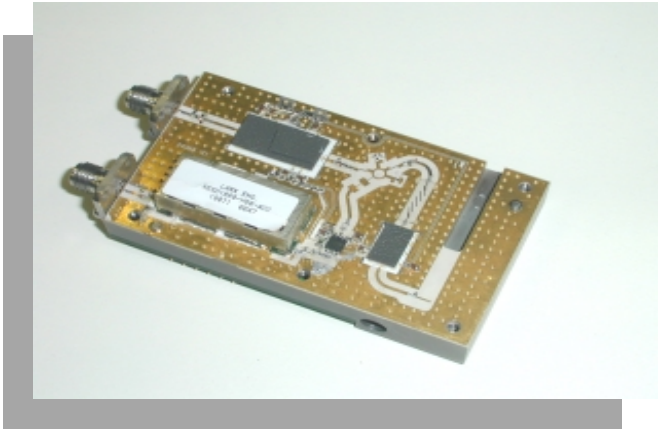
Product Information ISO 9001 CERTIFIED

8011
38 GHz Downconverter for Digital Radio Links



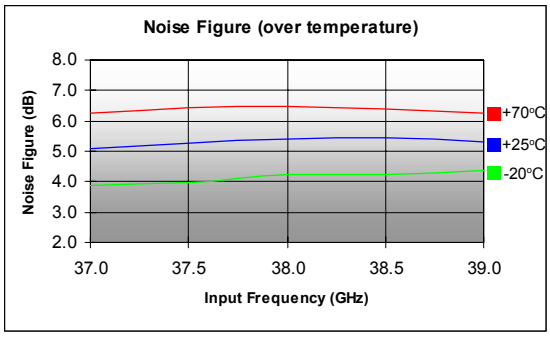
Features

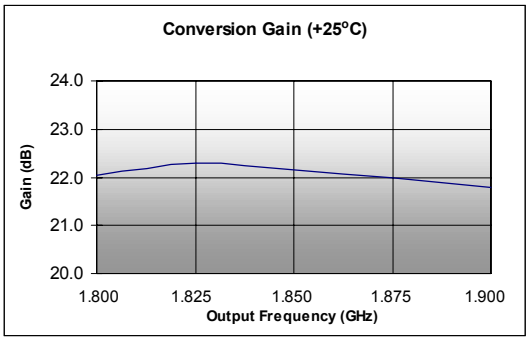
- 5.0 dB Typical Rx Noise Figure
- 22 dB Conversion Gain
- DC Power Consumption: <1.5 Watts
- Mixed Media Low Cost Construction
- Miniature Lightweight Design

Product Description

Designed for high capacity digital radios for point-to-point and point-to-multipoint applications, the Model 8011 receive module converts millimeterwave signals centered at 38 GHz down to a usable IF of 1850 MHz +/- 50 MHz. A WR28 waveguide port receives the input signal which transitions onto a microstrip transmission line. The signal is amplified and filtered prior to the downconversion stage. An externally applied 12 GHz signal source is used to drive the internal mixer. This signal passes through a frequency multiplier and gets amplified to supply optimum LO power. The downconverted IF signal undergoes several filtering and amplification stages prior to reaching the output port through an SMA connector.

The design incorporates mixed media printed wiring board construction which uses a combination of integrated softboard circuits and off-the-shelf chip and packaged semiconductor components to minimize material costs and simplify the assembly process. Separate printed wiring boards are used for DC and RF/IF sections. Three voltage levels (+5, -5, +12 Vdc) are required from externally regulated sources to support the mix of active components. A combination of solder reflow and silver epoxy is used for component attach.





About Teledyne Wireless

Teledyne Wireless has over 40 years of experience as a worldwide leader in the design, development, and manufacture of MMIC power amplifiers, electromechanical switches, filters / integrated filter assemblies, and integrated subsystems. We have established a reputation of delivering products which exhibit superior performance and reliability. Teledyne Wireless is developing microwave and millimeterwave transceivers and multifunction modules for use in VSAT, broadband internet access and fiber-optic applications. These products employ mixed media technologies chosen for optimal performance and reduced manufacturing cost. Teledyne Wireless is ISO 9001 certified.

TELEDYNE WIRELESS
A Teledyne Technologies Company

www.teledynewireless.com
email: sales@teledyne.com

1274 Terra Bella Avenue, Mountain View, CA 94043 • Tel: 800-832-6869 • Fax: (650) 962-6845

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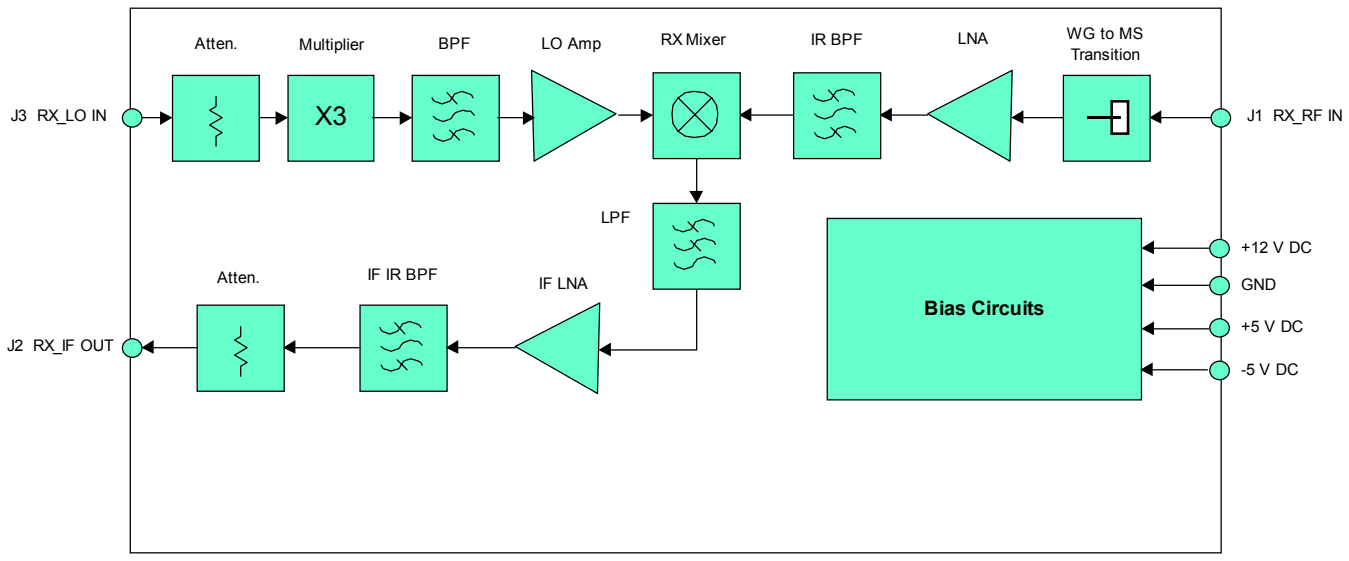
Operating Specifications @ +25°C

Parameter	Specification
RF Input Frequency	37500 MHz to 38500 MHz (-15 dBm min / +10 dBm max)
IF Output Freqeuncy	1850 MHz +/- 50 MHz
LO Frequency	11900 MHz to 12200 MHz (+17 dBm to +20 dBm / +23 dBm max)
RF/IF Conversion Gain	22 dB +/- 2 dB@ +25°C
IF Output Amplitude Flatness	+/- 0.5 dB typ +/- 1.0 dB max
Group Delay Flatness	2.5 ns max (any 50 MHz band)
Noise Figure	5.0 dB typ / 6.5 dB max
Input IP3	+10 dBm minimum
J1, J2, J3 Port Return Loss	15 dB typ / 10.0 dB min
LO/RF Leakage	-20 dBm max (out-of-band)
DC Voltage Requirements	+12 Vdc, +/- 5 Vdc
DC Power Consumption	1.5 Watts typ
Operational Temperature	-20oC to +70oC
Interface Connections:	
LO/ IF Port Output Connectors	SMA Female
RF port Input Connector	WR28 Waveguide
DC Connector	J4 Multi pin
Housing Material	6061 Aluminum w/ Gold Alodine Finish
Overall Dimensions	3.5"L x 2.5"W x 1.5"H

38 GHz Rx Module Block Diagram



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