



LT1201

USER MANUAL

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1. Specification

<i>LCD panel type</i>	12.1" TFT (12.1" Diagonal)
<i>Displayable resolution</i>	WXGA 1280 x 800 maximum
<i>Pixel dimension</i>	0.204 mm horizontal x 0.204 mm vertical
<i>LCD display color</i>	262,144 Colors
<i>OSD control</i>	Exit, Positioning(Horizontal, Vertical) Image Settings(Auto Adjust, Pixel Clock, Phase) Color Setting(Auto Color, 9300K Preset, 6500K Preset, User Preset) OSD Setting(Horizontal Position, Vertical Position, OSD Hold Time, OSD Lock), Language(English, Español, Français, Deutsch) Factory Reset
<i>Manual control buttons</i>	POWER , + , - ,SELECT , MENU
<i>Viewing angle</i>	Horizontal: ± 89, Vertical: ± 89. (CR > 10)
<i>Contrast ratio</i>	500:1 (Typ.)
<i>Brightness</i>	300 cd/m ²
<i>Response time</i>	30 ms, Tr + Td (Typ.)
<i>Active display area</i>	261.12 mm (H) x163.20mm (V)
<i>AC/DC adapter</i>	Input: AC 100 ~ 240V, 50 ~ 60 Hz Output: +12 Vdc / 3.0A
<i>Input signal</i>	Video: Analog 0.7 Vp-p. 75 ohms Sync. : TTL Level, Positive/ Negative, Separate Sync. DVI : REV1.0 Digital Single T.M.D.S.
<i>Input connector</i>	15 Pin D-Sub. , 24Pin DVI-D , USB B-type , 2.5ψ DC-Jack
<i>Touch screen MSR (option)</i>	3M Cap. (SCT3250 98-0003-3205-0 & EXII-7730HC) ID-TECH (CPR60029 , USB Interface, 3 Track)
<i>Power management</i>	Yes
<i>Regulation</i>	cUL, FCC, CE
<i>Dimensions (W x D x H)</i>	341 mm x 280 mm x 95 mm.
<i>Weight</i>	220 g. (LCD Module only) 2.1 Kg. (unit)
<i>Accessory</i>	VGA cable, DVI-D cable, USB cable, AC/DC adapter, power cord.
<i>Temperature</i>	Operation : 0 ~ 40°C Storage : -20 ~ 60°C

2. Important Servicing Safety Precautions

Prior to using this manual, please ensure that you have carefully followed all the procedures outlined in the user manual for this product. Read all of these instructions. Save these instructions for later use.

- Follow all warnings and instructions marked on the product.
- Do not use this product near water.
- This display should be installed on a solid horizontal base.
- When cleaning, use only a neutral detergent cleaner with a soft damp cloth. Do not spray with liquid or aerosol cleaners.
- Do not expose this display to direct sunlight or heat. Hot air may cause damage to the cabinet and other parts.
- Adequate ventilation must be maintained to ensure reliable and continued operation and to protect the display from overheating. Do not block ventilation slots and openings with objects or install the display in a place where ventilation may be hindered.
- Do not install this display near a motor or transformer where strong magnetism is generated. Images on the display will become distorted and the color irregular.
- Do not allow metal pieces or objects of any kind fall into the display from ventilation holes.
- Slots and openings in the cabinet and the back or bottom are provided for ventilation, to ensure reliable operation of the product and to protect it from overheating, those openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.

3. Location of Controls

1) POWER SWITCH

Pressing the power key will turn the monitor on. Pressing it again will turn it off.

2) POWER INDICATOR (green)

The LED indicator lamp is green; the unit is in normal operating mode.

The LED indicator lamp will change to orange when it is power-saving mode.

3) + : (RIGHT)

Auto Adjust in Progress

to scroll down the menu

to increase value of selected item

4) - : (LEFT)

to adjust the brightness and contrast on the monitor

to scroll up in the menu

to decrease value of selected item

5) SELECT:

To confirm the current selection. It's also used for going back to previous menu or sub-menu, and the changed data will be saved to memory.

6) MENU:

Enters or exits the OSD (On Screen Display) menus. It also exits from the submenu back to the previous menu. This type of cancellation will not save the previous changes.

4. Hot-key define

With signal input :

1) [+] key ==> Auto adjust in progress

2) [-] key ==> Adjust Brightness and Contrast

3) [SELECT] key ==> change VGA and DVI input source

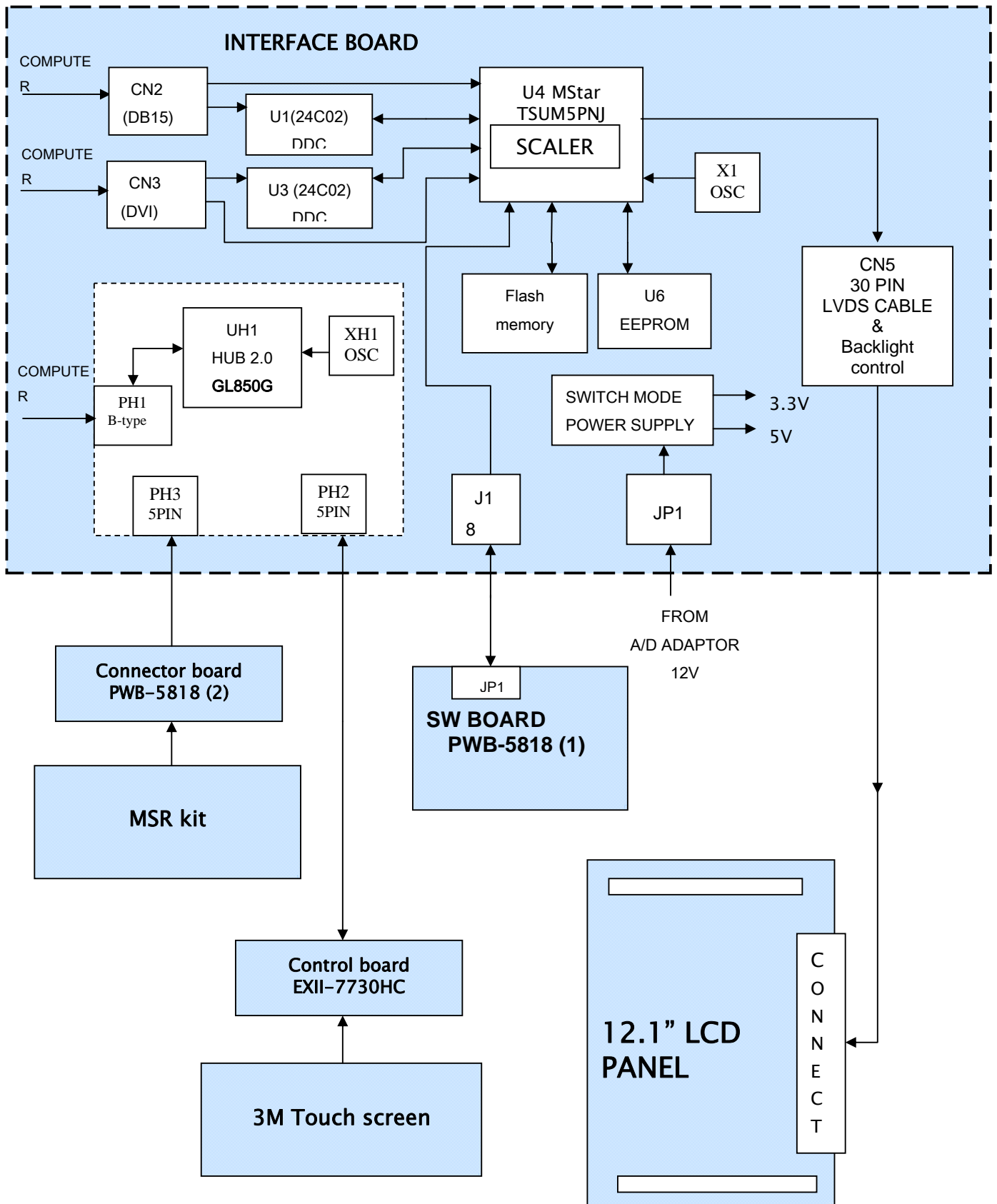
4) [+] and [-] ==> key lock & key unlock, when push [+] and [-] buttons simultaneously

5) [MENU] key ==> Factory mode, push and hold [MENU] key then power-in

Without signal input:

6) [+] and [-] ==> Burn-in mode, when push and hold [+] and [-] buttons simultaneously,
Then power-in

5. Block Diagram



6. Internal connector pin definition

WXGA I/F BOARD

J1: Key Switch for OSD Adjustment, Power Switch and Brightness Control Input Terminal

Pin No.	Symbol	Function
1	ADJUST / -	For OSD Adjustment
2	ADJUST / +	For OSD Adjustment
3	MENU	For OSD Adjustment
4	SELECT	For OSD Adjustment
5	POWER	For POWER on/off
6	LED-GRN	Normal Mode: Low
7	LED-ORG	Save Mode : Low
8	GND	Ground

PH2.PH3: Output Terminal for USB device unit

Pin No.	Cable Color	Function
1	Red	VBUS(5 Volts)
2	White	D-
3	Green	D+
4	Black	Ground
5	Drain wire	Shield ground

PH1: USB B-type Input Terminals

Pin No.	Cable Color	Function
1	Red	VBUS(5 Volts)
2	White	D-
3	Green	D+
4	Black	Ground



CN2: VGA Signal Input Terminals

Pin No.	Symbol	Function
1	VGA R	RED Video Input Signal
2	VGA G	GREEN Video Input Signal
3	VGA B	BLUE Video Input Signal
4	NC	
5	GND	GND
6	RED RETURN	GND for RED video signal
7	GREEN RETURN	GND for GREEN video signal
8	BLUE RETURN	GND for BLUE video signal
9	5V DCC	Support DDC +5V power
10	VGA CONN	Detect VGA connector signal
11	NC	
12	VGA SDA	DDC data
13	VGA HS	Horizontal Sync. Signal
14	VGA VS	Vertical Sync. Signal
15	VGA SCL	DDC clock

CON3: DVI Signal Input Terminals

Pin NO.	Symbol	Function
1	Dat2-	T.M.D.S Data2-
2	Dat2+	T.M.D.S Data2+
3	2/4 Shield	T.M.D.S Data2/4 Shield
4	Dat4-	T.M.D.S Data4-
5	Dat4+	T.M.D.S Data4+
6	DDC SCL	DDC Clock
7	DDC SDA	DDC Data
8	VSYNC	NC
9	Dat1-	T.M.D.S Data1-
10	Dat1+	T.M.D.S Data1+
11	1/3 Shield	T.M.D.S Data1/3 Shield
12	Dat3-	T.M.D.S Data3-
13	Dat3+	T.M.D.S Data3+
14	+5V	+5V Power
15	SYNC GND	Ground
16	HPD	Hot Plug Detect
17	Dat0-	T.M.D.S Data0-
18	Dat0+	T.M.D.S Data0+
19	0/5 Shield	T.M.D.S Data0/5 Shield
20	Dat5-	T.M.D.S Data5-
21	Dat5+	T.M.D.S Data5+
22	CLK Shield	T.M.D.S Clock Shield
23	CLK+	T.M.D.S Clock+
24	CLK-	T.M.D.S Clock-
C1	Red	NC
C2	Green	NC
C3	Blue	NC
C4	HSYNC	NC
C5	RGB GND	NC

CN5: Output Terminal for Panel Connector

Pin No.	Symbol	Function
1	PANEL_VCC	3.3 Power supply
2	PANEL_VCC	3.3 Power supply
3	PANEL_VCC	3.3 Power supply
4	LVDS_SET	LVDS_SET
5	GND	Ground
6	GND	Ground
7	RXE0-	Receiver signal (-)
8	VDD_EDID	VCC 3.3V
9	RXE0+	Receiver signal (+)
10	GND	Ground
11	RXE1-	Receiver signal (-)
12	CLK_EDID	CLK_EDID
13	RXE1+	Receiver signal (+)
14	DATA_EDID	DATA_EDID
15	RXE2-	Receiver signal (-)
16	GND	Ground
17	RXE2+	Receiver signal (+)
18	VDIM	Adjust back-light
19	RXEC-	Clock signal (-)
20	BL ON	Black-light on/off
21	RXC+	Clock signal (+)
22	GND	Ground
23	RXE3-	Receiver signal (-)
24	Black-light VCC 12V	VCC 12V for back-light device
25	RXE3+	Receiver signal (+)
26	Black-light VCC 12V	VCC 12V for back-light device
27	GND	Ground
28	Black-light VCC 12V	VCC 12V for back-light device
29	GND	Ground
30	Black-light VCC 12V	VCC 12V for back-light device

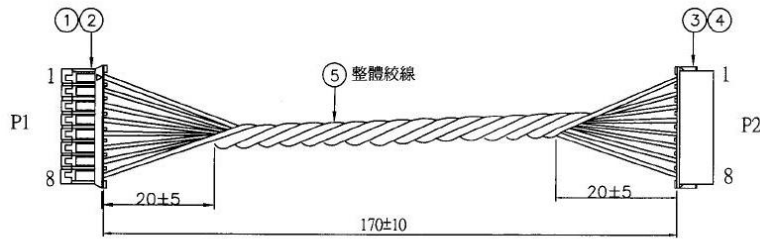
SW board

JP1: Output Terminal for OSD, Power and Brightness control.

	Symbol	Function
1	POWER	For POWER on/off
2	LED-GRN	Normal Mode: Low
3	LED-ORG	Save Mode: Low
4	ADJUST / +	For OSD Adjustment
5	ADJUST / -	For OSD Adjustment
6	SELECT	For OSD Adjustment
7	MENU	For OSD Adjustment
8	GND	Ground

7. Cable pin definition

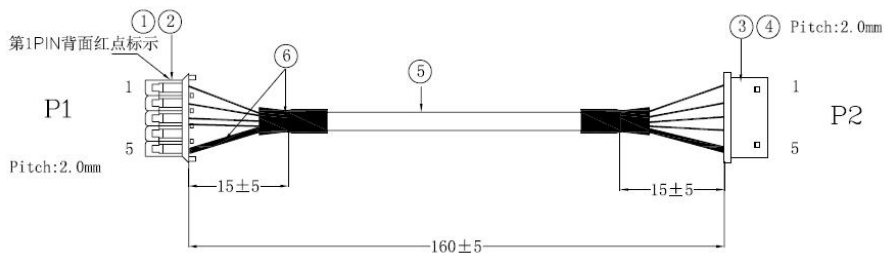
Switch board cable: WIRE 28AWG



Connection relationship

P1 (PHR-8)	WIRE COLOR	P2 (ZHR-8)
Pin No.		Pin No.
1	BLACK	5
2	BROWN	4
3	RED	7
4	ORANGE	6
5	YELLOW	1
6	GREEN	3
7	BLUE	2
8	PURPLE	8

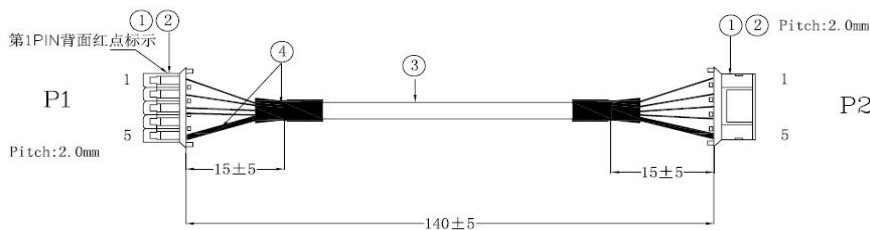
Int. C/B cable for 3M touch: WIRE 28AWG, Shielding cable



Connection relationship

P1 (PHR-5)	WIRE COLOR	P2 (ZHR-5)
Pin No.		Pin No.
1	BLACK	1
2	BROWN	2
3	RED	3
4	ORANGE	4
5	DRAIN	5

Int. MSR extend cable: WIRE 28AWG, Shielding cable



Connection relationship

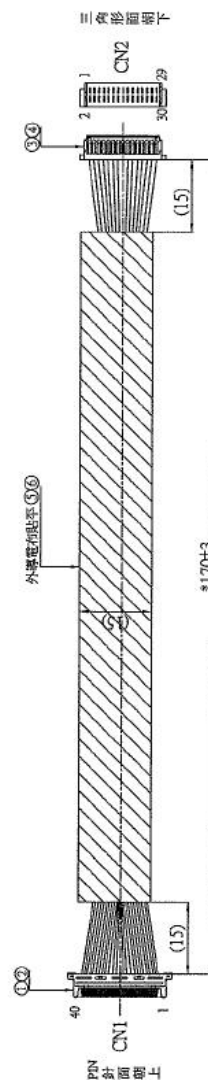
P1 (PHR-5)	WIRE COLOR	P2 (PHR-5)
Pin No.		Pin No.
1	BLACK	1
2	BROWN	2
3	RED	3
4	ORANGE	4
5	DRAIN	5

LVDS cable: WIRE UL10064 34# OD: 0.35mm

CN1 housing: JAE FI-JT40C-R3000 CNC housing: ACS 87219-3000

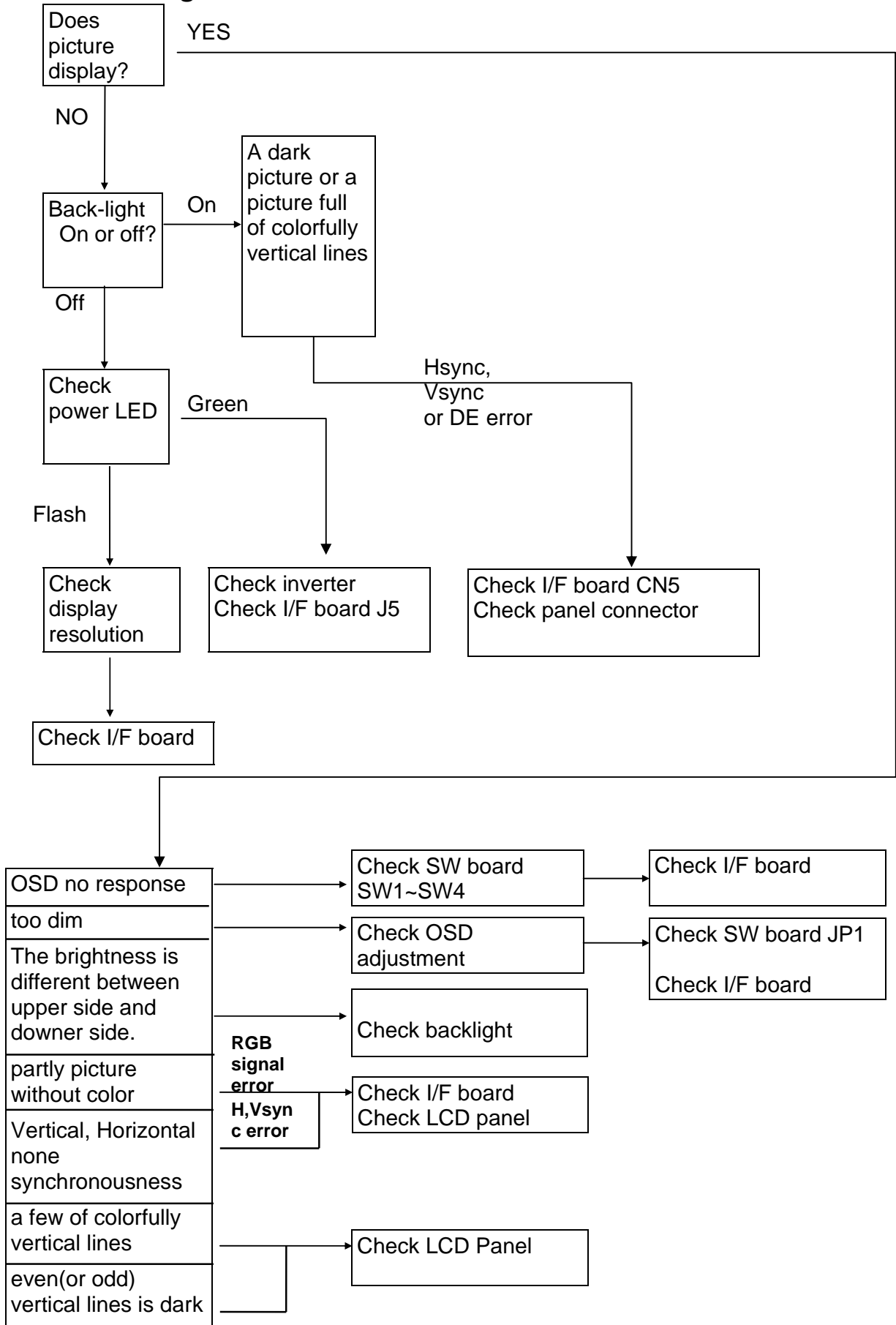
Connection relationship

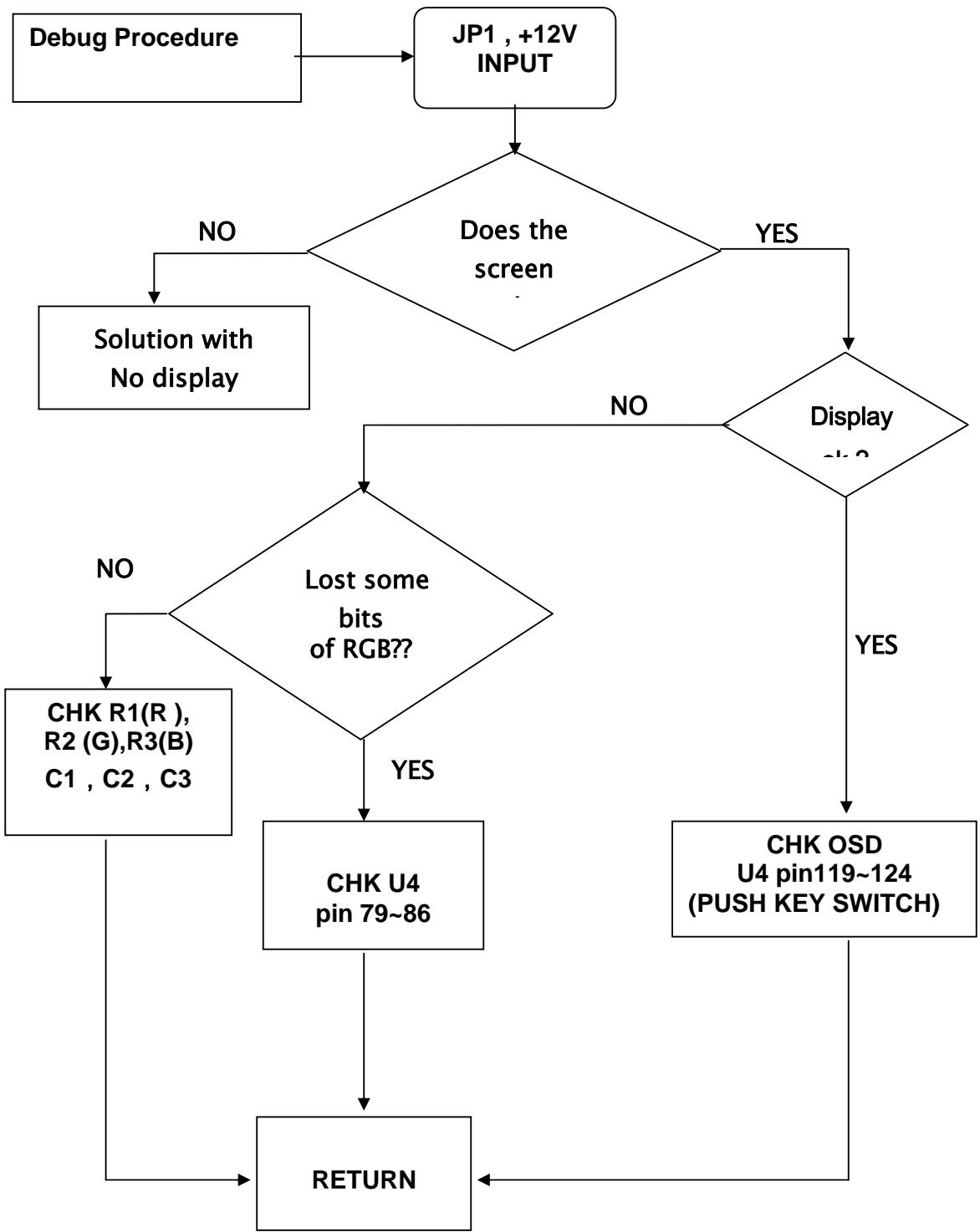
CN1	WIRE COLOR		CN2	
1	BLACK		5	
3	BROWN		1	
4	RED		2	
5	ORANGE		3	
6	YELLOW		8	
8	twist	BLACK	twist	12
9		WHITE		14
13	twist	BROWN	twist	7
14		WHITE		9
16	twist	RED	twist	11
17		WHITE		13
19	twist	ORANGE	twist	15
20		WHITE		17
22	twist	YELLOW	twist	19
23		WHITE		21
25	GREEN		18	
26	BLUE		20	
29	PURPLE		22	
34	GRAY		24	
35	WHITE		26	
36	BLACK		28	
37	BROWN		30	
40	RED		6	
10, 11, 15	GND		10, 16	
18, 21, 24			27, 29	
28, 30, 31, 32				
2, 7, 12	NC		4, 23, 25	

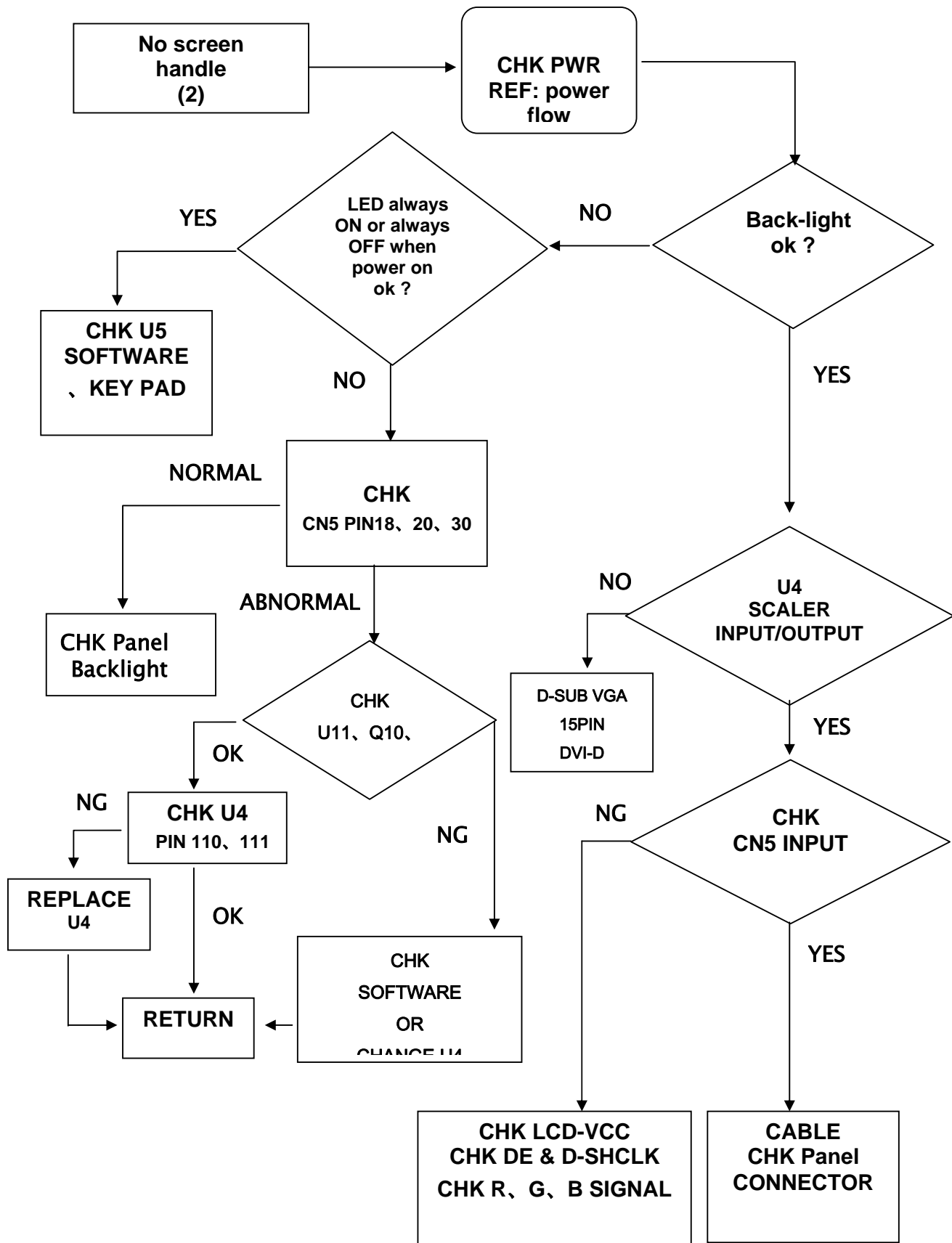


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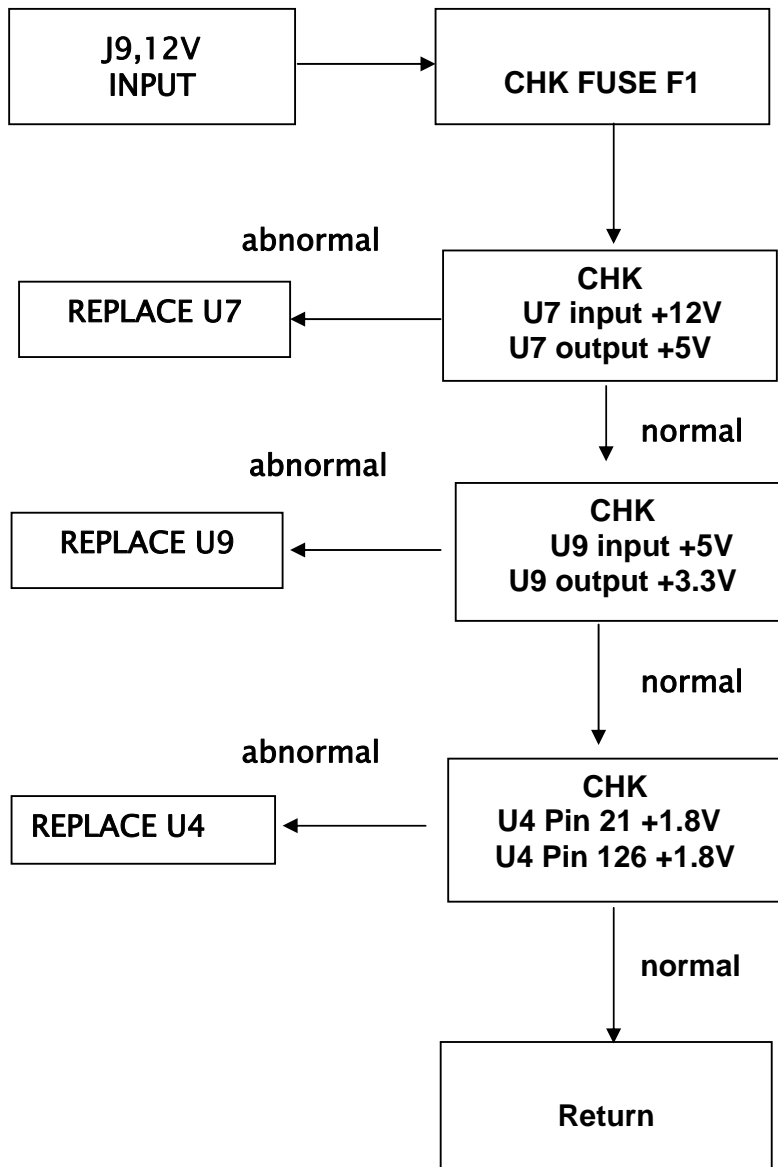
8. Trouble Shooting







POWER FLOW



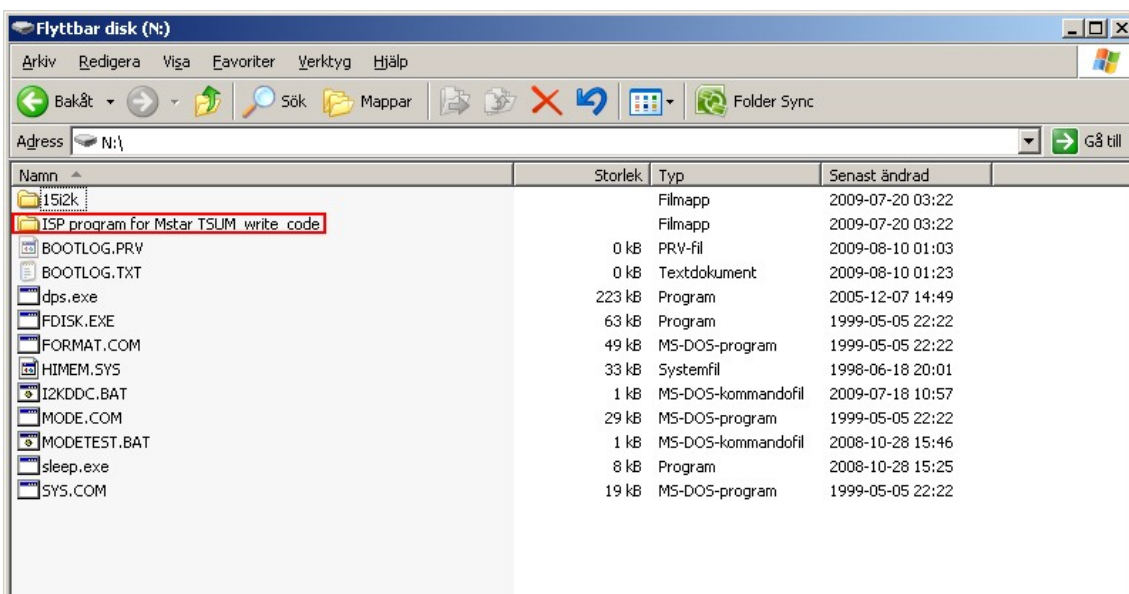
9. Upgrade software method

Instructions for flashing firmware

1. Disconnect any peripherals connected to the parallel port on the computer. Disconnect the DVI cable from the computer
2. Connect the DVI cable to the DVI to VGA adapter, and then connect the VGA side of the adapter to the ISP board. Connect the ISP board to the computer with the supplied parallel cable. (check Jumper No.4 and No.8 of SW3 to be ON at ISP board, the rest of all to be OFF). Connect the mouse and keyboard to the computer. All PC information will show on the other VGA monitor.



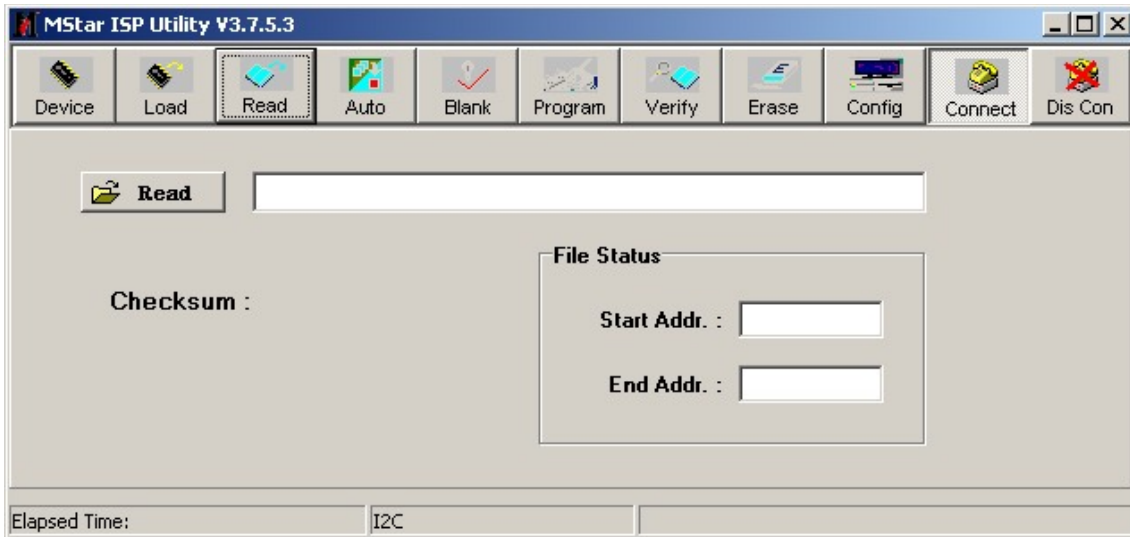
3. Plug in the USB flash drive.



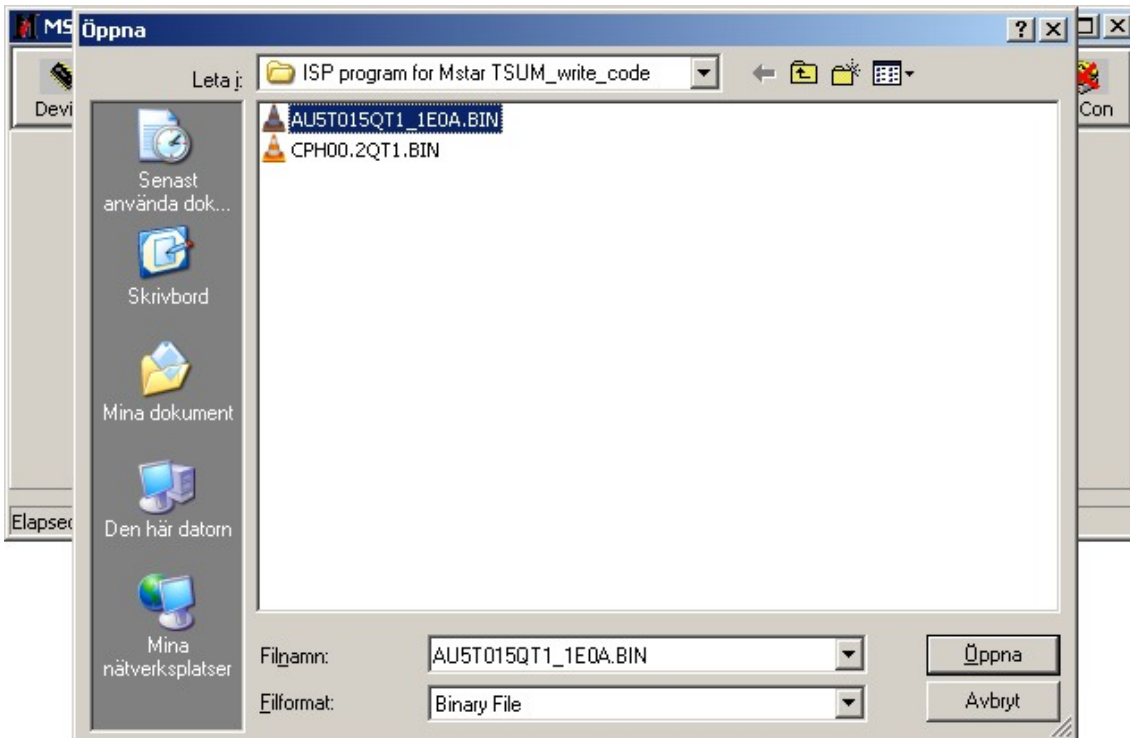
4. On the flash drive you will find a folder named “ISP program for Mstar TSUM_write_code”, open it and start ISP_Tool_3.75.3.exe



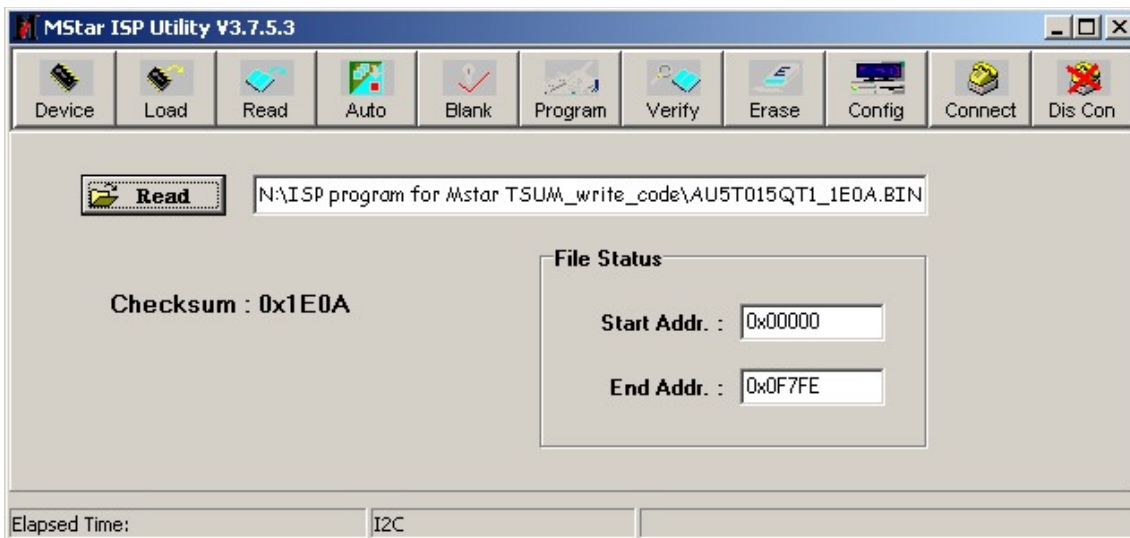
5. Press connect. A pop-up window showing “Device type is MX25L512” should appear. If the pop-up window say “Can’t entry ISP mode” recheck the cables.



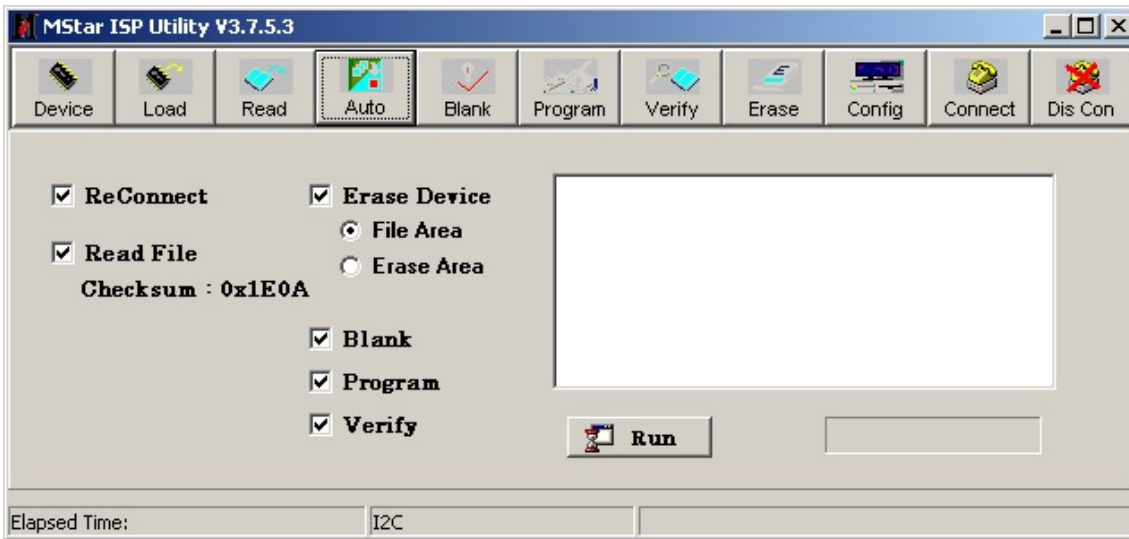
6. Next press the big red button on the top, and then press the smaller read button



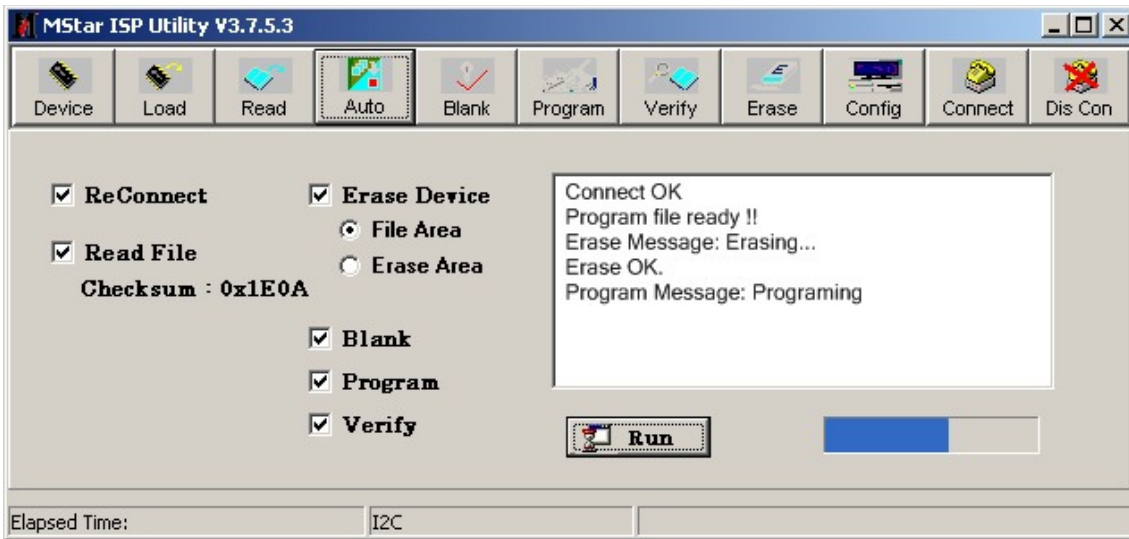
7. Select the AU5T015QT1_1E0A.BIN and open.



8. Check and re-check the Checksum. It should be 0x1E0A.



9. Press the Auto button right next to the read button. Check that the setting is according to picture above.



10. Press "Run". The program will start to erase and reprogram the firmware. Sometimes the programming fails, if that happens, just restart the process by hitting "Run" again. When the ISP board is cold this can happen a couple of times before you get a successful run.

11. Disconnect the ISP board and connect the DVI cable from the monitor to the computer again. Make sure that there's a video signal going to the screen. Locate the screens power supply. Press and hold the select button on the screen while you disconnect and reconnect AC power. The screen should show a message saying "All reset". The screen will go into burn-in mode if there's no video signal. If you have problems getting a signal to the monitor you can do the reset after step 18.

Revision Control	
DATE: <i>January 2011</i>	DESCRIPTION: <i>Document number 020-1080-00 Rev. A</i>

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