The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Solicitation Response(SR) Dept: 0511 ID: ESR08282500000001427 Ver.: 1 Function: New Phase: Final

Modified by batch , 09/03/2025

Header 1

List View

General Information | Contact | Default Values | Discount | Document Information | Clarification Request

Procurement Folder: 1742806
Procurement Type: Central Master Agreement
Vendor ID: 000000223571
Legal Name: ADVANTAGE TECHNOLOGY LLC
Alias/DBA:
Total Bid: $27,648.90
Response Date: 08/28/2025
Response Time: 22:15
Responded By User ID: advjstewart
First Name: James
Last Name: Stewart
Email: jstewart@advantage.tech
Phone: 304-342-0796

SO Doc Code: CRFQ
SO Dept: 0511
SO Doc ID: MIS2600000001
Published Date: 8/22/25
Close Date: 9/3/25
Close Time: 13:30
Status: Closed
Solicitation Description: NETWORKING EQUIPMENT

Total of Header Attachments: 1
Total of All Attachments: 1

Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Solicitation Response

Proc Folder:	1742806
Solicitation Description:	NETWORKING EQUIPMENT
Proc Type:	Central Master Agreement

Solicitation Closes	Solicitation Response	Version
2025-09-03 13:30	SR 0511 ESR08282500000001427	1

VENDOR

000000223571
ADVANTAGE TECHNOLOGY LLC

Solicitation Number: CRFQ 0511 MIS2600000001

Total Bid: 27648.900000000000145519152283 **Response Date:** 2025-08-28 **Response Time:** 22:15:08

Comments:

FOR INFORMATION CONTACT THE BUYER
Crystal G Hustead
(304) 558-2402
crystal.g.hustead@wv.gov

Vendor
Signature X **FEIN#** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Extreme Networks Products 48 Port Network Switch	1.00000	EA	3620.500000	3620.50

Comm Code	Manufacturer	Specification	Model #
43222612			

Commodity Line Comments:

Extended Description:

3.1.1 Extreme Networks 48 Port Network Switch (Model 5320-48P-8XE), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
2	Extreme Networks 24 Port Network Switch	1.00000	EA	2292.500000	2292.50

Comm Code	Manufacturer	Specification	Model #
43222612			

Commodity Line Comments:

Extended Description:

3.1.2 Extreme Networks 24 Port Network Switch (Model 5320-24P-8XE), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
3	Extreme Networks 16 Port Network Switch	1.00000	EA	1782.000000	1782.00

Comm Code	Manufacturer	Specification	Model #
43222612			

Commodity Line Comments:

Extended Description:

3.1.3 Extreme Networks 16 Port Network Switch (Model 5320-16P-4XE), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
4	Extreme Networks SFP Network Switch	1.00000	EA	2909.750000	2909.75

Comm Code	Manufacturer	Specification	Model #
43222612			

Commodity Line Comments:

Extended Description:

3.1.4 Extreme Networks SFP Network Switch (Model 5420F-24S-4XE), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
5	Extreme Networks 24 Port Network Switch	1.00000	EA	2856.500000	2856.50

Comm Code	Manufacturer	Specification	Model #
43222612			

Commodity Line Comments:

Extended Description:

3.1.5 Extreme Networks 24 Port Network Switch (Model 5420F-24P-4YE), or equal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
6	Extreme Networks 48 Port Network Switch	1.00000	EA	4392.000000	4392.00

Comm Code	Manufacturer	Specification	Model #
43222612			

Commodity Line Comments:

Extended Description:

3.1.6 Extreme Networks 48 Port Network Switch (Model 5420F-48P-4XE), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
7	Extreme Networks Standard Power Cord, 15A/USA/NEMA 5-15	1.00000	EA	16.000000	16.00

Comm Code	Manufacturer	Specification	Model #
26121636			

Commodity Line Comments:

Extended Description:

3.1.7 Extreme Networks Standard Power Cord, 15A, USA, NEMA 5-15, IEC320-C15 (Part 10099), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
8	Extreme Network 20GBase Direct Attach Cable - 0.5 m	1.00000	EA	184.250000	184.25

Comm Code	Manufacturer	Specification	Model #
26121636			

Commodity Line Comments:

Extended Description:

3.1.8 Extreme Network 20GBase Direct Attach Cable - 0.5 m (Part#20G-DACP-SFPDDZ5m), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
9	Extreme Networks 20GBase Direct Attach Cable - 1.0 m	1.00000	EA	203.250000	203.25

Comm Code	Manufacturer	Specification	Model #
26121636			

Commodity Line Comments:

Extended Description:

3.1.9 Extreme Networks 20GBase Direct Attach Cable - 1.0 m (Part# 20G-DACP-SFPDD1M), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
10	Extreme Networks 20GBase Direct Attach Cable - 3.0 m	1.00000	EA	309.000000	309.00

Comm Code	Manufacturer	Specification	Model #
26121636			

Commodity Line Comments:

Extended Description:

3.1.10 Extreme Networks 20GBase Direct Attach Cable - 3.0 m (Part# 20G-DACP-SFPDD3M), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
11	Extreme Networks QSFP to SFP+ Adapter	1.00000	EA	340.250000	340.25

Comm Code	Manufacturer	Specification	Model #
43210000			

Commodity Line Comments:

Extended Description:

3.1.11 Extreme Networks QSFP to SFP+ Adapter (Part# 10506), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
12	Extreme Networks 600W Secondary Power Supply	1.00000	EA	497.000000	497.00

Comm Code	Manufacturer	Specification	Model #
39121004			

Commodity Line Comments:

Extended Description:

3.1.12 Extreme Networks 600W Secondary Power Supply (Model XN-ACPWR-600W), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
13	Extreme Networks 920W Secondary Power Supply	1.00000	EA	661.750000	661.75

Comm Code	Manufacturer	Specification	Model #
39121004			

Commodity Line Comments:

Extended Description:

3.1.13 Extreme Networks 920W Secondary Power Supply (Model XN-ACPWR-920W), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
14	Extreme Networks Replacement Fan Module	1.00000	EA	68.900000	68.90

Comm Code	Manufacturer	Specification	Model #
43210000			

Commodity Line Comments:

Extended Description:

3.1.14 Extreme Networks Replacement Fan Module (Model XN-FAN-000), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
15	Extreme Networks 10GBASE-LR SFP+ Transceiver Module - 10 gig	1.00000	EA	190.250000	190.25

Comm Code	Manufacturer	Specification	Model #
43201553			

Commodity Line Comments:

Extended Description:

3.1.15 Extreme Networks 10GBASE-LR SFP+ Transceiver Module - 10 Gigabit Ethernet (Part# 10301), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
16	Extreme Networks 10GBASE-SR SFP+ Transceiver Module 10 Gig	1.00000	EA	287.750000	287.75

Comm Code	Manufacturer	Specification	Model #
43201553			

Commodity Line Comments:

Extended Description:

3.1.16 Extreme Networks 10GBASE-SR SFP+ Transceiver Module - 10 Gigabit Ethernet (Part# 10302), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
17	Extreme Networks 1M SFP+ Twin axial Cable	1.00000	EA	26.750000	26.75

Comm Code	Manufacturer	Specification	Model #
26121636			

Commodity Line Comments:

Extended Description:

3.1.17 Extreme Networks 1M SFP+ Twin axial Cable (Part# 10304), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
18	Extreme Networks 1000BASE-SX SFP Mini-GBIC Transceiver	1.00000	EA	39.250000	39.25

Comm Code	Manufacturer	Specification	Model #
43201553			

Commodity Line Comments:

Extended Description:

3.1.18 Extreme Networks 1000BASE-SX SFP Mini-GBIC Transceiver Module - 1.00 Gbps (Part# 10051H), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
19	Extreme Networks 1000BASE-LX SFP Mini-GBIC Transceiver	1.00000	EA	46.250000	46.25

Comm Code	Manufacturer	Specification	Model #
43201553			

Commodity Line Comments:

Extended Description:

3.1.19 Extreme Networks 1000BASE-LX SFP Mini-GBIC Transceiver Module - 1 Gbps (Part# 10052H), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
20	Extreme Networks SFP Transceiver Module - GigE	1.00000	EA	57.750000	57.75

Comm Code	Manufacturer	Specification	Model #
43201553			

Commodity Line Comments:

Extended Description:

3.1.20 Extreme Networks SFP Transceiver Module - GigE Copper (Model MGBIC-02), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
21	Extreme Networks 6E Tri-Radio Wireless Access Point	1.00000	EA	517.500000	517.50

Comm Code	Manufacturer	Specification	Model #
43222640			

Commodity Line Comments:

Extended Description:

3.1.21 Extreme Networks 6E Tri-Radio Wireless Access Point (Model AP4000-WW), or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
22	Technical Assistance Center & Operating System Support- 5 YR	1.00000	EA	123.750000	123.75

Comm Code	Manufacturer	Specification	Model #
81111811			

Commodity Line Comments:

Extended Description:

3.1.23 Vendor must have the ability to provide Technical Assistance Center and Operating System Support for 5 years for AP4000-WW wireless access points (part# 97000-AP4000-WW-5YR) or equal.

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
23	Extreme Cloud IQ Pilot SaaS & EW SaaS Support- 5 YRS	1.00000	EA	239.500000	239.50

Comm Code	Manufacturer	Specification	Model #
81111811			

Commodity Line Comments:

Extended Description:

3.1.23 Vendor must have the ability to provide Extreme Cloud IQ Pilot SaaS Subscription Support and Extreme Works (EW) SaaS Support for 5 years or equal (Part#: XIQ-PIL-S-C-EW-5YR)

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
24	Extreme Networks Multi-Gigabit Network Switch	1.00000	EA	5986.500000	5986.50

Comm Code	Manufacturer	Specification	Model #
43222612			

Commodity Line Comments:

Extended Description:

3.1.24 Extreme Networks Multi-Gigabit Network Switch (Model 5420F-16MW-32P-4XE), or equal.

Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Centralized Request for Quote
Info Technology

Proc Folder: 1742806			**Reason for Modification:**
Doc Description: NETWORKING EQUIPMENT			ADDENDUM 2 TO REVISE SPECIFICATIONS
Proc Type: Central Master Agreement			
Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2025-08-22	2025-09-03 13:30	CRFQ 0511 MIS2600000001	3

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Customer Code: 0000000223571
Vendor Name : Advantage Technology
Address :
Street : 950 Kanawha Blvd East Ste 100
City : Charleston
State : WV **Country :** USA **Zip :** 25301
Principal Contact : James Stewart, Sales Engineer
Vendor Contact Phone: 304-941-4272 **Extension:**

FOR INFORMATION CONTACT THE BUYER
Crystal G Hustead
(304) 558-2402
crystal.g.hustead@wv.gov

Vendor Signature X James Stewart **FEIN#** 74-3077314 **DATE** 08.28.2025

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION
THE STATE OF WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, WEST DEPARTMENT OF HEALTH AND HUMAN SERVICES, HEALTH FACILITIES, AND OFFICE OF SHARED ADMINISTRATION, IS SOLICITING BIDS TO ESTABLISH AN OPEN-END CONTRACT FOR NETWORKING EQUIPMENT TO INCLUDE NETWORK SWITCHES, TWIN AXIAL CABLES, POWER CORDS, WIRELESS ACCESS POINTS AND TRANSCEIVER MODULES PER THE ATTACHED DOCUMENTS. ***QUESTIONS REGARDING THE SOLICITATION MUST BE SUBMITTED IN WRITING TO CRYSTAL.G.HUSTEAD@WV.GOV PRIOR TO THE QUESTION PERIOD DEADLINE CONTAINED IN THE INSTRUCTIONS TO VENDORS SUBMITTING BIDS***

INVOICE TO		SHIP TO	
HEALTH AND HUMAN RESOURCES		HEALTH AND HUMAN RESOURCES	
MANAGEMENT INFORMATION SERVICE		MANAGEMENT INFORMATION SERVICE	
ONE DAVIS SQUARE, RM 211		321 CAPITOL ST, STE 200	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Extreme Networks Products 48 Port Network Switch	1.00000	EA	$3,620.50ea	$3,620.50

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:
3.1.1 Extreme Networks 48 Port Network Switch (Model 5320-48P-8XE), or equal.

INVOICE TO		SHIP TO	
HEALTH AND HUMAN RESOURCES		HEALTH AND HUMAN RESOURCES	
MANAGEMENT INFORMATION SERVICE		MANAGEMENT INFORMATION SERVICE	
ONE DAVIS SQUARE, RM 211		321 CAPITOL ST, STE 200	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Extreme Networks 24 Port Network Switch	1.00000	EA	$2,292.50ea	$2,292.50

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:
3.1.2 Extreme Networks 24 Port Network Switch (Model 5320-24P-8XE), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Extreme Networks 16 Port Network Switch	1.00000	EA	$1,782.00ea	$1,782.00

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:

3.1.3 Extreme Networks 16 Port Network Switch (Model 5320-16P-4XE), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Extreme Networks SFP Network Switch	1.00000	EA	$2,909.75ea	$2,909.75

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:

3.1.4 Extreme Networks SFP Network Switch (Model 5420F-24S-4XE), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	Extreme Networks 24 Port Network Switch	1.00000	EA	$2,856.50ea	$2,856.50

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:

3.1.5 Extreme Networks 24 Port Network Switch ~~(Model 5420F-24P-4YE),~~ or equal Model: 5420F-24P-4XE

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
6	Extreme Networks 48 Port Network Switch	1.00000	EA	$4,392.00ea	$4,392.00

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:

3.1.6 Extreme Networks 48 Port Network Switch (Model 5420F-48P-4XE), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
7	Extreme Networks Standard Power Cord, 15A/ USA/NEMA 5-15	1.00000	EA	$16.00ea	$16.00

Comm Code	Manufacturer	Specification	Model #
26121636			

Extended Description:

3.1.7 Extreme Networks Standard Power Cord, 15A, USA, NEMA 5-15, IEC320-C15 (Part 10099), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
8	Extreme Network 20GBase Direct Attach Cable - 0.5 m	1.00000	EA	$184.25ea	$184.25

Comm Code	Manufacturer	Specification	Model #
26121636			

Extended Description:

3.1.8 Extreme Network 20GBase Direct Attach Cable - 0.5 m (Part#20G-DACP-SFPDDZ5m), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
9	Extreme Networks 20GBase Direct Attach Cable - 1.0 m	1.00000	EA	$203.25ea	$203.25

Comm Code	Manufacturer	Specification	Model #
26121636			

Extended Description:

3.1.9 Extreme Networks 20GBase Direct Attach Cable - 1.0 m (Part# 20G-DACP-SFPDD1M), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
10	Extreme Networks 20GBase Direct Attach Cable - 3.0 m	1.00000	EA	$309.00ea	$309.00

Comm Code	Manufacturer	Specification	Model #
26121636			

Extended Description:

3.1.10 Extreme Networks 20GBase Direct Attach Cable - 3.0 m (Part# 20G-DACP-SFPDD3M), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
11	Extreme Networks QSFP to SFP+ Adapter	1.00000	EA	$340.25ea	$340.25

Comm Code	Manufacturer	Specification	Model #
43210000			

Extended Description:

3.1.11 Extreme Networks QSFP to SFP+ Adapter (Part# 10506), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
12	Extreme Networks 600W Secondary Power Supply	1.00000	EA	$497.00ea	$497.00

Comm Code	Manufacturer	Specification	Model #
39121004			

Extended Description:

3.1.12 Extreme Networks 600W Secondary Power Supply (Model XN-ACPWR-600W), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
13	Extreme Networks 920W Secondary Power Supply	1.00000	EA	$661.75ea	$661.75

Comm Code	Manufacturer	Specification	Model #
39121004			

Extended Description:

3.1.13 Extreme Networks 920W Secondary Power Supply (Model XN-ACPWR-920W), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
14	Extreme Networks Replacement Fan Module	1.00000	EA	$68.90ea	$68.90

Comm Code	Manufacturer	Specification	Model #
43210000			

Extended Description:

3.1.14 Extreme Networks Replacement Fan Module (Model XN-FAN-000), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
15	Extreme Networks 10GBASE-LR SFP+ Transceiver Module - 10 gig	1.00000	EA	$190.25ea	$190.25

Comm Code	Manufacturer	Specification	Model #
43201553			Alt# 10301-AO

Extended Description:

3.1.15 Extreme Networks 10GBASE-LR SFP+ Transceiver Module - 10 Gigabit Ethernet (Part# 10301), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
16	Extreme Networks 10GBASE-SR SFP+ Transceiver Module 10 Gig	1.00000	EA	$287.75ea	$287.75

Comm Code	Manufacturer	Specification	Model #
43201553			Alt# 10302-AO

Extended Description:

3.1.16 Extreme Networks 10GBASE-SR SFP+ Transceiver Module - 10 Gigabit Ethernet (Part# 10302), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
17	Extreme Networks 1M SFP+ Twin axial Cable	1.00000	EA	$26.75ea	$26.75

Comm Code	Manufacturer	Specification	Model #
26121636			Alt# 10304-AO

Extended Description:
3.1.17 Extreme Networks 1M SFP+ Twin axial Cable (Part# 10304), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
18	Extreme Networks 1000BASE-SX SFP Mini-GBIC Transceiver	1.00000	EA	$39.25ea	$39.25

Comm Code	Manufacturer	Specification	Model #
43201553			Alt# 10051H-AO

Extended Description:
3.1.18 Extreme Networks 1000BASE-SX SFP Mini-GBIC Transceiver Module - 1.00 Gbps (Part# 10051H), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
19	Extreme Networks 1000BASE-LX SFP Mini-GBIC Transceiver	1.00000	EA	$46.25ea	$46.25

Comm Code	Manufacturer	Specification	Model #
43201553			Alt# 10052H-AO

Extended Description:

3.1.19 Extreme Networks 1000BASE-LX SFP Mini-GBIC Transceiver Module - 1 Gbps (Part# 10052H), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
20	Extreme Networks SFP Transceiver Module - GigE	1.00000	EA	$57.75ea	$57.75

Comm Code	Manufacturer	Specification	Model #
43201553			Alt# MGBIC-02-AO

Extended Description:

3.1.20 Extreme Networks SFP Transceiver Module - GigE Copper (Model MGBIC-02), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
21	Extreme Networks 6E Tri-Radio Wireless Access Point	1.00000	EA	$517.50ea	$517.50

Comm Code	Manufacturer	Specification	Model #
43222640			

Extended Description:

3.1.21 Extreme Networks 6E Tri-Radio Wireless Access Point (Model AP4000-WW), or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
22	Technical Assistance Center & Operating System Support- 5 YR	1.00000	EA	$123.75ea	$123.75

Comm Code	Manufacturer	Specification	Model #
81111811			

Extended Description:

3.1.23 Vendor must have the ability to provide Technical Assistance Center and Operating System Support for 5 years for AP4000-WW wireless access points (part# 97000-AP4000-WW-5YR) or equal.

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
23	Extreme Cloud IQ Pilot SaaS & EW SaaS Support- 5 YRS	1.00000	EA	$239.50ea	$239.50

Comm Code	Manufacturer	Specification	Model #
81111811			

Extended Description:

3.1.23 Vendor must have the ability to provide Extreme Cloud IQ Pilot SaaS Subscription Support and Extreme Works (EW) SaaS Support for ~~5 years~~ or equal (Part#: ~~XIQ-PIL-S-C-EW-5YR~~) Model: XIQ-PIL-S-C-EW-3YR

INVOICE TO	SHIP TO
HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE ONE DAVIS SQUARE, RM 211 CHARLESTON WV US	HEALTH AND HUMAN RESOURCES MANAGEMENT INFORMATION SERVICE 321 CAPITOL ST, STE 200 CHARLESTON WV US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
24	Extreme Networks Multi-Gigabit Network Switch	1.00000	EA	$5,986.50ea	$5,986.50

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:

3.1.24 Extreme Networks Multi-Gigabit Network Switch (Model 5420F-16MW-32P-4XE), or equal.

SCHEDULE OF EVENTS

Line	Event	Event Date
1	VENDOR QUESTION DEADLINE	2025-08-12

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: MIS2600000001

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[ ]	Addendum No. 1	[ ]	Addendum No. 6
[X]	Addendum No. 2	[ ]	Addendum No. 7
[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Advantage Technology
Company

James Stewart
Authorized Signature

08.28.2025
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 08/25/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Jennifer Drake	
Mountain State Insurance Agency 1206 Kanawha Blvd. E. Suite 100 Charleston WV 25301-2949	PHONE (A/C, No, Ext): (304) 720-2000	FAX (A/C, No): (304) 720-2002
	E-MAIL ADDRESS: jdrake@mountainstateinsurance.com	

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
Advantage Technology, LLC 950 Kanawha Blvd. E Charleston WV 25301	INSURER A : Charter Oak Fire Ins Co	25615
	INSURER B : St. Paul Protective Insurance Company	19224
	INSURER C : Travelers Property Casualty of America	25674
	INSURER D : Farmington Casualty Company	41483
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** 24 25 Liab **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC [ ] OTHER:			ZLP16P96504	11/01/2024	11/01/2025	EACH OCCURRENCE	$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 1,000,000
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 1,000,000
							GENERAL AGGREGATE	$ 2,000,000
							PRODUCTS - COMP/OP AGG	$ 2,000,000
								$
B	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [ ] HIRED AUTOS ONLY [ ] NON-OWNED AUTOS ONLY			BA9X277890	11/01/2024	11/01/2025	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
							BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
								$
C	[X] UMBRELLA LIAB [X] OCCUR [ ] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $			CUPA1368310	11/01/2024	11/01/2025	EACH OCCURRENCE	$ 5,000,000
							AGGREGATE	$ 5,000,000
								$
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [ ] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		UBA1367872	11/01/2024	11/01/2025	[X] PER STATUTE [X] OTH-ER	WV Code 23-4-2
							E.L. EACH ACCIDENT	$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000
C	Professional Liability Cyber Liability			ZPL91N85217	11/01/2024	11/01/2025	General Aggregate	$2,000,000
							Each Occurrence	$2,000,000
							Technology Errors and Omissions Liability	$2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

West Virginia Department of Health and Homan Resour
321 Capitol Street
Ste 200
Charleston WV 25301

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

James Stewart, Sales Engineer
(Printed Name and Title)
950 Kanawha Blvd East Ste 100 Charleston, WV 25301
(Address)
304-973-9537 / NA
(Phone Number) / (Fax Number)
jstewart@advantage.tech
(E-mail address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through *wv*OASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; ; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the Vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

Advantage Technology
(Company)

James Stewart
(Signature of Authorized Representative)

James Stewart, Sales Engineer
(Printed Name and Title of Authorized Representative)

08.28.2025
(Date)

304-973-9537 / NA
(Phone Number) (Fax Number)

STATE OF WEST VIRGINIA

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §15A-3-14, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Advantage Technology

Authorized Signature: James Stewart Date: 08.28.2025

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 28th day of August, 2025.

My Commission expires October 26, 2025.

AFFIX SEAL HERE

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Todd Fowler
1053 Greenland Circle South Charleston, WV 25305
My Commission Expires October 26, 2025

NOTARY PUBLIC

10301-AO

Extreme Networks® 10301 Compatible TAA Compliant 10GBase-SR SFP+ Transceiver (MMF, 850nm, 300m, LC, DOM)

Features

- SFF-8432 and SFF-8472 Compliance
- VCSEL transmitter and PIN receiver
- Duplex LC Connector
- Commercial Temperature 0 to 70 Celsius
- Multi-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free

Applications

- 8x/10x Fibre Channel
- 10GBase-SR Ethernet
- Access, Datacenter and Enterprise
- Mobile Fronthaul CPRI/OBSAI

Product Description

This Extreme Networks® 10301 compatible SFP+ transceiver provides 10GBase-SR throughput up to 300m over multi-mode fiber (MMF) using a wavelength of 850nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Extreme Networks® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

AddOn's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."

TAA COMPLIANT

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5	4.0	V
Storage Temperature	TS	-40	85	°C
Operating Case Temperature	Tc	0	70	°C
Operating Humidity	RH	5	85	%
Receiver Power	R_{MAX}		-1	dBm
Maximum Bitrate	B_{max}		11.3	Gbps

Electrical Characteristics (TOP=25°C, Vcc=3.3Volts)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.15	3.30	3.43	V	
Power Supply Current	Icc			303	mA	
Power Consumption	P_{DISS}			1	W	
Transmitter						
Differential data input swing	Vin,pp	120		850	mV	
Input differential impedance	Zin	80	100	120	Ω	
Receiver						
Differential data output swing	Vout, pp	300		850	mV	
Output differential impedance	Zin	80	100	120	Ω	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Optical Power (average)	P_{AVE}	-7.3		-1.2	dBm	1
Optical Modulation amplitude (OMA)	P_{OMA}	-1.5			dBm	2
Optical Extinction Ratio	ER	3			dB	
Optical Wavelength	Tλ	840	850	860	nm	
Insertion loss	IL		2			
Receiver						
Receiver Sensitivity (average)	R_{AVE}			-9.9	dBm	3
Receiver Sensitivity (OMA)	R_{OMA}			-11.1		2
Receiver overload	P_{max}	-1			dBm	4
Receiver wavelength	Rλ	840		860	nm	

Notes:

1. Coupled into a Multi-mode fibre
2. Per IEEE 802.3ae specification
3. Average power, back-to-back, @10.31Gbps, BER 1E-12, PRBS 231-1.
4. Exceeding the Receiver overload can physically damage the module. Please use appropriate attenuation.

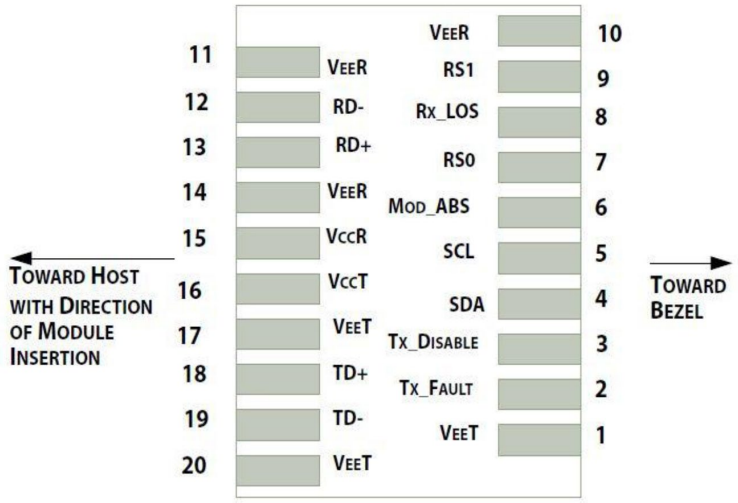
Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	TX Fault	Transmitter Fault. LVTTL-O	2
3	TX Disable	Transmitter Disable. Laser output disabled on high or open. LVTT-I.	3
4	SDA	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTL-I/O.	
5	SCL	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTL-I.	
6	MOD_ABS	Module Absent, Connect to VeeT or VeeR in Module.	4
7	RS0	Rate Select 0. Not used	5
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation. LVTTL-O.	2
9	RS1	Rate Select 1. Not used	5
10	VeeR	Receiver Ground (Common with Transmitter Ground).	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	1
12	RD-	Receiver Inverted DATA out. AC Coupled. CML-O.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled. CML-O.	
14	VeeR	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground).	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled. CML-I.	
19	TD-	Transmitter Inverted DATA in. AC Coupled. CML-O.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

Notes:

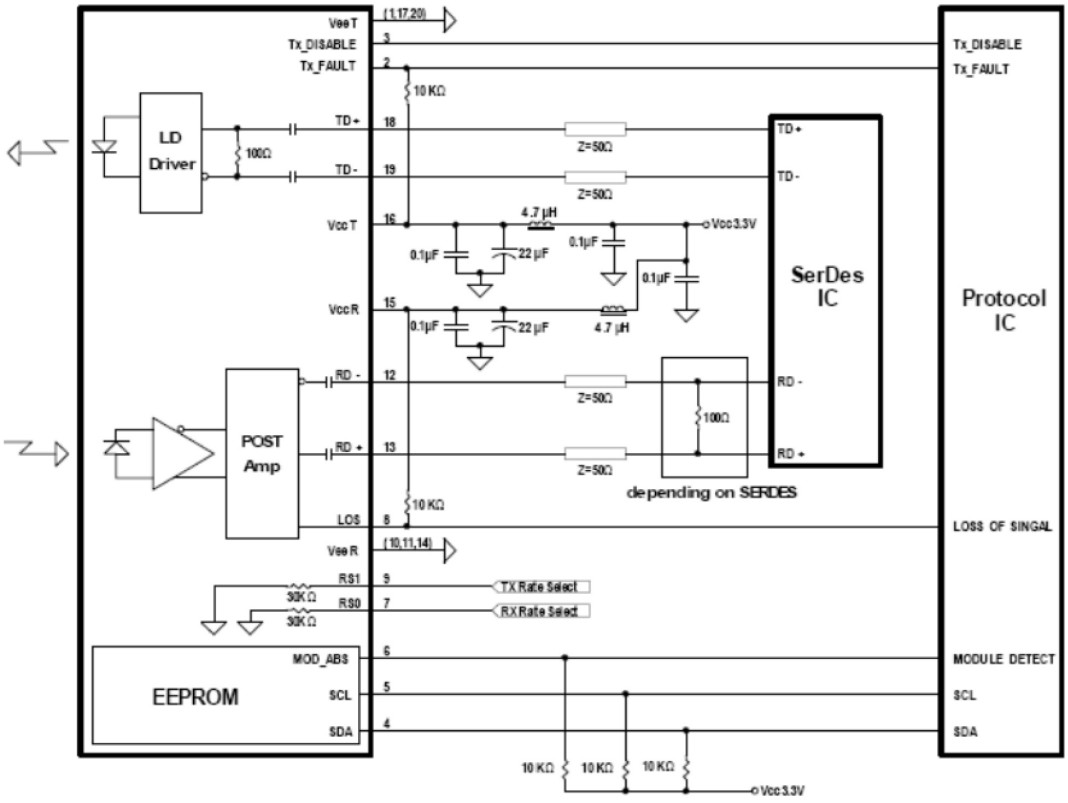
1. The module signal ground contacts, VeeR and VeeT, should be isolated from the module case.
2. This contact is an open collector/drain output and should be pulled up to the Vcc_Host with resister in the range 4.7KΩ to 10KΩ. Pull ups can be connected to one or several power supplies, however the host board design shall ensure that no module contract has voltage exceeding module VccT/R +0.5.V.
3. Tx_Disable is an input contact with a 4.7KΩ to 10KΩ pull-up resistor to VccT inside module.

4. Mod_ABS is connected to VeeT or VeeR in the SFP+ module. The host may pull the contract up to Vcc_Host with a resistor in the range from 4.7KΩ to 10KΩ. Mod_ABS is asserted “High” when the SFP+ module is physically absent from a host slot.
5. Internally pulled down per SFF-8431



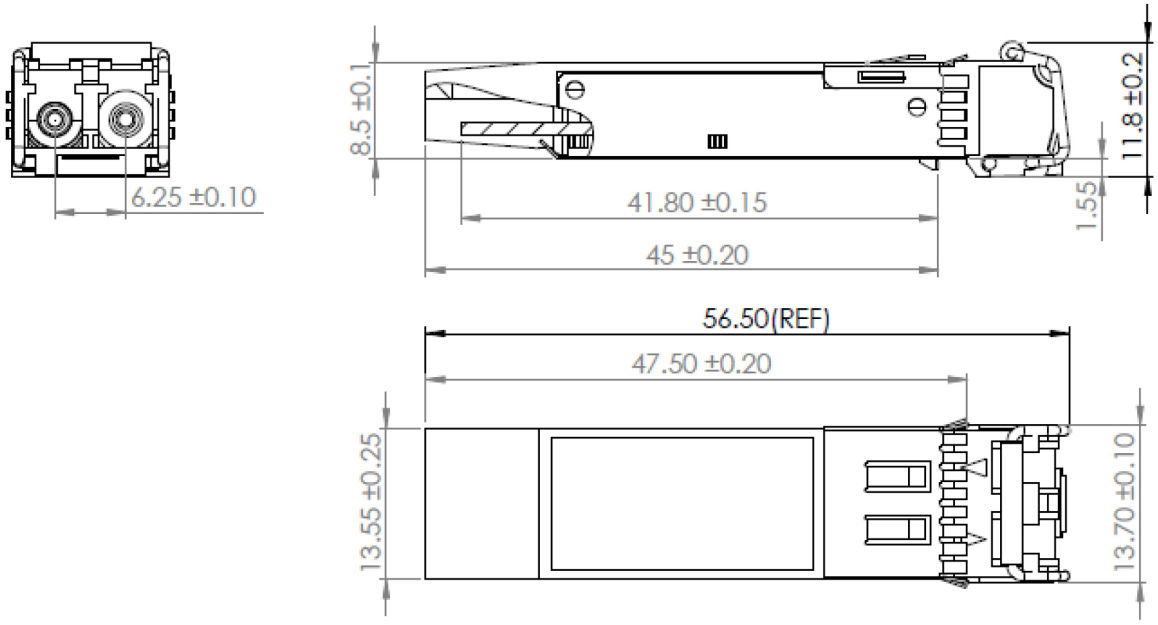
Pin-out of connector Block on Host board

Recommended Circuit Schematic



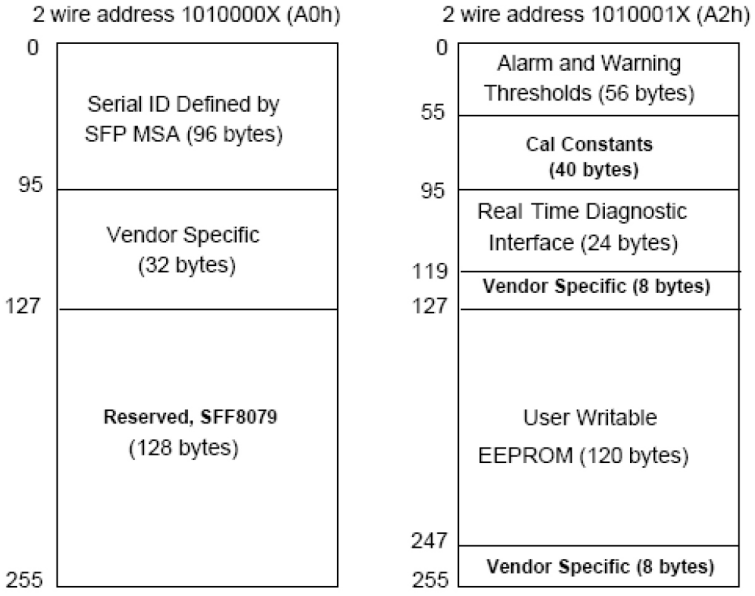
Mechanical Specifications

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).



EEPROM Information

EEPROM memory map specific data field description is as below:



About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is in engrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.

U.S. Headquarters

Email: sales@addonnetworks.com

Telephone: +1 877.292.1701

Fax: 949.266.9273

Europe Headquarters

Email: salessupportemea@addonnetworks.com

Telephone: +44 1285 842070

10302-AO

Extreme Networks® 10302 Compatible TAA Compliant 10GBase-LR SFP+ Transceiver (SMF, 1310nm, 10km, LC, DOM)

Features

- SFF-8432 and SFF-8472 Compliance
- Uncooled DFB transmitter and PIN receiver
- Duplex LC Connector
- Commercial Temperature 0 to 70 Celsius
- Single-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free

Applications

- 8x/10x Fibre Channel
- 10GBase-LR Ethernet
- Access, Datacenter and Enterprise
- Mobile Fronthaul CPRI/OBSAI

Product Description

This Extreme Networks® 10302 compatible SFP+ transceiver provides 10GBase-LR throughput up to 10km over single-mode fiber (SMF) using a wavelength of 1310nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Extreme Networks® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

AddOn's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."

TAA COMPLIANT

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5	4.0	V
Storage Temperature	TS	-40	85	˚C
Operating Case Temperature	Tc	0	70	˚C
Operating Humidity	RH	5	85	%
Receiver Power	R_{MAX}		0.5	dBm
Maximum Bitrate	B_{max}		11.3	Gbps

Electrical Characteristics (TOP=25°C, Vcc=3.3Volts)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.15	3.30	3.43	V	
Power Supply Current	Icc			303	mA	
Power Consumption	P_{DISS}			1	W	
Transmitter						
Differential data input swing	Vin,pp	120		850	mV	
Input differential impedance	Zin	80	100	120	Ω	
Receiver						
Differential data output swing	Vout, pp	300		850	mV	
Output differential impedance	Zin	80	100	120	Ω	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Optical Power (average)	P_{AVE}	-8.2		0.5	dBm	1
Optical Modulation amplitude (OMA)	POMA	-5.2			dBm	
Optical Extinction Ratio	ER	3.5			dB	
Optical Wavelength	Tλ	1260	1310	1355	nm	
Insertion loss	IL		0.6			
Receiver						
Receiver Sensitivity (average)	R_{AVE}			-14.4	dBm	3
Receiver Sensitivity (OMA)	R_{OMA}			-12.6		2
Receiver overload	P_{max}	0.5			dBm	4
Receiver wavelength	Rλ	1260		1565	nm	

Notes:

1. Coupled into a Single-mode fibre
2. Per IEEE 802.3ae specification
3. Average power, back-to-back, @10.31Gbps, BER $1E^{-12}$, PRBS 2^{31}-1.
4. Exceeding the Receiver overload can physically damage the module. Please use appropriate attenuation.

Pin Descriptions

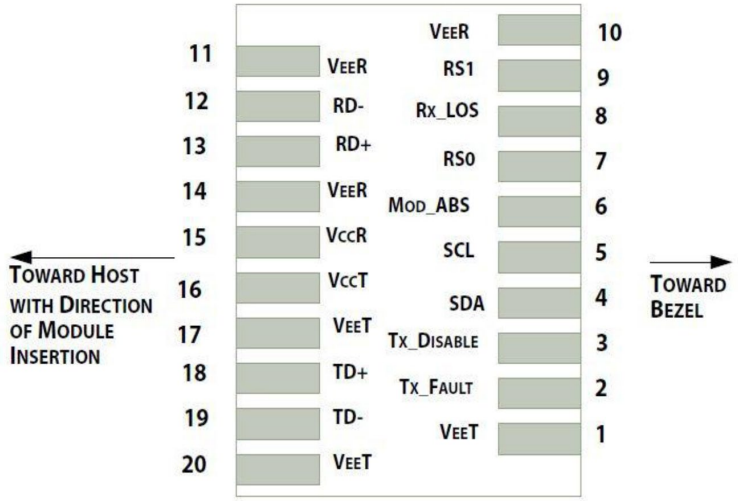
Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	TX Fault	Transmitter Fault. LVTTL-O	2
3	TX Disable	Transmitter Disable. Laser output disabled on high or open. LVTT-I.	3
4	SDA	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTL-I/O.	
5	SCL	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTL-I.	
6	MOD_ABS	Module Absent, Connect to VeeT or VeeR in Module.	4
7	RS0	Rate Select 0. Not used	5
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation. LVTTL-O.	2
9	RS1	Rate Select 1. Not used	5
10	VeeR	Receiver Ground (Common with Transmitter Ground).	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	1
12	RD-	Receiver Inverted DATA out. AC Coupled. CML-O.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled. CML-O.	
14	VeeR	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground).	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled. CML-I.	
19	TD-	Transmitter Inverted DATA in. AC Coupled. CML-O.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

Notes:

1. The module signal ground contacts, VeeR and VeeT, should be isolated from the module case.
2. This contact is an open collector/drain output and should be pulled up to the Vcc_Host with resister in the range 4.7KΩ to 10KΩ. Pull ups can be connected to one or several power supplies, however the host board design shall ensure that no module contract has voltage exceeding module VccT/R +0.5.V.
3. Tx_Disable is an input contact with a 4.7KΩ to 10KΩ pull-up resistor to VccT inside module.
4. Mod_ABS is connected to VeeT or VeeR in the SFP+ module. The host may pull the contract up to

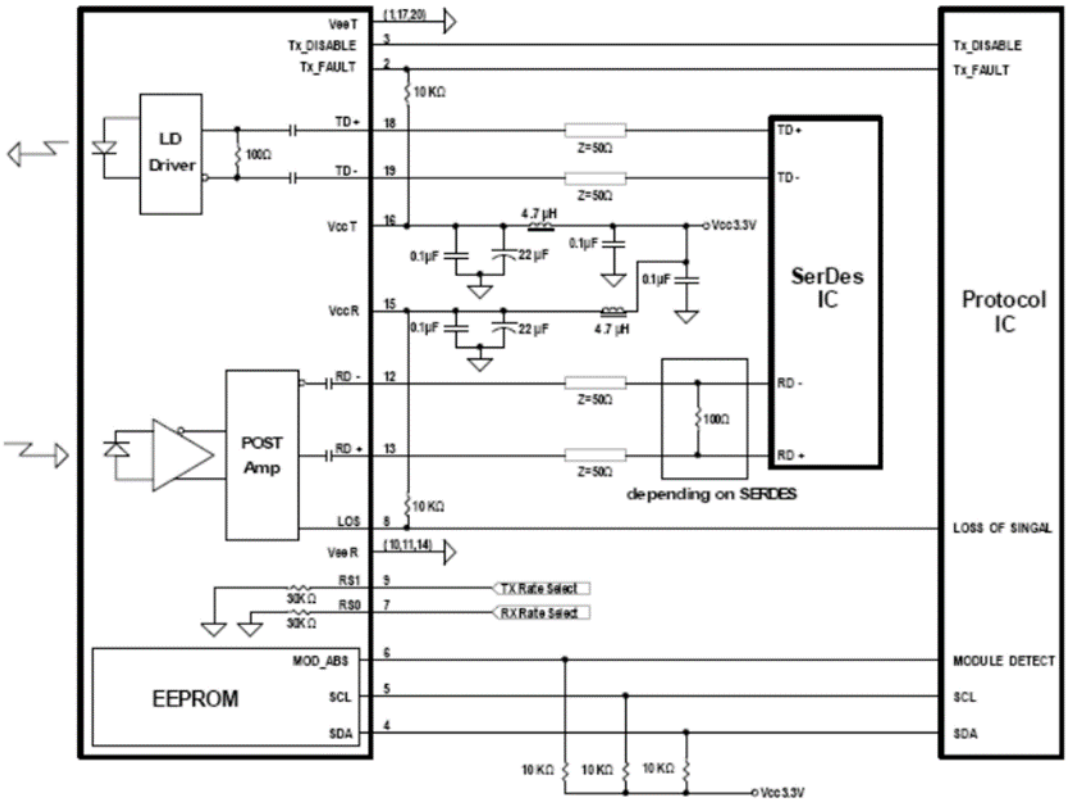
Vcc_Host with a resistor in the range from 4.7KΩ to 10KΩ. Mod_ABS is asserted “High” when the SFP+ module is physically absent from a host slot.

5. Internally pulled down per SFF-8431



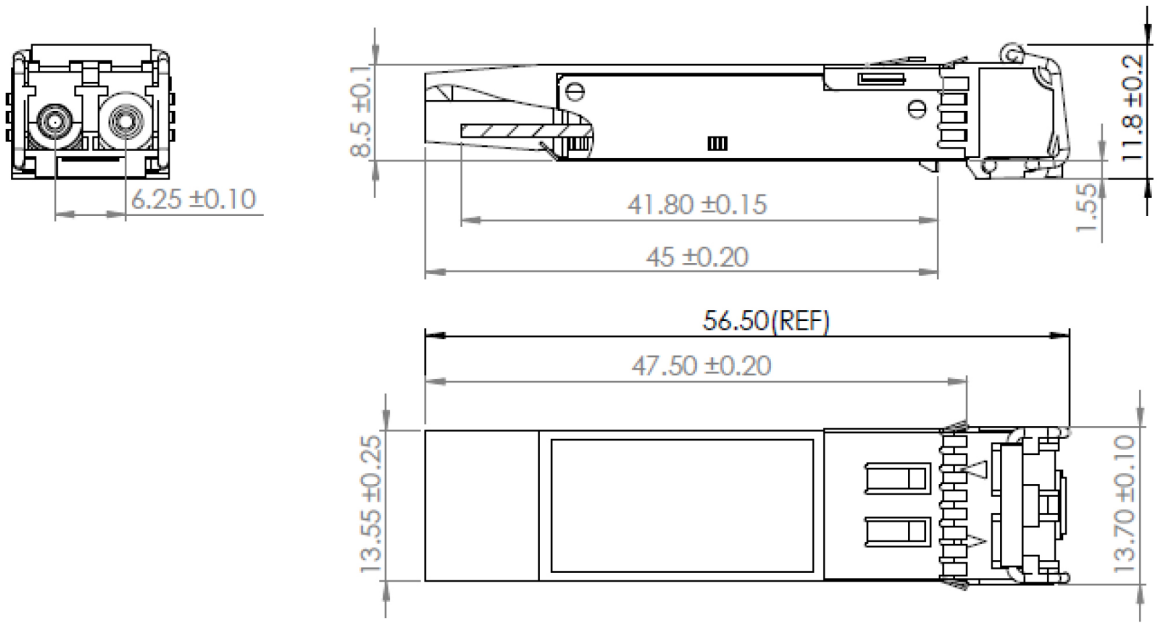
Pin-out of connector Block on Host board

Recommended Circuit Schematic



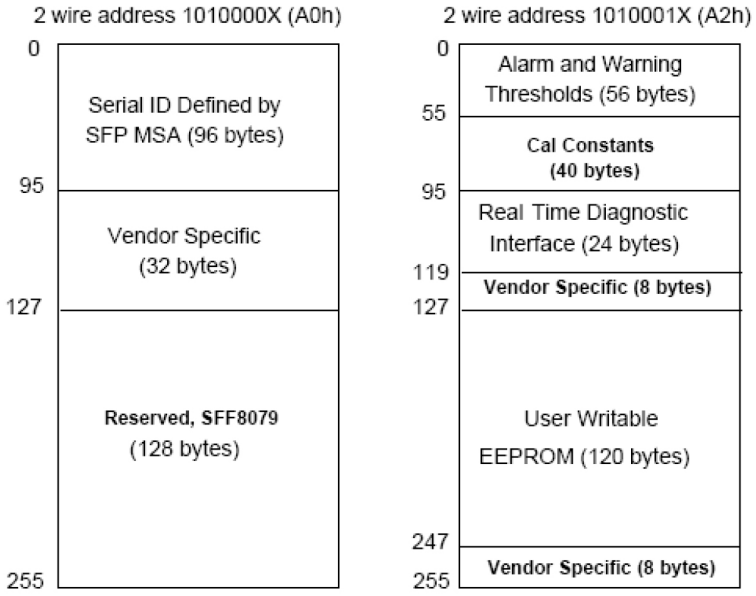
Mechanical Specifications

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).



EEPROM Information

EEPROM memory map specific data field description is as below:



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Telephone: +44 1285 842070

10304-AO

Extreme Networks® 10304 Compatible TAA Compliant 10GBase-CU SFP+ Direct Attach Cable (Passive Twinax, 1m)

Features

- Up to 10 Gbps bi-directional data links
- Compliant with SFF-8431
- Compliant with 10GFC
- 100 Ohm differential impedance
- Enhanced EMI design
- AC coupled inputs and outputs
- Operating Temperature Range: 0 to 70 Celsius
- Single 3.3V power supply
- RoHS Compliant and Lead-Free

Applications

- 10G Fibre Channel
- 10G Ethernet
- Serial Data Transmission

Product Description

This is a Extreme Networks® 10304 Compatible 10GBase-CU SFP+ to SFP+ direct attach cable that operates over passive copper with a maximum reach of 1m. It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. We stand behind the quality of our products and proudly offer a limited lifetime warranty. This cable is TAA (Trade Agreements Act) compliant and is built to comply with MSA (Multi-Source Agreement) standards.

AddOn's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."

General Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	DR		10.3125		Gbps	1
Bit Error Rate	BER			10^{-12}		
Operating Temperature	Tc	0		70	°C	2
Storage Temperature	Tstg	-40		85	°C	3
Power Supply Voltage	Vcc	3.14	3.30	3.46	V	4

Notes:

1. IEEE 802.3ae.
2. Case Temperature.
3. Ambient Temperature.
4. For the electrical power interface.

Cable Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Wire Gauge			30AWG		AWG
Cable Impedance	Z	90	100	110	Ω
Cable Diameter	OD		4.2		mm
Minimum Bending Radius	R		25		mm
Tolerance Range ±			2		cm

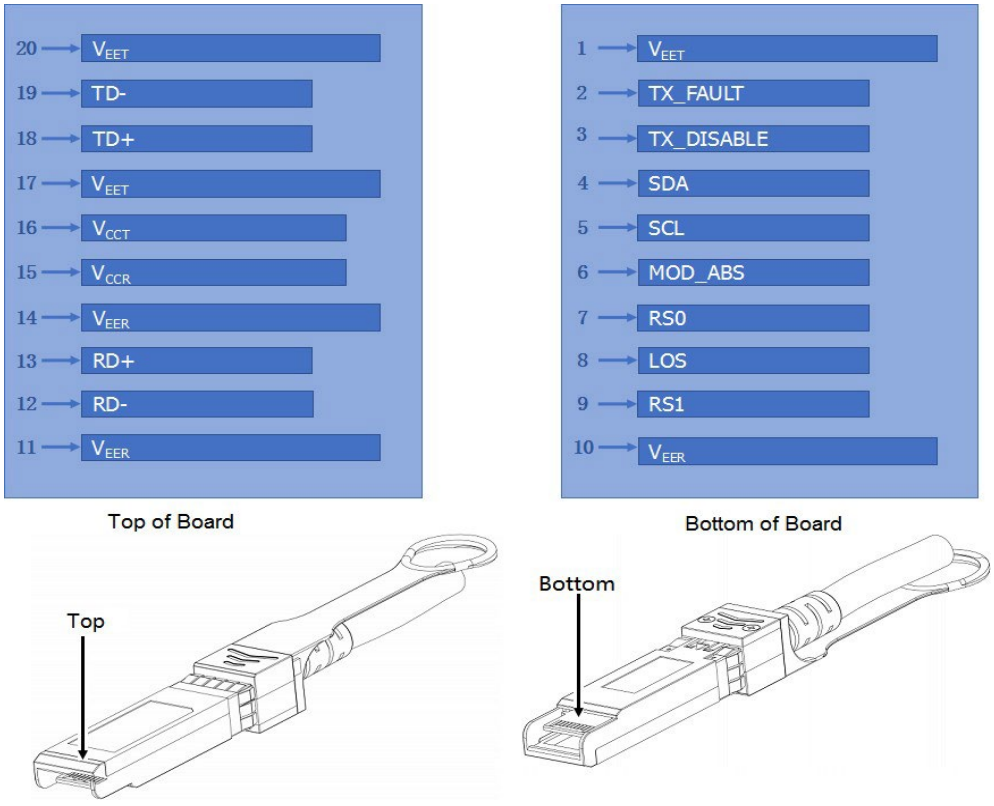
Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	Tx_Fault	Transmitter Failure Alarm. Not Used.	
3	Tx_Disable	Not Used. The signal turns off the module transmitter when it is “high” or “open.”	
4	SDA	Data Line for Serial ID.	2
5	SCL	Clock Line for Serial ID.	2
6	MOD_ABS	Module Absent. Grounded within the module.	2
7	RS0	No Connection Required.	
8	LOS	Loss of Signal Indication. “Logic 0” indicates normal operation.	
9	RS1	No Connection Required.	
10	VeeR	Receiver Ground (Common with Transmitter Ground).	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	1
12	RD-	Receiver Inverted Data Out. AC Coupled.	
13	RD+	Receiver Non-Inverted Data Out. AC Coupled.	
14	VeeR	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground).	1
18	TD+	Transmitter Non-Inverted Data In. AC Coupled.	
19	TD-	Transmitter Inverted Data In. AC Coupled.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

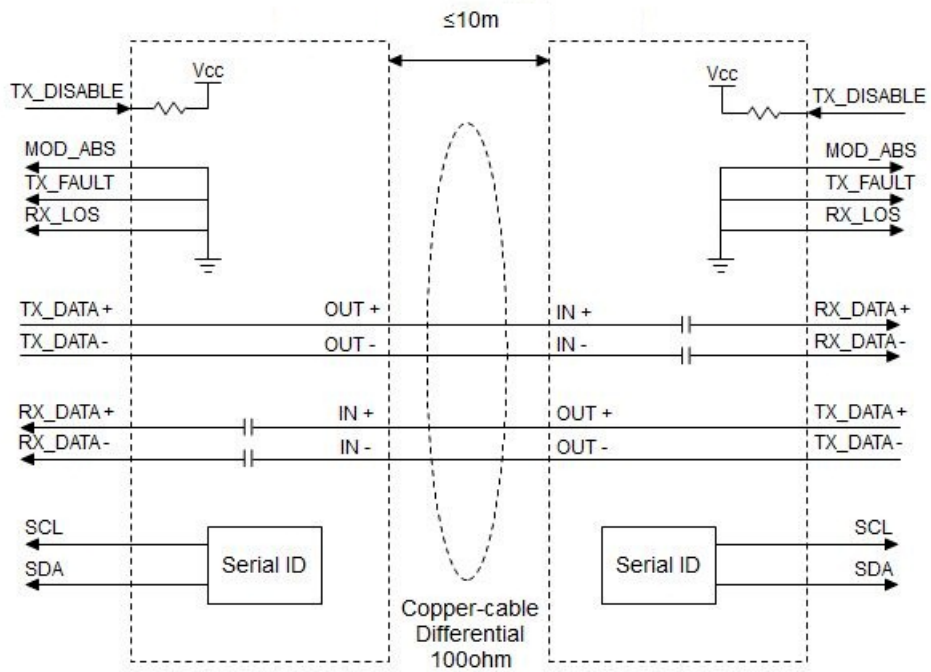
Notes:

1. The circuit ground is isolated from the chassis ground.
2. Should be pulled up with 4.7kΩ to 10kΩ on the host board to a voltage between 2V and 3.6V.

Electrical Pad Layout



Block Diagram of Transceiver



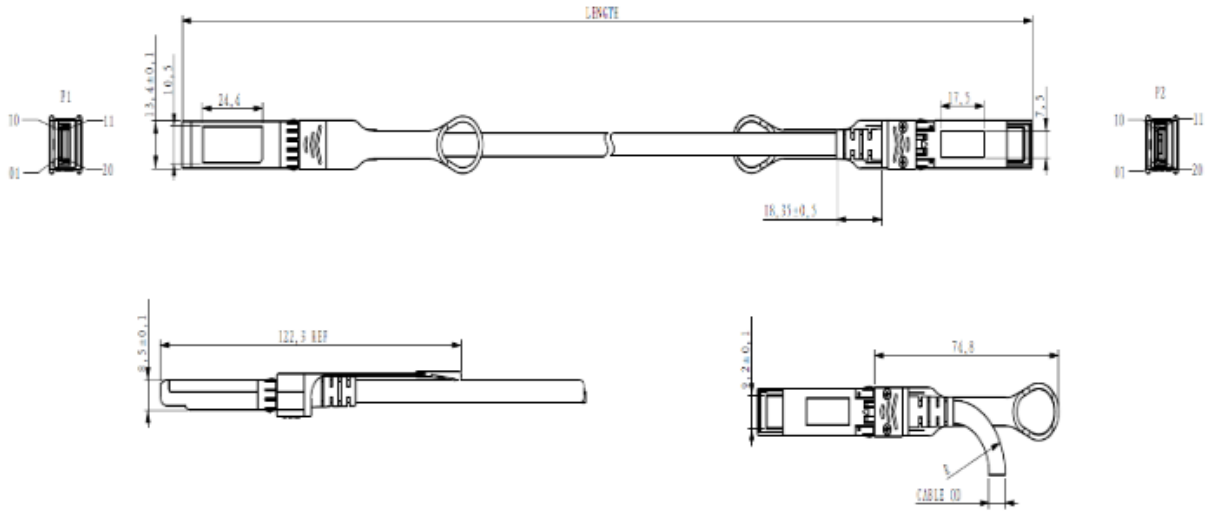
Weight

Parameter	Symbol	Typ.	Unit	Notes
30AWG Product Weight	GD30	72	g/PCS	1
30AWG Cable Weight	GC30	26	g/M	
Dust Cap Weight	GS	0.80	g/PCS	

Notes:

1. For example, the weight of a 6m cable with 30AWG is: 72+26*(6-1) + 0.80*2=203.6g.

Mechanical Specifications



All Dimensions are ±0.2mm Unless Otherwise Specified
Unit: mm

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10051H-AO

Extreme Networks® 10051H Compatible TAA 1000Base-SX SFP Transceiver (MMF, 850nm, 550m, LC, DOM, -40 to 85C)

Features

- INF-8074 and SFF-8472 Compliance
- Duplex LC Connector
- Industrial Temperature -40 to 85 Celsius
- Multi-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free

Applications

- 1x Fibre Channel
- 1000Base-SX Ethernet
- Access and Enterprise

Product Description

This Extreme Networks® 10051H compatible SFP transceiver provides 1000Base-SX throughput up to 550m over multi-mode fiber (MMF) using a wavelength of 850nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Extreme Networks® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

AddOn's transceivers are RoHS compliant and lead-free.

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TAA COMPLIANT

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc	-0.5		4.0	V
Storage Temperature	TS	-40		85	℃
Case Operating Temperature	Tc	-40		85	℃
Operating Humidity	RH	5		95	%
Data Rate (Gigabit Ethernet)			1.25		Gbps
Data Rate (Fibre Channel)			1.063		Gbps
50/125μm MMF	L			550	m

Electrical Characteristics (TOP=25°C, Vcc=3.3V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.13	3.30	3.47	V	
Power Supply Current	Icc			250	mA	
Transmitter						
Input differential impedance	Rin		100		Ω	1
Single ended data input swing	Vin, pp	250		1200	mV	
TX Disable-High		Vcc-1.3		Vcc	V	
TX Disable-Low		Vee		Vee+0.8	V	
TX Fault-High		Vcc-0.5		Vcc	V	
TX Fault-Low		Vee		Vee+0.5	V	
Receiver						
Single ended data output swing	Vout, pp	300	400	800	mV	2
Data output rise time	tr			175	ps	3
Data output fall time	tf			175	ps	3
LOS-High		Vcc-0.5		Vcc	V	
LOS-Low		Vee		Vee+0.5	V	

Notes:

1. AC coupled.
2. Into 100 ohm differential termination.
3. 20% - 80%

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Average Output Power	PO	-9		-4	dBm	1
Optical Wavelength	λ	830	850	860	nm	
Spectral Width	σ			0.85	nm	
Optical Rise/Fall Time	tr/tf			260	ps	2
Total Jitter	TJ			200	ps	
Optical Extinction Ratio	ER	9			dB	
Receiver						
Receiver Sensitivity	RSENS			-18	dBm	3,4
Maximum Received Power	RX_{MAX}	0			dBm	
Centre Wavelength	λC	770		860	nm	
LOS De-Assert	LOSD			-26	dBm	
LOS Assert	LOSA	-40			dBm	
LOS Hysteresis		0.5		5	dB	

Notes:

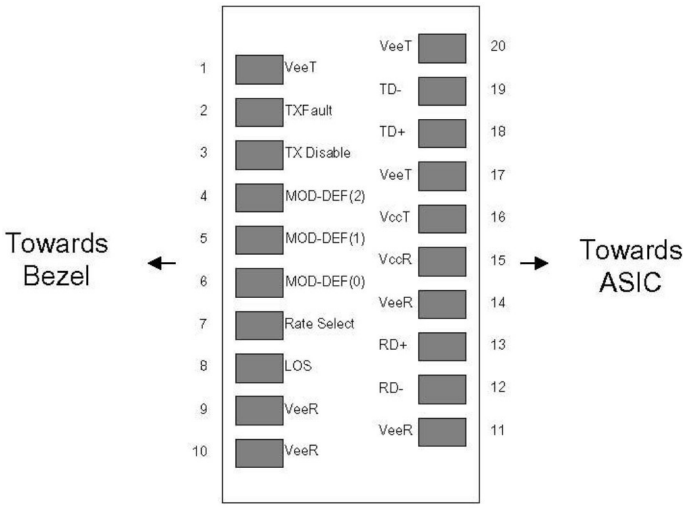
1. Class 1 Laser Safety.
2. Unfiltered, 20%-80%. Complies with GE and 1x FC eye masks when filtered.
3. Measured with conformance signals defined in FC-PI-2 Rev. 10.0 specifications.
4. Measured with PRBS 2^7-1 at 10^{-10} BER.

Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground)	1
2	TX Fault	Transmitter Fault.	
3	TX Disable	Transmitter Disable. Laser output disabled on high or open.	2
4	MOD DEF (2)	Module Definition 2. Data line for Serial ID.	3
5	MOD_DEF (1)	Module Definition 1. Clock line for Serial ID.	3
6	MOD_DEF (0)	Module Definition 0. Grounded within the module.	3
7	Rate Select	No connection required.	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	4
9	VeeR	Receiver Ground (Common with Transmitter Ground)	1
10	VeeR	Receiver Ground (Common with Transmitter Ground)	1
11	VeeR	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out. AC Coupled.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled.	
14	VeeR	Receiver Ground (Common with Transmitter Ground)	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	VeeT	Transmitter Ground (Common with Receiver Ground)	1

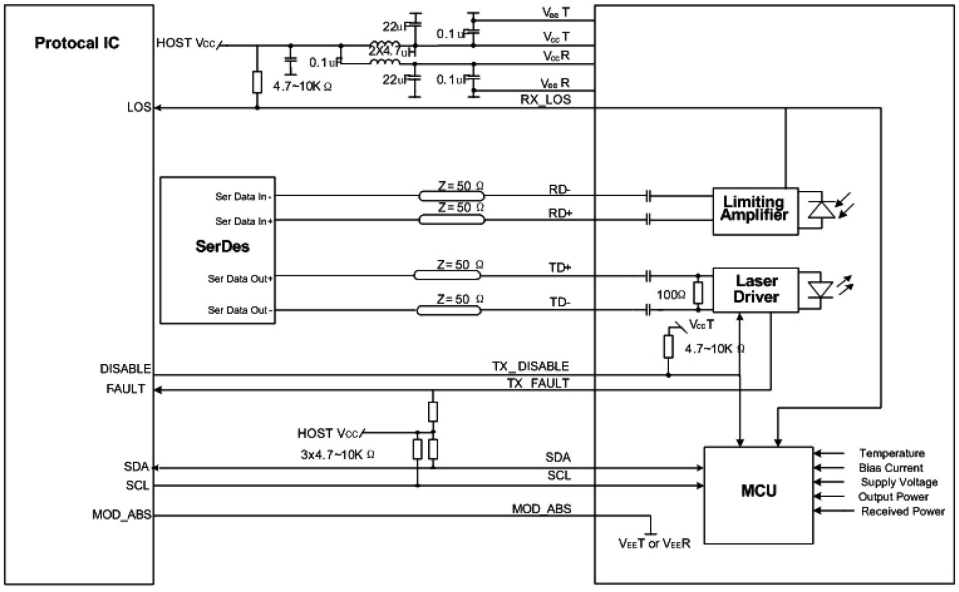
Notes:

1. Circuit ground is internally isolated from chassis ground.
2. Laser output disabled on TX Disable >2.0V or open, enabled on TX Disable <0.8V.
3. Should be pulled up with 4.7k-10kohms on host board to a voltage between 2.0V and 3.6V. MOD_DEF (0) pulls line low to indicate module is plugged in.
4. LOS is open collector output. Should be pulled up with 4.7k-10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.



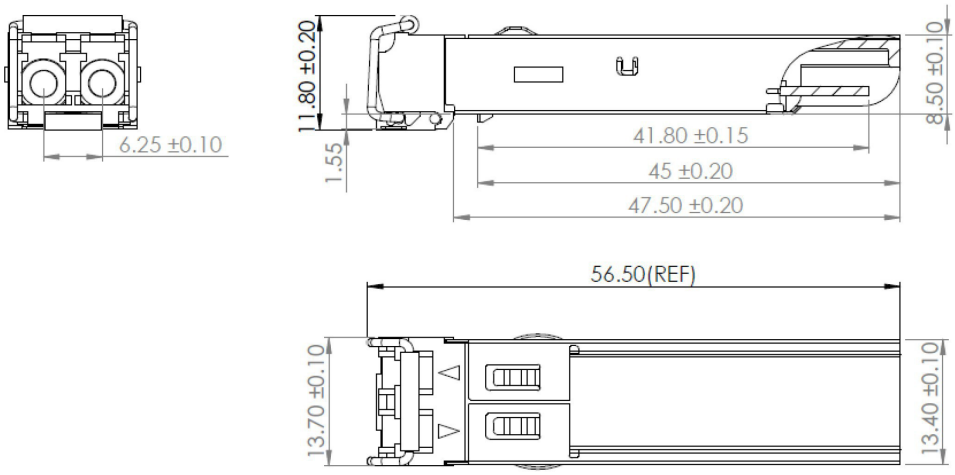
Pin-out of connector Block on Host board

Recommend Circuit Schematic



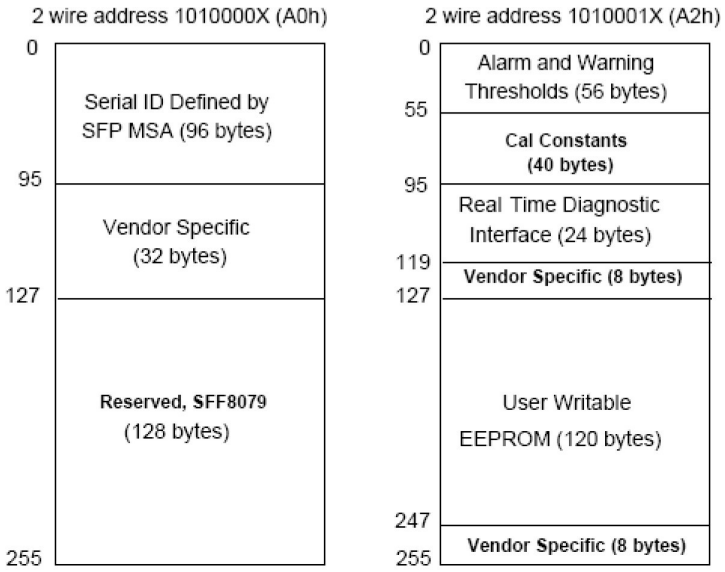
Mechanical Specifications

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).



EEPROM Information

EEPROM memory map specific data field description is as below:



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10052H-AO

Extreme Networks® 10052H Compatible TAA 1000Base-LX SFP Transceiver (SMF, 1310nm, 10km, LC, DOM, -40 to 85C)

Features

- INF-8074 and SFF-8472 Compliance
- Duplex LC Connector
- Industrial Temperature -40 to 85 Celsius
- Single-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free

Applications

- 1x Fibre Channel
- 1000Base-LX Ethernet
- Access and Enterprise

Product Description

This Extreme Networks® 10052H compatible SFP transceiver provides 1000Base-LX throughput up to 10km over single-mode fiber (SMF) using a wavelength of 1310nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Extreme Networks® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

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TAA COMPLIANT

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5	4.0	V
Storage Temperature	Tstg	-40	85	°C
Operating Case Temperature	Tc	-40	85	°C
Operating Humidity	RH	5	85	%
Receiver Power	R_{MAX}		0	dBm
Maximum Bitrate	B_{max}		1.25	Gbps

Electrical Characteristics (Tc=25°C, Vcc=3.3 Volts)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.15	3.30	3.43	V	
Power Supply Current	Icc			303	mA	
Power Consumption				1	W	
Transmitter						
Differential Data Input Swing	VIN,pp	120		850	mV	
Input Differential Impedance	ZIN	80	100	120	Ω	
Receiver						
Differential Data Output Swing	VOUT,pp	300		850	mV	
Output Differential Impedance	ZIN	80	100	120	Ω	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Optical Power (Average)	P_{AVE}	-9.5		-3	dBm	1
Optical Extinction Ratio	ER	9			dB	
Optical Wavelength	Tλ	1270	1310	1355	nm	
Insertion Loss	IL		0.6			
Receiver						
Receiver Sensitivity (Average)	R_{AVE}			-24	dBm	3
Receiver Overload	P_{max}	0			dBm	4
Optical Return Loss	ORL	12			dB	
Receiver Wavelength	Rλ	1260		1565	nm	

Notes:

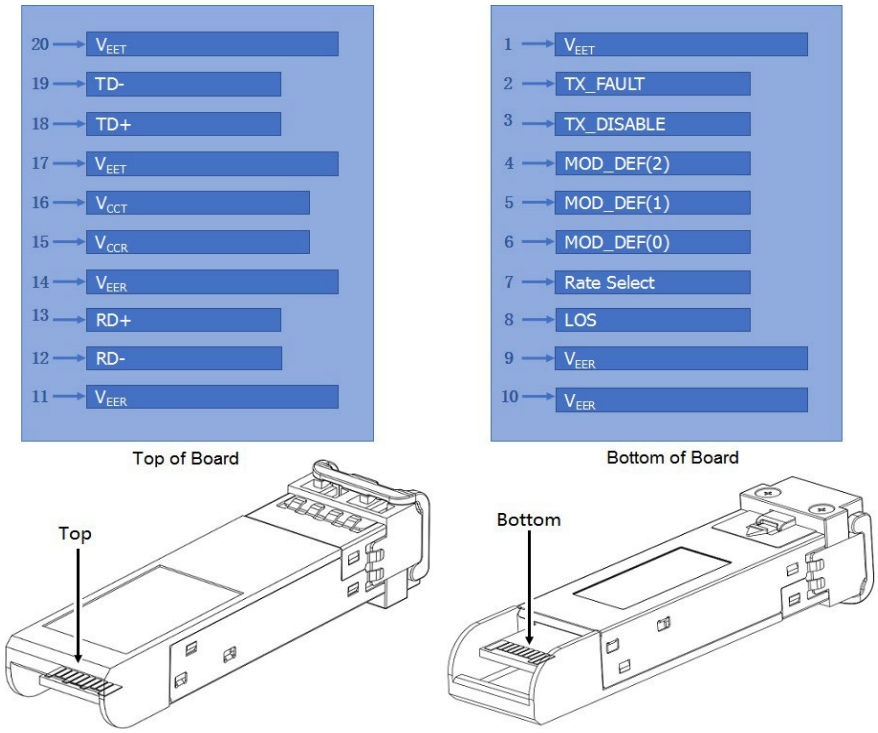
1. Coupled into a single-mode fiber.
2. Per IEEE 802.3ah specification.
3. Average power, back-to-back, @1.25Gbps, BER $1E^{-12}$, and PRBS 2^{31}-1.
4. Exceeding the Receiver Overload can physically damage the module. Please use appropriate attenuation.

Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	Tx_Fault	Transmitter Fault. Not Supported.	
3	Tx_Disable	Transmitter Disable. Laser output disabled on “high” or “open.”	2
4	MOD_DEF (2)	Module Definition 2. Data Line for Serial ID.	3
5	MOD_DEF (1)	Module Definition 1. Clock Line for Serial ID.	3
6	MOD_DEF (0)	Module Definition 0. Grounded within the module.	3
7	Rate Select	No Connection Required.	
8	LOS	Loss of Signal Indication. “Logic 0” indicates normal operation.	4
9	VeeR	Receiver Ground (Common with Transmitter Ground).	1
10	VeeR	Receiver Ground (Common with Transmitter Ground).	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	1
12	RD-	Receiver Inverted Data Out. AC Coupled.	
13	RD+	Receiver Non-Inverted Data Out. AC Coupled.	
14	VeeR	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground).	1
18	TD+	Transmitter Non-Inverted Data In. AC Coupled.	
19	TD-	Transmitter Inverted Data In. AC Coupled.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

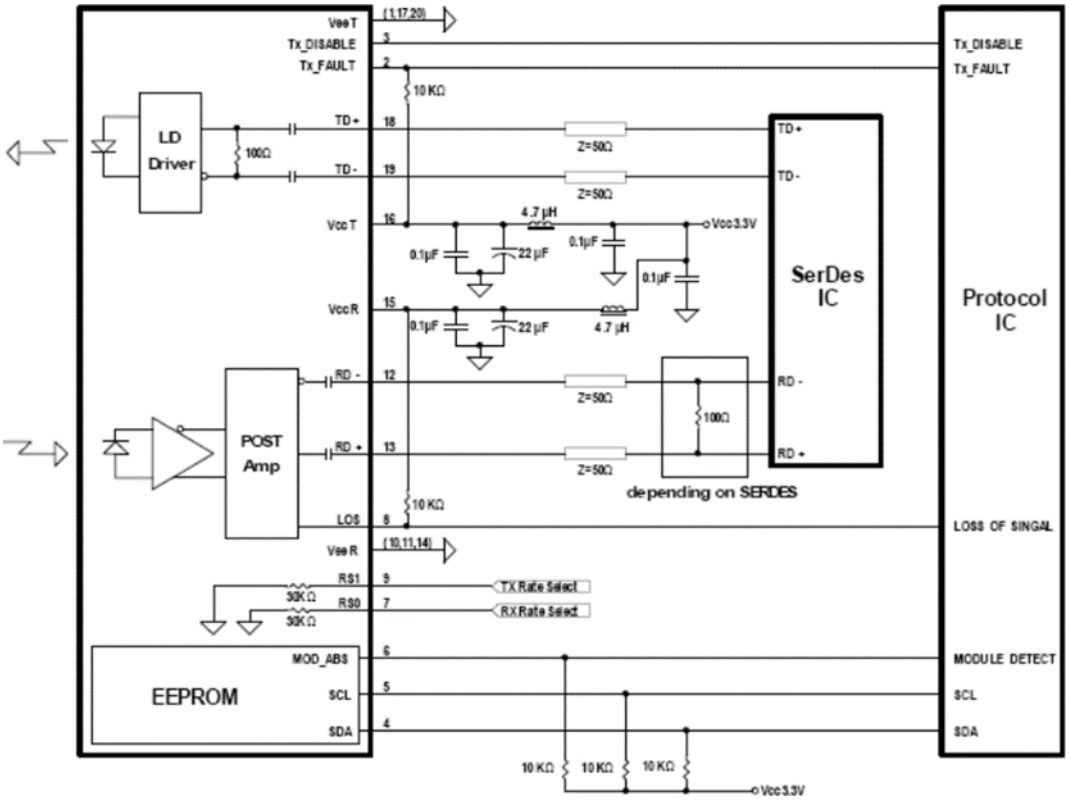
Notes:

1. The circuit ground is isolated from the chassis ground.
2. Disabled: T_{DIS}>2V or Open, Enabled: T_{DIS}<0.8V.
3. Should be pulled up with 4.7kΩ to 10kΩ on the host board to a voltage between 2V and 3.6V.
4. LOS is an open collector output.



Pin-Out of Connector Block on the Host Board

Recommended Circuit Schematic



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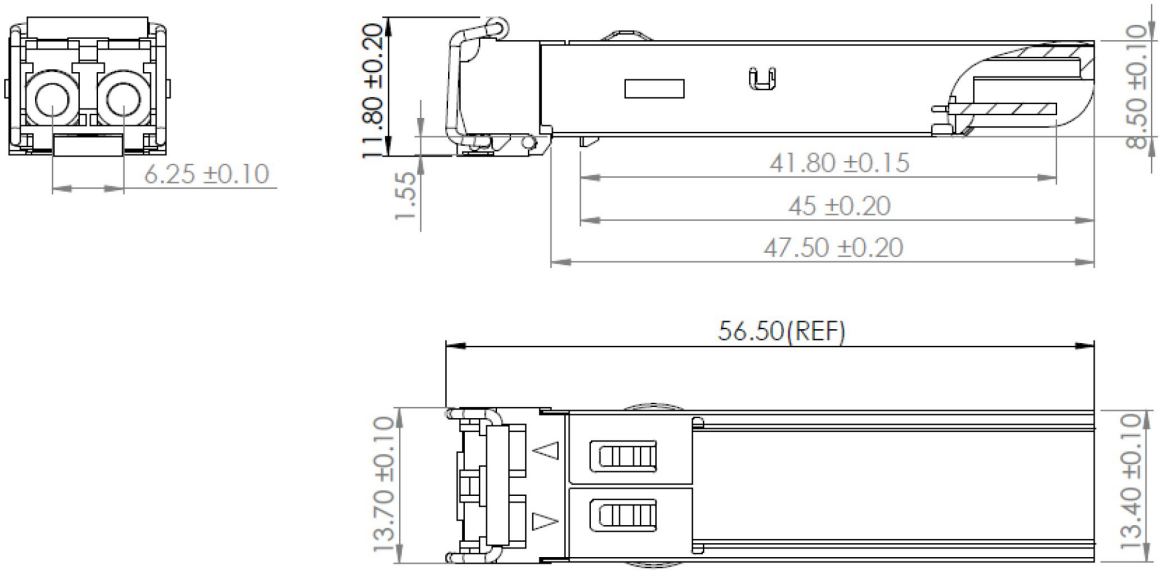

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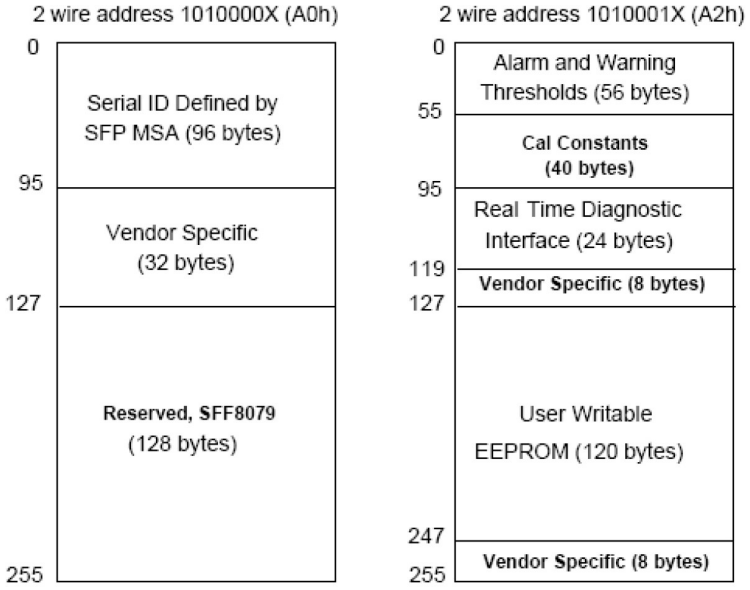
EEPROM memory map-specific data field description is as below:



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MGBIC-02-AO

Enterasys MGBIC-02 Compatible TAA Compliant 10/100/1000Base-TX SFP Transceiver (Copper, 100m, RJ-45)

Features

- INF-8074 Compliance
- RJ-45 Connector
- Commercial Temperature 0 to 70 Celsius
- Copper Media Type
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free

Applications

- 1000Base Ethernet
- Access and Enterprise

Product Description

This Enterasys® MGBIC-02 compatible SFP transceiver provides 10/100/1000Base-TX throughput up to 100m over a copper connection via a RJ-45 connector. This TX module supports 10/100/1000Base auto-negotiation and can be configured to fit your needs. It is guaranteed to be 100% compatible with the equivalent Enterasys® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. It is built to meet or exceed the specifications of Enterasys®, as well as to comply with MSA (Multi-Source Agreement) standards to ensure seamless network integration. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

AddOn's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."

TAA COMPLIANT

Rev. 030823

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Current	Is		320	375	mA	1
Input Voltage	Vcc	3.13	3.3	3.47	V	2
Maximum Voltage	Vmax			4	V	
Surge Current	Isurge			30	mA	3

Notes:

1. 1.2W max power over full range of voltage and temperature. Power consumption and surge current are higher than the specified values in SFP MSA.
2. Referenced to GND
3. Hot plug above steady state current. Power consumption and surge current are higher than the specified values in SFP MSA.

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	BR	10		1000	Mb/sec	3-5
Distance Supported	L			100	m	1
Operating Temperature	Top	0		85	°C	
Storage Temperature	Tsto	-40		85	°C	

Notes:

1. Category 5 UTP. BER <10-12
2. Clock tolerance is +/- 50 ppm
3. By default, the GE-GB-P is a full duplex device in preferred master mode
4. Automatic crossover detection is enabled. External crossover cable is not required
5. 1000Base-T operation requires the host system to have an SGMII interface with no clocks, and the module PHY to be configured per Application Note AN-2036. With a SERDES that does not support SGMII, the module will operate at 1000Base-T only.

Low-Speed Signals

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
SFP Output LOW	VOL	0		0.5	V	1
SFP Output High	VOH	Host_Vcc-0.5		Host_Vcc+0.3	V	1
SFP Input LOW	VIL	0		0.8	V	2
SFP Input HIGH	VIH	2		Vcc+0.3	V	2

Notes:

1. 4.7k to 10k pull-up to Host_Vcc, measured at host side of connector
2. 4.7k to 10k pull-up to Vcc, measured at SFP side of connector

High-Speed Signals

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmission Line-SFP						
Line Frequency	fL		125		MHz	1
TX Output impedance	Zout, TX		100		Ohm	2
Rx Input Impedance	Zin, RX		100		Ohm	2
Host-SFP						
Single ended data input swing	Vinsing	250		1200	mV	3
Single ended data output swing	Voutsing	350		800	mV	3
Rise/Fall Time	Tr,Tf		175		Psec	4
Tx Input Impedance	Zin		50		Ohm	3
Rx Output Impedance	Zout		50		Ohm	3

Notes:

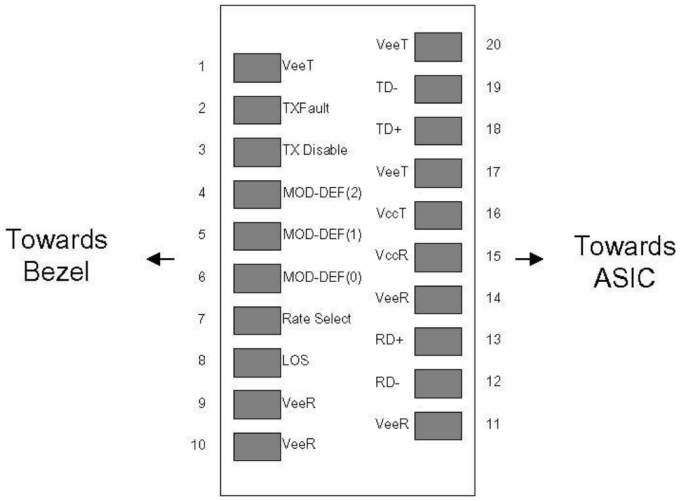
1. 5-level encoding, per IEEE 802.3
2. Differential, for all Frequencies between 1MHz and 125MHz
3. Single ended
4. 20%-80%

Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	TX Fault	Transmitter Fault. Not Supported	
3	TDIS	Transmitter Disabled. PHY disabled on high or open	2
4	MOD_DEF(2)	Module Definition 2. Data line for serial ID	3
5	MOD_DEF(1)	Module Definition 1. Clock line for serial ID	3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module	3
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication.	4
9	VeeR	Receiver Ground (common with Transmitter ground)	1
10	VeeR	Receiver Ground (common with Transmitter ground)	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	1
12	RD-	Receiver Inverted DATA out. AC Coupled.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled.	
14	VeeR	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground).	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

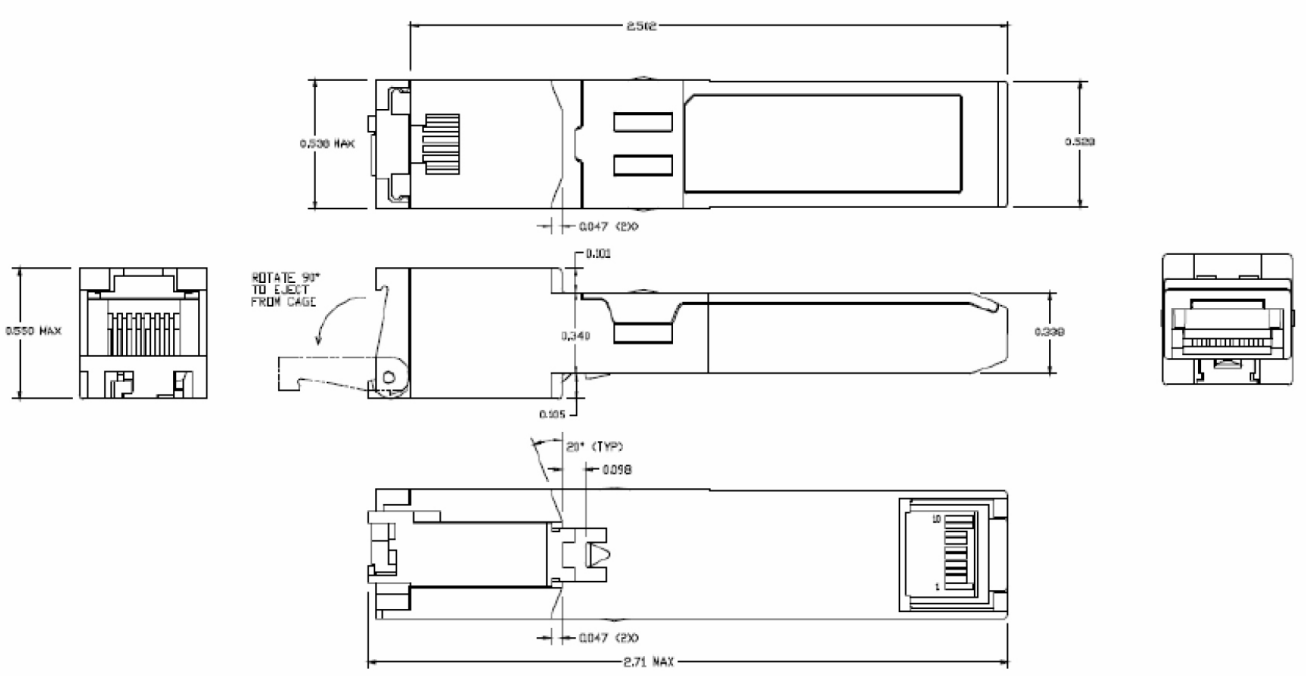
Notes:

1. Circuit ground is connected to chassis ground
2. PHY disabled on TDIS > 2.0V or open, enabled on TDIS <0.8V
3. Should be pulled up with 4.7k-10k Ohms on host board to a voltage between 2.0V and 3.6V.MOD_DEF (0) pulls line low to indicate module is plugged in.
4. LVTTL compatible with a maximum voltage of 2.5V. Not supported on GE-GB-P



Pin-out of connector Block on Host board

Mechanical Specifications



About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is in engrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.

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