

## Colorimetric and Resolution requirements of cameras

Alan Roberts

### **ADDENDUM 13 : Menu settings for**

#### **Panasonic AK-HC900P and AK-HRP900C Varicam (720/4~60Hz proscan)**

**This document is a report of the results of tests that are the precursor of those described in the EBU technical document Tech3335. It is not an endorsement of the product.**

Brief assessment was made on one sample of the camera. It is a 720-line progressive variable frame-rate box-camera with separate controller; it has neither sound nor viewfinder facilities, nor recorder. All menu items refer to this camera only. Later versions may differ. The camera appears to be based on the optical and electronic components of the Varicam, AJ-HDC27F Varicam camcorder.

The camera has 3 ccds, each of 1280x720 pixels. The signal output from the camera box is digital only, but the controller has analogue component outputs for monitoring. The output signal frame rate is constant despite any camera frame rate changes, always running at 60 (or 59.94) frames/second. When the camera is set to run at lower frame rates, replicated frames are output as needed. Thus, the variable-speed pictures can be monitored using a fixed frame-rate display. A special hardware/software system is required to extract frames from the tape to reconstruct a sequence of non-replicated frames at 24 per second. Nominal frame rate is 24fps, so the camera can effectively operate between 2.5 times (60fps) and 1/6 (4fps) normal speed. If the camera is set to 24fps, then the output signal is effectively performing a "3:2 pull-down" operation as is normal for film work in 59.94Hz countries.

The camera is small (1.85kg) and is useful mostly for remotely operated, single-camera work. It has internal menus for setting the performance, and two versions of most of them, giving a range of combinations that it has been impossible to investigate thoroughly in the limited time available. The camera cannot be operated at all without its controller (remotely, up to 60m by repute), even power supply (12v dc only) comes via the controller. There are three distinctly different modes in which it can operate. It is clearly designed with the intention of supplanting film, both for television and for printing back to film for distribution.

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#### Panasonic AK-HC900P and AK-HRP900C Varicam (720/4~60Hz proscan)

Many menu items have little or no effect on the image. Those that do so are highlighted. The full menus are given for completeness. Menus are accessed by pressing the “menu” button on the remote controller, and then using a rotary encoder exactly as in the Varicam camcorder.

There are two different versions of the menus, depending on the setting in Setting:Mode. This can be set for “Video” and “Film” menus. The content of these is subtly different; where an item exists only in “Film” or “Video” modes, it is marked as {F} or {C}. The “Video” mode (called “Cam” in the menus) is intended for use in situations where the camera is used as a television camera, “Film” menus are for those situations where the pictures are likely to be printed back to film, or used in exactly the same way as a film negative would be used for television. Many of the menu items are unchanged between these two sets.

There are two recommended settings here:

{v} conventional video use, but aiming to mimic film used on television, should match Sony HDW750 reasonably well for sensitivity, noise, dynamic range and colour performance

{w} film setting, aiming to mimic film on television, specifically set to match the equivalent setting for the 27F Varicam

BBC settings given in these tables are only intended as a starting point. This document is no substitute for the manual, the user is strongly advised to seek expert advice before embarking on any project with this camera. It is simple to use, but complex to set up.

NOTE: The use of “Black Stretch” (Setting:Mode) is intended to improve skin tones in well-lit environments, but it imparts some visible noise in dark areas. If this is a problem, then set “Black Stretch” to “OFF”, but under no circumstances set it negative because that will result in excessive black crushing and loss of detail.

The useful feature of the 27F, that of the gain switch storing many settings, is not available here. But the Super Gain settings do something very similar. These settings do not take advantage of that, should the need arise, a later revision may incorporate some settings for super gain.

Because of the short time available for testing this camera, not all items were fully assessed, the range and function of each control has been assumed to be the same as in the 27F. It is probably safe to make this assumption but there can be no guarantee without more prolonged investigation.

Film/Cam MAINTENANCE			Routes to other menus	
Item	Range	Factory	description	BBC
BLACK SHADING				
PED,GAMMA,FLARE				
KNEE,WHITE CLIP				
R/B GAIN				
DTL				
GAIN,AUTO IRIS				
S.GAIN 1				
S.GAIN 2				
S.GAIN 3				
FRAME MODE				
COLOR CORRECTION 1				
COLOR CORRECTION 2				

Film/Cam SETTING			Routes to other menus	
Item	Range	Factory	description	BBC
MODE				

SHUTTER	
H.PHASE	

<b>Film/Cam CAM ID</b>				<i>Camera name</i>
<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
ID		0	Enter camera ID, only if CAM ID Mode is ON in SETTING:MODE	

<b>Film/Cam FILE MENU</b>				<i>Setup files</i>
<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
FILE			Report current file name	
SAVE FILE?			Enter file name, up to five?	
SAVE			And save it	

<b>Film/Cam MAINTENANCE :BLACK SHADING</b>				<i>Basic stuff</i>
<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
DETECTION			Press Menu key to perform black shading correction	
CORRECT(DIG)	ON,OFF	ON	Takes about 90 seconds	

<b>Film/Cam MAINTENANCE :PED,GAMMA,FLARE</b>				<i>Transfer curve</i>
<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
M.PED			Indication of pedestal levels set in control panel	
R.PED				
B.PED				
M.GAMMA	0.35-0.75	0.45	Master gamma	0.45{v} 0.52{w}
R.GAMMA	-15~15	0		0
B.GAMMA	-15~15	0		0
R.FLARE	0~100		Set depending on lens, usual stuff	
G.FLARE	0~100			
B.FLARE	0~100			
GAMMA	OFF/ON	ON		
FLARE	OFF/ON	ON		ON
CINE GAMMA SEL[F]	FILM REC / VIDEO	VIDEO	Only in FILM MENU	VIDEO{w}
	REC[F]	REC[F]		
BLACK STR LVL{F}	0~30%[F]	0[F]	Only in FILM REC with Knee ON	0
DYNAMIC LVL{F}	200~500%[F]	200%[F]		

<b>Film/Cam MAINTENANCE :KNEE,WHITE CLIP</b>				<i>Transfer curve</i>
<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
M.KNEE POINT	80~107%[C] 30~90%[F]	65%	Master knee, disabled in FILM REC	85{v} 63{w}
R.KNEE POINT		0		
B.KNEE POINT		0	R/B deviations, disabled in FILM REC	0
M.KNEE SLOPE	1~99[C] 150~600%[F]	150%	Disabled in FILM REC	99{v} 350{w}
R.KNEE SLOPE		0		
B.KNEE SLOPE		0		
A.KNEE POINT		100%	Don't use auto knee, manual is better	95{v} 100{w}
A.KNEE SLOPE		0		
WHITE CLIP LVL		100%		109
KNEE	OFF,MANU,AUTO	ON		MANUAL
WHITE CLIP	ON,OFF	ON		ON

<b>Film/Cam MAINTENANCE :R/B GAIN</b>				<i>Colour balance</i>
<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
R.GAIN			Probably reflects settings on control panel	
B.GAIN				

<b>Film/Cam MAINTENANCE :DTL</b>				<i>Detail enhancement</i>
<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
DTL	ON,OFF	ON		ON
TOTAL DTL LVL		0	Horizontal and vertical together	4{v} 5{w}

H DTL LVL		11	Horizontal only	2
CRISP		2	Reduces noise by lowering low detail	1{v} 2{w}
LVL DEPENDENT		2		2
PEAK FREQUENCY	0~31	10		31
KNEE APERTURE	ON,OFF	OFF	Adds detail back in knee region	ON
KNEE APA LVL		10		5
SLIM DTL	ON,OFF	OFF		OFF
DTL(+)		0	Separate controls for + and - going edges	0
DTL(-)		0		+10
DTL CLIP		0		0
DTL SOURCE		(B+G)/2		(R+G)/2

**Film/Cam MAINTENANCE :GAIN,AUTO IRIS**

Item	Range	Factory	description	BBC
LOW GAIN	-6~18dB		Only gain is set, unlike the 27F.	-6{v} -3{w}
MID GAIN	-6~18dB		Button on controller cycles these and Supergain settings	-3{v} 0{w}
HIGH GAIN	-6~18dB			0{v} -3{w}
A.IRIS LEVEL		50	Aim point and peak/mean ratio,	100
A.IRIS PEAK/AVE		50	set to work only on peak white	100
A.IRIS WINDOW	NORM1,NORM2, CENTER	NORM1	Most of pic, most except top strip, centre area	NORM1
IRIS MODE	CAM/LENS	LENS	Auto iris control at camera or lens	
IRIS GAIN		6		

**Film/Cam MAINTENANCE :S.GAIN1,2 and 3***Super gain setting*

Item	Range	Factory	description	BBC
TOTAL GAIN			Indication of total gain, not a control	
ANA GAIN	0~36dB	9	Analogue extra gain	
PIX MIX		6	Gain by adding pixels horizontally And vertically	
V MIX	OFF,6dB,12dB,15dB,2	6		
FRAME MIX[C]	0dB	6	And frame-to-frame[C]	
H DTL LVL		11	Same detail controls as for normal use	
CRISP		2		
LVL DEPENDENT		2		
PEAK FREQUENCY		10		
M.GAMMA		0.55		
M.PED OFFSET		0	Black level offsets to fight noise	
R.PED OFFSET		0		
B.PED OFFSET		0		

**Film/Cam MAINTENANCE :FRAME MODE***Varicam stuff*

Item	Range	Factory	description	BBC
SCAN REVERSE	ON,OFF	OFF	Inverts picture for lens adaptors	OFF
FRAME RATE RANGE[F]	60-6,60-4[F]	60-6[F]	Camera rate, Film menu only, not in Camera mode	60-4[F]
FRAME RATE[F]	60-4	60		25[F]

**Film/Cam MAINTENANCE :MATRIX***Colour stuff*

Item	Range	Factory	description	BBC

**Film/Cam MAINTENANCE :COLOR CORRECTION***Colour stuff*

Item	Range	Factory	description	BBC

Safety Zone	OFF,0~12	3	(80%+90%, 80%, 90%) 16x9: 1-3=corners, 4-6=box 4x3: 7-9=corners, 10-12=box	3 (90% corners)
Center Mark	ON,OFF	ON		ON
Frame Sig	4:3,13:9,14:9,VISTA	4:3	Vista=1.85:1	14:9
Mark	ON,OFF	OFF	Frame marker	OFF
Lvl	0~15	15	Picture level outside frame mark	15

**Film/Cam Main Menu 2, VF Indicator**

Item	Range	Factory	description	BBC
Extender	ON,OFF	ON	Lens extender	ON
Shutter	ON,OFF	ON	Shutter speed display	ON
Filter	ON,OFF	ON	Filter position	ON
White	ON,OFF	ON	Show AWB or Preset A/B	ON
Gain	ON,OFF	ON		ON
Iris	IRIS,S+IRIS,OFF	S+IRIS	Iris/Super Iris display	S+IRIS
Camera ID	ON,OFF	ON	Show camera ID with bars	ON
Zoom Lvl	ON,OFF	ON	Focal length	ON
Color Temp	ON,OFF	ON		ON
Frame Rate	ON,OFF	ON	Camera frame rate, not vtr system	ON
Version ID	ON,OFF	ON	Show gamma version with bars	ON

**Film/Cam Main Menu 2, Camera ID**

Item	Range	Factory	description	BBC
ID 1			Max 10 characters	
ID 2			on	
ID 3			each line	

**Film/Cam Main Menu 2, Shutter Speed**

Item	Range	Factory	description	BBC
Synchro Scan 1	ON,OFF	ON	Speed set by buttons near filter wheel	ON
Synchro Scan 2	ON,OFF	ON		ON
Position 1	ON,OFF	ON		ON
Position 2	ON,OFF	ON	ON adds items to list of settings that	ON
Position 3	ON,OFF	ON	can be cycled through using the little	ON
Position 4	ON,OFF	ON	switch below the lens.	ON
Position 5	ON,OFF	ON		ON
Position 6	ON,OFF	ON		ON

**Film/Cam Main Menu 2, Shutter Select**

Item	Range	Factory	description	BBC
Synchro Scan 2	90~225°	180°	Set shutter speeds. List	180°
Position 1		1/100{C} 180°{F}	items are in degrees	1/100{v} 180°{fc}
Position 2	45°, 90°, 120°,	1/120{C} 172.8°{F}	then seconds	1/120{v} 172.8°{fc}
Position 3	144°, 172.8°, 180°,	1/250{C} 144°{F}	irrespective of setting in	1/250{v} 144°{fc}
Position 4	1/2000, 1/1000,	1/500{C} 120°{F}	VF Display Menu.	1/500{v} 120°{fc}
Position 5	1/500,	1/1000{C} 90°{F}	172.8° stops lighting	1/1000{v} 90°{fc}
Position 6	1/250, 1/120, 1/100	1/2000{C} 45°{F}	strobing.	1/2000{v} 45°{fc}

**Cam Main Menu 2, ! LED \*\*\***

Item	Range	Factory	description	BBC
Gain (0dB)	ON/OFF	ON		ON
Gain (-3dB)	ON/OFF	OFF		ON
Shutter	ON/OFF	ON		ON
White Preset	ON/OFF	OFF		ON
Extender	ON/OFF	ON		ON
Filter	ON/OFF	OFF		ON
Black Str	ON/OFF	OFF		ON
D5600K{C} DAYLIGHT{F}	ON/OFF	OFF		ON
Matrix	ON/OFF	OFF		ON
Color Correct	ON/OFF	OFF		ON
Frame Rate	ON,OFF	ON		ON

**Film/Cam Main Menu 2, Camera SW Mode**

Item	Range	Factory	description	BBC
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Filter Inh	ON,OFF	ON	AWB stored with filter data	ON
Shockless AWB	OFF,NORM, SLOW,FAST	OFF	Smooth AWB on-shot, 0.5~3 sec	OFF
Color Bars	SMPTE,FULL	FULL		FULL
S. Gain Off	S.GAIN,L/M/H	L/M/H	Method to release Super Gain	L/M/H
User1 SW	INH,S.GAIN,S.IRIS,S. BLK, B.STR,AUDIO	S.GAIN{C} INH{F}	B.STR uses +3 setting (not recommended). Y GET reads centre screen luma level in vf for 3 seconds	RET SW
User2 SW	CH1,AUDIO CH2,REC SW,Y GET, RET SW	INH{C} Y GET{F}		Y GET
S. Black Lvl	OFF,-10,-20,-30	OFF	Super black level setting	OFF
ECU Data Save	ON,OFF	OFF	Saves settings from ECU in camera	OFF
Auto Knee Sw	ON,OFF	ON{C} OFF{F}	Enables Auto Knee switch	OFF

**Film/Cam Main Menu 2, Super Gain**

Item	Range	Factory	description	BBC
S.Gain Value	18,24,30,36	18dB		18dB

**Film/Cam Main Menu 2, Frame Mode**

Item	Range	Factory	description	BBC
Frame Rate Range	60-12,60-4	60-4	Limit variable range low end	60-4
Frame Rate	4~60Hz	60{C}	Set rate, 4-12 warning given	
		24{F}		
Scan Reverse	ON,OFF	OFF	Invert image, for Angenieux primes	OFF

**Film/Cam Main Menu 3, Card Read/Write**

Item	Range	Factory	description	BBC
Select	1~8	1	File number to read	1
Read			load from file	
Select	1~8	1	File number to write	1
Write			write to file	
Card Config			format card for use	
Read User Data			load user data	
Title			max 8 characters	

**Film/Cam Main Menu 3, Cam Card R/W Select**

Item	Range	Factory	description	BBC
ID Read/Write	ON,OFF	OFF	ON=save cam ID to card	OFF
Cam Main Menu1 Level R/W	ON,OFF	OFF	Load/save Menu items that are/aren't marked, see manual for details. N.B. if changing system frequency (60/59.94), camera needs to be switched off/on to make it happen.	
Cam Main Menu1 SW R/W	ON,OFF	OFF		
Cam Main Menu2 R/W	ON,OFF	OFF		
Cam Main Menu3 R/W	ON,OFF	OFF		
Cam Main Menu4 R/W	ON,OFF	OFF		

**Film/Cam Main Menu 3, Genlock/Iris**

Item	Range	Factory	description	BBC
H Phase Coarse	0~15	7	Genlock phase	7
H Phase Fine	0~64	32		32
A.Iris Level	0~100	50	Auto iris target level, luma Ratio, 0=ave'ge, 100=peak	50
A.Iris Peak/Ave	0~100	50	1=full frame, 2=not top part	50
A.Iris Mode	NORM1,NORM2,CENT	NORM1		NORM1
S.Iris Level	0~100	80	Super Iris target level	80
Iris Gain	CAM,LENS	LENS	Iris gain to be set by lens or camera	LENS
Iris Gain Value	1~10	6	Camera lens setting	6

**Film/Cam Main Menu 3, Lens Adj**

Item	Range	Factory	description	BBC
F2.8 Adj	ON,OFF	OFF	refer to manual, I don't understand	OFF
F16 Adj	ON,OFF	OFF		OFF

**Film/Cam Main Menu 4, User Menu Select 1**

Item	Range	Factory	description	BBC
ROP			Select items	
LOW SETTING			from these	

MID SETTING			menu pages	
HIGH SETTING			to go on	
ADDITIONAL DTL1			User Menu Page 1.	
ADDITIONAL DTL2				
SKIN TONE DTL			42 items	
KNEE/LEVEL			maximum,	
GAMMA			14 per page	
CAMERA SETTING				

**Film/Cam Main Menu 4, User Menu Select 2**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
VF DISPLAY			Select	
VF MARKER			items	
VF INDICATOR			for	
!LED			User	
CAMERA SW MODE			Menu	
SUPER GAIN			Page 1.	
FRAME MODE				

**Film/Cam Main Menu 4, User Menu Select 3**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
CAM CARD READ/WRITE			And 14 more for	
CAM CARD R/W SELECT			User Menu Page 3.	
GENLOCK/IRIS				

**Film/Cam Main Menu 4, Black Shading**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Detection			This makes it happen	
Correct (Dig)	ON,OFF	ON		ON

**Film/Cam Main Menu 4, White Shading**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Select	1~8	1	Select a shading file	
Read			Read from it	
Detection (V Saw)			Measure vertical shading, save to file	
Correct	ON,OFF		Switch it on/off	ON
Title			Text field, 12 chars for each of 8 files	

**Film/Cam Main Menu 4, Flare**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
R.Flare	0~100	4		
G.Flare	0~100	0	Set depending on lens	
B.Flare	0~100	10		

**Film/Cam Main Menu 4, Colorimetry**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Matrix	SMPTE274, 240, NTSC	SMPTE274	240=old 1035, 274=1080 & 720	SMPTE 274

**Film/Cam Main Menu 4, Initialise**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Read Factory Data			Factory reset all menu settings	
Write User Data			Save user setup	
Scene Sel	1~4		Select scene file	
Read			Read scene file	
Write			Save scene file	
Reset			Factory reset scene files	
Title 1				
Title 2			N.B. if system frequency is changed,	
Title 3			power off/on to make it happen.	
Title 4				

**Film/Cam Main Menu 4, Diagnostic**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Camssoft (in)		T3.00-00-00.00	Internal flash software version	

Camsoft (out)	T1.00-00-00.0A	External flash software version
Cam Table	T1.00-00-00.06	Gamma table version
PLD (Cam)	T1.00-00-00.02	Camera software system version
Pld (SHD)	T1.01-00-00.02	Shading software version

**Film/Cam Main Menu 4, Evaluation**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
S/N				
Modulation				
Resolution				
Sensitivity				

**Film/Cam Main Menu 4, Option**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Eng Security	ON,OFF	OFF	ON=only User menus shown N.B. needs factory advice to reset, so <b>DON'T CHANGE THIS</b>	OFF
Shd, ABB SW CTRL	ON,OFF	ON	ON=ABB if AWB pressed >8 sec	ON
AWB Area	25%,50%,90%	25%	Sets AWB sense area	25%
AWB & ABB Offset	OFF,ON	OFF	OFF resets ROP gain/ped values after AWB or ABB	OFF
Cam Menu Select	VIDEO,FILM	FILM	Changes Main Menus, Film/Cam	
System Freq	60,59.94	60Hz		60

**Film/Cam Main Menu 4, Evaluation S/N**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
S/N	ON		Go	
Detail	ON,OFF	OFF		
H-F Compe	ON,OFF	OFF		
Gamma	ON,OFF	OFF	Temporary settings just for making measurements...	
Matrix	ON,OFF	OFF		
Flare	ON,OFF	OFF		
M.Ped	-200~200	140		

**Film/Cam Main Menu 4, Evaluation Modulation**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Modulation	ON		Go	
Detail	ON,OFF	OFF		
H-F Compe	ON,OFF	OFF		
Gamma	ON,OFF	OFF		
Matrix	ON,OFF	OFF		
Flare	ON,OFF	OFF		
M.Ped	-200~200	18{C} 0{F}		

**Film/Cam Main Menu 4, Evaluation Resolution**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Resolution	ON		Go	
Detail	ON,OFF	OFF		
H-F Compe	ON,OFF	OFF		
Gamma	ON,OFF	OFF		
Matrix	ON,OFF	OFF		
Flare	ON,OFF	OFF		
M.Ped	-200~200	18{C} 0{F}		

**Film/Cam Main Menu 4, Evaluation Sensitivity**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Sensitivity	ON		Go	
Knee	ON,OFF	OFF		
W.Clip	ON,OFF	OFF		
M.Ped	-200~200	18{C} 0{F}		



**VTR Main Menu, Function**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
News Rec Mode	OFF,0.2:2	OFF	recording overruns STOP up to 2 sec	OFF
Humid Ope	ON,OFF	OFF	ON=only Eject when humid	OFF
Rec Start	ALL,NORMAL	NORMAL	=only in Power Save/Pause	NORMAL
Pause Timer	10,20,30,60	30	Minutes in Pause before auto stop	30
Retake Mode	ON,OFF	OFF	ON=Rewind shot to over-record	OFF
HDSDI Out	ON,SIDE SW,AUTO,OFF	AUTO	Control for SDI socket	AUTO
Interval Rec	ON,ONE SHOT,OFF	OFF		OFF
Int Rec Time	00s10f:59s29f	00s10f	Intermittent, recording time	00s10f
Int Pause Time	0:23h59m59s	00h00m02s	Gap between recordings	00h00m02s
ECU Rec Chk SW	R.REVIEW,RETAKE	R.REVIEW	Controls Rec Chk switch on ECU	R.REVIEW
Character on SDI	MENU,STATUS	MENU	Show Menus or Menus & Status	MENU

**VTR Main Menu, Battery/Tape**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Battery Select	see next menu	PRO14	See next menu	
Ext DC In Select		AC-ADPT	As for battery, plus external	AC-ADPT
Batt Near End Alarm	ON,OFF	OFF	Warning bleep	OFF
Batt Near End Cancel	ON,OFF	ON	Mode switch cancels bleep	ON
Batt End Alarm	ON,OFF	ON	Warning bleep	ON
Batt Remain Full	100%,70%	70%	Indicator level called "full"	70%
Tape Near End Alarm	ON,OFF	OFF	Warning bleep	OFF
Tape Near End Time	3min,2min	2min	Bleep time before end	2min
Tape End Alarm	ON,OFF	ON	Warning bleep	ON
Tape Remain	3min,5min	3min	Size of time pixel in LCD	3min

**VTR Main Menu, Battery Setting**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
AJ-BP490	MANUAL,AUTO	AUTO	Pan AJ-BP490, PACO HP-90A	AUTO
AU-BP402	MANUAL,AUTO	AUTO		AUTO
HP-30A	MANUAL,AUTO	AUTO	PACO	AUTO
PRO14	MANUAL,AUTO	AUTO	Anton Bauer	AUTO
TRIM14	MANUAL,AUTO	AUTO	...	AUTO
TRIM13	MANUAL,AUTO	AUTO	...	AUTO
DIGITAL14	MANUAL,AUTO	AUTO	Anton Bauer 14V	AUTO
DIGITAL13	MANUAL,AUTO	AUTO	Anton Bauer 13V	AUTO
BP-H90	MANUAL,AUTO	AUTO	IDX	AUTO
BP-H100	MANUAL,AUTO	AUTO	...	AUTO
NP-L40	MANUAL,AUTO	AUTO	...	AUTO
NP-L40 D	MANUAL,AUTO	AUTO	...	AUTO
BP-L60/90	MANUAL,AUTO	AUTO	Sony Lithium	AUTO
NP-1B	MANUAL,AUTO	AUTO	Sony	AUTO

**VTR Main Menu, VTR VF Indicator**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Tape	ON,OFF	ON	Tape Left display	ON
Battery	ON,OFF	ON	Battery voltage	ON
Level Meter	CH1,CH1+CH2,CH2,OFF	CH1	Audio indicator	CH1
Audio In	ON,OFF	OFF		OFF
TC	TCG,TCR,TCG/TCR,OFF	OFF	Time code, the usual	OFF
VTR Warning	ALWAYS,NORM,OFF	NORM	NORMAL=warning for 3 sec	NORM
Save LED	SAVE&TAPE,SAVE	SAVE	SAVE&TAPE=flash near tape end	SAVE

**VTR Main Menu, Mic/Audio**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Front Mic Power	ON,OFF	ON	Phantom power	ON
Mic Lowcut Ch1	FRONT,REAR,	OFF	High-pass filters for channels 1 and 2	OFF
Mic Lowcut Ch2	F&R,OFF	OFF		OFF
Limiter	ON,OFF	OFF		OFF
Test Tone	NORM,ALWAYS, OFF,CHSEL	NORM	=tone with bars	NORM
Rec CH3CH4	CH1/2,CH3/4	CH1/2	Ch 3/4 from adaptor plate	CH1/2
Cue Select	SIDE SW,CH1,CH2,MIX	SIDE SW	Source for cue track	SIDE SW
Cue Rec	ON,OFF	ON	and whether or not	ON

Embedded Audio (60Hz)	ON,OFF	OFF	Embed audio when camera at 60Hz	OFF
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**VTR Main Menu, TC/UB**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
TC Mode	DF,NDF	DF	Drop Frame for 59.94, 24 is NDF	NDF
UB Mode	USER,DATE,TIME, EXT,TCG	USER	User bits data	USER
TCG Set Hold	ON,OFF	OFF	Store TC when powered down	OFF
First Rec TC	REGEN,PRESET	REGEN	How TC is started	REGEN
P.OFF LCD Display	ON,OFF	ON	TC display when power OFF	ON
TC Out	TCG,TCG/TCR	TCG		TCG
VITC UB Mode	USER,DATE,TIME, EXT,TCG	TIME		TIME
TC Disp Sel	24F,25F,30F	24	Timecode display	25{C} 24{fc}

**VTR Main Menu, Time/Date**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Year	00~99	0	Set time and date	
Month	1~12	1		
Day	1~31	1		
Hour	0~23	0		
Minute	0~59	0		
Time/Date set			Enter it directly	

**VTR Main Menu, VTR Card Read/Write**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Read				
Write				
Read User Data				

**VTR Main Menu, VTR Initialize**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Read Factory Data				
Write VTR User Data				

**VTR Main Menu, Diagnostic**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Operation			Time in use	
Drum Running			Drum hours	
Threading			Number of tape loads	
VTR Syscon			System version number	
Servo			Servo version number	
Mechacon			Mechanism control version number	
Front			LCD version number	

**VTR Main Menu, VTR USER MENU SELECT****VTR User Menu Select: FUNCTION**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
News Rec Mode				
Humid Ope				
Rec Start				
Pause Timer				
Retake Mode				
HDSDI Out				
Interval Rec Mode				
Interval Pause Timer				
ECU Rec Chk Sw				
Character on HDSDI				

**VTR User Menu Select: Battery/Tape**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Battery Select				
Ext DC In Select				

Batt Near End Alarm Batt Near End Cancel Batt End Alarm Batt Remain Full Tape Near End Alarm Tape End Alarm Tape Remain	
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**VTR User Menu Select: VF Indicator**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Tape Battery Level Meter Audio In TC VTR Warning Save LED				

**VTR User Menu Select: Mic/Audio**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Front Mic Power Mic Lowcut Ch1 Mic Lowcut Ch2 Limiter Test Tone Rec Ch3/Ch4 Cue Select Cue Rec Embedded Audio (60Hz)				

**VTR User Menu Select: TC/UB**

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
TC Mode UB Mode TCG Set Hold First Rec TC P.OFF LCD Display TC Out VITC UB Mode TC Disp Sel				