

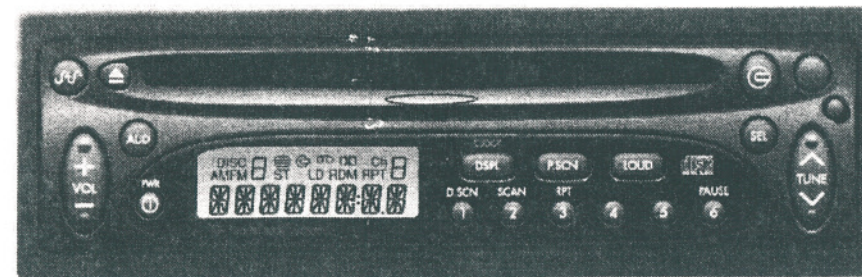


1997 SERVICE MANUAL

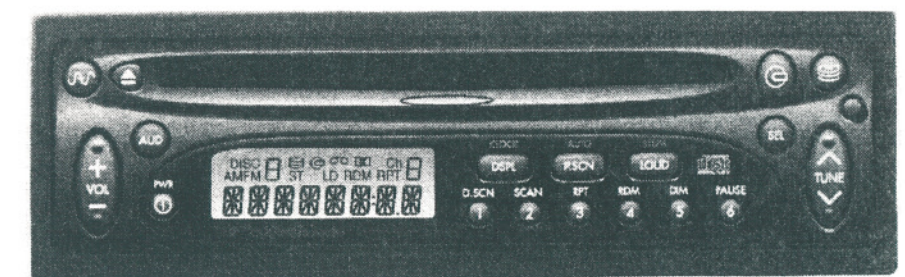
Rockford/Fosgate Radios



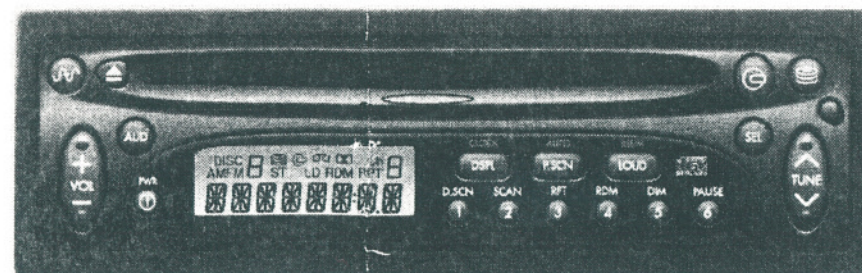
Cassette 16244491



CD 1.5 16244451, 16259881-(Japan)



CD 2 16244461, 16256029-(Japan)



CD 3 16244471, 16256019-(Japan)



CD 4 16244481, 16265719-(Japan)

FOREWORD

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication approval. The right is reserved to make changes at any time without notice.

Publication Date
April 1997

IMPORTANT SAFETY NOTICE

Proper service and repair are important to the safe, reliable operation of all electronic equipment. If part replacement is necessary, the part must be replaced with the same part number or approved replacement part.

The service procedures recommended and described in this SERVICE manual are effective methods of performing service operations. Some of these service operations require the use of tools especially designed for the purpose. The special tools should be used when and as recommended.

Accordingly, anyone who uses a service procedure or tool which is not recommended by Delco Electronics must first determine that neither personal safety nor the safe operation of the equipment will be jeopardized by the service procedure or tool selected.

It is important to note that this manual contains various "Cautions" and "Notices" that must be carefully observed in order to reduce the risk of personal injury during service or repair, or the possibility that improper service may damage the equipment or render it unsafe. It is also important to understand that these "Cautions" and "Notices" are not exhaustive because it is impossible to warn of all the possible hazardous consequences that might result from failure to follow these instructions.

GENERAL REPAIR INFORMATION

All circuit boards are conformal coated to protect the circuitry from moisture damage. The coating can be probed through by using a sharp, pointed probe. After circuit repair, the conformal coating must be re-applied to ensure continued circuit protection.

The repaired area of the circuit board must be thoroughly cleaned with an approved solvent to remove all flux residue, and dried before the conformal coating is applied.

MOS PROTECTION

Some circuit boards contain MOS circuitry. In order to maintain reliability, proper handling of MOS devices must be observed.

COMPONENT VALUES

Unless otherwise specified:

Resistance values are in Ohms.
Capacitance values are in MFDs.



ELECTROSTATIC DISCHARGE PRECAUTIONS

1. Do not touch parts or assemblies unless wearing wrist strap.
2. Avoid using materials such as nylon, plastic, etc.
3. Ground probe before making IC measurements.
4. Do not short IC pins together.

GENERAL PRECAUTIONS

1. Voltages measured with a DVM, 14 volts applied, and no signal input.
2. Use silver solder when replacing chip components.
3. Some chip components present are not used in all applications.

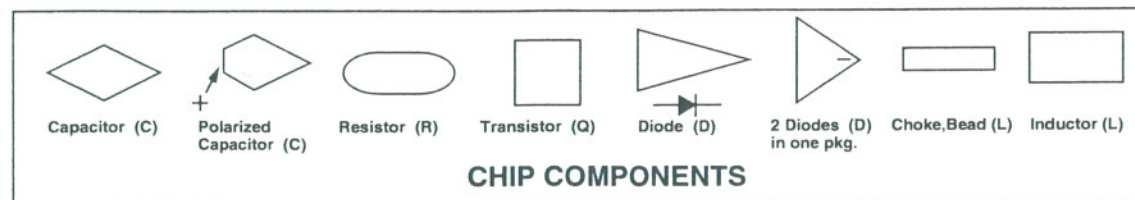


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Rockford/Fosgate Radios Application Listing & Ref. For Playbacks

<u>MODEL No.</u>	<u>DESCRIPTION</u>	<u>APPLICATION</u>	<u>PLAYBACK P/N & REF.DOCUMENTS</u>
16244451	1.5 CD	AFTERMARKET	16228651 (REF TCB-007-B)
16244461	2.1 CD	AFTERMARKET	16228651 (REF TCB-007-B)
16244471	3.1 CD	AFTERMARKET	16228651 (REF TCB-007-B)
16244481	4.1 CD	AFTERMARKET	16228651 OR 16228914 (REF TCB-007-B)
16244491	3.0 CASS	AFTERMARKET	16245004 (REF PAGES 19-21)
16256019	3.1 CD JAPAN	AFTERMARKET	16228651 (REF TCB-007-B)
16256029	2.1 CD JAPAN	AFTERMARKET	16228651 (REF TCB-007-B)
16259881	1.5 CD JAPAN	AFTERMARKET	16228651 (REF TCB-007-B)
16265719	4.1 CD JAPAN	AFTERMARKET	16228651 OR 16228914 (REF TCB-007-B)

MODELS
16244451
16244461
16244471
16244491
16256029
16256019
16259881

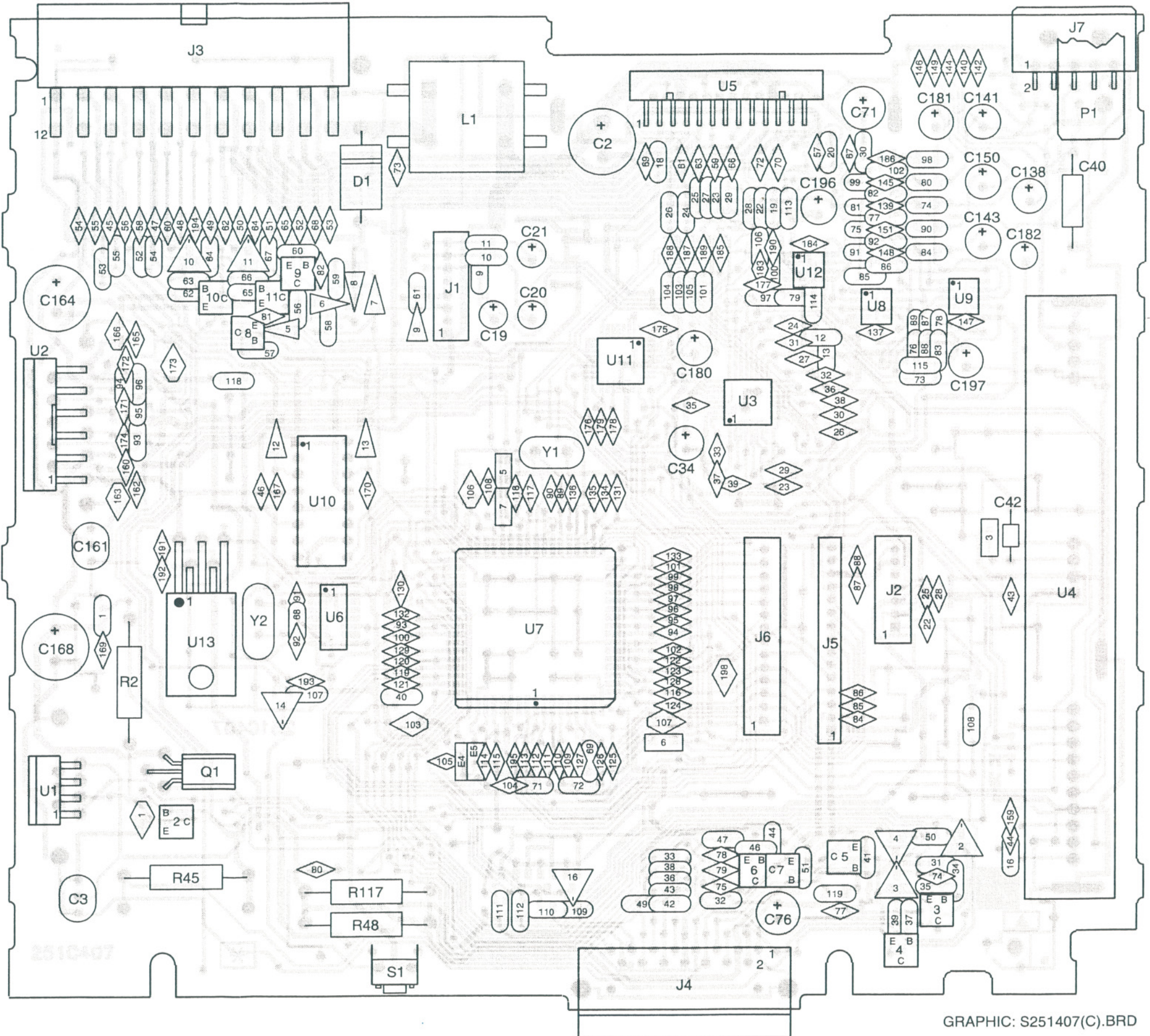
REF
A
B
C
D
E
F
G

ILLUS No.	SERVICE No.	DESCRIPTION
RESISTORS continued		
R77	16167399	RES-SM,47K,.063W,5%.....B,C,D,E,F
R78	16167391	RES-SM,22K,.063W,5%.....A,G
R78	16167399	RES-SM,47K,.063W,5%.....B,C,D,E,F
R79	16167399	RES-SM,47K,.063W,5%
R80	16031185	RES-SM, 1206 24, 5%
R81	16167391	RES-SM,22K,.063W,5%.....A,G
R81	16167399	RES-SM,47K,.063W,5%.....B,C,D,E,F
R82	16167391	RES-SM,22K,.063W,5%.....A,G
R82	16167399	RES-SM,47K,.063W,5%.....B,C,D,E,F
R83	16167399	RES-SM,47K,.063W,5%.....B,C,D,E,F
R84	16031185	RES-SM, 1206 24, 5%
R85	16167399	RES-SM,47K,.063W,5%.....B,C,D,E,F
R86	16167399	RES-SM,47K,.063W,5%.....B,C,D,E,F
R87	16167399	RES-SM,47K,.063W,5%.....B,C,D,E,F
R88	16167399	RES-SM,47K,.063W,5%.....B,C,D,E,F
R89	16167399	RES-SM,47K,.063W,5%.....B,C,D,E,F
R90	16031185	RES-SM, 1206 24, 5%
R91	16167399	RES-SM,47K,.063W,5%.....B,C,D,E,F
R92	16167399	RES-SM,47K,.063W,5%.....B,C,D,E,F
R93	16167399	RES-SM,47K,.063W,5%.....B,C,D,E,F
R94	16167399	RES-SM,47K,.063W,5%
R95	16167369	RES-SM,2.7K,.063W5%
R96	16167407	RES-SM,100K,.063W5%
R97	16167385	RES-SM,12K,.063W,5%.....C,D,F
R98	16031185	RES-SM, 1206 24, 5%
R99	16167385	RES-SM,12K,.063W,5%.....C,D,F
R100	16167385	RES-SM,12K,.063W,5%.....C,D,F
R101	16167399	RES-SM,47K,.063W,5%.....C,D,F
R102	16167385	RES-SM,12K,.063W,5%.....C,D,F
R103	16167399	RES-SM,47K,.063W,5%.....C,D,F
R104	16167399	RES-SM,47K,.063W,5%.....C,D,F
R105	16167399	RES-SM,47K,.063W,5%.....C,D,F
R106	16167385	RES-SM,12K,.063W,5%.....C,D,F
R107	16167433	RES-SM,1.2M,.063W5%
R108	16087404	RES-SM,0805 100, 5%
R109	16087404	RES-SM,0805 100, 5%
R110	16087404	RES-SM,0805 100, 5%
R111	16087404	RES-SM,0805 100, 5%
R112	16087404	RES-SM,0805 100, 5%
R113	16167399	RES-SM,47K,.063W,5%
R114	16167399	RES-SM,47K,.063W,5%.....A,G
R115	16167399	RES-SM,47K,.063W,5%.....A,G
R117	16014786	RES-FI 300 1W.....A,G
R118	16031168	RES-SM,1206 4.7 10%
R119	16031192	RES-SM, 1206 47, 5%

MISCELLANEOUS		
J1	16234206	JUMPER ASM-13 COND.....B,C,D,E,F
J2	16202234	JUMPER ASM-07 COND.....D
J3	16234200	HEADER-22 COND,MA
J4	16234215	HEADER-15 COND,FE
J5	16246254	JUMPER ASM-14 COND.....A,B,C,E,F,G
J6	16202236	JUMPER ASM-14 COND.....D
J7	16234207	HEADER-10 COND,MA
P1	16260022	SOCKET-ANTENNA
S1	16227212	SWITCH-PUSH, SPST
Y1	16192266	RESONATOR-16.0MHZ
Y2	16170308	CRYSTAL-QU,3.6MHZ
	16221557	BRACKET-MTG,QBA
	16249766	CONVECTOR-QVR
	16231526	SHIELD-COVER, TOP
	16231528	SHIELD-COVER, BTM
	16231529	INSULATOR-TUNER
	16175522	SCREW-M3-1.5X8CRPH
	16234541	CONVECTOR.....A,B,C,E,F,G
	16249766	CONVECTOR

* Note: Unless Universal Radio Tester and Software is available to program ECP to Japanese settings, replace with entire Main Board Asm.

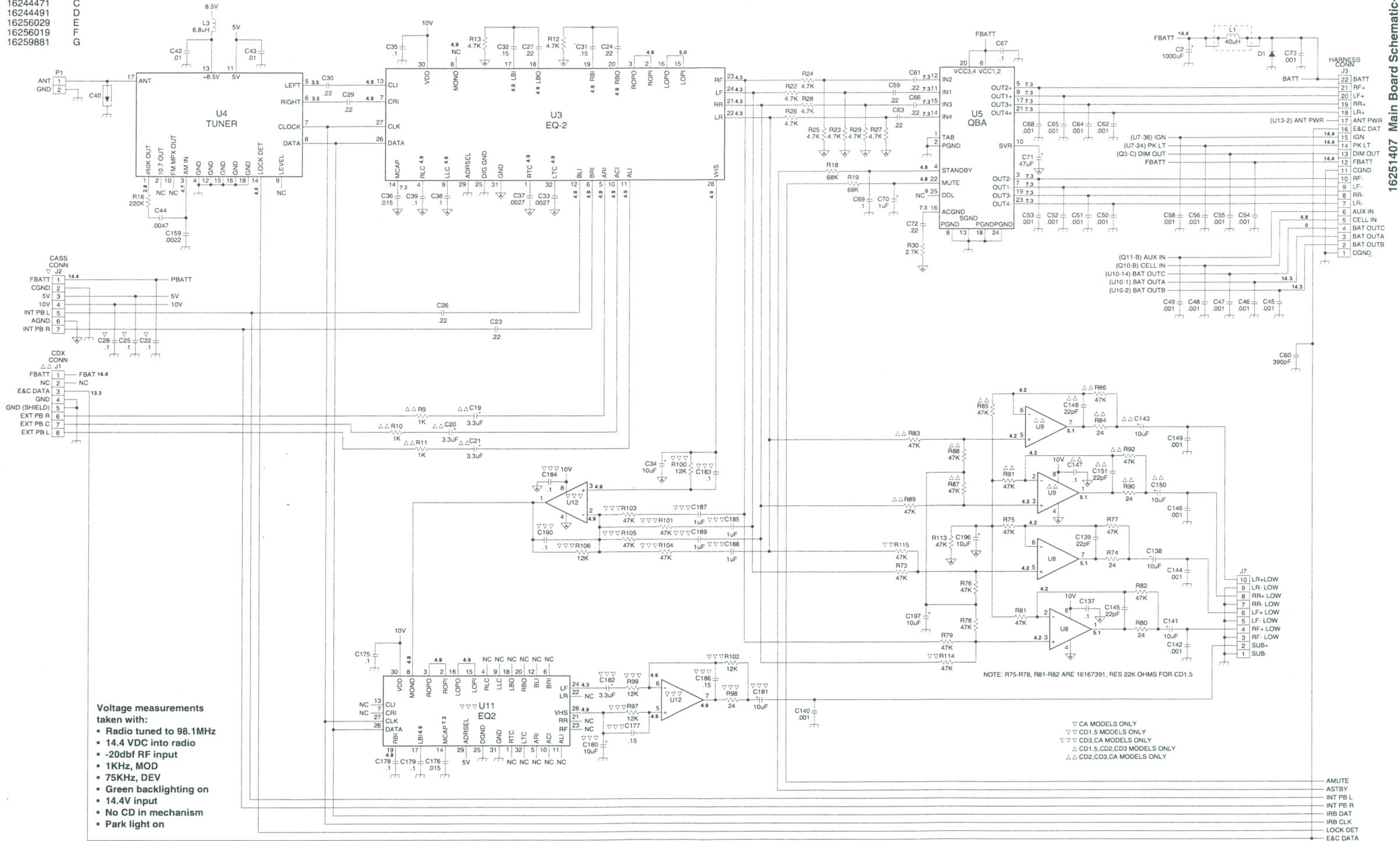
16266072.....CIR BD ASM MAIN.....E
16266077.....CIR BD ASM MAIN.....F
16259878.....CIR BD ASM MAIN.....G



GRAPHIC: S251407(C).BRD

MODELS
 16244451
 16244461
 16244471
 16244491
 16256029
 16256019
 16259881

REF
 A
 B
 C
 D
 E
 F
 G



16251407 Main Board Schematic-1

- Voltage measurements taken with:**
- Radio tuned to 98.1MHz
 - 14.4 VDC into radio
 - -20dbf RF input
 - 1KHz, MOD
 - 75KHz, DEV
 - Green backlighting on
 - 14.4V input
 - No CD in mechanism
 - Park light on

▽ CA MODELS ONLY
 ▽ CD1.5 MODELS ONLY
 ▾ CD3, CA MODELS ONLY
 △ CD1.5, CD2, CD3 MODELS ONLY
 ▲ CD2, CD3, CA MODELS ONLY

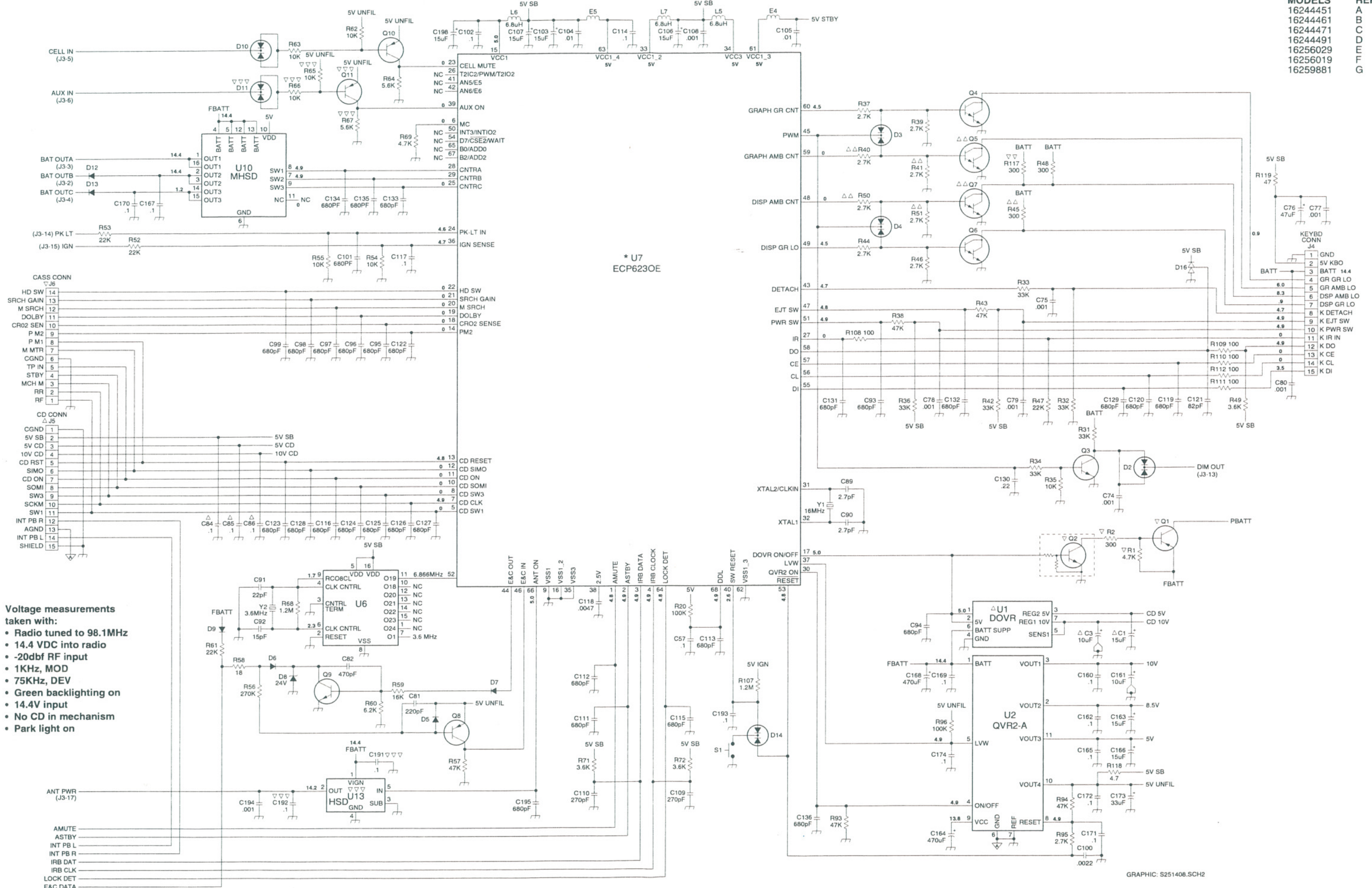
NOTE: R75-R78, R81-R82 ARE 16167391, RES 22K OHMS FOR CD1.5

GRAPHIC: S251408.SCH1

1013

DE CONFIDENTIAL 5

MODELS	REF
16244451	A
16244461	B
16244471	C
16244491	D
16256029	E
16256019	F
16259881	G



- Voltage measurements taken with:
- Radio tuned to 98.1MHz
 - 14.4 VDC into radio
 - -20dbf RF input
 - 1KHz, MOD
 - 75KHz, DEV
 - Green backlighting on
 - 14.4V input
 - No CD in mechanism
 - Park light on

MODELS
16244481
16265719

REF
A
B

If "Used On Models" column is blank, part is used on all models.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Section header: INTEGRATED CIRCUITS.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers U100 through U401.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers U402 through Q300.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers Q301 through Q501.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers Q502 through Q506.

DIODES & CHOKES

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers D30 through D52.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers D53 through D59.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers E400 through L503.

CAPACITORS

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C100 through C203.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C204 through C209.

ILLUS No. SERVICE No. DESCRIPTION

CAPACITORS continued

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C210 through C216.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C217 through C224.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C225 through C231.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C232 through C243.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C244 through C250.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C251 through C257.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C258 through C401.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C402 through C408.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C409 through C415.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C416 through C421.

ILLUS No. SERVICE No. DESCRIPTION

CAPACITORS continued

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C422 through C432.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C433 through C505.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C506 through C512.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C513 through C519.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C520 through C526.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C527 through C533.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C534 through C540.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C541 through C548.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C549 through C555.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C556 through C703.

ILLUS No. SERVICE No. DESCRIPTION

CAPACITORS continued

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C704 through C710.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers C711 through C715.

RESISTORS

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers R102 through R205.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers R206 through R217.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers R218 through R224.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers R225 through R232.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers R233 through R245.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers R246 through R252.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers R253 through R259.

Table with 3 columns: ILLUS No., SERVICE No., DESCRIPTION. Part numbers R260 through R303.

ILLUS No.	SERVICE No.	DESCRIPTION
RESISTORS continued		

R304	16167369	RES-SM,2.7K,.063W5%
R305	16167369	RES-SM,2.7K,.063W5%
R306	16167369	RES-SM,2.7K,.063W5%
R307	16167369	RES-SM,2.7K,.063W5%
R308	16167369	RES-SM,2.7K,.063W5%
R309	16167369	RES-SM,2.7K,.063W5%
R310	16167383	RES-SM,10K,.063W,5%
R311	16167395	RES-SM,33K,.063W,5%
R312	16167395	RES-SM,33K,.063W,5%
R313	16167369	RES-SM,2.7K,.063W5%
R314	16167369	RES-SM,2.7K,.063W5%
R400	16167407	RES-SM,100K,.063W5%
R401	16167407	RES-SM,100K,.063W5%
R402	16167369	RES-SM,2.7K,.063W5%
R403	16167399	RES-SM,47K,.063W,5%
R502	16171370	RES-SM,.063W5%22
R503	16167375	RES-SM,4.7K,.063W5%
R504	16167433	RES-SM,1.2M,.063W5%
R505	16167388	RES-SM,16K,.063W,5%
R506	16171368	RES-SM,.063W5%18OHM
R507	16167391	RES-SM,22K,.063W,5%
R508	16167417	RES-SM,270K,.063W5%
R509	16167399	RES-SM,47K,.063W,5%
R510	16167378	RES-SM,6.2K,.063W5%
R511	16167372	RES-SM,3.6K,.063W5%
R512	16167372	RES-SM,3.6K,.063W5%
R513	16167383	RES-SM,10K,.063W,5%
R514	16167383	RES-SM,10K,.063W,5%
R515	16167351	RES-SM,470,.063W
R516	16167383	RES-SM,10K,.063W,5%
R517	16167391	RES-SM,22K,.063W,5%
R518	16167399	RES-SM,47K,.063W,5%
R519	16167399	RES-SM,47K,.063W,5%
R520	16167399	RES-SM,47K,.063W,5%
R521	16167395	RES-SM,33K,.063W,5%
R522	16167395	RES-SM,33K,.063W,5%
R523	16167395	RES-SM,33K,.063W,5%
R524	16167383	RES-SM,10K,.063W,5%
R525	16167391	RES-SM,22K,.063W,5%
R526	16167372	RES-SM,3.6K,.063W5%
R527	16167391	RES-SM,22K,.063W,5%
R528	16167383	RES-SM,10K,.063W,5%
R529	16167383	RES-SM,10K,.063W,5%
R530	16167383	RES-SM,10K,.063W,5%
R531	16167351	RES-SM,470,.063W
R532	16167383	RES-SM,10K,.063W,5%
R702	16167394	RES-SM,30K,.063W,5%
R703	16167394	RES-SM,30K,.063W,5%
R704	16167399	RES-SM,47K,.063W,5%
R710	16167415	RES-SM,220K,.063W5%
R711	16167433	RES-SM,1.2M,.063W5%
R712	16014786	RES-FI300 1W
R713	16014786	RES-FI300 1W
R714	16031168	RES-SM,12064.7 10%
R715	16031192	RES-SM,1206 47, 5%

MISCELLANEOUS

J900	16234200	HEADER-22COND,MA
J901	16234207	HEADER-10COND,MA
J902	16234215	HEADER-15COND,FE
J904	16260022	SOCKET-ANTENNA
J905	16234206	JUMPER ASM-13 COND
J907	16234205	CABLE ASM-20 COND
J908	16244434	JUMPER ASM-06 COND
S1	16227212	SWITCH-TACT
S2	16251562	SWITCH-SLIDE
Y500	16192266	RESONATOR-16.0MHZ
Y501	16170308	CRYSTAL-3.6MHZ

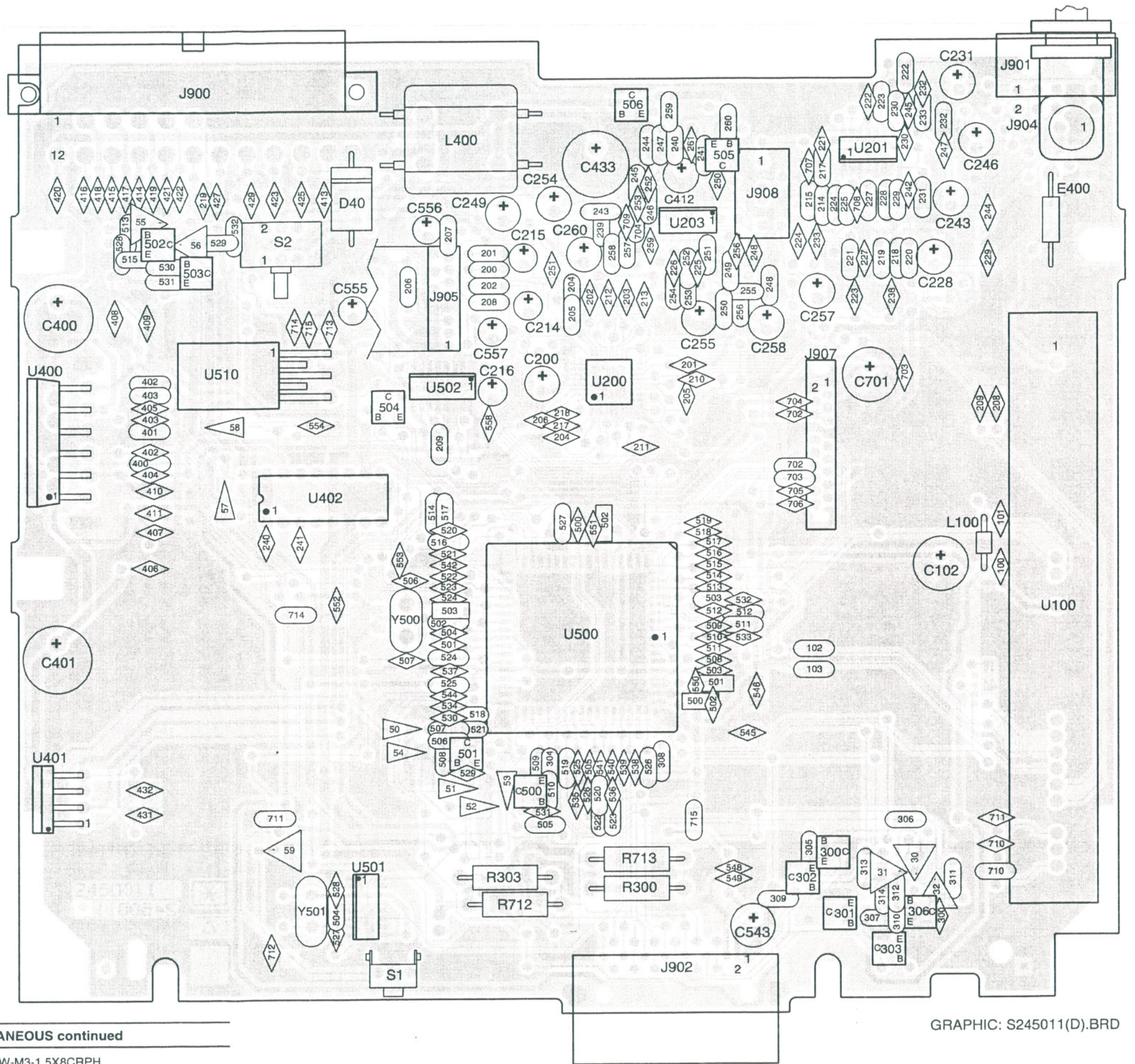
MODELS
16244481
16265719

REF
A
B

MISCELLANEOUS continued

16175522	SCREW-M3-1.5X8CRPH
16234541	CONVECTOR-DOVR
16249766	CONVECTOR-QVR

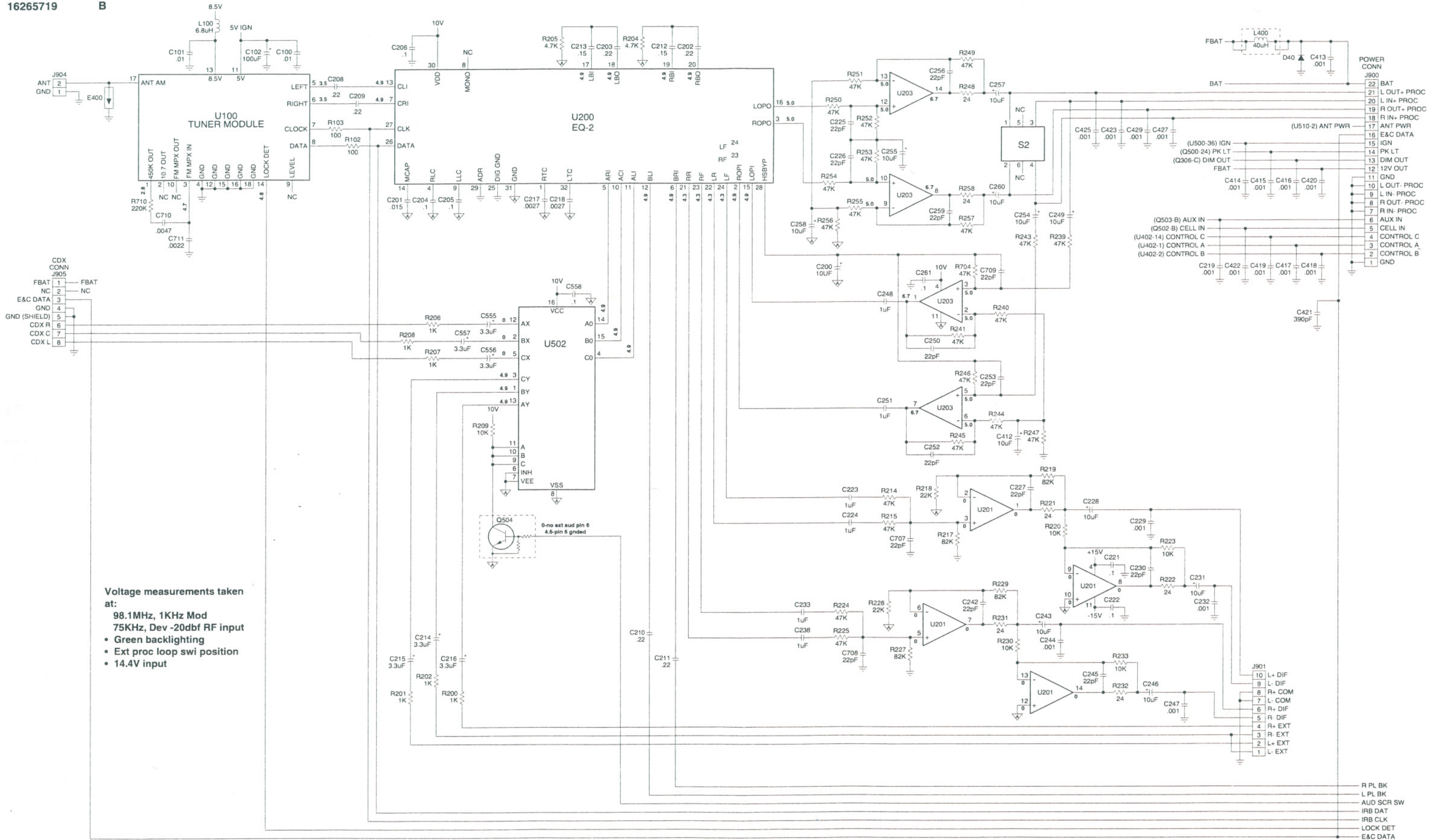
* Note Unless Universal Radio Tester and Software is available to program ECP to Japanese settings, replace with entire Main Board Assembly P/N 16265610.



GRAPHIC: S245011(D).BRD

MODELS
16244481
16265719

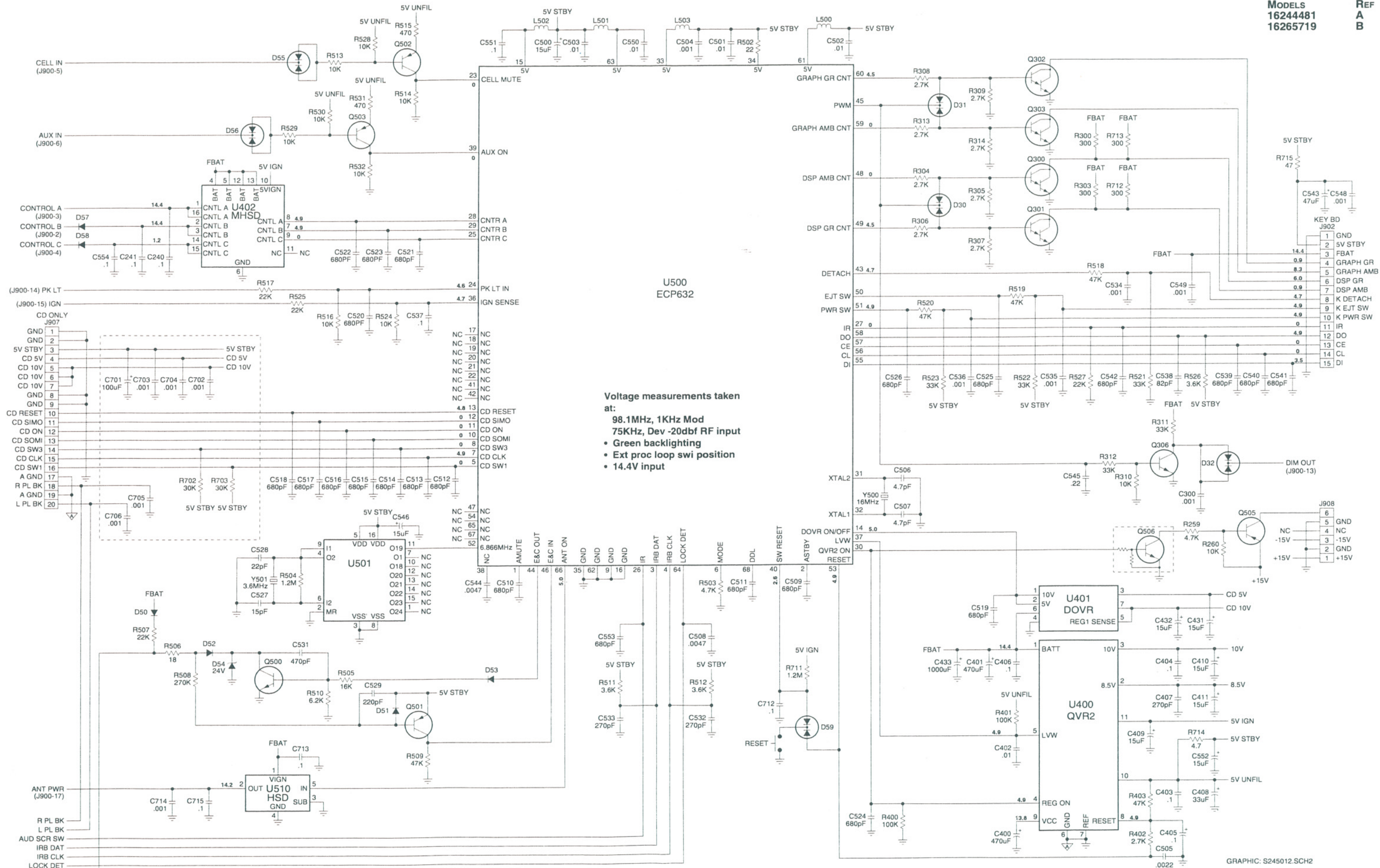
REF
A
B



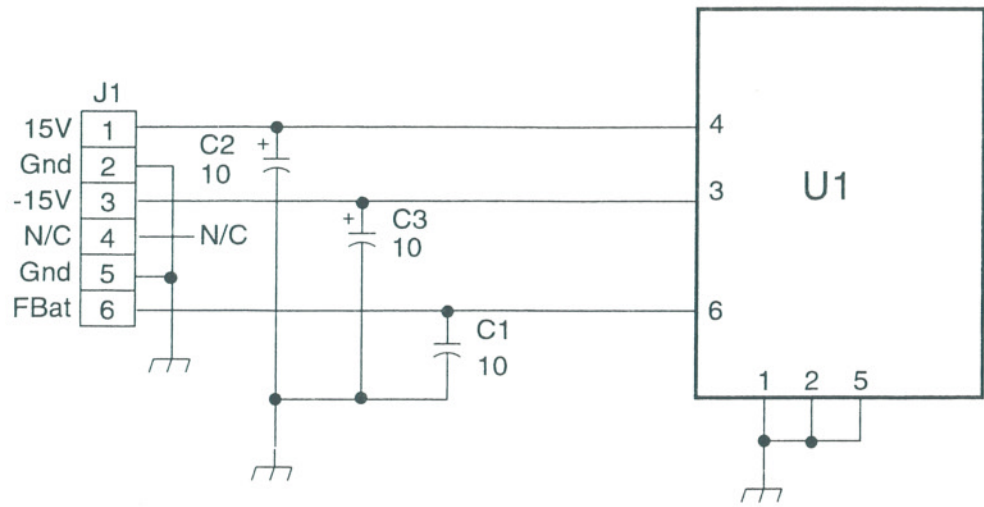
Voltage measurements taken at:
98.1MHz, 1KHz Mod
75KHz, Dev -20dbf RF input
• Green backlighting
• Ext proc loop swi position
• 14.4V input

GRAPHIC: S245012.SCH1

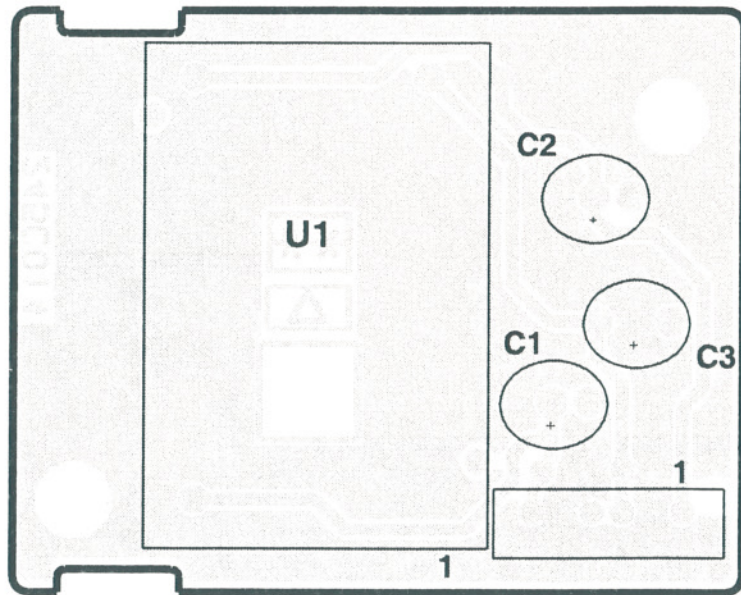
16245011 Main Board Schematic-1



Voltage measurements taken at:
98.1MHz, 1KHz Mod
75KHz, Dev -20dbf RF input
 • Green backlighting
 • Ext proc loop swi position
 • 14.4V input



16245017.SCH



GRAPHIC: S245014(C).BRD

MODELS: 16244481, 16265719

ILLUS SERVICE
No. PART DESCRIPTION

- C1.....16187511.....CAP-TAR, 10uF, 20V
- C2.....16187511.....CAP-TAR, 10uF, 20V
- C3.....16187511.....CAP-TAR, 10uF, 20V
- J1.....16239284.....CONNECTOR, 6 PIN
- U1.....16244580.....I.C.-CONVERTER

22-Pin Power/Speaker/AMP/CD Connector

for models: 16244451, 16244461, 16244471, 16244491, 16256019, 16256029, 16259881

Pin #	Function	I/O
1	Ground	Output
2	External Control B	Output
3	External Control A	Output
4	Control C (Pulsed +14 V line)	Output
5	Cell Phone Mute	Input
*6	External Audio control	Input
7	Rear Speaker, Left CH. (-)	Return
8	Rear Speaker, Right CH. (-)	Return
9	Front Speaker, Left CH. (-)	Return
10	Front Speaker, Right CH. (-)	Return
11	Ground (power)	Return
12	14 V Power	Output
13	Illumination Out (Dim)	Output
14	Illumination In (switched +12V)	Input
15	Ignition (switched +12V)	Input
16	E&C Buss	I/O
*17	Power Antenna	Output
18	Rear Speaker, Left CH. (+)	Output
19	Rear Speaker, Right CH. (+)	Output
20	Front Speaker, Left CH. (+)	Output
21	Front Speaker, Right CH. (+)	Output
22	Battery (+14)	Input

* Pins 6 & 17 are No Connection for models: 16244451, 16244461, 16256029, 16259881

22	21	20	19	18	17	16	15	14	13	12
11	10	9	8	7	6	5	4	3	2	1

Viewed from terminal end.

Graphic: 16234200.Conn.22-pin

22-Pin Power/Speaker/AMP/CD Connector

for models: 16244481 & 16265719

Pin #	Function	I/O
1	Ground	Output
2	External Control B	Output
3	External Control A	Output
4	Control C (Pulsed +14 V line)	Output
5	Cell Phone Mute	Input
6	External Audio control	Input
7	Processor Loop Right Input (-)	Return
8	Processor Loop Right Output (-)	Return
9	Processor Loop Left Input (-)	Return
10	Processor Loop Left Output (-)	Return
11	Ground (power)	Return
12	14 V Power	Output
13	Illumination Out (Dim)	Output
14	Illumination In (switched +12V)	Input
15	Ignition (switched +12V)	Input
16	E&C Buss	I/O
17	Power Antenna	Output
18	Processor Loop Right Input (+)	Input
19	Processor Loop Right Output (+)	Output
20	Processor Loop Left Input (+)	Input
21	Processor Loop Left Output (+)	Output
22	Battery (+14)	Input

22	21	20	19	18	17	16	15	14	13	12
11	10	9	8	7	6	5	4	3	2	1

Viewed from terminal end.

Graphic: 16234200(4.1).Conn.22-pin

10-Pin Connector

Low Level Audio/Sub-woofer Output Connector - Models: 16244451, 16259881

TERMINAL	FUNCTION	I/O
1	No CONNECT	-----
2	No CONNECT	-----
3	RIGHT FRONT CHANNEL (-)	RETURN
4	RIGHT FRONT CHANNEL (+)	OUT
5	LEFT FRONT CHANNEL (-)	RETURN
6	LEFT FRONT CHANNEL (+)	OUT
7	NO CONNECT	-----
8	NO CONNECT	-----
9	NO CONNECT	-----
10	NO CONNECT	-----

Low Level Audio/Sub-woofer Output Connector - Models: 16244461 & 16256029

TERMINAL	FUNCTION	I/O
1	No CONNECT	-----
2	No CONNECT	-----
3	RIGHT FRONT CHANNEL (-)	RETURN
4	RIGHT FRONT CHANNEL (+)	OUT
5	LEFT FRONT CHANNEL (-)	RETURN
6	LEFT FRONT CHANNEL (+)	OUT
7	RIGHT REAR CHANNEL (-)	RETURN
8	RIGHT REAR CHANNEL (+)	OUT
9	LEFT REAR CHANNEL (-)	RETURN
10	LEFT REAR CHANNEL (+)	OUT

Low Level Audio/Sub-woofer Output Connector - Models: 16244471, 16244491 & 16256019

TERMINAL	FUNCTION	I/O
1	MONO SUB CHANNEL (-)	RETURN
2	MONO SUB CHANNEL (+)	OUT
3	RIGHT FRONT CHANNEL (-)	RETURN
4	RIGHT FRONT CHANNEL (+)	OUT
5	LEFT FRONT CHANNEL (-)	RETURN
6	LEFT FRONT CHANNEL (+)	OUT
7	RIGHT REAR CHANNEL (-)	RETURN
8	RIGHT REAR CHANNEL (+)	OUT
9	LEFT REAR CHANNEL (-)	RETURN
10	LEFT REAR CHANNEL (+)	OUT

Low Level Audio/Sub-woofer Output Connector - Models: 16244481 & 16265719

TERMINAL	Function	I/O
1	Left Ch. External Audio Input (-)	Input
2	Left Ch. External Audio Input (+)	Input
3	Right Ch. External Audio Input (-)	Input
4	Right Ch. External Audio Input (+)	Input
5	Right Ch. (-) Differential	Return
6	Right Ch. (+) Differential, or Single Ended	Output
7	Left Ch. Ground (-) Single Ended, or Shield for VHS connector	Return
8	Right Ch. Ground (-) Single Ended, or Shield for VHS connector	Return
9	Left Ch. (-) Differential	Return
10	Left Ch. (+) Differential, or Single Ended	Output

10	8	6	4	2
9	7	5	3	1

Viewed from terminal end.

Graphic: 16234207.Conn.10-Pin

13-Pin (Din) Pigtail CD Connector

for models: 16244461, 16244471, 16244481, 16244491, 16256019, 16256029, 16265719

Pin #	Function	I/O
3	Left Channel	Input
1	Right Channel	Input
2	Audio Common	Return
4	Shield (Barrel)	Return
10	Battery	Output
5	Ground	Return
11	E&C Data	I/O

Pins 6, 7, 8, 9, 12 and 13 are no connection

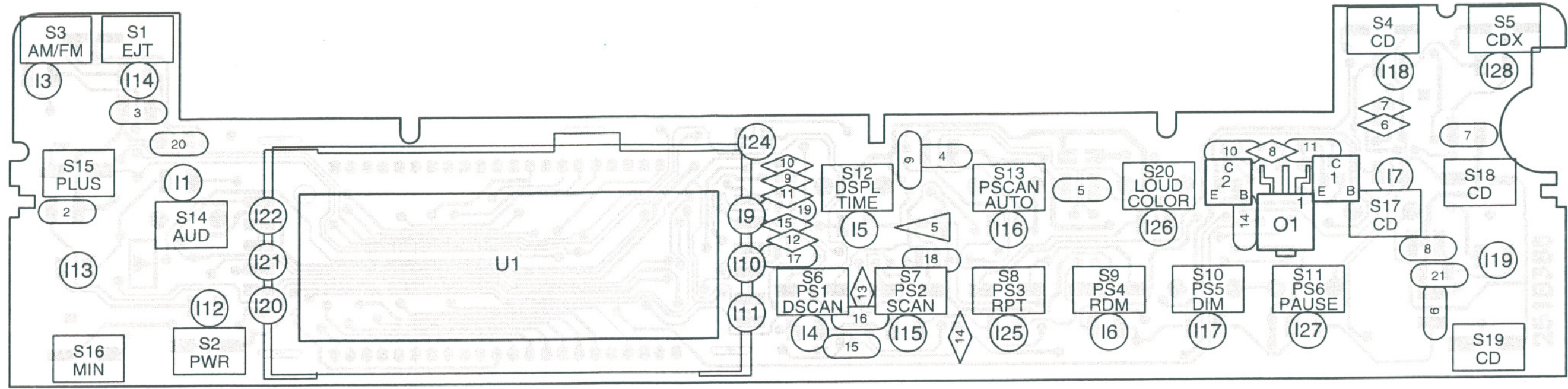


Viewed from terminal end.

Graphic: 16234206.Conn.13-Pin

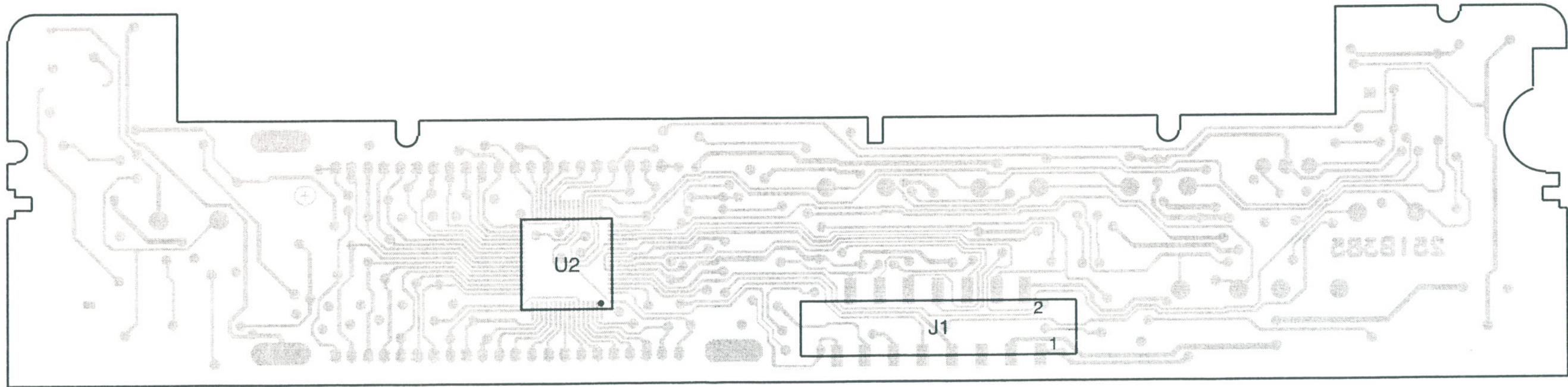
Not used on models: 16244451 & 16259881

MODELS
16244451
16259881



GRAPHIC: S251385(B).RSC

RSC VIEW



GRAPHIC: S251385(B).WSC

WSC VIEW

MODELS: 16244451, 16259881

ILLUS. SERVICE DESCRIPTION
No. PART

U116233053.....DISPLAY - LCD
U216234448.....IC-CMOS, LCD DRIVER
Q116205236.....XSTR-PNP, SOT23
Q216205236.....XSTR-PNP, SOT23

I1-716255103.....LED-GREEN, SM
I9-1116255104.....LED-GREEN, SM
I12-1916255103.....LED-GREEN, SM
I20-2216255104.....LED-GREEN, SM
I24-2816255103.....LED-GREEN, SM

D516150520.....DIO-SIG,SOT23
C616167510.....CAP-SM, 270pF, .50V, 5%
C716167510.....CAP-SM, 270pF, .50V, 5%
C816167464.....CAP-SM, 1000pF, .50V
C916208150.....CAP-SM, 0.1uF, .16V

C1016208150.....CAP-SM, 0.1uF, .16V
C1116208150.....CAP-SM, 0.1uF, .16V
C1216167510.....CAP-SM, 270pF, .50V, 5%
C1316167510.....CAP-SM, 270pF, .50V, 5%
C1416167510.....CAP-SM, 270pF, .50V, 5%
C1516167462.....CAP-SM, 680pF, .50V

R216058210.....RES-SM, 240,1/4W
R316058215.....RES-SM, 390,1/4W
R4-716058210.....RES-SM, 240,1/4W
R816058215.....RES-SM, 390,1/4W
R916167359.....RES-SM,1K,1/16W

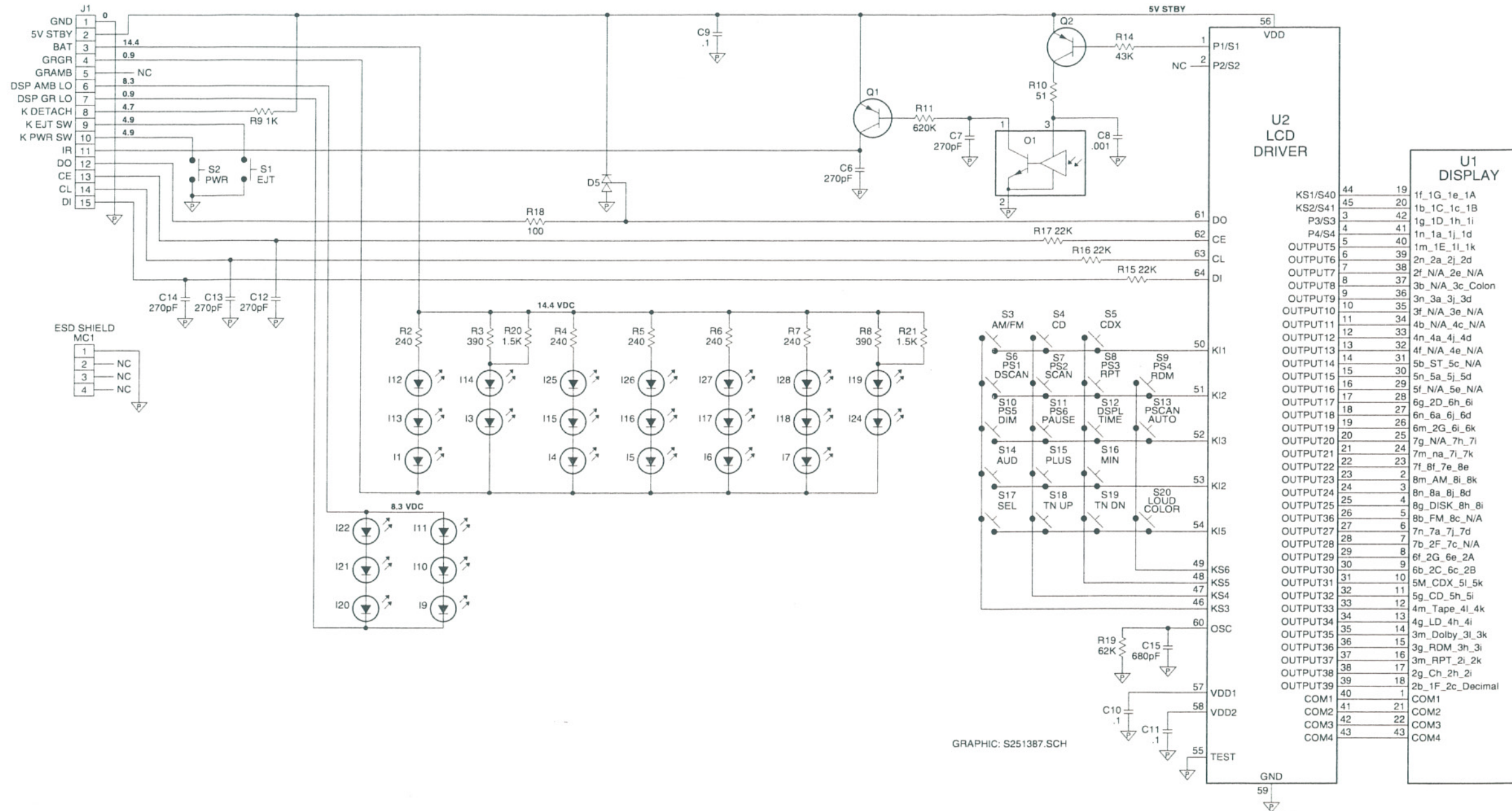
R1016167328.....RES-SM,51,1/16W
R1116167426.....RES-SM,620K,1/16W
R1416167398.....RES-SM,43K,1/16W
R1516167391.....RES-SM,22K,1/16W
R1616167391.....RES-SM,22K,1/16W

R1716167391.....RES-SM, .22K,1/16W
R1816087404.....RES-SM,100,1/16W
R1916167402.....RES-SM,62K,1/16W
R2016031551.....RES-SM,1.5K,1/8W
R2116031551.....RES-SM,1.5K,1/8W

J116234214.....HEADER-15 COND
O116239122.....OPTO
S1-916233727.....SWITCH-PUSH, SPST
S10-1416156820.....SWITCH-PUSH, SPST
S1516233727.....SWITCH-PUSH, SPST

S1616233727.....SWITCH-PUSH, SPST
S1716156820.....SWITCH-PUSH, SPST
S1816233727.....SWITCH-PUSH, SPST
S1916233727.....SWITCH-PUSH, SPST
S2016156820.....SWITCH-PUSH, SPST

16239623LIGHT PIPE
16235498STANDOFF
16234365SHIELD-ESD, DISPLAY



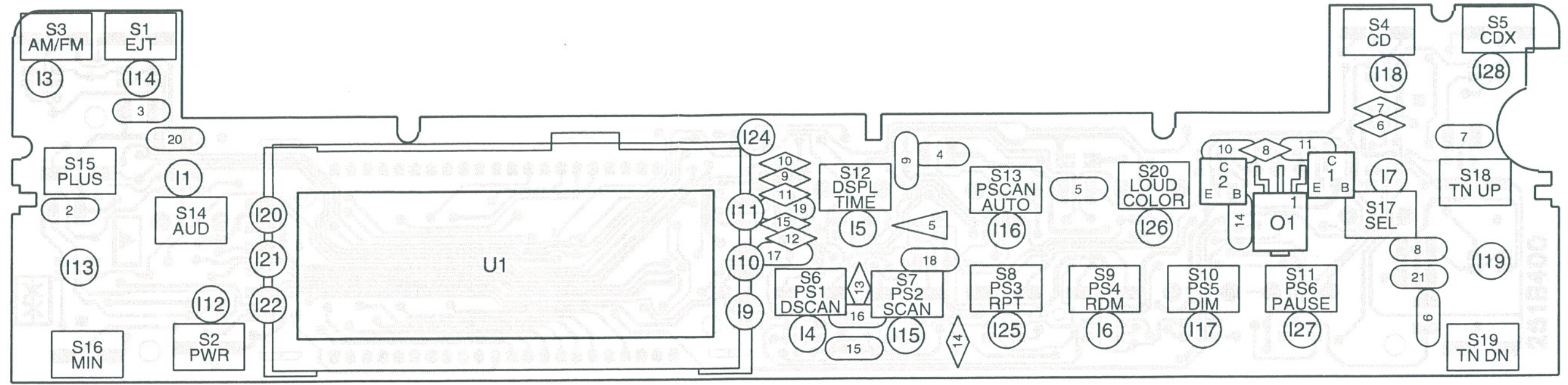
GRAPHIC: S251387.SCH

MODELS:
16244461
16244471
16256019
16256029

16244481
16265719

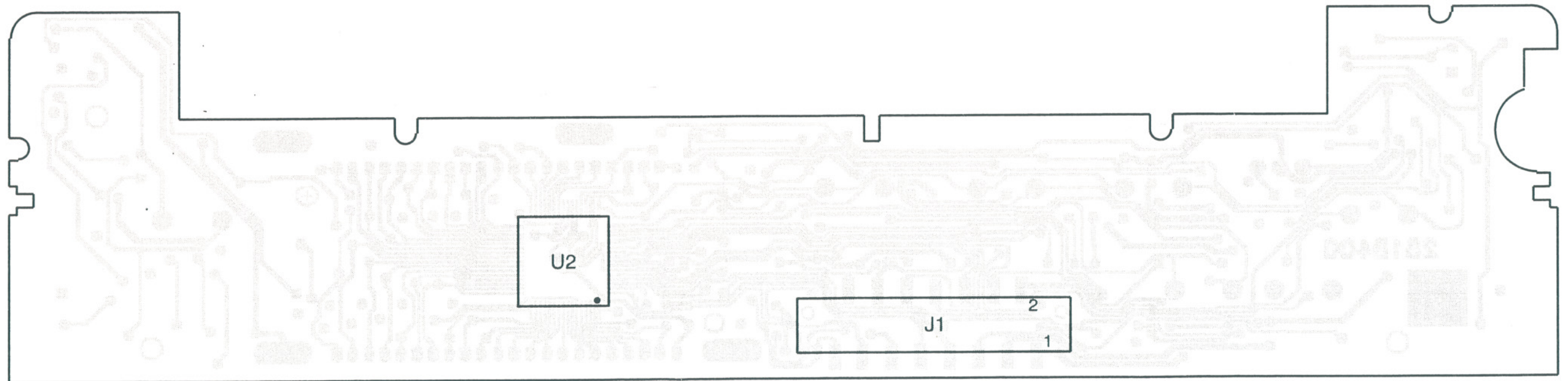
REF
A

B



GRAPHIC: S251400(B).RSC

RSC VIEW



GRAPHIC: S251400(B).WSC

WSC VIEW

MODELS:	REF
16244461	A
16244471	A
16256019	A
16256029	A
16244481	B
16265719	B

ILLUS. NO.	SERVICE PART	DESCRIPTION
U1	16246364	DISPLAY - LCD
U2	16234448	IC-CMOS, LCD DRIVER
Q1	16205236	XSTR-PNP, SOT23
Q2	16205236	XSTR-PNP, SOT23

D5	16150520	DIO-SIG, SOT23
I1-7	16232958	SMT-MULTILED
I1-7	16255105	LED-MULTI, SM
I9-11	16233120	LED-SM
I9-11	16255106	LED-MULTI, SM

I12-19	16232958	SMT-MULTILED
I12-19	16255105	LED-MULTI, SM
I20-22	16233120	LED-SM
I20-22	16255106	LED-MULTI, SM
I24-28	16232958	SMT-MULTILED
I24-28	16255105	LED-MULTI, SM

C6	16167510	CAP-SM, 270pF, .50V, 5%
C7	16167510	CAP-SM, 270pF, .50V, 5%
C8	16167464	CAP-SM, 1000pF, 50V
C9	16208150	CAP-SM, 0.1uF, .16V
C10	16208150	CAP-SM, 0.1uF, .16V

C11	16208150	CAP-SM, 0.1uF, .16V
C12	16167510	CAP-SM, 270pF, .50V, 5%
C13	16167510	CAP-SM, 270pF, .50V, 5%
C14	16167510	CAP-SM, 270pF, .50V, 5%
C15	16167462	CAP-SM, 680pF, .50V

R2	16058215	RES-SM, 390, 1/4W
R2	16058212	RES-SM, 300, 1/4W, 5%
R3	16058218	RES-SM, 510, 1/4W
R4-7	16058212	RES-SM, 300, 1/4W, 5%
R4-7	16058210	RES-SM, 240, 1/4W
R8	16058218	RES-SM, 510, 1/4W

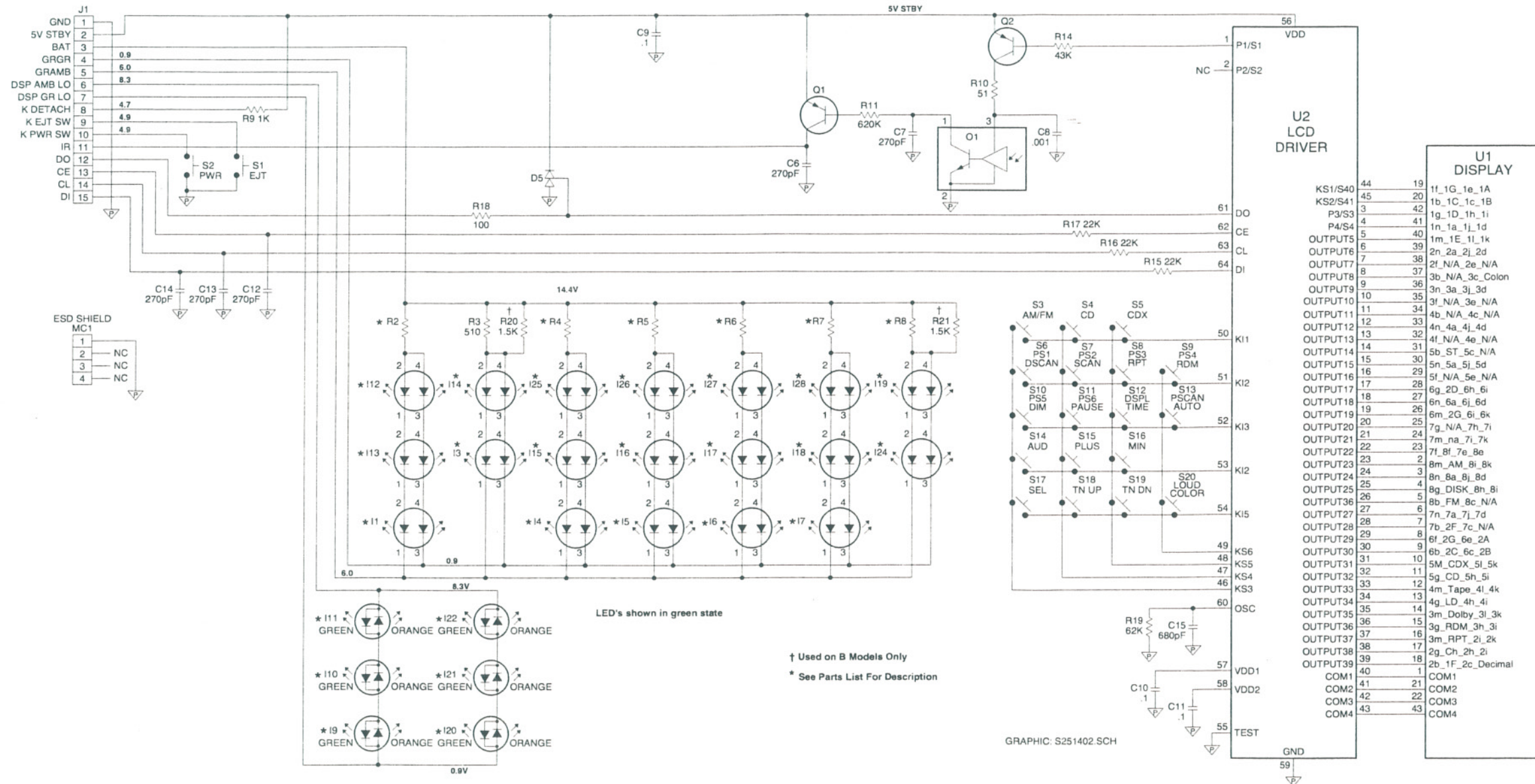
R8	16058215	RES-SM, 390, 1/4W
R9	16167359	RES-SM, 1K, 1/16W
R10	16167328	RES-SM, 51, 1/16W
R11	16167426	RES-SM, 620K, 1/16W
R14	16167398	RES-SM, 43K, 1/16W
R15	16167391	RES-SM, 22K, 1/16W

R16	16167391	RES-SM, 22K, 1/16W
R17	16167391	RES-SM, 22K, 1/16W
R18	16087404	RES-SM, 100, 1/16W
R19	16167402	RES-SM, 62K, 1/16W
R20	16031551	RES-SM, 1.5K, 1/8W
R21	16031551	RES-SM, 1.5K, 1/8W

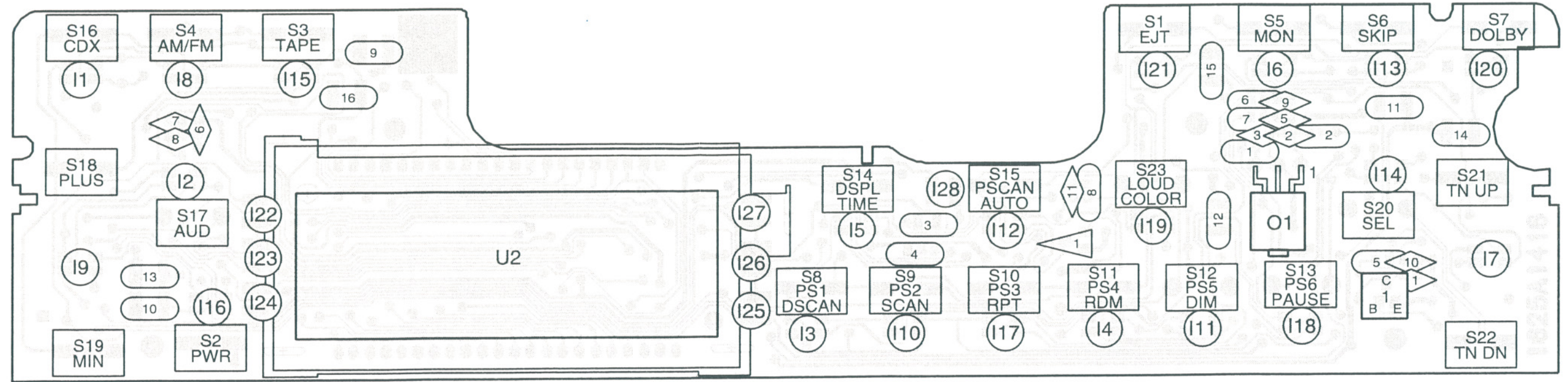
J1	16234214	HEADER-15 COND
O1	16239122	OPTO
S1-9	16249105	SWITCH-PUSH, SPST
S10-14	16156820	SWITCH-PUSH, SPST
S17	16156820	SWITCH-PUSH, SPST

S20	16156820	SWITCH-PUSH, SPST
S15	16249105	SWITCH-PUSH, SPST
S16	16249105	SWITCH-PUSH, SPST
S18	16249105	SWITCH-PUSH, SPST
S19	16249105	SWITCH-PUSH, SPST

16239623	LIGHT PIPE
16235498	STANDOFF
16234365	SHIELD-ESD, DISPLAY

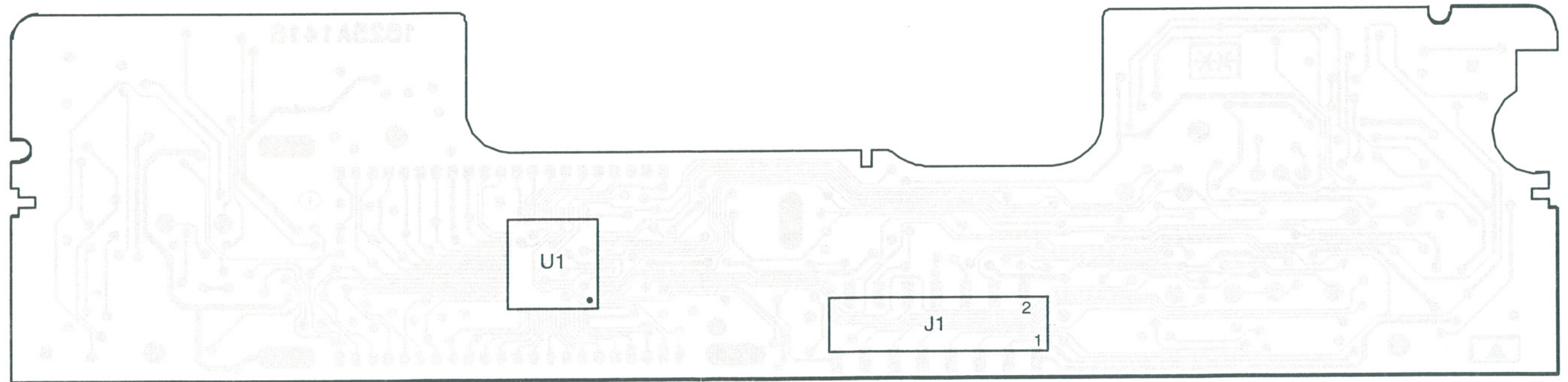


GRAPHIC: S251402.SCH



GRAPHIC: S251416(A).RSC

RSC VIEW



GRAPHIC: S251416(A).WSC

WSC VIEW

MODEL: 16244491

ILLUS. SERVICE PART DESCRIPTION

U116234448.....IC-CMOS, LCD DRIVER
 U216246364.....DISPLAY - LCD
 Q116205236.....XSTR-PNP, SOT23
 D116150520.....DIO-SIG,SOT23
 I1-2116232958.....SMT-MULTILED
 I22-2816233120.....LED-SM

C116167510.....CAP-SM, 270pF, .50V, 5%
 C216167510.....CAP-SM, 270pF, .50V, 5%
 C316167464.....CAP-SM, 1000pF, 50V
 C516167510.....CAP-SM, 270pF, .50V, 5%
 C616208150.....CAP-SM, 0.1uF, .16V

C716208150.....CAP-SM, 0.1uF, .16V
 C816208150.....CAP-SM, 0.1uF, .16V
 C916167510.....CAP-SM, 270pF, .50V, 5%
 C1016167510.....CAP-SM, 270pF, .50V, 5%
 C1116167462.....CAP-SM, 680pF, .50V, 5%

R116167328.....RES-SM,51, 1/16W
 R216167426.....RES-SM,620K, 1/16W
 R316087404.....RES-SM, 100, 1/10W, 5%
 R416167359.....RES-SM,1K, 1/16W
 R516167391.....RES-SM,22K, 1/16W

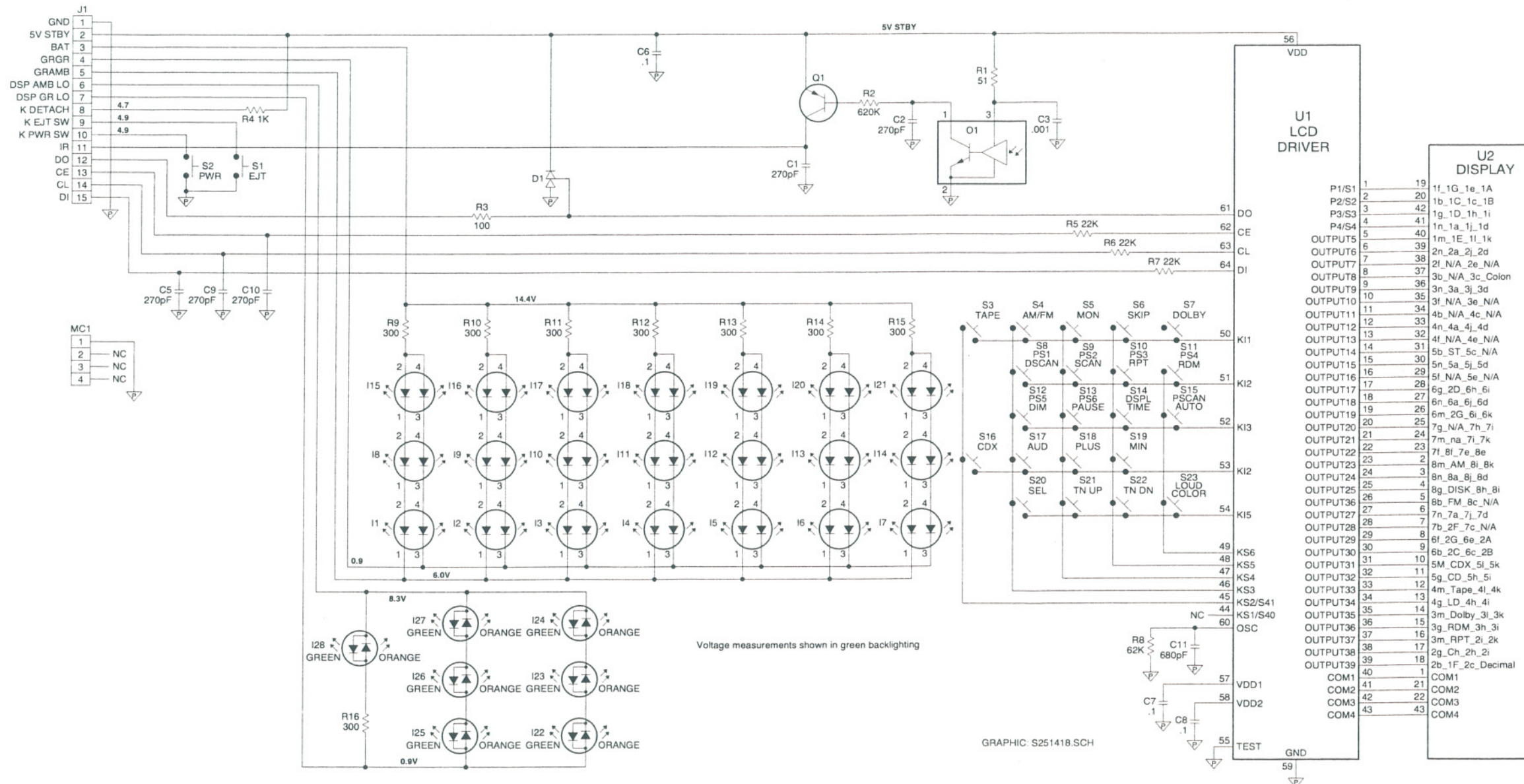
R616167391.....RES-SM,22K, 1/16W
 R716167391.....RES-SM,22K, 1/16W
 R816167402.....RES-SM,62K, 1/16W
 R9-1616058212.....RES-SM, 300, 1/4W, 5%

O116239122.....OPTO
 J116234214.....HEADER-15 COND
 S1-1116249105.....SWITCH-PUSH, SPST
 S1216125880.....SWITCH-PUSH, SPST
 S1316125880.....SWITCH-PUSH, SPST

S1716125880.....SWITCH-PUSH, SPST
 S1416249105.....SWITCH-PUSH, SPST
 S1516249105.....SWITCH-PUSH, SPST
 S1616249105.....SWITCH-PUSH, SPST
 S1816249105.....SWITCH-PUSH, SPST

S1916249105.....SWITCH-PUSH, SPST
 S2016125880.....SWITCH-PUSH, SPST
 S2116249105.....SWITCH-PUSH, SPST
 S2216249105.....SWITCH-PUSH, SPST
 S2316125880.....SWITCH-PUSH, SPST

16239623LIGHT PIPE
 16235498STANDOFF
 16246773SHIELD-ESD, DISPLAY



U1 LCD DRIVER	U2 DISPLAY
P1/S1	1 19 1f_1G_1e_1A
P2/S2	2 20 1b_1C_1c_1B
P3/S3	3 42 1g_1D_1h_1I
P4/S4	4 41 1n_1a_1j_1d
OUTPUT5	5 40 1m_1E_1I_1k
OUTPUT6	6 39 2n_2a_2j_2d
OUTPUT7	7 38 2l_N/A_2e_N/A
OUTPUT8	8 37 3b_N/A_3c_Colon
OUTPUT9	9 36 3n_3a_3j_3d
OUTPUT10	10 35 3f_N/A_3e_N/A
OUTPUT11	11 34 4b_N/A_4c_N/A
OUTPUT12	12 33 4n_4a_4j_4d
OUTPUT13	13 32 4f_N/A_4e_N/A
OUTPUT14	14 31 5b_ST_5c_N/A
OUTPUT15	15 30 5n_5a_5j_5d
OUTPUT16	16 29 5f_N/A_5e_N/A
OUTPUT17	17 28 6g_2D_6h_6i
OUTPUT18	18 27 6n_6a_6j_6d
OUTPUT19	19 26 6m_2G_6e_6k
OUTPUT20	20 25 7g_N/A_7h_7i
OUTPUT21	21 24 7m_na_7j_7k
OUTPUT22	22 23 7l_7f_7e_8e
OUTPUT23	23 2 8m_AM_8l_8k
OUTPUT24	24 3 8n_8a_8j_8d
OUTPUT25	25 4 8g_DISK_8h_8i
OUTPUT26	26 5 8b_FM_8c_N/A
OUTPUT27	27 6 7n_7a_7j_7d
OUTPUT28	28 7 7b_2F_7c_N/A
OUTPUT29	29 8 6f_2G_6e_2A
OUTPUT30	30 9 6b_2C_6c_2B
OUTPUT31	31 10 5M_CD_5l_5k
OUTPUT32	32 11 5g_CD_5h_5i
OUTPUT33	33 12 4m_Tape_4l_4k
OUTPUT34	34 13 4g_LD_4h_4i
OUTPUT35	35 14 3m_Dolby_3i_3k
OUTPUT36	36 15 3g_RDM_3h_3i
OUTPUT37	37 16 3m_RPT_2i_2k
OUTPUT38	38 17 2g_Ch_2h_2i
OUTPUT39	39 18 2b_1F_2c_Decimal
COM1	40 1 COM1
COM2	41 21 COM2
COM3	42 22 COM3
COM4	43 43 COM4

MISCELLANEOUS MECHANICAL PARTS LIST

LCD DISPLAY 16233053 & 16246364

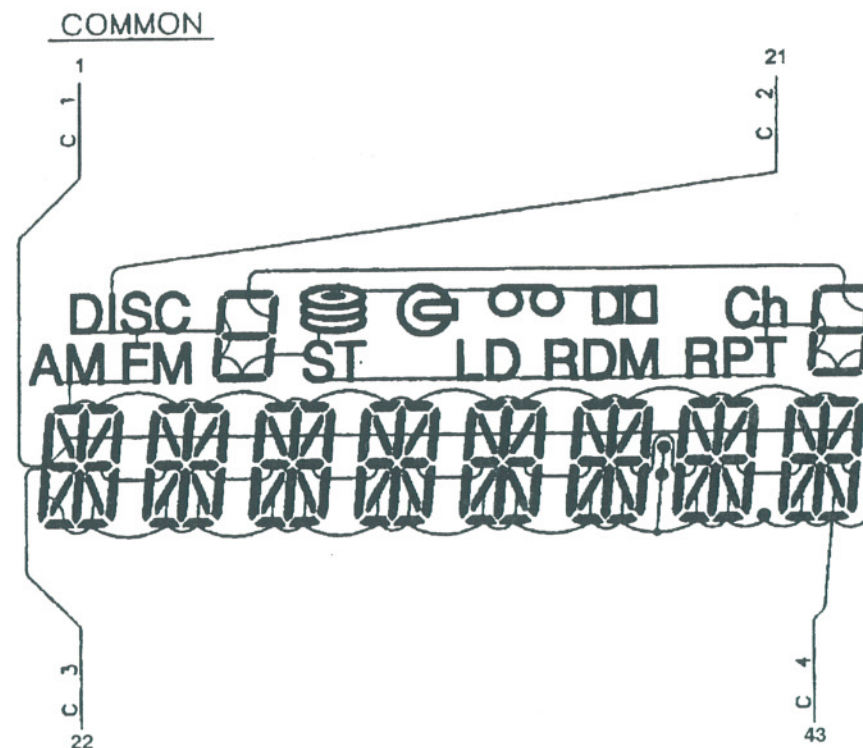
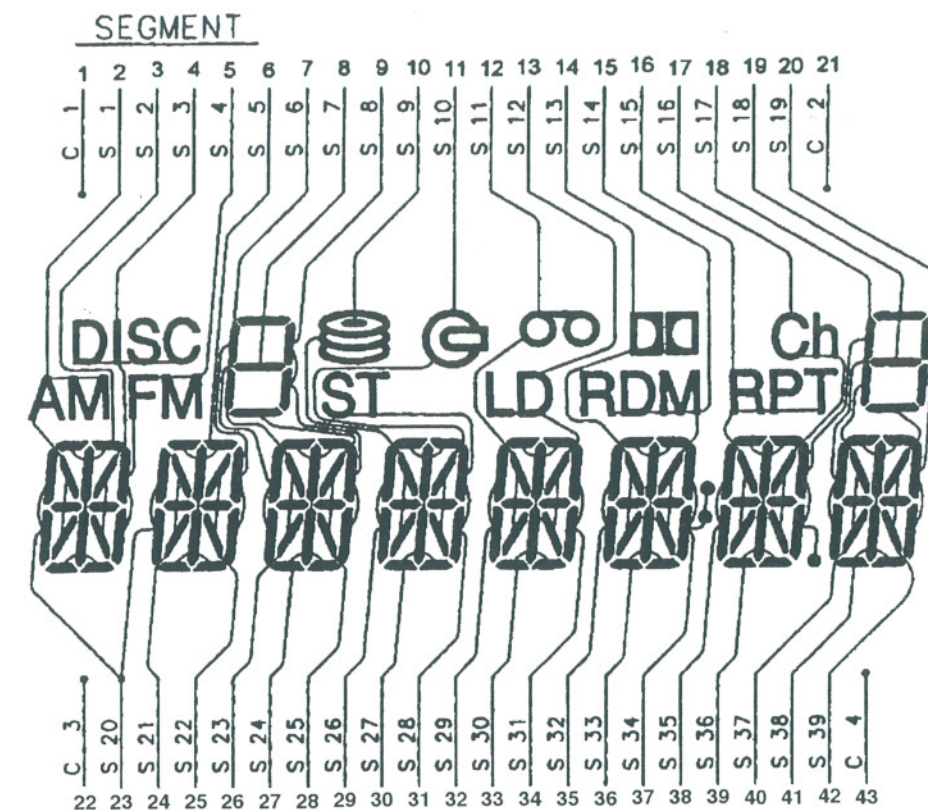
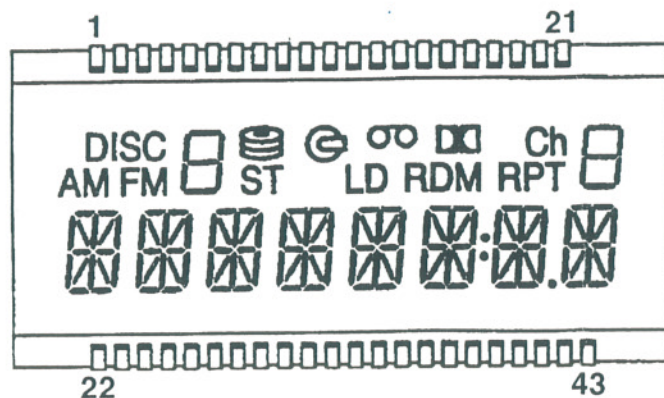
LCD PINOUT 16233053 & 16246364

MODELS	REF
16244451	A
16244461	B
16244471	C
16244481	D
16244491	E
16256029	F
16256019	G
16259881	H
16265719	I

If "Used On Models" column is blank, part is used on all models.

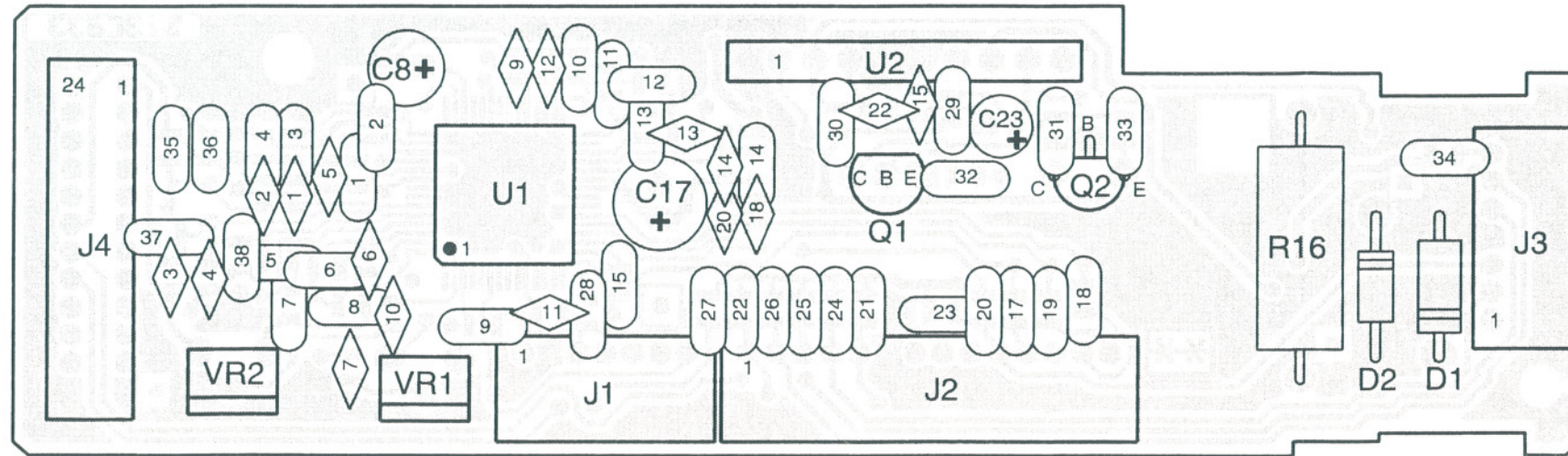
SERVICE PART	DESCRIPTION	USED ON MODELS:
16250572	TRIMPLATE ASM-FT,CA	E
16250567	TRIMPLATE ASM-FT,CD	C G
16250561	TRIMPLATE ASM-FT,CD	A H
16250564	TRIMPLATE ASM-FT,CD	B F
16250570	TRIMPLATE ASM-FT,CD	D I
16234359	SPRING, TRIMPLATE REL	
16246342	PUSHBUTTON-RELEASE	
16246781	TRIMPLATE-RR DETACH	E
16246338	TRIMPLATE-RR DETACH	A B C D F G H I
16256052	PUSHBUTTON SET	E
16256050	PUSHBUTTON SET	A H
16256051	PUSHBUTTON SET	B C D F G I
16193532	SCREW-1-32X.36CRRWH	
16217192	SCREW-4-40X1/4 TPH	
09432549	SCREW HEX WA HD TAP	
16260190	SCREW-TAP,PAN,M3X6	E
16217192	SCREW-4-40X1/4 TPH	
16218074	SCREW-M3-.5X4 TPHTT	
16232150	SCREW-M2.6X5.0 TPH	A B C D F G H I
16175522	SCREW-M3-1.5X8CRPH	
16241448	PAD-FOAM	
16246981	CASE ASM-CA	E
16246997	CASE ASM-CD	A B C D F G H I
16251773	CONVECTOR	A B C E F G H
16234449	CLAMP	
16246346	COVER-BOTTOM	A B C D E F G H
16234266	COVER-BOTTOM	I
16246341	TRIMPLATE-RING	
16246345	COVER-TOP	
16252262	ACTUATOR ASM-BASE	
16234267	INSULATOR-BOTTOM	
16247040	SPRING-LOCK	
16245004	DECK-BARE,CDS52	E
16228651	PLAYER-CD	A B C D* F G H I*
16228914	PLAYER-CD	D I (FLAT CABLE)
16246782	BRACKET-CASS	E
16234261	BRACKET-CD	A B C D F G H I
16244714	BRACKET-CONVERTOR	D I
16250573	TRIMPLATE ASM-BASE	E
16247000	TRIMPLATE-BASE,CD	A B C D F G H I
16260215	SLEEVE-UNIVERSAL	
16251118	COVER-DUST,CD	A B C D F G H I
16247040	SPRING-SLEEVE LOCK	

*LATER PRODUCTION CD MECHANISMS WITH ROUND WIRE CABLES



RSC VIEW

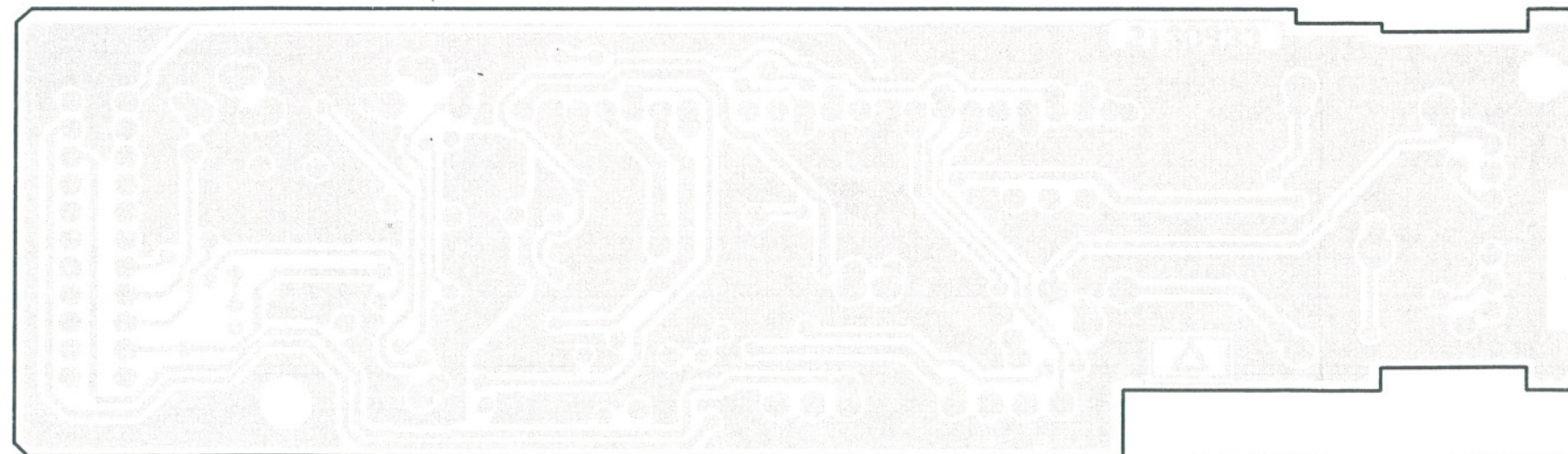
Figure 1



VR1 - Dolby Left
VR2 - Dolby Right

GRAPHIC: 213933.RSC(C) HP

WSC VIEW



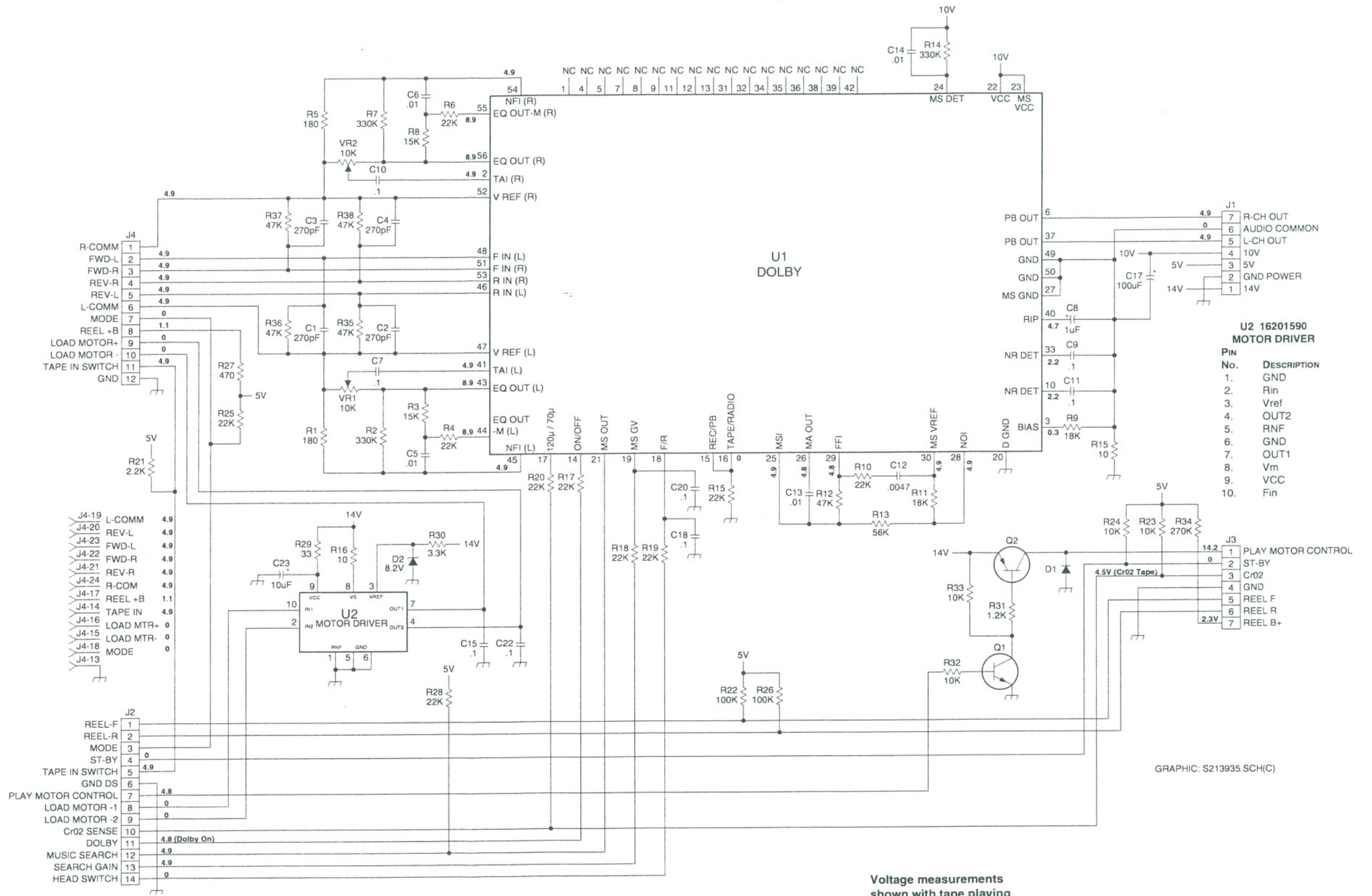
GRAPHIC: 213933.WSC(D)

CASSETTE DOLBY ADJUST(see Figure 1)		
STEP	ACTION	ADJUSTMENT
1.	Insert a Dolby Test Tape, Teac STT-150 (400 Hz 200nW/m) or equivalent	---
2.	Monitor Left Dolby Test Point with a voltmeter. (Tape Bd PCB J1, Pins 3, 4)	Adjust Left Dolby Potentiometer (VR1) for 580 mVrms ± 30mV.
3.	Monitor Right Dolby Test Point with a voltmeter. (Tape Bd PCB J1, Pins 2, 3)	Adjust Right Dolby Potentiometer (VR2) for 580 mVrms ± 30mV.

ILLUS. No.	SERVICE PART	DESCRIPTION
U1	16197898	IC-BIPOLAR, HA12165
U2	16201590	IC-BIPOLAR, MTR DRVR
Q1	16163332	XSTR-PNP, TO92
Q2	16194973	XSTR-PNP, TO92
D1	16011840	DIODE-RECT, A
D2	16017133	DIODE-IN4101 8.2V
C1	16089750	CAP-SM, 0805 270PF 5%
C2	16089750	CAP-SM, 0805 270PF 5%
C3	16089750	CAP-SM, 0805 270PF 5%
C4	16089750	CAP-SM, 0805 270PF 5%
C5	16191467	CAP-SM, 0.010UF, 50V
C6	16191467	CAP-SM, 0.010UF, 50V
C7	16172624	CAP-SM, .1UF, 25V
C8	16162863	CAP-ELR, 1MF, 50V
C9	16172624	CAP-SM, .1UF, 25V
C10	16172624	CAP-SM, .1UF, 25V
C11	16172624	CAP-SM, .1UF, 25V
C12	16089720	CAP-SM, 4700PF, 205V
C13	16191467	CAP-SM, 0.010UF, 50V
C14	16191467	CAP-SM, 0.010UF, 50V
C15	16172624	CAP-SM, .1UF, 25V
C17	16129398	CAP-ELR, 100MF, 16V
C18	16172624	CAP-SM, .1UF, 25V
C20	16172624	CAP-SM, .1UF, 25V
C22	16172624	CAP-SM, .1UF, 25V
C23	16064996	CAP-ELR, 10.0UF
R1	16087801	RES-SM, 0805 180, 5%
R2	16087742	RES-SM, 0805 330K, 5%
R3	16087613	RES-SM, 0805 15K, 5%
R4	16087630	RES-SM, 0805 22K, 5%
R5	16087801	RES-SM, 0805 180, 5%
R6	16087630	RES-SM, 0805 22K, 5%
R7	16087742	RES-SM, 0805 330K, 5%
R8	16087613	RES-SM, 0805 15K, 5%
R9	16087849	RES-SM, 0805 18K, 5%
R10	16087630	RES-SM, 0805 22K, 5%
R11	16087849	RES-SM, 0805 18K, 5%
R12	16087661	RES-SM, 0805 47K, 5%
R13	16087861	RES-SM, 0805 56K, 5%
R14	16087742	RES-SM, 0805 330K, 5%
R15	16087630	RES-SM, 0805 22K, 5%
R16	16185172	RES-WW, 10 OHM, 2W, 5%
R17	16087630	RES-SM, 0805 22K, 5%
R18	16087630	RES-SM, 0805 22K, 5%
R19	16087630	RES-SM, 0805 22K, 5%
R20	16087630	RES-SM, 0805 22K, 5%
R21	16087827	RES-SM, 0805 2.2K, 5%
R22	16087692	RES-SM, 0805 100K, 5%
R23	16087843	RES-SM, 0805 10K, 5%
R24	16087843	RES-SM, 0805 10K, 5%
R25	16087630	RES-SM, 0805 22K, 5%
R26	16087692	RES-SM, 0805 100K, 5%
R27	16087811	RES-SM, 0805 470K, 5%
R28	16087630	RES-SM, 0805 22K, 5%
R29	16087932	RES-SM, 33 .1, 5%
R30	16087550	RES-SM, 0805 3.3K, 5%
R31	16087508	RES-SM, 0805 1.2K, 5%
R32	16087843	RES-SM, 0805 10K, 5%
R33	16087843	RES-SM, 0805 10K, 5%
R34	16087805	RES-SM, 0805 270, 5%
R35	16087661	RES-SM, 0805 47K, 5%
R36	16087661	RES-SM, 0805 47K, 5%
R37	16087661	RES-SM, 0805 47K, 5%
R38	16087661	RES-SM, 0805 47K, 5%

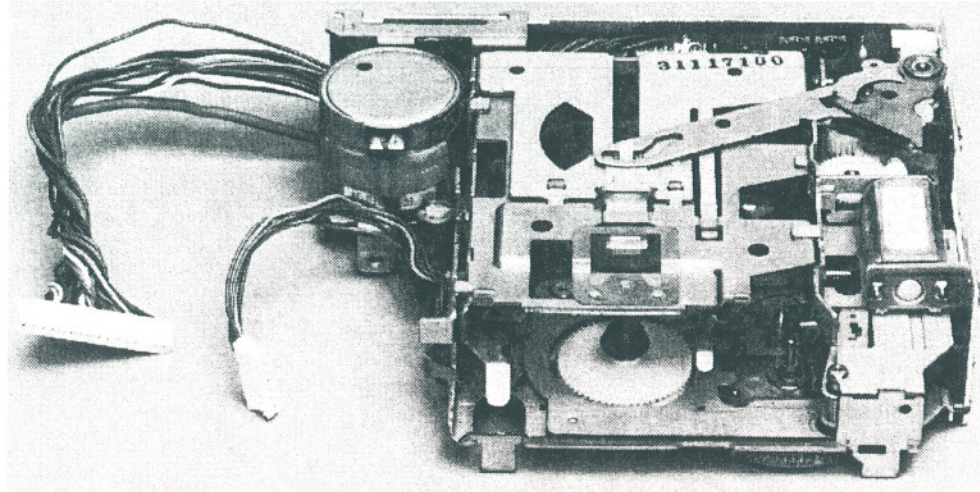
MODEL: 16244491 WITH CASSETTE DECK 16245004

ILLUS. No.	SERVICE PART	DESCRIPTION
VR1	16199367	RES-VAR, 10K OHM
VR2	16199367	RES-VAR, 10K OHM
J1	16199330	HEADER-7 COND, MA, RA
J2	16199331	HEADER-14 COND, MA, RA
J3	16199330	HEADER-8 COND, MA, RA
J4	16200676	HEADER-12 COND, MA, RA



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**Bare Deck 16245004
(shown with cassette board)**



CASSETTE TAPE SPEED ADJUST(see Exploded View Item No. 2)

STEP	ACTION	ADJUSTMENT
1.	Insert Motor Speed Test Tape (3KHz)	Adjust the motor speed variable resistor on top of the motor to 3KHz +3%, -1%.

Item No.	Pkg No.	Description
1.	01229353	Belt-Tape
2.	01229354	Motor Asm
3.	01229355	Motor Asm
4.	01229356	Pkg-Load Arm/Catch
5.	01229357	Switch
6.	01229358	Pkg-Control Brd
7.	01229359	Pkg-Photocoupler
8.	01229360	Head-Tape
9.	01229401	Pkg-Load Gear Asm
10.	01229402	Tape-Guide
11.	01229403	Pkg-Set Arm
12.	01229404	Pkg-Poly Washer
13.	01229405	Pkg-Washer
14.	01229423 *	Pkg-Washer

* New Part Number For 1997.

