Rotel RCD-1520
RS232 HEX Protocol

Date	Version	Update Description
February 2, 2012	1.00	Original Specification

The RS232 protocol structure for the RCD-1520 is detailed below. This is a HEX based communication protocol.

Connection Settings

Baud Rate	Parity	Valid Data Bits	Stop Bit Value	Handshaking	Data Type
19200	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, delimeter, etc.

Standard Command String Format

Start	Count	Device ID	Type	Key	Checksum
0xFE	0x03	0x40	0x10	0xXX	0xXX

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 byes 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

RCD-1520 HEX	Command Description
POWER COMMANDS	
FE 03 40 10 02 55	Power Toggle
FE 03 40 10 00 53	Power On
FE 03 40 10 01 54	Power Off
CD TRANSPORT COMMANDS	
FE 03 40 10 04 57	Play
FE 03 40 10 06 59	Stop
FE 03 40 10 05 58	Pause
FE 03 40 10 09 5C	Track >>|
FE 03 40 10 08 5B	Track |<<
FE 03 40 10 0B 5E	Search >>
FE 03 40 10 0A 5D	Search <<
FE 03 40 10 03 56	Eject
NUMERIC KEY COMMANDS	
FE 03 40 10 0C 5F	Number 0
FE 03 40 10 0D 60	Number 1
FE 03 40 10 0E 61	Number 2
FE 03 40 10 0F 62	Number 3
FE 03 40 10 10 63	Number 4
FE 03 40 10 11 64	Number 5
FE 03 40 10 12 65	Number 6
FE 03 40 10 13 66	Number 7
FE 03 40 10 14 67	Number 8
FE 03 40 10 15 68	Number 9
FE 03 40 10 16 69	Number +10
ADDITIONAL COMMANDS	
FE 03 40 10 25 78	Random
FE 03 40 10 26 79	Repeat
FE 03 40 10 27 7A	A-B Repeat
FE 03 40 10 36 89	Time
FE 03 40 10 24 77	Program
FE 03 40 10 38 8B	Scan
FE 03 40 10 37 8A	Review
FE 03 40 10 17 6A	Clear
FE 03 40 10 32 85	Front Display Dim

Section 2: Feedback String Format

Standard Response String Format

Start	Count	Device ID	Type	Data0 - Data40 (41 Bytes)	Checksum
0xFE	0x2B	0x40	0x20	ASCII Characters	0xXX

The feedback string is a representation of the display of the unit. The Data0 data byte contains data on the current brightness setting of the display. The remaining 40 data bytes contain data representing the remaining ASCII test and which of the various icons on the front display are currently illuminated and must be parsed to obtain track and disc data.

Data0 – Display Brightness

Value	Brightness Level
0x00	Brightness Level 0 (Brightest)
0x01	Brightness Level 1
0x02	Brightness Level 2
0x03	Brightness Level 3
0x04	Brightness Level 4
0x05	Brightness Level 5
0x06	Brightness Level 6
0x07	Display OFF

Data1 – Data40 – Display Data

The values must be parsed to obtain information on what is displayed. Below is a reference chart for what icons and information the bytes represent.

Value	Display Data
0x00-0x09	0 – 9
0x0A	⏵
0x0B	⏸
0x0C	■
0x0F	:
0x15	L (Repeat All)
0x16	T (Track)
0x17	C (Chapter)
0x19	S (Random)
0x20	Space
0x41-0x5A	ASCII Characters A – Z
0x61-0x7A	ASCII Characters a – z