

Cary Audio Design

Cinema 6 Surround Sound Processor

RS-232 Protocol and Control Details

Com Port Setup:

Use standard communications settings. The default that most devices use/accept is:

Baud Rate - 9600

Data Bits - 8

Parity - None

Stop Bits - 1

Com Port Pin Configuration:

Use standard pin configuration. A configuration that allows direct connection to a PC via 9-pin straight through serial cable is best. Use of only 3 pins (Transmit, Receive, Ground) is best.

9 pin female D connector

Pin 2 = Transmit

Pin 3 = Receive

Pin 5 = Ground

RS-232 interface :

Commands are to be sent to the unit via RS-232 using the following format:

<Command> = <Command ID><Argument>

<Command ID> = <Byte>

<Argument> = 0x0d

<Byte> = 0x30,0x30

Status Byte:

Upon receiving the command and done, a single status byte will be transmitted

The format for the status byte is :

<Status Byte> = <Command>

<Command> = 0x43,0x30,0x30

RS232-Interface Usage Details:

The RS-232 interface has a first-in-first-out (FIFO) buffer which will allow each commands to be received in direct succession. Commands are executed in the order in which they are received with approximately a 1/2 second delay between each command. If a longer string of commands is necessary, a minimum of 1/2 second delay should be added before sending additional commands.

Example for sending a long string of commands:

[Command 1]

<Delay 1/2 second>

[Command 2]

<Delay 1/2 second>

[Command 3]

<Delay 1/2 second>

If receiving the errors data, a single status byte will be transmitted. The status byte is:

RS232: <ERR>

ASCII: <0x45,0x58,0x58>

Upon Receiving the Command and done			a Single Status byte will be transmitted		
Command Description	RS232 Command	ASCII Command	Status Command Description	RS232 Command	ASCII Command
POWER ON	23	0x32,0x33,0x0d	Take unit out of standby	C23	0x43,0x32,0x33
POWER OFF	22	0x32,0x32,0x0d	Put unit in standby	C22	0x43,0x32,0x32
DVD COAXIAL INPUT	AA	0x41,0x41,0x0d	DVD Coaxial Input	CAA	0x43,0x41,0x41
CD COAXIAL INPUT	AB	0x41,0x42,0x0d	CD Coaxial Input	CAB	0x43,0x41,0x42
D-VCR COAXIAL INPUT	AC	0x41,0x43,0x0d	D-VCR Coaxial Input	CAC	0x43,0x41,0x43
TV COAXIAL INPUT	AD	0x41,0x44,0x0d	TV Coaxial Input	CAD	0x43,0x41,0x44
TV TOSLINK INPUT	AE	0x41,0x45,0x0d	TV Toslink Input	CAE	0x43,0x41,0x45
DVD TOSLINK INPUT	AF	0x41,0x46,0x0d	DVD Toslink Input	CAF	0x43,0x41,0x46
CD TOSLINK INPUT	B0	0x42,0x30,0x0d	CD Toslink Input	CB0	0x43,0x42,0x30
D-VCR TOSLINK INPUT	B1	0x42,0x31,0x0d	D-VCR Toslink Input	CB1	0x43,0x42,0x31
DVD ANALOG INPUT	B2	0x42,0x32,0x0d	DVD Analog Input	CB2	0x43,0x42,0x32
CD ANALOG INPUT	B3	0x42,0x33,0x0d	CD Analog Input	CB3	0x43,0x42,0x33
TV ANALOG INPUT	B4	0x42,0x34,0x0d	TV Analog Input	CB4	0x43,0x42,0x34
D-VCR ANALOG INPUT	B5	0x42,0x35,0x0d	D-VCR Analog Input	CB5	0x43,0x42,0x35
TUNER ANALOG INPUT	B6	0x42,0x36,0x0d	TUNER Analog Input	CB6	0x43,0x42,0x36
ANALOG 7.1 INPUT A	12	0x31,0x32,0x0d	Analog 7.1 Input A	C12	0x43,0x31,0x32
ANALOG 7.1 INPUT B	13	0x31,0x33,0x0d	Analog 7.1 Input B	C13	0x43,0x31,0x33
INPUT +	08	0x30,0x38,0x0d	Input +	C08	0x43,0x30,0x38
INPUT -	09	0x30,0x39,0x0d	Input -	C09	0x43,0x30,0x39
AUTO DETECT	90	0x39,0x30,0x0d	Auto Detect	C90	0x43,0x39,0x30
AUTO DECODE	24	0x32,0x34,0x0d	Auto Decode	C24	0x43,0x32,0x34
ANALOG	1C	0x31,0x43,0x0d	Analog	C1C	0x43,0x31,0x43
DIGITAL	1D	0x31,0x44,0x0d	Digital	C1D	0x43,0x31,0x44
LATE	0C	0x30,0x43,0x0d	Late	C0C	0x43,0x30,0x43
DELAY	19	0x31,0x39,0x0d	Delay	C19	0x43,0x31,0x39
PLIIX	38	0x33,0x38,0x0d	PLIIX	C38	0x43,0x33,0x38
NEO:96/24	A2	0x41,0x32,0x0d	NEO:96/24	CA2	0x43,0x41,0x32
SUR.MODE	0B	0x30,0x42,0x0d	Sur. Mode	C0B	0x43,0x30,0x42
AUDIO	74	0x37,0x34,0x0d	Audio	C74	0x43,0x37,0x34
VIDEO	75	0x37,0x35,0x0d	Video	C75	0x43,0x37,0x35
BASS +	44	0x34,0x34,0x0d	Bass +	C44	0x43,0x34,0x34
BASS -	45	0x34,0x35,0x0d	Bass -	C45	0x43,0x34,0x35
TREBLE +	46	0x34,0x36,0x0d	Treble +	C46	0x43,0x34,0x36
TREBLE -	47	0x34,0x37,0x0d	Treble -	C47	0x43,0x34,0x37
SPEAKER	60	0x36,0x30,0x0d	Speaker	C60	0x43,0x36,0x30
DIRECT	A4	0x41,0x34,0x0d	Direct	CA4	0x43,0x41,0x34
POWER ON/OFF	06	0x30,0x36,0x0d	Power on/off	C06	0x43,0x30,0x36
2xF	1E	0x31,0x45,0x0d	2xF	C1E	0x43,0x31,0x45

Upto Receiving the Command and done			a Single Status byte will be transmitted		
Command Description	Rs232 Command	ASCII Command	Status Command Description	Rs232 Command	ASCII Command
VOLUME +	9A	0x39,0x41,0x0d	Volume +	C9A	0x43,0x39,0x41
VOLUME -	9B	0x39,0x42,0x0d	Volume -	C9B	0x43,0x39,0x42
TEST	17	0x31,0x37,0x0d	Test	C17	0x43,0x31,0x37
BRIGHT	79	0x37,0x39,0x0d	Bright	C79	0x43,0x37,0x39
ZONE	8D	0x38,0x44,0x0d	Zone	C8D	0x43,0x38,0x44
MUTE	07	0x30,0x37,0x0d	Mute	C07	0x43,0x30,0x37
STEREO	2B	0x32,0x42,0x0d	Stereo	C2B	0x43,0x32,0x42
CES 7.1	63	0x36,0x33,0x0d	CES 7.1	C63	0x43,0x36,0x33
SETUP MENU	67	0x36,0x37,0x0d	Setup Menu	C67	0x43,0x36,0x37
NAVIGATION UP	68	0x36,0x38,0x0d	Navigation Up	C68	0x43,0x36,0x38
NAVIGATION DOWN	69	0x36,0x39,0x0d	Navigation Down	C69	0x43,0x36,0x39
NAVIGATION LIFT	6A	0x36,0x41,0x0d	Navigation Lift	C6A	0x43,0x36,0x41
NAVIGATION RIGHT	6B	0x36,0x42,0x0d	Navigation Right	C6B	0x43,0x36,0x42
NAVIGATION SEL PLAY	6C	0x36,0x43,0x0d	Navigation Sel Play	C6C	0x43,0x36,0x43
NAVIGATION EXIT	6D	0x39,0x44,0x0d	Navigation Exit	C6D	0x43,0x36,0x44