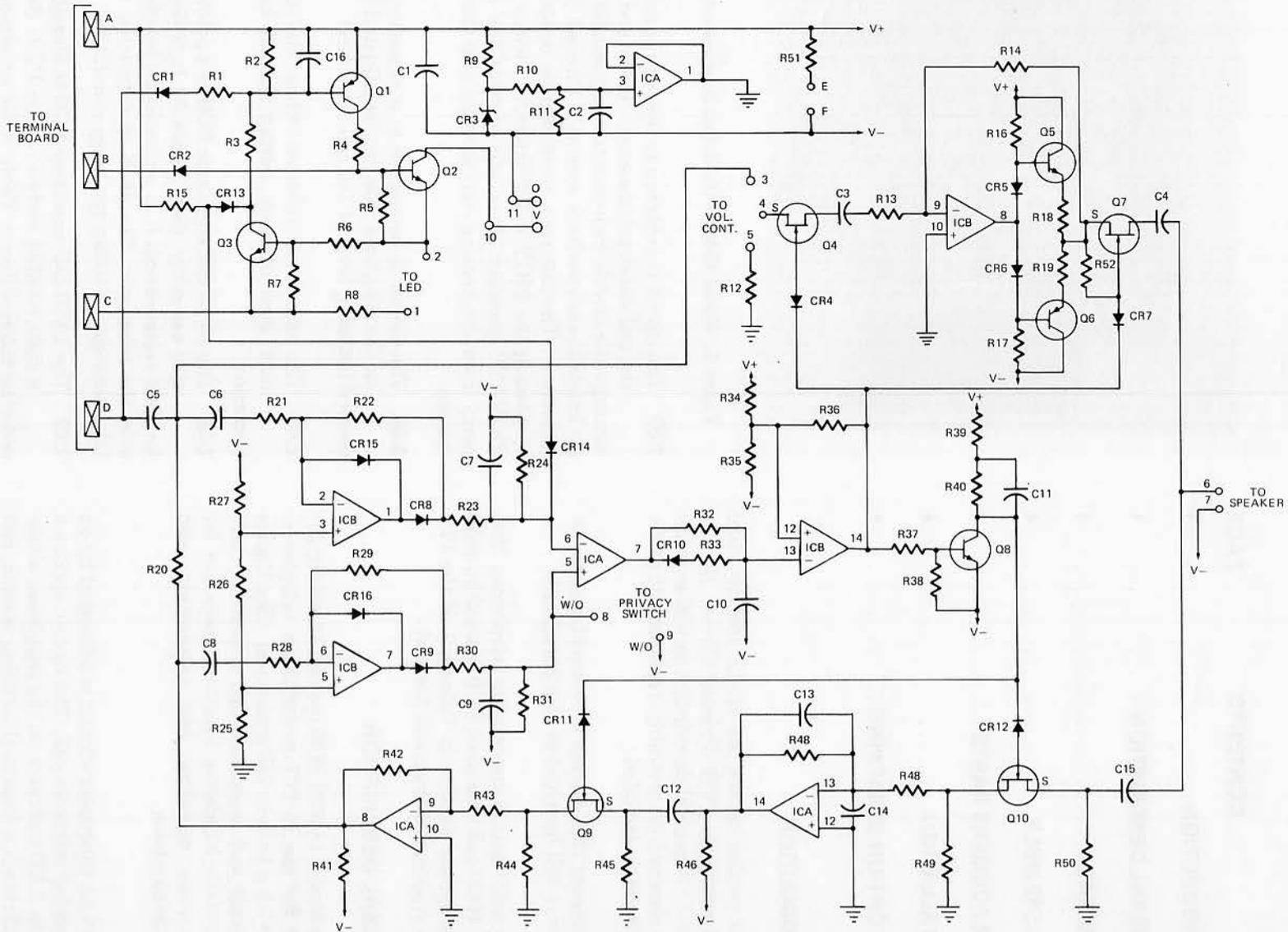
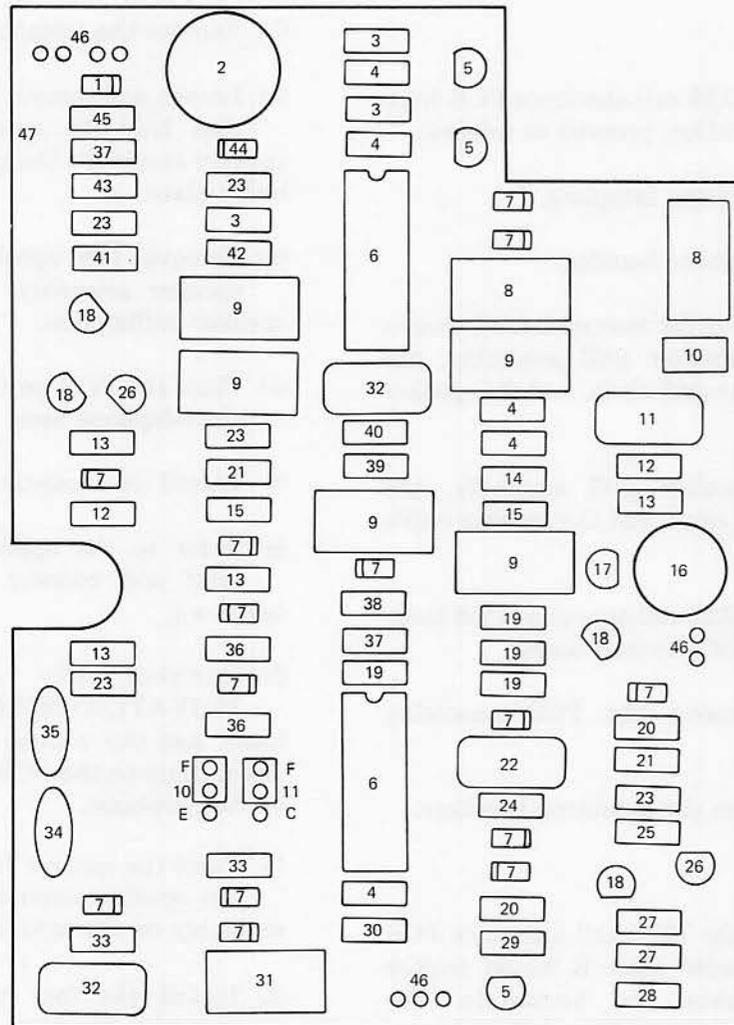


Figure 2: Model 184059 10/20 Call Announce PCB, Schematic



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Figure 3: Model 184059 10/20 Call Announce PCB, Component Location

TABLE A
ORDERING INFORMATION

CODE NUMBERS			
PCB CODE NUMBERS ARE FORMED IN TWO STEPS AS FOLLOWS:			
		184059	101
(1) PCB Model Number	_____		
(See Part 1)			
(2) PCB Style	_____		
(See Part 2)			
PART 1 PCB MODEL NUMBER		PART 2 PCB STYLE	
CODE	DESCRIPTION	CODE	DESCRIPTION
184059	Model 184059 10/20 Call Announce PCB For Telephones Equipped With Built-In Call Announcer	101	Standard Operation

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3. REMOVAL

3.01 To remove the 10/20 call announce PCB from its mounting location, proceed as follows:

- (a) Remove the telephone faceplate.
- (b) Remove the telephone housing.
- (c) Loosen and remove the four mounting screws that hold the speaker grill assembly, the speaker assembly, the grill cloth, and the speaker baffle plate.
- (d) Remove the speaker grill assembly, the speaker, the grill cloth, and the speaker baffle plate.
- (e) Disconnect the 10/20 call announce PCB leads from the telephone terminal board.
- (f) Loosen and remove the PCB mounting screws.
- (g) Lift the PCB from the mounting brackets.

4. DISASSEMBLY

4.01 Disassembly of the 10/20 call announce PCB is not recommended since it would require removal of components and terminals. For maintenance purposes, it is suggested that a questionable unit be substituted with a known good unit.

5. REPLACEMENT PARTS

5.01 Replacement parts for the 10/20 call announce PCB are listed in Table B.

6. INSTALLATION

6.01 To install the 10/20 call announce PCB inside a telephone, proceed as follows:

- (a) Remove the telephone faceplate.

- (b) Remove the telephone housing.
- (c) Loosen and remove the four mounting screws that hold the speaker grill assembly, the speaker assembly, the grill cloth, and the speaker baffle plate.
- (d) Remove the speaker grill assembly, the speaker assembly, the grill cloth, and the speaker baffle plate.
- (e) Place the PCB on the mounting brackets on the telephone base.
- (f) Install the mounting screws.
- (g) Refer to the appropriate telephone circuit label and connect the PCB leads to the telephone.
- (h) Connect the speaker leads, the PRIVATE/NORMAL switch leads, the LED leads, and the volume control leads to the terminal posts on the PCB. Refer to the circuit label of the telephone.
- (j) Place the speaker baffle plate, the grill cloth, the speaker assembly, and the speaker grill assembly on the mounting brackets.
- (k) Install the four mounting screws in the mounting brackets.
- (m) Replace the telephone housing.
- (n) Replace the telephone faceplate.

7. PCB OPTION STRAPPING

7.01 The 10/20 call announce PCB provides option strapping pins for the selection of normal call announce operation or all call announce operation. Strap F to 11 and F to 10 for normal call announce operation, or C to 11 and E to 10 for all call announce operation. Refer to Figure 2 for option strapping pin locations showing factory strapping.

TABLE B
REPLACEMENT PARTS LIST

INDEX NO	PART NUMBER	DESCRIPTION	QUANTITY USED
		Model 184059 10/20 Call Announce PCB	101
1	180658-101	Diode, 1N4004, CR2	1
2	181819-105	Capacitor, 100 MFD, 50 V, C1	1
3	181789-158	Resistor, 100 K, R10, R45, R50	3
4	181789-144	Resistor, 6.8 K, R25, R43, R44, R48, R49	5
5	181469-101	Transistor, FET, 2N4302, Q4, Q9, Q10	3
6	182705-101	IC, LM324, ICA, ICB	2
7	180656-102	Diode, 1N4148, CR1, CR4-CR16	14
8	182075-103	Capacitor, 0.047 MFD, 100 V, C12, C15	2
9	182075-106	Capacitor, 0.1 MFD, 100 V, C2, C7, C9, C10, C11	5
10	181665-104	Capacitor, 100 PFD, C13	1
11	181665-105	Capacitor, 510 PFD, C14	1
12	181789-164	Resistor, 330 K, R15, R47	2
13	181789-146	Resistor, 10 K, R2, R3, R23, R46	4
14	181789-163	Resistor, 270 K, R42	1
15	181789-140	Resistor, 3.3 K, R27, R41	2
16	181819-103	Capacitor, 47 MFD, 25 V, C4	1
17	182420-101	Transistor, FET, E 109, Q7	1
18	180146-101	Transistor, NPN, 2N4141, Q2, Q3, Q5, Q8	4
19	181789-155	Resistor, 56 K, R34, R35, R36, R37	4
20	181789-141	Resistor, 3.9 K, R16, R38	2
21	181789-169	Resistor, 1 M, R31, R40	2
22	182075-101	Capacitor, 0.01 MFD, 100 V, C3	1
23	181789-143	Resistor, 5.6 K, R1, R7, R9, R30, R33	5
24	181789-153	Resistor, 39 K, R13	1
25	181789-138	Resistor, 2.2 K, R17	1
26	180279-101	Transistor, PNP, 2N4143, Q1, Q6	2
27	181789-111	Resistor, 15 Ohm, R18, R19	2
28	181789-166	Resistor, 470 K, R14	1
29	181789-136	Resistor, 1.5 K, R12	1
30	181789-125	Resistor, 220 Ohm, R26	1
31	181789-344	Resistor, 1 K, 1 W, $\pm 5\%$, R51	1
32	182075-109	Capacitor, 0.0047 MFD, 100 V, C6, C8	2
33	181789-154	Resistor, 47 K, R21, R28	2
34	182130-107	Capacitor, 1.0 MFD, 35 V, C5	1
35	182130-112	Capacitor, 6.8 MFD, 35 V, C16	1
36	181789-167	Resistor, 560 K, R22, R29	2
37	181789-147	Resistor, 12 K, R6, R39	2
38	181789-195	Resistor, 3.3 M, R32	1
39	181789-179	Resistor, 820 K, R24	1
40	181789-135	Resistor, 1.2 K, R20	1
41	181789-142	Resistor, 4.7 K, R4	1
42	181789-168	Resistor, 680 K, R11	1
43	181789-118	Resistor, 56 Ohm, R8	1
44	183611-138	Diode, Zener, 1N4743A, 13 V, CR3	1
45	181789-129	Resistor, 470 Ohm, R5	1
46	183097-101	Square Terminal	15
	183299-101	Shorting Connector (Not Shown)	2
47	184058-101	PC Board, Drilled	1

NOTES:

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1. All resistors are 1/4 W, $\pm 5\%$ unless otherwise specified.
2. All capacitor values are in microfarads (MFD) or picofarads (PFD).