

## SUMMIT3741™

### 39 GHz Beamforming Front End IC Operating from 37 GHz to 41 GHz

The Summit3741™ integrates novel power amplifiers, low noise amplifiers, T/R switching, beamformers, calibration, gain control, beam table memory, temperature and power telemetry, and high-speed SPI control for a front-end module with optimal partitioning for 5G infrastructure.



The device is suitable for Antenna-in-Package (AIP) implementations, as well as conventional chip-on-board integration through the use of interposers.

SUMMIT3741 also features enhanced and cutting-edge digital integration, uniquely enabled by the GLOBALFOUNDRIES® (GF®) 45RFSOI process, which has inherent advantages over other semiconductor technologies for mmWave applications.

#### SUMMIT3741 product highlights:

- Operation from 37 GHz to 41 GHz
- Four-element dual-polarization TX/RX
- Independent dual-polarization beam directions
- Ultra-low TX- and RX-mode power consumption
- High-power, high efficiency stacked SOI CMOS PAs
- Low-loss T/R switch for TDD support
- 6-bit full-360° phase shifting and 0.5dB-step 16dB- range variable gain in each path
- Fully calibrated for gain/phase matching Across ICs
- On-chip temperature sensor
- Gain control for temperature compensation
- On-chip power sensor for each TX
- Operates from 1V, 1.8V and 4V power supplies
- 100MHz SPI with 2048-entry on-chip beam table storage
- 6-/8-bit chip ID with multiple modes of programming
- Flip-chip die with 75µm bump size and 200µm bump pitch