**Exarion, MPW chip Exawave 100 Fab-in completed**

Exarion completed fab-in for the MPW production on April 16, 2024. It has worked on the design with Asicland in Korea, and the production of MPW is carried out with the TSMC 12nm process in Taiwan. Fab-out is scheduled for mid-July.

Exarion is a Korean fabless company with real-time sound tracing technology and real-time denoising AI technology. The Sound-Tracing MPW chip for real-time 3D spatial audio is named to Exawave 100.

EXAWAVE 100 is the world’s first chip targeted to realize real-time sound-tracing for realistic 3D audio.

<Exawave 100 major specifications>

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| Item | Specification |
| Process | TSMC 12nm |
| Clock speed | 600MHz |
| Memory I/F | Internal SRAM |
| Memory Capacity | 4MByte |
| Internal Bus | AXI (ARM NIC-400 IP) |
| Host I/F | USB 3.0 with external chip (FX3) |
| Die size | 2.65 x 2.94 mm2 |
| I/O Power | 1.8 V |
| Core Power | 0.8 V |
| Power Consumption | 360mW (typical, estimated) |
| Package | 9 x 9 BGA, 121 Ball, 0.8 Pitch |

This innovative chip can provide a diverse set of sound-tracing functionalities, such as reflection, diffraction, occlusion, and reverberation based on geometric acoustic methods for virtual worlds. In this regard, EXAWAVE 100 is beneficial from both individual user and content developer perspectives; the individual users are allowed to enjoy high-quality sound-tracing effects while the content developers are able to develop high quality spatial 3D audio applications at lower cost.

Sound-tracing process can be divided into three steps. First, sound synthesis generates audio signals based on interactions between objects. Second, sound propagation models the phenomenon where waves generated from sound sources are transmitted through a medium to a listener. This is calculated approximately by available methods such as ray-tracing in the real-time domain. Finally, auralization (sound generation) computes the final sound based on impulse responses (IRs) generated by the sound propagation.

Exarion officials said they expect Exarwave 100 to open up a new era of sound tracing by enabling real-time, sophisticated spatial 3D audio content processing.

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