

## PMW-F5 and PMW-F55 Quick Reference Guide.

For On-Line Help See: <http://community.sony.com/t5/F5-F55/bd-p/large-sensor-camera-F5-F55>

For Tutorials and Tips see: <http://www.xdcam-user.com>.

This document has been prepared without the direct support of Sony. I have tried to make it as accurate as possible, but cannot guarantee that there may not be some errors or omissions. Comments and suggestions are welcome via [www.xdcam-user.com](http://www.xdcam-user.com).

You can download the latest version from here:

<http://www.xdcam-user.com/2014/04/pmwf5-and-pmw-f55-quick-reference-guide/>

### HOW TO USE THE DOCUMENT:

Anything in italics, like this ***(System – Base Settings)*** indicates the menu page or menu setting that you may need to change or where to look for the settings mentioned in the text.

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There are several sections:

HELP SOMETHINGS NOT WORKING.	If the camera doesn't work as expected, crashes won't power up or you can't turn something on, check in this section.
S&Q, SLOW MOTION AND CENTER CROP.	Anything to do with S&Q motion check here. Also information on shooting 2K raw or using the camera in Center Crop or Full Frame Modes.
OTHER GOTCHAS AND USEFULL THINGS TO KNOW	Problems and issues that don't live in any of the other sections including media issues, APR and Noise Reduction.
CINE EI MODE AND LUTS	Information about using the Cine EI Mode and LUT's
CUSTOM MODE.	Information about using Custom mode with some notes on Gamma Matrix and other paint settings.

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### HELP! SOMETHINGS NOT WORKING:

CAMERA UNRESPONSIVE	<p>Remove battery wait a few seconds and replace battery.</p> <p>Check the (<b>Lens Interface</b>) settings and turn the (<b>Lens Interface</b>) to OFF unless you are using lenses with the Arri or Cooke interface.</p> <p>It's recommended that you perform an (<b>All Reset</b>) in (<b>System</b>) if this occurs.</p> <p>Try re-seating the WiFi Dongle, a loose WiFi Dongle can cause the camera to hang.</p>
NO HDSDI OR HDMI OUTPUT	<p>Check that the HDSDI and HDMI outputs are enabled in the (<b>Video – Output On/Off AND Video – Output Format</b>) pages of the menu. If still no output, perform an (<b>System - all reset</b>) and re-start the camera.</p>
R5 RAW RECORDER DOES NOT COME ON WHEN IN CINE-EI	<p>The R5 raw recorder will only operate in the Cine-EI Mode. In addition you need to set the operating mode (<b>System – Base Setting – Shooting Mode</b>) to RAW and you must set the (<b>Recording – Rec Control</b>) to AXS for raw on the R5 only or AXS + SXS for raw plus internal SxS.</p>
CAMERA WON'T COME ON AFTER CHANGING LENS.	<p>Check the (<b>Camera - Lens Interface - Setting</b>) settings and turn the (<b>Lens Interface</b>) to OFF unless you are using lenses with the Arri or Cooke interface.</p>
OPTITEK LENS ADAPTER FOR CANON LENSES NOT WORKING.	<p>Check the (<b>Lens Interface</b>) settings and turn the (<b>Lens Interface</b>) to (<b>TYPE C</b>).</p>
CAN'T SELECT 4K HDSDI OR 4K HDMI OUTPUT.	<p>4K HDSDI and HDMI output is only available on the PMW-F55 and only when the camera is recording 4K internally on the SXS cards. If using the R5 to record 4K you can only record 2K/HD on the SxS cards, so cannot get a 4K HDSDI or HDMI output. In addition the HDSDI out must be set to 4K 2SI before the 4K HDMI option becomes available.</p>

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CAN'T ENABLE PROXY RECORDING	Proxy recording (XAVC + Mpeg2 on same SxS card) is only available on the F55 and only works when the camera is recording 4K XAVC YPbPr.
CAN'T SELECT SStP SR (HDCAM SR) CODEC	You can only select the SStP SR 422 codecs when the camera is in YPbPr mode and you can only select SStP 444 when in RGB mode. You cannot use SStP and RAW with the R5 at the same time. <b>(System – Base Setting – Main Operation – YPbPr or RGB).</b>
WAVEFORM OR HISTOGRAM NOT WORKING	You can only use the cameras built in waveform and histogram options when you the Sub SDI is enabled. <b>(Video – Output – SDI SUB).</b> In addition the waveform will only display when the LUT settings for the VF output and Sub SDI output are the same, either LUT ON for both or LUT OFF for both. <b>(Video – Monitor LUT – Sub&amp;HDMI PLUS Viewfinder)</b>
NEED TO PERFORM AN “ALL RESET” BUT DON'T HAVE ANY VIEWFINDER OR MONITOR OUTPUT.	From firmware V3 onwards you should be able to turn the SDI SUB display overlay ON/OFF from the side panel by pressing the “CAMERA” button one or two times to get to the page where SDI(Sub)Disp is shown in the bottom left corner.  Otherwise do the following: Turn the camera off then back on. Press the menu button once. Slowly turn the Sel/Set knob 11 clicks clockwise (10 clicks for earlier firmware versions). Press in the Sel/Set Knob. Turn it a further 15 clicks clockwise. Press the Sel/Set Knob twice. Turn it anti clockwise one click. Press the Sel/Set knob. The camera should reset. You should then have text overlays on the SUB HDSDI output.

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EXT I/F Warning	The EXT I/F is the connection between the camera and R5 recorder. Try removing and replacing the R5. Also ensure any AXS cards are firmly seated in the recorder.
AUDIO INPUTS ARE NOT WORKING.	In S&Q mode audio is not recorded so you will not see any audio input. In the viewfinder you will see a red circle with a line through it over the audio tracks. Exit S&Q mode to restore normal audio operation.

### S&Q, SLOW MOTION AND 2K SENSOR CROP:

CAN'T SELECT S&Q, MENU OPTION GREYED OUT.	Camera must be set to YPbPr XAVC or RAW to record S&Q. S&Q will not work if the camera is set to RGB, MPEG or SStP ( <b>System – Rec Format – Format – XAVC</b> ). ( <b>System – Base Setting – Main Operation – YPbPr OR RAW</b> ). For Raw only set ( <b>Recording – Rec Control – Setting</b> ) to AXS.
CAN'T SELECT FRAME RATE HIGHER THAN 60FPS IN S&Q	You must turn on HFR ( <b>Camera – S&amp;Q Motion – High Frame Rate – Full Scan or Center Scan</b> ). Only choose Full Frame if you have the optional 2K Optical Low Pass filter installed, otherwise use Center Scan to avoid excessive aliasing. HFR above 60fps is limited to 2K/HD.
MY HIGH SPEED FOOTAGE HAS A LOT OF JAGGIES, RAINBOW PATTERNS AND DOES NOT LOOK GOOD.	See note above. Use Center Scan mode to avoid aliasing and moiré without the optional 2K Low Pass Filter.

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<p>I CAN'T GO ABOVE 150 FPS IN HFR S&amp;Q</p>	<p>You can only go above 150fps if the camera is set to a NTSC area frequency, so 23.98, 24, 29.29 or 59.94fps must be used for higher frame rates. <b>(System – System Setting – Frequency)</b></p>
<p>I CAN'T GO ABOVE 180 FPS IN HFR S&amp;Q</p>	<p>Internal recordings on the SxS cards are limited to 180fps. To go up to 240fps you must use the optional R5 raw recorder and be in the Cine EI mode <b>(System-Base Setting – Shooting Mode – Cine EI PLUS Main Operation – RAW)</b>. In addition you may need to disable SXS recording to get above 180fps. <b>(Recording – Rec Control – Setting - AXS)</b> use AXS only for 240fps on the R5.</p>
<p>NO LUT'S WHEN SHOOTING S&amp;Q</p>	<p>LUT operation is restricted/limited when in S&amp;Q. You can only have LUT's ON or all LUT's OFF. There is no option to split the LUT's between the internal recordings and SDI/HDMI outputs. To turn on the LUT's on the HDSDI/HDMI you must turn ON the Main&amp;Internal LUT in the menu. <b>(Video – Monitor LUT – Main&amp;Internal)</b>. As an alternative you can turn LUT's OFF and use the viewfinder High Contrast Mode which adds a 709(800) look to the viewfinder pictures only. <b>(System – Assignable Button – VF High)</b></p>
<p>HOW DO I SHOOT 2K RAW INSTEAD OF 4K RAW</p>	<p>To shoot 2K raw instead of 4K set the Imager Scan to 2K Full or 2K center. Note that in order to get the very best results from 2K Full you should install the optional 2K optical low pass filter. You SHOULD NOT use the 2K OLPF in 2K Center Scan. <b>(System – Base Setting – Imager Scan Mode)</b></p>

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FLICKERING PICTURES IN HFR	Not really a camera issue, most likely the frequency of the light sources in your scene are not high enough. Even a distant light source such as a fluorescent light can introduce flicker into a daylight scene. Try using different high frequency lights or lower the frame rate.
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### OTHER GOTCHA’S AND THINGS USEFUL TO KNOW:

RESTORE MEDIA	Never perform a media restore on a camera with a different firmware version to the one that shot the material. Otherwise this is a completely safe to use function that tidies up files on your media cards to prevent or fix file corruption. If you get a Restore Media message you should always select “OK”. Do not try to record further material on a card that has given this message until a media restore has been performed.
RESTORE MEDIA FAILS	Check that the write protect tab on your media is not enabled.
EXECUTE APR	You will periodically see this message at start up. Whenever possible cap the lens or camera body to exclude all light and select “OK”. The process takes about 60 seconds and checks for any hot or dark pixels and restores the correct levels or maps them out.
PROBLEMS WITH AN AXS CARD	AXS cards should be re-formatted periodically to maintain best performance. Repeatedly formatting an AXS card several times will clear most AXS card issues.
FLICKER REDUCE/IMAGE FLICKER	Designed to reduce or eliminate flicker from artificial lights when shooting at a frame rate that does not match the mains frequency of the country. However is known to cause problems when using the shutter. Better to use the shutter set to a frequency that is a multiple of the mains frequency. E.g. 1/50, 1/100 <sup>th</sup> for 50hz countries (Europe, Asia) and 1/60, 1/120 <sup>th</sup> for 60hz countries (USA, Canada).
NOISE REDUCTION	The camera has internal noise reduction but this ONLY works in Custom Mode.
SLOG2 EXPOSURE LEVELS	Middle Grey = 32% 90% White = 59%
SLOG3 EXPOSURE LEVELS	Middle Grey = 41% 90% White = 61%
HOW TO TURN ON THE WAVEFORM VECTORSCOPE OR HISTOGRAM	These are tucked away in the ( <b>VF – Display On/Off – Video Signal Monitor</b> ) settings.

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WHICH CODEC?	The camera has several codec options. <b>(System – Rec Format).</b>
MPEG	The same as the XDCAM codec, 8 bit, 422 at 50Mb/s. Good for news, quick turn-around, small file size. Max Frame rate 29.97fps HD only. <b>(System – Rec Format).</b>
XAVC	New Sony codec. Variable bit rate depending on whether HD or 4K and frame rate. In F5/F55 always 10 bit 422 XAVC Intra. Good for high quality productions but with compact file size. 100Mb/s at HD 24fps. Approx 300Mb/s at 4K 24fps. <b>(System – Rec Format).</b>
SStP	SStP (Simple Studio Profile) is the same codec as used for HDCAM SR tape. Extremely high quality 422 or 444 codecs. HD only and large file sizes. 220Mb/s for 422 and 440Mb/s for 444. <b>(System – Rec Format).</b> 444 option only available when camera is in RGB mode <b>(System – Base Setting – Main Operation).</b> SStP can not be used when using the R5 to shoot Raw.
USE CONTENT BROWSER TO OFFLOAD FILES BEFORE ERASING CARD.	Always try to use Sony's Content Browser to copy material from your SxS cards before erasing or formatting the card. Content Browser will check for media corruption when a card is opened. If it detects any issues it will instruct you to perform a "Restore Media" by replacing the card in the camera.

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### CINE EI MODE AND LUTS.

<p>WHAT IS CINE EI MODE</p> <p>In depth guide to CineEI here: <a href="http://www.xdcam-user.com/2013/12/cine-ei-mode-when-recording-s-log23-and-raw-on-the-f5-and-f55/">http://www.xdcam-user.com/2013/12/cine-ei-mode-when-recording-s-log23-and-raw-on-the-f5-and-f55/</a></p>	<p>This is a mode that mimics film camera operation. Recordings are always done at the camera's native ISO (1250 on F55, 2000 on F5). LUT's are used to provide easier monitoring. Gain in the form of an "Exposure Index" is applied to the LUT. To enable Cine EI (<b>System – Base Setting – Shooting Mode – Cine EI</b>).</p>
<p>TO TURN LUTS ON</p>	<p>LUT output must be enabled in order to use the LUT's. Normally with LUT's you should enable LUT's for Sub&amp;HDMI and Viewfinder but NOT for Main&amp;Internal. (<b>Video – Monitor LUT – Sub&amp;HDMI PLUS Viewfinder</b>). LUT's can also be controlled from the side panel by pressing "camera" one or two times.</p>
<p>LUT OPTIONS ARE GREYED OUT</p>	<p>You must be in Cine EI mode. See note in S&amp;Q section of this document about LUT's when in S&amp;Q. Also when the F55 camera is outputting 4K over 4x HDSDI LUT operation is not possible.</p>
<p>LUT OR LOOK?</p>	<p>You can select between LUT's and LOOK's. LUT's are 1D LUT's and have a greater output range so will show exposure more faithfully than the LOOK's when using a low EI. LUT's only change contrast, LOOKs can change contrast, hue and colour. (<b>Video – Monitor LUT – Category</b>). Personally I prefer LUT's for judging exposure, but LOOK's may be better for estimating what the final production may look like.</p>
<p>EXPOSING VIA LUT/LOOK</p>	<p>Exposure tools like Waveform/Histogram/Zebbras measure the LUT/LOOK output, you should expose using normal video exposure levels when using a LUT.</p>

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WHICH LUT OR LOOK	This is down to personal preference. Use the one that looks right to you or gives the most pleasing image. There is no best LUT/LOOK or right or wrong LUT/LOOK. If unsure I suggest LUT P1 709(800) as this gives reliable and conventional 709 exposure levels.
EXPOSING WITHOUT LUT	Slog2 Middle Grey = 32% 90% White = 59%. Slog3 Middle Grey = 41% 90% White = 61%
CANT CHOOSE USER 3D LUT	User 3D LUT's are only available when the camera is set to SGmaut3 or SGamut3.cine.
USING A LOW EI	Using an EI Lower than the native ISO will result in a final image with less noise and more shadow information (as the actual recordings will be brighter). However over-exposure headroom is slightly reduced.
USING A HIGH EI	Using an EI higher than the native ISO will result in noisier pictures with less shadow information but with greater over exposure headroom (as the actual recordings will be darker).
SLOG2 OR SLOG3	Both give the same dynamic range. Slog2 may have some small benefits for low EI shooting. But Slog3 is easier to work with in post production and uses more familiar exposure levels. My recommendation is to use Slog3. <b>(System – Base Setting – Color Space).</b>
WHICH COLOR GAMUT WITH SLOG3	With Slog3 you can choose between S-Gamut3 and S-Gamut3.cine. S-Gamut3 is an extremely large color Gamut that can cause issues in some post workflows. S-Gamut3.cine is a smaller subset of S-Gamut3 that is easier to work with and very close to the DCI P3 color space used for digital cinema. Check with your post production people. Otherwise my recommendation is to use S-Gamut3.cine. <b>(System – Base Setting – Color Space).</b>

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### CUSTOM MODE GAMMA CURVES AND MATRIX.

WHEN TO USE CUSTOM MODE	Custom mode is good for creating a baked in look in camera or for workflows where the amount of post production will be minimal. Do also consider as an alternative using CineEI mode and baking in a look by using a LUT with <b>(Video – Monitor LUT – Main&amp;Internal)</b> set to ON. The LC-709 TypeA Look creates a very pleasing image.
SELECTING CUSTOM MODE	Custom mode is selected in <b>(System – Base Setting – Shooting Mode – Custom)</b> .
YPbPr or RGB	For most applications you will use YPbPr. RGB would only be used when recording with SStP 444 for very high quality productions, perhaps green screen work. <b>(System – Base Setting - Main Operation)</b>
GAMMA CHOICE	The Gamma curve effects the contrast and dynamic range of the recordings. When the gamma curve selected in the camera does not match the gamma curve of the monitor the contrast will not be normal (typically flat and washed out). Most TV's and Monitors use a gamma curve called REC-709 or something very similar. The camera has 5 different classes of gamma, STD (standard) HG (Hypergamma), User, Slog2 and Slog3. <b>(Paint – Gamma – Gamma Category)</b> .
STD GAMMAS	Limited dynamic range but closest match to most display devices. Standard gamma gain is x4.0, so a gamma with higher gain will be brighter, lower gain darker. STD5 R709 is the standard gamma for HD television. STD1 DVW – similar to older Sony SD cameras. STD6 x5.0 – 5x gain gamma, often known as BBC gamma. <b>(Paint – Gamma – Gamma Select)</b> .

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<p>HYPERGAMMAS</p> <p>More info here: <a href="http://www.xdcam-user.com/tech-notes/correct-exposure-with-cinegammas-and-hypergammas/">http://www.xdcam-user.com/tech-notes/correct-exposure-with-cinegammas-and-hypergammas/</a></p>	<p>Special extended range gammas that are close to standard gammas so grade very easily but offer greater dynamic range and a more film like highlight roll-off. Exposure levels should be slightly lower (1/2 to one stop lower) than STD gammas. Looking in the menu you will see each Hypergamma described by a 7 character name. The first 3 characters are the dynamic range in %. The 4<sup>th</sup> is the clip point, 0 = 100%, 9 = 109%. The number after the G is the nominal middle grey exposure level in %.</p> <p>Use HG with high G for low key scenes, low G for high key scenes.</p> <p><b>(Paint – Gamma – Gamma Select).</b></p>
<p>USER GAMMA</p>	<p>Here you can select a user created Gamma Curve. <b>(Paint – Gamma – Gamma Select).</b></p>
<p>Slog2</p> <p>More Info Here: <a href="http://www.xdcam-user.com/2013/11/understanding-log-and-exposure-levels-also-other-gammas-please-read-and-understand/">http://www.xdcam-user.com/2013/11/understanding-log-and-exposure-levels-also-other-gammas-please-read-and-understand/</a></p>	<p>The original 14 stop Sony Log gamma curve. Only use if you are prepared for extensive post production. <b>(Paint – Gamma – Gamma Select).</b></p>
<p>Slog3</p>	<p>New 14 stop log curve, very close to Cineon Log. Easier to grade than Slog2. Only use if you are prepared for extensive post production. <b>(Paint – Gamma – Gamma Select).</b></p>
<p>COLOR MATRIX</p>	<p>The color matrix allows you to alter the color response of the camera. <b>(Paint – Matrix).</b></p>
<p>PRESET MATRIX</p>	<p>Allows you to choose between several different pre-set matrix ranges. <b>(Paint – Matrix – Preset Matrix – ON PLUS Preset Select).</b></p>

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CHOOSING THE RIGHT MATRIX	Standard for normal shooting. High Saturation for strong vivid colors. FL Light – to remove green color cast present when shooting under some fluorescent or LED lights. Cinema – Subdued colors to mimic film style colors. <b>(Paint – Matrix – Preset Matrix – ON PLUS Preset Select).</b>
USER MATRIX	The user matrix allows you to alter the way the camera combines colors to give accurate hues and shades. Difficult to adjust unless you know what you are doing. <b>(Paint – Matrix – User Matrix).</b>
MULTI-MATRIX	An easier to use way of adjusting the colors the camera reproduces. You can take multiple colors by selecting several different AXIS settings and adjust the saturation and hue of those colors. Be careful as this can sometimes result in odd behavior on colors that sit on the boundary between two axis. <b>(Paint – Multi-matrix).</b>
DETAIL  More info on detail correction here: <a href="http://www.xdcam-user.com/2010/12/why-do-my-pictures-go-soft-when-i-pan-camera-detail-correction-in-depth/">http://www.xdcam-user.com/2010/12/why-do-my-pictures-go-soft-when-i-pan-camera-detail-correction-in-depth/</a>	Detail boosts the contrast around edges making the image appear sharper. May look artificial if set too high. If doing post production grading I recommend you turn Detail OFF as you can always sharpen in post and excessive in camera sharpening can restrict how much you can grade your footage. <b>(Paint – Detail).</b> The default detail level of 0 is adding noticeable edge enhancement. A level of -23 is the same as detail off. Lower than -23 and the image softens.

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APERTURE	A frequency based edge sharpening effect that makes the image look sharper. Tends to be less aggressive and more natural looking than detail correction but again I recommend you turn Detail OFF as you can always sharpen in post and excessive in camera sharpening can restrict how much you can grade your footage. <b>(Paint – Aperture).</b>
BLACK GAMMA	Can be used to adjust the slope of the darker part of the standard gamma curves. This lowers or increases the contrast in the darker parts of the image. <b>(Paint – Black Gamma).</b>
KNEE	Adjusts the point where the knee starts to compress and the compression ratio of highlights in the standard gammas. Done to increase dynamic range. <b>(Paint – Knee).</b> Best left alone unless you have a waveform monitor to get the settings just right. If shooting a scene with a very low dynamic range you can turn the knee off to eliminate electronic looking highlights, but highlight range will be dramatically decreased.
WHITE CLIP	Sets the clipping point of the camera. Normally OFF. If going direct to air for broadcast you may want to turn this ON and lower this to 104% for digital or 100% for analog broadcasters. Note that doing this will have an impact on the optimum knee settings. <b>(Paint – White Clip).</b>

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