**PRODUCT SUMMARY**

# SKY78131 SkyOne® Ultra 3.0 Front-end Module for WCDMA/LTE Bands 1, 2, 3, 4, 25, 34, 39

DISCONTINUED

## Applications

- Multiband 3G handsets
- CDMA/TD-SCDMA/WCDMA/HSPA/HSPA+/TDD-LTE/FDD LTE-modulated handsets for bands 1, 2, 3, 4, 25, 32, 34, 39, 66 and BC1

## Features

- Fully integrated MB multiband module
- Optimized for average power tracking system
- CDMA compatible
- Integrated filters for bands 1, 2, 3, 66, 32, 34, 39
- Integrated MB-HB extractor, harmonic filter
- MIPI® 2.0/RFFE interface
- Closed loop architecture with the implemented coupler output port
- Integrated LNA module
- Integrated routed switches to support MB/HB carrier aggregation for single antenna architecture
- Flexible Tx Input
- Support VLB/LB Transmit Output port
- Small, low profile package
  - 6.5 mm x 6.2 mm x 0.8 mm
  - 54-pad configuration
- For RoHS and other product compliance information, see the Skyworks Certificate of Conformance.

## Description

The SKY78131 SkyOne® Ultra 3.0 is a multimode multiband (MMMB) Front-End Module (FEM) that supports 3G/4G, and CDMA handsets and operates efficiently in CDMA, TD-SCDMA, WCDMA, HSPA, and LTE modes. The FEM consists of a WCDMA blocks operating in the middle bands, a logic control block for multiple power control levels, and band enable functions in both cellular and UMTS. RF I/O ports internally matched to 50 ohms, minimize the need for external components. Extremely low leakage current maximizes handset standby time. The InGaP/GaAs die and passive components are mounted on a multi-layer laminate substrate and the assembly encapsulated in plastic overmold.

**WCDMA:** The SKY78131 enhanced architecture supports WCDMA/High Speed Downlink Packet Access (HSDPA) and High Speed Uplink Packet Access (HSUPA) modulations, covers multiple bands for 3GPP including bands 1, 2, 4 and operates at different power modes. The module is fully controllable via a MIPI serial interface.

**LTE:** The SKY78131 meets spectral linearity requirements of LTE modulation with QPSK/16QAM up to 20 MHz bandwidth, including various resource block allocations, with excellent power-added efficiency.

**CDMA:** The SKY78131 meets spectral linearity requirements of CDMA2000 and EVDO Release A modulation with good power-added efficiency.

**TD-SCDMA:** The SKY78131 meets spectral linearity requirements of TD-SCDMA modulation dedicated transmit output port.

**Receiver Section:** The SKY78131's integrated Duplexers, RX SAWs, LNA and an Antenna switch support simultaneous Downlink Carrier Aggregation for additional Rx data rate and provides 3G/4G Rx paths from antenna to input ports of RFIC. Carrier Aggregation (CA) requirements for noise and harmonics are designed-in for best desense performance. Optimized low insertion-loss Rx paths, matching circuits, and well-grounded guard traces (high Tx–Rx isolation) inside module mitigate desense problems and enhance sensitivity performance.

**LNA Rx Ports:** The SKY78131 provides three LNA ports to support 4x4 MIMO.

**TRx and Rx Ports:** The SKY78131 provides six TRx ports.

## Ordering Information

| Product Name | Order Number | Evaluation Board Part Number |
|---|---|---|
| SKY78131 SkyOne® Ultra 3.0 Front–End Module | SKY78131 | |