



## Rotel RT-11 V02 RS232 ASCII Controller Command List

Date	Version	Update Description
June 12, 2014	1.00	Original Specification

The RT-11 V02 supports 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.

The below protocol is effective starting with V02 units that have the rear panel RS232 connection. Earlier models with the rear panel mini USB connections do not support this protocol.

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 display update information can be enabled/disabled using the “display\_update\_auto” and “display\_update\_manual” 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

RT-11 ASCII	Command Description	Unit Response
<b>POWER COMMANDS</b>		
power_on!	Power On	power=on!
power_off!	Power Off	power=standby!
power_toggle!	Power Toggle	power=on/standby!
<b>SOURCE SELECTION COMMANDS</b>		
fm!	Source FM	source=fm!
dab!	Source DAB	source=dab!
<b>TUNER CONTROL COMMANDS</b>		
tune_up!	Tune Up	n/a
tune_down!	Tune Down	n/a
queue!	Access Preset List	n/a
preset_up!	Preset Up	n/a
preset_down!	Preset Down	n/a
fm_mono!	Toggle FM Mono/Stereo Mode	n/a
fm_rds_disp!	Toggle through FM RDS or DAB Station Information	n/a
<b>MENU CONTROL COMMANDS</b>		
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
<b>NUMERIC KEY COMMANDS</b>		
1!	Number Key 1	n/a
2!	Number Key 2	n/a
3!	Number Key 3	n/a
4!	Number Key 4	n/a
5!	Number Key 5	n/a
6!	Number Key 6	n/a
7!	Number Key 7	n/a
8!	Number Key 8	n/a
9!	Number Key 9	n/a
0!	Number Key 0	n/a
<b>FM / DAB PRESET COMMANDS</b>		
memory!	Select memory for saving presets	n/a
call_fm_preset_n	Recall FM Preset n (n = 01 - 30)	fm_preset_n=##,text
call_dab_preset_n	Recall DAB Preset n (n = 01 - 30)	dab_preset_n=##,text
<b>OTHER COMMANDS</b>		
dimmer!	Toggle display dimmer	dimmer_#!

RT-11 ASCII	Command Description	Unit Response
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
<b>DISPLAY REFRESH COMMANDS</b>		
display_update_auto!	Set Display Update to Auto	display_update=auto!
display_update_manual!	Set Display Update to Manual	display_update=manual!

## Section 2: Feedback Request Command List

<b>Command:</b>	get_display!
<b>Description:</b>	Request the entire display to be sent
<b>Return String:</b>	display=###,text
<b>Return Description:</b>	Current display data; must include 3 digit length of text string at beginning followed by "," and text string (no terminating character)
<b>Example:</b>	display=020, Sample Text

<b>Command:</b>	get_product_type!
<b>Description:</b>	Request the product type
<b>Return String:</b>	product_type=##,text
<b>Return Description:</b>	Rotel product type name, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
<b>Example:</b>	product_type=05,RT-11

<b>Command:</b>	get_product_version!
<b>Description:</b>	Request the main CPU software version
<b>Return String:</b>	product_version=##,text
<b>Return Description:</b>	Rotel main CPU software version, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
<b>Example:</b>	product_version=06,V2.1.6

<b>Command:</b>	get_display_size!
<b>Description:</b>	Request display size
<b>Return String:</b>	display_size=##,##!
<b>Return Description:</b>	Columns and rows on current display
<b>Example:</b>	display_size=20,02!

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

<b>Command:</b>	get_current_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>	get_current_source!
<b>Description:</b>	Request current source
<b>Return String(s):</b>	source=fm! / source=dab!
<b>Return Description:</b>	Current source
<b>Example:</b>	source=fm!

<b>Command:</b>	get_current_dimmer!
<b>Description:</b>	Request current front display dimmer status
<b>Return String(s):</b>	dimmer=#! (0 (brightest) – 6 (dimmiest))
<b>Return Description:</b>	Current front display dimmer status
<b>Example:</b>	dimmer=3!

<b>Command:</b>	get_fm_preset_n!
<b>Description:</b>	Request saved FM station info for present n (n = 1 – 30)
<b>Return String(s):</b>	fm_preset_n=##,text
<b>Return Description:</b>	Saved FM preset number, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
<b>Example:</b>	fm_preset_04=09,107.15MHz

<b>Command:</b>	get_dab_preset_n!
<b>Description:</b>	Request saved DAB station info for present n (n = 1 – 30)
<b>Return String(s):</b>	dab_preset_n=##,text
<b>Return Description:</b>	Saved DAB preset number, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
<b>Example:</b>	dab_preset_01=##,text

<b>Command:</b>	get_allpreset_fm!
<b>Description:</b>	Request all saved FM station info [ 1..30 ]
<b>Return String(s):</b>	fm_preset_n=##,text
<b>Return Description:</b>	Saved FM preset number, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
<b>Example:</b>	fm_allpreset_01=##,text .. fm_allpreset_30=##,text

<b>Command:</b>	get_allpreset_dab!
<b>Description:</b>	Request all saved DAB station info [ 1..30 ]
<b>Return String(s):</b>	dab_preset_n=##,text
<b>Return Description:</b>	Saved DAB preset number, must include 2 digit length of text string at beginning followed by "," and text string (no terminating character)
<b>Example:</b>	dab_allpreset_01=##,text .. dab_allpreset_30=##,text