

AMC XO

8 Zone 8 Source Audio Digital Home System

XOi

4 Zone 4 Source Audio Digital Home System

X86

6 Zone 8 Source Audio / Video Digital Home System

DR-X86T
XOir

Appendix I **RS232 Manual**

XO/XOi/X86 MANUAL - Appendix I RS232 Manual

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Serial port specification

Serial Port Hardware

- Standard DB9 RS232 connector

Serial Port Communication Protocol

- RS232 asynchronous serial communication
- XO_{ir}:
 - 9600 bps, 8 bits, 1 stop bit, no parity
- All other models:
 - 38400 bps, 8 bits, 1 stop bit, no parity
- no flow control

Command set specification

Command Format

- All commands are in ASCII characters
- All commands begin with "*" (asterisk) character and end with <CR> character (0D hexadecimal)
- All commands RETURN with some feedback begin with "*" (asterisk) character and end with <CR> character (0D hexadecimal)
- If a command produces an error or structured with incorrect syntax, the system will return with "?<CR>" characters
- Multiple commands require a delay of **500ms** between commands

COMMAND



RETURN



ERROR RETURN



Numbering Format and Range

Zone Number Range

- XO: 01-08
- XO_i: 01-04
- XO_{ir}: 01-04
- X86: 01-06
- DR-X86T: 01-06

Source Select Range

- XO: 01-08
- XO_i: 01-04
- XO_{ir}: 01-04
- X86: 01-08
- DR-X86T: 01-08

Standard Status Feedback Format

Status Feedback Conditions

- Most commands send to the system will receive this type of Status Feedback unless specified explicitly
- Upon any keypad and IR action, there will be some automatic feedback from the system:
 - Keypad: Upon any key presses from keypads in any zones, the unit will send updated status feedbacks via RS232 port.
 - IR: Upon any IR commands received from any IR receivers, the unit will send updated status feedbacks via RS232 port.
 - XO_{ir}: Keypad and IR are not available under XO_{ir} model.

Status Feedback Format

RETURN	ZN _{aa} ,SRC _{bb} ,GRP _c ,VOL- _{dd}
RETURN PARAMETERS	aa = Zone Number bb = Source Select c = 0 (Group Mode Off), 1 (Group Mode On) dd = dBs of attenuation (00 – 62 where 62=mute)

Special Conditions

- When a user press and hold the Power Button on any of the keypads to turn off ALL zones, there will be TWO RS232 responses:
 - The first response is the normal Status Feedback response:
ZNaa,SRCbb,GRPc,VOL-dd
 - The second response is the ALL ZONES OFF response:
ZALLOFF

Command Reference

Zone Status

ACTION	Zone Status Command returns status information on the given zone
COMMAND	ZnnSTA00
COMMAND PARAMETERS	nn = Zone Number
RETURN	Standard Status Feedback Format
RETURN PARAMETERS	

Tone Control Settings

ACTION	Return tone control settings on the given zone
COMMAND	ZNnnSET00
COMMAND PARAMETERS	nn = Zone Number
RETURN	ZNaa,BASSbb,TREBbb,GRPc
RETURN PARAMETERS	aa = Zone Number bb = EQ level +/- 8,6,4,0 c = 0 (Group Mode Off), 1 (Group Mode On)

Power OFF

ACTION	Power OFF the given zone (turn off ALL zones in group mode and leave group mode)
COMMAND	ZNnnPWR00
COMMAND PARAMETERS	nn = Zone Number
RETURN	Standard Status Feedback Format
RETURN PARAMETERS	

Power ON

ACTION	Power ON the given zone (restore last select source and volume level)
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COMMAND	ZNnnPWR01
COMMAND PARAMETERS	nn = Zone Number
RETURN	Standard Status Feedback Format
RETURN PARAMETERS	

Power Toggle

ACTION	Toggle between power On/Off for the given zone
COMMAND	ZNnnPWR02
COMMAND PARAMETERS	nn = Zone Number
RETURN	Standard Status Feedback Format
RETURN PARAMETERS	

All Zones OFF

ACTION	Turn off ALL Zones
COMMAND	ZALLPWR00
COMMAND PARAMETERS	
RETURN	ZALLOFF
RETURN PARAMETERS	

Un-mute all Zones

ACTION	Disable mute for ALL Zones
COMMAND	ZALLMUT00
COMMAND PARAMETERS	
RETURN	ZALLMOFF
RETURN PARAMETERS	

Mute all Zones

ACTION	Apply mute for ALL Zones
COMMAND	ZALLMUT01
COMMAND PARAMETERS	
RETURN	ZALLMON
RETURN PARAMETERS	

Source Select

ACTION	Change a input source for the given zone
COMMAND	ZNnnSRCss
COMMAND PARAMETERS	nn = Zone Number ss = Input Source
RETURN	Standard Status Feedback Format
RETURN PARAMETERS	

Adjust Volume

ACTION	Adjust volume for the given zone
COMMAND	ZNnnVOLvv
COMMAND PARAMETERS	nn = Zone Number vv = Volume Level (00 - 62 where 62=mute)
RETURN	Standard Status Feedback Format XO _{ir} only: ZNaa,POWER _p ,MUTE _m ,SOURCE _{bb} ,VOL- _{dd}
RETURN PARAMETERS	XO _{ir} only: aa = Zone Number p = POWER 1 (ON) / 0 (OFF) m = 1 (MUTE), 0 (NOT MUTE) bb = Source Select dd = dBs of attenuation (00 - 62 where 62=mute)

Volume Up 1dB

ACTION	Step volume up 1dB for given zone
COMMAND	ZNnnVOLUP
COMMAND PARAMETERS	nn = Zone Number
RETURN	Standard Status Feedback Format
RETURN PARAMETERS	

Volume Down 1dB

ACTION	Step volume down 1dB for given zone
COMMAND	ZNnnVOLDN
COMMAND PARAMETERS	nn = Zone Number
RETURN	Standard Status Feedback Format
RETURN PARAMETERS	

Zone Mute OFF

ACTION	Disable mute for the given zone with last volume preserved
COMMAND	ZNnnMUT00
COMMAND PARAMETERS	nn = Zone Number
RETURN	Standard Status Feedback Format
RETURN PARAMETERS	

Zone Mute ON

ACTION	Apply mute for the given zone and memorize the current volume
COMMAND	ZNnnMUT01
COMMAND PARAMETERS	nn = Zone Number
RETURN	Standard Status Feedback Format

RETURN PARAMETERS	
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Adjust Bass

ACTION	Adjust Bass by +/- 0,4,6,8 dB (XO _{ir} : Sets Bass level to desired level)
COMMAND	ZNnnBASsn XO _{ir} only: ZNzzBASnn
COMMAND PARAMETERS	nn = Zone Number s = + or - sign n = Bass Adjustment Level (0,4,6,8) XO _{ir} only: zz = Zone Number nn = Desired Bass Level (Bass range is from -12 to +12 in 2eB steps) The Bass Level uses the positive values: 00, 02, 04, 06, 08, 10, 12 for Flat (0dB) and +dB For -dB settings, the following values are used: 22 (-2dB), 24 (-4dB), 26 (-6dB), 28 (-8dB), 30 (-10dB), 32 (-12dB)
RETURN	ZNaa,BASSbb,TREBbb,GRPc XO _{ir} only: ZNaa,BASSbb,TREBbb
RETURN PARAMETERS	aa = Zone Number bb = EQ level +/- 8,6,4,0 c = 0 (Group Mode Off), 1 (Group Mode On)

Adjust Treble

ACTION	Adjust Treble by +/- 0,4,6,8 dB (XO _{ir} : Sets Treble Level to desired values)
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COMMAND	ZNnnTRBsn XO _{ir} only: ZNzzTRBnn
COMMAND PARAMETERS	nn = Zone Number s = + or - sign n = Treble Adjustment Level (0,4,6,8) XO _{ir} only: zz = Zone Number nn = Desired Treble Level (Treble range is from -12 to +12 in 2dB steps) The Treble Level uses the positive values: 00, 02, 04, 06, 08, 10, 12 for Flat (0dB) and +dB For -dB settings, the following values are used: 22 (-2dB), 24 (-4dB), 26 (-6dB), 28 (-8dB), 30 (-10dB), 32 (-12dB)
RETURN	ZNaa,BASSbb,TREBbb,GRPc XO _{ir} only: ZNaa,BASSbb,TREBbb
RETURN PARAMETERS	aa = Zone Number bb = EQ level +/- 8,6,4,0 c = 0 (Group Mode Off), 1 (Group Mode On)

Group Mode OFF

ACTION	Disable Group Mode
COMMAND	ZALLGRP00
COMMAND PARAMETERS	
RETURN	GRPOFF
RETURN PARAMETERS	

Group Mode ON

ACTION	Activate Group Mode
COMMAND	ZALLGRPss
COMMAND PARAMETERS	ss = Input Source for this group (01 - 04/08)
RETURN	GRPON,STC _{ss}
RETURN PARAMETERS	ss = Input Source selected for this group