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US Semiconductors

OCP Day 2 – Analog Power Semis Takeaways

Atif Malik[AC]

Kelsey Chia, CFA

CITI'S TAKE

We attended OCP Day 2 in San Jose CA and hosted meetings with ALAB, MPWR, Ferric Semiconductor, and recap three key takeaways. First, we believe adoption of 800VDC side-car power architectures is more likely to begin in 2H27 as rack power requirements increase toward ~600kW, consistent with our expectations. Second, companies are beginning to sample integrated voltage regulator (IVR) solutions in 4Q26/1Q27, with limited-volume shipments already underway. Third, as AI clusters adopt higher optical density and rack-scale liquid cooling, we expect analog dollar content per system to increase, benefiting TXN, ADI, and MPWR, our top buy-rated analog picks. See our Day 1 Takeaways.

Broad 800VDC adoption in in 2H27 — Current rack power levels of ~230kW do not yet necessitate adoption of 800VDC side-car architecture. We believe adoption of 800VDC side-car power architectures is more likely to begin in 2H27 as rack power requirements increase toward ~600kW, consistent with our expectations. Both GaN and SiC are used in power conversions, with SiC used more in high-voltage applications. Google appears to be leading in adoption of next-gen architectures.

IVR adoption gaining traction in 2027; meaningful ramps unlikely before 2H27 — Companies are beginning to sample integrated voltage regulator (IVR) solutions in 4Q26/1Q27, with limited-volume shipments already underway. We believe accelerators reaching ~4-6kW power envelopes will drive IVR adoption, although meaningful ramps are unlikely before 2H27. Given the significant co-development across silicon, substrate, and PCB ecosystems, IVR adoption could cement supplier positions once designed in. We view MPWR and ADI (following its acquisition of Empower Semiconductor) as best positioned to capitalize on the IVR opportunity.

Networking optics and liquid cooling expand analog content opportunities — Pluggables, NPO, CPO, switches, and OCS require incremental power-management, timing, sensing, monitoring, control, and signal-chain content, while liquid-cooling architectures add temperature, pressure, flow, leak-detection, telemetry, and power-management ICs. As AI clusters adopt higher optical density and rack-scale liquid cooling, we expect analog dollar content per system to increase, benefiting TXN, ADI, and MPWR.

MCHP gaining exposure in next-gen AI rack power architectures — On Oct. 12, Navitas announced a 24kW 800V-to-12V PDB developed with NVIDIA, extending the previously announced 20kW 800V-to-6V platform first unveiled at NVIDIA GTC 2026. Earlier, on Oct 5, Navitas and Microchip introduced an 800V-to-6V reference design incorporating Microchip's dsPIC33AK digital controllers and TA100 security IC, which we view as an incremental growth vector to MCHP's data center business.

See Appendix A-1 for Analyst Certification, Important Disclosures and Research Analyst Affiliation



OCP Day 2 Takeaways

Ferric Semiconductor

- **Lowest energy per token** — Ferric highlighted 8-12% lower energy per token vs competing IVR solutions. Customers evaluate four primary criteria: current density, efficiency, transient response, vertical height of the device.
- **Competitive positioning** — Ferric highlighted its advanced packaging capabilities, inductor designs and digital-controller expertise as its main differentiator and does not generally view traditional analog companies as their main competitors.
- **IVR adoption / traction**— Ferric appears to be shipping in small volumes currently and sees broader deployment beginning in 2027, with multiple integration approaches reaching production before full substrate embedding matures. Back-side PCB attach is the most common integration method today. We believe Ferric is engaged with key accelerator companies, including partnership with Marvell.

Other Announcements

- **INTC highlights inference-focused GPU at OCP —** Intel disclosed additional details on its Intel GPU D-series (Crescent Island), designed for memory-intensive AI inference workloads with up to 480GB LPDDR5X memory, 1.5TB/s memory bandwidth, and 1.3 PFLOPS FP8 performance. Notably, the GPU can support models with up to 300B parameters on a single card and >1T parameters in an eight-GPU system. Intel also showcased Xeon-based ORv3 rack designs that scale to 46,000+ CPU cores per rack, emphasizing Xeon's role in agentic AI orchestration alongside GPUs.

Companies Mentioned:

Alphabet Inc (GOOGL.O; US$353.78; 1; 13 Oct 26; 16:00) | Analog Devices (ADI.O; US$414.7; 1; 13 Oct 26; 16:00) | Astera Labs, Inc (ALAB.O; US$325.41; 1; 13 Oct 26; 16:00) | Intel Corp (INTC.O; US$102.81; 1; 13 Oct 26; 16:00) | Marvell Technology Inc (MRVL.O; US$268.73; 1; 13 Oct 26; 16:00) | Microchip Technology (MCHP.O; US$74.16; 1; 13 Oct 26; 16:00) | Monolithic Power Systems (MPWR.O; US$1319.55; 1; 13 Oct 26; 16:00) | NVIDIA Corp (NVDA.O; US$228.52; 1; 13 Oct 26; 16:00) | Texas Instruments Inc (TXN.O; US$287.85; 1; 13 Oct 26; 16:00)