

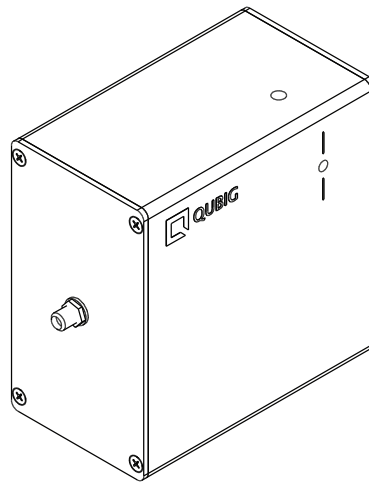


Test Data Sheet

EO-T0.5L3-IR2

S/N:

Resonant electro-optic phase modulator with - tunable resonance frequency

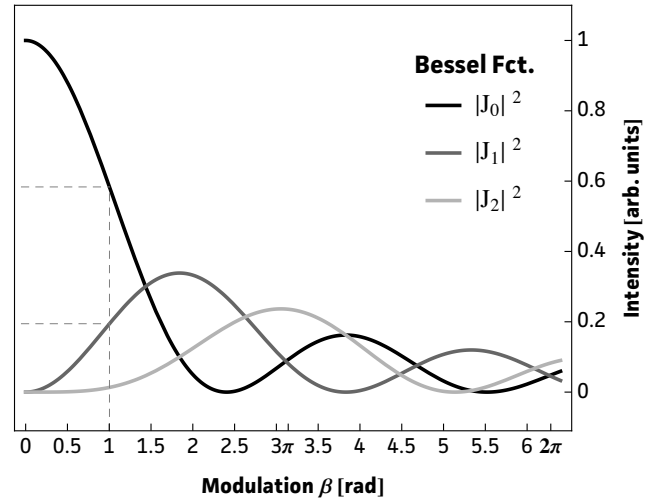
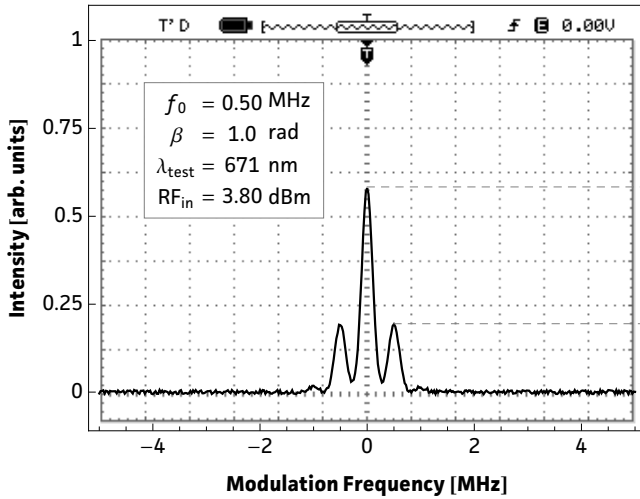


RF properties	Value	Unit
Resonance frequency: f_0 ¹⁾	492 - 543	kHz
Preset frequency: f_{set} ¹⁾	500.0	kHz
Bandwidth: $\Delta\nu$	17	kHz
Quality factor: Q	29	
Required RF power for 2π rad @ 2 μ m ²⁾	30.1	dBm
max. RF power: RF_{max} ³⁾	2	W

Optical properties		
EO crystal	LN	
Aperture	3x3	mm ²
Wavefront distortion (633nm)	$\lambda/6$	nm
max. optical intensity (2 μ m)	<1	W/mm ²
AR coating (R<0.5%)	1550-2400	nm

¹⁾ at 24.3°C ²⁾ with 50 Ω termination ³⁾ no damage with $RF_{in} < 5W$

Measured modulation

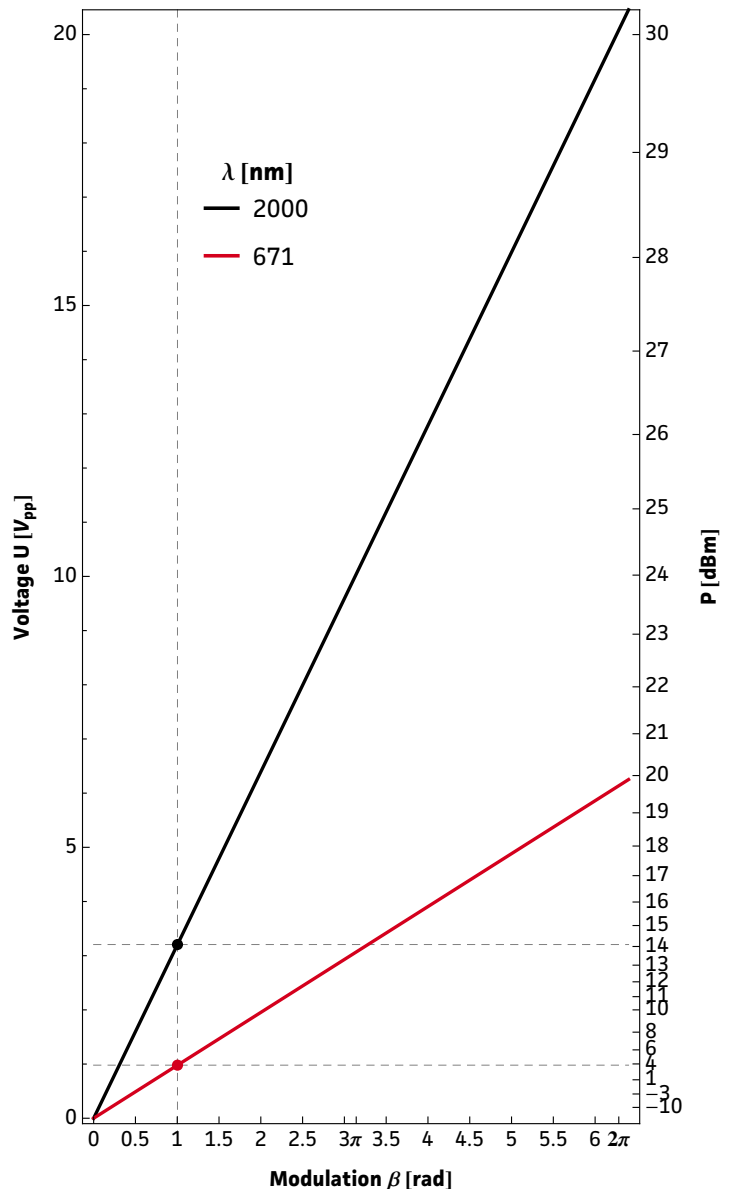
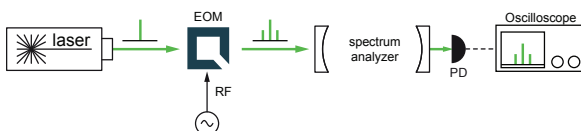


Expected modulation

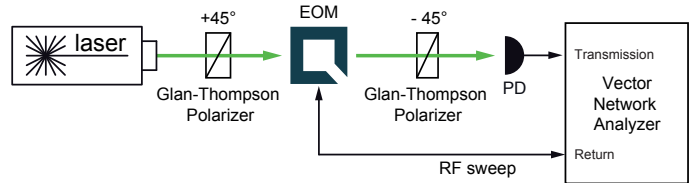
Wavelength	λ_{use}	2.0	um
Resonance frequency	f_0	500	kHz
Modulation	β	2π	rad
RF power	U	20.2	V_{pp}
	P_{dBm}	30.1	dBm
	P_{W}	1.0	W
	U_{π}	10.1	V_{pp}
Modulation efficiency	β/U	0.31	rad/V

Note: After turn on, the resonance frequency might drift slightly with applied rf power. Please compensate by tuning the rf drive frequency until steady-state.

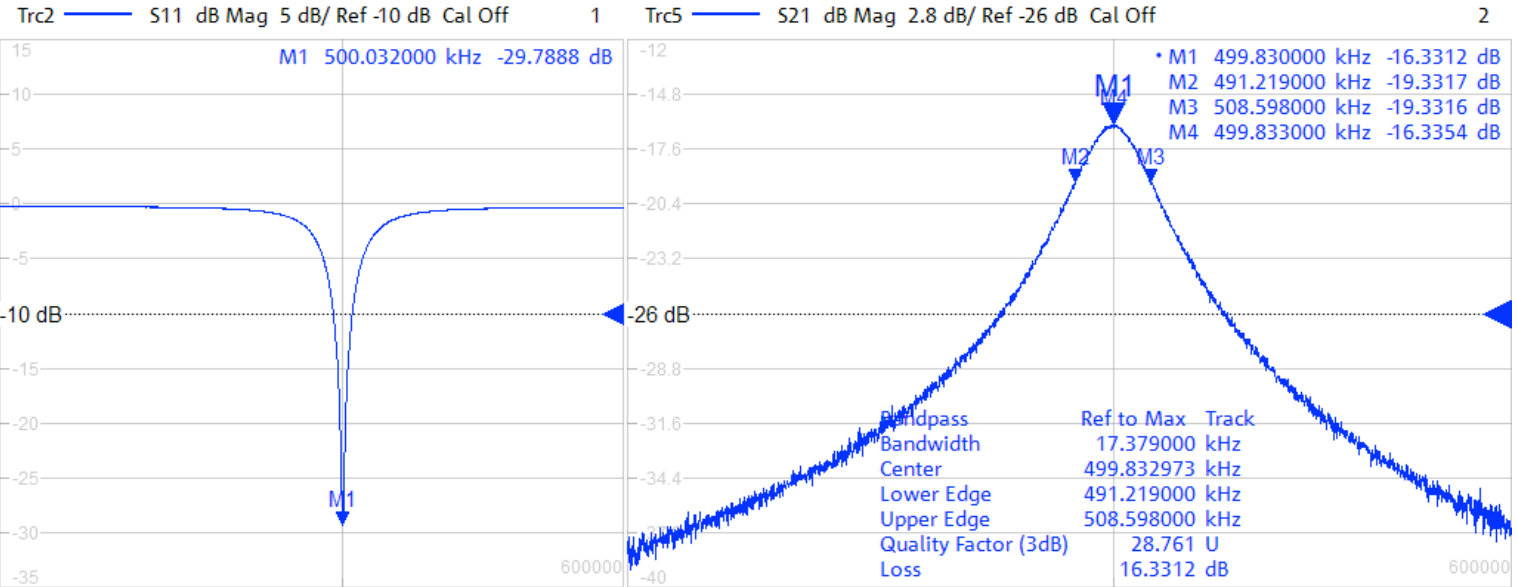
Test setup



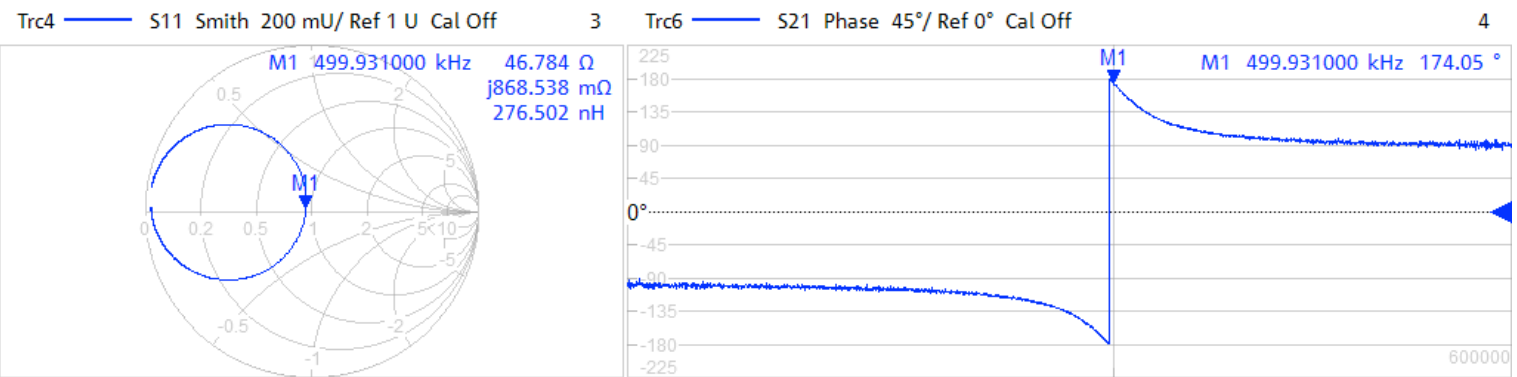
Resonance characteristics



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1328.5170K92-100178-XI



Ch1 Start 400 kHz Pwr -20 dBm Bw 10 kHz Stop 600 kHz



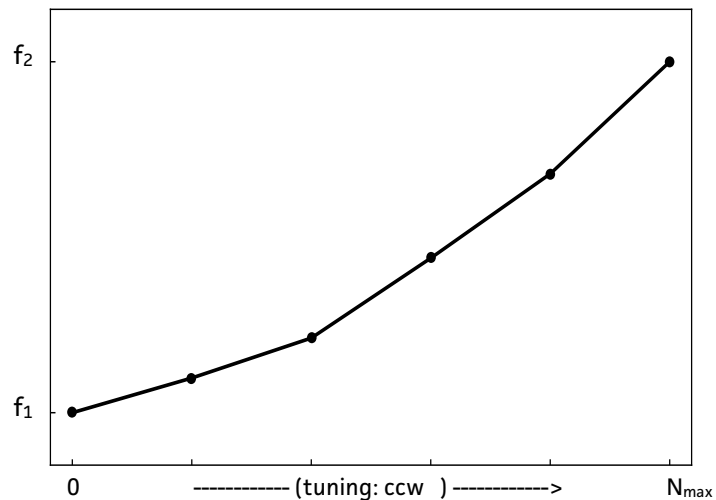
Ch1 Start 400 kHz Pwr -20 dBm Bw 10 kHz Stop 600 kHz

Tuning performance

f_0 min max*	f_1 f_2	492 543	kHz
max. number of turns	N_{max}	12	turns
incr. frequency shift	Δf	~4	kHz / turn
tuning orientation		ccw	$f_0 \uparrow$

Attention!!

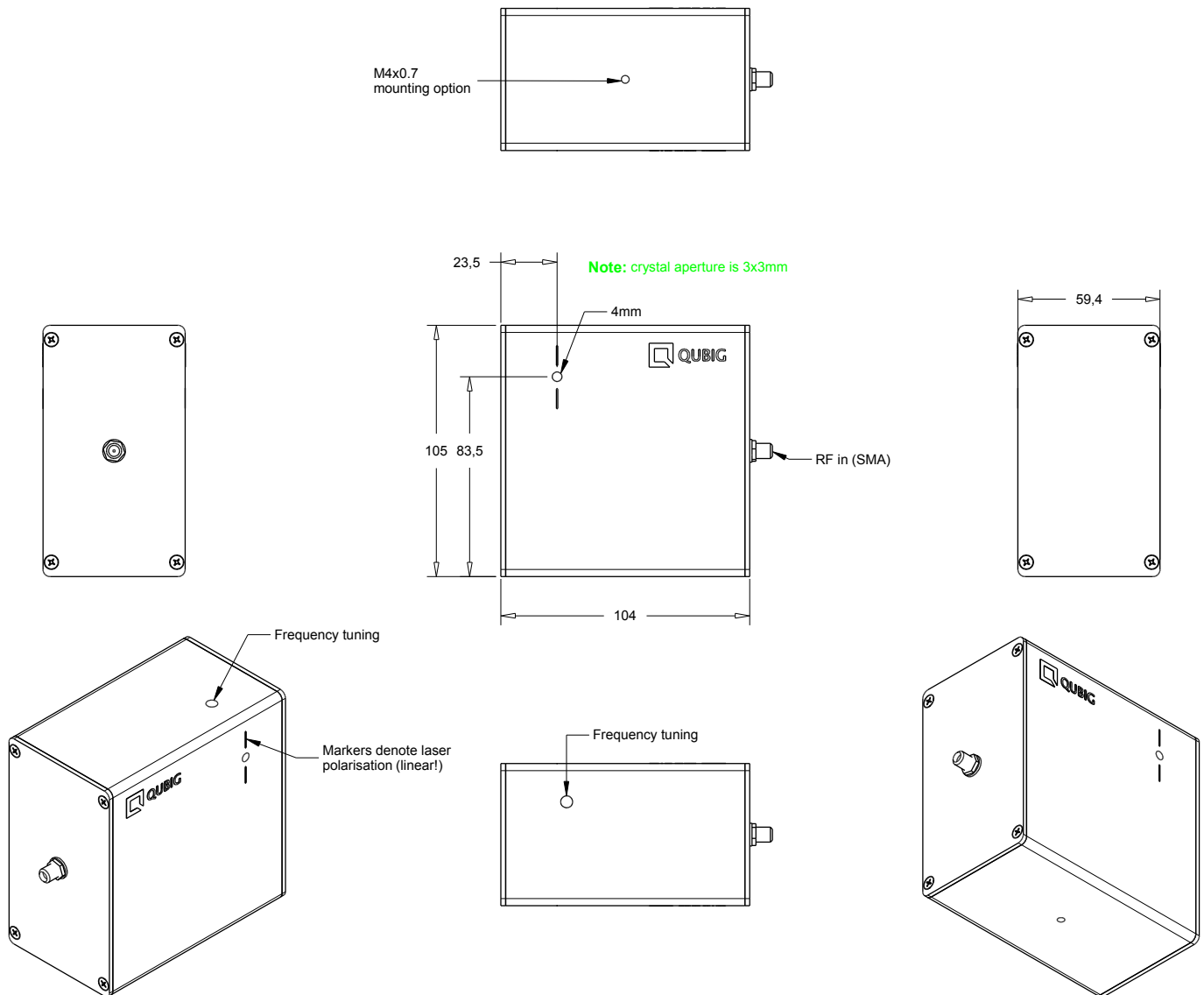
- use only supplied tuning tool
- actuate tuner carefully
- do not apply too much pressure or torque
- keep tuning tool coaxial
- tuner might not be perfectly orthogonal to box



Handling instructions

- Input laser polarization must be aligned with respect to the white markers on the housing
- Please handle device carefully. Avoid shock. Don't drop.
- After turn on the resonance frequency might drift slightly with applied rf power. Please compensate by tuning the rf drive frequency until steady-state (~min).

Package drawing



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