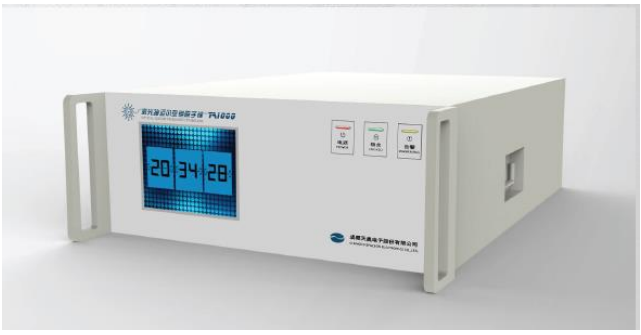
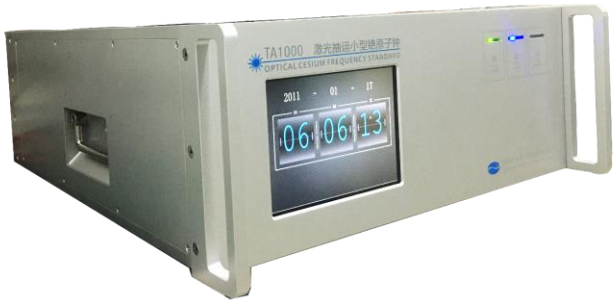
TA1000-M1 Optically pumped Miniaturized Cs Atomic Clock





The TA1000-M1 Caesium atomic clock, as a telecommunication first-class reference clock, is a high-accuracy frequency reference source specially developed for telecommunications, electric power, network, finance and other industries. It uses advanced optical technology for atomic state preparation and atomic transition detection. The output signal characteristics are consistent with ITU-T G.811.1 standard.

Feature

01

- Advanced Technology

Using laser pumping and laser detection technology;

02

- Meet the requirements of ITU-T G811;

03

- High reliability, long service life, wide temperature working range;

04

- Automatically monitor and record the operating status;

P +61 3 9551 7334
E sales@stepglobal.com W stepglobal.com
Unit 7, 444 Warrigal Road, Heatherton, Victoria Australia 3202

Specifications:

Tested Item			Technical index
Output Signal			10MHz Sine wave
			5MHz Sine wave
			1PPS
			2048kHz/E1
Input Signal			1PPS-SYNC
Size			19 inch 4U standard chassis（553mm × 456 mm × 177mm）
Weight			≤40Kg（net）
Warm-up time			≤40min@20℃
Power Consumption	Warm up		≤200W@20℃
	Steady state		≤120W@20℃
Power Supply	DC (standard)		-48VDC，2 channels, redundant
10MHz@20℃	Output power		7～13dBm (50Ω load)
	Relative frequency deviation		≤±1E-12
	Frequency stability（Tested after 2h locked, Allan variance）	1s	≤1.2E-11
		10s	≤8.5E-12
		100s	≤2.7E-12
		1000s	≤8.5E-13
		10000s	≤2.7E-13
		100000s	≤8.5E-14
	Harmonic suppression ratio		≤-40dBc
	Non-harmonic suppression ratio		≤-80dBc
	Phase Noise（SSB）	1Hz	≤-100dBc
		10Hz	≤-130dBc
		100Hz	≤-145dBc
		1000Hz	≤-150dBc
		10kHz	≤-154dBc
		100kHz	≤-154dBc
1PPS	Amplitude		≥2.4V TTL（50Ω Load）
	Pulse Width		20μs
	Rise Time		≤10ns
	Leading edge jitter		≤1ns
	Synchronization accuracy		≤±20ns
2048kHz/E1	Interface characteristics		Meet the interface characteristics requirements in GB / T 7611-2016
	Signal indicator		Meet the signal index requirements of ITU-T G.811
	E1 frame structure		Support SSM and meet the frame structure characteristics requirements of GB / T 7611-2016
Warm-up Frequency Repeatability			≤5E-13
Frequency adjustment range			≥±1E-9
Frequency adjustment resolution			≤1E-15
working temperature			0℃～40℃
Temperature Coefficient			Relative frequency deviation change of full temperature range is ≤1E-12
Storage temperature			-20℃～50℃
Barometric pressure sensitivity			≤5E-13 / Altitude 0 ～ 3km
Magnetic sensitivity			≤1E-13/Gauss
vibration			Meet the conditions of tertiary road and rail transportation
EMC			Complies with GJB151A naval ground conditions
Life			≥8 years
MTBF			≥100000hours
Interface			BNC

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