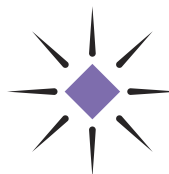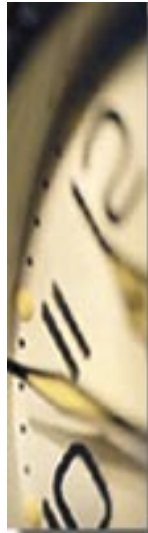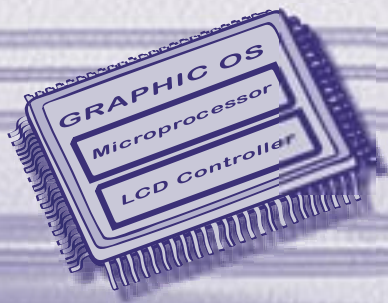# Beyond Your Basic LCD Controller

Graphical User Interface Solutions by Amulet Technologies empower designers to utilize their LCDs full design potential.

Amulet Technologies
Empowering Flat Panel Displays

www.amulettechnologies.com

Visually Appealing.

SCALABLE PRODUCTION SOLUTIONS

Amulet's Graphical OS Chip™ is a combination microprocessor, LCD controller and graphic library, significantly reducing memory requirements and freeing the host micro-processor to do its job more effectively.

"We have an innovative product and we wanted a user interface to match. It had to be great looking and easy-to-use. The HTML and graphics tools really let us focus on that. Furthermore, we didn't anticipate our system processor doing real-time graphics, Amulet's approach to GUIs allowed us to create a GUI with all the features we wanted without impacting performance."

– Hal Alles, President Home Comfort Zones
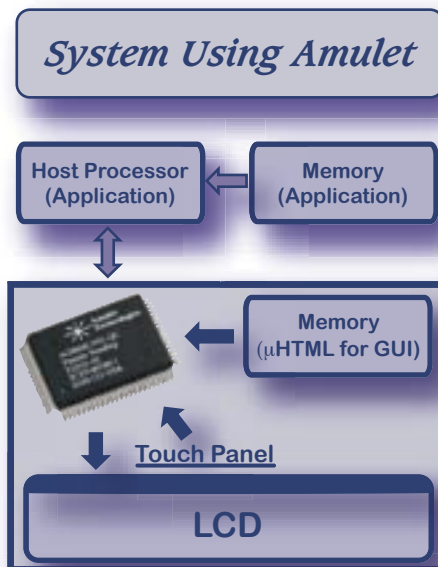
BEYOND YOUR BASIC LCD CONTROLLER

Amulet invented the Graphical Operating System in Silicon™. The chip is a combination LCD controller and microprocessor operating a graphic OS. A dedicated microprocessor for the GUI frees the host microprocessor. This approach can be applied to new product design, or to established products craving a midlife remodel. Customers can create a graphical UI or "skin," without altering the application's microcontroller or code.

"The Amulet LCD controller is an efficient solution. By offloading the graphical interface to a dedicated coprocessor, the embedded systems designer can focus on real-world interface issues." – **Jonathan Somers, Senior Research Engineer**
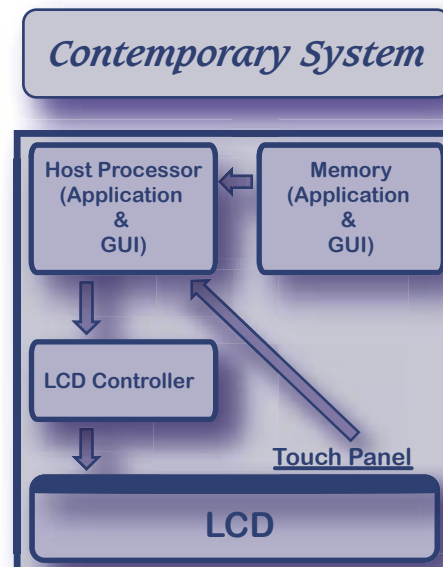
LOWER SYSTEM COSTS

Amulet's software solution in silicon delivers significant savings in overall system costs by providing a product that uses less memory, and frees up the host microprocessor to do its job. Customers can now use low-cost 8-bit microcontrollers for products that use feature-rich, graphically robust UIs.

"Amulet's Easy GUI chip freed up nearly 80% of our processor resources!" – **Mark Doble, President, MD Designs, Tampa, FL**

System Using Amulet

Host Processor (Application) ← Memory (Application)

Memory (μHTML for GUI)

Touch Panel

LCD

Contemporary System

Host Processor (Application & GUI) ← Memory (Application & GUI)

LCD Controller

Touch Panel
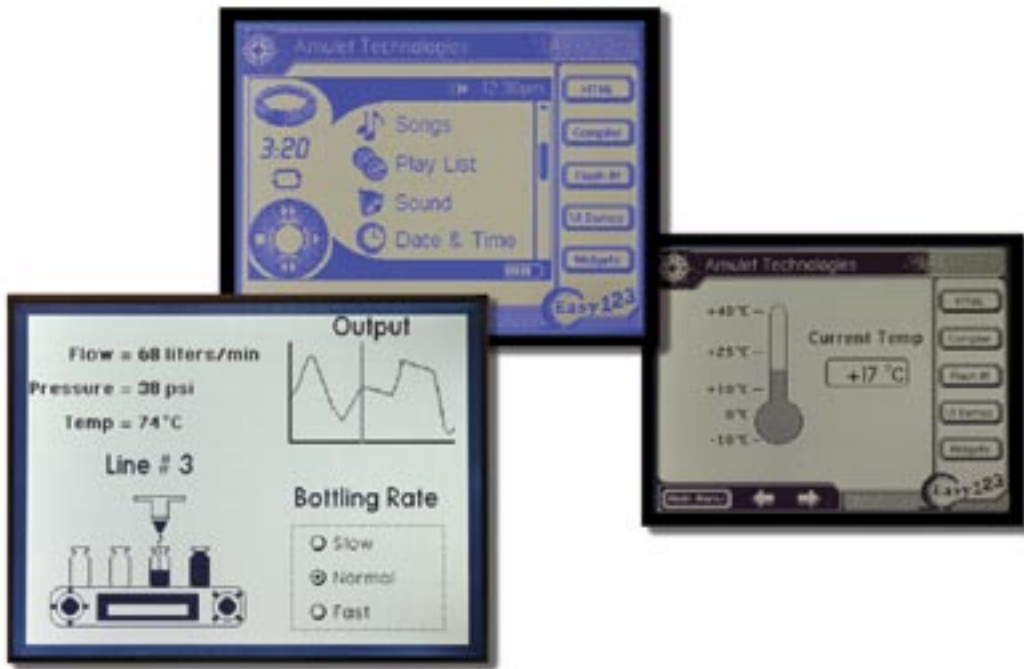
LCD

THE AMULET WAY

- GUI Visually Created in HTML
- No Burden on the Host Micro to Run GUI
- Requirement for Memory and Micro is Less
- Time to Market is Much Shorter
- Straight From Prototype to Production
- 24/7 Reliability
- Design GUI & Application in Parallel
- Fosters Collaboration between Engineers and Designers

THE OLD WAY

- GUI Requires Software Programming
- More Difficult to Create Using Code
- Requires Considerable Processing Power
- Memory for Application and GUI is Large
- Cost & Time to Develop GUI is High
- Recurring Cost (memory & micro) Higher
- Longer Time to Market
- Requires Simulation Phase in Development

Simply Reliable.

VISUALLY CREATE YOUR UI

Create an attractive, graphic-rich, robust and intuitive GUI that improves the look, feel and function of your product. The GUI is created using HTML and graphics programs. Use drag-and-drop tool sets instead of programming line upon line of tedious code. Amulet has dramatically shortened the GUI development cycle by 90%. This approach also fosters collaboration between engineers and designers.

"Amulet has cool technology that is easy to program. Our UI is now more robust, our menus have come alive, and our end users love it." – Eric Johnson, Design Engineer

INNOVATIVE GRAPHICS

Amulet's entire product line is built around its Graphical OS Chip™, an LCD controller and dedicated microprocessor running a graphical operating system. This chip renders GUI pages containing graphic images, widgets and other UI objects directly to the display, eliminating the need for complex programming to draw individual pixels. The chip supports any graphic monochrome LCD up to full VGA resolution.

NO SIMULATION - PROTOTYPE TO PRODUCTION

Amulet's patented micro-HTML format enables quick and easy on-display GUI programming that allows users to skip the simulation phase. By making the task of creating visually-appealing UIs a painless process, iterative changes can take place while developing the GUI without impacting schedules. Time-to-market is drastically accelerated, delivering great results faster!

"We were able to create product demos the first day, and completed 90% of our UI development the first week. Since prototype and development use the same platform Amulet probably saved me 1 to 2 months, full-time development." – Andrew Wyer, Design Engineer

24/7 RELIABILITY

What other LCD controller will let you keep your legacy hardware and software, won't task your 8-bit microcontroller AND gives you optimum 24/7 proven reliability? The Amulet GUI architecture was designed specifically for 24/7 operation. Create a robust, good looking GUI that won't crash when you need to run it 24/7.

FULLY INTEGRATED MODULES

Amulet's fully integrated GUI modules feature the Amulet Graphical OS Chip™. These modules are the best solution when time-to-market is of top priority. Included is on-board circuitry that allows the contrast and backlight to be controlled via the touch panel.

CUSTOM PRODUCTS

Amulet Technologies can develop custom production solutions to fit your needs. Customized controller boards or integrated modules can be designed to fit any customer requirement – no matter how large or how small.

Scalable Production Solutions

AMULET GRAPHICAL OS CHIP™

The Amulet Graphical OS Chip™ is beyond your basic LCD controller, combining a graphical operating system, microprocessor and LCD controller all in one. The technology makes it easy to integrate a graphic LCD into embedded products that use 8/16/32-bit micros and DSPs. A built-in microprocessor manages all GUI functions, freeing up the host micro to run the application more efficiently. A less expensive, less powerful micro can now be used for the application.

Create great looking, intuitive, graphically-rich GUIs with easy-to-use and inexpensive HTML and graphic editing programs. The chip renders HTML pages into µHTML™ which uses much less memory. RoHS compliant part available.

AGB64LV01-QC
AGB64LV01-QC-E (RoHS)

AMULET OnBoard™ (AOB) 5.7" MODULE KITS

Amulet OnBoard™ (AOB) is a fully integrated display solution. Our Graphical OS Chip™ and all the other parts to drive the LCD are mounted directly to the back of the display. Create great looking and robust graphic user interfaces using HTML and graphic editing programs, compile the project, and download it to the module.

• Three display types (FSTN Positive, FSTN Negative, STN Negative)
• Integrated touch panel
• White LED Backlight
• 4 Megabyte Serial Flash chip for storing µHTML™ pages
• Digital Potentiometers control contrast & backlight through the GUI

MK-AOB3202405T

MK-AOB3202405N

MK-AOB3202405B

AMULET 3.8" MODULE KITS

The MK-GT380 is a 3.8" LCD module (LCD with Controller Board). Our Graphical OS Chip™ and all the other parts to drive the LCD are mounted to a custom PCB.

• Two display types (FSTN Positive, STN Negative)
• Integrated Touch Panel
• White LED Backlight
• 4 Megabyte Serial Flash chip for storing µHTML™ pages
• Digital Potentiometers control contrast & backlight through the GUI

MK-GT380B

MK-GT380T

STARTER KITS

The 5.7" and 3.8" starter kits include everything you need to begin creating great looking graphic user interfaces fast.

Kits include:
• Production ready module
• Interface cable, Interface Board (5.7" Kit only)
• Power supply
• Stylus
• Amulet Software

CD includes compiler software with help documentation, a 45 day trial license of NAMO (HTML editing software) and Docklight, a test analysis and simulation tool for serial communication protocols.

5.7" Starter Kit
STK-AOB3202405

3.8" Starter Kit
STK-GT380

To see all of Amulet's latest products and services, please visit our website below. Contact us at Sales@AmuletTechnologies.com or (408) 244-0363.

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