SERVICE MANUAL

ABS541T

CONTENTS

1. SAFETY PRECAUTIONS 1

2. PREVENTION OF ELECTRO STATIC DISCHARGE(ESD)TO ELECTROSTATICALLY SENSITIVE(ES)DEVICES 1

3. CONTROL BUTTON LOCATIONS AND EXPLANATIONS 2

4. PREVERTION OF STATIC ELECTRICITY DISCHARGE 3

5. ASSEMBLING AND DISASSEMBLING THE MECHANISM UNIT 4

5.1 OPTICAL PICKUP UNIT EXPLOSED VIEW AND PART LIST 4

5.2 MISCELLANEOUS 6

6. ELECTRICAL CONFIRMATION 7

6.1 VIDEO OUTPUT (LUMINANCE SIGNAL) CONFIRMATION 7

6.2 VIDEO OUTPUT(CHROMINANCE SIGNAL) CONFIRMATION 8

7. MPEG BOARD CHECK WAVEFORM 9

8.2 MT1389 10

8.3 AM29LV160D 13

8.4 HY57V641620HG 18

9. SCHEMATIC & PCB WIRING DIAGRAM 21

10. SPARE PARTS LIST 39

1. SAFETY PREAUTIONS

1.1 GENERAL GUIDELINES

1. When servicing, observe the original lead dress. if a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.

2. After servicing, see to it that all the protective devices such as insulation barrier, insulation papers shields are properly installed.

3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

2.PREVENTION OF ELECTRO STATIC DISCHARGE(ESD)TO ELECTROSTATICALLY SENSITIVE(ES)DEVICES

Some semiconductor(solid state)devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive(ES)Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor chip components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge(ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially availabel discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices,place the assembly on a conductive surface such as alminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.

4. Use only an anti-static solder removal device. Some solder removal devices not classified as anti-static (ESD protected)can generate electrical charge sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, alminum foil or comparable conductive material).

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

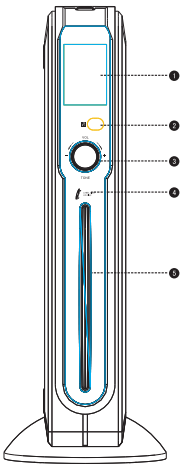
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity(ESD).

notice (1885x323x2 tiff)

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are imporant for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

■ Front panel illustration



❶ Display window

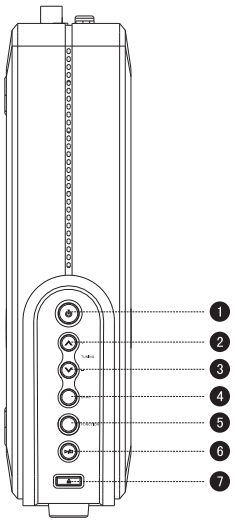
❷ IR sensor window

❸ Volume adjustment knob
Tone adjustment knob

❹ Direction indicator to place disc

❺ Door

■ Control Panel Illustration



❶ POWER button

❷ TUNING+ button
NEXT button

❸ TUNING- button
PREV button

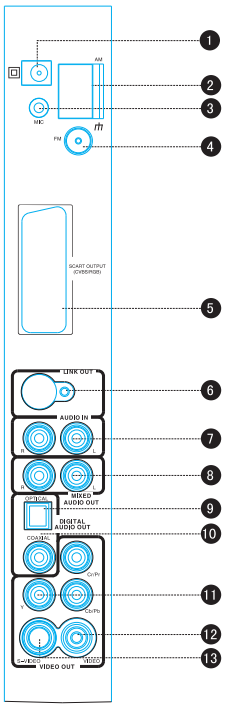
❹ WAVE BAND button

❺ FUNCTION button

❻ PLAY/STOP button

❼ OPEN/CLOSE button

■ Rear panel Illustration



❶ Power cord socket

❷ AM antenna input terminal

❸ MIC terminal

❹ FM antenna input terminal

❺ SCART output terminal

❻ I-Link output terminal

❼ AUX IN 2 terminal

❽ Front amplifying audio output terminal

❾ Optical output terminal of digital audio

❿ Coaxial output terminal of digital audio

⓫ Component video/Y Pb Pr output terminal

⓬ Video output terminal

⓭ S-video

4.PREVENTION OF STATIC ELECTRICITY DISCHARGE

The laser diode in the traverse unit (optical pickup)may brake down due to static electricity of clothes or human body. Use due caution to electrostatic breakdown when servicing and handling the laser diode.

4.1.Grounding for electrostatic breakdown prevention

Some devices such as the DVD player use the optical pickup(laser diode)and the optical pickup will be damaged by static electricity in the working environment.Proceed servicing works under the working environment where grounding works is completed.

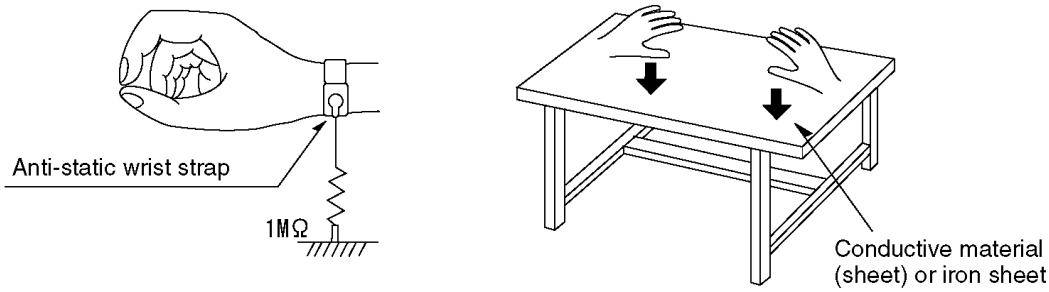
4.1.1. Worktable grounding

1. Put a conductive material(sheet)or iron sheet on the area where the optical pickup is placed,and ground the sheet.

4.1.2.Human body grounding

1 Use the anti-static wrist strap to discharge the static electricity from your body.

safety_3 (1577x409x2 tiff)



4.1.3.Handling of optical pickup

1. To keep the good quality of the optical pickup maintenance parts during transportation and before installation, the both ends of the laser diode are short-circuited.After replacing the parts with new ones, remove the short circuit according to the correct procedure. (See this Technical Guide).

2. Do not use a tester to check the laser diode for the optical pickup .Failure to do so willdamage the laser diode due to the power supply in the tester.

4.2. Handling precautions for Traverse Unit (Optical Pickup)

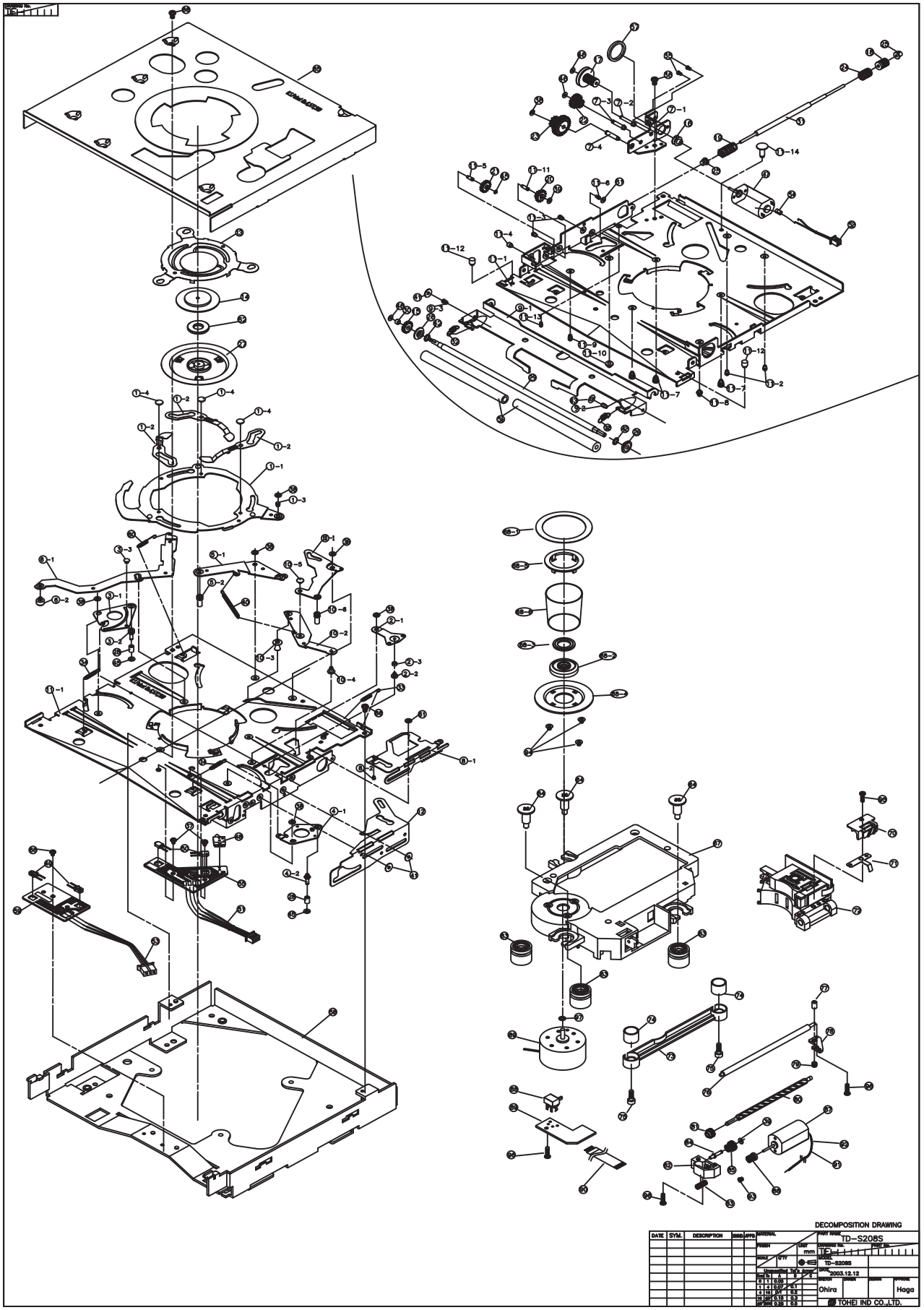
1. Do not give a considerable shock to the traverse unit(optical pickup)as it has an extremely high-precise structure.

2. When replacing the optical pickup, install the flexible cable and cut is short land with a nipper. See the optical pickup replacement procedure in this Technical Guide. Before replacing the traverse unit, remove the short pin for preventingstatic electricity and install a new unit.Connect the connector as short times as possible.

3. The flexible cable may be cut off if an excessive force is applied to it.Use caution when handling the cable

4. The half-fixed resistor for laser power adjustment cannot be adjusted. Do not turn the resistor.

5. Assembling and disassembling the mechanism unit



5.1 OPTICAL PICKUP UNIT EXPLOSED VIEW AND PART LIST

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Parts List

NO.	PART CODE	PART NAME	DRAWING#	Q'ty	NOTE
1	C8A001	AS-CLAMPER-PLATE	TE-14048	(1)	
1-1	C8P001	CLAMPER-PLATE	TE-13980	1	
1-2	C8P002	LIFTER CAM	TE-13981	3	
1-3	C8H001	CL-PLATE-SFT	TE-13982	1	
1-4	C8H002	LIFTER CAM-SFT	TE-13983	3	
2	C8A002	AS-TIMING-LEVER	TE-14049	(1)	
2-1	C8P003	TIMING-LEVER	TE-13984	1	
2-2	C8H003	T-LEVER-SHAFT	TE-13985	1	
2-3	C8H004	T-LEVER-COLOR	TE-13986	1	
3	C8A003	AS-D-G-LEVER-L	TE-14050	(1)	
3-1	C8P004	D-GUIDE-LEVER-L	TE-13987	1	
3-2	C8H005	DISC-OPEN-SFT-L	TE-13988	1	
3-3	C8H040	CLP-GUIDE-SFT	TE-14359	1	
4	C8A004	AS-D-G-LEVER-R	TE-14051	(1)	
4-1	C8P005	D-GUIDE-LEVER-R	TE-13989	1	
4-2	C8H006	DISC-OPEN-SFT-R	TE-14004	1	
5	C8A005	AS-LINK-LEVER-L	TE-14052	(1)	
5-1	C8P006	LINK-LEVER-L	TE-13990	1	
5-2	C8H007	D-SELECT-SHAFT	TE-14005	1	
6	C8A006	AS-D-SELECT-LEVER	TE-14053	(1)	
6-1	C8P007	DISC-SELECT-LEVER	TE-13991	1	
6-2	C8H008	D-SELECT-SFT-A	TE-14006	1	
7	C8A007	AS GEAR-BASE	TE-14054	(1)	
7-1	C8P008	GEAR-BASE	TE-13992	1	
7-2	C8H009	TWIN GEAR-SHAFT	TE-14007	1	
7-3	C8H010	C-GEAR-A-SHAFT	TE-14008	1	
7-4	C8H011	C-GEAR-B-SHAFT	TE-14009	1	
8	C8A008	AS-RACK-PLATE	TE-14055	(1)	
8-1	C8P009	RACK-PLATE	TE-13993	1	
8-2	C8H012	RACK-PLATE-SHAFT	TE-14010	1	
9	C8A009	AS-ROLLER-BASE	TE-14056	(1)	
9-1	C8P010	ROLLER BASE	TE-13994	1	
9-2	C8H013	R-B-SHAFT-L	TE-14011	1	
9-3	C8H014	R-B-SHAFT-R	TE-14012	1	
10	C8A010	AS LINK-CHANGE	TE-14057	(1)	
10-1	C8P011	LINK-LEVER-R	TE-13995	1	
10-2	C8P012	CHANGE-LEVER	TE-13996	1	
10-3	C8H015	C-LEVER-SFT-A	TE-14013	1	
10-4	C8H016	C-LEVER-SFT-B	TE-14014	1	
10-5	C8H017	C-LEVER-SFT-C	TE-14015	1	
10-6	C8H007	D-SELECT-SHAFT	TE-14005	1	
11	C8A015	AS LOADER BASE	TE-14058	(1)	
11-1	C8P013	LOADER BASE	TE-13997	1	
11-2	C8H019	LEVER-SHAFT	TE-14017	2	

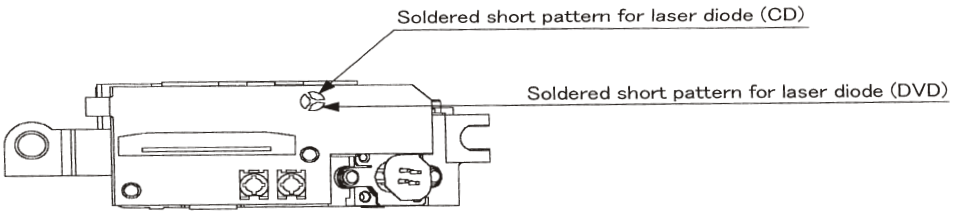
NO.	PART CODE	PART NAME	DRAWING#	Q'ty	NOTE
11-3	C8H020	CAM-SHAFT	TE-14018	2	
11-4	C8H021	CAM-GUIDE-SFT	TE-14019	1	
11-5	C8H022	ROLLER-GEAR-SFT	TE-14020	1	
11-6	C8H023	L-P-GUIDE-SFT-A	TE-14021	1	
11-7	C8H024	CLAMP-GUIDE-SFT	TE-14022	3	
11-8	C8H025	D-G-A-SHAFT-L	TE-14023	1	
11-9	C8H026	D-G-A-SHAFT-R	TE-14024	1	
11-10	C8H031	TIMING-LVR-SFT-N	TE-14065	1	
11-11	C8H027	GEAR-LOAD-SFT	TE-14025	1	
11-12	C8H034	D-G-SHAFT	TE-14162	2	
11-13	C8H038	L-P-GUIDE-SFT-B	TE-14222	1	
11-14	C8H035	EJECT-GUIDE-SFT	TE-14192	1	
12	C8P014	CAM-R	TE-13998	1	
13	C8P015	CLAMPER-TOP	TE-13999	1	
14	C8P023	YOKE-LO	TE-14124	1	
15	C8G001	ROLLER-GEAR	TE-14029	1	
16	C8G002	MOTOR-PULLY	TE-14030	1	
17	C8G003	PULLY-GEAR	TE-14031	1	
18	C8G004	HERICAL-GEAR	TE-14032	1	
19	C8G005	WORM-LOAD	TE-14033	1	
20	C8G006	GEAR-LOAD-A	TE-14034	1	
21	C8G007	IDLE-GEAR-ROLLER	TE-14035	1	
22	C8G008	CHUCK-GEAR-A	TE-14036	1	
23	C8G009	CHUCK-GEAR-B	TE-14037	1	
24	C8G010	WORM-CHUCK	TE-14038	1	
25	C8G011	SHAFT-CAP	TE-14039	2	
26	C8G012	BERRING-ROLLER	TE-14040	2	
27	C8G022	CLAMPER-LO	TE-14122	1	
28	C8G014	DISC-OPEN-COLOR	TE-14042	2	
29	C8H028	ROLLER-SHAFT	TE-14026	1	
30	C8H029	ROLLER-COLOR	TE-14027	1	
31	C8H030	WORM-SHAFT	TE-14028	1	
32	C8S006	ROLLER-SPRING	TE-14104	2	
33	C8S008	LEVER-SPRING	TE-14106	1	
34	C8S005	D-GUIDE-SP	TE-14103	2	
35	S14N102	M1.4×2 PRECISION SCREW TYPE-1 BK		2	
36	S20N303	M2×3 PRECISION SCREW TYPE-3		1	
37	S17N015	M1.7×1.5 PRECISION SCREW TYPE-3-N		2	
38	P16C325	PSW1.6×3.5×0.25C(BK)		7	
39	P12CR32	PSW1.2×3.2×0.25C(RED)		2	
40	C8S007	C-LEVER-SPRING	TE-14105	1	
41	P16C504	PSW1.6×5×0.4C(BK)		3	
42	P22W413	PSW2.2×4×0.13		2	
43	C8P029	SPRING-WASHER	TE-14251	1	
45	P12C202	PSW1.2×2.0×0.25C		3	
46	P12C404	PSW1.2×4×0.4C		3	
47	M01T278	MT M1N10FB10K		1	or WN3VB(M01T294)
48	S01W205	ESE22MH23		1	
49	E01L980	PT4800BC		2	
50	E01L975	GL4800		2	
51	C8G036	CNW4P-TL-S	TE-14342	1	
52	C8G034	CNW2P-TL-S	TE-14340	1	
53	C8G035	CNW3P-TL-S	TE-14341	1	

NO.	PART CODE	PART NAME	DRAWING#	Q'ty	NOTE
54	C5G022	φ2.5×3 SUMITUBE(BK)	TE-13780	1	
55	C8P040	SW-PCB-SO	TE-14884	1	
56	C8G032	ROLLER	TE-14290	2	
57	C8G017	LOADING BELT-L	TE-14102	1	
58	C2P164	MAIN-BASE-758M	TE-15237	1	
59	C8P046	SENSOR-PCB-HF	TE-15029	1	
60	C8S009	LEVER-SPRING-S	TE-14358	1	
61	P12CR02	PSW1.2×3.2×0.2C(RED)		2	
62	C4G074	MAGNET-TD	TE-14912	1	
63	C2G083	DAMPER IDLE	TE-14089	3	
64	C1H011	SCW-DAMPER	TE-13324	3	
65	C8P028	TD-S-TOP-COVER	TE-14188	1	
66	B20TK04	M2×4 BIND S-TIGHT		3	
67	D4G005	CHAS-PU-25	TE-14917	1	
68	D4A002	T/T-EL-ASSY		(1)	
68-1	A2G182	RUBBER-M32	TE-12482	1	
68-2	D4H005	T-T-BUSH-EL2	TE-15232	1	
68-3	C8P042	YOKE-E	TE-14931	1	
68-4	C8P041	TABLE-E	TE-14930	1	
68-5	C8G043	T-T-ELEVATOR	TE-14934	1	
68-6	C8S010	ELEVATOR-SPG	TE-14932	1	
69	M01T303	MT RF-300F-12350		1	
70	D4G003	GEAR-RACK	TE-14915	1	
71	D4P001	RACK-SPG-25	TE-14927	1	
72	D4G010A	SF-HD60		1	
73	D4G002	SFT-SUB-25	TE-14914	1	
74	D4S001	TILT-SP-25	TE-14929	2	
75	D4H003	M2×5 SCREW	TE-14937	2	
76	D4H002	SFT-MAIN-25	TE-14926	1	
77	D4S002	SPRING-TILT-28	TE-15320	1	
78	D1P001	PLATE-MAIN-OUT	TE-14384	1	
79	D1H012	M2.6×3 TILT SCREW	TE-14685	1	
80	D4H006	SHAFT-LEAD-28	TE-15321	1	
81	D1G003	GEAR-LEAD	TE-14395	1	
82	D4G004	HOLDER-25	TE-14916	1	
83	D1S001	SPG-LEAD	TE-14380	1	
84	D1H003	SHAFT-GEAR	TE-14385	1	
85	D1G004	GEAR-MIDDLE	TE-14396	1	
86	D1G002	GEAR-MOTOR	TE-14391	1	
87	M01T278	MT M1N10FB10K		1	
88	S01W016	SW ESE11SH2C		1	or SPPB14
89	D4P002	SW-PCB-25	TE-14928	1	
90	D3P004	FFC 1.0-6 L=110	TE-14853	1	
91	D4G008	LEAD-WIRE-25-A	TE-15147	1	
92	D4G009	LEAD-WIRE-25-B	TE-15147	1	
93	S14N003	M1.4×3 PRECISION SCREW TYPE-3		1	
94	D4H004	M1.7×1.8 SCREW		3	
95	B20B004	M2×4 BIND B-TIGHT		1	
96	S17B305	M1.7×5 PRECISION SCREW TYPE-3 B-TIGHT		3	
97	P19W325	PSW1.95×3.5×0.25		1	

5.2 MISCELLANEOUS

5.2.1 Protection of the LD(Laser diode)

Short the parts of LD circuit pattern by soldering.



5.2.2 Cautions on assembly and adjustment

Make sure that the workbenches,jigs,tips,tips of soldering irons and measuring instruments are grounded,and that personnel wear wrist straps for ground.

Open the LD shortlands quickly with a soldering iron after a circuit is connected.

Keep the power source of the pick-up protected from internal and external sources of electrical noise.

Refrain from operation and storage in atmospheres containing corrosive gases (such as H2S,SO2, NO2 and Cl2)or toxic gases or in locations containing substances(especially from the organic silicon,cyan, formalin and phenol groups)which emit toxic gases.It is particularly important to ensure that none of the above substances are present inside the unit.Otherwise,the motor may no longer run.

6.Electrical Confirmation

6.1. Video Output (Luminance Signal) Confirmation

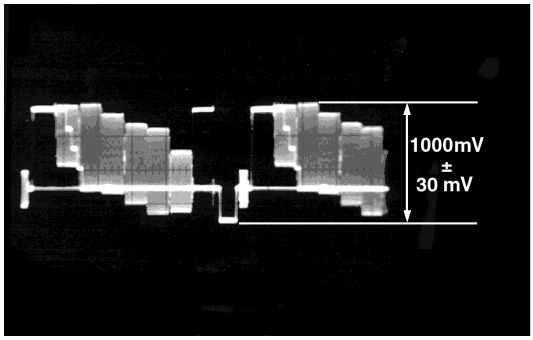
DO this confirmation after replacing a P.C.B.

Measurement point	Mode	Disc
Video output terminal	Color bar 75% PLAY(Title 46):DVDT-S15 PLAY(Title 12):DVDT-S01	DVDT-S15 or DVDT-S01
Measuring equipment,tools	Confirmation value	
200mV/dir,10 μ sec/dir	1000mVp-p±30mV	

Purpose:To maintain video signal output compatibility.

1.Connect the oscilloscope to the video output terminal and terminate at 75 ohms.

2.Confirm that luminance signal(Y+S)level is 1000mVp-p±30mV



6.2 Video Output(Chrominance Signal) Confirmation

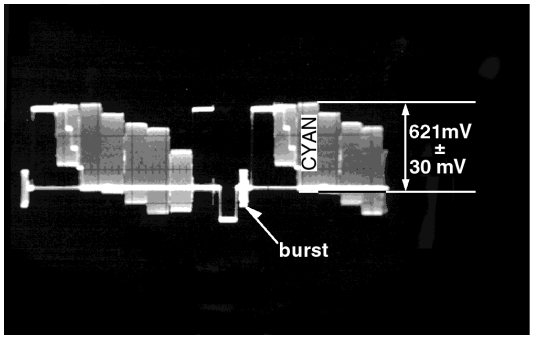
Do the confirmation after replacing P.C.B.

Measurement point	Mode	Disc
Video output terminal	Color bar 75% PLAY(Title 46):DVDT-S15 PLAY(Title 12):DVDT-S01	DVDT-S15 or DVDT-S01
Measuring equipment,tools	Confirmation value	
Screwdriver,Oscilloscope 200mV/dir,10 μ sec/dir	621mVp-p±30mV	

Purpose:To maintain video signal output compatibility.

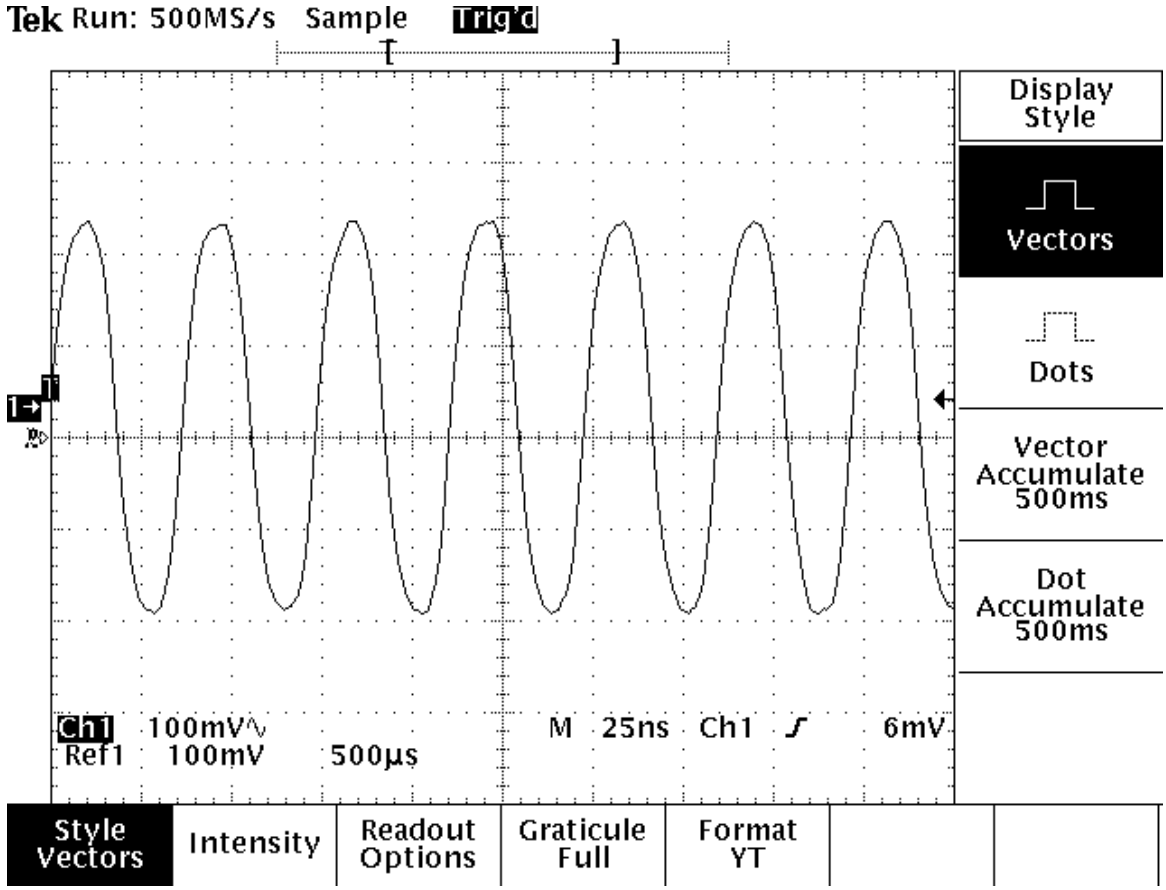
1.Connect the oscilloscope to the video output terminal and terminate at 75 ohme.

2.Confirm that the chrominance signal(C)level is 621 mVp-p±30mV

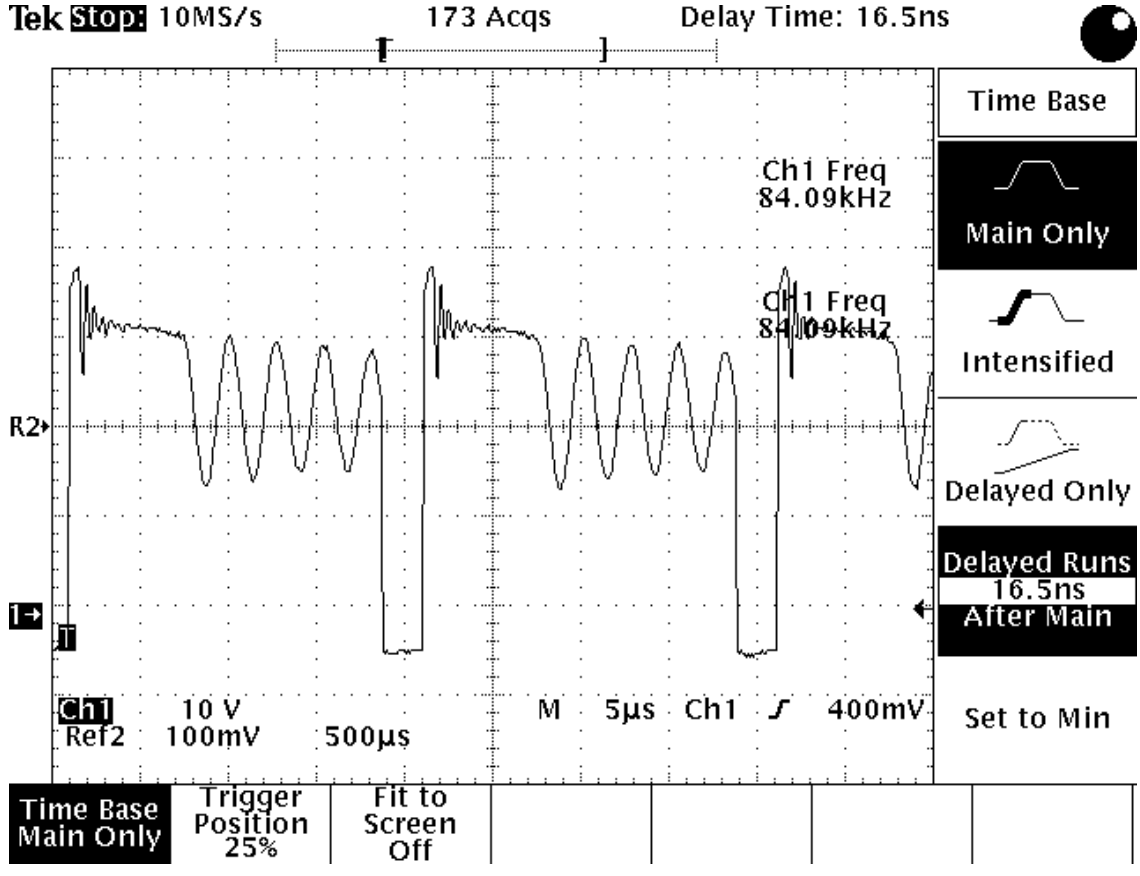


7.MPEG BOARD CHECK WAVEFORM

7.1 27MHz WAVEFORM



7.2 IC TEA1523 PIN.8 WAVEFORM DIAGRAM



MT1389

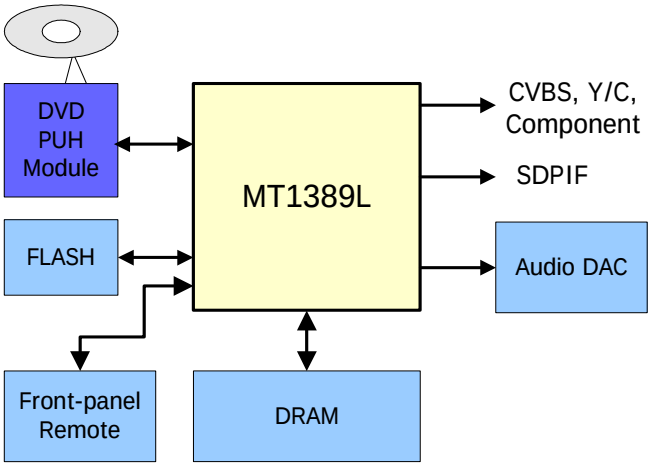
Progressive-Scan DVD Player SOC

Specifications are subject to change without notice

MediaTek MT1389 is a DVD player system-on-chip (SOC) which incorporates advanced features like high quality TV encoder and state-of-art de-interlace processing. The MT1389 enables consumer electronics manufacturers to build high quality, cost-effective DVD players, portable DVD players or any other home entertainment audio/video devices.

Based on MediaTek's world-leading DVD player SOC architecture, the MT1389 is the 3rd generation of the DVD player SOC. It integrates the MediaTek 2nd generation front-end analog RF amplifier and the Servo/MPEG AV decoder.

The progressive scan of the MT1389 utilized a proprietary advanced motion-adaptive de-interlace algorithm to achieve the best movie/video playback. It can easily detect 3:2/2:2 pull down source and restore the correct original pictures. It also supports a patent-pending edge-preserving algorithm to remove the saw-tooth effect.



DVD Player System Diagram Using MT1389

Key Features

- RF/Servo/MPEG Integration
- High Performance Audio Processor
- Motion-Adaptive, Edge-Preserving De-interlace
- 108MHz/12-bit, 6 CH TV Encoder

Applications

- Standard DVD Players
- Portable DVD Players

General Feature List

- Super Integration DVD player single chip
  - High performance analog RF amplifier
  - Servo controller and data channel processing
  - MPEG-1/MPEG-2/JPEG video
  - Dolby AC-3/DTS/DVD-Audio
  - Unified memory architecture
  - Versatile video scaling & quality enhancement
  - OSD & Sub-picture
  - 2-D graphic engine
  - Built-in clock generator
  - Built-in high quality TV encoder
  - Built-in progressive video processor
  - Audio effect post-processor
  - Audio input port

- High Performance Analog RF Amplifier
  - Programmable fc
  - Dual automatic laser power control
  - Defect and blank detection
  - RF level signal generator

- Speed Performance on Servo/Channel Decoding
  - DVD-ROM up to 4XS
  - CD-ROM up to 24XS

- Channel Data Processor
  - Digital data slicer for small jitter capability
  - Built-in high performance data PLL for channel data demodulation
  - EFM/EFM+ data demodulation
  - Enhanced channel data frame sync protection & DVD-ROM sector sync protection

- Servo Control and Spindle Motor Control
  - Programmable frequency error gain and phase error gain of spindle PLL to control spindle motor on CLV and CAV mode
  - Built-in ADCs and DACs for digital servo control
  - Provide 2 general PWM
  - Tray control can be PWM output or digital output

- Embedded Micro controller
  - Built-in 8032 micro controller
  - Built-in internal 373 and 8-bit programmable lower address port
  - 1024-bytes on-chip RAM
  - Up to 4M bytes FLASH-programming interface
  - Supports 5/3.3-Volt. FLASH interface
  - Supports power-down mode
  - Supports additional serial port

- DVD-ROM/CD-ROM Decoding Logic
  - High-speed ECC logic capable of correcting one error per each P-codeword or Q-codeword
  - Automatic sector Mode and Form detection
  - Automatic sector Header verification
  - Decoder Error Notification Interrupt that signals various decoder errors
  - Provide error correction acceleration

- Buffer Memory Controller
  - Supports 16Mb/32Mb/64Mb/128Mb SDRAM
  - Supports 16-bit SDRAM data bus
  - Provide the self-refresh mode SDRAM
  - Block-based sector addressing
  - Support 3.3 Volt. DRAM Interface

- Video Decode
  - Decodes MPEG1 video and MPEG2 main level, main profile video (720/480 and 720x576)
  - Smooth digest view function with I, P and B picture decoding
  - Baseline, extended-sequential and progressive JPEG image decoding
  - Support CD-G titles

- Video/OSD/SPU/HLI Processor
  - Arbitrary ratio vertical/horizontal scaling of video, from 0.25X to 256X
  - 65535/256/16/4/2-color bitmap format OSD,
  - 256/16 color RLC format OSD
  - Automatic scrolling of OSD image
  - Slide show transition as DVD-Audio Specification

- 2-D Graphic Engine
  - Support decode Text and Bitmap
  - Support line, rectangle and gradient fill
  - Support bitblt
  - Chroma key copy operation
  - Clip mask

- Audio Effect Processing
  - Dolby Digital (AC-3)/EX decoding
  - DTS/DTS-ES decoding
  - MLP decoding for DVD-Audio
  - MPEG-1 layer 1/layer 2 audio decoding
  - MPEG-2 layer1/layer2 2-channel audio
  - High Definition Compatible Digital (HDCD)
  - Windows Media Audio (WMA)
  - Advanced Audio Coding (AAC)
  - Dolby ProLogic II
  - Concurrent multi-channel and downmix out
  - IEC 60958/61937 output
    - PCM / bit stream / mute mode
    - Custom IEC latency up to 2 frames
  - Pink noise and white noise generator
  - Karaoke functions
    - Microphone echo
    - Microphone tone control
    - Vocal mute/vocal assistant
    - Key shift up to +/- 8 keys
    - Chorus/Flanger/Harmony/Reverb
  - Channel equalizer
  - 3D surround processing include virtual surround and speaker separation

- TV Encoder
  - Six 108MHz/12bit DACs
  - Support NTSC, PAL-BDGHINM, PAL-60
  - Support 525p, 625p progressive TV format
  - Automatically turn off unconnected channels
  - Support PC monitor (VGA)
  - Support Macrovision 7.1 L1, Macrovision 525P and 625P
  - CGMS-A/WSS
  - Closed Caption

- Progressive Output
  - Automatic detect film or video source
  - 3:2 pull down source detection
  - Advanced Motion adaptive de-interlace
  - Edge Preserving
  - Minimum external memory requirement

- Audio Input
  - Line-in/SPDIF-in for versatile audio processing

- Outline
  - 256-pin LQFP package
  - 3.3/1.8-Volt. Dual operating voltages

16 Megabit (2 M x 8-Bit/1 M x 16-Bit) CMOS 3.0 Volt-only Boot Sector Flash Memory

DISTINCTIVE CHARACTERISTICS

- **Single power supply operation**
  - — Full voltage range: 2.7 to 3.6 volt read and write operations for battery-powered applications
  - — Regulated voltage range: 3.0 to 3.6 volt read and write operations and for compatibility with high performance 3.3 volt microprocessors
- **Manufactured on 0.23 µm process technology**
  - — Fully compatible with 0.32 µm Am29LV160B device
- **High performance**
  - — Access times as fast as 70 ns
- **Ultra low power consumption (typical values at 5 MHz)**
  - — 200 nA Automatic Sleep mode current
  - — 200 nA standby mode current
  - — 9 mA read current
  - — 20 mA program/erase current
- **Flexible sector architecture**
  - — One 16 Kbyte, two 8 Kbyte, one 32 Kbyte, and thirty-one 64 Kbyte sectors (byte mode)
  - — One 8 Kword, two 4 Kword, one 16 Kword, and thirty-one 32 Kword sectors (word mode)
  - — Supports full chip erase
  - — Sector Protection features:

    A hardware method of locking a sector to prevent any program or erase operations within that sector

    Sectors can be locked in-system or via programming equipment

    Temporary Sector Unprotect feature allows code changes in previously locked sectors
- **Unlock Bypass Program Command**
  - — Reduces overall programming time when issuing multiple program command sequences
- **Top or bottom boot block configurations available**
- **Embedded Algorithms**
  - — Embedded Erase algorithm automatically preprograms and erases the entire chip or any combination of designated sectors
  - — Embedded Program algorithm automatically writes and verifies data at specified addresses
- **Minimum 1,000,000 write cycle guarantee per sector**
- **20-year data retention at 125°C**
  - — Reliable operation for the life of the system
- **Package option**
  - — 48-ball FBGA
  - — 48-pin TSOP
  - — 44-pin SO
- **CFI (Common Flash Interface) compliant**
  - — Provides device-specific information to the system, allowing host software to easily reconfigure for different Flash devices
- **Compatibility with JEDEC standards**
  - — Pinout and software compatible with single-power supply Flash
  - — Superior inadvertent write protection
- **Data# Polling and toggle bits**
  - — Provides a software method of detecting program or erase operation completion
- **Ready/Busy# pin (RY/BY#)**
  - — Provides a hardware method of detecting program or erase cycle completion (not available on 44-pin SO)
- **Erase Suspend/Erase Resume**
  - — Suspends an erase operation to read data from, or program data to, a sector that is not being erased, then resumes the erase operation
- **Hardware reset pin (RESET#)**
  - — Hardware method to reset the device to reading array data

This Data Sheet states AMD's current technical specifications regarding the Product described herein. This Data Sheet may be revised by subsequent versions or modifications due to changes in technical specifications.

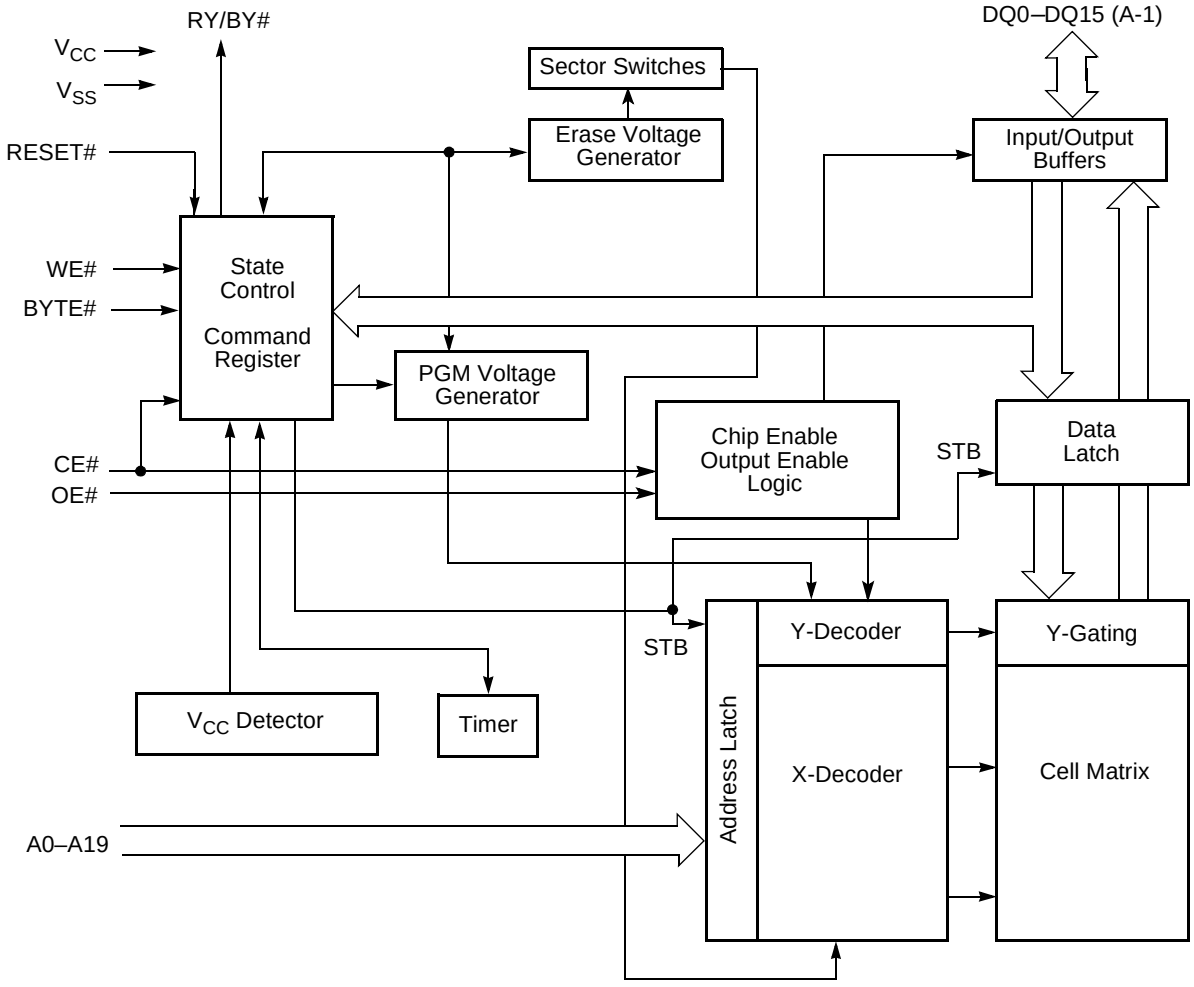
Publication# **22358** Rev: **B** Amendment/**+3**
Issue Date: **November 10, 2000**

PRODUCT SELECTOR GUIDE

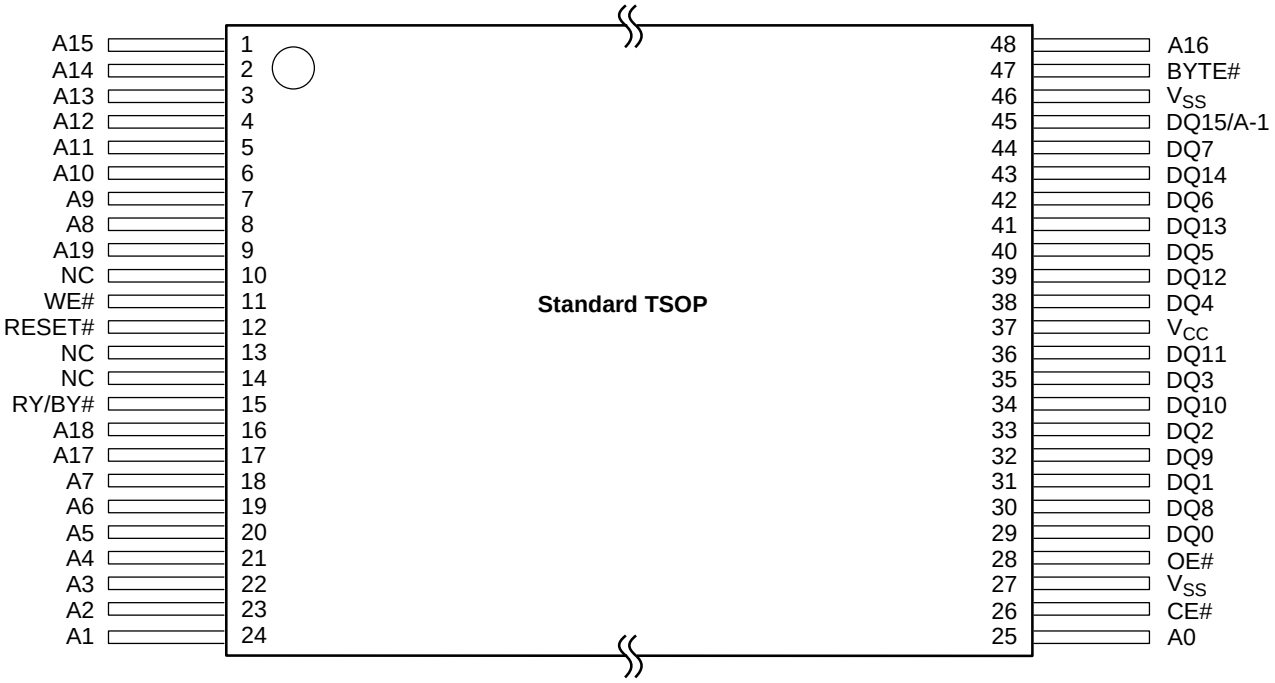
Family Part Number		Am29LV160D		
Speed Option	Voltage Range: V_{CC} = 2.7–3.6 V	**-70**	**-90**	**-120**
Max access time, ns (t_{ACC})		70	90	120
Max CE# access time, ns (t_{CE})		70	90	120
Max OE# access time, ns (t_{OE})		30	35	50

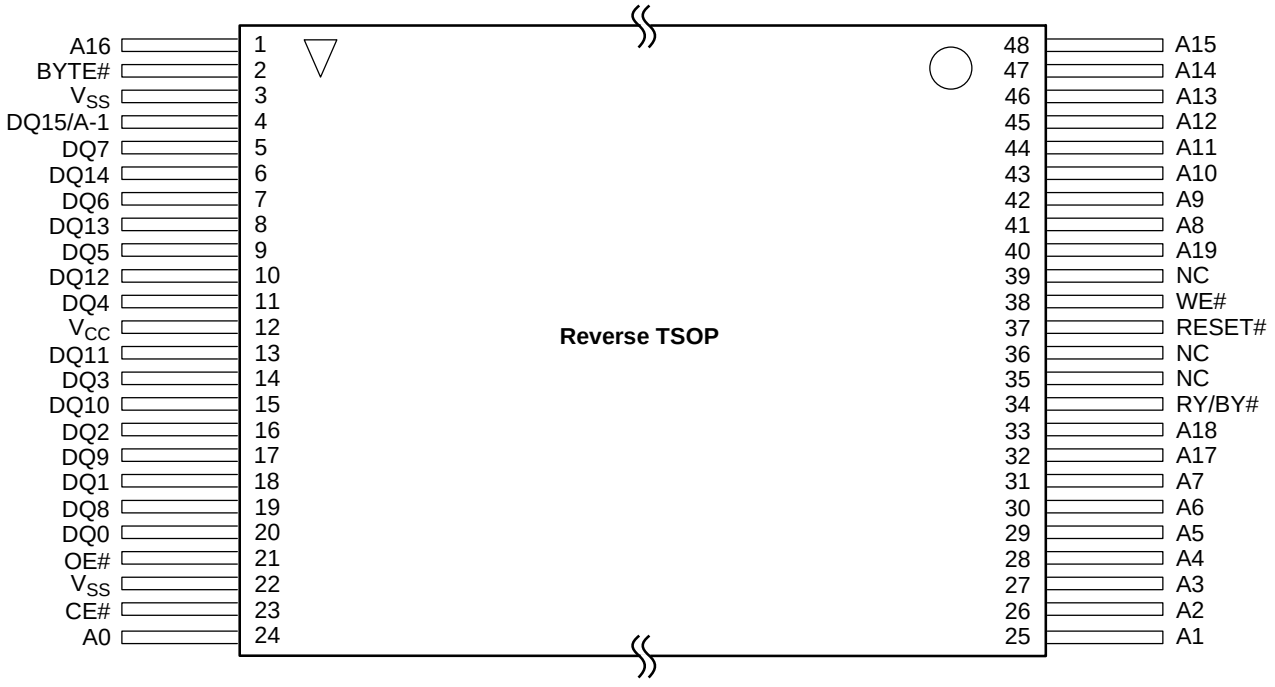
Note: *See "AC Characteristics" for full specifications.*

BLOCK DIAGRAM

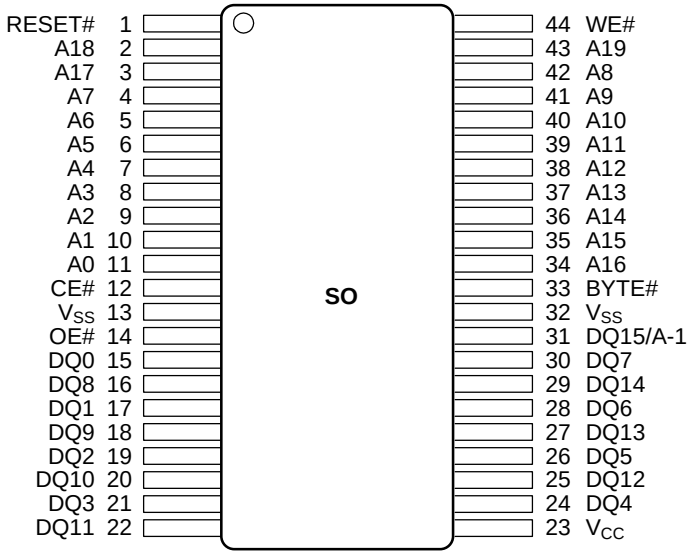


CONNECTION DIAGRAMS





CONNECTION DIAGRAMS



FBGA
Top View, Balls Facing Down

A6 A13	B6 A12	C6 A14	D6 A15	E6 A16	F6 BYTE#	G6 DQ15/A-1	H6 V_{SS}
A5 A9	B5 A8	C5 A10	D5 A11	E5 DQ7	F5 DQ14	G5 DQ13	H5 DQ6
A4 WE#	B4 RESET#	C4 NC	D4 A19	E4 DQ5	F4 DQ12	G4 V_{CC}	H4 DQ4
A3 RY/BY#	B3 NC	C3 A18	D3 NC	E3 DQ2	F3 DQ10	G3 DQ11	H3 DQ3
A2 A7	B2 A17	C2 A6	D2 A5	E2 DQ0	F2 DQ8	G2 DQ9	H2 DQ1
A1 A3	B1 A4	C1 A2	D1 A1	E1 A0	F1 CE#	G1 OE#	H1 V_{SS}

Special Handling Instructions

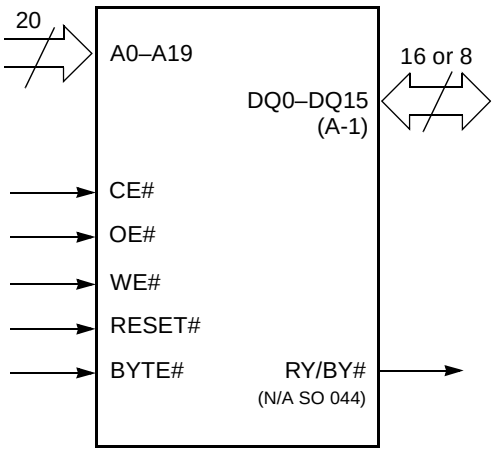
Special handling is required for Flash Memory products in FBGA packages.

Flash memory devices in FBGA packages may be damaged if exposed to ultrasonic cleaning methods. The package and/or data integrity may be compromised if the package body is exposed to temperatures above 150°C for prolonged periods of time.

PIN CONFIGURATION

A0–A19	=	20 addresses
DQ0–DQ14	=	15 data inputs/outputs
DQ15/A-1	=	DQ15 (data input/output, word mode), A-1 (LSB address input, byte mode)
BYTE#	=	Selects 8-bit or 16-bit mode
CE#	=	Chip enable
OE#	=	Output enable
WE#	=	Write enable
RESET#	=	Hardware reset pin
RY/BY#	=	Ready/Busy output (N/A SO 044)
V_{CC}	=	3.0 volt-only single power supply (see Product Selector Guide for speed options and voltage supply tolerances)
V_{SS}	=	Device ground
NC	=	Pin not connected internally

LOGIC SYMBOL



8.4 HY57V641620HG

DESCRIPTION

The Hyundai HY57V641620HG is a 67,108,864-bit CMOS Synchronous DRAM, ideally suited for the main memory applications which require large memory density and high bandwidth. HY57V641620HG is organized as 4banks of 1,048,576x16.

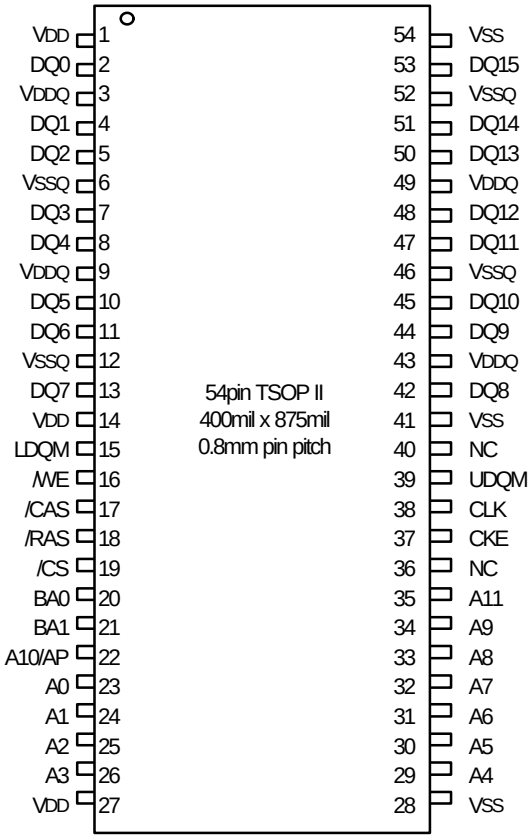
HY57V641620HG is offering fully synchronous operation referenced to a positive edge of the clock. All inputs and outputs are synchronized with the rising edge of the clock input. The data paths are internally pipelined to achieve very high bandwidth. All input and output voltage levels are compatible with LVTTL.

Programmable options include the length of pipeline (Read latency of 2 or 3), the number of consecutive read or write cycles initiated by a single control command (Burst length of 1,2,4,8 or Full page), and the burst count sequence(sequential or interleave). A burst of read or write cycles in progress can be terminated by a burst terminate command or can be interrupted and replaced by a new burst read or write command on any cycle. (This pipelined design is not restricted by a `2N` rule.)

FEATURES

- Single 3.3±0.3V power supply Note)
- All device pins are compatible with LVTTL interface
- JEDEC standard 400mil 54pin TSOP-II with 0.8mm of pin pitch
- All inputs and outputs referenced to positive edge of system clock
- Data mask function by UDQM or LDQM
- Internal four banks operation
- Auto refresh and self refresh
- 4096 refresh cycles / 64ms
- Programmable Burst Length and Burst Type
  - 1, 2, 4, 8 or Full page for Sequential Burst
  - 1, 2, 4 or 8 for Interleave Burst
- Programmable $\overline{\text{CAS}}$ Latency ; 2, 3 Clocks

PIN CONFIGURATION

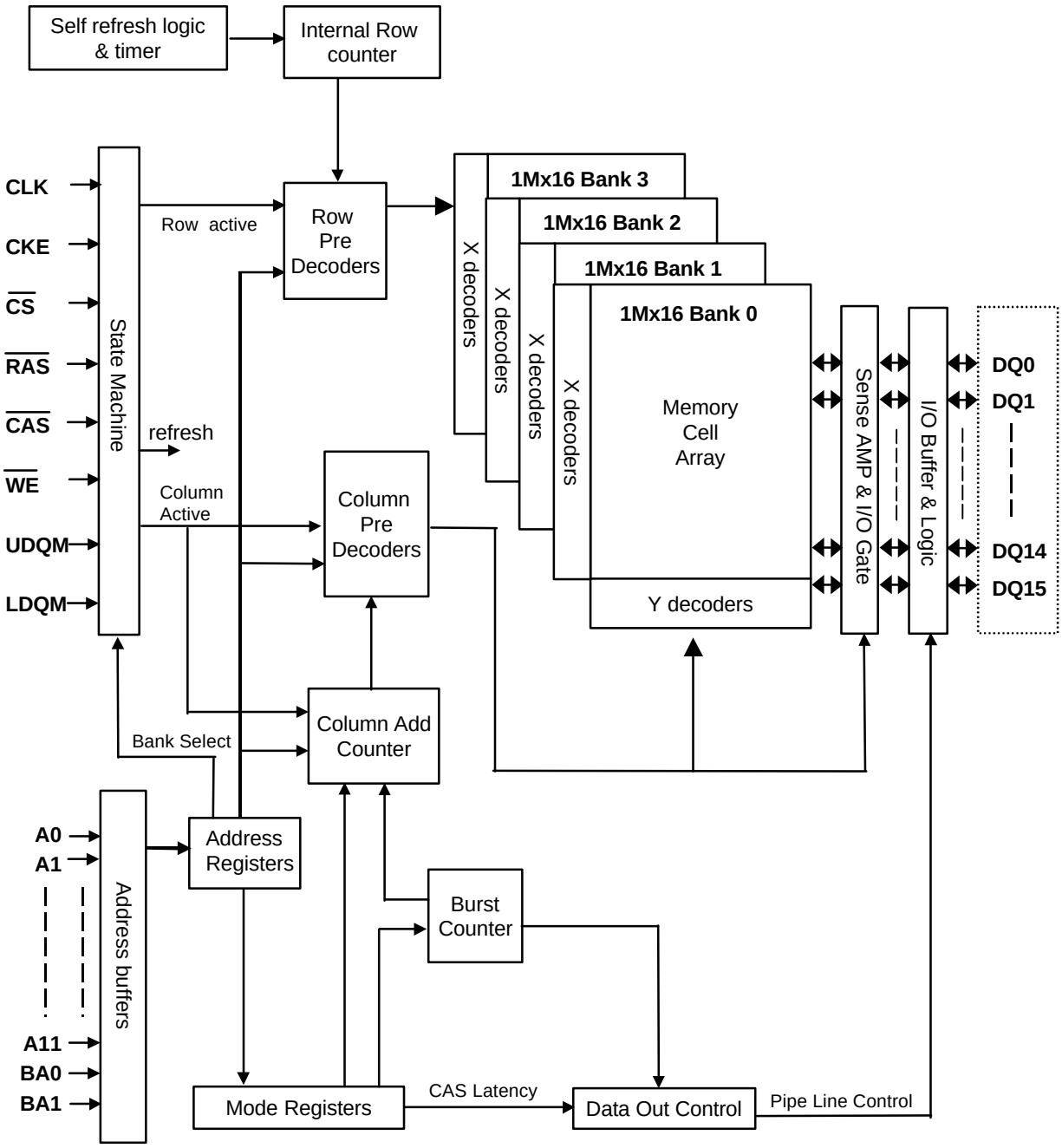


PIN DESCRIPTION

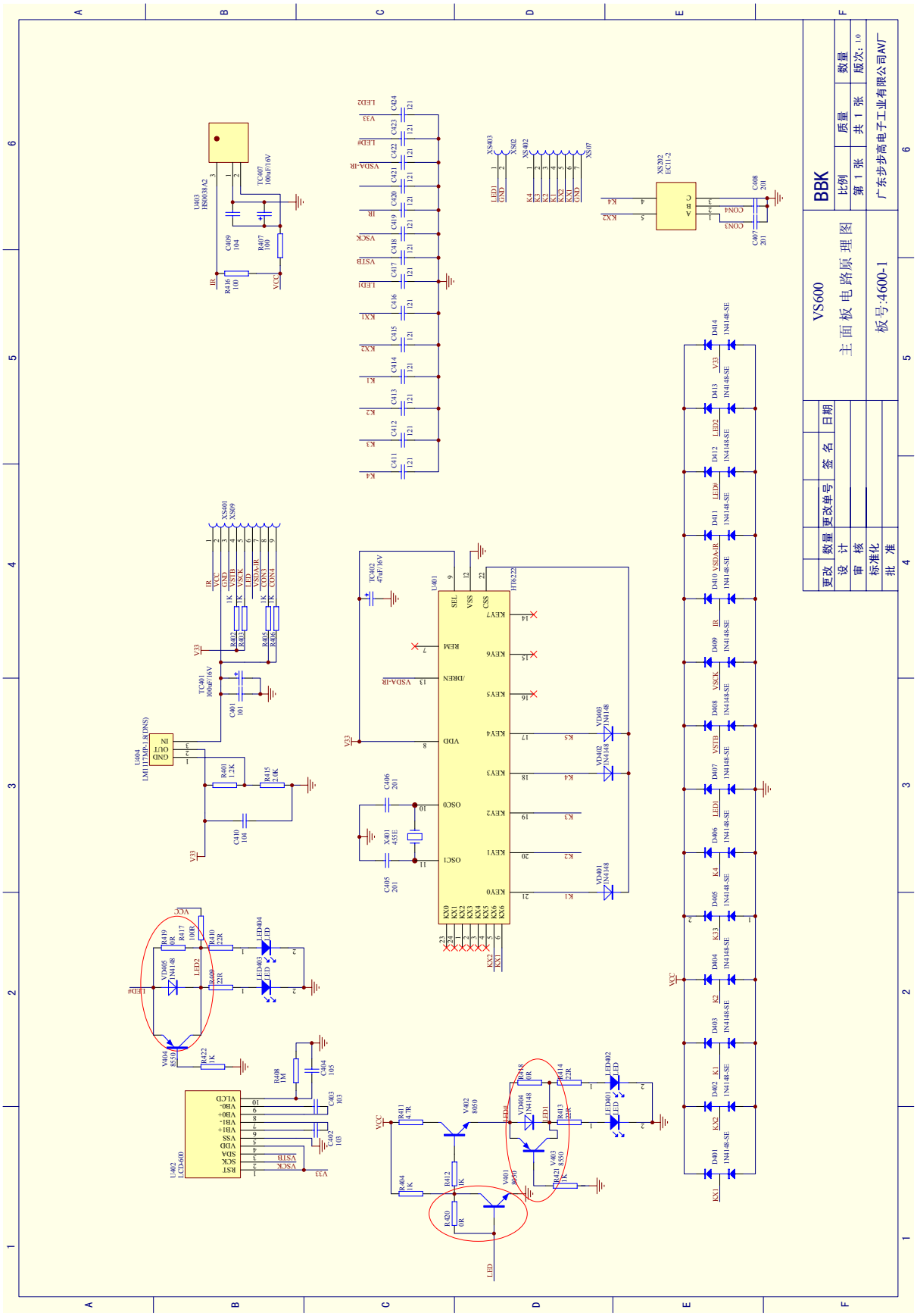
PIN	PIN NAME	DESCRIPTION
CLK	Clock	The system clock input. All other inputs are registered to the SDRAM on the rising edge of CLK
CKE	Clock Enable	Controls internal clock signal and when deactivated, the SDRAM will be one of the states among power down, suspend or self refresh
$\overline{CS}$	Chip Select	Enables or disables all inputs except CLK, CKE and DQM
BA0,BA1	Bank Address	Selects bank to be activated during $\overline{RAS}$ activity Selects bank to be read/written during $\overline{CAS}$ activity
A0 ~ A11	Address	Row Address : RA0 ~ RA11, Column Address : CA0 ~ CA7 Auto-precharge flag : A10
$\overline{RAS}$, $\overline{CAS}$, $\overline{WE}$	Row Address Strobe, Column Address Strobe, Write Enable	$\overline{RAS}$, $\overline{CAS}$ and $\overline{WE}$ define the operation Refer function truth table for details
LDQM, UDQM	Data Input/Output Mask	Controls output buffers in read mode and masks input data in write mode
DQ0 ~ DQ15	Data Input/Output	Multiplexed data input / output pin
VDD/VSS	Power Supply/Ground	Power supply for internal circuits and input buffers
VDDQ/VSSQ	Data Output Power/Ground	Power supply for output buffers
NC	No Connection	No connection

FUNCTIONAL BLOCK DIAGRAM

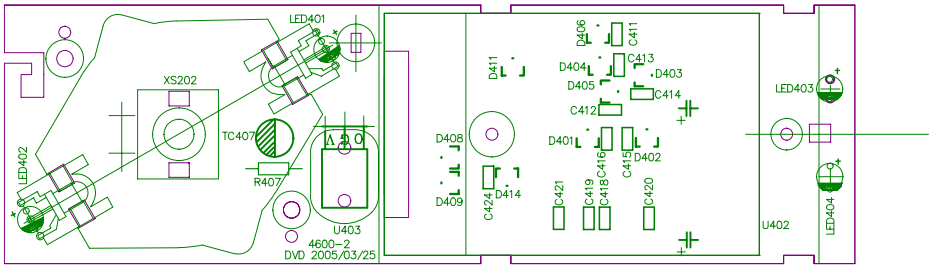
1Mbit x 4banks x 16 I/O Synchronous DRAM



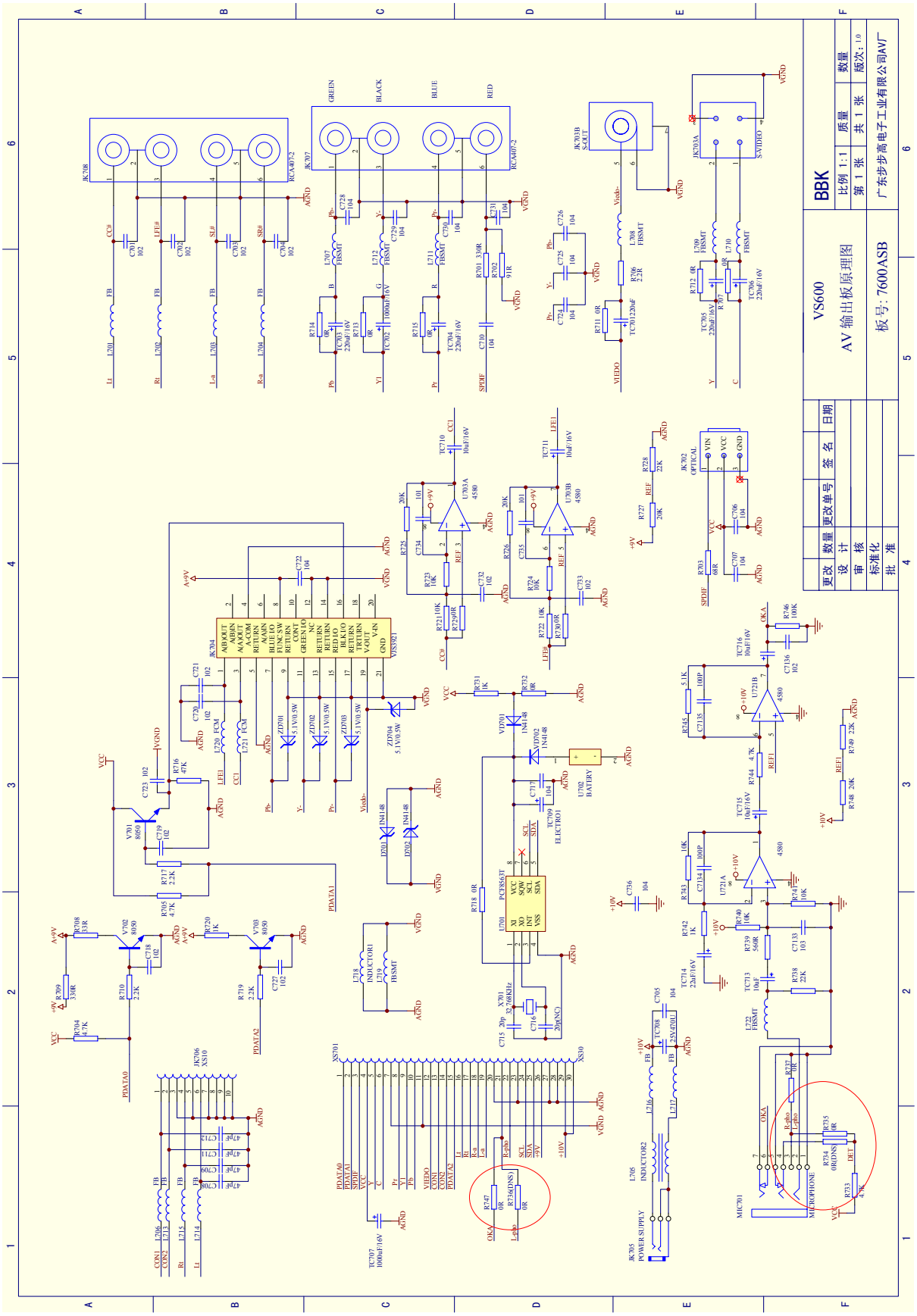
FRONT SCHEMATIC DIAGRAM



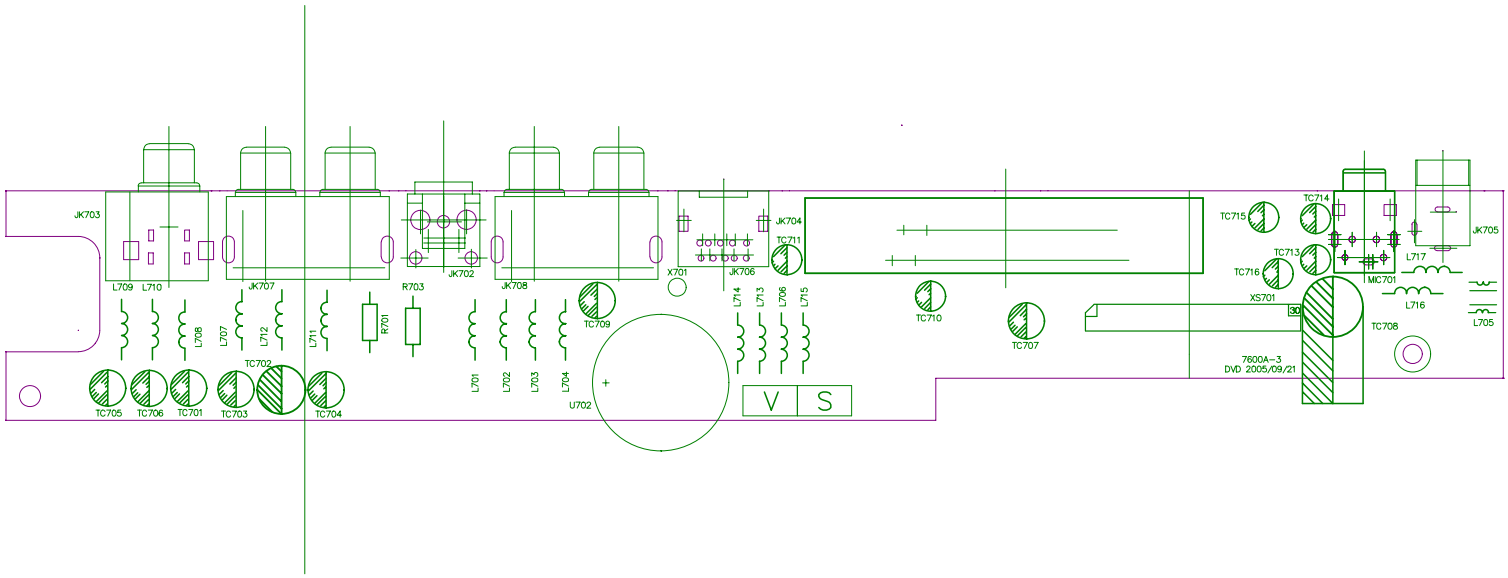
FRONT SCHEMATIC DIAGRAM



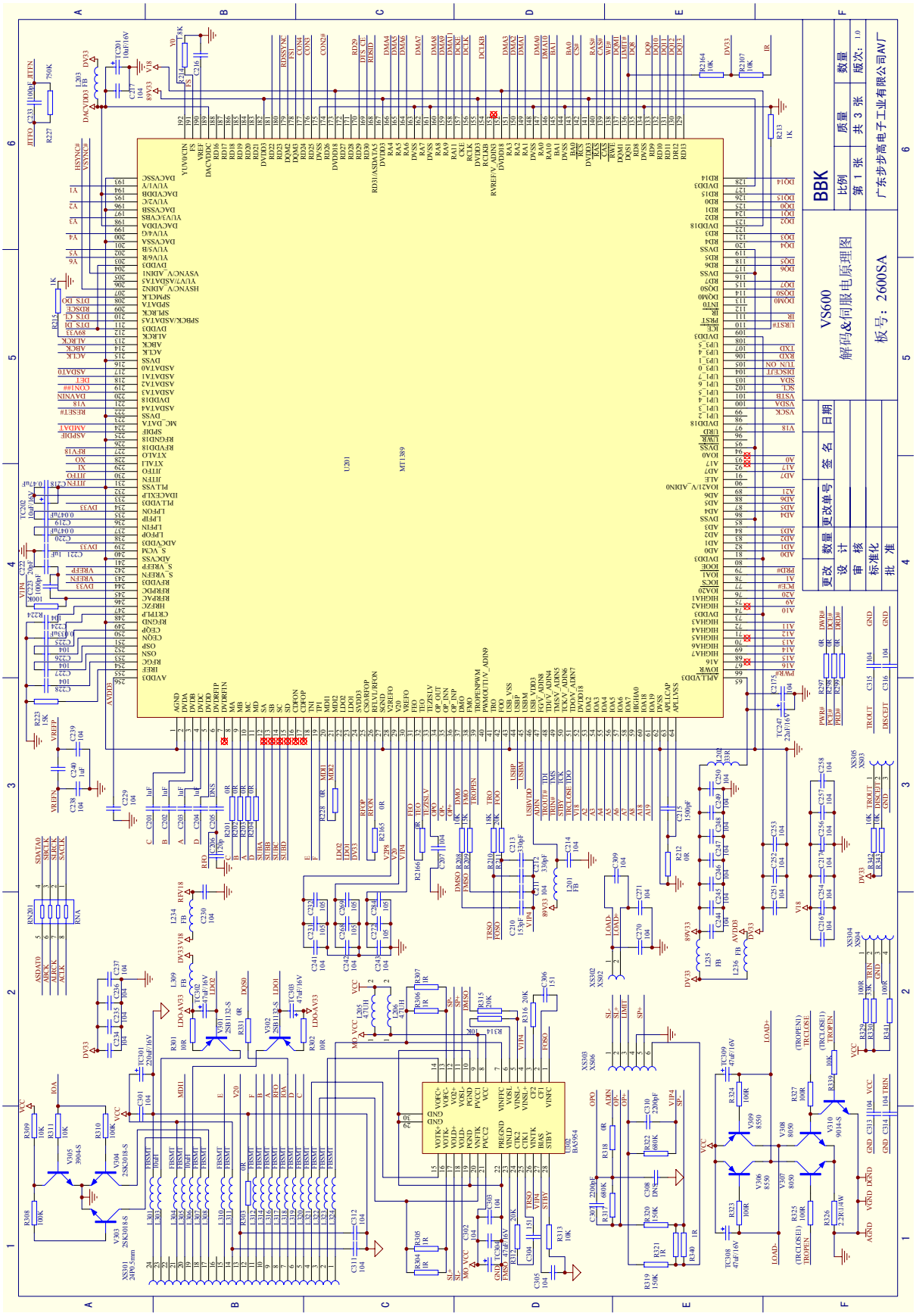
OUTPUT BOARD SCHEMATIC DIAGRAM



OUTPUT BOARD SCHEMATIC DIAGRAM



MIAN SCHEMATIC DIAGRAM



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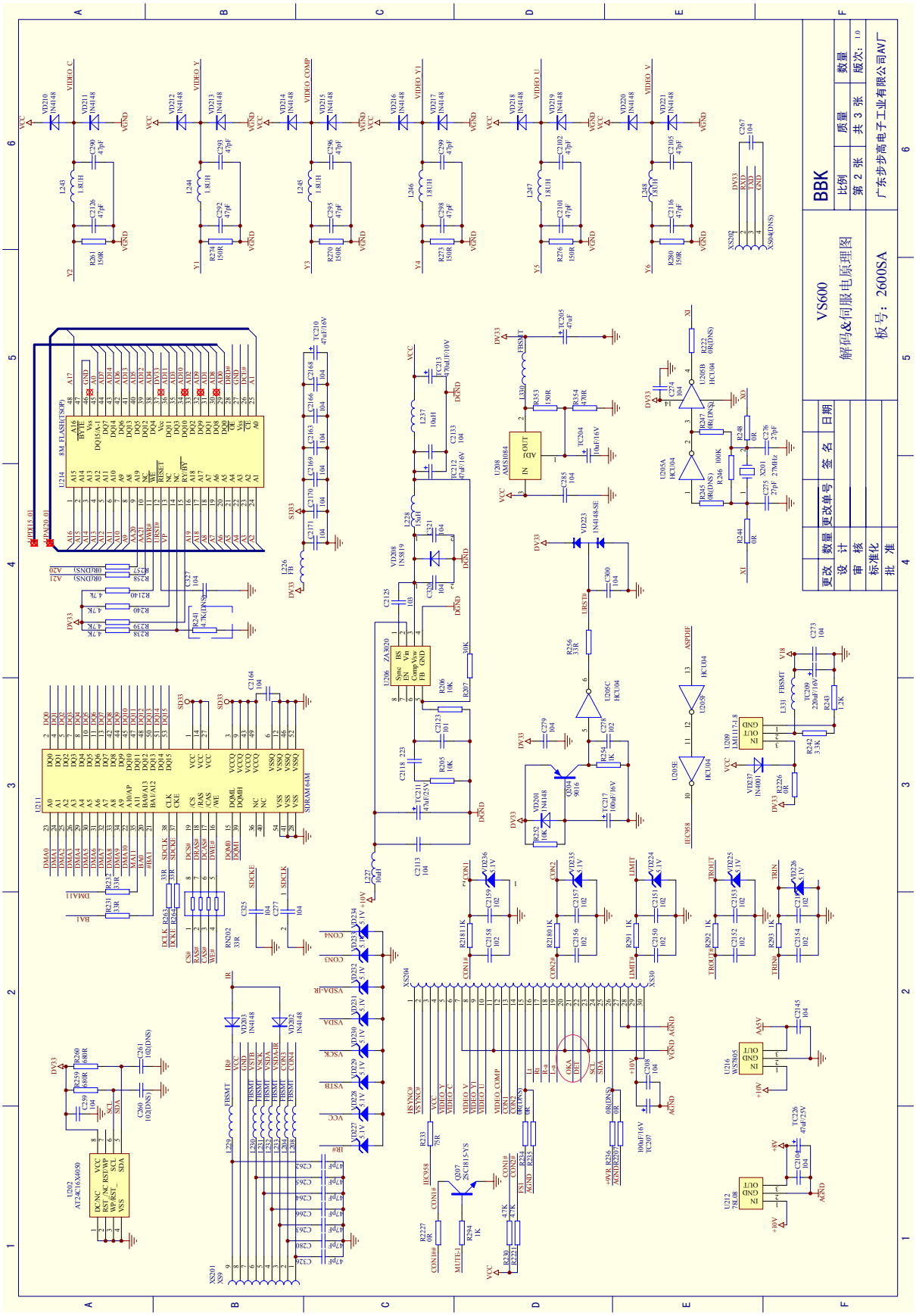
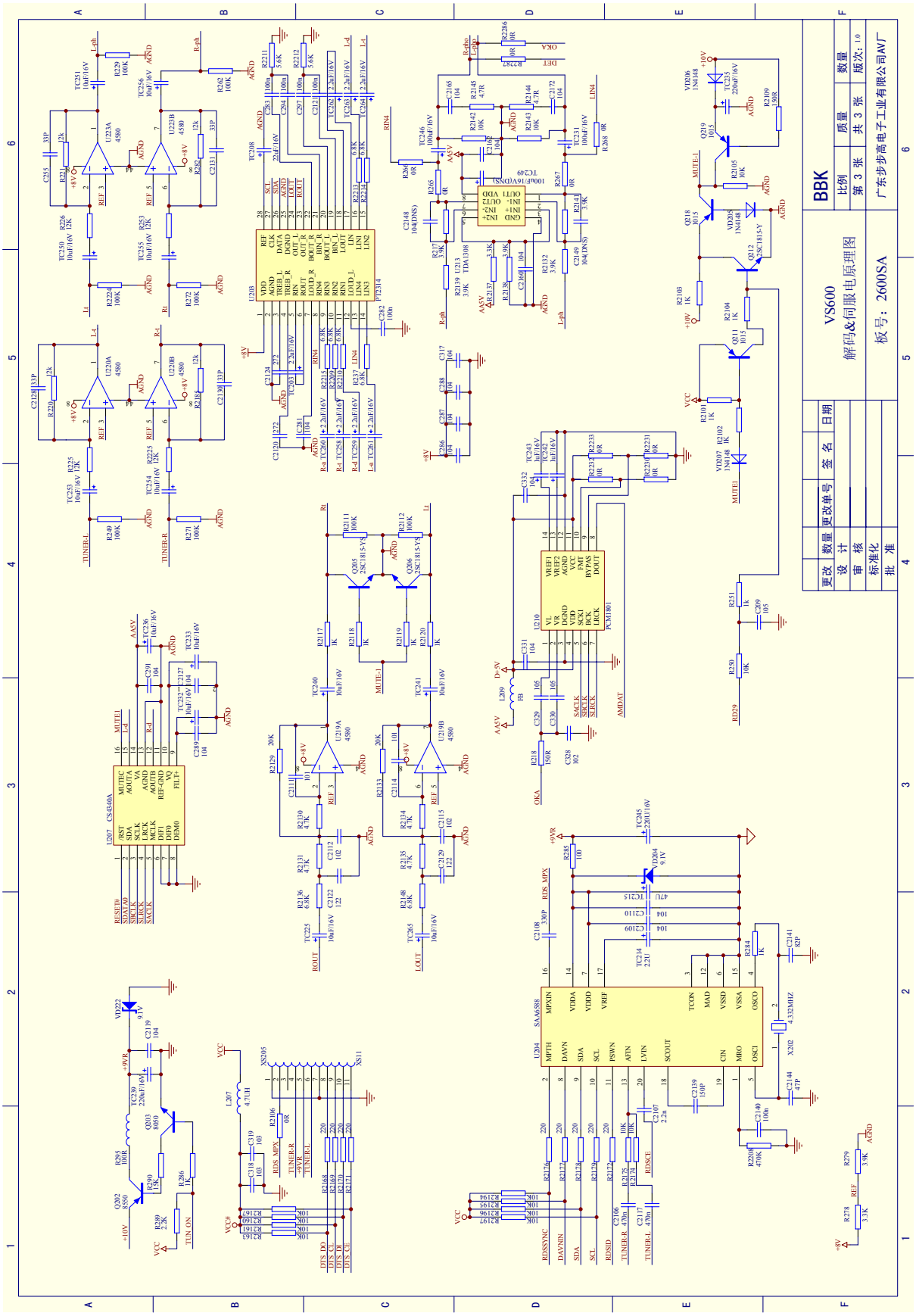
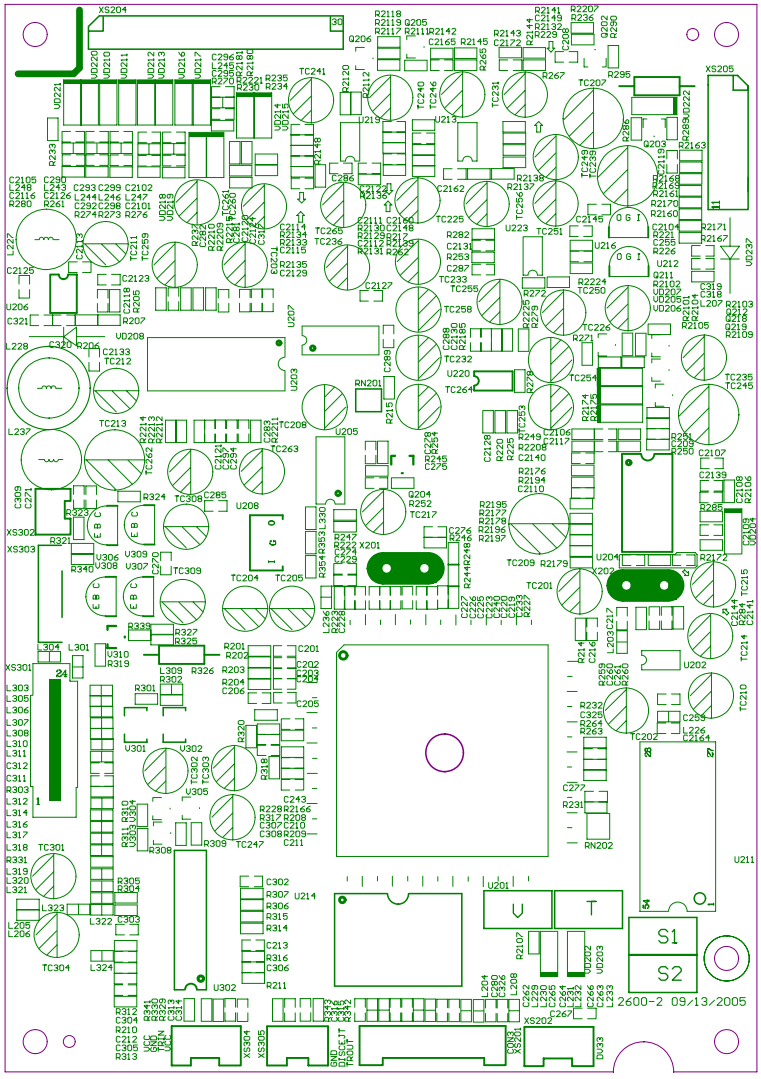


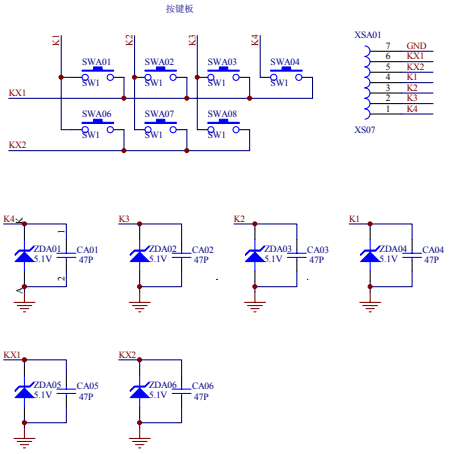
MIAN SCHEMATIC DIAGRAM

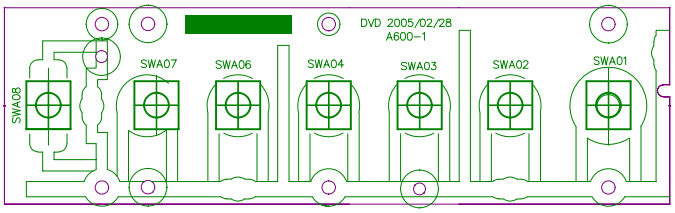


MIAN SCHEMATIC DIAGRAM

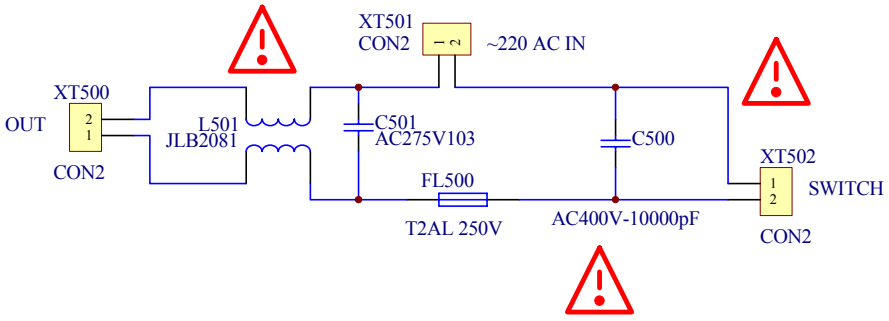


SUBSIDIARY BOARD

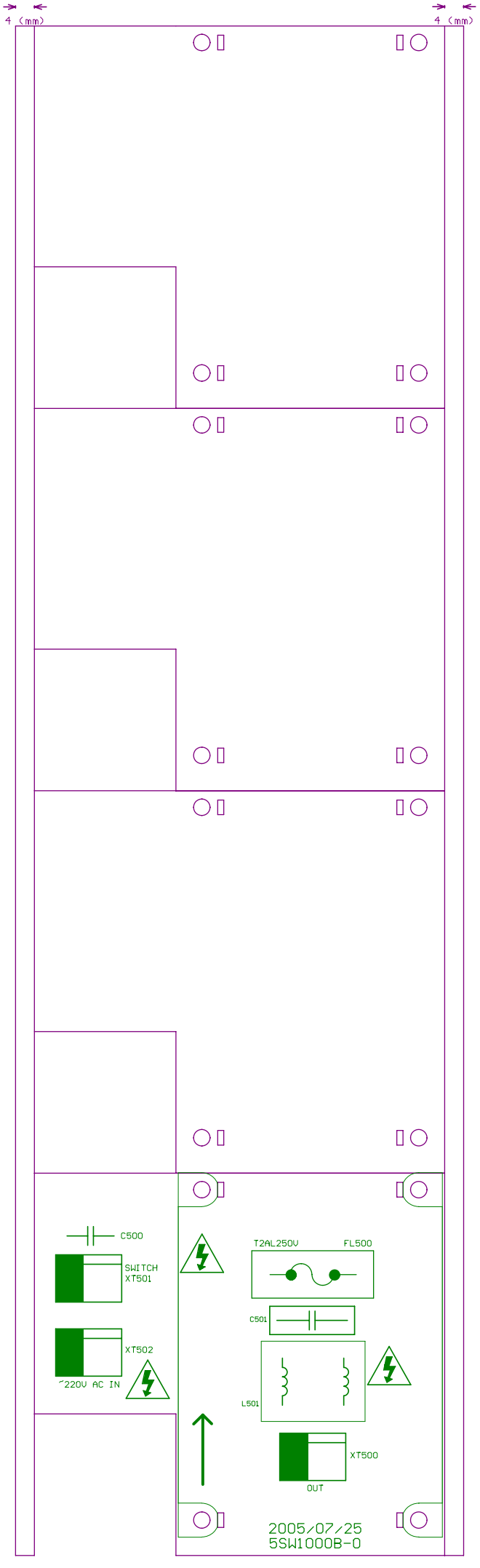




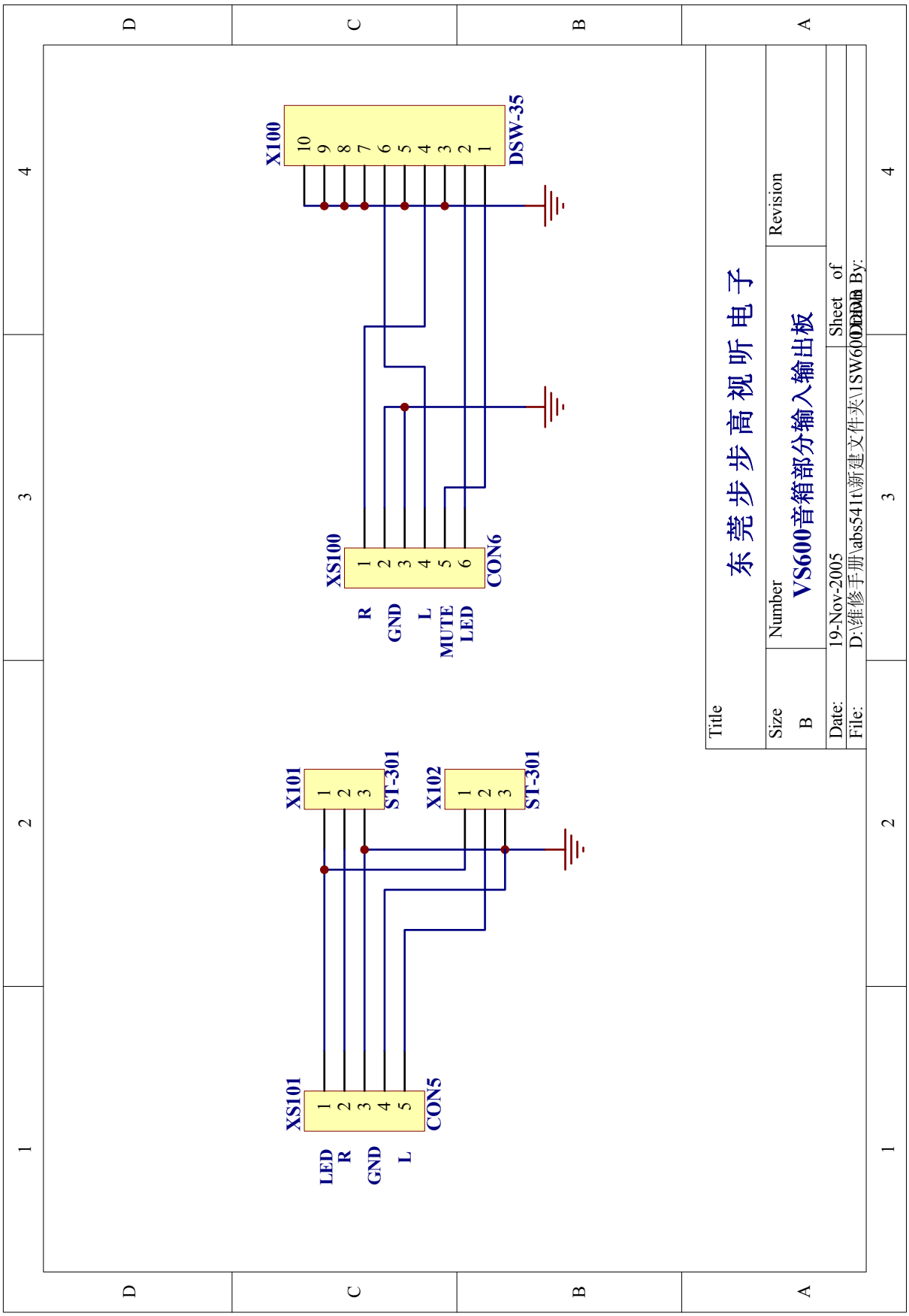
POWER BOARD SCHEMATIC DIAGRAM



POWER BOARD SCHEMATIC DIAGRAM



I/O board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DSW-35
XS100
CON6
R
GND
L
MUTE
LED
X101
ST-301
X102
ST-301
XS101
CON5
LED
R
GND
L
Title
东莞步步高视听电子
Size
B
Number
VS600音箱部分输入输出板
Revision
Date:
19-Nov-2005
Sheet of
File:
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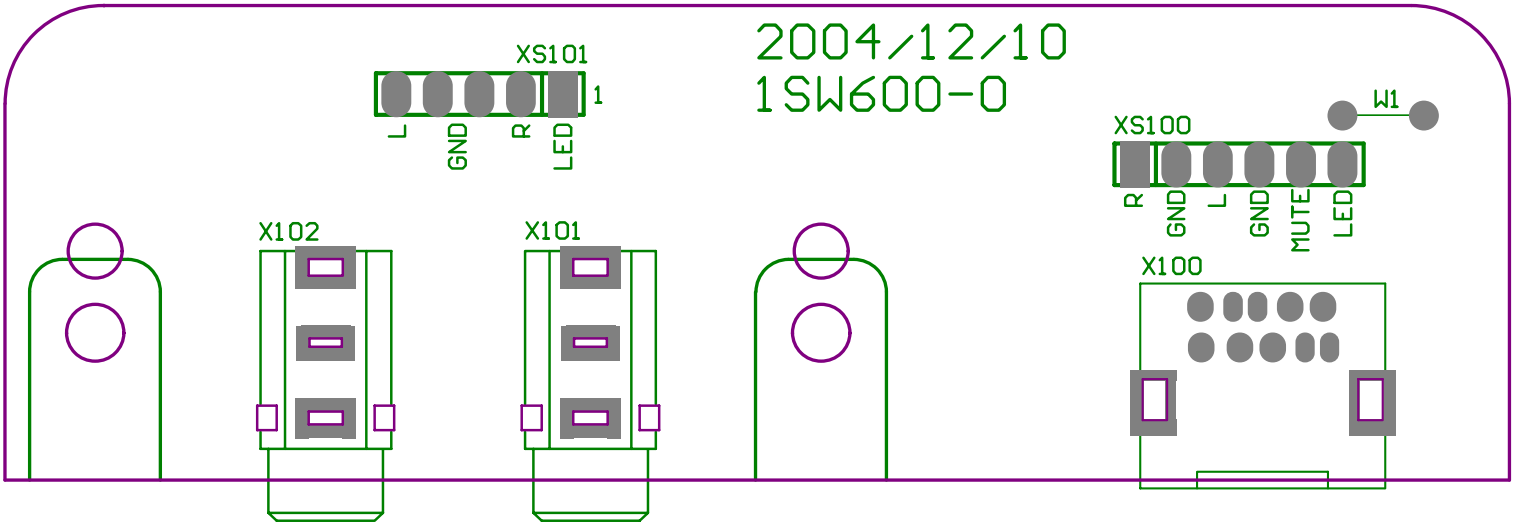
By:

I/O board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XS101
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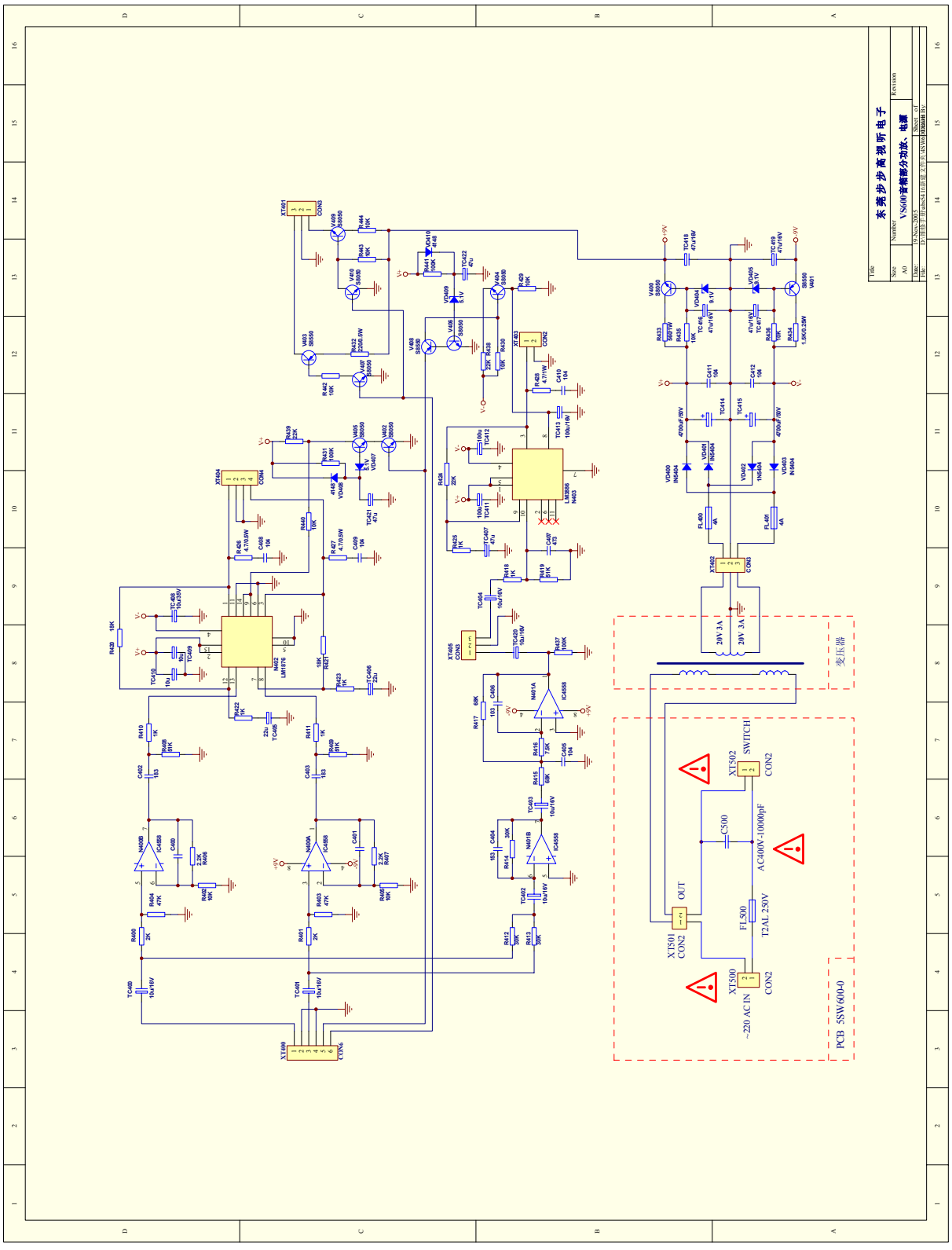
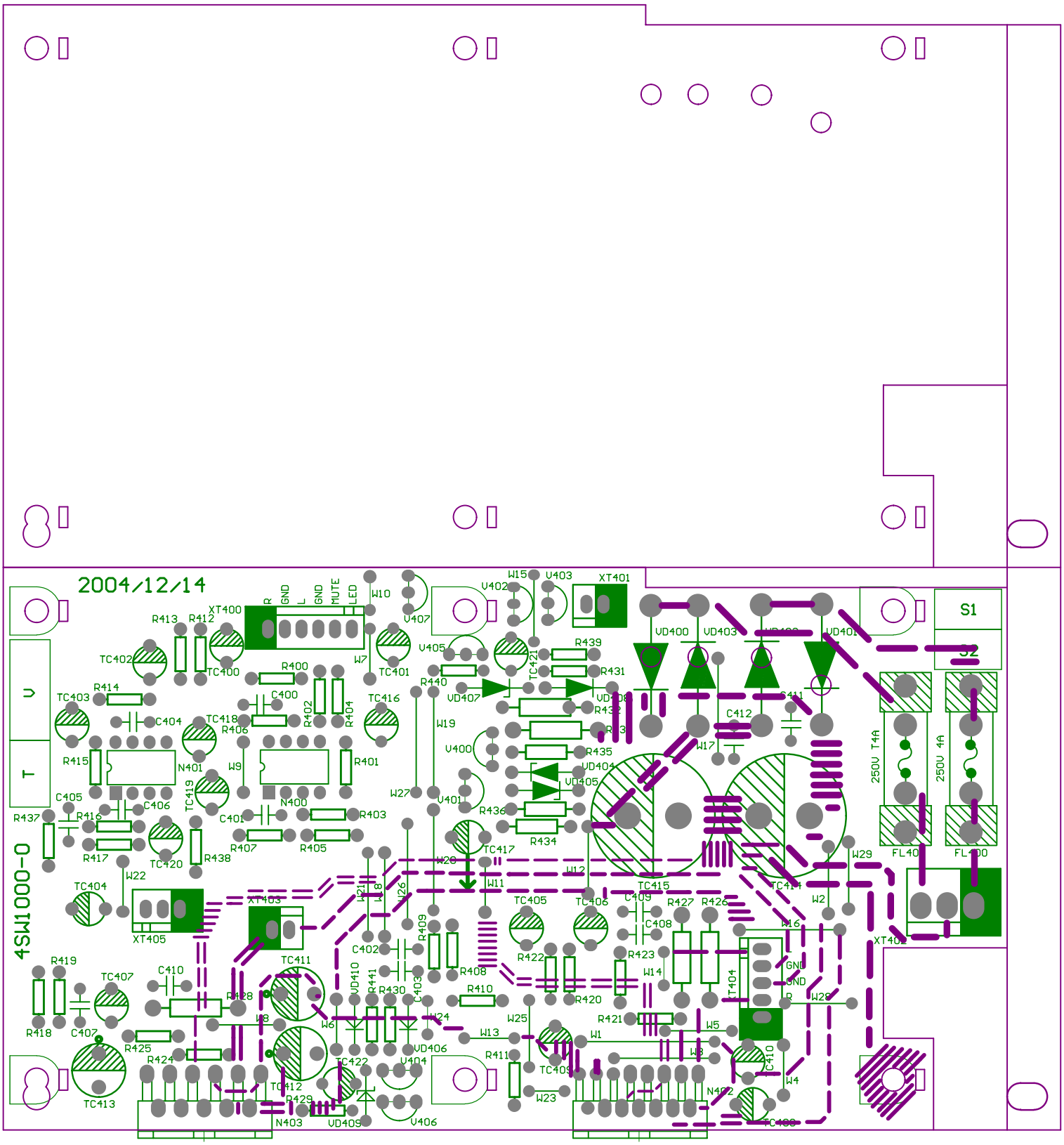
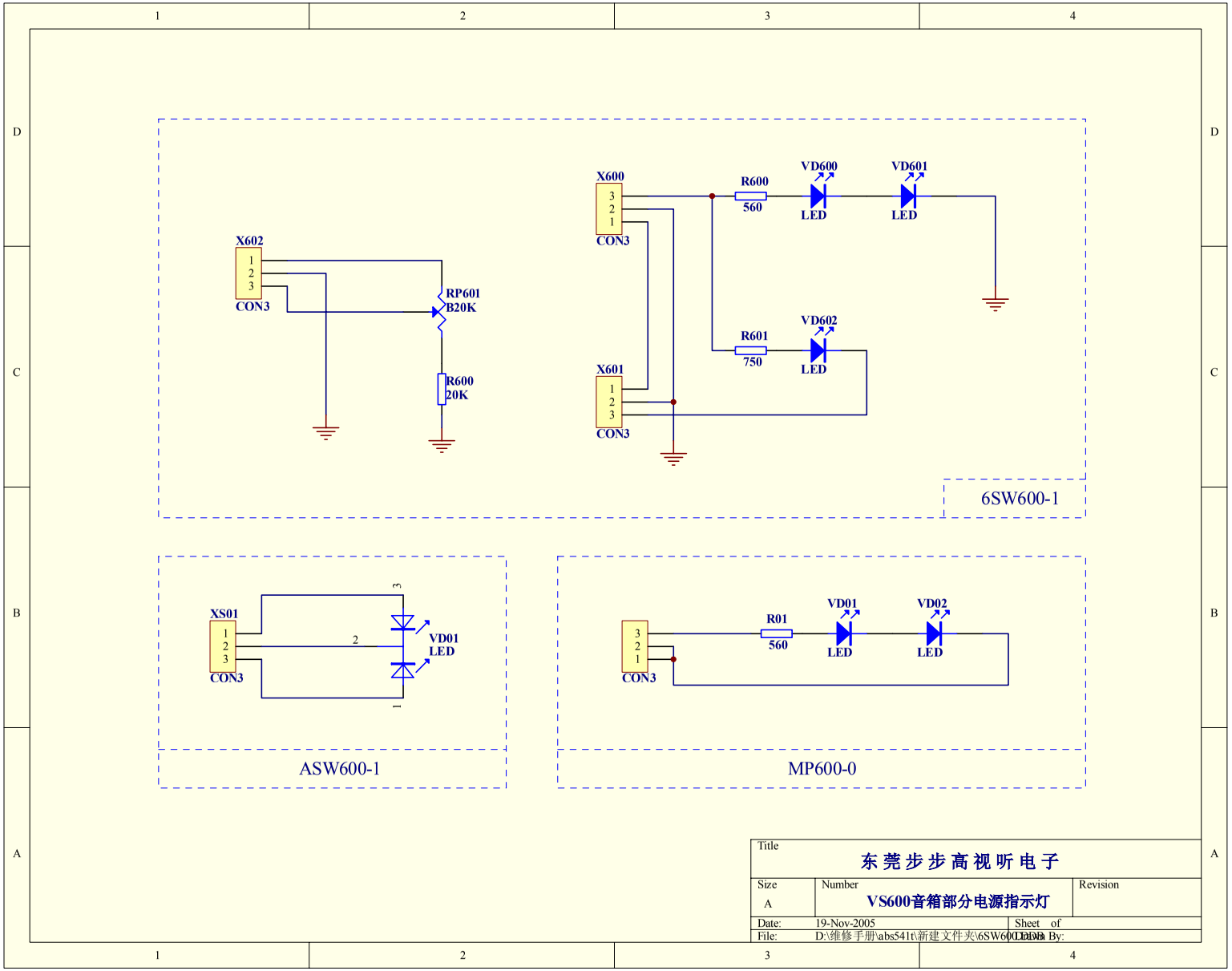
L
GND
R
LED
W1
XS100
R
GND
L
GND
MUTE
LED
X102
X101
X100

Amplifier board



Amplifier board




X602
CON3
RP601
B20K
R600
20K
X600
CON3
R600
560
VD600
LED
VD601
LED
R601
750
VD602
LED
X601
CON3
6SW600-1
XS01
CON3
VD01
LED
ASW600-1
CON3
R01
560
VD01
LED
VD02
LED
MP600-0
Title
东莞步步高视听电子
Size
A
Number
VS600音箱部分电源指示灯
Revision
Date:
19-Nov-2005
Sheet of
File:
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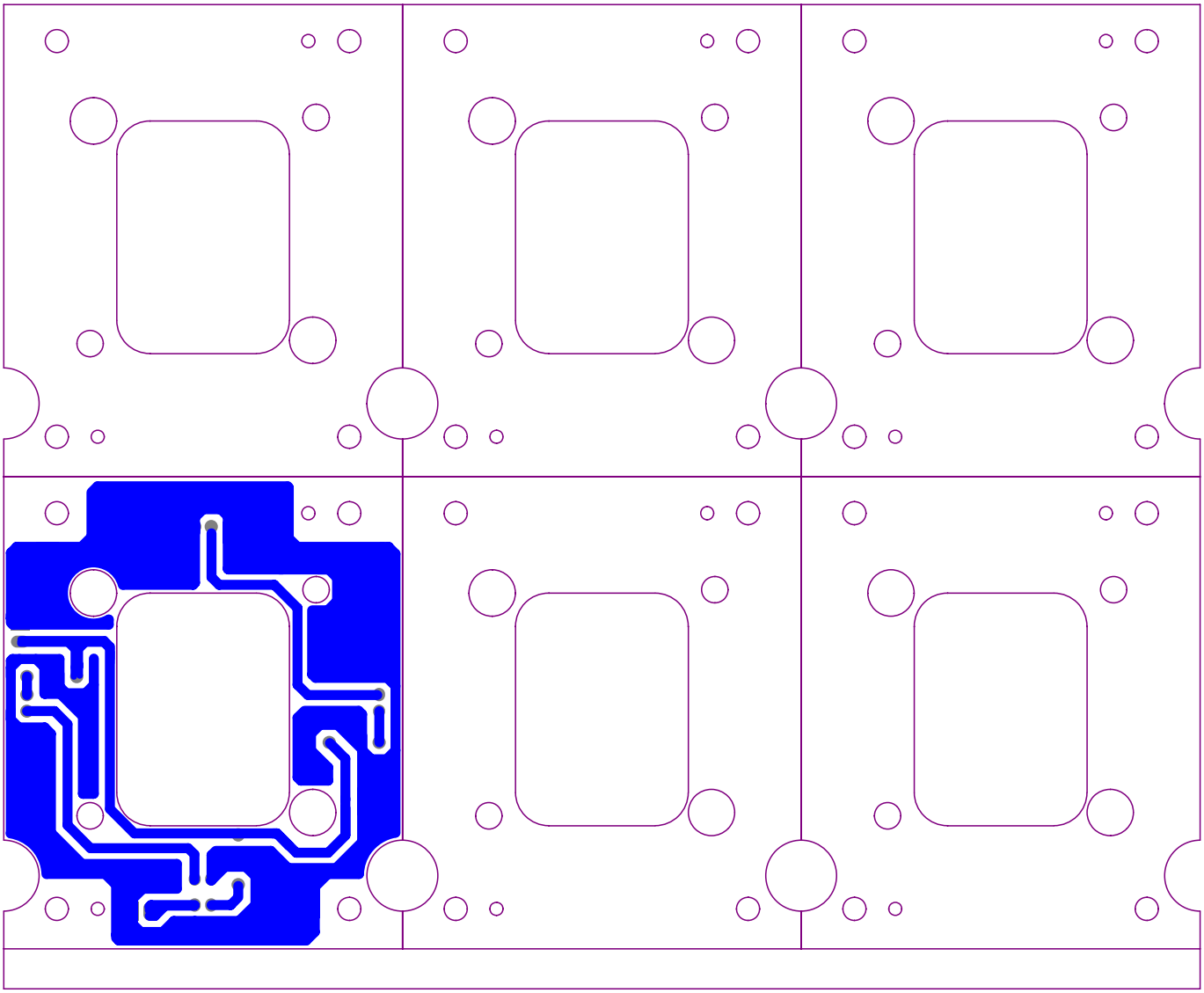
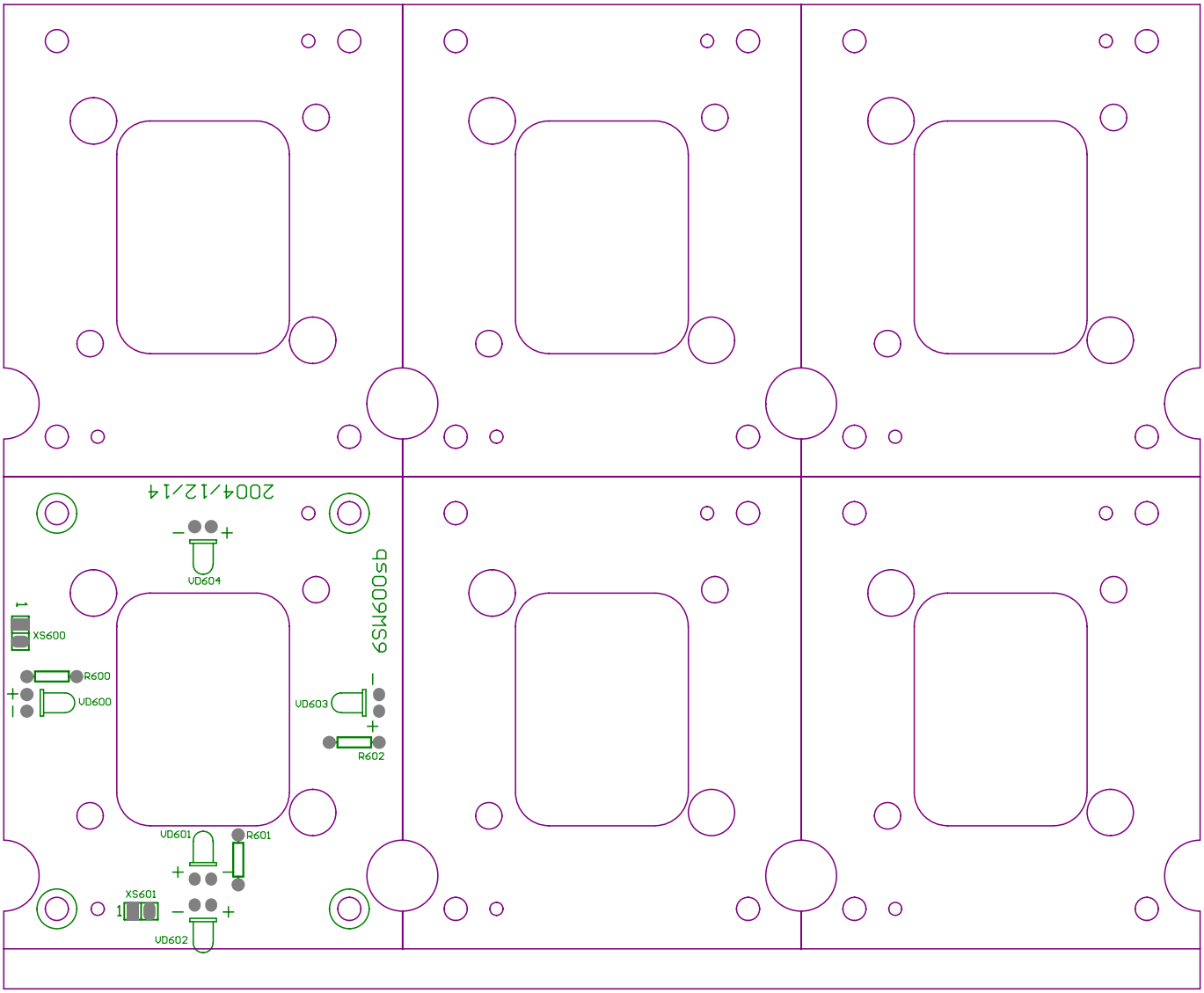
Drawn By:




2004/12/14
qs009MS9
VD604
XS600
R600
VD600
VD603
R602
VD601
R601
XS601
VD602

10. SPARE PARTS LIST

ABS541T MATERIAL LIST

1. MAIN PANEL

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	UANTIT	LOCATION
9	CARBON FILM RESISTOR	1/6W100 Ω ±5%	PCS	1	R407
0260201	CD	CD11C 16V100U±20%6×7 2.5	PCS	3	TC401,TC402,TC407
0620162	LIGHT RADIATION DIODE	3B 3SW WHITE WITH BLUE WIDE VIEW ANGLE	PCS	2	LED401,LED402
3070091	LED BRACKET	VS600	PCS	2	
0620164	LED BACKGROUND LIGHT	QBL04021L-09	PCS	1	LED404
5233743	SOFT SPONGE SPACER	6.5×3×3 SINGLE-FACED SOFT	PCS	1	1PC FOR IR SENSOR OF REMOTE CONTROL
3810065	GROUND SPRING	VS600	PCS	1	
3070090	LCD BRACKET	VS600	PCS	1	
0970003	CERAMIC RESONATOR	455E	PCS	1	X401
0881182	IC	LM1117MP-ADJ SOT-223	PCS	1	U404
0881587	IC	PT2222A SOP	PCS	1	U401
2360028	RECEIVING HEAD	GP1UX301QS	PCS	1	U403
5233621	RUBBER SPACER	VS600 SINGLE-FACED WITH GLUE IN REAR SIDE	PCS	1	1PC FOR RECEIVING HEAD
1940023	SOCKET	7P 2.0mm	PCS	1	XS402
1940044	SOCKET	9P 2.0mm	PCS	1	XS401
1940027	SOCKET	2P 2.0mm	PCS	1	XS403
0160197	DIGITAL POTENTIOMETER	EC11-2A-F17-T0.5-M	PCS	1	XS202
5446712	PCB SEMI-FINISHED PRODUCT	4600-2-SMD VS600	PCS	1	
1210091	LCM	M0745	PCS	1	U402

2. AV BOARD

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	UANTIT	LOCATION
0090001	SMD RESISTOR	1/16W 0 Ω ±5% 0603	PCS	7	R707,R711,R712,R713~R715,R747
90002	SMD RESISTOR	1/16W 2.2Ω ±5% 0603	PCS	1	R706
0090005	SMD RESISTOR	1/16W 33Ω ±5% 0603	PCS	1	R708
0090181	SMD RESISTOR	1/16W 100Ω ±5% 0603	PCS	1	R702
0090009	SMD RESISTOR	1/16W 330Ω ±5% 0603	PCS	1	R709
90012	SMD RESISTOR	1/16W 560 Ω ±5% 0603	PCS	1	R739
0090014	SMD RESISTOR	1/16W 1K ±5% 0603	PCS	3	R720,R731,R742
0090017	SMD RESISTOR	1/16W 2.2K ±5% 0603	PCS	3	R710,R717,R719
0090018	SMD RESISTOR	1/16W 3.3K ±5% 0603	PCS	2	R727,R732
0090240	SMD RESISTOR	1/16W 3.6K ±5% 0603	PCS	1	R728
90019	SMD RESISTOR	1/16W 4.7K ±5% 0603	PCS	4	R704,R705,R733,R744
0090020	SMD RESISTOR	1/16W 5.1K ±5% 0603	PCS	1	R745
0090023	SMD RESISTOR	1/16W 10K ±5% 0603	PCS	3	R740,R741,R743
0090026	SMD RESISTOR	1/16W 22K ±5% 0603	PCS	2	R738,R749
0090025	SMD RESISTOR	1/16W 20K ±5% 0603	PCS	1	R748
0090029	SMD RESISTOR	1/16W 47K ±5% 0603	PCS	1	R716
0090192	SMD RESISTOR	1/16W 51K ±5% 0603	PCS	4	R723,R724,C734,C735
0090034	SMD RESISTOR	1/16W 100K ±5% 0603	PCS	1	R746
0000181	CARBON FILM RESISTOR	1/4W220Ω±5%	PCS	1	R701
171	CARBON FILM RESISTOR	1/4W68Ω±5%	PCS	1	R703
0390095	SMD MAGNETIC BEADS	FCM1608K-221T05	PCS	3	L720,L721,L722
0700004	SMD VOLTAGE REGULATOR DIODE	5.1V ±5% 1/2W	PCS	4	ZD701~ZD704
880185	IC	NJM4558M SOP	PCS	2	U703,U721
780085	SMD TRIODE	8050D	PCS	3	V701~V703
0310234	SMD CAPACITOR	16V 105 +80%-20% Y5V 0603	PCS	2	R721,R722
0310044	SMD CAPACITOR	50V 33P ±5% NPO 0603	PCS	1	C715
0310045	SMD CAPACITOR	50V 47P ±5% NPO 0603	PCS	2	C711,C712
0310047	SMD CAPACITOR	50V 101 ±5% NPO 0603	PCS	2	C7134,C7135
310066	SMD CAPACITOR	50V 102 ±10% X7R 0603	PCS	15	C701~C704,C708,C709,C718~C721,C723,C727,C732,C733,C7136
0310072	SMD CAPACITOR	50V 103 ±10% X7R 0603	PCS	1	C7133
0310207	SMD CAPACITOR	50V 104 ±20% X7R 0603	PCS	6	C705~C707,C717,C722,C710
260196	CD	CD11C 16V10U±20%4×7 1.5	PCS	5	TC710,TC711,TC713,TC715,TC716
260443	CD	GZ 10V1000U±20%8×16 3.5	PCS	1	TC707
0260105	CD	CD110 25V470U±20%10×16 5	PCS	1	TC708
260088	CD	CD110 16V10U±20%5×11 2	PCS	1	TC709
0260689	CD	CD11C 16V22U±20%4×7 C5	PCS	1	TC714
0390057	MAGNETIC BEADS INDUCTOR	RH354708	PCS	16	L701~L704,L706~L715,L716,L717
0700007	SMD DIODE	1N4148	PCS	4	VD701,VD702,D701,D702
0960017	CRYSTAL OSCILLATOR	32.768KHz 3×9	PCS	1	X701
881080	IC	PCF8563T SO8	PCS	1	U701
1090045	ELECTRO-OPTIC TRANSFORMER	TX179ATW	PCS	1	JK702
1090024	ELECTRO-OPTIC TRANSFORMER	TX179AT	PCS	1	JK702
3630185	BATTERY HOLDER	1403G6-GBK4B	PCS	1	U702
3630281	BATTERY HOLDER	1403G7-GBK4B	PCS	1	U702
1632752	PCB	7600A-2	PCS	1	
1910182	TERMINAL SOCKET	AV4-8.4-13/PB-25	PCS	1	JK707

1910198	TERMINAL SOCKET	AV4-8.4-13/PB-26	PCS	1	JK708
1910129	TERMINAL SOCKET	SA-001-012 BLACK IRON PIECE SCREEN-SHIELDED	PCS	1	JK703
1910192	TERMINAL SOCKET	DSW-35	PCS	1	JK706
1860029	SCART SOCKET	SCART-01	PCS	1	JK704
1940193	CABLE SOCKET	15P 1.0mm STRAIGHT DUAL LINE PLUG TOUCH POINT	PCS	1	XS701
1980048	MIC SOCKET	ST-403-070-100	PCS	1	MIC701
1870030	POWER SOCKET	DC-005	PCS	1	JK705
0410118	CHOKE COIL	JLB0904	PCS	1	L705

3. SUBSIDIARY PANEL 1

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	UANTIT	LOCATION
90181	SMD RESISTOR	1/16W 100Ω ±5% 0603	PCS	2	R901,R904
0620161	LED BACKGROUND LIGHT	QBL04022D	PCS	1	LED901,LED904
2121722	FLAT CABLE	2P40 2.0 1PLUG RED/BLACK	PCS	1	
5233671	DUST-PROOF FLUFFY STRIP	VS600 DOUBLE-FACED WITH GLUE IN REAR SIDE	PCS	1	
1563503	PCB	9600-0	PCS	1	

4. SUBSIDIARY PANEL 2

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	UANTIT	LOCATION
1340003	LIGHT TOUCH RESTORE SWITCH	HORIZONTAL 6×6×1	PCS	7	KSWA01~KSWA07
2121771	SOFT FLAT CABLE	7P30 2.0 2PLUG WITH NEEDLE REVERSE	PCS	1	XSA01
5446490	PCB SEMI-FINISHED PRODUCT	A600-0-SMD VS600	PCS	1	

5. POWER BOARD OF SUBWOOFER

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	UANTIT	LOCATION
1940074	SOCKET	2P 7.92mm	PCS	3	XT500,XT501,XT502
3020402	FUSE HOLDER	BLX-2	PCS	1	FL500
1000046	POWER GRID FILTER	@JLB2081 4.5mH +∞-0% UL	PCS	1	L501
210204	ANTI-DISTURBANCE CAPACITOR	@MKP61 X2 275VAC 104M 15 UL	PCS	1	C501
0210206	TERYLENE CAPACITOR	@275V104±10%15mm VDE	PCS	1	C501
2300035	FUSE	@T2AL 250V VDE	PCS	1	FL500
200356	CERAMIC CAPACITOR	@CT7 400V103±20% 10mm VDE	PCS	1	C500
200355	CERAMIC CAPACITOR	@CT81 400V103±20% 12mm VDE	PCS	1	C500
1563806	PCB	@5SW1000B-0 UL	PCS	1	

6. POWER INDICATOR LIGHT BOARD

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	UANTIT	LOCATION
2121746	FLAT CABLE	3P500 2.5 2PLUG WITH L NEEDLE REVERSE	PCS	1	XS600
2121733	FLAT CABLE	2P130 2.5 2PLUG WITH DUAL L NEEDLE THE SAME DIRECTION	PCS	1	XS601
2150221	FLAT CABLE	3P500 2.5 2PLUG 2P SCREEN-SHIELDED WITH L NEEDLE THE SAME DIRECTION	PCS	1	XS602
0000126	CARBON FILM RESISTOR	1/6W560Ω±5% SHAPED 7.5	PCS	1	R600
0000621	CARBON FILM RESISTOR	1/6W750Ω±5% SHAPED 7.5	PCS	1	R601
5800099	VOLTAGE REGULATOR DIODE	9.1V ±5% 1/2W	PCS	3	V601~V603
0000139	CARBON FILM RESISTOR	1/6W20K±5% SHAPED 7.5	PCS	1	R603
620076	LIGHT RADIATION DIODE	3B3HC COLORLESS WITH BLUE	PCS	3	VD600,VD602,VD603
3070715	LED BRACKET	H=12.2mm SW600	PCS	3	
2100006	CONNECTION CORDS	Φ0.6 SHAPED 12.5mm	PCS	2	W1,W2
0160205	ROTATED POTENTIOMETER	WH11-4D-B20K-F20	PCS	1	RP601
1563772	PCB	6SW600-2	PCS	1	

7. POWER INDICATOR LIGHT BOARD 2

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	UANTIT	LOCATION
0620076	LIGHT RADIATION DIODE 2	3B3HC COLORLESS WITH BLUE	PCS	1	VD01
1563717	PCB	ASW600-1	PCS	1	

8. LIGHT BOARD OF MAIN SPEAKER

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	UANTIT	LOCATION
126	CARBON FILM RESISTOR	1/6W560Ω±5% SHAPED 7.5	PCS	1	R01
0620076	LIGHT RADIATION DIODE	3B3HC COLORLESS WITH BLUE	PCS	2	VD01,VD02
1563796	PCB	MP600-1	PCS	1	

9. POWER AMPLIFIER BOARD

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	UANTIT	LOCATION
0000499	CARBON FILM RESISTOR	1W4.7Ω±5% SHAPED R 15×9	PCS	1	R428
537	CARBON FILM RESISTOR	2W220Ω±5% SHAPED R 20×8	PCS	1	R433
0210055	TERYLENE CAPACITOR	100V 822 ±10% 3.5mm	PCS	1	C404
0260486	CD	CD11 35V4700U±20% 18×30 7.5	PCS	1	TC414
0570020	DIODE	1N5404	PCS	4	VD400,VD401,VD402,VD403
0880308	IC	KA4558 DIP	PCS	2	N400,N401
2300006	FUSE	T4AL 250V	PCS	2	FL400,FL401
3870057	FUSE HOLDER		PCS	4	FL400,FL401

1940001	SOCKET	2P 2.5mm	PCS	1	XT403
1940002	SOCKET	3P 2.5mm	PCS	2	XT405,XT401
1940004	SOCKET	5P 2.5mm	PCS	1	XT404
1940006	SOCKET	6P 2.5mm	PCS	1	XT400
1940040	SOCKET	3P 3.96mm	PCS	1	XT402
0410200	CHOKE COIL	VERTICAL 10UH 4A 5mm	PCS	2	L401,L402
5447296	PCB SEMI-FINISHED PRODUCT	4SW1000B-0 ABS541T AI	PCS	1	

10. INPUT AND OUTPUT BOARD OF SUBWOOFER

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	UANTITI	LOCATION
1910192	TERMINAL SOCKET	DSW-35	PCS	1	X100
2150232	FLAT CABLE	6P300 2.5 2PLUG 5P SCREEN-SHIELDED THE SAME DIRECTION	PCS	1	
2100010	CONNECTION CORDS	Φ0.6 SHAPED 5mm	PCS	1	W1
2121869	FLAT CABLE	5P340 2.5 2PLUG WITH NEEDLE THE SAME DIRECTION	PCS	1	XS101
0000126	CARBON FILM RESISTOR	1/6W560 Ω ±5% SHAPED 7.5	PCS	2	R101,R102
1563820	PCB	1SW600-1	PCS	1	

11. DECODE BOARD

MATERIAL CODE	MATERIAL NAME	SPECIFICATIONS	UNIT	UANTITI	LOCATION
90001	SMD RESISTOR	1/16W 0 Ω ±5% 0603	PCS	26	R222,R245,R247,R201~R204,R212,R228,R234,R236,R297,R298,R299,R303,R318,R331,R2106,R2165,R2166,R257,R258,L330,L331,R2230,R2231
0090272	SMD RESISTOR	1/16W1Ω±5% 0603	PCS	6	R304~R307,R321,R340
0090003	SMD RESISTOR	1/16W 10 Ω ±5% 0603	PCS	2	R301,R302
0090005	SMD RESISTOR	1/16W 33Ω ±5% 0603	PCS	7	R231,R232,R256,R263,R264,R266,R268
0090006	SMD RESISTOR	1/16W 75 Ω ±5% 0603	PCS	7	R261,R270,R273,R274,R276,R280,R233
90181	SMD RESISTOR	1/16W 100Ω ±5% 0603	PCS	5	R325,R327,R329, R341,R285
0090221	SMD RESISTOR	1/16W 120Ω ±5% 0603	PCS	1	R353
0090232	SMD RESISTOR	1/16W 150Ω ±5% 0603	PCS	1	R218
0090008	SMD RESISTOR	1/16W 220Ω ±5% 0603	PCS	11	R323,R324,R2168~R2172,R2176~R2179
0090239	SMD RESISTOR	1/16W 200Ω ±5% 0603	PCS	1	R354
0090013	SMD RESISTOR	1/16W 680Ω ±5% 0603	PCS	1	R2109
0570003	DIODE	1N4001	PCS	1	VD237
0090014	SMD RESISTOR	1/16W 1K ±5% 0603	PCS	18	R213,R215,R2103,R2104,R2117~R2120,R254,R2180,R2181,R290,R251,R291~R294,R284
0090016	SMD RESISTOR	1/16W 1.5K ±5% 0603	PCS	1	R243
90249	SMD RESISTOR	1/16W 510Ω ±5% 0603	PCS	1	R214
0090018	SMD RESISTOR	1/16W 3.3K ±5% 0603	PCS	2	R242,R278
0090224	SMD RESISTOR	1/16W 3.9K ±5% 0603	PCS	2	R279,R2132
90019	SMD RESISTOR	1/16W 4.7K ±5% 0603	PCS	11	R230,R238~R240,R2130,R2131,R2134,R2135,R2221,R2140,R289
90225	SMD RESISTOR	1/16W 5.6K ±5% 0603	PCS	2	R2211,R2212
0090021	SMD RESISTOR	1/16W 6.8K ±5% 0603	PCS	2	R2136,R2148
0090223	SMD RESISTOR	1/16W 2K ±5% 0603	PCS	6	R237,R2209,R2210,R2213~R2215
0090023	SMD RESISTOR	1/16W 10K ±5% 0603	PCS	30	R208,R252,R309,R311,R314,R339,R342,R343,R2142,R2143,R2160,R2161,R2163,R2164,R2167,R205,R2107,R259,R260,R286,R250,R313,R2101,R2102,R2194~R2197,R2174,R2175
0090187	SMD RESISTOR	1/16W 12K ±5% 0603	PCS	4	R220,R225,R2185,R2225
90024	SMD RESISTOR	1/16W 15K ±5% 0603	PCS	2	R209,R223
0090188	SMD RESISTOR	1/16W 18K ±5% 0603	PCS	1	R210
0090025	SMD RESISTOR	1/16W 20K ±5% 0603	PCS	6	R211,R312,R315,R316,R2129, R2133
90028	SMD RESISTOR	1/16W 33K ±5% 0603	PCS	1	R330
0090034	SMD RESISTOR	1/16W 100K ±5% 0603	PCS	8	R224,R246,R249,R271,R308,R310,R2111,R2112
0090197	SMD RESISTOR	1/16W 150K ±5% 0603	PCS	2	R319,R320
0090208	SMD RESISTOR	1/16W 470K ±5% 0603	PCS	1	R2208
0090231	PRECISION SMD RESISTOR	1/16W 680K ±1% 0603	PCS	2	R317,R322
90464	PRECISION SMD RESISTOR	1/16W 27K±1% 0603	PCS	1	R207
0090304	PRECISION SMD RESISTOR	1/16W 10K±1% 0603	PCS	1	R206
0100019	SMD RESISTOR NETWORKS	1/16W33Ω ±5% 8P	PCS	2	RN201,RN202
1030015	SMD VOLTAGE DEPENDENT RESISTOR	SFI0603-050E220NP	PCS	1	C300
0090319	PRECISION SMD RESISTOR	1/16W 750K ±1% 0603	PCS	1	R227
00003759	CARBON FILM RESISTOR	1/4W2.2 Ω ±5%	PCS	1	R326
00001689	CARBON FILM RESISTOR	1/4W39 Ω ±5%	PCS	1	R295

0310234	SMD RESISTOR	16V 105 +80%-20% Y5V 0603	PCS	21	C201~C204,C221,C240,C231,C232,C268,C269,C272,C284,C285,C209,C317,C318,C329,C330,C209,TC242,TC243
0310055	SMD CAPACITOR	16V 333 ±10% X7R 0603	PCS	1	C225
310056	SMD CAPACITOR	16V 473 ±10% X7R 0603	PCS	2	C219,C220
0310362	SMD CAPACITOR	16V 474 +80%-20% Y5V 0603	PCS	3	C218,C2106,C2117
0310085	SMD CAPACITOR	50V 20P ±5% NPO 0603	PCS	1	C222
310190	SMD CAPACITOR	50V 27P ±5% NPO 0603	PCS	2	C275,C276
310044	SMD CAPACITOR	50V 33P ±5% NPO 0603	PCS	2	C2130,C2128
0310045	SMD CAPACITOR	50V 47P ±5% NPO 0603	PCS	30	C262~C266,C280,C290,C292,C293,C295,C296,C298,C299,C2101,C2102,C2105,C2116,C2126,C326,C2150~C2159,C2144
0310046	SMD CAPACITOR	50V 82P ±5% NPO 0603	PCS	1	C2141
0310047	SMD CAPACITOR	50V 101 ±5% NPO 0603	PCS	6	C206,C233,C2111,C2114,C2123,C216
0310066	SMD CAPACITOR	50V 102 ±10% X7R 0603	PCS	6	C223,C278,C2112,C2115,C215,C328
310072	SMD CAPACITOR	50V 103 ±10% X7R 0603	PCS	1	C2125
0310207	SMD CAPACITOR	50V 104 ±20% X7R 0603	PCS	85	C207,C211,C214,C217,C224,C226~C230,C234~C239,C241~C254,C256~C259,C267,C270,C271,C273,C274,C279,C289,C291,C301~C303,C305,C309,C311~C316,C2104,C2119,C2127,C2145,C2163~C2164,C2166~C2171,C2174,C2175,C208,C2133,C2113,C286~C288,C283,C294,C297,C2121,C282,C281,C319,C331,C332,C2140,C2109,C2110
310068	SMD CAPACITOR	50V 222 ±10% X7R 0603	PCS	3	C307,C310,C2107
0310231	SMD CAPACITOR	50V 122 ±10% X7R 0603	PCS	2	C2122,C2129
0310048	SMD CAPACITOR	50V 151 ±5% NPO 0603	PCS	3	C304,C306,C2139
0310201	SMD CAPACITOR	50V 153 ±10% X7R 0603	PCS	2	C210,C308
0310202	SMD CAPACITOR	50V 223 ±10% X7R 0603	PCS	1	C2118
310118	SMD CAPACITOR	50V 272 ±5% X7R 0603	PCS	2	C2120,C2124
0310051	SMD CAPACITOR	50V 331 ±5% NPO 0603	PCS	3	C212,C213,C2108
02603879	CD	CD11C 16V10U±20%4×7 C5	PCS	12	TC240,TC241,TC236,TC265,TC233,TC225,TC201,TC202,TC232,TC253~TC254,TC217
2606899	CD	CD11C 16V22U±20%4×7 C5	PCS	2	TC208,TC247
2603889	CD	CD11C 16V47U±20%5×7 C5	PCS	8	TC210,TC302~TC304,TC308,TC309,TC226,TC215
02601139	CD	CD11C 16V100UF±20%6×7 C5	PCS	2	TC231,TC246
02606819	CD	CD11C 16V220U±20% 8×7 C5	PCS	7	TC239,TC207,TC205,TC209,TC235,TC301,TC245
02603859	CD	CD11 16V470U±20%8×12 C5	PCS	2	TC212,TC213
02606829	CD	CD11C 25V47U±20% 6×7 C5	PCS	1	TC211
02601919	CD	CD11C 50V2.2U±20%4×7 C5	PCS	9	TC203,TC259~TC261,TC258,TC262~TC264,TC214
0390095	SMD MAGNETIC BEADS	FCM1608K-221T05	PCS	34	L201~L203,L234,L235,L236,L309,L226,L204,L229~L233,L301,L304,L305,L307,L308,L310,L311,L312,L314,L316~L324,L208,L209
0700007	SMD DIODE	1N4148	PCS	18	VD201~VD203,VD205~VD207,VD210~VD221
700001	SMD DIODE	LS4148	PCS	18	VD201~VD203,VD205~VD207,VD210~VD221
700002	SMD DIODE	LL4148	PCS	18	VD201~VD203,VD205~VD207,VD210~VD221
0700004	SMD VOLTAGE REGULATOR DIODE	5.1V ±5% 1/2W	PCS	14	VD224~VD236,VD204
0700056	SMD DUAL DIODE	MMBD4148SE SOT-23	PCS	1	VD223
0700113	SMD VOLTAGE REGULATOR DIODE	9.1V ±5% 1/2W	PCS	1	VD222
0680013	SCHOTTKY DIODE	1N5819	PCS	1	VD208
780193	SMD TRIODE	2SK3018	PCS	2	V303,V304
0780040	SMD TRIODE	3904(100-300) SOT-23	PCS	1	V305
0780129	SMD TRIODE	8550D(160-300) SOT-23	PCS	1	Q202
780085	SMD TRIODE	8050D	PCS	1	Q203
0780063	SMD TRIODE	9015C	PCS	1	Q204
0780115	SMD TRIODE	2SB1132	PCS	2	V301,V302
0780062	SMD TRIODE	9014C	PCS	1	V310
0780197	SMD TRIODE	C1815	PCS	4	Q205,Q206,Q207,Q212
780198	SMD TRIODE	2SA1015	PCS	3	Q211,Q218,Q219
07800309	TRIODE	8550C	PCS	2	V306,V309
07800299	TRIODE	C8050	PCS	2	V307,V308
0390096	SMD INDUCTOR	1.8UH ±10% 1608	PCS	6	L243~L248
0390355	SMD INDUCTOR	4.7UH ±10% 1608	PCS	5	L205~L207,L303,L306
0960020	CRYSTAL OSCILLATOR	27.00MHz 49-S	PCS	1	X201
0882257	IC	MT1389FE/C(C VERSION) QFP	PCS	1	U201

0881031	IC	24C02N SOP	PCS	1	U202
0882758	IC	PT2314A SOP	PCS	1	U203
880322	IC	MM74HCU04M SOP	PCS	1	U205
0880513	IC	HCU04 SOP	PCS	1	U205
0881304	IC	ZA3020 SO8	PCS	1	U206
882022	IC	CS4340A SOP	PCS	1	U207
881501	IC	AMS1084CD TO-252	PCS	1	U208
0881182	IC	LM1117MP-ADJ SOT-223	PCS	1	U209
0881969	IC	IP1117-ADJ SOT-223	PCS	1	U209
0882461	IC	AZ1117H-ADJ SOT-223	PCS	1	U209
0881415	IC	HY57V641620HGT-7 TSOP	PCS	1	U211
881872	IC	KSV464P4JA-70 TSOP	PCS	1	U211
0881263	IC	PCM1801U SOP	PCS	1	U210
0881456	IC	SAA6588 SO20	PCS	1	U204
08816129	IC	UTC78L09 TO-92M	PCS	1	U212
881378	IC	BA5954FP HSOP	PCS	1	U302
08806989	IC	HA178L05PA TO-92M	PCS	1	U216
0880185	IC	NJM4558M SOP	PCS	2	U219,U220
0960226	CRYSTAL OSCILLATOR	4.332MHz 49-s	PCS	1	X202
1632658	PCB	2600-2	PCS	1	
410011	CHOKE COIL	VERTICAL 10UH 2A 5mm	PCS	2	L227,L237
0410133	VERTICAL SCREEN-SHIELDED FILTERING INDUCTOR	22UH 2A 5mm	PCS	1	L228
1940044	SOCKET	9P 2.0mm	PCS	1	XS201
1940027	SOCKET	2P 2.0mm	PCS	1	XS302
1940198	CABLE SOCKET	6P 1.0mm SMD WITH LCASP	PCS	1	XS303
1940022	SOCKET	4P 2.0mm	PCS	1	XS304
1940026	SOCKET	3P 2.0mm	PCS	1	XS305
1940072	CABLE SOCKET	6/5P 1.25mm STRAIGHT DUAL LINE PLUG	PCS	1	XS205
1940193	CABLE SOCKET	15P 1.0mm STRAIGHT DUAL LINE PLUG	PCS	1	XS204
1940281	CABLE SOCKET	24P 0.5mm SMD VERTICAL REVERSE CONNECTION INNER CLASP	PCS	1	XS301