PIC32 Graphics Solutions
Use the Power of PIC32 MCUs to Add Graphics to Your Design
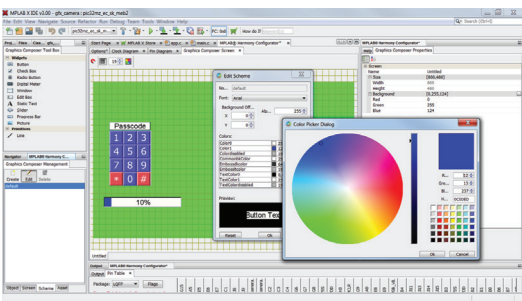
MPLAB® Harmony Graphics Library

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

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
- Integrated with MHC Configuration tool
- Multi-platform
  - Windows®, Linux® and Mac OS® operating systems
- Enhanced design tools
  - Drawing grids, auto widget alignment and other drawing shortcuts/productivity features
  - Cut, copy and paste properties

Download for free at: www.microchip.com/harmony.

Low-Cost Controllerless Graphics (LCCG) PICtail™ Plus Daughter Board

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 PSRAM and an LCD. This enables PIC32 devices to drive a display without an external graphics controller.

Low-Cost Controllerless Graphics PICtail Plus Daughter Board (AC164144)

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

The LCCG development board interfaces to a PIC32 Starter Kit or Explorer 16 Development Board and any of Microchip's LCD boards. It includes 256 KB of PSRAM that can be jumpered in or out of the circuit.

Suggested Development Tool Kits	Part Number
LCCG PICtail™ Plus Board	AC164144
PIC32 USB Starter Kit II	DM320003-2
PIC32MZ Embedded Connectivity Starter Kit	DM320006 DM320006-C
PIC32MZ with FPU Embedded Connectivity Starter Kit	DM320007 DM320007-C
WQVGA LCD or VGA LCD*	AC164127-6 AC164127-8
PIC32MZ Embedded Connectivity Adapter Board	AC320006

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

GUI Development Board with Projected Capacitive Touch

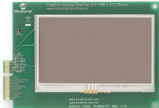*PIC32 GUI Development Board with Projected Capacitive Touch (DM320015)*

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)

Graphics Display Truly 7" 800 × 480 (WVGA) PICtail Plus Board (AC164127-9)

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
7.0" WVGA (800 × 480) TFT LCD	AC164127-9
Graphics Controller PICtail™ Plus Epson S1D13517 Board	AC164127-7
Graphics LCD Controller PICtail Plus SSD1926 Board	AC164127-5

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 Embedded Connectivity Starter Kit	DM320006 or DM320006-C
PIC32MZ with FPU Embedded Connectivity Starter Kit	DM320007 or DM320007-C

www.microchip.com/graphics

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

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