

Reflective Switch Modules (MEMS)



Withwave's MEMS Switch Modules is reflective type RF switches such as SP4T, SP10T, 4-port matrix switch according to switching applications and frequency range.

They delivers 9W CW power handling, low insertion loss and high linearity, making this devices ideal for RF signal routing in wireless infrastructure and applications from **DC to 20GHz**.

External Connectors included 2.92 mm vertical launch connectors for all RF port.

They are powered and controlled through **USB type-C connector**.



Features
<ul style="list-style-type: none"> - DC to 18GHz frequency range - 9 W CW power handling - High linearity and Low insertion loss - High Reliability > 3 billion Switching Operations - SP4T, SP10T, 4-Port Matrix Switch
Application
<ul style="list-style-type: none"> - Test & Measurement - High Power RF Front-ends - Antenna Tuning and Beam Steering - 5G Wireless Communication - RF Signal routing

WM418NKU, WM1018NKU, W4MS-NKU

Parameter	Condition	WM418NKU	WM1018NKU	W4MS-NKU
Operation Frequency		DC ~ 18 GHz	DC ~ 18 GHz	DC ~ 20 GHz
Insertion loss	All RF port terminated All RF port terminated	0.9 dB @ 9 GHz 2.3 dB @ 18 GHz	1.5 dB @ 9 GHz 3.5 dB @ 18 GHz	1.0 dB @ 10 GHz 2.9 dB @ 20 GHz
Return loss (common port)	All RF port terminated All RF port terminated	10 dB @ 9 GHz 10 dB @ 18 GHz	8 dB @ 9 GHz 8 dB @ 18 GHz	14 dB @ 10 GHz 10 dB @ 20 GHz
Return loss (active port)	All RF port terminated All RF port terminated	10 dB @ 9 GHz 8 dB @ 18 GHz	8 dB @ 9 GHz 8 dB @ 18 GHz	14 dB @ 10 GHz 10 dB @ 20 GHz
Isolation	All RF port terminated All RF port terminated	29 dB @ 9 GHz 16 dB @ 18 GHz	30 dB @ 9 GHz 18 dB @ 18 GHz	27 dB @ 10 GHz 17 dB @ 20 GHz
CW Input Power	Measured at +85 °C	Max. 9W	Max. 9W	Max. 9W
Input IP3	Measured at +25°C	90 dBm	90 dBm	95 dBm
Switching Time	COM control time @ Win10 MEMS IC Turn on time MEMS IC Turn off time	200 us 14 us 5 us	200 us 14 us 5 us	200 us 8.5 us 2.5 us
On/Off Operations	Cold switching @ +25°C	30x10 ⁹ Cycle	30x10 ⁹ Cycle	30x10 ⁹ Cycle
Hot Switch Restrictions	DC RF	-0.5V ~ +0.5V Max. 15dBm	-0.5V ~ +0.5V Max. 15dBm	-0.5V ~ +0.5V Max. 15dBm
Current consumption	USB type-C	14 mA	19 mA	85 mA
Power Supply	USB type-C	5 V	5 V	5 V
ESD HBM	RF port USB port	2 kV 16 kV	2 kV 16 kV	2 kV 16 kV
Operating Temperature		-40 °C ~ 85 °C	-40 °C ~ 85 °C	-40 °C ~ 85 °C

