



Test Data Sheet

EO-Na23R5

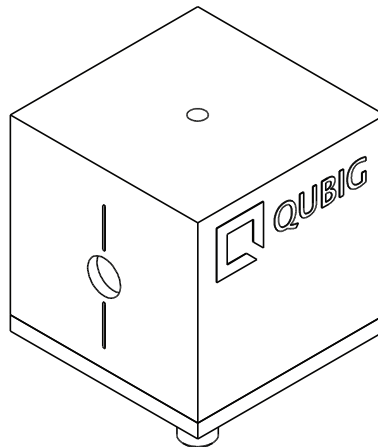
S/N:

High-Q, resonant electro-optic phase modulator

with

- tunable resonance frequency

- thermal crystal mount

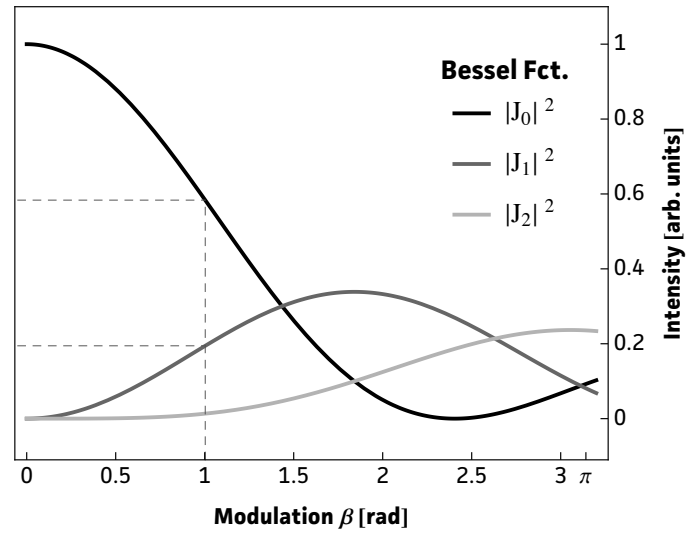
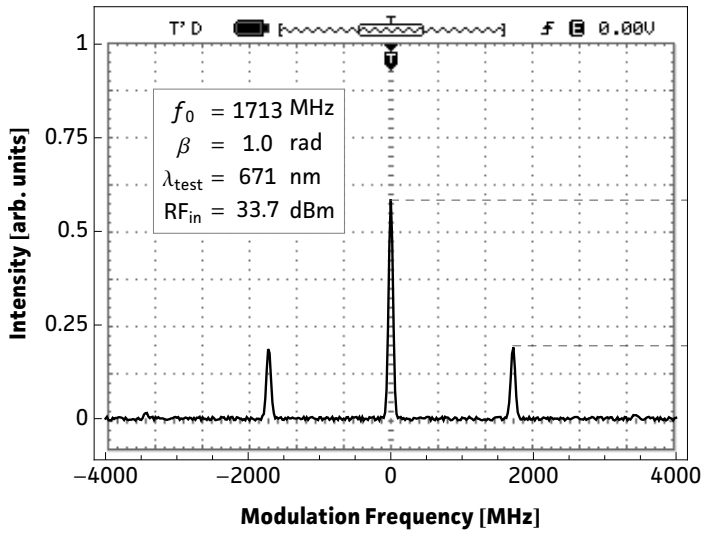


RF properties	Value	Unit
Resonance frequency: f_0 ¹⁾	1.53 - 1.76	GHz
Preset frequency: f_{set} ¹⁾	1713	MHz
Bandwidth: $\Delta\nu$	7.6	MHz
Quality factor: Q	225	
Required RF power for 1rad @ 589nm ²⁾	32.3	dBm
max. RF power: RF_{max} ³⁾	5	W

Optical properties		
EO crystal	RTP	
Aperture	5x5	mm ²
Wavefront distortion (633nm)	$\lambda/6$	nm
max. optical intensity (589nm)	<30	W/mm ²
AR coating (R<0.5%)	589	nm

¹⁾ at 24.3°C ²⁾ with 50Ω termination ³⁾ no damage with $RF_{in} < 10W$

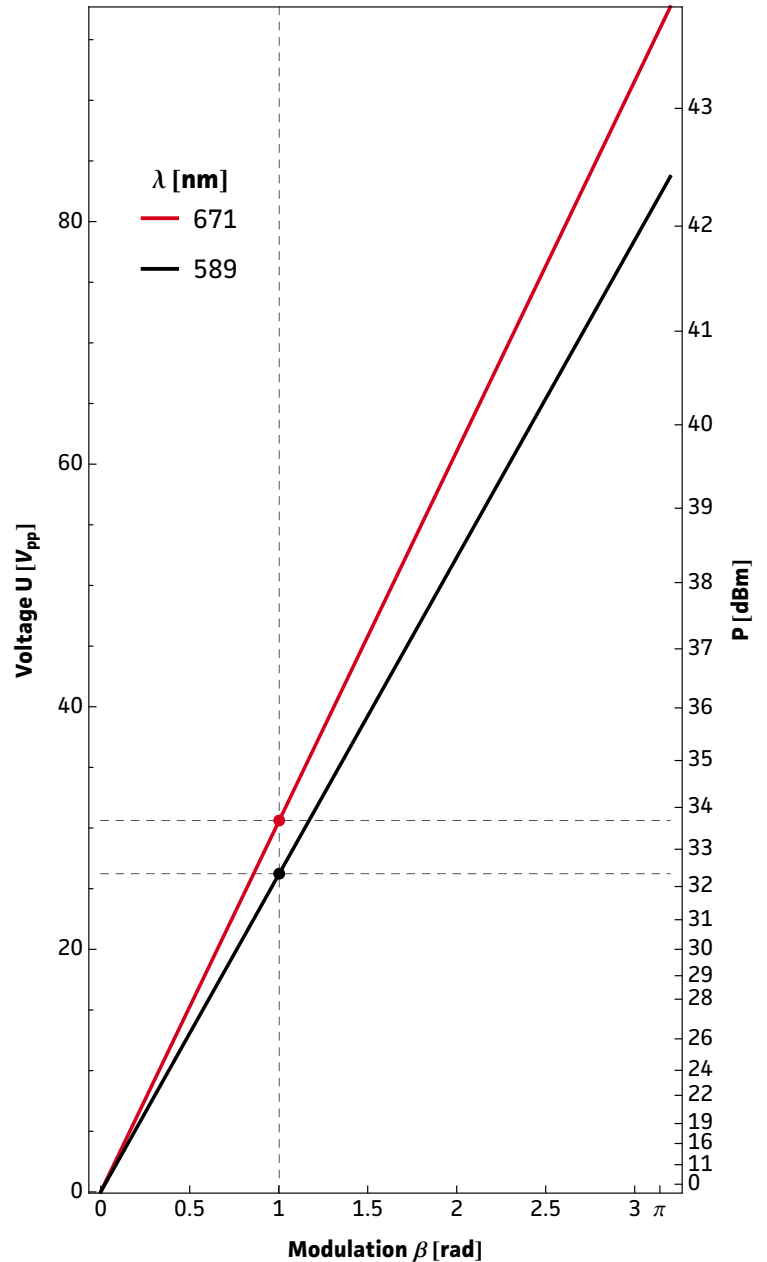
Measured modulation



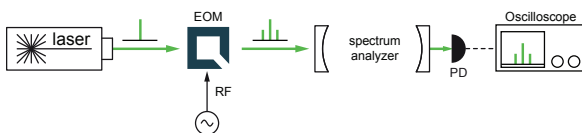
Expected modulation

Wavelength	λ_{use}	589	nm
Resonance frequency	f_0	1713	MHz
Modulation	β	1.0	rad
RF power	U	26.2	V _{pp}
	P _{dBm}	32.3	dBm
	P _W	1.71	mW
	U _{π}	82.2	V _{pp}
Modulation efficiency	β/U	0.04	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.

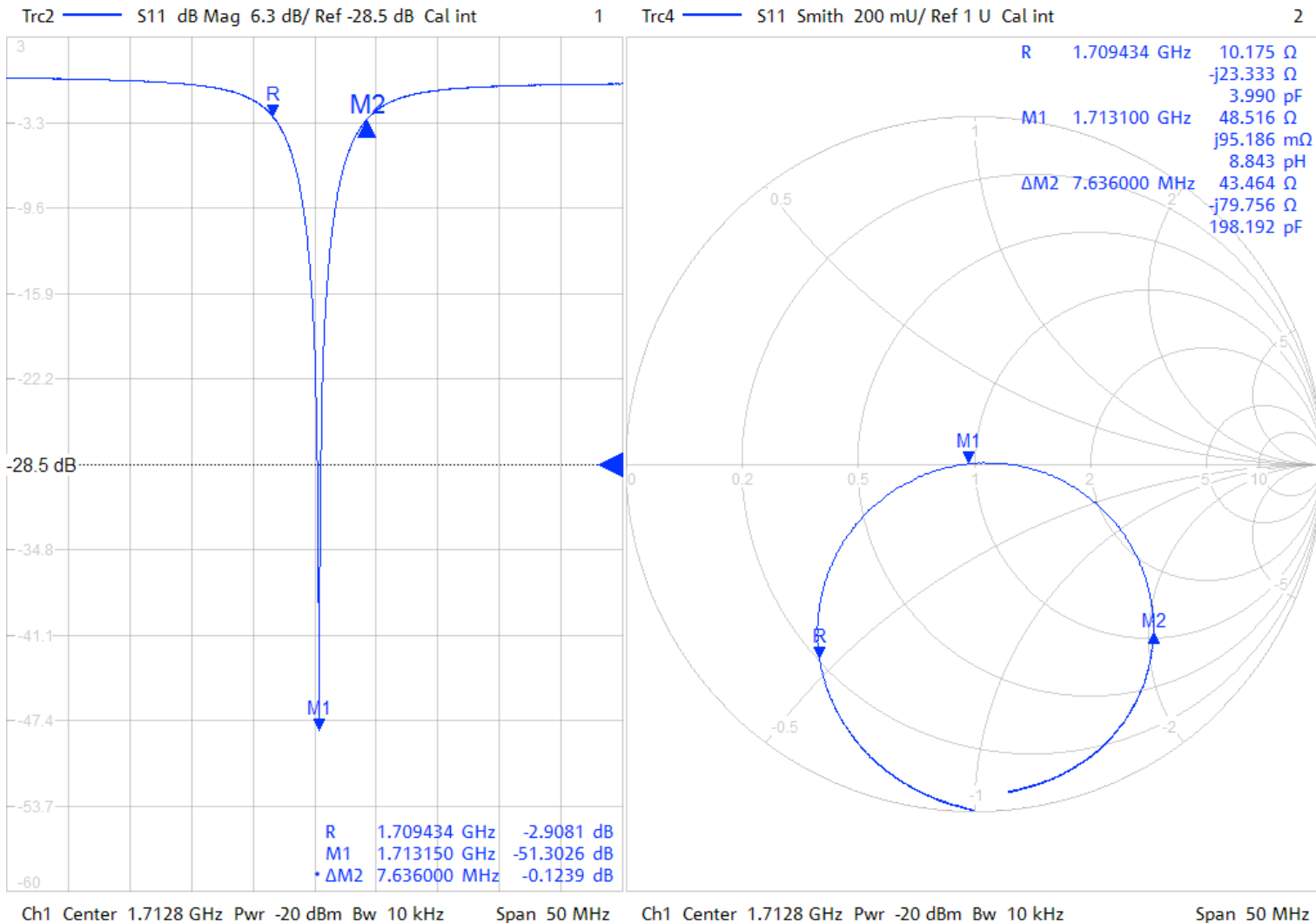
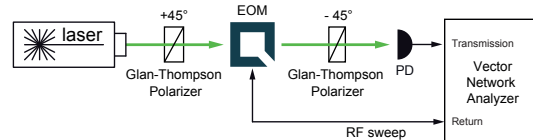


Test setup



Resonance characteristics

6/19/2015 11:46:09 AM
1328.5170K92-100178-XI

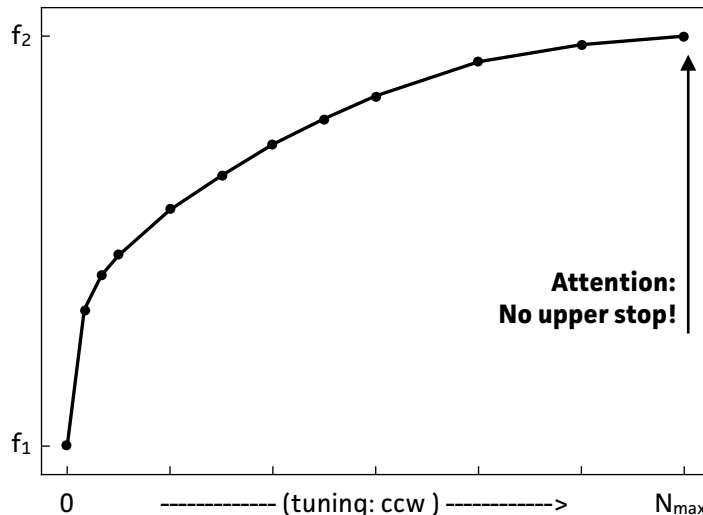


Tuning performance

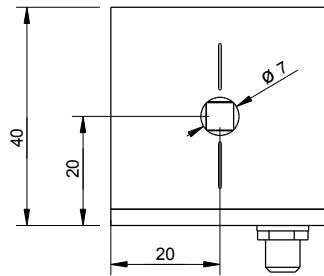
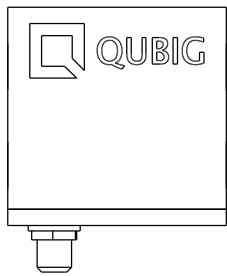
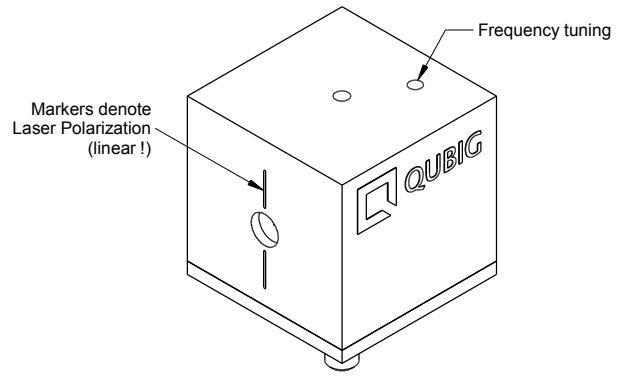
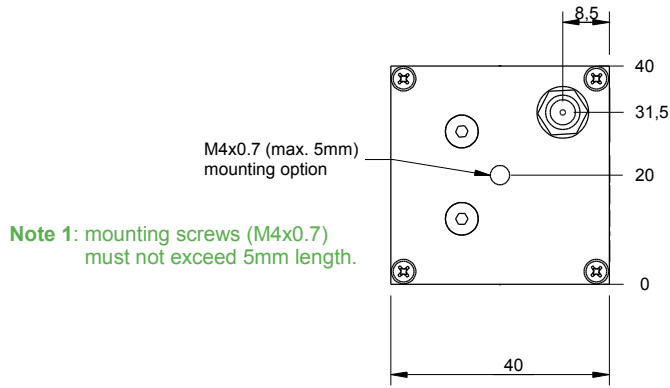
f_0 min max*	f_1 f_2	1.53 1.76	GHz
max. number of turns	N_{max}	6	turns
incr. frequency shift	Δf	~ 40	MHz / turn
tuning orientation		ccw	$f_0 \uparrow$

Attention!!

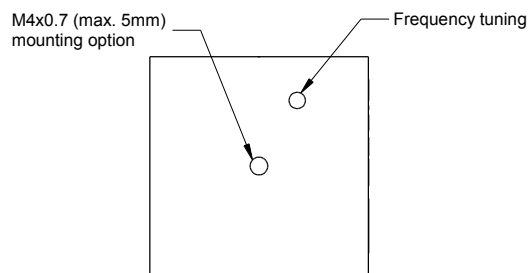
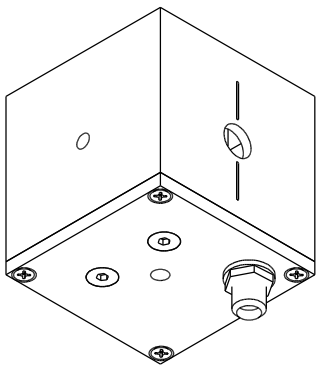
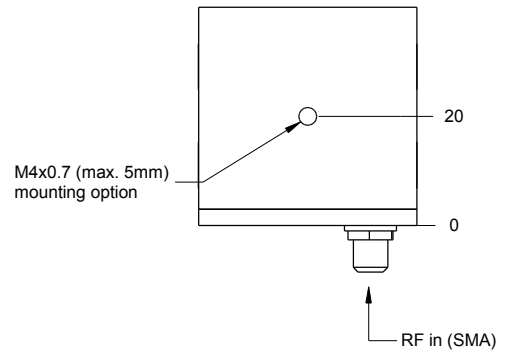
- use only supplied tuning tool
- actuate tuner carefully
- do not apply too much pressure or torque
- keep tuning tool coaxial
- tuner might not be perfectly orthogonal to box



Package drawing



Note 2: crystal aperture is 5x5mm.



Attention!!

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- tuner might not be perfectly orthogonal to box