

Analog Front End IC For 3G WCDMA

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We present the world's first integrated analog front-end (AFE) and audio codec IC supporting the WCDMA standard. This chip was fabricated on Intel's 0.18 μ m flash +logic +analog (FLA) process technology using a 0.35 μ m feature size analog transistor. The AFE transmit path contains a 10-bit segmented R2R D/A, self-calibrated active RC filter and programmable gain amplifier (PGA) with a self tuning offset correction circuit. The receive path includes a programmable gain active RC filter and an 8-bit A/D with built-in offset correction. The AFE operates at 2.7 V with a current consumption of 55 mA, and total active area of 15 mm².