

APPLICATION NOTE
Of
Advantech SOM 6.4" LCD Kit Application Note
LCD-A064-TTV1-0

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ABSTRACT

This application note explains how to use LCD 6.4" panel with SOM-A200 series. The content includes LCD panel, Touch Screen, Inverter cables information and connectors locations, directions.

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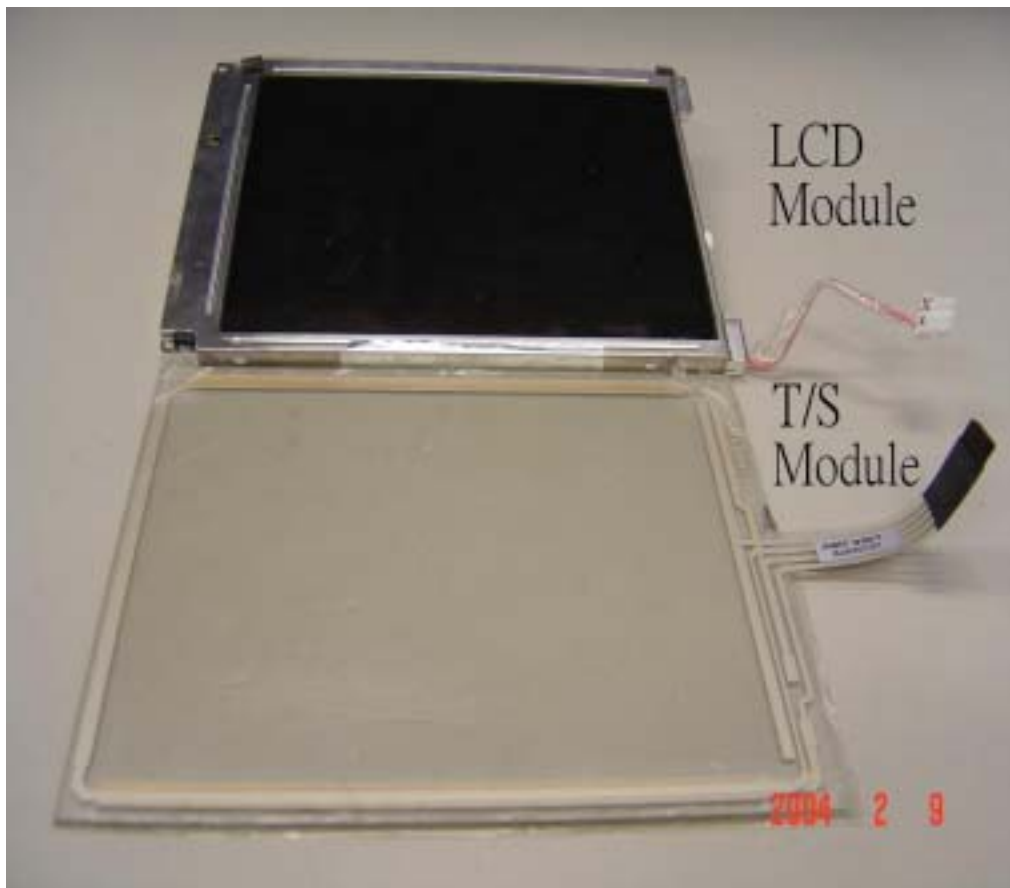
Revision History

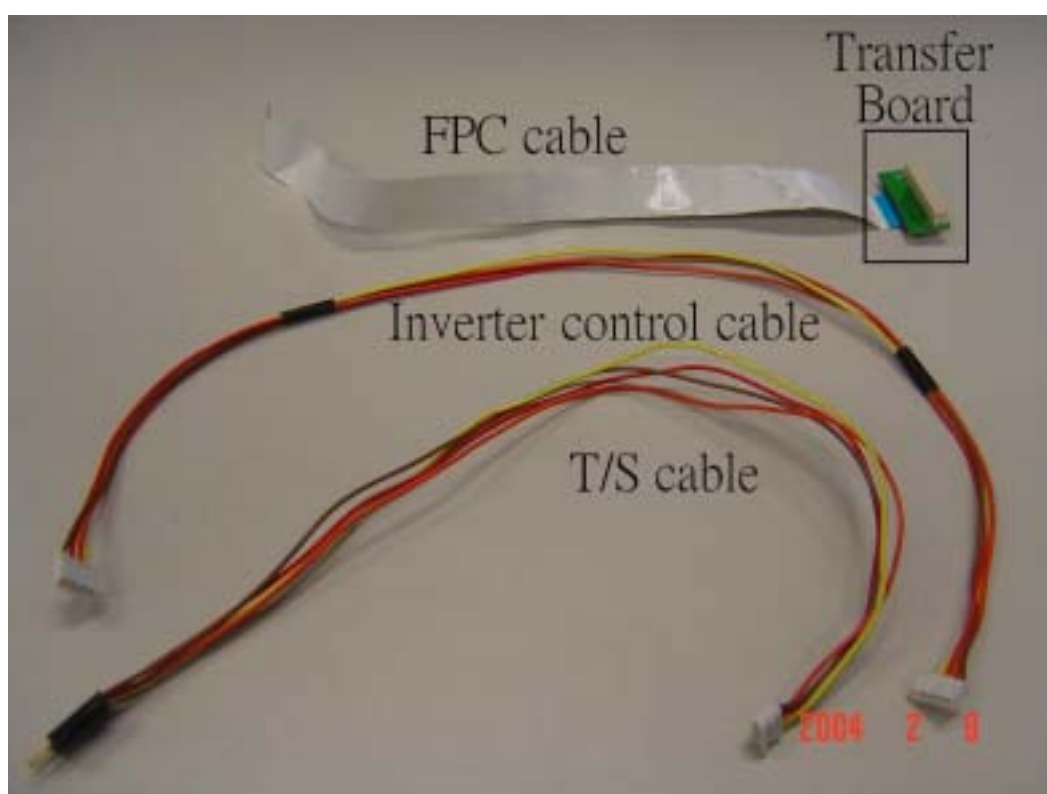
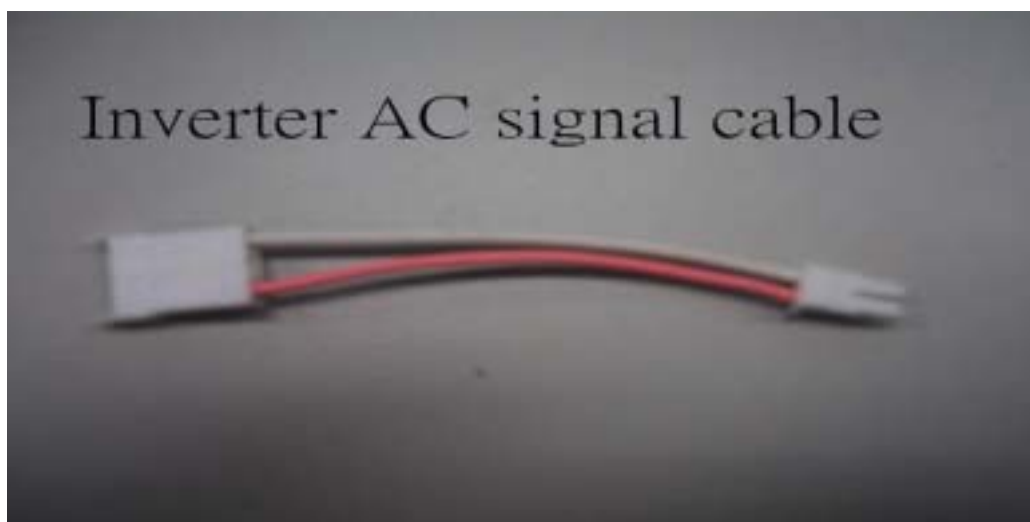
Version	Date	Reason
V1.00	2004.05.30	1 st official released version

Packing list

- (1) **LCD module** : 6.4" TFT 640*480 LCD
- (2) **Touch Screen module** : 6.4" 4-wire resistive T/S.
- (3) **Inverter** : 5V DC-in LCD inverter
- (4) **Transfer board** : PCB Assy' to transfer LCD signal connector type
- (5) **Cables** : FPC cable (transfer board ↔ LCD module),
T/S cable,
Inverter control cable (SOM carrier board ↔ inverter),
Inverter AC signal cable (Inverter ↔ LCD module)

* 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 customers to fit into their target Customer Solution Board (CSB) and target application. Before customers 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) or directly contact with 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	**	✓	✓	✓

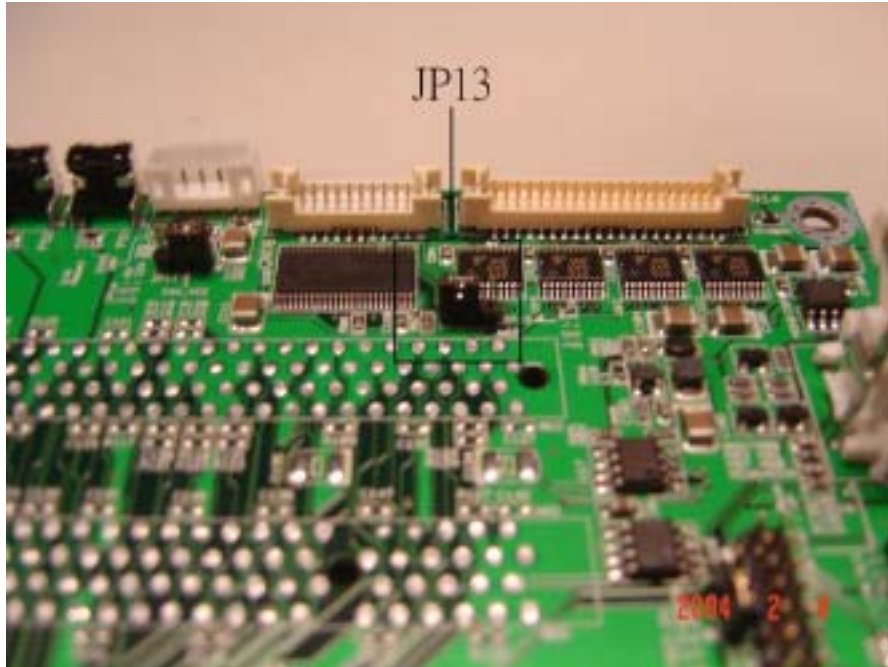
* : SOM-A2558 can support it, but the performance isn't perfect.

** : 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

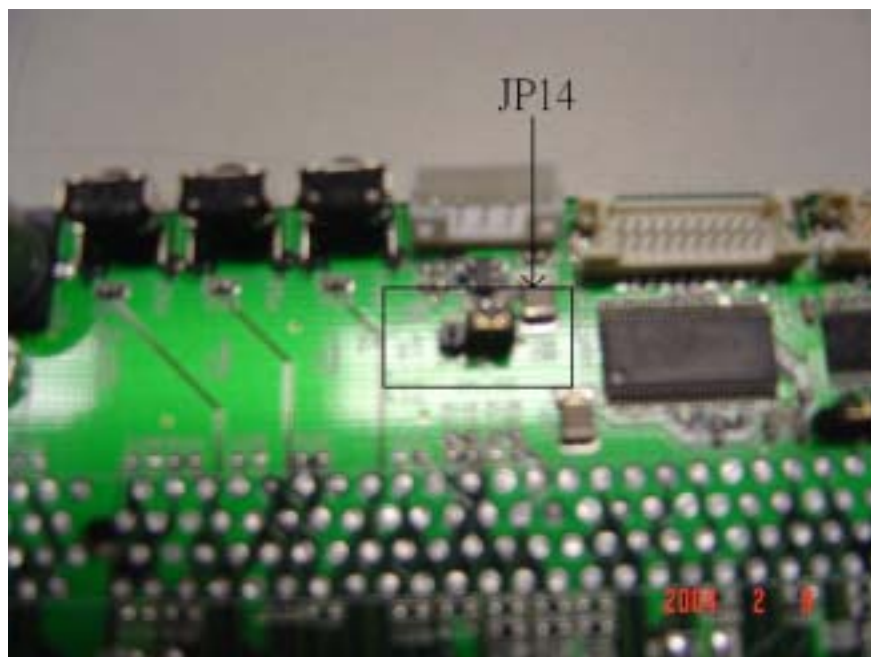
(1) Setting the LCD signals electrical level on SOM-A255x series carrier board

➔Set JP13's jumper at 2-3 pin.



(2) Setting the Inverter Power source

➔Set JP14's jumper at 1-2 pin.



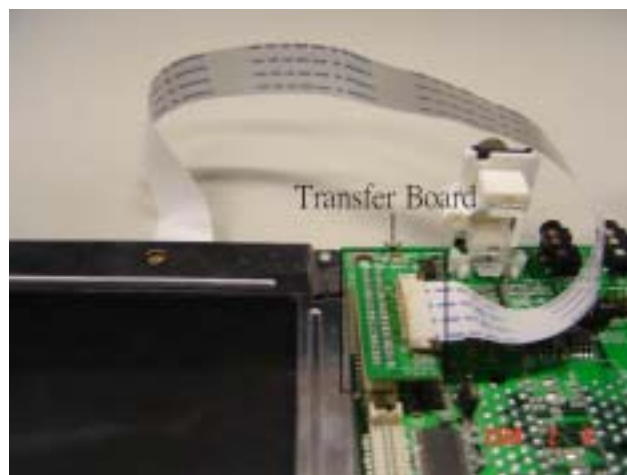
(3) Connect T/S cable

➔Connect T/S cable between T/S & SOM carrier board (CN17).



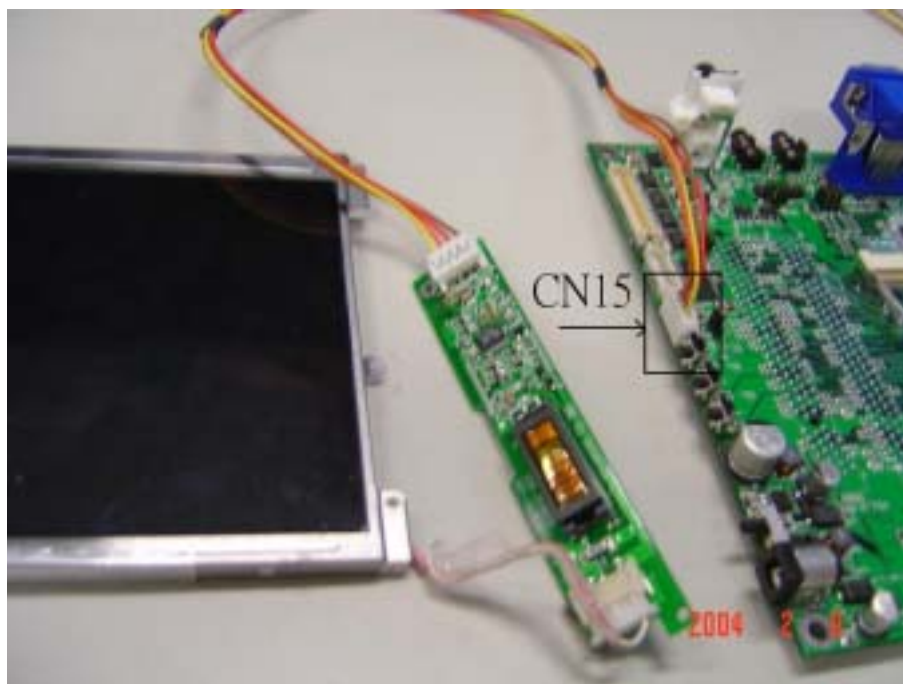
(4) Setup the transfer board

➔Plug the transfer board on SOM-A255x series carrier board CN14. Then connect the FPC cable between LCD module and transfer board. Check the following picture as indicator.



(5) Setup inverter

➔ Connect inverter-control cable between SOM carrier board (CN15) & inverter.



(6) H/W installation finished

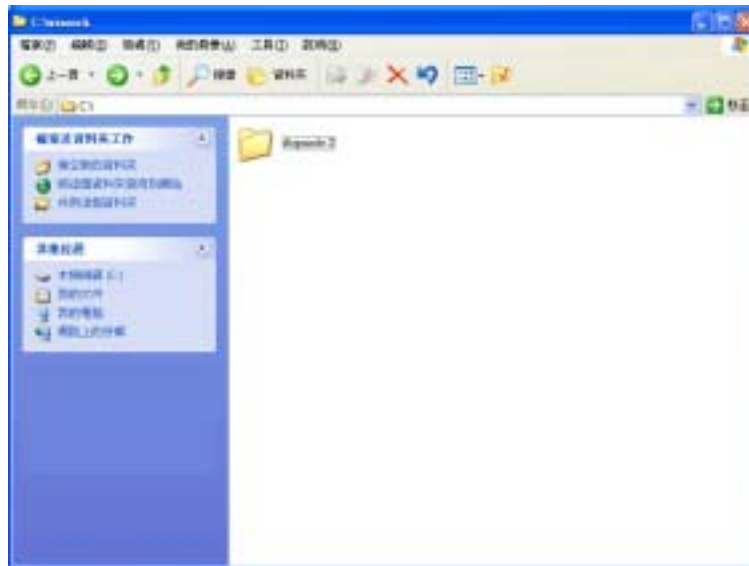


S/W bootloader mode setting

(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 supportiive 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

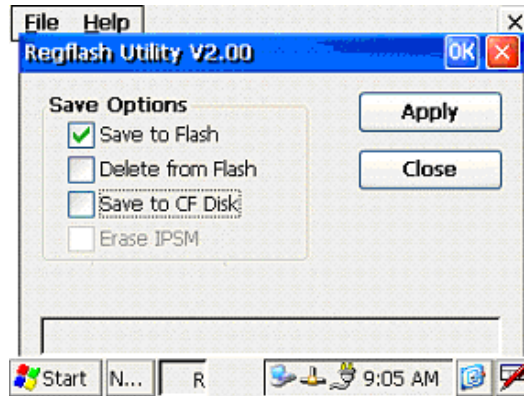
- (1) Connect the CRT cable to the SOM-A255x carrier board.
- (2) Double click the “System Configurator”.



- (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 10.4” LCD kit should choose 640*480 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 640*480 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) to arise your questions, or directly mail to ae.risc@advantech.com.tw.