SHEET INDEX

CONTENTS	SHEET NO.	ISSUE NO. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
SHEET INDEX SUPPORTING INFORMATION	A1	1	2	3	4	5	6	7	8																	
APPARATUS INDEX LEAD INDEX OPTION INDEX	A2	1	2	3	4	5	5	5	7																	
FS 1 SYSTEM INTERCONNECTIONS	B1	1	2	3	4	5	5	5	7																	
	B2	1	1	1	1	5	5	5	5																	
	B3	1	1	1	1	5	5	5	5																	
	B4	1	1	3	3	3	3	3	3																	
	B5	1	1	3	3	3	3	3	3																	
APP FIG. 1	C1	1	1	3	4	5	5	5	7																	
CIRCUIT NOTES	D1	1	2	3	3	5	5	5	7																	
EQUIPMENT NOTES	D2			3	3	3	3	3	7																	
SC1 ANNOUNCEMENT RECORD	E1			3	3	3	3	3	3																	
SC2 ANNOUNCEMENT REPRODUCE	E2			3	3	3	3	3	3																	
CAD 1 BACKPLANE WIRING	G1	1	1	3	3	3	3	3	3																	
	G2	1	1	1	1	1	1	1	1																	
	G3	1	1	3	3	3	3	3	3																	
	G4	1	1	1	1	1	1	1	1																	
	G5	1	1	1	1	1	1	1	1																	
	G6	1	1	1	1	1	1	1	1																	
	G7	1	1	1	1	1	1	1	1																	
	G8	1	1	1	1	1	1	1	1																	
	G9	1	1	1	1	1	1	1	1																	
	G10	1	1	1	1	1	1	1	1																	
CAD 2 JACK WIRING	G11	1	2	3	3	3	3	3	7																	
CAD 3																										

CONTENTS	SHEET NO.	ISSUE NO. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
CPS UD1 POWER SUPPLY	J1	1	2	3	3	5	6	7	7																	
	J2	1	2	3	3	5	6	7	7																	
CPS UD2 ENCODER DRIVER	J3	1	1	3	3	3	6	6	6																	
	J4	1	2	3	4	4	6	6	6																	
	J5	1	1	1	1	1	1	1	1																	
	J6	1	2	3	4	4	6	6	6																	
Ⓥ CPS UD3 TIMING AND CONTROL (MFR DISC)	J7	1	2	3	4	5	5	5	6																	
	J8	1	2	3	4	5	5	5	6																	
	J9A*	1	2	3	4	5	5	5	5																	
	J9B			3	4	5	5	5	5																	
	J10	1	2	3	4	5	5	5	6																	
	J11A	1	2	3	4	5	5	5	8																	
	J11B	1	1	1	4	5	5	5	5																	
Ⓝ CPS UD4 (SERIES 1 THRU 14) (MFR DISC) 3-24 SECOND VML MESSAGE MODULE	J12	1	2	2	2	2	6	6	8																	
	J13	1	2	2	2	2	2	2	8																	
	J14	1	1	3	3	3	6	6	8																	
	J15	1	2	3	3	3	6	6	8																	
	J16	1	2	3	3	3	6	6	8																	
CPS UD5 FML MESSAGE MODULE (MFR DISC)	J17	1	2	2	2	2	2	2	2																	
	J18	1	1	3	3	3	3	3	3																	
	J19	1	2	3	3	3	3	3	3																	
Ⓝ CPS UD6 (SERIES 1 THRU 14) (MFR DISC) 3-12 SECOND VML MESSAGE MODULE	J20	1	2	3	3	3	6	6	8																	
	J21	1	2	3	3	3	3	3	8																	
	J22	1	1	3	3	3	6	6	8																	
	J23	1	2	3	3	3	6	6	8																	
	J24	1	2	3	3	3	6	6	8																	
Ⓥ CPS UD38 TIMING AND CONTROL	J25					5	6	6	6																	
	J26					5	6	6	6																	
	J27					5	5	5	5																	
	J28					5	6	6	6																	
	J29					5	6	6	6																	
	J30					5	5	5	5																	
Ⓜ CPS UD4 (SERIES 15 AND ABOVE) 3-24 SECOND VML MESSAGE MODULE	J31								8																	
	J32								8																	
	J33								8																	
	J34								8																	
	J35								8																	
	J36								8																	
Ⓜ CPS UD6 (SERIES 15 AND ABOVE) 3-12 SECOND VML MESSAGE MODULE)	J37								8																	
	J38								8																	
	J39								8																	
	J40								8																	
	J41								8																	
	J42								8																	

* SHEET J9A WAS FORMERLY WITHOUT SUFFIX LETER.

DWG ISSUE	CD ISSUE	DATE ISSUED	ORGNR	APPD
1	1	2-14-78	– JSH	JPK RTS RHS
2A	2A	10-2-79	ZEM FCR	JPK RTS RHS
3B	2A APP 1B	10-2-79	ZEM FCR	JPK RTS RHS
4A	2A APPX 2A	9-9-81	FJB	HEM RTS ACS
5B	3B	9-9-81	FJB	HEM RTS ACS
6A	3B APP 1A	3-21-85	CDE REM	HEM RTS RHS
7B	3B APP 2B	3-21-85	CDE ACM	HEM RTS RHS
8D	4D	3-21-85	CDE RCA	HEM RTS RHS

LDI 5E 1-22-85
LDI 5G 1-22-85
LDI 5F 1-22-85
LDI 5D 1-22-85
LDI 5C 1-22-85
LDI 5B 1-22-85
LDI 5A 1-22-85

SUPPORTING INFORMATION

CATEGORY	NO.
EQUIPMENT DRAWING	J1C121A-1
EQUIPMENT DESIGN REQT.	J1C121 BSP 801-603-163
13A ANNOUNCEMENT SYSTEM - DESCRIPTION	BSP 201-519-101
13A ANNOUNCEMENT SYSTEM OPERATING PROCEDURES	BSP 201-519-301
13A ANNOUNCEMENT SYSTEM NETWORK DESIGN ENG INFO.	BSP 201-066-210

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.

1N01

COMMON SYSTEMS

13A ANNOUNCEMENT SYSTEM

CIRCUIT FOR RECORDING AND REPRODUCING DIAL FACILITIES MANAGEMENT ANNOUNCEMENTS

STANDARD

DWG SIZE 6S

ISSUE 3D

BELL LABORATORIES SD-97753-01

-A1

67 SHEETS

E-7559 (8-73) PRINTED IN U.S.A.

APPARATUS INDEX

EQPT LOC	APP FIG. NO.	APP FIG. SH NO.
CIRCUIT PACKS		
ENCODER DRIVER	1	C1
FML(0) THRU (7)	1	C1
POWER SUPPLY	1	C1
TIMING & CONTROL	1	C1
VML(3-12)(0) THRU (7)	1	C1
VML(3-24)(0) THRU (7)	1	C1

DESIG	LOCATION FS	LOCATION APP FIG.	LOCATION EQPT
CAPACITORS			
C1 Ⓤ	1A1	1	
C2 Ⓤ	1A1	1	

JACKS			
HANDSET	1A0	1	
HANDSET	1B0	1	
TAPE Ⓤ	1A0	1	

LEAD INDEX

DESIG	LOCATION FS	LOCATION CAD
-48V TALK BAT.		
-48	1F0	1A0
-48 RTN	1F0	1A0

ANNOUNCEMENT TRK CKT OR CONNECTING CKT AS REQD		
CH ACCESS (0)	4C0	1F0
CH ACCESS (1)	4C0	1F0
CH ACCESS (2)	4C5	1D3
CH ACCESS (3)	4C5	1D3
CH ACCESS (4)	5C0	1D3
CH ACCESS (5)	5C0	1D7
CH ACCESS (6)	5C5	1D7
CH ACCESS (7)	5C5	1D7
CT1 (0)	4D4	1F0
CT1 (1)	4D4	1F0
CT1 (2)	4D9	1D3
CT1 (3)	4D9	1D3
CT1 (4)	5D4	1D3
CT1 (5)	5D4	1D7
CT1 (6)	5D9	1D7
CT1 (7)	5D9	1D7
CT2 (0)	4D4	1F0
CT2 (1)	4D4	1F0
CT2 (2)	4D9	1D3
CT2 (3)	4D9	1D3
CT2 (4)	5D4	1D3
CT2 (5)	5D4	1D7
CT2 (6)	5D9	1D7
CT2 (7)	5D9	1D7
GRD (0)	4C0	1F0
GRD (1)	4C0	1F0
GRD (2)	4C5	1D3
GRD (3)	4C5	1D3
GRD (4)	5C0	1D7
GRD (5)	5C0	1D7
GRD (6)	5C5	1D7
GRD (7)	5C5	1D7
LIM (0)	4D4	1F0
LIM (1)	4D4	1F0
LIM (2)	4D9	1D3
LIM (3)	4D9	1D3
LIM (4)	5D4	1D3
LIM (5)	5D4	1D7
LIM (6)	5D9	1D7
LIM (7)	5D9	1D7
MU2 (0)	4D4	1F0
MU2 (1)	4D4	1F0
MU2 (2)	4D9	1D3
MU2 (3)	4D9	1D3
MU2 (4)	5D4	1D3
MU2 (5)	5D4	1D7
MU2 (6)	5D9	1D7
MU2 (7)	5D9	1D7
MU3 (0)	4D4	1F0
MU3 (1)	4D4	1F0
MU3 (2)	4D9	1D3
MU3 (3)	4D9	1D3
MU3 (4)	5D4	1D3
MU3 (5)	5D4	1D7
MU3 (6)	5D9	1D7
MU3 (7)	5D9	1D7
MU4 (0)	4D4	1F0
MU4 (1)	4D4	1F0
MU4 (2)	4D9	1D3
MU4 (3)	4D9	1D3
MU4 (4)	5D4	1D3
MU4 (5)	5D4	1D7
MU4 (6)	5D9	1D7
MU4 (7)	5D9	1D7
START (0)	4C0	1F0
START (1)	4C0	1F0
START (2)	4C5	1D3
START (3)	4C5	1D3

ANNOUNCEMENT TRK CKT OR CONNECTING CKT AS REQD (CONT)		
START (4)	5C0	1D3
START (5)	5C0	1D7
START (6)	5C5	1D7
START (7)	5C5	1D7
STP (0)	4D4	1F0
STP (1)	4D4	1F0
STP (2)	4D9	1D3
STP (3)	4D9	1D3
STP (4)	5D4	1D3
STP (5)	5D4	1D7
STP (6)	5D9	1D7
STP (7)	5D9	1D7
R1 (0)	4D4	1F0
R1 (1)	4D4	1F0
R1 (2)	4D9	1D3
R1 (3)	4D9	1D3
R1 (4)	5D4	1D3
R1 (5)	5D4	1D3
R1 (6)	5D9	1D7
R1 (7)	5D9	1D7
T1 (0)	4D4	1F0
T1 (1)	4D4	1F0
T1 (2)	4D9	1D3
T1 (3)	4D9	1D3
T1 (4)	5D4	1D3
T1 (5)	5D4	1D3
T1 (6)	5D9	1D7
T1 (7)	5D9	1D7
VA1 (0)	4D4	1F0
VA1 (1)	4D4	1F0
VA1 (2)	4D9	1D3
VA1 (3)	4D9	1D3
VA1 (4)	5D4	1D3
VA1 (5)	5D4	1D7
VA1 (6)	5D9	1D7
VA1 (7)	5D9	1D7
VA2 (0)	4D4	1F0
VA2 (1)	4D4	1F0
VA2 (2)	4D9	1D3
VA2 (3)	4D9	1D3
VA2 (4)	5D4	1D3
VA2 (5)	5D4	1D7
VA2 (6)	5D9	1D7
VA2 (7)	5D9	1D7

DESIG	LOCATION FS	LOCATION CAD
CONNECTING CKT		
AUD IN 1	1C0	1C0
AUD IN 2	1C0	1C0
AUD OUT	1B9	1C0
FMLCT 1	1B9	1A0
FMLCT 2	1B9	1A0
REC RLY 1	1B9	1C0
REC RLY 2	1B9	1C0
REM RECORD	1C0	1C0
REM RECORD RTN	1C0	1C0
VA TEST	2D0	1C0

OPTION INDEX

APP OR WRG	RATED ON ISSUE	REF NOTES	LOCATION
Z	MD 3B		SH C1
Y	MD 3B		SH B1
X			SH B1
W	MD 5B		SH B1
V	STD 5B		SH B1
U	MD 7B		SH A2, B1, C1, D1, D2, G11
T	STD 7B		SH B1, D2

APP OR WRG	RATED ON ISSUE	REF NOTES	LOCATION
ZA			SH B2, SH B3, SH B4, SH B5
ZB			SH B2, SH B3, SH B4, SH B5
ZC			SH B2, SH B3, SH B4, SH B5
ZD			SH B2, SH B3, SH B4, SH B5
ZE			SH B2, SH B3, SH B4, SH B5
ZF			SH B2, SH B3, SH B4, SH B5
ZG			SH B2, SH B3, SH B4, SH B5
ZH			SH B2, SH B3, SH B4, SH B5
YA	MD 3B		SH B2, SH B3, SH B4, SH B5
YB	MD 3B		SH B2, SH B3, SH B4, SH B5
YC	MD 3B		SH B2, SH B3, SH B4, SH B5
YD	MD 3B		SH B2, SH B3, SH B4, SH B5
YE	MD 3B		SH B2, SH B3, SH B4, SH B5
YF	MD 3B		SH B2, SH B3, SH B4, SH B5
YG	MD 3B		SH B2, SH B3, SH B4, SH B5
YH	MD 3B		SH B2, SH B3, SH B4, SH B5
XA			SH B2, SH B3, SH B4, SH B5
XB			SH B2, SH B3, SH B4, SH B5
XC			SH B2, SH B3, SH B4, SH B5
XD			SH B2, SH B3, SH B4, SH B5
XE			SH B2, SH B3, SH B4, SH B5
XF			SH B2, SH B3, SH B4, SH B5
XG			SH B2, SH B3, SH B4, SH B5
XH			SH B2, SH B3, SH B4, SH B5
WA			SH B1

13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S | ISSUE 7B

BELL LABORATORIES | SD-97753-01 | -A2

PART OF FS1
SYSTEM INTERCONNECTIONS

TAPE
(U) J11
(U) C1 4UF
(U) C2 4UF
J12
HANDSET
J13
TB1
FLOATING SHIELD
(X)
TO CONN CKT AS REQD
AUD IN 1
AUD IN 2
P
REM RECORD
REM RECORD RTN
380 MON AUD
ENCODER DRIVER CPS UD2
P4-1 GRD
P4-2 GRD
P3-4 MON AUD
P3-18 VOICE IN
P3-19 VOICE IN RTN
P3-17 -8
P3-1
P4-7 -15
P4-17
P4-9
P4-10 +15
P4-11 +5
P3-6 DCLK
P4-16 SOC
P4-18 SIC
P4-19 CSR
P4-20 SWC
AUD OUT P3-2
ENCODE P3-3
OCDR P4-12 P4-13 OCDR
OCR P4-5 P4-6 OCR
ICDR P4-14 P4-15 ICDR
ICR P4-3 P4-4 ICR
2FZ
TIMING & CONTROL
(W) CPS UD3
(V) CPS UD3B
P5-3 ENCODE
+15 P7-9 +15
+5 P7-11 P7-12 +5
P7-1 P7-2 GRD
P5-12 REM REC
P5-11 REM REC RTN
P7-10 PWR SENSE
P7-6 24K CLK IN
P7-3 T60 CLK IN
FMLCTRLY 1 P5-14
FMLCTRLY 2 P5-13
REC RLY P5-
PWR OFF P7-7
DCLK P5-6
SOC P7-4
SIC P7-5
CSR P7-19
SWC P7-20
24K CLK OUT P7-16
T60 CLK OUT P7-13
(X,Y)
FMLCTRLY 1
FMLCTRLY 2
2A1
POWER OFF
2FZ
TB1
3 AUD OUT
A FMLCT1
B FMLCT2
10 REC RLY 1
11 REC RLY 2
P
TO CONN CKT AS REQD
-48 RTN
TO -48V TALK BAT
-48A
2G2 CUR SENSE
(WA) SHELF ASS'Y GRD
18GA
FILTER GRD
CUR RTN
POWER SUPPLY CPS UD1
P1-1 CUR SENSE
P2-1
P2-2
P2-3
P2-4
P2-11
P2-12
-48 RTN
P1-4
P1-13
P1-14
-48
P1-8 CUR RTN
PWR SENSE P2-15 P2-6
-15 P2-17 P2-18 P1-11 P1-12 P2-8 → -15
+15 P2-19 P2-20 → +15
+5 P2-5 P2-13 P2-14 → +5
-8 P2-10 → -8
-4 P2-16 P2-7 → -4

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

DWG SIZE	ISSUE
65	7B

BELL LABORATORIES | SD-97753-01 | B1

PART OF FS 1
SYSTEM INTERCONNECTIONS

188 FMLCTRLY 1
FMLCTRLY 2

TIMING & CONTROL
(W) CPS UD3
(V) CPS UD3B

DET RST P6-2
ST ENAB P6-4
LIM RST P6-5
CT GATE P6-6
DT COMP SW P6-20

P8A-4 (YA) FML CTRLY 1
P8A-3 (YA) FML CTRLY 2
P9A-2 DET RST
P9A-4 (ZA,XA) ST ENAB
P9A-5 (ZA,XA) LIM RST
P9A-6 (ZA,XA) CT GATE
P9A-20 DT COMP SW

-4 P10A-16 -4
-15 P8A-1 -15
-8 P8A-17 -8
+5 P10A-11 +5
+15 P10A-9 +15
P10A-1 GRD

(ZA) VML(3-24)(0) CPS UD4
(YA) FML(0) CPS UD5
(XA) VML(3-12)(0) CPS UD6

P10A-7 PWR OFF
P10A-12 OCDR
P10A-6 OCR
P10A-15 ICDR
P10A-13 ICR
P10A-10 FILTER GRD
P8A-2 FILTER GRD

CURRENT SENSE P10A-4
CURRENT RETURN P10A-5

P8H-4 (YH) FML CTRLY 1
P8H-3 (YH) FML CTRLY 2
P9H-2 DET RST
P9H-4 (ZH,XH) ST ENAB
P9H-5 (ZH,XH) LIM RST
P9H-6 (ZH,XH) CT GATE
P9H-20 DT COMP SW

-4 P10H-16 -4
-15 P8H-1 -15
-8 P8H-17 -8
+5 P10H-11 +5
+15 P10H-9 +15
P10H-1 GRD

(ZH) VML(3-24)(7) CPS UD4
(YH) FML(7) CPS UD5
(XH) VML(3-12)(7) CPS UD6

P10H-7 PWR OFF
P10H-12 OCDR
P10H-6 OCR
P10H-15 ICDR
P10H-13 ICR
P10H-10 FILTER GRD
P8H-2 FILTER GRD

CURRENT SENSE P10H-4
CURRENT RETURN P10H-5

1C8 PWR OFF
1D4 OCDR
OCR
ICDR
ICR
1G1 FILTER GRD
CUR RET
1F1 CUR SENSE

MULT TO
(ZB) VML(3-24)(1) - (ZG) VML(3-24)(6) CPS UD4 OR
(YB) FML(1) - (YG) FML(6) CPS UD5 OR
(XB) VML(3-12)(1) - (XG) VML(3-12)(6) CPS UD6

13A ANNOUNCEMENT SYSTEM

DWG SIZE 65 | ISSUE 5B

BELL LABORATORIES | SD-97753-01 | B2

PART OF FS I
SYSTEM INTERCONNECTIONS

181 MON AUD

TO CONN CKT AS REQD — VA TEST — TB1 12

TIMING & CONTROL
(W) CPS UD3
(V) CPS UD38

P7-18	MATCH	
P7-8	LST CHP	
P6-3	VA TEST	
P5-3	ERASE	
P5-8	CHP CLK	
P5-7	SOR	
P5-20	REPL	
P5-10	REC	
P5-19	GEN INFO	
P7-17	REPH	
P5-18	STROBE	
P5-16	SILEN	
P7-14	FMLCT	
P6-7	CHP1	
P6-8	CHP2	
P6-9	CHP3	
P6-10	CHP4	
P5-4	OSC IN	
P5-5	OSC OUT	

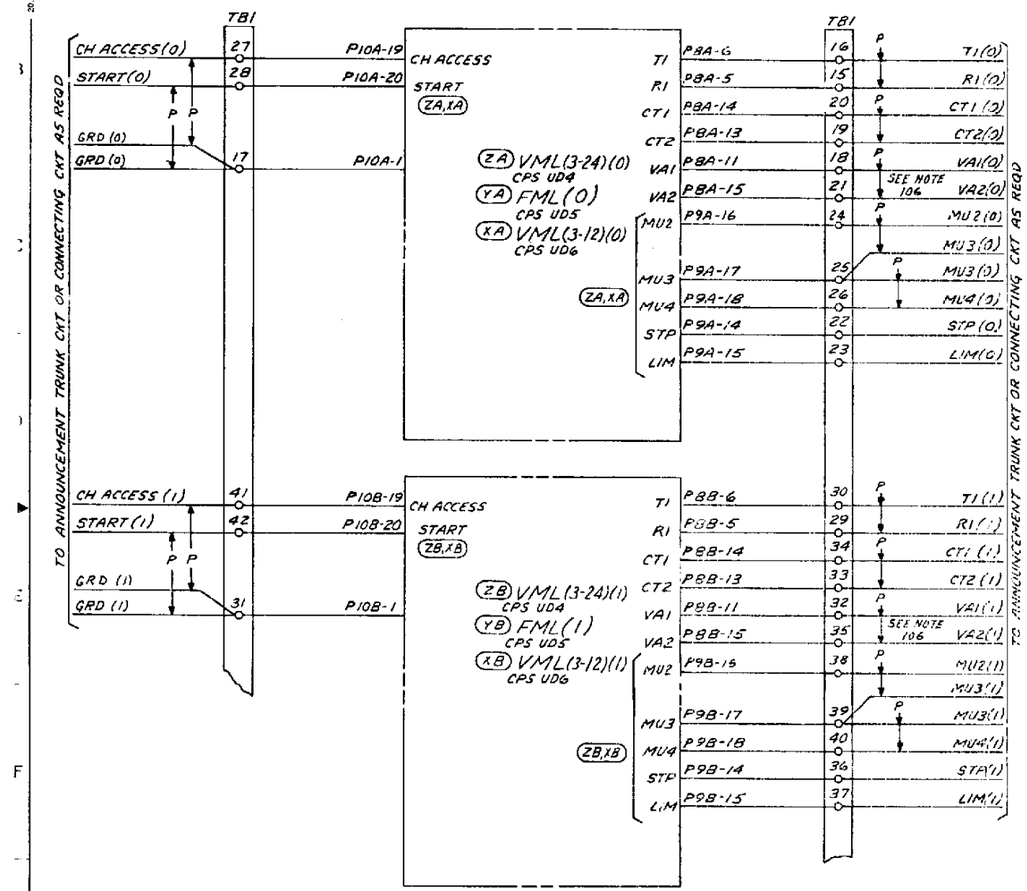
P9A-3	VA TEST	MATCH	P10A-18
P9A-9	ERASE	LST CHP	P10A-8
P8A-8	(ZR,XA) CHP CLK	MON AUD	P9A-11
P8A-7	(ZA,XA) SOR		
P8A-20	REPL		
P8A-10	REC		
P9A-19	GEN INFO	(ZA) VML(3-24)(0) CPS UD4	
P10A-17	REPH	(YA) FML(0) CPS UD5	
P9A-18	STROBE	(XA) VML(3-12)(0) CPS UD6	
P8A-16	SILEN		
P10A-14	(YA) FMLCT		
P9A-7	(YR) CHP1		
P9A-8	(YA) CHP2		
P9A-9	(YA) CHP3		
P9A-10	(YA) CHP4		

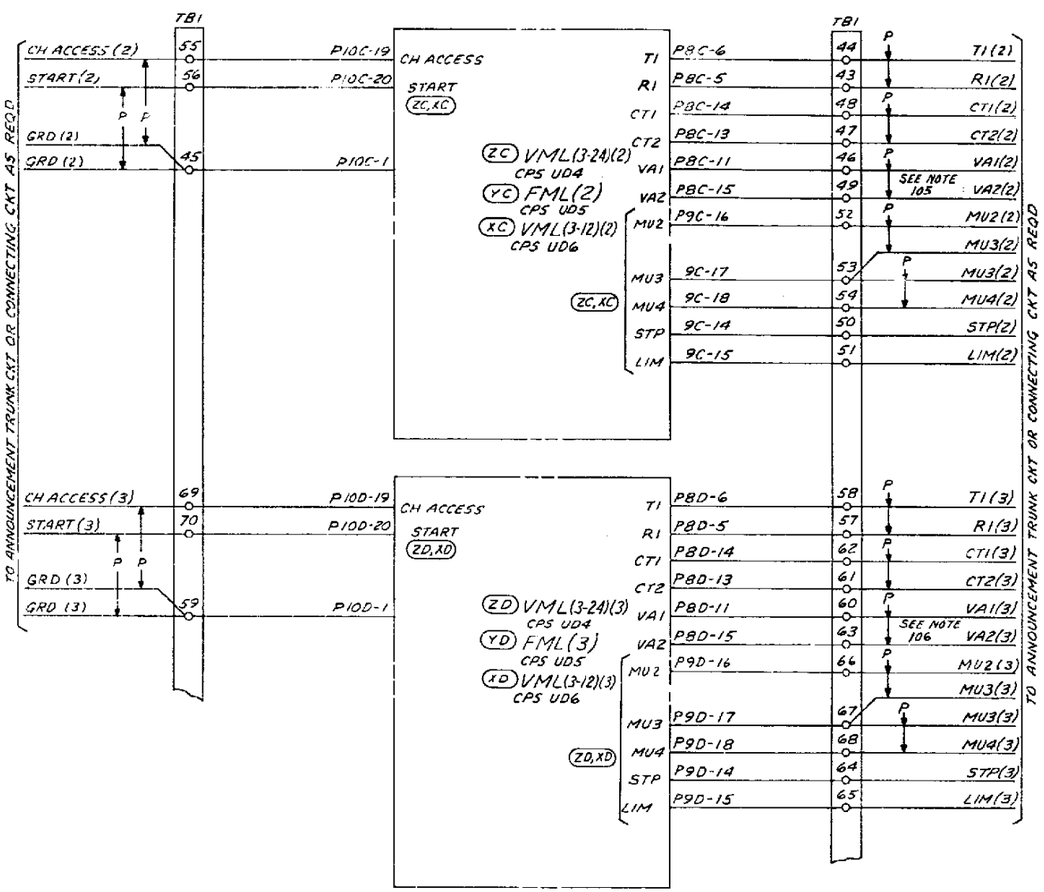
MULT TO
(ZB) VML(3-24)(1)–
(ZG) VML(3-24)(6) CPS UD4 OR
(YB) FML(1)–(YG) FML(6) CPS UD5 OR
(XB) VML(3-12)(1)–
(XG) VML(3-12)(6) CPS UD6

P9H-3	VA TEST	MATCH	P10H-18
P8H-9	ERASE	LST CHP	P10H-8
P8H-8	(ZH,XH) CHP CLK	MON AUD	P9H-11
P8H-7	(ZH,XH) SOR		
P8H-20	REPL		
P8H-10	REC		
P8H-19	GEN INFO	(ZH) VML(3-24)(7) CPS UD4	
P10H-17	REPH	(YH) FML(7) CPS UD5	
P8H-18	STROBE	(XH) VML(3-12)(7) CPS UD6	
P8H-16	SILEN		
P10H-14	(YH) FMLCT		
P9H-7	(YH) CHP1		
P9H-8	(YH) CHP2		
P9H-9	(YH) CHP3		
P9H-10	(YH) CHP4		

13A ANNOUNCEMENT SYSTEM	DWG SIZE 65	ISSUE 58
BELL LABORATORIES	SD-97753-01	B3

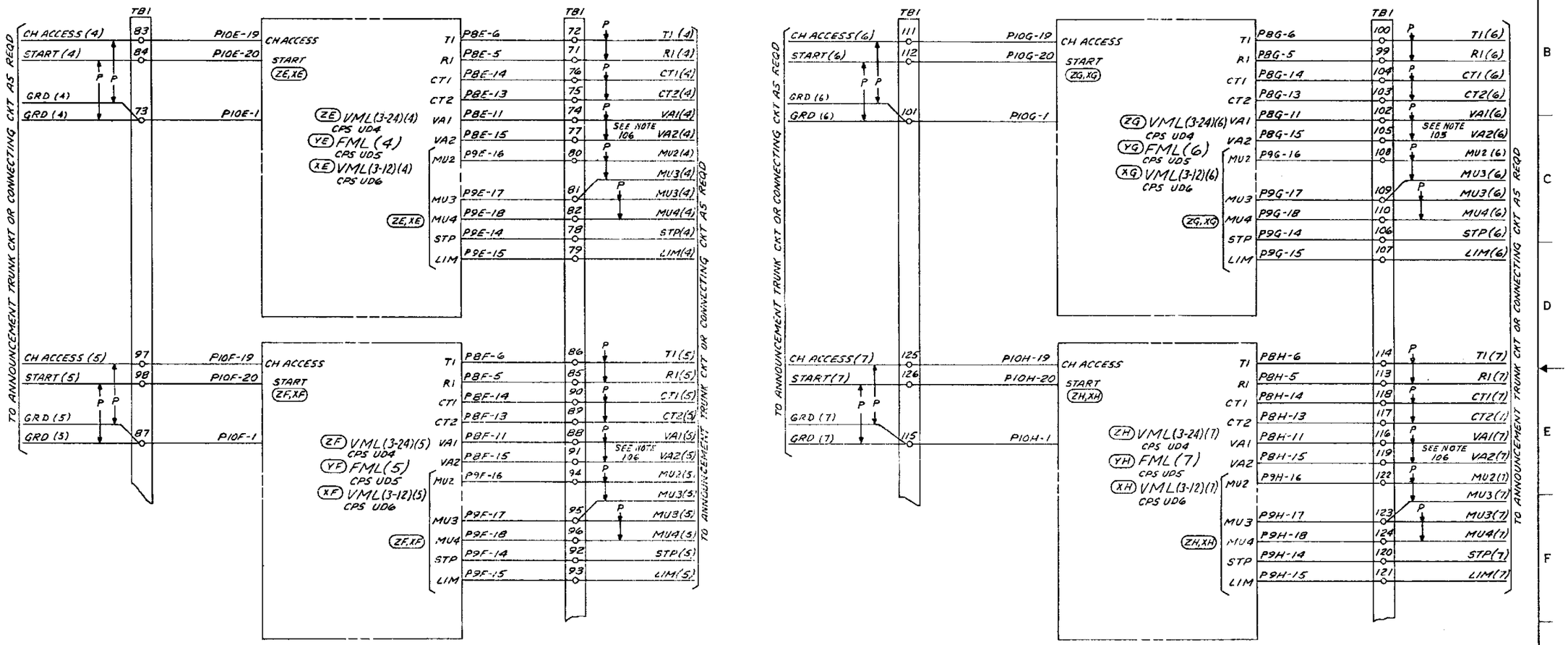
PART OF FS 1
SYSTEM INTERCONNECTIONS





13A ANNOUNCEMENT SYSTEM		DWG SIZE 55	ISSUE 3B
BELL LABORATORIES	SD-97753-01		84

PART OF FS 1
SYSTEM INTERCONNECTIONS



13A ANNOUNCEMENT SYSTEM		DWG SIZE	ISSUE
		B5	3B
BELL LABORATORIES	SD-97753-01		B5

APP FIG. 1

CIRCUIT PACK

EQPT LOC	POS 1	POS 2	POS 3	POS 4	POS 4	POS 4	POS 5	POS 5	POS 5	POS 6	POS 6	POS 6	POS 7	POS 7	POS 7	POS 8	POS 8	POS 8
DESIG	POWER SUPPLY	ENCODER DRIVER	TIMING & CONTROL	VML(3-24)(0)	FML (0)	VML(3-12)(0)	VML(3-24)(1)	FML (1)	VML(3-12)(1)	VML(3-24)(2)	FML (2)	VML(3-12)(2)	VML(3-24)(3)	FML (3)	VML(3-12)(3)	VML(3-24)(4)	FML (4)	VML(3-12)(4)
CODE	UD1	UD2	(H) UD3 (U) UD3B	UD4	UD5	UD6	UD4	UD5	UD6	UD4	UD5	UD6	UD4	UD5	UD6	UD4	UD5	UD6
OPTION				ZA	YA	XA	ZB	YB	XB	ZC	YC	XC	ZD	YD	XD	ZE	YE	XE
ELEM IDENT																		
TERM. FS LOC	1F2	1B2	1B7	2C4	2C4	2C4	2G6	2G6	2G6	2G6	2G6	2G6	2G6	2G6	2G6	2G6	2G6	2G6
TERM. FS LOC	1G4	1D2	2D2	3E5	3E5	3E5	3E5	3E5	3E5	3E5	3E5	3E5	3E5	3E5	3E5	3E5	3E5	3E5
TERM. FS LOC			3E2	4C2	4C2	4C2	4E2	4E2	4E2	4C7	4C7	4C7	4E7	4E7	4E7	5C2	5C2	5C2

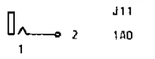
EQPT LOC	POS 9	POS 9	POS 9	POS 10	POS 10	POS 10	POS 11	POS 11	POS 11			
DESIG	VML(3-24)(5)	FML (5)	VML(3-12)(5)	VML(3-24)(6)	FML (6)	VML(3-12)(6)	VML(3-24)(7)	FML (7)	VML(3-12)(7)			
CODE	UD4	UD5	UD6	UD4	UD5	UD6	UD4	UD5	UD6			
OPTION	ZF	YF	XF	ZG	YG	XG	ZH	YH	XH			
ELEM IDENT												
TERM. FS LOC	2G6	2G6	2G6	2G6	2G6	2G6	2C8	2C8	2C8			
TERM. FS LOC	3E5	3E5	3E5	3E5	3E5	3E5	3E8	3E8	3E8			
TERM. FS LOC	5E2	5E2	5E2	5C7	5C7	5C7	5E7	5E7	5E7			

(U) CAPACITOR

DESIG	LOC	CODE
C1	1A1	542G, 1MF
C2	1A1	542G, 1MF

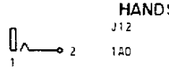
(U) JACK
41 SWITCHCRAFT

TAPE



JACK
223AM

HANDSET



TERMINAL STRIP

DESIG	LOC	CODE
TB*	1A2,1A9,1B1, 3D0,4B0,4B3, 4B5,4B9,5B0, 5B3,5B5,5B9	P/O (Z) E0-97882-30,GP1 (T) E0-97882-30,GP2 (X) E0-97882-31,GP1

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM	DWG SIZE 6S	ISSUE 7B
BELL LABORATORIES	SD-97753-01	-C1

CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	ONE PER
A	3	-48V TALK	SEE NOTE 104
BATTERY SYMBOL		VOLTAGE RANGE	
-48V TALK BAT.		-42.5 TO -52.5	

102.

FEATURE OR OPTION	PROVIDE		
	APP FIG.	APP OR WRG	QUANTITY
UD1 POWER SUPPLY MODULE	1		1 PER CKT
UD2 ENCODER-DRIVER MODULE	1		1 PER CKT
UD3 TIMING & CONTROL MODULE	1		1 PER CKT
UD4 VML (3-24) MESSAGE MODULE IN CHAN 0 POSITION	1	ZA	1 PER POSITION
UD5 FML MESSAGE MODULE IN CHAN 0 POSITION	1	YA	1 PER POSITION
UD6 VML (3-12) MESSAGE MODULE IN CHAN 0 POSITION	1	XA	1 PER POSITION
UD4 VML (3-24) MESSAGE MODULE IN CHAN 1 POSITION	1	ZB	1 PER POSITION
UD5 FML MESSAGE MODULE IN CHAN 1 POSITION	1	YB	1 PER POSITION
UD6 VML (3-12) MESSAGE MODULE IN CHAN 1 POSITION	1	XB	1 PER POSITION
UD4 VML (3-24) MESSAGE MODULE IN CHAN 2 POSITION	1	ZC	1 PER POSITION
UD5 FML MESSAGE MODULE IN CHAN 2 POSITION	1	YC	1 PER POSITION
UD6 VML (3-12) MESSAGE MODULE IN CHAN 2 POSITION	1	XC	1 PER POSITION
UD4 VML (3-24) MESSAGE MODULE IN CHAN 3 POSITION	1	ZD	1 PER POSITION
UD5 FML MESSAGE MODULE IN CHAN 3 POSITION	1	YD	1 PER POSITION
UD6 VML (3-12) MESSAGE MODULE IN CHAN 3 POSITION	1	XD	1 PER POSITION
UD4 VML (3-24) MESSAGE MODULE IN CHAN 4 POSITION	1	ZE	1 PER POSITION
UD5 FML MESSAGE MODULE IN CHAN 4 POSITION	1	YE	1 PER POSITION
UD6 VML (3-12) MESSAGE MODULE IN CHAN 4 POSITION	1	XE	1 PER POSITION
UD4 VML (3-24) MESSAGE MODULE IN CHAN 5 POSITION	1	ZF	1 PER POSITION
UD5 FML MESSAGE MODULE IN CHAN 5 POSITION	1	YF	1 PER POSITION
UD6 VML (3-12) MESSAGE MODULE IN CHAN 5 POSITION	1	XF	1 PER POSITION
UD4 VML (3-24) MESSAGE MODULE IN CHAN 6 POSITION	1	ZG	1 PER POSITION
UD5 FML MESSAGE MODULE IN CHAN 6 POSITION	1	YG	1 PER POSITION
UD6 VML (3-12) MESSAGE MODULE IN CHAN 6 POSITION	1	XG	1 PER POSITION

CIRCUIT NOTES: (CONT)

102. (CONT)

FEATURE OR OPTION	PROVIDE		
	APP FIG.	APP OR WRG	QUANTITY
UD4 VML (3-24) MESSAGE MODULE IN CHAN 7 POSITION	1	ZH	1 PER POSITION
UD5 FML MESSAGE MODULE IN CHAN 7 POSITION	1	YH	1 PER POSITION
UD6 VML (3-12) MESSAGE MODULE IN CHAN 7 POSITION	1	XH	1 PER POSITION
SHELF ASSY GROUND STRAP (SEE NOTE 206)	1	WA	1 PER CKT

103.

RECORD OF 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
2A	WA	NONE				
3B		Z		Y		Z
						YA-YH
	Y OR Z	Y OR Z		X		Y
5B	V OR W	W		V		W
7B	T OR U	U		T		U

CIRCUIT NOTES: (CONT)

104. -48V MUST BE PROVIDED BY TALK BATTERY SUPPLIED THROUGH A SEPARATE DEDICATED FILTER LOCATED IN THE SAME FRAME CONTAINING THE 13A ANNOUNCEMENT SYSTEM. SPECIFIC FILTERS FOR USE IN THE INDICATED SWITCHING SYSTEMS ARE SHOWN IN TABLE 1 BELOW.

TABLE 1

SWITCHING SYSTEM	FILTER	DRAWING
1 ESS 2 ESS	INCLUDED AS PART OF J1A058C-1 FRAME WHICH CONTAINS 13A	
3ESS	USE EXISTING FILTER IN FRAME WHICH CONTAINS 13A	
NO. 5 CROSSBAR	J23064M-50,L2	SD-25574-01
NO. 1 CROSSBAR	ED-95174-70,G4	SD-95571-01
STEP-BY-STEP	ED-95174-70,G4	SD-95571-01

THE POWER CABLE FROM THE FILTER OUTPUT TO THE 13A SHALL BE 20 GA / MIN. TIGHTLY TWISTED PAIR AND SHALL NOT BE BUNDLED IN WITH OR RUN TIGHTLY AGAINST OTHER CABLES ON THE FRAME.

105. A VOICE ALARM FROM A UD4, UD5, OR UD6 MESSAGE MODULE REPRESENTS LOSS OF ANNOUNCEMENT FROM THE CHANNEL EQUIPPED WITH THE MESSAGE MODULE THAT IS IN THE VOICE ALARM CONDITION. LOSS OF FUSE F1 INITIATES THE VOICE ALARM ON ALL CHANNELS EQUIPPED, AND REPRESENTS LOSS OF ANNOUNCEMENT FROM ALL CHANNELS EQUIPPED. THE VOICE ALARM TERMINALS VA1(0-7) AND VA2(0-7), MAY BE CONNECTED TO THE CENTRAL OFFICE ALARM CIRCUIT TO DETECT A VOICE ALARM CONDITION. CAUTION, FOR THIS CONNECTION A RELAY OPERATED FROM -48V TO GROUND MUST BE INSERTED BETWEEN THE VA1-VA2 TERMINALS AND THE CENTRAL OFFICE ALARM CIRCUIT TO ISOLATE THE VA1-VA2 RELAY CONTACTS FROM THE CENTRAL OFFICE ALARM CIRCUIT.

106. IN GENERAL, ALL CONNECTIONS FROM THE INTERCONNECTING CIRCUITS TO THE 13A ANNOUNCEMENT SYSTEM SHALL BE TWISTED PAIR. IN PARTICULAR FOR THE TYPES OF SWITCHING SYSTEMS SHOWN IN THE TABLE 2 BELOW, DEDICATED INTERFACE CIRCUITS SHOULD BE USED AS INDICATED.

TABLE 2

SWITCHING SYSTEM	INTERFACE CIRCUIT	DRAWING	USE
NO. 5 CROSSBAR	J-23064Q-50 CONTROL UNIT	SD-25574-01	ALWAYS REQUIRED
NO. 5 CROSSBAR	J-23058 BT VOICE ALARM AND CONTROL UNIT	SD-27980-01	OPTIONAL
STEP-BY-STEP	J-33017EE-1 INTERFACE UNIT	SD-35067-01	ALWAYS REQUIRED
STEP-BY-STEP	J-33017EE-1 ALARM UNIT	SD-35067-01	OPTIONAL

107. THE LOOP RESISTANCE OF THE TWISTED PAIRS WHICH CONNECT THE AUDIO AMPLIFIER OUTPUT TERMINALS T1(0-7) AND R1(0-7) TO THE POINT WHERE DISTRIBUTION IS MADE TO MULTIPLE TRUNK CIRCUITS SHOULD BE AS LOW AS POSSIBLE. THIS WILL ASSURE MINIMUM LOSS OF ANNOUNCEMENT LEVEL WITH INCREASING NUMBERS OF TRUNK CIRCUITS. IT WILL ALSO PROVIDE MAXIMUM TALK-THROUGH SUPPRESSION BETWEEN MULTIPLE TRUNKS. IN ENGINEERING AN OFFICE, THEREFORE, TABLES 3 AND 4 BELOW SHOULD BE USED AS A GUIDE IN SELECTING THE GAGE OF WIRE TO USE IN CONNECTING THE T1, R1 TERMINALS OF THE 13A TO THE POINT WHERE THE TRUNK CIRCUITS ARE MULTIPLED. THESE TABLES ASSURE THAT THE MAXIMUM LOSS IN ANNOUNCEMENT LEVEL FROM ONE TRUNK CIRCUIT CONNECTION TO THE MAXIMUM NUMBER INDICATED WILL NOT EXCEED 3.5 dB. THEY ALSO ASSURE THAT THE TALK-THROUGH SUPPRESSION WILL BE 40 dB MINIMUM. FOR EXAMPLE, TO CONNECT 100 900-OHM TRUNKS TO THE 13A WITH 100 FEET OF TWISTED PAIR, 24 GAUGE WIRE OR HEAVIER MUST BE USED. IF 100 600-OHM TRUNKS ARE TO BE CONNECTED WITH 100 FEET OF TWISTED PAIR, 22 GAUGE WIRE OR HEAVIER MUST BE USED.

NUMBER OF TRUNK CIRCUITS

DISTANCE (FT)	1	50	100	200	300	400	500
25	26	26	26	26	24	22	20
50	26	26	26	24	22	20	16
75	26	26	26	22	20	18	14
100	26	26	24	20	20	16	
200	24	24	22	18	16	14	
400	22	22	18	14	14		
800	18	18	16				
1000	18	18	14				

TABLE 3. WIRE GAGE FOR 900 OHM DISTRIBUTION

NUMBER OF TRUNK CIRCUITS

DISTANCE (FT)	1	50	100	200	300	400
25	26	26	26	24	22	20
50	26	26	26	22	20	16
75	26	26	24	20	18	14
100	26	26	22	20	16	
200	24	24	20	16	14	
400	20	20	16	14		
800	18	18	14			
1000	16	16				

TABLE 4. WIRE GAGE FOR 600 OHM DISTRIBUTION

CIRCUIT NOTES: (CONT)

107. (CONT) THE .045 INCH SQUARE WIRE WRAP PINS ON THE BACKPLANE ARE APPROVED FOR A MAXIMUM OF 2 CONNECTIONS OF 22GA WIRE. SUPPLEMENTARY TERMINAL BLOCKS MUST BE USED WHERE LARGER GAGE WIRE IS REQUIRED. THE FOLLOWING TABLE 5 CAN BE USED TO SELECT A NUMBER OF EQUIVALENT 24 GAGE WIRES.

TABLE 5

24 GAGE EQUIVALENCE

PAIR GAGE	EQUIVALENT NUMBER OF 24 GAGE PAIRS
14	10
16	7
18	4
20	3
22	2

13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S | ISSUE 7B

BELL LABORATORIES | SD-97753-01 | -01

E-2741 (6/79) PRINTED IN U.S.A.

EQUIPMENT NOTES:

(U) 201. WIRE BETWEEN BACKPLANE AND TAPE AND HEADSET JACKS SHALL BE KS-19195,L1 PAIR,TW.

(T) 201. WIRE BETWEEN BACKPLANE AND HEADSET JACKS SHALL BE KS-19195,L1 PAIR,TW.

202. TO CAUSE MINIMUM INTERFERENCE TO THE AUDIO SIGNALS THE 13A ANNOUNCEMENT SYSTEM SHOULD NOT BE LOCATED IN THE SAME FRAME OR ADJACENT TO EQUIPMENT WHICH PRODUCES EXTRAORDINARY ELECTRICAL ACTIVITY (SUCH AS RINGING AND TONE EQUIPMENT, SELECTOR SWITCHES, CROSSBAR SWITCHES, OR INTERRUPTER CIRCUITS).

203. ALL CONNECTIONS TO THE 13A ANNOUNCEMENT SYSTEM EXCEPT POWER AND GROUND ARE MADE TO THE .045 SQUARE WIRE WRAP TERMINALS ON THE BACKPLANE.

204. THE 13A SHOULD BE MOUNTED WITHIN 5 FEET OF THE FLOOR. A MINIMUM OF 2 INCHES CLEARANCE SHOULD BE PROVIDED ABOVE AND BELOW THE 13A AND THE INTERFACE CIRCUITS (TABLE 2) SHOULD BE ADJACENT TO THE 13A.

205. THE MESSAGE LENGTH REQUIRED DETERMINES THE CHOICE OF MESSAGE MODULES TO BE ORDERED. BOTH THE UD4 (OPTION ZA-ZH, LIST 40-47) AND THE UD6 (OPTION XA-XH, LIST 60-67) CAN HAVE THE MESSAGE LENGTH INCREASED IN 3 SECOND INCREMENTS UP TO THE MAXIMUM AVAILABLE CAPACITY BY THE SWITCH POSITIONS ON THE CIRCUIT PACKS. THE UD4 HAS A 24 SECOND CAPACITY AND THE UD6 HAS A 12 SECOND CAPACITY. THE SYSTEM CAN BE ORDERED WITH 1 TO 8 OPTIONS OF EITHER ALL OF ONE KIND OR A MIXTURE OF UD4S AND UD6S.

206. OPTION WA PROVIDES SHELF ASSY GROUND STRAP WHICH MUST BE INSTALLED ON ALL 13A'S MOUNTED IN NON ESS-TYPE OFFICES.

INFORMATION NOTES:

301.

13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S

ISSUE 7B

BELL LABORATORIES

SD-97753-01

-D2

SCI
ANNOUNCEMENT RECORD

CH ACCESS SWITCH IN ACCESS POSITION OR CH ACCESS AND START LEADS GROUNDED

LOCAL RECORD SWITCH OR CLOSURE BETWEEN LEADS REM RECORD AND REM RECORD RTN

1 MILLISEC (MIN)

LOCAL RECORD SWITCH OR RELEASE OF CLOSURE BETWEEN LEADS REM RECORD AND REM RECORD RTN

RECORD REQUEST LED (RED) LIGHTS

15 SEC (MAX)

RECORD REQUEST LED (RED) EXTINGUISHES

KREC RELAY AND RECORD LED (GREEN) LIGHTS

← RECORDING STARTS

3-29 SEC (DEPENDS ON MESSAGE LENGTH SWITCH SETTING)

← RECORDING ENDS

KREC RELAY AND RECORD LED (GREEN) EXTINGUISHES

CH ACCESS SWITCH RETURNED TO NORMAL OR GRD REMOVED FROM CH ACCESS AND START LEADS

END OF RECORD CYCLE

13A ANNOUNCEMENT SYSTEM		SD-97753-01-E1
BELL TELEPHONE LABORATORIES INCORPORATED	SHEET SIZE 6S	ISSUE 3B

SC2
ANNOUNCEMENT REPRODUCE

CH ACCESS SWITCH IN ACCESS POSITION
START LEAD GROUNDED

0-22 SEC

LEADS CT1 AND CT2 SHORTED

0.89-1.48 SEC

(Z)

LEADS MU3 AND MU4 SHORTED

SHORT REMOVED FROM LEADS MU2 AND MU3

SHORT REMOVED FROM LEADS CT1 AND CT2

ANNOUNCEMENT STARTS

U27 A

CH ACCESS SWITCH OR GROUND REMOVED FROM START LEAD

SHORT REMOVED FROM LEADS MU3 AND MU4

LEADS MU2 AND MU3 SHORTED

END OF ANNOUNCEMENT REPRODUCE CYCLE

3-29 SEC (DEPENDS ON MESSAGE LENGTH SWITCH SETTING)

ANNOUNCEMENT ENDS

LEAD LIM GROUNDED

GRD REMOVED FROM LEAD STP

SHORT REMOVED FROM LEADS MU3 AND MU4

LEADS MU2 AND MU3 SHORTED

200 MILLISECONDS

GRD REMOVED FROM LEAD LIM

LEAD STP GROUNDED

1.16 SEC

LEADS CT1 AND CT2 SHORTED

1.48 SEC

(Y)

SEQUENCE IS REPEATED BETWEEN (Z) AND (Y)
AS LONG AS CH ACCESS SWITCH IS IN ACCESS POSITION
OR GRD REMAINS ON START LEAD

A

TO L12

ISSUE 3B

13A ANNOUNCEMENT SYSTEM

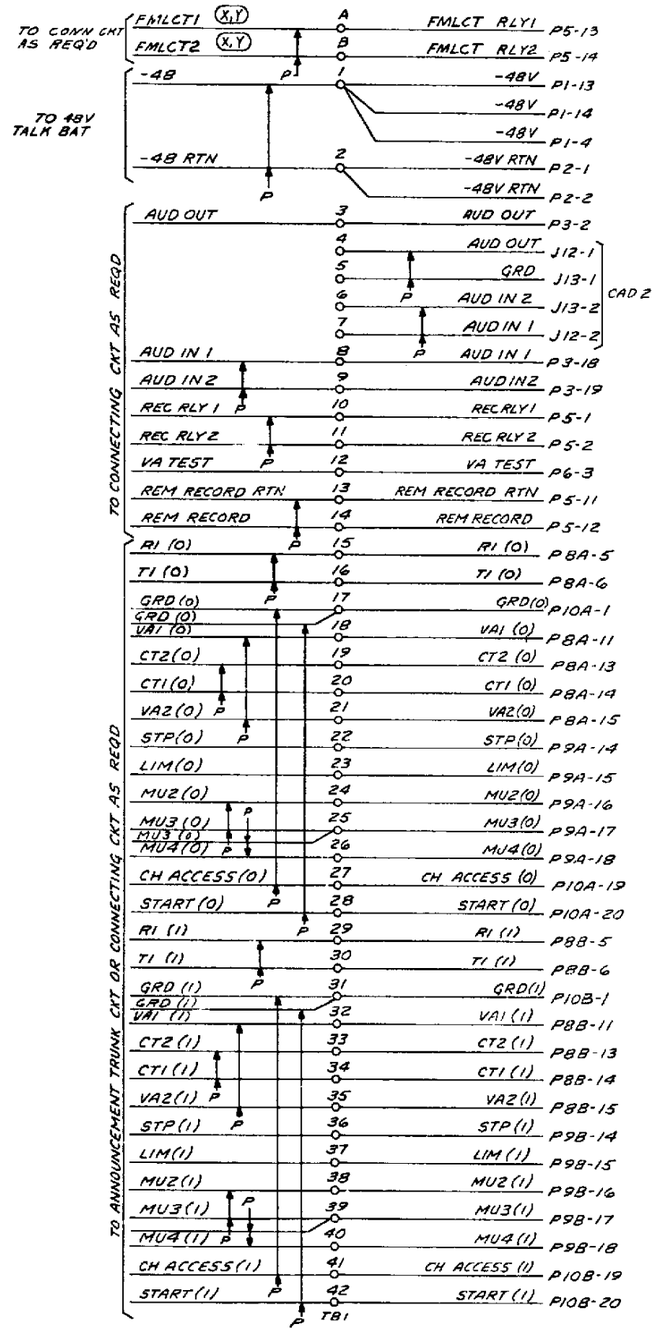
SD-97753-01-E2

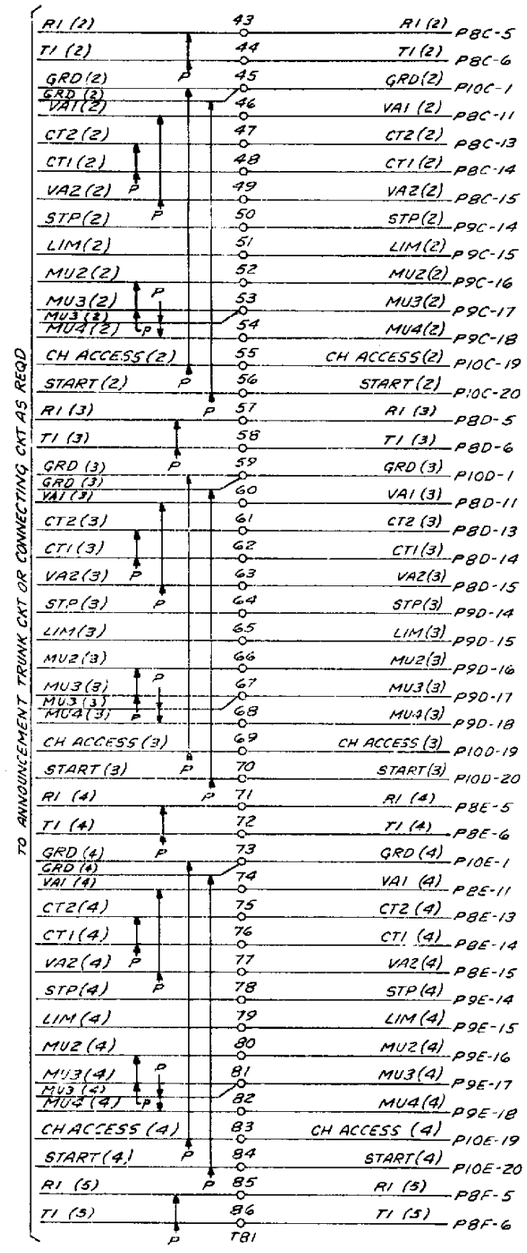
BELL TELEPHONE LABORATORIES
INCORPORATED

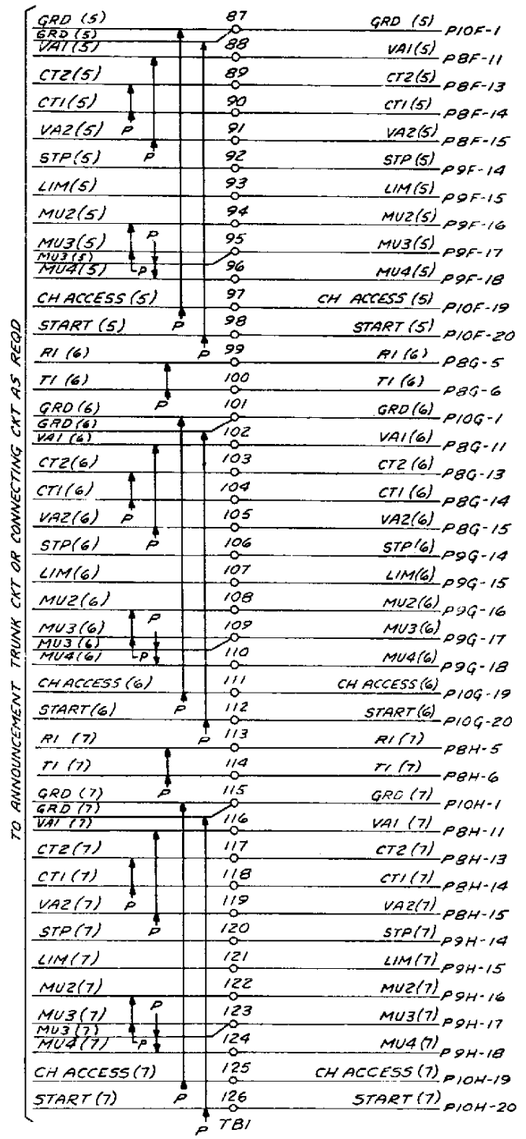
6S

PART OF CAD I

BACKPLANE WIRING





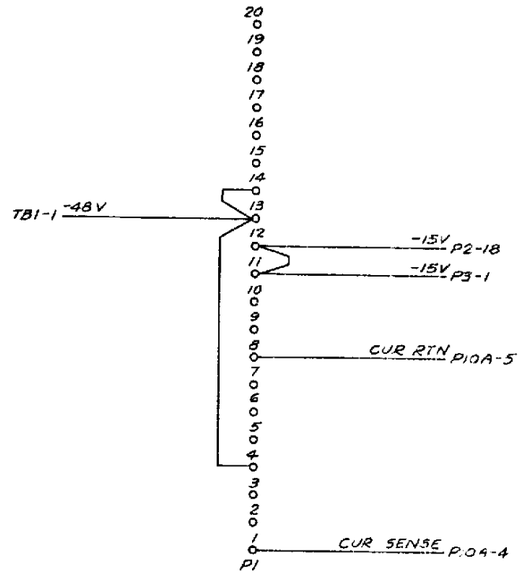


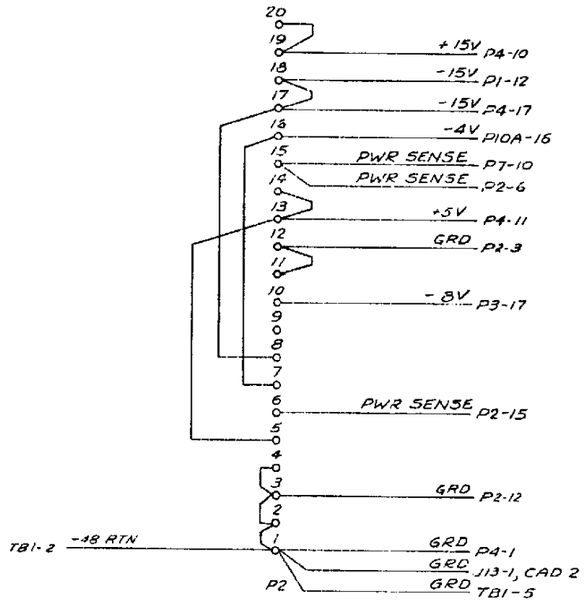
13A ANNOUNCEMENT SYSTEM

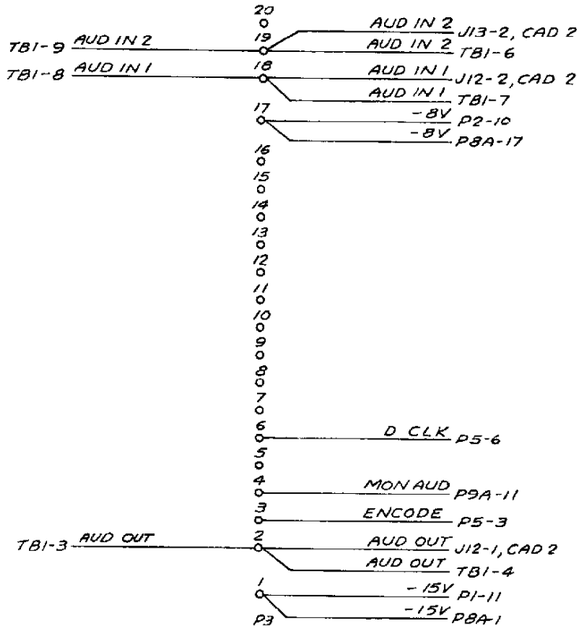
DWG SIZE	ISSUE
6S	3B

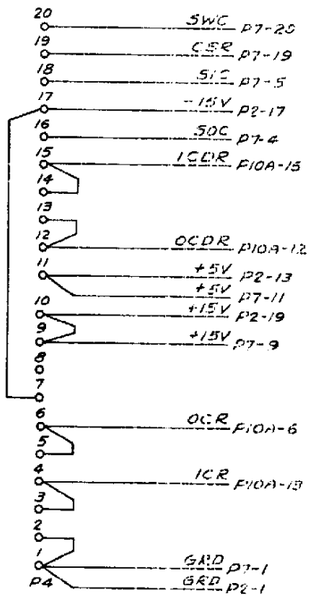
BELL LABORATORIES	SD-97753-01	G1

PART OF CAD 1
BACKPLANE WIRING





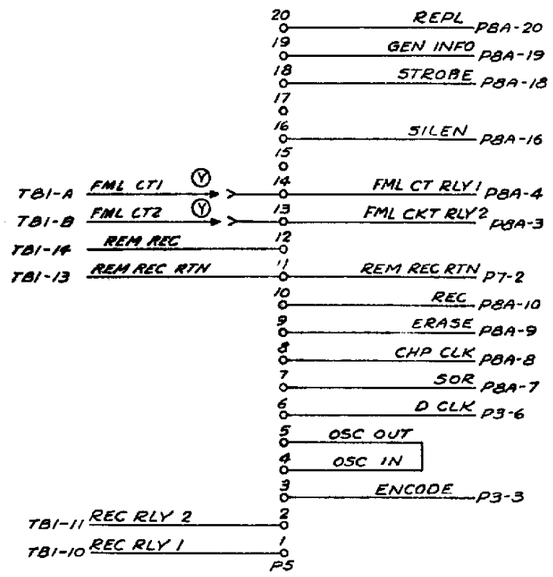


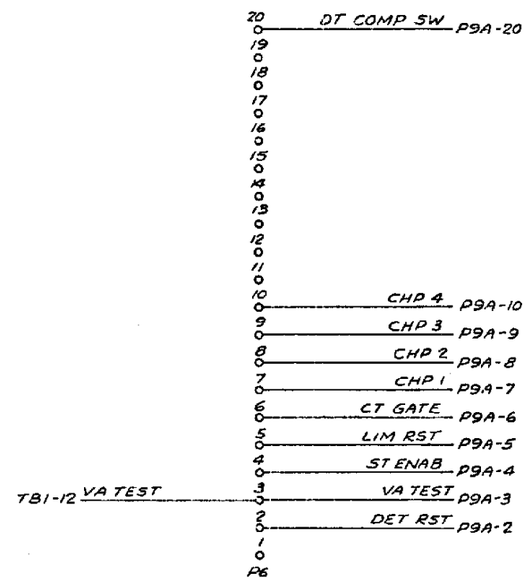


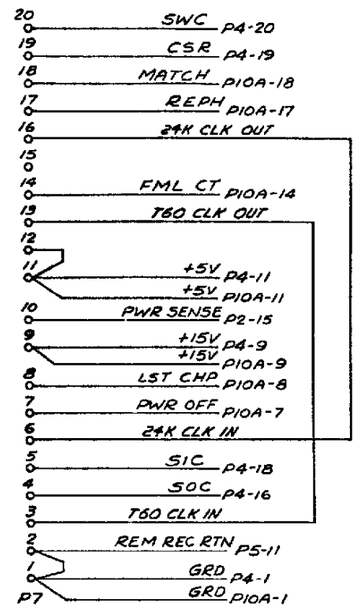
NOTE: NO INSTALLER WIRING ON SHEETS G2 THRU G11

13A ANNOUNCEMENT SYSTEM		DWG SIZE 6S	ISSUE 1
BELL LABORATORIES	SD-97753-01		G2

PART OF CAD I
BACKPLANE WIRING

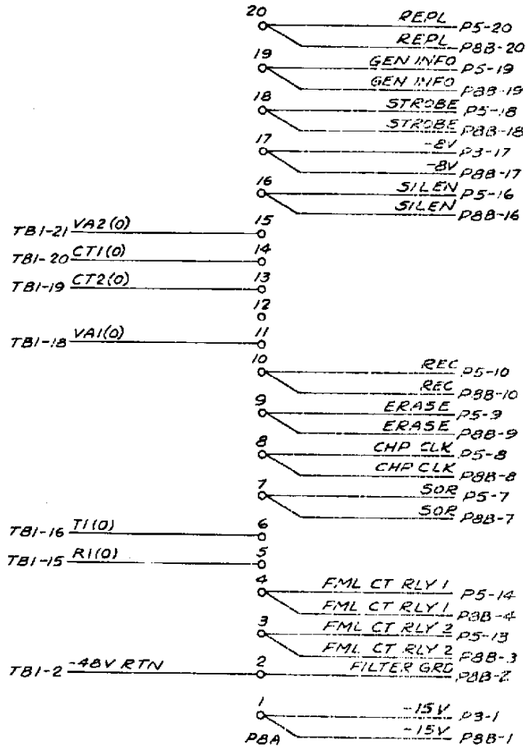


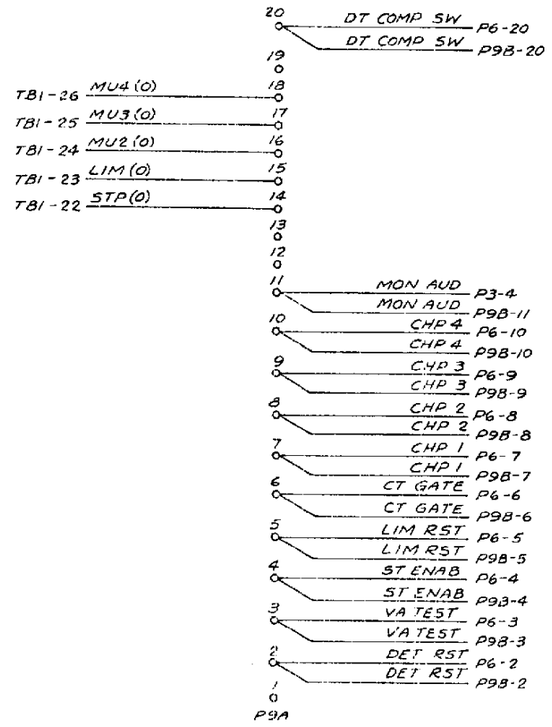


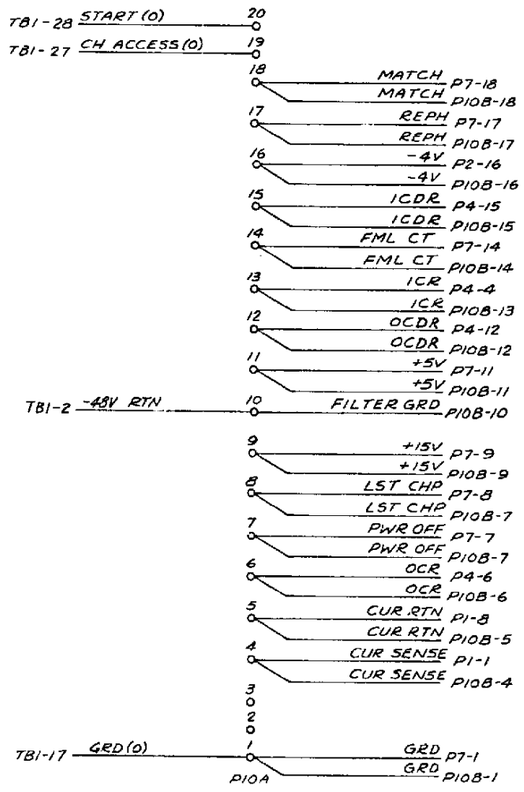


13A ANNOUNCEMENT SYSTEM		DWG SIZE 65	ISSUE 3B
BELL LABORATORIES	SD-97753-01		G3

PART OF CAD 1
BACKPLANE WIRING

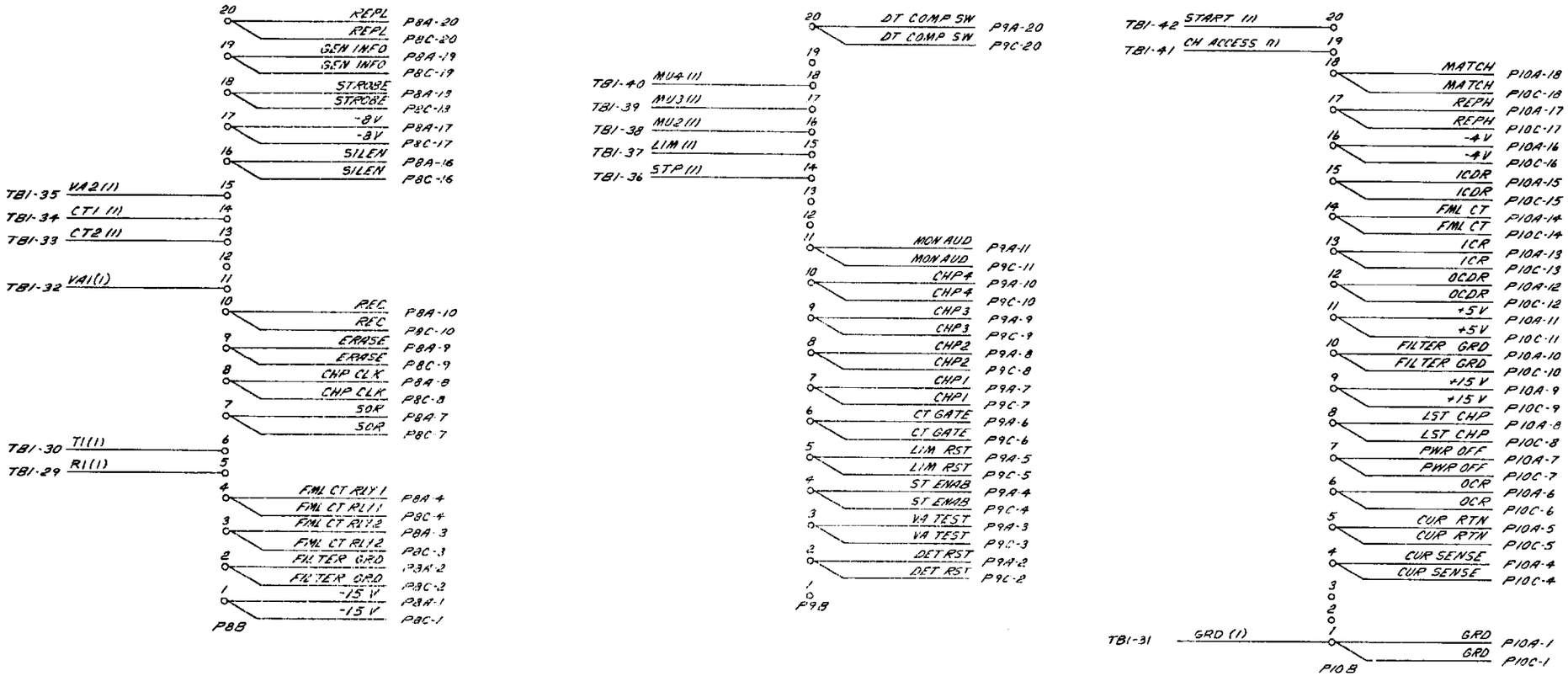






13A ANNOUNCEMENT SYSTEM	DWG SIZE 65	ISSUE /
BELL LABORATORIES	SD-97753-01	G4

PART OF CAD 1
BACKPLANE WIRING



19A ANNOUNCEMENT SYSTEM		DWG SIZE 6S	ISSUE /
BELL LABORATORIES	SD-97753-01		G5

PART OF CAD 1
BACKPLANE WIRING

TBI-49	VA2 (2)	15	
TBI-48	CT1 (2)	14	
TBI-47	CT2 (2)	13	
		12	
TBI-46	VA1 (2)	11	
		10	REC — P8B-10 / REC — P8D-10
		9	ERASE — P8B-9 / ERASE — P8D-9
		8	CHP CLK — P8B-8 / CHP CLK — P8D-8
		7	SOR — P8B-7 / SOR — P8D-7
TBI-44	T1(2)	6	
TBI-43	R1(2)	5	
		4	FAIL CT RLY 1 — P8B-4 / FAIL CT RLY 1 — P8D-4
		3	FAIL CT RLY 2 — P8B-3 / FAIL CT RLY 2 — P8D-3
		2	FILTER GRD — P8B-2 / FILTER GRD — P8D-2
		1	-15 V — P8B-1 / -15 V — P8D-1
		P8C	

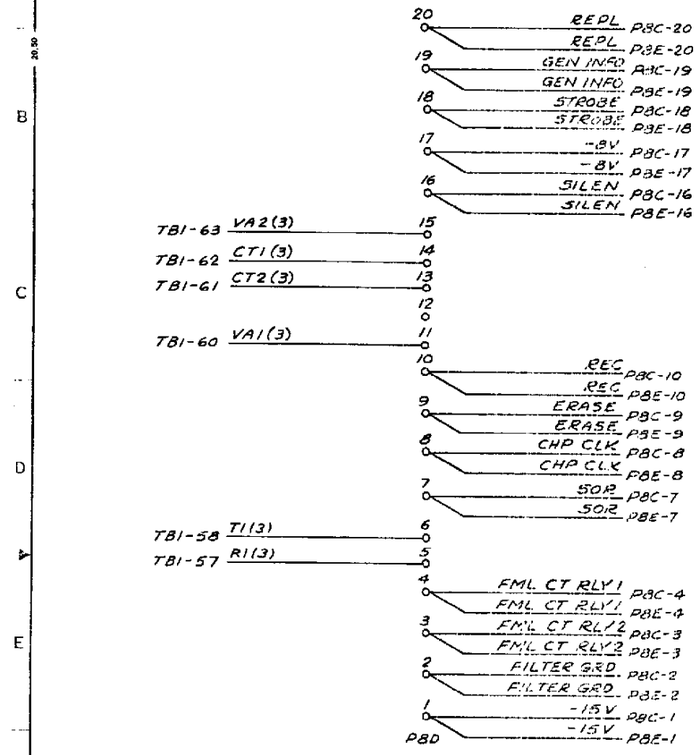
		20	REPL — P8B-20 / REPL — P8D-20
		19	GEN INFO — P8B-19 / GEN INFO — P8D-19
		18	STROBE — P8B-18 / STROBE — P8D-18
		17	-8V — P8B-17 / -8V — P8D-17
		16	SILEN — P8B-16 / SILEN — P8D-16

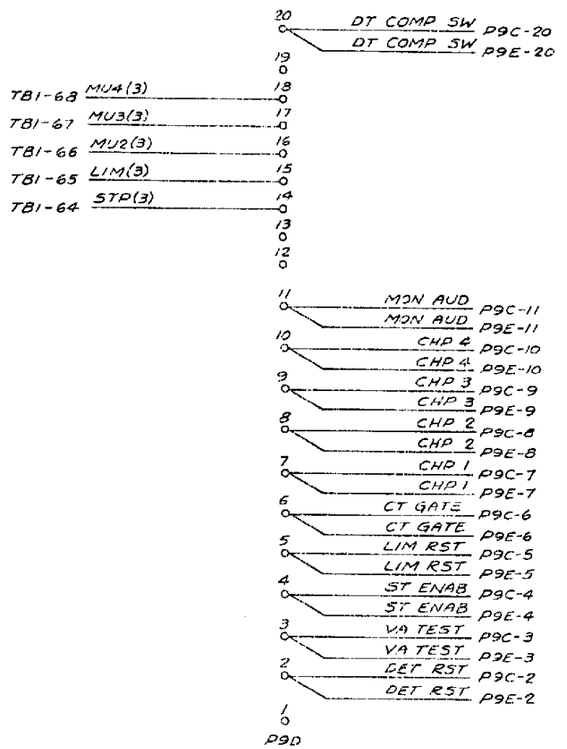
TBI-54	MU4 (2)	20	DT COMP SW — P9B-20 / DT COMP SW — P9D-20
TBI-53	MU3 (2)	19	
TBI-52	MU2 (2)	18	
TBI-51	LIM (2)	17	
TBI-50	STP (2)	16	
		15	
		14	
		13	
		12	
		11	MON AUD — P9B-11 / MON AUD — P9D-11
		10	CHP 4 — P9B-10 / CHP 4 — P9D-10
		9	CHP 3 — P9B-9 / CHP 3 — P9D-9
		8	CHP 2 — P9B-8 / CHP 2 — P9D-8
		7	CHP 1 — P9B-7 / CHP 1 — P9D-7
		6	CT GATE — P9B-6 / CT GATE — P9D-6
		5	LIM RST — P9B-5 / LIM RST — P9D-5
		4	ST ENAB — P9B-4 / ST ENAB — P9D-4
		3	VA TEST — P9B-3 / VA TEST — P9D-3
		2	DET RST — P9B-2 / DET RST — P9D-2
		1	
		P9C	

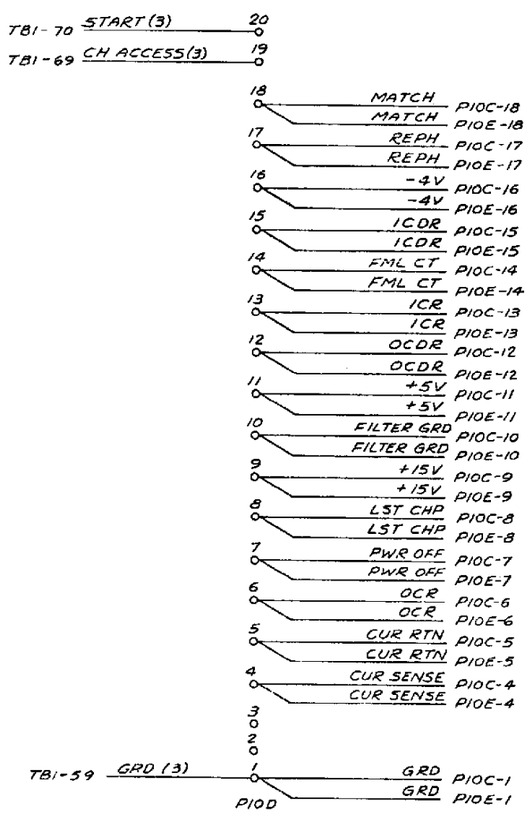
TBI-56	START (2)	20	
TBI-55	CH ACCESS (2)	19	
		18	MATCH — P10B-18 / MATCH — P10D-18
		17	REPH — P10B-17 / REPH — P10D-17
		16	-4V — P10B-16 / -4V — P10D-16
		15	ICDR — P10B-15 / ICDR — P10D-15
		14	FAIL CT — P10B-14 / FAIL CT — P10D-14
		13	ICR — P10B-13 / ICR — P10D-13
		12	OCDR — P10B-12 / OCDR — P10D-12
		11	+5 V — P10B-11 / +5 V — P10D-11
		10	FILTER GRD — P10B-10 / FILTER GRD — P10D-10
		9	+15 V — P10B-9 / +15 V — P10D-9
		8	LST CHP — P10B-8 / LST CHP — P10D-8
		7	PWR OFF — P10B-7 / PWR OFF — P10D-7
		6	OCR — P10B-6 / OCR — P10D-6
		5	CUR RTN — P10B-5 / CUR RTN — P10D-5
		4	CUR SENSE — P10B-4 / CUR SENSE — P10D-4
		3	
		2	
TBI-45	GRD (2)	1	GRD — P10B-1 / GRD — P10D-1
		P10C	

13A ANNOUNCEMENT SYSTEM		DWG SIZE 65	ISSUE /
BELL LABORATORIES	SD-97753-01		G6

PART OF CAD 1
BACKPLANE WIRING



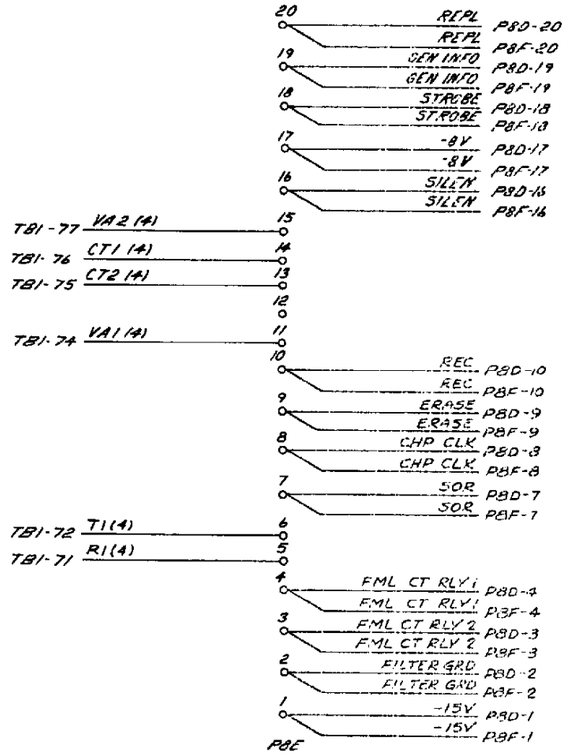


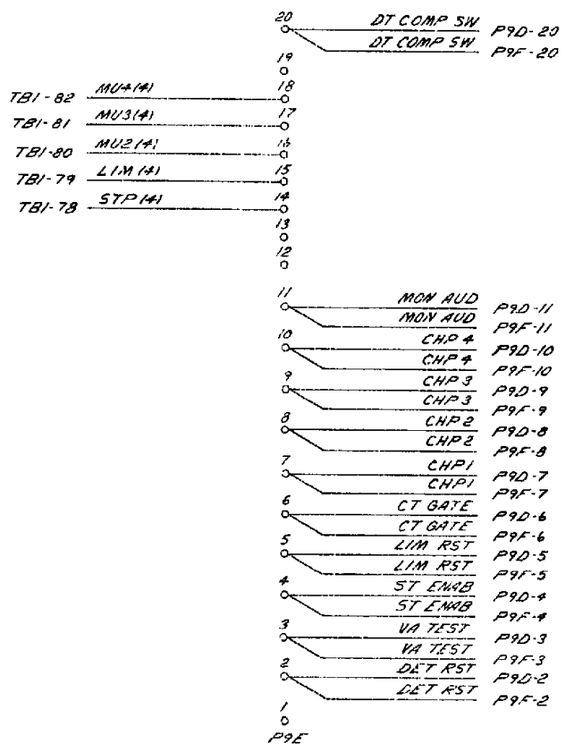


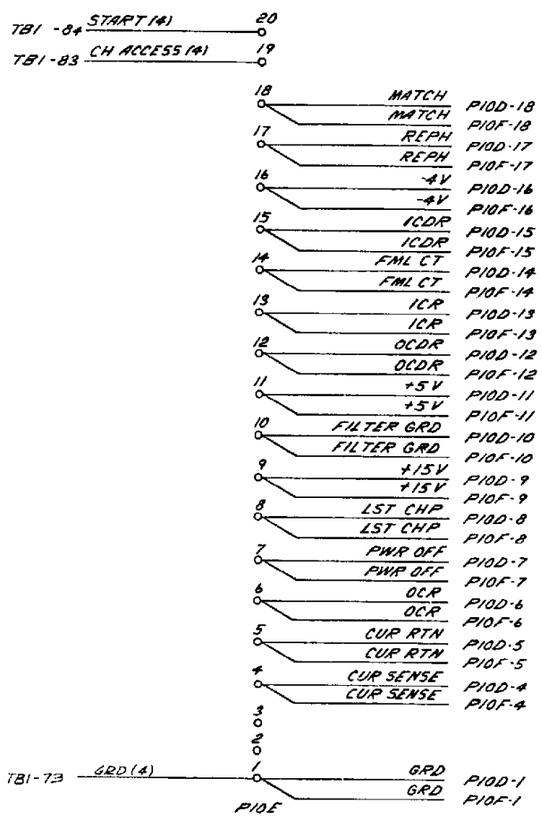
13A ANNOUNCEMENT SYSTEM		DWG SIZE 6S	ISSUE /
BELL LABORATORIES	SD-97753-01		G7

PART OF CAD I

BACKPLANE WIRING

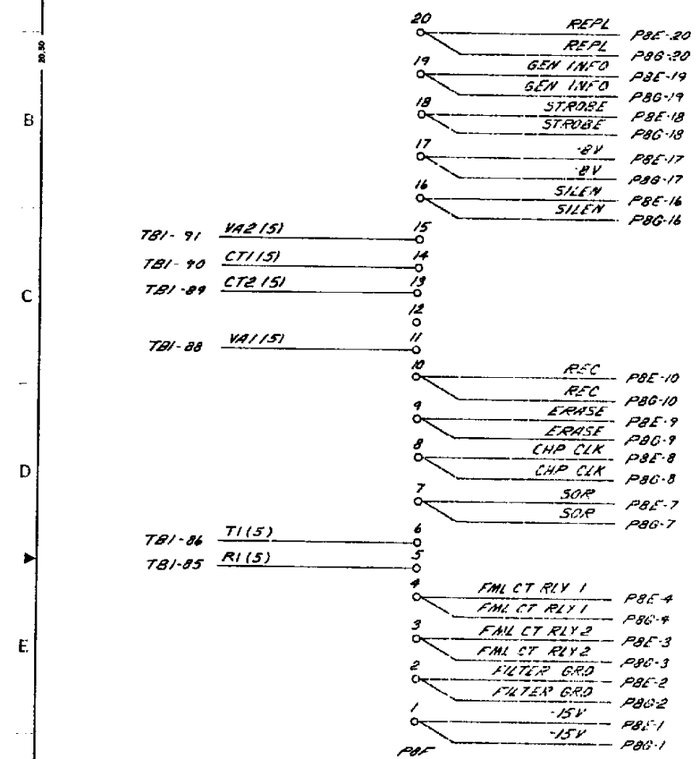


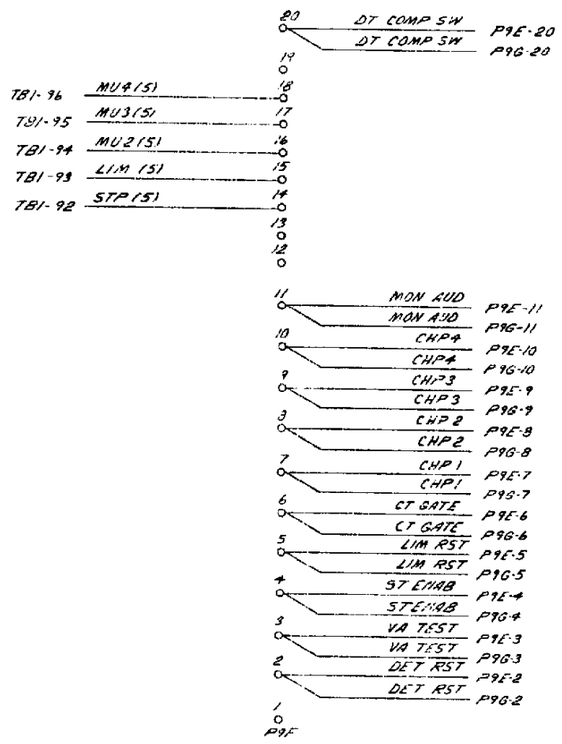


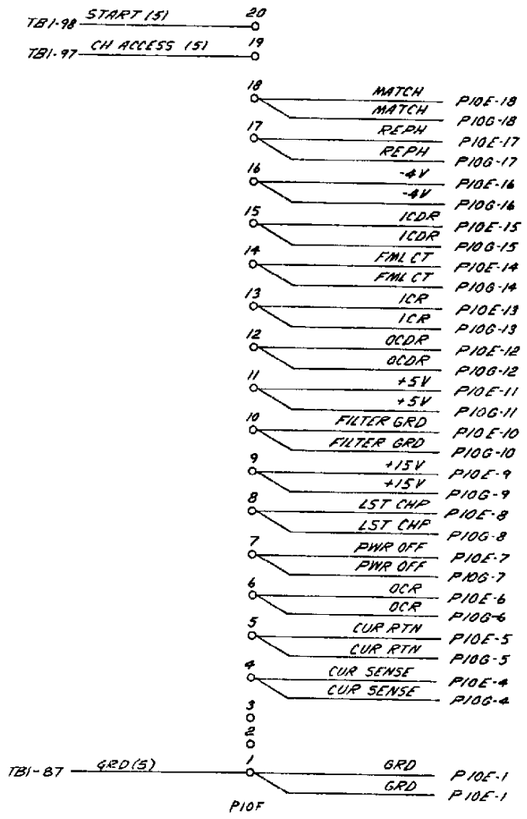


13A ANNOUNCEMENT SYSTEM		DWG SIZE 65	ISSUE /
BELL LABORATORIES	SD-97753-01		G8

PART OF CAD I
BACKPLANE WIRING







13A ANNOUNCEMENT SYSTEM	DWG SIZE 6S	ISSUE /
BELL LABORATORIES	SD-97753-01	G9

PART OF CAD I

BACKPLANE WIRING

TBI-105	VA2 (6)	15	
TBI-104	CT1 (6)	14	
TBI-103	CT2 (6)	13	
		12	
TBI-102	VA1 (6)	11	
		10	/REC — P8F-10; /REC — P8H-10
		9	ERASE — P8F-9; ERASE — P8H-9
		8	CHP CLK — P8F-8; CHP CLK — P8H-8
		7	SGR — P8F-7; SGR — P8H-7
TBI-100	T1 (6)	6	
TBI-99	R1 (6)	5	
		4	FAIL CT RLY1 — P8F-4; FAIL CT RLY1 — P8H-4
		3	FAIL CT RLY2 — P8F-3; FAIL CT RLY2 — P8H-3
		2	FILTER GRD — P8F-2; FILTER GRD — P8H-2
		1	-15V — P8F-1; -15V — P8H-1
		P8G	

		20	/REFL — P8F-20; /REFL — P8H-20
		19	GEN INFO — P8F-19; GEN INFO — P8H-19
		18	STROBE — P8F-18; STROBE — P8H-18
		17	-9V — P8F-17; -9V — P8H-17
		16	SILEN — P8F-16; SILEN — P8H-16

TBI-110	MU4 (6)	18	
TBI-109	MU3 (6)	17	
TBI-108	MU2 (6)	16	
TBI-107	LIM (6)	15	
TBI-106	STP (6)	14	
		13	
		12	
		11	MON AUD — P9F-11; MON AUD — P9H-11
		10	CHP 4 — P9F-10; CHP 4 — P9H-10
		9	CHP 3 — P9F-9; CHP 3 — P9H-9
		8	CHP 2 — P9F-8; CHP 2 — P9H-8
		7	CHP 1 — P9F-7; CHP 1 — P9H-7
		6	CT GATE — P9F-6; CT GATE — P9H-6
		5	LIM RST — P9F-5; LIM RST — P9H-5
		4	ST ENAB — P9F-4; ST ENAB — P9H-4
		3	VA TEST — P9F-3; VA TEST — P9H-3
		2	DET RST — P9F-2; DET RST — P9H-2
		1	
		P9G	

		20	DT COMP SW — P9F-20; DT COMP SW — P9H-20
		19	

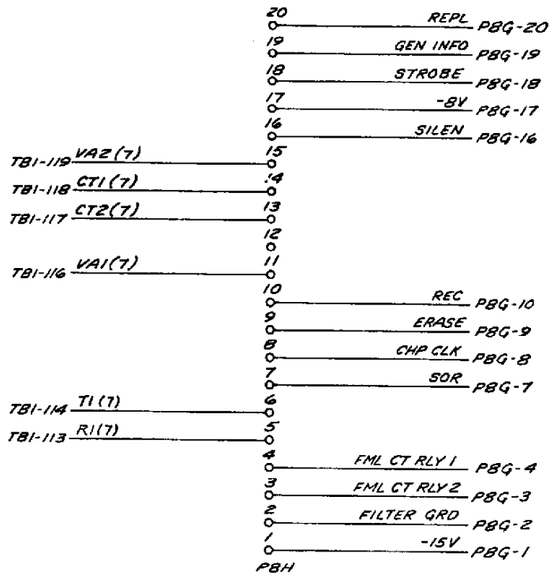
TBI-112	START (6)	20	
TBI-111	CH ACCESS (6)	19	
		18	MATCH — P10F-18; MATCH — P10H-18
		17	REPH — P10F-17; REPH — P10H-17
		16	-4V — P10F-16; -4V — P10H-16
		15	ICDR — P10F-15; ICDR — P10H-15
		14	FML CT — P10F-14; FML CT — P10H-14
		13	ICR — P10F-13; ICR — P10H-13
		12	OCDR — P10F-12; OCDR — P10H-12
		11	+5V — P10F-11; +5V — P10H-11
		10	FILTER GRD — P10F-10; FILTER GRD — P10H-10
		9	+15V — P10F-9; +15V — P10H-9
		8	LST CHP — P10F-8; LST CHP — P10H-8
		7	PWR OFF — P10F-7; PWR OFF — P10H-7
		6	OCR — P10F-6; OCR — P10H-6
		5	CUR RTN — P10F-5; CUR RTN — P10H-5
		4	CUR SENSE — P10F-4; CUR SENSE — P10H-4
		3	
		2	
TBI-101	GRD (6)	1	GRD — P10F-1; GRD — P10H-1
		P10G	

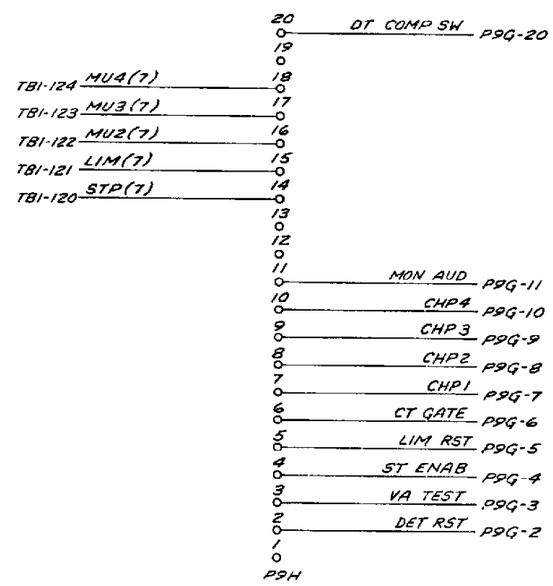
13A ANNOUNCEMENT SYSTEM

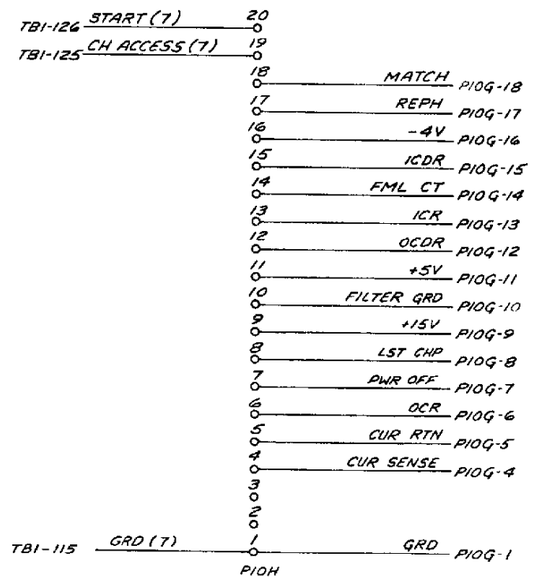
DWG SIZE: 65 | ISSUE: /

BELL LABORATORIES | SD-97753-01 | G10

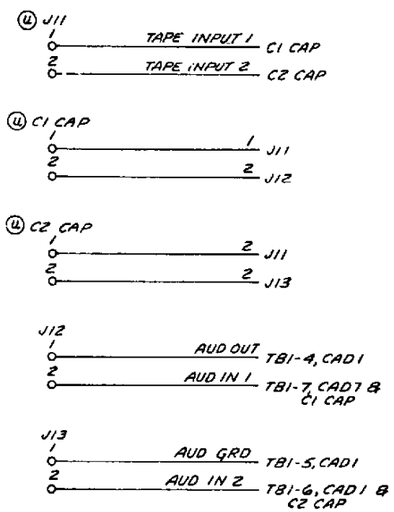
PART OF CAD 1
BACKPLANE WIRING



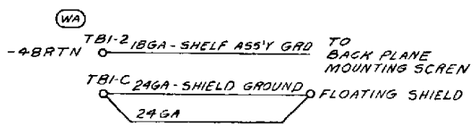




CAD 2



CAD 3



SEE PROPRIETARY NOTICE ON COVER PAGE.

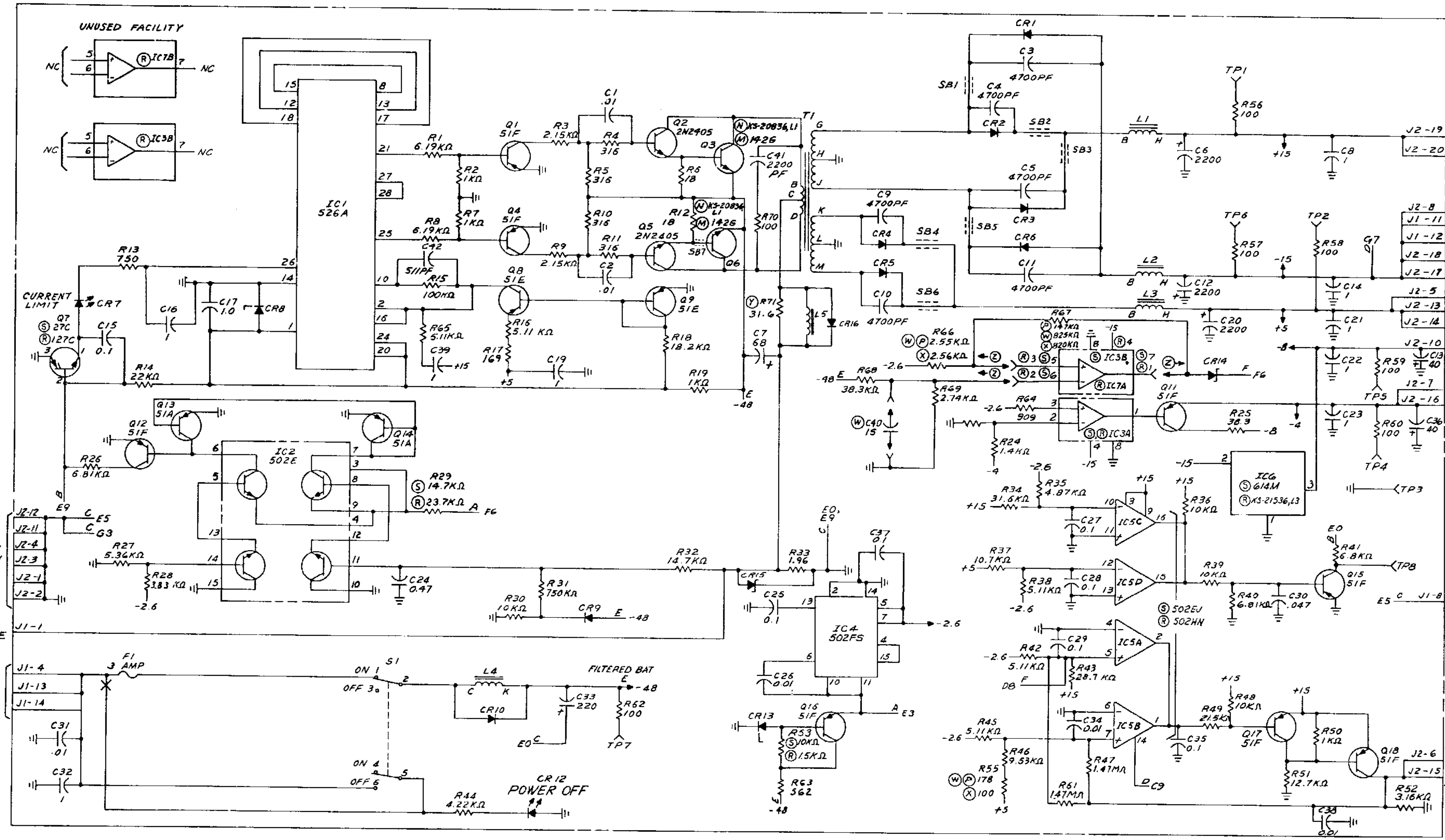
13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S | ISSUE 7B

BELL LABORATORIES | SD-97753-01 | G11

P/O CPS UD1

POWER SUPPLY


UNUSED FACILITY
IC7B
IC3B
NC
IC1 526A
R1 6.19KΩ
R2 1KΩ
R3 2.15KΩ
R4 316
R5 316
R6 18
R7 1KΩ
R8 6.19KΩ
R9 2.15KΩ
R10 316
R11 316
R12 18
R13 750
R14 22KΩ
R15 100KΩ
R16 5.11 KΩ
R17 169
R18 18.2KΩ
R19 1KΩ
C1 .01
C2 .01
Q1 51F
Q2 2N2405
Q3 1426
Q4 51F
Q5 2N2405
Q6 1426
Q7 27C
Q8 51E
Q9 51E
KS-20836,L1
C41 2200 PF
R70 100
R71 31.6
T1
CURRENT LIMIT
CR7
CR8
C16
C17 1.0
C15 0.1
C42 511PF
R65 5.11KΩ
C39
C19
C7 68
L5
CR16
CR1
C3 4700PF
SB1
C4 4700PF
CR2
SB2
SB3
C5 4700PF
CR3
C9 4700PF
CR4
SB4
SB5
CR6
CR5
C11 4700PF
C10 4700PF
SB6
L1
L2
L3
TP1
R56 100
C6 2200
C8 1
TP6
R57 100
TP2
R58 100
G7
C12 2200
C14 1
C20 2200
C21 1
C22 1
R59 100
C13 40
TP5
C23 1
R60 100
C36 40
TP4
J2-19
J2-20
+15V
J2-8
J1-11
J1-12
J2-18
J2-17
-15V
J2-5
J2-13
J2-14
+5V
J2-10
-8V
J2-7
J2-16
-4V
R66 2.55KΩ
2.56KΩ
R67 147KΩ 825KΩ 820KΩ
IC3B
IC7A
CR14
R68 38.3KΩ
R69 2.74KΩ
C40 15
R64 909
IC3A
Q11 51F
R25 38.3
R24 1.4KΩ
IC6 614M KS-21536,L3
TP3
Q12 51F
Q13 51A
Q14 51A
IC2 502E
R26 6.81KΩ
R29 14.7KΩ 23.7KΩ
E9
E5
G3
-48V RTN
J2-12
J2-11
J2-4
J2-3
J2-1
J2-2
R27 5.36KΩ
R28 3.83KΩ
C24 0.47
R30 10KΩ
R31 750KΩ
CR9
R32 14.7KΩ
R33 1.96
C37 .01
CR15
C25 0.1
IC4 502FS
C26 0.01
R34 31.6KΩ
R35 4.87KΩ
C27 0.1
IC5C
R36 10KΩ
R37 10.7KΩ
R38 5.11KΩ
C28 0.1
IC5D
R39 10KΩ
R40 6.81KΩ
C30 .047
R41 6.8KΩ
Q15 51F
TP8
J1-8
CUR RTN
502EU 502HN
CUR SENSE
J1-1
C29 0.1
IC5A
R42 5.11KΩ
R43 28.7KΩ
D8
-48V BAT
J1-4
J1-13
J1-14
F1 3 AMP
S1
L4
CR10
FILTERED BAT
C33 220
R62 100
TP7
C31 .01
C32 1
CR12 POWER OFF
R44 4.22KΩ
CR13
Q16 51F
R53 10KΩ 1.5KΩ
R63 562
E3
R45 5.11KΩ
C34 0.01
IC5B
R46 9.53KΩ
R47 1.47MΩ
R55 178 100
R61 1.47MΩ
C35 0.1
R48 10KΩ
R49 215KΩ
Q17 51F
R50 1KΩ
Q18 51F
R51 12.7KΩ
R52 3.16KΩ
C38 0.01
J2-6
J2-15
PWR SENSE

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNNOUNCEMENT SYSTEM	DWG SIZE 6S	ISSUE 7B
BELL LABORATORIES	SD-97753-01	-J1

P/O CPS UD1

POWER SUPPLY

COMPONENT LIST

CAPACITOR

DESIG	LOC	CODE
C1	1A4	KS-19774,L7, .01
C2	1C4	KS-19774,L7, .01
C3	1A6	KS-19774,L7, 4700PF
C4	1A6	KS-19774,L7, 4700PF
C5	1B6	KS-19774,L7, 4700PF
(T) C6	1B8	673D-228 H020 JJSC SPRAGUE, 2200 (SEE NOTE 4)
C7	1C5	672D-686 H060 DM5C SPRAGUE, 68
C8	1B9	596G, 1
C9	1B6	KS-19774,L7, 4700PF
C10	1C6	KS-19774,L7, 4700PF
C11	1C6	KS-19774,L7, 4700PF
(T) C12	1C8	673D-228 H020 JJSC SPRAGUE, 2200 (SEE NOTE 4)
C13	1D9	602A, 40
C14	1C9	596G, 1
C15	1C0	KS-19774,L13, 0.1
C16	1C1	KS-20736,L6, 1
C17	1C1	600A,1.0
C19	1D3	KS-20736,L6, 1
(T) C20	1C8	673D-228 H6R3 JE5C SPRAGUE, 2200 (SEE NOTE 4)
C21	1C9	596G, 1
C22	1D9	596G, 1
C23	1D9	596G, 1
C24	1E2	KS-19774,L5,0.47
C25	1F5	KS-20736,L4, 0.1
C26	1F5	KS-19774,L7, 0.01
C27	1E7	KS-20736,L4, 0.1
C28	1E7	KS-20736,L4, 0.1
C29	1F7	KS-20736,L4, 0.1
C30	1E8	KS-19774,L11, .047
C31	1G0	(U) KS-16048,L4,0.01,(V) 5425,0.01
C32	1G0	596G, 1
(T) C33	1F4	673D-227 H060 JE5C SPRAGUE, 220 (SEE NOTE 4)
C34	1F7	KS-20736,L4, 0.01
C35	1G8	KS-20736,L4, 0.1
C36	1D9	602A, 40
C37	1E5	KS-20736,L4, 0.1
C38	1H9	KS-20736,L4,0.01
C39	1D2	742D
(Z) C40	1D6	(W) 6518,15.0
C41	1B5	KS-20977,L4,2200PF
C42	1C2	KS-16742,L32,511PF

CONNECTOR

DESIG	LOC	CODE
J1		9638-20
J2		9638-20

DIODE

DESIG	LOC	CODE
CR1	1A6	(V) 485AE
CR2	1B6	(U) 804D
CR3	1B6	
CR4	1B5	(S) 485AE
		(R) 828AE
CR5	1C5	
CR6	1B6	(U) 804D, (V) 485AE
CR7	1C0	531G
CR8	1C1	808J
CR9	1F4	459BB
CR10	1F3	533B
CR12	1G3	531G
CR13	1G5	(S) 459AB, (R) 808AG
(Z) CR14	1D7	459G
CR15	1E5	804F
CR16	1C5	804D

FERRITE BEAD

DESIG	LOC	CODE
SB1	1A6	57-1559 STACKPOLE CARBON CO
SB2	1B7	
SB3	1B7	
SB4	1C6	
SB5	1C6	
SB6	1C6	
SB7	1E4	TYPE # 43 PART # 2643000101 FAIR-RITE PROD. CORP.

FUSE

DESIG	LOC	CODE
F1	1F0	70C

INDUCTION COIL

DESIG	LOC	CODE
L1	1B7	1301B
L2	1C7	
L3	1C7	
L4	1F3	1304E
L5	1C5	# 6310-8 CADDEL BURNS MFG.CO.

INTEGRATED CIRCUIT

DESIG	LOC	CODE
IC1	1B2	5260
IC2	1E2	502E
(W)(S) IC3	1C7,1B1	613F
IC4	1F5	502FS
IC5	1E7,1F7	(S) 502EJ, (R) 502HN
IC6	1D8	(S) 614M, (R) KS-21536,L3
(R) IC7	1D7,1A1	613F

RESISTOR

DESIG	LOC	CODE
R1	1B3	KS-20810,L1A, 6.19KΩ
R2	1B3	KS-20810,L1A, 1KΩ
R3	1B3	KS-20810,L1A, 2.15KΩ
R4	1B4	KS-20616,L1A, 316
R5	1B4	KS-20616,L1A, 316
R6	1B4	KS-20810,L1A, 18
R7	1B3	KS-20810,L1A, 1KΩ
R8	1B3	KS-20810,L1A, 6.19KΩ
R9	1C3	KS-20810,L1A, 2.15KΩ
R10	1B4	KS-20616,L1A, 316
R11	1C4	KS-20616,L1A, 316
R12	1B4	KS-20810,L1A, 18
R13	1C0	KS-20810,L1A, 750
R14	1D0	KS-20616,L1A, 22KΩ
R15	1C2	KS-20810,L1A, 100KΩ
R16	1C3	KS-20616,L1A, 5.11KΩ
R17	1C3	KS-20616,L1A, 169
R18	1C4	KS-20616,L1, 18.2KΩ
R19	1D4	KS-20289,L6C, 1KΩ
R23	1D6	KS-20616,L1A, 2.61KΩ
R24	1D6	KS-20616,L1A, 1.4KΩ
R25	1D8	KS-20616,L1A, 38.3
R26	1D0	KS-20616,L1A, 6.81KΩ
R27	1E0	KS-20616,L1A, 5.36 KΩ
R28	1E1	KS-20616,L1A, 3.83KΩ
R29	1E3	KS-20616,L1A, (S) 14.7KΩ, (R) 23.7KΩ
R30	1F3	KS-20810,L1A, 10KΩ
R31	1F3	KS-20810,L1A, 750KΩ
R32	1E4	KS-20810,L1A, 14.7KΩ
R33	1E5	KS-14603,L38A,1.96
R34	1E6	11.8KΩ
R35	1E7	4.87KΩ
R36	1E8	10KΩ
R37	1E6	KS-20616,L1A, 10.7KΩ
R38	1E6	5.11KΩ
R39	1E8	10KΩ
R40	1E8	6.81KΩ
R41	1E9	6.81KΩ
R42	1F7	5.11KΩ
R43	1F7	28.7KΩ
R44	1G3	(Y) KS-20289,L6C, 4.22KΩ
R45	1G6	(P) KS-20616,L1A, 5.11KΩ
R46	1G6	(P) KS-16311,L4F 5.11KΩ
R47	1G7	(P) KS-16311,L4F 9.53KΩ, (X) KS-20616,L1A,9.53KΩ
R48	1G8	KS-20810,L1A, 1.47MΩ
R49	1F9	10KΩ
R50	1F9	21.5KΩ
R51	1F8	1KΩ
R52	1G9	12.7KΩ
R53	1G5	3.16KΩ
R55	1G6	(S) KS-20616,L1A 10KΩ, (N) KS-20810,L1A,1.15KΩ
R56	1B8	(W)(P) KS-16311,L4F, 178
R57	1C8	(S) KS-20616,L1A, 100
R58	1C8	100
R59	1D9	100
R60	1D9	100
R61	1G7	100
R62	1F4	KS-20810,L1A, 1.47MΩ
R63	1E5	KS-20616,L1A, 100
R64	1D6	562
R65	1C2	909
(Z) R66	1C6	5.11K
R67	1C7	(P)(W) 2.55KΩ (X) 2.56KΩ
R68	1D5	(P) 147 KΩ (W) 825K (X) 820K
R69	1D6	38.3KΩ
R70	1B5	2.74KΩ
(Y) R71	1C5	KS-20810,L1A,100
		KS-14603,L6CB,31.6

SWITCH

DESIG	LOC	CODE
S1	1F2	7201MD9AQ DPDT C & K COMPONENTS INC

TRANSFORMER

DESIG	LOC	CODE
T1	1B5	3003T

TRANSISTOR

DESIG	LOC	CODE
Q1	1B3	51F
Q2	1B4	2N2405
Q3	1B4	(N) KS-20836,L1 (M) 142G
Q4	1B3	51F
Q5	1C4	2N2405
Q6	1C4	(N) KS-20836,L1 (M) 142G
Q7	1C0	(S) 27C, (H) 127C
Q8	1C3	51E
Q9	1C4	51E
Q11	1D7	51F
Q12	1D0	51F
Q13	1D1	51A
Q14	1D2	51A
Q15	1E9	51F
Q16	1F5	51F
Q17	1F8	51F
Q18	1F9	51F

NOTES: (CONT)

4. THE FOLLOWING CAPACITORS SHOULD BE OBTAINED WITHOUT A CONVEX MOUNTING SURFACE.

   C6,C12, 2200uf,SPRAGUE #673D 228 H020 JJ5C

   C20, 2200uf,SPRAGUE #673D 228 H6R3 JE5C

   C33, 220uf,SPRAGUE #673D 227 H060 JE5C

   ALTERNATE SUPPLIER:

   C6,C12, 2200uf,MALLORY, VPR242T010N1C6A

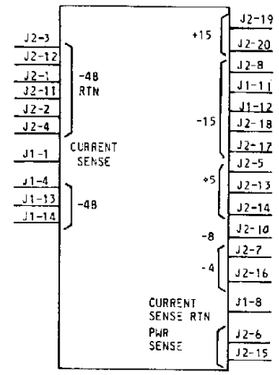
   C20, 2200uf,MALLORY, VPR242T020N1L6A

   C33, 220uf,MALLORY, VPR221NC75N1C6A

MANUFACTURING REFERENCE

CATEGORY	NO.
CONNECTOR ON FRAME	

SYMBOL

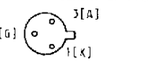


NOTES:

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

2. ⏚ GROUND RETURN.

3. TERMINAL NO. ARRANGEMENT OF 27C TRANSISTOR IS



RECORD OF CHANGES

DWG ISS	PREV FURN	STD	MFR DISC	SEE NOTE
3B	NONE	Z	NONE	
3B	NONE	Y	NONE	
3B	X	W	X	
3B	V	U	V	
3B	-	T	-	4
5B	S	R	S	
6A	W	P	W	
7B	N	M	N	

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S | ISSUE 7B

BELL LABORATORIES | SD-97753-01 | -J2

P/O CPS UD2

ENCODER DRIVER

VOICE IN J3-18
VOICE IN RET J3-19
MON AUD J3-4
AUD OUT J3-2
DCLK J3-6

J3-7 TP-AUDIN
J3-5 TP-AGC
J3-8 TP-AUD CHN
J3-14 TP-SQCH
J3-9 TP-DIG AUD
J3-3 ENCODE

IC1A 5559C TL074CN
IC1B 5559C TL074CN
IC1C 5559C TL074CN
IC1D 5559C TL074CN
IC2A 502G
IC2B 502G
IC3A 41BP
IC3B 41BP
IC3C 41BP
IC3D 41BP
IC4 12988
IC5B 502FW
IC5C 502FW
IC5D 502FW
IC6 604P
IC7 417
IC8 41CJ LS161
IC9 41CJ LS161
IC10A 41BR
IC10B 41BR
IC11 SEE NOTE 3
IC22 614D 21322
IC23 614N

Q1 51F
Q11
Q12
Q8

CR1
CR2

R1 237
R2 6.19KΩ
R3 6.19KΩ
R4 237
R5 6.19KΩ
R6 6.19KΩ
R7 1MΩ
R8 681KΩ
R9 2.7MΩ
R10 82.5KΩ
R11 1MΩ
R12 226KΩ
R13 1MΩ
R14 22.6KΩ
R15 1MΩ
R16 750
R17 5.11KΩ
R18 21.5KΩ
R19 6.49KΩ
R20 33.2KΩ
R21 3.32KΩ
R22 3.32KΩ
R23 82.5KΩ 105KΩ
R24 3.32KΩ
R25 11.5KΩ
R27 464
R28 75KΩ
R29 75KΩ
R30 75KΩ
R31 75KΩ
R32 1.47KΩ
R33 14.7KΩ
R34 90.9
R35 6.19KΩ
R36 21.5KΩ
R37 6.19KΩ
R38 11.5KΩ
R39 1KΩ
R110 10KΩ
R118 10KΩ
R119 10KΩ
R120 2.15KΩ
R121 11.8KΩ
R122 110

C1 0.1
C2 0.1
C3 0.1
C4 0.1
C5 .001
C6 1
C7 .01
C8 1
C9 .022
C10 1
C11 .0162
C12 1500PF
C13 .022
C14 22PF
C15 30
C16 0.1
C17 2.15
C18 6800PF
C19 0.1
C20 0.1
C21 0.332
C22 1
C23 0.1
C24 0.1
C25 0.1
C26 0.1
C27 680
C28 680
C29 40
C30 40
C61 22PF

+15V J4-10 J4-9
-15V J4-17 J4-7 J3-1
GRD J4-1 J4-2
+5V J4-11
-8V J3-17

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

BELL LABORATORIES	SD-97753-01	DWG SIZE 6S	ISSUE 6A
			-J3

P/O CPS UD2

ENCODER DRIVER

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S | ISSUE 6A

BELL LABORATORIES | SD-97753-01 | -J4

PRINTED IN U.S.A.

P/O CPS UD2

ENCODER DRIVER

SWC J4-20

CSR J4-19

ICI2A 4IBS

ICI2B 4IBS

+12 R80 511

+12 R81 511

ICI3A CD4011A OR 179A

IC14 CD4094B

IC15 CD4094B

IC16 CD4094B

DATA, STB, EN, V_{DD}, CLK, Q_S, V_{SS}, Q_1 Q_2 Q_3 Q_4 Q_5 Q_6 Q_7 Q_8

+12 C54 0.1

+12 C55 0.1

+12 C56 0.1

R82 205KΩ, R83 71.5KΩ, R84 44.2KΩ, R85 31.6KΩ, R35 27.4KΩ, R37 23.7KΩ, R88 21.5KΩ, R89 20.5KΩ, R90 21.5KΩ, R91 23.7KΩ, R92 27.4KΩ, R93 31.6KΩ, R94 44.2KΩ, R95 71.5KΩ, R96 205KΩ

R97 205KΩ, R98 71.5KΩ, R99 44.2KΩ, R100 31.6KΩ, R101 27.4KΩ, R102 23.7KΩ, R103 21.5KΩ, R104 20.5KΩ, R105 21.5KΩ, R106 23.7KΩ, R107 27.4KΩ, R108 31.6KΩ, R109 44.2KΩ, R110 71.5KΩ, R111 205KΩ

A 4B0

B 4F0

J3-11 TP-ICDR1

J3-10 TP-OCDR1

+12 C57 0.1 IC13 CD4011A (V_{DD} 14, V_{SS} 7)

13A ANNOUNCEMENT SYSTEM		DWG SIZE 65	ISSUE /
BELL LABORATORIES	SD-37753-01		-J5

P/O CPS UD2

ENCODER DRIVER

COMPONENT LIST

CAPACITOR

DESIG	LOC	CODE
C1	3A0	(Z) KS-20977,L4, (Y) 535JU,0.1
C2	3A2	KS-20736,L4, 0.1
C3	3B0	(Z) KS-20977,L4, (Y) 535JU,0.1
C4	3B2	KS-20736,L4, 0.1
C5	3B2	KS-20977,L4, .001
C6	3A3	596G, 1
C7	3B3	KS-20977,L4, 0.01
C8	3A5	596G, 1
C9	3B6	KS-20977,L4, .022
C10	3B6	596G, 1
C11	3B7	KS-20977,L4, .0162
C12	3B7	KS-20977,L4, 1500PF
C13	3B7	KS-20977,L4, .022
C14	3A4	KS-19774,L4, 22PF
C15	3C4	601H, 30
C16	3C1	KS-20736,L4, 0.1
C17	3C4	535FW, 2.15
C18	3C6	KS-20977,L4, 68G0PF
C19	3C7	KS-20736,L4, 0.1
C20	3D7	KS-20736,L4, 0.1
C21	3D5	(Z) 577Q,(Y) 594C,0.332
C22	3E1	596C, 1
C23	3E3	KS-20736,L4, 0.1
C24	3F3	KS-20736,L4, 0.1
C25	3E5	KS-20736,L4, 0.1
C26	3G7	KS-20736,L4, 0.1
C27	3F0	672D687H020 CTSC
C28	3G0	SPRAGUE, 680
C29	3G0	602A, 40
C30	3H0	602A, 40
C31	4A2	600A, 1.0
C32	4A2	KS-16958,L32, 30.1PF
C33	4B0	KS-16742,L34, 221PF
C34	4B2	(Z) KS-16958,L34, 100PF (T) KS-16958,L32
C35	4B2	KS-16742,L34, 221PF
C36	4C2	600A, 1.0
C37	4B4	KS-16958,L31, 24.3
C38	4B5	600W, 1.0
C39	4C5	600W, 1.0
C40	4C6	KS-20977,L4, .001
C41	4D4	596G, 1
(X) C42	4C5	KS-16958,L32,20PF
C43	4E2	600A, 1.0
C44	4E2	KS-16958,L32, 30.1PF
C45	4E4	KS-16958,L31, 24.3
C46	4E5	600A, 1.0
C47	4F5	600A, 1.0
C48	4E6	KS-20977,L4, .001
C49	4F0	(Z) KS-16742,L34,(Y) KS-16958,L32,221PF
C50	4F2	(Z) KS-16958,L34,(Z)OPF,(T) KS-16958,L32,137PF
C51	4F2	(Z) KS-16742,L34,(Y) KS-16958,L32,221PF
C52	4F2	600A, 1.0
C53	4F3	596G, 1
C54	5C0	KS-20736,L4, 0.1
C55	5C3	KS-20736,L4, 0.1
C56	5C6	KS-20736,L4, 0.1
C57	5F1	KS-20736,L4, 0.1
C58	4E3	600A, 1
(X) C59	4D4	KS-16958,L31,2PF
(X) C60	4E5	KS-16958,L32,20PF
(X) C61	3A6	KS-19774,L4, 22PF
(X) C62	4G5	KS-16958,L31,2PF
[2] (X) C63,C64	4C1,4D1	7273,0.01
(W) C65	4A2	KS-19774,L8,0.001
C66	4D2	
C67	4C3	

CONNECTOR

DESIG	LOC	CODE
J3		9638-20
J4		9638-20

DIODE

DESIG	LOC	CODE
CR1	3B4	4584
CR2	3C5	4584
CR3	4F3	4594A

FERRITE BEAD

DESIG	LOC	CODE
SB1	4B9	26730001 01
SB2	4E9	26730001 01

FAIR-RITE PRODUCTS

INTEGRATED CIRCUIT

DESIG	LOC	CODE
IC1	3A4,3B1, 3B5,3B8	(Z) 559C TL074CN TI OR (Y) 4605-5 (HARRIS)
IC2	3B3,3B9, 4H4	502G
IC3	3D0,3D1, 3E3,3E4, 4G0,4G1	418P
IC4	3C2	1299B
IC5	3C7,3C4, 4G3	502FW
IC6	3E2	604P
IC7	3E5	411T
IC8	3F5	(V) 411CJ (U) WALS161
IC9	3G6	(V) 411CJ (U) WALS161
IC10	3E6,3E8, 4G1,4G2	418R
(W) IC11	3F6	DIP SOCKET SEE NOTE 3
IC12	4C0,4C1, 4D0,4D1, 5A1,5B1	418S
IC13	5B2,4G2, 4G3,5F1	179A OR CD4011A RCA OR KS-21626,L5
IC14	5B1	CD4094B RCA
IC15	5B4	CD4094B RCA
IC16	5B7	CD4094B RCA
IC17	4B2	CA3100 RCA
IC18	4B3,4D3, 4E3,4H2	(V) CD4016AE RCA (U) KS-21634,L7
IC19	4C4	CA3100 RCA
IC20	4E4	CA3100 RCA
IC21	4E2	CA3100 RCA
IC22	3G2	(V) 614D (U) KS-21322,L8
(W) IC23	3H2	614N

RESISTOR

DESIG	LOC	CODE
R1	3A0	(Z) KS-20811,L1A, (T) KS-20289,L6C,237
R2	3A1	KS-20616,L1A, 6.19KΩ
R3	3A1	KS-20616,L1A, 6.19KΩ
R4	3B0	(Z) KS-20810,L1A, (T) KS-20289,L6C,237
R5	3B1	6.19KΩ
R6	3B1	6.19KΩ
R7	3B2	1MΩ
R8	3B3	KS-20616,L1A, 681KΩ
R9	3B3	KS-16645,L1, 2.7MΩ
R10	3B3	82.5KΩ
R11	3B3	1MΩ
R12	3A3	22.6KΩ
R13	3A4	1MΩ
R14	3A5	22.6KΩ
R15	3A5	KS-20616,L1A, 1MΩ
R16	3B6	750
R17	3B6	5.11KΩ
R18	3B7	21.5KΩ
R19	3B7	6.49KΩ
R20	3B7	(V) 33.2KΩ (U) 100Ω
R21	3B9	3.32KΩ
R22	3C4	3.32KΩ
R23	3C5	(Z) 82.5KΩ (Y) 105KΩ
R24	3C6	3.32KΩ
R25	3C7	11.5KΩ
R27	3C1	464
R28	3C4	75KΩ
R29	3D4	75KΩ
R30	3D4	75KΩ
R31	3C4	75KΩ
R32	3D5	1.47KΩ
R33	3D5	1.47KΩ
R34	3D5	90.9
R35	3D6	6.19KΩ
R36	3D6	21.5KΩ

RESISTOR (CONT)

DESIG	LOC	CODE
R37	3D6	6.19KΩ
R38	3D8	11.5KΩ
R39	3E7	1KΩ
R40	4A3	(Z) 1KΩ (T) 10.5KΩ
R41	4B1	KS-20616,L1A, 44.2KΩ
R43	4C4	(Z) 1MΩ, (Y) 348KΩ
R44	4A7	100
R45	4B5	(Y) KS-20289,L6C,75, 2.26KΩ
R46	4B6	(Z) KS-20810,L1A,51.1, 825
R47	4B7	KS-20810,L1A,(Z) 51.1, (T) 26.1
R48	4B7	KS-20810,L1A,(Z) 51.1 (Y) 26.1
R49	4C7	(Z) KS-20810,L1A,51.1,
R50	4C7	(Y) KS-20289,L6C,75
R51	4C1	(Z) 1kΩ (Y) 464
R52	4C2	1KΩ
R53	4C2	4.64KΩ
R54	4C3	2.26KΩ
R55	4D3	4.64KΩ
R56	4D4	1KΩ
R57	4D5	11KΩ
R58	4C6	3.01KΩ
R59	4D6	100
R60	4D1	KS-20616,L1A, (Z) 1KΩ, (T) 464
R61	4D2	1KΩ
R62	4D2	4.64KΩ
R63	4D3	4.64KΩ
R64	4E3	(Z) 1KΩ, (T) 10.5KΩ
R65	4E4	10.5KΩ
R66	4F4	100KΩ
R67	4D6	100
R68	4E5	2.26KΩ
R69	4E6	(Y) KS-20289,L6C,75, 825
R70	4E7	(Z) KS-20810,L1A,51.1
R71	4E7	(Z) KS-20810,L1A,51.1, (T) 26.1
R72	4F7	(Z) KS-20810,L1A,51.1, (Y) 26.1
R73	4F7	(Z) KS-20810,L1A,51 1
R74	4F1	(Y) KS-20289,L6C,75
R75	4F1	44.2KΩ
R76	4G4	10.5KΩ
R77	4G5	909
R78	4F6	10.5KΩ
R79	4F6	3.01KΩ
R80	5A1	100
R81	5B1	511
R82	5E1	205KΩ
R83	5E1	71.5KΩ
R84	5E1	44.2KΩ
R85	5E1	31.6KΩ
R86	5E2	27.4KΩ
R87	5E2	23.7KΩ
R88	5E2	21.5KΩ
R89	5E3	20.5KΩ
R90	5E3	21.5KΩ
R91	5E3	23.7KΩ
R92	5E3	27.4KΩ
R93	5E4	31.6KΩ
R94	5E4	44.2KΩ
R95	5E4	KS-20616,L1A, 71.5KΩ
R96	5E4	205KΩ
R97	5E5	205KΩ
R98	5E5	71.5KΩ
R99	5E5	44.2KΩ
R100	5E5	31.6KΩ
R101	5E6	27.4KΩ
R102	5E6	23.7KΩ
R103	5E6	21.5KΩ
R104	5E6	20.5KΩ
R105	5E7	21.5KΩ
R106	5E7	23.7KΩ
R107	5E7	27.4KΩ
R108	5E7	31.6KΩ
R109	5E8	44.2KΩ
R110	5E8	71.5KΩ
R111	5E8	205KΩ
R112	4B4	11KΩ
R113	4C3	4.64KΩ
R114	4E4	(Z) 1MΩ, (T) 348KΩ
R115	4E3	1KΩ
R116	4E4	4.64KΩ

RESISTOR (CONT)

DESIG	LOC	CODE
R118	3B8	10KΩ
R119	3C9	10KΩ
R120	3C9	KS-20616,L1A, 2.15KΩ
R121	3D8	11.8KΩ
R122	3D8	110
R123	4C9	(X) KS-20810,L1A, 0.5,(Y) KS-14603,L6A0,0.1
R124	4E9	(Z) KS-20810,L1A, 0.5,(Y) KS-14603,L6A0,0.25
R125	4F3	KS-20616,L1A,464

TRANSISTOR

DESIG	LOC	CODE
Q1	3E1	51F
Q3	4B7	2N2219A MOTOROLA
Q4	4B8	KS-20945, (D45H8 G.E.CO)
Q5	4C3	51B
Q6	4C2	46K
Q7	4C6	(Z) 66K,(T) 51B
Q8	4C7	2N2905A MOTOROLA
Q9	4C8	KS-20944, (D44H8 G.E.CO)
Q11	4D3	51B
Q13	4E7	2N2219A MOTOROLA
Q14	4E8	KS-20945, (D45H8 G.E.CO)
Q15	4F6	(Z) 66K,(T) 51B
Q16	4F7	2N2905A MOTOROLA
Q17	4F8	KS-20944, (D44H8 G.E.CO)
Q18	4C6	98N
Q19	4F4	(Z) 2N2222A (Y) 66J
Q20	4F6	98N

NOTES: (CONT)

5. BATTERY AND GROUND TERMINATIONS FOR IC'S:

IC DESIG	+5 BAT TERM	GND TERM
IC3	16	8
IC7	16	8
IC8	16	8
IC9	16	8
IC10	16	7,8
IC12	16	7,8

MANUFACTURING REFERENCE

CATEGORY	NO.

SYMBOL

J3-18	VOICE IN	TP-AUDIN J3-7
J3-19	VOICE IN RET	TP-AGC J3-5
J3-4	MON AUD	TP-AUD CHN J3-8
J3-2	AUD OUT	TP-SQCH J3-14
J3-6	DCLK	TP-DIG AUD J3-9
J4-10		ENCODE J3-3
J4-9	+15	
J4-17		
J4-7	-15	TP-OCDR2 J3-12
J3-1		OCDR J4-12
J4-1	GRD	J4-13
J4-2		OCR J4-5
J4-11	+5	J4-6
J3-17	-8	ICDR J4-14
		J4-15
		ICR J4-3
J4-16	SDC	J4-4
J4-18	SIC	TP-ICDR2 J3-13
J4-20	SWC	TP-ICDR1 J3-11
J4-19	CSR	TP-OCDR1 J3-10

NOTES:

1. UNLESS OTHERVISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS. VALUES PRECEDED BY THE SYMBOL + (PLUS) OR - (MINUS) ARE IN VOLTS.
2. ⏚ GROUND RETURN.
3. IC11 IS A DIP LOCATION FOR PREAMBLE LENGTH. PROVIDE THE FOLLOWING STRAPS.

(W) PINS
2-15
4-13
6-11
8-9

4. RECORD OF CHANGES

DWG ISS	PREV FURN	STD	MFR DISC	SEE NOTE
3B	Z	Y	Z	
3B	W		W	
3B	NONE	X		
6A	V	U	V	

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

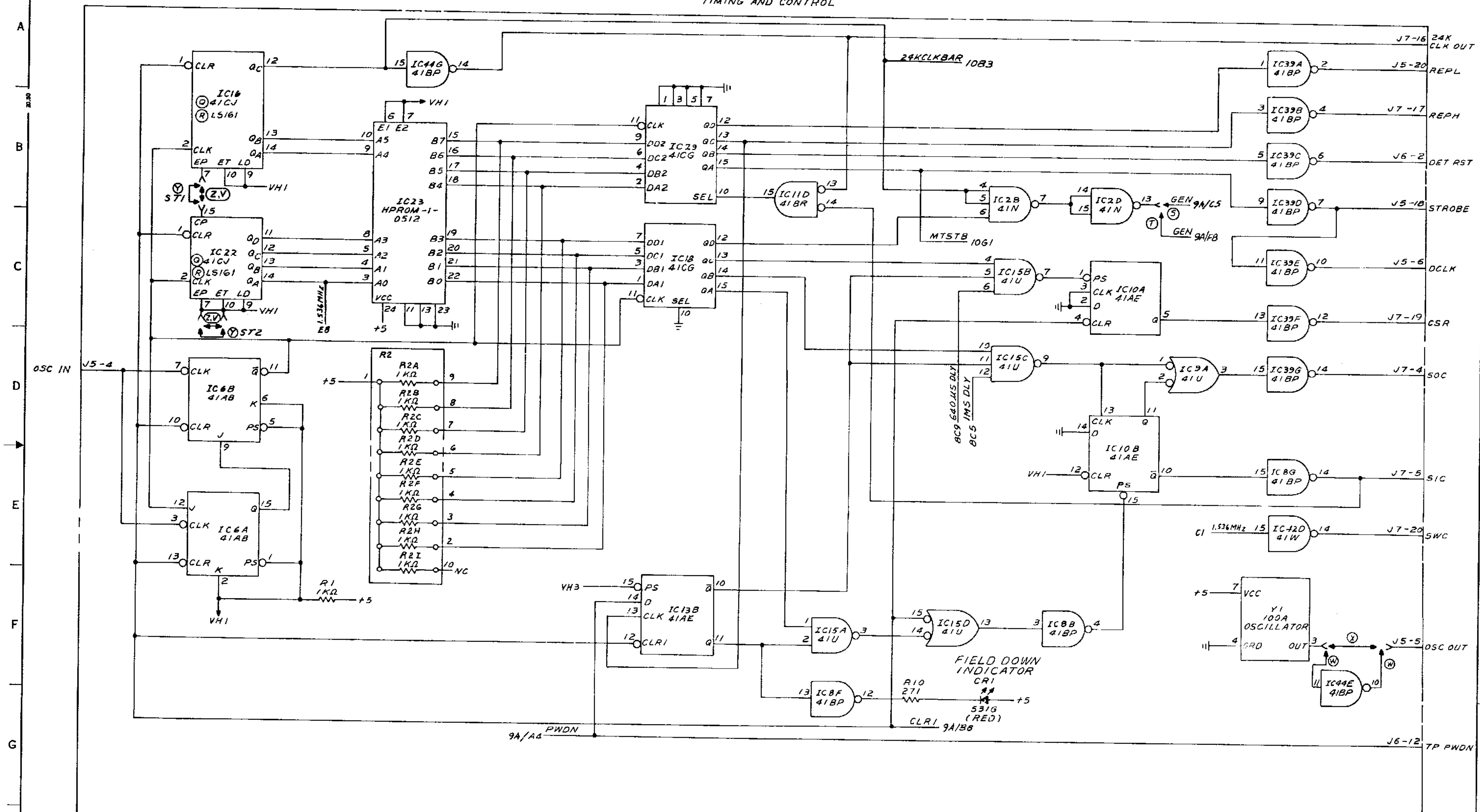
DWG SIZE 6S | ISSUE 6A

BELL LABORATORIES | SD-97753-01 | -J6

PRINTED IN U.S.A.

Ⓦ P/O CPS UD3 (MFR. DISC.)

TIMING AND CONTROL



OSC IN
J5-4
IC16 41CJ LS161
IC22 41CJ LS161
ST1
ST2
VH1
IC6B 41AB
IC6A 41AB
R1 1KΩ
+5
IC44G 41BP
IC23 HPROM-1-0512
R2
R2A 1KΩ
R2B 1KΩ
R2C 1KΩ
R2D 1KΩ
R2E 1KΩ
R2F 1KΩ
R2G 1KΩ
R2H 1KΩ
R2I 1KΩ
NC
1.536MHz
E8
IC29 41CG
IC18 41CG
IC11D 41BR
24KCLKBAR 10B3
MTSTB 10G1
IC2B 41N
IC2D 41N
GEN 9A/C5
GEN 9A/F8
IC15B 41U
IC10A 41AE
IC15C 41U
640μS DLY
1MS DLY
8C9
8C5
IC9A 41U
IC10B 41AE
VH3
IC13B 41AE
IC15A 41U
IC15D 41U
IC8B 41BP
IC8F 41BP
FIELD DOWN INDICATOR
CR1
531G (RED)
R10 271
CLR1 9A/B8
9A/A4 PWDN
IC39A 41BP
IC39B 41BP
IC39C 41BP
IC39D 41BP
IC39E 41BP
IC39F 41BP
IC39G 41BP
IC8G 41BP
IC42D 41W
C1 1.536MHz
Y1 100A OSCILLATOR
IC44E 41BP
J7-16 24K CLK OUT
J5-20 REPL
J7-17 REPH
J6-2 DET RST
J5-18 STROBE
J5-6 DCLK
J7-19 CSR
J7-4 SOC
J7-5 SIC
J7-20 SWC
J5-5 OSC OUT
J6-12 TP PWDN

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

DWG SIZE	ISSUE
65	6A

BELL LABORATORIES SD-97753-01 -J7

Ⓦ P/O CPS UD3 (MFR. DISC.)

TIMING AND CONTROL

10E2 LOAD 48

10F2 CNTPS

24K CLK IN J7-6

10B3 24K CLK IN

IC38B 41U

IC38A 41U

IC44F 41BP

IC31 41CJ LS161

IC43 41CJ LS161

IC36 41CJ LS161

IC41 41CJ LS161

IC46 41CJ LS161

VH2

ST3 ST4 ST5 ST6 ST7

1MS DLY 706

640μS DLY 7D6

CLR2 9A/B8

U6-16 TP-LOAD 48

CNT65536 9B/E3

IC32C 41N

CNT47 10B2

C18 100PF

IC48A 41DR

U6-13 TP-CNT68120

U6-14 TP-CNT68117

CNT68117 9A/F4

IC37C 41U

IC42A 41W

IC42B 41W

IC37B 41U

IC48B 41DR

IC42C 41W

C17 100PF

IC47B 41DR

IC47A 41DR

IC37A 41U

IC38D 41U

(CNT29-49K) U6-4 STENAB

CB8 9B/D6

CB8 9A/E3

IC26E 41BP

IC9B 41U

IC43B 41EE

CNT14 9A/A1

U6-15 TP-CNT14

IC45C 41EE

IC26C 41BP

IC27B 41DR

IC37D 41U

(CNT) 4K U6-5 LIMRST

IC30 41CD

INSULATED STRAP

IC21B 41Y

IC13A 41AE

PREAM 9A/D5

IC27A 41DR

IC44D 41BP

(CNT32K-0) U6-6 CT GATE

R12 1KΩ

+5

CNT68120 10C6

CNT68120 10D6

IC44A 41BP

IC44B 41BP

U5-8 CHPCLK

CB1 9A/E7

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S

ISSUE 6A

BELL LABORATORIES SD-97753-01 -J8

ⓦP/O CPS UD3 (MFR. DISC.)

TIMING AND CONTROL

FIELD DOWN SWITCH S2

LOCAL RECORD SWITCH S1

RECORD REQUEST INDICATOR CR2 531G (RED)

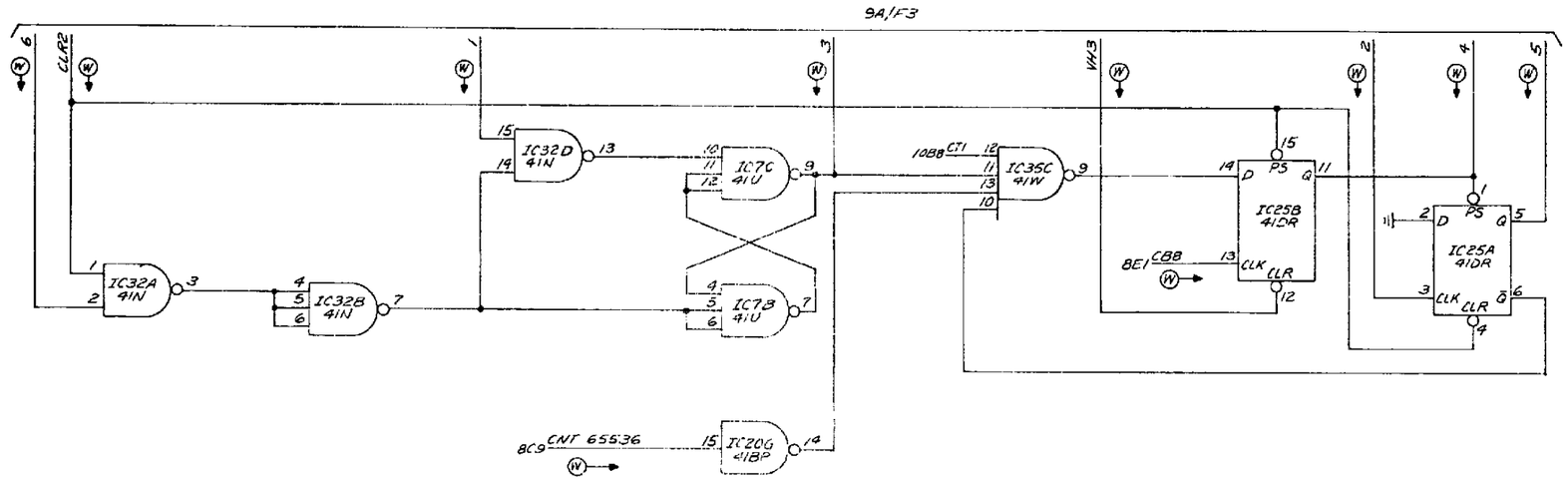
RECORD INDICATOR CR3 531H (GREEN)

SEE NOTE 5

13A ANNOUNCEMENT SYSTEM	DWG SIZE 6S — ISSUE 5B
BELL LABORATORIES	SD-97753-01 — -J9A

ⓦ P/O CPS UD3 (MFR. DISC.)

TIMING AND CONTROL



13A ANNOUNCEMENT SYSTEM		DWG SIZE 6S	ISSUE 5B
BELL LABORATORIES	SD-97753-01		-J98

PRINTED IN U.S.A.

Ⓦ P/O CPS UD3 (MFR. DISC.)

TIMING AND CONTROL

CUT THROUGH INDICATOR

MATCH J7-18

UNUSED FACILITY

DNA INDICATOR (RED)

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

BELL LABORATORIES	SD- 97753-01	DWG SIZE 6S	ISSUE 6A

-J10

Ⓜ P/O CPS UD3 (MFR. DISC.)

TIMING AND CONTROL

COMPONENT LIST

RELAY

	K1		K2
337A	KCT	347A	KREC
10A9		9A/G9	
10A6		9A/G7	

CAPACITOR

	DESIG	LOC	CODE
[10]	C1-C10	10C1	KS-20736,L4, 0.1
	C11	10C0	KS-20736,L4, 0.1
	C12	10C0	602A, 40
	C13	10C0	KS-20736,L4, 0.1
	C14	10B6	KS-20736,L4, 0.1
	C15	9A/D1	KS-20736,L1,0.47
	C16	9A/B1	KS-20736,L4, 0.1
	C17	8E6	KS-19774,L7, 100PF
	C18	8D9	KS-19774,L7, 100PF
[3]	C19-C21	10C1	KS-20736,L4, 0.1

CONNECTOR

DESIG	LOC	CODE
J5		963B-20
J6		963B-20
J7		963B-20

DIODE

DESIG	LOC	CODE
CR1	7F6	531G
CR2	9A/D4	531G
CR3	9A/G7	531H
CR4	9A/G7	458C
CR5	10G5	531A
CR6	10B6	458C
CR7	10A7	531E

INTEGRATED CIRCUIT

DESIG	LOC	CODE
IC1	10A0,10B4	413L
IC2	7B6,7B7, 10A1,10H3	41N
IC3	10G3	41EB
IC4	10E6,10B0	41EC
IC5	10E7,10E8	41Y
IC6	7D1,7E1	413B
IC7	10A1,9A/B5, 10G1,9B/D4	41U
IC8	7E8,7F5, 7F7,10B8, 10E1,10G4, 10G8	41BP
IC9	7D8,8F5, 10E4,10E5	41U
IC10	7C7,7D7	41AE
IC11	7B5,9A/A3, 9A/A6	41BR
IC12	9A/B2,9A/D1	41DE
IC13	7F4,8G5	41AE
IC14	10D1,10F5	41DR
IC15	7C6,7D6, 7F5,7F6	41U
IC16	7A1	Ⓠ41CJ Ⓡ WALS161

INTEGRATED CIRCUIT (CONT)

DESIG	LOC	CODE
IC18	7C4	41CG
IC19	10C8,10D8	419R
IC20	9A/A7,9A/B7, 9A/D3,9A/D2, 9A/F6,9A/G6, 9B/E4	418P
IC21	8G5,9A/C7	41Y
IC22	7C1	Ⓠ41CJ Ⓡ WALS161
IC23	7B2	HPROM-1-0512-5B HARRIS
IC24	10D7	Ⓧ41CF Ⓦ 41T
IC25	9A/E2,9A/E4, 9B/D6,9B/D7	41DR
IC26	8E2,8F5, 9A/A3,9A/F3, 9A/F4,10G2	418P
IC27	8F7,8G7	41DR
IC29	7B4	41CG
IC30	8F1	41CD
IC31	8B4	Ⓠ41CJ Ⓡ WALS161
IC32	9B/D1,9B/D2, 9B/D3,8C8, 10C1	41N
IC34	10B7,10D4	41AE
IC35	9A/D5,9A/E3 10E2,9B/D5	41W
IC36	8B6	Ⓠ41CJ Ⓡ WALS161
IC37	8D2,8E2, 8F6,8F8	41U
IC38	8A2,8B3, 8E8,10B1	41U
IC39	7A8,7B8, 7C8,7D8	41BP
IC40	9A/F5,9A/G5	41DR
IC41	8B7	Ⓠ41CJ Ⓡ WALS161
IC42	7E8,8E1, 8E2,8E6	41W
IC43	8B5	Ⓠ41CJ Ⓡ WALS161
IC44	7A2, 8B1,8B8 8G9,9A/E8	41BP
IC45	8F4,8F5 9A/F4,9A/G4	41EE
IC46	8B9	41CJ
IC47	8F7,8E7	41DR
IC48	8D7,8E3	41DR

OSCILLATOR

DESIG	LOC	CODE
Y1	7F8	100A, 9.216 MHZ

RESISTOR

DESIG	LOC	CODE
R1	7F1	KS-20616,L1A, 1KΩ
R2	7D2	4310R-101-102 BOURNS
R10	7F6	271
R11	9A/A2	1KΩ
R12	8G6	1KΩ
R13	9A/G0	KS-20616,L1A 1KΩ
R14	9A/D0	909
R15	9A/D0	200
R16	9A/D1	392
R17	9A/D4	271

RESISTOR (CONT)

DESIG	LOC	CODE
R18	9A/B0	1KΩ
R19	9A/B1	392
R20	9A/E4	1KΩ
R21	9A/G6	4.7KΩ
R22	9A/G7	1.2KΩ
R23	9A/G7	619
R24	9A/G0	1KΩ
R25	10G5	271
R26	10D6	1KΩ
R27	10A6	Ⓠ1.2KΩ Ⓡ KS-20810,L1A,825Ω
R28	10A7	619
R29	10B7	4.7KΩ
R30	10G7	10KΩ
R41	10G6	4.7KΩ
R43	10E0	1KΩ
R44	9A/B6	1KΩ
R45	9A/B6	2.15KΩ

STRAPS

DESIG	CODE
Ⓨ ST1-7	AUGAT Ⓩ 8136-650PZ BARE JUMPER [2] LSG-1A GT4-1 Ⓩ LEAD SOCKETS 24GA WIRE STRAP Ⓨ

SWITCH

DESIG	LOC	CODE
S1	9A/B0	C & K 8125A, 7089(3)(SMALL RED CAP)
S2	9A/A2	C & K 8125A, 7089(2)(SMALL BLACK CAP)

TRANSISTOR

DESIG	LOC	CODE
Q1	9A/G6	665
Q2	10B7	665
Q3	10G6	665

TEST POINTS

DESIG	LOC	CODE
TP-CLR	9A/A1	LSG-1B614-1 Ⓩ LEAD SOCKET (AUGAT)

IC DESIG	+5 BAT TERM	GRD TERM
IC1	16	8
IC2	16	8
IC3	16	7,8
IC4	16	8
IC5	16	8
IC6	16	8
IC7	16	8
IC8	16	8
IC9	16	8
IC10	16	7,8
IC11	16	7,8
IC12	16	8
IC13	16	7,8
IC14	16	7,8
IC15	16	8
IC16	16	8
IC18	16	8
IC19	16	7,8
IC20	16	8
IC21	16	8
IC22	16	8
IC23	24	23
IC24	16	8
IC25	16	7,8

IC DESIG	+5 BAT TERM	GND TERM
IC26	16	8
IC27	16	7,8
IC29	16	8
IC30	16	8
IC31	16	8
IC32	16	8
IC34	16	7,8
IC35	16	8
IC36	16	8
IC37	16	8
IC38	16	8
IC39	16	8
IC40	16	7,8
IC41	16	8
IC42	16	8
IC43	16	8
IC44	16	8
IC45	16	7,8
IC46	16	8
IC47	16	7,8
IC48	16	7,8

RECORD OF CHANGES

DWG ISS	PREV FURN	STD	MFR DISC	SEE NOTE
3B	Z	Y	Z	
3B	Y	V	Y	
3B	X	W	X	
5B	S	T	S	
6A	Q	R	Q	5

MANUFACTURING REFERENCE

CATEGORY	NO.

NOTES:

1. UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS. VOLTAGES PRECEDED BY THE SYMBOL + (PLUS) OR - (MINUS) ARE IN VOLTS.
2. ⏚ GROUND RETURN.
3. +5V AND GROUND IS DISTRIBUTED WITH 7 ROGERS BUS STRIPS.
4. THE INPUT SIGNAL REM REC RET IS CONNECTED TO SYSTEM GROUND VIA THE BACKPLANE WIRING.
5. THESE OPTIONS COVER ANY CHANGES MADE TO UD3 PRIOR TO THE AVAILABILITY OF UD38.
6. BATTERY AND GROUND TERMINATIONS FOR IC'S:

SYMBOL

J5-4	OSC IN	24K CLK OUT	J7-16
		REPL	J5-20
		REPH	J7-17
		DET RST	J6-2
		STROBE	J5-18
		OCLK	J5-6
		CSR	J7-19
		SOC	J7-4
		SIC	J7-5
		SWC	J7-20
		OSC OUT	J5-5
		TP PWDN	J6-12
		TP-LOAD 48	J6-16
		TP-CNT68120	J6-13
J7-6	24K CLK IN	TP-CNT68117	J6-14
		STENAB	J6-4
		TP-CNT1A	J6-15
		LIM RST	J6-5
		CT GATE	J6-6
		CHPCLK	J5-8
J7-10	PWR SEN	PWR OFF	J7-7
J5-3	ENCOD	GEN INFO	J5-19
J5-12	REM REC	TP PREAMBLE	J6-17
J5-11	REM REC RET	TP RECST	J6-18
J7-8	LST CHP	ERASE	J5-9
		SILEN	J5-16
		SOR	J5-7
		REC	J5-10
		REC RLY1	J5-2
		REC RLY2	J5-1
J7-9	+15	TP-60SEC	J6-19
J7-2, J7-1	GRD	FMLCT RLY1	J5-13
		FMLCT RLY2	J5-14
J7-12, J7-11	+5	FMLCT	J7-14
		T&D CLK OUT	J7-13
J7-18	MATCH	CHP1	J6-7
J7-3	T&D CLK IN	CHP4	J6-10
		CHP3	J6-9
		CHP2	J6-8
		VAT EST	J6-3
		DT COMP SW	J6-20
		TP-MLO	J6-11

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

DWG SIZE	ISSUE
6S	GA

BELL LABORATORIES | SD-97753-01 | -J11A

E-7461 (6-77) PRINTED IN U.S.A.

ⓦ P/O CPS UD3 (MFR. DISC.)

TIMING AND CONTROL

TABLE A
(ROM PROGRAM FOR IC23 ON UD3)

ADDRESS						ADR CNT	PROGRAM							
A_5	A_4	A_3	A_2	A_1	A_0		B_7	B_6	B_5	B_4	B_3	B_2	B_1	B_0
0	0	0	0	0	0	0								
0	0	0	0	0	1	1								
0	0	0	0	1	0	2	1	1						
0	0	0	0	1	1	3	1	1						
0	0	0	1	0	0	4	1							
0	0	0	1	0	1	5	1							
0	0	0	1	1	0	6	1							
0	0	0	1	1	1	7	1				1			
0	0	1	0	0	0	8	1							
0	0	1	0	0	1	9	1							
0	0	1	0	1	0	10	1							
0	0	1	0	1	1	11	1							
0	0	1	1	0	0	12	1							
0	0	1	1	0	1	13	1							
0	0	1	1	1	0	14	1							
0	0	1	1	1	1	15	1							
0	1	0	0	0	0	16	1							
0	1	0	0	0	1	17	1							
0	1	0	0	1	0	18	1							
0	1	0	0	1	1	19								
0	1	0	1	0	0	20								
0	1	0	1	0	1	21								
0	1	0	1	1	0	22								
0	1	0	1	1	1	23			1					
0	1	1	0	0	0	24			1					
0	1	1	0	0	1	25								
0	1	1	0	1	0	26								
0	1	1	0	1	1	27								
0	1	1	1	0	0	28								
0	1	1	1	0	1	29								
0	1	1	1	1	0	30								
0	1	1	1	1	1	31								
1	0	0	0	0	0	32								
1	0	0	0	0	1	33								
1	0	0	0	1	0	34				1				
1	0	0	0	1	1	35				1				
1	0	0	1	0	0	36				1				
1	0	0	1	0	1	37				1				
1	0	0	1	1	0	38				1				
1	0	0	1	1	1	39				1				
1	0	1	0	0	0	40				1				
1	0	1	0	0	1	41				1				
1	0	1	0	1	0	42				1				
1	0	1	0	1	1	43				1				1
1	0	1	1	0	0	44				1				1
1	0	1	1	0	1	45				1				1
1	0	1	1	1	0	46				1				1
1	0	1	1	1	1	47				1				1
1	1	0	0	0	0	48				1		1		1
1	1	0	0	0	1	49						1		1
1	1	0	0	1	0	50								1
1	1	0	0	1	1	51								1
1	1	0	1	0	0	52								1
1	1	0	1	0	1	53								1
1	1	0	1	1	0	54								1
1	1	0	1	1	1	55								1
1	1	1	0	0	0	56								1
1	1	1	0	0	1	57								1
1	1	1	0	1	0	58								1
1	1	1	0	1	1	59								1
1	1	1	1	0	0	60								
1	1	1	1	0	1	61								
1	1	1	1	1	0	62								
1	1	1	1	1	1	63								

NOTES:

1. THIS PROGRAM REFERS TO A HARRIS HPROM-0512 OR APPROVED EQUIVALENT. IN TABLE A "1" INDICATES A BLOWN MEMORY LINK. AN EMPTY BOX INDICATES A MEMORY LINK INTACT.

13A ANNOUNCEMENT SYSTEM

DWG SIZE: 6S

ISSUE: 5B

BELL LABORATORIES | SD-97753-01 | J11B

Ⓝ P/O CPS UD4 (SERIES 1 THRU 14) (MFR DISC)

3-24 SECOND VML MESSAGE MODULE

OCDR J10-12
OCR J10-6
ERASE J8-9
CHP CLK J8-8
SOR J8-7
ST ENAB J9-4
START J10-20
FILTER GROUND J10-10
CH ACCESS J10-19
REPL J8-20
REC J8-10
GEN INFO J8-18-19
REPH J10-17
ICR J10-13
ICDR J10-15

SB1 SB2

RI-B 10KΩ RI-A 10KΩ RI-C 10KΩ RI-D 10KΩ RI-E 10KΩ R10 10KΩ R20 10KΩ R28 10KΩ
R11 42.2 R12 1KΩ R13 42.2 14.7 R14 1KΩ R15 147 R29 2.74KΩ R30 1.78KΩ R31 1KΩ
C6 1 C7 5 C8 1 C9 5 C13 14.7PF
R94 42.2 R95 42.2 14.7
CHANNEL ACCESS S1
IC1A 41EE IC1B 41EE IC1C 41EE IC1D 41EE
IC2A 41EF IC2B 41EF IC2C 41EF IC2E 41EF IC2F 41EF IC2G 41EF IC2H 41EF
IC6A 41DE IC6B 41DE
IC7A 41N IC7B 41N IC7C 41E IC7D 41N
IC8A 41BP IC8B 41BP IC8C 41BP IC8D 41BP
IC9A 41BP IC9B 41BP IC9C 41BP IC9D 41BP
IC5A 41DR IC3 41CJ IC4 41CW IC20 41EF
R3 2.74KΩ 14D0 R4 8.25 CR1 +15
Q1 Q2
CCLK1
C63 Ⓥ100PF
13C5, SILENCE 1 14E1
R8 4.64KΩ
SILENCE 0 13C4, 14D6
LAST CHP 12H8, 14D0
GST1 14E1
ST ENAB 1 13A2
ST1 14F2
MESSAGE LENGTH S2
CA0 14AB
K1 CA 366 CR3
CR2
CA1 12G8
REPL 1 13B3
REPL 0 14AG
R21 4.22KΩ C14 100PF
R22 4.64KΩ R23 46.4 C61 Ⓥ0.1
C15 0.1
C16 100PF R24 422KΩ
R90 1.78KΩ R91 1.78KΩ R93 178
Q4 Q5 Q6 Q7 Q8 Q9 Q15 Q16
R32 100 C18 0.1 R33 162
R34 487 R25 4.64KΩ R26 46.4 R27 121 C62 Ⓥ0.1 C17 0.47
C19 .0698 C20 .0698
C1 0.18 C2 0.18
R6 121 C3 0.47 C12 0.1
IC10 SN75463P IC11 SN75463P IC12 SN75463P IC13 SN75463P
IC14 29A IC15 29A
OUTER COIL INNER COIL
C4 27PF C59 5.05PF C10 27PF C60 5.05PF C11 0.1
R9 4.64
J10-4 CUR SENSE J10-5 CUR RET
IC18D 41AC
12E2 CA1 12D4 LST CHP J10-8 LST CHP

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S | ISSUE 8D

BELL LABORATORIES | SD-97753-01 | -J12

Ⓝ P/O CPS UD4 (SERIES 1 THRU 14) (MFR DISC)

3-24 SECOND VML MESSAGE MODULE

SEE PROPRIETARY NOTICE ON COVER PAGE.		
13A ANNOUNCEMENT SYSTEM	DWG SIZE 6S	ISSUE 8D
BELL LABORATORIES	SD-97753-01	-J13

ⓝ P/O CPS UD4 (SERIES 1 THRU 14) (MFR DISC)

3-24 SECOND VML MESSAGE MODULE

DT COMP SW J9-20

PWR OFF J10-7

LIM RST J9-5

CT GATE J9-6

-15V J8-1 → -15

-8V J8-17 → -8

-4V J10-16 → -4

+15V J10-9 → +15

GRD J10-1

+5V J10-11 → +5

+5

R92 4.64KΩ

R77 10KΩ

R81 10KΩ

C54 40

C47 40

C48 0.1

C49 40

C50 0.1

13C6 Y

IC28 41CT

IC27 SEE NOTE 3

IC26 41CJ

LOAD CARRY

CLK

REPLO 12E4

DATA A

DATA B

DATA C

DATA D

ET

EP

CL

12E3 CAO

IC18C 41AC

J9-19 TP9

J10-18 MATCH

J9-14 STP

13H5 F GRD

K3 STP

J9-15 LIM

J8-14 CTI

K4 CT

J8-13 CT2

J9-16 MU2

K5 MU

J9-17 MU3

J9-18 MU4

12C5 QC

IC8D 41EF

13D3 A

IC23D 41N

12B1 C CLK1

IC25C 41N

12D4 LAST CHP12

IC25B 41N

IC25A 41N

R78 4.64KΩ

Q13

K3 STP

CR11

R79 ⓡ825Ω ⓢ1.47K

12C4 SILENCE 0

IC9F 41BP

R89 261

K5 MU

CR15

IC9G 41BP

NC

IC25D 41N

GST1 12D3

SILENCE 1 12C3

IC29C 41N

IC29A 41N

R82 4.64KΩ

Q14

K4 CT

CR13

R83 ⓡ825Ω ⓢ1.47K

STI 12E1

IC29B 41N

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S

ISSUE 8D

BELL LABORATORIES SD-97753-01 -J14

ⓃP/O CPS UD4 (SERIES I THRU 14) (MFR DISC)

3-24 SECOND VME MESSAGE MODULE

COMPONENT LIST

RELAY

337A

	K4 CT	K3 STP	K5 MU
14C9	14B9	14D9	
14E5	14D4	14D7	

347A

	K1 CA
13E9	
12E3	

348B

	K2 VA
13F9	
13F9	

CAPACITOR

DESIG	LOC	CODE
C1	12A6	535ME, 0.18
C2	12A6	535ME, 0.18
C3	12B8	KS-20736,L5, 0.47
C4	12A9	KS-19774,L7, 27PF
C5	12B9	KS-20736,L4, 0.1
C6	12D0	596C, 1
C7	12D1	601A, 5
C8	12D0	596C, 1
C9	12E1	601A, 5
C10	12E9	KS-19774,L7, 27PF
C11	12E9	KS-20736,L4, 0.1
C12	12F7	KS-20736,L4, 0.1
C13	12G2	KS-16958,L34, 14.7PF
C14	12F3	KS-16958,L32, 100PF
C15	12G4	KS-20736,L4, 0.1
C16	12F5	KS-16958,L32, 100PF
C17	12G7	KS-20736,L5, 0.47
C18	12G5	KS-20736,L4, 0.1
C19	12H5	535HG, .0698
C20	12H5	535HG, .0698
C21	13B4	596C, 1
C22	13A6	594C, 0.332
C23	13A7	594C, .0261
C24	13A7	KS-19774,L13, 0.27
C25	13B7	KS-20736,L4, 0.1
C26	13A8	719A, 1000PF
C27	13A9	KS-20736,L4, 0.1
C28	13B8	719A, .0147
C29	13B8	719A, .0147
C30	13C2	KS-19774,L7, .0022
C31	13C2	KS-19774,L7, .0022
C32	13C3	KS-20736,L4, 0.1
C33	13D2	KS-19774,L7, 150PF
C34	13D7	KS-20736,L4, 0.1
C35	13D6	KS-19774,L9, 1
C36	13E7	602A, 40
C37	13E8	602A, 40
C38	13D9	542A0, 0.1
C39	13E9	542A0, 0.1
C40	13E7	KS-20736,L4, 0.1
C41	13F7	KS-19774,L7, .001
C42	13F2	KS-19774,L7, .0022
C43	13E3	KS-20736,L4, 0.1
C44	13F2	KS-19774,L7, .0022
C45	13G2	KS-19774,L7, 150PF
C46	13F6	601A, 5
C47	14F0	602A, 40
C48	14F1	KS-20736,L4, 0.1
C49	14G0	602A, 40
C50	14G1	KS-20736,L4, 0.1
C51	SEE NOTE 4	
C52		KS-20736,L4, 0.1
C53		
C54	14E1	602A, 40
C55	13D8	542G, 4
C56	SEE NOTE 4	
C57	13F7	KS-20736, L4, 0.1
C58	13F7	
C59	12B9	
C60	12E9	KS-20813, L6, 5.05PF
C61	12G4	ⓥ 75G, 0.1
C62	12F7	ⓥ 75G, 0.1
C63	12B3	ⓥ KS-19774, L1, 100PF

CONNECTOR

DESIG	LOC	CODE
J8		963B-20
J9		
J10		

DIODE

DESIG	LOC	CODE
CR1	12B3	458C
CR2	12F3	531H
CR3	12F4	458C
CR4	13F6	459J
CR5	13F6	458C
CR6	13F6	458C
CR7	13F6	458C
CR8	13G6	458C
CR9	13G8	458C
CR10	13G9	458C
CR11	14D4	458C
CR12	13G8	531G
CR13	14E5	458C
CR14	13F8	458C
CR15	14C7	458C
CR17	13E8	521C
CR18	13D9	521A

FERRITE BEAD

DESIG	LOC	CODE
SB1	12A4	267 3000101 FAIR-RITE PRODUCTS
SB2	12H3	267 3000301

INTEGRATED CIRCUIT

DESIG	LOC	CODE
IC1	12B1,12C1, 12C4,12F2	41EE
IC2	12B1,12B2, 12C1,12C2, 12D4,12E2, 12G1	41EF
IC3	12B4	41CJ
IC4	12C5	41CW
IC5	12C3,13A3	41DR
IC6	12D1,12E1	41DE
IC7	12D2,12E2, 12F2	41N
IC8	12F1,12G1, 13B0	41EF
IC9	12F3,12F4	41BP
IC10	12B6	SN75463P TEXAS INST CO
IC11	12C6	SN75463P TEXAS INST CO
IC12	12D6	SN75463P TEXAS INST CO
IC13	12E6	SN75463P TEXAS INST CO
IC14	12B8	29A (BUBBLE MEMORY)
IC15	12E8	29A (BUBBLE MEMORY)
IC16	13C2	559J
IC17	13F2	559J
IC18	12G8,13B1, 13C1,14A8	41AC
IC19	13C4,13C6	41B
IC20	13A4	12986
IC21	13B5	604P
IC22	13A6,13A7, 13B8	502FY
IC23	13E6	UA759UIC, FAIRCHILD
IC24	13B7	CA3140 AE, RCA
IC25	14D1,14D2, 14E1,14E2	41N

INTEGRATED CIRCUIT (CONT)

DESIG	LOC	CODE
IC26	14A7	41CJ
② IC27	14B5	SEE NOTE 3
IC28	14A6	41CT
IC29	14E2,14E3, 14F3	41N

POTENTIOMETER

DESIG	LOC	CODE
R55	13C9	KS-19069,L4, 5KΩ
R87	13D1	KS-19646,L3,500
R88	13G1	

NOTES:

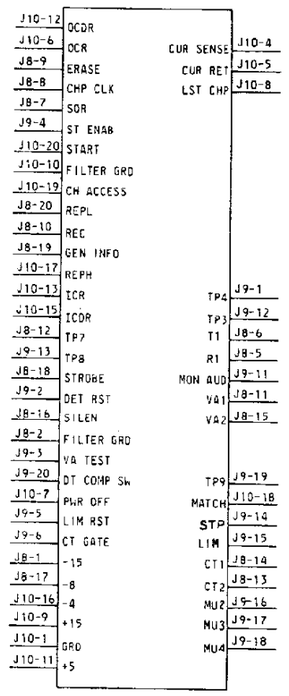
1. UNLESS OTHERWISE SPECIFIED:
   RESISTANCE VALUES ARE IN OHMS,
   CAPACITANCE VALUES ARE IN MICROFARADS,
   VALUES PRECEDED BY THE SYMBOL '+(PLUS)' OR '-(MINUS)' ARE IN VOLTS.
2. ⏚ GROUND RETURN.
3. ② IC27 DOES NOT EXIST. WIRES ARE CONNECTED TO TERMINALS AT POSITION IC27 WOULD OCCUPY.
4.

IC DESIG	+5 BAT TERM	GRD TERM	DECOUPLING CAPACITOR
IC1	16	7,8	C51
IC2	16	8	
IC3	16	8	C56
IC4	16	8	
IC5	16	8	
IC6	16	8	
IC7	16	8	C52
IC8	16	8	
IC9	16	8	
IC10	8	4	
IC11	8	4	
IC12	8	4	
IC13	8	4	
IC18	16	8	
IC19	16	8	
IC25	16	8	C53
IC26	16	8	
IC28	16	7,8	
IC29	16	8	

MANUFACTURING REFERENCE

CATEGORY	NO.

SYMBOL



SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S | ISSUE 8D

BELL LABORATORIES | SD-97753-01 | -J15

ⓂP/O CPS UD4 (SERIES 1 THRU 14)(MFR DISC)

3-24 SECOND VML MESSAGE MODULE

COMPONENT LIST (CONT)

RESISTOR

DESIG	LOC	CODE
R1	12B0,12F0	4306R-101-103 BOURNS
R3	12B1	KS-20810,L1A, 2.74KΩ
R4	12B3	KS-20810,L1A, 8.25
R6	12B6	KS-20616,L1A 121
R8	12C4	4.64KΩ
R9	12C9	KS-14603,L3CC,4.64
R10	12C0	10KΩ
R11	12D0	42.2
R12	12D0	1KΩ
R13	12E0	42.2 Ⓧ,14.7 Ⓗ
R14	12E0	1KΩ Ⓧ
R15	12E1	147
		KS-20616,L1A
R20	12F0	10KΩ
R21	12F3	4.22KΩ
R22	12G4	4.64KΩ
R23	12G5	KS-20810,L1A, 46.4
R24	12G5	KS-20616,L1A, 4.22KΩ
R25	12G6	KS-20616,L1A, 4.64KΩ
R26	12G6	KS-20810,L1A, 46.4
R27	12G7	121
R28	12G0	10KΩ
R29	12G1	KS-20616,L1A 2.74KΩ
R30	12G2	1.78KΩ
R31	12G3	1KΩ
R32	12G4	100
R33	12G5	KS-20810,L1A, 162
R34	12G5	487
R35	13A2	392
R36	13A6	681
R37	13A6	1.1KΩ
R38	13A7	75KΩ
R39	13B6	1.1KΩ
R40	13A7	5.62KΩ
R41	13B8	23.7KΩ
R42	13B8	7.15KΩ
R43	13B7	21.5KΩ
R44	13B8	56.2KΩ
R45	13B0	10KΩ
R46	13B2	11.5KΩ
R47	13B2	6.19KΩ
R48	13C0	KS-20616,L1A 10KΩ
R49	13C2	100KΩ
R50	13C2	100KΩ
R51	13D2	KS-16311,L4F 2.05KΩ
R52	13D2	2.05KΩ
R53	13D2	10KΩ
R54	13C7	21.5KΩ
		KS-20616,L1A
R58	13F2	100KΩ
R59	13F2	100KΩ
R60	13G2	KS-16311,L4F 2.05KΩ
R61	13G2	2.05KΩ
R62	13E6	1KΩ
R63	13E7	30.1KΩ
R64	13F8	KS-20616,L1A 10KΩ
R65	13G6	10KΩ
R66	13G7	1MΩ
R67	13G8	1.96KΩ
R68	13F9	KS-20810,L1A, 825
R69	13G5	4.64KΩ
R70	13G6	KS-20616,L1A, 14.7KΩ
R71	13G7	147
R72	13G7	1MΩ
R73	13G7	KS-16645,L1, 10MΩ
R74	13G6	2.61KΩ
R75	13G7	KS-20616,L1A 147
R77	14D0	10KΩ
R78	14D2	4.64KΩ
R79	14D4	Ⓡ KS-20810,L1A, 825Ω Ⓢ KS-20616,L1A,1.47K
R80	14C8	KS-20616,L1A, 464
R81	14E0	KS-20516,L1A, 10KΩ

RESISTOR (CONT)

DESIG	LOC	CODE
R82	14E3	KS-20616,L1A, 4.64KΩ
R83	14E5	Ⓡ KS-20810,L1A, 825Ω Ⓢ KS-20616,L1A,1.47K
R84	13B6	KS-20616,L1A 681
R85	13G2	10KΩ
R86	13A1	392
R89	14D7	Ⓢ KS-20616,L1A,261
R90	12F4	1.78KΩ
R91	12F5	1.78KΩ
R92	14A6	4.64KΩ
R93	12F5	KS-20616,L1A 178
R94	12D1	42.2
R95	12D1	42.2 Ⓧ 14.7 Ⓗ
R96	13E1	20.5KΩ
R97	13C3	4.64KΩ
R98	13F4	4.64KΩ

SWITCH

DESIG	LOC	CODE
S1	12D1	KS-19963,L9
S2	12E4	210725 EECO

TEST POINT

DESIG	LOC	CODE
TP1	13D2	P-42P506
TP2	13C3	
TP5	13F2	
TP6	13E3	
TP10	13E1	P 42P506
TP11	13H1	

TRANSFORMER

DESIG	LOC	CODE
T1	13D8	25780C

TRANSISTOR

DESIG	LOC	CODE
Q1	12B1	2N2222A
Q2	12B2	2N2222A
Q4	12F4	2N2222A
Q5	12F4	2N2907A
Q6	12G6	2N2222A
Q7	12G6	2N2907A
Q8	12G2	6ES
Q9	12G4	51F
Q10	13B4	51F
Q11	13G8	66S
Q12	13G6	66S
Q13	14D3	66S
Q14	14E4	66S
Q15	12F5	66S
Q16	12F5	51F

RECORD OF CHANGES

DWG ISS	PREV FURN	STD	MFR DISC	SEE NOTE
3B	Z	Y	Z	
3B	X	W	X	
6A	S	V,R	S	
8D	N	M	N	

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S | ISSUE 8D

BELL LABORATORIES | SD-97753-01 | -J16

P/O CPS UD5 (MFR DISC)

FML MESSAGE MODULE

STROBE J8-18
DET RST J9-2
OCDR J10-12
OCR J10-6
ICDR J10-15
ICR J10-13
CHIP 1 J9-7
CHIP 2 J9-8
CHIP 3 J9-9
CHIP 4 J9-10
REPL J8-20
REPH J10-17
GEN INFO J8-19
REC J8-10
ERASE J8-9
CH ACCESS J10-19
FILTER GRD J10-10
FMLCT J10-14
SILEN J8-16

R1 10KΩ
R2-E 10KΩ
R5-E 10KΩ
R5-D 10KΩ
R5-C 10KΩ
R5-B 10KΩ
R2-D 10KΩ
R5-A 10KΩ
R2-B 10KΩ
R2-C 10KΩ
R2-A 10KΩ

IC1A 41AC
IC1C 41AC
IC2A 41EF
IC2B 41EF
IC2C 41EF
IC2D 41EF
IC2E 41EF
IC2F 41EF
IC2G 41EF
IC7A 41BP
IC7B 41BP
IC7C 41BP
IC7D 41BP
IC7E 41BP
IC7F 41BP
IC8A 41EE
IC8B 41EE
IC8C 41EE
IC8D 41EE
IC9A 41DE
IC9B 41DE
IC11A 41N
IC11B 41N
IC11C 41N
IC11D 41N
IC13 41AC

SB1
SB2
C1 0.18
C2 0.698

IC3 SN75462P
IC6 SN75462P

OUTER COIL
INNER COIL
-R1
-R2
-R3
-R4
-G
-Z
+R4
+R3
+R2
+R1
+G
+Z

IC4 29A

IC5 559J
STROBE
RESET
AMP OUT
CAP IN
E1
E2
THRESHOLD
+IN
-IN
DATA OUT

R3 11.5KΩ
R4 6.19KΩ
C3 470PF
TP1
R7 2.05KΩ
R8 2.05KΩ
R9 10KΩ
R65 500
TP5
C6 .0022
R12 100KΩ
C7 27PF
R13 100KΩ
C8 .0022
C46 6.05PF
C13 0.1
C14 0.1
C4 0.1
TP2
R14 4.64
R71 4.64K
TP3

J10-4 CUR SENSE
J10-5 CUR RET
J9-12
J10-8 LST CHIP

R61 1.78KΩ
R62 1.78KΩ
R66 1.78KΩ
R68 178
R17 2.74KΩ
R18 1.78KΩ
R19 1K.2
R20 100
R21 16.2
R22 487
R25 4.22KΩ
R26 3.64KΩ
R27 46.4
R30 2.74KΩ
R31 21.5
R34 147
CR1
CR2
CR3
Q1
Q2
Q3
Q4
Q5
Q6
Q11
Q12

C9 14.7PF
C10 100PF
C15
C16 5
C5 0.1

R32 42.2 W14.7
R33 1KΩ
R69 42.2 W14.7
S1 CHANNEL ACCESS

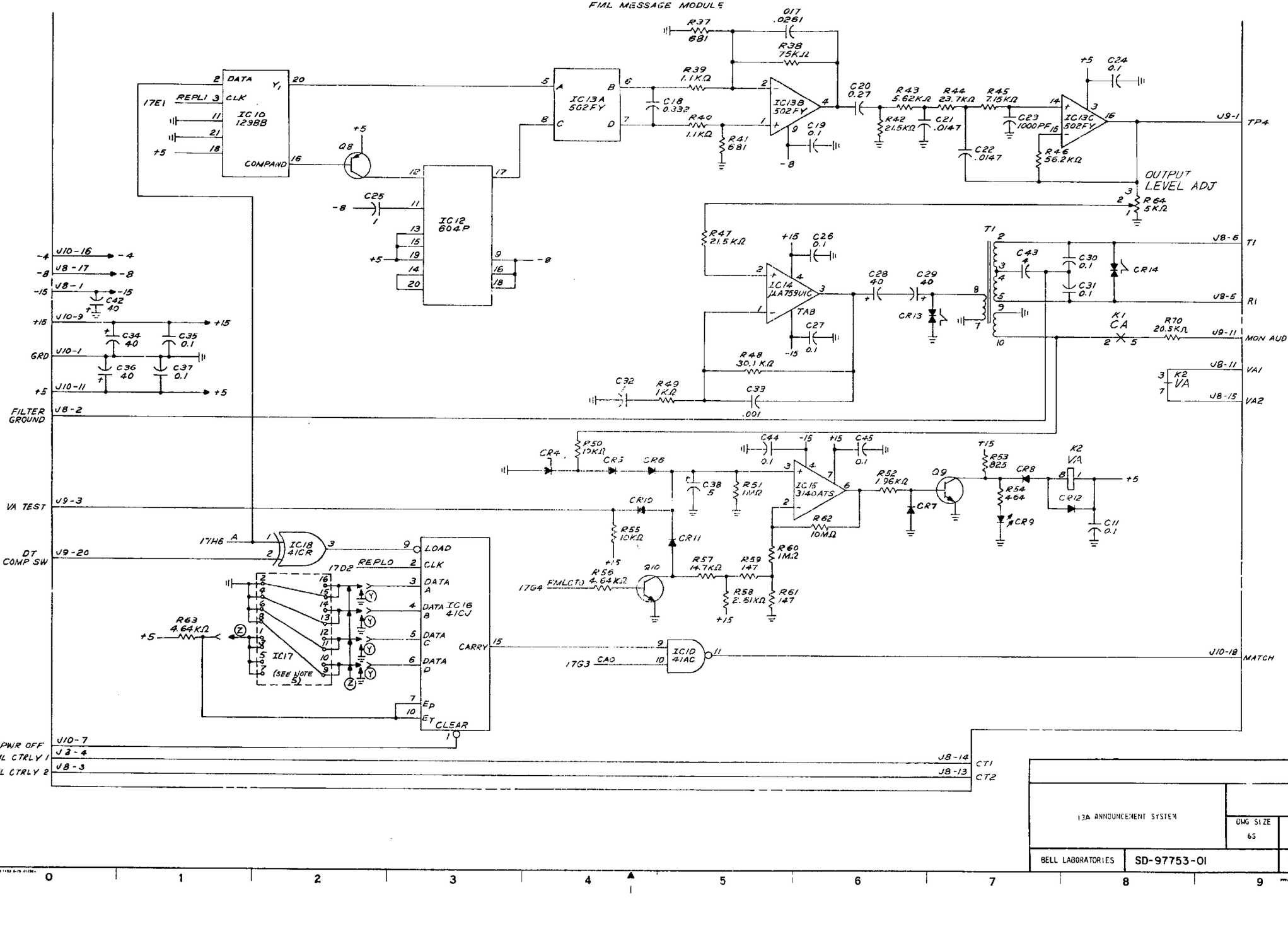
CA0 18G4
18B1
18F2
18F1
18G4
18Z4
REPL1
REPL0
FMLCTO
K1 CA 366

+5
+15
-15

13A ANNOUNCEMENT SYSTEM
DWG SIZE 6S
ISSUE 2A
BELL LABORATORIES
SD-97753-01
-J17

P/O CPS UD5 (MFR DISC)

FIML MESSAGE MODULE



13A ANNOUNCEMENT SYSTEM		DWG SIZE 6S	ISSUE 3B
BELL LABORATORIES	SD-97753-01		-J18

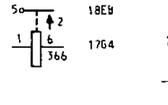
P/O CPS UD5 (MFR DISC)

FML MESSAGE MODULE

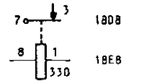
COMPONENT LIST

RELAY

	K1		K2
347A	CA	348B	VA



18E9 1764



18D8 18E8

CAPACITOR

DESIG	LOC	CODE
C1	17B3	535HE, 0.18
C2	17B3	535HG, .0698
C3	17B7	KS-19774,L7, 470PF
C4	17B8	KS-20736,L4, 0.1
C5	17D5	KS-20736,L4, 0.1
C6	17D7	KS-19774,L7, .0022
C7	17D7	KS-19774,L7,.27PF
C8	17D7	KS-19774,L7, .0022
C9	17E4	KS-16958,L34, 14.7PF
C10	17E4	KS-16958,L32, 100PF
C11	18E8	KS-20736,L4, 0.1
C12	17F6	KS-20736,L5, 0.47
C13	17F7	KS-20736,L4, 0.1
C14	17F5	KS-20736,L4, 0.1
C15	17G0	596C, 1
C16	17G1	601A, 5
C17	18A5	594C, .0261
C18	18B5	594C, .332
C19	18B6	KS-20736,L4, 0.1
C20	18A6	KS-19774,L13, 0.27
C21	18B7	719A, .0147
C22	18B7	719A, .0147
C23	18B7	719A, 1000PF
C24	18A8	KS-20736,L4, 0.1
C25	18B2	596C, 1
C26	18C6	KS-20736,L4, 0.1
C27	18D6	KS-20736,L4, 0.1
C28	18C6	602A, 40
C29	18C6	602A, 40
C30	18C8	542AD, 0.1
C31	18C8	542AD, 0.1
C32	18D4	KS-19774,L9, 1
C33	18D5	KS-19774,L7, .001
C34	18D0	602A, 40
C35	18D1	KS-20736,L4, 0.1
C36	18E0	602A, 40
C37	18E1	KS-20736,L4, 0.1
C38	18E5	601A, 5
C39	SEE NOTE 4	
C40		KS-20736,L4, 0.1
C41		
C42	18D0	602A, 40
C43	18C7	542G, 4
C44	18E5	KS-20736,L4, 0.1
C45	18E6	KS-20736,L4, 0.1
C46	17L7	KS-20813,L6,5.05PF

CONNECTOR

DESIG	LOC	CODE
J8		9638-20
J9		
J10		

DIODE

DESIG	LOC	CODE
CR1	17F3	458C
CR2	17H2	531N
CR3	17G4	458C
CR4	18E4	459J
CR5	18E4	458C
CR6	18E4	458C
CR7	18E7	458C
CR8	18E7	458C
CR9	18E7	531G
CR10	18E4	458C
CR11	18F5	458C
CR12	18E8	458C
CR13	18C6	521C
CR14	18C8	521A

FERRITE

DESIG	LOC	CODE
SB1	17B2	267 3000101 FAIR-RITE PRODUCTS
SB2	17B2	267 3000301 FAIR-RITE PRODUCTS

INTEGRATED CIRCUIT

DESIG	LOC	CODE
IC1	17A2,17A3, 17G4,18G5	413C
IC2	17B1,17C1, 17D1,17E1	41EF
IC3	17C4	SN75462P, TEXAS INST CO
IC4	17C6	29A (BUBBLE MEMORY)
IC5	17A8	557J
IC6	17D4	SN75462P, TEXAS INST CO
IC7	17E1,17E2, 17F2,17F3, 17G2,17H3	413P
IC8	17F1,17F2	41EE
IC9	17G1,17G4	413E
IC10	18B1	1298B
IC11	17H5,17H6	41N
IC12	18B3	604P
IC13	18B4,18A5, 18B8	502FY
IC14	18C5	UA756UIC, FAIRCHILD
IC15	18E6	CA3140AE, RCA
IC16	18F3	41CJ
(2) IC17	18F2	SEE NOTE 5
IC18	18F2	41CR

POTENTIOMETER

DESIG	LOC	CODE
R64	18B8	KS-19069,L4, 5KΩ
R65	17D7	KS-19636,L3,500

RESISTOR

DESIG	LOC	CODE
R1	17A0	KS-20616,L1A, 10KΩ
R2	17A0,17B0, 17E0,17F0	4306R-101-103 BOURNS
R3	17B7	KS-20616,L1A, 11.5KΩ
R4	17B7	KS-20616,L1A, 6.19KΩ
R5	17C0,17D0, 17E0	4306R-101-103 BOURNS
R7	17C7	KS-16311,L4F 2.05KΩ
R8	17C7	2.05KΩ
R9	17C7	KS-20616,L1A 10KΩ
R12	17D7	100KΩ
R13	17D7	100KΩ
R14	17D9	KS-20810,L1A, 4.64
R17	17E2	2.74KΩ
R18	17E4	KS-20616,L1A 1.78KΩ
R19	17E4	1KΩ
R20	17E5	130
R21	17E5	KS-20810,L1A, 162
R22	17E6	287
R25	17F4	KS-20616,L1A 4.22KΩ
R26	17F5	4.64KΩ
R27	17F5	KS-20810,L1A, 46.4
R28	17F5	KS-20616,L1A, 121
R30	17F3	KS-20616,L1A, 2.74KΩ
R31	17F5	KS-20810,L1A, 21.5
R32	17G0	42.2 (3), 14.7 (4)
R33	17G1	1KΩ (X)
R34	17H1	147
R37	18A5	KS-20616,L1A 681
R38	18A5	75KΩ
R39	18A5	1.1KΩ
R40	18A5	1.1KΩ
R41	18B5	681
R42	18B6	21.5KΩ
R43	18B6	5.62KΩ
R44	18B7	23.7KΩ

RESISTOR (CONT)

DESIG	LOC	CODE
R45	18B7	7.15KΩ
R46	18B7	56.2KΩ
R47	18C5	21.5KΩ
R48	18D5	KS-20616,L1A 30.1KΩ
R49	18D5	1KΩ
R50	18E4	10KΩ
R51	18E5	1MΩ
R52	18E6	1.96KΩ
R53	18E8	KS-20810,L1A, 825
R54	18E8	464
R55	18F4	10KΩ
R56	18F4	4.64KΩ
R57	18F5	KS-20616,L1A 14.7KΩ
R58	18F5	2.61KΩ
R59	18F5	147
R60	18F5	1MΩ
R61	18F5	147
R62	18F6	KS-16845,L1, 10KΩ
R63	18G1	KS-20616,L1A, 4.64KΩ
R66	17E3	KS-20616,L1A, 1.78KΩ
R67	17D5	KS-20616,L1A, 1.78KΩ
R68	17E5	KS-20616,L1A, 178
R69	17G1	KS-20616,L1A, 42.2 (3) 14.7 (4)
R70	18D8	KS-20616,L1A, 20.5KΩ
R71	17G9	KS-20616,L1A,4.64KΩ

SWITCH

DESIG	LOC	CODE
S1	17G1	KS-19963,L8

TEST POINT

DESIG	LOC	CODE
TP1	17B7	P-42P506
TP2	17B9	P-42P506
TP3	17D7	P-42P506

TRANSFORMER

DESIG	LOC	CODE
T1	18C7	25780C

TRANSISTOR

DESIG	LOC	CODE
Q1	17E4	66S
Q2	17E5	51F
Q3	17F4	2N2222A
Q4	17F5	2N2907A
Q5	17F4	2N2222A
Q6	17F5	2N2222A
Q8	18B2	51F
Q9	18E7	66S
Q10	18F4	66S
Q11	17E8	66S
Q12	17E5	51F

NOTES (CONT):

4.

IC DESIG	+5 BAT TERM	GRD TERM	DECOUPLING CAPACITOR
IC1	16	8	
IC2	16	8	C39
IC3	8	4	
IC6	8	4	
IC7	16	8	
IC8	16	7,8	C40
IC9	16	8	
IC11	16	8	
IC16	16	8	C41
IC18	16	7,8	

(2) 5. IC17 DOES NOT EXIST. STRAPS ARE CONNECTED TO TERMINALS AT POSITION IC17 WOULD OCCUPY.

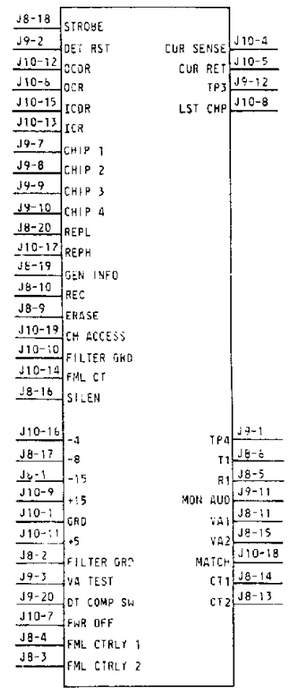
RECORD OF CHANGES

CHG ISS	PREV FURN	STD	MFR DISC	SEE NOTE
3B	Z	Y	Z	
3H	X	W	X	

MANUFACTURING REFERENCE

CATEGORY	NO.

SYMBOL



NOTES:

1. UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS; CAPACITANCE VALUES ARE IN MICROFARADS. VALUES PRECEDED BY THE SYMBOL +(PLUS) OR -(MINUS) ARE IN VOLTS.
2. ⏚ GROUND RETURN.

13A ANNOUNCEMENT SYSTEM	DWG SIZE 6S	ISSUE 3B
BELL LABORATORIES	SD-97753-01	-J19

Ⓝ P/O CPS UD6 (SERIES 1 THRU 14) (MFR DISC)

3-12 SECOND VML MESSAGE MODULE

OCDR J10-12 — SB1 — C1 0.18 — OUTER COIL

OCR J10-6

ERASE J8-9 — R1-B 10KΩ — IC1A 41EE — R3 2.74KΩ 22D0 — Q1 Q2 — R4 21.5 — CR1 +15

CHP CLK J8-8 — R1-A 10KΩ — IC2A 41EF — IC2B 41EF — CCLK1

SOR J8-7 — R1-C 10KΩ — IC1B 41EE — CG1 Ⓥ 100PF

IC2C 41EF — 21C5, SILENCE 1 22E2 — IC1C 41EE — IC3 41CJ — CLEAR — LOAD — ET — R8 4.64KΩ

IC5A 41DR — SILENCE 0 21C5, 22D6 — LAST CHP 22D0 — IC4 41CW

ST ENAB J9-4 — R10 10KΩ — IC2E 41EF — STENAB1 2IA2

START J10-20 R11 42.2 — C6 1 — R12 1KΩ — C7 5 — R94 42.2 — IC6A 41DE — IC7D 41N — IC7B 41N — GST1 22E1 — IC20 41EF

FILTER GROUND J10-10 — C8 1 — CHANNEL ACCESS S1 — R95 42.2 (X) 14.7 (M) — IC7A 41N — 22F2 ST1

CH ACCESS J10-19 R13 42.2 (X) 14.7 (M) — R14 1KΩ — C9 5 — IC6B 41DE — IC2F 41EF — CAD 22A8

R15 147 — CR2 — K1 CA — 366 — CR3 — 20E8 CA1 — IC9E 41BP — 21B3 REPL 1 — 22B6 REPL 0

REPL J8-20 — R1-E 10KΩ — IC8A 41EF — IC9C 41BP — IC9D 41BP — R90 1.78KΩ — Q13 — R91 1.78KΩ — R93 178 — Q16 — R34 487

REC J8-10 — R1-D 10KΩ — IC1D 41EE — IC7C 41N — IC9A 41BP — R21 4.22KΩ — C14 100PF — Q4 — Q5 — R22 4.64KΩ — R23 46.4 — C15 0.1 — C60 Ⓥ 0.1

GEN INFO J8-19 — R20 10KΩ — IC2G 41EF — C13 14.7PF — R29 2.74KΩ — R30 1.78KΩ — IC9B 41BP — NC — Q8 — R31 1KΩ — R32 100 — Q9 — R33 162 — C18 0.1

REPH J10-17 — R28 10KΩ — IC8B 41EF

ICR J10-13

ICDR J10-15 — SB2 — C19 .0698

MESSAGE LENGTH S2

IC10 SN75463P — IC11 SN75463P — IC14 29A — R6 121 — C3 0.47 — C12 .01 — +15 — -15

OUTER COIL: -Z, +G, -G, -R1, +R1, +R2, +R3, +R4, -R2

INNER COIL: -R3, +Z, -R4

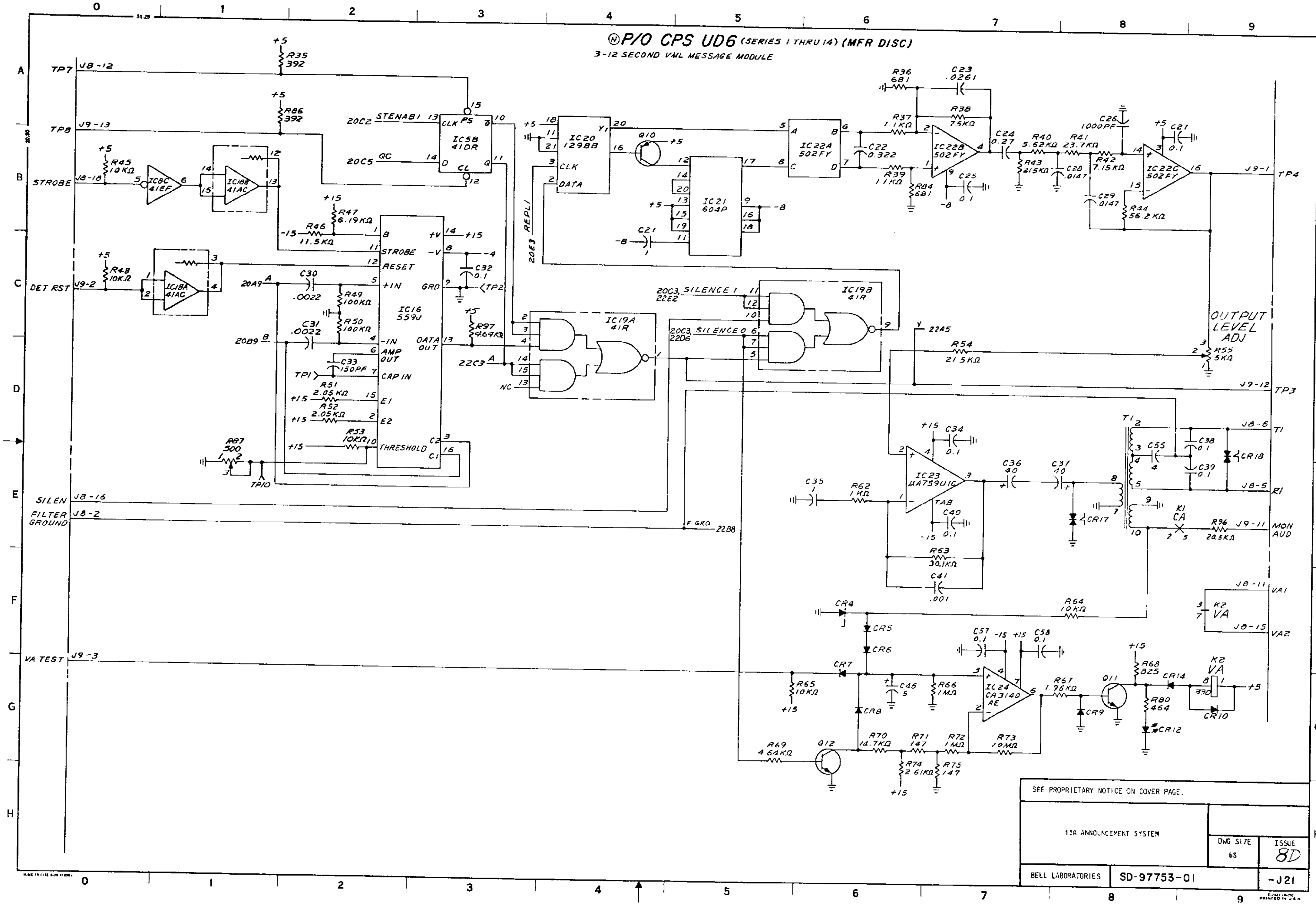
C4 27PF — C59 5045C5 PF — 0.1 — 21C1

J10-4 CUR SENSE — R9 4.64 — J10-5 CUR RET

20E2 CA1 — IC18D 41AC — J10-8 LST CHP

SEE PROPRIETARY NOTICE ON COVER PAGE.

19A ANNOUNCEMENT SYSTEM		DWG SIZE 6S	ISSUE 8D
BELL LABORATORIES	SD-97753-01		-J20



Ⓝ P/O CPS UD6 (SERIES 1 THRU 14) (MFR DISC)
3-12 SECOND VML MESSAGE MODULE
TP7
J8-12
TP8
J9-13
STROBE
J8-18
DET RST
J9-2
SILEN
J8-16
FILTER GROUND
J8-2
VA TEST
J9-3
R35 392
R86 392
R45 10KΩ
R48 10KΩ
IC8C 41EF
IC18B 41AC
IC18A 41AC
IC58 41DR
STENAB1
QC
20C2
20C5
R47 6.19KΩ
R46 11.5KΩ
IC16 559J
STROBE
RESET
+IN
-IN
AMP OUT
CAP IN
THRESHOLD
DATA OUT
GRD
C30 .0022
C31 .0022
R49 100KΩ
R50 100KΩ
C33 150PF
R51 2.05KΩ
R52 2.05KΩ
R53 10KΩ
R87 500
TP10
TP1
TP2
C32 0.1
R97 4.69KΩ
20A9
20B9
22C3
IC20 12988
CLK
DATA
REPL1
20E3
Q10
IC21 604P
C21
IC19A 41R
IC19B 41R
SILENCE 1
SILENCE 0
20C3, 22E2
20C3, 22D6
22A5
IC22A 502FY
IC22B 502FY
IC22C 502FY
R36 681
C23 .0261
R37 1.1KΩ
R38 75KΩ
C22 0.322
R39 1.1KΩ
R84 681
C25 0.1
C24 0.27
R40 5.62KΩ
R41 23.7KΩ
R43 215KΩ
C28 .0147
C26 1000PF
R42 7.15KΩ
C29 .0147
C27 0.1
R44 56.2KΩ
J9-1
TP4
OUTPUT LEVEL ADJ
R54 21.5KΩ
R55 5KΩ
J9-12
TP3
IC23 µA759U1C
C34 0.1
C35
R62 1KΩ
C40 0.1
R63 30.1KΩ
C41 .001
C36 40
C37 40
CR17
T1
C55 4
C38 0.1
C39 0.1
CR18
J8-6
T1
J8-5
R1
K1 CA
R96 20.5KΩ
J9-11
MON AUD
F GRD
22B8
J8-11
VA1
K2 VA
J8-15
VA2
CR4
CR5
CR6
R64 10KΩ
CR7
R65 10KΩ
C46 5
R66 1MΩ
CR8
C57 0.1
C58 0.1
IC24 CA3140 AE
R67 1.96KΩ
Q11
CR9
R68 825
CR14
K2 VA
CR10
R80 464
CR12
R69 4.64KΩ
Q12
R70 14.7KΩ
R71 147
R72 1MΩ
R73 10MΩ
R74 2.61KΩ
R75 147
SEE PROPRIETARY NOTICE ON COVER PAGE.
13A ANNOUNCEMENT SYSTEM
DWG SIZE 6S
ISSUE 8D
BELL LABORATORIES
SD-97753-01
-J21
PRINTED IN U.S.A.

ⓃP/O CPS UD6 (SERIES 1 THRU 14) (MFR DISC)

3-12 SECOND VML MESSAGE MODULE

DT COMP SW J9-20

PWR OFF J10-7

LIM RST J9-5

CT GATE J9-6

-15V J8-1

-8V J8-17

-4V J10-16

+15V J10-9

GRD J10-1

+5V J10-11

+5V

R92 4.64KΩ

21C6 Y — IC28 41CT

20E3 CAO — IC18C 41AC

20E4 REPLO

IC26 41CJ — LOAD, CARRY, CLK, DATA A, DATA B, DATA C, DATA D, ET, EP, CL

IC27 SEE NOTE 3

Ⓩ R76 4.64KΩ

20C5 QC — IC18D 41EC

21D3 A — IC29D 41N

J9-19 TP9

J10-18 MATCH

J9-14 STP

21E5 F.GRD — K3 STP

J9-15 LIM

J8-14 CT1

K4 CT

J8-13 CT2

J9-16 MU2

K5 MU

J9-17 MU3

J9-18 MU4

20B1 C CLK1 — IC25C 41N

20D4 LAST CHP 2200 — IC25B 41N

IC25A 41N

R78 4.64KΩ — Q13 — K3 STP 305 — CR11 — R79 Ⓡ825Ω Ⓢ1.47K — +15

R77 10KΩ

R81 10KΩ

IC25D 41N

20D3 GST1 — IC29C 41N

20C3 SILENCE 1 — IC29A 41N

IC29B 41N

20E1 ST1

R82 4.64KΩ — Q14 — K4 CT 305 — CR13 — R83 Ⓡ825Ω Ⓢ1.47K — +15

20C3 SILENCE 0 — IC9E 41BP — Ⓢ R89 2Ω1 — K5 MU 305 — CR15 — +5

IC9G 41BP — NC

C54 40

C47 40 — C48 0.1

C49 40 — C50 0.1

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM.

DWG SIZE 6S — ISSUE 8D

BELL LABORATORIES — SD-97753-01 — -J22

ⓃP/O CPS UD6 (SERIES 1 THRU 14) (MFR DISC)

3-12 SECOND VML MESSAGE MODULE

COMPONENT LIST

RELAY

	K4	K3	K5
337A	CT	STP	MU
	22C9	22B9	22D9
305	22E5	22D4	22D7

	K1	K2
347A	CA	VA
	21E9	21F9
366	20E3	21F9
348B		
330		

CAPACITOR

DESIG	LOC	CODE
C1	20A6	535HE, 0.18
C3	20B8	KS-20736,L5, 0.47
C4	20A9	KS-19774,L7, 27PF
C5	20B9	KS-20736,L4, 0.1
C6	20DD	596C, 1
C7	20D1	601A, 5
C8	20DD	596C, 1
C9	20E1	601A, 5
C12	20F7	KS-20736,L4, 0.1
C13	20G2	KS-16958,L34, 14.7PF
C14	20F3	KS-16958,L32, 100PF
C15	20G4	KS-20736,L4, 0.1
C18	20G5	KS-20736,L4, 0.1
C19	20H5	535HG, .0698
C21	21B4	596C, 1
C22	21A6	594C, 0.332
C23	21A7	594C, .0261
C24	21A7	KS-19774,L13, 0.27
C25	21B7	KS-20736,L4, 0.1
C26	21A8	719A, 1000PF
C27	21A9	KS-20736,L4, 0.1
C28	21B8	719A, .0147
C29	21B8	719B, .0147
C30	21C2	KS-19774,L7, .0022
C31	21C2	KS-19774,L7, .0022
C32	21C3	KS-20736,L4, 0.1
C33	21D2	KS-19774,L7, 150PF
C34	21D7	KS-20736,L4, 0.1
C35	21D6	KS-19774,L9, 1
C36	21E7	602A, 40
C37	21E8	602A, 40
C38	21D9	542AD, 0.1
C39	21E9	542AD, 0.1
C40	21E7	KS-20736,L4, 0.1
C41	21F7	KS-19774,L7, .001
C46	21F6	601A, 5
C47	22F0	602A, 40
C48	22F1	KS-20736,L4, 0.1
C49	22G0	602A, 40
C50	22G1	KS-20736,L4, 0.1
C51	SEE NOTE 4	KS-20736,L4, 0.1
C52		
C53		
C54	22F1	602A, 40
C55	21D8	542G, 4
C55	SEE NOTE 4	KS-20736,L4, 0.1
C57	21F7	KS-20736,L4, 0.1
C58	21F8	KS-20736,L4, 0.4
C59	20B9	KS-20813,L6, 5.05PF
C60	20F5	Ⓥ736, 0.1
C61	20B3	ⓋKS-19774,L1, 100PF

CONNECTOR

DESIG	LOC	CODE
J8		9638-20
J9		
J10		

DIODE

DESIG	LOC	CODE
CR1	20B3	458C
CR2	20F3	531H
CR3	20F4	458C
CR4	21F6	459J
CR5	21F6	458C
CR6	21F6	458C
CR7	21F6	458C
CR8	21G6	458C
CR9	21G8	458C
CR10	21G9	458C
CR11	22D4	458C
CR12	21G8	531G
CR13	22E5	458C
CR14	21F8	458C
CR15	22C7	458C
CR17	21E8	521C
CR18	21D8	521A

FERRITE BEAD

DESIG	LOC	CODE
SB1	20A3	267 3000101 FAIR-RITE PRODUCTS
SB2	20H3	267 3000301 FAIR-RITE PRODUCTS

INTEGRATED CIRCUIT

DESIG	LOC	CODE
IC1	20B1,20C1, 20C4,20F2	41EE
IC2	20B1,20B2, 20C1,20C2, 20D4,20E2, 20G1	41EF
IC3	20B4	41CJ
IC4	20C5	41CW
IC5	20C3,21A3	41DR
IC6	20D1,20E1	41DE
IC7	20D2,20E2, 20F2	41N
IC8	20F1,20G1, 21B2,22E3	41EF
IC9	20F3,20F4, 20G3,22E6	41BP
IC10	20B6	SN75463P TEXAS INST CO
IC11	20C6	SN75463P TEXAS INST CO
IC14	20B8	29A (BUBBLE MEMORY)
IC16	21C2	559J
IC18	20E8,21B1, 21C1,22A8	41AC
IC19	21C4,20C5	41R
IC20	21A4	12988
IC21	21B5	604P
IC22	21A6,21A7, 21B8	502FY
IC23	21E6	UA759UIC, FAIRCHILD
IC24	21G7	CA3140 AE, RCA
IC25	22D1,22D2, 22E1,22E2	41N

INTEGRATED CIRCUIT (CONT)

DESIG	LOC	CODE
② IC26	22A7	41CJ
IC27	22B5	SEE NOTE 3
IC28	22A6	41CT
IC29	22E2,22E3, 22F3,22C4	41N

POTENTIOMETER

DESIG	LOC	CODE
R55	21C9	KS-19069,L4, 5KΩ
R87	21D2	KS-19646,L3,500

NOTES:

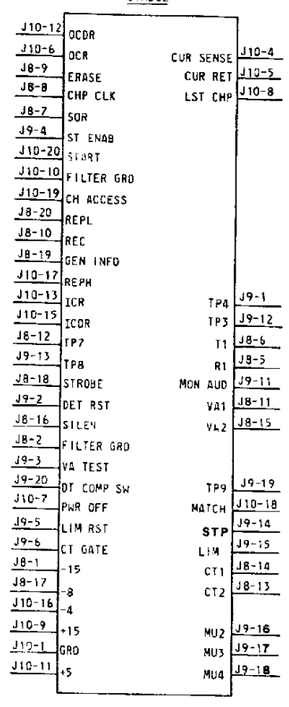
1. UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS, VALUES PRECEDED BY THE SYMBOL +(PLUS) OR -(MINUS) ARE IN VOLTS.
2. ⏚ GROUND RETURN.
3. ② IC27 DOES NOT EXIST. WIRES ARE CONNECTED TO TERMINALS AT POSITION IC27 WOULD OCCUPY.
4.

IC DESIG	+5 BAT TERM	GRD TERM	DECOUPLING CAPACITOR
IC1	16	7,8	C51
IC2	16	8	
IC3	16	8	C56
IC4	16	8	
IC5	16	8	
IC6	16	8	
IC7	16	8	C52
IC8	16	8	
IC9	16	8	
IC10	8	4	
IC11	8	4	
IC18	16	8	
IC19	16	8	
IC25	16	8	C53
IC26	16	8	
IC28	16	7,8	
IC29	16	8	

MANUFACTURING REFERENCE

CATEGORY	NO.

SYMBOL



SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S

ISSUE 8D

BELL LABORATORIES SD-97753-01 -J23

Ⓝ P/O CPS UD6 (SERIES I THRU 14) (MFR DISC)

3-12 SECOND VML MESSAGE MODULE

RECORD OF CHANGES

DWG ISS	PREV FURN	STD	MFR DISC	SEE NOTE
3B	Z	Y	Z	
3B	X	W	X	
6A	S	V,R	S	
8A	N	M	N	

COMPONENT LIST (CONT)

RESISTOR

DESIG	LOC	CODE
R1	20B0, 20F0	4306R-101-103 BOURNS
R3	20B1	KS-20810,L1A, 2.74KΩ
R4	20B3	KS-20810,L1A, 21.5
R6	20B6	KS-20616,L1A 121
R8	20C4	KS-20616,L1A 4.64KΩ
R9	20C9	KS-14603,L3CC, 4.64
R10	20C0	10KΩ
R11	20D0	42.2
R12	20D0	1KΩ
R13	20E0	42.2Ⓧ 14.7 Ⓦ
R14	20E0	1KΩⓍ
R15	20E1	147
		KS-20616,L1A
R20	20F0	10KΩ
R21	20F3	4.22KΩ
R22	20G4	4.64KΩ
R23	20G5	KS-20810,L1A, 46.4
R28	20G0	10KΩ
R29	20G1	2.74KΩ
R30	20G2	KS-20616,L1A 1.78KΩ
R31	20G3	1KΩ
R32	20G4	100
R33	20G5	KS-20810,L1A, 162
R35	21A2	392
R36	21A6	681
R37	21A6	1.1KΩ
R38	21A7	75KΩ
R39	21B6	1.1KΩ
R40	21A7	5.62KΩ
R41	21A8	23.7KΩ
R42	21A8	7.15KΩ
R43	21B7	21.5KΩ
R44	21B8	56.2KΩ
R45	21B0	10KΩ
R46	21B2	11.5KΩ
R47	21B2	6.19KΩ
R48	21C0	KS-20616,L1A 10KΩ
R49	21C2	100KΩ
R50	21C2	100KΩ
R51	21D2	KS-16311,L4F 2.05KΩ
R52	21D2	2.05KΩ
R53	21D2	10KΩ
R54	21C7	21.5KΩ
		KS-20616,L1A
R62	21E6	1KΩ
R63	21E7	30.1KΩ
R64	21F8	10KΩ
R65	21G6	10KΩ
R66	21G7	1MΩ
R67	21G8	1.96KΩ
R68	21F9	KS-20810,L1A, 825
R69	21G5	4.64KΩ
R70	21G6	KS-20616,L1A 14.7KΩ
R71	21G7	147
R72	21G7	1MΩ
R73	21G7	KS-16645,L1, 10MΩ
P74	21G6	2.61KΩ
R75	21G7	147
R76	22B5	KS-20616,L1A 4.64KΩ Ⓩ
R77	22D0	10KΩ
R78	22D2	4.64KΩ
R79	22D4	ⓇKS-20810,L1A, 825Ω ⓈKS-20616,L1A,1.47K
R80	22C8	KS-20616,L1A, 464
R81	22E0	KS-20616,L1A, 10KΩ

RESISTOR (CONT)

DESIG	LOC	CODE
R82	22E3	KS-20616,L1A, 4.64KΩ
R83	22E5	ⓇKS-20810,L1A, 825ΩⓈKS-20616,L1A,1.47K
R84	21B6	KS-20616,L1A, 681
R86	21B1	KS-20616,L1A,392
R89	22D7	ⓈKS-20616,L1A,261
R90	20F5	KS-20616,L1A,1.78KΩ
R91	20F5	KS-20616,L1A,1.78KΩ
R92	22A6	KS-20616,L1A, 4.64KΩ
R93	20F5	KS-20616,L1A, 178
R94	20D1	KS-20616,L1A 42.2
R95	20D1	42.2Ⓧ 14.7 Ⓦ
R96	21E9	20.5
R97	21C3	4.64KΩ

SWITCH

DESIG	LOC	CODE
S1	20D1	KS-19963,L9
S2	20E4	210725 EECO

TEST POINT

DESIG	LOC	CODE
TP1	21D2	P-42P506
TP2	21C3	P-42P506
TP10	21E1	P-42P506

TRANSFORMER

DESIG	LOC	CODE
T1	21D8	257BDC

TRANSISTOR

DESIG	LOC	CODE
Q1	20B1	2N2222A
Q2	20B2	2N2222A
Q4	20F4	2N2222A
Q5	20F4	2N2907A
Q8	20G2	66S
Q9	20G4	51F
Q10	21B4	51F
Q11	20G8	66S
Q12	20G6	66S
Q13	22D3	66S
Q14	22E4	66S
Q15	20F5	66S
Q16	20F5	51F

13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S

ISSUE 8D

BELL LABORATORIES SD-97753-01 -J24

Ⓥ P/O CPS UD3B

TIMING AND CONTROL

IC16 Ⓨ LS161 Ⓩ 41CJ

IC22 Ⓨ LS161 Ⓩ 41CJ

IC23 HPROM-1-0512

IC29 41CG

IC18 41CG

IC6B 41AB

IC6A 41AB

IC13B 41AE

IC10A 41AE

IC10B 41AE

IC44G 41BP

IC11D 41BR

IC2B 41N

IC2D 41N

IC15B 41U

IC15C 41U

IC9A 41U

IC15A 41U

IC15D 41U

IC8F 41BP

IC8B 41BP

IC8G 41BP

IC42D 41W

IC44E 41BP

IC39A 41BP

IC39B 41BP

IC39C 41BP

IC39D 41BP

IC39E 41BP

IC39F 41BP

IC39G 41BP

R2 R2A 1KΩ R2B 1KΩ R2C 1KΩ R2D 1KΩ R2E 1KΩ R2F 1KΩ R2G 1KΩ R2H 1KΩ R2I 1KΩ NC

R1 1KΩ

R10 27Ω

Y1 100A OSCILLATOR

CR1 5316 (RED)

FIELD DOWN INDICATOR

OSC IN J5-4

24KCLKBAR 28B3

MTSTB 28G1

GEN 27E8

26C9 640μS DLY

26C5 1MS DLY

CLR1 27B8

27A4 PWON

J7-16 24K CLK OUT

J5-20 REPL

J7-17 REPH

J6-2 DET RST

J5-18 STROBE

J5-6 DCLK

J7-19 CSR

J7-4 SOC

J7-5 SIC

J7-20 SWC

J5-5 OSC OUT

J6-12 TP PWON

13A ANNOUNCEMENT SYSTEM

DWG SIZE 65

ISSUE 6A

BELL LABORATORIES

SD-97753-01

-J25

Ⓜ P/O CPS UD3B

TIMING AND CONTROL

28E2 LOAD 48

28F2 CNTPS

24K CLK IN J7-6

2883 24K CLK IN

IC38B 41U

IC38A 41U

IC44F 41BP

IC31 LS161 41CJ

IC43 LS161 41CJ

IC36 LS161 41CJ

IC41 LS161 41CJ

IC46 LS161 41CJ

VH2

1MS DLY 25D6

640µS DLY 25D6

CLR2 27B8

J6-16 TP-LOAD 48

CNT65536 27H3

IC32C 41N

CNT47 28G2

C18 100PF

IC48A 41DR

J6-13 TP-CNT68120

J6-14 TP-CNT68117

CNT68117 27E4

IC37C 41U

IC42A 41W

IC42B 41W

IC37B 41U

CB8 27H5

IC26E 41BP

IC30 41CD

CB1 27D7

NC

IC48B 41DR

IC42C 41W

C17 100PF

IC37A 41U

IC47B 41DR

IC47A 41DR

IC38D 41U

(CNT29-49K) J6-4 STENAB

IC9B 41U

IC45B 41EE

CNT14 27A1

J6-15 TP-CNT14

IC45C 41EE

IC26C 41BP

IC27B 41DR

IC37D 41U

(CNT) 4K J6-5 LIMRST

IC21B 41Y

IC13A 41AE

PREAM 27D5

IC27A 41DR

IC44D 41BP

(CNT32K) -0 J6-6 CT GATE

R12 1KΩ +5

CNT68201 28D6

IC44A 41BP

IC44B 41BP

J5-8 CHPCLK

CNT68120 28C6

SEE PROPRIETARY NOTICE ON COVER PAGE.

13a ANNOUNCEMENT SYSTEM

DWG SIZE 6S

ISSUE 6A

BELL LABORATORIES SD-97753-01 -J26

Ⓥ P/O CPS UD3B
TIMING AND CONTROL

FIELD DOWN SWITCH S2

26E8 CNT14 — R11 1KΩ — IC11A 41BR — IC26A 41BP — PWDN 25G3

R44 1KΩ — IC11B 41BR — IC7A 41U — IC11C 41BR — J7-7 PWR OFF

CLR4I 28F6 — IC20A 41BP — CLR3 28C3

IC20B 41BP — CLR1 25G6

+5 R45 2.15KΩ — IC20C 41BP — CLR2 26AB, 27D1

PWRSEN J7-10 — R18 1KΩ — R19 392 — C16 0.1 — IC12A 41DE

+5 R24 1KΩ — ENCOD J5-3

RECORD REQUEST INDICATOR CR2 5316

IC20F 41BP — R17 271 (RED) — +5

IC21A 41Y — J5-19 GEN INFO

26F6 PREAM — J6-17 TP PREAMBLE

J6-18 TP RECST

IC35D 41W — IC35B 41W — J5-9 ERASE

27B8 CLR2 — IC26G 41BP — IC45A 41EE

IC40A 41DR — 26D9 CNT68117 — IC26F 41BP — IC20D 41BP — J5-7 SOR

26G0 C81 — IC44C 41BP — J5-16 SILEN

GEN 2587

IC38C 41U — J5-10 REC

J5-1 REC RLY1

IC40B 41DR — IC45D 41EE — R21 4.7KΩ — Q1 — R22 1.2KΩ — K2 KREC — CR4 — +15

K2 KREC — J5-2 REC RLY2

R23 619 — RECORD INDICATOR CR3 5311H (GREEN) — +15

+5 R13 1KΩ — J7-8 LST CHP

+15 R14 909Ω — REM REC J5-12 — R15 200Ω — IC12B 41DE

LOCAL RECORD SWITCH S1 — R16 392 — C15 0.47

REM REC RET — SEE NOTES

IC32A 41N — IC32B 41N — IC32D 41N — IC7C 41U — IC7B 41U

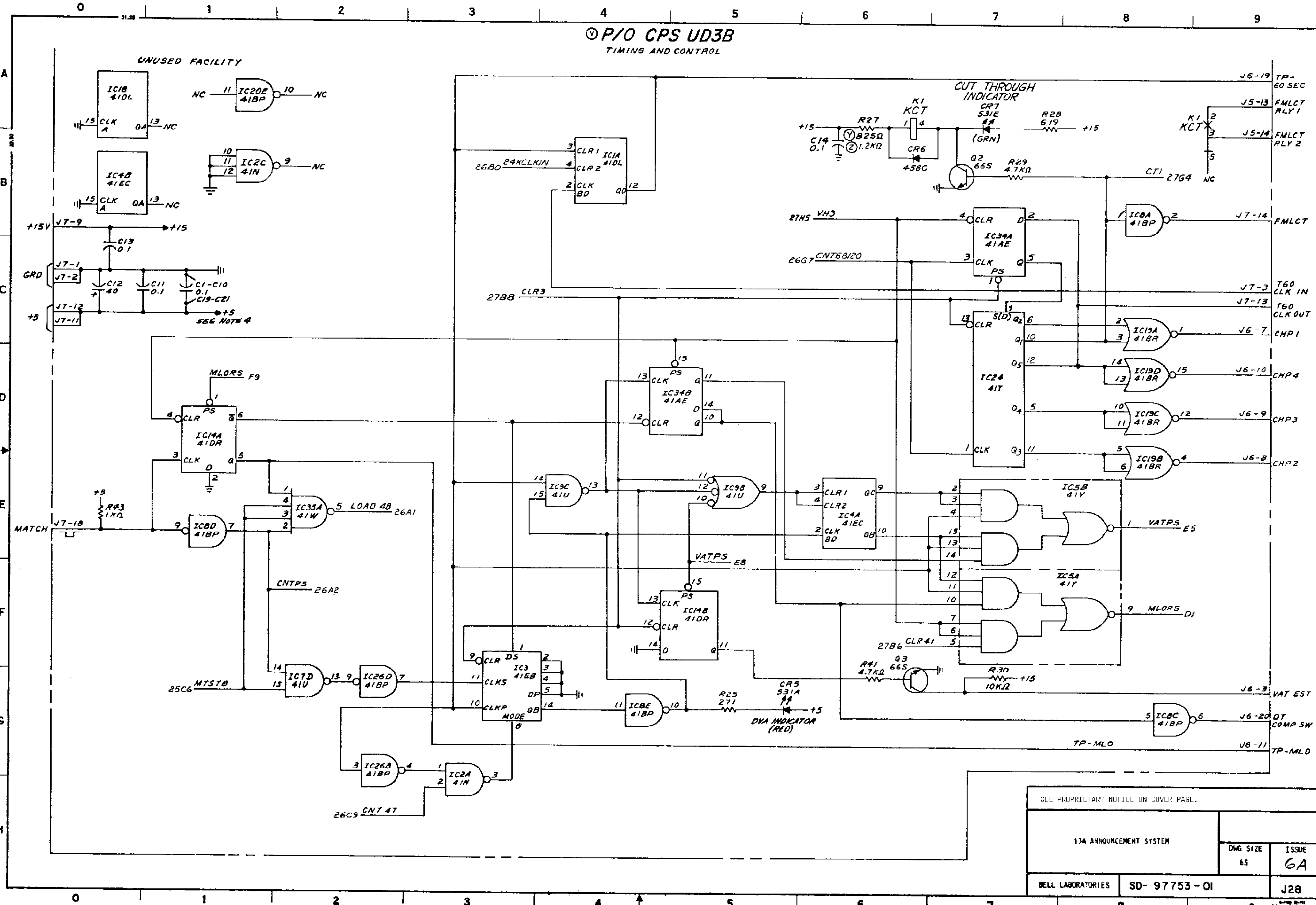
2888 CT1 12 — IC35C 41W — IC25B 41DR — IC25A 41DR

26E1 C88 — 2886 VH3 — R20 1KΩ — +5

26C9 CNT 65536 — IC20G 41BP

13A ANNOUNCEMENT SYSTEM

BELL LABORATORIES	SD-97753-01	DWG SIZE 6S	ISSUE 5B
			-J27


P/O CPS UD3B
TIMING AND CONTROL
UNUSED FACILITY
CUT THROUGH INDICATOR
IC1B 41DL
IC4B 41EC
IC20E 41BP
IC2C 41N
IC1A 41DL
IC34A 41AE
IC8A 41BP
IC2A 41T
IC19A 41BR
IC19D 41BR
IC19C 41BR
IC19B 41BR
IC14A 41DR
IC34B 41AE
IC8D 41BP
IC35A 41W
IC9C 41U
IC9B 41U
IC4A 41EC
IC5B 41Y
IC5A 41Y
IC14B 41DR
IC7D 41U
IC26D 41BP
IC3 41EB
IC8E 41BP
IC8C 41BP
IC26B 41BP
IC2A 41N
K1 KCT
CR7 531E (GRN)
R27 825Ω 1.2KΩ
R28 619
R29 4.7KΩ
Q2 66S
CR6 458C
C14 0.1
R41 4.7KΩ
Q3 66S
R30 10KΩ
R25 271
CR5 531A
DVA INDICATOR (RED)
R43 1KΩ
C13 0.1
C12 40
C11 0.1
C1-C10 0.1 C19-C21
SEE NOTE 4
+15V
GRD
+5
MATCH
MLORS F9
LOAD 48 26A1
CNTPS 26A2
MTSTB 25C6
CNT 47 26C9
24KCLKIN 26B0
VH3 27H5
CNT68120 26G7
CLR3 27B8
VATPS E8
VATPS E5
MLORS D1
CLR41 27B6
CT1 27G4
TP-MLO
J6-19 TP-60 SEC
J5-13 FMLCT RLY 1
J5-14 FMLCT RLY 2
J7-14 FMLCT
J7-3 T60 CLK IN
J7-13 T60 CLK OUT
J6-7 CHP1
J6-10 CHP4
J6-9 CHP3
J6-8 CHP2
J6-3 VAT EST
J6-20 DT COMP SW
J6-11 TP-MLD

SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

DWG SIZE	ISSUE
6S	6A

BELL LABORATORIES SD- 97753-01 J28

Ⓨ P/O CPS UD3B
TIMING AND CONTROL

COMPONENT LIST

RELAY

	K1		K2
337A	KCT	347A	KREC
2BA9		27F8	
2BA6		27F7	

CAPACITOR

	DESIG	LOC	CODE
[10]	C1-C10	28C1	KS-20736,L4, 0.1
	C11	28C0	KS-20736,L4, 0.1
	C12	28C0	602A, 40
	C13	28C0	KS-20736,L4, 0.1
	C14	28B6	KS-20736,L4, 0.1
	C15	27G1	KS-20736,L1,0.47
	C16	27G1	KS-20736,L4, 0.1
	C17	26E6	KS-19774,L7,100PF
	C18	2609	KS-19774,L7,100PF
[3]	C19-C21	28C1	KS-20736,L4, 0.1

CONNECTOR

DESIG	LOC	CODE
J5		9638-20
J6		9638-20
J7		9638-20

DIODE

DESIG	LOC	CODE
CR1	25F6	531G
CR2	27C5	531G
CR3	27F7	531H
CR4	27F7	458C
CR5	28G5	531A
CR6	28B6	458C
CR7	28A7	531E

INTEGRATED CIRCUIT

DESIG	LOC	CODE
IC1	28A0,28B4	41DL
IC2	25B6,25B7, 28A1,28H3	41N
IC3	28G3	41EB
IC4	28B0,28E6	41EC
IC5	28E7,28E8	41Y
IC6	25D1,25E1	41AB
IC7	27B5,27G4, 27H4,28G1	41U
IC8	25E8,25F5, 25F7,28A8, 28E1,28G4, 28G8	41BP
IC9	2508,26F5, 28E4,28E5	41U
IC10	25C7,2507	41AE
IC11	25B5,2743, 2745,27A6,	41BR
IC12	27B2,27G1	41DE
IC13	25F4,26D5	41AE
IC14	28D1,28F5	41DR
IC15	25C6,2507, 25F5,25F6	41U
IC16	2541	Ⓨ WALS161 Ⓩ 41CJ

INTEGRATED CIRCUIT (CONT)

DESIG	LOC	CODE
IC18	25C4	41CG
IC19	28C8,28D8	41BR
IC20	27B7,27C5 27E6,27H4	41BP
IC21	26G5,27C7	41Y
IC22	25C1	Ⓨ WALS161 Ⓩ 41CJ
IC23	25B2	HPROM-1-0512-58 HARRIS
IC24	28D7	41T
IC25	27G5,27H6	41DR
IC26	26E2,26F5, 27A3,27D3, 27E5,28G2	41BP
IC27	26F7,26G7	41DR
IC29	25B4	41CG
IC30	26F1	41CD
IC31	26B4	Ⓨ WALS161 Ⓩ 41CJ
IC32	28C8,27G3, 27H2,27H3, 28C1	41N
IC34	28B7,28D4	41AE
IC35	27D5,27G5, 28E2	41W
IC36	26B6	Ⓨ WALS161 Ⓩ 41CJ
IC37	26D7,26E2, 26F6,26F8	41U
IC38	26A2,26B3, 26E8,27F6,	41U
IC39	25A8,25B8, 25C8,2508	41BP
IC40	27E5,27F5	41DR
IC41	26B7	Ⓨ WALS161 Ⓩ 41CJ
IC42	25E8,26E1, 26E2,26E6	41W
IC43	26B5	Ⓨ WALS161 Ⓩ 41CJ
IC44	25A2,26B1, 26D8,26D9, 27D8	41BP
IC45	26F4,26F5, 27D4,27F5	41EE
IC46	26B9	Ⓨ WALS161 Ⓩ 41CJ
IC47	26E7,26F7	41DR
IC48	26D7,26E3	41DR

OSCILLATOR

DESIG	LOC	CODE
Y1	25F8	100A, 9.216 MHZ

RESISTOR

DESIG	LOC	CODE
R1	25F1	KS-20616,L1A, 1KΩ
R2	2502	4310R-101-102 BOURNS
R10	25F6	271
R11	2742	1KΩ
R12	26J6	1KΩ
R13	27K0	KS-20616,L1A 1KΩ
R14	27G0	909
R15	27G1	200
R16	27C1	392
R17	27C5	271

RESISTOR (CONT)

DESIG	LOC	CODE
R18	27B0	1KΩ
R19	27B1	392
R20	27H5	1KΩ
R21	27F6	4.7KΩ
R22	27F7	1.2KΩ
R23	27F7	619
R24	27B0	1KΩ
R25	28D5	271
R26	28D6	1KΩ
R27	28A6	Ⓨ KS-20810,L1A, 825Ω Ⓩ KS-20616,L1A,1.2KΩ
R28	28A7	619
R29	28B7	4.7KΩ
R30	28D7	10KΩ
R41	28D6	4.7KΩ
R43	28E0	KS-20616,L1A 1KΩ
R44	27B5	1KΩ
R45	27B6	2.15KΩ

SWITCH

DESIG	LOC	CODE
S1	2700	C & K 8125A, 7089(3) (SMALL RED CAP)
S2		
S2	2742	C & K 8125A, 7089(2) (SMALL BLACK CAP)

TRANSISTOR

DESIG	LOC	CODE
Q1	27F6	66S
Q2	28B7	66S
Q3	28D6	66S

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   RESISTANCE VALUES ARE IN OHMS.
   CAPACITANCE VALUES ARE IN MICROFARADS
   VALUES PRECEDED BY THE SYMBOL + (PLUS) OR - (MINUS) ARE IN VOLTS.
2. ⏚ GROUND RETURN.
3. +5V AND GROUND IS DISTRIBUTED WITH 7 ROGERS BUS STRIPS.
4. THE INPUT SIGNAL REM REC RET IS CONNECTED TO SYSTEM GROUND VIA THE BACKPLANE WIRING.
5. BATTERY AND GROUND TERMINATIONS FOR IC'S:

IC DESIG	+5 BAT TERM	GRD TERM
IC1	16	8
IC2	16	8
IC3	16	7,8
IC4	16	8
IC5	16	8
IC6	16	8
IC7	16	8
IC8	16	8
IC9	16	8
IC10	16	7,8
IC11	16	7,8
IC12	16	8
IC13	16	7,8
IC14	16	7,8
IC15	16	8
IC16	16	8
IC18	16	8
IC19	16	7,8
IC20	16	8
IC21	16	8
IC22	16	8
IC23	24	23
IC24	16	8
IC25	16	7,8
IC26	16	8

IC DESIG	+5 BAT TERM	GRD TERM
IC27	16	7,8
IC29	16	8
IC30	16	8
IC31	16	8
IC32	16	8
IC34	16	7,8
IC35	16	8
IC36	16	8
IC37	16	8
IC38	16	8
IC39	16	8
IC40	16	7,8
IC41	16	8
IC42	16	8
IC43	16	8
IC44	16	8
IC45	16	7,8
IC46	16	8
IC47	16	7,8
IC48	16	7,8

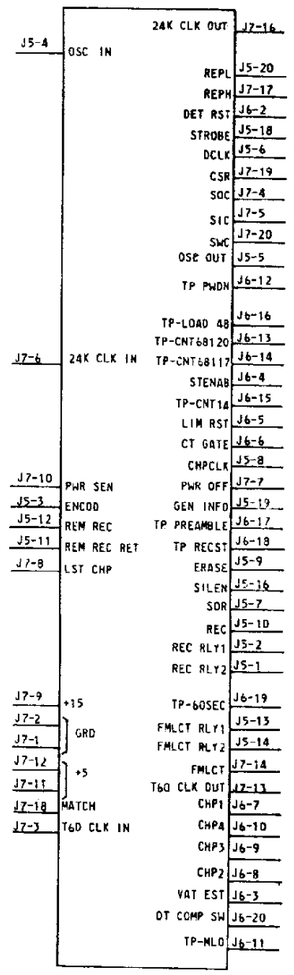
RECORD OF CHANGES

DWG ISS	PREV FURN	STD	MFR DISC	SEE NOTE
6A	Z	Y	Z	

MANUFACTURING REFERENCE

CATEGORY	NO.

SYMBOL



SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEM

DWG SIZE 6S | ISSUE 6A

BELL LABORATORIES | SD-97753-01 | -J29

PRINTED IN U.S.A.

ⓥP/O CPS UD3B

TIMING AND CONTROL

TABLE A
(ROM PROGRAM FOR IC_{23} ON UD3B)

ADDRESS						ADR CNT	PROGRAM							
A_5	A_4	A_3	A_2	A_1	A_0		B_7	B_6	B_5	B_4	B_3	B_2	B_1	B_0
0	0	0	0	0	0	0								
0	0	0	0	0	1	1								
0	0	0	0	1	0	2	1	1						
0	0	0	0	1	1	3	1	1						
0	0	0	1	0	0	4	1							
0	0	0	1	0	1	5	1							
0	0	0	1	1	0	6	1							
0	0	0	1	1	1	7	1					1		
0	0	1	0	0	0	8	1							
0	0	1	0	0	1	9	1							
0	0	1	0	1	0	10	1							
0	0	1	0	1	1	11	1							
0	0	1	1	0	0	12	1							
0	0	1	1	0	1	13	1							
0	0	1	1	1	0	14	1							
0	0	1	1	1	1	15	1							
0	1	0	0	0	0	16	1							
0	1	0	0	0	1	17	1							
0	1	0	0	1	0	18	1							
0	1	0	0	1	1	19								
0	1	0	1	0	0	20								
0	1	0	1	0	1	21								
0	1	0	1	1	0	22								
0	1	0	1	1	1	23			1					
0	1	1	0	0	0	24			1					
0	1	1	0	0	1	25								
0	1	1	0	1	0	26								
0	1	1	0	1	1	27								
0	1	1	1	0	0	28								
0	1	1	1	0	1	29								
0	1	1	1	1	0	30								
0	1	1	1	1	1	31								
1	0	0	0	0	0	32								
1	0	0	0	0	1	33								
1	0	0	0	1	0	34				1				
1	0	0	0	1	1	35				1				
1	0	0	1	0	0	36				1				
1	0	0	1	0	1	37				1				
1	0	0	1	1	0	38				1				
1	0	0	1	1	1	39				1				
1	0	1	0	0	0	40				1				
1	0	1	0	0	1	41				1				
1	0	1	0	1	0	42				1				
1	0	1	0	1	1	43				1			1	
1	0	1	1	0	0	44				1			1	
1	0	1	1	0	1	45				1			1	
1	0	1	1	1	0	46				1			1	
1	0	1	1	1	1	47				1			1	
1	1	0	0	0	0	48				1		1	1	
1	1	0	0	0	1	49				1		1	1	
1	1	0	0	1	0	50				1		1	1	
1	1	0	0	1	1	51				1		1	1	
1	1	0	1	0	0	52				1			1	
1	1	0	1	0	1	53				1			1	
1	1	0	1	1	0	54				1			1	
1	1	0	1	1	1	55				1			1	
1	1	1	0	0	0	56				1			1	
1	1	1	0	0	1	57				1			1	
1	1	1	0	1	0	58				1			1	
1	1	1	0	1	1	59				1			1	1
1	1	1	1	0	0	60				1			1	
1	1	1	1	0	1	61				1			1	
1	1	1	1	1	0	62				1			1	
1	1	1	1	1	1	63				1			1	

NOTES:

1. THIS PROGRAM REFERS TO A HARRIS HPROM-0512 OR APPROVED EQUIVALENT. IN TABLE A "1" INDICATES A BLOWN MEMORY LINK. AN EMPTY BOX INDICATES A MEMORY LINK INTACT.

13A ANNOUNCEMENT SYSTEM		
	DWG SIZE 4S	ISSUE 5B
BELL LABORATORIES	SD-97753-01	-J30

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ⓜ PART OF CPS-UD4 (SERIES 15 AND ABOVE)

3-24 SECOND VML MESSAGE MODULE

STROBE J8-18 · CHP CLK J8-8 · SDR J8-7 · ST ENAB J9-4 · START J10-20 · FILTER GROUND J10-10 · CH ACCESS J10-19 · REPL J8-20 · GEN INFO J8-19 · PWR OFF J10-7 · REC J8-10

CHANNEL ACCESS S1 295

CCLK1 33C2 · ST1 33E3 · SILENCE 1 32C0, 33E2 · LAST CHP 33C2 · PWR OFF 33F7 · REPL1 32B1

MESSAGE LENGTH 52

CHIP 7 32D0 · CHIP 3 32D0

GST1 33D2 · 3 SERIAL DATA OUT 32D3 · DIG ALARM 32F0

IC15 8051 · IC29 74HC161 · IC30 74HC138 · IC32 74HC123 · IC22 74HC138

AD0–AD7 34G0 · ALE 34C0 · WR 34D0 · RD 34D0 · A8 34E0 · A9 34E0 · A10 34E0 · A11 34E0 · A12 34E0

CS0 34C3 · CS1 34C5 · CS2 34C7 · CS3 32D0, 34C9 · CS4 34F3 · CS5 34F5 · CS6 34F7 · CS7 32C0, 34F9

J10-4 CUR SENSE · J10-5 CUR RET · J10-8 LST CHP

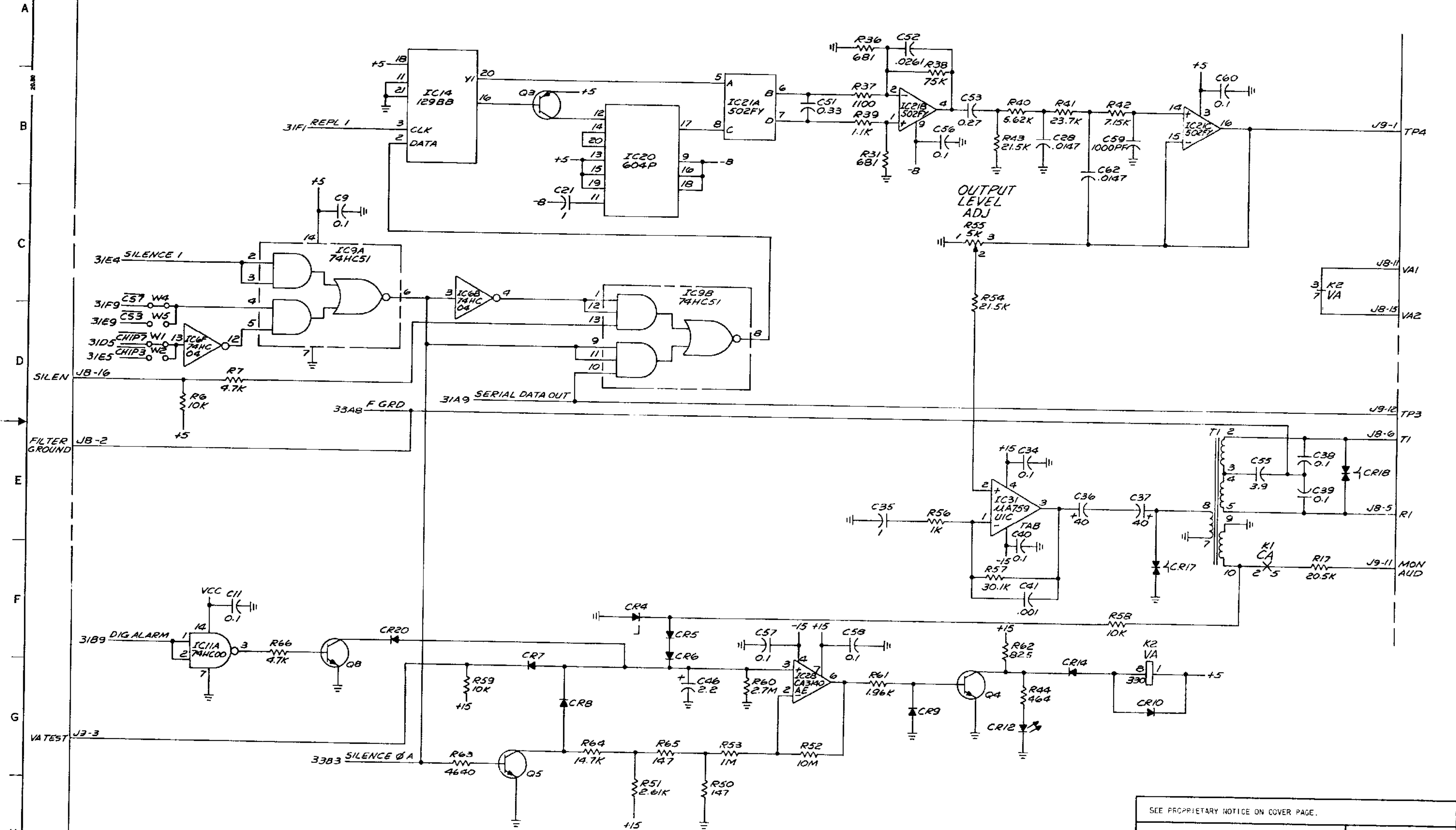
SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEMS CIRCUIT

DWG SIZE 6S · ISSUE 8D · SHEET J31

AT&T BELL LABORATORIES · SD-97753-01

Ⓜ PART OF CPS UD4 (SERIES 15 AND ABOVE)
3-24 SECOND VML MESSAGE MODULE



13A ANNOUNCEMENT SYSTEMS CIRCUIT

DWG SIZE	ISSUE
6S	8D

AT&T BELL LABORATORIES | SD-97753-01 | SHEET J32

Ⓜ PART OF CPS-UD4 (SERIES 15 AND ABOVE)

3-24 SECOND VML MESSAGE MODULE

IC12A 74HC 14 — IC11C 74HC00 — NC

+5 — C6 0.1 — 3262 SILENCE Ø A — IC6C 74HC 04 — Q2 — K5 MU — +5

3202 F GRD — K3 STP — J9-14 STP — J9-15 LIM

K4 CT — J8-14 CT1 — J8-13 CT2

K5 MU — J9-16 MU2 — J9-17 MU3 — J9-18 MU4

+5 — C10 0.1 — 3182 C CLK1 — 3163 LAST CHP — IC10B 74HC00 — IC10C 74HC00 — IC10D 74HC00 — R47 4.64K — Q6 — K3 STP — R46 825 — +15 — CR11

LIM RST J9-5 — Z1H 10K — Z4C 6 4.7K — IC3B 74HC08

CT GATE J9-6 — Z1E 10K — Z4B 4 4.7K — IC6D 74HC 04 — 3186 GST1 — IC4A 74HC10 — IC4B 74HC10 — IC4C 74HC10 — R33 4.64K — Q7 — K4 CT — R32 825 — +15 — CR13

+5 — C4 0.1

-15V J8-1 — C54 40 — -15

-8V J8-17 — -8

+15V J10-9 — C47 40 — C48 0.1 — +15

GRD J10-1 — C49 40 — C50 0.1

+5V J10-11 — +5

3184 SILENCE 1

3181 ST1

J9-19 TP9

+5.7 — C8 0.1 — R21 10K — R22 10K — IC8 LM393 — R23 3.48K — R25 470K — C20 20PF — R24 4.87K

VCC — R18 10K — IC11D 74HC00 — IC12F 74HC 14 — C5 3470 — PWR OFF 3187

IC13 LT317AT ADJ — C61 1 — R20 249 — R19 866 — CR16 — CR19 — VCC — C13 10 — C14 100 — VCCR — CR1

H1 BATTERY SWITCH — J11 — R10 1K — BT1 — NC

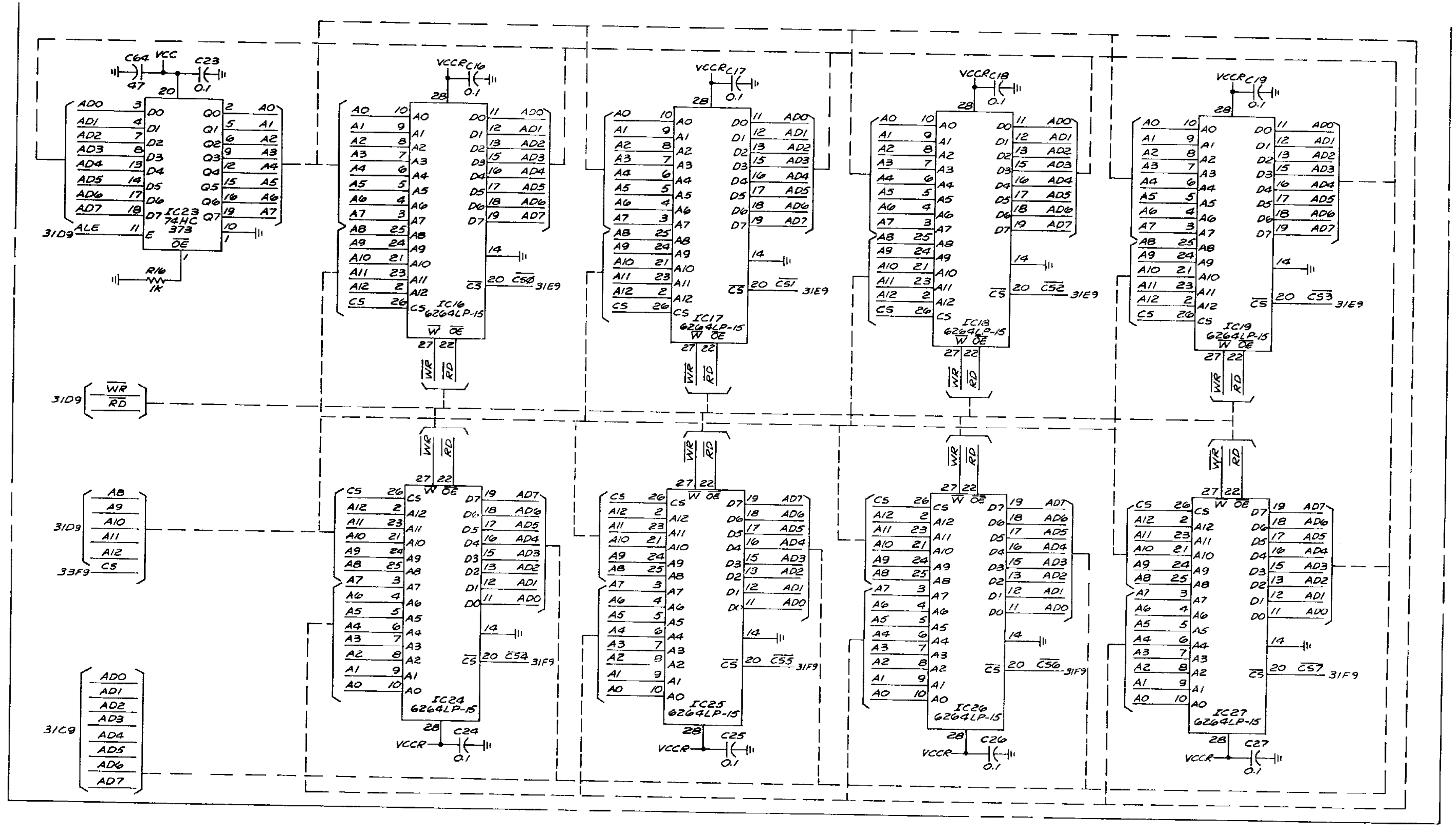
SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEMS CIRCUIT

DWG SIZE	ISSUE
6S	8D

AT&T BELL LABORATORIES — SD-97753-01 — SHEET J33

PART OF CPS UD4 (SERIES 15 AND ABOVE)
3-24 SECOND VML MESSAGE MODULE



13A ANNOUNCEMENT SYSTEMS
CIRCUIT

DWG SIZE	ISSUE
6S	8D

AT&T BELL LABORATORIES — SD-97753-01 — SHEET J34

Ⓜ PART OF CPS-UD4

(SERIES 15 AND ABOVE)

3-24 SECOND VML MESSAGE MODULE

COMPONENT LIST

RELAY

	K1	K2	K3	K4	K5
347A	CA				
	32F8				
	31F3				
348B		VA	STP	CT	MU
		32C9	33B9	33B9	33C9
		32F7			
337A			33B9	33B9	33C9
			33C6	33D6	33A5

BATTERY

DESIG	LOC	CODE
BT1	33G5	KS-22873,L3

CAPACITOR

DESIG	LOC	CODE
C1	31G2	WP90005,L6, 0.1
C2	31B3	WP90005,L6, 0.1
C3	31G1	WP90005,L6, 0.1
C4	33D3	WP90005,L6, 0.1
C5	31E6	WP90005,L6, 0.1
C6	33A4	WP90005,L6, 0.1
C7	31A3	WP90005,L6, 0.1
C8	33E6	WP90005,L6, 0.1
C9	32C2	WP90005,L6, 0.1
C10	33C3	WP90005,L6, 0.1
C11	32F1	WP90005,L6, 0.1
C12	31D2	WP90005,L6, 0.1
C13	33F4	651G, 10
C14	33F4	653A, 100
C15	31C7	WP90005,L6, 0.1
C16	34A3	WP90005,L6, 0.1
C17	34A5	WP90005,L6, 0.1
C18	34A6	WP90005,L6, 0.1
C19	34A8	WP90005,L6, 0.1
C20	33G6	KS-16958,L32, 20PF
C21	32C3	596C, 1
C22	31F8	WP90005,L6, 0.1
C23	34A1	WP90005,L6, 0.1
C24	34G3	WP90005,L6, 0.1

CAPACITOR (CONT)

DESIG	LOC	CODE
C25	34G5	WP90005,L6, 0.1
C26	34D6	WP90005,L6, 0.1
C27	34G8	WP90005,L6, 0.1
C28	32B7	719A, .0147
C29	31D4	WP90005,L6, 0.1
C30	31C5	WP90005,L6, 0.1
C31	31B6	KS-16958,L32, 30.1PF
C32	31B6	KS-16958,L32, 30.1PF
C33	31E0	759GY, 1
C34	32E6	WP90005,L6, 0.1
C35	32E5	759GY, 1
C36	32E7	602A, 40
C37	32E7	602A, 40
C38	32E9	542A0, 0.1
C39	32E9	542A0, 0.1
C40	32E6	WP90005,L6, 0.1
C41	32F6	KS-19774,L7, .001
C42	31F5	75G, 0.1
C43	31E0	759GY, 1
C44	31F0	601A, 5
C45	31D1	WP90005,L6, 0.1
C46	32G4	741Y, 2.2
C47	33F0	602A, 40
C48	33F1	WP90005,L6, 0.1
C49	33F0	602A, 40
C50	33F1	WP90005,L6, 0.1
C51	32B5	761C, .33
C52	32A6	594C, .0261
C53	3286	KS-19774,L13, 0.27
C54	33E0	602A, 40
C55	32E8	542G, 3.9
C56	3286	WP90005,L6, 0.1
C57	32F5	WP90005,L6, 0.1
C58	32F5	WP90005,L6, 0.1
C59	3287	719A, 1000PF
C60	3288	WP90005,L6, 0.1
C61	33F2	650B, 1
C62	32B7	719A, .0147
C63	31F4	601A, 5
C64	34B1	652C, 47
C65	31F7	WP90005,L6, 0.1
C66	31G7	KS-16742,L26, 3400PF

CONNECTOR

DESIG	LOC	CODE
J8		963B-20
J9		963B-20
J10		963B-20
J11	33C4	65966-001, BERG

CRYSTAL

DESIG	LOC	CODE
Y1	31B7	MP120 (CTS KNIGHTS 12 MHz)

DIODE

DESIG	LOC	CODE
CR1	33F5	458AB
CR4	32F4	459J
CR5	32F4	458C
CR6	32F4	458C
CR7	32F3	458C
CR8	32G3	458C
CR9	32G5	458C
CR10	32G7	458C
CR11	33C6	458C
CR13	33E5	458C
CR14	32G8	458C
CR16	33F4	458A
CR17	32F7	521C
CR18	32E9	521A
CR19	33F4	WP90013,L3
CR20	32F2	458C

DIODE (LIGHT EMITTING)

DESIG	LOC	CODE
CR2	31F1	556H
CR12	32G6	556G

HEADER

DESIG	LOC	CODE
H1	33G3	65966-103, BERG

INTEGRATED CIRCUIT

DESIG	LOC	CODE
IC1A	31B1	MM74HC04N
IC1B	31B1	
IC1C	31F1	
IC1D	31G1	
IC1E	3101	MM74HC02N
IC1F	3182	
IC2A	31C3	
IC2B	31C2	
IC2C	31C1	
IC2D	31F4	
IC3A	31F4	MM74HC08N
IC3B	3303	
IC3C	31H1	
IC3D	31G8	
IC4A	3303	MM74HC10N
IC4B	3304	
IC4C	33E5	MM74HC74N
IC5A	31C3	
IC5B	31F5	
IC6A	31D3	
IC6B	32C4	MM74HC04N
IC6C	33B4	
IC6D	33D2	
IC6E	31F5	
IC6F	3201	MM74HC00N
IC7A	31B2	
IC7B	31D2	
IC7C	31D2	

INTEGRATED CIRCUIT (CONT)

DESIG	LOC	CODE
IC7D	31E2	MM74HC00N
IC8	33F5	LM393N
IC9A	32C2	MM74HC51N
IC9B	32D4	
IC10A	31A8	MM74HC00N
IC10B	33C3	
IC10C	33C4	
IC10D	3304	
IC11A	32F1	
IC11B	31F4	
IC11C	33B1	
IC11D	33F7	
IC12A	33A1	MM74HC14N
IC12B	31D1	
IC12C	31F1	
IC12D	31F2	
IC12E	31F2	
IC12F	33F3	
IC13	33F3	LT317AT, LINEAR TECHNOLOGY
IC14	3282	1298B, WESTERN
IC15	3187	P8051AH, INTEL (SEE SHEET NOTE 1)
IC16	34C5	HM6264LP-15, HITACHI
IC17	34C4	HM6264LP-15, HITACHI
IC18	34C6	HM6264LP-15, HITACHI
IC19	34C8	HM6264LP-15, HITACHI
IC20	32B4	604P, WESTERN
IC21A	3285	502FY, WESTERN
IC21B	3286	
IC21C	3288	
IC22	31E8	MM74HC138N
IC23	34C1	MM74HC373N
IC24	34F3	HM6264LP-15, HITACHI
IC25	34F4	HM6264LP-15, HITACHI
IC26	34F5	HM6264LP-15, HITACHI
IC27	34F8	HM6264LP-15, HITACHI
IC28	3285	CA3140AE, RCA
IC29	31C4	MM74HC161N
IC30	31C5	MM74HC138N
IC31	3256	µA759UIC, FAIRCHILD
IC32	31F7	MM74HC123N

POTENTIOMETER

DESIG	LOC	CODE
R93	32C6	KS-19069,L4, 5K

SHEET NOTE

1. PID CODE FOR P8051AH IS AAUAJ.

13A ANNOUNCEMENT SYSTEMS CIRCUIT

DWG SIZE	ISSUE
6S	3D

AT&T BELL LABORATORIES | SD-97753-01 | SHEET J35

Ⓜ PART OF CPS-UD4

(SERIES 15 AND ABOVE)

3-24 SECOND VML MESSAGE MODULE

COMPONENT LIST (CONT)

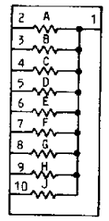
RESISTOR

DESIG	LOC	CODE
R6	32D1	KS-20616,L1A, 10K
R7	32D1	KS-20616,L1A, 4.7K
R8	31F3	KS-20616,L1A, 10K
R9	31F9	KS-14603,L3CC, 4.64
R10	33G5	KS-20616,L1A, 1K
R11	3100	KS-20616,L1A, 42.2
R12	31D1	KS-20616,L1A, 50K
R13	31F0	KS-20616,L1A, 14.7
R14	31G8	KS-20616,L1A, 4.7K
R15	31F1	KS-20616,L1A, 147
R16	34C1	KS-20616,L1A, 1K
R17	32F9	KS-20616,L1A, 20.5K
R18	33E7	KS-20616,L1A, 10K
R19	33F3	KS-20616,L1A, 866
R20	33F3	KS-20616,L1A, 249
R21	33E5	KS-20616,L1A, 10K
R22	33E6	KS-20616,L1A, 10K
R23	33F5	KS-20616,L1A, 3.48K
R24	33G6	KS-20616,L1A, 4.87K
R25	33F6	KS-20616,L1A, 470K
R26	31F5	KS-20616,L1A, 511
R27	31E1	KS-20616,L1A, 14.7
R28	31E1	KS-20616,L1A, 42.2
R29	31F7	KS-20616,L1A, 7.87K
R30	31H0	KS-20616,L1A, 10K
R31	32B5	KS-20616,L1A, 681
R32	33D6	KS-20810,L1A, 825
R33	33D5	KS-20616,L1A, 4.64K
R34	31H0	KS-20616,L1A, 4.7K
R36	32A5	KS-20616,L1A, 681
R37	32B5	KS-20616,L1A, 1.1K
R38	32A6	KS-20616,L1A, 75K
R39	32B5	KS-20616,L1A, 1.1K
R40	32B6	KS-20616,L1A, 5.62K
R41	32B7	KS-20616,L1A, 23.7K
R42	32B7	KS-20616,L1A, 7.15K
R43	32B6	KS-20616,L1A, 21.5K
R44	32G7	KS-20616,L1A, 464
R46	33C6	KS-20810,L1A, 825
R47	33C4	KS-20616,L1A, 4.64K
R50	32H4	KS-20616,L1A, 147
R51	32H4	KS-20616,L1A, 2.61K
R52	32G5	KS-16649,L1, 10M
R53	32G4	KS-20616,L1A, 1M
R54	32C6	KS-20616,L1A, 21.5K
R56	32E6	KS-20616,L1A, 1K
R57	32F6	KS-20616,L1A, 30.1K
R58	32F7	KS-20616,L1A, 10K
R59	32G3	KS-20616,L1A, 10K
R60	32G5	KS-16649,L1, 2.7M
R61	32G5	KS-20616,L1A, 1.96K
R62	32F6	KS-20810,L1A, 825
R63	32G2	KS-20616,L1A, 4.64K
R64	32G3	KS-20616,L1A, 14.7K
R65	32G4	KS-20616,L1A, 147
R66	32F1	KS-20616,L1A, 4.7K
R67	31F7	KS-20616,L1A, 1K
R68	31A6	KS-20616,L1A, 10K
R69	31C3	KS-20616,L1A, 1K
R70	31C5	KS-20616,L1A, 1K
R71	31F5	KS-20616,L1A, 1K
R72	31F4	KS-20616,L1A, 4.7K
R73	31D6	KS-20616,L1A, 10K

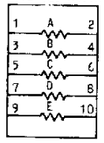
RESISTOR, NETWORK

DESIG	LOC	CODE
Z1A	31B0	770-101-R10K
Z1B	31A0	
Z1C	31B0	
Z1D	31G0	
Z1E	33D1	
Z1F	31F0	
Z1G	31G0	
Z1H	33C1	
Z1J	31C1	
Z2A	31B8	
Z2B	31B8	
Z2C	31B8	
Z2D	31B8	
Z2E	31B8	
Z2F	31B8	
Z2G	31B8	
Z2H	31B8	770-103-R4.7K
Z2J	31B8	
Z3A	31C1	
Z3B	31B1	
Z3C	31B1	
Z3D	31F0	
Z3E	31G0	
Z4A	31G0	
Z4B	33D1	770-83-R4.7K
Z4C	33C1	
Z4D	31D1	
Z5A	SPARE	
Z5B	31D1	
Z5C	31F5	
Z5D	31F1	

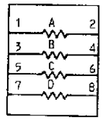
Z1,Z2
770-101-R10K



Z3
770-103-R4.7K



Z4,Z5
770-83-R4.7K



SWITCH

DESIG	LOC	CODE
S1	31E1	KS-19963,L9
S2	3105	210725, EECO

TEST POINT

DESIG	LOC	CODE
TP1	3107	P-42P506
TP2	31F4	P-42P506
TP5	31B7	P-42P506
TP6	31E7	P-42P506
TP7	31E7	P-42P506
TP8	31E7	P-42P506

TRANSFORMER

DESIG	LOC	CODE
T1	32E8	257BDC

TRANSISTOR

DESIG	LOC	CODE
Q1	31F2	51A
Q2	33B4	51A
Q3	32B3	51F
Q4	32G6	66S
Q5	32G3	66S
Q6	33C5	66S
Q7	33D5	66S
Q8	32G2	66S
Q9	31G9	66S

RECORD OF CHANGES

DWG ISS	PREV FURN	STD	MFR DISC	SEE NOTE
8D	N	M	N	4

MANUFACTURING REFERENCE

CATEGORY	NO.

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   RESISTANCE VALUES ARE IN OHMS,
   CAPACITANCE VALUES ARE IN MICROFARADS,
   VALUES PRECEDED BY THE SYMBOL + (PLUS)
   OR - (MINUS) ARE IN VOLTS.
2. ⏚ GROUND RETURN.
3. ALL IC'S ARE BY NATIONAL SEMICONDUCTOR UNLESS OTHERWISE SPECIFIED.
4. FOR OPTION N SEE SHEETS J12 TO J16

13A ANNOUNCEMENT SYSTEMS
CIRCUIT

DWG SIZE	ISSUE
6S	8D

AT&T BELL LABORATORIES | SD-97753-01 | SHEET J36

Ⓜ PART OF CPS-UD6 (SERIES 15 AND ABOVE)

3-12 SECOND VML MESSAGE MODULE

STROBE J8-18 · CHP CLK J8-8 · SDR J8-7 · ST ENAB J9-4 · START J10-20 R11 · FILTER GROUND J10-10 · CH ACCESS J10-19 R13 · REPL J8-20 · GEN INFO J8-19 · PWR OFF J10-7 · REC J8-10

CHANNEL ACCESS S1 295

CCLK1 39C2 · ST1 39E3 · SOR · REPL1 3881 · SILENCE 1 38CO, 39E2 · LAST CHP 39C2 · PWR OFF 39F1 · GST1 39D2

IC1A 74HC04 · IC1B 74HC04 · IC1C 74HC04 · IC1D 74HC04 · IC1E 74HC04 · IC1F 74HC04 · IC2A 74HC02 · IC2B 74HC02 · IC2C 74HC02 · IC2D 74HC02 · IC3A 74HC08 · IC3B 74HC08 · IC3C 74HC08 · IC3D 74HC08 · IC6A 74HC04 · IC6B 74HC04 · IC6E 74HC04 · IC7A 74HC00 · IC7B 74HC00 · IC7C 74HC00 · IC7D 74HC00 · IC10A 74HC00 · IC11B 74HC00 · IC12A 74HC14 · IC12B 74HC14 · IC12C 74HC14 · IC12D 74HC14 · IC12E 74HC14 · IC5A 74HC74 · IC5B 74HC74 · IC29 74HC161 · IC30 74HC138 · IC22 74HC138 · IC32 74HC123

MESSAGE LENGTH S2 · CHIP 1 38DO · CHIP 3 38DO

IC15 8051 · STROBE STRT · EOS · TEST · CLOCK ALARM · PWRON · SDR · DIN · XTAL1 · XTAL2 · TORST · SANT · FAIL · RNUM · RESET · EA/VDD · ALE · WR · RD · A8 · A9 · A10 · A11 · A12 · A15 A14 A13 · DOUT

SERIAL DATA OUT 38D3 · DIG ALARM 38FO · 40C0 · 40D0 · 40E0 · 40F0

AD0 AD1 AD2 AD3 AD4 AD5 AD6 AD7

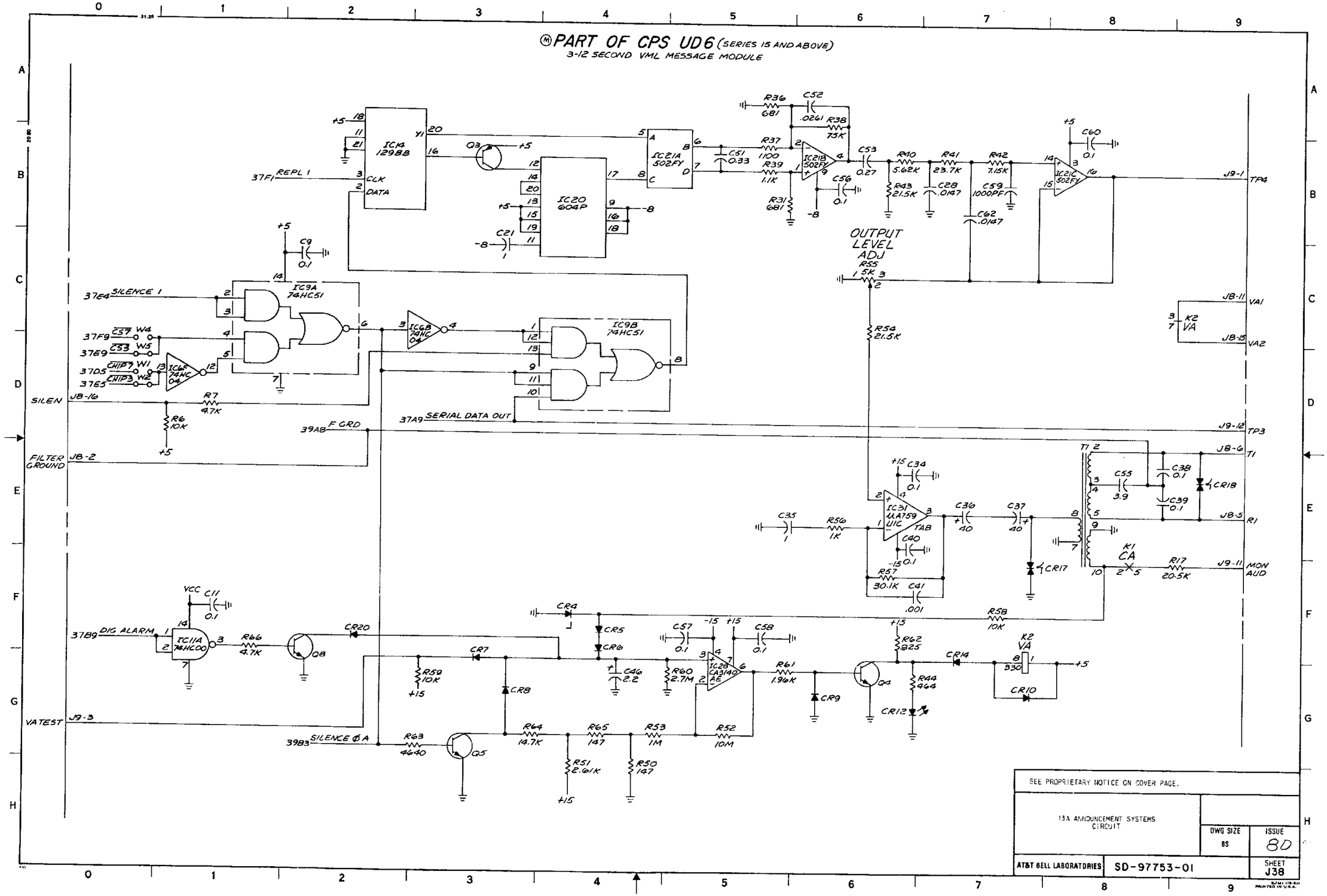
TP6 TP7 TP8 · 40C3 40C5 40C7 3BDO, 40C9 · 38CO

CUR SENSE J10-4 · CUR RET J10-5 · LST CHP J10-8 · Q9

SEE PROPRIETARY NOTICE ON COVER PAGE.			
13A ANNOUNCEMENT SYSTEMS CIRCUIT		DWG SIZE 8S	ISSUE 8D
AT&T BELL LABORATORIES	SD-97753-01	SHEET J37	

Ⓜ PART OF CPS UD6 (SERIES 15 AND ABOVE)

3-12 SECOND VML MESSAGE MODULE



SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEMS CIRCUIT	DWG SIZE 8S	ISSUE 8D
AT&T BELL LABORATORIES SD-97753-01		SHEET J38

Ⓜ PART OF CPS UD6 (SERIES 15 AND ABOVE)

3-12 SECOND VML MESSAGE MODULE

IC12A 74HC 14 — IC11C 74HC00 — NC

+5 C6 0.1 — 38G2 SILENCE ØA — IC6C 74HC 04 — Q8 — K5 MU 4 1 305 — +5

+5 C10 0.1 — 37B2 C CLK1 — 37G3 LAST CHP — IC10B 74HC00 — IC10C 74HC00 — R47 4.64K — Q6 — K3 STP 4 1 305 — R46 825 — +15

IC10D 74HC00 — CR11

+5 — Z1H 10K — LIM RST J9-5 — Z4C 4.7K — IC3B 74HC08

+5 C4 0.1 — CT GATE J9-6 — Z4B 4.7K — IC6D 74HC 04 — 37A6 GST1 — IC4A 74HC10 — IC4B 74HC10 — R33 4.64K — Q7 — K4 CT 4 1 305 — R32 825 — +15

CR13

-15V J8-1 — C54 40 — -15

37E4 SILENCE 1 — IC4C 74HC10 — 37E1 ST1

-8V J8-17 — -8

+15V J10-9 — C47 40 — C48 0.1 — +15

GRD J10-1

+5V J10-11 — C49 40 — C50 0.1 — +5

IC13 LT317AT ADJ — IN — OUT — C61 1 — R19 866 — R20 249 — +5.7 — CR16 — CR19 — VCC — C13 10 — C14 100 — CR1 — VCCR

HI BATTERY SWITCH — J11 — R10 1K — BT1 — NC

J9-19 TP9

+5.7 — C8 0.1 — R21 10K — R22 10K — IC8 LM393 — R23 3.48K — +5 — R25 470K — C20 20PF — R24 4.87K

VCC — R18 10K — IC11D 74HC00 — IC12F 74HC 14 — CS 40F0 — PWR OFF 37H7

3802 F GRD — K3 STP — J9-14 STP — J9-15 LIM

K4 CT — J8-11 CT1 — J8-13 CT2

K5 MU — J9-16 MU2 — J9-17 MU3 — J9-18 MU4

SEE PROPRIETARY NOTICE ON COVER PAGE.

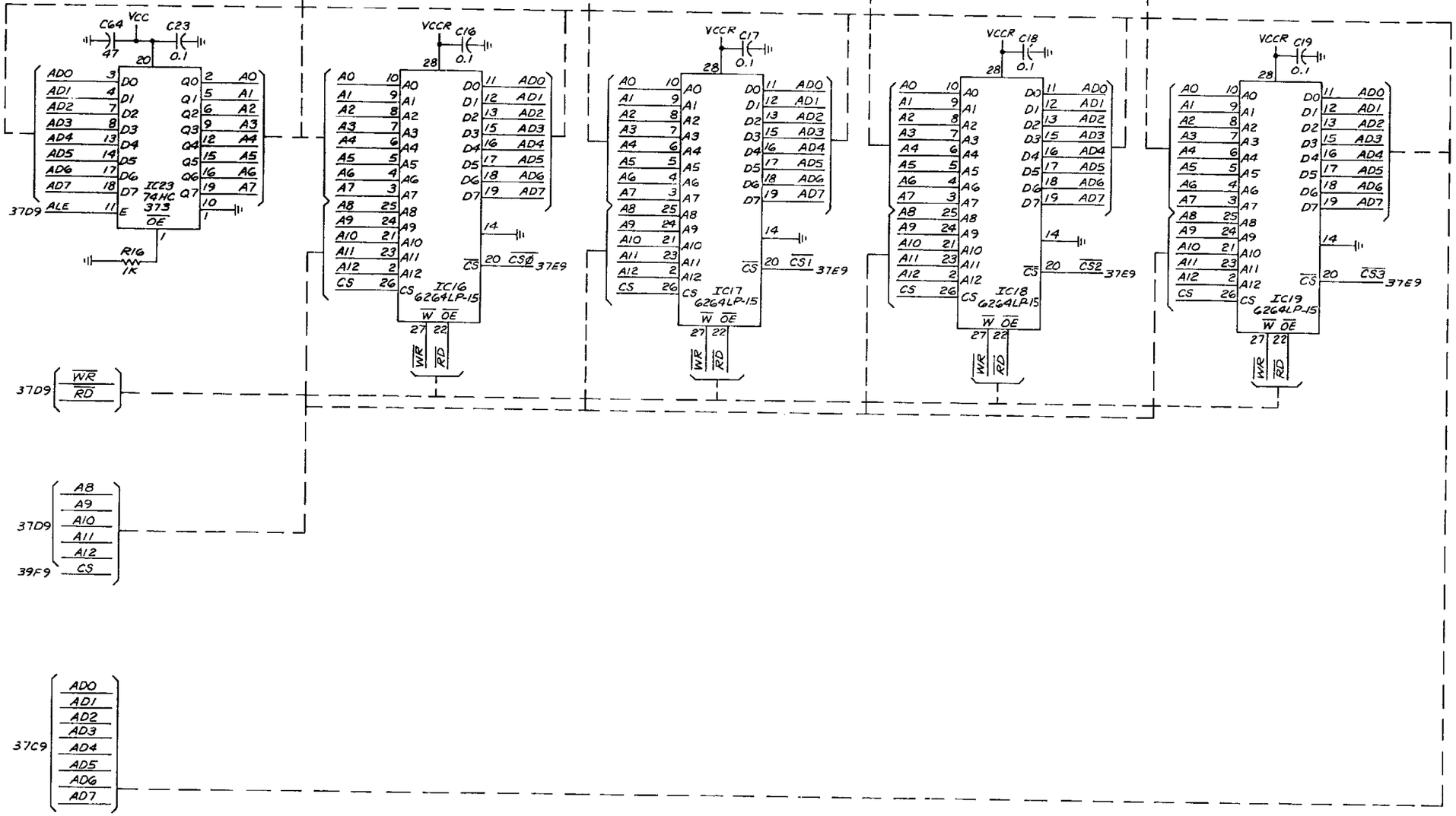
15A ANNOUNCEMENT SYSTEMS CIRCUIT

DWG SIZE	ISSUE
6S	8D

AT&T BELL LABORATORIES	SD-97753-01	SHEET J39

ⓜ PART OF CPS-UD6 (SERIES 15 AND ABOVE)

3-12 SECOND VML MESSAGE MODULE



SEE PROPRIETARY NOTICE ON COVER PAGE.

13A ANNOUNCEMENT SYSTEMS CIRCUIT	DWG SIZE 6S	ISSUE 8D
AT&T BELL LABORATORIES SD-97753-01		SHEET J40

Ⓜ PART OF CPS-UD6

(SERIES 15 AND ABOVE)

3-12 SECOND VML MESSAGE MODULE

COMPONENT LIST

RELAY

347A	K1	CA
		38F8
		37F3
348B	K2	VA
		38C9
		38F7
337A	K3	STP
		3989
		39C6
	K4	CT
		3989
		39D6
	K5	MU
		39C9
		39A5

BATTERY

DESIG	LOC	CODE
BT1	39G5	KS-22873,L3

CAPACITOR

DESIG	LOC	CODE
C1	37G2	WP90005,L6, 0.1
C2	37B3	WP90005,L6, 0.1
C3	37G1	WP90005,L6, 0.1
C4	39D3	WP90005,L6, 0.1
C5	37E6	WP90005,L6, 0.1
C6	39A4	WP90005,L6, 0.1
C7	37A3	WP90005,L6, 0.1
C8	39E6	WP90005,L6, 0.1
C9	38C2	WP90005,L6, 0.1
C10	39C3	WP90005,L6, 0.1
C11	38F1	WP90005,L6, 0.1
C12	37D2	WP90005,L6, 0.1
C13	39F4	651G, 10
C14	39F4	653A, 100
C15	37C7	WP90005,L6, 0.1
C16	40A3	WP90005,L6, 0.1
C17	40A5	WP90005,L6, 0.1
C18	40A6	WP90005,L6, 0.1
C19	40A8	WP90005,L6, 0.1
C20	39G6	KS-16958,L32, 20PF
C21	33C3	596C, 1
C22	37F8	WP90005,L6, 0.1
C23	40A1	WP90005,L6, 0.1
C28	38B7	719A, .0147
C29	37D4	WP90005,L6, 0.1
C30	37C5	WP90005,L6, 0.1
C31	37B6	KS-16958,L32, 30.1PF
C32	37B6	KS-16958,L32, 30.1PF

CAPACITOR (CONT)

DESIG	LOC	CODE
C33	37E0	759GY, 1
C34	38E6	WP90005,L6, 0.1
C35	38E5	759GY, 1
C36	38E7	602A, 40
C37	38E7	602A, 40
C38	38E9	542AD, 0.1
C39	38E9	542AD, 0.1
C40	38E6	WP90005,L6, 0.1
C41	38F6	KS-19774,L7, 001
C42	37F6	75G, 0.1
C43	37E0	759GY, 1
C44	37F0	601A, 5
C45	3701	WP90005,L6, 0.1
C46	38C4	741Y, 2.2
C47	39F0	602A, 40
C48	39F1	WP90005,L6, 0.1
C49	39F0	602A, 40
C50	39F1	WP90005,L6, 0.1
C51	38B5	761C, .33
C52	38A6	594C, .0261
C53	3886	KS-19774,L13, .27
C54	39E0	602A, 40
C55	38E8	542G, 3.9
C56	3886	WP90005,L6, 0.1
C57	38F5	WP90005,L6, 0.1
C58	38F5	WP90005,L6, 0.1
C59	38B7	719A, 1000PF
C60	3888	WP90005,L6, 0.1
C61	39F2	650B, 1
C62	3897	719A, .0147
C63	37F4	601A, 5
C64	4081	652C, 47
C65	37F7	WP90005,L6, 0.1
C66	37G7	KS-16742,L26, 3400PF

CONNECTOR

DESIG	LOC	CODE
J8		9638-20
J9		9638-20
J10		9638-20
J11	39G4	65966-001, BERG

CRYSTAL

DESIG	LOC	CODE
Y1	37B7	MP120 (CTS KNIGHTS 12 MHz)

DIODE

DESIG	LOC	CODE
CR1	39F5	458AB
CR4	38F4	459J
CR5	38F4	459C
CR6	38F4	459C
CR7	38F3	459C
CR8	38G3	459C
CR9	38G6	459C
CR10	38G7	459C
CR11	39G6	458C
CR13	39E5	458C
CR14	38G8	458C
CR16	39F4	458A

DIODE (CONT)

DESIG	LOC	CODE
CR17	38F7	521C
CR18	38E9	521A
CR19	39F4	WP90013,L3
CR20	38F2	458C

DIODE (LIGHT EMITTING)

DESIG	LOC	CODE
CR2	37F1	556H
CR12	3866	556G

HEADER

DESIG	LOC	CODE
H1	3905	65956-103, BERG

INTEGRATED CIRCUIT (SEE NOTE 1)

DESIG	LOC	CODE
IC1A	37B1	MM74HC04N
IC1B	37B1	
IC1C	37F1	
IC1D	37G1	
IC1E	3701	MM74HC02N
IC1F	37B2	
IC2A	37C3	
IC2B	37C2	
IC2C	37C1	MM74HC08N
IC2D	37F4	
IC3A	37F4	
IC3B	3903	
IC3C	37H1	MM74HC10N
IC3D	3708	
IC4A	3903	
IC4B	3904	
IC4C	3955	MM74HC74N
IC5A	37C3	
IC5B	37F5	
IC6A	3703	
IC6B	38C3	MM74HC00N
IC6C	39B4	
IC6D	3902	
IC6E	37F5	
IC6F	38D1	MM74HC00N
IC7A	37B2	
IC7B	37D2	
IC7C	3702	
IC7D	37E2	LM393N
IC8	39F6	MM74HC51N
IC9A	38C2	
IC9B	3804	
IC10A	37A8	MM74HC00N
IC10B	39C3	
IC10C	39C4	
IC10D	39D4	
IC11A	38F1	
IC11B	37F4	
IC11C	39B1	
IC11D	39F7	

INTEGRATED CIRCUIT (CONT)

DESIG	LOC	CODE
IC12A	39A1	MM74HC14N
IC12B	3701	
IC12C	37F1	
IC12D	37F2	
IC12E	37F2	
IC12F	39F8	
IC13	39F3	LT317AT, LINEAR TECHNOLOGY
IC14	3882	1298B, WESTERN
IC15	37B7	P8051AH, INTEL (SEE SHEET NOTE 1)
IC16	40C3	HM6264LP-15, HITACHI
IC17	40C4	HM6264LP-15, HITACHI
IC18	40C6	HM6264LP-15, HITACHI
IC19	40C8	HM6264LP-15, HITACHI
IC20	3884	604P, WESTERN
IC21A	3885	502FY, WESTERN
IC21B	3886	
IC21C	3888	
IC22	37E8	MM74HC138N
IC23	40C1	MM74HC373N
IC28	38G5	CA3140AE, RCA
IC29	37C4	MM74HC161N
IC30	37C5	MM74HC138N
IC31	38E6	uA759UIC, FAIRCHILD
IC32	37F7	MM74HC123N

POTENTIOMETER

DESIG	LOC	CODE
R55	3806	KS-19069,L4, 5K

RESISTOR

DESIG	LOC	CODE
R6	3801	KS-20616,L1A, 10K
R7	3801	KS-20616,L1A, 4.7K
R8	37F3	KS-20616,L1A, 10K
R9	37F9	KS-14603,L3CC, 4.64
R10	3905	KS-20616,L1A, 1K
R11	3700	KS-20616,L1A, 42.2
R12	3701	KS-20616,L1A, 90K
R13	37F0	KS-20616,L1A, 14.7
R14	37G8	KS-20616,L1A, 4.7K
R15	37F1	KS-20616,L1A, 147
R16	40C1	KS-20616,L1A, 1K
R17	38F9	KS-20616,L1A, 20.5K
R18	39E7	KS-20616,L1A, 10K
R19	39F3	KS-20616,L1A, 866
R20	39F3	KS-20616,L1A, 249
R21	39E5	KS-20616,L1A, 10K
R22	39E6	KS-20616,L1A, 10K
R24	39F5	KS-20616,L1A, 3.48K
R24	39G6	KS-20616,L1A, 4.87K
R25	39F6	KS-20616,L1A, 470K

SHEET NOTE

1. PID CODE FOR P8051AH IS AAUAJ.

13A ANNOUNCEMENT SYSTEMS CIRCUIT

DWG SIZE	ISSUE
6S	8D

AT&T BELL LABORATORIES | SD-97753-01 | SHEET J41

ⓜPART OF CPS-UD6

(SERIES 15 AND ABOVE)

3-12 SECOND VML MESSAGE MODULE

COMPONENT LIST (CONT)

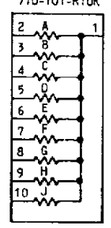
RESISTOR (CONT)

DESIG	LOC	CODE
R26	37F5	KS-20616,L1A, 511
R27	37E1	KS-20616,L1A, 14.7
R28	37E1	KS-20616,L1A, 42.2
R29	37F7	KS-20616,L1A, 7.87K
R30	37H0	KS-20616,L1A, 10K
R31	38B5	KS-20616,L1A, 681
R32	39D6	KS-20810,L1A, 825
R33	39D5	KS-20616,L1A, 4.64K
R34	37H0	KS-20616,L1A, 4.7K
R36	38A5	KS-20616,L1A, 681
R37	38B5	KS-20616,L1A, 1.1K
R38	38A6	KS-20616,L1A, 75K
R39	38B5	KS-20616,L1A, 1.1K
R40	38B6	KS-20616,L1A, 5.62K
R41	38B7	KS-20616,L1A, 23.7K
R42	38B7	KS-20616,L1A, 7.15K
R43	38B6	KS-20616,L1A, 21.5K
R44	38G7	KS-20616,L1A, 464
R46	39C6	KS-20810,L1A, 825
R47	39C4	KS-20616,L1A, 4.64K
R50	38H4	KS-20616,L1A, 147
R51	38H4	KS-20616,L1A, 2.61K
R52	38G5	KS-16645,L1, 10M
R53	38G4	KS-20616,L1A, 1M
R54	38C6	KS-20616,L1A, 21.5K
R56	38E6	KS-20616,L1A, 1K
R57	38F6	KS-20616,L1A, 30.1K
R58	38F7	KS-20616,L1A, 10K
R59	38G3	KS-20616,L1A, 10K
R60	38G5	KS-16645,L1, 2.7M
R61	38G5	KS-20616,L1A, 1.96K
R62	38F6	KS-20810,L1A, 825
R63	38G2	KS-20616,L1A, 4.64K
R64	38G3	KS-20616,L1A, 14.7K
R65	38G4	KS-20616,L1A, 147
R66	38F1	KS-20616,L1A, 4.7K
R67	37F7	KS-20616,L1A, 1K
R68	37A6	KS-20616,L1A, 10K
R69	37C3	KS-20616,L1A, 1K
R70	37C5	KS-20616,L1A, 1K
R71	37F5	KS-20616,L1A, 1K
R72	37F4	KS-20616,L1A, 4.7K
R73	37D6	KS-20616,L1A, 10K

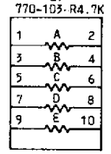
RESISTOR, NETWORK

DESIG	LOC	CODE
Z1A	37B0	770-101-R10K
Z1B	37A0	
Z1C	37B0	
Z1D	37C0	
Z1E	39D1	
Z1F	37F0	
Z1G	37G0	
Z1H	39C1	
Z1J	37C1	
Z2A	37B8	
Z2B	37B8	
Z2C	37B8	
Z2D	37B8	
Z2E	37B8	
Z2F	37B8	
Z2G	37B8	
Z2H	37B8	770-103-R4.7K
Z2J	37B8	
Z3A	37C1	
Z3B	37B1	
Z3C	37B1	
Z3D	37F0	
Z3E	37G0	
Z4A	37G0	
Z4B	39D1	770-83-R4.7K
Z4C	39D1	
Z4D	37D1	
Z5A	SPARE	
Z5B	37D1	
Z5C	37F5	
Z5D	37F1	

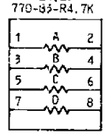
Z1,Z2
770-101-R10K



Z3
770-103-R4.7K



Z4,Z5
770-83-R4.7K



SWITCH

DESIG	LOC	CODE
S1	37E1	KS-19963,L9
S2	37D9	210729, EECC

TEST POINT

DESIG	LOC	CODE
TP1	37D7	P-42P506
TP2	37F4	P-42P506
TP5	37H7	P-42P506
TP6	37E7	P-42P506
TP7	37E7	P-42P506
TP8	37E7	P-42P506

TRANSFORMER

DESIG	LOC	CODE
T1	38E8	2578DC

TRANSISTOR

DESIG	LOC	CODE
Q1	37F2	51A
Q2	39B4	51A
Q3	38B3	51F
Q4	38G6	66S
Q5	38G3	66S
Q6	39C5	66S
Q7	39D5	66S
Q8	38G2	66S
Q9	37G9	

RECORD OF CHANGES

DWG ISS	PREV FURN	STD	MFR DISC	SEE NOTE
80	N	M	N	4

MANUFACTURING REFERENCE

CATEGORY	NO.

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   RESISTANCE VALUES ARE IN OHMS,
   CAPACITANCE VALUES ARE IN MICROFARADS,
   VALUES PRECEDED BY THE SYMBOL + (PLUS)
   OR - (MINUS) ARE IN VOLTS.
2. ⏚ GROUND RETURN.
3. ALL IC'S ARE BY NATIONAL SEMICONDUCTOR UNLESS OTHERWISE SPECIFIED.
4. FOR OPTION N SEE SHEETS J20 TO J24

13A ANNOUNCEMENT SYSTEMS
CIRCUIT

DWG SIZE: 8S

ISSUE: 80

AT&T BELL LABORATORIES

SD-97753-01

SHEET: J42