

Tekron TCG 08 GPS Dual Clock



A fully redundant GPS Clock

Based on Tekron's industry leading GPS Clock the TCG 01, the TCG 08 consists of two GPS Clocks in one 19" rack mount case. Each clock has multiple isolated outputs and independent power supplies, displays and antennas. The TCG 08 provides a fully redundant system to ensure uninterrupted operation 24/7.

Imbedded in the heart of the TCG 08 is the BISA algorithm. In the event that a clock loses satellite reception, BISA enables the clock to automatically synchronize to either the alternate clock or to an outside sync source to maintain time accuracy. The TCG 08, like all Tekron clocks, also supports IEC 61850.



Features

- Independently isolated outputs
- Isolated power supplies
- High power line drivers
- Low noise characteristics due to balanced pair distribution
- UTC and LST with user defined DST options
- Master/ Slave function

Supports

- DC IRIG-B or Modified Manchester: TTL, RS232, RS422/ RS485, HV MOSFET
- AM IRIG-B (Modulated)
- Serial Strings
- User defined pulses
- DCF77
- NTP/ SNTP (IEC 61850)
- Event Recording



www.tekroninternational.com

About Tekron

Tekron International is a leading developer of exceedingly accurate GPS clocks and time synchronization solutions for use in industrial applications.

Tekron GPS clocks are simple to install and use and are extremely rugged; attributes that are a prerequisite in the often extreme environments in which the clocks are installed.

Tekron GPS clocks have been installed in thousands of power stations & substations across the globe, where they prove invaluable in assisting power companies to operate efficiently, minimizing downtime and increasing the accuracy of control decisions.

With a Tekron GPS clock you can be confident that you can set it up and walk away.

> TEKRON | TCG 08 Datasheet

Physical

19" rack mount 1U high

(W) 483 mm x (D) 250 mm x (H) 40 mm, 1.9 Kg

IP40 (Ingress Protection rating)

Front panel display

Two 2-line x 16 character FSTN backlit displays (one for each clock) and four LEDs (two for each clock) indicating multiple statuses, including:

- Sync status
- Sync source
- Antenna/ cable fault
- Satellite acquisition mode

GPS Receiver

Each clock within the unit contains its own separate GPS receiver with the following specifications:

L1, C/ A code, 12 Channel Parallel-tracking receiver

Frequency:	1575.42 MHz
Pulse accuracy:	15 ns
Sensitivity:	Acquisition -136 dBm Tracking -141 dBm
Acquisition:	Hot Start <18 s Warm Start <45 s Cold Start <50 s

Antenna

Standard configuration would include two antennas and two antenna cables: one for each clock.

Physical

Conical shaped polycarbonate durable shell which minimizes snow and dust buildup.

Dimensions: 98 mm tall
90 mm diameter

Weight: 200 g

Specifications

Bandwidth:	1575.42 ± 1.023 MHz
Attenuation:	60 dB (typical) at 1575.42 ± 50 MHz
Gain:	38 dB 5 +/- 0.5 V (27 mA max)
Operating temperature:	-40 to 85° C

Antenna Cable

LMR240 ultra-flex low loss, high shielding antenna cable

Inputs & Outputs

Each clock within the unit can have your choice of the following options.

2 x independently programmable outputs accurate to within 100ns of UTC, either:

- TTL 0-5 V, 150 mA (BNC or 2-pin)
- RS422 +/- 6 V, 50 loads (BNC or 2-pin)
- HV switch MOSFET 300 V 1 A (2-pin)
- Fiber TX (62.5/125 μm, λ 820 nm), compatible with multi-mode fiber (ST Fiber connectors)

In addition to the output options above, the following outputs are supplied on each clock:

1 x RS232 serial port, DCE wired, Signals are +/- 10 V, 15 mA. Serial time messages output at 9600 baud. Programmable pulse on pin 1 (DB9).

Timing accuracy of RS232 port:
Serial Message <200 μs to UTC
Pulse/ or IRIG-B time code <1.5 μs to UTC

Plus:

1 x AM IRIG-B 9 Vpp, 50 ohm (BNC)
Timing accuracy: <2 μs to UTC

Plus:

2 x digital inputs: 0-5 V TTL/CMOS external IRIG-B synchronization

Plus:

1 x Sync Status Relay with NC/NO contacts

Options

The following options can be added to one or both clocks.

Network Time Server Port

1 x RJ45 UTP connector

100 Mbps

Timing accuracy: <200 ns to UTC

This UTP network interface option allows the TCG 01 to function as a Stratum 1 NTP/ SNTP Time Server.

Protocols Supported:

ARP, UDP, ICMP, TFTP, DHCP, SNMP, and BOOTP.

1 Channel Event recording

One channel event recording with common return that may be driven by TTL logic levels.

Lightning protection kit

Polyphaser DGXZ+06NFNF-A Impulse Suppressor multi-strike weather proofed low throughput energy lightning arrester kit.

Antenna Mounting Bracket

Adjustable 500 mm mounting bracket.

Configuration software

Windows based configuration software is supplied on CD and is also available to be downloaded from the Tekron website. User adjustable options include:

Timing & Synchronization

Worldwide daylight savings and local time configuration using either rule based or fixed date methods.

Options that allow equipment checks prior to full installation and adjustable hold-over times to increase reliability in the case of poor GPS coverage.

Adjustments to compensate for installation parameters such as delay of GPS signal through antenna cable.

Programmable Outputs

IRIG-B (B00x / B22x) time code with selectable IEEE 1344 and AFNOR S87-500 extensions

DCF77 time code

User defined pulse sequences:

Repetition rates from 20 ms to 24 hours

Offsets and durations from 10 ms to 24 hours

Resolution is 10 ms; timing accuracy is 100 ns

Serial Strings

NMEA-0183 ZDA

NMEA-0183 RMC

IRIG J-17

Tekron A - F (Six protocols for plug and play compatibility with a wide range of equipment).

Environmental & Electrical

Power supply: IEC 320 power Inlet
100 - 300 Vdc/ 85 - 264 Vac

Power Drain: 15 W max

Operating temperature: -10 to +65°C

Humidity: To 95% non-condensing

Isolation

Outputs to base unit: 2.5 kV

Power supply to I/O: 3.5 kV

Between I/O: 5 kV

Request a quote

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Note: The quickest and most effective method to request a quote is through the online quote request form on the Tekron website.