Panasonic
ideas for life

Professional Scene File Settings

AG-HPX500 series
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Adjustable range of parameters

In SCENE FILE menu screen, parameters of “Outline”, “Gradation” and “Color” can be set for your picture making.

Outline related

MENU	Factory default	Adjustable range
DETAIL LEVEL	0	-7 to +7
V DETAIL LEVEL	0	-7 to +7
DETAIL CORING	0	-7 to +7
SKIN TONE DTL	OFF	ON / OFF

Gradation related

MASTER PED	0	-100 to +100
NEWS GAMMA	OFF	ON / OFF
GAMMA	HD NORM	HD NORM / LOW / SD NORM / HIGH / B.PRESS / CINELIKE D / CINELIKE V
KNEE	MID	LOW / MID / HIGH

Color related

CHROMA LEVEL	0	-7 to +7
CHROMA PHASE	0	-7 to +7
COLOR TEMP Ach/Bch	0	-7 to +7
MATRIX	NORM1	NORM1 / NORM2 / FLUO / CINELIKE

Chapter 1 : SCENE FILE

Select preset scene files with SCENE FILE dial

In AG-HPX500 series, total six kinds of scene files are already preset. They can be selected with SCENE FILE dial. The suitable scene files can be selected based on the recording conditions or target picture image of your own.

F1	**Normal**	Suitable setting for standard HD recording. Gamma curve is set to “HD NORMAL” and other parameters are set to center value.
F2	**FLUO.**	Suitable for recordings indoors under cool fluorescent lamps. Most of the parameters are similar to “F1:Normal” but this mode uses “FLUO” color matrix table. “FLUO” matrix table compensates some certain colors which fall down under some higher color temperature (cool light) by fluorescent lamps. The “FLUO” matrix may not be required under natural color fluorescent lamps.
F3	**SPARK**	This mode makes higher “resolution”, “color level” and “contrast”. Picture becomes richer colored and bright image.
F4	**B-STR**	Suitable for some shooting locations such as “sunsets” and “in the Theater”. It makes the darken part to be more visible even under bright environment. And it would be effective for a scene which has dark & bright part together (wedding ceremony etc.). This mode expands gradation at darker part (Black stretch) by assigning a “HIGH” gamma curve.
F5	**CINE V**	This mode selects “CINELIKE V” gamma curve to make a film like picture recorded by video camera. Higher contrast image can be expressed than normal video gamma curve. NOTE: Panasonic recommends to adjust iris for reducing the video level to approximately 1/2 of normal level.
F6	**CINE D**	This mode selects “CINELIKE D” gamma curve to make a film camera like picture. “CINELIKE D” curve keeps even gradations from lower light to higher light level with higher priority for the dynamic range. In the case of editing the footage in a post production or finishing to movie films (kinescope), the “CINE D” mode makes it easier and simpler. There is a case that the unique atmosphere of “CINE D” mode is used as one of the picture expression ways. NOTE: Panasonic recommends to adjust iris for reducing the video level to approximately 1/2 of normal level.

Parameter comparison by scene preset

Detailed explanation is available on this handbook for menu items in **"bold"**.

MENU	F1	F2	F3	F4	F5	F6
	(Normal)	FLUO.	SPARK	B-STR	CINE V	CINE D
OPERATION TYPE	VIDEO CAM	VIDEO CAM	VIDEO CAM	VIDEO CAM	FILM CAM	FILM CAM
FRAME RATE	(DEFAULT)	(DEFAULT)	(DEFAULT)	(DEFAULT)	** FRAME	** FRAME
SYNCRO SCAN	1/48.0	1/48.0	1/48.0	1/48.0	180.0d	180.0d
DETAIL LEVEL	0	0	+7	0	0	0
V DETAIL LEVEL	0	0	0	0	0	0
DETAIL CORING	0	0	+4	+3	0	0
CHROMA LEVEL	0	0	0	+1	-2	0
CHROMA PHASE	0	0	0	0	0	0
COLOR TEMP Ach	0	0	0	0	0	0
COLOR TEMP Bch	0	0	0	0	0	0
MASTER PED	0	0	0	0	-2	-2
A.IRIS LEVEL	0	0	0	0	-2	-3
NEWS GAMMA	OFF	OFF	OFF	OFF	(OFF)	(OFF)
GAMMA	HD NORM	HD NORM	SD NORM	HIGH	CINELIKE V	CINELIKE D
KNEE	MID	MID	MID	MID	(MID)	(MID)
MATRIX	NORM1	FLUO	NORM2	NORM1	CINELIKE	CINELIKE
SKIN TONE DTL	OFF	OFF	OFF	OFF	OFF	OFF
V DETAIL FREQ	(THIN)	(THIN)	(THIN)	(THIN)	(THICK)	(THIN)

Recording format ("REC FORMAT" menu item in "RECORDING SETUP" screen) is not changed even when "F5: CINE V" or "F6: CINE D" position is selected.

Chapter 2 : DETAIL

Adjustment of outline, relates to luster & quality expression

There are some cases that Light reflection slightly added on the subject may be enhanced or be softened and it influences the expression of surface luster and quality. Luster of subjects and quality can be expressed by this control more naturally.

DETAIL -7

DETAIL +7

AG-HPX500 series is equipped with two DETAIL controls, for horizontal & vertical directions (“DETAIL LEVEL”) and a vertical direction (“V DETAIL LEVEL”). Balance of horizontal and vertical detail effect can be adjusted by those two controls in a certain range of detail signal level.

When setting a value of each detail level toward to “+” direction from the center value (increasing detail level), outline of the subject is enhanced and the picture becomes sharper with higher detail control signal on the video signal. On the contrary, outline of the subject becomes softer when setting the value toward to “-” direction (decreasing detail level).

In case the balance of resolution between horizontal direction and vertical seems to be unmatched, adjust “DETAIL LEVEL” first and then adjust “V DETAIL LEVEL”.

[Example] Effect of detail control

↕ Vertical detail

By adjusting the control toward to “+” direction, outline of woman’s eyes can be enhanced.

↔ Horizontal detail

By adjusting the control toward to “+” direction, outline of the wooden fence can be enhanced.

Adjusting “Horizontal & Vertical detail level”

“DETAIL LEVEL” menu item adjusts Horizontal and vertical detail together.

1. Select “DETAIL LEVEL” item in “SCENE FILE” menu screen.
2. Adjust “DETAIL LEVEL” item from “-7“ to “+7”. Level of outline enhancement can be adjusted with this control.

* Picture becomes sharper when increasing the value and softer when decreasing it.

Adjusting “Vertical detail level”

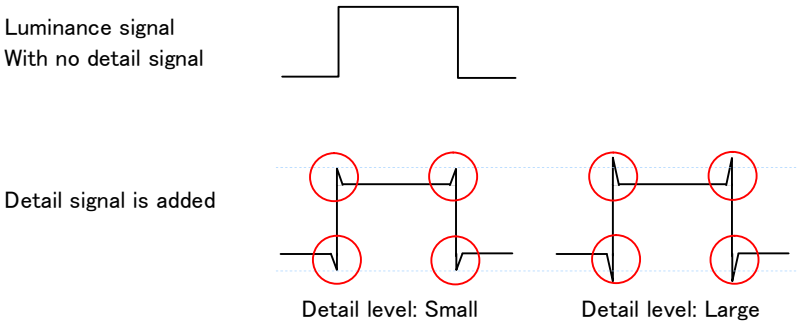
“V DETAIL LEVEL” menu item adjusts vertical detail. “V DETAIL LEVEL” item is suitable for some subjects that make difference in resolution balance between horizontal & vertical direction such as a cross striped subject.

1. Select “V DETAIL LEVEL” item in “SCENE FILE” menu screen.
2. Adjust “V DETAIL LEVEL” item from “-7“ to “+7”. Level of outline can be adjusted with this control.

* Adjust “V DETAIL LEVEL” item so that the outline enhancement between horizontal and vertical is well balanced.

Technical Description: DETAIL control

Detail signal is added to the edges on the luminance signal to make outline enhancing effect. Outline of the subject picture becomes sharper when increasing detail signal level due to high level signal at the edges. Outline of the subject picture becomes softer when decreasing detail signal level.

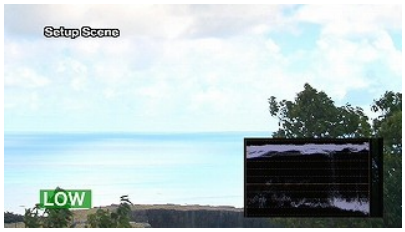


Chapter 3 : KNEE

Adjustment of gradations

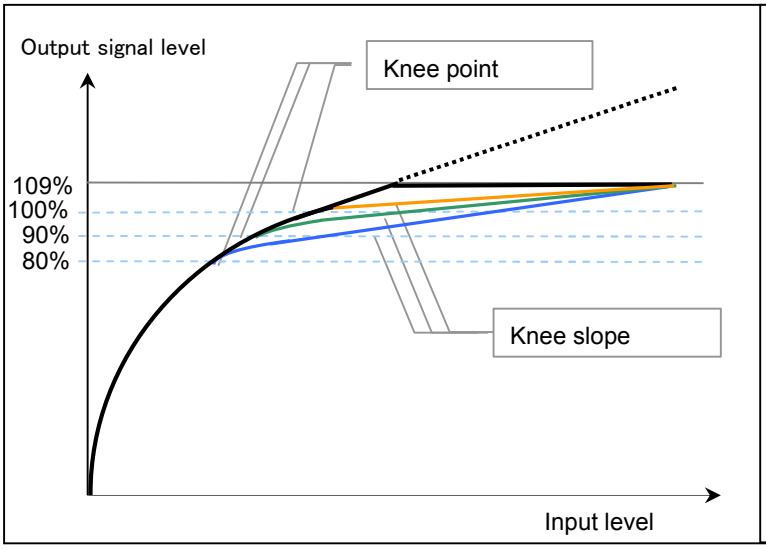
There are some cases that high intensity area in a picture loses gradations (blown highlights) when recording is done at a sunny place or under strong lighting conditions.
This phenomenon happens when level of the high intensity area exceeded the limit of the dynamic range (the range of signal processing) of the circuit.
To make such a high level portion of the signal within the dynamic range, the gradation can be compressed by the KNEE function.
However depending on the scene, color may become lighter when KNEE control is adjusted because color gradation is also compressed by the KNEE control.

Picture comparison: KNEE setting

	**LOW :** The threshold level is 80%. The 80% and upper of the video signal will be compressed, The color of the sky and clouds can be recognized. This setup is suitable for such a scene which has high intensity area.
	**MID :** The threshold level is 90%. The 90% and upper of the video signal will be compressed, The color of sky is not clear, it is going to white and not well separated from clouds.
	**HIGH :** The threshold level is 100%. The 100% and upper of the video signal will be compressed, The most part of the sky is white.

How to set KNEE control

1. Open a “KNEE” item in “SCENE FILE” menu screen.
2. Select the starting level of the KNEE compression (KNEE point) with a “KNEE” item.



LOW: Lower KNEE point

Start compression at approximately 80% level and upper.

MID: KNEE point is in the middle

Start compression at approximately 90% level and upper.

HIGH: Higher KNEE point

Start compression at approximately 100% level and upper.

* This is image only and may different from actual measurement

Technical description:

KNEE is a function to make a higher video level within the dynamic range of the circuit. It compresses the signal at a certain level and upper so that the level is within approximately 109% (white clip point).

Knee function expresses gradations in high intensity area such as clouds in the blue sky without changing the gradation expression at the knee point and lower.

Knee point is a setting for starting level of the KNEE compression. Adjustable range is approximately from 85% to 100%, with typical professional cameras.

Knee Slope means a slope which is determined by knee point and the maximum level of the dynamic range.

With the AG-HPX500 series, there is no manual knee slope adjustment but it is automatically adjusted properly with the knee point setting.

For the scenes which have high intensity area, lower knee point setting is recommended to avoid blown highlights, in general. For the scenes which have no high intensity area, higher knee point setting is recommended to keep gradations in the middle intensity area.

Chapter 4 : GAMMA

Expression of richer color & gradation

There are some cases that footage shows different result in “color and contrast” from the original image. In such cases, adjusting gradation of the output video signal is effective. For this purpose, please choose a suitable gamma curve depends on a subject.

The following seven kinds of different Gamma curves are available in the AG-HPX500 series.

	**HD NORM:** This is the standard gamma setting for HD shooting. It is the gamma curve defined as HDTV standard by the some organization such as ARIB, EBU and SMPTE. Please use this mode when you shoot the regular HDTV program.
	**LOW:** The video signal level in the low intensity area is compressed, and the Middle-High intensity area will be clear. Thus the picture image will be sharp.
	**SD NORM:** This is the standard gamma setting for SD shooting. When the camera is used in the SDTV mode or final program is delivered in SDTV mode, please use this gamma setting. It is the same gamma curve with AG-DVX100 series camcorder. At the lower intensity area, the video signal is pressed than HD NORM mode.
	**HIGH:** The video signal level in the low intensity area is Expanded. The detail in the dark area can be visible in this mode. It will provide the bright tone and soft contrast. When you have objects in the dark area, this mode will help.
	**B.PRESS:** The video signal level in the low intensity area is compressed stronger than LOW mode. The sharp and strong contrast picture will be created.

	**CINELIKE D:** This mode will creates cinema like picture. It is provide the wide dynamic range from low dark area to bright area. When the post process is planned, this mode provides the wide flexibility. NOTE: Panasonic recommends to adjust iris for reducing the video level to approximately 1/2 of normal level.
	**CINELIKE V:** This mode will creates cinema like picture in regular video process. The rich contrast will be applied. NOTE: Panasonic recommends to adjust iris for reducing the video level to approximately 1/2 of normal level.

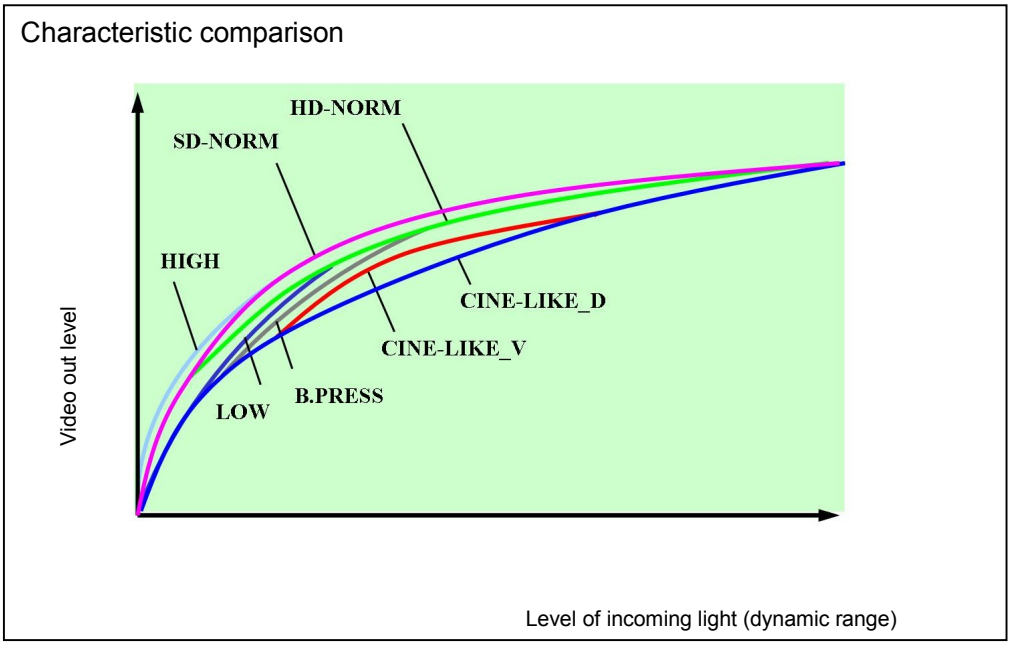
How to set GAMMA control

Select gamma curve with the following procedure.

1. Open “GAMMA” item in the “SCENE FILE” menu screen.
2. Select a suitable curve from the following selection to meet the scene.
   HD NORM / LOW / SD NORM / HIGH / B.PRESS / CINE-LIKE_D / CINE-LIKE_V

* For utilizing the full characteristic of CINE-LIKE gamma curves, Panasonic recommends to adjust iris for reducing the video level to approximately 1/2 of normal level when the CINE-LIKE_D or CINE-LIKE_V is selected.

* The gamma curve is fixed to CINELIKE V at a gain setting of 18dB.



* This is image only and may different from actual measurement

Chapter 5 : NEWS GAMMA

Optimized for News gathering purpose

NEWS GAMMA function is to suppress Overexposure under very blight environment. It would be effective for outside recordings such as news gathering and sports event.

GAMMA curve : HD NORM A part of the women's face is saturated.	**NEWS GAMMA: ON** Overexposure (Blown highlights) can be suppressed even under blight environment.
	

Activating NEWS GAMMA

Activate NEWS GAMMA with the following procedure. NEWS GAMMA works in 1080/60i, 50i, 720/60P, 50P, 480/60i, 576/50i mode.

1. Set “REC FORMAT” in “RECORDING SETUP” menu screen to a following item.
1080i/60i, 50i , 720/60P, 50P , 480/60i, 576/50i

2. Set “NEWS GAMMA” item in “SCENE FILE” to ON.

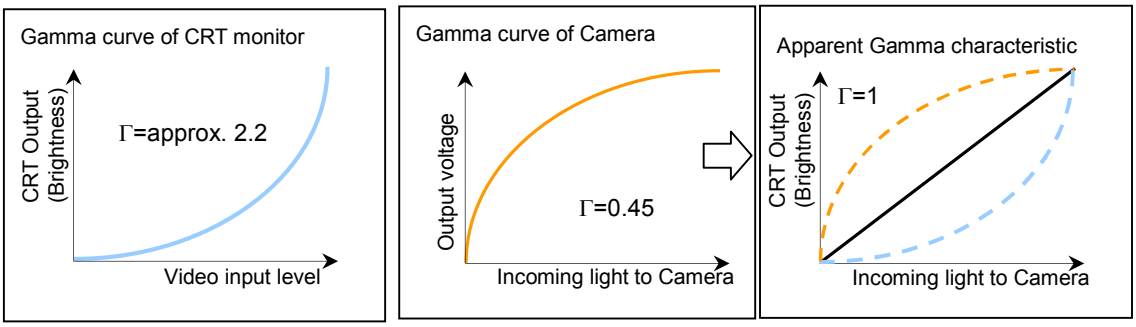
NOTE: When +18dB GAIN is applied, gamma curve setting is fixed to CINE LIKE V.

Technical Description:

"Gamma" is to express a relation of levels between input of camera or monitor TV and output, in a numerical value.

In general, linear curve (Γ=1) has the closest characteristic to the human eyes' characteristic.

However, Gamma characteristic in Cathode Ray Tube (CRT) monitors are not linear (output level is much higher than increment of input level, Γ=approximately 2.2). To counterbalance its CRT’s gamma characteristic, opposite gamma curve (Γ = 0.45, reciprocal value of 2.2, as the standard gamma value) is applied in video cameras (gamma characteristic in the eye becomes Γ=1).



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The “looks” of the picture can be changed by Gamma correction (example: making a film-like look). Gamma correction is one of the key points for active picture making.

DRS is a function to estimate and adjust Gamma curve and Knee slope automatically in response to signal level of each pixel in real time.

Chapter 6 : DETAIL CORING /SKIN TONE DTL

More precise control of outline

The outline of a subject can be adjusted with DETAIL control, sharper picture image can be made with it however, but DETAIL control makes the noise more visible with higher DETAIL value is selected. This is due to the detail circuit enhances noise portion as well as video signal.

In this case, it would be effective to mask the appearance of the noise, using DETAIL CORING control.

The DETAIL CORING control reduces the noise due DETAUL control by adjusting the coverage area where DETAIL signal is added.

	**Image example of DETAIL CORING control** Enhancing outline of image but ignore enhancing for subjects which have a certain video level or lower.

Example of DETAIL adjustment (without DETAIL CORING control)

	**DETAIL +7** In this example, outline and background of the woman is accentuated. In the meantime, details of her skin and strand of hair are visible.
	**DETAIL 0** In this example, outline and background of the woman is not accentuated. However, still the texture of the skin and hair are kept.

As shown in the photos above, DETAIL/V DETAIL adjustment affects to texture of image unintentionally. Depends on scenes, the changes from the original texture can be minimized in some degree by masking signal enhancement in lower level part with the DETAIL CORING control.

In case of the noise at skin portion as if the skin surface is rough, by reducing the detail at skin portion it can make smoother with SKIN TONE DTL control.

However, there is a case that the tone of certain subjects becomes flat and lose a feel of texture when SKIN TONE DTL is set to “ON” or higher DETAIL CORING value is chosen, Please check its effect level with a picture monitor to ensure if effects are applied as intended.

Setting DETAIL CORING control

1. Open "DETAIL CORING" item in "SCENE FILE" menu screen.
2. Adjust the masking level using with the "DETAIL CORING" item from "-7" to "+7".

* When setting a value toward to "-" direction from the center value, picture image at low signal level area becomes sharper but noise level is increased. On the contrary, when setting a value toward to "+" direction, noise level is decreased but picture image at low signal level area is not enhanced.
* Adjustment results can be different depends on the recording format and lighting conditions even with the same setting value. Please check the result with a picture monitor to make sure if DETAIL CORING effect is properly applied.

Setting SKIN TONE DTL control

1. Open “SKIN TONE DTL” menu item in the “SCENE FILE” menu screen.

2. Set “SKIN TONE DTL” item to ON or OFF

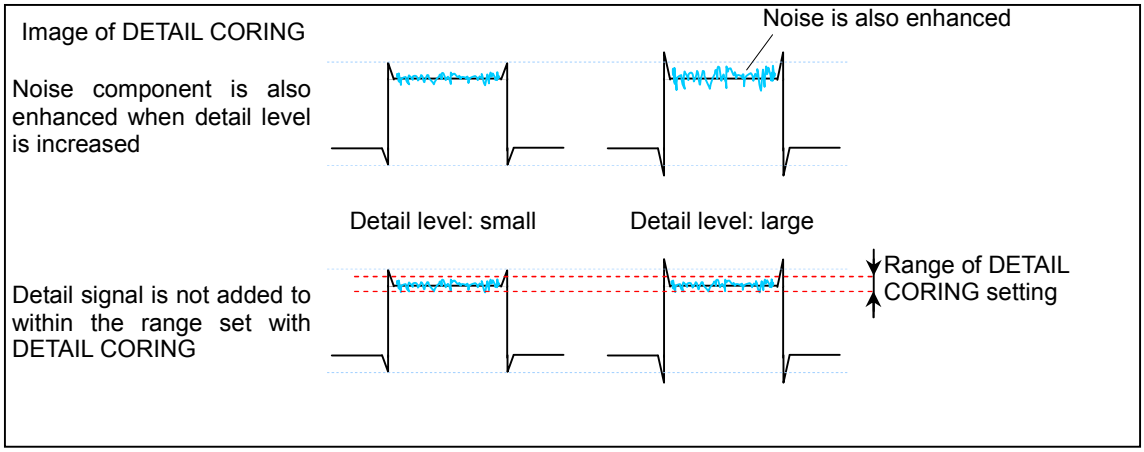
SKIN TONE DTL reduces details at skin portion. As the result, it reduces rough texture of skin.

Technical description

DETAIL CORING is to avoid addition of detail signal (controlled by DETAIL / V DETAIL circuit) to noise. The level of noise is relatively smaller than video signal, enhancing the “noise part” can be avoided by setting the threshold level to be higher than the noise level with DETAIL CORING control.

With DETAIL CORING control, outline for a certain subject can be enhanced without grainy entire image. Adjusting of the DETAIL CORING may also be effective to reduce noise which is appeared by adjusting GAMMA correction.

In addition, rough texture for skin tone can be smoothen by setting SKIN TONE DTL to ON. In some cases, it can express skin tone naturally.



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