CONTENTS	SHEET NO. PRIOR TO ISSUE 13	SHEET NO. CURRENT ISSUE	ISSUE NO. 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
SHEET INDEX OPTION INDEX SUPPORTING INFORMATION	-1	A1	13																								
FS 1 MULTIFREQUENCY SIGNAL GENERATOR CKT	-2	B1	13																								
APP FIG 1	-2	C1	13																								
CIRCUIT NOTES	-1	D1	13																								
EQUIPMENT NOTES INFORMATION NOTES	-1	D2	13																								
CAD 1 (FOR APP FIG. 1) CAD 2 WIRING REQD WHEN GENERATOR IS MOUNTED ON SAME FRAME AS ITS CONNECTING CIRCUIT CONNECTING CIRCUIT TABLE	-3	G1	13																								
CAD 3 WIRING REQD WHEN GENERATOR IS ON DIFFERENT FRAME FROM ITS ASSOCIATED CIRCUIT AND OUTPUT LEADS ARE 20 FT OR LESS CAD 4 WIRING REQD WHEN GENERATOR IS ON DIFFERENT FRAME FROM ITS ASSOCIATED CIRCUIT AND OUTPUT LEADS ARE 100 FT OR LESS CAD 5 WIRING REQD WHEN GENERATOR IS ON DIFFERENT FRAME FROM ITS ASSOCIATED CIRCUIT AND OUTPUT LEADS ARE BETWEEN 100 & 150 FT	-4	G2	13																								

OPTION INDEX

APP OR WIRG	RATED ON ISSUE	REF NOTES	LOCATION
Z	MD 3B STD 4B MD 5D	106	APP FIG. 1
Y	STD 3B MD 4B	105,107	APP FIG. 1
X	MD 4B STD 5D		APP FIG. 1
W	STD 4B	108	APP FIG. 1
V	STD 4B	108	APP FIG. 1
U	MD 4B	107	APP FIG. 1
T	STD 4B	107	APP FIG. 1
S	STD 5D		APP FIG. 1
R	STD 5D	107	APP FIG. 1
Q	STD 8D	109	APP FIG. 1

SHEET INDEX NOTES

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

SUPPORTING INFORMATION

CATEGORY	NO.
EQUIPMENT DRAWINGS	J95235AK-( ) J61566A-( )
BSP	179-603-501

NOTICE
NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER A WRITTEN AGREEMENT

13E

1N99

COMMON SYSTEMS
MULTIFREQUENCY SIGNAL
GENERATOR CIRCUIT

(2)

AT&T CO
STANDARD

A&M ONLY FOR THE SXS AOT

SD-95867-01-A1

7 SHEETS

BELL TELEPHONE LABORATORIES
INCORPORATED

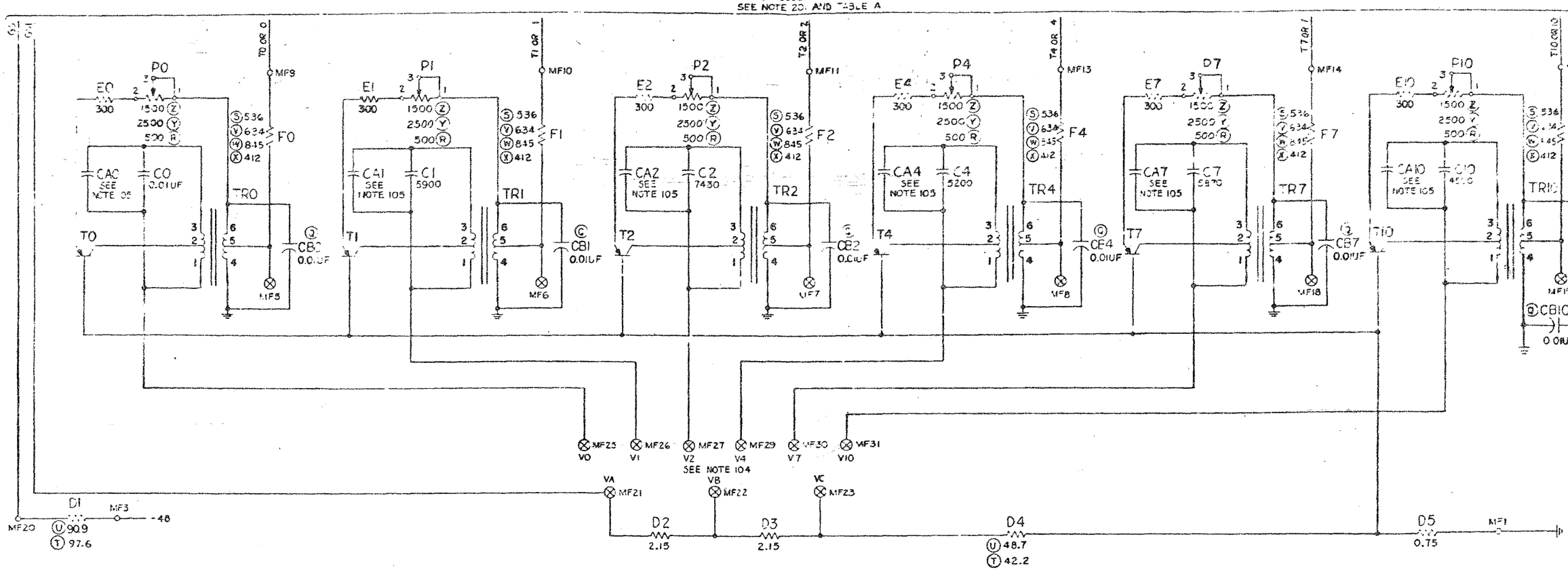
65

TCI Library www.telephonecollectors.info

FS I

MULTIFREQUENCY SIGNAL GENERATOR CKT

TO ASSOCIATED CIRCUIT
SEE NOTE 20 AND TABLE A



DRAWING ISSUE
1
2-D
3B
4B
5D
6D
AR
8D
9D
10D

MULTIFREQUENCY SIGNAL GENERATOR CIRCUIT (2)

BELL TELEPHONE LABORATORIES

SD-95867-01-B1

SD-95867-01-B1

TCI Library www.telephonecollectors.info

APP FIG. 1

CAPACITOR

OPT	DESIG	LOC	CODE
	C0	1B0	SEE NOTE 110
	C1	1B2	
	C2	1B4	
	C4	1B5	
	C7	1B7	
	C10	1B9	
	CA0	1B0	SEE NOTES 105, 110
	CA1	1B2	
	CA2	1B3	
	CA4	1B5	
	CA7	1B7	
	CA10	1B8	
Q	CB0	1C1	SEE NOTE 110
Q	CB1	1C3	
Q	CB2	1C5	
Q	CB4	1C6	
Q	CB7	1C8	
Q	CB10	1C9	

POTENTIOMETER

DESIG	LOC	CODE	OPTION Z	Y	R
P0	1A0	KS-13790,L25,	1500	2500	500
P1	1A2	KS-13790,L25,	1500	2500	500
P2	1A4	KS-13790,L25,	1500	2500	500
P4	1A5	KS-13790,L25,	1500	2500	500
P7	1A7	KS-13790,L25,	1500	2500	500
P10	1A9	KS-13790,L25,	1500	2500	500

RESISTOR

OPT	DESIG	LOC	CODE
T	D1	1E0	KS-8512,L17B,97.6
U	D1	1E0	KS-8512,L17B,90.9
	D2	1E4	~~445E~~,KS-20810,L1A,2.15
	D3	1E4	~~445E~~,KS-20810,L1A,215
T	D4	1E6	KS-8512,L3B,42.2
U	D4	1E6	KS-8512,L3B,48.7
	D5	1E8	~~111A~~,227C,KS-14603,L3AD,0.75
	E0	1A0	KS-13490,L1,300
	E1	1A2	
	E2	1A3	
	E4	1A5	
	E7	1A6	
	E10	1A8	
	F0	1B1	(S) ~~145A~~,KS-20810,L1A,536
	F1	1B3	(V) ~~146A~~,KS-20810,L1A,634
	F2	1B5	(W) ~~145A~~,KS-20810,L1A,845
	F4	1B6	
	F7	1B8	(X) ~~145A~~,KS-20810,L1A,412
	F10	1B9	

TRANSFORMER

DESIG	LOC	CODE
TR0	1C1	2531A
TR1	1C2	2531A
TR2	1C4	2531B
TR4	1C6	2531B
TR7	1C7	2531C
TR10	1C9	2531C

TRANSISTOR (SEE NOTE 107)

DESIG	LOC	CODE
T0	1C0	(T) 12E
T1	1C1	(U) 11A
T2	1C3	
T4	1C5	
T7	1C6	
T10	1C8	

SHEET 13B

MULTIFREQUENCY SIGNAL GENERATOR CIRCUIT

SD-95867-01-C1

BELL TELEPHONE LABORATORIES INCORPORATED

SHEET 6S

PRINTED IN U.S.A.

TCI Library www.telephonecollectors.info

CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	ONE PER
	1-1/3	48V SIG	APP FIG. 1
		GRD	APP FIG. 1

BATTERY SYMBOL	VOLTAGE RANGE
-48	42.75-52.5V

102.

FEATURE OR OPTION		PROVIDE APP FIG.	PROVIDE APP OR WRG	PROVIDE QUANTITY
MF SIGNAL GENERATOR CKT		1		1 PER CKT
TRANSMISSION LEVEL (SEE TABLE A)	-3 DBM PER TONE		X	
	-5 DBM PER TONE		V	
	-8 DBM PER TONE		W	
	-8 DBM PER TONE THRU HYBRID COILS		S	

103.

RECORD OF APPARATUS 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	HD
3B	Y OR Z	Z	106	Y		Z
4B	V,W, OR X	X	102	V,W		X
		Y OR Z		Z		Y
	T OR U	U		T		U
5D	S	V,W, OR X	102	X,S		
	R	Y OR Z		R		Z
8D	Q	NONE	109	Q		
13B	CAPACITORS		110			
	RESISTORS			KS-14603L-340		2270

104. FREQUENCY GENERATOR OUTPUT LEVEL:

CAUTION: TRANSISTORS MUST NOT BE REMOVED FROM OR REPLACED IN SOCKETS WHILE VOLTAGE IS CONNECTED TO THE VOLTAGE DIVIDER. BEFORE MAKING ANY TESTS ON THIS CIRCUIT WHEN IT IS CONNECTED TO ANOTHER CIRCUIT, TAKE THAT CIRCUIT OUT OF SERVICE AS REQUIRED.

A. THE FREQUENCIES OF OSCILLATORS SHOULD BE ADJUSTED TO ±1% RANGE UNDER FIELD TEST CONDITIONS.

OSC NO.	FREQUENCY HZ	RANGE HZ
0	700	693-707
1	900	891-909
2	1100	1089-1111
3	1300	1287-1313
4	1500	1485-1515
5	1700	1683-1717

3. ADJUSTMENT OF FREQUENCY GENERATOR OUTPUT LEVEL:
   1. TAKE EQUIPMENT OUT OF SERVICE AS REQUIRED.
   2. CONNECT TERMINAL MF20 TO TERMINAL MF21 (THIS PROVIDES A CLOSURE BETWEEN THE GS TO GS1 LEADS).
   3. CONNECT A 275 OHM ±1% LOAD RESISTOR, INSULATED TO PREVENT SHORTS,) TERMINAL MF1 (GROUND) AND TO EACH OF THE FOLLOWING MF-TEST POINT TERMINALS LISTED (ONE AT A TIME), AND CONNECT A VACUUM TUBE VOLTMETER, VOLTOMYST W790B OR EQUIVALENT, FROM THE SAME TEST TERMINAL TO MF-1 (GROUND). PERFORM VOLTAGE TESTS ON EACH OSC PER STEPS 6-8 FOLLOWING STEPS 4 AND 5.

104. (CONT)

OSC NO.	FROM MF-TEST POINT TERMINAL	EACH TO MF-TERMINAL	POTENTIOMETER DESIG (STEP 6)
0	MF5	MF1	P0
1	MF6		P1
2	MF7		P2
4	MF8		P4
7	MF18		P7
10	MF19		P10

4. WHERE THE TERMINALS LISTED IN THE LEFT COLUMN BELOW ARE NOT ALREADY CONNECTED TO ONE OF THE VA,VB, OR VC TERMINALS IN THE RIGHT COLUMN, CONNECT ALL THOSE ON ON THE LEFT TO THE VB,MF22 TERMINAL * FOR A MEDIUM VOLTAGE.

V-DESIGNATION & MF-TERMINAL		V-DESIGNATION & MF-TERMINAL	
V0	MF25	(LOWERS VOLTAGE)	
V1	MF26	VA	MF21
V2	MF27	* VB	MF22
V4	MF29	VC	MF23
V7	MF30	(RAISES VOLTAGE)	
V10	MF31		

5. IF NOT ALREADY CONNECTED, CONNECT GROUND TO TERMINAL MF1 AND CONNECT TERMINAL MF3 TO A NEGATIVE 48.5-52.5 VOLT POTENTIAL. THIS APPLIES POTENTIAL ACROSS THE VOLTAGE DIVIDER CONSISTING OF RESISTORS D1,D2,D3,D4, AND D5.

6. ADJUST POTENTIOMETERS (PC)-(P10) LISTED IN THE RIGHT COLUMN OF TABLE OF TEST 3 SO THAT WITH THE 275 OHM LOAD RESISTOR, THE OUTPUT VOLTAGE IS 1.5 VOLTS FOR EACH OSCILLATOR.

7. MEASURE THE OUTPUT VOLTAGE AGAIN, SUBSTITUTING A 1100±1% OHM LOAD RESISTOR, INSULATED TO PREVENT SHORTS, FOR THE 275 OHM LOAD RESISTOR OF STEP 3, AND OBSERVE THE VOLTMETER INDICATIONS OF THE OUTPUTS ARE 0.15 VOLT OF EACH OTHER.

8. IF THE OUTPUTS ARE NOT WITHIN LIMITS, READJUST TAPS VA,VB, AND VC BY RAISING OR LOWERING THE VOLTAGE TO MEET THE REQUIREMENTS OF STEP 7 BY REMOVING THE LEAD ON TERMINAL MF22 AND CONNECTING IT TO THE VC TERMINAL MF23 TO RAISE THE VOLTAGE, OR TO THE VA TERMINAL MF21 TO LOWER THE VOLTAGE. CONTINUE THIS PROCEDURE AS REQUIRED, BY READJUSTING THE TAPS VA,VB, AND VC UNTIL THE OUTPUTS ARE WITHIN THE 0.15 VOLTS OF EACH OTHER.

C. TEST MEASUREMENT OF THE FREQUENCY GENERATOR OUTPUT LEVEL.
   1. MEASURE THE OUTPUT VOLTAGE FOR EACH OSCILLATOR WITH THE 275 OHM LOAD RESISTOR CONNECTED TO THE OSCILLATOR OUTPUT FROM THE TEST POINT TERMINALS MF5,MF6,MF7,MF8, MF18, OR MF19 OF EACH OSCILLATOR BEING TESTED TO GROUND (USING THE PROCEDURE OF TEST B3). THESE READINGS SHOULD BE 1.5 ± 0.25 VOLTS. IF NOT, READJUST THE TAPS VA,VB, AND VC IN ACCORDANCE WITH THE ADJUSTMENT PROCEDURES (B6, B7, AND B8) UNTIL THE READINGS ARE WITHIN TOLERANCE.

105. FOR MANUFACTURE OR WHEN FIELD REPLACEMENTS OF TRANSFORMERS OR CAPACITORS OF THE FREQUENCY GENERATOR OF APP FIG. 1 ARE MADE:

A. THE INDIVIDUAL OSCILLATORS SHOULD BE ADJUSTED AS SPECIFIED IN NOTE 104.

B. THE FREQUENCY OF EACH OSCILLATOR SHOULD BE TESTED BY USING A LOAD RESISTOR OF 1100 OHMS CONNECTED BETWEEN THE OUTPUT TERMINAL (MF9,MF10,MF11,MF13,MF14 OR MF15 FOR OSCILLATOR 0,1,2,4,7, OR 10 RESPECTIVELY) AND GROUND (MF1 TERMINAL). CONNECT EITHER A BERKLEY EPUT METER, OR A HEWLETT PACKARD 521C METER, EITHER WITH A 10 SECOND GATE, OR A 72A FREQUENCY METER OR EQUIVALENT ACROSS THE LOAD RESISTOR (INSULATE AGAINST SHORTS). CONNECT TERMINAL MF20 TO MF21. THE FREQUENCY OF EACH OSCILLATOR SHOULD MEET THE LIMITS SPECIFIED IN THE FOLLOWING TABLE. TRIMMER CAPACITORS, DESIGNATED (CA-) CAN BE ADDED (IN PARALLEL TO THE (C)-CAPACITORS) TO LOWER THE FREQUENCY. THE APPROXIMATE CHANGE FOR EACH VALUE OF TRIMMER CAPACITOR IS GIVEN IN THE FOLLOWING TABLE.

105. (CONT)

OUTPUT TERMINAL	OSCILLATOR NO.	HZ	LIMITS HZ	FOR FREQUENCY WITHOUT TRIMMER, BETWEEN LIMITS OF:	ADD TRIMMER (CA-) VALUE (PF) OF:
MF9	0	700	698-705	705-708	100
				708-712	196
MF10	1	900	897-906	906-911	100
				911-915	147
				915-916	196
MF11	2	1100	1097-1108	1108-1112	100
				1112-1115	147
				1115-1119	196
				1119-1125	237
MF13	4	1300	1295-1309	1309-1313	51.1
				1313-1319	100
				1319-1325	147
				1325-1330	196
				1330-1335	237
MF14	7	1500	1495-1510	1510-1519	100
				1519-1525	147
				1525-1531	196
				1531-1535	237
MF15	10	1700	1695-1712	1712-1718	51.1
				1718-1728	100
				1728-1737	147
				1737-1739	196

106. (MFR DISC) IN EXISTING CIRCUITS IN WHICH THE (P) POTENTIOMETERS ARE 1500 OHMS (Z OPTION) THEY NEED ONLY BE REPLACED BY 2500 OHM POTENTIOMETERS (Y OPTION) IF SUFFICIENT REGULATION OF THE OUTPUT CANNOT BE OBTAINED.

107. WHEN AN 11A TRANSISTOR IS REPLACED BY A 12E TRANSISTOR, ALL 6 11A TRANSISTORS SHALL BE REPLACED. (D1) AND (D4) RESISTORS SHALL BE REPLACED REMOVING "U" OPTION AND INSTALLING Y OPTION. IF IT IS DIFFICULT TO MEET THE 0.25 VOLT MAXIMUM DIFFERENCE REQUIREMENT SPECIFIED IN NOTE 104, THE ASSOCIATED POTENTIOMETER SHALL BE CHANGED FROM Y OPTION TO R OPTION.

108. IN CERTAIN OFFICES WHERE SOME TRUNKS OPERATE AT 0DB TRMSN LEVEL PT AND OTHERS AT -2DB TRMSN LEVEL PT AND WHERE, IN ADDITION, HIGH LOSS TRUNKS ARE USED OUTGOING TO 1A OR 4A OFFICES IT IS NECESSARY TO PROVIDE -8DBM TONE LEVEL OPTION V, RATHER THAN -8DBM TONE LEVEL OPTION W, UNLESS THE TELEPHONE COMPANY SPECIFIES OTHERWISE THE -8DBM TONE LEVEL WILL BE PROVIDED.

109. WHEN A HIGH-FREQUENCY RINGING OCCURS IN THE OUTPUT OF AN INDIVIDUAL OSCILLATOR, OPTION Q SHOULD BE PROVIDED. THIS OPTION IS ALWAYS PROVIDED AFTER DATE OF INTRODUCTION INTO MANUFACTURE.

110. PRIOR TO ISSUE 13B, THE CAPACITORS

DESIG	WERE: (MD)	CHANGED TO ON 13B (STD)
C0	KS-13368,L14,L26 10,000	KS-16742,L41 10,000
C2	KS-13368,L13,L52 5,900	KS-16742,L42 5,930
C4	KS-13368,L13,L27 7,430	KS-16742,L42 7,410
C7	KS-13368,L13,L32 5,200	KS-16742,L42 5,170
C10	KS-13368,L13,L32 4,500	KS-16742,L42 4,480
(CA0.1, 2,4, 7,10)	KS-14056,L1,L34 51	KS-16958,L34 51.1
	KS-14056,L1,L34 100	KS-16958,L34 100
	KS-14056,L1,L34 150	KS-16958,L34 147
	KS-14056,L1,L34 200	KS-16958,L34 196
	KS-14056,L1,L34 240	KS-16958,L34 237
(CB0.1, 2,4, 7,10)	594G 0.01MF	KS-20977,L4 0.01MF

ISSUE 13B

MULTIFREQUENCY SIGNAL GENERATOR CIRCUIT

SD-95867-01-01

BELL TELEPHONE LABORATORIES INCORPORATED

DRAWING SIZE 6S

TCI Library www.telephonecollectors.info

EQUIPMENT NOTES:

201. (A) WHERE POSSIBLE, MOUNT AND FUSE THE MF SIGNAL GENERATOR ON THE SAME FRAME AS ITS ASSOCIATED CIRCUIT. IF NECESSARY, MOUNT GENERATOR ON A RELAY RACK AND FUSE AT A FUSE PANEL WHICH MAY BE LOCATED ON THE RELAY RACK OR ON THE FRAME MOUNTING THE ASSOCIATED CIRCUIT OR ON THE FUSE BAY.

(B) WHEN THE GENERATOR IS MOUNTED ON THE SAME FRAME AS ITS ASSOCIATED CIRCUIT, USE 24 GAUGE WIRE FOR ALL LEADS THAT STAY WITHIN THE FRAME.

(C) ON ISSUE 100 OR LATER, IF THE GENERATOR MUST BE FUSED AT A DIFFERENT FRAME, THE BATTERY AND GROUND LEADS SHOULD BE RUN TOGETHER AS A TWISTED PAIR TO THE FUSE PANEL TO MINIMIZE NOISE PICKUP.

(D) (MFR DISC) WHEN THE GENERATOR IS MOUNTED ON A RELAY RACK, KEEP CABLE RUN TO ASSOCIATED CIRCUIT TO NOT MORE THAN 20 FEET BETWEEN FRAMES. (REPLACED BY NOTE 201E)

(E) WHEN ANY OF THE FOLLOWING LEADS ARE RUN IN SWITCHBOARD CABLE, USE THE TYPE OF WIRE INDICATED FOR THE LENGTHS SHOWN IN THE TABLE:

LENGTH	LEADS	TYPE OF WIRE	REMARKS
0-100 FEET	0,1,2,4,7,10 OR T0,T1,T2,T4,T7,T10	22 GAUGE PAIRED WIRE IN CABLE	USE ONE PAIR FOR EACH LEAD, GROUNDING ONE WIRE OF THE PAIR AT THE GENERATOR END ONLY
	BAT, GRD, GS, GS1		
100-150 FEET	0,1,2,4,7,10 OR T0,T1,T2,T4,T7 T10	22 GAUGE SHIELDED WIRE IN CABLE (F)	EACH LEAD MUST BE SEPARATELY SHIELDED. EACH SHIELD MUST BE GROUNDED AT THE GENERATOR END ONLY
	BAT, GRD, GS, GS1	20 GAUGE PAIRED WIRE	

INFORMATION NOTES:

301. UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALVES ARE IN PICOFARADS (SAME AS FORMER MICRO MICRO FARADS), VALVES PRECEDED BY THE SYMBOL +(PLUS) OR -(MINUS) ARE IN VOLTS.

ISSUE 13B

MULTIFREQUENCY SIGNAL GENERATOR CIRCUIT

SD-95867-01-D2

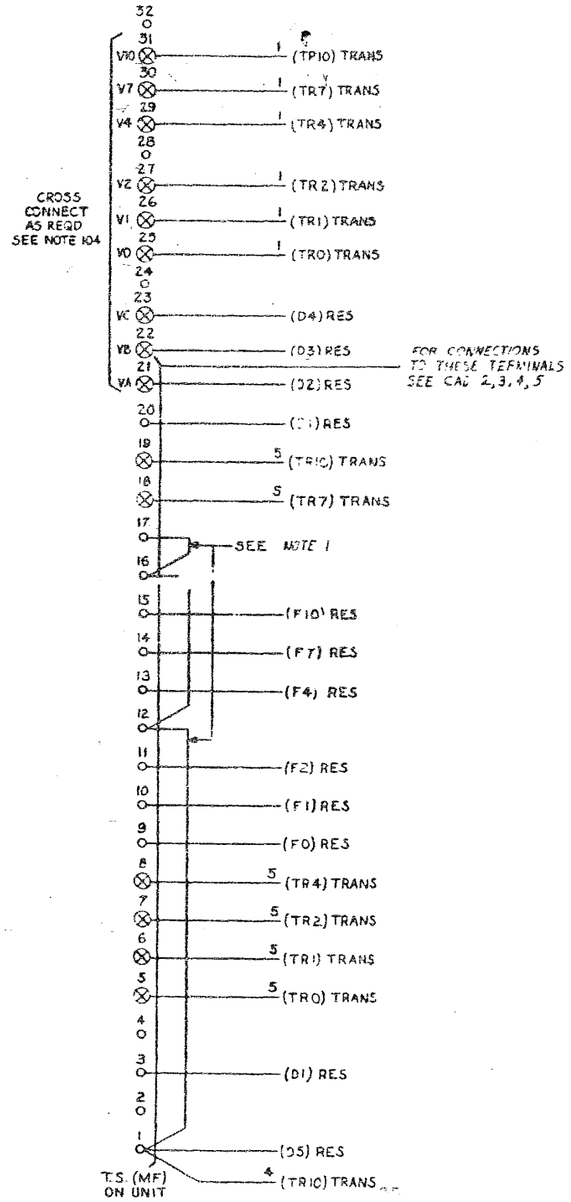
BELL TELEPHONE LABORATORIES INCORPORATED

CHRG. MARK 6S

TCI Library www.telephonecollectors.info

CAD 1

(FOR APP FIG. 1)



NOTES:
1. THESE STRAPS ADDED ON ISSUE 10D TO PROVIDE FOR LONGER LENGTH OF OUTPUT LEADS.

CAD 2

(WIRING REQUIRED WHEN GENERATOR IS MOUNTED ON SAME FRAME AS ITS CONNECTING CIRCUIT)

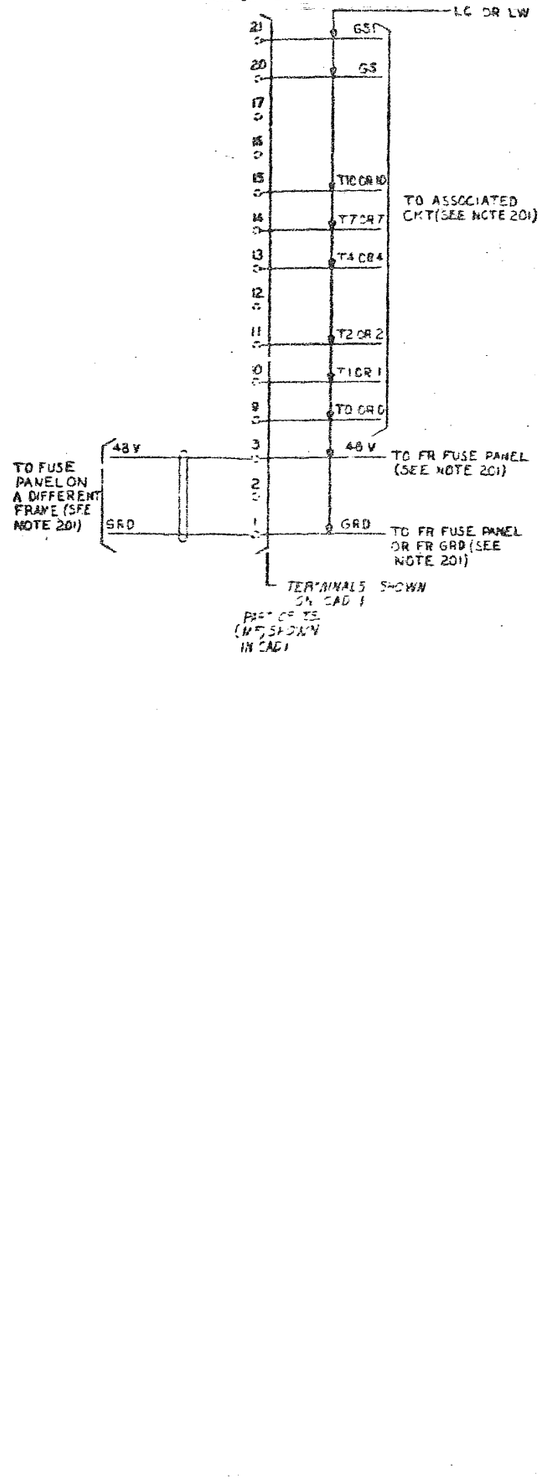


TABLE A

CONNECTING CKT	OPTION
AUTO. - ROH REG & SOR TEST, SOR TEST, REG TEST, OR PAD CKT AND OTHER TEST CKT USED TO TEST RF RECEIVERS	R
LINE CONCENTRATOR NO. 1A RF SIG CKT	
PULSE CONVR & REG AND RF PULSING CKT FOR SERV OBSERVING	
SERV OBSERVING CKT AND SERV OBSERVING TEST CKT	
CALLS WAITING CKT	M
RF OUTPULSING SOR & REG IN CROSSBAR TANDEM, AND SXS CAMA OFFICES	
TOLL TESTBOARD NO. 17B, 17E, 18B AND 19A TOLL TEST UNIT NO. 5B	
CAMA POS,POS SEL,POS LOOP AND TRAFFIC SERV POS RF KEYSET CKT	
SWBD OPERATING AS TOLL SWITCHBOARDS ONLY	
TRK TEST CKT IN CROSSBAR NO.5 OPERATING BOTH CLASS 5 AND CLASS 4 OR HIGHER AND CROSSBAR TANDEM.	
NO. 1 CROSSBAR ROTL OPERATING THROUGH OG TRUNKS TO A CLASS 5 AND A CLASS 4 OR HIGHER OFFICE.	
TRK TEST CKT IN CROSSBAR NO.5 OPERATING CLASS 5, CROSSBAR NO.1, PANEL AND LOCAL SXS OFFICES	V
ANI OUTPULSER CKT	
ANI LINE VERIFICATION CKT	
MISC CKT FOR LINE MESSAGE REG RACK	
RF OUTPULSING SOR IN CROSSBAR NO. 1, PANEL, LOCAL SXS OFFICES, AND SXS COMMON CONTROL CKT	
IN-BAND CONTROL CKT	
LOCAL TEST DESK OR CABINET NO. 3 OR 4X	
OUTPULSER IN SXS NO. 1 WITH AMA	
MANUAL OUTGOING TRK TEST FRAME TEST CKT FOR SXS OFFICE	
SWBD OPERATING AS DSA SWITCHBOARDS ONLY	
AUTOMATIC OUTGOING TRUNK TEST FRAME FOR SXS OFFICE	
NO 1 CROSSBAR ROTL OPERATING THROUGH OG TRUNKS TO A CLASS 5 OFFICE ONLY	
OGT INCPT FOR SXS OFFICE	
TRK TEST CKT IN TOLL 4A OR 4M OFFICES	S
RF OUTPULSING SOR & REG IN TOLL 4A OR 4M OFFICES	
TOLL SWBD NO. 5	
TOLL TESTBOARD NO. 17C AND 17D	
SWITCHBOARDS OPERATING AS COMBINED TOLL AND DSA SWITCHBOARDS	SEE NOTE 108

DRAWING ISSUE

1	
2-D	
3B	
4B	
5D	
6D	
AR	
8D	
9D	
10D	

MULTIFREQUENCY SIGNAL GENERATOR CIRCUIT (2)

BELL TELEPHONE LABORATORIES INCORPORATED

65

ISSUE 10D

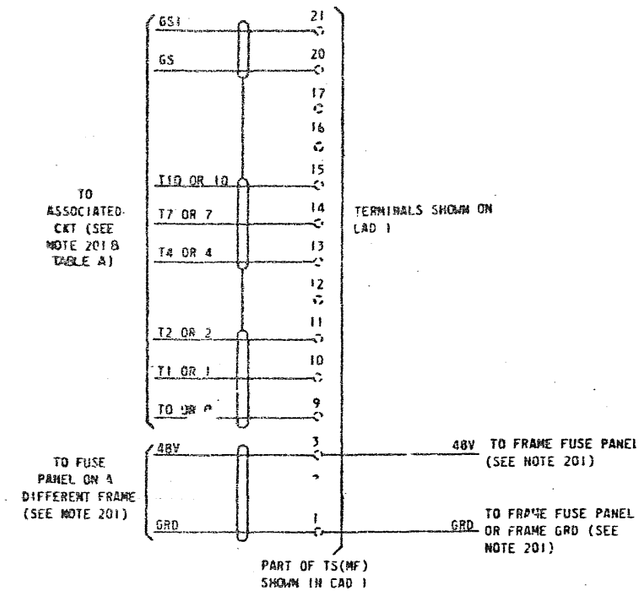
SD-95867-01-G1

SD-95867-01-G1

TCI Library www.telephonecollectors.info

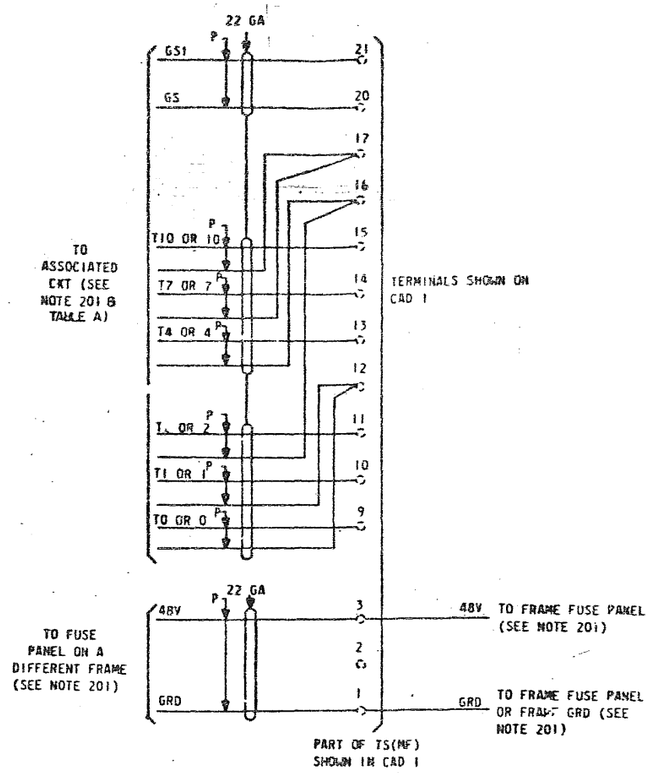
CAD 3 (MFR DISC)

(WIRING REQD WHEN GENERATOR IS ON DIFFERENT FRAME FROM ITS ASSOCIATED CIRCUIT AND OUTPUT LEADS ARE 20 FEET OR LESS)



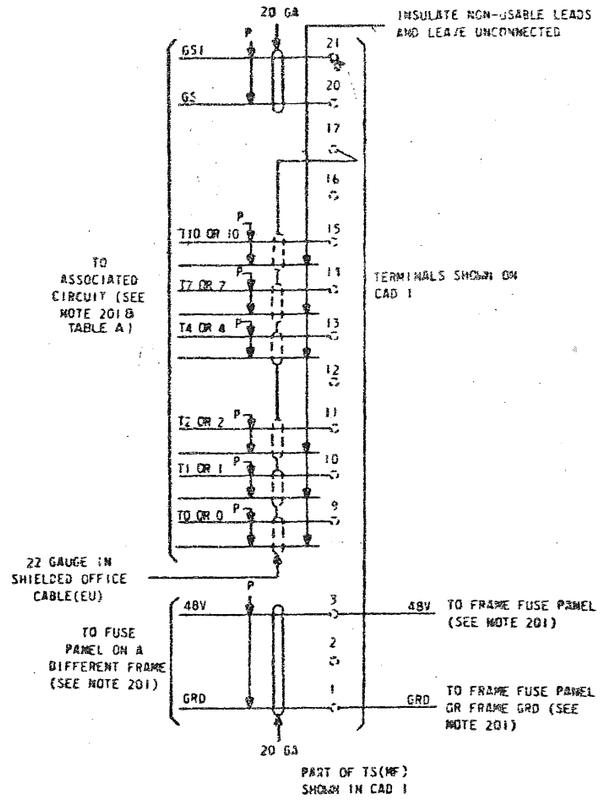
CAD 4

(WIRING REQUIRED WHEN GENERATOR IS ON DIFFERENT FRAME FROM ITS ASSOCIATED CIRCUIT AND OUTPUT LEADS ARE 100 FEET OR LESS)



CAD 5

(WIRING REQUIRED WHEN GENERATOR IS ON DIFFERENT FRAME FROM ITS ASSOCIATED CIRCUIT AND OUTPUT LEADS ARE BETWEEN 100 & 150 FEET)



DRAWING ISSUE 100

ISSUE 13B

MULTIFREQUENCY SIGNAL GENERATOR CIRCUIT (2)

SD-95867-01-02

BELL TELEPHONE LABORATORIES INCORPORATED 65

SD-95867-01-02

TCI Library www.telephonecollectors.info