Connect Tech Inc Xtreme 10G Managed Ethernet Switch Router User Guide

Contents

Connect Tech Inc.

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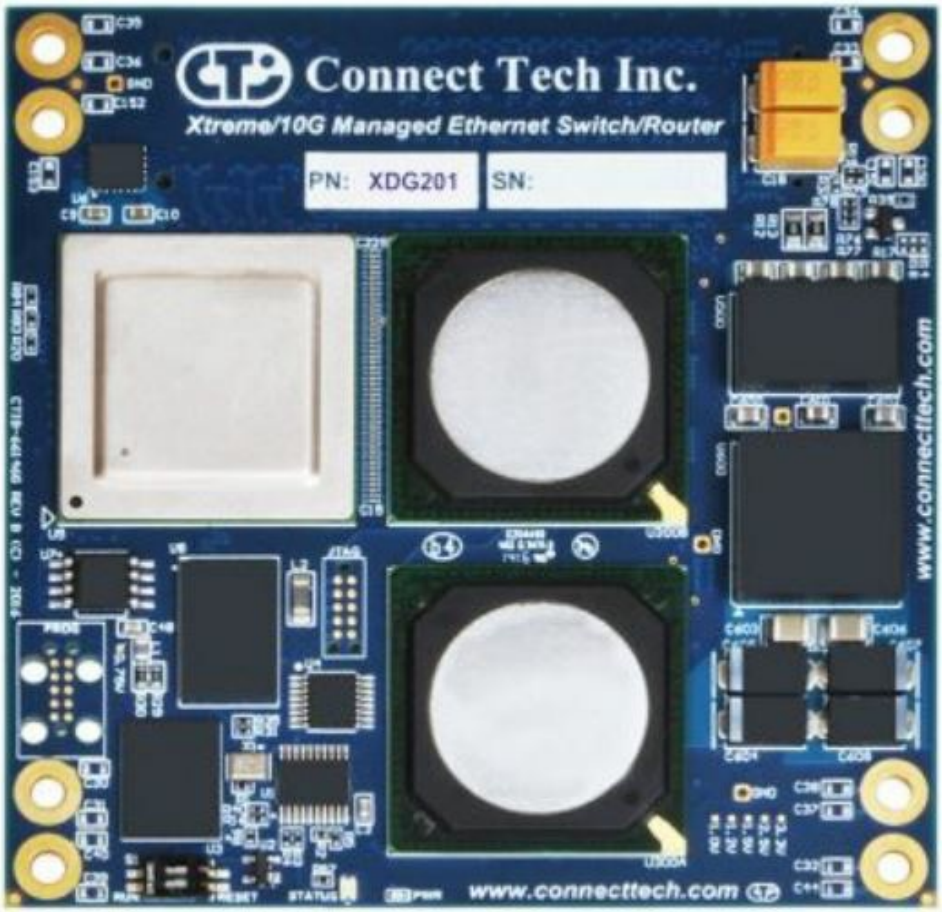

Product Information

Specifications

- **Product Name:** Xtreme/10G Managed Ethernet Switch/Router
- **Manufacturer:** Connect Tech Inc.
- **Address:** 42 Arrow Road Guelph, Ontario N1K 1S6
- **Website:** www.connecttech.com
- **Revision:** CTIM-00472 Revision 0.08 2019/07/09
- **Contact Details:**
  - **Tel:** 519-836-1291
  - **Toll-Free:** 800-426-8979 (North America only)
  - **Fax:** 519-836-4878
  - **Email:** sales@connecttech.com (sales), support@connecttech.com (support)

FAQ

- **Q:** How do I access the CLI Management Interface?
  - **A:** You can access the CLI Management Interface by connecting your computer to the device's serial port using a serial cable and using a terminal emulator program.
- **Q:** Where can I find more information about the available commands?
  - **A:** For detailed information on the available commands and their usage, please refer to the "Complete CLI and Protocol Configuration Reference Guide."

Preface

Disclaimer

The information contained within this user's guide, including but not limited to any product specification, is subject to change without notice. Connect Tech assumes no liability for any damages incurred directly or indirectly from any technical or typographical errors or omissions contained herein or for discrepancies between the product and the user's guide.

Customer Support Overview

If you experience difficulties after reading the manual and/or using the product, contact the Connect Tech reseller from which you purchased the product. In most cases the reseller can help you with product installation and difficulties. In the event that the reseller is unable to resolve your problem, our highly qualified support staff can assist you. Our support section is available 24 hours a day, 7 days a week on our website at: **http://connecttech.com/support/resource-center/**. See the contact information section below for more information on how to contact us directly. Our technical support is always free.

Contact Information

Mail/Courier

- Connect Tech Inc. Technical Support 42 Arrow Road Guelph, Ontario Canada N1K 1S6

Email/Internet

- **sales@connecttech.com**
- **support@connecttech.com**
- **www.connecttech.com**

Note: Please go to the **Connect Tech Resource Center** for product manuals, installation guides, device drivers, BSPs and technical tips. Submit your **technical support** questions to our support engineers.

Telephone/Facsimile

Technical Support representatives are ready to answer your call Monday through Friday, from 8:30 a.m. to 5:00 p.m. Eastern Standard Time. Our numbers for calls are:

- **Toll Free:** 800-426-8979 (North America only)
- **Telephone:** 519-836-1291 (Live assistance available 8:30 a.m. to 5:00 p.m. EST, Monday to Friday)
- **Facsimile:** 519-836-4878 (on-line 24 hours)

Limited Product Warranty

Connect Tech Inc. provides a one year Warranty for the Xtreme/10G Managed Ethernet Switch/Router. Should this product, in Connect Tech Inc.'s opinion, fail to be in good working order during the warranty period, Connect Tech Inc. will, at its option, repair or replace this product at no charge, provided that the product has not been subjected to abuse, misuse, accident, disaster or non-Connect Tech Inc. authorized modification or repair.

You may obtain warranty service by delivering this product to an authorized Connect Tech Inc. business partner or to Connect Tech Inc. along with proof of purchase. Product returned to Connect Tech Inc. must be pre-authorized by Connect Tech Inc. with an RMA (Return Material Authorization) number marked on the outside of the package and sent prepaid, insured and packaged for safe shipment. Connect Tech Inc. will return this product by prepaid ground shipment service. The Connect Tech Inc. Limited Warranty is only valid over the serviceable life of the product. This is defined as the period during which all components are available. Should the product prove to be irreparable, Connect Tech Inc. reserves the right to substitute an equivalent product if available or to retract the Warranty if no replacement is available.

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 **ESD Warning**

Electronic components and circuits are sensitive to ElectroStatic Discharge (ESD). When handling any circuit board assemblies including Connect Tech carrier assemblies, it is recommended that ESD safety precautions be observed. ESD safe best practices include, but are not limited to:

- Leaving circuit boards in their antistatic packaging until they are ready to be installed.
- Using a grounded wrist strap when handling circuit boards, at a minimum you should touch a grounded metal object to dissipate any static charge that may be present on you.
- Only handling circuit boards in ESD safe areas, which may include ESD floor and table mats, wrist strap stations and ESD safe lab coats.
- Avoiding handling circuit boards in carpeted areas.
- Try to handle the board by the edges, avoiding contact with components.

Revision History

Revision	Date	Changes
0.00	2016-06-15	Never Released
0.01	2016-08-18	Initial Release
0.02	2017-05-30	Updated B2B Connector Pinout Table
0.03	2017-07-25	– Corrected pin definitions of D69 and D68 in the B2B Pinout Table – Added additional information on breakout board options and their corresponding reference design package.
0.04	2017-07-27	– Vitesse Firmware version change, default IP now set to 10.10.10.1
0.05	2017-08-04	Added heatplate drawing link, removed drawing from doc
0.06	2017-09-11	– Fixed XDG201 3D Model Link – Added KDB entry on SFP+ CU Transceiver Compatibility
0.07	2018-05-15	Edited KDB link on SFP+ CU Transceiver Compatibility
0.08	2019-07-09	Corrected port speeds

Introduction

Connect Tech's Xtreme/10G Managed Ethernet Switch (XDG201) provides high density, high port count Layer 2 switching and Layer 3 routing with 10G uplinks. A total of 36 switchable ports, with 4 x 10G, 8 x 1G (SGMII) and 24 x 1G (Copper 10/100/1000Mbps) Ports in an extremely small form factor 85mm x 85mm. The devices target managed Layer 2 and Layer 3 equipment in SMB, SME, and industrial applications where high port count 1G switching with 10G aggregation/uplinks are required.
The XDG201 is a Network Switching Module. This module is of a proprietary form factor and contains a board-to-board connector that allows it to be integrated into an off the shelf carrier like the XBG301 or other custom/application specific carrier.

Product Features and Specifications

Feature	Description
Ethernet Switch Engine	Vitesse VSC7448 Carrier Grade Ethernet Switch Chipset
Ports	**36 Total Switching Ports** 4 x 10G (SFI) Ports 8 x 1G (SGMII) Ports 24 x 1G (Copper 10/100/1000Mbps) Ports Note: All ports are exposed over the proprietary module board-to-board connect or; physical interface must be implemented on carrier board.
Memories	4Gb DDR3 SDRAM 128Mb Serial NOR Flash

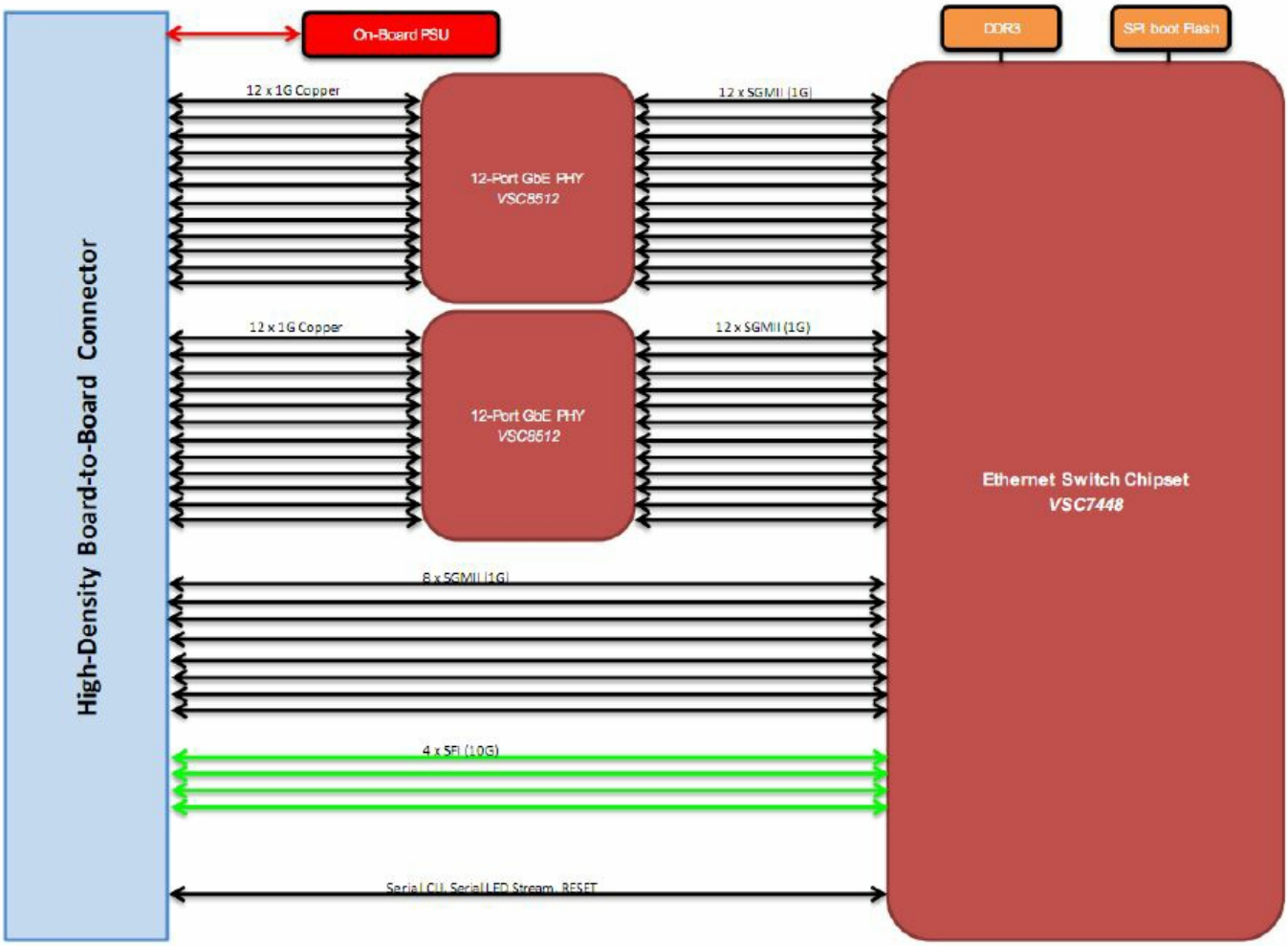
I/O Connectors	High-Density 440-pin Board-to-Board Connector
Layer 2 & Layer 3 Forwarding	IEEE802.1Q switch with 4K VLANs and 32K MAC table entries
	Push/pop up to 3VLAN tags on ingress and egress
	RSTP and MSTP support
	Fully non-blocking wire-speed switching performance for all frame sizes
	IPv4/IPv6 unicast and multicast Layer 2 switching with up to 32K groups and 1K port masks
	IPv4/IPv6 unicast and multicast Layer 3 forwarding (routing) with reverse path forwarding (RPF) support
	IGMPv2, IGMPv3, MLDv1, and MLDv2 support
	Link aggregation (IEEE 802.3ad)
	Independent and shared VLAN learning (IVL, SVL)
	Jumbo frame support
Quality of Service	Four megabytes of integrated shared packet memory Eight QoS classes with a pool of up to 32K queues TCAM-based classification with pat tern matching against Layer 2 through Layer 4 Information Dual- rate policers selected by VCAP IS2, eight single- rate priority policers per port, and four single-rate port policers for each port Flexible 4K ingress QoS mappings and 8K egress QoS mappings for VLAN tags and DSCP values Up to 4K egress VLAN tag operat ions Audio/ video bridging (AVB) with support for time-synchronized, low- latency and video streaming services Priority-based f low control (PFC) (IEEE 802.1Qbb)
Security	Vitesse Content Aware Processor (VCAP™) packet filtering engine using ACLs for ingress and egress packet inspection Storm controllers for flooded broadcast, flooded multicast , and flooded unicast traffic Per-port, per-address registration for copying/redirecting/discarding 32 VCAP single-rate policers
Maximum Bandwidth	80Gbps

Layer 2 Switching Parameters	Packet Buffer: 32Mb MAC Table Size: 32k Layer 2 Multicast Port Masks: 1k Super VC AP blocks: 8 VCAP CLM entries: 4k VCAP LPM entries: 4k/1k (IPv4/IPv6) VCAP IS2 entries: 4k/1k (IPv4/IPv6)

Layer 3 Routing Parameters	Router Legs: 128 IP unicast routes/hosts: 4k/1k (IPv4/IPv6) Next -hop/ ARP table entries: 2k IP multicast groups: 2k/512 Multicast router leg masks: 1k ECMPs: 16
Management Access	Web Interface CLI via RS-232 Software API SMNP
Input Voltage	+4V to 14V Input Range (External Connector)
Power Consumption	24W Max / 14W Idle
Dimensions	85mm x 85mm
Weight	TBD
MTBF	TBD
Operating Temp	-40°C to +85°C (chipset rated to +125°C thermals)
Warranty and Support	1 Year Warranty and Free Technical Support

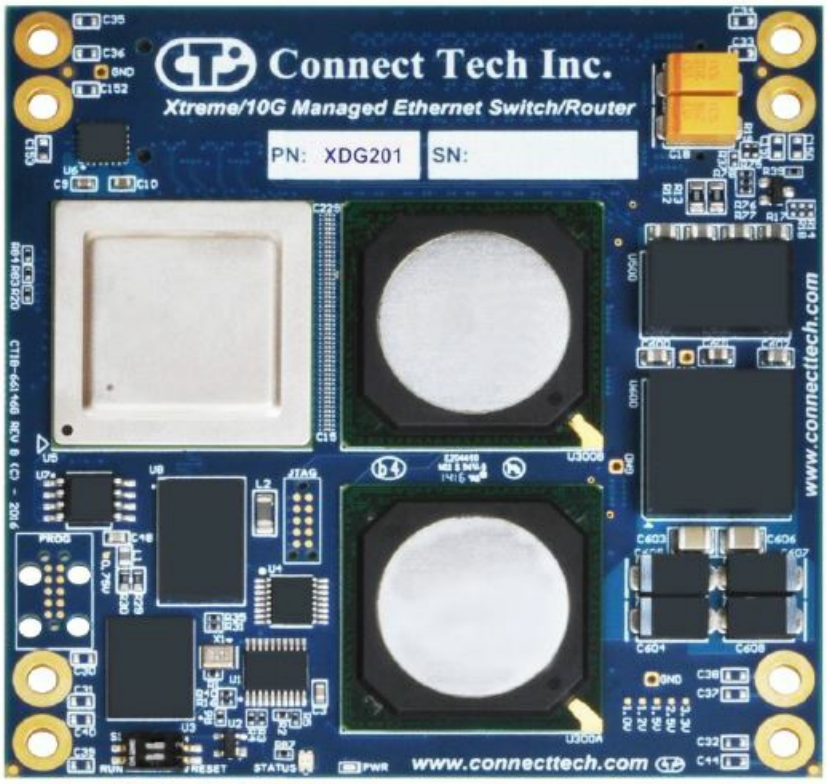
Product Overview

Block Diagram



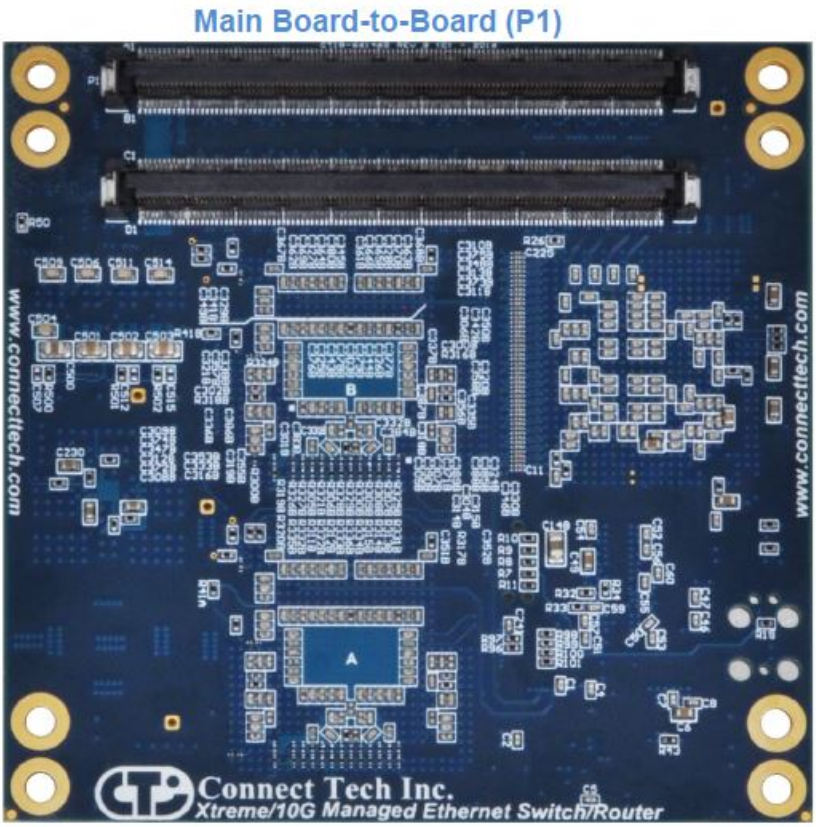
Connector Locations

Top Side



Config Switch (S1)

Bottom Side



Connector Summary

Designator	Connector	Description
P1	Main Board-to-Board	Primary Signal and Power Breakout Connector

Switch Summary & Locations

Designator	Function	Description
S1	Config Switch	Used to Put Switch in to Manual Reset Mode

Detailed Feature Description

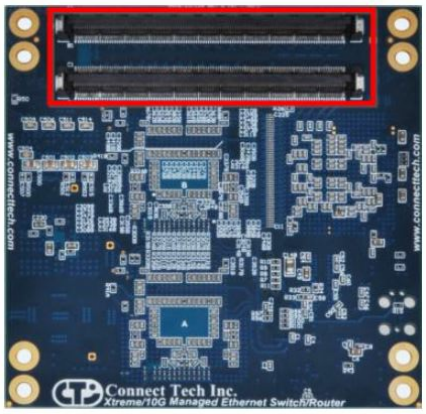
Main Board-to-Board Connector

The Main Board-to-Board connector carries:

- Input power from the carrier to the module
- Power control and reset signals
- 24x 1G copper pairs, for termination to RJ-45s on carrier board
- 4x 10G for connection to SFP+ on the carrier board

- 8x 1G for connection to SFP on the carrier board
- LED management signal chain
- SFP detection and control chain

LED and SFP management signals chains required specific circuitry on the carrier; see the reference design for details.

Function	**Primary Signal and Power Breakout**	
Location	P1	
XDG201 Module Connector	**Primary Part** Manufacturer: TE Connectivity Part Number: 3-1827231-6 **Cross Reference 1** Manufacturer: FCI Part Number: TBD	
Carrier Board Mating Connector	**Primary Part** Manufacturer: TE Connectivity Part Number: 3-5353652-6 **Cross Reference 1** Manufacturer: FCI Part Number: TBD	

Pinout Table

GND	A110
1GF-P7-RXD_P	A109
1GF-P7-RXD_N	A108
GND	A107
1GF-P6-RXD_P	A106
1GF-P6-RXD_N	A105
GND	A104
1GF-P5-RXD_P	A103

1GF-P5-RXD_N	A102
GND	A101
GND	A100
1GF-P4-RXD_P	A99
1GF-P4-RXD_N	A98
GND	A97
1GF-P3-RXD_P	A96
1GF-P3-RXD_N	A95
GND	A94
1GF-P2-RXD_P	A93
1GF-P2-RXD_N	A92
GND	A91
GND	A90
1GF-P1-RXD_P	A89
1GF-P1-RXD_N	A88
GND	A87
1GF-P0-RXD_P	A86
1GF-P0-RXD_N	A85
GND	A84
RESET#_IN	A83
RESET#_OUT	A82

PWROK_IN	A81
GND	A80
EE_WP#	A79
NAND_WP#	A78
Reserved	A77
Reserved	A76
Reserved	A75
Reserved	A74
Reserved	A73
Reserved	A72
Reserved	A71
GND	A70
1GC-P15-D3_P	A69
1GC-P15-D3_N	A68
1GC-P15-D2_P	A67
1GC-P15-D2_N	A66
1GC-P15-D1_P	A65
1GC-P15-D1_N	A64
1GC-P15-D0_P	A63
1GC-P15-D0_N	A62
GND	A61

GND	A60
1GC-P16-D3_P	A59
1GC-P16-D3_N	A58
1GC-P16-D2_P	A57
1GC-P16-D2_N	A56
1GC-P16-D1_P	A55
1GC-P16-D1_N	A54
1GC-P16-D0_P	A53
1GC-P16-D0_N	A52
GND	A51
1GC-P17-D3_P	A50
1GC-P17-D3_N	A49
1GC-P17-D2_P	A48
1GC-P17-D2_N	A47
1GC-P17-D1_P	A46
1GC-P17-D1_N	A45
1GC-P17-D0_P	A44
1GC-P17-D0_N	A43
GND	A42
GND	A41
1GC-P18-D3_P	A40

1GC-P18-D3_N	A39
1GC-P18-D2_P	A38
1GC-P18-D2_N	A37
1GC-P18-D1_P	A36
1GC-P18-D1_N	A35
1GC-P18-D0_P	A34
1GC-P18-D0_N	A33
GND	A32
GND	A31
1GC-P19-D3_P	A30
1GC-P19-D3_N	A29
1GC-P19-D2_P	A28
1GC-P19-D2_N	A27
1GC-P19-D1_P	A26
1GC-P19-D1_N	A25
1GC-P19-D0_P	A24
1GC-P19-D0_N	A23
GND	A22
GND	A21
1GC-P20-D3_P	A20
1GC-P20-D3_N	A19

1GC-P20-D2_P	A18
1GC-P20-D2_N	A17
1GC-P20-D1_P	A16
1GC-P20-D1_N	A15
1GC-P20-D0_P	A14
1GC-P20-D0_N	A13
GND	A12
GND	A11
+3V3_OUT	A10
+3V3_OUT	A9
GND	A8
+VIN	A7
+VIN	A6
+VIN	A5
+VIN	A4
+VIN	A3
+VIN	A2
GND	A1

B110	GND
B109	1GF-P7-TXD_P
B108	1GF-P7-TXD_N

B107	GND
B106	1GF-P6-TXD_P
B105	1GF-P6-TXD_N
B104	GND
B103	1GF-P5-TXD_P
B102	1GF-P5-TXD_N
B101	GND
B100	GND
B99	1GF-P4-TXD_P
B98	1GF-P4-TXD_N
B97	GND
B96	1GF-P3-TXD_P
B95	1GF-P3-TXD_N
B94	GND
B93	1GF-P2-TXD_P
B92	1GF-P2-TXD_N
B91	GND
B90	GND
B89	1GF-P1-TXD_P
B88	1GF-P1-TXD_N
B87	GND
B86	1GF-P0-TXD_P

B85	1GF-P0-TXD_N
B84	GND
B83	UART_TX
B82	UART_RX
B81	PWROK_OUT
B80	GND
B79	Reserved
B78	Reserved
B77	Reserved
B76	Reserved
B75	Reserved
B74	Reserved
B73	Reserved
B72	Reserved
B71	Reserved
B70	GND
B69	1GC-P12-D3_P
B68	1GC-P12-D3_N
B67	1GC-P12-D2_P
B66	1GC-P12-D2_N
B65	1GC-P12-D1_P
B64	1GC-P12-D1_N

B63	1GC-P12-D0_P
B62	1GC-P12-D0_N
B61	GND
B60	GND
B59	1GC-P13-D3_P
B58	1GC-P13-D3_N
B57	1GC-P13-D2_P
B56	1GC-P13-D2_N
B55	1GC-P13-D1_P
B54	1GC-P13-D1_N
B53	1GC-P13-D0_P
B52	1GC-P13-D0_N
B51	GND
B50	1GC-P14-D3_P
B49	1GC-P14-D3_N
B48	1GC-P14-D2_P
B47	1GC-P14-D2_N
B46	1GC-P14-D1_P
B45	1GC-P14-D1_N
B44	1GC-P14-D0_P
B43	1GC-P14-D0_N

B42	GND
B41	GND
B40	1GC-P21-D3_P
B39	1GC-P21-D3_N
B38	1GC-P21-D2_P
B37	1GC-P21-D2_N
B36	1GC-P21-D1_P
B35	1GC-P21-D1_N
B34	1GC-P21-D0_P
B33	1GC-P21-D0_N
B32	GND
B31	GND
B30	1GC-P22-D3_P
B29	1GC-P22-D3_N
B28	1GC-P22-D2_P
B27	1GC-P22-D2_N
B26	1GC-P22-D1_P
B25	1GC-P22-D1_N
B24	1GC-P22-D0_P
B23	1GC-P22-D0_N
B22	GND

B21	GND
B20	1GC-P23-D3_P
B19	1GC-P23-D3_N
B18	1GC-P23-D2_P
B17	1GC-P23-D2_N
B16	1GC-P23-D1_P
B15	1GC-P23-D1_N
B14	1GC-P23-D0_P
B13	1GC-P23-D0_N
B12	GND
B11	GND
B10	+3V3_OUT
B9	+3V3_OUT
B8	GND
B7	+VIN
B6	+VIN
B5	+VIN
B4	+VIN
B3	+VIN
B2	+VIN
B1	GND

GND	C110
GND	C109
10G-P3-RXD_P	C108
10G-P3-RXD_N	C107
GND	C106
GND	C105
10G-P2-RXD_P	C104
10G-P2-RXD_N	C103
GND	C102
GND	C101
GND	C100
GND	C99
10G-P1-RXD_P	C98
10G-P1-RXD_N	C97
GND	C96
GND	C95
10G-P0-RXD_P	C94
10G-P0-RXD_N	C93
GND	C92
GND	C91
GND	C90

SGPIO2_DI	C89
SGPIO2_LD	C88
SGPIO2_DO	C87
SGPIO2_CLK	C86
SFP+D_SCL	C85
SFP+C_SCL	C84
SFP+B_SCL	C83
SFP+A_SCL	C82
PUSHBUTTON#	C81
GND	C80
Reserved	C79
Reserved	C78
Reserved	C77
Reserved	C76
Reserved	C75
Reserved	C74
Reserved	C73
Reserved	C72
Reserved	C71
GND	C70
1GC-P3-D3_P	C69

1GC-P3-D3_N	C68
1GC-P3-D2_P	C67
1GC-P3-D2_N	C66
1GC-P3-D1_P	C65
1GC-P3-D1_N	C64
1GC-P3-D0_P	C63
1GC-P3-D0_N	C62
GND	C61
GND	C60
1GC-P4-D3_P	C59
1GC-P4-D3_N	C58
1GC-P4-D2_P	C57
1GC-P4-D2_N	C56
1GC-P4-D1_P	C55
1GC-P4-D1_N	C54
1GC-P4-D0_P	C53
1GC-P4-D0_N	C52
GND	C51
1GC-P5-D3_P	C50
1GC-P5-D3_N	C49
1GC-P5-D2_P	C48

1GC-P5-D2_N	C47
1GC-P5-D1_P	C46
1GC-P5-D1_N	C45
1GC-P5-D0_P	C44
1GC-P5-D0_N	C43
GND	C42
GND	C41
1GC-P6-D3_P	C40
1GC-P6-D3_N	C39
1GC-P6-D2_P	C38
1GC-P6-D2_N	C37
1GC-P6-D1_P	C36
1GC-P6-D1_N	C35
1GC-P6-D0_P	C34
1GC-P6-D0_N	C33
GND	C32
GND	C31
1GC-P7-D3_P	C30
1GC-P7-D3_N	C29
1GC-P7-D2_P	C28
1GC-P7-D2_N	C27

1GC-P7-D1_P	C26
1GC-P7-D1_N	C25
1GC-P7-D0_P	C24
1GC-P7-D0_N	C23
GND	C22
GND	C21
1GC-P8-D3_P	C20
1GC-P8-D3_N	C19
1GC-P8-D2_P	C18
1GC-P8-D2_N	C17
1GC-P8-D1_P	C16
1GC-P8-D1_N	C15
1GC-P8-D0_P	C14
1GC-P8-D0_N	C13
GND	C12
GND	C11
+3V3_OUT	C10
+3V3_OUT	C9
GND	C8
+VIN	C7
+VIN	C6

+VIN	C5
+VIN	C4
+VIN	C3
+VIN	C2
GND	C1

D110	GND
D109	GND
D108	10G-P3-TXD_P
D107	10G-P3-TXD_N
D106	GND
D105	GND
D104	10G-P2-TXD_P
D103	10G-P2-TXD_N
D102	GND
D101	GND
D100	GND
D99	GND
D98	10G-P1-TXD_P
D97	10G-P1-TXD_N
D96	GND

D95	GND
D94	10G-P0-TXD_P
D93	10G-P0-TXD_N
D92	GND
D91	GND
D90	GND
D89	I2C_SDA
D88	I2C_SCL
D87	MUX_SEL2
D86	MUX_SEL1
D85	MUX_SEL0
D84	SLED1_DO
D83	SLED1_CLK
D82	SLED0_DO
D81	SLED0_CLK
D80	GND
D79	Reserved
D78	Reserved
D77	Reserved
D76	Reserved
D75	Reserved

D74	Reserved
D73	Reserved
D72	Reserved
D71	Reserved
D70	GND
D69	1GC-P0-D3_P
D68	1GC-P0-D3_N
D67	1GC-P0-D2_P
D66	1GC-P0-D2_N
D65	1GC-P0-D1_P
D64	1GC-P0-D1_N
D63	1GC-P0-D0_P
D62	1GC-P0-D0_N
D61	GND
D60	GND
D59	1GC-P1-D3_P
D58	1GC-P1-D3_N
D57	1GC-P1-D2_P
D56	1GC-P1-D2_N
D55	1GC-P1-D1_P
D54	1GC-P1-D1_N

D53	1GC-P1-D0_P
D52	1GC-P1-D0_N
D51	GND
D50	1GC-P2-D3_P
D49	1GC-P2-D3_N
D48	1GC-P2-D2_P
D47	1GC-P2-D2_N
D46	1GC-P2-D1_P
D45	1GC-P2-D1_N
D44	1GC-P2-D0_P
D43	1GC-P2-D0_N
D42	GND
D41	GND
D40	1GC-P9-D3_P
D39	1GC-P9-D3_N
D38	1GC-P9-D2_P
D37	1GC-P9-D2_N
D36	1GC-P9-D1_P
D35	1GC-P9-D1_N
D34	1GC-P9-D0_P
D33	1GC-P9-D0_N

D32	GND
D31	GND
D30	1GC-P10-D3_P
D29	1GC-P10-D3_N
D28	1GC-P10-D2_P
D27	1GC-P10-D2_N
D26	1GC-P10-D1_P
D25	1GC-P10-D1_N
D24	1GC-P10-D0_P
D23	1GC-P10-D0_N
D22	GND
D21	GND
D20	1GC-P11-D3_P
D19	1GC-P11-D3_N
D18	1GC-P11-D2_P
D17	1GC-P11-D2_N
D16	1GC-P11-D1_P
D15	1GC-P11-D1_N
D14	1GC-P11-D0_P
D13	1GC-P11-D0_N
D12	GND

D11	GND
D10	+3V3_OUT
D9	+3V3_OUT
D8	GND
D7	+VIN
D6	+VIN
D5	+VIN
D4	+VIN
D3	+VIN
D2	+VIN
D1	GND

Board-to-Board Reference Design Package

- Connect Tech Product a complete reference design package for the XBG301 breakout board.
- This details how to properly interface to the XDG201 Switch.

This package contains the following for the XBG301 Breakout Board:

- Altium Designer ECAD Source Files
- PDF Schematic Files
- Gerbers / Manufacturing Files
- Bill of Materials
- Tech Data / B2B Pinout Information
- 3D Models (as well for the Switch Module and Heatspreader)

The Reference Design Package can be downloaded here:

- **http://www.connecttech.com/ftp/Reference_Designs/XBG301_Reference_Design_Package.zip**

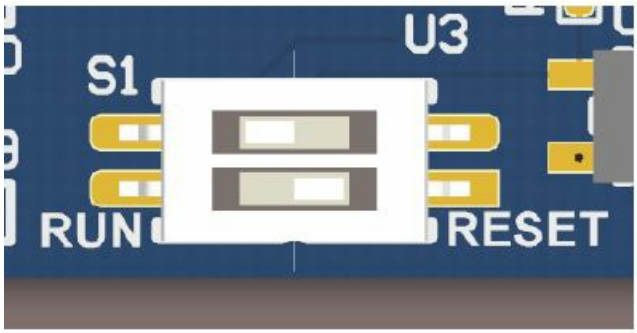
SFP and SFP+ CU Transceiver Support

The XDG201 has support for the CISCO Compatible/ Equivalent GLC-T, additional support for CU transceivers can be found in the following link. **http://connecttech.com/resource-center/kdb360-xtreme10g-managed-ethernet-switchrouter-sfpsfp-transceivermodules/**

Switch Details And Typical Installation

Switch Details

DIP Switch Details (S1)



- Ensure – S1 Lower Switch Position is set to “RUN” at all times.
- Moving the switch to “RESET” will hold the entire device in RESET and will prevent the board from booting.

Typical Installation

1. Install XHG201 heatplate to XDG201 module.
2. Prepare breakout/carrier board with 4 x M3 8mm standoffs.
3. Ensure breakout/carrier board will be supplying module with +12V DC.
4. Mate board-to-board connector from XDG201 module to that of the breakout/carrier board.
5. Turn power ON to breakout/carrier board, XDG201 will now boot up.

On-Board Indicator LED’s

The XDG201 has 2 on-board indicator LEDs.

LED Designator	Description
PWR	**Power Good Indicator** – If this LED is ON, this indicates that all on-board power supplies are ON and at the proper level.
Status	**System Status Indicator** – Function TBD

CLI Management Interface

CLI Access via External Serial Port

To use the CLI management on the XDG you must connect to the external management serial port. Only TX, RX and GND connections are needed for operation. You then must open the serial port in a terminal program such as: RealTerm, Putty, HyperTerminal, minicom, etc. The COM port must be set up to run with a baud rate of 115200, 8 data bits, 1 stop bit and no parity.

RS-232 Serial Parameter	**Value**
Baud Rate	115200 bps
Data Bits	8
Parity	None
Stop Bit	1

CLI Basics

Once opening the COM port attached to the management port, after boot up your terminal output should look like the output below. The default login is admin and password is blank(“”). So after typing admin hit <ENTER> then hit <ENTER> again to login and “?” will display a list of the available commands. Below is a list of common quick CLI commands. For a complete CLI reference please see the documents described below.

Common Task	**CLI Command Syntax**
What are the IP addresses used by my switch?	show ip int br
What ports are linked and at what speed?	show int * status
What software version is on my switch?	show ver
How do I save my configuration?	copy running-config startup-config
How do I setup my IP address for vlan1?	conf t int vlan 1 ip add xxx.xxx.xxx.xxx 255.255.255.0 end

Complete CLI and Protocol Configuration Reference Guide

The complete CLI and Protocol Configuration reference guide from Microsemi for the VSC7448 device can be downloaded here.

The following documents:

- AN1104-Software_Configuration_Guide_ICLI –
- AN1115Layer2ProtocolConfigurationGuide

Will have the below mentioned copyright notice.

Web Management Interface

- The Xtreme/10G Managed Ethernet Switch/Router allows users to configure and monitor the device from any web enabled device.
- Below describes how to access this management interface as well as provides on overview on the web GUI itself.

Accessing the Web Management Interface

There are two ways to access the web interface for first time use.

Method #1 – Using the default shipping IP

This method DOES NOT require having access to the CLI interface. By default the Xtreme/10G will have an IP address of 10.10.10.1, if you would like to connect to this address follow the steps below:

- Directly connect any port of Xtreme/10G to your host PC using a standard Cat5e ethernet cable
- Setup your host PC's IP address to be on the same subnet as Xtreme/10G (10.10.10.X)
- Open a web browser and go to the 10.10.10.1 address.
- Now you should see the login screen and from here you can setup the Xtreme/10G to an IP address on your network.

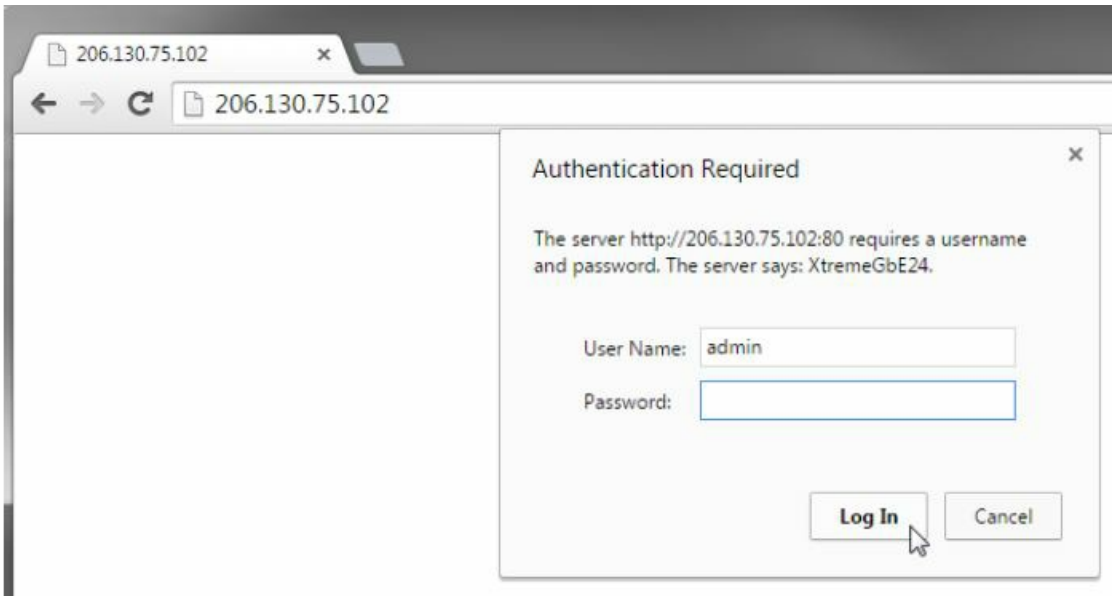
Method #2 – Changing the Xtreme/10G IP to one on your network via the CLI

This method requires having access to the CLI interface through means of the external management serial port or the PCIe/104 bus

- Login to the CLI interface
- Type in the following commands
- configure terminal
- interface vlan 1
- ip address xxx.xxx.xxx.xxx 255.255.255.0
- end
- Now connect Xtreme/10G to any place on your network.
- Once the system is up simply go to your specified address of xxx.xxx.xxx.xxx in a web browser of your choice and you will see the login screen for the web interface

Login Screen of Web Management Interface

To login into the web management interface, the default login is admin and the password is blank. (See below)



Web Management Interface Overview

<Complete Details Coming Soon>

Complete Web Protocol Configuration Reference Guide

As mentioned in the CLI section, the complete Protocol Configuration reference guide from Microsemi for the VSC7429 device can be downloaded here. It will have CLI and Web configuration methods listed.

The following document:

- AN1115Layer2ProtocolConfigurationGuide

Will have the below mentioned copyright notice.

Breakout Boards

The XDG201 product can be integrated into any custom designed motherboard, or custom design breakout specifically for the XDG201. It can also be used with CTI's line of COTS breakout boards as well, so that no additional development is needed. These COTS breakout boards can be used for proof of concept or for direct field deployment.

XBG301 – Embedded Carrier

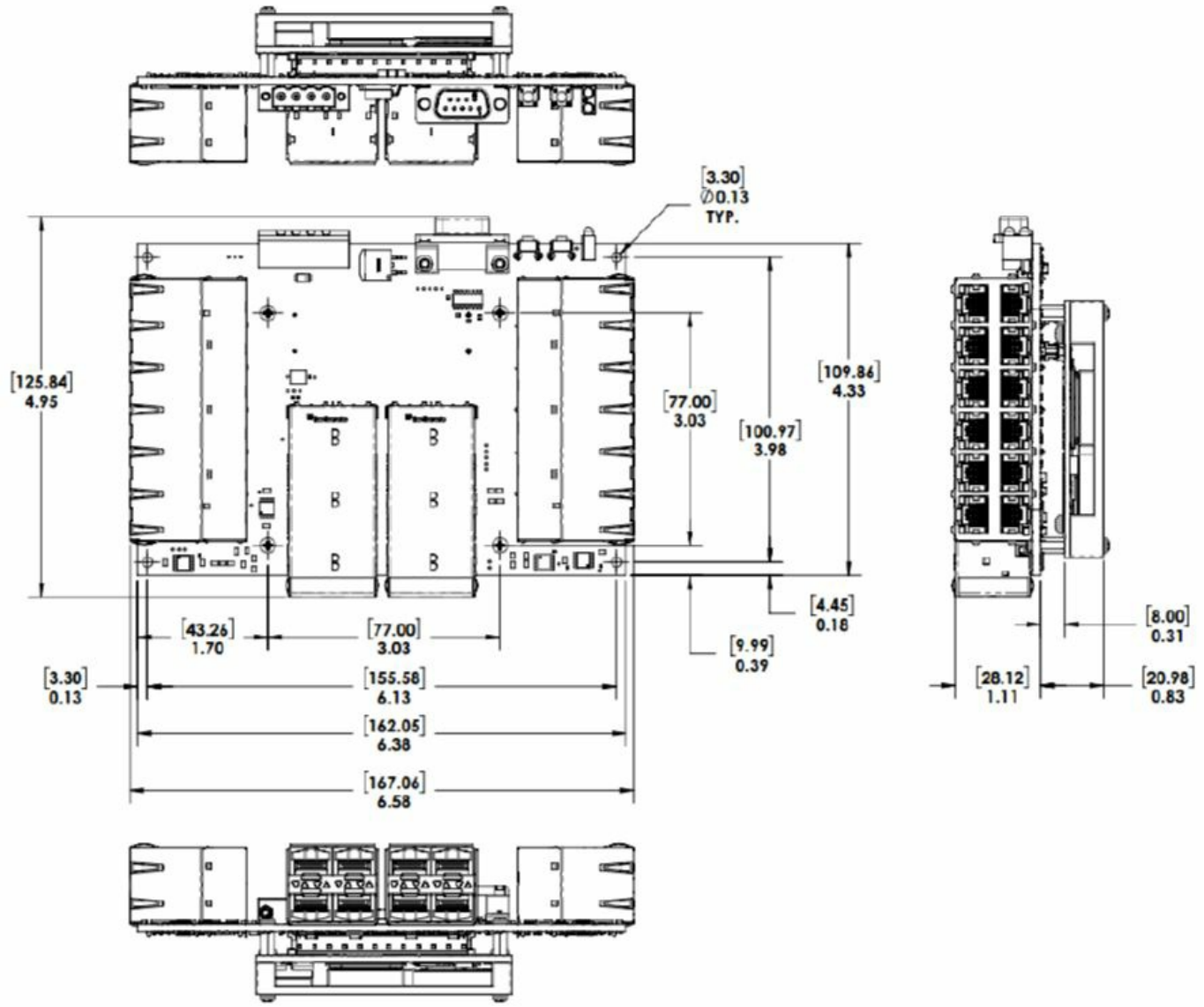
CTI has developed the XBG301, which is a COTS breakout board solution for the XDG201 switch. This breakout board is also meant to serve as a Reference Design platform for customers to use for their own development purposes. CTI provides full Bill of Materials, Schematics, Layout files and user documentation for the XBG301 embedded carrier in a Reference Design Package.

The Reference Design Package for this breakout board be downloaded here:
http://www.connecttech.com/ftp/Reference_Designs/XBG301_Reference_Design_Package.zip

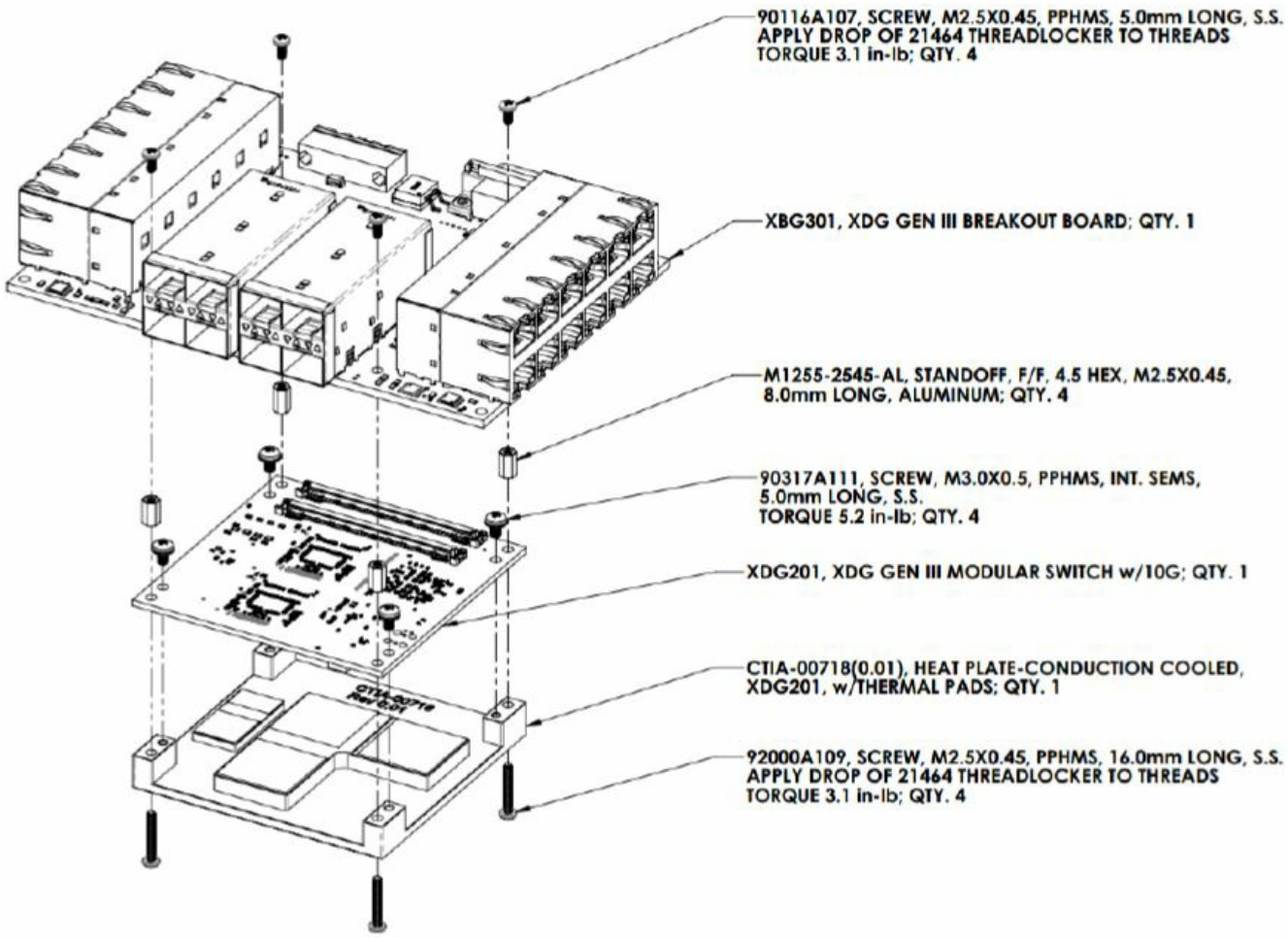
XBG301 – Embedded Carrier Specifications

Feature	Description
Ports	4x 10G (SFP+) 4x 1G (SFP) 24x 1G (RJ-45)
Console	1x RS-232 (via DB-9)
Input Voltage	**+5V to +14V DC** (4-pin 5mm pitch terminal header)
Dimensions	167.07mm x 125.84mm x 49.10mm (when XDG201 + XHG201 heat spreader a re installed)
Console	1x RS-232 (via DB-9)

XBG301 +XDG201 + XHG201 – Dimensioned Drawing



XBG301 +XDG201 + XHG201 – Assembly Drawing



Thermal Details

XDG201 Thermal Parameters

Thermal Parameter	Value
Minimum Ambient Operating Temperature	-40 °C
Maximum Operating Junction Temperature of all chipsets	125 °C
Total Solution TDP	24 W
Die junction to package case top (SoC/PHY)	3.27 °C/W
Die junction to PCB (SoC/PHY)	6.03 °C/W
Die junction to Ambient (SoC/PHY)	12.14 °C/W
Die junction to moving air @ 1 m/s (SoC/PHY)	9.42 °C/W

XHG201 – Conduction Cooled Heatplate

- The XHG201 is a flat heatplate that can be used to interface the XDG201 to another thermal extraction layer (chassis wall, finned heat sink etc).
- It is not intended to be used in a standalone application. **View the heatplate drawing**.

Current Consumption Details

Below are the maximum ratings of the XDG201 Switch.

Theoretical Maximum	**Amps**	**Watts**
Theoretical absolute maximum total draw of all functionality on the board	2.00	24

Below are measurements taken with the XDG201 Switch running in various configurations.
All measurements below are used with +12V applied to the Input Power Connector.

Actual Measurements	**Amps**	**Watts**
Idle No Links Up	1.17	14.04
1x 1G Link Up	1.20	14.40
24 x 1G Links Up	1.76	21.12
24 x 1G, 4 x 1G SFP, 4 x 10G SFP+ Up	1.81	21.72

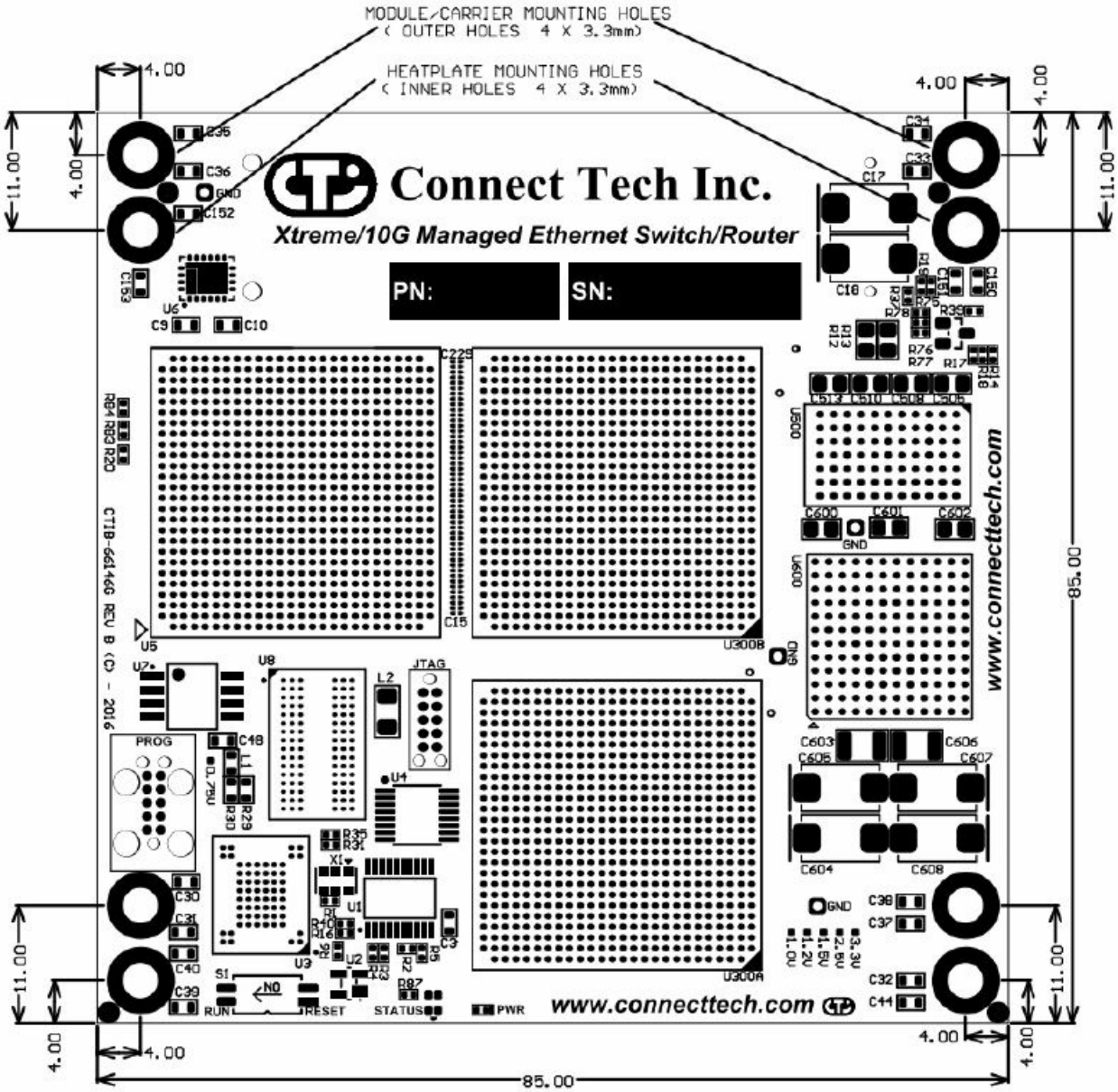
Mechanical Details

3D Model

Download Link: http://www.connecttech.com/ftp/3d_models/XDG201_3D_MODEL.zip

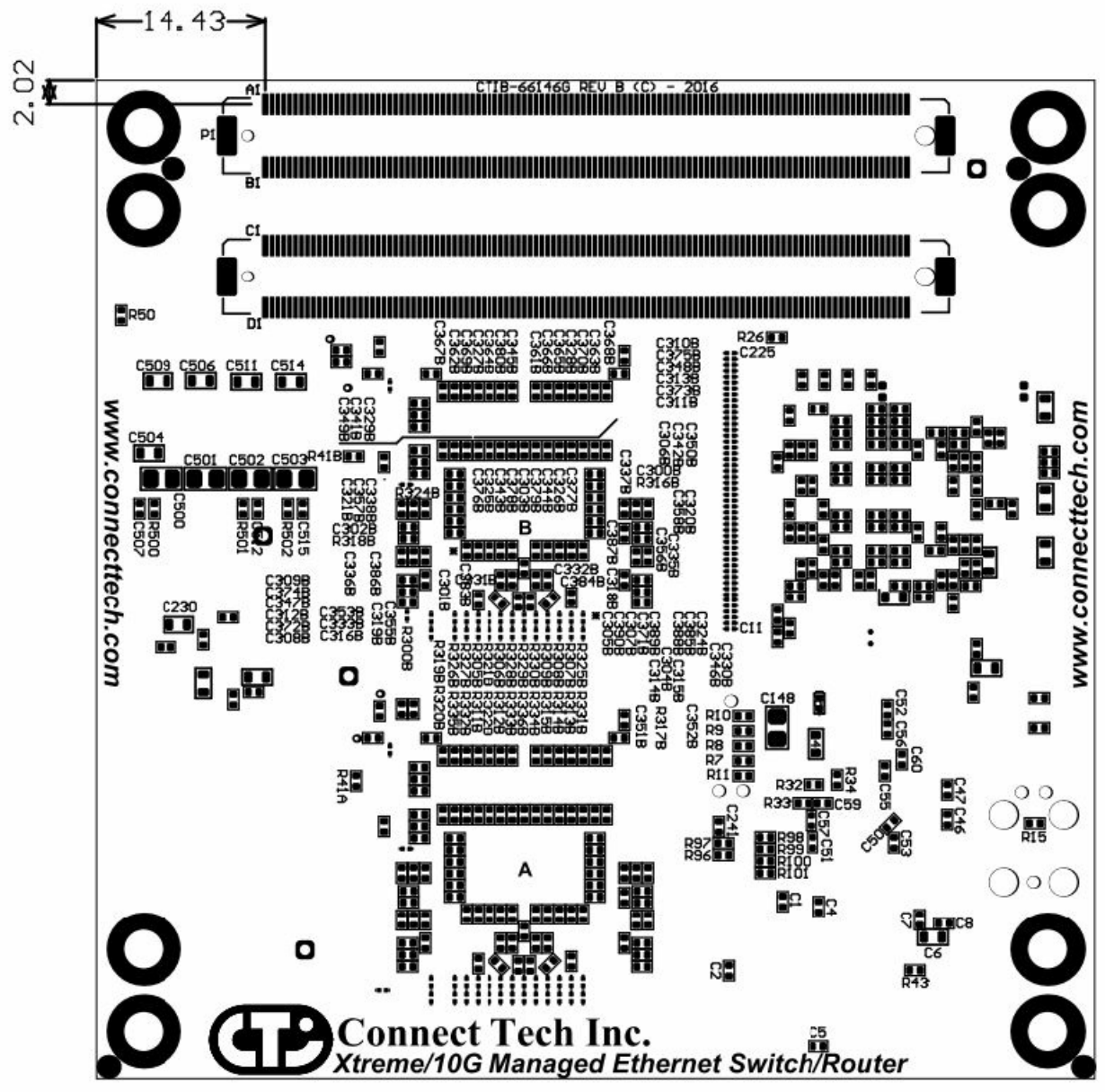
2D Drawing (Top Side)

- Dimensions in millimeters



2D Drawing (Bottom Side)

Dimensions in millimeters – Location of Pin 1 detailed below



Contact

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- support@connecttech.com

Documents / Resources

	Connect Tech Inc Xtreme 10G Managed Ethernet Switch Router [pdf] User Guide Xtreme 10G Managed Ethernet Switch Router, 10G Managed Ethernet Switch Router, Ethernet Switch Router, Switch Router, Router

References

- Support - Connect Tech Inc.
- Resource Center - Connect Tech Inc.
- Connect Tech Inc., Embedded Computing Experts
- Connect Tech Inc., Embedded Computing Experts
- User Manual