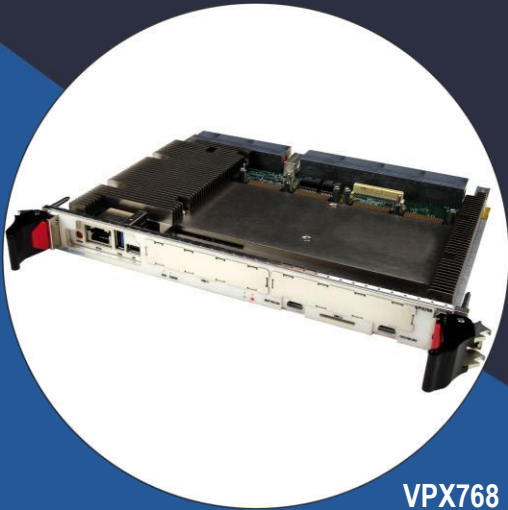


VPX768

Intel® Xeon™ W-11865MRE (Tiger Lake-H), PCIe Gen4, Dual XMC carrier, 6U VPX



VPX768

Key Features

- 6U VPX module Xeon W-11865MRE SoC (Tiger Lake-H) 11th-Generation (8 core @ 2.1 GHz Turbo 4.7 GHz)
- Dual PCIe Gen4 x16 to P1/P2 (capable of bifurcating down to x1 lanes)
- Up to 64GB of DDR4 with ECC
- Dual XMC sites with I/O expansion per VITA46.9 P3w3-X38s+P4w1-X12d+X8d and P5w1-P64s+P6w1-X12d+X8d pin field definition
- Dual 10GBASE-KR and dual 10GBASE-T
- Onboard 1TB NVMe SSD
- Audio, Video, SATA, USB and Serial ports to rear
- Front-panel DP++, GbE, USB 3.2 and RS-232
- Configuration port RS-232 via front
- Trusted Platform Managent (TPM)
- Health Management through dedicated onboard Processor

Benefits

- Unprecedented performances in 6U VPX: high-density, high-processing power, high-speed interface
- Dual XMC sites for flexibility of I/O and/or additional processing
- 2 channels of DDR4 with Error Correction Code (ECC) for enhanced reliability, availability and serviceability
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company



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VPX768

The VPX768 is a 6U processor module (VITA 46) for general purpose processing in demanding applications. Based on the Intel Xeon W-11865MRE processor, the efficient SoC design has high-bandwidth, high-speed I/Os for expansion and peripherals, supports real-time workloads and brings functional safety solutions to market faster (Intel® FSED P).

The module provides dual PCIe Gen4 x16 on P1/P2. The x16 lanes could be bifurcated down to x1 lanes to eliminate a PCIe switch in the overall system architecture.

In the rear it provides four SATA Ports, dual Ethernet 10GBASE-KR, dual Ethernet 10GBASE-T, 3x USB ports, dual Display Port (DP), RS-232 and Audio. The module provides GbE (1000-BaseT), Video (DP++), USB 3.2 and RS-232 to the front panel.

There are two XMC sites on the VPX768 with each mating to the CPU via PCIe Gen4 x8 lanes. Each XMC rear I/O follows the VITA 46.9 per P3w3-X38s+P4w1-X12d+X8d and P5w1-P64s+P6w1-X12d+X8d pin field definition.

The VPX768 provides dual channel DDR4 (up to 64GB total) with Error Correction Code (ECC), Flash for the OS, and an optional 1TB SSD NVMe module. The BIOS allows booting from onboard Flash, offboard SATA, PXE boot or USB.

The onboard Health Management running on a dedicated processor is one of the most sophisticated offered on the market with Server Management capabilities. It allows for Remote Management via Ethernet, redirect of the video over IP to monitor the boot process remotely, Serial Over LAN (SOL), etc. It also meets Tier two support per VITA specification. The modules come with Trusted Platform Management (TPM).

Linux or Windows OS are supported by default on the VPX768, VxWorks available upon request, consult VadaTech for additional options.

The unit is available in a range of temperature and shock/vib specifications per ANSI/VITA 47, up to V3 and OS2.



Figure 1: VPX768

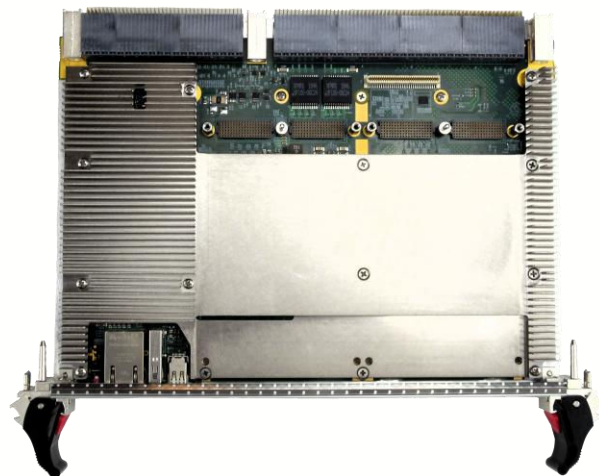


Figure 2: VPX768 Top View with Heatsink

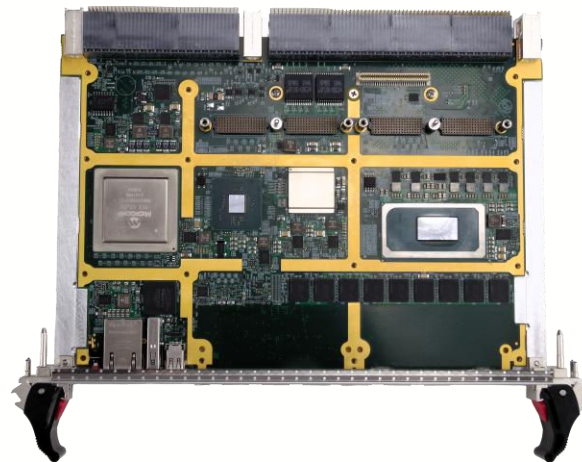


Figure 3: VPX768 Top View without Heatsink



Figure 4: VPX768 Front Panel View

Block Diagram

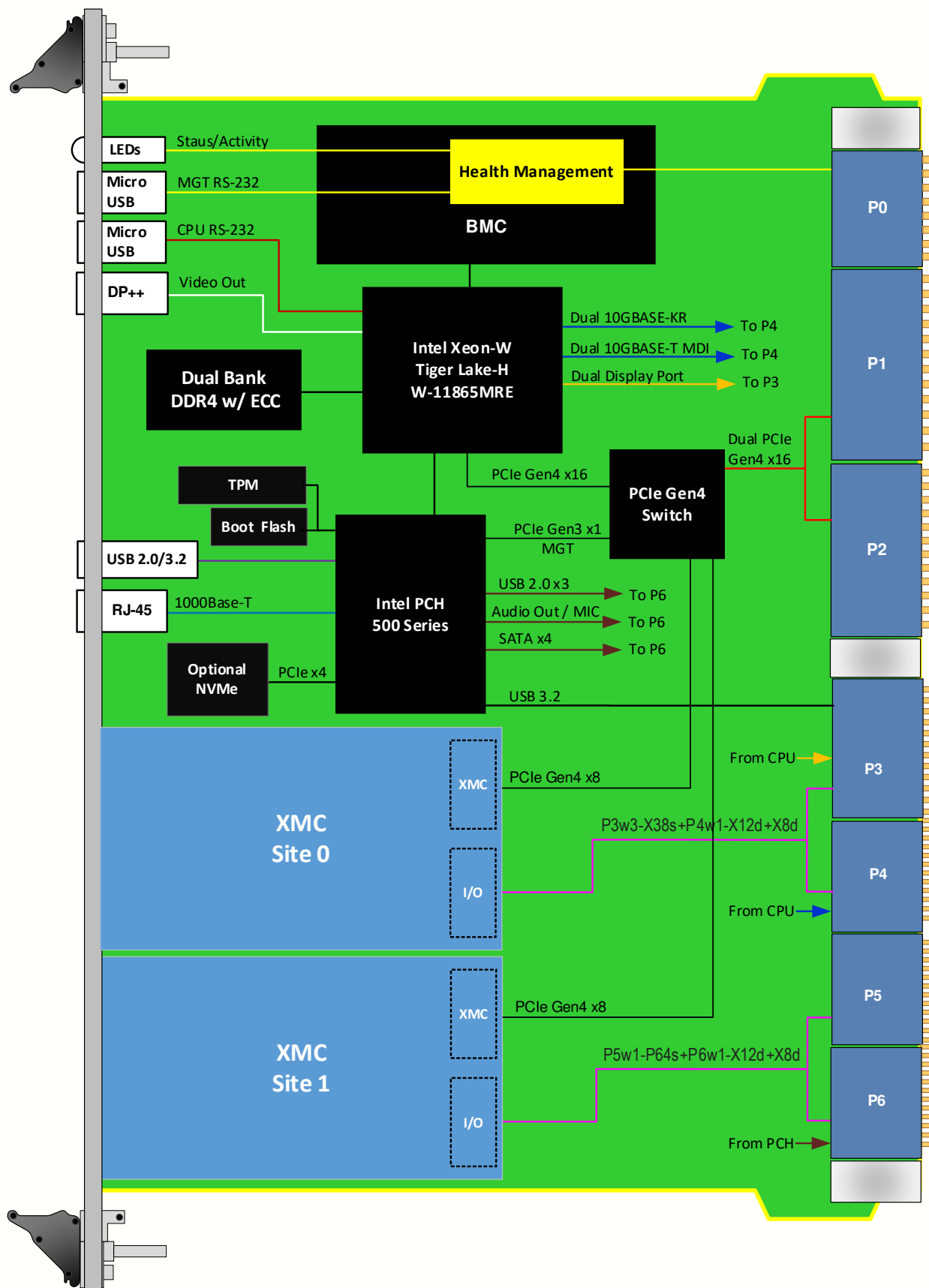


Figure 5: VPX768 Functional Block Diagram

Pinout Block diagram

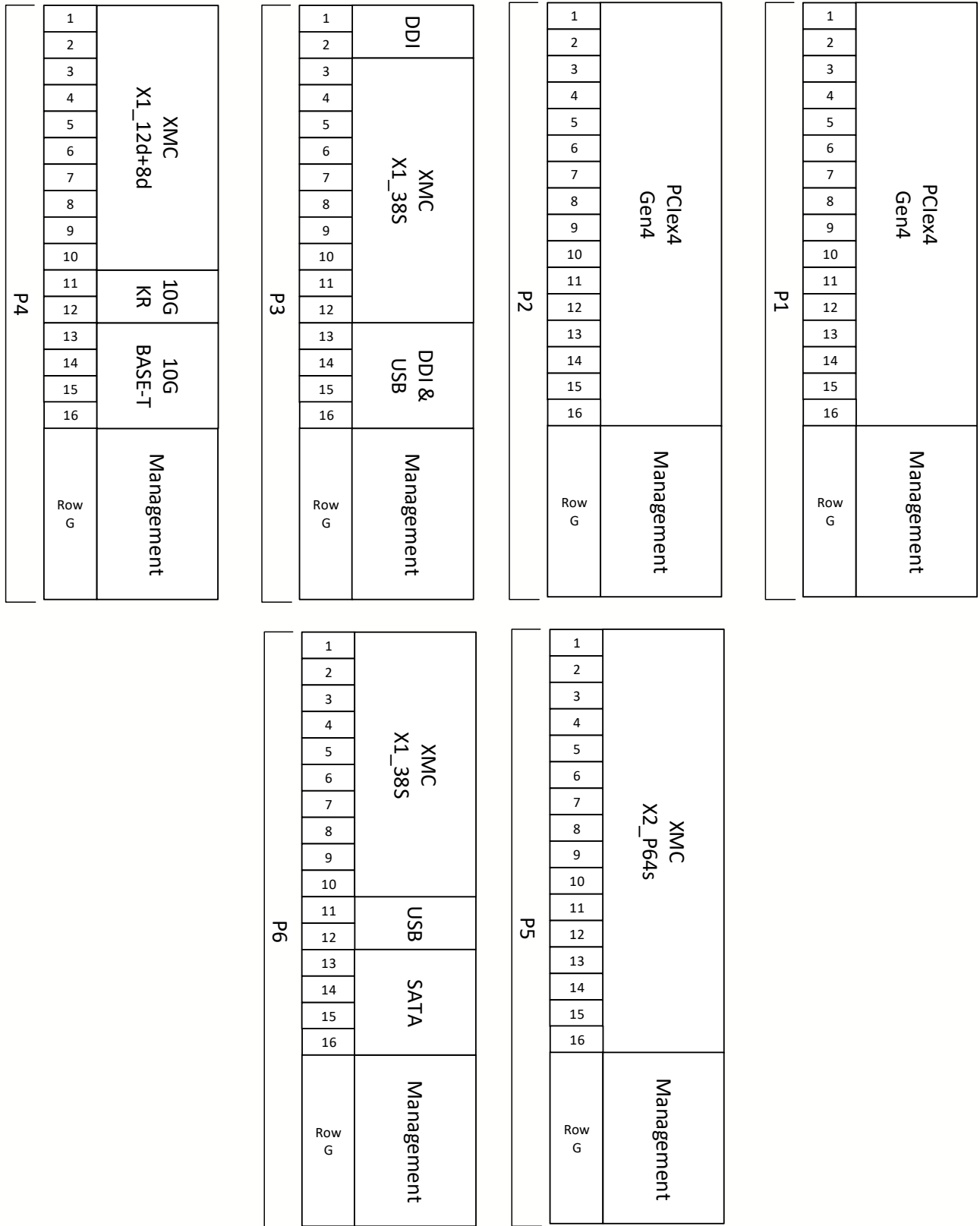


Figure 6: VPX768 Pinout Block Diagram to P1/P2

Specifications

Architecture		
Physical	Dimensions	6U, 1" pitch
Configuration		
Power	VPX768	~80W with no XMC installed (XMC dependent load)
Processor	CPU	Intel 11th Generation Xeon D-SoC
	Memory	DDR4 with ECC
PCIe	Lanes	Dual Gen4 x16 to rear
PCH		Intel 500 series
	Memory	BIOS flash
Front Panel	GbE	1000Base-T
	Video	DP++
	Serial	CPU RS-232 via micro USB
		Health Management RS-232 via micro-USB
	USB	USB 2.0/3.2
	LEDs	User defined by Health Management
On-board Interfaces	XMC VITA 46.9	Dual XMC site: P3w3-X38s+P4w1-X12d+X8d and P5w1-P64s+P6w1-X12d+X8d
VPX Interfaces	Slot Profiles	See Ordering Options
	Rear IO	SATA (x4 Ports), 2x 10GBASE-KR, 2x 10GBASE-T, Display Ports, RS-232, Audio
		PCIe x16 (bifurcation dual x8 or quad x4) on P1/P2
	Power Supplies	Power +12V; XMC VPWR = +12V
Software	OS Support	Linux or Windows supported (Linux loaded by default). VxWorks available upon request, consult VadaTech for additional options.
Other		
MTBF		MIL Hand book 217-F@ TBD hrs
Certifications		Designed to meet FCC, CE and UL certifications, where applicable
Standards		VadaTech is certified to both the ISO9001:2015 and AS9100D standards
Warranty		Two (2) years, see VadaTech Terms and Conditions

OpenVPX allows for a wide range of pin assignments and use cases. Prior to purchasing VadaTech products as standalone items (i.e. not part of an integrated platform) please consult with VadaTech on the system architecture to ensure compatibility.

INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of OpenVPX, ATCA and MTCA products including chassis platforms, shelf managers, AMC modules, Switch and Payload Boards, Rear Transition Modules (RTMs), Power Modules, and more. The company also offers integration services as well as pre-configured Application-Ready Platforms. Please contact VadaTech Sales for more information.

Ordering Options

VPX768 – A0C-DEF-GHJ

A = Processor	D = Memory (Dual banks)	G = Applicable Slot Profile
0 = Xeon W-11865MRE 1 = Reserved	0 = Reserved 1 = 16 GB/bank (32 GB total) 2 = 32 GB/bank (64 GB total, MOQ 5 pieces)	0 = 5 HP VITA 48.1
C = XMC Connectors (both sites)	E = NVMe	H = Environmental
0 = VITA 42 1 = VITA 61	0 = No NVMe 1 = 1TB NVMe 2 = Reserved 3 = Reserved	See Environmental Specification
F = VPX Connector Type	J = Conformal Coating	
0 = Standard 50u Gold Rugged 1 = KVPX Connectors	0 = No coating 1 = Humiseal 1A33 Polyurethane 2 = Humiseal 1B31 Acrylic	

Environmental Specification

Air Cooled			Conduction Cooled		
Option H	H = 0	H = 1	H = 2	H = 3	H = 4
Operating Temperature	AC1* (0°C to +55°C)	AC3* (-40°C to +70°C)	CC1* (0°C to +55°C)	CC3* (-40°C to +70°C)	CC4* (-40°C to +85°C)
Storage Temperature	C1* (-40°C to +85°C)	C3* (-50°C to +100°C)	C1* (-40°C to +85°C)	C3* (-50°C to +100°C)	C3* (-50°C to +100°C)
Operating Vibration	V2* (0.04 g2/Hz max)	V2* (0.04 g2/Hz max)	V3* (0.1 g2/Hz max)	V3* (0.1 g2/Hz max)	V3 (0.1 g2/Hz max)
Storage Vibration	OS1* (20g)	OS1* (20g)	OS2* (40g)	OS2* (40g)	OS2* (40g)
Humidity	95% non-condensing	95% non-condensing	95% non-condensing	95% non-condensing	95% non-condensing

Notes: *Nomenclature per ANSI/VITA 47. Contact local sales office for conduction cooled (H = 2, 3, 4).

Related Products

VPX551



- Dual Kintex UltraScale™ XCKU115
- 16 GB of 64-bit wide DDR4 Memory to each FPGA
- Rear fibre I/O via VITA 66.5

VPX980



- Quad Core ARM Freescale processor @ 1 GHz per core
- One GB DDR3 memory with FRAM for log messages
- 32 GB of Flash, 8 GB of NAND Flash

VTX990



- One slot benchtop 6U VPX development platform
- P0 to P6 connectors are installed
- Variable fan speed control for front and rear

Contact

VadaTech Corporate Office

198 N. Gibson Road, Henderson, NV 89014

Phone: +1 702 896-3337 | Fax: +1 702 896-0332

Asia Pacific Sales Office

7 Floor, No. 2, Wenhui Street, Neihu District, Taipei 114, Taiwan

Phone: +886-2-2627-7655 | Fax: +886-2-2627-7792

VadaTech European Sales Office

VadaTech House, Bulls Copse Road, Southampton, SO40 9LR

Phone: +44 2380 016403

info@vadatech.com | www.vadatech.com

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