TASCAM CG-2000 Video Sync/Master Clock Generator/Broadcasting and post production

This listing is for CG-2000 Master Clock Generator only. Use description below as a general reference.

The CG Series includes three distinct models tailored to different types of studios. The CG-2000 is designed for the needs of broadcasting and post production, the CG-1800 for small to large-scale video/audio synchronization systems, and the CG-1000 for recording studios, live sound applications and professional musicians.

The crystal oscillator is the heart of the clock generator. In each model of the CG Series, an OCXO (oven-controlled crystal oscillator) is used for its high precision, and the fact it is not influenced by the temperature of the environment. Boasting a clock frequency precision of 0.01 ppm*1, which exceeds that of a TCXO (temperature-compensated crystal oscillator), this unit is key in the creation of high-precision synchronization systems - with word output frequency stability of ±0.005ppm or less per day.

The CG-2000 is equipped with an external input connector that supports a 10MHz signal. This allows it to be connected to a rubidium clock or GPS clock for even higher precision.

External clock jitter is reduced using an original TASCAM circuit design that incorporates a high-performance video clock generator engineered with a FPGA*2 and a PLL (phase-locked loop) circuit with a discrete filter. This enables a stable clock signal to be provided to the video/word outputs - improving system stability. The glitch-free relock circuit prevents noise and skipping sounds caused by master clock dropouts.

In addition to (12) word clock outputs and (4) video outputs, the digital outputs include (2) AES3/AES11 and (2) S/PDIF outputs, making this unit useful for large-scale audio/video synchronization systems, and a wide variety of other applications. Of the (12) word outputs, two also support x2Fs, x4Fs and 256Fs output - enabling them to be used in systems with ProTools and other DAW software.

The CG Series has multiple functions to support maintenance, and the identification of issues if problems occur. The analyzer function measures output device termination, input level measurement (for CG-2000 and CG-1800), and the measurement of input frequencies. These built-in features enable the devices to provide troubleshooting support. Additionally, a logging function enables issues to be listed, and saved to a CSV file format on a USB flash drive.

Since crystal oscillators change over time, regular calibration is necessary. In order to avoid possible sync problems, timely inspections – along with regular maintenance is required. The CG Series has a self-correction function, enabling users to conduct maintenance using an external signal input*3 and simple operations.

Amphenol BNC connectors on the chassis use nuts for coupling – making them very durable, Also, a single circuit board is used for each connector - providing excellent resistance to the twisting and pulling of cables, and the suppression of interference between connectors.

The CG Series is the latest in the line of innovative TASCAM professional digital products – engineered with the latest digital clocking technology.

*1 Factory default value
*2 FPGA (Field Programmable Gate Array)
*3 Use of the self-calibration function requires preparation of a separate PPS-output 10MHz oscillator with a built-in GPS antenna.

Features

- Two power supply circuits for redundancy [CG-2000 only]
- Supports video reference/word clock redundancy [CG-2000 only]
- Internal clock uses a high-precision OCXO (oven-controlled crystal oscillator) that is not influenced by the temperature of the environment
- External input connector that supports 10MHz, allowing creation of systems with even higher precision
- Jitter management circuit provides stable clock
- Glitch-free relocking circuit prevents noise and skipping during clock dropouts and recovery
- Numerous output connectors, including (12) word clock outputs, enabling the use in large-scale video/audio synchronization systems
- Supports input and output of a variety of video signal formats, including NTSC, PAL and HD Tri-level
- AES3 and AES11 signals can also be used for external master clock input sources
- Analyzer function that can measure output device termination
- Optimal levels can be provided to other devices by adjusting wordclock output levels
- Error status can be outputted using GPO parallel output, allowing the monitoring of error occurrence
- Self-calibration function using an external oscillator (Atomic/GPS 10MHz, GPS PPS)
  *Use of the self-calibration function requires the use of a separate PPS-output 10MHz oscillator with a built-in GPS antenna.
- Word clock performance up to 192 kHz
- 0.1% pull-up/down for 24F(Film) and 29.97F(NTSC), and 4% pull-up/down for 24F(Film) and 25F(PAL)
- Up to (4) system settings can be saved to buttons for recall, and saved settings can be imported and exported via USB
- Durable nut-coupling BNC connectors made by Amphenol
- Independent circuit boards for each connector prevents contact failures due to twisting
- Three-prong IEC power cable included
- Panel-lock switch can be used to prevent inadvertent changes to unit operation

- 128x64-pixel organic EL display with a wide viewing angle
- Firmware updates possible using the USB port
- EIA 1U rack mount size
- RoHS-compliant product