

# Broadcasting Display Solutions

Studio reimagined, realized.

The Wall | LED Signage | Video Wall | QLED 8K Signage | Business Monitor | Color Expert



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Samsung inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems, and memory, system LSI, foundry and LED solutions. For the latest news, please visit the Samsung Newsroom at <http://news.samsung.com>.

## For more information

For more information about Samsung Display Solutions, visit [www.samsung.com/business](http://www.samsung.com/business) or [www.samsung.com/displaysolutions](http://www.samsung.com/displaysolutions)

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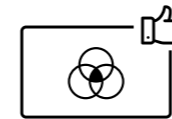
Samsung Electronics Co., Ltd.  
416, Maetan 3-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do 443-772, Korea



\* Samsung Indoor LED IF P1.5 Series and LCD signage solution  
News Studio, MediaCorp's Channel News Asia, Singapore

## Visual displays at the heart of the studio

The broadcasting industry is evolving rapidly, discovering the latest ways to deliver compelling content to its audiences. As the heart of this transformation is the broadcast studio, the center of the action. Visual display technology can take any transformation to the next level, providing the studio and its staff with all the requirements needed. From premium picture quality, to versatile design, robust reliability and a variety of innovative options, the right display technology can take any studio to the next level.



### Engage viewers with life-like images

It is critical that any studio delivers refined, realistic picture quality to its viewers, bringing every broadcast to life in the most engaging way possible.



### Transform studio as imagined

With flexible design and installation options, any studio can realize its transformation vision and create a space optimized to best suit their needs and deliver the best broadcasting possible.

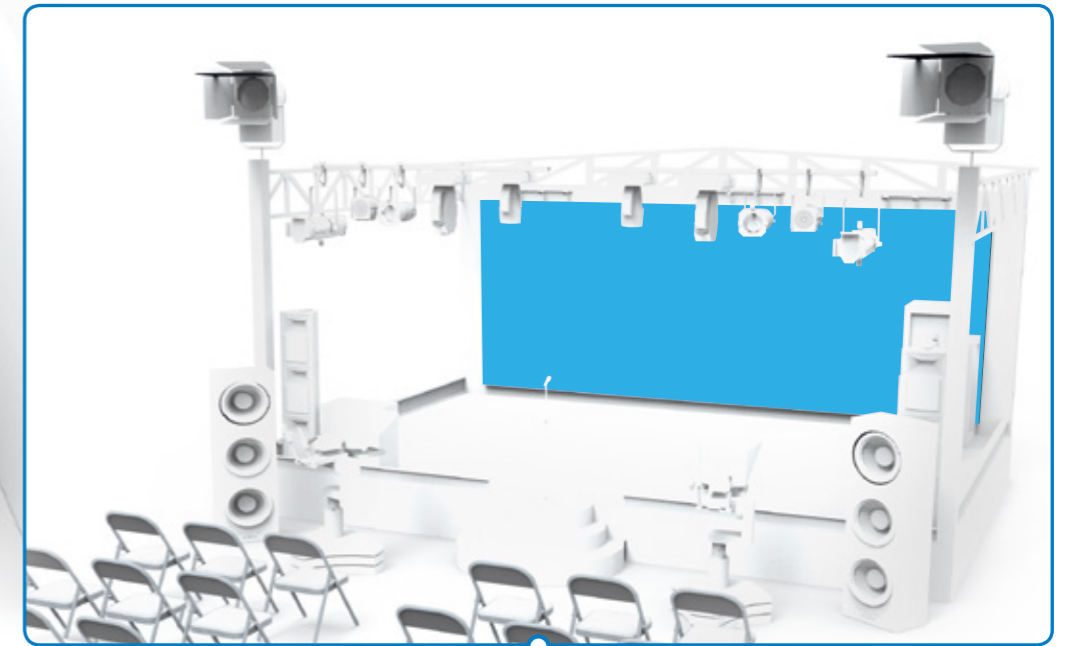
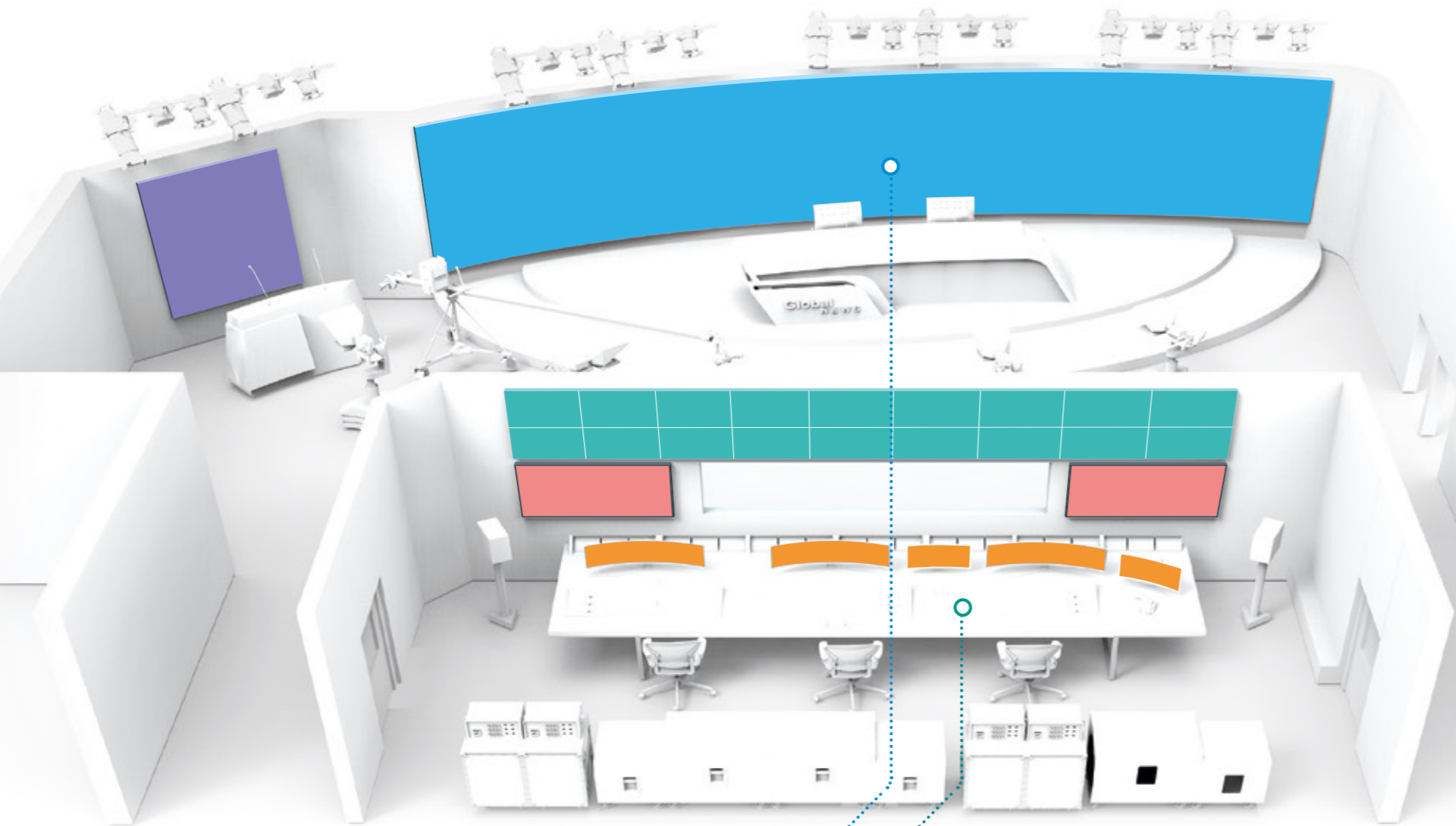


### Unfold your creative work efficiently

At the heart of any efficient and engaging broadcast is visual display technology, ensuring creative content is delivered seamlessly without disruptions.

# What Samsung offers

Samsung's comprehensive portfolio of visual display products enable a variety of applications that can be directly adopted to accelerate innovation and transformation.



## Studio

Studios are continuously evolving. Indoor LED signage is the most advanced technology that replaces traditional back wall or video wall technology with incomparable picture quality.

### Related products

The Wall, The Wall Remote Power, Indoor LED signage

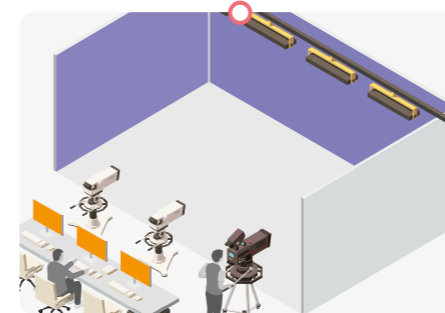


## Control Room

A control Room is the main command center of broadcasting, where all the information is gathered, and real-time decisions are made. That's why it's critical to be able to monitor various screens separately, as well as together.

### Related products

Video wall, QLED 8K signage, business monitors

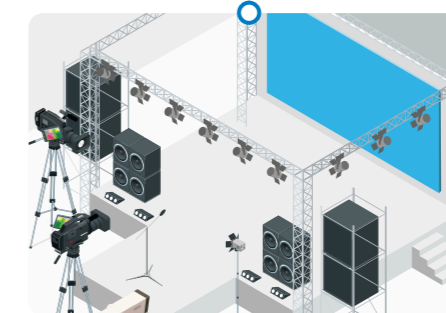


## Virtual Production Studio

Modern video production demands more and more post-production work, such as computer graphics. With the newest display technology which replaces traditional features such as chroma key, time and effort are dramatically reduced.

### Related products

The Wall

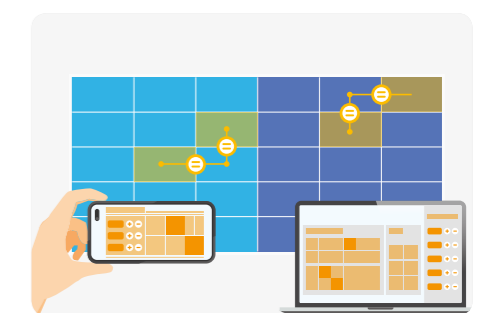


## Stage

Large and eye-catching displays attract a larger audience. At the same time, installation and disassembly should be simple and easy due to time constraints when setting up a stage.

### Related products

Indoor/Outdoor LED signage



## Calibration Solution

Accurate color and image quality are critical values of a broadcasting display, and how these elements are seen through the camera should also be checked. Powerful and easy calibration tools can help to ensure optimal uniformity.

### Related products

Color Expert

# Studio

Live Studio & Virtual Production Studio

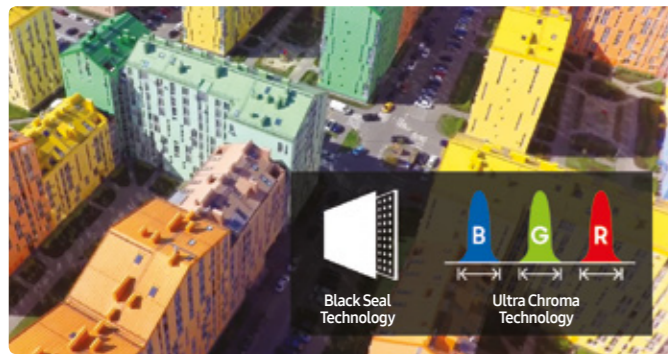
## Grab audience attention with advanced visual displays

No part of a broadcast is more important to the viewer than the studio. Ensure your viewers are captivated and engaged with industry leading visual technology, unique custom design and accurate color presentation available from Samsung's studio visual display offerings.



\* Samsung Indoor LED IF P1.5 series (4 UHD screens), Broadcasting Studio, Polsat, Poland

## The Wall: IWJ, IWA\* series



\*IWA is available from 2Q, 2021

### Black Seal & Ultra Chroma technology

The Wall helps broadcasters find the ideal color presentation. Black Seal technology showcases unparalleled contrast and immaculate detail. Ultra Chroma technology produces vibrant and natural colors. The Wall's narrower wavelength of color results in higher color purity, approximately twice that of conventional LEDs.



Black Seal Technology



Ultra Chroma Technology



Deep Black & Color



Non-glare

## The Wall: IWJ-R series



### Operational safeguards

The Wall features multiple operational safeguards intended to minimize screen failures including off board hot swap power supply and power/signal redundancy. These redundant systems help to ensure content interruptions are reduced as much as possible, keeping your message front and center.



Off-board power supply



Power redundancy



Signal redundancy



NEC Class for cable



### Quantum HDR technology

The Wall renders true-to-life imagery optimized for broadcasting. Advanced HDR technologies, including LED HDR and HDR10+ support, optimize picture quality, while an extremely accurate grayscale expression allows for more precise and natural imagery.



Quantum Processor Flex



Quantum HDR Technology



LED HDR10+



Multi-link HDR

## Indoor LED Signage: IFJ, IFA\*, IFR, IEA series



\*IFA is available from 2Q, 2020

### Customized color presentation

Detailed color management functionalities allow IF series users to select, store and deploy the RGB color gamut shades that best fit their own color standards and content requirements. This helps broadcasters quickly deploy content at high clarity across multiple screens.



Color management



Fine-tune uniformity

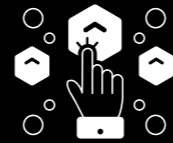


White balance



18 bit processing

# Why Samsung's The Wall for virtual production?



## Groundbreaking Micro LED technology enables content creation to go beyond the limits of creativity

To deliver realistic images and immersive content, the broadcasting and film industries have always developed new and innovative filming technologies. The most reliable and effective way was to shoot with real physical objects at a physical location, but this is too time-intensive and costly. For decades, computer graphics have been the most popular method to overcome these practical obstacles. It's one of the most compelling, creative solutions but also is unable to deliver the natural, vibrant picture quality required. Therefore, there is growing demand for Micro LED technology – such as Samsung's The Wall – offering versatile background options for a range of scenes, environments and atmospheres. The Wall's high-resolution picture quality makes every scene appear as the creator intended – ultimately saving time and cost, while enabling greater flexibility.



### Case Study

#### How The Wall transforms the film making process?

Kropac Media, a German filmmaker, adopted Samsung's The Wall to overcome the limitation of location shooting during the pandemic, and innovate their post-production process. With The Wall, the creativity and flexibility of actors and crew staff has been increased to achieve a better overall quality of results.

- **Customer** : Kropac Media
- **Industry** : Media, Entertainment
- **Product** : The Wall(IWJ) P1.2
- **Usage** : Virtual Production



#### Chroma Key

- ✓ Additional computer graphics required
- ✓ Unnatural acting & light reflection

#### The Wall

- ✓ Minimized post production
- ✓ Natural acting & light reflection

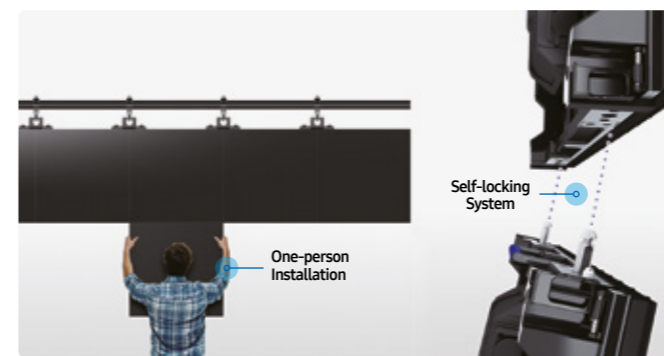
## Stage

### Capture audience imagination with real-time content

Digital signage is now critical to creating an impactful experience at live events. Audiences expect content that enhances each performance and provide crystal clear images from any location in the venue, indoor or outdoor, offering a memorable experience.



### Indoor Rental LED Signage: VMR-I series

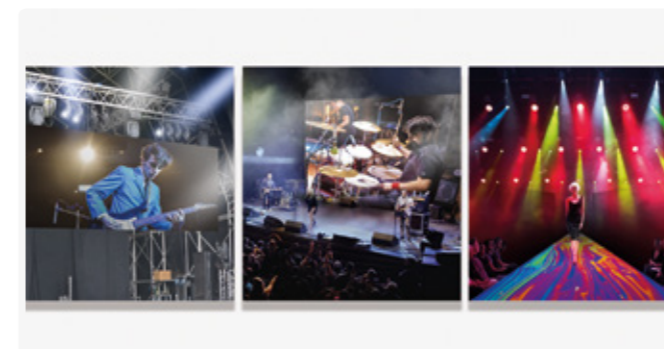


#### Real-time content delivery and rotation support

Samsung's VMR-I Series enables the delivery of real-time content with reduced frame latency, critical for live concerts and events. The display's ability to rotate freely also helps to effortlessly create customized designs while ensuring content is played regardless of the layout, no matter how unique.

- Edge protection
- Slim depth (86mm)
- Light weight (7.1kg)
- One-man installation

### Outdoor Rental LED signage: VMR-O series



#### Optimum performance in any environment

All components of the VMR-O Series undergo strict testing to ensure optimum performance at all times. The series has full outdoor IP65/65 validated design, protecting it against water, dust and all outdoor elements, ensuring continuous operation regardless of the environment.

- Various weather conditions
- IP65 rating
- Full front & rear service
- Cableless design

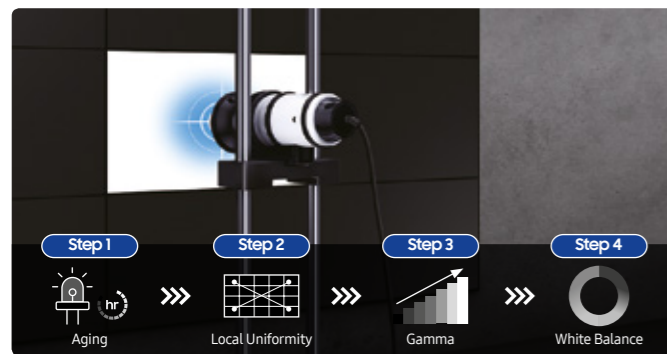
# Control room

## Empower efficient and effective decision making with display technology

Behind every live broadcast is an engaged and efficient control room, making critical decisions in real-time. Samsung display technology delivers the information needed in 8K resolution for crystal clarity, with flawless uniformity, all supported by long-term performance for peace of mind.

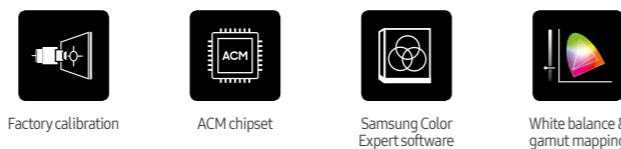


## Video Wall Display: VHR-R, VHT-E, VMT-E, VMT-U series



### Flawless uniformity

To ensure outstanding picture quality, all Samsung video wall displays are fine-tuned with a strict multi-step calibration process. Users may also adjust detailed settings to suit their individual needs using Samsung's free powerful software, Color Expert Pro. For businesses needing a simpler solution, Color Expert Pro Mobile makes for quick and easy calibration using a mobile device camera.



### Long-term performance

To provide consistent display clarity and uninterrupted content in any operational environment, Samsung's video wall panels undergo rigorous performance testing. Samsung's superior panel prevents screen darkening, light leakage or any deterioration, ensuring long-term delivery of brilliant content.



\* ISTA: International Safe Transit Association

## QLED 8K Signage: QPR-8K, QPA-8K\* series



### Real 8K resolution

Samsung QLED 8K offers super high resolution with more than 33 million pixels, 4 times higher than 4K UHD content and 16 times higher than FHD. Content creators have a more accurate view and greater control of images through editing tools for multiple videos and projects at once.



\*Note: Native 8K content based on current 8K streaming, connectivity and decoding standards. Future and certain third-party standards not guaranteed or may require additional device/adaptor purchase.  
\* QPA-8K is available from 2Q, 2021

## High resolution monitor: TU87F / S80UA / S80A



### Detailed clarity

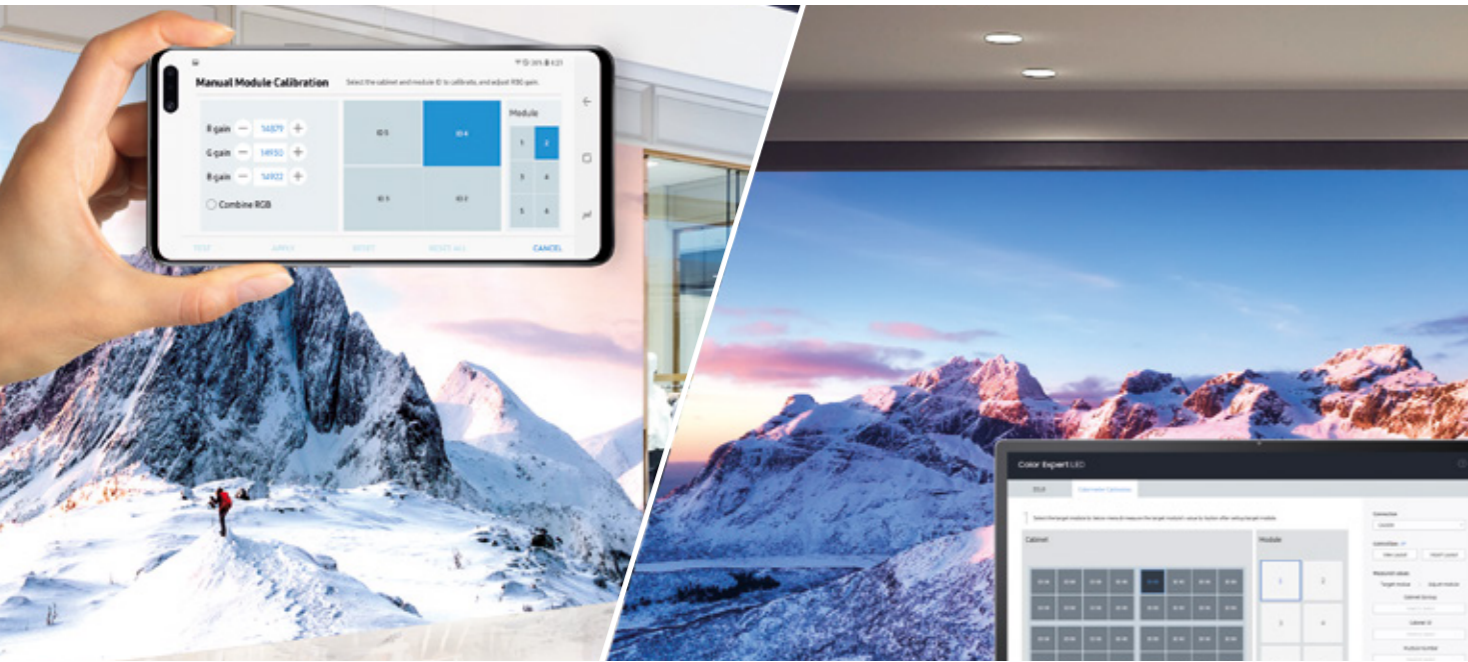
Samsung's UHD monitors display crisp, clear images and text with much greater sharpness. So the staffs can enjoy higher readability with reduced eye strain in control room environments that require long work hours.



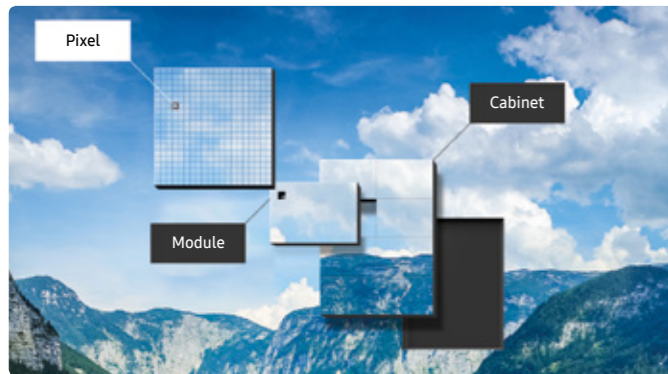
# Calibration solution

## Powerful calibration tools to optimize picture quality

Samsung's leading calibration tools – Color Expert LED and Color Expert Pro – offer full criteria on color calibration. Mobile calibration also offers a simplified tuning process and uniformity down to the pixel-level, meaning visuals are presented exactly as intended.



## Color Expert LED



### Pixel-level tuning

PC

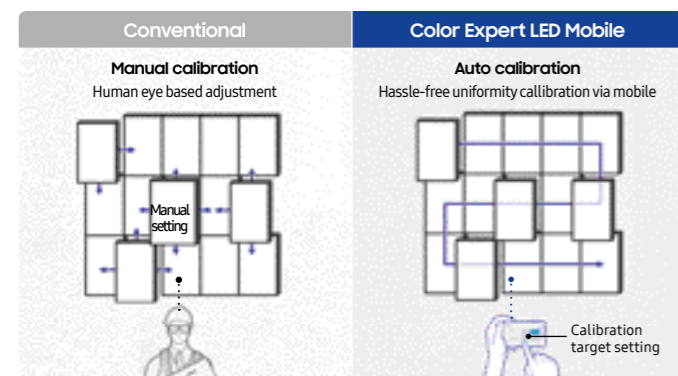
Samsung's Color Expert LED provides pixel-level uniformity, bringing more precise and refined picture quality to life, when compared with module-level uniformity. Using professional calibration devices, the uniformity is accurate and flawless, enhancing even the subtlest details.



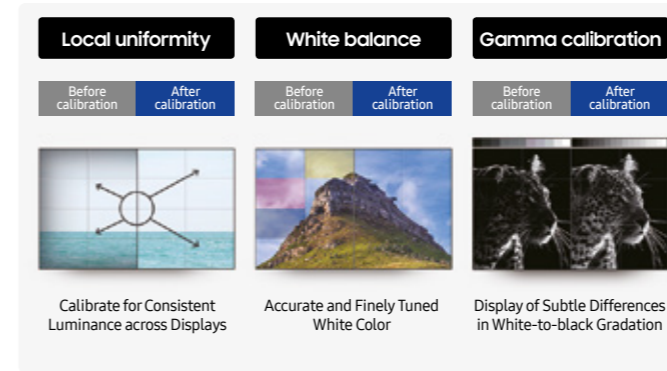
### Automatic calibration

Mobile

Using just a mobile phone camera and Wi-Fi network, calibration can be done without the need for additional, expensive professional devices. Color Expert LED Mobile calibrates automatically based on a target area ensuring it does not miss any subtle differences in color and brightness.



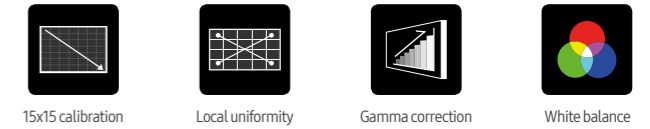
## Color Expert Pro



### Enhanced picture quality

PC

Color Expert Pro delivers stunning before-and-after results. White balancing options enable accurate white color. Users can calibrate for consistent luminance and color uniformity across displays. Gamma and gray scale calibration brings out subtleties, detail and depth in white-to-black gradation.



### Convenient refinement

Mobile

Color Expert Pro Mobile uses the smartphone camera to quickly and easily calibrate without a professional calibrator physically connected to the video wall. This highly cost-effective solution can calibrate up to 25 sets (5x5) of displays at once – dramatically faster than one-by-one calibration methods.



\*Color Expert Pro Mobile supports white balance calibration only. Local uniformity and gamma and gray scale is not supported.

### Samsung Color Expert technology



Factory Calibration

Multi-step factory fine tune for uniform brightness and colors



ACM Chipset



Hardware Calibration



15x15 Calibration (Color Expert Pro)

18 bit color processing (Color Expert LED)



Calibration Software



Color Expert Pro Color Expert LED



Color Expert Pro Mobile Color Expert LED

### Expert's consulting



### Do you need expert's consulting?

Every studio has its own brand identity and picture quality standard. Samsung understands the unique needs of individual broadcasters and has experienced professionals available for consultation.

For more information speak with your regional sales representative or visit [displaysolutions.samsung.com](http://displaysolutions.samsung.com)

# Specifications

## LED signage

| Project  | Pixel pitch | Diode type             | Brightness (Peak*/Max)     | Contrast ratio**   | Certification  | Cabinet size (LxHxD, per cabinet)                                      | Weight (per cabinet)  | Service***   | IP rating            |      |
|----------|-------------|------------------------|----------------------------|--|--|--|---|--|----------------------|------|
| The Wall | IWJ / IWJ-R | P0.8, P1.2, P1.6       | Flip-chip RGB LED          | 1,600 nit / 500 nit (P0.8),<br>1,600 nit / 800 nit (P1.2),<br>1,400 nit / 1,000 nit (P1.6)                               | 24,000:1 (P0.8, P1.2),<br>21,000:1 (P1.6)                                | EMC Class B, Safety 60950-1  | 806.4 x 453.6 x 72.2 mm (P0.8, P1.2),<br>806.4 x 453.6 x 72.8 mm (P1.6) | 12.5 kg (P0.8, P1.6),<br>12.2 kg (P1.2)                                    | Front                | IP20 |
|          | IWA****     | P1.2, 1.6              | Flip-chip RGB LED          | 1,600 nit / 800 nit (P1.2),<br>1,400 nit / 1,000 nit (P1.6)  | 24,000 : 1 (P1.2, TBD),<br>21,000:1 (P1.6, TBD)                          | EMC Class B, Safety 62368-1 /60950-1                                   | 806.4 x 453.6 x 36.6 mm   | 11.2 kg (TBD)  | Front                | IP20 |
| Indoor   | IFJ         | P1.2                   | Surface Mount Device(SMD)  | 1,200 nit / 600 nit  | 8,000:1  | EMC Class B, Safety 60950-1, FCC, UL, CB, KCC, RoHS                    | 806.4 x 453.6 x 76.7 mm   | 11.8 kg  | Front and parts rear | IP20 |
|          | IFA****     | P2.1, P2.5, P4.2       | Surface Mount Device (SMD) | 1,600 nit / 1,000 nit (P2.1)<br>2,400 nit / 1,200 nit (P2.5)<br>1,700 nit / 1,200 nit (P4.2)                             | 7,200 : 1 (P2.1, TBD)<br>10,000 : 1 (P2.5, TBD)<br>7,000 : 1 (P4.2, TBD) | EMC Class B, Safety 62368-1 /60950-1, TUV (TBD), EN13823 Class B (TBD) | 806.4 x 453.6 x 37.9 mm   | 14.0kg (TBD)   | Front                | IP20 |
|          | IFR/IFR-F   | P1.5, P2.0, P2.5, P4.0 | Surface Mount Device(SMD)  | 1,600 nit / 800 nit (P1.5)<br>1,600 nit / 1,000 nit (P2.0)<br>2,400 nit / 1,200 nit (P2.5)<br>1,500 nit / 900 nit (P4.0) | 12,000:1 (P1.5)<br>7,200:1 (P2.0)<br>10,000:1 (P2.5, P4.0)               | EMC Class A, Safety 60950-1, FCC, UL, CB, KCC, RoHS                    | 960 x 540 x 79.5 mm (IFR),<br>240 x 540 x 81 mm (IFR-F)                 | 11.8 kg (IFR P1.5),<br>12.4 kg (IFR P2.0, P2.5, P4.0),<br>3.2 kg (IFR-F)   | Front                | IP20 |
|          | IEA/IEA-F   | P2.5, P4.0             | Surface Mount Device (SMD) | 1,000 nit / 500 nit (P1.5)<br>800 nit / 500 nit (P4.0)   | 5,000:1  | EMC Class A, Safety 62368-1 /60950-1                                   | 960 x 540 x 79.5 mm (IEA),<br>240 x 540 x 81 mm (IEA-F)                 | 10.8kg(IEA),<br>3.2kg(IEA-F)   | Front                | IP20 |
|          | VMR-I       | P2.6, P2.9, P3.9       | SMD 3-in-1                 | ≥ 1,000nits  | 4,000:1  | EMC Class B, Safety 60950-1  | 500 x 500 x 86mm (LxHxD, per cabinet)                                   | 8.0±0.3kg/panel (P2.6)<br>7.8±0.3kg/panel (P2.9)<br>7.4±0.3kg/panel (P3.9) | Front and rear       | IP30 |
| Outdoor  | VMR-O       | P2.9, P3.9             | SMD 3-in-1                 | ≥ 4000nits (P2.9)<br>≥ 4500nits (P3.9)   | 4,000:1  | EMC Class A, Safety 60950-1  | 500 x 500 x 86mm (LxHxD, per cabinet)                                   | 11.8kg(IEA),<br>12.4 kg (IEA),<br>10.8 kg (IEA),<br>3.2 kg(IEA-F)          | Front and rear       | IP65 |

\* Peak value according to IDMS (Information Display Measurement Standard)

\*\* Contrast Ratio: Measured under 10lux light. Contrast in darkroom exceeds 1000000:1

\*\*\* Front service: Front service to power supply and main board on a cabinet level

\*\*\*\* IWA, IFA's specification is preliminary and subject to change without notice at the time of release.

## Video wall display

| Project | Screen size | Resolution    | Brightness | Contrast ratio | Operation hour | B-to-B (mm) | Bezel width   | Connectivity   |
|---------|-------------|---------------|------------|----------------|----------------|-------------|---|--|
| VHR-R   | 55"         | 1,920 x 1,080 | 700 nit    | 1,100:1        | 24/7           | 0.88mm      | 0.44mm (Even)   | In: DVI-D, DP1.2, HDMI 2.0(2), HDCP 2.2, Stereo Mini Jack<br>Out: DP1.2(Loop-out), Stereo Mini Jack<br>Ext: RS232C(In/Out), RJ45 |
| VHT-E   | 55"         | 1,920 x 1,080 | 700 nit    | 1,200:1        | 24/7           | 1.8mm       | 0.9mm (Even)  | In: DVI-D, DP1.2, HDMI 2.0(2), HDCP 2.2, Stereo Mini Jack<br>Out: DP1.2(Loop-out), Stereo Mini Jack<br>Ext: RS232C(In/Out), RJ45 |
| VMT-E   | 55"         | 1,920 x 1,080 | 500 nit    | 1,200:1        | 24/7           | 1.8mm       | 0.9mm (Even)  | In: DVI-D, DP1.2, HDMI 2.0(2), HDCP 2.2, Stereo Mini Jack<br>Out: DP1.2(Loop-out), Stereo Mini Jack<br>Ext: RS232C(In/Out), RJ45 |
| VMT-U   | 46", 55"    | 1,920 x 1,080 | 500 nit    | 1,200:1        | 24/7           | 3.5mm       | 46":<br>2.25mm(U/L),<br>1.25mm(R/B)<br>55": 2.3mm(U/L),<br>1.2mm(R/B) | In: DVI-D, DP1.2, HDMI 2.0(2), HDCP 2.2, Stereo Mini Jack<br>Out: DP1.2(Loop-out), Stereo Mini Jack<br>Ext: RS232C(In/Out), RJ45 |

## QLED 8K signage

| Project | Screen size   | Resolution    | Brightness               | Contrast ratio | Operation hour | SoC      | S/W          | Connectivity   |
|---------|---------------|---------------|--------------------------|----------------|----------------|----------|--------------|--|
| QPR-8K  | 82"           | 7,680 x 4,320 | 500 nit (peak 4,000 nit) | 1,850:1        | 16/7           | SSSP 7.0 | MagicINFO S7 | In: HDMI 2.0(4, including 8K 60p input support1), HDCP 2.2, USB 2.0(3)<br>Out: Optical(Digital Audio Out)<br>Ext: RS232C(In), RJ45 |
| QPA-8K* | 65", 75", 85" | 7,680 x 4,320 | 500nit (peak 2,000 nit)  | 1,200:1        | 16/7           | SSSP 9.0 | MagicINFO S9 | In: HDMI 2.1(HDMI4), HDMI 2.0 (HDMI1,2,3), HDCP 2.2, USB 2.0(3)<br>Out: Optical(Digital Audio Out)<br>Ext: RS232C(In), RJ45        |

\* QPA-8K's specification is preliminary and subject to change without notice at the time of release.

## Business monitor

| Type            | Project | Screen size | Flat/Curved | Aspect ratio | Resolution  | Brightness (Typ./Peak) | Refresh rate | Connectivity                                  |
|-----------------|---------|-------------|-------------|--------------|-------------|------------------------|--------------|---|
| High resolution | TU87    | 32"         | Flat        | 16:9         | 3840 x 2160 | 250 nit                | 60 Hz        | Thunderbolt 3(2), HDMI 2.0, DP1.2, USB 2.0(2) |
|                 | S80UA   | 27"         | Flat        | 16:9         | 3840 x 2160 | 300 nit                | 60 Hz        | DP1.2, HDMI 2.0, USB Type-C, USB3.0(3)        |
|                 | S80A    | 32", 27"    | Flat        | 16:9         | 3840 x 2160 | 300 nit                | 60 Hz        | DP1.2, HDMI 2.0, USB3.0(3), USB2.0            |

## Color Expert solution

| Project                 | Technology type                                   | System requirement  | Display compatibility   | Calibration feature  |
|-------------------------|---|---|---|--|
| Color Expert LED        | PC software calibration with ACM chipset          | Windows 7 32bit/64bit, Windows 8 32bit/64bit, Windows 10 32bit/64bit<br>A calibrator is required to use the Samsung Color Expert LED software.<br>Customers must purchase the calibrator separately.  | IWJ (The Wall) P0.8, P1.2, P1.6<br>IFR P1.5, P2.0, P2.5, P4.0<br>IFJ P1.2 | White balance, Gamut mapping,<br>Color temperature, Pixel-level uniformity |
| Color Expert LED Mobile | Mobile application calibration with mobile camera | Samsung Galaxy phone only   | IWJ (The Wall) P0.8, P1.2, P1.6<br>IFR P1.5, P2.0, P2.5, P4.0<br>IFJ P1.2 | White balance,<br>Module & screen-level uniformity                         |
| Color Expert Pro        | PC software calibration with ACM chipset          | Windows 7 32bit/64bit, Windows 8 32bit/64bit, Windows 10 32bit/64bit<br>A calibrator is required to use the Samsung Color Expert Pro software.<br>Customers must purchase the calibrator separately.<br>X-Rite i1 Display Pro is recommended. | VHR-R, UHN-E, UHF-E, UMN-E, UMH-E   | White balance, Gamma correction,<br>Local uniformity                       |
| Color Expert Pro Mobile | Mobile application calibration with mobile camera | Samsung Galaxy phone only   | VHR-R (PC-less), UHN-E, UHF-E, UMN-E, UMH-E (with PC)                     | White balance  |