

iG-G58V®

Agilex™ 5 SOSA-aligned 3U VPX Plug-in Module (Switch Profile)

iWave's Agilex™ 5 SOSA-aligned 3U VPX plug-in module is a high-performance FPGA-based computing platform designed for next-generation aerospace, defense, and mission-critical applications. Built on a standardized 3U VPX form factor and aligned with SOSA architecture, it enables seamless interoperability, scalability, and faster system integration.

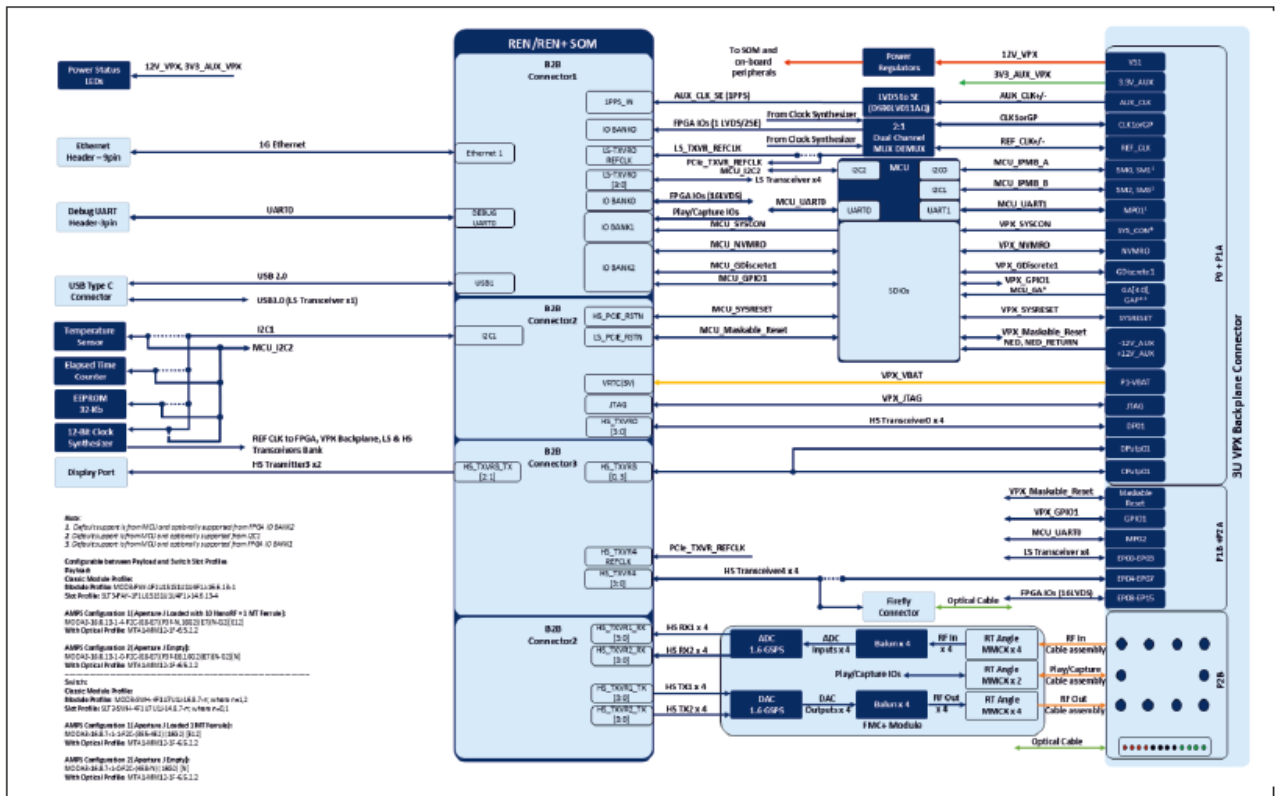


The module combines advanced FPGA processing with high-speed interfaces and rugged design, making it ideal for demanding workloads such as radar, electronic warfare, and real-time signal processing. Its modular architecture and support for open standards help reduce development complexity while ensuring long-term system flexibility and deployment readiness.

Highlights

- ❖ Agilex 5 E-Series SoC FPGA Compatible with A5E 065A, A5E 052A, A5E 043A, A5E 028A, A5E 013A, A5E 065B, A5E 052B, A5E 043B, A5E 028B, A5E 013B, A5E 008B
- ❖ Up to 656k Logic cells
- ❖ Supports 10GBASE-KX4/1000BASE-KX/40GBASE-KR4/10GBASE-KR
- ❖ MT Ferrule Connector for Optical Transceiver
- ❖ ADC x4 & DAC x4 with sampling rate up to 1.6GSPS

Block Diagram

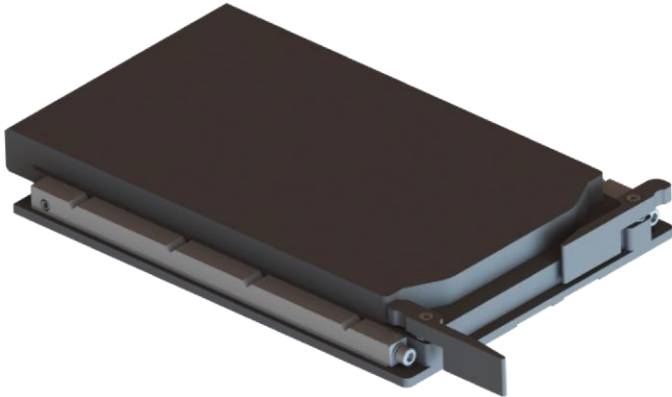


Technical Specifications

SoC	- Agilex 5 E-Series SoC FPGA - Up to 656k Logic elements - Dual core 64-bit Arm Cortex-A76 up to 1.8 GHz - Dual core 64-bit Arm Cortex-A55 up to 1.5 GHz	- On Board Clock Generators - Temperature Sensor x1 - Elapsed Counter x1 - EEPROM x1
Memory & Storage	2GB LPDDR4 with ECC for HPS 2 x 2GB LPDDR4 with ECC for FPGA 32GB eMMC (Exp. up to 128GB) 1Gb QSPI Flash (Exp. up to 2Gb)	Utility Plane - System Control Signals (GA[0:4], P, SYSRESET, NVMRO) - System Reference Clocks (REF_CLK, AUX_CLK) - IPMB-A, B & JTAG - Power Input (12V VDC, 3.3V_AUX)
IPMC	- Arm® 32-bit Cortex®-M0+ CPU up to 80 MHz - On chip 64KB of flash and 4KB of SRAM - One 12-bit 1.68-MSPS analog-to-digital converter (ADC)	Data Switch Port-01 - DS01[3:0] – 10GBASE-KX4/40GBASE-KR4/10GBASE-KR Data Plane Port-01 - DP01[3:0] – 10GBASE-KX4/40GBASE-KR4/10GBASE-KR Data Plane Port-02 - DP02[3:0] – 10GBASE-KX4/40GBASE-KR4/10GBASE-KR Data Plane Port-03 - DP03[3:0] – 1000BASE-KX/40GBASE-KR4/10GBASE-KR System Control Signals
VPX Front Panel features	- Gigabit Ethernet Header - USB 2.0 & 3.0 through USB Type-C Connector 3-pin Debug UART Header - Display Port - ADC x4 & DAC x4; Sampling rate up to 1.6GSPS	Maintenance Port MP01

Profile Specification	• Profile: SLT3-SWH-4F1U7U1J-14.8.7-1 • MOD3-SWH-4F1U7U1J-16.8.7-1 • Profile: SLT3-SWH-4F1U7U1J-14.8.7-0 • MOD3-SWH-4F1U7U1J-16.8.7-2	General Specification	Slot Pitch: 1 inch Conduction Cooled BSP Support: Linux Form Factor: 160mm X 100mm Environment Specification: RoHS & REACH Compliant
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Thermal & Mechanical



Thermal Solutions

For any highly integrated FPGA VPX Plug-in Module, thermal design is a very important factor. iWave supports a VITA 48.2 compliant 3U Conduction Cooled Heat Spreader.

Applications

Industrial

The Altera Agilex 5 is used in industrial applications like robotics, edge computing, Motor drive, computer numerical control (CNC) and machine vision and AI.

Video and Vision

Video and Vision Processing provides robust capabilities for AI-driven computer vision, low-latency video analytics, and real-time object detection making it ideal for edge computing, automotive and industrial applications that require high-quality video and vision processing.

Military and Secure Communication

Altera Agilex 5 FPGAs facilitate advanced military communication systems by enabling waveform adaptability, software updates, enable modular communication system for voice and data, efficient in multi waveforms and channels processing and energy-efficient radios.

Wireless

Altera Agilex 5 FPGAs power advanced wireless systems by enabling efficient 5G signal processing, flexible waveform adaptability, and low-latency communication for modern networks.

A Global Leader in Embedded Systems Engineering and Solutions

Since 1999, we have pioneered leadership in embedded systems technology, establishing ourselves as a strategic embedded technology partner for advanced solutions. Our comprehensive portfolio encompasses ARM and FPGA System on Modules, COTS FPGA solutions, and ODM solutions which include Telematics, Gateways & HMI Solutions.

Beyond our robust product ecosystem, we provide comprehensive ODM support with specialized custom design and manufacturing capabilities, enabling customers to accelerate and optimize their product development roadmaps. With a strategic focus on industrial, automotive, medical, and avionics markets, we deliver innovative technology solutions to global clients.

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