

## PRODUCT SUMMARY

# SKY58501-16: Sky5® Front-End Module for NR, LTE, WCDMA, Quad-Band, 2G, and Diversity Applications

## Applications

- Multiband 2G, 3G, 4G, and 5G handsets:
  - WCDMA Bands 5 and 8

## Features

- Quad-band 2G GSM/GPRS/EDGE
- LNA and Power Amplifier Module with integrated Filters (L-PAMiD) covering B8, B12, B13, B14, B20, B26, B28A/28B, B29, B71 with integrated quad-band 2G and DRX functionality
- LTE bands 5, 8, 12 to 14, 17 to 20, 26, 28A, 28B, 29, and 71
- Supports CA\_20\_28A
- Integrated PAs and filters to support DC\_20\_n28A
- TX MIPI® v2.1 compliant 52 MHz RFFE bus
- RX MIPI v3.0 compliant 52 MHz RFFE bus
- Enhanced high-efficiency APT PA core
- Integrated antenna and band select switches
- B29 RX path switched through B28B TX filter
- Two antenna ports with antenna swapping feature
- Integrated bi-directional RF coupler with attenuator
- Supports linear and VRAMP 2G
- Integrated primary and diversity low noise amplifier (LNA) with MIPI control features:
  - Baseband agnostic design for 10 gain modes
  - Independent gain and bias control
- Continuous bias control via RFFE interface
- Low supply voltage
- Low leakage current in power-down mode
- SkyShield™ shielded module
- Small, low-profile package:
  - 5.6 mm x 8.25 mm x 0.75 mm (max.)
  - 154-pad DSMGA package
- Lead (Pb)-free MSL3 @ 260 °C per JEDEC J-STD-020
- For RoHS and other product compliance information, see the [Skyworks Certificate of Conformance](#).

## Description

The SKY58501-16 front-end module (FEM) is a fully matched, 154-pad surface mount (SMT) module developed for 5G/4G/3G/2G/LTE/WCDMA/HSDPA/ HSUPA applications.

The FEM consists of a 3/4/5G PA block, quad-band, 2G PA block, input and output matching, a MIPI standard digital control block, single-ended primary duplexers, diversity RX filters, antenna and band select switches, and primary and diversity LNAs.

The SKY58501-16 is part of our Sky5® product portfolio.

The SKY58501-16 uses an enhanced architecture to cover multiple bands and meet the spectral linearity requirements of LTE QPSK, 16QAM, 64QAM, 256QAM modulations with up to 35 MHz bandwidth.

Output power is controlled by varying the input power and VCC is adjusted using a buck/boost power management integrated circuit (PMIC) to maximize efficiency. Extremely low leakage current maximizes handset standby time.

## Block Diagram

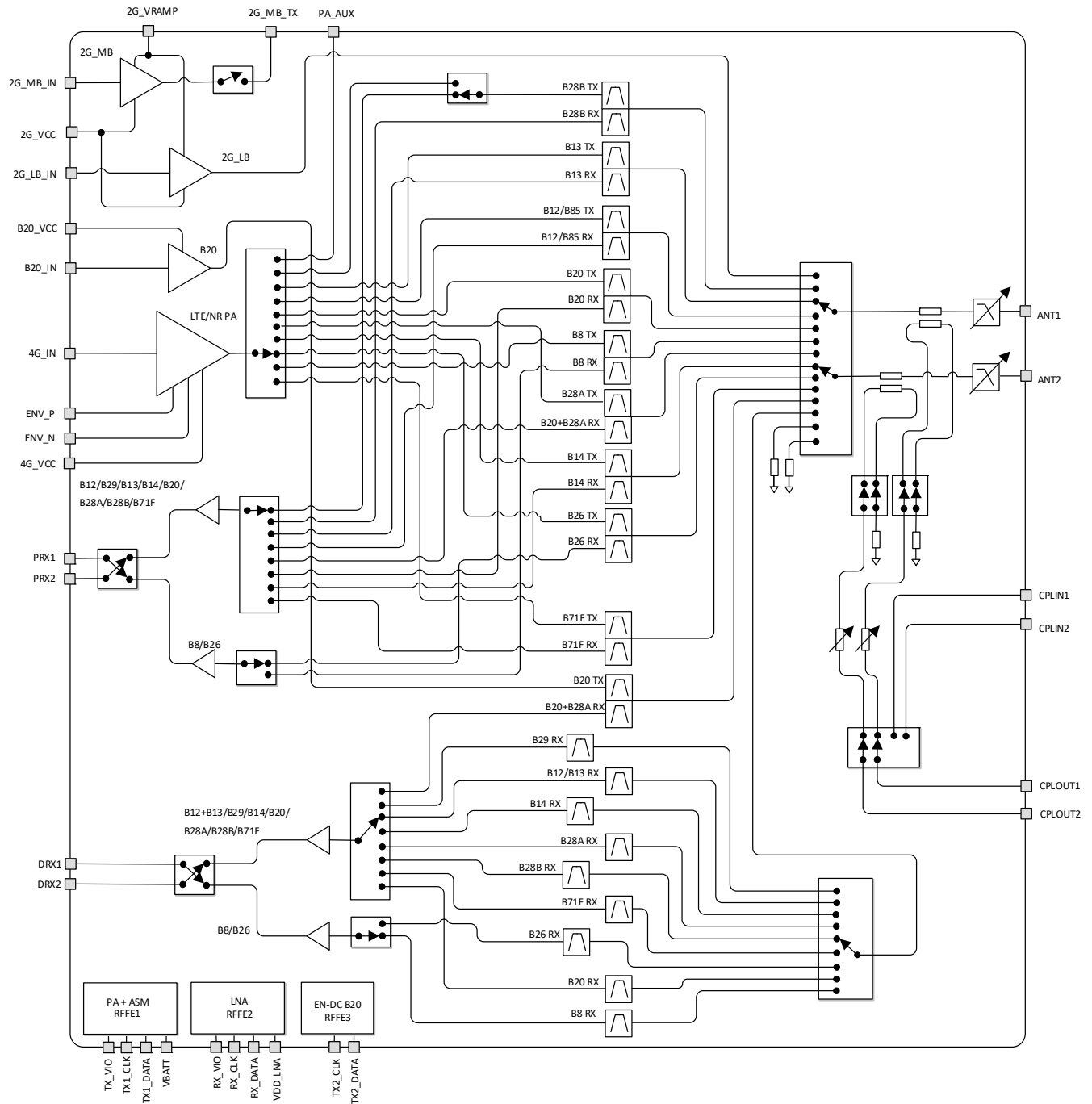


Figure 1. Functional Block Diagram

## Ordering Information

| Part Number | Description                                                                          | Evaluation Board Part Number |
|-------------|--------------------------------------------------------------------------------------|------------------------------|
| SKY58501-16 | Sky5® Front-End Module for NR, LTE, WCDMA, Quad-Band, 2G, and Diversity Applications | SKY58501-16EK1               |

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