

RUBIDIUM OSCILLATOR

Part Number: 830908403302 | ICPT-1

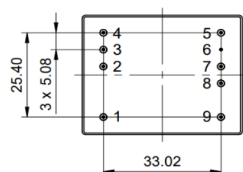
AKA Number: LFRBX0084033B



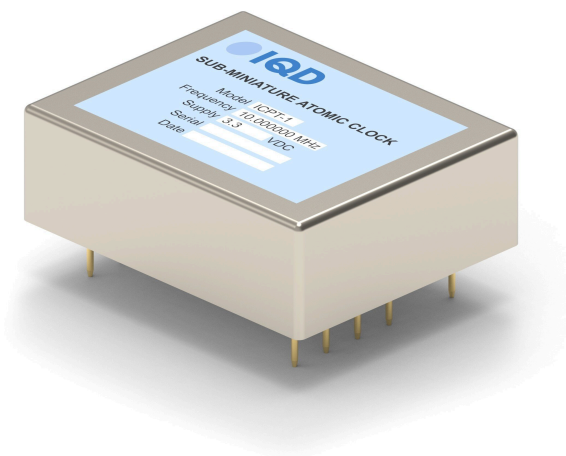
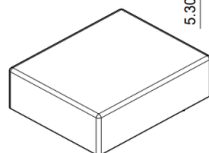
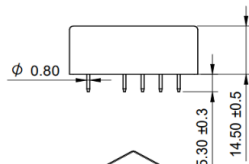
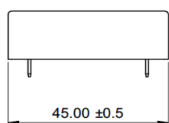
General Information

The ICPT-1 is an atomic clock designed using the Coherent Population Trap method housed in a 9 Pin through-hole metal case. ICPT-1 offers low phase noise, excellent short term stability and tight tolerance.

Dimensions [mm]



- Pin Connections
- | | |
|--------------------|-----------------|
| 1. Do Not Connect | 6. GND |
| 2. Lock Indication | 7. 1PPS Input |
| 3. TXD | 8. 1PPS Output |
| 4. RXD | 9. 10MHz Output |
| 5. +Vs | |



Frequency Parameters

Frequency 10.0 MHz

Frequency Tolerance ± 0.05 ppb @ 25 °C

Frequency Stability ± 0.5 ppb typ (Temperature varied across the operating temperature range, measurement referenced to frequency observed with $f_{ref} = (\Delta f_{max}/f_{min})/2$)

Operating Temperature -40 °C to 70 °C

Ageing ± 0.03 ppb max per day @ 25 °C

Retrace: ± 0.5 ppb max

Electrical Parameters

Supply Voltage 3.3 V ± 0.15 V

- 1 PPS Input (Pin 7): Synchronisation: ± 50 ns max
- Power Consumption (@ 25 °C):
 - Warm-Up: 8.25 W typ, 9 W max
 - Steady State: 1.65 W typ, 2 W max
- Warm-Up Time: 5 mins typ to ± 0.5 ppb @ 25 °C
- Lock Indicator: Pin 2 is high (3.3 V) when out of lock and low (0 V) when locked.

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Output Details

Output Compatibility CMOS

Drive Capability 15 pF

The above applies to 10 MHz output (Pin 9) and 1PPS output (Pin 8)

Output Control

1 PPS signal and frequency adjustment can be controlled via RS-232 data communication interface: 57600 Baud 8N1

For details please refer to ICPT-1 programming manual.

Frequency Adjustment

Digital Frequency Adjustment:

±100 ppb max scale

1 ppt resolution.

Material Parameters

Moisture Sensitivity Level (MSL) Not Applicable

Manufacturing Details

- Please ensure that a sufficient air gap is maintained between the ICPT-1 and the PCB at all times.
- No copper should be placed directly under the ICPT-1
- 1 PPS input line cannot be left floating, please add a pull down resistor to GND e.g. 100 kΩ

Company Address

IQD Frequency Products Ltd.

Station Road

Crewkerne

Somerset

TA18 8AR, United Kingdom

Noise Parameters

■ Short Term Stability (ADEV) typ

1 s 0.9E-10

10 s 5.0E-11

100 s 2.0E-11

■ Phase Noise 10MHz Output typ Offset

-70 dBc/Hz @ 1 Hz

-95 dBc/Hz @ 10 Hz

-120 dBc/Hz @ 100 Hz

-140 dBc/Hz @ 1 kHz

-145 dBc/Hz @ 10 kHz

-150 dBc/Hz @ 100 kHz

-155 dBc/Hz @ 1 MHz

Environmental Parameters

Storage Temperature Range: -55 °C to 85 °C

Humidity: 75 % (Non Condensing)

Technical Standards

RoHS Status 2015/863/EU - Compliant

REACH Status None

Packaging Details

Packaging SPQ Bulk 1 pcs