
Sony PXW-FS7 and Alphatron EVF-035W-3G

Ulrich Mors - morsmedia Film- & TV-Produktion - 04/2015



LDC vs. CRT?

CRT is dead. At least. Or better: Nearly dead!

There are still thousands of broadcast cameras fitted with a CRT viewfinder. Of course there are some colour LCD viewfinders for these models, but they are really really expensive. As an example: The C30WR color VF for PDW700 was roughly 7000€ in 2010!

Fortunately this has changed, and LCD viewfinder build quality as well. Today every so called “professional” camera owns an LCD viewfinder, mostly this is a display with a mounted swing-away ocular. That’s a good design because it’s two-in-one: Either use it as a viewfinder OR as a small monitor display. There are also OLED versions in the market - but they usually lack the swing-away option since the display size is 1 inch or even less, for example Sony’s DVF-EL100 (0.7” display...) or the new Zacuto Graticale.

If you want to be flexible and want to have many shooting options, you need the swing-away design. This is why Sony built the FS7 viewfinder exactly this way – but a lot



Sony FS7 viewfinder...



...ocular open...



Alphatron with FS7 bracket

of users don't like the mechanical design - the viewfinder is quite long and the small metal holders are not very trusty. However, the Sony LCD offers a good HiRes picture quality; the build quality is what you pay for.

Unfortunately the Sony VF has its drawbacks. For example, the built in waveform monitor (WFM, vectorscope, histogram) doesn't show up in every shooting mode. It's not the VF that generates it but the camera's internal VF signal processing - and this is eaten up by other processing like LUT output. Some users also don't like the WFM's size, you cannot enlarge it nor stretch it under the live picture.

Alphatron EVF-035W-3G

The Alphatron EVF is not new, but some parts have been redesigned. A lot of DSLR users use it since the beginning of (Canon) 5D video shooting, and it is reasonably priced. As a new feature you can buy a dedicated FS7 mounting bracket. Using that bracket you can simply switch from the Sony original viewfinder to the Alphatron in seconds.

Technically Sony and Alphatron both use 960 by 540 resolution, that's 16:9 native. Its 160° (vertical and horizontal) viewing angle is great for any shooting condition, there are a lot of menu settings for picture processing and it brings some features for exposure and focussing. Inputs are SDI 3G (full size) in and thru (out) as well as HDMI (mini, type c) in and thru. To avoid sun burning into the LCD screen you can open and close an "iris-type" shutter in front of your eyes.



shutter closed



open with two fingers



ready to shoot

EVF mounted on FS7

Sony approached the FS7 viewfinder by mounting it via 15mm rods onto the camera. To keep the VF in a 90° position, a line has been milled into the main 15mm rod, but not deep enough to prevent it from tipping. Alpatron does a similar design but cut a much deeper line into their rod - and the 90° holder has stronger counterparts to hold it. Simply spoken: If you shoot run and gun, the Alpatron doesn't doesn't tip away at all!



Well done: Alpatron's VF can't tip away – it's mounted directly onto the rod that sits perfect in the 90° holder. You can adjust the dampening by using an Allen key.

One fits all

Hate it too? Shooting everyday with different cameras AND different viewfinders? Here is my day-by-day horror scenario:

- **TODAY** we are shooting EB/ENG shouldercam with an old, worn out CRT viewfinder. Black & white (of course)! HD? Nope. Exposure and focus: Good luck! Want a waveform monitor? Just kidding...
- **Tomorrow:** Shoot a corporate video using DSLRs – somebody mounted some LCD monitors onto the camera, but I don't know the colors or user functions. Is there a peaking function? Is it calibrated? How do I bring the HDMI signal to the producer's SDI monitor?
- **The day after tomorrow:** A doc shot with S35 digital (F55, Alexa, RED), got to see different viewfinder AGAIN, different colors, different functions...

Welcome to camera work 2015: Working as a cameraman not only means to know dozens of cameras, it also means to handle dozens of viewfinders!

That's why I really appreciated when Alpatron announced the Alpatron "ENG Bracket" - an option to mount the viewfinder directly to any standard ENG camera!



Alpatron mounted to our XDCAM via ENG-Bracket

If a cameraman asks me today what to buy next, I would advise him not to buy the next cool LED light, but to invest into ONE viewfinder to be used on all cameras he is shooting with!

If you once know the menus of the Alpatron, if you once know it's colors and focussing/exposure features, you will profit from that ON EVERY SHOOT, with EVERY camera!

That's why I highly respect those guys from Alpatron: They know that the unit should be used on different locations with different and ever changing cameras.

FS7: Use it via SDI or HDMI , simply swap it against the Sony VF: takes 15 sec.

EB/XDCAM: Use it via SDI , swap it against the original CRT: 15 sec.

DLSR: Connect it via HDMI, you can route it to SDI out. Mounted with Cinearm etc.

Live production vision mixer: What?!?



All you need: SDI in/out, HDMI in/out



My assistant Phillip: Managing sound AND picture!

Be creative: I once hooked up the Alpatron with a standard multi clamp to a 19" rack at the vision mixer. That was an easy way to present the mixer operator the same viewfinder picture (+ exposure, colors) that we saw on our viewfinders...

Features and Setup of the EVF-035W

Let's concentrate on the most important things: Aside from finding the correct image section it's all about focus and exposure:

Easy focussing - part 1: Peaking

Peaking (making sharp edges stronger) is a well-know, proven way of finding the correct focus. You will find different ways in the Alpatron - simply switched by a user function button (you got 4 of them):



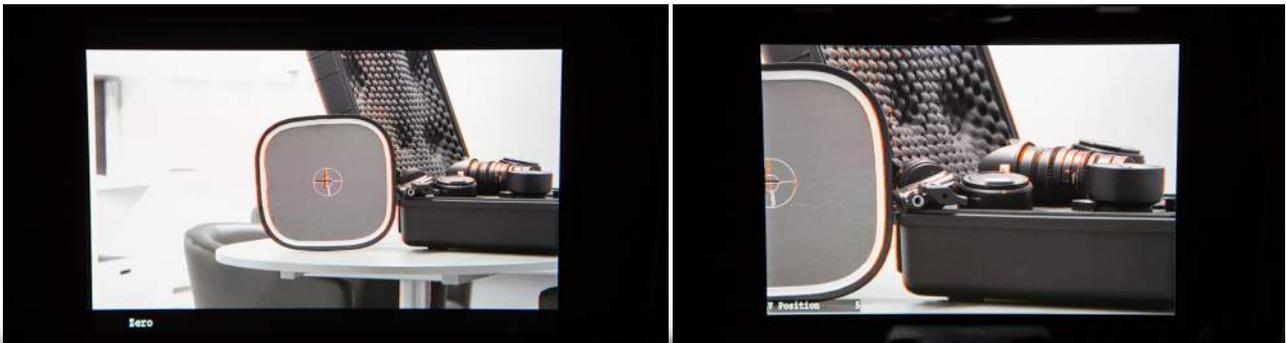
colored picture w/o peaking -> b&w pic with red peaking -> colored pic with red peaking

There is a hidden pre-set sharpening setting in the Alpatron called “Aperture” (in the picture menu). I found the picture to be less stressed when lowering this value to an absolute of -15. You will instantly see a much more natural and less artificial picture.

Whatever focus setup you prefer is a matter of taste - there is no “right” or “wrong” - it all depends on your needs and on your taste. If you are shooting critical subjects, you can go from color to b&w with colored peaking with a touch of a button.

Easy focussing - part 1: Pixel-to-Pixel

Until now we didn't change the picture section. If you want to nail the focus better, you can turn on a focus magnifier, called "pixel-to-pixel". Now the Alphasatron shows you a 960x540 section that you can even move around - ideal for golden-ratio interviews or off-center objects!



First switch on "pixel-to-pixel" - then move it up/down and left/right with the scroll wheel

Exposure - part 1: Zebra

Classics! Brightness gets translated into percentage and a selected range will be shown as a zebra stripe ON the picture. You can set the full range from 0% to 100%. There is a second highlight zebra (>100%) that warns you not to overexpose - therefore this zebra is colored red. There is also a 0% underexpose warning - but since we are producing video black, it is too high to be shown by this underexposure zebra.



Zebra lines in the Alphasatron

The Alphas zebra full range (0-100) is well suited for shooting log - because you can set it to very dark levels that are used in logarithmic shooting. For example, neutral gray is 32% brightness in Slog2, and 41% in Slog3. The FS7 Sony viewfinder can be set to minimum 50% - too high for grey card exposure zebra...

On the other hand, I sometimes would like to change the over / underexposure zebras on the Alphas, but you can't.

Exposure - part 2: False Color

False color splits brightness levels into colors. Overexposed parts of the picture will be colored red for example. The Alphas VF is very flexible - you can set a middle area (Y Level) and see higher and lower levels at a glance:



Subjects in "False Color" - with a base Y level of 50%

Exposure - part 3: Waveform-Monitor

Different to Sony's camera-generated waveform monitor you will find that:

- a) it is updated realtime
- b) you can set it's brightness (and look into more detailed values)
- c) you can even stretch it BELOW the live-signal



wfm thumbnail size, wfm stretched under picture, wfm stretched + scaled picture)

If you stretch the waveform monitor, you can choose whether if it blends ONTO the actual full size picture or if both need to be scaled to see the whole picture with the waveform monitor BELOW it.

Exposure - part 4: Range Error

This comes from DSLR cameras: If you shoot highlight areas, these parts start to blink. To be honest: The waveform monitor, zebra and false color give you a more detailed overview, that's why I prefer the other methods. DSLR shooters may like it better...

Shooting with the Alpatron EVF

I know the Alpatron already from using it on our FS700. If the Alpatron is new to you, take ten or twenty minutes to get familiar with the menus and set up the four user function buttons to your taste. When I was teaching a TV class at “Hands on xK” at HFF Munich (academy for TV and Film) I recommended those settings:

- F1: Pixel-to-Pixel
- F2: Peaking
- F3: Marker (Center und Cinema ratios)
- F4: Waveform Monitor

Aperture: -15

Zebra Y Setting: 70%



Hands on xK 2015 at HFF Munich

Here is my personal pro and contra list between Sony FS7 viewfinder and Alpatron EVF-035W-3G:

Common:

- both VFs have a native resolution of 960x540
- both VFs are mounted via a 15mm rod to the FS7
- both VFs use a display with swing-away ocular

Pro Sony VF:

- you can remote VF functions via FS7 zoom/remote grip (Focus Mag, Peaking etc.)
- the ocular can be taken down completely
- the VF has it's own viewfinder output socket, doesn't need an SDI or HDMI
- it's lightweight: 569g incl. rod, 90° holder and cable

Contra Sony VF:

- the ocular's composite doesn't seem to be very solid
- the spring mechanism that is holding the ocular can be opened to easily, and they are fiddly
- the rod line milling doesn't prevent the VF from accidently tipping
- there is only one screw for VF tilt and move
- the waveform monitor is generated by the camera, therefore it is not always available

Pro Alphanon EVF:

- you can mount it to any FS7/DSLR/EB & ENG with dedicated brackets
- several mounting positions (sideways, ahead, below)
- there are lot of picture settings and functions (white, contrast, brightness, color, marker)
- waveform/vectorscope is always available
- several waveform monitor modes
- several focus assistants
- several exposure assistants
- large viewing angle, large picture
- SDI in/ thru, HDMI in/ thru
- HDMI-to-SDI converter available
- well designed FS7 bracket with 2 screws and "no tipping"-feature
- power options: NPF-Akku or external DC (D-Tap and others)

There are also some little drawbacks:

Contra Alphanon EVF:

- of course the EVF needs a camera signal output (SDI or HDMI) - fortunately you can use the outputs for daisy chaining the next monitor
- powering up is slow (but is as slow as the FS7 - ca.14 seconds)
- you can not remote it's functions with the FS7 grip (no 3rd party VF can do it)
- some users claim that the picture size in the ocular is even too big (eyes have to wander across the screen) - but that seems to be a matter of taste, too
- minimal lag (camera->SDI->EVF processing), 1 frame?
- a bit heavier than the Sony VF: 679g with rod and Alphanon 90° holder

Bottom Line

Right out of the box the FS7 Sony viewfinder is absolutely fine. It has a nice and crisp picture and good colors too.

The main reason to buy the Alpatron is it's advanced features:

Our shooting jobs differ a lot (ENG with XDCAM shoulder cameras, corporate video with F5 / RED, documentary with FS7 or shooting with DSLRs). To maintain a reliable continuity in our shooting workflows we try to use the same viewfinder on all these cameras. I no more mess up with different viewfinders, different colors or different user function buttons. Learn it once to use it and keep it throughout all your productions. I see a personal viewfinder as an essential tool: By providing serious mounting brackets for every kind of camera plus flexible powering options, Alpatron offers this viewfinder for all kinds of work. Also it's an easing of burden to find functions and buttons at the same place (find it blind!), no matter what camera system is used (goodby worn out b&w viewfinders!).

One wish is left: I really would like to see Look-up-Tables (LUTs) features in the Alpatron EVF. Fortunately the FS7 (and alike) generates a monitor LUT on her outputs, but it does it only while recording - not while playback. On the other hand LUT processing means more hardware power, and has to be paid. The Alpatron EVF is reasonably priced and a kind of "allround" unit.



Alpatron EVF-035W-3G mounted different ways

Disclaimer:

I am working as a professional cameraman and broadcast/ film camera trainer for companies, universities and freelance professionals.

This review was made at request of Alpatron Broadcast who provided their EVF-035W-3G viewfinder and mounting brackets for testing.

This review is solely build on my personal experiences and reflects 100% my personal opinions.

Ulrich Mors, April 2015