SKYWORKS™

CX77304-15

PA Module for Dual-Band GSM850 PCS1900 / GPRS Applications

The CX77304-15 Power Amplifier Module(PAM) is designed in a compact form factor for dual-band cellular handsets comprising GSM850 and PCS1900 operation. It also supports Class 10 General Packet Radio Service (GPRS) multislot operation.

The PAM consists of an GSM850 PA block and a PCS1900 PA block, impedance matching circuitry for 50 Ω input and output impedances, and interface circuitry. Two separate Heterojunction Bipolar Transistor (HBT) PA blocks are fabricated on a single Gallium Arsenide (GaAs) die. One PA block supports the GSM850 band and the other PA block supports the PCS1900 band. Both PA blocks share common power supply pins to distribute current. A custom CMOS integrated circuit provides the internal interface circuitry including a current amplifier that minimizes the required power control current (I_{APC}) to 10 μA, typical. The GaAs die, the Silicon (Si) die, and passive components are mounted on a multi-layer laminate substrate. The assembly is encapsulated with plastic overmold.

The RF input and output ports are internally matched to 50 Ω to reduce the number of external components for a dual-band design. Extremely low leakage current (2 μA, typical) of the dual PA modulen maximizes handset standby time. The CX77304-15 also contains band-select switching circuitry to select GSM (logic 0) and PCS (logic 1) as determined from the Band Select (BS) signal. In the block diagram shown below, the BS pin selects the PA output (PCS OUT or GSM OUT) while the Analog Power Control (APC) controls the level of output power.
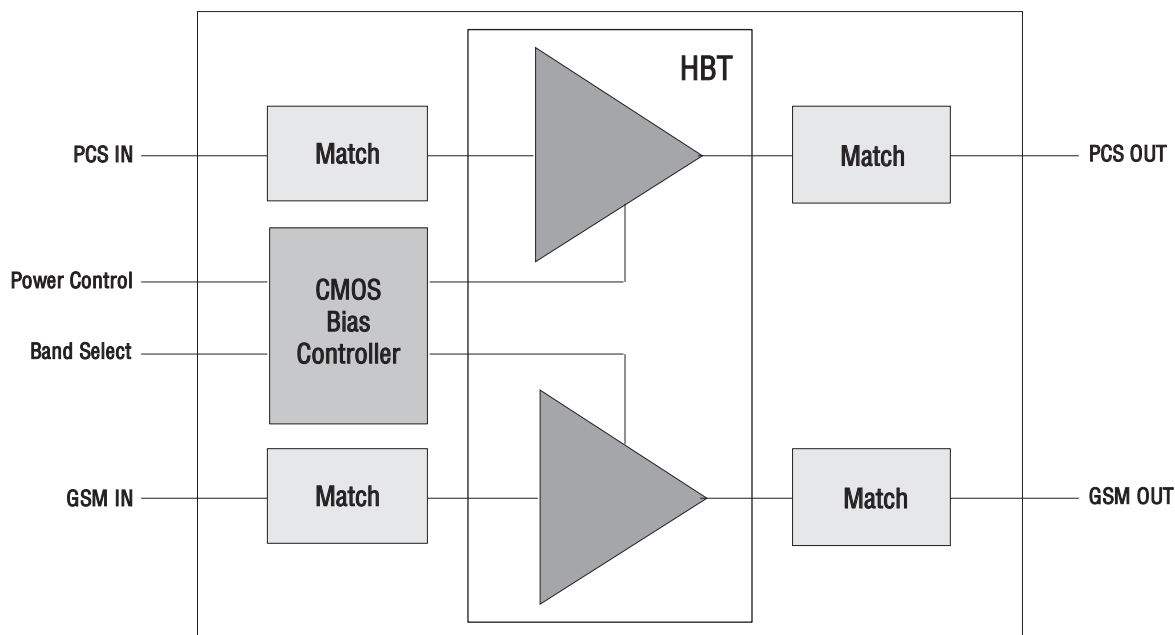
Distinguishing Features

- High efficiency
  GSM 55%
  PCS 45%
- Input/output matching
  50 Ω internal
- Small outline
  9.1 mm × 11.6 mm
- Low profile
  1.5 mm maximum)
- Low APC current
  10 μA, typical
- Gold plated, lead-free contacts

Applications

- Dual-band cellular handsets encompassing
  Class 4 GSM850
  PCS1900, and
  up to Class 10 GPRS multislot operation

Functional Block Diagram

General Information:

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