



WINSTAR Display
華凌光電股份有限公司

TFT WF35M Introduction

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2014-03



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Outline:

WF35M = TFT Clever System

1. WF35M Main Feature / Advantage
2. WWTFT-00# USB Program



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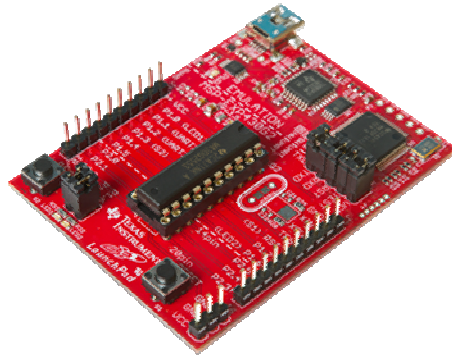
3.5” WF35M - TFT Clever System

Winstar WF35M – TFT Clever System is a brand-new TFT solution for customers to upgrade the existing mono displays to color TFT displays. The WF35M module is a new all-in-one system which the customers no need to redesign the TFT firmware and circuit.

This WF35M all-in-one display integrate Switch, UART, SPI, USB, PWM function. It's not necessary to use expensive high performance CPU or MCU and no need to use FPC at client end to drive the TFT module which can save a lot of BOM cost for the finish products/applications.

The WF35M is also can be easily linked to client's embedded system. The biggest advantage of using the WF35M is the customers can save cost and accelerate the product development procedure.

Easily Link to Client Embedded System



Client System



Link by 4 Wire



Winstar - WF35M

Key Advantage of WF35M-

- All in One System
- More Convenient to Upgrade
- Easy to Use
- Cost Less
- Shorten Development Time
- Less Coding
- Reduce I/O Port

WF35M All-In-One Module

LED Backlight Circuit

3.5" Color TFT Driver

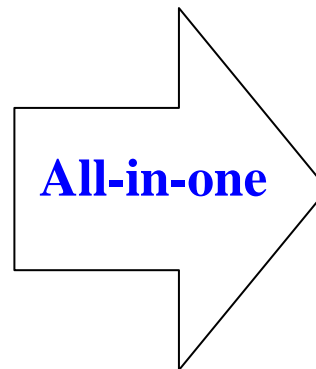
Frame buffer SRAM

Graphic file Flash

PWM & 4Button

Graphic Process

Character Process

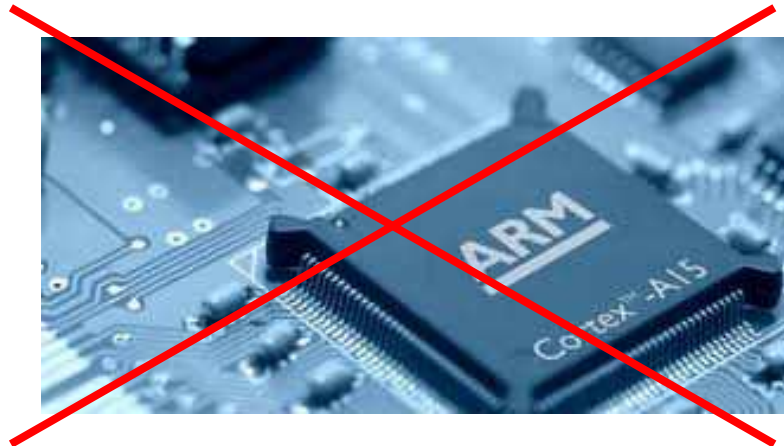


WF35M

➤ **WF35M all-in-one module - the customers do not need to redesign the TFT firmware and circuit.**

Cost Less

➤ **High performance CPU or MCU is unnecessary**

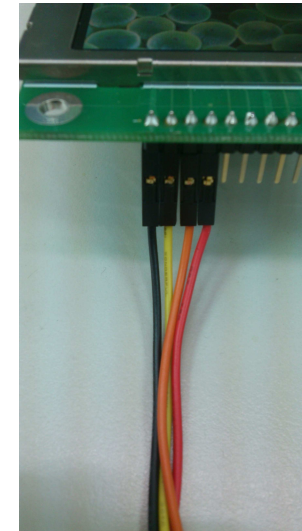
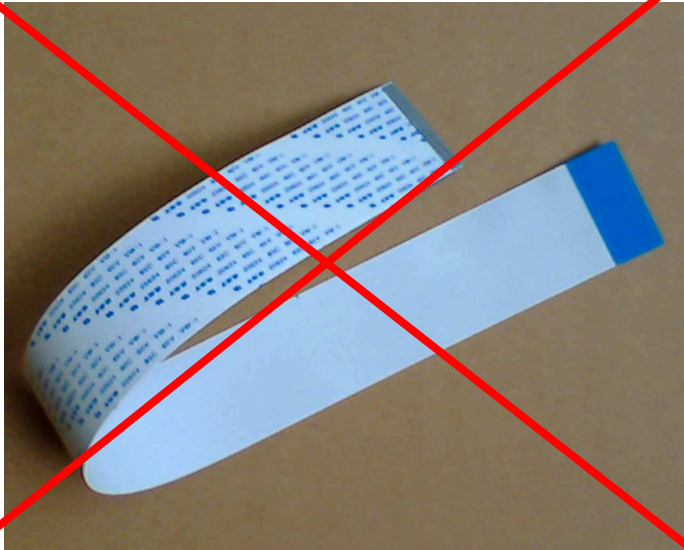


* It's not necessary to use high performance CPU or MCU to display the graphic contents.

* Save cost on IC material.

Reduce I/O Ports

➤ Replacing 20-Pin FPC, by using 4-Wire to connect with WF35M and Client System



* Customers can save cost by reducing connector and FPC.

* No need to use FPC and replaced by cable which increase the connection reliability.



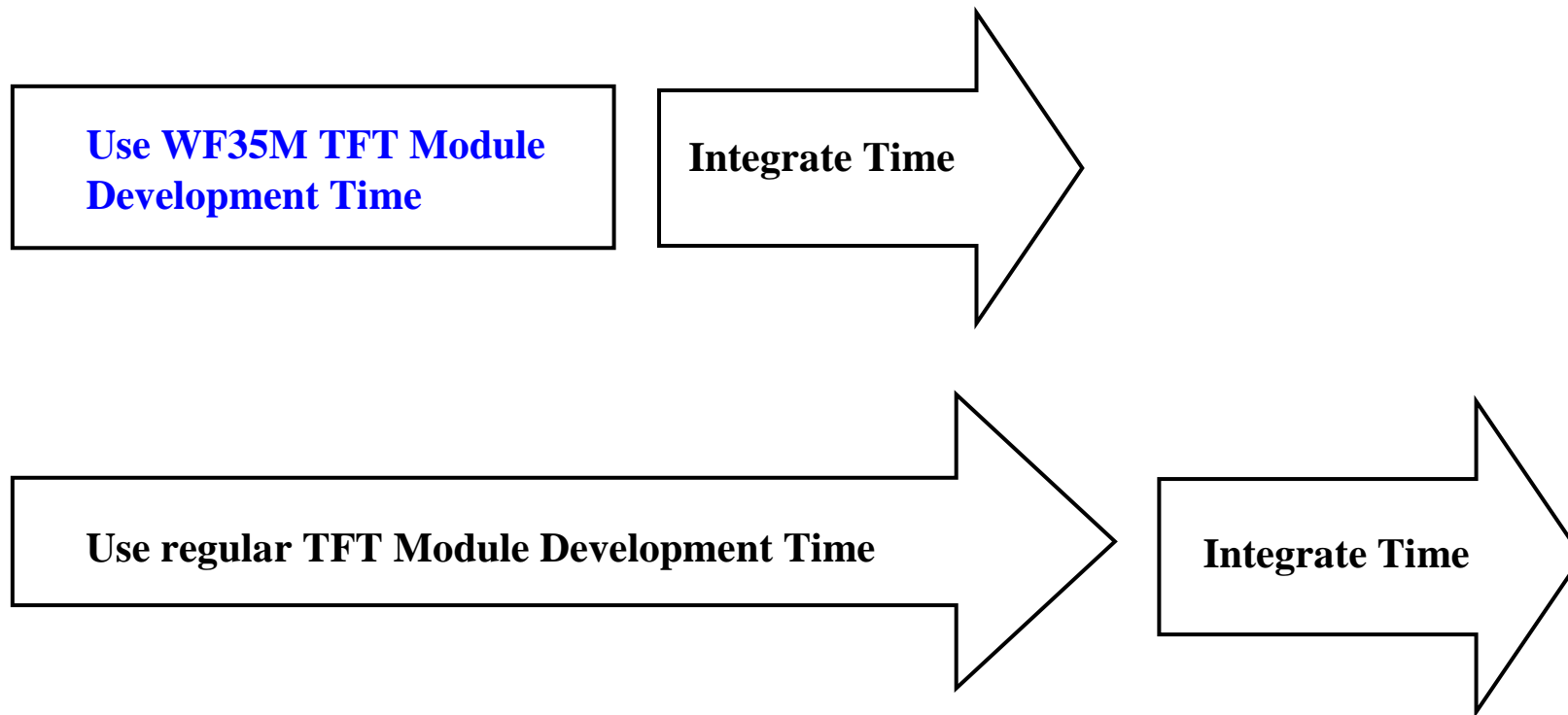
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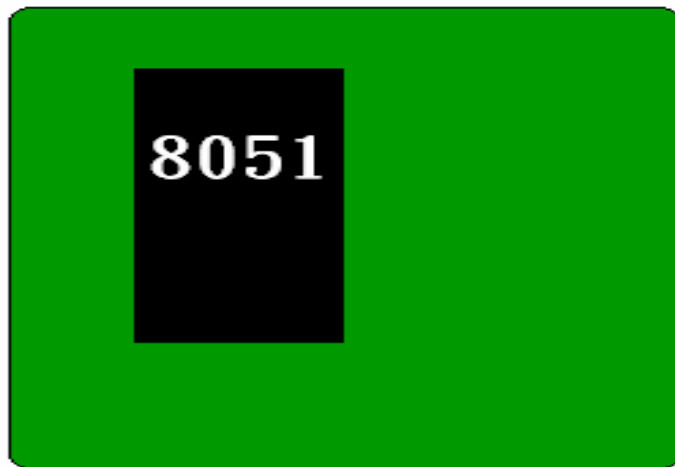
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Speed up Development Time

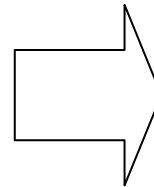
➤ **Save 60% Product Development Time**



Easy Upgrade to Color TFT



Do not need to modify the PCB



Color TFT Module



Mono STN LCD Module



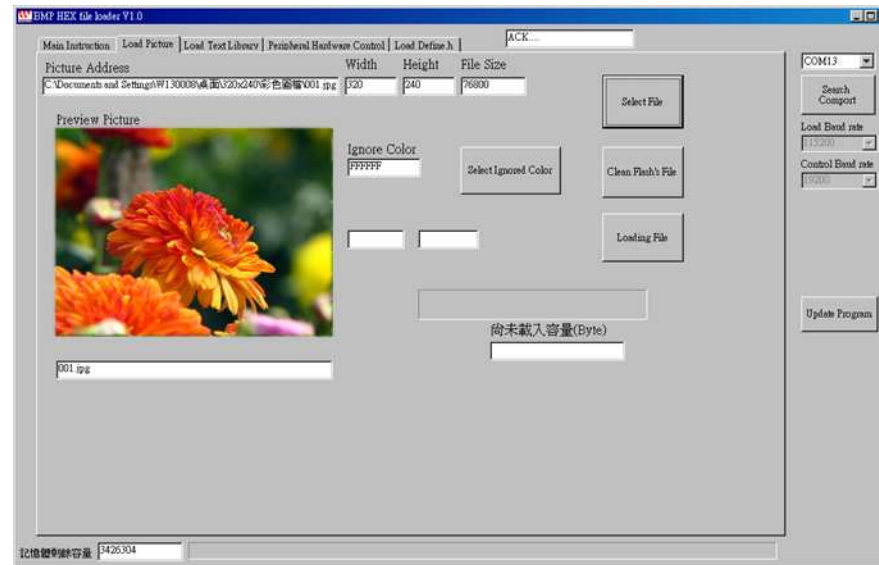
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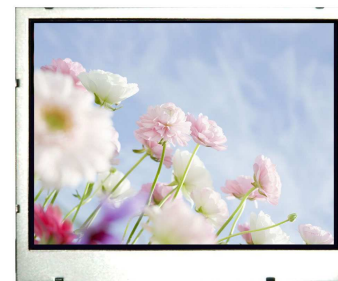
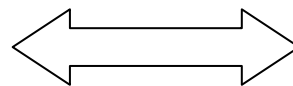
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WF35M UI Download & Coding test Software



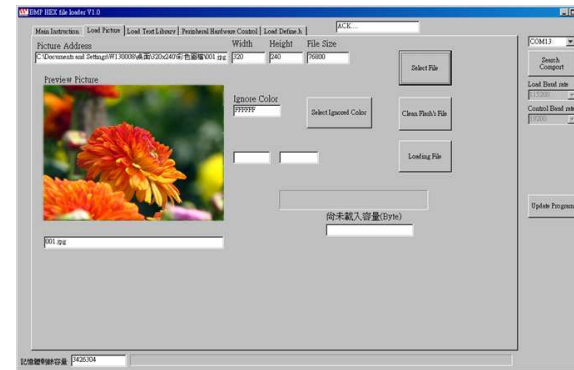
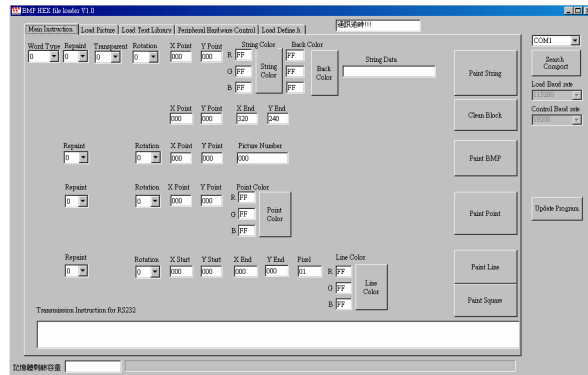
RS232 or USB



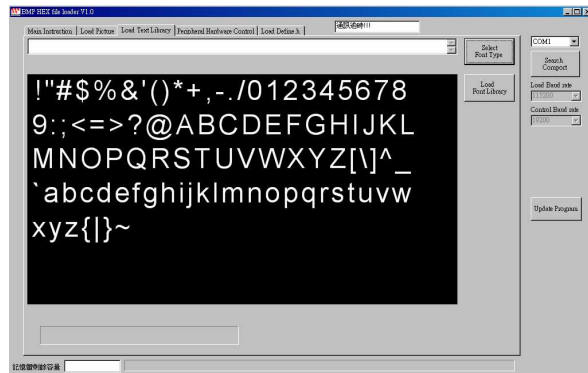
➤ **Connect the WF35M to PC by RS232 or USB, than the customer can begin to coding and design the content.**



Easy to Use WF35M UI Download & Coding test Software



Communication Test



Integrate the photo galleries into system

➤ The graphic integrated operation interface can speed up the product development.

Download the Character Font



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Who should choose WF35M?

User	WF35M Clever system	WF35Q	WF35L
Users do not have much experience on TFT module development.	V		
STN Module upgrade to TFT display.	V		
PC Software Developer, such as POS system or Solar PV inverter providers.	V		
User end already adopted high speed MCU such as PIC32 or TI C2000, but the MCU without support TFT driver.		V	
Users like embedded system providers have experience on using high performance MCU and have the ability to develop circuit and graphic interface.			V



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WWTFT-00# USB Program

In order to have users easily to implement the TFT display, Winstar designs a USB as communication interface between the PCs and TFT modules.

Key Advantage of WWTFT-00# USB --

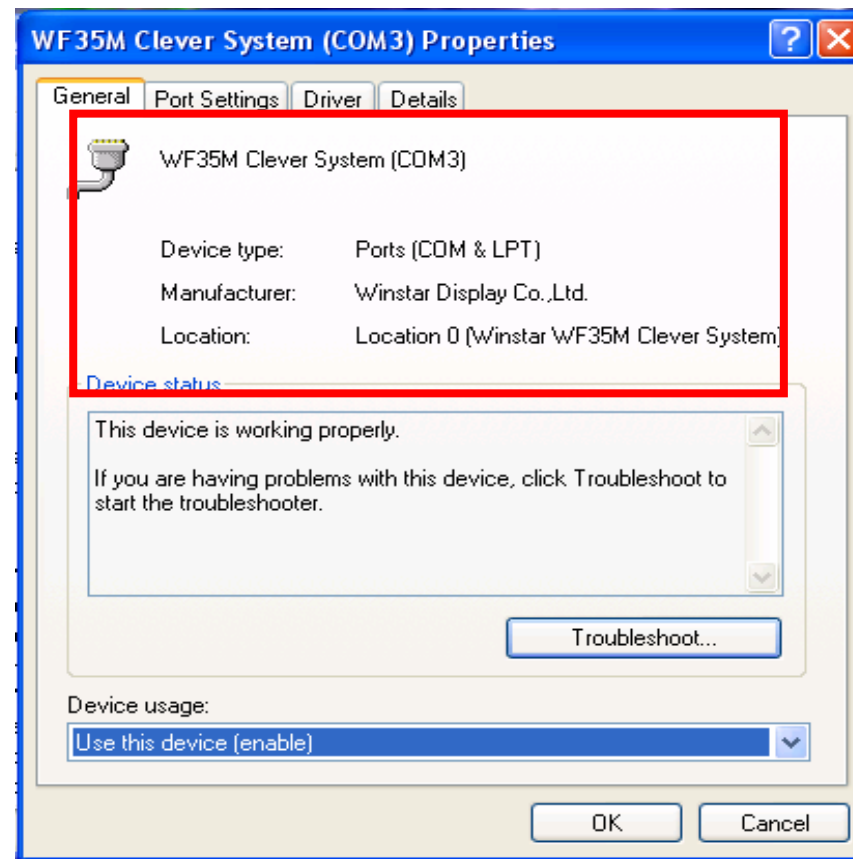
- WWTFT-00# USB is a tool to support user end copy the graphic/photo gallery to WF35M display for mass production.
- USB is the main stream of communication interface as it is easy to use and cost less.
- WWTFT-00# USB can link to the PC quickly for verifying and download the graphics.
- WWTFT-00# is the first launched Winstar standard USB for TFT modules.

How it works of using WWTFT-00# USB?

This is why we call Winstar TFT WF35M is “Clever System” since it can be very easily implement into mass production for end users to upgrade from mono STN displays to color TFT displays without much work. The users can choose the RS232 or Winstar WWTFT-00# USB as communication interface.



Windows USB Driver



Windows system can recognize Winstar USB Driver to identify the WF35M TFT Device.



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Market for WF35M

- POS or System Developers
- Traditional Food Machine Manufacturers
- Industrial Control Machine Manufacturers
- Medical Machine Manufacturers
- ✓ The customers currently using mono STN or FSTN displays that need to upgrade the product “value” to using color TFT displays.



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Conclusion - Advantage of WF35M

- WF35M all-in-one TFT Display which combines Switch, UART, SPI, USB, PWM Function.
- WF35M, a multi-function and very flexible system which combine character, graphic, ICON and point-line-plane process engine.
- No need to develop TFT display hardware and circuit and program which save users around 60% development time.
- Users can adopt the WF35M directly and do not have to upgrade the original MCU at user end.
- Using WF35M module, the users can improve the graphic mode performance of using WF35L with SSD1963 control board.

More in next page --



WF35M/WF43M Development Roadmap

G1 : 3.5"



2014/Q1

@ RS232 Interface
@ 4-SW Included

G2 : 3.5"



2014/Q2

@ SPI Interface
@ RTP Included

G3 : 4.3"



2014/Q3

@ Larger Size
@ the same function
with 3.5"



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Thank you!

謝謝 Danke 감사합니다 Merci благодарю Вас
Gracias ευχαριστω Dank u ありがとう Obrigado



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Responsibility on Environmental Protection

Winstar considered that our responsibility environmental protection; our manufacturing process completely follows RoHS, SVHC of EU REACH and Weee standard since 2006, as well as our relative supplier was asked to be cooperated with same regulation.