MXA920

Command Strings

Shure MXA920-S/MXA920-R command strings for third-party control systems, such as AMX, Crestron, or Extron. Includes all supported programming commands.

Version: 1.1 (2024-L)

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Command Strings

Using a Third-Party Control System

This device can be controlled using a third-party control system with the appropriate command string.

Common applications:

- Mute
- LED color and behavior
- Loading presets
- Adjusting levels
- Integration with camera systems

The device is connected via Ethernet to a control system, such as AMX, Crestron or Extron.

- **Connection:** Ethernet (TCP/IP; select “Client” in the AMX/Crestron program)
- **Port:** 2202

If using static IP addresses, set the Shure Control and the Audio Network settings to Manual in Designer. Use the Control IP address for TCP/IP communication with Shure devices.

See below for all supported command strings. This list is updated with each firmware release.

Using PuTTY and Other Telnet Clients

For all Telnet clients (including PuTTY), set Telnet negotiation to disabled or passive mode. Active Telnet negotiation is not supported by MXA devices.

If using PuTTY to enter commands for MXA devices, the first command you send may return an error. To fix, enter the command again and it should work normally.

Channel Number Assignments

MXA920 microphones use the following numbering to distinguish the channels for REP values.

Automatic Coverage On

- Coverage areas: 01–08
- Automixer output: 09
- AEC reference input: 10

Note: The 0 (all channel) index only reports the automixer output when automatic coverage is on.

Automatic Coverage Off

- Dante outputs: 01–08
- Automixer output: 09

- Post-gate channels: 01–08
- AEC reference input: 10

How Commands Work with Automatic Coverage On or Off

Commands work differently depending on the microphone's automatic coverage setting. For details about specific commands, see the entry for that command.

These commands work when automatic coverage is on:

- Get All
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- Firmware Version
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- Dedicated Coverage Area Position

These commands work when automatic coverage is off:

- Get All
- Model
- Serial Number
- Firmware Version
- IP Address for Primary Audio Network
- Subnet Mask for the Primary Audio Network
- Network Gateway for Primary Audio Network Interface
- Control MAC Address
- Device ID
- NA Device Name
- Channel Name
- Network Audio (Dante) Channel Name
- Identify Device (Flash LED)
- Audio Clip Indicator
- Metering Rate (RMS)
- Post-Gate Metering Rate (RMS)
- Automixer Gain Metering Rate (RMS)
- Metering Rate Pre-Compressor (RMS)
- AEC Reference In Metering Rate (RMS)
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- Presets
- Restore Default Settings
- View Preset Name
- Encryption Status
- Reboot
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- Active Mic Channels
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- Solo the Automix Channel
- LED Brightness
- LED Mute Indication
- LED Color Muted

- LED State Muted
- LED State Unmuted
- Device LED In State
- Bypass All EQ
- Bypass IntelliMix
- EQ Contour
- Lobe Width
- Array Height
- Turn On/Off Automatic Coverage
- Talker Position
- Talker Position Sensitivity
- Automixer Gate Out Status for Lobes
- Turn Autofocus On or Off
- X-Axis Lobe Steering
- Y-Axis Lobe Steering
- Z-Axis Lobe Steering
- Get Lobe's Autofocus Position (X-Axis)
- Get Lobe's Autofocus Position (Y-Axis)
- Get Lobe's Autofocus Height (Z-Axis)

Device Information

Use these commands to get information about the device, reboot, and restore default settings.

Get All

Parameter Name:	ALL
Command Types Supported:	GET, REP
Indexing:	n/a
Value(s):	Responds with `REP` for all device-specific properties and `ALL` channel-related properties.
Example(s):	< GET ALL >

Model

Parameter Name:	MODEL
Command Types Supported:	GET, REP
Indexing:	n/a
Value(s):	**model** is a 32 character quoted string. The value is padded with spaces to ensure that 32 characters are reported.

Example(s):	< GET MODEL > < REP MODEL model >

Serial Number

Parameter Name:	SERIAL_NUM
Command Types Supported:	GET, REP
Indexing:	n/a
Value(s):	**serial_num** is a 32 alphanumeric character string. Response is padded to ensure that 32 characters are always returned
Example(s):	< GET SERIAL_NUM > < REP SERIAL_NUM serial_num >

Firmware Version

Parameter Name:	FW_VER
Command Types Supported:	GET, REP
Indexing:	n/a
Value(s):	Where **ver** is an 18 character literal string: The value is 3 versions separated by a period. Each version shall be able to take on a value from 0 to 65535. **ver** has an "*****" if the firmware is invalid. **Example**: 65535.65535.65535
Example(s):	< GET FW_VER > < REP FW_VER ver >

IP Address for Primary Audio Network

Parameter Name:	IP_ADDR_NET_AUDIO_PRIMARY
Command Types Supported:	GET, REP
Indexing:	n/a
Value(s):	The value of IP address consist of 4 octets each separated by a period. The length of IP address is 15 characters. The value will be padded to ensure that 15 characters are always returned.
Example(s):	< GET IP_ADDR_NET_AUDIO_PRIMARY > < REP IP_ADDR_NET_AUDIO_PRIMARY ip_addr > < REP ERR >

Subnet Mask for the Primary Audio Network

Parameter Name:	IP_SUBNET_NET_AUDIO_PRIMARY
Command Types Supported:	GET, REP
Indexing:	n/a
Value(s):	**subnet** is subnet mask: 32 bit number represented in the Binary Coded Decimal notation in the form of A.B.C.D where each variable A or B or C or D are 8 bit octets each separated by a period. The length of subnet is 15 characters. The value will be padded to ensure that 15 characters are always returned.
Example(s):	< GET IP_SUBNET_NET_AUDIO_PRIMARY > < REP IP_SUBNET_NET_AUDIO_PRIMARY subnet > < REP ERR >

Network Gateway for Primary Audio Network Interface

Parameter Name:	IP_GATEWAY_NET_AUDIO_PRIMARY
Command Types Supported:	GET, REP

Indexing:	n/a
Value(s):	**gateway** is network gateway: 32 bit number represented in the Binary Coded Decimal notation in the form of A.B.C.D where each variable A or B or C or D are 8 bit octets each separated by a period. The length of subnet is 15 characters. The value will be padded to ensure that 15 characters are always returned.
Example(s):	< GET IP_GATEWAY_NET_AUDIO_PRIMARY > < REP IP_GATEWAY_NET_AUDIO_PRIMARY gateway > < REP ERR >

Control MAC Address

Parameter Name:	CONTROL_MAC_ADDR
Command Types Supported:	GET, REP
Indexing:	n/a
Value(s):	**addr** is a 17 character literal string formatted as 6 octets, each separated by a colon. **Example:** 00:0E:DD:FF:F1:63
Example(s):	< GET CONTROL_MAC_ADDR > < REP CONTROL_MAC_ADDR addr > < REP ERR >

Device ID

Parameter Name:	DEVICE_ID
Command Types Supported:	GET, REP
Indexing:	n/a
Value(s):	Response is a text string. Most devices allow device ID to be up to 31 characters. Value is padded with spaces as needed to ensure that 31 characters are always reported

Example(s):	< GET DEVICE_ID > < REP DEVICE_ID string >

Network Audio (Dante) Device Name

Parameter Name:	NA_DEVICE_NAME
Command Types Supported:	GET, REP
Indexing:	n/a
Value(s):	Response is a text string. Most devices allow device ID to be up to 31 characters. Value is padded with spaces to ensure that 31 characters are always reported.
Example(s):	< GET NA_DEVICE_NAME > < REP NA_DEVICE_NAME string >

Channel Name

Parameter Name:	CHAN_NAME
Command Types Supported:	GET, REP
Indexing:	GET **index**: Automatic coverage on: 09 (0 only reports the automixer output) Automatic coverage off: 0 through 09 REP **index:** 2-digit representation of the index sent in the GET, all the appropriate channels if the **index** = 0.
Value(s):	**string** is 31 character channel name. Value is padded with spaces as needed to ensure that 31 characters are always reported.
Example(s):	< GET index CHAN_NAME > < REP index CHAN_NAME string > < REP ERR >

Network Audio (Dante) Channel Name

Parameter Name:	NA_CHAN_NAME
Command Types Supported:	GET, REP
Indexing:	GET **index**: Automatic coverage on: 09 (0 only reports the automixer output) Automatic coverage off: 0 through 09 REP **index:** 2-digit representation of the index sent in the GET, all the appropriate channels if the **index** = 0.
Value(s):	**string** is 31 character channel name. Value is padded with spaces as needed to ensure that 31 characters are always reported.
Example(s):	< GET index NA_CHAN_NAME > < REP index NA_CHAN_NAME string > < REP ERR >

Identify Device (Flash LED)

Parameter Name:	FLASH
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**flash_state** takes on values ON OFF
Example(s):	< GET FLASH > < SET FLASH flash_state > < REP FLASH flash_state > < REP ERR >

Presets

Parameter Name:	PRESET
Command Types Supported:	GET, SET, REP

Indexing:	## is the preset number and takes on values 1-10.
Value(s):	n/a
Example(s):	< GET PRESET > < SET PRESET ## > < REP PRESET ## > < REP ERR >

View Preset Name

Parameter Name:	PRESET_NAME
Command Types Supported:	GET, REP
Indexing:	1-10: specific preset identifier
Value(s):	**name** is a literal string 25 alphanumeric characters long, special characters allowed except blank spaces, {} and < >. Note that if a preset is empty, **name** will say {empty}
Example(s):	< GET PRESET_NAME nn > < REP PRESET_NAME nn name > < REP ERR >

Device Encryption Status

Parameter Name:	ENCRYPTION
Command Types Supported:	GET, REP
Indexing:	n/a
Value(s):	**sts** is the encryption status, which can have the following values: ON OFF
Example(s):	< GET ENCRYPTION > < REP ENCRYPTION sts > < REP ERR >

Restore Default Settings

Parameter Name:	DEFAULT_SETTINGS
Command Types Supported:	SET, REP
Indexing:	n/a
Value(s):	## = 00 if restore is successful
Example(s):	< SET DEFAULT_SETTINGS > < REP DEFAULT_SETTINGS ## > < REP ERR >

Reboot

Note: This command does not send acknowledgement.

Parameter Name:	REBOOT
Command Types Supported:	SET
Indexing:	n/a
Value(s):	n/a
Example(s):	< SET REBOOT >

Channel and Coverage Area Commands

Use these commands to adjust gain and mute channels or coverage areas.

Audio Clip Indicator

Parameter Name:	AUDIO_OUT_CLIP_INDICATOR
Command Types Supported:	GET, REP
Indexing:	GET **index**: Automatic coverage on: 09 (0 only reports the automixer output) Automatic coverage off: 0 through 09 REP **index**: 2 digit representation of the index sent in the GET, all the appropriate channels if the **index** = 0.

Value(s):	**sts** is current status for the channel: 1. OFF 2. ON
Example(s):	< GET index AUDIO_OUT_CLIP_INDICATOR > < REP index AUDIO_OUT_CLIP_INDICATOR sts > < REP ERR >

Audio Gain (Digital)

Parameter Name:	AUDIO_GAIN_HI_RES
Command Types Supported:	GET, SET (INC, DEC), REP
Indexing:	GET **index**: Automatic coverage on: 09 (0 only reports the automixer output) Automatic coverage off: 0 through 09 REP **index:** 2 digit representation of the index sent in the GET, all the appropriate channels if the **index** = 0. Setting gain on all channels at once is not supported.
Value(s):	**gain** is in units of one-tenth of a dB. The value is multiplied by 10 and then scaled by 1100. The resulting value has a range of 0 to 1400 representing gain from -110.0 dB to 30.0 dB. **step** is in units of one-tenth of a dB. The resulting gain when the **step** is applied must be in the range allowed in the SET.
Example(s):	< GET index AUDIO_GAIN_HI_RES > < SET index AUDIO_GAIN_HI_RES gain > < SET index AUDIO_GAIN_HI_RES inc step > < SET index AUDIO_GAIN_HI_RES dec step > < REP index AUDIO_GAIN_HI_RES gain > < REP ERR >

Audio Gain Postgate

This command only works when automatic coverage is off.

Parameter Name:	AUDIO_GAIN_POSTGATE
Command Types Supported:	GET, SET, REP

Indexing:	GET **index**: See Channel Number Assignment for product-specific channel assignments. 0 = all channels. REP **index**: Single digit representation of the index sent in the GET, all the appropriate channels if the **index** = 0.
Value(s):	**gain** is in units of one-tenth of a dB and then scaled by 1100 and takes on values 0 to 1400 representing gain from -109.9 dB to 30.0 dB **step** is in units of one-tenth of a dB. The resulting gain when the **step** is applied must be in the range allowed in the SET.
Example(s):	< GET index AUDIO_GAIN_POSTGATE > < SET index AUDIO_GAIN_POSTGATE gain > < SET index AUDIO_GAIN_POSTGATE inc step > < SET index AUDIO_GAIN_POSTGATE dec step > < REP index AUDIO_GAIN_POSTGATE gain > < REP ERR >

Audio Level (RMS)

Parameter Name:	AUDIO_IN_RMS_LVL
Command Types Supported:	GET, REP
Indexing:	GET **index**: Channel Number Assignment for product-specific channel assignments. 0 = all channels. REP **index**: Single digit representation of the index sent in the GET, all the appropriate channels if the **index** = 0.
Value(s):	### is audio level in the range of 00-60.
Example(s):	< GET x AUDIO_IN_RMS_LVL > < REP x AUDIO_IN_RMS_LVL ### > < REP ERR >

Audio Level (Peak)

Parameter Name:	AUDIO_IN_PEAK_LVL
Command Types Supported:	GET, REP

Indexing:	GET **index**: Channel Number Assignment for product-specific channel assignments. 0 = all channels. REP **index**: Single digit representation of the index sent in the GET, all the appropriate channels if the **index** = 0.
Value(s):	### is audio level in the range of 000-060.
Example(s):	< GET index AUDIO_IN_PEAK_LVL > < REP index AUDIO_IN_PEAK_LVL ### > < REP ERR >

Active Mic Channels

This command only works when automatic coverage is off.

Parameter Name:	NUM_ACTIVE_MICS
Command Types Supported:	GET, REP
Indexing:	n/a
Value(s):	**active** represents the number of active channels.
Example(s):	< GET NUM_ACTIVE_MICS > < REP NUM_ACTIVE_MICS active >

Solo Channel to Automix

This command only works when automatic coverage is off.

Parameter Name:	CHAN_AUTOMIX_SOLO_EN
Command Types Supported:	GET, SET, REP
Indexing:	**index:** Mic input channels. See Channel Number Assignment for product-specific channel assignments. 0 = all channels.
Value(s):	**sts** determines the requested state of SOLO mode: 1. ENABLE 2. DISABLE
Example(s):	< GET index CHAN_AUTOMIX_SOLO_EN > < SET index CHAN_AUTOMIX_SOLO_EN sts > < REP index CHAN_AUTOMIX_SOLO_EN sts >

	< REP ERR >

Device Mute

Parameter Name:	DEVICE_AUDIO_MUTE
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**cmd** is desired mute status and takes on values: ON OFF TOGGLE **sts** is the current mute status for the designated channel and takes on values: ON OFF
Example(s):	< GET DEVICE_AUDIO_MUTE > < SET DEVICE_AUDIO_MUTE cmd > < REP DEVICE_AUDIO_MUTE sts >

Channel Mute

Parameter Name:	AUDIO_MUTE
Command Types Supported:	GET, SET, REP
Indexing:	Where **nn** is the channel. **nn** can be: Automatic coverage on: 09 (0 only reports the automixer output) Automatic coverage off: 0 through 09
Value(s):	**cmd** is desired mute status and takes on values: ON OFF TOGGLE **sts** is the current mute status for the designated channel and takes on values: ON OFF

Example(s):	< GET nn AUDIO_MUTE > < SET nn AUDIO_MUTE cmd > < REP nn AUDIO_MUTE sts >

Channel Mute (Post Gate)

This command only works when automatic coverage is off.

Parameter Name:	AUDIO_MUTE_POSTGATE
Command Types Supported:	GET, SET, REP
Indexing:	Where **nn** is the channel and takes on values defined in channel number assignments.
Value(s):	**cmd** is desired mute status and takes on values: ON OFF TOGGLE **sts** is the current mute status for the designated channel and takes on values: ON OFF
Example(s):	< GET nn AUDIO_MUTE_POSTGATE > < SET nn AUDIO_MUTE_POSTGATE cmd > < REP nn AUDIO_MUTE_POSTGATE sts >

Coverage Area Mute

This command only works when automatic coverage is on.

Mute and unmute coverage area audio (post-gate). Get audio mute status for a selected coverage area.

Parameter Name:	CA_MUTE
Command Types Supported:	GET, SET, REP
Indexing:	GET **index**: Coverage area defined in Channel Number Assignment. 0 = all coverage areas. REP **index**: Two-digit representation of the index sent in the GET.

Value(s):	**cmd** is desired mute status and takes on values: ON OFF TOGGLE **sts** is the current mute status for the designated coverage area and takes on values: On Off
Example(s):	< GET index CA_MUTE > < SET index CA_MUTE cmd > < REP index CA_MUTE sts > < REP ERR >

Coverage Area Gain

This command only works when automatic coverage is on.

View and set coverage area gain (post-gate).

Parameter Name:	CA_GAIN
Command Types Supported:	GET, SET (INC, DEC), REP
Indexing:	GET **index**: Coverage area defined in Channel Number Assignment. Setting gain for all coverage areas simultaneously is not supported. REP **index**: Two-digit representation of the index sent in the GET.
Value(s):	**gain** is in units of one-tenth of a dB. The value is multiplied by 10 and then scaled by 1100. The resulting value has a range of 0 to 1400 representing gain from −110 dB to 30 dB. **step** is in units of one-tenth of a dB. The resulting gain when the **step** is applied must be in the range allowed in the SET.
Example(s):	< GET index CA_GAIN > < SET index CA_GAIN gain > < SET index CA_GAIN inc step > < SET index CA_GAIN dec step > < REP index CA_GAIN gain > < REP ERR >

Meter Rate Commands

Adjust different meter rates using these commands.

Metering Rate (RMS)

Parameter Name:	METER_RATE
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**rate** is a value from 100 to 99999 representing meter rate in milliseconds. 0 = off Values 1 to 99 are not valid and result in response. **aaa** (automatic coverage on) or **aaa bbb ccc ddd eee fff ggg hhh iii** (automatic coverage off): Audio levels take on values 000-060, which represent actual audio levels of −60 to 0 dBFS. Represent channels in order defined in Channel Number Assignment. Automatic coverage on: 09 (0 only reports the automixer output) Automatic coverage off: 0 through 09
Example(s):	< GET METER_RATE > < SET METER_RATE rate > < REP METER_RATE rate > < REP ERR > < SAMPLE aaa > < SAMPLE aaa bbb ccc ddd eee fff ggg hhh iii >

Post-Gate Metering Rate (RMS)

This command only works when automatic coverage is off.

Parameter Name:	METER_RATE_POSTGATE
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**rate** is a value from 100 to 99999 representing meter rate in milliseconds. 0 = off Values 1 to 99 are not valid and result in response. **aaa bbb ccc ddd eee fff ggg hhh iii**: Audio Levels take on values 000-060, which represent actual audio levels of −60 to 0 dBFS. Represent mic input channels in order defined in Channel Number Assignment.

Example(s):	< GET METER_RATE_POSTGATE > < SET METER_RATE_POSTGATE rate > < REP METER_RATE_POSTGATE rate > < REP ERR > < SAMPLE aaa bbb ccc ddd eee fff ggg hhh iii >

Automixer Gain Metering Rate (RMS)

This command only works when automatic coverage is off.

Parameter Name:	METER_RATE_MXR_GAIN
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**rate** is a value from 100 to 99999 representing meter rate in milliseconds. 0 = off Values 1 to 99 are not valid and result in response. **aaa bbb ccc ddd eee fff ggg hhh iii:** Audio Levels take on values 000-060, which represent actual audio levels of −60 to 0 dBFS. Represent mic input channels in order defined in Channel Number Assignment.
Example(s):	< GET METER_RATE_MXR_GAIN > < SET METER_RATE_MXR_GAIN rate > < REP METER_RATE_MXR_GAIN rate > < REP ERR > < SAMPLE aaa bbb ccc ddd eee fff ggg hhh iii >

Metering Rate Pre-Compressor (RMS)

Parameter Name:	METER_RATE_PRECOMP
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	##### is a value from 100 to 99999 representing meter rate in milliseconds. 0 = off Values 1 to 99 are not valid and result in response. **aaa** (automatic coverage on) or **aaa bbb ccc ddd eee fff ggg hhh iii** (automatic coverage off): Audio levels take on values 000-060, which represent actual audio levels of −60 to 0 dBFS. Represent channels in order defined in Channel Number Assignment. Automatic coverage on: 09 (0 only reports the automixer output)

	Automatic coverage off: 0 through 09
Example(s):	< GET METER_RATE_PRECOMP > < SET METER_RATE_PRECOMP ##### > < REP METER_RATE_PRECOMP ##### > < REP ERR > < SAMPLE_PRECOMP aaa > < SAMPLE_PRECOMP aaa bbb ccc ddd eee fff ggg hhh iii >

AEC Reference In Metering Rate (RMS)

Parameter Name:	METER_RATE_AECREF
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**rate** is a value from 100 to 99999 representing meter rate in milliseconds. 0 = off Values 1 to 99 are not valid and result in response. **aaa:** Audio levels take on values 000-060, which represent actual audio levels of −60 to 0 dBFS. Represent channels in order defined in Channel Number Assignment.
Example(s):	< GET METER_RATE_AECREF > < SET METER_RATE_AECREF rate > < REP METER_RATE_AECREF rate > < REP ERR > < SAMPLE_AECREF aaa >

Coverage Area Metering Rate (RMS)

This command only works when automatic coverage is on.

Set and view RMS metering rate and data for all coverage areas (post-gate).

Parameter Name:	CA_METER_RATE
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**rate** is a value from 100 to 99999 representing meter rate in milliseconds. 0 = off Values 1 to 99 are not valid and result in response.

	aaa bbb ccc ddd eee fff ggg hhh: Audio levels take on values 000-060, which represent actual audio levels of −60 to 0 dBFS. Represent coverage areas defined in Channel Number Assignment.
Example(s):	< GET CA_METER_RATE > < SET CA_METER_RATE rate > < REP CA_METER_RATE rate > < REP ERR > < SAMPLE_CA aaa bbb ccc ddd eee fff ggg hhh >

LED Status and Behavior

Control status LED color and behavior with these commands.

Mute LED State

Parameter Name:	DEV_MUTE_STATUS_LED_STATE
Command Types Supported:	GET, REP
Indexing:	n/a
Value(s):	**sts** is current mute LED state that takes on these values: ON = MUTED OFF = UNMUTED
Example(s):	< GET DEV_MUTE_STATUS_LED_STATE > < REP DEV_MUTE_STATUS_LED_STATE sts > < REP ERR >

LED Brightness

Parameter Name:	LED_BRIGHTNESS
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**level** is the desired brightness level and takes on values: 0: Disabled 1: 20% 2: 40% 3: 60%

	4: 80% 5: 100%
Example(s):	< GET LED_BRIGHTNESS > < SET LED_BRIGHTNESS level > < REP LED_BRIGHTNESS level > < REP ERR >

LED Color Unmuted

Parameter Name:	LED_COLOR_UNMUTED
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**color:** RED, ORANGE, GOLD, YELLOW, YELLOWGREEN, GREEN, TURQUOISE, POWDERBLUE, CYAN, SKYBLUE, BLUE, PURPLE, LIGHTPURPLE, VIOLET, ORCHID, PINK, WHITE
Example(s):	< GET LED_COLOR_UNMUTED > < SET LED_COLOR_UNMUTED color > < REP LED_COLOR_UNMUTED color > < REP ERR >

LED Color Muted

Parameter Name:	LED_COLOR_MUTED
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**color:** RED, ORANGE, GOLD, YELLOW, YELLOWGREEN, GREEN, TURQUOISE, POWDERBLUE, CYAN, SKYBLUE, BLUE, PURPLE, LIGHTPURPLE, VIOLET, ORCHID, PINK, WHITE
Example(s):	< GET LED_COLOR_MUTED > < SET LED_COLOR_MUTED color > < REP LED_COLOR_MUTED color > < REP ERR >

LED State Muted

Parameter Name:	LED_STATE_MUTED
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**state**: ON, FLASHING, OFF
Example(s):	< GET LED_STATE_MUTED > < SET LED_STATE_MUTED state > < REP LED_STATE_MUTED state > < REP ERR >

LED State Unmuted

Parameter Name:	LED_STATE_UNMUTED
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**state**: ON, FLASHING, OFF
Example(s):	< GET LED_STATE_UNMUTED > < SET LED_STATE_UNMUTED state > < REP LED_STATE_UNMUTED state > < REP ERR >

Device LED In State

Parameter Name:	DEV_LED_IN_STATE
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**sts** indicates device's LED-In state: 1. OFF = Mute 2. ON = Unmute
Example(s):	< GET DEV_LED_IN_STATE > < SET DEV_LED_IN_STATE sts >

	< REP DEV_LED_IN_STATE sts > < REP ERR >

DSP Commands

Use these commands to adjust DSP settings.

PEQ Filter Enable

Parameter Name:	PEQ
Command Types Supported:	GET, SET, REP
Indexing:	GET **index**: See Channel Number Assignment for product-specific channel assignments. 0 = all channels. REP **index**: 2 digit representation of the index sent in the GET, all the appropriate channels if the **index** = 0. MXA920 **index:** Automatic coverage off: 01–08 (PEQ blocks for Dante outputs) Automatic coverage on or off: 09 (PEQ block on automix output) **filter** is the filter number in the selected PEQ block **index.** 0: all filters.
Value(s):	**sts** is the desired PEQ filter status: ON OFF TOGGLE
Example(s):	< GET index PEQ filter > < SET index PEQ filter sts > < REP index PEQ filter sts > < REP ERR >

Bypass All EQ

This command only works when automatic coverage is off.

Parameter Name:	BYPASS_ALL_EQ
Command Types Supported:	GET, SET, REP
Indexing:	n/a

Value(s):	**sts** takes on values: ON OFF TOGGLE
Example(s):	< GET BYPASS_ALL_EQ > < SET BYPASS_ALL_EQ sts > < REP BYPASS_ALL_EQ sts > < REP ERR >

Bypass IntelliMix

Allows you to disable (bypass) and enable all IntelliMix DSP blocks.

This command only works when automatic coverage is off.

Parameter Name:	BYPASS_IMX
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**sts** takes on values: ON OFF TOGGLE
Example(s):	< GET BYPASS_IMX > < SET BYPASS_IMX sts > < REP BYPASS_IMX sts > < REP ERR >

EQ Contour

Parameter Name:	EQ_CONTOUR
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**sts** takes on values: OFF ON

Example(s):	< GET EQ_CONTOUR > < SET EQ_CONTOUR sts > < REP EQ_CONTOUR sts > < REP ERR >

Coverage Commands

Use these commands when setting up microphone coverage.

Lobe Width

View and set lobe width.

This command only works when automatic coverage is off.

Parameter Name:	BEAM_W
Command Types Supported:	GET, SET, REP
Indexing:	GET **index**: Lobe numbers are defined in Channel Number Assignment. 0 = all channels. REP **index**: Two digit representation of the index sent in the GET, all the appropriate lobes if the **index** = 0.
Value(s):	**width** is beam width and takes on the values: NARROW MEDIUM WIDE
Example(s):	< GET index BEAM_W > < SET index BEAM_W width > < REP index BEAM_W width > < REP ERR >

Array Height

This command works when automatic coverage is on or off.

Parameter Name:	ARRAY_HEIGHT
Command Types Supported:	GET, SET, REP
Indexing:	n/a

Value(s):	**height** is the array height from the floor. It takes on values of 122-914 centimeters (4-30 feet) in 1 centimeter increments.
Example(s):	< GET ARRAY_HEIGHT > < SET ARRAY_HEIGHT height > < REP ARRAY_HEIGHT height > < REP ERR >

Turn On/Off Automatic Coverage

Parameter Name:	AUTO_COVERAGE
Command Types Supported:	GET, SET, REP
Indexing:	n/a
Value(s):	**sts** is the automatic coverage setting: On Off
Example(s):	< GET AUTO_COVERAGE > < SET AUTO_COVERAGE sts > < REP AUTO_COVERAGE sts > < REP ERR >

Commands for Camera Systems

Use these commands when integrating the device with a room's camera system.

Tips for Integrating with Camera Control Systems

Use these tips to get the best results when integrating the MXA920 with a room's camera tracking system.

- **Talk toward the microphone**
  - When possible, ask talkers to speak in the direction of the microphone. The microphone may take longer to send talker positions if they are facing 90 to 180 degrees off-axis from the microphone.
- **Speak up**
  - Ask quieter talkers to speak up. The microphone can take longer to send position information for quieter talkers.
- **Prep the room**
  - Acoustically treated rooms that are less reverberant usually sound better and help improve your microphone signal. In more reverberant rooms, the microphone can take longer to send talker positions or report inaccurate position data.

- **Move closer for single-talker framing**
  - If you need to frame 1 talker at a time with the room's camera, set things up so that the microphone is about 10 feet (3 meters) from the different talker positions. The MXA920 performs well with talkers that are up to 16 feet (4.9 meters) from the microphone, but moving closer helps room cameras with single-talker framing.
  - Position talkers so that they are no more than 90 degrees off-axis from the microphone.

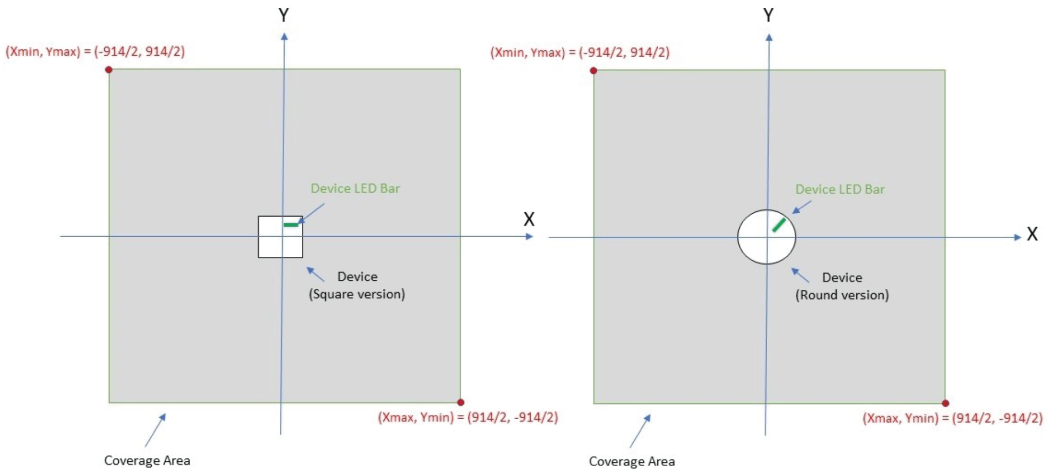
Talker Position

Get active talker positions in a reporting period in the form of X/Y/Z coordinates in centimeters. Control how often talker positions are reported by adjusting reporting period. The reporting period setting is persistent across power cycles.

Talker positions outside of coverage areas or lobes are not reported.

MXA920: Works with automatic coverage on or off

Parameter Name:	TALKER_POSITION_RATE SAMPLE_TALKER_POSITIONS
Command Types Supported:	GET, SET, SAMPLE, and REP
Indexing:	n/a
Value(s):	**TALKER_POSITION_RATE** **rate** represents how frequently talker positions should be reported. If there is no active talker in the reporting period, there is no report. Valid rates are 0: Disable reporting of talker positions (default setting) 100–99999 ms in 1 ms increments If the requested rate is invalid (1–99 or greater than 99999), device reports the current setting. Value in SET command can be 3 to 5 digits Value in REP command is always 5 digits long (00100 = 100 ms) **SAMPLE_TALKER_POSITIONS** **POSITION[1..n]:** consists of **1 to n** sets of talker positions. Each set is in the form of **{LobeID} {CoverageAreaID} {X Y Z}{reserved}**. If there are multiple talker positions in a reporting period, the data are combined and reported with one command. **{LobeID}**: Lobe number where audio is detected: 1-8. Always reported, regardless of automatic coverage setting. **{CoverageAreaID}**: Coverage area number where audio is detected. Automatic coverage on: 1-8 Automatic coverage off: 0 **{X Y Z}:** These are the coordinates where talker audio is detected, relative to the center of the device (in centimeters). **{X Y Z}** are defined as: **X**: Direction parallel to the LED bar (square microphones) or 45 degrees to the LED bar (round microphones).Valid ranges: MXA920: −1524 to +1524 cm (−50 to +50 ft.) **Y**: Direction perpendicular to the x-axis (square microphones) or 45 degrees past LED bar (round microphones). Valid ranges are the same as in **X**.

	Z: The distance down from the device. Valid range: 0 to 914 cm (0 to 30 ft.) in 1 cm increments. **{reserved}:** Set to 0. **Orientation Example** The following diagrams are looking down at the device from above. Example coverage areas are 30x30 ft. (914x914 cm). 
Example(s):	< GET TALKER_POSITION_RATE > < SET TALKER_POSITION_RATE rate > < REP TALKER_POSITION_RATE rate > < SAMPLE TALKER_POSITIONS POSITION[1..n] > < REP ERR > Example of reporting 2 talker positions in a reporting period: Talker 1 is at (X1, Y1, Z1) = (-1524, 321, 914), which is covered by lobe 1 in coverage area 2 Talker 2 is at (X2, Y2, Z2) = (123, -321, 914) which is covered by lobe 2 in coverage area 3 < SAMPLE TALKER_POSITIONS 1 2 -1524 321 914 0 2 3 123 -321 914 0 >

Talker Position Sensitivity

This command controls the sensitivity of the algorithm that reports talker positions. Higher sensitivity means the algorithm is easier to trigger and therefore reports more positions.

Talker positions outside of coverage areas or lobes are not reported.

There are 3 settings that you can adjust with this command:

- Localization sensitivity: Controls the amount of localization data that the mic sends
- VAD (voice activity detection) sensitivity: Controls how sensitive the voice activity detection part of the algorithm is
- Reflection/height correction: Use to improve localization precision. You must provide an array mounting height to use this setting. Use reflection correction in rooms with many highly reflective surfaces.

MXA920: Works with automatic coverage on or off

Parameter Name:	TALKER_POSITION_SENSITIVITY
Command Types Supported:	GET, SET, and REP
Indexing:	n/a
Value(s):	To control localization sensitivity, use these values for **sensitivity**: 0: Medium (Default setting) 1: Low (Less reporting. Use in rooms with lots of background noise.) 2: High (More reporting. Use in reverberant rooms or when you want more location reporting.) To control VAD sensitivity, use these values for **sensitivity**: 4: Medium (Default setting) 5: High (More reporting, but could be triggered by noise sources) 6: Lowest (Least amount of reporting. Could miss speech sources) 7: Low To control reflection/height correction, use these values for **sensitivity**: 8: Reflection correction off, height correction off (default) 9: Reflection correction off, height correction on* 11: Reflection correction on, height correction on* *You must also provide an array mounting height.
Example(s):	< GET TALKER_POSITION_SENSITIVITY > < SET TALKER_POSITION_SENSITIVITY sensitivity > < REP TALKER_POSITION_SENSITIVITY sensitivity > < REP ERR > Set the localization sensitivity to high: < SET TALKER_POSITION_SENSITIVITY 2 > < REP TALKER_POSITION_SENSITIVITY 2 > Set the VAD sensitivity to the lowest setting: < SET TALKER_POSITION_SENSITIVITY 6 > < REP TALKER_POSITION_SENSITIVITY 6 > Set reflection correction and height correction to on: < SET TALKER_POSITION_SENSITIVITY 11 > < REP TALKER_POSITION_SENSITIVITY 11 >

Automixer Gate Out Status for Coverage Areas

This command only works when automatic coverage is on.

Parameter Name:	AUTOMIX_GATE_OUT_CA
Command Types Supported:	GET, REP
Indexing:	GET **index**: Coverage area defined in Channel Number Assignment. 0 = all coverage areas. REP **index**: Two-digit representation of the index sent in the GET.
Value(s):	**sts** is the current gate out signal for the coverage area: 1. On 2. Off
Example(s):	< GET index AUTOMIX_GATE_OUT_CA > < REP index AUTOMIX_GATE_OUT_CA sts > < REP ERR >

Automixer Gate Out Status for Lobes

Parameter Name:	AUTOMIX_GATE_OUT_EXT_SIG
Command Types Supported:	GET, REP
Indexing:	GET **index**: Dante mic input defined in Channel Number Assignment. 0 = all channels. REP **index**: Two digit representation of the index sent in the GET, all the appropriate channels if the **index** = 0.
Value(s):	**sts** is current gate out signal for the channel: ON OFF
Example(s):	< GET index AUTOMIX_GATE_OUT_EXT_SIG > < REP index AUTOMIX_GATE_OUT_EXT_SIG sts > < REP ERR >

X-Axis Lobe Steering

View and set x-axis lobe position. X-axis is parallel to the LED bar.

Only works with automatic coverage off.

Parameter Name:	BEAM_X

Command Types Supported:	GET, SET, REP
Indexing:	GET **index**: Lobe numbers are defined in Channel Number Assignment. 0 = all channels. REP **index**: Two digit representation of the index sent in the GET, all the appropriate lobes if the **index** = 0.
Value(s):	**position** is the value for the x coordinate. **position** is in the form of XXXX in **REP** command. X-axis = The direction parallel to the LED bar XXXX takes on values 0 to 3048 centimeters (0 to 100 feet) in 1 cm increment. This represents actual range of −1524 to +1524 centimeters (−50.0 to +50.0 ft.), after subtracting offset of 1524 cm (50.0 ft.) from **position**. .
Example(s):	< GET index BEAM_X > < SET index BEAM_X position > < REP index BEAM_X position > < REP ERR >

Y-Axis Lobe Steering

View and set y-axis lobe position. Y-axis is perpendicular to the x-axis.

Only works with automatic coverage off.

Parameter Name:	BEAM_Y
Command Types Supported:	GET, SET, REP
Indexing:	GET **index**: Lobe numbers are defined in Channel Number Assignment. 0 = all channels. REP **index**: Two digit representation of the index sent in the GET, all the appropriate lobes if the **index** = 0.
Value(s):	**position** is the value for the y coordinate. **position** is in the form of XXXX in **REP** command. Y-axis = The direction perpendicular to the x-axis XXXX takes on values 0 to 3048 centimeters (0 to 100 feet) in 1 cm increment. This represents actual range of −1524 to +1524 centimeters (−50.0 to +50.0 ft.), after subtracting offset of 1524 cm (50.0 ft.) from **position**. .
Example(s):	< GET index BEAM_Y > < SET index BEAM_Y position > < REP index BEAM_Y position >

	< REP ERR >

Z-Axis Lobe Steering

View and set z-axis lobe position. Z-axis is the height of the array microphone.

Only works with automatic coverage off.

Parameter Name:	BEAM_Z
Command Types Supported:	GET, SET, REP
Indexing:	GET **index**: Lobe numbers are defined in Channel Number Assignment. 0 = all channels. REP **index**: Two digit representation of the index sent in the GET, all the appropriate lobes if the **index** = 0.
Value(s):	**height** is the distance down from the array and takes on values 0-914 representing distance in centimeters (0-30 feet). **height** is in the form of xxxx in **REP** command.
Example(s):	< GET index BEAM_Z > < SET index BEAM_Z height > < REP index BEAM_Z height > < REP ERR >

Turn Autofocus On or Off

Parameter Name:	AUTOFOCUS
Command Types Supported:	SET, GET, REP
Indexing:	N/A
Value(s):	**status** is the current state of autofocus: ON OFF
Example(s):	< GET AUTOFOCUS > < REP AUTOFOCUS status > < SET AUTOFOCUS status > < REP AUTOFOCUS status > < REP ERR >

Get Lobe's Autofocus Position (X-Axis)

Parameter Name:	BEAM_X_AF

Command Types Supported:	GET, REP
Indexing:	GET **index**: Lobe numbers are defined in Channel Number Assignment. 0 = all channels. REP **index**: Two digit representation of the index sent in the GET, all the appropriate lobes if the **index** = 0.
Value(s):	**position** is the value for the x coordinate. **position** is in the form of XXXX in **REP** command. X-axis = The direction parallel to the LED bar XXXX takes on values 0 to 3048 centimeters (0 to 100 feet) in 1 cm increment. This represents actual range of −1524 to +1524 centimeters (−50.0 to +50.0 ft.), after subtracting offset of 1524 cm (50.0 ft.) from **position**. .
Example(s):	< GET index BEAM_X_AF > < REP index BEAM_X_AF position > < REP ERR >

Get Lobe's Autofocus Position (Y-Axis)

Parameter Name:	BEAM_Y_AF
Command Types Supported:	GET, REP
Indexing:	GET **index**: Lobe numbers are defined in Channel Number Assignment. 0 = all channels. REP **index**: Two digit representation of the index sent in the GET, all the appropriate lobes if the **index** = 0.
Value(s):	**position** is the value for the y coordinate. **position** is in the form of XXXX in **REP** command. Y-axis = The direction perpendicular to the x-axis XXXX takes on values 0 to 3048 centimeters (0 to 100 feet) in 1 cm increment. This represents actual range of −1524 to +1524 centimeters (−50.0 to +50.0 ft.), after subtracting offset of 1524 cm (50.0 ft.) from **position**. .
Example(s):	< GET index BEAM_Y_AF > < REP index BEAM_Y_AF position > < REP ERR >

Get Lobe's Autofocus Height (Z-Axis)

Parameter Name:	BEAM_Z_AF

Command Types Supported:	GET, REP
Indexing:	GET **index**: Lobe numbers are defined in Channel Number Assignment. 0 = all channels. REP **index**: Two digit representation of the index sent in the GET, all the appropriate lobes if the **index** = 0.
Value(s):	**height** is the distance down from the array and takes on values of 0-914 centimeters in 1 cm increment (0-30 feet).
Example(s):	< GET index BEAM_Z_AF > < REP index BEAM_Z_AF height > < REP ERR >

Dynamic Coverage Area Position

This command only works when automatic coverage is on.

View and change a dynamic coverage area's position.

Parameter Name:	CA_DYNAMIC
Command Types Supported:	GET, SET, REP
Indexing:	GET **index**: Coverage area defined in Channel Number Assignment. 0 = all coverage areas. REP **index**: Two-digit representation of the index sent in the GET.
Value(s):	Rules about dynamic coverage areas: Valid size is 183x183 to 1524x1524 centimeters (6x6 to 50x50 feet) Center of a coverage area cannot be more than 762 centimeters (25 feet) from device center. Maximum number of coverage areas: 8 Coverage areas cannot overlap **position** is relative to device center. **position** is specified using coordinates for upper left and lower right corners of a coverage area in this sequence: Xmin Ymax Xmax Ymin X-axis is the direction parallel to the LED bar (square microphones) or 45 degrees to the LED bar (round microphones) Y-axis is the direction perpendicular to the x-axis (square microphones) or 45 degrees past the LED bar (round microphones) Coordinates are in centimeters Coordinates are separated by one space Coordinates in SET command can be 3 or 4 digits long Coordinates in REP command are always 4 digits (Example: 100 is represented by 0100) Valid X and Y values are from 0 to 3048, representing actual range of −1524 to +1524 cm in 1 cm increments (−50 to +50 ft.) To specify a coordinate, shift up the desired coordinates by 1524 cm (50 ft.)

	To interpret a coordinate, shift down the reported value by 1524 cm (50 ft.) For example: A dynamic coverage area centered around the device with a size of 914x914 cm (30x30 ft.) has these coordinates for position (after shifting coordinates by 1524): Xmin: −914/2+1524 = 1067 (X, upper left corner) Ymax: +914/2+1524 = 1981 (Y, upper left corner) Xmax: +914/2+1524 = 1981 (X, lower right corner) Ymin: −914/2+1524 = 1067 (Y, lower right corner)
Example(s):	< GET index CA_DYNAMIC > < SET index CA_DYNAMIC position > < REP index CA_DYNAMIC position > < REP ERR > Example of reporting coverage area 1 at (−457, +457, +457, −457): < REP 01 CA_DYNAMIC 1067 1981 1981 1067 >

Dedicated Coverage Area Position

This command only works when automatic coverage is on.

View and change a dedicated coverage area's position.

Parameter Name:	CA_DEDICATED
Command Types Supported:	GET, SET, REP
Indexing:	GET **index**: Coverage area defined in Channel Number Assignment. 0 = all coverage areas. REP **index**: Two-digit representation of the index sent in the GET.
Value(s):	Rules about dedicated coverage areas: Size is fixed at 183x183 centimeters (6x6 feet) Center of a coverage area cannot be more than 762 centimeters (25 feet) from device center. Maximum number of coverage areas: 8 Coverage areas cannot overlap **position** is relative to device center. **position** is specified using coordinates for upper left and lower right corners of a coverage area in this sequence: Xmin Ymax Xmax Ymin X-axis is the direction parallel to the LED bar (square microphones) or 45 degrees to the LED bar (round microphones) Y-axis is the direction perpendicular to the x-axis (square microphones) or 45 degrees past the LED bar (round microphones) Coordinates are in centimeters Coordinates are separated by one space Coordinates in SET command can be 2 to 4 digits long Coordinates in REP command are always 4 digits (Example: 100 is represented by 0100)

	Valid X and Y values are from 0 to 2377, representing actual range of −853 to +853 cm in 1 cm increments (−28 to +28 ft.) To specify a coordinate, shift up the desired coordinates by 1524 cm (50 ft.) To interpret a coordinate, shift down the reported value by 1524 cm (50 ft.) For example: A dedicated coverage area centered around the device with a size of 183x183 cm (6x6 ft.) has these coordinates for position (after shifting coordinates by 1524): Xmin: −183/2+1524 = 1433 (X, upper left corner) Ymax: +183/2+1524 = 1616 (Y, upper left corner) Xmax: +183/2+1524 = 1616 (X, lower right corner) Ymin: −183/2+1524 = 1433 (Y, lower right corner)
Example(s):	< GET index CA_DEDICATED > < SET index CA_DEDICATED position > < REP index CA_DEDICATED position > < REP ERR > Example of reporting coverage area 1 at (−0092, +0092, +0092, −0092): < REP 01 CA_DEDICATED 1432 1616 1616 1432 >