



Rotel RKB-850/8100/D850/D8100 RS232 ASCII Controller Command List

Date	Version	Update Description
March 24, 2014	1.00	Original Specification
April 18, 2014	1.10	Added new commands for Volume/Mute/Balance/Channel On/Off (Requires Main Software V1.31)
April 16, 2015	1.20	Added new information and feedback data when V02 units are in Signal Sense mode.
May 26, 2016	1.21	Updated information on temperature feedback.
October 24, 2016	1.30	Added new commands for analog/digital input selection for RKB-D850/D8100 models. (Requires Main Software V2.45)

The RKB-850/8100/D850/D8100 support an ASCII based RS232 protocol. The RS232 hardware does not support flow control so care needs to be take when sending and receiving data to avoid packet loss.

All commands sent to the attached Rotel device must have a terminating “!” character.

Example Command: power_on!

Note: Do not include any spaces in the command, and do not include a carriage return or line feed after the command, only the “!” terminating character.

Status information from the attached Rotel product with either have a terminating “!” character or a byte count for variable length text data that may include a “!” in the returned message. It is up to the sending/receiving control application to properly parse and process the packets.

Note: The byte count only includes the text data and not the length or “,” character.

Connection Settings

Baud Rate	Parity	Valid Data Bits	Stop Bit Value	Handshaking	Data Type
115200	N	8	1	None	String

Communication Protocol

Command and response messages are included on the following pages. Automatic status update information can be enabled/disabled using the “display_update_auto” and “display_update_manual” commands.

In automatic mode any time the amplifiers status changes, such as power state, temperature, input level trims or digital input frequency, the new information will be sent to the control system. In manual mode the status information updates must be requested each time a refresh of the status information is desired.

Channel Specific Commands

Many commands can include an optional prefix (0A:, 0B:, 0C:, 0D:) to issue a command or request status for a specific channel. If no prefix is included the command or status will apply to all channels.

Unit Responses in the command table including prefix 0A: indicate channel-specific responses. Depending on the command, the unit may return additional lines of feedback for each channel, separated by a carriage return (0A = Channel A, 0B = Channel B, etc.).

Example Command (Specific Channel): 0C:get_channel_status!

Example Response: 0C:ch_power=on!

Example Command (All Channels): get_channel_status!

Example Response: 0A:ch_power=on!
0B:ch_power=on!
0C:ch_power=on!
0D:ch_power=on!

Channel Specific Commands:

- Channel On/Off
- Volume Levels
- Balance Levels
- Mute Settings
- Channel Status

Enabling Volume Control

In order for RS232 volume control commands to function, all 4 front panel level trims must be set to minimum. If any of the front panel volume trims are not in the minimum position, RS232 volume control commands will not have any effect on the unit.

Balance vs. Left/Right Volume Levels

With Main Software V1.31 the RKB series amplifiers added commands for Balance, as well as independent Left/Right channel volume settings. If individual L/R volume settings are used, balance control commands will not have any effect and any existing balance settings will be reset to 0 for the channel.

Power On vs. Channel On Commands

With Main Software V1.31 the RKB series amplifiers added individual channel on/off commands. These commands can be used to enable/disable individual channels on the amplifier rather than powering on/off the entire unit. It is recommended to use EITHER power_on/power_off or the individual channel power commands, but not both.

For example, if amplifier channels are disabled using the channel_off commands, they will not respond to a power_on command and must be enabled using the channel_on command.

Signal Sense Mode

RKB V02 units with Main Software V2.43 and later have added a Signal Sense feature. When in Signal Sense mode RS232 Power On/Off and Channel On/Off commands are disabled. The return feedback to the get_current_power! and get_channel_status! is also modified when in this mode.

Analog/Digital Input Selection Mode (RKB-D850/D8100 only)

RKB-D850 and RKB-D8100 units with Main Software V2.45 and later have added an input selection mode feature. The default mode is Auto, which will select the Optical input if a digital signal is present. If no digital signal is present, it will then revert to the Analog input. The source input can be changed to always monitor either analog or digital via new RS232 commands.

Section 1: Control Command List

RKB-850 ASCII	Command Description	Unit Response
POWER & VOLUME COMMANDS		
power_on!	Power On	power=on!
power_off!	Power Off	power=standby!
power_toggle!	Power Toggle	power=on/standby!
channel_on!	Turn Specific Channel On	0A:ch_power=on!
channel_off!	Turn Specific Channel Off	0A:ch_power=off!
volume_up!	Volume Up	0A:volume_l_###! 0A:volume_r_###!
volume_down!	Volume Down	0A:volume_l_###! 0A:volume_r_###!
volume_n!	Set Volume to level n (n = 1 - 96)	0A:volume_l_###! 0A:volume_r_###!
volume_l_up!	Left Channel Volume Up	0A:volume_l_###!
volume_r_up!	Right Channel Volume Up	0A:volume_r_###!
volume_l_down!	Left Channel Volume Down	0A:volume_l_###!
volume_r_down!	Right Channel Volume Down	0A:volume_r_###!
volume_l_n!	Set Left Channel Volume to level n (n = 1 - 96)	0A:volume_l_###!
volume_r_n!	Set Right Channel Volume to level n (n = 1 - 96)	0A:volume_r_###!
mute!	Mute Toggle	0A:mute=on/off!
mute_on!	Mute On	0A:mute=on!
mute_off!	Mute Off	0A:mute=off!
BALANCE CONTROL COMMANDS		
balance_right!	Balance Right	0A:balance=000/L##/R##!
balance_left!	Balance Left	0A:balance=000/L##/R##!
balance_L15!	Set Balance to Max Left	0A:balance=L15!
balance_000!	Set Balance to 0	0A:balance=000!
balance_R15!	Set Balance to Max Right	0A:balance=R15!

OTHER COMMANDS		
factory_default_on!	Set all user settings back to factory defaults.	power=on!
INPUT SELECTION COMMANDS (V2.45 and newer)		
input_sel_auto!	Set input select mode to Auto	input_sel_mode=auto!
input_sel_digital!	Select optical input	input_sel_mode=digital!
input_sel_analog!	Select analog input	input_sel_mode=analog!
STATUS REFRESH COMMANDS		
display_update_auto!	Set Status Update to Auto	display_update=auto!
display_update_manual!	Set Status Update to Manual	display_update=manual!

Section 2: Feedback Request Command List

Command:	get_product_type!
Description:	Request the product type
Return String:	product_type=##,text
Return Description:	Rotel product type name, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
Example:	product_type=08,RKB-850

Command:	get_product_version!
Description:	Request the main CPU software version
Return String:	product_version=##,text
Return Description:	Rotel main CPU software version, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
Example:	product_version=06,V1.2.2

Command:	get_display_update!
Description:	Request status update
Return String(s):	display_update=auto! / display_update=manual!
Return Description:	Status of if the status refresh is automatic or manual
Example:	display_update=auto!

Command:	get_current_power!
Description:	Request current power status
Return String(s):	power=on! / power=standby! / power=SignalSenseMode!
Return Description:	Current power status. If in Signal Sense mode will return SignalSenseMode instead of on/standby.
Example:	power=on!

Command:	get_input_sel_mode!
Description:	Request current input select mode (Requires Main SW V2.45 or later)
Return String(s):	input_sel_mode=auto! / input_sel_mode=digital! / input_sel_mode=analog!
Return Description:	Current input selection mode.
Example:	input_sel_mode=digital!

Command:	get_channel_status!
Description:	Request current channel power status. If a specific channel prefix is not included, returns information for all 4 channels (0A/0B/0C/0D), each line separated by carriage return. Note – when in Signal Sense mode status will return ch_power=amp_on! or ch_power=amp_off!
Return String(s):	0A/0B/0C/0D:ch_power=on! / ch_power=off! / ch_power=amp_on! / ch_power=amp_off!
Return Description:	Current channel power status
Example:	0B:ch_power=off!

Command:	get_balance!
Description:	Request current balance setting. If a specific channel prefix is not included, returns information for all 4 channels (0A/0B/0C/0D), each line separated by carriage return
Return String(s):	0A/0B/0C/0D:balance=###! (L01-15, R01-15, 000)
Return Description:	Current balance setting
Example:	0B:balance=L03!

Command:	get_current_freq!
Description:	Request current frequency for digital source input. If a specific channel prefix is not included, returns information for all 4 channels (0A/0B/0C/0D), each line separated by carriage return
Return String(s):	0A/0B/0C/0D:freq=off! / freq=32! / freq=44.1! / freq=48! / freq=88.2! / freq=96! / freq=176.4! / freq=192!
Return Description:	Current frequency for digital source input
Example:	freq=48!

Command:	get_amp_trim!
Description:	Request current level trims. Returns information for all 4 channels (0A/0B/0C/0D), each line separated by carriage return
Return String(s):	0A/0B/0C/0D:amp_trim=19! / 0B: amp_trim=min! / 0D: amp_trim=max!
Return Description:	Current level trims for each amplifier channel
Example:	0A:amp_trim=45! 0B:amp_trim=20! 0C:amp_trim=min! 0D:amp_trim=max!

Command:	get_temperature!
Description:	Request current amplifier temperature (Celcius)
Return String(s):	temperature=32,32,34! / temperature=32,32,34,34!
Return Description:	Returns current temperature for channels AB, channels CD, Power Supply (or Power Supplies). RKB-850/D850 return 3 values, RKB-8100/D8100 use 2 x Power Supplies and so will return 4 values.
Example:	temperature=32,32,34!

Command:	get_fan_status!
Description:	Request current fan speed status
Return String(s):	fan=normal! / fan=high!
Return Description:	Current fan speeds
Example:	fan=normal!

Command:	get_amp_status!
Description:	Request current amplifier status
Return String(s):	amp=normal! / amp=protection!
Return Description:	Current status of the amplifiers
Example:	amp=normal!

Command:	get_volume_max!
Description:	Request Max volume value
Return String(s):	volume_max=##!
Return Description:	2 digit volume max level
Example:	volume_max=96!

Command:	get_volume_min!
Description:	Request Min volume value
Return String(s):	volume_min=0!
Return Description:	2 digit volume min level
Example:	volume_min=0!

Command:	get_volume!
Description:	Request current volume value. If a specific channel prefix is not included, returns information for all 4 channels (0A/0B/0C/0D), each line separated by carriage return
Return String(s):	0A/0B/0C/0D:volume_l_###! 0A/0B/0C/0D:volume_r_###!
Return Description:	2 digit current volume level
Example:	0C:volume_l_40! 0C:volume_r_40!

Command:	get_volume_l!
Description:	Request current volume value for the left channel. If a specific channel prefix is not included, returns information for all 4 channels (0A/0B/0C/0D), each line separated by carriage return
Return String(s):	0A/0B/0C/0D:volume_l_###!
Return Description:	2 digit current left channel volume level
Example:	0C:volume_l_40!

Command:	get_volume_r!
Description:	Request current volume value for the right channel. If a specific channel prefix is not included, returns information for all 4 channels (0A/0B/0C/0D), each line separated by carriage return
Return String(s):	0A/0B/0C/0D:volume_r_###
Return Description:	2 digit current right channel volume level
Example:	0C:volume_r_=40!