PRODUCT SUMMARY

SKY87021-11: Power Management IC for the SkyBlue™ System

Applications
- Smartphones
- 3G/4G multimode front-end modules
- Tablets and eBook readers
- Wireless data cards

Features
- Input voltage range: 2.5 V to 5.5 V
- High voltage boost supply:
  – Output voltage range from Bypass to 11 V
  – Output current up to 450 mA
  – High efficiency: 90% typical (\(V_{IN}=3.8\) V, \(V_{OUT}=9.5\) V, 1.0 mA > 110 mA)
  – Fast voltage transition response 570 mV/μs
  – Optimized for small external components
    o For HPUE application, 1.5 μH inductor, 2x1.0 μF output capacitor
    o For non-HPUE application: 1.5 μH/2.2 μH, 1.0 μF output capacitor
    o High 2.25 MHz switching frequency
  – Shutdown load disconnect
  – Fast load transient response, less than 20 μs
  – Over temperature, over voltage and short circuit protection
- Low voltage ÷2 step-down function
  – Output current up to 30 mA
- 4.5 V, 3 mA PA bias supply output
- MIPI RFFE interface for setup and control
  – 8-bit output voltage programming resolution
- Small footprint CSP (16-ball, 1.991 mm x 1.991 mm) package (MSL1, 260 °C per JEDEC J-STD-020)

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 SKY87021-11 is a high-efficiency RF front-end power management IC for APT RF power amplifier (PA) applications in portable battery powered devices. This IC includes a high-efficiency DC-DC voltage converter capable of delivering 450 mA at 11 V with a 4.5 V reference supply to provide a user-programmable RF PA APT supply for a 2.5 V to 5.5 V input range.

The SKY87021-11 also provides an additional 4.5 V bias supply for RF PA operation. This bias voltage output can supply load currents up to 3 mA and is available whenever the device is enabled. When the device is disabled, the 4.5 V bias supply is shut down. This device has over-voltage, over-current, shorted circuit, and thermal shutdown protection to protect the device and system under adverse operating conditions.

The SKY87021-11 is capable of supporting HPUE front-end modules and is controlled with a MIPI RFFE 2.0 compliant interface with 8-bit output voltage programming resolution. The SKY87021-11 is available in a 16-pin, 1.991 mm x 1.991 mm Chip Scale Package (CSP).

A typical application circuit is shown in Figure 1.
## Ordering Information

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<th>Model Name</th>
<th>Manufacturing Part Number</th>
<th>Evaluation Board Part Number</th>
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<td>SKY87021-11: Power Management IC for the SkyBlue™ System</td>
<td>SKY87021-11-001</td>
<td>SKY87021-11-EVB</td>
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