



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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INFORMATION

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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.

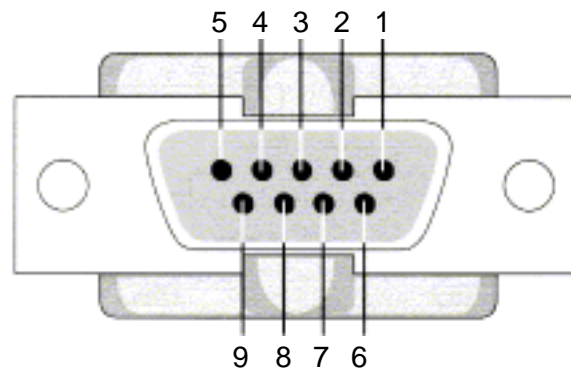
WIRING THE MALE RS-232 PORT CONNECTOR

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 |