

Sony FR7 Tutorial with AbelCine



Sony ILME-FR7 with RM-IP500 Remote Controller

Sony introduced the FR7 at IBC in September 2022. It looks like R2D2 mated with a PTZ (pan-tilt-zoom) camera, with the guts of an FX6, and aspirationally added to Sony's Cinema Line. While it has mostly landed in the worlds of multi-cam, sports, and broadcast, with a few tweaks and NODO wheels, FR7 becomes a versatile and affordable mini remote head.

AbelCine introduced me to Boyd Hobbs, NODO founder and cinematographer. A few days later, the best geared head I ever used arrived. More on that soon.

The ILME-FR7 has been on some interesting jobs. James Coker and his engineering team at Funicular Goats, working with AbelCine, had one spinning above Elton John during his *Live Farewell from Dodger Stadium*, as well as on the *Rihanna at the Super Bowl Halftime Show*, and *Alicia Keys for Apple Music Live*.

AbelCine and their partners have been working with FR7 extensively, especially on comedy shows such as *Atsuko Okatsuko: The Intruder*. They've had it on sliders, AGITO dollies, rigged, and remote. JC Sciacca (AbelCine Integration Engineer) and Jeff Lee (AbelCine Director of Education and Product Specialization) described the details. And, soon after, Jeff arrived at FDTimes with an entire system and provided a master class on its use.

Jeff explained, "Because we got involved so early on with the FR7, we had insight into a lot of projects. People were coming to us because we were using pre-production and prototype cameras. Then, as a third-party accessories started to come online, we got really interested in moving those integrations along as well. Where we see this camera really succeeding are in the worlds of multi-cam, concerts, live events, theater, and sports."

JC said, "On a number of our productions, in order to get all of the signals back to video control, we primarily use a MultiDyne SilverBack V. This allows us to gain control of the camera, video, timecode, and genlock back and forth.

"We usually mount the SilverBack next to the FR7 because it's of-

ten in hard-to-reach areas, such as up in a lighting grid on a truss or in front of the stage. If it's close enough to video control, you may not need to run over fiber. It depends on the venue and the position. We are working closely with MultiDyne and providing them feedback on their fiber base for the camera."

"A primary reason for going over fiber is in places with very long cable runs and to manage multiple cameras. Because the FR7 camera only has one SDI output, if you're in a live situation and someone wants a clean and a dirty feed, we actually use the SDI for one and the HDMI for the other. We'll add a small adapter box that converts HDI to SDI and sends those two feeds along the fiber to the control room or truck. Depending on the use case, one could also use NDI to transport a clean or dirty feed to the desired location, there's a lot of flexibility.

"We 3D-printed a base and cheeseplate at AbelCine to give us more mounting options, and we are planning additional things. For most of the concerts we're involved with, everything is internally recorded so that production has highest recording quality from the camera. Usually, the 1080p live feed is going to air or to be used as reference for editing later on. One thing to mention: if we're using POE (Power Over Ethernet), this disables the internal recording on the FR7. In this case, we need to run a dedicated AC to DC power adapter, which isn't a big issue."

It seems that the FR7 could democratize remote heads—maybe not in this iteration, but perhaps in future models that are more rugged and rain-resistant. Jeff agreed, "In addition to not blocking audience views on concerts, we're seeing that the FR7 is often replacing typical lock off camera positions. Now you can move it, or you may want to reposition it a few times during the performance, which begins to open up the possibility for more creative shots. I think as directors and DPs get comfortable with FR7, they'll find even more creative uses than we're seeing today."

Jeff talked about using FR7 on the AGITO modular remote dolly: "We did some tests utilizing two access points to run the FR7 on an

Sony FR7



AGTIO wirelessly and got it to work very well. The camera operator was looking at a feed from a Teradek and, using wheels or the joystick, was able to move, pan and tilt the camera exactly as you would expect. Where we saw some delay issues was when we utilized the iPad at the same time to view the video feed that was being streamed over WiFi to the little preview window in the webpage app. In these situations, we do not use the web app as our preview, but rather use a dedicated production monitor with a Teradek system to transmit and receive the picture, and only use the iPad for menu controls and those type of things. The AGITO dolly operator, of course, has their dedicated controls on another channel.”

The FR7 looks like a mini RIALTO-style camera head with an E-mount in front for interchangeable lenses and a Full-Frame (35.6 x 23.8 mm) sensor with an internal variable ND.6 to ND2.1 (2 to 7 stops). It’s essentially an FX6 sliced in half, and the camera specs are almost the same as FX6. The guts of the camera are in the base. Pan and tilt motors are in the usual places. Since it has an interchangeable lens mount, Sony’s 16-35 T3.1, 18-110 f/4 or 28-135 f/4 zooms

pair nicely. If it’s still lenses you want, Sony has them from 12mm to 1200mm. Add a geared band to a still zoom lens and use it with Chrosziel’s new CDM FSR zoom control for FR7.

The FR7 is approximately \$9699.99 USD. FR7K, which includes the FR7 and SELP28135G lens, is \$12,199.99 USD.

pro.sony.com abelcine.com

Sony FR7 Brief Specs

- Internal XAVC Recording (dual slots for CFexpress Type A and SDXC).
- External RAW Output.
- Total pixels: approx. 12.9 MP. Effective Pixels: approx. 10.3 MP.
- Base ISO 800 or ISO 12800. 15+ stops of dynamic range.
- Sony S-Log3 gamma, wide S-Gamut3 and S-Gamut3.Cine.
- Up to 120 fps 4K (QFHD) and 240 fps FHD.
- Pan Angle: ~340° (does not pan continuously).
- Tilt Angle: -30° to + 195°. Pan Speed: 0.02 deg. to 60 deg./s.



NODO Inertia Wheels



If you want smooth moves with Sony's FR7, it's NODO Inertia Wheels you want from NODO Film Systems. Pete Abel introduced me to Boyd Hobbs, a talented cinematographer who founded the company and launched Inertia Wheels in 2019. A few days later, NODO wheels arrived and made operating the Sony FR7 a pleasure and much smoother than a joystick. From my first day operating a Panahead, so nervous that the eyepiece fogged up, to years of using Moy, CP Mini-Worrall, Arrihead and more, nothing else was as much fun to use as NODO.

NODO wheels are elegantly designed and beautifully crafted (by hand). The wheels are standard sized. The body is compact and very portable. Menus, dials, buttons and connectors are intuitive.

Boyd explained, "NODO Inertia Wheels are all about the Camera Operator experience, starting with the physics of the hand wheel itself. We use in-line motors in the wheels and high-speed processors to adjust the haptics of the wheel.

Haptic control involves two important things: mass and drag. Brake pads adjust drag on mechanical geared heads. Inertia Wheels control drag using contactless electromagnetics in the brushless motors.

"Adjustable mass is not offered in any other wheels. Normally, to get more mass, wheels have to be heavier. NODO Inertia Wheels use motors and encoders to sense the Operator's force, and then the wheel position is adjusted relative to the equations of physics. So, the wheels feel and behave like heavier wheels which operators can change on demand. Give physics a spin."

The Sony FR7 uses VISCA protocol, an IP-based, camera control system. NODO uses an RDX (Rapid Development of X) box to communicate with the wheels—wirelessly or wired directly over a single Ethernet cable or across a network. In addition to FR7, NODO Inertia Wheels work with DJI Ronin, DJI Inspire, ARRI Trinity, MOVI Pro/XL, and many other remote heads.
nodo.film



Chrosziel CDM-SFR Zoom Control for Still Lenses on Sony FR7

Sony ILME-FR7 with Sony E-mount still photography zoom lens and Chrosziel CDM-SFR



Chrosziel's CDM-SFR Zoom Control lets you zoom with many E-mount still photography zoom lenses on the Sony FR7.

CDM-SFR means: **Chrosziel Digital Motor (for) Sony FR(7).**

The zoom motor attaches onto a 15mm lightweight support rod below the FR7's lens mount. Two clips attach to the top and bottom of the FR7's tilt housing on the right side.

Next, connect the CDM-SFR RJ45 cable to the OPTION port at the back of the FR7 (not the Ethernet port—that is used to connect the Sony controller).

Connect the power cables, and you're ready zoom.

Here is a list of Sony approved still photo zoom lenses. Many more will surely follow—and not only Sony.

SEL1224G	12-24mm G Full Frame
SEL1224GM	12-24mm G-Master Full Frame
SEL1635GM	16-35mm G-Master Full Frame
SEL2470GM	24-70mm G-Master Full Frame
SEL2470GMII	24-70mm GMaster II Full Frame
SEL70200G	70-200mm G Full Frame
SEL70200GM	70-200mm G-Master Full Frame
SEL70200GMII	70-200mm G-Master II Full Frame
SEL1670Z	16-70mm Z APS-C lens

chrosziel.com



Above: Chrosziel's CDM-SFR Zoom Motor, front and back

Sony ILME-FR7 with Chrosziel CDM-SFR



Sony RM-IP500 Remote Controller

