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THE RECREATED

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User Manual (Quick Start)

v1.0.3 6th December 2015

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Unlike all of the existing and pending recreated devices - which are 20th century solutions to a 21st century opportunity ... the Recreated ZX Spectrum is a 21st century solution to a 21st century opportunity.

The most successful recreated devices to date, epitomise the 20th century solution ... a fixed number of games embedded in the device and wires ... everywhere. Wires for power, wires to the screen ... usually fuzzy composite video ... and quite possibly wires to the controller too. In the nineties this was the only solution. In the noughties this may have been an acceptable solution. For the teenies ... this is just not good enough. HDMI is a must. Wireless is a must. Access to multiple sources of content is a must. Compatibility with phones and tablets ... as well as Macs, PCs ... even connected TVs ... is a must.

The Recreated ZX Spectrum (and the associated apps and web apps) offers all of this now. It's also adaptable to future ... as yet unforeseen ... developments. To us, creating a retro device doesn't mean copying retro concepts or employing retro tech. The original Sinclair ZX Spectrum was an innovation and we are determined that the Recreated ZX Spectrum be equally innovative.

Given this, please read the following information carefully as your preconceptions about what a recreated device can be, may be about to be dispelled.

To view a complete User Manual, please visit RecreatedZXSpectrum.com

by Charlie Huxter

edited by Steve Wilcox and James McKay

User Manual (Quick Start)

IMPORTANT NOTICE: The following factory settings are (or may be) applied to the Recreated ZX Spectrum (depending upon the variant).

- **Locked** to its 'Game Mode' (all 'Game Mode' functions available, limited 'QWERTY Mode' functions available - only keys 1 through 0, D and Enter are available).

- **Unlocked** (all 'Game Mode' functions available, all 'QWERTY Mode' functions available).

If the Recreated ZX Spectrum is **Locked** it can easily be **Unlocked** using the **FREE Recreated ZX Spectrum app** (or ONLINE web app). For a full description of all 'QWERTY Mode' functions available and for a full explanation of how to access them, go to RecreatedZXSpectrum.com and download the complete User Manual.

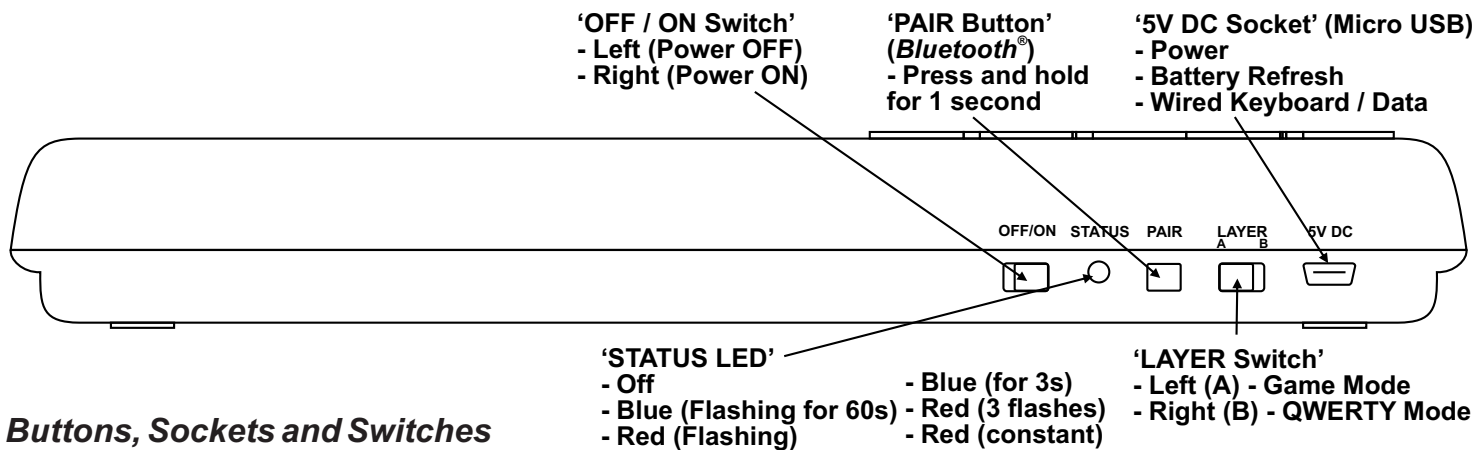
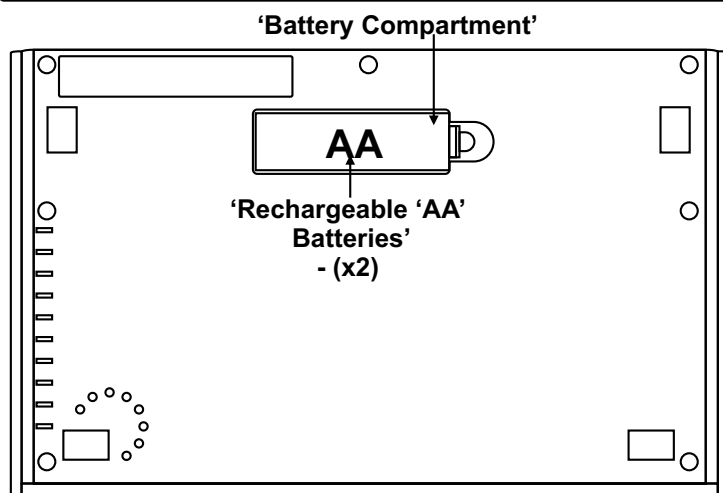
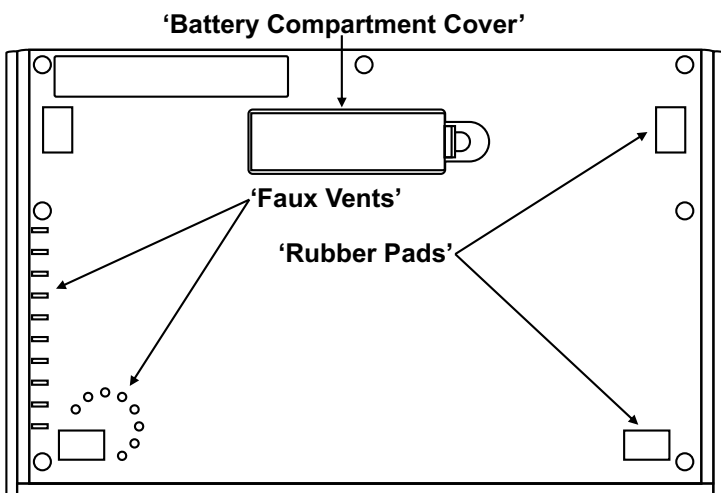
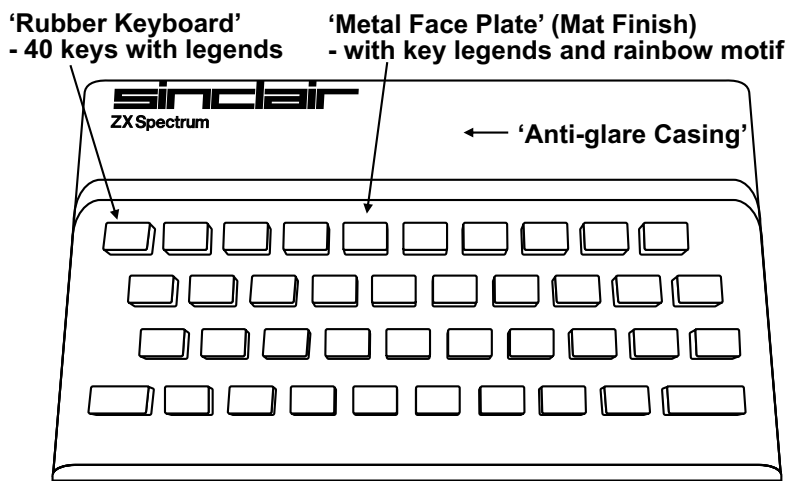
1 - The Recreated ZX Spectrum - At a Glance

The Recreated ZX Spectrum - Overview

This User Manual (Quick Start) describes the Recreated ZX Spectrum for phones, tablets, Macs, PCs and (to a limited extent) connected TVs.

IMPORTANT: BEFORE USING THE RECREATED DEVICE, PLEASE VIEW THE SHORT FILM - "OPERATING GUIDE". IT CAN BE FOUND AT www.RecreatedZX Spectrum.com

To download the complete User Guide please go to RecreatedZX Spectrum.com or search online using the search term, 'Recreated ZX Spectrum'.



Buttons, Sockets and Switches

Most of what you do with the Recreated ZX Spectrum will be done through the 40 keys of the **Rubber Keyboard**. A few physical buttons and switches control basic functions, such as turning on and turning off the Recreated ZX Spectrum and connecting it to other devices.

OFF / ON Switch: Use it to turn the Recreated ZX Spectrum OFF and ON.

PAIR Button (Bluetooth®): Use it to make the Recreated ZX Spectrum discoverable by other *Bluetooth®* devices.

STATUS LED: Use it to monitor the Recreated ZX Spectrum's status. **See complete User Guide for details.**

LAYER Switch: Use it to switch between the Recreated ZX Spectrum's 'Game Mode' - Left (A) and its 'QWERTY Mode' - Right (B).

5V DC Socket (Micro USB): Use it to power the Recreated ZX Spectrum (when no batteries are fitted), to refresh the batteries (when rechargeable batteries are fitted) and to use it as a wired keyboard or to connect it to an accessory.

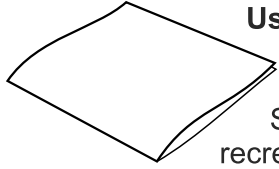
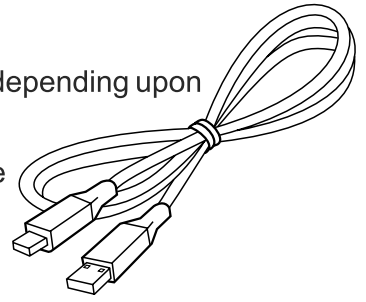
WARNING: Fit rechargeable batteries to avoid damaging the recreated device when the **5V DC Socket (Micro USB)** is in use. If in doubt, remove the batteries before connecting the **(USB) Cable**.

Battery Compartment Cover: Use it to access and to enclose the **Battery Compartment**.

Accessories. What's Included? What Else Is Needed?

The following accessories are (or may be) included with the Recreated ZX Spectrum (depending upon the variant) or may be included as downloadable items.

(USB) Cable. The **(USB) Cable** is a USB to Micro USB connector. Use it to connect the Recreated ZX Spectrum to: power it (when no batteries are fitted), refresh the rechargeable batteries (when rechargeable batteries are fitted), use it as a wired keyboard or connect an accessory.



User Manual: The **User Manual** is a downloadable document and in addition to being an extension to this document it includes a re-print of the original Sinclair ZX Spectrum user manuals, 'Introduction Sinclair ZX Spectrum' and 'BASIC Programming Sinclair ZX Spectrum'. Use it to: improve your understanding of the features and benefits of recreated device and to learn how to program in Sinclair BASIC.

FREE Recreated ZX Spectrum app: The **FREE Recreated ZX Spectrum** app is a downloadable app.

 [RecreatedZXspectrum.com](https://recreatedzxspectrum.com) →

Recreated ZX Spectrum ONLINE web app:

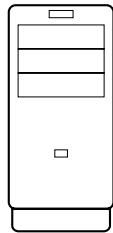
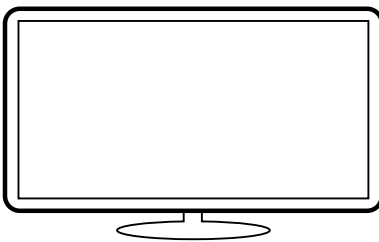
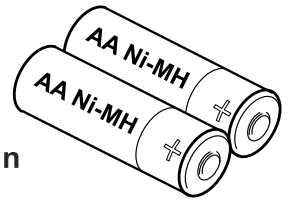
The Recreated ZX Spectrum ONLINE web app is available online. The app and the ONLINE web app

include Chuckie Egg, Sinclair BASIC and a huge game bundle. New games are available with each update of the app and the ONLINE web app. Use them to: play games, program in Sinclair BASIC and access the recreated device's additional features and exclusive content.

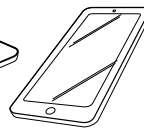
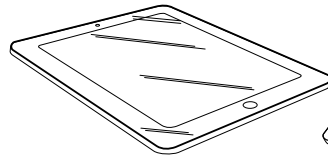


The following accessories are (or may be) required to operate the Recreated ZX Spectrum (depending upon the variant).

Rechargeable 'AA' Battery (x2). Ni-MH recommended, (not included). Not required when the recreated device is being used as a wired USB keyboard.



A compatible Phone, Tablet, Mac, PC or (now or in the future) connected TV device.



2 - Getting Started

Connecting to a compatible Phone, Tablet, Mac, PC or connected TV

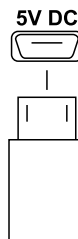
To connect the Recreated ZX Spectrum to a compatible phone, tablet, Mac, PC or connected TV by Bluetooth® ('Wireless'): Turn the Recreated ZX Spectrum ON. The **STATUS** LED will illuminate (blue) for approximately 3 second. Press and hold the **PAIR** Button for approximately 1 second. The **STATUS** LED will flash (blue). Whilst the **STATUS** LED is flashing (blue), the Recreated ZX Spectrum is discoverable by other **Bluetooth**® devices. Refer to the user guide provided with your compatible device for instructions on how to complete the connection. As soon as the Recreated ZX Spectrum is connected, its **STATUS** LED will stop flashing (blue) and it can be used.

If the connection is not complete within about one minute, the **STATUS** LED will stop flashing (blue) and the Recreated ZX Spectrum will no longer be discoverable by other **Bluetooth**® devices. If this happens, repeat the steps outlined above.

The Recreated ZX Spectrum features **Bluetooth**® 3.0 It supports Secure Simple Pairing and so does not require a PIN Code when pairing with other devices featuring **Bluetooth**® 2.1 and later.

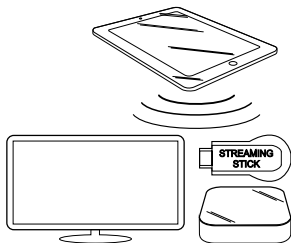
Note: If you have difficulty completing the connection between the Recreated ZX Spectrum and other **Bluetooth**® devices, refer to the user guide provided with your compatible device for instructions on finding and adjusting its **Bluetooth**® settings. Once there, check whether Recreated ZX Spectrum or similar is listed. If it is, remove it. Then, repeat the steps outlined above.

To connect the Recreated ZX Spectrum to a compatible phone, tablet, Mac, PC or connected TV by USB ('Wired'): Turn the Recreated ZX Spectrum OFF. Use the included (USB) Cable to connect the 5V DC Socket to a compatible device. Turn the Recreated ZX Spectrum ON. The STATUS LED will illuminate (pink) for approximately 1 second. As soon as the Recreated ZX Spectrum is connected it can be used.



Streaming to a Connected TV

A connected TV (sometimes referred to as a Smart-TV) is either a TV with integrated internet capabilities or a TV to which internet capabilities have been added by connecting a streaming device to its HDMI socket. Streaming devices include but are not means limited to those provided by Apple® (Apple TV®), Google® (Chromecast®), Amazon® and Roku®.



To use the Recreated ZX Spectrum with content being streamed from a compatible phone, tablet, Mac / PC to a connected TV: Follow the steps outlined above to connect the Recreated ZX Spectrum to a compatible device. Refer to the user guide provided with your compatible device and to the user guide provided with your connected TV or streaming device for instructions on streaming the content (e.g. games, apps or applications) to the connected TV. As soon as the Recreated ZX Spectrum is connected (and the content is streaming to the connected TV) it can be used.

Apps and Web Apps

The Recreated ZX Spectrum is an open system. This means that anyone can make games, apps and applications available for the recreated device. To get you started the Recreated ZX Spectrum includes the FREE Recreated ZX Spectrum app and the Recreated ZX Spectrum ONLINE web app (as downloadable items).

FREE Recreated ZX Spectrum app: Using your compatible device search your app store(s) for the **FREE Recreated ZX Spectrum app**, using the search term 'Recreated ZX Spectrum' ... then download the app. Open the app. So long as the Recreated ZX Spectrum is connected and its 'LAYER Switch' is set to 'A', it can be used with the app.

Recreated ZX Spectrum ONLINE web app: Using your compatible device go to RecreatedZXSpectrum.com and locate the Recreated ZX Spectrum ONLINE web app... then bookmark it or create a short cut on your home screen or desk top. Open the web app. So long as the Recreated ZX Spectrum is connected and its 'LAYER Switch' is set to 'A', it can be used with the web app.

Other apps and web apps for the Recreated ZX Spectrum are available from other vendors, (yet more are in development and will be available in the future). All these other apps and web apps can be found by using your compatible device to search your app store(s) and ONLINE, using the search term 'Recreated ZX Spectrum'. A list of these other apps and web apps for the Recreated ZX Spectrum can be found at RecreatedZXSpectrum.com. The list is kept under review and will continue to be revised well in to the future.

Note: If you are not able to find the FREE Recreated ZX Spectrum app or the Recreated ZX Spectrum ONLINE web app then the likelihood is that your device is not yet supported by the app or the web app. However, support for more devices is planned, so do please check back from time to time to find out if and when your device is supported by the app and the web app.

Technical Support

Available online at: RecreatedZXSpectrum.com and by email to: zxspectrum@elite-systems.co.uk

FCC Operation Guide - This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



FCC Compliance Statement - This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

IMPORTANT NOTE - FCC Caution Statement: Changes or Modifications not expressly approved by the party responsible could void the user's authority to operate this device.

Disposal and Recycling Information - When this product reaches its end of life, please dispose of it according to your local environmental laws and guidelines.

This marking on the product, accessories or literature indicates that the product and its electronics accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of how and where to take these items for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

Statement of Compliance with EU Directives - Hereby, Ceratech Accuratus Limited declares that this product is in compliance with the essential requirements and other relevant provisions of Directives, as applicable.



Trademark Information - The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Ceratech Accuratus Limited is under license. Other trademarks and trade names are those of their respective owners.

Mac, iOS, iPhone and iPad are registered trademarks of Apple Inc., registered in the U.S. and other countries.

ACCURATUS® Accuratus is a registered trademark of Ceratech Accuratus Limited. All other trademarks are the property of their respective owners. Ceratech Accuratus Limited assumes no responsibility for any errors that may appear in this manual.

3: Device-Layer Basics

Now that you have set up the Recreated ZX Spectrum, you will want to use it. The rest of this User Manual, along with the re-prints of the Introduction and BASIC Programming manuals (supplied with the original Sinclair ZX Spectrum and referred to in Appendix A and Appendix B below), tell you how to do that. To paraphrase what was written about the original Sinclair ZX Spectrum, “If you’ve already started pressing the keys on the Rubber Keyboard to see what they do then good; you cannot harm it in this way. Be bold. Experiment. If you get stuck, remember ... you can always reset the app by closing it down and opening it up again.”

The Recreated ZX Spectrum’s ‘Game Mode’ has been perfected for iOS / Android apps and for games in general ... its ‘QWERTY Mode’ has been honed for applications requiring access to all the functionality of a full-size keyboard.

The Game Mode

The Recreated ZX Spectrum is, by design, a wireless controller for use with iOS (and selected Android) devices, games and apps including the FREE Recreated ZX Spectrum iOS / Android apps. Currently available Bluetooth keyboards when used with iOS (and selected Android) devices can’t track key releases, limiting their use to simple word processing tasks or to use as controllers for slow role playing games. The Recreated ZX Spectrum’s custom hardware and clever firmware has been specifically-engineered to offer optimal response for fast ‘twitch’ games (and indeed other apps) on iOS (and selected Android) devices. Developers are encouraged to use the Recreated ZX Spectrum’s ‘Game Mode’ as a wireless controller for their own iOS and Android apps. A ‘Developer Guide’ can be found at RecreatedZXspectrum.com.

The QWERTY Mode

The Recreated ZX Spectrum is also, by design, a QWERTY keyboard for use with applications - for phones, tablets, Macs / PCs (and (now or in the future) connected TVs) - requiring access to all the functionality of a full-size keyboard. As the Recreated ZX Spectrum’s Rubber Keyboard has only 40 keys, a few of the keys - notably the ‘CAPS SHIFT’ and ‘SYMBOL SHIFT’ keys - are reserved in its ‘QWERTY Mode’ to provide access to the additional keyboard functionality not anticipated by the designers of the original Sinclair ZX Spectrum.

As a consequence of these keys being reserved, applications requiring access the Recreated ZX Spectrum’s ‘CAPS SHIFT’ and ‘SYMBOL SHIFT’ keys, (including ZX Spectrum games and applications run under emulation) will not function 100% correctly with its ‘QWERTY Mode’. To get the most out of the Recreated ZX Spectrum, users are encouraged to seek out games, apps and applications, (including ZX Spectrum games and applications run under emulation) which have been optimised for use with the Recreated ZX Spectrum’s ‘Game Mode’. Such games, apps and applications can be found by searching your app store or searching ONLINE using the search term ‘Recreated ZX Spectrum’. A list of these apps and ONLINE web apps for the Recreated ZX Spectrum can be found at RecreatedZXspectrum.com For similar reason, developers are encouraged to use the Recreated ZX Spectrum’s ‘Game Mode’ for their own games, apps and applications and to market them as optimised for the Recreated ZX Spectrum.

Factory Settings Locked / Unlocked

The following factory settings are (or may be) applied to the Recreated ZX Spectrum (depending upon the (variant)).

- Locked to its ‘Game Mode’ (all ‘Game Mode’ functions available, limited ‘QWERTY Mode’ functions available).
- Unlocked (all ‘Game Mode’ functions available, all ‘QWERTY Mode’ functions available).

If the Recreated ZX Spectrum is Locked it can easily be Unlocked using the FREE Recreated ZX Spectrum app (or ONLINE web app). To check whether it is Locked or Unlocked, follow the steps outlined above to download the app and connect the Recreated ZX Spectrum. Open the app (or ONLINE web app), select ‘Play’ and launch BASIC. Ensure the Recreated ZX Spectrum is set to its ‘QWERTY Mode’, if not slide the device’s LAYER Switch to the right / to ‘B’ (when viewing it from the rear). Press any one of the keys on the top row of the Rubber Keyboard (labelled ‘0’ to ‘9’) to confirm that it is connected; observe the on-screen response. Then press any one of the keys on the second row of the Rubber Keyboard (labelled ‘Q’ to ‘P’).

If the Recreated ZX Spectrum is Locked, there will be no on-screen response to pressing a key on the second row. To Unlock it, select ‘Unlock’ (in the app or in the ONLINE web app) and follow the on-screen instructions.

If the Recreated ZX Spectrum is Unlocked, there will be an on-screen response to pressing any one of the keys on the second row. No further action is required.

However, before using the FREE Recreated ZX Spectrum app (or the ONLINE web app) ensure the Recreated ZX Spectrum is set to its ‘Game Mode’, if not slide the device’s LAYER Switch to the left / to ‘A’ (when viewing it from the rear).

Symbol Layer - Optimisation for use with iOS / Mac, Android and Windows Devices

Once the Recreated ZX Spectrum is Unlocked it can be optimised for use with compatible iOS/Mac, Android and Windows devices by selecting the recreated device's corresponding 'Symbol Layer' The recreated device's 'Symbol Layer(s)' are accessed by pressing the following combinations of keys simultaneously: SYMBOL SHIFT +

- CAPS SHIFT + Z - Sets the 'Symbol Layer' to iOS/Mac
- SYMBOL SHIFT + CAPS SHIFT + V - Sets the 'Symbol Layer' to Android
- SYMBOL SHIFT + CAPS SHIFT + X - Sets the 'Symbol Layer' to Windows

Note: These keys have to be held down for a few seconds to perform the change of 'Symbol Layer'. This change will be stored in the recreated device's memory, if the recreated device is turned off. The default 'Symbol Layer' is the 'Symbol (iOS/Mac) Layer'.

Keyboard Shortcuts - Label

Once the Recreated ZX Spectrum is Unlocked and when its LAYER Switch is set to QWERTY Mode - Right (B), its additional keyboard functionality can be accessed. Many of the popular keyboard shortcuts are conveniently listed in the 'Keyboards Shortcuts' label included with the Recreated ZX Spectrum. The label has been designed so that it can be applied to the recreated device's anti-glare casing for convenient reference.

Keyboard Shortcuts - As the Recreated ZX Spectrum's Rubber Keyboard has only 40 keys, a few of the keys - notably the 'CAPS SHIFT' and 'SYMBOL SHIFT' keys - are reserved in its 'QWERTY Mode' to provide access to the additional keyboard functionality not anticipated by the designers of the original Sinclair ZX Spectrum.

CAPS SHIFT + SYMBOL SHIFT +			Z = Switch to Mac/iOS keyboard setting
CAPS SHIFT + SYMBOL SHIFT +			X = Switch to Windows keyboard setting
CAPS SHIFT + SYMBOL SHIFT +			V = Switch to Android keyboard setting
CAPS SHIFT +	1 = Escape	I = Insert	A = Windows/Apple key
	2 = Caps Lock	O = Delete	C = Ctrl
	5 = Cursor Left	H = Home	O = Alt
CAPS SHIFT +	6 = Cursor Down	E = End	G = Alt Gr
CAPS SHIFT + SYMBOL SHIFT +	7 = Cursor Up	U = Page Up	1-9 = F1-F9
	8 = Cursor Right	D = Page Down	Q = F10
	0 = Backspace	T = Tab	W = F11
	Space = Break	P = Print Screen	R = F12

QWERTY Mode - List of Functions

Once the Recreated ZX Spectrum is Unlocked and when its LAYER Switch is set to QWERTY Mode - Right (B), its additional keyboard functionality can be accessed. The additional keyboard functionality and how it is accessed is represented in the following images.

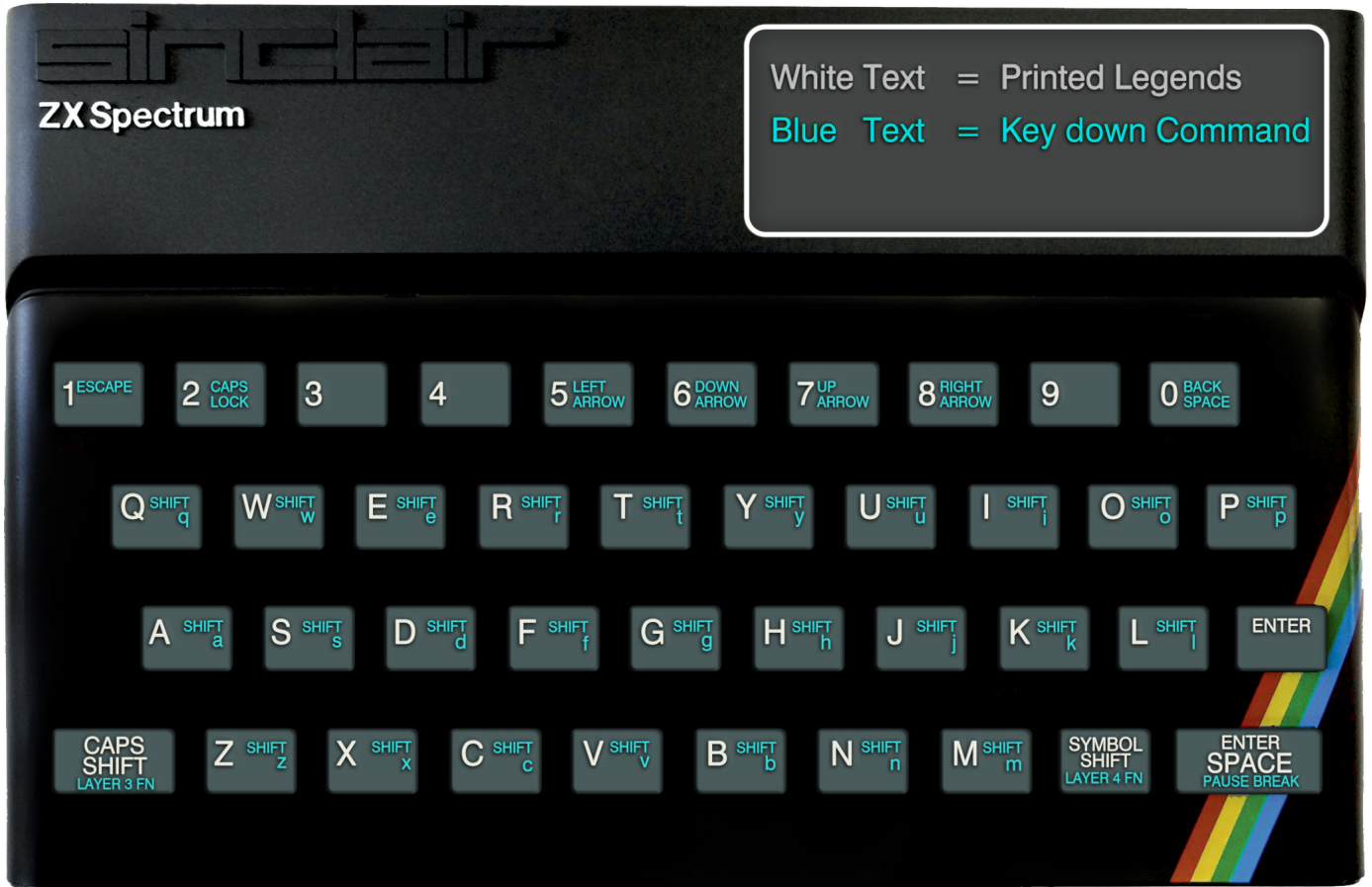
QWERTY MODE - LOCKED



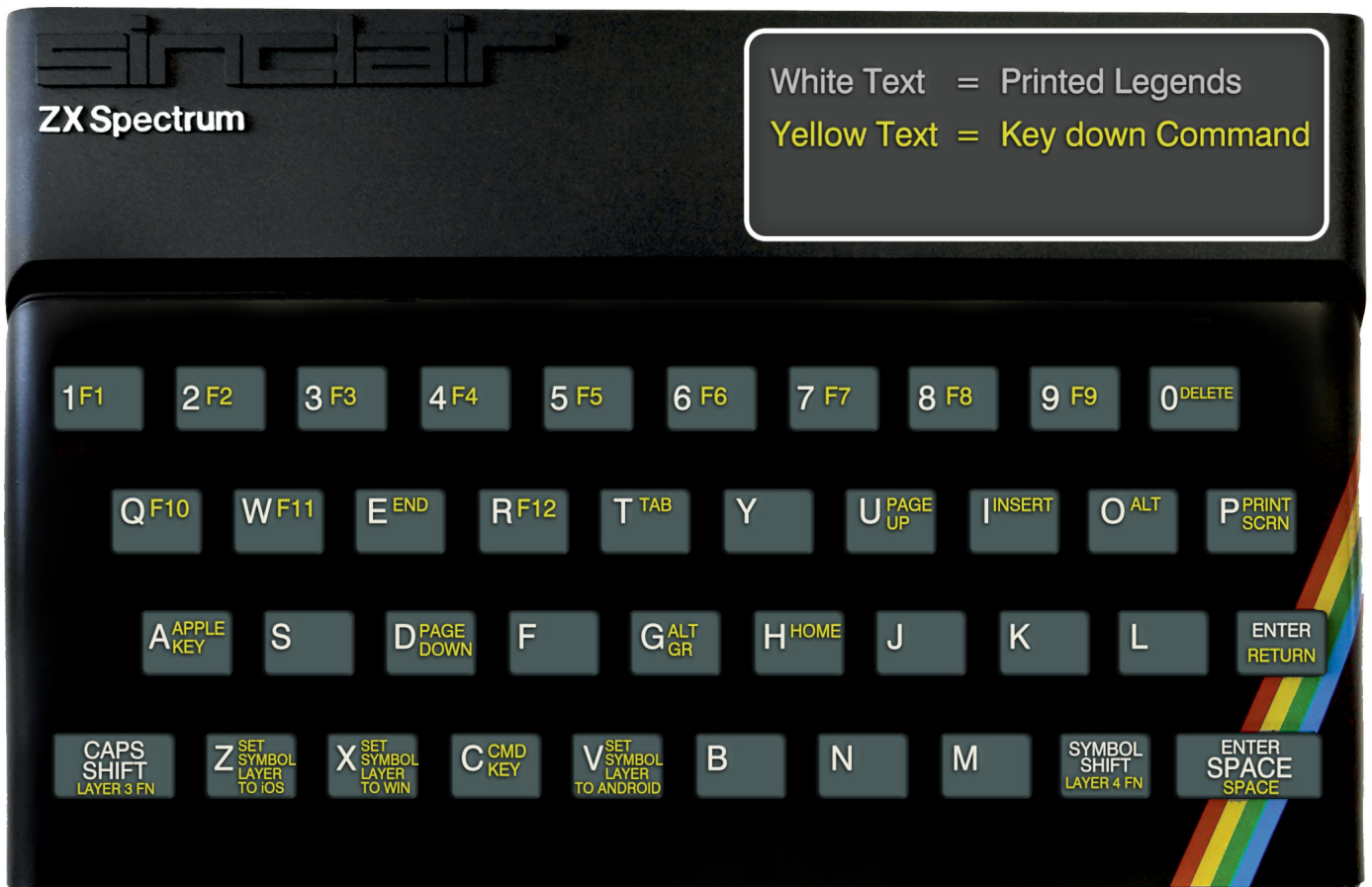
QWERTY MODE - UNLOCKED



QWERTY MODE - UNLOCKED - CAPS SHIFT HELD DOWN



QWERTY LAYER - MODE - CAPS SHIFT AND SYMBOL SHIFT HELD DOWN



QWERTY MODE - UNLOCKED - SYMBOL LAYER FOR (ANDROID / MAC / iOS / WINDOWS)



Frequently Asked Questions / Troubleshooting

Note: all Bluetooth devices have a power saving mode. If your recreated device has been dormant for a little while you may need to tap a key or two, or even turn it off and turn it back on again, to restore the pairing.

SHORT FILMS - Operating Guide / Introducing ... the Recreated ZX Spectrum

To coincide with the release of the recreated device we've published two short films - one short (around 5 minutes), the other somewhat longer. You can view the short films at the following link. They're also being distributed via the associated iOS and Android app and the ONLINE web app. Feel free to distribute it yourself.

Here are the links:

Introducing the ... Recreated ZX Spectrum - <https://vimeo.com/137649075>

Operating Guide ... Recreated ZX Spectrum - https://www.youtube.com/watch?v=p5EQ40_2j_w

If you've not so already we'd strongly recommend you view the Operating Guide before first using your recreated device and come back to it for a refresher from time to time.

BATTERIES / LEDs

1. When no batteries are fitted.

Connecting the Micro USB to the 5V DC causes the LED to flash red three times, then go out.

The recreated device is now ready to be used as a wired keyboard. (See also, Unlocking)

Moving the Off / On switch does nothing.

Press the Pairing does nothing.

2. When rechargeable batteries are fitted.

Connecting the Micro USB to the 5V DC causes the LED to flash red continually (the batteries are being recharged), unless the batteries are already fully charged, in which case the LED is red continually

The recreated device is now ready to be used as a wired keyboard. (See also, Unlocking)

Moving the Off / On switch does nothing.

Press the Pair button does nothing.

3. When no batteries are fitted and the Micro USB is not connected the 5V DC, the recreated device cannot be used.

4. When rechargeable batteries are fitted and the Micro USB is not connected to the 5V DC, the recreated device can be used as a wireless keyboard (unless the batteries are completely discharged).

Moving the Off / On switch to On causes the LED to go Blue for three seconds, then go out. The recreated device is switched on.

Press the Pair button (when the Off / On switch is set to on) causes the LED to flash blue for 60 seconds. The Bluetooth device is discoverable and available to pair with a phone, tablet, Mac, PC even connected TV.

This section will be updated in response to your feedback.

Frequently Asked Questions / Troubleshooting

UK DEVICE & BROWSER SETTINGS

When using your recreated device with a phone, tablet, Mac, PC or connected TV ensure that the compatible device and any applications which you may be using with it e.g. browsers, are set to UK settings. If you do not do this then your recreated device may appear to mal-function, for example you may see unexpected characters appear in response to key presses. Setting your compatible device's settings to UK will almost always solve this issue.

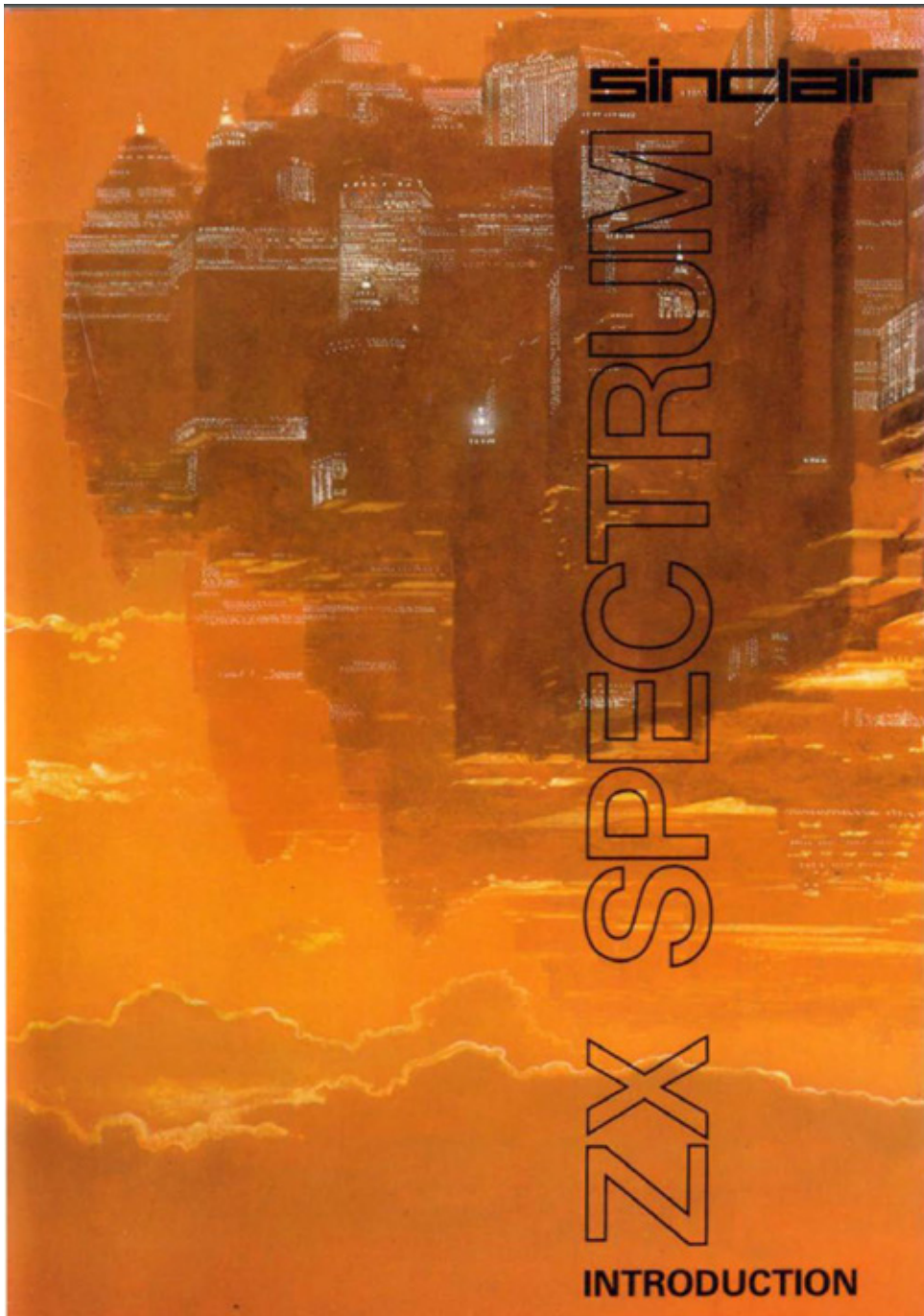
Appendix A

Introduction Sinclair ZX Spectrum (Re-print)

A re-print of the original Sinclair ZX Spectrum user manual, 'Introduction Sinclair ZX Spectrum' can be found at :-

RecreatedZXSpectrum.com

and at [this link](#).



BASIC Programming Sinclair ZX Spectrum (Re-print)

A re-print of the original Sinclair ZX Spectrum user manual, 'BASIC Programming Sinclair ZX Spectrum' can be found at :-

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and at [this link](#).

