

# **APPLICATION NOTE**

**Of**

**Advantech SOM-A255x series**

**15.0" LCD Kit**

**LCD-A150-TTX2-0**

Released Version : V1.00

Released Date : May, 30, 2004

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## **ABSTRACT**

This application note explains how to use LCD 15.0" panel with SOM-A200 series. The content includes LCD panel, Touch Screen, Inverter cables information and connectors locations, directions.

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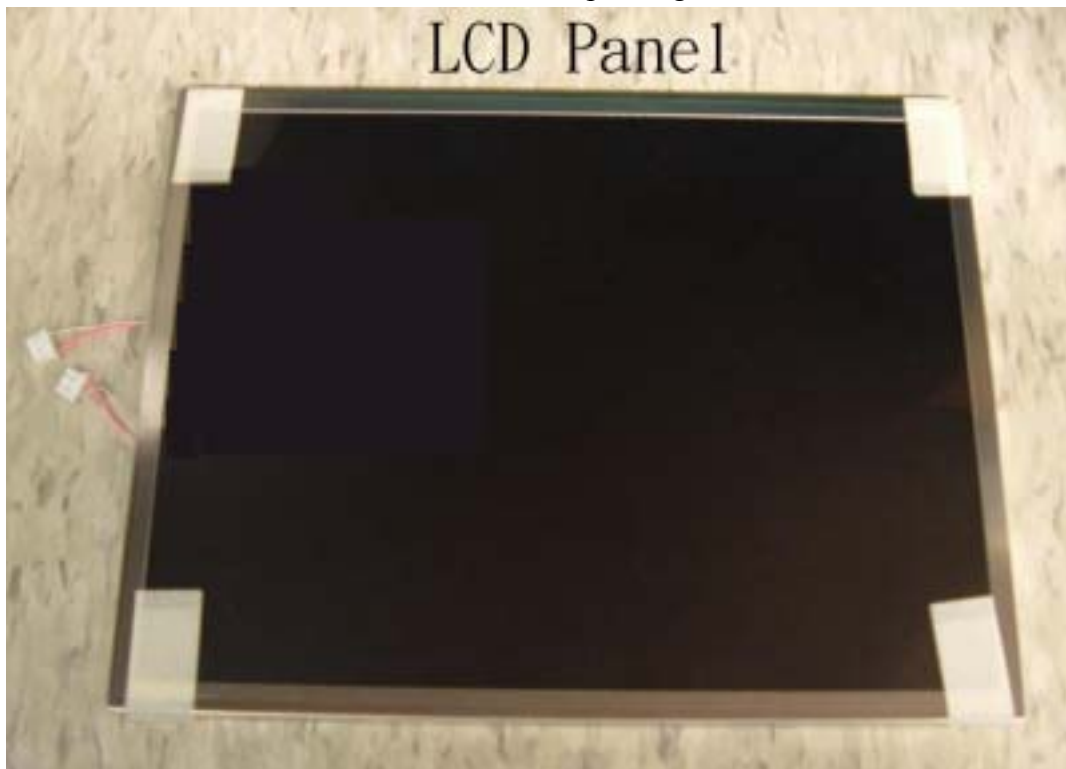
## Revision History

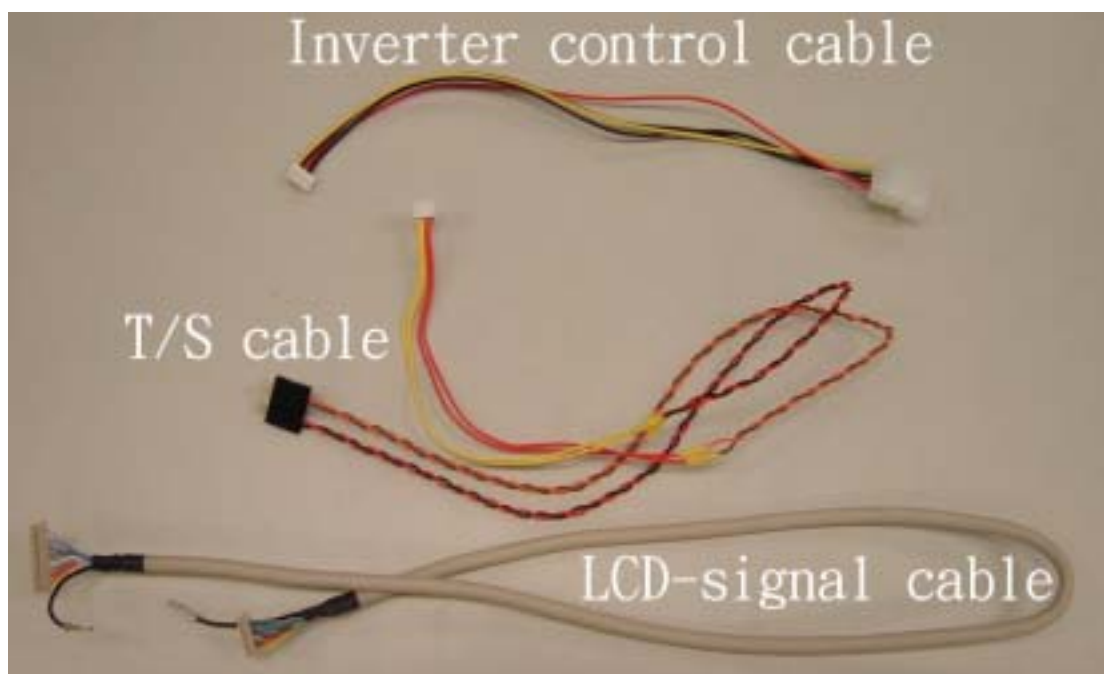
Version	Date	Reason
V1.00	2004.05.30	1 <sup>st</sup> official released version

## Packing list

- (1) **LCD module** : 15.0" TFT XGA LCD
- (2) **Touch Screen module** : 15.0" 8-wire resistive T/S
- (3) **Inverter** : 12V DC-in LCD inverter
- (4) **Cables** : LCD-signal cable (SOM carrier board ↔ LCD module),  
T/S cable,  
Inverter-control cable (Power Supply ↔ inverter),

\* Before start to install the LCD kit, check the packing list first.





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## Introduction

Advantech Supplies full range of certified LCD kits in difference size and type for users to fit into their target Customer Solution Board (CSB) and target application. Before users install the LCD kit in Advantech RISC SOM Design-in Kit, please read this application note first. Users must follow the installation method in this document.

If users want to change the LCD display resolution, they can change the setup through the CRT function.

If user needs any technique support, please login *Advantech SOM Design-in Zone* ([risc-designin.advantech.com.tw](http://risc-designin.advantech.com.tw)) or directly contact with [ae.risc@advantech.com.tw](mailto:ae.risc@advantech.com.tw).

The SOM-A255x series products include SOM-A2552、SOM-A2558 and SOM-A255F. SOM-A2558 series doesn't have display chip on module, SOM-A2558 use SoC PXA255 internal display function. The reference image of SOM-A2558 series can support two kinds of resolutions : 320 × 240 STN and 640 × 480 TFT. But the performance isn't perfect when using the SOM-A2558 in 640 × 480 resolution. User could check the display quality with 640\*480 LCD by himself.

The SOM-A2552 and SOM-A255F with SMI SM501 on board can support four display modes : 320 × 240 TFT, 640 × 480 TFT, 800 × 600 TFT, 1024 × 768 TFT. But the LCD kit Advantech provided is 320 × 240 STN. So SOM-2552 and SOM-255F can't support the Advantech 5.7" LCD kit.

User can get the application information from the below table.

✓ : supported in reference image ; - : not supported in reference image

	Advantech 5.7" STN LCD kit	Advantech 6.4" TFT LCD kit	Advantech 10.4" TFT LCD kit	Advantech 15.0" TFT LCD kit
SOM-2552	**	✓	✓	✓
SOM-2558	✓	*	-	-
SOM-255F	**	✓	✓	✓

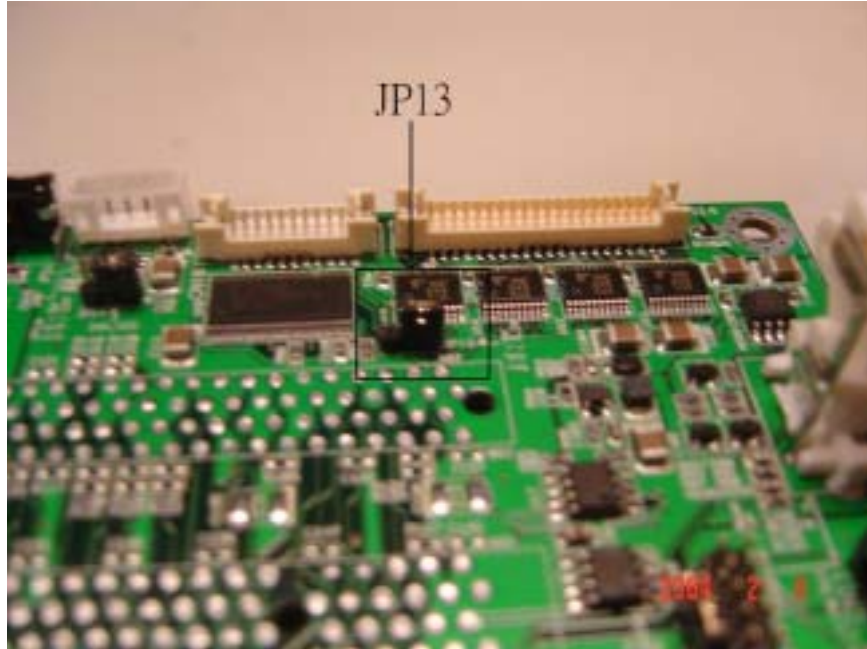
\* : SOM-A2558 can support it, but the performance isn't perfect.

\*\* : Reference image of SOM-A2552 and SOM-A255F can support 320×240 5.7" TFT LCD panel, but LCD-A057-STQ1-0 is 320x240 type.

## H/W installation

### (1) Setting the LCD signals electrical level on SOM-A255x series CSB

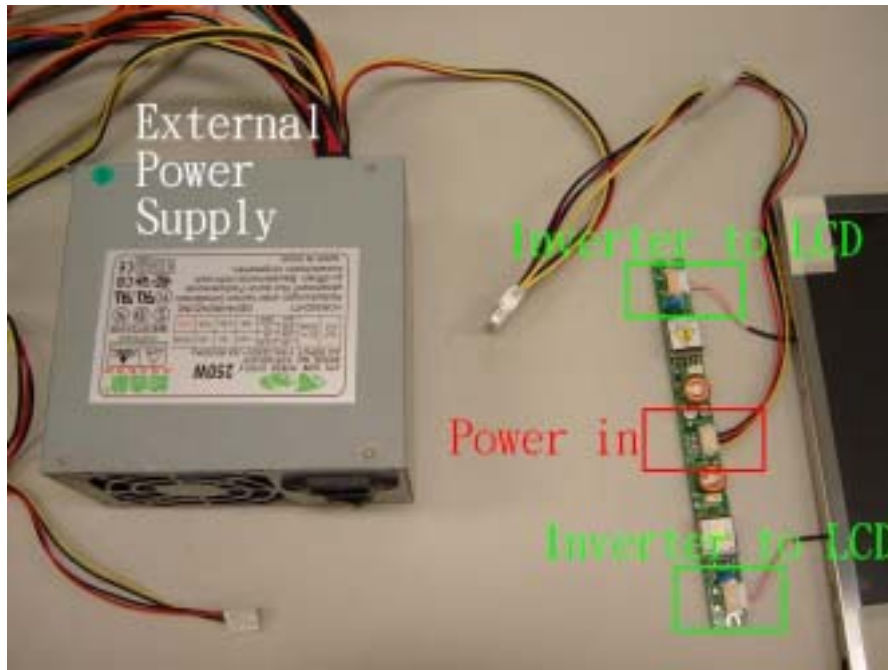
➔ Set JP13's jumper at 1-2 pin.



### (2) Setting the Inverter Power source and connect to LCD.

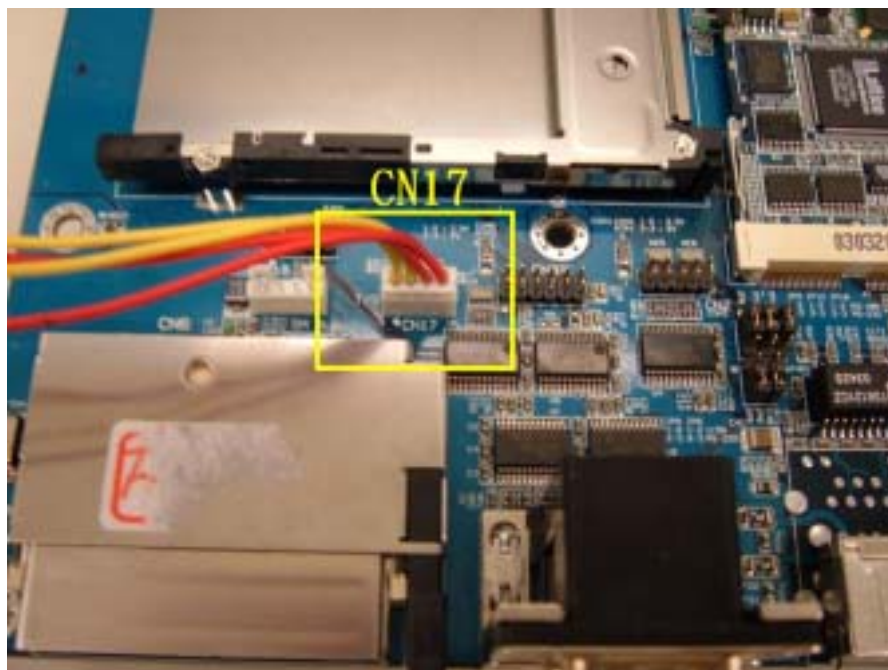
➔ Connect the inverter to the external power supply and LCD panel. The inverter power-in for 15" LCD is 12V DC input, but we don't design 12V DC source in SOM-A255x series carrier board. So user should connect the inverter power cable to ATX power supply. Because Inverter power source and control signals all comes from ATX power, user can't control the LCD brightness and inverter on/off by Advantech system configurator utility on desktop.





### (3) Connect T/S cable

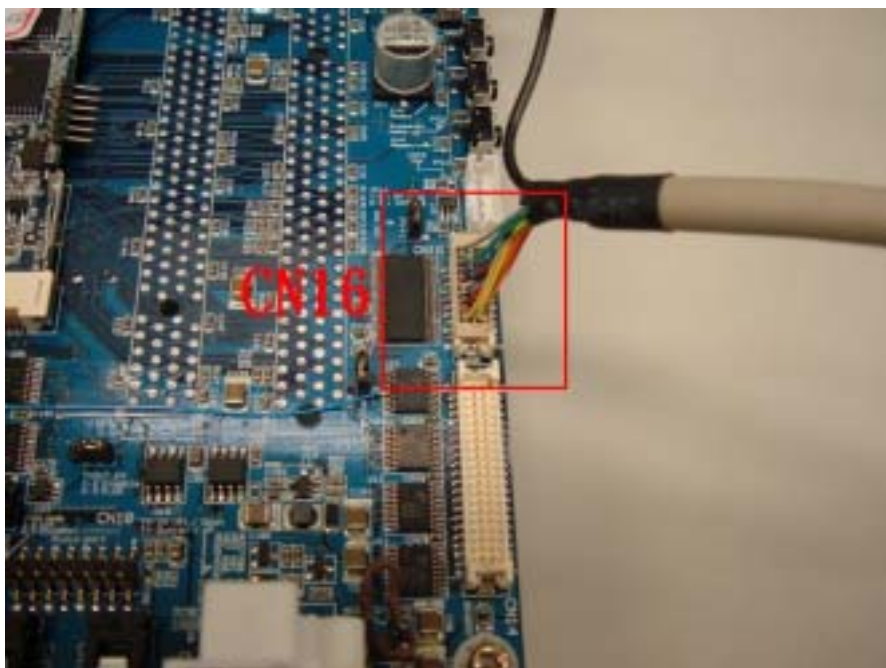
➔ Connect T/S cable between T/S & SOM carrier board (CN17). The T/S in 15" LCD kit is 8-wires resistive type. All SOM-A255x series supply 4-wires T/S resistive I/F. So we only connect the 4-wires T/S I/F on SOM-A255x to 15" T/S. Advantech has verified the performance of 15" T/S with SOM-A255x series; user could double check the performance by your self.

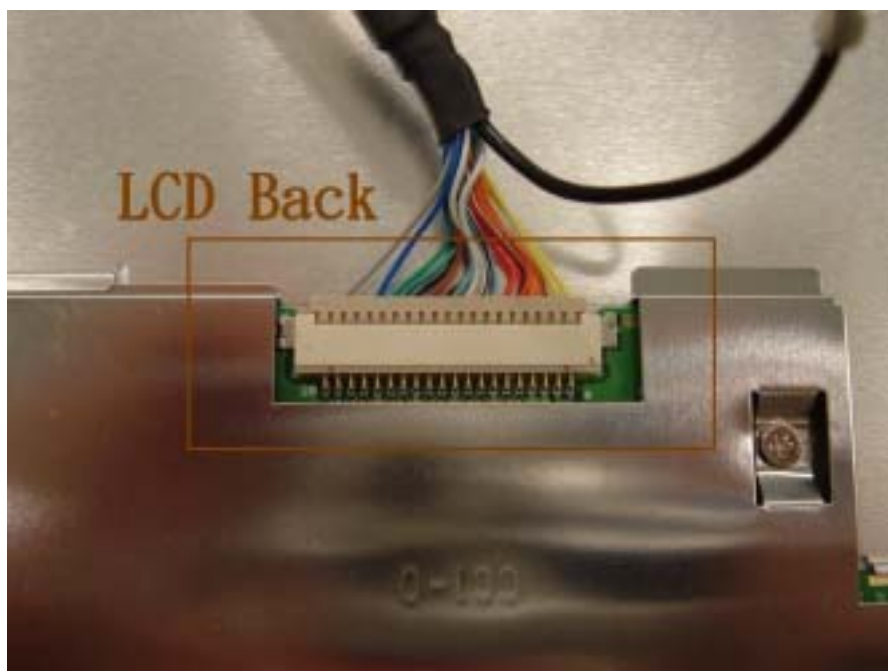




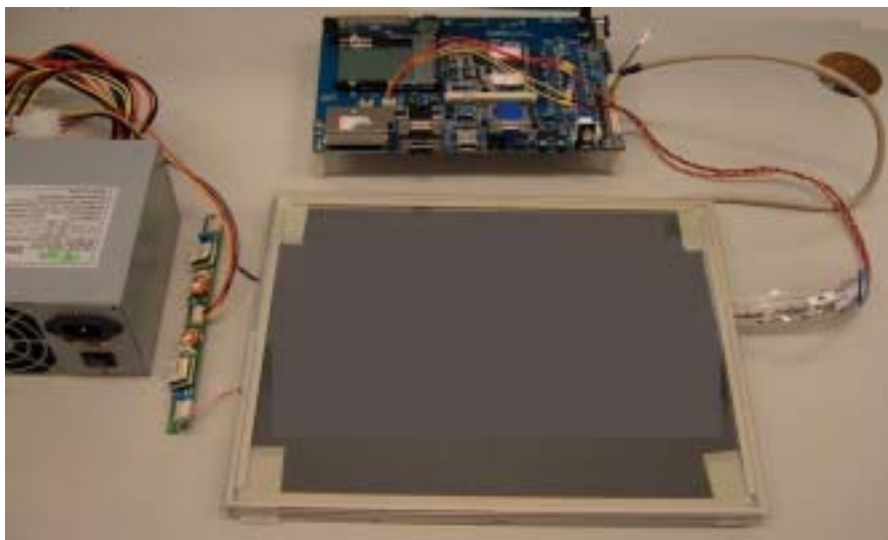
**(4) Connect LCD panel.**

➔ Connect LCD cable between SOM carrier board (CN16).





**(5) H/W installation finished**

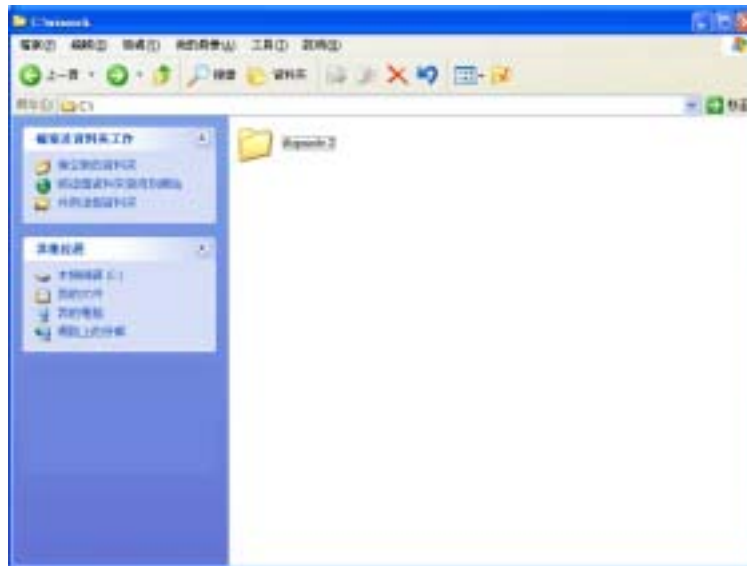


## S/W bootloader mode setting

### (1) Setup CF card

➔ Create a folder or any kinds of files named “dispmode.X” in CF card. The “X” of “dispmode.X” is a number from 0 to 4. It depends what kind of the SOM-A255x series products is used.

Note: this step is very important! System uses different folder name in CF card to load the different bootloader display setting. If users don't create the folder or create wrong folder name, system will load the wrong bootloader display setting.



(2) Put the CF card into CSB CF slot & turn the power on.

(3) Finish



**(4) Bootloader mode supportive list**

SOM-A2552 & SOM-A255F	Resolution
dispmode.0	800x600
dispmode.1	640x480
dispmode.2	1024x768
dispmode.3	320x240 (without CRT)
SOM-A2558	Resolution
dispmode.0	320x240 (16BPD)
dispmode.1	320x240 (8BPD)
dispmode.2	Reservation
dispmode.3	640x480 (16BPD)
dispmode.4	640x480 (8BPD)

## S/W display mode setting

- (1) Connect the CRT cable to the SOM-A255x carrier board.
- (2) Double click the “System Configurator”.

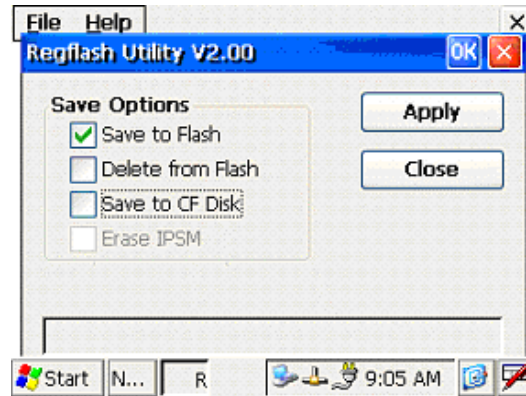


- (3) Then choose the “Display” tag.



- (4) Select the resolutions suitable for the LCD panel in the “Display Mode” pull-down list. Click the “Set” button to save the setting. Advantech 15” LCD kit should select 1024\*768 mode.
- (5) Click the “Apply” button to save the setting. After this step, the LCD register setting of image in CF card will be changed to 1024\*768 mode.





## Trouble shooting

- If user find anything wrong, please detail check this document again to make sure your operation steps are correct.
- Please double check LCD kit all cables are connected in the right way.
- T/S signal cable should be as far as possible with inverter and inverter AC signal cable. If T/S signal cable is close to inverter, the mouse cursor will be trembling.
- If user can't see output from LCD or the LCD panel display quality is strange, user could connect the SOM-A255x carrier board CRT-out I/F to CRT monitor to check the system status. Please use CRT-out function to make sure your LCD-out setting is correct with your target panel.
- If you still need any support, please login Design-in Zone ([risc-designin.advantech.com.tw](http://risc-designin.advantech.com.tw)) to arise your questions, or directly mail to [ae.risc@advantech.com.tw](mailto:ae.risc@advantech.com.tw).