



Switching
Engineered
for AV over IP

The NETGEAR AV Line M4250 series was designed with input from AV Professionals. The result is a line of switches built from the ground up to support 1Gb audio and video over IP with customized hardware and software along with dedicated service and support.

NETGEAR M4250 series key features:

- Ranges from 8 to 16 ports with a variety of PoE+ and Ultra90 PoE++ options for 15.4W, 30W, 60W, 75W and 90W AVoIP endpoints
- Uplink options include 1G for audio installations or standalone video installations as well as 10G uplinks for larger scale video deployments
- Also includes 12-port multi-gigabit Ethernet and 16-port 1G/10G fiber models for plug and play aggregation in a star topology
- Designed for a clean integration with traditional rack-mounted, AV equipment
- The M4250 switches come with a sleek, black display panel with status in front and all cabling plus additional status in the back
- Reversed mounting is possible when ports are desired on the front of the rack
- A second pair of rackmount ears allows the switches to be mounted recessed by 2-inches to allow for the cabling

- Software-controlled fan adjustments enable the fans to be turned off when ambient temperature and PoE loads are appropriate for a totally fanless operation
- Threaded holes on the bottom (4xM5 for 50x100mm VESA) and in front (1xM10 for clamps) allow for universal mounting options outside the rack as well

NETGEAR M4250 series AV software features:

- Pre-configured for audio and video over IP out of the box, the M4250 switches enable encoders and decoders to be connected with zero configuration
- When more configuration is required, an AV web-based GUI is available at the switch IP address:8080
- This interface has been specially designed for AV installers with specific AV-related controls made more accessible and with port-based profiles
- For audio, profiles for Dante, Q-SYS and AES67 are built-in, as well as an AVB profile (AVB license sold separately)

- For video, the M4250 offers profiles for NVX, SVSI, Q-SYS, NDI, Kramer KDS, Aurora Multimedia, ZeeVee, Atlona, Dante and SDVoE
- Other AV CODECs and manufactures are supported as well as audio/video/control mixed profiles
- To further simplify star deployments, NETGEAR IGMP Plus™ brings multicast automation between all M4250 switches, and with M4300/M4500
- Simply connect the switches together and you are done!

NETGEAR M4250 series other software features:

- All M4250 switches share the same high-end NETGEAR Layer 2 / Layer 3 switching engine for a consistent experience
- All switches in the M4250 series have another main, IT web-based GUI for midsize Enterprise campus networks, IoT and IPTV

- Additional features include static, RIP and PIM-SM, DM and SSM multicast routing, DHCP Server and PTPv2 Transparent Clock (1-step E2E)
- AVB is the only feature requiring a license, all other advanced features are available license-free
- Advanced classifier-based, time-based hardware implementation for L2 (MAC), L3 (IP) and L4 (UDP/TCP transport ports) security and prioritization
- Selectable Port-Channel / LAG (802.3ad - 802.1AX) L2/L3/L4 hashing for fault tolerance and load sharing with any type of Ethernet channeling
- Voice VLAN with SIP, H323 and SCCP protocols detection and LLDP-MED IP phones automatic QoS and VLAN configuration
- Efficient authentication tiering with successive DOT1X, MAB and Captive Portal methods for streamlined BYOD
- Comprehensive IPv4/IPv6 static and dynamic routing including Policy-based routing and 6-to-4 tunneling
- Advanced IPv4/IPv6 security implementation including malicious code detection, DHCP Snooping, IP Source Guard protection and DoS attacks mitigation

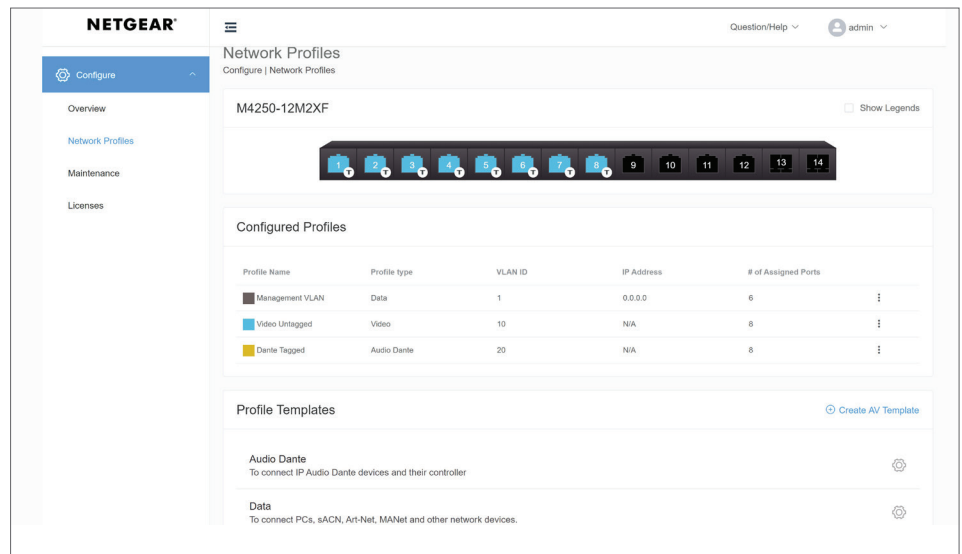
NETGEAR M4250 series management features:

- DHCP/BootP innovative auto-installation including firmware and configuration file upload automation
- Industry standard SNMP, RMON, MIB, LLDP, AAA, sFlow, RSPAN and PTPv2
- Service port for out-of-band Ethernet management (OOB)

- Standard RS232 straight-through serial RJ45 and USB Type-C ports for local management console
- Standard USB-A port for local storage, logs, configuration or image files
- Dual firmware image for updates with minimum service interruption
- Single-pane-of-glass NMS300 management platform with mass configuration support
- Industry standard command line interface (CLI) for IT admins used to other vendors commands
- Fully functional Web console (main GUI) for IT admins who prefer an easy to use graphical interface
- Dedicated AV web-based GUI interface available at [switch IP address:8080] for AV installations

NETGEAR M4250 series warranty and support:

- NETGEAR ProSAFE Limited Lifetime Hardware Warranty**
- Included Lifetime Technical Support
- Included Lifetime Next Business Day Hardware Replacement
- Offering free network design services and installation support, the NETGEAR Engineering Services Team is ready to help ensure your 1G deployments with the M4250 AV over IP switches go as smooth as possible. Just drop us an email at ProAVDesign@netgear.com to get started!



Hardware-at-a-Glance

Model Name	Form-Factor	Switching Fabric	REAR (REVERSIBLE)*					PSU	LEDs	MANAGEMENT	Model Number
			10/100/1000 BASE-T RJ45 ports	100/1000/2.5G BASE-T RJ45 ports	1000BASE-X SFP ports	1000/10G BASE-X SFP+ ports					
M4250-10G2F-PoE+	1U rack mount 440 x 43.2 x 200mm	24 Gbps	8 ports PoE+ (125W) 2 additional ports 10M, 100M, 1G	-	2 ports SFP 1G	-	Fixed (C14 connector) Power switch (On/Off)	Available both in front and in the rear: Power LED PoE Max LED (PoE models) Fan LED Port LEDs	Ethernet: 1G Out-of-band (Rear) Console: RJ45 RS232 (Rear) Console: USB-C (Rear) Storage: USB-A (Front) LED Ext: USB-C (Front)	GSM4212P	
M4250-10G2XF-PoE+	1U rack mount 440 x 43.2 x 200mm	60 Gbps	8 ports PoE+ (240W) 2 additional ports 10M, 100M, 1G	-	-	2 ports SFP+ 1G; 10G				GSM4212PX	
M4250-10G2XF-PoE++	1U rack mount 440 x 43.2 x 257mm	60 Gbps	8 ports PoE++** (720W) 2 additional ports 10M, 100M, 1G	-	-	2 ports SFP+ 1G; 10G				GSM4212UX	
M4250-12M2XF	1U rack mount 440 x 43.2 x 100mm	100 Gbps	-	12 ports 100M, 1G, 2.5G	-	2 ports SFP+ 1G; 10G				MSM4214X	
M4250-16XF	1U rack mount 440 x 43.2 x 200mm	320 Gbps	-	-	-	16 ports SFP+ 1G; 10G				XSM4216F	

* Reversed mounting is possible when ports are desired on the front of the rack by using the standard rackmount ears, or the included alternate rackmount ears to mount the switch recessed by 2-Inches to allow for the cabling.

** Ultra90 PoE++ 802.3bt is compatible with 802.3af PoE (15.4W), 802.3at PoE++ (30W) and 802.3bt (60W, 75W and 90W).



M4250-10G2F-PoE+
GSM4212P



M4250-10G2XF-PoE+
GSM4212PX



M4250-10G2XF-PoE++
GSM4212UX



M4250-12M2XF
MSM4214X



M4250-16XF
XSM4216F



Acoustic-at-a-Glance

Model Name	FAN OFF MODE Setting / maximum loading*					QUIET MODE Setting at 25°C ambient**					COOL MODE Setting at 25°C ambient**			Model Number
	Fanless State	Ambient	Sensor	PoE Power Load	Conditions	PoE Power Load	Fan Duty	Sensor	Case Temp (Top)	Acoustic	Fan Duty	Case Temp (Top)	Acoustic	
M4250-10G2F-PoE+	0dBA / 37.1°C Case Temp	25°C	<= 42°C	80W	All ports can be used	125W	25	<= 36°C	35.9°C	27.38dBA	100	27.2°C	55dBA	GSM4212P
M4250-10G2XF-PoE+	0dBA / 38.4°C Case Temp	25°C	<= 44°C	90W	All ports can be used	240W	25	<= 37°C	40.6°C	27.4dBA	100	30.9°C	56dBA	GSM4212PX
M4250-10G2XF-PoE++	0dBA / 42.3°C Case Temp	25°C	<= 67°C	45W	All ports can be used	90W 90-180W 180W-720W	25 30 40	<= 49°C <= 49°C <= 49°C	41.1°C 37.2°C 52.1°C	34.57dBA 40.8°C 47.19dBA	100	41.8°C	60dBA	GSM4212UX
M4250-12M2XF	0dBA / 56°C Case Temp	25°C	<= 64°C	-	8 ports 2.5G (no SFP+)	-	25	<= 58°C	53.5°C	28.5dBA	100	33.2°C	55dBA	MSM4214X
M4250-16XF	0dBA / 36.2°C Case Temp	25°C	<= 78°C	-	8 ports SFP+	-	25	<= 67°C	41.6°C	27.44dBA	100	30.3°C	57dBA	XSM4216F

* Software-controlled fan adjustments enable the fans to be turned off when ambient temperature and PoE loads are appropriate for a totally fanless operation.

** dBA values are SPL (Sound Pressure Level) values, testing following the ISO-7779 standard. Bystander Mode. Chamber Temp 25°C during testing. Full, 100%, Data and PoE loaded. Worst case.

Software-at-a-Glance

LITE LAYER 3 PACKAGE													Model Number
Model Name	Management	AV Dedicated UI	IPv4 / IPv6 ACL and QoS, DiffServ	IPv4 / IPv6 Multicast Filtering	IPv4 / IPv6 Policing and Convergence	Spanning Tree Green Ethernet	VLANs	Trunking Port Channel	IPv4 / IPv6 Authentication Security	IPv4 / IPv6 Static Routing	IPv4 / IPv6 Dynamic Routing		
M4250 series	Out-of-band IT Web GUI (main) HTTPs CLI; Telnet; SSH SNMP, MIBs RSPAN Radius Users, TACACS+	AV web-based GUI available at [Switch IP Address]:8080 Designed for AV installers AV-related controls Audio over IP profiles AVB profile* Video over IP profiles Mixed Audio and Video profiles	Ingress/egress 1 Kbps shaping Time-based Single Rate Policing	NETGEAR IGMP™ Plus for automated IGMP between switches IGMPv3 MLDv2 Snooping, Proxy ASM & SSM IGMPv1,v2 Querier (compatible v3) Control Packet Flooding	Auto-VoIP Policy-based routing (PBR) LLDP-MED IEEE 1588 PTPv2 1-Step End-to-End Transparent Clock AVB*: 802.1AS, 802.1Qav, 802.1Qat MSRP, 802.1ak MMRP, 802.1ak MVRP	STP, MTP, RSTP PV(R)STP BPDU/STRG Root Guard EEE 802.3az (EEE is disabled by default)	Static, Dynamic, Voice, MAC GVRP/ GMRP Double VLAN mode Private VLANs	Static LAG, or Dynamic LACP (LACP automatically reverts to and from Static LAG) Seven (7) L2/L3/L4 hashing algorithms	Successive Tiering (DOT1X; MAB; Captive Portal) DHCP Snooping Dynamic ARP Inspection IP Source Guard	Port, Subnet, VLAN routing Multicast static routes DHCPv4 Server DHCP Relay Stateful DHCPv6 Server	IPv4: RIP IPv4/IPv6: PIM-SM PIM-DM SSM	All models	

* Requires AVB license, sold separately. All other software features are available, license-free.

Performance-at-a-Glance

TABLE SIZE														
Model Name	MAC ARP/NDP	Routing/ Switching Capacity	Throughput 64-byte	Application Route Scaling	Packet Buffer	Latency	IP Multicast Routing Entries	CPU	Jumbo Frames	Multicast IGMP Group membership	VLANs	DHCP	sFlow	Model Number
M4250-10G2F-PoE+	16K MAC 4K ARP/ NDP	24 Gbps Line-Rate	17.86 Mpps	Static: 894v4/126v6 RIP: 32v4	16Mb	<2.27µs 1G	512 IPv4 128 IPv6	ARM A9 1.25Ghz 2GB RAM 256MB Flash	Up to 12K	2K IPv4 2K IPv6	4K VLANs	DHCP Server: 2K leases IPv4: 256 pools IPv6: 16 pools	16 samplers 16 pollers 8 receivers	GSM4212P
M4250-10G2XF-PoE+	16K MAC 4K ARP/ NDP	60 Gbps Line-Rate	44.64 Mpps	Static: 894v4/126v6 RIP: 32v4	16Mb	<2.14µs 1G <0.84µs 10G								GSM4212PX
M4250-10G2XF-PoE++	16K MAC 4K ARP/ NDP	60 Gbps Line-Rate	44.64 Mpps	Static: 894v4/126v6 RIP: 32v4	16Mb	<1.84µs 1G <0.81µs 10G								GSM4212UX
M4250-12M2XF	16K MAC 4K ARP/ NDP	100 Gbps Line-Rate	74.40 Mpps	Static: 894v4/126v6 RIP: 32v4	16Mb	<2.84µs 1G <6.02µs 2.5G <0.81µs 10G								MSM4214X
M4250-16XF	16K MAC 4K ARP/ NDP	320 Gbps Line-Rate	238.08 Mpps	Static: 894v4/126v6 RIP: 32v4	16Mb	<1.30µs 1G <0.86µs 10G								XSM4216F



Ordering Information

NETGEAR AV Line M4250-10G2F-PoE+ 8x1G PoE+ 125W 2x1G and 2xSFP Managed Switch (GSM4212P)

Americas	GSM4212P-100NAS		
Europe	GSM4212P-100EUS	Optional AVB License	AVB4212P-10000S
Asia Pacific	GSM4212P-100AJS		
China	GSM4212P-100PRS		

NETGEAR AV Line M4250-10G2XF-PoE+ 8x1G PoE+ 240W 2x1G and 2xSFP+ Managed Switch (GSM4212PX)

Americas	GSM4212PX-100NAS		
Europe	GSM4212PX-100EUS	Optional AVB License	AVB4212PX-10000S
Asia Pacific	GSM4212PX-100AJS		
China	GSM4212PX-100PRS		

NETGEAR AV Line M4250-10G2XF-PoE++ 8x1G Ultra90 PoE++ 802.3bt 720W 2x1G and 2xSFP+ Managed Switch (GSM4212UX)

Americas	GSM4212UX-100NAS		
Europe	GSM4212UX-100EUS	Optional AVB License	AVB4212UX-10000S
Asia Pacific	GSM4212UX-100AJS		
China	GSM4212UX-100PRS		

NETGEAR AV Line M4250-12M2XF 12x2.5G and 2xSFP+ Managed Switch (MSM4214X)

Americas	MSM4214X-100NAS		
Europe	MSM4214X-100EUS	Optional AVB License	AVB4214X-10000S
Asia Pacific	MSM4214X-100AJS		
China	MSM4214X-100PRS		

NETGEAR AV Line M4250-16XF 16x1G/10G Fiber SFP+ Managed Switch (XSM4216F)

Americas	XSM4216F-100NAS		
Europe	XSM4216F-100EUS	Optional AVB License	AVB4216F-10000S
Asia Pacific	XSM4216F-100AJS		
China	XSM4216F-100PRS		



Warranty and Support

ProSAFE Limited Lifetime Hardware Warranty**

90 days of Technical Support via phone and email*	Included, 90 days after purchase
Lifetime Technical Support through online chat	Included, lifetime
Lifetime Next Business Day hardware replacement	Included, lifetime

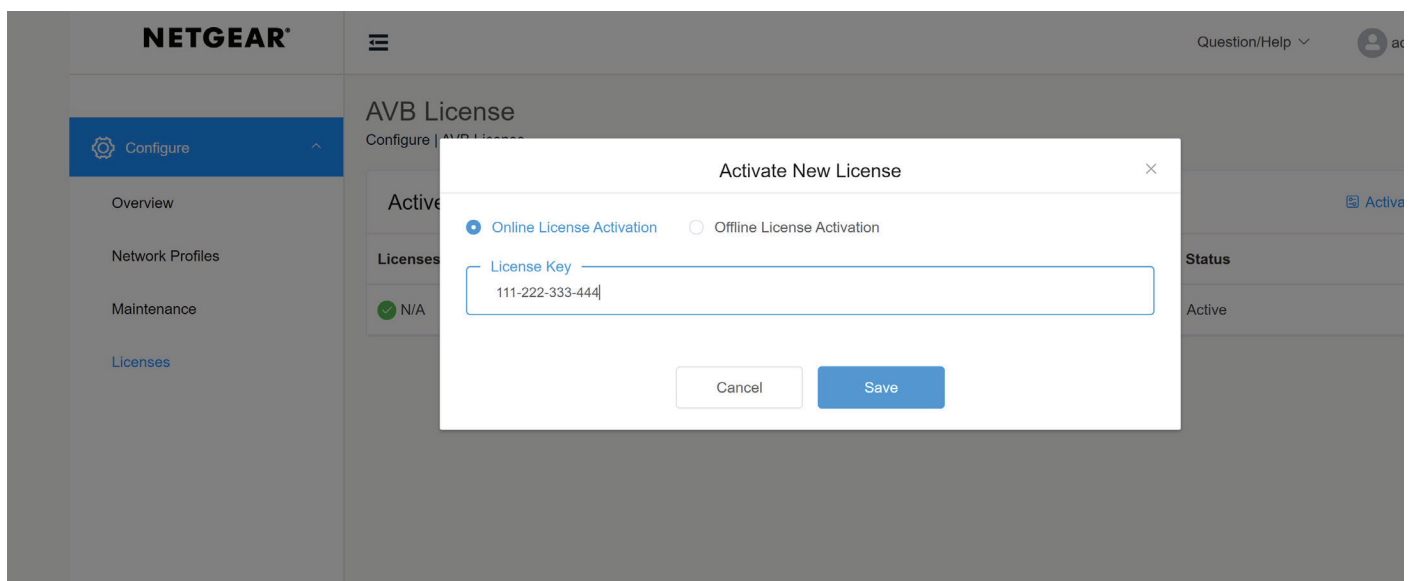
ProSUPPORT Support Contracts:

PMB0312-10000S	OnCall 24x7 1-year Category 2
PMB0332-10000S	OnCall 24x7 3-year Category 2
PMB0352-10000S	OnCall 24x7 5-year Category 2

OnCall 24x7 extends the 90-day technical support for standard and advanced features to the length of the contract term.

ProSUPPORT Installation Contract:

PSB0304-10000S	Remote Installation Setup and Configuration Service Contract 2-hour planned appointment.
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M4250 AVB Licenses are electronic SKUs. A license registration key is received by email and can be copied and pasted directly in the AV UI [Switch IP Address:8080] when the switch is online.

Modules

Modules	
AGM731F	1000BASE-SX SFP LC Transceiver (multimode, 550m OM4/OM3 50/125µm, 275m OM2/OM1 62.5/125µm)
AGM732F	1000BASE-LX SFP LC Transceiver (single mode, 10km 9/125µm)
AGM734-10000S	1000BASE-T SFP RJ45 Transceiver
AXC761-10000S	10G Direct Attach SFP+ to SFP+ 1 Meter Passive DAC Cable
AXC763 -10000S	10G Direct Attach SFP+ to SFP+ 3 Meter Passive DAC Cable
AXC765-10000S	10G Direct Attach SFP+ to SFP+ 5 Meter Active DAC Cable
AXC767 -10000S	10G Direct Attach SFP+ to SFP+ 7 Meter Active DAC Cable
AXC7610-10000S	10G Direct Attach SFP+ to SFP+ 10 Meter Active DAC Cable
AXC7615 -10000S	10G Direct Attach SFP+ to SFP+ 15 Meter Fiber DAC Cable
AXC7620 -10000S	10G Direct Attach SFP+ to SFP+ 20 Meter Fiber DAC Cable
AXM761-10000S	10GBASE-SR SFP+ LC Transceiver (multimode, 300m OM4/OM3 50/125µm, 33m OM2/OM1 62.5/125µm)
AXM761P10-10000S	Pack of 10 AXM761 Transceivers (multimode, 300m OM4/OM3 50/125µm, 33m OM2/OM1 62.5/125µm)
AXM762-10000S	10GBASE-LR SFP+ LC Transceiver (single mode, 10km 9/125µm)
AXM762P10-10000S	Pack of 10 AXM762 Transceivers (single mode, 10km 9/125µm)
AXM763-10000S	10GBASE-LRM SFP+ LC Transceiver (multimode, 260m OM4/OM3 50/125µm, 220m OM2/OM1 62.5/125µm)
AXM764-10000S	10GBASE-LR LITE SFP+ LC Transceiver (single mode, 2km 9/125µm)
AXM765-10000S	10GBASE-T SFP+ RJ45 Transceiver (30m)

** This product comes with a limited warranty that is valid only if purchased from a NETGEAR authorized reseller, and covers unmodified hardware, fans and internal power supplies - not software or external power supplies, and requires product registration at <https://www.netgear.com/business/registration> within 90 days of purchase; see <https://www.netgear.com/about/warranty> for details. Intended for indoor use only.

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