Pixelworks Powers OnePlus 11 Smartphone to Redefine Visual Excellence for Mobile Gaming

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Continued Partnership with OnePlus Introduces New Super Frame Rate and Picture Quality Engine on Smartphones, Featuring Pixelworks' Low Latency MEMC and Low Power Super-Resolution Technologies

SHANGHAI, Jan. 4, 2023 /PRNewswire/ -- Pixelworks, Inc. (NASDAQ: PXLW), a leading provider of innovative video and display processing solutions, today announced the newly launched OnePlus 11 flagship smartphone China version incorporates the Pixelworks X7 visual processing chipset and delivers a first of its kind solution, which was jointly developed and tuned by the two brands. By leveraging Pixelworks' core technologies, including the first ultra-low latency MotionEngine®, low power super-resolution and industry leading professional color calibration, the OnePlus 11 smartphone redefines the visual boundary between virtual and real worlds, while also establishing a new level of visual excellence for mobile gaming.

The OnePlus 11 smartphone is one of the first smartphones to utilize the Snapdragon® 8 Gen 2 Mobile Platform from Qualcomm Technologies, Inc. In terms of display, the smartphone sports a 6.7-inch 2K curved display with the real LTPO 3.0 technology and supports refresh rates of up to 120 Hz. In terms of camera, it features a triple-camera setup with a 50MP primary sensor, a 48MP ultra-wide lens, and a 32MP telephoto lens. The smartphone also incorporates a 5000mAh battery and supports 100W fast charging.

Driven by a pioneering commitment to gaming and display performance, OnePlus introduced its long-awaited Super Frame Rate and Picture Quality Engine on the newly released OnePlus 11 smartphone. Following extensive planning and coordination, this new solution provides upgraded and consistently stable high frame rate and superior picture quality across a growing number of games, ushering in a new era of visual excellence for mobile gaming. Through cooperation with gaming engine partners, OnePlus utilizes its exclusive and self-developed HyperBoost gaming engine to help the smartphone's processor better allocate and manage resources needed for the games. Additionally, Pixelworks' professional rendering chipset optimizes the processed gaming data to ensure that game content runs seamlessly on the smartphone at high frame rate and with high resolution.

As a key element of OnePlus' Super Frame Rate and Picture Quality Engine solution, the Pixelworks X7 visual processing chipset contributes further technical integration and visual optimization to the display pipeline. The number of high frame rate games powered by Pixelworks low-latency MEMC technology has now exceeded 100 titles. The technology has also brought comprehensive 120fps smooth gaming experience to consumers and set a new benchmark in the industry. The low power super-resolution technology uses an advanced algorithm to achieve image super-resolution reconstruction, generating high-resolution game graphics with clearer texture and richer details, surpassing the picture quality of the original game content. In addition, the chipset also maintains a consistently high standards in terms of SDR2HDR, color and brightness calibration, bringing users visual enjoyment with authentic picture quality and great eye-comfort. Coupled with the joint tuning efforts of Pixelworks and OnePlus, the OnePlus 11 smartphone succeeds in supporting both high frame rate and high picture quality simultaneously in top games, such as *Glory of the King*, *Game for Peace* and *Genshin Impact*. The resulting end performance overcomes historical systems-level limitations to uniquely deliver the full converged advantages of both 120 fps and a 2K resolution screen.

Specific to the excellent visual display qualities enabled by the Pixelworks X7 visual processor, it provides the OnePlus 11 smartphone with the following advanced capabilities:

Ultra-Low Latency MotionEngine® Technology – Driven by advanced algorithms and innovative architecture, the technology supports ultra-low latency frame interpolation that can boost the frame rate of original content to as high as 120fps while maintaining comparable smoothness of picture quality. Further, the technology ensures minimal latency as low as 10ms, which is well beyond the range of human perception. This function has been optimized for over 100 popular mobile games, including *Glory of the King, Game for Peace, League of Legends, Genshin Impact* and *Sky: Children of Light.*

Low Power Super-Resolution – Pixelworks' visual processing technology leverages newly advanced algorithms to improve picture quality by boosting content resolution from low to high resolution, making it possible for smartphones to empower lower picture quality games with excellent visual quality on screens capable of displaying at higher refresh rates. With the boosted resolution, sharper and enhanced outlines of game characters and scenes look more authentic and smoother than the those displayed in native resolution. This mode has now been applied to multiple notable games, such as *Genshin Impact, Glory of the King, League of Legends, Cross Fire, QQ Speed, Sky: Children of Light, Game for Peace* and *Moonlight Blade*.

AI Always-On HDR – Converts source SDR (Standard Dynamic Range) content to HDR (High Dynamic Range) content in real-time. This function improves the color saturation and contrast of images, producing a more detailed and vivid display to human eyes. Based on AI display functions, this technology utilizes scene detection to intelligently adjust display parameters according to the scenes of different games to ensure smooth, real-time transitions from SDR to HDR.

Absolute Color Accuracy – Each OnePlus 11 smartphone is factory calibrated with Pixelworks' patented and high-efficiency calibration technology, producing an average Delta E value (an indicator of color accuracy) less than 1, which enables consumers to enjoy real-to-life color for all apps and content covering 100% P3 and sRGB color gamuts. By leveraging the 3D LUT method, Pixelworks visual processing technology conducts advanced color calibration to comprehensibly and precisely manage numerous display attributes, including hue, saturation and brightness, making the color displayed on the screen look as vivid as what human eyes detect in the '3D space'. Additionally, Pixelworks technology compensates for the color saturation to guarantee the consistent and most true-to-life experience for human eyes in different color modes and lighting conditions.

Adaptive Brightness Calibration – Ensures the display's gamma value is always at 2.2 (best standard tested by image and video processing professionals) in different color modes to achieve the most true-to-life experience for human eyes when users view content on a mobile device's screen. Even in low brightness, this Pixelworks solution adapts the gamma curve to compensate for brightness to ensure the consistent color appearance of content displayed on the screen.

"The mobile gaming market is constantly evolving as gamers continue to demand better gaming experiences." said, Li Jie, President of OnePlus China. "It requires rich game content, as well as great visual delights, to create an excellent gaming experience. Visual effects of games rely on the integration of content design, image design, hardware rendering and advanced display panels. In other words, game publishers, game engine developers, smartphone manufacturers, hardware technology providers and other partners in the gaming ecosystem must work together in order to deliver the most realistic and intense visual appeal. As part of establishing an improved collaboration mechanism, we proposed cooperation on the Super Frame Rate and Picture Quality Engine, and we are very pleased to enlist Pixelworks' help in getting the most out of the technology. Working together, we believe we are ushering in a new era of super-high picture quality for mobile games."

"We congratulate the OnePlus team on their release of the OnePlus 11 smartphone!" said Ting Xiong, President of Pixelworks China. "OnePlus' meticulous attention to the user experience and relentless pursuit of innovation are truly impressive. Pixelworks has long been committed to engaging avid gamers in similarly enjoyable visual experiences when playing AAA games on mobile devices instead of on PCs. We believe that OnePlus shares the same goal. With more and more Chinese game publishers seeking to extend their success abroad, games have transcended their role as mere outlets of entertainment. In fact, some outstanding games have gradually started to become cultural icons. As we aim to improve the displaying of game content on mobile devices with superb visual technologies and help bring exceptional games to a wider audience, we also look forward to continued cooperation with OnePlus and other gaming ecosystem partners on innovate technologies and solutions. We're excited to embark on the journey to optimize gaming experiences on mobile devices together."

About OnePlus

OnePlus is a pioneering and performance-oriented brand under OPPO. The company brings together a group of engineers who dare to challenge the limits of the industry, pursue cutting-edge technologies, and pay attention to quality details. OnePlus sticks to its "Never Settle" mantra and provides technology enthusiasts with exquisitely designed devices featuring ultimate performance, specially designed texture, and flagship user experience.

About Pixelworks

Pixelworks provides industry-leading content creation, video delivery and display processing solutions and technology that enable highly authentic viewing experiences with superior visual quality, across all screens – from cinema to smartphone and beyond. The Company has more than 20 years of history delivering image processing innovation to leading providers of consumer electronics, professional displays and video streaming services.

For more information, please visit the company's web site at www.pixelworks.com.

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