LCD-Monitor

Chassis : LPU16YS
LPU17NS
LPU19YS / LPU19NS
LPU20YS
LPU22YS

Model : B1630N
B1730NW
B1930N / B1930NW
B2030N
B2230N

SERVICE Manual

TFT-LCD Monitor

B1630N / B1730NW / B1930N
B1930NW / B2030N / B2230N

Contens

Refer to the service manual in the GSPN (see the rear cover) for the more information.

Contents

GSPN (Global Service Partner Network)

Area	Web Site
North America	http://service.samsungportal.com
Latin America	http://latin.samsungportal.com
CIS	http://cis.samsungportal.com
Europe	http://europe.samsungportal.com
China	http://china.samsungportal.com
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Mideast & Africa	http://mea.samsungportal.com

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1. Precautions

1-1. Safety Precautions

Follow these safety, servicing and ESD precautions to prevent damage and to protect against potential hazards such as electrical shock.

1-1-1. Warnings

1. For continued safety, do not attempt to modify the circuit board.
2. Disconnect the AC power and DC power jack before servicing.

1-1-2. Servicing the LCD Monitor

1. When servicing the LCD Monitor, Disconnect the AC line cord from the AC outlet.
2. It is essential that service technicians have an accurate voltage meter available at all times. Check the calibration of this meter periodically.

1-1-3. Fire and Shock Hazard

Before returning the monitor to the user, perform the following safety checks:

1. Inspect each lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the monitor.
2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistorcapacitor networks, mechanical insulators, etc.
3. Leakage Current Hot Check (Figure 1-1):
   WARNING : Do not use an isolation transformer during this test.
   Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1410, 59.7).

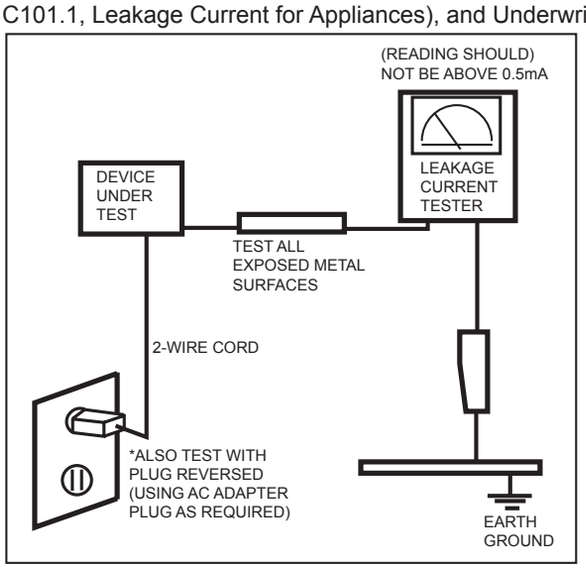


Figure 1-1. Leakage Current Test Circuit

4. With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: metal cabinets, screwheads and control shafts.
   The current measured should not exceed 0.5 milliamp.
   Reverse the power-plug prongs in the AC outlet and repeat the test.

1-1-4. Product Safety Notices

Some electrical and mechanical parts have special safetyrelated characteristics which are often not evident from visual inspection. The protection they give may not be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by ⚠ on schematics and parts lists. A substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

1-2. Servicing Precautions

WARNING: An electrolytic capacitor installed with the wrong polarity might explode.
Caution: Before servicing units covered by this service manual, read and follow the Safety Precautions section of this manual.
Note: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions.

1-2-1 General Servicing Precautions

1. Always unplug the unit's AC power cord from the AC power source and disconnect the DC Power Jack before attempting to:
   (a) remove or reinstall any component or assembly, (b) disconnect PCB plugs or connectors, (c) connect a test component in parallel with an electrolytic capacitor.
2. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
3. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the area around the serviced part has not been damaged.
4. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
5. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500 V) to theblades of the AC plug.
   The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
6. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

1-3. Static Electricity Precautions

Some semiconductor (solid state) devices can be easily damaged by static electricity. Such components are commonly called Electrostatically Sensitive Devices (ESD). Examples of typical ESD are integrated circuits and some field-effect transistors. The following techniques will reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. To avoid a shock hazard, be sure to remove the wrist strap before applying power to the monitor.
2. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.
3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.
4. Use only a grounded-tip soldering iron to solder or desolder ESDs.
5. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
7. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   Caution: Be sure no power is applied to the chassis or circuit and observe all other safety precautions.
8. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting your foot from a carpeted floor can generate enough static electricity to damage an ESD.

1-4. Installation Precautions

1. For safety reasons, more than two people are required for carrying the product.
2. Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.
3. Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal temperature may cause fire.
4. Bend the external antenna cable when connecting it to the product. This is a measure to protect it from being exposed to moisture. Otherwise, it may cause a fire or electric shock.
5. Make sure to turn the power off and unplug the power cord from the outlet before repositioning the product. Also check the antenna cable or the external connectors if they are fully unplugged. Damage to the cord may cause fire or electric shock.
6. Keep the antenna far away from any high-voltage cables and install it firmly. Contact with the highvoltage cable or the antenna falling over may cause fire or electric shock.
7. When installing the product, leave enough space (10cm) between the product and the wall for ventilation purposes. A rise in temperature within the product may cause fire.

Memo

2. Product specifications

2-1. Feature & Specifications

Feature			
Model	**B1630N**	**B1730NW**	**B1930N**
Brightness(Typical)	250 cd/m2	250 cd/m2	250 cd/m2
Response Time(Typical)	5ms	5ms	5ms
Contrast Ratio(Typical)	DC 50000:1 (Typ.500:1)	DC 50000:1 (Typ.600:1)	DC 50000:1 (Typ. 1000:1)
Viewing Angle (Horizontal/Vertical)	90˚/ 65˚ (CR>10)	160˚/150˚ (CR>10)	170˚/160˚ (CR>10)
Stand by Power(DPMS)	<0.3W	<0.3W	<0.3W
Special Features	MagicBright3, MagicEco, MagicAngle, Off timer, Image Size, Color Effect,Customized key, Windows Vista Basic		

Specifications			
Model	**B1630N**	**B1730NW**	**B1930N**
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally white transmissive		
	15.6”Wide 0.252 mm(H) x 0.252 mm(V) pixel pitch	17”Wide 0.255 mm(H) x 0.255 mm(V) pixel pitch	18.5”Wide 0.3 mm(H) x 0.3 mm(V) pixel pitch
Scanning Frequency	Horizontal:30 ~ 61 kHz Vertical:56 ~ 75 Hz	Horizontal:30 ~ 81 kHz Vertical:56 ~ 75 Hz	Horizontal:31 ~ 80 kHz Vertical:56 ~ 75 Hz
Color Supported	16.7M		
Resolution	1360 x 768	1440 x 900	1360 x 768
Input Signal	15.6” Analog	17” Analog	18.5” Analog
Input Sync. Signal	Separate H/V sync, Composite H/V, Sync-on-Green Level:TTL level		
Maximum Pixel Clock	90 MHz	136.75 MHz	89 MHz
Active Display (Horizontal/Vertical)	344.232(H) x 193.536(V)	367.2(H) x 229.5(V)	409.8(H) x 230.4(V)
AC power voltage & Frequency	AC 110~130V, 60Hz & AC 200~240V, 50Hz		
Power consumption	Less than 22W	Less than 22W	Less than 22W
Dimension Set (W x H x D)	388 x 338 x 178mm	413 x 375 x 178mm	455.6 x 375 x 178mm
Weight	2.65kg	2.9kg	3.55kg
Environmental Considerations	Operating Temperature: 10˚C ~ 40˚C(50˚F ~ 104˚F) Operating Humidity : 10% ~ 80% Operating Temperature: -25˚C ~ 45˚C(-13˚F ~ 113˚F) Operating Humidity: 5% ~ 90%		
Note: Designs and specifications are subject to change without prior notice.			

Feature			
Model	**B1930NW**	**B2030N**	**B2230N**
Brightness(Typical)	300 cd/m2	250 cd/m2	300 cd/m2
Response Time(Typical)	5ms	5ms	5ms
Contrast Ratio(Typical)	DC 70000:1 (Typ. 1000:1)	DC 50000:1 (Typ. 1000:1)	DC 70000:1 (Typ. 1000:1)
Viewing Angle (Horizontal/Vertical)	160˚/160˚ (CR>10)	170˚/160˚ (CR>10)	170˚/160˚ (CR>10)
Stand by Power(DPMS)	<0.3W	<0.3W	<0.3W
Special Features	MagicBright3, MagicEco, MagicAngle, Off timer, Image Size, Color Effect,Customized key, Windows Vista Basic		

Specifications			
Model	**B1930NW**	**B2030N**	**B2230N**
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally white transmissive		
	19"Wide 0.2835 mm(H) x 0.2835 mm(V) pixel pitch	20" Wide 0.2768 mm(H) x 0.2768 mm(V) pixel pitch	21.5" Wide 0.24825 mm(H) x 0.24825 mm(V) pixel pitch
Scanning Frequency	Horizontal:30 ~ 81 kHz Vertical:56 ~ 75 Hz	Horizontal:30 ~ 81 kHz Vertical:56 ~ 75 Hz	Horizontal:31 ~ 80 kHz Vertical:50 ~ 75 Hz
Color Supported	16.7M		
Resolution	1440 x 900	1600 x 900	1920 x1 080
Input Signal	19" Analog	20" Analog	21.5" Analog
Input Sync. Signal	Separate H/V sync, Composite H/V, Sync-on-Green Level:TTL level		
Maximum Pixel Clock	137 MHz	150 MHz	162 MHz
Active Display (Horizontal/Vertical)	408.24(H) x 255.15(V)	442.8(H) x 249.075(V)	476.64(H) x 268.11(V)
AC power voltage & Frequency	AC 110~130V, 60Hz & AC 200~240V, 50Hz		
Power consumption	Less than 39W	Less than 28W	Less than 50W
Dimension Set (W x H x D)	458 x 402 x 178mm	492 x 396 x 178mm	523.4 x 400 x 197mm
Weight	3.95kg	4.1kg	4.35kg
Environmental Considerations	Operating Temperature: 10˚C ~ 40˚C(50˚F ~ 104˚F) Operating Humidity : 10% ~ 80% Operating Temperature: -25˚C ~ 45˚C(-13˚F ~ 113˚F) Operating Humidity: 5% ~ 90%		
Note: Designs and specifications are subject to change without prior notice.			

2-2. Spec Comparison to the Old Models

Model	B1630N / B1730NW / B1930N / B1930NW / B2030N / B2230N	633NW / 733NW / 933SN / 933NW / 2033SN / 2233SN
Design		
Resolution	1360 x 768 (B1630N/B1930N) 1440 x 900 (B1730NW/B1930NW) 1600 x 900 (B2030N) 1920 x 1080 (B2230N)	1360 x 768 (633NW/933SN) 1440 x 900 (733NW/933NW) 1600 x 900 (2033SN) 1920 x 1080 (2233SN)
Input	Analog	Analog
Response Time	5ms	5ms
Viewing Angle	90/65(CR>10) (B1630N) 160/150(CR>10) (B1730NW) 160/160(CR>10) (B1930NW) 170/160(CR>10) (B1930N/B2030N/B2230N)	90/65(CR>10) (633NW) 160/150(CR>10) (733NW) 160/160(CR>10) (933NW) 170/160(CR>10) (933SN/2033SN/2233SN)
Brightness	250 m² (B1630N/B1730NW/B1930N/B2030N) 300 m² (B1930NW/B2230N)	250 m² (633NW/733NW/933SN/2033SN) 300 cm² (933NW/2233SN)
Contrast	50,000:1(DC) (B1630N/B1730NW/B1930N/B2030N) 70,000:1(DC) (B1930NW/B2230N)	12,000:1(DC) (633NW) 15,000:1(DC) (733NW) 50,000:1(DC) (933SN/933NW/2033SN/2233SN)
MagicBright	**4 Step**	7 step
Feature	**MagicBright3** **MagicEco** **MagicAngle** **Off timer** **Image Size** **Color Effect**	MagicBright3 Off timer Image Size Color Effect

*Color Effect

- Grey scale: Images are displayed in a grey tone on the screen.
- Green: Images are displayed in a green tone on the screen.
- Aqua: Images are displayed in a blue tone on the screen.
- Sepia: Images are displayed in a brown tone on the screen.

Image Size : If the resolution is not wide resolution, this option allows the screen size to be selected as normal or wide.

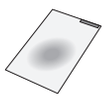
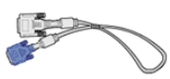
*MagicAngle

- Lean Back Mode1: Select when viewing from a slightly lower angle.
- Lean Back Mode2: Select when viewing from the bottom.
- Standing Mode: Select when viewing from the top.
- Side Mode: Select when viewing from the left or right.
- Custom: When <Custom> is selected, settings for <Lean Back Mode 1> is applied by default.
  User can set suitable picture quality as needed.

*MagicEco

- 100%: the power consumption is 100% of Default Setting.
- 75%: the power consumption is 75% of Default Setting.
- 50%: the power consumption is 50% of Default Setting.

2-3. Accessories

Product	Description	Ccde. No	Remark
	Quick Setup Guide	BN68-02480A	Samsung Electronics Service center
	Warranty Card (Not available in all locations)	BN68-00226R	
	User's Guide, Monitor Driver, Natural Color Pro Software	BN59-00982A	
	D-sub Cable 1,500mm(1.5M)	BN39-00244G	
	Power Cord 1,830mm(1.8M)	3903-000452	
	Cleaning Cloth 160mm x 120mm	BN63-02368B	

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3. Disassembly and Assembly

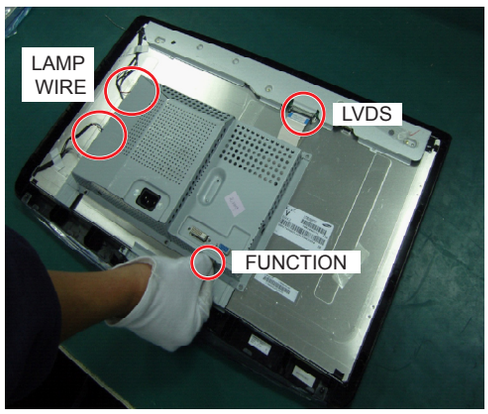
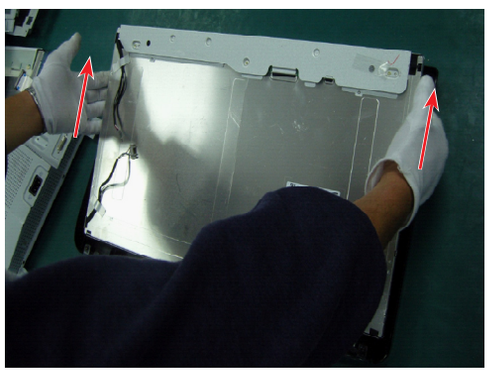
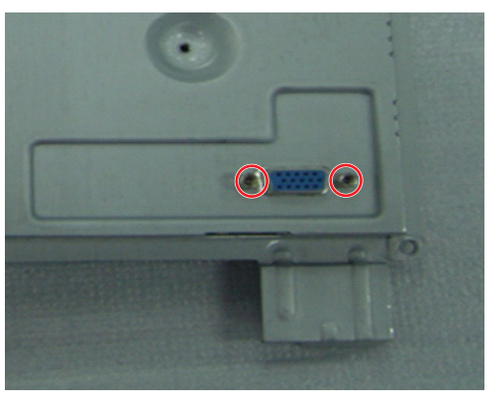
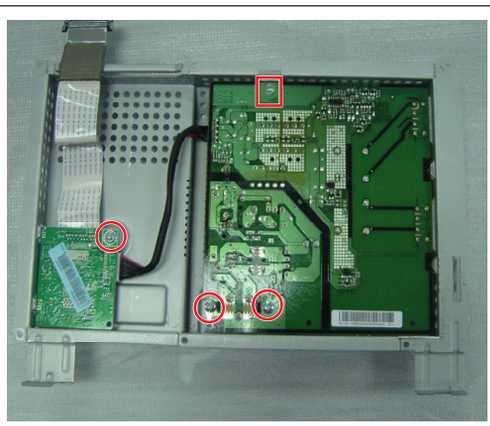
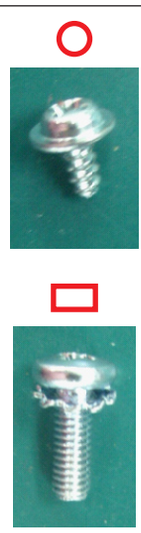
This section describes the disassembly and reassembly sequences for this monitor.

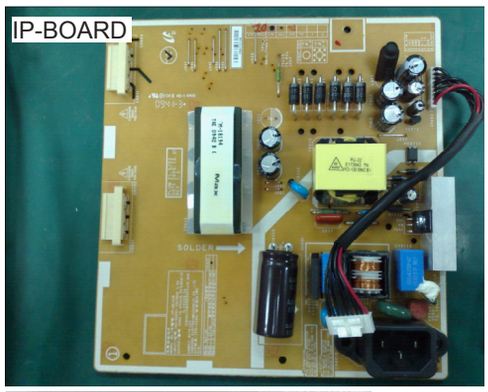
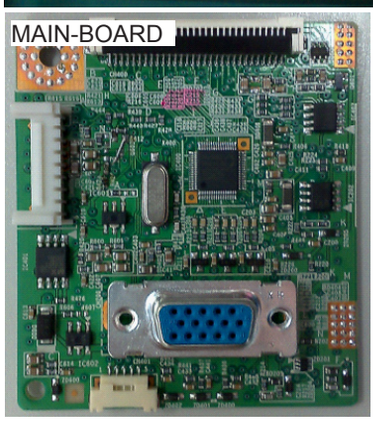
⚠ Warning: As this monitor has parts that are sensitive to static electricity, be careful when handling them.

3-1. Disassembly

⚠ Caution: 1. Turn the monitor off before beginning the disassembly process.
2. When disassembling the monitor, do not use any metal tools except for the provided jig.
3. Disassemble the monitor carefully as directed in the following procedures.

Description	Photo	Screws
1. Remove the stand body and then remove the two (2) screws shown in the figure.		
2. ① Turn the monitor over and insert your hands into the top of the monitor at the center and separate the front cover in the direction of the arrow as shown in the figure. ② Separate the sides of the front cover up to the directed line as shown in the figure.		
3. Turn the monitor over again to remove the back cover.		

Description	Photo	Screws
4. Remove the LVDS, LAMP wire and FUNCTION cable then remove the SHIELD-COVER.		
5. Remove the LCD panel.		
6. Remove the two (2) screws shown in the figure.		
7. Remove the four (4) screws shown in the figure and remove the Bracket support.		

Description	Photo	Screws
8. Remove the main PCB and IP boards from the SHIELD-cover.	IP-BOARD  MAIN-BOARD 	

※The assembly is in the reverse order of disassembly.

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4. Troubleshooting

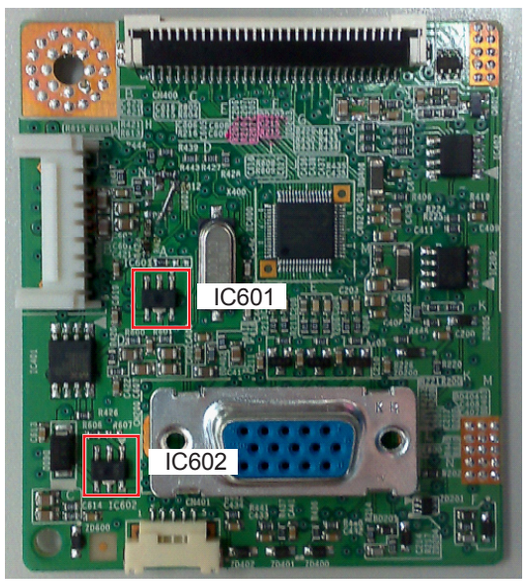
4-1. Troubleshooting

1. Set custom mode as follows before beginning a repair.

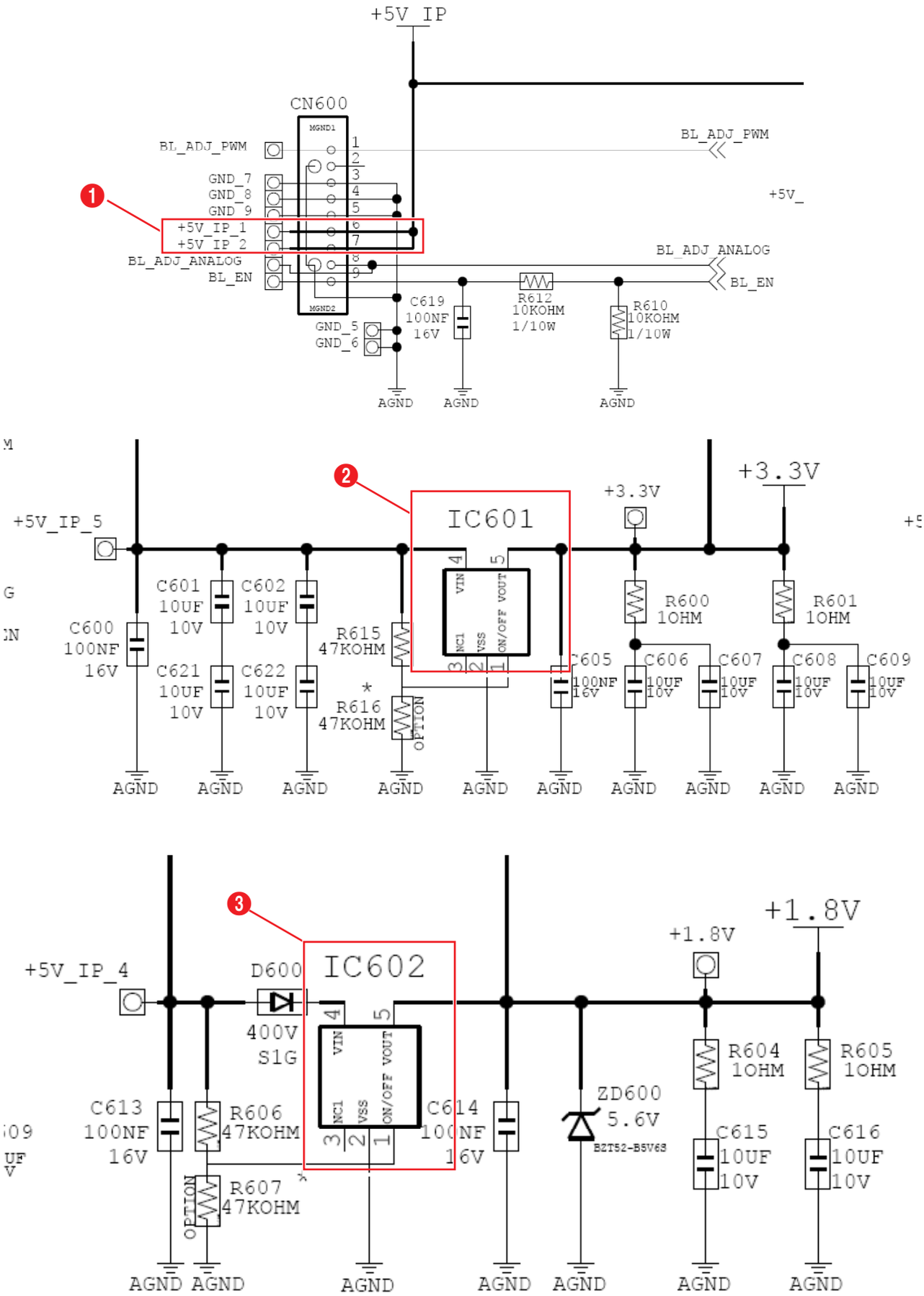
B1630N/B1930N	B1730NW/B1930NW	B2030N	B2230N
Resolution:1360x768 V-frequency:60Hz H-frequency:47.7kHz	Resolution:1440x900 V-frequency:75Hz H-frequency:70.6kHz	Resolution:1600x900 V-frequency:60Hz H-frequency:60kHz	Resolution:1920 x 1080 V-frequency:60Hz H-frequency:67.5kHz

2. If the screen is blank, check whether the power cord is connected correctly.
3. The circuits to check:
   • When the raster does not appear: The Function PCB, Main PCB, I/P PBA
   • When 5V is generated but a blank screen is displayed: Main PCB
   • When 5V is not generated: I/P PBA
4. “Press the MENU button and hold down the, “↵ (Enter, Source)” button for more than five (5) seconds to return the monitor to factory mode.

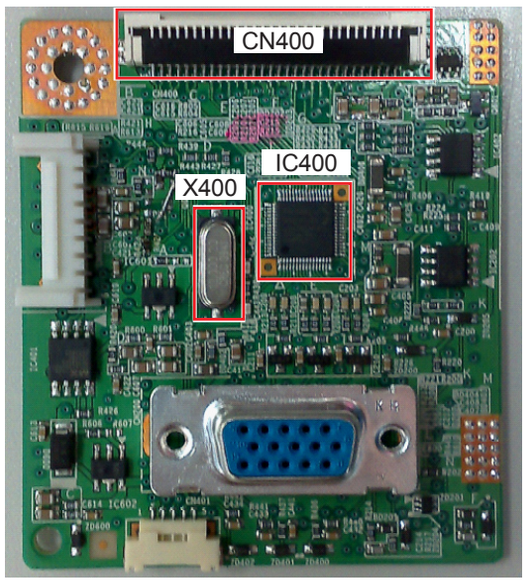
4-2. When the Power Does Not Turn On

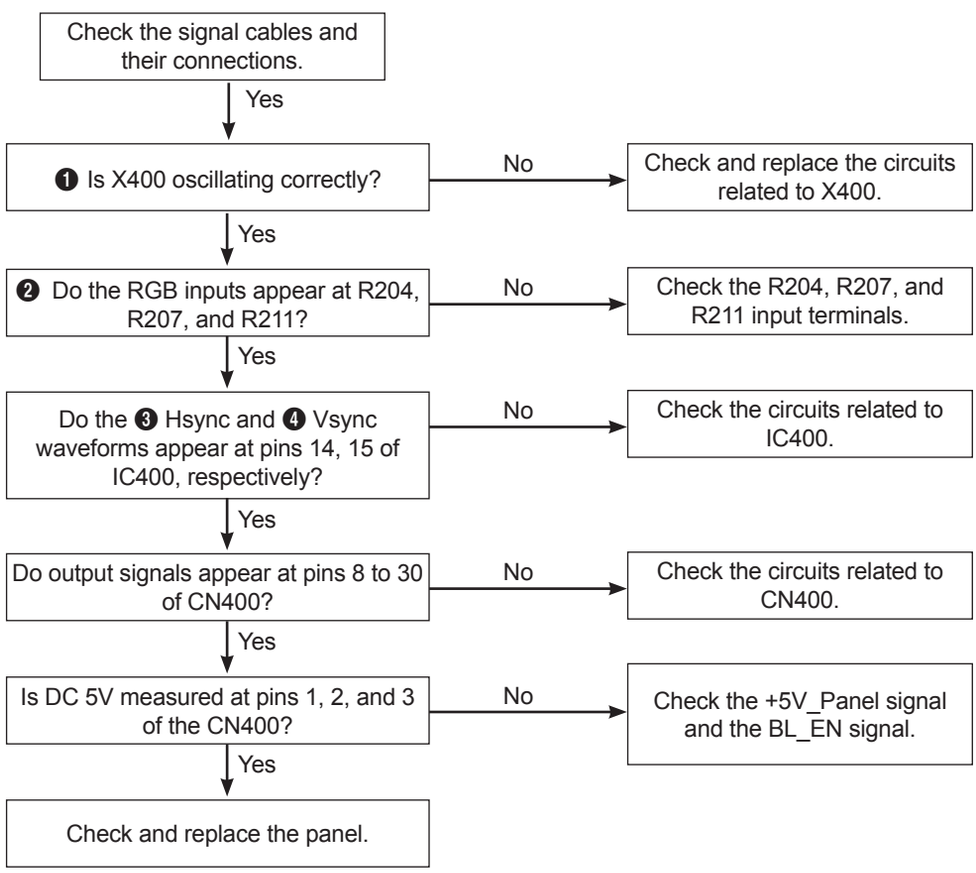
Symptom	- When turning on the Power button after connecting the power cable, the LED at the front of the monitor does not operate.
Major checkpoints	- When turning on the Power button after connecting the power cable, the LED at the front of the monitor does not operate. - Check the IP board power fuse and the IP board output power. - Check the connections for the IP board and the Main board inside the monitor. - Check the Main board power part and also check whether there is any abnormal output at any of the other output terminals.
Diagnostics	 Yes → Check the connection status for the function assy. ❶ Is DC 5V measured at pins 6, 7 of the CN600 connector when pins 3, 4, 5 are 0V? — No → Replace the IP board. — Yes ❷ Is DC 3.3V measured at pin 5 of IC601 when pin 4 is DC 5V? — No → Check the circuits related to IC601. — Yes ❸ Is DC 1.8V measured at pin 5 of IC602 when pin 4 is DC 5V? — No → Check the circuits related to IC602. — Yes Check and replace the IP board.
Caution	Make sure to disconnect the power before working on the IP board.

4-2-1. Circuit diagrams when the power does not turn on

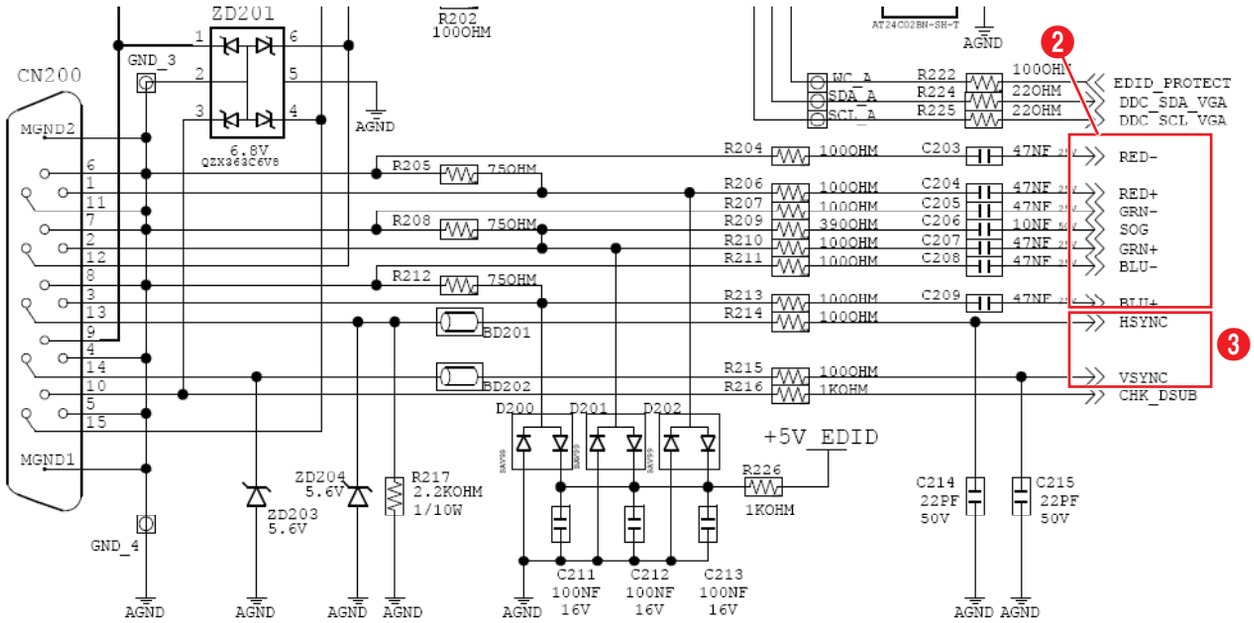


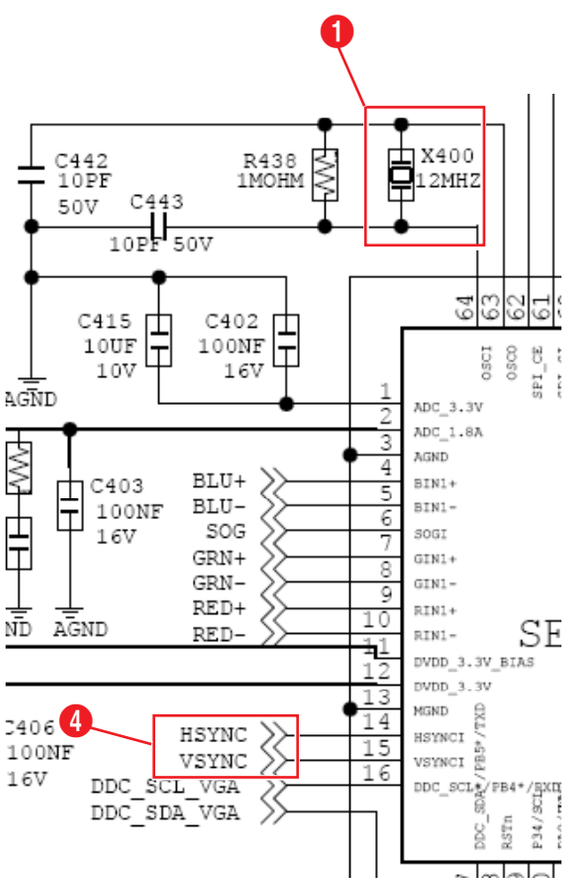
4-3. When the screen is blank

Symptom	- Even though the LED power turns on, the screen is blank when connecting the VGA cable.
Major checkpoints	- Even though the LED power turns on, the screen is blank when connecting the VGA cable. - Check the D-sub cable connections. - Check whether the LVDS cable is connected correctly to the panel. - Check whether the lamp connector of the panel is connected correctly to the IP board.
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP board.

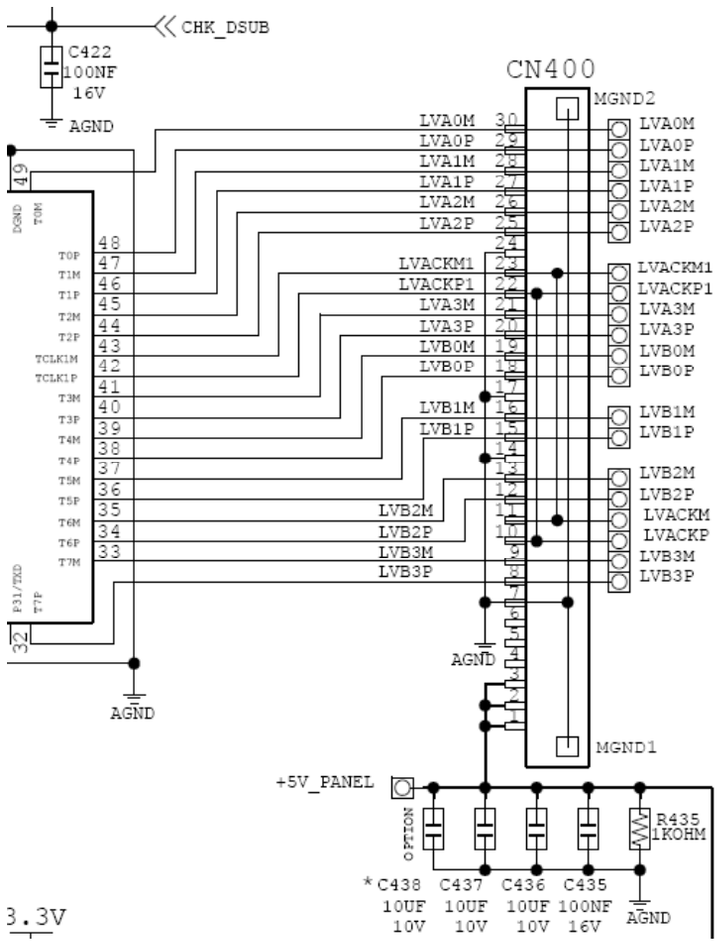


4-3-1. When a blank screen is displayed

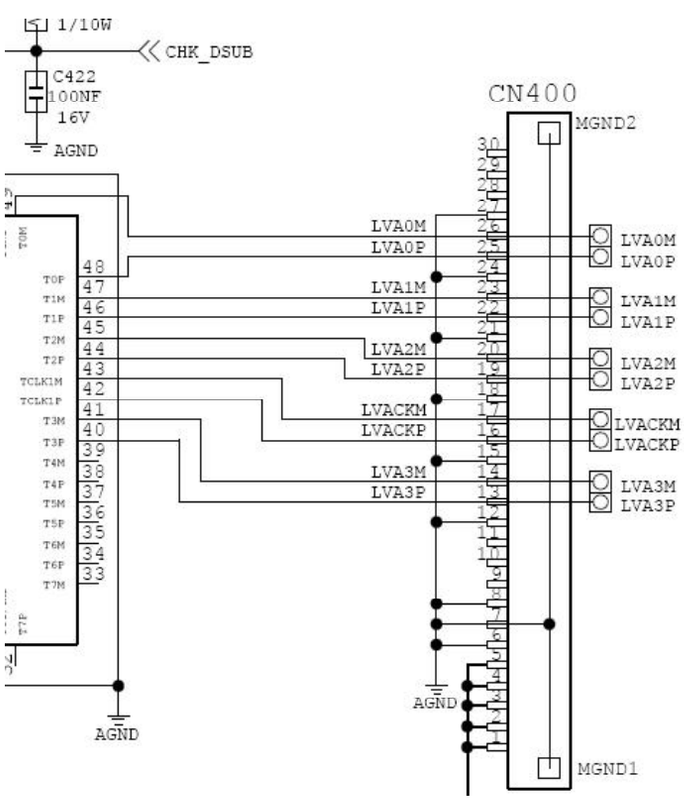




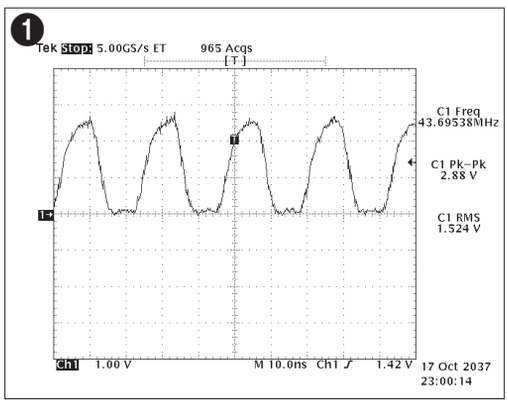
B1730NW / B1930NW / B2030N / B2230N

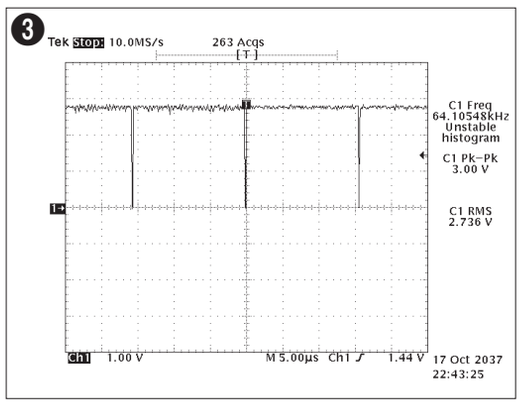


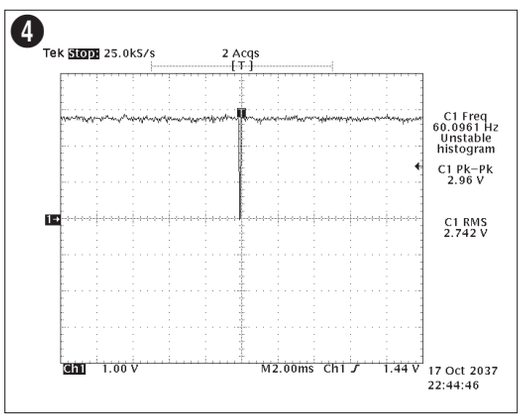
B1630N / B1930N



4-3-2. Waveforms when no screen is displayed







4-4. Error Examples and Actions

Error Appearance	Symptoms and Actions	Remarks
	Symptom: A full white screen is displayed regardless of the signals when turning on the monitor. Cause: This error occurs when only lamp power is supplied and the video signals are not input to the panel due to an LVDS cable connection error. Action: Replace the LVDS cable or connect the cable correctly so that the video signals can be supplied to the panel.	* A Full White pattern is a feature of a TN panel when no video signals are supplied.

4-5. Adjustment

4-5-1. Service Adjustment Conditions

1. Precautions before a Service Adjustment
   1) Check whether the devices for the service adjustment are operating normally.
   2) Secure a space that is sufficiently wide for disassembling the monitor.
   3) Prepare a soft mat on which the monitor will be disassembled.

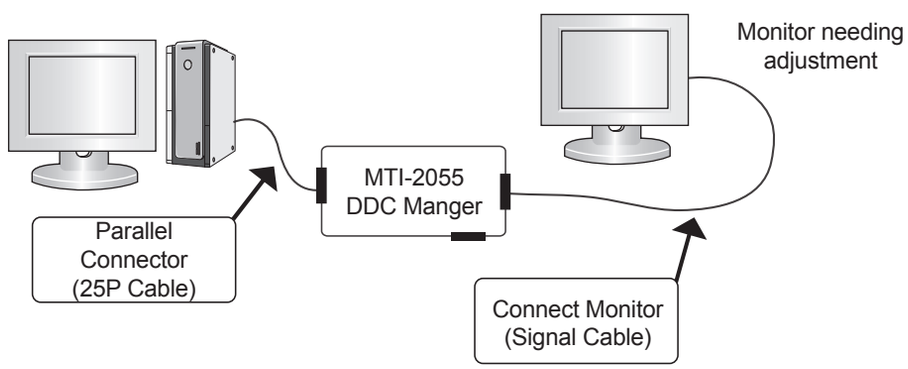
2. Entering Service Mode

   Entering: Menu → Brightness 0 → Contrast 0 → Hold down the Enter button for five (5) seconds.

   Exiting: Power OFF → Power ON

3. Basic Service Items to Perform after Replacing a Board
   1) Check the PC color adjustment status.
   2) Input DDC (input both of Analog and Digital).
   3) Check whether the appropriate MCU code for the model is input.
   4) Hard power the monitor off after entering service mode and performing a reset.

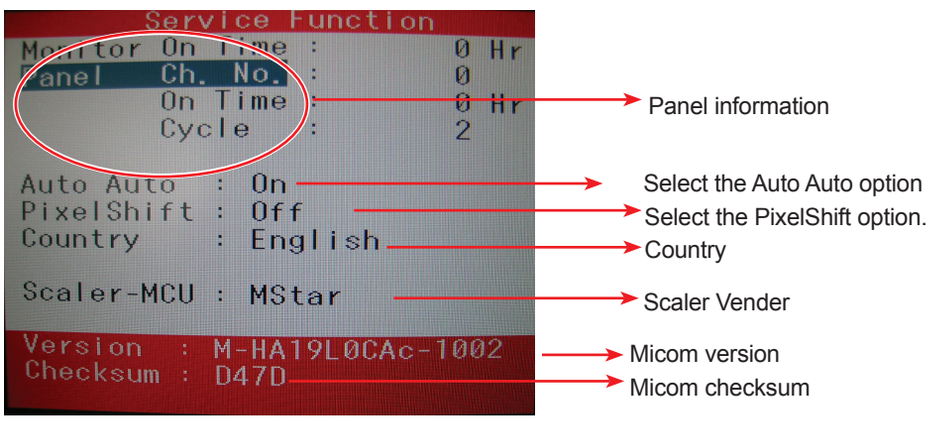
4. DDC EDIT Data Input
   1) Use when updating the AD board code.
   2) Download the WinDDC program, DDC Input program, and Hex and DDC files appropriate to the model through the Quality Control department of Samsung Electronics. Install the jig and input the data, as shown in the figure.



4-5-2. Service Function Specifications

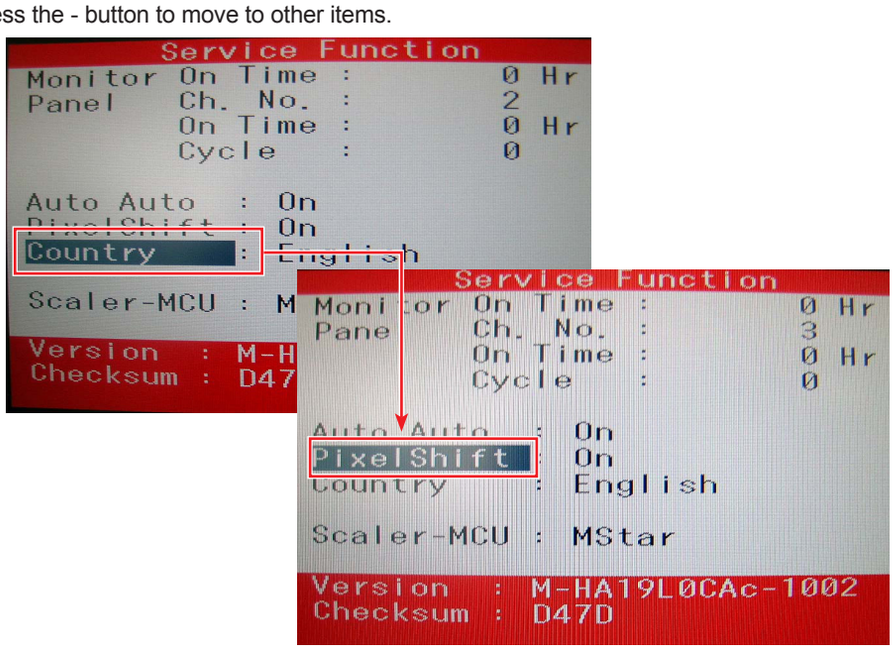
■ Checking the Code Version

1. Check the MCU code version and checksum after entering SVC Mode.
2. Entering SVC Mode
   - Adjust the Brightness and Contrast values to 0.
   - Hold down the Enter button for five (5) seconds.
   - The SVC Function OSD is displayed.
   - To exit the SVC Function, turn the power off.
3. Safe Mode
   - When the input signal is higher than the supported frequency of the product, safe mode gives users some time (one minute) to change the video card settings to the Recommended Mode settings.

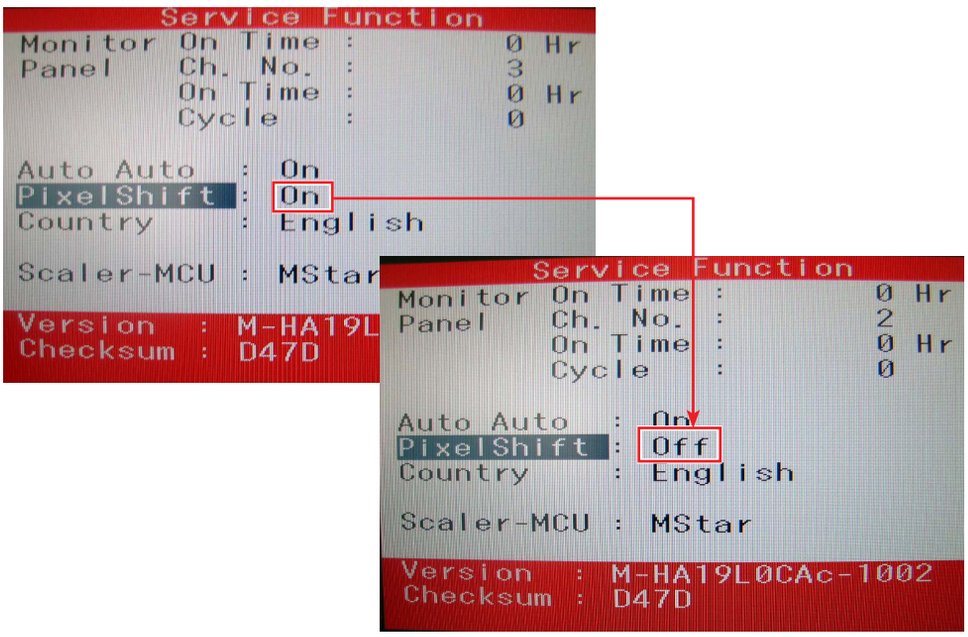


■ Service Mode (Moving around)

1. Press the - button to move to other items.

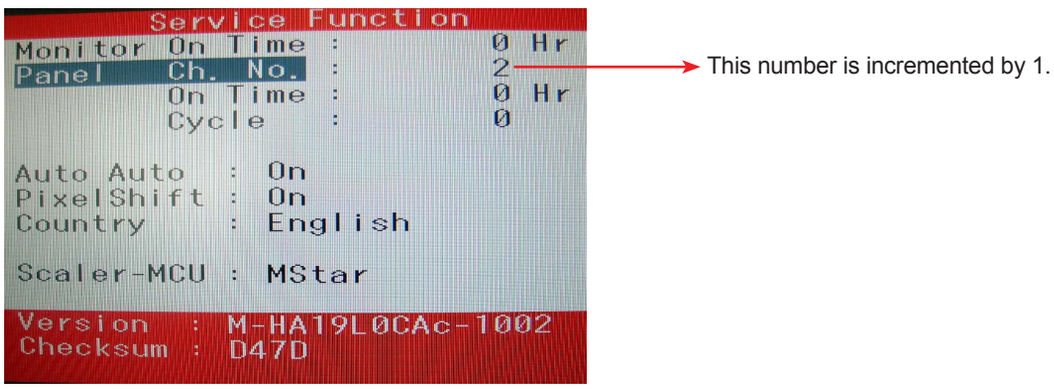


2. Press the - button to change the setting to On or Off.

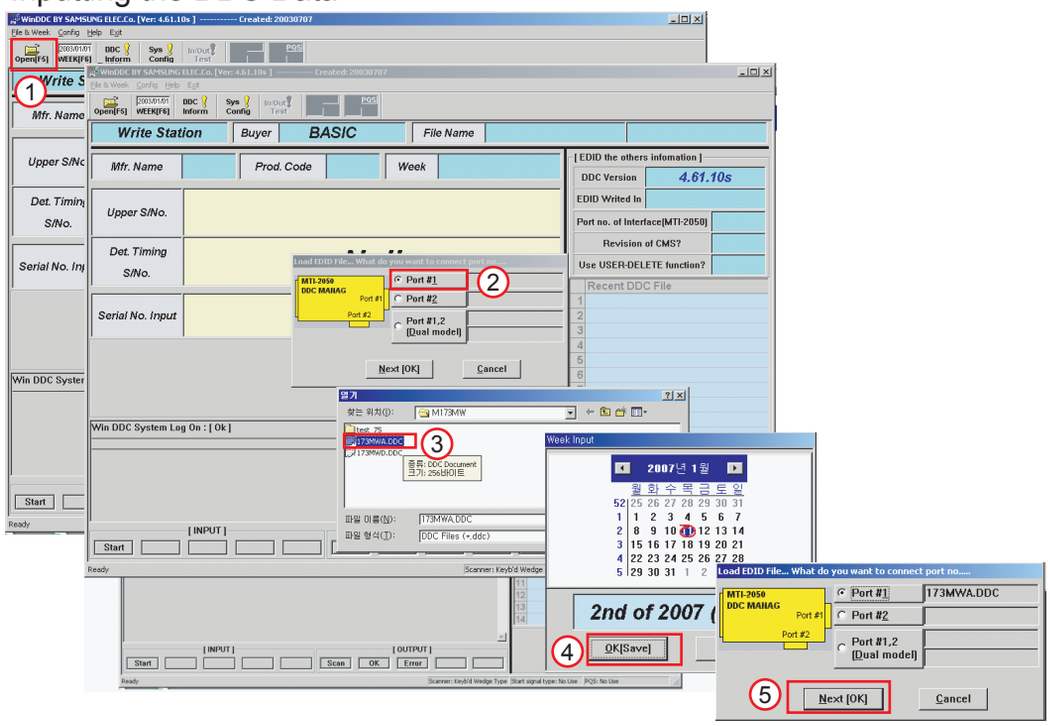


■ When replacing the panel

After replacing the panel, move to the Panel item and hold down the Menu button for five (5) seconds.
The Ch. No is incremented by 1 and then both the On Time and Cycle are set to 0.

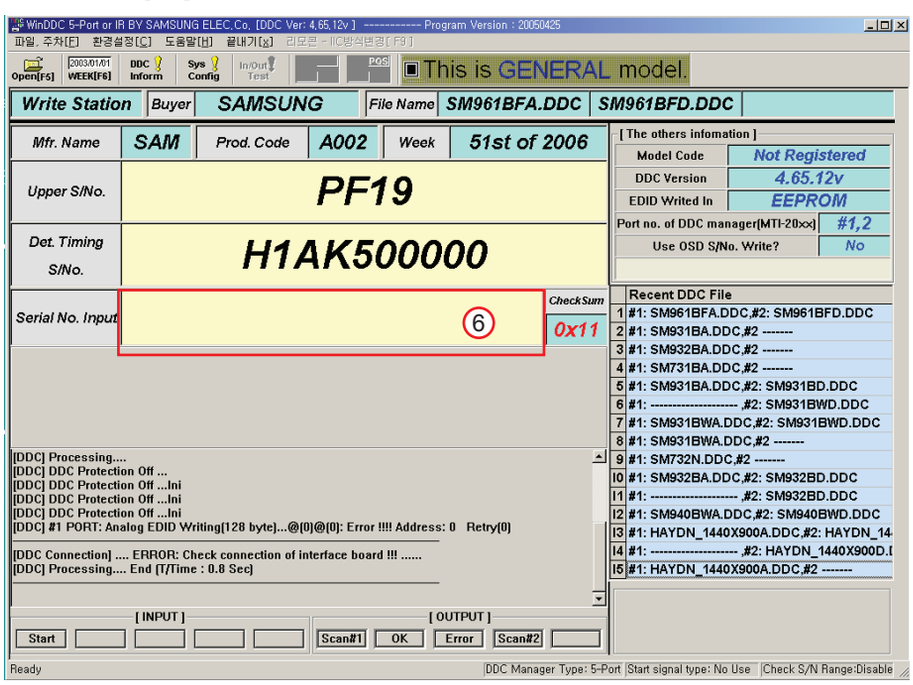


■ Inputting the DDC Data



Use the DDC Manager MTI-2050 version or later.

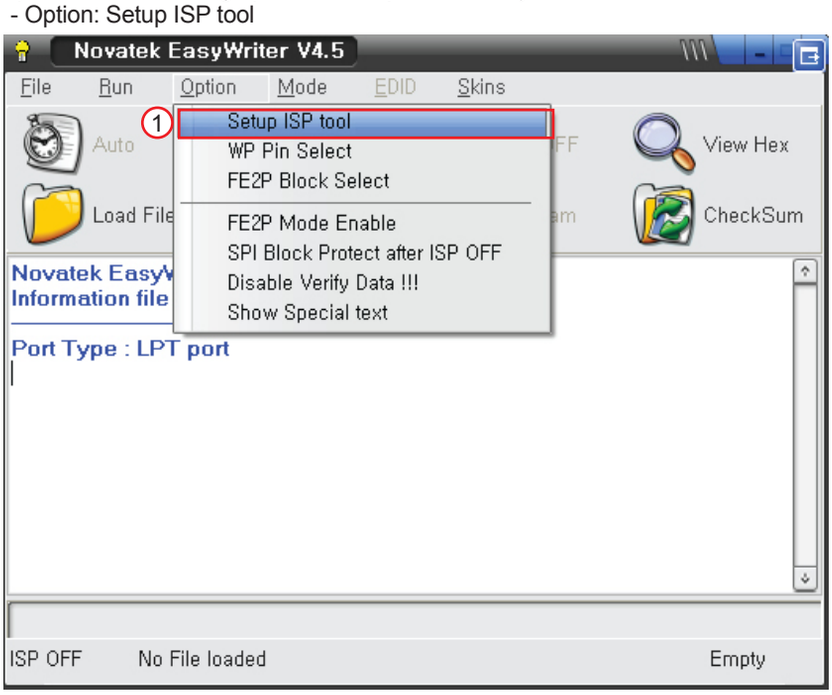
1) Click the Open [F5] icon.
2) Select a port.
3) Open a DDC file.
4) Select a date and click the OK [Save] button.
5) Click the Next [OK] button.



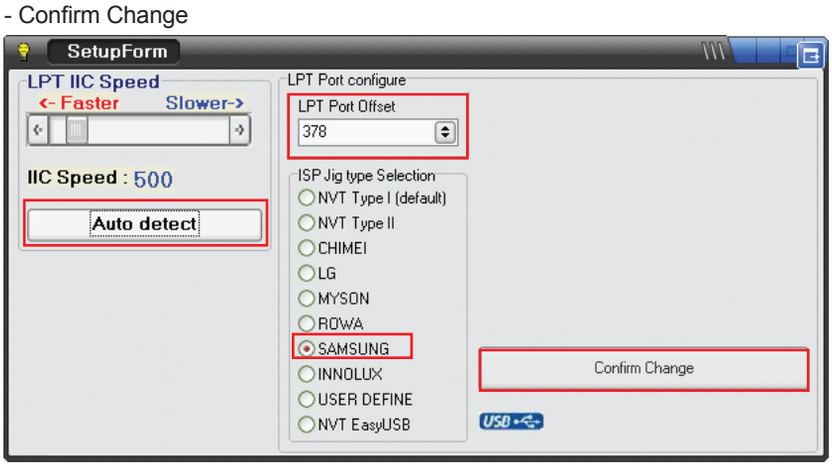
6) Enter the serial number and then press the Enter button
※When inputting digital data after inputting analog data, repeat steps 2 to 5.

■ Inputting the MCU Data

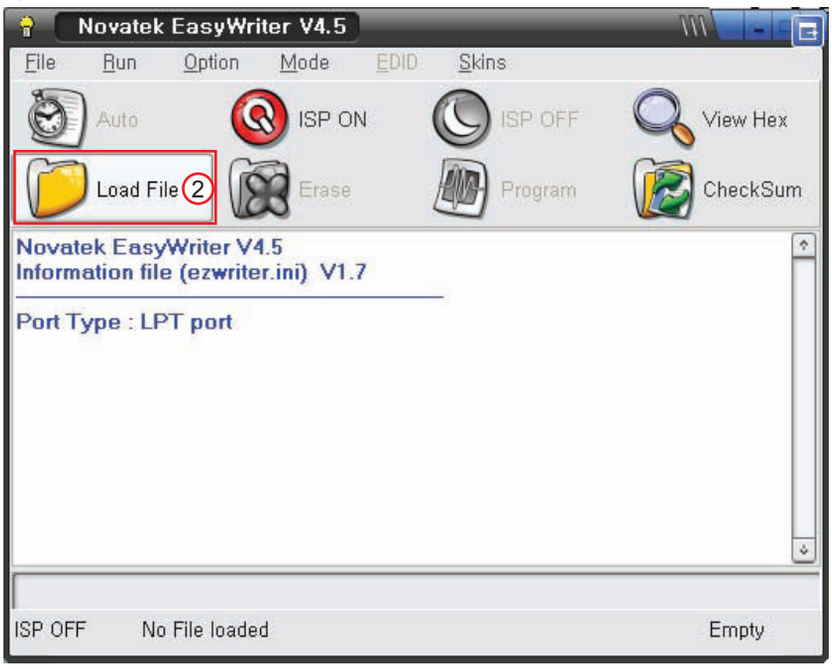
1) Check the following options after open the “Easywriter”
 - Option: Setup ISP tool



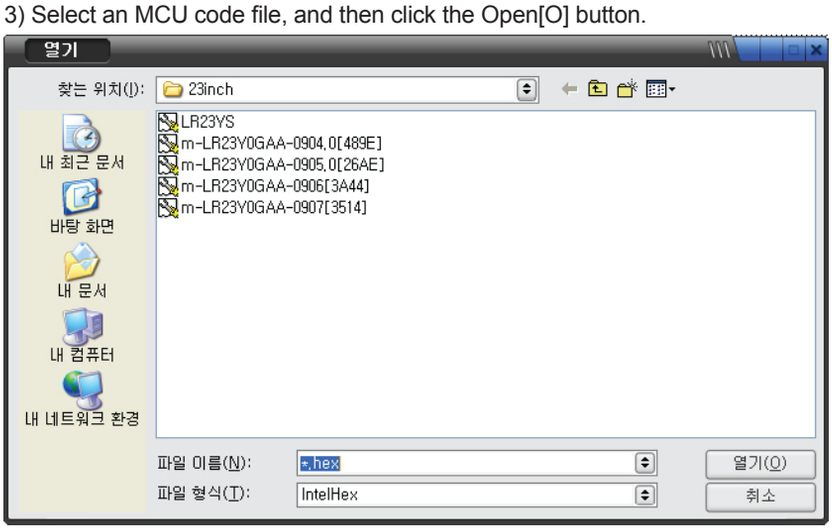
- LPT Port Offset: 378
- ISP Jig type Selection: SAMSUNG
- Auto detect
- Confirm Change



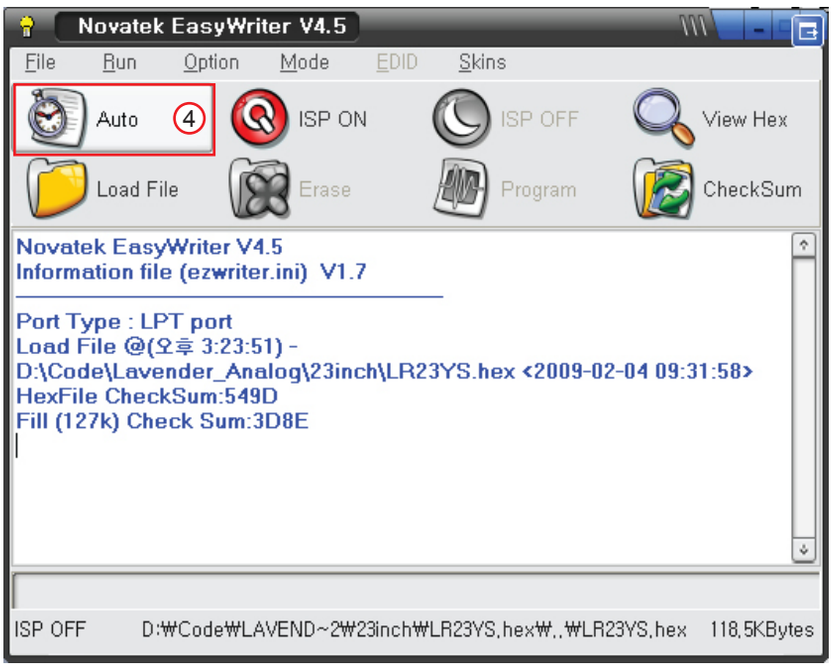
2) Click the Load File button.



3) Select an MCU code file, and then click the Open[O] button.



4) Click the Auto button.

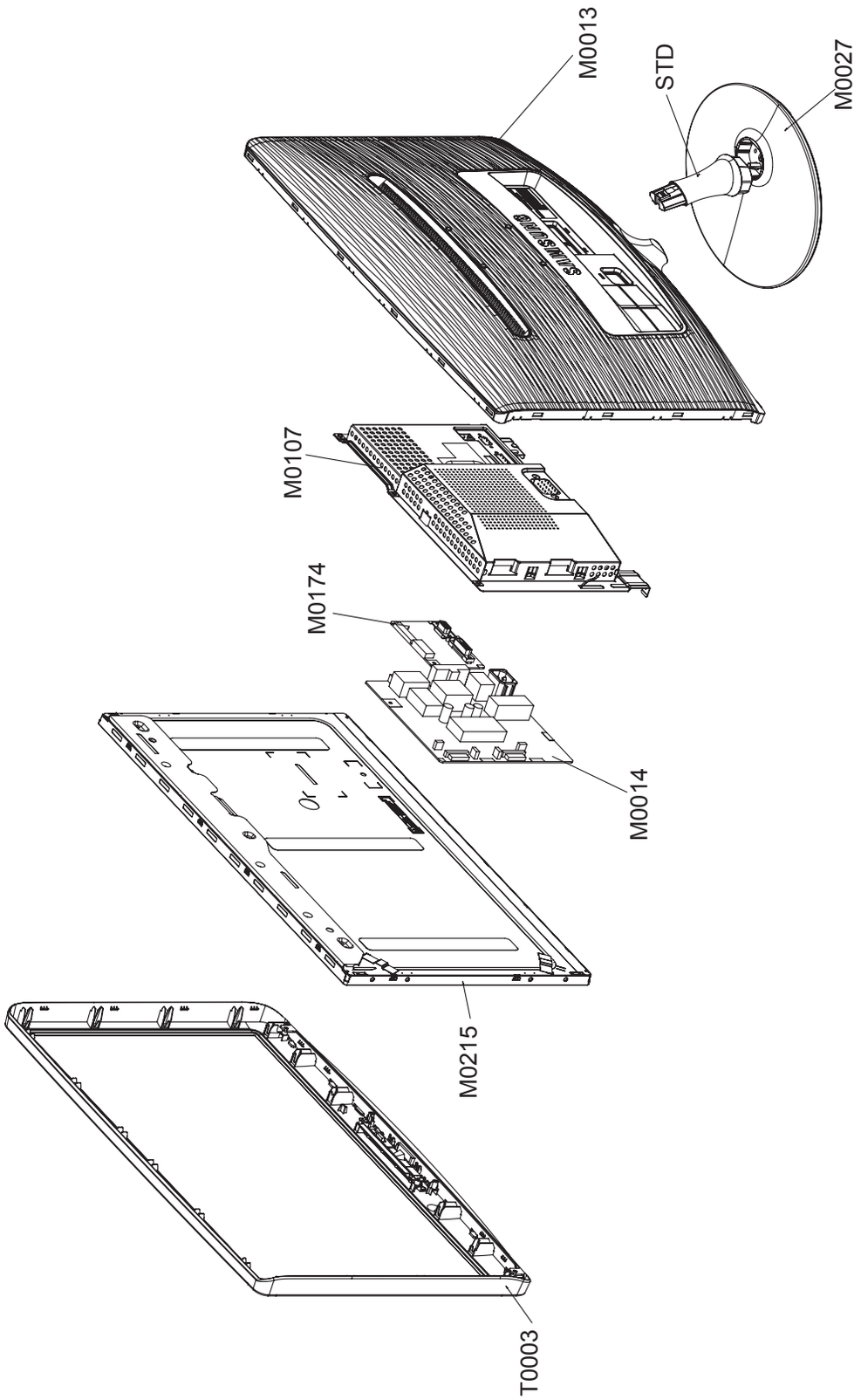


5) When programming and verification are complete, hard power the monitor off and then on again.

Memo

5. Exploded View & Part List

5-1. LS20PUYKF/EN - Exploded View



5-1-1. LS20PUYKF/EN - Parts List

Location No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
M0013	BN96-12499B	ASSY COVER P-REAR;PLUM 20 analog,HIPS,HB	1	SA	
M0014	BN94-03228H	ASSY PCB MAIN;LS20PUYKF/EN	1	SA	
M0027	BN96-12486A	ASSY STAND P-BASE;PLUM 15~20,ABS+PMMA(SF	1	SA	
STD	BN96-12487A	ASSY STAND P-BODY;PLUM 23,ABS+PMMA(SF-09	1	SA	
M0107	BN63-06352B	SHIELD-COVER;PLUM 20 analog,SECC,T0.8	1	SNA	
M0174	BN44-00327C	IP BOARD;IP-29155A,PLUM20"w(2Lamp),0.7~1	1	SA	
M0215	BN07-00624A	LCD-PANEL;LTM200KT03,SSUTTT,6Bit + Hi-FR	1	SA	
T0003	BN96-12497A	ASSY COVER P-FRONT;PLUM 20,ABS+PMMA,HB,B	1	SA	

5-2. LS20PUYKF/EN - Parts List

Service Bom (**SA**: SERVICE AVAILABLE, **SNA**: SERVICE NOT AVAILABLE)

Level	Location No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
0.1		BN90-02395A	ASSY COVER FRONT;B2030,H/GLOSSY	1	SNA	
..2	T0003	BN96-12497A	ASSY COVER P-FRONT;PLUM 20,ABS+PMMA,HB,B	1	SA	
...3	W392	6003-000282	SCREW-TAPTYPE;BH,+,-,B,M3,L8,ZPC(BLK),SW	2	SA	
...3		BN61-05972A	GUIDE-PANEL;PLUM 23,SECC,T0.8	1	SNA	
...3	CCM1	BN63-02183D	COVER-SHEET;Rhcm,PE Vinyl,T0.04,680mm,20	0.45	SNA	
...3	M0112	BN63-06350A	COVER-FRONT;PLUM 20,PMMA+ABS,HB,BK23,SF-	1	SNA	
...3		BN64-01234A	DECORATION;PLUM 20,PC,CLEAR	1	SNA	
...3	AL093	BN67-00280A	LENS-LED;PLUM23",PC CLEAR,TP26	1	SNA	
...3	T0527	BN68-00798D	LABEL-ENERGY,STAR;L/M,W/W,PET,T0.05,9.3,	1	SNA	
...3	M0175	BN96-12804B	ASSY BOARD P-TOUCH FUNCTION;plum (all mo	1	SA	
....4		BN94-03258A	ASSY PCB FUNCTION-BN96-12804B;PLUM,BN96-	1	SNA	
.....5	M2893	BN39-01164C	LEAD CONNECTOR;plum,UL1061#28,5P,80mm ,12	1	SA	
.....5		BN61-05967A	HOLDER-CONTROL;plum23",ABS HB,WH12	1	SNA	
.....5		BN97-03998A	ASSY SMD-BN96-12804B;PLUM,BN96-12804B	1	SNA	
......6		0406-001253	DIODE-TVS;VESD05A1-02V,6.0/6.8/7.5V,SOD-	2	SNA	
......6	L0405	0601-002642	LED;SMD(SIDE VIEW),BLUE,475nm,3.8x1.0x0.	1	SNA	
......6		1209-001890	IC-SENSOR;CT1N07B,MLF,24P,4x4mm,PLASTIC,	1	SA	
......6	HDR7	2007-000139	R-CHIP;220ohm,5%,1/16W,TP,1005	6	SNA	
......6	MR306	2007-000141	R-CHIP;2.2Kohm,5%,1/16W,TP,1005	2	SNA	
......6	R111	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	2	SNA	
......6		2007-001329	R-CHIP;7.5Kohm,5%,1/16W,TP,1005	2	SA	
......6	AD480	2203-006399	C-CER,CHIP;1000nF,10%,6.3V,X5R,1005	1	SA	
......6	CN906	3711-007275	CONNECTOR-HEADER;BOX,5P,1R,1.25mm,SMD-S,	1	SA	
......6		BN41-01342A	PCB SUB-TOUCH FUNCTION;Plum(all),FR-4,2,	1	SNA	
.....5		BN74-00057A	TAPE-FUNCTION;DOUBLE FACE TAPE,Polyester	1	SNA	
.....5		BN74-00058A	TAPE-FUNCTION;DOUBLE FACE TAPE,Polyester	2	SNA	
...3	M0081	6003-000115	SCREW-TAPTYPE;BH,+,B,M3,L6,ZPC(BLK),SW RC	2	SNA	
..2		BN68-02526A	LABEL-MONITOR-POP;Plum POP,WW,PET,T0.05,	1	SNA	
0.1	M0002	BN90-02396B	ASSY COVER REAR;B2030N,HIGH GLOSSY	1	SNA	
..2	W391	6003-000275	SCREW-TAPTYPE;BH,+,B,M3,L10,ZPC(BLK),SWR	2	SA	
..2	M0013	BN96-12499B	ASSY COVER P-REAR;PLUM 20 analog,HIPS,HB	1	SA	
...3	M0081	6003-001001	SCREW-TAPTYPE;FH,+,B,M3,L8,ZPC(BLK),SW RC	1	SNA	
...3	M0081	6003-001239	SCREW-TAPTYPE;FH,+,B,M4,L10,ZPC(WHT),SWR	2	SNA	
...3	M0113	BN61-01581A	BRACKET-VESA;BI17/19BS,SECC,T1.0	2	SNA	
...3	T0060	BN61-05091A	SPRING ETC-STAND;ECOFIT 23",SK5,T0.3	1	SNA	
...3	T0060	BN61-05968A	SPRING ETC;PLUM 23,SK5,T0.6,BLACK	1	SNA	
...3	CIS4	BN61-05971A	HOLDER-STAND;PLUM 23,POM,WHITE,ACETAL	1	SNA	

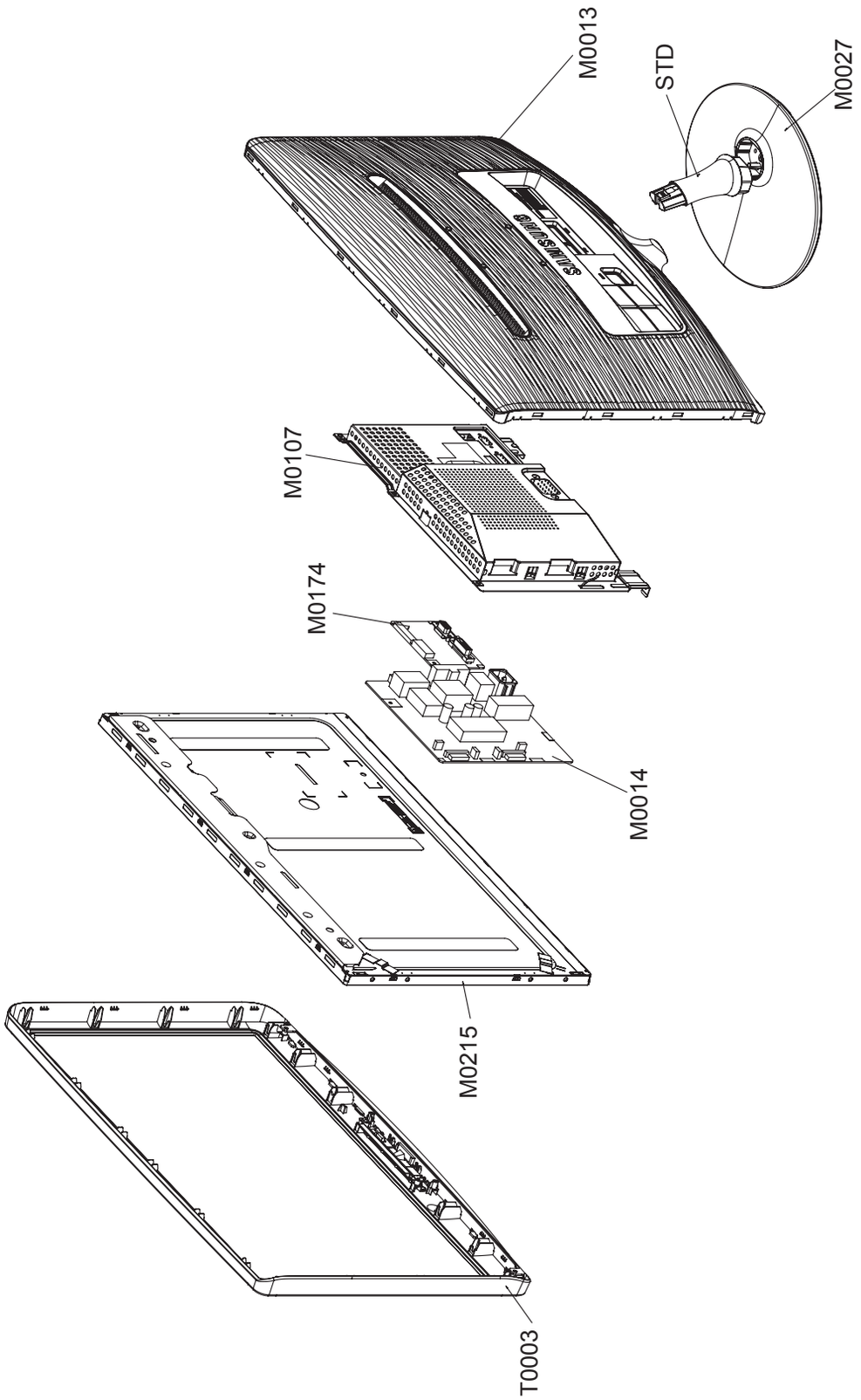
Level	Location No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
...3	M0111	BN63-06314A	COVER-STAND;PLUM23,ABS+PMMA,HB,BK23,H/GL	1	SNA	
...3	M0006	BN63-06351B	COVER-REAR;PLUM 20 analog,HIPS,HB,BK23	1	SNA	
...3		BN63-06357A	SHIELD-LAMP;PLUM 20",SPTE,T0.3	1	SNA	
...3	M0131	BP63-00786A	GASKET;HLS6187WX/XAA,Conductive Adhesive	1	SNA	
0.1		BN91-03053B	ASSY LCD-STZ;LS20MY*	1	SNA	
..2	M0215	BN07-00624A	LCD-PANEL;LTM200KT03,SSUTTT,6Bit + Hi-FR	1	SA	
0.1	M0017	BN91-04660H	ASSY CHASSIS;LS20PUYKF/EN	1	SNA	
..2	M0081	6003-000264	SCREW-TAPTYPE;PWH,+,-,B,M3,L6,ZPC(WHT),S	2	SA	
..2	M0174	BN44-00327C	IP BOARD;IP-29155A,PLUM20"w(2Lamp),0.7~1	1	SA	
..2	T0527	BN68-00931A	LABEL;ALL,S.MARINA,PREMIUM TRANSFER,T0.	1	SNA	
..2	M0014	BN94-03228H	ASSY PCB MAIN;LS20PUYKF/EN	1	SA	
...3		0202-001463	SOLDER-WIRE;LFC2-W3.0,-,D3,99.79Sn/0.2Cu	1.814	SNA	
...3		0202-001521	SOLDER-WIRE FLUX;ECO SOLDER RMA98 SUP,D1	0.003	SNA	
...3		0204-003399	FLUX;AGF-780 DS-AA15,13.0%	2.259	SNA	
...3		0204-003403	ISOPROPYL ALCOHOL;FLUX REDUCER #5080,GRA	3.47	SNA	
...3		3701-001510	CONNECTOR-DSUB;15P,3R,FEMAIL,STAMPED PIN	1	SNA	
...3	CN906	3711-005847	CONNECTOR-HEADER;BOX,9P,1R,2MM,ANGLE,SN,	1	SNA	
...3	T0527	BN68-00795A	LABEL-IC MICOM;MATISSE,GOYA,ART PAPER(10	1	SNA	
...3	T0174	BN97-03933H	ASSY SMD;LS20PUYKF/EN	1	SNA	
....4		0202-001477	SOLDER-CREAM;LST309-M,D20~45um,96.5Sn/3A	0.462	SNA	
....4		0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	3	SA	
....4	MZD1	0403-001411	DIODE-ZENER;5.49-5.73V,200mW,SOD-323,TP	8	SA	
....4		0403-001712	DIODE-ZENER;QZX363C6V8,6.47/7.14V,200mW,	1	SNA	
....4	PQ02	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA	
....4	Q409	0505-001165	FET-SILICON;Si3443CDV,P,-20V,+-4.4A,65mo	1	SA	
....4	IC112	1103-000129	IC-EEPROM;24C02,2Kbit,256x8,SOP,8P,5x4mm	1	SA	
....4	IC112	1103-001410	IC-EEPROM;S-24CS08AFJ-TB-1GE,8Kbit,1Kx8,	1	SA	
....4	IC109	1205-003895	IC-LCD CONTROLLER;SE919LM-NT,QFP,64P,7x7	1	SA	
....4	DR1	2007-000043	R-CHIP;1Kohm,1%,1/10W,TP,1608	6	SA	
....4	CER02	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	2	SNA	
....4	AR30	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	20	SA	
....4	AVR51	2007-000083	R-CHIP;3Kohm,5%,1/10W,TP,1608	1	SNA	
....4	CER04	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	2	SA	
....4	MROP1	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	12	SA	
....4	AR108	2007-000097	R-CHIP;47Kohm,5%,1/10W,TP,1608	5	SA	
....4	ARR2	2007-000102	R-CHIP;100Kohm,5%,1/10W,TP,1608	2	SA	
....4	ZR24	2007-000109	R-CHIP;1Mohm,5%,1/10W,TP,1608	1	SNA	
....4	KAR11	2007-000124	R-CHIP;2.2Kohm,5%,1/10W,TP,1608	3	SNA	
....4	HR13	2007-000821	R-CHIP;390ohm,1%,1/10W,TP,1608	1	SNA	
....4	ZR10	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	3	SNA	
....4	R1	2007-002425	R-CHIP;1ohm,5%,1/10W,TP,1608	6	SNA	
....4	C134	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,TP,1608	1	SA	

Level	Location No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
....4	C409	2203-000292	C-CER,CHIP;0.01nF,5%,50V,C0G,1608	2	SA	
....4	ZC14	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	SNA	
....4	DC108	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	25	SC	
....4	PC11	2203-006141	C-CER,CHIP;1000nF,10%,16V,X5R,1608	2	SNA	
....4	C125	2203-006361	C-CER,CHIP;10000nF,10%,10V,X5R,TP,2012	18	SC	
....4	X202	2801-003773	CRYSTAL-SMD;12MHz,30ppm,28-AAN,20pF,50oh	1	SA	
....4	T0568	3301-001407	BEAD-SMD;30ohm,1608,300mA,TP,,,0.4ohm	2	SNA	
....4	AC510	3708-001150	CONNECTOR-FPC/FFC/PIC;30P,1mm,SMD-A,SN,Y	1	SA	
....4		3711-005743	HEADER-BOARD TO CABLE;BOX,5P,1R,1.25mm,A	1	SA	
....4	T0077	BN41-01310A	PCB MAIN;PLUM B2230N,CEM-3,2,MP1.0,1.6,5	1	SNA	
....4	T0527	BN68-00931A	LABEL;ALL,S.MARINA,PREMIUM TRANSFER,T 0.	1	SNA	
....4	M0018	BN97-03932H	ASSY MICOM;B2030N	1	SNA	
.....5	IC115	1107-001580	IC-FLASH MEMORY;MX25L4005,4Mbit,512Kx8,S	1	SNA	
....4		0402-001614	DIODE-RECTIFIER;S1G,400V,1A,DO-214AC,TP	1	SA	
....4	L2011	3301-001145	BEAD-SMD;60ohm,4516,TP,70ohm/45MHz,82ohm	4	SNA	
....4	T0087	1203-006118	IC-POSI.FIXED REG.;S-1172B18-U5T1G,SOT-8	1	SA	
....4	T0087	1203-006141	IC-POSI.FIXED REG.;S-1172B33-U5T1G,SOT-8	1	SA	
....4	6MC22	2203-000975	C-CER,CHIP;47nF,10%,25V,X7R,TP,1608,-	6	SNA	
....4	C3	2203-000384	C-CER,CHIP;0.015nF,5%,50V,C0G,1608	1	SNA	
..2	M0006	BN96-12500B	ASSY SHIELD P-COVER;PLUM 20 analog,SECC,	1	SNA	
...3		BN61-05973A	STUD-PEM;PLUM23",M4,D8,L20	2	SNA	
...3	M0107	BN63-06352B	SHIELD-COVER;PLUM 20 analog,SECC,T0.8	1	SNA	
...3	M0131	BN63-00049A	GASKET;RB17AS,Conductive Fabric,1.5MM,10	1	SNA	
...3	M0131	BN63-03474A	GASKET;HUBBLE 27",Polyurethane+Polyester	4	SNA	
..2	T0081	6001-002408	SCREW-MACHINE;BH,+,WT,M4,L12,ZPC(WHT),SW	2	SA	
..2	M0214	BN96-02854W	ASSY CABLE P-FLAT CABLE;MCKINLEY,FLAT CA	1	SA	
..2	T0527	BN68-00513A	LABEL-E,PASS;ALL MODEL,YUPO(110G),50X15,	1	SNA	
0.1		BN91-04672A	ASSY SHIELD;B2030	1	SNA	
..2	CIS1	0203-001598	TAPE-FILAMENT;#8915,0.15,12,55000,CLR	0.24	SNA	
0.1		BN92-05472M	ASSY BOX;LS20PUYKF/EN	1	SNA	
..2	T0077	BH68-00329D	LABEL BAR CODE-02;NO CE,NO WT`Y,MPRII,LA	1	SNA	
..2		BH68-00656A	LABEL BOX-00;ALL MODEL,MOJO 90G,90,95,WH	1	SNA	
..2		BN69-04365A	BOX-02,SET;B2030,CB,A-01,SW2, ECT 40,YEL	1	SNA	
0.1		BN92-05473A	ASSY P/MATERIAL;LS20PUZKFV/ZC	1	SNA	
..2	S.N.A	0203-001100	TAPE-OPP MASKING;OPP/W75/ CLR,T0.075,W75,	1.41	SNA	
..2		6902-000061	BAG AIR;LDPE,T0.2,W500,L1000,TRP,370.000	1	SNA	
..2	T0524	6902-000241	BAG PE;HDPE/NITRON,T0.5/T0.012,W600,L600	1	SNA	
..2		6902-000379	BAG AIR;LDPE,T0.2,W1000,L1800,TRP,1260.0	1	SNA	
..2		6902-000604	BAG WRAPPING;LDPE,T0.02,W500,L10000,TRP,	2.04	SNA	
..2		6902-000609	BAG ROLL;LDPE,T0.05,W2400,L1000,TRP,30.0	0.02	SNA	
..2	T0527	BH68-40364A	LABEL-SUMMARY;G52,G72,ART,100G,WHT,BLK,W	1	SNA	
..2		BH69-00457C	PACKING INNER-00,PAD;COMM,T3.0,880,1320,	1	SNA	
..2	T0527	BN68-00129A	LABEL SHIPPING-00;LABEL SHIPPING,ART-PAP	1	SNA	
..2		BN69-00391P	PAD-ANGLE;T4,50,2200,YEL,56g	1	SNA	

Level	Location No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
..2		BN69-03093A	PALLET-WOOD;2033SW,WOOD,L1135,W815,H120,	1	SNA	
..2		BN69-03565T	PAD-PLATE;B2030,CB,SW,YEL,W1100,D780	1	SNA	
..2	T0246	BN69-04302A	CUSHION-SET;PLUM 20,EPS,WHITE	1	SNA	
0.1	M0045	BN92-05474L	ASSY ACCESSORY;LS20PUYKF/EN	1	SNA	
..2	T0268	3903-000452	CBF-POWER CORD;DT,EU/KR,CP3,IEC320 C13,2	1	SA	
..2	M0114	BN39-00244G	CBF SIGNAL;D-sub cable,15P/15P,20276N,15	1	SA	
..2	M0027	BN96-12486A	ASSY STAND P-BASE;PLUM 15~20,ABS+PMMA(SF	1	SA	
...3	T0524	6902-000109	BAG PE;HDPE,T0.015,W350,L430,TRP,28,2,4.	1	SNA	
...3	CIS4	BN61-01717A	HOLDER-STAND;BIZET,NI PLT,CH,+,M4,L11(5)	1	SNA	
...3	CCM1	BN63-02183K	COVER-SHEET;Rhcm,PE Vinyl,T 0.04,250MM,2	0.3	SNA	
...3		BN63-06315A	COVER-STAND BASE;PLUM 20,ABS+PMMA(SF-095	1	SNA	
...3		BN68-02482A	MANUAL FLYER-STAND;Plum,Mojo 80g,148,210	1	SNA	
...3	AR011	BN73-00077A	RUBBER FOOT;MATISSE,BUMPON,#13.5,T2.0 ,60	4	SNA	
...3		BN68-02466A	LABEL-STICKER;PLUM,ALL,ART PAPER,50,10,S	1	SNA	
..2	STD	BN96-12487A	ASSY STAND P-BODY;PLUM 23,ABS+PMMA(SF-09	1	SA	
...3	T0524	6902-000023	BAG PE;LDPE,T0.08,W150,L120,TRP,1.650g	1	SNA	
...3		BN61-05969A	STAND-BAR;PLUM 23,ABS+PMMA(SF-0950),BK23	1	SNA	
....4		BN61-05970A	STAND-BAR IN;PLUM 23,ABS+PMMA(SF-0950),B	1	SNA	
.....5		BN61-02932E	BRACKET-STOPPER NUT;ECOFIT 20,M4,D8,L12,	1	SNA	
...3	CCM1	BN63-02183C	COVER-SHEET;Rhcm,PE Vinyl,T0.04,200mm,20	0.1	SNA	
...3		BN68-02466C	LABEL-STICKER;PLUM,ALL,ART PAPER,50,10,S	1	SNA	
..2	M0045	BN96-12572E	ASSY ACCESSORY;LS20PUYKF/EN	1	SA	
...3	PE BAG	6902-000009	BAG PE;HDPE,T0.03,W240,L400,TRP,8,2,-,5.	1	SNA	
...3	M0019	BH68-70448A	CARD-01;TFT LCD,SRC,RUSSIA,S/W,120,W210*	1	SNA	
...3		BN59-00982A	S/W DRIVER-03,IB;PLUM Project,W/W,SyncMa	1	SNA	
...3	M9889	BN63-02368B	CLOTH-CLEAN;cloth,120,160,sea blue,ToC	1	SNA	
...3		BN68-00226R	MANUAL FLYER-03,WARRANTY CARD;comm,Samsu	1	SNA	
...3		BN68-00907F	MANUAL FLYER-00,WEE;comm,Samsung,23Lang,	1	SNA	
...3		BN68-01925G	MANUAL FLYER-WARRANTY CARD;comm,Samsung,	1	SNA	
...3		BN68-02480A	MANUAL FLYER-QSG,02;PLUM Project MODELS,	1	SNA	
...3		BN68-02462B	LABEL-STICKER;CIS,T0.05,93,40,TV-MONITOR	1	SNA	
0.1		BN92-05486A	ASSY LABEL;PLUM , BLACK,W/W	1	SNA	
..2	CCM1	BN68-01570A	LABEL RATING;ALL,SS,PE,T0.05,90,45,Dark	1	SNA	

5. Exploded View & Part List

5-1. LS20PUYKF/EN - Exploded View



5-1-1. LS20PUYKF/EN - Parts List

Location No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
M0013	BN96-12499B	ASSY COVER P-REAR;PLUM 20 analog,HIPS,HB	1	SA	
M0014	BN94-03228H	ASSY PCB MAIN;LS20PUYKF/EN	1	SA	
M0027	BN96-12486A	ASSY STAND P-BASE;PLUM 15~20,ABS+PMMA(SF	1	SA	
STD	BN96-12487A	ASSY STAND P-BODY;PLUM 23,ABS+PMMA(SF-09	1	SA	
M0107	BN63-06352B	SHIELD-COVER;PLUM 20 analog,SECC,T0.8	1	SNA	
M0174	BN44-00327C	IP BOARD;IP-29155A,PLUM20"w(2Lamp),0.7~1	1	SA	
M0215	BN07-00624A	LCD-PANEL;LTM200KT03,SSUTTT,6Bit + Hi-FR	1	SA	
T0003	BN96-12497A	ASSY COVER P-FRONT;PLUM 20,ABS+PMMA,HB,B	1	SA	

5-2. LS20PUYKF/EN - Parts List

Service Bom (**SA**: SERVICE AVAILABLE, **SNA**: SERVICE NOT AVAILABLE)

Level	Location No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
0.1		BN90-02395A	ASSY COVER FRONT;B2030,H/GLOSSY	1	SNA	
..2	T0003	BN96-12497A	ASSY COVER P-FRONT;PLUM 20,ABS+PMMA,HB,B	1	SA	
...3	W392	6003-000282	SCREW-TAPTYPE;BH,+,-,B,M3,L8,ZPC(BLK),SW	2	SA	
...3		BN61-05972A	GUIDE-PANEL;PLUM 23,SECC,T0.8	1	SNA	
...3	CCM1	BN63-02183D	COVER-SHEET;Rhcm,PE Vinyl,T0.04,680mm,20	0.45	SNA	
...3	M0112	BN63-06350A	COVER-FRONT;PLUM 20,PMMA+ABS,HB,BK23,SF-	1	SNA	
...3		BN64-01234A	DECORATION;PLUM 20,PC,CLEAR	1	SNA	
...3	AL093	BN67-00280A	LENS-LED;PLUM23",PC CLEAR,TP26	1	SNA	
...3	T0527	BN68-00798D	LABEL-ENERGY,STAR;L/M,W/W,PET,T0.05,9.3,	1	SNA	
...3	M0175	BN96-12804B	ASSY BOARD P-TOUCH FUNCTION;plum (all mo	1	SA	
....4		BN94-03258A	ASSY PCB FUNCTION-BN96-12804B;PLUM,BN96-	1	SNA	
.....5	M2893	BN39-01164C	LEAD CONNECTOR;plum,UL1061#28,5P,80mm ,12	1	SA	
.....5		BN61-05967A	HOLDER-CONTROL;plum23",ABS HB,WH12	1	SNA	
.....5		BN97-03998A	ASSY SMD-BN96-12804B;PLUM,BN96-12804B	1	SNA	
......6		0406-001253	DIODE-TVS;VESD05A1-02V,6.0/6.8/7.5V,SOD-	2	SNA	
......6	L0405	0601-002642	LED;SMD(SIDE VIEW),BLUE,475nm,3.8x1.0x0.	1	SNA	
......6		1209-001890	IC-SENSOR;CT1N07B,MLF,24P,4x4mm,PLASTIC,	1	SA	
......6	HDR7	2007-000139	R-CHIP;220ohm,5%,1/16W,TP,1005	6	SNA	
......6	MR306	2007-000141	R-CHIP;2.2Kohm,5%,1/16W,TP,1005	2	SNA	
......6	R111	2007-000171	R-CHIP;0ohm,5%,1/16W,TP,1005	2	SNA	
......6		2007-001329	R-CHIP;7.5Kohm,5%,1/16W,TP,1005	2	SA	
......6	AD480	2203-006399	C-CER,CHIP;1000nF,10%,6.3V,X5R,1005	1	SA	
......6	CN906	3711-007275	CONNECTOR-HEADER;BOX,5P,1R,1.25mm,SMD-S,	1	SA	
......6		BN41-01342A	PCB SUB-TOUCH FUNCTION;Plum(all),FR-4,2,	1	SNA	
.....5		BN74-00057A	TAPE-FUNCTION;DOUBLE FACE TAPE,Polyester	1	SNA	
.....5		BN74-00058A	TAPE-FUNCTION;DOUBLE FACE TAPE,Polyester	2	SNA	
...3	M0081	6003-000115	SCREW-TAPTYPE;BH,+,B,M3,L6,ZPC(BLK),SW RC	2	SNA	
..2		BN68-02526A	LABEL-MONITOR-POP;Plum POP,WW,PET,T0.05,	1	SNA	
0.1	M0002	BN90-02396B	ASSY COVER REAR;B2030N,HIGH GLOSSY	1	SNA	
..2	W391	6003-000275	SCREW-TAPTYPE;BH,+,B,M3,L10,ZPC(BLK),SWR	2	SA	
..2	M0013	BN96-12499B	ASSY COVER P-REAR;PLUM 20 analog,HIPS,HB	1	SA	
...3	M0081	6003-001001	SCREW-TAPTYPE;FH,+,B,M3,L8,ZPC(BLK),SW RC	1	SNA	
...3	M0081	6003-001239	SCREW-TAPTYPE;FH,+,B,M4,L10,ZPC(WHT),SWR	2	SNA	
...3	M0113	BN61-01581A	BRACKET-VESA;BI17/19BS,SECC,T1.0	2	SNA	
...3	T0060	BN61-05091A	SPRING ETC-STAND;ECOFIT 23",SK5,T0.3	1	SNA	
...3	T0060	BN61-05968A	SPRING ETC;PLUM 23,SK5,T0.6,BLACK	1	SNA	
...3	CIS4	BN61-05971A	HOLDER-STAND;PLUM 23,POM,WHITE,ACETAL	1	SNA	

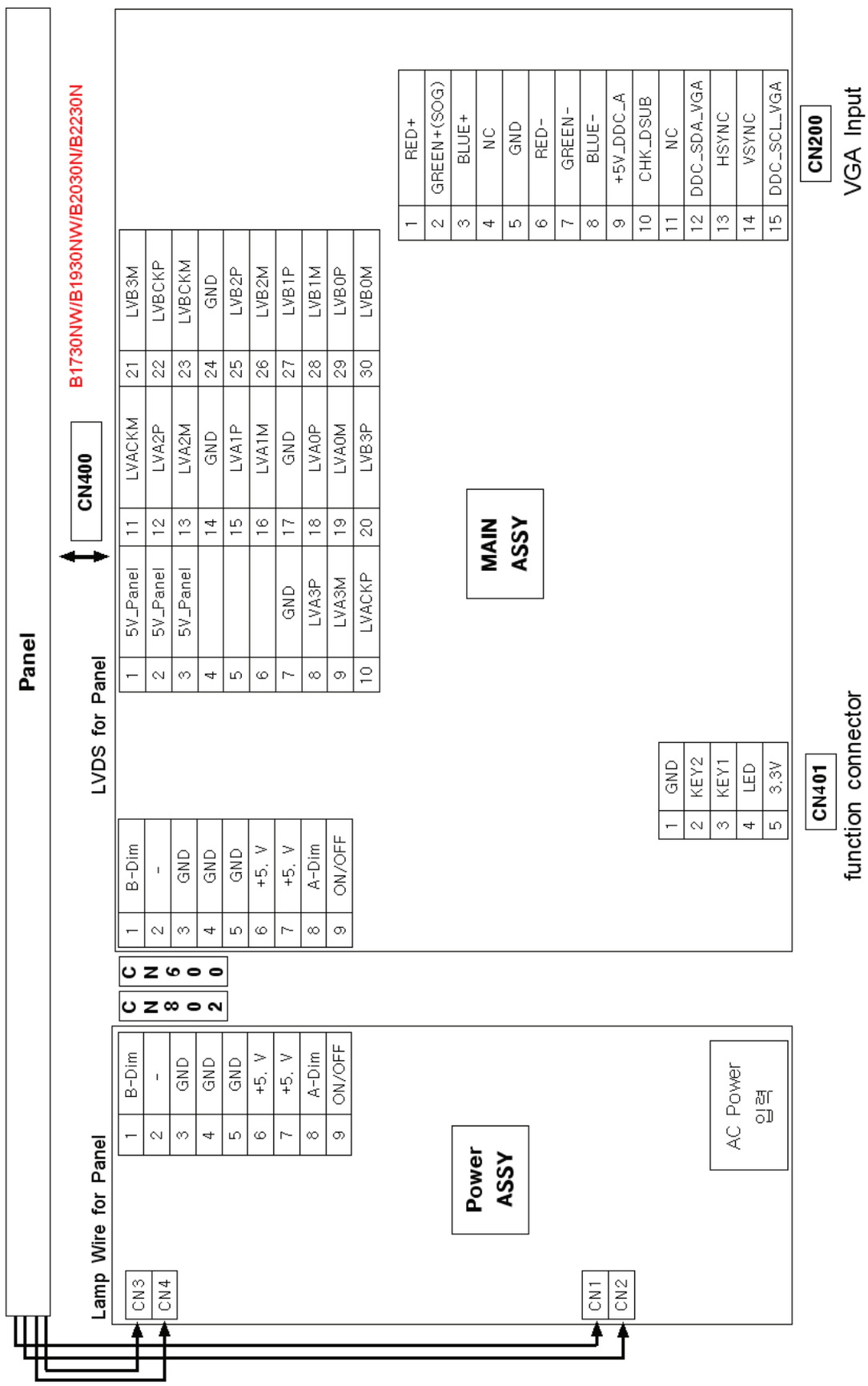
Level	Location No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
...3	M0111	BN63-06314A	COVER-STAND;PLUM23,ABS+PMMA,HB,BK23,H/GL	1	SNA	
...3	M0006	BN63-06351B	COVER-REAR;PLUM 20 analog,HIPS,HB,BK23	1	SNA	
...3		BN63-06357A	SHIELD-LAMP;PLUM 20",SPTE,T0.3	1	SNA	
...3	M0131	BP63-00786A	GASKET;HLS6187WX/XAA,Conductive Adhesive	1	SNA	
0.1		BN91-03053B	ASSY LCD-STZ;LS20MY*	1	SNA	
..2	M0215	BN07-00624A	LCD-PANEL;LTM200KT03,SSUTTT,6Bit + Hi-FR	1	SA	
0.1	M0017	BN91-04660H	ASSY CHASSIS;LS20PUYKF/EN	1	SNA	
..2	M0081	6003-000264	SCREW-TAPTYPE;PWH,+,-,B,M3,L6,ZPC(WHT),S	2	SA	
..2	M0174	BN44-00327C	IP BOARD;IP-29155A,PLUM20"w(2Lamp),0.7~1	1	SA	
..2	T0527	BN68-00931A	LABEL;ALL,S.MARINA,PREMIUM TRANSFER,T0.	1	SNA	
..2	M0014	BN94-03228H	ASSY PCB MAIN;LS20PUYKF/EN	1	SA	
...3		0202-001463	SOLDER-WIRE;LFC2-W3.0,-,D3,99.79Sn/0.2Cu	1.814	SNA	
...3		0202-001521	SOLDER-WIRE FLUX;ECO SOLDER RMA98 SUP,D1	0.003	SNA	
...3		0204-003399	FLUX;AGF-780 DS-AA15,13.0%	2.259	SNA	
...3		0204-003403	ISOPROPYL ALCOHOL;FLUX REDUCER #5080,GRA	3.47	SNA	
...3		3701-001510	CONNECTOR-DSUB;15P,3R,FEMAIL,STAMPED PIN	1	SNA	
...3	CN906	3711-005847	CONNECTOR-HEADER;BOX,9P,1R,2MM,ANGLE,SN,	1	SNA	
...3	T0527	BN68-00795A	LABEL-IC MICOM;MATISSE,GOYA,ART PAPER(10	1	SNA	
...3	T0174	BN97-03933H	ASSY SMD;LS20PUYKF/EN	1	SNA	
....4		0202-001477	SOLDER-CREAM;LST309-M,D20~45um,96.5Sn/3A	0.462	SNA	
....4		0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	3	SA	
....4	MZD1	0403-001411	DIODE-ZENER;5.49-5.73V,200mW,SOD-323,TP	8	SA	
....4		0403-001712	DIODE-ZENER;QZX363C6V8,6.47/7.14V,200mW,	1	SNA	
....4	PQ02	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	SA	
....4	Q409	0505-001165	FET-SILICON;Si3443CDV,P,-20V,+-4.4A,65mo	1	SA	
....4	IC112	1103-000129	IC-EEPROM;24C02,2Kbit,256x8,SOP,8P,5x4mm	1	SA	
....4	IC112	1103-001410	IC-EEPROM;S-24CS08AFJ-TB-1GE,8Kbit,1Kx8,	1	SA	
....4	IC109	1205-003895	IC-LCD CONTROLLER;SE919LM-NT,QFP,64P,7x7	1	SA	
....4	DR1	2007-000043	R-CHIP;1Kohm,1%,1/10W,TP,1608	6	SA	
....4	CER02	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	2	SNA	
....4	AR30	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	20	SA	
....4	AVR51	2007-000083	R-CHIP;3Kohm,5%,1/10W,TP,1608	1	SNA	
....4	CER04	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	2	SA	
....4	MROP1	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	12	SA	
....4	AR108	2007-000097	R-CHIP;47Kohm,5%,1/10W,TP,1608	5	SA	
....4	ARR2	2007-000102	R-CHIP;100Kohm,5%,1/10W,TP,1608	2	SA	
....4	ZR24	2007-000109	R-CHIP;1Mohm,5%,1/10W,TP,1608	1	SNA	
....4	KAR11	2007-000124	R-CHIP;2.2Kohm,5%,1/10W,TP,1608	3	SNA	
....4	HR13	2007-000821	R-CHIP;390ohm,1%,1/10W,TP,1608	1	SNA	
....4	ZR10	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	3	SNA	
....4	R1	2007-002425	R-CHIP;1ohm,5%,1/10W,TP,1608	6	SNA	
....4	C134	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,TP,1608	1	SA	

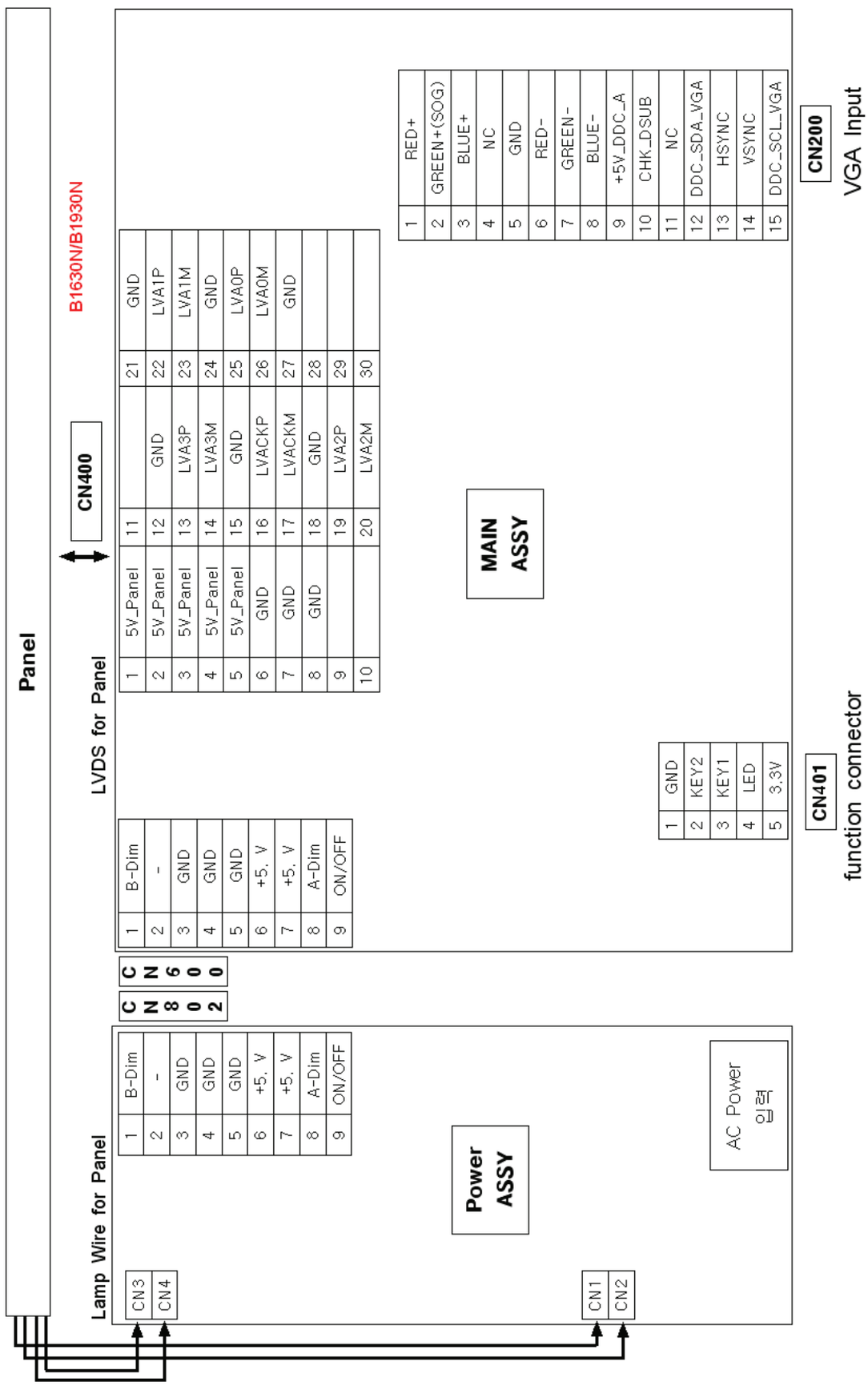
Level	Location No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
....4	C409	2203-000292	C-CER,CHIP;0.01nF,5%,50V,C0G,1608	2	SA	
....4	ZC14	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	SNA	
....4	DC108	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	25	SC	
....4	PC11	2203-006141	C-CER,CHIP;1000nF,10%,16V,X5R,1608	2	SNA	
....4	C125	2203-006361	C-CER,CHIP;10000nF,10%,10V,X5R,TP,2012	18	SC	
....4	X202	2801-003773	CRYSTAL-SMD;12MHz,30ppm,28-AAN,20pF,50oh	1	SA	
....4	T0568	3301-001407	BEAD-SMD;30ohm,1608,300mA,TP,,,0.4ohm	2	SNA	
....4	AC510	3708-001150	CONNECTOR-FPC/FFC/PIC;30P,1mm,SMD-A,SN,Y	1	SA	
....4		3711-005743	HEADER-BOARD TO CABLE;BOX,5P,1R,1.25mm,A	1	SA	
....4	T0077	BN41-01310A	PCB MAIN;PLUM B2230N,CEM-3,2,MP1.0,1.6,5	1	SNA	
....4	T0527	BN68-00931A	LABEL;ALL,S.MARINA,PREMIUM TRANSFER,T 0.	1	SNA	
....4	M0018	BN97-03932H	ASSY MICOM;B2030N	1	SNA	
.....5	IC115	1107-001580	IC-FLASH MEMORY;MX25L4005,4Mbit,512Kx8,S	1	SNA	
....4		0402-001614	DIODE-RECTIFIER;S1G,400V,1A,DO-214AC,TP	1	SA	
....4	L2011	3301-001145	BEAD-SMD;60ohm,4516,TP,70ohm/45MHz,82ohm	4	SNA	
....4	T0087	1203-006118	IC-POSI.FIXED REG.;S-1172B18-U5T1G,SOT-8	1	SA	
....4	T0087	1203-006141	IC-POSI.FIXED REG.;S-1172B33-U5T1G,SOT-8	1	SA	
....4	6MC22	2203-000975	C-CER,CHIP;47nF,10%,25V,X7R,TP,1608,-	6	SNA	
....4	C3	2203-000384	C-CER,CHIP;0.015nF,5%,50V,C0G,1608	1	SNA	
..2	M0006	BN96-12500B	ASSY SHIELD P-COVER;PLUM 20 analog,SECC,	1	SNA	
...3		BN61-05973A	STUD-PEM;PLUM23",M4,D8,L20	2	SNA	
...3	M0107	BN63-06352B	SHIELD-COVER;PLUM 20 analog,SECC,T0.8	1	SNA	
...3	M0131	BN63-00049A	GASKET;RB17AS,Conductive Fabric,1.5MM,10	1	SNA	
...3	M0131	BN63-03474A	GASKET;HUBBLE 27",Polyurethane+Polyester	4	SNA	
..2	T0081	6001-002408	SCREW-MACHINE;BH,+,WT,M4,L12,ZPC(WHT),SW	2	SA	
..2	M0214	BN96-02854W	ASSY CABLE P-FLAT CABLE;MCKINLEY,FLAT CA	1	SA	
..2	T0527	BN68-00513A	LABEL-E,PASS;ALL MODEL,YUPO(110G),50X15,	1	SNA	
0.1		BN91-04672A	ASSY SHIELD;B2030	1	SNA	
..2	CIS1	0203-001598	TAPE-FILAMENT;#8915,0.15,12,55000,CLR	0.24	SNA	
0.1		BN92-05472M	ASSY BOX;LS20PUYKF/EN	1	SNA	
..2	T0077	BH68-00329D	LABEL BAR CODE-02;NO CE,NO WT`Y,MPRII,LA	1	SNA	
..2		BH68-00656A	LABEL BOX-00;ALL MODEL,MOJO 90G,90,95,WH	1	SNA	
..2		BN69-04365A	BOX-02,SET;B2030,CB,A-01,SW2, ECT 40,YEL	1	SNA	
0.1		BN92-05473A	ASSY P/MATERIAL;LS20PUZKFV/ZC	1	SNA	
..2	S.N.A	0203-001100	TAPE-OPP MASKING;OPP/W75/ CLR,T0.075,W75,	1.41	SNA	
..2		6902-000061	BAG AIR;LDPE,T0.2,W500,L1000,TRP,370.000	1	SNA	
..2	T0524	6902-000241	BAG PE;HDPE/NITRON,T0.5/T0.012,W600,L600	1	SNA	
..2		6902-000379	BAG AIR;LDPE,T0.2,W1000,L1800,TRP,1260.0	1	SNA	
..2		6902-000604	BAG WRAPPING;LDPE,T0.02,W500,L10000,TRP,	2.04	SNA	
..2		6902-000609	BAG ROLL;LDPE,T0.05,W2400,L1000,TRP,30.0	0.02	SNA	
..2	T0527	BH68-40364A	LABEL-SUMMARY;G52,G72,ART,100G,WHT,BLK,W	1	SNA	
..2		BH69-00457C	PACKING INNER-00,PAD;COMM,T3.0,880,1320,	1	SNA	
..2	T0527	BN68-00129A	LABEL SHIPPING-00;LABEL SHIPPING,ART-PAP	1	SNA	
..2		BN69-00391P	PAD-ANGLE;T4,50,2200,YEL,56g	1	SNA	

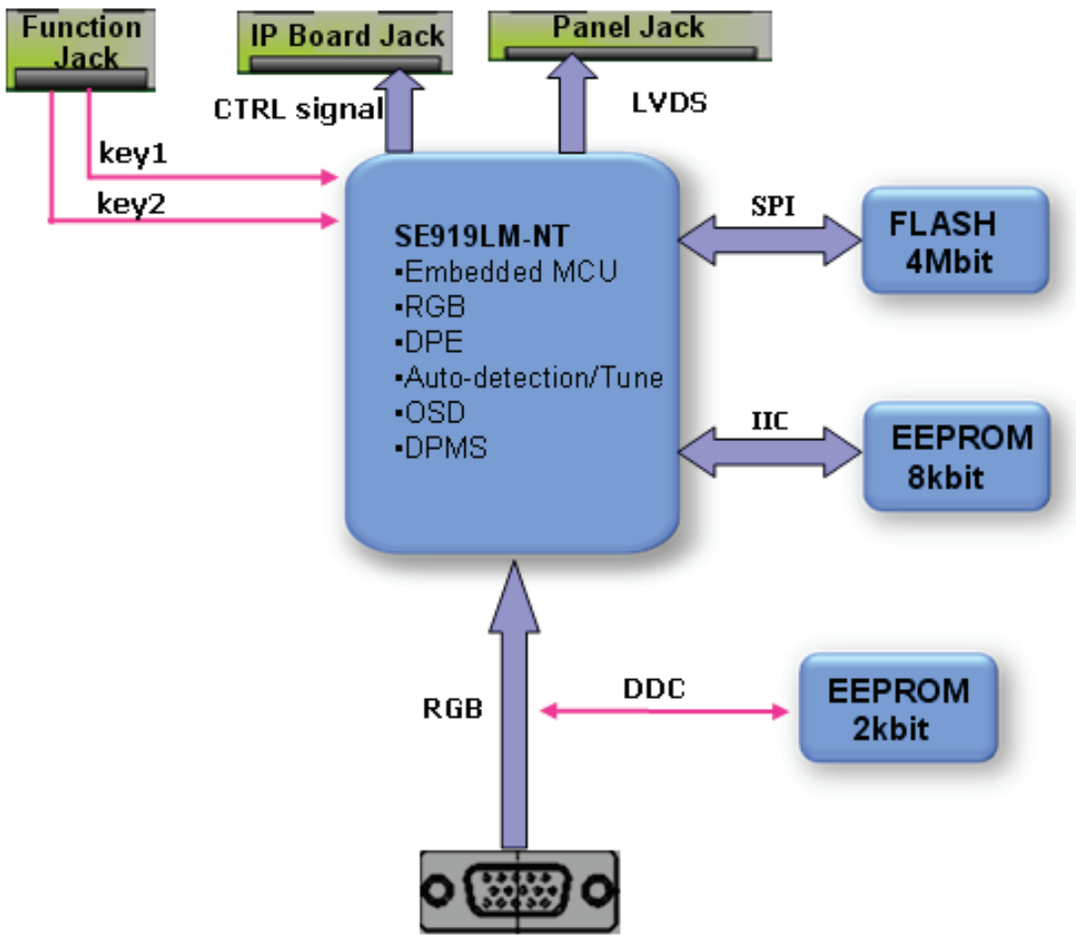
Level	Location No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
..2		BN69-03093A	PALLET-WOOD;2033SW,WOOD,L1135,W815,H120,	1	SNA	
..2		BN69-03565T	PAD-PLATE;B2030,CB,SW,YEL,W1100,D780	1	SNA	
..2	T0246	BN69-04302A	CUSHION-SET;PLUM 20,EPS,WHITE	1	SNA	
0.1	M0045	BN92-05474L	ASSY ACCESSORY;LS20PUYKF/EN	1	SNA	
..2	T0268	3903-000452	CBF-POWER CORD;DT,EU/KR,CP3,IEC320 C13,2	1	SA	
..2	M0114	BN39-00244G	CBF SIGNAL;D-sub cable,15P/15P,20276N,15	1	SA	
..2	M0027	BN96-12486A	ASSY STAND P-BASE;PLUM 15~20,ABS+PMMA(SF	1	SA	
...3	T0524	6902-000109	BAG PE;HDPE,T0.015,W350,L430,TRP,28,2,4.	1	SNA	
...3	CIS4	BN61-01717A	HOLDER-STAND;BIZET,NI PLT,CH,+,M4,L11(5)	1	SNA	
...3	CCM1	BN63-02183K	COVER-SHEET;Rhcm,PE Vinyl,T 0.04,250MM,2	0.3	SNA	
...3		BN63-06315A	COVER-STAND BASE;PLUM 20,ABS+PMMA(SF-095	1	SNA	
...3		BN68-02482A	MANUAL FLYER-STAND;Plum,Mojo 80g,148,210	1	SNA	
...3	AR011	BN73-00077A	RUBBER FOOT;MATISSE,BUMPON,#13.5,T2.0 ,60	4	SNA	
...3		BN68-02466A	LABEL-STICKER;PLUM,ALL,ART PAPER,50,10,S	1	SNA	
..2	STD	BN96-12487A	ASSY STAND P-BODY;PLUM 23,ABS+PMMA(SF-09	1	SA	
...3	T0524	6902-000023	BAG PE;LDPE,T0.08,W150,L120,TRP,1.650g	1	SNA	
...3		BN61-05969A	STAND-BAR;PLUM 23,ABS+PMMA(SF-0950),BK23	1	SNA	
....4		BN61-05970A	STAND-BAR IN;PLUM 23,ABS+PMMA(SF-0950),B	1	SNA	
.....5		BN61-02932E	BRACKET-STOPPER NUT;ECOFIT 20,M4,D8,L12,	1	SNA	
...3	CCM1	BN63-02183C	COVER-SHEET;Rhcm,PE Vinyl,T0.04,200mm,20	0.1	SNA	
...3		BN68-02466C	LABEL-STICKER;PLUM,ALL,ART PAPER,50,10,S	1	SNA	
..2	M0045	BN96-12572E	ASSY ACCESSORY;LS20PUYKF/EN	1	SA	
...3	PE BAG	6902-000009	BAG PE;HDPE,T0.03,W240,L400,TRP,8,2,-,5.	1	SNA	
...3	M0019	BH68-70448A	CARD-01;TFT LCD,SRC,RUSSIA,S/W,120,W210*	1	SNA	
...3		BN59-00982A	S/W DRIVER-03,IB;PLUM Project,W/W,SyncMa	1	SNA	
...3	M9889	BN63-02368B	CLOTH-CLEAN;cloth,120,160,sea blue,ToC	1	SNA	
...3		BN68-00226R	MANUAL FLYER-03,WARRANTY CARD;comm,Samsu	1	SNA	
...3		BN68-00907F	MANUAL FLYER-00,WEE;comm,Samsung,23Lang,	1	SNA	
...3		BN68-01925G	MANUAL FLYER-WARRANTY CARD;comm,Samsung,	1	SNA	
...3		BN68-02480A	MANUAL FLYER-QSG,02;PLUM Project MODELS,	1	SNA	
...3		BN68-02462B	LABEL-STICKER;CIS,T0.05,93,40,TV-MONITOR	1	SNA	
0.1		BN92-05486A	ASSY LABEL;PLUM , BLACK,W/W	1	SNA	
..2	CCM1	BN68-01570A	LABEL RATING;ALL,SS,PE,T0.05,90,45,Dark	1	SNA	

6. Wiring Diagram

6-1. Wiring Diagram - Main Board

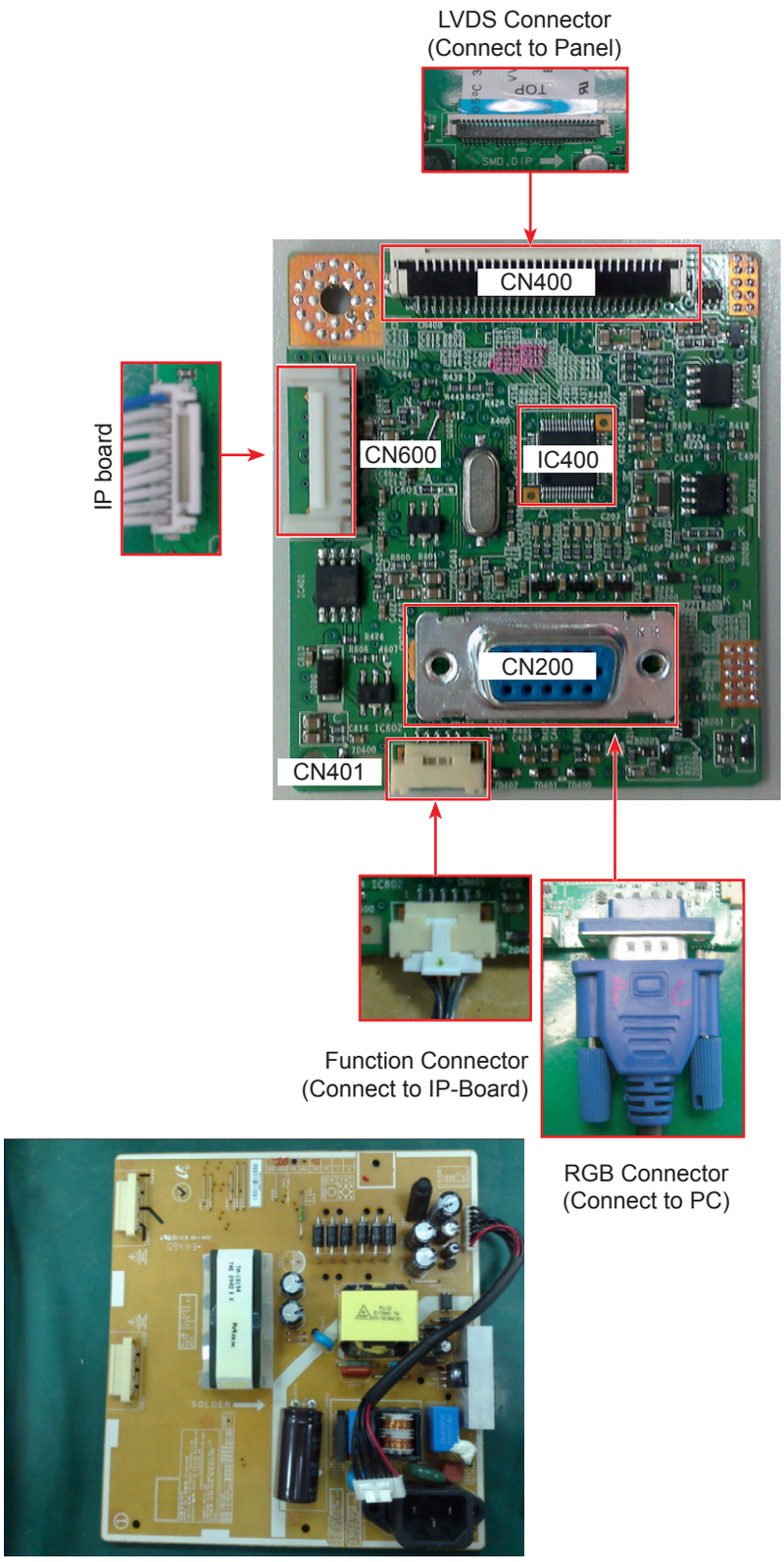



Panel
B1630N/B1930N
CN400
LVDS for Panel
Lamp Wire for Panel
CN3
CN4
CN1
CN2
CN8002
CN8600
Power ASSY
AC Power 입력
MAIN ASSY
CN401
function connector
CN200
VGA Input
1 B-Dim
2 -
3 GND
4 GND
5 GND
6 +5, V
7 +5, V
8 A-Dim
9 ON/OFF
1 GND
2 KEY2
3 KEY1
4 LED
5 3.3V
1 5V_Panel
2 5V_Panel
3 5V_Panel
4 5V_Panel
5 5V_Panel
6 GND
7 GND
8 GND
9
10
11
12 GND
13 LVA3P
14 LVA3M
15 GND
16 LVACKP
17 LVACKM
18 GND
19 LVA2P
20 LVA2M
21
22 LVA1P
23 LVA1M
24 GND
25 LVA0P
26 LVA0M
27 GND
28
29
30
1 RED+
2 GREEN+(SOG)
3 BLUE+
4 NC
5 GND
6 RED-
7 GREEN-
8 BLUE-
9 +5V_DDC_A
10 CHK_DSUB
11 NC
12 DDC_SDA_VGA
13 HSYNC
14 VSYNC
15 DDC_SCL_VGA



NO	Block	Role Description	Remarks
1	Scaler IC200	The ADC, TMDS, Scaling and Controller are integrated on a single chip.	SE919LM-NT
2	FLASH MEMORY IC401	Stores the firmware for the Scaler. The information can be updated.	
3	EEPROM IC402	Stores the OSD, Timing etc.	NVRAM 24C08
4	EEPROM IC202	Stores the EDID data.	24C02
5	Regulator IC601, IC602	The IC for a stable DC power supply.	S-1172B33-U5T1G S-1172B18-U5T1G

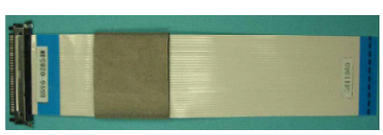
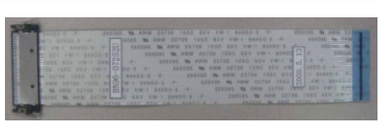
6-2. Wiring Diagram - IP Board



6-3. Connector Functions

Connector	Functions
CN802 ↔ CN600	Supplies 5V from the power board to the main board and transmits the PWM output from the power board to the inverter. *When a problem occurs: The No Power and Blank Screen errors may occur.
CN1 ~ CN4 In	Transmits the lamp current (6mA ~ 7mA) generated in the inverter to the lamp of the panel. * When a problem occurs: The Blank Screen error may occur.
CN200	VGA signal input terminal * When a problem occurs: The No RGB output error may occur.
CN400	Transmits the LVDS signals from the main board to the panel. * When a problem occurs: The Blank screen and No Power errors may occur.

6-4. Cables

Use	LVDS 30P FFC cable
Code	BN96-07252P (B1630N)
Photo	
Code	BN96-02854W (B1730NW / B1930NW / B2030N
Photo	
Code	BN96-07252U (B1930N)
Photo	
Code	BN96-07252X (B2230N)
Photo	

Memo