AD9363 INTEGRATED PROGRAMMABLE RF TRANSCEIVER

Simplify Your System Design and Standardize Your Radio Platform

High Performance and Integration
- High linearity and noise performance relax the requirements on the external components
- Enhanced integration simplifies system development, reducing component count and BOM costs, while achieving smaller size and higher power efficiency

Versatility
- Operates from 325 MHz to 3800 MHz
- Supports bandwidths up to 20 MHz
- Offers a common platform for a wide range of applications, reducing development time and inventory costs

Reliable Link
- High interference rejection reduces flyaway and other liability risks
- Frequency agility enhances link security and antijamming capabilities
- Wide RF tuning range enables frequency reuse of limited spectrum resources and operation in different bands

Long Range
- Covers over 2 km distance with higher power efficiency, enabling more applications

Low Latency
- Enables customizable radio protocols, reducing latency for real-time video transmission

Applications
- 3G/4G femtocell base stations
- Drones/UAVs
- Wireless video surveillance
- Software-defined radio

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AD9363 Functionality

- Dual transmitters (Tx): 4 differential outputs
- Dual receivers (Rx): 6 differential or 12 single-ended inputs
- Tunable range: 325 MHz to 3800 MHz
- Tunable bandwidth: <200 kHz to 20 MHz
- Supports frequency division duplex (FDD) and time division duplex (TDD) operation
- Superior receiver sensitivity with a noise figure <3 dB
- Receiver gain control
- CMOS/LVDS digital interface

Product Evaluation Options

ADI provides several options for simulating and prototyping AD9363 performance using both hardware and software tools. The following table outlines the available tools.

<table>
<thead>
<tr>
<th>Evaluation Board</th>
<th>FMC Motherboards</th>
<th>Control and Data Capture</th>
<th>Software Simulation Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADRV9363-W/PCBZ</td>
<td>Variety of Xilinx® and Altera® development boards</td>
<td>Operating system agnostic API source in ANSI C</td>
<td>MathWorks SimRF model</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Open-source GUI that runs on Windows®, Linux®, OS X</td>
<td>MATLAB Filter Design Wizard</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Open-source Linux IIO device driver</td>
<td>Streams data to GNU radio, MATLAB, and Simulink</td>
</tr>
</tbody>
</table>

RadioVerse Radio Design Environment

ADI recognizes the challenges associated with RF design and integration, and what it takes to bring a high performance radio solution to market quickly.

The RadioVerse™ technology and design ecosystem gets our customers through the entire radio design process—from idea, to proof of concept, to production—as fast as possible.

In addition to ADI’s market-leading integrated transceiver technologies, RadioVerse offers a choice of evaluation options, software user guides, complete API, a standard serial peripheral interface (SPI), training, an active technical support community, and a growing ecosystem of industry-leading ODM partners.

Integrated Wideband RF Transceiver Product Series

<table>
<thead>
<tr>
<th>Part Number</th>
<th>RF Tuning Range</th>
<th>Bandwidth</th>
<th>Channels</th>
<th>Interface</th>
<th>Power Consumption</th>
<th>Price @ 1k ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD9361</td>
<td>70 MHz to 6 GHz</td>
<td>56 MHz</td>
<td>2 Rx, 2 Tx</td>
<td>JESD207 CMOS/LVDS</td>
<td>&lt;1.5 W</td>
<td>175</td>
</tr>
<tr>
<td>AD9363</td>
<td>325 MHz to 3.8 GHz</td>
<td>20 MHz</td>
<td>2 Rx, 2 Tx</td>
<td>JESD207 CMOS/LVDS</td>
<td>&lt;1.5 W</td>
<td>80</td>
</tr>
<tr>
<td>AD9364</td>
<td>70 MHz to 6 GHz</td>
<td>56 MHz</td>
<td>1 Rx, 1 Tx</td>
<td>JESD207 CMOS/LVDS</td>
<td>&lt;1.5 W</td>
<td>130</td>
</tr>
<tr>
<td>AD9371</td>
<td>300 MHz to 6 GHz</td>
<td>100 MHz Rx, 250 MHz Tx</td>
<td>2 Rx, 2 Tx, 2 ORx, 3 SnRx</td>
<td>6 Gbps JESD204B</td>
<td>&lt;5 W</td>
<td>245</td>
</tr>
</tbody>
</table>

AD9363 functional block diagram.