

CNC Milling Simulator Pro v1.1.0

End-User Release Document / 最终用户发行说明

This document describes the v1.1.0 release as a whole and applies to every v1.1.0 build. The release channel, per-build changes and test checklist for the specific package you received are in its accompanying release notes.

本文件描述 v1.1.0 版本整体内容，适用于所有 v1.1.0 构建。您所收到的具体软件包 的发布渠道、逐版本更新与测试清单，请见随附的发布说明。

- Version / 版本: v1.1.0
- Document revised / 文档修订: 21 August 2026
- Release channel / 发布渠道: see the release notes supplied with your build / 见随附的发布说明
- Compared with / 对比版本: v1.0, Git initial release **20920a4** (28 May 2026)
- Publisher and copyright owner / 发布者及版权所有: JCZ Laboratory Pte Ltd
- Evaluation licensee / 测试被许可方: General Evaluation User

Release overview / 版本概述

Version 1.1.0 is a substantial update to the original v1.0 CNC milling simulator. It improves compatibility with modern Windows graphics systems, adds cloud-assisted G-code review, introduces safer and faster simulation controls, modernizes project file handling, strengthens OTP-based licensing, and improves startup and runtime feedback.

v1.1.0 是在原始 v1.0 基础上的一次重要更新。本版本提升了现代 Windows 图形系统兼容性，加入云端辅助 G-code Review、更安全和更灵活的仿真控制、Windows 原生文件操作、强化的 OTP 授权，以及更清晰的启动和运行反馈。

v1.0 versus v1.1.0 / 版本对比

Area / 项目	v1.0 initial release	v1.1.0
Windows graphics	OpenGL 2.0 Basic renderer	Prefer Best: Vulkan where supported, with OpenGL fallback
Windows distribution	Development-oriented AppGameKit output	Standalone versioned EXE and Inno Setup installer
Activation	Earlier server authorization flow	OTP verification with server-authoritative status, persistent device identity, signed grants and clock-rollback protection
G-code review	Not available	Review with AI, streamed results, multi-tab context and Review V2 machine/workpiece context
Project files	In-application file browser	Native Windows Open and Save dialogs

Area / 项目	v1.0 initial release	v1.1.0
Simulation speed	Basic fixed speed levels	Safe runtime levels: x1, x2, x4, x8, x16 and Turbo
Run control	Standard run/pause/stop	Run To Line with collision/error-aware early termination
Collision feedback	General visual/audio feedback	Dedicated CNC collision alarm and clearer safety dialogs
Geometry input	More limited numeric handling	Decimal workpiece and cutter geometry supported reliably
Coordinate display	Primarily updated during motion	Coordinate readouts remain calculated while stopped
Startup	Early frames could expose partially rendered content	Swap buffers are cleared before splash; OTP screen is no longer hidden behind splash
First workspace	Previous startup state	Opens a clean blank project in the editor
Packaging	Local runtime state could be carried into packages	Device, license and local preference files are excluded from release installers

Major new features / 主要新功能

Review with AI

The new Review with AI feature sends the submitted G-code and relevant simulator context to the JCZ Lab cloud review service. Results are displayed progressively where streaming is available. Review V2 understands additional machine context, including workpiece geometry and G54-G59 work offsets, and can highlight unsafe rapid movement toward the workpiece.

新增的 Review with AI 会把用户提交的 G-code 及相关模拟器上下文发送至 JCZ Lab 云端评审服务。在支持流式传输时，结果会逐步显示。Review V2 还会使用毛坯尺寸和 G54-G59 工件坐标系等上下文，并可提示快速移动进入工件等风险。

AI Review is an advisory tool. Its output must be checked by a qualified person and must not be treated as the sole authorization to operate physical machinery.

AI Review 仅作为辅助建议。所有结果必须由具备资质的人员复核，不能作为操作真实机床的唯一依据。

Run To Line

Run To Line allows the simulator to execute toward a selected G-code line. If a collision or execution error occurs first, the simulator stops and presents both the relevant safety warning and a Run To Line early-termination message. Timing and dialog queuing have been improved for repeatable behavior.

Run To Line 可让模拟器执行至选定的 G-code 行。如果途中先发生碰撞或执行错误，模拟器会停止，并显示相应安全警告及 Run To Line 提前终止信息。本版本改善了事件时序和对话框排队逻辑。

Runtime simulation speed

Simulation speed can now be changed safely while the application is running. Available levels are x1, x2, x4, x8, x16 and Turbo. Programmed feed rates, spindle values and estimated machining data remain independent from the selected visual simulation speed.

现在可在程序运行期间安全调整仿真速度，支持 x1、x2、x4、x8、x16 和 Turbo。G-code 中的进给、主轴参数及加工数据不会因为界面仿真倍速而改变。

Native Windows file dialogs

Opening and saving CNC projects now uses familiar Windows file dialogs, improving access to Documents, network locations and other folders supported by Windows.

打开和保存 CNC 项目现在使用 Windows 原生文件对话框，可更方便地访问 Documents、网络位置及 Windows 支持的其他文件夹。

Licensing and connectivity / 授权与网络

This package is built in **demo** mode with the **trial** license profile. OTP verification remains enabled through auth.jczlab.com.sg. First activation requires an Internet connection. The displayed evaluation licensee is **General Evaluation User**, so the package is not tied to a specific school, company or customer.

本软件包采用 **demo** 模式及 **trial** 授权配置，OTP 验证仍通过 auth.jczlab.com.sg 开启。首次激活需要网络连接。测试被许可方显示为 **General Evaluation User**，因此软件包不绑定特定学校、公司或客户。

To protect licensing integrity, the application uses a persistent device identifier and a device fingerprint. Signed authorization information may be stored locally to support permitted offline use and detect system-clock rollback. Local activation files are not included in the distributed installer.

为保护授权完整性，程序会使用持久化设备标识及设备指纹，并可能在本机保存签名授权信息，以支持许可范围内的离线使用及检测系统时间回拨。发布安装包不会包含开发或测试机器上的本地激活文件。

System requirements / 系统要求

Minimum / 最低配置:

- Windows 10 or Windows 11, 64-bit
- 64-bit x86-compatible processor
- Graphics adapter and driver compatible with OpenGL 2.0 or later
- Internet access for OTP activation and Review with AI
- Display resolution of at least 1280 × 720

Recommended / 推荐配置:

- Current Windows 11 release
- Intel UHD/Iris Xe, NVIDIA GeForce/RTX, AMD Radeon, Intel Arc, or equivalent GPU
- Current vendor graphics driver
- Vulkan support or OpenGL 3.3 or later
- 1920 × 1080 display or higher

The simulator selects the best renderer available through AppGameKit. A modern GPU may run through Vulkan, while compatible systems can fall back to OpenGL. Microsoft Basic Display Adapter and outdated

generic drivers are not recommended.

模拟器会通过 AppGameKit 选择可用的最佳渲染器。现代 GPU 可能使用 Vulkan，其他兼容系统可回退至 OpenGL。不建议使用 Microsoft Basic Display Adapter 或过旧的通用显卡驱动。

Installation and upgrade / 安装与升级

1. Close any running CNC Milling Simulator Pro instance.
2. Run the setup program supplied with your build, for example `CNC_Milling_Simulator_Pro_Setup_1.1.0_RC1.exe`.
3. Follow the installer prompts. The default installation is per-user and does not require administrator rights.
4. Start the simulator and complete OTP verification when requested.
5. Keep a backup of important CNC project files before installing.

The installer uses the same application identity for upgrades. It intentionally preserves user-created CNC project files while excluding development-machine activation and preference files from the release package.

安装程序使用相同的应用标识执行升级，并保留用户自行创建的 CNC 项目。发布包会排除开发机器上的激活数据和偏好设置。

Important notices / 重要说明

- Check the release notes supplied with your build for its release channel and known issues. Pre-release builds (Beta, RC) may still contain defects.
- Validate important programs independently before using them on physical equipment.
- Never rely solely on collision simulation or AI Review for machine safety.
- Back up CNC projects before installation and testing.
- If a problem occurs, record the Windows version, GPU model, graphics-driver version, renderer displayed by the simulator, reproduction steps, relevant G-code and screenshots or video.

Privacy and submitted content / 隐私与提交内容

Review with AI is a cloud feature. Do not submit confidential, export-controlled or customer-owned G-code unless you are authorized to send it to the JCZ Lab review service. OTP activation sends the information required to validate the account and device.

Review with AI 属于云端功能。除非已获得授权，请勿提交机密、受出口管制或客户所有的 G-code。OTP 激活会发送验证账户及设备所需的信息。

Support information / 问题反馈

When reporting an issue, please include:

- CNC Milling Simulator Pro version as shown in the application, for example `v1.1.0 RC1`
- Windows version and display scaling
- GPU model and graphics-driver version
- Whether Vulkan or OpenGL is shown by the simulator
- Whether OTP activation completed successfully
- Exact steps to reproduce

- Relevant G-code, screenshots or screen recording where permitted

Please remove personal, confidential and customer-identifying information before submitting diagnostic material.

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