



Rotel RX-1050 RS232 HEX Protocol

Date	Version	Update Description
February 6, 2012	1.00	Original Specification

The RS232 protocol structure for the RX-1050 is detailed below. This is a HEX based communication protocol.

Connection Settings

Baud Rate	Parity	Valid Data Bits	Stop Bit Value	Handshaking	Data Type
2400	N	8	1	None	String

All commands sent to the attached Rotel device must follow the command structure detailed below, unless specified otherwise. Send only the bytes only, no spaces, delimiter, etc.

Standard Command String Format

Start	Count	Device ID	Type	Key	Checksum
0xFE	0x03	0x60	0x10	0xFF	0xFF

Note: The count byte only includes the ID, Type, and Key bytes; it does not include the Start or Checksum bytes.

Note 2: Do not include any carriage returns or line feeds after the commands

Communication Protocol

Command and response messages are included on the following pages. The standard response string of the unit mirrors the data that would be available on the front panel of the unit.

Any change to the status of the front display on the unit will prompt a feedback string mirroring that change.

Note that the spaces shown between hex bytes below are for clarity only; do not include spaces in the actual command sent to the unit.

Meta Encoding

The start byte for all command and response strings is FE. To keep the device from encountering the start byte FE in any position other than as the start byte, any occurrence of the bytes FD or FE in a command string must be converted to either FD 00 (for FD), or FD 01 (for FE). This will allow the string to pass while masking any occurrence of the byte FE except as the start byte. Commands that have Meta Encoding applied will be highlighted in red.

Section 1: Control Command List

RX-1050 HEX	Command Description
POWER & VOLUME COMMANDS	
FE 03 60 10 0A 7D	Power Toggle
FE 03 60 10 4A BD	Power Off
FE 03 60 10 4B BE	Power On
FE 03 60 10 0B 7E	Volume Up
FE 03 60 10 0C 7F	Volume Down
FE 03 60 10 1E 91	Mute Toggle
SOURCE SELECTION COMMANDS	
FE 03 60 10 35 A8	Source Phono
FE 03 60 10 02 75	Source CD
FE 03 60 10 03 76	Source Tuner
FE 03 60 10 04 77	Source Tape
FE 03 60 10 05 78	Source Video 1
FE 03 60 10 06 79	Source Video 2
FE 03 60 10 07 7A	Source Video 3
FE 03 60 10 08 7B	Source Video 4
STONE CONTROL COMMANDS	
FE 03 60 10 0D 80	Treble Up
FE 03 60 10 0E 81	Treble Down
FE 03 60 10 0F 82	Bass Up
FE 03 60 10 10 83	Bass Down
FRONT PANEL SOURCE LABEL COMMANDS	
FE 03 60 10 19 8C	Character Enter
FE 03 60 10 1A 8D	Next Character
FE 03 60 10 1B 8E	Previous Character
FE 03 60 10 18 8B	Source Label Change
TUNER COMMANDS	
FE 03 60 10 28 9B	Tune Up
FE 03 60 10 29 9C	Tune Down
FE 03 60 10 27 9A	Memory
FE 03 60 10 24 97	Band Toggle
FE 03 60 10 20 93	Tune / Preset
FE 03 60 10 25 98	Frequency Direct
FE 03 60 10 21 94	Preset Scan
FE 03 60 10 44 B3	Tuner Display
FE 03 60 10 26 99	FM Mono
NUMERIC KEY COMMANDS	
FE 03 60 10 2A 9D	Number 1
FE 03 60 10 2B 9E	Number 2
FE 03 60 10 2C 9F	Number 3

RX-1050 HEX	Command Description
FE 03 60 10 2D A0	Number 4
FE 03 60 10 2E A1	Number 5
FE 03 60 10 2F A2	Number 6
FE 03 60 10 30 A3	Number 7
FE 03 60 10 31 A4	Number 8
FE 03 60 10 32 A5	Number 9
FE 03 60 10 33 A6	Number 0
OTHER COMMANDS	
FE 03 60 10 17 8A	Record Function Select
FE 03 60 10 23 96	Zone 2 / Main
FE 03 60 10 50 C3	Speaker A Toggle
FE 03 60 10 51 C4	Speaker B Toggle
FE 03 60 10 1F 92	Front Display On/Off
FE 03 60 10 FF 72	Display Refresh

Section 2: Feedback String Format

Standard Response String Format

Start	Count	ID	Type	Data					Checksum
0xFE	0x0F	0x60	0x20	Flag1	Flag2	Char1	...	Char11	0xFF

The feedback string is a representation of the display of the unit.

The Flag1 – Flag2 data bytes contain data on which of the various icons on the front display are currently illuminated.

The Char1 - Char11 data bytes contain ASCII data representing the text that appears across the front display. It can contain source input, volume, and tuner frequency data and should be parsed to obtain this information.

The display status uses 2 bits in Flag1 to confirm if the front display is On or Off.

Flag1 – Flag2 Data

	Flag1	Flag2
Bit0	Speaker B	AM
Bit1	Speaker A	Preset
Bit2	Display Mode 0	Memory
Bit3	Display Mode 1	Auto
Bit4	Standby LED	Tuned
Bit5		Stereo
Bit6		FM
Bit7		

Display Status

	Display On	Display Off
Display Mode 1	0	1
Display Mode 0	0	0