MAG2-MFS-17-ZZ-RD-X-68-0001-Public Address Data Sheets

AXIS C1610-VE Network Sound Projector

Sleek, robust speaker for clear speech

This network sound projector features a clean and minimalistic design suited to both outdoor and indoor environments. Digital signal processing (DSP) ensures clear sound, and embedded audio management software lets users remotely coordinate security, safety, and operational messages alongside background music. Built-in memory supports prerecorded messages, and live speak lets personnel address events in real time. Built on open standards, this speaker supports integration with network video, access control, analytics, and VoIP (supporting SIP). This standalone unit connects directly to your standard network for a flexible, scalable, cost-effective audio solution. Furthermore, its IK10 vandal-resistant rating allows for placement almost anywhere.

- > Sleek, vandal-resistant design
- > All-in-one, outdoor-ready speaker system
- > Connects to standard network
- > Simple installation with PoE
- > Remote health testing



reddot winner 2022

AXIS C1610-VE Network Sound Projector

Audio hardware

Enclosure	One-way enclosure with 4-inch broadband dynamic cone speaker
Max sound pressure level	106 dB
Frequency response	200 Hz - 16 kHz
Coverage pattern	130° (at 2 kHz)
Audio input/output	Built-in microphone (can be disabled mechanically)
Built-in microphone specification	50 Hz - 15 kHz
Digital signal processing	Built-in and pre-configured
Amplifier description	Built-in 7 W Class D amplifier

Audio management

AXIS Audio Manager Edge	Built in: – Content management for music and live/pre-recorded announcements. – Scheduling to decide when and where to play specific content. – Content prioritization to ensure urgent messages interrupt the schedule. – Zone management allowing you to divide up to 200 speakers into 20 zones. – Health monitoring for remote discovery of system errors. – User management to control who has access to what features. See separate datasheet for more details.
AXIS Audio Manager Pro	For larger and more advanced systems. Sold separately. See separate datasheet for specifications.

Audio software

Audio streaming	One-way/two-way with optional half-duplex echo cancellation. Mono.
Audio encoding	AAC LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Axis µ-law 16 kHz, WAV, MP3 in mono/stereo from 64 kbps to 320 kbps. Constant and variable bit rate. Sampling rate from 8 kHz up to 48 kHz.

System on chip (SoC)

Model	i.MX6 SX
Memory	512 MB RAM, 512 MB Flash

Network

Security	Password protection, IP address filtering, HTTPS[a] encryption, IEEE 802.1X[a] network access control, Digest authentication, User access log
Network protocols	IPv4/v6, HTTP, HTTPS[a], SIP, SSL/TLS[a], QoS Layer 3 DiffServ, FTP, CIFS/SMB, SMTP, Bonjour, UPnP™, SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, TCP, UDP, IGMPv1/v2/v3, ICMP, DHCP, ARP, SOCKS, SSH

System integration

Application Programming Interface	Open API for software integration, including VAPIX®, One-click cloud connection, AXIS Camera Application Platform (ACAP).
VoIP	Support for Session Initiation Protocol (SIP) for integration with Voice over IP (VoIP) systems, peer to peer or integrated with SIP/PBX. Tested with: SIP client such as Cisco, Bria and Grandstream and PBX suppliers such as Cisco and Asterisk. Supported SIP features: secondary SIP server, IPv6, SRTP, SIPS, SIP TLS, DTMF (RFC2976 and RFC2833), NAT (ICE, STUN, TURN) Supported codecs: PCMU, PCMA, opus, L16/16000, L16/8000, speex/8000, speex/16000, G.726-32
Intelligent audio	Auto Speaker Test
Event triggers	Virtual inputs, External input Call: DTMF, State changes, AXIS Camera Application Platform (ACAP)
Event actions	File upload: HTTP, network share and email Notification: email, HTTP and TCP Play audio clip Perform Auto Speaker Test Send SNMP trap Status LED
Built-in installation aids	Test tone verification and identification
Functional monitoring	Auto Speaker Test, Connection verification, Built-in system logging

General

Casing	Impact-resistant aluminum, IP66-, IK10-, NEMA 4X-, and MIL-STD-810G 509.5-rated.
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3 (max. 12.95 W)
Connectors	RJ45 10BASE-T/100BASE-TX PoE I/O: 4-pin 2.5 mm terminal block with two I/Os
Reliability	Designed for 24/7 operation.
Operating conditions	-40°C to 55 °C (-40 °F to 131 °F) Humidity 10-100% RH (condensing)
Storage conditions	-40 °C to 65 °C (-40 °F to 149 °F) Humidity 5-95% RH (condensing)
Approvals	**EMC** EN 55032 Class B, EN 50121-4, IEC 62236-4, EN 55024, EN 61000-6-1, EN 61000-6-2, FCC Part 15 Subpart B Class B, ICES-3(B)/NMB-3(B), VCCI Class B, RCM AS/NZS CISPR 32 Class B, KC KN32 Class B, KC KN35 **Safety** IEC/EN/UL 62368-1, IEC/EN/UL 60950-22 **Environment** IEC 62262 IK10, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14, IEC 60068-2-78, IEC/EN 60529 IP66, NEMA 250 Type 4X, MIL-STD-810G 509.5
Dimensions	Ø203 X 105 mm (Ø8.0 x 4.1 in)
Weight	4.1 kg (9.0 lb)
Included accessories	Installation Guide, AVHS Authentication Key, AXIS Camera Station license key, AXIS Connector Guard A, Cable shoe
Optional accessories	AXIS T91B47 Pole Mount, AXIS T91F67 Pole Mount, Cable Gland M20x1.5, RJ45, Cable Gland A M20, AXIS Power over Ethernet Midspans, T94R01B Corner Bracket, T94P01B Corner Bracket, T94S01P Conduit Back Box For more accessories, see *axis.com*
Video management software	AXIS Camera Station, Video management software from Axis' Application Development Partners available on *axis.com/techsup/software*
Languages	English, German, French, Spanish, Italian
Warranty	5-year warranty, see *axis.com/warranty*

a. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (www.openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*

Environmental responsibility:

axis.com/environmental-responsibility

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AXIS C6110 Network Paging Console

Flexible, customizable paging solution

AXIS C6110 Network Paging Console complements your network speakers to create a complete public address system that enables live paging, prerecorded callouts, and two-way audio. Configure as many zones as needed in the web interface, using the expandable tree structure. Then, to page, navigate to the right zone using the console's color LCD and twelve physical buttons. You can also configure buttons to trigger actions on other IoT devices – for example, doors or lights. The console can be wall-mounted or placed on a desktop, where you can use it as-is, with an external headset, or with AXIS TC6901 Gooseneck Microphone.

- > Enables live and prerecorded callouts
- > Reach all the audio zones you need
- > Web-configurable display
- > Two-way audio
- > Easy installation with PoE



AXIS C6110 Network Paging Console

Capabilities

Typical use cases	Live paging, play pre-recorded messages, two-way communication with speakers and SIP devices Navigate several pages of audio zones for paging

Hardware

Audio output	Built-in broadband speaker, diameter: 42 mm (1.65 in) Max sound pressure level: 80 dB
Audio input	Built-in microphone
Connectors	XLR input for AXIS TC6901 Gooseneck Microphone 3.5 mm input for headset (support for 3 and 4 rings) RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE
User interface	**Configurable soft keys**: Can be configured for paging, calling and announcements. RGB back light. **Volume buttons**: Adjust the volume in internal speaker or headset. **Push-to-talk button**: For paging. RGB back light. Microphone status LED
Display and indicators	**Display size**: 7 inch **Display resolution**: 1024 x 600 **Display view angle**: Full angle Configurable. Automatic back light with ambient light sensor. Display sleep mode for saving power.
Digital signal processing	Built-in and pre-configured
Casing	Plastic casing with aluminum chassis **Color**: black
Dimensions	**Height**: 67 mm (2.6 in) **Width**: 295 mm (11.6 in) **Length**: 132 mm (5.2 in)
Weight	910 g (2.0 lbs)
Mounting option	Desk or wall mount

Audio software

Audio features	Echo cancellation, noise reduction, beam forming
Audio streaming	Two-way (full duplex)
Audio encoding	AAC LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Axis μ-law 16 kHz, WAV, MP3, Opus 8/16/48 kHz MP3 in mono/stereo from 64 kbps to 320 kbps. Constant and variable bit rate. Sampling rate from 8 kHz up to 48 kHz.

System on chip (SoC)

Model	i.MX 8M Mini
Memory	1024 MB RAM, 1024 MB Flash

Network

Network protocols	IPv4/v6[a], HTTP, HTTPS, SSL/TLS, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP™, SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, NTCIP, SIP (Cisco, Avaya, Asterisk)

System integration

Application Programming Interface	Open API for software integration, including VAPIX®, One-click cloud connection, AXIS Camera Application Platform (ACAP).
VoIP	Support for Session Initiation Protocol (SIP) for integration with Voice over IP (VoIP) systems. Peer to peer or integrated with SIP/PBX. Tested with PBX suppliers such as Cisco and Asterisk. Supported SIP features: secondary SIP server, IPv6, SRTP, SIPS, SIP TLS, DTMF (RFC2976 and RFC2833), NAT (ICE, STUN, TURN) Supported codecs: PCMU, PCMA, opus, L16/16000, L16/8000, speex/8000, speex/16000, G.726-32, G.722
Event conditions	Audio: audio clip playing, audio detection Call: state, state change Device status: IP address blocked, IP address removed, live stream active, network lost, new IP address, system ready Edge storage: recording ongoing, storage disruption, storage health issues detected I/O: digital input is active, manual trigger, virtual input is active MQTT: stateless Scheduled and recurring: schedule
Event actions	Audio clips: play, play while the rule is active, stop playing Calls: answer, end, make I/O: toggle I/O once, toggle I/O while the rule is active LEDs: flash status LED, flash status LED while the rule is active MQTT: send MQTT publish message Notifications: HTTP, HTTPS, TCP and email Recordings: record audio, record audio while the rule is active SNMP traps: send message, send message while the rule is active

Approvals

EMC	CISPR 35, CISPR 32 Class A, CISPR 32:2015/AMD1:2019 Class A, EN 55035, EN 55032 Class A, EN 61000-6-1, EN 61000-6-2 Australia/New Zealand: RCM AS/NZS CISPR 32 Class A Canada: ICES-3(A)/NMB-3(A) Japan: VCCI Class A Korea: KS C 9835, KS C 9832 Class A USA: FCC Part 15 Subpart B Class A , shieled and unshieled cable
Safety	CAN/CSA C22.2 No. 62368-1, IEC/EN/UL 62368-1 ed. 3, KC-Mark
Environment	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14
Cybersecurity	ETSI EN 303 645

Cybersecurity

Edge security	**Software:** Signed OS, brute force delay protection, digest authentication and OAuth 2.0 RFC6749 OpenID Authorization Code Flow for centralized ADFS account management, password protection **Hardware:** Axis Edge Vault cybersecurity platform, secure boot
Network security	IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2), IEEE 802.1AR, HTTPS/HSTS, TLS v1.2/v1.3, Network Time Security (NTS), X.509 Certificate PKI, host-based firewall
Documentation	*AXIS OS Hardening Guide* *Axis Vulnerability Management Policy* *Axis Security Development Model* AXIS OS Software Bill of Material (SBOM) To download documents, go to *axis.com/support/cybersecurity/resources* To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

General

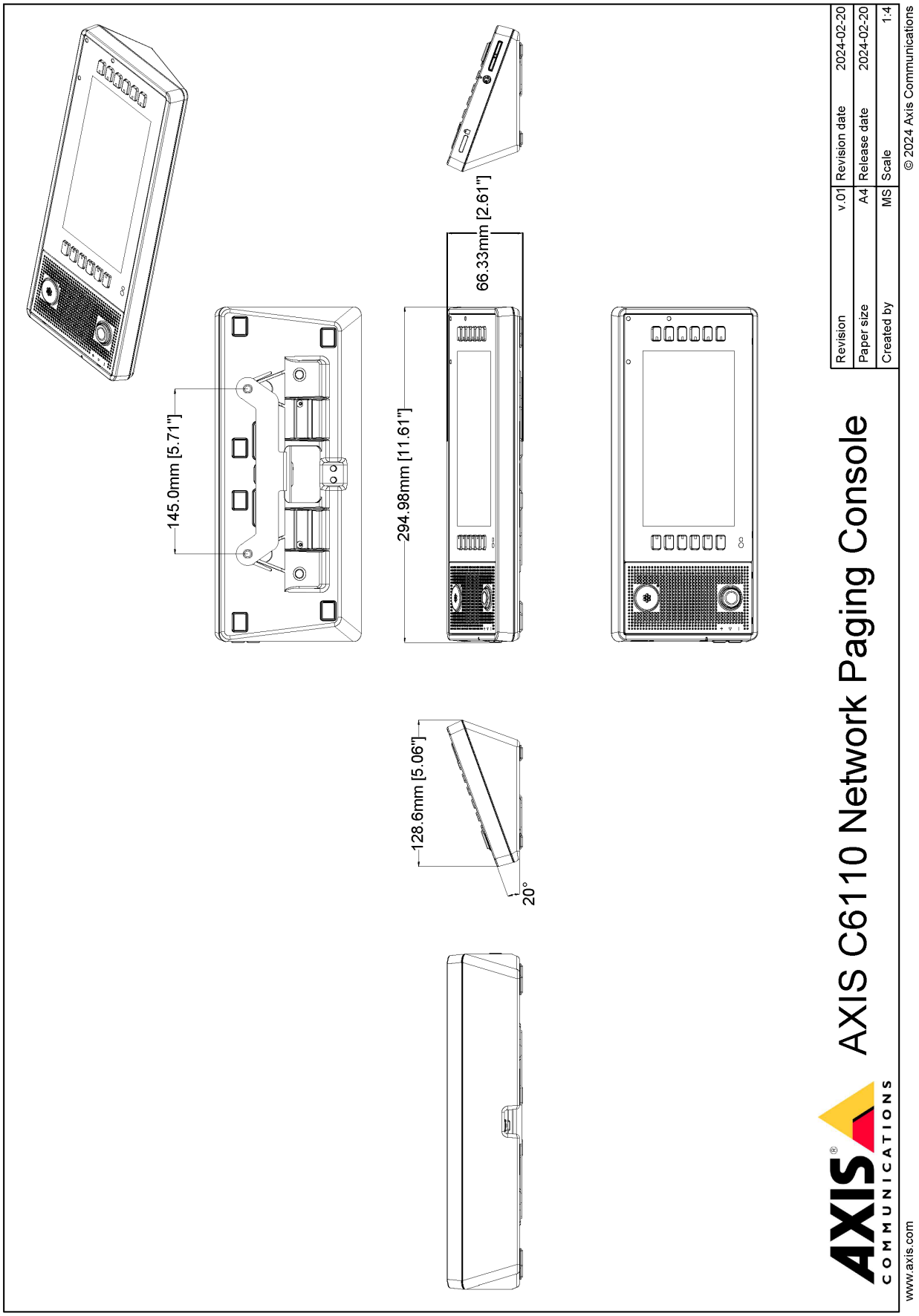
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3 (max 12.95 W) Typical power consumption: 6 W Max power consumption: 9.5 W
Reliability	Designed for 24/7 operation.
Storage	Support for microSD card
Operating conditions	0 °C to 50 °C (32 °F to 122 °F) Humidity 10–85% RH (condensing)
Storage conditions	-30 °C to 65 °C (-22 °F to 149 °F) Humidity 10–95% RH (non-condensing)
Box content	Paging console, installation guide, owner authentication key
Optional accessories	AXIS TC6901 Gooseneck Microphone
System tools	AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator Available at *axis.com*
Video management software	AXIS Camera Station, video management software from Axis' Application Development Partners available on *axis.com/techsup/software*
Languages	Display interface: English, German, French, Spanish, Italian Configuration interface: English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese
Warranty	5-year warranty, see *axis.com/warranty*

Sustainability

Substance control	PVC free RoHS in accordance with EU RoHS Directive 2011/65/EU/ and EN 63000:2018

	REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *echa.europa.eu*
Materials	Renewable carbon-based plastic content: 50% (recycled: 50%, bio-based: 0%, carbon capture based: 0%) Screened for conflict minerals in accordance with OECD guidelines To read more about sustainability at Axis, go to *axis.com/about-axis/sustainability*
Environmental responsibility	*axis.com/environmental-responsibility* Axis Communications is a signatory of the UN Global Compact, read more at *unglobalcompact.org*

a. *Audio synchronization with IPv4 only.*



Revision	v.01	Revision date	2024-02-20
Paper size	A4	Release date	2024-02-20
Created by	MS	Scale	1:4

AXIS C6110 Network Paging Console

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AXIS C1310-E Mk II Network Horn Speaker

Outdoor speaker for clear long-range speech

AXIS C1310-E Mk II Network Horn Speaker is perfect for outdoor environments in most climates. It allows users to remotely prevent unwanted activities, to deliver instructions during an emergency or to make general voice messages. Built-in memory supports pre-recorded messages, or security personal can respond to notifications with live speak. Open standards support easy integration with network video, access control, analytics, and VoIP (supporting SIP). Digital signal processing (DSP) ensures clear sound. The built-in microphone enables remote health testing and 2-way communication. Furthermore, the embedded audio management software supports user, content, zone, and scheduling management.

- > All-in-one speaker system
- > Connects to standard network
- > Simple installation with PoE
- > Remote health testing
- > Scalable and easy to integrate



AXIS C1310-E Mk II Network Horn Speaker

Audio hardware

Enclosure	Re-entrant horn loudspeaker with compression driver
Max sound pressure level	>121 dB
Frequency response	280 Hz - 12.5 kHz
Coverage pattern	70° horizontal by 100° vertical (at 2 kHz)
Audio input/output	Built-in microphone (can be disabled mechanically) Built-in speaker
Built-in microphone specification	50 Hz - 12 kHz
Amplifier description	Built-in 7 W Class D amplifier
Digital signal processing	Built-in and pre-configured

Audio management

AXIS Audio Manager Edge	Built in: – Zone management allowing you to divide up to 200 speakers into 20 zones. – Content management for music and live/pre-recorded announcements. – Scheduling to decide when and where to play content. – Content prioritization to ensure urgent messages interrupt the schedule. – Health monitoring for remote discovery of system errors. – User management to control who has access to what features. For more details, see the datasheet on *axis.com/products/axis-audio-manager-edge/support*
AXIS Audio Manager Pro	For larger and more advanced systems. Sold separately. For specifications, see the datasheet on *axis.com/products/axis-audio-manager-pro/support*
AXIS Audio Manager Center	AXIS Audio Manager Center is a cloud service for remote access and management of multi-site systems. For specifications, see the datasheet on *axis.com/products/axis-audio-manager-center/support*

Audio software

Audio streaming	One-way/two-way with optional half-duplex echo cancellation. Mono.
Audio encoding	AAC LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Axis μ-law 16 kHz, WAV, MP3 in mono/stereo from 64 kbps to 320 kbps. Constant and variable bit rate. Sampling rate from 8 kHz up to 48 kHz.

System integration

Application Programming Interface	Open API for software integration, including VAPIX®, One-click cloud connection, AXIS Camera Application Platform (ACAP).
Video management systems	Compatible with AXIS Companion, AXIS Camera Station, video management software from Axis' Application Development Partners available at *axis.com/vms*
Mass notification	Singlewire InformaCast®, Intrado Revolution, Lynx, Alertus
Unified communication	Verified compatibility: **SIP clients:** 2N, Yealink, Cisco, Linphone, Grandstream **PBX/SIP servers:** Cisco Call Manager, Cisco BroadWorks, Avaya, Asterix, Grandstream **Cloud service providers:** Webex, Zoom
SIP	**Supported SIP features:** Secondary SIP server, IPv6, SRTP, SIPS, SIP TLS, DTMF (RFC2976 and RFC2833), NAT (ICE, STUN, TURN) **RFC 3261:** INVITE, CANCEL, BYE, REGISTER, OPTIONS, INFO DTMF (RFC 4733/RFC 2833)
Event conditions	Audio: audio clip playing, speaker test result Call: state, state change Device status: IP address blocked/removed, live stream active, network lost, new IP address, system ready Edge storage: recording ongoing, storage disruption, storage health issues detected I/O: digital input, manual trigger, virtual input MQTT: subscribe Scheduled and recurring: schedule
Event actions	Audio: run automatic speaker test Audio clips: play, stop I/O: toggle I/O Light and siren: run, stop MQTT: publish Notification: HTTP, HTTPS, TCP and email Recordings: record audio SNMP trap messages: send message Status LED: flash
Built-in installation aids	Test tone verification and identification
Functional monitoring	Auto Speaker Test (verification via built-in microphone)

Approvals

Product markings	CSA, UL/cUL, UKCA, CE, KC, EAC, VCCI, RCM, BSMI
Supply chain	TAA compliant
EMC	EN 55035, EN 55032 Class B, EN 50121-4, EN 61000-6-1, EN 61000-6-2 **Australia/New Zealand:** RCM AS/NZS CISPR 32 Class B **Canada:** ICES-3(B)/NMB-3(B) **Japan:** VCCI Class B **Korea:** KS C 9835, KS C 9832 Class B **USA:** FCC Part 15 Subpart B Class B **Railway:** IEC 62236-4
Safety	CAN/CSA C22.2 No. 62368-1 ed. 3, IEC/EN/UL 62368-1 ed. 3
Environment	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 60529 IP66, NEMA 250 Type 4X, MIL-STD-810G 509.5, MIL-STD-810H 509.7
Cybersecurity	ETSI EN 303 645

Network

Network protocols	IPv4/v6[a], HTTP, HTTPS, SSL/TLS, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP™, SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, NTCIP, SIP

Cybersecurity

Edge security	**Software:** Signed OS, brute force delay protection, digest authentication, password protection **Hardware:** Axis Edge Vault cybersecurity platform Secure element (CC EAL 6+), Axis device ID, secure keystore, secure boot
Network security	IEEE 802.1X (EAP-TLS), IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR, HTTPS/HSTS, TLS v1.2/v1.3, Network Time Security (NTS), X.509 Certificate PKI, host-based firewall
Documentation	*AXIS OS Hardening Guide* *Axis Vulnerability Management Policy* *Axis Security Development Model* AXIS OS Software Bill of Material (SBOM) To download documents, go to *axis.com/support/cybersecurity/resources* To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

System on chip (SoC)

Model	NXP i.MX 8M Nano
Memory	1024 MB RAM, 1024 MB Flash

General

Casing	IP66- and NEMA 4X-rated Aluminum back can and stainless steel bracket Color: white RAL 9010
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3 Typical 2 W, max 12.95 W
Connectors	Network: RJ45 10BASE-T/100BASE-TX PoE I/O: 4-pin 2.5 mm terminal block for 2x supervised configurable I/Os
LED indicators	Status LED, front-facing LED
Reliability	Designed for 24/7 operation.

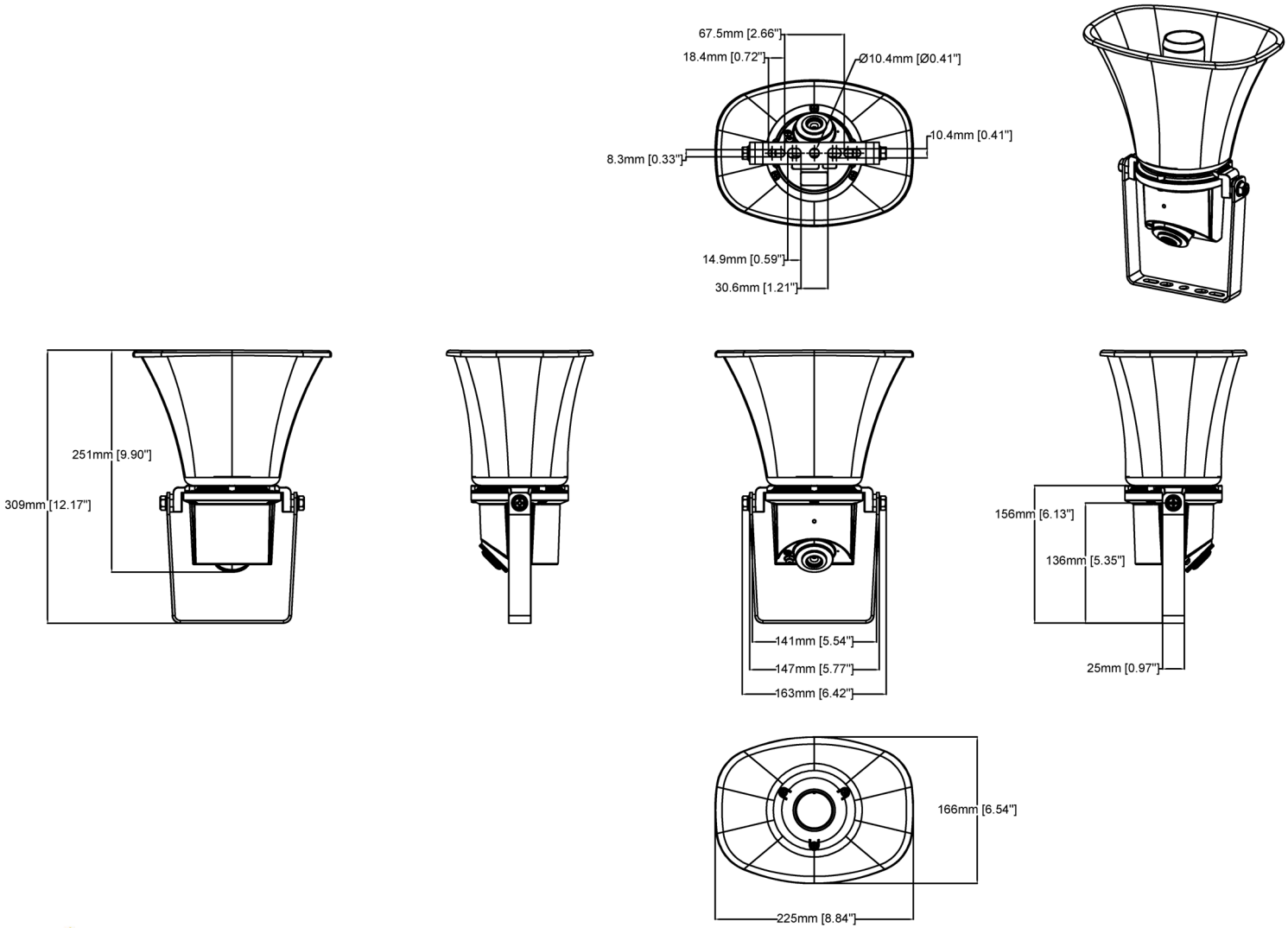
Operating conditions	Temperature: -40 °C to 60 °C (-40 °F to 140 °F) Humidity: 10-100% RH (condensing)
Storage conditions	Temperature: -40 °C to 65 °C (-40 °F to 149 °F) Humidity: 5–95% RH (non-condensing)
Dimensions	For the overall product dimensions, see the dimension drawing in this datasheet.
Weight	1.3 kg (2.9 lb.)
Box content	Horn speaker, installation guide, terminal block connector, connector guard, cable gasket, ring terminal, owner authentication key
Optional accessories	AXIS T91B47 Pole Mount, AXIS T91F67 Pole Mount, Cable Gland M20x1.5, RJ45, Cable Gland A M20, AXIS Power over Ethernet Midspans, T94R01B Corner Bracket, T94P01B Corner Bracket, T94S01P Conduit Back Box For more accessories, go to *axis.com/products/axis-c1310-e-mk-ii#accessories*
Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese
Warranty	5-year warranty, see *axis.com/warranty*
Part numbers	Available at *axis.com/products/axis-c1310-e-mk-ii#part-numbers*

Sustainability

Substance control	PVC free in accordance with JEDEC/ECA Standard JS709 RoHS in accordance with EU RoHS Directive 2011/65/EU/ and EN 63000:2018 REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *echa.europa.eu*
Materials	Screened for conflict minerals in accordance with OECD guidelines To read more about sustainability at Axis, go to *axis.com/about-axis/sustainability*
Environmental responsibility	*axis.com/environmental-responsibility* Axis Communications is a signatory of the UN Global Compact, read more at *unglobalcompact.org*

a. *Audio synchronization with IPv4 only.*

Dimension drawing



AXIS C1310-E Mk II Network Horn Speaker

Revision	v.01	Revision date	2023-10-26
Paper size	A4	Release date	2023-10-26
Created by	MS	Scale	1:6

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T10197611/EN/M10.2/2408

Highlighted capabilities

Axis Edge Vault

Axis Edge Vault is the hardware-based cybersecurity platform that safeguards the Axis device. It forms the foundation that all secure operations depend on and offer features to protect the device's identity, safeguard its integrity and protect sensitive information from unauthorized access. For instance, **secure boot** ensures that a device can boot only with **signed OS**, which prevents physical supply chain tampering. With signed OS, the device is also able to validate new device software before accepting to install it. And the **secure keystore** is the critical building-block for protecting cryptographic information used for secure communication (IEEE 802.1X, HTTPS, Axis device ID, access control keys etc.) against malicious extraction in the event of a security breach. The secure keystore and secure connections are provided through a Common Criteria or FIPS 140 certified hardware-based cryptographic computing module.

To read more about Axis Edge Vault, go to *axis.com/solutions/edge-vault*.

For more information, see *axis.com/glossary*

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AXIS C8110 Network Audio Bridge

Versatile audio hub

AXIS C8110 Network Audio Bridge is a smart solution based on open standards for connecting and combining analog and digital audio systems. Thanks to the built-in AXIS Audio Manager Edge application you can get functionalities like zone management and content scheduling in existing analog systems. With SIP support it is possible to connect an IP telephony system for callouts in analog speakers. With analog audio input you can easily integrate your intercom system or music streaming box with network speakers from Axis.

- > Combines analog and network audio
- > I/Os for buttons and relays
- > PoE for easy installation
- > Based on open standards
- > Easy integration with other systems



AXIS C8110 Network Audio Bridge

Models	AXIS C8110 Network Audio Bridge
Audio	
Audio management	Software applications for managing and controlling your audio system regardless of its size and complexity: – Included in the product (runs inside the device) is AXIS Audio Manager Edge, offering zone management, content management, content scheduling and health monitoring. Up to 200 speakers and 20 zones are supported (see separate datasheet for more details). – For larger and more advanced systems we recommend AXIS Audio Manager Pro (see separate datasheet).
Audio encoding	AAC LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Axis µ-law 16 kHz, WAV, MP3 in mono/stereo from 64 kbps to 320 kbps. Constant and variable bit rate. Sampling rate from 8 kHz up to 48 kHz.
Audio input/output	Mic-in, line-in, line-out
Frequency response	20 Hz - 20 kHz
Maximum output voltage	0.91 V_{rms}
Maximum input voltage	2.2 V_{rms}
Network	
Security	Password protection, IP address filtering, HTTPS[a] encryption, IEEE 802.1X[a] network access control, Digest authentication, User access log, Centralized Certificate Management
Supported protocols	IPv4/v6[b], HTTP, HTTPS[a], SSL/TLS[a], QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP™, SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, NTCIP, SIP (Cisco, Avaya, Asterisk)
System integration	
Application Programming Interface	Open API for software integration, including VAPIX®, One-click cloud connection, AXIS Camera Application Platform (ACAP) Support for Session Initiation Protocol (SIP) for integration with Voice over IP (VoIP) systems, peer to peer or integrated with SIP/PBX Tested with various SIP client such as Cisco, Bria and Grandstream. Tested with various PBX suppliers such as Cisco and Asterisk.
Audio synchronization	Built-in audio synchronization for up to 30 speakers with unicast and hundreds of speakers with multicast. No additional speaker management software or hardware required.
Event triggers	Call, Virtual inputs, External input, AXIS Camera Application Platform (ACAP)
Event actions	Play audio clip, send SNMP trap, status LED File upload via HTTP, network share and email Notification via email, HTTP, HTTPS and TCP External output activation
General	
Casing	IP20-rated Plastic and metal casing Color: Black NCS S 9000–N For repainting instructions and impact on warranty, contact your Axis partner.
Memory	512 MB RAM, 512 MB Flash
Power	8–28 V DC, max 4 W typical 1.85 W Power over Ethernet (PoE) IEEE 802.3af Type 1 Class 2 (max 4 W)
Connectors	RJ45 10BASE-T/100BASE-TX PoE I/O: 4-pin 2.5 mm terminal block for two configurable inputs/outputs Power: 2-pin 5.0 mm terminal block DC input Audio: 3 pole 3.5 mm, RCA line out
Storage	Support for microSD/microSDHC/microSDXC card Max. size 128 GB For SD card recommendations see *www.axis.com*
Reliability	Designed for 24/7 operation.
Operating conditions	-20 °C to 50 °C (4 °F to 122 °F) Humidity 10–85% RH (condensing)
Storage conditions	-40 °C to 65 °C (-40 °F to 149 °F) Humidity 5–95 % RH (non-condensing)
Approvals	**EMC** CISPR 35, CISPR 32 Class B, EAC, EN 55035, EN 55032 Class B, EN 61000-6-1, EN 61000-6-2, FCC Part 15 Subpart B Class B, ICES-3(B)/NMB-3(B), KC KN35, KN32 Class B, RCM AS/NZS CISPR 32 Class B, VCCI Class B, **Safety** UL 62368-1 **Environment** IEC/EN 60529 IP20
Dimensions	H x D x W: 24 x 56 x 128 mm (0.94 x 2.2 x 5.0 in)
Weight	107 g (0.24 lb)
Included accessories	Installation Guide, AVHS authentication key, Digital AXIS Camera Station license key, power connector, I/O connector, hook-and-loop fastener
Optional accessories	Power supply For more accessories, see *www.axis.com*
Video management software	AXIS Camera Station, Video management software from Axis' Application Development Partners available on *www.axis.com/techsup/software*
Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Traditional Chinese
Warranty	5-year warranty, see *axis.com/warranty*

a. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (www.openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*
b. *Audio synchronization with IPv4 only.*

Environmental responsibility:

axis.com/environmental-responsibility

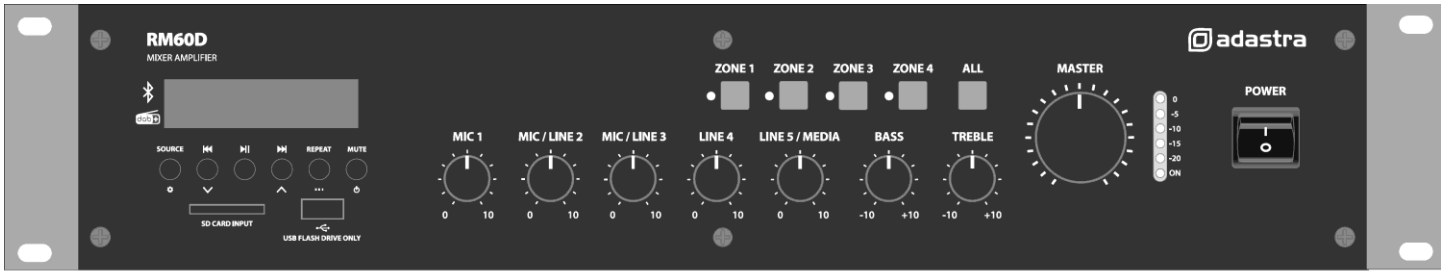
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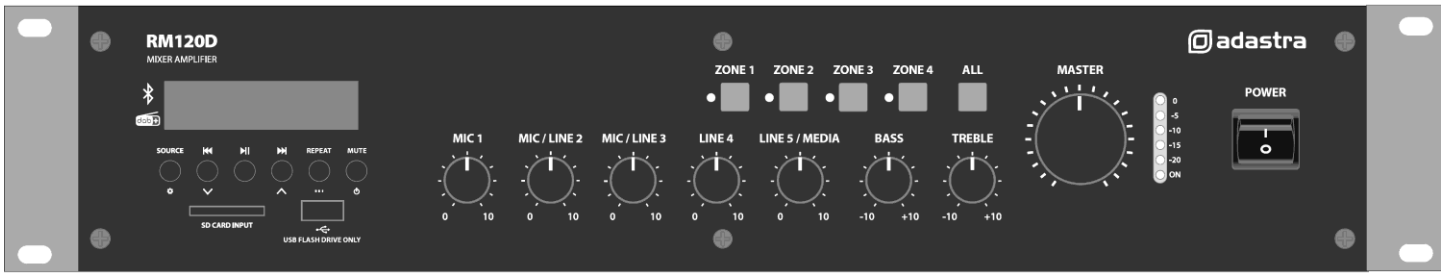
RMD-SERIES

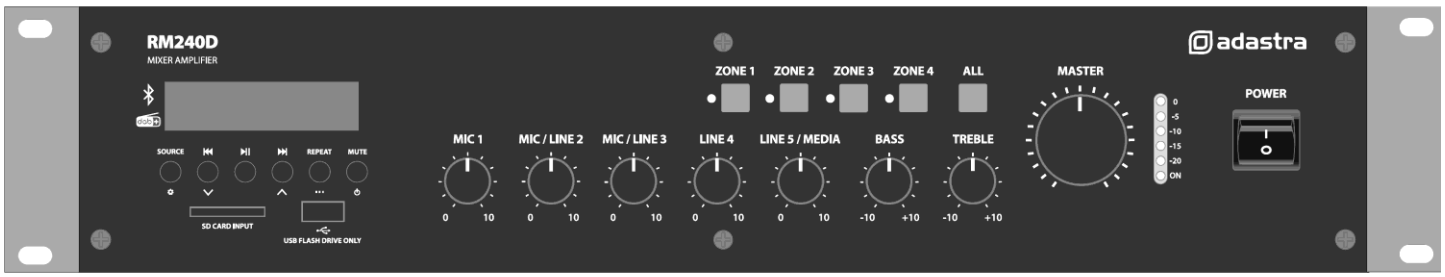
5-INPUT MIXER-AMPLIFIER with Bluetooth, DAB+/FM, USB/SD player

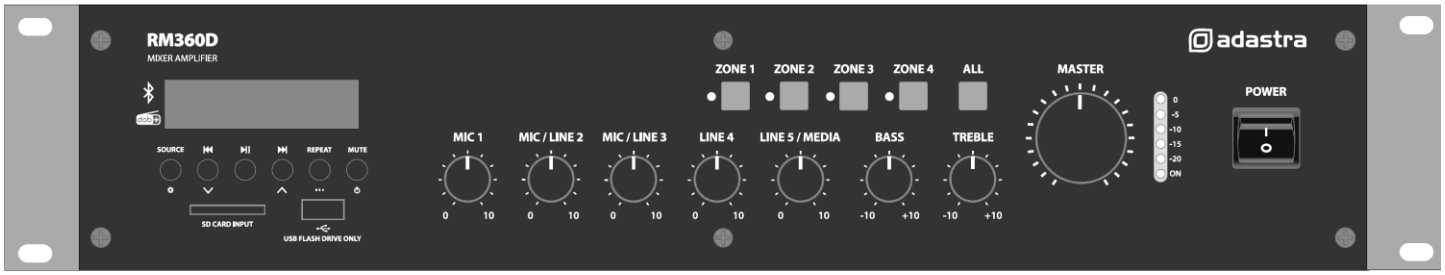
RM60D: 953.223UK
RM120D: 953.224UK
RM240D: 953.225UK
RM360D: 953.226UK

User Manual









Version 1.0

Caution: Please read this manual carefully before operating
Damage caused by misuse is not covered by the warranty

Introduction

Thank you for choosing the Adastra RMD-series rackmount 100V amplifier as part of your public address system. This amplifier is designed to offer high quality, dependable service for mobile and installed systems. Please read this manual fully and follow the instructions to achieve the best results with your new purchase and to avoid damage through misuse.

SAFETY SYMBOL AND MESSAGE CONVENTIONS



CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	AVIS RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR





This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.



SAFETY NOTICE

1. Prior to use, read through this manual
2. Keep the manual in good condition
3. Pay attention to safety warnings
4. Observe all operating requirements
5. Do not use the device near water or wet areas
6. For cleaning, only use a lint-free, dry cloth
7. Install according to the specifications
8. Place away from heat sources or heating appliances
9. Use mains lead provided and avoid damage to cable or connectors
10. Unplug power from mains during stormy weather or if unused for long periods
11. In case of malfunction, water ingress or other damage, consult qualified service personnel
12. Do not place in damp areas or near liquids or moisture. Do not spill liquids on the housing
13. Please pay attention to warning symbols during transit and placement
14. Terminals marked with the ϟ symbol are HAZARDOUS LIVE and should only be connected by qualified personnel
15. Ensure that the apparatus is connected to a mains socket with a protective EARTH connection
16. Ensure correct operation of the mains switch

Warning

To prevent the risk of fire or electric shock, do not expose any components to rain or moisture.
If liquids are spilled on the casing, stop using immediately, allow unit to dry out and have checked by qualified personnel before further use. Avoid impact, extreme pressure or heavy vibration to the case
No user serviceable parts inside – Do not open the case – refer all servicing to qualified service personnel.

Safety

- Check for correct mains voltage and condition of IEC lead before connecting to power outlet
- Use double insulated speaker wire with adequate current rating for 100V speaker connections
- Only use one type of output – i.e. 4-16Ω or 100V – do not mix or combine these outputs on a single zone or output
- Do not connect 4-16Ω speakers to the 100V terminal or 100V speakers to the 4-16Ω terminal
- Do not allow any foreign objects to enter the case or through the ventilation grilles

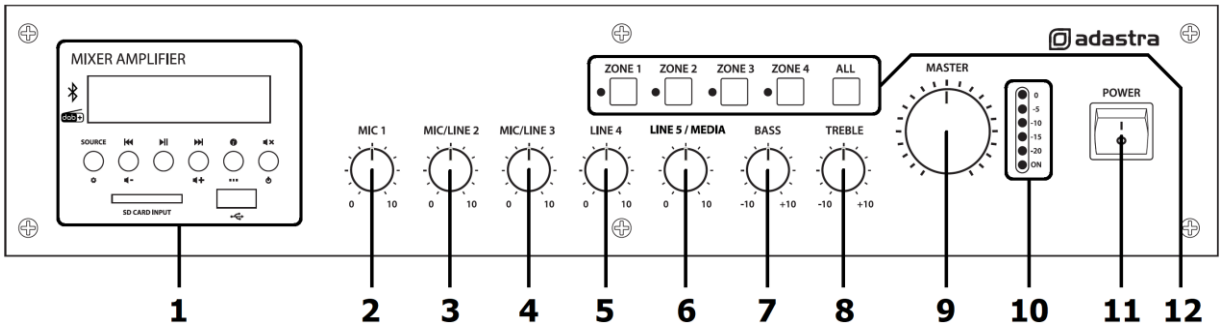
Placement

- Keep out of direct sunlight and away from heat sources
- Keep away from damp or dusty environments
- For rack-mounting, use the rack ears provided and ensure adequate support for the weight of the amplifier
- Ensure adequate air-flow and do not cover cooling vents at the front and rear of the amplifier
- Ensure adequate access to controls and connections

Cleaning

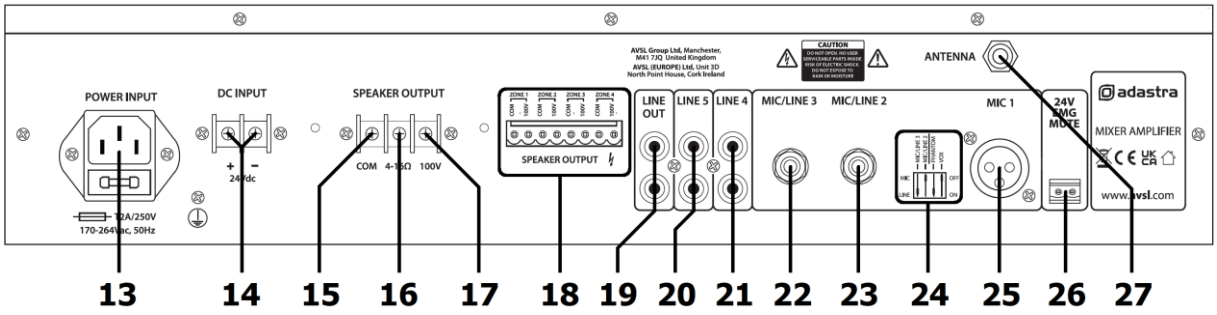
- Use a soft cloth with a neutral detergent to clean the casing as required
- Use a vacuum cleaner to clear ventilation grilles of any dust or debris build-ups
- Do not use strong solvents for cleaning the unit

Front panel



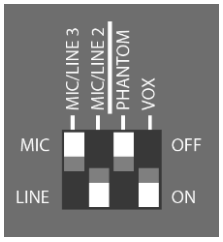
1. USB/SD/DAB+/FM/BT media player
2. MIC 1 volume control
3. MIC/LINE 2 volume control
4. MIC/LINE 3 volume control
5. LINE 4 volume control
6. LINE 5/MEDIA player volume control
7. BASS EQ control
8. TREBLE EQ control
9. MASTER volume control
10. VU level meter
11. POWER on/off switch
12. Speaker zone selector buttons

Rear panel



13. IEC mains inlet & fuse holder
14. DC power terminals
15. COM speaker terminal
16. 4-16Ω speaker terminal
17. 100V speaker terminal (unswitched)
18. 100V speaker terminals (zone switched)
19. LINE OUT connectors (RCA)
20. LINE 5 input (RCA)
21. LINE 4 input (RCA)
22. MIC/LINE 3 input (6.3mm jack)
23. MIC/LINE 2 input (6.3mm jack)
24. DIP switches (see DIP switches section below)
25. MIC 1 input (balanced XLR)
26. 24V Mute contacts
27. Antenna connection for DAB+/FM tuner

DIP switches (24)



MIC 1 input (25) has an option for +20V phantom power for condenser microphones and paging microphones with chimes.

MIC 1 also has the option of VOX control, which attenuates the line input channels 4 and 5 by -40dB when MIC 1 signal is detected and returns them to normal when MIC 1 signal is silent.

MIC/LINE 2 (23) and MIC/LINE 3 (22) inputs can be set to MIC (up position) or LINE (down position) sensitivity to suit the type of input being used. Be sure to make these DIP switch settings when the amplifier is switched off. Making any changes when the amplifier is powered up may cause loud noises which can damage the speakers.

Connection and setup

Connect the rear IEC inlet (13) to the mains using the supplied mains lead (or an equivalent approved type).

Alternatively, the amplifier can be powered by a 24V battery, such as a lorry or boat battery, by connecting the "+" and "-" of the battery to the DC INPUT (14) on the rear panel. Ensure that DC cables are capable of handling the required current (20A recommended)

The RMD series amplifiers have a total of 5 input channels. MIC 1 input (25) is fed to a dedicated microphone channel. Connect the main announcement microphone to this channel using a balanced XLR lead.

Connect microphones or mono line inputs to MIC/LINE 2 and MIC/LINE 3 inputs (23, 22) using good quality 6.3mm jack leads. Make sure the correct sensitivity is selected for the type of input source.

Connect any other line level audio inputs to the LINE 4 (21) and LINE 5 (20) connectors on the rear panel using good quality RCA leads. Since RMD series amplifiers have a mono output, all stereo signals are summed together.

Further mixer-amplifiers or slave amplifiers can be connected from the rear LINE OUT sockets (19), again using a good quality RCA lead. This output carries the full mix of all channels 1-5 as fed to the speakers.

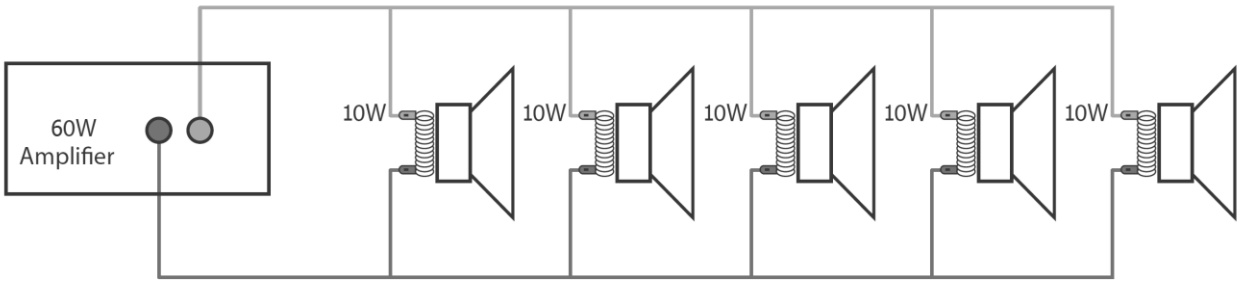
Speaker outputs

The RMD series amplifiers can be used either as 100V line amplifiers or standard low impedance power amplifiers. These 2 configurations cannot be used together, so it is important to decide which method will be used at the start.

100V line systems

For 100V line systems, connect the amplifier to the first speaker in the system using double-insulated speaker wire which has adequate current rating to handle the total output of the amplifier.

Connect the "100V" (17) output terminal to the positive (+) connection of the speaker and "COM" output (15) to the negative (-) connection of the speaker. Connect further speakers in parallel to the first speaker with all positive terminals and connected together and all negative terminals connected together as shown below.



A 100V line speaker system can comprise of many speakers connected together in parallel. The determining factor for how many speakers can be used on a single amplifier is the power rating. For most purposes, it is advised to connect as many speakers as needed with a combined wattage of no more than 90% of the amplifier's output power rating.

The terminals of a 100V speaker are connected to a transformer and in some cases, this transformer may be "tapped" for different power ratings. These tappings can be used to adjust the wattage (and output volume) of each speaker in the system to help achieve the ideal total power of the system for the amplifier.

Speaker switching zones

Any 100V speakers connected to the removable screw terminals labelled ZONE 1 / ZONE 2 / ZONE 3 / ZONE 4 will be governed by 4 front panel speaker switches (18).
(e.g. a speaker connected to ZONE 1 + COM will be enabled if Zone 1 button is depressed on the front panel)
There is also a switch labelled "ALL" on the front panel which enables output to all Zones 1 to 4.

If 100V speakers are needed for emergency evacuation or do not need to be switched on or off via the front panel, it is better to wire the "+" wire to the fixed unswitched 100V terminal (17) and the "-" wire to COM (15)

Low impedance systems

Alternatively, RM series amplifiers can be used to drive low impedance speakers by connecting the 4-16Ω terminal (16) to the "+" speaker connection and COM terminal (15) to the "-" speaker connection.

Do not use 4-16Ω and 100V at the same time.

Emergency mute function

RM series mixer-amplifiers are equipped with a Euroblock connector for a 24V mute function (26).
These contacts can be wired to an emergency panel (such as a fire alarm) which has a 24V trigger output.
(The 24V contacts can be connected with either polarity +/- or -/+ to operate)
When the alarm is activated, the RM mixer-amplifier will mute all channels except for MIC1, which remains active for emergency announcements.

Operation

When all connections to the amplifier are made, turn all rotary controls down and switch on the power (11) and a power "ON" LED will illuminate. Press in the "ALL" zones button for testing so that none are muted (12)

Turn BASS and TREBLE controls (7, 8) to the 12 o'clock position (pointing straight up) and turn the MASTER rotary control (9) up part way for testing.

Ensure a signal is being fed to one of the line inputs and gradually increase the volume control for that channel (2, 3, 4, 5 or 6) until the output is heard through the speakers.

Turn up the MASTER to the maximum required volume level and reduce the channel volume control if necessary.

Repeat this process for any other line inputs connected to channels 2, 3, 4, 5 or 6.
Note: If a line input is not connected to an RMD series mixer-amplifier, the initial test can be made using the built-in media player. See the "Media player" section for instructions.

Note: Both the media player output and LINE 5 input are governed by the LINE 5 / MEDIA volume control (6)

The output of the amplifier is represented on the VU meter LEDs (10) and care should be taken that the red "0" LED is only lit momentarily during use. Anything longer than a short flash of this LED may be indicating distortion or clipping of the output signal and the MASTER volume control or channel volume control should be turned down.
If a microphone is connected to MIC 1 input, make sure it is switched on and if it requires phantom power, make sure this feature is enabled on the DIP switch. Gradually increase the MIC 1 control (2) whilst speaking into the microphone until the required volume level is reached.

The microphone should not be able to "hear" the speakers, which can cause feedback (squealing or howling)

Repeat this process for microphones or line inputs connected via the MIC/LINE 2 and 3 inputs.

If the VOX feature is enabled on the DIP switches, audio playback through channels 4 and 5 will be reduced in volume automatically when speaking into MIC 1.

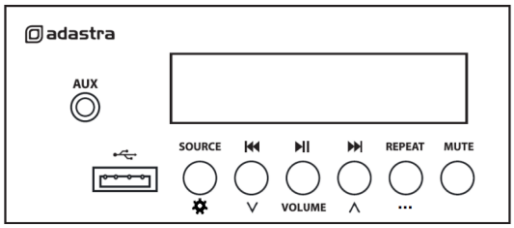
In addition to channel and MASTER volume controls, there are BASS and TREBLE EQ controls (7, 8) to adjust the tone of the overall output. At the 12 o'clock position, these controls apply no effect to the signal (no boost or cut).

Moving the BASS control clockwise boosts the low frequencies in the audio, whilst moving it anticlockwise will cut these low frequencies. Likewise, moving the TREBLE control clockwise boosts the high frequencies in the audio, whilst moving it anticlockwise will cut these high frequencies.

Adjust these EQ controls to suit the type of audio signal or compensate for the room acoustics.

Media player

The RM120D mixer-amp is fitted with a built-in media player (1)
The media player has a Bluetooth receiver, USB/SD audio player and a DAB+ or FM radio tuner. Pressing the SOURCE select button will step through Bluetooth, SD, USB, DAB and FM tuner modes. Pressing the MUTE button for any source will mute the output. Holding the MUTE button powers down the media player and pressing it again powers it up again.



Settings menu

The media player has a menu for global settings, which can be accessed by holding down the SOURCE button.
Press ⏮ and ⏭ to step through menu pages and ⏵⏸ to select an option. Press REPEAT / … to go back.

Setting	Press ⏵⏸	Press ⏵⏸ to step through settings and enter. Use ⏮ and ⏭ to adjust values
<Time >	<Set Time/Date >	DD-MM-YYYY… HH:MM
	<Set 12/24 hour >	<Set 24 hour> / <Set 12 hour>
	<Set date format>	<DD-MM-YYYY> / <MM-DD-YYYY>
	<Auto update >	<Update from Any> / <No Update> / <Update from FM> / < Update from DAB >
<Backlight >	<Timeout >	< On / 10 Sec / 20 Sec / 30 Sec / 45 Sec / 60 Sec / 90 Sec / 120 Sec / 180 Sec >
	<On level >	<Low> / <Medium> / <High> (brightness)
<Language >	<English> / <Deutsch> / <Italiano> / <Franças> / <Español> / <Português>	
<Factory Reset >	<No> / <Yes> ("Yes" will reset and starts a re-scan for DAB, Bluetooth will need to be re-paired)	
<SW version >	Displays the current software version	

Bluetooth

Search available Bluetooth devices on your smart phone or other sending device for a device with Bluetooth ID "adastra-****" (where **** is a unique ID number for each unit). Select to pair and connect with this ID.

When paired and connected, set the volume low on the smart phone or other sending device and play a track to check the sound through the speakers, increasing the volume on the smart phone to the required level.

Playback controls on the media player can remotely operate the smart phone from the amplifier front panel.
Pressing ⏵⏸ will pause or play the current track, whilst holding ⏵⏸ will disconnect the current paired device.
Pressing ⏮ or ⏭ will select the previous or next track. Holding ⏮ or ⏭ will decrease or increase the output volume.
Pressing the REPEAT / … button will switch the display to show the current time or date on the lower text line.

If there is no Bluetooth playback for 15 minutes, the display will revert to show the current time and date.

SD and USB audio player

The media player can play mp3 or wma files stored on a USB stick or SD card (formatted FAT32 or exFAT)
Select SD or USB using the SOURCE button and insert the SD or USB storage device containing the tracks.
The display will show the play status, USB or SD and repeat status on the upper test line.

Pressing ⏵⏸ will pause or play the current track, whilst ⏮ or ⏭ will select the previous or next track.
Holding the ⏮ or ⏭ button will decrease or increase the output volume of the media player.

The repeat mode can be set by holding the REPEAT/… button, pressing ⏵⏸, and selecting using ⏮ or ⏭.
NR = Normal (no repeat), RA = Repeat All, R1 = Repeat One (current track), Rd = Random.

Pressing the REPEAT/… button selects the lower text line information, cycling through ID3 info, time & date.
If there is no SD or USB playback for 15 minutes, the display will revert to show the current time and date.

DAB tuner

The media player has a digital radio receiver which can decode the DAB/DAB+ signal for high quality radio reception.
To receive this signal, connect the DAB/FM Aerial 'F' connector on the rear panel (27) to an external or indoor active aerial that can receive the DAB/DAB+ frequency band (174-240MHz).
Press and hold the ⏵⏸ button to initiate auto-tuning for the DAB radio tuner. The display will show "Scanning…" with a progress bar and the number of stations detected and stored.

The display will show the current station in the upper row of text and additional information on the lower row.
Select the station to be played using the ⏮ and ⏭ buttons.

Pressing the REPEAT/… button will cycle the display to show additional tuning, audio information, current time or date.
Holding this button opens a sub-menu for the FM tuner.

Setting	Press ⏵⏸ then use ⏮ and ⏭ to step through settings and ⏵⏸ again to select.
<Full scan >	Press ⏵⏸ to scan and store all available stations
<Preset Recall >	Select a stored station (use ⏮ and ⏭ to select 1-30)
<Preset Store >	Select a memory slot (use ⏮ and ⏭ to select 1-30) and ⏵⏸ to store current station in the slot
<Manual tune >	Use ⏮ and ⏭ to step through DAB frequency band
<Prune >	<No> / <Yes> (removes any redundant stations from memory)
<DRC >	<off> / <low> / <high> setting for dynamic range compression (loud vs quiet sound balance)

FM Tuner

The FM tuner function operates in the same way as a standard FM radio and benefits from the connection of an FM antenna to the rear panel 'F' type connector.

If no channels are tuned in, press the Play/Pause ⏵⏸ button to begin auto tuning, which scans available stations and stores them as channels within the FM tuner. Pressing Play/Pause again will abort auto-tuning.

To delete any selected station, press and hold the REPEAT button.
Repeat the auto tuning process to re-populate any missing presets.

To step through pre-set stations, press the Previous ⏮ or Next ⏭ buttons.
Turn up the MEDIA volume control to hear the output from the speakers and increase to the required level.

Holding the Previous ⏮ or Next ⏭ buttons will adjust the output volume of the player.

Pressing the REPEAT/… button will cycle the display to show additional tuning, audio information, current time or date.
Holding this button opens a sub-menu for the FM tuner.

Setting	Press ⏵⏸
<Preset Recall >	Select a stored station (use ⏮ and ⏭ to select 1-30)
<Preset Store >	Select a memory slot (use ⏮ and ⏭ to select 1-30) and ⏵⏸ to store current station in the slot
<Scan Setting >	<All stations> / <Strong station> (only stores stations with a strong signal)
<Audio Setting >	<Stereo allowed> / <Forced mono>

Specifications

Model	RM60D	RM120D	RM240D	RM360D
Power supply	170-264Vac, 50Hz (IEC) or 24Vdc (screw terminals)			
Signal inputs / output	Mic XLR, 2 x mic/line jack, 2 x RCA line, RCA line output			
Input sensitivity: mic 1	-53dBV			
Input impedance: mic 1	5k Ohms			
Input sensitivity: line	-15dBV (-18.5dBV line 5)			
Input impedance: ch.2-5	1k Ohms			
Speaker outputs	4 switched + 1 non-switched 100V / 4-16 Ohms / COM			
Controls	Mic1, mic/line2+3, line4+5, bass, treble, master volume			
Equalizer: bass	100Hz ±10dB			
Equalizer: treble	10kHz ±10dB			
Rear panel switches	Phantom, Vox, Mic/Line (2 + 3)			
Phantom power	+20V (mic 1 XLR, switchable)			
Audio source	DAB+/FM tuner, USB/SD player, Bluetooth receiver			
Emergency control	24V contacts - mute all except Mic.1 when triggered			
THD	<1.0%			
Output power: rms	60W	120W	240W	360W
Fuse	T2A	T3.15A	T5A	T5A
Dimensions	433 x 320 x 88mm	433 x 320 x 88mm	433 x 320 x 88mm	433 x 410 x 88mm
Weight	4.98kg	6.36kg	7.37kg	9.14kg

Troubleshooting

Poor or no DAB/DAB+/FM reception	Ensure DAB/FM aerial is connected within an area of good radio reception
Bluetooth cannot connect	Ensure that Bluetooth is enabled on sending device
	Ensure that the sending device is within Bluetooth range (5-10m)
	Check that "adastra ****" is the connected device
	If there are more than one "adastra ****" devices, check each in turn
No audio from Bluetooth device	Ensure that volume controls are not turned down on sending device
	Check volume and Play/Pause buttons in case Bluetooth is muted
No playback from USB or SD device	Ensure media is formatted to FAT32 and files are standard mp3/wma type
Output too loud or distorted	Reduce MIC, LINE IN, USB/SD and/or MASTER level
	Ensure Hi-Z line level input(s) not connected via MIC input
Output too quiet or inaudible	Increase MIC, LINE IN, USB/SD and/or MASTER level
	Check for quiet recording of media files on USB
	Check VOX override is not unintentionally suppressing audio playback
No microphone output	Check phantom power is enabled if using a condenser microphone
Feedback from microphone	Face microphone away from speakers and monitors and reduce level
Amplifier overheating	Ensure cooling vents are clear from debris and dust
	Check that 4, 8 or 16Ω speakers are not connected to 100V terminals
	Ensure total 100V speaker wattage is lower than amplifier rating
	Ensure that 100V and 4, 8 or 16Ω speakers are not both connected
	Ensure that total load connected to 4 - 16Ω output is not less than 4Ω

Disposal: The "Crossed Wheelie Bin" symbol on the product means that the product is classed as Electrical or Electronic equipment and should not be disposed with other household or commercial waste at the end of its useful life. The goods must be disposed of according to your local council guidelines.

Hereby, AVSL Group Ltd. declares that the radio equipment type 953.223UK, 953.224UK, 953.225UK and 953.226UK are in compliance with Directive 2014/53/EU

The full text of the EU declaration of conformity for 953.223UK is available at the following internet address:
http://www.avsl.com/assets/exportdoc/9/5/953223UK%20CE.pdf
The full text of the EU declaration of conformity for 953.224UK is available at the following internet address:
http://www.avsl.com/assets/exportdoc/9/5/953224UK%20CE.pdf
The full text of the EU declaration of conformity for 953.225UK is available at the following internet address:
http://www.avsl.com/assets/exportdoc/9/5/953225UK%20CE.pdf
The full text of the EU declaration of conformity for 953.226UK is available at the following internet address:
http://www.avsl.com/assets/exportdoc/9/5/953226UK%20CE.pdf

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AVSL (EUROPE) Ltd, Unit 3D North Point House, North Point Business Park, New Mallow Road, Cork, Ireland.

RMS605

1U 5-ZONE MIXER-AMPLIFIER 5 x 60W

Item ref: 953.152UK

User Manual



Version 1.1

⚠	Caution: Please read this manual carefully before operating Damage caused by misuse is not covered by the warranty

Introduction

Thank you for choosing an Adastra RMS605 5-zone mixer-amp as part of your sound system.
This 5-zone 100V power amplifier has the advantage of selectable global or individual inputs and a paging microphone input.
Please read this manual to gain the best results from your product and avoid damage through misuse.

SAFETY SYMBOL AND MESSAGE CONVENTIONS



CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	AVIS RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR





This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.



SAFETY NOTICE

1. Prior to use, read through this manual
2. Keep the manual in good condition
3. Pay attention to safety warnings
4. Observe all operating requirements
5. Do not use the device near water or wet areas
6. For cleaning, only use a lint-free, dry cloth
7. Install according to the specifications
8. Place away from heat sources or heating appliances
9. Use mains lead provided and avoid damage to cable or connectors
10. Unplug power from mains during stormy weather or if unused for long periods
11. In case of malfunction, water ingress or other damage, consult qualified service personnel
12. Do not place in damp areas or near liquids or moisture. Do not spill liquids on the housing
13. Please pay attention to warning symbols during transit and placement
14. Terminals marked with the ϟ symbol are HAZARDOUS LIVE and should only be connected by qualified personnel
15. Ensure that the apparatus is connected to a mains socket with a protective EARTH connection
16. Ensure correct operation of the mains switch

Warning

To prevent the risk of fire or electric shock, do not expose any components to rain or moisture.
If liquids are spilled on the casing, stop using immediately, allow unit to dry out and have checked by qualified personnel before further use.
Avoid impact, extreme pressure or heavy vibration to the case
No user serviceable parts inside – Do not open the case – refer all servicing to qualified service personnel.

Safety

- Check for correct mains voltage and condition of IEC lead before connecting to power outlet

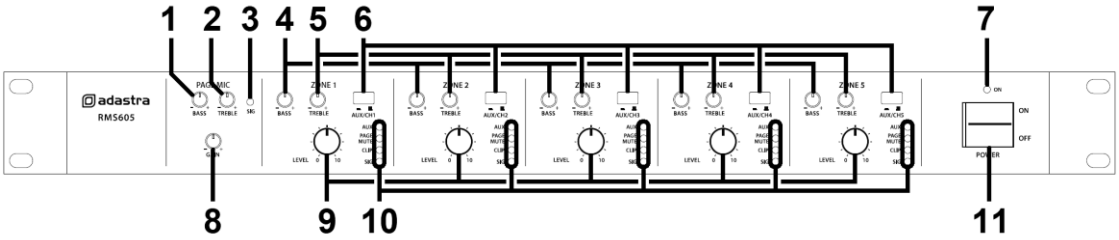
Placement

- This unit can be used free-standing or fixed into a 19" rack
- Ensure adequate support and access to controls and connectors when rack-mounting

Cleaning

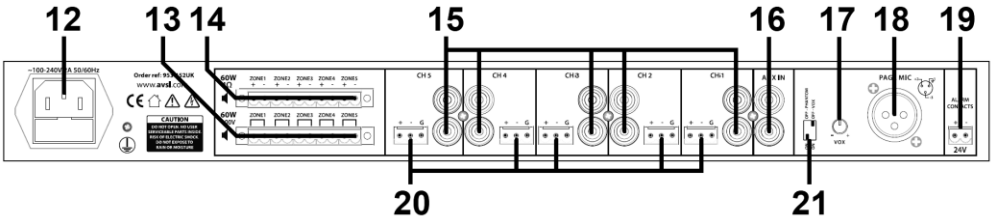
- Use a soft cloth with a neutral detergent to clean the housing as required
- Do not use strong solvents for cleaning the unit

Front panel



1. BASS EQ – Paging Mic input
2. TREBLE EQ – Paging Mic input
3. Signal indicator – Paging Mic input
4. BASS EQ – Output channels
5. TREBLE EQ – Output channels
6. AUX/Individual channel input switch
7. Power on indicator
8. GAIN control – Paging Mic input
9. LEVEL control – Output channels
10. Status indicators – Output channels
11. Power on/off switch

Rear panel



12. IEC mains inlet and fuse holder
13. 100V speaker output terminals
14. 4Ω speaker output terminals
15. Line level individual channel RCA inputs
16. Line level AUX RCA inputs
17. Paging mic VOX sensitivity control
18. Paging mic balanced XLR input
19. 24V emergency mute terminals
20. Line level individual channel terminal inputs
21. Phantom power and Vox DIP switches

Connection

Ensure the Power (11) is switched off until all input and output connections are in place.
Turn all output rotary level controls (9) fully down (anti-clockwise) to avoid loud noises when switching on.
Set the BASS and TREBLE Tone controls (1, 2, 4, 5) to the vertical position (zero)

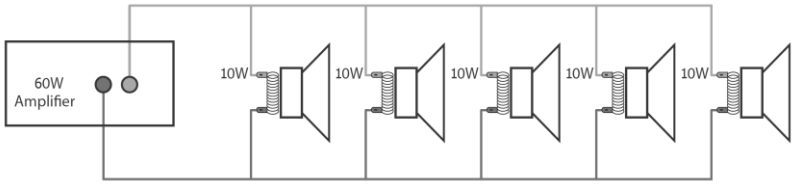
Loudspeakers should be connected to the RMS605 via screw terminals on one of 2 removable modular connectors.
If the speaker(s) being connected is not 100V type, use the terminal block marked "4Ω" for this channel (14).
Connect + and – wires to each speaker as indicated, ensuring that there is no chance of strands shorting across terminals.

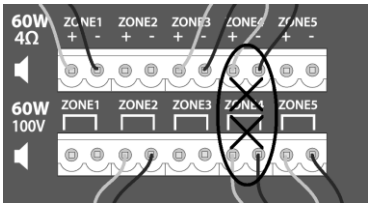
Important: Ensure that the load is no lower than 4Ω for each output. This can be…

1 x 4Ω speaker
1 x 8Ω speakers
2 x 8Ω speakers wired in parallel (4Ω)
1 x 16Ω speaker
2 x 16Ω speakers wired in parallel (8Ω)
3 x 16Ω speakers wired in parallel (5.3Ω)
4 x 16Ω speakers wired in parallel (4Ω)

Ensure that the connected speakers can handle 60W from each output.

If the speaker(s) being connected to an output channel are 100V type, use the terminal block marked "100V" for this output channel. When connecting multiple 100V speakers to this output, connect all speakers in parallel and ensure that the total load is below 54W.
The wattage of each speaker can sometimes be adjusted via tappings on the speaker (check the speaker's documentation if unsure)





DO NOT connect to both 4Ω and 100V terminals for any individual output channel
DO NOT mix 4Ω and 100V speakers on any single output.

THERE SHOULD BE NO CONNECTION MADE VERTICALLY ABOVE OR BELOW ANY OTHER

The RMS605 has 5 independent speaker output channels and can be used as a 5-way slave amplifier.
Set each AUX/CH switch (6) to the 'out' position (for individual channel input)

If connecting input to a channel via the pair of RCA inputs (15), these will be summed to mono.
If connecting input to a channel via Euroblock terminals (20), the green block may be removed from the panel for ease of handling.
Connect the signal "+" connection to the "+" screw terminal and the "-" connection to the "-" screw terminal.
If there is a separate "ground" connection (i.e. balanced cable), connect this to the "G" terminal.
Otherwise, for unbalanced connections, connect to "+" and "G" (or link both "-" and "G" connections with a piece of wire)

If 2 or more channels will share the same audio source, there is an option to connect this to the AUX input (16)
To route the AUX to any of the output channels, press the AUX/CH switch to the 'in' position for each channel to receive the AUX input.
For convenience, the AUX/CH switch can be switched in our out whenever AUX or individual channel input is needed.

For announcements and alerts, there is a PAGING MIC XLR input on the rear panel (18)
Connect a microphone to this input if required and select the PHANTOM power DIP switch (21) to "on" if it is a condenser microphone which requires external phantom power from the XLR connector. Next to the PHANTOM power DIP switch is the VOX DIP switch for voice override. Switching this to the "on" position will cause all other inputs to be muted when a sound is detected through the paging microphone input. The amount by which this muting takes effect is adjusted using the "VOX" rotary trim control (17)

The PAGING MICROPHONE input is always live to all output channels and the GAIN (8) or signal level control and BASS + TREBLE tone controls (1, 2) for this input are located on the front panel. If the microphone is too quiet, increase the GAIN control or if it is too loud, turn this control down. Adjust the BASS and TREBLE controls to achieve the required tonal balance for the microphone output.
If available, connect a 24V trigger from an alarm panel to the alarm contacts (17) to mute all except channel 1 in an emergency.

Connect the rear IEC inlet (16) to the mains using the supplied mains lead (or an equivalent approved type).
Ensure that the supply voltage is correct for this equipment and that the mains outlet is switched on.

Operation

When all signal and speaker connections are made, power up the RMS605 and gradually increase the LEVEL control of each channel to check the output to the 5 zones. Adjust the levels to the required amount and use the BASS and TREBLE controls to adjust the tone as necessary. For each, the 12 o'clock position is zero and rotating left decreases the amount of bass or treble whilst rotating right increases the amount of bass or treble.

Test the PAGING MIC input by gradually adjusting the GAIN control to the level needed to hear the microphone clearly through all channels. Again, adjust BASS and TREBLE controls to ensure that the paging mic output is clear and intelligible. If the VOX function is being used, adjust the VOX control on the rear panel to the sensitivity required to hear announcements over background music.
If needed, test the emergency mute contacts (19) by applying 24V across the terminals as indicated – all inputs except for the paging microphone should be muted.

After use, turn down all LEVEL controls before powering down to avoid loud pops or clicks through the connected speakers.

Specifications

Power supply	170-264Vac, 50/60Hz (IEC)
Fuse	T5AL (250V)
Output Per Channel RMS @ 100V	60Wrms
Output Per Channel RMS @ 4Ω	60Wrms
Output Per Channel RMS @ 8Ω	34Wrms
Output Per Channel RMS @ 16Ω	18Wrms
Inputs	1 x mic (XLR) + 5 line inputs (L+R RCA or +/-/GND terminals) + 1 Aux input (L+R RCA)
Speaker outputs	Ch1-5 100V or Ch1-5 4Ω (Euroblock screw terminals)
Input sensitivity	-24dBV (mic), -10dBV (line/aux)
Frequency response	100Hz – 20kHz
THD	1.0%
SNR	80dB (line), 75dB (mic)
Dimensions	482 x 302 x 44mm
Weight	8.3kg

Disposal: The "Crossed Wheelie Bin" symbol on the product means that the product is classed as Electrical or Electronic equipment and should not be disposed with other household or commercial waste at the end of its useful life The goods must be disposed of according to your local council guidelines.

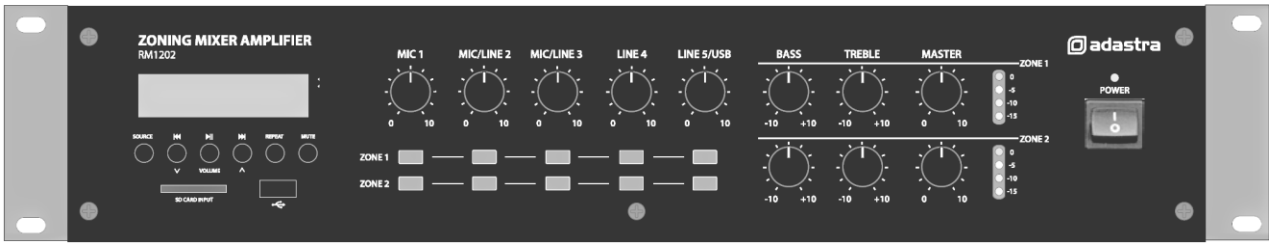
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AVSL (EUROPE) Ltd, Unit 3D North Point House, North Point Business Park, New Mallow Road, Cork, Ireland.

RM1202

Rackmount 2-zone Mixer-Amplifier

Item ref: 953.163UK

User Manual



Version 2.2

Caution: Please read this manual carefully before operating
Damage caused by misuse is not covered by the warranty

Introduction

Thank you for choosing the Adastra RM1202 rackmount 2-zone mixer-amplifier as part of your public address system. This unit is designed to offer high quality, dependable service for mobile and installed systems. Please read this manual to gain the best results from your product and avoid damage through misuse.

SAFETY SYMBOL AND MESSAGE CONVENTIONS



CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	AVIS RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR





This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.



SAFETY NOTICE

1. Prior to use, read through this manual
2. Keep the manual in good condition
3. Pay attention to safety warnings
4. Observe all operating requirements
5. Do not use the device near water or wet areas
6. For cleaning, only use a lint-free, dry cloth
7. Install according to the specifications
8. Place away from heat sources or heating appliances
9. Use mains lead provided and avoid damage to cable or connectors
10. Unplug power from mains during stormy weather or if unused for long periods
11. In case of malfunction, water ingress or other damage, consult qualified service personnel
12. Do not place in damp areas or near liquids or moisture. Do not spill liquids on the housing
13. Please pay attention to warning symbols during transit and placement
14. Terminals marked with the ϟ symbol are HAZARDOUS LIVE and should only be connected by qualified personnel
15. Ensure that the apparatus is connected to a mains socket with a protective EARTH connection
16. Ensure correct operation of the mains switch

Warning

To prevent the risk of fire or electric shock, do not expose any components to rain or moisture.
If liquids are spilled on the casing, stop using immediately, allow unit to dry out and have checked by qualified personnel before further use. Avoid impact, extreme pressure or heavy vibration to the case
No user serviceable parts inside – Do not open the case – refer all servicing to qualified service personnel.

Safety

- Check for correct mains voltage and condition of IEC lead before connecting to power outlet
- Use double insulated speaker wire with adequate current rating for 100V speaker connections
- Only use 1 type of output per zone – i.e. 4Ω, 8Ω or 100V – do not mix or combine these outputs on a single zone
- Do not connect 4Ω or 8Ω speakers to the 100V terminal or 100V speakers to the 4Ω or 8Ω terminals
- Do not allow any foreign objects to enter the case or through the ventilation grilles

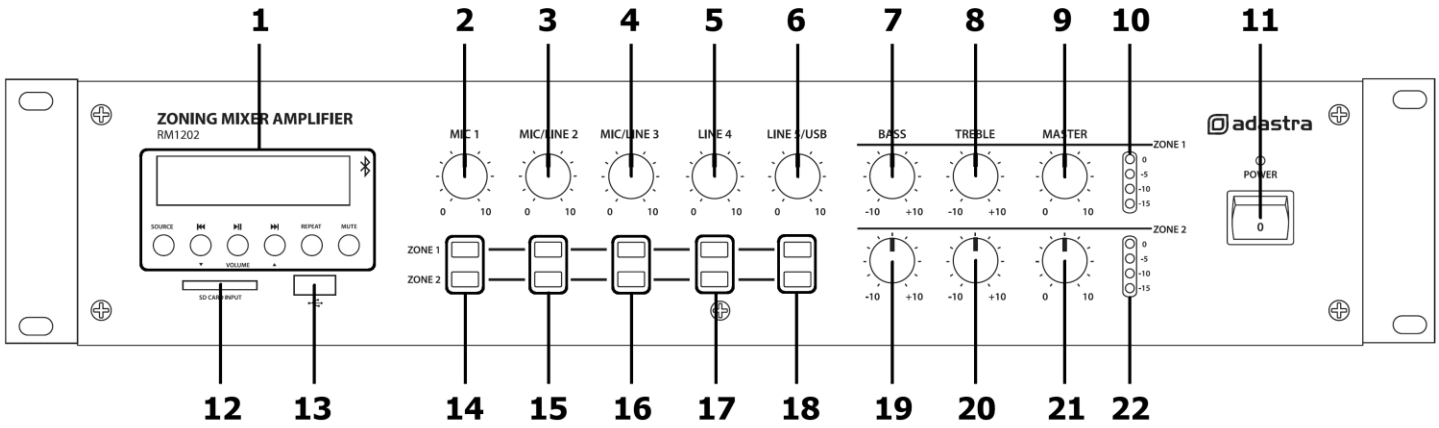
Placement

- For rack-mounting, ensure adequate support for the weight of the amplifier
- Ensure adequate air-flow and do not cover cooling vents at the sides of the amplifier
- Ensure adequate access to controls and connections

Cleaning

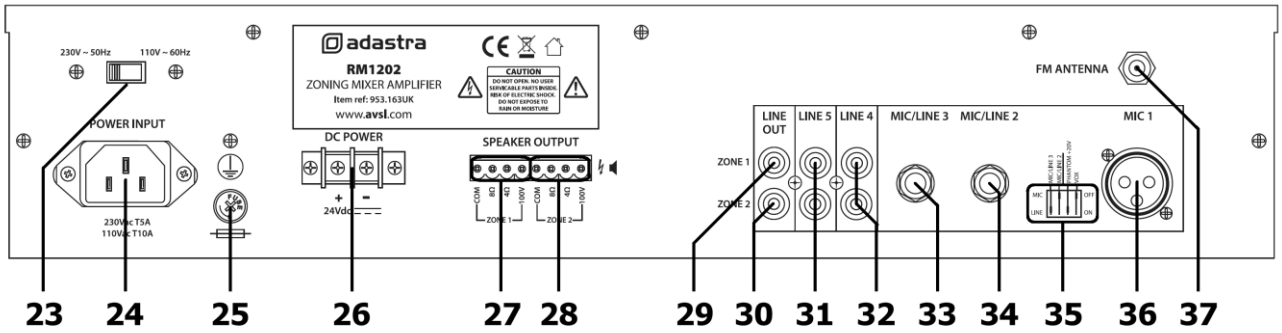
- Use a soft cloth with a neutral detergent to clean the casing as required
- Use a vacuum cleaner to clear ventilation grilles of any dust or debris build-ups
- Do not use strong solvents for cleaning the unit

Front panel



1. Media player
2. Mic 1 level control
3. Mic/Line 2 level control
4. Mic/Line 3 level control
5. Line 4 level control
6. Line 5 / Media Player level control
7. Zone 1: Bass EQ
8. Zone 1: Treble EQ
9. Zone 1: Master Volume
10. Zone 1: Level Indicator LEDs
11. Power on/off switch & LED
12. SD card slot
13. USB port
14. Mic 1 zone assign buttons
15. Mic/Line 2 zone assign buttons
16. Mic/Line 3 zone assign buttons
17. Line 4 zone assign buttons
18. Line 5 / Media Player zone assign buttons
19. Zone 2: Bass EQ
20. Zone 2: Treble EQ
21. Zone 2: Master Volume
22. Zone 2: Level Indicator LEDs

Rear panel



23. Voltage selector
24. Mains power inlet (IEC)
25. Mains fuse holder
26. 24Vdc power terminals
27. Zone 1 speaker output terminals
28. Zone 2 speaker output terminals
29. Zone 1 Line output
30. Zone 2 Line output
31. Line 5 input (2 x RCA)
32. Line 4 input (2 x RCA)
33. Mic/Line 3 input (6.3mm jack)
34. Mic/Line 2 input (6.3mm jack)
35. DIP switches
36. Mic.1 input (XLR)
37. FM antenna connector

Introduction

The RM1202 is a versatile and powerful mixer amplifier with 5 input channels which are assignable to 2 independent zone outputs. In addition to external signal sources, the RM1202 has and integrated Bluetooth® receiver, FM tuner and USB/SD audio player for comprehensive audio playback options. Please read the following instructions to get the best results from the equipment and avoid damage through misuse.

Connection and setup

With the RM1202 power switched off (11), connect the rear IEC inlet (24) to the mains using the supplied mains lead (or an equivalent approved type). Ensure that the voltage is correct as indicated on the voltage selector (23) and that the mains outlet is switched on.

Alternatively, the RM1202 can be operated by 24Vdc power for mobile applications (boats, fairgrounds etc.)
For this type of application, connect the 24Vdc power source to the DC input terminals on the rear panel (26)

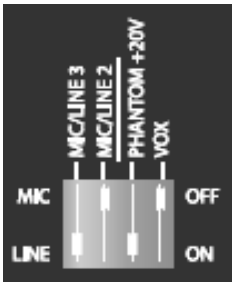
The RM1202 has 5 input channels and an integral multi-source audio player.

Channel 1 is a dedicated microphone input via a balanced XLR connector with switchable priority.

Channels 2 and 3 are designed for either microphones or line level sources (such as a CD/mp3 player or output from a mixer) via 6.3mm jack connectors on the rear panel.

Channels 4 and 5 are line inputs via RCA connectors with channel 5 shared by the onboard media player.
An antenna 'F' connector (37) is provided on the rear panel for connection to an external aerial for FM tuning.

DIP switches



Adjacent to the XLR microphone input for channel 1 is a bank of 4 DIP switches (35).
The right-hand switch is marked 'VOX', which sets priority for Mic.1.
When this is switched on, any sound through Mic.1 will temporarily mute other inputs.

The next DIP switch enables +20V phantom power on the Mic.1 XLR input.
Some condenser microphones require this phantom power to operate.

The 2 remaining DIP switches are used to set channels 2 and 3 to Mic or Line level.

Be sure to make these DIP switch settings when the amplifier is switched off. Making any changes when the amplifier is powered up may cause loud bangs through the system which can damage the speakers.

Signal Inputs and Outputs

Connect the main paging microphone to Mic.1 XLR input (36) and enable phantom power if required.

Connect microphones or line signals to Mic/Line 2 and 3 inputs (33, 34) using good quality jack leads.

Line level sources can be connected to Line 4 and 5 RCA inputs (31, 32)

Zone 1 and Zone 2 have individual RCA signal outputs on the rear panel (29, 30), which can be connected to the line inputs of active speakers or amplifiers. These are in addition to the speaker outputs detailed below.

Stereo operation

Both RCA connectors for Line 4 and Line 5 inputs are summed together to merge the stereo signal into mono.
This is useful for installed systems where the complete music mix needs to go to every speaker.

The RM1202 can also be used as a stereo 100V amplifier by connecting a Left line input to Line 4 enabled to Zone 1 and Right line input to Line 5 enabled to Zone2. This would produce a left output to Zone 1 and Right output to Zone 2.

Speaker outputs

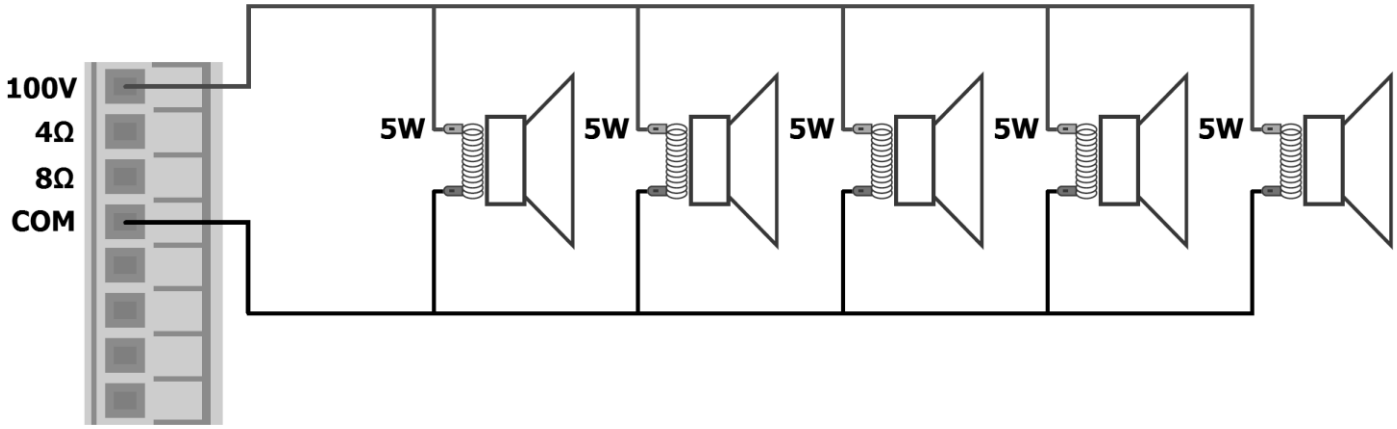
The RM1202 has a separate speaker output for each zone (27, 28) connected via a single terminal block.
The block is removable to enable easy access to the screw terminals.

Each zone output can be used to power either 100V line speakers or standard 4Ω or 8Ω speakers.
These configurations cannot be used together, so it is important to decide which will be used at the start.

100V line systems

For 100V speakers, connect the selected zone output to the first speaker in the zone using double-insulated speaker wire which has adequate current rating to handle the total output of the amplifier.

Connect the "100V" output terminal for the selected zone to the positive (+) connection of the speaker and "COM" output to the negative (-) connection of the speaker. Connect further speakers in parallel to the first speaker with all positive terminals and connected together and all negative terminals connected together as shown below.



A 100V line speaker system can comprise of many speakers connected together. The determining factor for how many speakers can be used on a single amplifier is the power rating. For most purposes, it is advised to connect as many speakers as needed with a combined wattage of no more than 90% of the amplifier's output power rating (in the case of the RM1202, this is 120W per zone output)

The terminals of a 100V speaker are connected via a transformer and in some cases, this transformer may be "tapped" for different power ratings. These tappings can be used to adjust the wattage (and output volume) of each speaker in a zone to help achieve the ideal total power of the system for the relevant zone output.

Low impedance systems

Alternatively, each zone output of the RM1202 is capable of powering one or more low impedance speakers.
There is an option on each zone for either a 4Ω or 8Ω speaker output to determine the minimum impedance.
It is essential to select the correct output terminal when opting for low impedance speakers.

For a single 8Ω speaker, connect the positive (+) wire to the "8Ω" terminal and the negative (-) wire to "COM"

For a single 4Ω speaker or for 2 x 8Ω speakers connected in parallel, connect the positive (+) wire to the "4Ω" terminal and the negative (-) wire to "COM"

In either case, the connected load should have a combined impedance no lower than stated on the terminal.
Lower impedance may cause irreparable damage to the amplifier.

The connected speaker(s) must also have a power handling to accept up to 120Wrms from the zone output.
Lower power handling may risk damage to the speakers.

Operation

When all connections to the amplifier are made, turn all rotary controls down and switch on the power (11).
The power LED will illuminate. To check for correct operation of the system, select an input source and output zone for testing. In the following example, Mic.1 input and Zone 1 output have been selected.

- Turn the Zone 1 Bass and Treble rotary controls (7, 8) to the vertical (12 o'clock) position
- Turn up Zone 1 Master volume control (9) part way for testing
- Make sure that the Zone 1 assign button for Mic.1 channel (14) is pressed in
- Speak into the microphone connected to the Mic.1 input (36)
- Gradually turn up the Mic.1 level control (2) whilst checking the LED indicators for Zone 1 (10)
- The microphone should now be audible through loudspeakers connected to the Zone 1 speaker output.
- Increase the Zone 1 output level to the maximum required volume for that zone
- Reduce the Mic/Line level to compensate

The above process can be extended to check all other input channels.
If preferred, the system can be checked using the onboard multi-source audio player.
Full information on the operation of this feature is detailed below.
Repeat the above process for Zone 2 to check output to the speakers from the enabled input channels.

Each zone has Bass and Treble controls to adjust the tonal content.
Bass controls the low frequency content and Treble controls the high frequency content.
The vertical (12 o'clock) position is neutral, rotating to the left is cut and to the right is boost.
Adjust both controls for each zone to give the desired tonal character to the connected speakers.

Media player

The RM1202 is fitted with a built-in media player, which allows playback of music or audio messages stored as standard compressed audio files on either USB pen drive or SD card.
The media player also has an FM radio tuner function and Bluetooth receiver as described below.
The output level of the media player is controlled by the LINE 5/USB control (6) on the front panel.

SOURCE	USB / SD / FM tuner / Bluetooth input source selector
⏮	Previous track or FM channel / volume down
⏵⏸	Play or pause current track / auto tune FM stations
⏭	Next track or FM channel / volume up
REPEAT	Repeat mode – off, single track or all
MUTE	Mute media player output

USB/SD

Push a USB pen drive into the USB port (13) and/or SD card into the SD card input (12) and the audio files will start to play automatically. Turn up the MEDIA control gradually to hear the output from the speakers and increase to the required level.

If play does not start automatically, press the SOURCE button and Play/Pause button (⏵⏸) to check if the player is set to play from the required memory device. If playback still does not start, try pressing the Previous track and Next track buttons (⏮, ⏭). Otherwise, check that the audio files are standard compressed type.

Normal playback will read through all tracks on the storage device. Pressing the REPEAT button will step through the repeat modes.

RT1 = repeat current track RND = random play RTA = repeat all tracks

Pressing the Previous track button (⏮) briefly steps backwards through tracks on the memory device. Press and hold this button to decrease the playback volume.

Pressing the Next track button (⏭) briefly steps forwards through tracks on the memory device.
Press and hold this button to increase the playback volume.

To pause the current track, press the Play/Pause button (⏵⏸) and press again to resume playback.
The LCD display will show the selected track number and then the elapsed time during playback.

FM Tuner

Press the Source button to switch to the FM tuner function. For good FM reception, it will be necessary to connect an external aerial to the Antenna connector on the rear panel using good quality coaxial RF cable terminated with an F-type connector.

To auto-tune available stations, press and hold the Play/Pause button to begin auto tuning, which scans available stations and automatically stores them as channels within the FM tuner.

Alternatively, to tune the station presets manually, press the Play/Pause button briefly to enter manual tuning mode (MANU). Use Previous/Next track buttons to select the desired frequency and press REPEAT, then use Previous/Next track buttons to select the preset and press REPEAT again to store the frequency in that preset (display will show "OK"). Repeat for all ten presets P01 to P10.

Press MUTE to exit the manual tuning mode.
To step through pre-set stations, press the Previous or Next buttons.
Hold down the REPEAT button to delete a stored station.
Holding the Previous track or Next track buttons will adjust the output volume of the player.

Bluetooth

The Bluetooth function allows connection of a smart phone or tablet to the media player section for playback of stored files or streamed digital audio.
In order to enable this function, it will be necessary to pair the sending device to the receiver as follows.

1. Open the Bluetooth settings menu on the smart phone or tablet (or other sending device)
2. Scan for Bluetooth devices and look for "adastra 0000" in the list of available devices (ensure that the RM amp is powered on and within reception range)
3. Select "adastra 0000" and the sending device should confirm that it is connected as an audio device. (note that "0000" may be a different number if it has been edited – see below)
4. Play audio from the sending device, ensuring that volume controls are not turned down/muted
5. Turn up the LINE 5/USB volume control on the amplifier to the required level.

The Previous, Next and Play/pause buttons will operate in Bluetooth as remote playback controls. Holding the Previous track or Next track buttons will adjust the output volume of the player.

The Bluetooth name can be customized to enable identification of individual nearby amplifiers.
To customize the Bluetooth number press and hold the Play/Pause button until adastra 0000 is displayed with one of the characters flashing. Press Previous or Next buttons to edit the number and Play/Pause to select another character. Hold Play/Pause to store the ID and exit.
Note: Android devices have the facility to re-name devices within the Bluetooth settings menu.
If the Bluetooth ID has been re-named on the Android device, editing the Bluetooth ID on the media player will not affect the name displayed on that Android device.

Track navigation can be controlled from the paired device or from the front panel of the RM1202.
Previous, Next and Play/pause buttons (⏮, ⏭, ⏵⏸) will operate in Bluetooth as remote playback controls.

Holding down the Previous or Next buttons will also adjust the volume of the player.

Specifications

Power supply	110-230Vac, 50/60Hz (IEC)
Output power	2 x 120Wrms
Audio source	USB/SD/FM/BT audio player
Bluetooth version	2.0
Inputs	1 x mic (XLR), 2 x mic/line (6.3mm jack), 2 x line (twin RCA)
Input impedance	1kΩ (mic/line)
Input sensitivity	-11dB (line), -46dB (mic)
Zone outputs: line	2 x RCA
Zone outputs: speaker	2 x terminal outputs 100V/8 ohms/4 ohms/com
Zone controls	Bass, Treble, Master volume
Phantom power	+20V switchable to Mic.1 XLR
Frequency response	100Hz - 20kHz
THD	<0.76% @ 1kHz
SNR	84dB (line), 82dB (mic)
Dimensions	433 x 88 x 320mm
Weight	11.24kg

Troubleshooting

No power LED on control panel	Ensure IEC lead is in good condition and connected properly
	Ensure that the voltage selector is switched to the correct value for the supply
	Ensure POWER switch is on and check mains inlet fuse
Power LED is on but no other LEDs and no output	Check input signals and condition of input connection leads
	Check that the selected zone output is assigned on the active input channel
	Ensure that Zone Master, Mic, Line or media player volume controls are turned up
Power light and zone indicator LEDs lighting but no output	Check speaker output terminals are connected correctly
	Check speakers are working (test on another amp if available)
LCD display on audio player is not lit	If main power is on, press and hold the Mute button until the display is lit
No output from audio player	Ensure that Mute function is off and volume is not set too low (press and hold "∧")
	Check that Mic.1 priority is not overriding playback
No playback via Bluetooth	Ensure that the sending device is paired and connected as audio to the correct device
	Check the playback status and volume setting of sending device
USB/SD player will not play audio from media	Press Play/Pause button to ensure track is not paused
	Press the Source button to ensure that the required device is selected
	Check memory device is connected properly (remove and re-insert)
	Check file types – standard compressed digital audio files are required
	Check memory device works on a PC or Mac for standard playback
Output is very loud or distorted	Check level of input signal is not too high
	Reduce level control for Mic, Line or media player input
	Reduce any boost to Bass or Treble and reduce Master volume control if needed
Output is working but at very low level	Check input audio source level is not too low
	Increase Master volume and input channel controls and remove any Bass or Treble cut
	Check for quiet recording of media files on USB/SD/BT devices
	Check Mic.1 priority is not unintentionally suppressing other channels
No microphone output	Check phantom power is enabled if using condenser microphones
Amplifier overheating	Ensure cooling vents are clear from debris and dust
	Check that 4Ω or 8Ω speakers are not connected to 100V terminals
	Ensure total 100V speaker wattage is lower than the max rating for any zone
	Ensure that 100V and 8Ω speakers are not connected simultaneously
	Ensure that total load connected to 4Ω or 8Ω output is not less than stated

Disposal: The "Crossed Wheelie Bin" symbol on the product means that the product is classed as Electrical or Electronic equipment and should not be disposed with other household or commercial waste at the end of its useful life. The goods must be disposed of according to your local council guidelines.

Hereby, AVSL Group Ltd. declares that the radio equipment type 953.163UK is in compliance with Directive 2014/53/EU

The full text of the EU declaration of conformity is available at the following internet address: http://www.avsl.com/assets/exportdoc/9/5/953163UK%20CE.pdf

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AVSL Group Ltd. Unit 2-4 Bridgewater Park, Taylor Rd. Manchester. M41 7JQ
AVSL (EUROPE) Ltd, Unit 3D North Point House, North Point Business Park, New Mallow Road, Cork, Ireland.

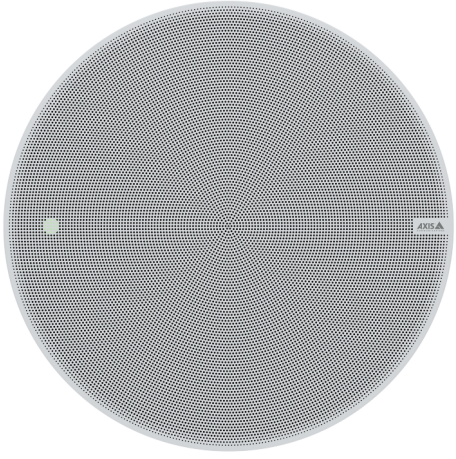
AXIS C1210-E Network Ceiling Speaker

Discrete in-ceiling installation—large

AXIS C1210-E is an all-in-one speaker system that makes voice announcements and background music smart and easy. It connects to standard network using one cable for both power (PoE) and connectivity. AXIS C1210-E offers flexible, discrete recessed ceiling installation, ideal for indoor environments but can also be used for protected outdoor areas like under the eaves. Additionally, it features a backbox that meets plenum requirements. It offers easy integration with your video management software (VMS), VoIP telephony, analytics, and more. Including a preconfigured digital signal processer (DSP) it produces clear voice every time. It also features a built-in microphone enabling remote health testing and 2-way audio talk-back. Furthermore, the embedded audio management software supports user, content, zone, and scheduling management.

- **All-in-one speaker system**
- **Connects to standard network**
- **Easy installation with just one network cable (PoE)**
- **Scalable and easy to integrate**
- **Remote health testing**





AXIS C1210-E Network Ceiling Speaker

Audio hardware	
Enclosure	One way enclosure with 6,5 inches broadband dynamic cone speaker
Max sound pressure level	96 dB
Frequency response	40 Hz - 20 kHz
Coverage pattern	130° coaxial
Audio input/output	Built-in microphone (can be disabled) External microphone, Line in
Built-in microphone specification	50 Hz - 20 kHz
Amplifier description	Built-in 7 W Class D amplifier
Digital signal processing	Built-in and pre-configured
Audio management	
AXIS Audio Manager Edge	Built in: – Content management for music and live/pre-recorded announcements. – Scheduling to decide when and where to play specific content. – Content prioritization to ensure urgent messages interrupt the schedule. – Zone management allowing you to divide up to 200 speakers into 20 zones. – Health monitoring for remote discovery of system errors. – User management to control who has access to what features. See separate datasheet for more details.
AXIS Audio Manager Pro	For larger and more advanced systems. Sold separately. See separate datasheet for specifications.
Audio software	
Audio streaming	One-way/two-way with optional half-duplex echo cancellation. Mono.
Audio encoding	AAC LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Axis μ-law 16 kHz, WAV, MP3 in mono/stereo from 64 kbps to 320 kbps. Constant and variable bit rate. Sampling rate from 8 kHz up to 48 kHz.
System on chip (SoC)	
Model	i.MX 6SoloX
Memory	512 MB RAM, 512 MB Flash
Network	
Security	Password protection, IP address filtering, HTTPS[a] encryption, IEEE 802.1X[a] network access control, Digest authentication, User access log, Centralized Certificate Management
Network protocols	IPv4/v6[b], HTTP, HTTPS[a], SSL/TLS[a], QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP™, SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, NTCIP, SIP (Cisco, Avaya, Asterisk)
System integration	
Application Programming Interface	Open API for software integration, including VAPIX®, One-click cloud connection, AXIS Camera Application Platform (ACAP).
VoIP	Support for Session Initiation Protocol (SIP) for integration with Voice over IP (VoIP) systems. Peer to peer or integrated with SIP/PBX. Tested with: SIP client such as Cisco, Bria and Grandstream and PBX suppliers such as Cisco and Asterisk. Supported SIP features: secondary SIP server, IPv6, SRTP, SIPS, SIP TLS, DTMF (RFC2976 and RFC2833), NAT (ICE, STUN, TURN) Supported codecs: PCMU, PCMA, opus, L16/16000, L16/8000, speex/8000, speex/16000, G.726-32
Intelligent audio	Auto Speaker Test (verification via built-in microphone)
Event triggers	Call, virtual inputs, external input, AXIS Camera Application Platform (ACAP)
Event actions	Play audio clip, send SNMP trap, send Auto Speaker Test, status LED, File upload via HTTP, network share and email, Notification via email, HTTP, HTTPS and TCP, external output activation
Built-in installation aids	Test tone verification and identification
General	
Casing	Baffle: Plastic Top cover: Plastic Mesh: Surface-treated steel plate Mesh color: Off-white (RAL 9010 or equivalent) Repaintable. For repainting instructions and impact on warranty, contact your Axis partner. Speaker mounting method: Plastic clamp
Power	Power over Ethernet (PoE), IEEE 802.3af Type 1 Class 3 (max 12.95 W)
Connectors	RJ45 10BASE-T/100BASE-TX PoE
Storage	Support for microSD/microSDHC/microSDXC card Max. size 64 GB For SD card recommendations see *www.axis.com*
Reliability	Designed for 24/7 operation.
LED indicators	Status LED, front-facing LED
Operating conditions	-30 °C to 50 °C (-22 °F to 122 °F) Humidity 10–100 % RH (condensing)
Storage conditions	-40 °C to 65 °C (-40 °F to 149 °F) Humidity 5–95 % RH (non-condensing)
Approvals	**EMC** CISPR 24, CISPR 35, CISPR 32 Class A, EN 55024, EN 55035, EN 55032 Class A, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, FCC Part 15 Subpart B Class A, ICES-3(A)/NMB-3(A), KC KN35, KC KN32 Class A, RCM AS/NZS CISPR 32 Class A, VCCI Class A **Safety** CAN/CSA C22.2 No. 62368-1, CAN/CSA-C22.2 No. 60950-22, IEC/EN 62368-1, KC-Mark, UL 62368-1, UL 60950-22 **Environment** IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 60529 IP44
Dimensions	Height: 150 mm (5.9 in), Front-mesh Ø 285 mm (11.2 in) Ceiling thickness: for mounting: 0–60 mm (0–2.4 in) Dimensions for fixing hole: Ø 261 mm ± 2 mm (10.3 in ± 0.08 in)
Weight	3100 g
Optional accessories	AXIS TC1603 Tile Bridge (for installation in soft ceiling), AXIS TC1602 Conduit Adapter, AXIS TC1702 Back Cover, AXIS Safety Wire 3M For more accessories, see *axis.com*
Video management software	AXIS Companion, AXIS Camera Station, video management software from Axis' Application Development Partners available on *axis.com/techsup/software*
Languages	English, German, French, Spanish, Italian
Warranty	5-year warranty, see *axis.com/warranty*

a. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (www.openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*
b. *Audio synchronization with IPv4 only.*

Environmental responsibility:

axis.com/environmental-responsibility

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AXIS C1110-E Network Cabinet Speaker

Flexible speaker with great sound – large

Bringing together performance and design, this stylish network cabinet speaker offers digital signal processing for clear voice messages, and rich bass sound ensures great background music. It's built on an open platform, supporting integration with VMS, VoIP telephony, analytics, and more. The built-in microphone enables remote health testing and 2-way communication with echo cancellation. AXIS Audio Manager Edge software comes preinstalled for easy management of users, content, zones, and scheduling. This all-in-one speaker system connects to the standard network using a single cable for power (PoE) and connectivity, and the easy-click mounting bracket supports installations on walls, ceilings, and poles.

- > Stylish, flexible all-in-one speaker
- > Connects to the standard network
- > Easy installation with PoE
- > 2-way audio with echo cancellation
- > Remote health testing



AXIS C1110-E Network Cabinet Speaker

Audio hardware

Enclosure	Two-way bass-reflex type Speaker components: 4-inch dynamic cone speaker, 1.25- inch dome tweeter
Max sound pressure level	96 dB
Frequency response	60 Hz - 20 kHz
Coverage pattern	Horizontal speaker coverage 140° Vertical speaker coverage 90°
Audio input/output	Built-in microphone (can be disabled)
Built-in microphone specification	50 Hz - 12 kHz
Amplifier description	Built-in 7 W Class D amplifier
Digital signal processing	Built-in and pre-configured

Audio management

AXIS Audio Manager Edge	Built in: – Content management for music and live/pre-recorded announcements. – Scheduling to decide when and where to play specific content. – Content prioritization to ensure urgent messages interrupt the schedule. – Zone management allowing you to divide up to 200 speakers into 20 zones. – Health monitoring for remote discovery of system errors. – User management to control who has access to what features. See separate datasheet for more details.
AXIS Audio Manager Pro	For larger and more advanced systems. Sold separately. See separate datasheet for specifications.
AXIS Audio Manager Center	AXIS Audio Manager Center is a cloud service for remote access and management of multi-site systems.

Audio software

Audio streaming	One-way/two-way with optional full-duplex echo cancellation. Mono.
Audio encoding	AAC LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Axis µ-law 16 kHz, WAV, MP3 in mono/stereo from 64 kbps to 320 kbps. Constant and variable bit rate. Sampling rate from 8 kHz up to 48 kHz.

System on chip (SoC)

Model	NXP i.MX 8M Nano
Memory	1024 MB RAM, 1024 MB Flash

Network

Network protocols	IPv4/v6[a], HTTP, HTTPS, SSL/TLS, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP™, SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, NTCIP, SIP (Cisco, Avaya, Asterisk)

System integration

Application Programming Interface	Open API for software integration, including VAPIX®, One-click cloud connection, AXIS Camera Application Platform (ACAP).
VoIP	Support for Session Initiation Protocol (SIP) for integration with Voice over IP (VoIP) systems. Peer to peer or integrated with SIP/PBX. Tested with: SIP client such as Cisco, Bria and Grandstream and PBX suppliers such as Cisco and Asterisk. Supported SIP features: secondary SIP server, IPv6, SRTP, SIPS, SIP TLS, DTMF (RFC2976 and RFC2833), NAT (ICE, STUN, TURN) Supported codecs: PCMU, PCMA, opus, L16/16000, L16/8000, speex/8000, speex/16000, G.726-32
Health monitoring	Auto Speaker Test (verification via built-in microphone)
Event conditions	Application Audio: audio clip playing, speaker test result Call: state, state change Device status: IP address blocked, IP address removed, live stream active, network lost, new IP address, ring power overcurrent protection, system ready Edge storage: recording ongoing, storage disruption, storage health issues detected I/O: digital input is active, manual trigger, virtual input is active Scheduled and recurring: schedule
Event actions	Audio: run automatic speaker test Audio clips: play, play while the rule is active, stop playing I/O: toggle I/O once, toggle I/O while the rule is active Light and siren: run light profile, run light profile while the rule is active, stop activities MQTT: send MQTT publish message Notifications: HTTP, HTTPS, TCP and email Recordings: record audio, record audio while the rule is active SNMP traps: send message, send message while the rule is active Status LED: flash, flash while the rule is active
Built-in installation aids	Test tone verification and identification

Approvals

EMC	CISPR 24, CISPR 35, CISPR 32 Class B, EN 55024, EN 55035, EN 55032 Class B, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4 **Australia/New Zealand:** RCM AS/NZS CISPR 32 Class B **Canada:** ICES-3(B)/NMB-3(B) **Japan:** VCCI Class B **Korea:** KS C 9835, KS C 9832 Class B **USA:** FCC Part 15 Subpart B Class B
Safety	CAN/CSA C22.2 No. 62368-1, CAN/CSA-C22.2 No. 60950-22, IEC/EN/UL 62368-1, IEC/EN/UL 60950-22, KC-Mark
Environment	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 60529 IP44[b]
Cybersecurity	ETSI EN 303 645

Cybersecurity

Edge security	**Software:** Signed firmware, brute force delay protection, digest authentication and OAuth 2.0 RFC6749 OpenID Authorization Code Flow for centralized ADFS account management, password protection, AES-XTS-Plain64 256bit SD card encryption **Hardware:** Axis Edge Vault cybersecurity platform Secure element (CC EAL 6+), Axis device ID, secure keystore, secure boot
Network security	IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2), IEEE 802.1AR, HTTPS/HSTS, TLS v1.2/v1.3, Network Time Security (NTS), X.509 Certificate PKI, host-based firewall
Documentation	*AXIS OS Hardening Guide* *Axis Vulnerability Management Policy* *Axis Security Development Model* AXIS OS Software Bill of Material (SBOM) To download documents, go to *axis.com/support/cybersecurity/resources* To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

Sustainability

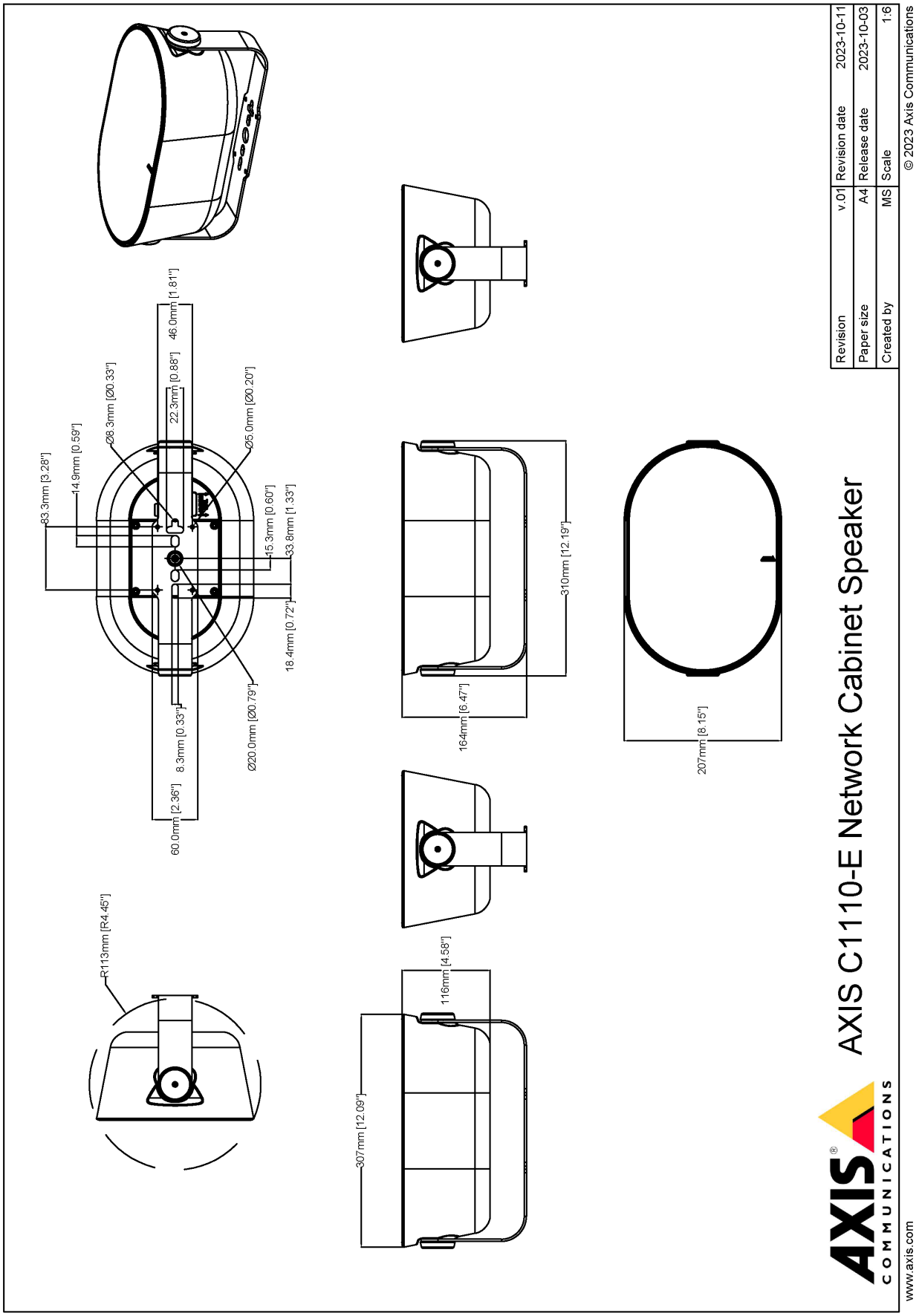
Substance control	PVC free, BFR/CFR free in accordance with JEDEC/ECA Standard JS709 RoHS in accordance with EU RoHS Directive 2011/65/EU/ and EN 63000:2018 REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *echa.europa.eu*
Materials	Renewable carbon-based plastic content: 51% (recycled: 0%, bio-based: 51%, carbon capture based: 0%) Screened for conflict minerals in accordance with OECD guidelines To read more about sustainability at Axis, go to *axis.com/about-axis/sustainability*

Environmental responsibility	*axis.com/environmental-responsibility* Axis Communications is a signatory of the UN Global Compact, read more at *unglobalcompact.org*

General

Casing	Aluminium casing, IP44 rated Colors: white, black For repainting instructions, go to *axis.com/products/axis-c1110-e/support* For information about the impact on warranty, go to *axis.com/warranty-implication-when-repainting*.
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3 (max 12.95 W)
Connectors	RJ45 10BASE-T/100BASE-TX PoE I/O: 4-pin 2.5 mm terminal block for 2x supervised configurable I/Os
LED indicators	Status LED, configurable front-facing RGB LED
Storage	Support for microSD/microSDHC/microSDXC card
Reliability	Designed for 24/7 operation.
Operating conditions	-30 °C to 50 °C (-22 °F to 122 °F) Humidity 10–100% RH (condensing)
Storage conditions	-40 °C to 65 °C (-40 °F to 149 °F) Humidity 5–95% RH (non-condensing)
Dimensions	Height: 207 mm (8.15 in) Width: 310 mm (12.2 in) Length: 165 mm (6.50 in)
Weight	4100 g (4.85 lbs)
Box content	Speaker, installation guide, terminal block connector, connector guard, cable gaskets, owner authentication key
Optional accessories	AXIS C8310 Volume Controller, AXIS Surveillance Cards For more accessories, see *axis.com*
System tools	AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator Available at *axis.com*
Video management software	AXIS Companion, AXIS Camera Station, video management software from Axis' Application Development Partners available on *axis.com/techsup/software*
Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese
Warranty	5-year warranty, see *axis.com/warranty*

a. *Audio synchronization with IPv4 only.*
b. *If installed according to the installation guide.*



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AXIS C1111-E Network Cabinet Speaker

Flexible speaker with good sound

Bringing together performance and design, this stylish network cabinet speaker offers digital signal processing for clear voice messages and background music. It's built on an open platform, supporting integration with VMS, VoIP telephony, analytics, and more. The built-in microphone enables remote health testing and 2-way communication with echo cancellation. AXIS Audio Manager Edge software comes preinstalled for easy management of users, content, zones, and scheduling. This all-in-one speaker system connects to the standard network using a single cable for power (PoE) and connectivity, and the easy-click mounting bracket supports installations on walls, ceilings, and poles.

- > Remote health testing
- > Stylish, flexible all-in-one speaker
- > Connects to the standard network
- > Easy installation with PoE
- > 2-way audio with echo cancellation



AXIS C1111-E Network Cabinet Speaker

Audio hardware

Enclosure	Sealed enclosure with a 2.5-inch broadband dynamic cone speaker
Max sound pressure level	93 dB
Frequency response	120 Hz - 20 kHz
Coverage pattern	Horizontal speaker coverage 120° Vertical speaker coverage 130°
Audio input/output	Built-in microphone (can be disabled)
Built-in microphone specification	50 Hz - 12 kHz
Amplifier description	Built-in 7 W Class D amplifier
Digital signal processing	Built-in and pre-configured

Audio management

AXIS Audio Manager Edge	Built in: – Content management for music and live/pre-recorded announcements. – Scheduling to decide when and where to play specific content. – Content prioritization to ensure urgent messages interrupt the schedule. – Zone management allowing you to divide up to 200 speakers into 20 zones. – Health monitoring for remote discovery of system errors. – User management to control who has access to what features. See separate datasheet for more details.
AXIS Audio Manager Pro	For larger and more advanced systems. Sold separately. See separate datasheet for specifications.
AXIS Audio Manager Center	AXIS Audio Manager Center is a cloud service for remote access and management of multi-site systems.

Audio software

Audio streaming	One-way/two-way with optional full-duplex echo cancellation. Mono.
Audio encoding	AAC LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Axis µ-law 16 kHz, WAV, MP3 in mono/stereo from 64 kbps to 320 kbps. Constant and variable bit rate. Sampling rate from 8 kHz up to 48 kHz.

System on chip (SoC)

Model	NXP i.MX 8M Nano
Memory	1024 MB RAM, 1024 MB Flash

Network

Network protocols	IPv4/v6[a], HTTP, HTTPS, SSL/TLS, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP™, SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, NTCIP, SIP (Cisco, Avaya, Asterisk)

System integration

Application Programming Interface	Open API for software integration, including VAPIX®, One-click cloud connection, AXIS Camera Application Platform (ACAP).
VoIP	Support for Session Initiation Protocol (SIP) for integration with Voice over IP (VoIP) systems. Peer to peer or integrated with SIP/PBX. Tested with: SIP client such as Cisco, Bria and Grandstream and PBX suppliers such as Cisco and Asterisk. Supported SIP features: secondary SIP server, IPv6, SRTP, SIPS, SIP TLS, DTMF (RFC2976 and RFC2833), NAT (ICE, STUN, TURN) Supported codecs: PCMU, PCMA, opus, L16/16000, L16/8000, speex/8000, speex/16000, G.726-32
Health monitoring	Auto Speaker Test (verification via built-in microphone)
Event conditions	Application Audio: audio clip playing, speaker test result Call: state, state change Device status: IP address blocked, IP address removed, live stream active, network lost, new IP address, ring power overcurrent protection, system ready Edge storage: recording ongoing, storage disruption, storage health issues detected I/O: digital input is active, manual trigger, virtual input is active Scheduled and recurring: schedule
Event actions	Audio: run automatic speaker test Audio clips: play, play while the rule is active, stop playing I/O: toggle I/O once, toggle I/O while the rule is active Light and siren: run light profile, run light profile while the rule is active, stop activities MQTT: send MQTT publish message Notifications: HTTP, HTTPS, TCP and email Recordings: record audio, record audio while the rule is active SNMP traps: send message, send message while the rule is active Status LED: flash, flash while the rule is active
Built-in installation aids	Test tone verification and identification

Approvals

EMC	CISPR 24, CISPR 35, CISPR 32 Class A, EN 55024, EN 55035, EN 55032 Class A, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4 **Australia/New Zealand:** RCM AS/NZS CISPR 32 Class A **Canada:** ICES-3(B)/NMB-3(B) **Japan:** VCCI Class A **Korea:** KS C 9835, KS C 9832 Class A **USA:** FCC Part 15 Subpart B Class A
Safety	CAN/CSA C22.2 No. 62368-1, CAN/CSA-C22.2 No. 60950-22, IEC/EN/UL 62368-1, IEC/EN/UL 60950-22, KC-Mark
Environment	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 60529 IP55
Cybersecurity	ETSI EN 303 645

Cybersecurity

Edge security	**Software:** Signed firmware, brute force delay protection, digest authentication and OAuth 2.0 RFC6749 OpenID Authorization Code Flow for centralized ADFS account management, password protection, AES-XTS-Plain64 256bit SD card encryption **Hardware:** Axis Edge Vault cybersecurity platform Secure element (CC EAL 6+), Axis device ID, secure keystore, secure boot
Network security	IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2), IEEE 802.1AR, HTTPS/HSTS, TLS v1.2/v1.3, Network Time Security (NTS), X.509 Certificate PKI, host-based firewall
Documentation	*AXIS OS Hardening Guide* *Axis Vulnerability Management Policy* *Axis Security Development Model* AXIS OS Software Bill of Material (SBOM) To download documents, go to *axis.com/support/cybersecurity/resources* To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

Sustainability

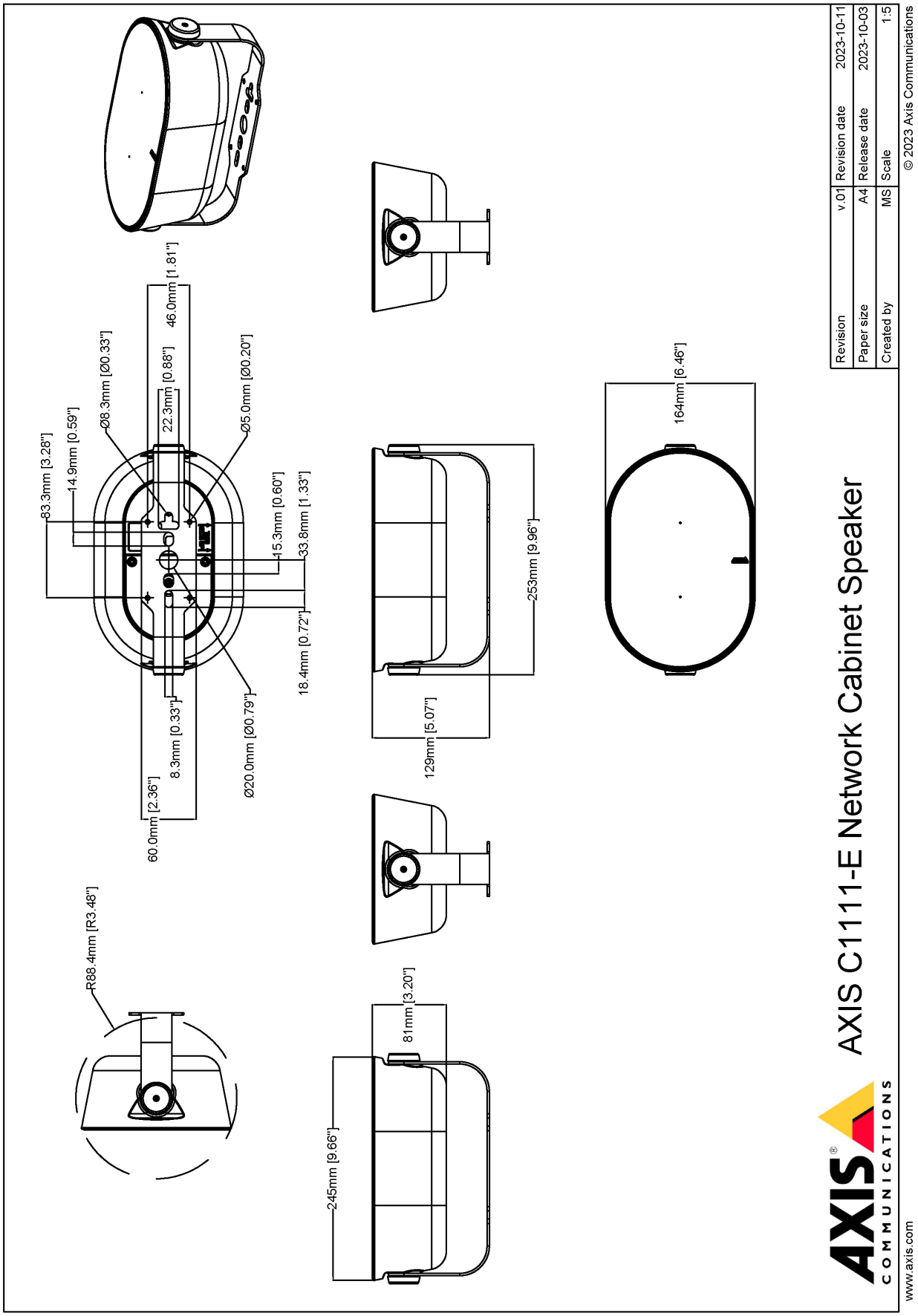
Substance control	PVC free, BFR/CFR free in accordance with JEDEC/ECA Standard JS709 RoHS in accordance with EU RoHS Directive 2011/65/EU/ and EN 63000:2018 REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *echa.europa.eu*
Materials	Renewable carbon-based plastic content: 51% (recycled: 0%, bio-based: 51%, carbon capture based: 0%) Screened for conflict minerals in accordance with OECD guidelines To read more about sustainability at Axis, go to *axis.com/about-axis/sustainability*
Environmental responsibility	*axis.com/environmental-responsibility* Axis Communications is a signatory of the UN Global Compact, read more at *unglobalcompact.org*

General

Casing	Aluminium casing, IP55 rated Colors: white, black

	For repainting instructions, go to *axis.com/products/axis-c1111-e/support* For information about the impact on warranty, go to *axis.com/warranty-implication-when-repainting*.
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3 (max 12.95 W)
Connectors	RJ45 10BASE-T/100BASE-TX PoE I/O: 4-pin 2.5 mm terminal block for 2x supervised configurable I/Os
LED indicators	Status LED, configurable front-facing RGB LED
Storage	Support for microSD/microSDHC/microSDXC card
Reliability	Designed for 24/7 operation.
Operating conditions	-30 °C to 50 °C (-22 °F to 122 °F) Humidity 10–100% RH (condensing)
Storage conditions	-40 °C to 65 °C (-40 °F to 149 °F) Humidity 5–95% RH (non-condensing)
Dimensions	Height: 164 mm (6.06 in) Width: 253 mm (10.0 in) Length: 129 mm (5.08 in)
Weight	2200 g (9.04 lbs)
Box content	Speaker, installation guide, terminal block connector, connector guard, cable gaskets, owner authentication key
Optional accessories	AXIS C8310 Volume Controller, AXIS Surveillance Cards For more accessories, see *axis.com*
System tools	AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator Available at *axis.com*
Video management software	AXIS Companion, AXIS Camera Station, video management software from Axis' Application Development Partners available on *axis.com/techsup/software*
Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese
Warranty	5-year warranty, see *axis.com/warranty*

a. *Audio synchronization with IPv4 only.*



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MOULDED SOUND PROJECTORS



- CAD10/T
- CAD10/TC

TECHNICAL SPECIFICATIONS

Rated power, Watts	10
Tappings 100 volt line, Watts	10/5/2.5/1.25
Transformer Impedance, Ohms	1k/2k/4k/8k
Tappings 70.7 volt line, Watts	5/2.5/1.25/0.375
Driver impedance, Ohms	8
Effective frequency range, Hz (BSEN60268-5)	120–18,000
S.P.L. @ 1m, 1 watt, dB, Test Signal Bandwidth 100Hz – 10 kHz	90
S.P.L. @ Full power, Octave Bandwidth dB	100
Acoustic Power (dB-PWL@1 Watt) 1k/2k Hz, dB	87/89
Dispersion at 1k/2k Hz, Degrees	180/120
Directivity Axial Q factor, 1 k/2kHz	2.5/5.8
IP Rating	66
Max/Min Ambient Temp	70°/-25°
Dimensions, front & depth, mm	Ø138 x 204
Net weight, Kgs	1.3
Colour/Finish	White
Material	ABS Plastic with UV inhibitor and Stainless steel hardware
Mounting	Aluminium U bracket

- CAD10/TC is Part 8 Voice Alarm Compliant but not EN54-24 Certified
- CAD10/TC supplied with 300mm, 5 core, non-fire rated cable tail
- Suitable for external use

Manufacturer reserves the right to alter specifications without notice

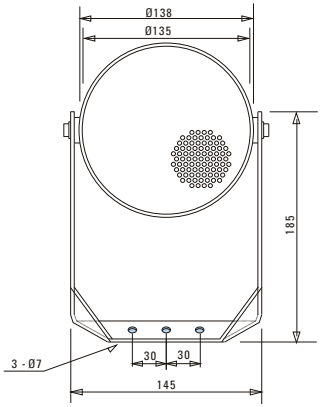
September 2019

CAD10/T CAD10/TC

MOULDED SOUND PROJECTORS

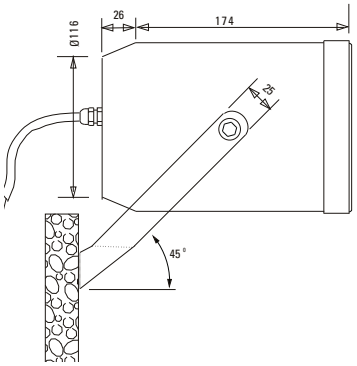
front view

unit: **mm**



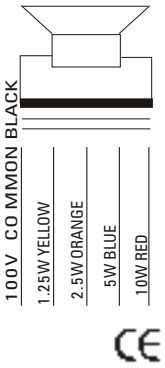
side view

unit: **mm**



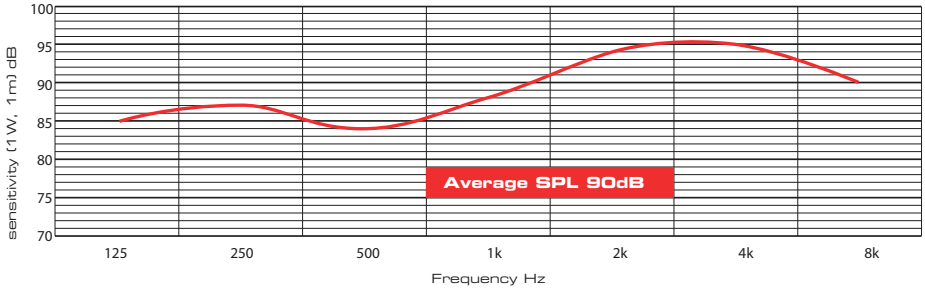
circuit diagram

CAD10/T



CE

speech octave band sensitivity



Effective Frequency Range **CAD10/T CAD10/TC** 120Hz - 18,000Hz

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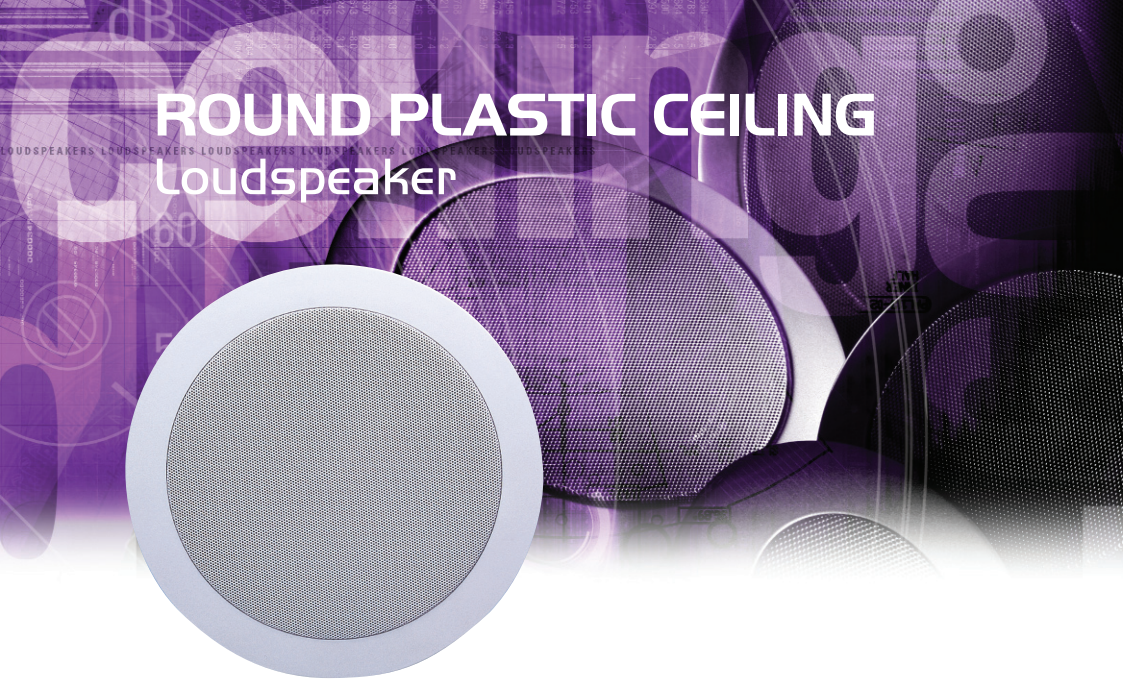
Penton UK Ltd

Unit 2 Teville Industrials | Dominion Way | Worthing | West Sussex | BN14 8NW

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www.pentonuk.co.uk

ROUND PLASTIC CEILING
Loudspeaker



PCL6/T

TECHNICAL SPECIFICATIONS

Rated power, Watts	6
Tappings 100 volt line, Watts	6/3/1.5/0.75/0.25
Transformer Impedance, Ohms, 100V	1.67k/3.33k/6.66k/13.3k/39.9K
Tappings 70.7 volt line, Watts	3/1.5/0.75/0.375/0.125
Driver impedance, Ohms	8
Effective frequency range, Hz (BSEN60268-5)	85 – 18,500
S.P.L. @ 1m, 1 watt, dB, Test Signal Bandwidth 100Hz-10kHz	82
S.P.L. @ Full power Octave Bandwidth, dB	90
Acoustic Power (dB-PWL@1 watt) 1k/2kHz, dB	81 / 81
Dispersion at 1k/2k Hz, Degrees	180/120
Directivity Axial Q factor, 1k/2kHz	2.1/4.9
IP Rating	21
Max/Min Ambient Temp	70°/-25°
Dimensions, diameter, mm	Ø234
Net weight, Kgs	0.9
Colour/Finish	White
Material	Plastic Baffle ABS with UV inhibitors, Metal Driver Chassis & Grille
Mounting	Rotary compression clamps
Cut-out, mm	Ø194

- IP Rating taken from the front of the speaker when installed horizontally in a ceiling
- Recommended for internal use only

Manufacturer reserves the right to alter specifications without notice

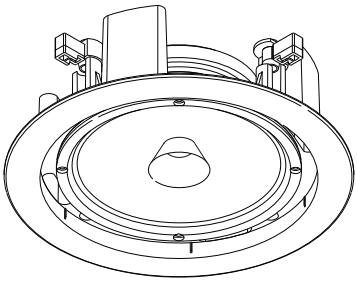
September 2016



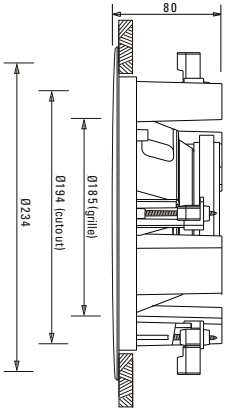
PCL6/T

ROUND PLASTIC CEILING LOUDSPEAKER

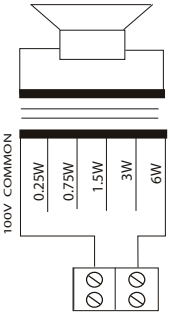
isogonal view
unit: **mm**



side view
unit: **mm**

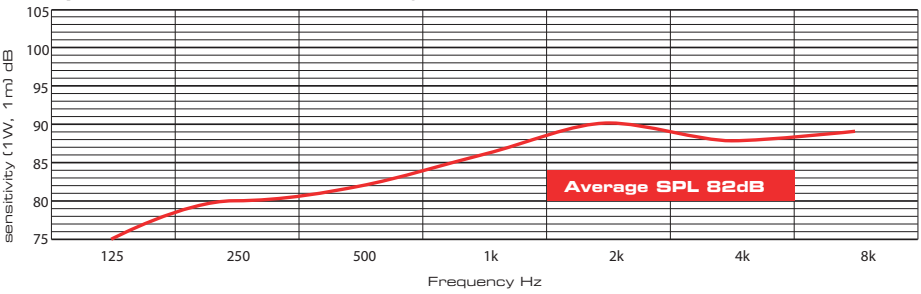


circuit diagram



CE

speech octave band sensitivity



Effective Frequency Range ● **PCL6/T** 85Hz - 18,500Hz

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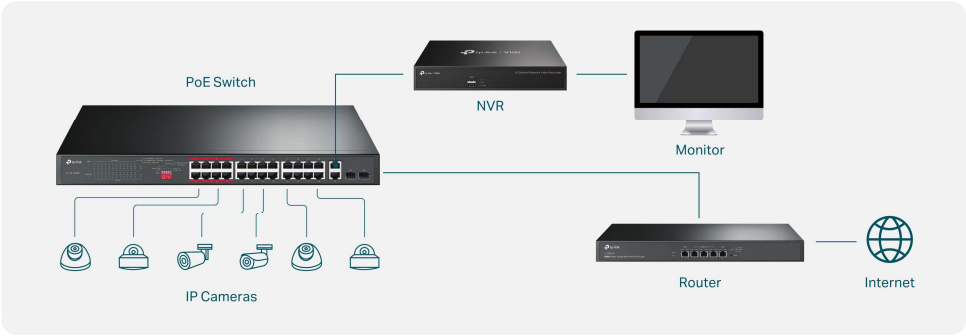
TP-Link JetStream PoE Switches

For Surveillance

Affordable Solutions Designed for Surveillance

TP-Link 100 Mbps PoE Switches

TP-Link's 100 Mbps PoE Switch series is designed to address specific SMB surveillance needs and satisfy the demands of most IP cameras. Many robust features like Extend Mode, Priority Mode, and Isolation Mode provide value well beyond basic networking needs, creating a versatile and reliable surveillance network to grow your business.



250 m PoE Transmission

With Extend Mode, PoE supports data and power transmissions up to 250 m away—perfect for surveillance camera deployment in large areas.

One-Click Priority Mode

Guarantees the quality of sensitive applications like video monitoring in critical business areas by prioritizing the data of certain ports.

One-Click Traffic Separation

Isolation Mode easily divides traffic for downlink ports to avoid snooping and tampering and isolates broadcast storm for higher security and performance.

Silent Operation

Desktop switches' fanless design deliver zero added noise in their locations. Rackmount switches automatically adjust their built-in fans to balance power consumption with sound reduction in noise-sensitive locations.

TP-Link 100 Mbps PoE Switches at a Glance

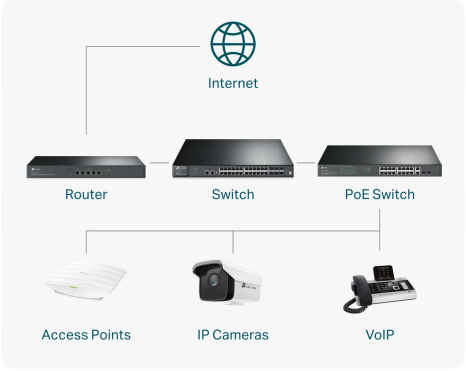
Layer	PoE Ports	Non-PoE Ports	Model	PoE Budget[1] (W)	PoE Standard	Extend Mode Button[2]	Priority Mode Button	Isolation Mode Button	Fanless Design	Deployment	Dimension (mm)
Unmanaged	4 FE	1 FE	HOT BUY TL-SF1005LP v1	41	802.3 af	Ports 1-4	Ports 1-2	-	•	Desktop Wall Mounting	99.8 × 98 × 25
			HOT BUY TL-SF1005P v2	67	802.3 af/at	Ports 1-4	Ports 1-2	-	•	Desktop Wall Mounting	99.8 × 98 × 25
		2 FE	HOT BUY TL-SF1006P v1	67	802.3 af/at	Ports 1-4	Ports 1-2	-	•	Desktop Wall Mounting	158 × 101 × 25
		4 FE	HOT BUY TL-SF1008LP v1	41	802.3 af	Ports 1-4	Ports 1-2	-	•	Desktop Wall Mounting	171 × 98 × 27
			TL-SF1008P v6	66	802.3 af/at	Ports 1-4	Ports 1-2	-	•	Desktop Wall Mounting	171 × 98 × 27
	8 FE	1 FE	HOT BUY TL-SF1009P v1	65	802.3 af/at	Ports 1-4/1-8	Ports 1-2	Ports 1-8	•	Desktop Wall Mounting	171 × 98 × 27
		2 GE + 1 SFP	TL-SL1311MP v1	124 (TBD)	802.3 af/at	Ports 1-4/1-8	-	Ports 1-8	•	Desktop Wall Mounting	209 × 126 × 26
	16 FE	1 GE + 1 Combo	TL-SL1218P v1	150	802.3 af/at	Ports 1-8/9-16	Ports 1-8	Ports 1-16	-	Rackmount	440 × 180 × 44
		2 Combo	HOT BUY TL-SL1218MP v2	250	802.3 af/at	Ports 1-8/9-16	Ports 1-8	Ports 1-16	-	Rackmount	440 × 180 × 44
	24 FE	2 Combo	TL-SL1226P v1	250	802.3 af/at	Ports 1-8/9-16/17-24	Ports 1-8	Ports 1-24	-	Rackmount	440 × 180 × 44
Smart	24 FE	2 GE + 2 Combo	TL-SL2428P v4	250	802.3 af/at	Extend Mode achieves long-distance transmissions by limiting the maximum port speed to 10 Mbps. Priority and Isolation Modes can be accessed through the QoS and VLAN functions.			-	Rackmount	440 × 180 × 44



TP-Link JetStream PoE Switches

For Access Points and More

Gigabit Switching Solutions for Growing SMBs



PoE Auto Recovery

Automatically reboots your dropped or unresponsive PoE-powered devices.

Easy to Use

Simply plug and play with a setup that requires no software or configuration.

Multiple Scenarios

Fits various environments thanks to a flexible design—excellent for IP cameras and access points.

Energy Efficient

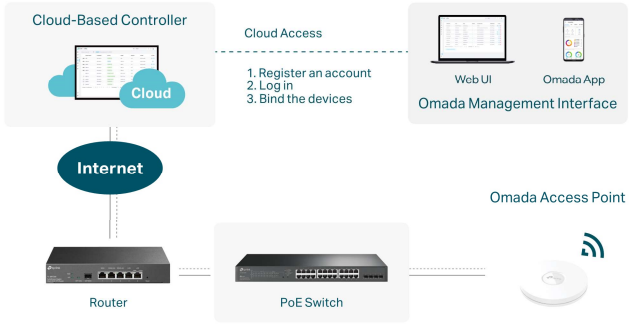
Consumes less power and lowers energy bills with Green Tech.

Layer	PoE Ports	Non-PoE Ports	Model	PoE Budget[†] (W)	PoE Standard	PoE Auto Recovery	Fanless Design	Deployment	Dimension (mm)
Unmanaged	4 GE	1 GE	HOT BUY TL-SG1005LP v1	40	802.3 af/at	-	•	Desktop Wall Mounting	99.8 × 98 × 25
			HOT BUY TL-SG1005P v2	65	802.3 af/at	-	•	Desktop Wall Mounting	99.8 × 98 × 25
		4 GE	HOT BUY TL-SG1008P v4	64	802.3 af/at	-	•	Desktop Wall Mounting	171 × 98 × 27
	8 GE	/	TL-SG1008MP v2	153	802.3 af/at	-	-	Desktop Rackmount	294 × 180 × 44
		1 GE + 1 SFP	TL-SG1210P v1	63	802.3 af/at	-	•	Desktop Wall Mounting	209 × 126 × 26
		1 GE + 1 Combo	TL-SG1210MP V2	123 (TBD)	802.3 af/at	-	•	Desktop Wall Mounting	209 × 126 × 26
	16 GE	2 Combo	HOT BUY TL-SG1218MP v1	250	802.3 af/at	-	-	Rackmount	440 × 180 × 44
	4 GE	1 GE	HOT BUY TL-SG105PE v1	65	802.3 af/at	•	•	Desktop Wall Mounting	99.8 × 98 × 25
		4 GE	HOT BUY TL-SG108PE v3	64	802.3 af/at	•	•	Desktop Wall Mounting	158 × 101 × 25
Easy Smart	8 GE	1 GE + 1 Combo	TL-SG1210MPE V2	123 (TBD)	802.3 af/at	•	•	Desktop Wall Mounting	209 × 126 × 26
		8 GE	TL-SG1016PE v2	150	802.3 af/at	•	-	Desktop Rackmount	294 × 180 × 44
	16 GE	2 Combo	HOT BUY TL-SG1218MPE v2	250	802.3 af/at	•	-	Rackmount	440 × 180 × 44
	24 GE	2 GE + 2 SFP	TL-SG1428PE v1	250	802.3 af/at	•	-	Rackmount	440 × 220 × 44

Smarter Cloud Solutions for Business Networking

TP-Link Gigabit / Multi-Gigabit PoE Switches—SDN Integration

Managed switches integrating Omada SDN (Software Defined Networking) provide 100% centralized cloud management to create highly scalable networks. Seamless wireless and wired connections are provided—ideal for hospitality, education, retail, office, and more.



Cloud Centralized Management

Fully manage your whole network from different sites—all controlled from a single interface anywhere, anytime.

Zero-Touch Provisioning[‡]

Remotely deploy and configure multi-site networks to ensure efficient deployment at a lower cost.

Easy Network Monitoring

The Omada app and intuitive Web UI make it easy to check your real-time network status and traffic distribution.

2.5 GE PoE for Wi-Fi 6[§]

2.5 GE Ports support the bandwidth needs of Wi-Fi 6 access points.

Layer	PoE Ports	Non-PoE Ports	Model	PoE Budget[†] (W)	PoE Standard	PoE Auto Recovery*	SDN	Deployment	Dimension (mm)
Smart & L2	4 GE	4 GE	TL-SG2008P v1	62	802.3 af/at	•	•	Desktop Wall Mounting	209 × 126 × 26
	8 GE	2 SFP	HOT BUY TL-SG2210P v3.2	61	802.3 af/at	•	•	Desktop Wall Mounting	209 × 126 × 26
			TL-SG2210MP v1	150	802.3 af/at	•	•	Desktop Rackmount	294 × 180 × 44
	24 GE	4 SFP	HOT BUY TL-SG2428P v1	250	802.3 af/at	•	•	Rackmount	440 × 220 × 44
	24 GE	4 SFP	TL-SG3428MP v1	384	802.3 af/at	•	•	Rackmount	440 × 330 × 44
	48 GE	4 SFP	TL-SG3452P v1	384	802.3 af/at	•	•	Rackmount	440 × 330 × 44
	24 GE	4 SFP+	TL-SG3428XMP v1	384	802.3 af/at	•	•	Rackmount	440 × 330 × 44
	8 × 2.5 GE	2 SFP+	TL-SG3210XHP-M2 v1	240	802.3 af/at	•	•	Rackmount	440 × 180 × 44

Discover More about TP-Link PoE Switches

[†] PoE budget calculations are based on laboratory testing. Actual PoE power budget is not guaranteed and will vary as a result of client limitations and environmental factors.
[‡] Zero-Touch Provisioning requires the use of the Omada Cloud-Based Controller.
[§] Not all PoE Switches support this feature. Please refer to the comparison table for details.
[◊] The speed of the ports in extend mode will be downgraded to 10 Mbps. Actual transmission distance may vary due to cable quality.
*Use of the feature requires further software upgrades.