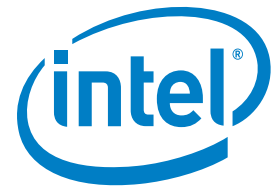


Solution Brief

Intel® Transcende™
T2K Dual-Mode Soc Family
Communications Infrastructure



LTE / Dual-Mode Femtocell SoC

Intel's single-mode and dual-mode 3G/LTE SoC family supports residential, SOHO, and enterprise applications.



Intel® Transcende™ solutions deliver a complete small cell base station on a chip, supporting concurrent multi-standard operation with carrier-grade software performance (HSPA and LTE). Simplifying the migration from 3G to LTE networks, Transcende T2K (T2xxx) devices handle the complete signal flow from the radio interface to IP packets for network connectivity. The product family builds upon the Transcende family of award-winning¹ small cell system-on-chip (SoC) solutions.

Each T2K device is a highly integrated SoC solution that includes a tightly-coupled MAC and PHY on one device, which minimizes latency and avoids complex software partitioning across multiple devices. The devices can support up to 32 simultaneous

users as a complete solution, from RF interface to L1 and L2/L3 on a single device.

The T2K family was specifically designed to provide optimal performance for next-generation base stations. This is achieved through the use of ARM® Cortex® A9 technology for control and protocol processing, CEVA® DSP cores for baseband processing, and specialized MAP² DSP blocks for advanced signal processing and encryption functions. All devices include carrier-grade, pre-integrated, and pre-verified code for PHY and stacks. The T2K family with 20 MHz channels and 2x2 MIMO supports either TD-LTE or LTE FDD. Pre-integrated and pre-verified software that supports 3GPP Release 8/9 and roadmap to Release 10 (LTE-A) is included.

At a Glance

- Single mode (LTE)
- Concurrent dual mode (LTE/3G)
- Residential, SOHO, and enterprise applications
- 3GPP home and local area base station specification
- 3GPP release 8/9/10 (LTE-A)
- Support for 4, 8, 16, and 32 users
- MIMO 2x2
- Channel bandwidths up to 20 MHz
- L1 and L2/L3 on a single device
- Carrier-class integrated software

The T2120 and T2150 have the same LTE capability as the T2100 and 2130, but also add simultaneous 3G operation to enable a single-chip, dual-mode solution. With support for Release 9 HSPA+, including MIMO, dual carrier, and soft handover, the T2120 and T2150 deliver a superset of the industry-leading Transcede PHY capability.

Functional Description

The Transcede T2K family was specifically designed to satisfy emerging market demands for residential and SOHO small cells. The product family builds upon prior Intel small-cell SoCs by incorporating proven multi-core technology to create a compelling, carrier-class VoIP solution for next-generation femtocell designs. The single SoC design delivers a complete L1, L2, and L3 solution, which can dramatically reduce overall system cost.

The T2K family with integrated network processor capabilities supports Layer 2 processing requirements for the next wave of

small cell designs. Network processing is performed by a high-performance ARM Cortex RISC processor with fast IP/Ethernet interfaces coupled with Metro Ethernet Forum (MEF) class of service hardware acceleration.

T2K devices are available with a reference design kit that provides optimized LTE and 3G software, and an extensible verification environment and board support package (BSP) using Linux*. The flexible, configurable software supports current and next-generation 3G and LTE small cell applications, thereby eliminating the need for costly in-field hardware upgrades.

For more information about Intel solutions for communications infrastructure, visit www.intel.com/communications

¹ Mindspeed Technologies, Inc., SK Telecom, and Contela won the Small Cell Industry Award for Commercial Deployment (Innovation in Commercial Deployment) at the 2012 Small Cell World Summit in London. The award is for the deployment of the world's first data-only femtocell service designed to offload increasing mobile data traffic caused by the rapid growth of smartphones and tablets.

² MAP is an abbreviation for multifunction application processor.

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Product Features

- Single SoC design for complete L1, L2, and L3 solutions
- Intel carrier-class L1 LTE and 3G software support
- Dual ARM* Cortex* A9 Processor
- Dual CEVA* XC DSP
- Four MAP DSP accelerator blocks
- Hardware accelerators (FEC, PRACH, PSC, and COR)
- Backhaul IPsec engine (AES, DES, and hashing)
- RAN security engine (AES, Kasumi, SNOW-3G, and ZUC)
- Secure boot and key management support

Product	T2K Market Segment
T2100	LTE Residential/SOHO
T2130	LTE Small Enterprise
T2120	Dual-Mode Residential/SOHO
T2150	Dual-Mode Small Enterprise

