

# CXA61 and CXA81 Serial Control Protocol v1.0

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## General Message Format

Byte	1	2	3	4	5	6	7	8	...	
	#	g	g	,	n	n	,	d	d	\r

Each byte contains an ASCII character.

All transmissions start with the '#' character (ASCII decimal 35).

gg = two byte Command Group.

There is a comma (ASCII decimal 44) separating the Group code from the Command Number.

nn = two byte Command Number.

There is a comma separating the Command Number and any Data bytes.

dd = Variable number of Data bytes.

Message terminated with a Carriage Return (ASCII decimal 13).

## **RS232 port settings**

9600 Baud

no parity bits

8 data bits

1 stop bit

## Group Commands

Group	Description
00	Error Messages
01	Amplifier Command
02	Replies from Amplifier Commands
03	Source Commands
04	Replies from Source Commands
13	Version Commands
14	Replies from Version Commands

Error Messages are only ever sent from the CXA unit.

- These are used to inform the user when the CXA unit does not understand the received message correctly, or the command is valid but cannot be executed at the current time.
- Each message that is sent to the CXA unit should receive a response back which is either a Reply message or an Error message.

Command Groups occur in pairs.

- The first Group, eg Group 01 "Amplifier Commands", is for messages that may be sent to the CXA unit from external control equipment.
- The second Group, eg Group 02 "Replies from Amplifier Commands", are responses from the CXA unit following a command being received.

Power/Mute/ Source changes in the CXA unit.

- When the power state, mute state or source is changed in the CXA unit by any means, for example from an IR remote control button press, a Reply message will be sent indicating the new changed state without the external control equipment needing to poll the unit for the current state.

## Source Selection

Where a source is specified, the code for the selected source is shown below

### CXA61

Code	Source
00	Source A1
01	Source A2
02	Source A3
03	Source A4
04	Source D1
05	Source D2
06	Source D3
10	Source MP3
14	Bluetooth
16	USB Audio

### CXA81

Code	Source
00	Source A1
01	Source A2
02	Source A3
03	Source A4
04	Source D1
05	Source D2
06	Source D3
14	Bluetooth
16	USB Audio
20	Source A1 Balanced

## Commands

### Error Messages

Group	Number	Data	Description	Example	
00	01	No Data	Command group unknown	#00,01\r	The Command Group is invalid
00	02	No Data	Command number unknown	#00,02\r	The Command Number is invalid for this Group
00	03	No Data	Command data error	#00,03\r	The Data is not in the expected range
00	04	No Data	Command not available	#00,04\r	The Command is valid, but can't be actioned

An Error message is only sent from the CXA unit if there is a problem with the received message or the message is valid but cannot be actioned, otherwise a normal Reply message will be sent.

## Amplifier Commands

Group	Number	Data	Description	Example	
01	01	No Data	Get current power state	#1,01\r	
01	02	0 - Standby 1 - On	Set power state	#1,02,0\r	Put unit into standby
01	03	No Data	Get current mute state	#1,03\r	
01	04	0 - Off 1 - On (Muted)	Set mute state	#1,04,0\r	Mute off

## Replies from Amplifier Commands

Group	Number	Data	Description	Example	
02	01	0 - Standby 1 - On	Current power state	#02,01,1\r	Unit is currently powered on
02	03	0 - Off 1 - On (Muted)	Current mute state	#02,03,0\r	Mute is currently off

## Source Commands

Group	Number	Data	Description	Example	
03	01	No Data	Get current source	#3,01\r	
03	02	No Data	Select next source	#3,02\r	
03	03	No Data	Select previous source	#3,03\r	
03	04	Source	Set source	#3,04,02\r	Select Source A3

## Replies from Source Commands

Group	Number	Data	Description	Example	
04	01	Source	Current source	#04,01,02\r	Current source is source A3

## Version Commands

Group	Number	Data	Description	Example	
13	01	No Data	Get Protocol Version	#13,01\r	Get protocol version
13	02	No Data	Get Firmware Version	#13,02\r	Get firmware version

## Replies from Version Commands

Group	Number	Data	Description	Example	
14	01	x.x	Protocol Version	#14,01,1.0\r	This RS232 Serial Protocol is version 1.0
14	02	x	Get Firmware Version	#14,02,01000G01061E\r	

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