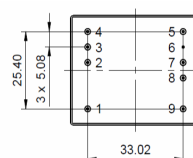
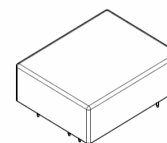
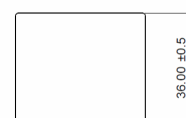
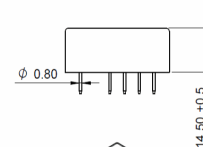
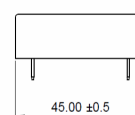




Outline (mm)



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	



Description

- The ICPT-1 is a Rubidium clock designed using the Coherent Population Trap method housed in a 9 Pin through-hole metal case. ICPT-1 offers good short term stability, tight tolerance and low power consumption.
- Features:
 - Precise Timing Synchronisation
 - +3.3V DC Input
 - Low Power Consumption
 - 1PPS Output
- Benefits:
 - Lower Size, Weight and Power Than Traditional Microwave Based Rb Oscillators
 - Excellent Short Term Stability
 - External 1PPS Synchronisation
- Applications:
 - Ideal for synchronisation of or as reference for satellite & secure communications, navigation systems and in financial, utility, security and communications timing applications.

Frequency Parameters

- Frequency: 10.0MHz
- Frequency Tolerance: ±0.05ppb
- Tolerance Condition: @ 25°C
- Ageing: ±0.03ppb max per day @ 25°C
- Frequency Stability (Temperature varied across the operating temperature range, measurement referenced to frequency observed with $f_{ref} = (\Delta f_{max} + f_{min})/2$): ±0.5 ppb typical
- Retrace: ±0.5ppb max

Electrical Parameters

- Supply Voltage: 3.3V ±0.15V
- 1PPS Input (Pin 7):
 - Synchronisation: ±50ns max
- Power Consumption (@ 25°C):
 - Warm-Up: 8.25W typ, 9W max
 - Steady State: 1.65W typ, 2W max
- Warm-Up Time: 5 mins typ to ±0.5 ppb @ 25 °C
- Lock Indicator: Pin 2 is high (3.3V) when out of lock and low (0V) when locked

Sales Office Contact Details:

UK: +44 (0)1460 270200
USA: +1.760.318.2824

Email: info@iqdfrequencyproducts.com
Web: www.iqdfrequencyproducts.com

Frequency Adjustment

- Digital Frequency Adjustment:
±100ppb max scale
1ppt resolution

Operating Temperature Ranges

- -45 to 70°C

Output Details

- Output Compatibility CMOS
- Drive Capability 15pF
- The above applies to 10MHz output (Pin 9) and 1PPS output (Pin 8)

Output Control

- 1PPS 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.

Noise Parameters

- Short Term Stability (ADEV) typ:
1s 0.9E-10
10s 5.0E-11
100s 2.0E-11
- Phase Noise 10MHz Output (typ)
-70dBc/Hz @ 1Hz
-95dBc/Hz @ 10Hz
-120dBc/Hz @ 100Hz
-140dBc/Hz @ 1kHz
-145dBc/Hz @ 10kHz
-150dBc/Hz @ 100kHz
-155dBc/Hz @ 1MHz

Environmental Parameters

- Storage Temperature Range: -55 to 85°C
- Humidity: 75% (Non Condensing)

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 place directly under the ICPT-1
- 1PPS input line cannot be left floating, please add a pull down resistor to GND e.g.100kΩ

Compliance

- RoHS Status (2015/863/EU) Compliant
- REACH Status Non-Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

Packaging Details

- Pack Style: Bulk Bulk pack
Pack Size: 1

Sales Office Contact Details:

UK: +44 (0)1460 270200
USA: +1.760.318.2824

Email: info@iqdfrequencyproducts.com
Web: www.iqdfrequencyproducts.com