Direct Connect CMOS-based Antenna Switches

Peregrine Semiconductor unveils two CMOS-based antenna switches that tie directly to the antenna.

The PE4261

The first device is a Flip-Chip SP4T GSM Antenna Switch. The PE4261 RF antenna switch for dual-band GSM handset applications provides antenna switch module manufacturers a low height and small footprint solution by implementing flip-chip packaging. The use of advanced packaging technology reduces the PCB area by a factor of nine when compared to conventional wire bonding. The 50W, PE4261 complements the PE4263 RF switch, detailed below. It offer unprecedented features, including: two-pin CMOS logic control inputs; low TX insertion loss of 0.55 dB at 900 MHz and 0.65 dB at 1.9 GHz; high Isolation of 45 dB at 900 MHz and 40 dB at 1.9 GHz; low harmonics (2fo = &#150 85 dBc and 3fo = &#150 72 dBc at 35 dBm input power); 1500 V HBM ESD tolerance at all ports; an integrated CMOS decoder/driver and RX SAW over voltage protection circuit. The device offers linear operation from 100 to 3000 MHz at 2.6 V with fast switch settling time. Further, the blocking capacitors typically found on pHEMT switches with positive control logic are not required for any UltraCMOS-based device. The PE4261 is slated for high-volume production in multiple facilities.

The PE4263

Peregrine Semiconductor's PE4263 RF Antenna Switch provides a unique, high-performance solution to the quad-band GSM handset Antenna Switch Module (ASM) market by offering high power at 41 dBm P1dB; high linearity of 65 dBm IP3; and monolithic integration of key elements including a control logic decoder and driver. This high-power device, developed on the Company's UltraCMOS&#153 process technology, advances the cellular phone industry past traditional roadblocks in performance and size, enabling new roadmaps to be drawn for next generation antenna switch module designs. This CMOS-based IC can be directly connected to the antenna of a GSM handset. Early designs incorporating the PE4263 have been validated and production is ramping with global cellular handset market-leaders. Peregrine's 50W PE4263 die provides superior performance, lower insertion loss, smaller footprint and higher integration to alternative pin-diode or pHEMT-based designs. This innovative 2.6V RF switch operates from 100 to 3000 MHz and provides many extraordinary features, including 1500 V ESD tolerance at all ports; no blocking capacitors; 45 dB of isolation; low insertion loss of 0.55 dB at 915 MHz; and fast switch settling time. Both devices are slated for high-volume production in multiple facilities. The PE4263 is priced at $0.60 ea. (10K units), and is available in

die form (1.24mm x 1.2mm). The 4261 is priced at $0.52 ea. (10K units). Both are available from Peregrine and its global distribution partner, Richardson Electronics.
Peregrine Semiconductor Corporation