

Rev:A00

# Multiple IQ frequency conversion modular



The frequency conversion component is composed of 7 orthogonal up-conversion modules, 1 orthogonal down-conversion module, 1 active local oscillator power division module, 7 local oscillator switch modules, control modules, and power processing modules. The purpose of the local oscillator power sub-module is to distribute the input local oscillator power to each frequency conversion module. In order to ensure the consistency of the amplitude and phase of the local oscillator of each frequency conversion module, the method of first amplification and then power division is adopted, and the 1dB compression point of the power amplifier is at least 30dBm. The local oscillator signal of the frequency conversion module can come from a shared local oscillator or an independent local oscillator. The local oscillator switching is controlled by the ping-pong switch on the panel, and the local oscillator of each frequency conversion module can be switched independently. The local oscillator switching function is realized by the SPDT switch. In order to increase the isolation degree between the local oscillators, one SPST switch is added to each local oscillator branch, and the isolation degree between the local oscillators can reach more than 70dB.

## Technical requirements

Model	CIQM50038A001		Items	Specifications
<b>Quadrature up-conversion module specification</b>	I/Q frequency Range	10~500MHz	RF output Power	≤0dBm
	RF frequency Range	4~8GHz	L0 input power	15±1dBm
	L0 frequency Range	4~8GHz	Gain	≥0dB
	I/Q input power	≤3dBm	Gain adjustment range	30dB , 0.5dB Stepping
	Microwave switch characteristics	isolation > 45dB; Switching time is less than 10ns	Output filter characteristics	3dB Cut-off Frequency (lowpass) 8GHz; Out-of-band rejection > 40dB@10GHz
<b>Orthogonal down conversion specification</b>	RF frequency Range	4~8GHz	RF input power	-20~-10dBm
	I/Q frequency	≤500MHz	I/Q output voltage	≤0.5V
	Output coupling method	AC	Local oscillator input power	15±1dBm
	Output filter characteristics	3dB Cut-off Frequency (lowpass) 500MHz	Input and output return loss	≥14dB
<b>Local oscillator power sub-module specification</b>	Local oscillator frequency range	4~8GHz	Local oscillator output power	15±1dBm(8-ways)
	Local oscillator input power	14±1dBm		