

Refurbished CISCO DWDM-XFP-36.61 Datasheet

CISCO > ROUTERS

Cisco 7600 Series Routers

Product Specifications	
Description	
Description	Specification
Chassis compatibility	Cisco 7603-S Cisco 7604 Cisco 7606 and Cisco 7606-S Cisco 7609 and Cisco 7609-S Cisco 7613 For Cisco Catalyst 6500 support, please visit: <URL>
Central-forwarding-engine compatibility	The line cards are compatible with the Cisco 7600 Series Supervisor Engine 720-3B/3BXL and Cisco 7600 Series Route Switch Processor 720 (RSP720) and later. The ES Plus line cards require dual-channel switch-fabric connectivity; therefore, these line cards are not supported with the Cisco 7600 Series Supervisor Engine 32 or in slots 1 through 8 of the Cisco 7613 chassis.
Distributed Forwarding Card (DFC)	Choice of Cisco Distributed Forwarding Card 3C or 3CXL (DFC-3C or DFC-3CXL, respectively) Line-rate distributed forwarding with services enabled; up to ~48 mpps per line card Distributed Forwarding Card 3C (DFC-3C): Designed for Carrier Ethernet-based infrastructures Allows up to 256,000 hardware-based forwarding entries Allows up to 128,000 NetFlow entries Distributed Forwarding Card 3CXL (DFC-3CXL): Optimized for IP/MPLS PE offering multiple IP services such as Layer 3 VPNs, IPv6, and triple- or quadruple-play services (data, voice, and video or data, voice, video, and mobility, respectively) Up to 1 million hardware-based forwarding entries Up to 256,000 NetFlow entries
Minimum software	Cisco IOS Software Release 12.2(33)SRD or later
Packet memory	512 MB for 200 ms of combined input and output buffering at 10 Gbps (100 ms ingress and 100 ms egress)
Link encapsulations	Ethernet II and IEEE 802.1q encapsulations
Hardware queues	ES+40 line cards: 128,000 ingress queues 128,000 egress queues ES+20 line cards: 64,000 ingress queues 64,000 egress queues Hierarchical QoS (H-QoS)
MAC addresses	Up to 96,000 MAC addresses per ES Plus line card Hardware-based MAC learning at wire rate
Environmental conditions	Operating temperature: 32 to 104°F (0 to 40°C) Storage temperature: -40 to 167°F (-40 to 75°C) Relative humidity: 10 to 90 percent, noncondensing Operating altitude: -60 to 2000m
MIBs	Cisco Entity MIB (CISCO-ENTITY-MIB) Cisco Entity Asset MIB Cisco Entity Field-Replaceable Unit (FRU) Control MIB Cisco Entity Alarm MIB Interface IF MIB (RFC 2233) Definitions of Managed Objects for Bridges (RFC 1493) Evolution of Interfaces Group of MIB-II (RFC 1573) Simple Network Management Protocol (SNMP) MIB II (RFC 1213) Remote Monitoring (RMON) MIB (RFC 1757) Switch Monitoring (SMON) MIB Video Monitoring MIBs: CISCO-FLOW-MONITOR-TC-MIB, CISCO-FLOW-MONITOR-MIB

	<p>CISCO-MDI-METRICS-MIB, CISCO-IP-CBR-METRICS-MIB</p> <p>For more details about these MIBs, visit: http://www.cisco.com/univercd/cc/td/doc/product/core/cis7600/7600mibs/</p>
Network management	CiscoWorks, CiscoView, CiscoWorks Resource Manager Essentials (RME), Cisco ANA, Cisco VAMS
Physical specifications	<p>Occupies 1 slot in a Cisco 7600 Series Router</p> <p>Up to eight ES Plus line cards in a Cisco 7609 or Cisco 7609-S 9-slot chassis</p> <p>Requires Supervisor Engine 720-3B/3BXL or Route Switch Processor 720 or later</p> <p>Dimensions (H x W x D): 1.75 x 15.375 x 16 in.</p> <p>Weight:</p> <p>2-port 10 GE line card (7600-ES+2TG): 11.5 lb</p> <p>4-port 10 GE line card (7600-ES+4TG): 12.4 lb</p> <p>20-port GE line card (7600-ES+20G): 11.7 lb</p> <p>40-port GE line card (7600-ES+40G): 12.9 lb</p>
Maximum power consumption (watts)	<p>20-port line card with Distributed Forwarding Card 3C (7600-ES+20G3C): 277</p> <p>20-port line card with Distributed Forwarding Card 3CXL (7600-ES+20G3CXL): 305</p> <p>2-port line card with Distributed Forwarding Card 3C (7600-ES+2TG3C): 269</p> <p>2-port line card with Distributed Forwarding Card 3CXL (7600-ES+2TG3CXL): 297</p> <p>40-port line card with Distributed Forwarding Card 3C (7600-ES+40G3C): 391</p> <p>40-port line card with Distributed Forwarding Card 3CXL (7600-ES+40G3CXL): 419</p> <p>4-port line card with Distributed Forwarding Card 3C (7600-ES+4TG3C): 371</p> <p>4-port line card with Distributed Forwarding Card 3CXL (7600-ES+4TG3CXL): 399</p>
Indicators	Status: green (operational); red (faulty)
Regulatory compliance	CE Marking
Safety	<p>UL 60950</p> <p>CSA C22.2 No. 60950</p> <p>EN60950</p> <p>TS001</p> <p>IEC 60950</p> <p>AS/NZS3260</p>
Electromagnetic compatibility	<p>FCC Part 15 Class A</p> <p>ICES-003 Class A</p> <p>VCCI Class A</p> <p>EN55022 Class A</p> <p>CISPR22 Class A</p> <p>AS/NZS3548 Class A</p> <p>EN61000-3-2</p> <p>EN61000-3-3</p> <p>EN61000-3-1</p> <p>EN55024</p> <p>EN50082-1</p> <p>EN300 386</p> <p>AS/NZS CISPR 22 Class A</p> <p>EN61000-6-1</p>
Telecommunications standards	<p>ITU-T G.691</p> <p>ITU-T G.707</p> <p>ITU-T G.783 Sections 9-10</p> <p>ITU-T G.784</p> <p>ITU-T G.803</p> <p>ITU-T G.813</p> <p>ITU-T G.825</p> <p>ITU-T G.826</p> <p>ITU-T G.841</p> <p>ITU-T G.957 Table 3</p> <p>ITU-T G.958FCC Part 15 Class A</p>

Feature Support

Description

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Carrier Ethernet and IP/MPLS network protocols	<p>IPv4 unicast and multicast</p> <p>IPv6 unicast and multicast</p> <p>Layer 2 multicast</p> <p>MPLS Provider Edge Layer 2 and Layer 3 VPNs</p> <p>MPLS Traffic Engineering (MPLS-TE)</p> <p>MPLS Fast Reroute (FRR)</p> <p>Differentiated Services (Diff-Serv) aware MPLS TE</p> <p>Layer 2 Tunneling Protocol Version 3 (L2TPv3)</p> <p>Generic Routing Encapsulation (GRE) and IP-in-IP Tunneling</p> <p>Ethernet Bridging and Ethernet Multipoint Bridging (E-MPB)</p> <p>Ethernet switching</p>

	Ethernet over MPLS (EoMPLS)
Carrier Ethernet and IP/MPLS network protocols (continued)	Switch port - access and trunk QinQ termination Selective QinQ Flexible QinQ VLAN translation Private VLAN VPLS and H-VPLS VLAN and Spanning Tree Protocols Per VLAN Spanning Tree (PVST) Virtual Switch Tagging (VST) Rapid Spanning Tree Protocol (RSTP) Multiple Spanning Tree (MST) Protocol: IEEE 802.1s VLAN ACL (VACL) VLAN Trunking Protocol (VTP) Resilient Ethernet Protocol (REP) Ethernet Operations, Administration, and Maintenance (E-OAM), Connection Fault Management (CFM), and Y.1731 802.1ah
QoS	Modular QoS CLI (MQC) Policing granularity down to 64 kbps and supported on both ingress and egress Access control lists (ACL) Classification, marking, policing, and queuing Differentiated services code point (DSCP) Complex re-marking of Ethernet and IP/MPLS headers
Congestion avoidance	Weighted Random Early Detection (WRED) based on IP Precedence and DSCP
Queuing and shaping	Enhanced Class-based Weighted Fair Queuing (CBWFQ) Egress Low Latency Queuing (LLQ) Ingress and egress shaping
Traffic classification and bandwidth policing	Classification based on: Extended ACL IP Precedence and IP DSCP MPLS Experimental Bits (EXP) VLAN Input VLAN Class of service (CoS): Inner and outer Policer: One rate two color and two rate three color on both ingress and egress
ACLs and security	Up to 32,000 access-list entries with no forwarding degradation Hardware counters for ACL hits
Layer 2 and Layer 3 VPNs	Layer 2 VPNs EoMPLS VPLS H-VPLS (MPLS Edge or QinQ Edge) Flexible QinQ Layer 3 VPNs MPLS VPN (RFC 2547-bis) Inter-AS and Carrier-Supporting-Carrier Multicast VPN (mVPN) mLDP based Multicast VPN (mVPN) Multicast VPN Extranet 802.1ah
Protection and bundling	MPLS FRR IEEE 802.3ad and Cisco EtherChannel technology

Inline Video Monitoring Feature Support

Description	
Description	Specification
Summary	Supported on all ES+ linecards Supported with supervisor engines Sup720 and RSP720 (1 gigabits and 10 gigabits) Monitoring on both ingress and egress interfaces IP/UDP encapsulated unicast and multicast video streams VBR and CBR video streams Compressed and uncompressed video streams
Metrics	RFC4445 Media Delivery Index (MDI) consisting of Delay Factor (DF), and Media Loss Rate (MLR), plus Media Discontinuity Count (MDC) - for MPEG video within M2TS (SPTS/MPTS) Delay Factor and Media Rate Variation (MRV) MDI:DF, MDI:MLR, MDI:MDC, IP-CBR:DF, and IP-CBR:MRV metrics are supported for CBR flows MDI:MLR and MDI:MDC are supported for VBR flows

Performance	Flow rates up to 10Gbps and a total of up to 40Gbps per linecard Up to 8000 flows per chassis and 1000 flows per linecard
Management	Media Stop Events (MSE) Threshold Crossing Alerts (TCA) Syslog support SNMP MIBs Full integration with Cisco's Video Assurance Management Solution (VAMS) http://www.cisco.com/en/US/products/ps9518/index.html

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