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	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	SHEET NO.
SHEET INDEX SUPPORTING INFORMATION	A1	1	2	3																																																	A1
FS 1 TRANSMITTER AMPLIFIER	B1	1	2	3																																																B1
FS 2 VF RECEIVER CHANNEL UNIT LOGIC	B2	1	2	3																																															B2
FS 3 RINGING DETECTOR	B3	1	1	3																																															B3
FS 4 RINGING MODE SELECT LOGIC	B4	1	2	3																																															B4
APP FIG. 1	C1	1	2	3																																															C1
CIRCUIT NOTES	D1	1	2	1																																														D1
EQUIPMENT NOTES	D2	1	1	3																																														D2
INFORMATION NOTES	D3	1	2	2																																														D3
	D4	1	2	2																																															D4

SUPPORTING INFORMATION

CATEGORY	NO.
EQUIPMENT DRAWING	J98718SR ED-7C084 ED-7C085
EQUIPMENT DESIGN REQUIREMENTS	J98718 (801-50) *)

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.

DWG ISSUE	CD ISSUE	DATE ISSUED	
1	1	9-4-75	DA JEW
2A	1 APPX 1A	8-3-76	ACC DCB
3A	1 APP 2A	12-2-76	JTD DCB JEW

ISSUE 3A

1N22

COMMON SYSTEMS
SIGNALING

TYPE D3, 24-CHANNEL
PULSE CODE MODULATION BANK
4-WIRE, 600-OHM RINGDOWN
CHANNEL UNIT
CIRCUIT

AT&TCO STANDARD

SD-3C227-01-A1

10 SHEETS

BELL TELEPHONE LABORATORIES INCORPORATED

6S

FS 1
TRANSMITTER AMPLIFIER

P/O PWB

SX1 J1 — E1 — P/O P1 — T — R

VF XMT
-16 DB TO 0 DB TLP

S1
6 OPEN
7 1200
9 600
10 150
A SCR SW
5 OPEN
4 1200
2 600
1 150

T1
382 A
29
3
7 8 10 5 4 3 2 1 9 12 11 NC

LF C.5 SCR SW

RV1

P/O C1
C.25 SCR SW — 11 F .5 — 6
C.5 SCR SW — 12 E .25 — 5 / 13 D .5 — 4
C1 SCR SW — 14 C 1.0 — 3
C2 SCR SW — 15 B 1.0 — 2 / 16 A 1.0 — 1

R9 1690
R10 681
R12 102
R13 102
R14 193

CW
R1 RLF 3K — E2 E3
R2 LHF 5K — E4 E5
HF SCR SW

P/O C1
L1 5.74 MH
9 .25 8 / 10 .25 7

0-1.5 dB
R3 XMT 200 — E6 E7 E8
R4 768
R5 768
126
R6 6190
RT 82.5K
R8 365X SEE NOTE 106

IC1-B 582AR
8 (−) 9 (+) 5 4
R15 6190
+12
C2 .01
126 126

R11 600

AT1 0-15 dB
2 3 1
1dB 2dB 4dB 8dB
126

E9 — E10 — E11 126

P/O J2 XMT
11 10 9 8 7
-7.5dB TLP 600Ω UNBAL

IC2
TRANSMIT ACTIVE FILTER 525F
NC: 4 6 9 12 13 20 21 23 24 26 28 32 33 11
7 5 — 18 — 22 36 — 126
19 31 — 25 30 14 15 17 27 2 29 1 3 8 10 16

C5 .01 — +12 — 126
C6 .01 — -12

Z1
TRANSMIT GATE CIRCUIT ED-3C414-30
3 — 2.15 — 2K — 7
PULSE AMP
1 — 6
5 — +12
2 4 — 126
P/O C7
A 1000 PF: 1 6
B 2.2: 5 2
-12
TO 2E3

P/O P1
47 TPAM
XMT
46 TPANG
TO XMT UNIT CKT

-48SP — R16 12.4K — CR1 — RV2 — SG
3D4 -7

SG
UNIT FACE PLATE
C3 90
-12
R17 27.1
C4 2.2
R18 18
12G +12 4G +4

P/O P1
26 GRD — TO FRAME GRD
32 SG — 33 -48SP — TO TPU CKT
23 -12 — 22 12G — 24 +12 — 42 4G — 50 +4 — TO POWER CONVERTER UNIT CKT

P/O J6 CONN
14 SG — 13 -48 SP — 9 -23 — 10 12G — 12 +12 — 6 4G — 3 +4
4H6 — 4H4

ISSUE 3A

4-WIRE 600 OHM RINGDOWN CHANNEL UNIT

BELL TELEPHONE LABORATORIES INCORPORATED

SD-3C227-01-B1

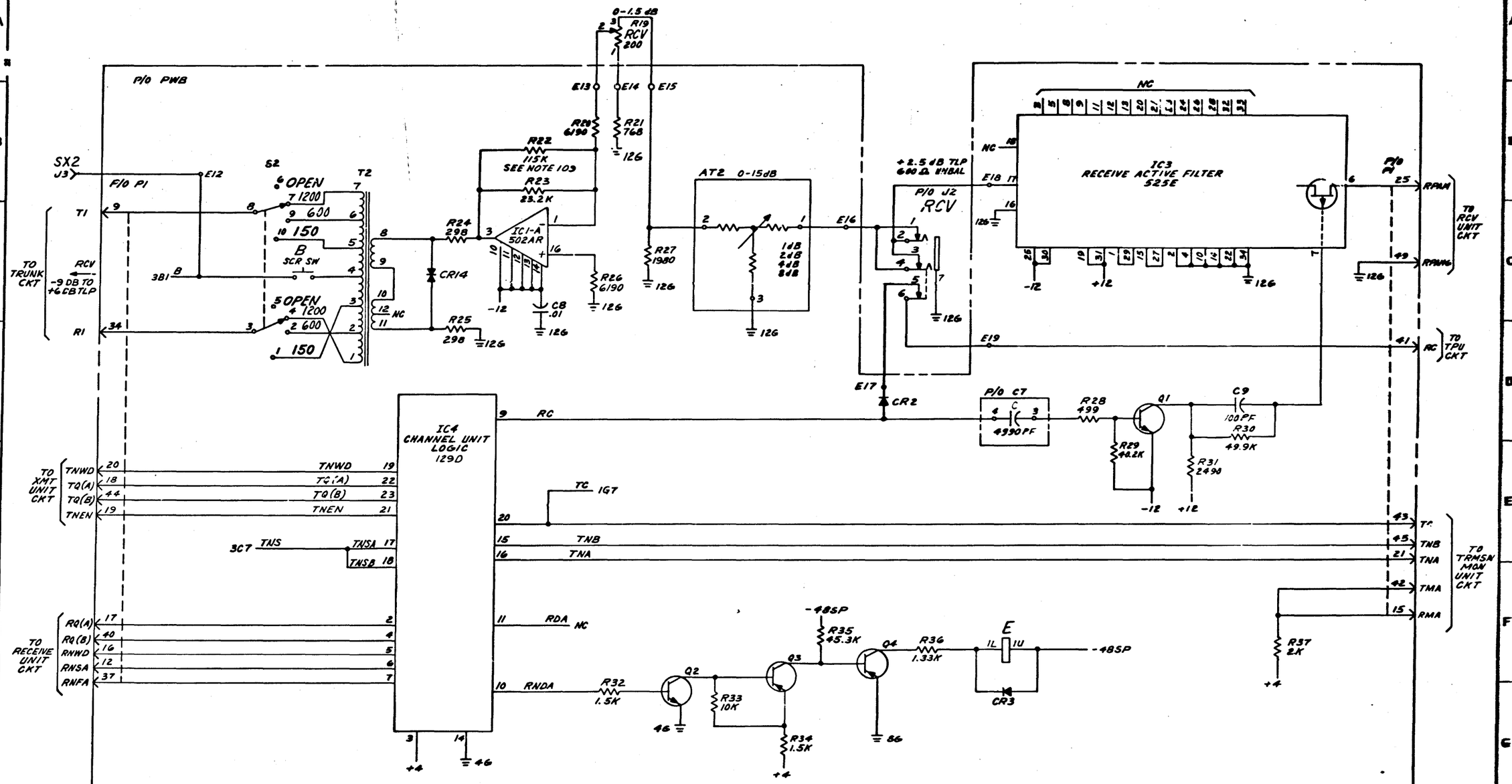
SIZE 6S

PRINTED IN U.S.A.

BELL SYSTEM PROPRIETARY INFORMATION
NOT FOR PUBLICATION OR
OUTSIDE DISTRIBUTION

FS 2

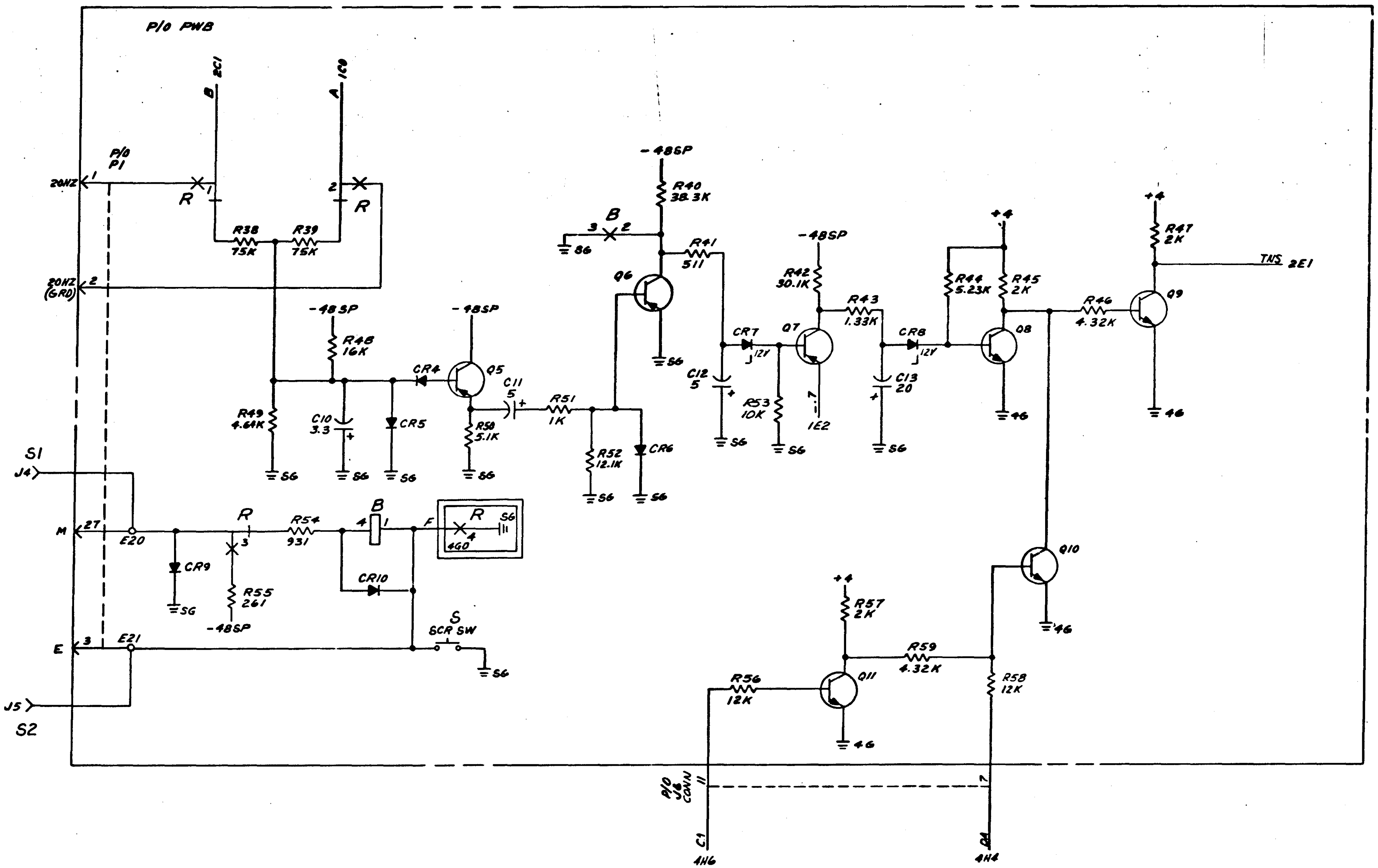
VF RECEIVER AND CHANNEL UNIT LOGIC



BELL SYSTEM PROPRIETARY INFORMATION
NOT FOR PUBLICATION OR
OUTSIDE DISTRIBUTION

ISSUE 3A	
4-WIRE, 600-OHM RINGDOWN CHANNEL UNIT	SD-3C227-01-B2
BELL TELEPHONE LABORATORIES INCORPORATED	CHFE CODE 6S

FS 3
RINGING DETECTOR



P/O PWB
B 2C1
A 1C9
P/O P1
20HZ 1
20HZ (GRD) 2
R38 75K
R39 75K
-48SP
R40 38.3K
R41 511
Q6
-48SP
R42 30.1K
R43 1.33K
CR7
CR8
Q7
C12 5
R53 10K
C13 20
1E2
+4
R44 5.23K
R45 2K
Q8
R46 4.32K
Q9
R47 2K
TNS 2E1
-48SP
R48 16K
-48SP
CR4
Q5
C11 5
R51 1K
R49 4.64K
C10 3.3
CR5
R50 5.1K
R52 12.1K
CR6
S1
J4
M 27
E20
R
R54 931
B
F
R S6 4G0
CR9
R55 261
-48SP
CR10
S SCR SW
E 3
E21
J5
S2
Q10
+4
R57 2K
R59 4.32K
R56 12K
Q11
R58 12K
P/O J6 CONN
C1 4H6
D4 4H4

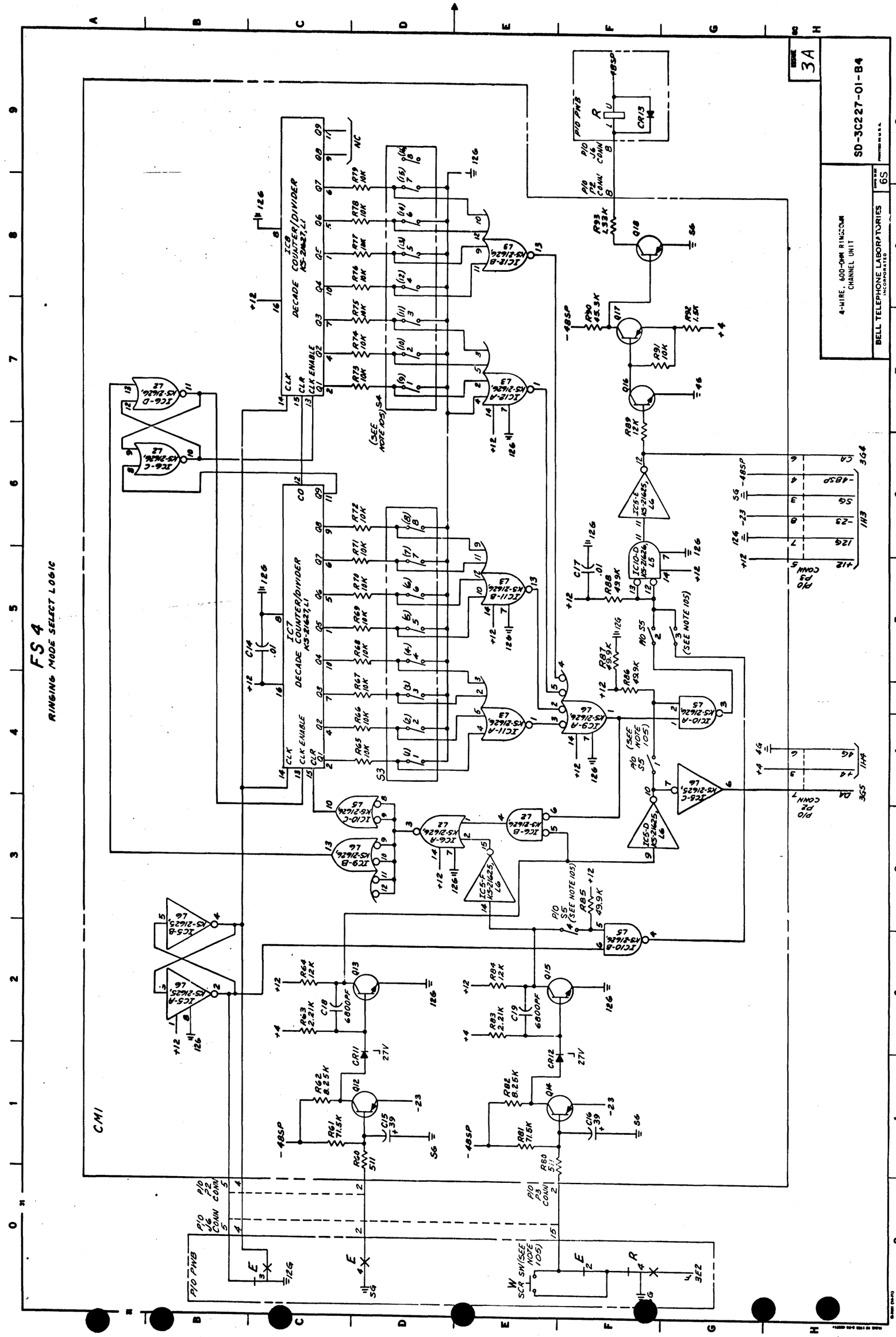
ISSUE 3A

4-WIRE, 600-OHM RINGDOWN CHANNEL UNIT

SD-3C227-01-B3

BELL TELEPHONE LABORATORIES INCORPORATED

6S



CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	ONE PER
BATTERY SYMBOL			VOLTAGE RANGE

102.

FEATURE OR OPTION	PROVIDE		
	APP FIG	APP OR WRG	QUANTITY

103.

RECORD OF FIGURES, WIRING AND APPARATUS CHANGES						
CHANGED ON ISSUE	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION USES FORM	SEE NOTE	USE IN CIRCUIT		
				STD	A&M	MD

CIRCUIT NOTES: (CONT)

104. WHEN 20 Hz RINGING IS TO BE RECEIVED INTO AND TRANSMITTED OUT OF THE UNIT, SCREW SWITCHES "A" AND "B" MUST BE CLOSED.

105. DESIGNATIONS IN PARENTHESES SHOWN AT SWITCHES S3 AND S4 REPRESENT STATION NUMBERS. ANY OF FOUR RINGING MODES FOR ASSIGNED STATIONS MAY BE SELECTED BY OPENING AND CLOSING OF CERTAIN SWITCHES. THE FOLLOWING TABLE PRESENTS SWITCH POSITIONS FOR THE RINGING MODES.

RINGING MODE	SWITCHES						
	S5-1	S5-2	S5-3	S5-4	W	S3 STATION 1-8	S4 STATION 1-7
CODE SELECT	1	1	0	X	1	*	*
NO CODE	0	1	0	X	1	STA 1 = 0 STA 2-8=1	1
REPEAT INPUT TIMING (NO LIMIT)	X	0	1	0	1	1	1
REPEAT INPUT TIMING (TWO SECONDS)	X	0	1	1	0	1	1

NOTE: 0 = OFF
1 = CLOSED
X = OFF OR CLOSED (DON'T CARE)

* SET PARTICULAR STATION NUMBER SWITCH (S3,1-8 AND S4,1-7) TO "OFF" POSITION FOR ASSIGNED STATION CODES IN THE CODE SELECT MODE.

106. THIS RESISTOR IS TO BE SELECTED AT MANUFACTURE TO MEET GAIN REQUIREMENTS. IF THE RESISTOR VALUE SHOWN ON SHEET B1 IS INADEQUATE, A VALUE MAY BE SELECTED FROM AMONG THE FOLLOWING KS-20810L1A RESISTORS: 470K, 511K, 597K, 649K.

107. THIS UNIT MUST NOT BE USED IN THE CHANNEL 24 POSITION DUE TO INTERFERENCE WITH THE TRANSMISSION MONITOR UNITS TESTING OF THE D3 BANK.

108. FOR NON-LOOPED DC SIGNALING SCREW SWITCH "S" MUST BE CLOSED.

109. THIS RESISTOR IS TO BE SELECTED AT MANUFACTURE TO MEET GAIN REQUIREMENTS. IF THE RESISTOR VALUE SHOWN ON SHEET B2 IS INADEQUATE, A VALUE MAY BE SELECTED FROM AMONG THE FOLLOWING KS-20810L1A RESISTORS: 107K, 124K, 133K, 143K.

EQUIPMENT NOTES:

201. "P1" INDICATES PRINTED CONNECTOR FINGERS OF PWB PLUG END AND MATES WITH A 940A CONNECTOR.

202. DESIGNATIONS SHOWN IN BOLD CHARACTERS IN B SECTION ARE MARKED ON UNIT.

203. TO CLOSE A SCREW SWITCH, THE SCREW SHALL BE TIGHTENED SUFFICIENTLY TO INSURE CONTACT BETWEEN TERMINALS AND UNDERSIDE OF SCREW HEAD. CAUTION IN TIGHTENING SCREW IS RECOMMENDED TO AVOID SHEARING OF SCREW. TO OPEN A SCREW SWITCH, THE SCREW SHALL BE LOOSENED APPROXIMATELY TWO COMPLETE TURNS. UNIT IS NORMALLY FURNISHED WITH SCREWS OPEN AND ATTENUATORS SET TO MAXIMUM

INFORMATION NOTES:

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

ISSUE 3A

4-WIRE, 600-OHM RINGDOWN CHANNEL UNIT	SD-3C227-01-01
BELL TELEPHONE LABORATORIES INCORPORATED	DRWG SIZE 6S

APP FIG 1

CONNECTOR

DESIG	LOC	CODE
SX1(J1)	1B0	KS-20667,L9
[1] RCV(J2)	2C6	601A (JACK)
[1] XMT(J2)	1C9	601A (JACK)
SX2(J3)	2B0	KS-20667,L9
S1(J4)	3E0	KS-20667,L14
S2(J5)	3F0	KS-20667,L15

JACK

SEE CONNECTOR

POTENTIOMETER

DESIG	LOC	CODE
R1	1B3	KS-21423,L3
R2	1B5	KS-21423,L4
R3	1B6	KS-21423,L5
R19	2A4	KS-21423,L5

PRINTED WIRING BOARD

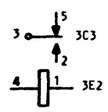
DESIG	LOC	CODE
PWB	1B0,2A0 3B0,4B0 4F9	ED-7C084-( )

E/W

RELAY

DESIG	R		E	
CODE	M44A		M223	
	CONT ARR	LOC	CONT ARR	LOC
4	EBM	4E0	EBM	4D0
3	EBM	3E1	EBM	3D0
2	EBM	3C2	EBM	4F0
1	EBM	3C1	EBM	
COIL		4F9		4F6

RELAY



ATTENUATOR

DESIG	LOC	CODE
AT1	1C8	50E
AT2	2B4	50E

CAPACITOR

DESIG	LOC	CODE
C1,A-H	1C3,1C5	734F CAP-PAK
C2	1D7	KS-19774,L2,.01
C3	1G1	KS-19524,L14,90
C4	1G3	650Q,2.2
C5	1G5	KS-19774,L2,.01
C6	1G5	KS-19774,L2,.01
C7, A,B,C	1G7,2D6	734C CAP-PAK
C8	2C3	KS-19774,L2,.01
C9	2D8	KS-16958,L31,100PF
C10	3D2	606J
C11	3D3	601A
C12	3D4	601F
C13	3D5	602G

CONNECTOR

DESIG	LOC	CODE
J6	1H4,3G3, 4B0,4F9	PS-21290,L5

PRINTED WIRING BOARD (CONT)

DIODE

DESIG	LOC	CODE
CR1	1F2	459AF
CR2	2D5	458A
CR3	2G6	458A
CR4	3D2	456B
CR5	3D2	458A
CR6	3D3	458A
CR7	3D4	459J
CR8	3D5	459J
CR9	3E1	458A
CR10	3E2	458A
CR13	4F9	458A
CR14	2C2	521B

INDUCTOR

DESIG	LOC	CODE
L1	1C5	16228S,5.74mH

INTERGRATED CIRCUIT

DESIG	LOC	CODE
[1] IC1-A	2C3	502AR
[1] IC1-B	1C6	502AR
IC2	1E6	525F
IC3	2B7	525E
IC4	2E3	1290

NETWORK

DESIG	LOC	CODE
Z1	1E7	ED-3C414-30

RESISTOR

DESIG	LOC	CODE
R4	1B6	KS-20810,L14,768
R5	1B6	KS-20810,L1A,768
R6	1C6	KS-20810,L1A,6190
R7	1C7	KS-20810,L1A,82.5K
R8	1C7	KS-20810,L1A,569K
R9	1C4	KS-20810,L1A,1690
R10	1C5	KS-20810,L1A,681
R11	1C7	KS-20810,L1A,600
R12	1D4	KS-20810,L1A,102
R13	1D5	KS-20810,L1A,102
R14	1D6	KS-20810,L1A,193
R15	1D6	KS-20810,L1A,6190
R16	1F1	KS-20810,L1A,12.4K
R17	1G2	KS-20810,L1A,27.1
R18	1G3	KS-20810,L1A,18
R20	2B3	KS-20810,L1A,6190
R21	2B4	KS-20810,L1A,768
R22	2B3	KS-20810,L1A,115K
R23	2C3	KS-20810,L1A,23.2K
R24	2C2	KS-20810,L1A,298
R25	2D2	KS-20810,L1A,298
R26	2C3	KS-20810,L1A,6190
R27	2C4	KS-20810,L1A,1980
R28	2D7	KS-20810,L1A,499
R29	2E7	KS-20810,L1A,40.2K
R30	2E8	KS-20810,L1A,49.9K
R31	2E8	KS-20810,L1A,2490
R32	2G4	KS-20810,L1A,1.5K
R33	2G4	KS-20810,L1A,10K
R34	2G5	KS-20810,L1A,1.5K
R35	2F5	KS-20810,L1A,45.3K
R36	2F6	KS-20289,L3D,1.33K
R37	2F8	KS-20810,L1A,2K
R38	3C1	KS-20810,L1A,75K
R39	3C1	KS-20810,L1A,75K
R40	3C3	KS-20810,L1A,38.3K
R41	3C4	KS-20810,L1A,511
R42	3C4	KS-20810,L1A,30.1K
R43	3D5	KS-20810,L1A,1.33K
R44	3C5	KS-20810,L1A,5.23K
R45	3C5	KS-20810,L1A,2K
R46	3D6	KS-20810,L1A,4.32K
R47	3C6	KS-20810,L1A,2K
R48	3D2	KS-20810,L1A,16K

PRINTED WIRING BOARD (CONT)

RESISTOR

DESIG	LOC	CODE
R49	3D1	KS-20810,L1A,4.64K
R50	3D2	KS-13491,L1,5.1K
R51	3D3	KS-13491,L1,.1K
R52	3D3	KS-20810,L1A,12.1K
R53	3D4	KS-20810,L1A,10K
R54	3E1	KS-20289,L3D,931
R55	3E1	KS-14603,L2CD,261
R56	3F4	KS-20810,L1A,12K
R57	3F4	KS-20810,L1A,2K
R58	3E5	KS-20810,L1A,12K
R59	3F5	KS-20810,L1A,4.32K

SELECTOR BLOCKS

DESIG	LOC	CODE
A	1C1	840844039
B	2C1	840844039
C.25	1C3	
C.5	1C3	
[1] C1	1C4	L-900603-1
[1] C2	1C4	L-900603-1
[1] HF	1D5	L-900603-1
[1] LF C.5	1C2	L-900603-1
S	3F2	840844039
W	4E0	840844039

SWITCH

DESIG	LOC	CODE
S1	1C1	KS-19104,L18
S2	2C1	KS-19104,L18

TRANSFORMER

DESIG	LOC	CODE
T1	1C2	2578BA
T2	2C2	2578BA

TRANSISTOR

DESIG	LOC	CODE
Q1	2D7	66J
Q2	2F4	66G
Q3	2F5	51A
Q4	2F5	51B
Q5	3D2	51B
Q6	3C3	51B
Q7	3D4	51B
Q8	3D5	66J
Q9	3D6	66J
Q10	3E6	66J
Q11	3F4	66J

VARISTORS

DESIG	LOC	CODE
RV1	1C2	106A
RV2	1F2	100G

CIRCUIT MODULE

DESIG	LOC	CODE
CM1	4A1	ED-7C085-( )

E/W

CAPACITOR

DESIG	LOC	CODE
C14	4C5	KS-19774,L2,.01
C15	4D1	608B
C16	4F1	608B
C17	4F5	KS-19774,L2,.01
C18	4C2	KS-19774,L1,6800PF
C19	4E2	KS-19774,L1,6800PF

DIODE

DESIG	LOC	CODE
CR11	4D1	459AH
CR12	4F1	459AH

CONNECTOR

DESIG	LOC	CODE
P2	4H4,4B0, 4F9	65433-007 (BERG ELECTRONICS)
P3	4F0,4H5	65433-007 (BERG ELECTRONICS)

PRINTED WIRING BOARD (CONT)

CIRCUIT MODULE (CONT)

INTERGRATED CIRCUIT

DESIG	LOC	CODE
[1] IC5,A-B	4B2	KS-21625,L6
[1] IC5,C-D	4G3	KS-21625,L6
IC5,E	4F6	KS-21625,L6
IC5,F	4E3	KS-21625,L6
[1] IC6,A	4D3	KS-21626,L2
[1] IC6,B	4E3	KS-21626,L2
IC6,C	4B6	KS-21626,L2
IC6,D	4B7	KS-21626,L2
IC7	4C5	KS-21627,L1
IC8	4C8	KS-21627,L1
[1] IC9,A	4F4	KS-21626,L6
[1] IC9,B	4C5	KS-21626,L6
[1] IC10,A	4G4	KS-21626,L5
[1] IC10,B	4F2	KS-21626,L5
[1] IC10,C	4C3	KS-21626,L5
[1] IC10,D	4F5	KS-21626,L5
[1] IC11,A	4E4	KS-21626,L3
[1] IC11,B	4E5	KS-21626,L3
[1] IC12,A	4E7	KS-21626,L3
[1] IC12,B	4E8	KS-21626,L3

RESISTORS

DESIG	LOC	CODE
R60	4D1	KS-20810,L1A,511
R61	4C1	KS-20810,L1A,71.5K
R62	4C1	KS-20810,L1A,8.25K
R63	4C2	KS-20810,L1A,2.21K
R64	4C2	KS-20810,L1A,12K
[3] R65-67	4D4	KS-20810,L1A,10K
[4] R68-71	4D5	KS-20810,L1A,10K
R72	4D6	KS-20810,L1A,10K
[3] R73-75	4D7	KS-20810,L1A,10K
[4] R76-79	4D8	KS-20810,L1A,10K
R80	4E1	KS-20810,L1A,511
R81	4E1	KS-20810,L1A,71.5K
R82	4E1	KS-20810,L1A,8.25K
R83	4E2	KS-20810,L1A,2.21K
R84	4E2	KS-20810,L1A,12K
R85	4F3	KS-20810,L1A, 49.9K
R86	4F4	KS-20810,L1A,49.9K
R87	4F5	KS-20810,L1A,49.9K
R88	4F5	KS-20810,L1A,49.9K
R89	4F6	KS-20810,L1A,12K
R90	4F7	KS-20810,L1A,45.3K
R91	4F7	KS-20810,L1A,10K
R92	4G7	KS-20810,L1A,1.5K
R93	1F8	KS-20289,L3D,1.33K

SWITCH

DESIG	LOC	CODE
S3	4D4	KS-21193,L5
S4	4D7	KS-21193,L5
[1] S5-1	4F4	KS-21193,L1
[1] S5-2	4G5	KS-21193,L1
[1] S5-3	4G5	KS-21193,L1
[1] S5-4	4F2	KS-21193,L1

TRANSISTOR

DESIG	LOC	CODE
Q12	4D1	51C
Q13	4D2	66J
Q14	4E1	51C
Q15	4E2	66J
Q16	4F7	66J
Q17	4F7	51B
Q18	4F8	51B

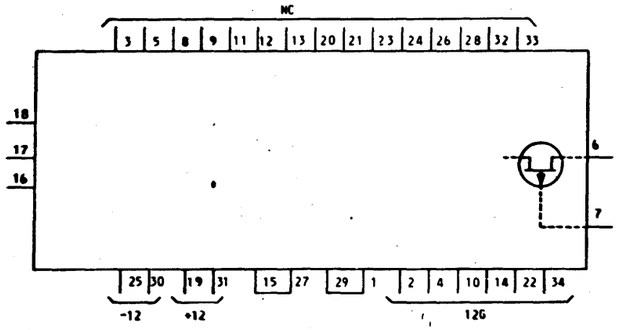
ISSUE 3A

4-WIRE, 600-OHM RINGDOWN CHANNEL UNIT	SD-3C227-01-C1
BELL TELEPHONE LABORATORIES INCORPORATED	DWG. SIZE 6S

INFORMATION NOTES: (CONT)

302. IC DEVICE CIRCUIT ELEMENTS

(A) **525E** RECEIVE ACTIVE FILTER



INPUT/OUTPUT INFORMATION

PIN 6 IS THE PRIMARY CHANNEL INPUT FOR THE RECEIVE PULSE AMPLITUDE MODULATED SIGNAL.

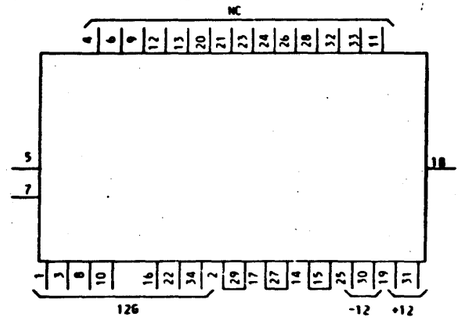
PIN 7 IS THE TIMING INPUT REQUIRED TO SAMPLE THE INDIVIDUAL CHANNEL.

PIN 17 IS THE PRIMARY CHANNEL OUTPUT FOR THE RECONSTRUCTED VOICE FREQUENCY SIGNAL.

CIRCUIT DESCRIPTION

THE RECEIVING ACTIVE FILTER RECONSTRUCTS THE TRANSMITTED WAVEFORM FROM THE RECEIVED SAMPLES. IT EFFECTIVELY HAS A LOW-PASS CHARACTERISTIC WHICH SUPPRESSES FREQUENCY COMPONENTS IN THE INPUT ABOVE 4kHz.

(B) **525F** TRANSMIT ACTIVE FILTER



INPUT/OUTPUT INFORMATION

PIN 5 IS THE PRIMARY VOICE FREQUENCY SIGNAL INPUT.

PIN 18 IS THE FILTERED VOICE FREQUENCY OUTPUT.

CIRCUIT DESCRIPTION

THE TRANSMIT ACTIVE FILTER IS A LOW-PASS FILTER WHICH EFFECTIVELY SUPPRESSES FREQUENCIES ABOVE 4kHz. THESE FREQUENCIES WOULD PRODUCE MODULATION PRODUCTS BELOW 4kHz IF THEY WERE NOT SUPPRESSED.

ISSUE 3A

4-WIRE, 600-OHM RINGDOWN CHANNEL UNIT

SD-3C227-01-D2

BELL TELEPHONE LABORATORIES INCORPORATED

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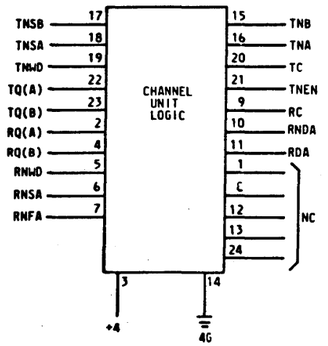
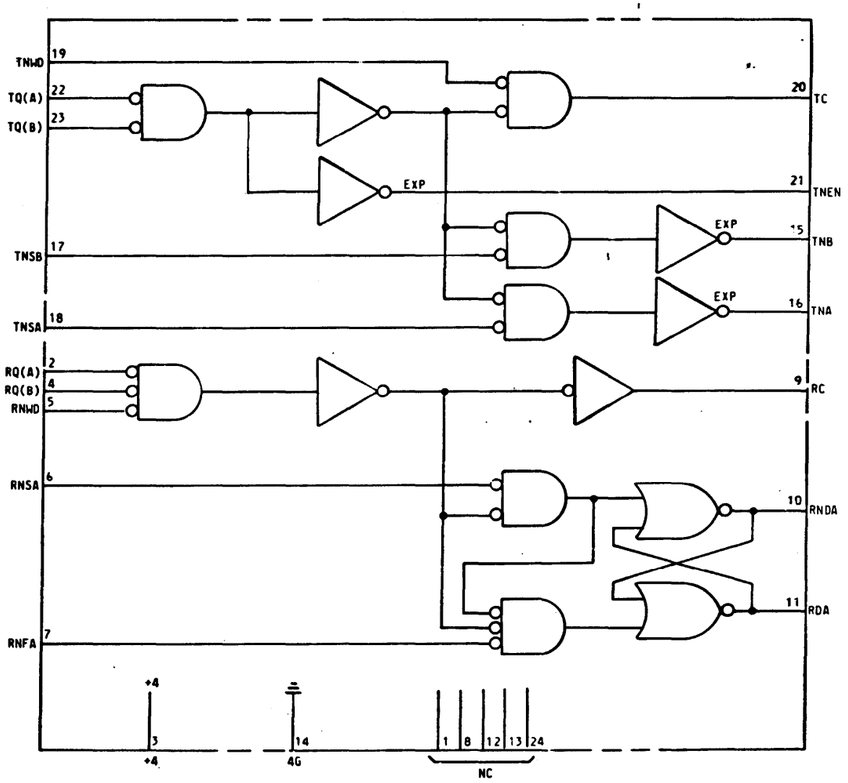
INFORMATION NOTES (CONT)
302. I.C. DEVICE CIRCUIT ELEMENTS (CONT)

(C) 129D CHANNEL UNIT LOGIC

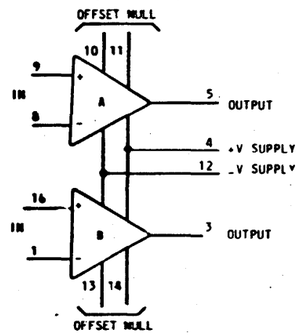


INPUT-OUTPUT INFORMATION

CIRCUIT DESCRIPTION



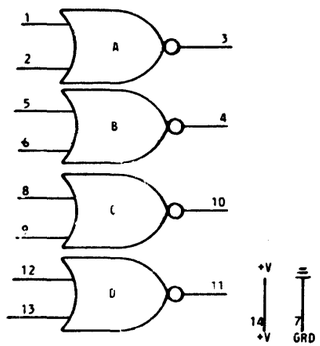
(D) 502AR DUAL VOICE FREQUENCY AMPLIFIER



INPUT/OUTPUT INFORMATION

CIRCUIT DESCRIPTION

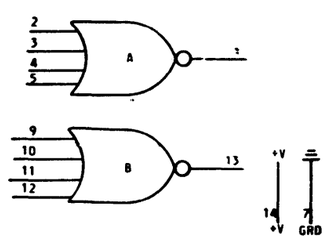
(E) KS-21626,L2 QUAD 2 INPUT NOR GATE



INPUT-OUTPUT INFORMATION

CIRCUIT DESCRIPTION

(F) KS-21626,L3 DUAL 4 INPUT NOR GATE



INPUT-OUTPUT INFORMATION

CIRCUIT DESCRIPTION

ISSUE 2A

4-WIRE, 600-OHM RINGDOWN CHANNEL UNIT

SD-3C227-01-D3

BELL TELEPHONE LABORATORIES INCORPORATED

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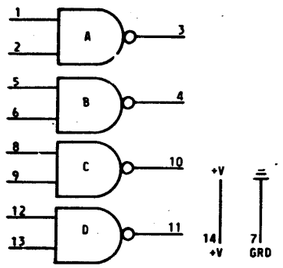
INFORMATION NOTES (CONT)

302. I.C. DEVICE CIRCUIT ELEMENTS (CONT)

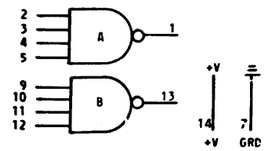
(G) **KS-21626,L5** QUAD 2 INPUT NAND GATE



INPUT/OUTPUT INFORMATION

CIRCUIT DESCRIPTION

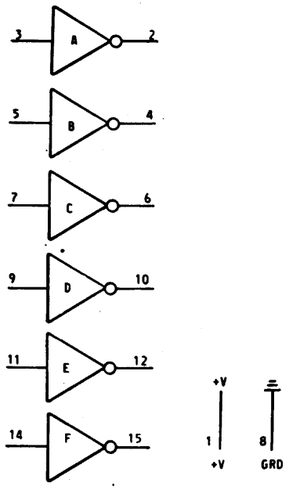
(H) **KS-21626,L6** DUAL 4 INPUT NAND GATE



INPUT/OUTPUT INFORMATION

CIRCUIT DESCRIPTIC

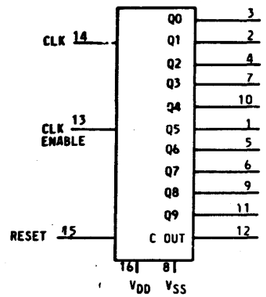
(J) **KS-21625,L6** HEX INVERTER/BUFFER



INPUT/OUTPUT INFORMATION

CIRCUIT DESCRIPTION

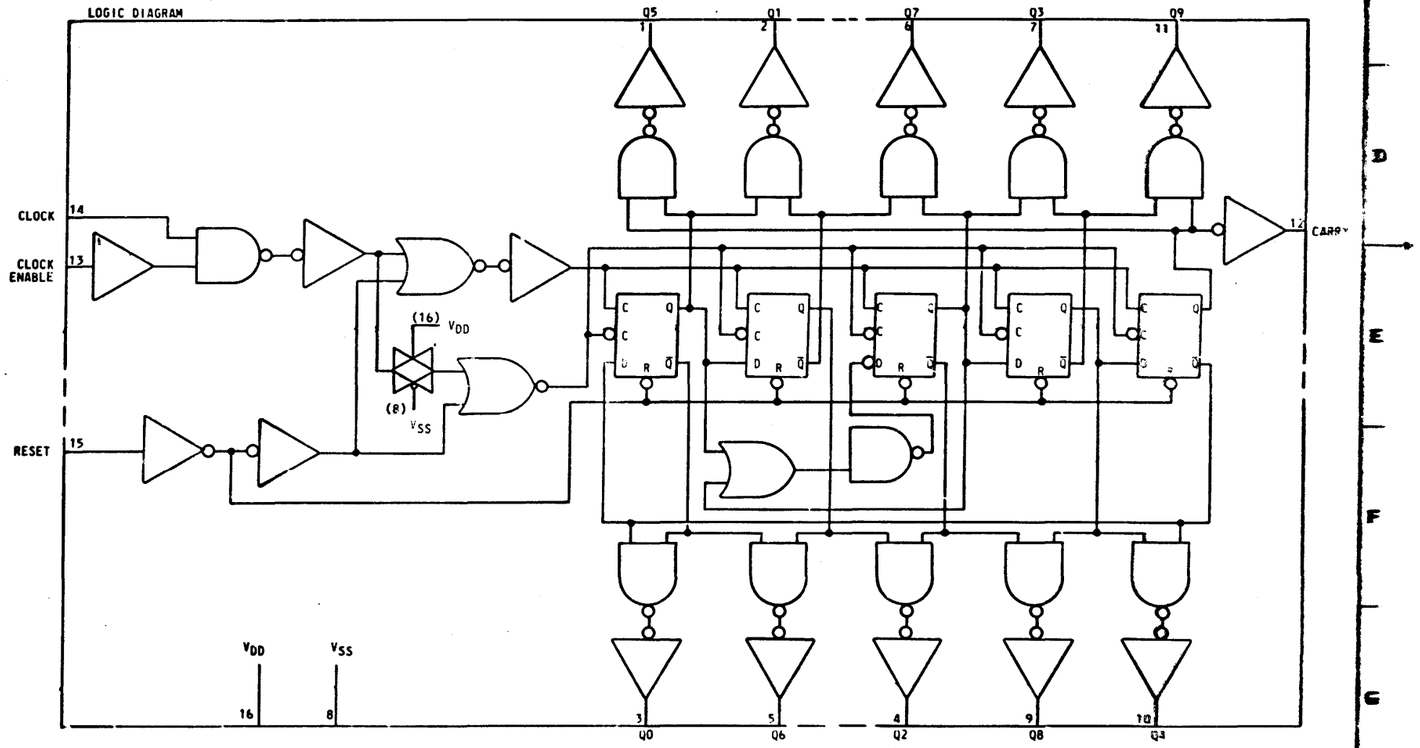
(K) **KS-21627,L1** DECADE COUNTER/DIVIDER



INPUT/OUTPUT INFORMATION

CIRCUIT DESCRIPTION

LOGIC DIAGRAM



ISSUE 2A

4-WIRE, 600-OHM RINGDOWN CHANNEL UNIT	SD-3C227-01-D4
BELL TELEPHONE LABORATORIES INCORPORATED	6S