ADGM3121/ADGM3144

Powering the Next Era of High-Speed Test Where High-Density Means Productivity

Product Details

- Built for modern ATE: Enabling more test channels, faster interfaces, and scalable switching
- Next-gen MEMS switching: ADGM3121 (DPDT) and ADGM3144 (SP4T) supporting high-speed digital loopback plus precision DC parametric testing
- Performance + Size: DC (±6V) to 30GHz and up to 64Gbps, supporting PCIe Gen4/Gen5/Gen6, USB4 and PAM4 signals, in a 3mm x 3mm platform-ready form factor

Key ATE System-Level Benefits

- High-speed performance: Maintains signal fidelity across high-speed lanes from DC to 64Gbps
- Single-insertion test: High-speed loopback + precision DC parametric test function on one test board
- Scalable architecture: 3mm x 3mm platform enables flexible configurations, and single-insertion test solutions
- Semiconductor-grade reliability: Improves uptime and simplifies integration in high-volume environments

Applications

- Relay replacement
- ATE load and probe boards
- Reconfigurable filters and attenuators
- Supports high-speed serialization/deserialization signals: PCIe Gen4/Gen5/Gen6, USB4, and PAM4

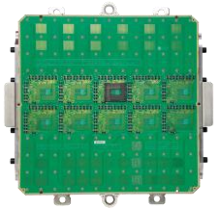
DPDT MEMS Switch,
0 Hz/DC to 24GHz
3mm × 3mm

SP4T MEMS Switch,
0 Hz/DC to 30GHz
3mm × 3mm

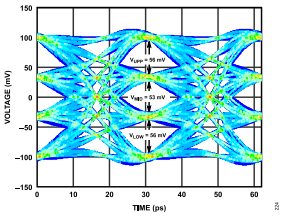
Features

- Next-generation size: 3mm × 3mm × 1.5mm (55% size reduction vs. previous generation)
- Performance: 0 Hz/DC (±6V) to 30GHz, up to 64Gbps, 33dBm RF power handling, excellent linearity, 1.9Ω R_{ON}
- Ease of use: Integrated 3.3V/10mW driver with low-voltage parallel and SPI logic control
- Minimal signal impact at 64Gbps: Low skew/jitter for high-fidelity transmission
- Reliability: Up to 50× improvement in cycle lifetime vs. typical electromechanical relays

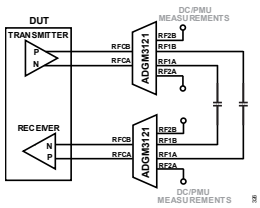
Applications & Validation



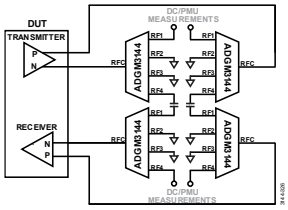
Example ATE load board (high-speed loopback + DC test)



Eye diagram at 64Gbps PAM4, T_{RISE}/T_{FALL} = 10ps signal through one **ADGM3121**



ATE loop back application enabling high-speed digital and DC testing using **ADGM3121**



ATE loop back application enabling high-speed digital and DC testing using **ADGM3144**

Performance Briefly

Part	Config	Signal Range	Speed	Supply	Package
ADGM3121	DPDT	DC (±6V) to 24GHz	Up to 64Gbps	3.3V/10mW	3mm × 3mm × 1.5mm
ADGM3144	SP4T	DC (±6V) to 30GHz	Up to 64Gbps	3.3V/10mW	3mm × 3mm × 1.5mm

Learn More

ADGM3121

Scan to access full product information

- Data sheet
- Evaluation kits
- Tools
- Ordering

ADGM3144

Scan to access full product information

- Data sheet
- Evaluation kits
- Tools
- Ordering

Resources

myAnalog is your access to the full analog.com experience! Register now to enable your access.
my.analog.com

myAnalog

Engage with the ADI technology experts in our online support community. Ask your tough design questions, browse FAQs, or join a conversation.
ez.analog.com

ADI EngineerZone™

ANALOG DEVICES

analog.com

For regional headquarters, sales, and distributors or to contact customer service and technical support, visit analog.com/contact.