SD-69567

SHEET INDEX

CONTENTS	SHEET NO.	ISSUE NO. 9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
SHEET INDEX SUPPORTING INFORMATION	A1	9	10	11	12	13	14	15	16																	
LEAD INDEX OPTION INDEX	A2	9	10	11	12	13	14	15	16																	
FS 1 SELECTOR CKT (10 CODES) (407B KTU) (MFR DISC.)	B1	9	9	9	9	9	14	14	14																	
	B2	9	9	9	9	9	14	14	14																	
FS 2 SELECTOR CKT (19 CODES) (424A KTU) (MFR DISC.)	B3	9	9	9	9	9	14	14	14																	
	B4	9	9	9	12	12	14	14	14																	
FS 3 FLASHING LAMP CKT (19 CODES) (425A KTU) (MD)	B5	6	6	6	6	6	6	6	6																	
FS 4 DIAL TONE, STATION BUSY TONE, AUDIBLE RINGBACK CKT (423A KTU)	B6	9	9	9	12	12	14	14	14																	
FS 5 LONG LINE CKT (420A KTU)	B7	9	9	9	9	9	14	14	14																	
FS 6 STATION BUSY SELECTION CKT (422A KTU) (MD)	B8	5	5	5	5	5	5	5	5																	
FS 7 STATION BUSY SELECTION CKT (422B KTU)	B9	9	9	9	9	9	14	14	14																	
FS 8 FLASHING LAMP CKT (19 CODES) (425B KTU)	B10	9	9	9	9	9	14	14	14																	
FS 9 DIAL TONE, STATION BUSY TONE, AUDIBLE RINGBACK CKT (423B KTU)(MD) OR (476A KTU)	B11	9	9	9	12	12	14	15	15																	
FS 10 SELECTOR CKT (19 CODES) (424B KTU) (MFR DISC.)	B12	9	10	11	12	13	14	13	14																	
	B13	9	10	11	12	13	14	14	14																	
FS 11 SELECTOR EXTENDER CKT (443A KTU)	B14					13	14	14	14																	
FS 12 SELECTOR CKT (19 CODES) (424C KTU)	B15						14	14	14																	
	B16						14	14	14																	
FS 13 SELECTOR CKT (10 CODES) (407C KTU)	B17						14	14	14																	
	B18						14	14	14																	
FS 14 T-T SELECTOR CKT (494A KTU)	B19							15	15																	
FS 15 ROTARY AND TOUCH-TONE SELECTOR CKT (P/O 494B KTU) FS 16 FLASHING LAMP AND TONES CKT (P/O 494B KTU, 491A KTU)	B20								16																	
APP FIG. 1 (407B KTU) (MD)	C1	8	8	8	8	8	14	14	14																	
APP FIG. 2 (424A KTU) (MD)	C2	8	8	8	8	8	14	14	14																	
APP FIG. 3 (425A KTU) (MD)	C3	9	9	9	9	9	9	9	9																	
APP FIG. 4 (423A KTU)	C4	9	9	9	12	12	12	12	12																	
APP FIG. 5 (420A KTU)	C5	3	3	3	3	3	3	3	3																	
APP FIG. 6 (422A KTU) (MD) APP FIG. 7 (422B KTU)	C6	9	9	9	9	9	9	9	9																	
APP FIG. 8 (425B KTU) APP FIG. 9 (423B KTU) (MD) OR (476A KTU)	C7	9	9	9	12	12	12	12	12																	
APP FIG. 10 (424B KTU) (MD)	C8	9	10	11	12	13	14	14	14																	
APP FIG. 11 (444A)	C9					13	13	13	13																	
APP FIG. 12 (424C) APP FIG. 13 (407C) APP FIG. 14 (494A KTU)	C10						14	15	16																	
APP FIG. 15 (494B KTU) APP FIG. 16 (491A KTU)																										

CONTENTS	SHEET NO.	ISSUE NO. 9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
CIRCUIT NOTES	D1	9	10	11	12	13	14	15	16																	
INFORMATION NOTES	D2	9	9	9	9	9	9	9	9																	
	D3	9	9	9	12	12	14	14	14																	
SHEET CANCELLED ON ISSUE 9B	F1																									
	F2																									
SHEET CANCELLED ON ISSUE 9B	H1																									

DWG ISS	CD ISS	DWG ISS	CD ISS	DWG ISS	CD ISS
1	1	2A	2A	3A	2A APP 1A
4A	7A APP 2A	5B	2A APP 4B	6D	3D
7A	3D APP 1A	8B	3D APP 2B		

DWG ISSUE	CD ISSUE	DATE ISSUED	DRAWN	APPD	
9B	4B	6-3-75	CDI OL	SGM OFG JS	HQ
10A1 (C)	4B APP 1A1(C)	6-3-75	CDI OL	SGM OFG JS	HQ
11A1 (C)	4B APP 2A1(C)	6-4-75	CDI OL	SGM OFG JS	HQ
12A1 (C)	4B APP 3A1(C)	6-5-75	CDI OL	SGM OFG JS	HQ
13B1 (C)	4B APP 4B1(C)	6-5-75	CDI OL	SGM OFG JS	HQ
14B1	5B1	3-8-76	ZEM OL	SGM OFG JS	HQ
15B1	5B1 APP 1B1	1-28-76	GDE CMD	JS	HQ
16B1	5B1 APPX 2B1	7-1-81	AOC OL	GCB JAM JS	HQ

1A2 KTS
INTERCOM CIRCUITS
AS USED IN 640-SERIES
PANELS.

SHEET INDEX NOTES

1. WHEN CHANGES ARE MADE IN THIS DRAWING, ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. THIS SHEET INDEX WILL BE REISSUED AND BROUGHT UP TO DATE EACH TIME ANY SHEET OF THE DRAWING IS REISSUED, OR A NEW SHEET IS ADDED.
3. THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE SHEET INDEX.
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
5. THE LAST ISSUE NUMBER OF THE SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.

SUPPORTING INFORMATION

CATEGORY	NO.
444A KTU	SD-69653-01
494B KTU	APS-837440
491A KTU	APS-837500
120A CM	APS-837467

ISSUE 16B1

SD-69567-01 1K03

STATION SYSTEMS

KEY TELEPHONE SYSTEM NO. 1A2
DIAL SELECTIVE INTERCOMMUNICATING
LINE CIRCUIT

(2)

AT&TCO STANDARD

SD-69567-01-A1
35 SHEETS

BELL TELEPHONE LABORATORIES INCORPORATED

6S

HANDBOOK

SD-69567-01-A1

LEAD INDEX

DESIG	LOCATION FS	LOCATION CAD
ASSOCIATED TEL SET BL LEAD		
BL0-9	8C0 9C0	

DIRECT STATION SELECT CKT		
BL (NC)	20F3	
CG	20F3	
Y1-Y5	20F3	

POWER SUPPLY		
RG	7C0	

SIGNAL INTERRUPTER		
AT1	6B0,11B1	
BT1	11C1	
LF	1D6,4D6,11B1	
MG	5G4,17D6,16D6 20C9	
RN	2H0,4H1,6B0, 11B1,13H0, 18H0,16H0	
ST	5G9 20C9	

TEL SET		
R	7B0,20B0	
T	7B0,20B0	

TOUCH-TONE ADAPTER CKT		
CG	2F0,4F0,13F0, 16F0,18F0	
LK	11E7	
R	2B0,4B0,13B0, 16B0,18B0	
RH	2F0,4F0,13F0, 16F0,18F0	
RS1	2F0,4F0,13F0, 16FC,18F0	
T	2C0,4C0,11F1, 13C0,16C0, 18C0	
TTG	2G0,4G0,13G0, 16G0,18G0	
Y1	1A0,3A0,12A0, 15A0,17A0	
Y2	1B0,3B0,12B0, 15B0,17B0	
Y3	1C0,3C0,12C0, 15C0,17C0	
Y4	1C0,3C0,12C0, 15C0,17C0	
Y5	1D0,3D0,12D0, 15D0,17D0	

DESIG	LOCATION FS	LOCATION CAD
TYPICAL KEY TEL SET (STATION LAMPS)		
L	1B9,17B9,19D6	
L0-8	5C9,10B9,20B9	
L9	5A9,10A9,20B9	
LX0-X9	5C9,10C9,20B9	
MG	20B9	
R	2A0,4A0,13A0, 16A0,18A0	
R0-6	2C0,4C0,13C7, 16C0,18C0,20B3	
R7	2A7,4A7,13A8, 16A7,18A7,20B3	
R8,R9	2C0,4C0,16C0, 18C0,20B3	
RX0-X9	4C0,13C7,16C0, 20B3	
T	2B0,4B0,13B0, 16B0,18B0	

TYPICAL KEY TEL SET TENS GROUP OF SETS		
L	3B9,12A9,15B9	

TYPICAL KEY TEL SET UNITS GROUP OF SETS		
L	3A9,12B9,15A9	

OPTION INDEX

APP OR WRG	LOCATION
Z	1D6,2F1,3E6,3F6,3G6, 12F6,12G6,12D6,15F6, 17E6
X	2H0,2H7,4H0,4H7,5H1, 6B2,6C3,10H1,13G7, 13H0,18G7,18H0,16G7, 16H0
W	1A7,1B9,3A7,3A9,3B9, 12A9,12B9,12A7,15A9, 15B9,15A7,17A9,17B9, 17A7
V	3A7,3A9,3B8,5A1,5C1, 5D1,10D1,12A9,12B8, 12B7,15A9,15B8
T	6B2,6C2
S	6A0
R	2H1,2H7,4H1,4H7,6C2, 7G2,7G4,10H1,13G7, 16H1,16H7,17H1,17H7
Q	7A2
N	1D6,2F1,3D6,3F6,3G6, 12F6,12G6,12D6,15F6, 17E6
M	2H1,4H1,7F2,7G2,7H2, 13H0,18H1,16H1
K	2H0,4H0,7G2,7H2,13H0, 18H0,16H0
J	2H0,4H0,7G2,7H2,13H0, 18H0,16H0
H	1A7,1B8,5A1,5C1,10A1, 10C1,17A7,17B8
G	2H0,4H0,5D1,13H0, 16H0,18H0,19D1;20C0
E	2H0,4H0,5D1,5F4, 13H0,16H0,18H0,19D1, 20C0, 20D4
ZA	2F4
ZB	2E4,4E4,9E1
ZC	2D4,4D4,9E1
ZD	11B4
ZE	11B4
ZF	11B4
ZG	13E4,13F3
ZJ	12F4,13D4,13E3,13E4, 13F4
ZK	12F3,13D5
ZM	12F2
ZN	12F2
ZP	13F3
ZS	APP FIG. 15
ZT	20G1

DRAWING ISSUE	
1	ALD ALV
2A	ALD ALD ALV
3A	
5B	
6D	
8B	

ISSUE 16B1

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (1)

SD-69567-01-A2

BELL TELEPHONE LABORATORIES INCORPORATED

SPEC SIZE 3S

PRINTED IN U.S.A.

SD-69567-01-A2

PART OF FS1 (MFR DISC)

SELECTOR CKT (10 CODES)

TOUCH-TONE ADAPTER CKT SD-69539-01 OR SD-69906-01

P/O 426A & 427C OR 440A KTU

PART OF 407B KTU

L- & H-

Y1 Y2 Y3 Y4 Y5

B25 B24 B22 A36 A37

Y6 LR

A10 B31 L, L'

B30 B20 B1 B7 B21 B35 B28 B27

LF TO SIGNAL INTERRUPTER

CG CG 2F1

B-24

B3 B18 A15 B17 B4

LAMP REL CONTACT NETWORK

LA FC1 FC2 FC3

Y14

LT1 OR LT2

TO OTHER LT1 OR LT2 CONTACTS

P/O 425B KTU

10B4-10C8

TYPICAL KEY TEL SET

L LG

LR BR AL1 AL2

LT1 LT2

10E2

TB1

9E1

9F1-9H1

P/O 422B KTU

G

DRAWING ISSUE

1 ADD DLU DLU

2A ADD DLU DLU

6D

ISSUE 14B1

SELECTOR CKT (10 CODES) (407B KTU)

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

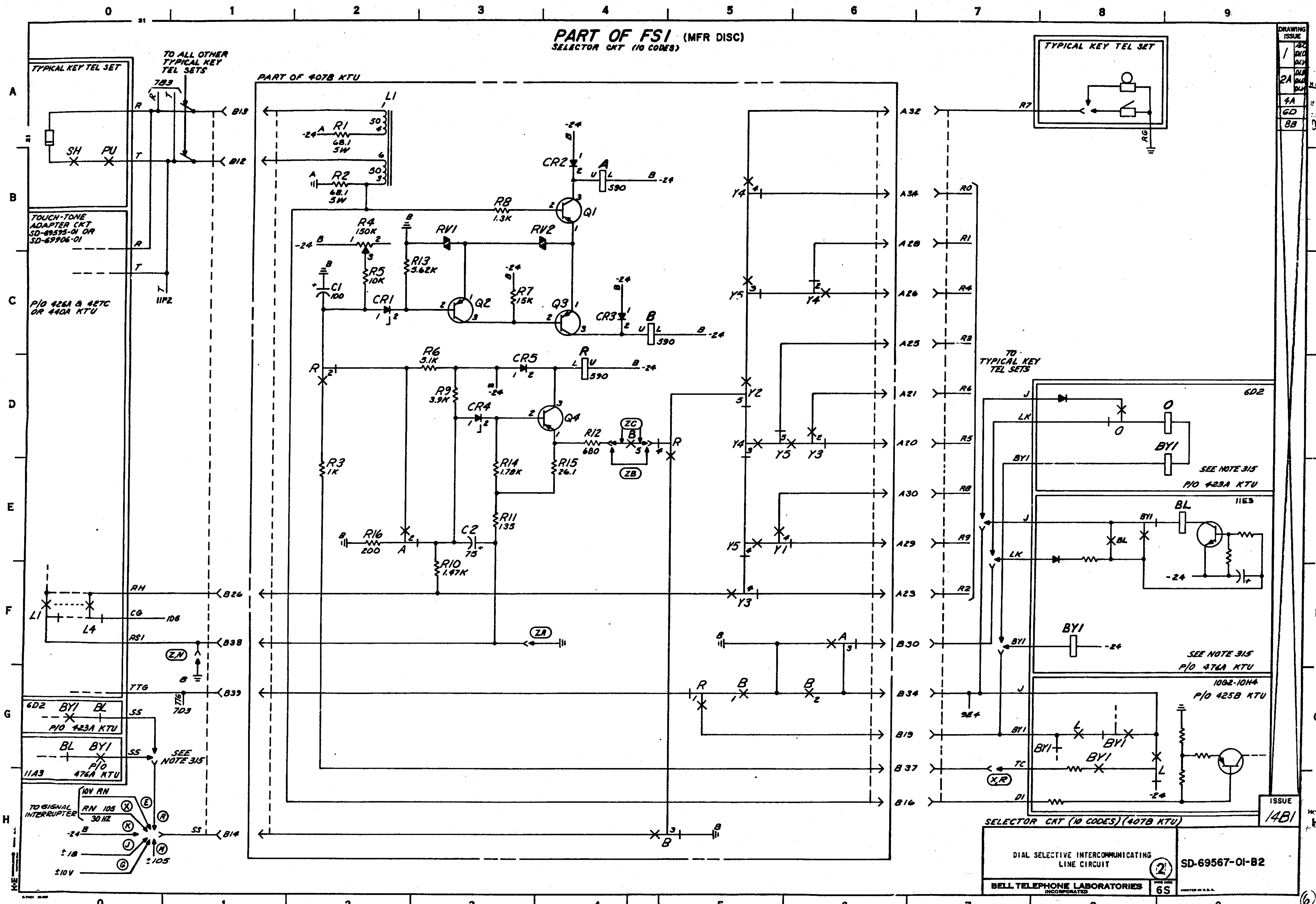
BELL TELEPHONE LABORATORIES INCORPORATED

SIZE CODE 6S

SD-69567-01-B1

SD-69567-01-B1

6



PART OF FS1 (MFR DISC)
SELECTOR CKT (10 CODES)
PART OF 407B KTU
TYPICAL KEY TEL SET
TO ALL OTHER TYPICAL KEY TEL SETS
TOUCH-TONE ADAPTER CKT SD-69595-01 OR SD-69906-01
P/O 426A & 427C OR 440A KTU
TO TYPICAL KEY TEL SETS
SEE NOTE 315
P/O 423A KTU
P/O 476A KTU
P/O 425B KTU
TO SIGNAL INTERRUPTER
SELECTOR CKT (10 CODES) (407B KTU)
DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT
SD-69567-01-B2
BELL TELEPHONE LABORATORIES INCORPORATED
ISSUE 14B1

PART OF FS 2 (MFR DISC)

SELECTOR CKT (19 CODES)

P/O 426A & 427C OR 440A KTU

TOUCH-TONE ADAPTER CKT SD-69595-01 OR SD-69906-01

L- & H-

PART OF 424A KTU

LAMP REL CONTACT NETWORK

LTI OR LT2

LT3 OR LT4

TO OTHER LTI-4 CONTACTS

10B4-10C8 P/O 425B KTU

LAMP REL CONTACT NETWORK

10E2 P/O 425B KTU

TYPICAL KEY TEL SET UNITS GROUP OF SETS

TYPICAL KEY TEL SET TENS GROUP OF SETS

LF TO SIGNAL INTERRUPTER

9F1-9H1 P/O 422B KTU

TO SELECTED R (0-9) LEAD FOR TRANSFER

9E1 P/O 422B KTU

9F4

DRAWING ISSUE	
1	SUM DLD DLH
2A	DLA DLC DLF DLH
3A	
6D	
7A	
8B	

ISSUE 1481

SELECTOR CKT (19 CODES) (424A KTU)

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (2)

SD-69567-01-B3

BELL TELEPHONE LABORATORIES INCORPORATED 6S

SD-69567-01-B3

PART OF FS2 (MFR DISC)

SELECTOR CKT (19 CODES)

PART OF 424A KTU

TYPICAL KEY TEL SET

TO ALL OTHER TYPICAL KEY TEL SETS

783

SH PU

TOUCH-TONE ADAPTER CKT SD-69595-01 OR SD-69906-01

P/O 426A & 427C OR 440A KTU

B13 B12 B26 B38 B39 B14

1 L1

R1 50 4 68.1 5W

R2 50 3 68.1 5W

-24

CR2 Q1 R8 1.3K

R4 150K 2 3

RV1 RV2

R13 3.62K

R5 10K

C1 100

CR1 Q2 R7 15K

Q3 CR3 590

R6 5.1K CR5 390

R9 3.9K CR4 Q4

R12 680 ZC B ZB

R14 1.78K R15 26.1

R3 1K

R11 135

R16 200 C2 75

R10 1.47K

3E3

TR1 Y4 TR Y5 Y2 Y3 Y1

A32 A33 A14 A34 A8 A28 A27 A26 A24 A25 A1 A21 A0 A20 A31 A30 A9 A29 A22 A23

RX7 RX0 R0 RX1 R1 RX4 R4 RX3 R3 RX6 R6 RX5 R5 RX8 R8 RX9 R9 RX2 R2

TO OTHER TYPICAL KEY TEL SETS OR 15D1

TYPICAL KEY TEL SET

R7 RG

6D2 BY1

P/O 423A KTU

SEE NOTE 315 11E3

P/O 476A KTU

BL

10G2-10H4

P/O 423B KTU

9D4

TC X,R D1

RH CG L1 L4 3D6

ESI 3F6

TTG 703

6D2 BY1 BL P/O 423A KTU SS

BL BY1 P/O 476A KTU 11A3 SS

SEE NOTE 315

TO SIGNAL INTERRUPTER

10V AN AN 105 30 HZ ±18 ±10V ±105

DRAWING ISSUE

1	AP DLH DLH
2A	DLH DLH DLH
4A	
60	
7A	
8B	

ISSUE 1481

SELECTOR CKT (19 CODES) (424A KTU)

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT 2 SD-69567-01-84

BELL TELEPHONE LABORATORIES INCORPORATED 6S

SD-69567-01-B4

FS 3 (MFR DISC)

FLASHING LAMP CKT (13 CODES)

425A KTU

184 OR 384

184-104 OR 384-304

3G2

102, 1E2-1E4, 2B2-2C3, 2G5 OR 302, 3E2-3E4, 4B2-4C3, 4G5

TYPICAL KEY TEL SET

DRAWING ISSUE

1	ARC DALD DLV
2A	DALD DALD DLV
3A	
6D	

TO OTHER TYPICAL KEY TEL SETS

CONN WHEN REQUIRED

TO SIGNAL INTERRUPTER

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (2)

SD-69567-01-B5

BELL TELEPHONE LABORATORIES INCORPORATED 6S

SD-69567-01-B5

(6)

FS 4

DIAL TONE, STATION BUSY TONE, AUDIBLE RINGBACK CKT

DRAWING ISSUE	
1	ADX DJD BKY
2A	BLJ DJD BLK
5B	
6D	H.O
8B	DR

423A KTU

ATI (S) 0
BTI (R) 19
RN (R) 11
TO SIGNAL INTERRUPTER

2HI, 4HI, 13HI, 16HI, 18HI P/O 407 OR 424 TYPE KTU
R — B — SS (R) 13

9E4, 9F4
B B J 16
10HI
LK 14
A
B
R
BYI 9
9H1
10HI
2F5-2G5, 4F5-4G5, 13F5-13G5, 16F5-16G5 OR 18F5-18G5 P/O 407 OR 424 TYPE KTU

Y5 BL 8
9A2 P/O 422B KTU

L1
A -24
A
2A1, 4A1, 13A1, 16A1, 18A1 P/O 407 OR 424 TYPE KTU

TO T-T ADAPTER CKT
T 12
783
B 15
-24 B 17
±18 1
±105 10

BL BYI 4 1
O 1 TB1
1 (T)
4 (R)
7 ±18
5 -24 B
BL BYI 4 1
6 (R)
8 ±105
2 (T)

O 4 O L U 915
BYI U L 590
BL U L 915

Q1 1 3 2
C1 .249
R1 6.2K
R2 68K
R3 30K BYI 2
R4 30K BL 2
R5 30K BL 3
R6 30K BYI 3
R7 68K
R8 6.2K
R9 7.5K
R10 6.8K
R11 150K 1 2 3
C2 .249
C3 .01
C4 .01
CR1 2 1
CR2 1 2
Q2 2 1 3
-24 B

B
B -24
±18
±105

SEE NOTE 309

ISSUE 14B1

DIAL TONE, STA BUSY, RINGBACK CKT (423A KTU)

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (1)

SD-69567-01-B6

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 3S

PRINTED IN U.S.A.

SD-69567-01-B6

0 1 2 3 4

@FS5
LONG LINE CKT

420A KTU

TO T-T ADAPTER CKT

TO TEL SET

TO POWER SUPPLY

T1 R1 68.1 5W C1 R2 777 5W TTG R3 620 Q1 P 915 CR1 CR2 RV1 R7 464 R8 3.9K Q3 TTG 590 C2 55 R9 3.6K RV2 R6 464 Q2 R10 4.7K CR5 CR3 CR6 CR4 R5 464 R4 4.22K TB1

L1

2A2,2B2 OR 4A2,4B2 OR 13A2,13B2, OR 15A2, 15B2 OR 18A2, 18B2 P/O 407 OR 424 TYPE KTU

265 OR 465 OR 1365 OR 1565 OR 1865 P/O 407 OR 424 TYPE KTU

SEE NOTE 308

R(0-X9) TO R0-RX9 ON FS1, FS2, FS10, FS12, OR FS13 AS REQD

LONG LINE CKT (420 KTU) SEE NOTE 308

DRAWING ISSUE 1 2A 3A 60

ISSUE 14B1

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (2)

SD-69567-01-B7

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 3S

SD-69567-01-B7

FS 6 (MFR DISC.)
STATION BUSY SELECTION CKT

DRAWING ISSUE	
1	ADC DLD DLV
2A	DLD DLD DLV
3A	
4A	
5B	

422A KTU

BL1 28 — BL2 23 — BL8 30 — BL9 29 — BLO 34 — BL3 25 — BL4 26 — BL5 20 — BL6 21 — BL7 32 — BR 9

TO ASSOC TEL SET BL LEAD SEE NOTE 307

Y1 8 — Y2 22 — Y3 24 — Y4 27 — Y5 0

B -24

182-1E2 OR 382-3E2

CR1 CR2 CR3 CR4 CR5 — 590

LT — L U 590

14 BL — BL B -24 — 6E2

1 J1 — TO J GRD OF FS1 WHEN 407B KTU IS PROVIDED OR TO J2 OF SWC FS6 WHEN ASSOC WITH UNITS GROUP OR TO J GRD OF FS3 WHEN ASSOC WITH TENS GROUP WHEN 424A KTU IS PROVIDED

35 LT1, LT2 — TO J GRD OF FS1 WHEN 407B KTU IS PROVIDED OR TO LT1 OF FS2 IF ASSOC WITH UNITS GROUP OR LT2 OF FS2 IF ASSOC WITH TENS GROUP WHEN 424A KTU IS PROVIDED

31 J3 — TO J GRD OF FS3 IF ASSOC WITH TENS GROUP WITH UNITS GROUP PROVIDED

33 J2 TO J1 OF PRECEDING FS6 IF PROVIDED

17 B -24

-24 B

5

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (2)

SD-69567-01-B8

BELL TELEPHONE LABORATORIES INCORPORATED — DWG SIZE 3S — PRINTED IN U.S.A.

SD-69567-01-B8

FS 7
STATION BUSY SELECTION CKT

DRAWING ISSUE
5B
6D
8B

422B KTU

BL9 29
BL8 30
BL0 34
BL7 32
BL4 26
BL5 20
BL6 21
BL3 25
BL1 28
BL2 23
J 16
BY1 19
9
8
6
3
4
1
5
2
TB1

TO ASSOC TEL SET BL LEAD SEE NOTE 307

CONN AS REQ'D FOR PICTUREPHONE

BR 10F1

ZB
ZC CR6 SEE NOTE 103

G U L B -24 590
CR5

LT U L 590 LT

Y1 Y2 Y4 Y5

CR1 CR2 CR3 CR4
915

BL B -24
6E2 P/O 423A KTU

CR5 BL Q6 -24
11D5 P/O 476A KTU

14
1 J1
35
31 J3
33 J2
17 B -24

TO J LEAD OF FS1 OR FS13 OR LT1 OF LT1, FS2 OR FS12 WHEN LT2 ASSOC WITH UNITS GROUP OR TO LT2 OF FS2 OR FS12 WHEN ASSOC WITH TENS GROUP

NC

Y1 8
Y2 22
Y4 27
Y5 0
Y4 10F1

BR
B -24

TO T-T ADAPTER CKT

P/O 407 OR 424 TYPE KTU
182, 382, 1282, 1582, 1782

ISSUE 14B1

STATION BUSY SELECTION CKT (422B KTU)

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (1)

SD-69567-01-B9

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 3S

PRINTED IN U.S.A.

SD-69567-01-89

FS 8
FLASHING LAMP CKT (19 CORES)

425B KTU

±10
184 OR 384 OR 1284 OR 1784 OR 1584
A
B
LA
P/O 407 OR 424 TYPE KTU

±10
LF
R
V3
V2
V1
FC3
FC2
FC1
184-104 OR 384-304 OR 1284-1204 OR 1784-1704 OR 1584-1504
P/O 407 OR 424 TYPE KTU

TO INTERCOM FOR PICTURE PHONE SERVICE CIRCUIT

B
TR1
TR
LT1
LT2
3G2

102, 1E2-1E4, 282-2C3, 2G5 OR 302, 3E2-3E4, 482-4C3, 4G5 OR 12D2, 12E2-12E4, 1382-13C3, 1365 OR 1702, 17E2-17E4, 1682-16C3, 1865 OR 1522, 15E2-15E4, 1682-16C3, 1685
P/O 407 OR 424 TYPE KTU
AL2
AL1
LR
BR
Y5
Y4
Y1
L1
D1
J
TC
BY1
LT3 CR6
LT4 CR5
LT2 CR4
LT1 CR3
Y14
BY1
R3 33K
CR2
R4 200
Q1
Q2
R6 2K
R1 1K
CR1
R8 160
R7 160
C1 200
R5 3.6K
R2 100

V14
LT2
LT1
LT4
LT3
LX5
LX8
LX2
LX7
LX4
LX6
LX3
LX0
LX9
LX1
LC5
LC4
LC2
LC3
LC6
LC1
ST
MG
A29
A21
A25
A34
A28
A32
A26
A30
A23
A20
40
A31
A22
A39
A27
A1
A24
A44
A9
A8
A37
A36
A84
A82
A39
A85
A5
A6
A15
A17

CONN WHEN REQUIRED
TO SIGNAC INTERRUPTER
TO OTHER TYPICAL KEY TEL SETS

TYPICAL KEY TEL SET
L6
L9

DRAWING ISSUE 6D

ISSUE 14B1

FLASHING LAMP CKT (19 CODES) (425B KTU)

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (2)

SD-69567-01-BIO

BELL TELEPHONE LABORATORIES INCORPORATED

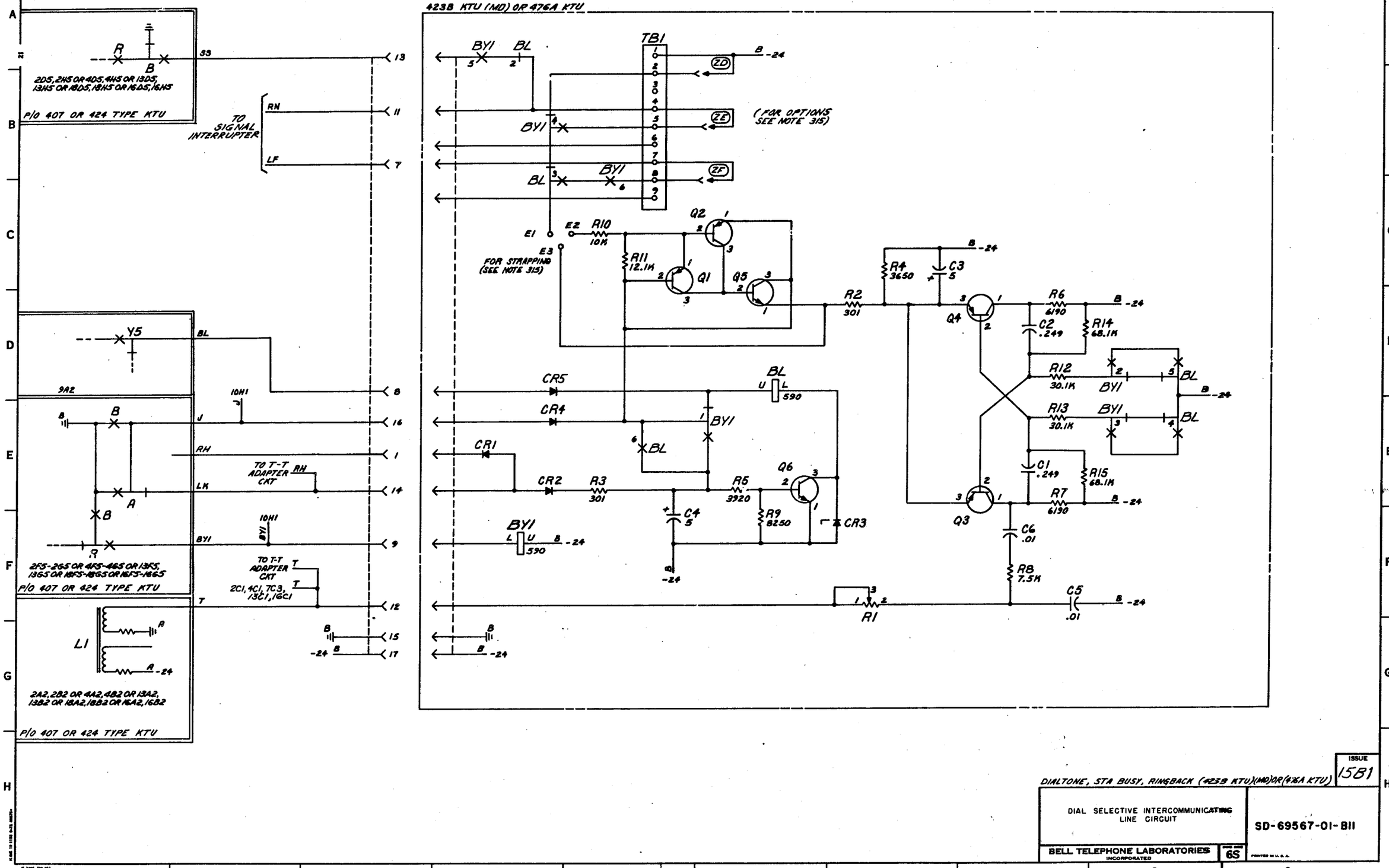
6S

SD-69567-01-BIO

(6)

FS 9

DIAL TONE, STATION BUSY TONE, AUDIBLE RINGBACK CKT



DIALTONE, STA BUSY, RINGBACK (423B KTU)(MD)OR(476A KTU)

ISSUE 1581

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

SD-69567-01-B11

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 6S

SD-69567-01-B11

PART OF FSIO (MFR DISC)

SELECTOR CKT (19 CODES)

TOUCH-TONE ADAPTER CKT SD-69595-01 OR SD-69906-01

P/O 426A & 427C OR 440A KTU

PART OF 424B KTU

L- & H-

LAMP REL CONTACT NETWORK

LT1 OR LT2

LT3 OR LT4

TO OTHER LT1-4 CONTACTS

1084-10C8 P/O 425B KTU

TYPICAL KEY TEL SET UNITS GROUP OF SETS

TYPICAL KEY TEL SET TENS GROUP OF SETS

LF TO SIGNAL INTERRUPTER

CB 13F1

9F1-9H1 P/O 422B KTU

TO SELECTED R(0-9) LEAD FOR TRANSFER

9F4

10E2 P/O 425B KTU

9E1 P/O 422B KTU

SELECTOR CKT (19 CODES) (424B KTU)

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69567-01-B12

ISSUE 14B1

SD-69567-01-B12

PART OF FSIO (MFR DISC)

SELECTOR CKT (19 CODES)

TYPICAL KEY TEL SET

TO ALL OTHER TYPICAL KEY TEL SETS

7B3

SH PU

B13 B12

TOUCH TONE ADAPTER CKT SD-69595-01 OR SD-69906-01

P/O 426A & 427C OR 440A KTU

PART OF 424B KTU

L1 R1 68.1 5W R2 68.1 5W

CR2 Q1 R8 1.5K

R4 105K RV1 RV2 R13 5.62K

C1 100 R5 10K CR1 Q2 R7 15K Q3 CR3

R6 5.1K CR5 R C3 CR4 Q4 R9 3.9K

R3 1K R14 1.78K R11 135 R15 26.1 CR7 R12 680

R16 200 C2 75 R10 1.47K 499 1K

12F4 12F6 703

TYPICAL KEY TEL SET

TO OTHER TYPICAL KEY TEL SETS OR 15D1

SEE NOTE 315 P/O 423A KTU

SEE NOTE 315 P/O 476A KTU

P/O 425B KTU

SELECTOR CKT (19 CODES) 424B KTU

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69567-01-B13

ISSUE 14B1

SD-69567-01-B13

⑨FS 11
SELECTOR EXTENDER

KTU 444A

TO 407 OR 424 TYPE KTU

RX0 A14 — TRY1 K2 — TRY K4 — B14 — RXX0 — RZ0 — RY0
B34
A34
RX1 A8 — TRY1 K2 — TRZ1 K4 — B8 — RXX1 — RZ1 — RY1
B28
A28
RX2 A22 — TRY K1 — TRZ K3 — B22 — RXX2 — RZ2 — RY2
B23
A23
RX3 A24 — TRY K1 — TRZ K3 — B24 — RXX3 — RZ3 — RY3
B25
A25
RX4 A27 — TRY K1 — TRZ K3 — B27 — RXX4 — RZ4 — RY4
B26
A26
RX5 A0 — TRY K1 — TRZ K3 — B0 — RXX5 — RZ5 — RY5
B20
A20
RX6 A1 — TRY K1 — TRZ K3 — B1 — RXX6 — RZ6 — RY6
B21
A21
RX7 A33 — TRY1 K2 — TRZ1 K4 — B33 — RXX7 — RZ7 — RY7
B32
A32
RX8 A31 — TRY1 K2 — TRZ1 K4 — B31 — RXX8 — RZ8 — RY8
B30
A30
RX9 A9 — TRY1 K2 — TRZ1 K4 — B9 — RXX9 — RX9 — RY9
B29
A29

TO TEL SETS

L K5 L U 915 B

A38
B38
A16 — TD — 424 TYPE KTU

TDX B36
BR B35 — CR10
TDY A36 — K2 — R3 2320 — Q2 — TRY K1 U L 590 — CR1
A37
TO 424 TYPE KTU SEE NOTE 316
LT2 B12 — CR9 CR12 — TRY K1 — R5 12.1K — Q1 — CR6 — TRY1 K2 L U 590
B37 — CR8
TDZ B16
LTZ B39 — CR11
DSS LTY A39

K4 — R4 2320 — Q3 — TRZ K3 U L 590 — CR4
TRZ K3 — R6 12.1K — Q4 — CR13 — TRZ1 K4 L U 590

±10 — L K5 — B13
A13

B ±10 A15 A14

FS 11 SELECTOR EXTENDER (444A KTU)

ISSUE 14B1 MC

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69567-01-B14

SD-69567-01-B14

PART OF FS 12
SELECTOR CKT (119 CODES)

P/O 426A & 427C OR 440A KTU

TOUCH-TONE ADAPTER CKT SD-69595-01 OR SD-69906-01

L- & H-

PART OF 424C KTU

P/O 422B KTU

TO SELECTED R (0-9) LEAD FOR TRANSFER

LAMP REL CONTACT NETWORK

LT1 OR LT2

LT3 OR LT4

TYPICAL KEY TEL SET UNITS GROUP OF SETS

TYPICAL KEY TEL SET TENS GROUP OF SETS

TO OTHER LT1-4 CONTACTS

P/O 425B KTU

LF TO SIGNAL INTERRUPTER

P/O 422B KTU

P/O 425B KTU

SELECTOR CKT (19 CODES) (424C KTU)

DRAWING ISSUE

ISSUE 14B1

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

SD-69567-01-B15

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 6S

SD-69567-01-B15

PART OF FS 12
SELECTOR CKT (19 CODES)

TYPICAL KEY TEL SET

TO ALL OTHER TYPICAL KEY TEL SETS

783

SH PU

B13 B12

TOUCH-TONE ADAPTER CKT SD-69595-01 OR SD-69906-01

P/O 426A & 427C OR 440A KTU

IIF1

PART OF 424C KTU

1 L1

R1 68.1

R2 68.1

CR2 Q1 R8 1.3K

R4 150K RV1 R13 22K

R5 10K C1 100

CR1 Q2 Q3 R7 15K CR3

R6 5.1K CR5

R9 5.76K CR4 Q4 R12 1K R15 178

R3 1K R14 46.4K CR8 R23 28K Q7

CR7 R11 11.5K

R16 100 C2 40 R10 270

R22 1.05K

1504

TR1 Y4 TR Y5 Y2 Y3 Y1

A232 A233 A14 A34 A8 A28 A27 A26 A24 A25 A1 A21 A0 A20 A31 A30 A9 A29 A22 A23

RX7 RX0 R0 RX1 R1 RX4 R4 RX3 R3 RX6 R6 RX5 R5 RY8 R8 RX8 R9 RX2 R2

TO OTHER TYPICAL KEY TEL SETS OR 1501

TYPICAL KEY TEL SET

R7 AG

602

P/O 423A KTU

SEE NOTE 315

IIE3

P/O 476A KTU

BY1 BL LK

1062-10H4

P/O 425B KTU

B30 B34 B19 B37 B16

304

TC X,R D1

RH CG L1 L4 RS1 3D6 3F6 TTG 703

B26 B38 B39

602 BY1 BL SS P/O 423A KTU

BL BY1 SS P/O 476A KTU IIA3

SEE NOTE 315

10V AN AN 185 30 HZ TO SIGNAL INTERRUPTER

-24 ±18 ±10V ±105 SS B14

B3

ISSUE 14B1

SELECTOR CKT (19 CODES) (424C KTU)

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

SD-69567-01-B16

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 6S

SD-69567-01-B16

PART OF FS 13
SELECTOR CKT (10 CODES)

TOUCH-TONE ADAPTER CKT SD-69538-01 OR SD-69906-01

P/O 426A & 427C OR 440A KTU

PART OF 407C KTU

L- & H-

Y1 B23 · Y2 B24 · Y3 B22 · Y4 Y6,LR A36 · Y5 A37

Y1 Y2 Y3 Y4 Y5 — 590 U L

R ±10 · B 6 · Y1 6 ±10 · Y2 6 ±10 · Y3 1 ±10 · R 4 ±10

B31 L,L' · B0 FC1 · B20 FC2 · B1 FC3 · B7 LF TO SIGNAL INTERRUPTER · B21 CG · B35 BR · B28 AL1 · B27 AL2

B3 A · B18 A-24 · A13 B · B17 B-24 · B4 ±10

B 4 B-24 · Y5 1

CG (N) CG /BF1 · (2) B

LAMP REL CONTACT NETWORK

LA (W) (N) · FC1 Y14 LT1 OR LT2 · FC2 Y14 · FC3 Y14 · TO OTHER LT1 OR LT2 CONTACTS

P/O 425B KTU 10B1-10C8

LAMP REL CONTACT NETWORK

LR · BR Y14 · AL1 LT1 · AL2 LT2 B

P/O 425B KTU 10E2

BR B TB1 9E1 P/O 422B KTU

TYPICAL KEY TEL SET

L (W) (N) · LG

Y1 Y2 Y3 Y4 Y5 G · BR P/O 422B KTU 9F1-9H1

DRAWING ISSUE

ISSUE 14B

SELECTOR CKT (10 CODES)(407C KTU)

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69567-01-B17

6S

SD-69567-01-B17

6

PART OF FS 13
SELECTOR CKT (10 CODES)

TYPICAL KEY TEL SET

TO ALL OTHER TYPICAL KEY TEL SETS

783

B13

B12

SH PU T R

TOUCH-TONE ADAPTER CKT SD-69535-01 OR SD-69906-01

P/O 426A & 427C OR 440A KTU

11F2

PART OF 407C KTU

L1 L4

R1 68.1 50

R2 68.1 50

CR2 A U L B -24 390

Q1

R8 1.3K

R4 150K

RV1

R13 22K

R5 10K

C1 100

CR1

Q2

R7 15K

Q3

CR3 B U L B -24 390

R6 3.1K

CR5 R U L B -24 750

R9 576K

CR4

Q4

R12 1K

R14 46.4K

R3 1K

R16 100

C2 40

R10 270

R22 105K

A32 A34 A28 A26 A25 A21 A20 A30 A29 A23 B30 B34 B19 B37 B16

Y4 Y5 Y2 Y3 Y1

TYPICAL KEY TEL SET

R7 RG

TO TYPICAL KEY TEL SETS

602

J LK BY1 0

SEE NOTE 315

P/O 423A KTU

11E3

BL BY1 -24

SEE NOTE 315

P/O 476A KTU

1062-10H4

P/O 425B KTU

R0 R1 R4 R3 R6 R5 R8 R9 R2

384

TC X,R DI

L4 RH CG RS1 TTG

1706 B26 B38 B39

6D2 BY1 BL SS P/O 423A KTU

BL BY1 SS P/O 476A KTU 11A3

SEE NOTE 315

703

TO SIGNAL INTERRUPTER

10V RN RN 105 30 HZ

-24 ±18 ±10V ±105 SS B14

SD-69567-01-818

SELECTOR CKT (10 CODES) (407C KTU)

ISSUE 14B1

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

SD-69567-01-818

BELL TELEPHONE LABORATORIES INCORPORATED

6S

0 1 2 3 4 5 6 7 8 9

A B C D E F G H

FS 14

494A KTU (APS-837288)

TO KEY TEL SETS OR 454B OR 460B

T B12
R B13
T A12
NC
R A13

TOUCH-TONE RECEIVER, TRANS-LATION

S1 S2 SEE NOTE 111

BATTERY FEED CIRCUIT

DIAL TONE GEN

SWITCH ARRAY

A23	R2
A25	R3
A26	R4
A20	R5
A21	R6
A32	R7
A30	R8
A29	R9
A34	R10
A14	R11
A8	R12
A28	R13
A24	R14
A27	R15
A0	R16
A1	R17
A33	R18
A31	R19
A9	

TO OTHER KEY TEL SETS

TO OTHER KEY TEL SETS OR TO 444A KTU

TYPICAL KEY TEL SET

MS-20419 BUZZER

TYPICAL KEY TEL SET

LG

P/O 444A KTU

SEE NOTE 104

TDY
TDZ

K1 K2

TO LAMPS INSTATIONS 20-39

TO 454B OR 460B KTU

±10
±10 RN
SS B14
±10
B31 L

CONTROL

A16	TD	TD
B35	BR	BR
B37	TC	
B3	A	A
-24 A	B18	A -24
A15	B	B
-24 B	B17	B -24
±10	B4	±10
B19	BVI	BVI
B16	DI	DI
B30	LK	LK
B0	FCI	NC
B7	LF	NC

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT	DWG SIZE 6S	ISSUE 1581
BELL LABORATORIES	SD-69567-01	-819

FS 15
ROTARY AND TOUCH-TONE SELECTOR CKT

P/O 4948 KTU

TO KEY TEL SETS OR 4548 OR 4608 KTU — T, R

TT/OP RECEIVER

SWITCH ARRAY

TYPICAL KEY TEL SET — KS-20419 BUZZER — LG

TO OTHER KEY TEL SETS

TO OTHER KEY TEL SETS OR TO 444A KTU

S1, S2 — SEE NOTE 111

BATTERY FEED CIRCUIT

±10 — SEE NOTE 112 — ±10 RN — SS — K1

CONTROL

POWER SUPPLY — +7, -5, -10

TO 420A, 444A, 454B, 460B OR 491A KTU'S

TO 491A KTU IF PROVIDED

SEE NOTE 104

P/O J1 — P/O J1 — TO DSS CIRCUIT SEE NOTE 1

ZT P1 — TO INTERNAL CIRCUITRY

A28	R1			
A23	R2			
A25	R3			
A26	R4			
A20	R5			
A21	R6			
A32	R7			
A30	R8			
A29	R9			
A34	R0			
A14	RX0			
A8	RX1			
A22	RX2			
A24	RX3			
A27	RX4			
A0	RX5			
A1	RX6			
A33	RX7			
A31	RX8			
A9	RX9			
B31	L			
A16	TD			
B37	TC			
B35	BR			
B19	BY1			
B16	D1			
B30	LK			
B39	TTG			
A35	LT1			
A39	LT2			
B34	J			
B7	LF			
B0	FC1			
B20	FC2			
B1	FC3			
A13	RS2			
A38	T6			
B3	A -24			
B18	A			
A15	B -24			
B17	B			
B4	±10			
B27				
P/O J1 20	A			
7	B			
1	-24			
14				
4				
5				
6				
8				
9				
10				
11				
12				
13	-5			
P/O J1 19	B25	Y1		
18	B24	Y2		
17	B22	Y3		
16	A36	Y4		
15	A37	Y5		
2	B21	C6		
3	B26	BL	NC	

FS 16
FLASHING LAMP AND TONE CKT

P/O 4948 KTU — LF B7 — K1 — ±10 B4 — ±10 RN 99 B14

491A KTU

TONE SUP — S1 — LOGIC

LAMP TRIACS AND MOTOR TRIAC

TO STATION LAMPS

TO INTERRUPTER

TO 422B KTU'S IF PROVIDED

B12	T	B12	A28	L1
B13	R	B13	A8	LX1
B16	D1	B16	A23	L2
B19	BY1	B19	A22	LX2
B30	LK	B37	A25	L3
B0	FC1	B0	A24	LX3
A39	LT2	A39	A26	L4
B34	J	B34	A27	LX4
B25	Y1	B14	A20	L5
B24	Y2	B30	A0	LX5
B22	Y3	B29	A21	L6
A36	Y4	B32	A1	LX6
A37	Y5	B33	A32	L7
B27	±10	B27	A33	LX7
B28	99	B28	A30	L8
B26	BL1	B26	A31	LX8
B21	C6		A29	L9
	NC	B7	A9	LX9
	NC	B4	A34	L0
	A BAT.	B18	A14	LX0
	B GRD	A15	A5	ST
		B38	A6	M6
A35				
B35				
			BL	
			Y5	
			Y4	
			Y2	
			Y1	
			LT2	
			LT1	
			BR	

(ZS) 120A CIRCUIT MODULE

NOTES:
1. INSTALL A 120A CIRCUIT MODULE IN CONNECTOR J1 IF DSS OR FLASHING LAMPS AND TONES ARE PROVIDED.

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT		DWG SIZE 6S	ISSUE 16B1
BELL LABORATORIES	SD-69567-01		B20

APP FIG. 1 (MFR DISC)

4078 KTU

RELAY

DESIG	A		B				R		Y1		Y2		Y3		Y4		Y5		DESIG
CODE	MB5		MB5				MA5		MB5		MB5		MB5		MB5		MB5		CODE
OPTION																			OPTION
X	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	X
6	EMB	1C3	EMB	1B4					EMB	1B4	EMB	1C4	EMB	1B2	EMB	1D3	EMB	1E2	6
5	EBM	1B2	EBM	2D4					EBM	1C3	EBM	2D5	EBM	1A3	EBM	1D2	EBM	2D5	5
4	EBM	1A2	EBM	1E2			EBM	2D5	EBM	2E5	EBM	1D3	EBM	2F5	EBM	2B5	EBM	2E5	4
3	EBM	2F6	EBM	2H5			EBM	1D4	EBM	1D3	EBM	1C3	EBM	1C3	EBM	2D5	EBM	2C5	3
2	EBM	2E2	EBM	2G6			EBM	2D2	EBM	1B3	EBM	1B3	EBM	2D6	EBM	2C6	EBM	1C2	2
1	EMB	1A4	EMB	2G5			EBM	2G5	EMB	1C3	EMB	1C3	EMB	1C4	EMB		EMB	1D3	1
COIL	X	2B4	X	2C4	X		X	2D4	X	1B2	X	1B2	X	1C2	X	1D2	X	1D2	COIL

FIELD ADJUSTMENT OF RELAY CONTACTS IS NOT RECOMMENDED

CAPACITOR

DESIG	LOC	CODE
C1	2C2	KS-16390,L6,100
C2	2E3	KS-16390,L12,75

VARISTOR

DESIG	LOC	CODE
RV1	2B3	100D
RV2	2B3	100D

DIODE

DESIG	LOC	CODE
CR1	2C2	459E
CR2	2B4	400J
CR3	2C4	400J
CR4	2D3	459E
CR5	2D3	400J

INDUCTOR

DESIG	LOC	CODE
L1	2A2	1682A

RESISTOR

DESIG	LOC	CODE
R1	2A2	KS-14603,L1A,68.1
R2	2B2	KS-14603,L1A,68.1
R3	2E2	KS-13490,L1,1K
R4	2B2	KS-19817,L1,150K
R5	2C2	KS-13490,L1,10K
R6	2D3	KS-13490,L1,5.1K
R7	2C3	KS-13490,L1,15K
R8	2B3	KS-13490,L1,1.3K
R9	2D3	KS-13490,L1,3.9K
R10	2F3	KS-16311,L7,1.47K
R11	2E3	KS-16311,L7,135
R12	2D4	KS-16311,L7,681
R13	2C2	KS-16311,L7,5.62K
R14	2E3	KS-16311,L7,1.78K
R15	2E4	KS-16311,L7,26.1
R16	2E2	KS-13490,L1,200

TRANSISTOR

DESIG	LOC	CODE
Q1	2B4	12H
Q2	2C3	12H
Q3	2C4	12H
Q4	2D4	12H

DRAWING ISSUE

1	ZBM DLD DLY
2A	DLD DLD DLY
4A	
7A	DR
8B	DR

14B1 MO

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

(1) SD-69567-01-C1

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 3S

PRINTED IN U.S.A.

(5)

SD-69567-01-C1

APP FIG. 2 (MFR DISC)

424A KTU

RELAY

DESIG	A		B								R		T		TR		TR1		DESIG
CODE	MB5		MB5								MA5		MA4		MB1		MB1		CODE
OPTION																			OPTION
X	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	X
6	EMB	3C3	EMB	3B4											EBM	4D6	EBM	3F3	6
5	EBM	3B2	EBM	4D4											EBM	4D6	EBM	4E6	5
4	EBM	3A2	EBM	3E2							EBM	4D5	EMB	4D5	EBM	4F6	EBM	4E5	4
3	EBM	4F6	EBM	4H5							EBM	3D4	EBM		EBM	4C5	EBM	4A5	3
2	EBM	4E2	EBM	4G6							EBM	4D2	EBM	3F4	EBM	4C6	EBM	4B6	2
1	EMB	3A4	EMB	4G5							EBM	4G5	EBM	3G3	EBM	4B6	EBM	3G2	1
COIL	X	4B4	X	4C4	X		X		X		X	4D4	X	3F2	X	3G2	X	3G2	COIL

DESIG					Y1		Y2		Y3		Y4		Y5						DESIG
CODE					MB5		MB5		MB5		MB5		MB5						CODE
OPTION																			OPTION
X	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	X
6					EMB	3B4	EMB	3C4	EMB	3B2	EMB	3D3	EMB	3E4					6
5					EBM	3D3	EBM	4D5	EBM	3A3	EBM	3D2	EBM	4D5					5
4					EBM	4E5	EBM	3D3	EBM	4F5	EBM	4B5	EBM	4E5					4
3					EBM	3D3	EBM	3C3	EBM	3C3	EBM	4D5	EBM	4C5					3
2					EBM	3B3	EBM	3B3	EBM	4D6	EBM	4C6	EBM	3C2					2
1					EMB	3C3	EMB	3C3	EMB	3C4	EMB		EMB	3D3					1
COIL	X		X		X	3B2	X	3B2	X	3C2	X	3D2	X	3D2	X		X		COIL

FIELD ADJUSTMENT OF RELAY CONTACTS IS NOT RECOMMENDED

CAPACITOR

DESIG	LOC	CODE
C1	4C2	KS-16390,L6,100
C2	4E3	KS-16390,L12,75

RESISTOR (CONT)

DESIG	LOC	CODE
R17	3E3	KS-13490,L1,10K
R18	3F3	KS-14603,L3A,464
R19	3F3	KS-13490,L1,4.3K
R20	3F3	KS-13490,L1,8.2K

DIODE

DESIG	LOC	CODE
CR1	4C2	459E
CR2	4B4	400J
CR3	4C4	400J
CR4	4D3	459E
CR5	4D3	400J
CR6	3F2	400J

TRANSISTOR

DESIG	LOC	CODE
Q1	4B4	12H
Q2	4C3	12H
Q3	4C4	12H
Q4	4D4	12H
Q5	3F3	12H
Q6	3F2	16G

INDUCTOR

DESIG	LOC	CODE
L1	4A2	1682A

VARISTOR

DESIG	LOC	CODE
RV1	4B3	100D
RV2	4B3	100D
RV3	3G2	100D

RESISTOR

DESIG	LOC	CODE
R1	4A2	KS-14603,L1A,68.1
R2	4B2	KS-14603,L1A,68.1
R3	4E2	KS-13490,L1,1K
R4	4B2	KS-19817,L1,150K
R5	4C2	KS-13490,L1,10K
R6	4D3	KS-13490,L1,5.1K
R7	4C3	KS-13490,L1,15K
R8	4B3	KS-13490,L1,1.3K
R9	4D3	KS-13490,L1,3.9K
R10	4F3	237A,1.47K
R11	4E3	237A,135
R12	4D4	237A,681
R13	4C2	237A,5.62K
R14	4E3	237A,1.78K
R15	4E4	237A,26.1
R16	4E2	KS-13490,L1,200

DRAWING ISSUE	
1	ZAW DLD DLV
2A	DLD DLD DLV
4A	
7A	
8B	

14B1

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (1)

SD-69567-01-C2

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 3S

PRINTED IN U.S.A.

SD-69567-01-C2

(5)

APP FIG. 3 (MFR DISC.)

425A KTU

RELAY

DESIG	BY1				L		LT1		LT2		LT3		LT4				Y14		DESIG
CODE	MA4				MB5		MB14		MB14		MB14		MB14				MB14		CODE
OPTION																			OPTION
X	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	X
6					EMB		EMB	5B7	EMB	5C8	EMB		EMB	5D7			EMB	5A5	6
5					EBM	5G8	EMB	5C7	EMB	5C7	EMB		EMB	5D7			EMB	5B4	5
4	EMB	5H4			EBM	5F2	EMB	5B6	EMB	5B7	EMB	5F7	EMB	5E5			EMB	5B5	4
3	EBM				EBM	5H4	EMB	5B6	EMB	5B6	EMB	5E6	EMB	5E6			EMB	5B4	3
2	EBM	5H4			EBM	5H2	EMB		EMB	5A6	EMB	5E6	EMB	5E5			EMB	5C5	2
1	EBM	5H2			EMB	5H3	EMB		EMB	5A6	EMB	5D7	EMB	5D7			EMB	5C4	1
COIL	X	5E3	X		X	5F3	X	5E2	X	5E2	X	5D2	X	5E2	X		X	5E2	COIL

FIELD ADJUSTMENT OF RELAY CONTACTS IS NOT RECOMMENDED

CAPACITOR

DESIG	LOC	CODE
C1	5G2	KS-16390,L7,200

DIODE

DESIG	LOC	CODE
CR1	5F3	441J
CR2	5F3	459J
CR3	5E2	441J
CR4	5E2	441J
CR5	5D2	441J
CR6	5D2	441J

RESISTOR

DESIG	LOC	CODE
R1	5F3	KS-13490,L1,1K
R2	5H2	KS-13490,L1,100
R3	5F2	KS-13490,L1,3.9K
R4	5G2	KS-13490,L1,200
R5	5G2	KS-13490,L1,3.6K
R6	5G3	KS-13490,L1,2K
R7	5G2	KS-13490,L1,160
R8	5G2	KS-13490,L1,160

TRANSISTOR

DESIG	LOC	CODE
Q1	5G2	12H
Q2	5G3	12H

DRAWING ISSUE

1	DLH DLH
2A	DLH DLH DLH
31	

ISSUE 9B

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (2)

SD-69567-01-C3

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 3S

PRINTED IN U.S.A.

SD-69567-01-C3 (1)

(5)

APP FIG. 4

423A KTU

RELAY

DESIG	BL				BY1						0								DESIG
CODE	MA19				MA3						MA19								CODE
OPTION																			OPTION
X	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	X
6																			6
5																			5
4	EMB	6C1			M	6A2					EMB	6D2							4
3	M	6E3			B	6E3					M								3
2	M	6E3			B	6D3					M								2
1	EBM	6A1			M	6C2					EBM	6B2							1
COIL	X	6E2	X		X	6D2	X		X		X	6C2	X		X		X		COIL

FIELD ADJUSTMENT OF RELAY CONTACTS IS NOT RECOMMENDED

CAPACITOR

DESIG	LOC	CODE
C1	6D3	535JR,.249
C2	6F3	535JR,.249
C3	6F4	594C,.01
C4	6G4	594C,.01

DIODE

DESIG	LOC	CODE
CR1	6D3	441J
CR2	6E3	441J

RESISTOR

DESIG	LOC	CODE
R1	6D3	KS-13490,L1,6.2K
R2	6D3	KS-13490,L1,68K
R3	6D3	KS-13490,L1,30K
R4	6E3	KS-13490,L1,30K
R5	6E3	KS-13490,L1,30K
R6	6E3	KS-13490,L1,30K
R7	6E3	KS-13490,L1,68K
R8	6F4	KS-13490,L1,6.2K
R9	6G4	KS-13490,L1,7.5K
R10	6G3	KS-13490,L1,6.8K
R11	6G3	KS-19817,L1,150K

TRANSISTOR

DESIG	LOC	CODE
Q1	6C3	16G
Q2	6F3	16G

DRAWING ISSUE

1	ORIG
2A	DLO DLY

ISSUE 12A1(C) NO

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (2)

SD-69567-01-C4

BELL TELEPHONE LABORATORIES INCORPORATED

DRG SIZE 3S

PRINTED IN U.S.A.

SD-69567-01-C4

APP FIG.5

420A KTU

RELAY

DESIG			P				R				TTG								DESIG
CODE			MA19				MA5				MA3								CODE
OPTION																			OPTION
X	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	X
6																			6
5																			5
4			EMB	7G2			EBM				M								4
3			M	7C1			EBM				B	7B1							3
2			M	7B2			EBM	7B1			B								2
1			EBM				EBM	7A1			M								1
COIL	X		X	7C2	X		X	7G1	X		X	7C2	X		X		X		COIL

FIELD ADJUSTMENT OF RELAY CONTACTS IS NOT RECOMMENDED

CAPACITOR

DESIG	LOC	CODE
C1	7B2	542F,2
C2	7D1	KS-16390,L17,55

VARISTOR

DESIG	LOC	CODE
RV1	7C2	100D
RV2	7D2	100D

DIODE

DESIG	LOC	CODE
CR1	7C1	458A
CR2	7C2	441J
CR3	7E2	441J
CR4	7E2	441J
CR5	7E2	441J
CR6	7E2	441J
CR7	7G1	441J

RESISTOR

DESIG	LOC	CODE
R1	7B1	KS-14603,L1C,68.1
R2	7B1	KS-14603,L1C,77.7
R3	7C1	KS-13490,L1,620
R4	7F2	KS-20289,L3A,4.22K
R5	7F2	KS-14603,L3A,464
R6	7D2	KS-14603,L3A,464
R7	7C1	KS-14603,L3A,464
R8	7D1	KS-13490,L1,3.9K
R9	7D1	KS-13490,L1,3.6K
R10	7E1	KS-13490,L1,4.7K

TRANSFORMER

DESIG	LOC	CODE
T1	7A2	2578AY

TRANSISTOR

DESIG	LOC	CODE
Q1	7C2	12H
Q2	7E1	12H
Q3	7D2	12H

DRAWING ISSUE

1	DLD DLV
2A	DLD DLD DLV
3A	

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (2)

SD-69567-01-C5

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 3S

PRINTED IN U.S.A.

3

SD-69567-01-C5

APP FIG. 6 (MFR DISC.)

422A KTU

RELAY

DESIG			LT						Y1		Y2		Y3		Y4		Y5		DESIG
CODE			MA11						MA5		MA5		MA5		MA5		MA5		CODE
OPTION																			OPTION
X	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	X
6																			6
5																			5
4			EMB	8F2					EBM	8B1	EBM	8A1	EBM		EBM	8D2	EBM	8E2	4
3			EBM	8H2					EBM	8B1	EBM	8D1	EBM	8L1	EBM	8A2	EBM	8D2	3
2			EBM	8F2					EBM	8E1	EBM	8C1	EBM	8D1	EBM		EBM	8B2	2
1			EMB						EBM		EBM	8E2	EBM	8C1	EBM		EBM	8B2	1
COIL	X		X	8F2	X		X		X	8F1	X	8F1	X	8G1	X	8G1	X	8G1	COIL

FIELD ADJUSTMENT OF RELAY CONTACTS IS NOT RECOMMENDED

DIODE

DESIG	LOC	CODE
CR1	8F1	441J
CR2	8F1	441J
CR3	8G1	441J
CR4	8G1	441J
CR5	8G1	441J

APP FIG. 7

422B KTU

RELAY

DESIG	G		LT						Y1		Y2				Y4		Y5		DESIG
	MB14		MA11						MA1		MA1				MA1		MA1		CODE
OPTION																			OPTION
X	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	X
6	EMB	9G2																	6
5	EMB	9E2																	5
4	EMB	9F2	EMB						EBM	9F2	EBM	9F2			EBM	9B2	EBM	9B2	4
3	EMB		EBM	9F3					EBM	9B1	EBM	9D2			EBM	9B2	EBM	9G2	3
2	EMB	9G2	EBM	9H2					EBM	9D2	EBM	9B2			EBM		EBM	9C2	2
1	EMB	9H2	EMB	9F3					EBM	9C1	EBM	9B1			EBM	9G2	EBM	9B1	1
COIL	X	9E2	X	9F3	X		X		X	9F2	X	9G2	X		X	9G2	X	9H2	COIL

DIODE

DESIG	LOC	CODE
CR1	9F1	441J
CR2	9G1	
CR3	9G1	
CR4	9H1	
CR5	9E2	
CR6	9E1	

DRAWING ISSUE

1	
2A	
3A	
5B	
8B	

ISSUE 9B

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (1)

SD-69567-01-C6

BELL TELEPHONE LABORATORIES INCORPORATED

3S

SD-69567-01-C6 (1)

APP FIG. 8

425B KTU

RELAY

DESIG	BY1				L		LT1		LT2		LT3		LT4				Y14		DESIG
CODE	MA4				MB5		MB14		MB14		MB14		MB14				MB14		CODE
OPTION																			OPTION
X	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	X
6					EMB	10B2	EMB	10B7	EMB	10C8	EMB		EMB	10D7			EMB	10A5	6
5					EBM	10G8	EMB	10C7	EMB	10C7	EMB		EMB	10D7			EMB	10B4	5
4	EMB	10H4			EBM	10F2	EMB	10B6	EMB	10B7	EMB	10F7	EMB	10E5			EMB	10B5	4
3	EBM				EBM	10H4	EMB	10B6	EMB	10B6	EMB	10E6	EMB	10E6			EMB	10B4	3
2	EBM	10H4			EBM	10H2	EMB		EMB	10A6	EMB	10E6	EMB	10E5			EMB	10C5	2
1	EBM	10H2			EMB	10H3	EMB		EMB	10A6	EMB	10D7	EMB	10D7			EMB	10C4	1
COIL	X	10E3	X		X	10F3	X	10E2	X	10E2	X	10D2	X	10E2	X		X	10E2	COIL

FIELD ADJUSTMENT OF RELAY CONTACTS IS NOT RECOMMENDED

CAPACITOR

DESIG	LOC	CODE
C1	10G2	KS-16390, L7, 200

DIODE

DESIG	LOC	CODE
CR1	10F3	441J
CR2	10F3	459J
CR3	10E2	441J
CR4	10E2	441J
CR5	10D2	441J
CR6	10D2	441J

RESISTOR

DESIG	LOC	CODE
R1	10F3	KS-13490,L1,1K
R2	10H2	,100
R3	10F2	,3.9K
R4	10G2	,200
R5	10G2	,3.6K
R6	10G3	,2K
R7	10G2	,160
R8	10G2	KS-13490,L1,160

TRANSISTOR

DESIG	LOC	CODE
Q1	10G2	12H
Q2	10G3	12H

APP FIG. 9

423B KTU (MD) OR 476A KTU

RELAY

DESIG	K1		K2	
CODE	MB5		MB5	
OPTION				
X	CONT ARR	LOC	CONT ARR	LOC
6	EMB	11E4	EMB	11B4
5	EBM	11D8	EBM	11A3
4	EBM	11E8	EBM	11B3
3	EBM	11B3	EBM	11E8
2	EBM	11A3	EBM	11D8
1	EMB	-	EMB	11E5
COIL	X	11D5	X	11F3

CAPACITOR

DESIG	LOC	CODE
C1	11E7	535JR
C2	11D7	535JR
C3	11C6	601A
C4	11F4	601A
C5	11F7	KS-20977,L4,.01
C6	11F7	KS-20977,L4,.01

DIODE

DESIG	LOC	CODE
CR1	11E3	458A
CR2	11E3	458A
CR3	11F6	459AJ
CR4	11E3	446F
CR5	11D3	458A

POTENTIOMETER

DESIG	LOC	CODE
R1	11F6	KS-19817,L1

RESISTOR

DESIG	LOC	CODE
R2	11D6	KS-20810,L1A,301
R3	11E4	,301
R4	11C6	,3650
R5	11E5	,3920
R6	11D7	,6190
R7	11E7	,6190
R8	11F7	,7.5K
R9	11F5	,8250
R10	11C4	,10K
R11	11C4	,12.1K
R12	11D7	,30.1K
R13	11E7	,30.1K
R14	11D8	,68.1K
R15	11E8	KS-20810,L1A,68.1K

TRANSISTOR

DESIG	LOC	CODE
Q1	11C5	51A
Q2	11C5	51A
Q3	11F7	51C
Q4	11D6	51C
Q5	11C5	66J
Q6	11E5	66J

DRAWING ISSUE 60

ISSUE 12A1(C)

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (2)

SD-69567-01-C7

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 3S

SD-69567-01-C7

APP FIG. 10 (MFR DISC)

424B KTU

RELAY

DESIG	A		B						R		T		T				TR		TR1				DESIG
CODE	MB5		MB5						MA5		MA4 ZM		MA36 ZN				MB1		MB1				CODE
OPTION																							OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
6	EMB	12C3	EMB	12B4													EBM	13D6	EBM	12F3			6
5	EBM	12B2	EBM	13D4													EBM	13D6	EBM	13E6			5
4	EBM	12A2	EBM	12E2					EBM	13D5	EMB	13D5	EMB	13D5			EBM	13F6	EBM	13E5			4
3	EBM	13F6	EBM	13H5					EBM	12D4	EBM	12F3	EMB	12F3			EBM	13C5	EBM	13A5			3
2	EBM	13E2	EBM	13G6					EBM	13D2	EBM	12F4	EMB	12F4			EBM	13C6	EBM	13B6			2
1	EMB	12A4	EBM	13G5					EBM	13G5	EBM	12G2	EBM	12G2			EBM	13B6	EBM	12G3			1
COIL		13B4		13C4						13D4		12F2		12F2				12G2		12G2			COIL

RELAY

DESIG			Y1		Y2		Y3		Y4		Y5												DESIG
CODE			MB5		MB5		MB5		MB5		MB5												CODE
OPTION																							OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
6			EMB	12B4	EMB	12C4	EMB	12B2	EMB	12D3	EMB	12E4											6
5			EBM	12C3	EBM	13D5	EBM	12A3	EBM	12D2	EBM	13D5											5
4			EBM	13E5	EBM	12D3	EBM	13F5	EBM	13B5	EBM	13E5											4
3			EBM	12D3	EBM	12C3	EBM	12C3	EBM	13D5	EBM	13C5											3
2			EBM	12C3	EBM	12B3	EBM	13D6	EBM	13C6	EBM	12C2											2
1			EMB	12B3	EMB	12C3	EMB	12C4	EMB		EMB	12D3											1
COIL				12B2		12B2		12C2		12D2		12D2											COIL

FIELD ADJUSTMENT OF RELAY CONTACTS IS NOT RECOMMENDED

CAPACITOR

DESIG	LOC	CODE
C1	13C2	KS-16390,L6, 100
C2	13E3	KS-16390,L12, 75
(ZG) C3	13D4	KS-16390,L17, 55
(ZJ) C3	13D4	KS-16390,L2, 25

DIODE

DESIG	LOC	CODE
CR1	13C2	459E
CR2	13B4	400J
CR3	13C4	400J
CR4	13D3	459E
CR5	13D3	400J
CR6	12F2	400J
(ZJ) CR7	13E4	446F

INDUCTOR

DESIG	LOC	CODE
L1	13A2	1682A

RESISTOR

DESIG	LOC	CODE
R1	13A2	KS-14603,L1A, 68.1
R2	13B2	KS-14603,L1A, 68.1
R3	13E2	KS-13490,L1, 1K
R4	13B2	KS-19817,L1, 150K
R5	13C2	KS-13490,L1, 10K
R6	13D3	KS-13490,L1, 5.1K
R7	13C3	KS-13490,L1, 15K
R8	13B3	KS-13490,L1, 1.3K
R9	13D3	KS-13490,L1, 3.9K
(ZG) R10	13F3	KS-20810,L1A, 1.47K
(ZJ,ZP) R10	13F3	KS-20810,L1A, 499
(ZR) R10	13F3	KS-20810,L1A, 1K
R11	13E3	KS-20810,L1A, 135
R12	13D4	KS-20810,L1A, 681
R13	13C2	KS-20810,L1A, 5.62K
R14	13E3	KS-20810,L1A, 1.78K
(ZG) R15	13E4	KS-20810,L1A, 26.1
R16	13E2	KS-13490,L1, 200
R17	13E3	KS-13490,L1, 10K
R18	13F3	KS-14603,L3A, 464
R19	13F3	KS-13490,L1, 4.3K
R20	13F3	KS-13490,L1, 8.2K

TRANSISTOR

DESIG	LOC	CODE
Q1	13B4	12H
Q2	13C3	12H
Q3	13C4	12H
Q4	13D4	12H
Q5	12F3	12H
Q6	12F2	16G

VARISTOR

DESIG	LOC	CODE
RV1	13B3	100D
RV2	13B4	100D
RV3	12F2	100D

14B1

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69567-01-C8

SD-69567-01-C8

APP FIG. 11

444A KTU

RELAY

DESIG	TRY		TRY1		TRZ		TRZ1		L					
CODE	MB1		MB1		MB1		MB1		MA1					
OPTION														
	CONT LOC	LOC	CONT LOC	LOC	CONT LOC	LOC	CONT LOC	LOC	CONT LOC	LOC	CONT LOC	LOC	CONT LOC	LOC
6	EBM	14G2	EBM	14F3	EBM	14G5	EBM	14F5						
5	EBM	14C3	EBM	14A3	EBM	14C5	EBM	14A5						
4	EBM	14B3	EBM	14D3	EBM	14B5	EBM	14D5	EBM	14G6				
3	EBM	14B3	EBM	14E3	EBM	14B5	EBM	14E5	EBM	14H6				
2	EBM	14D3	EBM	14E3	EBM	14D5	EBM	14A5	EBM	14H6				
1	EBM	14C3	EBM	14A3	EBM	14C5	EBM	14E5	EBM	14H6				
CODE		14G4		14G4		14G6		14G6		14E2				

DIODE

DESIG	LOC	CODE
CR1	14G3	458C
CR2	14G3	459AJ
CR3	14G5	459AJ
CR4	14G6	458C
CR8	14G2	458A
CR9	14G2	458A
CR10	14F2	446F
CR11	14H2	458A
CR12	14G2	458A

RESISTOR

DESIG	LOC	CODE
R3	14G2	KS-20810 L1A, 2320
R4	14G4	KS-20810 L1A, 2320
R5	14G3	KS-20810 L1A, 12.1K
R6	14G5	KS-20810 L1A, 12.1K

TRANSISTOR

DESIG	LOC	CODE
Q1	14G3	51A
Q2	14G2	51A
Q3	14G5	51A
Q4	14G5	51A

SD-69567-01-C9

SHEET 13B1(C) ino

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

SD-69567-01-C9

BELL TELEPHONE LABORATORIES INCORPORATED

6S

APP FIG. 12

424C KTU

RELAY

DESIG	A		B						R		T				TR		TR1		DESIG
CODE	MB5		MB5						MB36		MA36				MB1		MB1		CODE
OPTION																			OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
6	EMB	15C3	EMB	15B4					M	15B4					EBM	16D6	EBM	15F3	6
5	EBM	15B2	EBM	16D4					EBM	16E5					EBM	16D6	EBM	16E6	5
4	EBM	15B2	EBM	15E2					EBM	15D4	LMB	16D5			EBM	16F6	EBM	16E5	4
3	EBM	16E3	EBM	16H3					EBM	16D2	EMB	15F3			EBM	16C5	EBM	16A5	3
2	EBM	16F6	EBM	16G6					EBM	16G5	EMB	15G4			EBM	16C6	EBM	16B6	2
1	EMB	16D5	EMB	16G5							EBM	15G2			EBM	16B6	EBM	15G3	1
COIL		16B4		16C5						16C4		15F2				15G2		15G2	COIL

DESIG					Y1		Y2		Y3		Y4		Y5						DESIG
CODE					MB5		MB5		MB5		MB5		MB5						CODE
OPTION																			OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
6					EMB	15B4	EMB	15C4	EMB	15B2	EMB	15D3	EMB	15D3					6
5					EBM	15C3	EBM	16D5	EBM	16D6	EBM	15D2	EBM	16D5					5
4					EBM	16E5	EBM	15D3	EBM	16F5	EBM	16B5	EBM	16C5					4
3					EBM	15D3	EBM	15C3	EBM	15C3	EBM	16D5	EBM	16E5					3
2					EBM	15B3	EBM	15C3	EBM	15B3	EBM	16C6	EBM	15C2					2
1					EMB	15C3	EMB	15C3	EMB	15D4	EMB		EMB	15F4					1
COIL						15B2		15B2		15C2		15D2		15D2					COIL

FIELD ADJUSTMENT OF RELAY CONTACTS IS NOT RECOMMENDED

CAPACITOR

DESIG	LOC	CODE
C1	16C2	KS-16390 L6,100
C2	16E3	602J

DIODE

DESIG	LOC	CODE
CR1	16C2	459E
CR2	16B4	456F
CR3	16C4	456F
CR4	16D3	459AA
CR5	16D3	456F
CR6	15F2	456F
CR7	16E3	459C
CR8	16E4	459AJ

INDUCTOR

DESIG	LOC	CODE
L1	16A2	1682A

RESISTOR

DESIG	LOC	CODE
R1	16A2	~~KS-14603 L1A,68.1~~, KS-20289 L4A,68.1
R2	16B2	~~KS-14603 L1A,68.1~~, KS-20289 L4A,68.1
R3	16E2	KS-13490 L1,1K
R4	16B2	KS-19817 L1,150K (POT)
R5	16C2	KS-13490 L1,10K
R6	16D3	KS-13490 L1,5.1K
R7	16C4	KS-13490 L1,15K
R8	16B3	KS-13490 L1,1.3K
R9	16D3	KS-20810 L1A,5760
R10	16F3	KS-13490 L1,270
R11	16E4	KS-20810 L1A,11.5K
R12	16D4	KS-13490 L1,1K

RESISTOR (CONT)

DESIG	LOC	CODE
R13	16C3	KS-13490 L1,22K
R14	16E3	KS-20810 L1A,46.4K
R15	16E4	KS-20810 L1A,178
R16	16E2	KS-13490 L1,100
R17	15F3	KS-13490 L1,10K
R18	15G3	KS-13490 L1,2K
R19	15F3	KS-13490 L1,47K
R20	15F3	KS-13490 L1,8.2K
R21		NOT ASSIGNED
R22	16F2	KS-20810 L1A,1050
R23	16E4	KS-20810 L1A,28.7K

TRANSISTOR

DESIG	LOC	CODE
Q1	16B4	51C
Q2	16C3	51D
Q3	16C4	51D
Q4	16D4	51E
Q5	15F3	51D
Q6	15F2	66G
Q7	16E4	51E

VARISTOR

DESIG	LOC	CODE
RV1	16C3	100D

APP FIG. 13

407C KTU

RELAY

DESIG	A		B				R		Y1		Y2		Y3		Y4		Y5		DESIG
CODE	MB5		MB5				MB36		MB5		MB5		MB5		MB5		MB5		CODE
OPTION																			OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
6	EMB	17C3	EMB	17B4			M	17A4	EMB	17B4	EMB	17C4	EMB	17B2	EMB	17D3	EMB	17D3	6
5	EBM	17B2	EBM	18D4			EBM	18D5	EBM	17C3	EBM	18D5	EBM	18D6	EBM	17D2	EBM	18D5	5
4	EBM	17A2	EBM	17E2			EBM	17D4	EBM	18E5	EBM	17D3	EBM	18F5	EBM	18B5	EBM	18C5	4
3	EBM	18E2	EBM	18H4			EBM	18D2	EBM	17D3	EBM	17C3	EBM	17C3	EBM	18D5	EBM	18E5	3
2	EBM	18F6	EBM	18G6			EBM	18G5	EBM	17B3	EBM	17B3	EBM	17B3	EBM	18C6	EBM	17C2	2
1	EMB	18D5	EMB	18G5					EMB	17C3	EMB	17C3	EMB	17C4	EMB		EMB	17E2	1
COIL		18B4		18C4				18D4		17B2		17B2		17C2		17D2		17D2	COIL

FIELD ADJUSTMENT OF RELAY CONTACTS IS NOT RECOMMENDED

CAPACITOR

DESIG	LOC	CODE
C1	18C2	KS-16390 L6,100
C2	18E3	602J

DIODE

DESIG	LOC	CODE
CR1	18C2	459E
CR2	18B4	456F
CR3	18C4	456F
CR4	18D3	459AA
CR5	18D3	456F

INDUCTOR

DESIG	LOC	CODE
L1	18A2	1682A

RESISTOR

DESIG	LOC	CODE
R1	18A2	KS-20289 L4A,68.1
R2	18B2	KS-20289 L4A,68.1
R3	18E2	KS-13490 L1,1K
R4	18B2	KS-19817 L1,150K (POT)
R5	18C2	KS-13490 L1,10K
R6	18D3	KS-13490 L1,5.1K
R7	18C3	KS-13490 L1,15K
R8	18B3	KS-13490 L1,1.3K
R9	18D3	KS-20810 L1A,5760
R10	18F3	KS-13490 L1,270
R11		NOT ASSIGNED
R12	18D4	KS-13490 L1,1K
R13	18C2	KS-13490 L1,22K
R14	18E3	KS-20810 L1A,46.4K
R15		NOT ASSIGNED
R16	18E2	KS-13490 L1,100
R17-R21		NOT ASSIGNED
R22	18F2	KS-20810 L1A,1050

TRANSISTOR

DESIG	LOC	CODE
Q1	18B4	51C
Q2	18C3	51D
Q3	18C4	51D
Q4	18D4	51E

VARISTOR

DESIG	LOC	CODE
RV1	18C3	100D

APP FIG. 14

KTU

DESIG	LOC	CODE
-	19A3	494A

APP FIG. 15

KTU

DESIG	LOC	CODE
-	20A1, 20A6,	494B

MODULE, CIRCUIT

OPTION	DESIG	LOC	CODE
ZS	-	20F4	120A

APP FIG. 16

KTU

DESIG	LOC	CODE
-	20A8	491A

ISSUE 1681

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

SD-69567-01-CIO

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69567-01-CIO

CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	ONE PER
		-24 TALK	FUSE PROVIDED ON ASSOCIATED KSU OR PANEL CKT
		-24 SIG	FUSE PROVIDED ON ASSOCIATED KSU OR PANEL CKT

BATTERY SYMBOL	VOLTAGE RANGE
-24A	18-26V
-24B	20-26V

102.

FEATURE OR OPTION			PROVIDE APP FIG.	PROVIDE APP OR WRG	PROVIDE QUANTITY
SELECTOR CKT (10 CODES)			1		1 PER SYS
SELECTOR CKT (19 CODES)	1A2 KEY SYSTEMS ONLY (424A KTU)		2		1 PER SYSTEM
	1A2 KEY SYSTEMS 718 OR 1434 COM-KEY (424B KTU)		10		
FLASHING LAMP CKT (TO PROVIDE FLASHING LAMPS AND/OR INTERRUPTED RING TO 19 CODES)			8		1 PER SYS
DIAL TONE, STATION BUSY TONE, AND AUDIBLE RINGBACK CKT (423A)			4		1 PER SYS
DIAL TONE, STATION BUSY TONE, AND AUDIBLE RINGBACK CKT (476A)			9		1 PER SYS
LONG LINE CKT			5		1 PER STA
STATION BUSY SELECTION CKT			7		1 PER 10 CODES
SELECTOR CKT 10 OR 19 CODES	WITHOUT TOUCH-TONE		1,2,	Z	
	WITH T-T (NOTES 302 & 304)		10	N	
SELECTOR CKT 10 CODES				F†	
LONG LINE CKT (NOTE 308)				Q	
RINGING OPTIONS	INTERRUPTED (SEE NOTE 314)	10VAC BUZZERS		E	
		110VAC 30Hz RNGRS		X	
	SINGLE SPURT* (SEE NOTE 313)	10VAC BUZZERS		G†	
		18VAC BUZZERS		J	
		DC BUZZERS		K	
		110V 30Hz RNGRS		M	
LAMP SIGNALS	STEADY			W	
	FLASHING	10 CODES		H	
		19 CODES		V	
AUDIBLE TONES (SEE NOTE 315)	423A	DIAL TONE		T	
		STATION BUSY		R	
		AUDIBLE RINGBACK		S	
	476A †	DIAL TONE		ZD **	
		STATION BUSY		ZF **	
		AUDIBLE RINGBACK		ZE **	
ADD ON CONFERENCE (NOTE 303)					
PRESET CONFERENCE (NOTE 305)					
DIRECT STATION SELECTION (NOTE 306)					
SELECTOR EXTENDER CKT (37 CODES)			12		1 PER 37 CODES
T-T SELECTOR CKT (19 CODES)			14		1 PER SYS
ROTARY/T-T SELECTOR CKT			15		1 PER SYS
DIRECT STATION SELECTION				ZS	
FLASHING LAMPS AND TONES			16		1 PER SYS

*TIMING POTENTIOMETER ADJUSTABLE - 0.5 SEC THROUGH 2.5 SEC APPROXIMATELY

**FACTORY WIRED OPTIONS

†USED ON MODULAR PANELS

CIRCUIT NOTES: (CONT)

103.

RECORD OF APP FIGURES, WIRING AND APPARATUS CHANGES							
CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT STD	A&M	MD	
5B	6 OR 7	6		7		6	
6D	3 OR 8	3	105	8		3	
8B	ZA	NONE	105	ZA			
8B	ZB OR ZC	ZB	105	ZC		ZB	
9B	4 OR 9	4		9		4	
9B	ZD,ZE,ZF	NONE	**	ZD,ZE, ZF			
9B	FIG.2 OR FIG. 10	FIG. 2		FIG.2, FIG.10			
10A1(C)	ZJ OR ZG	ZG		ZJ		ZG	
11A1(C)	ZK,ZJ	ZJ		ZK,ZJ			
12A1(C)	ZK,ZJ OR ZN,ZJ	ZK, ZJ		ZN,ZJ		ZM,ZK	
13B1(C)	ZR,ZP	ZP		ZR		ZP	
14B	FIG. 1, FIG. 13	FIG.1		FIG.13		FIG.1	
14B	FIG.2, FIG.10, FIG.12	FIG.2, FIG.10		FIG.12		FIG.2, FIG.10	
16B1	ZS	ZT		ZS			

104. IN SYSTEMS USING 407-, 424-, OR 494B KTU'S, ANY DIGIT MAY BE ASSIGNED AS THE INITIAL DIGIT FOR TWO-DIGIT CODES. IN SYSTEMS USING THE 494A KTU, THE INITIAL DIGIT 1 IS ALWAYS TREATED AS THE FIRST DIGIT OF A TWO-DIGIT CODE. DIGITS 2, 3, 4 AND 5 MAY ALSO BE USED WHEN THE SELECTOR EXTENDER (444A KTU) IS USED. DIGITS USED AS THE INITIAL DIGITS OF TWO-DIGIT CODES MAY NOT BE USED FOR STATION CODES.

105. THESE RECORDS OF CHANGE AND OPTIONS ZA, ZB AND ZC WERE ADDED ON ISSUE 9B TO RECORD CHANGES MADE ON ISSUES INDICATED.

106. A GROUND PRESENT DURING THE TALKING STATE ON THE R2 OUTPUT OF THE 424A, 424B AND 407B KTU'S PREVENTS A COMMON RINGER FROM BEING USED ON CODE 2 IN SYSTEMS EQUIPPED WITH THESE KTU'S. THE GROUND IS NOT PRESENT IN THE 424C AND 407C KTU'S.

107. IN SYSTEMS USING THE 494- TYPE KTU'S, PARALLEL THE AUDIBLE SIGNALING LEADS WITH SPARE CONDUCTORS IN THE STATION CABLES, IF NECESSARY, TO OBTAIN ADEQUATE SOUND OUTPUT FROM BUZZERS ON LONG LOOPS.

108. A MAXIMUM OF 26 STATION LAMPS CAN BE CONNECTED TO LEAD L OF THE 494- KTU'S.

109. INTERRUPTED SIGNALING (OPTION E) CAN BE PROVIDED WITH THE 494A KTU ONLY IN SYSTEMS USING THE 454- OR 460- TYPE KTU'S.

110. LEAD TTG IS NOT USED WHEN THE LONG LINE CIRCUIT (420A KTU) IS USED WITH THE 494A KTU.

111. SCREW SWITCHES S1 AND S2 ON THE 494-TYPE KTU'S MUST BE CLOSED FOR SINGLE PATH INTERCOMS AND OPEN FOR BUTTON-PER-PATH OPERATION.

112. INTERRUPTED SIGNALING (OPTION E) CAN BE PROVIDED WITH THE 494B KTU ONLY IN SYSTEMS USING THE 454-, 460-, OR 491A KTU'S.

113. OPEN SCREW SWITCH S1 ON THE 491A KTU TO ELIMINATE DIAL TONE AND AUDIBLE RINGBACK.

ISSUE 16B1

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

SD-69567-01-D1

BELL TELEPHONE LABORATORIES INCORPORATED

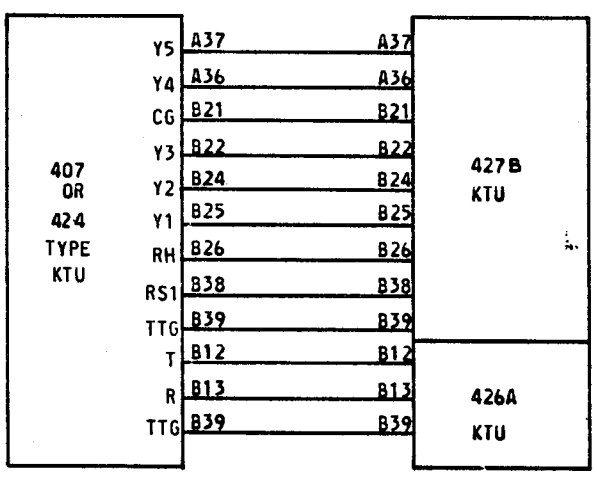
6S

SD-69567-01-D1

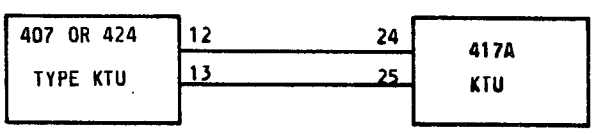
INFORMATION NOTES:

301. UNLESS OTHERWISE SPECIFIED:
RESISTANCE VALUES ARE IN OHMS,
CAPACITANCE VALUES ARE IN MICROFARADS,
VALUES PRECEDED BY THE SYMBOL + (PLUS)
OR - (MINUS) ARE IN VOLTS.

302. TOUCH-TONE (426A KTU AND 427A KTU).



303. ADD ON CONFERENCE. THE INTERCOM SHOULD BE CONNECTED AS SHOWN TO THE SECOND LINE PORT OF THE 417A TO PREVENT INADVERTENTLY DROPPING THE LINE CKT AS EASILY WHEN ON HOLD.

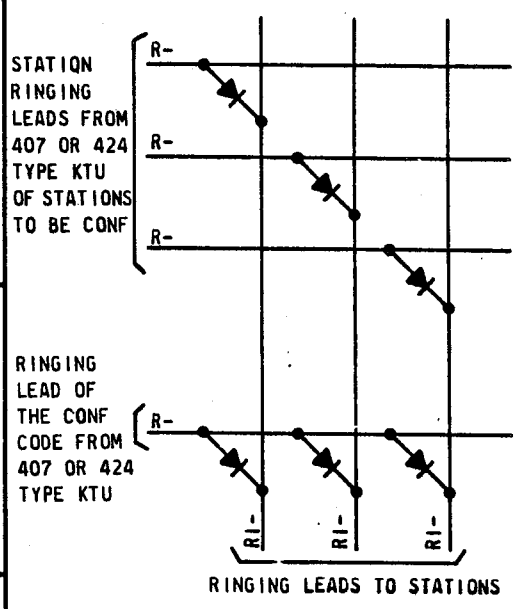


304. A 400J DIODE MUST BE CONNECTED BETWEEN THE (LK) AND (RH) TERMINALS OF THE 407 OR 424 TYPE KTU WHEN PROVIDING DIAL TONE USING THE 423A KTU IN A TOUCH-TONE EQUIPPED SELECTOR ONLY ARRANGEMENT. THE ANODE OF THE DIODE SHOULD BE CONNECTED TO THE (LK) TERMINAL, AND THE CATHODE OF THE DIODE SHOULD BE CONNECTED TO THE (RH) TERMINAL. IN THIS CASE THE (RH) LEAD COMING FROM THE 427B KTU MUST BE CONNECTED TO THE (LK) TERMINAL OF THE 407B KTU.

RH —|◀— LK

DIODE NOT REQUIRED WHEN USING 423B KTU

305. DIAL SELECTED PRESET CONFERENCE



INFORMATION NOTES: (CONT)

FOR STA CODE	GRD B	CONNECT BAT B	SIG KEY	407 OR 424 TYPE KTU B21	B22	B24	B25	B26	A36	A37	424 TYPE KTU A39
	TO TERMINALS ON 421A KTU										
1	37*,12,35,39,36	17	1	26		16		23			
2	37*,12,35,39,36	17	1	26			16	23			
3	37*,12,35,39,36	17	1	26	16			23	25		
4	37*,12,35,39,36	17	1	26		16		23	25		
5	37*,12,35,39,36	17	1	26			16	23	25	22	
6	37*,12,35,39,36	17	1	26	16			23	25	22	
7	37*,12,35,39,36	17	1	26		16		23	25	22	
8	37*,12,35,39,36	17	1	26			16	23		22	
9	37*,12,35,39,36	17	1	26	16			23		22	
0	37*,12,35,39,36	17	1	26		16		23		22	
X1	37*,12,35,39,36	17	1	26		16		23			27
X2	37*,12,35,39,36	17	1	26			16	23			27
X3	37*,12,35,39,36	17	1	26	16			23	25		27
X4	37*,12,35,39,36	17	1	26		16		23	25		27
X5	37*,12,35,39,36	17	1	26			16	23	25	22	27
X6	37*,12,35,39,36	17	1	26	16			23	25	22	27
X7	37*,12,35,39,36	17	1	26		16		23	25	22	27
X8	37*,12,35,39,36	17	1	26			16	23		22	27
X9	37*,12,35,39,36	17	1	26	16			23		22	27
X0	37*,12,35,39,36	17	1	26		16		23		22	27

*CONNECT TO GRD. B. OR TO TERMINAL 26 OF SUCCEEDING 421A KTU IF PROVIDED, OR TO TERMINAL B21 OF 427C KTU IF PROVIDED.

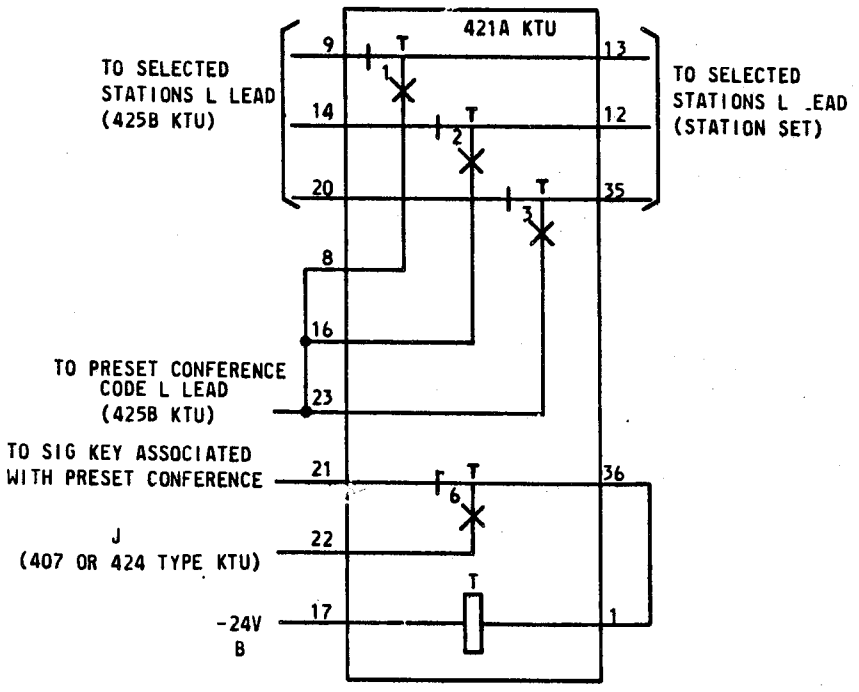
307. WHEN PROVIDING STATION BUSY TONE A KS-15724,L1 DIODE MUST BE INSTALLED IN THE STATION SET BETWEEN THE (BL) LEAD AND THE (AG) LEAD.

AG —|◀— BL

308. A 400J DIODE MUST BE CONNECTED BETWEEN THE (TTG) TERMINAL OF THE 407 OR 424 TYPE KTU AND THE (TTG) TERMINAL OF THE 420A KTU IN A TOUCH-TONE EQUIPPED SELECTOR-ONLY ARRANGEMENT. THE ANODE OF THE DIODE SHOULD BE CONNECTED TO THE 407 OR 424 TYPE KTU AND THE CATHODE OF THE DIODE SHOULD BE CONNECTED TO THE 420A KTU.

420A KTU —|◀— 407 OR 424 TYPE KTU

309. FLASHING LAMPS ON SIG KEY PRESET CONFERENCE.



DRAWING ISSUE
3A
5B
6D
7A

ISSUE 9B

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT (2)

SD-69567-01-D2

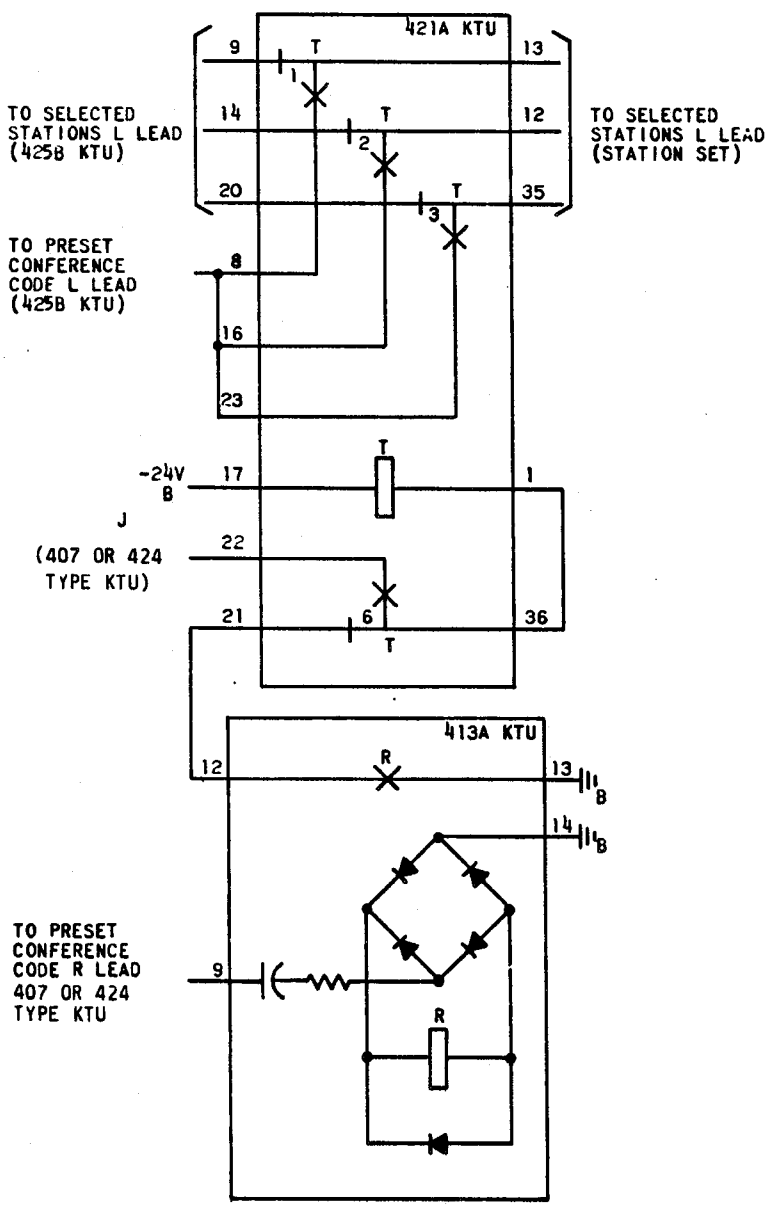
BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 3S

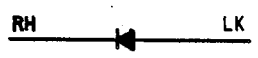
PRINTED IN U.S.A.

SD-69567-01-D2

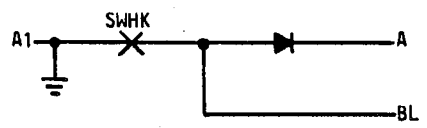
310. FLASHING LAMPS ON DIAL SELECTED PRESET CONFERENCE.



311. A 400J DIODE MUST BE CONNECTED BETWEEN THE LK AND RH TERMINALS OF THE 407B KTU OR 424A KTU WHEN PROVIDING DSS OR SIGNAL KEY PRESET CONFERENCE IN A DIAL-TONE EQUIPPED SELECTOR **ONLY** ARRANGEMENT. THE ANODE OF THE DIODE SHOULD BE CONNECTED TO THE LK TERMINAL, AND THE CATHODE OF THE DIODE SHOULD BE CONNECTED TO THE RH TERMINAL. IN THIS CASE THE RH LEAD COMING FROM THE 421A KTU MUST BE CONNECTED TO THE LK TERMINAL OF THE 407 OR 424 TYPE KTU.



312. A KS-15724,L1 DIODE MUST BE CONNECTED IN SERIES WITH THE A LEAD IN EACH TELEPHONE SET WHEN PROVIDING STATION BUSY TONE USING A 422B KTU.



313. STATION BUSY TONE IS NOT RECOMMENDED FOR USE WITH SINGLE SPURT RINGING.

314. TO PROVIDE INTERRUPTED RINGING, A 425B KTU MUST BE USED.

315. CAUTION:
THE 423A KTU CANNOT BE USED IN MODULAR PANELS BUT IT CAN BE USED ANYWHERE ELSE IN THE 1A2 KTS.
THE 476A KTU CAN ONLY BE USED WITH MODULAR PANELS.

423B (MD), 476A KTU

TB1 STRAPS	OPTION	
1-2 *	DIAL TONE	ZD
7-8 *	STATION BUSY	ZF
4-5 *	AUDIBLE	ZE

* FACTORY STRAPPING

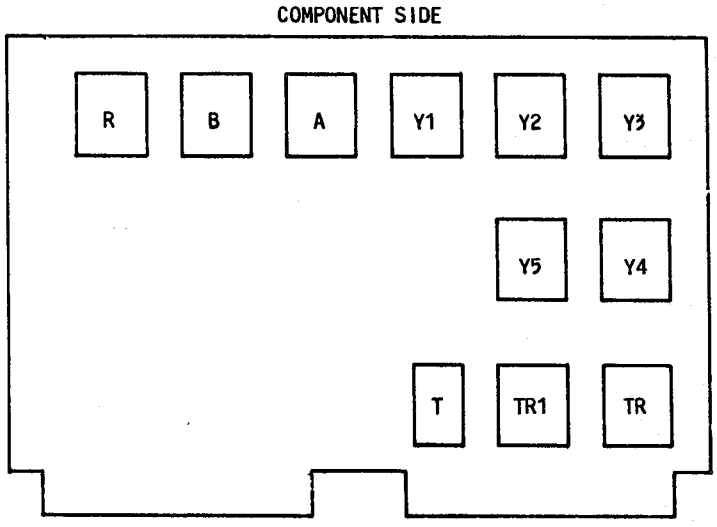
423A

TB1 STRAPS	OPTION	
4-6 *	STATION BUSY TONE WITH INTERRUPTED AUDIBLE SIGNAL	R
	AUDIBLE RINGBACK	S
1-2	DIAL TONE	T

* FACTORY STRAPPING

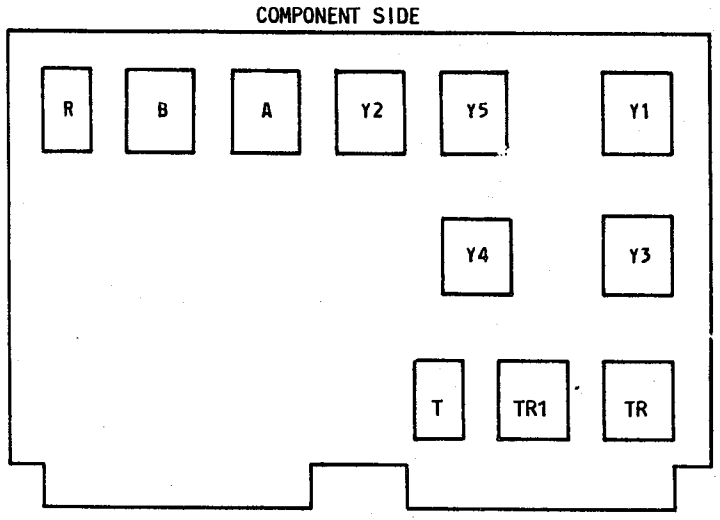
316. LAYOUT OF RELAYS ON 424C KTU:
(LAYOUT OF 407C KTU IS IDENTICAL EXCEPT RELAYS T,TR, AND TR1 ARE DELETED)

COMPONENT SIDE



LAYOUT OF RELAYS ON 424A, 424B KTU'S:
(LAYOUT OF 407B IS IDENTICAL EXCEPT RELAYS T,TR, AND TR1 ARE DELETED)

COMPONENT SIDE



DRAWING ISSUE
3A
4A
5B
8B

ISSUE 14B1

DIAL SELECTIVE INTERCOMMUNICATING LINE CIRCUIT

SD-69567-01-D3

BELL TELEPHONE LABORATORIES INCORPORATED

DWG SIZE 3S

PRINTED IN U.S.A.

SD-69567-01-D3

K·E 3M