XDE Module Comparison

Supporting a high throughput of 1 Gbps, these modules provide hardware-enforced data evaluation and control, without exposing the secure network to risk. Developed with FPGA (Field Programmable Gate Array) filtering technology, these miniaturized modules are disrupting the market due to their size, flexibility, power, and speed and can be designed directly into industrial control systems. Compare the XDE modules below and determine the best fit for your use case.

		XDE Radium	XDE Cobalt
HARDWARE	**Processor**	NA	NXP LS1012A
	FPGA LUTs	50K × 2	80K
	Memory (Flash, RAM)	None	QSPI Flash, eMMC Flash
	Interfaces	2 x 1GbE RJ-45, 2 x Serial	1x 1Gb 60 pin male edge connector
	Physical Isolator	Optical Diode or Magnetic Isolator	FPGA
	Input Power	5V × 2 via on-board header	3.3v Input via SGMII Connector
	Dimensions	101.6mm × 38.1mm	80mm × 22mm
	Operating Temperature	-40 to 70 Celcius	-40 to 70 Celcius
	Cooling	Ambient Air	Ambient Air
FIRMWARE	**FPGA**	Custom firmware and configurations	Custom firmware and configurations
	Processor	NA	Embedded OS
PERFORMANCE	**Functionality**	Hardware-enforced, one-way transfer, with a secure protocol break (no routable information is passed between the source and destination networks)	FPGA-based protocol validation and firewall rule enforcement, with hardware-controlled, one-way, or two-way, data flows and line-rate data filtering
	Throughput (Nominal)	1Gbps	1Gbps
	Protocol Support	UDP, various military and industrial control protocols	TCP/IP, UDP, various military and industrial control protocols
	IP Sec, TLS Session Support	No	Yes
	Target Devices	Smart sensors, PLC modules, RTU modules, Gateways	PLC modules, RTU modules, Gateways, Switches, Servers, Cloud Connectors
COMPLIANCE	**RoHS**	Yes	Yes
	Certifications	NSA Data Diode Evaluation (in progress) EAL 4+ (in progress) IEC 62443 (in progress)	NSA Data Diode Evaluation (planned) EAL 4+ (planned) IEC 62443 (planned)