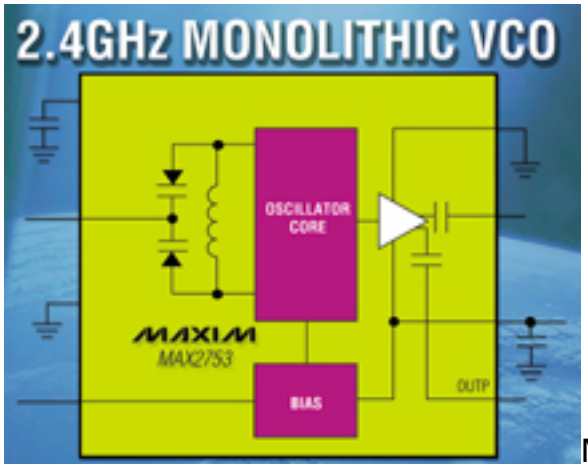
Upconverter/Driver Integrated Circuit



Maxim Integrated Products announces the MAX2307 miniature upconverter/driver IC with variable gain. It is designed for Japanese N-CDMA and PDC 900 MHz applications in the 900 MHz frequency band. The device features ultra-low current consumption and very small size. Implementation cost is optimized by replacing a SAW filter with a low-cost inductor. Low-cost CSP packaging helps further reduce cost.

The MAX2307 contains a unique double-balanced, variable-gain upconverter mixer, variable-gain power amplifier driver, an LO buffer, and bias circuitry to control the two shutdown modes of the device. In full shutdown, the device draws less than 1 &#956 A. In partial shutdown mode, the LO buffer is left on to minimize VCO pulling when the transmitter is turned on. Current consumption in this standby mode is only 2.6 mA. When the device is putting out its maximum linear power of 6.5dBm, it draws only 34 mA from a 2.8 V to 4.2 V supply. When backed off from peak power by 10 dB (the typical output power used for CDMA talk time calculations), current draw automatically reduces to 18 mA without user interaction. The device does not require a SAW filter to obtain &#150 35 dBc LO leakage, 30 dB image suppression, and receive band noise power of &#150 145 dBm/Hz at typical output power (&#150 134 dBm/Hz at maximum linear output power).

The MAX2307 comes in a new 1.5 mm &#215 2 mm ultra-CSP package. It is compatible with low-cost PC boards using standard design rules and via size.

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