QUBIG

Empowering Laser Technologies

Test Data Sheet

PM8 - SWIR-1

(EO-T80T3)

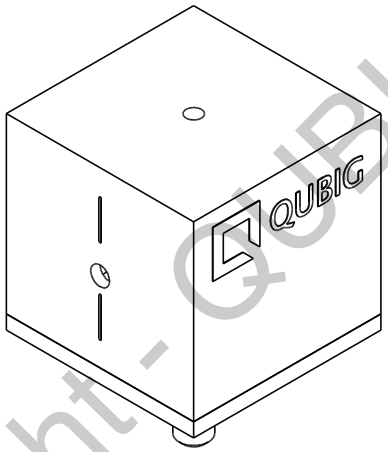
S/N: H3346

High-Q, resonant electro-optic modulator

with

- tunable resonance frequency

- TXC option



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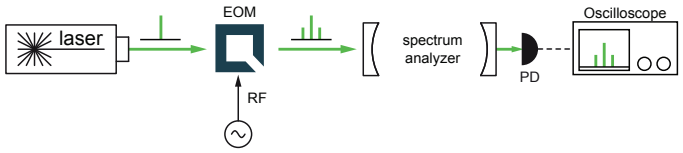
RF properties	Value	Unit
Resonance frequency: f_0 [1]	73.7 - 84.2	MHz
Preset frequency: f_{set} [1]	80.0	MHz
Bandwidth: $\Delta\nu$	586	kHz
Quality factor: Q	137	
Required voltage $\mathbf{V_1}$ for 1rad @ 1.2 | 1.5µm [2]	9.4 | 12.0	V_{pp}
max. RF_{in} power: RF_{max} [3]	5	W

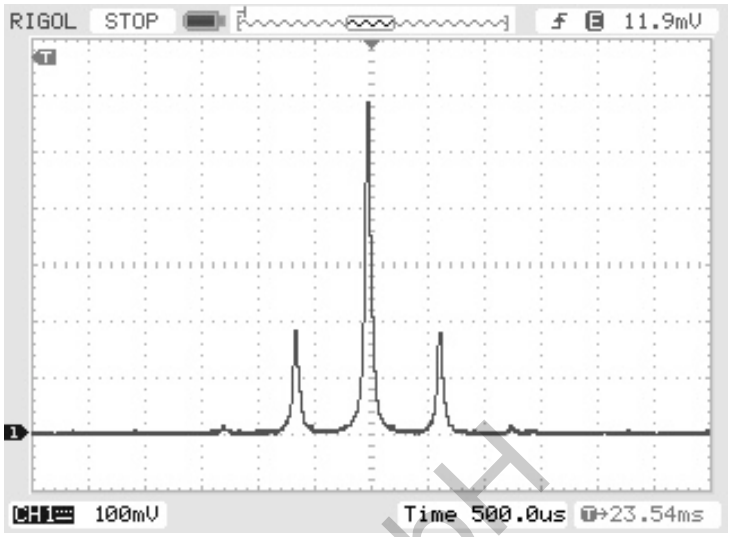
Optical properties		
EO crystal	LT	
Aperture	3x3	mm^2
Wavefront distortion (633nm)	λ/6	nm
max. optical intensity (1064nm)	1	W/mm^2
AR coating (R<1.5%)	800 - 2000	nm

[1] at 20.1°C [2] with 50Ω termination [3] no damage with RF_{in} < 10W

Measured modulation



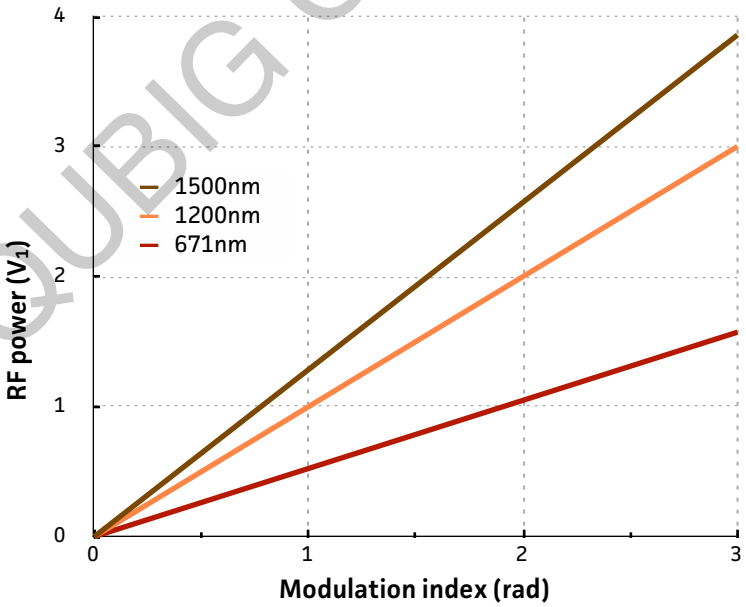
Test wavelength	λ_{test}	671	nm
Resonance frequency	f_0	80.0	MHz
RF power	RF_{in}	5.0	V_{pp}
		18.0	dBm



Expected modulation for β=1rad

Wavelength	λ_{use}	1.2 | 1.5	µm
Resonance frequency	f_0	80.0	MHz
RF power	RF_{in}	9.4 | 12.0	V_{pp}
		23.5 | 25.6	dBm
		225 | 361	mW

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.

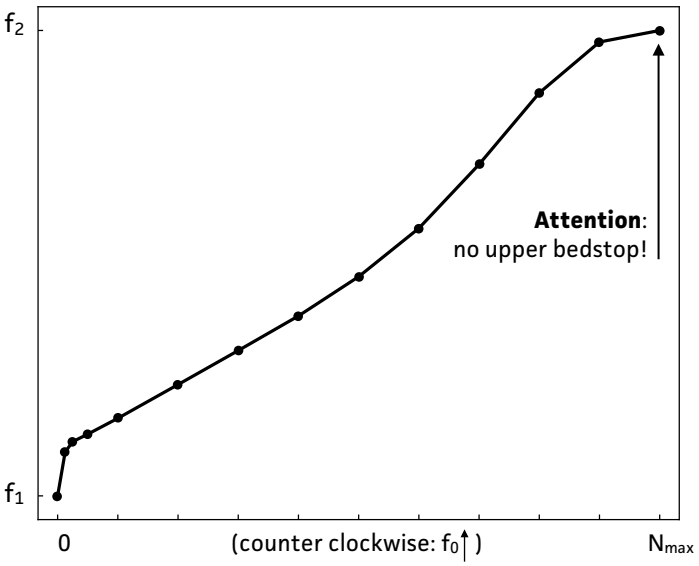


Tuning performance

f_0 min | max*	f_1 | f_2	73.7 | 84.2	MHz
max. number of turns	N_{max}	11	turns
incr. frequency shift	Δf	~1	MHz / turn
tuning orientation		ccw	f_0 ↑

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



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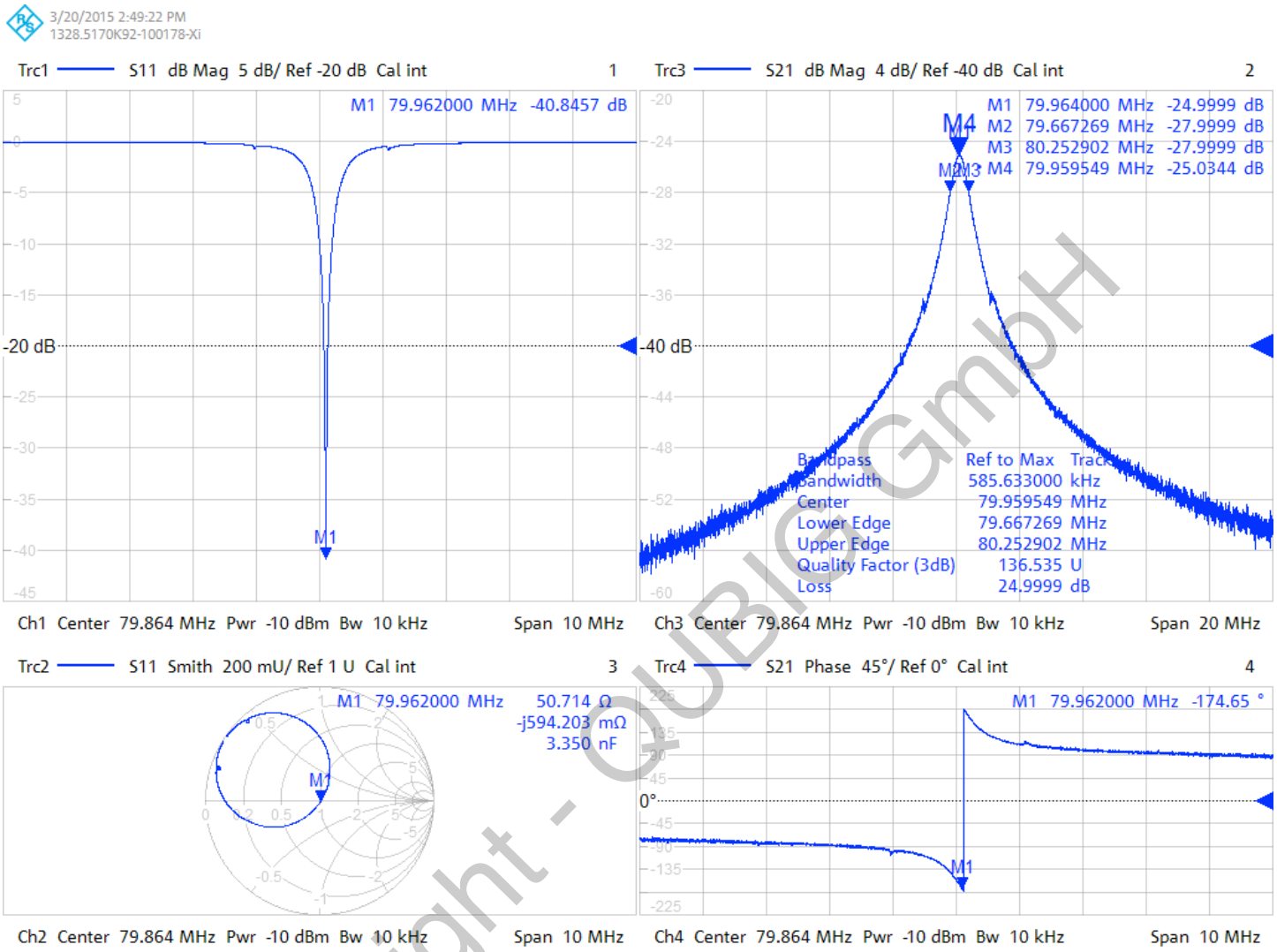
Return loss

Optical modulation



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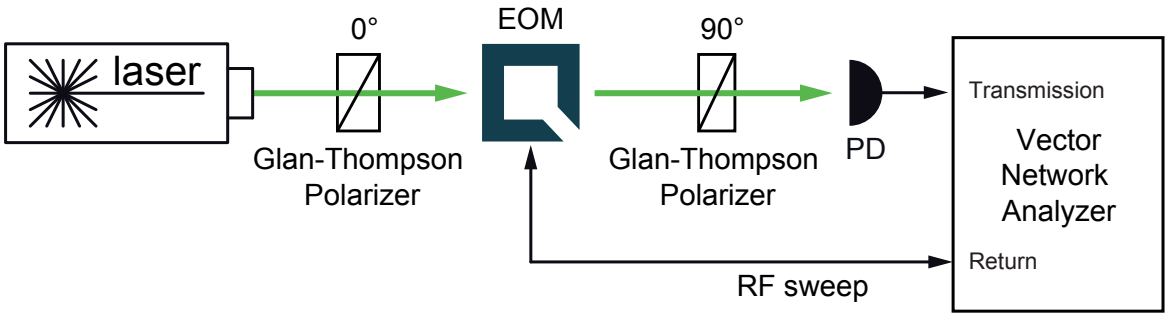
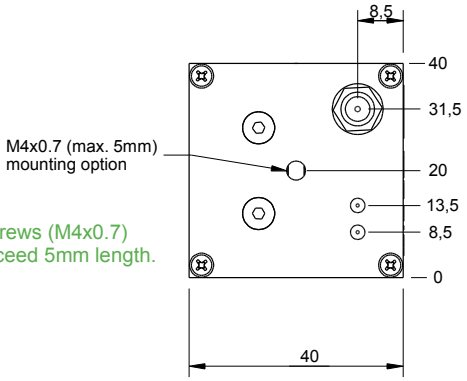
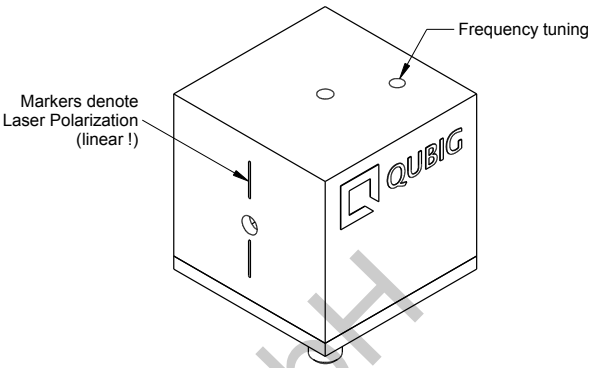
Test setup

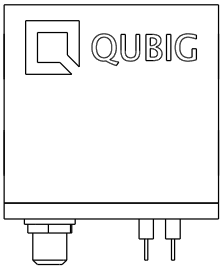


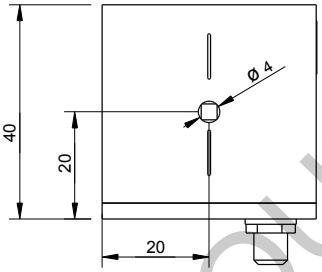
Package drawing



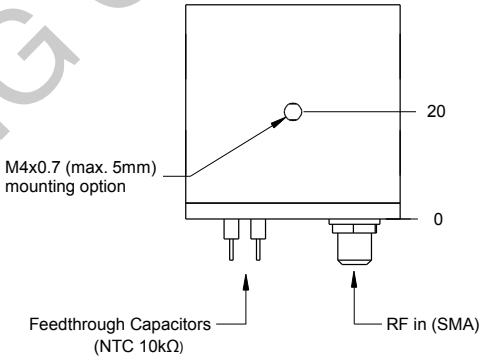
Note 1: mounting screws (M4x0.7) must not exceed 5mm length.

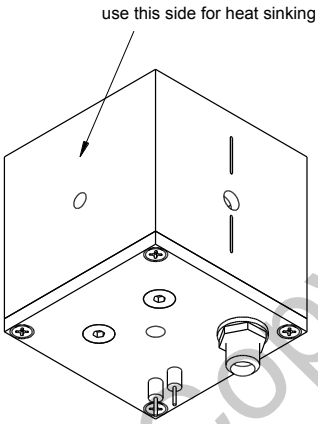


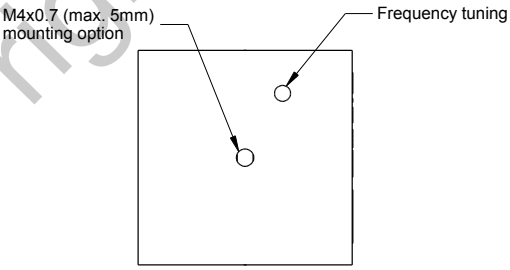




Note 2: crystal aperture is 3x3mm.







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