



**Home Theater  
Standard 7.1  
Surround  
Preamp/Processor**

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**RS-232 Port: Sending Commands  
and Interpreting Data**

**RC-5 Remote: Commands**

**Developer's Reference**

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**Home Theater Standard 7.1**  
**Surround Preamp/Processor**  
**Developer's Reference**  
v 03.0

**CONTACT**  
**INFORMATION**

Krell Industries, Inc.  
45 Connair Road  
Orange, CT 06477-3650 USA

TEL 203-799-9954  
FAX 203-891-2028  
E-MAIL [krell@krellonline.com](mailto:krell@krellonline.com)  
WEBSITE <http://www.krellonline.com>

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## Overview

This document is designed for application developers who want to control the Home Theater Standard 7.1 using an external computer-based device. The document contains five sections:

- 1 Connecting to the RS-232 Port, including the RS-232 connector diagram, and RS-232 Port Protocols, *on page 4*
- 2 RS-232 Commands, *on page 5*
- 3 RS-232 Status Feedback Description, *on page 11*
- 4 RS-232 Status Block Descriptions, showing how the Home Theater Standard 7.1 reports operational status, *on page 11*
- 5 RC-5 Commands, describing the codes used for controlling the Home Theater Standard 7.1 via IR, *on page 18.*

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## Connecting to the RS-232 Port

A 9-pin RS-232 port is located on the right-hand side of the Home Theater Standard 7.1 back panel. Make sure the clamping screws (or thumbscrews) securely fasten the connection cable from the external computer-based device to the RS-232 port on the Home Theater Standard 7.1.

Refer to the operating manual of your external computer-based device for instructions on connecting to the Home Theater Standard 7.1.

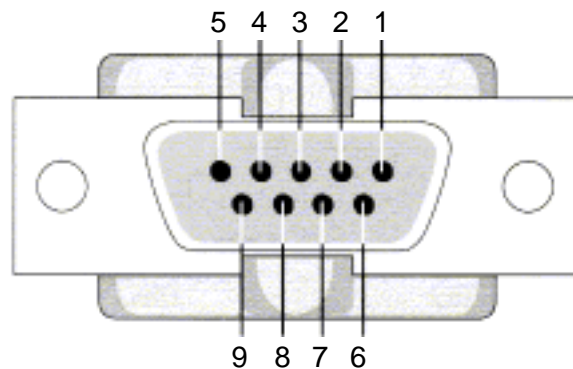
### WIRING THE MALE RS-232 PORT CONNECTOR

To wire the male connector, follow these steps:

1. Locate the pin numbers on the male connector plug (not shown).
2. Locate the pinout numbers on the female connector. (See Pinout Signal list below).
3. Wire the male connector, matching the pin numbers on the connector plug to the pinout numbers on the female connector. Only three signals are necessary: 2=Received Data, 3=Transmitted Data, and 5=Signal Ground.

### RS-232 PORT FEMALE CONNECTOR

(located on the back panel  
of the Home Theater Standard 7.1)



#### Pinout Signal

1	Data Carrier Detect
2	Received Data
3	Transmitted Data
4	Data Terminal Ready
5	Signal Ground
6	Data Set Ready
7	Request to Send
8	Clear to Send
9	Ring Indicator

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## RS-232 Port Protocols

The Home Theater Standard 7.1 RS-232 connection port is set to the following protocols:

9600 Baud    8 Data Bits    1 Stop Bit    No Parity

# RS-232 Commands for the Home Theater Standard 7.1

	COMMAND	RS-232 CODE
<b>MENU COMMANDS</b>	Up	UPZ
	Down	DWNZ
	Left	LFTZ
	Right	RTZ
	Menu	MENZ
	Enter	ENTZ
	Previous	PRVZ
<b>AUTO-STATUS COMMANDS</b>	Disable Auto Status	ASTDZ
	Enable Auto Status	ASTEZ
	Get Status	STAZ
<b>GENERAL DEVICE SELECT COMMANDS</b>	DVD Device Select <sup>1</sup>	DVDZ
	LD Device Select <sup>1</sup>	LDZ
	Satellite Device Select <sup>1</sup>	SATZ
	VCR Device Select <sup>1</sup>	VCRZ
	TV Device Select <sup>1</sup>	TVZ
	CD Device Select <sup>1</sup>	CDZ
	Tuner Device Select <sup>1</sup>	TUNZ
	Aux1 Device Select <sup>1</sup>	AU1Z
	Aux 2 Device Select <sup>1</sup>	AU2Z
	Tape Monitor Select <sup>1</sup>	TPZ
<b>LEVEL COMMANDS</b>	Up	UPZ
	Down	DWNZ
	Main Speaker Volume	000 - 152 XXXMVLZ
	Zone 2 Speaker Volume	000 - 152 XXXRVLZ
	Center Trim Select	then use UPZ and DWNZ must be on main zone ICVLZ
	Surround Trim Select	then use UPZ and DWNZ send twice for Back Trim Select must be on main zone IRVLZ
	Sub Trim Select	then use UPZ and DWNZ must be on main zone ISUBZ
	Center Speaker Trim	000 - 020, sets -10 to +10 dB XXXCVLZ
	Surround Speaker Trim	000 - 020, sets -10 to +10 dB XXXSRLZ
	Back Speaker Trim	000 - 020, sets -10 to +10 dB XXXBVLZ
	Subwoofer Trim	000 - 020, sets -10 to +10 dB XXXSVLZ
	Current Zone Balance Select	then use UPZ and DWNZ IBALZ
	Balance	000 -026, sets right off, left +6, through right +6, left off 1/2 dB steps XXBALZ
	Zone 2 Balance	then use UPZ and DWNZ BRLZ

<sup>1</sup> The General Device Select Command is the best choice for normal operation: It always functions on the currently selected zone and engages any configurations set through the Home Theater Standard 7.1 menu.

## RS-232 Commands for the Home Theater Standard 7.1, continued

	COMMAND	RS-232 CODE
<b>Level Commands, continued</b>	Mute Current Zone	MUTZ
	Mute Main Zone	MUTMZ
	Mute Zone 2	MUTRZ
	Night Compression	NTCZ
	Normal Compression	NMCZ
	Max Compression	MXCZ
<b>GENERIC ZONE DIRECT SELECT COMMANDS (Works on current zone)</b>	7.1 Input select <sup>2</sup>	AMCZ
	Analog Audio Input-1 <sup>2</sup>	AS1Z
	Analog Audio Input-2 <sup>2</sup>	AS2Z
	Analog Audio Input-3 <sup>2</sup>	AS3Z
	Analog Audio Input-4 <sup>2</sup>	AS4Z
	Analog Audio Input-5 <sup>2</sup>	AS5Z
	Analog Audio Input-6 <sup>2</sup>	AS6Z
	Analog Audio Input-7 <sup>2</sup>	AS7Z
	Analog Balanced Input <sup>2</sup>	AB1Z
	Analog Tape Select <sup>2</sup>	ATPAZ
	Analog VCR Select <sup>2</sup>	AVCAZ
	Coax-1 Digital Audio Input Select <sup>2</sup>	CO1Z
	Coax-2 Digital Audio Input Select <sup>2</sup>	CO2Z
	Coax-3 Digital Audio Input Select <sup>2</sup>	CO3Z
	Coax-4 Digital Audio Input Select <sup>2</sup>	CO4Z
	Coax-5 Digital Audio Input Select <sup>2</sup>	CO5Z
	Coax-6 Digital Audio Input Select <sup>2</sup>	CO6Z
	Optical-1 Digital Audio Input Select <sup>2</sup>	OPT1Z
	Optical-2 Digital Audio Input Select <sup>2</sup>	OPT2Z
	Component Video-1 <sup>2</sup>	CM1Z
	Component Video-2 <sup>2</sup>	CM2Z
	Composite Video-1 <sup>2</sup>	CS1Z
	Composite Video-2 <sup>2</sup>	CS2Z
	Composite Video-3 <sup>2</sup>	CS3Z
	Composite Video-4 <sup>2</sup>	CS4Z
	S-Video-1 <sup>2</sup>	SV1Z
	S-Video-2 <sup>2</sup>	SV2Z
S-Video-3 <sup>2</sup>	SV3Z	
S-Video-4 <sup>2</sup>	SV4Z	

### Note

*It is best to use the Home Theater Standard 7.1 on-screen configuration menus, not the Generic Direct Select Command, to configure a particular device. Please see the Home Theater Standard 7.1 Owner's Reference for configuration details.*

<sup>2</sup> Direct Select Commands override the configurations set through the Home Theater Standard 7.1 configuration menus.

## RS-232 Commands for the Home Theater Standard 7.1, continued

	COMMAND	RS-232 CODE
<b>MAIN ZONE DIRECT SELECT COMMANDS</b> <b>(Main zone must be on)</b>	Main Analog Audio Input-1	AS1MZ
	Main Analog Audio Input-2	AS2MZ
	Main Analog Audio Input-3	AS3MZ
	Main Analog Audio Input-4	AS4MZ
	Main Analog Audio Input-5	AS5MZ
	Main Analog Audio Input-6	AS6MZ
	Main Analog Audio Input-7	AS7MZ
	Main Analog Balanced Input	AB1MZ
	Main Analog Tape Select	TPAMZ
	Main Analog VCR Select	VCAMZ
	Main Aux1 Device Select	AU1MZ
	Main Aux2 Device Select	AU2MZ
	Main CD Device Select	CDMZ
	Main DVD Device Select	DVDMZ
	Main LD Device Select	LDMZ
	Main Satellite Device Select	SATMZ
	Main Tape Device Select	TPMZ
	Main Tuner Device Select	TUNMZ
	Main TV Device Select	TVMZ
	Main VCR Device Select	VCRMZ

### ZONE 2 DIRECT SELECT COMMANDS

**Note**

Use Zone 2 Direct Select Commands only when both zones are on.

Zone 2 Analog Audio Input-1 <sup>3</sup>	AS1RZ
Zone 2 Analog Audio Input-2 <sup>3</sup>	AS2RZ
Zone 2 Analog Audio Input-3 <sup>3</sup>	AS3RZ
Zone 2 Analog Audio Input-4 <sup>3</sup>	AS4RZ
Zone 2 Analog Audio Input-5 <sup>3</sup>	AS5RZ
Zone 2 Analog Audio Input-6 <sup>3</sup>	AS6RZ
Zone 2 Analog Audio Input-7 <sup>3</sup>	AS7RZ
Zone 2 Analog Balanced Input <sup>3</sup> AB1RZ	
Zone 2 Analog Tape Select <sup>3</sup>	TPARZ
Zone 2 Analog VCR Select <sup>3</sup>	VCARZ
Zone 2 Aux1	AU1RZ
Zone 2 Aux2	AU2RZ
Zone 2 CD	CDRZ
Zone 2 DVD	DVDRZ
Zone 2 LD	LDRZ
Zone 2 Satellite	SATRZ
Zone 2 Tape	TPRZ
Zone 2 Tuner	TUNRZ
Zone 2 TV	TVRZ
Zone 2 VCR	VCRRZ

<sup>3</sup> If only zone 2 is on, use instead the Generic Zone Direct Select Commands, on page 6.

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## RS-232 Commands for the Home Theater Standard 7.1, continued

	COMMAND	RS-232 CODE
<b>POWER COMMANDS</b>	Power On	1PWRZ
	Power Off	0PWRZ
<b>ZONE SELECT COMMANDS</b>	Main Zone	MANZ
	Zone 2	Zone 2 power toggle if main zone is OFF REMZ
<b>ROOM EQ COMMAND</b>	Room EQ Select	XXX = 000-004 (000 = OFF) (001-004 selects memory 1-4) XXXEQMZ
<b>TRIGGER COMMANDS</b>	Trigger-1	OFF 0TR1Z
	Trigger-1	ON 1TR1Z
	Trigger-2	OFF 0TR2Z
	Trigger-2	ON 1TR2Z
	Trigger-3	OFF 0TR3Z
	Trigger-3	ON 1TR3Z
	Trigger-4	OFF 0TR4Z
	Trigger-4	ON 1TR4Z



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## RS-232 Commands for the Home Theater Standard 7.1, continued

DECODE MODE SELECT COMMANDS	COMMAND	RS-232 CODE
	Mode 1	
Mode 2		MS2Z
Prologic		MVZ
Stereo		STZ
Preamp		PAZ
THX		THXZ
Audio Decode Set Mode	000 - 038, sets mode*	XXXMODZ

\* Refer to the list of audio decode modes and corresponding codes on page 10 to set the mode. Modes that do not apply to the current input stream are ignored.

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## RS-232 Commands for the Home Theater Standard 7.1, continued

*Audio decode modes  
and corresponding codes*

AUDIO DECODE MODE	CODE
Dolby Digital 5.1	000
Dolby Digital 5.1 + THX	001
Dolby Digital 5.1 + THX EX	002
AC3 2/0 Stereo Mode (Pass Mode)	003
AC3 2/0 Pro-Logic II Movie Mode	004
AC3 2/0 Pro-Logic II Music Mode	005
AC3 2/0 Pro-Logic II Matrix Mode	006
AC3 2/0 Pro-Logic II Emulation Mode	007
AC3 2/0 Pro-Logic II Movie +THX Mode	008
AC3 2/0 Pro-Logic II Emulation+THX Mode	009
DTS 5.1 Music	010
DTS 5.1 Movie	011
DTS 5.1 Matrix	012
DTS 5.1 Movie + THX	013
DTS 5.1 Matrix + THX	014
DTS 6.1 Discrete	015
DTS 6.1 Discrete + THX	016
DTS 5.1 Force	017
Stereo Mode (Pass Mode)	018
Pro-Logic II Movie Mode	019
Pro-Logic II Music Mode	020
Pro-Logic II Matrix Mode	021
Pro-Logic II Emulation Mode	022
Pro-Logic II Movie + THX Mode	023
Pro-Logic II Emulation + THX	024
DTS Neo:6 Cinema 6 Mode	025
DTS Neo:6 Music Mode	026
DTS Neo:6 Cinema 6 + THX Mode	027
Party Mode	028
General Admission Mode	029
Front Row Mode	030
On Stage Mode	031
Enhanced Stereo Mode	032
Orchestra Mode	033
Mezzanine Mode	034
Full Range + Sub Mode	035
Monophonic Mode	036
24/96 Decode Mode	038

# RS-232 Status Feedback Description for the Home Theater Standard 7.1

The Home Theater Standard 7.1 reports its operational status by transmitting a block of status data via the RS-232 connector. The block is configured as eighteen 8-bit words. The first and last word always contains hexadecimal code 55 to facilitate message framing and synchronization. When the data block is sent through an RS-232 port, each 8-bit word transmitted will also have 1 stop bit associated with it. The exact RS-232 protocol settings for both status and Home Theater Standard 7.1 control are as follows:

9600 Baud    8 Data Bits    1 Stop Bit    No Parity

The feedback system is available only through the RS-232 connector. The status can be activated in two ways. The first is to ask for status to be sent by sending the RS-232 command code "STAZ". The second is to enable auto status by sending the RS-232 command code "ASTEZ". Once the auto status command is sent, the Home Theater Standard 7.1 will transmit a status block whenever the status changes. Auto status is disabled by sending the RS-232 command code "ASTDZ". Auto status remains enabled until AC power is removed or turned off. When AC power is reapplied, auto status is disabled.

## RS-232 Status Block Descriptions for the Home Theater Standard 7.1

All numeric values described in the following charts are decimal values unless otherwise noted. The description of the eighteen 8-bit words follow.

The values marked Reserved must be ignored during pattern matching.

### Word 1: Start of Message

Bit	7	6	5	4	3	2	1	0
Description	0	1	0	1	0	1	0	1

Bit 7 – 0: Hexadecimal 55

### Word 2: General Status I

Bit	7	6	5	4	3	2	1	0
Description	System Mute	User Mute	Zone 2 Mute	Current Zone	Input Trigger	Zone 2 Only	Zone 2 Power	Main Power

Bit 7: System Mute	1 = Internal mute is active	Bit 3: Input Trigger	1 = 12V input trigger is active
Bit 6: Main Mute	1 = Main mute is active	Bit 2: Zone 2 Only	1 = Only Zone 2 power is on
Bit 5: Zone 2 Mute	1 = Zone 2 mute is active	Bit 1: Zone 2 Power	1 = Zone 2 power is on
Bit 4: Current Zone	1 = Zone 2 is active	Bit 0: Main Power	1 = Main power is on

## RS-232 Status Block Descriptions, continued

### Word 3: General Status II

Bit	7	6	5	4	3	2	1	0
Description	Menu Mode	Auto Status Enabled	PLL Locked	Trigger 4 On	Trigger 3 On	Trigger 2 On	Trigger 1 On	DSP Running

Bit 7: Menu mode 1 = Menu mode is active  
 Bit 6: Auto Status 1 = Auto status enabled  
 Bit 5: PLL Locked 1 = PLL is locked (valid digital input signal detected)  
 Bit 4: Trigger 4 On 1 = Trigger 4 is on  
 Bit 3: Trigger 3 On 1 = Trigger 3 is on  
 Bit 2: Trigger 2 On 1 = Trigger 2 is on  
 Bit 1: Trigger 1 On 1 = Trigger 1 is on  
 Bit 0: DSP Running 1 = DSPs are not reset

### Word 4: Current Device

Bit	7	6	5	4	3	2	1	0
Description	Z2 CD3	Z2 CD2	Z2 CD1	Z2 CD0	MN CD3	MN CD2	MN CD1	MN CD0

Bits 7 – 4: Zone 2 Current Device  
 Bits 3 – 0: Main Zone Current Device

#### Devices

0 DVD	5 CD
1 LD	6 TUNER
2 SAT	7 AUX 1
3 VCR	8 AUX 2
4 TV	9 TAPE

### Word 5: Volume

Bit	7	6	5	4	3	2	1	0
Description	VOL 7	VOL 6	VOL 5	VOL 4	VOL 3	VOL 2	VOL 1	VOL 0

Bit 7 – 0: Current Volume setting 0 – 152

### Word 6: Zone 2 Volume

Bit	7	6	5	4	3	2	1	0
Description	VOL 7	VOL 6	VOL 5	VOL 4	VOL 3	VOL 2	VOL 1	VOL 0

Bit 7 – 0: Current Zone 2 Volume setting 0 – 152

### Word 7: Video Input

Bit	7	6	5	4	3	2	1	0
Description	VID IN 7	VID IN 6	VID IN 5	VID IN 4	VID IN 3	VID IN 2	VID IN 1	VID IN 0

Bit 7 – 0: Current Video Input

#### Video Inputs

1 S-Video 1	7 Reserved
2 S-Video 2	8 Composite Video 1
3 S-Video 3	9 Composite Video 2
4 S-Video 4	10 Composite Video 3
5 Component Video 1	11 Composite Video 4
6 Component Video 2	

## RS-232 Status Block Descriptions, continued

### Word 8: Main Zone Audio Input

Bit	7	6	5	4	3	2	1	0
Description	MN AUD IN 7	MN AUD IN 6	MN AUD IN 5	MN AUD IN 4	MN AUD IN 3	MN AUD IN 2	MN AUD IN 1	MN AUD IN 0

Bit 7 – 0: Main Zone Audio Input

#### Audio Inputs

1 Digital: COAX 1	10 Analog: S1
2 Digital: COAX 2	11 Analog: S2
3 Digital: COAX 3	12 Analog: S3
4 Digital: COAX 4	13 Analog: S4
5 Digital: COAX 5	14 Analog: S5
6 Digital: COAX 6	15 Analog: S6
7 Digital: Optical 1	16 Analog: S7
8 Digital: Optical 2	17 Analog: Tape
9 Analog: B1	18 Analog: VCR

### Word 9: Zone 2 Audio Input

Bit	7	6	5	4	3	2	1	0
Description	Z2 AUD IN 7	Z2 AUD IN 6	Z2 AUD IN 5	Z2 AUD IN 4	Z2 AUD IN 3	Z2 AUD IN 2	Z2 AUD IN 1	Z2 AUD IN 0

Bit 7 – 0: Zone 2 Audio Input

#### Audio Inputs

1 Digital: COAX 1	10 Analog: S1
2 Digital: COAX 2	11 Analog: S2
3 Digital: COAX 3	12 Analog: S3
4 Digital: COAX 4	13 Analog: S4
5 Digital: COAX 5	14 Analog: S5
6 Digital: COAX 6	15 Analog: S6
7 Digital: Optical 1	16 Analog: S7
8 Digital: Optical 2	17 Analog: Tape
9 Analog: B1	18 Analog: VCR

### Word 10: Loudspeakers / Current Audio Stream

Bit	7	6	5	4	3	2	1	0
Description	Back Enabled	Sub Enabled	Surround Enabled	Center Enabled	Input Stream 3	Input Stream 2	Input Stream 1	Input Stream 0

Bit 7: Back Enabled 1 = Back loudspeaker(s) is(are) enabled

Bit 6: Sub Enabled 1 = Subwoofer is enabled

Bit 5: Surround Enabled 1 = Surround loudspeakers are enabled

Bit 4: Center Enabled 1 = Center loudspeaker is enabled

Bits 3–0: Current Input Stream Mode

#### Input Stream Modes

1 PCM	7 PCM Analog Input
2 Dolby Digital 2.0	8 Dolby Digital X/Y
3 Dolby Digital 5.1	9 7.1 (8 Channel discrete)
4 DTS 5.1	10 DTS 6.1 ES Matrix
5 24-bit, 96 KHz PCM	11 DTS 6.1 ES Discrete
6 PCM Digital Input	12 DTS 6.1 ES Matrix & Discrete

## RS-232 Status Block Descriptions, continued

### Word 11: Current Audio Decode Modes

Bit	7	6	5	4	3	2	1	0
Description	CAD 7	CAD 6	CAD 5	CAD 4	CAD 3	CAD 2	CAD 1	CAD 0

Bit 7 – 0: Current Audio Decode Modes

#### Analog and PCM Decode Modes

- 1 Stereo Mode (Pass Mode)
- 2 Pro-Logic II Movie Mode
- 3 Pro-Logic II Music Mode
- 4 Pro-Logic II Matrix Mode
- 5 Pro-Logic II Emulation Mode
- 6 Pro-Logic II Movie + THX Mode
- 7 Multichannel Input Mode
- 8 Pro-Logic II Emulation + THX Mode
- 9 DTS Neo:6 Cinema 6 Mode
- 11 DTS Neo:6 Music Mode
- 12 DTS Neo:6 Cinema 6 + THX Mode
- 13 Noise Mode
- 14 Classical Mode
- 15 General Admission Mode
- 16 Front Row Mode
- 17 On Stage Mode
- 18 Enhanced Stereo Mode
- 19 Orchestra Mode
- 20 Mezzanine Mode
- 21 Full Range + Sub Mode
- 22 Monophonic Mode
- 23 Analog-only Preamp Mode

#### Dolby AC3, 2/0 Modes

- 24 Stereo Mode (Pass Mode)
- 25 Pro-Logic II Movie Mode
- 26 Pro-Logic II Music Mode
- 27 Pro-Logic II Matrix Mode
- 28 Pro-Logic II Emulation Mode
- 29 Pro-Logic II Movie + THX Mode
- 30 Pro-Logic II Matrix + THX Mode
- 31 Pro-Logic II Emulation + THX Mode
- 32 was DTS Neo:6 Cinema 6 Mode
- 33 was DTS Neo:6 Cinema 5 Mode
- 34 was DTS Neo:6 Music Mode
- 35 was DTS Neo:6 Cinema 6 + THX Mode
- 36 was DTS Neo:6 Cinema 5 + THX Mode
- 37 Party Mode
- 38 General Admission Mode
- 39 Front Row Mode
- 40 On Stage Mode
- 41 Enhanced Stereo Mode
- 42 Orchestra Mode
- 43 Mezzanine Mode
- 44 Full Range + Sub Mode
- 45 Monophonic Mode
- 46 Analog-only Preamp Mode

#### Dolby AC3, 5/1 Modes

- 47 Dolby Digital 5.1
- 48 Dolby Digital 5.1 + THX
- 49 Dolby Digital 5.1 + THX EX

#### Dolby AC3, X/Y Modes

- 65 Dolby Digital 1+1
- 66 Dolby Digital 1/0
- 67 Dolby Digital 3/0
- 68 Dolby Digital 2/1
- 69 Dolby Digital 3/1
- 70 Dolby Digital 2/2

#### DTS Modes

- 50 DTS 5.1 Movie
- 51 DTS 5.1 Matrix
- 52 DTS 5.1 Movie + THX
- 53 DTS 5.1 Music
- 54 DTS 5.1 Matrix + THX
- 55 DTS 6.1 Discrete
- 56 DTS 6.1 Discrete + THX
- 57 DTS 5.1 Force

#### 24-bit, 96 KHz Modes

- 10 PCM 24-bit, 96 KHz

#### 7.1 (8 Channel Discrete Input) Modes

- 7 7.1

## RS-232 Status Block Descriptions, continued

### Word 12: Main Zone Balance/Compression Mode

Bit	7	6	5	4	3	2	1	0
Description	Reserved	CMode 1	CMode 0	BAL 4	BAL 3	BAL 2	BAL 1	BAL 0

Bits 4 - 0: Balance Setting 0 – 26

Bits 5 – 6: Compression Mode

#### Balance Settings

0	Right	Off	9	Left	+2.0	18	Right	+2.5
1	Left	+6	10	Left	+1.5	19	Right	+3.0
2	Left	+5.5	11	Left	+1.0	20	Right	+3.5
3	Left	+5.0	12	Left	+0.5	21	Right	+4.0
4	Left	+4.5	13	Centered	0	22	Right	+4.5
5	Left	+4.0	14	Right	+0.5	23	Right	+5.0
6	Left	+3.5	15	Right	+1.0	24	Right	+5.5
7	Left	+3.0	16	Right	+1.5	25	Right	+6.0
8	Left	+2.5	17	Right	+2.0	26	Left	Off

#### Compression Modes

1	Max	2	Normal	3	Night
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### Word 13: Room EQ/Zone 2 Balance

Bit	7	6	5	4	3	2	1	0
Description	Room EQ 2	Room EQ 1	Room EQ 0	BAL 4	BAL 3	BAL 2	BAL 1	BAL 0

Bits 7 – 5: Room EQ Setting

#### Room EQ Setting

0	Room EQ OFF
1	Room EQ Memory 1
2	Room EQ Memory 2
3	Room EQ Memory 3
4	Room EQ Memory 4

Bits 4 - 0: Balance Setting 0 – 26

#### Balance Settings

0	Right	Off	9	Left	+2.0	18	Right	+2.5
1	Left	+6	10	Left	+1.5	19	Right	+3.0
2	Left	+5.5	11	Left	+1.0	20	Right	+3.5
3	Left	+5.0	12	Left	+0.5	21	Right	+4.0
4	Left	+4.5	13	Centered	0	22	Right	+4.5
5	Left	+4.0	14	Right	+0.5	23	Right	+5.0
6	Left	+3.5	15	Right	+1.0	24	Right	+5.5
7	Left	+3.0	16	Right	+1.5	25	Right	+6.0
8	Left	+2.5	17	Right	+2.0	26	Left	Off

## RS-232 Status Block Descriptions, continued

### Word 14: Center Trim

Bit	7	6	5	4	3	2	1	0
Description	Reserved	Reserved	Reserved	CT 4	CT 3	CT 2	CT 1	CT 0

Bits 4 – 0: Center Trim

#### Trim Settings

0	-10 dB	10	0 dB
1	-9 dB	11	+1 dB
2	-8 dB	12	+2 dB
3	-7 dB	13	+3 dB
4	-6 dB	14	+4 dB
5	-5 dB	15	+5 dB
6	-4 dB	16	+6 dB
7	-3 dB	17	+7 dB
8	-2 dB	18	+8 dB
9	-1 dB	19	+9 dB
		20	+10 dB

### Word 15: Surround Trim

Bit	7	6	5	4	3	2	1	0
Description	Mode 1/2 LED Status	Reserved	Reserved	RT 4	RT 3	RT 2	RT 1	RT 0

Bit 7: Mode 1/2 LED Status 1 = Mode 1 LED is On, 0 = Mode 2 LED is On

Bits 4 – 0: Surround Trim

#### Trim Settings

0	-10 dB	7	-3 dB	14	+4 dB
1	-9 dB	8	-2 dB	15	+5 dB
2	-8 dB	9	-1 dB	16	+6 dB
3	-7 dB	10	0 dB	17	+7 dB
4	-6 dB	11	+1 dB	18	+8 dB
5	-5 dB	12	+2 dB	19	+9 dB
6	-4 dB	13	+3 dB	20	+10 dB

### Word 16: Back Trim

Bit	7	6	5	4	3	2	1	0
Description	Reserved	Reserved	Reserved	BT 4	BT 3	BT 2	BT 1	BT 0

Bits 4 – 0: Back Trim

#### Trim Settings

0	-10 dB	7	-3 dB	14	+4 dB
1	-9 dB	8	-2 dB	15	+5 dB
2	-8 dB	9	-1 dB	16	+6 dB
3	-7 dB	10	0 dB	17	+7 dB
4	-6 dB	11	+1 dB	18	+8 dB
5	-5 dB	12	+2 dB	19	+9 dB
6	-4 dB	13	+3 dB	20	+10 dB



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## RS-232 Status Block Descriptions, continued

### Word 17: Sub Trim

Bit	7	6	5	4	3	2	1	0
Description	Reserved	Reserved	Reserved	ST 4	ST 3	ST 2	ST 1	ST 0

Bits 4 – 0: Sub Trim

#### Trim Settings

0	-10 dB	7	-3 dB	14	+4 dB
1	-9 dB	8	-2 dB	15	+5 dB
2	-8 dB	9	-1 dB	16	+6 dB
3	-7 dB	10	0 dB	17	+7 dB
4	-6 dB	11	+1 dB	18	+8 dB
5	-5 dB	12	+2 dB	19	+9 dB
6	-4 dB	13	+3 dB	20	+10 dB

### Word 18: End of Message

Bit	7	6	5	4	3	2	1	0
Description	0	1	0	1	0	1	0	1

Bit 7 – 0: Hexadecimal 55

# RC-5 Commands for the Home Theater Standard 7.1

The following codes are used for controlling the Home Theater Standard 7.1 via IR.

SYSTEM (HEX)	COMMAND (HEX)	SYSTEM (DEC)	COMMAND (DEC)	RC5 WORD (HEX)	HOME THEATER STANDARD 7.1
1C	1	28	1	3701	SUB
1C	2	28	2	3702	REAR
1C	6	28	6	3706	CENTER
1C	7	28	7	3707	MUTE
1C	B	28	11	370B	DOWN
1C	C	28	12	370C	MENU
1C	D	28	13	370D	RIGHT
1C	E	28	14	370E	ENTER
1C	F	28	15	370F	LEFT
1C	10	28	16	3710	TAPE
1C	11	28	17	3711	UP
1C	12	28	18	3712	PREV
1C	19	28	25	3719	7.1 INPUT
1C	1A	28	26	371A	BALANCE
1C	1B	28	27	371B	B1
1C	1C	28	28	371C	S1
1C	1D	28	29	371D	S2
1C	1E	28	30	371E	S3
1C	1F	28	31	371F	S4
1C	20	28	32	3720	S5
1C	21	28	33	3721	COAX1
1C	22	28	34	3722	COAX2
1C	23	28	35	3723	OPT1
1C	24	28	36	3724	OPT2
1C	27	28	39	3727	TAPE ON
1C	28	28	40	3728	TAPE OFF
1C	29	28	41	3729	S-VIDEO1
1C	2A	28	42	372A	S-VIDEO2
1C	2B	28	43	372B	S-VIDEO3
1C	2C	28	44	372C	S-VIDEO4
1C	2D	28	45	372D	COMPOSITE1
1C	2E	28	46	372E	COMPOSITE2
1C	2F	28	47	372F	COMPOSITE3
1C	30	28	48	3730	COMPOSITE4
1C	33	28	51	3733	MUSIC1
1C	35	28	53	3735	STEREO
1C	37	28	55	3737	VOL ZERO
1C	38	28	56	3738	PWR ON
1C	39	28	57	3739	PWR OFF
1C	3A	28	58	373A	MUTE ON
1C	3B	28	59	373B	MUTE OFF
1C	3C	28	60	373C	VOL +10
1C	3D	28	61	373D	VOL -10
1C	3E	28	62	373E	PROLOGIC
19	0	25	0	3640	MUSIC2
19	1	25	1	3641	DVD
19	2	25	2	3642	LD
19	3	25	3	3643	SAT
19	4	25	4	3644	VCR

## RC-5 Commands for the Home Theater Standard 7.1, continued

SYSTEM (HEX)	COMMAND (HEX)	SYSTEM (DEC)	COMMAND (DEC)	RC5 WORD (HEX)	HOME THEATER STANDARD 7.1
19	5	25	5	3645	TV
19	6	25	6	3646	CD
19	7	25	7	3647	TUNER
19	8	25	8	3648	AUX1
19	9	25	9	3649	AUX2
19	A	25	10	364A	MAIN ZONE
19	B	25	11	364B	ZONE 2
19	C	25	12	364C	USER
19	D	25	13	364D	VCR INPUT
19	E	25	14	364E	TAPE INPUT
19	10	25	16	3650	COMPONENT1
19	11	25	17	3651	COMPONENT2
19	12	25	18	3652	COAX3
19	13	25	19	3653	COAX4
19	13	25	19	3654	COAX5
19	15	25	21	3655	COAX6
19	16	25	22	3656	TRIGGER1 ON
19	17	25	23	3657	TRIGGER1 OFF
19	18	25	24	3658	TRIGGER2 ON
19	19	25	25	3659	TRIGGER2 OFF
19	1A	25	26	365A	TRIGGER3 ON
19	1B	25	27	365B	TRIGGER3 OFF
19	1C	25	28	365C	TRIGGER4 ON
19	1D	25	29	365D	TRIGGER4 OFF
19	1E	25	30	365E	Z2 PWR ON
19	1F	25	31	365F	Z2 PWR OFF
19	20	25	32	3668	MAX DYNR
19	21	25	33	3669	NIGHT DYNR
19	22	25	34	366A	NORM DYNR
1C	14	28	20	3714	EQ OFF
1C	15	28	21	3715	EQ MEM1
1C	16	28	22	3716	EQ MEM2
1C	17	28	23	3717	EQ MEM3
1C	18	28	24	3718	EQ MEM4
19	30	25	48	3670	DIGIT 0
19	31	25	49	3671	DIGIT 1
19	32	25	50	3672	DIGIT 2
19	33	25	51	3673	DIGIT 3
19	34	25	52	3674	DIGIT 4
19	35	25	53	3675	DIGIT 5
19	36	25	54	3676	DIGIT 6
19	37	25	55	3677	DIGIT 7
19	38	25	56	3678	DIGIT 8
19	39	25	57	3679	DIGIT 9
19	3A	25	58	367A	SET MODE**

**\*\*The SET MODE command allows the user to set a specific audio decode mode using RC 5 commands. The code is set by sending the unit the SET MODE command, then the two DIGIT commands which define the mode. These three commands must occur in sequence; any command sent after the SET MODE command, other than the DIGIT commands, causes the SET MODE sequence to be reset. Refer to the list of audio decode modes on page 20. Modes that do not apply to the current input stream are ignored.**

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## RC-5 Commands for the Home Theater Standard 7.1, continued

*Audio decode modes  
and corresponding codes*

AUDIO DECODE MODE	CODE
Dolby Digital 5.1	00
Dolby Digital 5.1 + THX	01
Dolby Digital 5.1 + THX EX	02
AC3 2/0 Stereo Mode (Pass Mode)	03
AC3 2/0 Pro-Logic II Movie Mode	04
AC3 2/0 Pro-Logic II Music Mode	05
AC3 2/0 Pro-Logic II Matrix Mode	06
AC3 2/0 Pro-Logic II Emulation Mode	07
AC3 2/0 Pro-Logic II Movie +THX Mode	08
AC3 2/0 Pro-Logic II Emulation+THX Mode	09
DTS 5.1 Music	10
DTS 5.1 Movie	11
DTS 5.1 Matrix	12
DTS 5.1 Movie + THX	13
DTS 5.1 Matrix + THX	14
DTS 6.1 Discrete	15
DTS 6.1 Discrete + THX	16
DTS 5.1 Force	17
Stereo Mode (Pass Mode)	18
Pro-Logic II Movie Mode	19
Pro-Logic II Music Mode	20
Pro-Logic II Matrix Mode	21
Pro-Logic II Emulation Mode	22
Pro-Logic II Movie + THX Mode	23
Pro-Logic II Emulation + THX	24
DTS Neo:6 Cinema 6 Mode	25
DTS Neo:6 Music Mode	26
DTS Neo:6 Cinema 6 + THX Mode	27
Party Mode	28
General Admission Mode	29
Front Row Mode	30
On Stage Mode	31
Enhanced Stereo Mode	32
Orchestra Mode	33
Mezzanine Mode	34
Full Range + Sub Mode	35
Monophonic Mode	36
24/96 Decode Mode	38

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