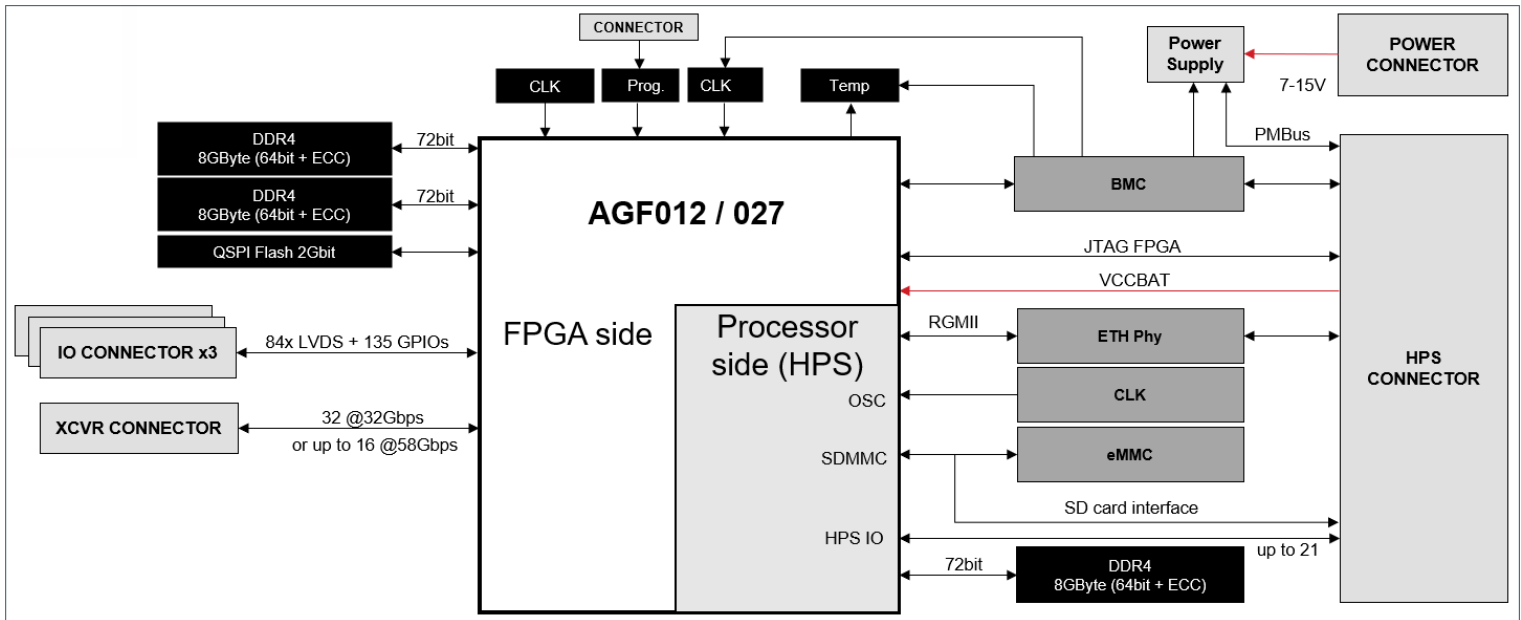
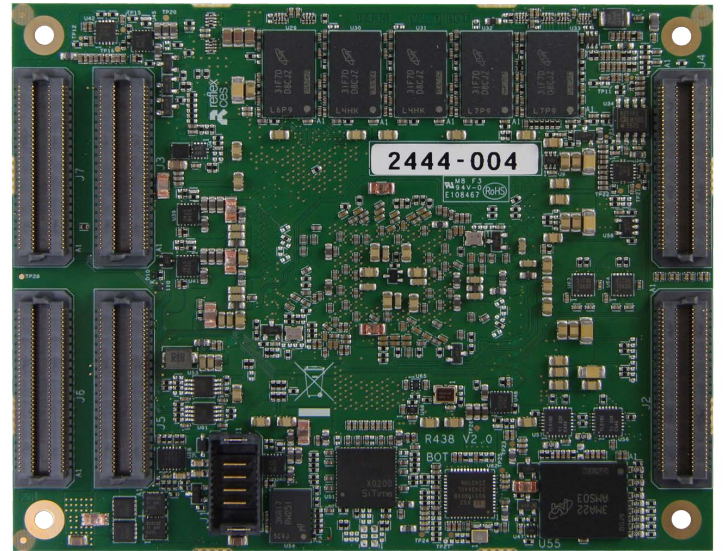
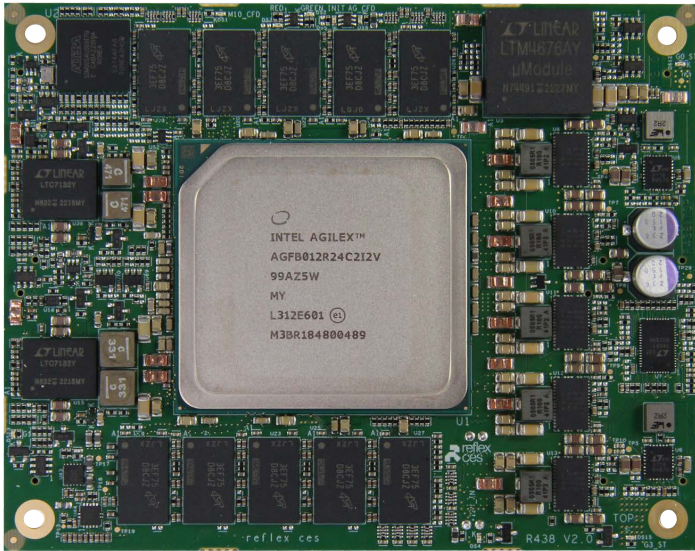


Ares Agiles™ 7 FPGA SoC F-Series System-on-Module



- Intel® Agilex™ 7 FPGA SoC F-Series
 - AGF012 / 027
 - PCIe Gen4 x8 Root Complex
 - PCIe Gen4 x16 End Point
 - Quad-Core ARM Cortex A-53

- 84x LVDS + 135 FPGA GPIOs
- 32 transceivers @32Gbps NRZ OR up to 16 transceivers @58Gbps PAM4
 - Industrial Temp Grade
 - Long Term Supply

- Bioscience & Instrumentation
 - Quantum Computing
 - Radar Systems
 - Electronic Warfare
 - Satellite Communication
 - "Customizable"

Features	Ares Agilex™ 7 FPGA SoC F-Series	
Ordering Information	RXCAGF012PR24-SOM001 (in production) using AGFB012R24C2I2V (1.2MLE) 1178 KLE, 110Mbit M20K, 3743 DSP Blocks	RXCAGF027PR24-SOM001 (in production) using AGFB027R24C2I1VC (2.7MLE) 2693 KLE, 259Mbit M20K, 8528 DSP Blocks
FPGA SoC	Agilex™ 7 FPGA SoC F-Series R24C package, pin compatible from 600KLE (AGF006) up to 2.7MLE (AGF027) Quad Core Arm Cortex-A53 up to 1.43GHz Industrial Temp Grade	
	Transceiver speed grade 2, Core speed grade 2	Transceiver speed grade 2, Core speed grade 1
DDR4 Memory	3 banks DDR4, 24 GByte total	
	HPS= 1 bank DDR4 x72bit bus, 8GByte, @2666MT/s FPGA= 2 banks DDR4 x72bit bus, 8GByte each, @2666MT/s	HPS= 1 bank DDR4 x72bit bus, 8GByte, @3200MT/s FPGA= 2 banks DDR4 x72bit bus, 8GByte each, @3200MT/s
Connectors	Transceiver Mezzanine Connector: 32 transceivers @32Gbps NRZ OR up to 16 transceivers @58Gbps PAM4 (example: 16 transceivers @32Gbps NRZ + 8 @58Gbps PAM4)	
	IO Mezzanine Connector: FPGA GPIOs = 135 HPS IO = up to 21 depending used interfaces	
	LVDS = 42 RX pairs and 42 TX pairs @1400Mbps	LVDS = 42 RX pairs and 42 TX pairs @1600Mbps
FPGA Configuration	2Gbit Quad SPI Flash (store up to 2 images)	
Software Configuration	128Gbyte NAND Flash eMMC (Stores U-Boot, Linux Kernel, and RootFS) + SD Card support on the carrier board (RXCAGF-CBD0SA)	
HPS Communication	1GbE RGMII, I2C, UART, USB 2.0 OTG, SPI slave and master, HPS IO	
Mechanical & Environmental Specification (to be qualified)	Module rugged for shocks and high vibration IEC/EN61000 (EMI immunity), EN61000 + EN55032 (EMI emission), EN60068 (Vibration: sinusoidal, 10Hz - 2KHz, +/- 0.15mm, 2g ; Shock: half-sinusoidal, 11ms, 15g) 7-15V Power Input Industrial temperature grade -40°C to +70°C	
Power & dissipation	Typ 113W, active airflow cooling (heat spreader + heatsink + fan) Max 122.5W	Typ 161W, active airflow cooling (heat spreader + heatsink + fan) Max 171W
	fan noise < 50dB, fan control capability (PWM, TACHY)	
Board Management Controller	Communication with Carrier board: I2C, JTAG Communication with FPGA : 1x UART to FPGA Monitoring : Current, voltages, temperature, ID information Programming : Clock Control: Power, temperature protection, Fan	
Module dimensions	107mm x 85mm (4.2 x 3.4 inches)	
Compliance	RoHS/REACH compliant	
Deliverables	<ul style="list-style-type: none"> Ares module & its active cooling system Board Support Package (to download from our online technical support) after purchase of a module and its carrier board: Starter Guide, module and carrier board Reference Manuals, Interconnect pinout file Mechanical drawings, assembly files FPGA GSRD Test Design by interface (Quartus Prime Pro Edition 24.2) BMC Software API HPS Software: <ul style="list-style-type: none"> Built with Yocto Project version 4.2 (Mickledore) U-Boot bootloader (v2023.04), ATF Linux kernel (v6.1.38) and linux Poky distribution 1-year technical support and warranty Online support at support.reflexces.com (after purchase of a kit) 	
MOTS = Modified version (on request)	<ul style="list-style-type: none"> Conformal coating Custom heatsink system Contact sales for customization 	

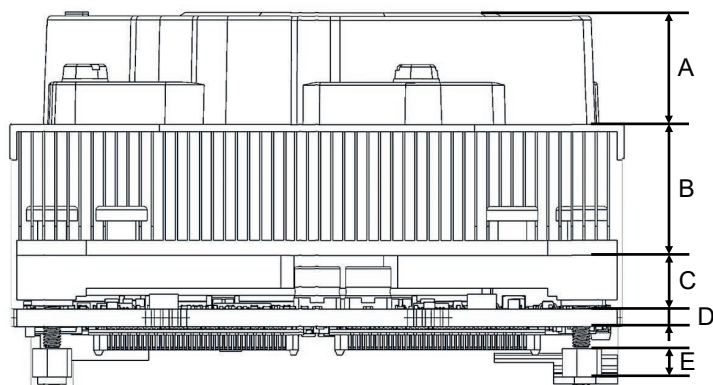
Thermal dissipation

Module dimension: 107mm x 85mm (4.2 x 3.4 inches)

Module + heatspreader: 14.76mm

Module + heatspreader + passive heat sink: 33.26mm

Module + heatspreader + passive heat sink + fan: 49.11mm



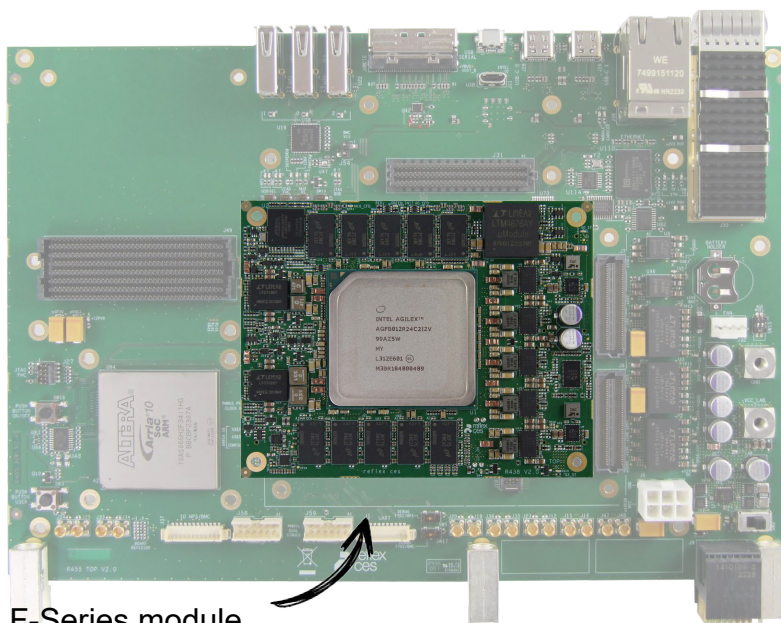
A.	Fan	15,85 mm
B.	Heat sink	18,50 mm
C.	Heat spreader	7,16 mm
D.	Board	2,6 mm
E.	Spacer	5,00 mm

Related products: 6U VPX Carrier board

The 6U VPX Carrier board is sold separately

Ordering information: RXCAGF-CBD0SA

Dimensions: 160mm x 233mm, Rackable in a 6U chassis



with Ares Agilex™ 7 SoC F-Series module