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# SCALING DIGITAL HEIGHTS

THE MEDIA AND ENTERTAINMENT INDUSTRY GREW TO INR 1.5 TRILLION IN 2017, ACCORDING TO A FICCI-EY REPORT. THIS SIGNALS GREAT OPPORTUNITY FOR CONTENT CREATORS AND BROADCASTERS ALIKE

# ON THE RADAR SCREEN

The latest technology developments in production monitors are making them more user-friendly, yet cost-efficient, striking the balance to become effective in post-production activities

BY BINDU GOPAL RAO



▲ Professional monitors are used in every stage of the imaging chain in content creation to display.

**I**maging professionals in post-production houses involved in digital colour rendering have high expectations from the equipment they use. This is especially true when it comes to their production monitors, as these are a must to offer uncompromising colour performance and calibration tools.

Over the years, this product range has seen the birth of newer technologies, which has helped improved the quality of content transmission. The latest production monitors available include several new aspects like refresh rate, viewing angle and contrast ratio.

In India, ARK Infosolutions provides a range of TV Logic's production monitors that have multiple interfaces, including 3G-SDI, HDMI, DVI, Component, CVBS, S-Video, VGA and audio. These monitors are ideal for TV-stations, ENG news crews, production studios and directors in live and post-production applications.

There are other products that directors swear by for their projects. A case in point is the 4-bay G-SPEED Shuttle with EV Series Bay adapters that have 20TB of disk storage on-board alongside the EV Series Reader Atomos Master Caddy Edition and an EV Series bay adapters that Michael Coleman, director, Atomos used. He said, "Gone are the bottlenecks and the speed humps. There is



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— MOHIT BHASIN, HEAD OF TECHNOLOGY, SUPARI STUDIOS.

flexibility now thanks to the superior drive technology. The caddy's and drive's speeds that I am using are amazing."

Mohit Bhasin, head of technology, Supari Studios said, "Currently, technology is really moving rapidly, especially when it

comes to the resolution films and the like. Now, there are 8K cameras. So, when you shoot a film in 8K, ideally you should carry out post-production also in 8K; if not, your work-in-progress files then at least your final files should be viewed in the final output resolution. This also means that you have to keep up to date with what new technologies are being announced and for what price point. CES 2018 just concluded a little while back and we saw a bunch of new monitors from LG, Dell, Lenovo, Asus and in fact, even Nvidia came out with a monitor."

Professional monitors are used in every stage of the imaging chain in content creation to display, which typically range from on-site shooting at the actual location to editing to image grading at the post-production facility. Apart from the application, customers usually make their choice based on screen size, type of panel and budget.

## MAKING THE CUT

Today, production monitors offer uncompromising colour performance and calibration tools. They support colour gamut's that conform to the ITU standard and match EBU/Rec. 709 specifications for HD broadcast video, allowing for accurate and standardised colour reproduction. "All these monitors are field upgradable using optional handheld tool that quickly and easily loads firmware updates into individual monitors. All these monitors

are calibrated prior to shipment with factory standards. TV Logic offers free colour calibration utility that automatically realigns monitor for accurate color reproduction. Four different measurement probes are supported that cover various requirements of sensitivity, speed and budget. TV-logic recommends the Klein K-10A probe as it offers both fast and highly accurate calibration as well as broad compatibility with the entire TV-logic line. The other supported probes include X-Rite i1 Display as well as the most advanced Konica Minolta CA-210 color analyser," said Mohan Rawat, country manager, broadcast and post, ARK Infosolutions.

When it comes to key decision-making, it is ideal to have the best hardware to help bring to life the creative teams vision. "And the quicker you realize issues with your final output the easier it will be to take your project through the defined pipeline. This would usually save a bit of back and forth on the final files especially when deliverables are nearing and you just begin to start watching

your project in high formats and resolution, as would be seen by the audiences," opined Bhasin.

The panel quality, processors and the overall electronics, which form the basic structural components, determine the performance of professional displays. Traditionally, the monitors were built with metal chasses but were heavier and were difficult to carry on location. "Sony successfully overcame this challenge by adopting PC/ABS to reduce weight while maintaining the same robustness. The advantage was lighter weight body which could be easily carried. These are also tested for vibrations for making them useful in OB vans and trucks. Professional monitors are also designed to be dependable and stable with tools to measure input video signals," said Amitab Kumar, marketing head, media solutions, professional solution division, Sony India. He added that the company's LMD series has the same signal-processing engine as the PVM-A series but with a reduced cost

allowing us to maintain color reproduction quality that responds to the needs of the professionals. Further colour reproduction of the LMD and PVM series is quality controlled individually at the factory. Sony professional monitors are also tested for long time aging until LCD stabilises thus ensuring reliability on field for retakes.

### TECHNOLOGY MATTERS

New technologies are on the horizon for production displays, as well as camera and field production monitors. CRT displays have been the gold standard for precision quality control monitoring for many years, but it's getting hard to find CRT monitors these days. "Improvements to flat panel displays combined with technology changes that reduce (but do not eliminate) the need for calibrated displays make flat panel LCD monitors the most popular choice today. Still, LCD display technology is getting more refined with each passing year. LCD displays are low-cost, lightweight and can produce excellent images,



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and new LCD developments such as In-Plane Switching (IPS) promise to give LCD displays much wider viewing angles and better visibility in bright light,” explained Rawat.

Another improvement in LCD technology is the use of LEDs for the backlight instead of CCFLs. It’s important to understand that displays with LED backlights are not technically LED displays; rather, they are LCD displays that use an LED backlight. These LED/LCD hybrids bring big benefits: deep blacks and improved contrast, thinner cases, lighter weight and lower power consumption.

A recent trend in display technology is the use of organic light-emitting diodes (OLEDs). The benefits of OLED display—including high brightness and wide viewing angles—stem from the fact that the display consists of pixel-sized LEDs; light from the LEDs does not pass through a controlling matrix such as that used in LCD/LED hybrid displays. Monitors are available for many other specialisations, such as 3D and the latest, 4K monitoring. While 4K is taking off, it is still in its early stages. There will continue to be refinement and advancement in professional video monitors, as well as continued creativity shown by manufacturers with monitors that pack in more features and capabilities.

### HIGH DEFINITION IMPACT

High dynamic range (HDR) is a bigger breakthrough compared to 4K as the latter



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– MOHAN RAWAT, COUNTRY MANAGER, BROADCAST AND POST, ARK INFOSOLUTIONS.

are merely measures of resolution, which is just one of the many characteristics of a high-quality display such as higher contrast ratio, smoother motion, more colors,

enhanced frame rate, etc. “Increased pixel count does not necessarily mean the viewing experience will be better. HDR pushes the limit of peak brightness and black level to as much as 1000 nits and 0.05 nits, respectively. This delivers extremely natural pictures,” said Rawat.

2160p (4K) video is widely being adopted by streaming services such as YouTube, Amazon, Vimeo, and Netflix. Netflix offers some blockbuster shows in 4K. But it does not necessarily enhance the viewing experience; however, HDR does. With HDR, on screen fire effects will look much warmer, and images will be lush and vibrant. It is a technology that’s arguably more noticeable than the upgrade from 1080p to 4K. Display makers are manufacturing HDR supported TVs, Consumers will opt for HDR TVs as it gains popularity. That’s when content owners will realise the shift in viewer preference and drive HDR video production.

### LOOKING AHEAD

Most of the production monitors in conventional post-production houses were deployed several years ago. Hence there are many reinstallation or revitalizing opportunities that lie within for solution providers. There is a huge opportunity lies ahead with the advent of newer technologies and the facilities using them, keep upgrading themselves at regular interval. Currently, the buzzword is HDR.

Bhasin explained, “I think we can safely say that it is a function of defining a workflow for your film. The decision making process starts right in the beginning and goes on till the very end, where post production lies. If the team decides that the entire workflow needs to be done in 4K and they take on more work from that perspective then it would help to have a pipeline that can support it, right from the workstations themselves to the monitors and so on. If you do a get a 4K monitor, for example, but do not have a computer or a colour grading software that can support 4K streams then it will be ineffective.”

In all, it certainly seems all about building the right workflows, pipelines and ecosystems. ■