

Release notes for ZX Touch firmware v1.11

Welcome to Firmware Upgrade v1.11 for the ZX Touch gaming console. This release focuses on expanding functionality, improving the overall user experience, and addressing feedback from our community. We've introduced new features that enhance both usability and customization, while also refining existing options for greater flexibility.

As always, the firmware can be upgraded using the stand-alone FUT application built into the console. This ensures that even if there are issues with the main firmware, the upgrade process remains reliable and accessible. Detailed instructions are available in the user manual.

NOTE: After updating the firmware, it is recommended to reset the device to factory settings to ensure proper initialization of the new parameters introduced in this update. To do this, navigate to the Save/Load settings, press the button with the Home icon to reset, and then select 'Save defaults' to apply these settings on every boot.

CHANGE LOG:

1. Large keyboard

The new firmware for ZX Touch brings a significant improvement for fans of text-based adventures, a staple of the ZX Spectrum experience. While the previous keyboard retained the original layout, its small size made it clumsy for entering the longer commands frequently required in these games. With this update, we've introduced a much larger keyboard that, although it differs from the original key layout, allows for much faster and more comfortable input. The original keyboard is still available and can be switched to the larger version through the Display settings menu, replacing the old layout. To further enhance the text adventure experience, a new button on the left side of the screen appears when the keyboard is displayed, allowing players to activate an expanded view. Although this view distorts the aspect ratio, it improves text readability, making gameplay smoother and more enjoyable. These improvements are especially noticeable when the console is angled on the ZXT stand, as both the larger keyboard and the expanded view work together to make two-handed typing easier and provide a more immersive and natural gameplay experience.

2. Custom Title screen

In the new firmware for ZX Touch, users can now customize the welcome image displayed during startup. Previously, this screen could be toggled on or off via the Display settings menu, but now an additional "custom" option has been introduced alongside the toggle. By selecting the "Set" button, users can upload a .bmp image stored on the SD card in the ZXT_SYSTEM folder to the console's memory. The image file must be named "TitleScreen.bmp" to be recognized.

Once the custom image is uploaded, it is saved in the console's internal memory, and the original welcome image remains intact. The SD card does not need to remain inserted for the custom welcome image to work. Users can choose between the original and the custom

images using the "custom" option in the Display settings menu.

The custom image must be in .bmp format, and .jpg images are not supported. It must also have a maximum resolution of 1024x600. If a smaller resolution is used, the image will be centred on the screen. Aspect ratio is flexible, and the image can be in 16, 24, or 32-bit colour depth; however, 8-bit images are not supported.

3. Hide side sections

To enhance the gameplay experience on ZX Touch, we've added a new feature that allows users to hide the control sections on the left and right sides of the screen. These sections, which can be distracting during gameplay, can now be concealed to provide a more focused view of the emulated screen. This option can be enabled through the Display settings menu.

There are two modes to choose from: Manual and Automatic. In Manual mode, after launching a game, players need to touch the emulated screen with two fingers to hide the control sections. A single finger touch will pause the game and bring the control sections back into view.

In Automatic mode, the control sections are automatically hidden as soon as the game starts. Touching the screen will pause the game and display the control sections again.

4. Colour palette

ZX Touch now features a new option for modifying the colour palette, offering an alternative to the ulaPlus enhancement. While ulaPlus is a well-known graphical upgrade for ZX Spectrum that requires either altering the game code or initializing it with another program, making it accessible only to users with programming skills, this new option simplifies the process.

Accessible through the Display settings menu, this feature allows users to adjust the colour palette of any game running on ZX Touch directly through the console's graphical interface. Users can replace any original Spectrum colour with a 24-bit colour and separate linked colours (lighter and darker shades) into independent colours. Additionally, the Grey scale mode can be enabled to display the currently selected colours as if viewed on a black-and-white television, evoking nostalgia for those who played games on black-and-white TVs in the 80s.

5. Background images

This firmware for ZX Touch introduces a feature that enhances the visual experience of ZX Spectrum games by allowing users to add custom background images using the new ZTG tool. Many ZX Spectrum games feature a fixed colour background, and when this option is enabled, all areas with that colour in the game become transparent, revealing a pre-selected background image.

Users can prepare these background images in any resolution up to 796x600, without being restricted to the ZX Spectrum's colour palette. The images must be in JPEG baseline format, with a width divisible by 4. Regardless of the resolution, the image will be stretched to fit the ZX Spectrum display area, excluding the borders.

To achieve the best visual quality, it's recommended to use resolutions that are multiples of the ZX Spectrum's native resolution (256x192, 512x384, or 768x576), as this prevents pixel blurring during the stretching process.

There are two ways to change background images during gameplay. The first method allows

users to manually switch images using buttons. A physical button can be mapped to a special function, and when pressed, combined with the left or right directions on the second D-pad, the user can cycle through assigned background images. For example, when starting a game, the background image is off by default, but pressing the function button and right on the second D-pad will show the first background image, with further presses switching to the next images.

The second method lets the game itself toggle or change the background images via an OUT instruction in the game's code. This enables backgrounds to change automatically, such as when transitioning between levels, without user intervention. To implement this, the game must support this feature or be modified to use it. Currently, this functionality is tied to port 31, though future updates will allow users to modify this using the ZTG tool. A simple example can be tested in BASIC: set the background colour to black with the command 'PAPER 0' and switch the first background on with 'OUT 31,1.' The second background can be displayed with 'OUT 31,2,' and you can turn off the background image with 'OUT 31,255'. The maximum number of backgrounds is 100, ranging from 0 to 99. In addition to changing the background image, it's also possible to change which colour becomes transparent. This is also achieved using the OUT command on port 31. For example, the command 'OUT 31,200' selects black as the transparent colour, 'OUT 31,201' selects blue, and so on until 'OUT 31,207', which selects white as the transparent colour. When the background is selected for the first time using the OUT command, manual modification is locked. This is indicated by the small padlock icon on the background info panel.

Not all games are suitable for this background image feature, but some, like *Jetpac*, work particularly well with it. We've prepared a ZTG file for *Jetpac* containing several background images, allowing users to experience this functionality firsthand. However, to respect copyright laws, the ZTG file does not include the game code itself. Users will need a legal copy of *Jetpac* and can integrate it into the ZTG file using the ZTG tool to try this example.

6. Hiding the main dashboard

A new option, "Hide main dashboard," has been introduced in the Display settings menu. When enabled, the main dashboard, which features the built-in games, will not be displayed if an SD card with a custom dashboard structure is inserted.

7. Assigning names to user dashboards

In this firmware version, users can assign names to custom dashboards, helping to organize and navigate game collections more effectively. To name a dashboard, hold a finger on an empty space and wait for a few seconds until a menu appears. In this menu, there is a new "Name" option. By selecting it, the keyboard appears, allowing users to rename the dashboard. The new name is then automatically saved to the dashboard file on the SD card.

8. Hiding the first icon on user dashboards

Each custom dashboard always displayed an icon for accessing the SD card content in the first position. With this update, the icon can now be hidden on individual dashboards. To hide the first icon, hold your finger on an empty space on the dashboard for a few seconds until a menu appears, then select the "Hide 1st icon" option. If you wish to bring the hidden icon back, simply select "Show 1st icon" from the same menu.

9. File handling

With the expanded capabilities of the ZTG tool, new file management functions have been introduced to enhance usability. These include copy, cut, paste, rename, delete, and create folder. To access these options, press and hold your finger on a file for a few seconds to bring up the menu. For actions like paste and create, you can also hold down on an empty space in the file list. Folders can only be deleted if they are empty, and the rename function allows you to change only the first part of the file name, not the file extension.

Additionally, a filter option lets you view specific file types such as .pok, .jpg, .bmp, and .txt files, or display all files on the SD card regardless of their extension. Since there are now more filter options than can fit on the screen at once, the filter icons are scrollable, allowing for easy navigation.

10. Image (.jpg) / Text (.txt) viewer

Since files like .jpg and .txt are commonly used during the ZTG generation process, it is now possible to view these files directly. By tapping on the file name, you can launch the viewer. For .jpg files, only those in baseline format with a width divisible by 4 (exactly as required for use in the ZTG tool) can be opened. The viewer will display images at their original resolution and natural size. For example, if you open a background image with a resolution of 512x384, it will appear at that size, not stretched to fit the full screen as it would be when used as a background.

When viewing text files, the first line of text followed by an empty line will be displayed as a title, using a larger and bold font for clarity.

11. Function key

When the new large keyboard is displayed on the screen instead of the smaller one, the sound volume slider becomes unavailable. In this case, the only way to adjust the volume is by going into the Sound settings, which can be inconvenient and slow. To resolve this, a new function button has been introduced on the physical controls.

This function button can be mapped in the "Physical keys" menu, similar to how ZX Spectrum keys are mapped. By default, it is mapped to the left button of the right D-pad. However, it can be remapped to any other physical button if desired. When this function button is pressed, the opposite D-pad can be used to adjust the sound volume using the up and down buttons, while the left and right buttons can be used to toggle or change backgrounds if they are present in the current game.

During volume adjustment, the current volume level is displayed in the top left corner of the screen, while the number of the selected background can be seen on a small panel in the middle right of the screen. If a physical button is assigned as a function button, it can still be used as a ZX Spectrum keyboard key or joystick. Previously, all physical buttons on the console had to be mapped to a ZX Spectrum keyboard key or joystick function, but now it is possible to leave some physical buttons unmapped. The physical button chosen for the function key is highlighted with a blue border in the "Physical keys" menu.

12. Poke Tool

This new tool can be launched from the "Miscellaneous" menu. There are two ways to use it: manually by entering the bank, address, and value, or by using pre-made .pok files from the SD card. Since pre-made .pok files are available for many games, this method is more

convenient.

To use a .pok file, first launch the file from the SD card by simply tapping on it in the file list. Then, when you open the tool, a list of all available pokes will appear on the screen. You can mark which pokes from the list you want to apply and then press the "Apply" button. This, of course, is done while the game is running and at the appropriate point in the game.

For pokes that require input (such as setting the number of lives), an edit box will be provided on the list where you can enter the desired value before pressing "Apply."

In the "Miscellaneous" menu, there is also an "Autoload POK file" option. If enabled, when a game is launched from the SD card, the corresponding .POK file is automatically loaded as well. The name of the POK file must match the name of the game being launched.

13. New ZTG Tool

The new ZTG tool is launched in the same way as before, by holding your finger on the game file from which you want to create a ZTG file. All existing tool functions are retained, with new additional meta data blocks: Info Text, Backgrounds, and POK files. It is also possible to choose whether to include the current console configuration or not, whether to include the game code or not, and whether to transfer the created file directly into the Games Library or generate it locally.

The option to exclude the game code has been introduced to avoid copyright issues when sharing ZTG files between users. For example, if you want to share a prepared file, simply exclude the game code, and the user who owns a legal copy of the game can easily add it to the ZTG file. This also means that ZTG files can now be edited. If you hold your finger on any ZTG file, you can select "Edit" from the menu. For each data block already in the ZTG file, you can choose whether to keep it, exclude it, or replace it with a new one. This applies to the game code as well. If the ZTG file doesn't contain the game code and you include it during the generation process, the tool will search for the game with the same name in the same folder and incorporate it into the ZTG file.

The names of the background files you want to include in the ZTG file must start with the prefix Bxx_, where xx is a number from 00 to 99. If you include an info text block (the file must have the same name as the file you're creating with the .txt extension), it can be opened on the game info screen by pressing the "Story" button. If you include a POK file in the ZTG file, it will be loaded when the game starts, and the pokes will immediately appear in the POKE tool.

14. Saving Game Progress in Multi-load Games

The ZXT has the ability to save game progress in three memory slots using the touchscreen buttons MS1, MS2, and MS3 for saving, and MR1, MR2, and MR3 for loading. However, an issue arises with multi-load games. Multi-load games stored in a .tap file do not load the entire game at the start but only a portion. After completing a certain level or set of levels, the next parts are loaded. The problem occurs when we save the game after loading the second part. When restarting from the beginning, the tape position is no longer aligned with where the game was saved. This leads to incorrect loading of the next part, potentially causing confusion or errors. In this firmware, the issue is resolved by saving the tape position along with the processor registers and ZX Spectrum memory. This ensures that upon restarting the game and loading the saved position, everything is correctly aligned.

15. USR0 mode

Some demos and games require the ZX Spectrum 128K to operate in **USR 0 mode** for proper functionality. In this mode, the Spectrum pages in the 48K ROM, making the system behave like it's in 48K mode, but with access to the page register and the ability to use AY sound.

On the ZXT console, this mode can be enabled via an additional option USR0 found under the Autoload (.TAP,.TRD) parameter in the Miscellaneous Settings. When this option is activated, the program will start in USR 0 mode, ensuring compatibility with software that requires this specific configuration.

16. Game Rewind

A new **Game Rewind** option has been introduced in the **Miscellaneous settings**. When enabled, this feature allows players to rewind gameplay after pausing. Once you pause the game, a green text label appears on the right side of the screen showing **REW: 0s**. Using the left and right buttons on the left D-pad, you can go back in time, and the label will update to **REW: xs**, where **x** represents the number of seconds you have rewound. After pressing play, the game resumes from the chosen point in the past.

Additionally, you can adjust the maximum duration the console can "remember" the gameplay in the past, which can be set anywhere between 9 and 62 seconds. Increasing this value makes the rewind steps larger, while decreasing it allows for finer, shorter steps. This provides a trade-off between the precision of rewinding and how far back you can go. This feature is especially useful for undoing mistakes—if, for example, you lose a life in the game, you can rewind a few seconds and try again with a different approach.

17. New built-in games

In this firmware, 10 new built-in games have been added, with special thanks to the creators for allowing us to include their games:

- **Toofy In Fan Land** (Paul Jenkinson)
- **Toofy's Winter Nuts** (Paul Jenkinson)
- **Toofy's Nutty Nightmare** (Paul Jenkinson)
- **Babyman vs Manbaby** (PuttyCAD / 100 Tin Soldiers)
- **Babyman vs Nappy Bird** (PuttyCAD / 100 Tin Soldiers)
- **Clone Zoo** (PuttyCAD / RichPea)
- **Gherbert Groundhog in Save The Date** (PuttyCAD / Psychic Parrot)
- **Lockdown Town ZX** (PuttyCAD / 100 Tin Soldiers)
- **Lockdown Town ZXMas** (PuttyCAD / 100 Tin Soldiers)
- **Lockdown Town ZXWeen** (PuttyCAD / 100 Tin Soldiers)

Two games, “Babyman vs Manbaby” and “Babyman vs Nappy Bird”, are available in two versions. The first is the standard edition, while the second is a special edition created specifically for the ZX Touch, utilizing the background image feature.

Special thanks for that!