
CONTROLCAL PIONEER 9G ISFccc PROFILE SET

USER'S GUIDE

ControlCAL is a control and calibration application for video displays that support the serial/RS-232 communication protocol. For Pioneer plasma displays, it's the only application that provides full access to the ISFccc interface in every Pioneer 7G, 8G, and 9G model that includes it, and it is used by nearly all professional Pioneer calibrators worldwide.

For the do-it-yourself 9G owner/calibrator, ControlCAL's calibration screens allow you to easily activate and adjust your display's built-in ISFccc modes from your computer. Most owners who activate their panel's ISF modes typically start with settings shared on the AVS or Calibration forums, and with ControlCAL, you can easily try different configurations and make your own modifications. Owners who want to take the next step and learn to calibrate their displays are encouraged to invest in calibration equipment and software ([special bundles](#) are available), and visit the [ControlCAL Calibration Forum](#). The forum is an excellent resource for information, advice, and support, whatever your ambition or level of expertise. All ControlCAL users are encouraged to register and participate.

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■ REQUIREMENTS

- ✓ Microsoft Windows XP or VISTA (For Apple Mac, please consult the [Calibration Forum](#))
- ✓ 512Mb minimum RAM
- ✓ Video card with 32MB minimum RAM
- ✓ Mouse/Touchpad
- ✓ Female DB9-to-Female DB9 *straight-through* serial cable (do *not* use a null-modem cable)
- ✓ RS-232 port (9-pin male DB9 connector)
 - The 25-pin male serial port found on some older computers requires a DB25-to-DB9 adapter
 - DO NOT attempt to use the 15-pin VGA port (on either the panel or your computer)
 - If your computer doesn't have an available serial port, use a USB-to-serial adapter. Recommended and supported options include the [Keyspan](#) USB-to-Serial Adapter and the ControlCAL USB-to-Serial Adapter (available in a [special bundle](#) that includes ControlCAL and the proper serial cable for your Pioneer display).
- ✓ ControlCAL Installer Application
- ✓ The ISFccc Display Profile Set for your specific model. The Profile Sets below are installed by the ControlCAL Installer Application. (Your Activation Key authorizes *your* specific profile only, so the others can be deleted if desired.)

8G ISFccc	
9G ISFccc Region 1 models	PRO-111FD, PRO-151FD, PDP-LX5090H, PDP-LX6090H, PDP-LX509A, PDP-LX609A, KRP-500A, KRP-600A
9G ISFccc Region 2 models	KRP-500A, KRP-600A (Asia Regions); PDP-LX5090, PDP-LX6090
9G ISFccc Elite Monitors	PRO-101FD, PRO-141FD
9G ISFccc Euro Monitors	KRP-500M, KRP-600M
- ✓ ControlCAL Activation Key (Emailed in a zip file attachment after your license fee is processed. **Save this information.**)

■ NEW & UPGRADE INSTALLATIONS

- 1 Download** the ControlCAL Installer Application and save it to your desktop or other location. (It'll appear as a standard Windows Installer package, filename *ControlCAL_v14x.msi*)



- 2 Run** the ControlCAL Installer Application, which installs the program and copies the above-listed Pioneer Profile Sets to your ControlCAL folder.



- 3 Activate** your copy of ControlCAL by entering the information from your activation email into the Activation dialog box. [MENU⇒Help⇒Activate] Help with activation issues is available on the [Calibration Forum](#).

Copy [CTRL+C] your activation key and paste [CTRL+V] into the dialog box. ⇒
(Take care that no extra spaces get added to the key when copying.)

UPGRADE NOTES:

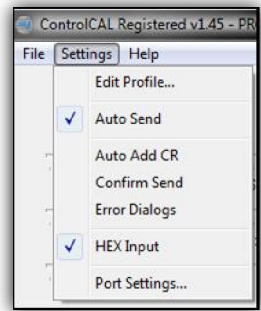
For upgrade installations, back up your existing *ControlCAL.ini* file if you have customized it, then copy it back to your ControlCAL folder after installing the upgrade. If upgrading from ControlCAL v1.41 or earlier, you also need to delete/uninstall your previous ControlCAL installation before proceeding with the new installation as described above. For ControlCAL versions after v1.41, the Installer Application automatically removes any old versions of the program.

RECOMMENDED CONTROLCAL SETTINGS

- **Auto Send:** Enable by checking in [MENU⇒Settings]. When engaged, changes made with the control sliders (using either the mouse or keyboard left/right arrow keys) are sent to the panel immediately. The SEND and SEND ALL buttons can still be used as well.

NOTE: If you type a value directly into a control window, you *must* use the small SEND button next to that control. Auto Send and SEND ALL have no effect for numerical values that are entered directly.

- **Error Dialogs:** Disable by un-checking in [MENU⇒Settings]. Any Pioneer error codes will still be logged in ControlCAL's terminal window.

**CONTROL SETTINGS TABLE**

All parameter options are expressed by numerical values in the ISFccc interface. (Example: Black Level 0=OFF and 1=ON) The Control Settings Table on page 8 shows the parameter options with their associated values.

WORKING WITH DISPLAY PROFILES

Your Activation Key will authorize the appropriate Profile Set for your panel when you activate ControlCAL.

- **Pages:** ISFccc Display Profile Sets have two parts, P1 and P2, which you could think of as *pages* 1 and 2. If you are performing an actual calibration, you should start with P2. (See [Calibration Workflow](#) for more information.) Note that you must set **Color Temp** = 6 (MANUAL) before you can adjust the RGB-High and RGB-Low controls. For convenience, the **Color Temp** control is available on both profile pages.
- **Loading Profiles:** When loading the second page of a profile (e.g., going from P2 to P1) with your panel already in calibration mode, you don't need to press **START CALIBRATION** again. ControlCAL remembers both the current input and memory (ISF-Day, ISF-Night, or ISF-Auto), so there's no need to re-send these when the second page is loaded.

CONTROLCAL WORKSHEET

The optional worksheet is a convenient way to organize and save records of your ISF settings as PDF files. Worksheets that you can fill, print, and save are available on the Calibration forum in versions for the North America 9G models and for the Europe-Asia-Australia 9G models.

THE REFRESH BUTTONS

The **REFRESH** buttons load the panel's current settings into the ControlCAL windows. The large **REFRESH** button in the main window refreshes all controls, including gamma. The two smaller **REFRESH** buttons in the Profiles Extras window refresh *only* the currently-selected gamma point. Each time you select a new gamma point, press one of the small **REFRESH** buttons to load and view its current values in the Profiles Extras window.

8-MINUTE TIME-OUT

The Pioneer ISFccc Interface will time out and the panel will return to normal operating mode after 8 minutes of inactivity on the serial port. This 8-minute time-out is one of the display's normal safety mechanisms and cannot be changed or disabled. As a work-around, simply re-send any current value (press the **SEND** button next to a control) every few minutes during periods of inactivity.

USB-TO-SERIAL ADAPTER

If using an adapter, install the driver before you begin. The Keyspan adapter comes with an installation disc, and the ControlCAL adapter drivers are available [on the forum](#). Use a female-to-female straight-through serial cable between the male connectors on the adapter and the Kuro. (Add gender-changers as necessary for male-terminated cables.)



- 1 Attach the serial cable and any required adapters between your computer and the Kuro's serial port (labeled SERVICE ONLY or RS-232C depending on the model), making sure to establish a *straight-through* connection. (It's recommended that you disconnect your panel's power cord when attaching or detaching any cables.)

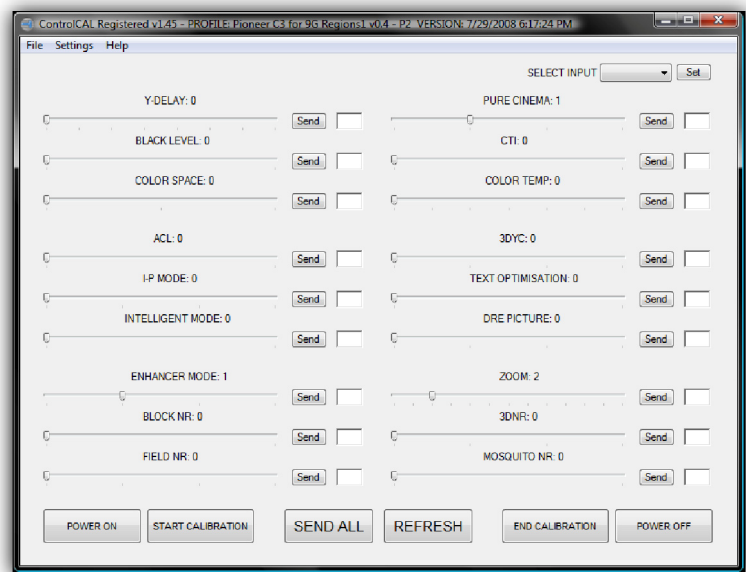
- For KRP-A series panels, use the SERVICE ONLY port on the rear panel of the external Media Receiver.
- For 9G monitors, set the Serial Port ID Number to **ALL**. [Home Menu ▶Control Setup ▶Serial Setting ▶ID No. Set = **ALL**]
- If using a USB-to-serial adapter, be sure the adapter's driver software is installed on your computer.



Pioneer Kuro
Serial Port

- 2 Begin with your Kuro in **Standby** mode. (The red Standby LED shows in the lower left corner.) Also, each input you work with will need to be receiving a video signal during adjustment.
- 3 **Start ControlCAL.** It's recommended that you enable **Auto-Send** and disable **Error Dialogs**.
- 4 Open the desired page of your Pioneer 9G Display Profile (P1 or P2) ¹ [MENU⇒File⇒Open⇒*your panel profile*]
- 5 Configure COM port settings if necessary. [MENU⇒Settings⇒Port Settings]

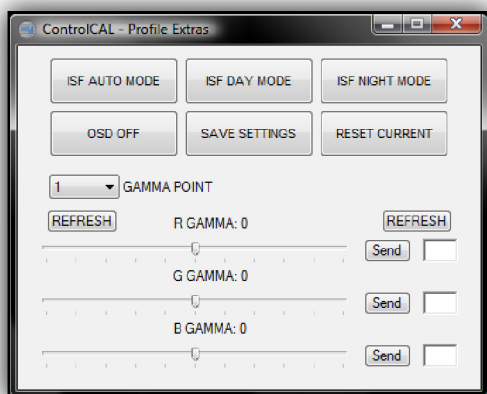
- 6 Press **POWER ON** in the ControlCAL main window (P2 is shown at right) ²
- 7 Press **START CALIBRATION** ³
A dialog box confirms that C3 Calibration Mode is enabled, and the ISFccc interface overlays the video on your display.



- 8 Select desired **INPUT** and press **SET** ⁴
- 9 In the Profiles Extras window, select the mode you wish to activate/adjust:
ISF-DAY MODE
ISF-NIGHT MODE
ISF-AUTO MODE
(ISF-Auto not available in all models)

- 10 Press **REFRESH** (in the main window) to load the current settings from your display into the ControlCAL window.
- 11 Adjust the individual controls as desired. If **Auto Send** is enabled, all changes made with the control sliders are applied to the panel immediately. If **Auto Send** is disabled, press **SEND** to the right of each control to apply the new value to the display, or **SEND ALL** after all desired values have been entered. (**SEND ALL** applies *all* values. Take care that control values left at their defaults do not overwrite custom settings.)
- 12 Open the second page of your profile (P1 or P2 as needed). [MENU⇒File⇒Open⇒*your panel profile*]
- 13 Press **REFRESH** (in the main window) to load the current settings from your display.
- 14 Adjust individual controls as desired. (See Step 11 regarding **Auto Send**, and the **SEND** and **SEND ALL** commands.)

- 15** Gamma points can be adjusted at any time during calibration in the Profiles Extras window. This step is only necessary if you are changing gamma values from their default of 0.



Select a **GAMMA POINT**, adjust the RGB controls for that point, and press **SEND** next to each control.

Each gamma point (1 – 9) must be adjusted individually.

The small **REFRESH** buttons load only the currently-selected gamma point into ControlCAL, while the large **REFRESH** button in the Main Window loads *all* current settings.

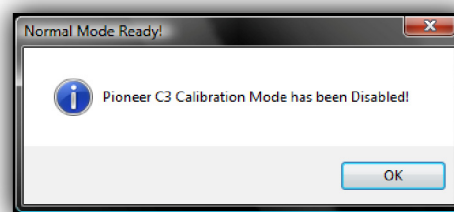
- 16** Press **SAVE SETTINGS**. **SAVE SETTINGS AFTER EACH MODE IS CALIBRATED OR CHANGES WILL BE LOST.**

- 17** Repeat Steps 9—16 for any other ISF modes you want to activate or adjust on the currently-selected input. Be sure to press **SAVE SETTINGS** for each mode when you have completed its calibration.

- 18** Repeat Steps 8—17 for any additional inputs you wish to calibrate.

- 19** Press **END CALIBRATION**.

A dialog box confirms that C3 Calibration Mode has been disabled and the panel is ready to resume normal operation.



IT CAN TAKE UP TO A MINUTE FOR THIS STEP TO COMPLETE AND THE DIALOG BOX TO APPEAR.

- 20** Press **POWER OFF** in the main ControlCAL window. Close ControlCAL.

Disconnect the serial cable and resume normal operation. (It's recommended that you disconnect your panel's power cord when attaching or detaching any cables.) The ISF modes are now available as AV selections for any inputs on which you have activated them.

Note: The ISF modes are "locked" and cannot be adjusted from your Kuro's user menus. (Picture adjustment options appear grayed out for the ISF modes.) You must use ControlCAL to make changes to your ISF settings.

NOTES

- ¹ "ControlCAL's Activation level cannot Load this Display Profile" error is returned when ControlCAL has not been activated. "ControlCAL has not been licensed to Load this Display Profile" error is returned when you attempt to load a profile that is not authorized by your Activation Key. Contact [ControlCAL](#) if you need to purchase a Registered Activation Key.
- ² If the panel fails to power on at all, see [Troubleshooting Cables & Adapters](#).
- ³ If your panel powers on but you receive a "No communication from display!" error when trying to enter calibration mode, see [Troubleshooting Cables & Adapters](#).
- ⁴ For 9G monitors: A dialog box may prompt you to force the input change (if you select the already-current input); select **YES**.

■ USING RESET CURRENT TO RESTORE DEFAULTS

The **RESET CURRENT** button in the Profiles Extras window allows you to restore an ISF memory to its defaults and reset the calibration flag to 0 (non-activated status). This button is only operational if the panel is in calibration mode and an input and mode (ISF-DAY MODE, ISF-NIGHT MODE or ISF-AUTO MODE) have been selected.

EXAMPLE: You want to reset the ISF-DAY, ISF-NIGHT and ISF-AUTO modes for Input 3.

- 1 Press **START CALIBRATION** (if not already in calibration mode)
- 2 Select **INPUT 3** and press **SET**
- 3 Reset each ISF mode:
 - Press **ISF DAY MODE** and then **RESET CURRENT**
 - Press **ISF NIGHT MODE** and then **RESET CURRENT**
 - Press **ISF AUTO MODE** and then **RESET CURRENT**
- 4 Press **END CALIBRATION** to exit calibration mode. The ISF modes are no longer activated on Input 3.

Each input has two or three ISF modes (some models do not have ISF-AUTO) which must be reset individually as in the above example. There is no "universal" reset that restores defaults to all memories and inputs at once. If you want to reset *all* ISF modes on *all* inputs, you must repeat Steps 2 - 3 for every input on which the ISF modes have been activated.

■ USING SEND ALL AND REFRESH TO COPY SETTINGS BETWEEN INPUTS OR MODES

This shortcut uses the **SEND ALL** and **REFRESH** functions to copy settings from one mode or input to another.

- 1 Open Display Profile P2
- 2 Press **START CALIBRATION** (if not already in calibration mode)
- 3 Load the P2 settings of the input and ISF mode you want to copy settings from:
 - Select the **INPUT** and press **SET**
 - Select the ISF mode you're copying from (**ISF-DAY** or **ISF-NIGHT** or **ISF-AUTO**)
 - Press **REFRESH** to load the P2 settings into ControlCAL
- 4 Apply the P2 settings to the input and ISF mode you want to copy settings to:
 - Select the **INPUT** (if different from the current input) and press **SET**
 - Select the ISF mode you want to copy to
 - Press **SEND ALL** to send the P2 settings to your panel
 - Press **SAVE SETTINGS**
- 5 Open Display Profile P1
- 6 Load the P1 settings of the input and ISF mode you want to copy settings from:
 - Select the **INPUT** (if different from the current one) and press **SET**
 - Select the ISF mode you're copying from (**ISF-DAY** or **ISF-NIGHT** or **ISF-AUTO**)
 - Press **REFRESH** to load the P1 settings into ControlCAL
- 7 Apply the P1 settings to the input and ISF mode you want to copy settings to:
 - Select the **INPUT** (if different from the current input) and press **SET**
 - Select the ISF mode you want to copy to
 - Press **SEND ALL** to send the P1 settings to your panel
 - Press **SAVE SETTINGS**
- 8 Press **END CALIBRATION** to exit calibration mode.

GAMMA POINTS: The SEND ALL command does *not* send a value to all nine gamma points simultaneously, only to the currently-selected point (the one showing in the Profiles Extras window). When adjusting the gamma controls, you must set each point individually. The procedure for adjusting the gamma point controls is detailed on [page 5, Step 15](#).

Most ControlCAL issues are the result of misconfigured cables or adapters causing communication failures between your computer and your Pioneer display. Using the cable and adapter included with the [ControlCAL bundle](#) is the easiest way to avoid these issues, but if you use or make your own serial cables, the particular error you encounter can help diagnose the problem and point to appropriate solutions.

THE SERIAL PORT CONNECTOR (DB9)



ControlCAL uses the Kuro's 9-pin male serial port, labeled SERVICE ONLY or RS-232C, to connect and communicate with your display. (For the KRP-A series, the serial port is located on the rear panel of the external Media Receiver.) Only pins 2, 3, and 5 are actually used.

ControlCAL requires a *straight-through* connection from the serial port of your Kuro to the serial port of your computer or USB adapter, such that:

Pin 2 ⇒ Pin 2

Pin 3 ⇒ Pin 3

Pin 5 ⇒ Pin 5



Male DB9 Pin-out



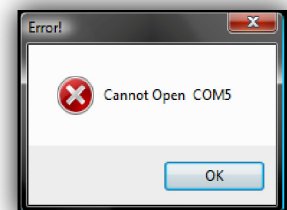
Female DB9 Pin-out

The pin-out of a male DB9 connector is the *inverse* of a female DB9 connector. In gender-changing serial cables and adapters, pins 2 & 3 can be either straight- or crossed-mapped, and this is typically where misconfigured connections arise. *The cumulative result of all adapter and cable connections must be the straight-through configuration shown above.*

CONTROLCAL COMMUNICATIONS ERRORS

❌ ControlCAL cannot open the COM port

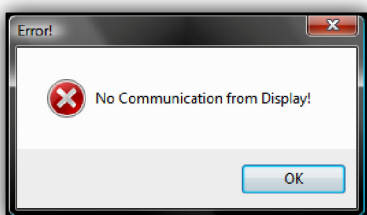
ControlCAL requires an open COM port on your computer, and will usually detect one automatically. USB-to-serial adapter drivers include setup programs that will help you establish and configure a COM port if one is not already available. If ControlCAL doesn't detect an open port, you can select one manually in [MENU⇒Settings⇒Port Settings].



❌ ControlCAL does not power on your display at all

You're likely using a null-modem serial cable or adapter, even if it isn't labeled as such. This cross-maps pins 2 & 3, the send/receive channels, so ControlCAL can't communicate with the panel at all. Try another cable that is not null-modem. (Alternately, add *another* adapter that crosses pins 2 & 3, effectively swapping them back to straight-through status.)

❌ ControlCAL powers on your display but cannot receive communication from it



The entire pin-out is backwards. This occurs when a "pass-through" gender-changer simply converts each male pin to female without properly mapping the pin channels, resulting in a female connector with the *de facto* pin-out of a male connector.

Replace this pass-through adapter with a gender-changer that correctly inverts the pin-out, mapping male pin 2 to female pin 2, male pin 3 to female pin 3, and so on.

Pioneer 9G ISFccc CONTROL SETTINGS TABLE			
Default values are indicated in blue.			
COLOR TEMP		PURE CINEMA	
0		0	Off
1	Low	1	Standard
2	Mid-Low	2	Advance
3	Mid	3	Smooth
4	Mid-High	CTI	
5	High	0	Off
6	Manual ^{SEE NOTE 1}	1	On
BLACK LEVEL		3YDC	
0	Off	0	Off
1	On	1	Low
COLOR SPACE		2	Mid
0		3	High
1	1	TEXT OPTIMIZATION	
2	2	0	Off
ACL		1	On
0	Off	DRE PICTURE	
1	On	0	Off
I-P MODE		1	Low
0		2	Mid
1	Mode 1	3	High
2	Mode 2	ZOOM (Screen Size) ^{SEE NOTE 2}	
3	Mode 3	0	Dot x Dot
INTELLIGENCE MODE		1	4:3
0	Off	2	Full
1	On	3	Zoom
ENHANCER MODE		4	Cinema
1	Mode 1	5	Wide or Wide 1
2	Mode 2	6	Full 14:9 (region-specific)
3	Mode 3	7	Cinema 14:9 (region-specific)
BLOCK NR / MOSQUITO NR		8	Full 2 (region-specific)
0	Off	11	Auto ^{SEE NOTE 3}
1	On	12	Wide 2 (region-specific)
FIELD NR		3DNR	
0	Off	0	Off
1	Low	1	Low
2	Mid	2	Mid
3	High	3	High

¹ You *must* set Color Temp=6 before you can adjust the RGB-High and RGB-Low controls. If Color Temp \neq 6, those control values will be displayed in red in the ControlCAL window and cannot be changed.

² Zoom (Screen Size) is included in Display Profile P2 as a convenience; it is *not* locked in the ISF modes and can be changed at any time with your remote. Some Zoom options are limited to region-specific models. Some options are signal-sensitive and adjust dynamically during use.

³ Zoom=11 (Auto) is effective only when SIDE MASK DETECTION \neq OFF and AUTO SIZE \neq OFF and an HD signal is incoming. Screen size is changed to Auto whenever these conditions are present and ISF Zoom=11 (Auto).

CONTROLCAL CALIBRATION WORKSHEET

PAGE 9

The worksheet is a convenient way to organize and save records of your ISF settings; it is *not* required for using ControlCAL itself. Control parameters in the worksheet table are arranged in the same order that they appear in the ControlCAL windows, for easy navigation. Fully-functional .PDF versions that you can fill, print, and save are available separately on the ControlCAL Calibration Forum.



ControlCAL CALIBRATION WORKSHEET: Pioneer 9G Elite Panels													
MODEL:		INPUT:				SOURCE:							
ISF-DAY													
Profile P1	Contrast		Color			Profile P2	y-Delay	0	Pure Cinema				
	Brightness		Tint				Black Level		CTI				
	Sharpness		Color Temp				Color Space		Color Temp				
	Color Mgmt R		R-High (Drive)				ACL		3DYC				
	Color Mgmt Y		G-High (Drive)				I-P Mode		Text Opt.				
	Color Mgmt G		B-High (Drive)				Intelligence		DRE Picture				
	Color Mgmt C		R-Low (CutOff)				Enhancer Mode		Zoom				
	Color Mgmt B		G-Low (CutOff)				Block NR		3DNR				
Color Mgmt M		B-Low (CutOff)			Field NR		Mosquito NR						
Gamma Points		1	2	3	4	5	6	7	8	9	ALL		
	R												
	G												
B													
ISF-NIGHT													
Profile P1	Contrast		Color			Profile P2	y-Delay	0	Pure Cinema				
	Brightness		Tint				Black Level		CTI				
	Sharpness		Color Temp				Color Space		Color Temp				
	Color Mgmt R		R-High (Drive)				ACL		3DYC				
	Color Mgmt Y		G-High (Drive)				I-P Mode		Text Opt.				
	Color Mgmt G		B-High (Drive)				Intelligence		DRE Picture				
	Color Mgmt C		R-Low (CutOff)				Enhancer Mode		Zoom				
	Color Mgmt B		G-Low (CutOff)				Block NR		3DNR				
Color Mgmt M		B-Low (CutOff)			Field NR		Mosquito NR						
Gamma Points		1	2	3	4	5	6	7	8	9	ALL		
	R												
	G												
B													
ISF-AUTO Color Sensor Active													
Profile P1	Contrast		Color			Profile P2	y-Delay	0	Pure Cinema				
	Brightness		Tint				Black Level		CTI				
	Sharpness		Color Temp				Color Space		Color Temp				
	Color Mgmt R		R-High (Drive)				ACL		3DYC				
	Color Mgmt Y		G-High (Drive)				I-P Mode		Text Opt.				
	Color Mgmt G		B-High (Drive)				Intelligence		DRE Picture				
	Color Mgmt C		R-Low (CutOff)				Enhancer Mode		Zoom				
	Color Mgmt B		G-Low (CutOff)				Block NR		3DNR				
Color Mgmt M		B-Low (CutOff)			Field NR		Mosquito NR						
Gamma Points		1	2	3	4	5	6	7	8	9	ALL		
	R												
	G												
B													
Calibration Notes													
Calibrator:						Date:							

This [workflow](#) is intended primarily for those performing an actual calibration, rather than inputting existing settings. Most calibrators prefer to start with Display Profile P2 and set the filters, color temperature, and color space, since these control parameters need to be set before the picture quality adjustments are done in Display Profile P1.

- | | |
|--|--|
| 1 Set peak luminance (CONTRAST) | 5 Adjust gamma (GREEN, RED, then BLUE) |
| 2 Set black level (BRIGHTNESS) | 6 Tweak grayscale (RGB-HIGH, RGB-Low and CMS) |
| 3 Adjust grayscale (RGB-HIGH AND RGB-LOW) | 7 Adjust color saturation (COLOR) |
| 4 Adjust color points (CMS CONTROLS) | 8 Repeat steps 1,3,4,6,and 7 until grayscale and color points are maximized |

If you choose to do your own calibrations, information about calibration equipment and software, including user feedback and recommendations, is available on the ControlCAL Calibration Forum. You'll also find information about the available [ControlCAL software & hardware bundles](#).

LINKS & CONTACT INFORMATION

CONTROLCAL RESOURCES:

[ControlCAL Website](#)
[ControlCAL Software/Hardware Bundles](#)
[ControlCAL Adapter/Cable Bundle](#)
[KRP-M Patch Package](#)

ControlCAL Calibration Forum Threads:

[Pioneer Plasma Threads](#)
[User-Posted Settings](#)
[Resolving Activation Issues](#)
[ControlCAL Worksheet](#)
[Checking Hours & Changing Side Mask Color](#)

CONTROLCAL END USER LICENSE AGREEMENT (EULA)

CONTACT CONTROLCAL

AVS FORUM RESOURCES:

[Pioneer 9G Elite Owner's Discussion](#)
[Pioneer 9G non-Elite Kuro Owner's Discussion](#)
[Pioneer 9G North American KRP Owner's Discussion](#)
[Signature Elite 141 Owner's Discussion](#)
[Pioneer 9G Kuro Comparison Chart](#)
[Pioneer 9G Kuro Settings/Issues](#)

PIONEER INFORMATION, SUPPORT, & DOWNLOADS

[Pioneer International Sites](#)

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