

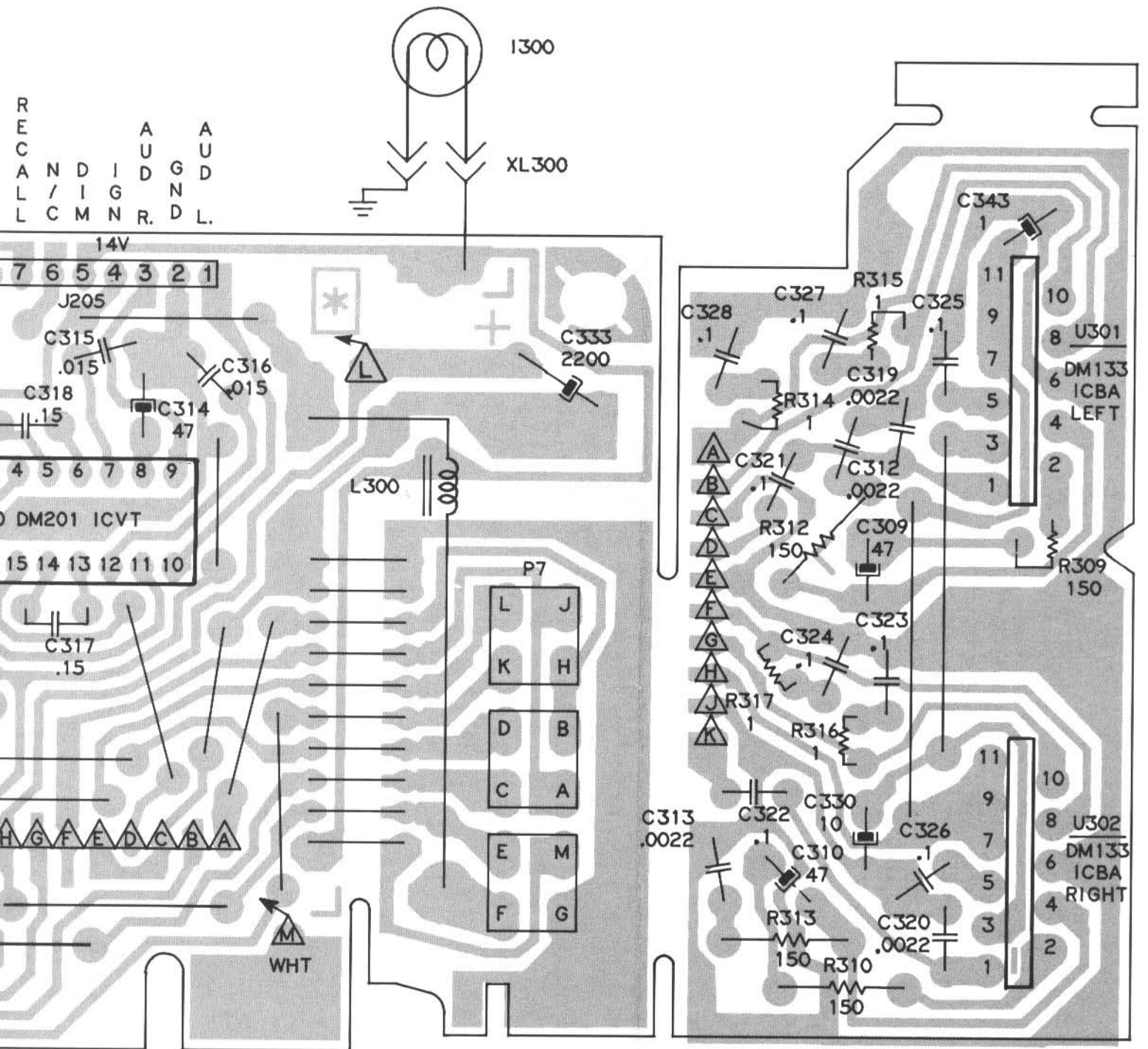


1987 AUTO RADIO SERVICE MANUAL

2000 SERIES L.E.D. ELECTRONICALLY TUNED RECEIVERS

APPLICATION	SERIAL NO.		PART NO.
	FROM:	TO:	
AM/FM/ST W/O SEEK/SCAN/CLK			
M-VAN, S/T TRUCK	1000001	_____	16050335
AM/FM/ST/SEEK/SCAN/CLK			
M-VAN, S/T TRUCK	1000001	_____	16048831
CADILLAC D	1000001	_____	16058026
AM/FM/ST/SEEK/SCAN/CLK/CASS			
CADILLAC D	1000001	_____	16063276
CASSETTE DECKS-SEE SECTION 2F			

BOARD
MODELS 16050335
 16048831
 16058026



* USED ON CLOCK MODELS ONLY

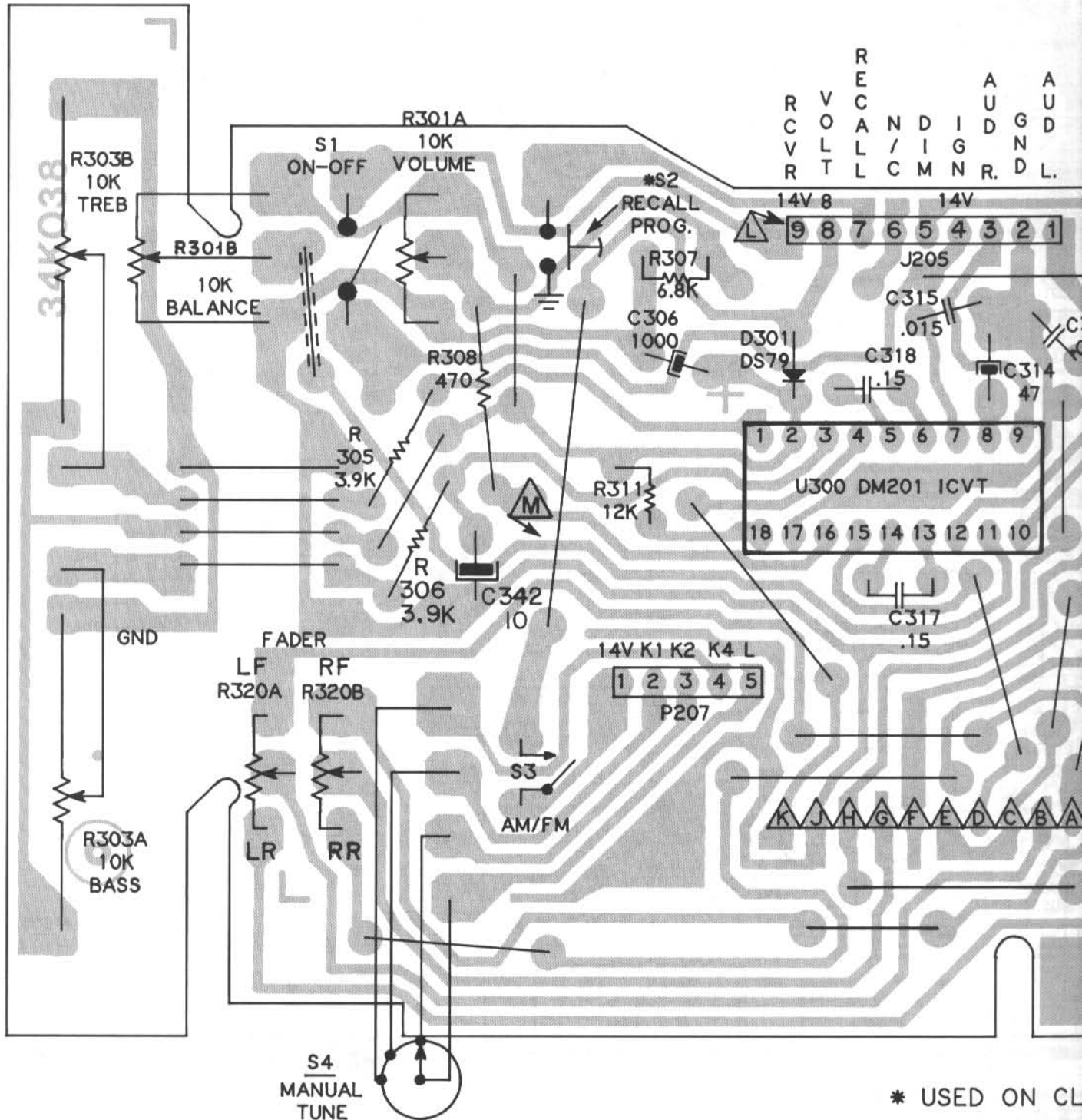
CONTROL BOARD

AUDIO BOARD

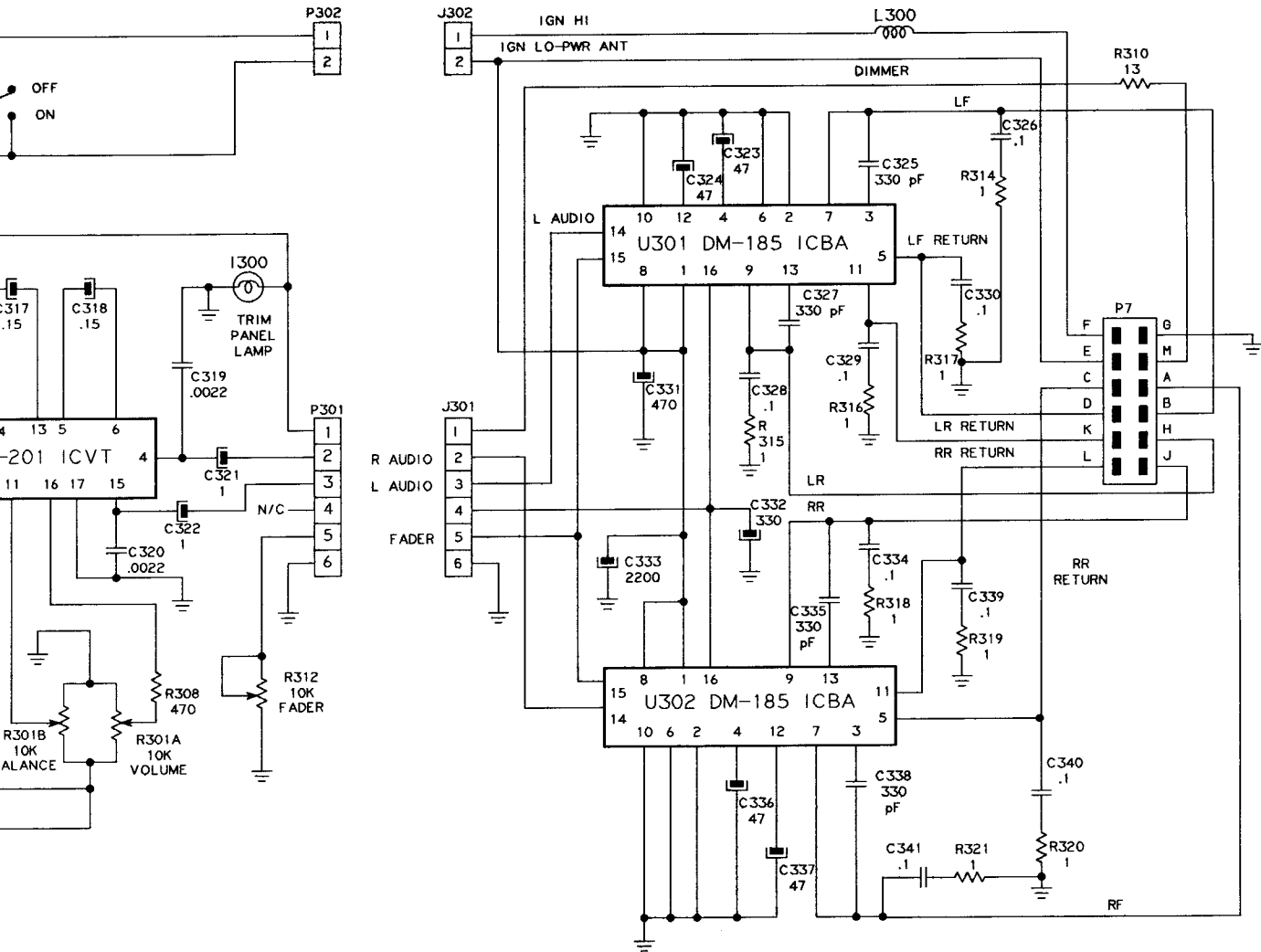
SERVICE AIDS

AUDIO & CONTROL BOARD
2000 SERIES L.E.D. COVERS NON-CASSETTE MODELS

16050335
 16048831
 16058026



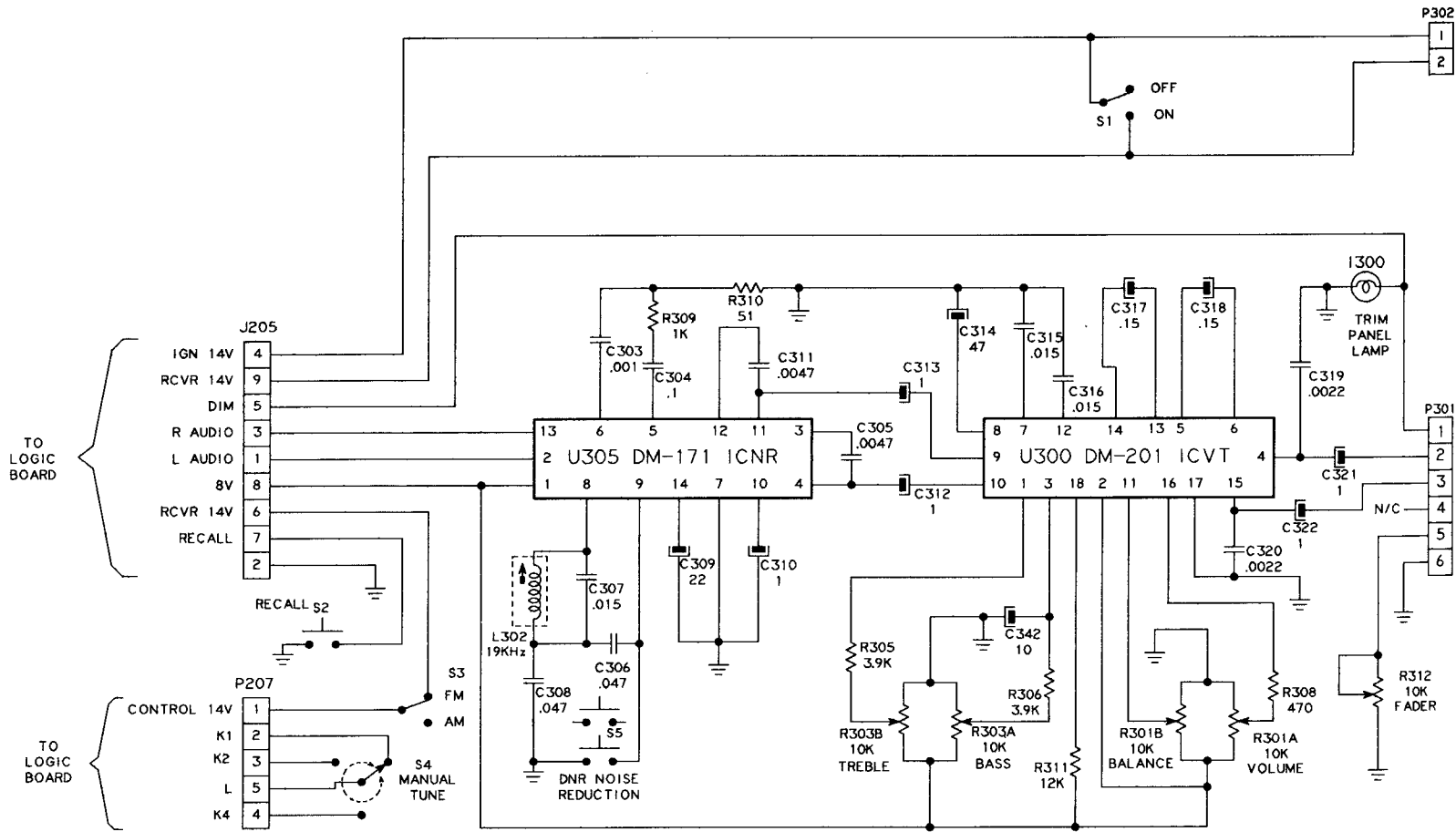
* USED ON CL
CONTROL BOARD



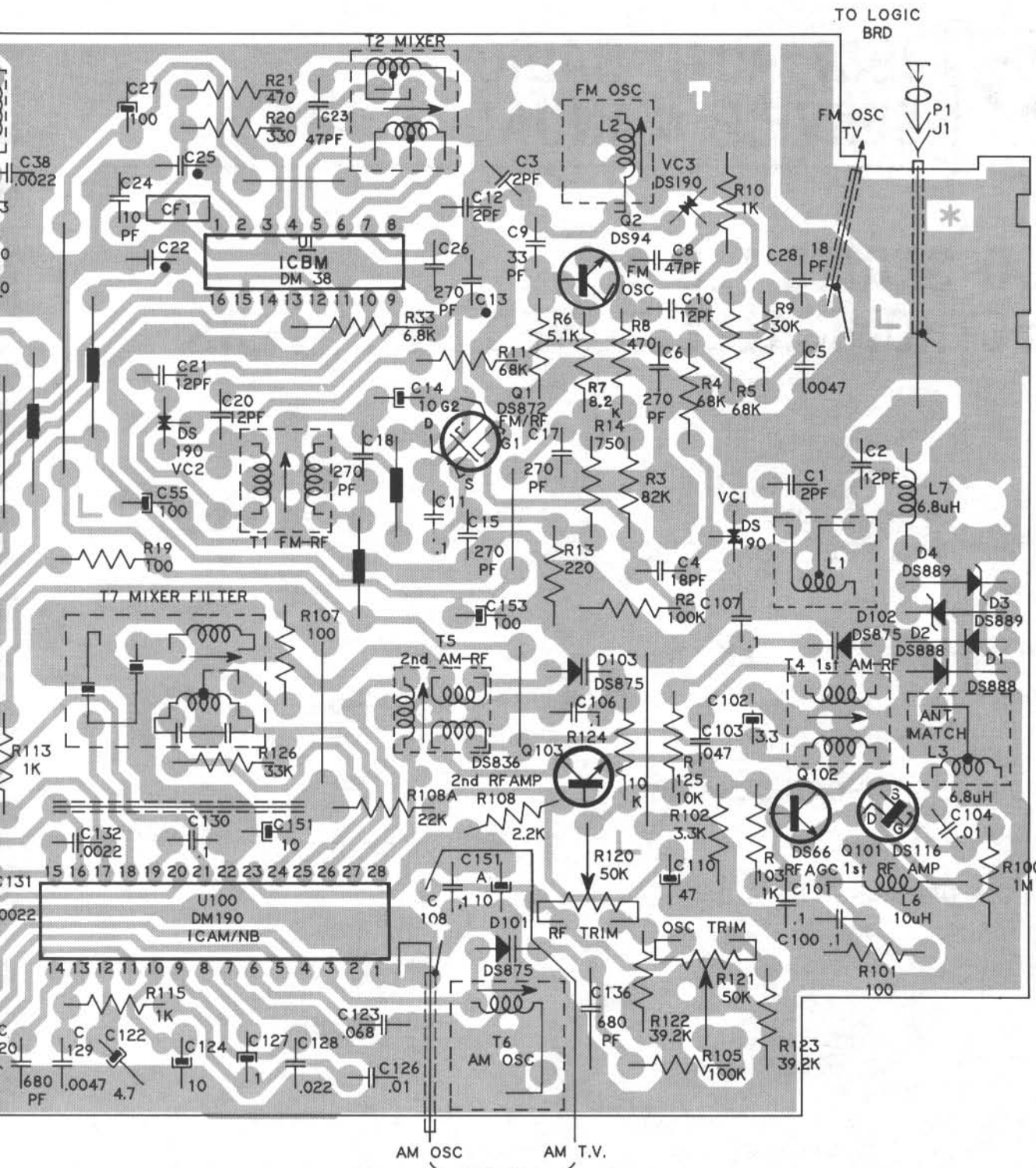
AUDIO BOARD

SCHEMATIC

2000 SERIES L.E.D. COVERS CASSETTE MODEL 16063276 AUDIO AND CONTROL BOARD

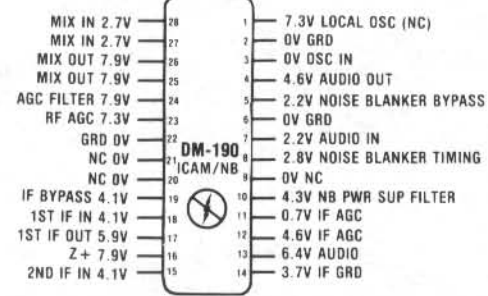
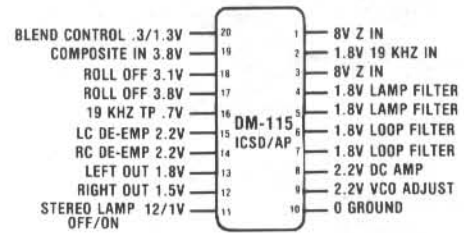


CASSETTE CONTROL CIRCUIT

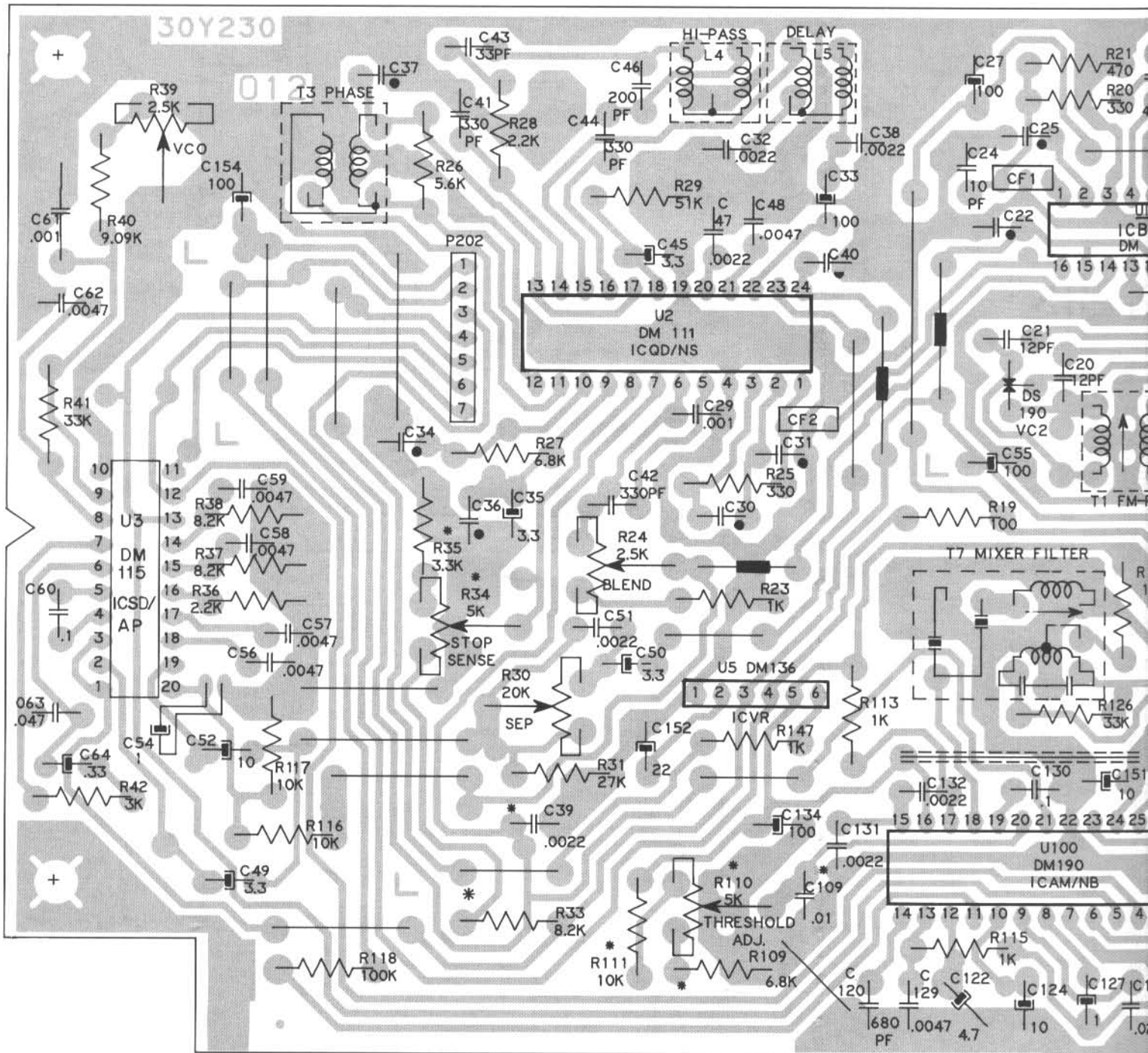


TO LOGIC BRD

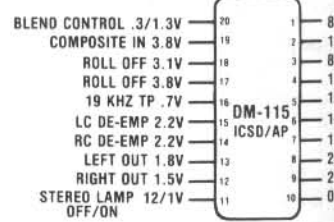
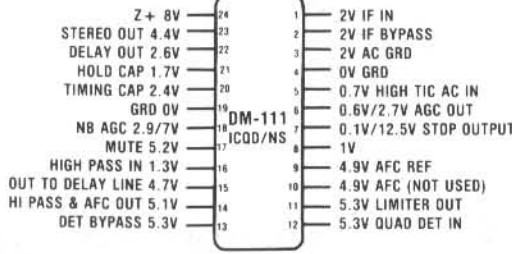
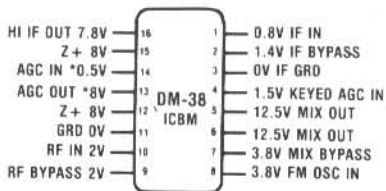
TO LOGIC BRD



SERVICE AIDS 2000 SERIES L.E.D. AM/FM STEREO

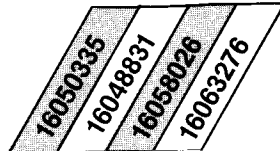


* Not Used on Model 16050335



⑭ *2.4V WITH SIGNAL IN
⑮ *1V WITH SIGNAL IN

PARTS LIST 2000 SERIES L.E.D.



CONTROLS AND SWITCHES

R301A/B- /S1	16030180	CONTROL VOL/BAL/ON-OFF	X			
R301A/B S1/S2	16027368	CONTROL VOL/BAL/ON-OFF/RECALL	X	X	X	X
R303A/B	16020080	CONTROL DUAL TREB/BASS	X	X	X	X
R312/S3/ S4	16020172	CONTROL FADE/AM-FM/TUNE				X
R320A/B S3/S4	16023816	CONTROL FADE/AM-FM/TUNE	X	X	X	X
S5	*16063981	SWITCH DNR	X	X	X	X
S201	16024364	SWITCH GANG	X	X	X	X

CONNECTORS

J1	16013647	CONN ASM ANTENNA	X	X	X	X
P7	12004451	CONN ASM 12-PIN	X	X	X	X
J7	1224150	CONN PKG 12-PIN BENCH 1-PIECE	X	X	X	X
J7	1224198	CONN PKG 12-PIN BENCH 3-PIECE	X	X	X	X
J201	1224209	CONN PKG MEMORY (6/PKG)	X	X	X	X
P201	16026835	CONN ASM MEMORY 2-PIN	X	X	X	X
J202	16020854	CONN ASM 7-PIN	X	X	X	X
P202	16004455	CONN MALE 7-PIN	X	X	X	X
J205	16009483	CONN ASM 9-PIN	X	X	X	X
J205	16020852	CONN ASM 9-PIN	X	X	X	X
P205	16001158	CONN MALE 9-PIN	X	X	X	X
J207	*16035231	CONN ASM 5-PIN	X	X	X	X
P207	16001157	CONN MALE 5-PIN	X	X	X	X
J301	16013558	CONN ASM 6-PIN				X
P301	16009584	CONN MALE 6-PIN				X
J302	16013559	CONN ASM 2-PIN				X
P302	16018438	CONN MALE 2-PIN				X
P500	16017809	CONN ASM 5-PIN				X

KNOBS PUSHBUTTONS AND TRIMPLATES

16018146	KNOB BASS/TREB CONTROL	X	X	X	X
16020534	KNOB BASS/TREB CONTROL	X	X	X	X
16019795	KNOB FADE/BAL	X	X		
16020530	KNOB FADE/BAL	X	X		
16020297	KNOB VOL/TUNE	X	X		
*16064807	KNOB VOL/TUNE			X	X
16018145	PUSHBUTTON DNR			X	X
16021872	PUSHBUTTON F.FWD/REV			X	X
16018143	PUSHBUTTON SEEK/MIN SCAN/HR		X		
16020528	PUSHBUTTON SEEK/MIN SCAN/HR		X		
16021873	PUSHBUTTON STOP/EJECT			X	X
7898970	PUSHBUTTON STORE/SELECT	X	X		
16020529	PUSHBUTTON STORE/SELECT	X	X		
16052127	TRIMPLATE		X		
16048767	TRIMPLATE		X		
*16060906	TRIMPLATE			X	X
*16064550	TRIMPLATE			X	X

2000 SERIES L.E.D. PARTS LIST

Illus. No.	Service No.	Description
CAPACITORS (IN MICROFARADS UNLESS SPECIFIED)		
C215	16047804	10 16V
C216	16005253	470 16V
C217	16009797	270 PF 100V
C218	16015615	0.1 50V
C219	16047805	100 16V
C220	16009797	270 PF 100V
C221	16005096	0.001 50V
C222	16005096	0.001 50V
C223	16005096	0.001 50V
C224	16029010	1 16V NPO
C225	16029010	1 16V NPO
C226	16015615	0.1 50V
C227	16005096	0.001 50V
C229	16015537	0.047 16V
C230	16047805	100 16V
C231	16047805	100 16V
C232	16009797	270 PF 100V
C233	16015615	0.1 50V
C234	16009797	270 PF 100V
C235	16009797	270 PF 100V
C236	16009797	270 PF 100V
C237	16009797	270 PF 100V
C238	16047805	100 16V
C240	16005253	470 16V
C242	16009797	270 PF 100V
C243	16015615	0.1 50V
C244	16015615	0.1 50V
C245	16047804	10 16V
C247	16015537	0.047 16V
C248	16016306	0.033 50V
C250	16015615	0.1 50V
C303	16015610	0.001 50V
C304	16015615	0.1 50V
C305	16018425	10.0047 63V
C306	16034624	1000 10V
C306	16018427	0.047 63V (CASS MODEL ONLY)
C307	16018426	0.015 63V
C308	16018427	0.047 63V
C309	16016641	47 25V
C309	16016883	22 16V (CASS MODEL ONLY)
C310	16016641	47 25V
C310	16055331	1 50V (CASS MODEL ONLY)
C311	16018425	0.0047 63V
C312	*16054588	0.0022 25V
C312	16055331	1 50V (CASS MODEL ONLY)
C313	*16054588	0.0022 25V
C313	16055331	1 50V (CASS MODEL ONLY)
C314	16016641	47 25V
C315	16015534	0.015 12V
C316	16015534	0.015 12V
C317	16015215	0.15 FILM
C318	16015215	0.15 FILM
C319	*16060770	0.0022 100V
C320	*16054588	0.0022 25V
C321	16015615	0.1 50V
C321	16055331	1 50V (CASS MODEL ONLY)
C322	16015615	0.1 50V
C322	16055331	1 50V (CASS MODEL ONLY)
C323	16015615	0.1 50V
C323	16016641	47 25 (CASS MODEL ONLY)
C324	16015615	0.1 50V
C324	16016641	47 25 (CASS MODEL ONLY)
C325	16015615	0.1 50V
C325	16014293	330 PF 100V (CASS MODEL ONLY)
C326	16015615	0.1 Y5S

Illus. No.	Service No.	Description
CAPACITORS (IN MICROFARADS UNLESS SPECIFIED)		
C327	16015615	0.1 50V
C327	16014293	330 PF 100V (CASS MODEL ONLY)
C328	16015616	0.1 Y5S
C329	16015616	0.1 Y5S
C330	16016933	10 16V
C330	16015616	0.1 Y5S (CASS MODEL ONLY)
C331	16005253	470 16V
C332	16024339	330 10V
C333	16034036	2200 16V
C334	16015615	0.1 Y5S
C335	16014293	330 PF 100V
C336	16016641	47 25V
C337	16016641	47 25V
C338	16014293	330 PF 100V
C339	16015615	0.1 Y5S
C340	16015615	0.1 Y5S
C341	16015615	0.1 Y5S
C342	16016933	10 16V
C343	16055331	1 50V

RESISTORS AND POTENTIOMETERS

R24	16010973	POT 2.5K BLEND ADJ
R30	9349022	POT 20K SEP ADJ
R34	9349445	POT 5K STOP SENSE
R39	16010973	POT 2.5K VCO ADJ
R40	16006639	9.09K 1/4W 1%
R110	9349445	POT 5K THRESHOLD ADJ
R120	16024788	POT 50K RF TRIM
R121	16024788	POT 50K OSC TRIM
R211	16017180	51 OHM 1W (1/2W CASE)
R239	16038749	390 OHM 1W (1/2W CASE)
R240	16017387	6.8 OHM 2W (1W CASE)
R310	16025449	13 OHM 1W

Illus. No.	Service No.	Description
DIODES		
D229	16043467	DS-31
D230	16043467	DS-31
D231	16043467	DS-31
D301	16006643	DS-79
VC1,2, &3	1226505	DS-190 SET

CRYSTALS COILS TRANSFORMERS & CERAMIC FILTERS

Y201	16017182	CRYSTAL 4 MHZ
CF1	*16059317	CERAMIC FILTER 10.7 MHZ
CF2	*16059317	CERAMIC FILTER 10.7 MHZ
L1	16018202	COIL FM ANT
L2	16018206	COIL FM OSC
L3	16005269	TRANSFORMER ASM ANT
L4	7898999	CHOKE DUAL HIGH PASS
L5	7898999	CHOKE DUAL AUDIO DELAY
L6	16008754	CHOKE 10 UH
L7	16043619	CHOKE 6.8 UH
L300	16014025	CHOKE FILTER A+(INCL CONN BRACKET)
L302	16018423	TRANSFORMER 19 KHZ
T1	16018205	TRANSFORMER FM RF
T2	16018270	TRANSFORMER MIXER
T3	16017939	TRANSFORMER PHASE
T4	16006685	TRANSFORMER AM 1ST RF
T5	16012429	TRANSFORMER AM 2ND RF
T6	16018001	TRANSFORMER AM OSC
T7	16013192	TRANSFORMER MIXER-FILTER

CAPACITORS (IN MICROFARADS UNLESS SPECIFIED)

C1	16020130	2 PF 50V
C2	16054597	12 PF 50V
C3	16020130	2 PF 50V
C4	*16054592	18 PF 100V
C5	16055869	0.0047 100V
C6	16015611	270 PF 50V
C8	16014298	47 PF 100V
C9	16009796	33 PF 100V
C10	16054597	12 PF 50V
C11	16015615	0.1 50V
C12	16020130	2 PF 50V
C13	16055867	BYPASS
C14	16047804	10 16V
C15	16015611	270 PF 50V
C17	16015611	270 PF 50V
C18	16015611	270 PF 50V
C20	16054597	12 PF 50V
C21	16054597	12 PF 50V
C22	16055867	BYPASS
C23	16014298	47 PF 100V
C24	*16054606	10 PF 100V
C25	16055867	BYPASS
C26	16015611	270 PF 100V
C27	16047805	100 16V
C28	*16054592	18 PF 100V
C29	16015610	0.001 50V
C30	16055867	BYPASS
C31	16055867	BYPASS
C32	*16054588	0.0022 25V
C33	16047805	100 16V
C34	16055867	BYPASS
C35	16033782	3.3 35V
C36	16055867	BYPASS
C37	16055867	BYPASS
C38	*16054588	0.0022 25V

Illus. No.	Service No.	Description
CAPACITORS (IN MICROFARADS UNLESS SPECIFIED)		
C39	*16054588	0.0022 25V
C40	16055867	BYPASS
C41	16020139	330 PF 50V
C42	16020139	330 PF 50V
C43	16009796	33 PF 100V
C44	16020139	330 PF 50V
C45	*16033782	3.3 35V
C46	16020142	200PF 50V
C47	*16054588	0.0022 25V
C48	16055869	0.0047 100V
C49	*16033782	3.3 35V
C50	*16033782	3.3 35V
C51	*16054588	0.0022 25V
C52	16047804	10 16V
C54	16055331	1 50V
C55	16047805	100 16V
C56	16055869	0.0047 100V
C57	16055869	0.0047 100V
C58	16055869	0.0047 100V
C59	16055869	0.0047 100V
C60	16015615	0.1 50V
C61	16010968	0.001 50V
C62	16055869	0.0047 100V
C63	16015537	0.047 16V
C64	16017225	0.33 35V
C100	16015615	0.1 50V
C101	16015615	0.1 50V
C102	*16033782	3.3 35V
C103	16015537	0.047 16V
C104	16015613	0.01 16V
C106	16015615	0.1 50V
C107	16015615	0.1 50V
C108	16015615	0.1 50V
C109	16015613	0.01 16V
C110	16047806	47 25V
C120	16017737	680 PF 100V
C122	7936362	4.7 10V
C123	16026439	0.068 16V
C124	16047804	10 16V
C126	16015613	0.01 16V
C127	16055331	1 50V
C128	16008772	0.022 16V
C129	16055869	0.0047 100V
C130	16015615	0.1 50V
C131	*16054588	0.0022 25V
C132	*16054588	0.0022 25V
C134	16047805	100 16V
C136	16032447	680 PF 50V
C151	16047804	10 16V
C151A	16047804	10 16V
C152	16047799	22 16V
C153	16047805	100 16V
C154	16047805	100 16V
C201	16015534	0.015 16V
C202	16009797	270 PF 100V
C203	16009797	270 PF 100V
C204	16015615	0.1 50V
C205	16009797	270 PF 100V
C206	*16054604	91 PF 100V
C207	16008570	TRIMMER 500 KHZ
C208	16054605	22 PF 50V
C209	16047804	10 16V
C210	16015613	0.01 16V
C211	16015610	0.001 16V
C212	7936359	3 35V
C213	16015610	0.001 50V
C214	16015537	0.047 16V

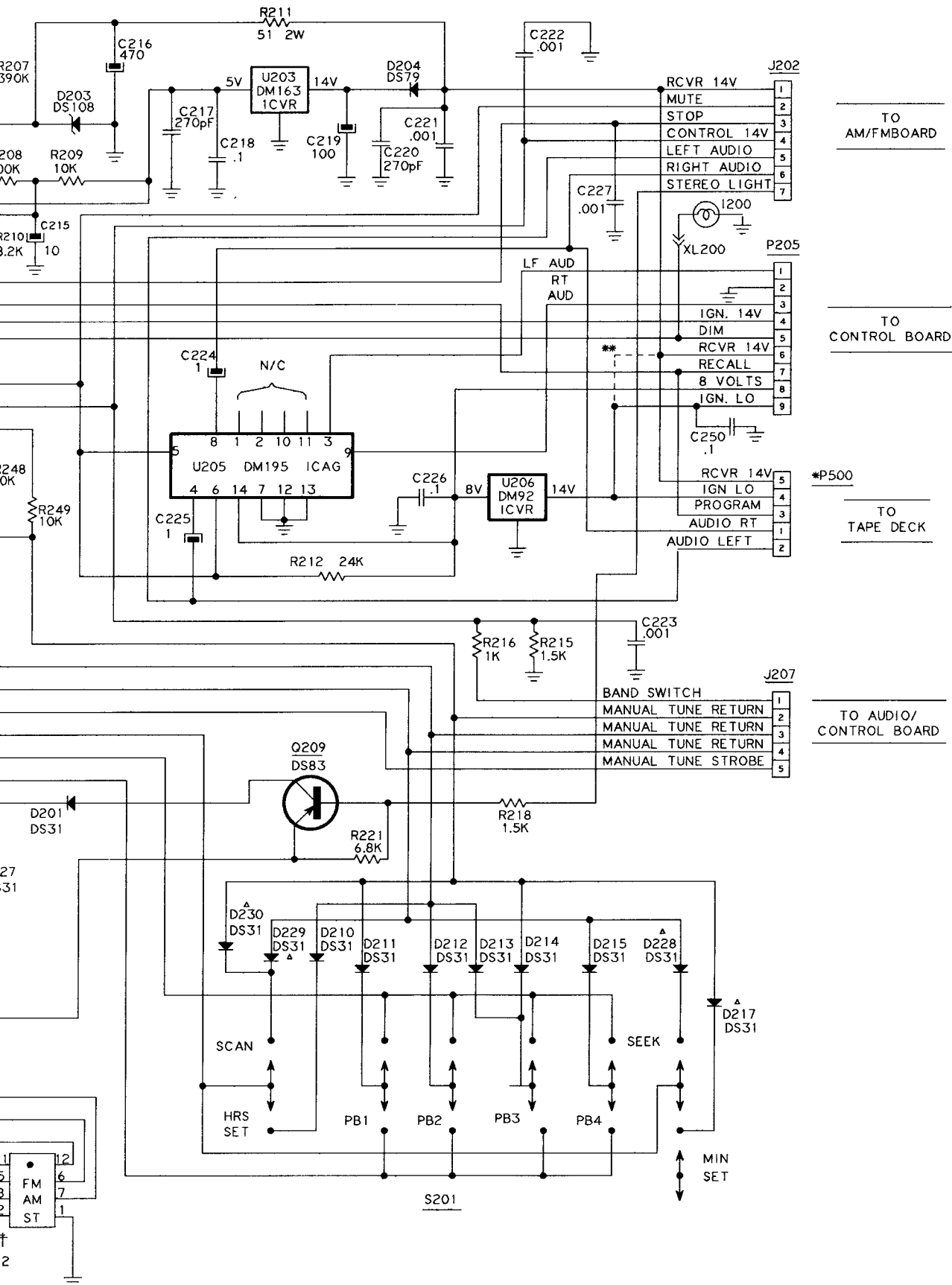
PARTS LIST

2000 SERIES L.E.D.

Illus. No.	Service No.	Description
INTEGRATED CIRCUITS		
U1	16010316	DM-38 BALANCED MIXER
U2	16006165	DM-111 QUAD DET/NOISE SUPP
U3	16006168	DM-115 AUD/PROC/ST/DECODER
U5	16029499	DM-136 VOLTAGE REGULATOR
U100	16025215	DM-190 AM/NOISE SUPPRESSOR
U201	16017177	DM-159 SYNTHESIZER
U202	16001358	DM-90 INTEGRATOR (MOS)
U203	16017811	DM-163 VOLTAGE REGULATOR 5.1V
U204	16041555	DM-162 VOLTAGE REGULATOR 5V
U205	16023530	DM-195 TRANSFER GATE
U206	16006048	DM-92 VOLTAGE REGULATOR 8V
U207	16024627	DM-186 PROGRAMMER (MOS)(CASS MODEL ONLY)
U207	16036377	DM-229 PROG (MOS)
U208	16017178	DM-161 DRIVER ARRAY SEGMENT
U300	16027363	DM-201 VOLUME TONE BALANCE
U301	16014384	DM-133 BRIDGE AUDIO
U301	16024341	DM-185 BRIDGE AUDIO(CASS MODEL ONLY)
U302	16014384	DM-133 BRIDGE AUDIO
U302	16024341	DM-185 BRIDGE AUDIO(CASS MODEL ONLY)
U305	16018305	DM-171 DNR
TRANSISTORS		
Q1	16022205	DS-872 FM RF AMP
Q2	7895167	DS-94 FM OSCILLATOR
Q101	16008567	DS-116 AM 1ST RF AMP
Q102	7936256	DS-66 AM RF AGC
Q103	*16058650	DS-836 AM 2ND RF AMP
Q200	7936256	DS-66 DIM CONTROL
Q201	16032272	DS-876 DISPLAY REGULATOR
Q202	7932515	DS-831 RECALL
Q203	7936256	DS-66 ENABLE
Q204	16017176	DS-858 DIGIT DRIVER
Q205	16017176	DS-858 DIGIT DRIVER
Q206	16017176	DS-858 DIGIT DRIVER
Q207	16017176	DS-858 DIGIT DRIVER
Q209	7303105	DS-83 ST LIGHT INHIBIT
DIODES		
D1	16043467	DS-888
D2	16043467	DS-888
D3	16017133	DS-889 ZENER 8.2V
D4	16017133	DS-889 ZENER 8.2V
D101,D102		
D103	*16057539	DS-875 MATCHED SET OF THREE
D201	16043467	DS-31
D203	7897896	DS-108 ZENER 15V
D204	16006643	DS-79
D210	16043467	DS-31
D211	16043467	DS-31
D212	16043467	DS-31
D213	16043467	DS-31
D214	16043467	DS-31
D215	16043467	DS-31
D217	16043467	DS-31
D218	16043467	DS-31
D219	16043467	DS-31
D220	16043467	DS-31
D221	16020855	DS-871 ZENER 28V
D222	16004798	DS-131
D224	16023673	DS-49 ZENER 14V
D225	16043467	DS-31
D226	16043467	DS-31
D227	16043467	DS-31
D228	16043467	DS-31

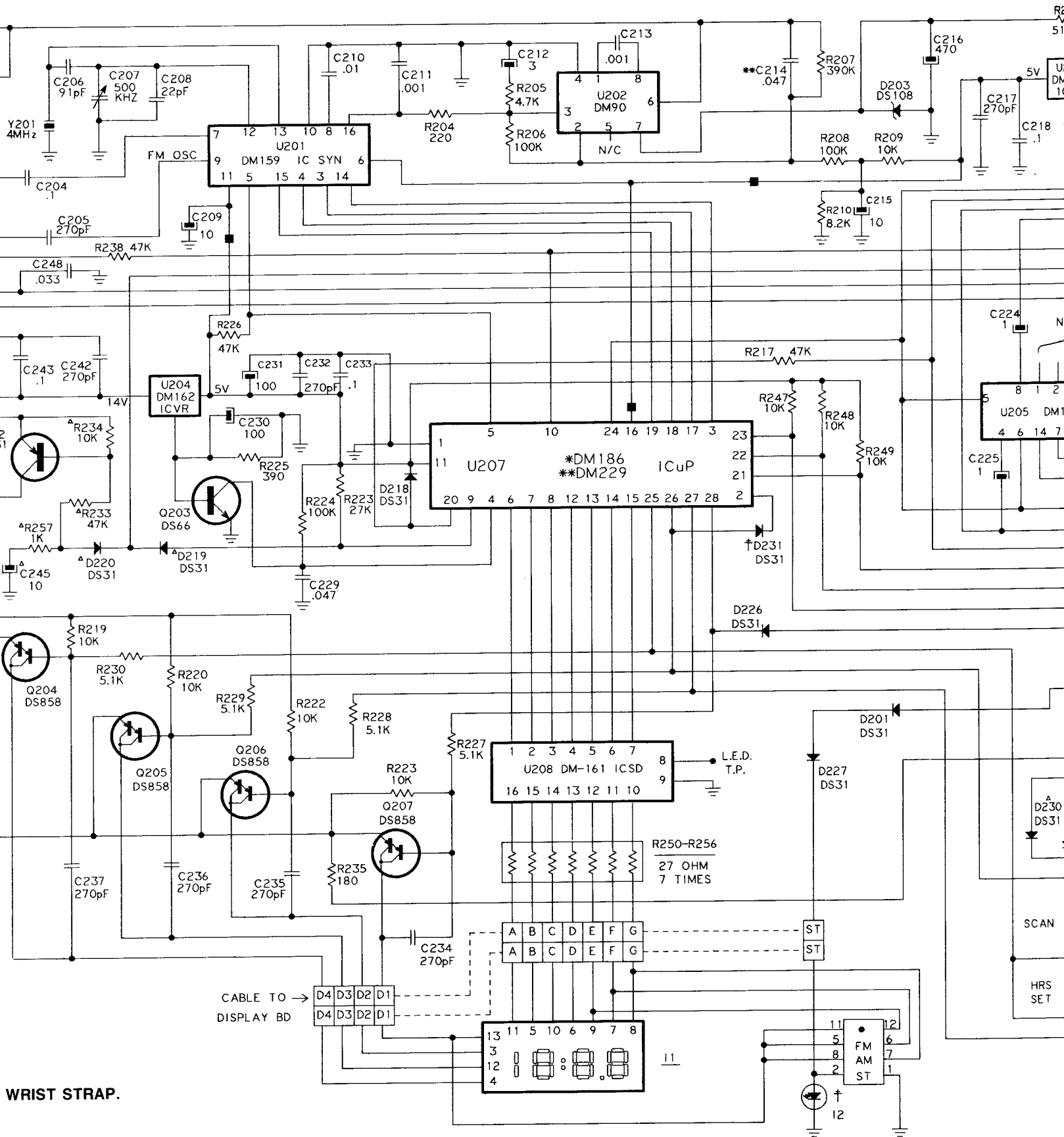
Illus. No.	Service No.	Description
DIODES		
D229	16043467	DS-31
D230	16043467	DS-31
D231	16043467	DS-31
D301	16006643	DS-79
VC1,2, &3	1226505	DS-190 SET
CRYSTALS COILS TRANSFORMERS & CERAMIC FILTERS		
Y201	16017182	CRYSTAL 4 MHZ
CF1	*16059317	CERAMIC FILTER 10.7 MHZ
CF2	*16059317	CERAMIC FILTER 10.7 MHZ
L1	16018202	COIL FM ANT
L2	16018206	COIL FM OSC
L3	16005269	TRANSFORMER ASM ANT
L4	7898999	CHOKE DUAL HIGH PASS
L5	7898999	CHOKE DUAL AUDIO DELAY
L6	16008754	CHOKE 10 UH
L7	16043619	CHOKE 6.8 UH
L300	16014025	CHOKE FILTER A+(INCL CONN BRACKET)
L302	16018423	TRANSFORMER 19 KHZ
T1	16018205	TRANSFORMER FM RF
T2	16018270	TRANSFORMER MIXER
T3	16017939	TRANSFORMER PHASE
T4	16006685	TRANSFORMER AM 1ST RF
T5	16012429	TRANSFORMER AM 2ND RF
T6	16018001	TRANSFORMER AM OSC
T7	16013192	TRANSFORMER MIXER-FILTER
CAPACITORS (IN MICROFARADS UNLESS SPECIFIED)		
C1	16020130	2 PF 50V
C2	16054597	12 PF 50V
C3	16020130	2 PF 50V
C4	*16054592	18 PF 100V
C5	16055869	0.0047 100V
C6	16015611	270 PF 50V
C8	16014298	47 PF 100V
C9	16009796	33 PF 100V
C10	16054597	12 PF 50V
C11	16015615	0.1 50V
C12	16020130	2 PF 50V
C13	16055867	BYPASS
C14	16047804	10 16V
C15	16015611	270 PF 50V
C17	16015611	270 PF 50V
C18	16015611	270 PF 50V
C20	16054597	12 PF 50V
C21	16054597	12 PF 50V
C22	16055867	BYPASS
C23	16014298	47 PF 100V
C24	*16054606	10 PF 100V
C25	16055867	BYPASS
C26	16015611	270 PF 100V
C27	16047805	100 16V
C28	*16054592	18 PF 100V
C29	16015610	0.001 50V
C30	16055867	BYPASS
C31	16055867	BYPASS
C32	*16054588	0.0022 25V
C33	16047805	100 16V
C34	16055867	BYPASS
C35	16033782	3.3 35V
C36	16055867	BYPASS
C37	16055867	BYPASS
C38	*16054588	0.0022 25V

- † Used on Model 16050335
- * Used on Model 16063276
- ▲ Not used on Model 16050335
- ** Non-Cass models only



IC & DISPLAY BOARD

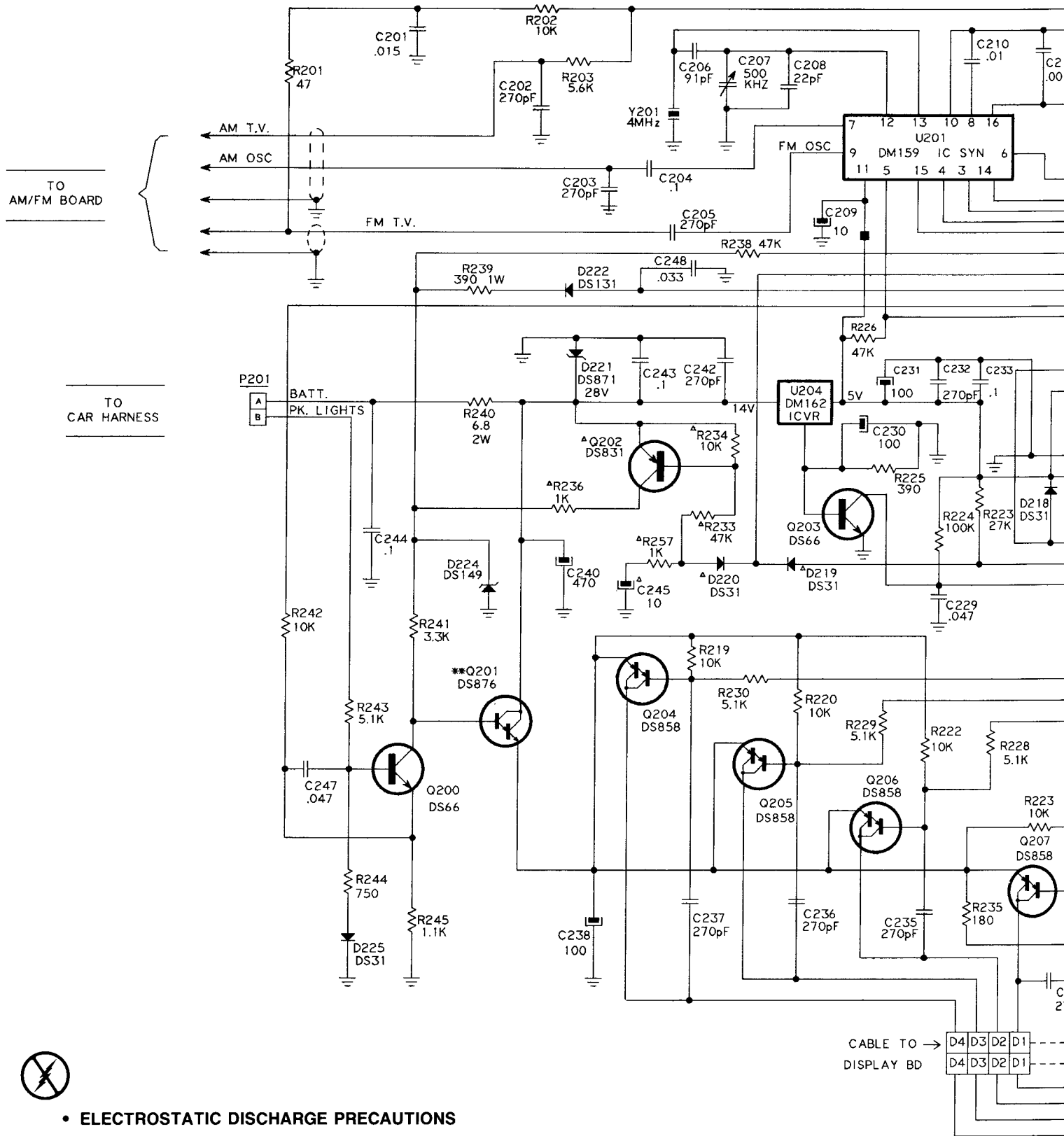
† Used on Model 160503
 * Used on Model 160632
 ▲ Not used on Model 160632
 ** Non-Cass models only



WRIST STRAP.

NOTED.
 NO SIGNAL INPUT.

SCHEMATIC 2000 SERIES L.E.D. LOGIC & DISPLAY BOARD



• **ELECTROSTATIC DISCHARGE PRECAUTIONS**

1. DO NOT TOUCH PARTS OR ASSEMBLIES UNLESS WEARING WRIST STRAP.
2. USE X100 SCALE ON OHMMETER.
3. AVOID USING MATERIALS SUCH AS NYLON, PLASTIC, ETC.
4. GROUND PROBE BEFORE MAKING IC MEASUREMENTS.
5. DO NOT SHORT IC PINS TOGETHER.

• ALL CAPACITORS ARE SHOWN IN MFD UNLESS OTHERWISE NOTED.

• VOLTAGES MEASURED WITH A DVM, 14 VOLTS APPLIED, AND NO SIGNAL INPUT.