

2.4-2.5 GHz Front-End Module with Internally Matched Power Amplifier & SPDT for 11b/g/n
PRODUCTION DATA SHEET
DESCRIPTION

LX5551 is a high-performance WLAN front-end module (FEM) for 802.11b/g/n and other applications in the 2.4-2.5GHz frequency range. LX5551 integrates an advanced InGaP/GaAs Heterojunction Bipolar Transistor (HBT) power amplifier with both input/output impedance matching, and an InGaAs pseudomorphic HEMT (pHEMT) switch, into a single 3x3mm package.

The Tx path of LX5551 features a two-stage monolithic microwave integrated circuit (MMIC) power amplifier with active bias circuitry, and 50 Ω input/output matching inside the package. With 3.3V supply voltage and 90mA nominal bias current, the Tx path provides 27dB gain and +18dBm linear output power, with extremely low total EVM (<3%) for 64QAM/54Mbps OFDM. Both gain and power are readily measured at antenna port, with switch insertion loss included.

The Rx path of LX5551 includes a low-cost SPDT switch with excellent insertion loss and isolation. It features a very low Tx-to-Rx port leakage in receive mode.

LX5551 is available in a 16-pin, 3x3mm micro-lead package (MLPQ-16L). With its best-class performance and compact footprint, LX5551 offers an ideal front-end solution for the ever demanding design requirements of today's WLAN systems, including 802.11b/g and the latest 11n MIMO implementation.

KEY FEATURES

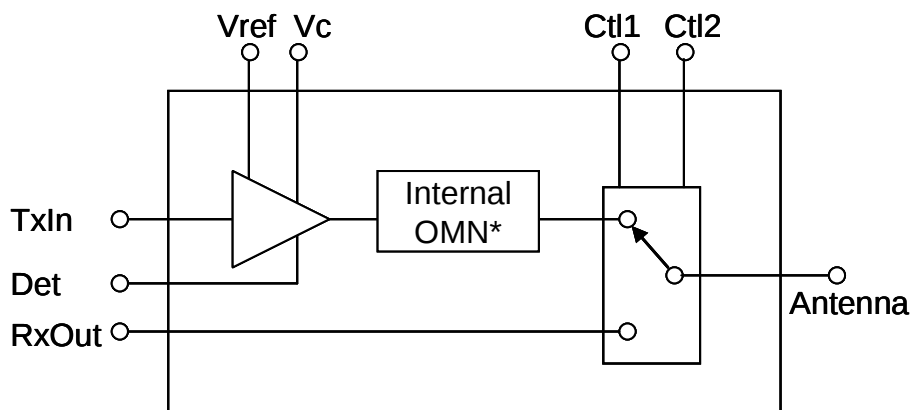
- 2.4-2.5GHz 11b/g/n Front-End Solution in a Single 3x3mm MLP Package
- All RF Ports Matched to 50 Ω
- Single-Polarity 3.3V Supply
- Tx Path Power Gain ~ 27dB
- Rx Path Loss ~ 0.6dB
- Pout ~ +18dBm at Antenna* for EVM = 3%
- Total Current ~140mA for +18dBm with 90% Duty Cycle
- Pout > +22dBm for 11b 1Mbps DSSS Mask Compliance
- Small Footprint: 3x3mm²
- Low Profile: 0.9mm
- RoHS Compliant & Pb-Free

* Including SPDT switch loss

APPLICATIONS

- IEEE 802.11b/g
- IEEE 802.11n MIMO

IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

BLOCK DIAGRAM


*OMN: Output Matching Network

PRODUCT HIGHLIGHT

PACKAGE ORDER INFO

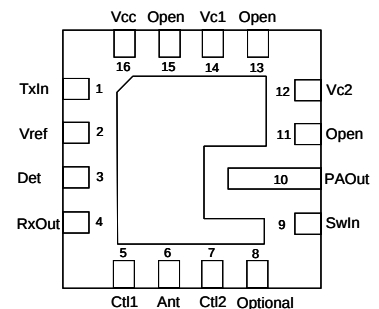
	Plastic MLPQ 16 pin 3x3mm RoHS Compliant /Pb-Free
LQ	LX5551LQ

Note: Available in Tape & Reel.
Append the letters "TR" to the part number.
(i.e. LX5551LQ-TR)

ABSOLUTE MAXIMUM RATINGS

DC Supply Voltage, RF off (PA).....	5V
(Switch)	5V
Collector Current (PA).....	500mA
Total Power Dissipation.....	2W
RF Input Power.....	10dbm
Maximum Junction Temperature (Tj max)	+150°C
Operation Ambient Temperature	-40°C to +85°C
Storage Temperature.....	-65°C to +150°C
RoHs/Pb Free Peak Package Solder Reflow Temperature (40 seconds maximum exposure).....	260°C(+0, -5)

Note: Exceeding these ratings could cause damage to the device. All voltages are with respect to Ground. Currents are positive into, negative out of specified terminal.

PACKAGE PIN OUT


LQ PACKAGE
("See-Through" View from Top)

RoHS/Pb-free 100% Matte Tin Lead finish

THERMAL DATA

LQ Plastic MLPQ 16-Pin

THERMAL RESISTANCE-JUNCTION TO CASE, θ_{JC}	17°C/W
THERMAL RESISTANCE-JUNCTION TO AMBIENT, θ_{JA}	55.2°C/W

Junction Temperature Calculation: $T_J = T_A + (P_D \times \theta_{JA})$.

The θ_{JA} numbers are guidelines for the thermal performance of the device/pc-board system. All of the above assume no ambient airflow.



INFORMATION

Thank you for your interest in Microsemi® Analog Mixed Signal products.

The full data sheet for this device contains proprietary information.

To obtain a copy, please contact your local Microsemi sales representative. The name of your local representative can be obtained at the following link

<http://www.microsemi.com/contact/contactfind.asp>

or

Contact us directly by sending an email to:

IPGdatasheets@microsemi.com

Be sure to specify the data sheet you are requesting and include your company name and contact information and or vcard.

We look forward to hearing from you.