

(# 4& 843 24' 1 ON N %0. 5SBOTDFJWFS

24' 1 843 (

" QQMDBUPO

‡ (# 4& 843

4UBOESET

‡ 4' '

‡ 4' '

‡ 4' '

‡ *8&& DE

' FBU/SFT

‡ (HBCU&U F3CFU (C& (# 4& 43

‡ 4VQCPST0 QFSBU POTBU (& (CJT

‡ \$PN QMBCUP *8&& (# 4& 43

‡ (CJTY \$I BOCFM&VID.\$SBM

OUF3BDF \$" 6

‡ 3P) 4 \$PN QMBCU

‡ -PX 1PXFS\$POTVN QJPOJ 8

‡ \$PN QMBCUP i24' 1 (CT 9

1MHHBCV 5SBOTDFJWFS4PMUJ POTw4' '

‡ 0 QJDBM JH U4PVSD Y / . 7\$4&

‡ 5SBOTN JTTPO- FCHU VQUP . PO

0. . . ' . PO0. . . ' .

‡ . . ' JDFS. 10 \$POCFDUPS

‡ 0 QFSBUJCH5FN QFSBUJF3BCHF L3 UP L3

‡) PU; 1MHHBCV UP 1.O&VID.\$SBM

\$POCFDUPS

‡ -BUJ JCH. FD BOJN 1VM\$BC

‡ 5XP 8 JF \$PN N PO. BOBFN FOU'OUF3BDF

4' '

*** &NFD&D\$I BSBDFSTUJDT

| 1BSBN FJFS | 4ZN CPM | . JO | 5ZQJBM | . BY | 6OJT | / PUFT |
|--------------------|---------|------|--------|------|------|--------|
| 4VQOZ 7PNBHF | 7s\$ | | | | 7 | |
| 4VQOZ \$VSSFOU | *ED | | | | " | |
| . PEVNI 5PUBM PXFS | 1 | | | | 8 | |

5SBOTN JJFS

| | | | | | | |
|-------------------------------------|------|--|-------|--|------|--|
| 4JHOBMCH 3BUJ 1FS- BOF | | | ± QQN | | (CT | |
| %JGFSFOUBMOQVU* N QFEBODF | ; JO | | | | 01 N | |
| %JGFSFOUBMOQVU 7PNBHF " N QMJVEF | 7JO | | | | N7QQ | |

3FDFJWFS

| | | | | | | |
|---------------------------------------|-------|--|-------|--|------|--|
| 4JHOBMCH 3BUJ 1FS- BOF | | | ± QQN | | (CT | |
| %JGFSFOUBM VUQVU* N QFEBODF | ; PVU | | | | 01 N | |
| %JGFSFOUBM VUQVU 7PNBHF " N QMJVEF | 7PVU | | | | N7QQ | |

&ZF 8 JEU

| | | | | | | |
|---------------------|------|--|--|--|----|--|
| 7FSJDBM&ZF \$NPTVSF | | | | | E# | |
| 5SBOTJ JPO5JN F UP | 5S5G | | | | QT | |

/ PUFT

. BYN VN UPUBM PXFS/BMF JTQFDJGFE BDSPTTU F QMJFN QFSBU/SF BOE VPMBHF SBF

*7 0 QJDBM\$ I BSBDFSTUJDT

| | | | | | | |
|-----------|---------|------|---------|------|-----|--------|
| 1BSBN FUS | 4ZN CPM | . JO | 5ZQJDBM | . BY | 6QJ | / PUFT |
|-----------|---------|------|---------|------|-----|--------|

5SBOTN JUF5

| | | | | | | |
|-----------------------|--|--|---|-----|------|--|
| 4JHOBMCH3BUF 1FS- BOF | | | ± | QQN | (CT | |
|-----------------------|--|--|---|-----|------|--|

\$FOUFS8 BWFVWCHU Å

| | | | | | | |
|--------------------|----|--|--|--|----|--|
| 3. 44QFDJ\$BMB JEU | 48 | | | | ON | |
|--------------------|----|--|--|--|----|--|

5SBOTN JJO . " 1FS- BOF 591 E#N

| | | | | | | |
|---------------------------------|------|--|--|--|-----|--|
| 5SBOTN JJ' WFSBHF 1PXF51FS- BOF | 1PVU | | | | E#N | |
|---------------------------------|------|--|--|--|-----|--|

-BVOD 1PXF5J00. " . JOVT 1 5%&\$ E#N
5%&\$. JO

| | | | | | | |
|---|-------|--|--|--|----|--|
| 5SBOTN JUF5BOE %JQFSTJPO&ZF DNPV5F 5%&\$ &BD -BOF . BY | 5%&\$ | | | | E# | |
|---|-------|--|--|--|----|--|

0 QJDBM&YJODJPO3BJP 83 E#

" WFSBHF - BVOD 1PXFSPG0 ' ' 5SBOTN JUF5 1FS- BOF E#N

| | | | | | | |
|----------------------------|----|--|--|--|----|--|
| 0 QJDBM&FU/30- PTT5PNTSBOF | 3- | | | | E# | |
|----------------------------|----|--|--|--|----|--|

5SBOTN JUF5&ZF . BTL %FGQJPO \ ^ E#) JJ
19 9 9 : : : ^ 3BJP x °
) JT1FS4BN QW

3FDFJWF5

| | | | | | | |
|-----------------------|--|--|---|-----|------|--|
| 4JHOBMCH3BUF 1FS- BOF | | | ± | QQN | (CT | |
|-----------------------|--|--|---|-----|------|--|

%BN BHF 5I SFTI PNE %5 E#N

| | | | | | | |
|--------------------------------|-----|--|--|--|-----|--|
| " WFSBHF 3FDFJWF 1PXF51FS- BOF | 391 | | | | E#N | |
|--------------------------------|-----|--|--|--|-----|--|

| | | | | | | |
|----------------------------|--------|--|--|--|-----|--|
| 3FDFJWF 1PXF50. " 1FS- BOF | 3Y0. " | | | | E#N | |
|----------------------------|--------|--|--|--|-----|--|

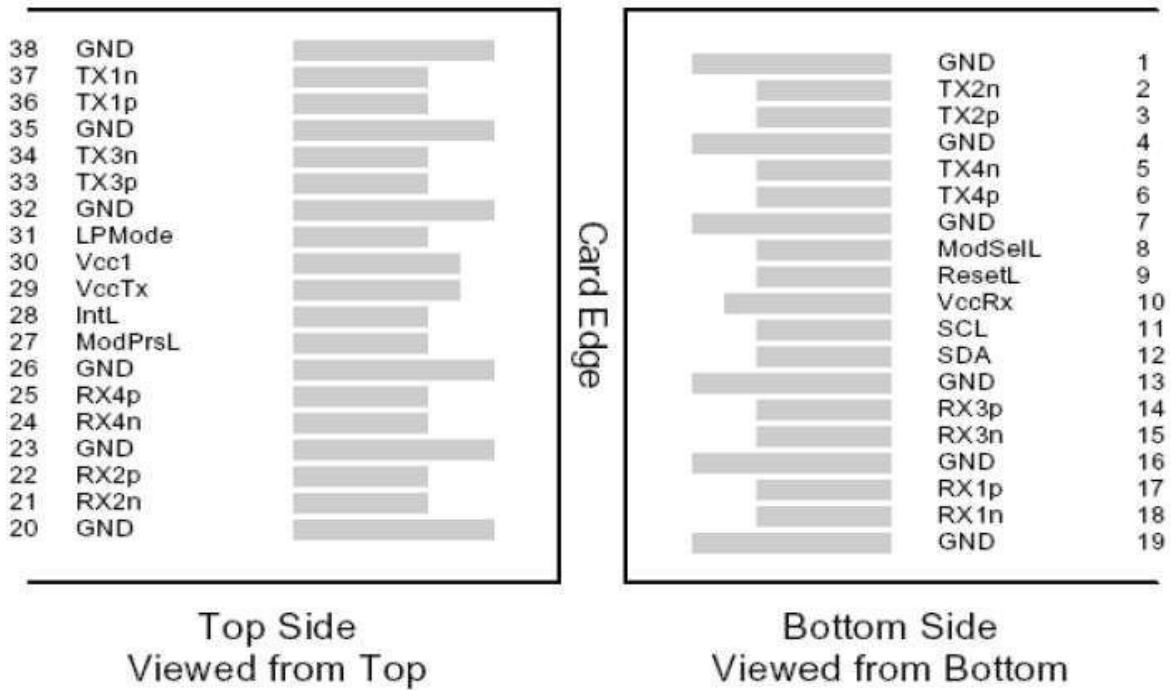


| 1BSN FUS | 4ZN CPM | . JO | 5ZQJBM | . BY | 6OJT | / PUFT |
|---|---------|------|--------|------|------|--------|
| 3FDFJWFS3FOMDUBCF | 3OM | | | | E# | |
| 4SFTTFE 3FDFJWFS 4FOTJWJZ 0. " &BDI - BCF . BY | 4&/ | | | | E#N | |
| -04 %F " TTFSU | -04% | | | | E#N | |
| -04 " TTFSU | -04 | | | | E#N | |
| -04) ZTUFSTJT | -04, | | | | E# | |

/ PUFT

5SBOTN JJJFSBCE 3FDFJWSDPOTJTUT PG NTFST BCE QI PUPEJPEF PQFSBUJCHBU (C TFBD
 . FBTVSFE XJJ DPOPSN BCF UFTUTJHCBMBU51 TFF CPSUJ F #&3 TQFDJGFE JO PG&&&4UE

7 1J%FGQJ POT



' JHVF o24' 1 \$PNQMBU 1J\$POCFDIPS 1FS4' '

7* 1J%FTDSQJ POT

| 1J | 4ZN CPM | / BN F %FTDSQJPO | 3FG |
|----|---------|------------------------------------|-----|
| | (/ % | (SPVCE | |
| | 5Y O | 5SBOTN JIJFS*O/VFSJFE %BUB*QQU | |
| | 5Y Q | 5SBOTN JIJFS/ PO*O/VFSJFE %BUB*QQU | |
| | (/ % | (SPVCE | |
| | 5Y O | 5SBOTN JIJFS*O/VFSJFE %BUB*QQU | |
| | 5Y Q | 5SBOTN JIJFS/ PO*O/VFSJFE %BUB*QQU | |

| 1J0 | 4ZN CPM | / BN F %FTDSQJPO | 3FG |
|-----|--------------------|--------------------------------|-----|
| | (/ % | (SPVCE | |
| | . PE4FM | . PEVW4FMU | |
| | 3FTFU | . PEVW3FTFU | |
| | 7 _{\$} 3Y | 7 1PXFS4VQQW3FDFJFS | |
| | 4\$- | 8 JF 4FSBMOUFSDF \$MOL | |
| | 4%" | 8 JF 4FSBMOUFSDF %BUB | |
| | (/ % | (SPVCE | |
| | 3Y Q | 3FDFJFS/ PO *OVSJFE %BUB0 VUQU | |
| | 3Y O | 3FDFJFS*OVSJFE %BUB0 VUQU | |
| | (/ % | (SPVCE | |
| | 3Y Q | 3FDFJFS/ PO *OVSJFE %BUB0 VUQU | |
| | 3Y O | 3FDFJFS*OVSJFE %BUB0 VUQU | |
| | (/ % | (SPVCE | |
| | (/ % | (SPVCE | |
| | 3Y O | 3FDFJFS*OVSJFE %BUB0 VUQU | |
| | 3Y Q | 3FDFJFS/ PO *OVSJFE %BUB0 VUQU | |

| 1J0 | 4ZN CPM | / BN F %FTDSQJPO | 3FG |
|-----|----------|-------------------------------------|-----|
| | (/ % | (\$PVE | |
| | 3Y O | 3FDJWFS*O/VFSJFE %BUB0 VUQMU | |
| | 3Y Q | 3FDJWFS/ PO*O/VFSJFE %BUB0 VUQMU | |
| | (/ % | (\$PVE | |
| | . PE1SF- | . PEV# 1\$TFCU | |
| | *CU | *CUFSS/CU | |
| | 7\$\$ 5Y | 7 1PXFS4VQQM 5SBOTN JIIFS | |
| | 7\$\$ | 7 1PXFS4VQQM | |
| | -1. PEF | -PX 1PXFS. PEF | |
| | (/ % | (\$PVE | |
| | 5Y Q | 5SBOTN JIIFS/ PO*O/VFSJFE %BUB*QQMU | |
| | 5Y O | 5SBOTN JIIFS*O/VFSJFE %BUB*QQMU | |
| | (/ % | (\$PVE | |
| | 5Y Q | 5SBOTN JIIFS/ PO*O/VFSJFE %BUB*QQMU | |
| | 5Y O | 5SBOTN JIIFS*O/VFSJFE %BUB*QQMU | |
| | (/ % | (\$PVE | |

/ PUFT

\$,SDJHSPVCE JT JIIFSQBW JIPNIFE SPN DI BITJHSPVCE

CU JT BOPQFODPNDUPSESBOPVUQXIJ JI TI PVA CFQMMIE VQXJJI B L0 L0INTSFJTJUPSPOUFI PTUCPSE 5I F 5- QOJT EFBTFSJFE) JI BGFSDPNQMUJPOPGFTFUXI FOCZUF CUJ %BUB/ PUBFBEZ JTSFBE XJJI BVVWF PGH BCE UI F QHGFV JTSFBE TFF 4' '

7** %HUBM%BHOPTUD' VODJ POT

| | |
|---|--|
| 2-Wire Serial Address 1010000x | |
| Lower Page 00h | |
| 0 Identifier | |
| 1- 2 Status | |
| 3- 21 Interrupt Flags | |
| 22- 33 Free Side Device Monitors | |
| 34- 81 Channel Monitors | |
| 82- 85 Reserved | |
| 86- 98 Control | |
| 99 Reserved | |
| 100-104 Hardware Interrupt Pin Masks | |
| 105-106 Vendor Specific | |
| 107 Reserved | |
| 108-110 Free Side Device Properties | |
| 111-112 Assigned for use by PCI Express | |
| 113 Free Side Device Properties | |
| 114-118 Reserved | |
| 119-122 Password Change Entry Area (Optional) | |
| 123-126 Password Entry Area (Optional) | |
| 127 Page Select Byte | |

| Upper Page 00h | Optional Page 01h | Optional Page 02h | Optional Page 03h | |
|----------------------------|-----------------------------------|------------------------------------|-------------------------------------|--------------------------------------|
| 128 Identifier | 128 CC_APPS | 128-255 User EEPROM Data | 128-175 Free Side Device Thresholds | |
| 129-191 Base ID Fields | 129 AST Table Length (TL) | | 176-223 Channel Thresholds | 224 Tx EQ & Rx Emphasis Magnitude ID |
| | 130-131 Application Code Entry 0 | | | |
| | 132-133 Application Code Entry 1 | | | |
| | 134-253 other entries | | | |
| 192-223 Extended ID | 254-255 Application Code Entry TL | 225 RX output amplitude indicators | | |
| 224-255 Vendor Specific ID | | 226-241 Channel Controls | | |
| | | | 242-251 Channel Monitor Masks | |
| | | | 252-255 Reserved | |

' JHVSF o5XP8 JF *OUFSBDF' JFVAT

51 F PQFSBUJCH BCE EJBHOPTUDT JOCPSN BUJPOJTN POLUPFE BCE SFQPSJFE CZB% HUBM% BHOPTUDT 5SBOTDFJVFSS\$ POLSPMWS %%/5\$ JOTJEF U F \$SBOTDFJVFSXI JD JTBDFTIFE U SPVHI B XJF TFSEMOUFSBDF 51 F XJF TFSEMOUFSBDF TI BMDPOTJUPGBN BTUFSBCE TNVVF 51 F QYFE TEF TI BMDCF U F N BTUFSBCE U F GFF TEF TI BMDCF U F TNVVF \$POLSPMBOE EBUBBSF \$SBOTGSSFE TFSEBWX 51 F N BTUFS TI BMDQJUBUF BMDI EBUB \$SBOTGFS' %BUBDBOCF \$SBOTGSSFE \$PN U F N BTUFSUP U F TNVVF BOE \$PN U F TNVVF UP U F N BTUFS 51 F XJF JOUFSBDF TI BMDI DPOTJUPGNDL 4\$- BOE EBUB 4%" TJHCBMT 51 F N BTUFSVJMJ FT4\$- UP DNDL EBUB BOE DPOLSPMOCPSN BUJPOPOU F XJF CVT 51 F N BTUFSBCE TNVVF TI BMDI U F TUBUF PG4%" POU F QPTJVF \$SBOTJUPDCH FEHF PG4\$- 51 F 4%" TJHCBMT CJEJFDJPOBM%/SICH EBUB \$SBOTGFS U F 4%" TJHCBMTI BMDI \$SBOTJUPOXI FO4\$- JTJAX " \$SBOTJUPPOU F 4%" TJHCBMTI JF 4\$- JT JHI TI BMDI DBUF BTUQPSTUBSJ DPCEJPO

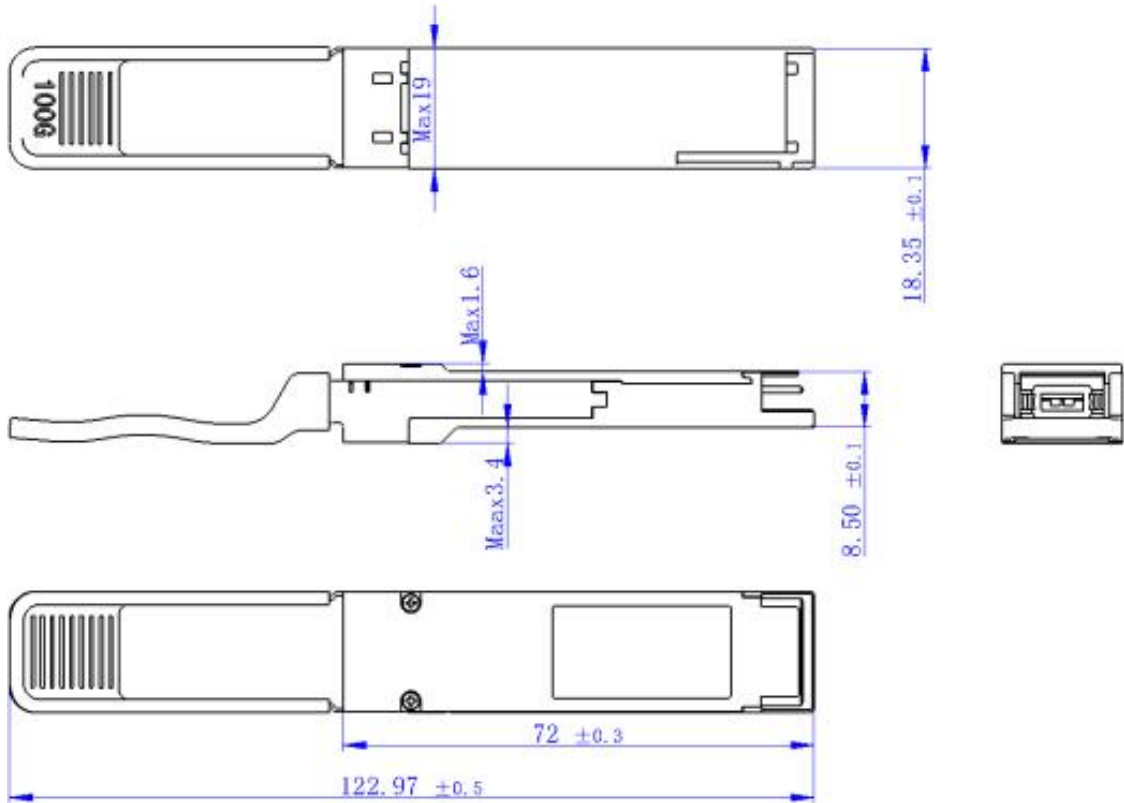
' PSN PSF JOCPSN BUJPO QVBTIF TFF U F 24' 1 . 4" EPDYN FOJBUJPO

7*** %HUBM%BHOPTUD4QFDJGDBUPOT

| 1BSN FUS | 4ZN CPM | " DD/SBZ | 6QJ | / PUFT |
|------------------------------|-----------|----------|-----|---------------------|
| 5BOTDFJWF\$BTIF 5FN QFSBU/SF | % *@& 1 | ± | L3 | 0 VFS0 QFSBUJH5FN Q |
| 4VQQZ 7 PNBHF | % *@_\$\$ | ± | 7 | ' VM0 QFSBUJH3BOHF |
| \$I BOCFM#JBT\$VSSFCU | % *@# 4 | ± | N" | 1FSS\$ I BOCFM |
| \$I BOCFM#9 1PXF S | % *@9 | ± | E# | 1FSS\$ I BOCFM |
| \$I BOCFM#9 1PXF S | % *@9 | ± | E# | 1FSS\$ I BOCFM |

*9 . FD BQDBM#QFDJGDBUPOT

6QJNN



' JHVF . FD BQDBM#N FOT/POT

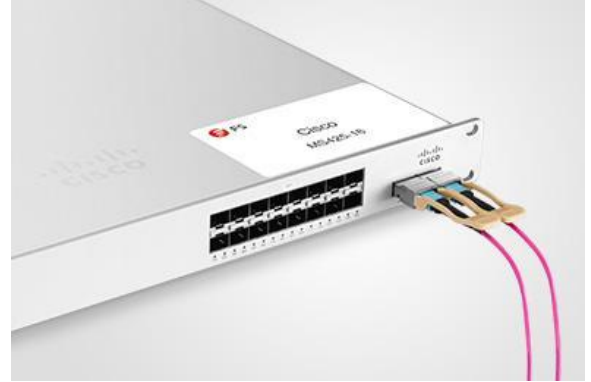
5FTU\$FOUFS

* \$PN QBUC.MUZ 5FTUOH

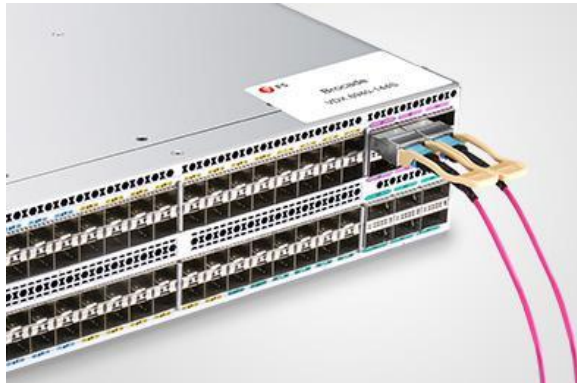
&BD GCFSPQJDBMSBOTDFJWFSI BT CFFOUFTUFE JOI PTUEFWDF POTJUF JO' 4" TTVSE 1PHSN UP FOTVSF QWMDPN QBUC.MUZ X.JJ PVVFS WFOEPST



\$JDP \$BUBZTU\$: \$



\$JDP . 4



#SPDEBF 7%0 4



%FM& \$ / FUKPSLCH; 0/



'PSJUN 4 5

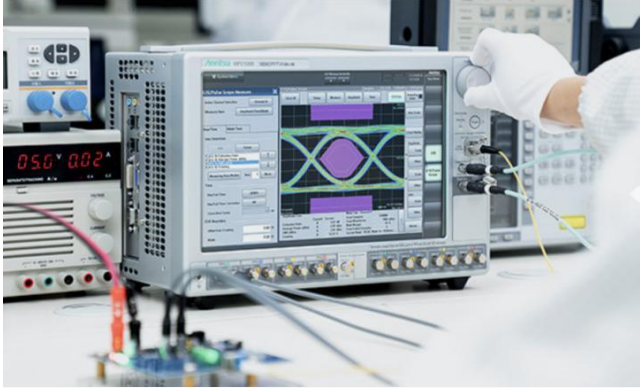


) 6" 8 &4 -) * 4

" CPVW JTQBSJPGVSVUFTUCFE CFUX PSL FRVJQN FOU' PSN PSF JOGPN BUPO QWBTIF DNDL UI F 5FTU#FE 1% *UX JMWCF VQEBUFE JOSFBNUN F BT XF FYCBOE PVSQPSJPNP

** 1 FSCPSN BODF 5FTUJCH

&BD GCFSPQJDBM\$BOTDFJWFSI BT OFFO GVMZUFTUFE JO' 4 " TTVSFE 1SPHSN FRVJQCFE XJU XPSMATTN PTUBEV/BODFE BOBYUJDBM
FRVJQN FCUUP FOIVSF UI BUPVSL\$BOTDFJWFSIXPSL GFSDFUJZ POZPVSEFVDF



1. TX/RX Signal Quality Testing

Equipped with the all-in-one tester integrated 4ch BERT & sampling oscilloscope, and variable optical attenuator to ensure the input and output signal quality.

- Eye Pattern Measurements: jitter, Mask Margin, etc
- Average Output Power
- OMA
- Extinction Ratio
- Receiver Sensitivity
- BER Curve

2. Reliability and Stability Testing

Subject the transceivers to dramatic changes in temperature on the thermal shock chamber to ensure reliability and stability of the transceivers.

- Commercial: 0 °C to 70 °C
- Extended: -5 °C to 85 °C
- Industrial: -40 °C to 85 °C



3. Transfer Rate and Protocol Testing

Test the actual transfer data rate and the transmission ability under different protocols with Network Master Pro.

- Ethernet
- Fibre Channel
- SDH/SONET
- CPRI



4. Optical Spectrum Evaluation

Evaluate various important parameters with the Optical Spectrum Analyzer to meet the industry standards.

- Center Wavelength, Level
- OSNR
- SMSR
- Spectrum Width



0 SEFS*OPSN BUPO

| 1BSJ/ VN CFS | %FTDS.QJPO |
|--------------|--|
| 24'1 43 (| QSFP28 100GBASE-SR4 850nm 100m Transceiver |
| 24'1 #*% (| 24'1 (# 4&43 #J%#FDJPCBM CN NTransceiver |
| 24'1 843 (| 24'1 (# 4&843 CN N 5SBOTDFJ/WFS |
| 24'1 1'3 (| 24'1 (# 4&14. CN N 5SBOTDFJ/WFS |
| 24'1 *3 (| 24'1 (# 4&\$8 % CN LN 5SBOTDFJ/WFS |
| 24'1 14. (| 24'1 (# 4&14. CN LN 5SBOTDFJ/WFS |
| 24'1 -3 (| 24'1 (# 4&-3 CN LN 5SBOTDFJ/WFS |
| 24'1 &3 (| 24'1 (# 4&F\$8 % CN LN 5SBOTDFJ/WFS |
| 24'1 83 (| 24'1 (# 4&83 CN LN 5SBOTDFJ/WFS |
| 24'1 ;3 (| 24'1 (# 4&;3 CN LN 5SBOTDFJ/WFS |
| 2 (| 24'1 (# 4&-3 BCE (# 4&056 %/EM\$BUF CN LN 5SBOTDFJ/WFS |
| 2 (| 24'1 (# 4&-3 BCE (# 4&056 %/EM\$BUF CN LN 5SBOTDFJ/WFS |
| 2 (| 24'1 (# 4&83 BCE (# 4&056 %/EM\$BUF CN LN 5SBOTDFJ/WFS |
| 2 83 - (9 | 24'1 (# 4&83 - CN LN &YUOEFEE |
| 24'1 *43 (| 24'1 (# 4&43 CN N 5SBOTDFJ/WFS*CEVTLSBM |
| 24'1 *3 (| 24'1 (# 4&-3 CN LN 5SBOTDFJ/WFS*CEVTLSBM |
| 24'1 %3 (| 24'1 (# 4&%3 CN N 5SBOTDFJ/WFS |
| 24'1 '3 (| 24'1 (# 4&'3 CN LN 5SBOTDFJ/WFS |
| 24'1 -3 (| 24'1 (# 4&-3 CN LN 5SBOTDFJ/WFS |



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