Audioms mikroCNC Software for CNC Machine Control User Guide

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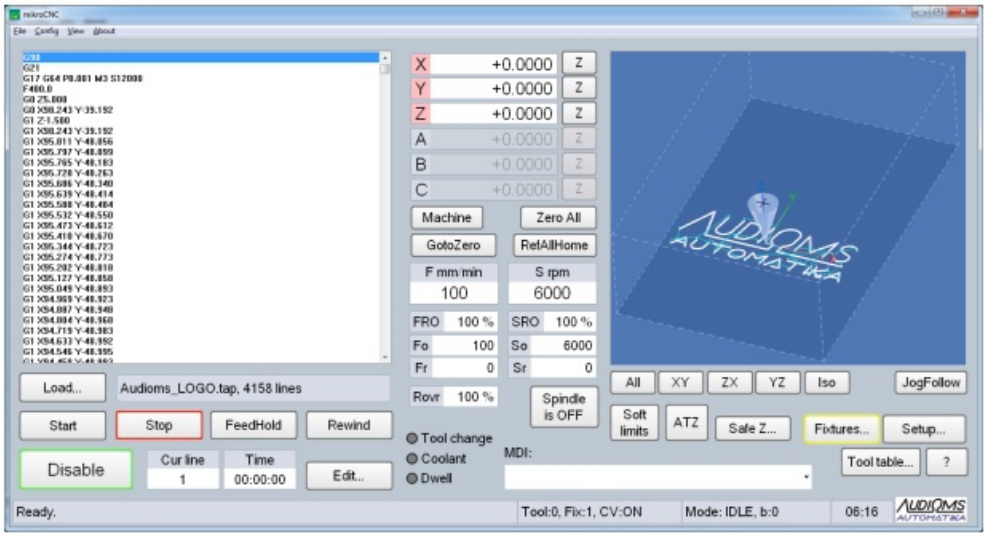


Specifications

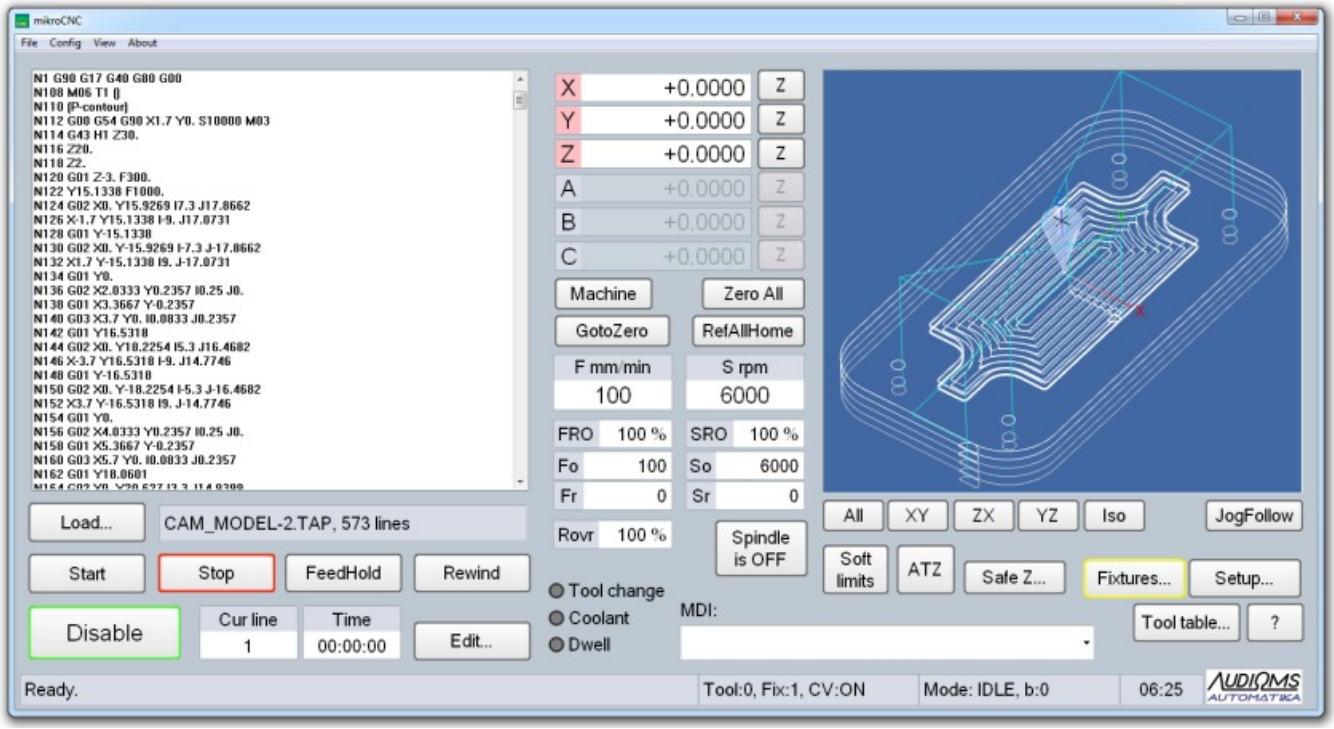
- **Software Name**: mikroCNC
- **Software Type:** CNC Machine Control
- **Supported Operating Systems:** Windows XP/Vista/7/8/8.1/10 (32-bit or 64-bit)
- **Supported Motion Controllers:** ISO-USB-BOX, USB-MC-INT, USB-MC
- Built-in Motion Planner Algorithm Supports up to 6-axis simultaneous motion
- **Acceleration and deceleration options:** Trapezoidal ramp profile, S-profile

Installation

1. Download the software from the website **www.audiohms.com**
2. Unpack the downloaded ZIP archive into a preferred folder on your computer
3. Create a shortcut icon on the desktop for easy access

Description

NOTE: When working with the software it is important to pay special attention to safety at work. Any problems encountered, bug reports and suggestions can be sent to e-mail address: **support@audiohms.com**



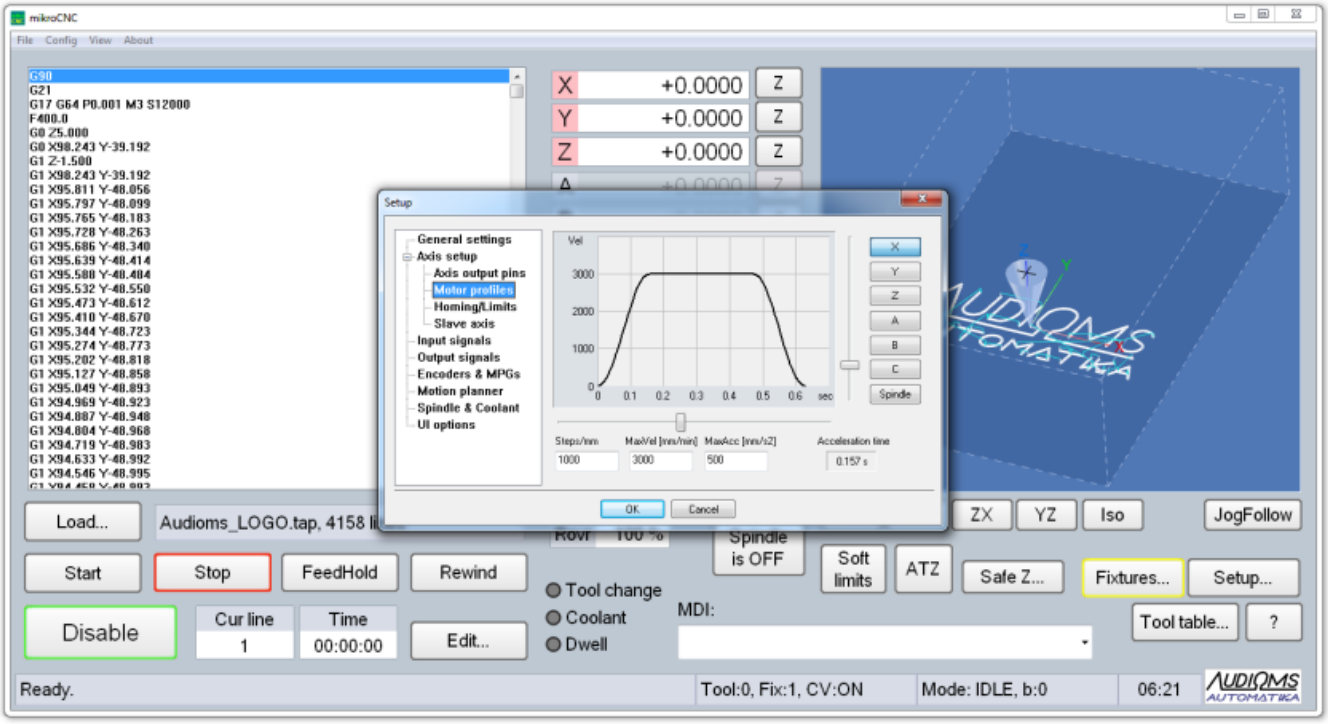


Figure 1.1 **mikroCNC** software

mikroCNC is free software (Figure 1.1) that can interpret standard G and M commands and that turns a computer into the CNC control station. It works on Windows XP/Vista/7/8/8.1/10 with 32-bit or 64-bit architecture.

mikroCNC software currently supports this Audioms Automatika motion controller:

- ISO-USB-BOX motion controller,
- USB-MC-INT motion controller and
- USB-MC motion controller.

The software has a built-in motion planner algorithm that supports simultaneous, synchronized motion of up to 6 axes. For acceleration and deceleration, it is possible to select either a trapezoidal ramp profile or a more advanced S-profile that offers a significant reduction of inertial forces and vibrations.
Software support AutoToolZero – ATZ option.

Installation of the software
The software can be downloaded from the site www.audiohms.com in the form of a ZIP archive. The Archive should be unpacked into the previously made folder and a shortcut icon for the executable can be created on the computer desktop screen.

Supported G commands

- G0, G1 – rapid and linear moves
- G02, G03 – circular&helical moves, interpolated using linear segments
- G04 Px – dwell time in ms/sec
- G21 – set units (ignored)
- G28 – return to home location
- G28.1 – home one or more axes

- G31 – straight probe
- G43 Hn – enable tool length offset compensation
- G49 – cancel tool length offset compensation
- G52 – set work coordinate offsets
- G92 – set coordinates for the current position
- G92.1 – reset work coordinate offsets
- G53 – move in machine coordinates
- G54-G59 – set current fixture
- G54.1 Px – extended set fixture format, x=1-20
- G61 – exact stop mode
- G64 – constant velocity mode
- G17, G18, G19 – work plane selection
- G90 – Absolute positioning
- G91 – Relative positioning
- G90.1 – Absolute I,J, K for arcs
- G91.1 – Relative I,J,K for arcs
- Fxxx – set feed rate
- Sxxx – set spindle rpm speed (controls PWM out)

Supported M commands (macros)

- M0, M1 – program stop
- M3, M4 – start spindle (activate spindle relay)
- M5 – stop spindle
- M6 Tn – tool change
- M7 – mist coolant ON
- M8 – flood coolant ON
- M9 – both coolants OFF
- M10 Px – fast turn ON digital signal Ext#x (laser)
- M11 Px – fast turn OFF digital signal Ext#x (laser)
- M10 Qx – set PWM duty cycle, x=0-255 (laser)
- M98 Px, Ln – call subroutine x, n times
- Ox – define subroutine start
- M99 – return from subroutine
- M30, M2 – program stop and rewind
- M47 – repeat the program from the first line
- #num=value – assign value to g-code variable num
- [#num1 + #num2 * …] – expression using operators + – * / ^
- Nx – line number (ignored)
- (,) – comment open & close
- ; – comment at the end of line

Keyboard shortcuts

mikroCNC software supports the following shortcut keys:

- Ctrl+O GotoZero
- Ctrl+R Run program
- Ctrl+S Stop
- Ctrl+W Rewind
- Ctrl+Space Feedhold
- Ctrl+E Enable/Disable
- Ctrl+L Load
- Ctrl+A Zoom to show all
- Ctrl+P Spindle Start/Stop
- Ctrl+H Homing sequence
- Ctrl+Enter MDI line
- Ctrl+D Diagnostics window
- Ctrl+Tab Jog & Mpg window
- Alt+Enter: Fullscreen
- Left-Right arrows Jog X-axis
- Up-Down arrows Jog Y-axis
- PgUp-PgDown Jog Z axis
- Shift+Jog Keys Full speed
- Ctrl+Jog Keys Full speed

Document revisions

- Ver. 1.0, November 2021., Initial document release
- Ver. 1.1, July 2023., Added new supported hardware. Small text update

FAQ

- **Q: Where can I find technical support for mikroCNC software?**
- A: For any problems encountered, bug reports, and suggestions, you can email **support@audiohms.com**.
- **Q: What are the supported operating systems for mikroCNC software?**
- A: mikroCNC software works on Windows XP/Vista/7/8/8.1/10 with 32-bit or 64-bit architecture.
- **Q: What motion controllers are supported by mikroCNC software?**
- A: mikroCNC software currently supports the following Audioms Automatika motion controllers: ISO-USB-BOX, USB-MC-INT, and USB-MC.
- **Q: What are the different ramp profiles available for acceleration and deceleration?**
- A: mikroCNC software offers the options of trapezoidal ramp profile and S-profile, which offers a significant reduction of inertial forces and vibrations.

SCAN

Audioms Automatika doo Kragujevac, Serbia
web: www.audiohms.com
e-mail: office@audiohms.com
mikroCNC software user's manual, July 2023.

Documents / Resources

	Audioms mikroCNC Software for CNC Machine Control [pdf] User Guide mikroCNC Software for CNC Machine Control, mikroCNC, Software for CNC Machine Control, CNC Machine Control, Machine Control, Control

References

- Audiohms - drajveri za upravljanje koračnim i DC servo motorima
- Audiohms - drajveri za upravljanje koračnim i DC servo motorima
- User Manual