## CMOS RFeIC Portfolio for WLAN in Mobile Devices

### Features and Benefits
- Single-Chip/Single-Die RFeIC in pure CMOS
- Highest Level of Integration with Smallest Size
- Easy PCB Design with Complete On-Chip Impedance Matching and RF Decoupling
- Industry’s Most Cost-Effective Front-End Solutions
- 4.8V Battery Voltage Supply Support

### Applications
- Smartphones, Feature Phones
- Laptops / Ultrabooks
- Tablets / E-Readers
- Gaming
- Portable Devices with Embedded Wi-Fi/BT

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### CMOS RFeIC Portfolio for WLAN in Mobile Devices

<table>
<thead>
<tr>
<th>P/N</th>
<th>Description</th>
<th>Frequency</th>
<th>Vcc</th>
<th>Tx Gain</th>
<th>Tx Pout</th>
<th>Rx Gain</th>
<th>Rx NF</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFX8420</td>
<td>2.4GHz WLAN/BT 11n RFeIC with PA, SP3T Switch</td>
<td>2.4-2.5</td>
<td>3.6</td>
<td>27</td>
<td>+18</td>
<td>-0.7</td>
<td>n/a</td>
<td>2.5x2.5mm QFN16</td>
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<td>RFX8422</td>
<td>2.4GHz WLAN/BT 11n RFeIC with PA, LNA SP3T Switch</td>
<td>2.4-2.5</td>
<td>3.6</td>
<td>25</td>
<td>+18</td>
<td>12</td>
<td>2.5</td>
<td>2.5x2.5mm QFN16</td>
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<tr>
<td>RFX8825</td>
<td>2.4GHz PA, WLAN/BT SP3T Switch 5GHz WLAN 11ac PA, LNA, Switch</td>
<td>2.4-2.5</td>
<td>5.15-5.85</td>
<td>3.6</td>
<td>28 2G</td>
<td>28 5G</td>
<td>+18 2G, +17 5G</td>
<td>n/a 2G</td>
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<td>RFX8826</td>
<td>2.4GHz PA, WLAN/BT 11ac RFeIC 5GHz WLAN 11ac PA, LNA, Switch</td>
<td>5.15-5.85</td>
<td>3.6</td>
<td>30</td>
<td>+16</td>
<td>11ac 1.8% EVM</td>
<td>13</td>
<td>3</td>
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<tr>
<td>RFX8050</td>
<td>5GHz WLAN 11ac RFeIC with PA, LNA, Tx/Rx Switch</td>
<td>5.15-5.85</td>
<td>3.6</td>
<td>32</td>
<td>+15</td>
<td>11ac 1.8% EVM</td>
<td>12</td>
<td>3</td>
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<td>RFX5010</td>
<td>5GHz WLAN 11ac RFeIC with PA, LNA, Tx/Rx Switch</td>
<td>5.15-5.85</td>
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<td>32</td>
<td>+17</td>
<td>11n 3% EVM</td>
<td>12</td>
<td>3</td>
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<td>RFX5000</td>
<td>5GHz WLAN 11n RFeIC with PA, LNA, Tx/Rx Switch</td>
<td>4.9-5.85</td>
<td>3.3</td>
<td>32</td>
<td>n/a</td>
<td>11n 3% EVM</td>
<td>12</td>
<td>3</td>
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</tbody>
</table>

The RFaxis family of CMOS RF Front-end IC (RFeIC) products for WLAN 802.11n and 802.11ac includes the industry’s most densely integrated, high performance wireless connectivity solutions targeted for Wi-Fi mobile devices, gaming, and portable computing markets. Built upon RFaxis’ patented single-chip/single-die RFeIC architecture, these miniature ICs come complete with on-chip input and output impedance matching and are fully RF decoupled on all DC voltage supply pins, thus requiring the minimum number of external components and typically take only a fraction of PCB footprint when compared with competitor solutions.

The RFeIC architecture integrates the PA, LNA, Transmit and Receive switching circuitry, the associated matching network, and the harmonic filter all in a CMOS single-die, single-chip device. Dual-band, dual-mode architectures are also available in single-die, single-chip, which is intended for WLAN/BT MIMO applications. Combining superior performance, high sensitivity, high efficiency, low noise, small form factor, and low cost, the RFaxis RFeICs offer the ideal solution for the latest WLAN 802.11a/b/g/n/ac single antenna and MIMO products. Common to most mobile devices is a 4.8V battery voltage, and a direct connection to this supply voltage which is supported.
RFX8420 CMOS 2.4GHz WLAN/BT TRANSMIT/RECEIVE RFeIC with PA/SP3T

Size: 2.5 x 2.5 x 0.45 mm
Package: 16-L QFN

Product Overview
- Single-Chip, Single-Die RF Front-end IC
- PA + SP3T Switch + Harmonic Filters
- Dual-Mode 802.11 b/g/n WLAN & BT
- Pure CMOS
- 2.4 – 2.5 GHz Operation
- Direct Battery Operation
- Pin-Compatible with RFFM8204

Key Features
- Fully Integrated Single-Placement FE
- +18dBm Pout @ 3% EVM OFDM 64QAM
- 170mA @ +17dBm (Low-Current Mode)
- 24dBm P1dB
- 32dB Tx Gain, 13dB Rx Gain
- 3dB Noise Figure

RFX8422 2.4GHz WLAN/BT TRANSMIT/RECEIVE RFeIC with PA/LNA/SP3T

Size: 2.5 x 2.5 x 0.455 mm
Package: 16-L QFN

Product Overview
- Single-Chip, Single-Die RF Front-end IC
- PA + LNA + SP3T Switch + Harmonic Filters
- Dual-Mode 802.11 b/g/n WLAN & BT
- Pure CMOS
- 2.4 – 2.5 GHz Operation
- Direct Battery Operation
- Pin-Compatible with MDFE2PFA-046, RFFM8202, SKY65534-11, AWL9280

Key Features
- Fully Integrated Single-Placement FE
- 25dB Tx Gain
- 140mA @ 18dBm with 3% EVM
- 14dB Rx Gain
- 2.5dB Noise Figure at Antenna
- 3dB Noise Figure
- Low Noise Amplifier with Bypass Mode
RFX8825 DUAL-BAND DUAL-MODE WLAN/BT TRANSMIT/RECEIVE RFeIC

Size: 3 x 4 x 0.55 mm
Package: 28-L QFN

Product Overview
- Single-Chip, Single-Die RF Front-end IC
- PA + LNA + SPDT/SP3T + Harmonic Filters
- 5GHz LNA Bypass Mode
- Pure CMOS
- Dual-Mode 802.11 a/b/g/n WLAN & BT
- Dual-Band 2.4–2.5/ 4.9–5.85GHz Operation
- Direct Battery Operation
- Pin-Compatible with Skyworks SE5510T

Key Features
- Fully Integrated Single-Placement FE
- +17dBm for EVM<3% 11a OFDM  64QAM
- +18dBm for EVM<3% 11g OFDM 64QAM
- 28dB Tx Gain, Rx Gain
- 12dB Rx Gain (5GHz)
- 3dB Noise Figure (5GHz)

RFX8826 DUAL-BAND DUAL-MODE WLAN/BT TRANSMIT/RECEIVE RFeIC

Size: 3 x 4 x 0.55 mm
Package: 28-L QFN

Product Overview
- Single-Chip, Single-Die RF Front-end IC
- PA + LNA + SPDT/SP3T + Harmonic Filters
- 5GHz LNA Bypass Mode
- Pure CMOS
- Dual-Mode 802.11 a/b/g/n WLAN & BT
- Dual-Band 2.4–2.5/ 4.9–5.85GHz Operation
- Direct Battery Operation
- Pin-Compatible with Skyworks SE5510T

Key Features
- Fully Integrated Single-Placement FE
- +17dBm for EVM<3% 11a OFDM  64QAM
- +18dBm for EVM<3% 11g OFDM 64QAM
- 28dB Tx Gain, Rx Gain
- 12dB Rx Gain (5GHz)
- 3dB Noise Figure (5GHz)
RFX8050 5GHz WLAN 11a/n/ac TRANSMIT/RECEIVE RFIC

**Product Overview**
- Single-Chip, Single-Die RF Front-end IC
- PA + LNA + SPDT + Harmonic Filters
- Pure CMOS
- WLAN 802.11a/n/ac Applications
- 5.15–5.85 GHz Operation
- Direct Battery Operation
- Pin-Compatible with RFFM8502, SKY65535-11

**Key Features**
- Fully Integrated Single-Placement FE
- +18dBm Pout @ 3% EVM 11a/n
- +16dBm Pout @ 1.8% EVM 11ac
- 200mA at +18dBm Pout
- 30dB Tx Gain, 13dB Rx Gain
- 3dB Noise Figure
- Low Noise Amplifier with Bypass Mode

RFX5010 5GHz WLAN 11a/n/ac TRANSMIT/RECEIVE RFIC

**Product Overview**
- Single-Chip, Single-Die RF Front-end IC
- PA + LNA + SPDT + Harmonic Filters
- Pure CMOS
- WLAN 802.11a/n Applications
- 5.15–5.85 GHz Operation
- Pin-Compatible to Skyworks SE5007T/SE5012T

**Key Features**
- Fully Integrated Single-Placement FE
- +17dBm Pout @ 3% EVM 11n MCS7
- +15dBm Pout @ 1.8% EVM 11ac MCS9
- 24dBm P1dB
- 32dB Tx Gain, 13dB Rx Gain
- 3dB Noise Figure
- Low Noise Amplifier with Bypass Mode
### RFX5000B 5GHz WLAN TRANSMIT/RECEIVE RFIC

**Size:** 3 x 3 x 0.55 mm  
**Package:** 16-L QFN

#### Product Overview
- Single-Chip, Single-Die RF Front-end IC
- PA + LNA + SPDT + Harmonic Filters
- Pure CMOS
- WLAN 802.11a/n Applications
- 4.9–5.85 GHz Operation
- Pin-Compatible to Skyworks SE5007T/SE5012T

#### Key Features
- Fully Integrated Single-Placement FE
- +18dBm Pout @ 3% EVM OFDM 64QAM
- 170mA @ +17dBm (Low-Current Mode)
- 24dBm P1dB
- 32dB Tx Gain, 13dB Rx Gain
- 3dB Noise Figure
- Low Noise Amplifier with Bypass Mode