Infineon acquires GaN Systems
Becoming a leading GaN Power House

24 October 2023
Transaction rationale focused on scale and complementary capabilities

Combine complementary skills in application understanding and product definition to shape industry leading GaN based solutions.

Accelerate Go-2-Market and revenue generation by leveraging IFX sales force to drive GaN Systems products into the market.

Increase scale by combining IFX in-house and GaN System foundry manufacturing capacity.

Scale, breadth, quality and deep application knowledge combined to accelerate GaN adoption.
Perfect fit: Infineon and GaN Systems will propel customers’ success

**GaN portfolio**
Broad portfolio of discrete and integrated MV and HV GaN products, incl. system enabling components (e.g. drivers, controllers)

**Manufacturing capabilities**
Dual-site in-house production combined with strong foundry partnerships

**Perfect fit**
Leading GaN IP and the industry’s strongest R&D force to create highly innovative GaN based solutions

**Application know-how**
Best-in-class application know-how for creating new and improved systems, providing competitive advantage for our customers

**Roadmap acceleration**
Significant roadmap acceleration and faster time-to-market through unmatched R&D resources and application understanding
The acquisition supports our vision of driving decarbonization and digitalization, as GaN allows for higher efficiency

GaN provides superior switching performance, which results in **higher efficiency** and **lower system cost**

We are the **#1 in power, technology leader**, with 20 years of innovation in GaN providing all components (controllers, drivers, switches) for a **full system solution offering**

Our GaN technology offers **unmatched quality**, backed by **supply stability** through in-house manufacturing
GaN Systems acquisition positions Infineon to be a leading GaN Power House

Leading IP & strongest R&D force

Leading patent portfolio for GaN – >350 patent families

~450 strong GaN team high double-digit USD m GaN R&D p.a.

Best-in-class application understanding incl. automotive

Leveraging foundry + IDM advantages

We own key IP and all frontend process steps

We combine foundry partnerships and dual-site in-house production, ready for 8"

We target a leading market position
Joining forces and adding complementary strengths creates a winning formula for the GaN market

### Substrates
- GaN fabrication starts with fully commoditized Silicon (Si) wafers

### Epitaxy
- GaN epi layer for device fabrication
- Si substrate

### Frontend technology
- Strong IP portfolio
- Dual-site in-house manufacturing (Villach, Kulim 3 in construction) in transition to 8"
- Foundry partnerships

### Packaging

### Product portfolio
- Full system offering, fast track to GaN-specific topologies
- High-volume standard and GaN-specific, low-parasitic packages
- Monolithic integration roadmap

### Application understanding
- Broad application coverage to significantly accelerate roadmap
- Excellent access to lead customers, incl. automotive

### Customer access
GaN market is taking off, driven by key power applications

Superior switching performance results in higher efficiency and lower system cost.

Applications w/ tipping point reached or in sight:

- Charger, adapter
- Server (high voltage)
- Residential solar
- On-board charger

GaN brings significant value proposition in many applications

**On-board Charger**

*On-board charger:* increasing power density from today’s 2kW/l to 10kW/l with GaN

**HP SMPS**

*HP-SMPS for server:* GaN is enabling highest power density and efficiency, to enable Accelerated- and AI computing at lowest TCO

**Charger & Adapter**

*High-density charger & adapter:* GaN enables smallest form factors for multiport chargers & adapters

**Renewables**

*ESS DCDC converter:* highest efficiency and space reduction with GaN vs Si implementation

**Motor Control**

*GaN increases of overall system efficiency* by reduction of motor-current ripple and switching losses

**48V DCDC**

*48V to ~7V/1V conversion:* with GaN brings smallest form factors to Accelerated- and AI computing as well as Telecom brick converters

*Image source: gansystems.com*
Our offering:
Discretes, Integrated Power Solutions & Modules, System Solutions

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<th>Discrete solution</th>
<th>Integrated Power Solution &amp; Modules</th>
<th>System Solution</th>
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<tr>
<td>CoolGaN™ HEMT</td>
<td>CoolGaN™ IPS</td>
<td>Controller + CoolGaN™ IPS</td>
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Software and Algorithms

- Design flexibility
- System development effort
- Customer support
GaN is not a drop-in replacement for Si, best-in-class application know-how crucial for completely new and improved systems

Example: different topologies for a solar inverter

**Si** Two Stages

![Si Two Stages Diagram]

**GaN** Single Stage

![GaN Single Stage Diagram]

- Higher power density and therefore smaller ✓
- Higher efficiency ✓
- Reduced complexity/system cost ✓

**But: system redesign required**
Summary: Infineon completes acquisition of GaN Systems
Becoming a leading GaN Power House

This acquisition is another milestone in Infineon's strategic
development, strengthening and accelerating our
profitable growth and key competencies

Combined strengths in R&D resources, application
understanding and customer project pipeline will
significantly accelerate our joint GaN roadmap

We reinforce our global leadership in power systems
through mastery of all relevant power technologies,
in silicon, silicon carbide or gallium nitride

We will inform customers in a timely manner about
any relevant changes that may occur during the
integration process