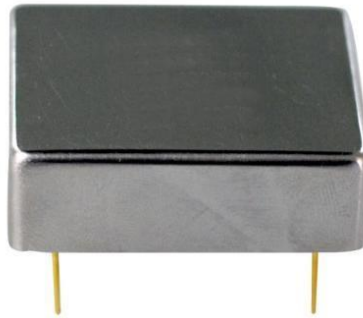


# CPT Atomic Clock

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- Low phase noise -90dBc/Hz @ 10Hz
- Excellent short term stability  $\leq 2.0E-10/1s$
- Accuracy  $\leq 5.0E-11$



E10-CPT Coherent Population Trap

The E10-CPT is designed using the Coherent Population Trap (CPT) method. In comparison with the traditional atomic clock, there is no cavity and the lamp has been substituted with a Laser spectrum lamp. The E10-CPT has low power consumption and miniaturization has been realized in the CPT atomic clock with the procession of MEMS

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## Features

- Precise Timing Synchronisation
- +3.3V DC Input
- Low Power Consumption <1.5W
- SA.45s Compatible
- 1PPS output

## Benefits

- Stability to  $\leq 2.0E-10/1s$
  - Accuracy  $\leq 5.0E-11$
  - Long Term Stability  $\leq 3.0E-11$
  - External 1PPS Synchronization
- 

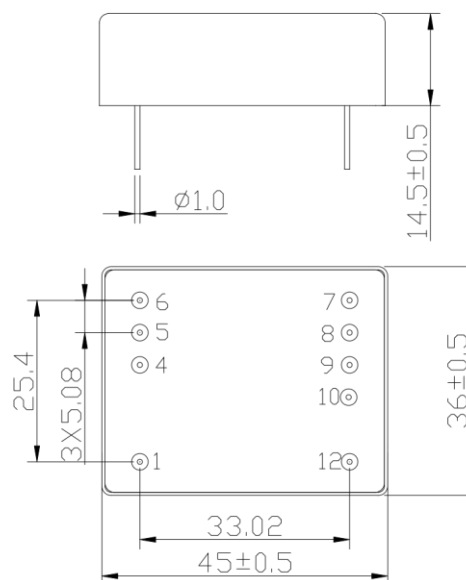
## Applications

- Satellite Communications
- Secure Communications
- Navigation Systems
- Reference for: DTV, DAB, VHF, UHF& PMR TX, CMDA, UTMS, LTE, Tetra and IPTV
- Extended Holdover for CDMA and WiMAX Base Stations
- Network Time Protocol use in Financial, Utilities, Security and Communications Timing

Specification		E10-CPT
<b>Type</b>		CPT Rubidium
<b>Output</b>		
Frequency		10MHz
Level		HCMOS
Number		1
Frequency		1PPS
Level		HCMOS
Number		1
<b>Input</b>		
Frequency		1PPS
Level		HCMOS
Number		1
Sync		±50ns
<b>Accuracy at Shipment</b>		5.00E-11
<b>Frequency Stability</b>		
1s		2.00E-10
10s		7.00E-11
100s		2.00E-11
<b>Aging</b>		3.00E-11
<b>Phase Noise</b> dBc/Hz in 1Hz BW		
1Hz		
10Hz		-90dBc/Hz
100Hz		-120dBc/Hz
1kHz		-140dBc/Hz
10KHz		-145dBc/Hz
<b>Start Up (Warm) Time</b>		≤5 Minutes @ 25°C
<b>Retrace</b>		5.00E-11
<b>Digital Tuning</b>		
Range		1.00E-06
Resolution		1.00E-12
<b>Power Supply</b>		
DC		3.15Vdc to 3.45Vdc
<b>Power Consumption @ 25°C</b>		
Warm Up		5.2W
Stabilized		≤1.6W @25°C
<b>Temperature</b>		
Operating		-45°C to +70°C
Storage		-55°C to +85°C
Coefficient		1.00E-09
Humidity		75% (Non Condensing)
<b>Mechanical</b>		
Colour		Silver
Dimension		45 x 36 x 15mm
Package		12 pin DIL
Weight		≤45g

## Pin Definitions and Outline

- |                    |                  |
|--------------------|------------------|
| 1: NC              | 7: +3.3V         |
| 2: No pin          | 8: GND           |
| 3: No pin          | 9: 1PPS Input    |
| 4: Lock Indication | 10: 1PPS Output  |
| 5: TXD             | 11: No pin       |
| 6: RXD             | 12: 10MHz Output |



## Remote System interface and Control

The complete control and interrogation of the E10-CPT functions and parameters can be performed via the RS-232 Data communications interface. 57600 Baud, 8 Bit, No Parity, 1 Stop Bit.