

MRX SLM IP Control Specification

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IP Control Protocol

To communicate with the system via the network, the following conditions must be met:

1. The unit must first be powered on. If 'IP control in standby' is enabled in the setup menu, it will enable IP Control as soon as possible after AC power is connected.
2. The unit's IP address must be known. This can be achieved through the device discovery process described below or by setting a static IP address through the unit's configuration interface.
3. A TCP/IP connection to the unit must be established on the defined port (default: 14999) through the unit's configuration interface.

WebSocket

You may also communicate with the unit through a WebSocket running on port 8080. The WebSocket operates in the same way as the TCP socket.

Important: If the system has exceeded the maximum number of simultaneous connections, it will forcibly close the oldest connection.

Device Discovery Protocol

The Anthem Device Discovery Protocol broadcasts and listens to specifically formatted data packets on the device's local subnet.

The DDP packet format is as follows:

offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	80 'P'	65 'A'	82 'R'	67 'C'	0	0	announce	powering_ off	version			tcp_ip_port				
16	device_name [0-15]															
32	code_name [0-15]															
48	serial_number [0-15]															

Device Discovery Packet Version 1

offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	80 'p'	65 'A'	82 'R'	67 'C'	0	0	announce	powering _off	version			tcp_ip_port				
16	device_name [0-15]															
32	code_name [0-15]															
48	serial_number [0-15]															
64	serial_number [16-31]															
80	device_name [16-31]															
96	device_name [32-47]															
112	device_name [48-63]															
128	Extended Metadata [0-128]															
144																
160																
176																
192																
208																
224																
240																

Device Discovery Packet Version 2

Field Descriptions:

- **announce:** If this bit is set, any Anthem product receiving the packet will broadcast a packet with the appropriate parameters set.
- **powering_off:** When an Anthem product is shutting down and losing a network connection, this byte will be set to 1.
- **version:** DDP Packet Version
- **tcp_ip_port:** The port on which the system will listen for incoming TCP connections
- **device_name:** Device name as defined by the user in the setup menu
- **model_name:** Model name - should be the same as what is returned when the device receives an IDM? query.
- **serial_number:** MAC Address of the device
- **Extended Metadata:** 128 bytes of product-specific metadata that can signal the device's current status. For example, this section could include "Z1POW1;Z2POW0;Z1VOL-35;" to indicate that the main zone is on, set to volume -35, and the system volume is set to -35.

The MRX SLM will broadcast a packet with the appropriate parameters set every time the unit establishes a network connection and when it shuts down and loses a connection (in this case, the powering off byte will be set to 1).

The unit will also broadcast a packet when it receives a formatted “announce” packet (with the announce byte set to 1).

Unused bits and bytes are filled with 0's.

Important: device_name, model_name and serial_number are not necessarily null-terminated C-Style strings. Code using these strings should not assume that the last byte is null.

Samples

Microsoft VC++ structure definition

```
#pragma pack(push,1)

struct device_descriptor_t
{
    __int8    unique_header[0x4];
    __int8    reserved1_rw0;
    __int8    reserved2_rw0;
    __int8    announce;
    __int8    powering_off;
    __int32    version;
    __int32    tcp_ip_port;
    __int8    device_name[0x10];
    __int8    model_name[0x10];
    __int8    serial_number[0x10];

    void hton() {
        version = htonl(version);
        tcp_ip_port = htonl(tcp_ip_port);
    }

    void ntoh() {
        version = ntohl(version);
        tcp_ip_port = ntohl(tcp_ip_port);
    }
};
#pragma pack(pop)
```

GCC structure definition

```
struct device_descriptor_t
{
    int8_t    unique_header[0x4];
    int8_t    reserved1_rw0;
    int8_t    reserved2_rw0;
    int8_t    announce;
    int8_t    powering_off;
    int32_t    version;
    int32_t    tcp_ip_port;
    int8_t    device_name[0x10];
    int8_t    model_name[0x10];
    int8_t    serial_number[0x10];

    void hton() {
        version = htonl(version);
        tcp_ip_port = htonl(tcp_ip_port);
    }

    void ntoh() {
        version = ntohl(version);
        tcp_ip_port = ntohl(tcp_ip_port);
    }
} __attribute__((packed));
```

Control Commands

General Notes

- You must use a semicolon as the command separator/terminator as it is the only valid line feed
- Query responses will terminate in a semicolon
- Successful commands return a semicolon ";" after the action is completed.
In order to receive immediate feedback for the action you've performed, append the query command for that same action to the end of your command. I.e.
"Z1VOL-28;Z1VOL?;"
 - This behaviour has changed from the MRX x40 API
- When a recognized command cannot be executed, "!E<OriginalCommand>" is returned.
 - This behaviour has changed from the MRX x40 API
- Invalid commands return the message "!I<OriginalCommand>". Ex 'HELLO;' would result in a response 'IIHELLO;'
- Only a few commands are valid when the system is in standby: all queries and 'ZxPOWy', ZxINPy, ZxVOL, ZxPVOL. All other commands are considered 'Invalid' or not officially supported.
 - This behaviour has changed from the MRX x40 API
- Average command processing latency is 20ms
- All queryable settings that can change are reported asynchronously to all active connections whenever a change occurs.
- Multiple commands can be executed simultaneously by combining them into a single message.
 - i.e.:
Z1POW?;Z1INP?;PLAYAPRV?;PLAYANXT?;PLAYAPP?;PLAYASRM?;PLAYDUR?;PLAYTITL?;PLAYALB?;PLAYCOVR?;PLAYMODE?;PLAYTIME?;

Sample Command String

To send a power-on command, send "Z1POW1;" using the semicolon ";" command separator/terminator.

- Upper case letters represent a command, and the lower case represents variables which must be entered.

Character Encoding

Textual data will be transferred using hex-encode UTF-8, an extension of ASCII.

Example: set an input name (ISilNyxxx).

Each ASCII letter is sent as two hex (0-9, A-F) characters. Non-English letters are sent as four characters (2 bytes) or six characters (3 bytes). Note padding to 16 bytes.

Spacing between letters has been added for clarity.

Television: IS1IN 54 65 6C 65 76 69 73 69 6F 6E 20 20 20 20 20 20;

Télévision: IS1IN 54 C3A9 6C C3A9 76 69 73 69 6F 6E 20 20 20 20 20 20;

电视: IS1IN E794B5 E8A786 20 20 20 20 20 20 20 20 20 20 20 20;

System Information

Base System

IDQ?

Description: Query model and firmware version

Query Response: returns IDQ followed by model, software version, region, and software build date, e.g. "IDQMRX SLM US 0.9.0"

Notes: This command or its functionality differs from the MRX x40 API

IDM?

Description: Query model

Query Response: returns IDM followed by model, e.g. "IDMMRX SLM"

Notes: This command or its functionality differs from the MRX x40 API

IDS?

Description: Query software version

Query Response: returns IDS followed by software version, e.g. "IDS0.9.0"

Notes: This command or its functionality differs from the MRX x40 API

GSN?

Description: Query serial number

Query Response: returns device serial number

IDR?

Description: Query region

Query Response: returns IDR followed by region, e.g. "IDRUS" or "IDREU" or "IDRCN"

IDB?

Description: Query software build date

Query Response: returns IDB followed by software build date, e.g.

"IDB20230308153459"

Notes: This command or its functionality differs from the MRX x40 API

IDH?

Description: Query hardware version

Query Response: returns IDH followed by hardware version, e.g. "IDHD"

Notes: This command or its functionality differs from the MRX x40 API

Network Module

IDHOST?

Description: Query Host Firmware Version

Query Response: returns IDHOST followed by the Host Firmware Version, e.g. "IDHOST1.5.1"

Notes: This command or its functionality differs from the MRX x40 API

IDHDMI?

Description: Query HDMI Firmware Version

Query Response: returns IDHDMI followed by the HDMI Firmware Version, e.g. "IDHDMI0.0.6"

Notes: This command or its functionality differs from the MRX x40 API

WMAC?

Description: Query Wi-Fi MAC Address

Query Response: returns Wi-Fi MAC Address, e.g. "01.23.45.67.89.AB"

EMAC?

Description: Query Ethernet MAC Address

Query Response: returns Ethernet MAC Address, e.g. "01.23.45.67.89.AB"

NMST?

Description: Query Network Status

Query Response: returns Network Status, e.g. 192.168.1.54 or 'Up' or 'Down' or 'Connecting'. Up to 32 characters

System Status

PSUT?

Description: Query Power Supply temperature

Query Response: returns Power Supply temperature

HDMIT?

Description: Query HDMI Processor temperature

Query Response: returns HDMI Processor temperature

Z1VIR?

Description: Query Video Input Resolution

Query Response: returns Z1VIRxx

Possible Values (xx): 0 - No Input

- 1 - Other
- 2 - 1080p60
- 3 - 1080p50
- 4 - 1080p24
- 5 - 1080i60
- 6 - 1080i50
- 7 - 720p60
- 8 - 720p50
- 9 - 576p50
- 10 - 576i50
- 11 - 480p60
- 12 - 480i60
- 13 - 3D
- 14 - 4k60
- 15 - 4k50
- 16 - 4k30
- 17 - 4k25
- 18 - 4k24
- 19 - 4k48

Notes: The system will report changes to this value to all connected clients.

Z1AIC?

Description: Query Audio Input Channels

Query Response: returns Z1AICx

Possible Values (x): 0 - No Input

- 1 - Other
- 2 - Mono (Center channel only)
- 3 - 2-Channel
- 4 - 5.1-Channel
- 5 - 7.1 Channel
- 6 - Dolby Atmos®
- 7 - DTS:X

Notes: The system will report changes to this value to all connected clients.

Z1AIF?

Description: Query Audio Input Format

Query Response: returns Z1AIFx

Possible Values (x): 0 - No Input

- 1 - Analog
- 2 - PCM
- 3 - Dolby
- 4 - DSD
- 5 - DTS
- 6 - Dolby Atmos®
- 7 - DTS:X

Notes: The system will report changes to this value to all connected clients.

Z1BRT?

Description: Query Audio Input Bit Rate (kbps)

Query Response: returns Z1BRTxxxx

Possible Values (xxxx): 0 - Analog

For Analog/PCM inputs, this equals the sample rate multiplied by the bit depth and the number of channels.

Notes: The system will report changes to this value to all connected clients.

Z1SRT?

Description: Query Audio Input Sampling Rate (kHz)

Query Response: returns Z1SRTxxxx

Possible Values (xxxx): 0 - Analog Direct
Current Sampling Rate

Notes: The system will report changes to this value to all connected clients.

Z1BDP?

Description: Query Audio Bit Depth

Query Response: returns Z1BDPx

Possible Values (x): 0 - 16-bit

1 - 24-bit

2 - 32-bit

3 - Unknown

Notes: The system will report changes to this value to all connected clients.

This command's return values differ from the MRX x40 API

Z1AIN?

Description: Query Audio Input Format Name

Query Response: returns Z1AINx

Example: Current audio input format is DTS Master Audio. 'Z1AIN?'

Returns 'Z1AINDTS Master Audio'

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

Z1AIR?

Description: Query Audio Input Bit Rate Name

Query Response: Returns Z1AIRx.

For lossy input formats, returns the bit rate (ex 'Z1AIR384 kbps').

It returns the sample rate combined with bit depth (ex: 'Z1AIR48/16') for lossless audio, analog audio, or PCM audio inputs.

Example: Current audio input bit rate is 384 kbps. 'Z1AIR?' Returns 'Z1AIR384 kbps'

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

System Set-Up

Speaker Set-Up - Amp Matrixing

SSAMSy

Description: Set Surround Matrixing Mode

Possible Values (y): 0 - Surround

- 1 - Front (Bi-Amp)
- 2 - Front In-Ceiling
- 3 - Front Dolby
- 4 - Front On-Wall
- 5 - Middle In-Ceiling
- 6 - Back In-Ceiling
- 7 - Back On-Wall

Query Response: When queried with SSAMSy? returns SSAMSy

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

Profile Set-Up - Speaker Set-Up

SSSPp0yyyy

Description: Set Speaker Profile Name

Possible Values (p): Speaker Profile number 1-4

Possible Values (yyyy): Hex-encoded UTF-8 string, up to 64 bytes.

Query Response: When queried with SSSPp0? returns SSSPp0y

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

SSSPp1y

Description: Enable or Disable Subwoofer

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 - Off
1 - On

Query Response: When queried with SSSPp1? returns SSSPp1y

Notes: The system will report changes to this value to all connected clients.

SSSPp5?

Description: Query Front Speaker

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 1 - On

Query Response: This value is read-only. When queried with SSSPp5? returns SSSPp5y

Notes: The system will report changes to this value to all connected clients.

SSSPp7y

Description: Enable or Disable Center Speaker

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 - Off
1 - On

Query Response: When queried with SSSPp7? returns SSSPp7y

Notes: The system will report changes to this value to all connected clients.

SSSPp8y

Description: Enable or Disable Surround Speakers

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 - Off
1 - On

Query Response: When queried with SSSPp8? returns SSSPp8y

Notes: The system will report changes to this value to all connected clients.

SSSPpAy

Description: Enable or Disable Height Speakers

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 - Off
1 - On

Query Response: When queried with SSSPpA? returns SSSPpAy

Notes: The system will report changes to this value to all connected clients.

Profile Set-Up - Bass Management

BMSPp0y

Description: Set LFE Low Pass Filter Frequency

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 40 to 120 Hz in steps of 10
130 for Bypass

Query Response: When queried with BMSPp0? returns BMSPp0y

Notes: The system will report changes to this value to all connected clients.

BMSPp10y

Description: Set Subwoofer Phase Frequency

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 40 to 120 Hz

Query Response: When queried with BMSPp10? returns BMSPp10y

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

BMSPp11y

Description: Set Subwoofer Phase

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 to 120 degrees in steps of 1

Query Response: When queried with BMSPp11? returns BMSPp11y

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

BMSPp12y

Description: Set Subwoofer Polarity

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 - Normal
1 - Inverted

Query Response: When queried with BMSPp12? returns BMSPp12y

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

BMSPp5y

Description: Set Front Crossover Frequency

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 40 to 250 Hz in steps of 10 Hz
30 for Off

Query Response: When queried with BMSPp5? returns BMSPp5y

Notes: The system will report changes to this value to all connected clients.

BMSPp7y

Description: Set Center Crossover Frequency

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 40 to 250 Hz in steps of 10 Hz
30 for Off

Query Response: When queried with BMSPp7? returns BMSPp7y

Notes: The system will report changes to this value to all connected clients.

BMSPp8y

Description: Set Surround Crossover Frequency

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 40 to 250 Hz in steps of 10 Hz
30 for Off

Query Response: When queried with BMSPp8? returns BMSPp8y

Notes: The system will report changes to this value to all connected clients.

BMSPpAy

Description: Set Height Crossover Frequency

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 40 to 250 Hz in steps of 10 Hz
30 for Off

Query Response: When queried with BMSPpA? returns BMSPpAy

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

Profile Set-Up - Listener Position

LPSPp1y

Description: Set Subwoofer Distance

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 to 180

Feet: 0'0" to 30'0", step 2" - 30' = 180

Metric: 0 to 900 cm, step 5 cm - 900 cm = 180

Query Response: When queried with LPSPp1? returns LPSPp1y

Notes: The system will report changes to this value to all connected clients.

LPSPp5y

Description: Set Front Left Distance

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 to 180

Feet: 0'0" to 30'0", step 2" - 30' = 180

Metric: 0 to 900 cm, step 5 cm - 900 cm = 180

Query Response: When queried with LPSPp5? returns LPSPp5y

Notes: The system will report changes to this value to all connected clients.

LPSPp6y

Description: Set Front Right Distance

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 to 180

Feet: 0'0" to 30'0", step 2" - 30' = 180

Metric: 0 to 900 cm, step 5 cm - 900 cm = 180

Query Response: When queried with LPSPp6? returns LPSPp6y

Notes: The system will report changes to this value to all connected clients.

LPSPp9y

Description: Set Center Distance

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 to 180

Feet: 0'0" to 30'0", step 2" - 30' = 180

Metric: 0 to 900 cm, step 5 cm - 900 cm = 180

Query Response: When queried with LPSPp9? returns LPSPp9y

Notes: The system will report changes to this value to all connected clients.

LPSPpAy

Description: Set Surround Left Distance

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 to 180

Feet: 0'0" to 30'0", step 2" - 30' = 180

Metric: 0 to 900 cm, step 5 cm - 900 cm = 180

Query Response: When queried with LPSPpA? returns LPSPpAy

Notes: The system will report changes to this value to all connected clients.

LPSPpBy

Description: Set Surround Right Distance

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 to 180

Feet: 0'0" to 30'0", step 2" - 30' = 180

Metric: 0 to 900 cm, step 5 cm - 900 cm = 180

Query Response: When queried with LPSPpB? returns LPSPpBy

Notes: The system will report changes to this value to all connected clients.

LPSPpEy

Description: Set Height Left Distance

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 to 180

Feet: 0'0" to 30'0", step 2" - 30' = 180

Metric: 0 to 900 cm, step 5 cm - 900 cm = 180

Query Response: When queried with LPSPpE? returns LPSPpEy

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

LPSPpFy

Description: Set Height Right Distance

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 0 to 180

Feet: 0'0" to 30'0", step 2" - 30' = 180

Metric: 0 to 900 cm, step 5 cm - 900 cm = 180

Query Response: When queried with LPSPpF? returns LPSPpFy

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

Profile Set-Up - Level Calibration

LCSPp0y

Description: Set Calibration Level

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): -15 to +15 dB in steps of 0.5 dB

Query Response: When queried with LCSPp0? returns LCSPp0y

Notes: The system will report changes to this value to all connected clients.

LCSPp1y

Description: Set Subwoofer Level

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): -12 to +12 dB in steps of 0.5 dB

Query Response: When queried with LCSPp1? returns LCSPp1y

Notes: The system will report changes to this value to all connected clients.

LCSPp5y

Description: Set Front Left Level

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): -12 to +12 dB in steps of 0.5 dB

Query Response: When queried with LCSPp5? returns LCSPp5y

Notes: The system will report changes to this value to all connected clients.

LCSPp6y

Description: Set Front Right Level

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): -12 to +12 dB in steps of 0.5 dB

Query Response: When queried with LCSPp6? returns LCSPp6y

Notes: The system will report changes to this value to all connected clients.

LCSPp9y

Description: Set Center Level

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): -12 to +12 dB in steps of 0.5 dB

Query Response: When queried with LCSPp9? returns LCSPp9y

Notes: The system will report changes to this value to all connected clients.

LCSPpAy

Description: Set Surround Left Level

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): -12 to +12 dB in steps of 0.5 dB

Query Response: When queried with LCSPpA? returns LCSPpAy

Notes: The system will report changes to this value to all connected clients.

LCSPpBy

Description: Set Surround Right Level

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): -12 to +12 dB in steps of 0.5 dB

Query Response: When queried with LCSPpB? returns LCSPpBy

Notes: The system will report changes to this value to all connected clients.

LCSPpEy

Description: Set Height Left Level

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): -12 to +12 dB in steps of 0.5 dB

Query Response: When queried with LCSPpE? returns LCSPpEy

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

LCSPpFy

Description: Set Height Right Level

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): -12 to +12 dB in steps of 0.5 dB

Query Response: When queried with LCSPpF? returns LCSPpFy

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

LCSPpKy

Description: Set Test Tone

Possible Values (p): Speaker Profile number 1-4

Possible Values (y): 00000000 - Off

00000001 - Subwoofer

00000010 - Front Left

00000020 - Front Right

00000100 - Center

00000200 - Surround Left

00000400 - Surround Right

00002000 - Height Left

00004000 - Height Right

Query Response: When queried with LCSPpK? returns LCSPpKy

Notes: Only one profile can have Test Noise active at a time.

The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

Input Set-Up

ICN?

Description: Query number of active input configurations

Query Response: returns ICNnn

Example: "ICN9" is returned for a system with 9 active inputs

Notes: The system supports 30 input configurations.

The system will report changes to this value to all connected clients.

IIAi

Description: Insert input number

Possible Values (i): Input Number 1-30

Notes: Shifts all higher numbered inputs down. Default values are assigned.

IDAi

Description: Delete input number

Possible Values (i): Input Number 1-30

Notes: Shifts all higher numbered inputs up.

ISiINyyyy

Description: Set Input Name

Possible Values (i): Input Number 1-30

Possible Values (y): Input Name Hex-encoded UTF-8 string, up to 64 bytes

Query Response: When queried with ISiIN? returns ISiINyyyy

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

ISiVIDx

Description: Set Video Input

Possible Values (i): Input Number 1-30

Possible Values (x): 0 - None
1 - HDMI

Query Response: When queried with ISiVID? returns ISiVIDx

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

ISiAIJx

Description: Set Audio Input

Possible Values (i): Input Number 1-30

Possible Values (x): 0 - None

1 - HDMI

2 - HDMI eARC

3 - Digital Optical

4 - Analog

5 - Streaming

6 - Bluetooth

Query Response: When queried with ISiAIJ? returns ISiAIJx

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

ISiSPp

Description: Set Speaker Profile for Input

Possible Values (i): Input Number 1-30

Possible Values (p): Speaker Profile number 0-3

0 - Profile 1

...

3 - Profile 4

Query Response: When queried with ISiSP? returns ISiSPp

Notes: The system will report changes to this value to all connected clients.

ISiARCx

Description: Enable/Disable Anthem Room Correction for an Input

Possible Values (i): Input Number 1-30

Possible Values (x): 0 - Off

1 - On

Query Response: When queried with ISiARC? returns ISiARCx

Application Note: This value must not be set to 1 if the value of [Z1ARCVAL?](#) is 0.

Notes: The system will report changes to this value to all connected clients.

ISiDVx

Description: Set Dolby Audio Post-Processing mode

Possible Values (i): Input Number 1-30

Possible Values (x): 0 - Off

1 - Movie

2 - Music

3 - Night

Query Response: When queried with ISiDV? returns ISiDVx

Notes: The system will report changes to this value to all connected clients.

ISiDSVx

Description: Set Dolby Speaker Virtualization mode

Possible Values (i): Input Number 1-30

Possible Values (x): 0 - Off

1 - On

Query Response: When queried with ISiDSV? returns ISiDSVx

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

ISiDDRCx

Description: Set Dolby / DTS Dynamic Range Control mode

Possible Values (i): Input Number 1-30

Possible Values (x): 0 - Off

1 - On

2 - Auto

Query Response: When queried with ISiDDRC? returns ISiDDRCx

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

The functionality of this command has been changed to include DTS

ISiPSx

Description: Set Audio Mode Preset

Possible Values (i): Input Number 1-30

Possible Values (x): -1 - Last Used

0 - None

1 - Automatic

2 - AnthemLogic-Cinema

3 - AnthemLogic-Music

4 - Dolby Surround

5 - DTS Neural:X ***CHANGED***

6 - *Unused on the MRX SLM*

7 - All Channel Stereo

8 - Mono

9 - All Channel Mono

Query Response: When queried with ISiPS? returns ISiPSx

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

This command's parameters have changed from previous versions of this document - values have shifted up due to the addition of Automatic.

ISiLSxxx

Description: Set Lip Sync Delay

Possible Values (i): Input Number 1-30

Possible Values (xxx): 0-150 ms in steps of 5 ms

Query Response: When queried with ISiLS? returns ISiLSx

Notes: The system will report changes to this value to all connected clients.

ISiITx

Description: Set Input Trim

Possible Values (i): Input Number 1-30

Possible Values (x): -12 to +12 dB in steps of 0.5 dB

Query Response: When queried with ISiIT? returns ISiITx

Notes: The system will report changes to this value to all connected clients.

General Configuration - Preferences

GCLx

Description: Set Language

Possible Values (x): 0 - English
1 - Chinese
2 - German
3 - Spanish
4 - French
5 - Italian

Query Response: When queried with GCL? returns GCLx

Notes: The system will report changes to this value to all connected clients.

GCBUX

Description: Set Beta Updates

Possible Values (x): 0 - No
1 - Yes

Query Response: When queried with GCBU? returns GCBUX

Notes: The system will report changes to this value to all connected clients.

GCDUX

Description: Set Distance Units

Possible Values (x): 0 - Feet
1 - Centimetres

Query Response: When queried with GCDU? returns GCDUX

Notes: The system will report changes to this value to all connected clients.

GCMVSx

Description: Set Master Volume Scale

Possible Values (x): 0 - percentage
1 - dB

Query Response: When queried with GCMVS? returns GCMVSx

Notes: The system will report changes to this value to all connected clients.

GCMMVx

Description: Set Main Maximum Volume

Possible Values (x): -40 to +10 dB, steps of 0.5 dB

Query Response: When queried with GCMMV? returns GCMMVx

Notes: The system will report changes to this value to all connected clients.

GCMPOVx

Description: Set Main Power-On Volume

Possible Values (x): 0 - Last Used

1 - -90 dB

Any other value up to GCMMV? in steps of 0.5 dB

Query Response: When queried with GCMPOV? returns GCMPOVx

Notes: The system will report changes to this value to all connected clients.

GCMPOIx

Description: Set Main Power-On Input

Possible Values (x): 0 - Last Used

Any value between 1-30 set up as a valid input

Query Response: When queried with GCMPOI? returns GCMPOIx

Notes: The system will report changes to this value to all connected clients.

GCNSPOx

Description: Set No Signal Power Off

Possible Values (x): 0 - 5 Minutes

1 - 10 Minutes

2 - 20 Minutes

3 - 1 Hour

4 - 2 Hours

5 - 6 Hours

7 - Never

Query Response: When queried with GCNSPO? returns GCNSPOx

Notes: The system will report changes to this value to all connected clients.

GCSHDMIBx

Description: Set Standby HDMI Bypass

Possible Values (x): 0 - Off
1 - HDMI

Query Response: When queried with GCSHDMIB? returns GCSHDMIBx

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

GCCECCx

Description: Set CEC Control

Possible Values (x): 0 - Off
1 - On

Query Response: When queried with GCCECC? returns GCCECCx

Notes: The system will report changes to this value to all connected clients.

GCCPFCx

Description: Set CEC Power-Off Control

Possible Values (x): 0 - Off
1 - On

Query Response: When queried with GCCECC? returns GCCECCx

Notes: CEC must be ON to operate

The system will report changes to this value to all connected clients.

GCCTVAX

Description: Set HDMI Audio to TV

Possible Values (x): 0 - Off
1 - On

Query Response: When queried with GCCTVA? returns GCCTVAX

Notes: CEC must be OFF to operate

The system will report changes to this value to all connected clients.

General Configuration - Control

GCDNccc

Description: Set Device Name

Possible Values (ccc): Device Name Hex-encoded UTF-8 string, up to 64 bytes

Query Response: When queried with GCDN? returns GDNccc

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

GCTCPx

Description: Set IP Control TCP Port

Possible Values (x): 1025-49150

Default: 14999

Query Response: When queried with GCTCP? returns GCTCPx

Notes: The system will report changes to this value to all connected clients.

GCIRx

Description: Set IR Control

Possible Values (x): 0 - Off

1 - Front IR

2 - Rear IR

Query Response: When queried with GCIR? returns GCIRx

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

System Control

Main Zone Control

Z1POWy

Description: Set Main Zone Power

Possible Values (y): 0 - Off
1 - On

Query Response: When queried with Z1POW? returns Z1POWy

Notes: The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

Z1INPy

Description: Set Current Input

Possible Values (yy): 1-30

Query Response: When queried with Z1INP? returns Z1INPy

Notes: The system will report changes to this value to all connected clients.

Z1VOLyy

Description: Set Main Zone Volume

Possible Values (yy): -90 to +10 dB

Query Response: When queried with Z1VOL? returns Z1VOLy

Notes: The system will report changes to this value to all connected clients.

Z1VDN

Description: Pulse Volume Down 0.5 dB

Command Response: Z1VOLyy

Z1VUP

Description: Pulse Volume Up 0.5 dB

Command Response: Z1VOLyy

Z1PVOLyy

Description: Set Main Zone Percentage Volume

Possible Values (yy): 0-100% in steps of 1%

Query Response: When queried with Z1PVOL? returns Z1PVOLy

Notes: The system will report changes to this value to all connected clients.

Z1PVDN

Description: Pulse Volume Down 1%

Command Response: Z1PVOLyy

Notes: A step is 1% - this might be 0.5, 1, 2, 3 or 4 dB

Z1PVUP

Description: Pulse Volume Up 1%

Command Response: Z1PVOLyy

Notes: A step is 1% - this might be 0.5, 1, 2, 3 or 4 dB

Z1MUTy

Description: Set Main Zone Muting Value

Possible Values (y): 0 - Unmute

1 - Mute

t - Toggle

Query Response: When queried with Z1MUT? returns Z1MUTy

Notes: The system will report changes to this value to all connected clients.

Terse volume mapping table:

[0% = -90 dB] step 4 dB

[4% = -74 dB] step 3 dB

[11% = -53 dB] step 2 dB

[20% = -35 dB] step 1 dB

[30% = -25 dB] step 0.5 dB

[100% = +10 dB].

Converted dB round up to the next percent. i.e. -89.5 to -86 dB rounded to 1%.

Z1ALMy

Description: Set Main Zone Audio Listening Mode

Possible Values (y): 0 - None

1 - Automatic

2 - AnthemLogic-Cinema

3 - AnthemLogic-Music

4 - Dolby Surround

5 - DTS Neural:X ***CHANGED***

6 - *Unused on the MRX SLM*

7 - All Channel Stereo

8 - Mono

9 - All Channel Mono*

Query Response: When queried with Z1ALM? returns Z1ALMy

Notes: The system will report changes to this value to all connected clients.

* Only applicable to 2-channel sources

This command's parameters differ from the MRX x40 API

This command's parameters have changed from previous versions of this document - values have shifted up due to the addition of Automatic.

Z1ADN

Description: Pulse Audio Listening Mode Down

Notes: This will select the next lower-numbered selection.

Z1AUP

Description: Pulse Audio Listening Mode Up

Notes: This will select the next higher-numbered selection.

Z1TONyzz

Description: Adjust Tone Settings

Possible Values (y): 0 - Bass

1 - Treble

Possible Values (zz): -10 to +10 dB in steps of 0.5 dB

Query Response: When queried with Z1TONy? returns Z1TONyzz

Notes: Z1TON0-01 represents a bass cut by 1 dB.

The system will report changes to this value to all connected clients.

Z1TUPy

Description: Pulse Tone Up

Possible Values (y): 0 - Bass
1 - Treble

Notes: This will adjust the selected Tone Control up in steps of 0.5 dB

Z1TDNy

Description: Pulse Tone Down

Possible Values (y): 0 - Bass
1 - Treble

Notes: This will adjust the selected Tone Control down in steps of 0.5 dB

Z1BALyyy

Description: Adjust Balance

Possible Values (yyy): -5 to 5 in steps of 0.5

Query Response: When queried with Z1BAL? returns Z1BALyyy

Examples: Z1BAL5 represents balance entirely to the right;
Z1BAL-5 represents balance entirely to the left;
Z1BAL0 is balance in the middle;
Z1BAL-1.5 represents balance partly to the left.

Notes: Entry is rounded to the nearest valid value.

The system will report changes to this value to all connected clients.

Z1BLT

Description: Shift Balance Left by 0.5 dB

Notes: This will shift the balance of all channels by 0.5 to the left

Z1BRI

Description: Shift Balance Right by 0.5 dB

Notes: This will shift the balance of all channels by 0.5 to the right

Z1LEVyzz

Description: Adjust Level Settings

Possible Values (y): 1 - Subwoofer

5 - Fronts

7 - Center

8 - Surrounds

A - Heights

D - LFE

Possible Values (zz): -10 to 10 dB in steps of 1 dB except when adjusting LFE which has an upper limit of 0 dB.

Query Response: When queried with Z1LEVy? returns Z1LEVyzz

Example: Z1LEV1+01 represents fronts boosted by 1 dB.

Notes: Entry is rounded to the nearest valid value.

The system will report changes to this value to all connected clients.

This command's parameters differ from the MRX x40 API

Z1LUPy

Description: Pulse Level Up

Possible Values (y): 1 - Subwoofer

5 - Fronts

7 - Center

8 - Surrounds

A - Heights

D - LFE

Notes: This will adjust the selected channel's level up in steps of 0.5 dB

This command's parameters differ from the MRX x40 API

Z1LDNy

Description: Pulse Level Down

Possible Values (y): 1 - Subwoofer

5 - Fronts

7 - Center

8 - Surrounds

A - Heights

D - LFE

Notes: This will adjust the selected channel's level up in steps of 0.5 dB

This command's parameters differ from the MRX x40 API

Main Zone ARC Metadata

Z1ARCVAl?

Description: Is ARC Valid

Possible Values (x): 0 - Not Valid
1 - Valid

Query Response: returns Z1ARCVAlx

Z1ARCUPL?

Description: ARC Upload Date

Possible Values (ccc): UTF-8 string of up to 64 hex-encoded bytes

Query Response: returns Z1ARCUPLccc

Notes: This command's parameters differ from the MRX x40 API

Z1ARCNAM?

Description: ARC Name

Possible Values (ccc): UTF-8 string of up to 64 hex-encoded bytes

Query Response: returns Z1ARCNAMccc

Notes: This command's parameters differ from the MRX x40 API

Basic Control

Z1SIMyyyy

Description: Simulate IR Command

Possible Values (yyyy):

yyyy	Main Zone IR Key
0	Key 0
1	Key 1
2	Key 2
3	Key 3
4	Key 4
5	Key 5
6	Key 6
7	Key 7
8	Key 8
9	Key 9
10	Power On
11	Power Off
12	
13	
14	Mode
15	
16	
17	
18	
19	
20	Previous
21	Next
22	Play/Pause
23	
24	
25	Volume Up
26	Volume Down
27	Mute Toggle
28	
29	
30	
31	Stream
32	Digital
33	Analog
34	HDMI
35	Bluetooth
36	TV

Notes: use 0 to fill in blanks Ex: Key 1 = 0001

This command's parameters differ from the MRX x40 API

Advanced Control

CPYSxy

Description: Copy Settings from x to y

Possible Values (x,y): 0 - Current

1 - User

2 - Installer

CPYS01

Description: Save User Settings

Notes: System will save the current settings as user settings backup.

CPYS02

Description: Save Installer Settings

Notes: System will save the installer settings as user settings backup.

The system will then respond with 'Bulk Settings Changed' (BSC1) to all open connections.

CPYS10

Description: Load User Settings

Notes: System will reload current settings from the user settings backup.

The system will then respond with 'Bulk Settings Changed' (BSC1) to all open connections.

CPYS20

Description: Load Installer Settings

Notes: System will reload current settings from the installer settings backup.

The system will then respond with 'Bulk Settings Changed' (BSC1) to all open connections.

LDFDS

Description: Load Factory Settings

Notes: Loads the factory default settings but does not reset the network settings.

The system will then respond with 'Bulk Settings Changed' (BSC1) to all open connections.

LOTFS

Description: Reset On-The-Fly Settings

Notes: Load the factory default On-The-Fly settings.

The system will then respond with 'Bulk Settings Changed' (BSC1) to all open connections.

Streaming Playback Control

PLAYAPRV?

Description: Is the Previous Song/Restart control allowed to be used?

Possible Values (x): 0 - No

1 - Yes

Query Response: returns PLAYAPRVx

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

PLAYANXT?

Description: Is the Next Song control allowed to be used?

Possible Values (x): 0 - No

1 - Yes

Query Response: returns PLAYANXTx

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

PLAYAPP?

Description: Is the Play/Pause control allowed to be used?

Possible Values (x): 0 - No

1 - Yes

Query Response: returns PLAYAPPx

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

PLAYASRM?

Description: Are options in the Shuffle/Repeat Mode control allowed to be used?

Possible Values (b): 0 - No

1 - Yes

Query Response: returns PLAYASRMbbbbbb

Notes: Boolean values for shuffle, repeatOne, shuffleRepeatOne, repeatAll, shuffleRepeatAll.

The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

PLAYDUR?

Description: Query the duration of the current track

Possible Values (x): Duration in Seconds

Query Response: returns PLAYDURx

Notes: For current position, see [PLAYTIME?](#)

The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

PLAYTITL?

Description: Query the current track's title

Possible Values (ccc): UTF-8 string of up to 64 hex-encoded bytes

Query Response: returns PLAYTITLccc

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

PLAYALB?

Description: Query the current track's album

Possible Values (ccc): UTF-8 string of up to 64 hex-encoded bytes

Query Response: returns PLAYALBccc

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

PLAYART?

Description: Query the current track's artist

Possible Values (ccc): UTF-8 string of up to 64 hex-encoded bytes

Query Response: returns PLAYARTccc

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

PLAYCOVR?

Description: Query the current track's cover art URL

Possible Values (ccc): UTF-8 string of up to 64 hex-encoded bytes

Query Response: returns PLAYCOVRccc

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

PLAYMODEx

Description: Set the Play mode

Possible Values (x): 0 - Normal

1 - Shuffle

2 - Repeat One

3 - Shuffle Repeat One

4 - Repeat All

5 - Shuffle Repeat All

Query Response: When queried with PLAYMODE? returns PLAYMODEx

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

PLAYCTRLx

Description: Play Control

Possible Values (x): 0 - Stop

1 - Play (Read Only)

2 - Play/Pause

3 - Previous

4 - Next

Query Response: When queried with PLAYMODE? returns PLAYMODEx

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

PLAYTIME?

Description: Query the play position of the current track

Possible Values (x): Play Position in Seconds

Query Response: returns PLAYTIMEx

Notes: For track duration, see [PLAYDUR?](#)

The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

PLAYSRVC?

Description: Query the current streaming service's name

Possible Values (ccc): UTF-8 string of up to 64 hex-encoded bytes

I.e., Spotify, AirPlay, Casting

Query Response: returns PLAYSRVCccc

Notes: The system will report changes to this value to all connected clients.

This command or its functionality differs from the MRX x40 API

System Broadcasts

BSC1

Description: Bulk Settings Changed

Notes: Sent by the system whenever bulk operations are performed on the Menu Settings / On-the-fly Adjustments / etc. Typically those operations would result in significant system notifications; however, the system can instead send BSC1 to all active connections to indicate that all cached settings should be invalidated.

Example: “Load User Settings” could change hundreds of settings simultaneously; sending notifications for each would be wasteful. Instead, the system will send BSC1.

Application Note: When received, the control system must invalidate cached settings and request updated values