SKYWORKS™

PRODUCT SUMMARY

SKY74702: Transmitter for CDMA Applications

Applications

- CDMA phones in the cellular band:
  - CDMA-US
  - CDMA-Japan

Features

- Serial bus interface control
- Low power consumption in all operating modes
- Image reject upconverter replaces external RF SAW filter
- Transmit power control with 90 dB dynamic range
- Variable gain RF block for improved in-band SNR
- VHF VCO (external tank), 200 to 700 MHz
- VHF VCO switching to increase the talk time of the radio
- Two separate PLL synthesizers provide dual-loop, multi-band operation and power-save mode for both standby and lower frequency of operation
- Fully programmable PLL dividers and selectable charge pump currents for multi-VCO applications
- Transmit puncture pin disables programmable portions of device
- RFLGA™ (40-pin, 6 x 6 x 1 mm) package with downset paddle

Description

The SKY74702 device is a single-supply, monolithic integrated circuit. It is designed for use in single-mode Code Division Multiple Access (CDMA) cellular voice/data applications including extensions for CDMA-Japan.

The SKY74702 is a highly integrated superheterodyne transmitter that incorporates the following components:

- In-Phase and Quadrature (I/Q) modulator – accepts the analog I and Q current outputs from the baseband analog processor and converts them to Intermediate Frequency (IF) signals
- Voltage Controlled Oscillator (VCO) and VHF synthesizer – generates the LO signal for the quadrature modulator
- UHF synthesizer – controls the UHF oscillator
- Variable Gain Amplifier (VGA) – provides the variable output power for CDMA systems
- Image reject upconverter and power amplifier (PA) drivers

The signal enters the chip as a baseband I/Q signal, which is upconverted by an I/Q quadrature modulator. The resulting signal is fed through a VGA to provide variable output power. After leaving the open collector output of the VGA, the signal enters a switch matrix. This switch matrix allows the signal to be routed through an external filter, or it can be filtered by the tuned collector load and passed directly to the UHF image reject mixer.
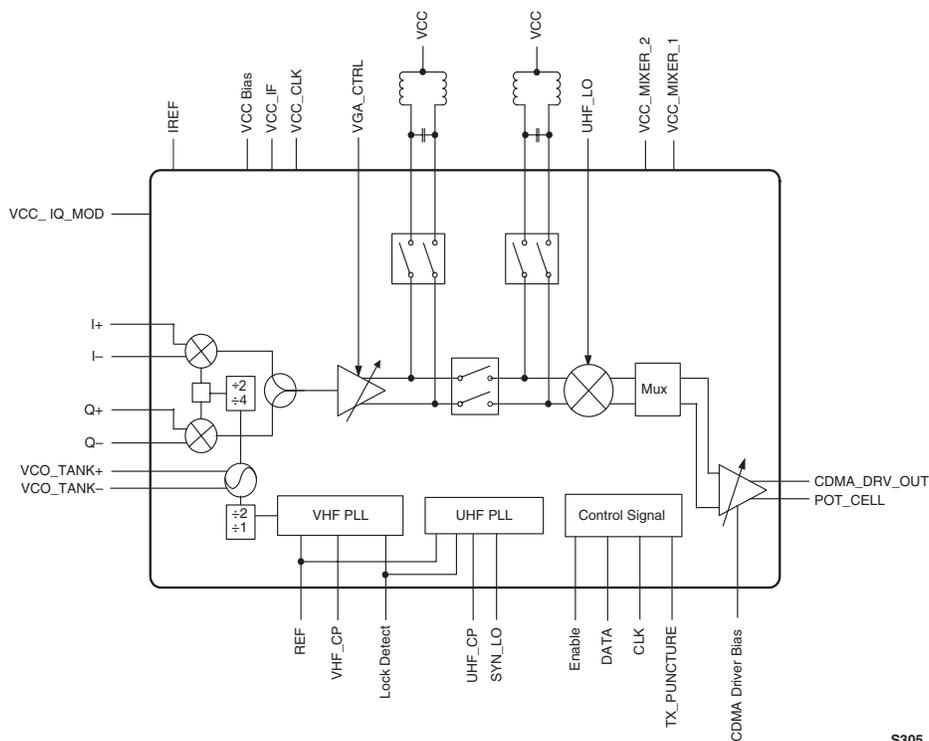
The image reject mixer is internally connected to the PA driver. The mixer driver combination has a variable gain control that can be used to reduce the RF gain, which improves the in-band Signal-to-Noise Ratio (SNR) at a lower output power. The PA driver amplifies the RF signal to the appropriate level for the desired output power. This is then filtered by a bandpass filter and sent to an external PA to obtain the final rated output power at the antenna.

The device package and pinout for the 40-pin RF Land Grid Array (RFLGA) are shown in Figure 1. A block diagram of the SKY74702 is shown in Figure 2.

Figure 1. SKY74702 Pinout – 40-Pin RFLGA Package (Top View)

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Figure 2. SKY74702 Transmitter Block Diagram

Ordering Information

Model Name	Manufacturing Part Number	Product Revision
SKY74702 CDMA Transmitter	SKY74702-11	

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