

Preheat Function

The rear of the unit features a switch that toggles between the mode that completely shuts down the system when the power is turned OFF, and the recommended preheat mode, which continues to supply power to the internal rubidium oscillator. Keeping the rubidium warm reduces waiting time after the power is turned ON and enables the unit to provide its full performance immediately.

Superb Chassis Construction for Optimal Performance

Since the high precision nature of the rubidium oscillator makes it delicate and susceptible to external vibrations, special consideration has been made in the chassis construction to control these vibrations. The bottom chassis securing the various components adopts a dual layer structure comprised of two steel plates, and the power transformer and other components are affixed to separate layers in a three-dimensional configuration to prevent interference between neighboring components. Furthermore, the unit features an extraordinarily thick and highly-rigid aluminum panel enclosure and patented ESOTERIC pin point feet (patent no. 40750477 JP) that minimize the small vibrations that could affect clock precision.



ESOTERIC

Grandioso G1

Master Clock Generator



Specifications

Clock outputs

10MHz OUT	4
Connectors	BNC
Output level	Sine wave : 0.5 ± 0.1 Vrms / 50Ω

Master clock input

Input frequency	
Rb+EXT1pps mode	1pps signal (GPS precision or better)
Rb+EXT10M mode	10MHz (GPS precision or better)
Connector	BNC
Input levels	
10MHz	Sine wave: 0.5–1.0 Vrms / 50Ω Square wave: 1.5–3.0 Vpp / 50Ω
1pps signal	Positive pulse, TTL level / 10kΩ

Output clock stabilization (approximate time in minutes)

Until oscillator stabilizes after power turned on	10
Frequency stability	Within ±0.1 ppb (-20°C to +65°C)
Frequency precision	Within ±0.05 ppb (when shipped new) (ppb=10 ⁻⁹)

General

Power supply	AC 230V, 50Hz AC 120V, 60Hz AC 220V, 60Hz
Dimensions (W × H × D) (including protrusions)	445 × 132 × 448 mm (17 5/8" × 5 1/4" × 17 3/4")
Weight	23 kg (50 3/4 lb)

Included accessories

- Power cord × 1
- Owner's manual × 1
- Felt pads × 4
- Warranty card × 1



PROUDLY MADE IN TOKYO

ESOTERIC

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- This product is available in three different power supply variations shown in the chart above.
- Make sure that the voltage shown on the rear panel matches the AC line voltage in your area.
- The shape of the AC inlet and plug of the supplied power cord depends on the voltage rating and destination country.

Please note that Esoteric products are only available from approved distributors in overseas territories.
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PRINTED IN JAPAN 0816005-TECD-0235

Grandioso G1

Master Clock Generator

A truly three-dimensional audio experience delights the listener with a real sense of depth and conveys the actual feel of the high ceiling of a concert hall. High-end audiophiles know the excitement felt at the moment the first sound shatters the silence, the tense experience of impeccably tight focus, and the joy of music that feels so real you can almost touch it. After the last beautiful gradation of a lingering note has gently faded away and the system has concluded playback is when the true thrill of music really begins.

The role of a high precision master clock is not to add something extra to your audio system. Rather, it is to attain the maximum performance from the system in order to convey music that is as close as possible to the original sound.

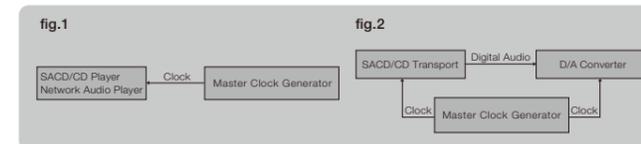
The Grandioso G1 is the flagship model of master clock generator line, which combines all of our wisdom, technology, and passion. It adopts a high precision rubidium oscillator with a frequency precision of ± 0.05 ppb (parts per billion) or ± 0.00005 ppm and new technologies such as "Wide Range Clock Buffer Amplifiers" and "Adaptive Zero Ground" circuits to attain the very best in musical expression from your favorite audio system.



Grandioso G1
Master Clock Generator

Master Clock Generator

A 'clock' is a pulse signal that is used as a reference signal for all digital circuits. Every piece of digital gear has an on-board clock oscillator, and a high-quality clock is vital for precise, jitter-free signal processing. The Grandioso G1 master clock generator is an external clock device designed to supply atomic precision clock to digital devices (such as a transport, D/A converter, Super Audio CD player, or network audio player) equipped with dedicated input terminals. The G1 can supply clock signals with a significantly higher degree of purity and stability than clocks generated by connected devices themselves, and thereby significantly improves the sound quality.



Ultrahigh Precision Rubidium Oscillator

An extremely high precision American-made rubidium oscillator with a frequency precision of ± 0.05 ppb or ± 0.00005 ppm is used as the core of this extraordinarily accurate timing device. This oscillator module has been manufactured to ESOTERIC's demanding specifications with sound quality and stability being given top priority. The sound quality one would expect from our best model in the master clock generator series has been achieved.

"Wide Range Clock Buffer Amplifier"

The clock signal is output by four newly-designed "Wide Range Clock Buffer Amplifiers", which each have a separate power supply regulator and provide an even wider range than ever before. The discrete circuits use high-speed transistors with excellent high frequency performance, which are perfect for generating digital waveforms for which a high degree of accuracy is required. Combined with a heavy-duty power supply, these circuits greatly contribute to major improvements in sound quality by providing an accurate and stable timing signal to audio devices.



High precision rubidium oscillator

Wide range clock buffer amplifiers featuring a power regulator and amplifier integrated into separate blocks via the shortest route

Custom coaxial cables equipped with MIL standard SMA connector

Four 10 MHz Clock Output Terminals and "Adaptive Zero Ground" Mode(*)

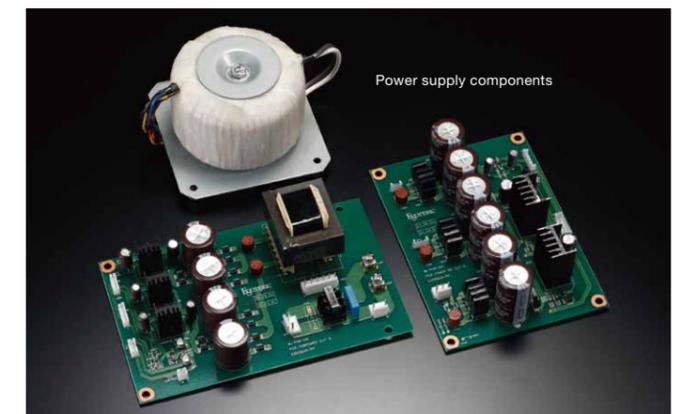
The unit provides four terminals that output a 10 MHz sine wave clock, and is equipped with a new "Adaptive Zero Ground" mode that actively drives the ground signal to 0 volts. This greatly reduces noise (random jitter) caused by variation in the ground voltage. Switches on the rear of the unit toggle between the adaptive mode and normal mode for each output terminal, and allow the user to select the buffer amplifier drive method that is just right for their listening preferences.

*The Grandioso G1 is a unit dedicated to 10 MHz output, and can only be connected with compatible devices



Substantial Power Supply

A newly-designed power supply is adopted to maximize the performance of the new wide range clock buffer amplifiers, with a separate power supply regulator circuit assigned to each of the four buffer amplifiers to increase the independence of each channel. The amplifier and power supply are also divided into blocks and connected via the shortest route to ensure drive that is both clean and powerful. A large toroidal transformer, which enables highly efficient and high power actuation, is used as the main transformer and a dedicated EI core transformer is used for digital control. A series of multiple capacitors are used for a ripple filter circuit and Schottky barrier diodes are used for quick response supporting fast digital processing, which assists the accuracy of the clock's signal generation.



Power supply components

External 10 MHz/1 pps input

A 10 MHz or 1 pps reference signal can also be input externally by connecting a device such as a GPS receiver to an external input terminal. The internal rubidium oscillator is synchronized with a higher center frequency precision clock received from a satellite, and this allows more stable rubidium oscillation than the crystal controlled oscillator built into the external GPS receiver, which makes the most of the advantages of a high precision GPS system.

Custom Coaxial Cables with MIL Standard SMA Connector

The all-important internal wiring of the unit uses hardwired connections with custom coaxial cables of the finest quality. These cables adopt MIL-compliant gold plated SMA connectors that were specifically developed for high frequency transmission and original milled brass BNC terminals designed by ESOTERIC to achieve a secure connection, in order to minimize loss of transmission to the utmost limit.