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THE LEADER IN AUDIO ENGINEERING

SACD Standard

Super Audio
Compact Disc Player

RS-232 Port: Sending Commands and Interpreting Data

RC-6 Remote: Commands

Developer's Reference

SACD Standard
Super Audio Compact Disc Player
Developer's Reference
v 03.0

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Overview

This document is designed for application developers who want to control the SACD Standard 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 6*

4 RS-232 Status Block Descriptions, showing how the SACD Standard reports operational status, *on pages 6-7*

5 RC-6 Commands, describing the codes used for controlling the SACD Standard via IR, *on page 8*

Connecting to the RS-232 Port

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

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

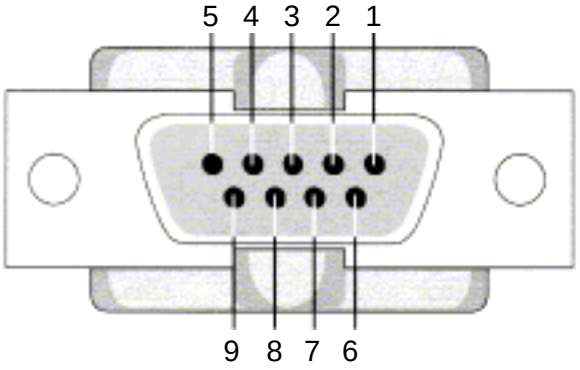
WIRING THE MALE RS-232 PORT CONNECTOR

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 SACD Standard



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

RS-232 Port Protocols

The SACD Standard 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 SACD Standard

COMMAND	RS-232 CODE
Power On	1PWRZ
Power Off	0PWRZ
Toggles the Power	PWRZ
Open / Close Transport	OPNZ
Reverse Search	RSCHZ
Forward Search	FSCHZ
Play	PLYZ
Forward Track	FTRKZ
Reverse Track	RTRKZ
Re-start Track	STRKZ
Pause	PAUSZ
Stop	STPZ
Area	AREAZ
Display	DISPZ
Dim	DIMZ
Scan	SCANZ
Shuffle	SFFLZ
Repeat	RPTZ
A-B Repeat	ABRZ
Number 1	ONEZ
Number 2	TWOZ
Number 3	TREZ
Number 4	FORZ
Number 5	FIVZ
Number 6	SIXZ
Number 7	SEVZ
Number 8	ATEZ
Number 9	NINZ
Number 0	NULZ
Filter 1	FLTAZ
Filter 2	FLTBZ
Filter 3	FLTCZ
Filter 4	FLTDZ
Track Select	xxTSLZ
Enable Auto-Status	ASTEZ
Disable Auto-Status	ASTDZ
Send Status	STAZ

RS-232 Status Feedback Description for the SACD Standard

The SACD Standard reports its operational status by transmitting a block of status data via the RS-232 connector. The block is configured as three 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 SACD Standard 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". SACD Standard 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 SACD Standard

All numeric values described in the following charts are decimal values unless otherwise noted. The description of the three 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	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Power

Bit 7: Reserved
Bit 6: Reserved
Bit 5: Reserved
Bit 4: Reserved
Bit 3: Reserved
Bit 2: Reserved
Bit 1: Reserved
Bit 0: Power 1=Main power is on

RS-232 Status Block Descriptions, continued

Word 3: 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-6 Commands for the SACD Standard

The following codes are used for controlling the SACD Standard via IR.

SYSTEM (HEX)	SYSTEM (DEC)	COMMAND (HEX)	COMMAND (DEC)	KEY COMMAND
04	04	0C	12	SACD Power
04	04	31	49	Stop
04	04	50	80	Sound Mode
04	04	2C	44	Play
04	04	29	41	Reverse
04	04	30	48	Pause
04	04	22	34	Slow
04	04	28	40	Forward
04	04	21	33	Previous
04	04	D7	215	Resume
04	04	20	32	Next
04	04	54	84	Disc
04	04	48	72	Display
04	04	01	1	1
04	04	02	2	2
04	04	03	3	3
04	04	04	4	4
04	04	05	5	5
04	04	06	6	6
04	04	07	7	7
04	04	08	8	8
04	04	09	9	9
04	04	00	0	0
04	04	1C	28	Shuffle
04	04	13	19	Dim
04	04	1D	29	Repeat
04	04	3B	59	Repeat A-B
04	04	2A	42	Scan