Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

PIC32 Graphics Solutions
Use the Power of PIC32 MCUs to Add Graphics to Your Design

Microchip provides several visual design tools to help you with the development of graphics firmware. These GUI-based tools reduce the need to memorize graphics object information, improve the edits-compile-execute cycle and allow developers to work in the same space as users.

MPLAB® Harmony Graphics Library

The MPLAB Harmony Graphics Library is a free, modular library optimized for Microchip 32-bit microcontrollers. The library includes features such as alpha blending, gradient fills and anti-aliased fonts. Applications can take advantage of these features to enhance the user experience while delivering performance required by the application. The Graphics Library features:

- Up to 16-bit or 65K colors
- 2D objects such as line, circle, text, rectangle, polygon or bar
- 3D objects such as buttons, panels, window, group box or sliders
- Images, animation
- Resistive touch screen, keypad
- Multiple fonts

MPLAB Harmony Graphics Composer (MHGC)

The MPLAB Harmony Graphics Composer is a graphical user interface design tool that is integrated as part of the MPLAB Harmony Configurator (MHC). This tool allows you to easily configure and visually design for the MPLAB Harmony Graphics Primitive Library and the MPLAB Harmony Graphics Object Layer. The MPLAB Harmony Graphics Composer features:

- What You See Is What You Get (WYSIWYG) design
- Concept to glass in minutes without writing a single line of code
- Multi-platform (Windows®, Linux® and Mac OS® operating systems)
- Enhanced design tools
  - Drawing grids, auto widget alignment and other drawing shortcuts/productivity features
  - Drag-and-drop widgets and objects directly into your design

MHGC is fully integrated into MHC which is available as an MPLAB X IDE plug-in.
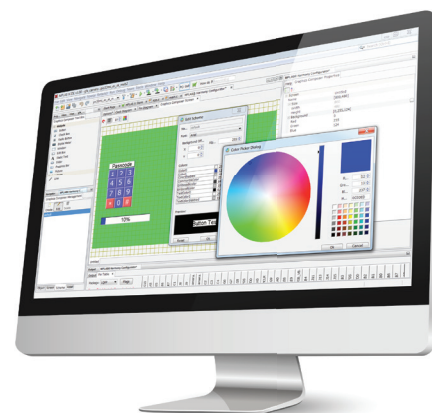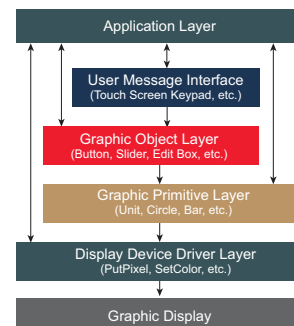
SEGGER emWin Pro Library

emWin from SEGGER Microcontroller GmbH and Co. KG is a software graphics library that provides efficient GUI building blocks for applications that operate with a graphical LCD.

- Completely replaces the object library and primitive layer of Microchip Graphics Library
- Robust graphics widget and shape drawing library
- Use SEGGER development tool chain and utilities
- RTOS independent

Low-Cost Controllerless Graphics (LCCG)

Microchip's PIC32 microcontrollers offer up to 2 MB Flash, up to 512 KB RAM, up to 330 DMIPS and high-performance DMA to render graphics directly to displays. All of Microchip's PIC32 MCUs include a Parallel Master Port (PMP) which is used to connect external SRAM and LCD. This enables PIC32 devices to drive a display without an external graphics controller.

- Uses <5 MIPS and DMA to render graphics
- Direct interface to STN, TFT displays
- Integrated up to 512 KB RAM for frame buffering

Suggested Development Tool Kits	Part Number
Multimedia Expansion Board II	DM320005-2
PIC32MZ with FPU Embedded Connectivity Starter Kit	DM320007 DM320007-C
PIC32 GUI Development Board with PCAP Touch	DM320015
LCCG PICtail™ Plus Board	AC164144
PIC32 USB Starter Kit II	DM320003-2
WQVGA LCD or VGA LCD•	AC164127-6, AC164127-8
PIC32MZ Embedded Connectivity Adaptor Board	AC320006

*Can only be driven by DM320006/6-C or DM320007/7-C for an LCCG setup

MICROCHIP

Multimedia Expansion Board II (MEB II)

Multimedia Expansion Board II (DM320005-2)

The Multimedia Expansion Board II (MEB II) is a highly integrated, compact and flexible development platform which works with PIC32MZ Starter Kit. The MEB II kit features a 4.3" WQVGA PCAP touch display daughter board. The kit also has an on-board 24-bit stereo audio codec, VGA camera, 802.11 b/g wireless module, Bluetooth® HCI transceiver, temperature sensor, microSD™ slot and analog accelerometer.

Suggested Development Tool Kits	Part Number
Multimedia Expansion Board II	DM320005-2
PIC32MZ with FPU Embedded Connectivity Starter Kit	DM320007 or DM320007-C

GUI Development Board with Projected Capacitive Touch

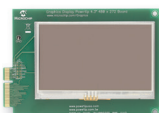*PIC32 GUI Development Board with Projected Capacitive Touch (DM320015)*

The GUI Development Board with Projected Capacitive Touch is based on the PIC32MX795F512H with 105 DMIPS performance, 512 KB Flash and 128 KB RAM. The PIC32 MCU is coupled to low-cost PSRAM for high-speed graphics frame buffering and a 4.3" WQVGA touch display. The board provides USB host and device connectivity and supports additional I/O connections via through-hole pads for custom board attachment. On-board PCAP touch is supported by Microchip's MTCH6301 projected capacitive touch controller. This solution is a stand-alone development platform that can be programmed/debugged via the on-board 5-pin In-Circuit Serial Programmer interface designed for Microchip's PICkit™ 3 In-Circuit Debugger.

Suggested Development Tool Kits	Part Number
PIC32 GUI Development Board with PCAP Touch	DM320015

LCD Display Boards

Graphics Display 3.2" 320 × 320 Board (AC164127-4)

Graphics Display 4.3" 480 × 272 Board (AC164127-6)

Graphics Display Truly 5.7" 640 × 480 (VGA) PICtail Plus Board (AC164127-8)

LCD display boards are pre-wired to interface to Microchip's PIC32 LCCG board, Epson or Solomon controller-based boards and PIC24-based graphics development boards. They are a convenient way to add graphics to your design and leverage your Microchip development tools investment.

Ordering Information

Display/Controller Boards	Part Number
3.2" QVGA (240 × 320) TFT LCD	AC164127-4
4.3" WQVGA (480 × 272) TFT LCD	AC164127-6
5.7" VGA (640 × 480) TFT LCD	AC164127-8
Graphics Controller PICtail™ Plus Epson S1D13517 Board	AC164127-7
Graphics LCD Controller PICtail Plus SSD1926 Board	AC164127-5

MICROCHIP

www.microchip.com/graphics

Visit our web site for additional product information and to locate your local sales office.

Microchip Technology Inc. • 2355 W. Chandler Blvd. • Chandler, AZ 85224-6199

Microcontrollers • Digital Signal Controllers • Analog • Memory • Wireless