

Radiance Tech Tip 11

RS232 Command Interface

Serial RS232 Command Interface

Usage

The RS232 serial interface can be used to control the operation of the Radiance or allow the Radiance to do some simple control of another device. To connect the Radiance to a PC, or another device, use a standard RS232 null modem cable.

Most commands do not require a carriage return. The commands that require a carriage return are listed with a "<CR>" at the end of the command. You can use a carriage return or "{" as a command terminator. Any character outside the legal range for characters, Hex 20 to Hex 7A will act as a terminator. Characters above Hex 7F are masked off with "x7F". Adding a carriage return to the commands that don't require a carriage return may result in a menu being left on the screen.

All commands to query the status of the Radiance begin with "ZQ", followed by another character (currently 'I','S','O'), followed by a 2 digit decimal code. No terminating characters are used with the query commands

The query response always begins with '!' followed by the last 3 characters of the query request, followed by the data for the query using commas to separate, followed by "<CR><LF>".

All commands listed in this document are implemented in Software Rev 051611.

Port Settings

- 9600 Baud
- 8 data bits
- No parity bit
- One stop bit
- No flow control

Connections

- Pin 2 – Receive
- Pin 3 – Transmit
- Pin 5 and connector shell – Ground

RS-232 Power OnMessage/OffMessage

Power On/Off Message that can be used to control another device. Can be used to send an ASCII string out the RS-232 port to turn on or off a display. NOTE: Turning "On" RS-232 power OnMessage/OffMessage in the Radiance menu, turns off echoing of the original query command. The query response will still be sent. The command is:

MENU → Other → OnOff Setup→ (On Message, Off Message)

Message Control

Set baud rate, parity and gap for the Power On/Off Message. The command is:

MENU → Other → OnOff Setup→ Message Ctl

On Screen Display Message

Turn On/Off the input display window that is shown at the bottom of the screen when you change inputs. If you use a control system to change inputs on the Radiance you can set OSD enable to "Off". The command is:

MENU → Other → Menu Control → OSD enable

Echo command

When Echo is set to "Off", the Radiance will only send a message at power on/off.

When Echo is set to "Off with Status", the status for power or input changes are in the same format as the response to status query commands ZQS02 or ZQI00.

When Echo is set to "On", the Radiance will echo all characters sent to it.

Also see the "ZE" command.

The command is:

MENU → Other → I/O Setup → RS-232 Setup → Echo → (Off, Off with Status, On)

Optional start/end delimiters for RS232 commands

When Delimiters is set to "On" or "On with Ack/Nack", the Radiance accepts RS232 commands in the format "#<command><CR>". Start is '#'. End is <CR> or a terminator. Any character outside the legal range for characters, Hex 20 to Hex 7A will act as a terminator. Characters above Hex 7F are masked off with "x7F". Commands that already end with a <CR> do not need a second <CR>.

When Delimiters is set to "On with Ack/Nack", an ack or nack will be given per command. Ack = "!Y", Nack="!N". An ack is given when a '#',<CR> pair is seen with at least one character in between. A nack is generated if unmatched start/end delimiters are seen or if a '#',<CR> pair is sent with nothing in between. The ack does not indicate whether the character(s) in between '#',<CR> represented a valid command.

When Delimiters is set to "On with Csum & Ack/Nack" the Radiance accepts commands in the format:"#NcommandCC<CR>", where N is a command count from 0-9 (10 just wraps back to 0), and CC is an 8 bit checksum of the previous chars in the command (.ie "#0ZQS008E<CR>" is a correctly formatted command with a valid checksum). Acks ("!Y") are sent by the Radiance only when commands are received with matching checksums in this mode. The command count is included in the checksum but is not verified to be incrementing so it can be left unchanged from one command to the next if desired. The command is:

MENU → Other → I/O Setup → RS-232 Setup → Delimiters → (Off, On, On with Ack/Nack)

ASCII Command List

Remote	RS232-ASCII	Description
ON	%	Power on
STBY	\$	Power to standby
MENU	M	Activate menu
EXIT	X	Exit. Often acts as a cancel key
HELP	U	Displays on-screen help for highlighted menu item.
CLR	!	Force menu off (i.e. can use to assure menu is off for input selection)
INPUT	i	Choose input (i.e. i2 for input 2 and i+2 for input 12)
ZONE	L	Output zone select
ALT	#	Alternate
PREV	P	Display previous input
PIP-OFF	e	PIP off
PIP-SEL	p	PIP select
PIP-SWAP	r	PIP swap
PIP-MODE	m	PIP mode
OK	k	Accept command
OK	<enter>	Accept command (uses the PC "ENTER" keycode)
<	<	Left arrow ("less-than" key on keyboard)
>	>	Right arrow ("greater-than" key on keyboard)
v	v	Down arrow (lower-case v, as in "vote")
^	^	Up arrow (shift 6 key on keyboard)
0	0	Enter the digit 0
1	1	Enter the digit 1
2	2	Enter the digit 2
3	3	Enter the digit 3
4	4	Enter the digit 4
5	5	Enter the digit 5
6	6	Enter the digit 6
7	7	Enter the digit 7
8	8	Enter the digit 8
9	9	Enter the digit 9
+10	+	Add 10 to the next digit entered
NLS	N	Non Lineal Scaling
4:3	n	Input is 4:3 format. Use previous zoom setting.
4:3NZ	[Input is 4:3 format. No zoom.
LBOX	l	Input is 4:3 letterbox format. Use previous zoom setting.
LBOXNZ]	Input is 4:3 letterbox format. No zoom
16:9	w	Enhanced for 16:9 televisions format. Use previous zoom setting.
16:9NZ	*	Enhanced for 16:9 televisions format. No zoom.
1.85	j	Input is 1.85 format. Use previous zoom setting.
1.85NZ	/	Input is 1.85 format. No zoom.
2.35	W	Input is 2.35 format. Use previous zoom setting.
2.35NZ	K	Input is 2.35 format. No zoom.

Remote	RS232-ASCII	Description
MEMA	a	Select MEMA
MEMB	b	Select MEMB
MEMC	c	Select MEMC
MEMD	d	Select MEMD
	g	Onscreen messages on
	s	Onscreen messages off
FREEZE	z	Freeze-frame. Any other character resumes
480P	A	Select Vertical Resolution = 480p
540P	B	Select Vertical Resolution = 540p
600P	C	Select Vertical Resolution = 600p
720P	D	Select Vertical Resolution = 720p
768P	E	Select Vertical Resolution = 768p
840P	F	Select Vertical Resolution = 840p
1080P	G	Select Vertical Resolution = 1080p
1080I	I	Select Vertical Resolution = 1080I
ASPECT	=	Set Output aspect ratio (i.e. =178 <enter>, for 16:9 displays)
	-	The no-op character is ignored, between commands, by the RS232 interface. The underscore character can be used inside a message command.
	tXMM	Test Pattern command: X is a letter 'a'-'p' corresponding to the 16 available test patterns. MM: 0-10 corresponds to 10%-100% stepping by 10%. MM: 11-20 corresponds to 5%-95% stepping by 10%. Sending 'X' will exit. Note: the "TxMM" test pattern rendering command is an older command and the letters used to render test patterns don't match the letters returned by the newer "ZQ102" query command.
	taMM	Crosshatch
	tbMM	Overscan (always displayed as 100 IRE)
	tcMM	Contrast (always displayed as 100 IRE)
	tdMM	Every other Hline (always displayed as 100 IRE)
	teMM	Every other Vline (always displayed as 100 IRE)
	tfMM	Ramp (always displayed as 100 IRE)
	tgMM	White Window
	thMM	White Solid
	tiMM	75% Colorbars (always displayed as 75 IRE)
	tjMM	Red Solid
	tkMM	Green Solid
	tlMM	Blue Solid
	tmMM	Yellow Solid
	tnMM	Cyan Solid
	toMM	Magenta Solid
	tpMM	Contrast2 (always displayed as 100 IRE)
	tqMM	Red Window
	trMM	Green Window
	tsMM	Blue Window
	ttMM	Yellow Window
	tuMM	Cyan Window
	tvMM	Magenta Window
	tA	Set Adjustable test pattern mode
	tR	Set Reference test pattern mode

Remote	RS232-ASCII	Description
	ZBc	Block character-- The character "c" will be displayed as a solid block "█" in on-screen messages. The main usage is to display control settings such as a volume control. Also see command "ZTMxxx".
	ZC	Clear-- Clear any onscreen message
	ZD<0,1,2,3>	Set Delimiters-- 0=off, 1=on, 2=on with ack/nack, 3=on with checksum and ack/nack.
	ZE<0,1,2>	Set Echo-- 0=echo off, 1=echo on (default), 2=echo off with status. See page 2: "Echo command".
	ZQI00	Basic input info-- returns (logical input#1-18, input memory a-d, physical input #1-18). Example response: "!I00,1,A,1<CR><LF>" for logical input 1, MemA, physical input 1
	ZQI01	Input video-- returns (0=none,1=video active,2=testpat active), vert rate *100, horiz res, vert res, interlaced, (0=off, 2=frame packed, 4=top-bottom, 8=side-by-side), input 3D type ((0=off, 2=frame packed, 4=top-bottom, 8=side-by-side)). Example response: "!I01,1,5992,720,480,1,0<CR><LF>" for active 480i video 3D off.
	ZQI02	Input pattern info-- returns ({On=1,Off=0}, pattern group 'a'-'o', sub pattern #, IRE level 0-100, A/R for adjustable or reference patterns). Example response: "!I02,1,a,1,100,R<CR><LF>" for overscan test pattern on and set to overscan at 100 IRE and reference levels. Note: the letters returned by the newer "ZQ102" query command don't match the letters used in the older "TxMM" test pattern rendering command. "a,0"=Crosshatch, "a,1"=Overscan, "a,2"=AspectSquares, "b,0"=Contrast1, "b,2"=Contrast2, "c,0"=HLines, "c,1"=VILines, "d,0"=Ramp, "e,0"=GrayWindowMed, "e,1"=GrayWindowSm, "e,2"=GraySolid, "f,0"=100%ColorBars, "f,1"=75%ColorBars, "g,0"=RedWindowMed, "g,1"=RedWindowSm, "g,2"=RedSolid, "h,0"=GrnWindowMed, "h,1"=GrnWindowSm, "h,2"=GrnSolid, "i,0"=BluWindowMed, "i,1"=BluWindowSm, "i,2"=BluSolid, "j,0"=YelWindowMed, "j,1"=YelWindowSm, "j,2"=YelSolid, "k,0"=CynWindowMed, "k,1"=CynWindowSm, "k,2"=CynSolid, "l,0"=MagWindowMed, "l,1"=MagWindowSm, "l,2"=MagSolid. "m,0"=DesaturatdRedWinMed, "m,1"=DesaturatedRedWinSm, "m,2"=DesaturatedRedWinSolid "n,0"=DesaturatedGrnWinMed, "n,1"=DesaturatedGrnWinSm, "n,2"=DesaturatedGrnWinSolid "o,0"=DesaturatedBluWinMed, "o,1"=DesaturatedBluWinSm, "o,2"=DesaturatedBluWinSolid
	ZQI03	Output1 and Output2 config select for current input memory—[Replaced by ZQI18 due to changes in the output config memory structure in SW Rev 102910] returns (Output1<0,1> disabled=0 enabled=1, Output2<0,1>, config select<0-7>) Example response: "!I03,1,0,3" would mean out1 is enabled, out2 is disabled, using output config3.
	ZQI04	Current input audio select—returns (XX=0-5 HDMI, 6-11 coax, 12-13 optical, 14-17 stereo)
	ZQI05 (Note 1)	Current input black level-- returns (-64 to 64)
	ZQI06 (Note 1)	Current input contrast level-- returns (-127 to 127)
	ZQI07 (Note 1)	Current input color format-- returns (0=auto, 1=Bt.601, 2=Bt.709)
	ZQI08 (Note 1)	Current input color offset-- returns (-127 to 127)
	ZQI09 (Note 1)	Current input color red offset-- returns (-127 to 127)
	ZQI10 (Note 1)	Current input color grn offset-- returns (-127 to 127)
	ZQI11 (Note 1)	Current input hue offset-- returns (-127 to 127)
	ZQI12 (Note 1)	Current input hue red offset-- returns (-127 to 127)
	ZQI13 (Note 1)	Current input hue grn offset-- returns (-127 to 127)
	ZQI14 (Note 1)	Current input YC delay-- returns (cr,cb) (-31 to 31) multiply by 1/16 pixel

Remote	RS232-ASCII	Description
	ZQI15	Current input deinterlacing mode-- returns (0 for "auto", 1 for "film", 2 for "video")
	ZQI16	Current input vertical shift--returns (index,value). Index=0 is off, Index=1-15 is the index of current setting being used and value is the amount (-511-511).
	ZQI17	Current input deinterlacing--returns (!I17X,Y,Z) where X = 1/0 (on/off), Y = 1/0 (allow/disallow) for <> keys, Z = 1/0 (active / not active) to indicate whether reinterlacing is taking place.
	ZQI18	Current output configuration selected by current input resolution and user memory--[Replaces command ZQI03 due to changes in the output config memory structure in SW Rev 102910] returns out1 on/off status (1/0), out2 on/off status (1/0), output mode selected (C<0-7> for one of eight output configurations or D<mode_name> for a directly selected standard mode), output 3D type (0=off, f=auto, 1=frame seq, 2=frame packed, 4=top-bottom, 8=side-by-side), cms <0-7>, style <0-7>.
	ZQO00	Basic output info-- returns (current output config 0-7, video on for out1, video on for out2, audio on for out1, audio on for out2). Example response: "!O00,1,1,0,1,1<CR><LF>" output cfg = 1, video out1 is on, video out2 is off, audio out1 is on, audio out2 is on.
	ZQO01	Output mode-- returns (vertical rate * 100, horiz res, vert res, interlaced, (0=off, 1=frame seq, 2=frame packed, 4=top-bottom, 8=side-by-side)). Example response: "!O01,5994,1920,1080,0,0<CR><LF>" for a default 1080p 3D off output mode.
	ZQO02	Output aspect-- returns (current output aspect, followed by 5 output aspects for input aspects 4:3,Letterbox,16:9,1.85,2.35) 110-250 corresponds to 1.10 - 2.50
	ZQO03	Output shrink-- returns (top,left,bottom,right) 000-255 pixels
	ZQO04	Output gamma--returns (current gamma (85-130)) corresponding to .85 -1.30
	ZQO05	Output color gamut enabled-- returns (1 if enabled, 0 if disabled)
	ZQO06	Output color gamut AddR values-- returns (r,g,b,yellow,cyan,magenta,white) values are 0-1024
	ZQO07	Output color gamut AddG values-- returns (r,g,b,yellow,cyan,magenta,white) values are 0-1024
	ZQO08	Output color gamut AddB values-- returns (r,g,b,yellow,cyan,magenta,white) values are 0-1024
	ZQO09	Output color temp-- returns (IRE points 0-10) the 11 values are in range 0-1000, corresponding to 0-100.0 (ZQO89 returns pts 11-20)
	ZQO10	Output color temp-- returns (R points 0-10) the 11 values are in range 0-1000, corresponding to 0-100.0 (ZQO90 returns pts 11-20)
	ZQO11	Output color temp-- returns (G points 0-10) the 11 values are in range 0-1000, corresponding to 0-100.0 (ZQO91 returns pts 11-20)
	ZQO12	Output color temp-- returns (B points 0-10) the 11 values are in range 0-1000, corresponding to 0-100.0 (ZQO92 returns pts 11-20)
	ZQO13	Output color settings-- returns (color,color red, color grn) values are in range -127 to 127
	ZQO14	Output hue settings-- returns (hue,hue red, hue grn) values are in range -127 to 127
	ZQO15	Output black and contrast-- returns (black,contrast), black is -64 to 64, contrast is -127 to 127
	ZQO16	Output mode name-- Names are same as seen in the menu under Output:Configs:ConfigX>Select Mode. Corresponds to the "ZY44" set output mode by name command.
	ZQO17	Output ctemp points-- returns number of ctemp points (2, 5, 11, 12, 21)
	ZQO89	Output color temp-- if using 12 pt returns (IRE point 12), If using 21 pt returns (IRE points 11-20), the value is in range 0-1000, corresponding to 0-100.0 (ZQO09 returns pts 0-10)
	ZQO90	Output color temp-- if using 12 pt returns (R point 12), If using 21 pt returns (R points 11-20), the value is in range 0-1000, corresponding to 0-100.0 (ZQO09 returns pts 0-10)

Remote	RS232-ASCII	Description
	ZQO91	Output color temp-- if using 12 pt returns (G point 12), If using 21 pt returns (G points 11-20), the value is in range 0-1000, corresponding to 0-100.0 (ZQO09 returns pts 0-10)
	ZQO92	Output color temp-- if using 12 pt returns (B point 12), If using 21 pt returns (B points 11-20), the value is in range 0-1000, corresponding to 0-100.0 (ZQO09 returns pts 0-10)
	ZQS00	Alive-- returns ("!S00,Ok<CR><LF>") if working
	ZQS01	Id-- returns (model name, software revision, model#, serial #) Example response: "!S01,RadianceXD,102308,1009,745<CR><LF>". Radiance XD model number is 1009, XE will be 1010
	ZQS02	Power-- returns (Off="!S02,0<CR><LF>", On="!S02,1<CR><LF>")
	ZQS03	Zoom step%-- returns (current zoom step) values are 5,15
	ZQS04	Output trigger status for triggers 1 and 2-- returns (0 for low, 1 for high) Note: NA on RadianceXS and RadianceMini
	ZTMxxxx<CR>	Print message on the screen-- M = '0' to '9'... '9' leaves message until "ZC" sent. 2 lines, 30 characters per line, legal characters " through 'z' (0x20 - 0x7a in hex), a carriage return or '!' can be used to terminate message. ASCII extended characters set solid block for use as a volume bar. Also see command "ZBc".
	ZY0M<CR>	Set zoom factor to M-- Where M can be 0-2 (or 0-7 if zoom is set for 5% steps)
	ZY1MMM<CR>	Set output aspect ratio to MMM for all input aspects--. Where the valid range is 110-250 which corresponds to 1.10 to 2.50. See "ZY45".
	ZY2MMMMNNNOOOPPP<CR>	Set output shrink parameters-- Where MMM=top, NNN=left, OOO=bottom, PPP=right edge. Range is 0-255 for each.
	ZY3<1,2><H,L><CR>	Sets trigger-- 1 or 2 either H=on or L=off. For exclusive RS-232 control of the trigger set the Radiance trigger menu to "Under RS232 control" (Menu, Other, Trigger Out, (Trigger1, Trigger2), Under RS232 control). Note: NA on RadianceXS
	ZY40XXX<CR>	Set output color mgmt gamma-- XXX =085-130 which corresponds to 0.85 to 1.30
	ZY40XXX<CR>	Set output color mgmt gamma-- XXX =085-130 which corresponds to 0.85 to 1.30
	ZY410CRXXXX<CR>	Set output color mgmt color gamut matrix--C=Column 0-6 corresponds to R,G,B,Y,C,M,W. R= Row=0-2 corresponds to AddR,AddG,AddB, XXXX is the value =0000-1024 (use leading 0's to always be 4 chars long).
	ZY411<CR>	Set output color mgmt-- reset color gamut to defaults.
	ZY412<0,1> <CR>	Set output color mgmt-- color gamut, 0=disable, 1=enable
	ZY413XX<CR>	Set output color mgmt-- set number of points for RS232 color mgmt, XX=11, 12, 21. This affects allowable range for <PP> in ZY42 commands. Changing number of pts resets all pts to default value. 11pt=0,10...90,100 12pt=0,5,10,20...90,100 21pt=0,5...95,100 (IRE)
	ZY42IPPXXXX<CR>	Set output color mgmt-- set IRE for ctemp point PP (ZY413 setting affects the allowed range) 11pt PP=1-9, 12pt PP=1-10, 21pt PP=1-19 (The lowest and highest point can not be changed from 0 and 100 IRE), XXXX=value 0000-1000 corresponds to 000.0-100.0
	ZY42RPPXXXX<CR>	Set output color mgmt-- set red for ctemp point PP, (ZY413 setting affects the allowed range) 11pt PP=0-10, 12pt PP=0-11, 21pt PP=0-20, XXXX=value 0000-1000 corresponds to 000.0-100.0
	ZY42GPPXXXX <CR>	Set output color mgmt-- set grn for ctemp point PP, (ZY413 setting affects the allowed range) 11pt PP=0-10, 12pt PP=0-11, 21pt PP=0-20, XXXX=value 0000-1000 corresponds to 000.0-100.0
	ZY42BPPXXXX<CR>	Set output color mgmt-- set blu for ctemp point PP, (ZY413 setting affects the allowed range) 11pt PP=0-10, 12pt PP=0-11, 21pt PP=0-20, XXXX=value 0000-1000 corresponds to 000.0-100.0
	ZY42APRRRRGGGGBBBB<CR>	Set output color mgmt-- set red, grn and blu for ctemp point PP, (ZY413 setting affects the allowed range) 11pt PP=0-10, 12pt PP=0-11, 21pt PP=0-20, RRRR,GGGG,BBBB= value 0000-1000 corresponds to 000.0-100.0.

Remote	RS232-ASCII	Description
	ZY42DPP<CR>	Set output color mgmt-- set default for ctemp point PP, (ZY413 setting affects the allowed range) 11pt PP=0-10, 12pt PP=0-11, 21pt PP=0-20
	ZY43CCSVVV<CR> (Note 1)	Set out color-- S=sign<+,->, VVV = value<000-127>
	ZY43CRSVVV<CR> (Note 1)	Set out color red-- S=sign<+,->, VVV = value<000-127>
	ZY43CGSVVV<CR> (Note 1)	Set out color grn-- S=sign<+,->, VVV = value<000-127>
	ZY43HHSVVV<CR> (Note 1)	Set out hue-- S=sign<+,->, VVV = value<000-127>
	ZY43HRSVVV<CR> (Note 1)	Set out hue red-- S=sign<+,->, VVV = value<000-127>
	ZY43HGSVVV<CR> (Note 1)	Set out hue grn-- S=sign<+,->, VVV = value<000-127>
	ZY43BLSVVV<CR> (Note 1)	Set out black-- S=sign<+,->, VVV = value<000-064>
	ZY43COSVVV<CR> (Note 1)	Set out contrast-- S=sign<+,->, VVV = value<000-127>
	ZY44<ModeName><CR>	Sets up the output mode by name-- Names are same as seen in the menu under Output:Configs:ConfigX:Select Mode. Corresponds to the "ZQO16" output mode name command.
	ZY45XMMM<CR>	Sets output aspect to MMM for input aspect X-- X(0=4:3, 1=Letterbox 2=16:9, 3=1.85, 4=2.35) MMM<110-250> which corresponds to 1.10 to 2.50. See "ZY1MMM" command to set aspect ratio for all input aspects.
	ZY46F<CR>	Set output format-- F=0-3 (0=YCbCr422, 1=YCbCr444, 2=RGB-PC, 3=RGB-Vid).
	ZY47X	Set 3D output for left, right or both eyes-- X (L=Left, R=Right, B=Both)
	ZY503XYZ<CR>	Note: Old command, replaced by ZY503MCS Set input memories output config select-- Enable Output1 X<0,1> disable=0 enable=1, Enable Output2 Y<0,1>, Output Config Z<0-7>. When output is disabled it outputs 1080i blank video.
	ZY503MCS,CR>	Set Output Mode, Cms and Style--M(K=keep current mode, 0-7 to select Output Mode 0-7), C(K=keep current Cms, 0-7 to select Output Cms 0-7), S(K=Keep current Style, 0-7 to select Output Style 0-7).
	ZY504XX<CR>	Set input audio select to XX-- 00-05 HDMI (only valid on HDMI inputs and must match the selected HDMI input) 06-11 coax, 12-13 optical, 14-17 stereo
	ZY505SVVV<CR> (Note 1)	Set input black level-- S=sign<+,-> VVV=value <000-064>
	ZY506SVVV<CR> (Note 1)	Set input contrast level-- S=sign<+,-> VVV=value <000-127>
	ZY507X<CR> (Note 1)	Set input color format-- 0=auto, 1=Bt.601, 2=Bt.709. SD inputs are fixed to Bt.601 and a setting of auto or Bt.709 is ignored.
	ZY508SVVV<CR> (Note 1)	Set input color offset-- S=sign<+,-> VVV=value <000-127>
	ZY509SVVV<CR> (Note 1)	Set input color red offset-- S=sign<+,-> VVV=value <000-127>
	ZY510SVVV<CR> (Note 1)	Set input color grn offset-- S=sign<+,-> VVV=value <000-127>
	ZY511SVVV<CR> (Note 1)	Set input hue offset-- S=sign<+,-> VVV=value <000-127>
	ZY512SVVV<CR> (Note 1)	Set input hue red offset-- S=sign<+,-> VVV=value <000-127>
	ZY513SVVV<CR> (Note 1)	Set input hue grn offset-- S=sign<+,-> VVV=value <000-127>
	ZY514SXSY<CR>(Note 1)	Set input YC Delay-- S=Sign<+,->,XX=Cr delay <00-31> in 1/16 of a pixel, S=Sign<+,->, YY=Cb delay <00-31>
	ZY515X<CR>	Set input deinterlacing mode-- 0="auto", 1="film", 2="video"
	ZY5160XX<CR> ZY5161XXSVVV<CR>	Set input vertical shift-- Can just switch which vertical shift setting is being used with "ZY5160XX" where XX=0-15 (0 is off, 1-15 would be a vertical shift setting). With "ZY5161XXSVVV" you select which shift setting to use (XX) and also set the value (S=sign<+,->,VVV=value <-511,511>)
	ZY520X	Toggle HDMI Hotplug-- useful to get sources to re-read EDID information and possibly change audio or video output formats. X =0-5 corresponds to HDMI input 1-6, 7 corresponds to all HDMI inputs.
	ZY523X<CR>	Use remote right and left arrow buttons for reinterlace control-- X='0' disallows, X='1' allows, X='2' allows with onscreen messages.

Remote	RS232-ASCII	Description
	ZY6SAVECONFIG<CR>	Save configuration--
	ZY7M<0,1><CR>	Menu position-- 0=default menu, 1=menu at top
	ZY7TGSIII<CR>	Test pattern command-- G=test pattern group 'a' - 'o', S=subpattern number, 0-n. Number of subpatterns depends on the group, III = IRE, 000-100. Will round to nearest step of 5. This command matches the format of the test pattern status command and should be used instead of old "tXMM" command.

(Note 1) The current input setting is combined with the current output setting. The actual setting used is limited to the maximum range of the register.