

Wireless LAN RF Solutions

Microsemi offers a broad portfolio of WLAN RF solutions that are used in a variety of applications including wireless access points and half mini-cards for notebooks and netbooks. Our solutions include ICs and Front End Modules that support the fast-growing market for WLAN products used in space-constrained smartphones and other data-enabled cellular handset designs

Selector Guide

Part Number	Applications	Features	Frequency (Ghz)	Supply Voltage	Pout 3% EVM	Gain (db)	Total Current	Package Size
LX5506	802.11a Client/AP UNII -2/-3	Low Current High Linearity High Pout	5.15 - 5.85	3.3V	18dBm	21	190mA	3 x 3 x 0.9
LX5506M	802.11a Client/AP UNII -2/-3	O/P Pre-match High Gain Low Cost	4.9 - 5.9	3.3V	17dBm	30	140mA	3 x 3 x 0.9
LX5511	802.11b/g Client/AP Fixed Radio ISM	Superb EVM Low Current Low Cost	2.4 - 2.5	3.3V	20dBm (2.4% EVM)	26	170mA	3 x 3 x 0.9
LX5514	802.11b/g/n Client/AP Portables	Linear Pout Low Current Ultra-small Package Low Cost	2.4 - 2.5	3.3V	20dBm (2.8% EVM)	28	145mA	2 x 2 x 0.45
LX5514M	802.11b/g/n Client/Portables Handsets	Ultra-small Package Direct Battery Connect	2.4 - 2.5	3.6V (3.0 - 4.2V)	19.5dBm (2.8% EVM)	27	130mA	1.5 x 1.5
LX5516	802.11b/g/n Client/AP Portables	50 Ohm In/Out Ultra-small Package Low cost	2.4 - 2.5	3.3V	18dBm (2.5% EVM)	29	130mA	2 x 2 x 0.45
LX5518	802.11b/g/n AP/Router	High Power Linear Pout	2.4 - 2.5	3.3V 5V	24dBm 26dBm	32 30	345mA 391mA	3 x 3 x 0.9
LX5530	802.11a/n WiMAX 802.16e Client/AP UNII -2/-3	High Linearity Broadband Match High Gain	4.9 - 5.9	3.3V 5V	18dBm (3% EVM, 3.3V) 22dBm (2.5% EVM, 5V)	31 33	230mA 360mA	3 x 3 x 0.9
LX5535	802.11b/g/n AP/Router	High Power Linear Pout	2.4 - 2.5	3.3V 5V	22dBm 24.5dBm	32 31	227mA 275mA	3 x 3 x 0.9
LX5537	WiMAX 802.16e 802.11 b/g WiBro Client A/P	High Gain High OFDM Pout 27dB Step Atten.	2.3 - 2.9	3.6V 4.2V	24dBm (3.6V) 26dBm (4.2V)	31	350mA 435mA	3 x 3 x 0.9
LX5540	802.11b/g/n Client/AP Portables	PA + LNA	2.4 - 2.5	3.3V	20dBm	28	145mA	3 x 3 x 0.45
LX5541	802.11b/g/n Client/AP	PA +LNA+SPDT	2.4 - 2.5	3.3V	19dBm	27	145mA	3 x 3 x 0.45
LX5543	802.11b/g/n Handsets	PAM+SP3T Switch	2.4 - 2.5	3.6V (3.0 - 4.2V)	17.5dBm	26	150mA	3 x 3 x 0.55
LX5551	802.11b/g/n Client/AP Portables	PAM+SPDT Switch	2.4 - 2.5	3.3V	18dBm	27	140mA	3 x 3 x 0.9
LX5552	802.11b/g/n Client/AP Portables	PAM+LNA+SPDT Switch	2.4 - 2.5	3.3V	17dBm	26	140mA	3 x 3 x 0.55
LX5553	802.11b/g/n Handsets	PAM+LNA+SP3T switch	2.4 - 2.5	3.6V (3.0 - 4.2V)	17.5dBm	26	150mA	3 x 3 x 0.55



LX5514MTM

World's Smallest WLAN Power Amplifier

Microsemi's LX5514MTM power amplifier supports IEEE 802.11b/g/n WLAN applications in the 2.4-2.5GHz frequency range. It targets the fast-growing market for WLAN products used in space-constrained smartphones and other data-enabled cellular handset designs. The device is based on the company's proven LX5514TM amplifier and has been streamlined to fit into a compact, ultra-low-profile 1.5x1.5mm, 0.4mm high package.

Key Features

- 2.4-2.5GHz operation
- Single-polarity 3.3V supply
- Quiescent current ~ 84mA
- Power gain ~ 27dB
- 19dBm @3% EVM/3.3V
- Total I_c ~ 130mA @19dBm/3.3V
- Complete on-chip input match, simple output match
- Small footprint: 1.5x1.5mm², low profile: 0.4mm



NEW

LX5518TM 2.4 GHz WLAN Power Amplifier

Our LX5518 2.4GHz WLAN Power Amplifier with ultra-high linearity, efficiency, and output power delivers Microsemi's superior performance to challenging environments and is optimized for ultra-high linear output power over a temperature range from -40 to +85°C while delivering world-class low power-added efficiency (PAE). It is designed for high-performance applications such as wireless access points and routers that demand improved broadcast range and data rates to accommodate challenging radio frequency transmission environments. The LX5518 PA meets these challenges by delivering 26.2dBm of orthogonal frequency division multiplexing (OFDM) output power at 3 percent error vector magnitude (EVM) while consuming only 391mA of current for cooler operation.

Key Features

- 2.4 -2.5 GHz operation
- P_{out} 26.2dBm for 3% EVM with 5V supply
- P_{out} 24dBm for 3.5% EVM with 3.3V supply
- 30dB+ OFDM power gain
- Low current consumption: 391mA at 26.2dBm output power
- 50-ohm input match
- Simplified output match
- Temperature-compensated on-chip output power detector with wide dynamic range

WLAN RF Power Solutions

LX5530™

4.5 - 6GHz High Power Amplifier

The LX5530 power amplifier is optimized for 802.11a applications and is implemented as a three stage MMIC with active bias, on-chip matching and output pre-matching. At 5V supply it supplies high power gain up to 33dB and provides up to +25dBm linear output for the 802.11a OFDM spectrum and a low EVM of 3% for up to +23dBm output power for the 4.9-5.9GHz band.

- Broadband 4.9-5.9 GHz operation
- Single-polarity 3V - 5V supply
- Power gain ~ 33dB for $V_C = 5V$, $I_{CQ} = 250mA$
- Power gain > ~28dB across 4.9-5.85GHz
- OFDM mask compliance power $P_{out} \sim +25dBm$ over 4.9-5.85GHz
- P_{out} up to +23dBm with EVM ~3% ($V_C = 5V$)
- EVM < ~ 2.5% for $P_{out} = +21dBm$ across 4.9-5.85GHz ($V_C = 5V$)
- EVM < ~ 2.5% for $P_{out} = +19dBm$ across 4.9-5.85GHz ($V_C = 4V$)
- Complete on-chip input match
- Simple output match for optimal broadband EVM
- On-chip RF decoupling
- Temperature-compensated on-chip output
- Power detector with wide dynamic range
- Small footprint, low profile : 3 x 3 x 0.9 mm

LX5535™

2.4 - 2.5 GHz Power Amplifier

The LX5535 power amplifier is optimized for 802.11b/g and 802.16 WiMAX applications and is implemented as a three stage MMIC with active bias, on-chip matching and output pre-matching. At 5V supply it supplies high power gain up to 32dB and provides up to +25dBm linear output for the 802.11g specification, and 28dBm power to the 802.11b mask compliant specification. The LX5535 has a low EVM of 3% for up to +25dBm output power for 64QAM / 54Mbps.

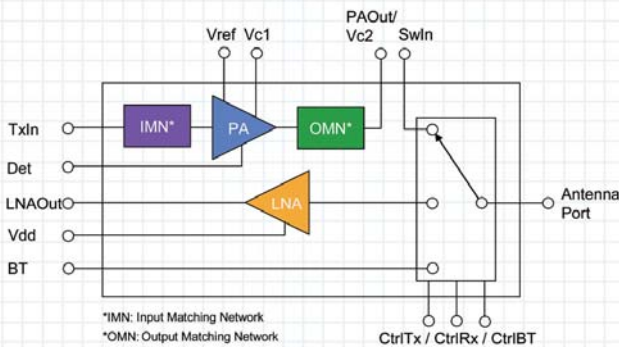
- Advanced InGaP HBT
- 2.3 - 2.4GHz operation
- Single-polarity 3.3 – 5.0V supply
- Quiescent current $I_{CQ} \sim 120mA$
- Power gain ~ 32dB
- Total current ~ 260mA for $P_{out} = 25dBm$ 802.11g
- Total current ~ 370mA for $P_{out} = 28dBm$ 802.11b
- 802.11b mask-compliant power = 28dBm
- Power for EVM = 3.5% for 64QAM / 54Mbps: 25dBm
- Very small footprint: 3 x 3 x 0.9mm
- Suitable for IEEE 802.11b/g applications
- Suitable for IEEE 802.16 WiMAX applications



LX5553TM / LX5543TM

2.4 - 2.5 GHz Front-End Modules

Microsemi's LX5553 802.11b/g/n is a highly integrated front-end module (FEM) that supports Wi-Fi functionality in space-constrained smartphones and other data-enabled cellular handset designs. Designed to deliver excellent performance, the LX5553 integrates an advanced power amplifier with on-chip impedance matching, a fully matched LNA and a SP3T switch that enables the LX5553 to share a single antenna between WLAN and Bluetooth systems, eliminating the need for an additional antenna. The LX5543 is offered to customers who do not need an LNA. Both devices are offered in a 3x3mm package that takes up significantly less space than solutions that use discrete components for these functions.



Microsemi LX5553 Block Diagram

Key Features

- 2.4-2.5GHz 802.11b/g/n front-end solution in a single MLP package
- SP3T for sharing antenna between WLAN and bluetooth systems
- All RF I/O matched to 50
- Single supply voltage 3.0V to 4.2V
- Small Footprint: 3x3mm²
- Low Profile: 0.55mm
- RoHS compliant & Pb-Free
- 2.4-2.5 GHz front-end module

TX Features

- Power gain ~ 25 dB*
- Pout ~ +17 dBm* for 3% EVM at antenna
- Current ~145 mA at +17 dBm*
- Pout ~ +21 dBm* for 11b 1Mbps DSSS mask compliance
- Quiescent current ~ 82 mA

RX Features

- Gain ~ 13 dB*
- Noise Figure ~ 2.1 dB*
- IIP3 ~ +5 dBm*

Bluetooth Path

- Insertion Loss ~ 0.9 dB
- IP1dB ~ +29 dBm
- Includes SP3T switch loss

