Mini USB Motorized Linear Stages 20, 50 mm

Integrated Controller: USB and Manual Knob, 2 µm Repeat Precision, XYZ

DATASHEET

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The MMLS Series Miniature Motorized Stages offer an innovative design that combines submicron precision with user-friendly operation and affordability, making them an ideal choice for programmable motion applications. These stages feature a dual-bearing design to eliminate backlash and a proprietary optical encoder, achieving nanometer-level resolution and submicron repeatability.

Each stage connects to a smart motor driver with USB/RS232 interfaces. The controller includes a manual control knob for intuitive operation: pressing it activates manual mode, while rotating it initiates movement, with speed increasing as the knob turns and direction reversing when rotated past the center. An Ethernet control option is available via an additional control box. The system includes a wall-pluggable power supply, a downloadable intuitive GUI, and a command list for custom programming. The mounting plate is compatible with optical setups, ensuring seamless integration. Multiple MMLS stages can be interconnected with included cables, enabling control of multiple units, including XYZ configurations, via a single USB/RS232 or Ethernet interface. The system supports various ILSM models, providing versatility for complex setups.

Features

- USB Controller
- Ease Use GUI
- Power Supplier/Cable Included
- Manual Control Built-In
- XYZ Configurable
- Optical Encoder/Position Calibrators
- High Precision/Repeatability

Applications

- Optical Systems
- Mechanical Systems
- Lab Use
- Instruments

RoHS COMPLIANT

Specifications

Parameter	Min	Typical	Max	Unit
Travel Range	0	20	50	mm
Accuracy (unidirectional)	3	1		µm
Repeatability Bidirectional [1]	5	1		µm
Repeatability Unidirectional [1]	1	0.5		µm
Incremental Move	100			nm
Speed	0.001		8	mm/s
Encoder Count	100			nm
Operating Temperature	0		50	°C
Moving Mass			300	g
Manual Control	Push Switch	Indexed Knob		
Auton Control Interface		USB		
XYZ Interface [2]		USB		
Power Supply (included)		12VDC/3A		

[1]: The repeatability includes backlash errors.

[2]: Up to 3 Agiltron stages can be linked and controlled via a single USB/GUI. XYX forming brackets are available to be purchased.

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Mechanical Dimensions (mm)

- Mounting Plate for XY Configuration

- Moving Mounting Plate for Optical Components/Stages

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Operation Instruction

- Plug the stage cable into the controller box
- Plug the provided power supply.
- Pull and rotate the side knob to operate the motor manually.
- Connect the controller to a computer using the provided USB cable.
- Load the GUI from the provided memory stick or download it from our website.
- Run the GUI.
- If you encounter any issues, please email us at sales@photonwares.com.

Ordering Information (Part Number)

	A1	☐	☐	☐	☐	☐	☐	☐
Prefix	**Type**	**Travel**	**Precision**	**Package**	**Moving**	**XYZ Bracket**	**Controller**	**Ethernet Control**
MMLS-		20 mm = 2 Special = 0	Regular = 1 Special = 0	Regular = 1 Special = 0	X = 1 XY = 2 XYZ = 3 Special = 0	Non = 1 Y = 2 Z = 3 Special = 0	Yes = 1 Non = 2	Non = 1 Yes = 2

Notes:

Red is special order that takes longer time to deliver

- Y Bracket: Forms an XY stage – $95.
- Z Bracket: Creates an XZ stage or an XYZ stage when combined with the Y Bracket – $155.
- Ethernet Control : Enables remote control of the XYZ stage – $890.

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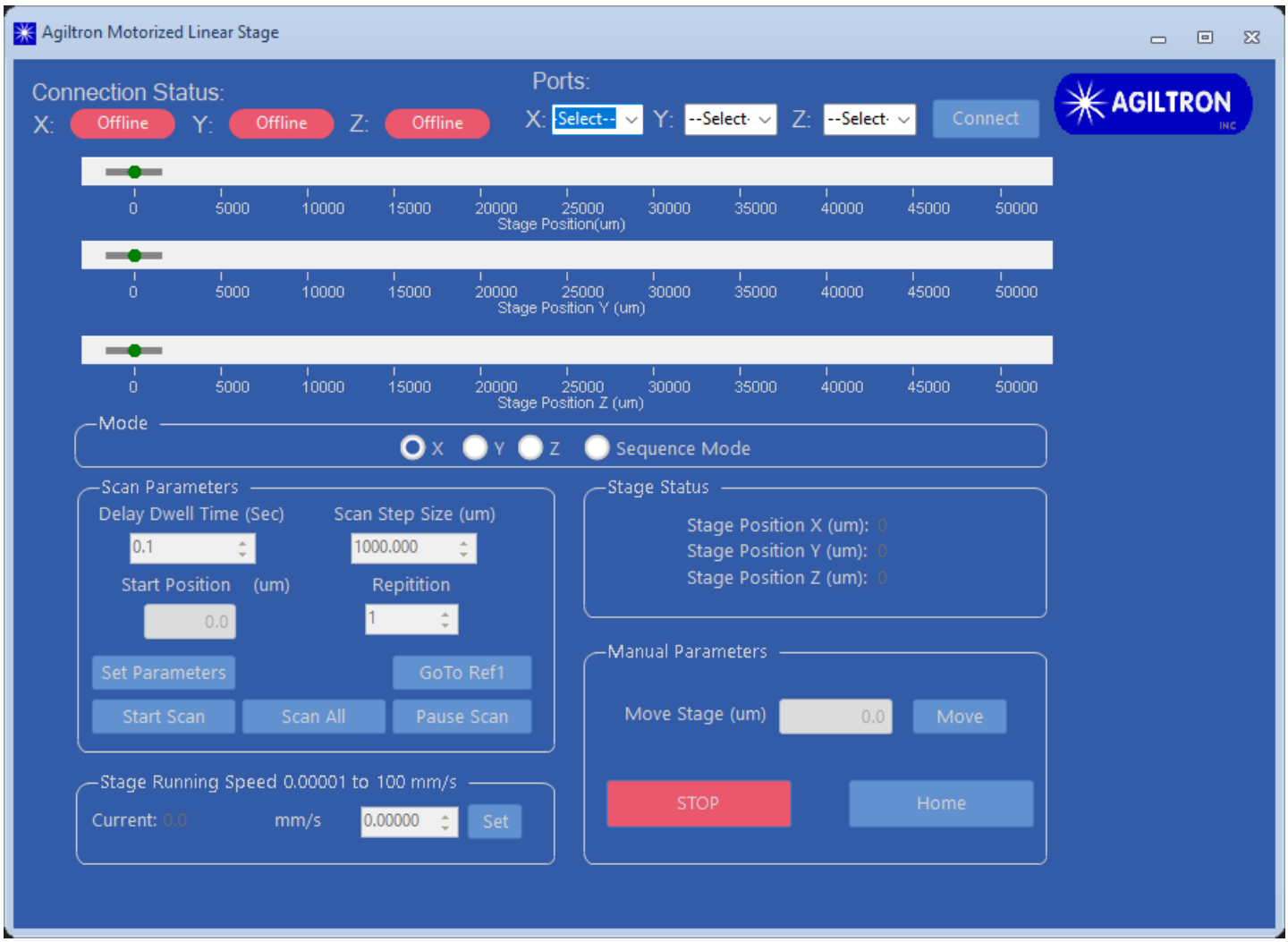
GUI



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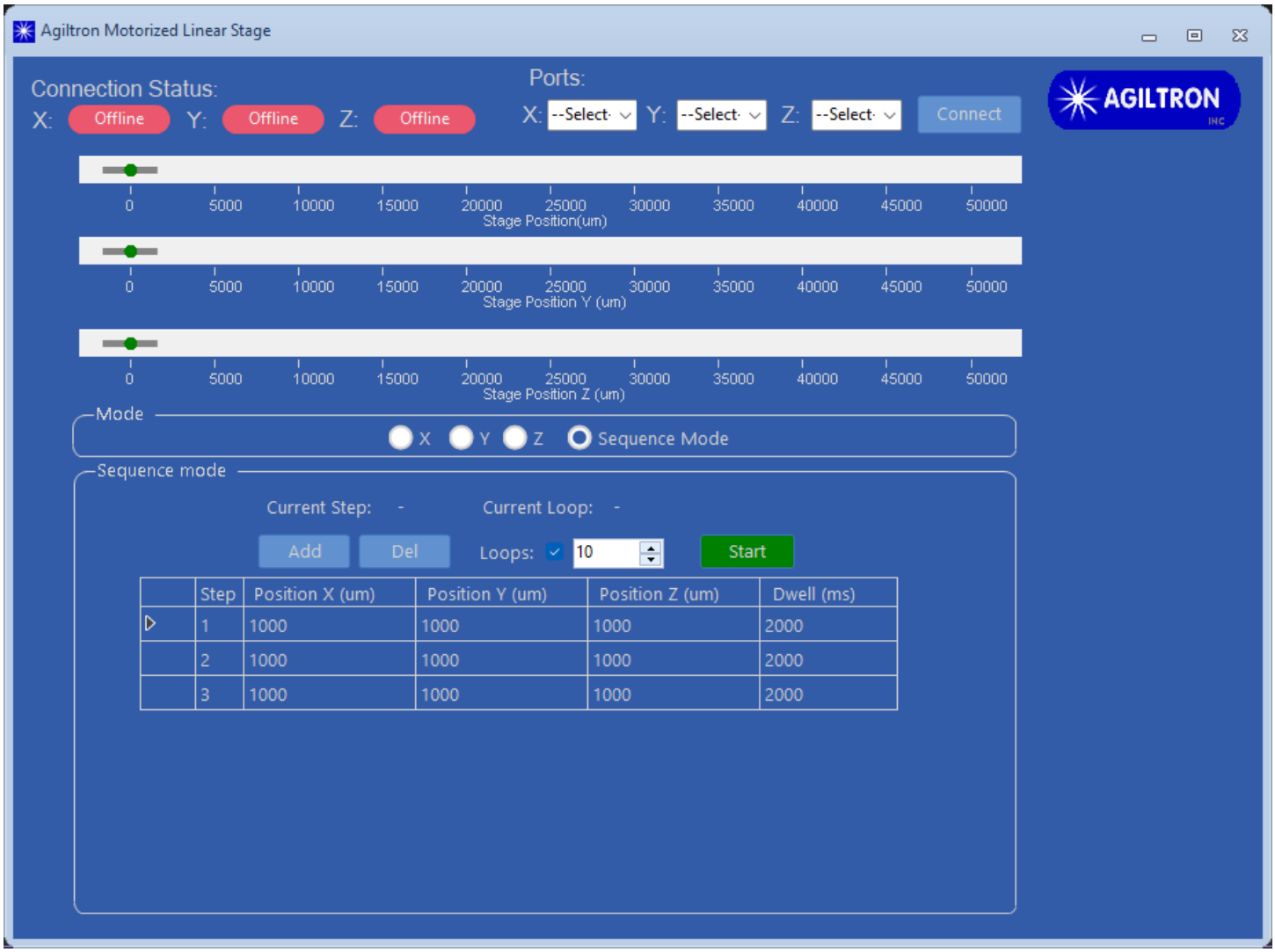

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