

## Rotel RA-6000 RS232 / IP ASCII Controller Command List

Date	Version	Update Description
August 9, 2022	1.00	Original Specification

The RA-6000 supports an ASCII based RS232 and IP 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 will have a terminating “\$” character. It is up to the sending/receiving control application to properly parse and process the packets.

### Connection Settings

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

### IP Control Settings

The RA-6000 will accept and respond to IP control commands if the product is connected to a local network and has a valid IP address.

Commands will be accepted via TCP port 9590, and the unit will send responses back via the same port. The command and response format is identical to the serial commands.

### Communication Protocol

Command and response messages are included on the following pages. Automatic status update information can be enabled/disabled using the “rs232\_update\_on” and “rs232\_update\_off” commands.

In automatic mode each time the display changes the new display line(s) will be sent. In manual mode the display updates must be requested each time a refresh of the display information is desired. This primarily applies to Front USB metadata information. Basic status information such as volume, power or source changes will still be provided automatically.

## Section 1: Control Command List

RA-6000 ASCII	Command Description	Unit Response
<b>POWER &amp; VOLUME COMMANDS</b>		
power_on!	Power On	power=on\$
power_off!	Power Off	power=standby\$
power_toggle!	Power Toggle	power=on/standby\$
vol_up!	Volume Up	volume=##\$
vol_down!	Volume Down	volume=##\$
vol_nn!	Set Volume to level n (00 - 96)	volume=##\$
mute!	Mute Toggle	mute=on/off\$
mute_on!	Mute On	mute=on\$
mute_off!	Mute Off	mute=off\$
<b>SOURCE SELECTION COMMANDS</b>		
cd!	Source CD	source=cd\$
coax1!	Source Coax 1	source=coax1\$
coax2!	Source Coax 2	source=coax2\$
coax3!	Source Coax 3	source=coax3\$
opt1!	Source Optical 1	source=opt1\$
opt2!	Source Optical 2	source=opt2\$
opt3!	Source Optical 3	source=opt3\$
aux!	Source Aux	source=aux\$
tuner!	Source Tuner	source=tuner\$
phono!	Source Phono	source=phono\$
usb!	Source Front USB	source=usb\$
bluetooth!	Source Bluetooth	source=bluetooth\$
bal_xlr!	Source XLR	source=bal_xlr\$
pcusb!	Source PC-USB	source=pc_usb\$
<b>SOURCE CONTROL COMMANDS</b>		
play!	Play Source	n/a
stop!	Stop Source	n/a
pause!	Pause Source	n/a
trkf!	Track Forward/Tune Up	n/a
trkb!	Track Backward/Tune Down	n/a
<b>TONE CONTROL COMMANDS</b>		
bypass_on!	Tone Bypass On	bypass=on\$
bypass_off!	Tone Bypass Off	bypass=off\$
bass_up!	Bass Up	bass=000/+##/-##\$
bass_down!	Bass Down	bass=000/+##/-##\$
bass_-nn!	Set Bass to -n (n = 01-10)	bass=-##\$
bass_000!	Set Bass to 0	bass=000\$
bass_+nn!	Set Bass to +n (n = 01-10)	bass=+##\$

RA-6000 ASCII	Command Description	Unit Response
treble_up!	Treble Up	treble=000/+##/-##\$
treble_down!	Treble Down	treble=000/+##/-##\$
treble_-n!	Set Treble to -n (n = 01-10)	treble=-##\$
treble_000!	Set Treble to 0	treble=000\$
treble_+nn!	Set Treble to +n (n = 01-10)	treble=+##\$
<b>BALANCE CONTROL COMMANDS</b>		
balance_r!	Balance Right	balance=000/l##/r##\$
balance_l!	Balance Left	balance=000/l##/r##\$
balance_lnn!	Set Balance to left n (n = 01-15)	balance=l##\$
balance_000!	Set Balance to 0	balance=000\$
balance_rnn!	Set Balance to right n (n = 01-15)	balance=r##\$
<b>OTHER COMMANDS</b>		
dimmer!	Toggle display dimmer	dimmer=#\$
dimmer_0!	Set display to brightest setting	dimmer=0\$
dimmer_1!	Set display to dimmer level 1	dimmer=1\$
dimmer_2!	Set display to dimmer level 2	dimmer=2\$
dimmer_3!	Set display to dimmer level 3	dimmer=3\$
dimmer_4!	Set display to dimmer level 4	dimmer=4\$
dimmer_5!	Set display to dimmer level 5	dimmer=5\$
dimmer_6!	Set display to dimmest setting	dimmer=6\$
<b>RS232 FEEDBACK COMMANDS</b>		
rs232_update_on!	Set RS232 Update to Auto (On)	update_mode=auto\$
rs232_update_off!	Set RS232 Update to Manual (Off)	update_mode>manual\$

## Section 2: Feedback Request Command List

<b>Command:</b>	power?
<b>Description:</b>	Request current power status
<b>Return String(s):</b>	power=on\$ / power=standby\$
<b>Return Description:</b>	Current power status
<b>Example:</b>	power=on\$

<b>Command:</b>	source?
<b>Description:</b>	Request current source
<b>Return String(s):</b>	source=cd\$ / source=coax1\$ / source=coax2\$ / source=coax3\$ source=opt1\$ / source=opt2\$ / source=opt3\$ / source=tuner\$ / source=phono\$ / source=usb\$ / source=aux\$ / source=pc_usb\$ / source=bal_xlr\$ / source=bluetooth\$
<b>Return Description:</b>	Current source
<b>Example:</b>	source=usb\$

<b>Command:</b>	volume?
<b>Description:</b>	Request current volume value
<b>Return String(s):</b>	volume=##\$
<b>Return Description:</b>	2 digit current volume level
<b>Example:</b>	volume=40\$

<b>Command:</b>	mute?
<b>Description:</b>	Request current mute status
<b>Return String(s):</b>	mute=on\$ / mute=off\$
<b>Return Description:</b>	Current mute status
<b>Example:</b>	mute=off\$

<b>Command:</b>	bypass?
<b>Description:</b>	Request current tone bypass state
<b>Return String(s):</b>	bypass=on\$ / bypass=off\$
<b>Return Description:</b>	Current tone bypass state
<b>Example:</b>	bypass=off\$

<b>Command:</b>	bass?
<b>Description:</b>	Request current bass level
<b>Return String(s):</b>	bass=###\$ (+01-10, -01-10, 000)
<b>Return Description:</b>	Current tone control bass level
<b>Example:</b>	bass=+02\$

<b>Command:</b>	treble?
<b>Description:</b>	Request current treble level
<b>Return String(s):</b>	treble=###\$ (+01-10, -01-10, 000)
<b>Return Description:</b>	Current tone control treble level
<b>Example:</b>	treble=-01\$

<b>Command:</b>	balance?
<b>Description:</b>	Request current balance setting
<b>Return String(s):</b>	balance=###\$ (l01-15, r01-15, 000)
<b>Return Description:</b>	Current balance setting
<b>Example:</b>	balance=r03\$

<b>Command:</b>	freq?
<b>Description:</b>	Request current frequency for digital source input
<b>Return String(s):</b>	freq=off\$ / freq=32\$ / freq=44.1\$ / freq=48\$ / freq=88.2\$ / freq=96\$ / freq=176.4\$ / freq=192\$ / freq=384\$
<b>Return Description:</b>	Current frequency for digital source input
<b>Example:</b>	freq=48\$

<b>Command:</b>	dimmer?
<b>Description:</b>	Request current front display dimmer level
<b>Return String(s):</b>	dimmer=0\$ / dimmer=1\$ / dimmer=2\$ / dimmer=3\$ / dimmer=4\$ / dimmer=5\$ / dimmer=6\$
<b>Return Description:</b>	Current front display dimmer level
<b>Example:</b>	dimmer=3\$

<b>Command:</b>	pcusb?
<b>Description:</b>	Request current PC-USB class
<b>Return String(s):</b>	pcusb_class=2\$
<b>Return Description:</b>	Current PC-USB class
<b>Example:</b>	pcusb_class=2\$

<b>Command:</b>	version?
<b>Description:</b>	Request the main CPU software version
<b>Return String:</b>	version=#.##\$
<b>Return Description:</b>	Rotel main CPU software version
<b>Example:</b>	version=1.53\$

<b>Command:</b>	pc_version?
<b>Description:</b>	Request the PC-USB software version
<b>Return String:</b>	pc_version=#.##\$
<b>Return Description:</b>	Rotel PC-USB software version
<b>Example:</b>	pc_version=1.13\$

<b>Command:</b>	ip?
<b>Description:</b>	Request the IP address of the product
<b>Return String:</b>	ipaddress=###.###.###.###\$
<b>Return Description:</b>	Current IP address
<b>Example:</b>	ipaddress =192.168.100.8\$

<b>Command:</b>	mac?
<b>Description:</b>	Request the MAC address of the product
<b>Return String:</b>	mac=#####\$
<b>Return Description:</b>	MAC address (uppercase characters)
<b>Example:</b>	mac=0CEFAF90125E\$

<b>Command:</b>	model?
<b>Description:</b>	Request the model number
<b>Return String:</b>	model=text\$
<b>Return Description:</b>	Rotel model number
<b>Example:</b>	model=RA-6000\$

<b>Command:</b>	discover?
<b>Description:</b>	Request the device to identify itself on the network
<b>Return String:</b>	discover=ip=###.###.###.### port=#### mac=#####\$
<b>Return Description:</b>	Device's IP address, port number and MAC address
<b>Example:</b>	discover=ip=192.168.100.25 port=9596 mac=0cefaf90125e\$