

RM1010-LLC

Low Leakage Switch Matrix

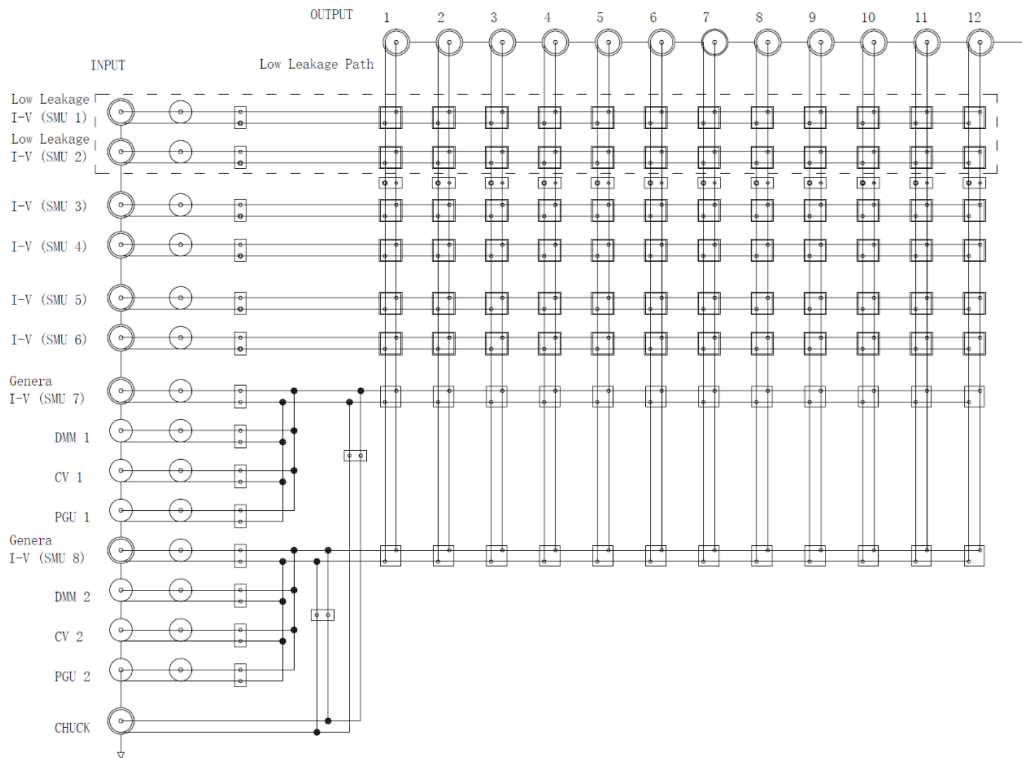
Version 1.1



1.Product Description

1.1Product Introduction

RM1010-LLC 4-slot semiconductor switch matrix can meet high-speed semiconductor test applications with S3022F benchtop or S2012C PXle plug-in card source measure unit. Easy to use GUI is also speeding up the development for new test functions and simplifying system integration. RM1010-LLC supports traditional SCPI commands, making the migration of test code easy and fast, it can support multi-machine parallel connection to improve system test efficiency and reduce costs.



R1010G-LLC Block diagram of the low leakage switch matrix

2.Product features and advantages

characteristic	advantage
14 inputs and 48 outputs (up to 96 low leakage cross-nodes)	Increases the flexibility and precision of parameter measurements, saving cost and time

<100fA leakage current (low leakage channel)	With precision SMU (such as S3022F, S2012C), it can achieve precision measurement and does not degrade measurement accuracy
Settling time: < 3.5 sec to < 400 fA after 10 V applied	With precision SMU (such as S3022F, S2012C), it can achieve the fast measurement of the ultra-low current signal
High-speed signal measurement	10 MHz Bandwidth (at -3 dB)
Modular design, Supports x12, x24, x36 and x48 three-axis output configurations	Flexible configuration to reduce one-time costs
Easy to use front panel design	LCD control panel, easy to control and monitor the relay switching status
Free PC GUI control software	Remote measurement and control from PC

3.Switch matrix Specification

Specification	Input channels	2 (Low Leakage I-V Port) 6 (General I-V Port) 2 (C-V Port) 2 (DMM Port) 2 (PGU Port)
	Output channels	12/24/36/48
	Max. Current rating	1 A
	Max. Voltage rating	200 V (Channel to Ground) 300 V (Channel to Channel)
	Close Ch Residual R	0.6 Ω (Low Leakage I-V Port) 1.0 Ω (General I-V Port) 1.0 Ω (C-V, HF Port)

	Ch Isolation R ¹	$10^{13} \Omega$ (Low Leakage I-V Port) $10^{12} \Omega$ (General I-V Port) $10^9 \Omega$ (C-V, HF Port)
Typical Data	Offset current	$<0.1 \text{ pA}$ (Low Leakage I-V Port) $<1000 \text{ pA}$ (General I-V Port)
	Offset voltage, Electro Motive Force (EMF) at 5 min.	$<80 \mu\text{V}$ (Low Leakage I-V Port) $<110 \mu\text{V}$ (General I-V Port) $<110 \mu\text{V}$ (C-V, HF Port)
	Channel crosstalk capacitance	$<0.3 \text{ pF/CH}$
	Guard capacitance	$<145 \text{ pF}$ (Low Leakage I-V Port) $<123 \text{ pF}$ (General I-V Port)
	Additional C measurement error	$<\pm 1\% \pm 0.5 \text{ pF}$ (C-V Port)
Supplemental Information	Communication interface	USB/LAN
	Power requirements	100/120/220/240 V \pm 10%, 47 Hz to 63 Hz
	Maximum VA	100 W
	Bandwidth (@ -3 dB)	$<10 \text{ MHz}$ (C-V, HF Port)
	Relay contact life	>108 times
	Settling time	$<3.5 \text{ sec}$ to $<400 \text{ fA}$ after 10 V applied

	Environment	Indoor use
	Work condition	0 °C ~ +40 °C, 5 % ~ 80 % (no condensation)
	Storage condition	-40 °C ~ 70 °C, 5 % ~90 % (no condensation)
	Altitude condition	Operating: 0 m~2000 m, Storage: 0 m ~4600 m

Note:

1. Insulation resistance test environment: 23 °C±5 °C, 5% to 60% RH

4.Dimension and weight

Size	
RM1010-LLC	222 mm H x 430 mm W x 580 mm D
R1010G-LLC	30 mm H x 395 mm W x 504 mm D
Weight (approx.)	
RM1010-LLC	19.7 kg
R1010G-LLC	3.4 kg

5.Order information

Quick Reference Manual, USB Flash (includes PDF user manual, Quick Measurement Software and Drivers).

RM1010-LLC	4-slot semiconductor switch matrix Main frame
R1010G-LLC	8×12 Low leakage current switch matrix card

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*This information is subject to change without notice.