# Complete family of DSP solutions for residential and enterprise femtocell market

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Enterprise and residential femtocell networks are evolutionary step for 3G/4G wireless technology

Why femto?

- Improved coverage

- More consistent user experience than what is typically available with the macro network

- Improved wireless data rates

- Reduced transport network costs

- Reduced congestion in locations with exceptionally high network capacity requirements

- Ability to deliver advanced services

- Provides deep in-building broadband wireless services more economically than macro cellular network
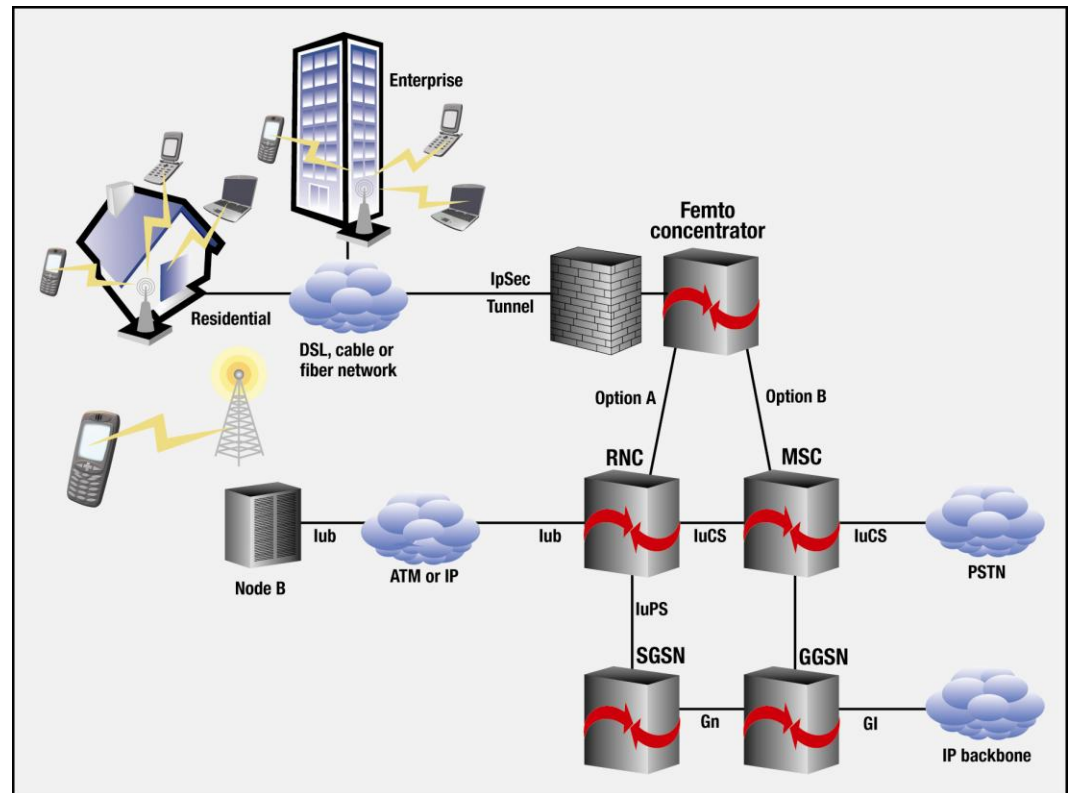
New solutions for the femtocell market

New TCI6485 residential femtocell solution:

- 850MHz dual-core C64x+ DSP
- 8 UEs
- HSDPA up to 15 MBits/s
- HSUPA up to 5.7 MBit/s
- Cell size < 100m
- L3/ L2/ L1 functionality

New TCI6489 enterprise femtocell solution:

- 850MHz three core C64x+ DSP
- 32 UEs
- HSDPA up to 15 MBits/s
- HSUPA up to 5.7 MBit/s
- Cell size 200m
- L3/ L2/ L1 functionality

TCI648x is compatible with all major 2G/3G and 4G systems including GSM, CDMA, WCDMA, TD-SCDMA, WiMAX and LTE

Suite of Analog components

Complete end to end analog to digital hardware solution for all femtocell base station derivatives in all frequency ranges, bandwidth and capability

WCDMA/HSPA Software

- Fully operational and tested layers 1, 2 & 3 femtocell software stacks from leading wireless software suppliers.
- Modular, high level language software for ease in porting, customization and feature growth.

TCI6485 and TCI6489 – DSP platforms optimized for femtocell products

Key Features and Benefits

- Customized set of memory, peripheral, accelerator, core and performance features makes it the ideal processor for femtocell applications

- Single device for PHY and MAC processing reduces overall BOM

- TCI6489 (enterprise) has three 850 MHz C64x+ DSP cores
    - Four lanes of Antenna Interface (CPRI/ OBSAI) to connect to analog front end
    - 3MB of L2 memory and focused accelerators such as RAC (Receiver Accelerator Coprocessor used in UMTS), VCP2 (Viterbi Coprocessor) and TCP2 (Turbo Coprocessor) help reduce load on DSP

- TCI6485 (residential) has two 850MHz C64x+ DSP cores
    - One core is dedicated for higher layer (MAC) processing and second core is focused on Layer 1 (PHY) processing
    - Two lanes of Antenna Interface (CPRI/OBSAI) for analog RF connectivity, 2MB of L2 memory and focused accelerators such as RAC, VCP2 and TCP2 help reduce load on DSP

TCI6485/TCI6489 Block Diagram
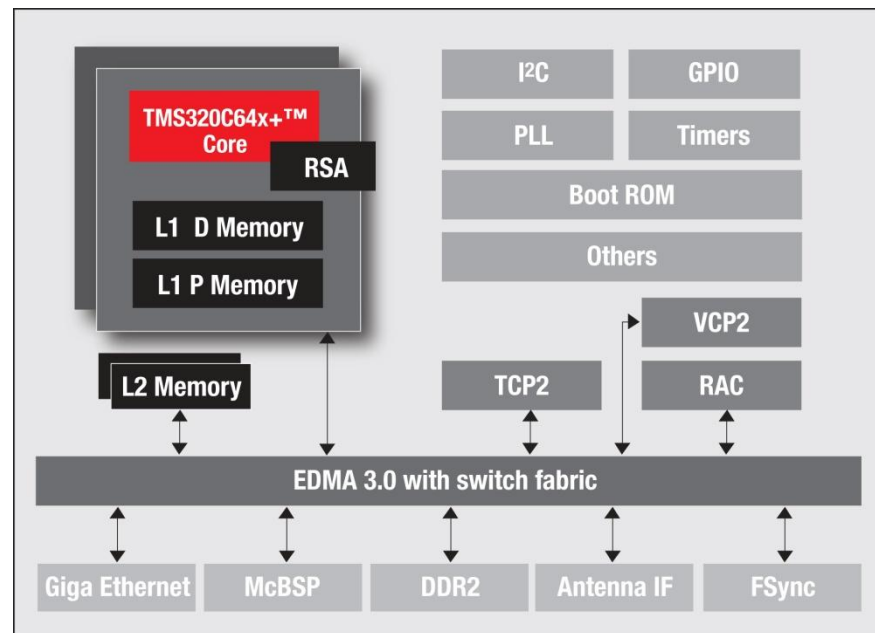
*TCI6489 has an additional 850 MHz C64x+ DSP core and an additional 1MB of L2 memory

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Third party partners speed time-to-market and allow for increased development flexibility

MIMON

- mimoON will provide Layer 1 (PHY) as defined in Release 6 of the 3GPP specification with migration path to R7 and R8
- Leverages TI WCDMA functional libraries and on-chip accelerators for optimal performance
- Provided in high level language, modular form for customization and standards expansion
- Includes multiple MIMO configurations

Continuous Computing

- Continuous Computing will provide comprehensive protocol stack for Layer 2 & Layer 3
- Fully portable solution allows OEM to take advantage of new higher speeds
- Optimized data and control plane performance aligned with HSPA, HSPA+ and LTE latency and throughput requirements
- Easy migration path from HSPA/HSPA+ to LTE

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TI's longstanding incumbency in wireless infrastructure combined with robust DSP solutions developed for femto market allows OEMs to develop products for this emerging market with confidence.

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