SUMMIT2629e™

28 GHz Beamforming Front End IC
Operating from 26.5 GHz to 29.5 GHz

The SUMMIT2629e™ is an eight-channel RF front-end for 28 GHz, 5G phased array antenna systems fabricated in RF-Silicon on Insulator (RF-SOI)

" Sivers Semiconductors is indeed offering a real performance breakthrough which will translate to higher performance and lower cost mmWave phased array systems."
Daniel Kang
Head of Digital Solution Team, Dreamtech

The SUMMIT 2629e was designed to address the challenges constraining 5G mmWave performance by:

- Extending the link range to decrease infrastructure costs and improve customer satisfaction.
- Reducing power consumption and thermal dissipation.
- Reducing antenna array complexity and overall RF front-end cost.

Operating from 26.5 to 29.5 GHz, the SUMMIT 2629e RFIC integrates power amplifiers (PA), low noise amplifiers, T/R switching, beamformers with beam table memory, calibration, gain control and temperature and power telemetry with a high-speed system peripheral interface (SPI) for control. A single SUMMIT 2629e provides two sets of four channels for two antenna polarizations – a total of eight channels per RFIC.

Features

- Four-element Dual-pol. TX/RX with Independent Polarization Beam Directions
- High-Power, High-Efficiency SOI CMOS Power Amplifiers
- State-of-the-art Low-Noise Amplifiers and Low-Loss T/R Switching
- Ultra-low Transmit and Receive-Mode Power Consumption
- 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
- Extensive On-chip Temperature and Power Sensing
- On-chip Gain Control for Temperature Compensation
- High-Speed SPI with Large On-Chip Beam Table Storage
- Wafer-Level Chip-Scale Package (WLCSP) compatible with low-cost PCB manufacturing
- Support for Large-Scale Arrays through Multiple Chip-Addressing Modes