

PRODUCT SUMMARY

SKYA23013 SkyOne® Ultra 3.0 Front-End Module for Automotive Applications – WCDMA / LTE Bands 1, 2, 3, 4, 25, 34, 39

Applications

- Multiband telematics boxes
- CDMA /TD-SCDMA/ WCDMA / HSPA / HSPA+ / TDD-LTE/ FDD-LTE-modulated Bands 1, 2, 3, 4, 25, 32, 34, 39, 66, 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



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.

Description

The SKYA23013 SkyOne® Ultra 3.0 is a multimode multiband (MMMB) Front-End Module (FEM) for Automotive Applications that supports 3G/4G and operates efficiently in CDMA, TD-SCDMA, WCDMA, HSPA, and LTE modes. The FEM consists of a WCDMA block 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 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 SKYA23013 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 SKYA23013 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 SKYA23013 meets spectral linearity requirements of CDMA2000 and EVDO Release A modulation with good power-added efficiency.

TD-SCDMA: The SKYA23013 meets spectral linearity requirements of TD-SCDMA modulation dedicated transmit output port.

Receiver Section: The SKYA23013's integrated Duplexers, RX SAWs, LNA, an Antenna switch to support simultaneous Downlink Carrier Aggregation for additional Rx data rate and 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 SKYA23013 provides three LNA ports to support 4x4 MIMO.

TRx and Rx Ports: The SKYA23013 provides six TRx ports.

Ordering Information

Part Number	Part Description	Evaluation Board Part Number
SKYA23013	SkyOne® Ultra 3.0 Front-End Module	SKYA23013EK1

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