MARK MDX 0408 DSP Loudspeaker Processor User Manual

Contents

MARK MDX 0408 DSP Loudspeaker Processor

Product Specifications

- Model: MDX 0408
- Product Name: Central Control Codes User Manual
- RS232 Settings:
  - Baudrate: 115200 Bit/s
  - Parity bits: None
  - Data bits: 8
  - Stop bits: 1
  - Control sending Interval: >200ms (presets load/save function >3s)
- TCP/IP Connecting Configuration:
  - Transport protocol: TCP client
  - IP address: refer to IP address information in LCD display, or check it in Software
  - Network port: 8234
  - Control sending interval: >200ms (when setting for Presets function >3s)

Product Usage Instructions

RS232 Connection

1. Connect the RS232 cable to the designated port on the product.
2. Set the Baudrate to 115200 Bit/s on your communication software.
3. Ensure Parity bits are set to None, Data bits to 8, and Stop bits to 1.
4. Adjust the Control sending Interval as needed, ensuring it is greater than 200ms.
5. If using presets load/save function, set the interval to greater than 3s.

TCP/IP Connection

1. Configure the product to use TCP client as the Transport protocol.
2. Refer to the IP address information displayed on the LCD or check it in the software.
3. Set the Network port to 8234.
4. Adjust the Control sending interval to be greater than 200ms.
5. If configuring for Presets function, ensure the interval is set to greater than 3s.

Frequently Asked Questions (FAQ)

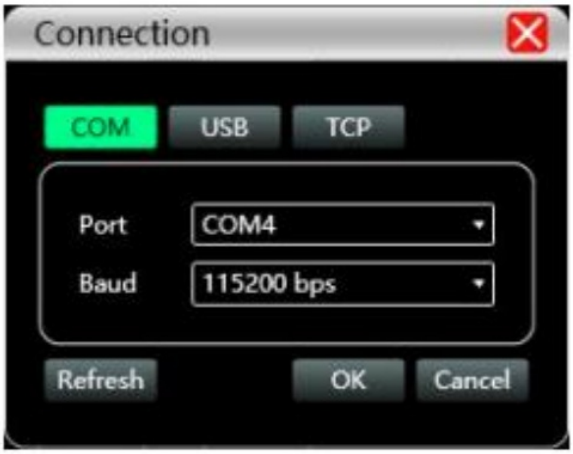
- **Q: How do I find the IP address information in the LCD display?**
  A: Navigate through the menu options on the LCD display to locate the network settings where the IP address is displayed.
- **Q: What should I do if the Control sending interval is less than recommended?**
  A: Adjust the settings in the control software to increase the interval to meet the specified requirements for proper operation.

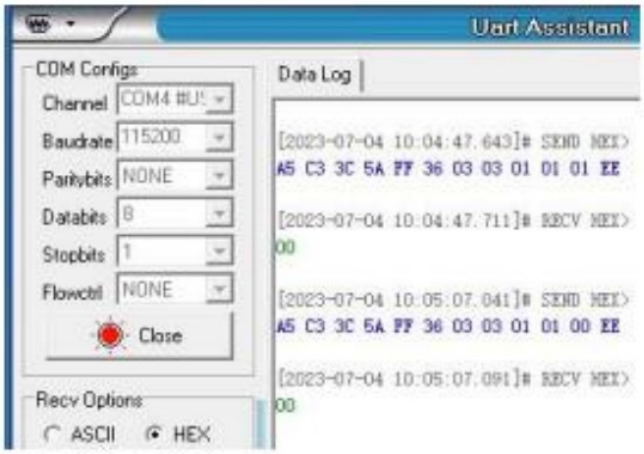
Central control codes user manual

- RS232:

- Baudrate:115200 Bit/s
- Parity bits: None
- Data bits: 8
- Stop bits: 1

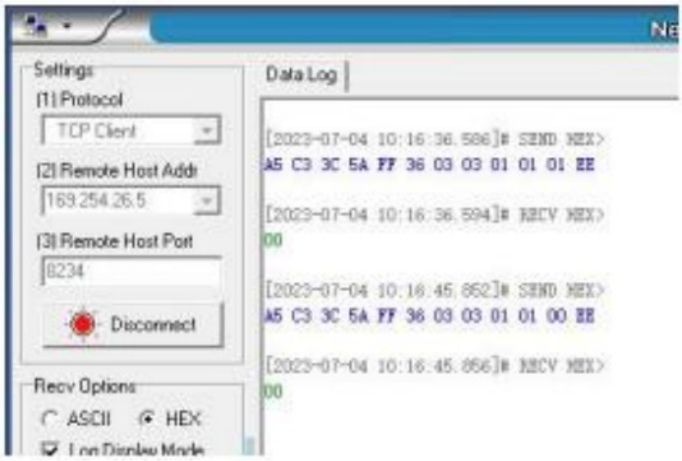
Control sending Interval >200ms (presets load/save function >3s)





TCP/IP connecting configuration

- Transport protocol: TCP client
- IP address: refer to IP address information in LCD display, or check it in Software
- Network port: 8234 Control sending interval: >200ms (when setting for Presets function >3s)



Regulation of control codes

Send instruction to device
QxA5 oxC3 ox3C Ox5A OxFF OXO? ox?? ox?? feedback code from device:

- OxOO: sending successful
- OXOI: sending failed

Read the status Of device

oxA5 oxC3 ox3C Ox5A OxFF QU? ox?? ox??
feedback code from device:

- **0xA5** 0xC3 0x3C 0x5A: start code
- **OxFF:** device ID
- **Ox0?:** functions code 0x??: data length (byte-sized) of Ox?? … Ox?? Ox?? …
- **Ox??:** data (such as input/output, channel No., on/off, etc.)
- **OxEE:** end code Notice: hexadecimal data for sample, using without the prefix “Ox” , such as: A5 C3 3C 5A FF 36 00 ?? … ?? EE

Functions code

02	Scene (presets)	09	Matrix mixing
03	Mute	0D	Switch of analog/Dante/USB audio input
04	Volume and channels gain		
05	+/-Gain in step		
06	Line/Mic level with sensitivity		
07	Phantom +48V		
08	AFC feedback control setting		

Decimal and hexadecimal digit table

D:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
H:	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
D:	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
H:	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E

Scene (presets) (0x02)

Scene (presets) recalling

Recall preset 1 (default of ex)	A5 C3 3C 5A FF 36 02 01 01 EE
Recall preset 2	A5 C3 3C 5A FF 36 02 01 02 EE
Recall preset ...	A5 C3 3C 5A FF 36 02 01 .. EE
Recall preset 30	A5 C3 3C 5A FF 36 02 01 1E EE
Read current preset	A5 C3 3C 5A FF 63 02 00 EE

Scene (presets) reading

Feedback code description:
A5 C3 3C 5A FF 63 02 01 03 EE means current preset No.3 Mute (0x03)

Mute (0x03)

Mute setting

All input channels mute	A5 C3 3C 5A FF 36 03 03 01 00 01 EE
All input channels cancel mute	A5 C3 3C 5A FF 36 03 03 01 00 00 EE
All output channels mute	A5 C3 3C 5A FF 36 03 03 02 00 01 EE
All output channels cancel mute	A5 C3 3C 5A FF 36 03 03 02 00 00 EE

Input 1 mute	A5 C3 3C 5A FF 36 03 03 01 01 01 EE
Input 2 mute	A5 C3 3C 5A FF 36 03 03 01 02 01 EE
Input .. mute	A5 C3 3C 5A FF 36 03 03 01 .. 01 EE
Input 16 mute	A5 C3 3C 5A FF 36 03 03 01 16 01 EE

Input 1 mute cancel	A5 C3 3C 5A FF 36 03 03 01 01 00 EE
Input 2 mute cancel	A5 C3 3C 5A FF 36 03 03 01 02 00 EE
Input .. mute cancel	A5 C3 3C 5A FF 36 03 03 01 .. 00 EE
Input 16 mute cancel	A5 C3 3C 5A FF 36 03 03 01 16 00 EE

Output 1 mute	A5 C3 3C 5A FF 36 03 03 02 01 01 EE
Output 2 mute	A5 C3 3C 5A FF 36 03 03 02 02 01 EE
Output .. mute	A5 C3 3C 5A FF 36 03 03 02 .. 01 EE
Output 16 mute	A5 C3 3C 5A FF 36 03 03 02 16 01 EE

Output 1 mute cancel	A5 C3 3C 5A FF 36 03 03 02 01 00 EE
Output 2 mute cancel	A5 C3 3C 5A FF 36 03 03 02 02 00 EE
Output .. mute cancel	A5 C3 3C 5A FF 36 03 03 02 .. 00 EE
Output 16 mute cancel	A5 C3 3C 5A FF 36 03 03 02 16 00 EE

Status of mute reading

Read Input 1 mute status	A5 C3 3C 5A FF 63 03 02 01 01 EE
Read Input 2 mute status	A5 C3 3C 5A FF 63 03 02 01 02 EE
Read Input .. mute status	A5 C3 3C 5A FF 63 03 02 01 .. EE
Read Input 16 mute status	A5 C3 3C 5A FF 63 03 02 01 16 EE

Read Output 1 mute status	A5 C3 3C 5A FF 63 03 02 02 01 EE
Read Output 2 mute status	A5 C3 3C 5A FF 63 03 02 02 02 EE
Read Output .. mute status	A5 C3 3C 5A FF 63 03 02 02 .. EE
Read Output 16 mute status	A5 C3 3C 5A FF 63 03 02 02 16 EE

Feedback code description:

- A5 C3 3C 5A FF 63 03 03 02 04 00 EE means Output 4 mute cancel
- A5 C3 3C 5A FF 63 03 03 02 04 01 EE means Output 4 mute

Volume and channels gain (0x04)

Device volume setting

Device main volume set in -60.0dB	A5 C3 3C 5A FF 36 04 04 00 01 A8 FD EE
Device main volume set in -20.0dB	A5 C3 3C 5A FF 36 04 04 00 01 9C FF EE
Device main volume set in ... dB	A5 C3 3C 5A FF 36 04 04 00 01 XX XX EE

Channels gain setting

Input 1 gain set in -60.0dB	A5 C3 3C 5A FF 36 04 04 01 01 A8 FD EE
Input 2 gain set in -60.0dB	A5 C3 3C 5A FF 36 04 04 01 02 A8 FD EE
Input .. gain set in -60.0dB	A5 C3 3C 5A FF 36 04 04 01 .. A8 FD EE
Input 16 gain set in -60.0dB	A5 C3 3C 5A FF 36 04 04 01 16 A8 FD EE

Output 1 gain set in 12.0dB	A5 C3 3C 5A FF 36 04 04 02 01 78 00 EE
Output 2 gain set in 12.0dB	A5 C3 3C 5A FF 36 04 04 02 02 78 00 EE
Output .. gain set in 12.0dB	A5 C3 3C 5A FF 36 04 04 02 .. 78 00 EE
Output 16 gain set in 12.0dB	A5 C3 3C 5A FF 36 04 04 02 16 78 00 EE

Remark: 0.1dB in step when calculate
Example 1: if set volume in -60.0dB, -60.0/0.1=-600
Using excel to calculate low bit: =RIGHT(DEC2HEX(-600,2),2), final value A8
Using excel to calculate high bit: ==MID(DEC2HEX(-600,4),LEN(DEC2HEX(-600,4))-3,2), final value FD

Channel volume value reading

Read device main volume	A5 C3 3C 5A FF 63 04 02 00 00 EE

Read Input 1 volume	A5 C3 3C 5A FF 63 04 02 01 01 EE
Read Input 2 volume	A5 C3 3C 5A FF 63 04 02 01 02 EE
Read Input .. volume	A5 C3 3C 5A FF 63 04 02 01 .. EE
Read Input 16 volume	A5 C3 3C 5A FF 63 04 02 01 16 EE

Read Output 1 volume	A5 C3 3C 5A FF 63 04 02 02 01 EE
Read Output 2 volume	A5 C3 3C 5A FF 63 04 02 02 02 EE
Read Output .. volume	A5 C3 3C 5A FF 63 04 02 02 .. EE
Read Output 16 volume	A5 C3 3C 5A FF 63 04 02 02 16 EE

Feedback code description:

- A5 C3 3C 5A FF 63 04 04 00 00 AC FE EE means device main volume is -34.0dB
- A5 C3 3C 5A FF 63 04 04 02 04 EC FE EE means Output 4 volume is -2.0dB

+/-Gain in step (0x05)

Input all channels gain +1.0dB	A5 C3 3C 5A FF 36 05 04 01 00 00 0A EE
Input all channels gain -1.0dB	A5 C3 3C 5A FF 36 05 04 01 00 01 0A EE

Output all channels gain +1.0dB	A5 C3 3C 5A FF 36 05 04 02 00 00 0A EE
Output all channels gain -1.0dB	A5 C3 3C 5A FF 36 05 04 02 00 01 0A EE

Input 1 gain +1.0dB	A5 C3 3C 5A FF 36 05 04 01 01 00 0A EE
Input 2 gain +1.0dB	A5 C3 3C 5A FF 36 05 04 01 02 00 0A EE
Input .. gain +1.0dB	A5 C3 3C 5A FF 36 05 04 01 .. 00 0A EE
Input 16 gain +1.0dB	A5 C3 3C 5A FF 36 05 04 01 16 00 0A EE

Input 1 gain -1.0dB	A5 C3 3C 5A FF 36 05 04 01 01 01 0A EE
Input 2 gain -1.0dB	A5 C3 3C 5A FF 36 05 04 01 02 01 0A EE
Input .. gain -1.0dB	A5 C3 3C 5A FF 36 05 04 01 .. 01 0A EE
Input 16 gain -1.0dB	A5 C3 3C 5A FF 36 05 04 01 16 01 0A EE

Output 1 gain +1.0dB	A5 C3 3C 5A FF 36 05 04 02 01 00 0A EE
Output 2 gain +1.0dB	A5 C3 3C 5A FF 36 05 04 02 02 00 0A EE
Output .. gain +1.0dB	A5 C3 3C 5A FF 36 05 04 02 .. 00 0A EE
Output 16 gain +1.0dB	A5 C3 3C 5A FF 36 05 04 02 16 00 0A EE

Output 1 gain -1.0dB	A5 C3 3C 5A FF 36 05 04 02 01 01 0A EE
Output 2 gain -1.0dB	A5 C3 3C 5A FF 36 05 04 02 02 01 0A EE
Output .. gain -1.0dB	A5 C3 3C 5A FF 36 05 04 02 .. 01 0A EE

Output 16 gain -1.0dB	A5 C3 3C 5A FF 36 05 04 02 16 01 0A EE

Remark: 0.1dB in step when calculate
Example: if +/-1.0dB, 1.0/0.1=10
Using excel to calculate low bit: =DEC2HEX(10,2),2), final value 0A

Line/Mic level with sensitivity (0x06)

Mic level with the sensitivity setting

Input 1 mic input with sensitivity in 5dB	A5 C3 3C 5A FF 36 06 03 01 00 01 EE
Input 1 mic input with sensitivity in10dB	A5 C3 3C 5A FF 36 06 03 01 00 02 EE
Input 1 mic input with sensitivity in 15dB	A5 C3 3C 5A FF 36 06 03 01 00 03 EE
Input 1 mic input with sensitivity in 20dB	A5 C3 3C 5A FF 36 06 03 01 00 04 EE
Input 1 mic input with sensitivity in 25dB	A5 C3 3C 5A FF 36 06 03 01 00 05 EE
Input 1 mic input with sensitivity in 30dB	A5 C3 3C 5A FF 36 06 03 01 00 06 EE
Input 1 mic input with sensitivity in 35dB	A5 C3 3C 5A FF 36 06 03 01 00 07 EE

Remark:

Sensitivity from 1 to 7 level: 5/10/15/20/25/30/35 dB

Input 1 line input	A5 C3 3C 5A FF 36 06 03 01 01 00 EE
Input 2 line input	A5 C3 3C 5A FF 36 06 03 02 01 00 EE
Input ... line input	A5 C3 3C 5A FF 36 06 03 ... 01 00 EE
Input 16 line input	A5 C3 3C 5A FF 36 06 03 16 01 00 EE

Line/Mic input reading

Input 1	A5 C3 3C 5A FF 63 06 01 01 EE
Input 2	A5 C3 3C 5A FF 63 06 01 02 EE
Input ...	A5 C3 3C 5A FF 63 06 01 ... EE
Input 16	A5 C3 3C 5A FF 63 06 01 16 EE

Feedback code description: A5 C3 3C 5A FF 63 06 03 02 00 05 EE means input channel 2 in Mic level with No.5 sensitivity (25dB)

Phantom +48V (0x07)
Input in Mic level with phantom +48V setting

Input 1 in Mic level open phantom +48V	A5 C3 3C 5A FF 36 07 02 01 01 EE
Input 1 in Mic level close phantom +48V	A5 C3 3C 5A FF 36 07 02 01 00 EE
Input 2 in Mic level open phantom +48V	A5 C3 3C 5A FF 36 07 02 02 01 EE
Input 2 in Mic level close phantom +48V	A5 C3 3C 5A FF 36 07 02 02 00 EE
---	---
Input 16 in Mic level open phantom +48V	A5 C3 3C 5A FF 36 07 02 16 01 EE
Input 16 in Mic level close phantom +48V	A5 C3 3C 5A FF 36 07 02 16 00 EE

Remark: user should effect Mic level before opening or closing 48V phantom

Input in Mic level with phantom +48V reading

Input 1	A5 C3 3C 5A FF 63 07 01 01 EE
Input 2	A5 C3 3C 5A FF 63 07 01 02 EE
Input ...	A5 C3 3C 5A FF 63 07 01 ... EE
Input 16	A5 C3 3C 5A FF 63 07 01 16 EE

Feedback code description:

A5 C3 3C 5A FF 63 07 02 05 00 EE means input channel **5** closed phantom +48V

AFC feedback control setting (Ox08)

Input with AFC level setting

Input 1 with AFC level 1	A5 C3 3C 5A FF 36 08 02 01 01 EE
Input 1 with AFC level 2	A5 C3 3C 5A FF 36 08 02 01 02 EE
Input 1 close AFC function	A5 C3 3C 5A FF 36 08 02 01 00 EE
...	...

Remark:

AFC level 1: 01; level 2: 02

AFC close: 00

Input with AFC level reading

Input 1 AFC status reading	A5 C3 3C 5A FF 63 08 01 01 EE
Input 2 AFC status reading	A5 C3 3C 5A FF 63 08 01 02 EE
...	...

Feedback code description: A5 C3 3C 5A FF 63 08 02 02 01 EE means input channel 2 opened with AFC level 1

Matrix mixing (0x09)

Input – output channels matrix setting

Set matrix Input 1- Output 1 √	A5 C3 3C 5A FF 36 09 03 01 01 01 EE
Set matrix Input 1- Output 2 √	A5 C3 3C 5A FF 36 09 03 01 02 01 EE
Set matrix Input ..- Output .. √	A5 C3 3C 5A FF 36 09 03 .. .. 01 EE
Set matrix Input 16- Output 16 √	A5 C3 3C 5A FF 36 09 03 16 16 01 EE

Set matrix Input 1- Output 1 ×	A5 C3 3C 5A FF 36 09 03 01 01 00 EE
Set matrix Input 1- Output 2 ×	A5 C3 3C 5A FF 36 09 03 01 02 00 EE
Set matrix Input ..- Output .. ×	A5 C3 3C 5A FF 36 09 03 .. .. 00 EE
Set matrix Input 16- Output 16 ×	A5 C3 3C 5A FF 36 09 03 16 16 00 EE

Status of Input – output channels matrix reading

Input 1- Output 1	A5 C3 3C 5A FF 63 09 02 01 01 EE
Input 1- Output 2	A5 C3 3C 5A FF 63 09 02 01 02 EE
Input ..- Output ..	A5 C3 3C 5A FF 63 09 02 .. .. EE
Input 16- Output 16	A5 C3 3C 5A FF 63 09 02 16 16 EE

Feedback code description:

- A5 C3 3C 5A FF 63 09 03 04 04 01 EE means Input 4 – Output 4 connecting √
- A5 C3 3C 5A FF 63 09 03 04 04 00 EE means Input 4 – Output 4 disconnecting χ

Switch of analog/Dante/USB audio input (0x0D)

Analog/Dante/USB audio input setting

Input 1 - analog	A5 C3 3C 5A FF 36 0D 02 01 00 EE
Input 2 - analog	A5 C3 3C 5A FF 36 0D 02 02 00 EE
Input .. - analog	A5 C3 3C 5A FF 36 0D 02 .. 00 EE
Input 16 - analog	A5 C3 3C 5A FF 36 0D 02 16 00 EE

Input 1 - Dante	A5 C3 3C 5A FF 36 0D 02 01 04 EE
Input 2 - Dante	A5 C3 3C 5A FF 36 0D 02 02 04 EE
Input .. - Dante	A5 C3 3C 5A FF 36 0D 02 .. 04 EE
Input 16 - Dante	A5 C3 3C 5A FF 36 0D 02 16 04 EE

Input 1 - USB audio	A5 C3 3C 5A FF 36 0D 02 01 05 EE
Input 2 - USB audio	A5 C3 3C 5A FF 36 0D 02 02 05 EE

Status of analog/Dante/USB audio input reading

Input 1	A5 C3 3C 5A FF 63 0D 01 01 EE
Input 2	A5 C3 3C 5A FF 63 0D 01 02 EE
Input ..	A5 C3 3C 5A FF 63 0D 01 .. EE
Input 16	A5 C3 3C 5A FF 63 0D 01 16 EE

Feedback code description

- A5 C3 3C 5A FF 63 OD 02 04 04 EE means Input 4 is using Dante signal
- A5 C3 3C 5A FF 63 OD 02 06 00 EE means Input 6 is using analog signal
- A5 C3 3C 5A FF 63 OD 02 02 05 EE means Input 2 is using USB audio signal

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Documents / Resources

	MARK MDX 0408 DSP Loudspeaker Processor [pdf] User Manual MDX 0408 DSP Loudspeaker Processor, MDX 0408, DSP Loudspeaker Processor, Loudspeaker Processor, Processor

References

- User Manual