




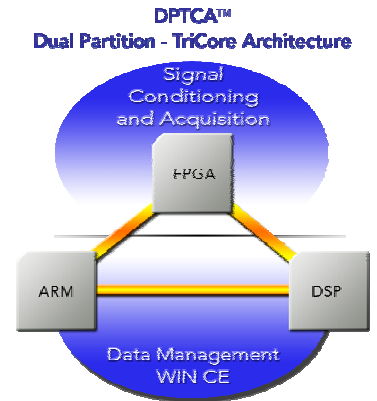


Programmable Embedded Controller

Medical Device OEM Solutions

-  Powerful Medical Grade Embedded Platform
-  Advanced Data Management Features
-  Fully Integrated Physical I/O
-  Low-power, Portable Platform
-  Easy FDA Approval with E-TROLZ DPTCA™ Technology



Overview

E-TROLZ's application specific, programmable embedded controller (MediPEC) is a standard, fully integrated medical grade platform for medical device OEMs. By integrating the hardware, I/O, drivers, RTOS, and API into a patient protected subsystem, medical device OEMs can focus their efforts and resources on their core competency. Implementing a MediPEC dramatically reduces your development cycle. Instead of investing person-years on a micro-controller design, drivers, and RTOS, you invest in your application program and device verification.

Through the use of plug-in SD cards and USB, the MediPEC is highly configurable, immensely capable, and yet cost effective. By selecting the data storage capacity and wireless communications type to meet your application requirements, you select the exact functionality needed to meet your cost target. Furthermore, the MediPEC delivers exceptional portability based on its small size and stingy power consumption.

The MediPEC is a fully integrated, ready to program, OEM solution. With the RTOS fully integrated from the hardware through the system and user I/O, up to an I/O API, the MediPEC is ready to program out of the box with standard C, C++, or C# tools. In fact, most of the application programming is already implemented in the E-TROLZ I/O API. This I/O API delivers fill-in-the-blank configuration of digitization parameters, oversampling routines, data file parameters, and communications parameters.

Powerful measurement and control applications are possible on the MediPEC with an ARM MCU and 32-bit DSP; large RAM, flash and storage capacities; multiple networks; and video displays. Yet this level of performance, integration, and configurability are very affordable through standardization, exact functionality, and the use of high volume components.

The MediPEC embodies the most advanced E-TROLZ technology. The Dual-Partition TriCore Architecture, DPTCA™ guarantees reliable, repeatable performance for easy FDA approval. With 4KV patient protection built-in, the MediPEC is already used in Class II, 510K FDA approved devices.



Platforms

- MediPEC/e Embedded applications with touch screen displays, full suite of networking, memory, and I/O
- MediPEC/d Deeply embedded applications, low power option for portable use, quarter VGA or LCD display
- MediPEC/i¹ Smart I/O applications performing measurement and control with optional wireless communications

Applications

- Portable medical devices
- Laboratory analyzer / detector
- Electromedical devices
- Handheld medical devices
- Portable analyzer / detector
- Ambulatory monitor / detector
- Device automation
- Remote sensing / monitoring
- Dedicated subsystems

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Processor

The OMAP™ is a high-performance, power efficient processor, providing real-time signal processing capabilities of a DSP coupled with the command and control functionality of an ARM.

The E-TROLZ Coprocessor is a dedicated, programmable, real-time controller capable of sophisticated timing, signaling, and high-speed I/O control.

Embedded Software

The E-TROLZ IDE delivers powerful control routines in an easy to use, integrated environment. For those demanding visual and communications rich applications, Windows CE enables features such as video and audio playback, encryption, browsing, web serving, and network device management.

I/O Blocks

I/O blocks represent the smallest quantity of a specific I/O type available. Signal conditioning is readily available for most signal types and is added to your application specific solution.

| Input/Output Blocks | In | Out |
|--|------|------|
| Digital Input and Output | | |
| TTL, DC, Relay | 8/16 | 8/16 |
| Analog Input with Programmable Gain | | |
| 12-bit, 10KHz | 4/8 | 0 |
| 16-bit, 1KHz | 4/8 | 0 |
| 24-bit, 100Hz | 4/8 | 0 |
| Analog Output | | |
| 12-bit, 16-bit | 0 | 2 |
| PWM Output | 0 | 1 |

Note: Analog input quantity is for single ended, quantity for differential is half

Form Factor

The MediPEC's standard form factor is ETX; 3.75 x 4.5 in. However your application specific product can be virtually any geometry. The minimum surface area is 16.8, 15.0, and 9.0 in² for the MediPEC/e, /d, and /i respectively. Height restrictions for all controllers are 0.75 in. top and 0.375 in. bottom.

| Feature Matrix MediPEC | /e | /d | /i ¹ |
|---|-----|-----|-----------------|
| Processor | | | |
| OMAP 5910 ARM9, C55x DSP, 150MHz | Y | Y | N |
| E-TROLZ Coprocessor | Y | Y | Y |
| Embedded Software | | | |
| RTOS/Windows CE 5.0 | Y | Y | N |
| Win32 API | Y | Y | N |
| E-TROLZ API | Y | Y | Y |
| Memory | | | |
| RAM MB (max) | 256 | 256 | 2 |
| Flash MB (max) | 64 | 64 | 8 |
| Flash Disk - SD | Y | Y | N |
| Display | | | |
| XGA | Y | N | N |
| VGA | Y | N | N |
| QVGA | N | Y | N |
| Display IC | N | Y | N |
| LCD Char | N | Y | Y |
| Input | | | |
| Touch screen | Y | N | N |
| 8x8 element matrix keypad | Y | Y | N |
| Communications | | | |
| 802.11b/g | Y | Y | N |
| Blue Tooth 2.0 ² | Y | Y | N |
| 100Base-T | Y | Y | N |
| USB 2.0 / 1.1 | Y | Y | N |
| RS-232 / RS-485 | Y | Y | Y |
| 802.15.4 ZigBee | Y | Y | Y |
| I/O Blocks | | | |
| Analog | Y | Y | Y |
| Digital | Y | Y | Y |
| CAN Bus | Y | Y | N |
| Miscellaneous | | | |
| RTC | Y | Y | N |
| SPI | Y | Y | N |
| I ² C | Y | Y | Y |
| Smart Battery Interface | N | Y | N |
| Integrated Development Environment | | | |
| E-TROLZ Control Software ¹ | Y | Y | Y |
| Microsoft Visual Studio | Y | Y | N |
| Microsoft Visual languages | Y | Y | N |

Notes: 1) 2nd generation product, contact E-TROLZ for availability
2) Can be combined with 802.11b/g, but not 100Base-T

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