



ME60 Multi-Service Control Gateway Brochure



Huawei Technologies Co., Ltd.





ME60 Multi-Service Control Gateway

Product Overview

The ME60 is a multi-service control gateway product series launched by Huawei. ME60s are mainly used as broadband service access BRAS nodes and IP/MPLS network service-provisioning nodes.

The ME60 uses Huawei-developed Solar series NP chips. In addition, the ME60 uses the CLOS distributed multi-level switching architecture and leverages distributed hardware-based forwarding and non-blocking switching to achieve excellent line-speed forwarding performance, superb scalability, comprehensive QoS, and strong service processing capabilities. Based on an industry-leading 2 Tbit/s platform, the ME60 is compatible with the line cards already installed on existing networks, which helps to maximize the protection of customer investment.

The ME60 is a high-performance service management and provisioning platform, which fully meets the requirements of a variety of service-provisioning modes, carries multiple services simultaneously, and ensures that a wide range of telecommunications services run stably and reliably. Through using the ME60 and corresponding solutions, operators can construct a future-oriented intelligent broadband IP network with greatly reduced multi-service network construction and O&M costs.

Appearance

The ME60 series includes the following models, which can meet the requirements of networks of various scales: ME60-X16A, ME60-X8A, ME60-X16, ME60-X8, and ME60-X3.



ME60-X16A



ME60-X8A



ME60-X16



ME60-X8



ME60-X3

Product Features

1. Industry-Leading Performance and Access Capabilities

ME60 series chassis are based on large-capacity 2 Tbit/s platforms, on which each slot can be smoothly expanded to 1 Tbit/s, enabling the carrying of large-volume service traffic

and satisfying the increasing bandwidth demands of future networks.

ME60s can support 480 Gbit/s high-performance broadband service access boards and 160 Gbit/s CGN service boards. In addition, ME60s support a maximum of one million concurrent users, meeting the fast-growing demands of operators' broadband services and providing a solid foundation for operators' broadband evolution.

The ME60 supports a wide variety of policy protocols, providing strong service interconnection capabilities and excellent network adaptability.

In addition, the ME60 series supports a wide range of interfaces to enable full re-use, guaranteeing the highest level of customer investment protection. Featuring high port density and a compact design, the ME60 chassis efficiently minimizes the required installation space.

2. Excellent User Experiences

ME60s support user access functions, with each slot being capable of initiating up to 300 user connections per second. The ME60 can initiate up to 800 user connections per second, with the session establishment rate of the large-capacity CGN board reaching up to two million sessions per second, fully ensuring user experiences.

3. Rich VAS Capabilities

The ME60 supports a wide variety of Value-Added Services (VASs) and features, including GRE tunnels, IPsec security tunnels, and NetStream. In addition, the ME60 supports comprehensive IPv6 user access modes and a large-capacity CGN solution, avoiding the IPv4 address shortage problem that affects operators, while, at the same time, also providing a comprehensive IPv4 to IPv6 transition solution, comprehensively guaranteeing long-term operator service evolution. The ME60 supports the intelligent acceleration of value-added services, providing monetization capabilities to networks.

4. Efficient O&M Technologies and Tools

Featuring efficient and accurate O&M detection and measurement technologies, such as IP FPM, TWAMP, RFC2544, G.8032, and one-click automated O&M tools, ME60s can

help operators simplify O&M and greatly reduce OPEX. In addition, by using O&M management tools such as U2000 and uTraffic, network operating conditions can be monitored in real time, enabling operators to determine whether the forwarding capacity of the network complies with the SLAs signed with users.

5. Energy-Conserving Design

The ME60 uses reliable and secure Huawei-developed Solar chips. Solar chips support the dynamic allocation and management of multi-core NP resources; the automatic disabling of redundant or unused ports, bus, and chip resources; and dynamic frequency adjustment and intelligent fan speed adjustment. These industry-leading power consumption control technologies significantly reduce the power consumption of a device.

6. Consistent Market Leader

According to authoritative third-party organizations, the ME60 continually ranks first in the global BRAS market. ME60s have already been deployed by numerous leading operators worldwide, including China Telecom, China Unicom, China Mobile, Vodafone in Italy and Germany, Jazztel in Spain, Malaysia Telecom, Etisalat in the UAE, STC in Saudi Arabia, Globe in the Philippines, and KPN in the Netherlands.

Product Specifications

Attribute	ME60-X16A	ME60-X8A	ME60-X16	ME60-X8	ME60-X3
Switching Capacity	50.32 Tbit/s	25.16 Tbit/s	12.58 Tbit/s	7.08 Tbit/s	1.08 Tbit/s
Forwarding Performance	11,520 Mpps	5,760 Mpps	5,760 Mpps	2,880 Mpps	360 Mpps
Number of Slots	22 slots, including 16 LPUs, 2 SRUs, and 4 SFUs	12 slots, including 8 LPUs, 2 SRUs, and 2 SFUs	22 slots, including 16 LPUs, 2 SRUs, and 4 SFUs	11 slots, including 8 LPUs, 2 SRUs, and 1	5 slots, including 3 LPUs and 2 SRUs

SFU					
Dimensions (H x W x D)	1,778 mm x 442 mm x 650 mm (40U)	934 mm x 442 mm x 650 mm (21U)	1,420 mm x 442 mm x 650 mm (32U)	620 mm x 442 mm x 650 mm (14U)	175 mm x 442 mm x 650 mm (DC 4U) 220 mm x 442 mm x 650 mm (AC 5U)
Maximum Power Consumption	7,220W (BSUF-240) 9,040W (BSUF-480)	4,110W (BSUF-240) 4,770W (BSUF-480)	4,610W (BSUF-100) 6,210W (BSUF-240)	2,340W (BSUF-100) 3,220W (BSUF-240)	920W (BSUF-100)
Full Configuration Weight	356 kg	190 kg	279 kg	136 kg	DC: 42 kg (100G) AC: 52 kg (100G)
Interface Types	100 GE-WAN/LAN 10 GE-WAN/LAN GE/FE				
BRAS	User access protocols: PPPoE, IPoE, 802.1X, and ND access User authentication protocols: PAP, CHAP, MSCHAP, RADIUS, and HWTACACS User billing protocols: RADIUS, HWTACACS, and COPS User authorization protocols: RADIUS, HWTACACS, and COPS Policy protocols: COPS, COA				
L2TP	Maximum number of sessions supported: 64K per slot and 128K per device Maximum number of tunnels supported: 16K per slot, 16K per LAC device, and 48K per LNS device				
IPv4	Supports the static routing protocol and dynamic routing protocols, such as RIP, OSPF, IS-IS, and BGP-4. All ports support line-rate forwarding even in complex routing environments, for example, when route flapping occurs.				
IPv6	Supports the following: <ul style="list-style-type: none"> IPv4/IPv6 dual stacks A variety of IPv4-to-IPv6 transition technologies: manually configured tunnels, IPv6 over IPv4 tunnels, GRE tunnels, IPv4 over IPv6 tunnels, and IPv6 provider edge (6 PE) IPv6 static routes and dynamic routing protocols, such as BGP4/BGP4+, RIPng, OSPFv3, and IS-ISv6. IPv6 neighbor discovery, PMTU discovery, TCP6, ping IPv6, tracer IPv6, socket IPv6, static IPv6 DNS, IPv6 DNS server, TFTP IPv6 client, and IPv6 policy-based routing 				

	<ul style="list-style-type: none"> ● Network Address Translation IPv6-to-IPv4 (NAT64), NAT44 and Dual-Stack Lite (DS-Lite). <p>Internet Control Message Protocol Version 6 (ICMPv6) Management Information Base (MIB), User Datagram Protocol Version 6 (UDP6) MIB, TCP6 MIB, and IPv6 MIB.</p>
MPLS/ MPLS VPN	<p>Supports the following:</p> <ul style="list-style-type: none"> ● MPLS TE and MPLS/BGP VPN in compliance with RFC 2547bis ● Inter-AS Option A, inter-AS Option B, and inter-AS Option C ● Integration with Internet services ● Martini MPLS L2VPN and Kompella MPLS L2VPN ● VPLS and VLL ● Heterogeneous interworking <p>Multicast VPN</p>
Layer 2 Features	<p>Supports the following:</p> <ul style="list-style-type: none"> ● Protocols such as IEEE 802.1Q, IEEE 802.1ad, IEEE 802.1D, IEEE 802.1w, and IEEE 802.1s ● VLAN aggregation (super VLAN) <p>Filtering list based on MAC addresses and ports</p>
Reliability	<p>Supports the following:</p> <ul style="list-style-type: none"> ● Protection mechanisms such as IP/LDP/VPN/TE/VLL FRR, IP/TE automatic rerouting, fast convergence of IGP/BGP/multicast routes, VRRP, load balancing among IP-Trunk links, BFD, MPLS/Ethernet OAM, and routing protocol/port/VLAN damping ● PW redundancy, E-Trunk, E-APS, and E-STP ● In-service patching for smooth software upgrade ● Passive backplane ● Redundancy backup for key components such as route processing modules, SFUs, and power modules to guard against a single point of failure ● Switching between components that hot back up each other, Graceful Restart (GR), NSF, NSR, and ISSU ● Hot-swapping for all components <p>Intra- or inter-CGN service chassis 1+1 and 1:1 hot backup</p>
QoS	<ul style="list-style-type: none"> ● Provides well-designed HQoS mechanism. <ul style="list-style-type: none"> ✓ Provides advanced scheduling and congestion avoidance technologies, accurate traffic policing and traffic shaping, and complex rule definition and fine-grained flow identification. ✓ Supports MPLS HQoS and ensures QoS for MPLS VPN, VLL, and PWE3 services. ✓ Supports DiffServ- and MPLS TE-based DS-TE, eight Class Types (CTs), and TE-tunnel-based QoS. ● Supports a maximum of 768K flow queues per slot.
Value-Added Services	<ul style="list-style-type: none"> ● Supports Destination Address Accounting (DAA), which helps carriers identify services based on destination network segments and perform separate accounting for different services on IP carrier networks. <p>Supports Enhanced Dynamic Service Gateway (EDSG), which identifies various user</p>

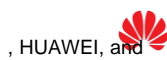
	services based on traffic destination addresses and implements independent rate limit, accounting, and management for each service.
Multicast	<p>Supports the following:</p> <ul style="list-style-type: none"> ● IGMPv1, IGMPv2, and IGMPv3 ● Static multicast ● Multicast routing protocols, such as PIM-SM, PIM-SSM, MSDP, and MBGP ● Multicast CAC ● Interoperability between multicast protocols ● Multicast policies for multicast routing protocols and multicast forwarding ● Multicast QoS <p>Two-level multicast replication on the SFU and LPU to achieve optimal multicast service performance</p>
Security	<p>Supports the following:</p> <ul style="list-style-type: none"> ● ACL-based packet filtering ● URPF ● GTSM ● DHCP snooping ● ARP attack defense ● DoS attack defense ● MAC address limit ● MAC-IP binding ● SSH ● SSHv2
Operating Environment	Long-term operating temperature: 0°C to 45°C
	Short-term operating temperature: –5°C to +55°C
	Long-term operating humidity: 5% to 85% [(non-condensing) ?]
	Short-term operating humidity: 0% to 100% [(non-condensing) ?]
	Operating altitude: equal to or under 4,000 meters



Copyright © Huawei Technologies Co., Ltd. 2019. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without the prior written consent of Huawei Technologies Co., Ltd.

Trademark Notice



, HUAWEI, and are trademarks or registered trademarks of Huawei Technologies Co., Ltd.

Other trademarks, product, service, and company names mentioned are the property of their respective owners.

General Disclaimer

The information in this document may contain predictive statements including, without limitation, statements regarding future financial and operating results, future product portfolio, new technology, etc. There are a number of factors that could cause actual results and developments to differ materially from those expressed or implied in the predictive statements. Therefore, such information is provided for reference purposes only and constitutes neither an offer nor an acceptance. Huawei may change the information at any time without notice.

HUAWEI TECHNOLOGIES CO., LTD.

Huawei Industrial Base

Bantian Longgang

Shenzhen 518129, P.R. China

Tel: +86-755-28780808

www.huawei.com