

PRODUCT SUMMARY

SKY58100-11 Sky5® Low Band Tx-Rx Front-End Module for 3G/4G/5G Applications with Low Band / High Band 2G

Applications

- Multi-band 2G 3G/4G/5G Mobile Devices
- Handsets, Data Cards, M2M
- LTE Advanced Carrier Aggregation (CA)

Features

- MIPI® RFFE 3.0 control interface with 1.8V/1.2V supply
- Integrated switched duplexer filters for Bands 8, 26 and 28A
- Integrated Low Noise Amplifiers (LNA)
- Three auxiliary 3G/4G/5G Tx outputs for external filters
- Three 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 works with 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
 - SkyShield™ Shielded Module
 - 56-pad configuration

3G Features

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

4G Features

- FDD LTE
- Uplink QPSK, 16QAM, 64QAM
- Critical L+M, L+H Downlink CA Support

5G Features

- n5, n8, n28, n71, n13, n14



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.

The SKY58100-11 Sky5® Multimode Multiband Tx-Rx Front-End Module (FEM) supports 2G/3G/4G/5G mobile devices and operates efficiently in 3G/4G/5G modes. The SKY58100-11 is part of our Sky5® product portfolio. 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, 26, and 28A, and a low noise amplifier (LNA). Extremely low leakage current maximizes device standby time.

The IC die and passive components are mounted on a multi-layer laminate substrate. The assembly is encapsulated in a 7.6 mm x 6.0 mm x 0.75 mm, 56-pad MCM, SMT plastic package which allows a highly manufacturable, low cost solution.

The SKY58100-11 FEM is optimized for LTE Advanced which utilizes Carrier Aggregation for higher data rates. The combined filtering, RF matching and TRx switching internal to the FEM optimizes performance for popular Downlink (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. The Skyworks Finger-Based Integrated Power Amplifier Control (FB-iPAC) minimizes output power variation into mismatch.

Exceptional RF coexistence planning and system techniques are employed to minimize Rx de-sensitizing ("de-sense").

Figure 1 shows the SKY58100-11 functional block diagram.

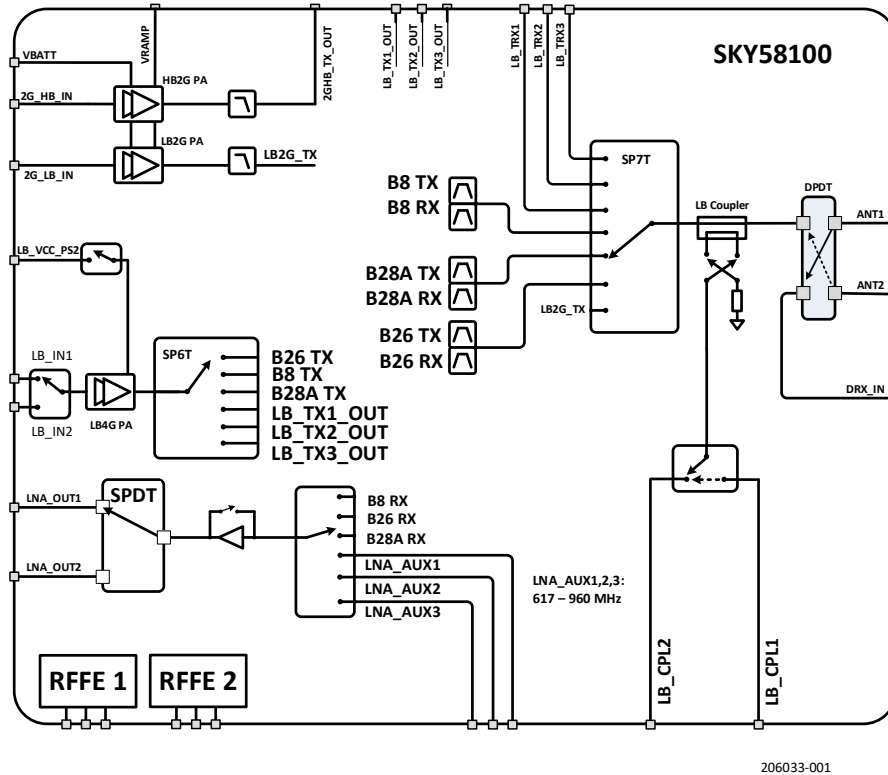


Figure 1. SKY58100-11 Functional Block Diagram

Ordering Information

Part Number	Part Description	Evaluation Board Part Number
SKY58100-11	Sky5® Low-Band Tx-Rx Front-End Module	SKY58100-11EK1

Copyright © 2022, Skyworks Solutions, Inc. All Rights Reserved.

Information in this document is provided in connection with Skyworks Solutions, Inc. (“Skyworks”) products or services. These materials, including the information contained herein, are provided by Skyworks as a service to its customers and may be used for informational purposes only by the customer. Skyworks assumes no responsibility for errors or omissions in these materials or the information contained herein. Skyworks may change its documentation, products, services, specifications or product descriptions at any time, without notice. Skyworks makes no commitment to

update the materials or information and shall have no responsibility whatsoever for conflicts, incompatibilities, or other difficulties arising from any future changes.

No license, whether express, implied, by estoppel or otherwise, is granted to any intellectual property rights by this document. Skyworks assumes no liability for any materials, products or information provided hereunder, including the sale, distribution, reproduction or use of Skyworks products, information or materials, except as may be provided in Skyworks’ Terms and Conditions of Sale.

THE MATERIALS, PRODUCTS AND INFORMATION ARE PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE, INCLUDING FITNESS FOR A PARTICULAR PURPOSE OR USE, MERCHANTABILITY, PERFORMANCE, QUALITY OR NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT; ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED. SKYWORKS DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. SKYWORKS SHALL NOT BE LIABLE FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO ANY SPECIAL, INDIRECT, INCIDENTAL, STATUTORY, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS THAT MAY RESULT FROM THE USE OF THE MATERIALS OR INFORMATION, WHETHER OR NOT THE RECIPIENT OF MATERIALS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Skyworks products are not intended for use in medical, lifesaving or life-sustaining applications, or other equipment in which the failure of the Skyworks products could lead to personal injury, death, physical or environmental damage. Skyworks customers using or selling Skyworks products for use in such applications do so at their own risk and agree to fully indemnify Skyworks for any damages resulting from such improper use or sale.

Customers are responsible for their products and applications using Skyworks products, which may deviate from published specifications as a result of design defects, errors, or operation of products outside of published parameters or design specifications. Customers should include design and operating safeguards to minimize these and other risks. Skyworks assumes no liability for applications assistance, customer product design, or damage to any equipment resulting from the use of Skyworks products outside of Skyworks’ published specifications or parameters.

Skyworks, the Skyworks symbol, Sky5®, SkyOne®, SkyBlue™, Skyworks Green™, Clockbuilder®, DSPLL®, ISOModem®, ProSLIC®, and SiPHY® are trademarks or registered trademarks of Skyworks Solutions, Inc. or its subsidiaries in the United States and other countries. Third-party brands and names are for identification purposes only and are the property of their respective owners. Additional information, including relevant terms and conditions, posted at www.skyworksinc.com, are incorporated by reference.