

**PRODUCT SUMMARY**

# SKY5®-8096-11: SkyOne® LiTE Mid-Band and High-Band Front-End Module for 3G, 4G, and 5G Applications

## Applications

- Multi-band 3G / 4G / 5G mobile devices
- Handsets, data cards, and M2M
- LTE advanced carrier aggregation (CA)

## Features

- MIPI® RFFE 2.1 control interfaces with 1.2 V / 1.8 V nominal supply
- Supports envelope tracking (ET) operation
- Two ANT output ports support flexible ANT configurations and swap
- Integrated hexaplexer filter for Bands 1, 3, 32, and 40
- Integrated duplexers for Bands 2 and 7
- Integrated diplexer filter for Bands 34 and 39
- Integrated filter for Band 41F
- Two auxiliary MB Tx outputs for external filters and one auxiliary HB Tx output for external filter
- Three auxiliary TRx ports to support additional bands
- Auxiliary mid-band antenna switch input for 2G Tx output from low-band module
- Integrated bi-directional RF coupler with cascade support
- All RF I/O ports matched to 50 Ω impedance
- Small, low-profile package:
  - 8.6 mm x 6.5 mm x 0.7 mm (max)
  - 62-pad Large Grid Array (LGA) configuration

## 3G Features

- WCDMA, HSPA+
- TD-SCDMA, TD-HSPA
- CDMA2000 1x RC1, RC3, EVDO (Rev A)



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.

## 4G Features

- FDD/TDD LTE
- Uplink QPSK, 16 QAM, and 64 QAM
- Intra-band uplink carrier aggregation
  - 35 MHz (175 RB) for Band 39
  - 40 MHz (200 RB) for Bands 1, 2, 3, 7, 40, and 41
  - 60 MHz (300 RB) for Bands 40 and 41
- Inter-band downlink CA support
- MB-to-MB and MB-to-HB inter-band uplink CA supported by Skyworks add-on PA module (SKY77782)

## 5G Features

- FDD/TDD NR Bands
- Uplink QPSK, 16 QAM, 64 QAM, and 256 QAM
- Up to 100 MHz APT and ET

## Description

The SKY58096-11 Mid-Band and High-Band Front-End Module (FEM) supports 3G / 4G / 5G mobile devices and operates efficiently in 3G / 4G / 5G modes. The module includes separate 3G / 4G / 5G PA blocks operating in the mid-bands and high-bands, a silicon controller containing the MIPI® RFFE® interface, RF band switches, MB and HB antenna switches, bi-directional couplers, and integrated filters for Bands 1, 2, 3, 7, 32, 34, 39, 40, and 41. RF I/O ports are internally matched to 50 Ω to minimize the need for external components. Extremely low leakage current maximizes device standby time.

The IC die and passive components are mounted on a multi-layer laminate substrate. The 62-pad LGA assembly, encapsulated in an 8.6 mm x 6.5 mm x 0.65 mm SMT plastic package, offers a highly manufacturable and low-cost solution.

The SKY58096-11 module is designed to meet stringent 5G NR and LTE advanced requirements where wider bandwidth (100 MHz) and carrier aggregation are utilized for higher data rates. The combined filtering, RF matching, and TRx internal switching optimize performance for popular downlink (DL) CA band combinations in a compact, low-cost solution. The module contains all necessary components between the antenna and RFIC transceiver and is optimized for superior Rx sensitivity and Tx efficiency. Two ANT ports provide best flexibility to support multiple ANT configurations and ANT swap function. For the Uplink, the PA blocks support very wide bandwidth 5G NR operations up to 60 MHz for n1, n3, n7 and up to 100 MHz for n41.

**Ordering Information**

Part Number	Product Description	Evaluation Board Part Number
SKY58096-11	SkyOne® LiTE Mid-band and High Band Front-End Module for 3G, 4G, and 5G Applications	SKY58096-11EK1

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