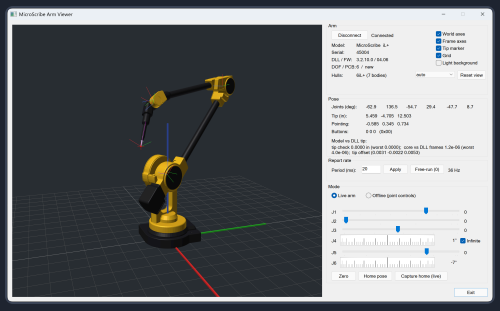
SOFTWARE DEVELOPMENT KIT · NEW RELEASE

MicroScribe®

SDK 4.0 — Product Overview

One SDK connects your Windows application to every MicroScribe ever shipped, from the first serial arms to today's high-rate USB models — and now draws the arm live, measures through a turntable, and hands you the kinematics that robot-teaching and simulation work needs.



ArmViewer sample, live mode, 6iL+ — tip check 0.0000 in

66 functions
27 new in 4.0, append-only ABI

Win32 + x64
no VC++ redistributables required

Every model
every era, USB and serial

$245
one purchase, royalty-free runtime

Modernized ArmDLL 3.2.10.0

`armdll32.dll` · `armdll64.dll`

Win32 and x64 builds from a single VS2022 codebase with a static runtime: no Visual C++ redistributable, no installer — drop the DLL beside your executable. The ABI is append-only, so applications built against any ArmDll 3.x import library keep working unchanged. Both DLLs support USB and serial arms.

Rate control that doesn't block

`ArmSetReportPeriod` · `ArmGetTimestamp`

Change the report period in microseconds instead of the multi-second stall of the old update call. Meter from 1 to 255 ms, or open the floodgate with period 0 and stream at the arm's full hardware rate on current USB arms. A 1 ms hardware timestamp rides on every report, so sample timing is the device's clock, not the host's.

Observable homing, markers and capabilities

`ArmGetHomingState` · `ArmSetMarker` · `ArmGetCapabilityTag`

Homing state and completion snapshots, one-shot or persistent user markers, and per-unit capability tags — all with graceful fallback on older firmware, so one code path serves the whole installed base.

The turntable service

`ArmSetTurntableZero` … `ArmSetTurntableCompensation`

Zero, calibrate, align, enable. The DLL computes eccentricity and alignment, persists them per serial number, and applies table-frame compensation to every report — roughly three thousandths through a full rotation on the reference rig. The `TurntableDemo` sample walks the entire recipe.

Kinematics as a first-class API

`ArmGetDHParameters` · `ArmGetLinkFrames`

The exact DH set and calibrated tip offset the DLL uses, and the six cumulative link frames of the latest report. Draw the arm, feed a simulator, or teach a robot — bit-identical to the DLL's own pose.

Arm visualization package + ArmViewer

`models/` · `arm-model/` · `ArmViewer` · `ArmModelCheck`

Eleven CAD hulls of the i+ series arm (STEP and STL, each authored in its own link frame), a JSON manifest, and the `MsArmModel::core` library that turns a live report into one world transform per body. ArmViewer shows the connected arm moving on screen in real time, with an Offline mode for teaching without hardware. Compatible with i, i+, iL, iL+, G and 3D series geometry.

Probe management as a standard

`probe-manager/` · `Probe_Ref`

A UI-agnostic core library for sampling, button filtering, distinct-sample detection, tip calibration and table-compensation guards, plus a written specification and a minimal reference UI. Adopt it as-is instead of re-implementing it.

Samples, rebuilt

`MSConsol` — the canonical thirty-line "hello, arm". `MSTest` — the minimal GUI. `Probe_Ref`, `TurntableDemo`, `ArmViewer`, `ArmModelCheck` — new. All CMake-first for VS2022, VS Code and the command line, Win32 and x64, with prebuilt executables. `Probe_Mgr` (2011) ships as historical reference.

Documentation, reborn

An offline HTML help site replaces the CHM: full reference for every function, structure and return code, plus topic guides for markers, homing, capability codes, the turntable service, firmware compatibility, visualizing the arm, and defining custom tips.

Who it's for

Integrators & ISVs connecting Windows products to every MicroScribe. **Robotics & engineering educators** teaching kinematics on a real arm. **Researchers & labs** building custom capture tools. **OEM partners** embedding the arm in their systems.

3.X → 4.0

What you get that 3.x never had

	SDK 3.X	SDK 4.0
ArmDLL	3.2.x, older toolchain	**3.2.10.0, VS2022, static runtime**
API	39 functions	**66 functions, append-only ABI**
Rate control	blocking update call	**non-blocking + free-run**
Timestamps	—	**1 ms hardware timestamp**
Homing / markers	not observable	**observable, legacy fallback**
Turntable	app-side math	**in-DLL service, persisted**
Kinematics	deprecated `arm_rec`	**DH parameters + link frames**
Arm CAD	by request	**11 STEP + STL hulls + core lib**
Samples	3, older VS projects	**6, CMake, incl. ArmViewer**
Probe mgmt.	2011 MFC sample	**core lib + written standard**
Help	CHM	**offline HTML site**
Install	proprietary installer	**ZIP / portable extractor, no admin**
Availability	free, by request	**$245, instant download**

HELLO, ARM

```c
#include <armdll32.h>
if (ArmStart(NULL) != ARM_SUCCESS) return 1;  // poll
if (ArmConnect(0, 0) != ARM_SUCCESS) { ArmEnd(); return 1; }
int dof; ArmGetNumDOF(&dof);  // 5 or 6
ArmSetLengthUnits(ARM_INCHES);
ArmSetUpdateEx(ARM_FULL, 100);  // pos + orientation
ArmSetReportPeriod(0);  // free-run (USB)
length_3D tip; angle_3D aim; DWORD btn;
ArmGetTipPosition(&tip);
ArmGetTipOrientationUnitVector(&aim); // axis
ArmGetButtonsState(&btn);  // bitmask
ArmDisconnect(); ArmEnd();
```

SPECIFICATIONS

Library	ArmDll32 / ArmDll64 3.2.10.0 — Win32 and x64, identical API; static CRT; USB and RS-232 serial
Interface	C header (`armdll32.h`), `__stdcall` exports, import libraries for both bitnesses; callable from any language with a foreign function interface (C#/.NET, Python, Java, Node, LabVIEW, MATLAB…)
Operating system	Windows 10 and 11 (earlier versions untested)
Arms supported	i, iL, i+, iL+, PLUS upgrades, M-series (MX, MLX), G2, G2L, 3D, 3DL — 5- and 6-axis variants — over USB or serial
Report rate	1–255 ms metered, or free-run at full hardware rate on current USB arms; 1 ms hardware timestamp
Arm models	11 rigid bodies (STEP AP203 + binary STL) in DH link frames, JSON manifest; i+ series, compatible with i, iL, G and 3D geometry
Build tooling	CMake presets for VS2022 (Win32, x64); samples in C/C++ with prebuilt executables
Documentation	Offline HTML help site, opens in any browser
Packaging	Versioned ZIP and portable EULA self-extractor — any folder, no admin rights, no registry

INSIDE THE DOWNLOAD

```
MicroScribe_SDK_4.0.0/
├ bin/Win32, x64    armdll32.dll · armdll64.dll
├ inc/ lib/        armdll32.h · import libraries
├ samples/          MSConsol · MSTest · Probe_Ref
|                   TurntableDemo · ArmViewer · ArmModelCheck
|                   Probe_Mgr (2011, historical)
├ probe-manager/    MsProbeManager::core, source
├ arm-model/        MsArmModel::core, source
├ models/           11 STEP + 11 STL · arm-model.json
├ help/             offline HTML help site
└ docs/             license · readme · release notes
```

LICENSING

One purchase, one developer license, and the right to ship what you build. The ArmDLL runtime and the arm models remain Revware property, distributed unmodified and under their original names, with the notice “Portions copyright © 1992-2026 Revware, Inc.” in your product.

- ✓ **Royalty-free redistribution of the runtime with your application**
- ✓ **Arm models licensed for use inside your product**
- ✓ **No activation, no keys, no phone-home**

Order online — $245

Instant download after checkout. Future feature releases are separate low-cost updates.

revware.net/microscribe-software/microscribe-sdk-4-0/