







FS7 II



SONY

Summary

Feedback Improvements in FS7 II Design and body construction **Picture quality** Connectivity/outputs Recording formats and media Slow and Quick motion Audio Wireless operation Supplied accessories







Feedback

ND filter:

"Especially for doc usage, I'd love to see FS5's ND filter on FS7's body"

E-mount:

"I love to be able to use any lens, but sometimes I'm afraid the mount could bend with heavy lenses"

SELP28135:

"That's the lens that saves my day if many focal lengths are needed, but I'd prefer a wider lens designed for Super35"



Feedback

Grip arm:

"An adjustable arm is a great help for shooting ergonomically, but our FS7 is used by various operators, and each one needs to modify arm's length with ease"

VF rod:

"Any position for the VF is possible, but from time to time it tilted; a more secure way to fix it would be nice"

VF hood:

"I shoot both indoor and outdoor, so a hood is a must. But sometimes FS7's loupe is either too big or too heavy when folded"



NEW: Electronic variable ND filter

When light/exposure changes (example: in an indoor-to-outdoor (or vice-versa) travelling footage)

- If iris or shutter is modified, aesthetics change
- If ISO/Gain is adjusted, it's difficult to match the exact light level

Thanks to an Electronic Variable ND filter, light approaching the sensor can be adjusted, with no DEPTH OF FIELD modification

Keep your aesthetics regardless the light

Step increments from 1/4 to 1/128





NEW: Electronic variable ND filter

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Before the sensor, there is a LCD layer: same behaviour as an external ND polarized-based filter, at a microscopic level



NEW: E-mount (lever lock type)

When in a cinema or broadcast environment, lens are not easy to be turned to attach/detach (rods, follow-focus, mattebox, box lens...)

With new E-mount (lever lock type), only collar needs to rotate







NEW: E-mount (lever lock type)

E-mount

- Is wide: can host Super35, APS-C or FF
- Has a hot interface for communication with lens
- Is short: just 18mm flange-back distance (sensor-to-mount) allows user to "build" the desired lens via adapters. No need to spend money on new lenses



18mm

Exmor

INE . I . MIC+48

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NEW: VF rod ergonomics improvement

Independent clamps for easy adjust





NEW: Hood and eyepiece's attachment

PXW-FS7M2's LCD panel is 1/4 Full HD resolution (960x540)

Eye piece and VF hood (both supplied) can be easily attached, with an improved system





NEW: grip arm length adjustment

No need to use coin/screwdriver to loose/tighten screws; knobs are easily adjustable





NEW: arm/grip position for low-angle shoots

Both knobs can be attached to Arri rosette, so handle can be set closer to camera body





NEW: Up to 10 assignable buttons

Assignable buttons are ring-shaped for quick tactile location without visual contact





NEW: Up to 10 assignable buttons

Assignable functions to custom buttons				
Off	Focus Area	Push AGC	S&Q Motion	
Marker	Focus Area(Push AF)	Push Auto ND	Picture Cache Rec	
Zebra	VF Mode	Spotlight	Rec Review	
Peaking	ND Filter Position	Backlight	Thumbnail	
Video Signal Monitor	IRIS	ATW	Shot Mark1	
DURATION/TC/U-BIT	AGC	ATW Hold	Shot Mark2	
Focus Magnifier x4 / x8	Auto ND Filter	SteadyShot	Clip Flag OK	
Focus Magnifier x4	SHUTTER	Color Bars	Clip Flag NG	
Focus Magnifier x8	Auto Exposure Level	User Menu	Clip Flag Keep	
Push AF/Focus Hold	Push Auto IRIS	Rec Lamp	High/Low Key	

Assignable functions to grip dial
Off
IRIS
ISO/GAIN/EI
ND Filter
Focus
Audio Input Level



NEW: BT.2020 colour space

Apart from S-Gamut3 and S-Gamut3.Cine, BT.2020 colour space can be selected in various resolutions





NEW: E-mount lens version-up

FS7 II allows user to update lens firmware from camera body (same as for a Version Up for the camcorder)

Such lens firmware update can be downloaded from consumer website



NEW: Other physical improvements

XQD card: easy to grab (8mm vs 3.7 mm)







NEW: Other physical improvements

Power LED added above Power switch





Audio protective cap direction changed





Design

Continuity with PXW-FS7

Designed for a "run and gun" or "one man band" operation

Developed for usage under toughest conditions; dust and splash-proof







Design: right

Similar to PXW-FS7





Design: rear

Similar to PXW-FS7

Center of gravity is in a low and rlightly right position

















Body construction

Magnesium chassis for lightweight (33% lighter than aluminum) and structural strength

Sealed body: completely sealed electronic circuitry for dust and moisture resistance



Picture quality: sensor

FS7 II is equipped with the SAME SENSOR as PMW-F5, PXW-FS7 and PXW-FS5

4K Super35 CMOS sensor

- Native ISO 2000
- 14 stops
- SNR: 57dB
- Fast readout (up to 240 fps in Full HD)



Resolution	Aspect ratio	#Megapixels	Size (mm)
Total	-	11.6	25.5x15.6
4K	17:9	8.8	24.0x12.7
QFHD	16:9	8.3	22.5x12.7



Tip: if working in 2K/Full HD resolution, optical low pass filter is recommended especially in Super Slow Motion mode



Picture quality: dynamic range

FS7 II's sensor offers High Dynamic Range and a wide colour space Available: S-Gamut3.Cine/SLog3, S-Gamut3/SLog3, S-Gamut/SLog2, **BT.2020**



Tip: be careful if using S-Log curve in low lights; minimum ISO is 3200



Connectivity

Video outputs:

- 2x SDI
- HDMI

Audio inputs:

- 2x XLR
- Single/dual receiver via MI shoe
 Wireless
- USB port for IFU-WLM3 (supplied)
- NFC (left side)

Power

- BP-U batteries (BP-U30 supplied)
- 12V DC IN



Connectivity

Remote control via LanC Infrared remote control Headphone (minijack) GPS



Connectivity (with XDCA-FS7)

RAW OUT (BNC) DC IN (4-pin XLR)/OUT (12V Hirose) Genlock IN (BNC) Reference OUT (BNC) Timecode IN/OUT (BNC) V-Mount for batteries





Connectivity: bit depth (outputs and codec)

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	Rec format	Resolution	Output	Sampling and depth	
			Codec	422 10bit	
	XAVC Intra	4K: 4096x2160	SDI	422 10bit (HD)	
			HDMI	422 10bit (420 8bit if 50p)	
			Codec		
		Full HD: 1920x1080	SDI	422 10bit	
			HDMI		
X	XAVC Long GOP	QFHD: 3840x2160	Codec	420 8bit	
			SDI	422 10bit (HD)	
			HDMI	422 10bit (420 8bit if 50p)	
			Codec		
		Full HD: 1920x1080	SDI	422 10bit	
			HDMI		
			Codec	422 8bit	
	MPEG2 422	Full HD: 1920x1080	SDI		
FS7 II Produc			HDMI	422 TUDIT	

Image · IP · Workflow

MLUT support

When in Cine EI mode, Monitor LUTs, Look Profiles or User 3D LUTs can be applied to SDI1, SDI2, HDMI or VF

LUT: Outputs video with a preset or user LUT

 709(800%), HyperGammas(800%,109% white limit, 18% gray video output of 40% or 33%), S-Log3 (1300%), or User 1 to 6 (imported from SD card)

Look Profile: Outputs video close to print film or video suitable as the start point of grading

• LC-709, LC-709typeA, SLog2-709 or Cine+709

User 3D LUT: Outputs video with an applied user 3D LUT; can be easily developed (1D and 3D) via RAW Viewer or Catalyst Browse

• User 3D-1 to 4



Recording formats (PAL)

4 codecs available: XAVC-I 422, XAVC-L 422, XAVC-L 420 and MPEG HD422 XAVC-I 422

- 4K & QFHD: 50p @ 500Mbps, 25p @ 250Mbps
- Full HD: 50p @ 186Mbps, 50i/25p @ 93Mbps

XAVC-L 422

- Full HD: 50p/50i/25p @ 50Mbps, 35Mbps
 XAVC-L 420
- QFHD: 50p @ 150Mbps, 25p @ 100Mbps
 MPEG HD 422
- Full HD: 50i/25p @ 50Mbps
- 1280x720: 50p/25p @ 50 Mbps





Recording formats (PAL): RAW and ProRes

With XDCA-FS7, RAW output and internal ProRes recording is available





Recording formats (PAL): RAW and ProRes

RAW

- Is outputted in data stream mode (not baseband video) through SDI connector, so needs to be decoded in HXR-IFR5, Atomos or Convergent Design's equipment
- Output can provide up to 200fps slow-motion (240 in NTSC mode)
- 4K (4096x2160) or 2K (2048x1080) at 50p or 25p

ProRes

- Is recorded in XQD card (in FS7 II card slot)
- ProRes 422 HQ Full HD: 50i/25p @ 184Mbps, ProRes 422 Full HD: 50i/25p @ 122Mbps



XAVC and NLEs

Most mainstream NLEs and colour grading suites accept direct XAVC-I and XAVC-L as of Oct'16:

- Premiere Pro CC, Edius Pro 8.22, Avid Media Composer 7.0.4/8.4 (via PDZK-MA2 v3.41) Magix Vegas Pro 14, FCP-X 10.2.3 (with Pro Video Formats v2.0.4, in Full HD)
- DaVinci Resolve 12, Baselight 4.4, Quantel Rio, Flame/Smoke/Lustre



Recording media

XQD G and S series are recommended for recording any format **XAVC-I 422**

- 4K & QFHD: 50p/25p in XQD G/S series
- Full HD: 50p in XQD G/S series, 50i/25p in XQD G/S/N/M series

XAVC-L 422

• Full HD: 50p/50i/25p in XQD G/S/N/M/H/S series

XAVC-L 420

• QFHD: 50p/25p in XQD G/S/N/M series

MPEG HD 422

• Full HD/1280x720: in XQD G/S/N/M/H/S series

ProRes 422

• Full HD 422 HQ: 50i/25p in XQD G/S series, 422: 50i/25p in XQD G/S/N/M series





Recording media

Recording times Minutes (approx.) at 50p



XQD 128GB (internal)		
XAVC-I QFHD	23	
XAVC-L QFHD	89	
XAVC-I FHD	61	
XAVC-L FHD 50	263	
MPEG HD 422	263	

			1
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	VI.		
	24		1
			1
			1

AXS 512GB (on AXS-R5)			
4K RAW	23		
2K RAW	95		



Cache recording

Perfect for recovering an action after it has happened: never miss a shot Especially appreciated in reality environments (docs, nature, ENG...)

Format	Resolution	Cache (seconds)	
RAW	4096x2160 / 2048x1080	Not available	
XAV/C Intro	4096x2160 / 3840x2160	0-2 (not available for 50p)	
	1920x1080	0-2 / 2-4 / 4-6 / 6-8	
	3840x2160	0-2	
XAVC Long GOP	1920x1080	0-2 / 2-4 / 4-6 / 6-8	
ProRes	1920x1080	Not available	
MPEG-2	1920x1080	0-2 / 2-4 / 4-6 / 6-8 / 8-10 / 13-15	



Simultaneous/parallel recording

3 REC buttons available, 2 card slots: each card can be controlled independently



Nice for editing live events or long-duration takes (concerts, sports, interviews...) or multicamera productions



Super Slow Motion / S&Q Motion

FS7 II allows up to 180 fps in Full HD resolution without buffer (continuous) If outputting RAW, framerate reaches up to 240 fps in 2K resolution

- XAVC-I, XAVC-L in 4K/QFHD: 1-60 fps
- XAVC-I in Full HD: 1-180 fps (NTSC), 1-150 fps (PAL)
- XAVC-L in Full HD: 1-120 fps
- ProRes and MPEG-2: not available





Audio

PXW-FS7 can handle up to 4 audio channels (24bit, 48kHz, LPCM) Inputs: 2x XLR, 2x MI shoe channels, 1x internal mic

MI shoe allows 2 transmitter with just 1 receiver (URX-P03D) connected via SMAD-P3D







P · Workflow

Wireless operation

IFU-WLM3 (WiFi dongle) is included with PXW-FS7M2

NFC is also included: when "touching" with phone or tablet, Content Browser Mobile will open (or, if not installed, will lead us to the app download page)

Came	era Control			Connected Lock
Stby	^{TCG} 23:01:52	:29	Clip A001C001 Frame Rate 59.94P Picture Size 3840 x 2160 Rec Format XAVC-I	26min B 0min DCIN 12.0V
		Assign Ma	in Playback Cu	rsor
		ND 1/4	1/4 1/8 1/3	1/32 1/64 1/128
Ī		Iris F4.5		CLOSE
×	Lock -	Focus	Near	Far
		Zoom O	Wide	Tele
580 F	PS.	Shutter	White	Gamma
Off		1/60	Preset 3200K	STD5
Auto I	ris	Auto Shutter	AGC	Auto ND
Off		Off	On	Off
ATW		Gain		
Off				
Color	Bars			
Off		Auto Blac	Auto White	



Wireless operation

CBK-WA100 support: it can be attached via USB (IFU-WLM3 will be connected to CBK-WA100). Mounting plate for CBK-WA100 is supplied

- Proxy recording (XAVC-S)
- Remote control (via browser)
- Video monitoring (via CBM)
- Proxy file transfer (not hi-res file)

Proxy resolution	Bitrate (Mbps, VBR)	Video codec	Audio codec	
1280x720	9			
640x360	3	XAVC proxy	AAC-LC, 2ch,	
480x270	1	(LONG GOP, 420 8011, .mp4)	128kbps	
480x270	0.5			



Supplied accessories

- Camcorder: PXW-FS7M2
- Viewfinder
- Grip remote control
- Eye piece (loupe)
- VF hood
- Battery: BP-U30
- Battery charger: BC-U1
- AC adapter: AC-UES123
- Attachment bracket for CBK-WA100

- WiFi dongle: IFU-WLM3
- Sensor cap
- Remote commander: RMT-845
- USB cable
- Clamp spacer
- Cold shoe kit
- Power cord
- Operating instructions
- Content Browser serial number
- SELP18110G in PXW-FS7M2K kit



