

Colorimetric and Resolution requirements of cameras

Alan Roberts

ADDENDUM 16: Menu settings for

Sony PDW530P XDCAM

A brief assessment was made on a production sample of the PDW530P (no 40099), a 625-line SDTV XDCAM cam-corder. It is very similar in form and function to other small camcorders, sharing many features and having a very similar menu set. For this assessment, no manual was available.

The camera is switchable between interlace (50i) and progressive (25psf) modes and thus can generate a “film look” in the camera . It has specific “film-look” gamma curves that incorporate many of the contrast handling features of earlier cameras, making it a great deal easier to set up. The camera has 3 2/3” ccds and records to a 23GB DVD rather than tape, using IMX data compression. It also records using the standard DV coder, called DVCAM in this model.

The camera is significantly smaller and lighter than the familiar Beta camcorder and is useful mostly for portable, single-camera work. It has many internal menus for setting the performance, such that it can then be used without external controls. It is not well suited to multi-camera operation, its only video output is via composite PAL or an encoded DV signal (IEEE1394, iLink).

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Many menu items have little or no effect on the image. Those that do so are highlighted. The full menus are given for completeness. Where two values are given {f} denotes film use (25psf), {v} video (50i). The film mode does not use any of the "Film" gamma curves, because they are clearly designed to achieve a "finished" look, with oversaturated colours and crushed shadows. However, since all the Film curves incorporate a knee with gentle inflexion, they may be more appropriate in some circumstances. The Film gamma curves are all very similar to each other, there seems little merit in choosing any one over the others. The manual knee and black stretch controls both operate on the Film gammas as well as the Standard ones, care is needed to avoid over compression of highlights. Both gamma modes can cope with about 2 stops of overexposure. With Black Stretch and Knee both off, the camera can capture nearly 10 stops of exposure range, apparently a little better than the Digibeta 790 (maybe the test lens produced less flare). In the "video" mode with optimised Black Stretch and Knee, it captures 11.5 stops (about 2 stops of overload, and 0.5 stop of underexposure), to mimic film performance. This is a bigger range than any of the "FLM" gammas can do, because the FLM gammas all have low slope near black, presumably intended to make oversaturated, black-crushed pictures.

Detail enhancement has been set low, because there is a strange diagonal filtering that causes significant and visible aliasing at even moderate levels. Detail is inevitably switched off for the film mode.

FreezeMix mode appears to be the equivalent of EVS in other cameras. Switched on in 25psf mode gives the same vertical resolution as 50i, thus minimising most interlace twitter artefacts.

The camera has five User switches, three on the left side (one labelled "Turbo Gain") and two on the top handle. It also has a small flip-out lcd panel, extremely useful for setting up menus. It is a pity that the only video outputs from the camera are composite coded PAL or RGB components one at a time, there is no digital output except via an IEEE1394 connector, DV encoded.

In usual Sony style, controls tend to have a large range, with a zero setting that may or may not be centred. Zero does not often mean no action, it is merely the factory default setting. Since the test camera had been used by others, there is no guarantee that defaults switch settings in these tables are accurate, they are only what was found in the test camera at the time of testing.

There is a strange effect, shown using the sawtooth test signal with gamma switched off; at about 82% signal level, the slope changes slightly, indicating a pre-knee after the sawtooth injection point. The same inflection shows at higher gains, where it is more obvious. I have no explanation for this yet, but it has no significant effect in pictures. Standard gamma curve #4 is the closest match to BBC curves, nominally the 0.4 version, but with maximum slope only 4.35; in the Film setup, Black Stretch raises the slope to about 5.7.

USER MENUS

22 pages of menus that can be customised by selecting pages from the rest of the menu structure

OPERATION MENUS

1 OUTPUT

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
LCD bright <L>	-32~31	0	side panel brightness	
LCD bright <H>	-32~31	0	what?	
LCD color	-32~31	0	red to blue	

2 TEST OUT

controls test output socket

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Test Out Marker	On, Off	Off	v/f markers	
Test Out VFdisp	On, Off	Off	displays	
Test Out Menu	On, Off	Off		
Test Out Zebra	On, Off	Off		
Test Out TC	On, Off	Off		
Test Out Select	On, Off	Off		

assignables

3 FUNCTION 1

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Assign SW <1>	Off, Test out character, Marker, ATW, Return video, Lens ret, Rec switch, Turbo switch, Zebra, Freeze mix	ATW	ATW=auto white	
Assign SW <2>	Off, Test out character, Marker, Rec video source, Zebra, Freeze mix, D5600, Ext rec control	Off		
Assign SW <3>	Off, Test out character, Marker, ATW, Return video, Lens ret, Rec switch, Turbo switch, Zebra,	Off	Switches on top handle	
Assign SW <4>	Zoom tele/wide	Off		
Turbo SW	Off, Test out character, Marker, ATW, Return video, Lens ret, Rec switch, Turbo switch, Zebra, Freeze mix	Turbo		

4 FUNCTION 2

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
D5600	On, Off	Off	shifts 3200 balance to 5600	
Wide AWB	On, Off	On	if off, enables D5600	
White switch 	Mem, ATW	Mem	preset white	
Shockless white	Off, 1, 2, 3	1	auto-white drift speed	
ATW speed	1, 2, 3, 4, 5	4		
Zoom speed	--			
Low light	On, Off	Off	vf warning	
Low light level	-32~167	0	uncalibrated	
VF batt warning	10%, 20%	10%		

5 POWER SAVE

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
i.Link out	Enable, Dsabl	Dsabl		
Rec audio out	EE, Save	EE		
Network	Enable, Dsabl	Dsabl	Ethernet connector on handle, "Dsabl"	
Thumbnail	VDRSW, Save		enables thumbnails	

6 VF DISP 1

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
VF disp	On, Off	On	All v/f displays	
VF disp mode	1, 2, 3	3	Couldn't see what this does	
Disp extender	On, Off	Off	Lens extender	
Disp filter	On, Off	Off	etc	
Disp white	On, Off	Off		
Disp Gain	On, Off	Off		
Disp Shutter	On, Off	Off		
Disp audio	On, Off	Off		
Disp disc	On, Off	Off		
Disp iris	On, Off	Off		

7 VF DISP 2

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Disp zoom	On, Off	Off		
Disp color temp	On, Off	Off		
Disp batt remain	Int, Volt, Auto	Int		
Disp disc in	On, Off	Off		
Disp 16:9/4:3 ID	On, Off	On		
Disp WRR RF lvl	On, Off	Off	Radio mic rf level	
Disp time code	On, Off	On		
Disp rec format	On, Off	On		

8 !LED

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Gain <1>	On, Off	On		
Shutter	On, Off	On		
Wht preset	On, Off	On		
ATW run	On, Off	On		
Extender	On, Off	On		
Filter	On, Off	On		
Override	On, Off	On	Not sure of this	

9 MARKER 1

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Marker	On, Off	On		
Center	On, Off	On		
Safety zone	On, Off	Off		
Safety area	80%, 90%, 92%, 95%	90%		
Aspect	On, Off	Off		
Aspect select	3:3, 13:9, 14:9	14:9		
Aspect mask (4:3)	On, Off	Off		
Aspect mask lvl	1/8, 1/4, 1/2	1/4		
100% Marker	On, Off	Off		

10 MARKER 2

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
User box	On, Off	Off		
User box width	1~465	245	Pixel numbers/2	
User box height	1~142	72	Line numbers/4	
User box H pos	-461~461	0	Positions limit when box hits an edge,	
User box V pos	-141~140	0	offset from centre restricts height and width	
Centre H pos	-48~47	0		
Centre V pos	-15~14	0		

11 GAIN SW

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Gain low	-3, 0, 3, 6, 9, 12,	0		0 dB
Gain mid	18, 24, 30, 36, 42,	9		9 dB
Gain high	48dB	18		18 dB
Gain turbo		42		
Turbo SW Ind		Off		

12 VF SETTING

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Zebra	On, Off	On		On
Zebra select	1, 2, Both	1		1
Zebra 1 det lvl	20~107%	85%		85%
Zebra 1 apt lvl	1~20%	10%		10%
Zebra 2 det lvl	52~109%	100%		
VF detail level	4~195	0		
VF aspect	Auto, 16:9	Auto		Auto

13 AUTO IRIS

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Iris override	On, Off	Off		
Iris speed	-99~99	0		
Clip high light	On, Off	Off		
Iris window	1, 2, 3, 4, 5, 6, Var	1	Various shapes	
Iris window Ind	On, Off	Off		
Iris var width	1~465	245	Same rules as for marker box	
Iris var height	1~142	85		
Iris var H pos	-461~461	0		
Iris var V pos	-140~140	0		

14 SHOT ID

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
ID-1				
ID-2			Four lines of text, 12 characters each, used	
ID-3			in shot id selection, see below	
ID-4				

15 SHOT DISP

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Shot date	On, Off	On		
Shot time	On, Off	On		
Shot model name	On, Off	Off		
Shot serial no	On, Off	Off		
Shot ID sel	ID-1, ID-2, ID-3, ID-4	ID-1		
Shot 16:9 ID	On, Off	Off		
Shot blink char	On, Off	Off		

16 SET STATUS

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Status abnormal	On, Off	On		
Status function	On, Off	On		
Status audio	On, Off	On		

17 OFFSET WHT

Preset white balance switch values

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Offset white <A>	On, Off	Off		
Warm-cool <A>	2358~65535	6300	Kelvins, big steps	
Color fine <A>	-99~99	0	Fine steps	
Offset white 	On, Off	Off		
Warm-cool 	2358~65535	6300	Kelvins, big steps	
Color fine 	-99~99	0	Fine steps	

18 SHT ENABLE

Enable shutter speeds

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Shutter SLS	On, Off	On	Slow shutter	
Shutter ECS	On, Off	On		
Shutter 1/60	On, Off	On		
Shutter 1/125	On, Off	On		
Shutter 1/250	On, Off	On		
Shutter 1/500	On, Off	On		
Shutter 1/1000	On, Off	On		
Shutter 1/2000	On, Off	On		

19 LENS FILE

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Lens file select	1~16	1		
F.ID	(report id)			

20 FORMAT

Important stuff

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
16:9/4:3 select	16:9, 4:3	16:9		
Scan mode	I, PsF	I		I{v}, PsF{f}

21 SOURCE SEL

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Rec video source	Cam, Ext	Cam	Presumably, ext means via i.Link	Cam
Ext rec control	On, Off	Off		

22 UMID SET

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Country code			4 characters	
Organization			4 characters	
User code			4 characters	
Time zone			Choose from list of time zones	

PAINT

1 SW STATUS

Main switches

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Gamma	On, Off	On		On
Chroma	On, Off	On		On
Matrix	On, Off	On		On
Knee	On, Off	On		On{v}, Off{f}
White clip	On, Off	On		Off{v}, On{f}
Detail	On, Off	Off		On{v}, Off{f}
Aperture	On, Off	On		On
Flare	On, Off	Off		Off
EVS	On, Off	Off		Off
Test saw	Saw, Rec, Off	Off		Off

2 WHITE

White balance settings

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Color temp <A>	2358~65535	3100	Result of white balance in Preset A Fine control	
Color fine <A>	-99~99	0		
R gain <A>	-99~99	0		
B gain <A>	-99~99	0		
D5600K <A>	On, Off	Off		
Color temp 	2358~65535	3100	Result of white balance in Preset B	
Color fine 	-99~99	0		
R gain 	-99~99	0		
B gain 	-99~99	0		
D5600K 	On, Off	Off		

3 BLACK/FLARE

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Master black	-107~92	0		
R black	-99~99	0		
B black	-99~99	0		
Master flare	-99~99	0		
R flare	-99~99	0		
G flare	-99~99	0		
B flare	-99~99	0		
Flare	On, Off	On		On
Test out select	Enc, R, G, B	Enc		Enc

4 GAMMA

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Gamma	On, Off	On		On
Step gamma	0.35~0.95	0.45	0.05 steps	0.45
Master gamma	-99~99	0		0
R gamma	-99~99	0		0
G gamma	-99~99	0		0
B gamma	-99~99	0		0
Test out select	Enc, R, G, B	Enc		Enc
Gamma select	STD, FLM	STD		STD
GMA sel (STD)	1, 2, 3, 4, 5, 6	3	1,2=ENG (3.5x), 3,4=BBC (4.35x), 5,6=low contrast (2.75x)	4
GMA sel (FLM)	1, 2, 3, 4, 5	1	All have slope about 3.1x, and built-in knee to about 600%	

5 BLACK GAMMA

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Black gamma	On, Off	Off	Optional, adds ~1 stop to exposure range	Off{v}, On{f}
Black gamma range	Low, L.Mid, H.Mid, High	H.Mid		H.Mid
Master blk gamma	-99~99	0	0=no effect, i.e. stretch or compress blacks, +62 lifts gamma STD4 black slope to 5.75	62
R blk gamma	-99~99	0		
G blk gamma	-99~99	0		
B blk gamma	-99~99	0		
Test out select	Enc, R, G, B	Enc		Enc

6 KNEE

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Knee	On, Off	On	Optional, gives about 2.5 stops overexposure, if clipper off, 1.5 if on	Off{v}, On{f}
Knee point	50.0~109.0%	85%		85%
Knee slope	-99~99	0		62
Knee saturation	On, Off	On	Works well, preserves colours	On
Knee sat level	-99~99	0		0
White clip	On, Off	On	Film gamma curve limits early enough	On{v}, Off{f}
White clip level	100.0~100.5	100.0		100.0

7 DETAIL 1

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Detail	On, Off	On		On{v}, Off{f}
Aperture	On, Off	On		On
Detail level	-85~114	0	Strange diagonal effects at all amplitudes	-20
Aperture level	-74~124	0	Works better than detail	49
DTL H/V ratio	-101~98	0		0
Crispening	On, Off	On		-60
Level depend	On, Off	On		On
LVL depend level	-16~183	0		0
Detail freq	-99~99	0		99

8 DETAIL 2

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Knee aperture	On, Off	Off	Might be worth having On if knee is useful,	Off
Knee aperture lvl	-85~114	0	but is probably insignificant	0
Detail comb	-99~99	0		0
Cross color	On, Off	Off	In component digits?	Off
Corss color lvl	-43~56	0		0
Detail limit	-99~99	0		0
Dtl wht limit	-99~99	0		0
Dtl blk limit	-99~99	0		0
Dtl v-blk lmt	-99~99	0		0

9 DETAIL 3

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Fine dtl	On, Off	Off		Off
Fine dtl lvl	-99~99	0		0
V dtl creation	Nam, G, R+G, Y	R+G		R+G
H/V control mode	H/V, V	V		V

10 SKIN DETAIL

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Skin detail all	On, Off	Off		Off
Skin detect	Exec		This is a command to do it	
Skin area ind	On, Off	Off		
Skin dtl select	1, 2, 3			
Skin detail	On, Off	Off		
Skin detail lvl	-99~99	0		
Skin detail sat	-99~99	0		
Skin detail hue	-99~99	0		
Skin detail width	-99~99	0		

11 MTX LINEAR

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Matrix	On, Off	On		On
Matrix (USER)	On, Off	Off	Only one preset matrix (EBU), and it can't	Off
Matrix (Preset)	On	On	be switched off to allow only user matrix	On
Matrix R-G	-99~99	0		
Matrix R-B	-99~99	0		
Matrix G-R	-99~99	0		
Matrix G-B	-99~99	0		
Matrix B-G	-99~99	0		
Matrix B-G	-99~99	0		

12 MTX MULTI

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Matrix	On, Off	On		On
Matrix (Multi)	On, Off	Off		Off
Matrix area ind	On, Off	Off		
Matric color det	Exec		This is a command to do it	
MTX (Multi) axis	B, B+, MG-, MG, MG+, R, R+, YL-, YL, YL+, G-, G, G+, CY, CY+, B-			
MTX (Multi) hue	-99~99	0		
MTX (Multi) sat	-99~99	0		

13 MODULATION

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Vmod	On, Off	On		
Master Vmod	-99~99	0		
R Vmod	-99~99	0		
G Vmod	-99~99	0		
B Vmod	-99~99	0		
Test out select	Enc, R, G, B	Enc		

14 LOW KEY SAT

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Low key sat	On, Off	Off		Off
L.Key sat level	-99~00	0		
L.Key range	-99~00	0		
Y Blk gamma	On, Off	Off	Black stretch on coded Y rather than RGB	Off
Y Blk gam level	-99~00	0		
Y blk gam range	Low, L.Mid, H.Mid, High	High		

15 SCENE FILE

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
1	(name)		These are reports of stored file names	
2	(name)			
3	(name)			
4	(name)			
5	(name)			
Standard				
Scene recall	Exec		This is the command to do it	
Scene store	Exec			
F.ID	(name)			

MAINTENANCE

1 WHITE SHADING

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Wht shad ch sel	R, G, B, Test			
Test out select	Enc, R, G, B	Enc		
Wht H saw	-99~99	0		
Wht H para	-99~99	0		
Wht V saw	-99~99	0		
Wht V para	-99~99	0		
White saw/para	On, Off	On		On

2 BLACK SHADING

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Blk shad ch sel	R, G, B, Test			
Test out select	Enc, R, G, B	Enc		
Blk H saw	-99~99	0		
Blk H para	-99~99	0		
Blk V saw	-99~99	0		
Blk V para	-99~99	0		
Black saw/para	On, Off	On		On
Master black	-107~92	0		
Master gain(tmp)	-3~48dB	0		

3 LEVEL ADJ

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Enc video level	-99~99	0	Doesn't affect recorded level	
RGB level	-99~99	0		
Test out select	Enc, R, G, B	Enc		
H blanking width	-99~99	0		

4 BATTERY

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
<Sony info>			Lithium battery settings	
Before end 1	5~100%	10%	5% steps	
End 1	0~5%	5%		
<Sony>				
Before end 2	11.5~17.0V	11.6V		
End 2	11.0~11.5V	11.0V		
<Sony info>				
Before end 3	11.5~17.0V	11.5V		
End 3	11.0~11.5V	11.0V		

5 AUDIO-1

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
CA-701 audio in	Enabl, Dsabl	Enabl		
Audio CH3/4 mode	CH1/2, SW	SW		
Rear XLR auto	On, Off	On		
Front mic ref	-60, -50, -40dB	-60dB		
Rear mic ref	-60, -50, -40dB	-60dB		
Min alarm vol	Set, Off	Off		
SP att level	Off, 3, 6, 9dB	Off	Speaker level	
Headphone out	Mono, Streo	Mono		

6 AUDIO-2

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Au data len(IMX)	16,24bit	16bit	Audio word length	
Au ref level	-20, -18, -16, -12dB	-20dB		
Au CH1/2 agc mode	Mono, Streo	Mono		
Au CH3/4 agc mode	Mono, Streo	Mono		
Au agc spec	-6, -9, -12, -15dB	-6dB		
Au limiter mode	Off, 06, -9, -12, 15dB	Off		
Au out limiter	On, Off	Off		
i.Link audio out	2ch, 4ch	2ch	4ch=12-bit 32kHz, 2ch=16-bit 48kHz	

7 AUDIO-3

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Au SG(1kHz)	On, Off, Auto	Auto	Tone	
Mic CH1 level	Side1, Front, F+S1	F+S1		
Mic CH2 level	Side2, Front, F+S2	F+S2		
Rear1/WRR level	Side1, Front, F+S1	F+S1		
Rear2/WRR level	Side2, Front, F+S2	F+S2		

8 TIMECODE

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
TC out	Auto, Gene	Auto		
Ext-LK Ubit	Int, Ext	Int		
LTC Ubit	Fix, Time	Fix		
VITC Ubit	Fix, Time	Fix		
Watch auto adj	On, Off	On		
Ubit group ID	000, 101	000		
VITC ins line 1	9~22H	19H		
VITC ins line 2	9~22H	21H		

9 VDR MODE

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Rec ,tally blink	On, Off	On		
Rec start beep	On, Off	Off		
Sub lcd mode sel	Timer, Off, Cont	Timer		
Sub lcd timer	1, 3, 8H	1H		
Rec format	IMX50, IMX40, IMX30, DVCAM	IMX50	50Mb/s for best picture quality	IMX50

Disc recorder

10 PRESET WHT

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Color temp <P>	2358~65535	3100	Result of white balance in main Preset	
Color fine <P>	-99~99	0	Fine control	
R gain <P>	-99~99	0		
B gain <P>	-99~99	0		
D5600K <P>	On, Off	Off		
AWB enable	On, Off	Off	So you can set the preset to auto as well	

11 DCC ADJUST

Auto knee

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
DCC function sel	DCC, ADP.K, Fix DCC	DCC		
DCC range	400, 450, 500, 550, 600%	600%	Implies the ccds do 600% overload, maybe	
DCC point	-99~99	0		
DCC gain	-99~99	0		
DCCdelay time	-166~33	0		

12 AUTO IRIS 2

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Iris window	1, 2, 3, 4, 5, Var	1		
Iris window ind	On, Off	Off		
Iris level	-99~99	0		
Iris APL ratio	-190~9	0	Peak/mean ratio	
Iris var width	-99~99	0		
Iris var height	-99~99	0		
Iris var P pos	-99~99	0		
Iris var V pos	-99~99	0		
Iris speed	-99~99	0		
Clip high light	On, Off	Off		

13 FUNCTION 3

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Wht filter inh	On, Off	Off		
Color bar sel	EBU, SNGS, SMPTE	EBU	SMPTE bars are useful	
Rec tally	Upper, Both	Upper		
Color vf input	Comp, VBS, Both	Comp		
User & All only	On, Off	Off	Disables deeper menus	
RM common memory	On, Off	Off	Remote control	
RM rec start	RM, Cam, Para RM	RM		

14 GENLOCK

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Genlock	On, Off	On		
Return video	On, Off	Off		
GL H phase	-57~142	0		
GL SC phase	-99~99	0		
GL SC 0/180 sel	0, 180	180		

15 ND COMP

Correct colour variation in ND filters

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
ND offset adjust	On, Off	Off		
Clear ND offset	Exec		This is a command to do it	

16 AUTO SHADING

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Auto blk shading	Exec			
Reset blk shading	Exec			
Test out select	Enc, R, G, B	Enc		
Master gain(tmp)	-3~48dB			

17 DISC

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Delete last clip	Exec			
Delete all clips	Exec			
Quick format	Exec			

18 NETWORK

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
DHCP	Enabl, Dsabl	Dsabl		
IP address	Exec		Goes into submenu to set values	
Subnet mask	Exec			
Def.gateway	Exec			
Link speed	10Mb, 100Mb, Auto	Auto		

FILE

1 USER FILE 1

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
User file load	Exec			
User file save	Exec			
F.ID	12 characters			
User preset	Exec			

2 USER FILE 2

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Store user preset	Exec			
Clear user preset	Exec			
Customize reset	Exec			
Load custom data	On, Off	Off		
Load out of user	On, Off	Off		
Before file page	On, Off	Off		
User load white	On, Off	Off		

3 ALL FILE

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
All file load	Exec			
All file save	Exec			
F.ID	12 characters			
All preset	Exec			
Store all preset	Exec			
Clear all preset	Exec			
3 sec clr preset	On, Off			
Network data	On, Off			

3 SCENE FILE

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
1	(name)		These are reports of stored file names	
2	(name)			
3	(name)			
4	(name)			
5	(name)			
Standard				
Scene recall	Exec		This is the command to do it	
Scene store	Exec			
F.ID	(name)			

5 REFERENCE

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Reference store	Exec			
Reference clear	Exec			
Reference load	Exec			
Reference save	Exec			
F.ID	12 characters			
Scene white data	On, Off	Off		

6 LENS FILE 1

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
All file load	Exec			
All file save	Exec			
F.ID	12 characters			
All preset	Exec			
Store all preset	Exec			
Clear all preset	Exec			
3 sec clr preset	On, Off			
Network data	On, Off			

7 LENS FILE 2

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Lens Vmod	-99~99	0		
Lens centre H	-99~99	0		
Lens centre V	-99~99	0		
Test out select	Enc, R, G, B	Enc		
Lens R flare	-99~99	0		
Lens G flare	-99~99	0		
Lens B flare	-99~99	0		
Lens W-R offset	-99~99	0		
Lens W-B offset	-99~99	0		

8 LENS FILE 3

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Shading ch sel	R, G, B, Test			
Test out select	Enc, R, G, B	Enc		
Lens H saw	-99~99	0		
Lens H para	-99~99	0		
Lens V saw	-99~99	0		
Lens V para	-99~99	0		

9 MEMORY STICK

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
M.S. format	Exec			
MS in > jump to	Exec			

DIAGNOSIS

1 HOURS METER

reports

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Operation				
Operation (rst)				
Spindel (rst)				
Laser (rst)				
Loading (rst)				
Seek (rst)				

2 TIME/DATE

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
Adjust	EXEC			
Hour	EXEC			
Min	EXEC			
Sec	EXEC			
Year	EXEC			
Month	EXEC			
Day	EXEC			

3 ROM VERSION 1

reports

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
AT	1.03			
SYS1	1.08			
SYS2K	1.00			
DRIVE	1.05			
FP	1.04			

4 ROM VERSION 2

reports

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
VAIN	1/05			
PIER	1.13			
PRX.V	1.00			
PRX.A	1.01			
A.DSP	1.00			

5 DEV STATUS

reports

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
			Reports on device status	

6 OPTION BOARD

reports

<i>Item</i>	<i>Range</i>	<i>Factory</i>	<i>description</i>	<i>BBC</i>
			Reports on option installed	