DAEWOO ELECTRONICS

Service Manual

DVD PLAYER

MODEL: DG-K301

✓ **Caution :**

In this Manual, some parts can be changed for improving, their performance without notice in the parts list. So, if you need the latest parts information,please refer to PPL(Parts Price List) in Service Information Center.

July. 2007

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SPECIFICATIONS

Laser		wavelength 650nm
Video		PAL/AUTO/NTSC
Frequency response		20Hz ~ 20KHz (±1dB)
Signal/noise ratio		≥90dB
Channel separation		≥85dB (1KHz)
Dynamic range		≥80dB (1KHz)
Output Audio	Analog	output level : 2.0 + 0/-0.2Vrms (Load impedance : 1,0KΩ)
	Digital	output level : 0.5 ±0.1Vp-p (Load impedance : 75Ω)
Output Video	Composite	output level : 1.0 ±0.1Vp-p (Load impedance : 75Ω, imbalance, negative polarity)
	S-video	output level : brightness(Luma) 1.0 ±0.1Vp-p Chromaticity (Color) 0.286 ±20% (Load impedance : 75Ω)
	Component	Y: 1Vp-p, Pb/Pr: 0.7Vp-p (Load impedance : 75Ω)
Power		100-240V~, 50Hz~60Hz 12W
Dimensiones	Body (W x H x D)	360 x 38 x 215 mm
	Packing	437 x 90 x 280 mm
Weight (Gross / Net)		1.97Kg / 1.41Kg

Notes : Design and specifications in this instruction manual are subjected to change without prior notice toimprove quality and function.

DVD Audio output standards

Output	Disc type		
	DVD	VIDEO-CD	CD
Analogue Audio output	48/96KHz sampling	44.1KHz sampling	44.1KHz sampling
Digital Audio output	48KHz sampling	44.1KHz sampling	44.1KHz sampling

CIRCUIT OPERATIONAL DESCRIPTION

1. DVD Module

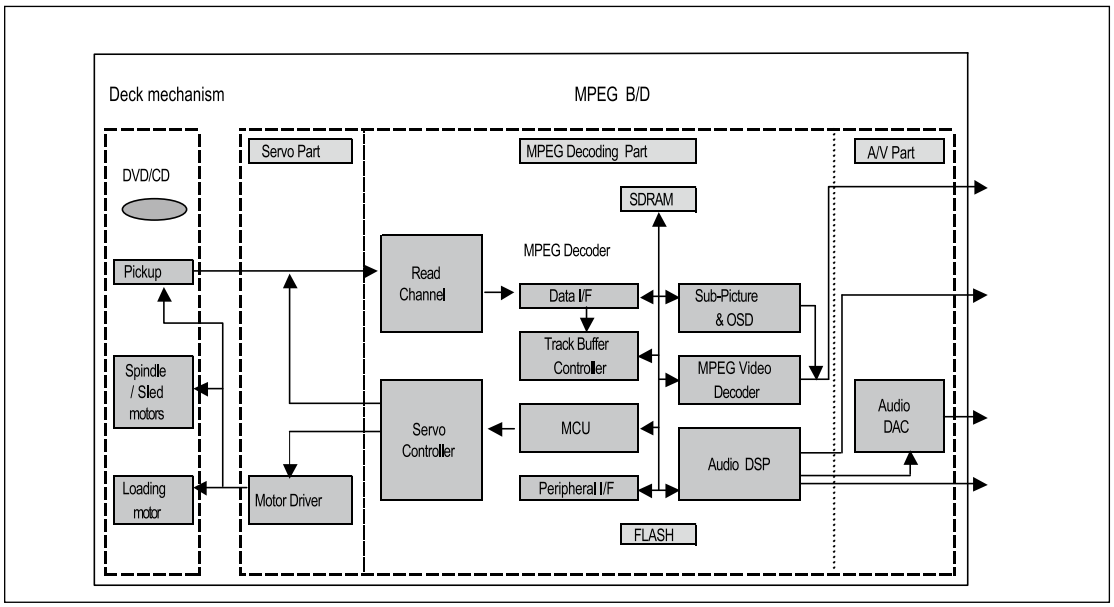
1) Summary

DVD One Board consists of: Loader part that reads and transmits audio and video data saved at Optic Discs (DVD, CD-DA, VCD, CD-R) to MPEG Decoder part; MPEG Decoder part, which, by decoding and encoding data received from the Loader, produces analog signals; and u-Com that controls the overall system including the loader and MPEG decoder.

2) How Does it Operate

Insert the power cord and then power transmitted to each IC, and the SET will be the STAND-BY status which requires the least power for input the front panel key, input the STAND BY/ ON key, extinguished the LED. Once the Power On key is entered, u-Com recognizes it and initiates each chipset, performs sequential algorithms such as determining whether the disc is in or not, and if in, what type of disc is loaded.

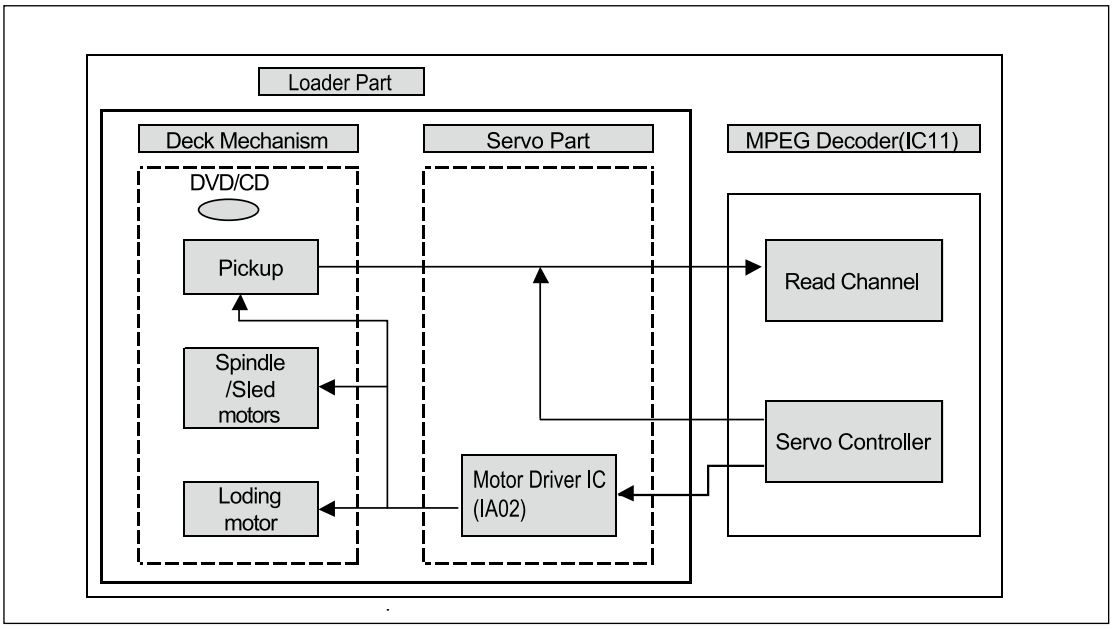
Through this process, it can read disc data before transmitting it to the MPEG Decoder. The MPEG Decoder will then decode and encode such data before generating the final analog audio and video signal outputs.



DVD-MODULE Block Diagram

3) Loader Part

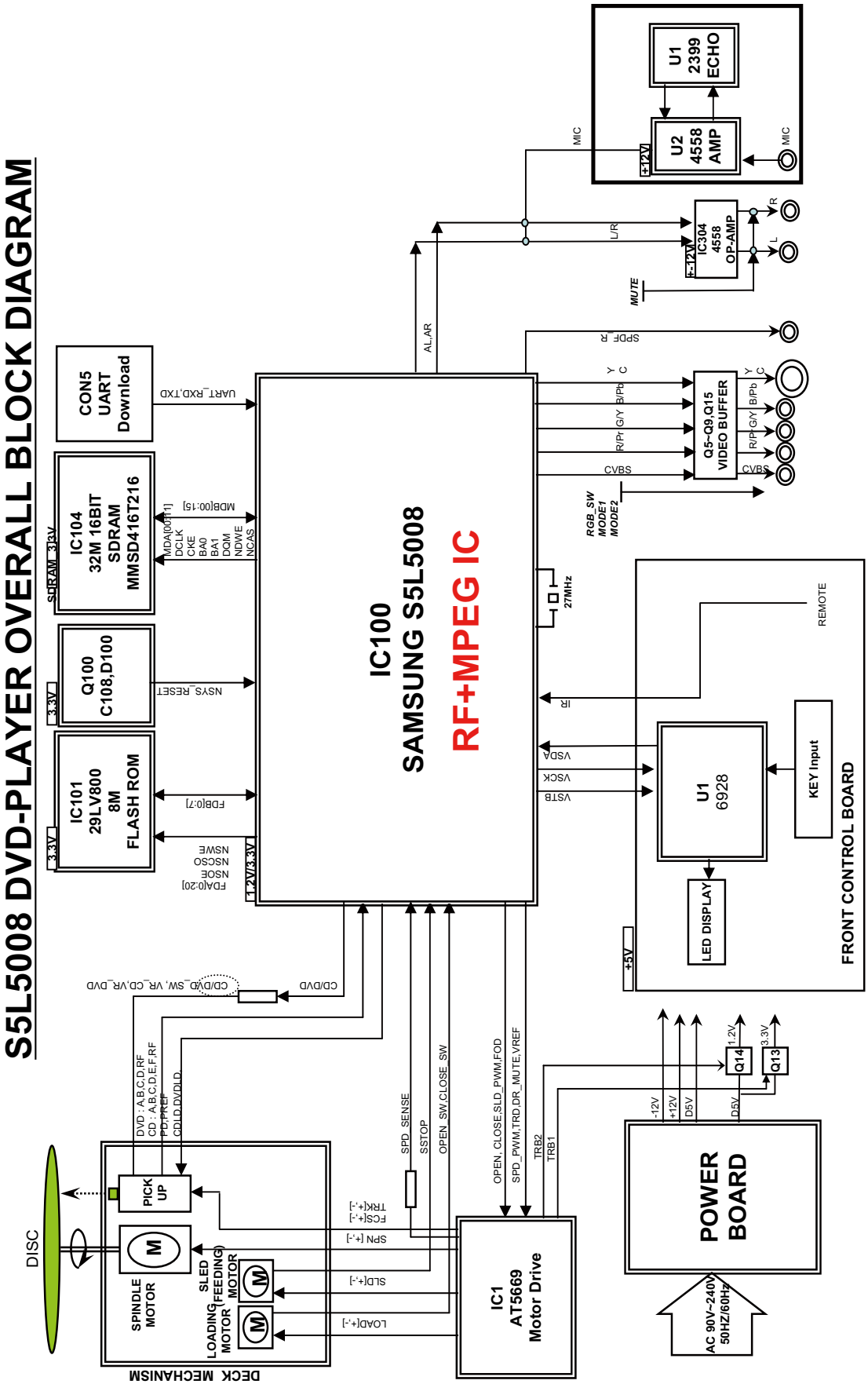
The loader which read the data of audio/video from optic disc and transfer them to MPEG decoder can be divided into Deck total DVD assay(in a short term, Mecha) and Servo. Mecha mounts with the optical pick-up which allows reading the signal of a disc using laser beam and makes it operates and consists of the deck mechanism which allows loading a disc and reading the data. Servo is a sort of circuit which allows operating the loader and recovering the data and consists of Motor Drive IC operating the spindle, the sled, the loading motor.



Loader Block Diagram

2. Overall Block Diagram--S5L5008(2CH)

1) 2CH



3. MPEG Decoder

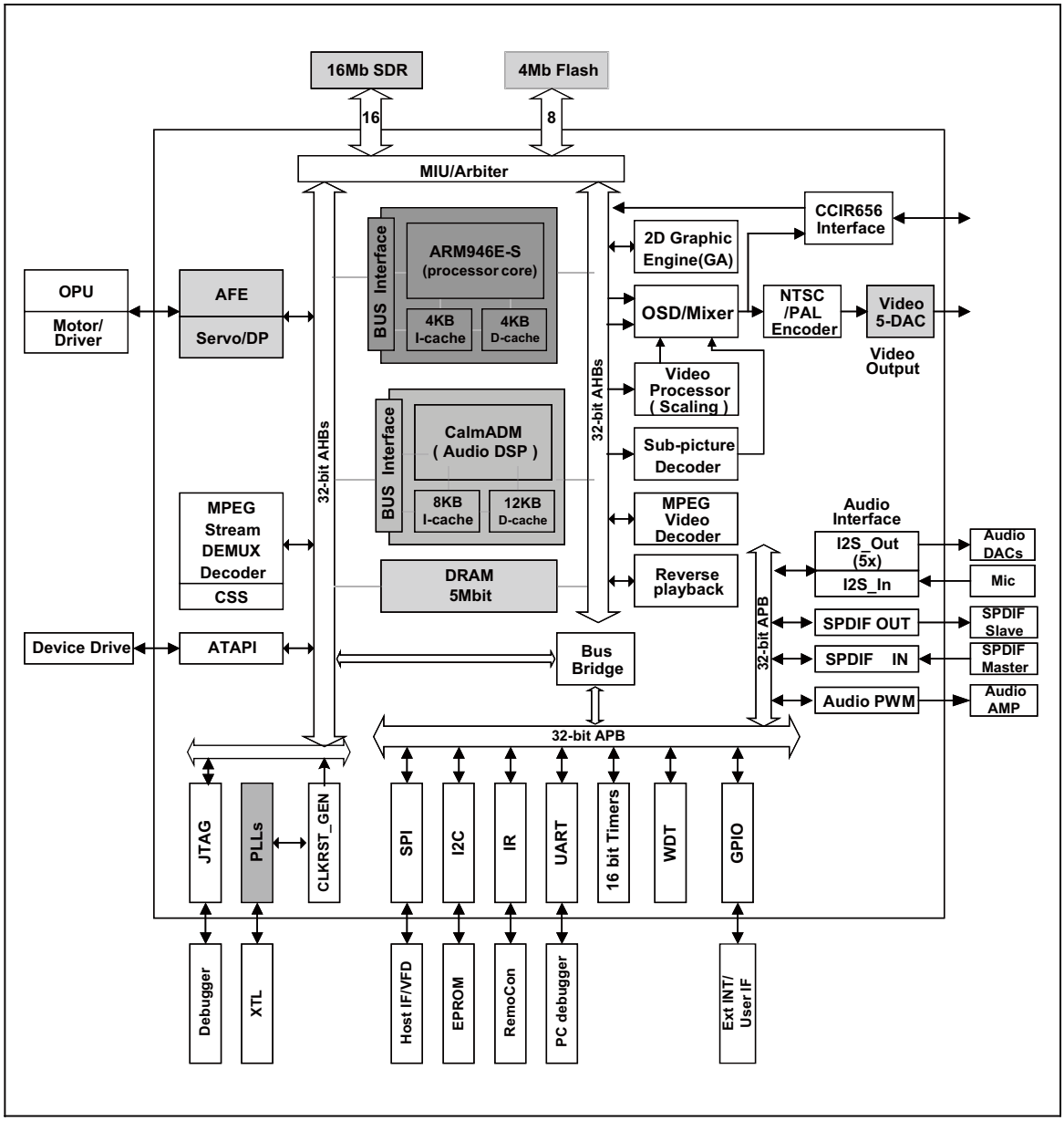
The signal read from DVD disc is output into the RF signal and Servo related signal through the RF IC and they are input into the MPEG decoder and processed the MPEG decoding and divided into video/audio signal. The video signal is output into the analog audio signal through the built-in encoder block and also the audio signal into the audio DAC through the audio decoder block.
MPEG decoder consists of existing MPEG-2 decoder and single chip combined the digital signal processing part which is the core technology of DVD player with the Servo controller.

1) DVD Servo And MPEG-2 Decoder : S5L5008

SAMSUNG S5L5008 DVD SoC is designed to provide a cost-effective, low power size and high performance DVD players solution for DVD-Video, DVD-Audio & many of CD applications. To reduce total system cost, S5L5008 also providesthe following features: a Optical RF,a front-end controller, a back-end decoder, a control CPU with separate 4KB Instruction and 4KB Data Cache, an improved audio DSP, a programmable video encoder with a dual output capability of interlaced and progressive scan, Memory controller, 4-channel Timers with PWM, I/O Ports, 1-channel 10-bit ADCsfor Servo control, 5-channel 10-bitVideo-DACs, 1-channel UART with handshake, IIC-BUS interface, IIS-BUS interface, SIO, 6-in-1 Card Interface, SPDIF in/out, Audio PWM outand PLL for clock generation.

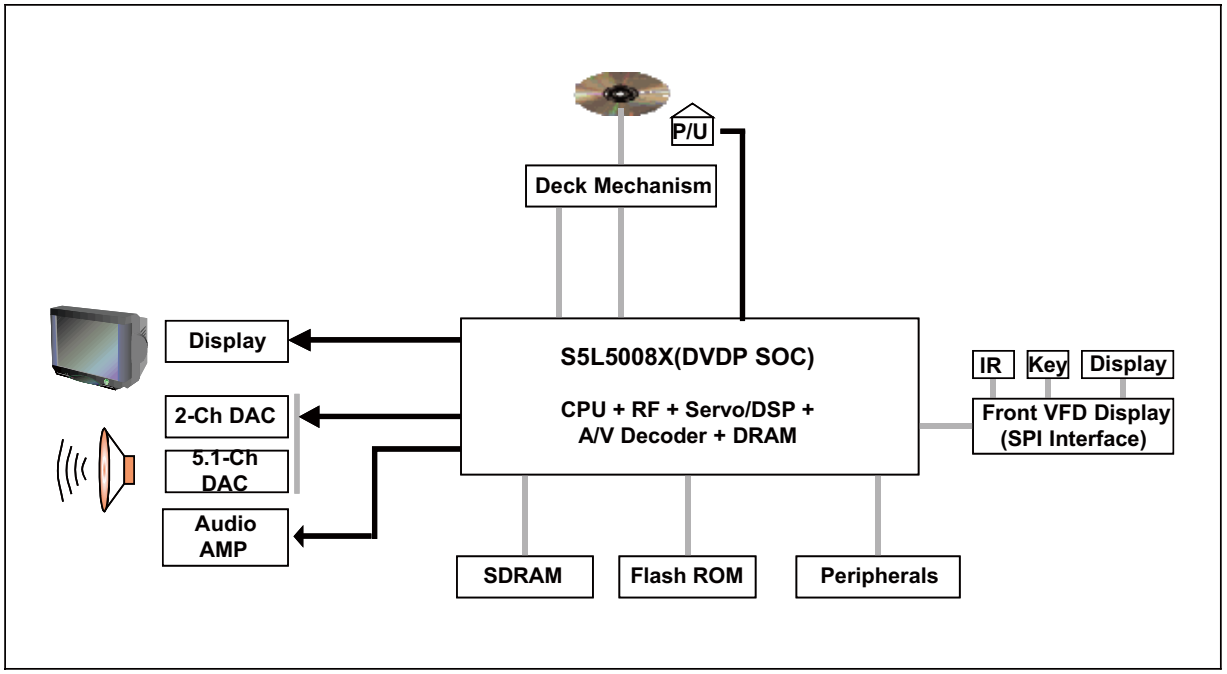
The S5L5008 is fabricated in a standard 0.13um CMOS technology. Its low-power, simple, elegant and fully static design is particularly suitable for cost-sensitive and power-sensitive applications.

The S5L5008 is built around the outstanding CPU core: The ARM946E-S cached processor is a member of the ARM9 Thumb family of high-performance 32-bit system-on-a-chip processor solutions. It provides a complete high performance CPU subsystem, including ARM9TDMI RISC integer CPU, 4KB instruction/data caches, write buffer, and protection unit, with an AMBA bus interface. The ARM9TDMI core within the ARM946E-S executes both the 32-bit ARM and 16-bit Thumb instruction sets, allowing the user to trade off between high performance and high code density. It is binary compatible with ARM7TDMI, ARM10TDMI, and StrongARM processors, and is supported by a wide range of tools, operating systems, and application software.

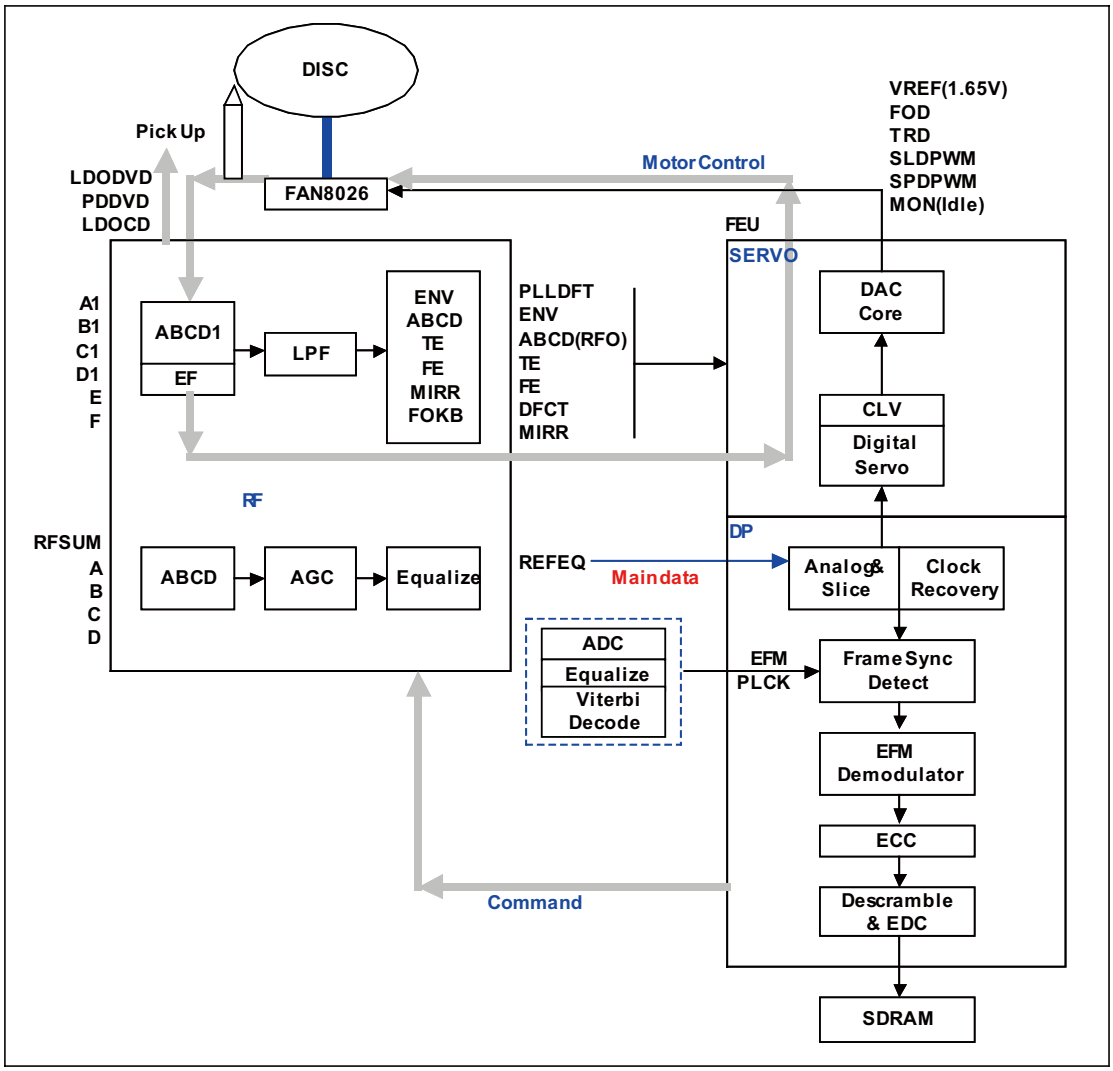


S5L5008 Block Diagram

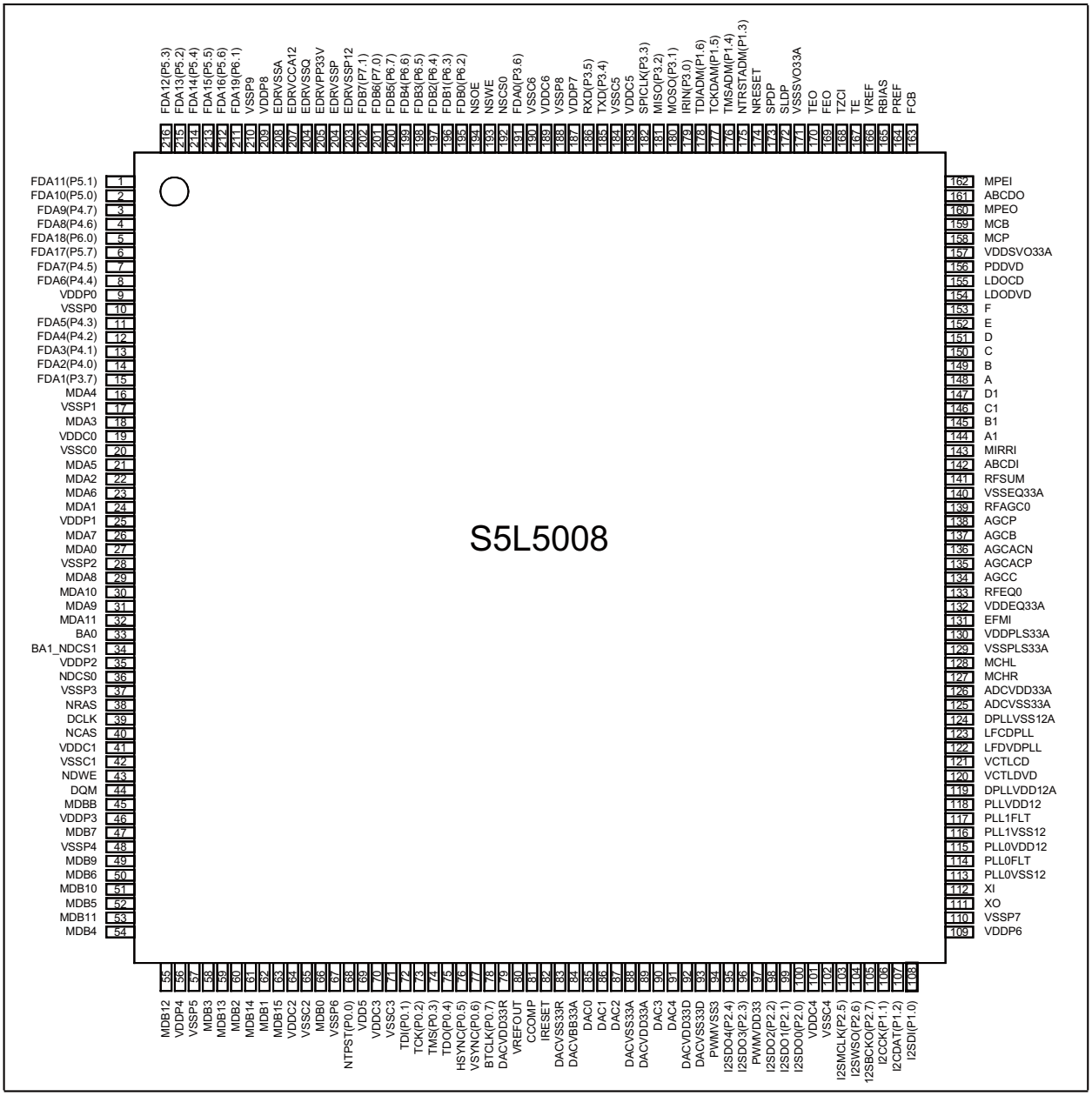
CIRCUIT OPERATIONAL DESCRIPTION



S5L5008 System Diagram(Servo Application)



S5L5008 Servo Control Flow



S5L5008 Pin Assignments (216-QFP)

2) Flash Memory : ES29LV800DB-70TG

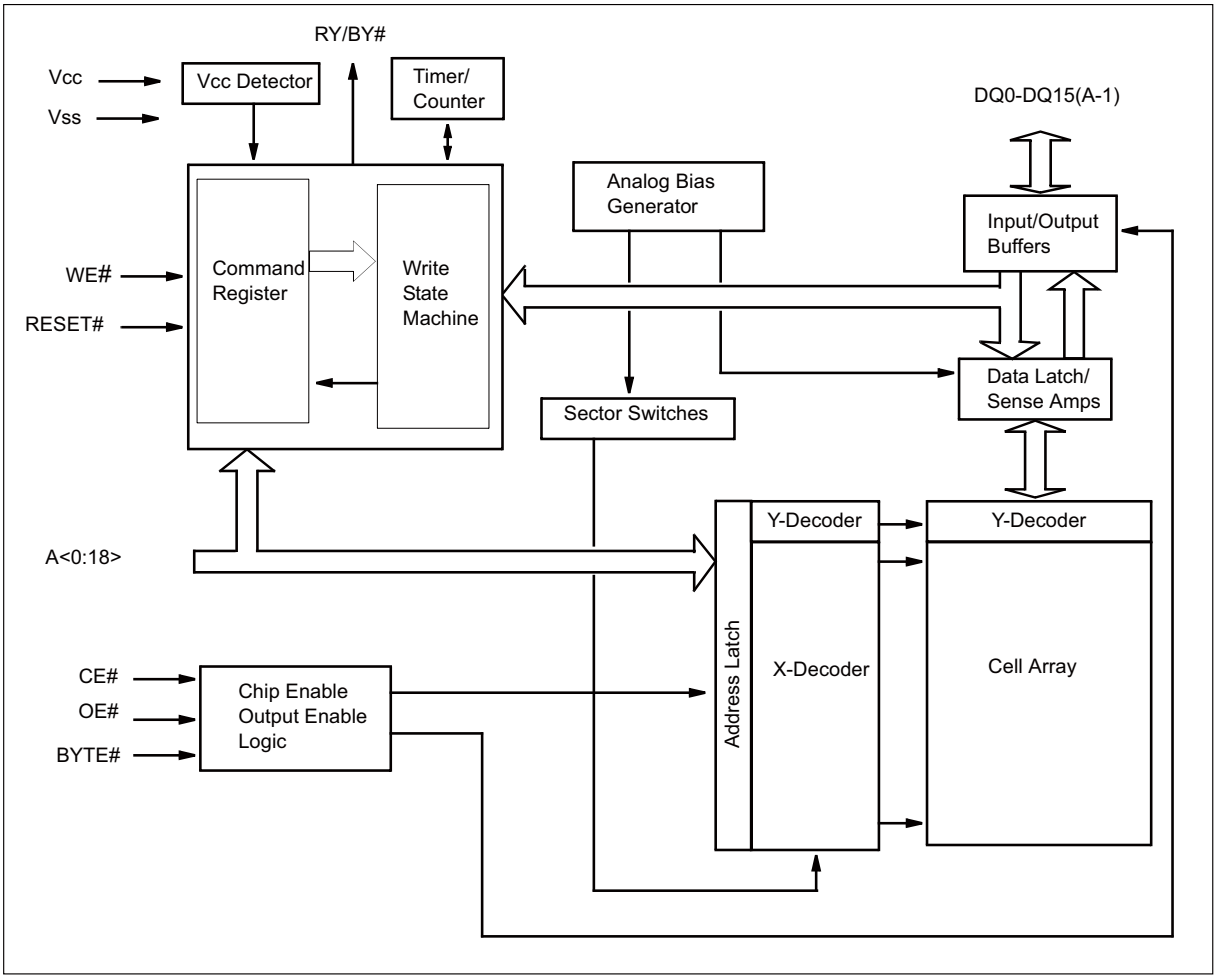
Description

The ES29LV800 is a 8 megabit, 3.0 volt-only flash memory device, organized as 1M x 8 bits (Byte mode) or 512K x 16 bits (Word mode) which is configurable by BYTE#. Four boot sectors and fifteen main sectors are provided : 16Kbytes x 1, 8Kbytes x 2, 32Kbytes x 1 and 64Kbytes x 15. The device is manufactured with ESI's proprietary, high performance and highly reliable 0.18um CMOS flash technology. The device can be programmed or erased in-system with standard 3.0 Volt Vcc supply (2.7V-3.6V) and can also be programmed in standard EPROM programmers. The device offers minimum endurance of 100,000 program/erase cycles and more than 10 years of data retention.

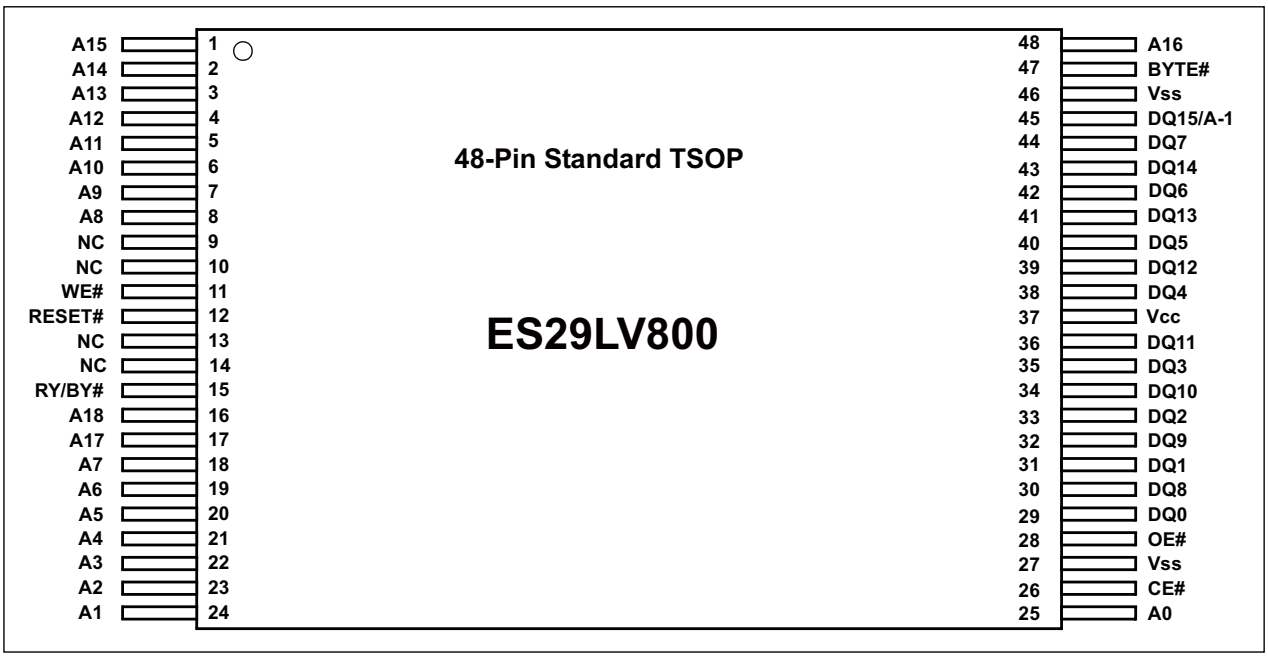
The ES29LV800 offers access time as fast as 70ns or 90ns, allowing operation of high-speed microprocessors without wait states. Three separate control pins are provided to eliminate bus contention : chip enable (CE#), write enable (WE#) and output enable (OE#).

All program and erase operation are automatically and internally performed and controlled by embedded program/erase algorithms built in the device. The device automatically generates and times the necessary high-voltage pulses to be applied to the cells, performs the verification, and counts the number of sequences. Some status bits (DQ7, DQ6 and DQ5) read by data# polling or toggling between consecutive read cycles provide to the users the internal status of program/erase operation: whether it is successfully done or still being progressed.

The ES29LV800 is completely compatible with the JEDEC standard command set of single power supply Flash. Commands are written to the internal command register using standard write timings of microprocessor and data can be read out from the cell array in the device with the same way as used in other EPROM or flash devices.

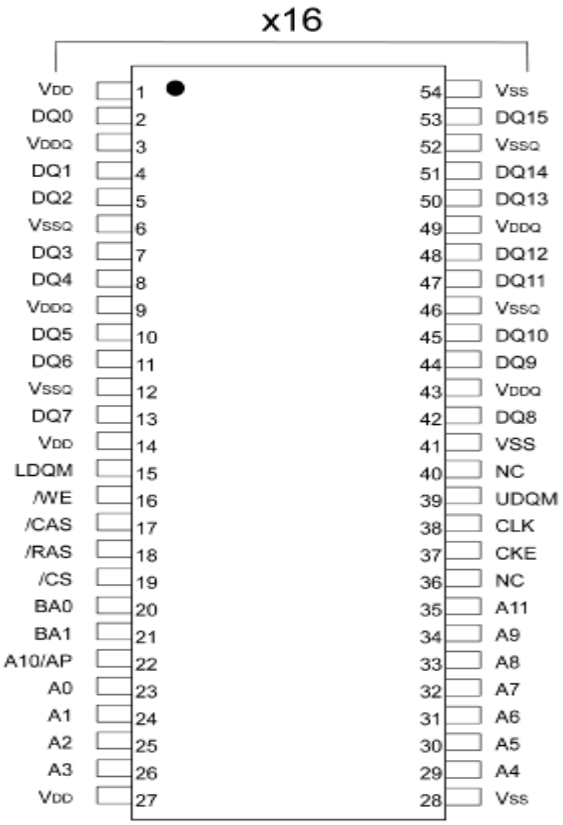


FLASH ES29LV800 Block Diagram



FLASH ES29LV800 Pin Assignments

3) SDRAM : MMSD416T216-O



SDROM MMSD416T216-O Pin Assignments

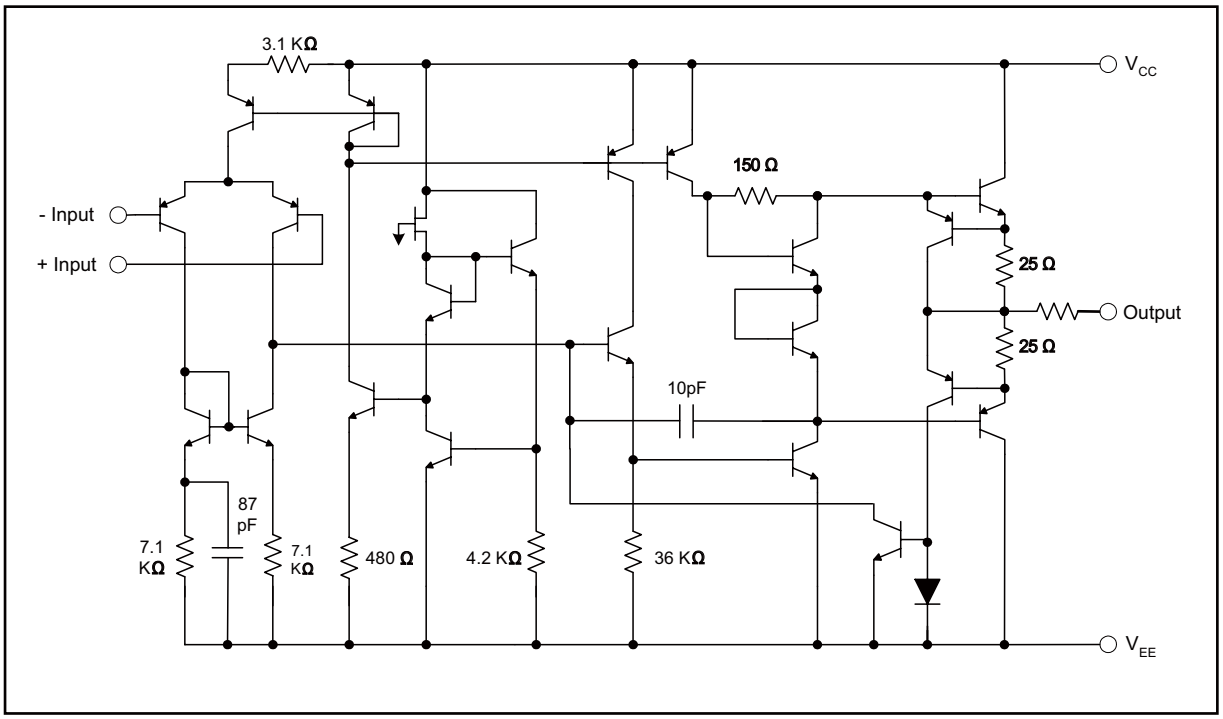
4) AMPLIFIERS : AZ4558CM-E1

Description

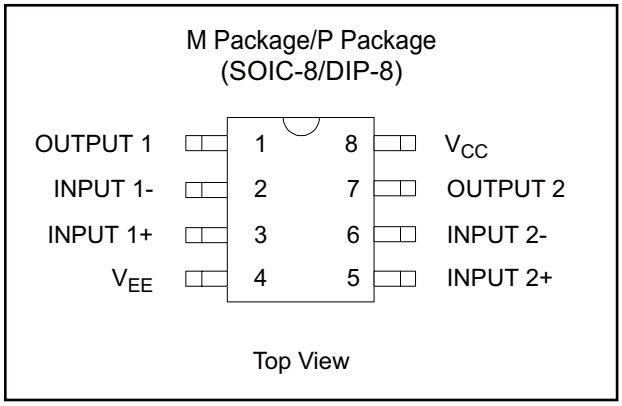
The AZ4558 consists of two high performance operational amplifiers. The IC features high gain, high input resistance, excellent channel separation, wide range of operating voltage and internal frequency compensation. It can work with ± 18V maximum power supply voltage.

The AZ4558 is specifically suitable for applications in differential-in, differential-out as well as in potentialmetric amplifiers and where gain and phase matched channels are mandatory.

The AZ4558 is available in DIP-8 and SOIC-8 pack-age.



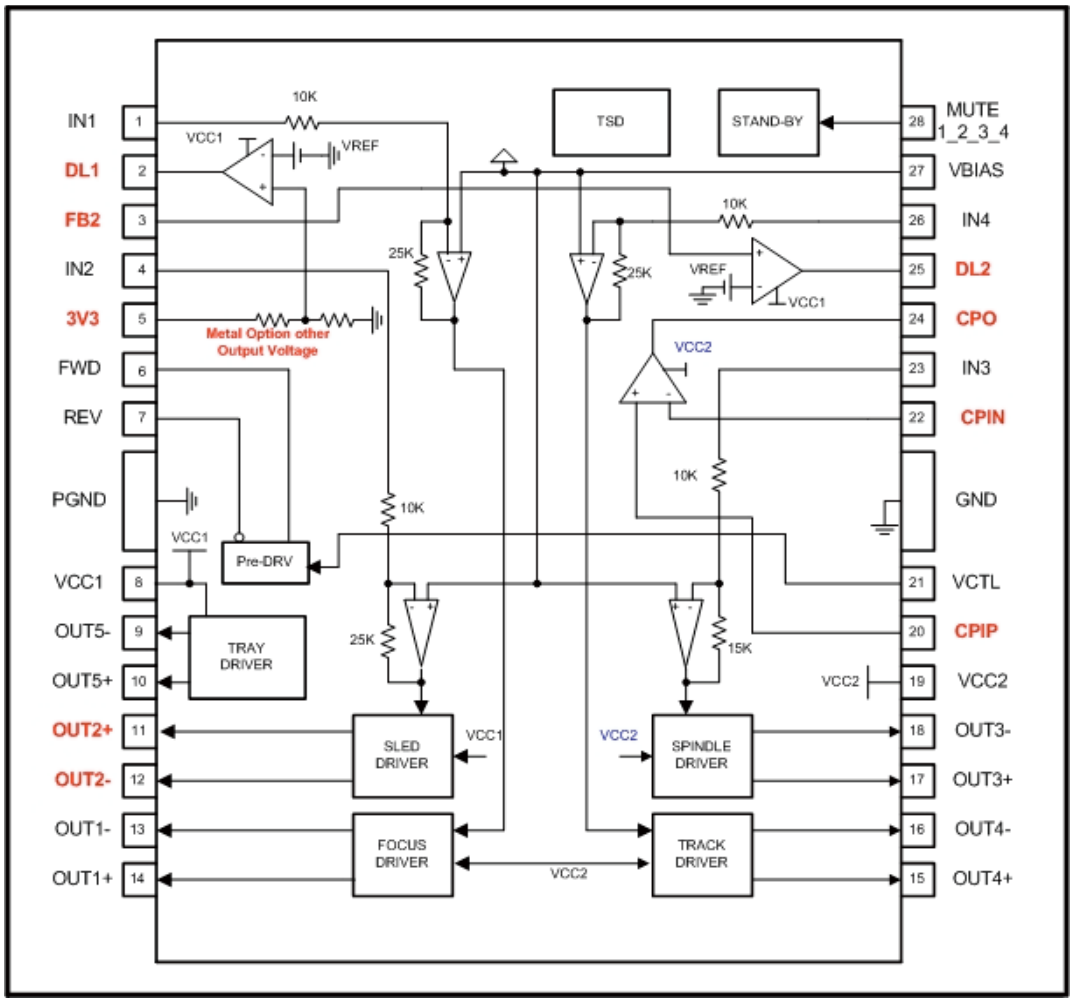
AMPLIFIERS AZ4558CM-E1 Block Diagram



AMPLIFIERS AZ4558CM-E1 Pin Assignments

5) Motor Drive IC: AT5669

The AT5669 is a 5-channel BTL driver IC. Two of them can drive DC motors and two can drive coils, such as the focus and tracking actuators of a CD-ROM/DVD-ROM/DVD-Player system It also built-in one channel bi-direction DC motor driver for Tray. Using the built-in linear regulator, it can be save the PCB space. It also includes 1 comparator.



Motor Drive IC (AT5669) Block Diagram

Pin Descriptions

Pin No.	Pin name	Function
1	IN1	CH1(Focus coil) input
2	DL1	Linear Regulator 3V3 driver output
3	FB2	Linear Regulator 2 feedback input
4	IN2	CH2(Sled driver) input
5	3V3	Linear Regulator 3V3 input(Metal Option possible for other voltage from 2.5V~4V)
6	FWD	CH5 forward input
7	REV	CH5 reverse input
8	VCC1	Power Supply 1
9	OUT5-	CH5(Tray driver) output(-)
10	OUT5+	CH5(Tray driver) output(+)
11	OUT2+	CH2(Sled driver) output (+)
12	OUT2-	CH2(Sled driver) output (-)
13	OUT1-	CH1(Focus coil) output (-)
14	OUT1+	CH1(Focus coil) output (+)
15	OUT4+	CH4(Tracking coil) output (+)
16	OUT4-	CH4(Tracking coil) output (-)
17	OUT3+	CH3(Spindle) output (+)
18	OUT3-	CH3(Spindle) output (-)
19	VCC2	Power Supply 2
20	CPIP	Comparator positive input
21	VCTL	CH5 Speed control input
22	CPIN	Comparator negative input
23	IN3	CH3(Spindle) input
24	CPO	Comparator Output
25	DL2	Adjustable Linear Regulator driver output
26	IN4	CH4 (Tracking driver) input
27	VBIAS	VREF input pin
28	MUTE_1_2_3_4	Mute control for CH1,CH2,CH3,CH4

Notes: The indicated polarities for the output pins are under the condition that all inputs are (+). The power supplies for the driver output are Vcc1 for the loader, Vcc2 for focus and tracking drivers, and Vcc for pre-block and sled driver. Therefore, make sure Vcc1≥Vcc2.

VOLTAGE CHARTS

U1 SM8002C

PIN	1	2	3	4	5	6
Voltage	0.372V	0.176V	1.734V	1.742V	120.2V	1.965V

U2 EL817

PIN	1	2	3	4
Voltage	0.483V	3.818V	0.237V	2.637V

U3 AZ431BZ-ATRE1

PIN	R	A	K
Voltage	2.476V	0V	3.821V

IC101 ES29LV800D

	Voltage			Voltage			Voltage			Voltage			Voltage			Voltage	
PIN	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY
1	0.8V	0.8V	**10**	0V	0V	**19**	2.8V	2.7V	**28**	3.2V	3.2V	**37**	3.26V	3.26V	**46**	0V	0V
2	3V	3.0V	**11**	3.26V	3.27V	**20**	2.5V	2.3V	**29**	2.9V	3V	**38**	3.3V	3.26V	**47**	0V	0V
3	3.26V	3.26V	**12**	3.27V	3.27V	**21**	2.5V	2.8V	**30**	0.1V	0.1V	**39**	3.2V	3V	**48**	0.9V	1.5V
4	1.7V	1.7V	**13**	3.27V	3.27V	**22**	2.5V	2.5V	**31**	3V	2.6V	**40**	3V	3V			
5	2.5V	2.5V	**14**	0V	0V	**23**	2.8V	2.8V	**32**	0.1V	0.1V	**41**	0.1V	0.1V			
6	1.8V	1.8V	**15**	0V	0V	**24**	2.8V	2.8V	**33**	2.6V	2.9V	**42**	3V	2.5V			
7	2.4V	2.4V	**16**	0V	0V	**25**	1.4V	2V	**34**	0.1V	0.1V	**43**	0.1V	0.1V			
8	1.2V	1.2V	**17**	2.8V	3.2V	**26**	3.2V	3.1V	**35**	3V	2.9V	**44**	3V	2V			
9	0V	0V	**18**	3V	2.1V	**27**	0V	0V	**36**	0.1V	0.1V	**45**	1.4V	2.2V			

IC102 MMSD416T216-0

	Voltage			Voltage			Voltage			Voltage			Voltage			Voltage	
PIN	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY
1	3.32V	3.32V	**10**	1.3V	1.25V	**19**	3.0V	3.3V	**28**	0V	0V	**37**	3.3V	3.3V	**46**	0V	0V
2	2.5V	1.1V	**11**	1.8V	1.7V	**20**	0V	0V	**29**	0.4V	0.8	**38**	1.6V	1.6V	**47**	2.6V	2.1V
3	3.32V	3.32V	**12**	0V	0V	**21**	1.8V	1.6V	**30**	1.2V	1.32V	**39**	2.9V	2.98V	**48**	2.9V	3.15V
4	2.5V	2.7V	**13**	2.9V	2.9V	**22**	0.1V	0.1V	**31**	0.6V	0.3V	**40**	0V	0V	**49**	3.3V	3.32V
5	1.9V	1.8V	**14**	3.3V	3.3V	**23**	0.3V	0.1V	**32**	0.6V	0.6V	**41**	0V	0V	**50**	1.04V	1.2V
6	0V	0V	**15**	2.8V	2.9V	**24**	0V	0V	**33**	0V	0V	**42**	1.6V	1.82V	**51**	1.0V	1.4V
7	1.5V	2.9V	**16**	3.3V	3.27V	**25**	0V	0V	**34**	0V	0V	**43**	3.3V	3.3V	**52**	0V	0V
8	1.1V	1.25V	**17**	3.3V	3.3V	**26**	0.6V	0.4V	**35**	0V	0V	**44**	1.5V	1.0V	**53**	0V	0V
9	3.32V	3.34V	**18**	3.2V	3.3V	**27**	3.3V	3.3V	**36**	0V	0V	**45**	1.8V	1.7V	**54**	0V	0V

IC1 AT5669

	Voltage			Voltage			Voltage			Voltage			Voltage	
PIN	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY
1	1.66V	1.66V	**7**	0V	0V	**13**	2.48V	2.48V	**19**	4.88V	4.86V	**25**	2.69V	2.7V
2	3.35V	3.34V	**8**	4.87V	4.87V	**14**	2.46V	2.49V	**20**	3.71V	3.71V	**26**	1.63V	1.63V
3	1.23V	1.23V	**9**	0V	0V	**15**	2.56V	2.56V	**21**	4.86V	4.86V	**27**	1.61V	1.61V
4	1.63V	1.63V	**10**	0V	0V	**16**	2.41V	2.37V	**22**	1.11V	1.1V5	**28**	3.22V	3.22V
5	3.27V	3.27	**11**	2.57V	2.54V	**17**	3.57V	3.5V	**23**	2V	2V	**29**	0V	0V
6	0V	0V	**12**	2.39V	2.54V	**18**	1.41V	1.4V	**24**	4.71V	4.7V	**30**	0V	0V

IC304 AZ4558CM-E1

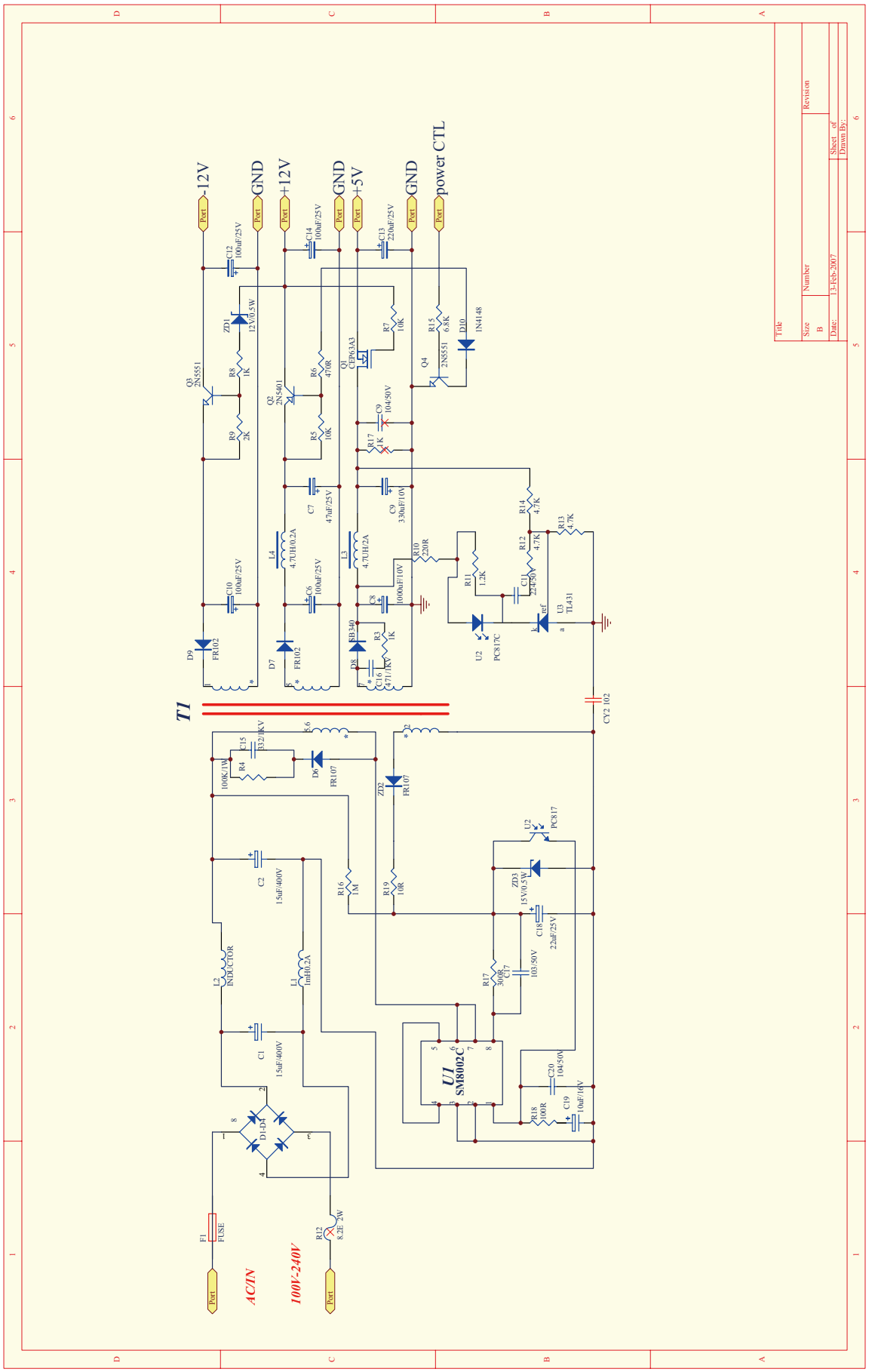
	Voltage			Voltage			Voltage			Voltage	
PIN	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY
1	0V	0V	**3**	0V	0V	**5**	0V	0V	**7**	0V	0V
2	0V	0V	**4**	11.7V	11.7V	**6**	0V	0V	**8**	10V	10V

IC100 S5L5008

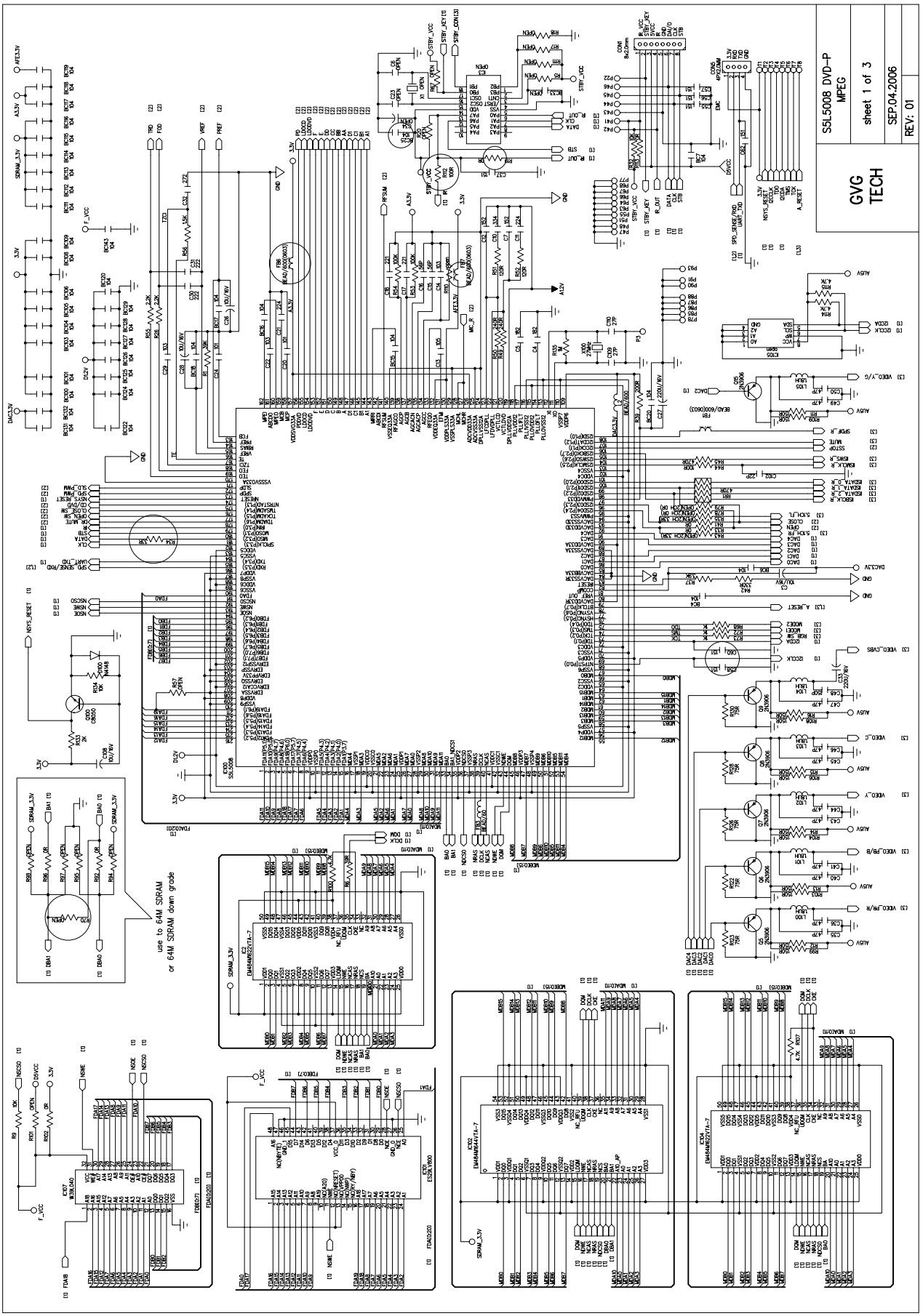
	Voltage			Voltage			Voltage			Voltage			Voltage			Voltage	
PIN	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY	**PIN**	STOP	PLAY
1	1.5V	2.0V	**37**	0.1V	0.1V	**73**	0V	0V	**109**	3.2V	3.2V	**145**	2.2V	2.2V	**181**	3.3V	2.3V
2	2V	2.0V	**38**	3.3V	3.2V	**74**	0V	0V	**110**	0V	0V	**146**	2.2V	2.2V	**182**	2.6V	2.5V
3	1V	2.0V	**39**	2.2V	2.2V	**75**	0V	0V	**111**	2.2V	2.2V	**147**	1.6V	1.6V	**183**	1.2V	1.2V
4	2.3V	2.3V	**40**	3.2V	3.2V	**76**	2.4V	2.4V	**112**	1.8V	1.8V	**148**	1.6V	1.6V	**184**	0V	0V
5	2.4V	2.5V	**41**	1.1V	1.1V	**77**	2.3V	2.3V	**113**	0V	0V	**149**	1.6V	1.6V	**185**	3.2V	3.2V
6	0.3V	1.0V	**42**	0V	0V	**78**	0V	0V	**114**	0.5V	0.5V	**150**	1.6V	1.6V	**186**	0V	3.6V
7	2.6V	2.6V	**43**	3.2V	3.2V	**79**	3.2V	3.2V	**115**	1.2V	1.2V	**151**	1.6V	1.6V	**187**	2.6V	3.7V
8	2.2V	2.6V	**44**	3V	3V	**80**	1.2V	1.2V	**116**	1.2V	1.2V	**152**	2.1V	2.1V	**188**	3.2V	3.2V
9	3.2V	3.2V	**45**	3V	1.2V	**81**	2V	2V	**117**	1.2V	1.2V	**153**	2.1V	2.1V	**189**	0V	0V
10	0V	0V	**46**	3.2V	3.2V	**82**	1.2V	1.2V	**118**	1.2V	1.2V	**154**	1.9V	1.9V	**190**	1.2V	1.1V
11	2.5V	2.2V	**47**	1V	1.4V	**83**	0V	0V	**119**	1.2V	1.2V	**155**	3.2V	3.2V	**191**	0V	0V
12	2.7V	2.5V	**48**	0V	0V	**84**	0V	0V	**120**	0.4V	0.4V	**156**	0.2V	0.2V	**192**	1.3V	1.9V
13	1.7V	2.2V	**49**	1.3V	2.4V	**85**	0.6V	0.6V	**121**	0V	0V	**157**	3.2V	3.2V	**193**	3.1V	2.8V
14	3.1V	2.5V	**50**	1.2V	2V	**86**	0.7V	0.7V	**122**	0.5V	0.4V	**158**	1.9V	1.9V	**194**	2.2V	3.2V
15	1.5V	2.0V	**51**	1V	2.5V	**87**	0.7V	0.4V	**123**	0V	0V	**159**	1.2V	1.2V	**195**	3.1V	2.5V
16	0.9V	1.8V	**52**	1V	1.5V	**88**	0V	0V	**124**	0V	0V	**160**	1.9V	1.9V	**196**	2.5V	3.1V
17	0.1V	0.1V	**53**	1.4V	1.6V	**89**	3.2V	3.2V	**125**	0V	0V	**161**	1V	1V	**197**	3.2V	3.1V
18	1V	0.9V	**54**	1.7V	2.4V	**90**	0.7V	0.7V	**126**	3.2V	3.3V	**162**	1.6V	1.6V	**198**	3.2V	2.5V
19	1.2V	1.2V	**55**	1V	1.2V	**91**	0.8V	0.7V	**127**	1.6V	1.6V	**163**	1.34V	1.34V	**199**	3.1V	2.8V
20	0V	0V	**56**	3.2V	3.2V	**92**	3.2V	3.2V	**128**	1.6V	1.6V	**164**	2.1V	2.1V	**200**	3V	3.1V
21	1V	1.1V	**57**	1.5V	1.2V	**93**	0V	0V	**129**	0V	0V	**165**	0.9	0.9V	**201**	2.2V	1.9V
22	0.6V	1.2V	**58**	1.2V	1.6V	**94**	0V	0V	**130**	3.2V	3.2V	**166**	1.5V	1.5V	**202**	3.2V	2.8V
23	1V	1.2V	**59**	1.3V	1.4V	**95**	2.3V	2.3V	**131**	1.7V	1.7V	**167**	1.5V	1.4V	**203**	1.2V	1.1V
24	1.5V	1.2V	**60**	1.5V	1.3V	**96**	2.3V	2.3V	**132**	3.2V	3.2V	**168**	1.5V	1.5V	**204**	0V	0V
25	3.2V	3.2V	**61**	1V	2V	**97**	3.2V	3.2V	**133**	2V	1.9V	**169**	1.58V	1.58V	**205**	3.2V	3.2V
26	1V	1.0V	**62**	1.1V	1.2V	**98**	0V	0V	**134**	1.3V	1.3V	**170**	1.61V	1.61	**206**	0V	0V
27	0.5V	1.3V	**63**	1.3V	2V	**99**	0V	0V	**135**	1.6V	1.6V	**171**	0V	0V	**207**	1.15V	1.15V
28	0V	0V	**64**	1.2V	1.2V	**100**	0V	0V	**136**	1.65V	1.65V	**172**	1.5V	1.6V	**208**	0V	0V
29	0.5V	0.5V	**65**	0V	0V	**101**	1.2V	1.2V	**137**	1.35V	1.35V	**173**	2.1V	2.1V	**209**	3.2V	3.2V
30	1V	1.3V	**66**	3.1V	2.2V	**102**	0V	0V	**138**	1.8V	1.8V	**174**	3.2V	3.2V	**210**	0V	0V
31	0.7V	1.2V	**67**	0V	0V	**103**	0V	0V	**139**	1V	1V	**175**	3.2V	3.2V	**211**	0V	0V
32	0.1V	0.1V	**68**	0V	0V	**104**	0V	0V	**140**	0V	0V	**176**	0V	0V	**212**	1.2V	1.2V
33	2.2V	2.6V	**69**	3.3V	3.3V	**105**	0V	0V	**141**	1.7V	1.7V	**177**	3.2V	3.2V	**213**	2.2V	2.4V
34	3.2V	3.2V	**70**	1V	0V	**106**	0V	0V	**142**	0V	0V	**178**	0V	3.2V	**214**	1.7V	2V
35	3.2V	3.2V	**71**	1.2V	1.2V	**107**	0V	0V	**143**	1.6V	1.7V	**179**	3.8V	3.8V	**215**	1.5V	2V
36	3.2V	3.2V	**72**	3.6V	3.6V	**108**	2.3V	2.3V	**144**	2.2V	2.2V	**180**	2.3V	2.3V	**216**	2.3V	2V

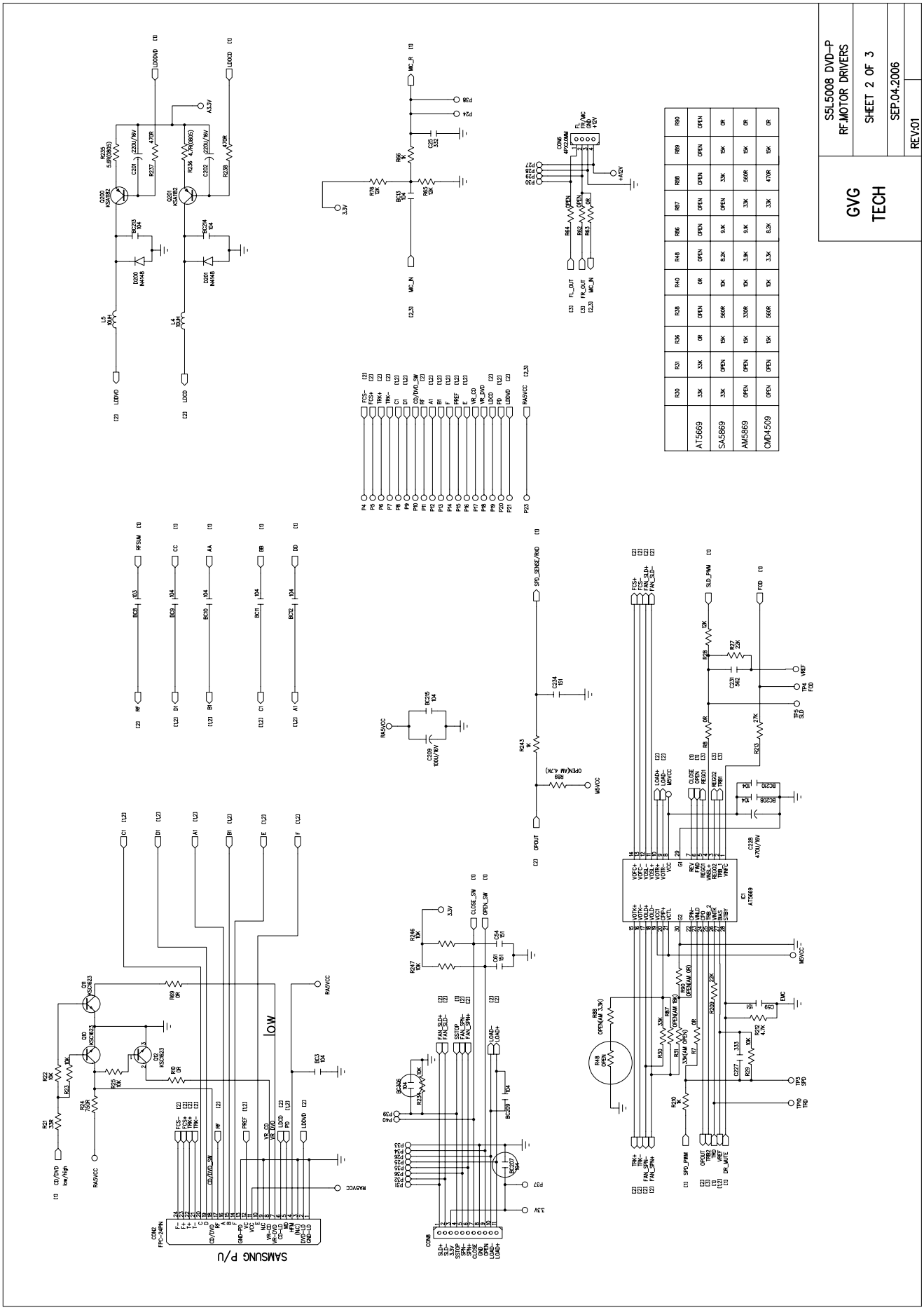
CIRCUIT DIAGRAM

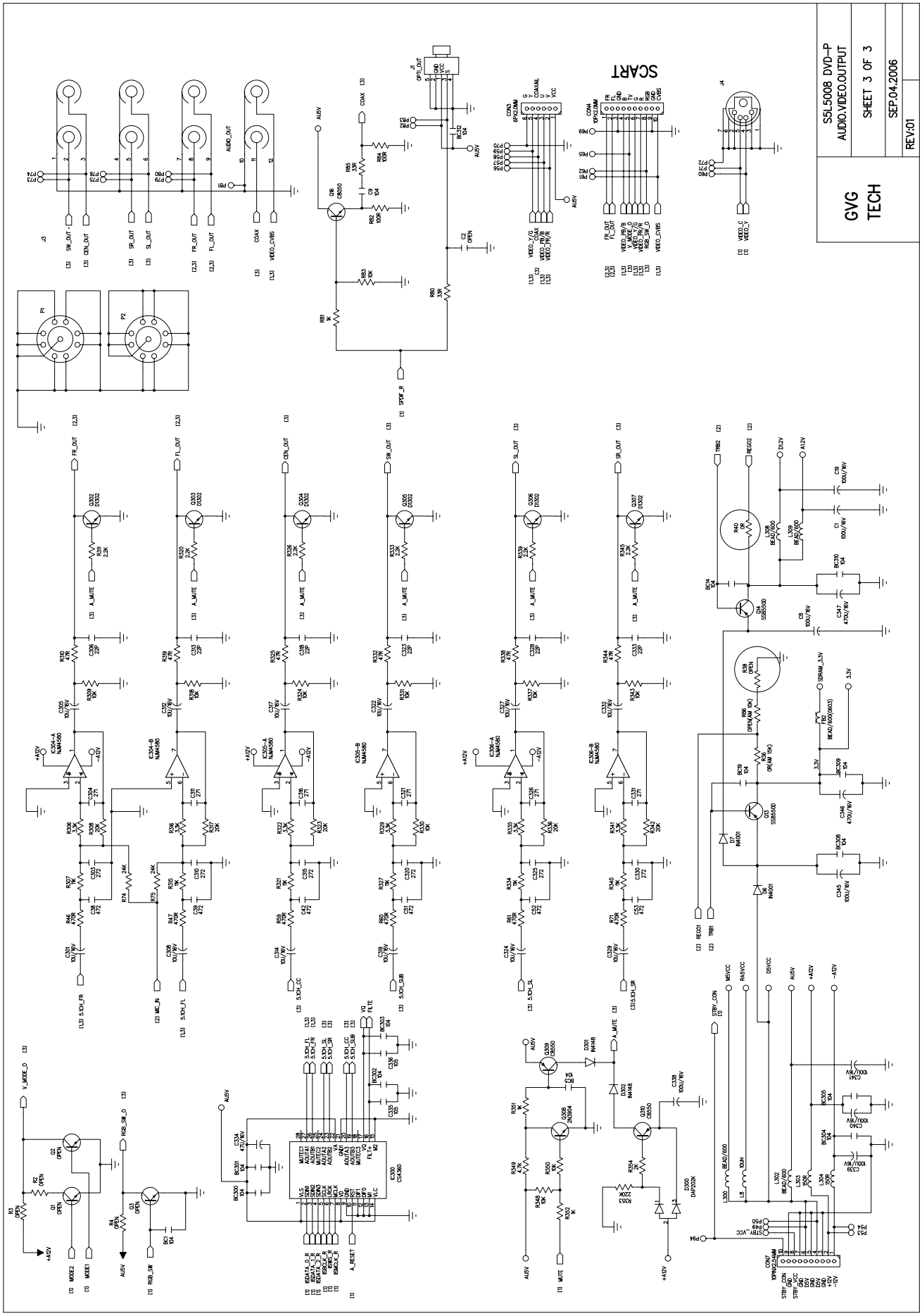
1. POWER SUPPLY SCHEMATIC DIAGRAM



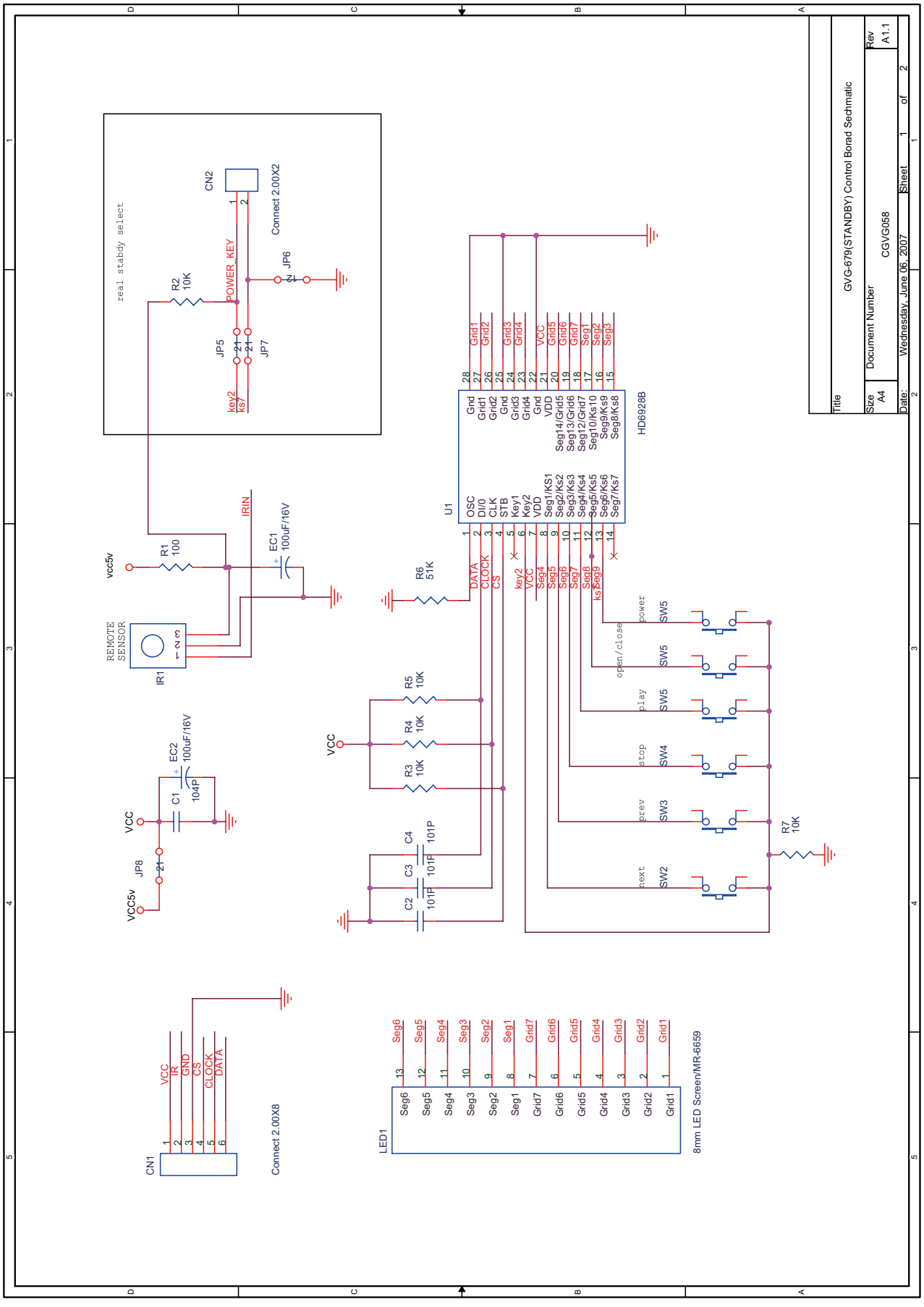
2. DECODE BOARD SCHEMATIC DIAGRAM



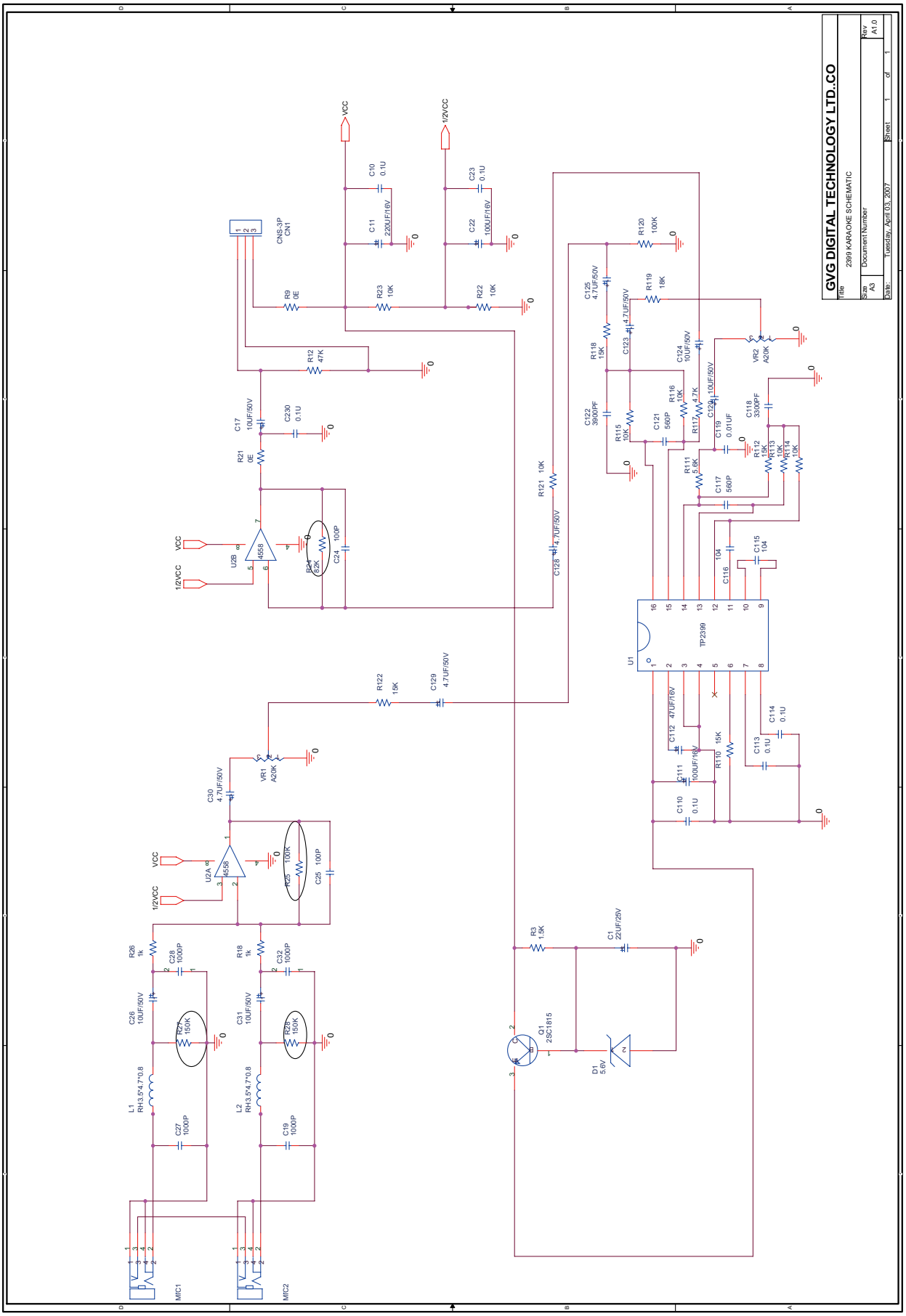

S5L5008 DVD-P
RF,MOTOR DRIVERS
SHEET 2 OF 3
SEP.04.2006
REV:01
GVG
TECH
SAMSUNG P/U
low
AT5669
SA5669
AM5669
CMD4509
IC1
AT5669


S5L5008 DVD-P
AUDIO.VIDEO.OUTPUT
SHEET 3 OF 3
SEP.04.2006
REV:01
GVG
TECH
SCART

3. CONTROL BOARD SCHEMATIC DIAGRAM

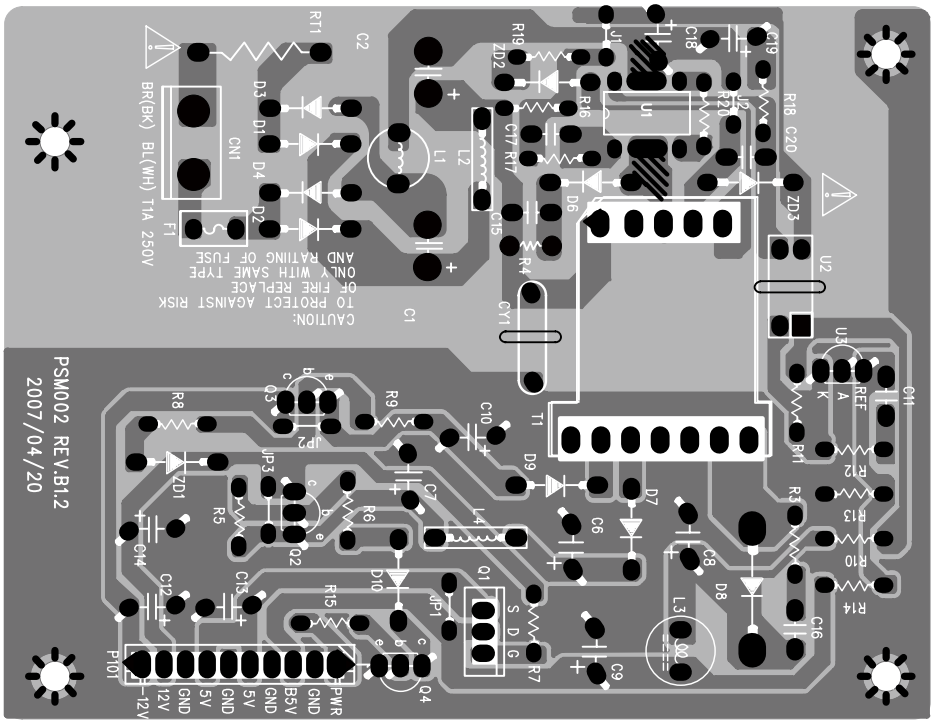


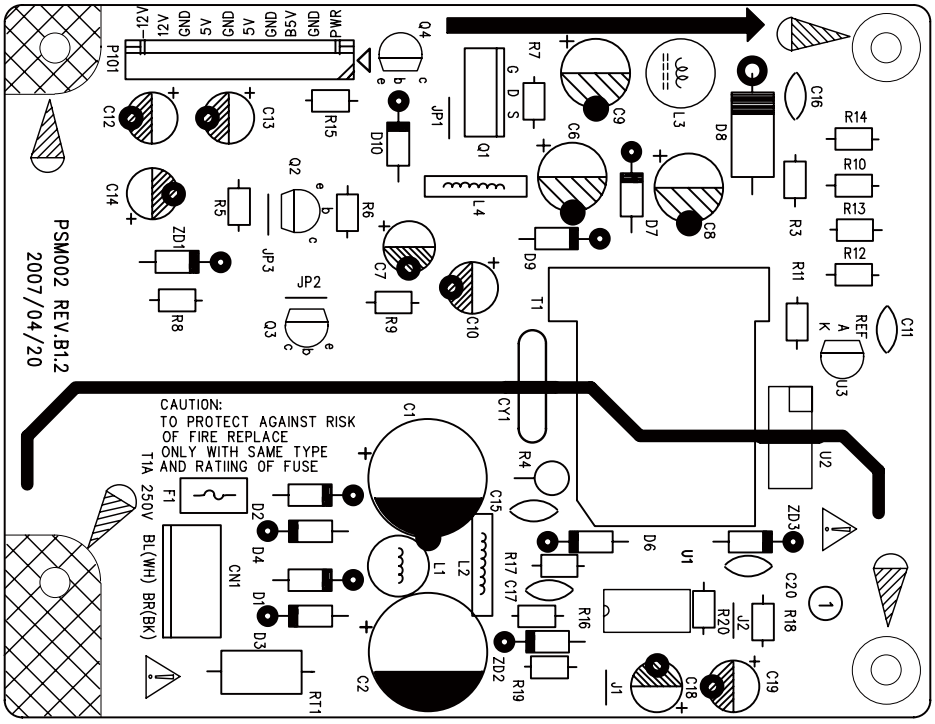
4. MICROPHONE BOARD SCHEMATIC DIAGRAM



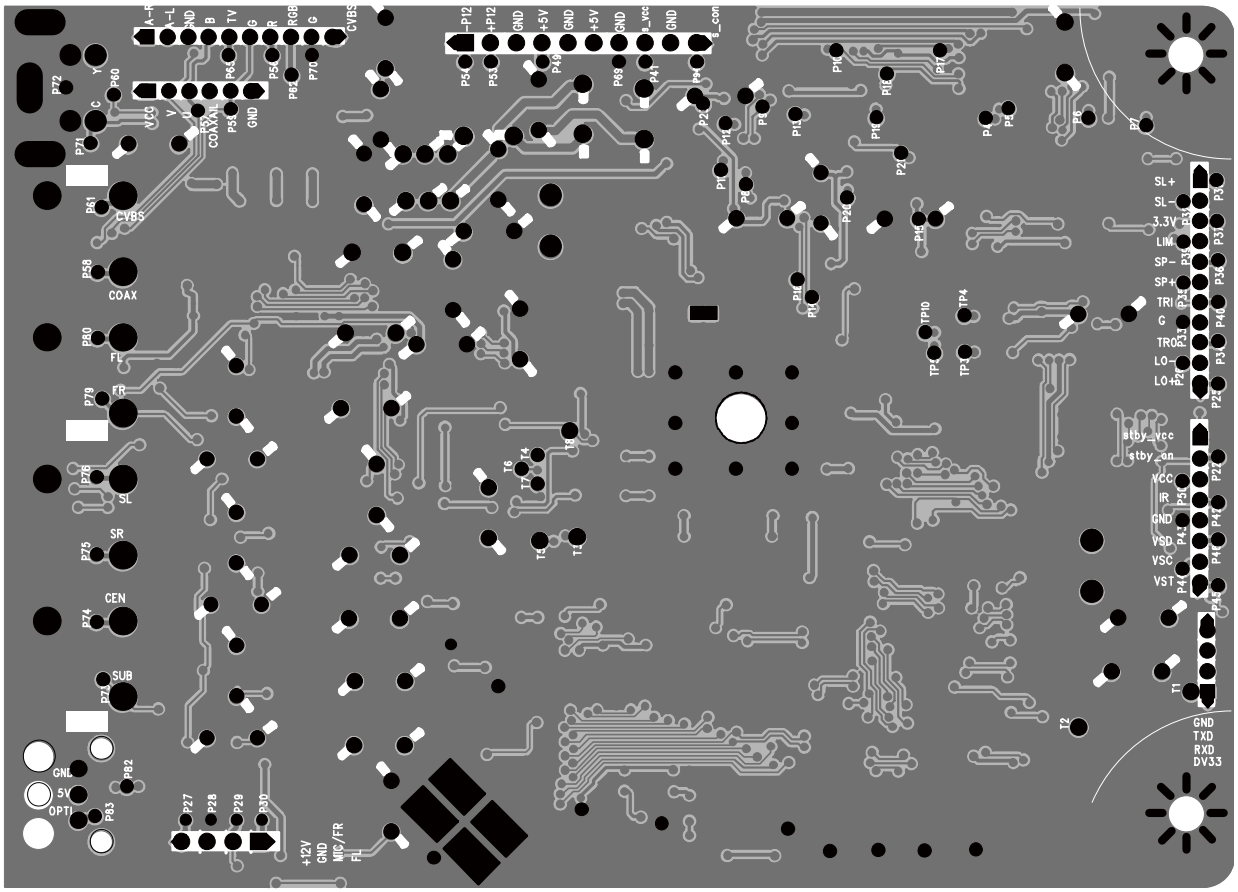
PCB CIRCUIT BOARD

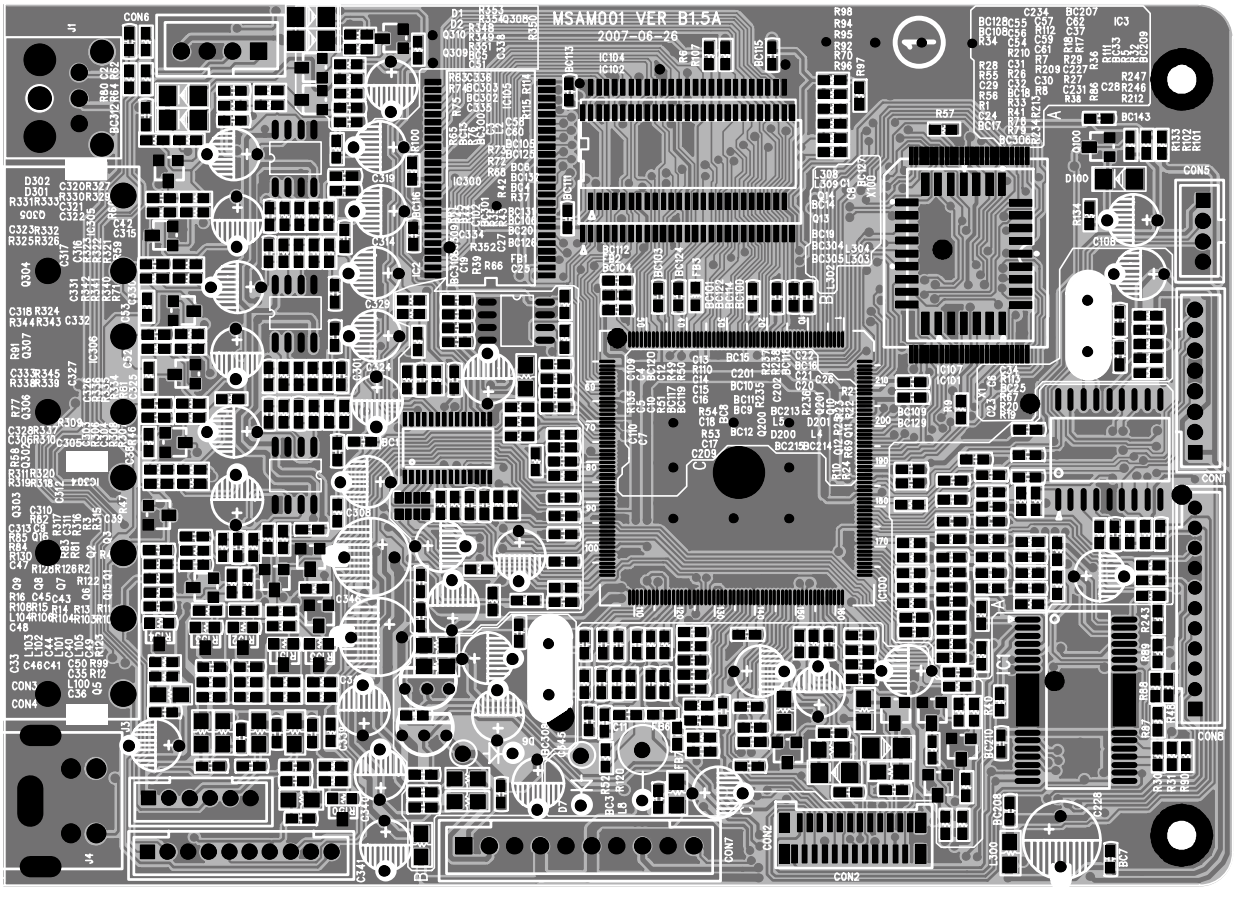
1. POWER SUPPLY BOARD



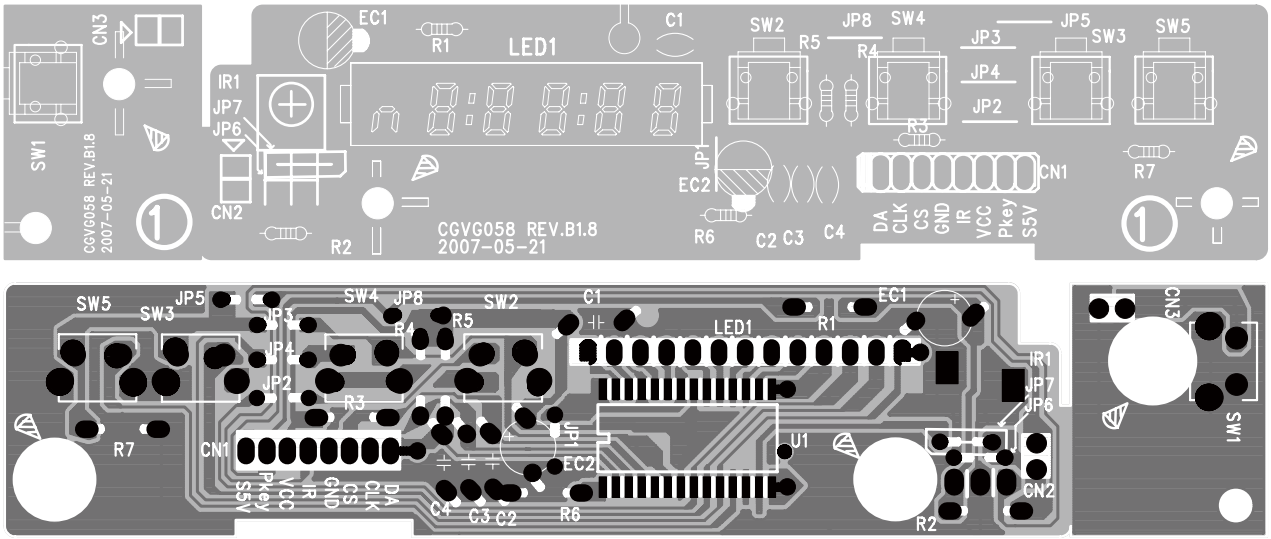


2. DECODE BOARD

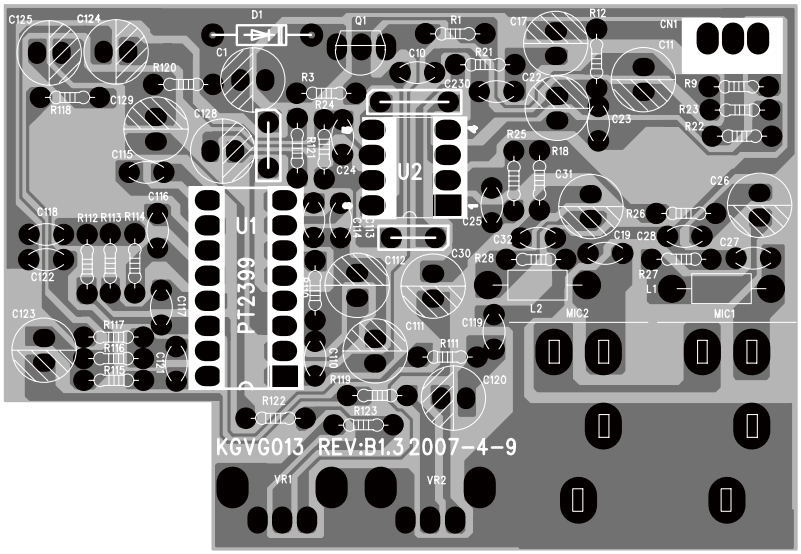




3. CONTROL BOARD

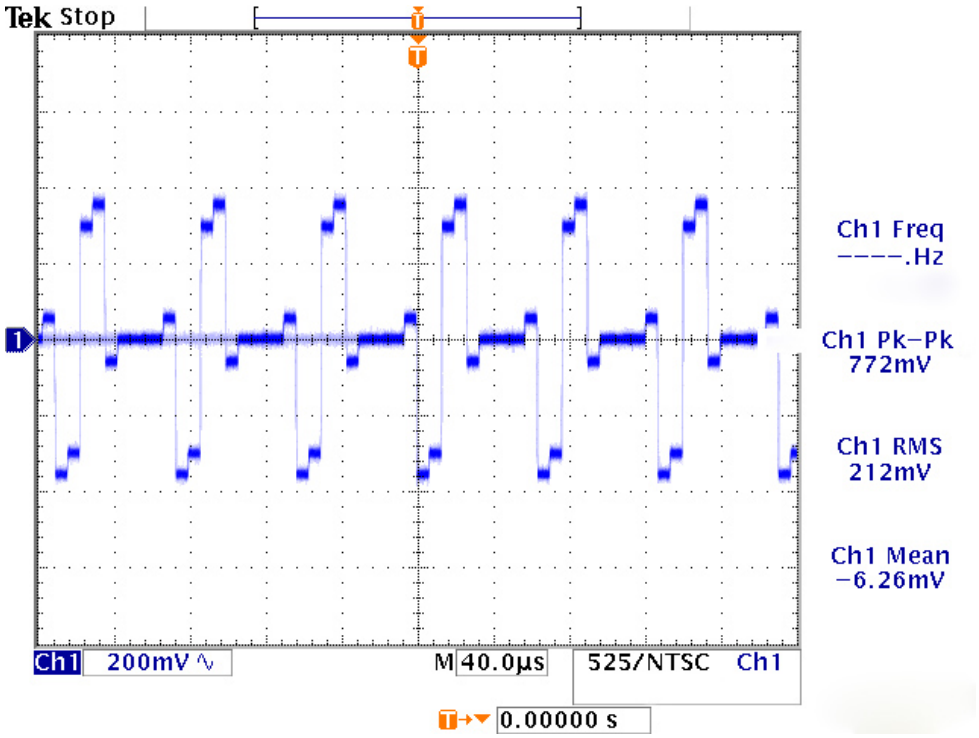


4. MICROPHONE BOARD

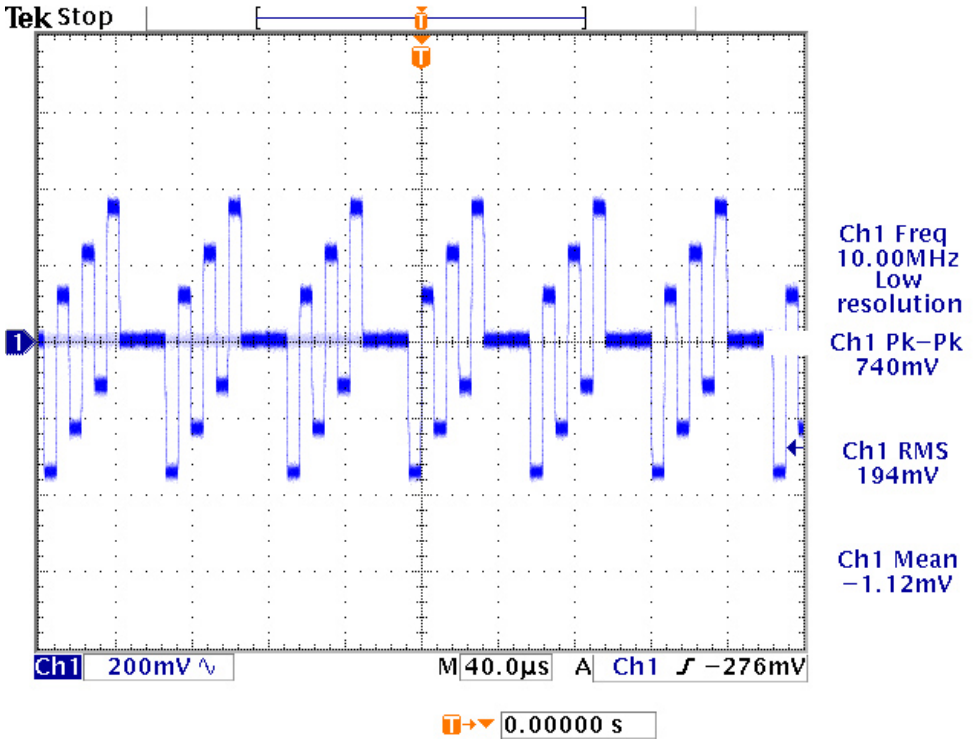


WAVEFORMS

1. VIDEO

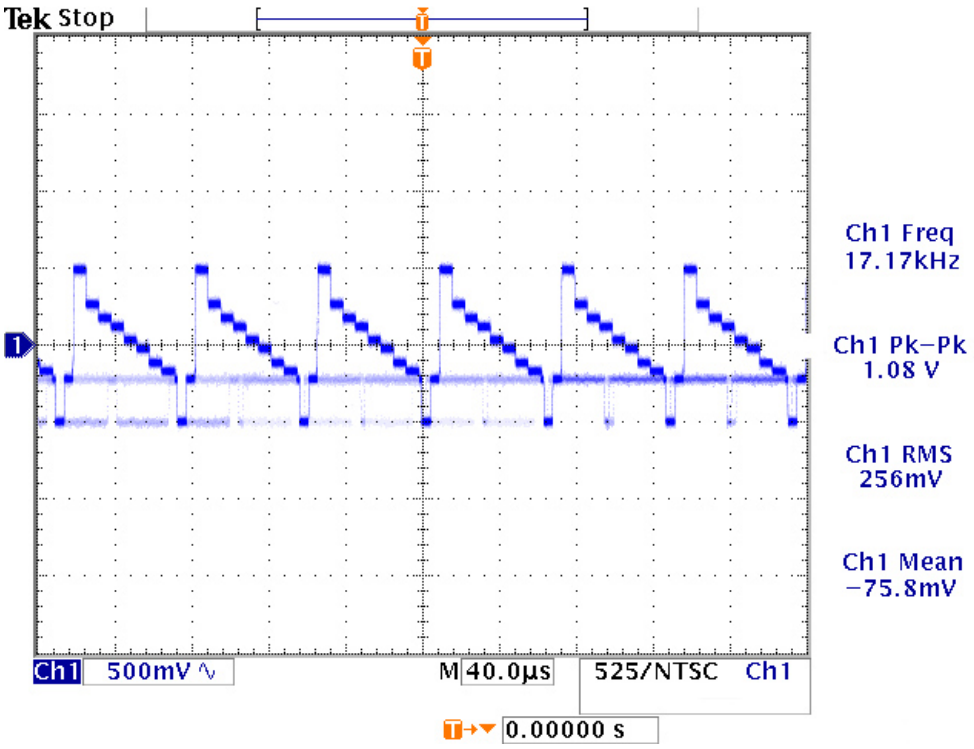


IC100 S5L5008 85Pin (DAC0)

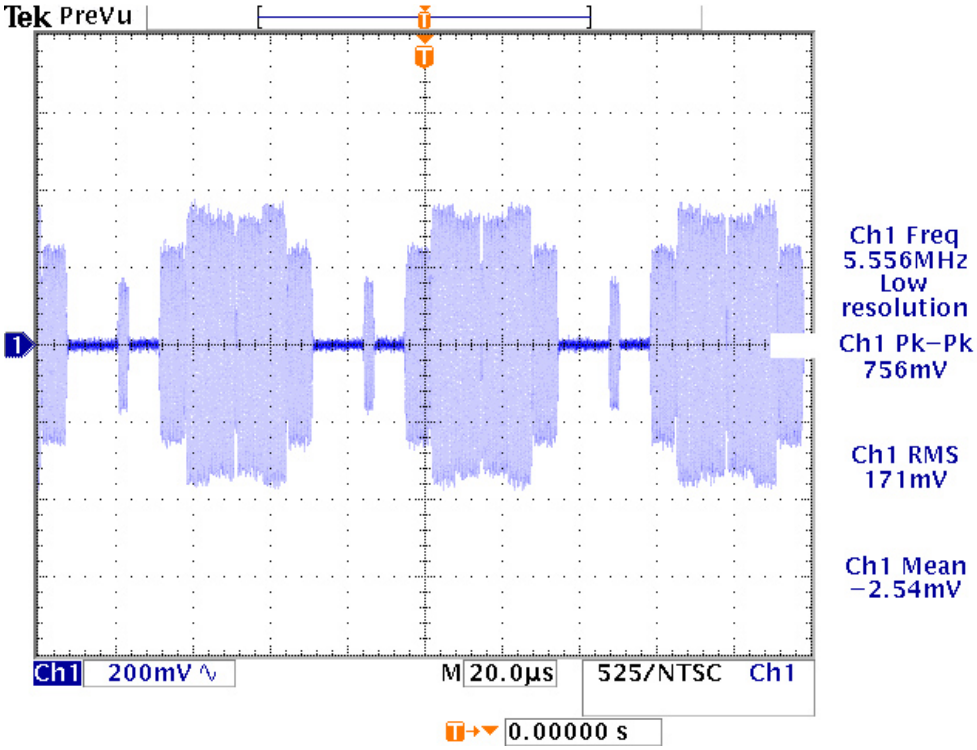


IC100 S5L5008 86Pin(DAC1_PB)

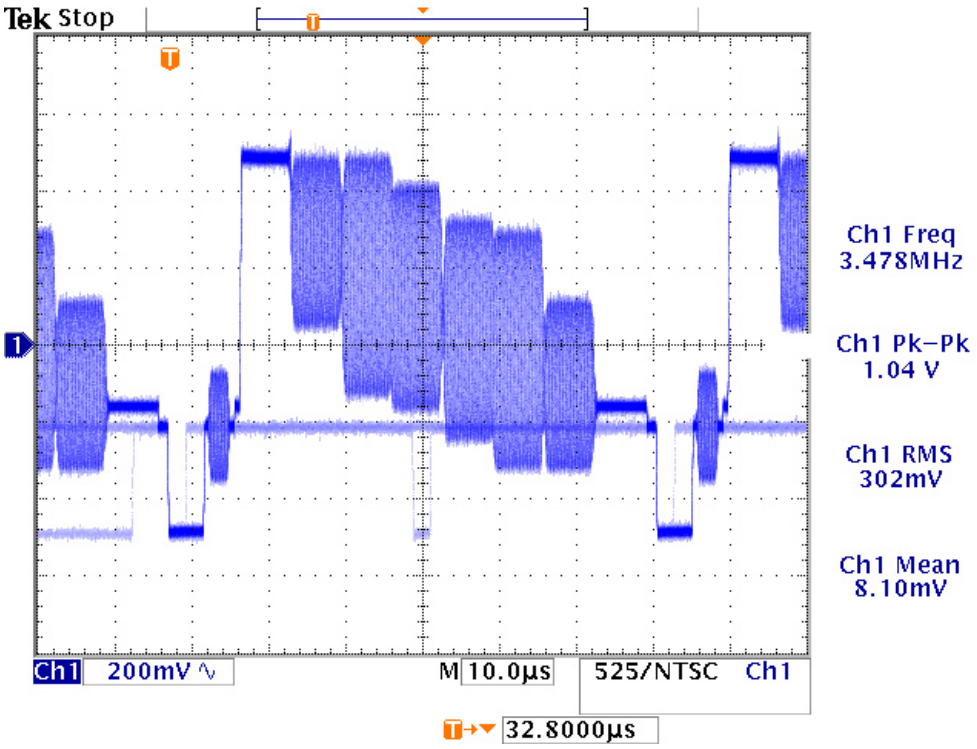
WAVEFORMS



IC100 S5L5008 87Pin(DAC2_Y)

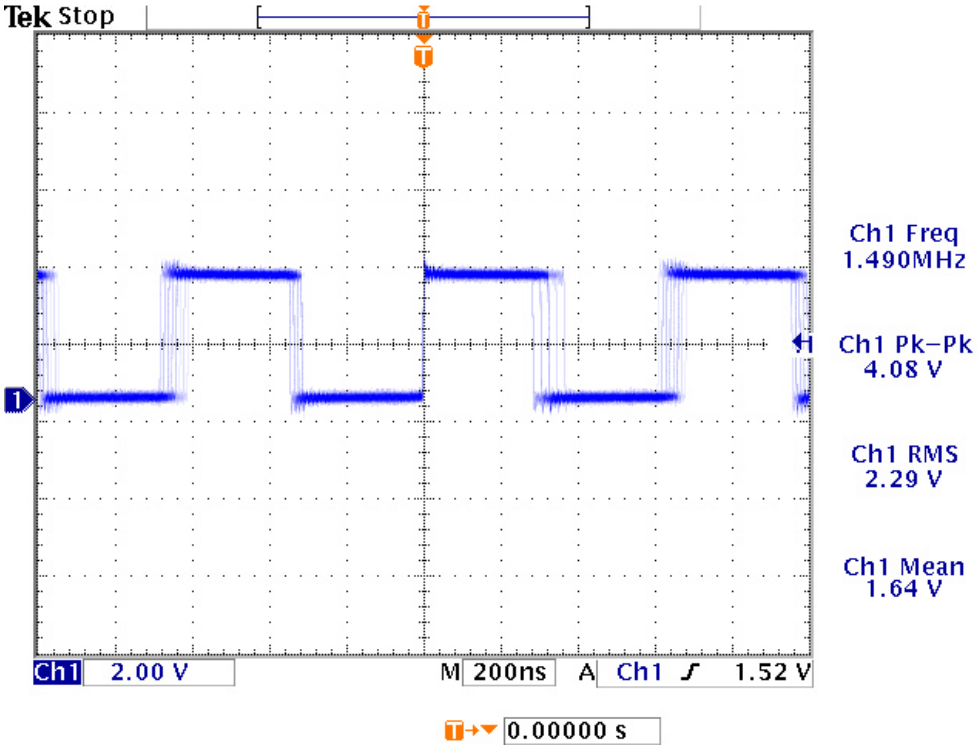


IC100 S5L5008 90Pin(DAC3_C)



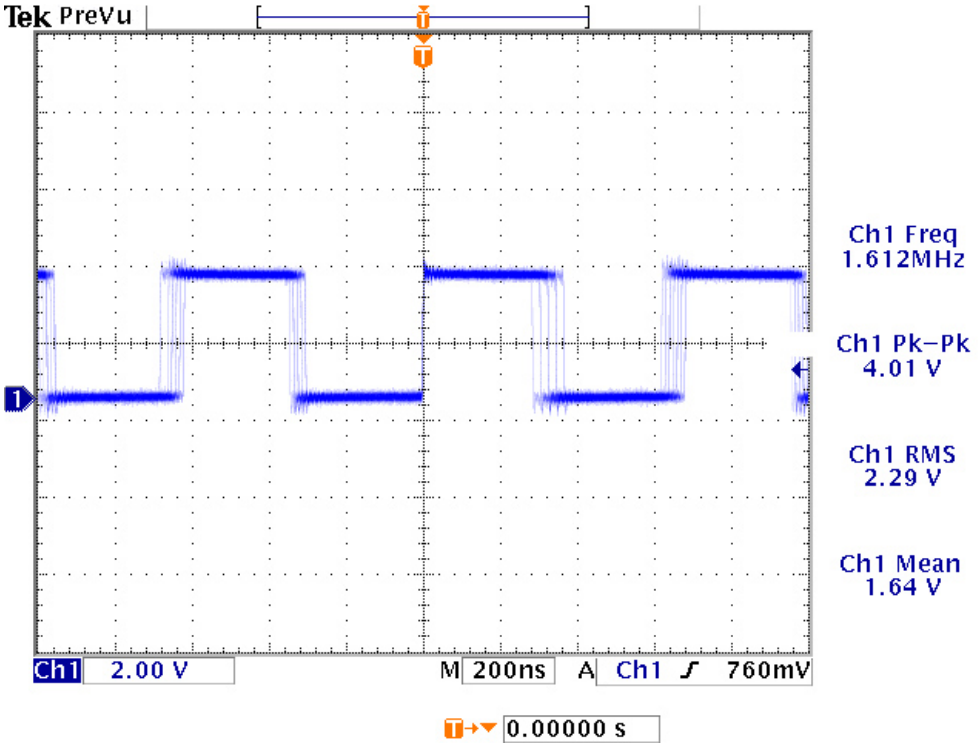
IC100 S5L5008 91Pin(DAC4_CVBS)

2. AUDIO

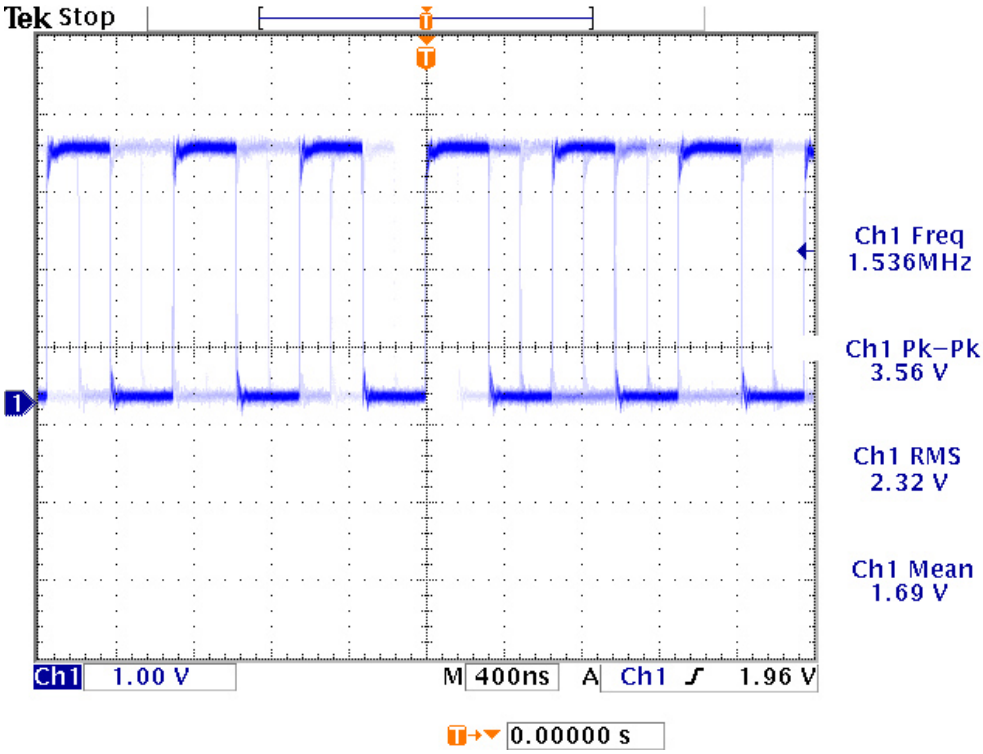


C100 S5L5008 95Pin(FR)

WAVEFORMS

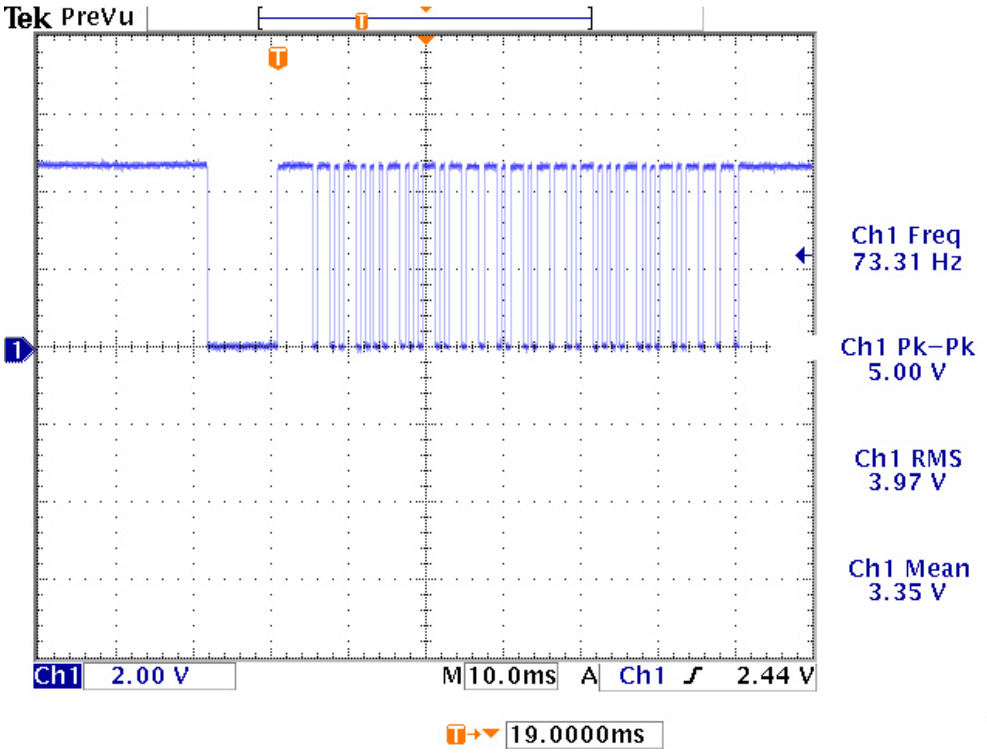


IC100 S5L5008 96Pin(FL)

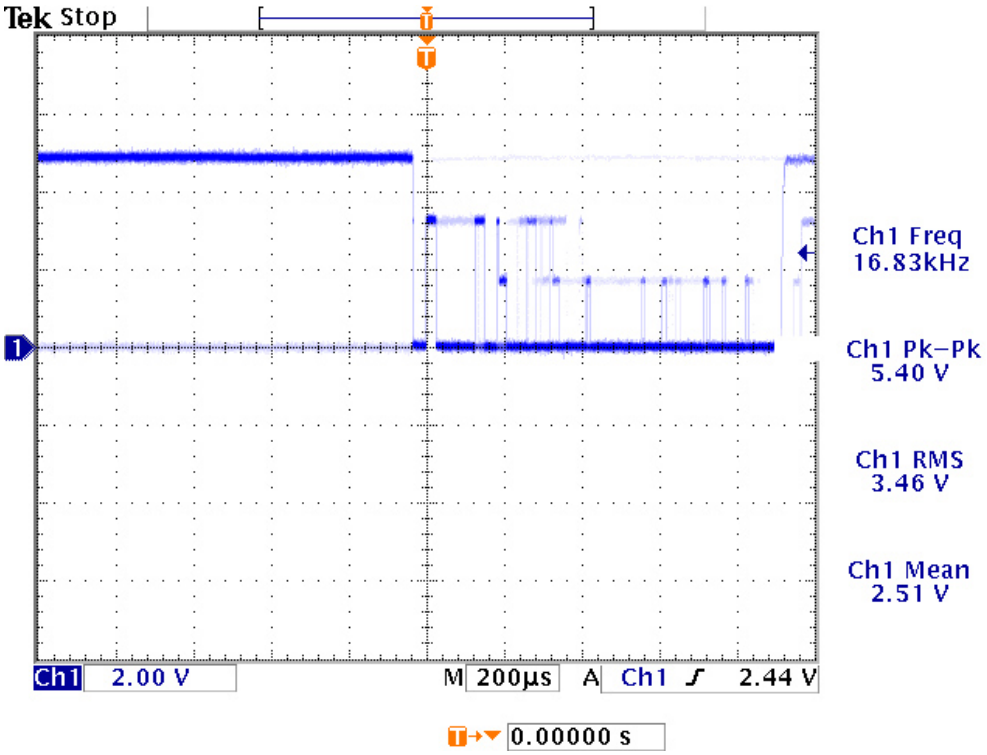


IC100 S5L5008 108Pin(SPDIF_R)

3. SYSTEM WAVEFORMS

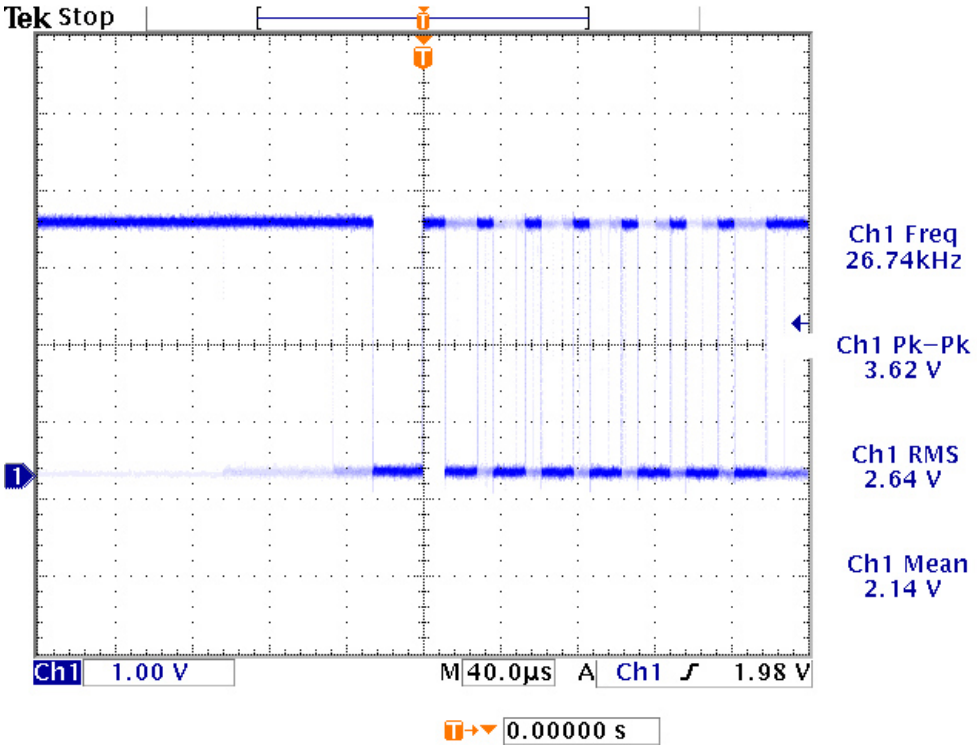


CON1_4P(IR)

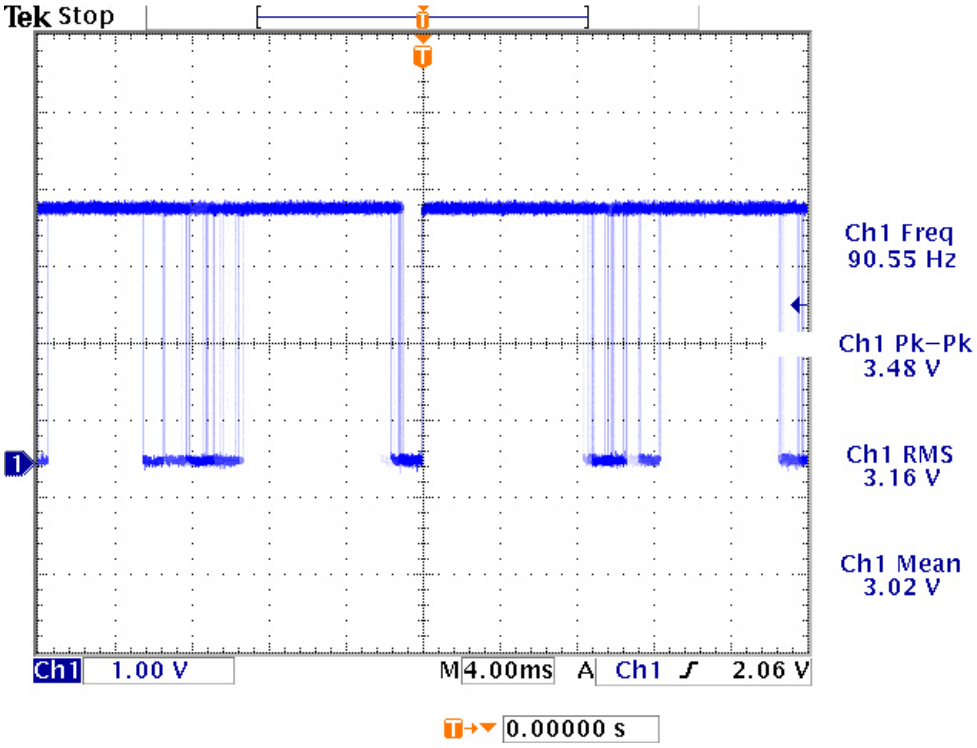


CON1_6P(DAIO)

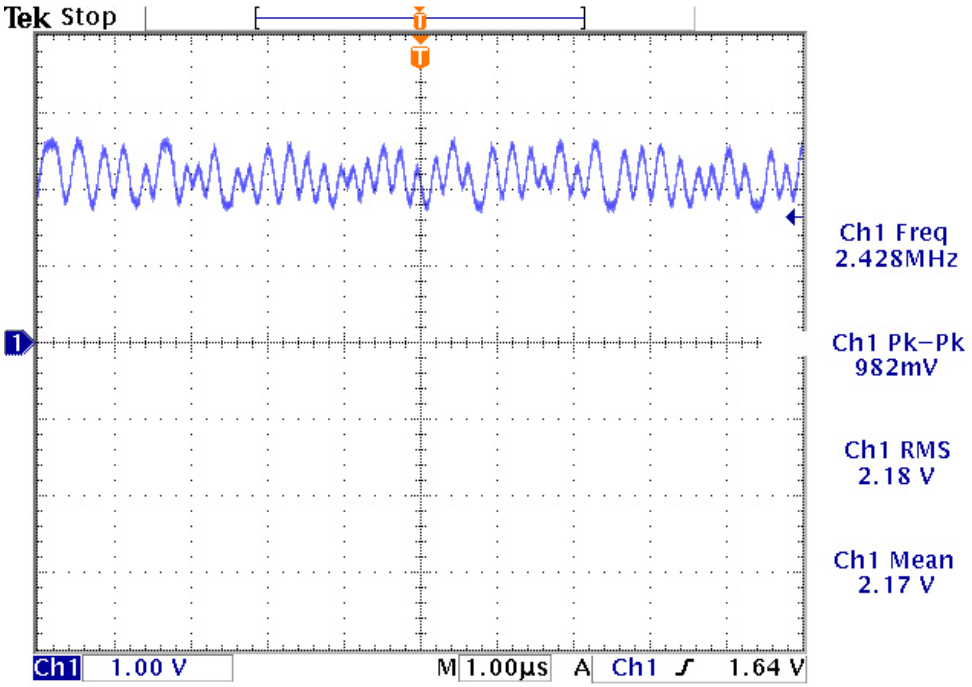
WAVEFORMS



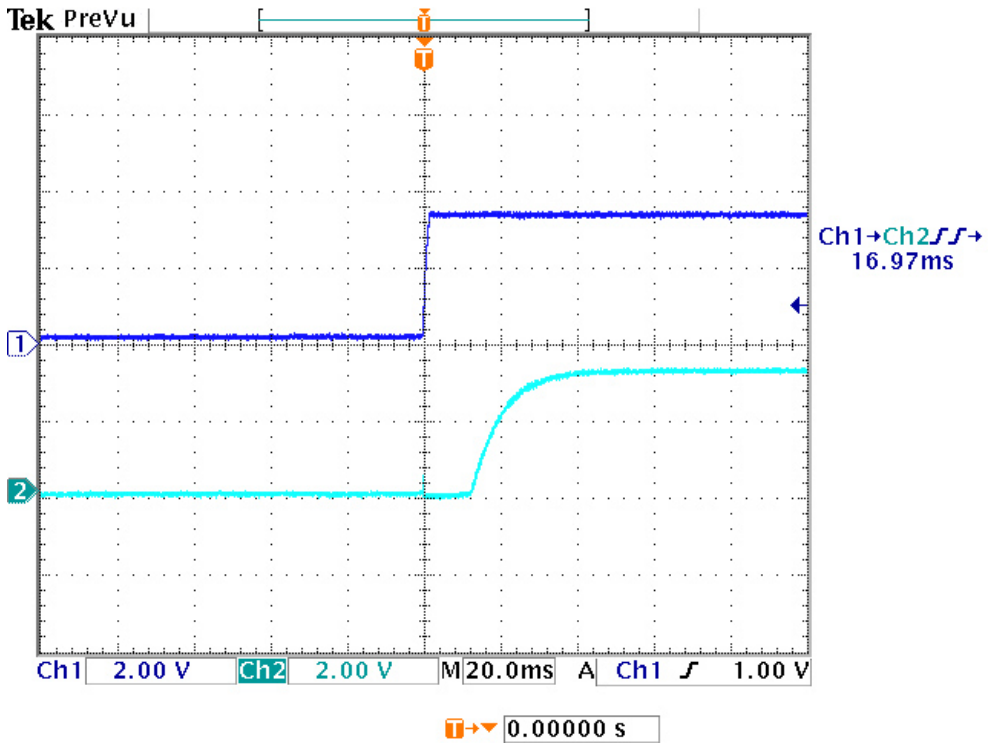
CON1_7P(CLK)



CON1_8P(STB)

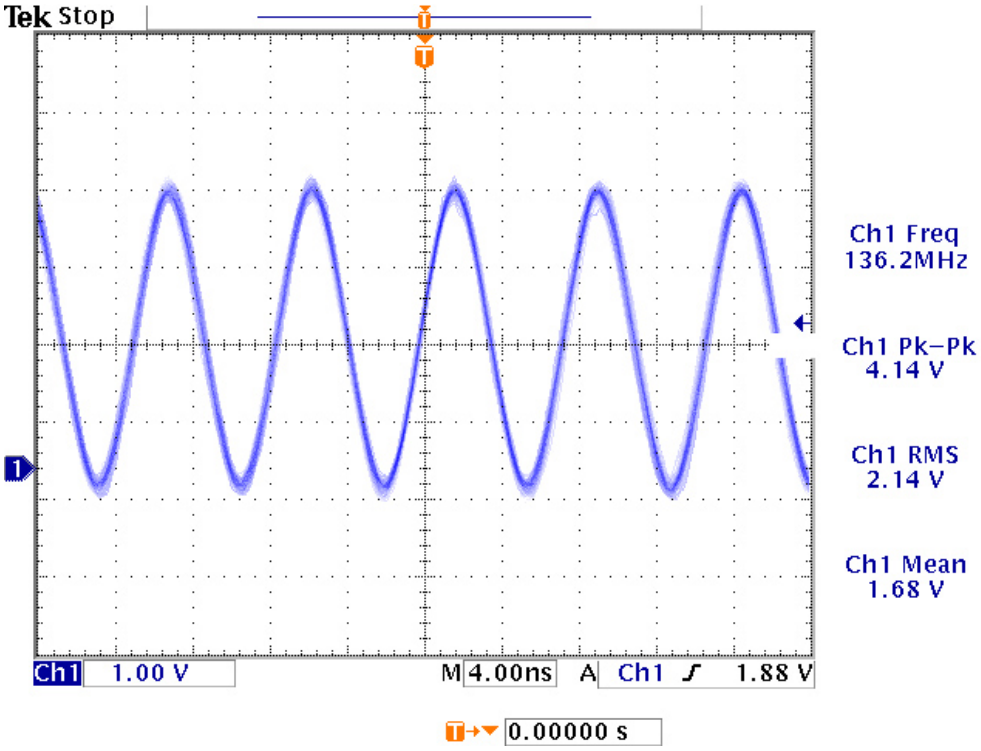


CON2_17P(RF)

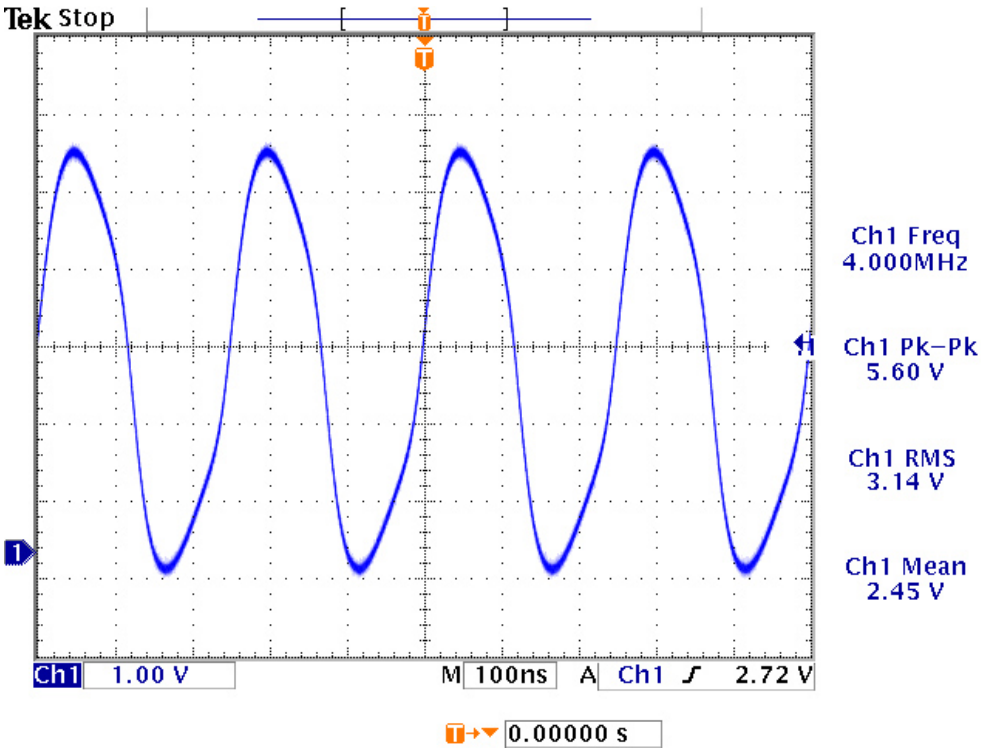


NSYS_RESET_3.3V

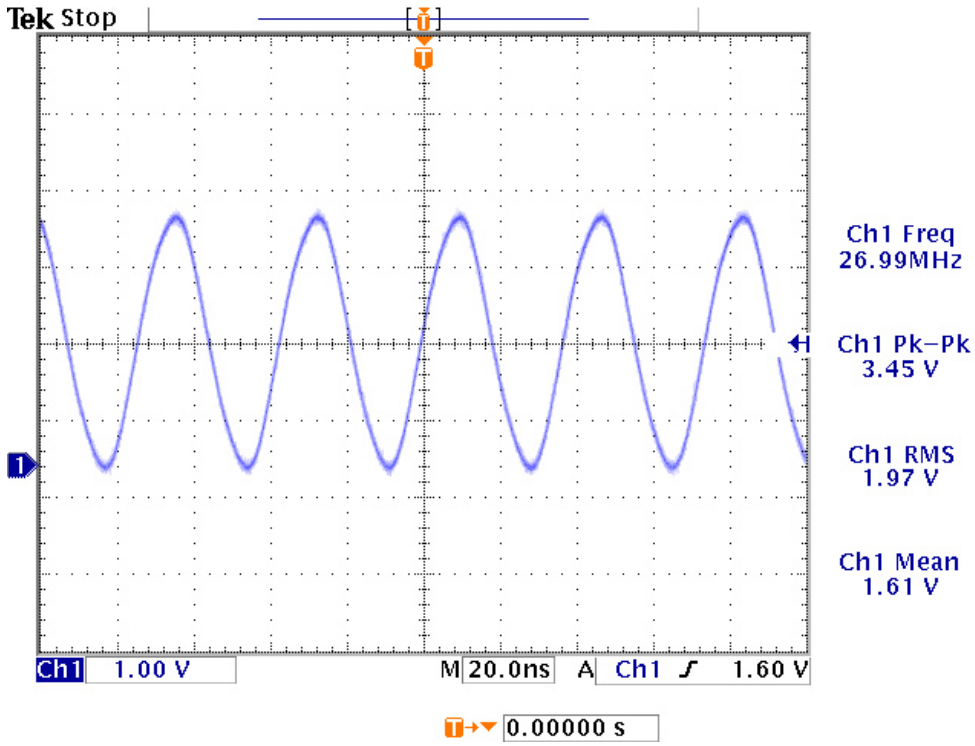
WAVEFORMS



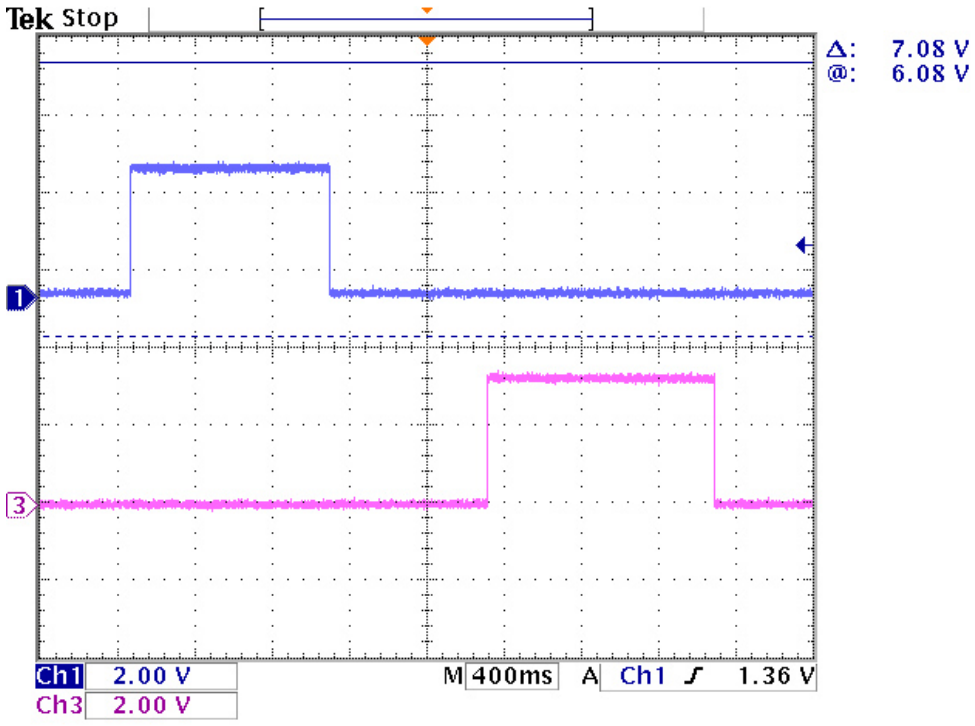
SDRAM CLK



Crystal 4MHz



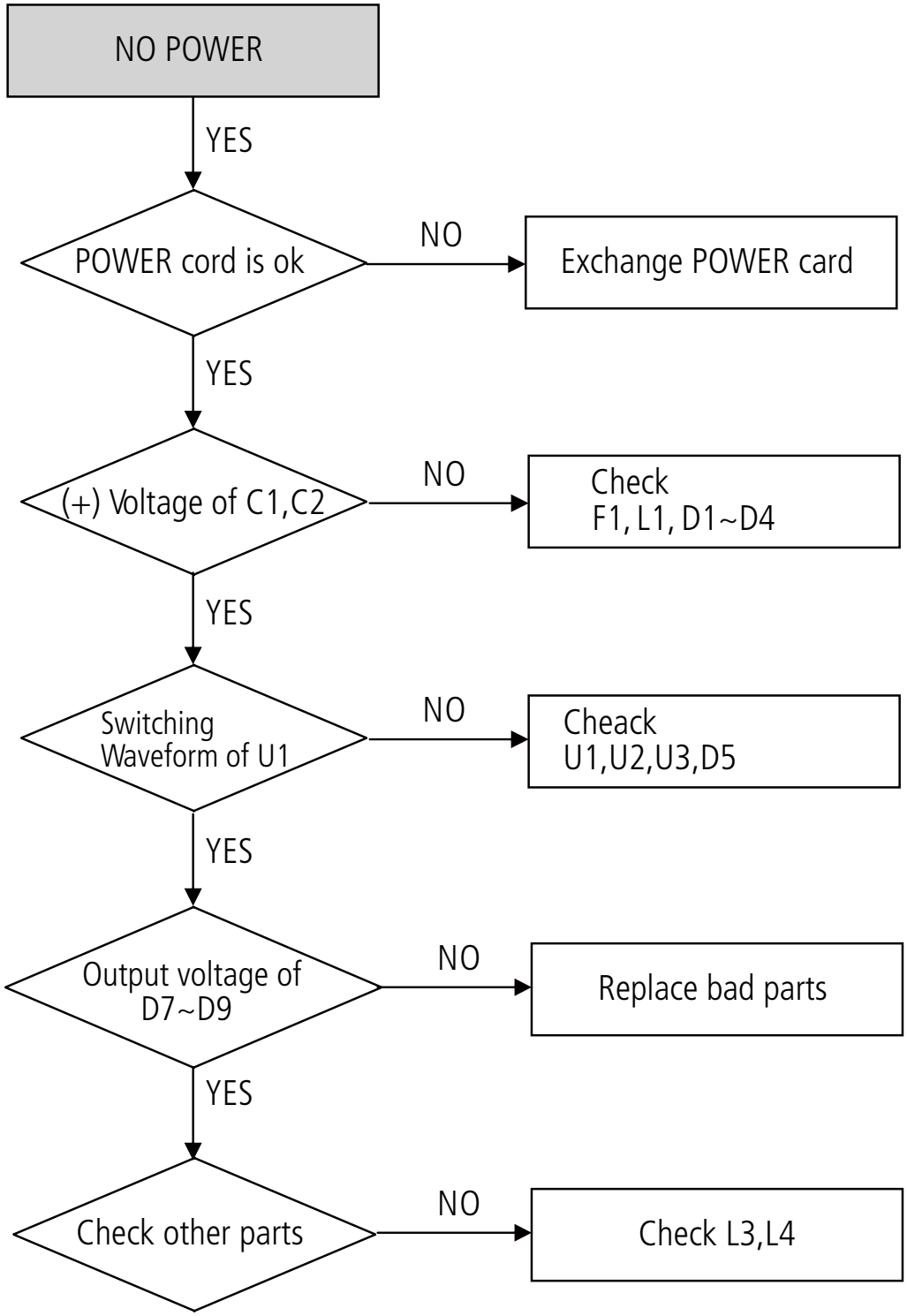
Crystal 27MHz



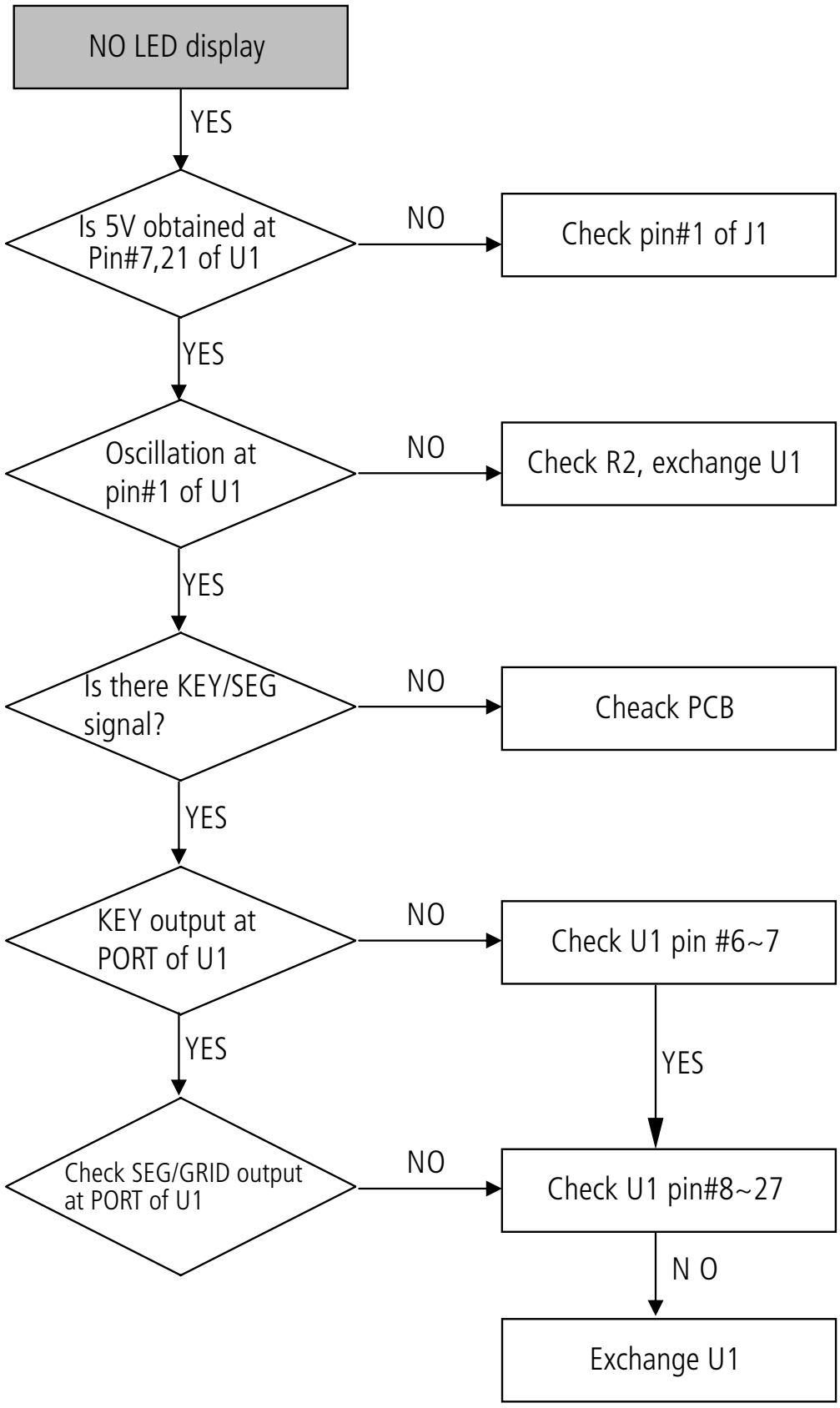
IC1 7Pin,6Pin_open_close

TROUBLE SHOOTING

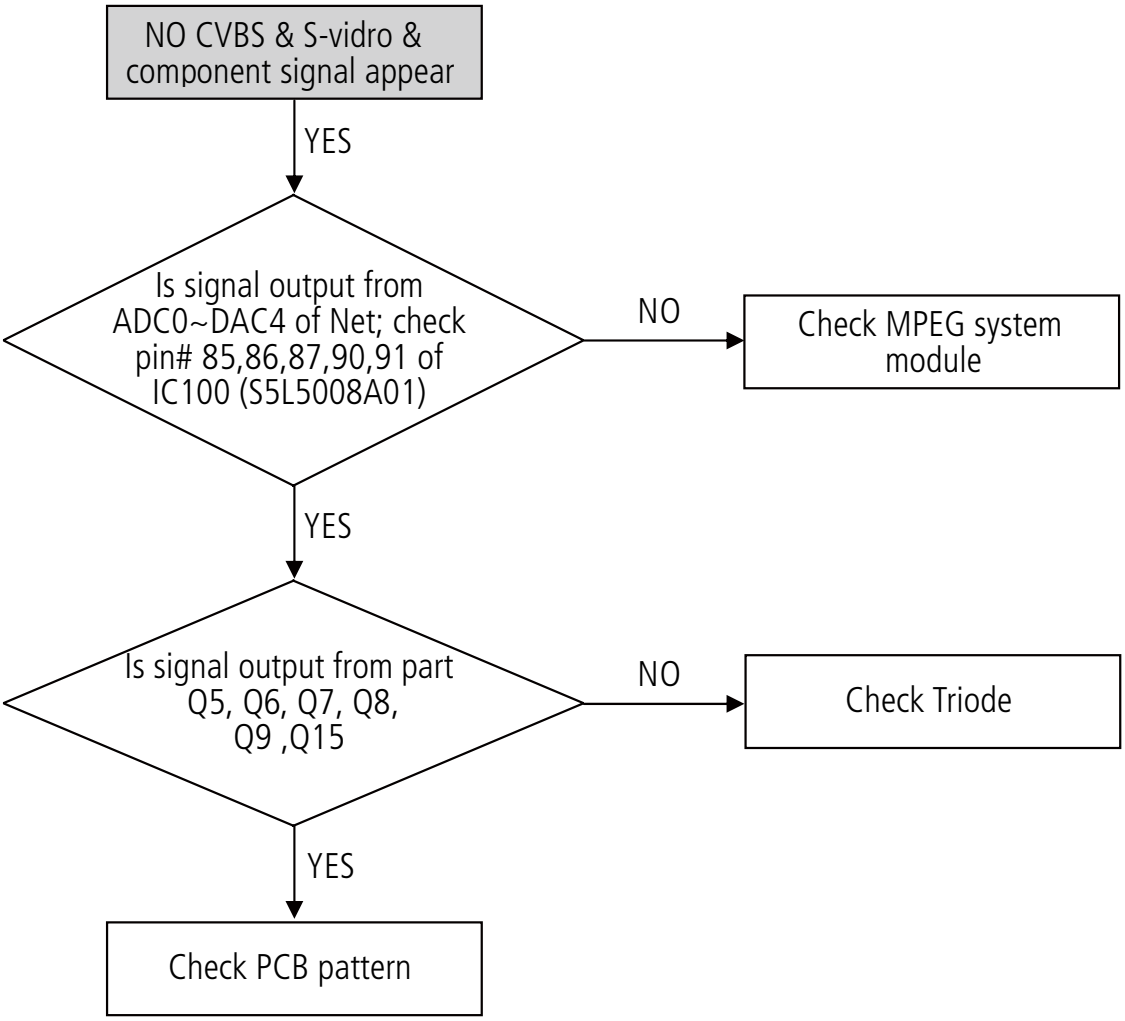
1. POWER CIRCUIT



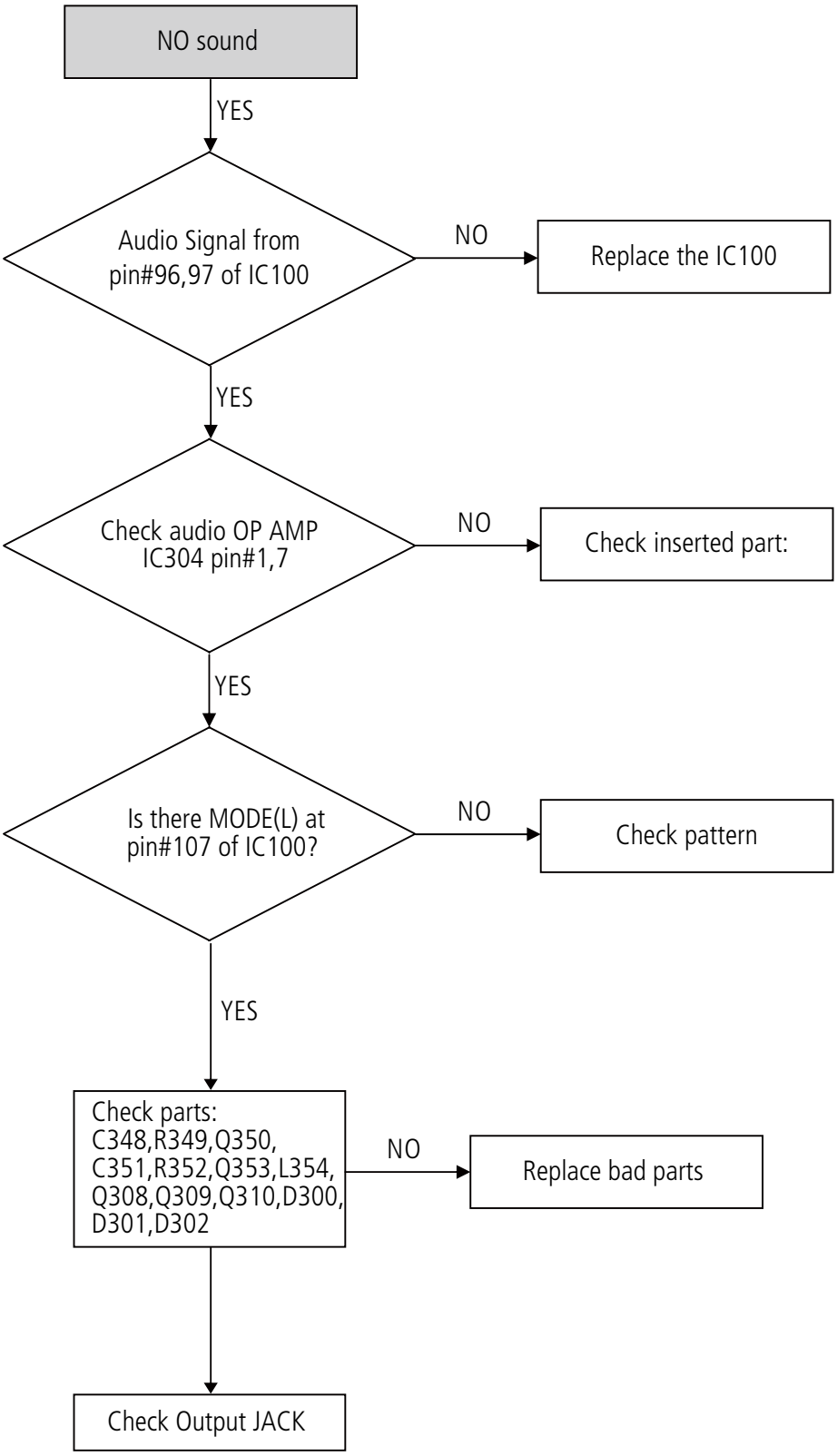
2. CONTROL BOARD CIRCUIT



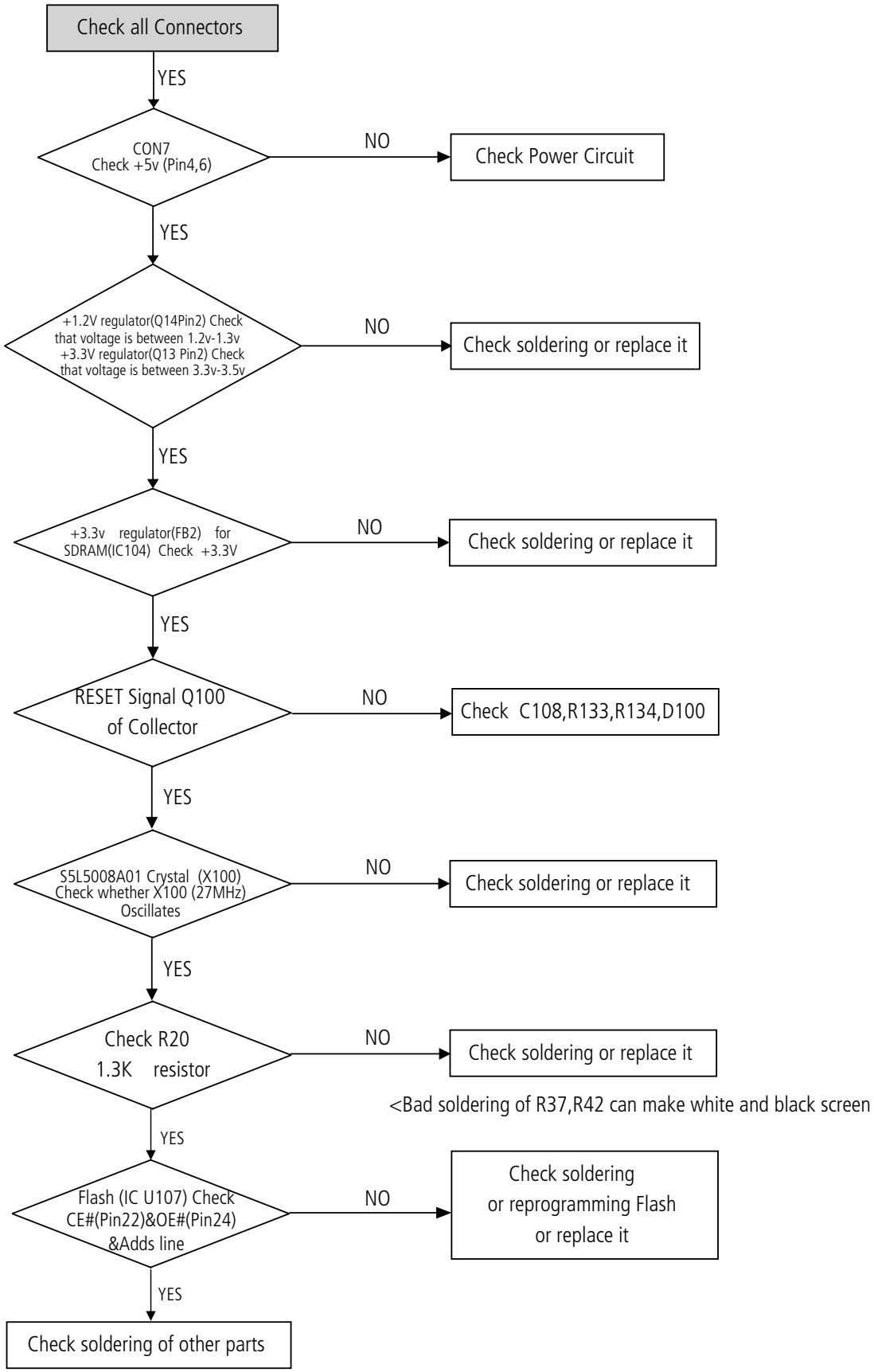
3. VIDEO CIRCUIT



4. AUDIO OUTPUT CIRCUIT

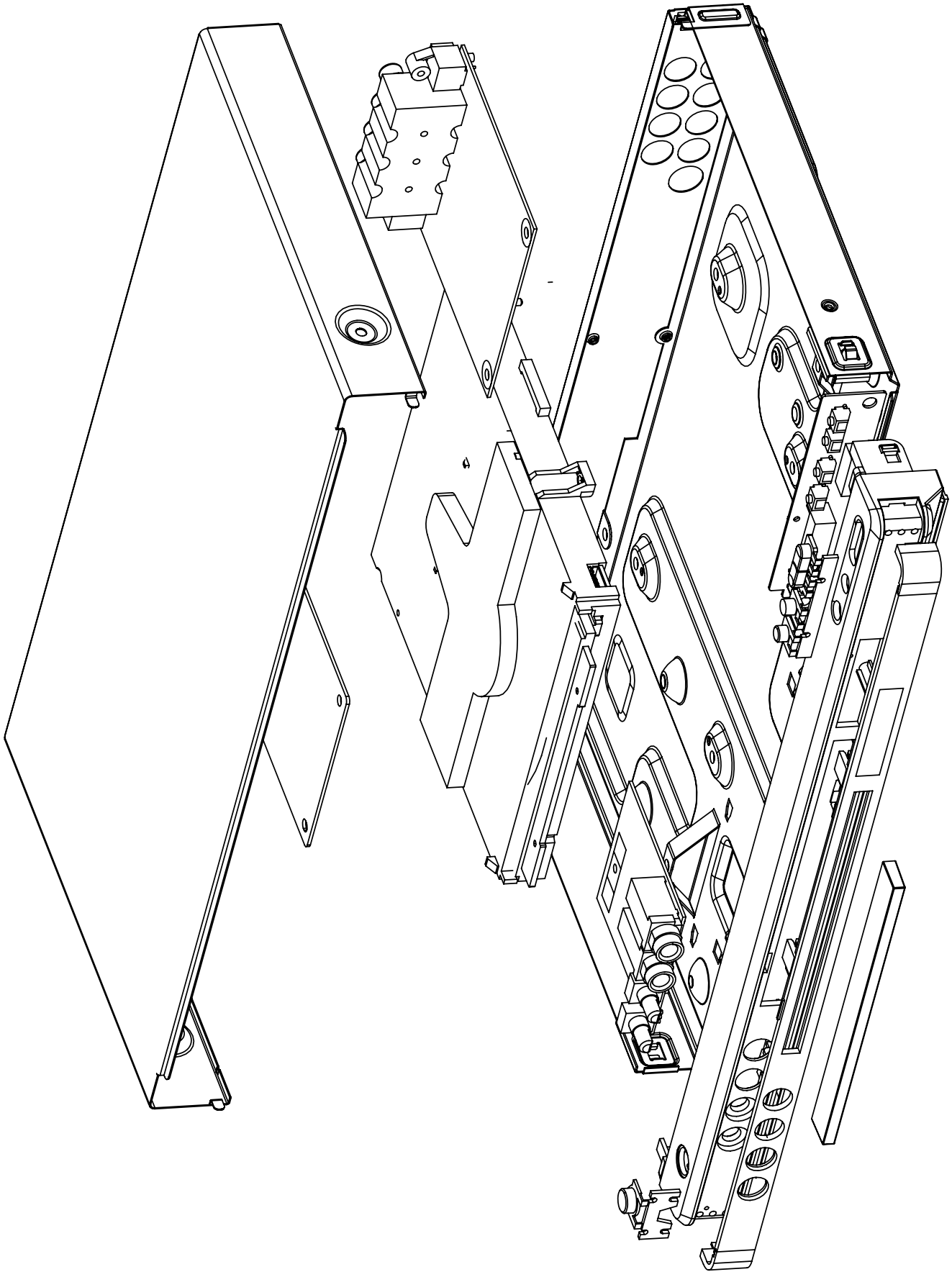


5. MPEG BOARD


Check all Connectors
YES
CON7
Check +5v (Pin4,6)
NO
Check Power Circuit
YES
+1.2V regulator(Q14Pin2) Check
that voltage is between 1.2v-1.3v
+3.3V regulator(Q13 Pin2) Check
that voltage is between 3.3v-3.5v
NO
Check soldering or replace it
YES
+3.3v regulator(FB2) for
SDRAM(IC104) Check +3.3V
NO
Check soldering or replace it
YES
RESET Signal Q100
of Collector
NO
Check C108,R133,R134,D100
YES
S5L5008A01 Crystal (X100)
Check whether X100 (27MHz)
Oscillates
NO
Check soldering or replace it
YES
Check R20
1.3K resistor
NO
Check soldering or replace it
<Bad soldering of R37,R42 can make white and black screen
YES
Flash (IC U107) Check
CE#(Pin22)&OE#(Pin24)
&Adds line
NO
Check soldering
or reprogramming Flash
or replace it
YES
Check soldering of other parts

INSTRUMENT DISASSEMBLY

Make sure that all leads/ wiring are routed correctly when reassembling.



PARTSLIST

SET Material List

Code: 16020892

Unit:pcs

No	Part Code	Part Name	Description	QTY	Location
1	16020892	DVD PLAYER	DG-K301-S5L5008,SHINWA,2.0CH,2MIC,YUV	1	
2	10900014	Battery	7# English Lead free no Hg(R03 UM-4)	2	
3	11310584	Conn Wire	2.0 two heads 11P*80mm,, red white conn wire ,same direction	1	
4	11350148	Power Cord	2 pin IMQ report (jianli)(outside 1.5m end 220*15mm)VH3.96mm KE-39	1	
5	11360001	AV Cable	audio 4 heads red white cable 1.5m	1	
6	11360002	AV Cable	video 2 heads yellow cable 1.5m	1	
7	11640109	Loader	Samsung DL3GV pick up (SONY LD) conn wire 0.5mm/24P same direction	1	
8	12010146	CD Door	DG-K301(679) black TABS with DVD/Progressive Scan printing	1	
9	12200071	Volume	679 Volume HIPS	2	
10	12300325	Mirror	DG-K301 PMIMA(black)	1	
11	12400017	bracket	GVG-679 MIC PCB bracket (ABS)	1	
12	12500001	Handle	white plastic (kit)	1	
13	13000148	T/Cover	GVG680/679 CBU T=0.5mm	1	
14	13010208	B/Cover	GVG679 Samsung Solution - match PSM002 power PCB CBU T=0.6mm	1	
15	13020581	R/Panel	DG-K301 2.0CH YUV T=0.5mm	1	
16	13500002	Screw	BTV3*6	2	MPEG PCB 2
17	13500004	Screw	BTPW3*8	5	Loader 4,MIC PCB 1
18	13500007	Screw	BTPW3*6	4	Power PCB 4
19	13500104	Screw	BTVW3*6	5	T/Cover 5
20	13500107	Screw	BBTV3*8 Black	5	MPEG PCB Jack 4,R/Panel 1
21	13500134	Screw	BTPW3*16	1	MIC bracket 1
22	13670002	Cushion	0.5mm Ø3mm	2	Loader
23	14050806	Gift Box	DG-K301(CHILE/PERU)	1	
24	14500140	Pad Foam	GVG-680(LEFT) 270*82*88mm	1	
25	14500141	Pad Foam	GVG-680(RIGHT) 270*82*50mm	1	
26	14600005	PE Bag	Manual PE bag 04*230*370mm (with warning message)	1	
27	14600081	PE Bag	360mm*(280+70)*0.57mm (with warning message)	1	
28	15300938	Manual	DG-K301(CHILE/PERU)	1	
29	15420168	Warrant Card	DAEWOO Warrant Card	1	
30	15440154	Cushion	34*10*0.5mm(single has sticker 3M #9448) rigidity38	2	Loader
31	15460009	Cushion	17*17*3mm (single has sticker)	4	
32	15710097	MIC Assy	GV-KGVG013-PT2399-01(K301)	1	
33	15750115	Power PCB Assy	GV-SM8002-PSM002-03 NO STANDBY	1	
34	15780497	Panel Assy	DG-K301 silver 2MIC	1	
35	15800731	Mpeg PCB Assy	DG-K301(CHILE/PERU)DJAS5L5008-MSAM001-25(15700423)	1	
36	15900204	Remote Control	RC501-A00-(DVG-8500N)DAEWOO	1	

MPEG PCB Assy Material List

Code: 15700423

No	Part Code	Part Name	Description	QTY	Location
1	15700423	Mpeg PCB Assy	GV-DJAS5L5008-MSAM001-1-26(2.0CH) COAXIAL,OPTICAL,S-VIDEO,MIC,YUV	1	
2	10050001	R Chip	1/16W,0E,±5%,0603	22	R7,R10,R46,R47,R69,R78,R79,R102,R63,R58,R77,R91[2M x16SDRAM(R92,R97)O Type,(R92,R98)P Type],R36,R40,R48,R113,R19,R8
3	10050004	R Chip	1/16W,33E,±5%,0603	6	R85,R80,R21,R35,R43,R34
4	10050005	R Chip	1/16W,47E,±5%,0603	2	R310,R319
5	10050006	R Chip	1/16W,75E,±5%,0603	5	R130,R123,R122,R126,R128
6	10050007	R Chip	1/16W,100E,±5%,0603	4	R112,R82,R84,R81
7	10050009	R Chip	1/16W,150E,±5%,0603	12	R11,R12,R13,R14,R15,R16,R99,R103,R104,R106,R108,R109
8	10050012	R Chip	1/16W,200E,±5%,0603	1	R39
9	10050014	R Chip	1/16W,240E,±5%,0603	2	R49,R50
10	10050017	R Chip	1/16W,330E,±5%,0603	1	R42
11	10050018	R Chip	1/16W,470E,±5%,0603	2	R237,R238
12	10050019	R Chip	1/16W,1K,±5%,0603	4	R210,R351,R66,R243
13	10050020	R Chip	1/16W,2K,±5%,0603	2	R133,R354
14	10050021	R Chip	1/16W,2.2K,±5%,0603	4	R26,R55,R311,R320
15	10050023	R Chip	1/16W,3.3K,±5%,0603	2	R306,R316
16	10050024	R Chip	1/16W,3.9K,±5%,0603	1	R37
17	10050026	R Chip	1/16W,4.7K,±5%,0603	3	R107,R212,R349
18	10050028	R Chip	1/16W,10K,±5%,0603	17	R9,R23,R25,R29,R32,R83,R134,R234,R246,R247,R309,R318,R348,R350,R22,R30,R31
19	10050029	R Chip	1/16W,11K,±5%,0603	2	R307,R315
20	10050030	R Chip	1/16W,12K,±5%,0603	3	R28,R76,R65
21	10050031	R Chip	1/16W,15K,±5%,0603	2	R74,R75
22	10050033	R Chip	1/16W,20K,±5%,0603	2	R308,R317
23	10050034	R Chip	1/16W,22K,±5%,0603	4	R27,R209,R88,R90
24	10050036	R Chip	1/16W,100K,±5%,0603	2	R53,R54
25	10050045	R Chip	1/16W,1M,±5%,0603	1	R135
26	10050049	R Chip	1/16W,27K,±5%,0603	1	R213
27	10050061	R Chip	1/16W,1.5K,±5%,0603	1	R56
28	10050076	R Chip	1/16W,120E,±5%,0603	2	R51,R52
29	10050100	R Chip	1/16W,560E,±5%,0603	1	R352
30	10050105	R Chip	1/16W,750E,±5%,0603	1	R24
31	10050121	R Chip	1/16W,220K,±5%,0603	1	R353
32	10050139	R Chip	1/16W,39K,±5%,0603	1	R1
33	10054023	R Chip	1/16W,5.6E,±5%,0805	1	R235
34	10054039	R Chip	1/16W,4.7E,±5%,0805	1	R236
35	10054041	R Chip	1/16W,150E,±5%,0805	2	L303,L304
36	10190067	C Electro	16V/100UF/±20%/D5*11/105ºC F5 TP	9	C1,C8,C19,C209,C338,C339,C340,C341,C345
37	10190080	C Electro	10V/220UF/±20%/D5*11/105ºC F5 TP	3	C228,C347,C346
38	10190190	C Electro	16V/10UF/±20%/D5*11/105ºC F5 TP	8	C3,C26,C28,C108,C301,C305,C308,C312
39	10190197	C Electro	16V/220UF/±20%/D6.3*11/105ºC F5 TP	4	C27,C33,C201,C202
40	10200001	C Chip	56P,50V,±10%,0603	2	C15,C16
41	10200003	C Chip	22P,50V,±10%,0603	2	C306,C313
42	10200007	C Chip	151,50V,±10%,0603	11	C37,C54,C56,C57,C59,C61,C62,C234,C55,C58,C60
43	10200009	C Chip	181,50V,±10%,0603	1	C48
44	10200010	C Chip	272,50V,±10%,0603	1	C32
45	10200016	C Chip	333,50V,±10%,0603	1	C227

PARTSLIST

No	Part Code	Part Name	Description	QTY	Location
46	10200023	C Chip	562,50V,±10%,0603	1	C231
47	10200036	C Chip	104,50V,±10%,0603	4	BC9~BC12
48	10200041	C Chip	152,50V,±10%,0603	2	C7,C12
49	10200042	C Chip	182,50V,±10%,0603	2	C4,C5
50	10200091	C Chip	224,25V,±10%,0603	2	C11,C21
51	10200092	C Chip	105,25V,±10%,0603	1	C13
52	10200098	C Chip	334,16V,±10%,0603	1	C10
53	10201005	C Chip	27P,50V,±5%,0603	2	C109,C110
54	10201008	C Chip	102,50V,±5%,0603	2	C303,C310
55	10201010	C Chip	101,50V,±5%,0603	2	C20,C24
56	10201013	C Chip	221,50V,±5%,0603	2	C17,C18
57	10201014	C Chip	121,50V,±5%,0603	2	C304,C311
58	10201026	C Chip	222,50V,±5%,0603	2	C30,C31
59	10201027	C Chip	332,50V,±5%,0603	1	C25
60	10201033	C Chip	47P,50V,±5%,0603	11	C47,C49,C50,C35,C36,C40,C41,C43,C44,C45,C46
61	10201038	C Chip	103,50V,±5%,0603	4	BC8,C14,C22,C29
62	10202001	C Chip	104,50V,+80%-20%,0603	58	BC3~7,BC13~BC20,BC101,BC104~106,BC109,BC111~120,BC122,BC125~128,BC131~132,BC143,BC209~210,BC213~215,BC304~305,BC308~310,BC312,C9
63	10250018	Coil	0805,10UH,±10%,TP	3	L4,L5,L8
64	10250020	Coil	0805,1.8UH,±10%,TP	6	L104,L105,L100,L101,L102,L103
65	10250022	Coil	0805,600E,100MHZ,0.5A,TP	5	L2,L300,L302,L308,L309
66	10250140	Coil	0603,600E,100MHz,TP	4	FB1,FB2,FB6,FB7
67	10251017	Coil	0603,60E,TP	1	FB3
68	10320006	Diode	1N4001,TP	3	D6,D7
69	10390001	Diode Chip	1N4148,1206	7	D100,D200,D201,D301,D302,D1,D2
70	10450086	TR	8550,Ic=1.5A,DIP	2	Q13,Q14
71	10460001	TR Chip	2N3904,SOT-23	6	Q10,Q308,Q11,Q12,Q302,Q303
72	10460006	TR Chip	SS8550,SOT-23	2	Q309,Q310
73	10460007	TR Chip	2N3906,SOT-23	8	Q9,Q200,Q201,Q15,Q5,Q6,Q7,Q8
74	10460008	TR Chip	SS8050,SOT-23	2	Q100,Q16
75	10510738	IC	S5L5008 QFP216	1	IC100
76	10510739	IC	AT5669 HSOP	1	IC1
77	10510765	IC	MMSD416T216-O TSOP54 2*16 "MEM-TEK"	1	IC102
78	10510786	IC	AZ4558CM-E1(SOP-8)	1	IC304
79	10510798	IC	ES29LV800EB-70TG 3.3V TSOP48 "EX-CELSEMI"	1	IC101
80	10610030	Crystal	27MHz 27P (HC-49/S) with cushion	1	X100
81	11000708	PCB	MSAM001 VER:B1.5 2007-03-22 T=1.2mm MPEG PCB	1	
82	11150006	Conn Wafer	XH-7Pin 2.54mm	1	CON7
83	11150035	Conn Wafer	XH-6Pin 2.0mm	1	CON1
84	11150042	Conn Wafer	XH-11Pin 2.0mm	1	CON8
85	11150056	Conn Wafer	XH-3Pin 2.54mm	1	CON6
86	11150105	Jack	optical terminal TX179AFT	1	J1
87	11150115	Jack	S-Viode (with fixed hole)DSW-007	1	J4
88	11150186	Conn Wafer	FPC radial /-24Pin 0.5mm with iron cover	1	CON2
89	11150235	Jack	4 holes jack AV7-8.4-13D-B	1	J3

POWER PCB Assy Material List

Code: 15750115

No	Part Code	Part Name	Description	QTY	Location
1	10000004	R Carbon Film	1/6W,4.7K,±5%,TP	3	R12,R13,R14
2	10000099	R Carbon Film	1W,100K,±5%,TP	1	R4
3	10000118	R Carbon Film	1/8W,10E,±5%,TP	1	R19
4	10000121	R Carbon Film	1/8W,1K,±5%,TP	1	R3
5	10000123	R Carbon Film	1/8W,1M,±5%,TP	1	R16
6	10000128	R Carbon Film	1/8W,220E,±5%,TP	1	R10
7	10000190	R Carbon Film	1/8W,100E,±5%,TP	1	R18
8	10000209	R Carbon Film	1/8W,1.2K,±5%,TP	1	R11
9	10000288	R Carbon Film	1/6W,300E,±5%,TP	1	R17
10	10110031	C Cera AC	400V,102,±20%,Y1,T=4mm	1	CY1
11	10150015	C Cera	223,50V,±10%	1	C11
12	10150051	C Cera	332,1KV,±20%,F5	1	C15
13	10151009	C Cera	104,50V,±20%	1	C20
14	10151027	C Cera	103,50V,±20%	1	C17
15	10151044	C Cera	471,1KV,±20%	1	C16
16	10190013	C Electro	16V/220UF/±20%/D6*12/105ºC	1	C13
17	10190020	C Electro	16V/10UF/±20%/D5*11/105ºC	1	C19
18	10190063	C Electro	10V/1000UF/±20%/D8*12/105ºC	1	C8
19	10190118	C Electro	25V/22UF/±20%/D5*11/105ºC	1	C18
20	10190129	C Electro	25V/100UF/±20%/D6.3*11/105ºC	3	C6,C14,C12
21	10190184	C Electro	400V/15UF/±20%/D13*16/105ºC	2	C1,C2
22	10250002	Coil	4.7UH,D3*7,±10%,TP	1	L4
23	10250006	Coil	RH3.5*4.7*0.8,TP	1	L2
24	10250176	Coil	4.7UH 2A ±10% D8*10 F5	1	L3
25	10250177	Coil	1mH 0.2A ±10% D6*8 F5	1	L1
26	10300050	Transformer	TRSM8002C	1	T1
27	10320005	Diode	1N4007,TP	4	D1~D4
28	10330008	Diode Zener	15V,1/2W,DO-35,TP	1	ZD3
29	10380006	Schottky Diode	HER107,1A,1000V	2	D6,ZD2
30	10380021	Schottky Diode	SB340,3A,40V	1	D8
31	10380022	Schottky Diode	FR105,1A,600V	2	D7,D9
32	10510777	IC	AZ431BZ-ATRE1 TO-92 TP	1	U3
33	10510884	IC	SM8002C HDIP4	1	U1
34	10640009	IC Photo Coupler	EL817	1	U2
35	11000710	PCB	PSM002 REV:B1.2 2007-01-27 POWER PCB	1	
36	11150216	Conn Wafer	3Pin VH3.96mm	1	CN1
37	11260003	Jumper	pre-form pitch 6mm	3	JP1,JP2,JP3
38	11260004	Jumper	pre-form pitch 7mm	1	R20
39	11260011	Jumper	pre-form pitch 15mm	1	RT1
40	11260033	Jumper	pre-form pitch 5.5mm	2	J2,J1
41	11310684	Conn Wire	2.54 two heads 7P*240mm,red white conn wire with pin, reverse	1	P101
42	11450010	Fuse	T1A,250V,SMT,TP	1	F1

Front Panel Assy Material List

Code: 15780731

No	Part Code	Part Name	Description	QTY	Location
1	12000531	Panel	DG-K301	1	
2	12100348	Knob	GVG-679 power knob	1	
3	12100349	Knob	GVG-679 function knob	1	
4	12420175	fittings	GVG-679-2 left fittings	1	
5	12420176	fittings	GVG-679-2 right fittings	1	
6	13500004	Screw	BTPW3*8	3	
7	15730270	Panel Assy	GV-CGVG058-05(K301)	1	

Control PCB Assy Material List

Code: 15730270

No	Part Code	Part Name	Description	QTY	Location
1	10000005	R Carbon Film	1/6W,10K,±5%,TP	4	R3,R4,R5,R7
2	10000019	R Carbon Film	1/6W,51K,±5%,TP	1	R6
3	10000150	R Carbon Film	1/6W,2.2K,±5%,TP	1	R1
4	10151009	C Cera	104,50V,±20%	1	C1
5	10190030	C Electro	16V/100UF/±20%/D5*11/105ºC	2	EC1,EC2
6	10510794	IC	AP6928 SOP 28Pin	1	U1
7	10711020	LED	MR-6656 T=13mm	1	LED1
8	10800018	Switch	tact switch 6*6*5	5	SW1~SW5
9	11000736	PCB	CGVG058 REV:B1.8 2007-04-09 T=1.6mm control PCB	1	
10	11260002	Jumper	pre-form pitch 5mm	7	JP7,JP8,JP1~JP5
11	11310600	Conn Wire	2.0 two heads 2P*240mm, red white conn wire with pin	1	CN2 to CN3
12	11310700	Conn Wire	2.0 two heads 6P*110mm,red white conn wire with pin 1,3P reverse	1	CN1
13	11500019	Receiver	SM3385JMH6	1	IR1

Loader Assy Material List

Code: 11640109

No	Part Code	Part Name	Description	QTY	Location
1	11640108	Loader	Samsung DL3GV pick up (SONY LD) excluding traverse	1	
2	12420133	Traverse	Shinwa SHD-2303 GGV-L2	1	
3	11390052	Flat Cable	0.5 pick up conn wire 24P 150mm,same direction (wide 5mm,metallic)	1	

MIC PCB Assy Material List

Code: 15710097

No	Part Code	Part Name	Description	QTY	Location
1	10000004	R Carbon Film	1/6W,4.7K,±5%,TP	1	R117
2	10000005	R Carbon Film	1/6W,10K,±5%,TP	7	R22,R23,R113,R114,R115,R116,R121
3	10000013	R Carbon Film	1/6W,1.5K,±5%,TP	1	R3
4	10000014	R Carbon Film	1/6W,5.6K,±5%,TP	1	R111
5	10000015	R Carbon Film	1/6W,15K,±5%,TP	4	R110,R112,R118,R122
6	10000018	R Carbon Film	1/6W,47K,±5%,TP	1	R12
7	10000020	R Carbon Film	1/6W,100K,±5%,TP	2	R120,R25
8	10000086	R Carbon Film	1/6W,18K,±5%,TP	1	R119
9	10000124	R Carbon Film	1/6W,82K,±5%,TP	1	R24
10	10000305	R Carbon Film	1/6W,150K,±5%,TP	2	R27,R28
11	10000002	R Carbon Film	1/6W,1K,±5%,TP	2	R18,R26
12	10100007	Pot	RD902N-BA1-B20K-S,3PIN	1	VR1
13	10100011	Pot	RO903NE-F20-C20K-S,3PIN	1	VR2
14	10150004	C Cera	392,50V,±10%	1	C122
15	10150007	C Cera	101,50V,±10%	2	C24,C25
16	10150008	C Cera	104,50V,±10%,Y5P	8	C10,C23,C110,C113,C114,C230,C115,C116
17	10150013	C Cera	103,50V,±10%	1	C119
18	10150049	C Cera	102,50V,±10%	4	C19,C27,C28,C32
19	10151024	C Cera	332,50V,±20%	1	C118
20	10150002	C Cera	561,50V,±10%	2	C117,C121
21	10190008	C Electro	50V/4.7UF/±20%/D5*11/105ºC	5	C30,C123,C125,C128,C129
22	10190012	C Electro	50V/10UF/±20%/D5*11/105ºC	5	C17,C26,C31,C120,C124
23	10190030	C Electro	16V/100UF/±20%/D5*11/105ºC	2	C22,C111
24	10190039	C Electro	25V/22UF/±20%/D5*11/105ºC	1	C1
25	10190117	C Electro	16V/220UF/±20%/D8*12/105ºC	1	C11
26	10190219	C Electro	16V/47UF/±20%/D4*5/105ºC	1	C112
27	10250006	Coil	RH3.5*4.7*0.8,TP	2	L1,L2
28	10330001	Diode Zener	5.6V,1/2W,DO-35,TP	1	D1
29	10450013	TR	C1815,ß=70~700	1	Q1
30	10510180	IC	PT2399 (DIP)	1	U1
31	10510791	IC	AZ4558CP-E1 DIP 8Pin	1	U2
32	11000726	PCB	KGVG013 REV:B1.2 2007-03-12 MIC PCB	1	
33	11150029	Jack	4pin mic wafer	2	MIC1,MIC2
34	11260004	Jumper	Pre- form pitch 7mm	1	JMP1
35	11260024	Jumper	Pre- form pitch 4.5mm	2	JMP2.JMP3
36	11260003	Jumper	Pre- form pitch 6mm	2	R21,R9
37	11310685	Conn Wafer	2.54 two heads 3P*420mm,shield cable with pin	1	CN1