

## PRODUCT SUMMARY

# SKY77585 Tx-Rx Quad-Band Front-End Module for GSM/GPRS (824-915 MHz) (1710-1910 MHz) w/ Four Linear TRx Switch Ports

### Applications

- Quad-band cellular handsets encompassing
  - Class 4 GSM850/GSM900
  - DCS1800/PCS1900
  - Class 12 GPRS multi-slot operation
  - EDGE downlink compatible

### Features

- High efficiency
- Low transmit supply current
- 50  $\Omega$  matched input/output
- Tx-VCO-to-antenna and antenna-to-Rx-SAW filter RF interface
- RF switch affords high linearity, low insertion loss, and 0 V DC on Rx ports
- Small, low profile package
  - 6 mm x 6 mm x 0.9 mm
  - 28-pad configuration

### Description

SKY77585 is a transmit and receive Front-End Module (FEM) with integrated power amplifier control designed in a low profile, compact form factor for quad-band cellular handsets comprising GSM850/GSM900 and DCS1800/PCS1900 operation. The SKY77585 offers a complete Transmit VCO-to-Antenna and Antenna-to-Receive SAW filter solution. The FEM also supports Class 12 General Packet Radio Service (GPRS) multi-slot operation and EDGE downlink.

The module consists of a GSM850/GSM900 PA block and a DCS1800/PCS1900 PA block, impedance-matching circuitry for 50  $\Omega$  input and output impedances, Tx harmonics filtering, high linearity/low insertion loss RF switch, and a Power Amplifier Control (PAC) block. One PA block supports the GSM850/GSM900 bands and the other PA block supports the DCS1800/PCS1900 bands. Both PA blocks share common power supply pads to distribute current. The output of each PA block and the outputs to the four receive pads are connected to the antenna pad through an RF switch. Four broadband interchangeable receive ports provide flexibility to support multimode and multiband configurations. The GaAs die, the CMOS die, the Switch die, and passive components are mounted on a multi-layer laminate substrate. The assembly is encapsulated with plastic overmold.

Band selection and control of transmit and receive are performed using four external control pads. Refer to the block diagram in Figure 1 below. The band select pad, BS1, BS2, Mode, and TxEN select GSM850, GSM900, DCS, and PCS modes of operation.

Transmit enable TxEN controls receive or transmit mode of the RF switch (Tx = logic 1). Proper timing between transmit enable TxEN and Analog Power Control VRAMP allows for high isolation between the antenna and Tx-VCO while the VCO is being tuned prior to the transmit burst.

The SKY77585 is compatible with logic levels from 1.2 V to 2.9 V for BS1, BS2, MODE, and TxEN pads.



Skyworks Green™ products are compliant with all applicable legislation and are halogen-free. For additional information, refer to Skyworks *Definition of Green™*, document number SQ04-0074.

## Ordering Information

Product Name	Order Number	Evaluation Board Part Number
SKY77585 Tx-Rx Quad-band Front-End Module	SKY77585	

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