

Haier

CAUTION:

READ THIS MANUAL CAREFULLY
TO DIAGNOSE TROUBLE CORRECTLY
BEFORE OFFERING SERVICE

SERVICE MANUAL

COLOR TV

MODEL: HL15R



TV-8888-127

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product deal with in this service information by anyone else could result in serious injury or death.

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1. Specification

Model	HL15R
Screen size	15.4inch
Aspect ratio	16:10
Resolution	1280*800
Response Time (ms)	16
Angel of view	H:90/V:45
Color display	262,144
NO.of preset channels	181
OSD language	English/Spanish/French
Color system	NTSC
Audio system	M
Audio output power(Built-in)(W)	2×1.5W
Audio output power(outer)(W)	No
Total power input (W)	< = 50W
Voltage range (V)	AC120V
Power frequency (Hz)	60Hz
Time of sleep timer(MINS)	240Min
Net weight(KG)	2.2
Gross weight(KG)	3
Net dimension(MM)	381*147*330
Packaged dimension(MM)	439*167*475


2. Warning

	WARNING RISKELECTRIC SHOCK DONOT OPEN	
<p>WARNING: To reduce the risk of electric shock don't remove cover or back.</p> <p>No user-serviceable parts inside refer service to qualified service personnel.</p>		

Safety of operators has been taken into consideration at the design and manufacture phase, but inappropriate operation may cause electric shock or fire. To prevent the product from being damaged, the following rules should be observed for the installation, use and maintenance of the product. Read the following safety instruction before starting the operation.

The User Manual uses the following symbols to ensure a safe operation and prevent any damage to operators or properties:

	THIS SYMBOL INDICATES THAT HIGH VOLTAGE IS PRESENT INSIDE . IT IS DANGEROUS TO MAKE ANY KING OF CONTACT WITH ANY INSIDE PART OF THIS PRODUCT.
---	--

	THIS SYMBOL INDICATES THAT THERE ARE IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE APPLIANCE.
--	--

FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rule. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, use and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference with not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encourage to try to correct the interference by one or more of the following measures:

- *Reorient or relocate the receiving antenna.

- *Increase the separation between the equipment and receiver.

- *Connect the equipment into an outlet on a circuit different from that to which the receivers connected.

- *Consult the dealer or an experienced radio/TV technician for help.

This device compiles with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may be not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC CAUTION:

To assure continued compliance and possible undesirable interference, the provided ferrite cores must be used when connecting this plasma display to video equipment; and maintain at least 40cm spacing to other peripheral device.

CANADIAN NOTICE:

This Class B digital apparatus compiles with Canadian ICES-003.

IMPORTANT SAFETY INSTRUCTIONS

Read all of the instructions before using this appliance. When using this appliance, always exercise basic safety precautions, including the following:

- 1)Save these Instructions ---the safety and operating instructions should be retained for future reference.
- 2)All warning on the appliance and in the operating instructions should be followed.
- 3)Cleaning --- Unplug from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use only dry cloth for cleaning.
- 4)Attachments ---do not use attachments not recommended by the manufacturer as they may cause hazards.
- 5)Water and moisture -- do not place this product near water, for example, near a bathtub, wash bowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.
- 6)Accessories ---do not place this unit on an unstable cart, stand, tripod, bracket, or table. Use only with a cart, stand, tripod, bracket, or table recommend by the manufacture, or sold with the unit.
- 7)Ventilation ---Slots and openings in the cabinets and the back or bottom are provided for ventilation. These openings must not be blocked. In a built in installation such a bookcase or rack do not install

product unless proper ventilation is provided.

8)Power Source ---this TV should be operated only from the type of power source indicated on the rating label. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company.

9)Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet. To prevent electric shock, ensure the grounding pin on the AC cord power plug is securely connected.

10)Power cord protection ---Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords or plugs, convenience receptacle, and the point where they exit from the appliance.

11)Lighting precaution ---for added protection for this product during a lighting storm or when it is left unattended for long period of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lighting and power line surges.

12)Never push objects of any kind into this product through openings as they may touch dangerous voltage point or short out parts that could result in a fire or electric shock. Avoid spilling liquid of any kind on the product.

13)Servicing ---do not attempt to service the product by yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to authorized service personnel.

14)Unplug this unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- a. When the power supply cord or plug is damaged or frayed.
- b. If liquid has been spilled, or objects have been fallen into the unit.
- c. If the unit has been exposed to rain or water.
- d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
- e. If the unit has been dropped or damaged in any way.
- f. When the unit exhibits a distinct change in performance; this indicates a need for service.

15) Heat --- The product should be situated away heat source such as radiators, heat registers, stoves, or other products (Including amplifiers) that product heat.

16) Overloading ---Do not overload wall outlets and extension cord as this can result in a risk of fire or electric shock.

SAVE THESE INSTRUCTIONS

Thank you for using our Haier product. This easy-to-use manual will guide you in getting the best use of your product. Remember to record the model and serial number. They are on label in back of the unit.

Staple your receipt to your manual. You will need it to obtain warranty service.

3. LOCATION OF CONTROLS AND COMPONENTS

3.1.Board Location



No.	Parts number	Description
A Board		Main Board
B Board		Power Board

3.2. A Board---- Main Board



3.2.1 Function Description:

Main Board :

Process signal which incept from exterior equipment , then translate into signal that panel can display.

3.2.2 Connector definition

Main board connector

Power connectors(CN3,CN5)

CN3		CN5	
Pin number	Signal name	Pin number	Signal name
1	+12VEXT	1	+12V
2	+12VEXT	2	GND
3	BLON	3	GND
4	ADJ	4	+5V
5	GND	5	STB
6	GND		
7	PWR-ON		

Notes:

CN3-Pin 3: Backlight on/off:

The system can turn on or turn off the backlight of TFT LCD Panel through the power supply unit path.

CN3-Pin 7: System power on / standby

System board will use this pin to control system power.

CN3-Pin 4: Control the luminance of backlight

The system can generate the PWN signal to control the strength of TFT LCD Panel's backlight through this connector.

TFT LCD Panel(LVDS) Connector(CN4)

Pin number	Signal name	Description
------------	-------------	-------------

1-3	Power	Power for panel
4-6	GND	Ground
7	RXE0-	LVDS EVEN 0 - Signal
8	RXE0+	LVDS EVEN 0 + Signal
9	RXE1-	LVDS EVEN 1 - Signal
10	RXE1+	LVDS EVEN 1 + Signal
11	RXE2-	LVDS EVEN 2 - Signal
12	RXE2+	LVDS EVEN 2 + Signal
13,14	GND	Ground
15	RXEC-	LVDS EVEN Clock - Signal
16	RXEC+	LVDS EVEN Clock + Signal
17	RXE3-	LVDS EVEN 3 - Signal
18	RXE3+	LVDS EVEN 3 + Signal
19	RXO0-	LVDS ODD 0 - Signal
20	RXO0+	LVDS ODD 0 + Signal
21	RXO1-	LVDS ODD 1 - Signal
22	RXO1+	LVDS ODD 1 + Signal
23	RXO2-	LVDS ODD 2 - Signal
24	RXO2+	LVDS ODD 2 + Signal
25,26	GND	Ground
27	RXOC-	LVDS ODD Clock - Signal
28	RXOC+	LVDS ODD Clock + Signal
29	RXO3-	LVDS ODD 3 - Signal
30	RXO3+	LVDS ODD 3+ Signal

Keypad and remote connector(CN2)

Pin number	Singnal name	Description
1	IR_IN	IR
2	CPU5V	5V
3	LED_G	LAMP GREEN
4	GND	GND
5	LED_R	LAMP RED
6	K6	POWER
7	K5	MENU
8	K4	P-
9	K3	P+
10	K2	V-
11	K1	V+
12	K0	SOURCE

Speaker connector (CN1)

Pin number	Singnal name	Description
1	LSPK	LSPK
2	GND	GND
3	GND	GND
4	RSPK	RSPK

DVD VIDEO Connector: CN6

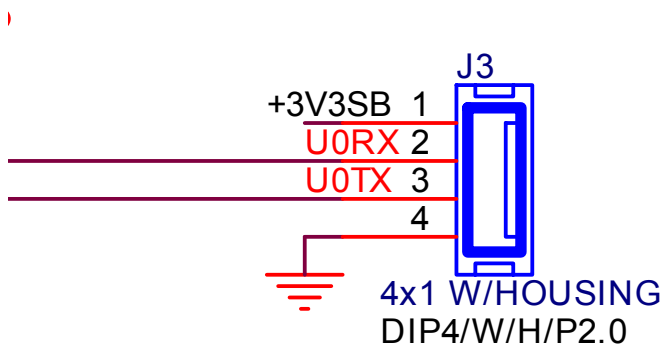
Pin number	Signal name	Description
1	GPIO	GPIO
2	PB_IN	PB1 IN
3	Y_IN	Y1_IN
4	GND	GND
5	PR_IN	PR1 IN
6	GND	GND
7	IR	DVD IR

DVD AUDIO Connector: P1

Pin number	Signal name	Description
1	LI	YPBPR1L_IN
2	RI	YPBPR1R_IN
3	GND	GND

Other connectors:

1, CN19 to Upgrade the program of MTK5380(U13) AND FLASH(U17)



3.3.B Board.....(Power Board)



3.3.1 Function Description:

Supply power for Main board, Panel.

3.3.2 Connector definition

INPUT CONNECTOR (CN6)

CN6	Signal name
1	N
2	GND
3	GND
4	DIM
5	EN
6	+12V
7	+12V

3.4. LCD PANNEL.



3.4.1 Function Description: Display the signal.

3.4.2 Connector definition

Pin number	Signal name	Description
1-3	Power	Power for panel
4-6	GND	Ground
7	RXE0-	LVDS EVEN 0 - Signal
8	RXE0+	LVDS EVEN 0 + Signal
9	RXE1-	LVDS EVEN 1 - Signal
10	RXE1+	LVDS EVEN 1 + Signal
11	RXE2-	LVDS EVEN 2 - Signal
12	RXE2+	LVDS EVEN 2 + Signal
13,14	GND	Ground
15	RXEC-	LVDS EVEN Clock - Signal
16	RXEC+	LVDS EVEN Clock + Signal
17	RXE3-	LVDS EVEN 3 - Signal
18	RXE3+	LVDS EVEN 3 + Signal
19	RXO0-	LVDS ODD 0 - Signal
20	RXO0+	LVDS ODD 0 + Signal
21	RXO1-	LVDS ODD 1 - Signal
22	RXO1+	LVDS ODD 1 + Signal
23	RXO2-	LVDS ODD 2 - Signal
24	RXO2+	LVDS ODD 2 + Signal
25,26	GND	Ground
27	RXOC-	LVDS ODD Clock - Signal
28	RXOC+	LVDS ODD Clock + Signal
29	RXO3-	LVDS ODD 3 - Signal
30	RXO3+	LVDS ODD 3+ Signal

CN1(Header):S14B-PH-SM4-TB(D)(LF)(JST) or equivalent.

Pin No.	Symnbol	Description
1	VBL	+3.3V Power input
2		
3		
4	GND	Ground
5		
6		
13		
14		
25		
26		
7-12	LVDS EVEN	LVDS EVEN Signal
15		
16		
17		
18	LVDS	
19-24		

27	ODD	LVDS ODD Signal
28		
29		
30		

4. FEATURES AND TECHNICAL DESCRIPTION

1	Factory model(reference only)	L15R1W-A
2	HAC model	HL15R
3	Tuner	Integrated NTSC&ATSC
4	Video Signal System	NTSC/ATSC(8VSB,Clear QAM)
5	Digital Comb Filter	3D
6	Video Noise Reduction	yes
7	Stereo Surround Sound	yes
8	MTS Stereo	yes
9	Tone Control	yes
10	Mute	yes
11	Clock	No
12	Sleep Timer	yes

5. INSTALLATION INSTRUCTIONS

DIY DO IT YOURSELF INSTALLATION

If you've decided to take on the challenge of installing your flat-panel television on your own, we've put together an extensive list of instructions for doing the job right. If this all seems a bit overwhelming, just give a call to the professionals at **Magnolia Home Theater** — **1-888-MAGNOLIA** (1-888-624-6654). We'll get the job done quickly, efficiently and correctly. Evening and weekend appointments are now available!

DO IT YOURSELF INSTALLING YOUR FLAT-PANEL TELEVISION

(**Note:** This information is provided to help guide your installation. Haier assumes no liability for errors or the outcome of any installation since each project is unique and tools, materials, techniques, local codes and regulations vary and change.)Preparing for Your Installation In planning your flat-panel television install, there are some questions you'll need to ask yourself first. Once these are answered, you're ready to begin your project: **Seating area**

Is the system designed around a "sweet spot" or for the same sound and picture everywhere? There are different products for different designs.

Furniture

You will need room for your equipment — most home theater components require a space 13-15 inches wide by 10-13 inches deep to fit properly.

What kind of seating do you want? Is the room primarily a home theater entertainment area, or will music be part of what it's used for as well?

Aesthetics

Make sure the equipment you choose doesn't overwhelm the room. Do you have room for a

projection screen, or will you need to find something a little more space effective?

Wire access

Have you planned how you will run wires to your LCD TV locations? Will you have all of your equipment next to the TV, or will it be hidden in another room or area?

Do you have enough wire to complete the project? Too much wire is better than not enough.

Mounting

Does your TV require a proprietary mounting device? Some manufacturers require specific mounts for their TVs.

What is the size and weight of your TV? All brackets have weight and size restrictions. It is necessary to make sure your TV will fit within the limitations of the mount.

Are you going to fit the mount into a tight space or cabinetry? It may be impossible to use some brackets if the space does not allow the proper leverage.

Will you need to tilt or move the TV from time to time? There are mounts available that will adjust to the seating arrangement in the room.

Will the TV be positioned at an angle? Special mounts and techniques may be required to keep your TV mounted at or into an angle.

What will the TV be mounted to? It is necessary to have proper support for your TV. In most cases, there will be wood, metal or mortar to mount the bracket to.



TV Breakdown - See our TV Selection »**LCD TVs: 32" and smaller** This type of TV is clean looking and lightweight. They are usually easier to mount and require smaller brackets. **LCD TVs: 32" and larger** This type of TV is a larger version of their smaller counterparts. They are usually more expensive in larger sizes than other technologies. Most will work with the same style bracket as plasma TVs.

Plasma TVs: 32" and larger This is the most common type of Flat-Panel TV. These TVs are available in sizes as small as 32" and go all the way past 100". Most have a variety of mounting options. **DLP**

Wall-Mountable TVs This is the least common type of Wall-Mountable TV. There are usually special requirements for this mount.



Needed Tools. Some tools used in the installation profession can cost hundreds of dollars. However, these tools can save hours of work on a project and allow a skilled installer to learn about a house's construction without cutting into the wall. They also eliminate much of the risk involved in working near electrical and plumbing systems. Here is a list of tools needed for TV mounting:



- ? Stud finder
- ? Tape measure
- ? Level
- ? Pencil
- ? Power drill
- ? Socket wrench
- ? Allen wrench

? Wall probe — piano wire, etc

? Wire running tools — fish/carpet tape, flex rods, electrical tape



Running Wires You'll need to get a wire from your TV to your equipment. There are a few guidelines you need to be aware of when it comes to running wires: The National Electrical Code (NEC) is a set of rules that govern how wires and varying types of power are run in a building. These rules cover both high voltage (outlets, light switches) and low voltage (phone lines, speaker wires, cable lines). Any work you do **MUST** be in accordance with the NEC, as well as local ordinances for your city, county and state. It's good to have a clear understanding of these rules before you begin. A/V wire can be susceptible to interference from external sources, such as electrical lines. The NEC dictates minimum safe clearances for wires, but it is best to keep as much distance between your speaker wires and any potential sources of interference — you don't want to get all the way through your install only to discover your speakers "buzz" or "hum" constantly. The wire you use is as important as the equipment itself. The type of copper and how thick it is, the jacket protecting the copper, the distance it's run — all of these impact how your system will perform. Make sure you're choosing wire that is the proper material and has a thick enough gauge for the location and distance it will be run. There are also different wire ratings that dictate what kind of wires are run in different areas of a house. For example, certain wires are "in-wall" rated, while others are rated for what is run outside, underground, in HVAC ducts, etc. Since this is spelled out by the NEC and in any local restriction codes, it is strongly recommended that you make use of a professional installer if you're unsure of local ordinances.



Wire Running Techniques Beginner Skill Level — 1 or 2 hours, depending on room

Track molding — This concealment option is an adhesive-backed, hollow, plastic trim that can hold wiring on the inside. When the wires are run inside the trim, the adhesive sticks it into place against baseboards, in corners, etc. The trim can also be painted, so it blends better with the background.

Horizontal channeling — This involves cutting out a path in the wall for the wire to flow through. Some damage, due to the wall notching or stud drilling, is expected with this technique. After you run wire through the channel, you will need to patch the hole in the wall.

Intermediate Skill Level — 2 hours, depending on room

Carpet fish — This technique uses a specially designed flat wire to run between the carpet and the pad. This should usually be routed through low-traffic areas to avoid wear on the wire. Start by pulling up a section of carpet, usually near where your wire will be run to or from. Then, feed carpet tape or another suitably long device from the start to the finish of your run and tape the wire securely.



TECHTIP: *When taping wire, make sure to "taper" the wire in a wedge or cone shape — any corners or edges on your tape job can catch and hamper your efforts. This works best with two people — one to feed the wire and one to pull from the other end.*

Intermediate Skill Level — 2 hours, depending on room

Wall fish — This technique uses access from a basement or attic to run wires up or down a wall. Interior walls are usually empty, but exterior walls will often be blocked with insulation.

TECHTIP: *If you have access to a wall where you need a wire fished, drill up from the lower level*



or down from an upper level into the center of the wall. Once you have an access hole drilled, run your wire fish tool, such as a flex rod, down to where you need the wire run. Tape your wire and feed it through the wall to your desired location.



Attaching the Bracket to the TV/Mount to the Wall **Intermediate Skill Level — 3 to 5 hours with little or no experience**

Securing Your TV to the Wall

1. Using a partner, lift the TV and use the upper hooked side of the bracket to lock onto the lip of the wall mount. **See Photo #32.** Before lowering the TV down, make sure that your wires are ready for connection. If your TV will not allow connections to be made when it is flat against the wall, take this time to connect them while your partner holds the TV in place. **3.** Once all the wires are connected or ready to be connected, gently place the TV flat against the wall, taking care that no wires get caught or pinched. **4.** Take this time to double check that the TV is level. Once this is verified, secure all locking screws or bars.



If you've made it to this point, congratulations on a job well done!

DO IT YOURSELF INSTALLING YOUR SPEAKER SYSTEM

(**Note:** This information is provided to help guide your installation. Haier assumes no liability for errors or the outcome of any installation since each project is unique and tools, materials, techniques, local codes and regulations vary and change.)
Preparing for Your Installation In planning your speaker installation, there are some questions you'll need to ask yourself first. Once these are answered, you're ready to begin your project: **Seating area**

Is the system designed around a "sweet spot" or for the same sound everywhere? There are different products for different designs.

What kind of seating do you want? Is the room primarily a home theater entertainment area, or will music be part of what it's used for as well?

Aesthetics

What speaker sizes are you planning to use? Make sure the ones you choose don't overwhelm the room.

Wire access

Have you planned how you will run wires to your speaker locations?



Speaker Breakdown - See our Speaker Selection »**Floor standing/Tower Speakers** These are the largest speakers and the most common in dedicated home theater rooms. They consist of a larger cabinet for the components and have different sized drivers inside. Some towers even come with amplifiers built into the cabinet. This construction usually allows for the best sound, but they can be

imposing from a price and appearance standpoint. **Bookshelf Speakers** Quite a bit smaller than their floor standing cousins, these speakers are designed to provide a happy medium between sound quality and space efficiency. While bookshelf speakers will lose some of the performance of a larger speaker, their size makes them a popular choice for many rooms. **Satellite Speakers** In areas where space is at a premium, satellite speakers are a popular choice. These are small, usually plastic, and are often included in many cost-effective "home theater in a box" packages. Their small size and cost effectiveness make them an ideal choice for smaller rooms or a budget system, but their sound quality often comes up short when compared to higher quality options. **Recessed Speakers** Some companies offer a type of speaker that uses the wall or the ceiling as an enclosure. In other words, these "recessed" speakers put the empty space in those areas to work for you. You will need to consider a few things for this type of installation:

A suitable mounting depth — Most speakers need 3-6 inches of space behind the wall or ceiling. If you go this route, make sure there aren't drain lines or wires blocking the way.

A sturdy mounting surface — For this, properly installed drywall will usually provide a stable area.

Wire access — Some high quality wire can be as thick as your finger. How do you want it run? Is the wire you will be using code compliant? (See "Running Wires" section for more information.)

Soundproofing — Things may sound great in one room, but can be irritating to those in the next room. Proper treatment will cut down unwanted noise, as well as help your sound quality.

A working knowledge of your house's construction — Before you begin installation, know what is hidden before you cut or drill! This will help avoid any costly uses of the word "oops."



Needed Tools Some tools used in the installation profession can cost hundreds of dollars. However, these tools can save hours of work on a project and allow a skilled installer to learn about a house's construction without cutting into the wall. They also eliminate much of the risk involved in working near electrical and plumbing systems. Here is a list of tools needed for speaker mounting:

- | | |
|----------------|--|
| ? Stud finder | ? Flashlight |
| ? Tape measure | ? Speaker template — usually comes with recessed speakers |
| ? Level | ? Wall probe — piano wire, etc |
| ? Drywall Saw | ? Wire running tools — fish/carpet tape, flex rods, electrical |
| ? Pencil | tape |
| ? Power drill | |

Running Wires You'll have to get a wire from your speaker to your equipment. There are a few rules you'll need to be aware of when it comes to running wires: The National Electrical Code (NEC) is a set of rules that govern how wires and varying types of power are to be run in a building. These rules cover both high voltage (outlets, light switches) and low voltage (phone lines, speaker wires, cable lines). Any work you do **MUST** be in accordance with the NEC, as well as local ordinances for your city, county and state. It's good to have a clear understanding of these rules before you begin. Speaker wire can be susceptible to interference from external sources, such as electrical lines. The NEC dictates minimum safe clearances for wires, but it is best to keep as much distance between your speaker wires and any potential sources of interference — you don't want to get all the way through your install only to

discover your speakers "buzz" or "hum" constantly. The wire you use is as important as the speaker and amplifier themselves. The type of copper and how thick it is, the jacket protecting the copper, the distance it's run — all of these impact how your system will perform. Make sure you're choosing wire that is the proper material and has a thick enough gauge for the location and distance it will be run. There are also different wire ratings that dictate what kind of wires are run within different areas of a house. For example, certain wires are "in-wall" rated, while others are rated for what can be run outside, underground, in HVAC ducts, etc. Since this is spelled out by the NEC and in any local restrictions codes, it is strongly recommended that you make use of a professional installer if you're unsure of local ordinances.



Wire Running Technique

Carpet fish — This technique uses a specially designed flat wire to run between the carpet and the pad. This should usually be routed through low-traffic areas to avoid wear on the wire. Start by pulling up a section of carpet, usually near where your wire will be run to or from. Feed carpet tape or another suitably long device from the start to the finish of your run, and tape the wire securely.



TECHTIP: *When taping wire, make sure to "taper" the wire in a wedge or cone shape — any corners or edges on your tape job can catch and hamper your efforts. This works best with two people — one to feed the wire, and one to pull from the other end.*

Wall fish — This technique uses access from a basement or attic to run wires up or down a wall. Interior walls are usually empty, but exterior walls will often be blocked with insulation.



TECHTIP: *If you have access to a wall where you need a wire fished, drill up from the lower level or down from an upper level into the center of the wall. Once you have an access hole drilled, run your wire fish tool, such as a flex rod, down to where you need the wire run. Tape your wire and feed it through the wall to your desired location.*

Track molding — This concealment option is an adhesive-backed, hollow, plastic trim that can hold wiring on the inside. When the wires are run inside the trim, the adhesive sticks it into place against baseboards, in corners, etc. The trim can also be painted, so it blends better with the background.



Mounting an On-Wall Speaker **Beginner Skill Level — 30 to 60 minutes**¹. Most on-wall speakers will have a very straightforward mounting process. If they can be wall mounted, they will have a small hole on the back or an insert for attaching a mount. Measure where this hole is on the speaker and pick your desired height.² When you have located the height for your speaker, use your stud finder to locate a stud to hang your speaker from.



TECHTIP: *Most stud finders work the same — simply hold the stud finder still against the surface and then hold down the button. It will then beep. Now move it slowly straight up and down, or to the left and right until it indicates it senses something — usually by blinking or beeping in a different manner..*

Mark the location and attach your screw or mount.³ If a stud can not be located, drywall anchors can sometimes be used to hang a speaker from the wall — it depends on the weight of the speaker. Check

the anchor weight restrictions against the weight of your speakers, ensuring they can hold the speaker weight. **4.** Once your mounting location is ready, ensure your wire is ready to be connected. Test your speaker after connecting the wire by playing something through it. Once you get it to work, hang or attach the speaker depending on the method being used.



Mounting Recessed Speakers: In-Wall and In-Ceiling **Intermediate Skill Level — 2 to 3 hours, depending on house**

1. Start by taking the template that came with your speaker. This will usually be a cardboard cutout that shows you what size and shape your hole needs to be. Once you remove any obstacles in the way of your desired speaker location, lightly trace the outline with a pencil. **See Photo #1**



2. Once you trace your outline, make a small hole inside the outline, and use your wall probe to "feel" around for any obstacles.



TECHTIP: *You can use a variety of tools such as inspection mirrors, stud finders, or even a coat hanger to check inside a wall without opening up a huge hole. Check your intended speaker location thoroughly before you cut a full size hole!*

Water and gas lines, air vents, drain lines — many of these will not register with a stud finder, but can hide an inch or two behind the sheetrock. It's best to find this out with a small hole you can easily fix rather than a full-sized hole that needs involved repair.

3. After you verify the cavity is free of obstructions, use your drywall saw to begin cutting your hole.



TECHTIP: *Cut as you push in — cutting as you pull out can catch and damage some wall coverings. You may also wish to score the area by using a utility knife to trace your line before cutting.*

Be sure to save the piece you just cut out — you can use it to patch the hole if you ever decide to remove the speaker. **See Photo #2**



4. When your hole has been cut, you may be able to use this newly found access to help run your wires. Once your wire is in place, connect it to the speaker. This would be a good time to test your speaker by playing something through it to make sure your wire and speaker are in working order before you place it in the wall.

5. Place the speaker into the hole, making sure there are no gaps between the wall and the speaker. These spaces look bad and they will decrease your sound quality. Take care to ensure your speaker is not touching anything inside the wall or ceiling and that the drywall shows no signs of bending or sagging. **See Photo #3**



Mounting Recessed Speakers: In-Wall and In-Ceiling

6. There are a few different ways of securing a recessed speaker, which vary by manufacturer. The manual for your speakers will give you detailed instructions on how your speakers are secured. There will be multiple screws you will need to tighten, so be sure you have them all secured.



TECHTIP: *If you tighten all the screws on one side first, or too far, it will "angle" the speaker and make the opposite side almost impossible to attach without risking harm to the drywall. Lightly tighten the screws all around when the speaker is flush with the drywall.*

7. Before you fully tighten your speakers into place, use your tape measure and level to make sure you have it positioned exactly the way you want it. **See Photo #4**



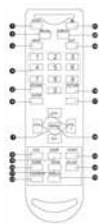
TECHTIP: *Keep in mind that even though the speaker may be level, a bookcase or anything else in the room that is not level can make a level speaker look crooked. Have someone stand back as you hold it to make sure it looks good with the rest of the room.*

8. Once you have tightened your speaker into place, the last step is to insert the grille that came with your speaker. This is a decorative cover that conceals the components of the speaker itself. These grilles are usually a very tight fit and can bend if not inserted carefully. Start with one side of the grille and work it into the groove without forcing it. They are a very precise fit, and any creases will be very noticeable if you end up forcing it, so take your time.

If you've made it to this point, congratulations on a job well done!

6 External Equipment Connections

Accessories



Remote Control



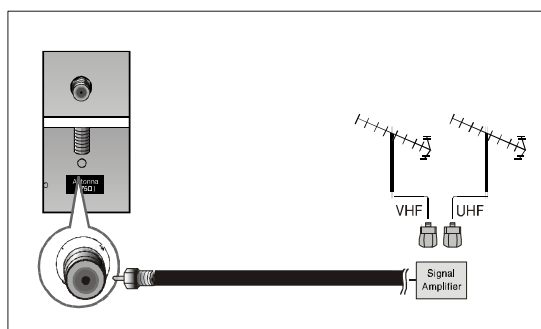
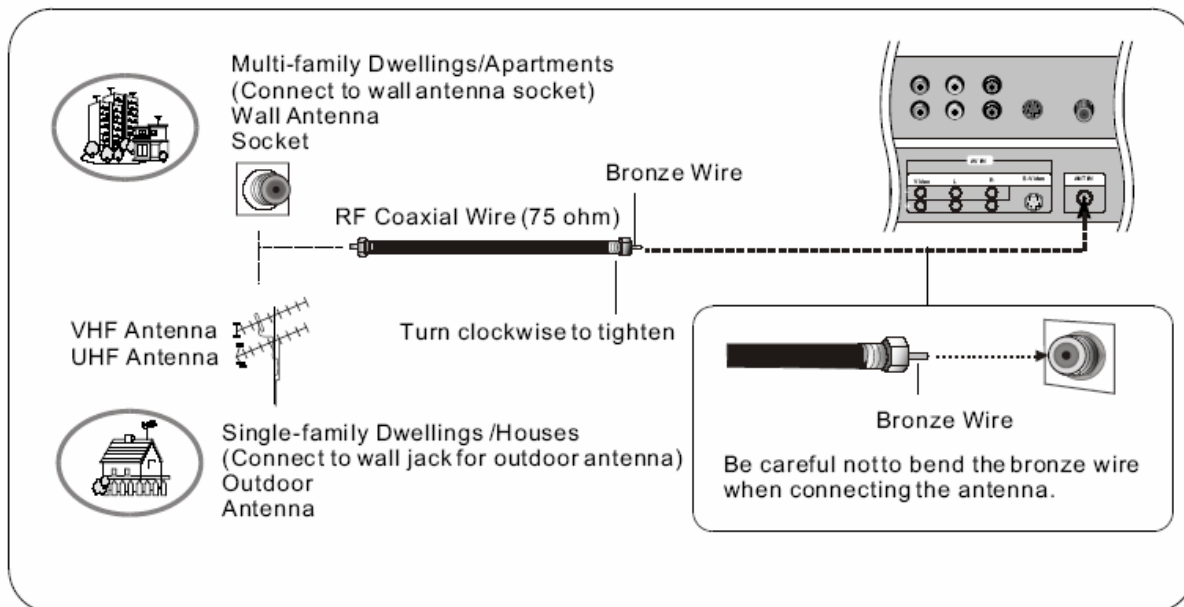
User Manual



Battery

Antenna Connection

Generally speaking, to enjoy a clearer picture, we recommend that you use a CATV system or an outdoor antenna . location and antenna positioning

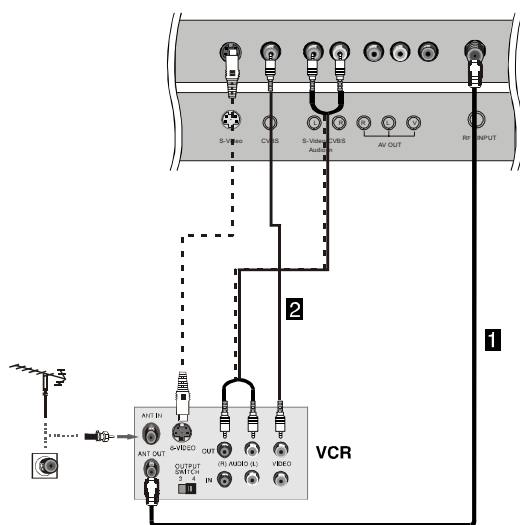


- To improve the picture quality in a poor signal area, please purchase a signal amplifier and install properly.
- If the antenna needs to be split for two TV's, install a "2-Way Signal Splitter" in the connections.
- If the antenna is not installed properly, contact your dealer for assistance.

Choose Your Connection

There are several ways to connect your television, depending on the components you want to connect and the quality of the signal you want to achieve. The following are examples of some different ways to connect your TV with different input sources. Choose the connection which is best for you.

VCR connection



To avoid picture noise (interference), leave an adequate distance between the VCR and TV

Connection Option 1

Set VCR output switch to channel 3 or 4 and then tune the TV to the same channel number.

Connection Option 2

1. Connect the audio and video cables from the VCR's output jacks to the TV input jacks, as shown in the figure.

When connecting the TV to VCR, match the jack colors (Video = yellow, Audio Left = white, and Audio Right = red). If you connect an S-VIDEO output from VCR to the S-VIDEO input, the

picture quality is improved; compared to connecting a regular VCR to the Video input.

2. Insert a video tape into the VCR and press PLAY on the VCR. (Refer to the VCR owner's manual.)

3. Select the input source with using the INPUT button on the remote control, and then press ▲/▼ button to select the source,press the ► button to confirm.

External Equipment Connections

External A/V Source Setup

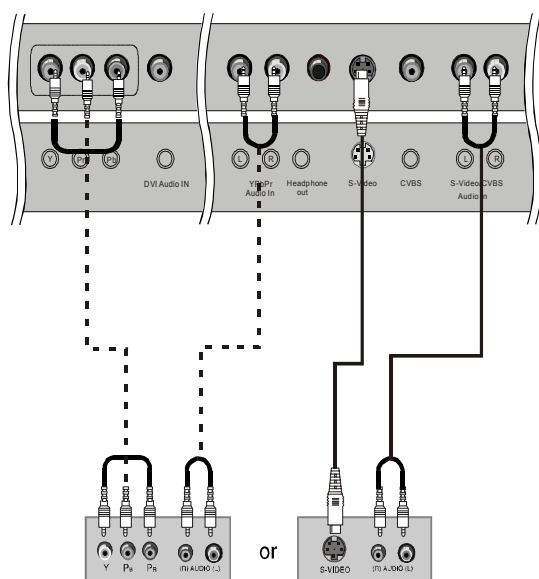
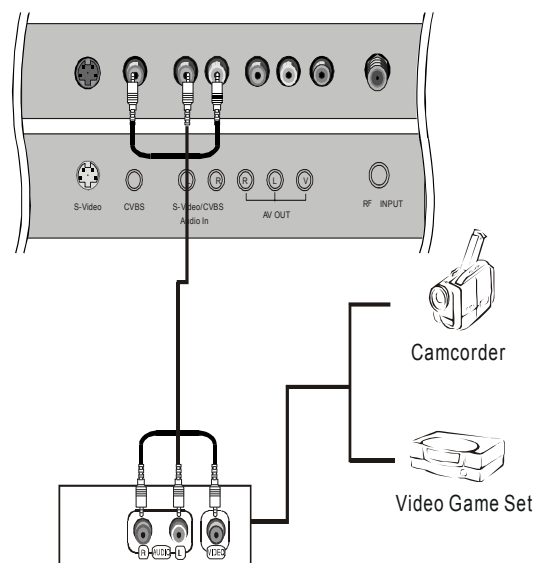
How to connect

Connect the audio and video cables from the external equipment's output jacks to the TV input jacks, as shown in the figure.

When connecting the TV to external equipment, match the jack colors (Video = yellow, Audio Left = white, and Audio Right = red).

How to use

1. Select the input source with using the INPUT button on the remote control.
2. Press the ?/ ? button to select the desired source.
3. Press the ok button to confirm
2. Operate the corresponding external equipment.



DVD

How to connect

1. Connect the DVD video outputs (Y, Pb/Cb, Pr/Cr) to the Y, Pb, Pr jacks on the TV and connect the DVD audio outputs to the YPbPr Audio IN jacks on the TV, as shown in the figure.
2. If your DVD only has an S-VIDEO output jack, connect this to the S-VIDEO input on the TV. as shown in the figure.

NOTE: If your DVD player does not have component video output, use S-Video.

How to use

1. Turn on the DVD player, insert a DVD.
2. Use the INPUT button on the remote control to select YPbPr mode.
3. Press Play button on external equipment for program play.
4. Refer to the DVD player's manual for operating instructions.

■ Component Input ports

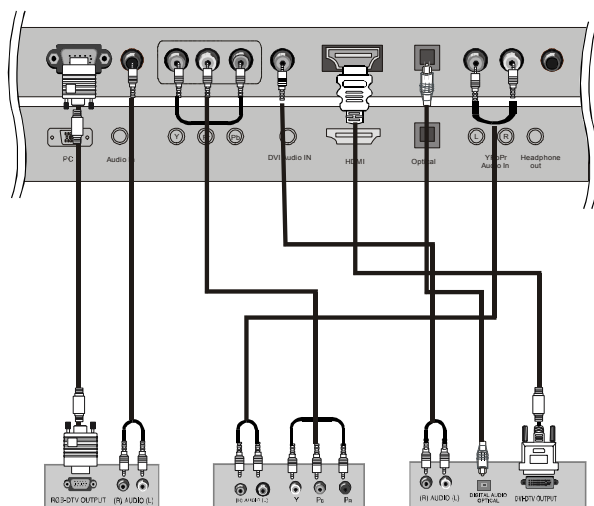
To get better picture quality, connect a DVD player to the component input ports as shown below.

Component ports on the TV	Y	Pb	Pr
Video output ports on DVD player	Y	Pb	Pr
	Y	B-Y	R-Y
	Y	Cb	Cr
	Y	P _B	P _R

DTV connection

This TV can receive Digital Over-the-air/Cable signals without an external digital set-top box. However, if you do receive Digital

signals from a digital set-top box or other digital external device, refer to the figure as shown below. This TV supports HDCP (High-bandwidth Digital Contents Protection) protocol for Digital Contents (480p,720p,1080i).



Digital Set-top Box

How to connect

Use the TV's (Y, PB, PR) , VGA or HDMI jack for video connections, depending on your set-top box connector. Then, make the corresponding audio connections.

How to use

1. Turn on the digital set-top box. (Refer to the owner's manual for the digital set-top box.)
2. Use INPUT on the remote control to select YPbPr, VGA, or HDMI source.

Signal	YPbPr	HDMI/DM
480i	Yes	Yes
480p	Yes	Yes
720p	Yes	Yes
1080i	Yes	Yes

Digital Audio Output

Send the TV's audio to external audio equipment (stereo system) via the Digital Audio Output (Optical) port.

How to connect

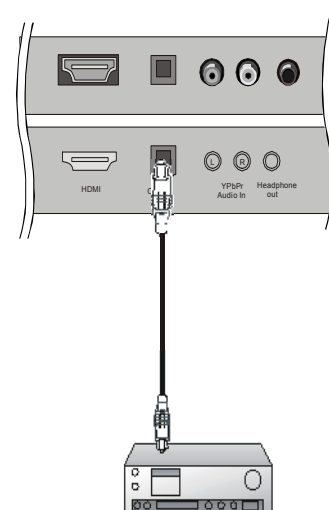
1. Connect one end of an optical cable to the TV Digital Audio (Optical) Output port.
2. Connect the other end of the optical cable to the digital audio (optical) input on the audio equipment.

See the external audio equipment instruction manual for operation.

Note: When connecting with external audio equipments, such as amplifiers or speakers, please turn the TV speakers off.

Caution: Do not look into the optical output port.

Looking at the laser beam may damage your vision.



PC Connection

How to connect

1. To get the best picture quality, adjust the PC graphics card to 1024x768 .
2. Use the TV's PC or DVI (Digital Visual Interface)Audio IN port for video connections, depending on your PC connector.
 - If the graphic card on the PC does not output analog and digital RGB simultaneously, connect only one of eitherVGA IN or DVI IN to display the PC on the TV.
 - If the graphic card on the PC does output analog and digital RGB simultaneously, set the TV to either VGA or DVI; (the other mode is set to Plug and Play automatically by the TV.)
3. Then, make the corresponding audio connection. If using a sound card, adjust the PC sound as

required.

How to use

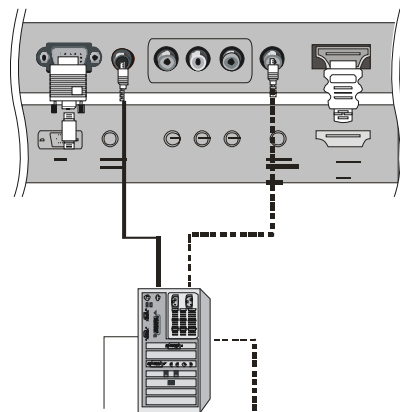
1. Turn on the PC and the TV.
2. Turn on the display by pressing the POWER button on the TV's remote control.
3. Use INPUT on the remote control to select VGA or HDMI source.
4. Check the image on your TV. There may be noise associated with the resolution, vertical pattern, contrast or brightness in PC mode. If noise is present, change the PC mode to another resolution, change the refresh rate to another rate or adjust the brightness and contrast on the menu until the picture is clear. If the refresh rate of the PC graphic card can not be changed, change the PC graphic card or consult the manufacturer of the PC graphic card.

NOTES:

- 1 Use a DVI cable.
- 2 Avoid keeping a fixed image on the TV's screen for a long period of time. The fixed image may become permanently imprinted on the screen.
- 3 The synchronization input form for Horizontal and Vertical frequencies is separate.

Resolution

Mode	Resolution	Frame frequency (Hz)
VGA	640*480	60Hz
SVGA	800*600	60Hz/75Hz
XGA	1024*768	60Hz
		75Hz
		85Hz



Connecting Headphones

You can connect a set of headphones to your set if you wish to watch a TV program without disturbing the other people in the room.



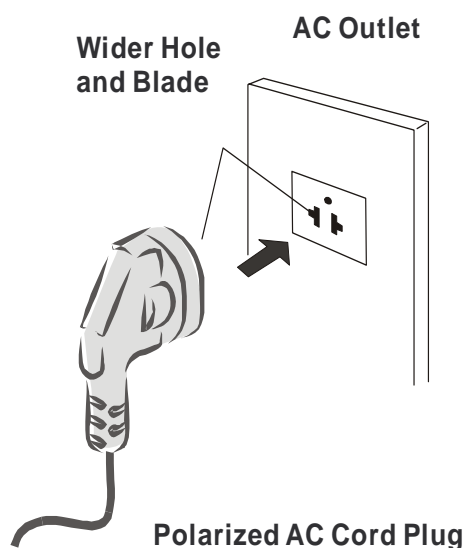
Plug a set of headphones into the 3.5mm mini-jack socket on the rear panel of the set.

Note :

Prolonged use of headphones at a high volume may damage your hearing.

You will not receive sound from the speakers when you connect headphones to the system.

Power source



TO USE AC POWER SOURCE

Use the AC polarized line cord provided for operation on AC.

Insert the AC cord plug into a standard polarized AC outlet.

NOTES:

Never connect the AC line cord plug to other than the specified voltage.

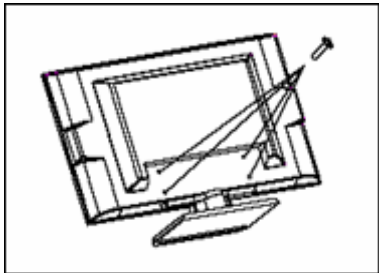
Use the attached power cord only.

If the polarized AC cord does not fit into a non-polarized AC outlet, do not attempt to file or cut the blade. It is the user's responsibility to have an electrician replace the obsolete outlet.

If you cause a static discharge when touching the unit and the unit fails to function, simply unplug the unit from the AC outlet and plug it back in. The unit should return to normal operation.

Take the table stand off

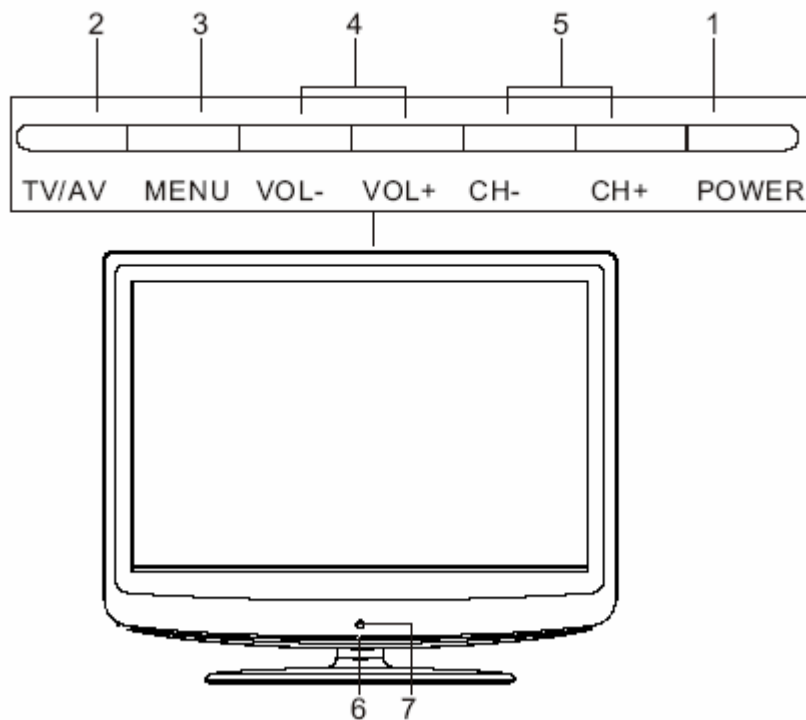
You can take off the table stand if you don't want to use the table stand.

	<p>HL15R</p> <p>Please release the screw .</p> <p>See the picture</p>
---	---

7. OPERATION INSTRUCTIONS

Basal information

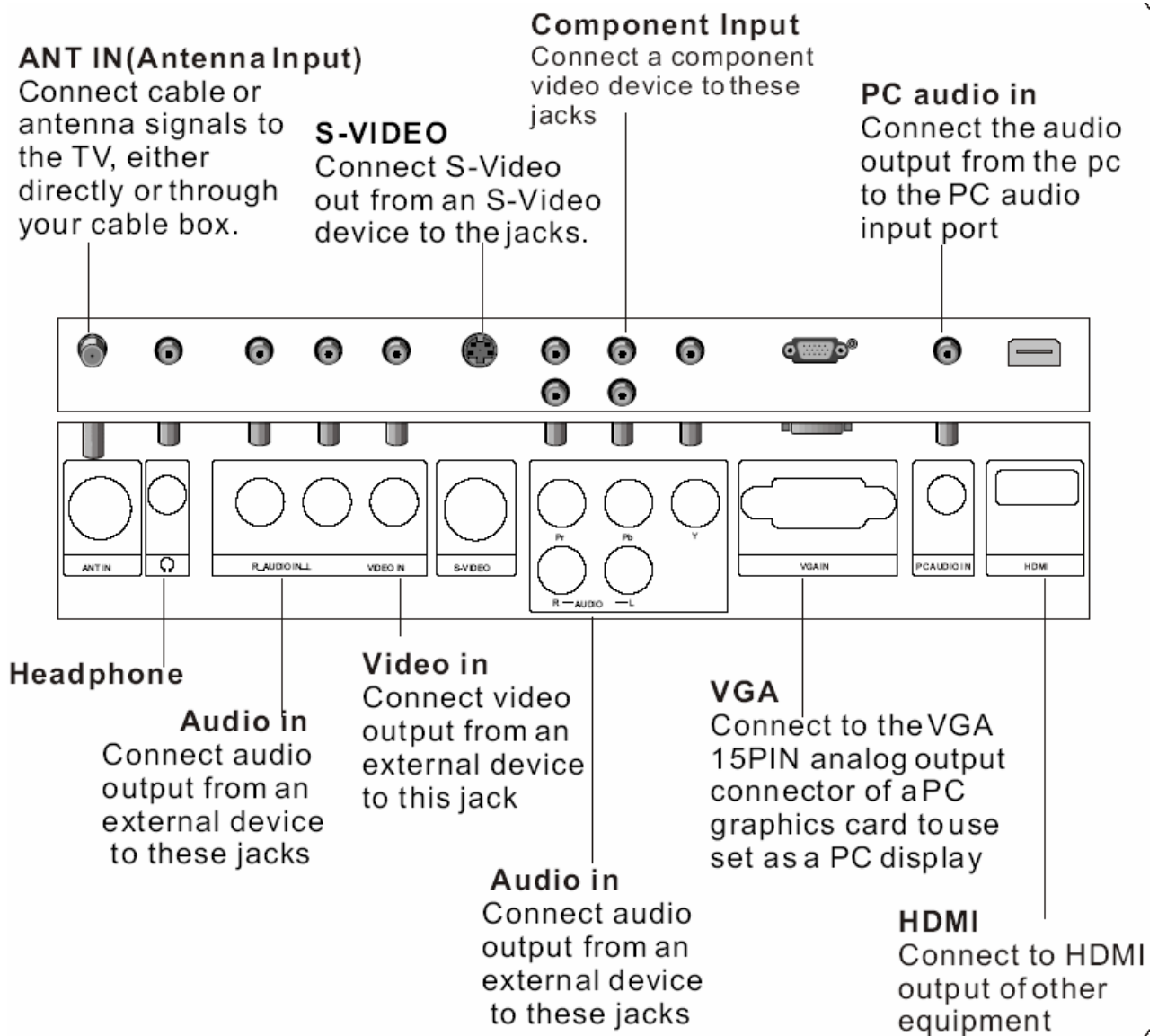
7.1 Front panel controls



Control Panel Function

1. Power supply switch
2. TV/AV Selects the input signals.
3. MENU Press to select the main menu
4. VOL- Volume down / Left orientation to adjust the item in the OSD
 VOL+ Volume up / Right orientation to adjust the item in the OSD
 /Press to enter
5. CH- TV channel down / to select the item in the menu
 CH+ TV channel up / to select the item in the menu
6. Power indicator
7. Remote Sensor Receives the signals from the remote control

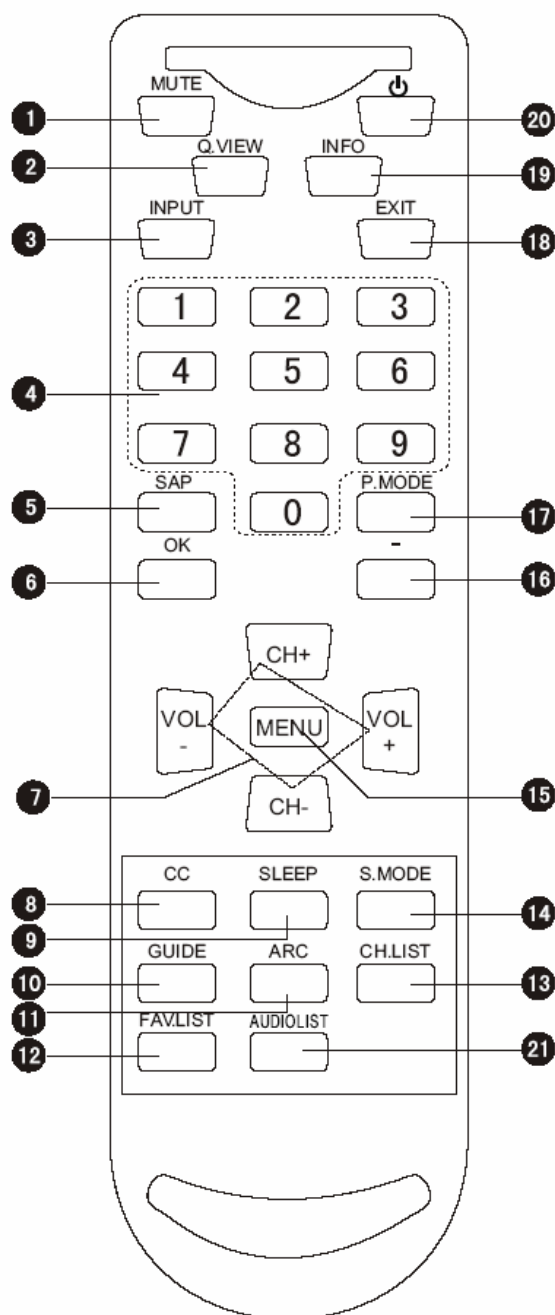
7.2 Back panel controls



7.3 Setting Up Your Remote Control

When using the remote control, aim it towards the remote sensor on the TV

Buttons on the remote control



- 1 Mute
- 2 Q View: Return to previous channel in TV mode
- 3 Input selection
- 4 Program Number
- 5 Select MONO, STEREO, SAP in NTSC system
- 6 Confirm button
- 7 Volume/Channel Selection
- 8 CCD (closed caption) On / Off
- 9 TV Sleep button
- 10 Shows program schedule in TV
- 11 Select the aspect ratio
- 12 Open the favorite channel list in TV
- 13 Open the channel list in TV
- 14 Adjust sound mode
- 15 MENU
- 16 Select additional channels
- 17 Adjust Picture Mode
- 18 Exit On Screen Display
- 19 Program Infomation
- 20 Power
- 21 Open the audio list in TV

8. DISASSEMBLY INSTRUCTIONS

8.1.whole machine

The whole machine includes Packaging subassembly, Front-frame subassembly, Back-cover subassembly, Base subassembly, MAINBOARD SUBASSEMBLY, Remote Control Board Subassembly, Control Board Subassembly, Assembly Material Subassembly, Romoter Contral

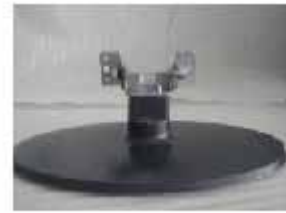
Per-setting Subassembly.



1



2



3.1



3.2



3.3



3.5



3.6

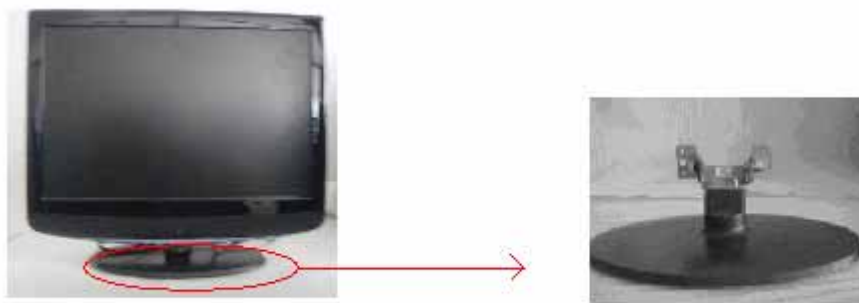


3.7

Components List

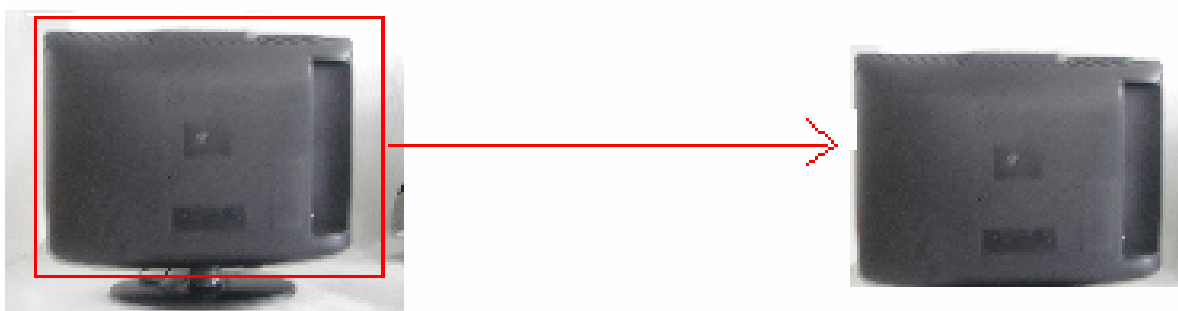
NO	Name	Description	Parts number
1	HL15R	whole machine	
2	Packaging		
3	TV Set		
3.1	Base subassembly		
3.2	Back cover subassembly		
3.3	Front Frame Subassembly		
3.4	Assembly Material Subassembly		
3.5	Control Board Subassembly		
3.6	Remote Control Board Subassembly		
3.7	Mainboard Subassembly		

8.2. Base subassembly



Subassembly	Spare parts number	Location No.	Spare Parts Name in English	Specification	Qty
Base Subassembly			Base Subassembly		1
			Base Assembly		1
			Base Borad		1
			Bolt	M3*16	1
			Rubber		4

8.3. Back cover subassembly



Components List

Subassembly	Spare parts number	Location No.	Spare Parts Name in English	Specification	Qty
Back Cover Subassembly			Back Cover Subassembly		1

		Power Cord	2.1 Meter Power Cord	1
		Magnetism Coil	ECIK-EL6E-B	1
		Back Cover Assembly		1
		Back Cover		1
		Button Bracket		1
		Terminal Board		1
		Rotational Axis		2
		Bolt	SJ2824-87 ST3X10F	8
		Plastic board		1
		Bolt	SJ2824-87 ST4 × 16F	1
		Bolt	SJ2825-87 ST3X120F	2
		Terminal Lable		1
		Metal clip		2
		Bolt	SJ2824-87 ST3X8F	2
		Label		1

8.4Front-frame subassembly



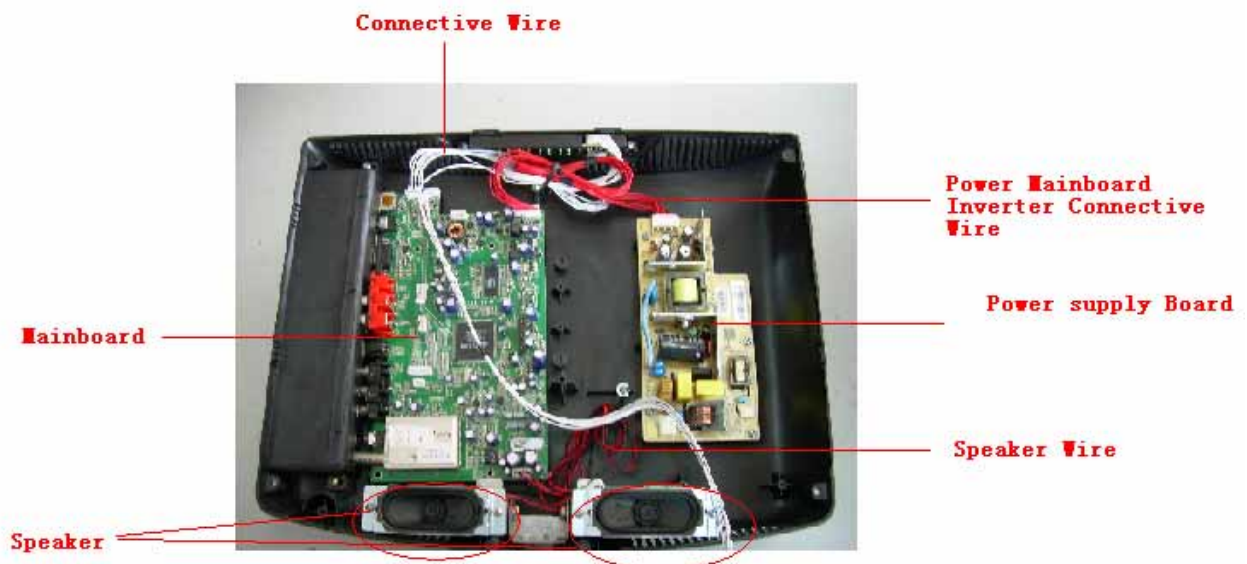
Components List

Subassembly	Spare parts number	Location No.	Spare Parts Name in English	Specification	Qty
-------------	--------------------	--------------	-----------------------------	---------------	-----

Front Frame Subassembly			Front Frame Subassembly		1
			Front Frame Assembly		1
			Front Frame		1
			Transparent Window		1
			LCD panel bracket		2
			Metal piece		2
			Bolt		8
			Bolt	SJ2824-87 ST3*8F	2
			Speaker Wire	JT4801-J3750Y	1
			Speaker	Y37-2W/4OHM	2
			Bolt	SJ2824-87 ST3*10F	4

8.5. Assembly Material Subassembly

8.5.1. Location Photo



8.5.2 Components List

Subassembly	Spare parts number	Location No.	Spare Parts Name in English	Specification	Qty
Assembly Material Subassembly			Assembly Material Subassembly		1
			LVDS Wire	LVDS Wire	1
			Connective Wire	(PH-12) -400mm-400mm- (PH-8)	1
			Power Mainboard Inverter Connective Wire	(TJC3-7) -500mm- (TJC3-7)	1
			Power Supply Board	PCA050FA-011-P-R	1
			Left Gasket	EPS	1
			Right Gasket	EPS	1
			LCD PANNEL		1
			Bolt	SJ2824-87 ST3*8F	8
			Bolt	SJ2824-87 ST3X10F	8
			Bolt	SJ2824-87 ST3X10F	6
			Magnetism Coil	BCRK-513571	1
			Magnetism Coil	BCRK-513571	1
			Electric Sponge		1

9. MEASUREMENTS AND ADJUSTMENTS

The way to the factory mode menu:

1st, press nemu,

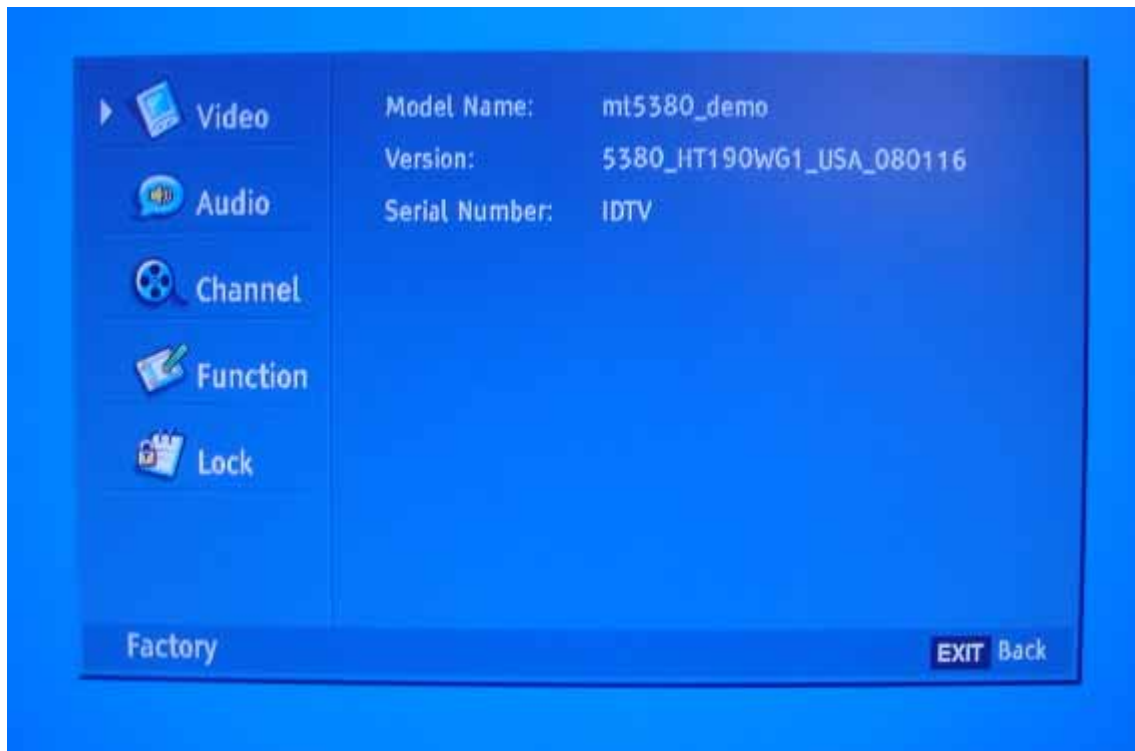
2en, input 8893,

Finished these operations ,system will be into the factory mode menu.



9.1 Version ,S/N, Panel Resoution

Version: The first line is the model Name and the second line is current software version.



9.2 Video

9.2.1 , Auto Color

The option could only be used in the VGA and Component model. When we found the color in the two models was abnormal. Then we can use the function to adjust it automatically.

9.2.2 , Color Temperature

The function could adjust the Color Temperature., used when debugging.



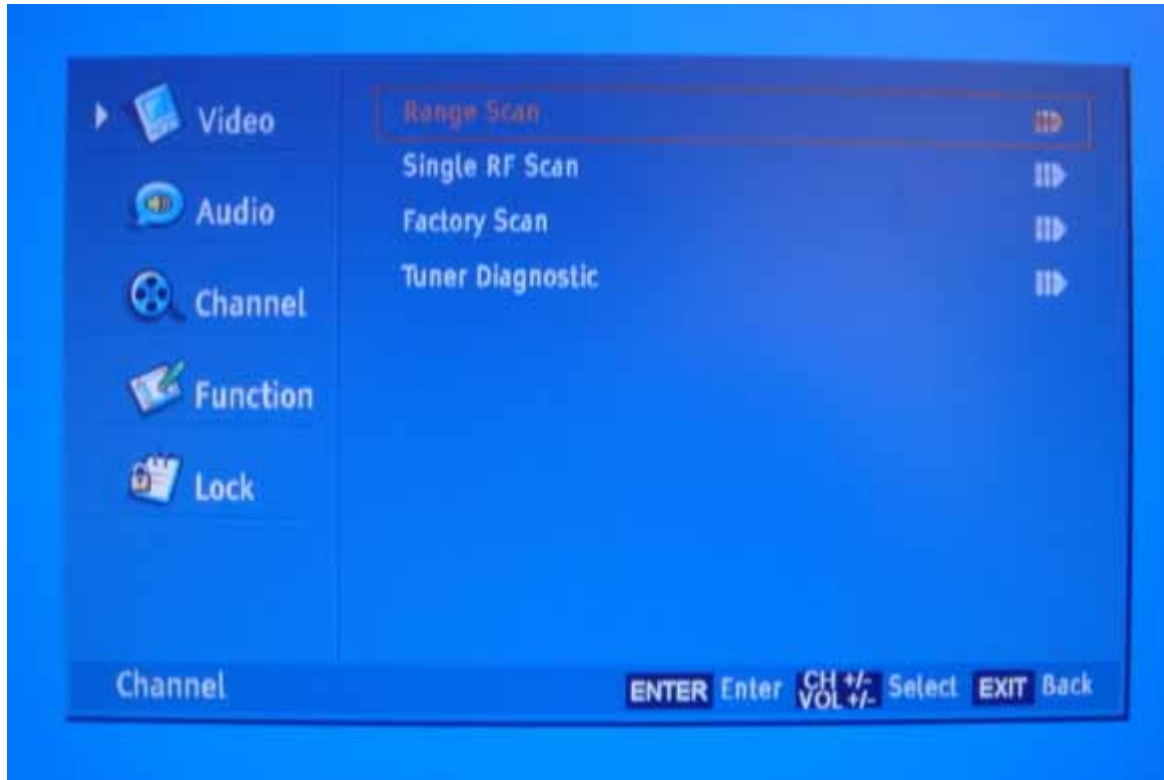
9.3 Audio

Dolby Banner: When turn it “ON”, the model will be in Dolby authentication state.
Compression: Compression style. RF : atv line : AV/S-Video/YPbPr/VGA
Compression Factor: Compression state.
Downmix: output model. MTS System: used when debugging. The parameters only used when debugging, no need to be modified.

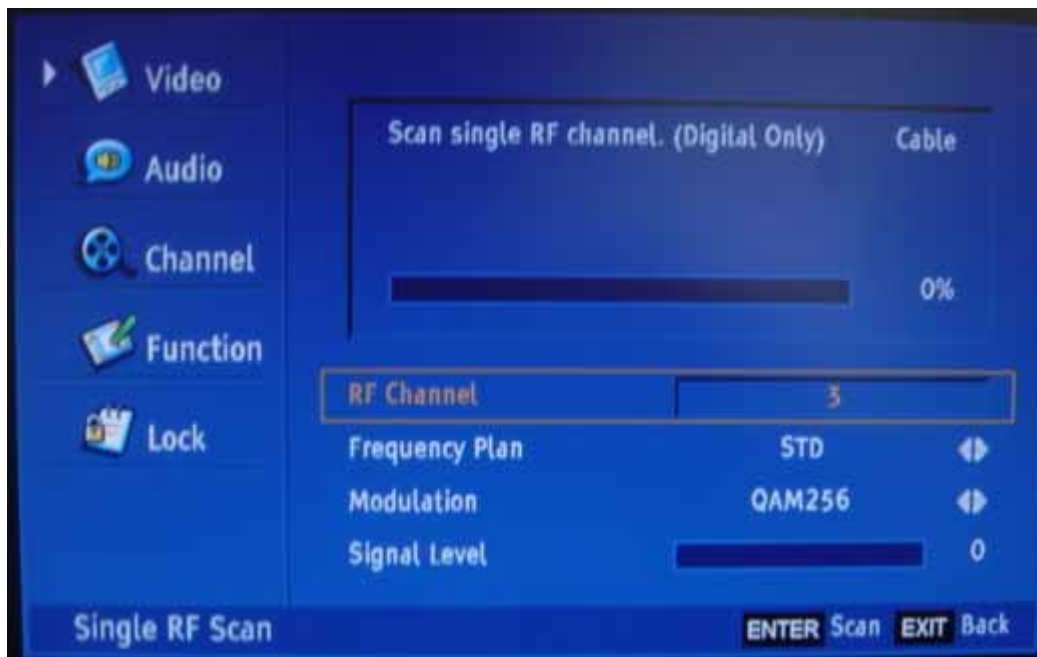


9.4 Channel

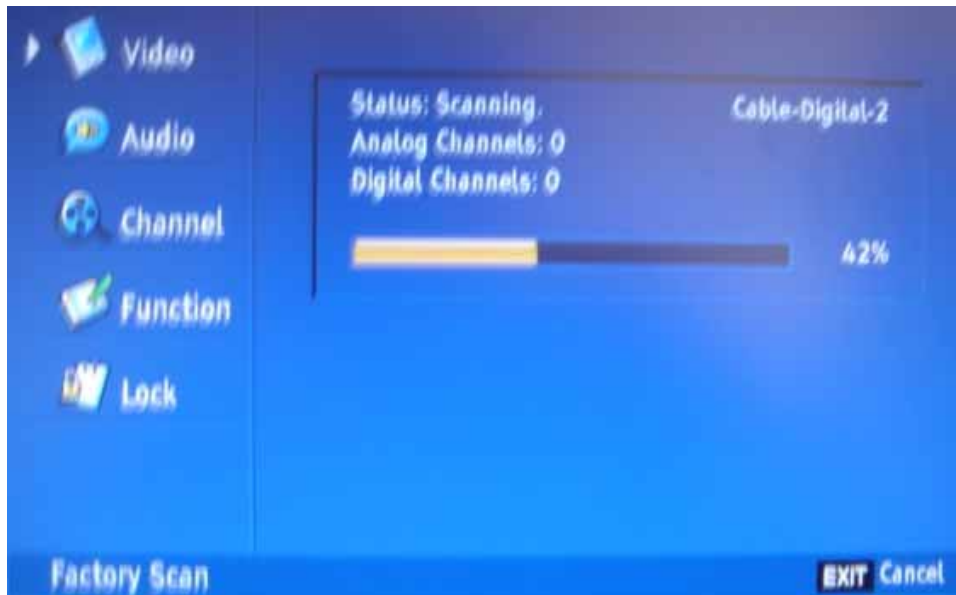
Range Scan: The function could make it to search the channels by differentiation the analog and digital channels.



Single RF Scan: Search channels in the frequency scope set in advance.



Factory Scan: According to ANTENNA-ANALOG--- ANTENNA-DIGITAL--- CABLE- ANALOG--- CABLE- DIGITAL to search channels, used only in project debugging.

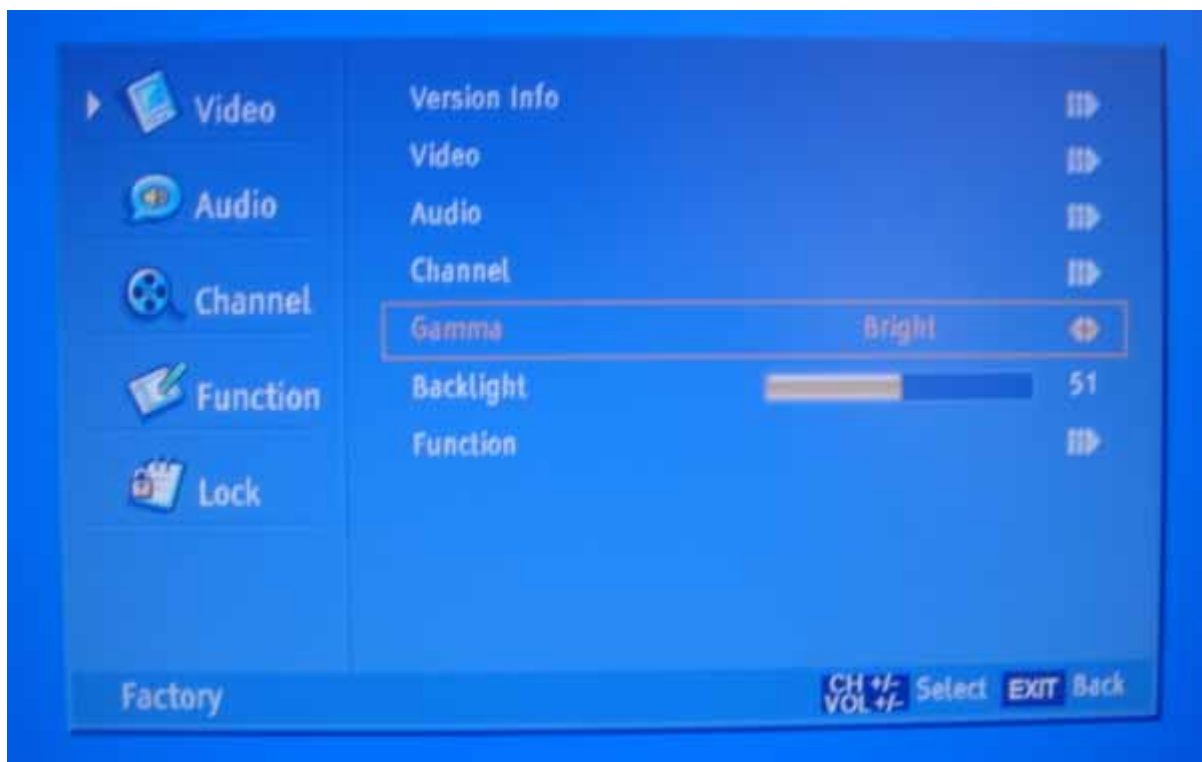


Tuner Diagnostic: Project debugging setting, used to inspect the audio function.

9.5 Gamma

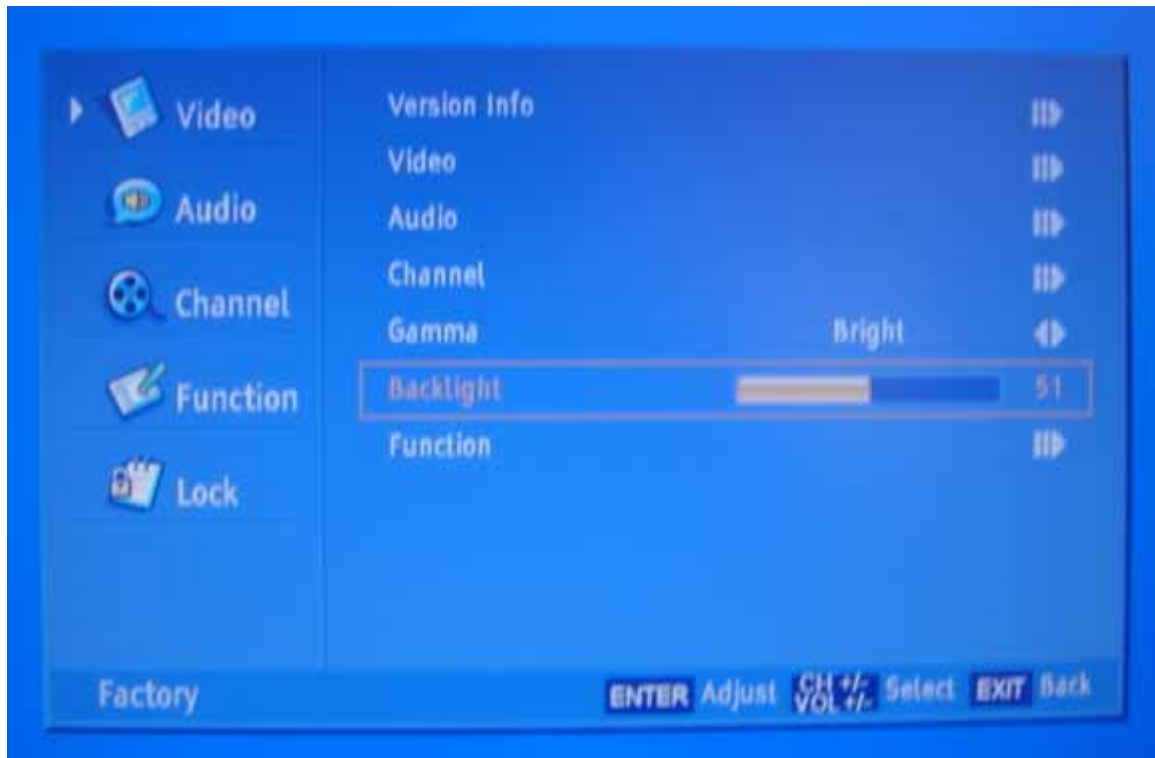
Gamma:

Bright : GAMMA0.8 Middle : default settings in the programme Dark : GAMMA1.2



9.6 Backlight

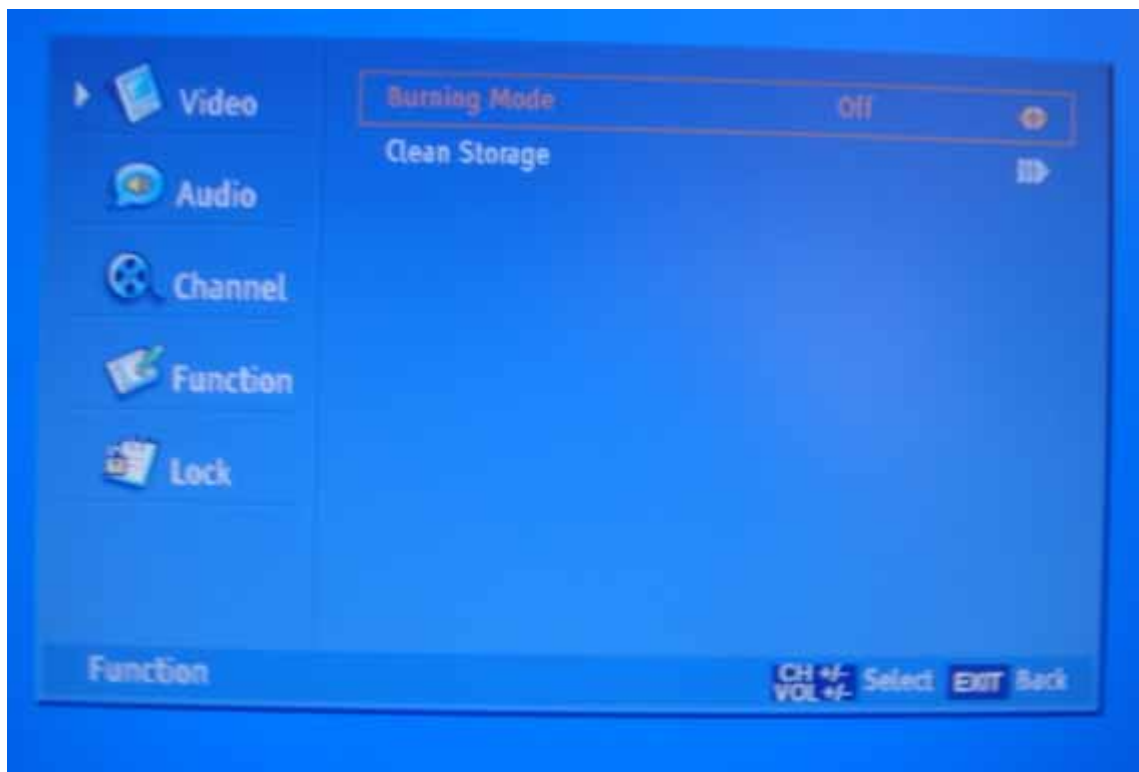
Backlight: adjust the backlight.

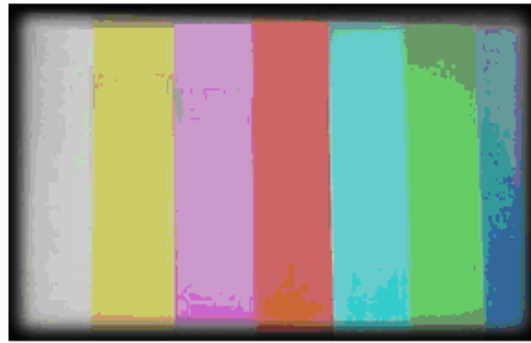


9.7 Function

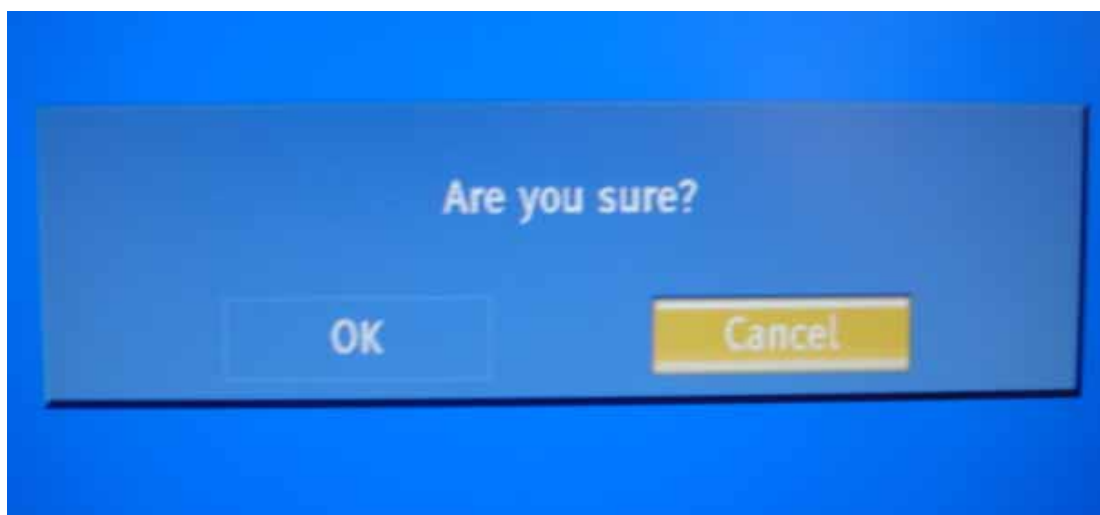
Burning Mode:

Turn it "ON" to enter the aging model, This is for factory run-in testing. The screen would display red, green, blue and black screen repeatedly. Each color screen could be exam at that time.





Clean Storage : The function could make the model turn back to the factory default setting.



Remark:

The date of the chart only is a example, please don't adjust the factory mode base on it.

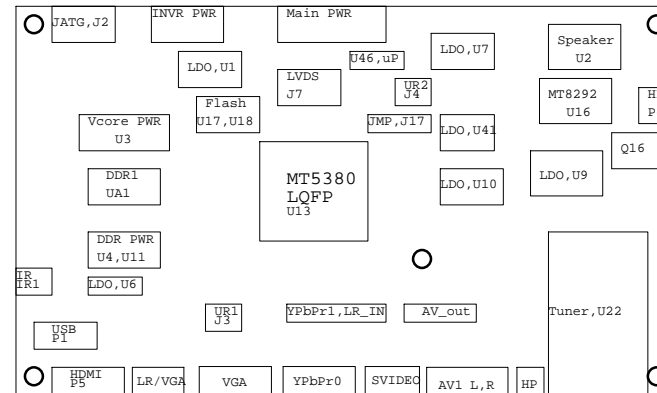
10. CIRCUIT DIAGRAM

MT5380 (DDR1)
MODEL NAME: MT5380P1-V2

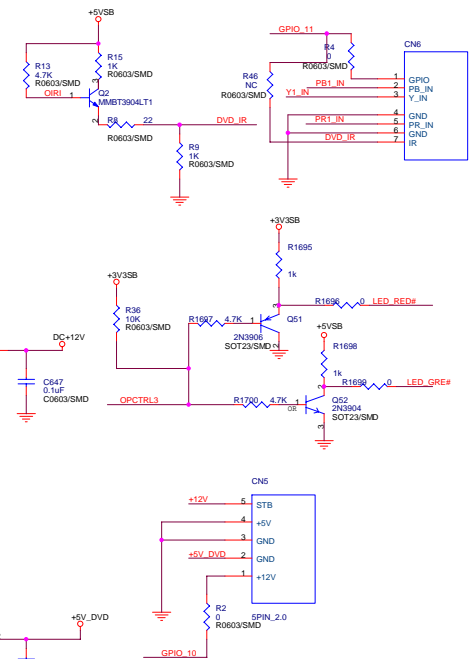
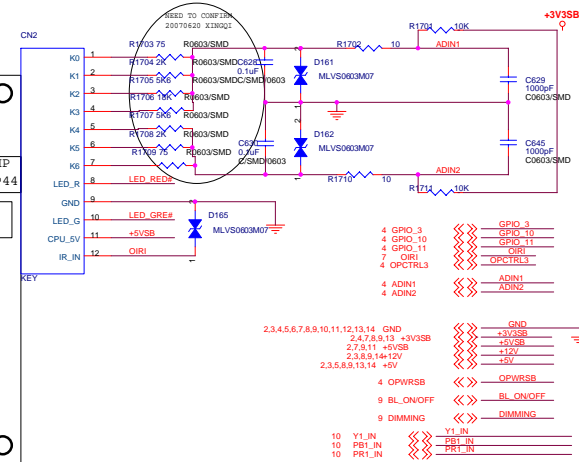
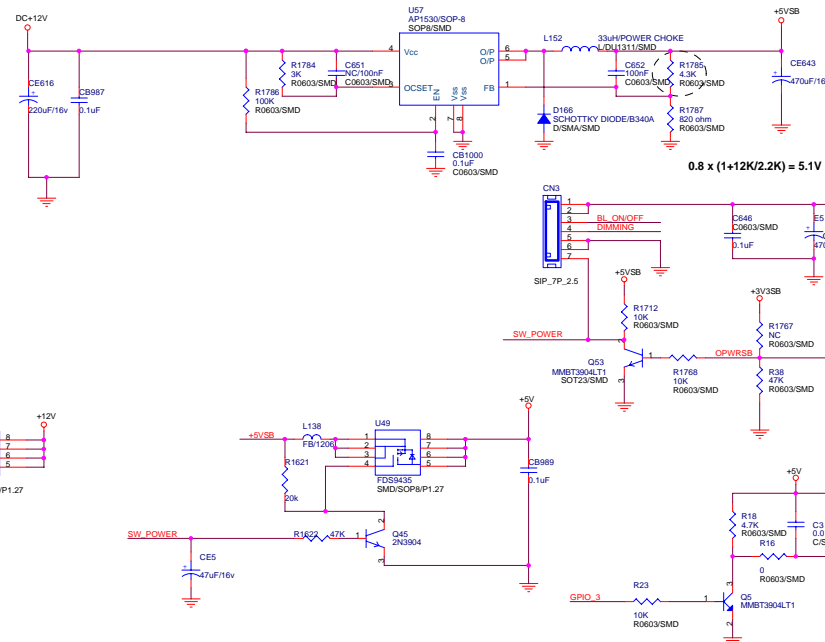
01. INDEX
02. DIGITAL POWER
03. ANALOG POWER
04. PERIPHERAL
05. ANALOG PLL/USB2.0/TUNER
06. DDR1 MEMORY
07. FLASH/JTAG/UART/IR/TRAP
08. HDMI/SPEAKER
09. LVDS/MUTE
10. YPBPR/L/R
11. VGA IN/LR
12. AV IN/LR/CVBSO
13. LINE OUT/HP
14. BACK LIGHT /MAIN POWER

GPIO Definition	
GPIO_0	System EEPROM Write Protect
GPIO_1	Unused
GPIO_3	Unused
GPIO_4	Headphone Detect
GPIO_5	Audio Mute Control
GPIO_6	HDMI EEPROM Write Protect
GPIO_7	HDMI HDP
GPIO_8	Speaker Mute
GPIO_9	LVDS Power Control
GPIO_10	LVDS Panel Control(Reserve)
GPIO_11	LVDS Panel Control(Reserve)
GPIO_12	U2RX
GPIO_13	U2TX
OPCTRL0	CEC Function
OPCTRL1	VGA EEPROM Write Protect
OPCTRL2	Back Light Control
OPCTRL3	Unused
OPCTRL4	Trap
OPCTRL5	Trap
AIN1,2,4	Unused
OPWM0(GPIO 40)	Unused
VXCO(GPIO 67)	Unused

GPIO Definition	
RF_AGC(GPIO 62)	Unused
AIN3_L(GPIO 74)	Unused
AIN3_R(GPIO 75)	Unused




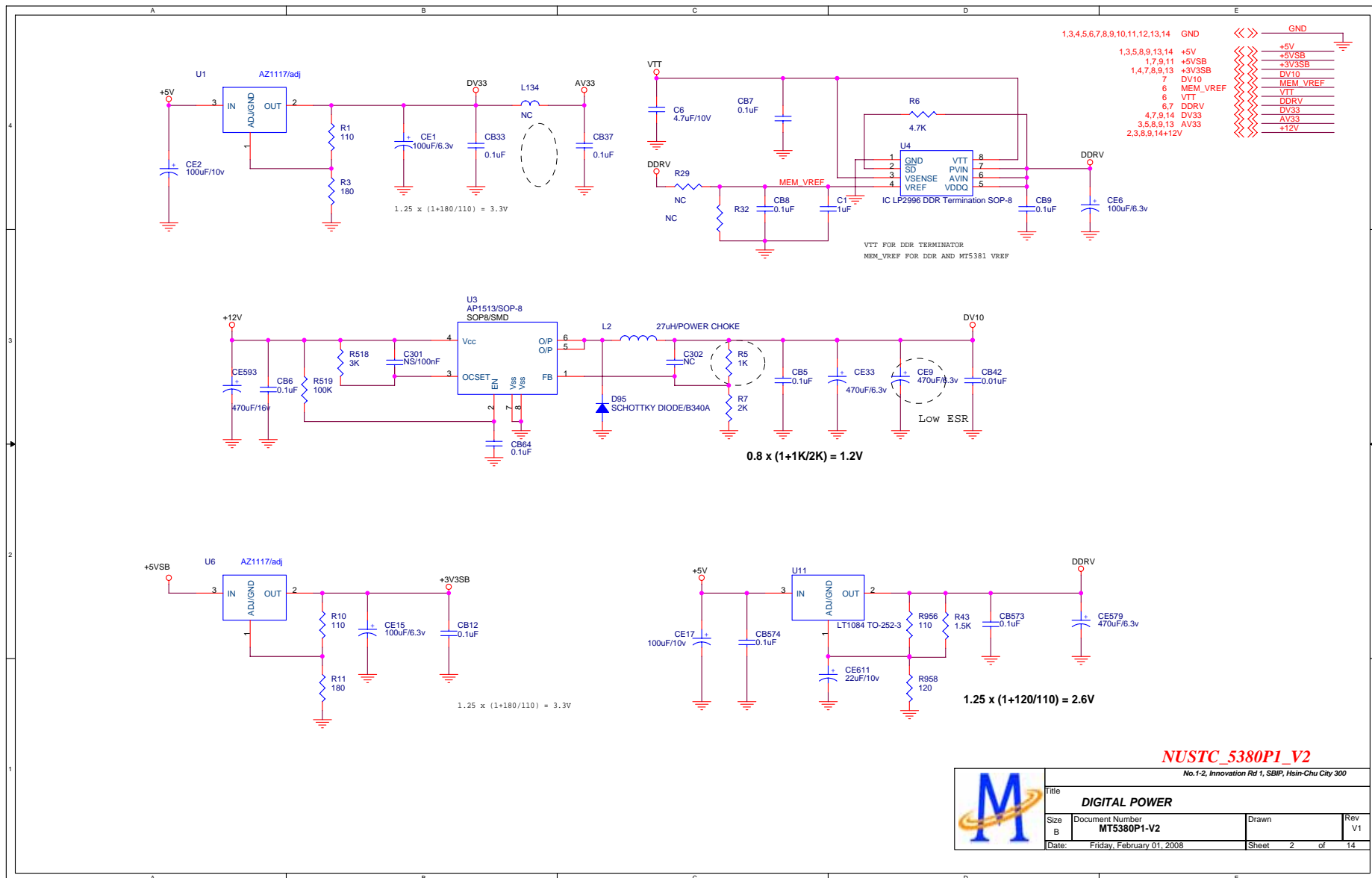
Rev	History	Note	DATE
V1	INITIAL VERSION		2007/04/10
V2	1.Change Vcore Voltage. 2.Add FB for DV33 and AV33 Reserve		
	3. Add R49, R50 for A version IC. 4. Change C20, C21 for crystal capacitors.		2007/06/11
	5.Add DRAM Serial resistors. 6.Add CEC up. 7. Add U16 M18292		2007/06/11

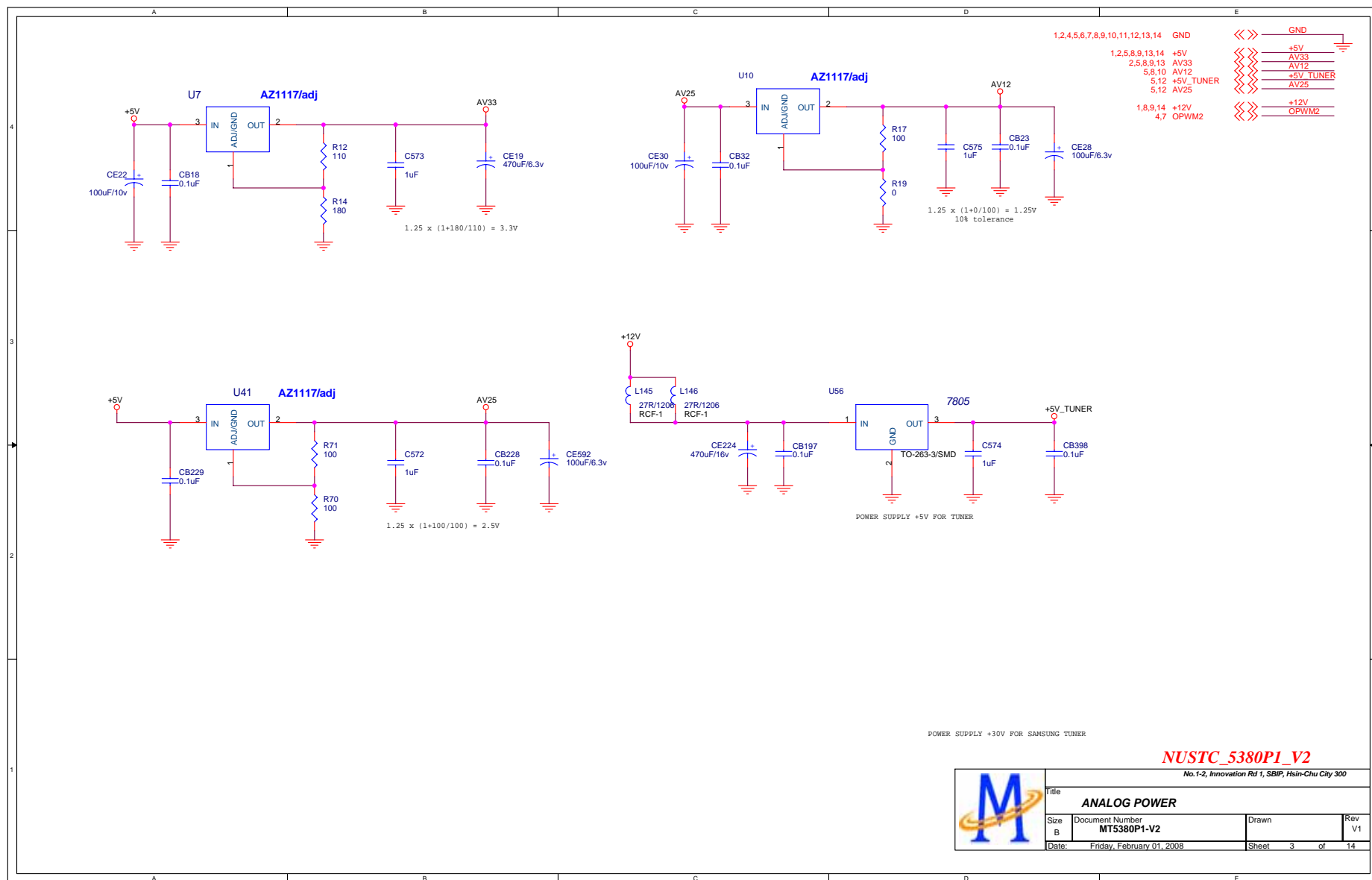


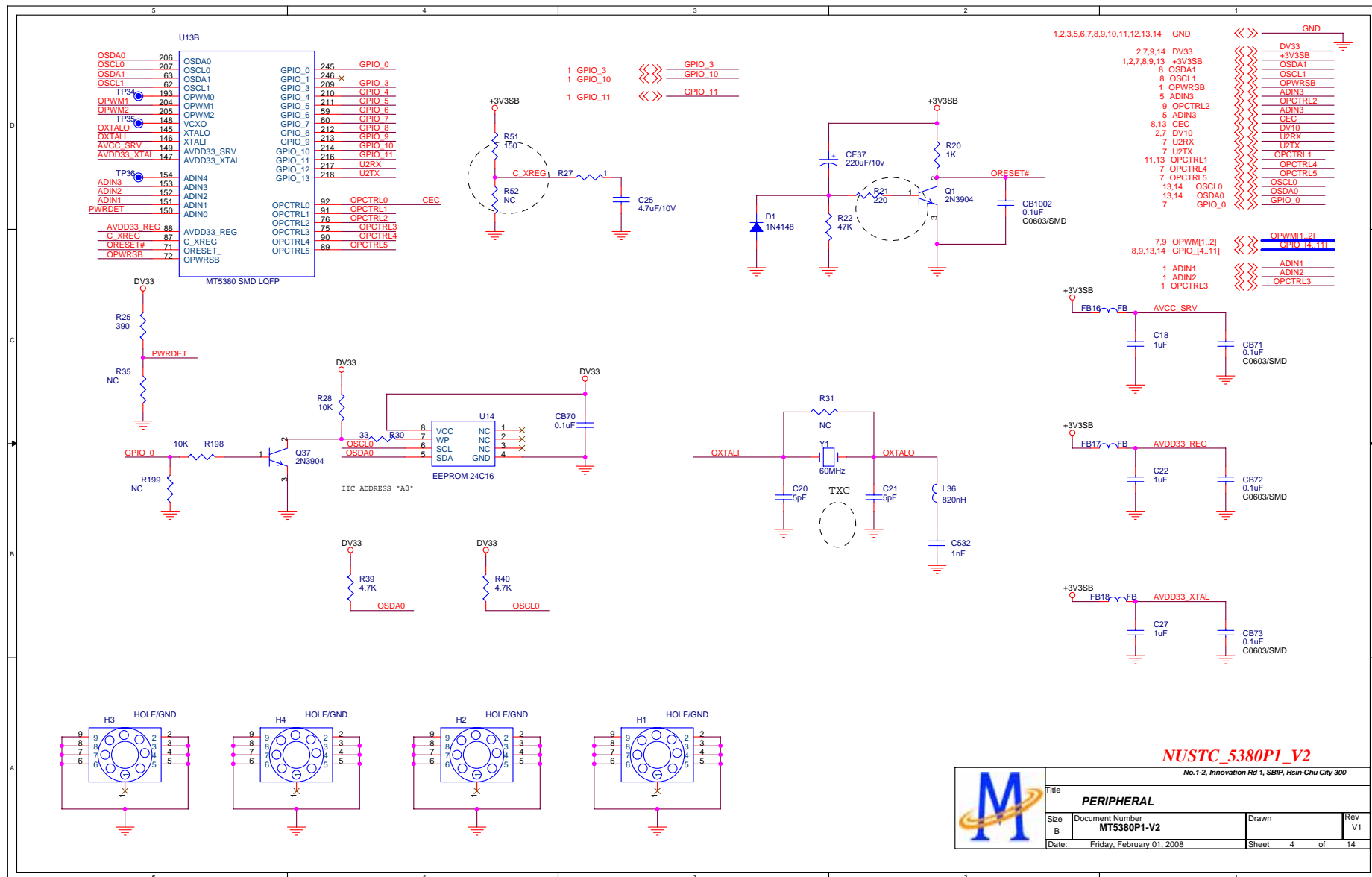
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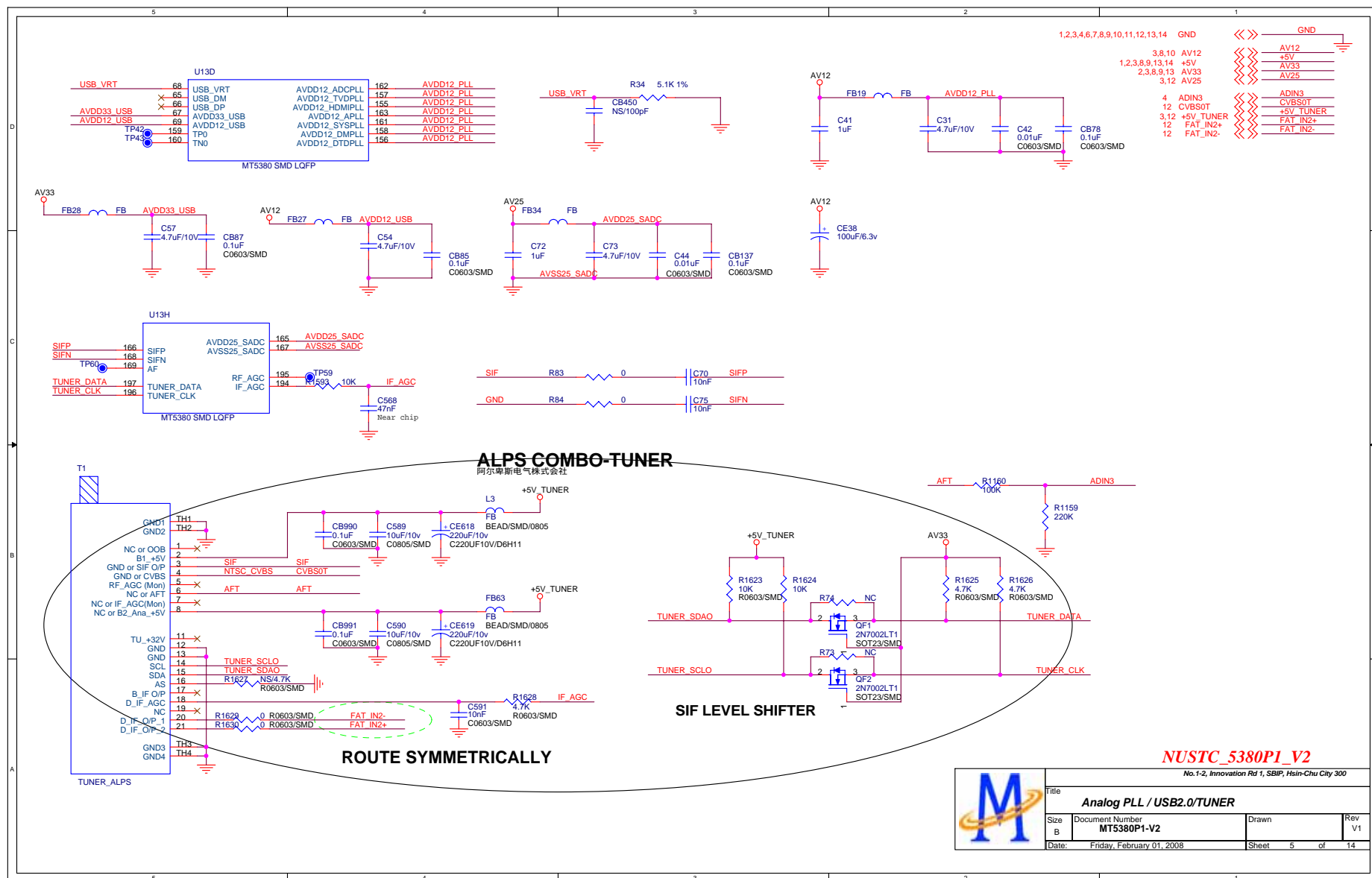
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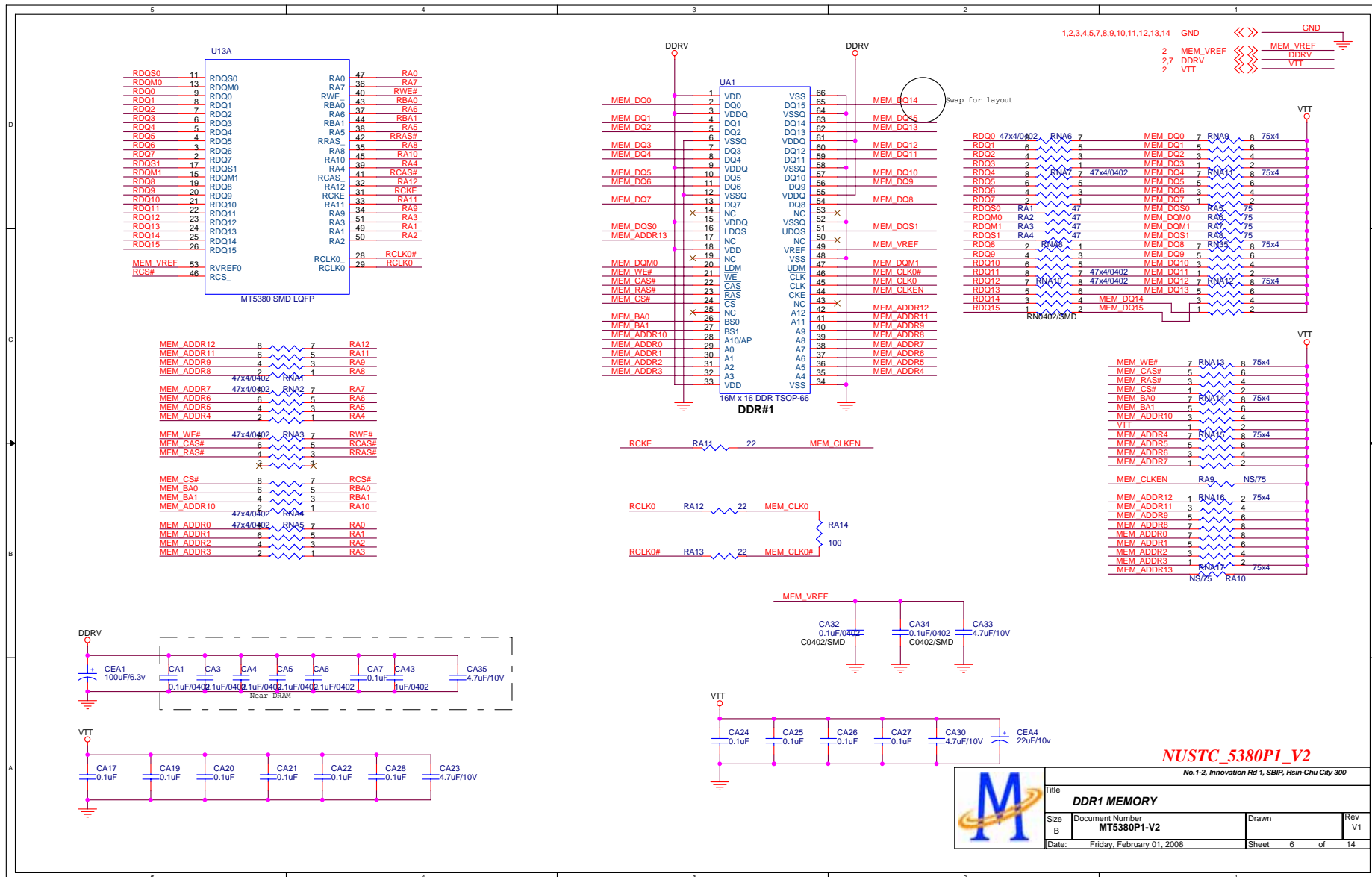
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	Size	Document Number	Drawn	Rev
	C	MTS380P1-V2		
	Project	MTSB, Hsinchu City, 30000	Project	1 of 1

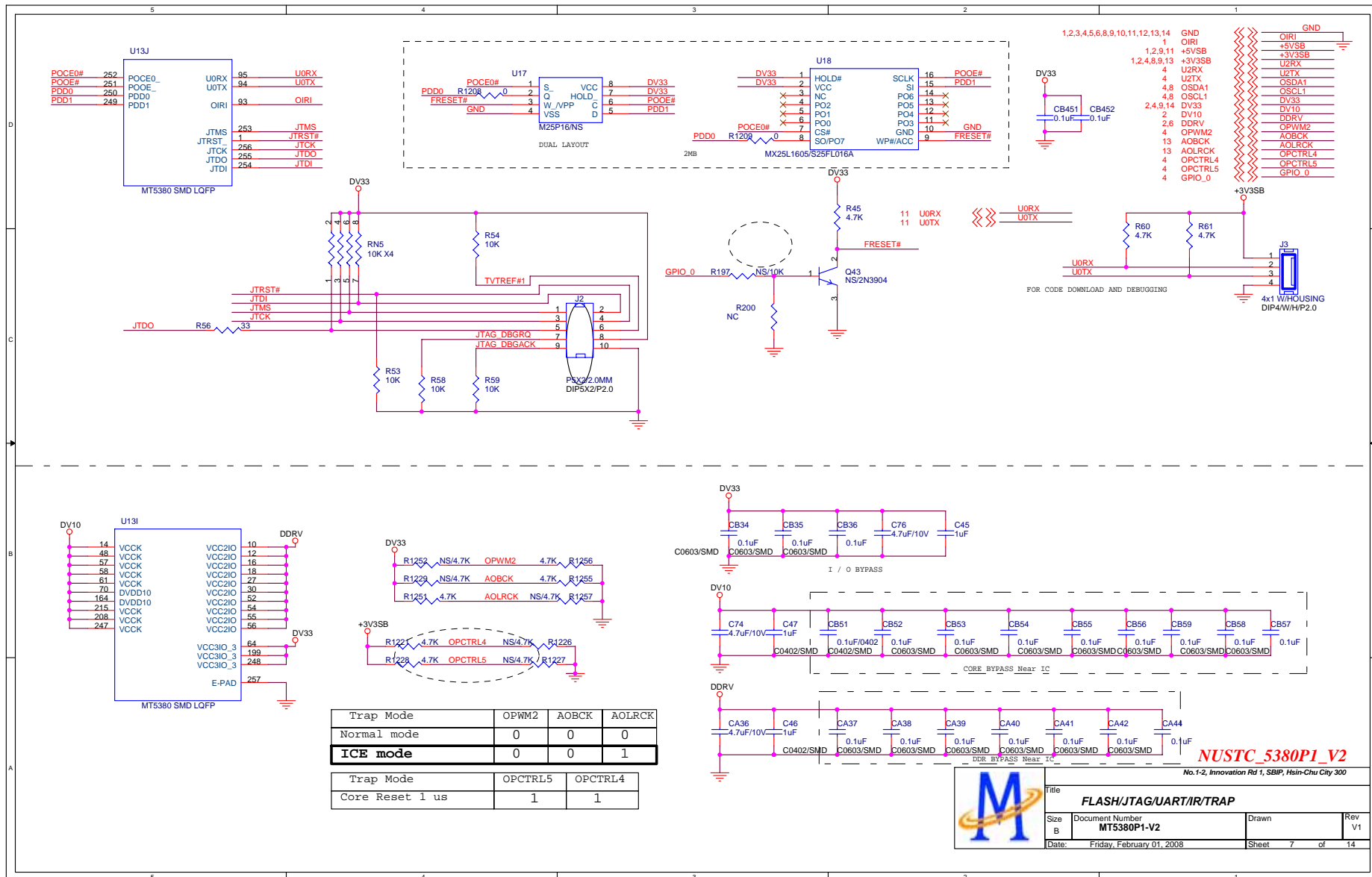


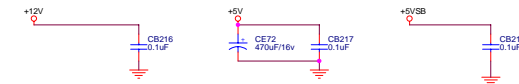
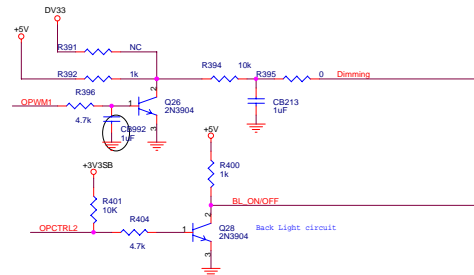
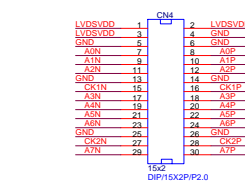


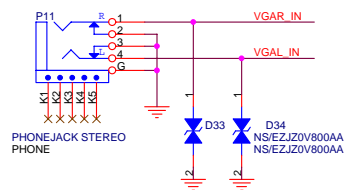
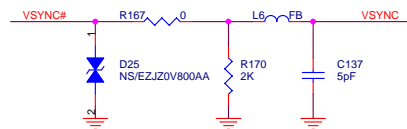
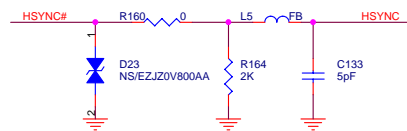
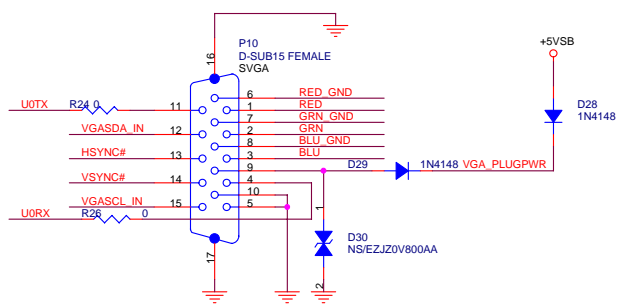




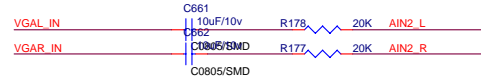
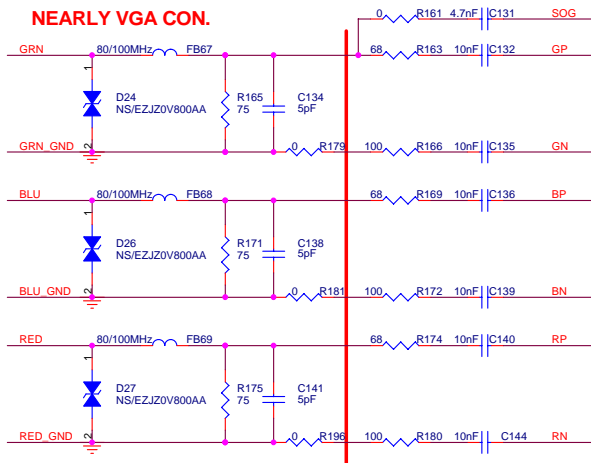




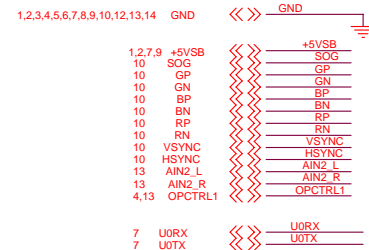
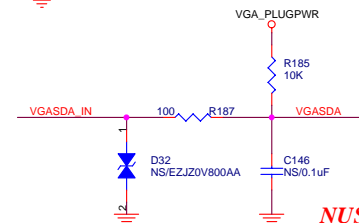
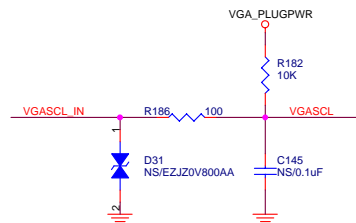
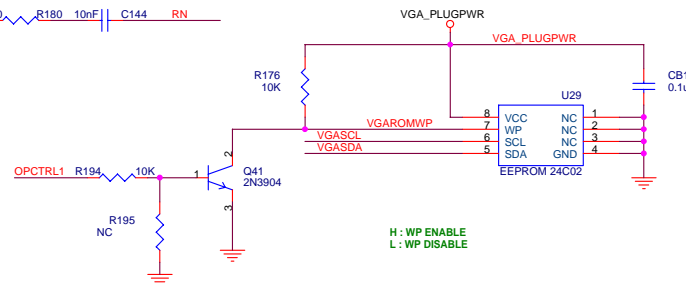
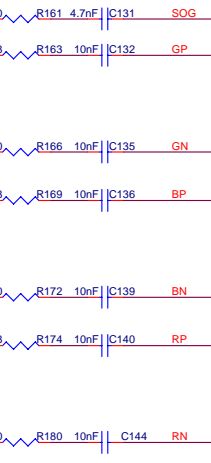




NEARLY VGA CON.

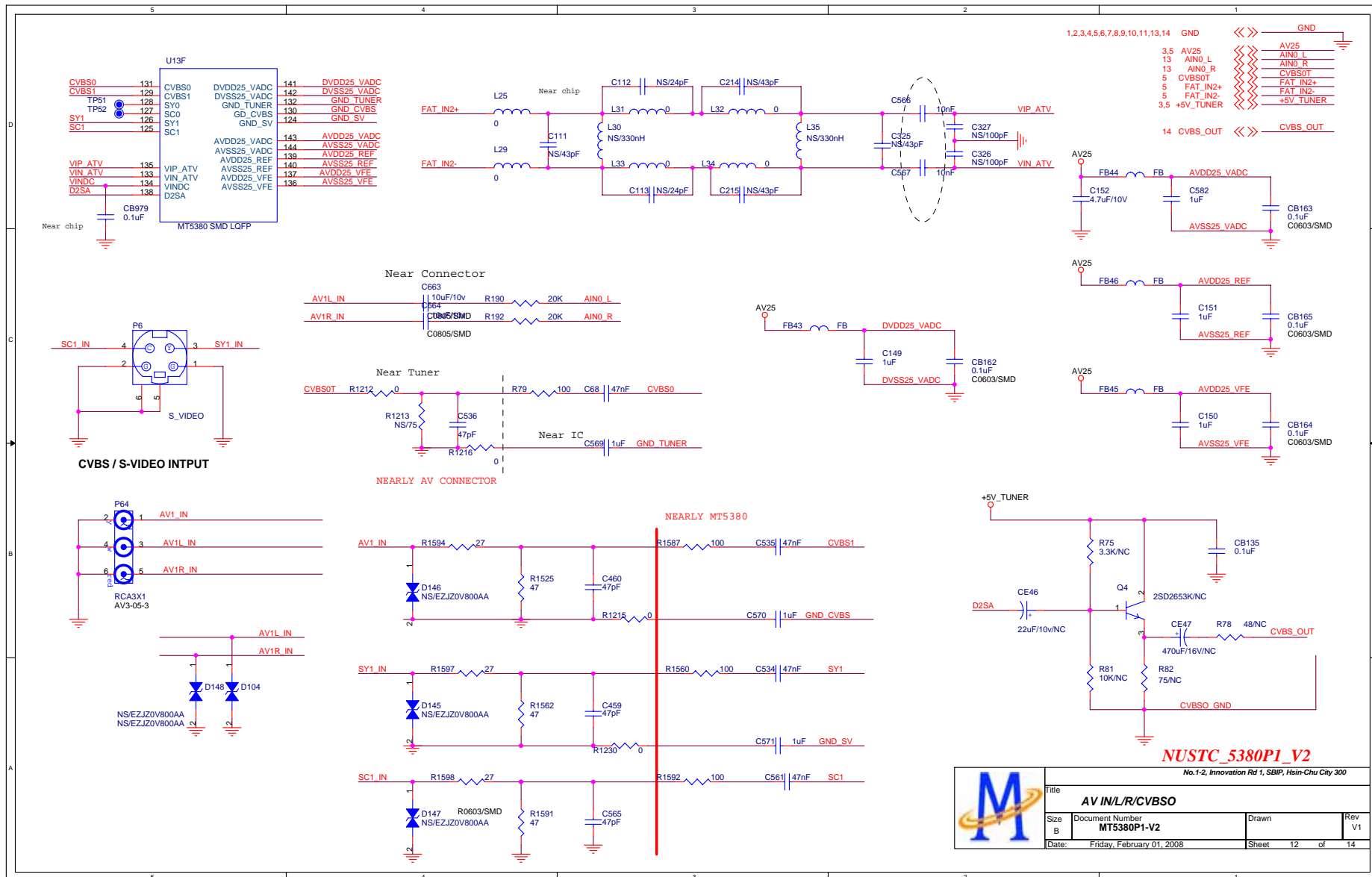


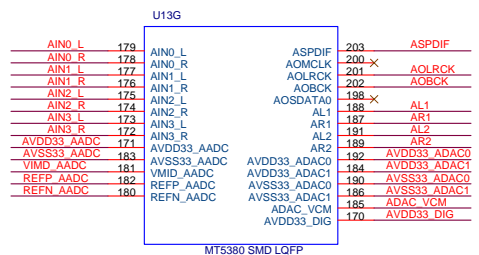
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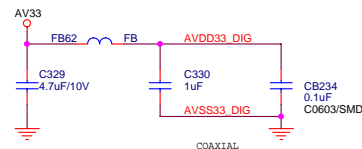
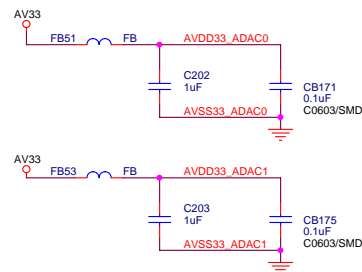
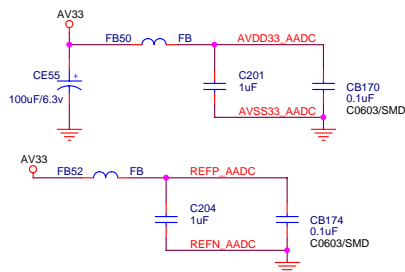
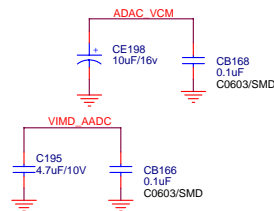
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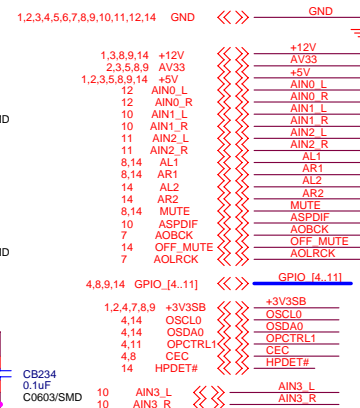




Need fine tune timing



HPDET# R324 0 GPIO_4

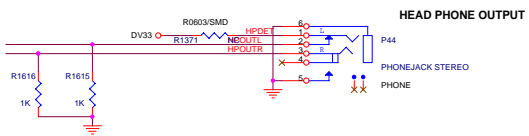
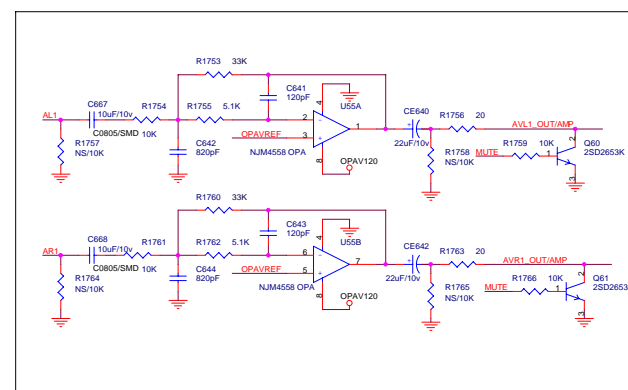
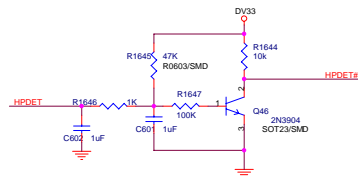
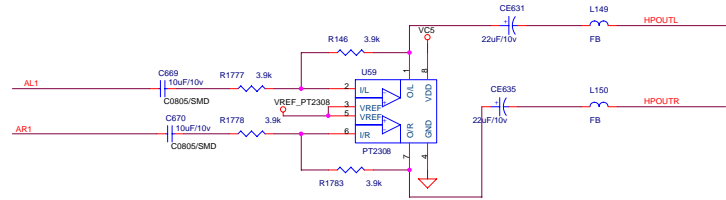
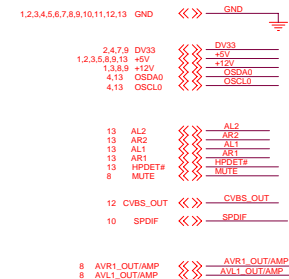
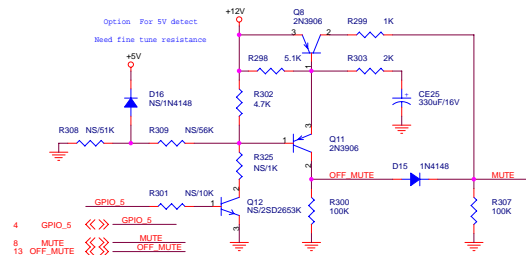
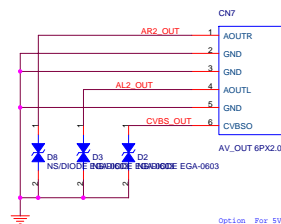


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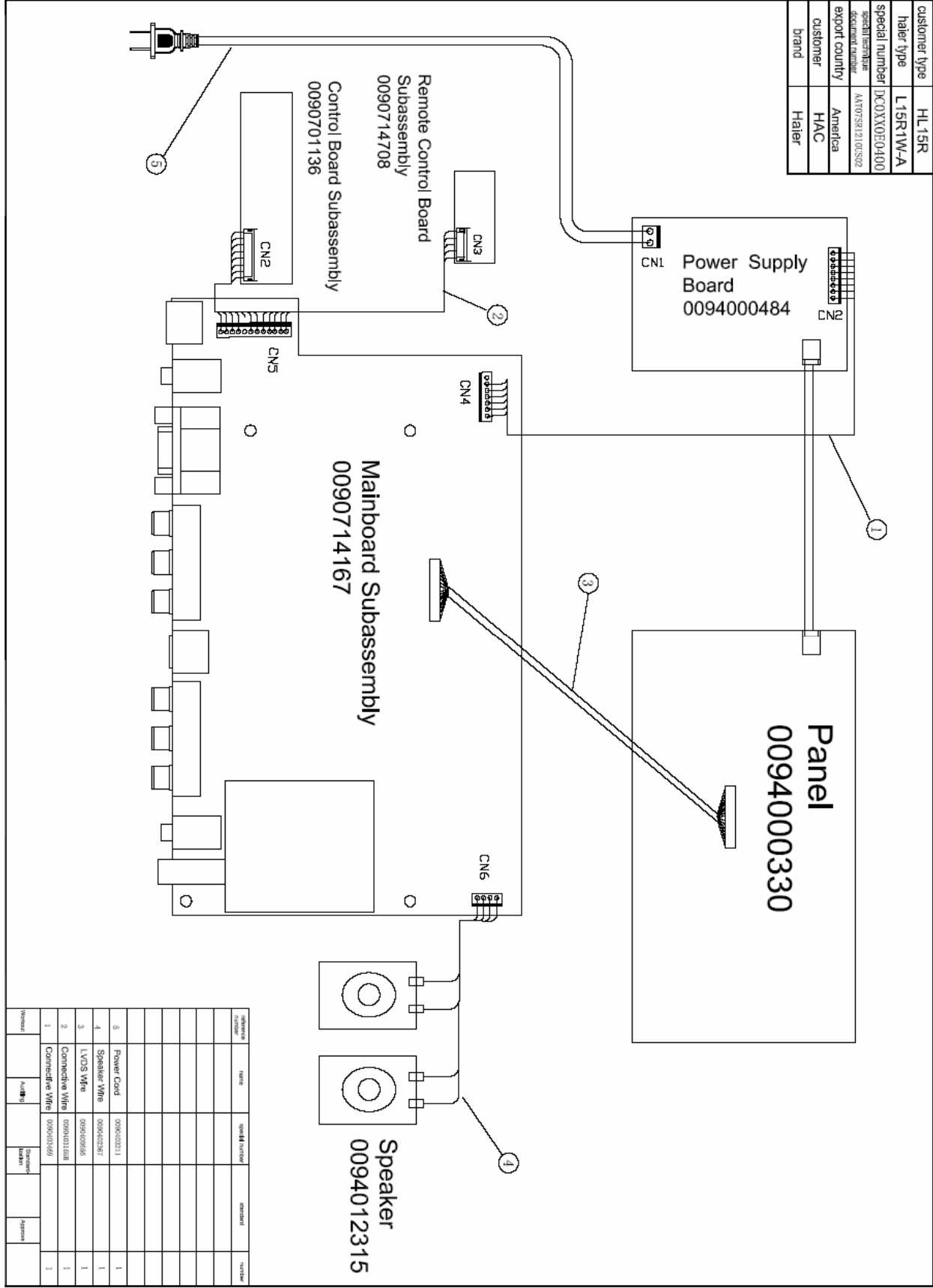
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11. WIRING CONNECTION DIAGRAM



12. TROUBLE SHOOTING GUIDE

12.1. Simple check

No Picture,no sound	Verify if the television is properly plugged Verify if the television is properly supplied power Verify if electricity is available
Blank screen	Verify if correct signals are input Press INPUT button to change signal input to TV input Restart the television if power supply is interrupted
No sound	Press Mute button and verify if Mute mode is set. Switch to other channel and verify if the same problem happens. Press VOL+ button to see if the problem can be solved.
Poor sound	Verify if sound system is correct .Refer to some chapter for adjust.
No picture in some channel	Verify if correct channel is selected. Adjust the antenna. Make adjustments by Fine Tune and MANUAL Scan.
No color for some channel program(black and white)	Verify if the same problem exists in other channels. check out of picture and sound system. Refer to relative instructions in the Manual for color adjust.
Spots with some or all pictures	Verify if the antenna is correctly connected. Verify if the antenna is in good condition. Make fine adjustment of channel.
Horizontal/vertical bars or picture shaking	Check for local interference such as an electrical appliance or power tool.
Television out of control	Disconnect the television from power supply and 10 seconds later,connect the television to the power supply.If the problem still exists,contact authorized after-sales service for technical assistance.

12.2 Power Supply Board failure check

State:No power

First,check cables which connect with PSU,then check as follows

1) Check PSB input voltage (AC input)

voltage : ~ 120V

connector:CN7

2) Check PSB output voltage orderly :

voltage : +12V ,+12V
connector:CN6 (P6,P7)

12.3 Main board failure check

State:No picture

First,check cables which connect with PSB and the Lvds wire with the panel.

Second, check the output voltage of CN4

Connector: CN4.

State : No sound

First , check cables which connect with Main Board , then check as follows

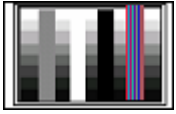
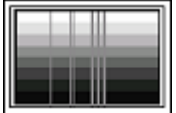
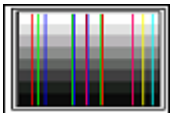



First,check speaker anode(+) and cathode(-),confirm speaker short or not. If short ,replace speaker.

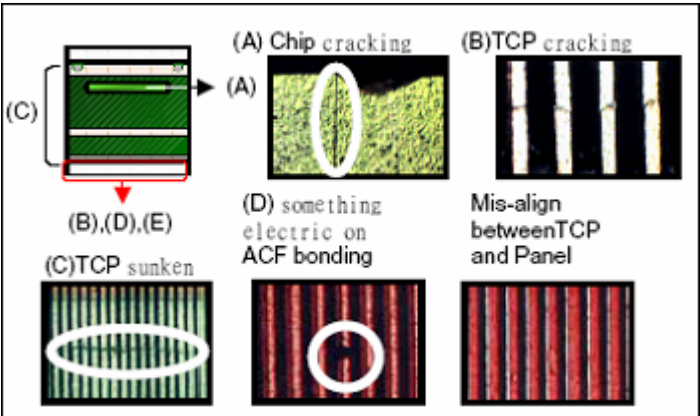
Second,check CN1 with oscillograph, confirm wave output or not.

Connector: CN1.

12.4 Pannel failure

Failure Mode

Part	Name	Description	Phenomena	Failure cause
TCP	V B/D	Vertical bar		Block Defect :TCP cracking or cracking Dim or L/D :TCP Sunken :TCP lead cracking :ACF bonding short :Awful environment and something electric enter into LCD :Mis-align between TCP and Panel :Panel failure :TCP failure
	V Dim	Vertal gray line		
	V L/D	Vertical color line(light or dark forever)		
	H B/D	Horizontal bar		
	H Dim	Horizontal gary line		
	H L/D	Horizontal line(light or dark forever)		








(A) Chip cracking (B) TCP cracking




(C) TCP sunken (D) something electric on ACF bonding (E) Mis-align between TCP and Panel

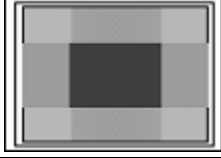
Failure Mode

Part	Name	Description	Phenomena	Failure cause
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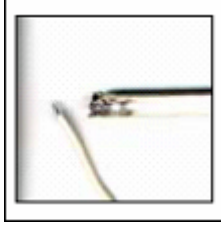


Panel or Polarizer	Dot Defect	Bright dot dark dot in pannel		Incoming Inspection Standard
	Polarizer Bubble	Bladder in Polarizer		Bladder between Polarizer and top glass
	Polarizer Scratch	Polarizer Scratch		Tine or rigidity arose
	F/M inside Polarizer	Eyewinker inside Polarizer		Eyewinker inside Polarizer
Circuit	Abnormal Display	Abnormal Display		1. Chip lose action 2. IC ahort or jointiog bad 3. Pannel and vsc connect bad
	Flashing	Bright and dark display alternately		

Failure Mode

Part	Name	Description	Phenomena	Failure cause
Circuit	White Screen	B/L normal, only white screen display		Maybe caused by surge current and EDS
	Black Screen	B/L normal, only Black screen display		
	Flicker	Crosstalk		LCD Vcom imbalance

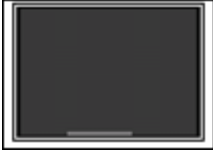

	Abnormal Color	Only abnormal color		Capacitance improper bring crosstalk inside LCD panel
	Abnormal Color	Only abnormal color		1. Chip lose action 2. IC short or jointion bad 3. Pannel and vsc connect bad

Failure Mode

Part	Name	Description	Phenomena	Failure cause
	Mechanical Nolse	When turn panel, appear cacophony		Caused by Mechanica noise of backlight unit
	Ripple	Connectric circle		Causeed by between mechanism and pannel
	B/L off	B/L lose action		*Connect badness between wire and electrode
	B/L dark	B/L brightness darker than normal		*Connect badness Short between wire and electrode
	B/L wire damaged	B/L wire damaged		Operation abnormal or systemic noise
	B/L wire open	Without backlight		Operation abnormal or systemic noise
	B/L shut down	B/L shutdown in sometime		Short bitween lamp housing and wire, Because consume power too much
	F/M	F/M in B/L ,white, balck Rotundity or wirelike		F/M in B/L unit

Failure Mode

Part	Name	Description	Phenomena	Failure cause
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Mechanical or B/L	Light leakage	Brightness at bottom of LCM brighter than normal		B/L unit badness
	Uniformity	B/L brightness asymmetric		Sheet in B/L unit is uneven
	Mount hole	Lack screw or screw damage		*Lack screw Screw damage

13、 MAINTENANCE

To remove dirt or dust, wipe the cabinet with a soft, dry, lint-free cloth. Please be sure not to use a wet cloth.

Cleaning the Screen

Early malfunctions can be prevented. Careful and regular cleaning can extend the amount of time you will have

your new TV. Be sure to turn the power off and unplug the power cord before you begin any cleaning.

1. Here's a great way to keep the dust off your screen for a while. Wet a soft cloth in a mixture of lukewarm water and a little fabric softener or dish washing detergent. Wring the cloth until it's almost dry, and then use it to wipe the screen.

2. Make sure the excess water is off the screen, and then let it air-dry before you turn on your TV.

Cleaning the Cabinet

Extended Absence

If you expect to leave your TV dormant for a long time (such as a vacation), it's a good idea to unplug the power cord to protect against possible damage from lightning or power surges.

Sincere Forever

