

MaxDuino

Instruction Manual

Day-to-day guide for browsing, playing, and recording tape images

Prepared from the supplied Markdown source

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Summary

MaxDuino Instruction Manual

This guide focuses on day-to-day use of MaxDuino: how to browse, play, and record tape images, plus which file types are supported.

What MaxDuino Does

MaxDuino is an SD-card tape emulator for retro computers. You copy supported tape files to an SD card, browse them on the device, and play them back as cassette audio.

Some firmware builds also support recording, so MaxDuino can capture incoming tape audio and save it as a new file on the SD card. The maximum SD Card size is 32GB.

Before You Start

- Copy your supported tape files onto the SD card.
- Insert the SD card into MaxDuino.
- Connect MaxDuino audio output to the tape/ear input of the target machine for playback.
- For recording, connect the source tape/audio output to the MaxDuino recording input.
- Format support can vary slightly by firmware build, so smaller builds may not include every format listed in this guide.

Basic Controls

- Up / Down: Move through files and folders.
- Play: Open the highlighted folder, or start the highlighted file.
- Play during playback: Pause or resume.
- Stop: Stop playback.
- Stop while browsing inside a folder: Go back to the parent folder.
- Root / Menu: Return to the SD-card root or open the menu, depending on your device layout.
- Record: Start recording on recorder-enabled builds.

Basic Playback

1. Power on MaxDuino and wait for the file list.
2. Use Up and Down to highlight a file or folder.
3. Press Play.
4. If the selection is a folder, MaxDuino enters it.
5. If the selection is a supported file, playback starts.
6. Run the normal LOAD or cassette-loading command on the target computer.
7. Use Play to pause/resume and Stop to stop playback.

Menu Overview

Depending on the firmware layout, the menu is usually opened with Root, or with Root + Stop.

Common menu items include:

- Baud Rate: Used for formats that support speed selection or speed override.
- Record Type: Chooses the recording format when recording is available.
- Motor Ctrl: Lets MaxDuino follow motor control from compatible systems.
- TSXCzxpUEFSW: An advanced compatibility switch used by some TSX, CDT, ZX, and UEF cases.
- Skip BLK:2A: Optional compatibility setting on builds that include it.

For most users, the main menu items that matter are Baud Rate and Record Type.

Playback File Type Support

Target system / family	Supported file types	Notes
ZX Spectrum	.tap, .ttx, .ay	.ay files are wrapped and played as Spectrum-style tape data.
ZX80	.o, .p	.p support is for ZX80 8K ROM conversions.
ZX81	.p	Native ZX81 support.
Jupiter Ace	.tap	Uses Jupiter Ace TAP handling, not Spectrum TAP timing.
Oric	.tap	Native Oric TAP support.
BBC Micro / Acorn Electron / Acorn Atom	.uef	Use uncompressed .uef files. UEFExtractor
MSX	.cas, .tsx, TZX-family MSX data	Some MSX tape files also work when saved in TZX-family containers.
Dragon / CoCo	.cas	Uses the CAS path for Dragon and CoCo-style tape images.
TRS-80	.cas	Auto-detected from .cas data when present in the build.
Amstrad CPC	.cdt	.cdt is handled through the TZX-family playback engine.
Commodore C64 / C16	.tap	Must be native C64-TAPE-RAW or C16-TAPE-RAW TAP images.
Sharp MZ	.mzf, .mzt, .m12	.mzt and .m12 use the same playback path as .mzf.
Memotech MTX	.mtx	Native MTX playback support.
Mattel Aquarius	.caq	Fixed-timing Aquarius support.

Important Notes About Shared Extensions

- .tap is not one universal format. MaxDuino distinguishes between Spectrum, Jupiter Ace, Oric, and Commodore TAP files.
- .cas is also shared across multiple systems. MaxDuino uses the file content to decide between TRS-80 and the generic CAS path used for systems such as MSX, Dragon, and CoCo.
- .tsx belongs to the TZX family. In practice, some MSX files may still work even when they are stored with a .ttx extension instead of .tsx.

Recording

Recording is only available on recorder-enabled firmware builds.

When recording is available:

- MaxDuino saves the new recording into the folder you are currently browsing.
- Filenames are created automatically, such as MaxSave0.ttx, MaxSave1.cas, or MaxSave2.mzf.
- You should choose the desired Record Type in the menu before starting.

Basic Recording Workflow

1. Browse to the folder where you want the recording saved.
2. Open the menu and choose Record Type if needed.
3. Connect the source tape/audio output to MaxDuino.
4. Press Record.
5. Start playback on the source machine or cassette deck.
6. Press Stop to finish and save the recording.

Record File Type Support

Record mode	Saved as	Best use	Notes
TZX ID15	.tzx	Generic direct recording	Best general-purpose fallback capture mode.
ZX Spectrum	.tzx	Spectrum-oriented recording	Still saved as .tZX, but tuned for Spectrum-style input.
MSX CAS	.cas	Native MSX recording	Best choice for MSX when available.
Sharp MZF	.mzf	Native Sharp MZ recording	Preferred over generic capture for Sharp MZ use.

Practical Recording Guidance

- Use TZX ID15 when you want a general direct recording format.
- Use ZX Spectrum when recording Spectrum material and you want the Spectrum-tuned capture path.
- Use MSX CAS for native MSX cassette recordings.
- Use Sharp MZF for Sharp MZ recordings.
- Native record modes are usually the best option when they exist for your target system.

Everyday Tips

- If a file does not load, first confirm that the format is supported by your firmware build.
- For tricky TSX, CDT, or UEF loads, try adjusting Baud Rate and the TSXCzxpUEFSW compatibility option.
- .ay files are intended for ZX Spectrum AY playback and typically need the appropriate AY loader or player on the target machine.
- Use uncompressed .uef files. UEF-Extractor
- Keep .tap and .cas files organised by target platform, since those extensions are used by more than one system.
- Some builds allow extra paused-playback navigation for block-based files such as TZX-family tapes
- If the playback or record is playing up few things to check
 - The SD card needs to be 32GB or less
 - Don't cheap brands
 - SD card needs to be formatted to fat32 (SD formatter)
 - Check your power sources. Sometimes Maxduino seems to be operating but there is not enough stable power to power all the circuits. I've seen this a few times now.

Summary

For normal use, the workflow is simple:

1. Put supported tape files on the SD card.
2. Browse with Up and Down.
3. Press Play to enter folders or start playback.
4. Press Stop to stop or go back.
5. Use the menu for speed, compatibility, and recording format settings.

If your firmware includes recording, choose the right Record Type, record into the current folder, and MaxDuino will create the output filename automatically.

Source: MAXDUINO_INSTRUCTION_MANUAL.md