



The Frequency Control Specialist

Timing Module Introduction

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Taitien Introduction

- Taitien Electronics
Headquarters: New Taipei City, Taiwan
- Manufacturer of Precision Timing Products
- Primary Markets: Networking, Communications,
Industrial & Consumer



Product Offerings



Quartz **Bar, Wafer, Blank**



Thickness/Pressure/
Temperature **Sensor** Crystal



Metal Can **Crystal**



SMD **Crystal**



General Purpose &
Precision SMD **Clock Oscillator**



Voltage Controlled
Crystal Oscillator (**VCXO**)



Fast Delivery Products
(**XO/VCXO/TCXO**)



Voltage Controlled
Temperature Compensated
Crystal Oscillator (**VCTCXO**)



Oven Controlled
Crystal Oscillator (**OCXO**)



GPS Timing Module



GT-11, Basic Timing Module

- 25 x 25 mm (1 x 1 inch) Small Size
- Standard Freq: 10 MHz
- ADEV: $< 5E-12$, Tau-10Ks (GPS Locked, 25°C).
- 1PPS GPS locked: $< 75\text{ns RMS}$
- **Low Power Consumption: 0.6W @ 3.3V**
- Output Waveform: LVCMOS
- Low Cost, Affordable Reference Clock

- **Applications:**
 - Test and Measurement Equipment
 - General Timing and Instrumentation
 - Digital Video Broadcast



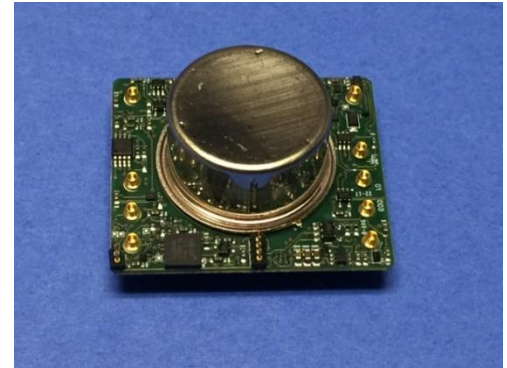
GBTX-300, Oven controlled Timing Module

- 48 x 48 mm compatible with common OCXO types
- Standard Frequency: 10 MHz
- Accuracy GPS locked: $< 1E-12$
- Holdover GPS unlocked: $< 1E-10$
- ADEV: $< 1E-11/s$
- 1PPS GPS locked: $< 30ns$
- 1PPS GPS unlocked: $< 8\mu s$
- Input Power: 4W @ 12V
- Output Waveform: LVCMOS, Sine Wave
- Applications:
 - 3G / LTE and WIMAX Base Stations
 - Military and Satellite Radio
 - Test and measurement equipment



DTQ-101, **Ultra-Low Power** Timing Module

- 39.1 x 34 mm Fully Compatible with CSAC
- Standard Frequency : 4.096, 5.0, 8.192, 10, 16.384MHz
- 1pps Input and 1pps Output for Discipline
- Discipline to 1ns RMS in Phase and <10-12 in Frequency
- Holdover : <1.5uSec. for 24 Hours
- **Ultra-low Power Consumption: 60mW typical**
- Output Waveform: CMOS
- RS232 Digital Interface
- Applications:
 - Telecom
 - Low Orbit Satellite
 - Smart Power Grid
 - Test and measurement equipment
 - Battery powered Portable communication systems



Preliminary



DT-6565, Full performance Timing Module

- 65 x 65 x 23mm, replacement for low end Rubidium standards
- Standard Frequency : 10MHz
- 1pps Input and 1pps Output for Discipline
- Discipline to <1ns RMS in Phase and <10-12 in Frequency
- Holdover : <1.5uSec. for 24 hours, $\Delta T = \pm 10^{\circ}\text{C}$
<1.5uSec. for 3 days, $\Delta T = \pm 3^{\circ}\text{C}$
<100uSec. for 7 days, $\Delta T = \pm 5^{\circ}\text{C}$
- OnBoard Timing Model, on/off option
- Built-in 1 Second Phase Meter, 1nSec. RMS
- Fast Recovery from Power Interruption
- RS232 Digital Interface
- 3W, Steady State, at 25°C
Low Power option available(125mW)
- Grandmaster Clock replacement



Thank you!

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