## The Xtreme/GbE Managed Carrier Ethernet Switch provides Carrier Grade Ethernet switching capabilities in an extremely small embedded form factor.

Excellent for high-end applications such as Mobile and Microwave backhaul, the Xtreme/GbE Managed Carrier Ethernet Switch is also a highly reliable way to communicate with 10/100/1000 devices in an embedded system.
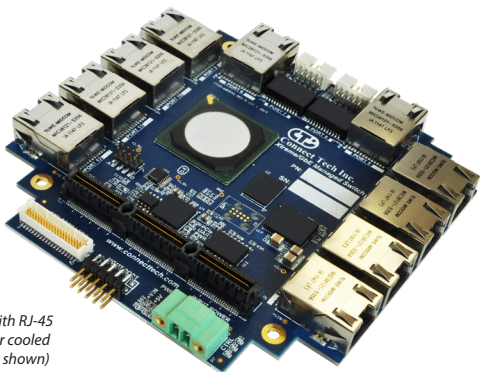
Powered by the latest generation Carrier Ethernet Switch engine the Vitesse 7428/7429. Xtreme/GbE's embedded 416 MHz MIPS 32-bit CPU, 1Gb DDR2 external memory and DMA-based frame extraction and insertion support timing over packet, Ethernet OAM, and performance monitoring.

FEATURES

✓ Conduction cooled Heatplate or Air cooled Heatsink option

✓ 8 or 12 Port 10/100/1000 Mbps Switch

✓ Web GUI or CLI Management

✓ Carrier Grade Ethernet Switching

✓ Available with RJ-45 or Rugged Locking connectors

✓ PC/104 Compliant: 4.550" x 4.393" or Smaller

✓ Extended Temperature Range: -40℃ to +85℃
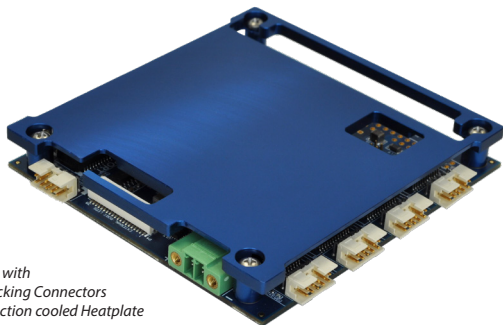
XDG Board with
Rugged Locking Connectors
and Conduction cooled Heatplate

XDG Board with RJ-45
Connector, Air cooled
(Heatsink not shown)

HARDWARE SPECIFICATIONS	
Ethernet Switch Engine	Vitesse VSC7428 Carrier Grade Ethernet Switch Chipset (XDG004-009) Vitesse VSC7429 Carrier Grade Ethernet Switch Chipset (XDG010, XDG013) A powerful embedded 416 MHz RISC 32-bit CPU, with DDR2 external memory and DMA-based frame extraction and insertion supports timing over packet, Ethernet OAM, and performance monitoring.
Memories	1Gb DDR2 SDRAM 128Mb Serial NOR Flash
Port Type	Gigabit ethernet (10/100/1000 Mbps)
Connectors	RJ-45s or Rugged Locking Pin Headers (see part numbers on page 2)
Layer 2 Switching	802.1Q VLAN switch with 8K MACs and 4K VLANs Push/pop up to two VLAN tags IPv4/IPv6 multicast Policing with storm control and MC/BC protection RSTP and MSTP support Hardware and software-based learning Link aggregation (IEEE 802.3ad) Independent and shared VLAN learning (IVL, SVL) Jumbo frame support
Management Access	Web Interface RS-232 Serial Interface (CLI) Software API PCIe/104 Bus
Indicator LEDs	2 LEDs per port (available on RJ-45 and through external connector) Power Rail LEDs Status LEDs
Standalone Operation	Switch can be used as a standalone unit OR it can be paired with an embedded SBC.
Input Voltage	Wide input rage: +9V to +36V DC with Reverse Polarity Protection Can be powered from external connector OR directly from expansion bus
Power Consumption	Idle: 0.3A, 3.6W Typical: 0.35A, 4.2W Max: 0.5A, 6W (with +12V input)
Bus Interface	No bus connector populated PC/104 bus pass through (for sourcing power only) PCIe/104 bus (sourcing power and management interface)
Dimensions	PC/104 compliant: 3.775" x 3.550" (95.89mm x 90.17mm) Tallest Top Side Component: Heatsink 0.375" (9.5mm)
Operating Temp	-40℃ to +85℃ (chipset rated to +125℃/+257°F thermals) (-40℃ to +185℃)

XTREME/GBE
MANAGED CARRIER ETHERNET SWITCH

SOFTWARE SPECIFICATIONS		

Port control
Port Speed/Duplex Mode/Flow Ctrl
Port Frame Size (Jumbo frames)
Port State (administrative status)
Port Status (link monitoring)
Port Statistics (MIB counters)
Port VeriPHY (cable diagnostics)

MIBs
RFC 1213 MIB II
RFC 1215 TRAPS MIB
RFC 4188 Bridge MIB
RFC 3635 Ethernet-like MIB
RFC 3411 SNMP Management Frameworks
IEEE 802.1 MSTP MIB
IEEE 802.1AB LLDP-MIB (LLDP MIB included in a clause of the STD)
RFC 3621 LLDP-MED Power (POE) (No specific MIB for POE+ exists)
Private MIB framework

QoS
Traffic Classes (8 active priorities)
Port Default Priority
QoS User Priority
Input priority mapping
QoS Control List (QCL Mode)
Storm Control for UC, MC and BC
Port policers
Global/VCAP (ACL) policers
Port egress shaper
Queue egress shapers
TRTCM (two rate three color market)
Scheduler mode (Strict or Weighted Fair Queuing)

L2 Switching
Auto MAC addr. Learning/Ageing
MAC Addresses – Static
Virtual LAN
Private VLAN – Static
Port Isolation – Static
IEEE-802.1ad Provider Bridge (Native or Translated VLAN)
Rapid Spanning tree – RSTP, STP
Loop Guard
Link Aggregation – Static
Link Aggregation – LACP
IGMPv2 snooping
Port Mirroring (Ingress and Egress Mirroring)

Power Saving
Cold start
Cool start
ActiPHY
PerfectReach
EEE Power Management
LED Power Management
Thermal Protection

Management
DHCP Client
HTTP Server
CLI - Console Port
Industrial Standard CLI
Industrial Standard Configuration
Management access filtering
HTTPS
System Syslog
Software Upload via web
SNMP v1 / v2c / v3 Agent
SNMP multiple trap destinations
IEEE 802.1AB-2005 Link Layer Discovery – LLDP
Configuration Download/Upload - XML
Configuration Download/Upload - Industrial Standard
Loop detection restore to default
Symbolic Register Access

L3 Switching
IPv4 Unicast: RIPv1/RIPv2

Synchronization
SNTP & client

Security
Port-Based 802.1X
Multiple 802.1X
Web & CLI Authentication
ACLs for filtering/policing/port copy

Part Number	GBE Port Count	GBE Connector Type	Thermal Solution	PC/104 BUS Connector Option
XDG004	8	RJ-45's	Air Cooled Heatsink	None
XDG005	8	RJ-45's	Air Cooled Heatsink	PC/104
XDG006	8	RJ-45's	Air Cooled Heatsink	PCIe/104
XDG007	8	Rugged Locking Pin Headers	Air Cooled Heatsink	None
XDG008	8	Rugged Locking Pin Headers	Air Cooled Heatsink	PC/104
XDG009	8	Rugged Locking Pin Headers	Air Cooled Heatsink	PCIe/104
XDG010	12	RJ-45's & Rugged Locking Pin Header	Air Cooled Heatsink	PCIe/104
XDG012	12	RJ-45's & Rugged Locking Pin Header	Air Cooled Heatsink	None
XDG013	12	Rugged Locking Pin Headers	Air Cooled Heatsink	PCIe/104
XDG016	8	RJ-45's	Conduction Cooled Heatplate	None
XDG017	8	RJ-45's	Conduction Cooled Heatplate	PC/104
XDG018	8	RJ-45's	Conduction Cooled Heatplate	PCIe/104
XDG019	8	Rugged Locking Pin Headers	Conduction Cooled Heatplate	None
XDG020	8	Rugged Locking Pin Headers	Conduction Cooled Heatplate	PC/104
XDG021	8	Rugged Locking Pin Headers	Conduction Cooled Heatplate	PCIe/104
XDG022	12	RJ-45's & Rugged Locking Pin Header	Conduction Cooled Heatplate	PCIe/104
XDG023	12	Rugged Locking Pin Headers	Conduction Cooled Heatplate	PCIe/104

Part Number	Cable
CKG019	Ruggedized Cable Kit for XDG007/8/9
CKG029	Cable Kit for XDG010
CKG033	Ruggedized Cable Kit for XDG013

Connect Tech Inc.
Tel: +1.519.836.1291
Toll: 800.426.8979 (North America)
Email: sales@connecttech.com
www.connecttech.com

RoHS