REVISIONS				
SYM	DESCRIPTION	REVISED BY	DATE	APPROVED

CHANNEL A

R15 6.8K ±5%
R16 6.8K ±5%
R17 1K
R2 6.8K ±5%
R4 680 ±5%
R5 330 ±5%
Q1 Q2 Q3 Q4 ITI22 DUAL
R14 10K
R19 10K
R13 1K
R18 1K
R6 330 ±5%
R20 22K
Q5 Q6 ITI22 DUAL
C1 4.7μf TANT
R8 680 ±5%
R9 3.3K ±5%
R10 1K
R11 3.3K ±5%
R12 680 ±5%
R24 20K
R28 3.3K ±5%
R27 680 ±5%
R22 3.3K ±5%
C2 .1μf
Q7 2N3565
R7 2.2K
R1 1.5K ±5%
R3 680 ±5%
R21 100K
R25 1.5K
R26 3.3K ±5%
R29 33K ±5%
C3 4.7μf TANT.
R38 47
Q8
R36 47
R37 47
Q9
Q10
R31 220
C4 56μf TANT.
R35 220
C5 56μf TANT.
R30 10K
R32 1.5K ±5%
C6 .0022μf
C7 .0022μf
R33 1.5K ±5%
R34 10K
R28 100K
R39 6.8K ±5%
R40 680 ±5%
R41 2.2 1/2W
C8 15μf TANT.
(RED) +15V
(BLACK) 0V
J1 SIGNAL IN 1
J2 SIGNAL IN 2
J3 SIGNAL OUT 1
J4 SIGNAL OUT 2

CHANNEL B

R66 6.8K ±5%
R67 6.8K ±5%
R8 1K
R53 6.8K ±5%
R55 680 ±5%
R33 680 ±5%
Q21 Q22 Q23 Q24 ITI22 DUAL
R45 10K
R70 10K
R64 1K
R69 1K
R56 680 ±5%
R71 22K
Q25 Q26 ITI22 DUAL
C18 4.7μf TANT.
R59 680 ±5%
R60 3.3K ±5%
R61 1K
R62 3.3K ±5%
R63 680 ±5%
R74 3.3K ±5%
R76 680 ±5%
R73 3.3K ±5%
C19 .1μf
Q27 2N3565
R58 2.2K
R52 1.5K ±5%
R54 680 ±5%
R72 100K
R75 1.5K ±5%
R77 3.3K ±5%
R80 33K ±5%
C20 4.7μf TANT.
R89 47
Q28
R87 47
R88 47
Q29
Q30
R82 220
C21 56μf TANT.
R85 220
C22 56μf TANT.
R81 10K
R82 1.5K ±5%
C23 .0022μf
C24 .0022μf
R84 1.5K ±5%
R85 10K
R79 100K
R90 6.8K ±5%
R91 680 ±5%
R92 2.2 1/2W
C24 15μf TANT.
(RED) +15V
(BLACK) 0V
J5 SIGNAL IN 1
J6 SIGNAL IN 2
J7 SIGNAL OUT 1
J8 SIGNAL OUT 2

4. LAST REF. DES. USED ARE R92, Q30 + C25
5. OMITED R42-R51 Q11-Q20 + C9-C17
4. ALL JACKS ARE MOUNTED ON FRONT PANEL
3. ALL TRANSISTORS ARE 2N4916
2. ALL RESISTORS ARE IN OHMS ±10%, 1/4 WATT
1. ____ SAMPLES ON FIRST ARTICLE PARTS MUST BE APPROVED BY CBS ENGINEERING BEFORE STARTING PRODUCTION.

NOTES: UNLESS OTHERWISE SPECIFIED

NEXT ASSY NO. | USED ON

UNLESS OTHERWISE SPECIFIED
TOLERANCES
FRACTIONS ±1/32
.X ± .019
.XX ± .010
.XXX ± .005
ANGLES ± ½°
FRACTIONAL WOOD ±1/16
HOLES - COPED +.005 -.000
HOLES - DRILLED & PIERCED +.003 -.000
STRAIGHTNESS
UNMARKED ANGLES ARE 90°
ALL DIMENSIONS ARE IN INCHES
DO NOT SCALE DRAWING

DWN	DAN VIGIL	11/5/70
CHK		11/6/70
APPD M.B.		/ /
APPD E.E.		11/6/70
MATERIAL		
FINISH, COLOR		

CBS MUSICAL INSTRUMENTS FULLERTON, CALIFORNIA

DWG. TITLE
SCHEMATIC
DUAL RING MODULATOR
NO. 111

PEL. NO.	SIZE	DWG. NO.	REV
	D	140301	—
SCALE ¾	MODEL SYNTHESIZER		SHEET 1 OF 1