

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 081413 and later. Some older commands that have been superseded are shown grayed out.

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)


RS232 reporting of output mode changes

You can enable rs232 reporting of Radiance output mode changes. This is useful for control systems that need to take other actions when an output mode changes occur. When enabled and an output mode change occurs, the Radiance will send a string reporting the new mode information as if the rs232 mode inquiry command "ZQI18" had been issued to the Radiance. The command is:

MENU → Other → I/O Setup → RS-232 Setup → Report mode changes → (Off, On)

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) |
| | _ (underscore) | Underscore is defined as a no-op character and is ignored even between or inside commands. |
| | tXMM <i>use ZY7T instead</i> | 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. "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 <i>-also see: tR, ZY7T</i> | Set Adjustable test pattern mode. Test patterns are then affected by output CMS settings to calibrate video with the Radiance. |
| | tR <i>-also see: tA, ZY7T</i> | Set Reference test pattern mode. Test patterns only affected by output PC/Video setting allowing to calibrate picture with the displays controls. |
| | ZB<X> <i>-also see: ZC,ZT</i> | Define Block character-- The character X will be displayed as a solid block  in on-screen messages. Can be used to display control settings (.ie volume control) |
| | ZC <i>-also see: ZT, ZB</i> | 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. |

| Remote | RS232-ASCII | Description |
|--------|---|---|
| | ZE<0,1,2> -See page 2: "Echo command". | Set Echo-- 0=echo off, 1=echo on (default), 2=echo off with status. |
| | ZQ100 | 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 |
| | ZQ101 | 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. |
| | ZQ102 also see: ZY7T | 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, "b,3"=BlkRamp, "b,4"=LowClip, "b,5"=WhtRamp, "b,6"=HiClip, "b,7"=Targets, "b,8"=Check, "b,9"=lcheck, "b,10"=VidBlack, "b,11"=VidWhite "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 Note: not in menu, control via RS232. "n,0"=DesaturatedGrnWinMed, "n,1"=DesaturatedGrnWinSm, "n,2"=DesaturatedGrnWinSolid Note: not in menu, control via RS232. "o,0"=DesaturatedBluWinMed, "o,1"=DesaturatedBluWinSm, "o,2"=DesaturatedBluWinSolid Note: not in menu, control via RS232. |
| | ZQ103 use ZQ118 instead | Output1 and Output2 config select for current input memory—[Replaced by ZQ118 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. |
| | ZQ104 | Current input audio select--returns (XX=0-5 HDMI, 6-11coax, 12-13 optical, 14-17 stereo) |
| | ZQ105 * | Current input black level-- returns (-64 to 64) |
| | ZQ106 * | Current input contrast level-- returns (-127 to 127) |
| | ZQ107 * | Current input color format-- returns (0=auto, 1=Bt.601, 2=Bt.709) |
| | ZQ108 * | Current input color offset-- returns (-127 to 127) |
| | ZQ109 * | Current input color red offset-- returns (-127 to 127) |
| | ZQ110 * | Current input color grn offset-- returns (-127 to 127) |
| | ZQ111 * | Current input hue offset-- returns (-127 to 127) |
| | ZQ112 * | Current input hue red offset-- returns (-127 to 127) |
| | ZQ113 * | Current input hue grn offset-- returns (-127 to 127) |
| | ZQ114 * | Current input YC delay-- returns (cr,cb) (-31 to 31) multiply by 1/16 pixel |

* The current input setting is combined with the current output setting. The final value is limited to the maximum range of the register.

| 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 reinterlacing status--returns (!I17X,Y,Z) where X = 1/0 (enable/off) , Y = 1/0 (allow/disallow) <, > key control, Z= 1/0 (reinterlacing currently active / not active). |
| | ZQI18 | Current output configuration selected by current input resolution and user memory-- 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=frm seq, 2=frm packed, 4=top-btm, 8=side-by-side), CMS <0-7>, Style <0-7>. |
| | ZQI19 | Current input aspect--returns 0-9. 0=4:3 1=lbox 2=1.78 3=1.85 4=2.35, 5=4:3 nls, 6=lbox nls, 7=1.78 nls, 8=1.85 nls 9=2.35 nls |
| | 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 <i>also see: ZY40</i> | Output gamma--returns current gamma (80-140) corresponding to .80 - 1.40. |
| | ZQO05 <i>also see: ZY412</i> | Output color gamut enabled-- returns (1 if enabled, 0 if disabled) |
| | ZQO06 <i>use ZQO30 instead</i> | Output color gamut AddR values-- returns (r,g,b,yellow,cyan,magenta,white) values are 0-1024 |
| | ZQO07 <i>use ZQO30 instead</i> | Output color gamut AddG values-- returns (r,g,b,yellow,cyan,magenta,white) values are 0-1024 |
| | ZQO08 <i>use ZQO30 instead</i> | Output color gamut AddB values-- returns (r,g,b,yellow,cyan,magenta,white) values are 0-1024 |
| | ZQO09 <i>also see: ZQO89</i> | 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 <i>also see: ZQO90</i> | 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 <i>also see: ZQO91</i> | 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 <i>also see: ZQO92</i> | 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) |

| Remote | RS232-ASCII | Description |
|--------|---|---|
| | ZQO20 <i>-added 090512</i> <i>-also see: ZQO30, ZY415</i> | 3D LUT capability. Returns the maximum dimensions of the LUT. Example response is !O20,NN,PP where NN is the dimension of the LUT. For the RadianceXS this is "05" for a 5x5x5 LUT. PP is the length of the LUT color values in bits, for the Radiance this is "10" bits. Maximum values are PP bits + 1. So for 10 bit values the maximum value is 1024 (0x400). The default values at the black corner (address 0,0,0) are 64,64,64 and for the white corner 940,940,940. |
| | ZQO21 <i>-added 081413</i> <i>-also see: ZQO20, ZY416</i> | Current 3D LUT size. Returns the currently selected dimensions of the LUT. Example response is !O21,NN where NN is the current dimension of the LUT. If NN was "05" then the currently selected LUT size would be 5x5x5 |
| | ZQO30XXYYZZ <i>-added 090512</i> <i>-also see: ZQO20, ZY415</i> | 3D LUT value. XX,YY,ZZ are addresses in the 3D cube. XX is along the red axis, YY the green axis and ZZ the blue axis. Range for the device corresponds to the currently selected LUT size. if the LUT size is 5 then the range for the address is 00-04 (corresponding to 0,25,50,75,100% of the video range). Command returns: !O30,rrrr,ggg,bbbb where rrrr,ggg,bbbb are the red,green blue hex values at the location. For 10 bit values this is a range of x0000-x0400. |
| | ZQO89 <i>also see: ZQO09</i> | 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 <i>also see: ZQO10</i> | 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 (ZQO10 returns pts 0-10) |
| | ZQO91 <i>also see: ZQO11</i> | 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 (ZQO11 returns pts 0-10) |
| | ZQO92 <i>also see: ZQO12</i> | 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 (ZQO12 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: Only available on units with output triggers |
| | ZTMxxxx<CR> <i>-also see: ZB,ZC</i> | 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. |
| | ZYSX<CR> | Set rs232 baud rate. X='D', 'M', 'F' for default 9.6k, 28.8k, 57.6k baud. |
| | 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> <i>-also see: ZY45</i> | 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. |
| | ZY2MMMNNOOOPPP<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 RS-232 control of the trigger set the trigger setting in the Radiance menu to one of the RS232 control enabling options. (Trigger menu found under Other: I/O Setup: Trigger Out). Note: Only available on units with output triggers. |
| | ZY40XXX<CR> <i>also see: ZQO04</i> | Set output color mgmt gamma-- XXX =080-140 which corresponds to 0.80 to 1.40 |
| | ZY410CRXXXX<CR> <i>use ZY415 instead</i> | 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, |

| Remote | RS232-ASCII | Description |
|--------|--|---|
| | | 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 of currently selected CMS to default values and 8 point mode. |
| | ZY412<0,1> <CR> | Set output color mgmt-- 3D color gamut enable, 0=disable, 1=enable |
| | ZY413XX<CR> | Set output color mgmt-- set number of points for 2D LUT (aka grayscale), 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) |
| | ZY415XXYYZZCVVV<CR> <i>-added 090512</i> <i>-also see: ZQO20,ZQO30</i> | Set output color mgmt--Set 3D LUT value where XX,YY,ZZ are addresses in the cube. XX is along the red axis, YY the green axis and ZZ the blue axis. Range for the Radiance is 00-04. C is 0,1,2 indicating that we're writing the red, green or blue component at this location. VVVV is the hex value for the color component at the addressed location. For the Radiance (10 bit LUT) the range is x0000-x0400. When this command is executed the Radiance will be set into the 125 point gamut user interface. |
| | ZYGXYZRRRGGGBBB<CR> <i>-added 081513</i> <i>-also see: ZQO20,ZQO30</i> | Shorter version of ZY415 command for writing values to the LUT. X,Y,Z are addresses on red, green, blue axes. Range is 0-4 or 0-8 depending on selected gamut size. RRRGGGBBB is the hex value for red, green, blue value at the point. Range is 0x000 - 0x400. Command will set Radiance into 125 point mode if it was in 8 pt mode. |
| | 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. |
| | 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> * | Set out color-- S=sign<+,->, VVV = value<000-127> |
| | ZY43CRSVVV<CR> * | Set out color red-- S=sign<+,->, VVV = value<000-127> |
| | ZY43CGSVVV<CR> * | Set out color grn-- S=sign<+,->, VVV = value<000-127> |
| | ZY43HHSV VV<CR> * | Set out hue-- S=sign<+,->, VVV = value<000-127> |
| | ZY43HRSVVV<CR> * | Set out hue red-- S=sign<+,->, VVV = value<000-127> |
| | ZY43HGSVVV<CR> * | Set out hue grn-- S=sign<+,->, VVV = value<000-127> |
| | ZY43BLSVVV<CR> * | Set out black-- S=sign<+,->, VVV = value<000-064> |
| | ZY43COSVVV<CR> * | 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. |
| | ZY45MMMM<CR> <i>-also see: ZY1</i> | Set output aspect to MMM for input aspect X-- X(0=4:3, 1=Lbox, 2=16:9, 3=1.85, 4=2.35) MMM<110-250> which corresponds to 1.10 to 2.50. |
| | ZY46F<CR> | Set output format-- F=0-3 (0=YCbCr422, 1=YCbCr444, 2=RGB-PC, 3=RGB-Vid). |
| | ZY47X<CR> | Set 3D output for left, right or both eyes-- X (L=Left, R=Right, B=Both) |

* The current input setting is combined with the current output setting. The final value is limited to the maximum range of the register.

| Remote | RS232-ASCII | Description |
|--------|--|---|
| | ZY48X<CR> | Set 3D eyeglass polarity--X <-,+> |
| | ZY503XYZ<CR> <i>use ZY530 instead</i> | 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. |
| | ZY506SVV<CR> * | Set input contrast level-- S=sign<+,-> VVV=value <000-127> |
| | ZY507X<CR> * | 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. |
| | ZY508SVV<CR> * | Set input color offset-- S=sign<+,-> VVV=value <000-127> |
| | ZY509SVV<CR> * | Set input color red offset-- S=sign<+,-> VVV=value <000-127> |
| | ZY510SVV<CR> * | Set input color grn offset-- S=sign<+,-> VVV=value <000-127> |
| | ZY511SVV<CR> * | Set input hue offset-- S=sign<+,-> VVV=value <000-127> |
| | ZY512SVV<CR> * | Set input hue red offset-- S=sign<+,-> VVV=value <000-127> |
| | ZY513SVV<CR> * | Set input hue grn offset-- S=sign<+,-> VVV=value <000-127> |
| | ZY514SXXSY<CR> * | 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> ZY5161XXSVV<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 "ZY5161XXSVV" you select which shift setting to use (XX) and also set the value (S=sign<+,->,VVV=value <-511,511>) |
| | ZY520X<CR> | 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. |
| | ZY530MCS<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). |
| | ZY532CSDM<CR> | Test pattern output mode-- Sets up a mode that will be switched to when a test pattern command is executed with the character 'm' appended to it (ie "ZY7T....m"). In this ZY532CSDM command, the 'C' is defined to select the CMS to be used and can be '0'-7' or 'K' for keep current. 'S' is the selected style to be used and is also '0'-7' or 'K'. D is the 3d mode selection and can be '0', '1', '2', '4', '8' or 'K' corresponding to off (so a 2d mode), frame sequential, frame packed, top-bottom, side-by-side, or keep current. 'M' is the crt mode and can be the name of any of the predefined modes (.ie 480p, 720p60, etc), "C0"-C7" for the user defined custom modes, or 'K' for keep current crt mode. |
| | ZY6SAVECONFIG<CR> | Save configuration to flash. Exit any onscreen test patterns prior to performing a save. |
| | ZY7M<0,1><CR> | Menu position-- 0=default menu, 1=menu at top |

* The current input setting is combined with the current output setting. The final value is limited to the maximum range of the register.

| Remote | RS232-ASCII | Description |
|--------|---|---|
| | ZY7TGSIII<CR> <i>also see: ZQI02,tA,tR</i> | Test pattern command-- G=test pattern group 'a' - 'r', 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 the old "tXMM" command. "a,0"=Crosshatch, "a,1"=Overscan, "a,2"=AspectSquares, "b,0"=Contrast1, "b,2"=Contrast2, "b,3"=BlkRamp, "b,4"=LowClip, "b,5"=WhtRamp, "b,6"=HiClip, "b,7"=Targets, "b,8"=Check, "b,9"=lcheck, "b,10"=VidBlack, "b,11"=VidWhite "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 Note: not in menu, control via RS232. "n,0"=DesaturatedGrnWinMed, "n,1"=DesaturatedGrnWinSm, "n,2"=DesaturatedGrnWinSolid Note: not in menu, control via RS232.. "o,0"=DesaturatedBluWinMed, "o,1"=DesaturatedBluWinSm, "o,2"=DesaturatedBluWinSolid Note: not in menu, control via RS232.. "p,0"=DesaturatdYelWinMed, "m,1"=DesaturatedYelWinSm, "m,2"=DesaturatedYelWinSolid Note: not in menu, control via RS232. "q,0"=DesaturatedCynWinMed, "n,1"=DesaturatedCynWinSm, "n,2"=DesaturatedCynWinSolid Note: not in menu, control via RS232. "r,0"=DesaturatedMagWinMed, "o,1"=DesaturatedMagWinSm, "o,2"=DesaturatedMagWinSolid Note: not in menu, control via RS232. |
| | ZY7TsRRRGGBBB<CR> <i>also see: ZQI02</i> | UserColor test pattern command- S=subpattern number, 0 is Medium Window, 1 is Small Window, and 2 is Solid Window. RRR,GGG,BBB= value 000-255 Example: Display userColor test pattern, 100% white, medium window "ZY7Ts0255255255". |