NEC

PART NO. 599910514

SERVICE MANUAL

COLOR MONITOR **MultiSync® LCD1525V**

MODELS LCD1525V (A) / (B)

This models changes an original model (LA-1527HMW (A) / (B) : product made from NEC) into the product made from LITE-ON.

When the factory mark of a serial bar code label is "C", it is an original model, and when a factory mark is "U", it is a model made from Lite-ON.

Refer to page 2-1 SERIAL NUMBER INFORMATION.

- LA-1527HMW: Factory mark: C
  Maintenance is performed by the original service manual (Part No.599910487).
- LCD1525V : Factory mark: U
  Maintenance is performed using this service manual.

NEC Corporation

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08109388
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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 code.

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

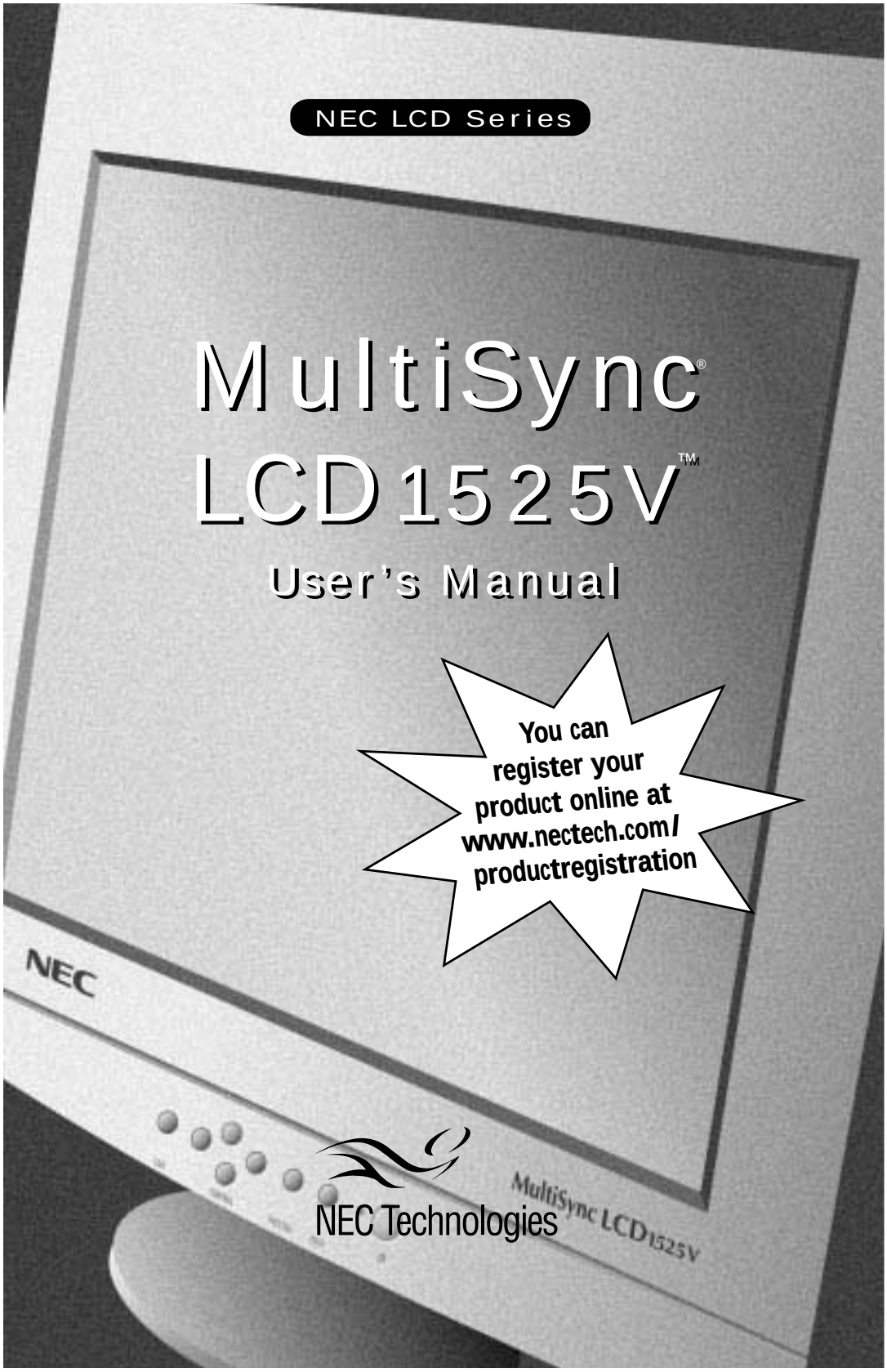
1. When parts replacement is required for servicing, always use the manufacturer's specified replacement.
2. When replacing the component, always be certain that all the components are put back in the place.
3. As for a connector, pick and extract housing with fingers properly since a disconnection and 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

Only the point is mentioned

1. A Version



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.

Canadian Department of Communications Compliance Statement

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

C-UL: Bears the C-UL Mark and is in compliance with Canadian Safety Regulations according to C.S.A. C22.2 No. 950.

FCC Information

1. Use the attached specified cables with the LCD1525V color monitor so as not to interfere with radio and television reception.
   (1) Please use the supplied power cable or equivalent to ensure FCC compliance.
   (2) Please use the supplied AC Adapter (#UP06051120).
   (3) 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.

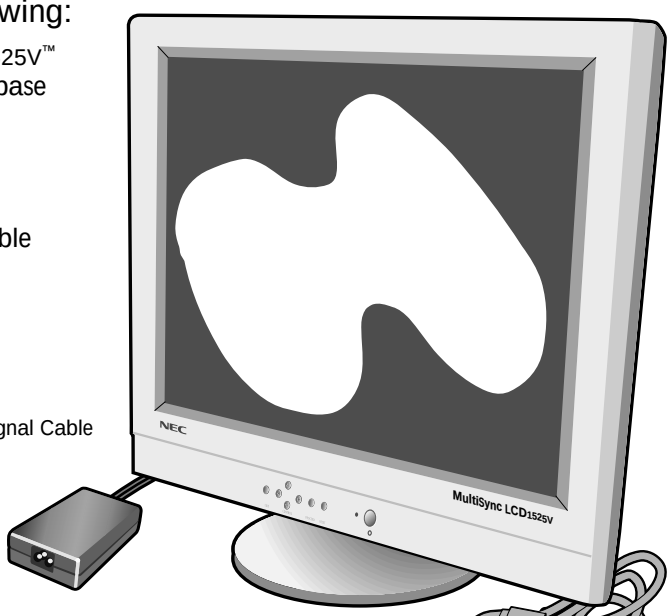
If necessary, the user should contact the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet, prepared by the Federal Communications Commission, helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is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

Contents

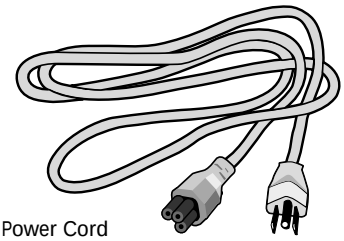
You can register your product online at www.nectech.com/productregistration

Your new NEC Technologies MultiSync® LCD monitor box* should contain the following:

- MultiSync LCD1525V™ monitor with tilt base
- Power Cord
- AC Adapter (#UP06051120)
- Video Signal Cable
- User's Manual



MultiSync LCD1525V monitor with Video Signal Cable and AC Adapter



Power Cord

User's Manual

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

Quick Start

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

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

   For the Mac: Connect the MultiSync LCD1525V™ Macintosh cable adapter to the computer **(Figure B.1)**. Attach the 15-pin mini D-SUB end of the appropriate signal cable to the MultiSync LCD1525V Macintosh cable adapter **(Figure B.1)**. Tighten all screws.

NOTE: To obtain the MultiSync LCD1525V Macintosh cable adapter, call NEC Technologies at (800) 820-1230.

Remove connector cover and cable cover on back of monitor.

3. Connect the 15-pin mini D-SUB of the video signal cable to the appropriate connector on the back of the monitor **(Figure C1)**.

   Place the Video Signal Cable under Clip A. Then place AC Adapter Cable under Clip B.

   Replace connector cover and cable 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. Connect one end of the power cord to the MultiSync LCD Series monitor and the other end to the power outlet **(Figure D.1)**.
5. Turn on the monitor **(Figure E.1)** and the computer.
6. To complete the setup of your MultiSync LCD monitor, use the following OSM™ controls:
   - Auto Adjust Contrast
   - Auto Adjust

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

NOTE: For download information on the Windows® 95/98 INF file for your MultiSync LCD**1525V** monitor, refer to the **References** section of this User's Manual.

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

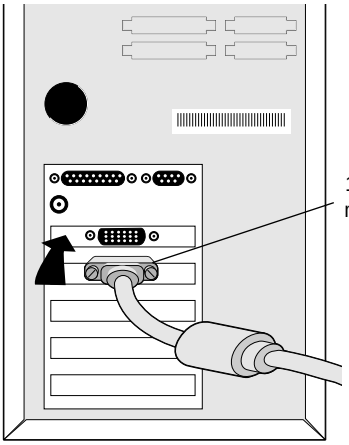


Figure A.1

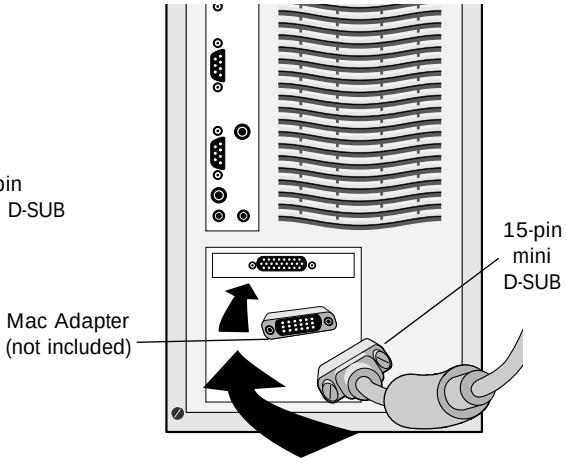
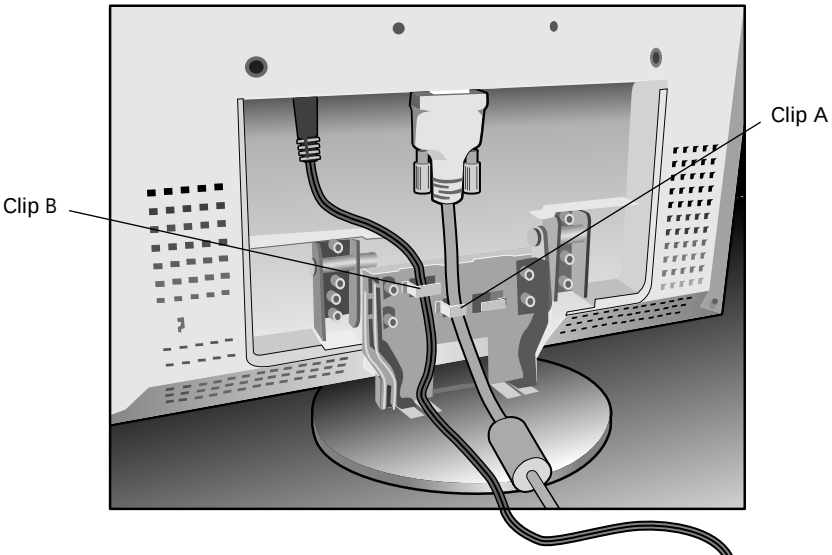


Figure B.1

Quick Start cont.

Figure C.1



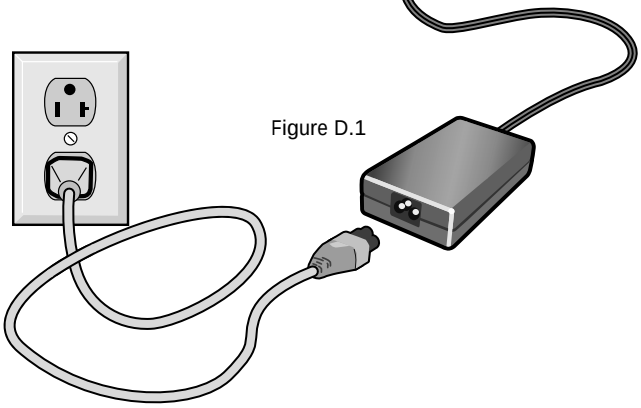


Figure D.1

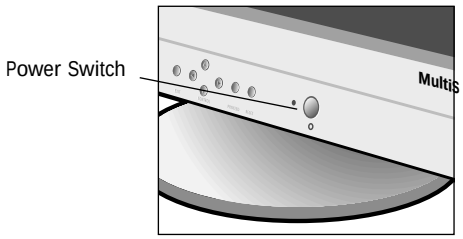


Figure E.1

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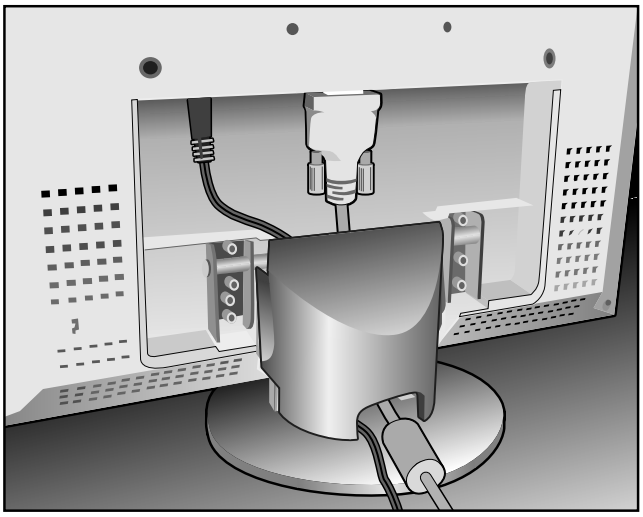
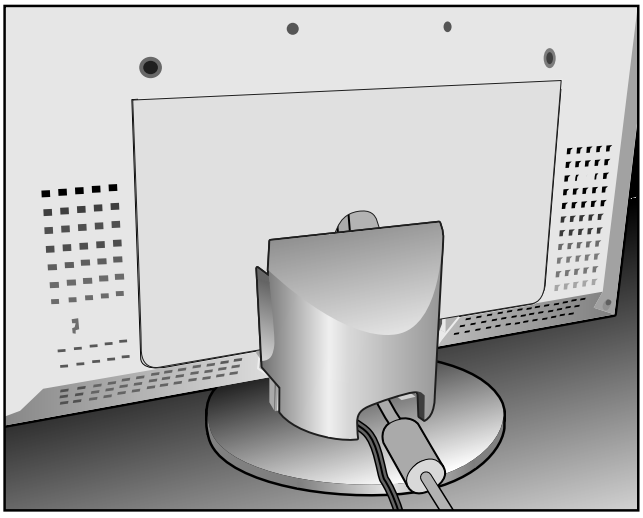
Quick Start cont.





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Controls

OSM™ (On-Screen-Manager) Controls

The OSM controls on the front of the monitor function as follows:

Control	Main Menu	Sub-Menu
EXIT	Exits the OSM controls.	Exits to the OSM controls main menu.
CONTROL ▲ / ▼	Moves the highlighted area up/down to select one of the controls.	Moves the highlighted area up/down to select one of the controls.
CONTROL ◄ / ►	Moves the highlighted area left/right to select control menus.	Moves the bar left/right to increase or decrease the adjustment.
PROCEED	Has no function.	Activates Auto Adjust feature. In Tool and Information Mode, opens additional window.
RESET: The currently highlighted control to the factory setting.	Resets all the controls within the highlighted menu.	Resets the highlighted control.

NOTE: When RESET is pressed, a warning window will appear allowing you to cancel the reset function.

Brightness and Contrast

Brightness: Adjusts the overall image and background screen brightness.
Contrast: Adjusts the image brightness in relation to the background.
Auto Adjust: Corrects the image displayed for non-standard video inputs.

AUTO Auto Adjust

Automatically adjusts the Position and H. Size and fine settings.

Position

Controls horizontal and vertical image position within the display area of the LCD.

Auto Adjust: Automatically sets the horizontal and vertical image position within the display area of the LCD.

Image Adjust

H.SIZE: Adjusts the horizontal size by increasing or decreasing this setting.

Fine: Improves focus, clarity and image stability by increasing or decreasing the Fine setting.

Auto Adjust: Automatically adjusts the H. Size or Fine settings.

Controls cont.

AccuColor® Control System

Five color presets select the desired color setting. If a setting is adjusted, the name of the setting will change to Custom.

Color Gain (Red, Green, Blue): Increases or decreases Red, Green or Blue color depending upon which is selected. The change in color will appear on screen and the direction (increase or decrease) will be shown by the color bars.

Tools

Language: OSM control menus are available in seven languages.

OSM™ Position: You can choose where you would like the OSM control image to appear on your screen. Selecting OSM Location allows you to manually adjust the position of the OSM control menu left, right, up or down.

OSM Turn Off: The OSM control menu will stay on as long as it is in 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 10, 20, 30, 60 and 120 seconds.

OSM Lock Out: This control completely locks out access to all OSM control functions. When attempting to activate OSM controls while in the Lock Out mode, a screen will appear indicating the OSM controls are locked out. To activate the OSM Lock Out function, press PROCEED, then ▲ and hold down simultaneously. To de-activate the OSM Lock Out, press PROCEED, then ▲ and hold down simultaneously.

Factory Preset: Selecting Factory Preset allows you to reset all OSM control settings back to the factory settings. The RESET button will need to be held down for several seconds to take effect. Individual settings can be reset by highlighting the control to be reset and pressing the RESET button.

Resolution Notifier: This optimal resolution is 1024 x 768. If ON is selected, a message will appear on the screen after 2 minutes, notifying you that the resolution is not at 1024 x 768.

Information

Display Mode: Provides information about the current resolution display and technical data including the preset timing being used and the horizontal and vertical frequencies.

Recommended Use

Safety Precautions and Maintenance

FOR OPTIMUM PERFORMANCE, PLEASE NOTE THE FOLLOWING WHEN SETTING UP AND USING THE MULTISYNC® LCD COLOR 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.
- When operating the MultiSync LCD monitor with its AC 220-240V power supply, use a power supply cord that matches the power supply voltage of the AC power outlet being used. The power supply cord you use must have been approved by and comply with the safety standards of your country. (Type HOSVV-F should be used in UK)
- Use supplied AC Adapter. Do not place any objects onto the AC Adapter and do not use the AC Adapter 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.
- In UK, use a BS-approved power cord with molded plug having a black (5A) fuse installed for use with this monitor. If a power cord is not supplied with this monitor, please contact your supplier.

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

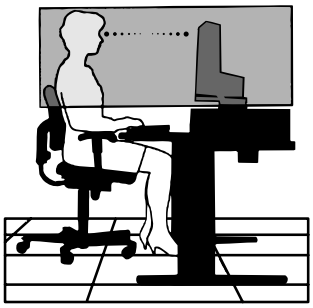
- When the power supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the monitor.
- If the monitor has been exposed to rain or water.
- If the monitor has been dropped or the cabinet damaged.
- If the monitor does not operate normally by following operating instructions.

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.

Recommended Use cont.

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 16 inches and no further away than 28 inches from your eyes. The optimal distance is 21 inches.
- Rest your eyes periodically by focusing on an object at least 20 feet away. Blink often.
- Position the monitor at a 90° angle to windows and other light sources to minimize 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 realize the maximum ergonomics benefits, we recommend the following:

- Adjust the Brightness until the background raster disappears
- Do not position the Contrast control to its maximum setting
- Use the preset Size and Position controls with standard signals
- Use the preset Color Setting
- Use non-interlaced signals with a vertical refresh rate between 60-75Hz
- Do not use primary color blue on a dark background, as it is difficult to see and may produce eye fatigue to insufficient contrast

For more detailed information on setting up a healthy work environment, call NEC at (800) 820-1230, NEC FastFacts™ information at (630) 467-4363 and request document #900108 or write the American National Standard for Human Factors Engineering of Visual Display Terminal Workstations – ANSI-HFS Standard No. 100-1988 – The Human Factors Society, Inc. P.O. Box 1369, Santa Monica, California 90406.

Specifications

Monitor Specifications		MultiSync® LCD1525V™ Monitor	Notes
LCD Module	Diagonal:	15.1 inch	Active matrix; thin film transistor (TFT)
	Viewable Image Size:	15.1 inch	liquid crystal display (LCD); 0.30 mm dot
	Native Resolution (Pixel Count):	1024 x 768	pitch; 200cd/m² white luminence;
			200:1 contrast ratio, typical
Input Signal	Video:	ANALOG 0.7 Vp-p/75 Ohms	
	Sync:	Separate sync. TTL Level	
		Horizontal sync. Positive/Negative	
		Vertical sync. Positive/Negative	
Display Colors	Analog input:	16,194,277 colors with dithering	Depends on display card used.
Viewing Angle	Left/Right:	± 55°	
	Up/Down:	40°	
Synchronization	Horizontal:	24.8 kHz to 60.0 kHz	Automatically
Range	Vertical:	56.2 Hz to 75.0 Hz	Automatically
Resolutions Supported		720 x 400* VGA text	Some systems may not support
Resolution based on horizontal and		640 x 480* at 60 Hz to 75 Hz	all modes listed.
vertical frequencies only		800 x 600* at 56 Hz to 75 Hz	
		1024 x 768 at 60 Hz to 75 Hz	NEC cites recommended resolution at
			75 Hz for optimal display performance.
Active Display Area	Horizontal:	307 mm/12.1 inches	Dependent upon signal timing used,
	Vertical:	230 mm/9.1 inches	and does not include border area.
Power Supply		AC 100 – 240 V @ 50/60 Hz	
Current Rating		0.6 A @ 100 – 120 V/0.3 A @ 220 – 240 V	
Dimensions		370 mm (W) x 325 mm (H) x 151 mm (D)	
		14.6 inches (W) x 12.8 inches (H) x 5.9 inches (D)	
Weight		4.1 kg	
		9.1 lbs	
Environmental Considerations			
	Operating Temperature:	5°C to 35°C/41°F to 95°F	
	Humidity:	30% to 80%	
	Feet:	0 to 10,000 Feet	
	Storage Temperature:	-10°C to +60°C/14°F to 140°F	
	Humidity:	10% to 85%	
	Feet:	0 to 45,000 Feet	

* Interpolated Resolutions: When resolutions are shown that are lower than the pixel count of the LCD module, text may appear different. This is normal and necessary for all current flat panel technologies when displaying non-native resolutions full screen. In flat panel technologies, each dot on the screen is actually one pixel, so to expand resolutions to full screen, an interpolation of the resolution must be done.

NOTE: Technical specifications are subject to change without notice.

Features

Wider Compatibility: Because the MultiSync® LCD monitor is analog through and through, it does not require special analog to digital display or interface cards but can accept RGB input directly.

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.

AccuColor® Control System: Allows you to adjust the colors on your screen and customize the color accuracy of your monitor to a variety of standards.

OSM™ (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 OSM controls for quick and easy image adjustments, tilt base for preferred angle of vision, small footprint and compliance with MPRII guidelines for lower emissions.

Plug and Play: The Microsoft® solution with the Windows®95/98 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.

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.
- Power Switch and computer power switch should be in the ON position.
- 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.)
- 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 Technologies 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 OSM Image Adjust controls to focus and adjust display by increasing or decreasing the fine total. When the display mode is changed, the OSM Image Adjust settings may need to be re-adjusted.
- Check the monitor and your display card with respect to compatibility and recommended signal timings.

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

- Power Switch should be in the ON position and power cord should be connected.
- Make certain the computer is not in a power-saving mode (touch the keyboard or mouse).

Display image is not sized properly

- Use the OSM 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.)

Selected resolution is not displayed properly

- Use OSM Display Mode to enter Mode Change sub-menu and confirm that the appropriate resolution has been selected. If not, select corresponding option.

References

- **BBS** **(978) 742-8706**

  NEC Technologies' Remote Bulletin Board System is an electronic service accessible with your system and a modem. Communication parameters are: 300/1200/2400/9600/14.4k/28.8k/33.6k bps, no parity, 8-data bits, 1 stop bit

- **Customer Service/ Technical Support** **(800) 632-4662**
  Fax **(978) 635-7049**

- **Electronic Channels:**

  Internet e-mail: tech-support@nectech.com
  Internet ftp site: ftp.nectech.com
  World Wide Web: http://www.nectech.com
  Product Registration: http://www.nectech.com/productregistration
  Windows® 95/98 INF File: http://cssweb.nectech.com/common/drivers.htm then download the file NECMSINF.ZIP.

- **FastFacts™ Information** **(630) 467-4363**

INFORMATION	DESCRIPTION	DOCUMENT #
Glossary	Definition of terms related to functions, features and installation of the MultiSync monitor	900203
More Information	Names and addresses of other groups involved in standards and features of the MultiSync monitor	900204
Macintosh Connection	Detailed information on connecting the MultiSync monitor to a Macintosh	153006
Healthy Work Environment	Detailed information on setting up a healthy work environment	900108

- **Literature & Sales Info** **(800) NEC-INFO [(800) 632-4636]**
- **MultiSync Fulfillment** **(800) 820-1230**
  [For software & accessories]
- **TeleSales** **(800) 284-4484**

Limited Warranty

NEC Technologies, Inc. (hereinafter "NECTECH"), warrants this Product to be free from defects in material and workmanship and, subject to the conditions set forth below, agrees to repair or replace (at NECTECH's sole option) any part of the enclosed unit which proves defective for a period of three (3) years from the date of first consumer purchase. Spare parts are warranted for ninety (90) days. Replacement parts or units may be new or refurbished and will meet specifications of the original parts or unit.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. This warranty is limited to the original purchaser of the Product and is not transferable. This warranty covers only NECTECH-supplied components. Service required as a result of third party components is not covered under this warranty. In order to be covered under this warranty, the Product must have been purchased in the U.S.A. or Canada by the original purchaser. This warranty only covers Product distribution in the U.S.A. or Canada by NECTECH. No warranty service is provided outside of the U.S.A. or Canada. Proof of Purchase will be required by NECTECH to substantiate date of purchase. Such proof of purchase must be an original bill of sale or receipt containing name and address of seller, purchaser, and the serial number of the product.

It shall be your obligation and expense to have the Product shipped, freight prepaid, or delivered to the authorized reseller from whom it was purchased or other facility authorized by NECTECH to render the services provided hereunder in either the original package or a similar package affording an equal degree of protection. All Products returned to NECTECH for service MUST have prior approval, which may be obtained by calling 1-800-632-4662.

The Product shall not have been previously altered, repaired, or serviced by anyone other than a service facility authorized by NECTECH to render such service, the serial number of the product shall not have been altered or removed. In order to be covered by this warranty the Product shall not have been subjected to displaying of fixed images for long periods of time resulting in image persistence (afterimage effects), accident, misuse or abuse or operated contrary to the instructions contained in the User's Manual. Any such conditions will void this warranty.

NECTECH SHALL NOT BE LIABLE FOR DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR OTHER TYPES OF DAMAGES RESULTING FROM THE USE OF ANY NECTECH PRODUCT OTHER THAN THE LIABILITY STATED ABOVE. THESE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR THE LIMITATION OR EXCLUSION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE ABOVE EXCLUSIONS OR LIMITATIONS MAY NOT APPLY TO YOU.

This Product is warranted in accordance with the terms of this limited warranty. Consumers are cautioned that Product performance is affected by system configuration, software, the application, customer data, and operator control of the system, among other factors. While NECTECH Products are considered to be compatible with many systems, specific functional implementation by the customers of the Product may vary. Therefore, suitability of a Product for a specific purpose or application must be determined by consumer and is not warranted by NECTECH.

For the name of your nearest authorized NECTECH service facility, contact NECTECH at 1-800-632-4662.

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-

TCO'99 cont.

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

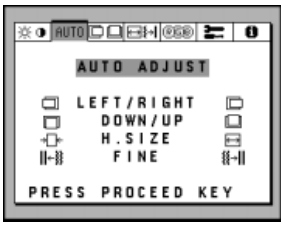
You may also obtain current information on TCO'99 approved and labelled products by visiting their website at: http://www.tco-info.com/

NEC Technologies, Inc. MultiSync® LCD1525V™
Setup instructions for Windows® 95/98 & NT Computers

For Optimal Performance the MultiSync LCD1525V should be set up for 1024x768 @ 75Hz.

Once you have booted up your computer and have entered Windows, please follow the instructions below to fully optimize your MultiSync LCD monitor.

Step 1 Auto Adjust your MultiSync LCD monitor.



- Display a white background with a bright image at full page setting on the monitor, using such applications as Microsoft® Word, Excel or Paintbrush.
- To begin the setup/adjustment of the NEC MultiSync LCD1525V monitor, push the **Proceed** button on the front bezel of the monitor to bring up the NEC ***On Screen Manager***.
- Press the right arrow to highlight the **"AUTO"** tab and to select the **"AUTO ADJUST"** menu in green.
- Press the **"PROCEED"** button to initiate the ***Auto Adjust*** Function (This function will take a few seconds to be completed).
- Press **EXIT** to close the OSM™ menu.

(Proceed to Step 2.)
see reverse side

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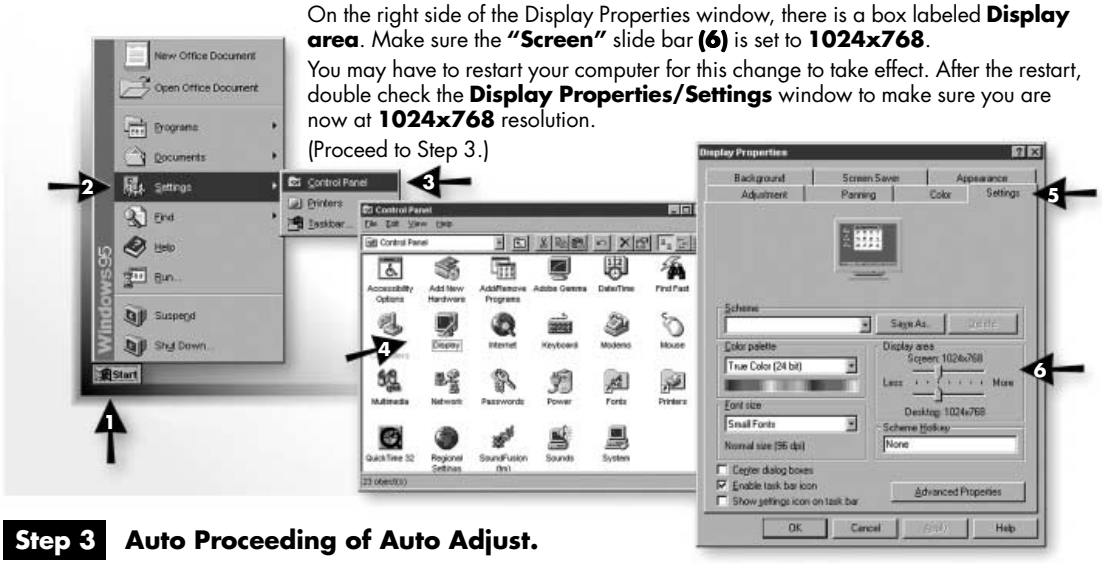
Step 2 Make sure that your computer is set up for 1024x768 resolution.

Open the Display Properties window by following this mouse click sequence **(1, 2, 3, 4, & 5)** indicated by the numbered arrows below.

On the right side of the Display Properties window, there is a box labeled **Display area**. Make sure the **"Screen"** slide bar **(6)** is set to **1024x768**.

You may have to restart your computer for this change to take effect. After the restart, double check the **Display Properties/Settings** window to make sure you are now at **1024x768** resolution.

(Proceed to Step 3.)



Step 3 Auto Proceeding of Auto Adjust.

As soon as your computer is set to **1024x768** resolution, the monitor automatically activates the Auto Adjust Function. This function is activated only when the new video signal is received for the first time. If the image quality after the Auto Adjust is activated is not sufficient, please repeat Step1.

If you have questions regarding the setup of your MultiSync LCD monitor, please refer to the user's manual or contact the NEC Technical Support Center at 1-800-632-4662.

2. B Version

MultiSync LCD1525V

User's Manual

NEC

Introduction to the NEC MultiSync LCD1525V

Congratulations on your purchase of the NEC MultiSync LCD1525V true colour monitor!

Wider Compatibility
Because the MultiSync LCD monitor is analog through and through, it does not require special analog to digital display or interface cards but can accept RGB input directly.

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.

OSM (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 OSM controls for quick and easy image adjustments, tilt/swivel base for preferred angle of vision, small footprint and compliance with MPRII guidelines for lower emissions.

Plug and Play
The Microsoft® solution with the Windows® 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.

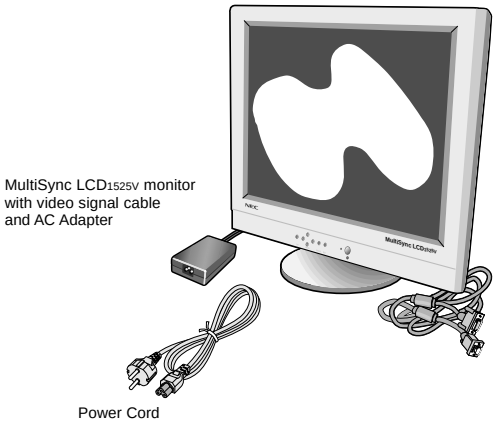
IPM (Intelligent Power Manager) System
Provides innovative power-saving methods that allow the monitor to shift to a lower power consumption level when on but not in use, saving two-thirds of your monitor energy costs, reducing emissions and lowering the air conditioning costs of the workplace.

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.

Contents

Your new NEC MultiSync LCD monitor box should contain the following:



- NEC MultiSync LCD1525V.
- AC Power Cord.
- AC Adapter (Type. UP06051120).
- Video Signal Cable.
- User's Manual.

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

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.
- 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.
- 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.
- 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 that is easily accessible.
- When operating the MultiSync LCD monitor with its AC220-240V worldwide power supply, use a power supply cord that matches the power supply voltage of the AC power outlet being used. The power supply cord you use must have been approved by and comply with the safety standards of your country.
- Use supplied AC Adapter.
- No Object shall be placed on AC Adapter.

- AC Adapter shall not be used outdoors.
- Handle with care when transporting. Save packaging for transporting.
- The inside of the fluorescent tube located within the LCD monitor contains mercury. Please follow the bylaws or rules of your local municipality to dispose of this 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 is damaged.

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 53 cm for the MultiSync LCD1525V monitor.
- 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 minimize 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.

Installation

To attach the MultiSync LCD1525V monitor to your system, follow these instructions:

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

   For the Mac: Connect the MultiSync LCD1525V Macintosh cable adapter to the computer (Figure B.1). Attach the 15-pin mini D-SUB end of the appropriate signal cable to the MultiSync LCD1525V Macintosh cable adapter (Figure B.1). Tighten all screws.
3. Remove connector cover and cable cover. Connect the 15-pin mini D-SUB of the video signal cable to the appropriate connector on the back of the monitor (Figure C.1).
   Place the Video Signal Cable under Clip A. Then place AC Adapter Cable under Clip B.
   Replace connector cover and cable 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. Connect one end of the power cord to the MultiSync LCD Series monitor and the other end to the power outlet (Figure D.1).
5. Turn on the monitor (Figure E.1) and the computer.
6. To complete the setup of your MultiSync LCD monitor, use the following OSM controls:
   - Auto Adjust Contrast
   - Auto Adjust

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

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

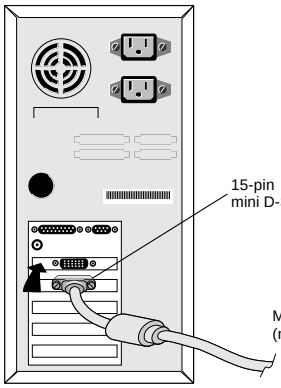


Figure A.1

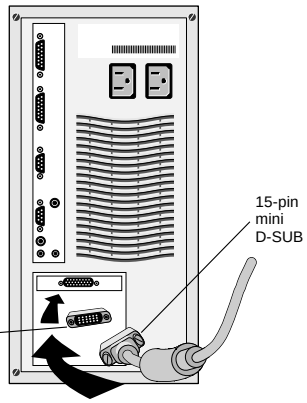
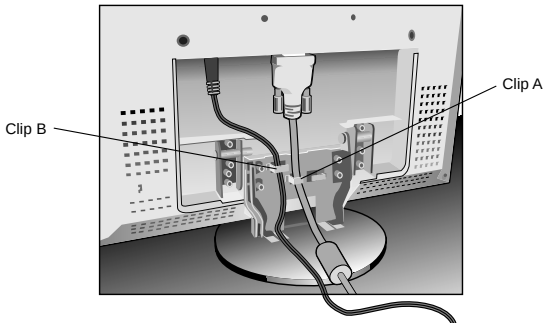


Figure B.1

Figure C.1



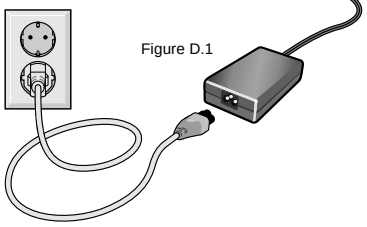


Figure D.1

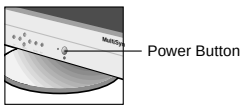
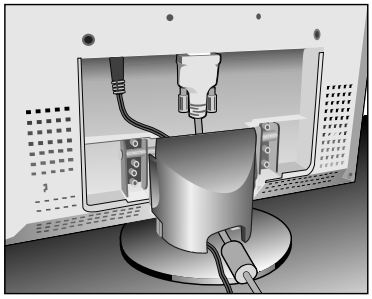
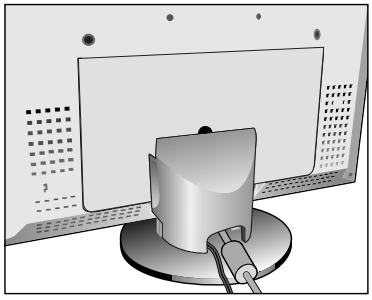


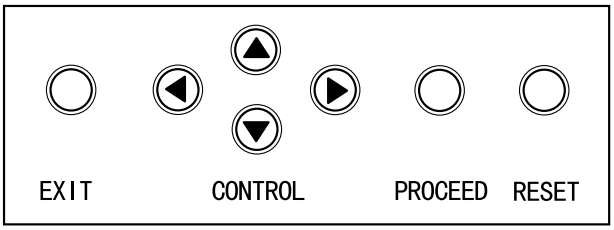
Figure E.1





Controls

OSM Controls



The OSM controls on the front of the monitor provide the following functions:

To access OSM press any of the control buttons (◀ , ▶ , ▲ , ▼) or the PROCEED button.

	Main Menu	Sub-Menu
EXIT	Exits the OSM controls.	Exits to the OSM main menu.
CONTROL ▲ / ▼	Moves the highlighted area up/down to select one of the controls	Moves the highlighted area up/down to select one of the controls
CONTROL ◀ / ▶	Moves the highlighted area left/right to select control menus.	Moves the bar left/ right to increase or decrease the adjustment.
PROCEED	Has no function.	Activates Auto Adjust feature. In Tool and Information Mode, opens additional window.
RESET	Resets the highlighted control menu to the factory setting.	Resets the highlighted control to the factory setting.

NOTE: When RESET is pressed, a warning window will appear allowing you to cancel the RESET function.

☼◑ Brightness and Contrast

☼ Brightness

Adjusts the overall image and background screen brightness.

◑ Contrast

Adjusts the image brightness in relation to the background.

AUTO Auto Adjust

Corrects the image displayed for non-standard video inputs.

AUTO Auto Adjust

Automatically adjusts the Position, H. size and Fine controls.

Position

Controls horizontal and vertical image position within the display area of the LCD.

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.

AUTO Auto Adjust

Automatically sets the horizontal and vertical image position within the display area of the LCD.

Image Adjust

H. size

Adjusts the horizontal size by increasing or decreasing this setting.

Fine

Improves focus, clarity and image stability by increasing or decreasing the Fine setting.

AUTO Auto Adjust

Automatically adjusts the H. Size or Fine settings.

RGB Colour Control System

Five options select the desired colour setting. If a setting is adjusted, the name of the setting will change to Custom.
Colour Gain (Red, Green, Blue): Increases or decreases Red, Green or Blue colour depending upon which is selected. The change in colour will appear on screen and the direction (increase or decrease) will be shown by the colour bars.

Tools

Language: OSM control menus are available in seven languages.

OSM Position

You can choose where you would like the OSM control image to appear on your screen. Selecting OSM Location allows you to manually adjust the position of the OSM control menu left, right, up or down.

OSM Turn Off

The OSM control menu will stay on as long as it is in use. In the OSM Turn Off sub-menu, 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 10, 20, 30, 60 and 120 seconds.

OSM Lock Out

This control completely locks out access to all OSM control functions. When attempting to activate OSM controls while in the Lock Out mode, a screen will appear indicating the OSM controls are locked out. To activate the OSM Lock Out function, simultaneously press and hold down the PROCEED and ▲ button(s). To de-activate the OSM Lock Out mode, again simultaneously press and hold down the PROCEED and ▲ button(s).

Factory Preset

Selecting Factory Preset allows you to reset all OSM control settings back to the factory settings. The RESET button will need to be held down for several seconds to take effect. Individual settings can be reset by highlighting the control to be reset and pressing the RESET button.

Resolution Notifier

This optimal resolution is 1024 x 768. If ON is selected, a message will appear on the screen after 2 minutes, notifying you that the resolution is not at 1024 x 768.

Information

Display Mode: Provides information about the current resolution display and technical data including the preset timing being used and the horizontal and vertical frequencies.

Specifications

Display	38 cm (15.1 inch) viewable image size; 1024 x 768 native resolution (Pixel Count); active matrix; thin film transistor (TFT); liquid crystal display (LCD); 0.30 mm dot pitch; 200 cd/m² white luminance, typical; 200:1 contrast ratio, typical	
Input Signal	Video	Analog 0.7 Vp-p 75 Ω
	Sync	Separate sync. TTL Level Horizontal sync. Positive/Negative Vertical sync. Positive/Negative
Display Colours	Analog Input:	16,194,277 colours with dithering (Depends on the graphics board)
Synchronisation Range	Horizontal Vertical	24.8 kHz to 60.0 kHz (Automatically) 56.2 Hz to 75.0 Hz (Automatically)
Resolutions Supported		720 x 400*: VGA text 640 x 480* at 60 Hz to 75 Hz 800 x 600* at 56 Hz to 75 Hz 1024 x 768 at 60 Hz to 75 Hz
Active Display Area**		Horizontal 307.2 mm Vertical 230.4 mm

Power Supply		AC 100-240 V @ 50/60 Hz
Current Rating		0.6 A @ 100-120 V / 0.3 A @ 220-240 V
Dimensions		370 mm (W) x 325 mm (H) x 151 mm (D)
Weight		4.1 kg
Operating Environmental Considerations	Temperature	5° C to +35° C
	Humidity	30% to 80%
Storage Environmental Considerations	Temperature	-10° C to +60° C
	Humidity	10% to 85%

* Interpolated Resolutions: When resolutions are shown that are lower than the pixel count of the LCD module, text may appear different. This is normal and necessary for all current flat panel technologies when displaying non-native resolutions full screen. In flat panel technologies, each dot on the screen is actually one pixel, so to expand resolutions to full screen, an interpolation of the resolution must be done.
** Active display area is dependent upon the signal timing.

Technical specifications are subject to change without notice.

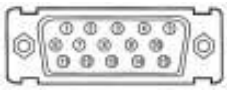
Troubleshooting/Support

Problem	Check These Items
No picture	- The signal cable should be completely connected to the display card/computer. - The display card should be completely seated in its slot. - Power button and computer power switch should be in the ON position. - 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.) - 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.
Power Button does not respond	Unplug the power cord of the monitor from the AC outlet to turn off and reset the monitor, or simultaneously press the RESET and Power buttons.
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 recommends using a screen saver at regular intervals whenever the screen is idle.

Problem	Check These Items
Image is unstable, unfocused or swimming is apparent	- Signal cable should be completely attached to the computer. - Use the OSM Image Adjust controls to focus and adjust display by increasing or decreasing the Fine Control. When the display mode is changed, the OSM Image Adjust settings may need to be re-adjusted. - 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 75 Hz refresh rate.
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. - Make certain the computer is not in a power-saving mode (touch the keyboard or mouse).
Display image is not sized properly	- Use the OSM Image Adjust controls to increase or decrease the H. Size. - Check to make sure that a supported mode and signal timing has been selected on the display card or system being used. (Please consult display card or system manual to change graphics mode or refresh rate.)

App. A PIN ASSIGNMENTS

MINI D-SUB 15 P



Pin No.	LCD1525V
1	RED
2	GREEN
3	BLUE
4	NO-CONNECTION
5	GROUND
6	GROUND
7	GROUND
8	GROUND
9	+5V (DDC)
10	GROUND
11	GROUND
12	SDA
13	H.SYNC, H/V.SYNC
14	V.SYNC
15	SCL

App. B Preset Signal Timing

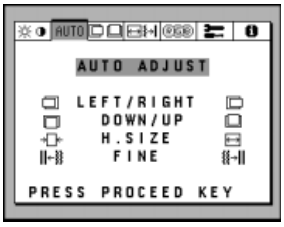
Preset	Resolution	Vertical Frequency (Hz)	Horizontal Frequency (kHz)	Pixel Frequency (MHz)
1	640 x 400	56.42	24.83	21.05
2	640 x 480	59.99	31.47	25.18
3	720 x 350	70.09	31.47	28.32
4	720 x 400	70.09	31.47	28.32
5	800 x 600	56.25	35.16	36.00
6	800 x 600	60.32	37.88	40.00
7	640 x 480	66.61	35.00	30.24
8	640 x 480	72.81	37.86	31.50
9	640 x 480	75.00	37.50	31.50
10	800 x 600	75.00	46.88	49.50
11	800 x 600	72.19	48.08	50.00
12	1024 x 768	60.00	48.36	65.00
13	1024 x 768	70.07	56.48	75.00
14	1024 x 768	75.03	60.02	78.75

MultiSync LCD1525V
Setup instructions for Windows 95/98 & NT Computers

For Optimal Performance the MultiSync LCD1525V should be set up for 1024x768 @ 75Hz.

Once you have booted up your computer and have entered Windows, please follow the instructions below to fully optimize your MultiSync LCD monitor.

Step 1 Auto Adjust your MultiSync LCD monitor.



- Display a white background with a bright image at full page setting on the monitor, using such applications as Microsoft Word, Excel or Paintbrush.
- To begin the setup/adjustment of the NEC MultiSync LCD1525V monitor, push the **Proceed** button on the front bezel of the monitor to bring up the NEC ***On Screen Manager***.
- Press the right arrow to highlight the **"AUTO"** tab and to select the **"AUTO ADJUST"** menu in green.
- Press the **"PROCEED"** button to initiate the ***Auto Adjust*** Function (This function will take a few seconds to be completed).
- Press **EXIT** to close the OSM menu.

(Proceed to Step 2.)
see reverse side

Part No.7735422580-0A
Printed in Taiwan

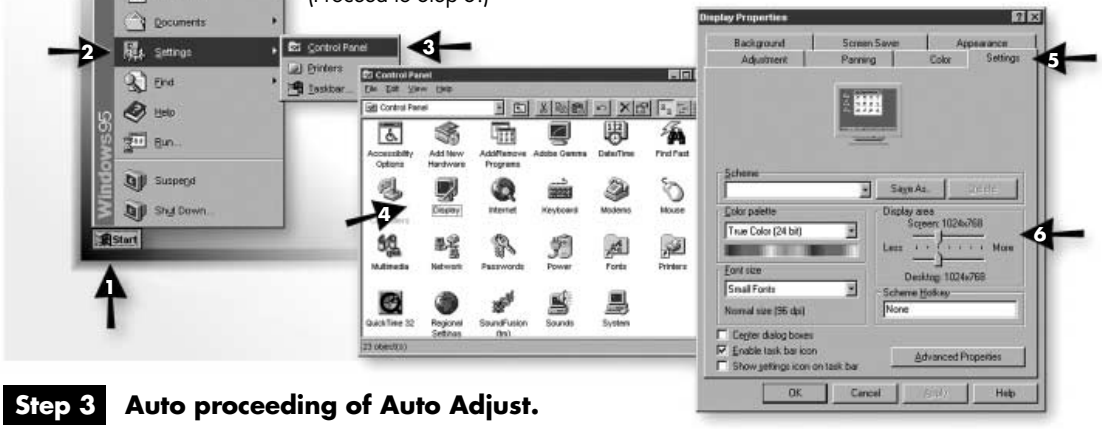
Step 2 Make sure that your computer is set up for 1024x768 resolution.

Open the Display Properties window by following this mouse click sequence **(1, 2, 3, 4, & 5)** indicated by the numbered arrows below.

On the right side of the Display Properties window, there is a box labeled **Display area**. Make sure the **"Screen"** slide bar **(6)** is set to **1024x768**.

You may have to restart your computer for this change to take effect. After the restart, double check the **Display Properties/Settings** window to make sure you are now at **1024x768** resolution.

(Proceed to Step 3.)



Step 3 Auto proceeding of Auto Adjust.

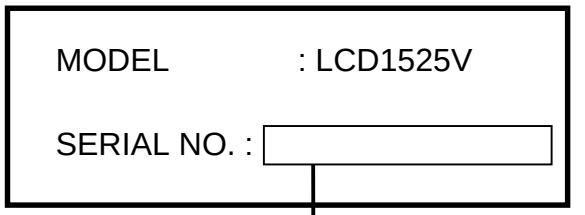
As soon as your computer is set to **1024x768** resolution, the monitor automatically activates the Auto Adjust Function. This function is activated only when the new video signal is received for the first time. If the image quality after the Auto Adjust is activated is not sufficient, please repeat Step1.

If you have questions regarding the setup of your MultiSync LCD monitor, please refer to the user's manual .

SERIAL NUMBER INFORMATION

Refer to the serial number information shown below.

EX.) SERIAL BER CODE LABEL



Manufactured Year :
(Last digit)

Manufactured Month :

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

00001 ~ on ward
(Start from 00001 ~ when month is changed.)

Factory mark :
LITEON "U"

Model mark
LCD1525V (A) ---------- :A
LCD1525V (B) ---------- :B

DISASSEMBLY

- Before you disassemble the set, turn off power and pull out the power plug.
- Use the proper screwdriver. If oversize or undersize screwdriver is used, screws may be damaged.
- Disassembly is the opposite process of assembly.

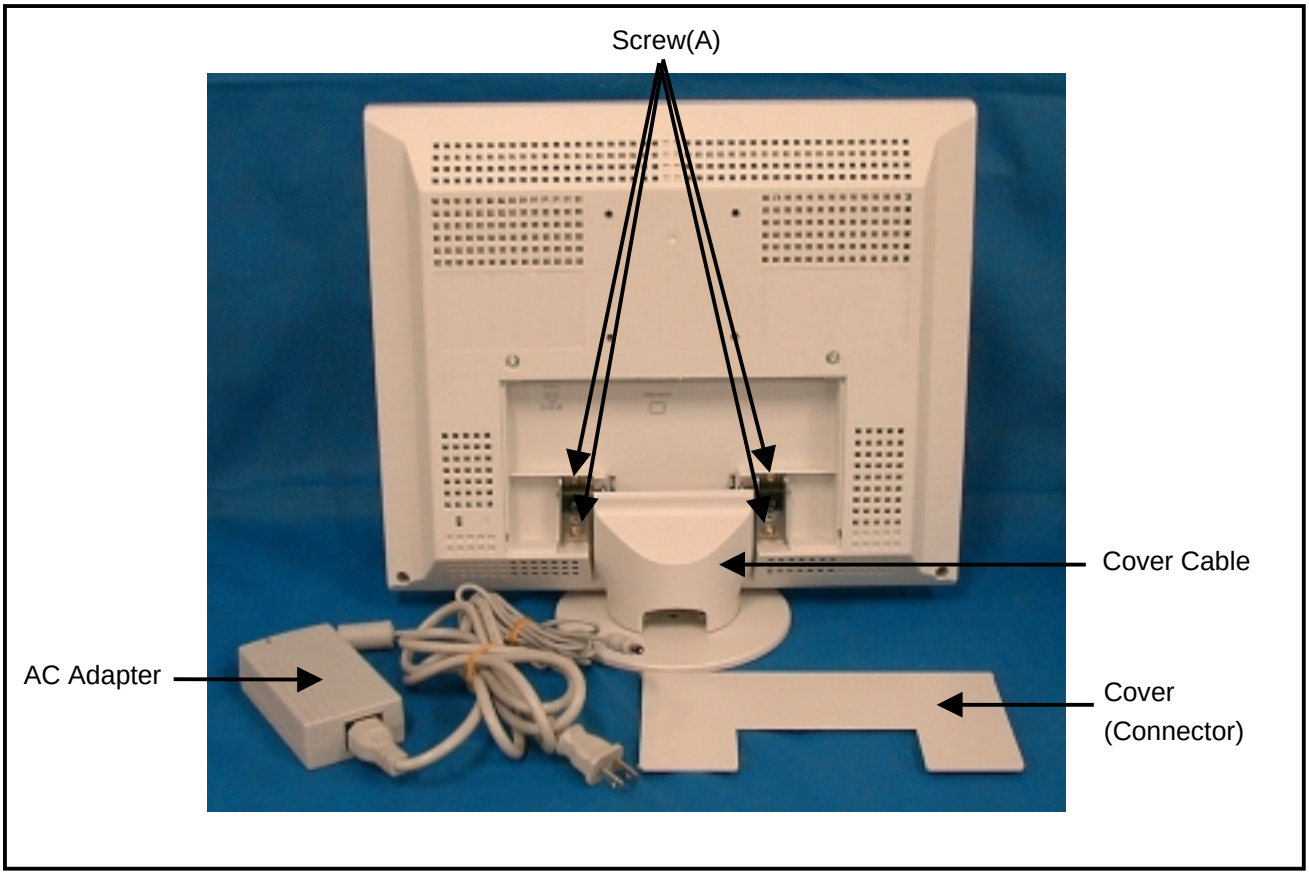


Photo 1

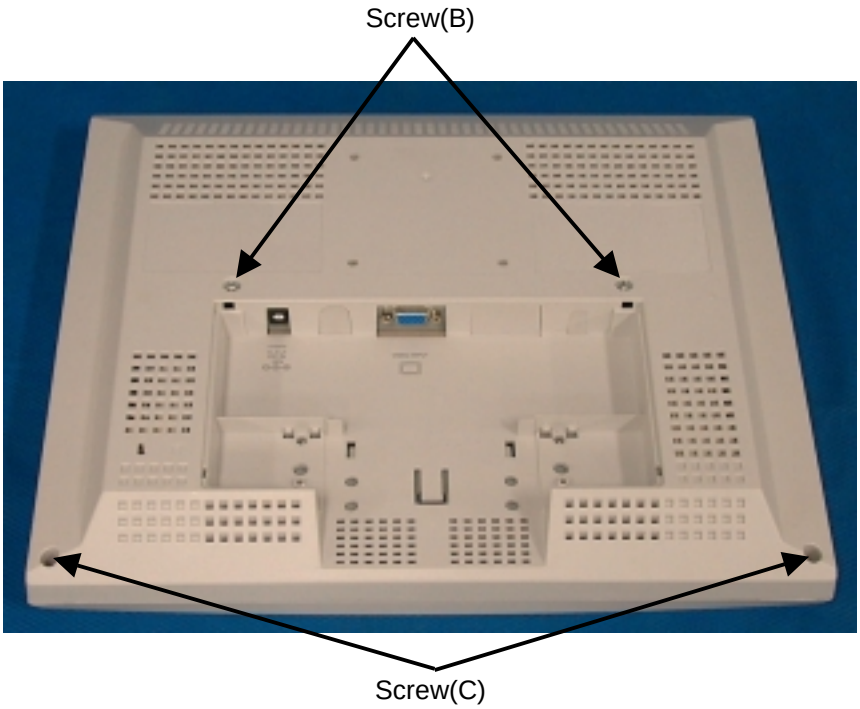


Photo 2

* HOOK

Photo 3

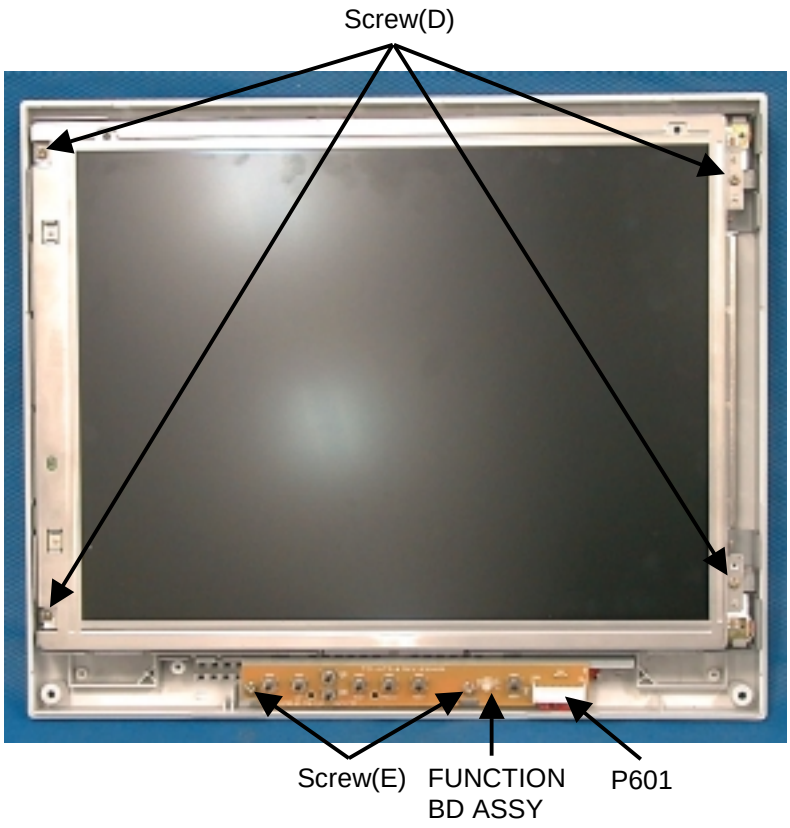


Photo 4

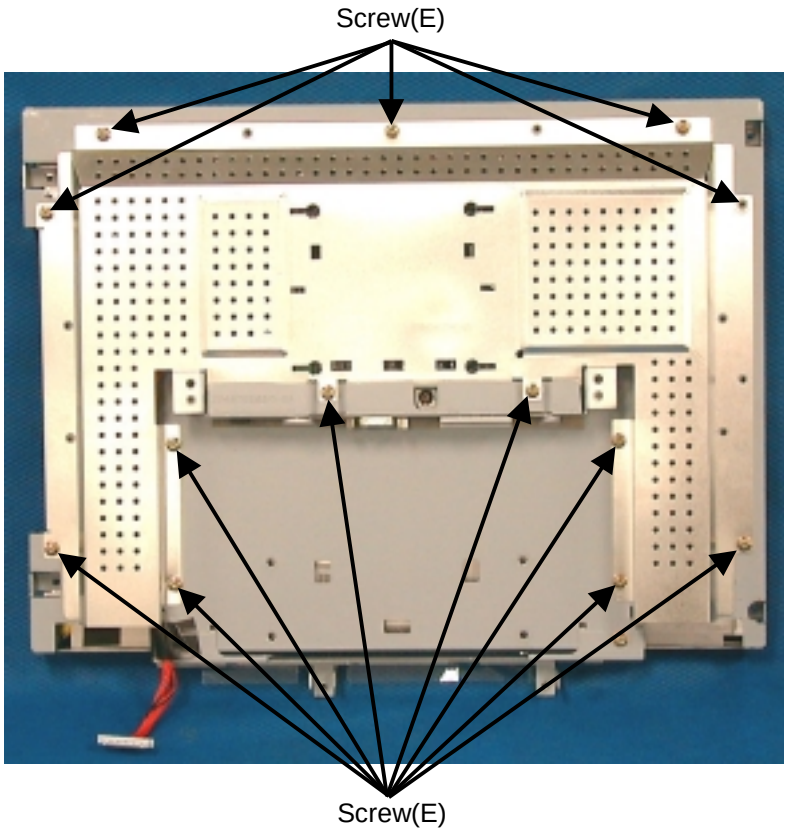


Photo 5

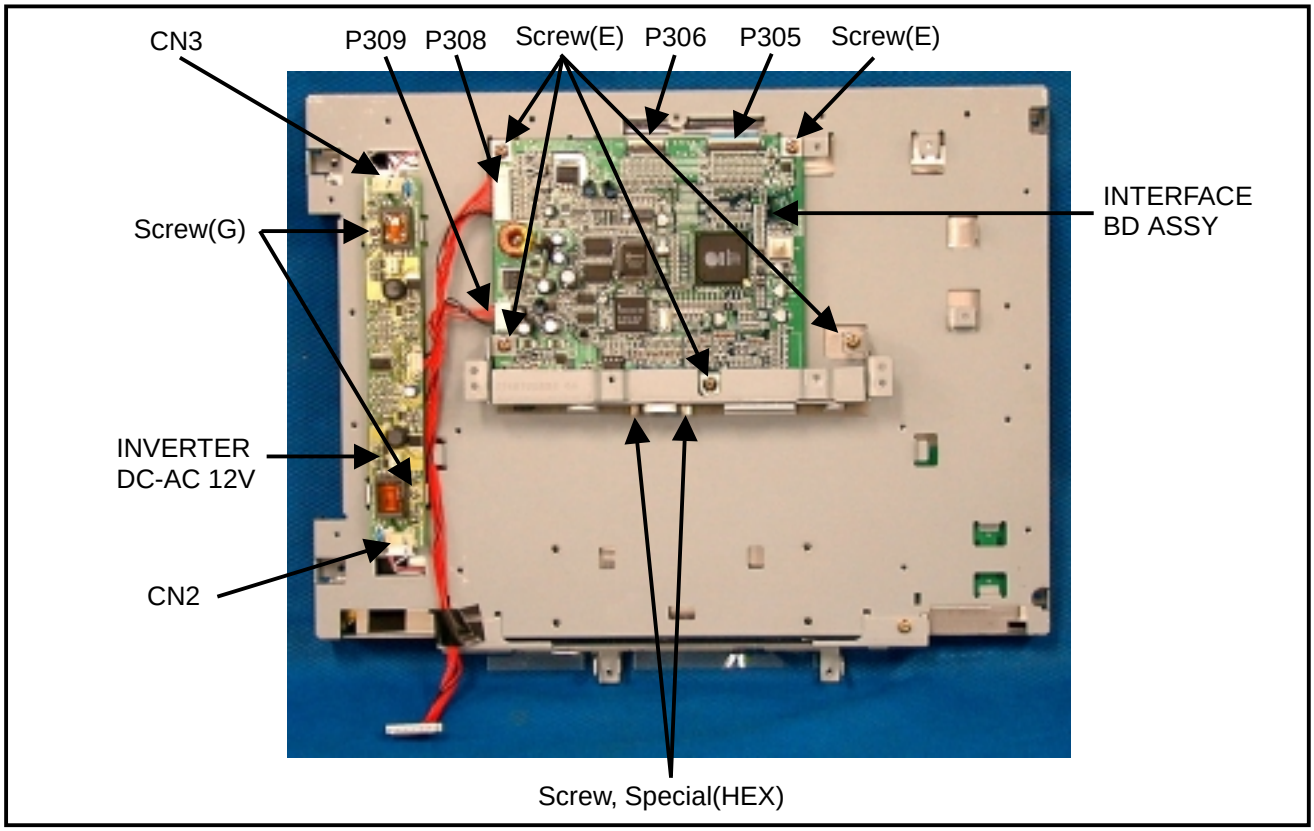

CN3
P309
P308
Screw(E)
P306
P305
Screw(E)
INTERFACE
BD ASSY
Screw(G)
INVERTER
DC-AC 12V
CN2
Screw, Special(HEX)

Photo 6

ADJUSTMENT PROCEDURES

TABLE OF CONTENTS

1. Preparations for Adjustment

1.1 Measuring equipment used

Pre-programmed signal generator VG-819 (Astro Design) or equivalent product

1.2 Power-supply voltage

AC 120 V ± 5%, 50/60Hz or AC 220 V ± 5%, 50/60Hz

1.3 Aging

Unnecessary

1.4 Input Signal

Input signal 20 (*1) from the video signal generator VG-819 with an inspection ROM device mounted.

*1 For more details about the signals, see Section 3, "VG-819 Setting Method."

2. Set Adjustment

2.1 Power supply turn-on

1) Insert the AC cable plug in a wall outlet, and press the POWON key. Confirm that the green and amber LEDs flash reciprocally.

   * If there is no reciprocal flashing of the green and amber LEDs even after the AC cable plug has been inserted in a wall outlet or the POWON key has been pressed, such a product shall be regarded as a defective one.

2) Enter Signal 20 and confirm that the LED is lit in green.

   * If the LED is not lit in green at that time, such a product shall be regarded as a defective one.

3) Press the PROCEED key. Confirm that the OSD is displayed on the screen.

2.2 Adjustments

2.2.1 How to open the service menu

1) Use the ▸ key and select the rightmost tag ⓘ in the OSD menu.

2) Use the ▾ key and move the HIGHLIGHT to [DISPLAY MODE....→]. Then press the PROCEED key to obtain a sub-menu.

3) Pressing the RESET key, press the ▴ and ▾ keys simultaneously in order to obtain a display of the [WARNING] screen.

4) Press the PROCEED key to obtain a display of the [SERVICE MENU] screen.

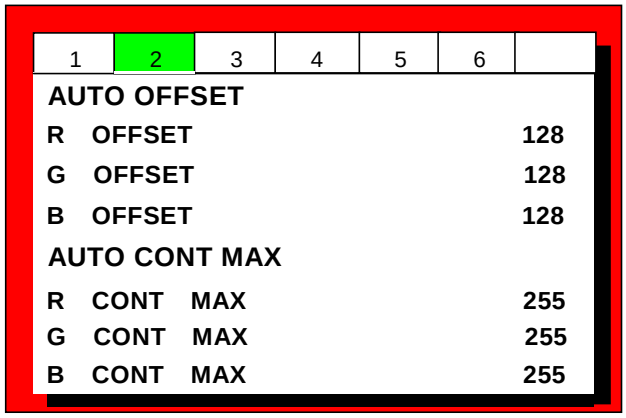
5) Confirm that the LED is lit in yellow.

2.2.2 Contrast adjustment

1) Use the VG-819 and enter Signal 20, in order to obtain a 16 gray pattern display.

2) Open the service menu. (See 2.2.1 herein.)

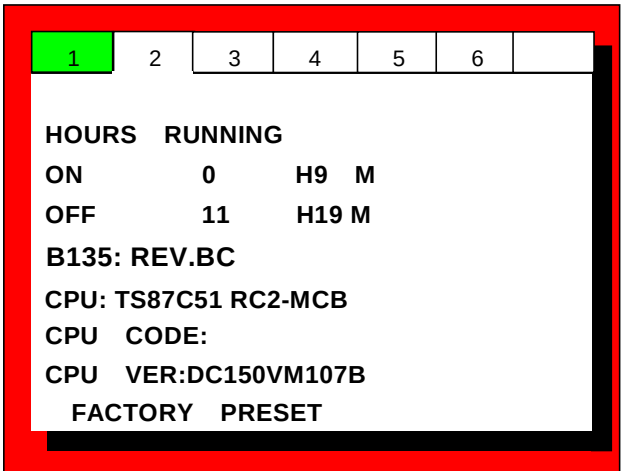
3) Using the ◀ and ▶ keys, select Tag 2 of the service menu and provide a display of the [AUTO OFFSET, AUTO CONT MAX] screen.



AUTO OFFSET, AUTO CONT MAX screen

4) Using the ▲ and ▼ keys, adjust the HIGHLIGHT to [AUTO OFFSET] and press the PROCEED key. Confirm that the values at the right of [R OFFSET], [G OFFSET], and [B OFFSET] change in the meantime. Then, using the ▲ and ▼ keys, adjust the HIGHLIGHT to [AUTO CONT MAX] and press the PROCEED key. Confirm that the values at the right of [R CONT MAX], [G CONT MAX], and [B CONT MAX] change in the meantime.

5) Using the ◀ and ▶ keys, select Tag 1 of the service menu and provide a display of the [FACTORY PRESET] screen.



FACTORY PRESET screen

6) Use the VG-819 and enter Signal 20, in order to obtain an all-white display.

7) Using the ▲ and ▼ keys, adjust the HIGHLIGHT to [FACTORY PRESET] and press the PROCEED key. Confirm that the values at the right of [HOYRS RUNNING] to zero.

8) Press the EXIT key 4 times and close the service menu.

3. VG-819 Setting Method

VG-819 setup

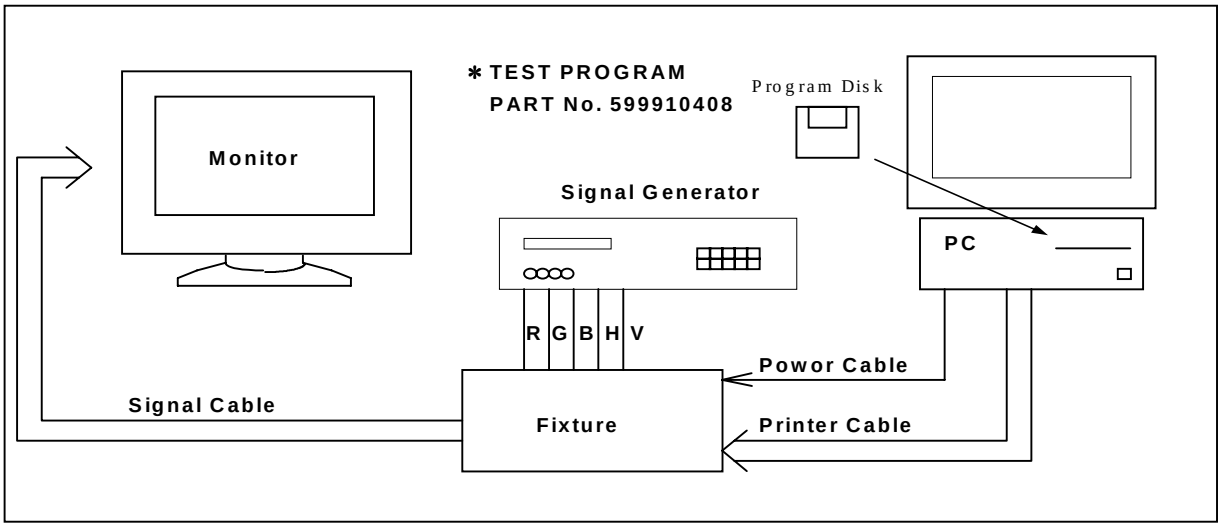
		VG-819		
Mode		Signal 20		
H	DOT CLOCK [MHz]	78.75		
	TOTAL [DOT]	1312		
	DISP [DOT]	1024		
	SYNC PULSE [DOT]	96		
	BACK [DOT]	176		
	Hdstrat [DOT]	0		
	Hdwidth [DOT]	0		
V	INTERLACE	NON		
	TOTAL [H]	800		
	DISP [H]	768		
	SYNC PULSE [H]	3		
	BACK PORCH [H]	28		
	EQPfp [H]	0		
	EQPbp [H]	0		
	SERRATION [H]	OFF		
	EDP [H]	OFF		
	VDs [H]	0		
	VBf [H]	0		
OUTPUT	OUTPUT MODE	ANALOG		
	NRZ/RZ	NRZ		
	CV			
	HS	POS		
	VS	POS		
	CS	NEG		
	HD	NEG		
	VD	NEG		
	RGB	POS		
	HT	POS		
	C	NEG		
	VIDEO	0.70V		
	Set-up	0.00V		
	Sync	0.30V		
PAT SEL		GRAY		
CHARA PATTERN	Format Code Font Cell	1 82 16*16 16*16		
GRAY	Direction:0	L0:0 L1:17 L2:34 L3:51 L4:68 L5:85 L6:102 L7:127 L8:143 L9:159 LA:175 LB:191 LC:207 LD:223 LE:239 LF:255		

INSPECTION

1. Inspection of PLUG & PLAY communication

1.1 A construction of System

This system should be connected as shown below.



1.2 Starting method

1) Input Signal

Input signal must be separate sync. Two kinds of signals must be prepared.

One is the signal which vertical synchronization frequency is 42Hz, and another is the signal that vertical synchronization frequency is between 55Hz and 25kHz.

Horizontal synchronization frequency should be set to reasonable value(example 31.5kHz).

2) Power ON procedure

- First, put the floppy disk for PnP Inspection into PC and turn on PC.
- Turn on Fixture.
- Make sure that fixture's LED blinks on and off.
- Turn on signal generator and monitor.

3) Starting PC Software

- Inspection of PnP communication

  To check the PnP communication, EDID file name is LCD1525V.

  Type "P LCD1525V" to DOS command line and press return key.
- Writing EDID to EEPROM and inspection of PnP communication

  To write EDID to EEPROM and check the PnP communication of LCD1525V, type "WP LCD1525V" on DOS command line and press return key.

1.3 Operation

- The operation should be performed according to the screen message.
- When the message of “Please set V. sync to 42Hz.” is displayed, set the signal generator to the signal with vertical synchronization frequency of 42Hz. When the message of “Please set V. sync to over 55Hz.” is displayed, set the signal generator to the signal whose vertical synchronization frequency is between 55Hz and 25kHz.
- The message of “Normally Complete” means that writing of EDID data or PnP inspection completed normally.
  The message of “Error” means that writing of EDID data or PnP inspection finished incorrectly.
- When the PnP inspection is completed, read EDID data would be displayed. And if the read EDID data differed from the original EDID data, the different bytes would be displayed in red.
- For the details of error, see the messages displayed at the bottom right of the screen.
  The meaning of the messages is shown on section 4.
- After writing of EDID data or inspection of DDC2B, monitor can not be communicated by DDC1.
  In that case, turn off and on the monitor again, which will make the DDC1 communication test possible.
- Make sure that fixture’s LED flashes on and off before writing EDID data, inspecting DDC1 and DDC2B. If the fixture’s LED does not flash on and off, turn off and turn on the monitor and the fixture.

1.4 Error Messages

- Start Bit Error
  This message is displayed when the start bit is not “H” while sending data from PC to MPU on the fixture.
  This error will be caused by noise etc. on the line.
- Command Error
  This message is displayed when the different command is sent from PC to MPU on the fixture.
- Hardware Error
  This message means that the PC does not recognize ACK command sent from the MPU on the fixture.
- File Open Error
  This message means that the input EDID file name was wrong.
- Command line Switch Error
  This message means that the input communication command is incorrect.
- Parity Error
  This message is displayed when the MPU on the fixture recognized the parity bit is incorrect.
  This error can be caused by noise etc. on the line.
- EDID Data Error
  This message is displayed when the null bit is not detected in EDID data read by DDC1 communication.
- EDID Data Sort Error
  This message is displayed when the header code is not detected in EDID data read by DDC1 communication.
- Time Out Error
  This message is displayed when the PC does not recognize ACK commands sent from MPU within 10 msec after the PC had sent communication command or EDID data.
  If this error occurs, check the connection on PC, fixture and monitor.

1.5 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 : LCD1525V

EDID-128

	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	38	A3	A6	3B	01	01	01	01
10	01 *1)	0A *2)	01	02	08	1F	17	78	EA	4E	E0	A1	57	4C	99	23
20	19	52	57	BF	EE	00	31	4F	45	4F	01	01	01	01	01	01
30	01	01	01	01	01	01	DC	1E	00	20	41	00	20	30	10	60
40	13	00	33	E6	10	00	00	1E	00	00	00	FD	00	37	4B	18
50	3C	08	00	0A	20	20	20	20	20	20	00	00	00	FC	00	4E
60	45	43	20	4C	43	44	31	35	32	35	56	0A	00	00	00	FF
70	00	39 *3)	39	30	30	32	30	35	43	41	0A	20	20	20	00	79 *4)

Table 1.5 Data list (Management number : EDID-128)

Note 1: address 10h — Week of manufacture = Month of manufacture × 4

Note 2: address 11h — Year of manufacture - 1990

Notes 3: address 71h ~ 7Dh — Serial Number (ASCII coded)
If less than 13 char, terminate with 0Ah and fill the rests with 20h.

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

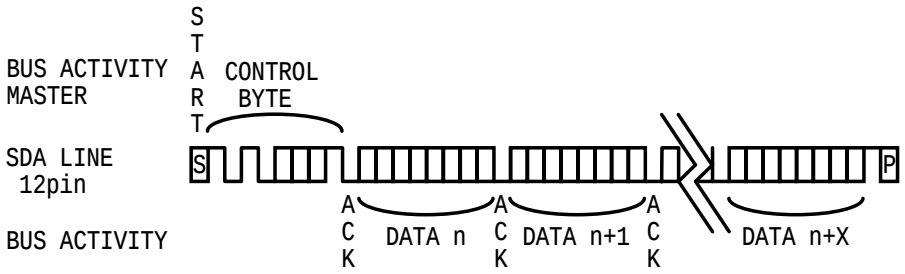


Diagram 1.5Timing chart of DDC2B

2. Appearance of LCD and Display inspection standard

2.1 Dot defect

2.1.1 Bright Dot

Bright dot is defined as dots(sub-pixels) which appeared brightly in the screen when the LCM displayed with dark pattern.

- R, G or B 1 dot ---------- 6 Max.
- Adjacent 2 dots ---------- 2 Max.
- Adjacent above 3 dots ---------- Not allowed.
- Total amount of Bright dots ---------- 8 Max.
- Minimum distance between dots ----- 15mm

2.1.2 Dark Dot

Dark dot is defined as dots(sub-pixels) which appeared darkly in the screen when the LCM displayed with brigt pattern.

- 1 dot ---------- 6 Max.
- Adjacent 2 dots ---------- 2 Max.
- Adjacent above 3 dots ---------- Not allowed
- Total amount of Dark dot ---------- 8 Max.
- minimum distance between dots ----- 15mm

2.1.3 Total amount of Dot Defects ---------- 10 Max.(including bright & dark dot defects)

NOTE: a. Every dot herein means Sub-pixel(each Red, Green or Blue Color).
b. Bright & Dark dots are larger than half sub-pixel. (Dots smaller than half sub-pixel are not counted as defect dots)

2.2 Polarizer Defects

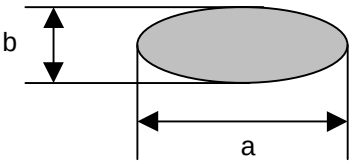
Items		Criteria
Scratch	Linear	$0.05 \le W \le 0.2$, $5.0 \le L \le 10.0$, $N \le 4$
Dent	Circuar	$0.2 \le D \le 0.5$, $N \le 6$

NOTE: D: Average Diameter D=(a+b)/2

W: Width, L: Length, N: Quantity

Linear: a>2b, Circular: a<2b

Unit: mm



a. Extraneous substances that can be wiped out like Finger Print, Particles are not considered as a defect.

b. Defects which is on the Black Matrix(outside of Active Area) are not considered as a defect.

2.3 Foreign Material

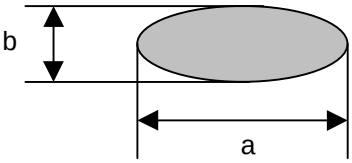
Items		Criteria
Foreign Material	Linear	$0.05 \le W \le 0.1$, $0.3 \le L \le 4$, $N \le 4$
	Circuar	$0.2 \le D \le 0.5$, $N \le 6$

NOTE: D: Average Diameter D=(a+b)/2

W: Width, L: Length, N: Quantity

Linear: a>2b, Circular: a<2b

Unit: mm



2.4 Line defect

All kinds of line defects such as vertical, horizontal or cross are not allowed.

2.5 Bezel Appearance

Scratches, minor bents, stains, particles on the Bezel frame are not considered as a defect.

3. BACK LIGHT REPLACEMENT MANUAL

TFT Color Liquid-crystal Module

[LM151X2 (Part No. 36804268)]

CONTENTS

Note: The replacement of the backlight tube in LCD module will not be reflected to extend the warranty period of whole LCD module or that of whole LCD monitor. Please refer warranty terms and conditions of LCD module.

Warranty

a. Warranty Period

The In-warranty is Eighteen(18) Months from manufacturing month.
Note) The manufacturing Month is on the LCDs as Supplier's serial No.

b. Repair Warranty

The repair warranty is Twelve(12) Months from repaired month for repaired LCDs.
Note) The Label for repair will be added after repairing.

Rev. 1.0 18/Feb/1999	Rev. 2.0 4/Mar/1999			

c. Serial Number Information

• Lot Mark

A	B	C	D	E	F	G	H	I	J	K	L

A,B: DIVSION CODE
C,D.E: MODEL CODE
F: YEAR
G: MONTH
H,I,J,K,L: SERIAL NO.

Note: 1. YEAR

YEAR	91	92	93	94	95	96	97	98	99	2000
Mark	1	2	3	4	5	6	7	8	9	0

Note: 2. MONTH

MONTH	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Mark	1	2	3	4	5	6	7	8	9	0	N	D

• Location of Lot Mark

Serial NO. is printed on the label. The label is attached to the backside of the LCD module.
This is subject to change without prior notice.

1. Back light Replacement Procedure

1.1 Equipment and Tool Required for Replacement

1) Finger protectors

2) ESD wrist strap

3) Precision Screw driver (+)

4) Replacement lamp unit

Back light unit (Part No. 79PG1000)

Recommendations: If or dirt adheres to the fluorescent lamp during replacement, it could result in uneven lighting, so it is recommend that replacement be performed in a clean room or on a clean bench (class C). Also the LCD module could be damaged due to static electricity, so it is recommended that an ionizer (or other anti-static electricity equipment) be used.

1.2 Preparation

1) Put on the finger protectors and ESD wrist strap.

2) Turn on the ionizer (or turn on the other anti-static electricity equipment).

1.3 Replacement procedures

To be explained according to the sequence of replacement work.

(1) Put the TFT-LCD module on the working table, with its display plane facing upwards.

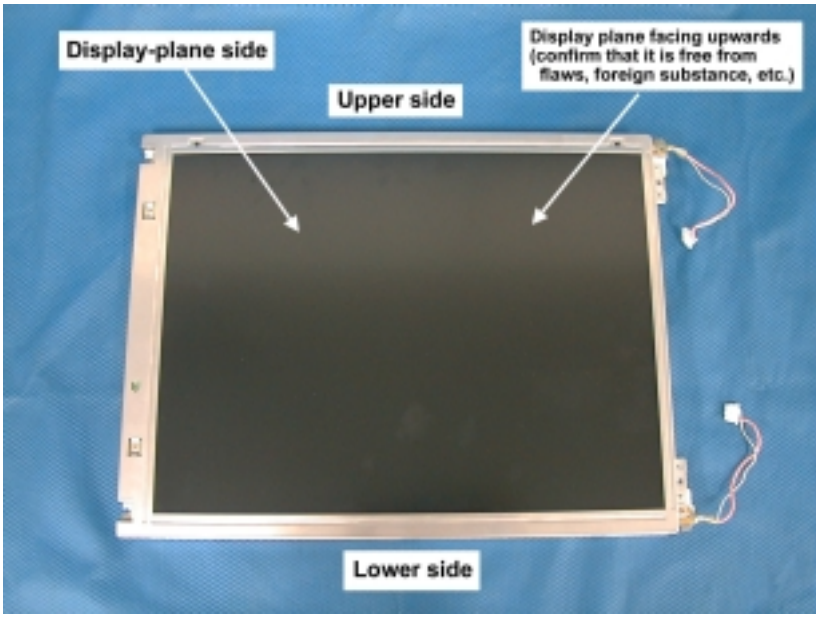


Photo 1

(2) A screw is removed.

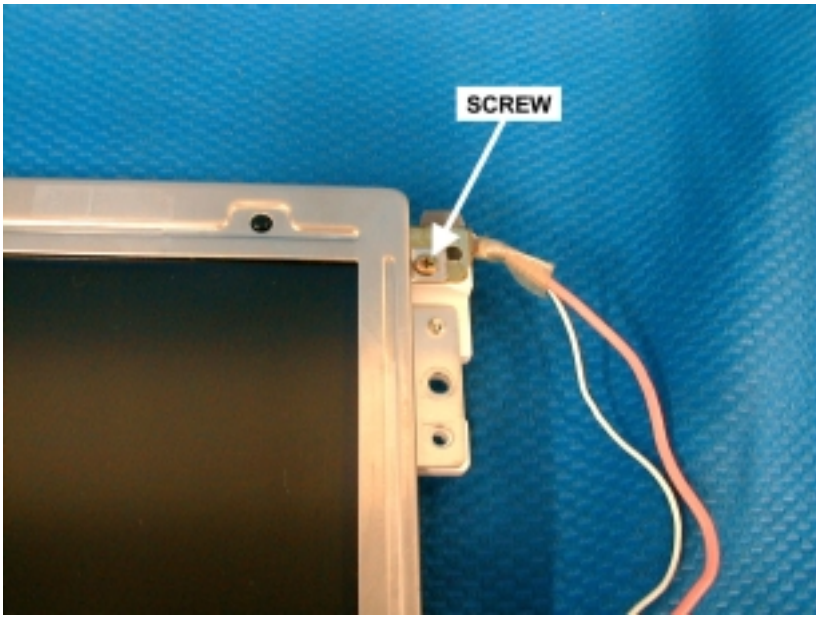


Photo 2

(3) Slowly pull the bracket, back light and take out the back light unit.

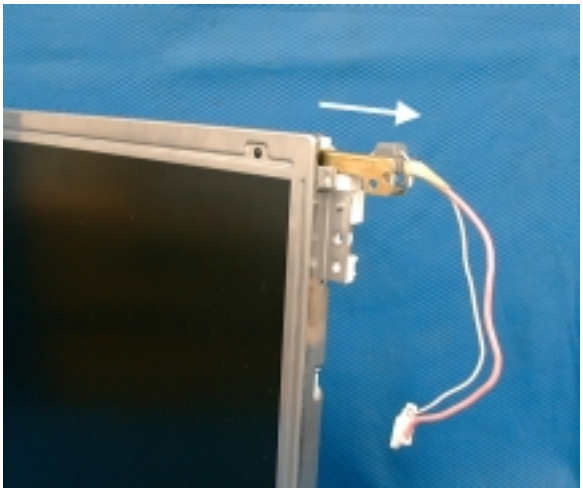


Photo 3

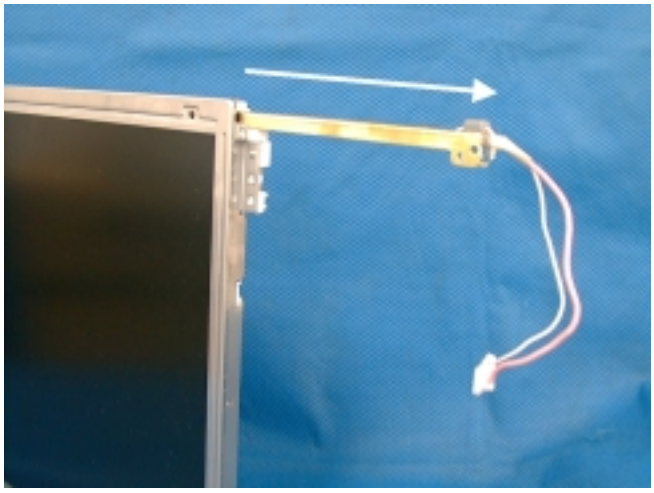


Photo 4

(4) Then, take out the lower-side back light unit.

Turn the LCD module upside down and follow the procedures (2) to (3).

(5) Photo 5 shows the condition that the two upper and lower lamp units have been dislodged.

Photo 5

(6) Stand the LCD module and insert the back light unit.

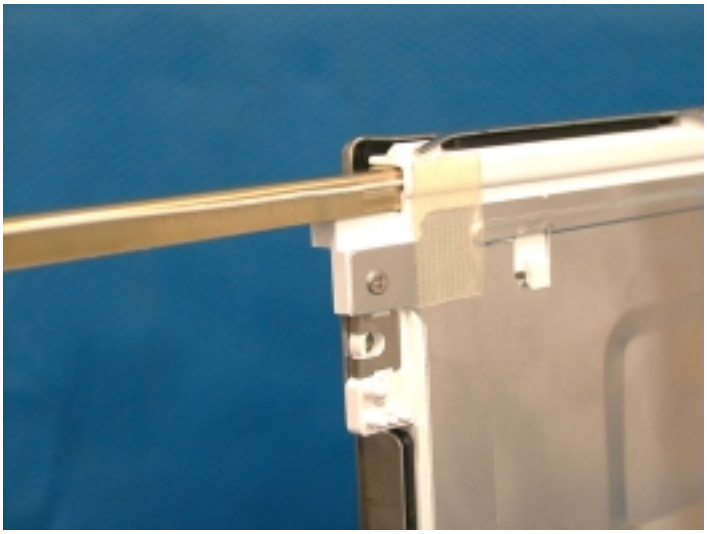


Photo 6

- Make sure not to confuse the direction of insertion.

(7) After the completion of insertion, the back light unit is fixed with the screw.

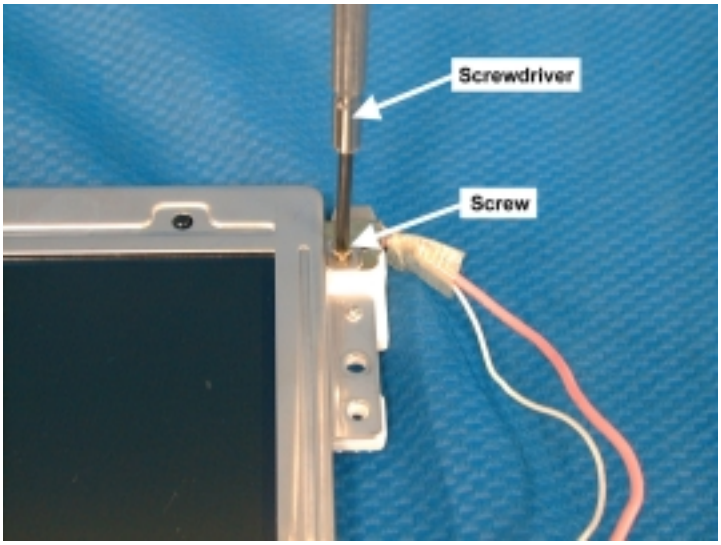


Photo 7

(8) Insert another back light unit according to the procedures of (6) and (7) above.

(9) Check items:

- Confirm that everything is in the same condition as original. (Photo 1)
- Confirm that the display plane of the LCD module is free from flaws, dust, and foreign substance.
- Incorporate the LCD module in the main unit, connect the connector, and turn on the power supply.
- Confirm the lighting of the fluorescent lamp.

TROUBLE SHOOTING

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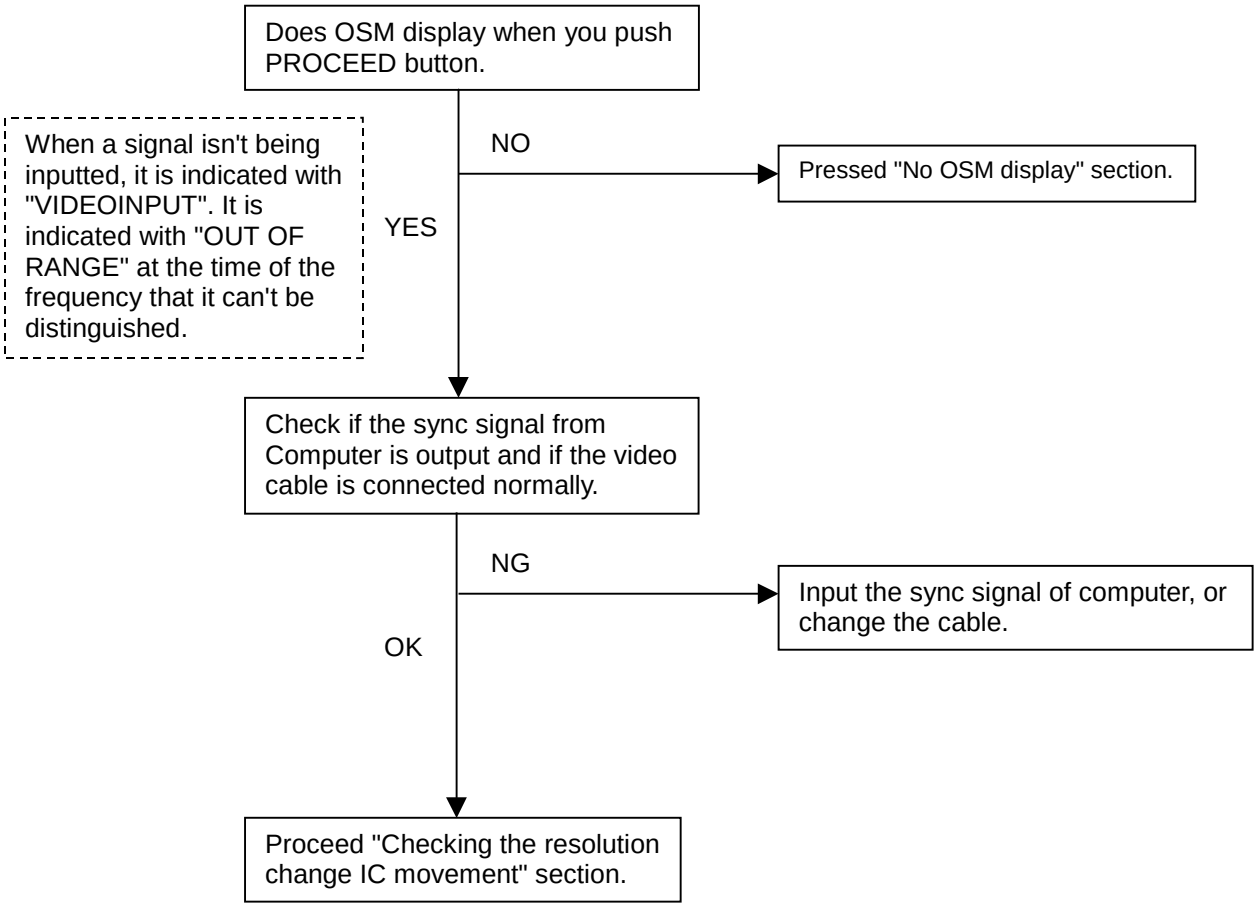
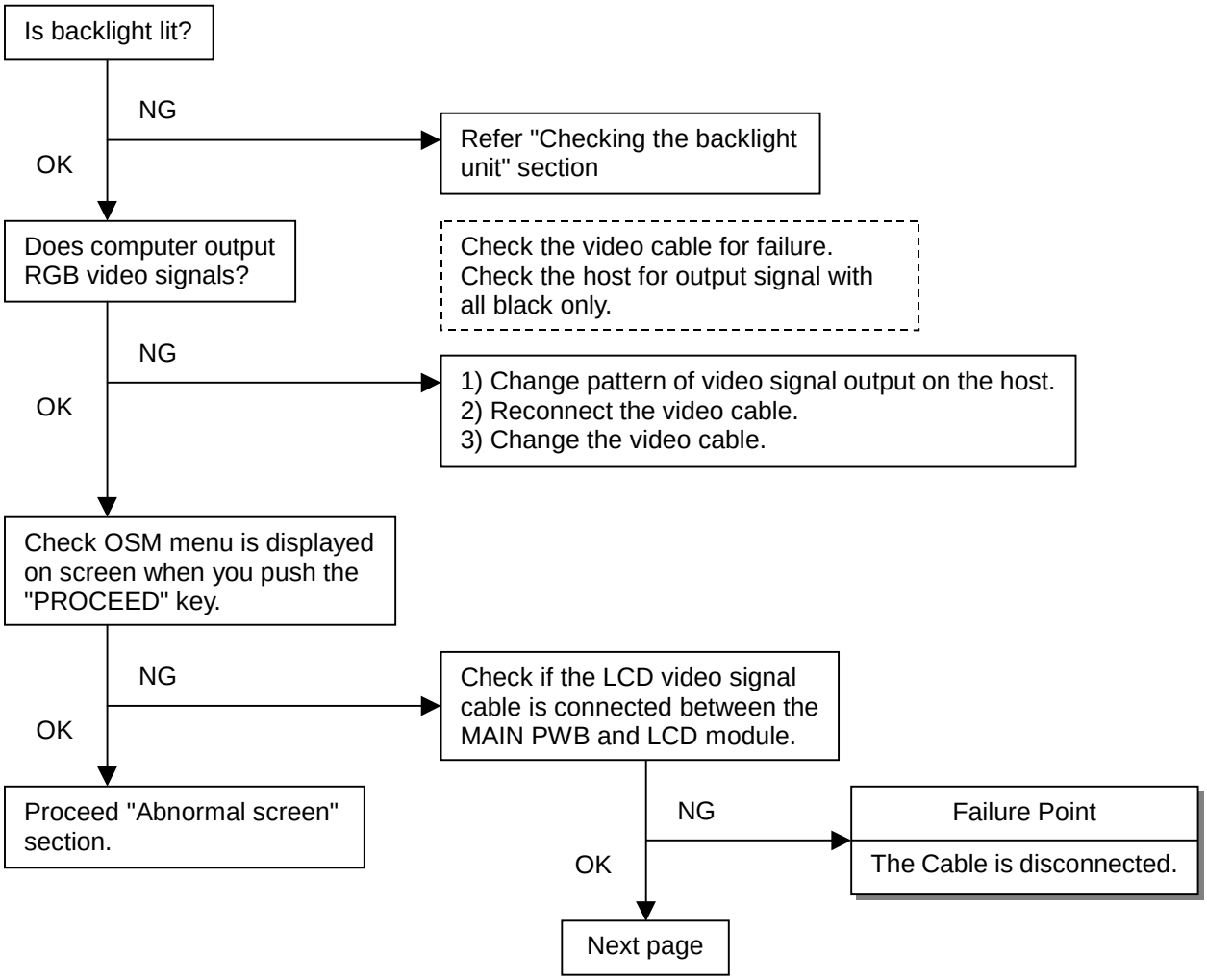
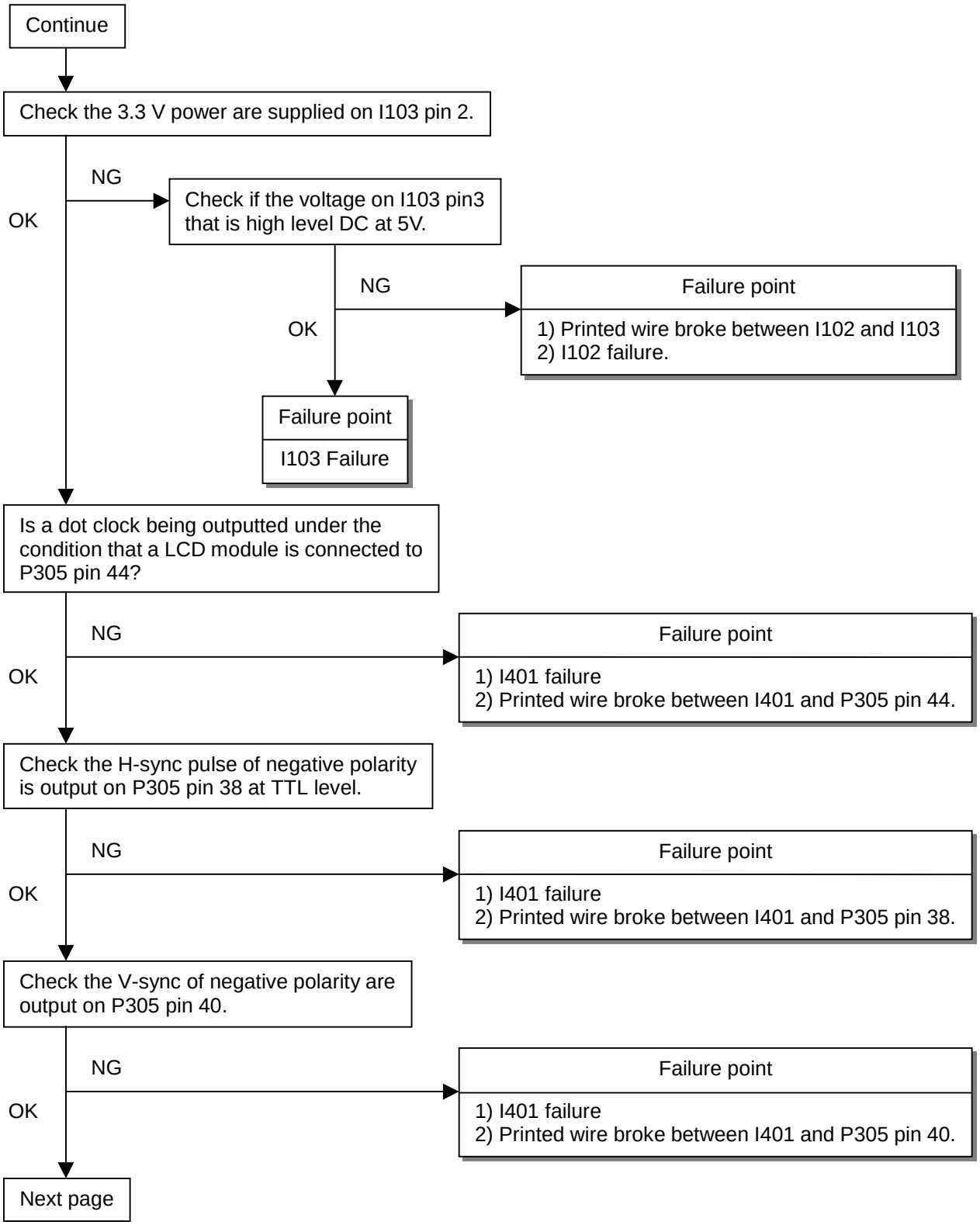
page

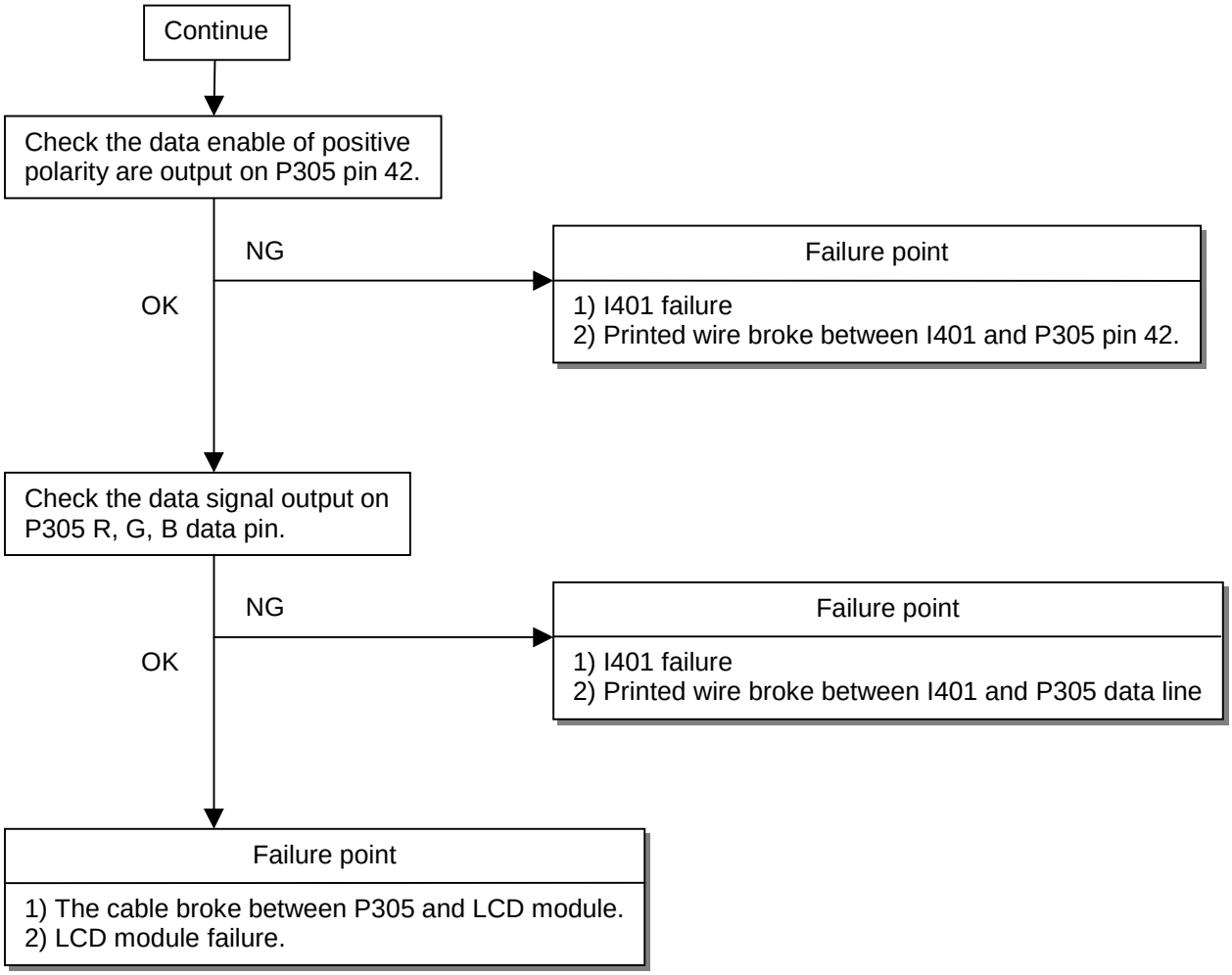
1. No display of screen (Screen is black, color of LED is amber)



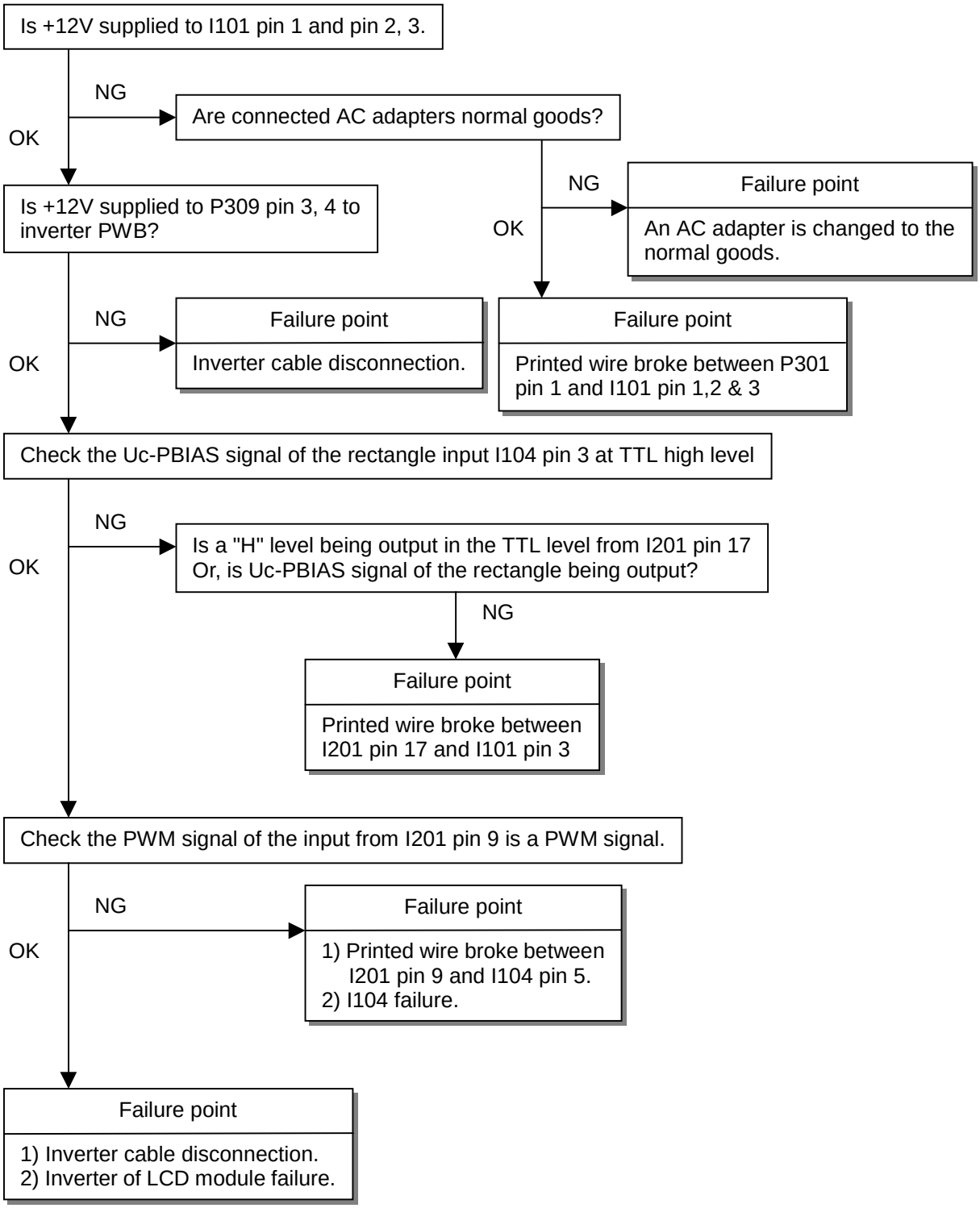
2. Nothing displays on screen (Screen is black, color of LED is green)



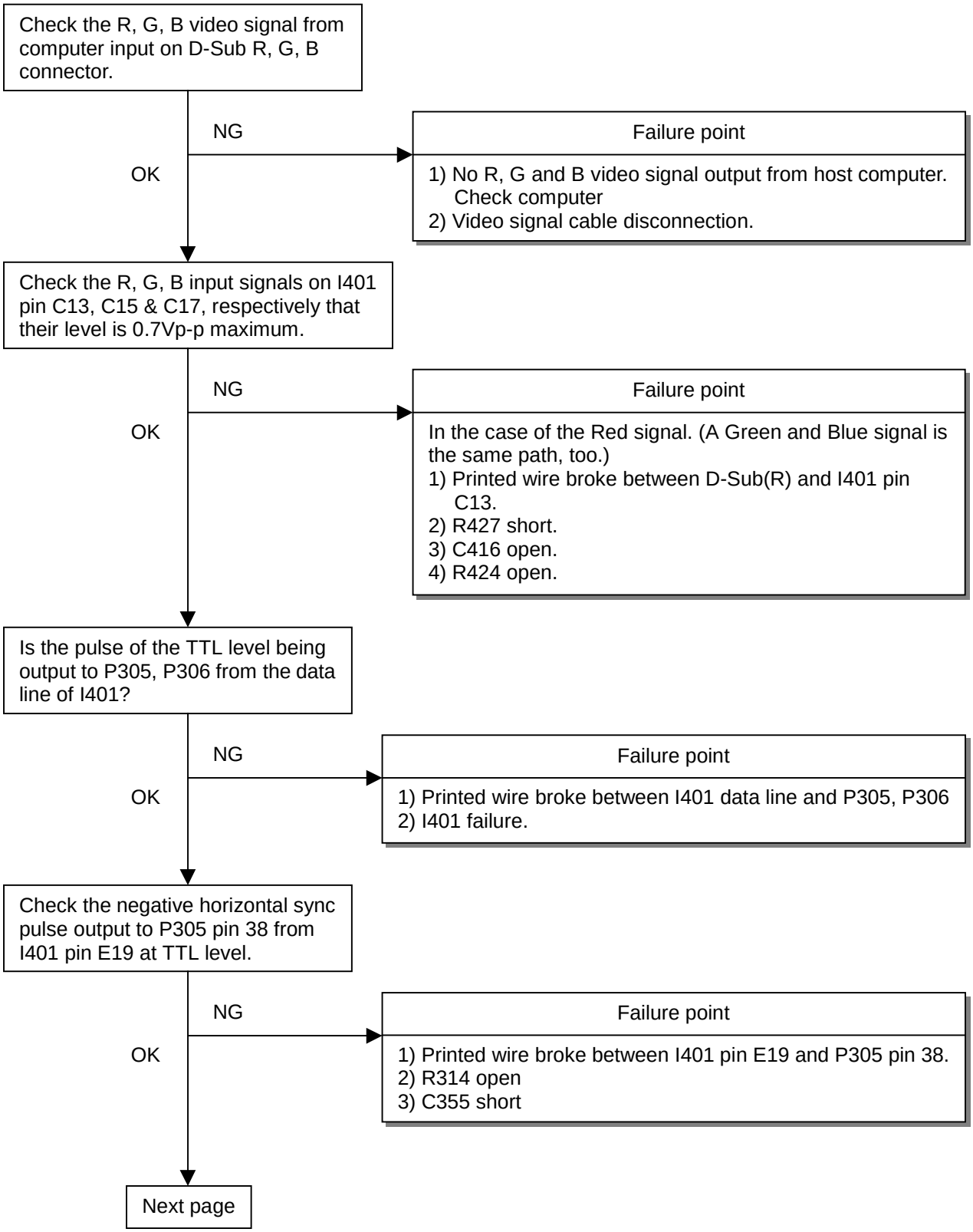

Continue
Check the 3.3 V power are supplied on I103 pin 2.
NG
OK
Check if the voltage on I103 pin3 that is high level DC at 5V.
NG
OK
Failure point
1) Printed wire broke between I102 and I103
2) I102 failure.
Failure point
I103 Failure
Is a dot clock being outputted under the condition that a LCD module is connected to P305 pin 44?
NG
OK
Failure point
1) I401 failure
2) Printed wire broke between I401 and P305 pin 44.
Check the H-sync pulse of negative polarity is output on P305 pin 38 at TTL level.
NG
OK
Failure point
1) I401 failure
2) Printed wire broke between I401 and P305 pin 38.
Check the V-sync of negative polarity are output on P305 pin 40.
NG
OK
Failure point
1) I401 failure
2) Printed wire broke between I401 and P305 pin 40.
Next page

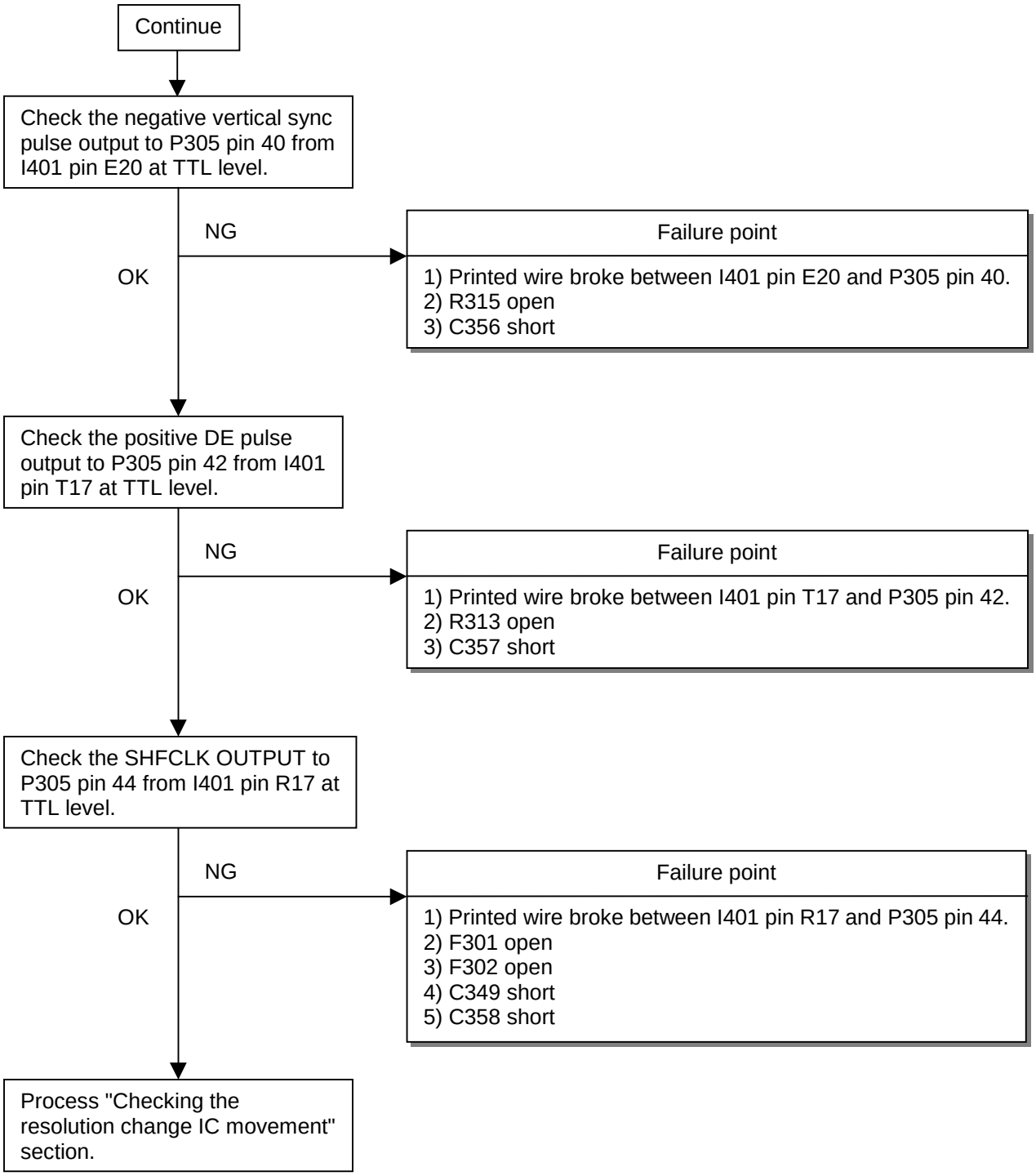

Continue
Check the data enable of positive polarity are output on P305 pin 42.
NG
OK
Failure point
1) I401 failure
2) Printed wire broke between I401 and P305 pin 42.
Check the data signal output on P305 R, G, B data pin.
NG
OK
Failure point
1) I401 failure
2) Printed wire broke between I401 and P305 data line
Failure point
1) The cable broke between P305 and LCD module.
2) LCD module failure.

3. Checking the back light unit

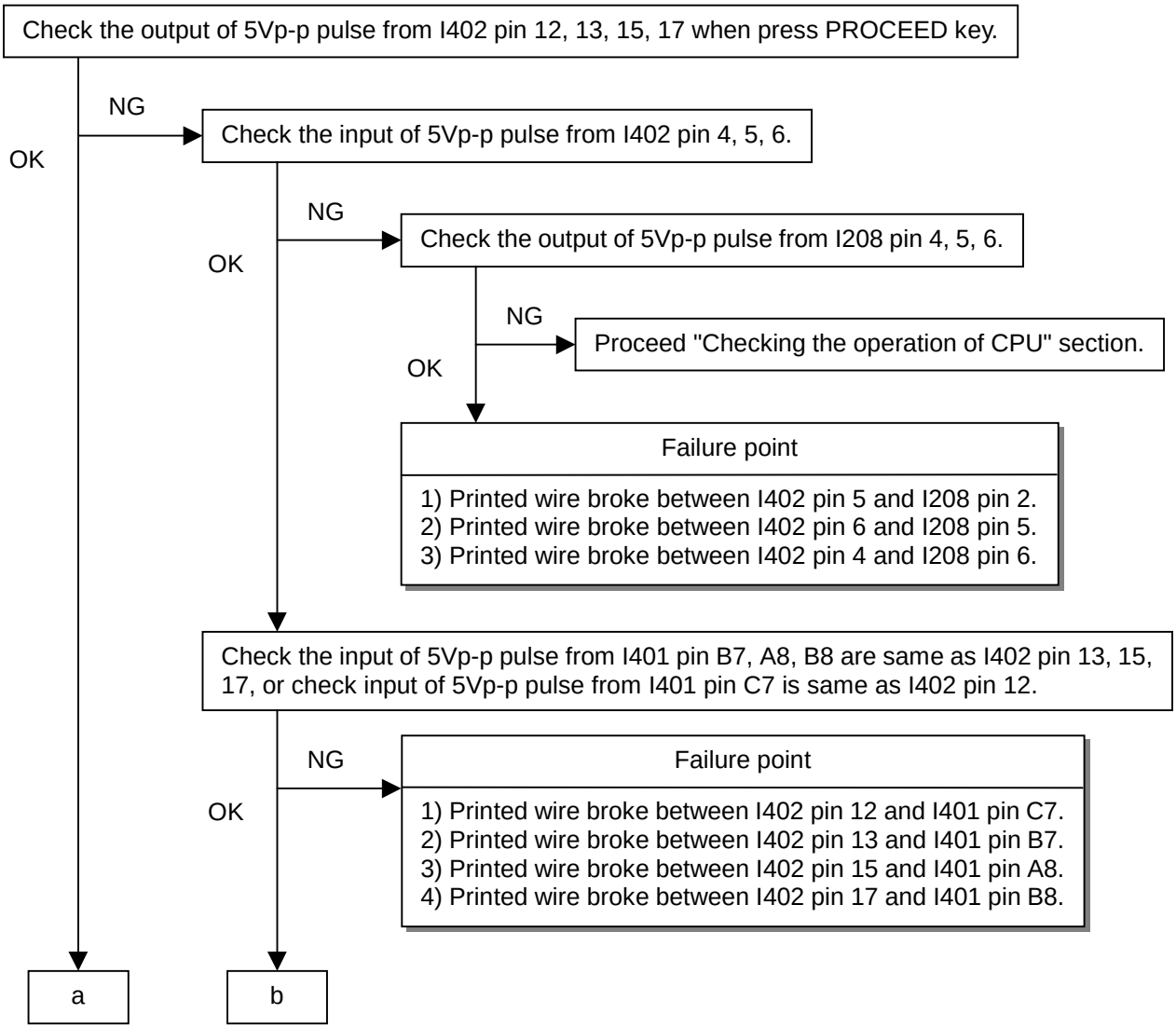


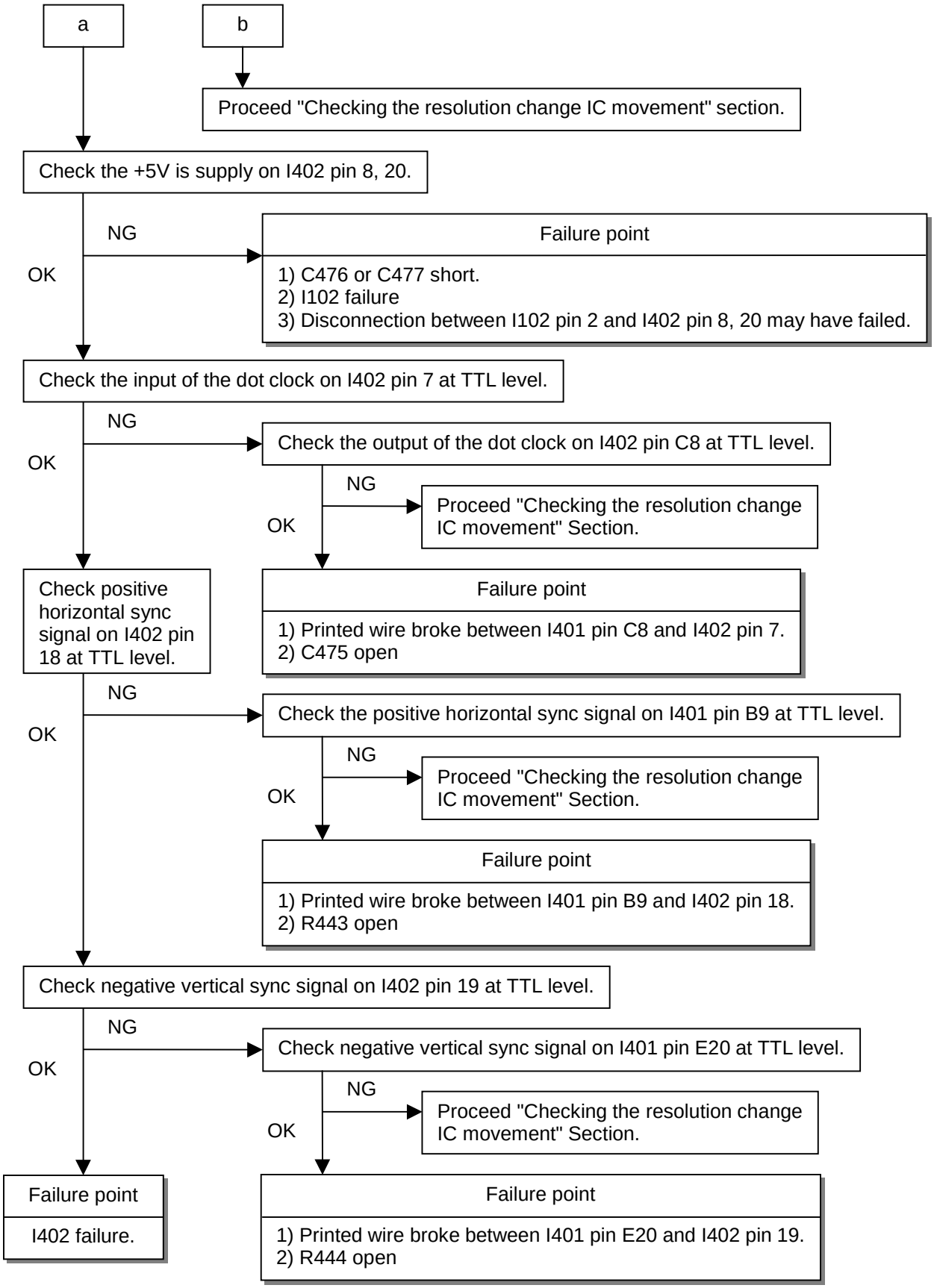
4. Abnormal screen



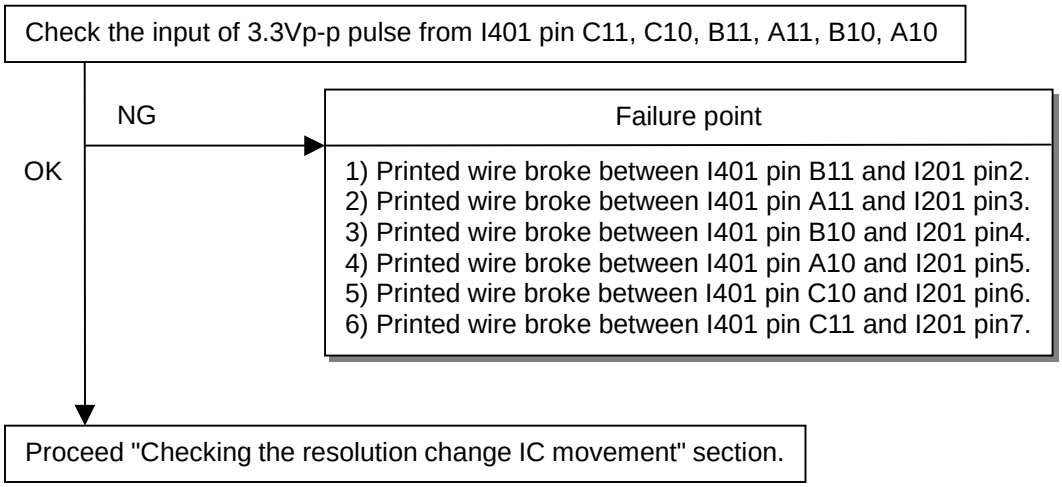

Continue
Check the negative vertical sync pulse output to P305 pin 40 from I401 pin E20 at TTL level.
NG
OK
Failure point
1) Printed wire broke between I401 pin E20 and P305 pin 40.
2) R315 open
3) C356 short
Check the positive DE pulse output to P305 pin 42 from I401 pin T17 at TTL level.
NG
OK
Failure point
1) Printed wire broke between I401 pin T17 and P305 pin 42.
2) R313 open
3) C357 short
Check the SHFCLK OUTPUT to P305 pin 44 from I401 pin R17 at TTL level.
NG
OK
Failure point
1) Printed wire broke between I401 pin R17 and P305 pin 44.
2) F301 open
3) F302 open
4) C349 short
5) C358 short
Process "Checking the resolution change IC movement" section.

5. No OSM display



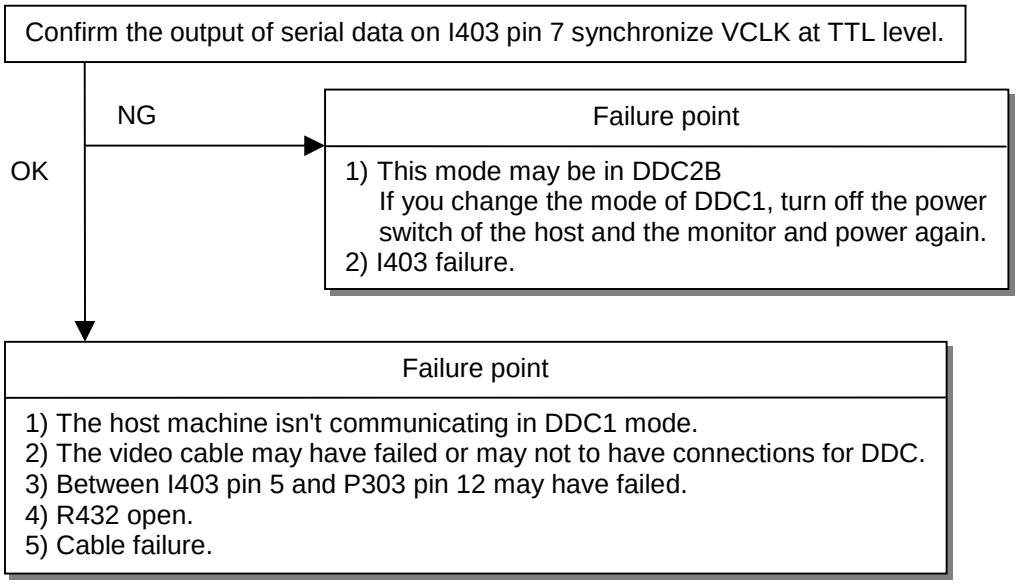

a
b
Proceed "Checking the resolution change IC movement" section.
Check the +5V is supply on I402 pin 8, 20.
NG
OK
Failure point
1) C476 or C477 short.
2) I102 failure
3) Disconnection between I102 pin 2 and I402 pin 8, 20 may have failed.
Check the input of the dot clock on I402 pin 7 at TTL level.
NG
OK
Check the output of the dot clock on I402 pin C8 at TTL level.
NG
OK
Proceed "Checking the resolution change IC movement" Section.
Failure point
1) Printed wire broke between I401 pin C8 and I402 pin 7.
2) C475 open
Check positive horizontal sync signal on I402 pin 18 at TTL level.
NG
OK
Check the positive horizontal sync signal on I401 pin B9 at TTL level.
NG
OK
Proceed "Checking the resolution change IC movement" Section.
Failure point
1) Printed wire broke between I401 pin B9 and I402 pin 18.
2) R443 open
Check negative vertical sync signal on I402 pin 19 at TTL level.
NG
OK
Check negative vertical sync signal on I401 pin E20 at TTL level.
NG
OK
Proceed "Checking the resolution change IC movement" Section.
Failure point
I402 failure.
Failure point
1) Printed wire broke between I401 pin E20 and I402 pin 19.
2) R444 open

6. Abnormal Auto adjustment

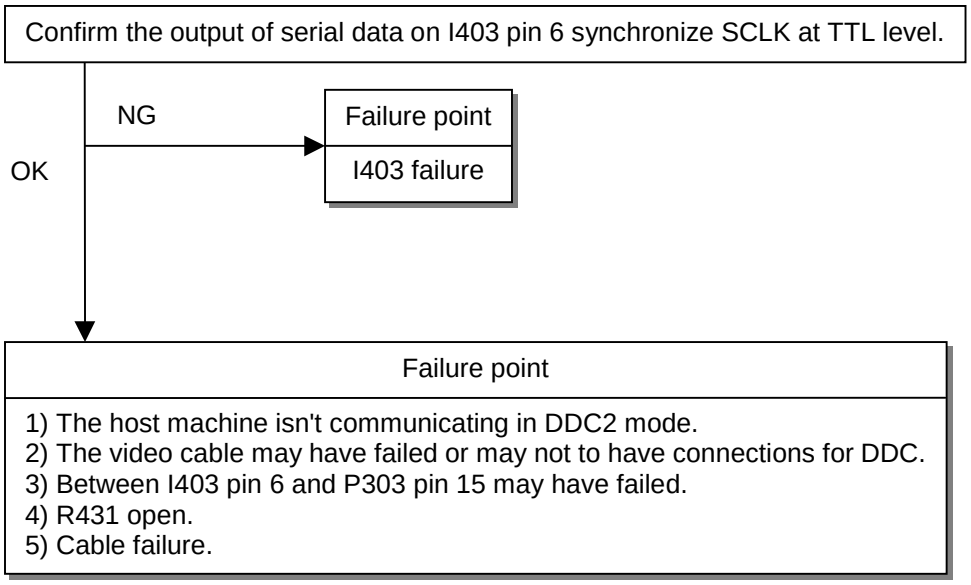


7. Abnormal plug and play operation

7.1 Abnormal DDC1

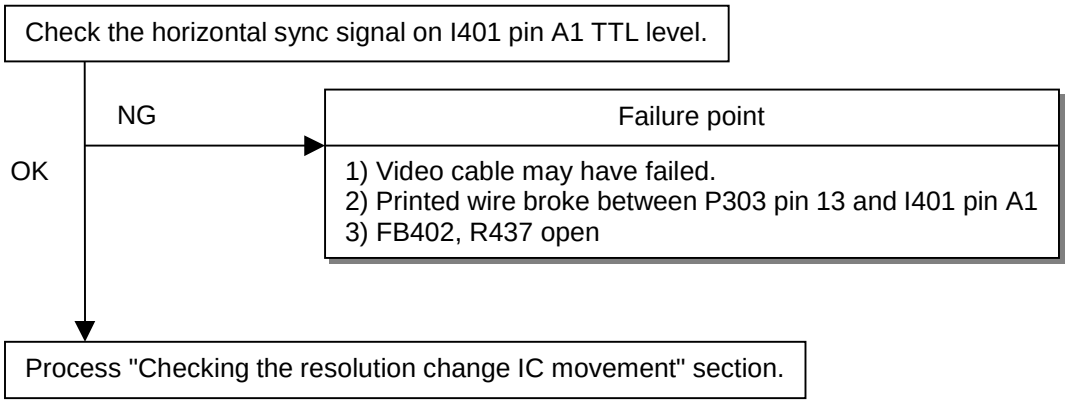


7.2 Abnormal DDC2

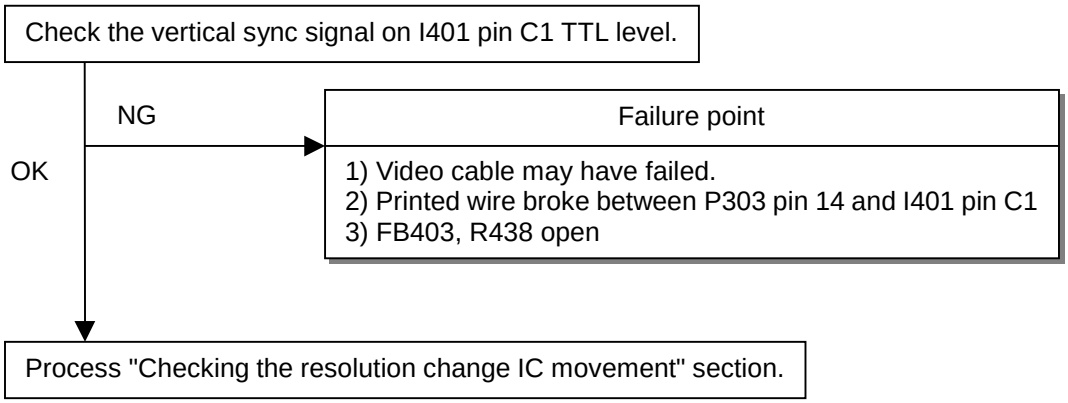


8. Checking the interface circuit of sync signal

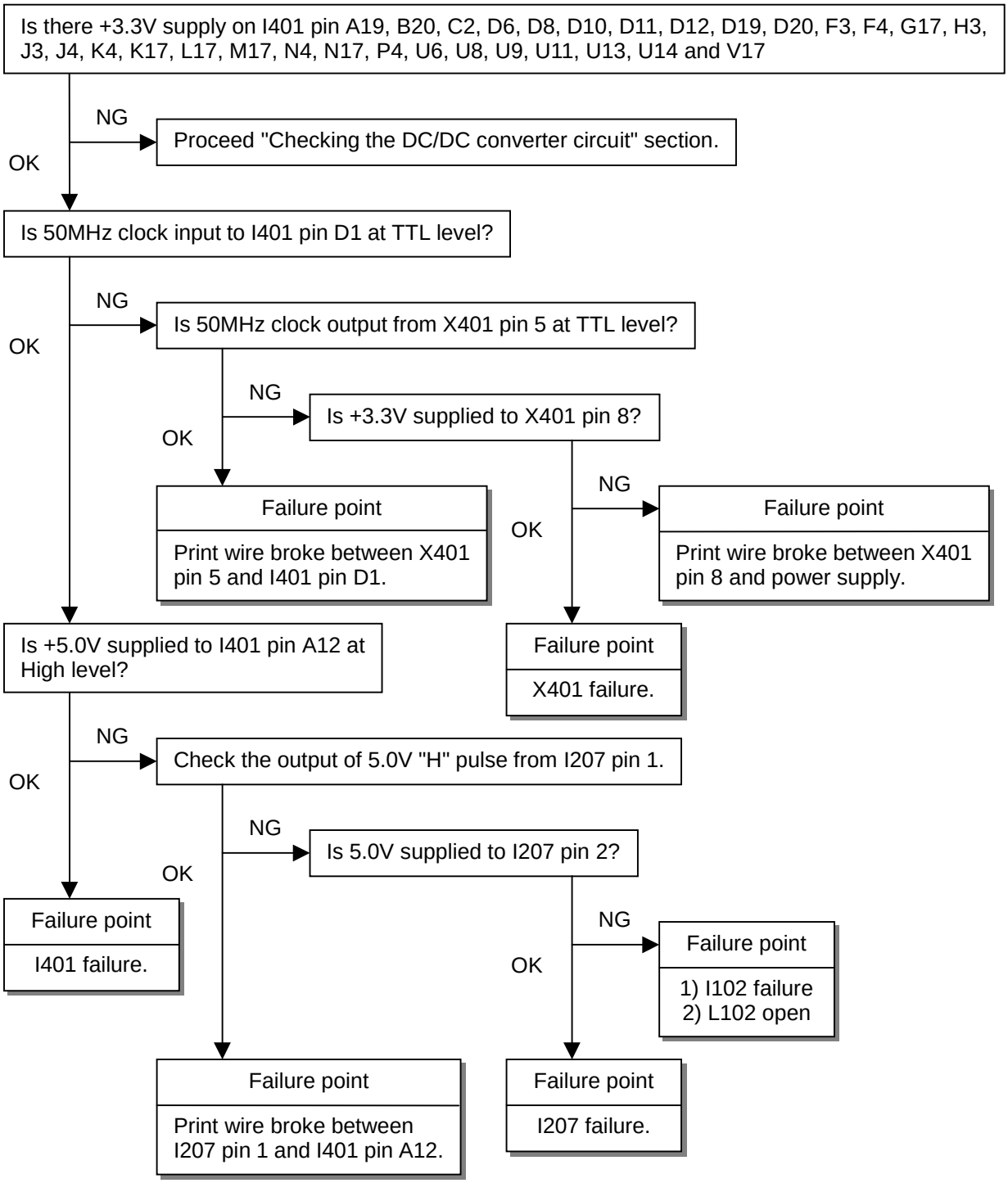
8.1 Checking the control circuit of horizontal sync pulse



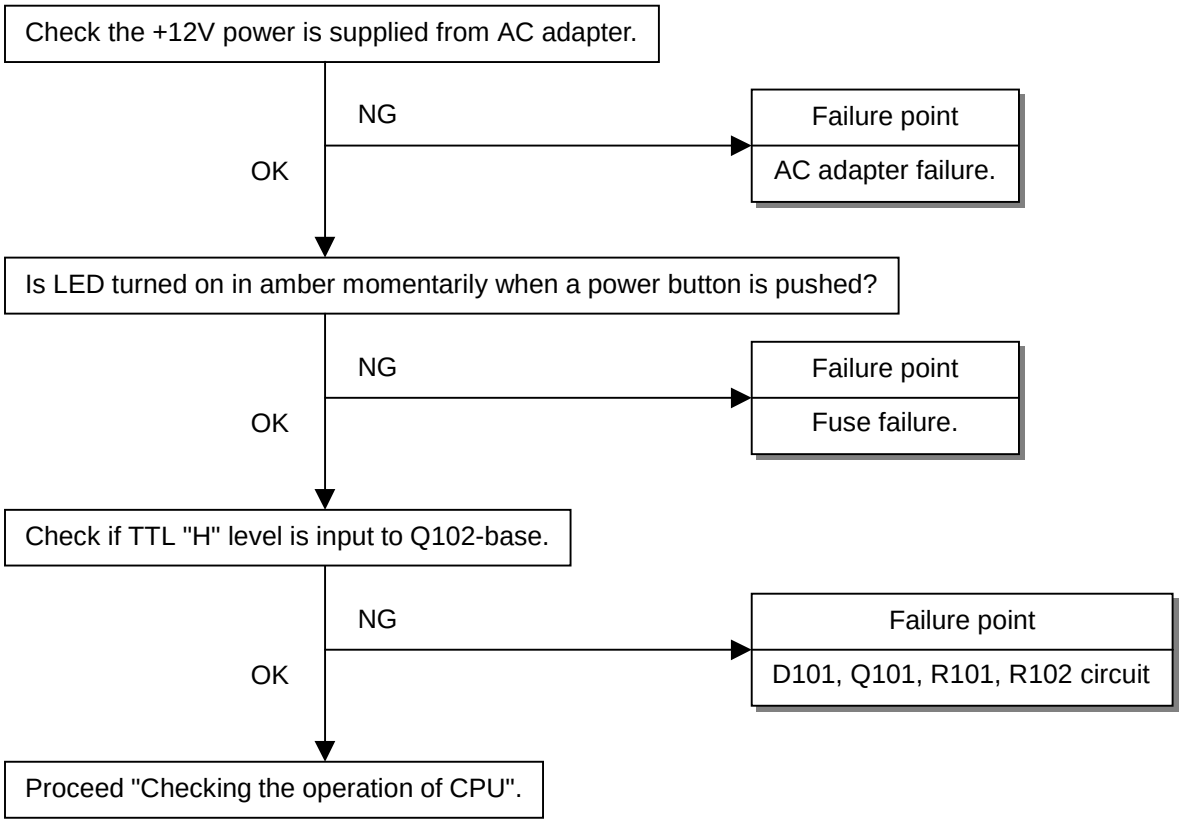
8.2 Checking the control circuit of vertical sync pulse



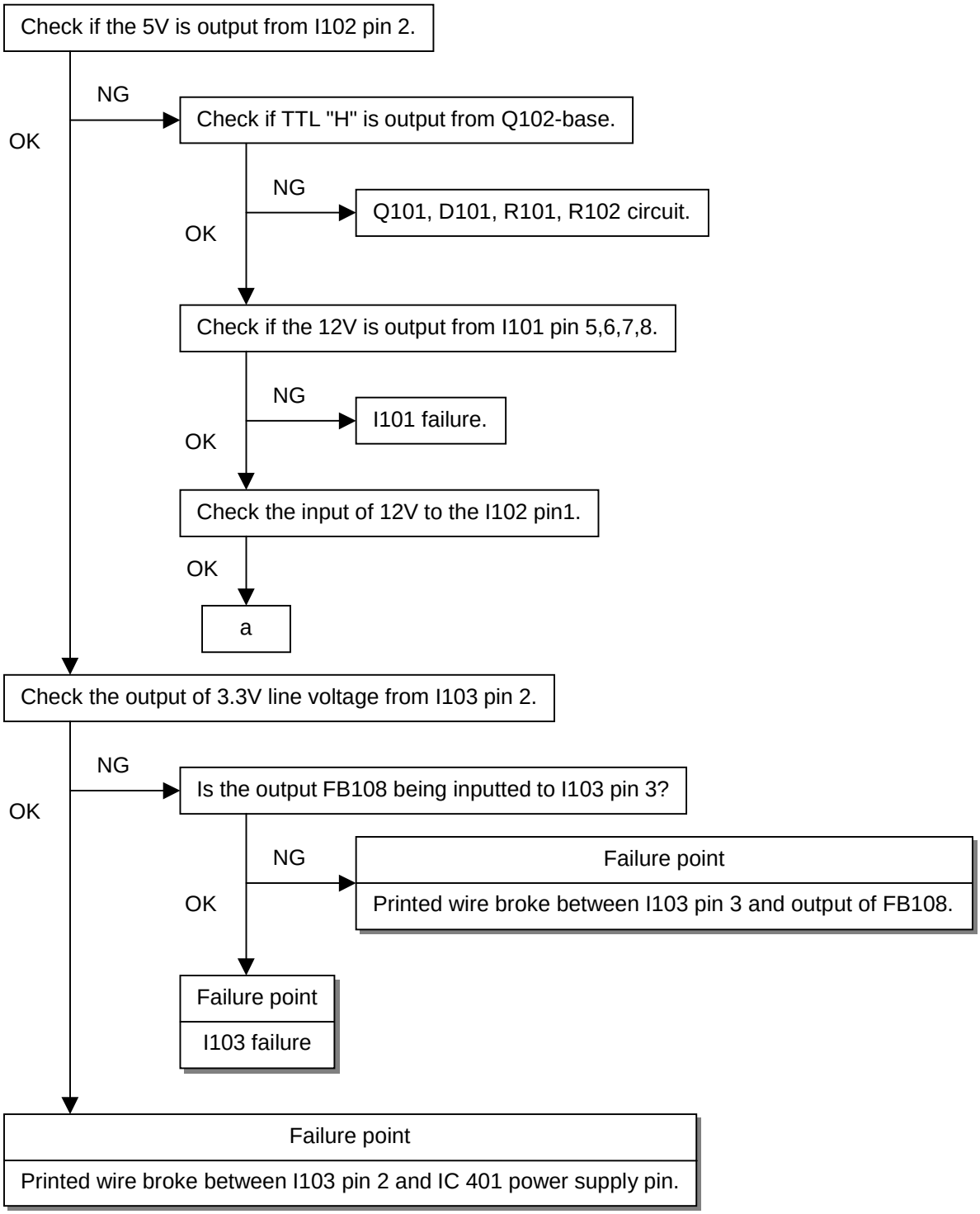
9. Checking the resolution change IC movement



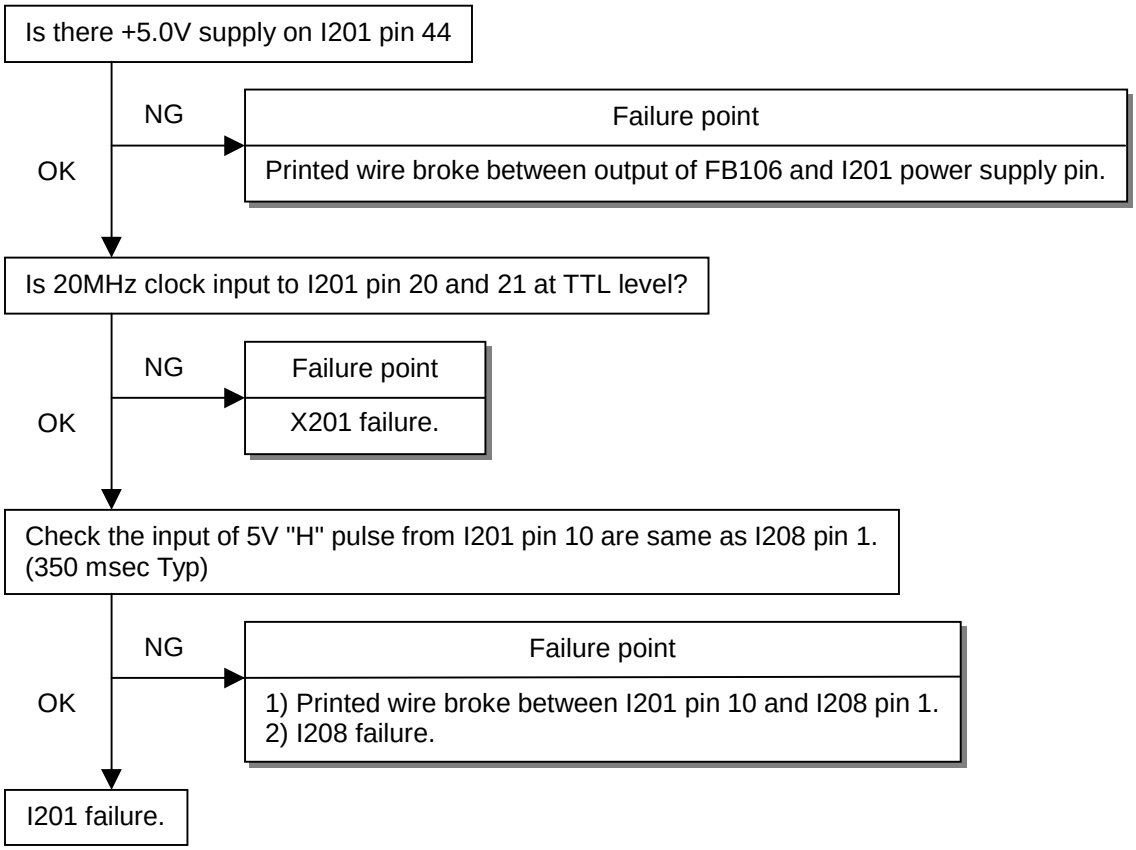
10. No power on



11. Checking the DC/DC converter circuit



12. Checking the operation of CPU



CIRCUIT DESCRIPTION

TABLE OF CONTENTS

Page

1. Power supply

1. I/02:DC-DC converter
   A 5V power supply for LCD module, CPU, and logic is generated from the 12V source.
2. I/03:3-terminal regulator
   A 3.3V power supply for LCD module is generated from the 5V source.
3. I/03:3-terminal regulator
   A 3.3V power supply for IC14 analog is generated from the 5V source.
4. I/03:3-terminal regulator
   A3.3V power supply for IC14 digital is generated from the 5V source.

Q301, I301 ON/OFF control for LCD Module

ON/OFF control is performed for power ON/OFF and also for the power saving sequence.

2. On-screen circuit

I402 (M35072-057FP) is an OSD IC.

The HREF Signal, the OSDVS signal (horizontal/vertical sync signal in negative polarity), and the OSDCLK signal (dot clock for OSD display) are received from I401 (Circuit diagram MAIN PWB 3/10 B135), and data of the OSDDAT signal (pin 5) are picked up from the OSDSTB signal (pin 6) that is generated from I208 .

Using these data, and On-screen menu screen is established and the resultant data are output to IC401.

3. Video input circuit

The AC-coupled video signal is used to clamp the black level at 0V.

4. Definition converter LSI peripheral circuit

I401 (B135) is the definition converter LSI.

The analog R, G, B signal input entered from the video input circuit is converted into the digital data of video signal through the incorporated A/D converter. Based on this conversion, this device performs interpolation during pixel extension. The source voltage for this device is 3.3V and the system clock frequency is 50MHz.

The withstand voltage level for the input signal voltage if I401 is 3.3V and 5V.

5. System reset, LED control circuit

5.1 System reset

System reset is performed by detecting the rising and falling of the 5V source voltage at I207.

5.2 LED control circuit

Green/amber is lit with the control signal of the LED GREEN and LED AMBER signal pin 15, 12 from I208.

6. E^2PROM

Data transfer between I205 (AT24C16) and CPU (Circuit diagram MAIN PWB 2/10) (I201) is effected through the IIC bus SCL (pin 15) and SDA (pin 16) of I201. The data to be transferred to each device are stored in I205.

- IC14 control data
- OSD related setting data.
- Other control data for service menu.

7. CPU circuit

I201 (80C51RA2) functions as the CPU.

The source voltage for the device is 5.0V and the system clock frequency 20MHz.

7.1 Detection of POWER switch status

The CPU identifies the ON status of the two power supplies. The identification is made when the power supply is turned off. For example, if the power supply is turned off with the POWER switch, the POWER switch must be turned on when activating the power supply again. If the power supply is turned off by pulling out the power cord, then this power supply can be turned on by connecting the power cord, without pressing the POWER switch.

7.2 Display mode identification

7.2.1 Functions

(1) Display mode identification

- The display mode of input signal is identified based on Table 1, and according to the frequency and polarity (HPOL, VPOL) of horizontal or vertical sync signal, presence of the horizontal or vertical sync signal, and the discrimination signal (HSYNC_DETECT, VSYNC_DETECT).
- In MOD [3] [4], inappropriate polarity, composite sync, and sync On green are indentified as MOD [4].
- When the mode has been identified through the measurement of horizontal and vertical frequencies, the total number of lines is determined with a formula of “Horizontal frequency/Vertical frequency = Total number of lines. “Final identification can be made by examining the coincidence of the obtained figure with the number of lines for the mode identified from the frequency. The boundary number of lines in each mode is shown in Table 2.
- When the detected frequency if the sync signal has changed, the total number of lines should be counted even through it is rge identified frequency in the same mode. Then, it is necessary to examine whether the preset value for the vertical display position of Item 4-3 has exceeded the total number of lines. If exceeded, a maximum value should be set up, which does not exceed the vertical display position of Item 4-3.

(2) Power save mode.

- Vertical frequency : Below 24 KHz
- Horizontal frequency : 75 KHz or above,
- VTOTAL : 1027 or mode.

(3) Asset management

As an action for asset management, the potential at the WRITE PROTECT pin is turned to be “H” if there is a vertical input of vertical frequency (42 Hz $\pm$ 1Hz).

For more detailed setting method, refer to 4-6-5-14 (8). During this operation, this system stays in the Out-Of-Range mode.

(4) Power save mode.

The power save mode is assumed when the horizontal/vertical signals are as specified below.

- If there is no horizontal sync signal input.
- If there is no vertical sync signal input.
- If the horizontal sync signal is outside the measuring range of B135.
- If the Vertical sync signal is outside the measuring range of B135.

Table 1

Signal number	Preset	Mode	HSYNC: FREQUENCY	VSYNC: FREQUENCY	SYNC TYPE	HSYNC: POLARITY	VSYNC: POLARITY	DOTCLK	fH(kHz)	FV(Hz)
1		640X400 (56)	24kHz≤fH<30.8kHz					21.053	24.830	56.432
2		640X480 (60)	30.8kHz≤fH<33kHz	FV<63Hz				25.175	31.469	59.992
3		720X350 (70)			SEP	+	-	25.175	31.469	70.087
4		720X400 (70)			SEP	-	+	25.175	31.469	70.087
4		720X400 (70)			OTHER	OTHER	OTHER			
5		800X600 (56)	33kHz≤fH<43kHz	FV<58Hz				36.000	35.156	56.250
6		800X600 (60)		58Hz≤fV<63Hz				40.000	37.879	60.317
7		640X480 (66)		63Hz≤fV<68Hz				30.240	35.000	66.611
8		640X480 (72)		68Hz≤fV<74Hz				31.500	37.861	72.809
9		640X480 (75)		74Hz≤fV	SEP	-	-	31.500	37.500	75.000
10		720X350 (85)			SEP	+	-	31.500	37.861	85.080
11		720X400 (85)			SEP	-	+	31.500	37.861	85.080
11		720X400 (85)			OTHER	OTHER	OTHER			
12		800X600 (75)	43kHz≤fH<47.2kHz	FV<80Hz				49.500	46.875	75.000
13		640X480 (85)		80Hz≤fV				36.000	43.269	85.008
14		1024X768 (60)	47.2kHz≤fH<51kHz	FV<63Hz				65.000	48.363	60.004
15		800X600 (72)		63Hz≤fV<73Hz				50.000	48.077	72.188
16		832x624 (75)		73Hz≤fV				57.283	49.725	74.550
14		1024X768 (60)	51kHz≤fH<55kHz	FV<70Hz				70.490	52.448	60.004
17		800X600 (85)		70Hz≤fV				56.250	53.674	85.061
18		1024X768 (70)	55kHz≤fH<59kHz					75.000	56.476	70.069
19		1024X768 (75)	59kHz≤fH<62kHz					78.750	60.023	75.029
20		1024X768 (85)	62kHz≤fH<75kHz					94.500	68.677	84.977

Table 2. the number of the lines, Vsync distinction

Indication resolution	The number of the distinction lines	Distinction Vsync	The fixed mode
The mode of 400 line and under	LINE≤487	FV≤63Hz	3
		63Hz<fV≤78Hz	1
		78Hz≤fV	11
640×480	487<LINE≤607	FV≤63Hz	6
		63Hz<fV≤68Hz	7
		68Hz<fV≤74Hz	8
		74Hz<fV≤78Hz	9
		78Hz≤fV	10
800×600	607<LINE≤777	FV≤58Hz	11
		58Hz<fV≤63Hz	12
		63Hz<fV≤73Hz	14
		73Hz<fV≤78Hz	13
		78Hz≤fV	15
832×624	640≤LINE	-	16
1024×768	768<LINE≤870	FV≤63Hz	17
		63Hz<fV≤68Hz	18
		68Hz<fV≤73Hz	19
		73Hz<fV≤78Hz	20
		78Hz<fV	21
1152×864	870<LINE≤1031		UN SUPPORT
1280×960	960<LINE≤1027		UN SUPPORT
1280×1024	1027<LINE		UN SUPPORT

Attention :

1. Make it the mode 16 by the first HSYNC, the VSYNC distinction in the time beyond 640 line when you recognize it with the mode 16.
2. When resolution beyond 1024 × 768 is inputted, resolution is lowered with Down scaling to 1024 × 768, and indicated, and OSD should indicate OUT of Range.

7.3 User Control

7.3.1 Related ports of I401

Port	Pin No.	I/O	Signal name	Function	Remarks
MFB1	B6	I	RESET	RESET switch input	The set value is returned to the initial value
MFB10	A3	I	EXIT	EXIT switch input	Withdraw from OSD
MFB8	A4	I	DOWN	▼ switch input	(▼) key
MFB4	B5	I	UP	▲ switch input	(▲) key
MFB9	B3	I	-	◀ switch input	(◀) key
MFB3	C5	I	+	▶ switch input	(▶) key
MFB2	A6	I	PROCEED	PROCEED switch input	Functional

7.3.2 Functions

Control is effected for the push-switches to be used when the user changes the parameters, in order to modify the respective setting values. Whether the switch has been pressed is identified with the switch input level that is turned “L”.

Each switch input port is pulled up at outside of ASIC.

Each parameter is stored in the EEPROM, the contents of which are updated as required.

7.4 Control of definition converter LSI I401

7.4.1 Ports related to control

Pin No.	I/O	Signal name	Function
C9	I	IRQ	B135 interrupt signal
C10	O	HCLK	B135 serial clock
B11	I/O	HDATA	B135 serial data
C11	O	HFS	B135 serial select

7.4.2 Functions

Major function of I401 are as follows:

(1) Expansion of the display screen.

(2) Timing control for various signal types.

(3) Power-supply sequence (LCD panel).

7.5 I^2C bus control

7.5.1 Related ports of I201

Port	Pin No.	I/O	Signal name	Function
P3.3	15	I	IICCLK	IIC bus clock
P3.4	16	I/O	IICDATA	IIC bus data

7.5.2 I^2C-controlled functions

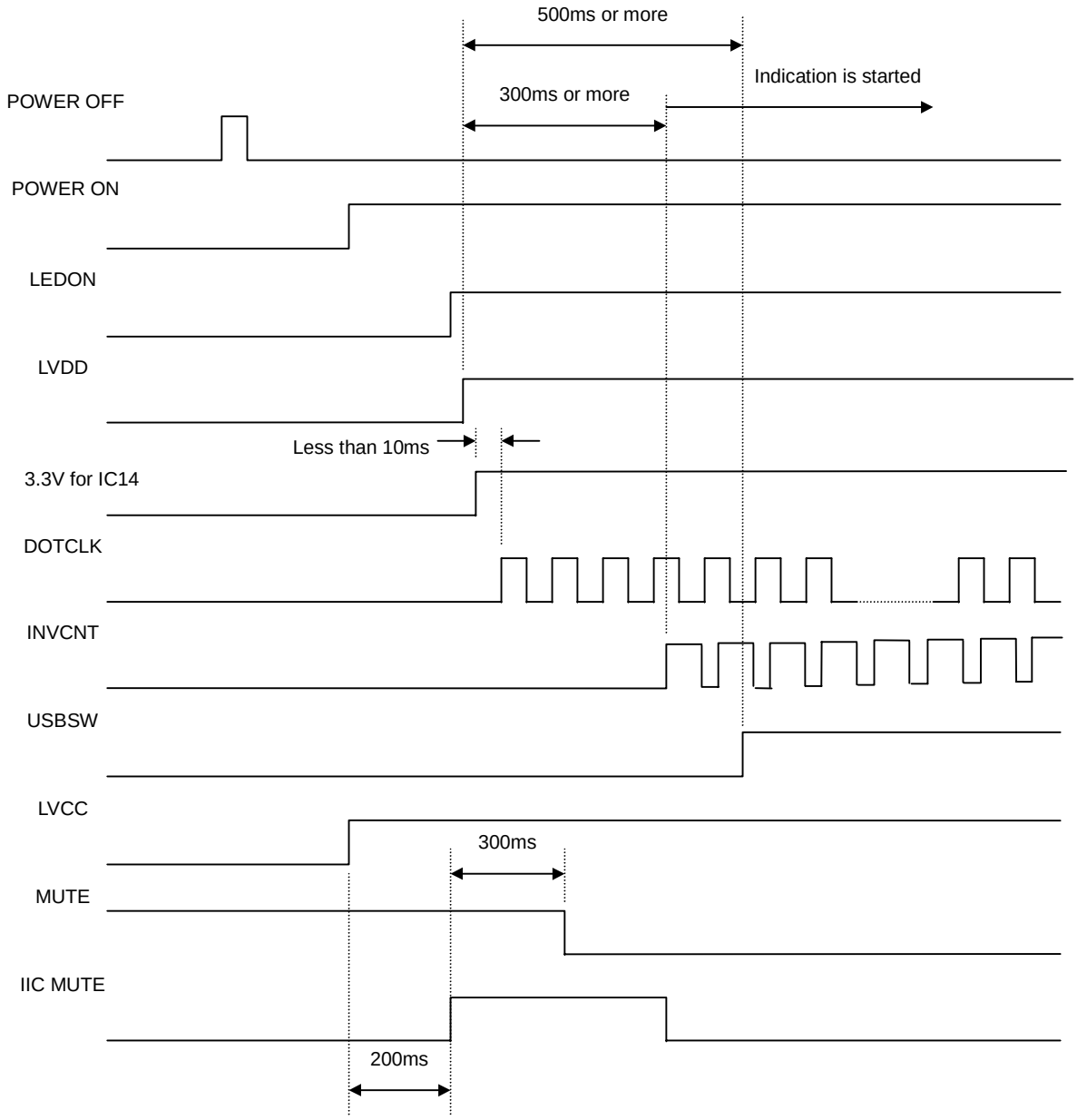
The following function controls are effected I^2C.

(1) Control of EEPROM I205 for parameter setting.

(2) Control of audio preamplifier.

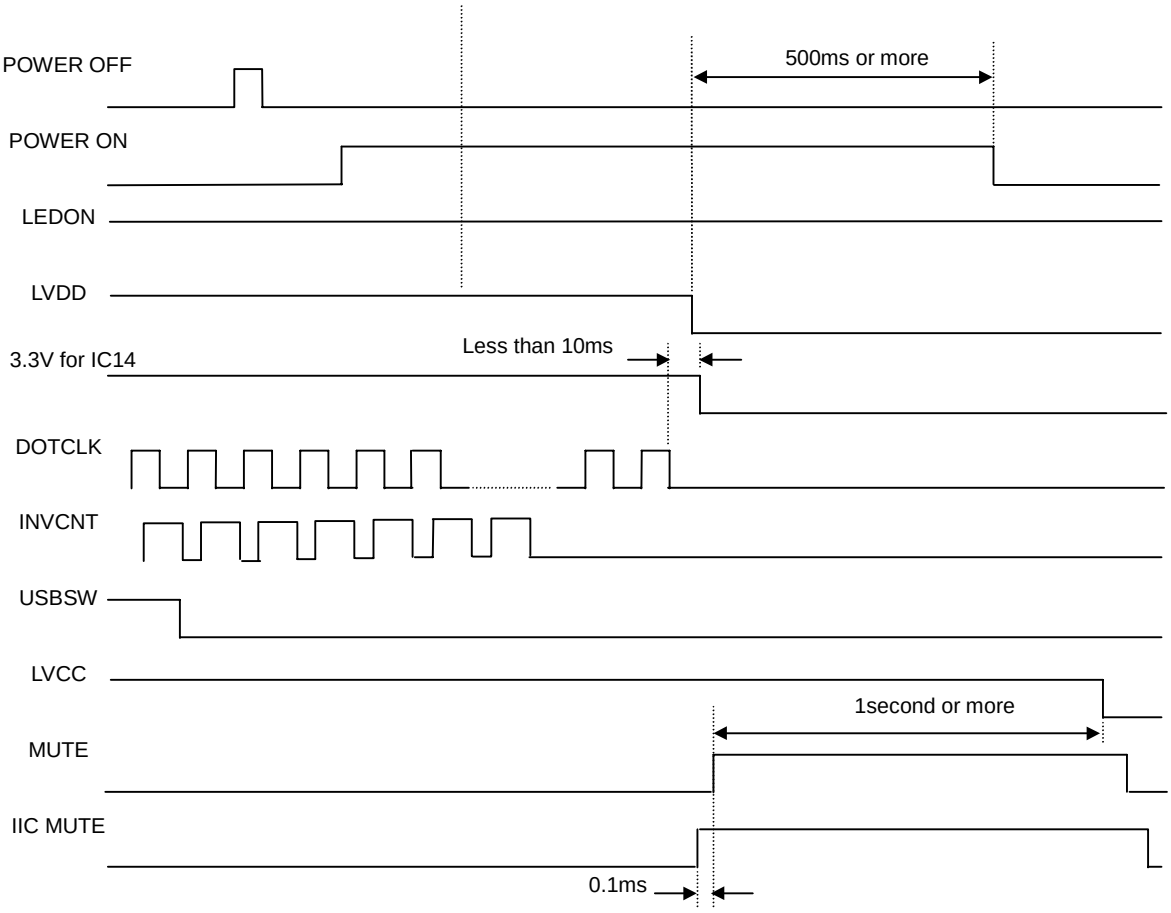
7.6 Power ON sequence

When the POWER switch is pressed, the POWER OFF signal is turned “H”. When this “H” potential is detected, the CPU begins to establish the respective power supplies according to the sequence shown below.



7.7 Power OFF sequence

When the POWER switch is pressed while the power supply is ON, the POWER ON signal is turned “H”. When this “H” potential is detected, the CPU begins to turn off the respective power supplies according to the sequence shown below.



7.8 List of CPU Pin Assignments

Port	Pin NO	Signal name	Function	Remarks	Destina-tion	Pull up
Vss1	1	N.C	Optional GRD			
P1.0	2	HDATA0	B135 Serial Data	Data I/O terminal for communication	B135	O
P1.1	3	HDATA1	B135 Serial Data	Data I/O terminal for communication		O
P1.2	4	HDATA2	B135 Serial Data	Data I/O terminal for communication		O
P1.3	5	HDATA3	B135 Serial Data	Data I/O terminal for communication		O
P1.4	6	HCLK	B135 Serial Clock	Clock output terminal for B135 CPU communication		
P1.5	7	HFS	B135 Data Enable	High: enable / low: disable		
P1.6	8	A16	Address	Not used	I203	O
P1.7	9	PWM	Back light control PWM signal		I104	
-	10	RST	Reset		I206,I208	
P3.0	11	RXD	Receive Data		-	
-	12	N.C	-			
P3.1	13	TXD	Transmit Date	I/O port with internal pull-up	-	
P3.2	14	IRQ	B135 Interruption signal	I/O port with internal pull-up	B135	
P3.3	15	SCL	Serial Clock	I/O port with internal pull-up	I205	O
P3.4	16	SDA	Serial Data	I/O port with internal pull-up	I205	O
P3.5	17	Uc-PBIAS	Back light control ON/OFF signal	I/O port with internal pull-up	I104	
P3.6	18	WR	External data memory write strobe	I I/O port with internal pull-up	I204,I206	
P3.7	19	RD	External data memory read strobe	I/O port with internal pull-up	I204	
-	20	XTAL2	Crystal 1	Output from the inverting oscillator	X201	
-	21	XTAL	Crystal 2		X201	
-	22	GRD			-	
-	23	N.C	-			
P2.0	24	A8	Address	I/O port with internal pull-up	I202,I203,I204	
P2.1	25	A9	Address	I/O port with internal pull-up		
P2.2	26	A10	Address	I/O port with internal pull-up		
P2.3	27	A11	Address	I/O port with internal pull-up		
P2.4	28	A12	Address	I/O port with internal pull-up		
P2.5	29	A13	Address	I/O port with internal pull-up		
P2.6	30	A14	Address	I/O port with internal pull-up	I202,I203,I204 ,I206	
P2.7	31	A15	Address	I/O port with internal pull-up	I202,I203,I204 ,I209	
-	32	PSEN	Program Store Enable		I203,I209	
-	33	ALE	Address Latch Enable/Probram Pulse		I202	
-	34	N.C	-			
-	35	EV/Vpp	External Access Enable/Programming Supply Voltage		-	
P0.7	36	D7	Address/Data	I/O port	I202,I203,I204 ,I208	
P0.6	37	D6	Address/Data	I/O port		
P0.5	38	D5	Address/Data	I/O port		
P0.4	39	D4	Address/Data	I/O port		
P0.3	40	D3	Address/Data	I/O port		
P0.2	41	D2	Address/Data	I/O port		
P0.1	42	D1	Address/Data	I/O port		
P0.0	43	D0	Address/Data	I/O port		
-	44	Vcc	Source Voltage(+5V)		-	

8. Inverter Protective circuit for back light and power source circuity

This unit operates on an output voltage of 12V from AC adapter. When an AC adapter with an output voltage over 12V higher is connected, the control signal from I101 is forcibly connected to the LOW level through D101 (RLZ18B), Q101 (SST33904), and R101, R102. In order to protect the inverter for back light. By this treatment, oscillation is suspended in the inverter circuit. It must be noted that the back light it unlit as a result of the stoppage of inverter oscillation.

REPLACEMENT PARTS LIST

The components specified for Model LCD1525V(A)

SYMBOL	PART NO	DESCRIPTION
*** ICS ***		
I101	79PL1041	IC SI4431DY 8P SOP
I102	79PL1040	IC LM2596S-5.0 TO-263(S)
I103	79PL1145	IC RC1587M33 3P TO263
I104	79PL1038	IC LM358DR 8P SOP SMD
I201	79PL1050	IC TS80C51RA2 44P PLCC
I202	79PL1048	IC 74HCT373 20P 300MIL
I203	79PL1051	IC HT27C010-70 32P PLCC
I204	79PL1146	IC W24258S-70 28P SOP
I205	79PL1052	IC KS24L161C 8P DIP
I206	79PL1047	IC 74HCT04 14P SMD
I207	79PL1045	IC MCP130-450DI TO92
I208	79PL1048	IC 74HCT373 20P 300MIL
I209	79PL1046	IC 74HCT08 14P SMD
I301	79PL1042	IC SI9424DY 8P SOP
I401	79PL1043	IC GMB135 292P BGA GENESI
I402	79PL1044	IC M35072-057FP 20P SSOP
I403	79PL1049	IC AT24C21-10PC-2.5 8P
*** TRANSISTORS ***		
Q101	79PL1036	TR NPN SST3904 SMD
Q102	79PL1036	TR NPN SST3904 SMD
Q301	79PL1036	TR NPN SST3904 SMD
Q401	79PL1147	TR NPN PMBT2222A SOT-23
Q402	79PL1147	TR NPN PMBT2222A SOT-23
*** DIODES ***		
D101	79PL1035	DIODE ZNR RLZ TE-11 18B
D330	79PL1034	DIODE BYS10-45-TR SMD
D401	79PL1032	DIODE RLS4148 LL-34 SMD
D402	79PL1032	DIODE RLS4148 LL-34 SMD
D403	79PL1032	DIODE RLS4148 LL-34 SMD
D404	79PL1032	DIODE RLS4148 LL-34 SMD
D405	79PL1032	DIODE RLS4148 LL-34 SMD
D406	79PL1032	DIODE RLS4148 LL-34 SMD
D407	79PL1033	DIODE PRLL5819 1A/40V
D408	79PL1033	DIODE PRLL5819 1A/40V
D409	79PL1032	DIODE RLS4148 LL-34 SMD
D410	79PL1032	DIODE RLS4148 LL-34 SMD
D411	79PL1032	DIODE RLS4148 LL-34 SMD
D412	79PL1032	DIODE RLS4148 LL-34 SMD
D413	79PL1144	DIODE ZNR RLZ TE-11 5.6B

SYMBOL	PART NO	DESCRIPTION
D414	79PL1032	DIODE RLS4148 LL-34 SMD
D415	79PL1144	DIODE ZNR RLZ TE-11 5.6B
D416	79PL1032	DIODE RLS4148 LL-34 SMD
D417	79PL1144	DIODE ZNR RLZ TE-11 5.6B
D418	79PL1032	DIODE RLS4148 LL-34 SMD
D419	79PL1032	DIODE RLS4148 LL-34 SMD
D420	79PL1032	DIODE RLS4148 LL-34 SMD
D600	79PL1088	LED LTL-36EDJP 1(Y)3(G)

*** RELAYS & SWITCHES ***

S601	79PL1096	SW TACT TSAD-1
S602	79PL1096	SW TACT TSAD-1
S603	79PL1096	SW TACT TSAD-1
S604	79PL1096	SW TACT TSAD-1
S605	79PL1096	SW TACT TSAD-1
S606	79PL1096	SW TACT TSAD-1
S607	79PL1096	SW TACT TSAD-1
S608	79PL1096	SW TACT TSAD-1

*** PWB ASSYS ***

AA1	79PL1122	INVERTER DC-AC 12V
AA17	79PL1120	INTERFACE BD NEC-DL151AT
AA19	79PL0952	FANCTION KEY BD NEC-DC150
	79PL1121	PANEL BD NEC-DL151(99)

*** COILS & FILTERS ***

FB101	79PL1064	BEAD COREHB-1P4516-600T60
FB102	79PL1064	BEAD COREHB-1P4516-600T60
FB103	79PL1066	CORE BEAD WB453215B121QST
FB104	79PL1066	CORE BEAD WB453215B121QST
FB106	79PL1066	CORE BEAD WB453215B121QST
FB107	79PL1066	CORE BEAD WB453215B121QST
FB108	79PL1066	CORE BEAD WB453215B121QST
FB301	79PL1148	BEAD CORE HB-1B2012-121JT03
FB302	79PL1148	BEAD CORE HB-1B2012-121JT03
FB304	79PL1064	BEAD COREHB-1P4516-600T60
FB305	79PL1064	BEAD COREHB-1P4516-600T60
FB401	79PL1060	BEAD CORE WB201209F050QST
FB402	79PL1060	BEAD CORE WB201209F050QST
FB403	79PL1060	BEAD CORE WB201209F050QST
FB404	79PL1059	BEAD CORE WB201209B260QNT
FB405	79PL1059	BEAD CORE WB201209B260QNT
FB406	79PL1060	BEAD CORE WB201209F050QST
FB407	79PL1060	BEAD CORE WB201209F050QST
FB408	79PL1059	BEAD CORE WB201209B260QNT
FB409	79PL1064	BEAD COREHB-1P4516-600T60
FB410	79PL1059	BEAD CORE WB201209B260QNT
L001	79PL1132	CORE K5A RP 40*6.5*12

SYMBOL	PART NO	DESCRIPTION
L101	79PL0993	COIL CHOKE 45UH K
L102	79PL0992	COIL CHOKE L=45UH K
L103	79PL1065	BEAD CORE STC222B 1210
L104	79PL0991	COIL CHOKE 3UH K
L301	79PL1065	BEAD CORE STC222B 1210
L402	79PL1057	EMI FILTER EF-1T2012-050J
L403	79PL1057	EMI FILTER EF-1T2012-050J
L404	79PL1057	EMI FILTER EF-1T2012-050J
L405	79PL0994	COIL PEAKING 22UH K SMD
L406	79PL0994	COIL PEAKING 22UH K SMD
L407	79PL0994	COIL PEAKING 22UH K SMD
L408	79PL0994	COIL PEAKING 22UH K SMD
L409	79PL0994	COIL PEAKING 22UH K SMD
L411	79PL1063	BEAD COREHB-1B3216-700T05
L412	79PL1065	BEAD CORE STC222B 1210

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

AA3	36804268	LCD LM151X2
AA4	79PG1000	BACK LIGHT UNIT
F101	79PL1131	FUSE SLOW TR5-T 2.5A
PC01	79PL0963	POWER CBL 1800GRY WALL
PWR	79PL1115	ADAPTER AC-DC 12V/4A WHIT
V001	79PL0962	VIDEO CBL 1800 NEC-GRAY
V002	79PL1134	FFC 45P 0.5 2896(ATYPE)
X201	79PL1053	CRYSTAL 20MHZ HC-49/US
X401	79PL1054	OSCILLTOR 50MHZ

*** KNOBS & PUSH BUTTONS ***

AA14	79PL1071	PUSH BUTTON

*** APPEARANCE PARTS ***

AA10	79PL1125	STAND BOTTOM FOR NEC-DL15
AA11	79PL1135	BASE PLATE STAND
AA12	79PL1136	FOOT PAD FOR (B)
AA15	79PL1069	LENS
AA16	79PL1068	CAP(CONNECTOR)
AA5	79PL1124	REAR COVER FOR NEC-DL151A
AA6	79PL1123	F/C ASSY FOR NEC-DL151AT
AA7	79PL0960	COVER(CONNECTOR) NEC-DC15
AA8	79PL0958	STAND FRONT FOR NEC-DC150
AA9	79PL0961	COVER CABLE FOR NEC-DC150

*** PRINTED & PACKING MATERIALS ***

B01	79PL1130	MODEL LABEL
P11	79PL1126	CARTON NEC-DL151ATA(99)
P21	79PL0968	EPS-T&B (NEC 15LCD)"
P31	79PL0969	PLASTIC BAG
P32	79PL1102	PLASTIC BAG

SYMBOL	PART NO	DESCRIPTION
Y001	79PL1127	NEC C150ATA MANUAL ASSY

*** RESISTORS ***

R101	79PL1005	CHIP-R 4.7KH 1/8W J
R102	79PL1005	CHIP-R 4.7KH 1/8W J
R103	79PL1007	CHIP-R 51KH 1/8W J 805
R104	79PL1007	CHIP-R 51KH 1/8W J 805
R105	79PL0996	CHIP-R 100H 1/8W J 805
R106	79PL1005	CHIP-R 4.7KH 1/8W J
R107	79PL1005	CHIP-R 4.7KH 1/8W J
R108	79PL1003	CHIP-R 33H 1/8W J 0805
R109	79PL1003	CHIP-R 33H 1/8W J 0805
R110	79PL0995	CHIP-R 0H 1/8W J 0805
R111	79PL0999	CHIP-R 100KH 1/8W J 805
R112	79PL0999	CHIP-R 100KH 1/8W J 805
R113	79PL0999	CHIP-R 100KH 1/8W J 805
R114	79PL0999	CHIP-R 100KH 1/8W J 805
R115	79PL0996	CHIP-R 100H 1/8W J 805
R201	79PL1011	FRN 10KH 1/16W J 8P4R
R202	79PL1005	CHIP-R 4.7KH 1/8W J
R203	79PL0998	CHIP-R 10KH 1/8W J 805
R204	79PL0998	CHIP-R 10KH 1/8W J 805
R205	79PL0996	CHIP-R 100H 1/8W J 805
R206	79PL0996	CHIP-R 100H 1/8W J 805
R209	79PL1005	CHIP-R 4.7KH 1/8W J
R307	79PL1012	FRN 22H 1/16W J 8P4R SMD
R308	79PL1012	FRN 22H 1/16W J 8P4R SMD
R309	79PL1012	FRN 22H 1/16W J 8P4R SMD
R310	79PL1012	FRN 22H 1/16W J 8P4R SMD
R311	79PL1012	FRN 22H 1/16W J 8P4R SMD
R312	79PL1012	FRN 22H 1/16W J 8P4R SMD
R313	79PL1002	CHIP-R 22H 1/8W J 805
R314	79PL1002	CHIP-R 22H 1/8W J 805
R315	79PL1002	CHIP-R 22H 1/8W J 805
R316	79PL1001	CHIP-R 2.2KH 1/8W J 805
R317	79PL1005	CHIP-R 4.7KH 1/8W J
R402	79PL1005	CHIP-R 4.7KH 1/8W J
R403	79PL1004	CHIP-R 470H 1/8W J 805
R405	79PL1005	CHIP-R 4.7KH 1/8W J
R406	79PL1004	CHIP-R 470H 1/8W J 805
R407	79PL1011	FRN 10KH 1/16W J 8P4R
R408	79PL1013	FRN 4.7KH 1/16W J 8P4R
R409	79PL1011	FRN 10KH 1/16W J 8P4R
R410	79PL1013	FRN 4.7KH 1/16W J 8P4R
R411	79PL1013	FRN 4.7KH 1/16W J 8P4R
R412	79PL0995	CHIP-R 0H 1/8W J 0805
R416	79PL1013	FRN 4.7KH 1/16W J 8P4R
R417	79PL1013	FRN 4.7KH 1/16W J 8P4R

SYMBOL	PART NO	DESCRIPTION
R418	79PL1000	CHIP-R 150H 1/8W J 805
R419	79PL1000	CHIP-R 150H 1/8W J 805
R420	79PL1000	CHIP-R 150H 1/8W J 805
R421	79PL1000	CHIP-R 150H 1/8W J 805
R422	79PL1000	CHIP-R 150H 1/8W J 805
R423	79PL1000	CHIP-R 150H 1/8W J 805
R424	79PL0995	CHIP-R 0H 1/8W J 0805
R425	79PL0995	CHIP-R 0H 1/8W J 0805
R426	79PL0995	CHIP-R 0H 1/8W J 0805
R427	79PL1008	CHIP-R 75H 1/8W F 0805
R428	79PL1008	CHIP-R 75H 1/8W F 0805
R429	79PL1008	CHIP-R 75H 1/8W F 0805
R430	79PL1006	CHIP-R 47H 1/8W J 805
R431	79PL1006	CHIP-R 47H 1/8W J 805
R432	79PL1006	CHIP-R 47H 1/8W J 805
R433	79PL1005	CHIP-R 4.7KH 1/8W J
R434	79PL1005	CHIP-R 4.7KH 1/8W J
R436	79PL1003	CHIP-R 33H 1/8W J 0805
R437	79PL0996	CHIP-R 100H 1/8W J 805
R438	79PL0996	CHIP-R 100H 1/8W J 805
R440	79PL0995	CHIP-R 0H 1/8W J 0805
R441	79PL0995	CHIP-R 0H 1/8W J 0805
R442	79PL1006	CHIP-R 47H 1/8W J 805
R443	79PL1005	CHIP-R 4.7KH 1/8W J
R444	79PL1005	CHIP-R 4.7KH 1/8W J
R445	79PL1003	CHIP-R 33H 1/8W J 0805
R446	79PL1003	CHIP-R 33H 1/8W J 0805
R447	79PL1003	CHIP-R 33H 1/8W J 0805
R448	79PL0997	CHIP-R 1KH 1/8W F 0805
R449	79PL0995	CHIP-R 0H 1/8W J 0805
R450	79PL0995	CHIP-R 0H 1/8W J 0805
R451	79PL0995	CHIP-R 0H 1/8W J 0805
R452	79PL0998	CHIP-R 10KH 1/8W J 805
R455	79PL0995	CHIP-R 0H 1/8W J 0805
R456	79PL1010	FRN 0H 1/16W J 8P4R SMD
R801	79PL1133	FRN OHM 33 1/16W J 8P4R
R802	79PL1133	FRN OHM 33 1/16W J 8P4R
R803	79PL1133	FRN OHM 33 1/16W J 8P4R
R804	79PL1133	FRN OHM 33 1/16W J 8P4R
R805	79PL1133	FRN OHM 33 1/16W J 8P4R
R806	79PL1133	FRN OHM 33 1/16W J 8P4R

*** CAPACITORS ***

C037A	79PL1085	MEM 0.22UF 50V,J,F,P=5MM
C101	79PL1030	MC 0.1UF 50V Y5V Z SMD
C102	79PL0184	ALU UF 470 16V T 105C 10
C103	79PL1030	MC 0.1UF 50V Y5V Z SMD
C104	79PL1016	ALU 100UF 16V T 105C

SYMBOL	PART NO	DESCRIPTION
C105	79PL1030	MC 0.1UF 50V Y5V Z SMD
C106	79PL1030	MC 0.1UF 50V Y5V Z SMD
C107	79PL0184	ALU UF 470 16V T 105C 10
C108	79PL1030	MC 0.1UF 50V Y5V Z SMD
C109	79PL1023	MC 330PF 50V NPO J SMD
C110	79PL1023	MC 330PF 50V NPO J SMD
C111	79PL1023	MC 330PF 50V NPO J SMD
C112	79PL1020	MC 100PF 50V NPO J SMD
C113	79PL1020	MC 100PF 50V NPO J SMD
C114	79PL1030	MC 0.1UF 50V Y5V Z SMD
C115	79PL1030	MC 0.1UF 50V Y5V Z SMD
C116	79PL1030	MC 0.1UF 50V Y5V Z SMD
C117	79PL1030	MC 0.1UF 50V Y5V Z SMD
C119	79PL0184	ALU UF 470 16V T 105C 10
C120	79PL1030	MC 0.1UF 50V Y5V Z SMD
C121	79PL1030	MC 0.1UF 50V Y5V Z SMD
C122	79PL1140	ALU 100UF 10V 105 6.3X10
C123	79PL1140	ALU 100UF 10V 105 6.3X10
C124	79PL1030	MC 0.1UF 50V Y5V Z SMD
C125	79PL1016	ALU 100UF 16V T 105C
C126	79PL1030	MC 0.1UF 50V Y5V Z SMD
C127	79PL1016	ALU 100UF 16V T 105C
C128	79PL1030	MC 0.1UF 50V Y5V Z SMD
C129	79PL1016	ALU 100UF 16V T 105C
C130	79PL1030	MC 0.1UF 50V Y5V Z SMD
C131	79PL1029	MC 0.01UF 50V Y5V Z SMD
C132	79PL1030	MC 0.1UF 50V Y5V Z SMD
C133	79PL1030	MC 0.1UF 50V Y5V Z SMD
C134	79PL1016	ALU 100UF 16V T 105C
C135	79PL1030	MC 0.1UF 50V Y5V Z SMD
C201	79PL1022	MC 33PF 50V NPO J SMD
C202	79PL1022	MC 33PF 50V NPO J SMD
C203	79PL1014	ALU 10UF 16V 105C T SMD
C204	79PL1030	MC 0.1UF 50V Y5V Z SMD
C205	79PL1030	MC 0.1UF 50V Y5V Z SMD
C206	79PL1030	MC 0.1UF 50V Y5V Z SMD
C207	79PL1030	MC 0.1UF 50V Y5V Z SMD
C208	79PL1030	MC 0.1UF 50V Y5V Z SMD
C209	79PL1025	MC 47PF 50V NPO J SMD
C210	79PL1025	MC 47PF 50V NPO J SMD
C211	79PL1030	MC 0.1UF 50V Y5V Z SMD
C212	79PL1030	MC 0.1UF 50V Y5V Z SMD
C213	79PL1030	MC 0.1UF 50V Y5V Z SMD
C301	79PL1022	MC 33PF 50V NPO J SMD
C302	79PL1022	MC 33PF 50V NPO J SMD
C303	79PL1022	MC 33PF 50V NPO J SMD
C304	79PL1022	MC 33PF 50V NPO J SMD
C305	79PL1022	MC 33PF 50V NPO J SMD

SYMBOL	PART NO	DESCRIPTION
C306	79PL1022	MC 33PF 50V NPO J SMD
C307	79PL1022	MC 33PF 50V NPO J SMD
C308	79PL1022	MC 33PF 50V NPO J SMD
C309	79PL1022	MC 33PF 50V NPO J SMD
C310	79PL1022	MC 33PF 50V NPO J SMD
C311	79PL1022	MC 33PF 50V NPO J SMD
C312	79PL1022	MC 33PF 50V NPO J SMD
C313	79PL1022	MC 33PF 50V NPO J SMD
C314	79PL1022	MC 33PF 50V NPO J SMD
C315	79PL1022	MC 33PF 50V NPO J SMD
C316	79PL1022	MC 33PF 50V NPO J SMD
C317	79PL1022	MC 33PF 50V NPO J SMD
C318	79PL1022	MC 33PF 50V NPO J SMD
C319	79PL1022	MC 33PF 50V NPO J SMD
C320	79PL1022	MC 33PF 50V NPO J SMD
C321	79PL1022	MC 33PF 50V NPO J SMD
C322	79PL1022	MC 33PF 50V NPO J SMD
C323	79PL1022	MC 33PF 50V NPO J SMD
C324	79PL1022	MC 33PF 50V NPO J SMD
C349	79PL1021	MC 22PF 50V NPO J SMD
C350	79PL1030	MC 0.1UF 50V Y5V Z SMD
C351	79PL1018	ALU 470UF 25V T 105C
C352	79PL1030	MC 0.1UF 50V Y5V Z SMD
C353	79PL1029	MC 0.01UF 50V Y5V Z SMD
C354	79PL1030	MC 0.1UF 50V Y5V Z SMD
C355	79PL1141	MC 100PF 50V NPO J SMD
C356	79PL1141	MC 100PF 50V NPO J SMD
C357	79PL1141	MC 100PF 50V NPO J SMD
C401	79PL1030	MC 0.1UF 50V Y5V Z SMD
C402	79PL1030	MC 0.1UF 50V Y5V Z SMD
C403	79PL1030	MC 0.1UF 50V Y5V Z SMD
C404	79PL1030	MC 0.1UF 50V Y5V Z SMD
C405	79PL1030	MC 0.1UF 50V Y5V Z SMD
C406	79PL1029	MC 0.01UF 50V Y5V Z SMD
C407	79PL1029	MC 0.01UF 50V Y5V Z SMD
C408	79PL1029	MC 0.01UF 50V Y5V Z SMD
C409	79PL1029	MC 0.01UF 50V Y5V Z SMD
C410	79PL1029	MC 0.01UF 50V Y5V Z SMD
C411	79PL1029	MC 0.01UF 50V Y5V Z SMD
C412	79PL1029	MC 0.01UF 50V Y5V Z SMD
C413	79PL1029	MC 0.01UF 50V Y5V Z SMD
C416	79PL1029	MC 0.01UF 50V Y5V Z SMD
C417	79PL1029	MC 0.01UF 50V Y5V Z SMD
C418	79PL1029	MC 0.01UF 50V Y5V Z SMD
C419	79PL1029	MC 0.01UF 50V Y5V Z SMD
C420	79PL1029	MC 0.01UF 50V Y5V Z SMD
C421	79PL1029	MC 0.01UF 50V Y5V Z SMD
C422	79PL1026	MC 5PF 50V NPO J SMD

SYMBOL	PART NO	DESCRIPTION
C423	79PL1026	MC 5PF 50V NPO J SMD
C424	79PL1026	MC 5PF 50V NPO J SMD
C425	79PL1030	MC 0.1UF 50V Y5V Z SMD
C429	79PL1030	MC 0.1UF 50V Y5V Z SMD
C430	79PL1020	MC 100PF 50V NPO J SMD
C431	79PL1020	MC 100PF 50V NPO J SMD
C432	79PL1030	MC 0.1UF 50V Y5V Z SMD
C433	79PL1025	MC 47PF 50V NPO J SMD
C434	79PL1025	MC 47PF 50V NPO J SMD
C435	79PL1025	MC 47PF 50V NPO J SMD
C436	79PL1030	MC 0.1UF 50V Y5V Z SMD
C437	79PL1030	MC 0.1UF 50V Y5V Z SMD
C438	79PL1030	MC 0.1UF 50V Y5V Z SMD
C439	79PL1017	ALU 47UF 16V 85C SMD
C440	79PL1030	MC 0.1UF 50V Y5V Z SMD
C441	79PL1030	MC 0.1UF 50V Y5V Z SMD
C442	79PL1030	MC 0.1UF 50V Y5V Z SMD
C443	79PL1030	MC 0.1UF 50V Y5V Z SMD
C444	79PL1030	MC 0.1UF 50V Y5V Z SMD
C445	79PL1030	MC 0.1UF 50V Y5V Z SMD
C446	79PL1030	MC 0.1UF 50V Y5V Z SMD
C447	79PL1030	MC 0.1UF 50V Y5V Z SMD
C448	79PL1030	MC 0.1UF 50V Y5V Z SMD
C449	79PL1017	ALU 47UF 16V 85C SMD
C450	79PL1030	MC 0.1UF 50V Y5V Z SMD
C451	79PL1030	MC 0.1UF 50V Y5V Z SMD
C452	79PL1017	ALU 47UF 16V 85C SMD
C453	79PL1030	MC 0.1UF 50V Y5V Z SMD
C454	79PL1030	MC 0.1UF 50V Y5V Z SMD
C455	79PL1017	ALU 47UF 16V 85C SMD
C456	79PL1030	MC 0.1UF 50V Y5V Z SMD
C457	79PL1017	ALU 47UF 16V 85C SMD
C458	79PL1030	MC 0.1UF 50V Y5V Z SMD
C459	79PL1030	MC 0.1UF 50V Y5V Z SMD
C460	79PL1030	MC 0.1UF 50V Y5V Z SMD
C461	79PL1030	MC 0.1UF 50V Y5V Z SMD
C462	79PL1030	MC 0.1UF 50V Y5V Z SMD
C463	79PL1030	MC 0.1UF 50V Y5V Z SMD
C464	79PL1030	MC 0.1UF 50V Y5V Z SMD
C465	79PL1030	MC 0.1UF 50V Y5V Z SMD
C466	79PL1030	MC 0.1UF 50V Y5V Z SMD
C467	79PL1017	ALU 47UF 16V 85C SMD
C468	79PL1030	MC 0.1UF 50V Y5V Z SMD
C469	79PL1030	MC 0.1UF 50V Y5V Z SMD
C470	79PL1030	MC 0.1UF 50V Y5V Z SMD
C471	79PL1030	MC 0.1UF 50V Y5V Z SMD
C472	79PL1019	ALU 1UF 50V 105C T SMD
C473	79PL1027	MC 0.01UF 50V X7R K SMD

SYMBOL	PART NO	DESCRIPTION
C474	79PL1024	MC 47PF 50V NPO K SMD
C475	79PL1142	MC 1UF 16V Y5V M SMD
C476	79PL1030	MC 0.1UF 50V Y5V Z SMD
C477	79PL1030	MC 0.1UF 50V Y5V Z SMD
C478	79PL1030	MC 0.1UF 50V Y5V Z SMD
C479	79PL1030	MC 0.1UF 50V Y5V Z SMD
C480	79PL1030	MC 0.1UF 50V Y5V Z SMD
C481	79PL1143	ALU 4.7UF 25V 85C T SMD
C482	79PL1143	ALU 4.7UF 25V 85C T SMD

REPLACEMENT PARTS LIST

The components specified for Model LCD1525V(B)

SYMBOL	PART NO	DESCRIPTION
*** ICS ***		
I101	79PL1041	IC SI4431DY 8P SOP
I102	79PL1040	IC LM2596S-5.0 TO-263(S)
I103	79PL1145	IC RC1587M33 3P TO263
I104	79PL1038	IC LM358DR 8P SOP SMD
I201	79PL1050	IC TS80C51RA2 44P PLCC
I202	79PL1048	IC 74HCT373 20P 300MIL
I203	79PL1051	IC HT27C010-70 32P PLCC
I204	79PL1146	IC W24258S-70 28P SOP
I205	79PL1052	IC KS24L161C 8P DIP
I206	79PL1047	IC 74HCT04 14P SMD
I207	79PL1045	IC MCP130-450DI TO92
I208	79PL1048	IC 74HCT373 20P 300MIL
I209	79PL1046	IC 74HCT08 14P SMD
I301	79PL1042	IC SI9424DY 8P SOP
I401	79PL1043	IC GMB135 292P BGA GENESI
I402	79PL1044	IC M35072-057FP 20P SSOP
I403	79PL1049	IC AT24C21-10PC-2.5 8P
*** TRANSISTORS ***		
Q101	79PL1036	TR NPN SST3904 SMD
Q102	79PL1036	TR NPN SST3904 SMD
Q301	79PL1036	TR NPN SST3904 SMD
Q401	79PL1147	TR NPN PMBT2222A SOT-23
Q402	79PL1147	TR NPN PMBT2222A SOT-23
*** DIODES ***		
D101	79PL1035	DIODE ZNR RLZ TE-11 18B
D330	79PL1034	DIODE BYS10-45-TR SMD
D401	79PL1032	DIODE RLS4148 LL-34 SMD
D402	79PL1032	DIODE RLS4148 LL-34 SMD
D403	79PL1032	DIODE RLS4148 LL-34 SMD
D404	79PL1032	DIODE RLS4148 LL-34 SMD
D405	79PL1032	DIODE RLS4148 LL-34 SMD
D406	79PL1032	DIODE RLS4148 LL-34 SMD
D407	79PL1033	DIODE PRLL5819 1A/40V
D408	79PL1033	DIODE PRLL5819 1A/40V
D409	79PL1032	DIODE RLS4148 LL-34 SMD
D410	79PL1032	DIODE RLS4148 LL-34 SMD
D411	79PL1032	DIODE RLS4148 LL-34 SMD
D412	79PL1032	DIODE RLS4148 LL-34 SMD
D413	79PL1144	DIODE ZNR RLZ TE-11 5.6B

SYMBOL	PART NO	DESCRIPTION
D414	79PL1032	DIODE RLS4148 LL-34 SMD
D415	79PL1144	DIODE ZNR RLZ TE-11 5.6B
D416	79PL1032	DIODE RLS4148 LL-34 SMD
D417	79PL1144	DIODE ZNR RLZ TE-11 5.6B
D418	79PL1032	DIODE RLS4148 LL-34 SMD
D419	79PL1032	DIODE RLS4148 LL-34 SMD
D420	79PL1032	DIODE RLS4148 LL-34 SMD
D600	79PL1088	LED LTL-36EDJP 1(Y)3(G)

*** RELAYS & SWITCHES ***

S601	79PL1096	SW TACT TSAD-1
S602	79PL1096	SW TACT TSAD-1
S603	79PL1096	SW TACT TSAD-1
S604	79PL1096	SW TACT TSAD-1
S605	79PL1096	SW TACT TSAD-1
S606	79PL1096	SW TACT TSAD-1
S607	79PL1096	SW TACT TSAD-1
S608	79PL1096	SW TACT TSAD-1

*** PWB ASSYS ***

AA1	79PL1122	INVERTER DC-AC 12V
AA17	79PL1120	INTERFACE BD NEC-DL151AT
AA19	79PL0952	FANCTION KEY BD NEC-DC150
	79PL1121	PANEL BD NEC-DL151(99)

*** COILS & FILTERS ***

FB101	79PL1064	BEAD COREHB-1P4516-600T60
FB102	79PL1064	BEAD COREHB-1P4516-600T60
FB103	79PL1066	CORE BEAD WB453215B121QST
FB104	79PL1066	CORE BEAD WB453215B121QST
FB106	79PL1066	CORE BEAD WB453215B121QST
FB107	79PL1066	CORE BEAD WB453215B121QST
FB108	79PL1066	CORE BEAD WB453215B121QST
FB301	79PL1148	BEAD CORE HB-1B2012-121JT03
FB302	79PL1148	BEAD CORE HB-1B2012-121JT03
FB304	79PL1064	BEAD COREHB-1P4516-600T60
FB305	79PL1064	BEAD COREHB-1P4516-600T60
FB401	79PL1060	BEAD CORE WB201209F050QST
FB402	79PL1060	BEAD CORE WB201209F050QST
FB403	79PL1060	BEAD CORE WB201209F050QST
FB404	79PL1059	BEAD CORE WB201209B260QNT
FB405	79PL1059	BEAD CORE WB201209B260QNT
FB406	79PL1060	BEAD CORE WB201209F050QST
FB407	79PL1060	BEAD CORE WB201209F050QST
FB408	79PL1059	BEAD CORE WB201209B260QNT
FB409	79PL1064	BEAD COREHB-1P4516-600T60
FB410	79PL1059	BEAD CORE WB201209B260QNT
L001	79PL1132	CORE K5A RP 40*6.5*12

SYMBOL	PART NO	DESCRIPTION
L101	79PL0993	COIL CHOKE 45UH K
L102	79PL0992	COIL CHOKE L=45UH K
L103	79PL1065	BEAD CORE STC222B 1210
L104	79PL0991	COIL CHOKE 3UH K
L301	79PL1065	BEAD CORE STC222B 1210
L402	79PL1057	EMI FILTER EF-1T2012-050J
L403	79PL1057	EMI FILTER EF-1T2012-050J
L404	79PL1057	EMI FILTER EF-1T2012-050J
L405	79PL0994	COIL PEAKING 22UH K SMD
L406	79PL0994	COIL PEAKING 22UH K SMD
L407	79PL0994	COIL PEAKING 22UH K SMD
L408	79PL0994	COIL PEAKING 22UH K SMD
L409	79PL0994	COIL PEAKING 22UH K SMD
L411	79PL1063	BEAD COREHB-1B3216-700T05
L412	79PL1065	BEAD CORE STC222B 1210

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

AA3	36804268	LCD LM151X2
AA4	79PG1000	BACK LIGHT UNIT
F101	79PL1131	FUSE SLOW TR5-T 2.5A
PC01	79PL0971	POWER CBL 1900GRY WALL
PWR	79PL1115	ADAPTER AC-DC 12V/4A WHIT
V001	79PL0962	VIDEO CBL 1800 NEC-GRAY
V002	79PL1134	FFC 45P 0.5 2896(ATYPE)
X201	79PL1053	CRYSTAL 20MHZ HC-49/US
X401	79PL1054	OSCILLTOR 50MHZ

*** KNOBS & PUSH BUTTONS ***

AA14	79PL1071	PUSH BUTTON

*** APPEARANCE PARTS ***

AA10	79PL1125	STAND BOTTOM FOR NEC-DL15
AA11	79PL1135	BASE PLATE STAND
AA12	79PL1136	FOOT PAD FOR (B)
AA15	79PL1069	LENS
AA16	79PL1068	CAP(CONNECTOR)
AA5	79PL1124	REAR COVER FOR NEC-DL151A
AA6	79PL1123	F/C ASSY FOR NEC-DL151AT
AA7	79PL0960	COVER(CONNECTOR) NEC-DC15
AA8	79PL0958	STAND FRONT FOR NEC-DC150
AA9	79PL0961	COVER CABLE FOR NEC-DC150

*** PRINTED & PACKING MATERIALS ***

B01	79PL1130	MODEL LABEL
P11	79PL1128	CARTON NEC-DL151AT(99)EUR
P21	79PL0968	EPS-T&B (NEC 15LCD)"
P31	79PL0969	PLASTIC BAG
P32	79PL1102	PLASTIC BAG

SYMBOL	PART NO	DESCRIPTION
Y001	79PL1129	NEC C150ATA MANUAL ASSY

*** RESISTORS ***

R101	79PL1005	CHIP-R 4.7KH 1/8W J
R102	79PL1005	CHIP-R 4.7KH 1/8W J
R103	79PL1007	CHIP-R 51KH 1/8W J 805
R104	79PL1007	CHIP-R 51KH 1/8W J 805
R105	79PL0996	CHIP-R 100H 1/8W J 805
R106	79PL1005	CHIP-R 4.7KH 1/8W J
R107	79PL1005	CHIP-R 4.7KH 1/8W J
R108	79PL1003	CHIP-R 33H 1/8W J 0805
R109	79PL1003	CHIP-R 33H 1/8W J 0805
R110	79PL0995	CHIP-R 0H 1/8W J 0805
R111	79PL0999	CHIP-R 100KH 1/8W J 805
R112	79PL0999	CHIP-R 100KH 1/8W J 805
R113	79PL0999	CHIP-R 100KH 1/8W J 805
R114	79PL0999	CHIP-R 100KH 1/8W J 805
R115	79PL0996	CHIP-R 100H 1/8W J 805
R201	79PL1011	FRN 10KH 1/16W J 8P4R
R202	79PL1005	CHIP-R 4.7KH 1/8W J
R203	79PL0998	CHIP-R 10KH 1/8W J 805
R204	79PL0998	CHIP-R 10KH 1/8W J 805
R205	79PL0996	CHIP-R 100H 1/8W J 805
R206	79PL0996	CHIP-R 100H 1/8W J 805
R209	79PL1005	CHIP-R 4.7KH 1/8W J
R307	79PL1012	FRN 22H 1/16W J 8P4R SMD
R308	79PL1012	FRN 22H 1/16W J 8P4R SMD
R309	79PL1012	FRN 22H 1/16W J 8P4R SMD
R310	79PL1012	FRN 22H 1/16W J 8P4R SMD
R311	79PL1012	FRN 22H 1/16W J 8P4R SMD
R312	79PL1012	FRN 22H 1/16W J 8P4R SMD
R313	79PL1002	CHIP-R 22H 1/8W J 805
R314	79PL1002	CHIP-R 22H 1/8W J 805
R315	79PL1002	CHIP-R 22H 1/8W J 805
R316	79PL1001	CHIP-R 2.2KH 1/8W J 805
R317	79PL1005	CHIP-R 4.7KH 1/8W J
R402	79PL1005	CHIP-R 4.7KH 1/8W J
R403	79PL1004	CHIP-R 470H 1/8W J 805
R405	79PL1005	CHIP-R 4.7KH 1/8W J
R406	79PL1004	CHIP-R 470H 1/8W J 805
R407	79PL1011	FRN 10KH 1/16W J 8P4R
R408	79PL1013	FRN 4.7KH 1/16W J 8P4R
R409	79PL1011	FRN 10KH 1/16W J 8P4R
R410	79PL1013	FRN 4.7KH 1/16W J 8P4R
R411	79PL1013	FRN 4.7KH 1/16W J 8P4R
R412	79PL0995	CHIP-R 0H 1/8W J 0805
R416	79PL1013	FRN 4.7KH 1/16W J 8P4R
R417	79PL1013	FRN 4.7KH 1/16W J 8P4R

SYMBOL	PART NO	DESCRIPTION
R418	79PL1000	CHIP-R 150H 1/8W J 805
R419	79PL1000	CHIP-R 150H 1/8W J 805
R420	79PL1000	CHIP-R 150H 1/8W J 805
R421	79PL1000	CHIP-R 150H 1/8W J 805
R422	79PL1000	CHIP-R 150H 1/8W J 805
R423	79PL1000	CHIP-R 150H 1/8W J 805
R424	79PL0995	CHIP-R 0H 1/8W J 0805
R425	79PL0995	CHIP-R 0H 1/8W J 0805
R426	79PL0995	CHIP-R 0H 1/8W J 0805
R427	79PL1008	CHIP-R 75H 1/8W F 0805
R428	79PL1008	CHIP-R 75H 1/8W F 0805
R429	79PL1008	CHIP-R 75H 1/8W F 0805
R430	79PL1006	CHIP-R 47H 1/8W J 805
R431	79PL1006	CHIP-R 47H 1/8W J 805
R432	79PL1006	CHIP-R 47H 1/8W J 805
R433	79PL1005	CHIP-R 4.7KH 1/8W J
R434	79PL1005	CHIP-R 4.7KH 1/8W J
R436	79PL1003	CHIP-R 33H 1/8W J 0805
R437	79PL0996	CHIP-R 100H 1/8W J 805
R438	79PL0996	CHIP-R 100H 1/8W J 805
R440	79PL0995	CHIP-R 0H 1/8W J 0805
R441	79PL0995	CHIP-R 0H 1/8W J 0805
R442	79PL1006	CHIP-R 47H 1/8W J 805
R443	79PL1005	CHIP-R 4.7KH 1/8W J
R444	79PL1005	CHIP-R 4.7KH 1/8W J
R445	79PL1003	CHIP-R 33H 1/8W J 0805
R446	79PL1003	CHIP-R 33H 1/8W J 0805
R447	79PL1003	CHIP-R 33H 1/8W J 0805
R448	79PL0997	CHIP-R 1KH 1/8W F 0805
R449	79PL0995	CHIP-R 0H 1/8W J 0805
R450	79PL0995	CHIP-R 0H 1/8W J 0805
R451	79PL0995	CHIP-R 0H 1/8W J 0805
R452	79PL0998	CHIP-R 10KH 1/8W J 805
R455	79PL0995	CHIP-R 0H 1/8W J 0805
R456	79PL1010	FRN 0H 1/16W J 8P4R SMD
R801	79PL1133	FRN OHM 33 1/16W J 8P4R
R802	79PL1133	FRN OHM 33 1/16W J 8P4R
R803	79PL1133	FRN OHM 33 1/16W J 8P4R
R804	79PL1133	FRN OHM 33 1/16W J 8P4R
R805	79PL1133	FRN OHM 33 1/16W J 8P4R
R806	79PL1133	FRN OHM 33 1/16W J 8P4R

*** CAPACITORS ***

C037A	79PL1085	MEM 0.22UF 50V,J,F,P=5MM
C101	79PL1030	MC 0.1UF 50V Y5V Z SMD
C102	79PL0184	ALU UF 470 16V T 105C 10
C103	79PL1030	MC 0.1UF 50V Y5V Z SMD
C104	79PL1016	ALU 100UF 16V T 105C

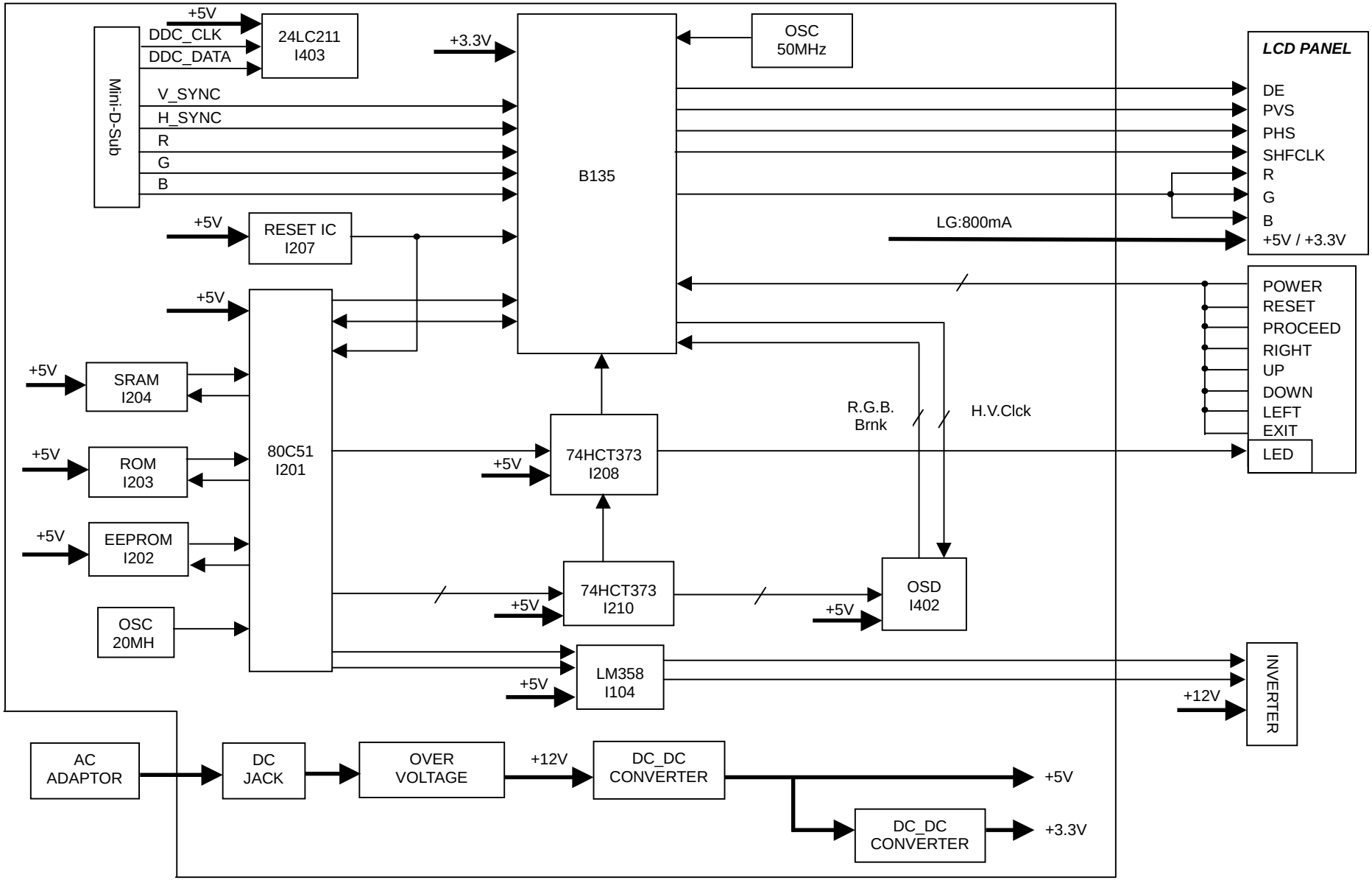
SYMBOL	PART NO	DESCRIPTION
C105	79PL1030	MC 0.1UF 50V Y5V Z SMD
C106	79PL1030	MC 0.1UF 50V Y5V Z SMD
C107	79PL0184	ALU UF 470 16V T 105C 10
C108	79PL1030	MC 0.1UF 50V Y5V Z SMD
C109	79PL1023	MC 330PF 50V NPO J SMD
C110	79PL1023	MC 330PF 50V NPO J SMD
C111	79PL1023	MC 330PF 50V NPO J SMD
C112	79PL1020	MC 100PF 50V NPO J SMD
C113	79PL1020	MC 100PF 50V NPO J SMD
C114	79PL1030	MC 0.1UF 50V Y5V Z SMD
C115	79PL1030	MC 0.1UF 50V Y5V Z SMD
C116	79PL1030	MC 0.1UF 50V Y5V Z SMD
C117	79PL1030	MC 0.1UF 50V Y5V Z SMD
C119	79PL0184	ALU UF 470 16V T 105C 10
C120	79PL1030	MC 0.1UF 50V Y5V Z SMD
C121	79PL1030	MC 0.1UF 50V Y5V Z SMD
C122	79PL1140	ALU 100UF 10V 105 6.3X10
C123	79PL1140	ALU 100UF 10V 105 6.3X10
C124	79PL1030	MC 0.1UF 50V Y5V Z SMD
C125	79PL1016	ALU 100UF 16V T 105C
C126	79PL1030	MC 0.1UF 50V Y5V Z SMD
C127	79PL1016	ALU 100UF 16V T 105C
C128	79PL1030	MC 0.1UF 50V Y5V Z SMD
C129	79PL1016	ALU 100UF 16V T 105C
C130	79PL1030	MC 0.1UF 50V Y5V Z SMD
C131	79PL1029	MC 0.01UF 50V Y5V Z SMD
C132	79PL1030	MC 0.1UF 50V Y5V Z SMD
C133	79PL1030	MC 0.1UF 50V Y5V Z SMD
C134	79PL1016	ALU 100UF 16V T 105C
C135	79PL1030	MC 0.1UF 50V Y5V Z SMD
C201	79PL1022	MC 33PF 50V NPO J SMD
C202	79PL1022	MC 33PF 50V NPO J SMD
C203	79PL1014	ALU 10UF 16V 105C T SMD
C204	79PL1030	MC 0.1UF 50V Y5V Z SMD
C205	79PL1030	MC 0.1UF 50V Y5V Z SMD
C206	79PL1030	MC 0.1UF 50V Y5V Z SMD
C207	79PL1030	MC 0.1UF 50V Y5V Z SMD
C208	79PL1030	MC 0.1UF 50V Y5V Z SMD
C209	79PL1025	MC 47PF 50V NPO J SMD
C210	79PL1025	MC 47PF 50V NPO J SMD
C211	79PL1030	MC 0.1UF 50V Y5V Z SMD
C212	79PL1030	MC 0.1UF 50V Y5V Z SMD
C213	79PL1030	MC 0.1UF 50V Y5V Z SMD
C301	79PL1022	MC 33PF 50V NPO J SMD
C302	79PL1022	MC 33PF 50V NPO J SMD
C303	79PL1022	MC 33PF 50V NPO J SMD
C304	79PL1022	MC 33PF 50V NPO J SMD
C305	79PL1022	MC 33PF 50V NPO J SMD

SYMBOL	PART NO	DESCRIPTION
C306	79PL1022	MC 33PF 50V NPO J SMD
C307	79PL1022	MC 33PF 50V NPO J SMD
C308	79PL1022	MC 33PF 50V NPO J SMD
C309	79PL1022	MC 33PF 50V NPO J SMD
C310	79PL1022	MC 33PF 50V NPO J SMD
C311	79PL1022	MC 33PF 50V NPO J SMD
C312	79PL1022	MC 33PF 50V NPO J SMD
C313	79PL1022	MC 33PF 50V NPO J SMD
C314	79PL1022	MC 33PF 50V NPO J SMD
C315	79PL1022	MC 33PF 50V NPO J SMD
C316	79PL1022	MC 33PF 50V NPO J SMD
C317	79PL1022	MC 33PF 50V NPO J SMD
C318	79PL1022	MC 33PF 50V NPO J SMD
C319	79PL1022	MC 33PF 50V NPO J SMD
C320	79PL1022	MC 33PF 50V NPO J SMD
C321	79PL1022	MC 33PF 50V NPO J SMD
C322	79PL1022	MC 33PF 50V NPO J SMD
C323	79PL1022	MC 33PF 50V NPO J SMD
C324	79PL1022	MC 33PF 50V NPO J SMD
C349	79PL1021	MC 22PF 50V NPO J SMD
C350	79PL1030	MC 0.1UF 50V Y5V Z SMD
C351	79PL1018	ALU 470UF 25V T 105C
C352	79PL1030	MC 0.1UF 50V Y5V Z SMD
C353	79PL1029	MC 0.01UF 50V Y5V Z SMD
C354	79PL1030	MC 0.1UF 50V Y5V Z SMD
C355	79PL1141	MC 100PF 50V NPO J SMD
C356	79PL1141	MC 100PF 50V NPO J SMD
C357	79PL1141	MC 100PF 50V NPO J SMD
C401	79PL1030	MC 0.1UF 50V Y5V Z SMD
C402	79PL1030	MC 0.1UF 50V Y5V Z SMD
C403	79PL1030	MC 0.1UF 50V Y5V Z SMD
C404	79PL1030	MC 0.1UF 50V Y5V Z SMD
C405	79PL1030	MC 0.1UF 50V Y5V Z SMD
C406	79PL1029	MC 0.01UF 50V Y5V Z SMD
C407	79PL1029	MC 0.01UF 50V Y5V Z SMD
C408	79PL1029	MC 0.01UF 50V Y5V Z SMD
C409	79PL1029	MC 0.01UF 50V Y5V Z SMD
C410	79PL1029	MC 0.01UF 50V Y5V Z SMD
C411	79PL1029	MC 0.01UF 50V Y5V Z SMD
C412	79PL1029	MC 0.01UF 50V Y5V Z SMD
C413	79PL1029	MC 0.01UF 50V Y5V Z SMD
C416	79PL1029	MC 0.01UF 50V Y5V Z SMD
C417	79PL1029	MC 0.01UF 50V Y5V Z SMD
C418	79PL1029	MC 0.01UF 50V Y5V Z SMD
C419	79PL1029	MC 0.01UF 50V Y5V Z SMD
C420	79PL1029	MC 0.01UF 50V Y5V Z SMD
C421	79PL1029	MC 0.01UF 50V Y5V Z SMD
C422	79PL1026	MC 5PF 50V NPO J SMD

SYMBOL	PART NO	DESCRIPTION
C423	79PL1026	MC 5PF 50V NPO J SMD
C424	79PL1026	MC 5PF 50V NPO J SMD
C425	79PL1030	MC 0.1UF 50V Y5V Z SMD
C429	79PL1030	MC 0.1UF 50V Y5V Z SMD
C430	79PL1020	MC 100PF 50V NPO J SMD
C431	79PL1020	MC 100PF 50V NPO J SMD
C432	79PL1030	MC 0.1UF 50V Y5V Z SMD
C433	79PL1025	MC 47PF 50V NPO J SMD
C434	79PL1025	MC 47PF 50V NPO J SMD
C435	79PL1025	MC 47PF 50V NPO J SMD
C436	79PL1030	MC 0.1UF 50V Y5V Z SMD
C437	79PL1030	MC 0.1UF 50V Y5V Z SMD
C438	79PL1030	MC 0.1UF 50V Y5V Z SMD
C439	79PL1017	ALU 47UF 16V 85C SMD
C440	79PL1030	MC 0.1UF 50V Y5V Z SMD
C441	79PL1030	MC 0.1UF 50V Y5V Z SMD
C442	79PL1030	MC 0.1UF 50V Y5V Z SMD
C443	79PL1030	MC 0.1UF 50V Y5V Z SMD
C444	79PL1030	MC 0.1UF 50V Y5V Z SMD
C445	79PL1030	MC 0.1UF 50V Y5V Z SMD
C446	79PL1030	MC 0.1UF 50V Y5V Z SMD
C447	79PL1030	MC 0.1UF 50V Y5V Z SMD
C448	79PL1030	MC 0.1UF 50V Y5V Z SMD
C449	79PL1017	ALU 47UF 16V 85C SMD
C450	79PL1030	MC 0.1UF 50V Y5V Z SMD
C451	79PL1030	MC 0.1UF 50V Y5V Z SMD
C452	79PL1017	ALU 47UF 16V 85C SMD
C453	79PL1030	MC 0.1UF 50V Y5V Z SMD
C454	79PL1030	MC 0.1UF 50V Y5V Z SMD
C455	79PL1017	ALU 47UF 16V 85C SMD
C456	79PL1030	MC 0.1UF 50V Y5V Z SMD
C457	79PL1017	ALU 47UF 16V 85C SMD
C458	79PL1030	MC 0.1UF 50V Y5V Z SMD
C459	79PL1030	MC 0.1UF 50V Y5V Z SMD
C460	79PL1030	MC 0.1UF 50V Y5V Z SMD
C461	79PL1030	MC 0.1UF 50V Y5V Z SMD
C462	79PL1030	MC 0.1UF 50V Y5V Z SMD
C463	79PL1030	MC 0.1UF 50V Y5V Z SMD
C464	79PL1030	MC 0.1UF 50V Y5V Z SMD
C465	79PL1030	MC 0.1UF 50V Y5V Z SMD
C466	79PL1030	MC 0.1UF 50V Y5V Z SMD
C467	79PL1017	ALU 47UF 16V 85C SMD
C468	79PL1030	MC 0.1UF 50V Y5V Z SMD
C469	79PL1030	MC 0.1UF 50V Y5V Z SMD
C470	79PL1030	MC 0.1UF 50V Y5V Z SMD
C471	79PL1030	MC 0.1UF 50V Y5V Z SMD
C472	79PL1019	ALU 1UF 50V 105C T SMD
C473	79PL1027	MC 0.01UF 50V X7R K SMD

SYMBOL	PART NO	DESCRIPTION
C474	79PL1024	MC 47PF 50V NPO K SMD
C475	79PL1142	MC 1UF 16V Y5V M SMD
C476	79PL1030	MC 0.1UF 50V Y5V Z SMD
C477	79PL1030	MC 0.1UF 50V Y5V Z SMD
C478	79PL1030	MC 0.1UF 50V Y5V Z SMD
C479	79PL1030	MC 0.1UF 50V Y5V Z SMD
C480	79PL1030	MC 0.1UF 50V Y5V Z SMD
C481	79PL1143	ALU 4.7UF 25V 85C T SMD
C482	79PL1143	ALU 4.7UF 25V 85C T SMD

BLOCK DIAGRAM



C&C for Human Potential