Network switch

The BAE Systems network switch is an Ethernet switch providing Layer 2 switching of 10GbE and 1GbE communications. The switch is an intelligent system capable of providing the computational processing necessary to support complex networking features.

The network switch incorporates a Marvell® 98DX3336 Prestera device that provides a highly integrated, high-performance, low-power packet processor, enabling intelligent switching, security, and performance. The 98DX3336 is a system-on-chip device which features an integrated dual core 800 MHz ARMv7 CPU used to manage the switching functions and support host system interfaces. The 98DX3336 meets IEEE 802.3 networking requirements as well as demanding yet cost-sensitive performance needs by enabling host management and embedding additional value-added security or monitoring applications. Native integration of PHYs enables the 1 GbE direct attached copper and fiber based 1 GbE and 10GbE network connections.

The switch boots from a 32MB NOR flash device into a Linux OS stored on a 1GB NAND flash device. The main CPU program execution memory is a 512MB DDR3L memory bank with ECC. Line rate switching is performed in hardware with minimal CPU intervention.

The switch provides for 19 (x19) 1000BASE-T, 2 (x2) 1000BASE-SX and 4 (x4) 10GBASE-SR network connections. The switch is capable of line rate packet processing of 120 MPPS and switching capacity of 84 Gbps.

The Power over Ethernet supported switch allows for automatic detection of the power requirements and the application of power to the devices. The switch meets IEEE 802.3 requirements at quad port control.

The network switch is a flange mounted device, utilizing an ARINC 763 enclosure. The external interfaces of the switch include three rectangular Quadrax connectors on one face of the enclosure for all PoE interfaces, and four circular connectors (one power/signal, three fiber optic) and a RJ-45 jack and RS232 connection on the opposite face.

Key parameters

Size	ARINC 763 flange mounted enclosure with MIL- STD-38999 connectors
Weight	8 lbs
Power	115VAC, 360-800 Hz, single phase, 200 msec hold-up
Interfaces	x1 RS-232 (front panel)
Processor	Marvell® 98DX333x Prestera
Memory	512 MB DDR3 with ECC
Network	(x19) 1000BASE-T (x4) 10GBASE-SR (x2) 1000BASE-SX
Network Support	Layer 2 Ethernet switching VLAN support Power over Ethernet (PoE) Jumbo frame support Quality of service DHCP relay/option82 Port mirroring Packet filtering Traffic control Spanning tree (STP/RSTP)
Discrete Interface	x3 input discrete x1 output discrete x4 dedicated (programming) input discrete
Software	Linux OS SNMP v2/3 Configurable via command line interface, web UI, config file, REST API
Security	Security logging Configurable packet filtering 802.1X port security Built-in firewall
Temperature	-40°C to +70°C continuous operation Convection cooled