Introduction 簡介

Here's a brief development history of our 2 latest upgrades.

One of our user from China, who was a scientist involved in designing the DF-5 intercontinental ballistic missile, was generous enough to help design a ingenious "non-equal cavity compression" technology. This technology provided us with valuable insights for redesigning the KHG reagent nozzle. Creating uniform and precise reagent droplets.

However, due to the more accurate reagent droplets, its tiny shape will cause more physical interference. It is unfortunate that the existing MCUs can barely handle the huge amount of calculation required to resolve this interference, so we decided to use an external add on module to achieve the best results.

At the same time, we have also upgraded the software in advance and enhanced the algorithms to enable the motherboard to support this novel design.

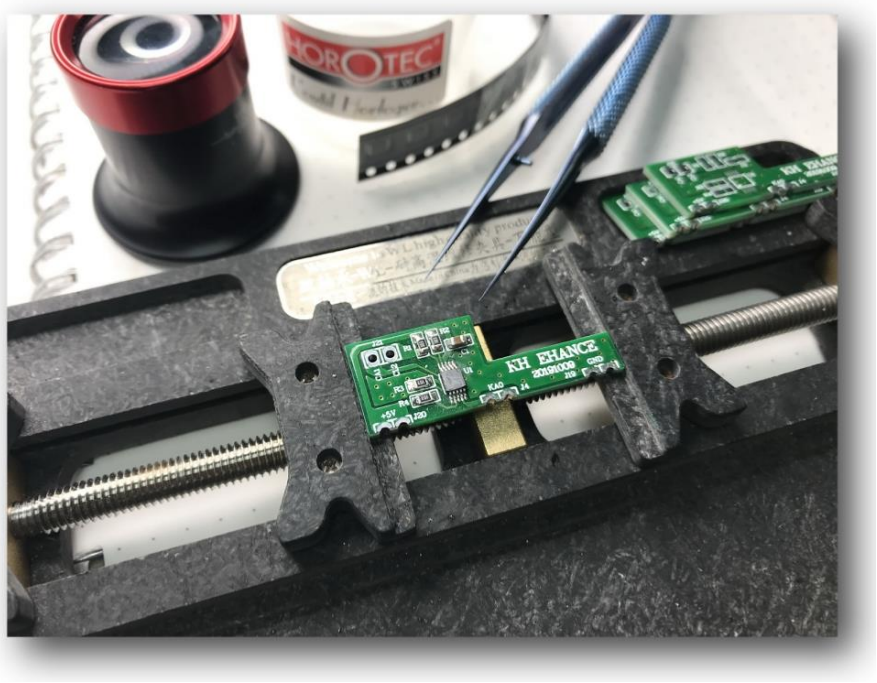
It is extremely exciting that using our high-speed camera to observe the shape of the reagent droplet coupled with the new KHG calculations, results in much improved resolution and provides much better accuracy and stability by a factor of at least three times.

一位來自中國的客戶，他是一名洲際彈道火箭設計的科學家。 基於與我們深厚的私人友情，提供了一種非常巧妙的特殊「非等徑空腔壓縮技術」，為我們重新設計試劑噴嘴，提供了重要而且寶貴的指引。

但是，由於更精確的試劑水滴，它的微小外形肯定會造成更多的物理干擾，更不幸的是現有的 MCU 幾乎無法承受，為解決這個干擾所需要的龐大計算量，因此我們決定改採用外掛式的硬體運算晶片插件，來達成這個目的。

與此同時，我們也預先升級了軟件並增強演算法，使主板能夠支持這種新穎的設計。

值得令人興奮的是，通過高速攝影機的觀察與實際計算結果比對證實，這個新設計可以立刻將解析度與穩定性整整提高到達三倍以上。



How To install KH senser ehance module and upgrade Nozzle to NZ2.
(如何安裝與設定增強模組及高精度噴嘴)

1. All KHG maintenance video are located here: http://www.khguardian.com/videos.php

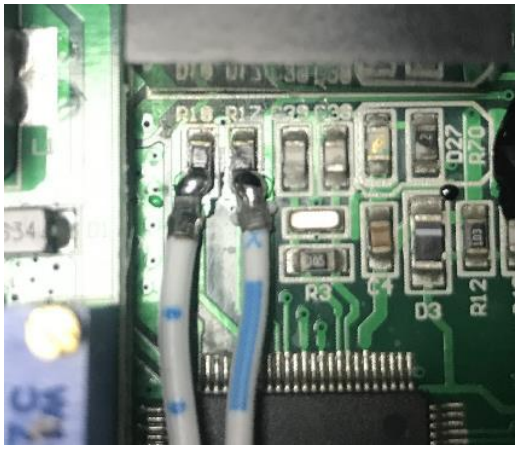
教學視頻的網址為 http://www.khguardian.com/videos.php

2.Please follow installationvideo“ How to upgrade Nozzle to NZ2” to install high resolution Nozzle V2.

請依照 "如何安裝高精度試劑噴嘴"這個視頻安裝高精度試劑噴嘴。

3.Please follow instruction video “How to soldering KH Ehance module.” to install KH.Enhance module.

請依照 ″如何安裝 KH 探測增強模塊(需焊接)″ 這個視頻正確的安裝模塊。 有關焊接點的位置細節，請參考 (圖示 1)



(Figure 1 圖示1)

4.Please upgrade firmware later than V9.7R7

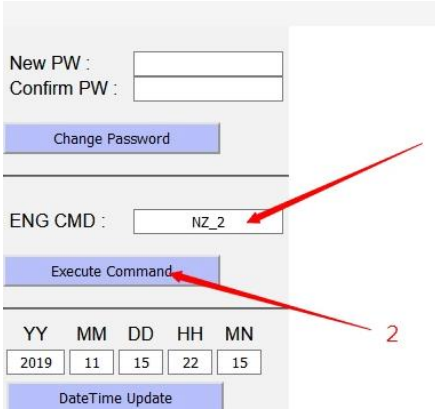
將韌體更新到 _V9.1R7.BIN (或)以上。

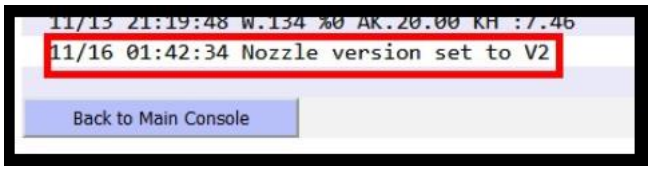
5.If upgraded KH.Enhance module. Please enter “7” in setting “KH sensor version”

如果安裝了″KH 探測增強模塊″，請將 ″KH sensor version:″ 這個欄位的數字設定為 7。

6.If installed “High resource nozzle V2” please follow (Figure 1) Enter engineer mode and key in engineer command “NZ_2” (All uppercase) to introduce nozzle V2 for KHG, after the command is successfully executed will be shown in the record.

如果安裝了″高精度試劑噴嘴″，請依照(圖示2)所示，下達工程命令 ″NZ_2″ (全部大寫) 將噴嘴更改為第二代，命令執行成功後將會顯示於紀錄。





(Figure 2 圖示 2)

7. Restart KHG

重開機。

8. Pease recalibrate ph probe for ph 7 ph4.
請開始重新進行 pH7、pH4 校正。

9. Here's a small tip for calibrating ph probe. Enter engineer command "DSP_VOL" (All uppercase) will allow ph probe voltage to show on LCD (Figure 3)

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這裡有個小技巧，為了更精確的校正，可以使用工程指令 "DSP_VOL" (全部大寫) 將工程電壓顯示於 LCD 螢幕，如 (圖示 3)。

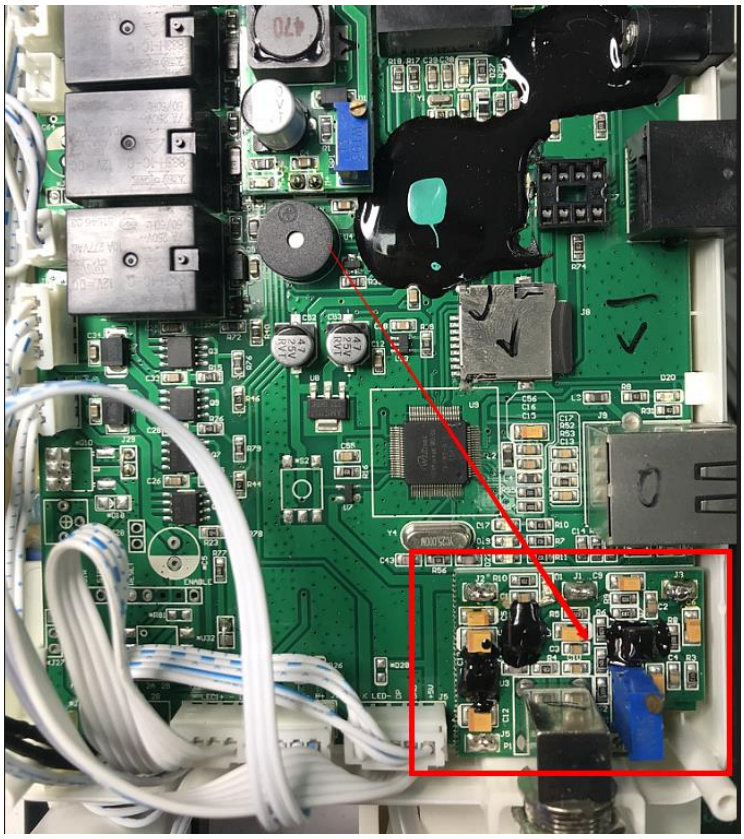
(Figure 3 圖示 3)

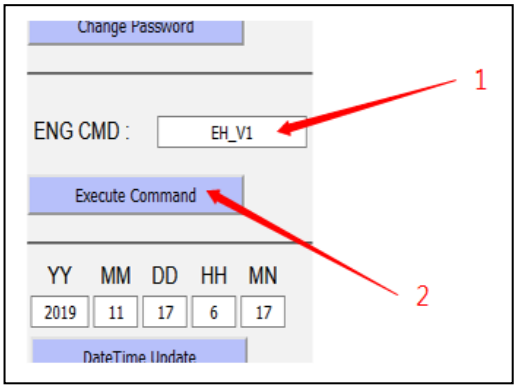
10. First time starting back up KHG from upgrading the KH.Enhance module, the PH on LCD screen might be showing 0. This is due to calibration of ph 4 and 7 had not been completed. Just need to check that the voltage is jumping with in +- 5 mV (might need 2 min) and calibration ph 7 and ph 4. Than the ph will be showing correctly.

KHG 初次更改為使用增強模組時，LCD 面板上的 pH 數值有可能顯示為 0，這是因為沒有產生斜率所需要的 pH4 以及 pH7 參考電壓。此時請不用擔心也不用理會，只要觀察電壓的變化僅在 +/- 5 mV 的範圍內緩慢跳動或靜止(大約需要兩分鐘)，即可直接進行 pH7、pH4 的設定，當正確設定完成後，pH 值便會正常的顯示。

11. Voltage showing function will be reset after next restart.
有關工程電壓的顯示，將會在下一次重開機後自動關閉。

12. If you are using the earliest pH module (Figure 4), Please use engineer command "EH_V1" in particular.
如果您使用的是最早期的 pH 模組，如 (圖示 4)，請務必特別下達工程命令 "EH_V1"，以提高分辨度。




Change Password
ENG CMD :
EH_V1
Execute Command
YY
MM
DD
HH
MN
2019
11
17
6
17
DateTime Update
1
2

(Figure 4 圖示 4)