

# *KH-6801*

## *Automatic Final Frequency Adjustment System*

*(Pallet Type) for SMD Clock Osc. /TCXO /VCXO*



- 2002 Hong Kong Award for Industry :  
Machinery and Equipment Design



The KH6801 utilizes the latest Proportional-Integral-Differential (PID) plating control algorithm enhanced with shutter forecasting control. Intelligent solid-state plating power control module gives better plating accuracy and higher speed compared to the other conventional shutter-only or PID-only control system. Typical plating time per crystal is less than 3.0 seconds (totally 2 plating cycles), with typical frequency spread of less than  $\pm 1$  ppm \* <sup>Note</sup>.

The built-in high speed KM5112 Frequency Counter Card provides the final accuracy of the clock osc. being plated. Measurement accuracy of less than  $\pm 1$  ppm could be achieved. Post measurement can be used.

The system operation software is user friendly and menu driven. Touch panel is designed for production workers to operate easily, so that they do not need to work with the computer.

- Frequency range : 10KHz to 700MHz
- Proportional-Integral-Differential (PID) plating control algorithm enhanced with shutter forecasting control.
- Programmable pitch for different size of pallets (max. size 175 x 130mm).
- Typical plate time per crystal is less than 3.0 seconds (totally 2 plating cycles), with typical frequency spread  $\pm 1$  ppm \* <sup>Note</sup>.
- The system operation software is user friendly and menu driven.
- Touch panel is designed for production workers to operate easily.
- Filament control : Computer controlled real time high speed solid-state SSR.
- Dual pallets for high throughput.
- Simultaneous plating (Optional) increase throughput.
- High speed Turbo pump. (Optional : Cryo Pump, Diffusion Pump)
- UPS (Un-interrupt Power Supply) to protect the system from power failure.
- Optional for SMD crystal



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## Specifications

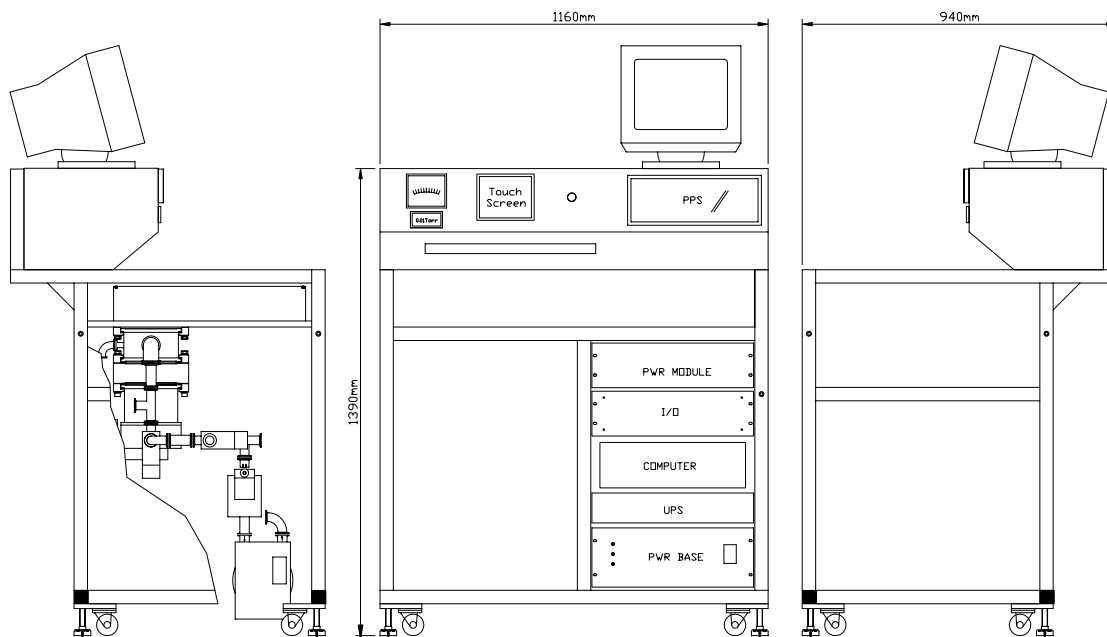
- Frequency range : 10KHz to 700MHz
- Plating control algorithm : Real time digital PID control, with shutter forecast
- Filament control : Computer controlled real time high speed solid-state SSR
- Measurement : KM5112 high speed frequency counter card with ovenized time base
- Programmable power supply : dual channel, voltage resolution=5mV, current resolution=0.5mA
- Pump down time \* : Approx. 3 minute to  $1 \times 10^{-4}$  torr
- Power requirement : 380V 3-phase, 50Hz Approx. 3 KVA
- Cooling water required : 2 Kg/cm<sup>2</sup> below 21°C Approx. 3 litre/min.
- Compressed air required : 5 Kg/cm<sup>2</sup>
- Pumping System : Rotary Pump - 200 Litre/min, Turbo pump\*\*
- Gross weight : approx. 600Kg
- Dimensions (DxWxH) : approx. 940 x 1200 x 1800 mm (not include the light pole)

\* When the chamber is clean, empty, at room temperature, and with sufficient water cooling

\*\* Diffusion pump or Cryo Pump is available on customer's request.

## Options

- Simultaneous plating
- Up-grade KH6800 options for SMD crystals
- Dry pump (only suitable for turbo pump or cryo pump configurations)



Note : 1) Measurements were taken immediately after a crystal was plated inside the vacuum system. The measurement data show the actual plating accuracy of the system without influencing by crystal stabilities (e.g. temperature characteristics, effect on crystal under normal atmosphere, etc.)

2)  $>90\% \pm 1\text{ppm}$

Specifications are subject to change without prior notice.



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