Keysight Technologies
M9252A DigRF Host Adapter Protocol Test for MIPI Alliance Gear1 and Gear2 DigRf v4 RFICs
Data Sheet

Industries and Applications
DigRF is used in mobile terminals for Long Term Evolution (LTE) and WiMax communications, including:
- RFIC development test
- RFIC validation
- RFIC device integration

Product Description
Validation of RFIC operation starts before the handset integration phase. Engineering teams need DigRF digital serial stimulus and analysis tools that operate in concert with the traditional RF tools.

The M9252A DigRF Host Adapter module belongs to the Keysight Technologies, Inc RDX family. The module provides the serial stimulus capabilities required for the MIPI Alliance DigRF v4-based RFIC evaluation and characterization. A single module combines stimulus and Rx side capture capabilities to generate configurable control and data traffic and observe the response from the Device Under Test (DUT). It allows engineers to work in the domain (digital or RF) of their choice to quickly characterize the DUT’s digital and wireless behavior.

Main Features and Benefits

<table>
<thead>
<tr>
<th>Product features</th>
<th>Your benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>For RFIC test, simulates a BB-IC</td>
<td>Control and configure the RFIC to match the test setup</td>
</tr>
<tr>
<td>Gear 2 (HS2x) support</td>
<td>Test high throughput to the latest MIPI specifications</td>
</tr>
<tr>
<td>Multi-link</td>
<td>Support for 1Rx/1Tx at low power or 4Rx/2Tx at Gear 2 high speed</td>
</tr>
<tr>
<td>Automation API</td>
<td>Complete programmatic control for complete production testing requirements</td>
</tr>
<tr>
<td>Seamless integration with Keysight 89600 VSA software</td>
<td>Immediate access to the industry’s broadest, most advanced standards-based demodulation and signal analysis</td>
</tr>
</tbody>
</table>

Specifications and Characteristics

### Hardware

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>1 slot 3U</td>
</tr>
<tr>
<td>DigRF v4</td>
<td>Version 1.0 and 1.1</td>
</tr>
<tr>
<td>DUT connection</td>
<td>Samtec 50-pin ERF8-025-05.0-L-DV</td>
</tr>
<tr>
<td>GPIO bus</td>
<td>A 6-pin-width GPIO bus can stimulate and sense proprietary interfaces</td>
</tr>
<tr>
<td>Trigger input/output</td>
<td>MMCX connections for external device synchronization</td>
</tr>
<tr>
<td>Link speeds</td>
<td>Low power (LP)</td>
</tr>
<tr>
<td></td>
<td>High speed (HS1x) Gear 1</td>
</tr>
<tr>
<td></td>
<td>High speed (HS2x) Gear 2 (Option 001)</td>
</tr>
<tr>
<td>Link support</td>
<td>1 link</td>
</tr>
<tr>
<td></td>
<td>2 links (Option 002)</td>
</tr>
<tr>
<td>Lane configurations</td>
<td>Primary and secondary lanes</td>
</tr>
<tr>
<td></td>
<td>1Tx/1Rx</td>
</tr>
<tr>
<td></td>
<td>1Tx/2Rx</td>
</tr>
<tr>
<td></td>
<td>2Tx/4Rx (Option 003)</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Operating systems</th>
<th>Microsoft WindowsXP (32-bit)</th>
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<tbody>
<tr>
<td>Programming control</td>
<td>COM API, graphical user interface</td>
</tr>
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Conquer protocol testing challenges with integrated DigRF and RF analysis solutions from Keysight Technologies.
The Keysight M9252A supports configurable traffic generation with customizable headers, payloads, and frame-sequence control. The host adapter allows the user to characterize and analyze RFIC performance with LTE-Advanced transmit and receive waveforms.

- Automatic support of ARQ in hardware
- Precise control of timing for each DigRF frame sent
- Ability to inject a group of DigRF frames under software (API) control while transmission is active
- Capability to control ‘clustering’ of multiple DLCs
- Supports multiple (2) independent DLC channels
- Ability to understand and convert IQ data to DigRF from a variety of input formats such as ASCII files and signal studio. Internal 128 MB data memory is used as transmit source
- Automatically extract the IQ data from the DigRF data stream in hardware. The data is written into the internal 256-MB DDR memory. The data can be evaluated using the 89600 VSA software
- Selectable sample rate per DLC on TX and RX sublink
- IQ samples and resolution automatic selection based on Air-standard

Complete RF Testing

The M9252A works with Keysight vector signal generation and analysis software to perform cutting edge LTE-A carrier aggregation and RF quality analysis. The M9252A module can be combined with an RF signal generator and analyzer for RF interface stimulus and analysis. The same signal generation and analysis software can be used to build stimulus and analyze data on both the DigRF and antenna sides of the RFIC.

Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>M9252A</td>
<td>PXIe DigRF host adapter</td>
</tr>
<tr>
<td>M9252A-001</td>
<td>Enable Gear 2 (HS2x)</td>
</tr>
<tr>
<td>M9252A-002</td>
<td>Enable secondary link</td>
</tr>
<tr>
<td>M9252A-003</td>
<td>Link extension (2Tx/4Rx lanes) (cannot be used with Option 002)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interface cable</th>
</tr>
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<tbody>
<tr>
<td>M9255A</td>
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<tr>
<td>M9256A</td>
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<table>
<thead>
<tr>
<th>Upgrades</th>
<th>Description</th>
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<tbody>
<tr>
<td>M9252AU-001</td>
<td>G2 speed enhancement license</td>
</tr>
<tr>
<td>M9252AU-002</td>
<td>Upgrade to 2 links (2Rx/1Tx each)</td>
</tr>
<tr>
<td>M9252AU-003</td>
<td>Link upgrade to 4Rx/2Tx license</td>
</tr>
<tr>
<td>M9252A-112</td>
<td>Twelve month core software update subscription service (Standard)</td>
</tr>
<tr>
<td>M9252AU-112</td>
<td>Twelve month M9252A core software update subscription renewal</td>
</tr>
<tr>
<td>M9252AU-124</td>
<td>Twenty-four month core software update subscription service renewal</td>
</tr>
</tbody>
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