



MediaTek's World-Leading 8K DTV SoC in Volume Production on TSMC 12FFC Technology

Hsinchu, Taiwan R.O.C., Nov. 8, 2019 – MediaTek (TWSE: 2454) and TSMC (TWSE: 2330, NYSE: TSM) today announced that the industry's first 8K digital TV system-on-chip (SoC) manufactured with 12nm technology, the MediaTek S900, has entered volume manufacturing with TSMC. Built on TSMC's low-power 12nm FinFET Compact (12FFC) process following the companies' close collaboration, the S900 enables the next generation of smart TVs to deliver a richer and more interactive experience to consumers.

The S900 is MediaTek's first flagship smart TV SoC, supporting 8K resolution and high-speed edge AI computation. Designed to help TV manufacturers create highly competitive flagship products, the integrated S900 supports features including AI voice-user interface and picture quality enhancements, enabling the next generation of smart TVs to deliver a vastly improved user experience.

TSMC's ultra-low power 12FFC process leads the foundry segment's 16/14nm generation technologies in reducing die size and power consumption, which is essential for digital TV applications. It provides a sweet spot between performance and low power that is ideal for enabling voice recognition and edge AI capabilities in consumer electronics, wearables and Internet of Things (IoT) devices.

"TSMC has been a key strategic partner of MediaTek for a long time, and their advanced processes have consistently enabled MediaTek's industry-leading designs with innovative features which have satisfied the stringent requirements of our SoC solutions," said H.W. Kao, Corporate Vice President of MediaTek. "We see a strong global demand for 8K televisions, and we are delighted to join hands with TSMC to collaborate on advanced technology for 8K TV SoCs to drive the growth of the premium smart TV segment."

"MediaTek has long been recognized as a leader in consumer electronics. TSMC is pleased to have the opportunity to continue our long history of collaboration and working together on such an innovative product as the S900," said Dr. Kevin Zhang, TSMC's Vice President of Business Development. "We will continue to expand our ultra-low power technology offering to help our customers to create AI-enabled SoCs to enrich smart homes for a smarter world."

Additional Background on the S900 8K DTV SoC

MediaTek's S900 8K smart TV SoC integrates a proprietary AI processor unit enabling next-generation AI picture quality (AI PQ) and MiraVision-Pro, supporting a variety of AI features for



smart TVs, including facial recognition and AI scene recognition enabling S900-powered TVs to fundamentally improve picture quality by optimizing color saturation, brightness, sharpness, and dynamic motion compensation. Powered by AI, the MediaTek S900 enables televisions to serve as a control hub for an AIoT ecosystem with MediaTek's NeuroPilot AI development platform, which enables control of smart devices in the living room, kitchen, bedroom and more through voice or gesture control for a revolutionary user interface experience.

Additional Background on the 12FFC Process and TSMC IoT Platform

As a part of TSMC's widely-adopted 16FFC family of processes, 12FFC is supported by a comprehensive design ecosystem and a complete IP portfolio, including high-voltage I/O (5V HVMOS) to enable smooth design migration from mature nodes.

TSMC provides a comprehensive IoT Platform with ultra-low power technologies to enable low-power and low-leakage applications, as well as a comprehensive IP portfolio supported by both TSMC and third-party partners to enable customers' diversified IoT product design requirements. In addition to 12FFC, TSMC's industry-leading processes include 55nm ULP, 40nm ULP, 28nm ULP, and 22nm ULP/Ultra-low leakage (ULL), which have been widely adopted by various IoT and wearable applications. TSMC is also extending its low V_{dd} (Low Operating Voltage) offerings for extreme low-power applications, and provides comprehensive specialty technologies in RF, embedded memory, emerging memory, and sensors to support IoT designs.



About MediaTek Inc.

MediaTek Incorporated (TWSE: 2454) is a global fabless semiconductor company that enables 1.5 billion connected devices a year. They are a market leader in developing innovative systems-on-chip (SoC) for mobile device, home entertainment, connectivity and IoT products. Their dedication to innovation has positioned us as a driving market force in several key technology areas, including highly power-efficient mobile technologies and advanced multimedia solutions across a broad range of products such as smartphones, tablets, digital televisions, OTT boxes, wearables and automotive solutions. MediaTek empowers and inspires people to expand their horizons and more easily achieve their goals through smart technology. They call this idea Everyday Genius and it drives everything they do. Visit www.mediatek.com for more information.

About TSMC

TSMC pioneered the pure-play foundry business model when it was founded in 1987, and has been the world's largest dedicated semiconductor foundry ever since. The company supports a thriving ecosystem of global customers and partners with the industry's leading process technology and portfolio of design enablement solutions to unleash innovation for the global semiconductor industry.

TSMC serves its customers with global capacity of more than 12 million 12-inch equivalent wafers per year in 2019, and provides the broadest range of technologies from 2 micron all the way to foundry's most advanced processes, which is 7-nanometer today. TSMC is the first foundry to provide 7-nanometer production capabilities and the first to commercialize Extreme Ultraviolet (EUV) lithography technology in delivering customer products to market in high volume. TSMC is headquartered in Hsinchu, Taiwan. For more information about TSMC please visit <http://www.tsmc.com>.

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