



New Product Information



Master Clock Generator

[Rubidium Model] **G-0Rb**

[Crystal Model] **G-03X**

Enhanced technology and performance – a new generation of master clocks from Esoteric®

Ever since Esoteric introduced the, “master clock generators” G-0s / G-0 in 2003, they have been critically acclaimed by high-end audiophiles for ultra-precise word clock management, maximizing the reproduction potential of digital source components. Esoteric is proud to introduce a new generation of master clocks, incorporating new technology enhancements in models G-0Rb and G-03X.

The G-0Rb evolved from the G-0s and features a new “Rubidium-exclusive” circuit design with highly purified components, including a newly designed power supply.

The G-03X evolved from the G-0 and features a “Crystal-exclusive circuit design” coupled with a slim and elegant profile. The G-03X provides affordability for a wider audience of Esoteric source component owners, without sacrificing any performance aspects of G-0 performance!

Ultra-high-performance oscillator core

The G-0Rb uses a U.S. -made rubidium oscillator accurate to +/- 0.05-ppb (parts per billion) = 0.00005 ppm (parts per million) frequency precision for extremely high performance in the clock generator core. The G-03X uses a high precision crystal oscillator (Accurate to +/- 0.1 ppm). In addition, proprietary specifications and manufacturing processes implemented by ESOTERIC are used to optimize signal stability thereby improving sound quality within your audio system.

Power supply equipped with large capacitors and transformer (G-0Rb uses a highly efficient WB transformer / G-03X uses a high quality R-core transformer).

The power supply of the G-0Rb uses a WB type transformer. WB transformers are highly efficient, providing exceptional performance. The WB transformer is structured with the core wrapped around the coil. This unique structure provides a very short magnetic path resulting in extremely low magnetic resistance. The Esoteric exclusive WB design minimizes magnetic flux leakage and allows excellent instantaneous current supply capabilities that result in excellent transformer efficiency and improved voltage conversion as well as stability within a small volumetric area. The G-03X uses a large R-core transformer to provide maximum performance in a newly designed low profile cabinet. Combined with high-speed Schottky barrier diodes, low-impedance, smooth chemical capacitors and other unique power supply components, the power circuit design of the G-0Rb and the G-03X provide extremely stable electronic power to both unit's internal circuitry.

G-0Rb

The design of the G-0Rb is fully optimized around its Rubidium (“Rb”), clock oscillator core. Because the G-0Rb does not have a crystal controlled oscillator, voltage variations and other external influences do not affect the accuracy of this master clock generator. The Rubidium oscillator is mounted in its own temperature controlled and electrically isolated oven, making the G-0Rb the most stable oscillator in the audio video market.

Custom designed ESOTERIC SMB coaxial cable (incorporating high purity 6N copper wire), is used for clock signal connections from the Rb unit to other circuits. This design helps your audio system achieve advanced three-dimensional imaging and exceptional acoustical transparency.

The G-0Rb is finely tuned by incorporating many acoustically selected, high quality parts. The incoming electrical power path is connected through a high quality rhodium plated power inlet plug, and directly to the main power supply without passing through any stand-by circuit. This design provides higher signal path purity. The power supply uses specially selected capacitors for rich power stability. High purity 6N copper wire is used between the power supply unit and Rb unit circuits. (6N copper provides a conductive purity level of 99.99997%).

The flagship master clock generator G-0Rb provides sophisticated high-end reproduction capability and musical expression by creating the highest quality clock signal that Esoteric has ever achieved!

G-03X

The G-03X is a younger sister of the flagship G-0Rb and is an evolutionary successor to the crystal clock generator model G-0. The G-03X has an OCXO (Oven Controlled Crystal Oscillator), circuit on board. The OCXO is a small thermostatic chamber used to heat the combination oscillator core and control circuits at a fixed, high thermal level. This provides stability to the crystal clock, being free from unwanted characteristic variations. As a result, the G-03X is exceptionally stable at +/- 0.1 ppm clock stability, even within severe thermal environments ranging from -20°C to 70°C! The crystal master clock generator G-03X can be used with a wide range of digital source components with the same established product quality level achieved by the G-0.

Mechanically inert and structurally refined for optimal performance

The G-0Rb / G-03X housing is designed with high rigidity throughout in the tradition of Esoteric's product line development. Thick aluminum exterior (front, top and side panels), and multiple internal reinforcement materials provide a very strong housing that minimizes cabinet vibrations. Three ESOTERIC exclusive pinpoint feet (patent pending), made of quenched steel, allow the unit to be completely stabilized during operation (The G-0Rb couples 5 mm-thick heavy steel base plates for maximum anti-resonance performance). Thanks to Esoteric's vibration and resonance free construction, the housing blocks small vibrations which could affect clock precision, allowing the oscillator to operate at its full potential. The G-03X is manufactured with this rigid housing construction in a 2U (90 mm/3.5" inch) height.

Three separate output systems

The G-0s has three separate output systems which can output 1x, 2x, and 4x multiples of the base frequency (44.1 kHz, 48 kHz or 48 P (PAL film frequency, which is four percent slower than 48 kHz)). Each of these systems has two output ports, making it possible to supply word clocks to up to six different compatible devices. It is also possible to cancel the output from any unused sub-system to prevent sound quality degradation due to unnecessary interference.

Proprietary universal clock output

TEAC/Esoteric developed a universal clock which serves as a new Word Sync format for A/V connections. The G-0s was the first product equipped with this universal clock. This universal clock is also included in the G-0Rb and its sync signal can be supplied in the future to compatible devices available from TEAC/Esoteric. This function will allow an ultra-precise oscillator to centrally manage everything from audio to video.

External 10-MHz signal input port

The G-0Rb and G-03X both have an input port capable of receiving a 10-MHz reference signal from an external component. This port can be connected with devices such as an ultra-precise cesium atomic oscillator as a "system upgrade" for special applications.

Proprietary gold-plated BNC ports

The G-0Rb and G-03X use Esoteric's proprietary gold plated BNC ports, providing highly reliable electrical contacts. In addition, these ports are securely fastened to the rear panel so that they are robust enough to handle even the heaviest and thickest types of audiophile high grade BNC cables.



G-0Rb Master clock



G-03X Master clock

User-friendly interface

It is easy to control the functions of the G-0Rb or G-03X simply by pressing the buttons on the front panel. Equipment settings can be checked at a glance on their high-quality LCD displays.

LCD Display panel

These new Esoteric models feature an LCD display panel specifically designed for a high level of visibility. The new LCD display has three brightness levels (plus display off mode) -- a useful feature in home theaters where excessive light is not desired. As in most audiophile electronics, an incremental audio improvement may also be achieved by "powering down" the LCD display during use.

		G-0Rb	G-03X
Clock outputs	44.1 kHz lines	44.1 kHz, 88.2 kHz, 176.4 kHz	
	48 kHz lines	48 kHz, 96 kHz, 192 kHz	
	UNIVERSAL CLOCK lines	100 kHz, 96 kHz	100 kHz
	PAL FILM lines	46.08 kHz, 96.16 kHz, 184.32 kHz	
	Accuracy	±0.05 ppb=±0.00005 ppm (factory setting)	
	Terminals	BNC coaxial	
Stabilized time of the output clock		10 minutes	2 minutes
		(until the oscillator is stabilized)	(until the oscillator is stabilized)
		10 seconds	30 seconds
		(until the FREQUENCY MODE selection is stabilized)	(unit the FREQUENCY MODE selection is stabilized)
Frequency input	Input	10 MHz (under ±10 ppm)	
	Input level	0.5~1.0 Vrms / 50 Ω (Sine wave)	
		1.5~2.5 Vpp / 50 Ω (Rectangular wave)	1.5~3.0 Vpp / 50 Ω (Rectangular wave)
	Terminal	BNC coaxial	
General	Power supply	AC 230 V, 50 Hz (Europe model)	
		AC 120 V, 60 Hz (U.S.A. / Canada model)	
		AC 220 V, 60 Hz (Korea model)	
	Power consumption	81 W (maximum), 31 W (nominal)	12 W (maximum), 7 W (nominal)
	External dimensions (W x H x D)	442 × 153 × 351 mm	442 × 97.5 × 353 mm
	Weight	18 kg (40 lb)	9.1 kg (20 lb)
operation temperature range		+5°C to +35°C	

- Design and specifications are subject to change without notice - Weight and dimensions are approximate.

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TEAC ESOTERIC COMPANY
 3-7-3 Nakacho, Musashino-shi,
 Tokyo 180-8550, Japan
 Fax: +81-422-52-5132 www.teac.co.jp/av/