SKY5A3200: Sky5® Mid- and High-Band Front-End Module for 3G/4G/5G Applications

Applications

- Multi-band 4G and 5G automotive and telematics Network Attached Device (NAD)

Features

- MIPI® RFFE 3.0 control interface
- Multiple gain state average power tracking mode
- 4G/5G band supports 1, 3, 25, 66, 70, 7, 34, 39, 40, 41 (38), 30 (ext. filter), 21 (ext. filter), 32/75/76 (ext. filter)
- One auxiliary HB TX output for external filter
- One auxiliary MB TX output for external filter
- Four auxiliary TRx ports to support additional bands
- Two auxiliary LNA ports to support additional bands
- Four auxiliary LNA ports for MIMO
- Integrated bi-directional RF coupler for forward and reverse
- All RF I/O ports matched to 50 Ω impedance
- Small, low profile package:
  - 6.2 mm x 7.4 mm x 0.70 mm (max.)
  - 56-pad configuration
- SkyShield™ self-shielded module
- Lead (Pb)-free MSL3 at 260 °C per JEDEC J-STD-020
- Temperature: –30 °C (+85 °C) operating, –40 °C (+105 °C) functional
- Automotive support:
  - AEC-Q104 Grade 2
  - Production Part Approval Process (PPAP)
  - IMDS material declaration
- For RoHS and other product compliance information, see the Skyworks Certificate of Conformance.

Description

The SKY5A3200 Mid-Band (MB) and High-Band (HB) Front-End Module (FEM) supports 3G/4G/5G for automotive and telematics NAD. The module includes separate 3G/4G/5G PA blocks operating in MB and HB, a silicon controller containing the MIPI® RFFE interface, RF band switches, MB and HB antenna switches, bidirectional couplers, and integrated filters for Bands 1, 25, 3, 66, 70, 7, 34, 39, 40, and 41.

The SKY5A3200 is part of our Sky5® product portfolio.

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 module is designed to meet stringent 5G NR and LTE advanced requirements where wider bandwidth (100 MHz) and CA are used for higher data rates.

The combined filtering, RF matching, and TRx switching internal to the module optimizes performance for popular downlink (DL) CA band combinations. The module contains all necessary components between the antenna and RFIC transceiver and is optimized for receive sensitivity and transmit efficiency.

Two ANT ports provide flexibility to support multiple ANT configurations and ANT swap function. For the uplink (UL) bands, the PA blocks support wide bandwidth 5G NR operations: up to 60 MHz for n1, n3, n7, and up to 100 MHz for n41.

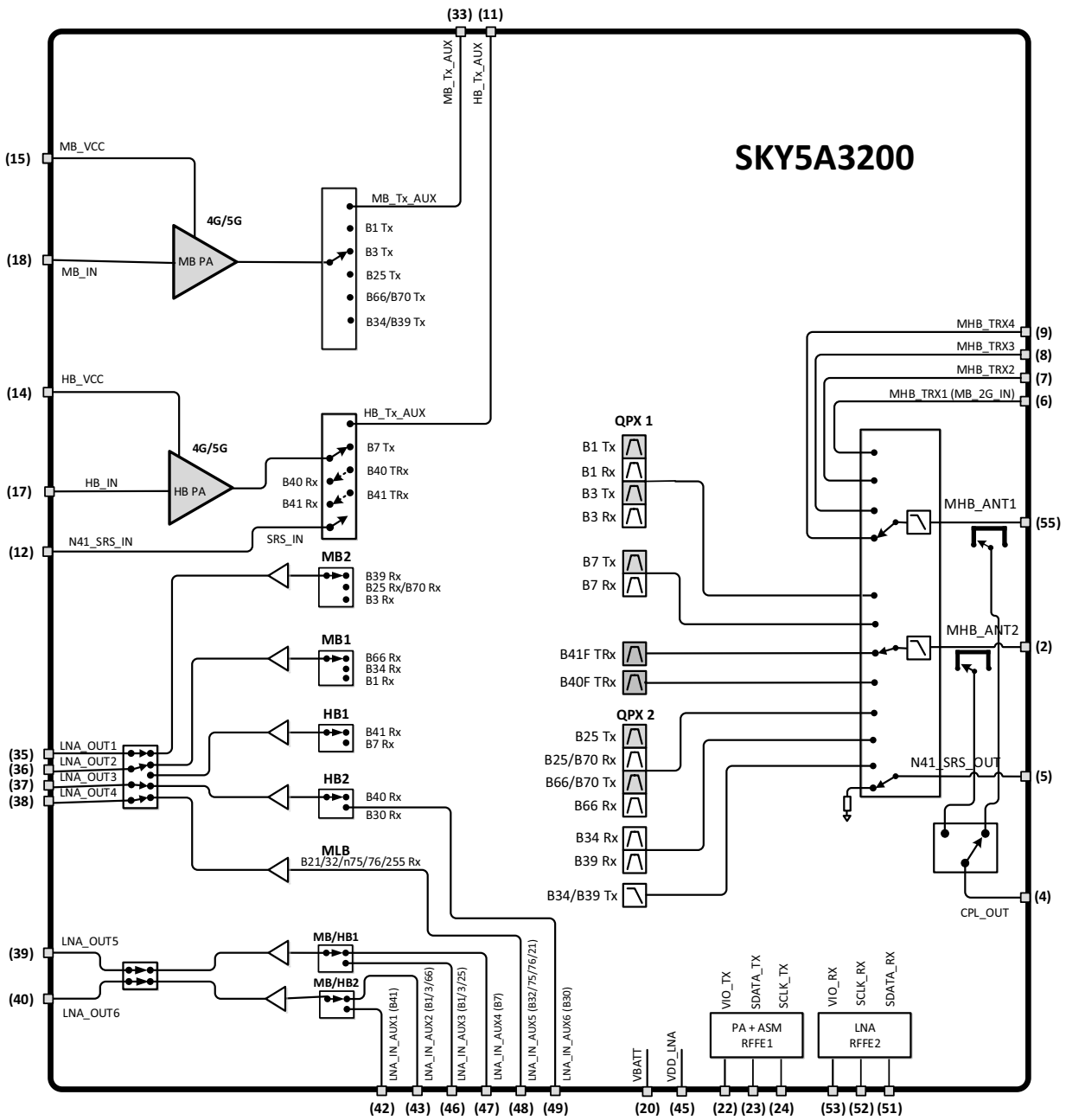Figure 1 on page 2 shows the functional block diagram.

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Figure 1. Functional Block Diagram

Ordering Information

Part Number	Description	Evaluation Board Part Number
SKY5A3200	Sky5® Mid- and High-Band Front-End Module for 3G/4G/5G Applications	SKY5A3200EVK1

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