Product Selection Guide

A comprehensive overview of our innovative product range.

Software

Avionics

Single Board Computers

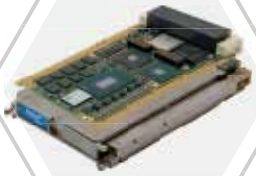
Integrated Systems

Product Lifecycle

Graphics & Video

abaco.com

Digital Signal Processing



Network Comms

I/O & Storage

Product Support

Abaco SYSTEMS

AMETEK

Product Support

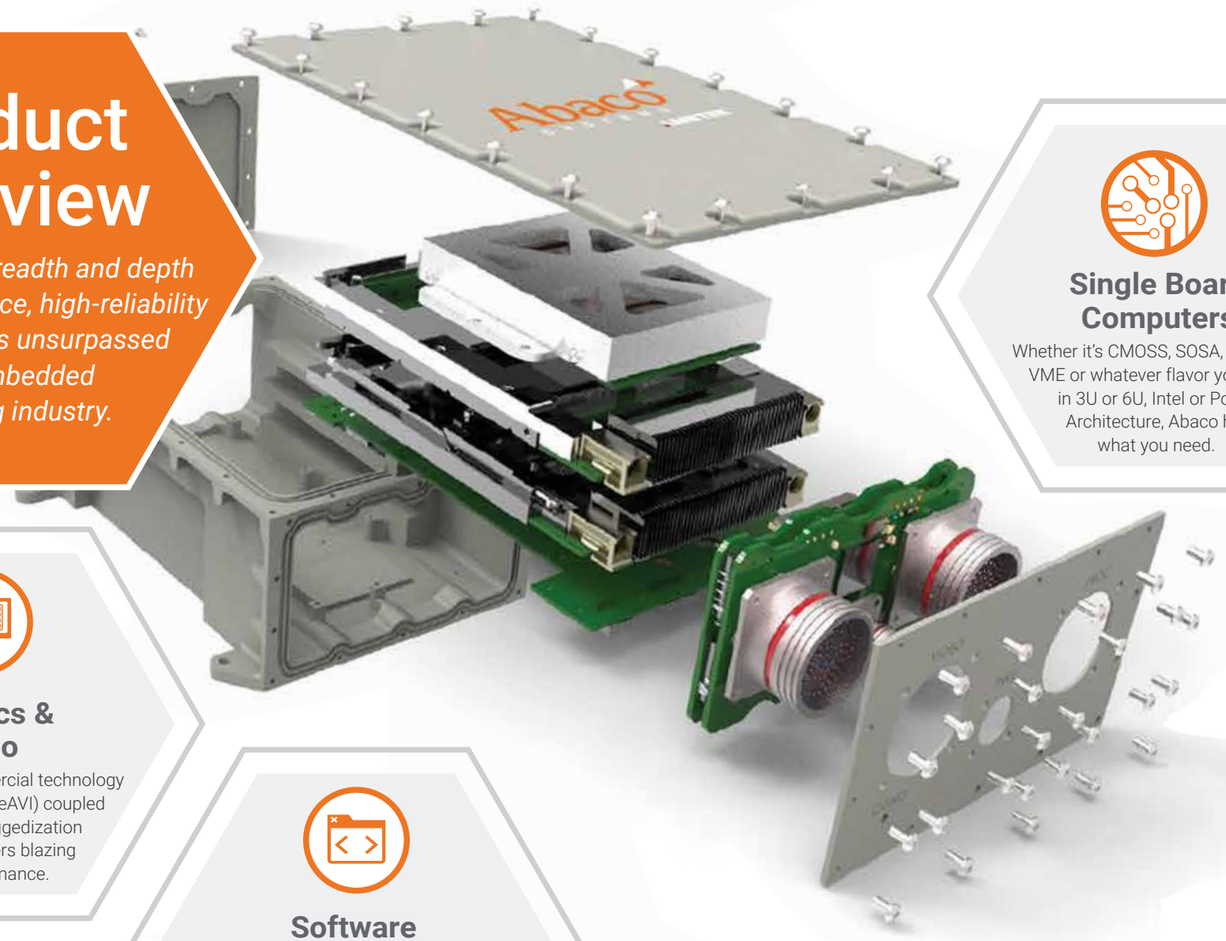
3U & 6U Leader

Manufacturing

SOSA™ Aligned

Product Overview

Abaco offers a breadth and depth of high-performance, high-reliability solutions that is unsurpassed in the embedded computing industry.



Avionics

Our broad and deep line of avionics interfaces, test platforms, tools and software support the development of modern military and commercial aircraft from small SWaP-constrained platforms to commercial airliners.

Graphics & Video

Leading edge commercial technology (NVIDIA, AMD/CoreAVI) coupled with Abaco's ruggedization expertise delivers blazing high performance.

I/O & Storage

Your ability to configure exactly the right connectivity options to create a complete system has never been greater – or more flexible.

Prodcut Lifecycle Management

Minimizing your long term cost of ownership is a key goal at Abaco.

Software

Abaco's MiddleWare comprises user-friendly software/middleware tools that offer a seamless middle layer integration point for custom applications that require dedicated hardware.

Single Board Computers

Whether it's CMOSS, SOSA, OpenVPX, VME or whatever flavor you need, in 3U or 6U, Intel or Power Architecture, Abaco has what you need.

Ruggedization Levels

As well as Ruggedization Levels A to E, Abaco also offers Ruggedization Levels1 to 5.

Integrated Systems

Pre-integrated and pre-qualified, so they're ready for immediate deployment– minimizing cost, risk & program lead time.

Digital Signal Processing

An extensive track record of helping our customers turn sensor-acquired data into actionable information in the shortest time and at the lowest bandwidth.

Network Communications

From copper to fiber, mezzanine to VPX to rugged LRU, we have the switches and routers to handle your environment and application.

Single Board Computers

Whether it's CMOSS, SOSA, OpenVPX, VME or whatever flavor you need, in 3U or 6U, Intel or Power Architecture, Abaco haswhat you need. And it's backed by our long-term support and technology insertion programs to maximize return on investment.

SBC3612D

Rugged Single Board Computer aligned with CMOSS and SOSA standards.

- 3U VPX SBC aligned to compute-intensive profile of the SOSA standard
- Xeon® D-2775TE HCC Processor from Intel® (16 cores)
- Features a 100 GbE and 10/25GbE data plane and 10/25 GbE control plane
- Two channels of soldered DDR4 SDRAM with ECC up to 64 GB and up to 480 GB NAND Flash (NVMe SSD)
- Expansion via PCIe™ Gen 4 (x 8 or x16 lanes) and XMC site
- Xilinx® Zynq® UltraScale+™ MPSoC FPGA for enhanced security
- Linux, Windows operating system support

HPC2812

Rugged Multiprocessor aligned with CMOSS and SOSA standards.

- 6U VPX SBC aligned to payload slot profile of the SOSA standard
- Dual node Xeon® D-2796TE HCC Processor from Intel® (20 cores at 2.0GHz)
- Each node features a 100 GbE data plane and 1GbE control plane
- Four channels of soldered DDR4 SDRAM with ECC up to 128 GB per node, and up to 480 GB NAND Flash (NVMe SSD) per node
- Expansion via PCIe™ Gen 4 (8 lanes per node) and XMC site
- Xilinx® Zynq® UltraScale+™ MPSoC FPGA for enhanced security
- Linux, Windows operating system support

SBC3513

Rugged Single Board Computer aligned with CMOSS and SOSA™ standards.

- 3U VPX SBC aligned to I/O-intensive profile of the SOSA standard
- 11th Generation Intel® Core™ i7 Xeon (W-11865MR) processor, 8 cores @2.6GHz
- Features a 100 GbE data plane and 25GbE control plane
- Two channels of soldered DDR4 SDRAM with ECC up to 64 GB and up to 480 GB NAND Flash (NVMe SSD)
- Expansion via PCIe™ (x4) Gen 4 and XMC
- Xilinx® Zynq® UltraScale+™ MPSoC FPGA for enhanced security
- Linux, Windows operating system support

For latest product releases & information visit: **abaco.com/portfolio**

INTEL ARCHITECTURE SBCs

PRODUCT	FORM FACTOR	PROCESSOR	MAXIMUM MEMORY	MEZZANINE	AXIS	RUGGEDIZATION
SBC3511	VPX 3U	Intel Xeon E-2276ME	Up to 64 GB DDR4 SDRAM soldered with ECC	1x XMC	YES	Level A-E Air, Conduction Cooled
SBC3513	VPX 3U	Intel® Core™ i7 Xeon (W-11865MR)	Up to 64 GB DDR4 SDRAM soldered with ECC	1x XMC	YES	Level A-E Air, Conduction Cooled
SBC329	VPX 3U	Intel Xeon E3-1505M, E3-1505L v6	16 GB DDR4 SDRAM soldered with ECC	1x XMC	YES	Level 1-5 Air, Conduction Cooled
SBC347D	VPX 3U	Intel Xeon D	32 GB DDR4 SDRAM soldered with ECC	-	YES	Level 1-5 Air, Conduction Cooled
SBC3612D	VPX 3U	Intel Xeon D-2700 Processor	64 GB DDR4 SDRAM sol-dered with ECC	-	YES	Level A-E Air, Conduction Cooled
SBC6511	VPX 6U	Intel Xeon E-2276ME	Up to 64 GB DDR4 SDRAM soldered with ECC	2x XMC PCIe Gen3	YES	Level 1-5 Air, Conduction Cooled
SBC627	VPX 6U	5th Gen. Intel Core i7 4-core up to 2.7 GHz	32 GB DDR3 SDRAM	2x PMC/XMC	YES	Level 1-5 Air, Conduction Cooled
XVB603	VME	Intel Xeon E3-1505M, E3-1505L v6	16 GB DDR4 SDRAM soldered with ECC	2x PMC/XMC	-	Level 1-2 Air Cooled

POWER ARCHITECTURE SBCs

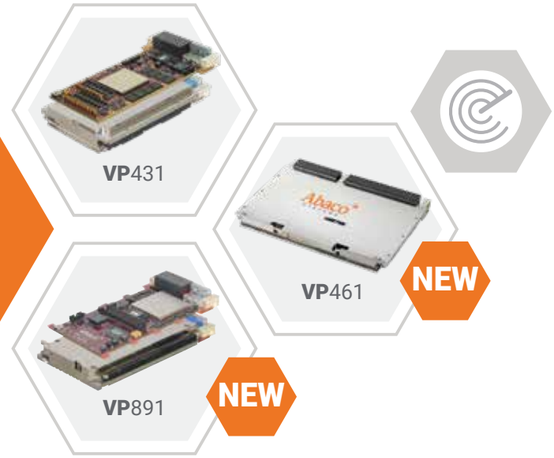
PRODUCT	FORM FACTOR	PROCESSOR	MAXIMUM MEMORY	MEZZANINE	AXIS	RUGGEDIZATION
SBC314	VPX 3U	QorIQ T2081/T1042 @ up to 1.8 GHz	4 GB DDR3L SDRAM with ECC	1x PMC/XMC	Yes	Level 1-5 Air, Conduction Cooled
SBC314C	VPX 3U	QorIQ T2081 @ 1.8 GHz	8 GB DDR3 SDRAM with ECC	1x XMC	-	Level 1-5 Air, Conduction Cooled
PPC11A	VME	QorIQ T2081/T1042 @ up to 1.8 GHz	8 GB DDR3L SDRAM with ECC	2x PMC/XMC	-	Level 1-5 Air, Conduction Cooled
IMP3B	cPCI 3U	QorIQ P2020 @ 1.0 GHz - Two e500v2 cores	2 GB DDR3 SDRAM with ECC	1x PMC	-	Level 1-5 Air, Conduction Cooled
DSP221	VXS 6U	T2081 NXP QorIQ @ 1.8 GHz - Eight e6500 virtual cores	8 GB DDR3 SDRAM with ECC Single Bank	2x XMC/PMC	-	Level 1-3 Air Cooled

MULTIPROCESSING

PRODUCT	FORM FACTOR	RUGGEDIZATION	AXIS	OTHER
DSP282A	VPX 6U	Level 1-3 Air Cooled	YES	Designed for size, weight and power (SWaP) sensitive applications
IPN254	VPX 6U	Extended temperature, Rugged Air Cooled and Conduction Cooled	YES	Designed to align to the SOSA standard, 64 GB DDR4 with ECC, 32 MB Flash, up to 256 GB SSD (NVMe), Security FPGA
HPC2812	VPX 6U	Level A-E	YES	Rugged 6U VPX High Performance Computer delivers the absolute top performance you can get in a 6U Intel® based multiprocessor aligned to the SOSA™ Standard

Digital Signal Processing

Abaco has an extensive track record of helping our customers turn sensor-acquired data into actionable information with the lowest latency and highest bandwidth in a broad range of digital and analog applications.



VP431

3U RFSoC Board

Direct RF Processing System - Aligned to SOSA™ Standard.

- Enables direct RF sampling which can be processed in the digital domain, bringing greater flexibility to the signal processing chain
- One of the densest 3U OpenVPX analog FPGA processing boards available with the ability to synchronize all 16 channels
- Available with two cooling options, air or conduction, making it an ideal COTS product for early designs and capable of being deployed into operational assets
- Optional MORA or VITA 49.2, REDHAWK or GNU Radio support available

VP891

3U FPGA Board

Modular High-Performance System Aligned to SOSA™ Standard.

- Next Generation of Industry-Leading 3U VPX FPGA Board
- Modular I/O built on an FMC+ standard interface enables upgrades to future technology without a complete system redesign
- Capable of advanced encrypted bit streams and secure boot capability, enabled by Xilinx tools
- Streaming DSP with an FPGA and a general-purpose processor for decisions and control in a single module
- 100GbE and PCIe Fat Pipes
- Optional MORA or VITA 49.2, REDHAWK or GNU Radio support available

VP461

6U FPGA Board

High-Density Processing and I/O Aligned to SOSA™ Standard.

- One of the highest density processing and I/O cards in the industry with dual RFSoC and dual Virtex UltraScale+ FPGAs in a single 6U OpenVPX board.
- Significantly reduces number of cards and slots, delivering a high-performance, low-latency system while optimized for SWaP.
- Integrated with 16x16 high-speed, high-bandwidth ADCs and DACs with ability to synchronize all channels
- Multiple 100Gb Ethernet and PCIe Fat Pipes to Backplane
- Optional MORA or VITA 49.2, REDHAWK or GNU Radio support available

FMC PRODUCTS AND PARAMETERS

PRODUCT	FUNCTION	# CHANNELS	DATA RATE (MSPS)	RESOLUTION (BITS)	CONNECTOR	SIGNALING	COUPLING
FMC116	ADC	16	125	14	HPC	LVDS	DC
FMC120	ADC DAC	4 4	1000 1250	16 16	HPC	JESD204B	DC
FMC126	ADC	1, 2, 4	up to 5000	10	HPC	LVDS	AC
FMC134	ADC	2,4	6400, 3200	12	FMC+	JESD204B	AC
FMC150	ADC DAC	2 2	250 800	14 16	LPC	LVDS	AC
FMC160	ADC	1 1	3600 5700	12 14	HPC	LVDS	AC
FMC163	ADC DAC	1,2 2	4000, 2000 2850	12 14	HPC	LVDS	AC
FMC165	ADC DAC	2 1	2600 5200	14 14	HPC	JESD204B (in) LVDS (out)	AC
FMC168	ADC	8	250	16	HPC	LVDS	AC
FMC170	ADC DAC	1 1	5000 5000	10 10	HPC	LVDS	AC
FMC172	ADC DAC	1	6000	10	FMC	LVDS	AC
FMC176	ADC DAC	4 2	250 5600	14 14	HPC	JESD204B (in) LVDS (out)	AC
FMC216	DAC	4, 8, 16	1250, 625, 312.5	16	HPC	JESD204B	DC
FMC407	Clock Distribution	2	40000	-	HPC	GBT	-

FPGA AND SOC BOARDS

PRODUCT	FORM FACTOR	FPGA/SOC TYPE	FMC/ADC AND DAC	COMMENTS
VP891	VPX 3U	Virtex UltraScale+ Zynq UltraScale+ MPSoC	1x HSPC FMC+ site (Gen2)	Aligned to SOSA Standard
VP431	VPX 3U	Zynq Ultrascale+ RFSoC Gen3 - Integrated ADC, DAC, programmable logic and processing subsystems	ADC 8-channel >5.0GSPS 14-Bit DAC 8-channel 10.0GSPS 14-Bit Flexible ADC/DAC clocking scheme	Aligned to SOSA standard
VP461	VPX 6U	Dual Zynq UltraScale+ RFSoC Gen 3 Dual Virtex UltraScale+ Zynq UltraScale+ MPSoC	ADC: 16-channel >5.0GSPS 14-bit DAC: 16-channel 10.0GSPS 14-bit Flexible ADC/DAC clocking scheme	Aligned to SOSA standard
VP889	VPX 3U	Virtex Ultrascale+, Zynq Ultrascale+ MPSoC	1x HSPC/FMC+	-
VP868	VPX 6U	2x Ultrascale Kintex or Virtex	2x HSPC FMC+	Optionally 1x Virtex and 1x Zynq
VP881	VPX 3U	VP880 variant with expanded backplane I/O options	1x HSPC/FMC+	VP880 variant with expanded backplane I/O options
VP880	VPX 3U	Ultrascale Kintex or Virtex and Zynq Ultrascale+	1x HSPC/FMC+	-
PC821	PCIe	Ultrascale Kintex or Virtex	1x HSPC/FMC+,1x HPC	-
VP780	VPX 3U	Virtex 7	1x HPC	-
FM780	XMC	Virtex 7	Optional	FMC site takes second slot space

Graphics & Video

Leading edge commercial technology coupled with Abaco's ruggedization expertise delivers blazing graphics and video performance from a range of platforms and small, lightweight mission-ready, pre-integrated subsystems.

GVC1001

Graphics, Vision and AI Computer. All the processing power and connectivity you need.

- Ultra-high performance graphics, vision and AI computer featuring NVIDIA® Jetson AGX Xavier™ AI and Deep Learning enabled technology
- Ideal for data intensive applications such as 360° situational awareness, autonomous vehicles, EO/IR processing, non-cert Degraded Visual Environment (DVE), radar processing and more
- Delivers up to 11 TFLOPS for maximum performance in advanced applications
- Minimal SWaP enables deployment in constrained environments

GRA116S

SOSA™-aligned NVIDIA® Ampere™ A4500™ HPC GPGPU and Graphics Output Board.

- The GRA116S is a rugged 3U OpenVPX SOSA™-aligned high-performance compute engine and graphics output board based on the very latest NVIDIA® Ampere™ architecture using the NVIDIA A4500™ platform.
- By utilizing the NVIDIA A4500™ the GRA116S's GPU node is equipped with 5120 CUDA® cores, 160 3rd Gen Tensor cores and 40 2nd Gen RT cores to deliver > 17 TFLOPS floating-point 32 performance. Additionally, the A4500™ provides a 256-bit wide memory bus for 384 GB/s peak memory bandwidth for its 16GB GDDR6 graphics memory with ECC.

IPN254

High Performance Computing Multiprocessor SOSA™ Alignment, technology insertion.

- By combing the latest NVIDIA® Quadro RTX™ 3000 GPU with the latest 9th generation Intel® Xeon® E CPU, the IPN254 delivers maximum processing performance
- Alignment with the SOSA™ Technical Standard, an alternative version of the IPN254 provides a form/fit/function-compatible technology insertion solution for IPN252 users
- Supports new customers with the latest DisplayPort ™ output technology
- Move unprecedented amounts of data with dual 40 GbE data plane

GRAPHICS & VIDEO BOARDS

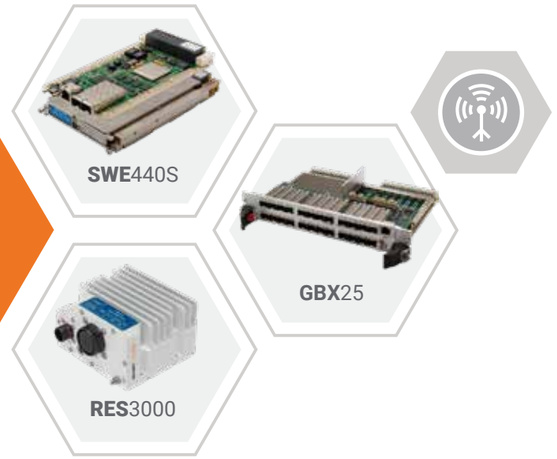
PRODUCT	FORM FACTOR	CHIP SET	I/O	COOLING	CONFORMAL COATING	EXTENDED TEMPERATURE RANGE
NVP2102A	3U, XMC	NVIDIA Pascal GPU - Quadro P2000	4x 3G-SDI inputs, 2x SL-DVI output ports, 2x CVBS (NTSC/PAL) inputs, 2x Audio inputs, 2x 3G-SDI outputs, 2x Rear DisplayPorts 1.4	Air, Conduction	NO	YES
NVP2102	3U, XMC	NVIDIA Pascal GPU - Quadro P2000	4x 3G-SDI inputs, 2x Display-Port outputs	Air, Conduction	NO	YES
NVP2000	XMC	NVIDIA Pascal GPU - Quadro P2000	3x DisplayPort 1.4 outputs	Air, Conduction	NO	YES
NVP2009	XMC	NVIDIA Pascal GPU - Quadro P2000	Combinations of: 1x Display-Port++, 4x 3G-SDI, 2x CVBS, 2x VGA	Air, Conduction	NO	From -40° to -75°
GRA115Q	VPX 3U	NVIDIA QuadroRTX™ 3000 GPU, NVIDIA QuadroRTX™ 5000 GPU	2x DisplayPorts 1.4a outputs, 2x SL-SVI outputs, 4x SL-DVI outputs	Air, Conduction	YES	From -40° to +85°C
GRA116S	VPX 3U	NVIDIA Quadro Ampere A4500 GPU	x2 DisplayPort outputs (VITA 65 option)	Air, Conduction	YES	From -40° to +85°C
GRA116OP	VPX 3U	NVIDIA Quadro Ampere A2000 GPU	Choice of 4 options: x2 DisplayPort & x2 Single-Link DVI-D; x4 Single-Link DVI-D; x4 DisplayPort; x2 Single-Link DVI-D & x2 3G-SDI	Air, Conduction	YES	From -40° to +85°C
GR5	VPX 3U	NVIDIA Pascal GPU - Quadro P2000	2x SL-DVI output ports, 2x DisplayPort 1.2 output ports	Air, Conduction	NO	From -40° to +85°C
GR4	VPX 3U	NVIDIA Pascal GPU – Quadro P5000/P3000	4x 3G-SDI inputs, 4x 3G-SDI outports, 1x DisplayPort output	Conduction	NO	NO
GR2	VPX 3U	NVIDIA Pascal GPU – Quadro P5000/P3000	2x DisplayPort outputs	Air, Conduction	NO	NO
IPN254	VPX 6U	NVIDIA Turing RTX3000 (TU106); 9th Genera-tion Intel Xeon E CPU (E-2276ME)	DisplayPort, DVI, GPIO, SATA, Serial, USB	Air, Conduction	NO	YES
NPN244 NPN244S	VPX 6U	NVIDIA QuadroRTX™ 3000 GPU, NVIDIA QuadroRTX™ 5000 GPU	8x DisplayPort 1.2 output ports	Air, Conduction	NO	From -40° to +85°C

RUGGED DISPLAY

PRODUCT	FORM FACTOR	CHIP SET	I/O	COOLING	MAXIMUM STORAGE	ENVIRONMENTAL
GVC1001	Small form factor package	NVIDIA® Jetson AGX Xavier™	DisplayPort or DVI, 10 Gigabit Ethernet, 1 Gigabit Ethernet, CANBus, USB, UARTs, Audio I/O and GPIO	Base-Plate	256 GB NMEe SSD	40C to +71C (baseplate cooled) MIL-STD-810G IP67
MAGIC1A	Small form factor package	Intel Xeon E3-1505M, E3-1505L v6	ARINC 429, DisplayPort, DVI, MIL-STD-1553, VGA, RS 232/422/485, 1 Gigabit Ethernet, Audio I/O and GPIO	Base-Plate	-	MIL-STD-810G, MIL-STD-704

Network Communications

Abaco's unique OpenWare COTS switch management software provides an extensive, powerful and flexible feature set that, together with our 30+ years of experience, means we can solve our customers' toughest networking problems.



SWE440S

40 Gigabit Ethernet Switch
Ultimate bandwidth, low power.

- Fully managed 3U VPX 10/40GigE Ethernet switch designed to align with the SOSA™ Technical Standard, as well as a range of OpenVPX profiles
- Up to thirty-two 10GigE or eight 40GbE ports (or combination of the two) plus up to three 1GbE ports are supported
- OpenWare switch management software delivers the fully managed Layer 3 routing and customization needed to create almost any network topology
- Includes comprehensive military-grade security features such as Denial of Service, multi-level passwords and sanitization for maximum protection of sensitive data

RES3000

Compact, Rugged Ethernet Switches. Flexible, secure, powerful and tiny.

- At just 148 x 131 x 86mm, and weighing just 1.2Kg, the rugged 12-port RES3000 is designed for the most confined spaces typical of today's ground-, air- and sea vehicles, plus the option to have a total of 24 or 28 ports in the second size of unit
- With Abaco's uniquely powerful and secure OpenWare switch management software, and the option of 28 ports of which four are 10GbE, the RES3000 is a flexible solution to fit most applications
- VICTORY switch compliance comes built-in, enabling the RES3000 to easily and quickly function as the data distribution heartbeat of modern army platforms

GBX25

Flexible, reconfigurable and SWaP-C3 optimized.

- Reconfigurable and flexible to help reduce design timescales and costs
- 10G SFP+ support and flexible port configuration for up-linking and connecting to other systems
- Slot reduction with the Dual I/O variant, giving access to a total of 40 ports split between the front (16) and rear (24) I/O. The GBX25 simplifies architectures, saves space and reduces budgets
- SWaP-C3 optimization, maximizing system functionality
- Most comprehensive set of interface types supported including both copper to fiber

For latest product releases & information visit: **abaco.com/portfolio**

ETHERNET SWITCHES AND ROUTERS

PRODUCT	PORT TYPE	MANAGEMENT TYPE	PORTS	SOFTWARE	NETWORK OPERATIONS
RES3000	1000BASE-T, 10GBASE-SR	Fully Managed Layer-2/3+	12, 24, 28	OpenWare	L2-L3 packets, including IPv6
VSR8000	10/100/1000BaseT	Juniper Junos	-	Virtual Firewall, Juniper Networks®, Junos®, vSRX	Firewalling, IPv4, IPv6 routing
VSR347D	10/100/1000BaseT, 10GBASE-KR	Juniper Junos	6	JUNOS (Juniper Operating System)	Firewalling, IPv4, IPv6 routing

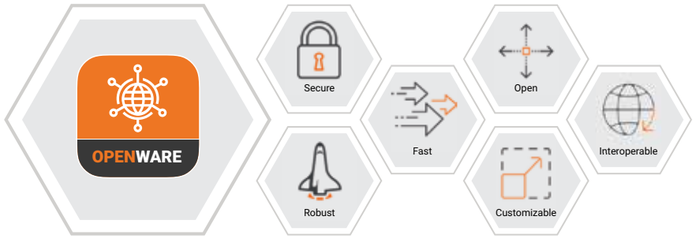
EMBEDDED ETHERNET SWITCHES

PRODUCT	FORM FACTOR	PORT TYPE	MANAGEMENT TYPE	PORTS	NETWORK OPERATIONS
SWE540A	VPX 6U	40GBASE-KR4, 10GBASE-KX4, 1000BASEKX, 10GBASE-KR	OpenWare Fully Managed Layer -2/3+	Up to 39	Wire speed switching and routing including IPv4/IPv6
SWE440A	VPX 3U	40GBASE-KR4, 10GBASE-KX4/KR, 1000BASE-T, 1000BASE-KX	OpenWare Fully Managed Layer -2/3+	Up to 33	Wire speed switching and routing including IPv4/IPv6
SWE440S	VPX 3U	1000BASET, 1000BASEKX, 10GBASE-KX4, 10GBASE-SR, 10GBASE-KR, 40GBASE-KR4, 10GBASE-LR	Fully Managed Layer-2/3+	Up to 35	Wire speed switching and routing including IPv4/IPv6
NETernity™ GBX411	VPX 3U	10GBASE-SR/LR, 1000BASET, 1000BaseKX, 10GBASE-KX4	OpenWare Fully Managed Layer -2/3+	Up to 28	Wire speed switching and routing including IPv4/IPv6
NETernity GBX25	6U VME	Rear: 10/100/1000BASE-T Front SFP/SFP+: 100BASE-FX, 10/100/1000BASE-T, 1000BASE-SX, 1000BASE-LX, 10GBASE-T, 10GBASE-SR, 10GBASE-LR	Fully Managed Layer -2/3+	Up to 40 ports in total: Maximum of 24 front Maximum of 24 rear	Wire speed switching and routing including IPv4/IPv6

ETHERNET NETWORK INTERFACE CARDS

PRODUCT	FORM FACTOR	PORTS	PORT TYPE	FRONT PANEL I/O CONNECTORS	REAR PANEL I/O CONNECTORS
XMC477RC	XMC	4	1000BASE-SX, 1000BASE-LX, 1000BASE-T, 100BASE-FX	I/O Connectors: SFP/SFP+	XMC connectors

The industry's most flexible network management software. OpenWare is a GNU/Linux-based firmware, bringing together the best of open source and in-house developed switch control, routing and protocol standards, providing users with an Ethernet switch that can be easily configured for any network requirement.



Integrated Systems

Powerful, flexible and based on commercial open standards, Abaco's Integrated Systems are pre-integrated and pre-qualified so that they're ready for immediate deployment – minimizing cost, riskand program lead time.

COTS Systems

- Commercial Off the Shelf solutions for graphics, compression, video, AI, and general-purpose processing, to include remote data acquisition, sensor, and avionics interfaces
- Integrated solutions based on Intel 9th Gen I7 processors, NVIDIA Pascal P2000, NVIDIA Jetson AGX Xavier SoM and Xilinx Zynq Ultrascale + Quad Core ARM CPU with FPGA
- Designed and tested to meet the harsh environmental requirements our customers demand
- Built to meet MIL-STD-810G, MIL-STD-461G, and MIL-STD-704F
- Sealed, EMI-compliant, MIL-DTL-38999 connectors
- Functional test completed before shipment

CERT Systems

- Commercial Off the Shelf safety-certifiable system-level solutions backed by artifacts for DO-254 and DO-178 for DAL D to DAL A
- Integrated solutions based on Power PC, future ARM and Zynq Ultrascale, wide range of I/O, MIL-STD-1553, RINC 429, high and low speed serial, discretes, graphics, and video capabilities
- Designed and tested to meet the harsh environmental requirements our customers demand
- Built to meet MIL-STD-810G, MIL-STD-461G, and MIL-STD-704F
- Sealed, EMI-compliant, MIL-DTL-38999 connectors
- Functional test completed before shipment

Configurable Systems

- Configurable System solution based on the Commercial Off the Shelf modules from Abaco integrated together to form a final solution to meet customer-defined requirements. Include SDRL items, advanced testing, and specialized I/O. To include high-speed Ethernet and RF signals
- Integrated solutions based on architectures aligned to 3U and 6U VPX and SOSA standards
- Designed and tested to meet the harsh environmental requirements our customers demand
- Built to meet MIL-STD-810G, MIL-STD-461G, and MIL-STD-704F
- Sealed, EMI-compliant, MIL-DTL-38999 connectors
- Functional test completed before shipment
- Additional solutions may be available. Consult with your Abaco representative

For latest product releases & information visit: **abaco.com/portfolio**

COTS SYSTEMS

PRODUCT	FORM FACTOR	PROCESSOR	COOLING	OPERATING TEMPERATURE	WEIGHT LB (KG)	DESCRIPTION
MAGIC1A	3U Boxed, VPX 3U	Intel Xeon E3-1505M v6	Baseplate- or forced-air cooling	-40°C to 65°C baseplate temperature (baseplate-cooled version) -40°C to 65 °C air at 15,000 m altitude (forced-air version)	<9 lbs (<4kg)	Display computer, based on combination of CPU and GPU technology, for the most mission computer demanding applications
RES3000	-	-	Natural Conduction/ Convection Cooled and Baseplate Cooled	-40˚C to +71˚C	3.5 - 6.9 lbs (1.6 - 3.1 kg)	Compact, rugged, fully managed Ethernet switch
GVC1001	Small Form Factor Package	GPU: 512-core Volta GPU with Tensor cores, CPU: 8-core ARM V8.2 64-bit CPU, SoM: NVIDIA Jetson AGX Xavier	Base Plate	-40˚C to +55˚C	6.0 lbs (2.72 Kg)	Ultra-High Performance Graphics, Vision and AI Computer.

CERT SYSTEMS

PRODUCT	FORM FACTOR	PROCESSOR	COOLING	OPERATING TEMPERATURE	WEIGHT LB (KG)	DESCRIPTION
FORCE2C	VPX 3U	QorIQ T2081 @ 1.8 GHz / T1042 @ 1.4 GHz	Base Plate	-40˚C to +70˚C	7.0 lbs (3.2kg)	Flight certifiable mission computer

CONFIGURABLE SYSTEMS

PRODUCT	FORM FACTOR	PROCESSOR	COOLING	OPERATING TEMPERATURE	WEIGHT LB (KG)	DESCRIPTION
DAGRX	Small Form Factor Package	Intel Atom Quad Core 1.91 GHz	Convection, Conduction	-40˚C to +50˚C	~3 lbs (~1.4 kg)	Small Form Factor Computer with IntelTM Processor and Flexible I/O for Industrial and Rugged Applications
SAYBRX	Small Form Factor Package	Intel Core i7	Convection, Conduction	-40˚C to +70˚C	~7 lbs (~3.2 kg)	Small Form Factor Computer with Intel Processor and Flexible I/O for Lab and Rugged Applications
CRS-D5I-3VC1 COTS Rugged Computer	VPX 3U	Intel Core i7	Convection	-40˚C to +50˚C	20 lbs (9kg)	Configurable with Latest 3U VPX Intel SBC modules and Supporting I/O options
VPX167	VPX 3U	Intel Quad Core i7	Conduction Cooled	-40˚C to +70˚C	40 lbs (18.1 kg)	Airborne electronic warfare

DEVELOPMENT SYSTEMS & CHASSIS

PRODUCT	FORM FACTOR	SLOTS	POWER SUPPLY	COOLING	SOFTWARE	RUGGEDIZATION
DEVPX3	VPX 3U	8	100-240V AC	Air-Flow Through-Cooled	Axis Tool Suite, Health Toolkit, Hardware Development Kit	Commercial (benign), Lab Grade

Avionics

Our commercially available avionics interfaces product portfolio and expertise span the entire aircraft lifecycle from development, through test and simulation to embedded deployment – even in the lab and on the flightline for maintenance and troubleshooting.

RAR15X

Multi-protocol, rugged, reliable and secure.

- Highest density XMC card with MIL-STD-1553, ARINC 429, and Discretes
- Direct supplier-to-user support provides fast-turn expertise to shorten problem-solving, minimize development time and decrease time-to-market
- No-cost board support package – complete with source code – provides developers with the easy API visibility that facilitates problem solving and shortens lead-time
- FPGA-based designs mitigate the impact of obsolescence, delivering longer deployed lifetimes while minimizing impact on customer architectures and designs

Thunderbolt 3

Family of Portable Devices.

- Embedded performance in external, portable device
- Upgraded replacement for legacy ExpressCard, PCMCIA, or USB connections
- Leverages high speed 40Gbps interface for minimum latency, maximum channel density
- Supports ARINC 429, ARINC 664/AFDX, and MIL-STD-1553 protocols

1553, ARINC & AFDX Databus Analyzers

- Suite of software and hardware bundles with a range of features and pricepoints enabling you to choose the right analyzer for your needs
- Easy to use, powerful GUI tool provides instant visibility, enabling faster resolution of user interface issues
- Real-time acquisition of analysis information pre-acquisition, during acquisition and post-acquisition delivers instant actionable intelligence for both data and interface

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EMBEDDED I/O

PRODUCT	FORM FACTOR	PROTOCOL	# CHANNELS	TEMPERATURE RANGE	DISCRETES
RAR15X	XMC	MIL-STD-1553, ARINC 429	ARINC 10RX 8TX, MIL-STD-1553 2 or 4	-40°C to +85°C	0, 6 or 12
RXMC1553	XMC	MIL-STD-1553	MIL-STD-1553 1 or 2	-40°C to +85°C	0, 8 or 12
RAR-XMC	XMC	ARINC 429, 573, 575, 582 2-wire, 717	ARINC 2 To 32	-40°C to +85°C	0 or 2
RCEI-830A	PMC	ARINC 429, 573, 575, 582 2-wire, 717	ARINC 2 to 16	-40°C to +85°C	0 or 2
R15-MPCIE	mPCIe or mini PCIe	MIL-STD-1553	MIL-STD-1553 1, 2 or 4	-40°C to +85°C	2+1
RAR-MPCIE	mPCIe or mini PCIe	ARINC 429, 573, 575, 582 2-wire, 717	ARINC 4 to 12	-40°C to +85°C	4

TEST, SIMULATION AND DEVELOPMENT

PRODUCT	FORM FACTOR	PROTOCOL	# CHANNELS	TEMPERATURE RANGE	DISCRETES
RPCIE-1553	PCI Express	MIL-STD-1553	MIL-STD-1553 1, 2 or 4	-40°C to +70°C	18
RAR-PCIE	PCI Express	ARINC 429, 573, 575, 582 2-wire, 717	ARINC 2 to 16	-40°C to +75°C	16
RCNIC-A2PAU4	PCI Express	AFDX/ARINC 664	AFDX/ARINC 664 2 ports	0°C to +70°C	-
RAR-USB	USB	ARINC 429, 573, 575, 582 2-wire, 717	ARINC 4 to 21	-40°C to +75°C	8
R15-USB	USB	MIL-STD-1553	MIL-STD-1553 1 or 2	-40°C to +75°C	8

THUNDERBOLT 3 PORTABLE DEVICES

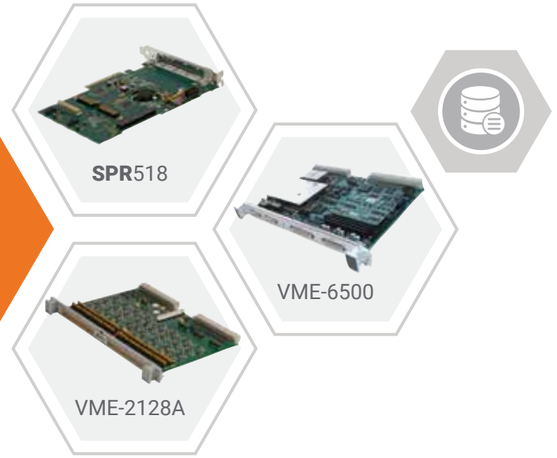
PRODUCT	FORM FACTOR	PROTOCOL	# CHANNELS	APPLICATION	OTHER
QPM-1553-TB	PMC, Thunderbolt 3	MIL-STD-1553	1, 2, or 4	Lab, Simulation, Test, Portable	IRIG, 18 Discretes, Single/Dual/ Multi-function operating mode
RCEI-830A-TB	PMC, Thunderbolt 3	429, 573, 575, 582 2-wire	Up to 16 Rx and 16 Tx	Flightline, Maintenance	Conduction cooled, commercial XT temperature range
RCNIC-A2PA-TB	PMC, Thunderbolt 3	AFDX/ARINC 664	2	Flightline, Maintenance	IRIG, AFDX/ARINC 664 Part 7 stack
RAR15XF	XMC, Thunderbolt 3	MIL-STD-1553, ARINC 429	ARINC 10RX 8TX, MIL-STD-1553 2 or 4	Flightline, Maintenance	0 or 6

DATABUS ANALYZER

PRODUCT	FORM FACTOR	# CHANNELS	APPLICATION	DESCRIPTION
BT-1553	Software	-	Lab Simulation Test Development	Windows based Avionics databus GUI analyzer
BT-ARINC	Software	-	Flightline, Maintenance	
BT3-USB-MON	Software and USB	MIL-STD-1553 1, Scope output 1	Flightline, Maintenance	Windows based Avionics databus GUI analyzer combined with bus monitoring hardware with a built in scope output
BT3-R15-USB	Software & I/O card	MIL-STD-1553 1 or 2	Flightline, Maintenance	Windows based Avionics databus GUI analyzer combined with protocol I/O hardware
BTA-USB	Software & I/O card	ARINC 16 RX, 5 TX	Flightline, Maintenance	

I/O & Storage

Abaco has a broad range of I/O and storage solutions from standalone I/O products, your ability to configure exactly the right connectivity options to create a complete system has never been greater - or flexible.



SPR518

PCI Express XMC Carrier Card

- Half-length form factor XMC carrier
- Supports Gen3 PCI Express
- Integrated fan without additional space
- Provides up to 25W to XMC site
- Stand-alone capable and provides J14 and J16 connectivity

VME-2128A

128-bit High-Voltage Digital Output Board with Built-in-Test

- The VME-2128A* board is capable of delivering 128 channels of high voltage and/or high current sink outputs. The VME-2128A open collector output drivers are capable of supporting output voltages from 5 to 48 VDC. A unique feature of the VME-2128A board is the Built-in-Test (BIT) logic, which allows the user, under software control, to verify the operation of each channel
- This product complies with the VMEbus specification (ANSI/IEEE STD 1014-1987 IEC 821 and 297) with the following mnemonics: A24:A16:D32/D16/D08 (EO): Slave: 39/3D:29/2D:6U form factor

VME-6500

Analog/Digital Processor

- Single board supporting 16 analog and 32 digital channels delivers maximum functional density, saving slots and minimizing SWaP while optimizing performance
- Support for Microsoft Windows, Linux and VxWorks enables development across broad and flexible range of platforms and applications
- Enables data acquisition as close as possible to sensors, minimizing latency and delivering actionable information faster

For latest product releases & information visit: **abaco.com/portfolio**

DIGITAL & SERIAL I/O

PRODUCT	FORM FACTOR	CHANNELS	INTERFACE	I/O VOLTAGE RANGE
VME-6500 6U VME	VME 6U	8 Analog input, 8 Analog output, 16 Digital input, 16 Digital output	Front I/O	Analog ±10V or 0 to 25 mA, Digital Input 1.25 to 66 VDC, Digital Output 8 to 35 VDC
VME-1129	VME 6U	128 Input	Buffered inputs with debounce - Front I/O	1.25 to 66 VDC
VME-1182A	VME 6U	64 Input	Opto-isolated inputs - Front I/O	5 to 60 VDC, 110, 240 VAC
VME-2128A	VME 6U	128 Output	High-voltage buffered outputs - Front I/O	5 to 55 VDC

STORAGE

PRODUCT	FORM FACTOR	CAPACITY	FUNCTION
PMC-0247RC Disk Drive	PMC	Up to 250GB	Serial ATA Hard Disk Drive Module
VME-1129	PMC	Up to 6GB	Compact Flash/MicroDrive Host Adapter

CARRIER CARDS & BUS ADAPTERS

PRODUCT	FORM FACTOR	CAPACITY	DESCRIPTION
SPR518	PCI Express	1 XMC	SPR518 provides a smart upgrade path to affordably replace the existing SPR418A PCI Express (PCIe®) carrier for XMC modules. The new card provides for unimpeded data transfers within traditional PCs, at the full rate supported by the mezzanine card
EXP238	VME 6U	3 PMC/XMC	EXP238 is a 6U VMEbus form factor expansion card offering three XMC/PMC expansion sites. When ordered as an option for the XVB603 VMEbus single board computer, the 3-slot solution greatly expands system flexibility
PEX431	VPX 3U	1 PMC/XMC	Designed to enable the development of complex, scalable, high performance 3U VPX systems in today's increasingly-connected military/aerospace world, the PEX431 is characterized by significant flexibility
PEX442	VPX 6U	2 PMC/XMC, 1 AFIX	6U VPX Mezzanine Carrier Card with non-blocking Gen 2 PCI Express switch with four x4 ports to the backplane

Software

User-friendly software/middleware tools that offer a seamless middle layer integration point for custom applications that require dedicated hardware. MiddleWare's three major components are the AXIS Tool Suite, OpenWare Network Management Software, & the Health Toolkit.

Health Toolkit

Unique, innovative, reliable.

- Software/middleware tool designed to maximize system reliability and mission success in critical environments such as electronic warfare, digital radar and flight control
- A solution that operates between the underlying hardware and the application software; interrogates all aspects of the hardware's performance
- HT enhances interoperability by including well-established third party industry interfaces, such as DDS, to align with standards as FACE and SOSA

AXIS ImageFlex

Portable, low overhead, high performance, easy to use.

- Optimized, high quality image manipulation, fusion, stabilization and distortion correction/morphing algorithms
- Comprehensive reference applications: AI classifier and object detection with neural algorithms, target tracking, stabilization, "SkyBox" spherical situation awareness, LiDAR data viewer, autonomous visualizer
- DO-160G, MIL-STD-704F, MIL-STD-461G and MIL-STD-810G qualification increases confidence, reduces risk, minimizes NRE

MIDDLEWARE

PRODUCT	SHORT DESCRIPTION
AXIS ImageFlex	High performance image processing, visualization and graphics toolkit
AXIS Pro	HPEC application development tool; greatly improving application efficiency; reducing development time
AXISLib-AVX 2.6 DSP and Math Libraries	High performance vector math, DSP, and linear algebra optimized for Intel processors with AVX-256
AXISLib-PPC DSP and Math Libraries	High performance vector math, DSP, and linear algebra optimized for Power Architecture processors
AXIS DataView Toolkit	Facilitates fast development of GPUs
AXIS EventView	Detailed, visual performance analysis
AXIS Takyon	An open API library that simplifies CPU, GPU and sub-systems communications
Health Toolkit	Software/middleware toolkit designed to maximize system-wide reliability and mission success
Hardware Development Kit	A development tool giving users access to unallocated Xilinx, Inc. FPGA resources on Abaco boards
OpenWare	Industry's most flexible, customizable, secure Ethernet switch management software

Product Lifecycle Management

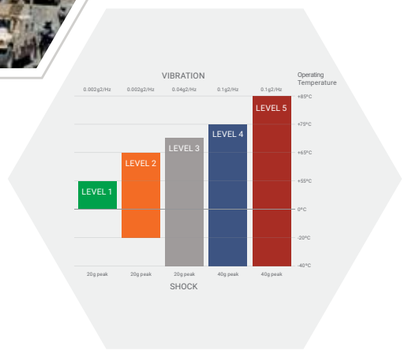
Minimizing your long term cost of ownership is a key goal at Abaco. We do this in a variety of ways – from designing-in compatibility across generations of products to a range of long term support services that minimize the potential impact of obsolescence.

Our commitment is to supporting customer programs throughout their lifecycle – even if that lifecycle is measured in decades.

It starts with designing successive generations of products to be pin-compatible with their predecessors – making technology insertion to obtain incremental performance and functionality easier and more cost-effective. An example: the PPC11A we introduced recently was form, fit and function compatible with the PPC1A we introduced in 1995.

Rugged by Design

At Abaco, we design rugged in. That means choosing screened parts. State of the art mechanical engineering. Using conductive materials. Soldered components. Advanced cooling.



Created to operate in the harshest of environments, our products now reflect our unparalleled experience and expertise in creating truly rugged solutions, with our unique combination of design evaluation and assembly and test practices through to advanced thermal management, mechanical engineering and hermetic control techniques.

We make our products rugged by upgrading or screening parts for extended temperatures, adding mechanical stiffening bars, and/or changing substrate materials for thermal conduction. An integrated stiffening frame/thermal management assembly is used to optimize the mechanical dynamic and thermal performance. A variety of conformal coatings are available for humidity and static control.

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INTELLIGENCE
WIDEBAND

ADVANCED SYSTEMS
DISTRIBUTED PROCESSING

FLIGHT SAFETY CERTIFICATION
SOSA™
APNT SIGINT
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AUTONOMOUS SYSTEMS
RADAR PROCESSING
COGNITIVE PROCESSING
C4ISRT

BUILT ON ABACO'S COMPLETE 3U VPX / 6U VPX PORTFOLIO

DESIGNED TO ALIGN TO THE SOSA™ STANDARD

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Abaco Systems is a global leader in commercial open architecture computing and rugged embedded electronics. With more than 30 years of experience in aerospace & defense, industrial, energy, medical, communications and other critical sectors, Abaco's innovative solutions align with open standards to accelerate customer success.

Abaco Systems is a business unit of AMETEK, Inc., a leading global manufacturer of electronic instruments and electromechanical devices with 2021 sales of more than $5.5 billion.

10/22