Versatile Network Switching

VNetS-3110 Versatile Network Switch Card

Our next generation, state-of-the-art avionics Ethernet switch card designed to an open standard form factor resulting in reduced sustainment costs

Flexible Network Configurations

- Switching core fabric provides a superset of switch functionality to support the widest possible range of customer applications
- Deterministic or non-deterministic network protocols
- Ethernet ports configurable to bandwidth needs
- Expandable to fiber optic ports
- Ruggedized for Commercial or Military aircraft usage

Designed to Open Standards

- Hardware Open System Technology (HOST) slot profiles
- IEEE 802.1 Time Sensitive Network (TSN)
- SAE AS-6675 TSN Aerospace Profile
- IEEE 802.3 Standard for Ethernet
- ANSI/VITA 65.0 Open VPX System
- ANSI/VITA 46.11 System Management

Critical Network Functionality Inherent to Design

- Extensive traffic policing, segregation and priority mechanisms
- QSFP+ interface can be used as an external interface, mirror port, flight test interface, or a variety of other functions
- Grand Master Clock functionality is able to sync to an external 1PPS GPS input or simulate a 1PPS output

Configuration Simplified

- Extensive toolset for configuration of the switch
- Delivered in pre-configured state <or> user configured during integration
- Configuration options include TSN, ARINC 653 partitioning, and programmable Remote Data Concentrators

Photo: USAF

geaviation.com

Performance specifications

Baseline Configuration

- 6x 1000Base-KX Ethernet <or> 6x 10GBase-KR
- 1x 10/100/1000Base-T
- 24x Gen 2 PCIe Lanes
- 6x Open/Ground Position Inputs
- 1x Open/Ground Parity Input
- 1x NVM Write Protect
- 1x 1PPS in/out
- Controller Interface
- VITA 46.11 Type 1, IPMC

Features

- Deterministic Ethernet
    - IEEE 802.1 Time Sensitive Networking (TSN)
    - SAE AS-6675 TSN Aerospace Profile
- Hardware Open Systems Technologies (HOST) Base Models
    - MOD3-SWH-6F6U-16.4.1-11
    - MOD3-SWH-2F24U-16.4.3-3
- Ethernet Port Configurations
    - 6F6U version
        - 6x 1000Base-KX <or> 6x 10GBase-KR capable
        - 1x 1000Base-T
    - 2F24U version
        - 24x 10GBase-KR
        - 2x 40GBase-KR4
- 24x Port PCIe Gen 2 switch (6F6U)
- High accuracy gPTP Grand Master Clock
- VITA 46.11 System Management Bus
- RS-232-C Test Interface

Tools

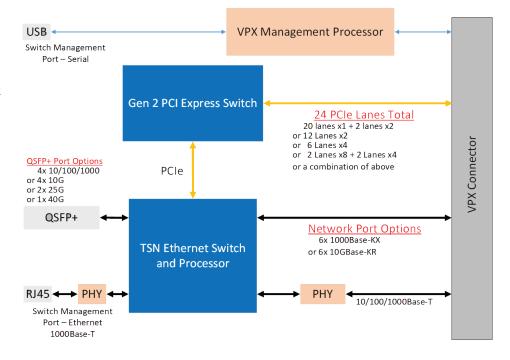- ARINC 664 and TSN network configuration tools suite

Also Available

VNetS-1000 Development Unit

- Break out signals to industry standard interfaces
- Expandable to fiber optic physical interfaces

Feature	Attribute
Size	OpenVPX, VITA 65, 3U
Temperature	-40°C to +70°C
Altitude	TBD
Relative Humidity	> 95%
Cooling	Conduction or Convection

USB — Switch Management Port – Serial

VPX Management Processor

Gen 2 PCI Express Switch

24 PCIe Lanes Total
20 lanes x1 + 2 lanes x2
or 12 Lanes x2
or 6 Lanes x4
or 2 Lanes x8 + 2 Lanes x4
or a combination of above

QSFP+ Port Options
4x 10/100/1000
or 4x 10G
or 2x 25G
or 1x 40G

PCIe

QSFP+

TSN Ethernet Switch and Processor

Network Port Options
6x 1000Base-KX
or 6x 10GBase-KR

RJ45 — PHY — Switch Management Port – Ethernet 1000Base-T

PHY — 10/100/1000Base-T

VPX Connector