



QSG - Hardware Specifications1

[Common Control Card Specifications](#) 2

Common Control Card Specifications

This section provides specifications for the TNC, TNCE, TSC, TSCE, AIC, cards, the alarm expansion panel (AEP), the MIC-A/P and MIC-C/T/P FMECs, and the card.

For compliance information, refer to the [Cisco Optical Transport Products Safety and Compliance Information](#) document.

- Description
- Categories
- Tags
- Risk
- Business Relevance

General Card Specifications

This section provides power specifications and temperature ranges for all cards.

About the Cisco Vulnerability Database Library

The Cisco Vulnerability Database (VDB) library provides links to the *Cisco Application Detectors Reference* for each VDB release. The *Cisco Application Detectors Reference* lists information about each application detector in the VDB release, including:

- Description
- Categories
- Tags
- Risk
- Business Relevance

Shelf Specifications

For information on shelf bandwidth, list of topologies, Cisco Transport Controller (CTC) specifications, the LAN, Transaction Language One (TL1), modem, and alarm specifications, timing, power, environment, and shelf dimensions, see the "Hardware Specifications" appendix in the

100G-CK-C and 100ME-CK-C Card Specifications

For information on card specifications, see the [data sheet](#).

40-DMX-CE Card Specifications

The 40-DMX-CE card optical specifications are shown in the following table. For power specifications, see [Table 6: Individual Card Power Requirements](#), on page 8.

Table 1: 40-DMX-CE Card Optical Specifications

Parameter	Note	Condition	Min	Max	Unit
Receive (Rx) filter shape	All SOP and within whole operating temperature range	-1 dB bandwidth, COM RX => TX 1, 40 (OUT)	+/- 100	—	pm
		-3 dB bandwidth, COM TX => TX 1, 40 (OUT)	+/- 199	—	pm
Insertion loss	All SOP and within whole operating temperature range	COM RX => TX 1, 40	—	5.8	dB
VOA dynamic range	—	COM RX => TX 1, 40	25	—	dB
Maximum optical input power	—	—	300	—	mW

40-SMR2-C Card Specifications

The 40-SMR2-C card optical specifications are shown in the following table. For power specifications, see [Table 6: Individual Card Power Requirements](#), on page 8.

Table 2: 40-SMR2-C Optical Specifications

Parameter	Note	Condition	Min	Max	Unit
Channel bandwidth: -0.25 dB	All SOP and within whole operating temperature range, connectors included, and for maximum VOA operating attenuation	All WXC paths (ADD-RX to WXC output, EXP1-RX to WXC output, EXP2-RX to WXC output, and EXP3-RX to WXC output)	—	—	pm
Channel bandwidth: -0.5 dB			+/- 160	—	pm
Channel bandwidth: -1.5 dB			—	—	pm
Channel bandwidth: -3.0 dB			+/- 240	—	pm
Insertion loss	All SOP, any optical switch state, and within whole operating temperature range, connectors included	All WXC paths (ADD-RX to WXC output, EXP1-RX to WXC output, EXP2-RX to WXC output, and EXP3-RX to WXC output)	2.0	7	dB
	All SOP, within whole operating temperature range, connectors included	DROP-TX with respect to EXP-TX	—	5.3	dB

VOA dynamic range	—	All WXC paths (ADD-RX to WXC output, EXP1-RX to WXC output, EXP2-RX to WXC output, and EXP3-RX to WXC output)	20	—	dB
		DROP-TX	—	25	dB
Maximum optical input power	Total power sum of all ports	—	500	—	mW

The EDFA amplifier within the 40-SMR2-C card has the following specifications:

- Optical characteristics (specified from LINE-RX to EXP-TX)
 - Total operating wavelength range: 1530 to 1561.5 nm
 - Gain ripple (peak to valley): 1.2 dB
 - Mid-access loss (MAL) range (for dispersion compensation unit [DCU]): 0 to 9 dB
 - Gain range: 7 to 38 dBm in constant gain mode
 - Minimum gain (standard range): 7.0 dBm
 - Maximum gain (standard range with programmable gain tilt): 21 dBm
 - Maximum gain (extended range with uncontrolled gain tilt): 38 dBm
 - Gain and power regulation over/undershoot: 0.5 dB
 - Maximum output power (with full channel load): 17 dBm
 - Minimum output power (with one channel): -5 dBm
 - Input power (pin) range at full channel load: -21 to 12 dBm
 - Input power (pin) range at single channel load: -43 to -10 dBm
 - Noise figure at G=21 dB = 7.5 dB

The EDFA2 amplifier within the 40-SMR2-C card has the following specifications:

- Optical characteristics (specified from WXC output to LINE-TX)
 - Total operating wavelength range: 1530.0 to 1561.5 nm
 - Gain ripple (peak to valley): 1.2 dB
 - Gain range: 13 to 26 dB
 - Optimal gain (gain tilt = 0): 17 dB
 - Gain and power regulation over/undershoot: 0.5 dB
 - Minimum output power (with one channel): -5 dBm

- Input power range (full channel load): -9 to 4 dBm
- Input power range (single channel load): -31 to -18 dBm
- Noise figure at G=17dB = 6 dB maximum

The OSC filter within the 40-SMR2-C card has the following specifications:

- OSC filter drop (OSC) insertion loss maximum: 1.8 dB
- OSC filter add (OSC) insertion loss maximum: 1.3 dB

32DMX Card Specifications

The 32DMX card optical specifications are shown in the following table. For power specifications, see .

Table 3: 32DMX Optical Specifications

Parameter	Note	Condition	Min	Typical	Max	Units
-1 dB bandwidth	All SOP and within whole operating temperature range, connectors included, and for maximum VOA operating attenuation.	COM RX => TX 1, 32 (OUT)	+/- 110	—	—	pm
-3 dB bandwidth			+/- 200	—	—	pm
Insertion loss	All SOP, and within whole operating temperature range, connectors included.	COM RX => TX 1, 32	—	—	5.5	dB
VOA dynamic range	—	COM RX => TX 1, 32	25	—	—	dB
Maximum optical input power	—	—	300	—	—	mW

The 32DMX channel plan is shown in the following table. All 32DMX client interfaces must comply with this plan.

Table 4: 32DMX Channel Plan

Channel Number	Band	Channel ID	Frequency (GHz)	Wavelength (nm)
1	1	30.3	195.9	1530.33
2		31.2	195.8	1531.12
3		31.9	195.7	1531.90
4		32.6	195.6	1532.68
5	2	34.2	195.4	1534.25
6		35.0	195.3	1535.04
7		35.8	195.2	1535.82
8		36.6	195.1	1536.61

9	3	38.1	194.9	1538.19
10		38.9	194.8	1538.98
11		39.7	194.7	1539.77
12		40.5	194.6	1540.56
13	4	42.1	194.4	1542.14
14		42.9	194.3	1542.94
15		43.7	194.2	1543.73
16		44.5	194.1	1544.53
17	5	46.1	193.9	1546.12
18		46.9	193.8	1546.92
19		47.7	193.7	1547.72
20		48.5	193.6	1548.51
21	6	50.1	193.4	1550.12
22		50.9	193.3	1550.92
23		51.7	193.2	1551.72
24		52.5	193.1	1552.52
25	7	54.1	192.9	1554.13
26		54.9	192.8	1554.94
27		55.7	192.7	1555.75
28		56.5	192.6	1556.55
29	8	58.1	192.4	1558.17
30		58.9	192.3	1558.98
31		59.7	192.2	1559.79
32		60.6	192.1	1560.61

4MD-xx.x Card Specifications

The 4MD-xx.x card optical specifications are shown in the following table. For power specifications, see [Table 6: Individual Card Power Requirements](#), on page 8.

Figure 1: This is a image

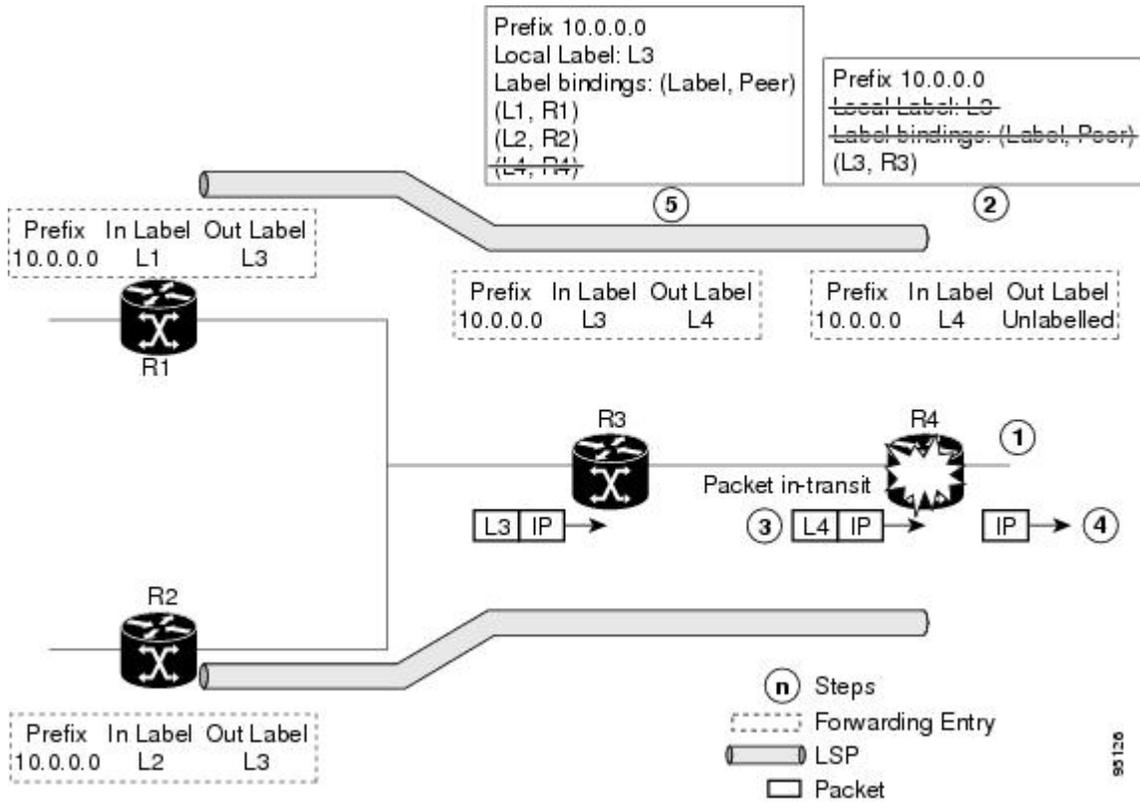


Table 5: 4MD-xx.x Optical Specifications

Parameter	Note	Condition	Min	Max	Unit
Trx filter shape (-0.5 dB bandwidth TrxBW ₂)	All SOP and within whole operating temperature range	COM Rx—xx.xx Tx	+/- 180	—	pm
		COM Rx—yy.yy Tx			
		COM Rx—zz.zz Tx			
		COM Rx—kk.kk Tx			
		xx.xx Rx—COM Tx			
		yy.yy Rx—COM Tx			
		zz.zz Rx—COM Tx			
		kk.kk Rx—COM Tx			
Insertion loss demultiplexer section	All SOP and within whole operating temperature range	COM Rx—xx.xx Tx	—	1.9	dB
		COM Rx—yy.yy Tx	—	2.4	dB
		COM Rx—zz.zz Tx	—	2.8	dB
		COM Rx—kk.kk Tx	—	3.3	dB

Insertion loss multiplexer section	All SOP and within whole operating temperature range (two connectors included)	xx.xx Rx—COM Tx	—	3.6	dB
		yy.yy Rx—COM Rx	—	3.2	dB
		zz.zz Rx—COM Tx	—	3.0	dB
		kk.kk Rx—COM Tx	—	2.6	dB
VOA dynamic range	—	—	25	—	dB
Maximum optical input power	—	—	300	—	mW

Power

The following table provides power consumption information for the cards.

Table 6: Individual Card Power Requirements

Card type	Card Name	Maximum Power in Watts	Typical Power in Watts	Amperes at -48 V	BTU/Hr.
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Common Control Cards	TNC	62	52	0.94	153	
	TNC-E	100	70	1.1	181181	
	TSC	55	46	0.79	129	
	TSC-E	88	65	0.96	157	
	AEP	—	—	(from +5 VDC from AIC-I)	10	
	MIC-ISC-100T	69	53	1.10	181.0	
	Optical Service Channel Cards	OSCM	26	23	0.48	79
		OSC-CSM	27	24	0.5	82
	Optical Amplifier Cards	OPT-PRE	39	30	0.63	103
		OPT-BST	39	30	0.63	103
	OPT-BST-E	39	30	0.63	103	
	OPT-AMP-17-C	23	19	0.83	137	
	OPT-AMP-C	30	23	0.83	137	
	OPT-RAMP-C	55	44	1.04	171	
OPT-RAMP-CE	58	46	0.83	137		
RAMAN-CTP	90	50	1.04	170.5		
RAMAN-COP	90	50	1.04	170.5		
OPT-EDFA-17	50	40	0.52	86		
OPT-EDFA-24	50	40	0.52	86		
PSM Card	PSM	50	35	0.41	69	

Multiplexer and Demultiplexer Cards	4MD-xx.x	25	17	0.35	58.0		
	ROADM Cards	32DMX	25	15	0.31	52	52
		32DMX-L	25	15	0.31	52	
		32WSS	65	50	1.04	171	
		40-MUX-C	39	35	0.73	120	
		40-DMX-C	39	35	0.73	120	
		40-DMX-CE	39	35	0.73	120	
		40-WSS-C	79	63	1.53	250	
		40-WSS-CE	79	63	1.53	250	
		40-WXC-C	33	30	0.63	103	
		80-WXC-C	40	20	0.42	69	
		40-SMR1-C	60	30	0.73	120	
		40-SMR2-C	70	35	0.83	137	
Transponder and Muxponder Cards	TXP_MR_10G	50	50	32.5	0.73	120	
	TXP_MR_10E	50	50	32.5	1.05	171	
	TXP_MR_10E-C	50	31.8	1.05	171		
	TXP_MR_10E_L	50	31.8	1.05	171		
	TXP_MR_10EX_C	53	34.4	0.88	144		
	TXP_MR_2.5G	31	24.3	0.73	120		
	TXPP_MR_2.5G	31	24.3	1.05	171		
	MXP_2.5G_10G	60	43.6	1.05	171		
	MXP_2.5G_10E	60	43.6	1.05	171		
	MXP_2.5G_10E_C	60	43.6	1.05	171		
	MXP_2.5G_10E_L	60	43.6	1.05	171		
	MXP_2.5G_10EX_C	60	43.6	1.05	171		
	MXP_MR_2.5G	60	43.6	1.05	171		
	MXPP_MR_2.5G	60	43.6	1.05	171		

Transponder and Muxponder Cards	MXP_MR_10DME_C	71	53.4	1.25	205
	MXP_MR_10DME_L	71	53.4	1.25	205
	MXP_MR_10DMEX_C	74	56	1.25	205
	40G-MXP-C	112	90	2.34	383
	40E-MXP-C	143	99	2.34	383
	40ME-MXP-C	143	99	2.34	383
	40E-TXP-C	130	105	0.73	120
	40ME-TXP-C	130	105	0.73	120
	ADM-10G	160	135	2.81	461
	OTU2_XP	70	50.8	1.48	243
	AR_MXP	74	50	1.09	15
	AR_XP	74	50	1.09	15
	AR_XPE	74	50	1.09	15
TDCU Cards	TDC-CC	12	11	0.17	28
	TDC-FC	12	11	0.17	28



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