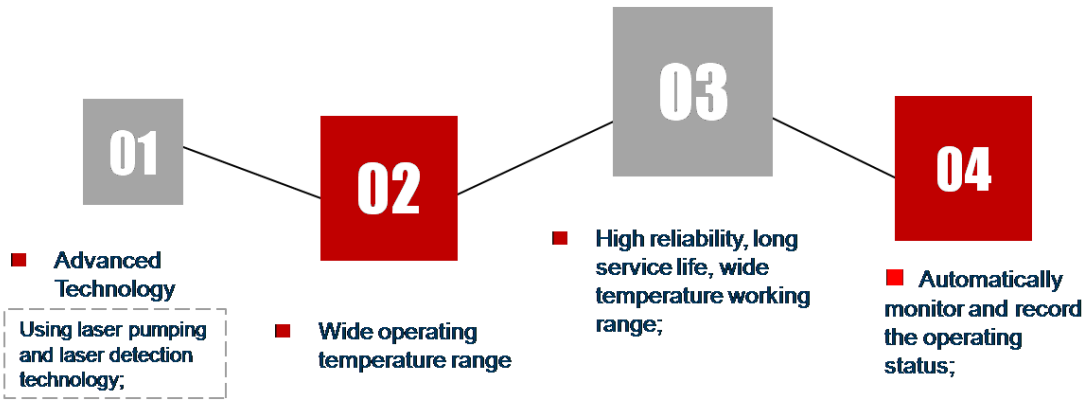
# TA1000 Optically pumped Miniaturized Cs Atomic Clock


The TA1000 optically pumped small caesium atomic clock is based on optical pumping and optical detection theory and technology, which can avoid the traditional complex beam optics and magnetic selective state and life limited electron multiplier. It has the characteristics of high precision, long life and high reliability. It represents the advanced development technology of caesium atomic clock systems.

As a first-level frequency standard, the TA1000 can be widely used in high-precision timing and synchronisation and timing, it is ideal for digital communication, power synchronization, time-frequency measurement and many other fields.

## .Features

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## Specifications:

| | | Specification | | |
|---|---|---|---|---|
| | | Standard type | | High Performance |
| Output Signals | | 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 | ≤190W@20℃ | | |
| | Steady state | ≤110W@20℃ | | |
| Power Supply | DC | 22V～75V | | |
| | AC | 220（1±10%）V，50（1±2%）Hz | | |
| | Other functions | When both DC and AC power are present, AC power is automatically selected | | |
| 10MHz | Output Power | 7～13dBm (50Ω load) | | |
| | Relative frequency deviation | ≤±1E-12 | | ≤±5E-13 |
| | Frequency stability（Tested after 2h locked，Allan variance） | 1s | ≤1.2E-11 | ≤5.0E-12 |
| | | 10s | ≤8.5E-12 | ≤3.5E-12 |
| | | 100s | ≤2.7E-12 | ≤8.5E-13 |
| | | 1000s | ≤8.5E-13 | ≤2.7E-13 |
| | | 10000s | ≤2.7E-13 | ≤8.5E-14 |
| | | 100000 | ≤8.5E-14 | ≤2.7E-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 | | |
| Repeatability of boot frequency | | ≤5E-13 | | |
| Frequency adjustment range | | ≥±1E-9 | | |
| Frequency adjustment resolution | | ≤1E-15 | | |
| Working Temperature | | 0℃～40℃ | | 18℃～28℃ |
| Temperature Coefficient | | Relative frequency deviation change of full temperature range is ≤1E-12 | | Relative frequency deviation change of full temperature range is ≤5.0E-13 |
| Storage temperature | | -20℃～50℃ | | |
| Barometric pressure sensitivity | | ≤5E-13 / Altitude 0 ～ 3km | | |
| Magnetic sensitivity | | ≤1E-13/Gauss | | |
| Vibration | | Meet the conditions of third-level road and rail transportation | | |
| EMC | | Meets GJB151A navy ground conditions | | |
| Life | | ≥8 years | | |
| MTBF | | ≥100000hours | | |
| Interface | | BNC | | |

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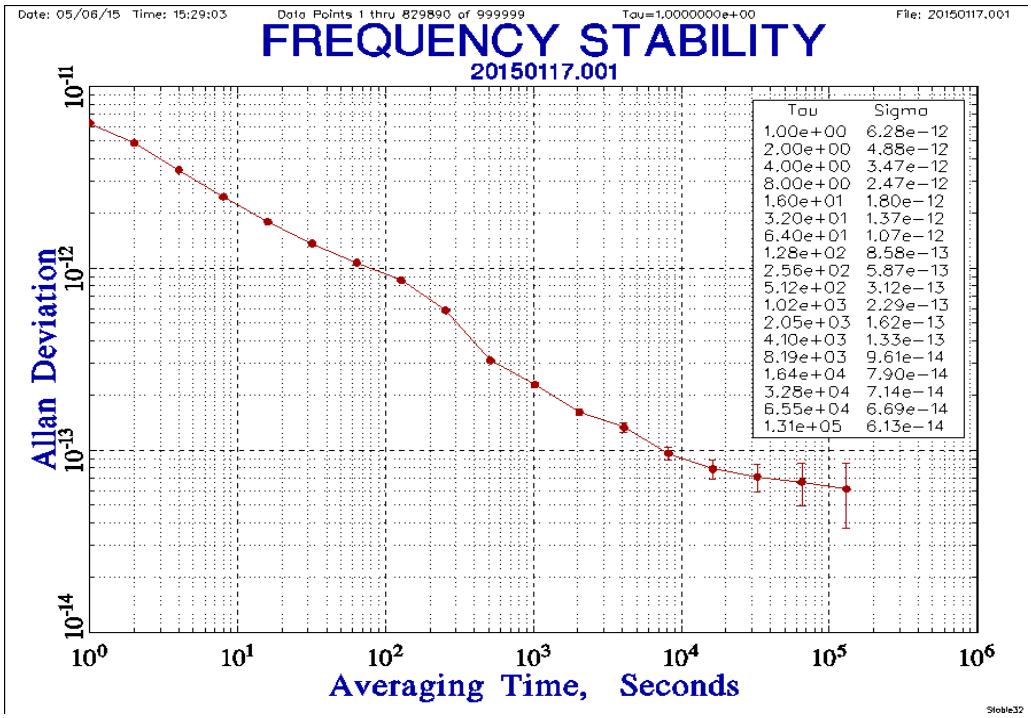


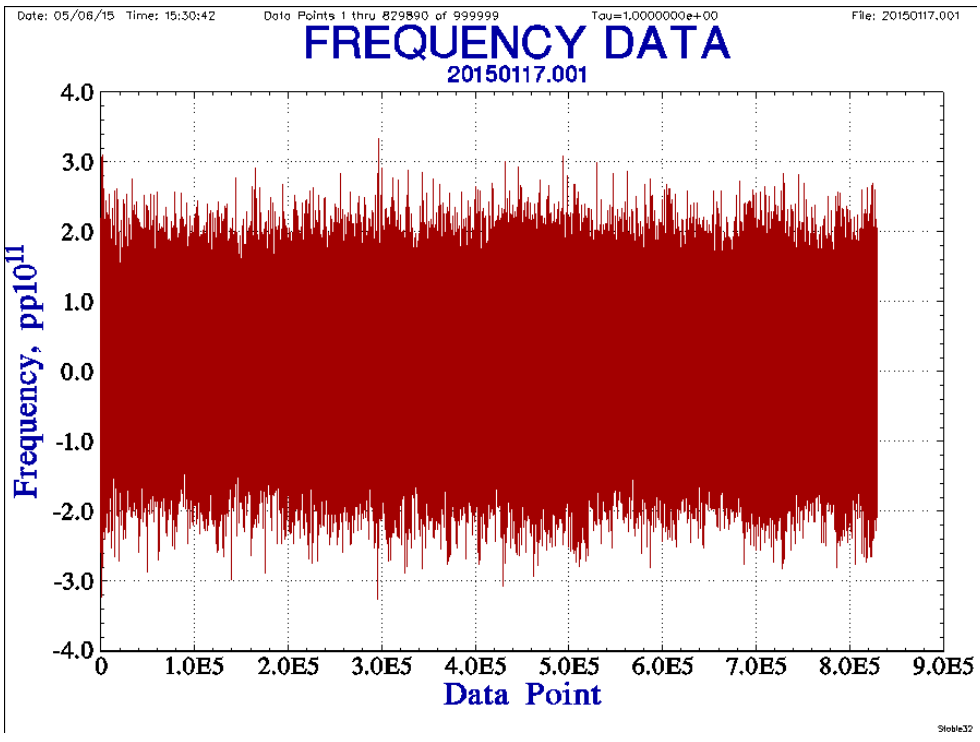


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