



**SKYWORKS®**

## PRODUCT SUMMARY

# SKY5A3058: Sky5® Low Band TX-RX Front-End Module for 3G/4G/5G Applications with Low Band/High Band 2G

## Applications

- Automotive
- 4G/5G automotive and telematics Network Attached Device (NAD)

## Features

- MIPI® RFFE 3.0 control interface with 1.8 V/1.2 V supply
- Integrated switched duplexer filters for Bands 8, 12, 20, 26, 28A, and 29
- Integrated low noise amplifiers (LNA)
- 4 auxiliary 3G/4G/5G TX outputs for external filters
- 4 auxiliary 3G/4G/5G TRX ports to support additional bands
- Integrated VCC switch for 4G PA
- TX filtering for harmonically-related LB-MB downlink CA
- Integrated low band and high band 2G PAs
- High band 2G for companion MB/HB modules
- Integrated bi-directional RF coupler with cascade support
- Small, low-profile package:
  - 7.6 mm x 6.0 mm x 0.75 mm (max.)
  - SkyShield™ Shielded Module
  - 56-pad configuration
- For RoHS and other product compliance information, see the [Skyworks Certificate of Conformance](#)

## 4G/5G Features

- FDD LTE
- Uplink QPSK, 16QAM, 64QAM
- Critical L+M, L+H downlink CA support
- n8, n12, n20, n26, n28A, n28B, n71, n13, n14

## Automotive Support

- Production Part Approval Process (PPAP)
- AEC-Q104 Grade 2
- IMDS material declaration

## Description

The SKY5A3058 Sky5® TX/RX Front-End Module (FEM) supports 2G/3G/4G/5G for automotive and telematics NAD. The FEM consists of a low-band 3G/4G/5G PA block, low band and high-band 2G PA blocks, a silicon controller containing the MIPI RFFE interface, RF band switches, antenna switches, a bi-directional coupler, integrated filters for Bands 8, 12, 20, 26, 28A, and 29, and LNA. Extremely low leakage current maximizes device standby time. The SKY5A3058 is part of our Sky5 product portfolio.

The IC die and passive components are mounted on a multi-layer laminate substrate. The assembly allows a highly manufacturable, low cost solution.

The device is optimized for LTE Advanced which uses CA for higher data rates. The combined filtering, RF matching, and TRX switching internal to the FEM optimizes performance for popular DL CA band combinations in a compact and low-cost solution. The FEM contains the necessary components between the antenna and RFIC transceiver and is optimized to provide superior RX sensitivity and TX efficiency.

Selecting the linear-GMSK operation standard disables VRAMP input, so all PA biasing depends only on MIPI mode selection. The transmitted envelope is then a linear function of RF input. Selecting VRAMP-enabled operation, the PA controller provides VRAMP control of the GMSK envelope and reduces sensitivity to input drive, temperature, power supply, and process variations.

Exceptional RF coexistence planning and system techniques are employed to minimize RX de-sensitizing (“de-sense”).

## Functional Block Diagram

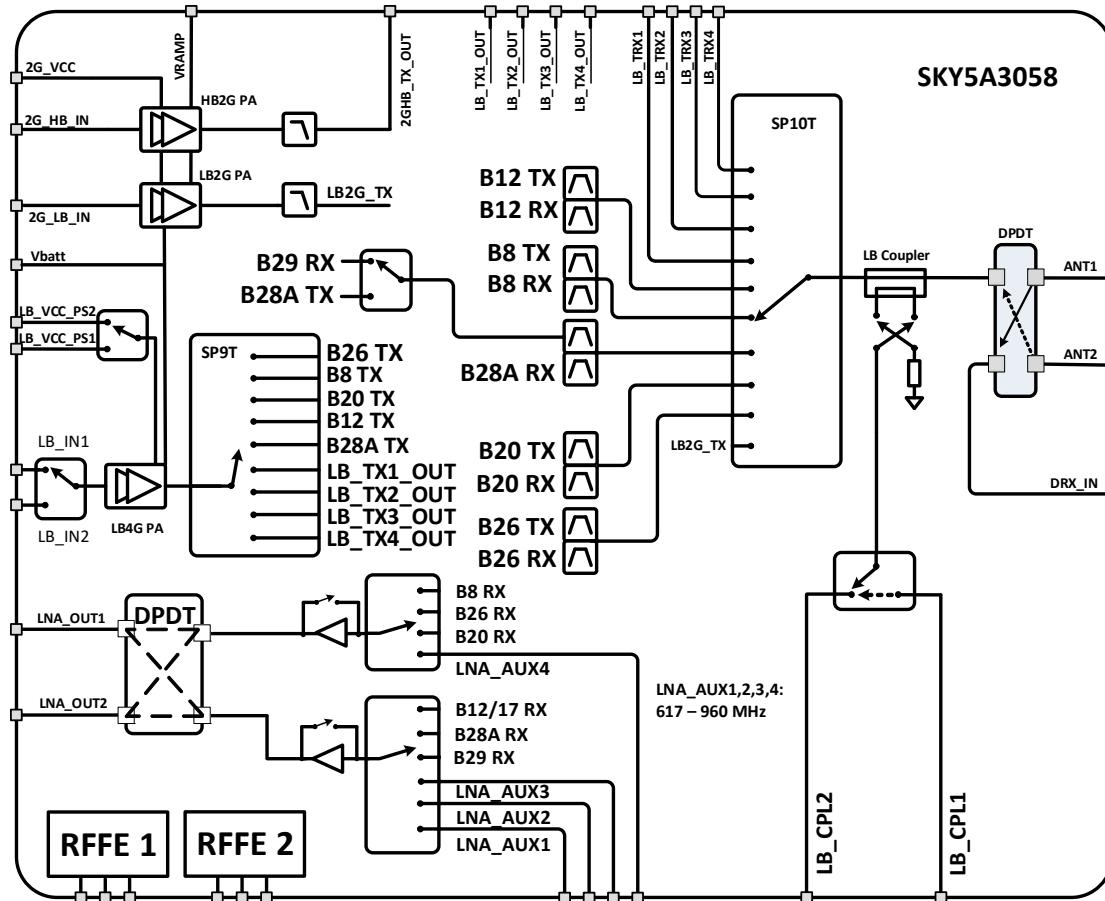


Figure 1. Functional Block Diagram

## Ordering Information

Part Number	Part Description	Evaluation Board Part Number
SKY5A3058	Sky5® Low-Band Tx-Rx Front-End Module	SKY5A3058EK1

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