OCK-2P

User Manual

Version 1.0

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Product Overview

This 10 MHz master clock is primarily designed for audio equipment such as network players, digital transports, DACs, and clock distributors, serving as a unified system time reference.

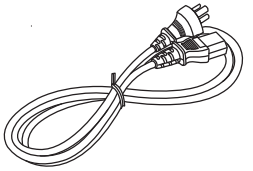
Benefiting from an ultra-low phase noise clock core and a highly purified, independent power supply architecture, it significantly improves sonic stability, imaging accuracy, and background quietness, resulting in a more cohesive presentation with clearer layering and finer detail.

Features

- Six 10.000 MHz clock outputs (3 × square wave / 3 × sine wave)
- Ultra-low phase noise: −115 dBc @ 1 Hz offset
- Each output features independent driver and isolation circuitry
- Power section employs EMI filtering + 30 W NORATEL toroidal transformer + high-speed rectification and filtering
- LM350T primary regulation combined with LT3041 secondary ultra-low-noise regulation, providing independent μV-level power supplies for the oscillator and clock outputs
- Each output is equipped with 50 Ω / 75 Ω impedance-matched gold-plated connectors
- CNC-machined aluminum chassis with internal functional partitioning to reduce electromagnetic interference and mechanical resonance

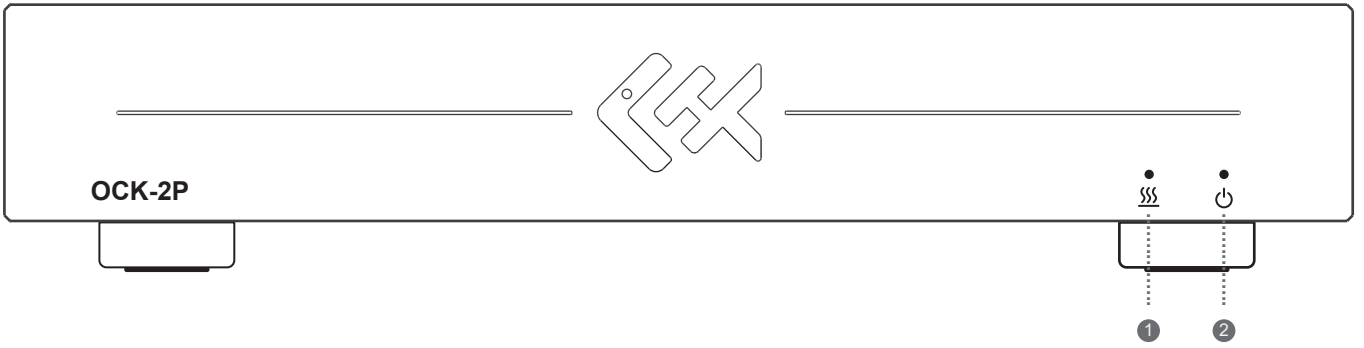
Package Contents

10 MHz Master Clock ×1



AC Power Cable ×1

Device Name / Front Panel

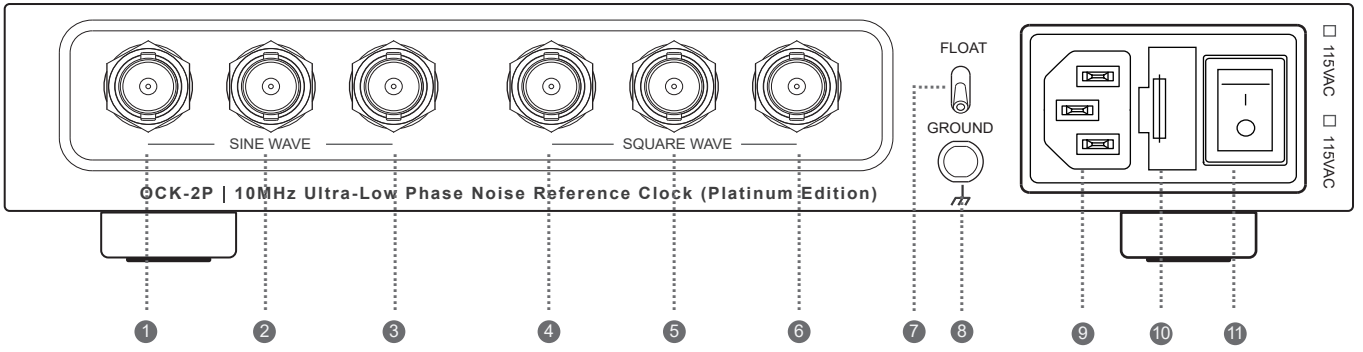


❶ **Clock Preheat Indicator**
During preheating of the internal temperature-controlled crystal oscillator, the indicator light is off, and it turns on once preheating is complete. The preheating time depends on the ambient temperature and typically takes 15–30 minutes in a cold start.

The clock signal is already output during preheating, reaching optimal performance once preheating is finished.

❷ **Power Indicator**
Indicates the power status of the unit.

Device Name / Rear Panel



Sine Wave Outputs

1. 10 MHz Sine Wave, 50 Ω
2. 10 MHz Sine Wave, 50 Ω
3. 10 MHz Sine Wave, 75 Ω

Square Wave Outputs

4. 10 MHz Square Wave, 50 Ω
5. 10 MHz Square Wave, 50 Ω
6. 10 MHz Square Wave, 75 Ω

7 Grounding Switch
Up: AC ground disconnected
Down: AC ground connected

8 Ground Terminal
For grounding with a dedicated wire

9 IEC Power Connector
Connect to mains power using a suitable power cable.

10 Fuse
The fuse can be replaced by opening the fuse compartment.

11 Power Switch

Technical Specifications

Number of Outputs: 6 outputs (3 × Square Wave / 3 × Sine Wave)

Output Impedance: Square Wave: 50 Ω ×2; 75 Ω ×1
Sine Wave: 50 Ω ×2; 75 Ω ×1

Output Level: Square Wave: 2 Vpp / 1 Vrms / 13 dBm (@50 Ω)
Sine Wave: 2.8 Vpp / 1 Vrms / 13 dBm (@50 Ω)

Close-in Phase Noise (Typical): ≤ −115 dBc @ 1 Hz Offset
≤ −140 dBc @ 10 Hz Offset
≤ −150 dBc @ 100 Hz Offset
≤ −158 dBc @ 1 kHz Offset
≤ −160 dBc @ 10 kHz Offset

Frequency Stability: < ±5ppb

Frequency Accuracy: < ±0.05ppm

Short-term Stability: 2×10^{-12} @ 1 s

Preheating Time: 15 minutes (basic) / 60 minutes (full)

Dimensions: 240 × 175 × 50 mm (W × D × H)

Weight: 2.0Kg

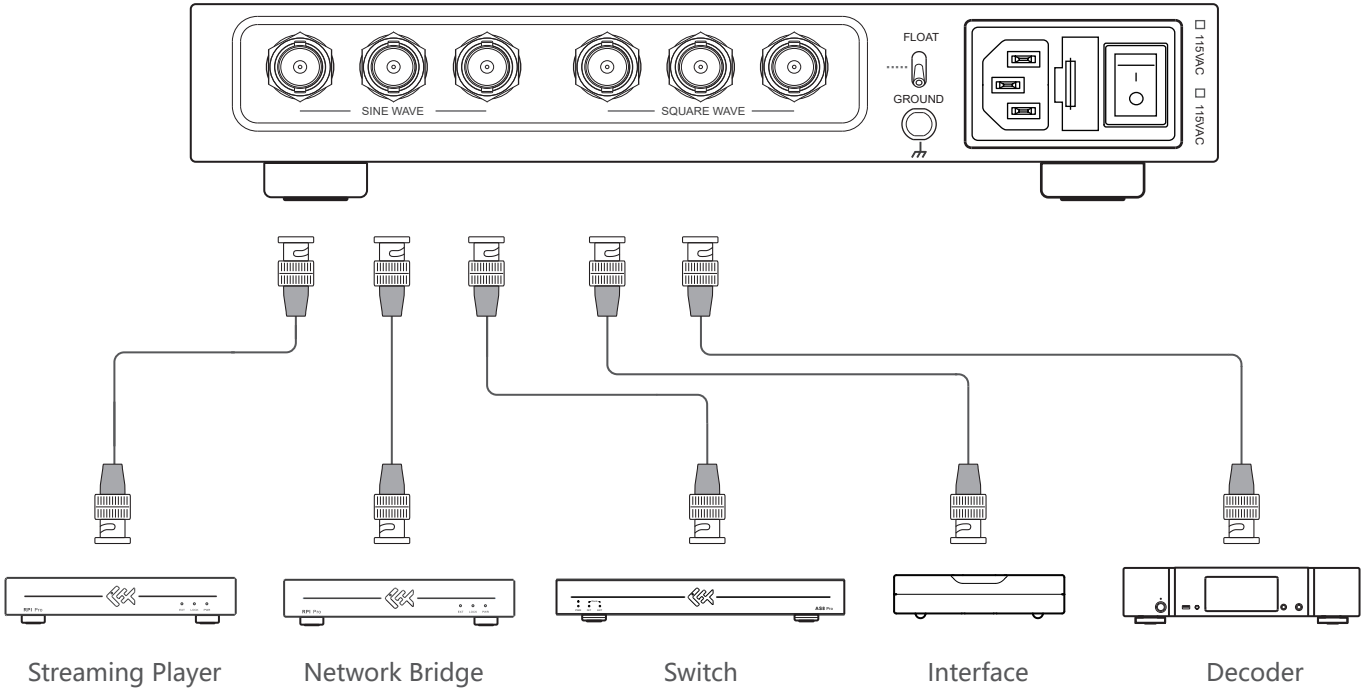
AC Voltage: Factory set 220–240 VAC (can be set to 110–120 VAC on request)

Power Consumption: 10 W during preheat / 5 W during stable operation

Fuse: 5 x 20 mm T1.0AL (110~120VAC)
5 x 20 mm T1.0AL (220~240VAC)

Accessories: 10 MHz Master Clock ×1 、AC Power Cable ×1

System Configuration



Device Connections

Please use 50 Ω or 75 Ω BNC coaxial cables to connect the OCK-2P to devices requiring an external clock, and connect the cables to the corresponding impedance output ports.

The unit provides both sine wave and square wave clock outputs. The impedance and waveform type of each output are set at the factory and cannot be changed by the user. Please use each port according to its labeling.

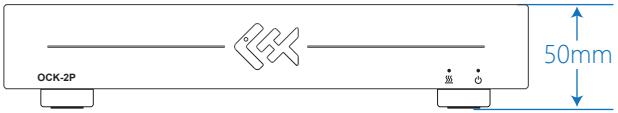
All clock outputs are synchronized and equipped with independent output buffers to ensure mutual isolation and stable signals.

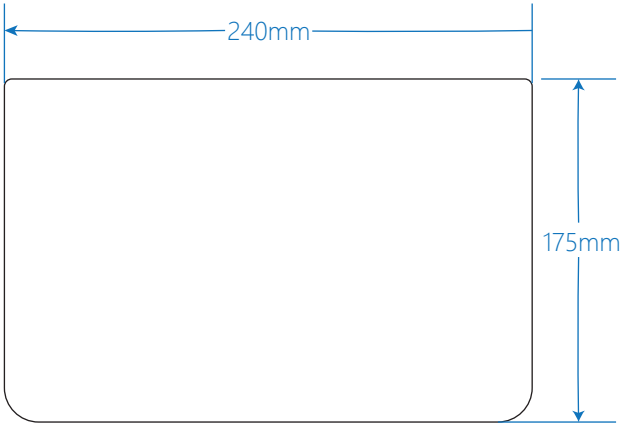
Usage

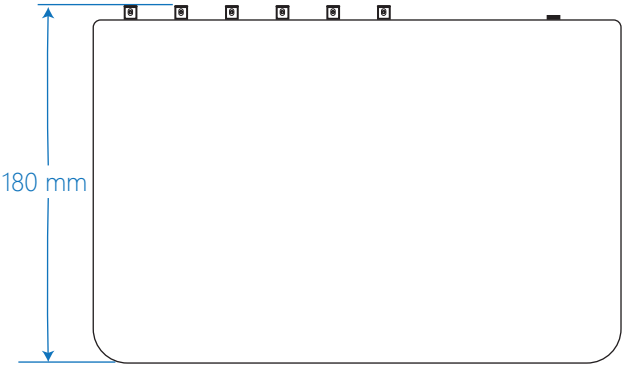
The OCK-2P features an internal temperature-controlled chamber that provides a stable operating environment for the clock oscillator. Upon power-up, the chamber enters a preheating phase, and the indicator light turns steady on once preheating is complete. The preheating time depends on the ambient temperature and typically takes 15–30 minutes in a cold start.

During preheating, the clock signal is already output, and optimal performance is reached once preheating is finished.

Product Dimensions







Troubleshooting

Fault	Possible Cause	Solution
Power Indicator Off	1. Power not connected or poor contact	1. Connect the power
	2. Blown fuse	2. Replace with a suitable fuse
No Response from BNC Connection	1. Poor cable connection	1. Connect the cable properly
	2. Incorrect frequency	2. Use a clock with the correct frequency

Warranty Card

Dear Valued Customer,

Thank you for purchasing a LHY Audio product!
This warranty card serves as proof of warranty for your LHY Audio product and should be kept by the user.
With this card, you are entitled to receive after-sales repair services from LHY Audio.
Please keep it in a safe place.

1. This product comes with a one-year warranty. During the warranty period, LHY AUDIO provides complimentary repair services. If repairs are needed after the warranty period has expired, LHY AUDIO will still offer repair services; however, labor and material costs will be charged to the customer.
2. Please ensure the product is properly packaged to avoid damage or loss during transportation.
3. To request warranty service, please return the product along with a fully completed warranty card and proof of purchase(such as a copy of the invoice or receipt).

Product Information

Item Name: _____ Product Model: _____

Product ID: _____ Purchase Date: _____

User Name: _____ Phone Number: _____

Address: Room 1611, Building 8, Tongxin No.1 Intelligent Manufacturing City, No. 80, Shiqi Village Section, Shilian Road, Panyu District, Guangzhou, Guangdong Province, China

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Dear Valued Customer,

Thank you for choosing LHY Audio. We sincerely hope this product meets your expectations and adds more enjoyment to your daily life.

LHY AUDIO LIMITED

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