



# Product Brief

## GDM7205K



Mobile WiMAX IEEE 802.16e Wave 2-compliant monolithic single-chip

### FEATURES

- ▶ Integrates up to 160 MHz ARM926E RISC CPU and 120 MHz P2D DSP with 128 KB on-chip SDRAM
- ▶ 1.1V supply voltage
- ▶ 2.300-2.690GHz WiMAX band with auto-calibration and dynamically adjustable channel bandwidth
- ▶ Complies with IEEE 802.16e mobile WiMAX and WiMAX Forum® Wave2 certification
- ▶ Maximum throughput: >40 Mbps/DL, 6 Mbps/UL
- ▶ Supports CC/CTC and Chase Combining-CTC
- ▶ Hybrid ARQ supporting up to category 6
- ▶ Integrates two receivers and a single transmit Path for MIMO-DL (Matrix A/B) and collaborative MIMO UL
- ▶ Supports seamless handover across the cells or sectors
- ▶ Supports AAS/BF features for MS

### BENEFITS

- ▶ Reduces PCB design complexity
- ▶ Ultra low power consumption
- ▶ Small form factor
- ▶ Optimizes mobile WiMAX implementation in mobile devices
- ▶ Minimizes external RF front-end components
- ▶ Satisfies high demands of multimedia processing

GDM7205K is the world's first mobile WiMAX IEEE 802.16e Wave 2-compliant monolithic single-chip. This highly integrated single-chip solution is designed to optimally support mobile WiMAX applications, including portable, nomadic and fixed. GDM7205K includes a mobile WiMAX baseband, RF transceiver, high performance dual-processors, and an impressive array of peripherals for connectivity and multimedia.

With its highly integrated, low-power on-chip radio transceiver and a small number of external RF front-end components, GDM7205K supports all essential features of mobile WiMAX (802.16e), implementing MIMO plus all PHY and MAC features required for WiMAX Forum Wave2 certification.

With a true single RF/BB monolithic implementation, GDM7205K offers ultra lower power consumption and small form factor to fit into the smallest mobile devices such as mobile handsets, smart phones, as well as portable/fixed devices such as USB dongles, residential gateways, etc.

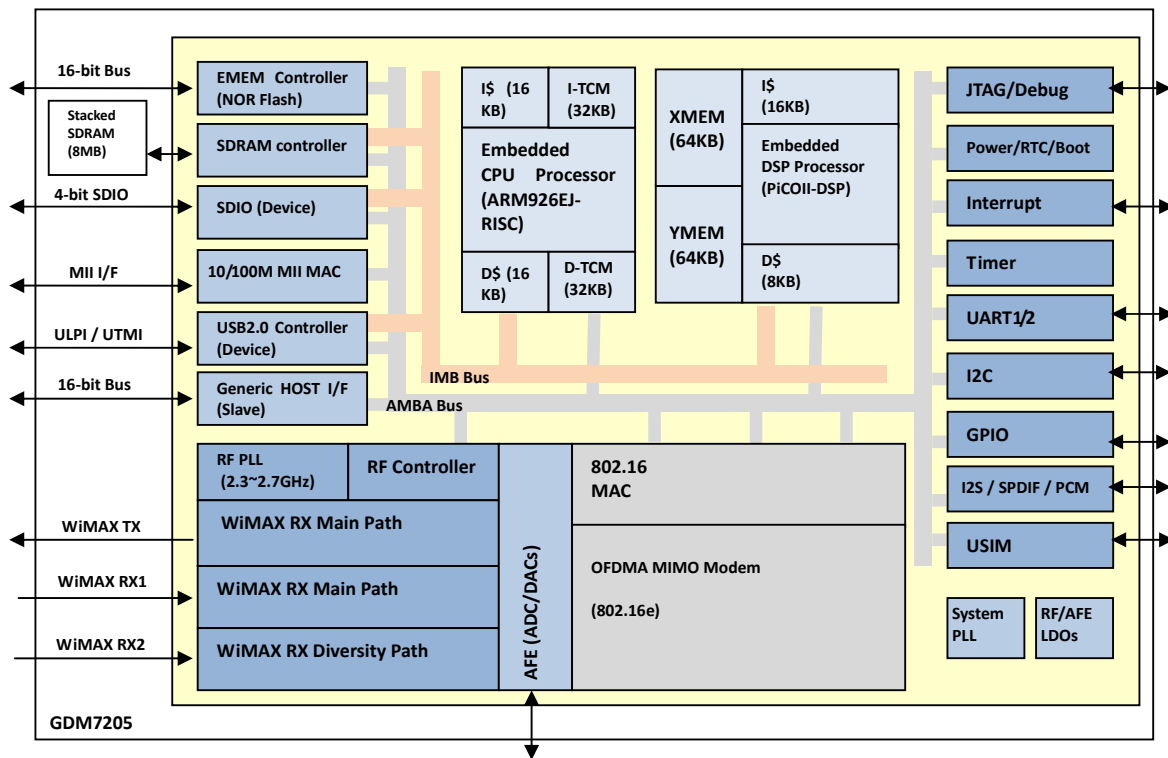
GDM7205K implements a unique, patent-pending, reduced complexity, MIMO decoder based on ML algorithm that delivers the highest theoretical performance possible. Interface options include USB2.0 ULPI/UTMI, SDIO and 10/100 Ethernet MII as well as 16-bit memory interface.

### Applications

- ▶ Mobile WiMAX terminals such as smart phones & PDAs
- ▶ Portable WiMAX devices such as USB dongles and PC cards
- ▶ Fixed WiMAX devices such as residential CPEs

## Block Diagram

GDM7205K (RF/BB SOC)



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