

**PRODUCT SUMMARY**

# SKY78042 SkyOne® Ultra Front-End Module for WCDMA / LTE Bands 26, 8, 12, 20, 28A, 28B, and GSM/EDGE 850/900 MHz

**Applications**

Multiband 3G handsets  
 Multiband FDD LTE handsets

**Features**

- Fully integrated LB/VLB multiband module
- Envelope Tracking (ET) for WCDMA/FDD LTE bands
- Average Power Tracking
- CDMA compatible
- Dual-band GSM/GPRS/EDGE 850/900 MHz
- Fully programmable Mobile Industry Processor Interface (MIPI®) digital control
- Closed loop architecture with the Implemented coupler output port
- Fully configurable RF inputs
- Supports Band 20 transient output port
- Small, low profile package
  - 7.5 x 6.0 x 0.9 mm
  - 48-pad configuration



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**Description**

The SKY78042 SkyOne® Ultra, a hybrid, multimode multiband (MMMB) Front-End Module (FEM), supports 2.5G, 3G/4G and CDMA handsets, and operates efficiently in GSM, GPRS, EDGE, WCDMA, HSPA, and LTE modes. The FEM consists of a GSM800/EGSM900 PA block, separate WCDMA blocks operating in the low 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.

**GSM / EDGE:** The SKY78042 new compact architecture supports the GSM850 and EGSM900 bands, as well as 2.5G Class 12 General Packet Radio Service (GPRS) multi-slot operation and EDGE linear modulation.

**WCDMA:** The SKY78042 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 8 and 26, and operates at different power modes. The module is fully controllable via a MIPI/RFEE serial interface.

**LTE:** The SKY78042 meets spectral linearity requirements of LTE modulation with QPSK/16QAM up to 20 MHz bandwidth, including various resource block allocations, with good power-added efficiency.

**Receiver Section:** The SKY78042 integrated Duplexers, RX SAWs, and the 1P8T switch support simultaneous Downlink Carrier Aggregation for additional Rx data rate and provide 2G/3G/4G Rx paths from antenna to LNA port of RFIC. Carrier Aggregation (CA) requirements for noise and harmonics are designed-in for best de-sense performance. Additionally, GPS and LB/HB WiFi coexistence are also designed-in for exceptional support to maintain all radio performance, even in user scenarios of simultaneous use. Optimized low insertion-loss Rx paths, matching circuits, and well-grounded guard traces (high Tx–Rx isolation) inside module mitigate de-sense problems and enhance sensitivity performance.

**TRx and Rx Ports:** The SKY78042 provides two TRx ports.

## Ordering Information

Product Name	Order Number	Evaluation Board Part Number
SKY78042 SkyOne® Ultra Front-End Module	SKY78042	EN21-D695-001

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