Micro-box 2200

Intel®
Core™ i3
1.7GHz

8 GB
DDR RAM

8 GB
SSD

PCI
express

Portable

Fanless

TeraSoft Inc. - A leading professional engineering solution and service provider for MATLAB

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MICRO-BOX 2200

* Rugged, high-performance industrial PC
  - Fanless, low-power and power consumption design 41W(Typical)
  - Support for all standard PC peripherals
  - Sturdy, compact size
* I/O-expandability, equipped with AD/DA, Encoder, Frequency In/Out and DI/O modules
* The suite offering
  - Micro-Box 2200（PCI express）
* Onboard Core™ i3-1.7GHz / 8GB DDR RAM / 8GB SSD
* Power supply input Max. 60W (12V/24VDC ± 20%)
* Stand-alone ability, Simulink Real-Time self-installed software tools are able to run on stand-alone mode. Users can burn the pre-set Simulink model to SSD without an Internet connection.

Micro-Box is an affordable and robust multi-function platform for rapid control prototyping applications. Developed by TeraSoft Inc, a leading professional engineering solutions provider based in Taipei, Taiwan, Micro-Box works seamlessly with the MathWorks® family of products including MATLAB®, Simulink®, Simulink Real-Time, MATLAB Coder and Simulink Coder, enabling engineers to model physical systems and execute them in real-time under harsh environmental conditions.

Micro-Box is a rugged, high-performance industrial PC with no moving parts inside. The product supports all standard PC peripherals including video, mouse, and keyboard. For engineers who have real-time analysis and control systems testing needs, Micro-Box offers an excellent mix of performance, compact size, sturdiness, and I/O expandability. A selection of I/O options are available providing, support for SCI, TCP/IP, and PCI express based AD/DA, DI/O and frequency I/O modules that address numerous prototyping requirements. Micro-Box is integrated with MATLAB/Simulink and related control modules allowing the user to conduct real-time modeling and simulation of control systems, rapid prototyping, and hardware-in-the-loop testing without the need of manual code generation and complicated debug processes. This results in significant cost savings and reduced development time.

Micro-Box Specification

Micro-Box 2200 (PCI express)

- Core™ i3-1.7GHz
- 8GB DDR RAM
- 8GB SSD
- I/O-expandability provided through standard PCI express bus
- Support 6 different I/O modules including of AD、DA、Encoder、Frequency In/Out and DI/O
- 106(W) x 139(D) x 198(H) mm, 2.4 kg
- 12V/24VDC ± 20%

・External power for 110 to 220VAC, 50Hz to 60Hz environment,

・Hardware accessory(for Micro-Box 2200)
- Packing case
- USB
- Terminal Connector x 6
- Power supply (110~220 Voltage)
- User manual and tutorial CD

・Software
- Inverted pendulum control demonstration Simulink model
- DC motor position/speed control demonstration Simluink model

Environment

- Operating Temperature：-20 ~60° C(-4~140° F) @ 5~85% RH with 07.m/s airflow
- Storage Temperature：-40 ~85° C(-40~185° F)
- Relative Humidity：10 ~95% RH @ 40° C, non-condensing
- Shock Protection：Operating, IEC 60068-2-27, 50G half sine, 11ms
- Vibration Protection：Operating, IEC 60068-2-64, 1Grms, random, 5~500Hz, 1 hr/axis

Type	Specification
A/D	8 channels, ±10 volts,14 bits,
D/A	8 channels, ±10 volts ,14 bits, 10mA Max.
Encoder	4 channels, 32 bits, 0V/5V, A/B/Index
DIO	8 channels DIN, 8 channels DOUT, TTL
Frequency I/O	4 channels

Micro-Box for Rapid Prototyping

When configured as part of a rapid prototyping system, Micro-Box is attached to a host computer running standard MathWorks tools such as MATLAB Simulink, Simulink Real-Time and Stateflow(optional), operating under the Windows OS in non real-time mode. Micro-Box acts as a target PC on which the user's application is based. It uses a real-time kernel and runs under a real-time multi-tasking OS.

Applications are built on the host PC using Simulink, with Simulink Real-Time providing various I/O blocks. RTW generates and compiles C-code modules and other static C-modules and links them to a Dynamic Linked Library (DLL). Simulink Real-Time transforms the DLL to an Simulink Real-Time Kernel specific target application and downloads it onto the Micro-Box target PC.

Micro-Box can be configured for usein functional rapid prototyping, on-target rapid prototyping, or hardware-in-the-loop testing.

Demo 1 Inverted Pendulum Control

* System requirement
  - MATLAB, Simulink, Simulink 3D Animation, MATLAB Coder, Simulink Coder, Simulink Real Time
  - Micro-Box 2200
  - DC motor driver circuit and control plant* (EMECS)
* EMECS: Electro-Mechanical Engineering Control System, is created by TeraSoft Inc.