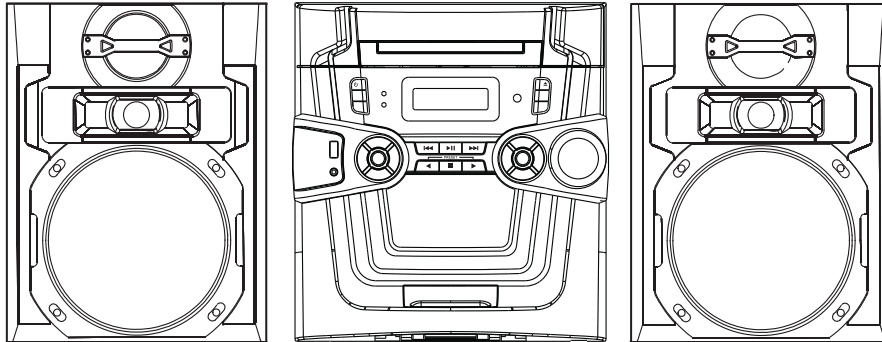


Service Manual


CD Mini System for iPhone or iPod **CD2961i**



CONTENTS

	Pages
Performance Specifications	2
Electrical Parts List	5
Printed Circuit Boards	12
Wiring Diagram	19
Schematic Diagrams	21
Voltage Chart	27
IC Pins Description and IC Block Diagrams	28
Block Diagram	35
Exploded Drawing	36
Exploded Drawing Parts List	37

PRODUCT SAFETY NOTES

Many electrical and mechanical parts in this chassis have special safety characteristics. These safety characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by  in the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully.

The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

CAUTION:

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

PERFORMANCE SPECIFICATIONS

GENERAL TEST CONDITION

Power Supply	: 230V AC 50Hz
Output Load	: 6ohm Dummy Speaker Load
Reference Output	: 1W
Input Signal Source	: 75ohm Dummy for FM
Modulation	: 40kHz for FM Mono 1kHz
Remarks	: 7.5kHz Pilot Tone
	: 67.5kHz L+R 1kHz

AMPLIFIER SECTION

	TEST ITEMS	UNIT	NOMINAL	LIMIT	
1.	Standby power AC Input: 230V, 50Hz	W	---	<0.5	
2.	Output power $\phi=1$ kHz 10% THD (L/R)	W	90	88	
3.	Frequency response 3dB (Ref 1kHz)	Hz	40 ~ 16000		
4.	Distortion Line IN=500mV Po=1W 1kHz	%	0.5	1	
	20~20kHz BPF Maximum volume Line IN=500mV 1kHz	%	---	15	
5.	Line in input sense Main PO=90W 1kHz Maximum volume	mV	1000	1200	
6.	Audio level balance FM: Deviation= \pm 40kHz 1kHz	dB	-5	\pm 3	
	CD=-6dB 1kHz	dB	-3	\pm 3	
	Line IN=500mV 1kHz	dB	0	0	
	iPod=-6dB kHz	dB	-5	\pm 3	
7.	Channel separation Line IN=500mV $\phi=1$ kHz	dB	50	40	
8.	Channel unbalance $\phi=1$ kHz Aux IN	dB	0	3	
9.	S/N ratio Line IN=500mV 1kHz 20~20kHz BPF	dB	---	55	
	A-Weighted	dB	---	65	
10.	Graphic equalizer (with Ref. to flat)	Rock 100Hz	dB	6	\pm 2
		1kHz	dB	0	\pm 3
		10kHz	dB	6	\pm 2
		Classic 100Hz	dB	0	\pm 2
		1kHz	dB	2	\pm 2
		10kHz	dB	4	\pm 2
		Pop 100Hz	dB	-2	\pm 2
		1kHz	dB	4	\pm 2
		10kHz	dB	-2	\pm 2
		Jazz 100Hz	dB	2	\pm 2
		1kHz	dB	-2	\pm 2
		10kHz	dB	4	\pm 2
11.	Muting attenuation (A Filter ON)	dB	70	65	
12.	Hum and noise Volume=1 20~20kHz BPF	mV	---	1.5	
	Maximum volume 20~20kHz BPF	mV	---	10	

Remarks:

Measurement condition:

a. AU measurement should be done at by pass mode, without EQ effects.

All Item 20k LPF-ON

PERFORMANCE SPECIFICATIONS - CONTINUED

FM SECTION					
	TEST ITEMS	UNIT	NOMINAL	LIMIT	
1.	Tuning range	MHz	87.5 - 108	---	
2.	Tuning step	kHz	50	---	
3.	I.F frequency	kHz	---	---	
4.	Sensitivity (at S/N=30dB)	90.1MHz	dB	20	28
		98.1MHz	dB	20	28
		106.1MHz	dB	20	28
5.	Limiting sensitivity	-3dB Deviation=±40kHz	dB	12	20
6.	Stereo threshold	Deviation=±40kHz	dB	20	48
7.	Overload I/P level	THD=10%	dB	---	110
8.	Am Suppression MOD=30%	Ø=400Hz VIN=45dB	dB	50	25
9.	Selectivity	2SG DF=±400kHz	dB	30	22
		Vin=45dB Deviation=±40kHz			
10.	Audio response	Ref=1kHz -3dB	Hz	---	60 - 4000
	Channel separation	Ø=1kHz	dB	35	24
11.	Distortion	Ø=1kHz Mono Deviation=±75kHz	%	0.3	4
		20~20kHz BPF Stereo Deviation=±67.5kHz	%	1.4	4
12.	S/N ratio	Mono 22.4Hz~15kHz BPF	dB	50	40
		Stereo 22.4Hz~15kHz BPF	dB	50	40
13.	Auto scan threshold		dB	28	32
14.	Modulation Hum	20~20kHz BPF	dB	50	40
15.	Oscillation fall out		%	---	75
16.	Minimum volume hum	Volume=1 20kHz LPF	mV	---	1.5
Remarks:					
Measurement condition:					
1. AU measurement should be done at by pass mode, without EQ effects.					
2. Deviation (Mono)=±75kHz (Stereo)=±67.5kHz / Pilot=±7.5kHz					

iPod SECTION					
	TEST ITEMS	UNIT	NOMINAL	LIMIT	
1.	Frequency response (-3dB)	Ref 1kHz	Hz	100 ~ 16000	
		1kHz 0dB 20Hz~20kHz BPF	dB	---	60
2.	S/N ratio	A-Weighted	dB	---	65
3.	Hum and noise	Volume=1 20~20kHz BPF	mV	---	1.5
		Maximum volume 20~20kHz BPF	mV	---	10
4.	Distortion	-10dB 128K Bit rate	%	0.5	1
5.	Channel separation	Ø=1kHz	dB	50	40
6.	Channel unbalance	Ø=1kHz	dB	0	3
Remarks:					
Measurement condition:					
1. AU measurement should be done at by pass mode, without EQ effects. All Item 20k LPF-ON					

PERFORMANCE SPECIFICATIONS - CONTINUED

CD SECTION				
	TEST ITEMS	UNIT	NOMINAL	LIMIT
1.	Frequency response (-3dB) (Ref. 1kHz)	Hz	40 ~ 16000	
2.	S/N ratio Ref=CD 1K 0dB 20Hz~20kHz BPF A-Weighted	dB	---	60
3.	Hum and noise Volume=1 Maximum volume	20~20kHz BPF	---	1.5
		20~20kHz BPF	---	10
4.	Distortion CD=-10dB Ø=1kHz	%	0.5	1
5.	Channel separation Ø=1kHz 0dB	dB	50	40
6.	Channel unbalance Ø=1kHz 0dB	dB	---	3
7.	Program access time	Short	1	3
		Long	4	7
8.	Time to read TOC	ABEX TCD-712R	8	10
		ABEX TCD-W012W	15	20
9.	Error correction	SBC444A Interruption	1	0.6
		Black dot	1	0.6
		Fingerprint	75	65
		ABEX TCVD-721R Scratch	1	0.6
10.	Eccentricity Abex TCD-712R	µm	210	140
11.	Vertical deviation Abex TCD-731RA	mm	1	0.78
12.	Error correction	ABEX TCD-W021W Scratch	1	0.6
		ABEX TCD-W025W Black dot	1	0.6
Remarks:				
Measurement condition: 1. AU measurement should be done at by pass mode, without EQ effects. All Item 20k LPF-ON 2. Test Disc=SONY 3				

ELECTRICAL PARTS LIST

Ref. No.	Description	Mfr's Part No.	Qty.
PCB			
MAIN PCB	PCB CD29611-01-01 170x150x1.6mm (FR4/R29)	033-CD2961W100	1
iPod PCB	PCB CD29611-01-02 58.5x45x1.0mm (FR4/R29)	033-CD2961W101	1
KEY PCB	PCB CD29611-01-03 245x97.5x1.6mm (94HB/R01)	033-CD2961W102	1
REMOTE CONTROL SECTION			
	REMOTE CONTROL, MOLD BLACK, 430C PNT, RUBBER: L.BLUE 2708C, w/BATTERY, NO WEEE	043-A72424W110	1
AMPLIFIER SECTION			
RESISTORS			
R888,889	CHIP RESISTOR 0 ohm +-5% 1/16W (0603/1608)	001-300052W016	2
SR65,800	CHIP RESISTOR 0 ohm +-5% 1/16W (0402/1005)	001-300056W016	2
R0420,94	CHIP RESISTOR 100 ohm +-5% 1/16W (0603/1608)	001-310152W016	2
SR49,52,55,57,62,86, R111	CHIP RESISTOR 100 ohm +-5% 1/16W (T&W) (0402/1005)	001-310156W016	7
R1,2,092,0106, SR66	CHIP RESISTOR 1 Kohm +-5% 1/16W (0402/1005)	001-310256W016	5
SR47,48,51,54,64,68,83,85, 87,88,097,102,103, R401L, 431L,401R,431R	CHIP RESISTOR 10 Kohm +-5% 1/16W (T&W) (0402/1005)	001-310356W016	17
R24,148	CHIP RESISTOR 100 Kohm +-5% 1/16W (0402/1005)	001-310456W016	2
R402L,402R,116,126	CHIP RESISTOR 15 Kohm +-5% 1/16W (0402/1005)	001-315356W016	4
SR75	CHIP RESISTOR 220 ohm +-5% 1/16W (0603/1608)	001-322152W016	1
SR2,3,4,5,6,7,8,9	CHIP RESISTOR 2.2 Kohm +-5% 1/16W (0402/1005)	001-322256W016	8
SR59	CHIP RESISTOR 30 Kohm +-5% 1/16W (0402/1005)	001-330356W016	1
SR89,91,92, SC121	CHIP RESISTOR 33 Kohm +-5% 1/16W (0402/1005)	001-333356W016	4
SR93,94,95,96	CHIP RESISTOR 3.3 ohm +-5% 1/10W (0805/2012)	001-333850W010	4
SR69,70,71,72	CHIP RESISTOR 3.3 ohm +-5% 1/16W (0402/1005)	001-333856W016	4
R101,430L,430R	CHIP RESISTOR 3.9 Kohm +-5% 1/16W (0402/1005)	001-339256W016	3
SR1,74, R93,106,124,125	CHIP RESISTOR 4.7 Kohm +-5% 1/16W (0402/1005)	001-347256W016	6
SR61,67	CHIP RESISTOR 47 Kohm +-5% 1/16W (0402/1005)	001-347356W016	2
R6,95,112,117,123	CHIP RESISTOR 470 Kohm +-1% 1/16W (0402/1005)	001-347416W016	5
R10,403L,403R	CHIP RESISTOR 5.6 Kohm +-5% 1/16W (0402/1005)	001-356256W016	3
R8	CHIP RESISTOR 56 Kohm +-5% 1/16W (0402/1005)	001-356356W016	1
R7	CHIP RESISTOR 68 Kohm +-5% 1/16W (0402/1005)	001-368356W016	1
R251	CHIP RESISTOR 820 ohm +-5% 1/16W (0402/1005)	001-382156W016	1
R9,118,121,122	CHIP RESISTOR 820 Kohm +-5% 1/16W (0402/1005)	001-382456W016	4
CAPACITORS			
SC113,135,137,139	CHIP CAP 0.001 uF/50V +-10% (0603/1608) (MCH185C102KK/GRM39X7R102K50PT)	003-510212W050	4
C081 SC82	CHIP CAP 1000 pF/50V +-10% (0402/1005)	003-510214W050	2
SC108,109,112,120	CHIP CAP 0.01 uF/100V +-10% (0805/2012)	003-510310W100	4
C10	CHIP CAP 0.01 uF/50V +-10% (0603/1608) (GRM39B103K50PT)	003-510312W050	1
C34,807	CHIP CAP 0.1 uF/50V +-10% (0805/2012)	003-510410W050	2
SC1,5,89,90,92,93,97,98, 100,101	CHIP CAP 0.1 uF/100V +-10% (0805/2012)	003-510410W100	10
C04,94,123	CHIP CAP 0.1 uF/50V +-10% (0603/1608)	003-510412W050	3
SC79,80,103,104,107	CHIP CAP 0.1 uF/16V +-10% (0402/1005)	003-510414W016	5
C409L2,409L3	CHIP CAP 1 uF/16V +-10% (0603/1608)	003-510512W016	2
C81,83,84,86,87,90,103,104, 105,125,131,402R,410R1, 410L1,411L,411R,453L	CHIP CAP 1 uF/10V +-10% (0402/1005)	003-510514W010	17
SC8,69,70,73,74,106,126, 127,128,129	CHIP CAP 10 uF/10V +-10% (0805/2012)	003-510610W010	10
C31	CHIP CAP 10 uF/16V +-10% (0805/2012)	003-510610W016	1
C408R1,408R2	CHIP CAP 0.15 uF/16V +-10% (0603/1608)	003-515412W016	2
C407R1,407R2	CHIP CAP 0.22 uF/16V +-80-20% (0402/1005)	003-522484W016	2
SC105	CHIP CAP 330 pF/50V +-10% (0402/1005)	003-533114W050	1

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
SC87,94,95,102	CHIP CAP 0.033 uF/50V +-10% (0603/1608)	003-533312W050	4
C6,88,119,124,135	CHIP CAP 47 pF/50V +-10% (0402/1005)	003-547014W050	5
SC81	CHIP CAP 0.0047 uF/50V +-10% (0402/1005)	003-547214W050	1
C404R1,404R2	CHIP CAP 0.0056 uF/50V +-10% (0402/1005)	003-556214W050	2
C2	CHIP CAP 100 pF/50V +-10% NPO (0402/1005)	003-610114W050	1
C3,106,116,408,409,062,063, 064,065,066,067,068, SC75, 76,77,78,110,123,124	CHIP CAP 100 pF/50V +-5% NPO (0402/1005) (GRM36C0G101J50PT)	003-610154W050	19
SC130,131,132,133	CHIP CAP 150 pF/50V +-5% NPO (0402/1005)	003-615154W050	4
C115,117,118	CHIP CAP 22 pF/50V +-5% NPO (0402/1005) (GRM36C0G220J50PT)	003-622054W050	3
SC125,134,136,138	METALLIZED POLYESTER FILM CAP 1 uF/63V +-10% (MEF-105K0063DT1058) PITCH:5mm	004-110512W063	4
SC91,96,99	ELECT CAP 1000 MFD/50V +-20% 85C (13x25)	006-010201W50D	3
EC1	ELECT CAP 10 MFD/50V +-20% (5x11) (TAPING PITCH:2.5mm)	006-81000AW50D	1
C805,806	ELECT CAP 100 MFD/35V +-20% (8x11.5mm) (TAPING PITCH:5mm)	006-810100W35D	2
C400, SC84	ELECT CAP 100 MFD/16V +-20% (5x11) (TAPING PITCH:2.5mm)	006-81010AW16D	2
SC111	ELECT CAP 220 MFD 16V +-20% (6.3x11) (TAPING PITCH:2.5mm)	006-82210AW16F	1
C1,071,121,515	ELECT CAP 47 MFD/16V +-20% (5x11) (TAPING PITCH:2.5mm)	006-84700AW16D	4
C98	ELECT CAP 470 MFD/16V +-20% (10x12.5) (TAPING PITCH:5mm)	006-847100W16D	1
C11,810	ELECT CAP 470 MFD 10V +-20% (6.3x12) (TAPING PITCH:2.5mm)	006-84710AW10F	2
TRANSISTORS			
SQ3, Q5,7,504	CHIP TRANSISTOR MMBT3904/MMBT3904LT1/ 3DG3904M/T3904 (T&W)	008-A03904W000	4
Q9	CHIP TRANSISTOR S8050LT1/C3265-EY2	008-A08050W000	1
SQ4	TRANSISTOR 3CA8550M-C/8550M-C	008-A08550W000	1
INTEGRATED CIRCUITS			
U1	IC MP2451DT 36V/0.6A STEP-DOWN CONVERTER (SOT23-6L)	010-232451W000	1
U4,5, IC9	IC D4558 (SOP8)	010-334558W001	3
IC12	IC TDA7440D (SMT):ROHS AUDIO PROCESSOR IC (S.T)	010-527440W000	1
U3	IC TAS5611PHD/TAS5611A ANALOG-INPUT POWER STAGE 64PIN HTQFP	010-835611W000	1
DIODES			
D10	CHIP ZENER DIODE RLZ 4.7V 1/2W RLZ 4.7B (RLZTE-114.7B) F011-010047W125	011-010047W126	1
D9	CHIP ZENER DIODE 8.2V 1/2W ZMM5237BST	011-010082W126	1
D403	CHIP DIODE (SMT) LS4148(KT)/LL4148	011-044148W002	1
D11	CHIP SCHOTTKY BARRIER RECTIFIER B340A 3A/40V DO-214AC (TAPING)	011-050340W000	1
INDUCTORS			
L19	POWER INDUCTOR (SMT) 22 uH +-20% 1A SMT73-220M/68-073220410Q =018-060226-202	018-060226W306	1
SL5,6,7,8	POWER INDUCTOR 22 uH +-15% 6A PKF1313-220 L6-B-T1-LF(B) L=3.8 +-0.5mm (ROHS) (FENFA)	018-060226W805	4
L15,22,23,24	CHIP FERRITE BEAD GZ1608Y102T(f) (SUNLORD) STGB1608-102PT	032-101608W015	4
FB20	CHIP FERRITE BEAD 30ohm @100MHz/5A UPZ1608E300-5R0TF	032-101608W082	1

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
MISCELLANEOUS			
L29,30	BEAD COIL TOR0953-270N-B-LF 27 uH +-40%	037-000953W270	2
SP1	SPEAKER TERMINAL JACK 4 PINS DS-207x2-01	118-040207W000	1
CN602	HEADER 4 PINS #TJC6-4A PITCH:3.96mm VERTICAL	135-000TJ6W040	1
CN603	HEADER 10 PIN SPEC #2001-WS-10 PITCH:2mm VERTICAL REPLACE:135-PHS100-100	135-2001WSW100	1
CD SECTION with NEC-N CD MECHANISM #DA11VZ--N			
RESISTORS			
R67, L27	CHIP RESISTOR 0 ohm +-5% 1/16W (0603/1608)	001-300052W016	2
R36,149	CHIP RESISTOR 0 ohm +-5% 1/16W (0402/1005)	001-300056W016	2
R71	CHIP RESISTOR 10 ohm +-5% 1/16W (0402/1005)	001-310056W016	1
R5R	CHIP RESISTOR 100 ohm +-5% 1/16W (T&W) (0402/1005)	001-310156W016	1
R007,13,14,15,16,17,23,27, 41,43,49,50,51,051,52,62, 065,067,068,114,0631,039R, 042R,1R,2R,7R,8R,9R, L21	CHIP RESISTOR 1 Kohm +-5% 1/16W (0402/1005)	001-310256W016	29
R20,39,54,55,56,57,59,66, 176,178,247,012,047,048, 049,054,R040R,041R	CHIP RESISTOR 10 Kohm +-5% 1/16W (T&W) (0402/1005)	001-310356W016	18
R19,21,38,99,108,113	CHIP RESISTOR 100 Kohm +-5% 1/16W (0402/1005)	001-310456W016	6
R64	CHIP RESISTOR 12 Kohm +-5% 1/16W (0402/1005)	001-312356W016	1
R65,72	CHIP RESISTOR 2 Kohm +-5% 1/16W (0402/1005)	001-320256W016	2
R53,63	CHIP RESISTOR 20 Kohm +-5% 1/16W (0402/1005)	001-320356W016	2
R58	CHIP RESISTOR 2.2 Kohm +-5% 1/16W (0402/1005)	001-322256W016	1
R11,12,60,076	CHIP RESISTOR 22 Kohm +-5% 1/16W (0402/1005)	001-322356W016	4
R005,006	CHIP RESISTOR 2.2 ohm +-5% 1/16W (0603/1608)	001-322852W016	2
R18	CHIP RESISTOR 330 ohm +-5% 1/16W (T&W) (0402/1005)	001-333156W016	1
R9,61	CHIP RESISTOR 3.3 Kohm +-5% 1/16W (0402/1005)	001-333256W016	2
R22,70	CHIP RESISTOR 3.3 Mohm +-5% 1/16W (0402/1005)	001-333556W016	2
R109	CHIP RESISTOR 470 ohm +-5% 1/16W (0402/1005)	001-347156W016	1
R45,46,47,48,110	CHIP RESISTOR 4.7 Kohm +-5% 1/16W (0402/1005)	001-347256W016	5
R82,83	CHIP RESISTOR 47 Kohm +-5% 1/16W (0402/1005)	001-347356W016	2
R81	CHIP RESISTOR 5.6 Mohm +-5% 1/16W (0603/1608)	001-356552W016	1
R3R	CHIP RESISTOR 68 ohm +-5% 1/16W (0402/1005)	001-368056W016	1
CAPACITORS			
C44,59,128,133,138	CHIP CAP 1000 pF/50V +-10% (0402/1005)	003-510214W050	5
C35,96	CHIP CAP 0.1 uF/16V +-10% (0603/1608) (87-A10-260-08G) (C1608JB1C104K) (TDK)	003-510412W016	2
C003,005,07,008,009,016, 018,021,023,024,026,027, 032,033,034,035,036,037, 039,041,42,46,48,049,050, 52,053,60,62,71,093,97,098, 100,122,127,130, SC7,83, 85,86	CHIP CAP 0.1 uF/16V +-10% (0402/1005)	003-510414W016	41
C32,129,132,136,137	CHIP CAP 1 uF/10V +-10% (0402/1005)	003-510514W010	5
C006,007	CHIP CAP 2.2 uF/6.3V +-20% (0402/1005)	003-522524W006	2
C36,37,38	CHIP CAP 470 pF/50V +-10% (0402/1005)	003-547114W050	3
C015,020	CHIP CAP 15 pF/50V +-5% NPO (0402/1005) (GRM36C0G150J50PT)	003-615054W050	2
C43	CHIP CAP 18 pF/50V +-5% NPO (0402/1005) (GRM36C0G180J50PT)	003-618054W050	1
C4,16	CHIP CAP 22 pF/50V +-5% NPO (0603/1608) (GRM39C0G220J50PT)	003-622052W050	2
C012,18	CHIP CAP 22 pF/50V +-5% NPO (0402/1005) (GRM36C0G220J50PT)	003-622054W050	2


ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
C002,004	CHIP CAP 0.0047 uF/50V +-10% (0402/1005)	003-547214W050	2
C19	ELECT CAP 10 MFD/50V +-20% (5x11) (TAPING PITCH:2.5mm)	006-81000AW50D	1
C7,8,011,40,45,50,51,54,56, 58,120	ELECT CAP 100 MFD/16V +-20% (5x11) (TAPING PITCH:2.5mm)	006-81010AW16D	11
C12,63,66,107,148	ELECT CAP 220 MFD/10V +-20% (6.3x11) (TAPING PITCH:2.5mm)	006-82210AW10D	5
C65	ELECT CAP 47 MFD/25V +-20% (5x11) (TAPING PITCH:2.5mm)	006-84700AW25D	1
C61,99	ELECT CAP 470 MFD 10V +-20% (6.3x12) (TAPING PITCH:2.5mm)	006-84710AW10F	2
TRANSISTORS			
Q27	TRANSISTOR-BUK&TO-126 B772	008-600772W000	1
Q001,007	TRANSISTOR 3CA8550/8550	008-685500W000	2
Q1,2,4,8,10,11	CHIP TRANSISTOR MMBT3904/MMBT3904LT1/ 3DG3904M/T3904 (T&W)	008-A03904W000	6
Q6	CHIP TRANSISTOR S8550LT1/A1298-IY	008-A08550W001	1
Q3	CHIP TRANSISTOR 3DA8050M-C/8050M-C	008-AJ8050W000	1
CRYSTALS			
X2	CRYSTAL 32.768 kHz 12.5 pF +-5ppm (2x6mm) (COMMUTEK)	009-332768W400	1
X11	CRYSTAL 12 MHz HC-49US (3x9mm)	009-612000W201	1
INTEGRATED CIRCUITS			
IC8	IC AMS1117-1.5/D1117-1.5V (SOT-223)	010-001117W006	1
IC3	IC MFI341S2162 (w/135-003660W000 OR 001)	010-243411W007	1
U005	IC ME6118A33B3G (SOT223) (MICRONE) LOW CURRENT (WORLD ELITE)	010-246118W000	1
IC1	IC SC9671-B CD & MP3 DECODER (QFP-128) (NANFENG)	010-519671W000	1
IC2	IC SA1466TR (HSOP28) (NANFENG)	010-921466W000	1
IC03	IC GD25Q40 (SOP-8) (NANFENG)	045-F08512W101	1
DIODES			
D5	CHIP ZENER DIODE UDZ3.9V/ZMM5228BST 3.9V 1/2W (LL-34)	011-040039W120	1
D1,4,6	CHIP DIODE (SMT) LS4148(KT)/LL4148	011-044148W002	3
D3	CHIP DIODE 1N5819WB (SOD-123)	011-045819W000	1
INDUCTORS			
L003,4,5,7,8,9,10,11,014,28 L409R,L409L	CHIP FERRITE BEAD GZ1608Y102T(f) (SUNLORD) STGB1608-102PT	032-101608W015	12
MISCELLANEOUS			
CN5	HEADER 5 PINS PEC #2001-WS-5 PITCH:2mm VERTICAL	135-2001WSW050	1
CN1,501	HEADER 6 PINS PEC #2001-WS-6 PITCH:2mm VERTICAL REPLACE:135-PHS060-060	135-2001WSW060	2
CN006	HEADER 10 PIN SPEC #2001-WS-10 PITCH:2mm VERTICAL REPLACE:135-PHS100-100	135-2001WSW100	1
CN009	FFC/FPC CONNECTOR 16 PINS PITCH:1mm #D100-SSA-16 VERTICAL/TOP CONTACT NEC-N CD MECHANISM #DA11VZ--N	135-D100SSW160	1
	CD LOADER MODULE JL-021 w/FCC CABLE 16P L=220mm 5P=200mm, 6P=140mm	153-00DA11W003 165-0JL021W005	1 1
iPod DOCK SECTION			
RESISTORS			
R487	CHIP RESISTOR 0 ohm +-5% 1/16W (0603/1608)	001-300052W016	1
R484,496,498	CHIP RESISTOR 100 ohm +-5% 1/16W (0603/1608)	001-310152W016	3
R479,481	CHIP RESISTOR 10 Kohm +-5% 1/16W (0603/1608)	001-310352W016	2
R480,483	CHIP RESISTOR 100 Kohm +-5% 1/16W (0603/1608)	001-310452W016	2

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
R3	CHIP RESISTOR 100 Kohm +-5% 1/16W (0402/1005)	001-310456W016	1
R428	CHIP RESISTOR 43.2 Kohm +-1% 1/16W (0603/1608)	001-343B12W016	1
R147	CHIP RESISTOR 470 Kohm +-5% 1/16W (0402/1005)	001-347456W016	1
R419,477	CHIP RESISTOR 49.9 Kohm +-1% 1/16W (0603/1608)	001-350312W016	2
R420	CHIP RESISTOR 549 Kohm +-1% 1/16W (0603/1608)	001-355412W016	1
R478	CHIP RESISTOR 75 Kohm +-1% 1/16W (0603/1608)	001-375312W016	1
CAPACITORS			
C9,906	CHIP CAP 0.1 uF/16V +-10% (0603/1608) (87-A10-260-08G) (C1608JB1C104K) (TDK)	003-510412W016	2
C26,2,28,101,109	CHIP CAP 100 pF/50V +-10% NPO (0402/1005)	003-610114W050	5
C430,433,435,439,440,441, 442,443,444	CHIP CAP 22 pF/50V +-5% NPO (0603/1608) (GRM39C0G220J50PT)	003-622052W050	9
TRANSISTORS			
Q406,410	TRANSISTOR 2SK3018 (ROHM) (SMD) SMALL SWITCHING N-CHANNEL MOSFET	008-903018W000	2
Q07	CHIP TRANSISTOR MMBT3904/MMBT3904LT1/ 3DG3904M/T3904 (T&W)	008-A03904W000	1
DIODE			
D12	CHIP ZENER DIODE 2.0V UDZ2.0B-TRB (ROHM)	011-010020W001	1
INDUCTORS			
L013,32	FERRITE BEAD INDUCTOR #P10243NL/ Z1RH3.5x5x8w/FBS 75-350850 T5-R	032-100243W000	2
L2,20,25,26	CHIP FERRITE BEAD GZ1608Y102T(f) (SUNLORD) STGB1608-102PT	032-101608W015	4
L401,402	CHIP FERRITE BEAD PZ2012U601-1R5T(F)/ HCB2012KF-601T20 (0805/2012)	032-102012W002	2
WIRE			
CP7	HSG (2mm) PEC 2001H-12 w/220mm FLAT CABLE AWG26#UL2651/GREY SLDG.:4mm	136-F11222W000	1
MISCELLANEOUS			
J1	30 PINS iPod SOCKET BY AVNET MFI514S0117 (APPLE NR.514S0117) VERTICAL	135-003660W000	1
CN4	HEADER 12 PINS PEC #2001-WS-12 PITCH:2mm VERTICAL	135-2001WSW120	1
KEY SECTION			
RESISTORS			
R201	CHIP RESISTOR 0 ohm +-5% 1/8W (1206/3216)	001-300051W018	1
FB1,2,3,4,5,6,7,8,9,10,11,12, 13,17,18,19, R807,808	CHIP RESISTOR 0 ohm +-5% 1/16W (0603/1608)	001-300052W016	18
R702,789,790,791,792	CHIP RESISTOR 100 ohm +-5% 1/16W (0603/1608)	001-310152W016	5
R782	CHIP RESISTOR 1 Kohm +-5% 1/16W (0603/1608)	001-310252W016	1
R700,738	CHIP RESISTOR 10 Kohm +-5% 1/16W (0603/1608)	001-310352W016	2
R739,740	CHIP RESISTOR 6.8 Kohm +-5% 1/16W (0603/1608)	001-368252W016	2
R787	CHIP RESISTOR 82 Kohm +-5% 1/16W (0603/1608)	001-382352W016	1
S701	ROTARY ENCODER EC121102X2B-HA1-106	030-H12000W200	1
CAPACITORS			
C727,739,740,759,760	CHIP CAP 0.001 uF/50V +-10% (0603/1608) (MCH185C102KK/GRM39X7R102K50PT)	003-510212W050	5
C725	CHIP CAP 0.1 uF/16V +-10% (0603/1608) (87-A10-260-08G) (C1608JB1C104K) (TDK)	003-510412W016	1
C726,728,751,752,753	CHIP CAP 0.1 uF/50V +80-20% (0603/1608) (GRM188F11H104ZA01D+C1) (MURATA)	003-510482W050	5
C707,708	CHIP CAP 0.047 uF/50V +-10% (0603/1608) (GRM39B103K50PT)	003-547312W050	2
C710,711,712,714	CHIP CAP 33 pF/50V +-5% NPO (0603/1608) (GRM39COG330J50PT/MCH185A330JK)	003-633052W050	4

ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
C758	ELECT CAP 2.2 MFD/50V +-20% (5x11) (TAPING PITCH:5mm)	006-802000W50D	1
C730,756	ELECT CAP 47 MFD/16V +-20% (5x11) (TAPING PITCH:5mm)	006-847000W16D	2
INTEGRATED CIRCUIT			
IC701	IC DISPLAY DRIVER-VFD CS16315 (LQFP44)	010-411631W000	1
DIODES			
D707,708,709,710,711,712, 713,714,715,716,760	DIODE IN-4148 ROHM/TELEFUNKEN TAP**50 KEL(NS)T:52mm/NS(FAIRCHILD)/SEMTECH	011-004148W000	11
SWITCHES			
SW701,702,703,704,705, 706,707,708,709,710,711, 713,714,717,718,719,720, 721,722	TACT SW SKQNABD010 (ALPS) G20D00000220	021-SKQNABW000	20
WIRES			
CP2	HSG (2mm) PEC 2001H-06 w/120mm GREYx6 AWG26#UL2651 SLDG:3.5mm (P/N: AH700508)	136-F10612W000	1
CP3	HSG (2mm) PEC 2001H-10 w/115mm FLAT CABLE AWG26#UL2651/TAT GREY SLDG.:3.5mm	136-F11011W500	1
MISCELLANEOUS			
D726	LED 3mm RED BT-202D-31 (FOSHAN)/ 1L034XH11A0DA002 (BRIGHTTEK)	110-033040W003	1
IR701	REMOTE/CONTROL INFRARED RECEIVER MODULE (SM3573JM3) (56.7kHz) (SILAN OPTRONICS)	111-003575W001	1
DS701	VACUUM FLUORESCENT DISPLAY VFD25-1014FN (BOE)	115-251014W000	1
NJ602	HEADPHONE JACK 3.5mm TC38-103-01 w/SWITCH BLACK COLOUR VERTICAL TYPE	116-038103W350	1
POWER SECTION			
MISCELLANEOUS			
	POWER SUPPLY MODULE	038-CD2961W001	1
	 POWER CORD SAA-MG2.05mm7.5A H03VVH2-F MIG. w/SR250mm+HSG, w/TERM BLK (YIP CHUN)	134-B11551W01U	1
RADIO SECTION			
RESISTORS			
L1,3	CHIP RESISTOR 0 ohm +-5% 1/16W (0603/1608)	001-300052W016	2
R85,86,87,88,89,100,105	CHIP RESISTOR 1 Kohm +-5% 1/16W (0402/1005)	001-310256W016	7
R77,84	CHIP RESISTOR 10 Kohm +-5% 1/16W (T&W) (0402/1005)	001-310356W016	2
R5,083	CHIP RESISTOR 200 ohm +-5% 1/16W (0402/1005)	001-320156W016	2
R107	CHIP RESISTOR 22 Kohm +-5% 1/16W (0402/1005)	001-322356W016	1
R90,91	CHIP RESISTOR 47 Kohm +-5% 1/16W (0402/1005)	001-347356W016	2
CAPACITORS			
C031,77,78	CHIP CAP 1000 pF/50V +-10% (0402/1005)	003-510214W050	3
C09,15,21,25,33,39	CHIP CAP 0.1 uF/16V +-10% (0402/1005)	003-510414W016	6
L13,14, C75,76	CHIP CAP 1 uF/10V +-10% (0402/1005)	003-510514W010	4
C30,72,55,57,67,79,80	CHIP CAP 47 pF/50V +-10% (0402/1005)	003-547014W050	7
C14,29	CHIP CAP 15 pF/50V +-5% NPO (0402/1005) (GRM36C0G150J50PT)	003-615054W050	2
C47	ELECT CAP 100 MFD/16V +-20% (5x11) (TAPING PITCH:2.5mm)	006-81010AW16D	1
TRANSISTORS			
Q101	CHIP TRANSISTOR MMBT3904/MMBT3904LT1/ 3DG3904M/T3904 (T&W)	008-A03904W000	1
Q102	TRANSISTOR 3CA8550M-C/8550M-C	008-A08550W000	1
INTEGRATED CIRCUIT			
IC7	IC SI4702	010-514702W000	1

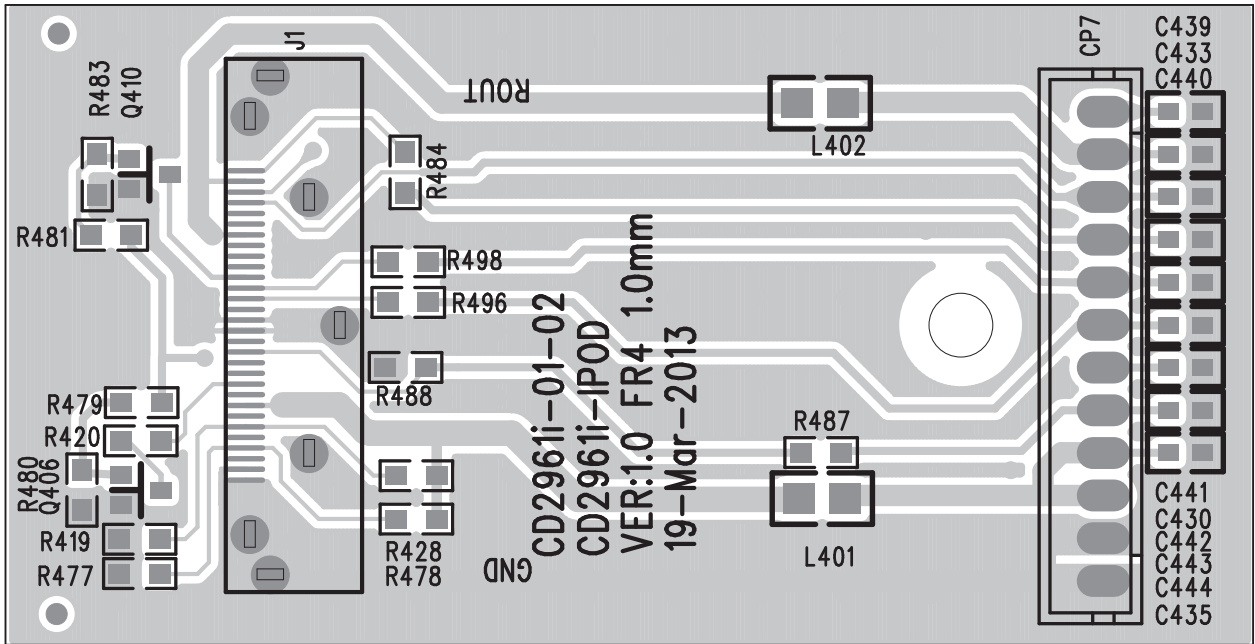
ELECTRICAL PARTS LIST - CONTINUED

Ref. No.	Description	Mfr's Part No.	Qty.
CRYSTAL			
XT1	CRYSTAL 32.768 kHz +-20ppm (CSA206) (COMMUTEK) (87-A70-170-01C)	009-332768W100	1
DIODES			
D2	CHIP ZENER DIODE 3.3V 1/2W ZMM3.3HSA	011-010033W125	1
D7,8	CHIP DIODE (SMT) LS4148(KT)/LL4148	011-044148W002	2
INDUCTORS			
L6	CHIP INDUCTOR 270 nH +-5% (0603/1608) SDCL1608CR27JT(f) (SUNLORD)	018-040270W100	1
L12,17,18	CHIP FERRITE BEAD GZ1608Y102T(f) (SUNLORD) STGB1608-102PT	032-101608W015	3
WIRE			
FMANT1	JP WIRE AWG26#UL1007 3.5xDIA.6mm 1500mm BLACK WITH BLACK H.S.T TUBE DIA.:2mm	051-679A50W009	1

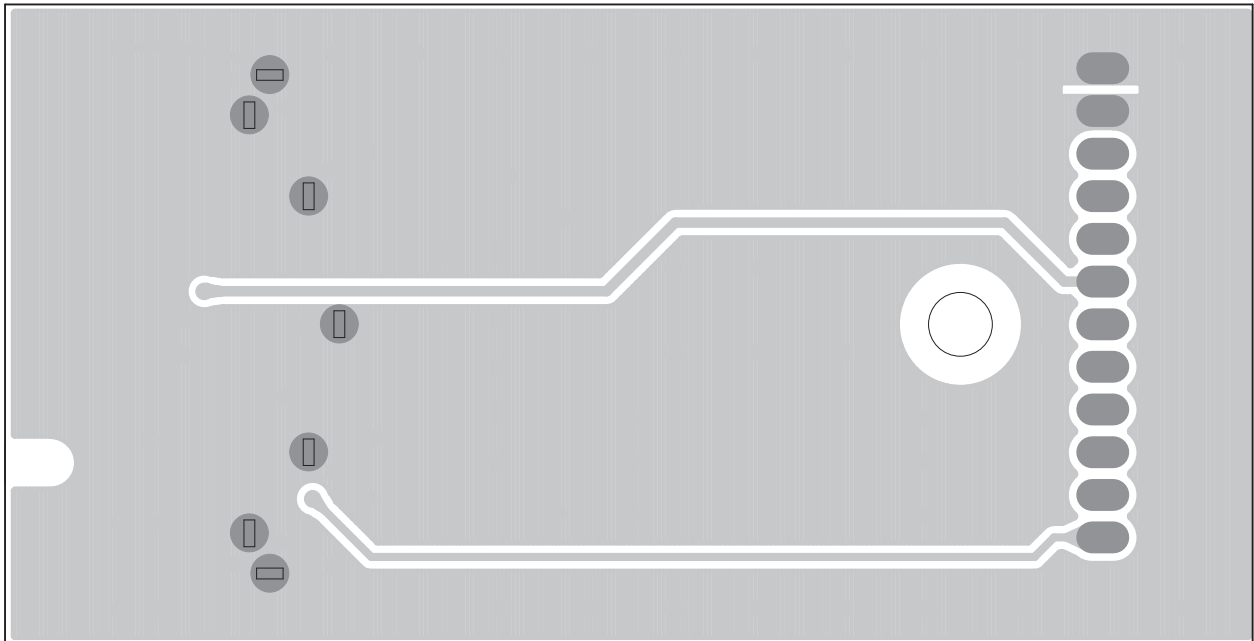
Notes: ⚠ Symbol in parts list represent safety parts.

PRINTED CIRCUIT BOARDS

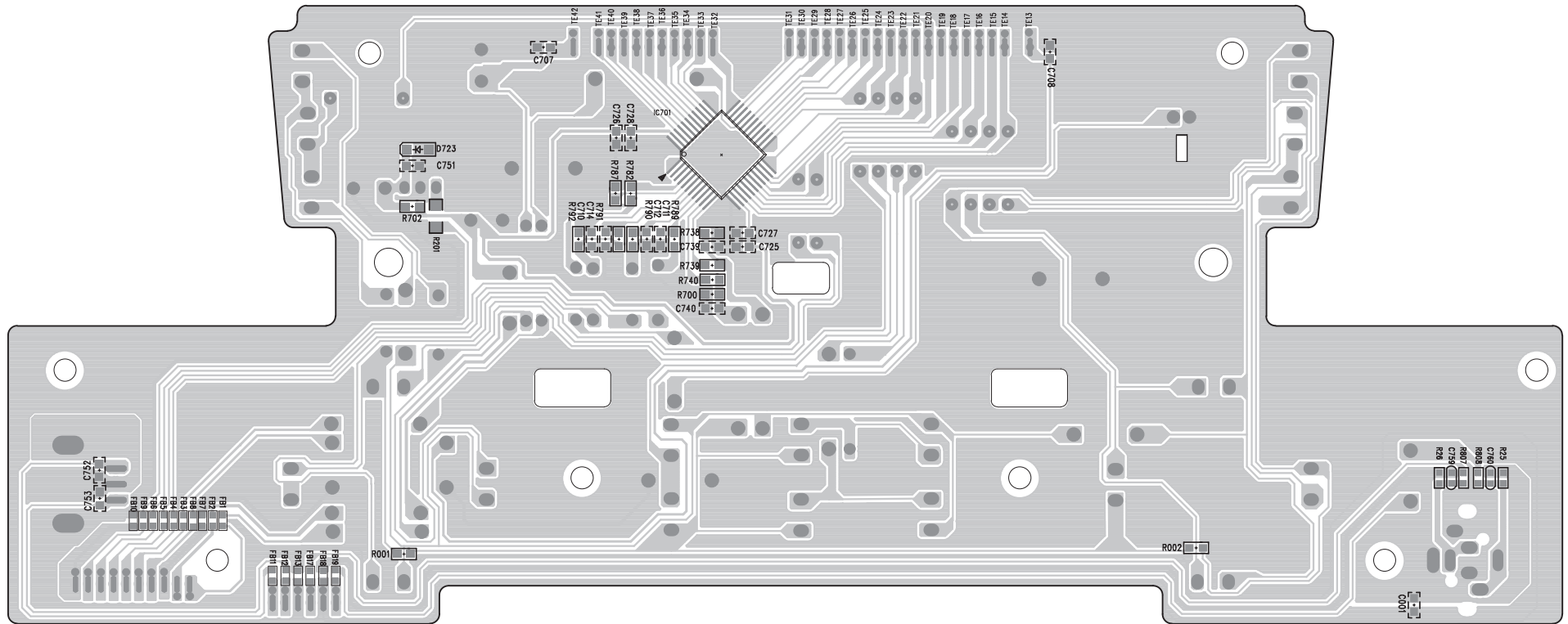
iPod PCB (TOP VIEW)
CD2961I-01-02



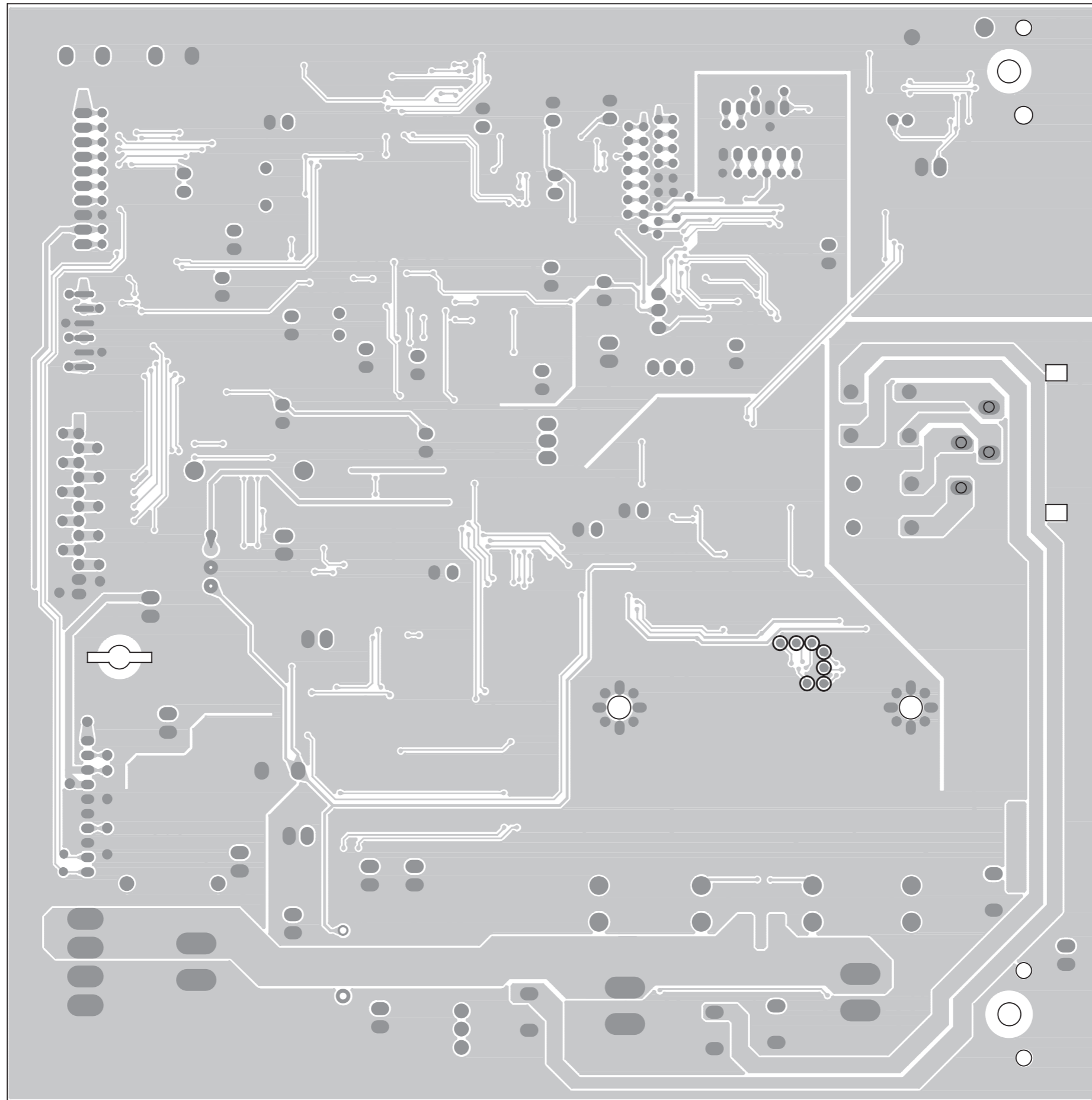
iPod PCB (BOTTOM VIEW)
CD2961I-01-02



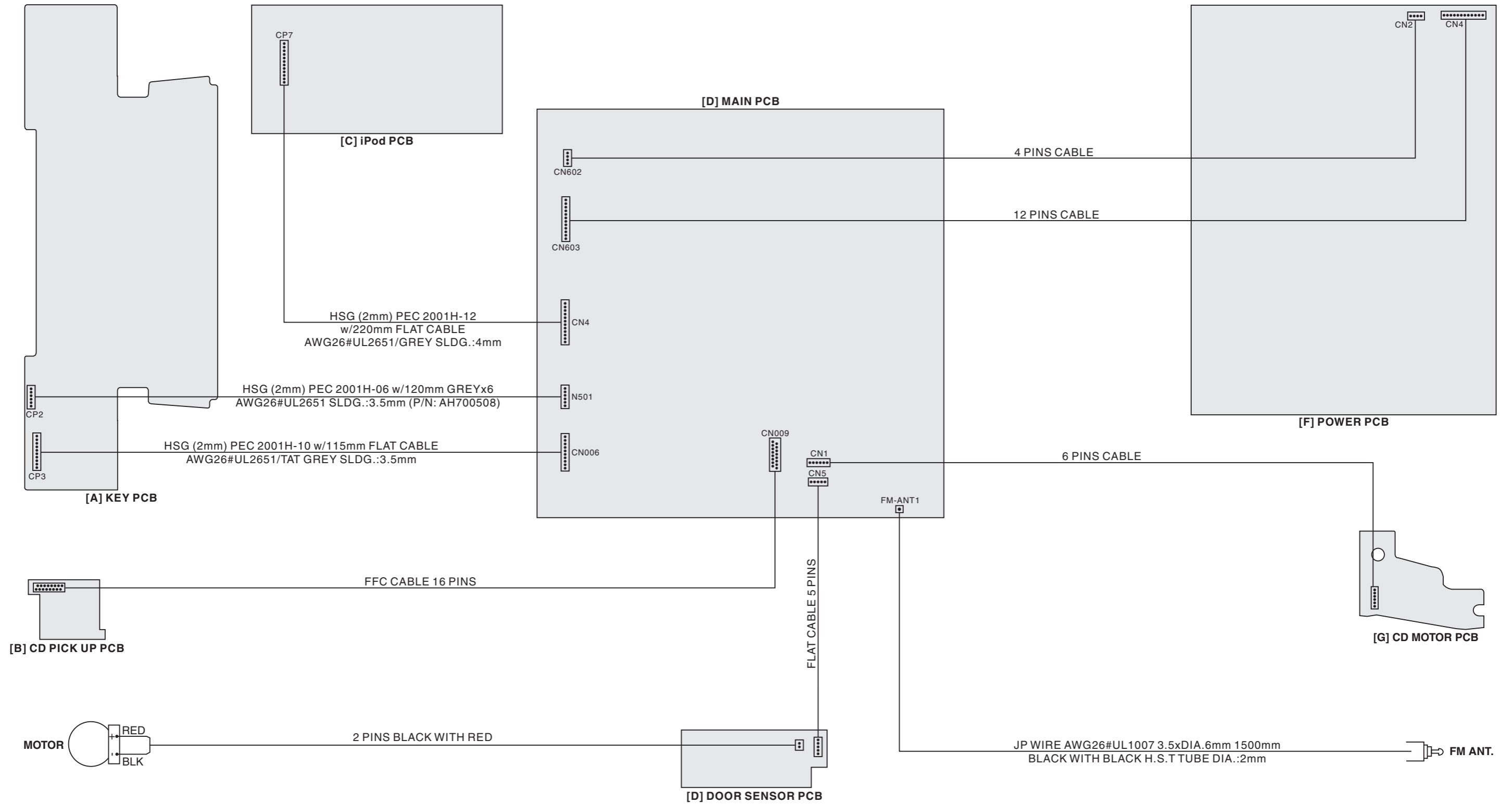
KEY PCB (BOTTOM VIEW)
CD2961I-01-03



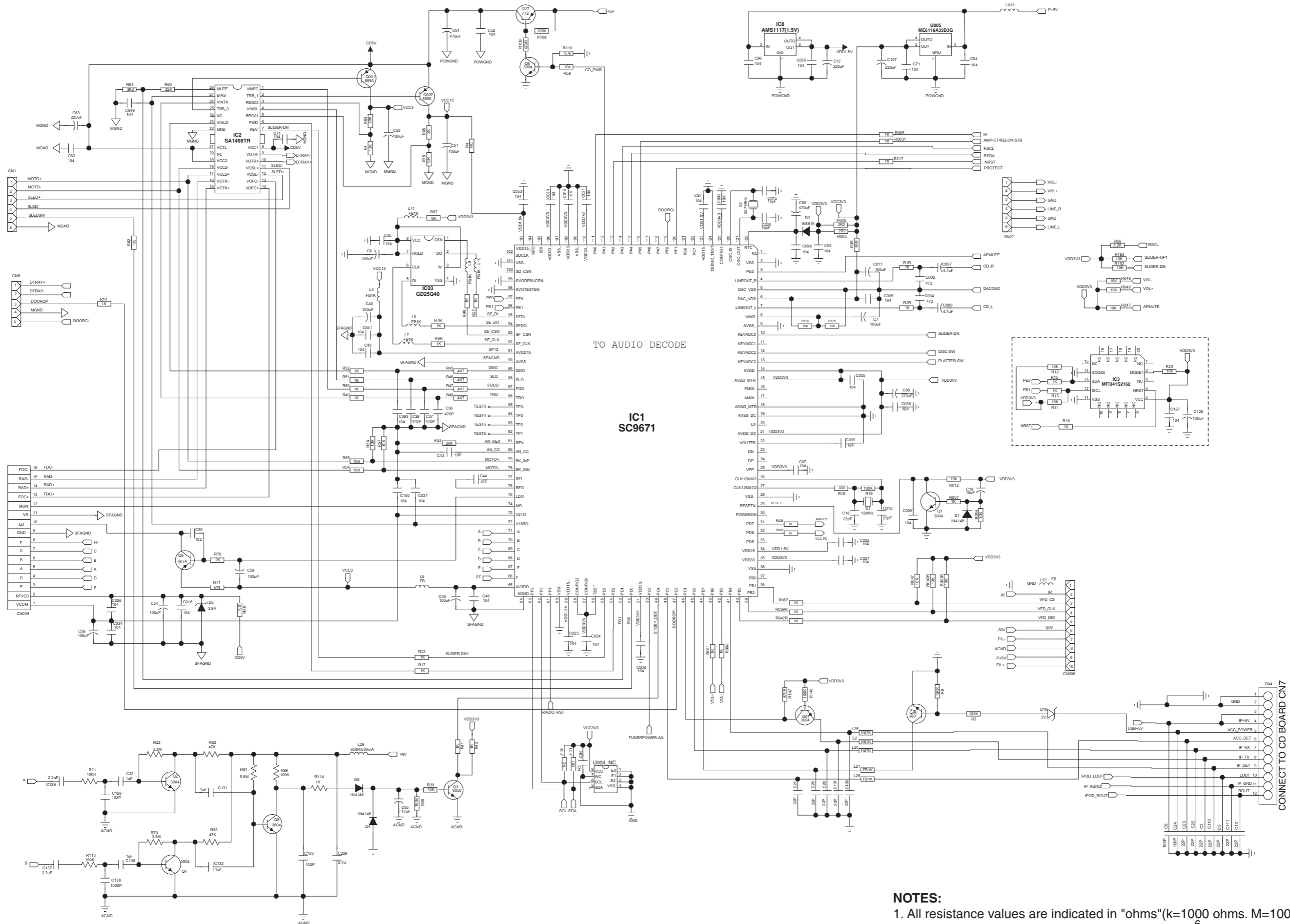
MAIN PCB (BOTTOM VIEW)
CD29611-01-01



WIRING DIAGRAM



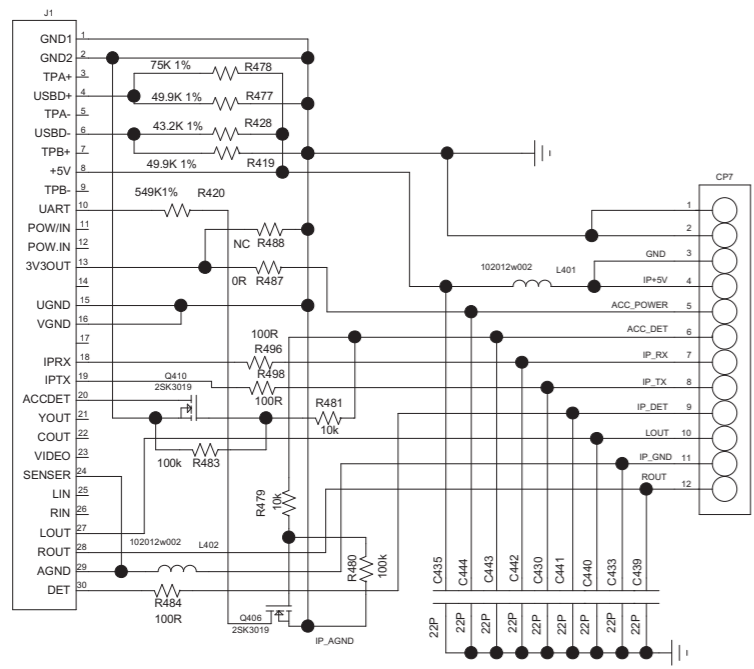
CD SECTION



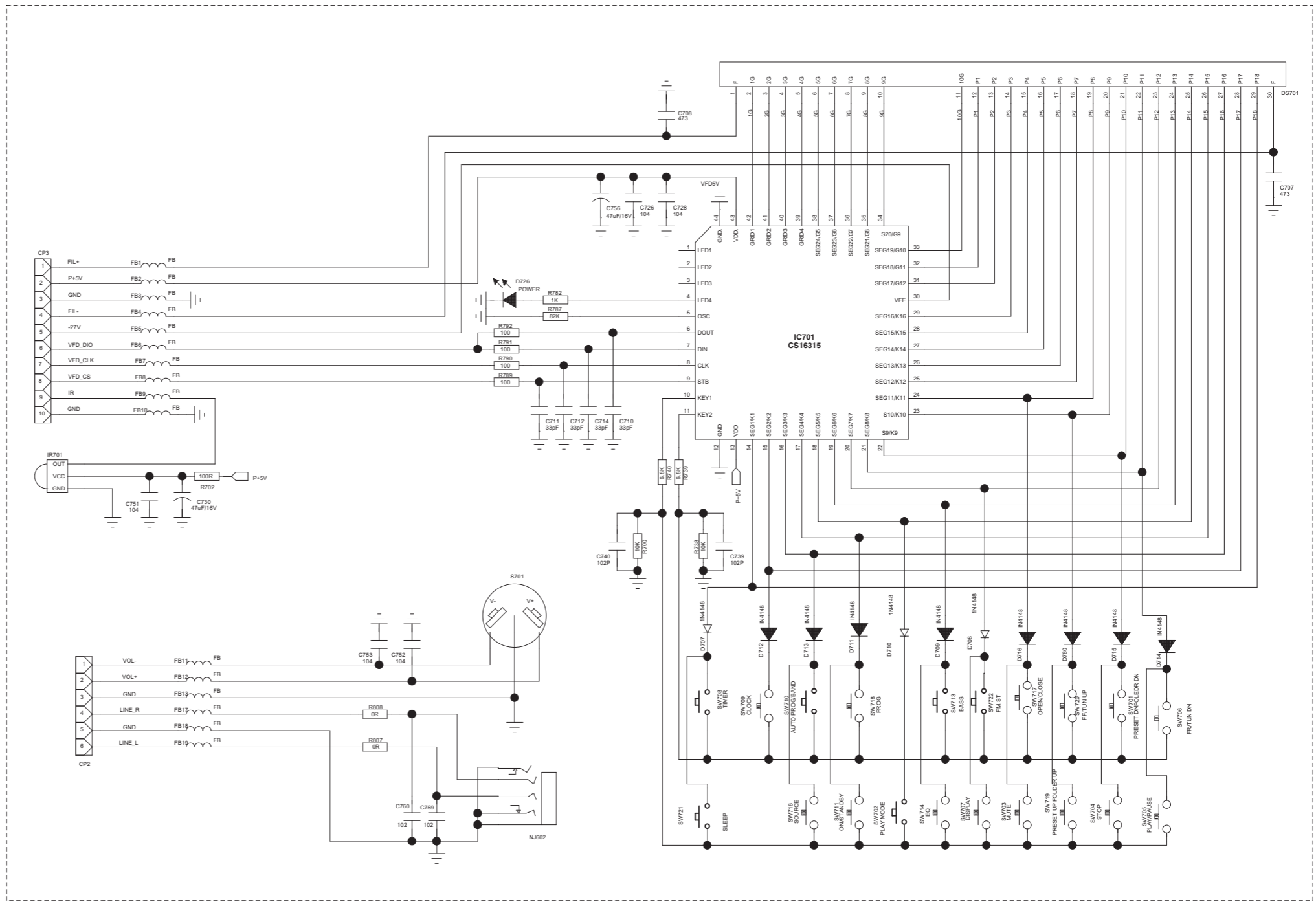
TO AUDIO DECODE
IC1
SC9671

- NOTES:**
1. All resistance values are indicated in "ohms"(k=1000 ohms. M=1000 Kohms).
 2. All capacitance values are indicated in "µF" (p=10⁻⁶ µF).

DISPLAY / KEY & iPod SECTION



CONNECT TO CD BOARD CN7



NOTES:
 1. All resistance values are indicated in "ohms"(k=1000 ohms. M=1000 Kohms).
 2. All capacitance values are indicated in "μF" (p=10⁻⁶ μF).

VOLTAGE CHART

THE MEASURED VALUE IS DC VOLTAGE

UNIT: V

CD SECTION

TEST CONDITION: CD PLAY

U1 (MP2451DT)

PIN'S NUMBER	1	2	3	4	5	6
CD PLAY	17.38	0	0.87	7.80	33.12	0.68

U005 (ME6118A33B3G)

PIN'S NUMBER	1	2	3	4
CD PLAY	0	3.32	5.02	3.32

IC8 (AMS1117)

PIN'S NUMBER	1	2	3	4
CD PLAY	0	1.50	5.02	1.50

Remarks:

Other Integrated Circuits don't need to test.

IC PINS DESCRIPTION AND IC BLOCK DIAGRAMS

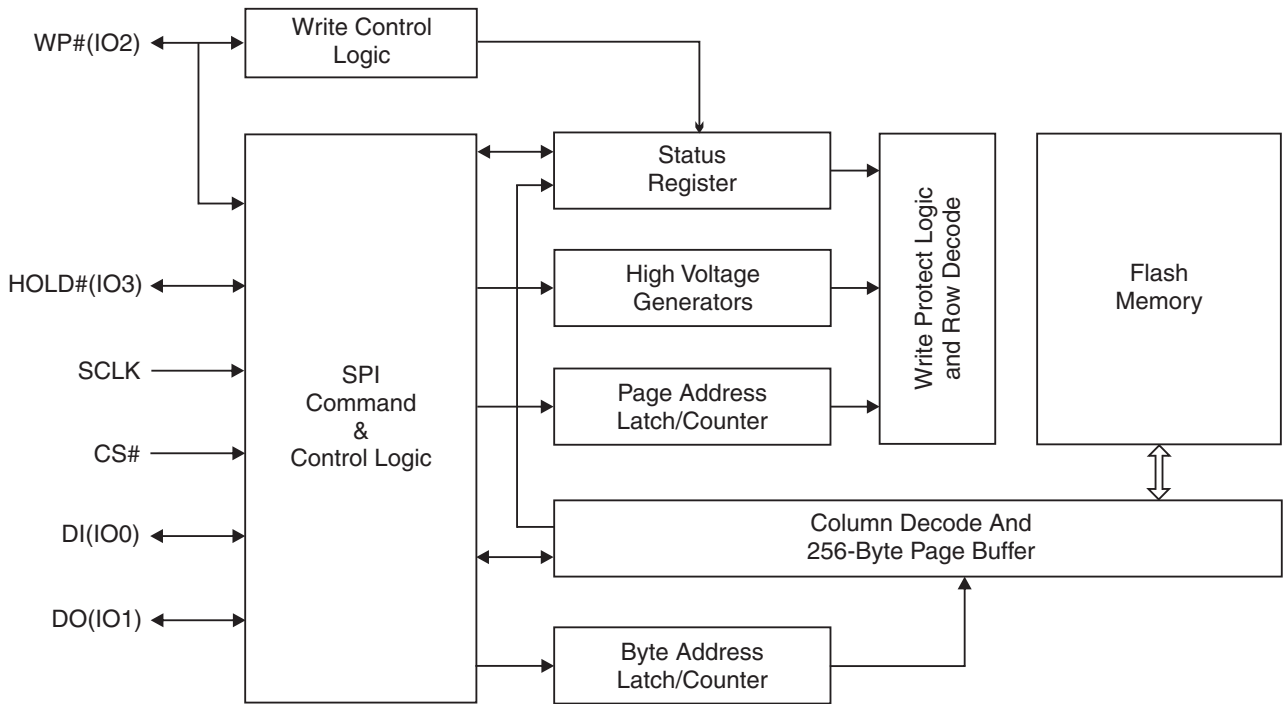
IC701 CS16315 PINS DESCRIPTION

Pin	Pin Name	Function
1~4	LED1 to LED4	LED output pin.
5	OSC	Oscillator pin.
6	DOUT	Data output pin.
7	DIN	Data input pin.
8	CLK	Clock input pin.
9	STB	Strobe pin.
10,11	KEY1 to KEY2	Key data input.
14~29	Seg1~Seg16 /KS1~KS16	High-voltage output (segment).
30	VEE	Pull-down level.
31~38	Seg17~Seg24 /Grid12~Grid5	High-voltage output (segment/grid).
39~42	Grid1 to Grid4	High-voltage output (grid).
13,43	VDD	Logic power pin.
12,44	VSS	Logic ground.

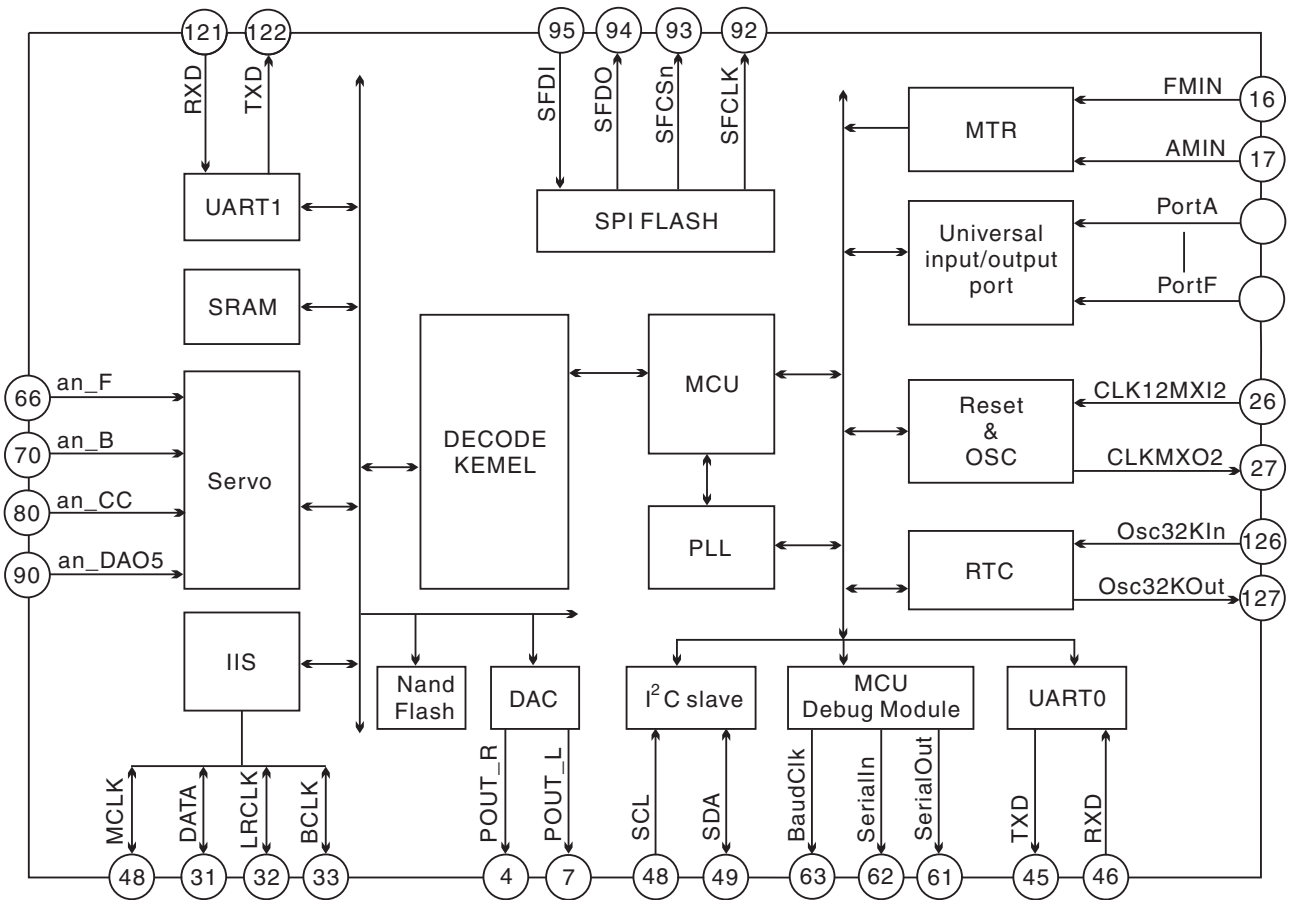
U1 MP2451DT PINS DESCRIPTION

Pin	Pin Name	Function
1	BST	Bootstrap. This is the positive power supply for the internal floating high side MOSFET driver. Connect a bypass capacitor between this pin and SW pin.
2	GND	Ground. It should be sonnected as close as possible to the output capacitor avoiding the high current switch paths.
3	FB	Feedback. This is the input to the error amplifier. An external resistive divider connected between the output and GND is compared to the internal +0.8V reference to set the regulation voltage.
4	EN	Enable input. Pulling this pin below the specified threshold shuts the chip down. Pulling it above the specified threshold enables the chip. Floating this pin shuts chip down.
5	VIN	Input Supply. This supplies power to all the internal sontrol circuitry, both BS regulators and the high side switch.A decoupling capacitor to ground is close to this pin to reduce switching spikes.
6	SW	Switch node. This is the putput from the high-side switch. A low V_F Schottky diode to ground is required close to this pin to reduce switching spikes.

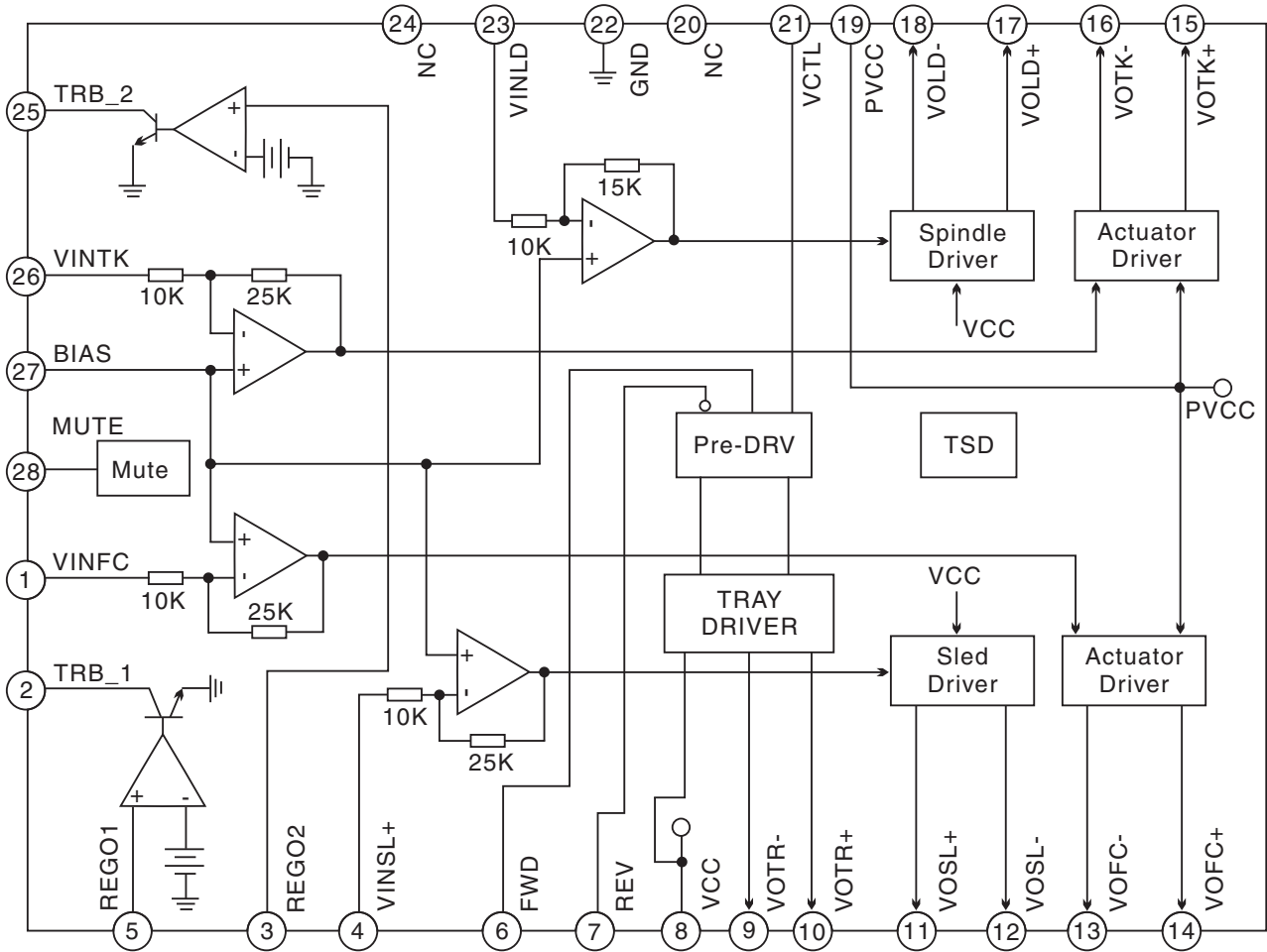
IC03 GD25Q40



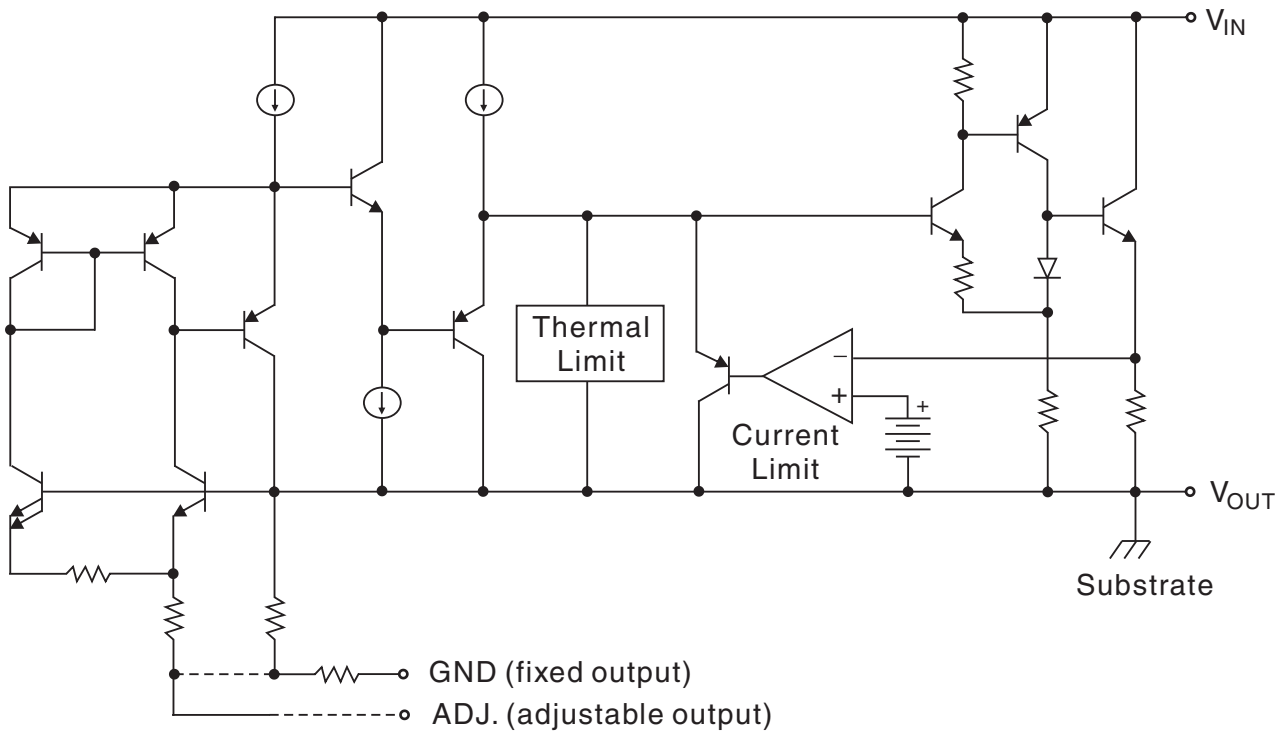
IC1 SC9671



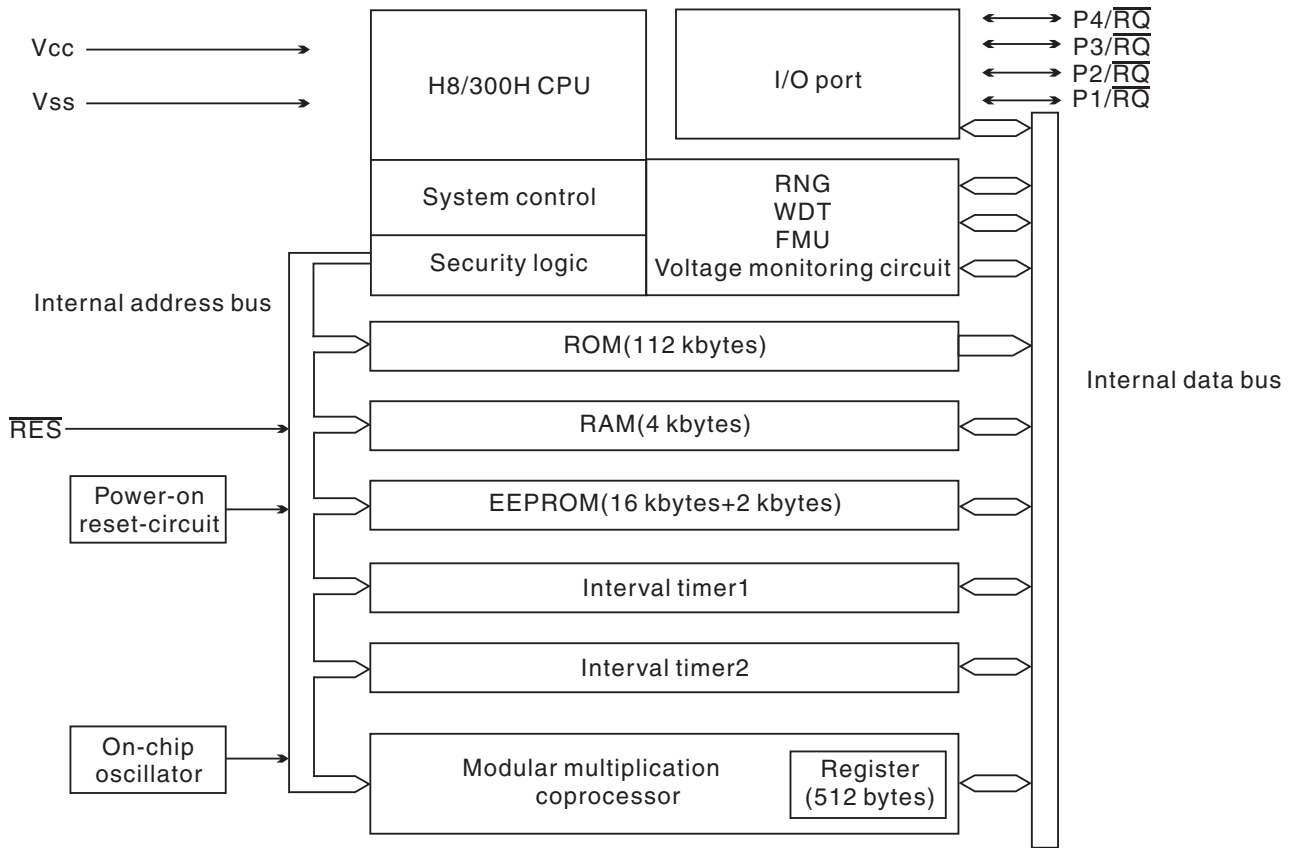
IC2 SA1466TR



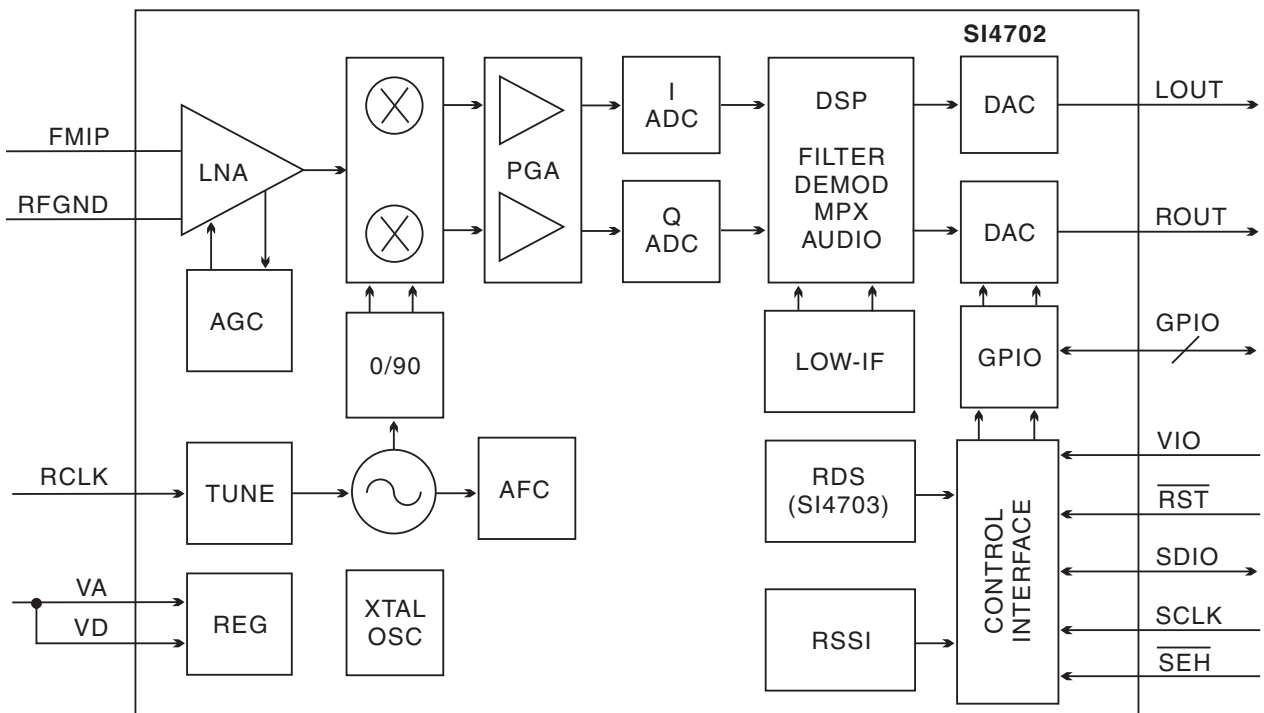
IC8 AMS1117



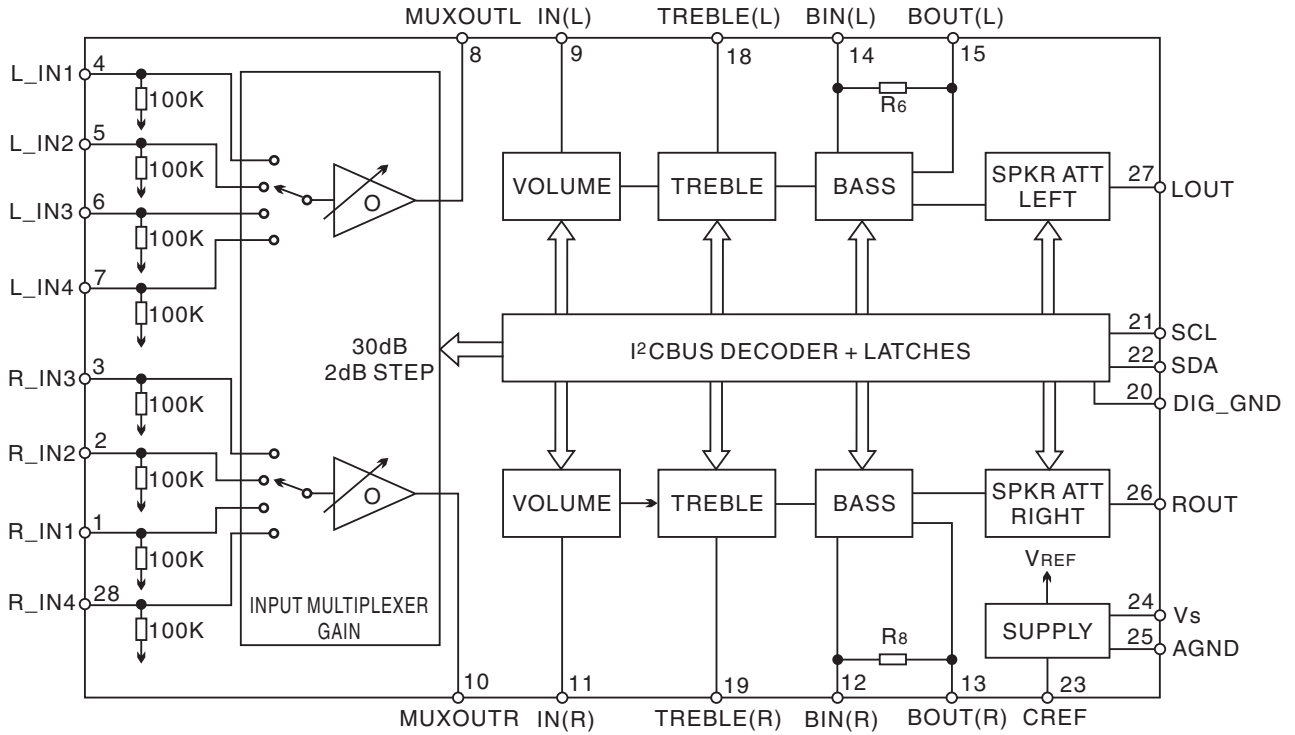
IC3 MFI341S2162



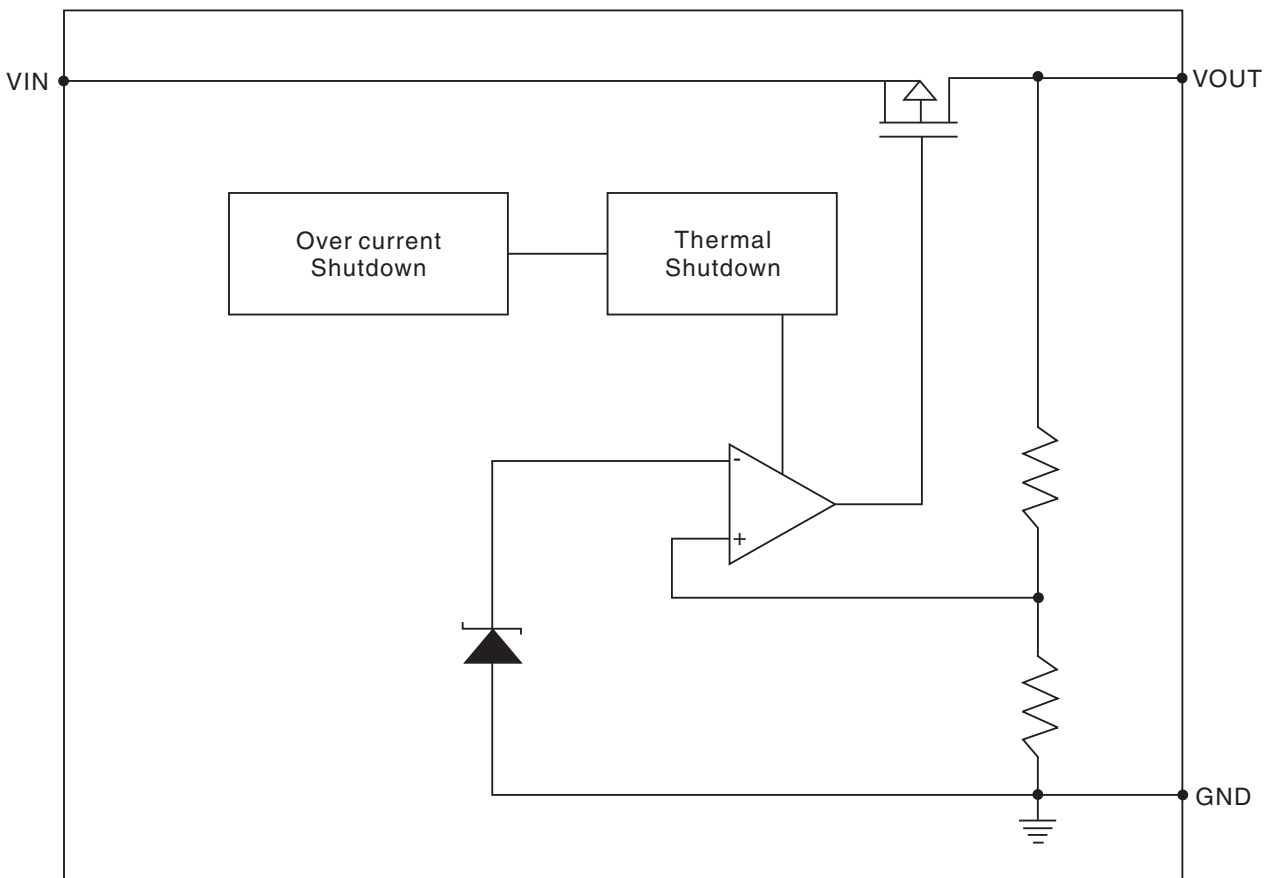
IC7 SI4702



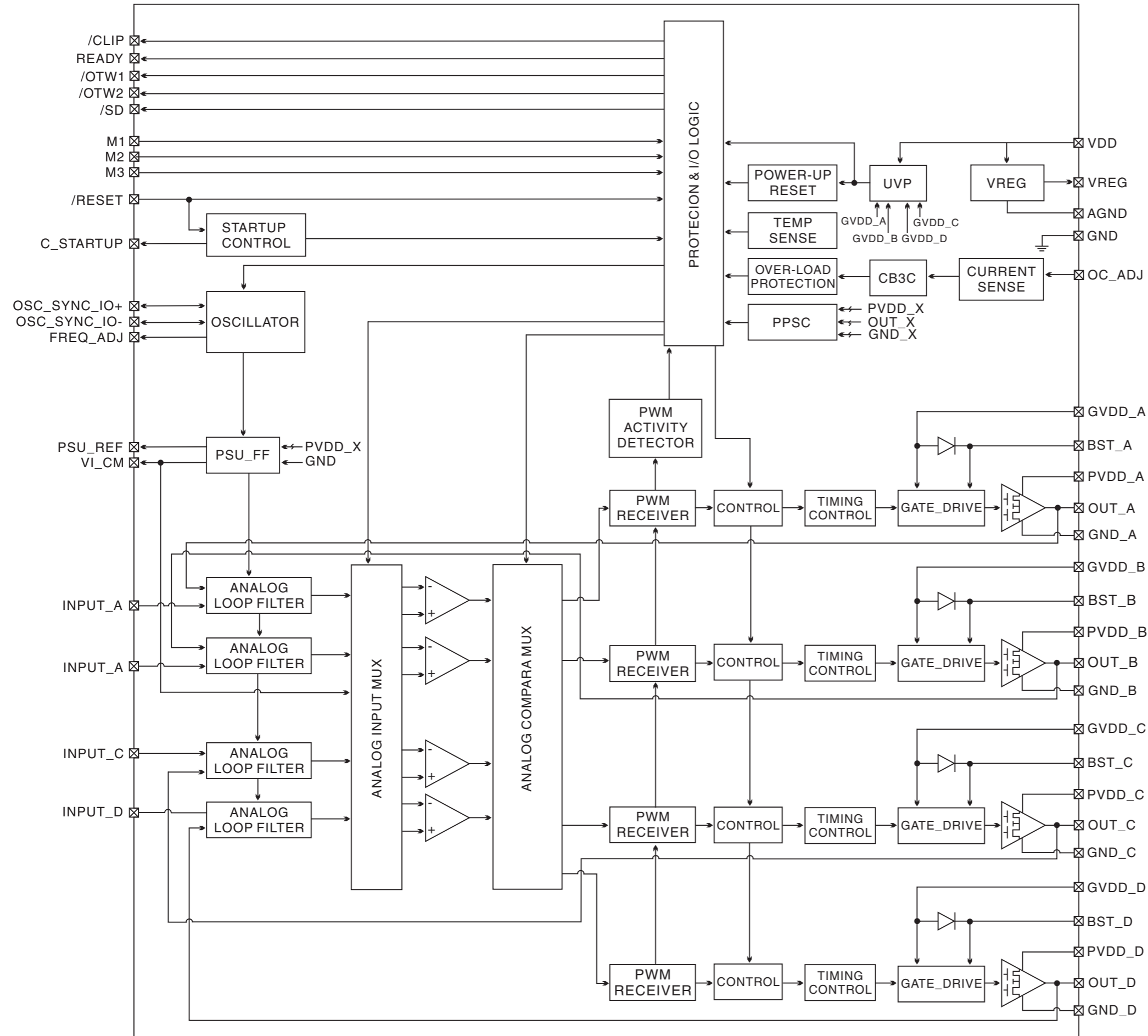
IC12 TDA7440D



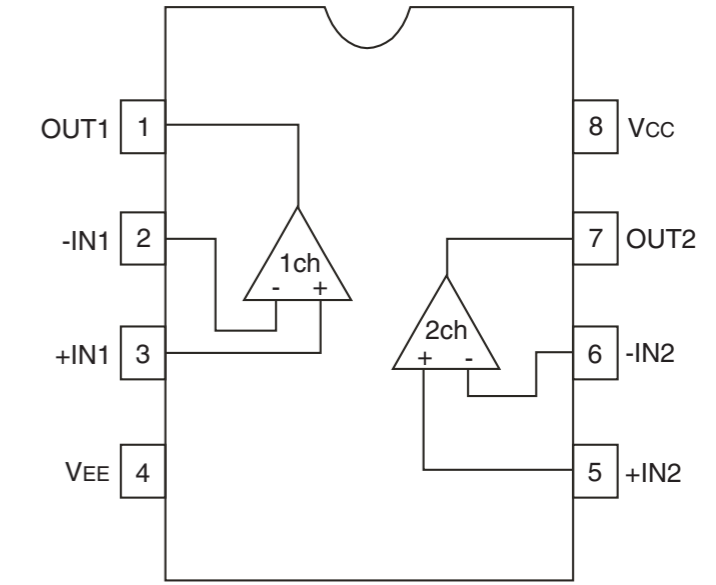
U005 ME6118A33B3G



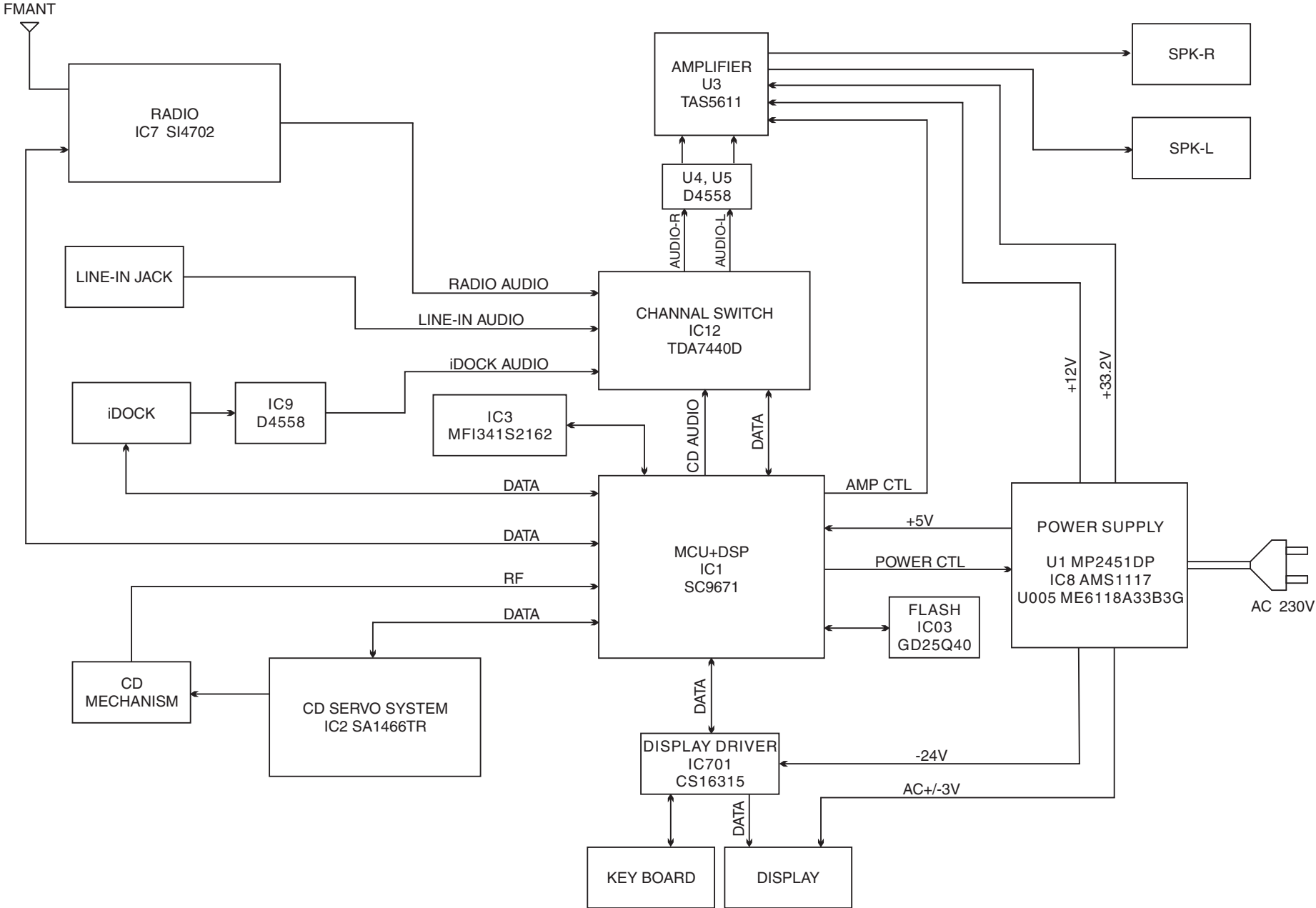
U3 TAS5611PHD



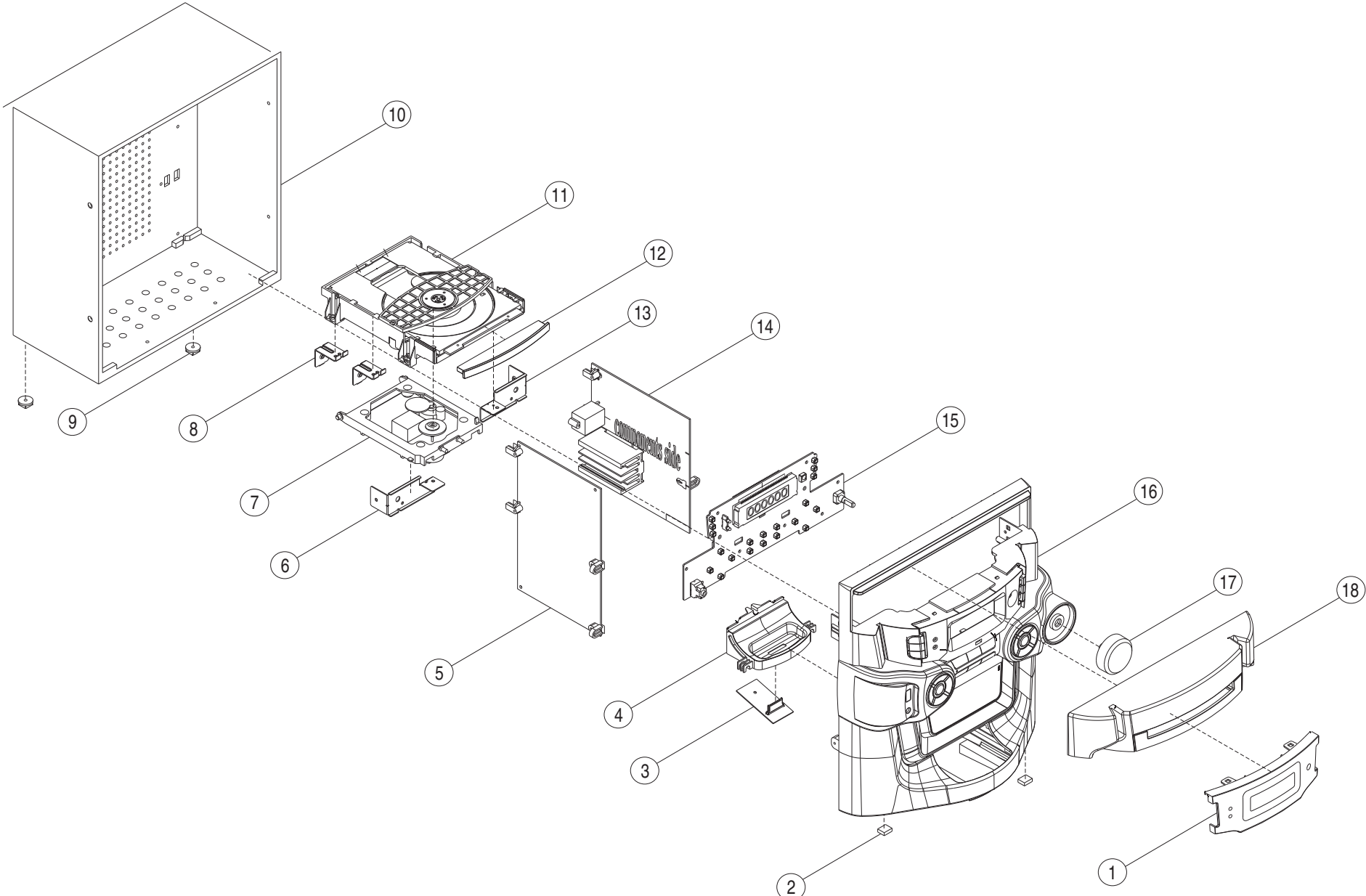
IC9, U4, U5 D4558



BLOCK DIAGRAM



EXPLODED DRAWING



EXPLODED DRAWING PARTS LIST

Ref. No.	Description	Mfr's Part No.	Qty.
1	DISPLAY LENS, MOLD DARK TINT SMOKY (SAN) w/PNT	500-296508Wxxx	1
2	RUBBER FOOT, 12x10x4mm NBR RUBBER PAT, T=4mm	700-268E34W000	2
	2/FRT PANEL		
3	iPod PCB CD29611-01-02	033-CD2961W101	1
4	iPod DOCK, MOLD BLACK, (ABS)	500-296103W000	1
5	POWER SUPPLY PCB MODULE	038-CD2961W001	1
6	METAL BRACKET RIGHT, SECC T=1.0mm	605-296122W000	1
7	NEC-N CD MECHANISM #DA11VZ--N	153-00DA11W003	1
8	METAL BRACKET BACK, SECC T=1.0mm	605-296120W000	2
9	RUBBER FOOT, 16x6mm NBR RUBBER HARDNESS 90	700-268E40W000	2
	2/WOODEN BOX		
10	WOOD BOX, 6mm MDF BOARD, BLACK PVC, w/PNT	660-296110Wxxx	1
11	CD LOADER MODULE JL-021 w/FCC CABLE 16P L=220mm, 5P=150mm, 6P=140mm	165-0JL021W002	1
12	CD DOOR, MOLD BLACK, (ABS) w/SPY	500-296102Wxxx	1
13	METAL BRACKET LEFT, SECC T=1.0mm	605-296121W000	1
14	MAIN PCB CD29611-01-01	033-CD2961W100	1
15	KEY PCB CD29611-01-03	033-CD2961W102	1
16	FRONT PANEL, MOLD COLOR, (HIPS V2) w/SPY & PNT	500-296101Wxxx	1
17	VOLUME KNOB, MOLD BLACK, (HIPS V2) w/SPY	510-296503Wxxx	1
18	DOOR COVER, MOLD COLOR, (ABS) w/SPY & PNT	500-296104Wxxx	1
	SSQ36 - SPEAKER BLK/G.BLK, 40x216x310mm, RED/BLKWIRE/1.2M, (NIL/6 Ohm)	661-SSQ36RW390	2
	(F550-266422-000) MOUNTING BRACKET, MOLDED NATURAL, (ABS)	505-266422W000	4
	(F550-823843-000) L BRACKET, MOLDED NATURAL, (ABS)	505-823843W000	3
	HEATSINK, AL 80x40x33.8mm, EXTRUDE AL	613-371935W000	1
	WOODEN BLOCK, T=12mm MDF BOARD, 18x16mm	660-296113W000	1
	FIBRE SHEET, FORMEX BLACK, T=0.4mm, 200x100mm, w/3M 9448 DOUBLE SIDE TAPE	700-296112W000	1
	RUBBER FOOT, NBR T=3.0mm, 12.5x10mm, w/NITTO 500 ADHESIVE	700-296114W000	1
	1/FRT PANEL		
	RUBBER FOOT, 10x10x2mm BLACK (PORON), w/SELF-ADHESIVE	700-630341W000	1
	1/VFD		
	SCREW ST3x10mm, PWAB BRASS BASED, W=7	720-030300W100	2
	2/RUBBER FOOT TO WOODEN BOX		
	SCREW ST3x8mm, PWB BRASS BASED, W=12mm	720-040301W080	9
	4/DOOR CVR		
	2/DECK BKT TO FRT PANEL		
	3/iPod DOCK TO FRT PANEL		
	SCREW ST3x16mm, BB BLACK	720-110300W161	4
	4/WOODEN BOX TO FRT PANEL		
	SCREW ST3x12mm, BA BLACK	720-120300W121	5
	1/BACK PANEL TO SPK TERMINAL		
	4/BACK PANEL TO MOUNTING BKT		
	SCREW ST3x8mm, BB T.T.S. (B TYPE)	722-080307W080	21
	8/KEY PCB TO FRT PANEL		
	2/POWER PCB TO LEFT BKT		
	2/POWER PCB TO MOUNTING BKT		
	1/MAIN PCB TO MOUNTING BKT		
	2/MAIN PCB TO L BKT		
	1/iPod PCB		
	2/PCB TO HEATSINK		
	3/LEFT BKT TO FRT PANEL		
	SCREW ST3.0x8, BB T.T.S. BLACK (B TYPE), (G64D00000960)	722-080307W081	2
	2/BACK PANEL TO METAL BKT BACK		
	SCREW ST3x10mm, BB T.T.S. (B TYPE) BLACK (BTTB 23.0x10.0 ABS)	722-080307W101	4
	4/LOADET TO METAL BKT		
	SCREW ST3x18mm, BB T.T.S. (B TYPE) BLACK	722-080307W181	2
	2/WOOD BOX TO METAL BKT L(R)		
	SPEAKER CLIP B & C	724-113854W000	2

NOTES:

May, 2013