



Rotel RA-1572 RS232 / IP ASCII Controller Command List

Date	Version	Update Description
August 27, 2018	1.00	Original Specification
January 2, 2019	2.00	Add V2.0 specification and details on change

The RA-1572 supports an ASCII based RS232 protocol. The RS232 hardware does not support flow control so care needs to be taken when sending and receiving data to avoid packet loss. The unit will also support IP control using the same command formats.

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 either have a terminating “!” or “\$” character, depending on the protocol revision (see update below), 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.

Important Protocol Revision

As of software V2.65, the RS232 and IP protocol was updated with changes to some commands as well as all feedback strings. **This change will impact existing control systems so any connected control systems should be updated to utilize the new protocol before updating the software in the RA-1572.**

The current commands and feedback strings are documented in Sections 1 & 2, while the legacy commands for older software is documented in Sections 3 & 4. A summary and list of specific changes is also provided in Appendix A.

The RS232 connection settings and IP control port remain unchanged with the 2.0 specification.

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-1572 will only 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 (V2.0) or "display_refresh_auto" and "display_refresh_manual" commands (V1.0).

With RS232 update set to ON, any status changes to the unit will be transmitted via RS232. With RS232 update set to OFF, the unit will not send any feedback unless polled by the controller.

Section 1: Control Command List V2.0

Applies to RA-1572 V2.65 and newer

RA-1572 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\$
vol_up!	Volume Up	volume=##\$
vol_dwn!	Volume Down	volume=##\$
vol_min!	Set Volume to Min	volume=00\$
vol_nn!	Set Volume to level n (01 - 96)	volume=##\$
mute!	Mute Toggle	mute=on/off\$
mute_on!	Mute On	mute=on\$
mute_off!	Mute Off	mute=off\$
SOURCE SELECTION COMMANDS		
cd!	Source CD	source=cd\$
coax1!	Source Coax 1	source=coax1\$
coax2!	Source Coax 2	source=coax2\$
opt1!	Source Optical 1	source=opt1\$
opt2!	Source Optical 2	source=opt2\$
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\$

RA-1572 ASCII	Command Description	Unit Response
SOURCE CONTROL COMMANDS		
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
TONE CONTROL COMMANDS		
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_-10!	Set Bass to -10	bass=-10\$
bass_000!	Set Bass to 0	bass=000\$
bass_+10!	Set Bass to +10	bass=+10\$
treble_up!	Treble Up	treble=000/+##/-##\$
treble_down!	Treble Down	treble=000/+##/-##\$
treble_-10!	Set Treble to -10	treble=-10\$
treble_000!	Set Treble to 0	treble=000\$
treble_+10!	Set Treble to +10	treble=+10\$
BALANCE CONTROL COMMANDS		
balance_r!	Balance Right	balance=000/L##/R##\$
balance_l!	Balance Left	balance=000/L##/R##\$
balance_l15!	Set Balance to Max Left	balance=L15\$
balance_000!	Set Balance to 0	balance=000\$
balance_r15!	Set Balance to Max Right	balance=R15\$
SPEAKER OUTPUT COMMANDS		
speaker_a!	Toggle Speaker A Output	speaker=a/a_b/off\$
speaker_b!	Toggle Speaker B Output	speaker=b/a_b/off\$
speaker_a_on!	Speaker A Output On	speaker=a/a_b\$
speaker_a_off!	Speaker A Output Off	speaker=b/off\$
speaker_b_on!	Speaker B Output On	speaker=b/a_b\$
speaker_b_off!	Speaker B Output Off	speaker=a/off\$
OTHER COMMANDS		
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\$
pcusb_class_1!	Set PC-USB Audio Class to 1.0	pcusb_class=1\$

RA-1572 ASCII	Command Description	Unit Response
pcusb_class_2!	Set PC-USB Audio Class to 2.0	pcusb_class=2\$
factory_default_on!	Reset unit to factory defaults	n/a
RS232 FEEDBACK COMMANDS		
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 V2.0

Applies to RA-1572 V2.65 and newer

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

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

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

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

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

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

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

Command:	balance?
Description:	Request current balance setting
Return String(s):	balance=###\$ (L01-15, R01-15, 000)
Return Description:	Current balance setting
Example:	balance=L03\$

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

Command:	speaker?
Description:	Request current active speaker outputs
Return String(s):	speaker=a\$ / speaker=b\$ / speaker=a_b\$ / speaker=off\$
Return Description:	Current active speaker outputs
Example:	speaker=a\$

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

Command:	pcusb?
Description:	Request current PC-USB class
Return String(s):	pcusb_class=1\$ / pcusb_class=2\$
Return Description:	Current PC-USB class
Example:	pcusb_class=1\$

Command:	version?
Description:	Request the main CPU software version
Return String:	version=#.##\$
Return Description:	Rotel main CPU software version
Example:	version=1.09\$

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

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

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

Command:	model?
Description:	Request the model number
Return String:	model=text\$
Return Description:	Rotel model number
Example:	model=RA-1572\$

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

Section 3: Control Command List V1.0

Applies to RA-1572 prior to V2.65

RA-1572 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!
volume_up!	Volume Up	volume=##!
volume_down!	Volume Down	volume=##!
volume_max!	Set Volume to Max	volume=max!
volume_min!	Set Volume to Min	volume=min!
volume_n!	Set Volume to level n (n = 1 - 96)	volume=##!
mute!	Mute Toggle	mute=on/off!
mute_on!	Mute On	mute=on!
mute_off!	Mute Off	mute=off!
SOURCE SELECTION COMMANDS		
cd!	Source CD	source=cd!
coax1!	Source Coax 1	source=coax1!
coax2!	Source Coax 2	source=coax2!
opt1!	Source Optical 1	source=opt1!
opt2!	Source Optical 2	source=opt2!
aux!	Source Aux	source=aux!
tuner!	Source Tuner	source=tuner!
phono!	Source Phono	source=phono!
usb!	Source Front USB	source=usb!
pc_usb!	Source PC-USB	source=pc_usb!
bal_xlr!	Source XLR	source=bal_xlr!
bluetooth!	Source Bluetooth	source=bluetooth!
SOURCE CONTROL COMMANDS		
play!	Play Source	n/a
stop!	Stop Source	n/a
pause!	Pause Source	n/a
track_fwd!	Track Forward/Tune Up	n/a
track_back!	Track Backward/Tune Down	n/a
MENU CONTROL COMMANDS		
menu!	Display the Menu	n/a
exit!	Exit Key	n/a
up!	Cursor Up	n/a
down!	Cursor Down	n/a
left!	Cursor Left	n/a
right!	Cursor Right	n/a
enter!	Enter Key	n/a

RA-1572 ASCII	Command Description	Unit Response
TONE CONTROL COMMANDS		
tone_on!	Tone Controls On	tone=on!
tone_off!	Tone Controls Off	tone=off!
bass_up!	Bass Up	bass=000/+##/-##!
bass_down!	Bass Down	bass=000/+##/-##!
bass_-10!	Set Bass to -10	bass=-10!
bass_000!	Set Bass to 0	bass=000!
bass_+10!	Set Bass to +10	bass=+10!
treble_up!	Treble Up	treble=000/+##/-##!
treble_down!	Treble Down	treble=000/+##/-##!
treble_-10!	Set Treble to -10	treble=-10!
treble_000!	Set Treble to 0	treble=000!
treble_+10!	Set Treble to +10	treble=+10!
BALANCE CONTROL COMMANDS		
balance_right!	Balance Right	balance=000/L##/R##!
balance_left!	Balance Left	balance=000/L##/R##!
balance_L15!	Set Balance to Max Left	balance=L15!
balance_000!	Set Balance to 0	balance=000!
balance_R15!	Set Balance to Max Right	balance=R15!
SPEAKER OUTPUT COMMANDS		
speaker_a!	Toggle Speaker A Output	speaker=a/a_b/off!
speaker_b!	Toggle Speaker A Output	speaker=b/a_b/off!
OTHER COMMANDS		
dimmer!	Toggle display dimmer	dimmer_#!
dimmer_0!	Set display to brightest setting	n/a
dimmer_1!	Set display to dimmer level 1	n/a
dimmer_2!	Set display to dimmer level 2	n/a
dimmer_3!	Set display to dimmer level 3	n/a
dimmer_4!	Set display to dimmer level 4	n/a
dimmer_5!	Set display to dimmer level 5	n/a
dimmer_6!	Set display to dimmest setting	n/a
pcusb_class_1!	Set PC-USB Audio Class to 1.0	pcusb_class=1!
pcusb_class_2!	Set PC-USB Audio Class to 2.0	pcusb_class=2!
factory_default_on!	Reset unit to factory defaults	n/a
DISPLAY REFRESH COMMANDS		
display_update_auto!	Set Display Update to Auto	display_update=auto!
display_update_manual!	Set Display Update to Manual	display_update=manual!

Section 4: Feedback Request Command List V1.0

Applies to RA-1572 prior to V2.65

Command:	get_display!
Description:	Request the entire display to be sent
Return String:	display=###,text
Return Description:	Current display data; must include 3 digit length of text string at beginning followed by "," and text string (no terminating character)
Example:	display=040, Sample Text

Command:	get_display1!
Description:	Request display line #1 to be sent
Return String:	display1=##,text
Return Description:	Current display line 1, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
Example:	display1=20, Sample Text

Command:	get_display2!
Description:	Request display line #2 to be sent
Return String:	display2=##,text
Return Description:	Current display line 2, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
Example:	display2=20, Sample Text

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=07,RA-1572

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=05,V2.5.9

Command:	get_display_size!
Description:	Request display size
Return String:	display_size=##,##!
Return Description:	Columns and rows on current display
Example:	display_size=20,04!

Command:	get_display_update!
Description:	Request display update
Return String(s):	display_update=auto! / display_update>manual!
Return Description:	Status of if the display 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!
Return Description:	Current power status
Example:	power=on!

Command:	get_current_source!
Description:	Request current source
Return String(s):	source=cd! / source=coax1! / source=coax2! / source=opt1! / source=opt2! / source=tuner! / source=phono! / source=usb! / source=pc_usb! / source=aux1! / source=aux2! / source=bal_xlr! / source=bluetooth!
Return Description:	Current source
Example:	source=pc_usb!

Command:	get_tone!
Description:	Request current tone control state
Return String(s):	tone=on! / tone=off!
Return Description:	Current tone control state
Example:	tone=off!

Command:	get_bass!
Description:	Request current bass level
Return String(s):	bass=###! (+01-10, -01-10, 000)
Return Description:	Current tone control bass level
Example:	bass=+02!

Command:	get_treble!
Description:	Request current treble level
Return String(s):	treble=###! (+01-10, -01-10, 000)
Return Description:	Current tone control treble level
Example:	treble=-01!

Command:	get_balance!
Description:	Request current balance setting
Return String(s):	balance=###! (L01-15, R01-15, 000)
Return Description:	Current balance setting
Example:	balance=L03!

Command:	get_pcusb_class!
Description:	Request current PC-USB class
Return String(s):	pcusb_class=1! / pcusb_class=2!
Return Description:	Current PC-USB class
Example:	pcusb_class=1!

Command:	get_current_freq!
Description:	Request current frequency for digital source input
Return String(s):	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_volume_max!
Description:	Request Max volume value
Return String(s):	volume_max=##!
Return Description:	2 digit volume max level
Example:	volume_max=80!

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
Return String(s):	volume=##!
Return Description:	2 digit current volume level
Example:	volume=40!

Command:	get_current_speaker!
Description:	Request active speaker outputs
Return String(s):	speaker=off! / speaker=a! / speaker=b! / speaker=a_b!
Return Description:	Active speaker outputs
Example:	speaker=a!

Command:	get_tone_max!
Description:	Request Max Tone value
Return String(s):	tone_max=10!
Return Description:	2 digit tone max level
Example:	tone_max=10!













Command:	get_mute_status!
Description:	Request current mute status
Return String(s):	mute=off! / mute=on!
Return Description:	Current mute state
Example:	mute=on!

Command:	get_current_dimmer!
Description:	Request current dimmer level
Return String(s):	dimmer=#! (0 - 6)
Return Description:	Current display dimmer level. 0 = brightest, 6 = dimmest
Example:	dimmer=3!

Command:	get_power_mode!
Description:	Request current power mode. (Quick or Normal)
Return String(s):	power_mode=normal! / power_mode=quick!
Return Description:	Current power mode
Example:	power_mode=quick!

Section 5: Special Character Mapping

Certain characters on the RA-1572 display may be represented by a combination of 2-3 hex bytes in the feedback string provided by the unit. Refer to the chart below for a mapping of the different characters.

Symbol	Hex Value	Symbol	Hex Value	Symbol	Hex Value
A	EE 82 85	D	EE 82 8A		EE 82 99
C	EE 82 84		EE 82 8B		EE 82 9A
F	EE 82 92	 	EE 82 81		EE 82 88
G	EE 82 87		EE 82 82		EE 82 95
I	EE 82 8E		EE 82 83		EE 82 96
L	EE 82 89		EE 82 94	*	EE 82 90
M	EE 82 93		EE 82 97		EE 82 91
R	EE 82 8C		EE 82 98	Z	EE 82 8D
S	EE 82 8F	T	EE 82 80	END	EE 80 80 EE 80 81 EE 80 82

Appendix A: Summary of Changes V1.0 – V2.0

A list of the specific changed commands and feedback strings between the V1.0 and V2.0 specification is detailed here.

Global Changes

In addition to the specific changes below, the terminating character on all feedback strings has changed to the "\$" character instead of the previous "!" character.

An example response string is provided below.

Unit Response V1.0	Unit Response V2.0
bypass=off!	bypass=off\$

Control Command Changes

Command V1.0	Command V2.0	Response V1.0	Response V2.0
volume_up!	vol_up!	volume=##!	volume=##\$
volume_down!	vol_dwn!	volume=##!	volume=##\$
volume_max!	n/a	volume=max!	n/a
volume_min!	vol_min!	volume=min!	volume=00\$
volume_n!	vol_nn!	volume=##!	volume=##\$
track_fwd!	trkf!	n/a	n/a
track_back!	trkb!	n/a	n/a
tone_on!	bypass_off!	tone=on!	bypass=off\$
tone_off!	bypass_on!	tone=off!	bypass=on\$
display_update_auto!	rs232_update_on!	display_update=auto!	update_mode=auto\$
display_update_manual!	rs232_update_off!	display_update=manual!	update_mode=manual\$
balance_right!	balance_r!	balance=000/L##/R##!	balance=000/L##/R##\$
balance_left!	balance_l!	balance=000/L##/R##!	balance=000/L##/R##\$
balance_R15!	balance_r15!	balance=000/L##/R##!	balance=000/L##/R##\$
balance_L15!	balance_l15!	balance=000/L##/R##!	balance=000/L##/R##\$
menu!	n/a	n/a	n/a
exit!	n/a	n/a	n/a
up!	n/a	n/a	n/a
down!	n/a	n/a	n/a
left!	n/a	n/a	n/a
right!	n/a	n/a	n/a
enter!	n/a	n/a	n/a

Feedback Request Command Changes

Note the listed responses below may not include all values – refer to the appropriate command in the main documentation sections for the full list of potential response values.

Command V1.0	Command V2.0	Response V1.0	Response V2.0
get_current_power!	power?	power=on!	power=on\$
get_current_source!	source?	source=cd!	source=cd\$
get_volume!	volume?	volume=##!	volume=##\$
get_mute_status!	mute?	mute=off!	mute=off\$
get_tone!	bypass?	tone=off!	bypass=on\$
get_bass!	bass?	bass=###!	bass=###\$
get_treble!	treble?	treble=###!	treble=###\$
get_balance!	balance?	balance=###!	balance=###\$
get_current_speaker!	speaker?	speaker=a!	speaker=a\$
get_current_freq!	freq?	freq=44.1!	freq=44.1\$
get_current_dimmer!	dimmer?	dimmer=#!	dimmer=#\$
get_display!	n/a	display=###,text	n/a
get_display1!	n/a	display1=###,text	n/a
get_display2!	n/a	display2=###,text	n/a
get_product_type!	model?	product_type=##,text	model=text\$
get_product_version!	version?	product_version=##,text	version=#.##\$
get_display_size!	n/a	display_size=##,##!	n/a
get_display_update!	n/a	display_update=auto!	n/a
get_pcusb_class!	pcusb?	pcusb_class=2!	pcusb_class=2\$
get_volume_max!	n/a	volume_max=##!	n/a
get_volume_min!	n/a	volume_min=0!	n/a
get_tone_max!	n/a	tone_max=10!	n/a
get_power_mode!	n/a	power_mode=quick!	n/a
n/a	pc_version?	n/a	pc_version=#.##\$
n/a	ip?	n/a	ipaddress=###.###.###.###\$
n/a	mac?	n/a	mac=#####\$
n/a	discover?	n/a	discover=ip=###.###.###.### port=#### mac=#####\$