MITSUBISHI

PART NO. 599910610

# SERVICE MANUAL

COLOR MONITOR **E55LCD**

**MODEL No. NL1503 (B)**

NEC-MITSUBISHI ELECTRIC VISUAL SYSTEMS CORPORATION

AUGUST 2002

200208
08R220B3

## WARNING

The SERVICE PERSONNEL should have the appropriate technical training, knowledge and experience necessary to:

- Be familiar with specialized test equipment, and
- Be careful to follow all safety procedures to minimize danger to themselves and their coworkers.

To avoid electrical shocks, this equipment should be used with an appropriate power cord.

This equipment utilized a micro-gap power switch. Turn off the set by first pushing power switch. Next, remove the power cord from the AC outlet.

To prevent fire or shock hazards, do not expose this unit to rain or moisture.

This symbol warns the personnel that un-insulated voltage within the unit may have sufficient magnitude to cause electric shock.

This symbol alerts the personnel that important literature concerning the operation and maintenance of this unit has been included.
Therefore, it should be read carefully in order to avoid any problems.

## PRODUCT SAFETY CAUTION

1. When parts replacement is required for servicing, always use the manufacturer's specified replacement.
2. When replacing the component, always be certain that all the components are put back in the place.
3. As for a connector, pick and extract housing with fingers properly since a disconnection and improper contacts may occur, when wires of the connector are led.
4. Use a proper screwdriver. If you use screwdriver that does not fit, you may damage the screws.

# CONTENTS

# User's Manual

MITSUBISHI

User's Manual

Uživatelská příručka

Bedienerhandbuch

Οδηγίες Χρήσης

Manual del usuario

Manuel de l'utilisateur

Manuale utente

Gebruikershandleiding

Podręcznik użytkownika

Руководство пользователя

Kullanıcı Klavuzu

E55LCD

Quality is visible.

www.nec-mitsubishi.com

# For the Customer to use in U.S.A. or Canada

## Canadian Department of Communications Compliance Statement

**DOC:** This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

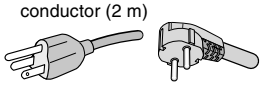
Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouiller du Canada.

**C-UL:** Bears the C-UL Mark and is in compliance with Canadian Safety Regulations according to CSA C22.2 #950.

Ce produit porte la marque 'C-UL' et se conforme aux règlements de sûrele Canadiens selon CAN/CSA C22.2 No. 950.

## FCC Information

1. Use the attached specified cables with the LCD monitor colour monitor so as not to interfere with radio and television reception.
   (1) The power supply cord you use must have been approved by and comply with the safety standards of U.S.A. & Europe, and meet the following condition.

| | |
|---|---|
| Power supply cord<br>Length<br>Plug shape | Non shield type, 2-power cord conductor (2 m)<br>  <br>U.S.A Continental Europe |

   (2) Shielded video signal cable. Use of other cables and adapters may cause interference with radio and television reception.

2. 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 Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, 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 will 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 encouraged 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 receiver is connected.
   - Consult your dealer or an experienced radio/TV technician for help.

   Changes or modifications not expressly approved by the party responsible for complicance could void the user's authority to operate the equipment.

   If necessary, the user should contact the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet, prepared by the Federal Communications Commission, helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

# FCC Statement

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

| | |
|---|---|
| **U.S. Responsible Party:**<br>**Address:**<br><br>**Tel. No.:** | **NEC-Mitsubishi Electronics Display of America, Inc.**<br>**1250 North Arlington Heights Road, Suite 500**<br>**Itasca, Illinois 60143-1248**<br>**(630) 467-3000** |
| Type of Product: | Computer Monitor |
| Equipment Classification: | Class B Peripheral |
| Model: | M6JNL1503 |

# TCO’99

Congratulations! You have just purchased a TCO’99 approved and labeled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also to the further development of environmentally adapted electronics products.

**Why do we have environmentally labelled computers?**

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during the manufacturing. Since it has not been possible for the majority of electronics equipment to be recycled in a satisfactory way, most of these potentially damaging substances sooner or later enter Nature.
There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (Internal) and natural (external) environments. Since all methods of conventional electricity generation have a negative effect on the environment (acidic and climate-influencing emissions, radioactive waste, etc.), it is vital to conserve energy. Electronics equipment in offices consume an enormous amount of energy since they are often left running continuously.

**What does labelling involve?**

This product meets the requirements for the TCO’99 scheme which provides for international and environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation) and Statens Energimyndighet (The Swedish National Energy Administration).
The requirements cover a wide range of issues: environment, ergonomics, usability, emission of electrical and magnetic fields, energy consumption and electrical and fire safety.
The environmental demands concern restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons) and chlorinated solvents, among other things. The product must be prepared for recycling and the manufacturer is obliged to have an environmental plan which must be adhered to in each country where the company implements its operational policy. The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.
Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, physical and visual ergonomics and good usability.

**Environmental Requirements**

**Flame retardants**

Flame retardants are present in printed circuit boards, cables, wires, casings and housings. In turn, they delay the spread of fire. Up to thirty percent of the plastic in a computer casing can consist of flame retardant substances. Most flame retardants contain bromine or chloride and these are related to another group of environmental toxins, PCBs, which are suspected to give rise to severe health effects, including reproductive damage in fisheating birds and mammals, due to the bio-accumulative* processes. Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.
TCO’99 demand requires that plastic components weighing more than 25 grams must not contain flame retardants with organically bound chlorine and bromine. Flame retardants are allowed in the printed circuit boards since no substitutes are available.

**Lead****

Lead can be found in picture tubes, display screens, solders and capacitors. Lead damages the nervous system and in higher doses, causes lead poisoning.
TCO’99 requirement permits the inclusion of lead since no replacement has yet been developed.

**Cadmium****

Cadmium is present in rechargeable batteries and in the colourgenerating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses.
TCO’99 requirement states that batteries, the colourgenerating layers of display screens and the electrical or electronics components must not contain any cadmium.

**Mercury****

Mercury is sometimes found in batteries, relays and switches, Mercury damages the nervous system and is toxic in high doses.
TCO’99 requirement states that batteries may not contain any Mercury. It also demands that no mercury is present in any of the electrical or electronics components associated with the display unit.

**CFCs (freons)**

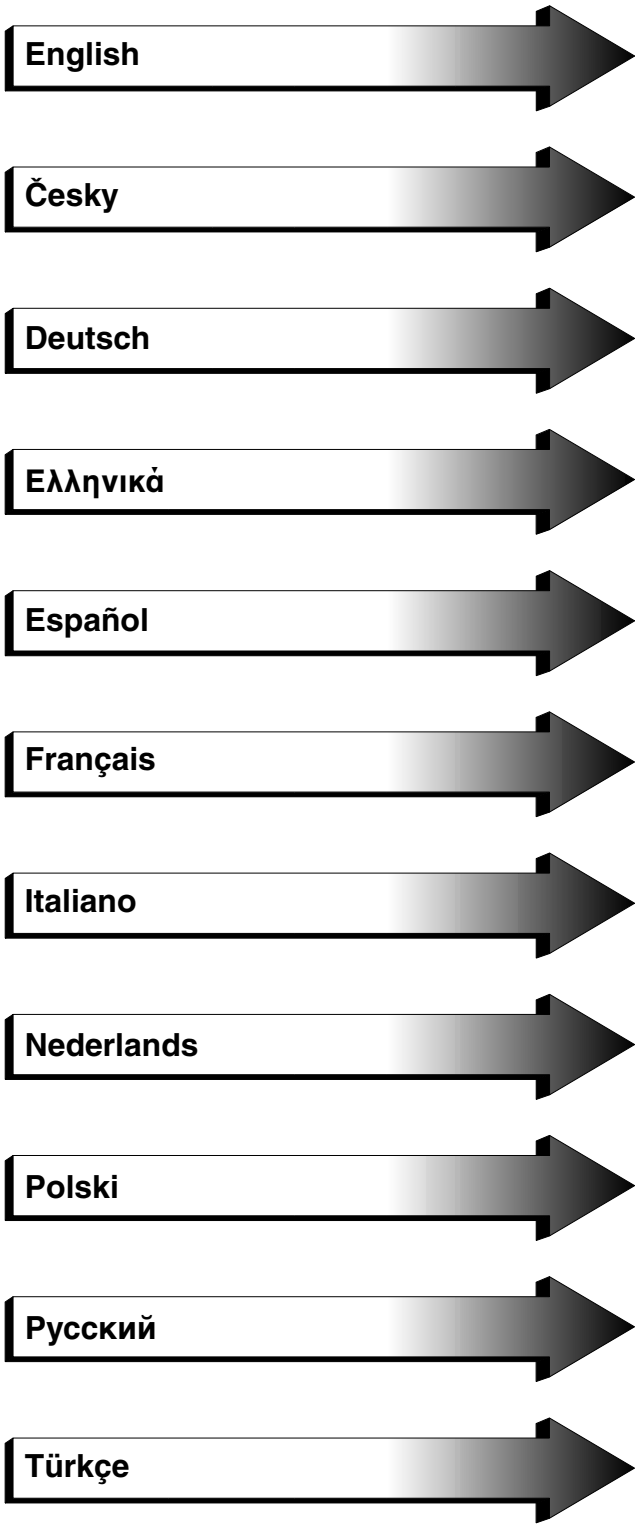
CFCs (freons) are sometimes used for washing printed circuit boards. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on Earth of ultraviolet light with consequent increased risks of skin cancer (malignant melanoma).
The relevant TCO’99 requirement; Neither CFCs nor HCFCs may be used during the manufacturing and assembly of the product or its packaging.

*Bio-accumulative is defined as substances which accumulate within living organisms.
**Lead, Cadmium and Mercury are heavy metals which are Bio-accumulative.
To obtain complete information on the environmental criteria document, order from:

TCO Development Unit
SE-114 94 Stockholm
SWEDEN
FAX Number: +46 8 782 92 07
E-mail (Internet): development@tco.se

You may also obtain current information on TCO’99 approved and labelled products by visiting their website at:
http://www.tcodevelopment.com

# Index


English
Česky
Deutsch
Ελληνικά
Español
Français
Italiano
Nederlands
Polski
Русский
Türkçe

**WARNING**

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO, DO NOT USE THIS UNIT'S POLARIZED PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS UNLESS THE PRONGS CAN BE FULLY INSERTED.

REFRAIN FROM OPENING THE CABINET AS THERE ARE HIGH VOLTAGE COMPONENTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

**CAUTION**

RISK OF ELECTRIC SHOCK • DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol warns user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

### Caution:

When operating the LCD Monitor with a 100-240V AC power source in Europe, use the power cord provided with the monitor.

In the UK, a BS approved power cord with a moulded plug has a Black (five Amps) fuse installed for use with this equipment. If a power cord is not supplied with this equipment please contact your supplier.

When operating the LCD Monitor with a 100-240V AC power source in Australia, use the power cord provided with the monitor.

For all other cases, use a power cord that matches the AC voltage of the power outlet and has been approved by and complies with the safety standard of your particular country.

# Declaration

**Declaration of the Manufacturer**

We hereby certify that the colour monitor NL1503 is in compliance with

Council Directive 73/23/EEC:
- EN 60950

Council Directive 89/336/EEC:
- EN 55022
- EN 61000-3-2
- EN 61000-3-3
- EN 55024

and marked with

CE

NEC-Mitsubishi Electric Visual Systems Corporation
4-13-23, Shibaura,
Minato-Ku
Tokyo 108-0023, JAPAN

ENERGY STAR® is a U.S. registered trademark.
As an ENERGY STAR Partner, NEC-Mitsubishi Electric Visual Systems Corporation has determined that this product meets the ENERGY STAR guidelines for energy efficiency. The ENERGY STAR emblem does not represent EPA endorsement of any product or service.
All other trademarks mentioned in this manual are the property of their respective owners.
IBM PC/XT/AT, PS/2, MCGA, VGA, 8514/A and XGA are registered trademarks of International Business Machines Corporation.
Apple and Macintosh are registered trademarks of Apple Computer Inc.
Microsoft and Windows are registered trademarks of the Microsoft Corporation.
NEC is a registered trademark of NEC Corporation.
All other trademarks or registered trademarks are property of their respective owners.

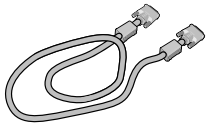
# Contents

Your new LCD monitor box* should contain the following:

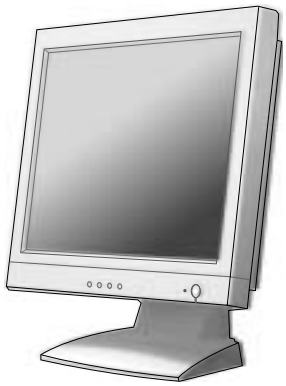
- LCD Monitor with tilt base
- Power cord
- Video Signal Cable (D-SUB to D-SUB Cable)
- User's Manual

User's Manual

Power Cord



Video Signal Cable
(D-SUB to D-SUB Cable)



* Remember to save your original box and packing material to transport or ship the monitor.

# Quick Start

To attach the LCD monitor to your system, follow these instructions:

1. Turn off the power to your computer.
2. **For the PC with Analog output:** Connect the 15-pin mini D-SUB to D-SUB signal cable to the connector of the display card in your system (**Figure A.1**).

   **For the Mac:** Connect the Macintosh cable adapter (not included) to the computer (**Figure B.1**). Attach the 15-pin mini D-SUB signal cable to the MultiSync Macintosh cable adapter (**Figure B.1**).

**NOTE:** Some Macintosh systems do not require a Macintosh cable adapter.

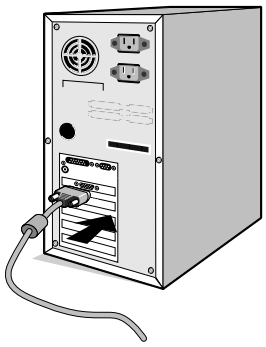


**Figure A.1**

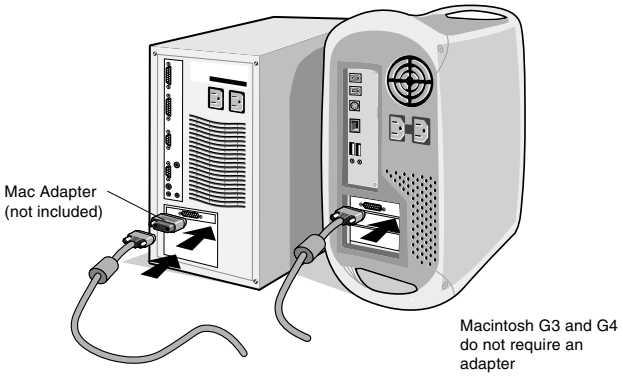



**Figure B.1**

3. Remove connector cover. Connect the D-SUB signal cable to the connector on the back of the monitor. Place the video signal cable (**Figure C.1**). Replace connector cover.

**NOTE:** Incorrect cable connections may result in irregular operation, damage display quality/components of LCD module and/or shorten the module's life.

4. Remove connector cover. Connect one end of the power cord to the AC inlet on the back of the monitor and the other end to the power outlet (**Figure D.1**). Replace the power cord cover.
5. Press an arrow point "▼" portion with take off connector cover.

**NOTE:** Please refer to Caution section of this manual for proper selection of AC power cord.

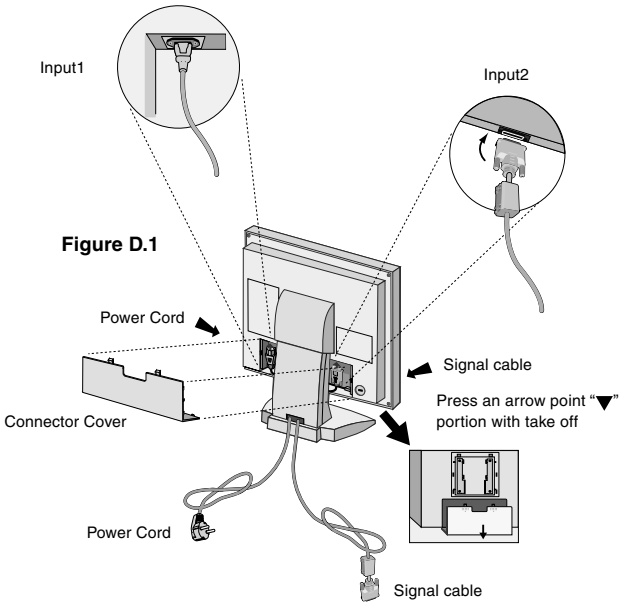



**Figure D.1**

**Figure C.1**

6. Turn on the monitor with the Power Button (**Figure E.1**) and the computer.
7. To complete the setup of your LCD monitor, use the following OSD controls:
   - Auto Adjust Contrast (Analog input only)
   - Auto Adjust (Analog input only)

Refer to the **Controls** section of this User's Manual for a full description of these OSD controls.

**NOTE:** If you have any problems, please refer to the **Troubleshooting** section of this User's Manual.

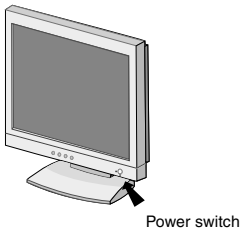



**Figure E.1**

## Tilt

Grasp both sides of the monitor screen with your hands and adjust the tilt as desired (**Figure F.1**).

The movable scope for elevation and depression of LCD is -5°~30° angle (**Figure F.2**).

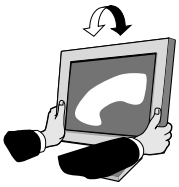


**Figure F.1**

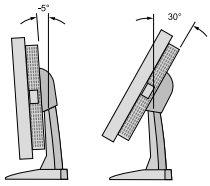



**Figure F.2**

## Remove Monitor Stand for Mounting

To prepare the monitor for alternate mounting purposes:

1. Place monitor face down on a non-abrasive surface (Place the screen on a 36 mm platform so that the stand is parallel with the surface.) (**Figure G.1**).
2. Displace connector cover on the black of the monitor (**Figure G.2**).
3. To take off back cover, please follow the instructions of arrow while pressing two side of monitor (**Figure G.3**).

   Next, lift up the stand, dismantle upper cover, then go on to dismantle the stand cover (**Figure G.4**).

   Return the stand to its original position, remove the 4 screws that connect the monitor to the stand, and lift off the stand assembly (**Figure G.5**).
4. Disconnect all cables.
5. Reverse this process to reattach stand.

**NOTE:** Use only VESA-compatible alternative mounting method.

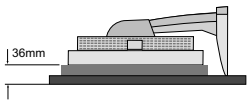



**Figure G.1**

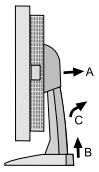



**Figure G.2**

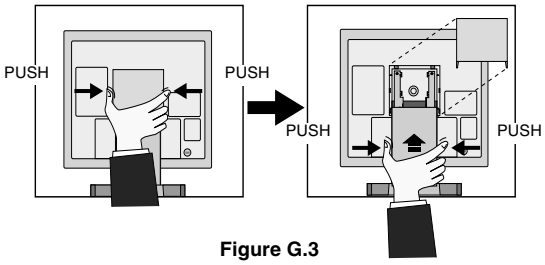



**Figure G.3**

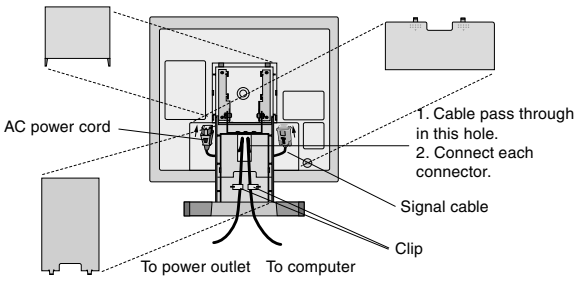



**Figure G.4**

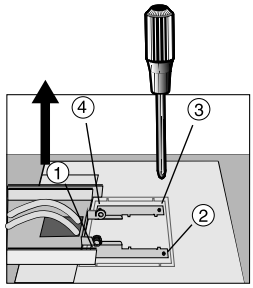



**Figure G.5**

**Caution:** Please use the attached screws (4pcs) when mounting. To fulfil the safety requirements the monitor must be mounted to an arm which guaranties the necessary stability under consideration of the weight of the monitor. The LCD monitor shall only be used with an approved arm (e.g. GS mark).

# Controls

## OSD (On-Screen-Display) Controls

The OSD controls on the front of the monitor function as follows:
To access OSD press any of the control buttons. To change D-SUB signal input, auto detect.

| Control | Switch Function | When no OSD Display |
|---|---|---|
| | Open menu | Select to next menu |
| | Auto-Adjust (Hot key) | Select to next item |
| | Brightness (Hot key) / Decrease | Press for adjustment of brightness |
| | Contrast (Hot key) / Increase | Press for adjustment of contrast |
| | Power key | Switch change to power mode (Power ON/ Power OFF) |

## Brightness/Contrast Controls

**BRIGHTNESS:** Adjusts the overall image and background screen brightness.

**CONTRAST:** Adjusts the image brightness in relation to the background.

## Auto Adjust

**Auto Adjust:** Automatically adjust the Image Position, the H.Size and Fine setting.

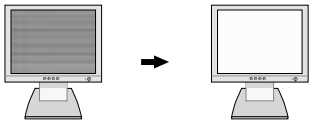
**White Balance:** Automatically adjust the image for white balance.

## H-SIZE

**Clock:** Adjust the Horizontal size by increasing or decreasing the setting. Should the “Auto Adjust” function do not give you a satisfactory pictire setting, a further tuning can beperformed using the “H-Size” function (dot clock). For this Moiré test patten could be used. This function may alter the width of the picture. Use Up/Down Menu to center the image on the screen. If the H-Size is wrongly calibrated, the result would look like on the left drawing. The image should be homogeneous.

When H.SIZE value is wrong. | When H.SIZE value is improved. | When H.SIZE value is correct.

**Phase:** Improve focus, clarity and image stability by increasing or decreasing this setting. Should the “Auto Adjust” function and the “H.Size” function do not give you satisfactory picture setting, a fine tuning can be performed using the “Fine” function. It improve focus, clearity and image stability by increasing or decreasing this setting. For this a Moiré test pattern could be used. If the Fine value is wrongly calibrated the result would look like on the left drawing. The image should be homogeneous.



When PHASE value is wrong. | When PHASE value is correct.

**LEFT/RIGHT:** Controls Horizontal Image Position within the display area of the LCD.

**DOWN/UP:** Controls Vertical Image Position within the display area of the LCD.

## Colour Control Systems

Six colour presets select the desired colour setting.
Colour temperature increases or decreases in each preset.

**RGB Grain:** Colour grain can be further managed by R.G.B. for desired saturation.

**Color-Temperature:** Adjust the color temperature at the display. (9300K, 8200K, 7500K, 6500K, 5000K, USER)

## Tools

**OSD H-POS.:** The horizontal image is expanded to approximately 2 times.

**OSD V-POS.:** The vertical image is changeable.

**OSD TURN OFF:** The OSM control menu will stay on as long as it is use. In the OSM Turn Off submenu, you can select how long the monitor waits after the last touch of a button to shut off the OSM control menu. The preset choices are 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 120 and 180 seconds.

**SHARPNESS:** This function is digitally capable to keep crisp image at any timings. It is continuously adjustable to get distinct image or soft one as you prefer, and set independently by different timings.

**OSD TRANSPARENCY:** This function allows you to set OSD transparency gradually.

**LANGUAGE:** OSD control menus are available in seven languages.

## INFORMATION

**MONITOR INFO:** Indicates the model and serial numbers of your monitor.

**ALL RESET:** Selecting ALL RESET allows you to reset all OSD control settings back to the factory settings.

**POWER SAVE:** When No signal window appears, select “Power save” to Yes for DPMS function otherwise system acts in burn-in mode.

NOTE: **AUTO ADJUST (ANALOG INPUT ONLY):** Exits the OSD control and main menu.

## OSD Warning

**NO SIGNAL:** This function gives a warning when there is no Horizontal or Vertical Sync Signal present and advises you to check all Video Inputs on the monitor and computer to make sure they are properly connected. After power is turned on or when there is a change of input signal or video is inactive, the **No Signal** window will appear.

**OUT OF RANGE:** This function gives a recommendation of the optimized resolution and refresh rate. After the power is turned on or there is a change of input signal or the video signal doesn’t have proper timing, the **Out Of Range** menu will appear.

# Recommended use

**Safety Precautions and Maintenance**

FOR OPTIMUM PERFORMANCE, PLEASE NOTE
THE FOLLOWING WHEN SETTING UP AND USING
THE MULTISYNC LCD COLOUR MONITOR:

- **DO NOT OPEN THE MONITOR.** There are no user serviceable parts inside and opening or removing covers may expose you to dangerous shock hazards or other risks. Refer all servicing to qualified service personnel.
- Do not spill any liquids into the cabinet or use your monitor near water.
- Do not insert objects of any kind into the cabinet slots, as they may touch dangerous voltage points,which can be harmful or fatal or may cause electric shock,fire or equipment failure.
- Do not place any heavy objects on the power cord. Damage to the cord may cause shock or fire.
- Do not place this product on a sloping or unstable cart, stand or table, as the monitor may fall, causing serious damage to the monitor.
- Do not place any objects onto the monitor and do not use the monitor outdoors.
- The inside of the flourescent tube located within the LCD monitor contains mercury. Please follow the bylaws or rules of your municipality to dispose of the tube properly.

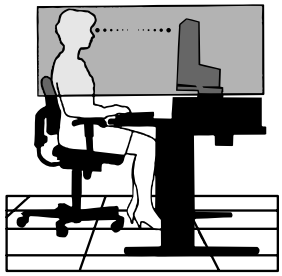
Immediately unplug your monitor from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the monitor.
- If the monitor has been exposed to rain or water.
- If the monitor has been dropped or the cabinet damaged.
- If the monitor does not operate normally by following operating instructions.
- Do not bend power cord.
- Do not use monitor in high temperatured, humid, dusty, or oily areas.
- Do not cover vent on monitor.
- If monitor is broken, do not come in contact with the liquid crystal.
- If glass is broken. Handle with care.

CAUTION

- Allow adequate ventilation around the monitor so that heat can properly dissipate. Do not block ventilated openings or place the monitor near a radiator or other heat sources. Do not put anything on top of monitor.
- The power cable connector is the primary means of detaching the system from the power supply. The monitor should be installed close to a power outlet which is easily accessible.
- Handle with care when transporting. Save packaging for transporting.

CORRECT PLACEMENT AND ADJUSTMENT OF THE MONITOR
CAN REDUCE EYE, SHOULDER AND NECK FATIGUE. CHECK
THE FOLLOWING WHEN YOU POSITION THE MONITOR:



- For optimum performance, allow 20 minutes for warm-up.
- Adjust the monitor height so that the top of the screen is at or slightly below eye level. Your eyes should look slightly downward when viewing the middle of the screen.
- Position your monitor no closer than 40 cm and no further away than 70 cm from your eyes. The optimal distance is 58 cm.
- Rest your eyes periodically by focusing on an object at least 6 m away. Blink often.
- Position the monitor at a 90° angle to windows and other light sources to minimise glare and reflections. Adjust the monitor tilt so that ceiling lights do not reflect on your screen.
- If reflected light makes it hard for you to see your screen, use an anti-glare filter.
- Clean the LCD monitor surface with a lint-free, non-abrasive cloth. Avoid using any cleaning solution or glass cleaner!
- Adjust the monitor's brightness and contrast controls to enhance readability.
- Use a document holder placed close to the screen.
- Position whatever you are looking at most of the time (the screen or reference material) directly in front of you to minimize turning your head while you are typing.

- Avoid displaying fixed patterns on the monitor for long periods of time to avoid image persistence (after-image effects).
- Get regular eye checkups.

**Ergonomics**

To realise the maximum ergonomics benefits, we recommend the following:

- Use the preset Size and Position controls with standard signals.
- Use the preset Colour Setting.
- Use non-interlaced signals with a vertical refresh rate between 60-75 Hz.
- Do not use primary colour blue on a dark background, as it is difficult to see and may produce eye fatigue due to insufficient contrast.

# Specifications

| **Monitor Specifications E55LCD (NL1503)** | | | **Notes** |
|---|---|---|---|
| LCD Module | Diagonal: | 38 cm/15 inches | Active matrix; thin film transistor (TFT) liquid crystal display (LCD); 0.297 mm dot pitch; typical 200cd/m$^2$ white luminence; typical 300:1 contrast ratio. |
| | Viewable Image Size: | 38 cm/15 inches | |
| | Native Resolution (Pixel Count): | 1024 x 768 | |
| Input Signal | Video: | ANALOG 0.7 Vp-p/75 Ohms | |
| | Sync: | Separate sync.TTL Level (Positive/Negative)<br>Horizontal sync. Positive/Negative<br>Vertical sync. Positive/Negative<br>Compostite sync. TTL Level (Positive/Negative) | |
| Display Colours | Analog input: | 16,194,277 (DITHERING) | Depends on display card used. |
| Synchronization Range | Horizontal: | 24.8 kHz to 60 kHz | Automatically |
| | Vertical: | 50 Hz to 75.1 Hz | Automatically |
| Viewing Angle | Left/Right: | ±60° | |
| | Up/Down: | ±45° | |
| Image Formation Time | | 30ms (Typ.) $t_{rR}$=10ms, $t_{rD}$=20ms | |
| Resolutions Supported | Landscape: | 640 x 400 at 56 Hz / 70 Hz<br>640 x 480 at 60 Hz / 67 Hz / 72 Hz / 75 Hz<br>720 x 400 at 70 Hz<br>800 x 600 at 56 Hz / 60 Hz / 72 Hz / 75 Hz<br>832 x 624 at 75 Hz<br>1024 x 768 at 60 Hz / 70 Hz / 72 Hz / 75 Hz | |
| Active Display Area (Lanscape) | Horizontal: | 304 mm/12.0 inches | Dependent upon signal timing used, and does not include border area. |
| | Vertical: | 228 mm/9.0 inches | |
| Power Supply | | AC 100-240 V, 50-60 Hz | |
| Current Rating | | 1 A @ 100-240 V | |
| Dimensions | Landscape: | 350.5 mm (W) x 362.1 mm (H) x 160.7 mm (D)<br>13.8 inches (W) x 14.3 inches (H) x 6.3 inches (D) | |
| Weight | | 4.2 kg (9.3 lbs) | |
| Environmental Considerations | | | |
| | Operating Temperature: | 5 °C to 35 °C | |
| | Humidity: | 30% to 80% | |
| | Altitude: | 0 to 3,000 m | |
| | Storage Temperature: | -20 °C to +60 °C | |
| | Humidity: | 10% to 80% | |
| | Altitude: | 0 to 9,500 m | |

**NOTE:** Technical specifications are subject to change without notice.

# Features

**Reduced Footprint:** Provides the ideal solution for environments requiring superior image quality but with size and weight limitations. The monitor's small footprint and low weight allow it to be moved or transported easily from one location to another.

**Colour Control System:** Allows you to adjust the colours on your screen and customize the colour accuracy of your monitor to a variety of standards.

**OSD (On-Screen Manager) Controls:** Allow you to quickly and easily adjust all elements of your screen image via simple to use on-screen menus.

**ErgoDesign Features:** Enhance human ergonomics to improve the working environment, protect the health of the user and save money. Examples include OSD controls for quick and easy image adjustments, tilt base for preferred angle of vision, small footprint and compliance with MPRII and TCO guidelines for lower emissions.

**Plug and Play:** The Microsoft solution with the Windows 95/98/2000 operating system facilitates setup and installation by allowing the monitor to send its capabilities (such as screen size and resolutions supported) directly to your computer, automatically optimizing display performance.

**IPM (Intelligent Power Manager) System:** Provides innovative power-saving methods that allow the monitor to shift to a lower power consumption level when on but not in use, saving two-thirds of your monitor energy costs, reducing emissions and lowering the air conditioning costs of the workplace.

**Multiple Frequency Technology:** Automatically adjusts monitor to the display card's scanning frequency, thus displaying the resolution required.

**FullScan Capability:** Allows you to use the entire screen area in most resolutions, significantly expanding image size.

**Wide Viewing Angle Technology:** View angle is the angle at which the contrast ratio is greater than 10. The angles are determined for the horizontal or x axis and the vertical or y axis with repect to the z axis which is nornal to the LCD surface. (Viewing angle: x axis 60°, y axis 45°)

**VESA Standard Mounting Interface:** Allows users to connect their MultiSync monitor to any VESA standard (75 mm pitch) third party mounting arm or bracket. Allows for the monitor to be mounted on a wall or an arm using any third party compliant device.

# Troubleshooting

**No picture**

- The signal cable should be completely connected to the display card/computer.
- The display card should be completely seated in its slot.
- Front power Switch and computer power switch should be in the ON position.
- Make sure that a supported mode has been selected on the display card or system being used. (Please consult display card or system manual to change graphics mode.)
- Check the monitor and your display card with respect to compatibility and recommended settings.
- Check the signal cable connector for bent or pushed-in pins.

**Image persistence**

- Image persistence is when a “ghost” of an image remains on the screen even after the monitor has been turned off. Unlike CRT monitors, LCD monitors’ image persistence is not permanent. To alleviate image persistence, turn the monitor off for as long as an image was displayed. If an image was on the monitor for one hour and a “ghost” of that image remains, the monitor should be turned off for one hour to erase the image.

**NOTE:** As with all personal display devices, NEC-Mitsubishi Electronic Displays recommends using a screen saver at regular intervals whenever the screen is idle.

**Image is unstable, unfocused or swimming is apparent**

- Signal cable should be completely attached to the computer.
- Use the OSD Image Adjust controls to focus and adjust display by increasing or decreasing the fine total. When the display mode is changed, the OSD Image Adjust settings may need to be readjusted.
- Check the monitor and your display card with respect to compatibility and recommended signal timings.
- If your text is garbled, change the video mode to non-interlace and use 60 Hz refresh rate.

**Message “OUT OF RANGE” is displayed (screen is either blank or shows rough images only)**

- Image is displayed only roughly (pixels are missing) and OSD warning “OUT OF RANGE” is displayed: Either signal clock or resolution is too high. Choose one of the supported modes.
- OSD warning “OUT OF RANGE” is displayed on a screen: Signal frequency is out of range. Choose one of the supported modes.

**LED on monitor is not lit (no green or amber colour can be seen)**

- Power Switch should be in the ON position and power cord should be connected.

**Display image is not sized properly**

- Use the OSD Image Adjust controls to increase or decrease the Coarse total.
- Check to make sure that a supported mode has been selected on the display card or system being used. (Please consult display card or system manual to change graphics mode.)

**No Video**

- If no video is present on the screen, turn the Power button off and on again.
- Make certain the computer is not in a power-saving mode (touch the keyboard or mouse).

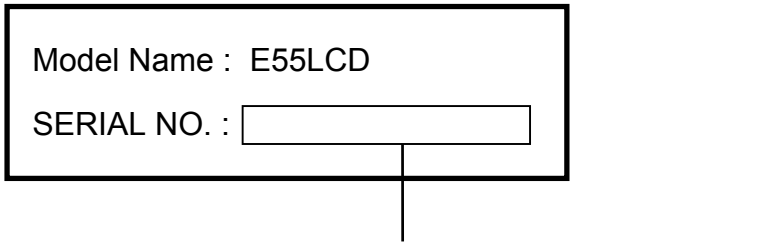
Printed on recycled paper

Printed in China
15501341

# Serial Number Information

Refer to the serial number information shown below.

EX.) SERIAL NUMBER LABEL




Manufactured Year :

( Last digit )

Manufactured Month :

| | | |
|---|---|---|
| January to September | 1 to | 9 |
| October | | X |
| November | | Y |
| December | | Z |

Serial Number(5-digit)

(sequential number at production month, 00001-99999)

Factory Code:

NPG China factory ..... “Y”

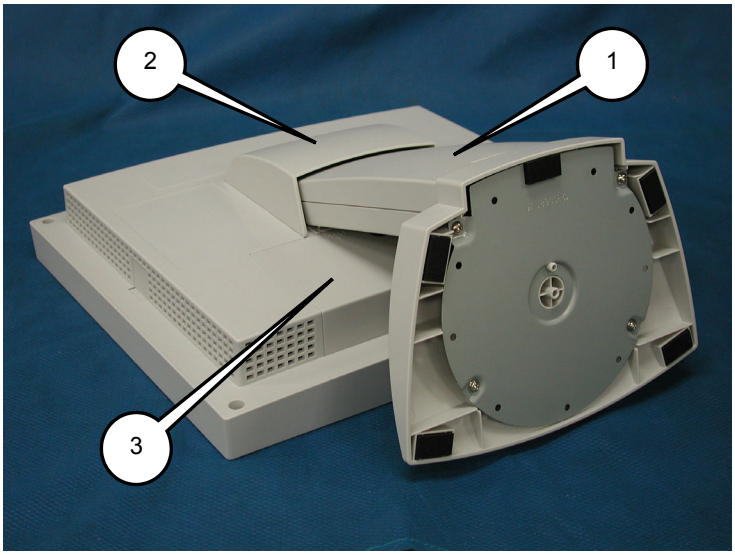
Control Code:

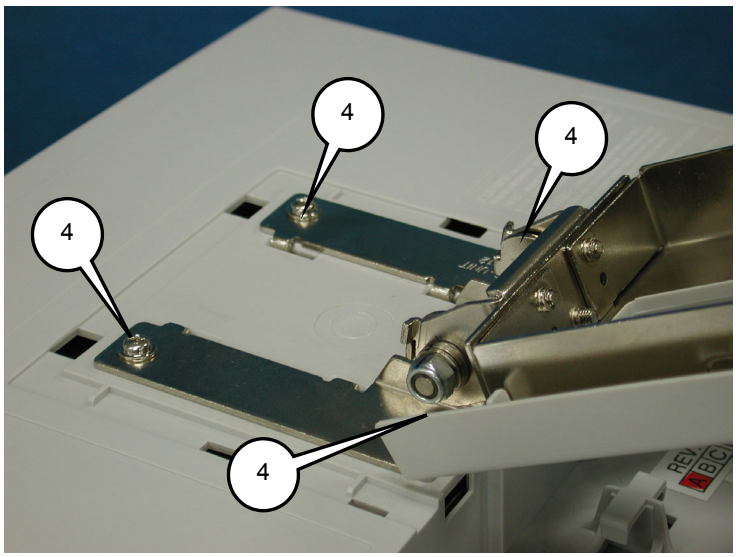
B: B ver. (for Europe, Asia and Pacific)

# DISASSEMBLY

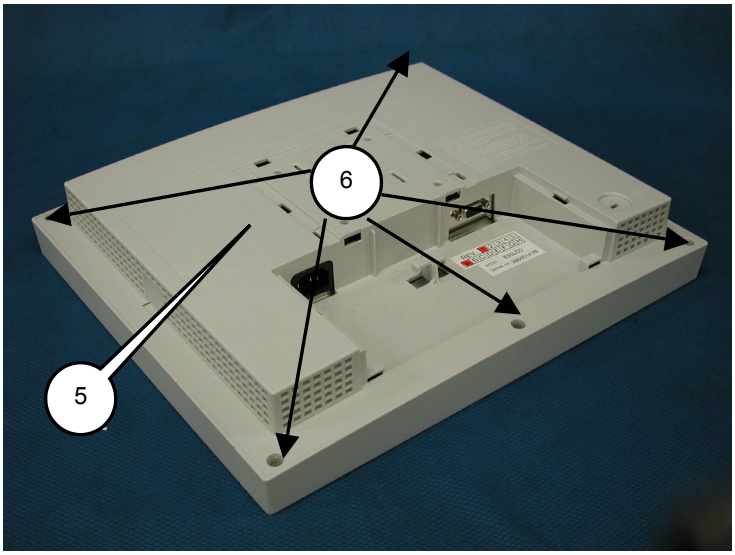
- Before you disassembly the set, turn off power and pull out the power plug.
- Use the proper screwdriver. If oversize or undersize is used, screws may be damaged.
- Assembly is the opposite process of disassembly.
- Note: If consignment the parts begins, the part number of NPG is used.

| SYMBOL | Part No. for NPG | Part No. for NMV | DESCRIPTION |
|---|---|---|---|
| 1 | 11000842 | 79PQ5007 | COVER, TILT, REAR |
| 2 | 11000831 | 79PQ5006 | COVER, HINGE |
| 3 | 11000791 | 79PQ5003 | COVER, CABLE |
| 4 | 14300171 | --- | P4*12/W MC(NI) |

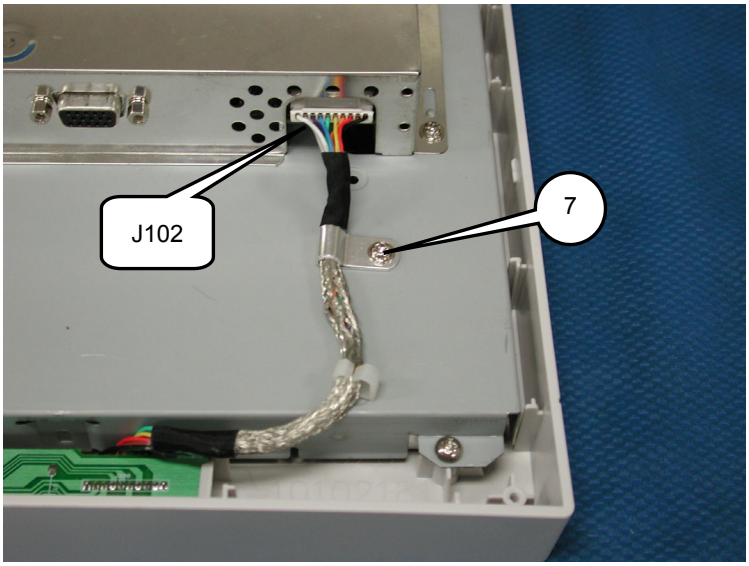


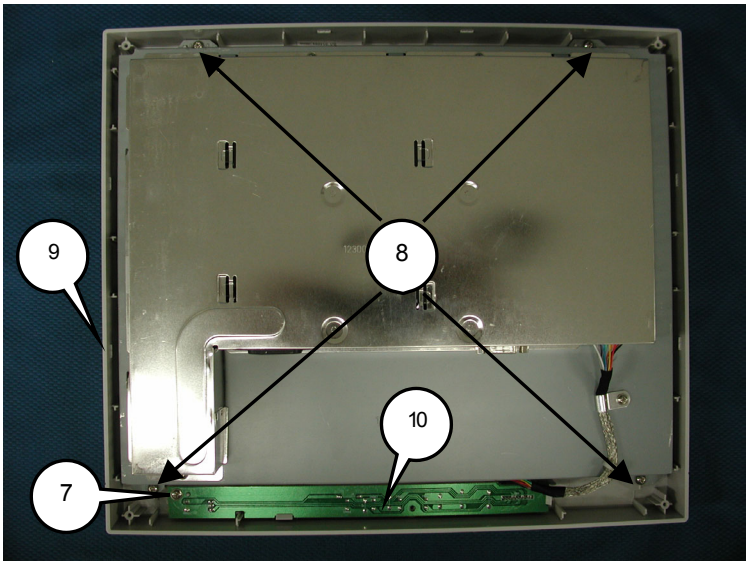
| SYMBOL | Part No. for NPG | Part No. for NMV | DESCRIPTION |
|---|---|---|---|
| 5 | 10102971 | 79PQ5001 | CABINET BACK |
| 6 | 14000181 | --- | SCREW T3X10 |



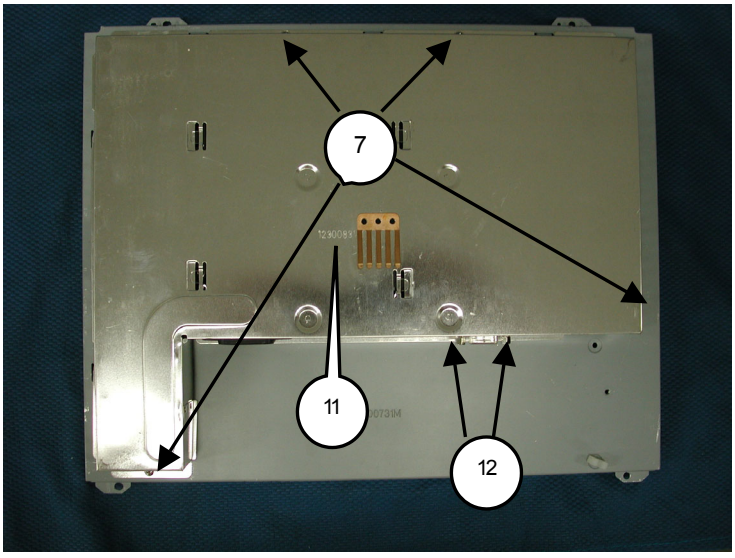

| SYMBOL | Part No. for NPG | Part No. for NMV | DESCRIPTION |
|---|---|---|---|
| 7 | 14300071 | --- | P3*6/W MC (NI) |



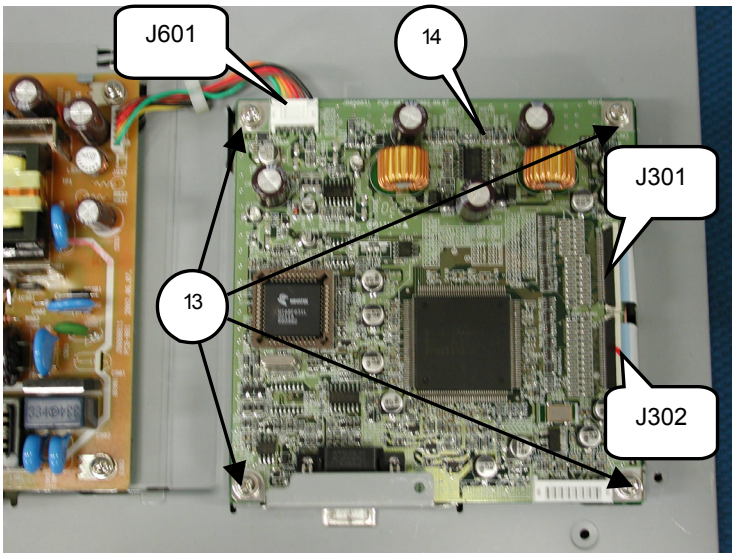
| SYMBOL | Part No. for NPG | Part No. for NMV | DESCRIPTION |
|---|---|---|---|
| 7 | 14300071 | --- | P3*6/W MC (NI) |
| 8 | 14000171 | --- | VB-1 4*10 MC(NI) |
| 9 | 10102981 | 79PQ5002 | CABINET FRONT ASSY |
| 10 | AS0R21ML | 79PQ5068 | SW INSERT ASSY |



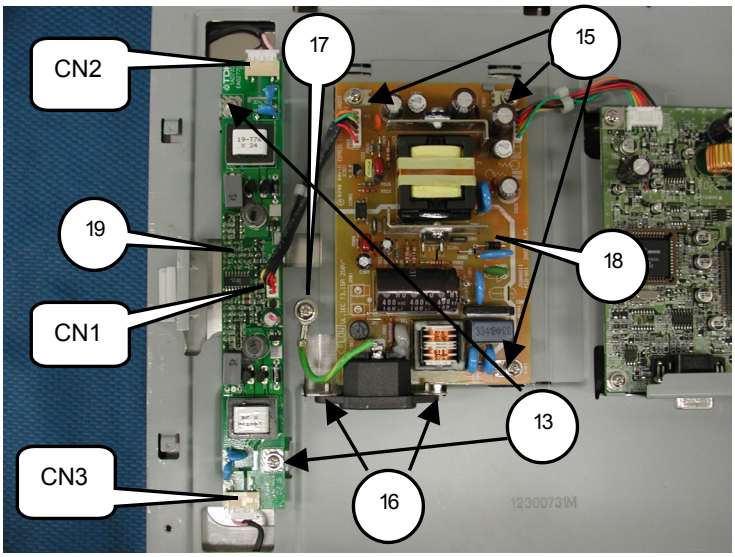

| SYMBOL | Part No. for NPG | Part No. for NMV | DESCRIPTION |
|---|---|---|---|
| 7 | 14300071 | --- | P3*6/W MC (NI) |
| 11 | 12300831 | --- | SHIELD, COVER |
| 12 | 14300201 | --- | 4#-40T*40T*4.8HL*4.0*5-NI/W |



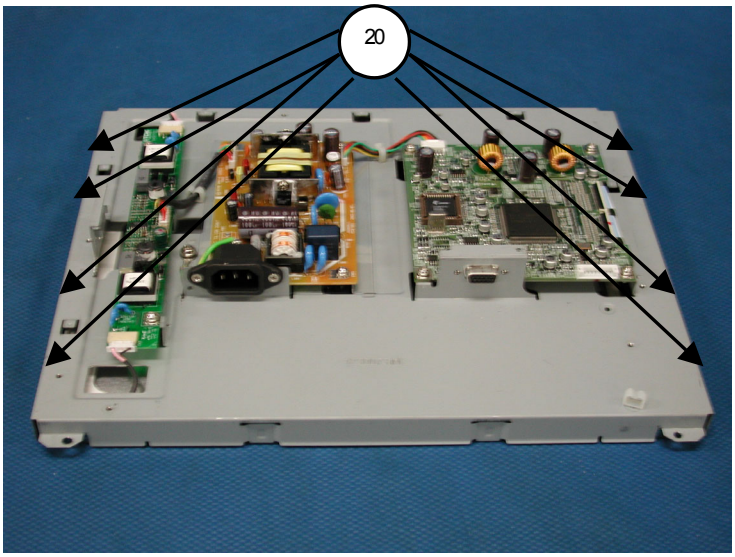
| SYMBOL | Part No. for NPG | Part No. for NMV | DESCRIPTION |
|---|---|---|---|
| 13 | 14300161 | --- | P3*8*8+SPW+WAS MC(NI) |
| 14 | AM0R22ML | 79PQ5011 | MAIN INSERT ASSY |



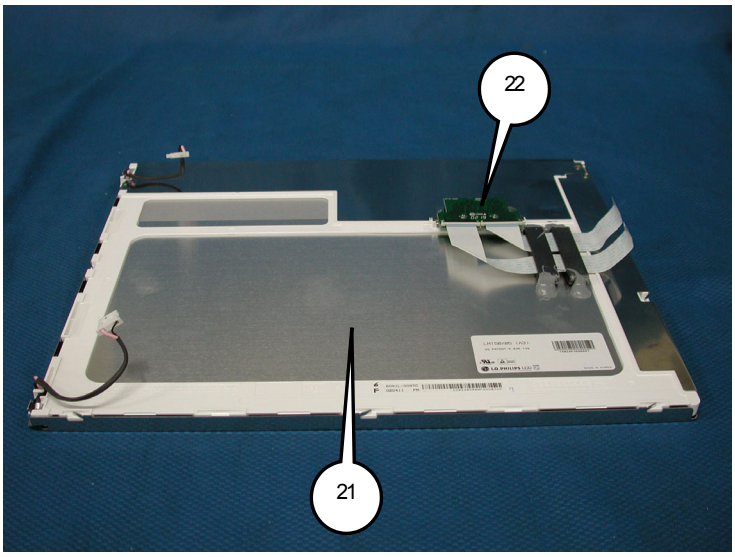

| SYMBOL | Part No. for NPG | Part No. for NMV | DESCRIPTION |
|---|---|---|---|
| 13 | 14300161 | --- | P3*8*8+SPW+WAS MC(NI) |
| 15 | 14300181 | --- | P3*8*8+SPW+GEAR MC(NI) |
| 16 | 14300091 | --- | F3*8 MC (NI) |
| 17 | 14300151 | --- | P4*10*10+SPW+WAS MC(NI) |
| 18 | AP0R22ML | 79PQ5067 | POWER INSERT ASSY |
| 19 | JM100011 | --- | INVERTER TAD770 TDK |



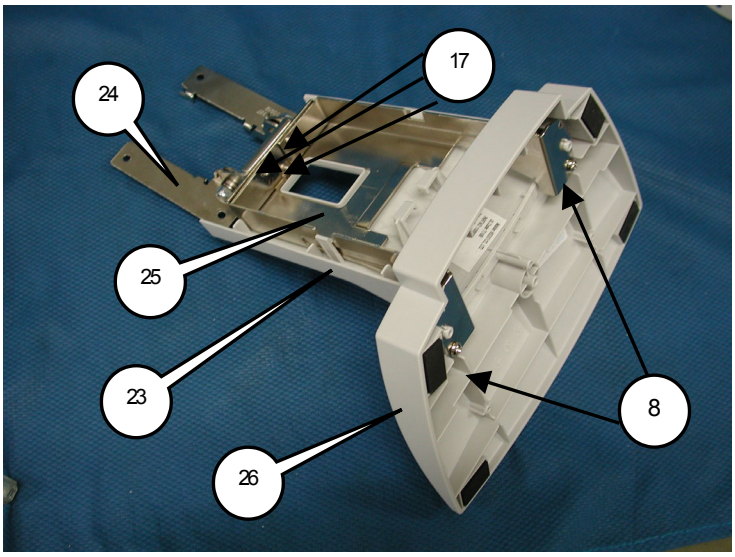
| SYMBOL | Part No. for NPG | Part No. for NMV | DESCRIPTION |
|---|---|---|---|
| 20 | 14300211 | --- | P2.5*4 MC (NI) |



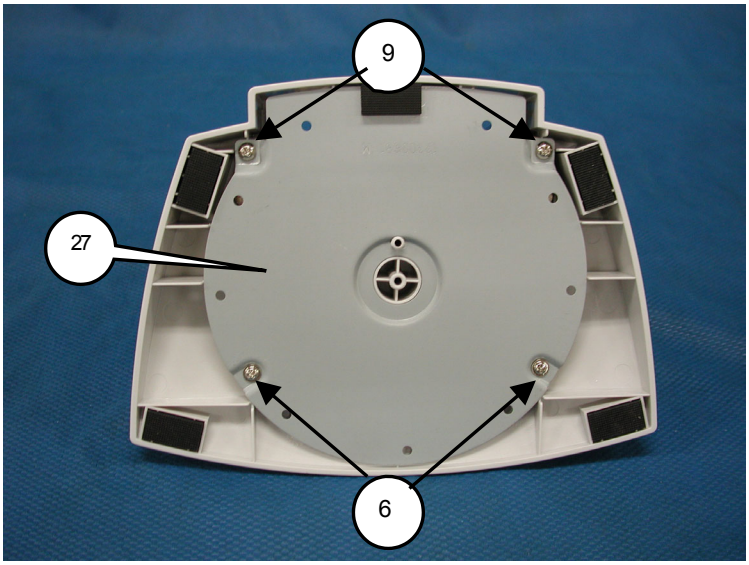

| SYMBOL | Part No. for NPG | Part No. for NMV | DESCRIPTION |
|---|---|---|---|
| 21 | JG552011 | 79PQ5063 | TFT LM150X05-A3 LGPL |
| 22 | AK0R21TL | 79PQ5069 | CN SMT8S9 ASSY |



| SYMBOL | Part No. for NPG | Part No. for NMV | DESCRIPTION |
|---|---|---|---|
| 8 | 14000171 | --- | VB-1 4*10 MC(NI) |
| 17 | 14300151 | --- | P4*10*10+SPW+WAS MC(NI) |
| 23 | 11000811 | 79PQ5004 | COVER, TILT, FRONT |
| 24 | 14900012 | 79EN0287 | HINGE UNIT |
| 25 | 12000621 | 79EN0282 | TILT, FRAME, STAND |
| 26 | 11000821 | 79PQ5005 | TILT, BASE |




| SYMBOL | Part No. for NPG | Part No. for NMV | DESCRIPTION |
|---|---|---|---|
| 6 | 14000181 | --- | SCREW T3X10 |
| 8 | 14000171 | --- | VB-1 4*10 MC(NI) |
| 27 | 12300681 | 79EN0528 | SHIELD, BASE |



# ADJUSTMENT PROCEDURES

## TABLE OF CONTENS

## 1. Application

This adjustment procedure applies to the 15-inch LCD display (E55LCD).

## 2. Standard setting state

Unless designated in particular, the test is carried out with the following state.

| Item | | State for Adjustment |
|---|---|---|
| Power voltage | | AC100V ~ 240V |
| Input frequency | | 1024 X 768 ;75Hz |
| Input connector | | D-SUB |
| OSD setting | BRIGHTNESS | 100% |
| | CONTRAST | 80% |
| | SHARPNESS | 0 |
| | Color Temperature | 6500K |
| | OSD time off | 30 seconds |
| | Language | English |
| | OSD transparency | 100% |
| | Power saving | Yes |

## 3. Names of each LCD monitor part, and adjustment method

### 3.1 Configuration of front control panel

| Key | When no OSD Display | Display OSD |
|---|---|---|
| | Open menu | Select to next menu |
| | Auto-Adjust(Hot key) | Select to next item. |
| ▽/☼ | BRIGHTNESS(Hot key) /decrease | If no OSD, the key setting to adjust Brightness hot key, else to do value decrease. |
| △/◐ | CONTRAST(Hot key) increase | If no OSD, the key setting to adjust Contrast hot key, else to do value increase. |
| Power Key | Switch change to power mode ( power ON / power OFF ) | |

2) Key define


### 3.2 OSD operation method

<Factory mode>

-Hot key for reset EEPROM data-

Press (▲) and (▼) button at the same time then power on.

-Hot key for Factory adjust-

Press MENU ( ), and SELECT( ) button at the same time then power on.

-How to return to User mode-

To return to User mode, turn POWER-SW OFF.

# 4.Set adjustments

## 4.1 Measuring instruments to be used

The measuring instruments considered necessary for the adjustment of the E55LCD set are specified below.

(1) Equipment that can generate an output of the adjusted VG-819 unit or equivalent.

## 4.2 Power source voltage

100 - 120V/ 220 - 240V±5%, 50/60Hz

## 4.3 Electrification

(1) Make connections according to the mode intended for VG-819 cable setting.

(2) Turn on the power switch of the VG-819 unit.

(3) Connect an AC power cable to the unit under inspection.

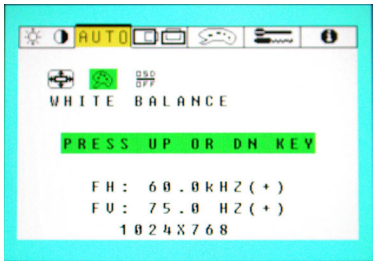
(4) The LED of the unit under inspection is lit in amber.(In the middle of signal discrimination)

(5) After the completion of signal discrimination, the LED is lit in green.

## 4.4 BIAS and GAIN adjustment

(1) Input timing 1024X768;75Hz, XGA75 with signal generator, then set the pattern to 32gray scale and video signal level to 0.7V.

(2) OSD select to WHITE BALANCE then press (▲) or (▼) button.




(3) Automatic adjustment of BIAS and GAIN.

## 4.5 Panel BRIGHTNESS check

(1) Input timing 1024X768;75Hz, XGA75 with signal generator, then set pattern to full white and video signal level to 0.7V.

(2) OSD setting BRIGHTNESS and CONTRASST to max(100).

(3) Color temperature setting to user.

(4) Check the center luminance should >= 170 cd/m2.

## 4.6 Panel color check

(1) Input timing 1024X768;75Hz, XGA75 with signal generator, then set pattern to full white and video signal level to 0.7V.

(2) Color temperature setting to user.

(3) Check the center color coordination.

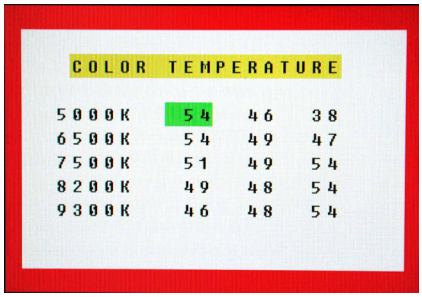
x = 0.313+/- 0.03 y = 0.329 +/- 0.03

## 4.7 Color temperature check

(1) Input timing 1024X768;75Hz, XGA75 with signal generator, then set pattern to full white and video signal level to 0.7V.

(2) OSD brightness setting to MAX(100) and contrast setting to 80.

(3) OSD into factory mode and adjust R;G;B gain to meeting below color coordination.




(4) Each color temperature setting as below

| | | |
|---|---|---|
| 9300K: | x = 0.281+/- 0.03 | y = 0.311 +/- 0.03 |
| 8200K: | x = 0.290+/- 0.03 | y = 0.300 +/- 0.03 |
| 7500K: | x = 0.300+/- 0.03 | y = 0.310 +/- 0.03 |
| 6500K: | x = 0.313+/- 0.03 | y = 0.329 +/- 0.03 |
| 5000K: | x = 0.345+/- 0.03 | y = 0.352 +/- 0.03 |

# INSPECTION

## TABLE OF CONTENS

# 1. Electric performance

## 1.1 Confirming the operation of operation SW

(1) Input XGA75 pattern “Crosshatch”.

(2) The picture must appear within four seconds after turning power switch ON.

(3) Confirm that Power-On Indicator is lit.

(4) Synchronization must not flow when power switch is turned ON and OFF.

(5) OSD must appear when Menu or Select button is pressed.

(6) The setting value must smoothly change and abnormalities such as noise must not occur when (▲) / (▼) button is pressed.

(7) Press OSD OFF button, and confirm that OSD picture disappears.

## 1.2 Frequency change speed

(1) Change the preset timing.

(2) Confirm that it does not take so long time to change the picture when frequency is changed. (Within five seconds)

## 1.3 Confirming power management function

(1) Input the specified timing with signal generator, and set the pattern to full white.

| Mode | H | V | Power voltage | Input timing | Power consumption |
|---|---|---|---|---|---|
| Normal | On | On | AC240V | XGA75 | 25W |
| Standby | Off | On | AC240V | XGA75 | 3W |
| Suspend | On | Off | AC240V | XGA75 | 3W |
| Off | Off | Off | AC240V | XGA75 | 3W |

# 2 Safety test

## 2.1 Isolation voltage

Confirm that the abnormality is never seen when AC1500V is applied for two seconds across AC earth GND pin to chassis GND. Cut-off current must be 10mA.

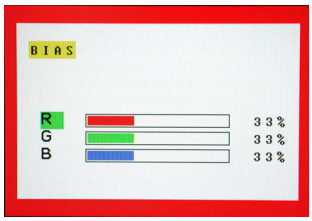
## 2.2 Ground resistance

Confirm that the resistance must be less than 100m ohms or less when 25A is applied across AC earth GND pin to chassis GND.

## 3. Factory mode

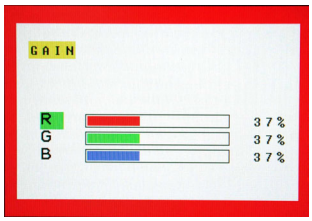
Mention the contents of the factory menu letter.

**Page 1:**



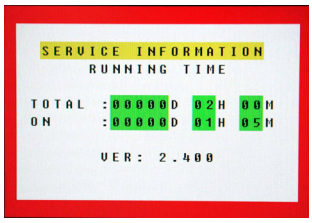

1. A “Menu” key is pressed and the "BIAS" menu is displayed.
2. Press ”Select” key to adjust the cursor to R,G or B.
3. Press (▲) or (▼) key can adjust each value is changed.

**Page 2:**



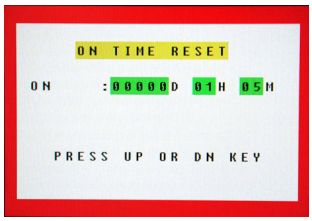

1. A “Menu” key is pressed and the "GAIN" menu is displayed.
2. Press ”Select” key to adjust the cursor to R,G or B.
3. Press (▲) or (▼) key can adjust each value is changed.

**Page 3:**



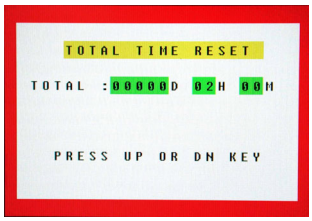

1. A “Menu” key is pressed and the "SERVICE INFORMATION" menu is displayed.
2. The page can check "TOTAL TIME", "ON TIME" and firmware version.

**Page 4:**



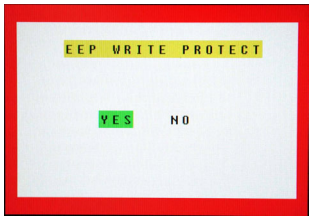

1. A “Menu” key is pressed and the "ON TIME RESET" menu is displayed.
2. Reset by (▲) or (▼) key.

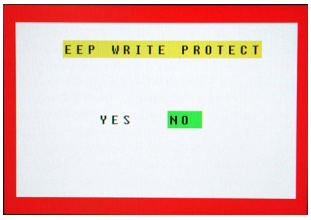
**Page 5:**




1. A “Menu” key is pressed and the "TOTAL TIME RESET" menu is displayed.
2. Reset by (▲) or (▼) key.

**Page 6:**



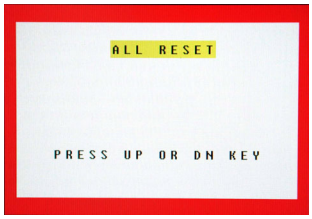




1. A “Menu” key is pressed and the "EEP WRITE PROTECT" menu is displayed.
2. Change setting EEPROM write Protect by ”Select” key.

   YES: Disable

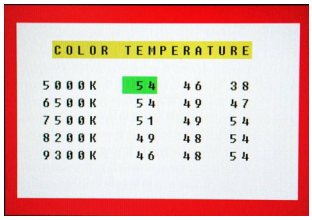
   NO : Enable

**Page 7:**




1. A “Menu” key is pressed and the "ALL RESET" menu is displayed.
2. Reset all EEPROM date and load default value to EEPROM by (▲) or (▼) key.

**Page 8:**




1. A “Menu” key is pressed and the "COLOR TEMPERATURE" menu is displayed.
2. Select R,G,B by ”Select” key.
3. Press (▲) or (▼) key can adjust each value is changed.

   Left side : Red

   Center : green

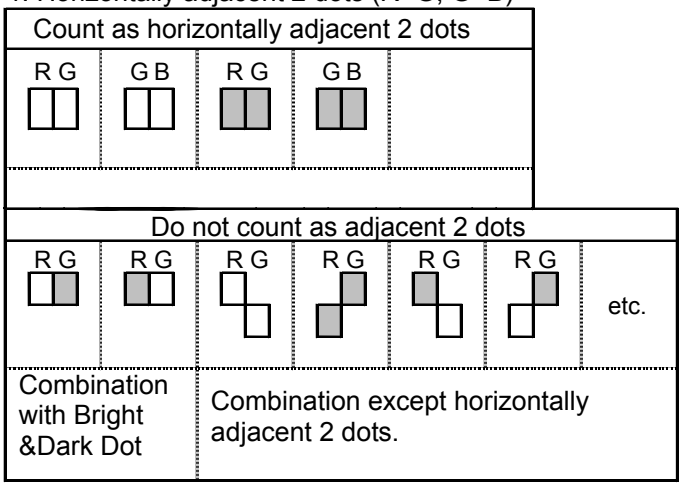
   Right side : Blue

## 4. External inspection on the LCD module

| Items | | | Criteria | | Remarks |
|---|---|---|---|---|---|
| Adjacent Dots | 1) | Bright Dots | Horizontally adjacent 2 dots (R+G, G+B) | Max. 2 | Note 1 |
| | 2) | Dark Dots | Horizontally adjacent 2 dots (R+G, G+B) | Max. 2 | Note 2 |
| | 3) | Bright Dots | Horizontally, vertically or combined adjacent 3 dots (separately bright dots and dark dots) | Not Allowed | Note 3 |
| | 4) | Dark Dots | | Not Allowed | |
| Dot Defect | 5) | Dot defect except 1), 2) | R or G or B (Bright Dot + Dark Dot) | Max. 6 | Note 4 |
| Min. Distance between bright dots | 6) | Distance between bright dots | Distance between bright dots (R - R): less than 6.5mm | Max. 2 for each color | Note 5 |
| | 7) | Distance between 6)'s | Distance between 6)s : less than 15mm | Not Allowed | Note 6 |
| | 8) | Fault cluster | Two or more pixels or sub-pixels with more than one fault of 5) | Max. 3 | Note 7 |
| | | | Two or more pixels or sub-pixels with more than one fault of 1) | Not Allowed | Note 8 |
| | | | Two or more pixels or sub-pixels with more than one fault of 2) | | |
| Total amount of Dot Defects | Total amount of Bright Dot (R,G,B) and Dark Dot (R,G,B) | | | Max. 10 | - |
| | Total amount of Bright Dot (G) | | | Max. 6 | - |
| Note 9. Every dot herein means sub-pixel (each Red, Green or Blue color) | | | | | |
| Note 10. Bright & Dark Dots are larger than one third of sub-pixel. (Dots smaller than one third of sub-pixel are not counted as a defect dots.) | | | | | |
| Note 11. Do not use the [ND] filter in counting a bright dot. | | | | | |

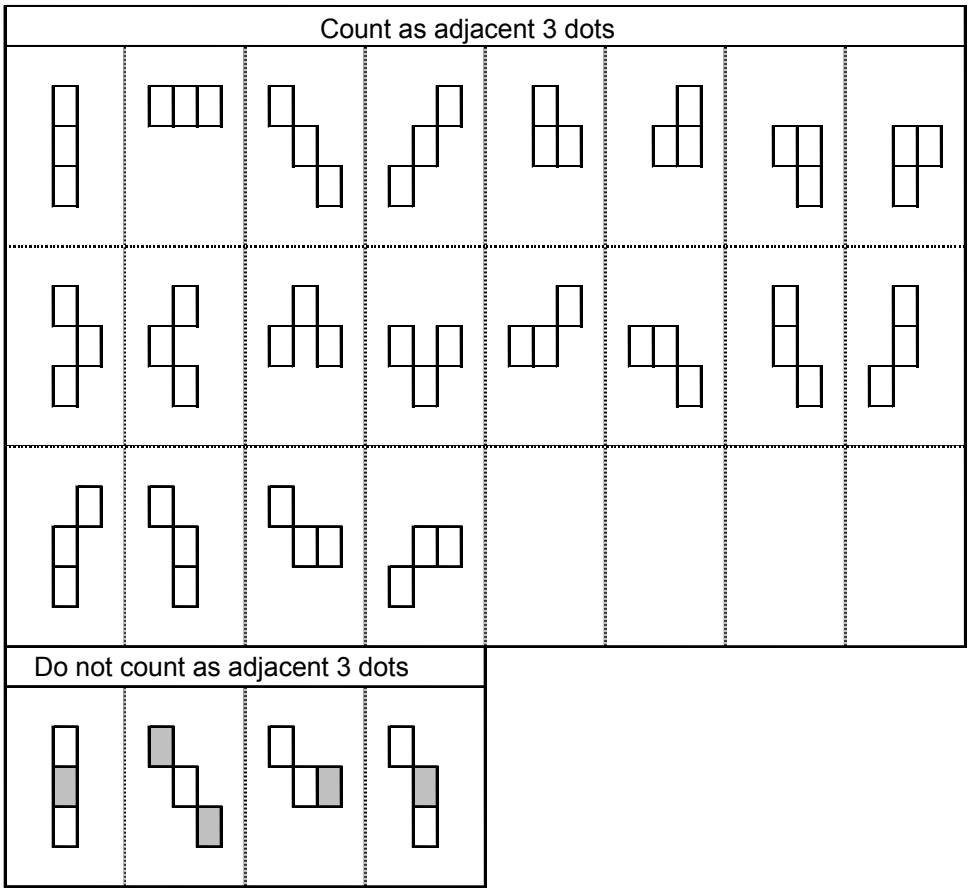
: Bright Dot  : Dark Dot

Note 1. Horizontally adjacent 2 dots (R+G, G+B)



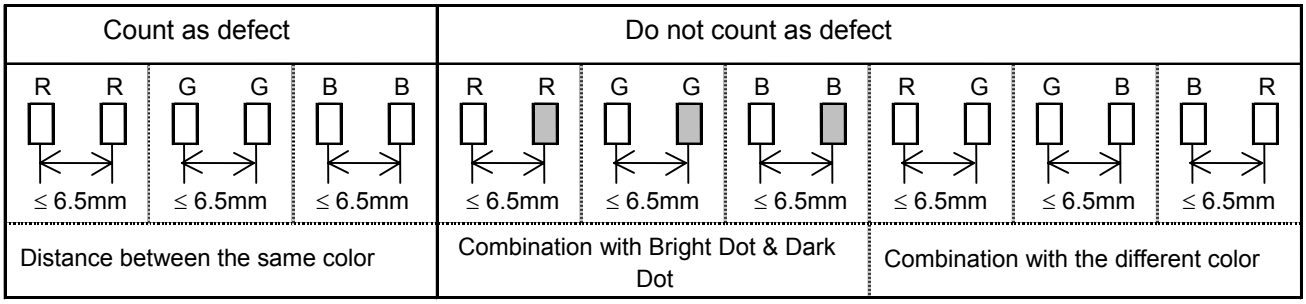

Note 2. 1) + 2) : Max. 3

Note 3. Horizontally, vertically or combined adjacent 3 dots (separately bright dots and dark dots)

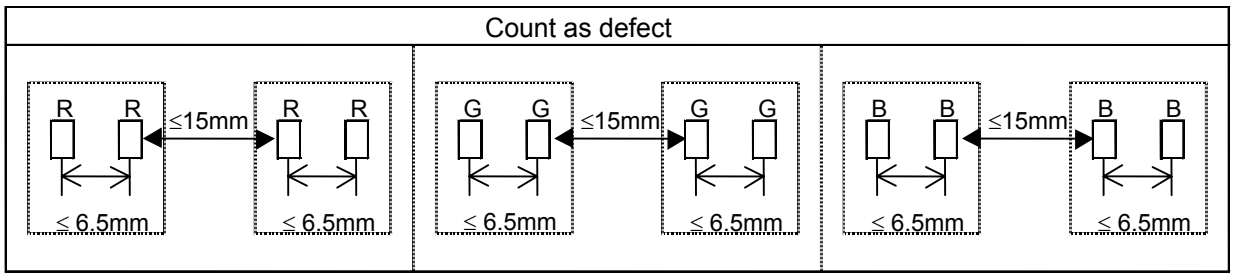



Note 4. Do not count the horizontally adjacent 2 dots (R-G, G-B)

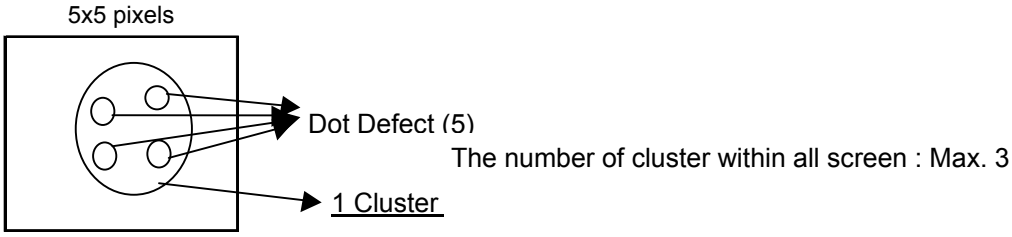
Note 5. Distance between bright dots



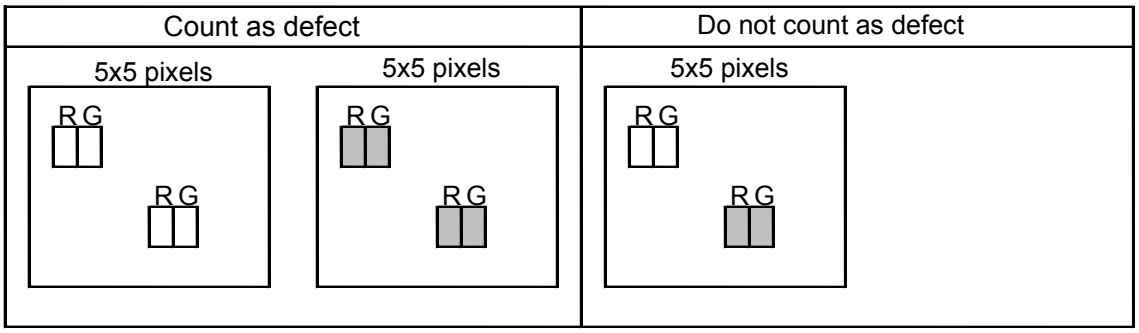

Note 6. Distance between the group of 6)'s.



Note 7. Two or more pixels or sub-pixels with more than one fault of 5) within 5x5 pixels



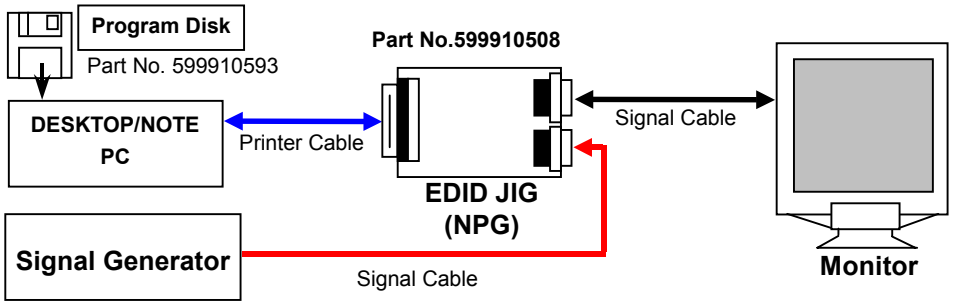

Note 8. Two or more pixels or sub-pixels with more than one fault of 1) or 2) within 5x5 pixels

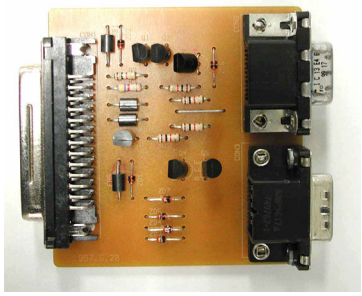


## 5. Inspection of PLUG & PLAY Communication and OSD "MONITOR INFORMATION" for Model Name/ Serial Number

### 5.1 System Connection

This system should be connected as shown below.



EDID JIG (NPG)

### 5.2 Input Signal

Horizontal sync frequency: Not specified.

Vertical sync frequency: Not specified.

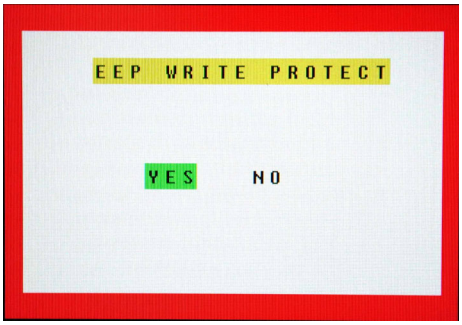
### 5.3 Programs Required

NPGV233.EXE
E55LCD.BAT
E55LCD.TXT

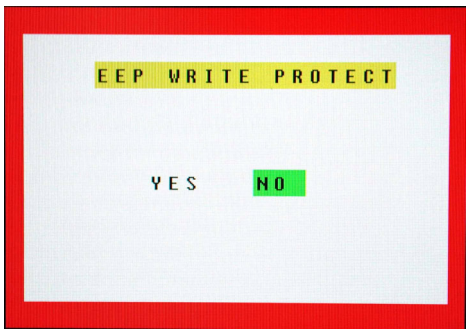
### 5.4 Inspection Procedures

a. Factory Mode: Press "Menu" and "Select" button at the same time then power ON.

b. A "Menu" button is pressed and the "EEP WRITE PROTECT" menu is displayed.



c. A ◇”selection” button is pressed and cursor is moved to "NO."




d. Copy the above-mentioned programs in an adequate directory.

e. Set up the MO-DOS mode. (DOS Prompt of Windows95/98 is also acceptable.)

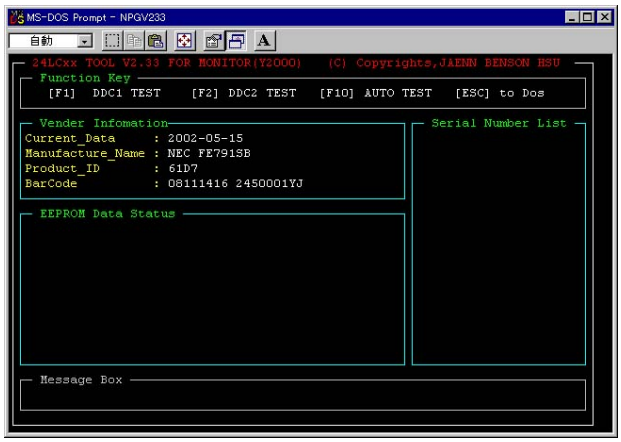
f. Execute the E55LCD.BAT from the command line.

g. Press the F2 key to start the inspection of DDC2B.
As a result of inspection, when EDID data is not written in or it differs, h or later is performed.

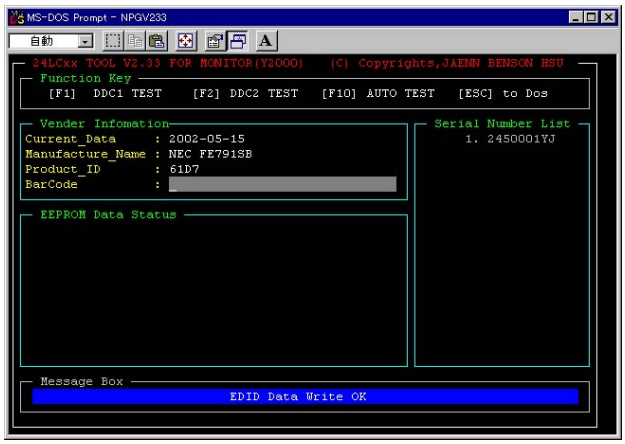
h. Check the serial number of the set and enter an input of the following code from the keyboard.

08R220B3 Serial Number (Model Code + 1 Space + Serial No.)

Example: 08R220B3 2600001YB

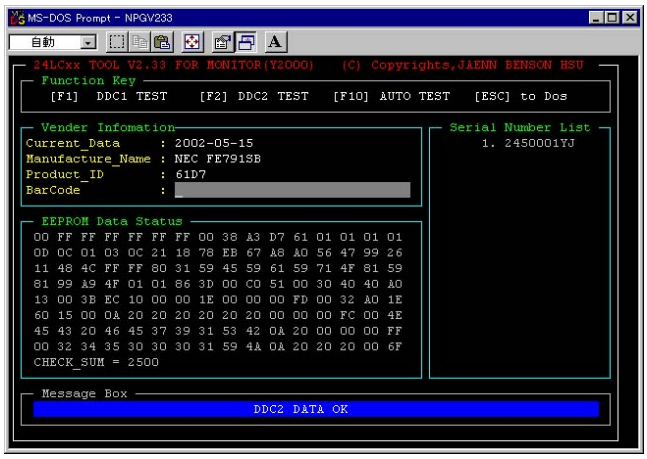


i. Press the Enter key. Then, the EDID data, OSD model name, and the serial number begin to be written in.




j. Display “MONITOR INFO.” of the OSD, and confirm that the model name and serial number have been correctly written.

k. Press the F2 key to start the inspection of DDC2B.
After the completion of inspection, the contents of EDID are displayed. If an error should occur, the related error message will be displayed in the bottom area of the screen. Refer to Paragraph 7.5 in regard to the meaning of this error message.



## 5.5 Error Messages

- IIC Communication Error

  Communication disabled

- EDID Check Sum Error

  Entry of false EDID

- DDC2 Does Not Find Head Data

  DDC2 Communication disabled

## 5.6 EDID Data File

The EDID data file text is shown below. When you write or inspect EDID for this monitor, the following table can be used.

File name : E55LCD.TXT

| | **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 | 34 | AC | 4E | 46 | 01 | 01 | 01 | 01 |
| **10** | 1A *1 | 0C *2 | 01 | 03 | 08 | 1E | 17 | 78 | EA | 7E | A5 | A0 | 58 | 4E | 96 | 25 |
| **20** | 1E | 50 | 54 | BF | EE | 00 | 01 | 01 | 01 | 01 | 01 | 01 | 01 | 01 | 01 | 01 |
| **30** | 01 | 01 | 01 | 01 | 01 | 01 | C3 | 1E | 00 | 20 | 41 | 00 | 20 | 30 | 10 | 60 |
| **40** | 13 | 00 | 30 | E4 | 10 | 00 | 00 | 1E | 00 | 00 | 00 | FD | 00 | 37 | 4B | 1F |
| **50** | 3C | 08 | 00 | 0A | 20 | 20 | 20 | 20 | 20 | 20 | 00 | 00 | 00 | FC | 00 | 45 |
| **60** | 35 | 35 | 4C | 43 | 44 | 0A | 20 | 20 | 20 | 20 | 20 | 20 | 00 | 00 | 00 | FF |
| **70** | 00 | 31 *3 | 35 *3 | 30 *3 | 30 *3 | 30 *3 | 30 *3 | 31 *3 | 49 *3 | 41 *3 | 0A *3 | 20 *3 | 20 *3 | 20 *3 | 00 | 8D *4 |

Table 7.6 Data list

*1 : address 10h  Manufactured month x 4

*2 : address 11h  Manufactured year - 1990

*3 : address 71h ~ 7Dh  Input serial number (ASCII code)

Add 0Ah after serial number.

Add 20th remaining address.

*4 : address 7Fh  Checksum. The sum of entire 128byte shall be equal to 00h.

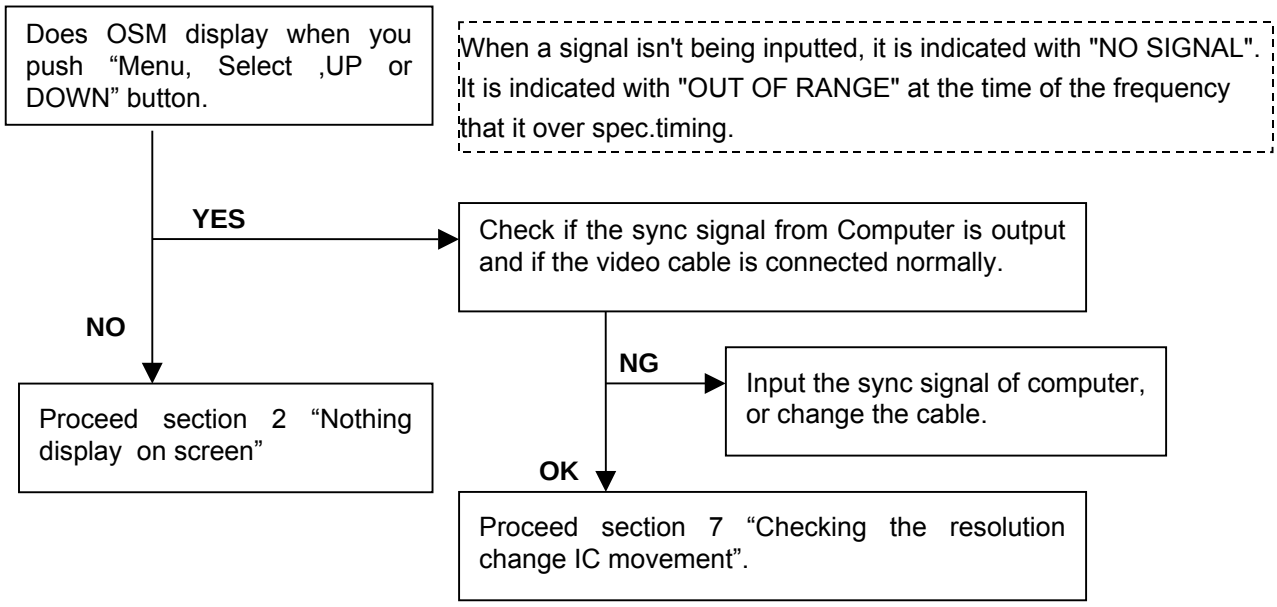
## 6. Preset Timing

| NO | Timing name | Dot Clock (MHz) | Horizontal | | | | | | Vertical | | | | | | HS/VS Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | frequency Fh (KHz) | Period Th (μS) | SYNC. pulse Ths (μS) | Front porch Thf (μS) | Back porch Thb (μS) | Display time Thd (μS) | frequency FV (Hz) | Period Tv (ms) | SYNC. pulse Tvs (ms) | Front porch Tvf (ms) | Back porch Tvb (ms) | Display time Tvd (ms) | |
| 1 | MAC13 | 30.24 | 35.00 (Dots) | 28.57 864 | 2.12 64 | 2.12 64 | 3.17 96 | 21.16 640 | 66.67 (Lines) | 15.00 525 | 0.09 3 | 0.09 3 | 1.11 39 | 13.71 480 | N,N |
| 2 | MAC16 | 57.24 | 49.70 (Dots) | 20.13 1152 | 1.12 64 | 0.56 32 | 3.91 224 | 14.54 832 | 74.52 (Lines) | 13.42 667 | 0.06 3 | 0.02 1 | 0.78 39 | 12.56 624 | N,N |
| 3 | VGA350 | 25.175 | 31.47 (Dots) | 31.78 800 | 3.81 96 | 0.64 16 | 1.91 48 | 25.42 640 | 70.08 (Lines) | 14.27 449 | 0.06 2 | 1.18 37 | 1.91 60 | 11.12 350 | P,N |
| 4 | VGA60 | 25.175 | 31.47 (Dots) | 31.78 800 | 3.81 96 | 0.64 16 | 1.91 48 | 25.42 640 | 59.94 (Lines) | 16.68 525 | 0.06 2 | 0.32 10 | 1.05 33 | 15.25 480 | N,N |
| 5 | VGA75 | 31.50 | 37.50 (Dots) | 26.67 840 | 2.03 64 | 0.51 16 | 3.81 120 | 20.32 640 | 75.00 (Lines) | 13.33 500 | 0.08 3 | 0.03 1 | 0.43 16 | 12.80 480 | N,N |
| 6 | VESA720 | 28.32 | 31.47 (Dots) | 31.78 900 | 3.81 108 | 0.64 18 | 1.91 54 | 25.42 720 | 70.08 (Lines) | 14.27 449 | 0.06 2 | 0.41 13 | 1.08 34 | 12.71 400 | N,P |
| 7 | SVGA56 | 36.00 | 35.16 (Dots) | 28.44 1024 | 2.00 72 | 0.67 24 | 3.56 128 | 22.22 800 | 56.25 (Lines) | 17.78 625 | 0.06 2 | 0.03 1 | 0.63 22 | 17.07 600 | P,P |
| 8 | SVGA60 | 40.00 | 37.88 (Dots) | 26.40 1056 | 3.20 128 | 1.00 40 | 2.20 88 | 20.00 800 | 60.32 (Lines) | 16.58 628 | 0.11 4 | 0.03 1 | 0.61 23 | 15.84 600 | P,P |
| 9 | SVGA72 | 50.00 | 48.08 (Dots) | 20.80 1040 | 2.40 120 | 1.12 56 | 1.28 64 | 16.00 800 | 72.19 (Lines) | 13.85 666 | 0.12 6 | 0.77 37 | 0.48 23 | 12.48 600 | P,P |
| 10 | SVGA75 | 49.50 | 46.88 (Dots) | 21.33 1056 | 1.62 80 | 0.32 16 | 3.23 160 | 16.16 800 | 75.00 (Lines) | 13.33 625 | 0.06 3 | 0.02 1 | 0.45 21 | 12.80 600 | P,P |
| 11 | XGA60 | 65.00 | 48.36 (Dots) | 20.68 1344 | 2.09 136 | 0.37 24 | 2.46 160 | 15.75 1024 | 60.00 (Lines) | 16.67 806 | 0.12 6 | 0.06 3 | 0.60 29 | 15.88 768 | N,N |
| 12 | XGA70 | 75.00 | 56.48 (Dots) | 17.71 1328 | 1.81 136 | 0.32 24 | 1.92 144 | 13.65 1024 | 70.07 (Lines) | 14.27 806 | 0.11 6 | 0.05 3 | 0.51 29 | 13.60 768 | N,N |
| 13 | XGA72 | 78.08 | 58.10 (Dots) | 17.21 1344 | 1.72 134 | 0.33 26 | 2.05 160 | 13.11 1024 | 72.08 (Lines) | 13.87 806 | 0.10 6 | 0.05 3 | 0.50 29 | 13.22 768 | N,N |
| 14 | XGA75 | 78.75 | 60.02 (Dots) | 16.66 1312 | 1.22 96 | 0.20 16 | 2.23 176 | 13.00 1024 | 75.03 (Lines) | 13.33 800 | 0.05 3 | 0.02 1 | 0.47 28 | 12.80 768 | P,P |
| 15 | XGA60 | 65.00 | 48.36 (Dots) | 20.68 1344 | 2.09 136 | 0.37 24 | 2.46 160 | 15.75 1024 | 60.00 (Lines) | 16.67 806 | 0.12 6 | 0.06 3 | 0.60 29 | 15.88 768 | P,P |
| 16 | VGA73 | 31.5 | 37.86 (Dots) | 26.41 832 | 1.27 40 | 0.76 24 | 4.06 128 | 20.32 640 | 72.81 (Lines) | 13.73 520 | 0.08 3 | 0.24 9 | 0.74 28 | 12.68 480 | N,N |
| 17 | SUN | 70.49 | 52.45 | 19.04 1344 | 1.93 136 | 0.34 24 | 1.27 160 | 14.53 1024 | 65.07 | 15.37 806 | 0.11 6 | 0.06 3 | 0.55 29 | 14.64 768 | P,N |
| 18 | PAL | 27 | 31.25 | 32 864 | 3.59 97 | 1.74 47 | 0.7 19 | 25.95 700 | 50 | 20 625 | 0.39312 | 1.13 35 | 0.072 2 | 18.4 575 | N,N |

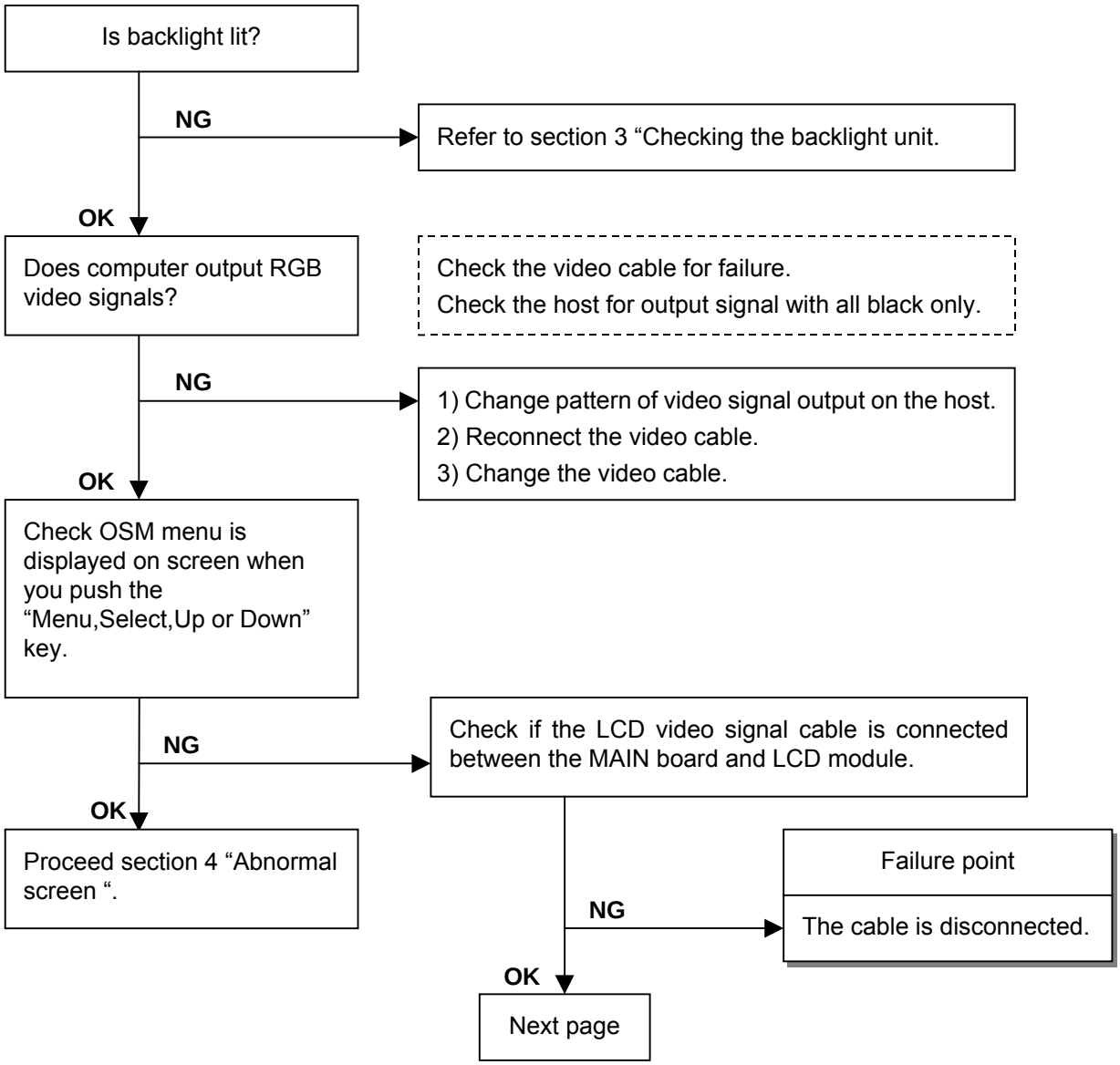
# TROUBLE SHOOTING

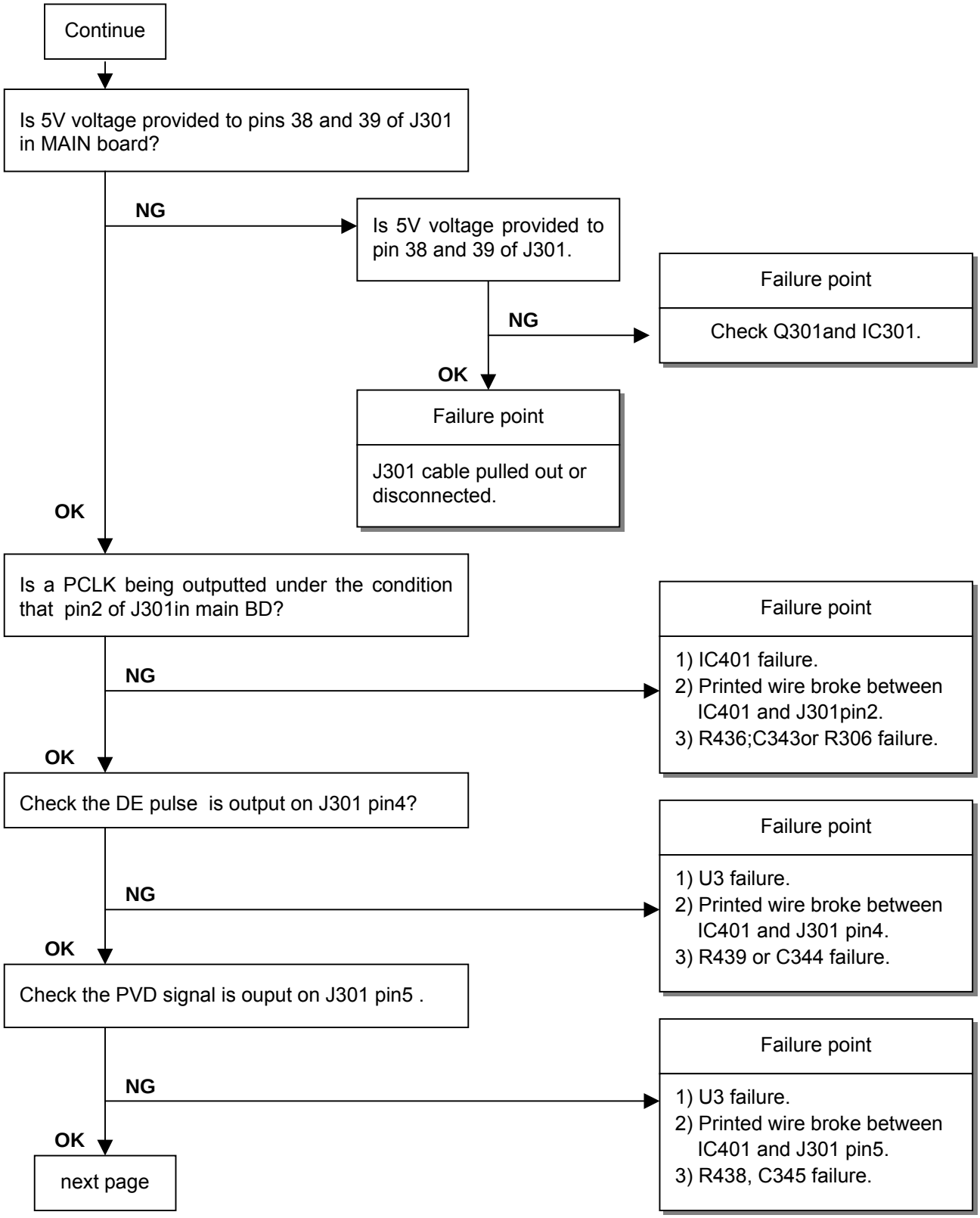
## TABLE OF CONTENTS

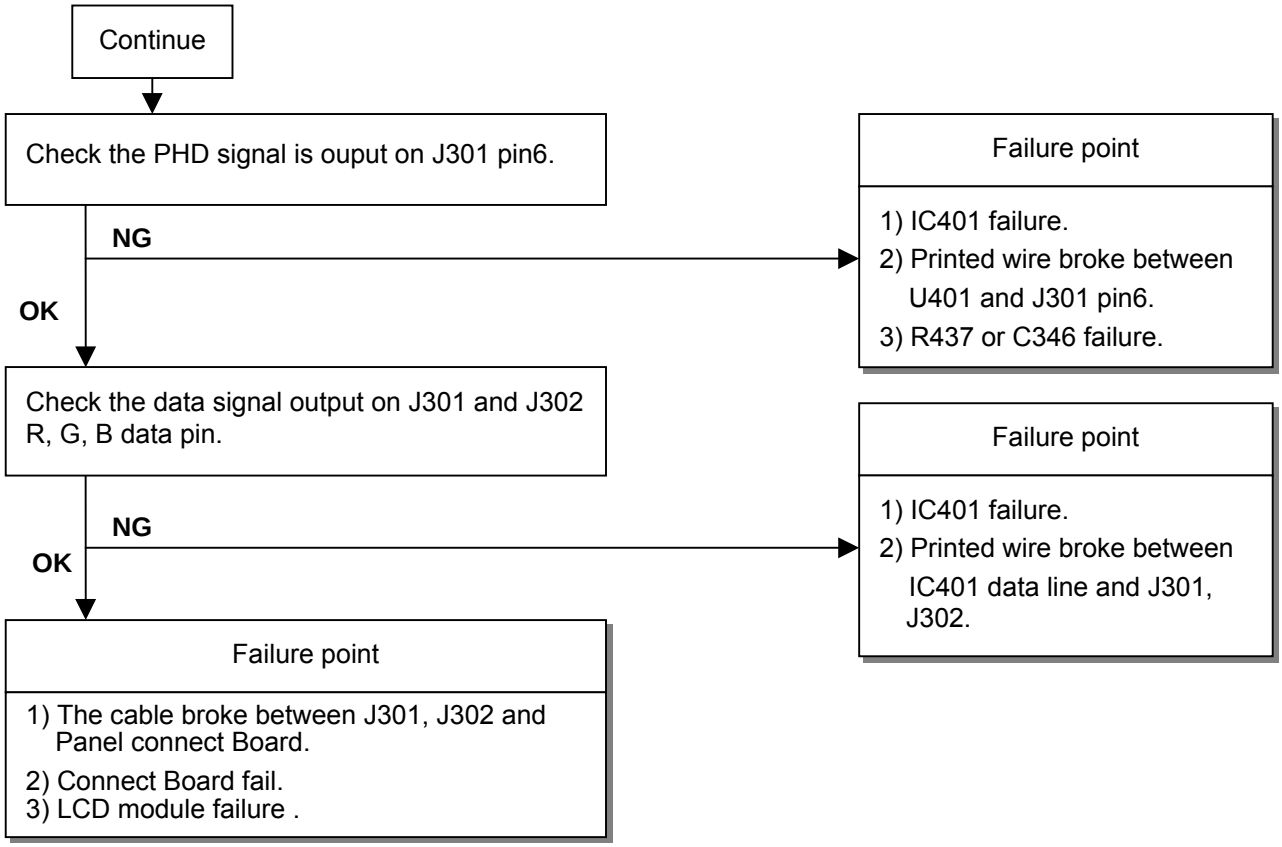
## 1. No display of screen (Screen is black, color of LED is amber)



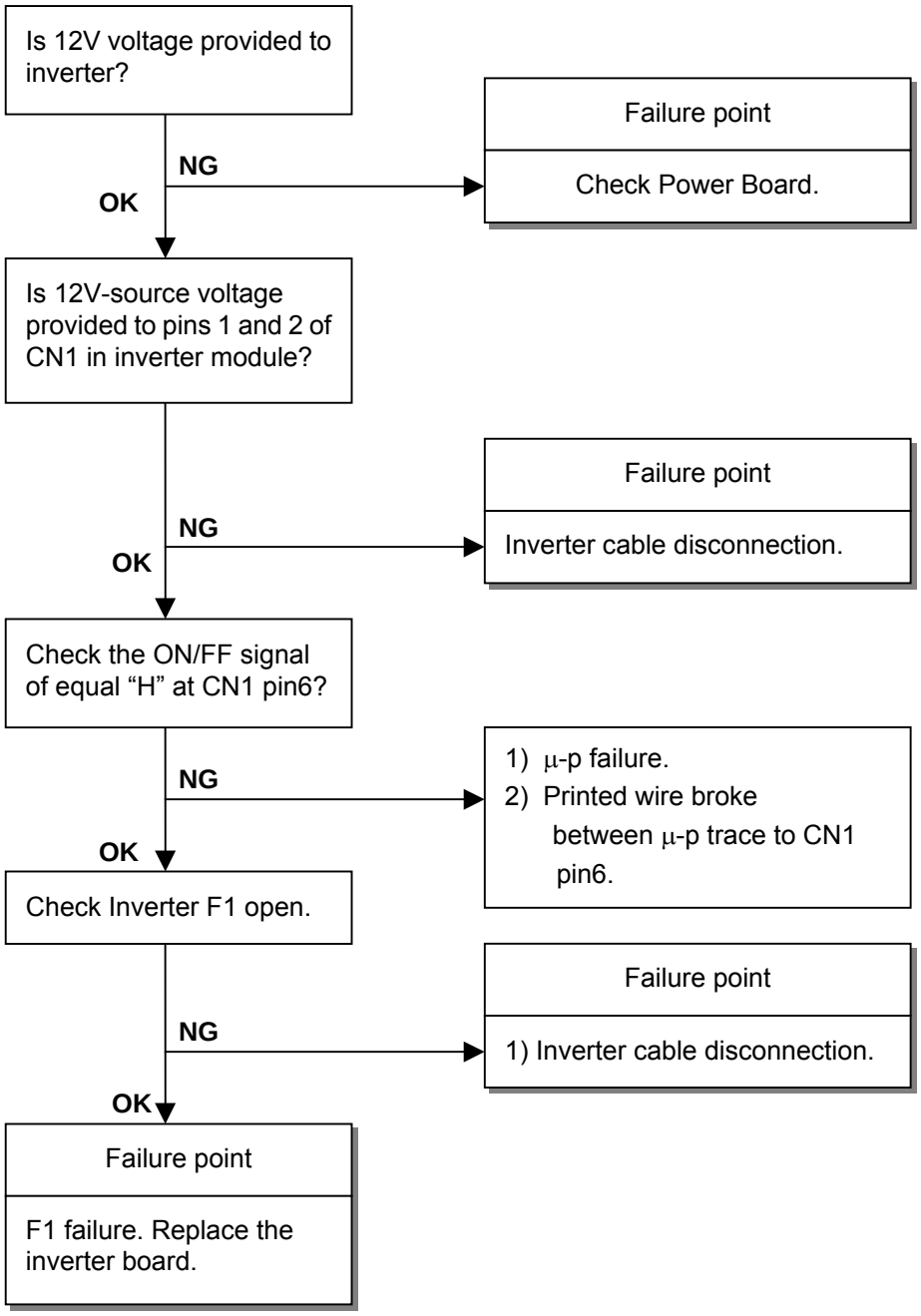
## 2. Nothing displays on screen (Screen is black, color of LED is green)



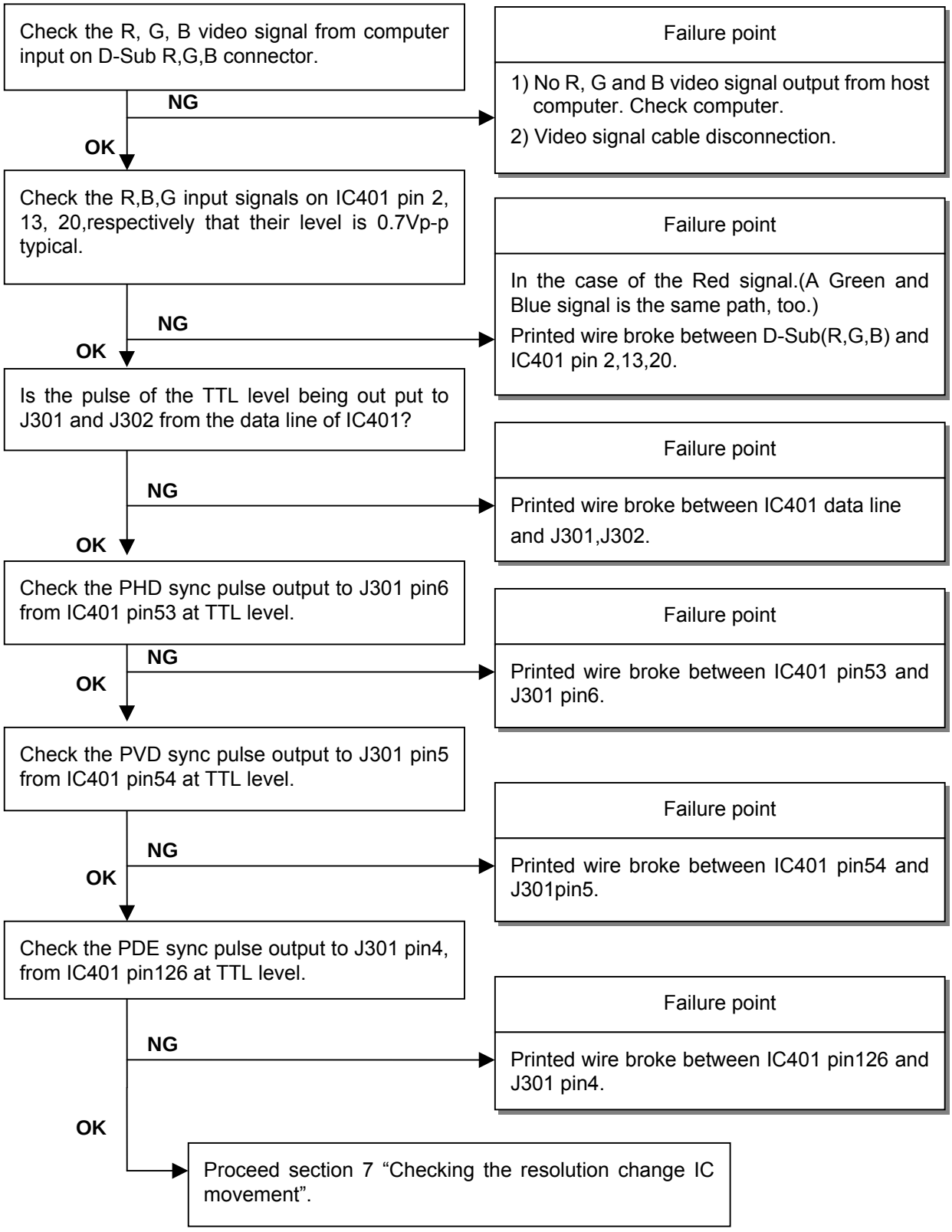

Continue
Is 5V voltage provided to pins 38 and 39 of J301 in MAIN board?
NG
Is 5V voltage provided to pin 38 and 39 of J301.
Failure point
Check Q301and IC301.
NG
OK
Failure point
J301 cable pulled out or disconnected.
OK
Is a PCLK being outputted under the condition that pin2 of J301in main BD?
Failure point
1) IC401 failure.
2) Printed wire broke between IC401 and J301pin2.
3) R436;C343or R306 failure.
NG
OK
Check the DE pulse is output on J301 pin4?
Failure point
1) U3 failure.
2) Printed wire broke between IC401 and J301 pin4.
3) R439 or C344 failure.
NG
OK
Check the PVD signal is ouput on J301 pin5 .
Failure point
1) U3 failure.
2) Printed wire broke between IC401 and J301 pin5.
3) R438, C345 failure.
NG
OK
next page


Continue
Check the PHD signal is ouput on J301 pin6.
NG
OK
Failure point
1) IC401 failure.
2) Printed wire broke between U401 and J301 pin6.
3) R437 or C346 failure.
Check the data signal output on J301 and J302 R, G, B data pin.
NG
OK
Failure point
1) IC401 failure.
2) Printed wire broke between IC401 data line and J301, J302.
Failure point
1) The cable broke between J301, J302 and Panel connect Board.
2) Connect Board fail.
3) LCD module failure .

## 3. Checking the back light unit

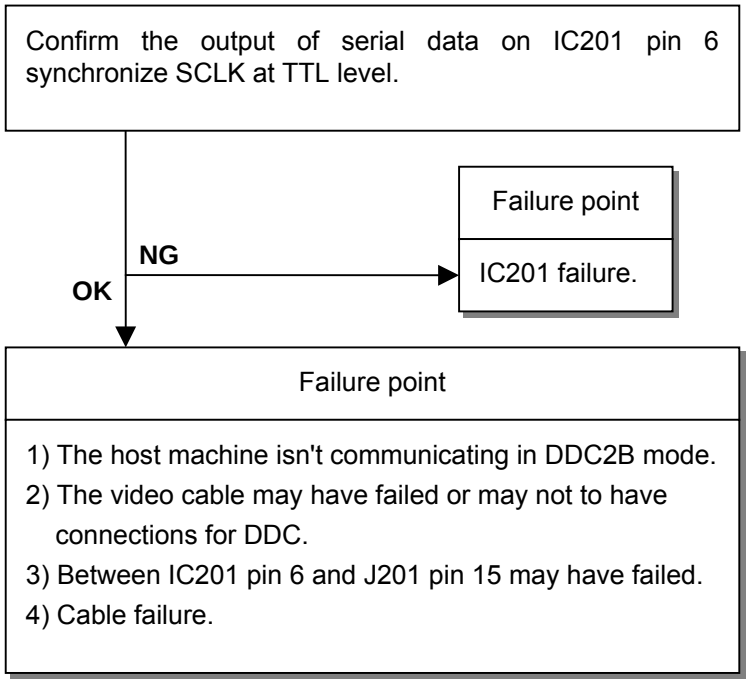


## 4. Abnormal screen



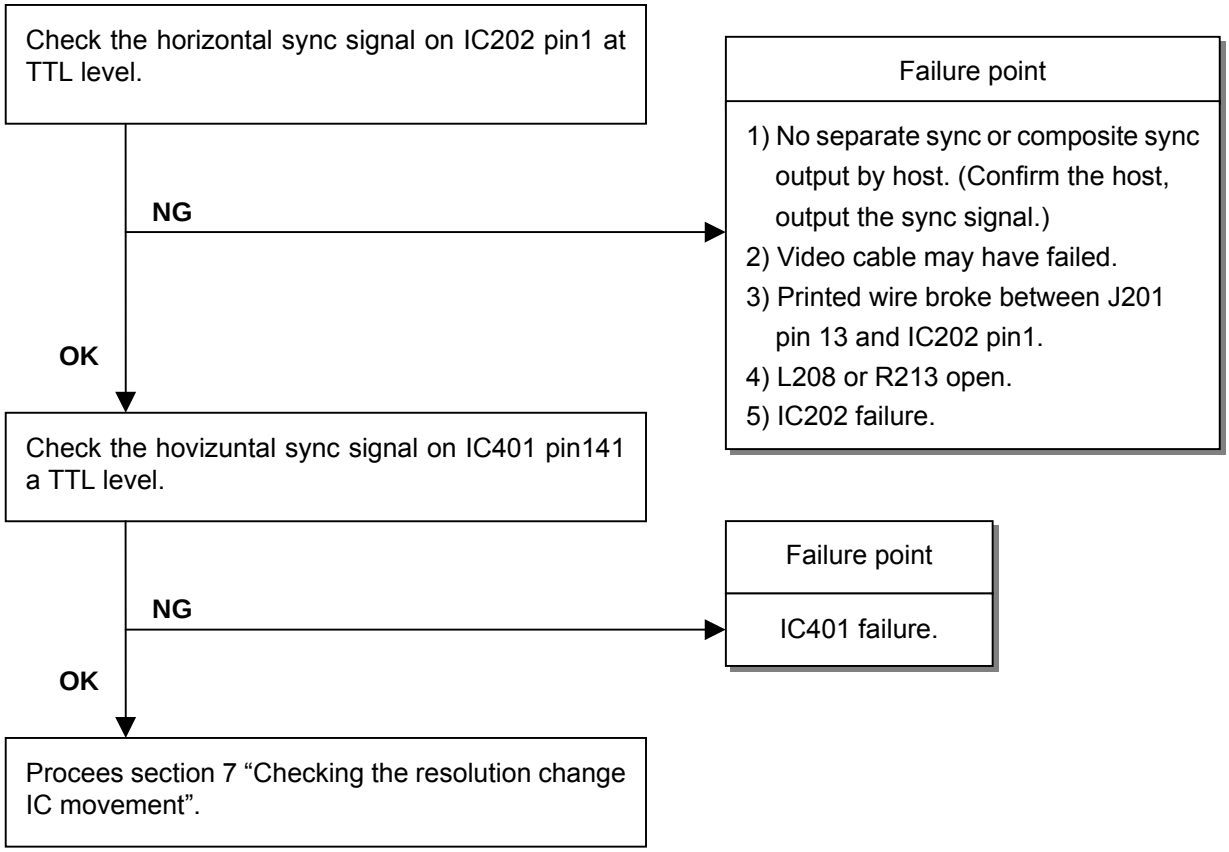
## 5. Abnormal plug and play operation

**Abnormal DDC2B**

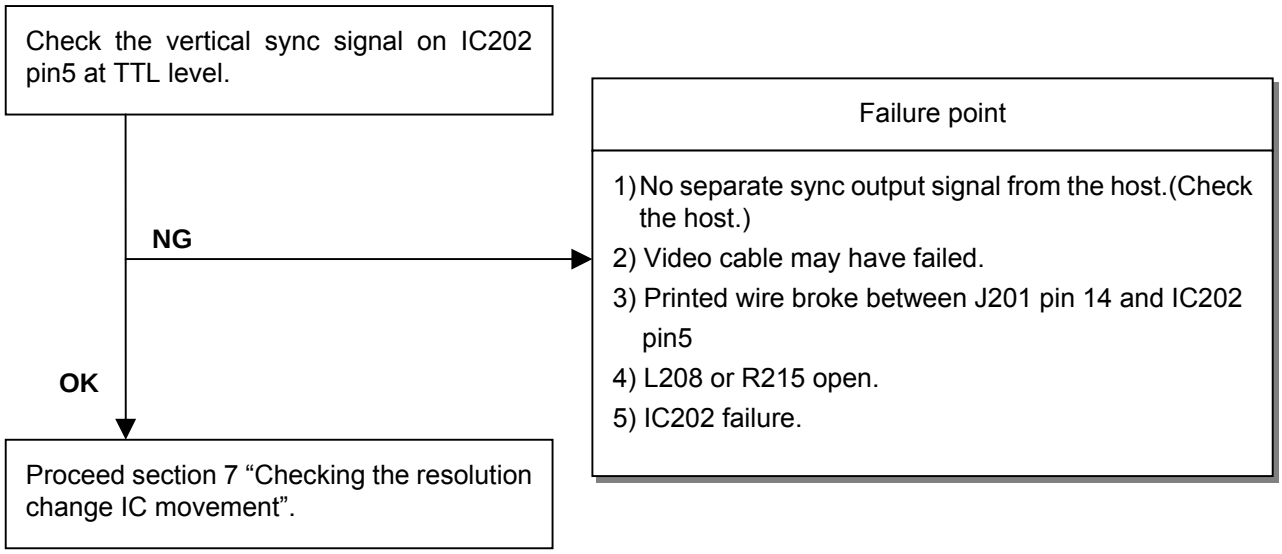


## 6. Checking the interface circuit of sync signal

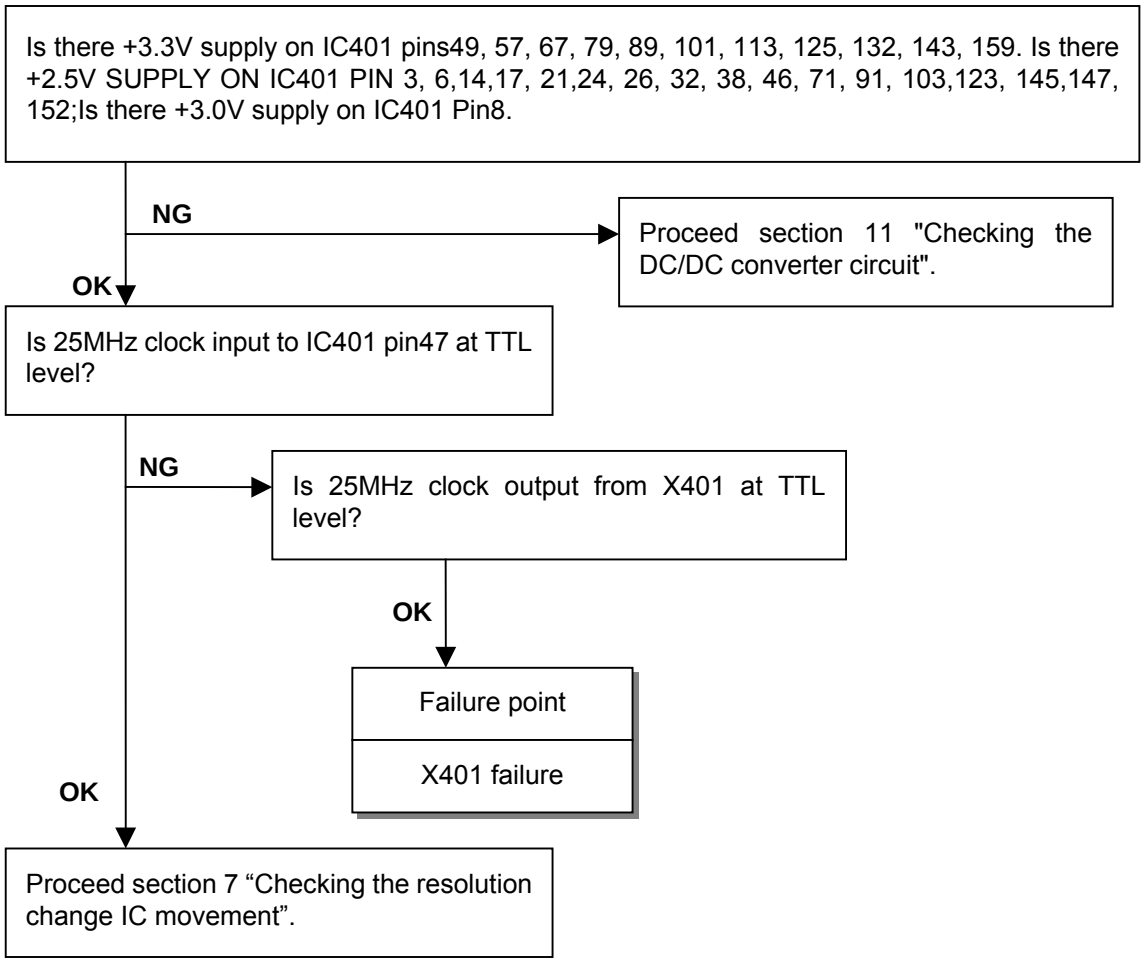
### 6.1 Checking the control circuit of horizontal sync pulse



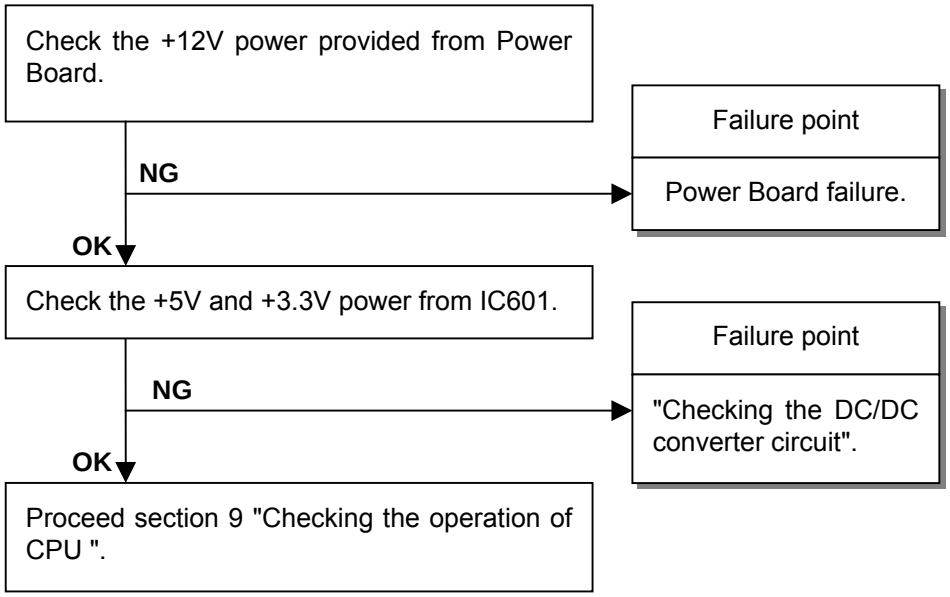
### 6.2 Checking the control circuit of vertical sync pulse



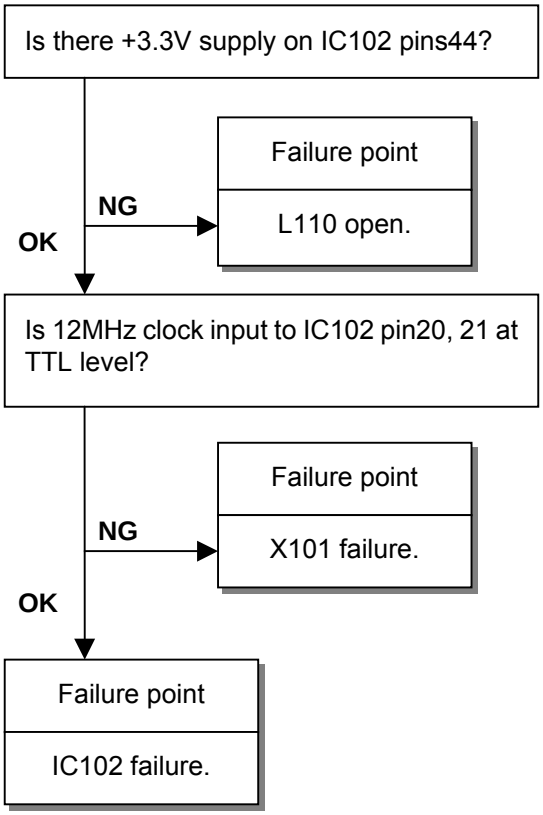
## 7. Checking the resolution change IC movement



## 8. No power on


Check the +12V power provided from Power Board.
NG
Failure point
Power Board failure.
OK
Check the +5V and +3.3V power from IC601.
NG
Failure point
"Checking the DC/DC converter circuit".
OK
Proceed section 9 "Checking the operation of CPU ".

## 9. Checking the operation of CPU



# CIRCUIT DESCRIPTION

## TABLE OF CONTENTS

Page

# 1 Power Circuit

## 1.1 Power input

12V DC input from power Board through J601 to interface.

## 1.2 Soft-power circuit

IC602 control the Q602 and Q601 for 12V into the DC to DC circuit .

IC602 pin5 Low is OFF status ; Hi is ON status

While “ON” status DC to DC circuit output 5V and 3.3V

While “OFF” status DC to DC circuit is not activity.

## 1.3 DC to DC circuit

IC610 is used generate the system power. It have built in 2 channel PWM controller to provide two voltage output.

One (5V) is provide panel Vcc and 2.5V regulator input.

The other (3.3V) is provide the Scaler and MCU power.

## 1.4 Panel Vcc control

Panel power control used Q301 and IC301 from IC102 (pin19) PANELVCC_CTL.

While the PANELVCC_CTL stay at High level ;the panel voltage is 5V.

While the PANELVCC_CTL stay at Low level ;the panel voltage is 0V.

# 2 Microprocessor Control circuit

## 2.1 clock circuit

The X101 is crystal ;it generates an 12M Hz output for microprocessor.

## 2.2 I2C buses

IC102 (pin 40) SDA Serial data

IC102 (pin 39) SCL Serial clock

This is I2C serial communication bus and is used for READ or WRITE data communication of IC101 and IC401.

## 2.3 General-purpose port

### 2.3.1 Key scan status

IC102 pin2 is for OSD “Menu” adjust

IC102 pin3 is for OSD “Select” adjust

IC102 pin4 is for OSD “Up” adjust

IC102 pin5 is for OSD “Down” adjust

### 2.3.2 Scaler control

IC102 pin14 (I/O) for scaler interrupt signal

IC102 pin 30 output scaler reset signal

### 2.3.3 LED control

IC102 pin 42 control Q102 for Green LED lit.

IC102 pin 43 control Q101 for RED LED lit.

### 2.3.4 Data memory

The display control data are held by the EEPROM(IC101); These display control data are accessed through the I2C bus of the MCU.,

## 3 Scaler

The scaler IC (IC401) is controlled by MCU through the I2C bus.

IC401 embeded the ADC provide with the analog interface input.

X401 output 25M Hz fed to IC401.

IC202 schmitt trigger for sync.waveform processor. And fed to IC401 for mode detect.

# REPLACEMENT PARTS LIST

The components specified for Model E55LCD

| SYMBOL | Part No for NPG | Part No for NMV | DESCRIPTION |
|---|---|---|---|
| *** ICS *** | | | |
| IC101 | EHA10081 | 79PQ5015 | IC SMD 24LC16B SO8 |
| IC102 | EHA10251 | 79PQ5019 | IC NT68F631L MCU8BIT128K |
| IC201 | EHA10091 | 79PQ5016 | IC SMD 24LC21 SO8 |
| IC202 | EH160011 | 79EN0550 | IC FTTL 74F14SJ SO |
| IC401 | EHA10061 | 79PQ5013 | IC SMD SAA6713AH SCALER |
| IC402 | EHA10071 | 79PQ5014 | IC SMD PJ1117CW-2.5V REGU |
| IC601 | EHA10111 | 79PQ5018 | IC SMD MB3775PF-ER A/D |
| IC602 | EHA10101 | 79PQ5017 | IC SMD 74F74 SO14 |
| IC901 | EH170021 | 79PQ5012 | IC TOP245Y HYBRID POWER |
| IC902 | EH190021 | 79EN0553 | IC PHOTO COUPLE PC123Y |
| IC921 | EH190011 | 79EN0552 | IC KIA431A-AT |
| *** TRANSISTORS *** | | | |
| IC301 | EQ500117 | 79EN0587 | FET CHIP HAT1053M |
| Q101 | EP000313 | 79EN0583 | TR CHIP 2SA1037AK-T146R |
| Q102 | EP000313 | 79EN0583 | TR CHIP 2SA1037AK-T146R |
| Q103 | EN000211 | 79EN0576 | TR CHIP NPN DTC114EUA |
| Q201 | EN000211 | 79EN0576 | TR CHIP NPN DTC114EUA |
| Q301 | EN000211 | 79EN0576 | TR CHIP NPN DTC114EUA |
| Q601 | EP000611 | 79PQ5025 | TR 2SB1424 SOT89 |
| Q602 | EN000211 | 79EN0576 | TR CHIP NPN DTC114EUA |
| Q603 | EQ500411 | 79PQ5076 | FET SMD P SI230IDS-TI |
| Q604 | EP000611 | 79PQ5025 | TR 2SB1424 SOT89 |
| Q605 | EN000211 | 79EN0576 | TR CHIP NPN DTC114EUA |
| *** DIODES *** | | | |
| BD901 | EJ000110 | 79EN0568 | DIODE D2SB60A |
| D201 | EX700216 | 79EN0596 | DIODE RB495D |
| D202 | EYD40562 | 79EN0598 | ZD CHIP UDZS5.6B TE-17 |
| D203 | EX500216 | 79EN0594 | DIODE CHIP DAN217 T146 |
| D204 | EX500216 | 79EN0594 | DIODE CHIP DAN217 T146 |
| D205 | EX500216 | 79EN0594 | DIODE CHIP DAN217 T146 |
| D211 | EX700115 | 79EN0595 | DIODE CHIP CRS01 C |
| D401 | EYE40301 | 79PQ5028 | ZD Z02W 3.0V |
| D601 | EX700411 | 79PQ5027 | DIODE SSM24 |
| D602 | EX700411 | 79PQ5027 | DIODE SSM24 |
| D603 | EYG30501 | 79PQ5029 | ZD 5V 1/2W |
| D803 | EL200110 | 79EN0573 | DIODE LED SML19460C |
| D901 | EJ300115 | 79EN0570 | DIODE SF13 |
| D902 | EJ100041 | 79PQ5021 | DI BYV26E 1A 1KV |
| D921 | EJ100030 | 79PQ5020 | DI FCQ10A06 10A 60V |

| SYMBOL | Part No for NPG | Part No for NMV | DESCRIPTION |
|---|---|---|---|
| PD901 | EJ100061 | 79PQ5022 | DI P6KE200A |

*** TRANSFORMERS ***

| | | | |
|---|---|---|---|
| T901 | HE100061 | 79PQ5061 | TRANS POWER 49A-1041 |

*** RELAYS & SWITCHES ***

| | | | |
|---|---|---|---|
| SW800 | JC300111 | 79EN0691 | SW-TACT SKQNAED010 |
| SW802 | JC300111 | 79EN0691 | SW-TACT SKQNAED010 |
| SW803 | JC300111 | 79EN0691 | SW-TACT SKQNAED010 |
| SW804 | JC300111 | 79EN0691 | SW-TACT SKQNAED010 |
| SW805 | JC300111 | 79EN0691 | SW-TACT SKQNAED010 |

*** PWB ASSYS ***

| | | | |
|---|---|---|---|
| MAINBD | AM0R22ML | 79PQ5011 | MAIN INSERT ASSY |
| POWBD | AP0R22ML | 79PQ5067 | POWER INSERT ASSY |
| SWBD | AS0R21ML | 79PQ5068 | SW INSERT ASSY |
| CNBD | AK0R21TL | 79PQ5069 | CN SMT8S9 ASSY |

*** COILS & FILTERS ***

| | | | |
|---|---|---|---|
| B901 | HC011012 | 79EN0672 | FERRITE WBRID-237555-H7S |
| B902 | HC011012 | 79EN0672 | FERRITE WBRID-237555-H7S |
| L102 | HM011011 | 79EN0677 | FERRITE BLM18AG121SN1 |
| L103 | HM011011 | 79EN0677 | FERRITE BLM18AG121SN1 |
| L104 | HM011011 | 79EN0677 | FERRITE BLM18AG121SN1 |
| L105 | HM011011 | 79EN0677 | FERRITE BLM18AG121SN1 |
| L106 | HM011011 | 79EN0677 | FERRITE BLM18AG121SN1 |
| L107 | HM011011 | 79EN0677 | FERRITE BLM18AG121SN1 |
| L108 | HM011011 | 79EN0677 | FERRITE BLM18AG121SN1 |
| L109 | HM011011 | 79EN0677 | FERRITE BLM18AG121SN1 |
| L110 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L204 | HM011011 | 79EN0677 | FERRITE BLM18AG121SN1 |
| L207 | HM011011 | 79EN0677 | FERRITE BLM18AG121SN1 |
| L208 | HM011532 | 79EN0680 | FERRITE CHIP BK2125HS431 |
| L209 | HM011532 | 79EN0680 | FERRITE CHIP BK2125HS431 |
| L301 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L302 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L303 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L401 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L402 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L403 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L404 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L405 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L406 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L407 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L601 | HA200051 | 79PQ5059 | L CHOKE 33UH |
| L602 | HA200051 | 79PQ5059 | L CHOKE 33UH |
| L603 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L604 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |

| SYMBOL | Part No for NPG | Part No for NMV | DESCRIPTION |
|---|---|---|---|
| L605 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L606 | HM012311 | 79EN0683 | FERRITE SMB160808-N1-121P |
| L901 | HA100101 | 79PQ5058 | LINE FILT 30.5MH HFZ20H03 |
| L932 | HA200071 | 79PQ5060 | L CHOKE 33UH 2A 49A-2003 |
| L933 | HA200071 | 79PQ5060 | L CHOKE 33UH 2A 49A-2003 |

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

| | | | |
|---|---|---|---|
| ACCORD | RG030031 | 79PQ5066 | PW CORD EU 2M R-PLUG GR |
| CABLE | RE010041 | 79PQ5065 | CABLE DSUB-DSUB GRAY 2M |
| F901 | JA270016 | 79EN0689 | FUSE MRT 3.15AH 250V |
| J402 | RAJ01601 | 79PQ5064 | CN SMD 60P SIDE |
| RV901 | FD300018 | 79EN0610 | VARISTOR ENE471D-10A |
| TFT | JG552011 | 79PQ5063 | TFT LM150X05-A3 LGPL |
| TH901 | FD200011 | 79EN0609 | THERMISTOR SCK103 |
| X101 | EM100031 | 79PQ5023 | X'TAL 12M HC-49/U |
| X401 | EM2K0021 | 79PQ5024 | OSC SMD FN2500002 25M 50P |

*** APPEARANCE PARTS ***

| | | | |
|---|---|---|---|
| BASEF | 17000781 | 79EN0290 | FOOT,PAD |
| BASEFP | 17000951 | 79EN0291 | FOOT PAD |
| BASES | 12300681 | 79EN0528 | SHIELD,BASE |
| BASET | 12000621 | 79EN0282 | TILT,FRAME,STAND |
| CABB | 10102971 | 79PQ5001 | CABINET BACK |
| CABI B | 11000831 | 79PQ5006 | COVER, HINGE |
| CABIB | 11000791 | 79PQ5003 | COVER, CABLE |
| CABIBA | 10102981 | 79PQ5002 | CABINET FRONT ASSY |
| TIBA | 11000821 | 79PQ5005 | TILE, BASE |
| TILT | 14900012 | 79EN0287 | HINGE UNIT |
| TILTF | 11000811 | 79PQ5004 | COVER, TILT, FRONT |
| TILTR | 11000842 | 79PQ5007 | COVER, TILT, REAR |

*** PRINTED & PACKING MATERIALS ***

| | | | |
|---|---|---|---|
| CARTON | 13202081 | 79PQ5008 | CARTON BOX E55LCD(MITSUBI |
| IDLABE | 15001781 | 79PQ5009 | RATING LABEL E55 LCD (MIT |
| MANUAL | 15501341 | 79PQ5010 | MANUAL E55 LCD (MITSUBISH |
| PABAG | 13700161 | 79EN0286 | PACKING,BAG |
| PACKL | 13400721 | 79EN0284 | POLYLON(L) |
| PACKR | 13400731 | 79EN0285 | POLYLON(R) |
| SHEETC | 15800102 | 79PQ5074 | CAUTION SHEET |
| SHEETS | 15900261 | 79PQ5075 | SALES OFFICE LIST (MITSUB |

*** RESISTORS ***

| | | | |
|---|---|---|---|
| C626 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |
| L201 | HM015011 | 79PQ5079 | BEAD SMD FCM2012C-121T06 |
| L202 | HM015011 | 79PQ5079 | BEAD SMD FCM2012C-121T06 |
| L203 | HM015011 | 79PQ5079 | BEAD SMD FCM2012C-121T06 |
| L205 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |
| L206 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |

| SYMBOL | Part No for NPG | Part No for NMV | DESCRIPTION |
|---|---|---|---|
| R101 | EP224723 | 79PQ5026 | CHIP NETWORK 1/10W(T) 5% |
| R102 | EP224723 | 79PQ5026 | CHIP NETWORK 1/10W(T) 5% |
| R103 | FM010472 | 79EN0185 | R SMD 1/10W(T) 5% 4.7K |
| R104 | FM010472 | 79EN0185 | R SMD 1/10W(T) 5% 4.7K |
| R107 | FM010472 | 79EN0185 | R SMD 1/10W(T) 5% 4.7K |
| R108 | FM010101 | 79EN0615 | R CHIP 1/10W(T) 5% 100 |
| R109 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |
| R110 | FM010101 | 79EN0615 | R CHIP 1/10W(T) 5% 100 |
| R111 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |
| R112 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |
| R113 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |
| R114 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |
| R119 | FM010472 | 79EN0185 | R SMD 1/10W(T) 5% 4.7K |
| R120 | FM010472 | 79EN0185 | R SMD 1/10W(T) 5% 4.7K |
| R121 | FM010151 | 79PQ5036 | CHIP 1/10W(T) 5% 150H |
| R123 | FM100472 | 79PQ1899 | CHIP 1/8W(T) 5% 4.7K |
| R124 | EP224723 | 79PQ5026 | CHIP NETWORK 1/10W(T) 5% |
| R126 | FM100472 | 79PQ1899 | CHIP 1/8W(T) 5% 4.7K |
| R127 | FM010472 | 79EN0185 | R SMD 1/10W(T) 5% 4.7K |
| R128 | FM010472 | 79EN0185 | R SMD 1/10W(T) 5% 4.7K |
| R129 | FM510221 | 79PQ5046 | R SMD METAL 1/3W 220H J |
| R131 | FM100103 | 79PQ1893 | CHIP 1/8W(T) 5% 10K |
| R132 | FM100472 | 79PQ1899 | CHIP 1/8W(T) 5% 4.7K |
| R134 | FM100472 | 79PQ1899 | CHIP 1/8W(T) 5% 4.7K |
| R135 | FM510221 | 79PQ5046 | R SMD METAL 1/3W 220H J |
| R140 | FM010471 | 79PQ5038 | CHIP 1/10W(T) 5% 470H |
| R204 | FM010472 | 79EN0185 | R SMD 1/10W(T) 5% 4.7K |
| R205 | FM010472 | 79EN0185 | R SMD 1/10W(T) 5% 4.7K |
| R206 | FM100101 | 79PQ1891 | CHIP 1/8W(T) 5% 100H |
| R208 | FM100101 | 79PQ1891 | CHIP 1/8W(T) 5% 100H |
| R210 | FM010473 | 79PQ5039 | CHIP 1/10W(T) 5% 47K |
| R211 | FM010473 | 79PQ5039 | CHIP 1/10W(T) 5% 47K |
| R212 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |
| R213 | FM100101 | 79PQ1891 | CHIP 1/8W(T) 5% 100H |
| R214 | FM010101 | 79EN0615 | R CHIP 1/10W(T) 5% 100 |
| R215 | FM100101 | 79PQ1891 | CHIP 1/8W(T) 5% 100H |
| R216 | FM010101 | 79EN0615 | R CHIP 1/10W(T) 5% 100 |
| R217 | FM100222 | 79EN0226 | R SMD 1/8W(T) 5% 2.2K |
| R218 | FM100222 | 79EN0226 | R SMD 1/8W(T) 5% 2.2K |
| R219 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |
| R220 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |
| R221 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |
| R302 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |
| R304 | FM100103 | 79PQ1893 | CHIP 1/8W(T) 5% 10K |
| R306 | FM010000 | 79EN0175 | R SMD 1/10W(T) 5% 0 |
| R401 | FM010472 | 79EN0185 | R SMD 1/10W(T) 5% 4.7K |
| R402 | FM010473 | 79PQ5039 | CHIP 1/10W(T) 5% 47K |
| R403 | FM100510 | 79PQ5044 | CHIP 1/8W(T) 5% 51H |

| SYMBOL | Part No for NPG | Part No for NMV | DESCRIPTION |
|---|---|---|---|
| R405 | HM014021 | 79PQ5078 | BEAD SMD FCA3216M4-301T02 |
| R406 | FM100390 | 79EN0231 | R SMD 1/8W(T) 5% 39 |
| R407 | FM100390 | 79EN0231 | R SMD 1/8W(T) 5% 39 |
| R408 | FM100270 | 79EN0228 | R SMD 1/8W(T) 5% 27 |
| R409 | HM014021 | 79PQ5078 | BEAD SMD FCA3216M4-301T02 |
| R410 | FM100123 | 79EN0223 | R SMD 1/8W(T) 5% 12K |
| R411 | HM014021 | 79PQ5078 | BEAD SMD FCA3216M4-301T02 |
| R412 | FM100390 | 79EN0231 | R SMD 1/8W(T) 5% 39 |
| R413 | FM100390 | 79EN0231 | R SMD 1/8W(T) 5% 39 |
| R414 | HM014021 | 79PQ5078 | BEAD SMD FCA3216M4-301T02 |
| R415 | FM100270 | 79EN0228 | R SMD 1/8W(T) 5% 27 |
| R416 | FM100390 | 79EN0231 | R SMD 1/8W(T) 5% 39 |
| R417 | FM100390 | 79EN0231 | R SMD 1/8W(T) 5% 39 |
| R418 | FM100270 | 79EN0228 | R SMD 1/8W(T) 5% 27 |
| R419 | HM014021 | 79PQ5078 | BEAD SMD FCA3216M4-301T02 |
| R420 | HM014021 | 79PQ5078 | BEAD SMD FCA3216M4-301T02 |
| R421 | HM014021 | 79PQ5078 | BEAD SMD FCA3216M4-301T02 |
| R422 | HM014021 | 79PQ5078 | BEAD SMD FCA3216M4-301T02 |
| R423 | FM010472 | 79EN0185 | R SMD 1/10W(T) 5% 4.7K |
| R425 | FM010151 | 79PQ5036 | CHIP 1/10W(T) 5% 150H |
| R426 | HM014021 | 79PQ5078 | BEAD SMD FCA3216M4-301T02 |
| R427 | HM014021 | 79PQ5078 | BEAD SMD FCA3216M4-301T02 |
| R428 | HM014021 | 79PQ5078 | BEAD SMD FCA3216M4-301T02 |
| R429 | HM014021 | 79PQ5078 | BEAD SMD FCA3216M4-301T02 |
| R430 | FM100330 | 79PQ5043 | R SMD METAL 1/8W 33H J |
| R432 | FM010103 | 79EN0178 | R SMD 1/10W(T) 5% 10K |
| R433 | FM100000 | 79PQ1890 | CHIP 1/8W(T) 5% 0 H |
| R434 | FM100000 | 79PQ1890 | CHIP 1/8W(T) 5% 0 H |
| R436 | FM010510 | 79PQ5040 | CHIP 1/10W(T) 5% 51H |
| R437 | FM010101 | 79EN0615 | R CHIP 1/10W(T) 5% 100 |
| R438 | FM010101 | 79EN0615 | R CHIP 1/10W(T) 5% 100 |
| R439 | FM010101 | 79EN0615 | R CHIP 1/10W(T) 5% 100 |
| R440 | FM100000 | 79PQ1890 | CHIP 1/8W(T) 5% 0 H |
| R441 | FM010510 | 79PQ5040 | CHIP 1/10W(T) 5% 51H |
| R442 | FM010472 | 79EN0185 | R SMD 1/10W(T) 5% 4.7K |
| R443 | FM010472 | 79EN0185 | R SMD 1/10W(T) 5% 4.7K |
| R601 | FM100202 | 79PQ5042 | CHIP 1/8W(T) 5% 2K |
| R602 | FM010103 | 79EN0178 | R SMD 1/10W(T) 5% 10K |
| R603 | FM100202 | 79PQ5042 | CHIP 1/8W(T) 5% 2K |
| R604 | FM100101 | 79PQ1891 | CHIP 1/8W(T) 5% 100H |
| R605 | FM100000 | 79PQ1890 | CHIP 1/8W(T) 5% 0 H |
| R606 | FM100000 | 79PQ1890 | CHIP 1/8W(T) 5% 0 H |
| R607 | FM100101 | 79PQ1891 | CHIP 1/8W(T) 5% 100H |
| R608 | FM100000 | 79PQ1890 | CHIP 1/8W(T) 5% 0 H |
| R609 | FM100000 | 79PQ1890 | CHIP 1/8W(T) 5% 0 H |
| R610 | FM100121 | 79PQ5041 | CHIP 1/8W(T) 5% 120H |
| R611 | FM100471 | 79EN0232 | R SMD 1/8W(T) 5% 470 |
| R612 | FN011651 | 79PQ5047 | CHIP 1/10W(T) 1% 1.65K |

| SYMBOL | Part No for NPG | Part No for NMV | DESCRIPTION |
|---|---|---|---|
| R613 | FN012941 | 79PQ5048 | CHIP 1/10W(T) 1% 2.94K |
| R614 | FM010393 | 79PQ5037 | CHIP 1/10W(T) 5% 39K |
| R615 | FM010333 | 79EN0183 | R SMD 1/10W(T) 5% 33K |
| R616 | FM010333 | 79EN0183 | R SMD 1/10W(T) 5% 33K |
| R617 | FM010393 | 79PQ5037 | CHIP 1/10W(T) 5% 39K |
| R618 | FM010221 | 79EN0181 | R SMD 1/10W(T) 5% 220 |
| R619 | FM010221 | 79EN0181 | R SMD 1/10W(T) 5% 220 |
| R620 | FN011001 | 79EN0159 | R SMD 1/10W(T) 1% 1K |
| R621 | FN011001 | 79EN0159 | R SMD 1/10W(T) 1% 1K |
| R622 | FM100472 | 79PQ1899 | CHIP 1/8W(T) 5% 4.7K |
| R623 | FM010471 | 79PQ5038 | CHIP 1/10W(T) 5% 470H |
| R624 | FM010471 | 79PQ5038 | CHIP 1/10W(T) 5% 470H |
| R625 | FM510102 | 79PQ5045 | R SMD METAL 1/3W 1K J |
| R626 | FM510102 | 79PQ5045 | R SMD METAL 1/3W 1K J |
| R627 | FM010471 | 79PQ5038 | CHIP 1/10W(T) 5% 470H |
| R628 | FM010221 | 79EN0181 | R SMD 1/10W(T) 5% 220 |
| R629 | FM010221 | 79EN0181 | R SMD 1/10W(T) 5% 220 |
| R634 | FM100472 | 79PQ1899 | CHIP 1/8W(T) 5% 4.7K |
| R901 | FK004091 | 79EN0614 | R METAL 1/2W(T) 5% 470K |
| R902 | FA360105 | 79PQ1849 | CARBON 1/2W/M(T) 5% 1M |
| R903 | FA360105 | 79PQ1849 | CARBON 1/2W/M(T) 5% 1M |
| R905 | FA360275 | 79PQ5031 | CARBON 1/2W/M(T) 5% 2.7M |
| R906 | FA360275 | 79PQ5031 | CARBON 1/2W/M(T) 5% 2.7M |
| R907 | FB279091 | 79PQ5035 | METAL 1/4W/M(T) 1% 9.09K |
| R908 | FA270689 | 79PQ5030 | CARBON 1/4W/M(T) 5% 6.8H |
| R921 | FA360471 | 79PQ5032 | CARBON 1/2W/M(T) 5% 470H |
| R922 | FA270102 | 79PQ1828 | CARBON 1/4W/M(T) 5% 1K |
| R924 | FB271852 | 79PQ5033 | METAL 1/4W/M(T) 1% 18.5K |
| R925 | FB274871 | 79PQ5034 | METAL 1/4W/M(T) 1% 4.87K |
| R926 | FB273302 | 79PQ1870 | METAL 1/4W/M(T) 1% 33K |

*** CAPACITORS ***

| | | | |
|---|---|---|---|
| C101 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C102 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C103 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C104 | GN310629 | 79PQ5054 | C SMD ELE85 16V 10U M |
| C105 | GM410353 | 79EN0503 | C SMD X7R/T 0.01U/50V K |
| C106 | GM410353 | 79EN0503 | C SMD X7R/T 0.01U/50V K |
| C107 | GM422052 | 79EN0509 | C SMD NPO/T 22P/50V J |
| C108 | GM422052 | 79EN0509 | C SMD NPO/T 22P/50V J |
| C109 | GM410353 | 79EN0503 | C SMD X7R/T 0.01U/50V K |
| C110 | GM410253 | 79EN0502 | C SMD X7R/T 1000P/50V K |
| C111 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C113 | GM410253 | 79EN0502 | C SMD X7R/T 1000P/50V K |
| C114 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C115 | GM410353 | 79EN0503 | C SMD X7R/T 0.01U/50V K |
| C116 | GM410253 | 79EN0502 | C SMD X7R/T 1000P/50V K |
| C117 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |

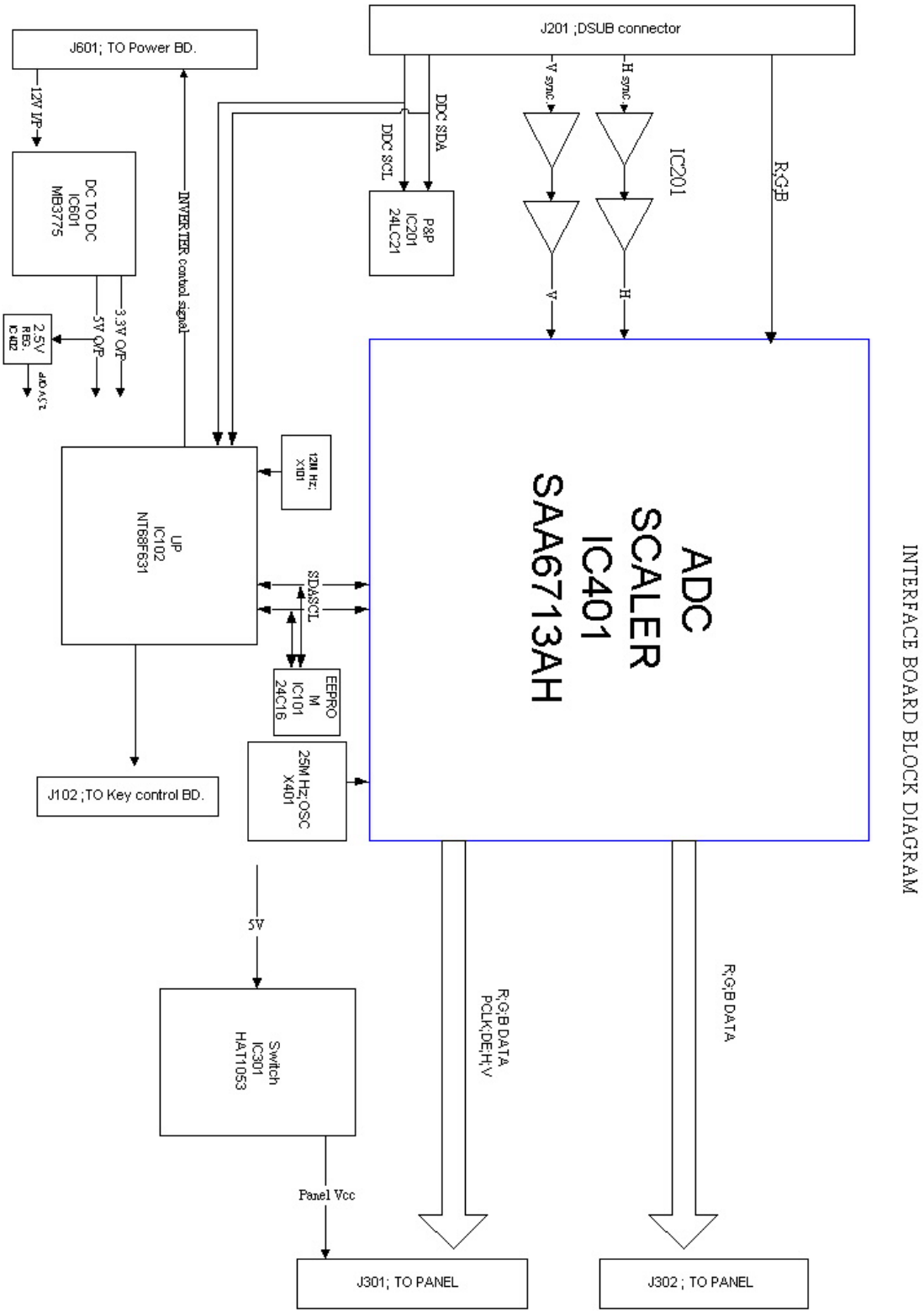
| SYMBOL | Part No for NPG | Part No for NMV | DESCRIPTION |
|---|---|---|---|
| C118 | GM410253 | 79EN0502 | C SMD X7R/T 1000P/50V K |
| C119 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C121 | GM410253 | 79EN0502 | C SMD X7R/T 1000P/50V K |
| C122 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C125 | GN310629 | 79PQ5054 | C SMD ELE85 16V 10U M |
| C204 | GM410353 | 79EN0503 | C SMD X7R/T 0.01U/50V K |
| C205 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C206 | GM410353 | 79EN0503 | C SMD X7R/T 0.01U/50V K |
| C207 | GM447052 | 79EN0660 | C CERA NPO/T 47P/50V J |
| C208 | GM447052 | 79EN0660 | C CERA NPO/T 47P/50V J |
| C301 | GN310729 | 79PQ5055 | C SMD ELE85 16V 100U M |
| C302 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C303 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C304 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C305 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C306 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C307 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C308 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C309 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C310 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C311 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C312 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C313 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C314 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C315 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C316 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C317 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C318 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C319 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C320 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C321 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C322 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C323 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C324 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C325 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C326 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C327 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C328 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C329 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C330 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C331 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C332 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C333 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C335 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C336 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C337 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C338 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C339 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |

| SYMBOL | Part No for NPG | Part No for NMV | DESCRIPTION |
|---|---|---|---|
| C340 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C341 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C342 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C343 | GM422052 | 79EN0509 | C SMD NPO/T 22P/50V J |
| C344 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C345 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C346 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C347 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C348 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C349 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C350 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C351 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C352 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C353 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C354 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C355 | GN310729 | 79PQ5055 | C SMD ELE85 16V 100U M |
| C357 | GM410353 | 79EN0503 | C SMD X7R/T 0.01U/50V K |
| C358 | GN310729 | 79PQ5055 | C SMD ELE85 16V 100U M |
| C359 | GM422052 | 79EN0509 | C SMD NPO/T 22P/50V J |
| C401 | GN347629 | 79PQ5056 | C SMD ELE85 16V 47U M |
| C402 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C403 | GX41051K | 79PQ5057 | C CERAMIC B 1U/10V K |
| C404 | GN347629 | 79PQ5056 | C SMD ELE85 16V 47U M |
| C405 | GM447152 | 79EN0514 | C SMD NPO/T 470P/50V J |
| C406 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C407 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C408 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C409 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C410 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C411 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C412 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C413 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C414 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C415 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C416 | GN347629 | 79PQ5056 | C SMD ELE85 16V 47U M |
| C417 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C418 | GM410253 | 79EN0502 | C SMD X7R/T 1000P/50V K |
| C419 | GM433323 | 79PQ5053 | C CERA X7R/T 0.033U 16V K |
| C420 | GM433323 | 79PQ5053 | C CERA X7R/T 0.033U 16V K |
| C421 | GM422353 | 79EN0511 | C SMD X7R/T 0.022U/50V K |
| C422 | GM433323 | 79PQ5053 | C CERA X7R/T 0.033U 16V K |
| C423 | GM433323 | 79PQ5053 | C CERA X7R/T 0.033U 16V K |
| C424 | GM433323 | 79PQ5053 | C CERA X7R/T 0.033U 16V K |
| C425 | GM433323 | 79PQ5053 | C CERA X7R/T 0.033U 16V K |
| C426 | GN347629 | 79PQ5056 | C SMD ELE85 16V 47U M |
| C427 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C428 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C429 | GN347629 | 79PQ5056 | C SMD ELE85 16V 47U M |

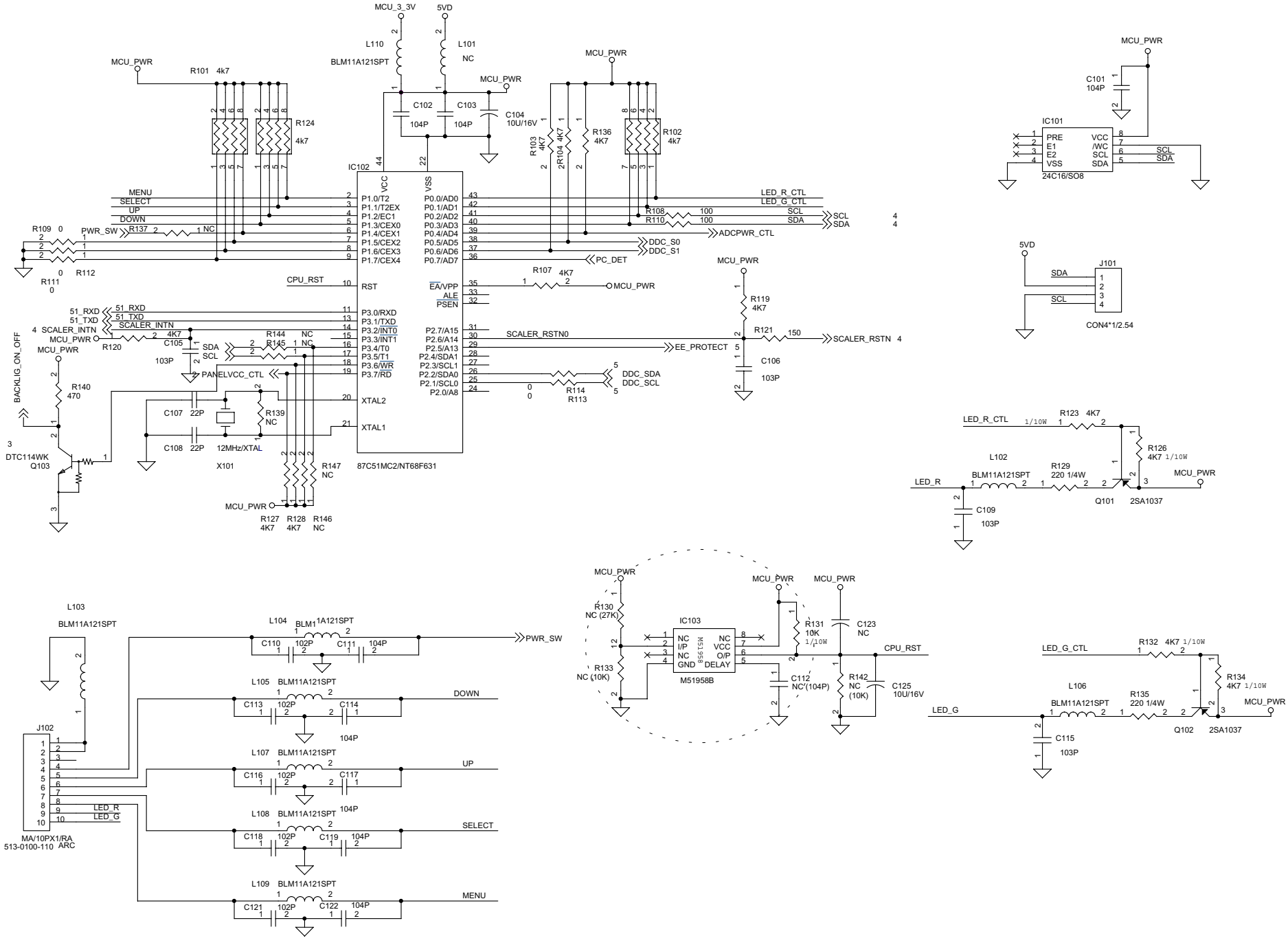
| SYMBOL | Part No for NPG | Part No for NMV | DESCRIPTION |
|---|---|---|---|
| C430 | GN347629 | 79PQ5056 | C SMD ELE85 16V 47U M |
| C431 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C432 | GM410253 | 79EN0502 | C SMD X7R/T 1000P/50V K |
| C433 | GN347629 | 79PQ5056 | C SMD ELE85 16V 47U M |
| C434 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C435 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C436 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C437 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C438 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C439 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C440 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C441 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C442 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C443 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C444 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C445 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C446 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C447 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C448 | GN347629 | 79PQ5056 | C SMD ELE85 16V 47U M |
| C449 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C450 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C451 | GM41005D | 79EN0659 | C CERA NPO/T 10P/50V D |
| C601 | GM410232 | 79EN0501 | C SMD NPO/T 1000P/25V J |
| C602 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C603 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C604 | GAM47737 | 79EN0643 | C ELE 105C/T 470U/25V M |
| C605 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C606 | GAM47737 | 79EN0643 | C ELE 105C/T 470U/25V M |
| C607 | GM410353 | 79EN0503 | C SMD X7R/T 0.01U/50V K |
| C608 | GM410353 | 79EN0503 | C SMD X7R/T 0.01U/50V K |
| C609 | GM447333 | 79EN0517 | C SMD X7R/T 0.047U/25V K |
| C610 | GM410518 | 79EN0506 | C SMD Y5V/T 1U/10V Z 0603 |
| C611 | GM410518 | 79EN0506 | C SMD Y5V/T 1U/10V Z 0603 |
| C612 | GM447333 | 79EN0517 | C SMD X7R/T 0.047U/25V K |
| C613 | GAY00041 | 79PQ5077 | C ELECT 105C/T 470U/25V |
| C614 | GM410353 | 79EN0503 | C SMD X7R/T 0.01U/50V K |
| C617 | GN310629 | 79PQ5054 | C SMD ELE85 16V 10U M |
| C618 | GN310629 | 79PQ5054 | C SMD ELE85 16V 10U M |
| C619 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C621 | GNM10728 | 79EN0663 | C ELE 105C 100U/16V M |
| C622 | GAM47737 | 79EN0643 | C ELE 105C/T 470U/25V M |
| C623 | GM410353 | 79EN0503 | C SMD X7R/T 0.01U/50V K |
| C624 | GM410353 | 79EN0503 | C SMD X7R/T 0.01U/50V K |
| C625 | GM410253 | 79EN0502 | C SMD X7R/T 1000P/50V K |
| C631 | GM422052 | 79EN0509 | C SMD NPO/T 22P/50V J |
| C632 | GM422052 | 79EN0509 | C SMD NPO/T 22P/50V J |
| C633 | GM410423 | 79EN0504 | C SMD X7R/T 0.1U/16V K |
| C902 | GJ033417 | 79PQ5051 | C SAFETY-X 0.33U/275V M |

| SYMBOL | Part No for NPG | Part No for NMV | DESCRIPTION |
|---|---|---|---|
| C903 | GJC22285 | 79EN0656 | C SAFETY Y/D 2200P/250V M |
| C904 | GJC22285 | 79EN0656 | C SAFETY Y/D 2200P/250V M |
| C905 | GAY00010 | 79PQ5049 | C ELE105 100U 400V M HITA |
| C906 | GB7103H3 | 79PQ1746 | CERAMIC Y5P(B)/T0.01U/1KV |
| C907 | GA310555 | 79PQ0196 | ELECT 85°C/T 1U/50V M |
| C908 | GF210452 | 79PQ0752 | MEF CAP BOX 0.1U/50V J |
| C909 | GA347655 | 79PQ1267 | C,ELEC 47UF 50V M |
| C910 | GJC33285 | 79PQ5052 | C SAFETY Y/D 3300P/250V M |
| C911 | GB7103H3 | 79PQ1746 | CERAMIC Y5P(B)/T0.01U/1KV |
| C912 | GB210458 | 79PQ0228 | CERAMIC Y5V/T 0.1U/50V Z |
| C921 | GAM68737 | 79EN0644 | C ELE 105C/T 680U/25V M |
| C922 | GAM68737 | 79EN0644 | C ELE 105C/T 680U/25V M |
| C923 | GF233252 | 79PQ5050 | MEF CAP BOX 0.0033U/50V J |
| C924 | GF210452 | 79PQ0752 | MEF CAP BOX 0.1U/50V J |
| C932 | GAM22737 | 79EN0642 | C ELE 105C/T 220U/25V M |
| C933 | GAM22737 | 79EN0642 | C ELE 105C/T 220U/25V M |
| C935 | GB210458 | 79PQ0228 | CERAMIC Y5V/T 0.1U/50V Z |
| C936 | GB210458 | 79PQ0228 | CERAMIC Y5V/T 0.1U/50V Z |
| C937 | GB210458 | 79PQ0228 | CERAMIC Y5V/T 0.1U/50V Z |

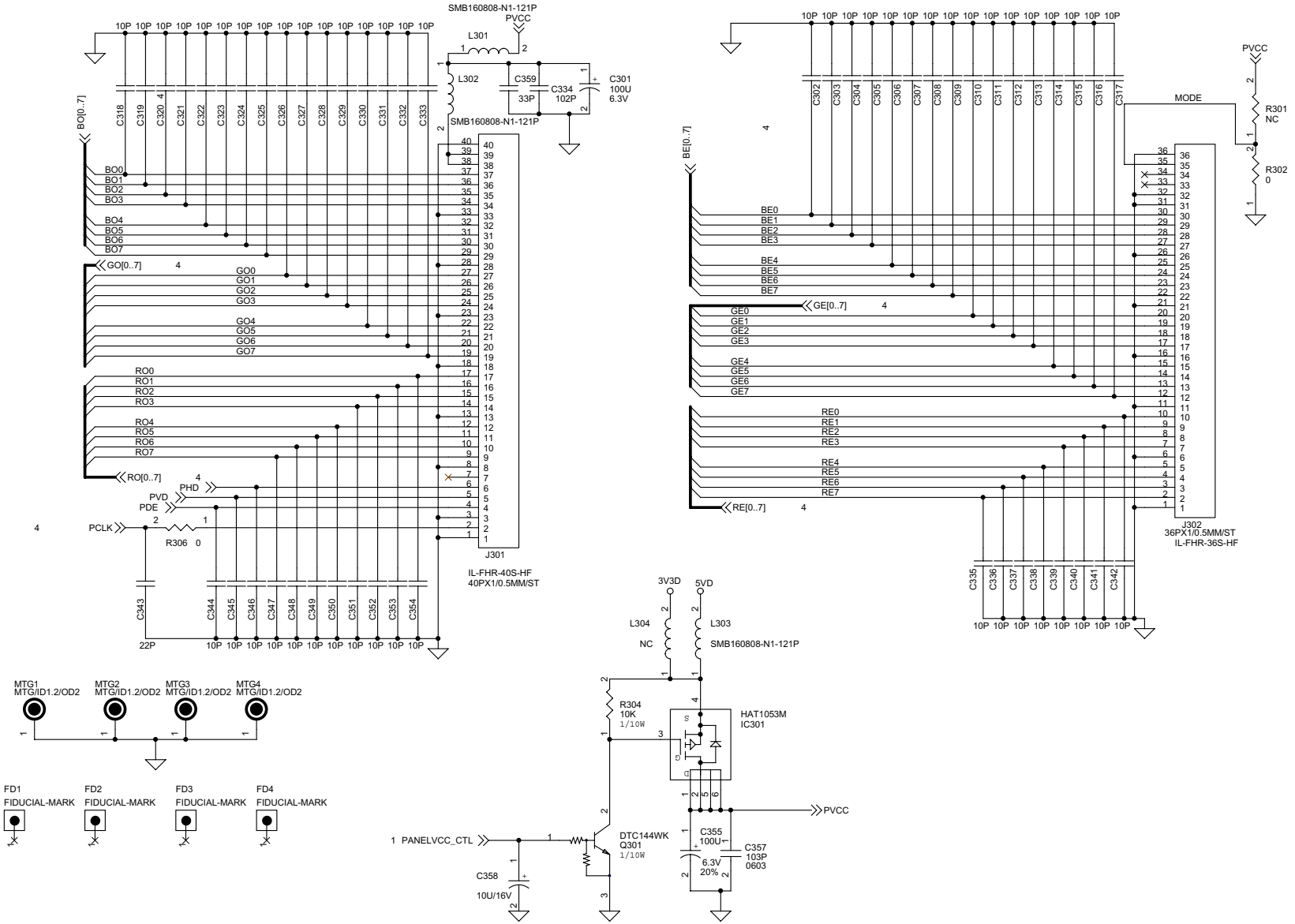
# BLOCK DIAGRAM



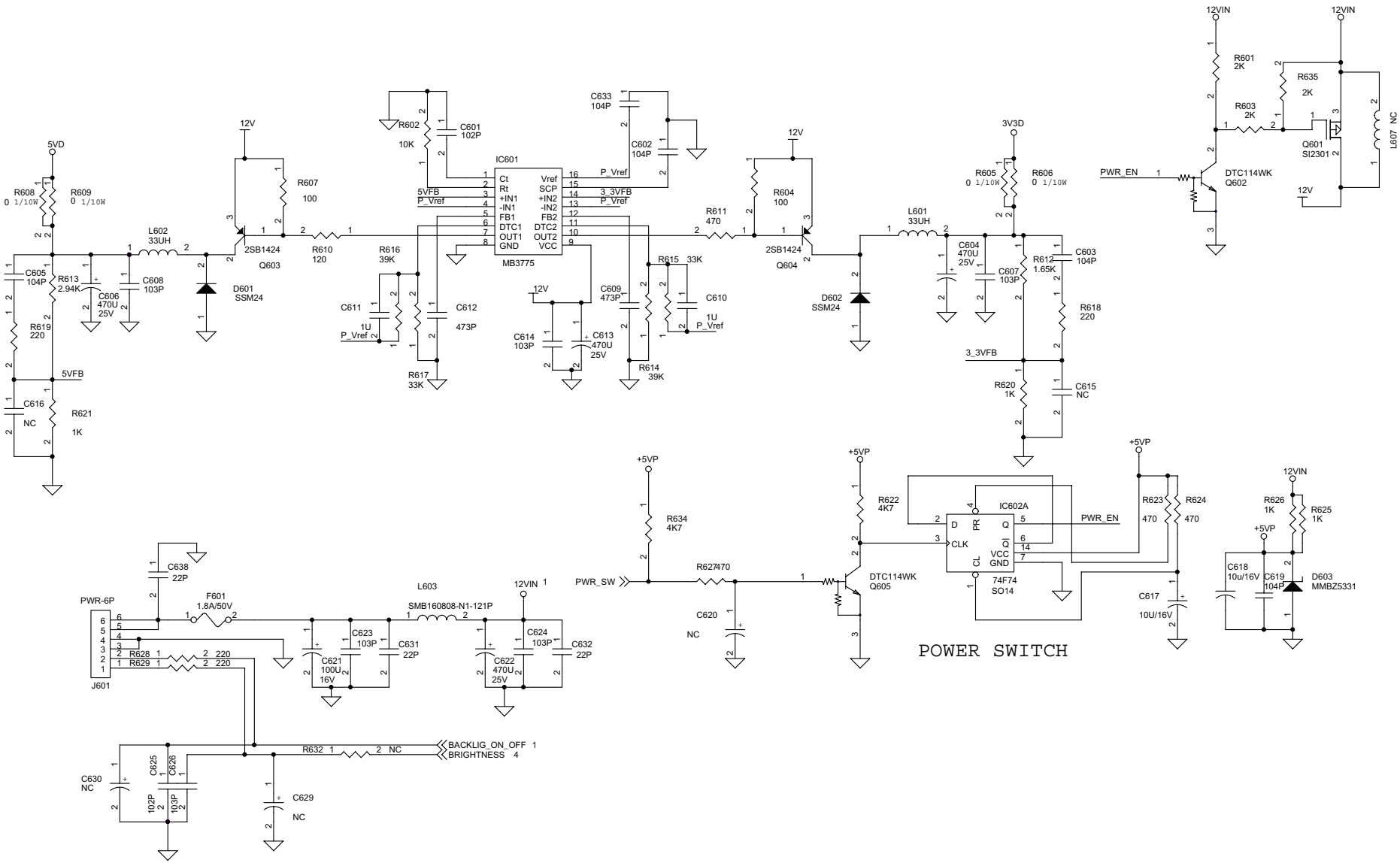
# SCHEMATIC DIAGRAM MAIN PWB (CPU) (1/5)



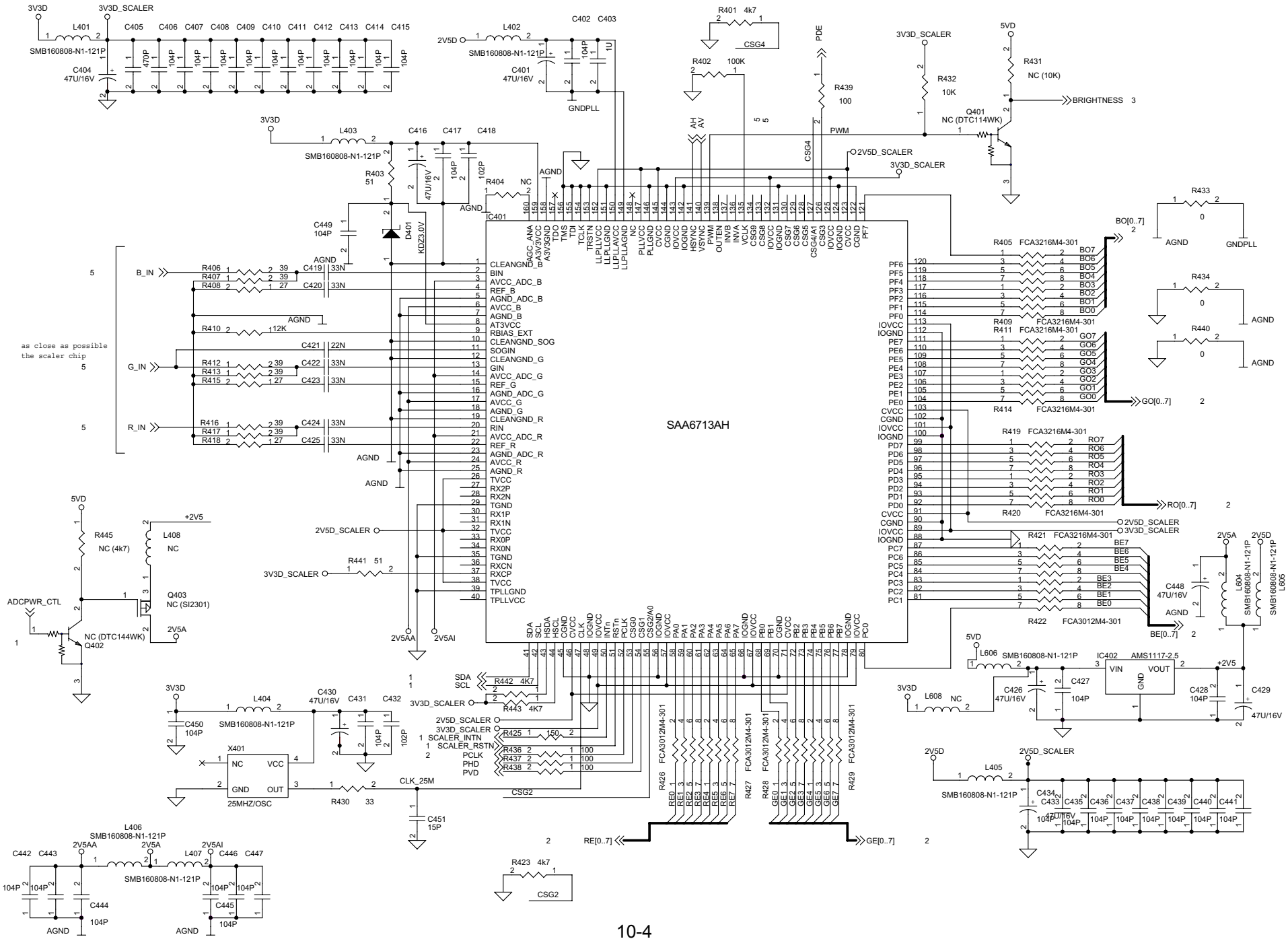
# SCHEMATIC DIAGRAM MAIN PWB (PANEL_INTERFACE) (2/5)



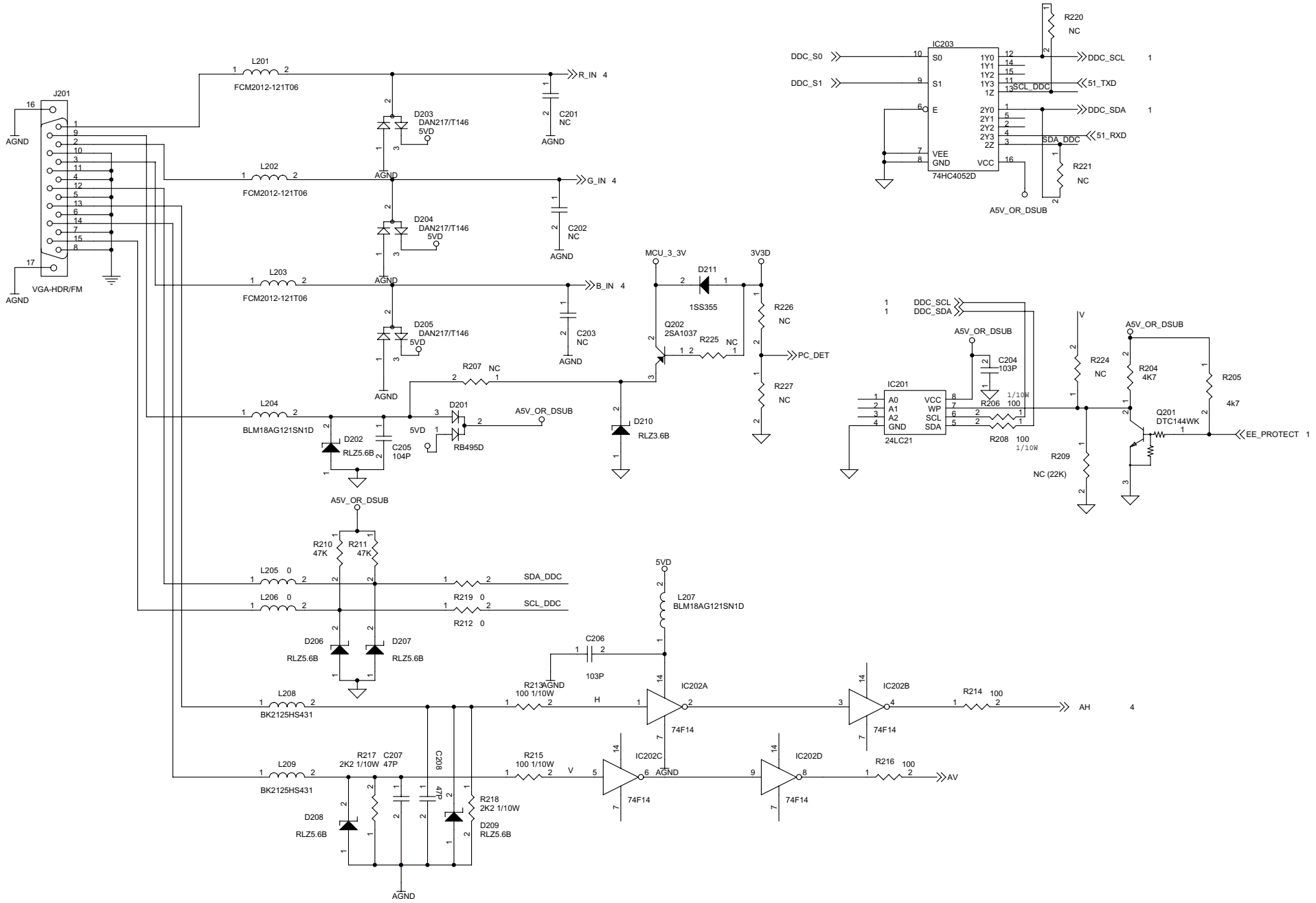
# SCHEMATIC DIAGRAM MAIN PWB (POWER) (3/5)



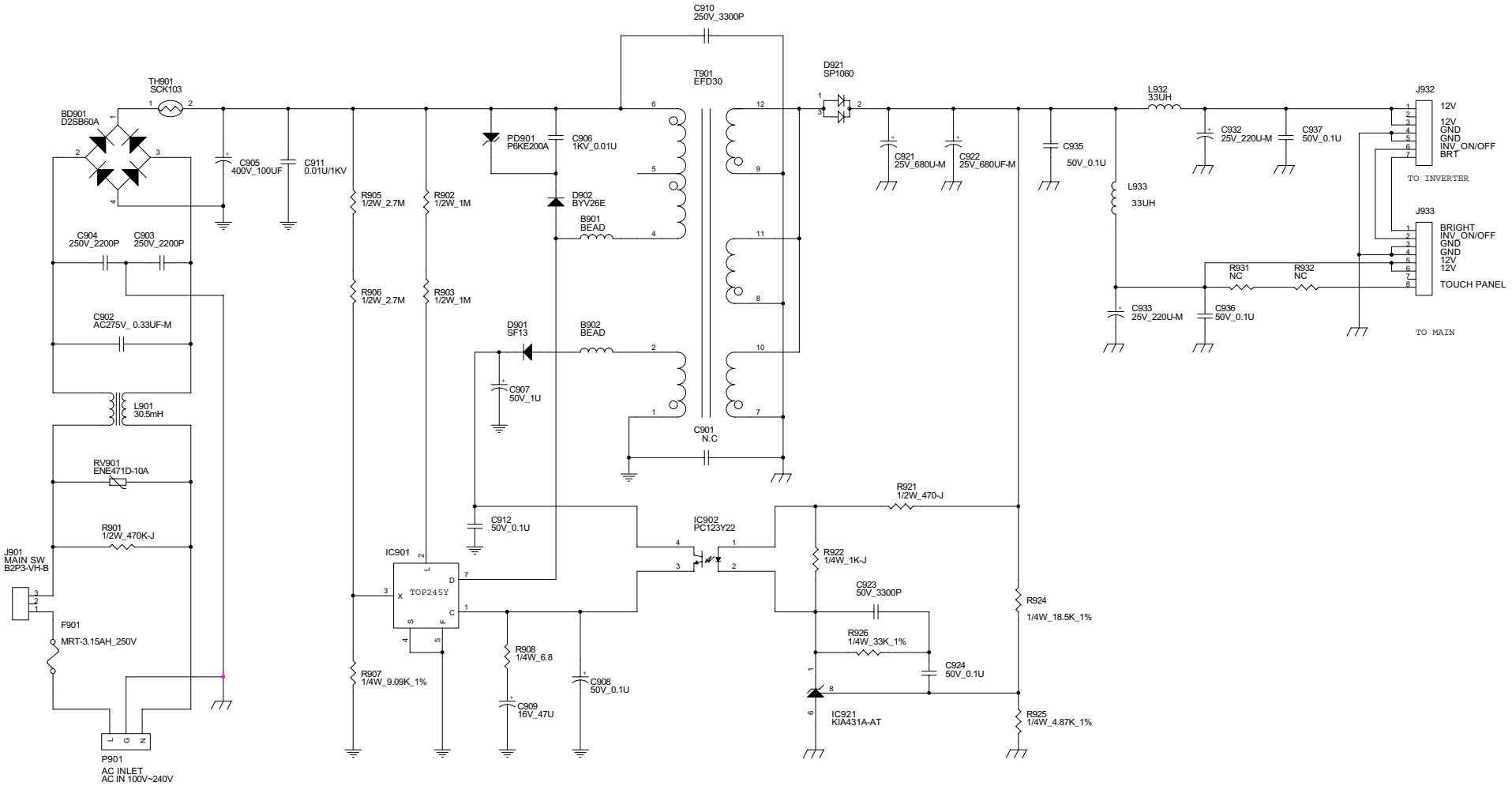
# SCHEMATIC DIAGRAM MAIN PWB (SCALAR) (4/5)



# SCHEMATIC DIAGRAM MAIN PWB (VGA INPUT) (5/5)



# SCHEMATIC DIAGRAM POWER PWB (1/1)



# SCHEMATIC DIAGRAM INVERTER (1/1)