



EIGENLABS EIGENHARP PICO

What do you get when you ditch the keyboard and cram as many control options into a MIDI instrument as possible? Eigenlabs have a few answers to questions seldom asked.

Text: Brad Watts

These days, everyone has an angle on controlling computer-generated sounds. However, for the most part, MIDI-based control of software-based instruments has centred on the age-old keyboard paradigm. It's not surprising really – an individual keyboard key is basically a switch after all, and a familiar one at that. Press it and you get a note. But once you add velocity sensitivity, and perhaps some form of aftertouch, you've taken that particular form factor to its limit. Then there are drums – a frightfully simple triggering situation with a dozen or so pitches to worry about. Things like guitar MIDI controllers are a more complex affair, relying on hexaphonic pickups and the need to 'track' inordinate amounts of pitch-bend information. There are, it should also be noted, occasional attempts at corraling the art of the woodwind instrumentalist into the world of MIDI. Akai went down this path years ago with the EWI range of wind controllers, a game they're still chipping away at with the EWIUSB 4000. Yamaha also showed some interest with its WX5 MIDI clarinet, and of course instigated breath controllers on the DX7 years ago. But the issue (and limitation) with all these devices is that they emulate instruments that have existed for centuries, millennia even! Perhaps in this day and age there might be other avenues to pursue? After seeing the Eigenlabs Eigenharp Pico I believe this to be true.

But first a little modern history: Eigenlabs is a British company, founded by John Lambert in 2001, with an aim to produce the world's most expressive electronic musical instrument. It wasn't until 2009 that the company released its first instrument, the Eigenharp. Eigenlabs offer three styles of Eigenharp: the Alpha, the Pico, and the Tau. It's the diminutive Pico that's the focus of this review, measuring approximately 335mm in length – about the length of a standard primary-school issue English recorder. When unfolded, the mouthpiece adds another 150mm to the Pico's length. It's a handsomely constructed unit, consisting of a rectangular aluminium sleeve with all electronics sealed away from curious fingers. One end of the Pico accepts the removable mouthpiece, while the other accepts a mini-USB cable for connection to your PC or Mac – a three metre USB cable is also provided. On the rear-side of the Pico there's a removable plastic clip offering two hooks that come into play when holding the Pico like a typical woodwind instrument. This also provides an anchor point for the USB cable. Remove the clip and the Pico can sit flat on a tabletop.

PICO-LOWDOWN

Around the front of the Pico is where we find the actual control buttons, and this is where similarities with traditional musical instruments and MIDI controllers disappear. As you'll see from the image, 18 trigger buttons grace the front surface. Initially one imagines these to be mere velocity-sensitive triggers, much the same technology as a MIDI keyboard or drum controller,

but there's a lot more going on here. Each of these rubberised pads is a remarkably well-engineered device... I'll explain.

While each pad will of course trigger a note and the registered velocity, they can also be wiggled laterally in any direction, somewhat like a short and stubby joystick. In addition to transmitting note information, velocity and pressure, each pad can register and transmit MIDI continuous controller or pitch information in north/south and east/west directions. Each pad samples its current setting 2000 times per second with 10-bit (1024 step) resolution. Getting the picture so far? These aren't anything like your typical keyboard controller keys or triggers – there are five avenues of MIDI information that can be streamed from each pad. Add the 18cm ribbon controller and the breath controller and you've got what's possibly *the* most expressive MIDI controller available. You'll notice the pads are laid out in two rows without any delineation or indication of semitones – it's up to the player to invent and develop their own technique. Hey, this is a completely new instrument after all.

The Pico arrives with a number of accoutrements: two mouthpieces for the breath controller so you can avoid sharing your current ailment with your collaborators, a lanyard for swinging the Pic from your neck, saxophone style, and an 8GB USB memory stick containing the requisite software installation to drive the Pico.

Initially the software for the Pico only supported Mac OSX, but Eigenlabs recently released a Windows 7 compatible version. One should note that the software is an intrinsic component of the package. The unit doesn't actually produce any sound under its own steam – it must be connected to a host computer. Using Soundfont compiled sound-sets, the software also searches your system for any Audio Unit plug-ins you might have installed. These can be integrated into patches, and like many of the Pico's operating features, can be recalled and instigated via the Pico itself. Using the Pico to control software instruments within your favoured DAW is also possible, but you must have the 'EigenD' application running and set up an IAC bus within the OSX AudioMIDI Setup application. Eigenlabs supplies all the relevant information and Help files to get this happening.

In use I have to say the Pico gets some getting used to, and yes, I all did my interpretations of the Star Wars cantina scene music. On a more serious note, the Pico is an extremely innovative instrument. The number of continuous controller messages this thing puts out is largely impossible with any other style of MIDI controller. Then, when you consider much of this data can be output on a per-note basis, you realise just how powerful and expressive the Eigenlabs instruments can be – startlingly different and primed for new and innovative approaches to performance. ■

NEED TO KNOW

Price
\$759

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Pros

Extraordinarily different.
Excellent performance tool.
Superbly made.
Available in silver, black, and now pink!

Cons

Takes more than the usual setup procedure.
Not inexpensive.

Summary

The Eigenlabs Pico goes where no other MIDI controller goes... and it's uncharted territory out there. Players will ultimately determine how this innovative instrument develops and where it takes computer-based performance, as is the case with any of the Eigenlabs instruments.

讓年輕人發揮創意！

近年本港政府大力提倡創意產業，鼓勵各行業多投放資源以推動年青人的創意。不少學校近年也開始在學校內設置全電腦化音樂室和校園電視台等，使學生有機會接觸和學習有關音樂創作和電視製作的知識，好為將來的創意工業培育人才。本港多間電視台為了培育音樂人才，也相繼舉辦了不同的音樂比賽，為年青人提供了一個新的音樂出路。

我們應多鼓勵他們，給他們機會：

- 讓他們學習音樂...
 - 讓他們發揮創意...
 - 讓他們認識Eigenharp Pico, Tau, Alpha...
- 因為這是他們發揮創意的工具！



Eigenharp Alpha



Eigenharp Pico



Eigenharp Tau



Eigenharp Tau (近照)



Eigenharp Alpha (近照)



Eigenharp 樂隊

Eigenharp

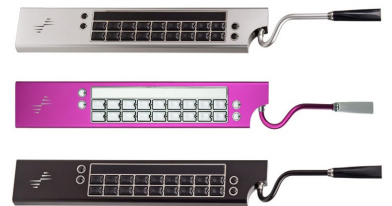
創新電腦音樂科技成果：全新概念樂器 Eigenharp

電腦科技在過去十多年間的發展，不論在功能、速度和創意方面都有令人意想不到，眼前一亮的成果！例如電影方面，由傳統的膠捲模擬（Analog）時代轉變為現在的數碼（Digital）時代；再由2D的平面視覺畫面轉變為3D的立體視覺畫面，實在令我們讚嘆不已！至於音樂和錄音製作方面也由傳統的錄音帶模擬（Analog）時代轉變為現在的電腦數碼（Digital）錄音時代了！借助電腦數碼科技的幫助下，不論影、音兩方面都出現了很大的變化，同時也找到了新的發展

方向。但在音樂演奏方面，多年來電腦數碼科技在這方面似乎一直都沒有很大突破，直到最近Eigenharp的出現才得以填補了這個多年來的缺口。

Eigenharp是英國一家電腦音樂科技公司（Eigenlabs）花了八年研究的成果。Eigenharp是利用了創新電腦音樂科技成果而設計出的全新概念樂器，其形狀有點似一支電結他，但同時設有一個「吹咀」又像一支吹管；Eigenharp是以按鍵方式彈奏的，所以又似一般的琴鍵樂器。演

奏者只需學懂使用Eigenharp的演奏技巧和操作技術，便可演奏出任



(Eigenharp Pico)

何樂器（如：結他、鋼琴、小提琴、長號、鼓…等），甚至同時演奏兩種或以上的音色，奏出多件樂器合奏的效果。

Eigenlabs 花了八年研究的成果：Eigenharp Pico, Tau, Alpha



(Eigenharp Tau)

Eigenharp的設計充分地利用了現今電腦在處理音樂的強勁功能，Eigenharp的主要功能是讓演奏者完全控制了電腦的音樂資源（如：Audio Unit、VST、Sampler、Synthesizer、Drum Machine、Drum Loops…等），演奏者在演奏途中只需在Eigenharp上按一、兩下鍵便可即時轉換其他樂器的音色繼續演奏。演奏者更可使用Eigenharp的Drum Loop功能設計屬於自己的Drum Loop，並於演奏中途隨時作

出改變。Eigenharp上的每個鍵都有紅、綠、黃色的燈號，代表演奏者所選擇的不同功能，演奏時只要一看各個鍵的燈號便即時知道所選用的音色、Drum Loop的結構和其他的設定，一目了然！

因不同種類樂器的發聲原理都有不同的特性，所以每種樂器都有獨特的效果和演奏技巧。因此Eigenharp的設計師在這方面特別花了不少心思來模仿各種樂器的特性。在琴鍵

樂器方面，Eigenharp每個鍵都有力度感應的，大力按下便會大聲，輕按則細聲，有如彈奏琴鍵一樣。在弦樂器方面（如：結他、小提琴等），Eigenharp的側面設有一條Strip Controller，演奏時用手指在這Strip Controller上滑過便會產生弦樂器的Pitch Bend效果。Eigenharp每個鍵按下後都可向前、後、左、右方向推壓，做出不同的演奏效果。至於吹管類樂器方面，Eigenharp設有一支吹管方便演奏者用來演奏吹管類的音色。



加以適當地運用，便可發揮無限的創意，令你的聽眾/觀眾眼前一亮，驚嘆不已！現時在歐、美各國已有不少演奏者開始使用Eigenharp在音樂會上演奏，或由多位樂手組成全Eigenharp樂隊作公開表演，為樂壇的發展開闢了新路向。

(Eigenharp Tau)

由於Eigenharp的獨特設計使演奏者在演奏各種不同的音色時都可保持該樂器的特性，有如使用該樂器來演奏一樣，所以我們只需學會使用Eigenharp便等於擁有無數的樂器，只要我們在演奏時

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Eigenharp：將會成為主要的演奏工具



大家只要在YouTube短片分享網站輸入關鍵字“Eigenharp”便可搜到大量有關Eigenharp的演奏表演、示範介紹、教學練習等錄影

片段，大家從這些短片中可瞭解和感受到Eigenharp的強大演奏功能和電腦科技對音樂演奏的影響。相信大家看過後都會十分認



同Eigenharp在不久的將來，很快便會成為各演奏者主要的演奏工具。

Eigenharp：三款設計適合不同用途

Eigenharp現有以下三款不同的設計，以適合不同用家的要求：

(一) Eigenharp Pico

支援電腦平台：Mac OSX 10.4或以上/Window 7

Pico的設計十分小巧輕型便於攜帶，全長只有49cm，共有18個鍵，4個功能鍵，一支吹管和一條長18cm的Strip Controller。由於Pico的操作十分簡單容易學習，十分適合初學者（如：學生和一

般音樂愛好者）作學習簡單的演奏或小型樂隊之用。Pico備有黑色、銀灰色和粉紅色可供選擇。售價：HK\$6,000.00

(二) Eigenharp Tau

支援電腦平台：Mac OSX 10.4或以上/2011年初才支援 Window 7

Tau的長度跟一支電結他相若，共設有72個鍵，12個敲擊鍵（Percussion Keys），8個功能鍵，一支吹管和一條

Strip Controller，Headphone Output，Base Station一個和肩帶一條。由於Tau的操作較Pico複雜，功能也比Pico多，適合一般職業演奏者和樂隊之用。Tau備有黑色和銀灰色可供選擇。售價：HK\$25,000.00

(三) Eigenharp Alpha

支援電腦平台：Mac OSX 10.4或以上/暫時不支援 Window 7

Alpha的長度比一支電結他稍

長一點，共設有120個鍵，12個敲擊鍵（Percussion keys），1個靜音鍵，一支吹管，兩條



(Eigenharp Alpha)

Strip Controller，Headphone Output，Microphone Input / Preamp，Base Station一個，肩帶一條和Alpha獨有的腳踏輸入（Pedal Input）。Alpha是專為那些專業的演奏者而設的，功能是最適合專業的職業演奏者和樂隊之用。售價：HK\$48,000.00



測試：打開Eigenharp Pico的包裝盒，盒內除了Pico外還有一個後備吹咀，一條肩帶（可把Pico掛在胸前），一條3M長的USB2接線，使用手冊和一支8GB USB 手指。USB手指內除了Pico的驅動程式，各種樂器的音色和EigenD控制軟件外還有多套教學短片，十分詳細地教導用家如何安裝和使用Pico，可謂照顧週到。把Pico安裝到Window 7 Pro（如用Mac機：Mac OS X 10.4或以上）內進行測試，花了個多小時跟著教學短片學習，很快便掌握了Pico的功能和使用方法，不論是轉換音色、移調、選用 Drum Loops、兩種樂器合奏…等均可在彈奏時剎那間完成。一如所預料，Eigenharp的功能和設計真正實現了電腦數碼科技在音樂演奏方面的重大突破，填補了這個多年來的缺口。相信Eigenharp在不久的將來，很快便會成為各演奏者主要的演奏工具。

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