

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

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



Conquer protocol testing challenges with integrated DigRF and RF analysis solutions from Keysight Technologies.

Specifications and Characteristics

Hardware	
Size	1 slot 3U
DigRF v4	Version 1.0 and 1.1
DUT connection	Samtec 50-pin ERF8-025-05.0-L-DV
GPIO bus	A 6-pin-width GPIO bus can stimulate and sense proprietary interfaces
Trigger input/output	MMCX connections for external device synchronization
Link speeds	Low power (LP) High speed (HS1x) Gear 1 High speed (HS2x) Gear 2 (Option 001)
Link support	1 link 2 links (Option 002)
Lane configurations	Primary and secondary lanes 1Tx/1Rx 1Tx/2Rx 2Tx/4Rx (Option 003)
Software	
Supported operating systems	Microsoft WindowsXP (32-bit) Microsoft Windows 7 (32/64-bit)
Programming control	COM API, graphical user interface

Software Information

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



M9252A DigRF host adapter module and M9255A DUT cable

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

Model	Description
M9252A	PXIe DigRF host adapter
M9252A-001	Enable Gear 2 (HS2x)
M9252A-002	Enable secondary link
M9252A-003	Link extension (2Tx/4Rx lanes) (cannot be used with Option 002)
Interface cable	
M9255A	DUT connection cable Samtec 50-pin ERF8-025-05.0-L-DV
M9256A	DigRF interface converter for M9255A to SMA connectors
Upgrades	
M9252AU-001	G2 speed enhancement license
M9252AU-002	Upgrade to 2 links (2Rx/1Tx each)
M9252AU-003	Link upgrade to 4Rx/2Tx license
M9252A-112	Twelve month core software update subscription service (Standard)
M9252AU-112	Twelve month M9252A core software update subscription renewal
M9252AU-124	Twenty-four month core software update subscription service renewal

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