# SKY58281-21 Sky5® Front End Module for LTE and NR

## Applications

- Multi-band 4G/5G handsets
- Band B42, B43, B48, n77, and n78
- Supports n77, n79 Downlink CA

## Features

- UHB LPAMiF for B42, B43, B48, n77, and n78
- Fully Baseband Agnostic Design
- Full Power APT support without DPD
- n78 PC2 power support
- Integrated n77, n78 and n79 primary and MIMO Rx path
- MIPI® v3.0 compliant 52 MHz RFFE bus
- High performance APT/ET PA cores
- Supports 2x2 UL-MIMO using two TX placements
- Supports Fast SRS Hopping timing requirements
- Integrated ANT swap switch
- Integrated SRS_IN/OUT port supports full SRS connectivity
- Switchable LAA input
- 50 ohm input/output impedance with internal DC-blocking
- Continuous bias control via RFFE interface
- Low leakage current in power-down mode
- High performance integrated LNA with MIPI® control features:
  - Up to seven gain modes
  - Independent gain and bias control
- Small, low profile package:
  - 4.5 mm x 5.5 mm x 0.7 mm (Max.)
  - 42-pad configuration
  - LGA with conformal shielding

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.
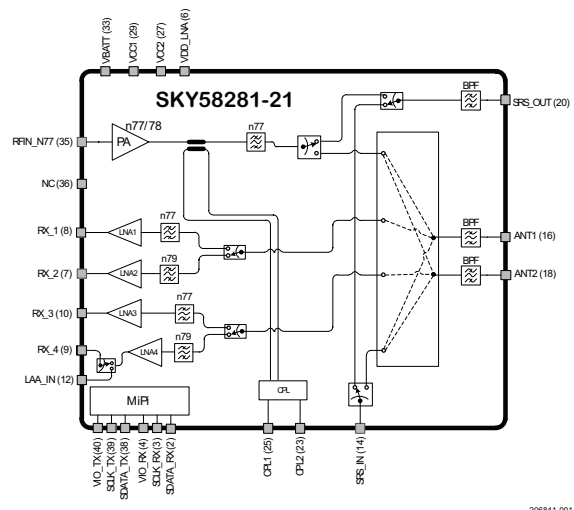
## Description

The SKY58281-21 Front End Module (FEM) for LTE and NR is a new addition to our Sky5 portfolio of 5G Technology products. Key advances compared to previous generation dual band UHB modules are integrated MIMO Rx path and increased output power. The higher Pout enables PC2 support for n78 and n79. This versatile and fully matched FEM supports multi-band 4G/5G and LTE/NR applications.

Packaged in a single 4.5 mm x 5.5 mm x 0.7 mm (Max.) form factor, the 42-pad surface mount (SMT) module consists of PA blocks, input and output matching, a MIPI standard digital control block, single-ended filters, antenna and band select switches and low Noise amplifier (LNA).

Utilizing an enhanced architecture, the SKY58281-21 covers multiple bands and meets the spectral linearity and EVM requirements of CP-OFDM and DFTS-OFDM modulations up to 256 QAM. Output power is controlled by varying input power and adjusting VCC maximizes efficiency. Extremely low leakage current maximizes handset stand-by time.



**Figure 1. SKY58281-21 Functional Block Diagram**

## Ordering Information

| Part Number | Part Description | Evaluation Board Part Number |
|---|---|---|
| SKY58281-21 | Front End Module for LTE and NR | SKY58281-21EK1 |

## References

Skyworks Application Note: *PCB Design and SMT Assembly/Rework Guidelines for MCM-L Packages; Document Number 101752*

Standard SMT Reflow Profiles: *JEDEC Standard J-STD-020*

Electrostatic Discharge Sensitivity (ESD) Testing: *JEDEC Standard, JESD22-A114 Human Body Model (HBM)*

Electrostatic Discharge Sensitivity (ESD) Testing: *JEDEC Standard, JESD22-A115 Machine Model (MM)*

Electrostatic Discharge Sensitivity (ESD) Testing: *JEDEC Standard, JESD22-C101 Charged Device Model (CDM)*

Testing & Measurement Techniques: *Electrostatic Discharge Immunity Test, IEC 61000-4-2*