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LCD MONITOR

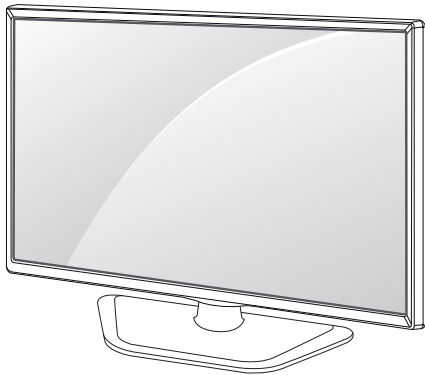
SERVICE MANUAL

CHASSIS : LM42A

MODEL : 32MB25VQ 32MB25VQ-LC

CAUTION

BEFORE SERVICING THE CHASSIS,
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



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SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by \triangle in the Schematic Diagram and Exploded View.

It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent Shock, Fire, or other Hazards.

Do not modify the original design without permission of manufacturer.

General Guidance

An **isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and its components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1 W), keep the resistor 10 mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Before returning the receiver to the customer,

always perform an **AC leakage current check** on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

Leakage Current Cold Check(Antenna Cold Check)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.

If the exposed metallic part has a return path to the chassis, the measured resistance should be between 1 M Ω and 5.2 M Ω .

When the exposed metal has no return path to the chassis the reading must be infinite.

An other abnormality exists that must be corrected before the receiver is returned to the customer.

Leakage Current Hot Check (See below Figure)

Plug the AC cord directly into the AC outlet.

Do not use a line Isolation Transformer during this check.

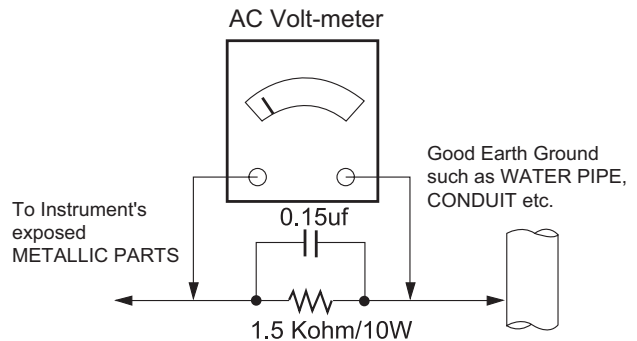
Connect 1.5 K / 10 watt resistor in parallel with a 0.15 uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.

Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.

Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which corresponds to 0.5 mA.

In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

Leakage Current Hot Check circuit



When 25A is impressed between Earth and 2nd Ground for 1 second, Resistance must be less than 0.1

*Base on Adjustment standard

SPECIFICATION

NOTE : Specifications and others are subject to change without notice for improvement.

1. Application range

This spec sheet is applied all of the Monitor with LM142A chassis.

2. Requirement for Test

Each part is tested as below without special appointment.

- (1) Temperature: 25 °C ± 5 °C(77 °F ± 9 °F), CST: 40 °C ± 5 °C
- (2) Relative Humidity: 65 % ± 10 %
- (3) Power Voltage
 - : Standard input voltage (AC 100-240 V~, 50/60 Hz)
 - * Standard Voltage of each products is marked by models.
- (4) Specification and performance of each parts are followed each drawing and specification by part number in accordance with BOM.
- (5) The receiver must be operated for about 5 minutes prior to the adjustment.

3. Test method

- (1) Performance: LGE TV test method followed
- (2) Demanded other specification
 - Safety : MIC Class A
 - EMC : MIC Class A

4. Module General Specification

No	Item		Content	Remark
1	Customer		BRAND	
2	User Model Name		32MB25VQ	
3	Sale region		Refer to Suffix standard	
4	Feature		LCD MONITOR	
5	Chassis Name		LM42A	
6	General Scope	External SW &Adj.	Joystick New OSD (Menu, Picture Mode, Input, Power off)	
		Function	OSD,DDC2B,DDC2AB, HDCP, Control Lock, Ratio, Black level, Super Energy Saving, Screen Split, SUPER RESOLUTION+, Color Wizard, Reader mode	
7	Power Code		Length : 1.5 ± 0.05 M Shape : Wall-out Color : Black	Refer to Suffix standard and power cord table
8	Cable	HDMI	Length : 1.8m Shape : Detachable Type Color : Black	Support
		DVI	Length : Shape : Color : Pin :	Do not Support
		Audio	Length : ,Shape : ,Color: ,Pin	Do not Support
		TV	Length : ,Shape : ,Color: ,Pin	Do not Support
9	Power		Input: AC100~240V 50~60Hz, 19V, 2.53A Output: DC 19V 2.53A	Refer to Suffix standard
10	Applying module list		P/No	
			EAJ63112001	

ADJUSTMENT INSTRUCTION

1. Coverage

This spec. sheet applies to LM42A chassis applied Monitor all models manufactured in Monitor factory.

2. Appointment

- (1) Adjustment must be done as fixed sequence, and adjustment sequence can be modified after agreement with the responsible R&D engineer considering mass-production condition.
- (2) Power : AC 100-240V to Adapter, 19Vdc out
- (3) Input signal: As Product Standard(Signal ROM:)
- (4) Warm-up Time : Depends on assemble line
(Recommend : Over 5 minutes)
- (5) Adjustment equipment :
 - White balance equipment : CA-110/210(or equivalent)
 - Signal Generator : VG-819(or VG828 or equivalent)
 - PC : More than 486 computer with White balance adjust program.,
 - HDCP Adjusting Jig equipment.
 - Etc. : Display Monitor, Oscilloscope

3. EDID

3.1. EDID

No	Item	Content	16 Data
1	Manufacturer ID	GSM	1E 6D
2	Product ID	(Analog) (DVI) (HDMI)	30451 (76 F3) 30452 (76 F4) 30453 (76 F5)
3	Year	2014	18
4	Version	1	01
5	Revision	Analog : 3 DVI : 3 HDMI 3	03
6	Serial Number	*	*
7	Week	**	**
8	Model Name	32 inch LG FHD	--
9	Check Sum	****	****
10	Special Item	Need to Input Serial Number	

** Protocol : DDC 2AB

3.2. Data (128 Bytes)

- EDID Ver. 1.3 FOR ANALOG (128 Byte)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	F3	76	01	01	01	01
10	01	18	01	03	68	46	27	78	EA	F3	53	A5	54	51	93	26
20	12	48	49	23	08	00	01	01	81	C0	81	00	81	80	95	00
30	90	40	A9	C0	B3	00	02	3A	80	18	71	38	2D	40	58	2C
40	45	00	BA	88	21	00	00	1A	00	00	00	FD	00	38	3F	1E
50	53	0F	00	0A	20	20	20	20	20	20	00	00	00	FC	00	33
60	32	69	6E	63	68	20	4C	47	20	46	48	44	00	00	00	FF
70	00	0A	20	20	20	20	20	20	20	20	20	20	20	20	00	3E

- EDID Ver. 1.3 FOR DVI (128 Byte)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	F4	76	01	01	01	01
10	05	18	01	03	80	46	27	78	EA	F3	53	A5	54	51	93	26
20	12	48	49	23	08	00	01	01	81	C0	81	00	81	80	95	00
30	90	40	A9	C0	B3	00	02	3A	80	18	71	38	2D	40	58	2C
40	45	00	BA	88	21	00	00	1E	00	00	00	FD	00	38	3F	1E
50	53	0F	00	0A	20	20	20	20	20	20	00	00	00	FC	00	33
60	32	69	6E	63	68	20	4C	47	20	46	48	44	00	00	00	FF
70	00	0A	20	20	20	20	20	20	20	20	20	20	20	20	00	1D

- EDID Ver. 1.3 FOR HDMI (256 Byte)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	FF	FF	FF	FF	FF	FF	00	1E	6D	F5	76	01	01	01	01
10	01	18	01	03	80	46	27	78	EA	F3	53	A5	54	51	93	26
20	12	48	49	23	08	00	01	01	81	C0	81	00	81	80	95	00
30	90	40	A9	C0	B3	00	02	3A	80	18	71	38	2D	40	58	2C
40	45	00	BA	88	21	00	00	1A	21	39	90	30	62	1A	27	40
50	68	B0	36	00	BA	88	21	00	00	1C	00	00	00	FD	00	38
60	3D	1E	53	0F	00	0A	20	20	20	20	20	20	20	00	00	FC
70	00	33	32	69	6E	63	68	20	4C	47	20	46	48	44	01	E4

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	02	03	1D	F1	49	84	05	03	02	1D	00	10	11	13	23	09
10	07	07	83	01	00	00	66	03	0C	00	10	00	80	01	1D	00
20	73	51	D0	1E	20	38	88	15	00	56	50	21	00	00	1E	01
30	1D	80	18	71	1C	16	20	58	2C	25	00	56	50	21	00	00
40	9E	01	1D	80	D0	72	1C	16	20	10	2C	25	80	C4	8E	21
50	00	00	9E	02	3A	80	D0	72	38	2D	40	10	2C	45	20	06
60	44	21	00	00	1E	02	3A	80	18	71	38	2D	40	58	2C	45
70	00	56	50	21	00	00	1E	00	00	00	00	00	00	00	00	48

1) All Data: HEXA Value

2) Changeable Data :

* Serial No : Controlled / Data:01) - Yellow box

** Week : Controlled / Data: 01) - Purple box

***:Year: Controlled - Blue box

**** Check sum - Block box

4. Adjustment

4.1. Overview

- Use factory automation equipment and adjust automatic movement.
- But, do via passivity adjust in error occurrence.

4.2. Adjustment order

(refer to the Adjustment standard and adjustment command table)

4.2.1. Board Assembly Line

- Connect input signal to 15pin D-sub.
- Ready for adjustment: check whether adjustment command works normally or not and the operating state of each mode.
- Check the display state of gray color when 256 gray scale pattern is embodied.
- Read by EEPROM Read Command to check whether initial value is correct or not.

4.2.2. Total Assembly Line

- Input analog signal. (1920x1080@60Hz)
- Write HDCP Key to EEPROM(24C16) by using DDC2AB protocol & HDCP Adjusting Jig equipment [Address 0xA6 80, 298bytes]
- If error is occurred, write and check again.
- Ready : Warm-up in 5 minutes in the state with signal(depends on line condition)
- Connect input signal to D-sub.
- Default value before adjustment : Contrast "70" , Brightness "100(Max)"

4.2.3. Adjustment of Horizontal/Verticality screen position, Clock and Phase at each Mode.

- There is no special factory mode adjustment.
Writing initial value of EEPROM in Board Assembly line is adjusting Preset Mode and Reset mode. (EEPROM is initialized when AC Power is ON first.)
- If the change of FOS data is needed after M.P, it is possible by writing Mode Data with EEPROM write command or modifying the Mode Data in MICOM itself.
(Caution) Must keep power-on more than 3 seconds after AC Power-on first time.

4.2.4. Color coordinates adjustment and Luminance adjustment.

4.2.4.1. Color coordinates adjustment

- Monitor Contrast / Brightness
 - Contrast : 70
 - Brightness : 100(Max)
 - Energy saving : off
- CA-110: channel : 8 / CA-210: channel 14
- Signal Generator :
At cut-off and drive -> 16 step pattern for ADC
 - Output Voltage : 700 mVp-p
 - Output Mode :
Mode 12(1920x1080+ 60Hz)mode Setting.

4.2.4.2. Adjustment : Board Assembly Line

- 32MB24 model use internal ADC, no need connect D-SUB cable Internal ADC steps as below
- On AC power on with Aging mode, checking the ADC values and then decide to do or not,

- Read ADC OFFSET and GAIN flags from 0xA6 0xFD, 0xFE on NVRAM

- If those values are not 0xAA on Aging mode, must do internal ADC calibration.

- If the result of internal ADC calibration is OK, save the ADC result and make the OFFSET and GAIN flags to 0xAA and make the Internal_ADC flag to INTERNAL.

- Display the result of ADC on Aging Mode OSD and Service OSD

- If don't use internal ADC, please follow below step

- Input 16 step pattern for ADC (Mode12, pattern 11).
(Video level : 700 mVp-p)
- Adjust by commanding AUTO_COLOR_ADJUST
- Confirm "Success" message in Screen or Check the data of 0xFD, 0xFE address of EEPROM(0xA6) is 0xAA after waiting 5 seconds
- If there is "FAULT" message or the data of 0xFD, 0xFE address of EEPROM(0xA6) is not 0xAA, do adjust again
- If all Adjustment is completed, the values of 6500K, User Color and 9300K are saved automatically.

4.2.4.3. Confirm at Total Assembly Line: adjustment

- Check the data of 0xFD, 0xFE address of EEPROM(0xA6) is 0xAA.
- If the data of 0xFD, 0xFE address of EEPROM(0xA6) is not 0xAA, do adjust again by 3.2.4.2.

4.2.4.4. Confirm PRESET 6500K Color coordinates and Adjust PRESET 9300K Color coordinates .

- * Set as Aging mode ON, by commanding AGING_ON/OFF command code.
- * Select Module that is being used in present production by commanding MODULE SELECT.
- * Send SYSTEM RESET command to set Module data.
- * Input Full White Pattern (Video level : 700 mVp-p)

EN33S /SW Model are Non TCO model,no need W/B

4.2.4.5. Confirm User color coordinates .

- * Confirm Whether User color is saved same as 6500K.
- * After confirming Color coordinates, Must return to 6500K
- * Confirm whether user color is 50. If the value of user color(R/G/B) is 30, do adjust again by

4.2.5. Confirm Operation state.

4.2.5.1. Operation mode : Confirm whether each appointed mode operate correctly or not.

4.2.5.2. Confirmation of Adjustment condition and operation :

Confirm whether it meet Auto/Manual equipement Adjustment standard or not.

- Confirm Analog screen state : Confirm screen state at below mode.

Appointment mode :

640*480 @60Hz (Mode 2), 800*600@75Hz(Mode 5)
1024*768@60Hz(Mode 6), 1280*1024@60Hz(Mode 9)
1680*1050@60Hz(Mode 11), 1920*1080@60Hz(Mode 12)
SMPTE pattern(Check 0%,5%,95%,100%)

– Mode can be added.

- Check HDCP signal screen by using Video generator that generate HDCP signal

4.2.5.3. Confirm Auto adjustment operation.

* Input Analog 1 Dot on/off & Rectangle Pattern at Mode 12(1920x1080@60Hz)

* Confirm adjustment operation by changing Clock, Phase,H/V Position.

* Check Clock, Phase by pressing AUTO Key.

* Confirm first set of new lot by periods

4.2.5.4. Other quality

- Confirm that each items satisfy under standard condition that was written product spec.
- Confirm Applying Module & MICOM Setting -> Confirm with Service OSD
- Confirm at Service OSD by "Menu + Power key" on .(from Power off)
- Confirm first set of new lot by periods, and confirm periodically when there is Process change or Adjustment setting change.

4.2.5.5. OSD & Adjustment device Confirmation :

Confirm operation mentioned as product spec.

- Vary Brightness and Contrast and confirm the variation of Luminance and display status.
- Operate the Super+ Resolution function and confirm variation of Luminance.
- Make sure to do FACTORY RESET after confirmation of OSD function.

4.2.5.6. Confirm the display state by inputting 8 color Bar Pattern & 256 Gray Scale pattern.

4.2.5.7. DPM operation confirmation: Check if Power LED breathing and Power Consumption operates as standard.

- Measurement Condition : 230V@ 50Hz (Analog)
- Confirm DPM operation at the state of screen without Video Signal.(refer to Spec at Page 11)

4.2.5.8. DDC EDID Write

- HDMI part EDID data

- 32MB25 does not need input HDMI EDID on the line, F/W include HDMI EDID, aging on MODE If AC ON, HDMI EDID is automatically loaded to EEPROM(24C02).

- Analog part EDID data

* Connect analog Signal Cable to D-sub wafer.

* Write EDID DATA to EEPROM(24C16) by using DDC2AB protocol.

* Check whether written EDID data is correct or not. (refer to Product spec).

-> After writing EDID, send Elapsed Time Clear command.

(Elapsed time should not be displayed, after EDID writing)

: Confirm periodically (in the first set of new lot, process change) whether module name and aging time disappeared on the self-diagnostics OSD with signal cable disconnected.

-> If Elapsed Time Clear command isn't executed, module name, aging time and TCO word appear on the self-diagnostics OSD.(Module name and aging time should not appear after writing EDID)

-> Make sure to do FACTORY RESET at the final process.

4.2.5.9. Shipping condition

■ Contrast : 70

■ Power Switch : Off

■ Brightness : "100(Max)"

■ Color Select : custom

■ Language Select : Refer to product spec.

■ OSD Position : Match Position with Key position

■ Power indicator : ON

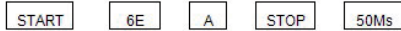
■ Sound : ON

■ Check HDMI Audio headphone function, after check, please set signal source to RGB Mode by Hand.

5. Signal composition for adjustment

5.1. I2C (100K BPS)

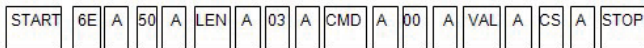
5.2. COMMUNICATION START



Until ACK BIT goes LOW, Repeat it.

5.3. Command form.

Command form use DDC2AB standard communication protocol.



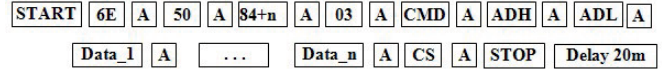
- LEN : DATA BYTE number to send.
- CMD : Command language that monitor executes.
- VAL : FOS DATA
- CS : Dada's CHECHSUM that transmit
- DELAY : 50MS
- A : Acknowledge

5.4. Screen adjust command (LENGTH = 84)

No.	Adjustment contents	CMD(hex)	ADR	VAL(hex)	Explanation
1	FACTORY ON	E0	00	00	Adjustment start
2	SAVE MODE	E2	00	00	
3	EEPROM ALL INITIAL	E4	00	00	adjustment initialization
4	EEPROM READ	E7	Slave add		At EEPROM Read
5	EEPROM WRITE	E8	Slave add	Data	Write data at EEPROM
6	MODE SAVE	EA	00	00	Mode Data(FOS) Save
7	COLOR SAVE	EB	00	00	User color
				01	6500K
				02	9300K
10	Tune H Position	20	00	00-?	Tune H Position
11	Tune V Position	30	00	00-?	Tune V Position
12	Tune CLOCK	90	00	00-?	Tune CLOCK
13	Tune PHASE	92	00	00-?	Tune PHASE
14	R GAIN	16	00	00-80	Tune Gain
15	G GAIN	18	00	00-80	
16	B GAIN	1A	00	00-80	
17	R OFFSET	80	00	00-80	
18	G OFFSET	82	00	00-80	Tune OFFSET
19	B OFFSET	84	00	00-80	
20	BRIGHT(Backlight)	10	00	00-64	Tune Analog Bright
21	BRIGHT1(Scaler)	11	00	00-64	Tune Digital Bright
22	FACTORY RESET	F0	00	00	Factory reset
23	AUTO_COLOR_ADJUST	F1	00	0	AUTO COLOR Tuning
				00	Auto color
				01	User save
24	COLOR_MODE_CHANGE	F2	00	01	6500K
				02	9300K
				03	sRGB
26	Elapsed time Clear	E9	00	00	Aging off&Clear elapsed time
27	Aging On/Off	F3	00	FF/00	FF:ON / 00:OFF
28	Input Select	F4	00	60	1:DSUB ANALOG
				80	2: DVI Digital
				90	3:HDMI
29	SYSTEM RESET	F5	00	00	Restart System
30	Module Select	F6	00	0X80	0X80: I.C 3200UE-FGA9
31	Select Language	68	00	00-10	17 language 00:English 0C: Ukrainian 01:German 0D: Chinese 02:French 0E: Japanese 03:Spanish 0F: Korean 04:Italian 10:Hindi 05:Swedish 06:Finnish 07:Portuguese 08:Brati 09:Polish 0A:Russian 0B:Greek

5.5. EEPROM Data Write

5.5.1 Signal TABLE



LEN : 84h+Bytes

CMD : E8h

ADH : E2PROM Slave Address(A0,A2,A4,A6,A8,AA,AC,AE),
Not 00h(Reserved by Buffer To EEPROM)

ADL : E2PROM Sub Address(00~FF)

Data : Write data

Delay : 20ms

5.5.2. Command Set

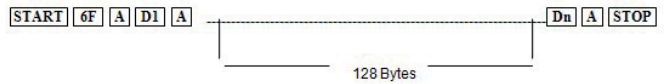
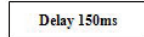
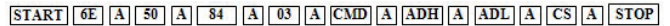
No.	Adjustment contents	CMD(hex)	LEN	Explanation
1	EEPROM	E8	94	16-Byte Write
2	WRITE		(84+n)	n-byte Write

* Use

- FOS Default write :

<14mode data> write
SyncFlags,HPeriodH, HPeriodL, VtotalH,VtotalL,
SrcHTotalH, SrcHTotalL
SrcHStartH, SrcHStartL, SrcVStartH,SrcVStartL,
HsyncPhase

- Temporary Data write: Write to particular address of EEPROM.

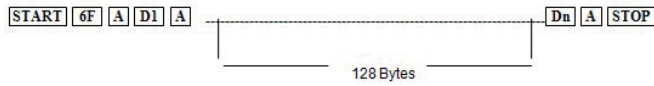


5.6. E2PROM Data Read

5.6.1. Signal TABLE

START 6E A 50 A 84 A 03 A CMD A ADH A ADL A CS A STOP

Delay 150ms



5.6.2. COMMAND SET

No.	Adjustment contents	CMD (hex)	ADH (hex)	ADL (hex)	Explanation
1	EEPROM READ	E7	A0	0	0-Page 0~7F Read
2			80	0-Page 80~FF Read	
3			A2	0	1-Page 0~7F Read
4			80	1-Page 80~FF Read	
5			A4	0	2-Page 0~7F Read
6			80	2-Page 80~FF Read	
7			A6	0	3-Page 0~7F Read
8			80	3-Page 80~FF Read	
9			A8	0	4-Page 0~7F Read
10			80	4-Page 80~FF Read	
11			AA	0	5-Page 0~7F Read
12			80	5-Page 80~FF Read	
13			AC	0	6-Page 0~7F Read
14			80	6-Page 80~FF Read	
15			AE	0	7-Page 0~7F Read
16			80	7-Page 80~FF Read	

5.6.3. Use

Read E2PROM's specific area as unit of 128(80h)-byte. (84h)

5.6.4 EDID Write

EEPROM access by using DDC2B protocol

■ 1-Byte write

START A0 A L A D A STOP

L : 0x00~0x7F

D : data

■ 8-byte write

START A0 A L A Data1 A A Data8 A STOP

L : 0x00,0x10,....0x70

5.6.5. EDID Read

- DDC2B Command.(A0/A1)

START A0 A 00 START A1 A Data1 ... Data128 A CS A STOP

- 128 Byte transfer of EDID Buffer of MICOM

6. Pattern for Adjustment

Pattern 0 : FULL BLACK (State of without video signal)

Pattern 1 : FULL WHITE (Don't display other Character except for White Pattern)

Pattern 3 : FULL WHITE

Pattern 4 : Cross hatch pattern (Horizontal 10Line, Vertical 8Line) & Rectangle Pattern

Pattern 5 : 1 Dot on, 1 Dot off & Rectangle Pattern

Pattern 6 : Vertical Sync only input (Use signal cable of which Pin #5 is GND)

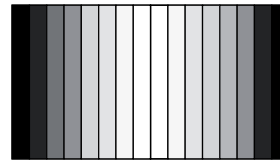
Pattern 7 : Horizontal Sync only input (Use signal cable of which Pin #5 is GND)

Pattern 8 : State of without Vertical/Horizontal Sync and Video Signal. (Use signal cable of which Pin #5 is GND)

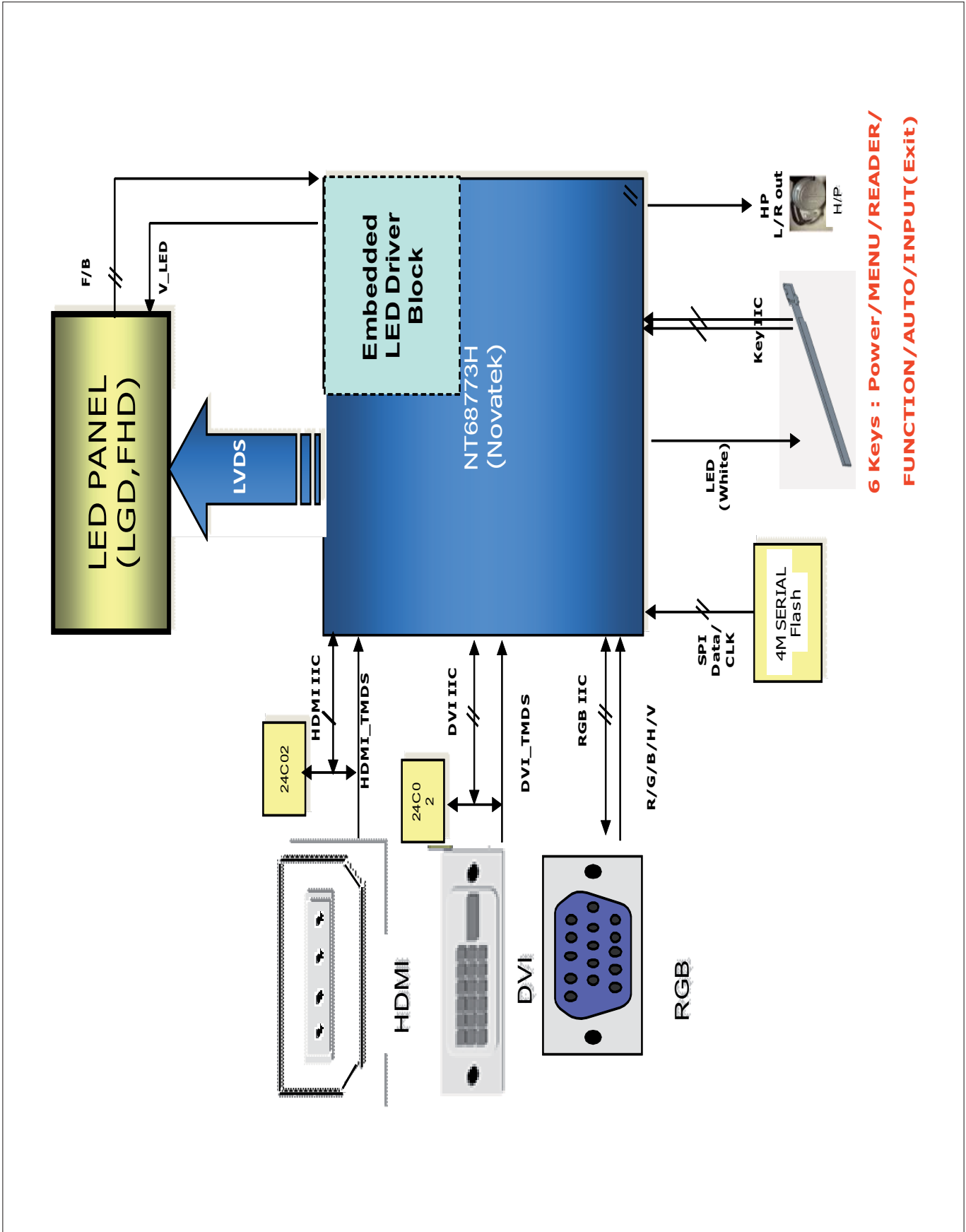
Pattern 9 : 8 Color Bar Pattern + 16 Gray Level Pattern

Pattern 10 : SMPTE Pattern

Pattern 11 : 16 Gray Step Pattern (700mV)



BLOCK DIAGRAM

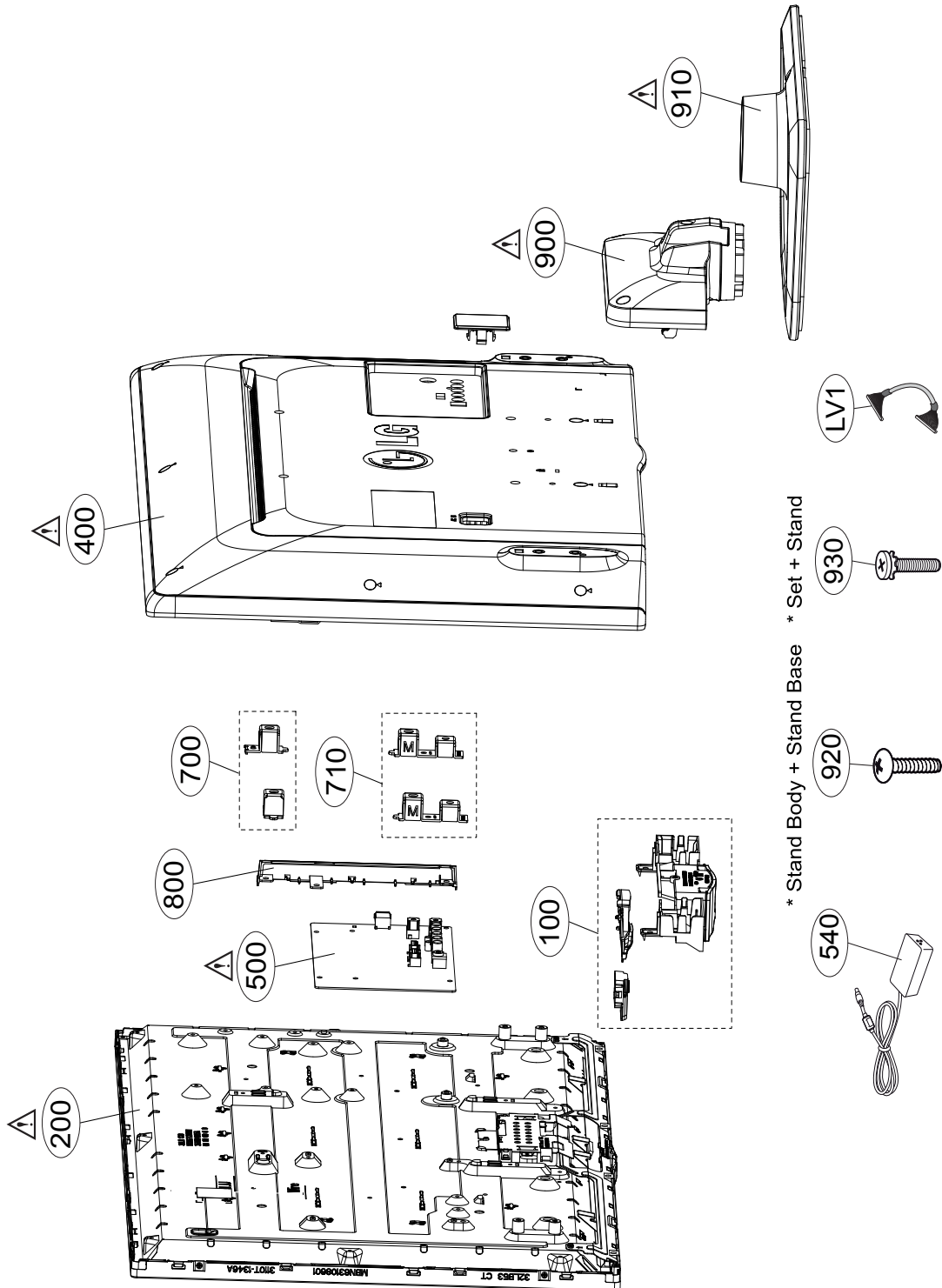


**6 Keys : Power/MENU/READER/
FUNCTION/AUTO/INPUT(Exit)**

EXPLODED VIEW

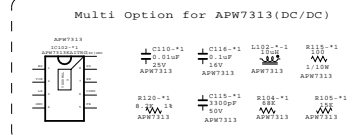
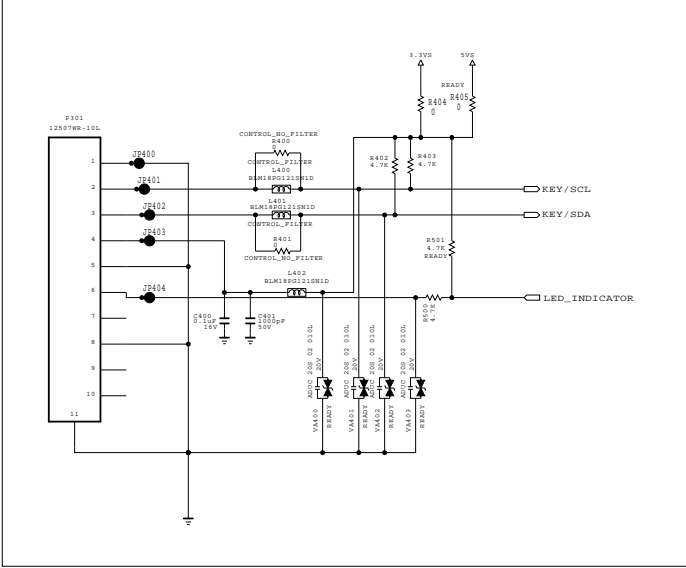
IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by \triangle in the Schematic Diagram and EXPLODED VIEW. It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards. Do not modify the original design without permission of manufacturer.

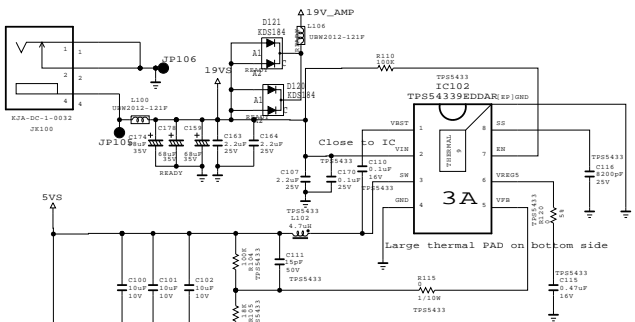


PCB P/N: EAX65842902 (LM42A)
Date : 2014.03.18

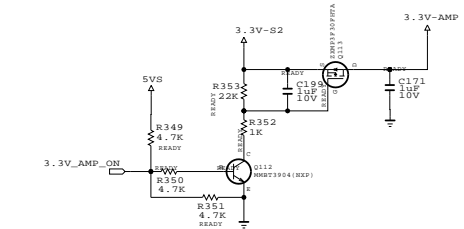
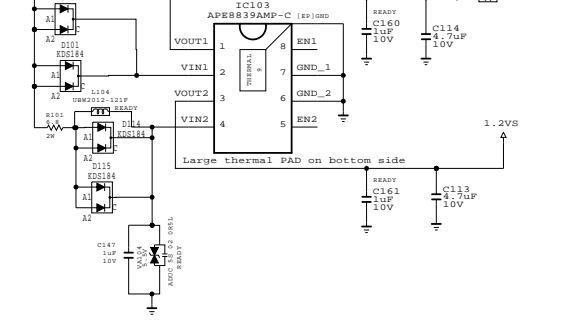
Control/LED indicator



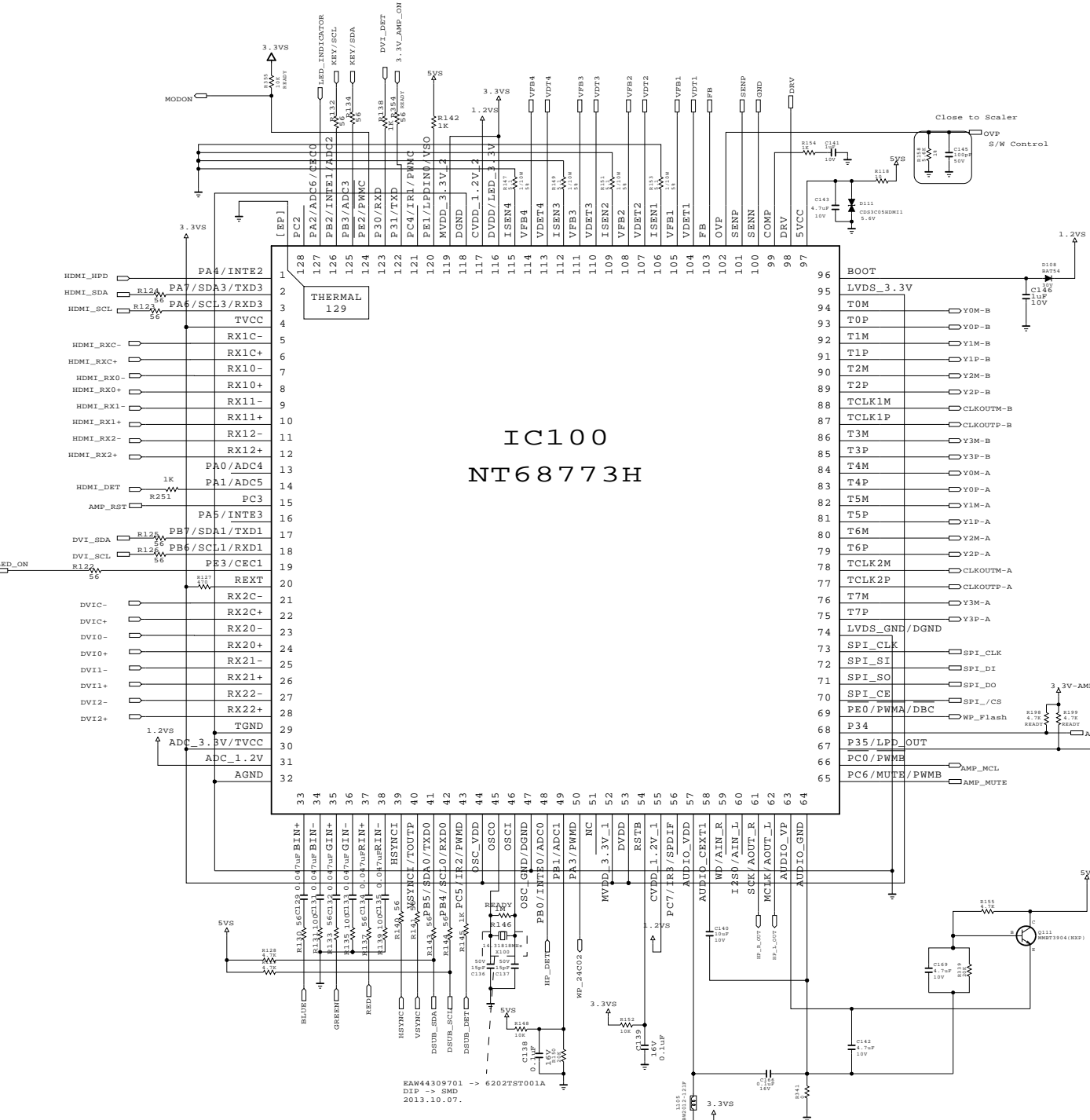
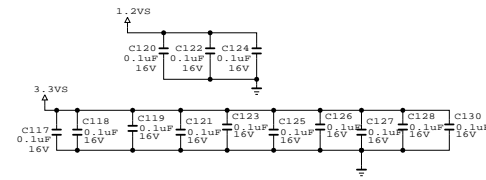
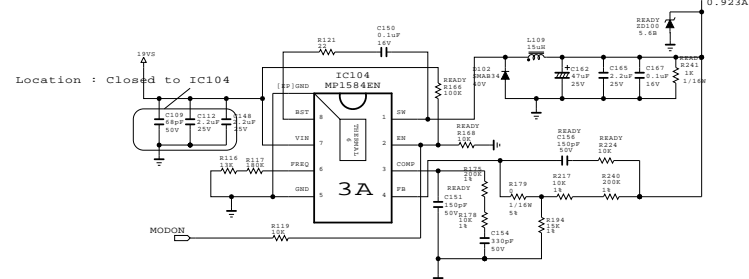
NEAR DC JACK 19V to 5V DC/DC



2-Ch LDO

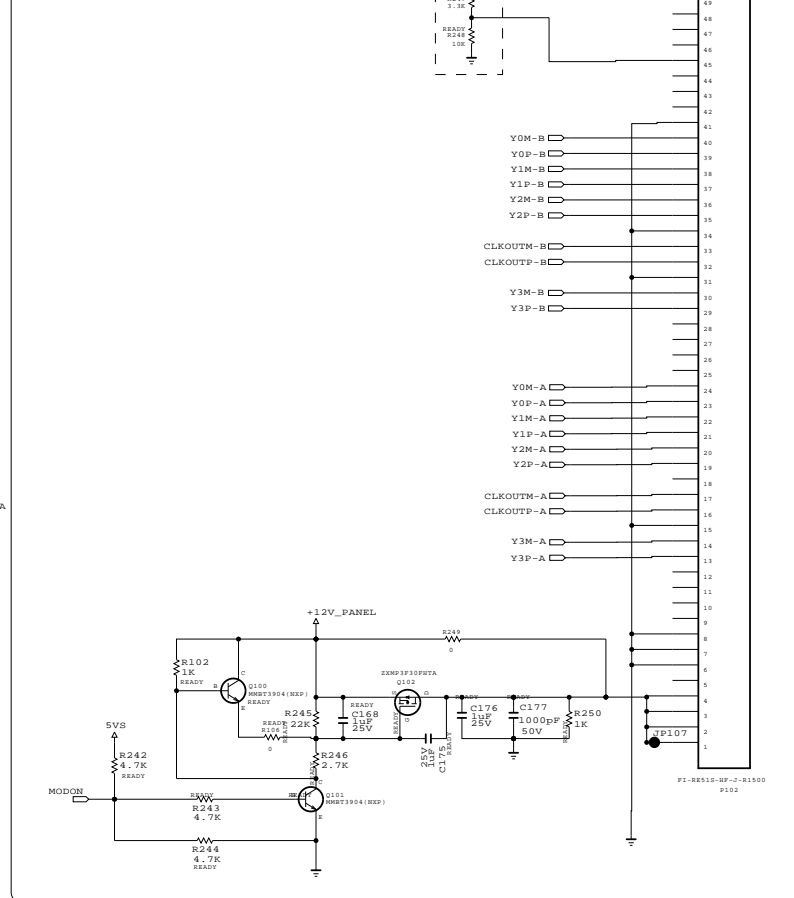


19V to 12V DCDC CONVERTER

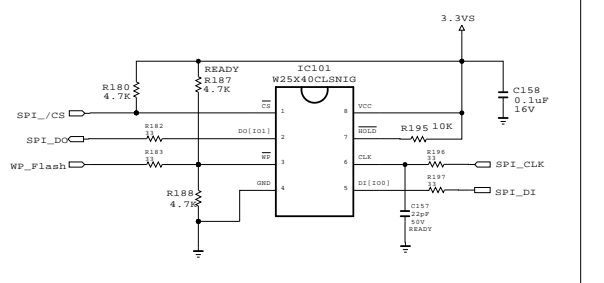


LVDS OUT

[51Pin LVDS Connector]
(For FHD 60Hz)
** Non-Reverse type **



4M Serial Flash

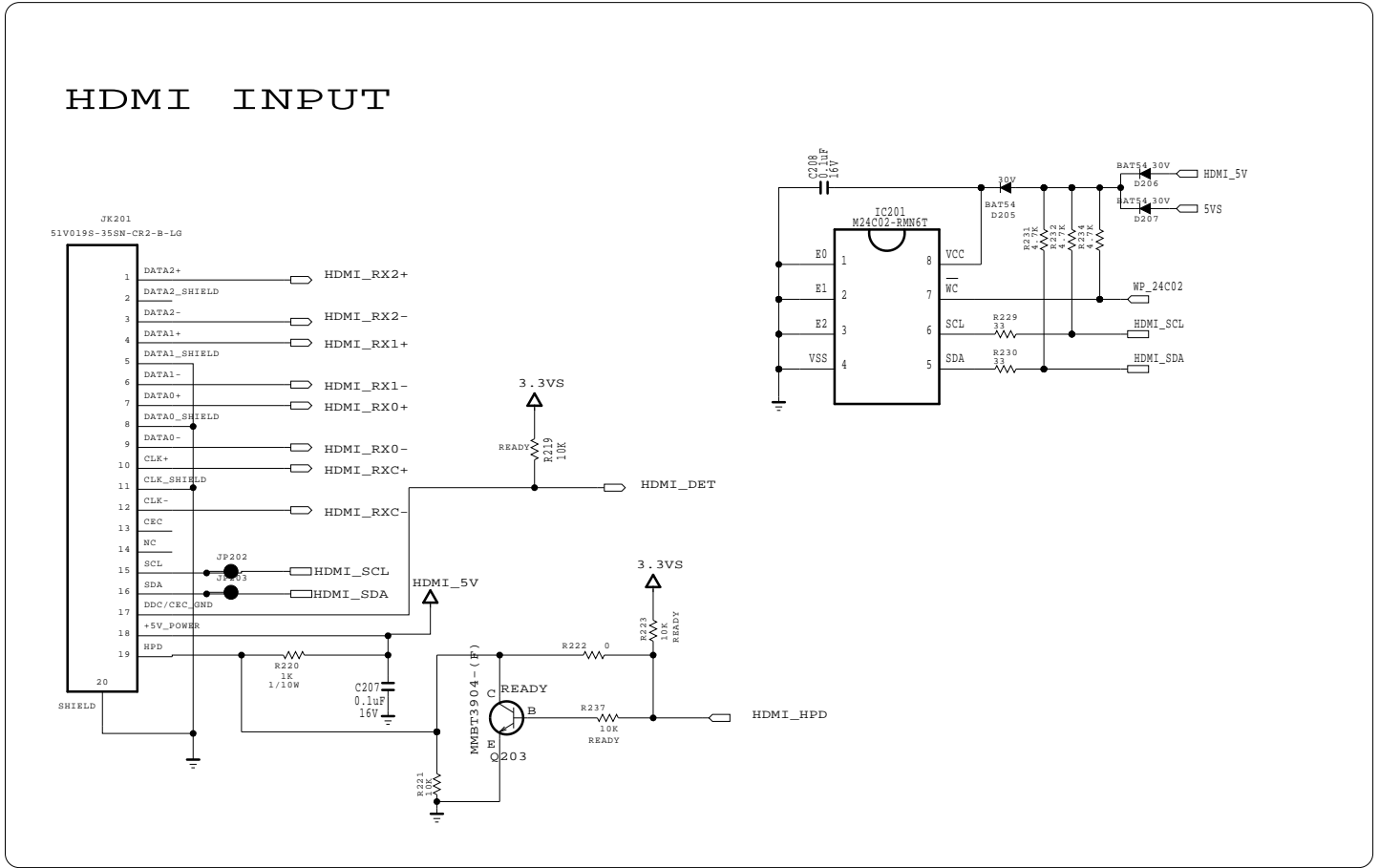
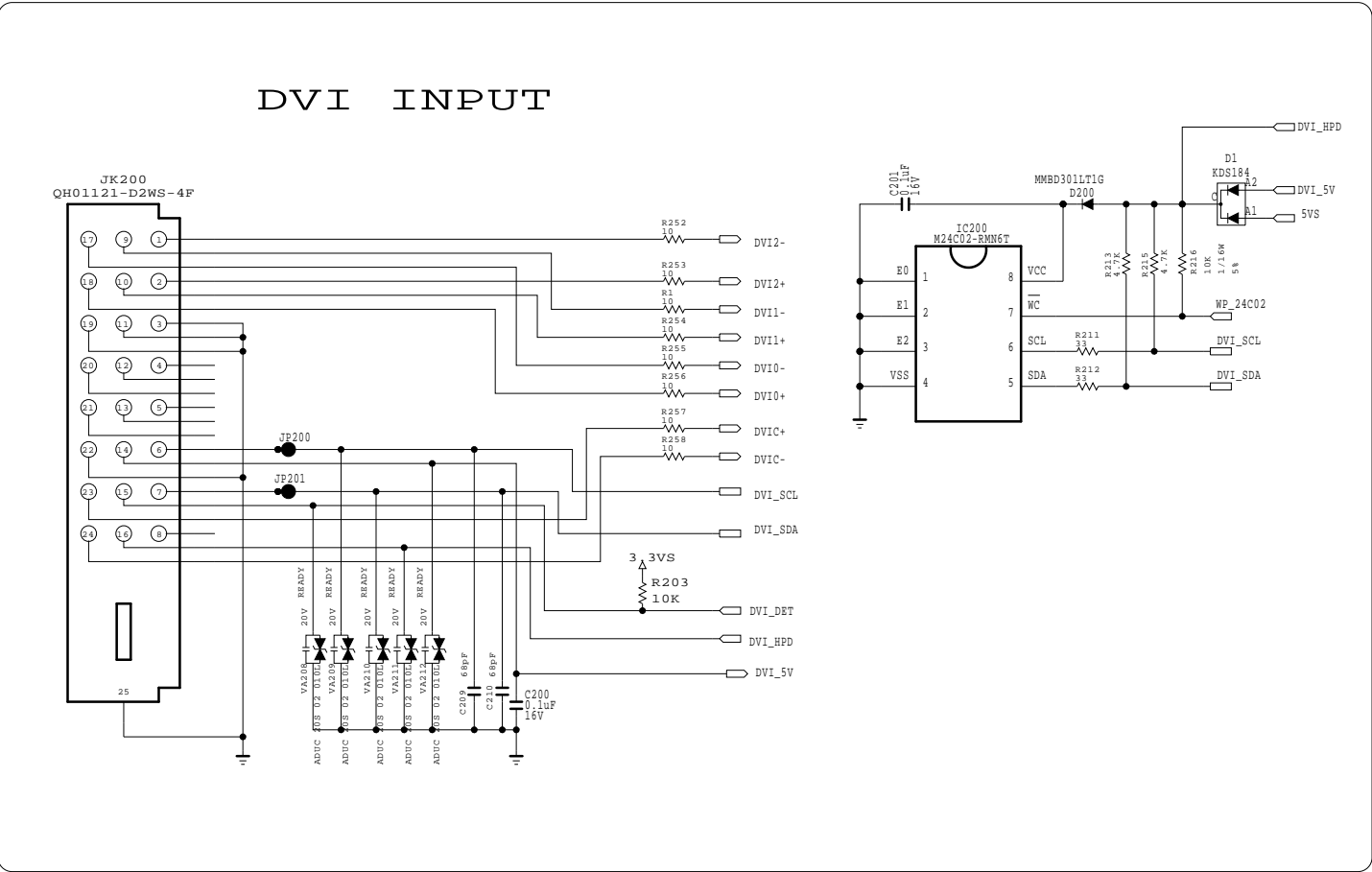
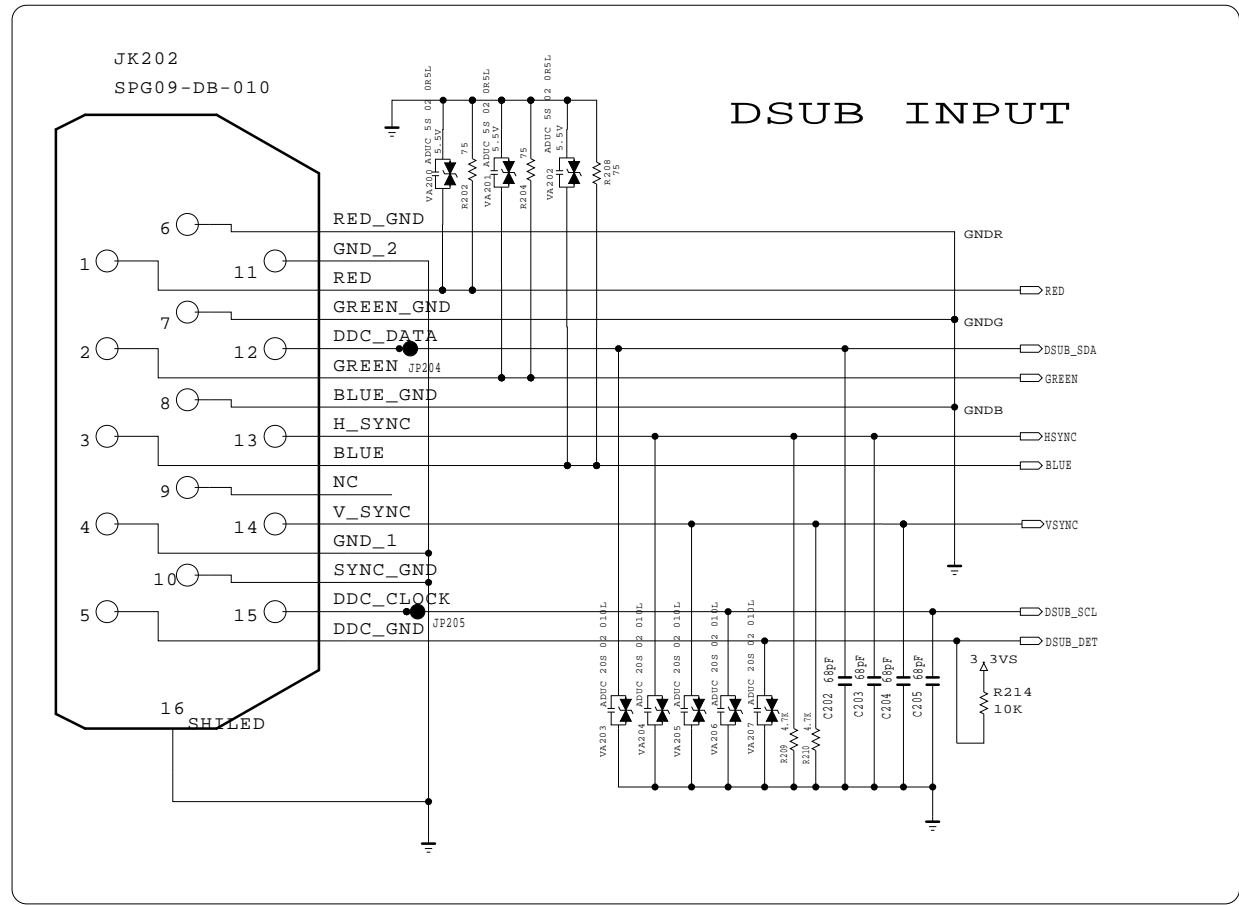


THE Δ SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FIRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE Δ SYMBOL MARK OF THE SCHEMATIC

SECRET
LGElectronics



MODEL	32MB25	DATE	2014-02-18
BLOCK	SCALER	SHEET	1 / 4



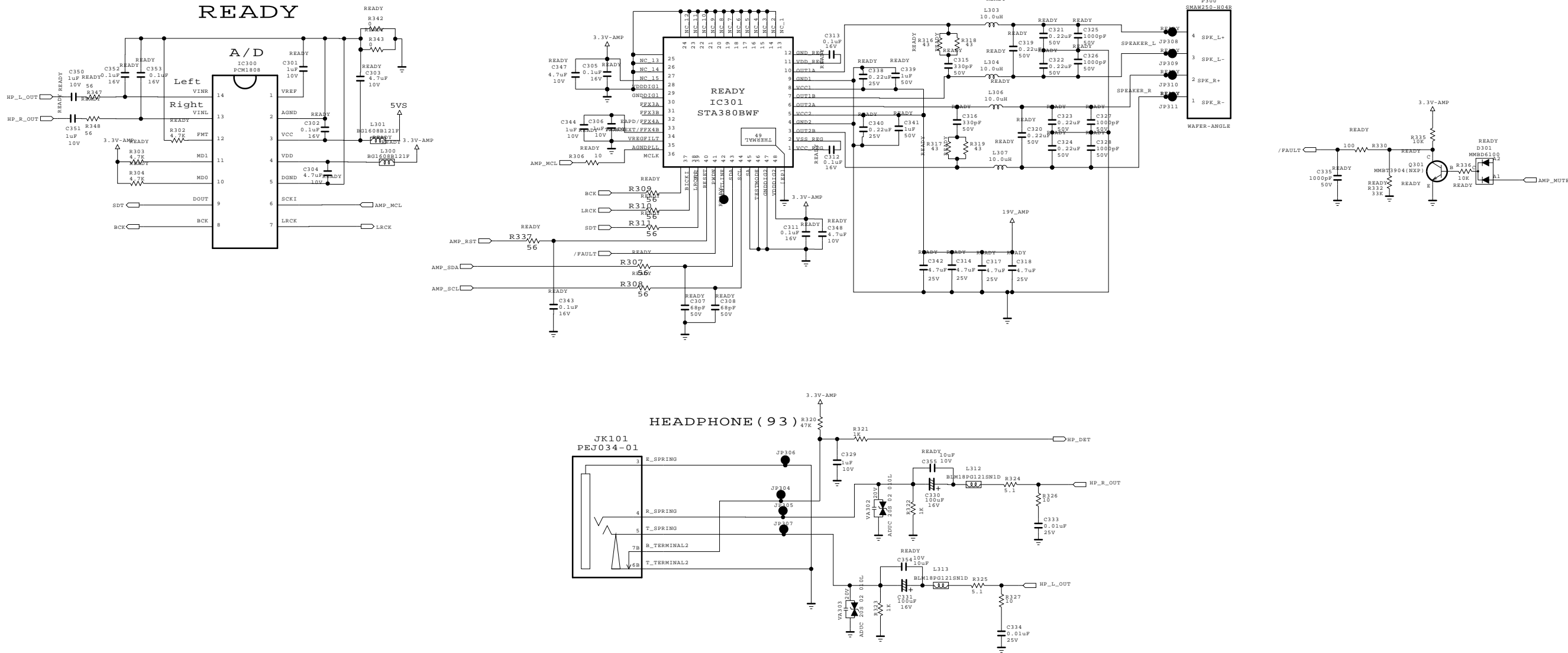
THE \triangle SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FIRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE \triangle SYMBOL MARK OF THE SCHEMATIC.

SECRET
LG Electronics



MODEL	32MB25	DATE	2014-02-09
BLOCK	Interface	SHEET	2 / 4

Audio AMP (READY)

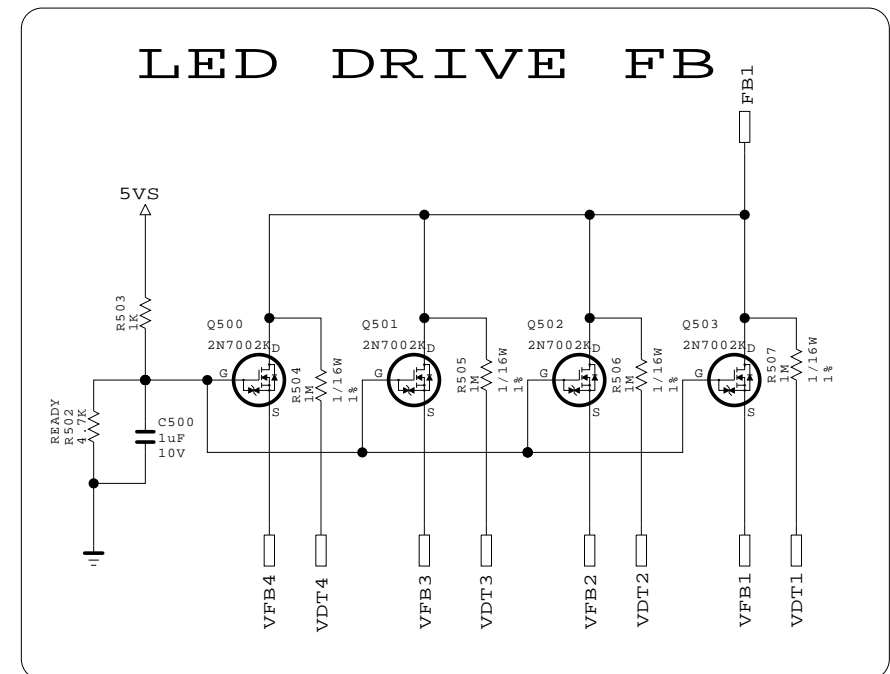
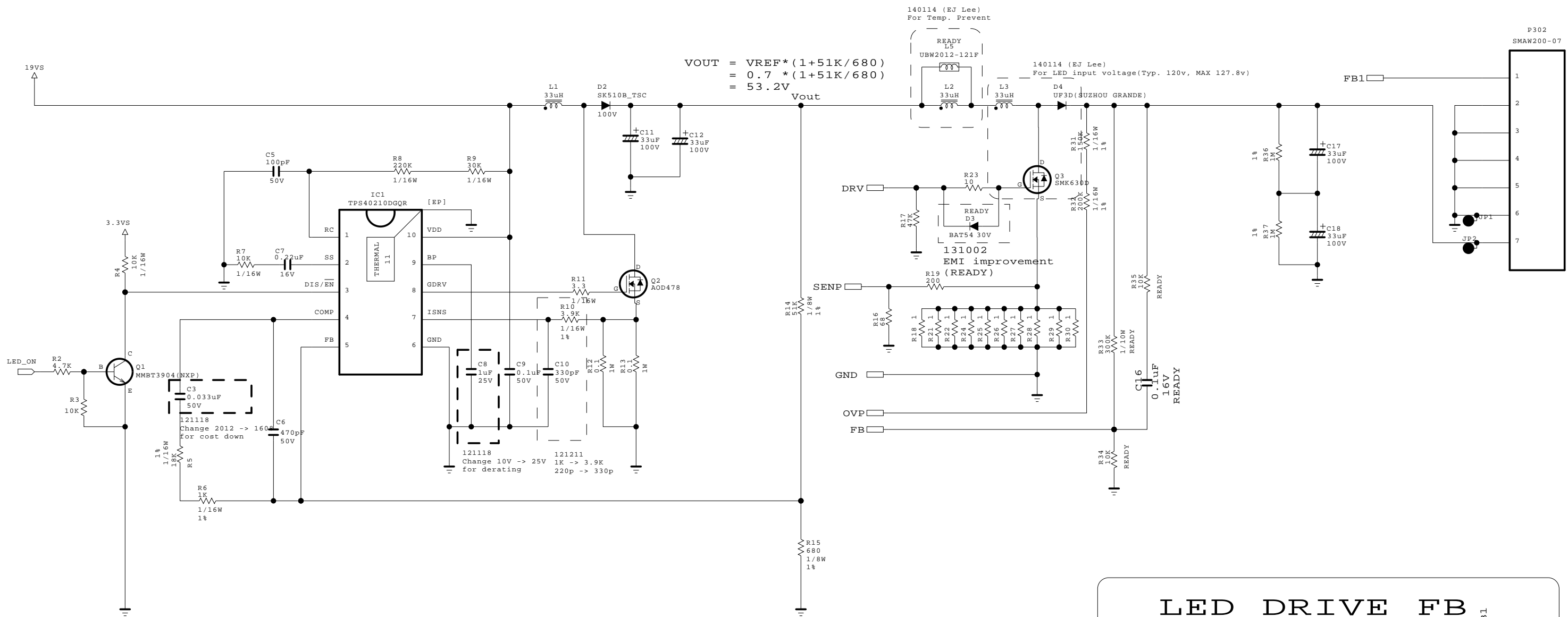


THE Δ SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FIRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE Δ SYMBOL MARK OF THE SCHEMATIC.

SECRET
LGElectronics

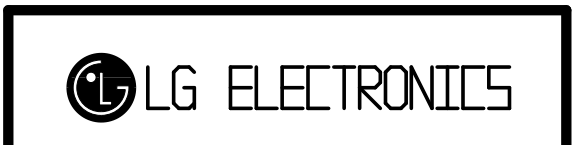
LG ELECTRONICS

MODEL	32MB25	DATE	2014-02-09
BLOCK	AUDIO	SHEET	3 / 4



THE SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FIRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SYMBOL MARK OF THE SCHEMATIC.

SECRET
LGElectronics



MODEL	32MB25	DATE	2014-02-18
BLOCK	LED Driver	SHEET	4 / 4

