DSP Group Unveils DBM10 Low-Power Edge AI/ML SoC with Dedicated Neural Network Inference Processor

Open platform, with cost- and power-optimized architecture, enables rapid development of AI and ML applications for mobile, wearables, hearables, and the IoT.

San Jose, Calif., January 7, 2020 - **DSP Group, Inc. (NASDAQ: DSPG)**, a leading global provider of wireless and voice-processing chipset solutions for converged communications today announced the DBM10, a low-power, cost-effective artificial intelligence (AI) and machine learning (ML) system on chip (SoC). The SoC comprises a digital signal processor (DSP) and the company's nNetLite neural network (NN) processor, both optimized for low-power voice and sensor processing in battery operated devices. This architecture offers developers with full flexibility of partitioning innovative algorithms between DSP and NN processor and enables fast TTM for integration of voice and sensing algorithms such as noise reduction, AEC, wake-word detection, voice activity detection and other ML models. The DBM10 features an open platform approach with a comprehensive software framework. This allows developers to quickly get next-generation designs to market with their own algorithms, or with DSP Group's comprehensive and proven suite of optimized algorithms for voice, sound event detection (SED), and sensor fusion for applications ranging from true wireless stereo (TWS) headsets to smartphones, tablets, wearables, and IoT.

"Edge applications for AI are many and diverse, but almost all require the ultimate in terms of low power, small form factor, cost effectiveness, and fast time-to-market, so we are very excited about what the DBM10 brings to current and new customers and partners," said Ofer Elyakim, CEO of DSP Group. "Our team has worked to make the absolute best use of available processing power and memory for low-power AI and ML at the edge—including developing our own patent-pending weight compression scheme—while also emphasizing ease of deployment. We look forward to seeing how creatively developers apply the DBM10 platform."

"SoCs with the appropriate processors for critical functions are key to enabling innovative products with acceptable battery life," said Phil Solis, Research Director at IDC. "Such SoCs, with audio and sound DSPs and NPUs, need to support common frameworks and standards to enable competitive voice- and other sound-enabled smart products across end-user and IoT devices."

The DBM10 adds to DSP Group's SmartVoice line of SoCs and algorithms that are deployed globally in devices ranging from smartphones and laptops/PCs, to set-top boxes, tablets, remote controls, and smart IoT devices for the home. SmartVoice last year reached the [100 million units shipped](#) milestone, so the low-power DBM10 is supported by an established ecosystem of third-party algorithm providers. Key partners have integrated already their NN algorithms on the

nNetLite NN processor at the heart of the DBM10 to achieve maximum performance at the lowest power consumption.

Working alongside a programmable low-power DSP, the nNetLite processor supports all standard deep NN (DNN) and ML frameworks and employs a comprehensive cross-platform toolchain for model migration and optimization.

Key specifications include:

- A highly-compact form factor: ~4 mm^2
- Ultra-low-power inference consume~500 µW (typical) for voice NN algorithms
- Runs Hello Edge 30-word detection model @ 1 MHz (125 MHz available)
- Allows porting of large models (10s of megabytes) without significant accuracy loss using model optimization and compression.

About DSP Group
DSP Group®, Inc. (NASDAQ: DSPG) is a global leader in wireless communications and voice processing chipsets and algorithms for a wide range of smart-enabled devices. The company was founded in 1987 on the principles of experience, insight, and continuous advancement. We seek to consistently deliver next-generation solutions in the areas of voice, audio, video, and data connectivity. Building upon our core competencies in the area of voice processing, DSP Group invests heavily in innovation for the smart future. The result is leading-edge semiconductor and product development technology that allows our customers to develop products that enhance the end-user experience. From AI-enabled TWS headsets to the voice-enabled smart home. From IoT, security, mobile handsets, tablets, and laptops, all the way to full enterprise-level unified communications (UC) across cloud-based voice services, DSP Group applies its core engineering and technical support capabilities to help its customers meet the demands of an ever-expanding universe of voice-enabled, connected, smart devices. Visit us at www.dspg.com or follow us on LinkedIn and Twitter, as well YouTube, where you can see our solutions in action.

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