XSTREAM DIGITAL

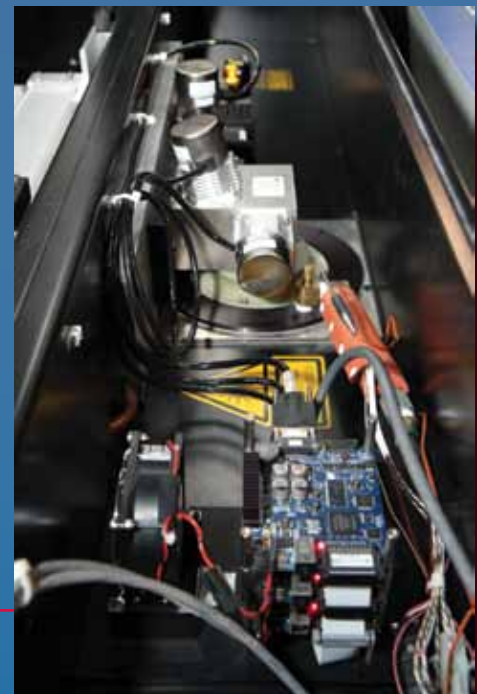**DIGITAL SCANNING SYSTEM**
POWERED BY INTEGRA

XSTREAM DIGITAL Scanning System for Ultra High Accuracy, Repeatability and Accelerated Scan Speeds.

XSTREAM DIGITAL IS AN ALL DIGITAL INTEGRATED SCANNING SYSTEM THAT HAS BEEN DESIGNED FOR THE HIGHEST LEVELS OF PERFORMANCE. THIS HAS BEEN ACHIEVED BY OPTIMIZING STATE OF THE ART TECHNOLOGIES IN LASER/SCANNER CONTROL, COMMUNICATIONS, SERVOS, DRIVES, GALVOS, ENCODERS AND MIRRORS INTO ONE INTEGRATED PLATFORM. THE SYSTEM USES AN INTEGRATED CONTROLLER TO ACHIEVE ADVANCED LASER / SCANNER SYNCHRONIZATION CONTROL. OPTIONALLY, XY2-100 COMMAND INPUT CAN BE USED ON EITHER DIGITAL OR EXISTING ANALOG GALVOS.

XSTREAM DIGITAL - NEW ELEMENTS THAT REDEFINE STATE-OF-THE-ART IN OPTICAL SCANNING SYSTEMS

- XS FILL SCAN SPEED 500 IPS (INCHES PER SECOND) (CURRENT HS SCAN SPEED IS 400 IPS)
- XS OUTLINE SCAN SPEED 200 IPS (INCHES PER SECOND) (CURRENT OUTLINE SCAN SPEED IS 70 IPS)
- XSTREAM SCAN CONTROL SYSTEM – SYNCHRONOUS MODULATED LASER CONTROL
- XS STATE SPACE SERVO – ANTICIPATES LASER POSITION, FASTER THAN FEEDBACK
- XS ENCODER GALVOS – BREAKTHROUGH ACCURACY
- BERYLLIUM MIRRORS – SHAPED, LIGHTENED AND BALANCED MIRRORS PROVIDE HIGH SPEED AND FAST SETTLING PERFORMANCE
- XS SCAN CONTROL SYSTEM HAS ELIMINATED THE NEED FOR AN EXTERNAL DOS BOX, LASER CONTROLLER & EOV MODULE BY INTEGRATING THEM INTO A SINGLE UNIT


XSTREAM BDS DIGITAL SCANNER SYSTEM INCLUDES:

- INCLUDES DIGITAL X, Y & Z GALVOS
- XSTREAM BDS SYSTEM
- DYNAMIC VECTOR CONTROL (DVC)
- INTERCONNECTING CABLES TO ADAPTER, SERVOS AND MOTORS

Traditional Control Scheme

- Mirror position is assumed-known based on position feedback; delays are required at the end of jumps (Jump Delay) and before changing mark direction (Stroke Delay) to ensure mirror position (= Stationary)
- Synchronization of laser firing to mirror motion is pre-programmed by the user; additional delays might be required (Laser-On Delay & Laser-Off Delay)
- The user combines process parameters (laser and scanner information) with pattern information (vectors & jumps) at the time of program creation, requiring re-programming for adaptation to varying process requirements (different laser / scanners / pattern)
- One set of delays is defined based on worst-case requirements and is used for the entire job
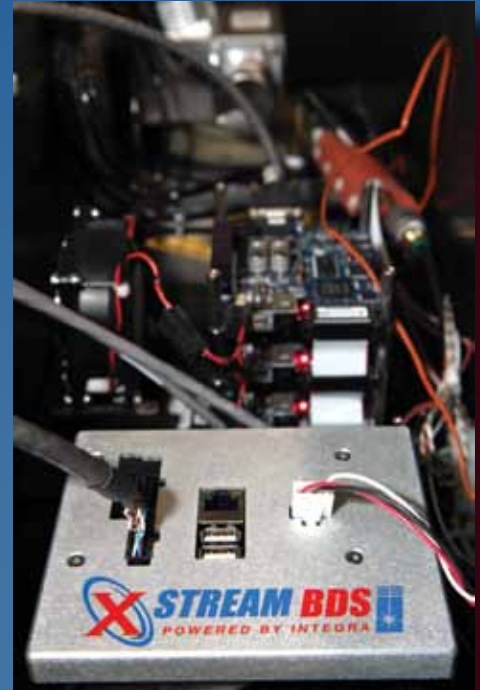
XSTREAM DIGITAL Control Scheme

- Mirror position is always known based on complete modeling of scanner behavior
- Synchronization of laser control to mirror motion is dynamically calculated by the software during job execution
- DVC now allows independent control of fill / outline laser power parameters during galvo acceleration & deceleration for a better end-of-vector control