FOUR-AXIS SYNCHRONIZING MOTION SYSTEM

四轴联动系统



产品特点

FEATURES

使用思特光学自主研发的GMC控制卡，可实现高速度、高精度、大幅面的激光加工。

GMC controller independently developed by Scanner Optics, realizing high-speed, high-precision and large field laser processing.

支持多种文件格式；支持二次开发，提供C++和C#开发例程。

Support multiple file formats; Support secondary development and provide C++ and C# development routines.

适用于思特光学各个系列振镜方头，以及兼容XY2-100通讯协议的第三方振镜方头。

Closed-loop control system, monitoring the position and state of the galvanometer in real time.

只需要一张控制卡即可实现振镜与平台的实时同步联动控制。

Only one controller is needed to realize the real-time synchronous control between scan head and 2 axis gantry.

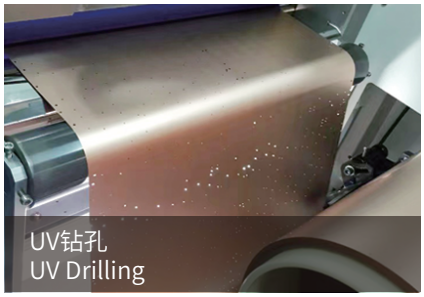
工作原理

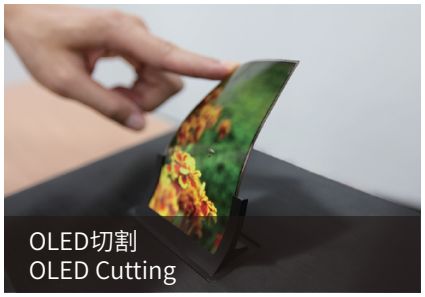
Working Principle

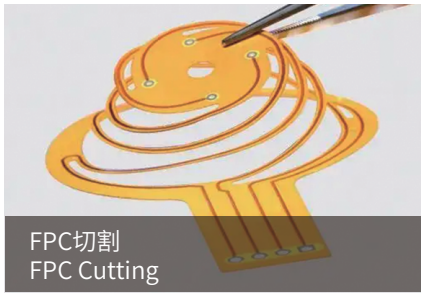
四轴联动系统主要由XY振镜、XY运动平台、平台驱动器、GMC控制卡以及定制加工软件组成，拥有无限视野加工功能，可同步XY运动平台与振镜方头。将扫描振镜的高动态性能与XY运动平台的大行程范围相结合，解决了传统2D振镜对加工范围受限的问题，而且不存在拼接误差，适合于大尺寸、高精度的激光加工应用。

The four-axis synchronizing motion system is mainly composed of an XY scan head, an XY motion platform, a platform driver, a GMC controller and customized processing software. It has infinite field processing function and can synchronize the XY motion platform and scan head. The combination of scan head with high dynamic performance and the XY motion platform with large stroke range solves the problem of limited machining range of traditional 2D galvo scanning system, and there is no stitching error, which is suitable for large-size and high-precision laser machining applications.

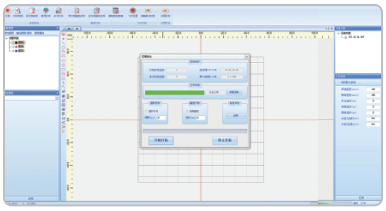
应用场景
Application scenarios



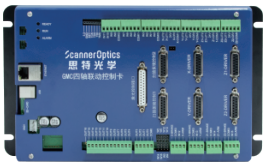




四轴联动方案组成
Four-Axis Synchronizing Motion System scheme



打标软件
Marking Software



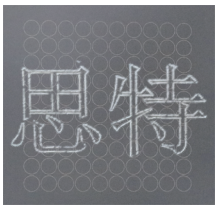
控制卡
Controller



XY平台 / 驱动器
XY Motion Platform / Driver



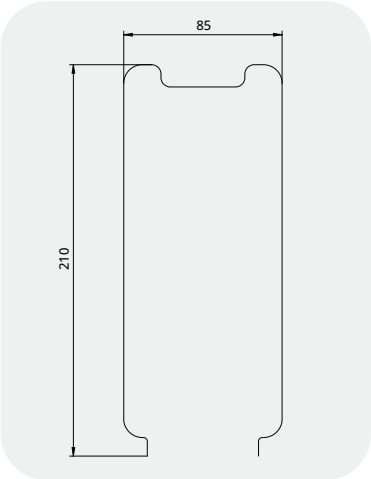
定制振镜 / 场镜
Customized Galvo / F-theta lens

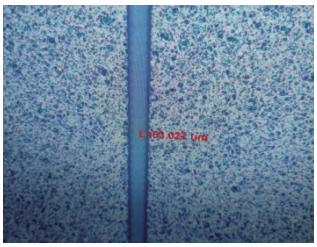


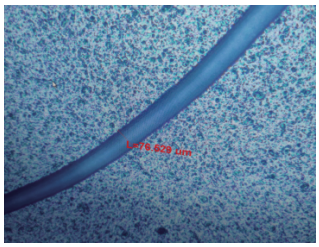
打标图案
Marking Pattern

加工精度为5μm@130mm行程
5μm processing accuracy @ 130mm travel length

行业应用
Industry application

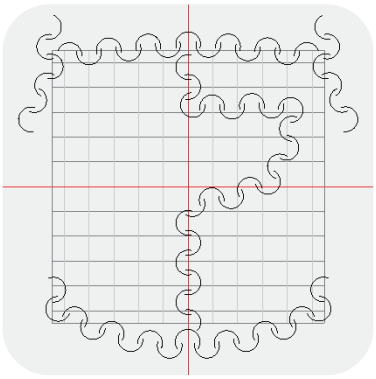






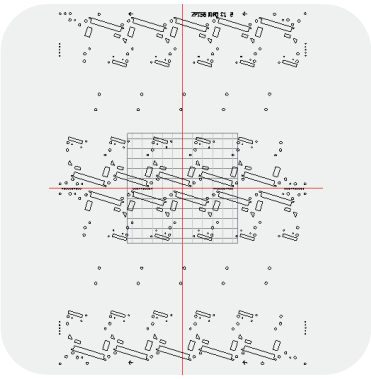
NO.1
柔性面板切割

项目难点
重复切割30圈，重复精度＜0.01mm（振镜系统激光焦距600mm）
直线段和圆弧段切割线宽要一致，在圆弧处不能有能量堆积



NO.2
大幅面牛皮半切

项目难点
需要保证600幅面大小牛皮半切深度一致，不能相差0.1mm



NO.3
大幅面PCB飞行切割

项目难点
矢量图内每一个图形（圆形，三角形，长方形）需要在移动不同的
3个位置过程中，振镜重复切3次，不能有重复精度偏差

ScannerOptics 思特光学

深圳市思特光学科技有限公司
Scanner Optics Co.,Ltd.

广东省深圳市宝安区福永镇重庆路128号大族激光4栋4楼
4F Building No.4, Han's Laser Production Base, No.128 Chongqing Road,
Fuyong Street, Bao'an District, Shenzhen City, Guang Dong, China.

www.scanneroptics.cn / www.scanneroptics.com
0755-2304 1055
hansscanner@hanslaser.com