

UEI FAQ: High Performance Processor Options

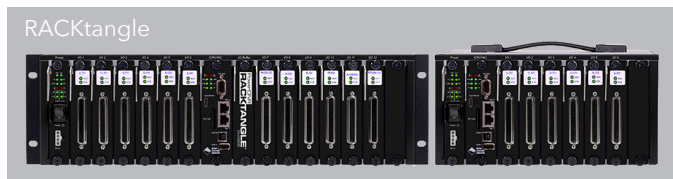


UEI FAQ: High Performance Processor Options

UEI offers flexible, rugged, high performance systems that are configurable to a variety of application requirements. This FAQ provides an overview of our system configurations and outlines features offered with each of our GigE CPU board versions.



INTRODUCTION to UEI Systems



UEI system configurations include a product line of stand-alone controllers, as well as a product line of “tethered” systems that are slaved to a host PC over Ethernet. Each system chassis can house a selection of I/O boards custom-selected for your application.

UEI’s **UEIPAC** product line consists of stand-alone, embedded controllers. These systems run on standard VxWorks, Linux, or Real-time Linux OS, and applications can be developed on a Linux PC or a Windows PC using Cygwin. Additionally, the UEIPAC product line extends to targeted software deployments including a Simulink (UEISIM) option, Modbus (UEIModbus) option, and OPC-UA (UEIOPC-UA) option.

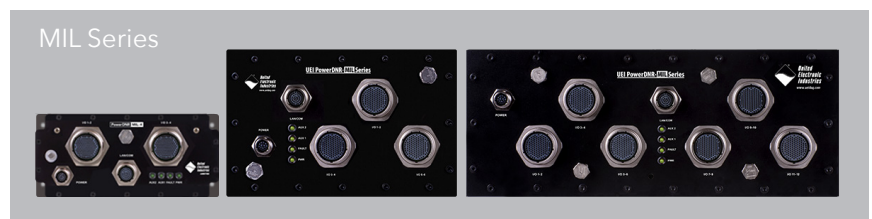


UEI’s **PowerDNA** systems run as an I/O slave under the control of a host PC. In this configuration, you develop and run your application on the host PC. PowerDNA mode supports all popular operating systems, including Windows, Linux, QNX, VxWorks and more, as well as application software, such as MATLAB or LabVIEW.



UEIPACs and PowerDNA systems are available in several chassis form factors:

- Cube (4" x 4" x 4", 4" x 4" x 6", or 4" x 4" x 2.7" chassis)
- RACKtangle (3U-19" rack chassis) or HalfRACK (3U-12" rack chassis)
- FLATRACK (1U-19" rack chassis)
- MIL series chassis (designed to meet MIL-STD-461/810/704/1275)



OVERVIEW of Standard, SoloX and Zynq Product Versions

All GigE UEIPAC and PowerDNA systems are available in 8347 (-02), 8347E (-03), SoloX ARM (-11/-12) and Zynq (-33, -34 and -3A) versions. The new fifth generation UEIPAC (versions -33, -34 and -3A), with its Zynq® UltraScale+™ based UEIPAC CPU, offers up to a 10x increase in CPU performance over previous UEIPACs.



Product versions correlate directly to the version of the CPU board you require for your system. For example, if you order a UEIPAC-300-1G-03, you are ordering a GigE UEIPAC system in a Cube chassis with slots for 3 I/O boards with an -03 version CPU board.



OVERVIEW of Cyber Security Options

UEI’s hardware is designed with the latest tools to keep your data safe and secure. You can rest assured that UEI will keep you safe from:

- Extraction of code
- Manipulation of data and code
- Erasure of data and code
- Introduction of malware
- Disruption of systems operations
- Manipulation of system parameters
- Compromise of cryptographic technologies (use of secure key lengths and algorithms)
- Compromise of I/O interfaces (JTAG, Ethernet, USB, SPI)
- Unprivileged users gaining privileged access
- Compromise of cryptographic keys



3 PHASES OF UEI CYBER SECURITY

SECURE BOOT

- Extension of the Root of Trust
- Prevents untrusted code execution and reverse engineering

SECURE OS

- Linux TK that has the latest patches (Yocto)
- All admin control, password policies, etc. activated
- STIG/NIST SP 800.213A compliance

SECURE HARDWARE

- Admin control of all interfaces
- Encryption/Activation

THE FOLLOWING TABLE provides an overview of features offered with the Standard/ -02, -03 CPU, SoloX and Zynq board versions

OVERVIEW OF FEATURES

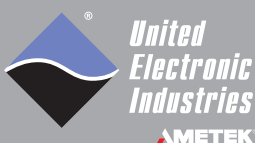
	8347 (-02)	8347E (-03)	SoloX ARM (-11/-12)	Zynq (-33)	Zynq (-3A)	Zynq (-34)
Processor/System:						
Processor Type	<ul style="list-style-type: none"> • Freescale 8347 • 400 MHz 	<ul style="list-style-type: none"> • Freescale 8347 • 400 MHz (with encryption) 	<ul style="list-style-type: none"> • NXP i.MX6 SoloX series ARM (Cortex-A9) • 1 GHz clock speed 	<ul style="list-style-type: none"> • Xilinx Zynq® UltraScale+™ SoC quad-core ARM • Integrated FPGA • ZU3EG Series at 1.2 GHz clock speed 	<ul style="list-style-type: none"> • Xilinx Zynq® UltraScale+™ SoC quad-core ARM, • Integrated FPGA • ZU4EV Series at 1.2 GHz clock speed 	<ul style="list-style-type: none"> • Xilinx Zynq® UltraScale+™ SoC quad-core ARM • Integrated FPGA • ZU4EG Series at 1.2 GHz clock speed
SD Card Interface	SD cards up to 32 GByte	SD cards up to 32 GByte	µSD cards up to 32 GByte	N/A	N/A	N/A
USB	Standard USB 2.0	Standard USB 2.0	2x Standard USB 2.0	Standard USB 3.0/2.0	Standard USB 3.0/2.0	Standard USB 3.0/2.0
RAM	256 MByte	256 MByte	1 GByte	4 GByte	2 GByte	4 GByte
Flash¹	32 MByte	128 MByte	8 GByte eMMC	8 GByte eMMC	8 GByte eMMC	8 GByte eMMC
Solid State Hard Drive¹	8, 16, or 32 GByte drive	8, 16, or 32 GByte drive	8, 16, or 32 GByte drive or M.2 peripheral drive	Optional NVMe SS drives up to 512 GByte	Optional NVMe SS drives up to 512 GByte	Optional NVMe SS drives up to 512 GByte
M.2 Slot	N/A	N/A	Supports B connector 1X PCIe and USB	Supports M connector 2X PCIe	Supports M connector 2X PCIe	Supports M connector 2X PCIe
Synchronization Options	1PPS or IEEE-1588 (PTP) standard	1PPS or IEEE-1588 (PTP) standard	1PPS or IEEE-1588 (PTP) standard	1PPS or IEEE-1588 (PTP) standard	1PPS or IEEE-1588 (PTP) standard	1PPS or IEEE-1588 (PTP) standard
Encryption Ready	N/A	Yes, IPsec support pending	TPM Optional	Yes, on board TPM chip	Yes, on board TPM chip	Yes, on board TPM chip
FPGA Space	N/A	N/A	N/A	Xilinx FPGA with: <ul style="list-style-type: none"> • 154 k logic cells • 141 k CLB Flip-Flops • 71 k CLB LUTs 	Xilinx FPGA with: <ul style="list-style-type: none"> • 192 k logic cells • 76 k CLB Flip-Flops • 88 k CLB LUTs 	Xilinx FPGA with: <ul style="list-style-type: none"> • 192 k logic cells • 141 k CLB Flip-Flops • 88 k CLB LUTs
Interface:						
Ethernet Interface	2x 10/100/1000Base-T	2x 10/100/1000Base-T	2x 10/100/1000Base-T	3x 10/100/1000Base-T	3x 10/100/1000Base-T	3x 10/100/1000Base-T
Serial Port	RS-232, 9-pin "D"	RS-232, 9-pin "D"	DIAG port (use DIAG to RS-232 cable)	DIAG port (use DIAG to RS-232 cable)	DIAG port (use DIAG to RS-232 cable)	DIAG port (use DIAG to RS-232 cable)
Video	N/A	N/A	Optional HDMI (CPU option -12) 1366 x 768 pixels, 60Hz	Display port supports full HD graphics (1080p)	Display port supports full HD graphics (1080p)	Display port supports full HD graphics (1080p)
Boot options (UEIPAC-only):						
Default Boot Device¹	SSD if installed, otherwise SD Card ²	Flash	eMMC Flash	eMMC Flash	eMMC Flash	eMMC Flash

Note¹ UEIPACs boot from the default settings listed above. Other options may be requested.

Note² The SSDs can be used for data and/or root file system storage.

The SD cards and SSD devices used are not built by UEI. As we do not control the source, we cannot offer our 10-year availability guarantee on these devices.

For more information: Please contact UEI support at support@ueidaq.com or call (508) 921-4600 with any questions.



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