

<u>APPLICATION</u>	<u>SERVICE REF. NO.</u>	<u>PART NO.</u>
<b>AM/FM STEREO</b>		
PONTIAC A, B, F		
OLDSMOBILE A, B, C, E		
BUICK A, B, C, E	10BETR1	16012700
CADILLAC C, D,	16CETR1	16012816
CADILLAC E, K	16KETR1	16012896
<b>AM/FM/ST CASSETTE</b>		
PONTIAC F		
CHEVROLET Y	12FECT1	16018182
OLDSMOBILE A, B, C, E		
BUICK A, B, C, E	10BECT1	16012750
CADILLAC C, D	16CECT1	16012806
CADILLAC E, K	16KECT1	16012876
<b>AM/FM/ST 8-TRACK</b>		
CHEVROLET Y		
OLDSMOBILE A, B, C, E		
BUICK A, B, C, E	10BETT1	16012760
CADILLAC C, D	16CETT1	16012826
CADILLAC E, K	16KETT1	16012886
<b>REMOTE CONTROL (LIMO)</b>		
CADILLAC D	16DETT1	16012836

# ETR ALIGNMENT

(Requires precision generator)

## AM

STEP	DISPLAY SETTING	GEN. FREQ. (MODULATED)	MONITOR	PROCEDURE
1 (OPT.)	540	260 KHz $\pm 260$ Hz	AUDIO	ADJUST T7 FOR MAXIMUM
2	530	—	ISLAND 60	ADJUST OSC. COIL, T6 FOR 1 VDC
3	1610	—	ISLAND 60	ADJUST OSC. TRIM., C121 FOR 9 VDC
4	REPEAT STEPS 2 AND 3 UNTIL VOLTAGES ARE 1.0 V + 0.00 V — .05 V AND 9.00 V + .25 V — 0.00 V			
5	600	600 KHz $\pm 1$ KHz	AUDIO	ADJUST T4 AND T5 FOR MAXIMUM
6	1400	1400 KHz $\pm 1$ KHz	AUDIO	ADJUST C104 AND C107 FOR MAXIMUM

## FM

STEP	DISPLAY SETTING	GEN. FREQ. (MODULATED)	MONITOR	PROCEDURE
1	87.7	—	ISLAND 3	ADJUST OSC. COIL L2 FOR 2 VDC
2	107.9	—	ISLAND 3	ADJUST OSC. TRIM C7 FOR 8 VDC
3	REPEAT STEPS 1 AND 2 UNTIL VOLTAGES ARE 2.0 V $\pm$ .05 V AND 8.0 V $\pm$ .1V			
4	98.1	98.1 MHz $\pm 1$ KHz	AUDIO	ADJUST T2 MIXER FOR MAXIMUM
5	98.1	98.1 MHz $\pm 1$ KHz	VOLTAGE ACROSS PINS 9 AND 10, DM111	ADJUST PHASE COIL FOR 0.00 V $\pm$ .1 V
6	87.7	87.7 MHz $\pm 1$ KHz	AUDIO	ADJUST T1 (RF) AND L1 (ANT.) FOR MAXIMUM
7	107.9	107.9 MHz $\pm 1$ KHz	AUDIO	ADJUST C19 (RF) AND C3 (ANT.) FOR MAXIMUM

## CLOCK FREQUENCY

STEP	DISPLAY SETTING	GEN. FREQ.	MONITOR	ADJUST
1	—	—	PIN 12 OF DM-81 WITH FREQ. COUNTER	TRIMMER OFF PINS 9, 10 (DM-81) FOR 10 KHz, $\pm$ .1 Hz

## DM-119

STEP	DISPLAY SETTING	GEN. FREQ. (MODULATED)	MONITOR	PROCEDURE
1*	—	—	—	CONNECT PIN 9 TO PIN 20
2	—	—	PIN 10	ADJUST R678 FOR 53.35 KHz (52.82 TO 53.88 KHz) AT ROOM TEMP.

\*14V APPLIED TO RADIO

# ALIGNMENT ETR

## STEREO AND/OR BLEND (DM-115)

STEP	GENERATOR	DISPLAY STEP	ADJUSTMENT	ACTION
1	—	—	TURN BLEND POT FULL (OFF) (CW) AS VIEWED FROM COPPER SIDE	CONNECT A 2.4K RESISTOR BETWEEN IS 2F AND PIN 16 (DM-115). CONNECT A 250 $\mu$ F CAP FROM PIN 15 (DM-111) TO GROUND.
2	—	—	—	CONNECT FREQUENCY COUNTER TO PIN 16 (DM-115)
3	—	—	VCO	ADJUST VCO POT UNTIL COUNTER READS 19.000 KHZ $\pm$ .050 KHZ
4	—	—	—	REMOVE 2.4K RESISTOR AND 250 $\mu$ F CAPACITOR
5	STEREO SIGNAL 5000 $\mu$ V., ONE CHANNEL MODULATED @ 98.1 MHZ	98.1	SEPARATION	TUNE GENERATOR TO RADIO. TURN SEPARATION POT FOR MINIMUM OUTPUT ON UNMODULATED CHANNEL
6	SAME	98.1	—	OBTAIN ODB REFERENCE ON MODULATED CHANNEL
7	REDUCE OUTPUT TO 40 $\mu$ V.	98.1	BLEND	TURN BLEND POT FOR —1DB DROP ON MODULATED CHANNEL

## STOPPING SENSITIVITY DM-111

1	98.1 MHZ @ 15 $\mu$ V — NO MODULATION	98.1	THRESHOLD	TUNE GENERATOR TO RADIO AND TURN THRESHOLD ADJUST POT. FOR 0.00V $\pm$ .02V ACROSS PINS 6 AND 8, DM-111
---	--	------	-----------	--

## STOPPING SENSITIVITY DM-42

1	—	—	TURN R110 FULLY CCW AS VIEWED FROM COPPER SIDE	PIN 21 OF THE DM-42 SHOULD BE LOW
	600KHZ $\pm$ 1KHZ @ 5 $\mu$ V	600	R110	TURN R110 SLOWLY CLOCKWISE UNTIL PIN 21 GOES HIGH

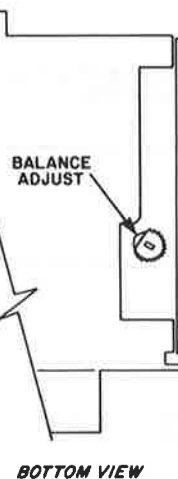
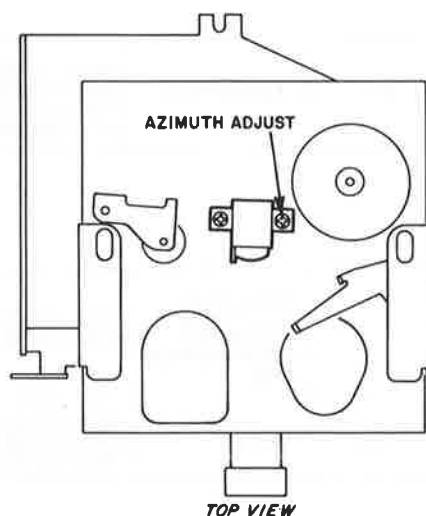
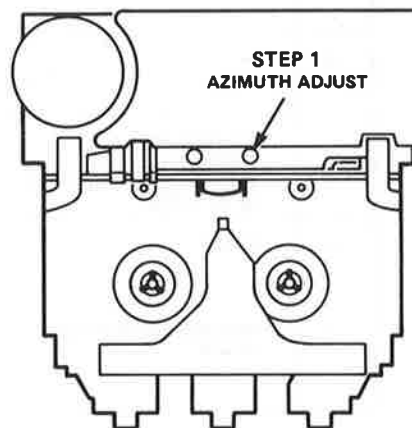
# ALIGNMENT

STEP	TEST TAPE SIDE	VOLUME OR FRONT-REAR	EQUIPMENT	ADJUSTMENT
<b>AZIMUTH (HIGH FREQUENCY) ADJUSTMENT</b>				
1	2	VOLUME - FULL & FRONT-REAR CON- TROL ON FRONT (CW)	AC VTVM ACROSS EITHER FRONT SPEAKER	PEAK AZIMUTH ADJUSTMENT SCREW FOR MAXIMUM 8KHz TONE
<b>BALANCE ADJUSTMENT</b>				
2	2	VOLUME - FULL & BALANCE - CENTER	AC VTVM TO EACH CHANNEL	ADJUST BALANCE CONTROL FOR EQUAL OUTPUT FROM EACH CHANNEL
<b>MOTOR SPEED CHECK</b>				
3	1			TIME 1KHz BEEPS (58-60 SECOND INTERVALS). IF OUTSIDE LIMITS - REPLACE MOTOR.

Test Tape J-23724 is available from:  
**Kent-Moore Corporation, Tool Division**  
 29784 Little Mack, Roseville, Michigan 48066  
 Telephone: (313) 774-9500

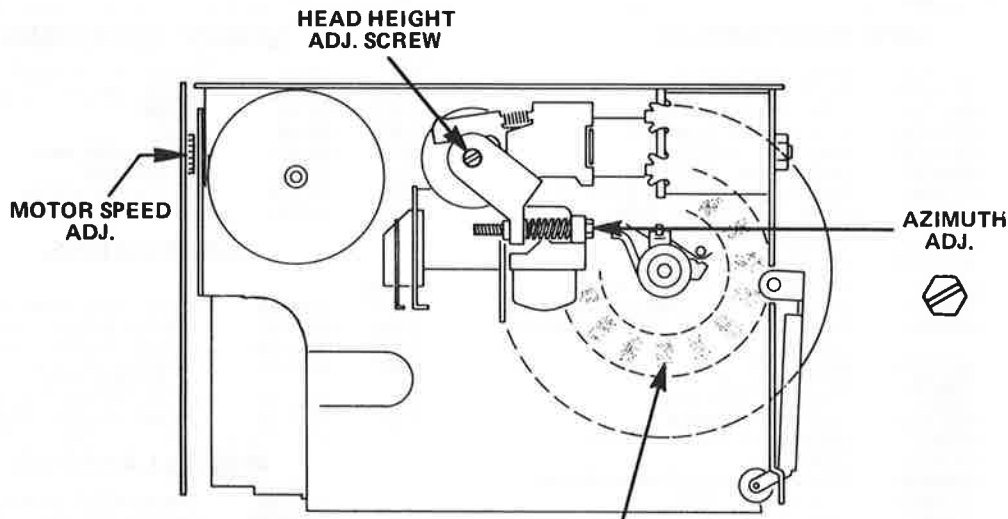
**Side 1: Beep at 60 second intervals  
 for motor speed check.**

**Side 2: 8 KHz tone for azimuth and  
 balance control adjustment.**



# ALIGNMENT

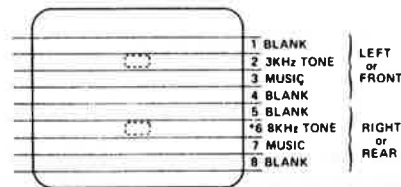
8-TRACK



UNDER FLUORESCENT LIGHT,  
60Hz STROBE PATTERN SHOULD  
STAND STILL.

Test Tape J-22683-01 is available from:  
**KENT MOORE TOOL DIVISION**  
29784 LITTLE MACK  
ROSEVILLE, MICHIGAN 48066  
313/774-9500

RCA Test tape 321 is also recommended  
especially for head height.



\*TRACK 6 HAS 1KHz "BEEP"  
AT 60 SEC INTERVALS

TEST TAPE PROGRAM

HEAD HEIGHT (CROSSTALK)		
USING J-22683:	PROGRAM 1,	FULL VOLUME – TURN SCREW UNTIL TONE IS HEARD, THEN BACK IT OFF UNTIL TONE DISAPPEARS.
	PROGRAM 4,	FULL VOLUME – SHOULD BE QUIET
USING RCA 321:	PROGRAM 2,	MODERATE VOLUME – ADJUST FOR NULL
AZIMUTH (HIGH FREQUENCY)		
EITHER TAPE:	PROGRAM 2,	HIGH VOLUME – MONITOR 8KHz TONE, ADJUST FOR MAXIMUM, RE-CHECK HEAD HEIGHT.
MOTOR SPEED ADJUSTMENT (DECK IN UPRIGHT POSITION)		
ANY GOOD TAPE:	WITH A FLUORESCENT LIGHT POSITIONED NEAR THE FLYWHEEL, ADJUST MOTOR SPEED UNTIL THE 60Hz STROBE PATTERN IS MOTIONLESS OR DRIFTING SLIGHTLY CCW (FAST)	

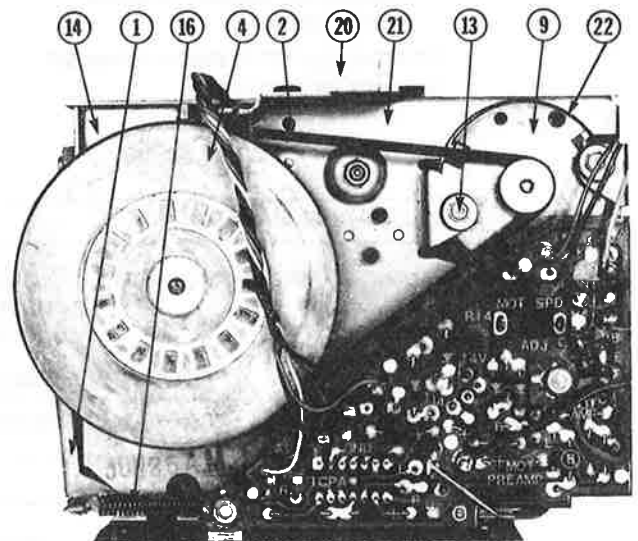
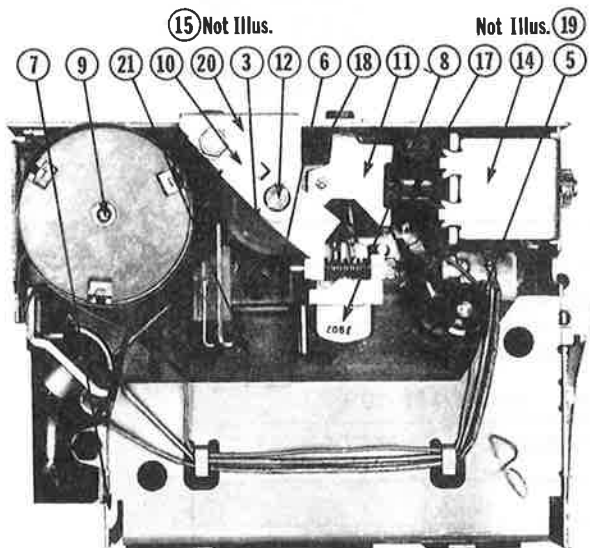
# 8-TRACK PARTS LIST

Illus. No.	Service No.	Description
<b>TAPE MECHANICAL</b>		
1	16001505	ARM, CART. LOCK
2	16008576	BELT, DRIVE
3	7896704	CAM, TRACK CHANGE
4	16011725	FLYWHEEL & BEARING
5	16011726	WASHER, THRUST
6	16006297	GUIDE ASM., TAPE
7	7896694	GUIDE PLATE, CART., PLASTIC
8	16010767	HEAD & CARRIAGE ASM. INCL. CABLE
9	16011269	MOTOR
10	16011747	PAWL, CAM
11	9349291	PLUNGER & RATCHET ASM.
12	7896705	SCREW, HEAD HEIGHT ADJ.
13	1224435	SCREW PACKAGE, MOTOR MOUNT (6/PKG.)
14	16010175	SOLENOID
15	7896706	SPRING, CAM
16	7898886	SPRING, LOCK ARM
17	16003539	SPRING, PLUNGER
18	1223673	SPRING, RATCHET (10/PKG.)
19	1224227	STRIPPER
20	16009930	BRACKET, MOUNTING AND CAM
21	16009568	PLATE ASM., CART.
22	7310401	SHIELD, MOTOR
<b>CONTROLS</b>		
R400	16005034	POT, MOTOR SPEED, 5K

Illus. No.	Service No.	Description
<b>SEMICONDUCTORS</b>		
D401	DS-97	DIODE, TACH. RECT.
D402	DS-159	DIODE, ZENER, 6.2 VOLT
D403	DS-79	DIODE
D404	DS-79	DIODE
Q21	DS-831	MOTOR PRE-AMP
Q22	DS-66	MOTOR AMP
Q23	DS-513	MOTOR CONTROL
U22	DM-50	IC, PRE-AMP
<b>CAPACITORS</b>		
C401 and		
C402	7288048	470 PF, 10%, 100V, Y5S
C405	9348339	15 MFD, 3 VOLT, ELECTROLYTIC
C406	9348339	15 MFD, 3 VOLT, ELECTROLYTIC
C407	9349025	100 MFD, -10, + 250, 16 VOLT, ELECTROLYTIC
C411	7932103	2 MFD, 10 VOLT, ELECTROLYTIC
C421	7932103	2 MFD, 10 VOLT, ELECTROLYTIC
<b>MISCELLANEOUS</b>		
	1224709	TRANSISTOR MOUNTING PKG.
S4	16006758	SWITCH, R/T (ON CIRCUIT BOARD)
J400	16009446	CONNECTOR ASM., 5-WIRE, TO AUDIO BOARD

\*PARTS FIRST USED IN 1981

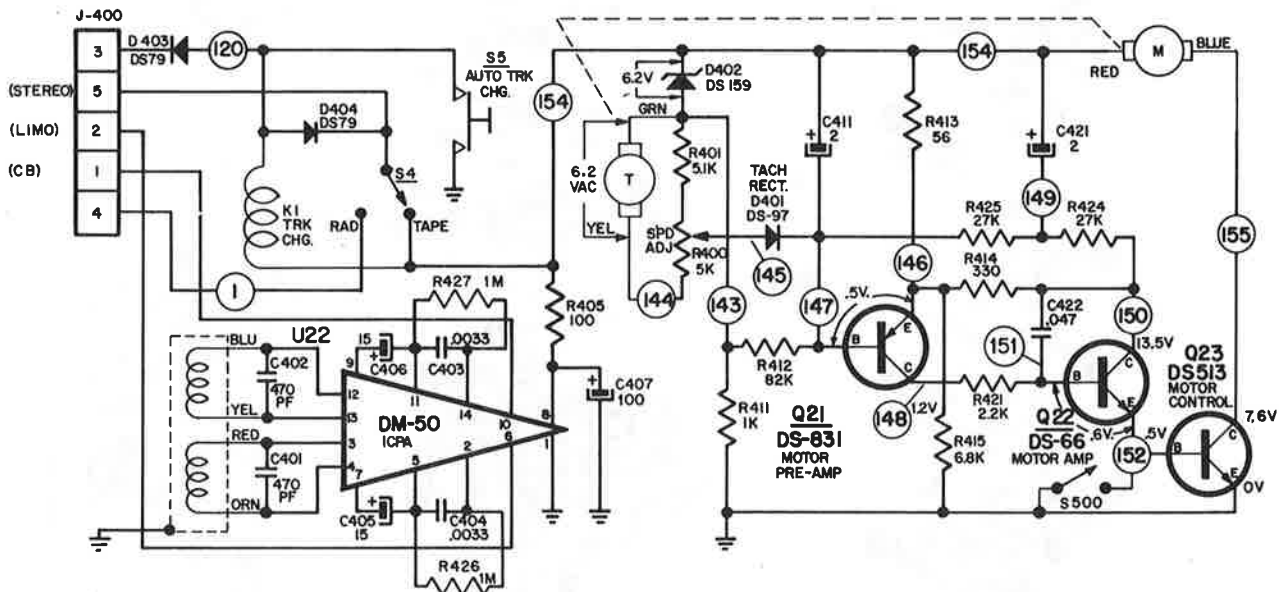
## PARTS BREAKDOWN



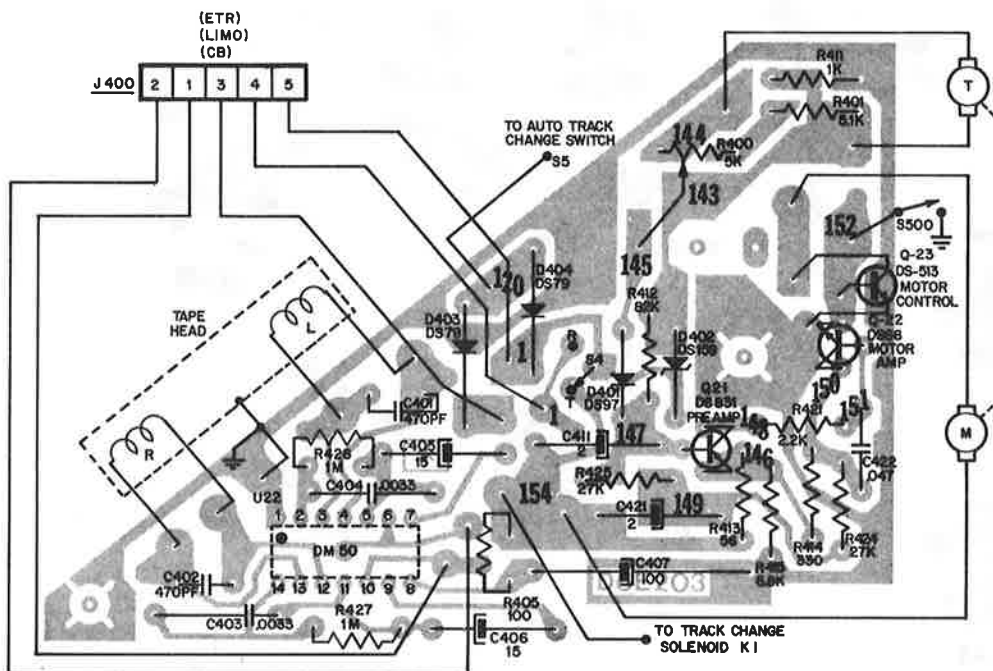
# 8-TRACK TAPE

ETR/8-TRACK TAPE

## SCHEMATIC



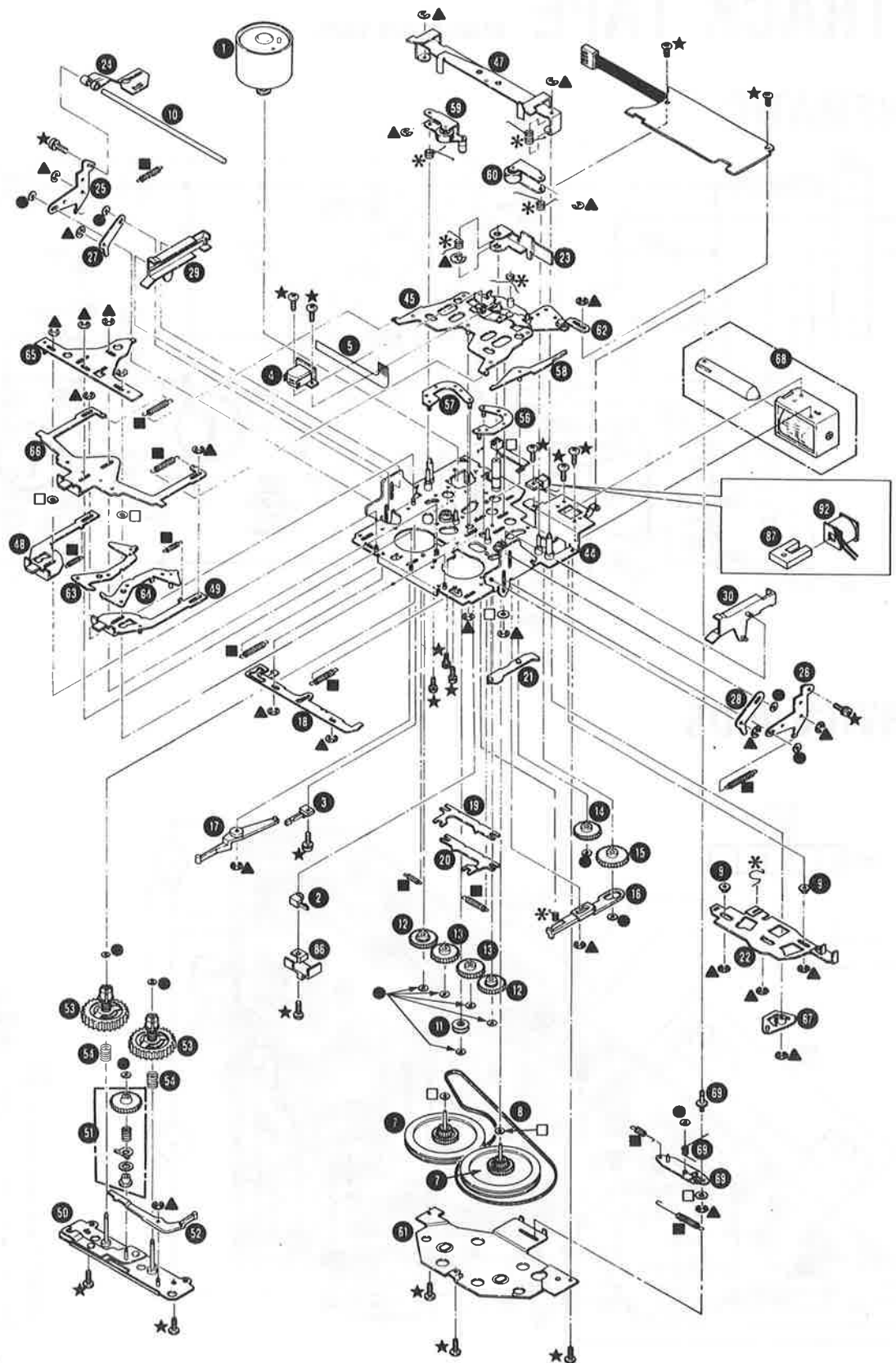
## SERVICE AIDS



U22  
DM-50  
ICPA

PIN	VOLTAGE
1	0V
2	0V
3	.6V
4	.6V
5	2.0V
6	1.4V
7	3.2V
8	13.2V
9	3.3V
10	1.5V
11	2.1V
12	.6V
13	.6V
14	0V

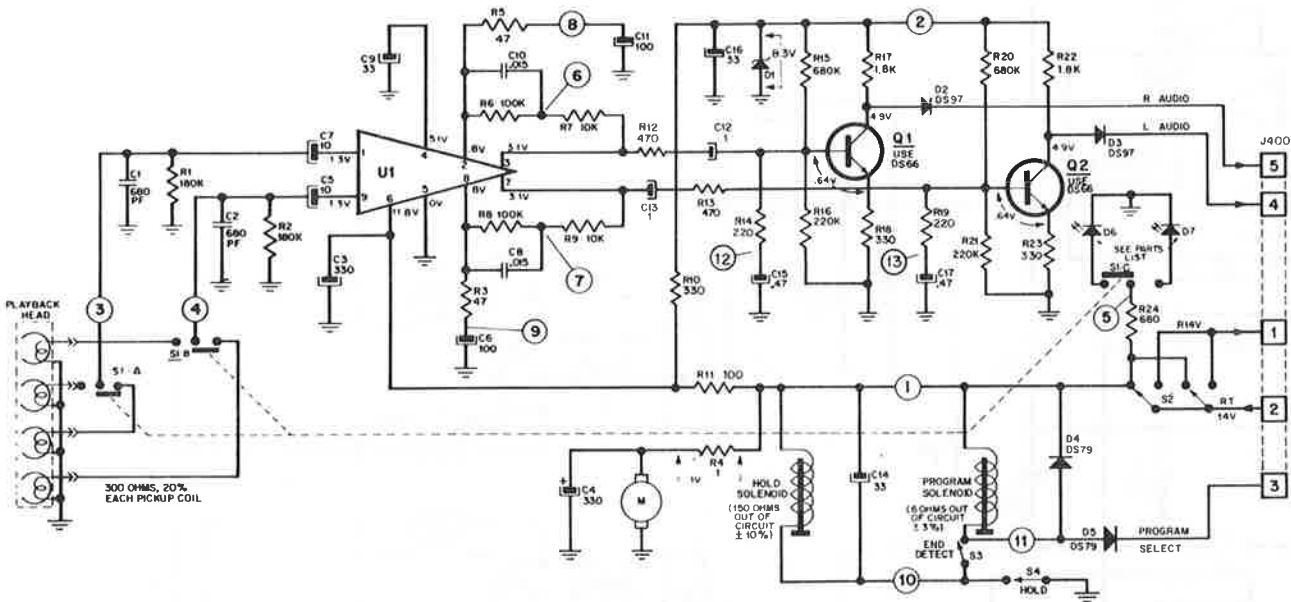
# PARTS BREAKDOWN



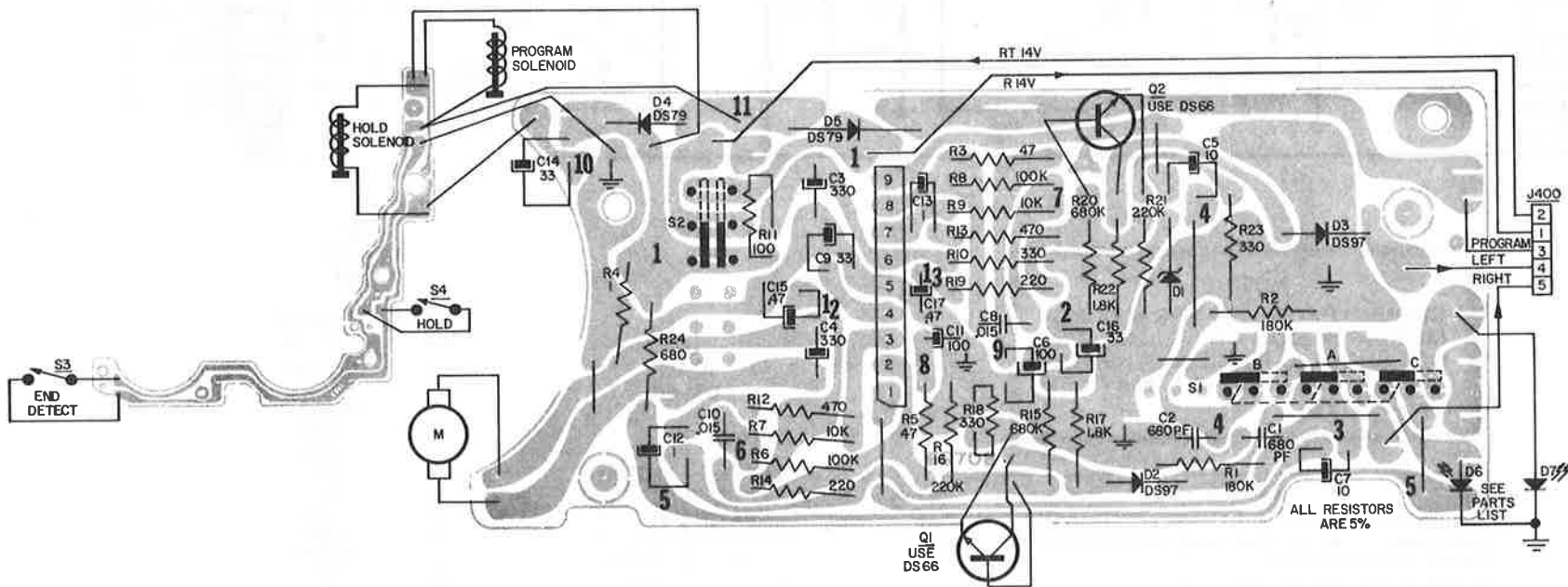


# CASSETTE TAPE

## SCHEMATIC



## SERVICE AIDS



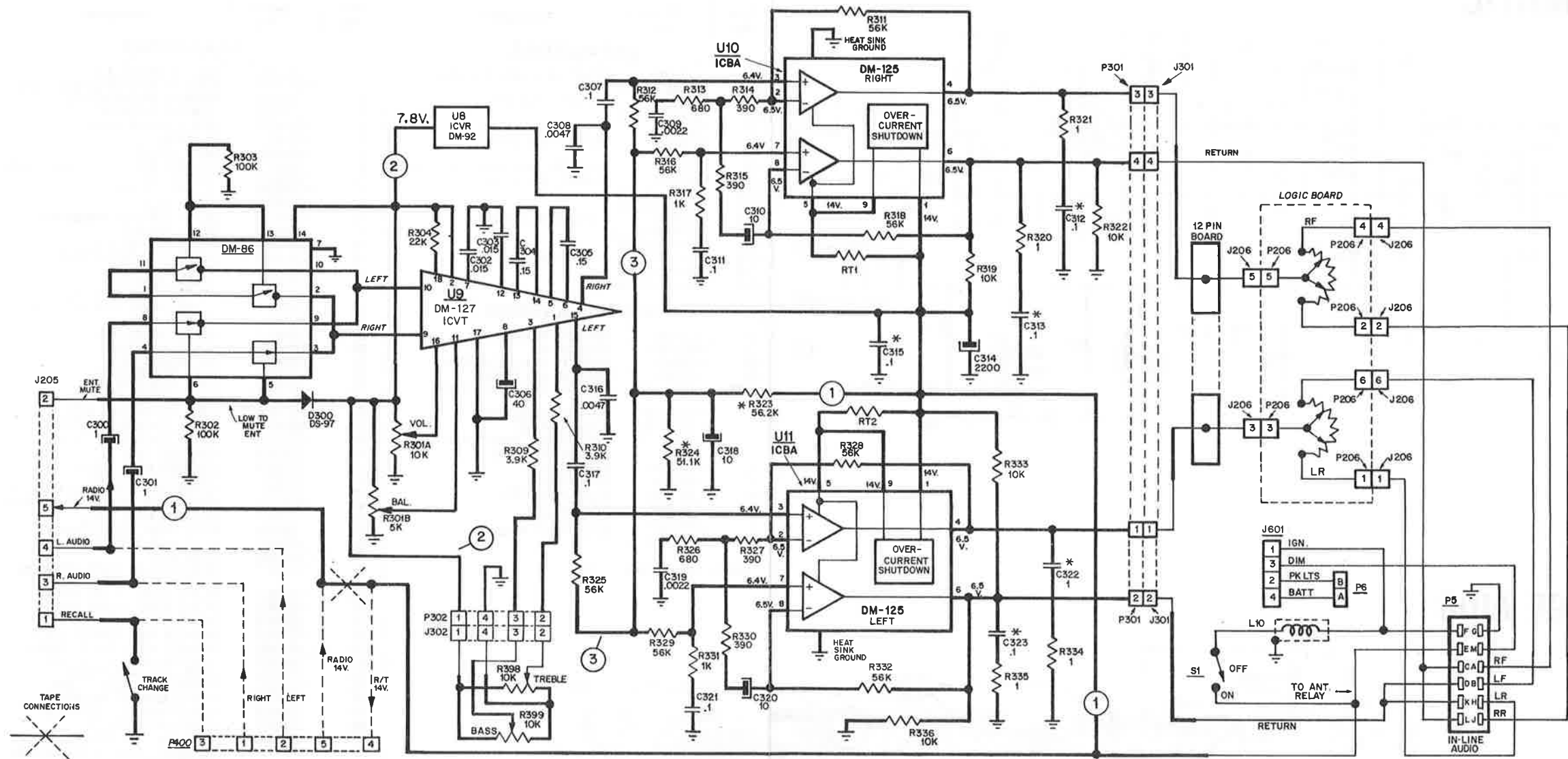
# CASSETTE DECK PARTS LIST

Illus. No.	Service No.	Description
<b>CAPACITORS</b>		
C1	*1224975	.680 PF, 10%, 50V, POLYESTER
C2	SAME AS C1	
C3	*1224973	.330 MFD., 16V, LYTIC
C4	SAME AS C3	
C5	*1224974	10 MFD., 16V, LYTIC
C6	*1224976	100 MFD., 6V, LYTIC
C7	SAME AS C5	
C8	*1224977	.015 MFD., 20%, 50V, POLYESTER
C9	*1224972	.33 MFD., 16V, LYTIC
C10	SAME AS C8	
C11	SAME AS C6	
C12	*1224978	1 MFD., 50V, LYTIC-
C13	SAME AS C12	
C14	SAME AS C9	
C15	*1224979	.47 MFD., 35V, TANT
C16	SAME AS C9	
C17	SAME AS C15	
<b>MISCELLANEOUS</b>		
S1	*1224966	SWITCH, REVERSE
S2	*1224967	SWITCH, R/T
S3	*1224871	SWITCH, END DETECTING
S4	*1224872	SWITCH, HOLDING
J400	*16009446	CONNECTOR ASM., FEMALE, 5-WIRE
	*16013795	PUSHBUTTON, EJECT
	*16013796	PUSHBUTTON
	*16013816	CIRCUIT BD., DIRECTION INDICATOR, BARE
	*1224906	SPRING PKG.
	*1224914	SPRING PKG.
	*1224969	SNAP-RING PKG.
	*1224962	E-RING PKG.
	*1225023	SCREW PKG.
	*1224968	MISC. HDW. PKG.

\*PARTS FIRST USED IN 1981

Illus. No.	Service No.	Description
<b>TRANSPORT</b>		
1	*1224870	MOTOR, W/PULLEY
2	*1224871	SWITCH, END DETECTING (S3)
3	*1224872	SWITCH, HOLDING (S4)
4	*1224873	HEAD, PLAYBACK
5	*1224874	CABLE, HEAD, FLEX
7	*1224875	FLYWHEEL
8	*1224876	BELT, DRIVE
9	*1224877	ROLLER, SELECTOR PLATE SHAFT
10	*1224878	BAR, GUIDE LINK
11	*1224879	PULLEY, IDLER
12	*1224880	GEAR, IDLER
13	*1224881	GEAR, FORWARD-REVERSE
14	*1224882	GEAR, DOUBLE
15	*1224883	GEAR, DETECTING
16	*1224884	HOOK, END DETECTING
17	*1224885	LINK, SELECTOR
18	*1224886	LEVER, SWITCH
19	*1224887	PLATE, FFWD CAM, TOP
20	*1224888	PLATE, FFWD CAM, BOTTOM
21	*1224889	PLATE TIMING
22	*1224890	PLATE, SELECTOR
23	*1224891	PLATE, HOLDING
24	*1224892	ACTUATOR, R/T
25	*1224893	LINK, GUIDE, LEFT
26	*1224894	LINK, GUIDE, RIGHT
27	*1224895	LINK, LOWERING, LEFT
28	*1224896	LINK, LOWERING, RIGHT
29	*1224897	GUIDE, CASSETTE, LEFT
30	*1224898	GUIDE, CASSETTE, RIGHT
44	*1224918	CHASSIS ASM.
45	*1224919	CHASSIS ASM., HEAD
47	*1224920	LEVER ASM., EJECT
48	*1224921	LEVER ASM., FFWD/REW, LEFT
49	*1224922	LEVER ASM., FFWD/REW, RIGHT
50	*1224923	HOLDER ASM., REEL
51	*1224924	GEAR ASM., DETECTING
52	*1224925	ARM, END DETECTING
53	*1224926	REEL ASM.
54	*1224917	SPRING PKG., BACK TENSION, LEFT AND RIGHT, 2 EACH
56	*1224927	PLATE ASM., IDLER, RIGHT
57	*1224928	PLATE ASM., IDLER, LEFT
58	*1224929	PLATE ASM., RELEASE
59	*1224930	ROLLER ASM., PINCH, LEFT
60	*1224931	ROLLER ASM., PINCH, RIGHT
61	*1224932	HOLDER ASM., FLYWHEEL
62	*1224933	CAM ASM., PRESSURE
63	*1224934	PLATE ASM., GEAR, LEFT
64	*1224935	PLATE ASM., GEAR, RIGHT
65	*1224936	PLATE ASM., LEVER LOCK
66	*1224937	LEVER ASM., EJECT
67	*1224938	CAM ASM., SELECTOR
68	*1224939	SOLENOID AND PLUNGER ASM., PROGRAM
69	*1224943	LEVER, SPRING, PIN PKG., PROGRAM
86	*1224959	PAD, SWITCH
87	*1224960	CORE, HOLDING
92	*1224964	SOLENOID, HOLDING
<b>SEMICONDUCTORS</b>		
D1	*1224970	DIODE, ZENER, 8V
D2	DS-97	DIODE, AUDIO ISOLATION
D3	DS-97	DIODE, AUDIO ISOLATION
D4	DS-79	DIODE, SPIKE SUPPRESSION
D5	DS-79	DIODE, PROGRAM
D6	*DS-845	LED, DIRECTION INDICATOR, YELLOW
D7	*DS-845	LED, DIRECTION INDICATOR, YELLOW
Q1	DS-66	NPN, AUDIO AMP
Q2	DS-66	NPN, AUDIO AMP
U1	*1224965	MODULE, TAPE PRE-AMP

CASSETTE AUDIO SCHEMATIC



**NOTICE**  
BENCH SPEAKERS  
MUST BE UNGROUNDED

UNLESS OTHERWISE NOTED:

ALL CAPACITORS ARE SHOWN IN MFD  
AND ARE 75 VOLT OR HIGHER EXCEPT  
ELECTROLYTICS AND THOSE NOTED BY  
AN \*

VOLTAGES MEASURED WITH A  
VTVM NO SIGNAL AND 14 VOLTS  
APPLIED TO RADIO.

**NOTICE**  
GROUND PROBE BEFORE MAKING  
MEASUREMENTS ON IC. ALSO, DO  
NOT SHORT IC PINS TOGETHER OR  
TO GROUND OR IC MAY BE  
DESTROYED.

NOTICE

Maintain all CMOS module terminals at same potential  
until installed — by: grounding body, tweezers, work sur-  
faces & soldering iron tips.  
NEVER HANDLE DEVICE BY LEADS (even installed).  
Use X100 scale on ohmmeter. Maintain humidity above  
30%.  
Avoid electrostatic materials such as: plastic, nylon, etc.

U7  
ICAG  
DM-86

CONTROL PIN 5,6,12,13	SWITCH
8V	CLOSED
0V	OPEN

U9  
DM-127  
ICVT

PIN	CASSETTE VOLTAGE
1	2.6V-5.6V
2	7.9V
3	2.6V-5.6V
4	1.3V
5	2.2V
6	2.4V
7	2.5V
8	2.3V
9	2.2V
10	2.2V
11	0V-7.9V
12	2.7V
13	2.6V
14	2.2V
15	1.2V
16	0V-7.9V
17	0V
18	3.0V

# COMPLETE SPEAKER LISTING

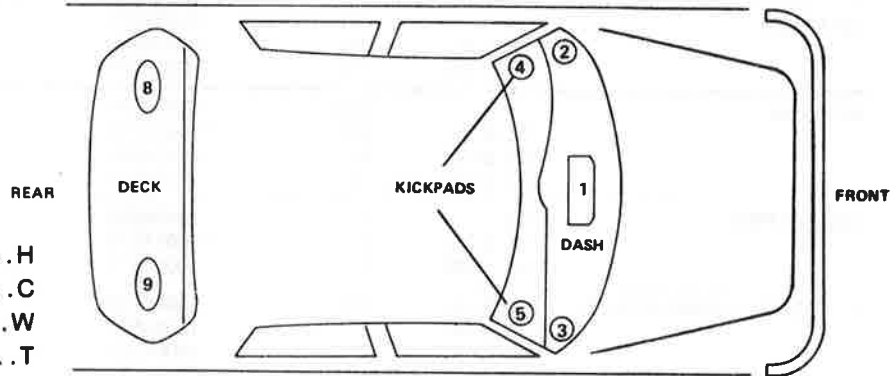
## SPEAKER LOCATION GUIDE (TO BE USED WITH SPEAKER LIST)

### SPEAKER CODES:

- A - 6 x 9
- C - 4 x 10
- D - 4 x 6
- E - 3½ Round

### CAR CODES:

- HATCHBACK .....H
- PASSENGER CARS .....C
- STATION WAGONS .....W
- TRUCKS .....T



CAR NAME	LOCATION & SPEAKER CODE	CAR CODE	STANDARD SPEAKER	EXTENDED RANGE SPEAKER	HIGH SENSITIVITY SPEAKER (4 Ω)
CENTURY .....	2E & 3E 8A or 9A	CW CW	16009923 16004570	16004150	
LE SABRE & ELECTRA .....	2D & 3D 8A or 9A 8C or 9C	CW C W	16006240 16006240 16001261	16004150	
REGAL .....	2E & 3E 8C or 9C	C C	16009923 16003571	16004150	
RIVIERA .....	2D & 3D 8C or 9C	C C	16006240 16009190	16004150	
SKYLARK .....	2D & 3D 8C or 9C	C C	16006240 16003571		
DEVILLE AND FLEETWOOD ...	2D & 3D 8A & 9A	C C	16006240 16004570		*16011460
EL DORADO .....	2D & 3D 8A & 9A	C C	16006240 16004570		*16013890
SEVILLE .....	2D & 3D 8A & 9A	C C	16006240 16004570		*16011460
MALIBU .....	1C 8A or 9A 8C or 9C	CW C W	16006741 16004570 16003571		
MONTE CARLO .....	1C 2E & 3E 8A or 9A	C C C	16006250 16006260 16004570		
CHEVETTE .....	1C 8D or 9D	C C	16006911 16008150		
CHEVROLET .....	1C 2D & 3D 8A or 9A	CW CW CW	16006250 16006240 16004570		
CAMARO .....	1C 8A or 9A	C C	‡16010591 16004570		

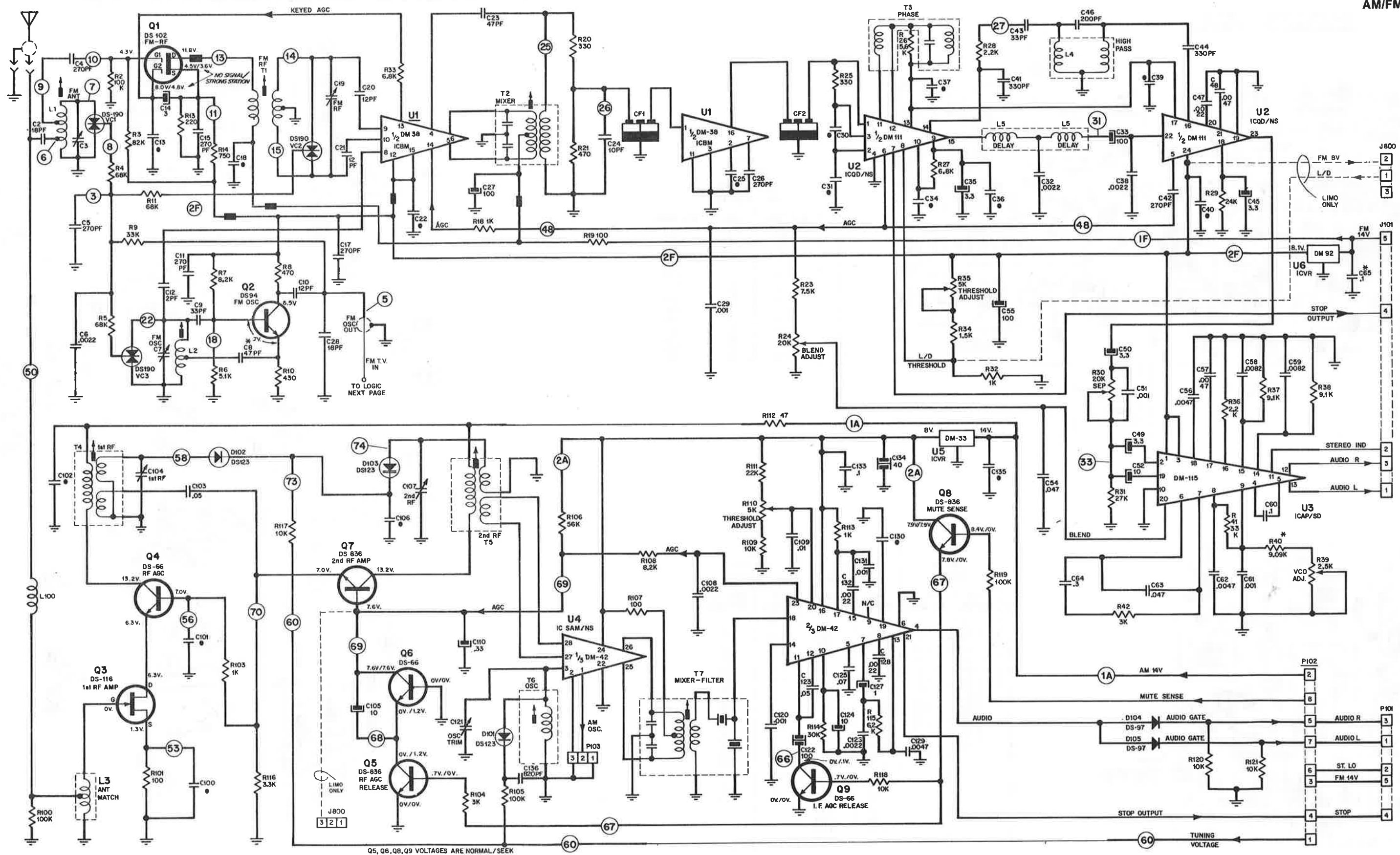
‡ CAMARO - USE BRACKET 16010525  
\* FIRST USED IN 1981

# COMPLETE SPEAKER LISTING

CAR NAME	LOCATION & SPEAKER CODE	CAR CODE	STANDARD SPEAKER	EXTENDED RANGE SPEAKER	HIGH SENSITIVITY SPEAKER (4 Ω)
MONZA .....	1C 9A 9C	CH H C	16006741 16004570 16003571		
CORVETTE .....	2D & 3D 8A or 9A	C C	16006240	16004150	
CITATION .....	1C 2E & 3E 8C or 9C	CH CH CH	16003571 16006260 16003571		
LEMANS .....	1C 2E & 3E 8A or 9A 8C or 9C	CW CW C W	16006250 *16014612 16004570 16003571	16004150	
GRAND PRIX .....	1C 2E & 3E 8C or 9C	C C C	16006250 *16014612 16003571		
CATALINA & BONNEVILLE .....	2D & 3D 8A & 9A 8C or 9C	CW C W	16006240 16004570 16001261	16004150	
FIREBIRD .....	1C 2E & 3E 8A or 9A	C C C	‡16010592 *16014612 16004570	16004150	
SUNBIRD .....	1C 9A 9C	CH H C	16006741 16004570 16003571		
PHOENIX .....	2D & 3D 8C & 9C	CH CH	16006240 16003571		
88 AND 98 .....	2E & 3E 8A or 9A 8C or 9C	CW C W	16009923 16004570 16001261		
CUTLASS & CUTLASS SUPREME .....	2E & 3E 8C or 9C	CW CW	16009923 16003571		
TORONADO .....	2D & 3D 8C or 9C	C C	16006240 16003571		*16013890
OMEGA .....	2D & 3D 8C or 9C	C C	16006240 16003571		
STARFIRE .....	1C 9A	H H	16006741 16004570		
EL CAMINO .....	1C	T	16006250		
CHEVY PICK-UP, BLAZER & SUBURBAN .....	1C 2D & 3D 8C & 9C	T T T	16001261 *16012331 16001261		
STEP VAN .....	1C	T	16003571		
"G" VAN .....	2D & 3D 8A or 9A 8C or 9C	T T T	16006240 16004570 16001261		
ALUMINUM TILT CAB .....	1C 2C & 3C 8C & 9C	T T T	16006911 16006911 16006911		
MEDIUM DUTY .....	1C 8C & 9C	T T	16001261 16001261		

‡ FIREBIRD — USE BRACKET 16010526

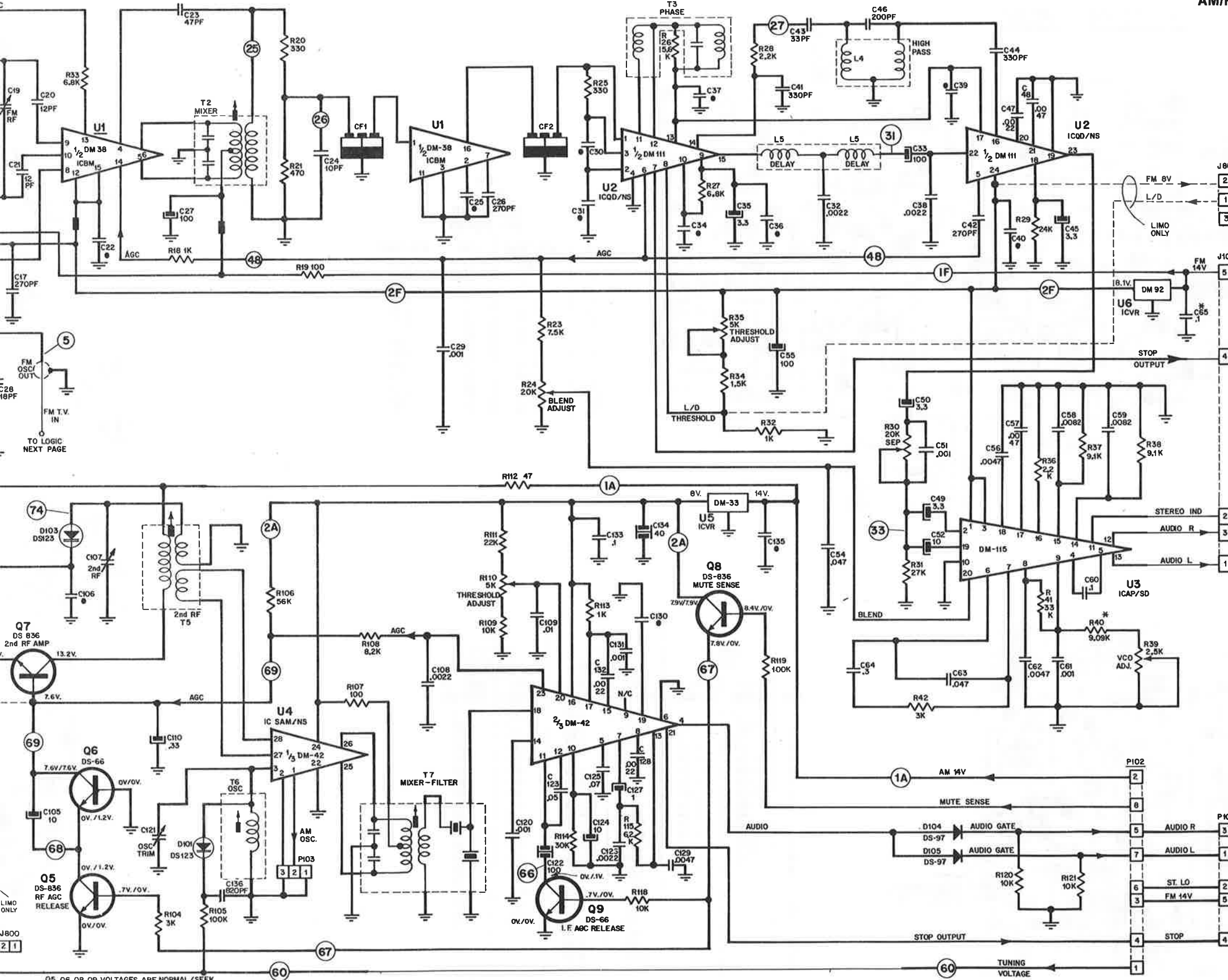
\* FIRST USED IN 1981





# SCHEMATIC

AM/FM STEREO — ETR



UNLESS OTHERWISE NOTED:

ALL CAPACITORS ARE SHOWN IN MFD AND ARE 75 VOLT OR HIGHER EXCEPT ELECTROLYTICS AND THOSE NOTED BY AN\*

CAUTION:

GROUND PROBE BEFORE MAKING MEASUREMENTS ON IC. ALSO, DO NOT SHORT IC PINS TOGETHER OR TO GROUND.

VOLTAGES MEASURED WITH A VTVM 14 VOLTS APPLIED TO RADIO

● SPECIAL BYPASS CAPACITOR SEE PARTS LIST.

\* SPECIAL CAPACITORS AND RESISTORS SEE PARTS LIST

Q5, Q6, Q8, Q9 VOLTAGES ARE NORMAL/SEEK

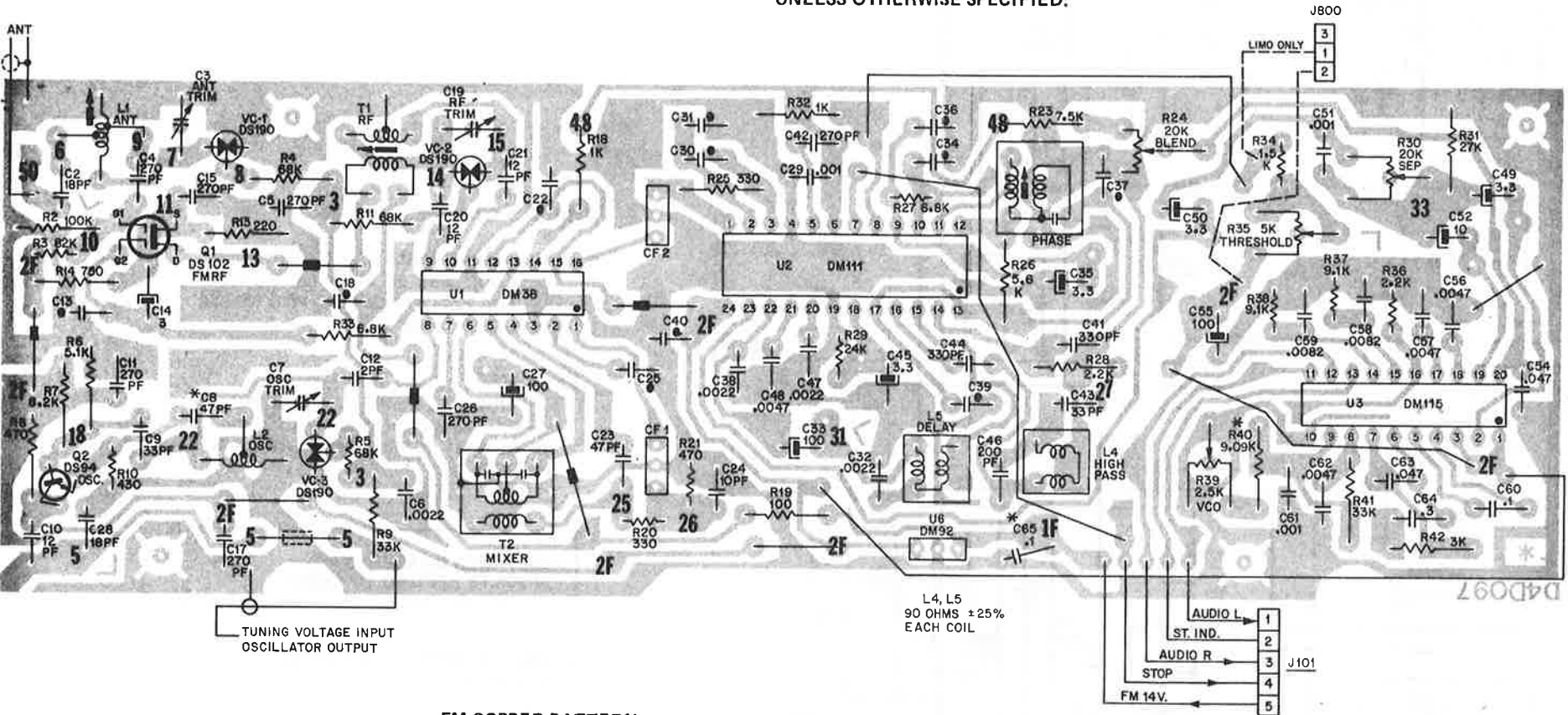
SERVICE AIDS

ETR

ALL VOLTAGES "NO SIGNAL"  
UNLESS OTHERWISE SPECIFIED.

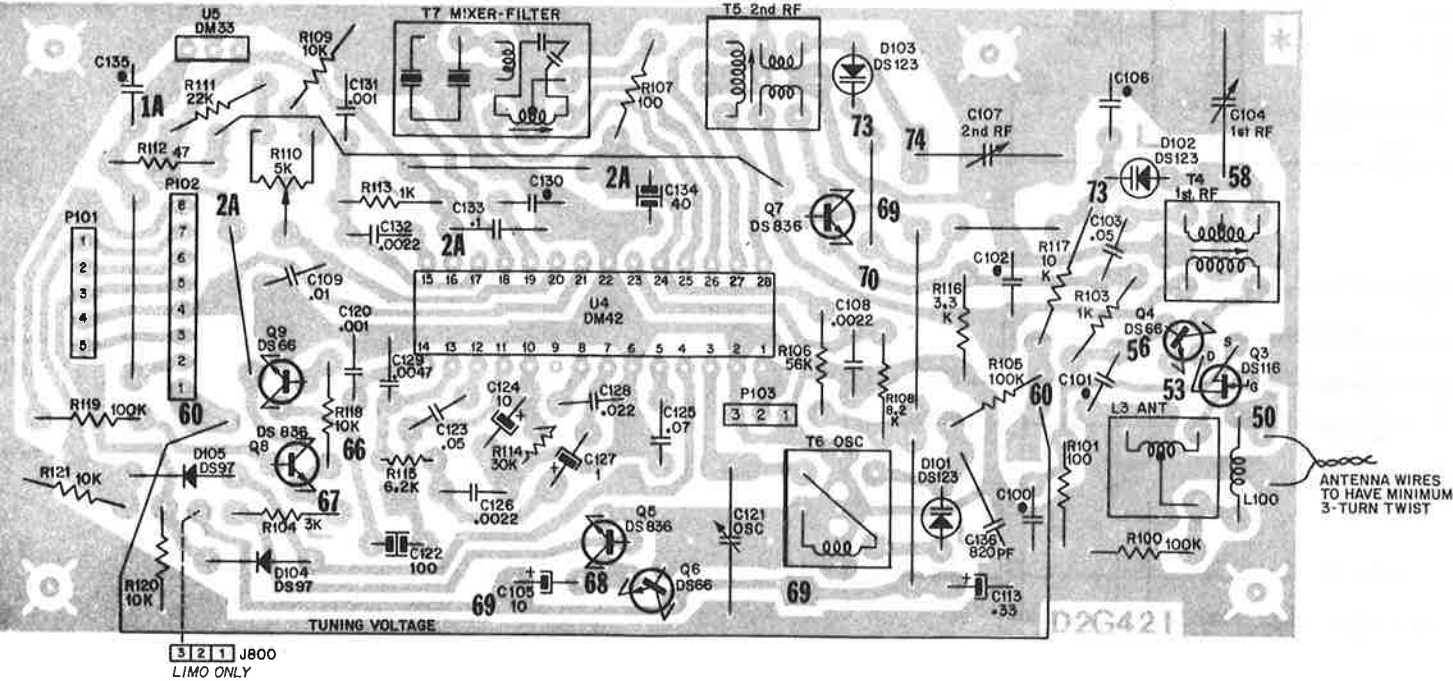
DELCO 1981 Series

PARTS BR



FM COPPER PATTERN

AM COPPER PATTERN

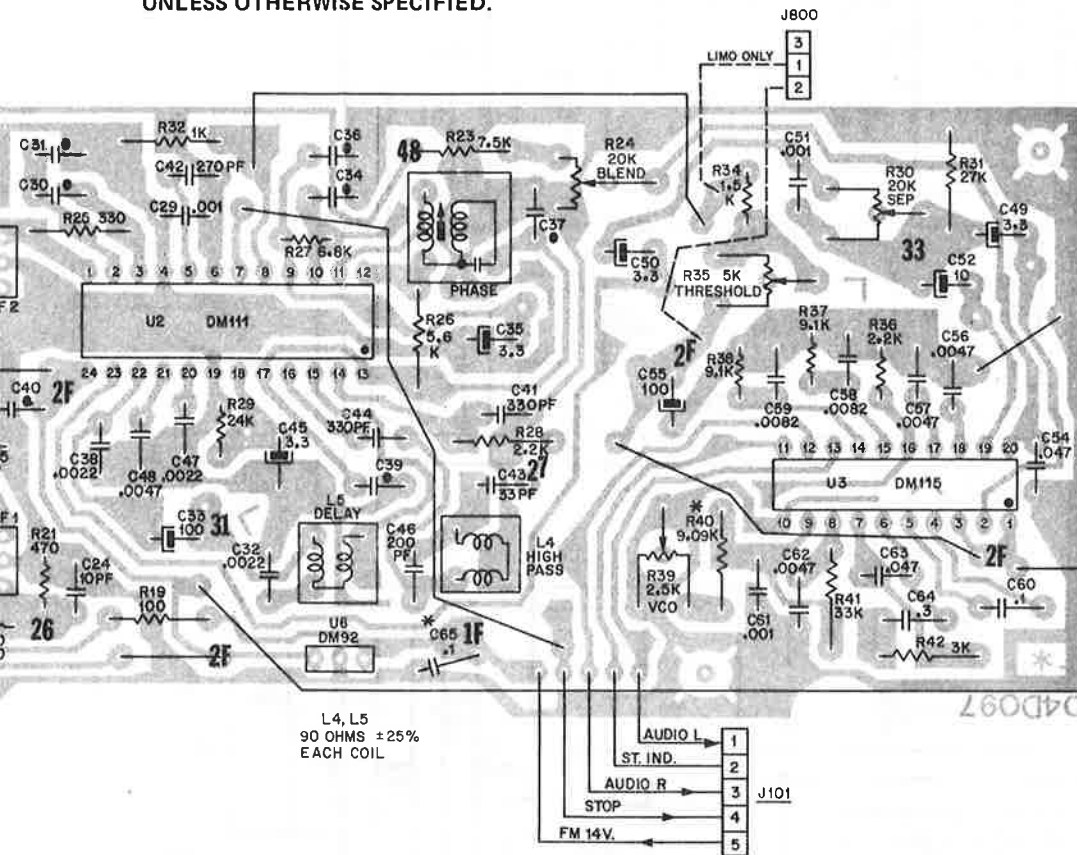


U4  
DM-42  
ICSAM/NS  
(No Signal)

PIN	VOLTAGE	PIN	VOLTAGE
1	6.50V	15	4.1V
2	0V	16	7.9V
3	0V	17	5.9V
4	4.5V	18	4.1V
5	2.2V	19	4.1V
6	0V	20	2.9V
7	2.2V	21	.1V
8	2.8V	22	0V
9	2.1V	23	7.6V
10	4.6V	24	7.9V
11	4.6V	25	7.7V
12	.7V	26	7.7V
13	6.4V	27	2.8V
14	3.6V	28	2.8V

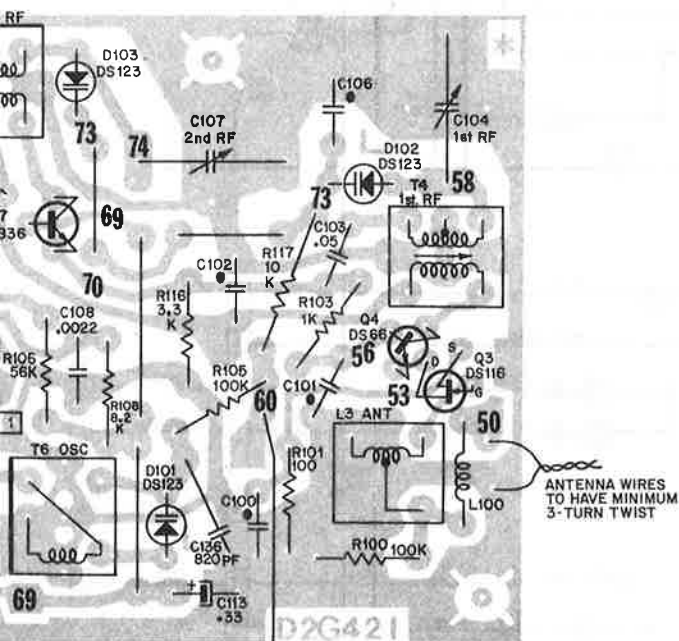
PIN	U1 DM-38 ICBM		U2 DM-111 ISQD/NS		U3 DM-115 ICAP/SD	
	NO SIGNAL	2000 $\mu$ V NO MOD	NO SIGNAL	2000 $\mu$ V NO MOD	NO SIGNAL	2000 $\mu$ V STEREO
1	.7V	.7V	1.7V	1.8V	8.1V	8.1V
2	1.4V	1.4V	1.7V	1.8V	1.9V	1.9V
3	0V	0V	1.7V	1.8V	8.1V	8.1V
4	1.4V	1.4V	0V	0V	1.8V	1.8V
5	11.8V	11.6V	.7V	.6V	1.8V	1.8V
6	11.8V	11.6V	.6V	2.7V	1.8V	1.8V
7	3.7V	3.7V	.1V	12.5V	1.8V	1.8V
8	3.7V	3.8V	2.1V	1.7V	2.3V	2.2V
9	1.9V	1.9V	4.6V	4.8V	2.2V	2.2V
10	1.9V	1.9V	4.9V	4.8V	0V	0V
11	0V	0V	5.2V	5.2V	12.6V	.8V
12	8.1V	8.1V	5.2V	5.0V	2.5V	2.3V
13	8.1V	4.8V	5.2V	5.2V	2.8V	2.8V
14	.4V	2.7V	4.9V	5.0V	3.2V	3.2V
15	8.1V	8.1V	4.2V	4.3V	3.5V	3.5V
16	7.6V	7.6V	1.3V	1.3V	.7V	.7V
17			5.2V	5.2V	4.0V	4.0V
18			2.9V	7.0V	3.3V	3.3V
19			0V	0V	4.0V	4.0V
20			2.4V	2.4V	.3V	1.1V
21			1.8V	1.7V		
22			2.6V	2.6V		
23			4.1V	4.4V		
24			8.1V	7.9V		

ALL VOLTAGES "NO SIGNAL"  
UNLESS OTHERWISE SPECIFIED.

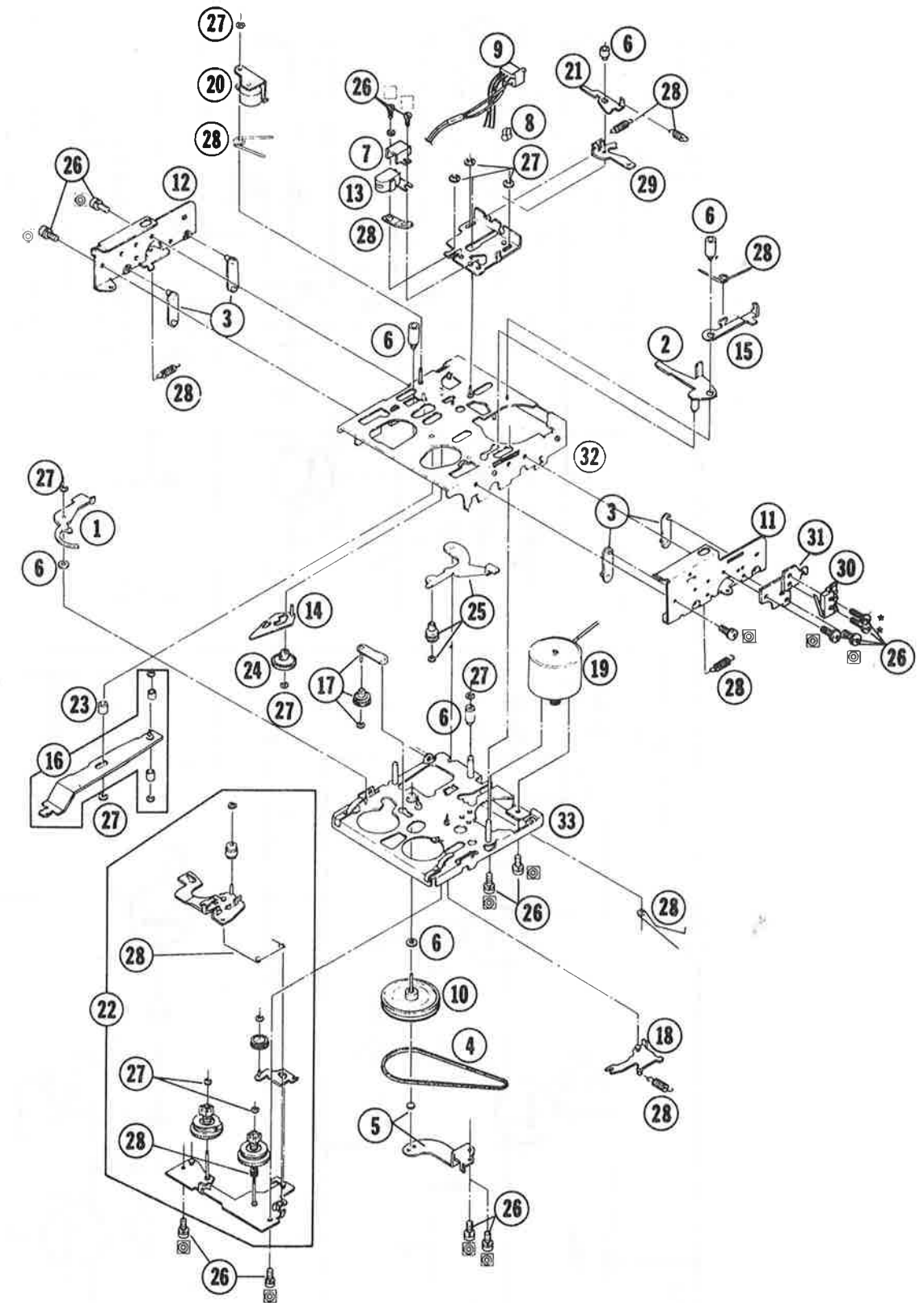


U4  
DM-42  
ICSAM/NS  
(No Signal)

PIN	VOLTAGE	PIN	VOLTAGE
1	6.50V	15	4.1V
2	0V	16	7.9V
3	0V	17	5.9V
4	4.5V	18	4.1V
5	2.2V	19	4.1V
6	0V	20	2.9V
7	2.2V	21	.1V
8	2.8V	22	0V
9	2.1V	23	7.6V
10	4.6V	24	7.9V
11	4.6V	25	7.7V
12	.7V	26	7.7V
13	6.4V	27	2.8V
14	3.6V	28	2.8V



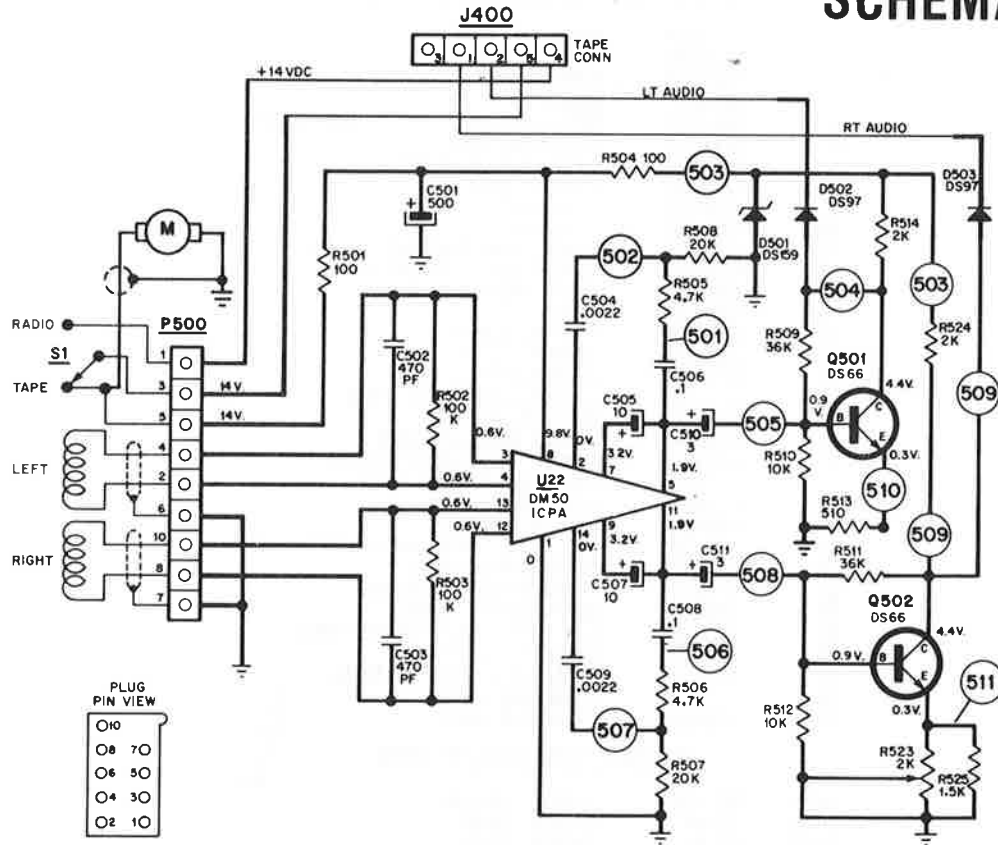
	U1 DM-38 ICBM		U2 DM-111 ISQD/NS		U3 DM-115 ICAP/SD	
PIN	NO SIGNAL	2000 $\mu$ V NO MOD	NO SIGNAL	2000 $\mu$ V NO MOD	NO SIGNAL	2000 $\mu$ V STEREO
1	.7V	.7V	1.7V	1.8V	8.1V	8.1V
2	1.4V	1.4V	1.7V	1.8V	1.9V	1.9V
3	0V	0V	1.7V	1.8V	8.1V	8.1V
4	1.4V	1.4V	0V	0V	1.8V	1.8V
5	11.8V	11.6V	.7V	.6V	1.8V	1.8V
6	11.8V	11.6V	.6V	2.7V	1.8V	1.8V
7	3.7V	3.7V	.1V	12.5V	1.8V	1.8V
8	3.7V	3.8V	2.1V	1.7V	2.3V	2.2V
9	1.9V	1.9V	4.6V	4.8V	2.2V	2.2V
10	1.9V	1.9V	4.9V	4.8V	0V	0V
11	0V	0V	5.2V	5.2V	12.6V	.8V
12	8.1V	8.1V	5.2V	5.0V	2.5V	2.3V
13	8.1V	4.8V	5.2V	5.2V	2.8V	2.8V
14	.4V	2.7V	4.9V	5.0V	3.2V	3.2V
15	8.1V	8.1V	4.2V	4.3V	3.5V	3.5V
16	7.6V	7.6V	1.3V	1.3V	.7V	.7V
17			5.2V	5.2V	4.0V	4.0V
18			2.9V	7.0V	3.3V	3.3V
19			0V	0V	4.0V	4.0V
20			2.4V	2.4V	.3V	1.1V
21			1.8V	1.7V		
22			2.6V	2.6V		
23			4.1V	4.4V		
24			8.1V	7.9V		



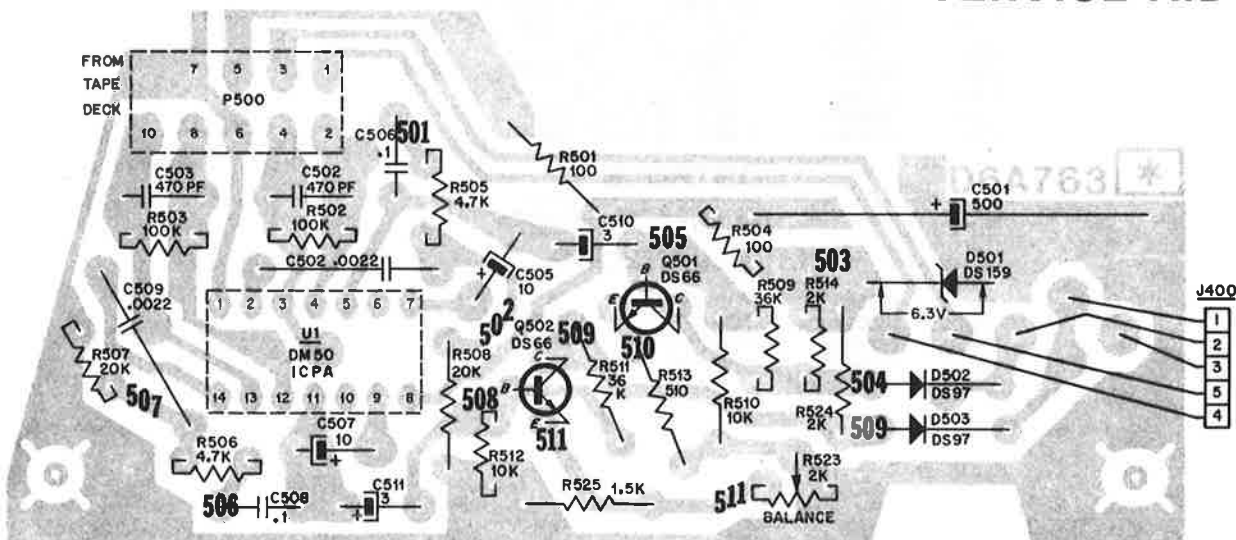


# CASSETTE TAPE

## SCHEMATIC



## SERVICE AIDS



# PARTS LIST

CASSETTE DECK

Illus. No.	Service No.	Description
<b>CASSETTE DECK PARTS</b>		
1	1224366	ARM, DETECTING
2	1224364	ARM, EJECT ASM.
3	1224368	ARM, PIVOT
4	1224370	BELT
5	1224369	BRACKET, FLYWHEEL BRG. ASM.
6	1224403	BUSHING PKG.
7	1224362	CASE, HEAD SHIELD
8	1224367	CLAMP, CORD
9	1224365	CONNECTOR ASM.
10	1224355	FLYWHEEL
11	1224356	GUIDE, CARTRIDGE (RIGHT)
12	1224357	GUIDE, CARTRIDGE (LEFT)
13	1224350	HEAD, PLAYBACK
14	1224359	HOOK
15	1224360	LEVER, EJECT
16	1224353	LEVER, EJECT ASM.
17	1224354	LEVER, IDLER ASM.
18	1224361	LEVER, IDLER SW. ASM.
19	1224410	MOTOR, ASM.
20	1224351	PINCH ROLLER ASM.
21	1224406	PLATE, REW DETECTING
22	1224396	REEL BASE ASM. PKG.
23	1224352	ROLLER, EJECT
24	1224358	ROLLER, HOOK
25	1224363	ROLLER, TAPE END DETECTING
26	1224380	SCREW PACKAGE
27	1224375	SNAP RING PACKAGE
28	1224390	SPRING PACKAGE
29	1224407	STOPPER, REW DETECTING
30	1224405	SWITCH, MICRO
31	1224404	BRACKET, SWITCH MTG.
32	1224693	CHASSIS, MAIN
33	1224694	CHASSIS, SUB
<b>SEMICONDUCTORS</b>		
D501	DS-159	DIODE, DS-159
D502	DS-97	DIODE, DS-97
D503	DS-97	DIODE, DS-97
Q501	DS-66	TRANSISTOR, BUFFER
Q502	DS-66	TRANSISTOR, BUFFER
U22	DM-50	IC PRE-AMP
<b>CAPACITORS</b>		
C501	9342269	500 MFD, 16 VOLT, ELECT.
C505	7936360	10 MFD, 10 VOLT, TANT.
C506	7287408	.1 MFD, 20%, Y5S
C507	7936360	10 MFD, 10 VOLT, TANT.
C508	7287408	.1 MFD, 20%, Y5S
C510	7936363	3 MFD, 10 VOLT, TANT.
C511	7936363	3 MFD, 10 VOLT, TANT.
<b>CONTROLS</b>		
R523	16005419	CONTROL, 2K BALANCE
<b>MISCELLANEOUS</b>		
40	16005291	PUSHBUTTON
J400	16009446	CONNECTOR, 5-WIRE
P500	1224365	CONNECTOR, 10-PIN
S1	1224405	SWITCH, MICRO

**NON—CB ETR (Logic Section)**

Maintain all CMOS module terminals at same potential until installed — by: grounding body, tweezers, work surfaces & soldering iron tips.

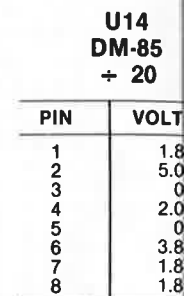
**NEVER HANDLE DEVICE BY LEADS (even installed).**

Use X100 scale on ohmmeter. Maintain humidity above 30%.

Avoid electrostatic materials such as: plastic, nylon, etc.

GROUND PROBE BEFORE MAKING MEASUREMENTS ON IC. ALSO, DO NOT SHORT IC PINS TOGETHER OR TO GROUND OR IC MAY BE DESTROYED.

ALL CAPACITORS ARE SHOWN IN MFD  
AND ARE 50 VOLT OR HIGHER EXCEPT  
ELECTROLYTICS AND THOSE NOTE BY  
AN \*



EBC	
-----	--

## ▲ 11.1 INPUT AND

## PLL D

NOR

E	0V
B	.7V
C	0V

# NOTICE

Maintain all CMOS module terminals at same potential until installed — by: grounding body, tweezers, work surfaces & soldering iron tips.

NEVER HANDLE DEVICE BY LEADS (even installed).

Use X100 scale on ohmmeter. Maintain humidity above 30%.

Avoid electrostatic materials such as: plastic, nylon, etc.

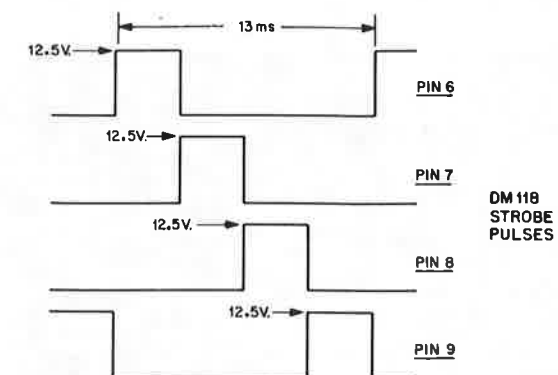
# NOTICE

GROUND PROBE BEFORE MAKING MEASUREMENTS ON IC. ALSO, DO NOT SHORT IC PINS TOGETHER OR TO GROUND OR IC MAY BE DESTROYED.

# UNLESS OTHERWISE NOTED:

ALL CAPACITORS ARE SHOWN IN MFD AND ARE 50 VOLT OR HIGHER EXCEPT ELECTROLYTICS AND THOSE NOTE BY AN \*

# VOLTAGES MEASURED WITH A VTVM 14 VOLTS APPLIED TO RADIO



# U16 DM-81 SYN

PIN	VOLTAGE
1	13.8V
2	.6V
3	0V
4	0V
5	2.9V
6	0V
7	7.0V
8	0V
9	6.3V
10	4.6V
11	6.9V
12	6.9V
13	0V
14	0V

# U14 DM-85 ÷ 20

PIN	VOLTAGE
1	1.8V
2	5.0V
3	0V
4	2.0V
5	0V
6	3.8V
7	1.8V
8	1.8V

# U17 DM-90 INT.

PIN	FM	AM
1	.1V	.1V
2	2.9V	6.0V
3	2.9V	5.8V
4	0V	0V
5	.1V	.1V
6	+	+
7	13.8V	13.9V
8	7.2V	7.1V

±1 TO 9 VOLTS AM  
2 TO 8 VOLTS FM

# Q11 DIM CONTROL DS-66

E	1.7V ▲
B	2.3V ▲
C	6.2V ▲

# Q12 DISPLAY REG. DS-70

E	5.0V ▲
B	6.2V ▲
C	12.9V ▲

▲ 11.1V APPLIED TO DIMMER  
INPUT OF 12-PIN CONNECTOR.  
AND 14V APPLIED TO P6-B.

# U15 DM-104 ICVR

IN	OUT
13.2V	5.0V

# Q18 ENABLE DS-66

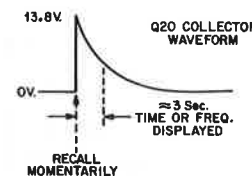
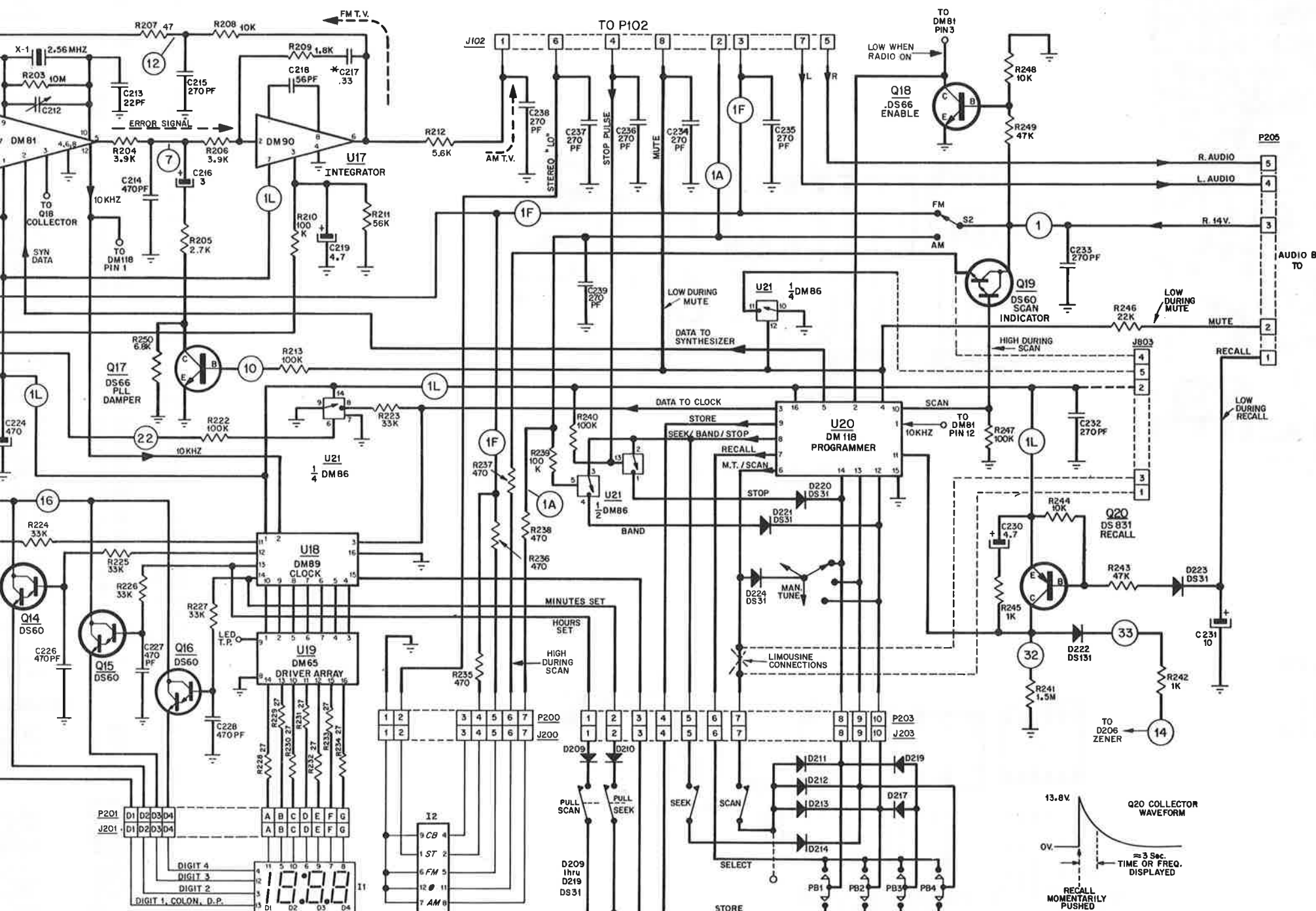
RADIO ON	RADIO OFF
0V	0V
.7V	0V
0V	14.0V

# Q17 PLL DAMPER DS-66

NORMAL	SEEK
E	0V
B	.7V
C	0V

# Q19 SCAN DS-60

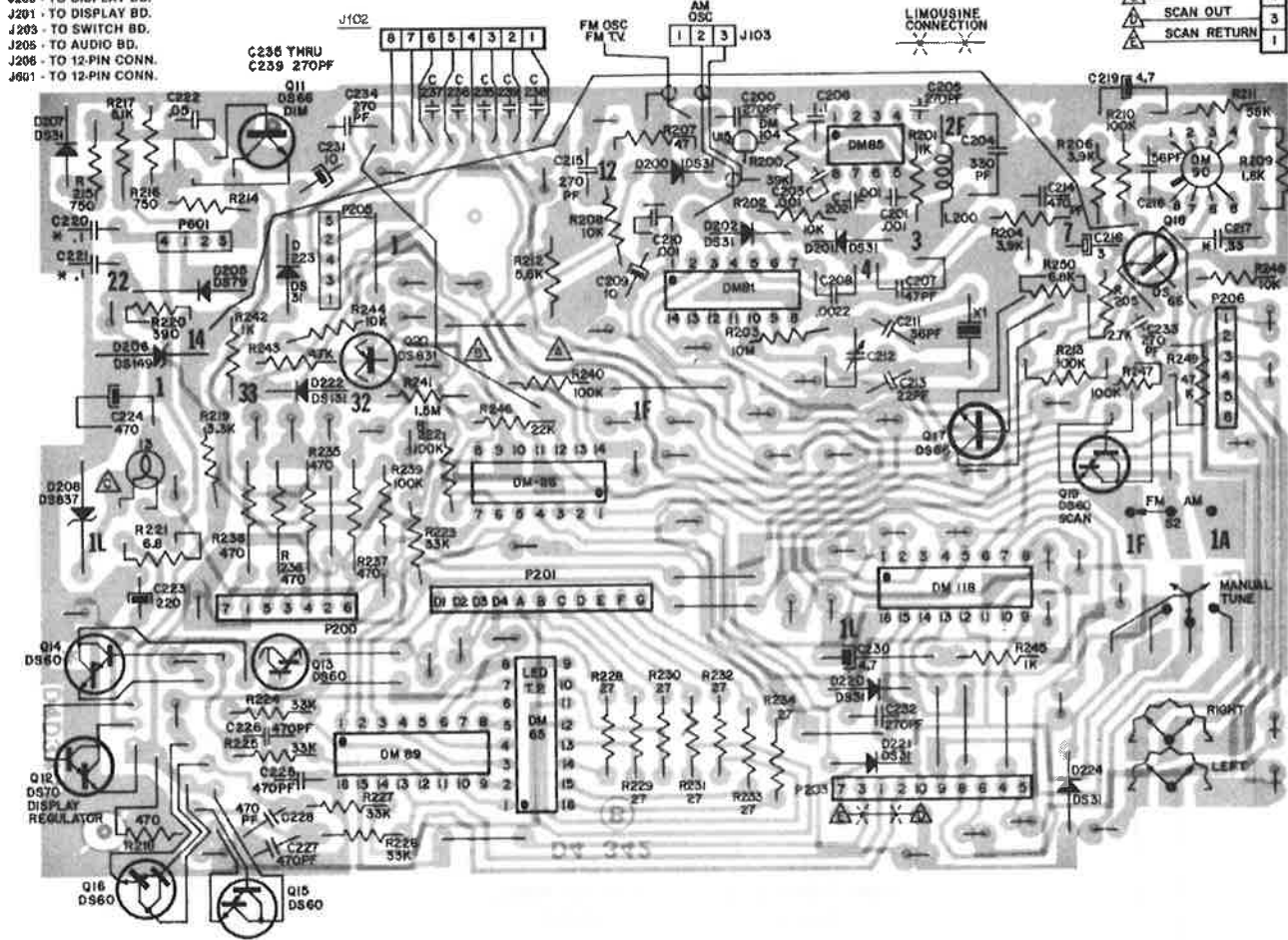
NORMAL	SCAN
E	0V
B	0V
C	14.0V



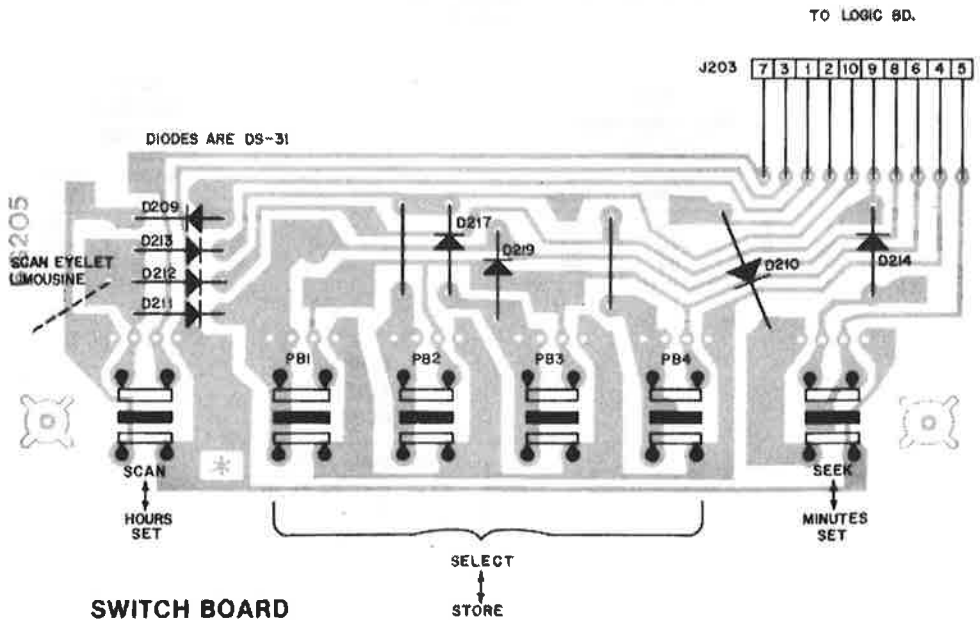


SERVICE AIDS

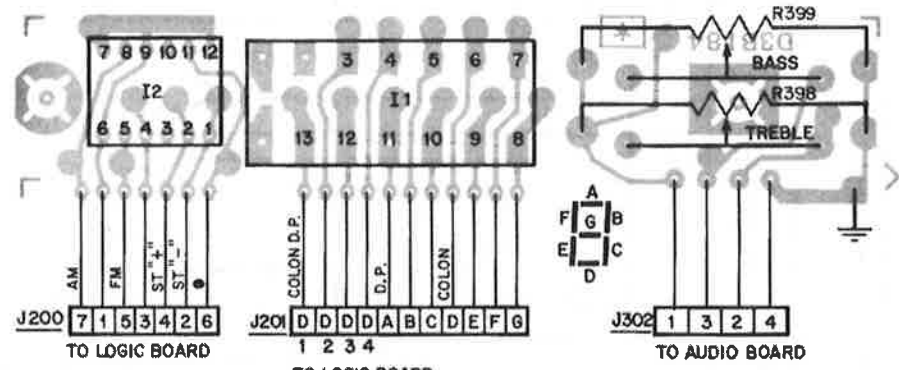
P102 - TO AM BD.  
J200 - TO DISPLAY BD.  
J201 - TO DISPLAY BD.  
J203 - TO SWITCH BD.  
J205 - TO AUDIO BD.  
J206 - TO 12-PIN CONN.  
J601 - TO 12-PIN CONN.



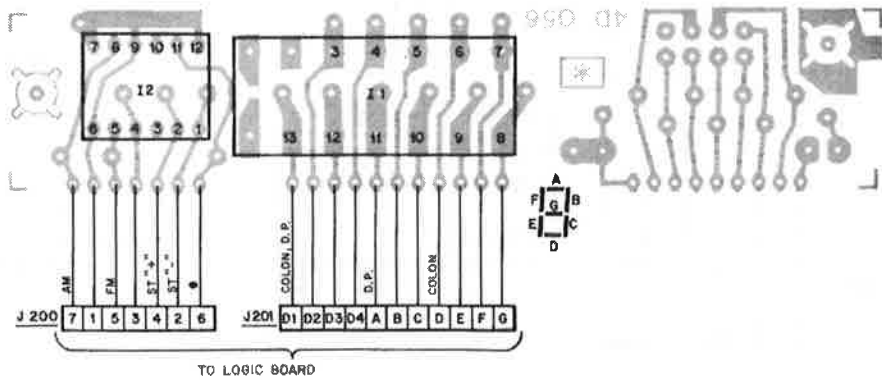
LOGIC BOARD



SWITCH BOARD



DISPLAY BOARD CASSETTE

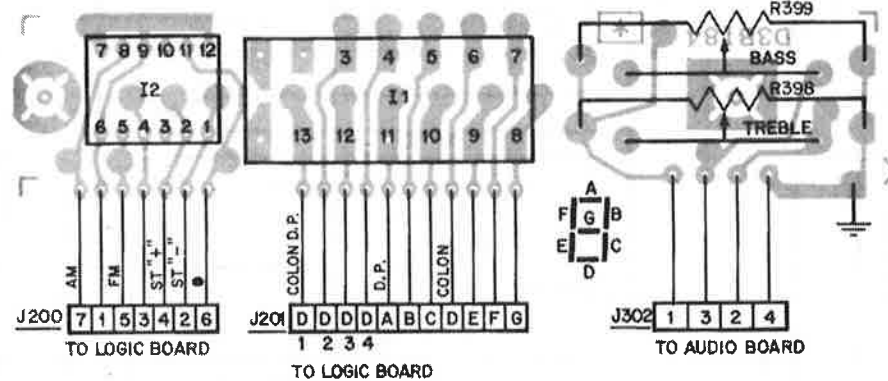
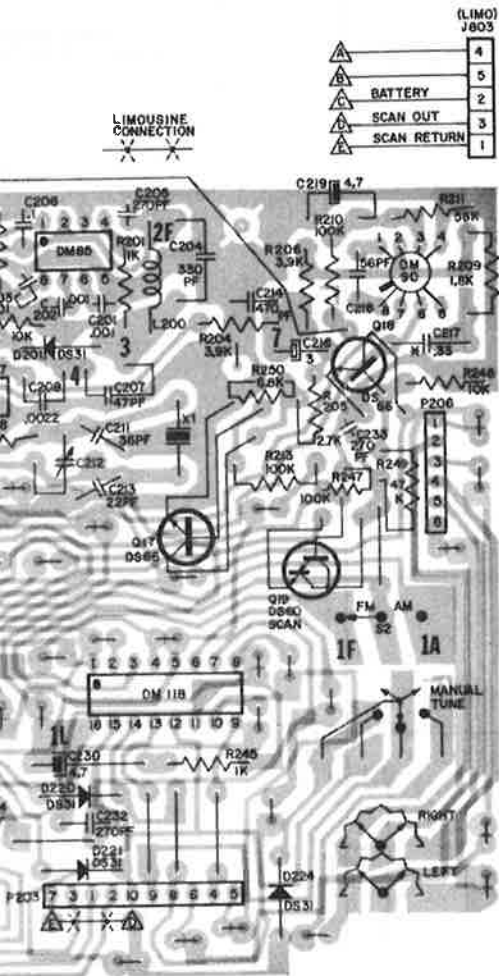


DISPLAY BOARD ETR AND 8-TRACK

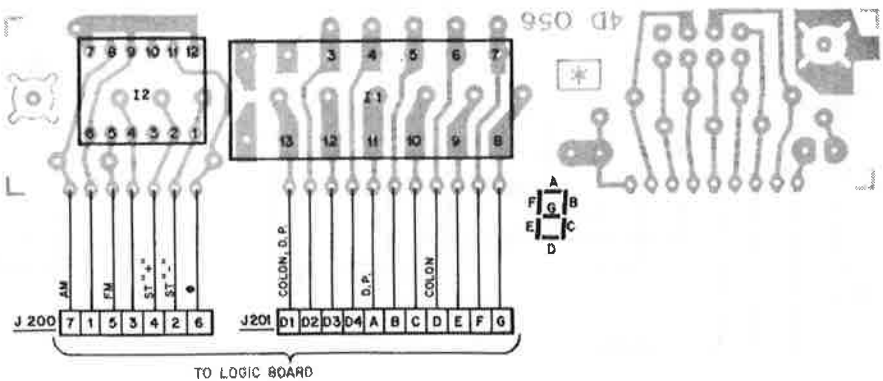
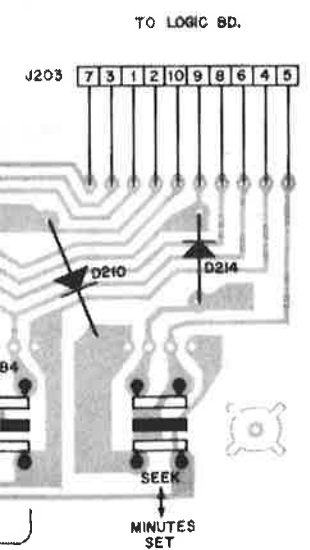
PARTS LIST

Illus. No.	Service No.	Des.
INTEGRATED		
U1	DM-38	BALANCE
U2	DM-111	QUADRAT
U3	DM-115	NOISE SU
U4	DM-42	AUDIO PR
U5	DM-33	STEREO
U6	DM-92	VOLUME
U7	DM-86	VOLUME
U8	DM-92	VOLUME
U9	DM-127	BRIDGE A
U10	DM-125	BRIDGE A
U11	DM-125	BRIDGE A
U12	DM-86	TRANSFE
U13	DM-113	DUAL CON
U14	DM-85	INVERTOR
U15	DM-104	+20
U16	DM-81	VOLTAGE
U17	DM-90	SYNTHES
U18	DM-89	INTEGRAT
U19	DM-65	CLOCK (M
U20	DM-118	DRIVER A
U21	DM-86	PROGRAM
DIODE		
D101, D102 and		
D103	DS-123	AM VARIC
D104	DS-97	AM AUDIO
D105	DS-97	AM AUDIO
D200	DS-31	ISOLATIO
D201	DS-31	ISOLATIO
D202	DS-31	ISOLATIO
D205	DS-79	AUDIO IS
D206	DS-149	ZENER, 8V
D207	DS-31	TEMP, CO
D208	DS-837	ZENER, 13V
D220	DS-31	ISOLATIO
D221	DS-31	ISOLATIO
D222	DS-131	ISOLATIO
D223	DS-31	ISOLATIO
D224	DS-31	ISOLATIO
D300	DS-97	CLAMP
D301	DS-97	CLAMP
D302		
thru C305	DS-97	XMIT BR
VC1, VC2 and VC3	DS-190	VARACTO
		FM RF, FM
TRANSIS		
Q1	DS-102	FM RF A
Q2	DS-94	FM OSC
Q3	DS-116	AM 1ST P
Q4	DS-66	RF AGC
Q5	DS-836	RF AGC
Q6	DS-66	
Q7	DS-836	AM 2ND P
Q8	DS-836	MUTE SE
Q9	DS-66	IF AGC R
Q11	DS-66	DIM CON
Q12	DS-70	DISPLAY
Q13	DS-60	DIGIT DR
Q14	DS-60	DIGIT DR
Q15	DS-60	DIGIT DR
Q16	DS-60	DIGIT DR
Q17	DS-66	PLL DAM

# SERVICE AIDS



DISPLAY BOARD CASSETTE



DISPLAY BOARD ETR AND 8-TRACK

# PARTS LIST ETR

Illus. No.	Service No.	Description
<b>INTEGRATED CIRCUITS</b>		
U1	DM-38	BALANCED MIXER
U2	DM-111	QUADRATURE DETECTOR/ NOISE SUPPRESSOR
U3	DM-115	AUDIO PROCESSOR/ STEREO DECODER
U4	DM-42	AM/NOISE SUPPRESSOR
U5	DM-33	VOLTAGE REGULATOR, 8V
U6	DM-92	VOLTAGE REGULATOR, 8V
U7	DM-86	AUDIO GATE (MOS)
U8	DM-92	VOLTAGE REGULATOR, 8V
U9	DM-127	VOLUME, TONE, BALANCE
U10	DM-125	BRIDGE AUDIO
U11	DM-125	BRIDGE AUDIO
U12	DM-86	TRANSFER GATE, LIMO (MOS)
U13	DM-113	DUAL COMPLEMENTARY PAIR PLUS INVERTOR (MOS)
U14	DM-85	+20
U15	DM-104	VOLTAGE REGULATOR, 5V
U16	DM-81	SYNTHESIZER (MOS)
U17	DM-90	INTEGRATOR (MOS)
U18	DM-89	CLOCK (MOS)
U19	DM-65	DRIVER ARRAY, SEGMENT
U20	DM-118	PROGRAMMER (MOS)
U21	DM-86	TRANSFER GATE
<b>DIODES</b>		
D101, D102 and D103	DS-123	AM VARICAP (MATCHED SET OF 3)
D104	DS-97	AM AUDIO GATE
D105	DS-97	AM AUDIO GATE
D200	DS-31	ISOLATION
D201	DS-31	ISOLATION
D202	DS-31	ISOLATION
D205	DS-79	AUDIO ISOLATION
D206	DS-149	ZENER, 8V
D207	DS-31	TEMP. COMPENSATION
D208	DS-837	ZENER, 13.6V, 2%
D220	DS-31	ISOLATION
D221	DS-31	ISOLATION
D222	DS-131	ISOLATION
D223	DS-31	ISOLATION
D224	DS-31	ISOLATION
D300	DS-97	CLAMP
D301	DS-97	CLAMP
D302	DS-97	CLAMP
D305	DS-97	XMIT BRIDGE MUTE
VC1, VC2 and VC3	DS-190	VARACTOR; FM ANT, FM RF, FM OSC.
<b>TRANSISTORS</b>		
Q1	DS-102	FM RF AMP (MOS)
Q2	DS-94	FM OSC
Q3	DS-116	AM 1ST RF AMP
Q4	DS-66	RF AGC
Q5	DS-836	RF AGC RELEASE
Q6	DS-66	FM 2ND RF AMP
Q7	DS-836	AM 2ND RF AMP
Q8	DS-836	MUTE SENSE
Q9	DS-66	IF AGC RELEASE
Q11	DS-66	DIM CONTROL
Q12	DS-70	DISPLAY REGULATOR
Q13	DS-60	DIGIT DRIVER
Q14	DS-60	DIGIT DRIVER
Q15	DS-60	DIGIT DRIVER
Q16	DS-60	DIGIT DRIVER
Q17	DS-66	PLL DAMPER

Illus. No.	Service No.	Description
Q18	DS-66	ENABLE
Q19	DS-60	SCAN INDICATOR
Q20	DS-831	RECALL
<b>COILS &amp; TRANSFORMERS</b>		
CF1 and CF2	7897580	CERAMIC FILTER, 10.7 MHZ
L1	16001130	COIL, FM ANT.
L2	16001129	COIL FM, OSC
L3	16005269	COIL, ANTENNA MATCH
L4	7898999	COIL, DUAL, HIGH PASS
L5	7898999	COIL, DUAL, AUDIO DELAY
L10	16009760	CHOKE, FILTER, A+
L100	7896143	CHOKE, AM
L200	16001074	CHOKE, 2.7 MICROHENRY
T1	16008568	TRANSFORMER, FM RF
T2	9346544	TRANSFORMER, MIXER
T3	9346543	TRANSFORMER, PHASE
T4	16012428	TRANSFORMER, AM 1ST RF
T5	16012429	TRANSFORMER, AM 2ND RF
T6	16012422	TRANSFORMER, AM OSC, 4-PIN
T6	16018001	TRANSFORMER, AM OSC, 3-PIN (Used with C136, External 820 PF)
T7	16013192	TRANSFORMER, MIXER-FILTER
<b>CAPACITORS</b>		
C2	16014296	18 PF, 10%, 100V, NPO
C3	16011865	TRIMMER, FM ANT
C4	16009797	270 PF, 20%, 100V, Y5S
C5	16009797	270 PF, 20%, 100V, Y5S
C6	16009799	.0022 MFD, 20%, 100V, Y5R
C7	16011865	TRIMMER, FM OSC
C8	16005092	47 PF, 10%, 50V, NPO
C9	16005090	33 PF, 5%, 50V, NPO
C10	16011266	12 PF, 10%, 100V, NPO
C11	16009797	270 PF, 20%, 100V, Y5S
C12	16009794	2 PF, 12%, 100V, NPO
C13	16009903	BYPASS
C14	7936359	3 MFD, 20%, 35V, TANT
C15	16009797	270 PF, 20%, 100V, Y5S
C17	16009797	270 PF, 20%, 100V, Y5S
C18	16009903	BYPASS
C19	16011865	TRIMMER, FM RF
C20	16011266	12 PF, 10%, 100V, NPO
C21	16011266	12 PF, 10%, 100V, NPO
C22	16009903	BYPASS
C23	16005092	47 PF, 10%, 50V, NPO
C24	16009795	10 PF, 5%, 100V, NPO
C25	16009903	BYPASS
C26	16009797	270 PF, 20%, 100V, Y5S
C27	16009487	100 MFD, +80 -20%, 16V, LYTIC
C28	16014296	18 PF, 10%, 100V, NPO
C29	16009798	.001 MFD, 20%, 100V, Y5P
C30	16009903	BYPASS
C31	16009903	BYPASS
C32	16009799	.0022 MFD, 20%, 100V, Y5R
C33	16009487	100 MFD, +80 -20%, 16V, LYTIC
C34	16009903	BYPASS
C35	16009485	3.3 MFD, +80 -20%, 10V, LYTIC
C36	16009903	BYPASS
C37	16009903	BYPASS
C38	16009799	.0022 MFD, 20%, 100V, Y5R
C39	16009903	BYPASS
C40	16009903	BYPASS
C41	16014293	330PF, 20%, 100V, Y5S
C42	16009797	270 PF, 20%, 100V, Y5S
C43	16005090	33 PF, 5%, 50V, NPO
C44	16014293	330PF, 20%, 100V, Y5S
C45	16009485	3.3 MFD, +80 -20%, 10V, LYTIC
C46	16009474	200 PF, 10%, 100V, Y5R
C47	16009799	.0022 MFD, 20%, 100V, Y5R
C48	16009800	.0047 MFD, 20%, 100V, Y5R
C49	16009485	3.3 MFD, +80 -20%, 10V, LYTIC

Illus. No.	Service No.	Description
<b>CAPACITORS (Continued)</b>		
C50	16009485	3.3 MFD, +80 —20%, 10V, LYTIC
C51	*16009798	.001 MFD, 20%, 100V, Y5P
C52	16006055	10 MFD, 20%, 16V, LYTIC
C54	16009484	.047 MFD, 20%, 16V, Y5S
C55	16009487	100 MFD, +80 —20%, 16V, LYTIC
C56	16009800	.0047 MFD, 20%, 100V, Y5R
C57	16009800	.0047 MFD, 20%, 100V, Y5R
C58	16011265	.0082 MFD, 10%, 10V, Y5R
C59	16011265	.0082 MFD, 10%, 10V, Y5R
C60	7895979	.1 MFD, 20%, 25V, Y5S
C61	16010969	.001 MFD, 5%, 50V, NPO
C62	16009800	.0047 MFD, 20%, 100V, Y5R
C63	16009484	.047 MFD, 20%, 16V, Y5S
C64	16003529	.3 MFD, 20%, 10V, Y5S
C65	7895979	.1 MFD, 20%, 25V
C100	*7287408	BYPASS, AM IF
C101	*7287408	BYPASS, AM IF
C102	*7287408	BYPASS, AM IF
C103	7297087	.05 MFD, 20%, 16V, Y5S
C104	16001482	TRIMMER, 1ST RF
C105	16006055	10 MFD, 20%, 16V, LYTIC
C106	*7287408	BYPASS, AM IF
C107	16001482	TRIMMER, 2ND RF
C108	7283696	.0022 MFD, 20%, 100V, Y5S
C109	7291069	.01 MFD, 20%, 16V, Y5S
C110	7936748	.33 MFD, 20%, 35V, TANT
C120	7292268	.001 MFD, 10%, 100V, Y5E
C121	16001482	TRIMMER, AM OSC
C122	9349947	100 MFD, +250 —10%, 16V, NP
C123	7287087	.05 MFD, 20%, 16V, Y5S
C124	7936360	10 MFD, 20%, 10V, TANT
C126	7283696	.0022 MFD, 10%, 100V, Y5D
C127	7936365	1 MFD, 20%, 15V, TANT
C130	*7287408	BYPASS, AM IF
C131	7292268	.001 MFD, 10%, 100V, Y5E
C132	7283696	.0022 MFD, 10%, 100V, Y5D
C134	9340269	40 MFD, +75 —10%, 16V, NP
C135	*7287408	BYPASS, AM IF
C136	16010944	820PF, 5%, 50V, NPO
C200	7288049	270PF, 10%, 100V, Y5S
C201	16005096	.001 MFD, 20%, 50V, Y5S
C202	16005096	.001 MFD, 20%, 50V, Y5S
C203	16005096	.001 MFD, 20%, 50V, Y5S
C204	16010355	330PF, 5%, 50V, NPO
C205	16005095	270PF, 20%, 50V, Y5S
C207	16005092	47PF, 10%, 50V, NPO
C209	7895005	10 MFD, 20%, 15V, TANT
C210	16005096	.001 MFD, 20%, 50V, Y5S
C211	16005027	36 PF, 5%, 100V, NPO
C212	16008570	TRIMMER, 2.56 MHZ ADJ.
C213	7283625	22 PF, 5%, 100V, NPO
C214	7288048	470 PF, 10%, 100V, Y5S
C215	7288049	270 PF, 10%, 100V, Y5S
C216	7936359	3 MFD, 20%, 35V, TANT
C217	16002010	.33 MFD, 10%, 75V, METAL FILM
C218	7897012	56 PF, 5%, 100V, NPO
C219	16011274	4.7 MFD, 20%, 16V, LYTIC
C220	7895979	.1 MFD, 20%, 25V
C221	7895979	.1 MFD, 20%, 25V
C222	7287087	.05 MFD, 20%, 16V, Y5S
C223	16005099	220 MFD, +100 —10%, 16V, LYTIC
C224	16005253	470 MFD, +100 —10%, 16V, LYTIC
C225	7288048	470PF, 10%, 100V, Y5S
C226	7288048	470PF, 10%, 100V, Y5S
C227	7288048	470PF, 10%, 100V, Y5S
C228	7288048	470 PF, 10%, 100V, Y5S
C230	7897499	4.7 MFD, 10%, 16V, TANT
C231	16006055	10 MFD, 20%, 16V, LYTIC
C232	7288049	270 PF, 10%, 100V, Y5S
C233	16005095	270 PF, 20%, 50V, Y5S
C234	7288049	270PF, 10%, 100V, Y5S

Illus. No.	Service No.	Description
C235	thru	
C239	16005095	270 PF, 20%, 50V, Y5S
C300	7936365	1 MFD, 20%, 15V, TANT
C301	7936365	1 MFD, 20%, 15V, TANT
C306	7298555	40 MFD, 20%, 6V
C307	*7895979	.1 MFD, 20%, 25V, Y5S
C308	7280703	.0047 MFD, 10%, 100V, Y5S
C309	7283696	.0022 MFD, 10%, 100V, Y5D
C310	16006055	10 MFD, 20%, 16V, LYTIC
C311	*7895979	.1 MFD, 20%, 25V, Y5S
C312	*16006041	.1 MFD, +80 —20%, 16V, Y5S
C313	*16006041	.1 MFD, +80 —20%, 16V, Y5S
C314	16011651	.2200 MFD, +75 —10%, Y5D
C315	*16006041	.1 MFD, +80 —20%, 16V
C316	7280703	.0047 MFD, 10%, 100V, Y5S
C317	*7895979	.1 MFD, 20%, 25V, Y5S
C318	16006055	10 MFD, 20%, 16V, LYTIC
C319	7283696	.0022 MFD, 10%, 100V, Y5D
C320	16006055	10 MFD, 20%, 16V, LYTIC
C321	*7895979	.1 MFD, 20%, 25V, Y5S
C322	*16006041	.1 MFD, +80 —20%, 16V, Y5S
C323	*16006041	.1 MFD, +80 —20%, 16V, Y5S
C324	7895005	10 MFD, 20%, 15V, TANT

## CONNECTORS AND HARNESSES

J5	1224150	12-PIN, 1-PIECE, BENCH HOOK-UP
J5	1224198	12-PIN, 3-PIECE, BENCH HOOK-UP
P5	12004451	CONNECTOR, 12-PIN, POWER AND SPEAKERS
P6	7895132	CONNECTOR, RADIO PIGTAIL, 2-WIRE
J6	1224223	HARNESS, CAR, 2-WIRE
P101	*16014276	CONNECTOR ASM., MALE, 5-PIN
J101	*16013982	CONNECTOR ASM., 5-WIRE, RIBBON
P102	16009469	CONNECTOR ASM., MALE, 8-PIN
J102	16009482	CONNECTOR ASM., FEMALE, RIBBON
P103	16001213	CONNECTOR ASM., MALE, 3-PIN
J103	16013379	CONNECTOR ASM., FEMALE, 3 CAVITY
J200	16005030	CONNECTOR ASM., 7-WIRE, RIBBON
P200	16005454	CONNECTOR, ASM., MALE, 7-PIN
P201	16009479	CONNECTOR ASM., MALE, 11-PIN
J201	16010389	CONNECTOR ASM., 11-PIN, RIBBON
P202	16009470	CONNECTOR ASM., 7-PIN, MALE
J202	16009483	CONNECTOR ASM., 7-WIRE, RIBBON
P203	16017667	CONNECTOR ASM., 10-PIN, MALE
J203	16009480	CONNECTOR ASM., FEMALE, RIBBON
P205	16001157	CONNECTOR ASM., MALE, 5-PIN
J205	16009558	CONNECTOR ASM., FEMALE, 5-WIRE
P206	16009584	CONNECTOR ASM., MALE, 6-PIN AUDIO
J206	16009575	CONNECTOR ASM., 6-WIRE
P301	16001212	CONNECTOR ASM., MALE, 4-PIN
J301	16001551	CONNECTOR ASM., 4-WIRE
P302	16001212	CONNECTOR ASM., MALE, 4-PIN
J302	16013700	CONNECTOR ASM., FEMALE, 4-WIRE
P400	16001157	CONNECTOR ASM., MALE, 5-PIN
P601	16001212	CONNECTOR ASM., MALE, 4-PIN
J602	16010392	CONNECTOR ASM., FEMALE, 4-WIRE
J603	16010391	CONNECTOR ASM., FEMALE, 5-WIRE

\*PARTS FIRST USED IN 1981

## AUDIO



WITHOUT TAPE

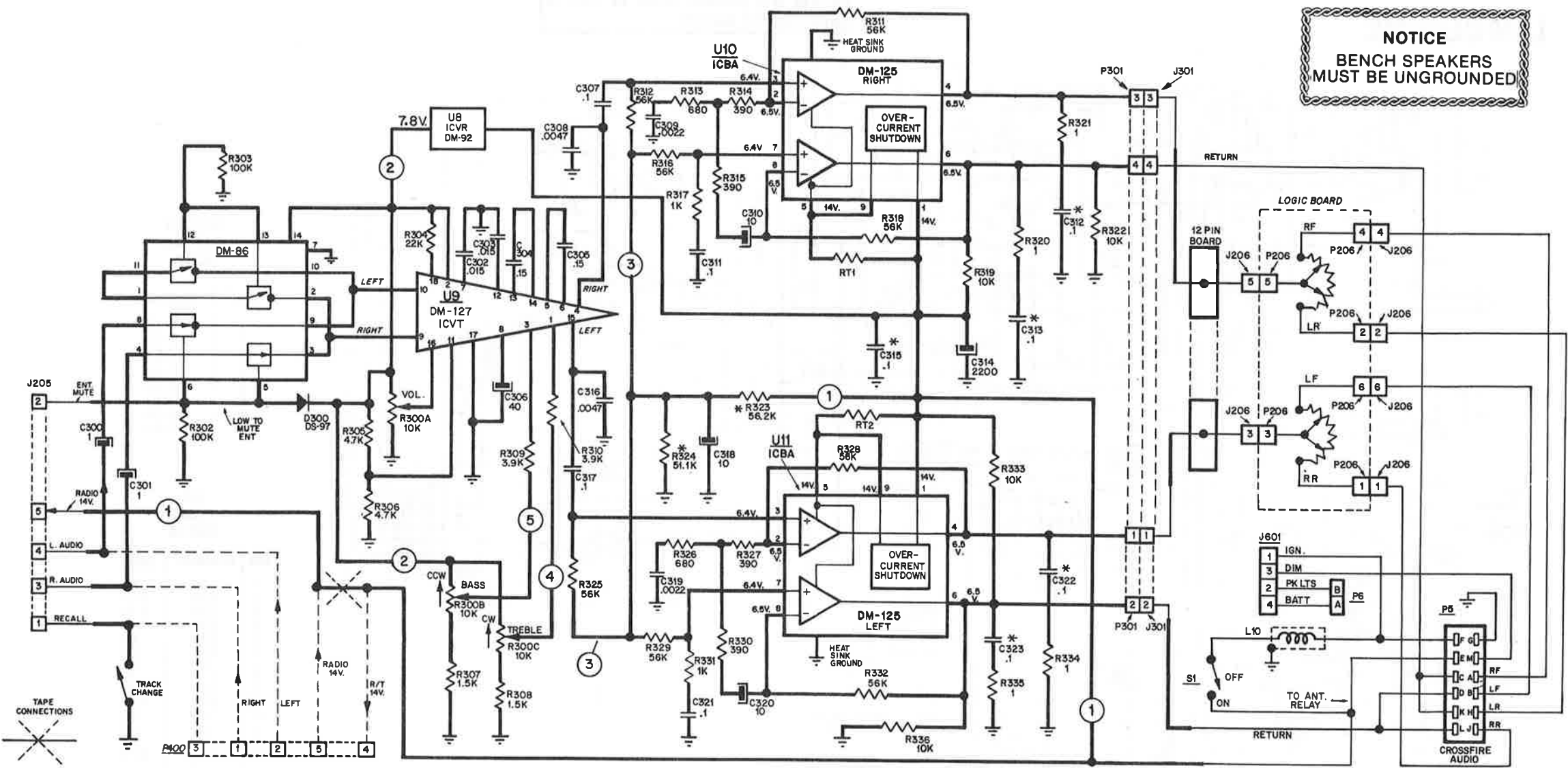


FROM SL



# SCHEMATIC

AUDIO FOR STEREO OR 8-TRACK



**NOTICE**  
BENCH SPEAKERS  
MUST BE UNGROUNDED

**U9  
DM-127  
ICVT**

PIN	ST/8TR VOLTAGE
1	3.3V-5.5V
2	7.8V
3	3.3V-5.5V
4	1.4V
5	2.3V
6	2.7V
7	2.9V
8	2.3V
9	2.2V
10	2.2V
11	3.5V
12	2.9V
13	2.8V
14	2.3V
15	1.4V
16	0V-7.9V
17	0V
18	2.9V

**U7  
ICAG  
DM-86**

CONTROL PIN 5,6,12,13	SWITCH
8V	CLOSED
0V	OPEN

**NOTICE**  
GROUND PROBE BEFORE MAKING  
MEASUREMENTS ON IC. ALSO, DO  
NOT SHORT IC PINS TOGETHER OR  
TO GROUND OR IC MAY BE  
DESTROYED.

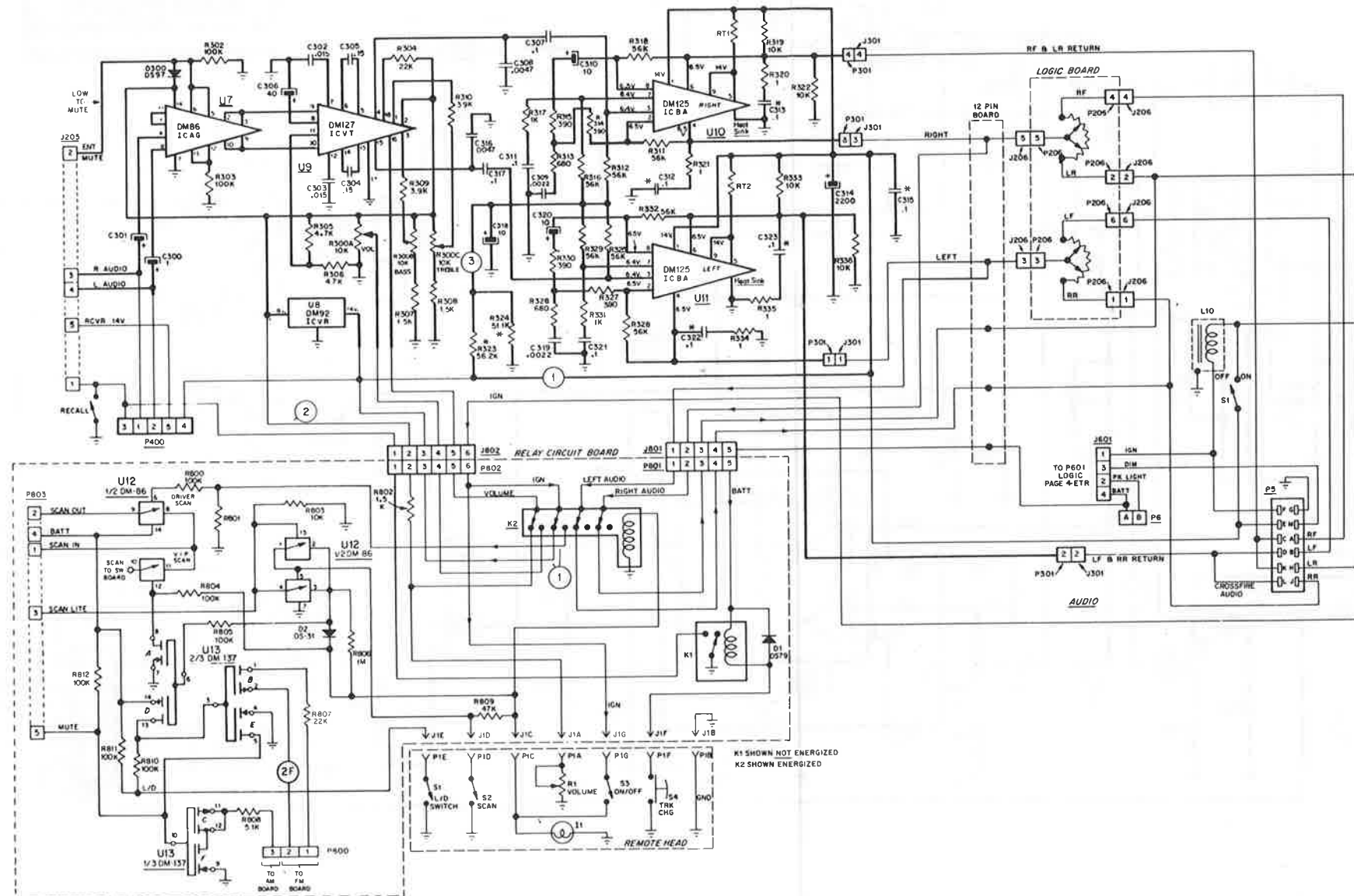
**UNLESS OTHERWISE NOTED:**  
ALL CAPACITORS ARE SHOWN IN MFD  
AND ARE 75 VOLT OR HIGHER EXCEPT  
ELECTROLYTICS AND THOSE NOTED BY  
AN \*

**VOLTAGES MEASURED WITH A VTVM  
14 VOLTS APPLIED TO RADIO**

**NOTICE**  
Maintain all CMOS module terminals at same potential  
until installed — by: grounding body, tweezers, work sur-  
faces & soldering iron tips.  
NEVER HANDLE DEVICE BY LEADS (even installed).  
Use X100 scale on ohmmeter. Maintain humidity above  
30%.  
Avoid electrostatic materials such as: plastic, nylon, etc.

# LIMOUSINE

VOLTAGES MEASURED WITH A VTVM NO SIGNAL AND 14 VOLTS APPLIED TO RADIO.



U10, 11  
DM-125  
ICBA

PIN	VOLTAGE
1	13.7V
2	6.5V
3	6.4V
4	6.5V
5	13.8V
6	6.5V
7	6.4V
8	6.5V
9	13.8V

U7  
ICAG  
DM-86

PIN	NORMAL	SEEK
1	0V	0V
2	2.2V	2.2V
3	2.2V	2.2V
4	2.2V	.4V
5	8.5V	0V
6	8.5V	0V
7	0V	0V
8	2.2V	.4V
9	2.2V	2.2V
10	2.2V	2.2V
11	0V	0V
12	0V	0V
13	0V	0V
14	8.0V	8.0V

## PARTS LIST

Illus. No.	Service No.	Description
<b>RELAY BOARD</b>		
D1	DS-79	DIODE, SPIKE SUPPRESSION
D2	DS-31	DIODE, ISOLATION
K1	16005087	RELAY, SPDT
K2	16004821	RELAY, 4PDT
J1	16004823	CONNECTOR ASM., FEMALE, ON RELAY BOX
P800	16001213	CONNECTOR ASM., MALE, 3-PIN
J800	16014277	CONNECTOR ASM., FEMALE, 3-WIRE
P801	16001157	CONNECTOR ASM., MALE, 5-PIN
J801	16004827	CONNECTOR ASM., FEMALE, 5-WIRE
P802	16009584	CONNECTOR ASM., MALE, 6-PIN
J802	16010162	CONNECTOR ASM., FEMALE, 6-WIRE
P803	16001157	CONNECTOR ASM., MALE, 5-PIN
J803	16010163	CONNECTOR ASM., FEMALE, 5-WIRE

Illus. No.	Service No.	Description
<b>RELAY BOARD (Cont'd.)</b>		
U12	DM-86	TRANSFER GATE (MOS)
U13	DM-137	DUAL COMPLEMENTARY PAIR PLUS INVERTER (MOS)
<b>REMOTE HEAD</b>		
I1		LAMP, NO. 250
P1	16004014	CABLE ASM., TO REMOTE, 15 FT. 3 IN.
R1	16004483	CONTROL VOLUME (ALSO S1, S3, S4)
S2	7279805	NUT, HEX
	9349438	SWITCH, SCAN, NORMALLY CLOSED, PUSH-PUSH
	16003522	PUSH-BUTTON, ROUND WITH SET SCREW

### NOTICE

Maintain all CMOS module terminals at same potential until installed — by: grounding body, tweezers, work surfaces & soldering iron tips.

NEVER HANDLE DEVICE BY LEADS (even installed).

Use X100 scale on ohmmeter. Maintain humidity above 30%.

Avoid electrostatic materials such as: plastic, nylon, etc.

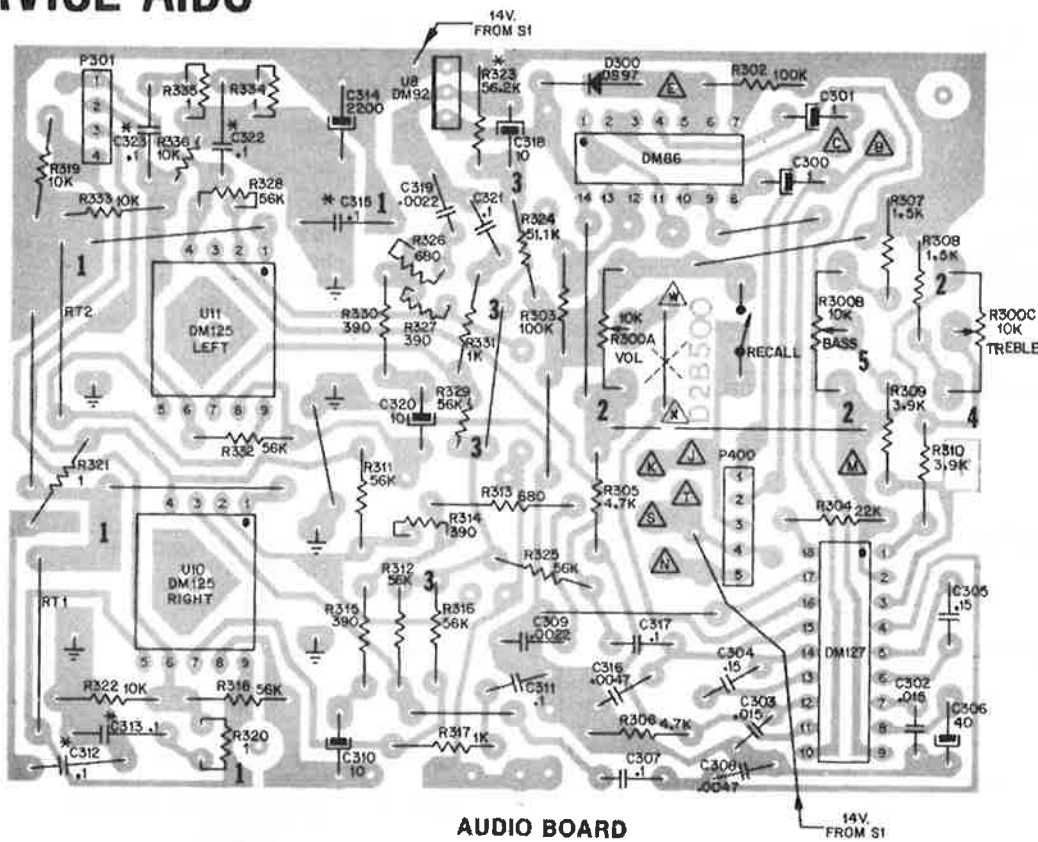
### NOTICE

GROUND PROBE BEFORE MAKING MEASUREMENTS ON IC. ALSO, DO NOT SHORT IC PINS TOGETHER OR TO GROUND OR IC MAY BE DESTROYED.

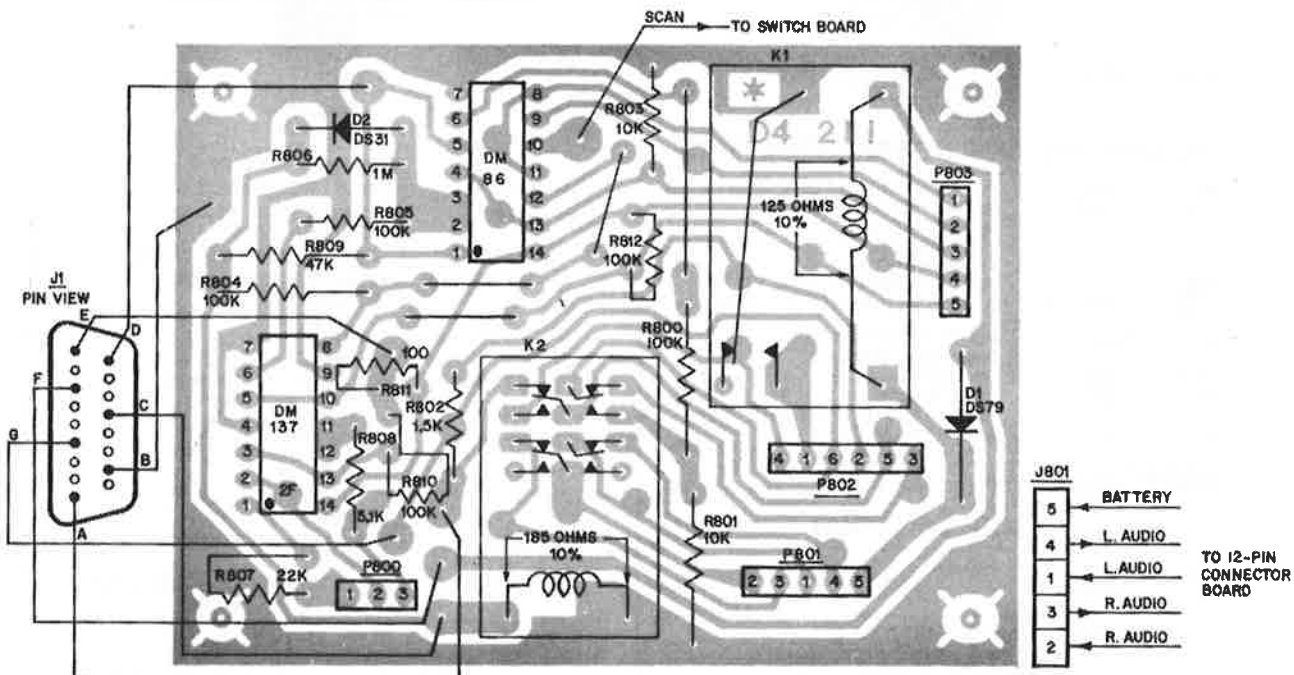
### NOTICE

BENCH SPEAKERS MUST BE UNGROUNDED

# SERVICE AIDS



AUDIO BOARD



RELAY BOARD

# PARTS LIST ETR

Illus. No.	Service No.	Description
<b>ESCUTCHEON ASSEMBLIES</b>		
	16010113 ....	10BETR1
	16010108 ....	16CETR1
	16010112 ....	16KETR1
	16013979 ....	10BECT1, 12FECT1
	16012809 ....	16CECT1
	16012877 ....	16KECT1
	16010103 ....	10BETT1
	16010107 ....	16CETT1
	16010110 ....	16KETT1
	16010107 ....	16DETT1
<b>CONTROLS</b>		
	16011563 ....	MANUAL TUNE, FDR, BAND, FOR: 10BETR1 16KETR1 10BECT1, 12FECT1 16KECT1 10BETT1 16KETT1
	16011562 ....	MANUAL TUNE, FDR, BAND, FOR: 13CETR1 16CECT1 16CETT1 16DETT1
R300	16016467 ....	VOLUME, ON-OFF, RECALL, TONE, FOR: 10BETR1 16KETR1 10BETT1 16KETT1
R300	16016466 ....	VOLUME, ON-OFF, RECALL, TONE, FOR: 16CETR1 16CETT1 16DETT1
R301	16013097 ....	VOLUME, ON-OFF, RECALL, BALANCE, FOR: 10BECT1, 12FECT1 16KECT1
R301	16013075 ....	VOLUME, ON-OFF, RECALL, BALANCE, FOR: 16CECT1
<b>RESISTORS AND POTENTIOMETERS</b>		
R24	9349022 ....	POTENTIOMETER, 20K, BLEND ADJ.
R30	9349022 ....	POTENTIOMETER, 20K, SEPARATION, ADJ.
R35	9349445 ....	POTENTIOMETER, 5K, THRESHOLD ADJ.
R39	16010973 ....	POTENTIOMETER, 2.5K, VCO
R40	16006639 ....	9.09K, 1%, VCO, METAL FILM
R110	9349445 ....	POTENTIOMETER, 5K, THRESHOLD ADJ.
R220	16001068 ....	390 OHM, 1W
R221	16001067 ....	6.8 OHM, 2W
R323	16003080 ....	56.2K, 1%, METAL FILM
R324	16016465 ....	51.1K, 1%, METAL FILM
R398 and R399	16013314 ....	POT. ASM., SLIDE, DUAL
<b>MISCELLANEOUS</b>		
X1	16006225 ....	CRYSTAL, 2.56 MHZ
I3	16005032 ....	LAMP, BALLAST
	7898970 ....	PUSHBUTTON
	7898971 ....	PUSHBUTTON, SEEK
	7899375 ....	PUSHBUTTON, SCAN
	16009566 ....	SWITCH AND PUSHBUTTON ASM

Illus. No.	Service No.	Description
<b>MISCELLANEOUS</b>		
I2	DS-835	INDICATOR, FUNCTION, RED FOR 12FECT1
I1	DS-834	DISPLAY, 3½ DIGIT, RED FOR 12FECT1
	16014643 ....	SOCKET, ANTENNA
	16010921 ....	INSULATOR, COVER, FM
I2	DS-841	INDICATOR, FUNCTION FOR 10BETR1 16KETR1 10BECT1 16KECT1 10BETT1 16KETT1
I1	DS-842	DISPLAY, 3½ DIGIT FOR 10BETR1 16KETR1 10BECT1 16KECT1 10BETT1 16KETT1
I2	DS-843	INDICATOR, FUNCTION FOR 16CETR1 16CECT1 16CETT1 16DETT1
I1	DS-844	DISPLAY, 3½ DIGIT FOR 16CETR1 16CECT1 16CETT1 16DETT1
	1224709 ....	TRANSISTOR MTG. PKG., DS-70, DS-513
	16013184 ....	CIRCUIT BOARD, DISPLAY FOR 10BECT1 12FECT1 16CECT1 16KECT1
	16014056 ....	CIRCUIT BOARD, DISPLAY FOR 10BETR1 16CETR1 16KETR1 10BETT1 16CETT1 16KETT1 16DETT1
	1224711 ....	GROUND SPRING PKG, 4/PKG
	1224712 ....	SCREW PKG., CASE, SHORT, 25/PKG.
	1224413 ....	TERMINAL PKG., 12-PIN, 15 TERMINALS/PKG.
	1224144 ....	BRACKET, 12-PIN CONN., MTG.
	16016014 ....	CIRCUIT BD, 12-PIN INPUT FOR 10BECT1 12FECT1 16CECT1 16KECT1
	16010193 ....	CIRCUIT BD., 12-PIN INPUT FOR 10BETR1 16CETR1 16KETR1 10BETT1 16CETT1 16KETT1 16DETT1
	● 10012264 ....	LENS, DISPLAY; STEREO/8-TRACK FIREBIRD
	● 10018263 ....	LENS, DISPLAY; AUTO-REVERSE CASSETTE, FIREBIRD

● GM PARTS DIVISION ONLY