MACOM to Transfer HRL Laboratories T3L 40 nm GaN-on-SiC Process to Production

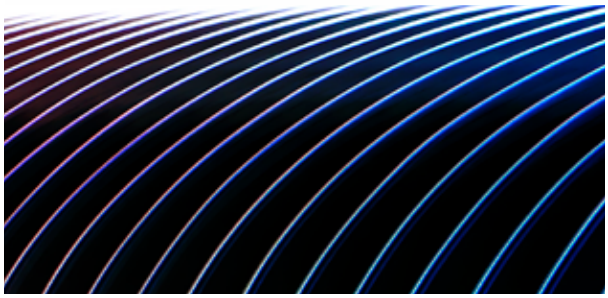
About T3L GaN

- A GaN-on-SiC HEMT technology, featuring a 40 nanometer T-gate, graded-channel epitaxial structure and mini-field-plate design, engineered for exceptional linearity, dynamic range and signal integrity in millimeter wave systems.
- Matured under DARPA's Dynamic Range-enhanced Electronics and Materials (DREaM) and the Office of the Undersecretary of Defense's (OUSD) State-of-the-Art Radio Frequency Gallium Nitride (STARRY NITE) programs and HRL funding.
- Achieves high power density (>2 W/mm) through 94 GHz with world-class power added efficiency (PAE) – up to 70% at 30 GHz and up to 40% at 94 GHz.
- Process optimized for linearity with OIP3 > 36 dBm and OIP3/Pdc > 20 dB at 30 GHz.
- Industry-leading minimum Noise Figure (NFMIN) as low as 0.46 dB at 30 GHz and 1.77 dB at 94 GHz.
- Demonstrated long-term reliability.

MACOM®

COLLABORATES WITH

HRL | LABORATORIES



Benefits to MACOM

- Collaborating with HRL may lead to new technology breakthroughs and business opportunities for both parties.
- IP License minimizes process development risks, costs and time to market.
- Complements existing semiconductor portfolio and MACOM's roadmap.
- Expands growth opportunities within MACOM's core Defense and Telecommunications markets.
- Strengthens MACOM's product offering in very high frequency GaN MMIC technology.

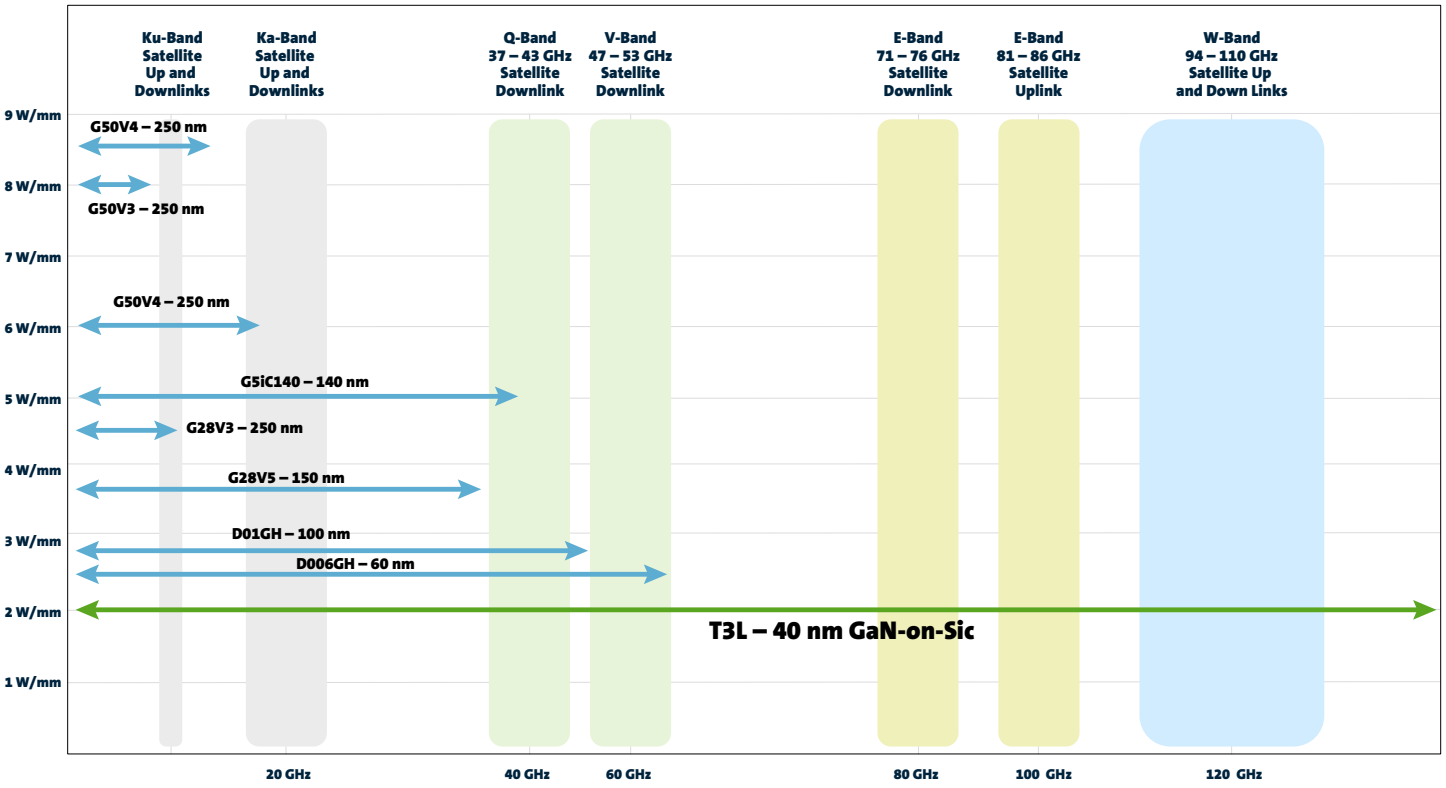
Customers, Markets and Products

- High frequency and high-power applications including, satellite communications (SATCOM), missile radar, electronic warfare (EW), 6G infrastructure and emerging space and sensor systems serving the aerospace, defense and commercial markets.
- Key enabling technology to take advantage of available bandwidth at Q-, V-, E- and W-Bands for high data rate LEO communication systems.
- MMIC products including, power and low noise amplifiers.

MACOM
"We're pleased to partner with HRL and look forward to establishing a close working relationship. T3L is one of the most advanced high frequency semiconductor processes in the industry, which we anticipate will enhance our existing portfolio and accelerate execution of our roadmap," said Stephen G. Daly, President and Chief Executive Officer, MACOM. "We were not part of the STARRY NITE or DREaM programs; however, MACOM and our customers will soon be the beneficiaries of the results, as we industrialize this technology."

HRL
"This new relationship with MACOM demonstrates HRL's expertise at developing and proving technology concepts and then transitioning them into production," said Rob Vasquez, President and Chief Executive Officer, HRL. "Our GaN-on-SiC process technologies were established over many years of diligent work, and we're excited to now partner with MACOM to advance the work into high volume production."

MACOM GaN Technologies and Common SATCOM Bands



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