

## CHANGE LOG

### 19/11/22 Version 44

Added "Go to sample" button to the Pulses chart page.

Added "Total waves in range:" label.

Added baud rate reporting when finding a mean carrier tone wavelength.

Now allows TAP with an invalid file data size field to be loaded, giving a message.

Improved colouring of 300 baud rate Atom files by allowing the final byte to not have a trailing extra wave.

Fixed filenames of COL files containing Unicode characters with the 32-bit Windows edition.

### 16/09/22 Version 43

Disabled the 'CSW file creator' controls with the 64-bit Windows edition.

Added automatic loading of point colours from a COL file when opening a CSW or TAP file.

Added wavelength checking with the single wave encoding buttons.

Added button for writing little endian coloured bytes to TZX files.

Replaced the mean wavelengths algorithm for 2 or 3 wavelengths with one called K means.

Improved the marks and legend and added colour coding on the 'Mean wave statistics' page.

Updated sampling rates table and computers table for TAP files from the Vice V3.6.1 manual.

Fixed a page number fault with the analysis chart that occurred after the number of pages was reduced.

Renamed "Total Spectrum bytes in range:" label to "Total 'single wave encoding' bytes in range:" and swapped its position with the "Total pulses in range:" label.

Made the time span on the 'File summary' page and the 'Pulses chart' page have 8 decimal places including trailing zeroes instead of 6, 7 or 8 and without trailing zeroes.

Removed the Dragon colouring button.

Changed to a new icon.

### 03/08/22 Version 42

Added wave colouring buttons for BBC 8E1 and 8O1 data.

Added 'Odd/Even points are negative pulses' to the file summary page for TAP files.

Made two colouring buttons from one, for Commodore Vic-20/64 and Plus 4 and fixed colouring to include the data end mark.

Fixed the colouring of Commodore bytes which should be little-endian.

Fixed 'Forward 50' button on the 'Mean Wave Statistics' page.

Fixed the size of the read/write point colours group box.

Fixed the CSW file creator which did not work with V40 or V41.

Improved the 'Counts of wavelengths' chart by only displaying the range used.

Improved the speed of pulse colouring.

Removed the 'Small Monitor Adjustments' button.

Enlarged the creator's signature font.

Moved the Dragon colouring button out of the KCS data group box.

Now compiled with:

    C++ Builder 10.4 Version 27.0.40680.4203,

    TeeChart v2022.34.220125 VCL,

    zlib v1.2.12.

### 31/03/22 Version 41

Now supports Unicode CSW, TZX and COL file names.

Now support Unicode (UTF-8) creator's signature, in CSW V2.1 files.

Now supports Unicode (UTF-8) text descriptions, in TZX files.

The form has been enlarged and has small changes.

Swapped the positions of the first and last point buttons.

Removed the null terminator from the creator's signature in the CSW V2.1 format, since the length is described anyway and many CSW files have it omitted in error.

Fixed the CSW file creator that did not work with V40.

Fixed incorrect usage of old pulses data by the user interface after loading a subsequent file with V40.  
Fixed incorrect opening of TZX files where the header was being appended with V40.  
Fixed TZX files buttons 'Append selected pure data and optional trailing gap' and 'Append selected file...', which record an incorrect gap and mean pulse lengths with V38 to V40.  
Fixed TZX format signal level buttons that had their functions swapped with V36 to V40.

Fixed some memory leaks.

Now compiled with:

C++ Builder 10.4 Version 27.0.40680.4203,  
TeeChart v2022.34.220125 VCL,  
zlib v1.2.11.

11/6/19 Version 40

File names may now be used with wide characters.

Now compiled with;

C++ Builder 10.2.3 therefore support for Windows Vista and earlier has gone,  
TeeChart v2018.26.181203 VCL,  
zlib v1.2.11.

The CSW file creator will not work with any 64-bit version of Windows.

Fixed a bug with mean wave finding after loading more than one CSW or TAP files.

Fixed setting the video standard with TAP V2 files when the code is more than 3.

Fixed some exception handling.

Improved the ability to recognise gaps between wavelengths groups, which are used to find mean wavelengths.

Made the open file button the default button and removed its mnemonic access key.

Gave accelerator keys to the first point and last point edit boxes.

All edit boxes are now right justified.

Made many small user interface improvements.

The overflow pulse length for TAP V0 files is now set at 1500 instead of 3000.

4/5/11 Version 39

Fixed minor arithmetic errors with removing a phase shift from a WAV file before converting to CSW.

The background colour of the charts is now fixed.

Fixed reading of TAP V2 file wavelengths following a special code.

12/3/11 Version 38

Fixed the loading of point colours, which was not working in V37.

Fixed the '2 wavelengths data means finding' feature, which was not working in V37.

Removed the mean pulse length finding button. This might be brought back in a later version.

Changed the 'Find values' tab caption to 'Find wave values'.

The background colour of the charts is now white due to a bug.

The Windows 9x series is no longer supported.

Added labels to show when point colours are being loaded or saved.

Reorganised the mean wavelength values finding buttons and statistics.

Added a 'Colour pulses in range as 1200 baud, 8N2 format. (MSX)' button.

Added a 'Colour pulses in range as Dragon' button.

Improved the 'LOADING DATA' label, which was not always getting removed.

Improved the 'Colour pulses in range as ZX81 bits and bytes' button.

Improved loading of CSW and TAP files by double clicking on a file when there are spaces in the file name or the directory of it.

24/3/09 Version 37

Added a 'Colour pulses in range as Commodore bits and bytes' button.

Reworded two of the buttons on the 'Colour code pulses' page.

The data start colour is now teal instead of using the start bit colour.

The data end colour is now sky blue instead of using the stop bit colour.

The parity mark colour used in Commodore files is money green.

Fixed tabulation on the 'Search' page.

Fixed checking for an even number of pulses when finding mean wavelengths using the 'Find values' page which was not done with V36.

#### 5/3/09 Version 36

Colouring of data waves now calculates mean wavelengths and expects waves to be within a tolerated range for all computers. KCS and Acorns use a long wavelength that is the short wavelength X 2. Other computers use separate wavelengths.

The entering of an estimate of a baud rate for KCS/Acorn data is removed.

When 2 or 3 distinct wavelengths are not found a message is now given.

The 'Colour code pulses' page has been rearranged and has some rewording.

Corrected information in this document about pulse colouring for Spectrum, Acorns and ZX81.

Fixed TZX data block writing buttons that wrongly expected Enterprise colouring in versions 33, 34 and 35.

Fixed the writing on the buttons for Spectrum and Enterprise colouring that was wrong with versions 34 and 35.

Fixed a minor bug that restricted Spectrum data blocks to FFFFF bytes.

#### 18/1/09 Version 35

Fixed a minor bug with loading point colours in version 34.

Fixed a bug with creating a CSW file in version 34.

Fixed a bug where the window would resize itself in version 34.

#### 16/1/09 Version 34

The 'number of pulses is zero bug' is always corrected now when a CSW file is created.

Colouring pulses of data blocks was slow in version 33 and is now fixed.

The 'Colour code pulses' page has been rearranged and has some rewording.

Added a 'Colour pulses in range as ZX81 bits and bytes' button.

Added a 'Colour pulses in range as end mark' button and the colour is black.

Added a 'Colour pulses in range from bit 0 to bit 7' button.

The 'Colour pulses in range as sync pulses / row of pulses' button has been split into two buttons: 'Colour pulses in range as synchronisation pulses' set the colour to white. 'Colour pulses in range as row of pulses' sets the colour to maroon.

Moved some buttons on the 'Create TZX file' page into the only group box.

#### 24/9/08 Version 33

Fixed a bug that prevented version 32 from loading V1.1 CSW files.

Fixed a bug with loading the point colours from a COL file which is present in version 32.

Fixed a bug with the initial time, 00.00, not being displayed on the graphical display page after loading a file.

Fixed some minor bugs with the TZX chunk writing buttons which are present in versions 29, 30, 31 and 32.

Relaxed checking of TAP file headers for potential compatibility with future format changes.

Fixed removing of phase shift which is broken in version 32.

#### 4/6/08 Version 32

Fixed a bug that displayed 1 too many data analysis chart pages when the number of counts is an increment of 50.

Fixed page increment size on data analysis chart track bar.

Increased font size on data analysis chart legend.

Made the data analysis chart invisible when not displaying data.

Added file summary fields for machine type and video standard from TAP files.

Changed input file label to a memo using separate lines for directories.

Improved CSW file loading time for large files.

Short CSW files load slightly slower.

Improved exception handling.

Allowed all minor versions of the TZX format V2.  
Allowed unknown blocks with TZX files.  
Added controls for the TZX signal level block.

#### 24/9/06 Version 31

Fixed a bug that prevented phase shift removal from working sometimes.  
Fixed a minor bug with gap pulse finding which did not start from the next page with V29 and V30.  
Fixed minor bugs with messages returned from the DLL files.  
Fixed a minor bug with displaying the creators signature.  
Fixed a minor reading, buffer overrun bug with calculating time span at the last pulse of the file.  
Fortunately no erroneous data was seen by the user.  
Made colouring of Spectrum data pulses require an even number of pulses.  
Improved detection of mean bits values. This is not a bug fix.  
Reduced the font size for the file name and directory.  
Added a 'Small Monitor' button to reduce some font sizes for small monitor users.  
The program had more rewriting done for this version.

#### 23/6/06 Version 30

Fixed the writing of an incomplete last byte to TZX files.  
Fixed the compression type label which always said "RLE".  
Fixed checking of minor version number of CSWViewer.dll.  
Improved behaviour for files with 0 pulses.  
Removed the need for package files.  
Added support for Commodore TAP files.  
Added new controls for the mean value finding graph.  
The program had more rewriting done for this version.

#### 18/4/06 Version 29

Fixed the button for 3 wave data, which gave inaccurate calculations due to bugs.  
Fixed a bug that prevented TZX files of the V1.13 specification from opening.  
Fixed phase shift removing for some WAV files.  
Added the missing files TeeUI7C6.bpl and VCLX60.bpl to Borland-BCB6.zip.  
Added a bookmark feature to the search page.  
Changed time span in milliseconds to time span in samples.  
Improved the behavior when opening WAV files that are 16 bit or stereo, for conversion to CSW.  
Made many minor user interface improvements.  
Put the main program code in a DLL file.  
The program had a big rewriting for this version.

#### 18/8/05 Version 28

Fixed a bug with bits mean finding and Acorn baud rate.  
Added new pulse colouring buttons for Atom cassettes and 300 baud BBC cassettes.  
Linked with zlib V1.2.3, which fixes more security vulnerabilities.  
The package files in Borland-BCB6.zip in the directory:  
<http://ftp.worldofspectrum.org/pub/sinclair/tools/pc/drivers/> are now required.

#### 10/6/05 Version 27

Linked with zlib V1.2.2 which fixes:  
    Potential security vulnerability when decoding invalid compressed data,  
    Fix bug when decompressing dynamic blocks with no distance codes,  
    Do not return an error when using gzread() on an empty file.  
Removed the need for package support files.

#### 4/4/05 Version 26

Allowed opening of a CSW file in CSW Viewer by associating the extension with CSW Viewer and opening a file with a file manager.

Improved the problem handling with memory allocation.

Made the displayed tab sheet the file summary after loading a new file.

Fixed TZX support, which does not work with V24 and V25.

Made TZX buttons always available after opening a TZX file.

Now adds an extension to new TZX files if one is not typed.

#### 4/3/05 Version 25

Corrected ticks on bottom axis of both graphs.

Rearranged the file summary page.

Changed bits pulse mean length in samples to wave mean length in samples.

Added a new button for 3 wave data.

#### 19/1/05 Version 24

Reduced the font size on the graphical view page legend.

Improved the "How to record" document.

Made many improvements to the graphs.

Improved speed of file loading and the speed in general.

Changed the required package files.

#### 12/12/04 Version 23

Fixed a bug with phase shift removing, which only affected WAV files with a particular end to the samples.

Added the necessary file (since version 16): BCBSMP40.BPL to borland-win.zip.

#### 19/11/04 Version 22

Increased maximum creator's signature size to 150 characters.

Made a change to the recommended method of smoothing gaps in the "How to record" document.

Fixed loading of CSW V1.1 files which have not worked since version 20.

Changed wavelength toleration for detecting Acorn waves to be equal to MakeUEF V1.2.

#### 20/10/04 Version 21

Put back the option to select multiple WAV files for conversion to CSW.

Simplified phase shift removing to only -90 degrees on the whole file.

Made new 'remove phase shift' check box state held in registry.

Removed recording of phase shifts in CSW files.

Created a new document on recording WAV files for conversion to CSW files.

Changed default low cut-off frequency to 1000Hz.

#### 11/10/04

I removed version 20 from WOS due to rethink on CSW file creation.

#### 2/10/04 Version 20

Added creators signature facility for creating CSW files.

Fixed a small inaccuracy with TZX block 11 trailing gaps.

Improved the file opening dialog box settings.

Disallowed files with sampling rate of 0.

Began phase shift keying of waves in WAV files before passing a temporary WAV file to CSW.exe.

Added number of samples information to file summary.

Made the time span in the file summary appear sooner.

Reduced the size of the font for the file name and directory and changed the colour to maroon.

Changed the name of some tabs.

Changed recommended filter ranges.

Changed wavelength toleration for detecting Acorn waves.

Changed an initial edit box value for searching for a pulse.

Removed the option to select multiple WAV files for conversion to CSW because of the 'number of pulses' bug with CSW.exe.

#### 7/8/04 Version 19

Changed code for pure data and file TZX blocks so any inaccuracy is carried onto the optional trailing gap.  
Fixed bug with tolerated wavelength of data bits when using TZX output buttons for pure data and file.  
Fixed font size of Values Finder graph title which is bugged in version 18.

#### 20/7/04 Version 18

Completed TZX file output page with support for TZX blocks 11, 12, 13, 14, 20, 2A and 30.  
Added a gap finding button that uses pulse colour codes.  
Changed the time span on the File summary page to show minutes and seconds.  
Changed the time span on the Graphical display page to show minutes and seconds.  
Changed name of Pulse colouring page to Pulse colour coding.  
Changed words on mean pilot finding panel.

#### 22/6/04 Version 17

Fixed bug with CSW V1.01 format files, which have not loaded since version 10.  
Improved the error checking with reading and writing of files.  
Added a new pulse colouring button for sync pulses or a sequence of pulses (maroon).  
Changed the default point colour to the gap colour.  
Joined range time span and range selection panels.  
File summary headings now removed when not in use.  
Added time span to the file summary.  
Made minor changes to the file summary headings.  
The file summary now works better with zero sized files.  
Improved the wording and layout of Values finder page.  
Cleared the window of old values etc. when opening a new CSW file.  
Started TZX file output page.

#### 22/5/04 Version 16

Added new pulse colouring buttons for: pilot (grey), gap (yellow) and special pulses (any chosen colour).  
Changed ordering of the tabs.  
Fixed bug where CSW files could not be read after reading an uncompressed CSW file.

#### 30/4/04 Version 15

Removed time span calculation button and made the time span automatically calculated.  
Added two buttons for saving and loading of the point colours.  
Fixed minor bug where the file was not closed when the number of pulses is incorrect.

#### 26/3/04 Version 14

Invalid CSW V1.01 files with a 0 byte, at the end of the file, have not been accepted since version 11.  
Added frequency filter range to CSW file creator tab.  
Improved the Acorn bits coupling.  
Made minor changes to words on application.  
Some error handling possibly does not work because of compiler bugs.

#### 11/2/04 Version 13

Made a workaround to make calling of CSW.exe work with some versions of Windows.  
Extended the size of the digits in the edit boxes.  
Added Go to seconds and Go to point buttons.  
Added Pulse coupling page and moved the Spectrum bytes coupling button to it.  
Added standard Acorn start bits, bytes, and stop bits coupling button.  
Added a Searching page and pulse finding button mainly for finding gaps.  
Added About page.  
Changed the font in the File summary page.

#### 30/1/04 Version 12

Fixed incorrectly enabled buttons after using CSW file creator with no file loaded for viewing.

Now closes files after reading data.

Added the files TeePro6C4.bpl and TeeUI6C4.bpl to Tee6C4.zip.

#### 16/1/04 Version 11

Fixed initial polarity message, which has been wrong since version 1.

Added a new tab for control of CSW.exe with multiple file selection. The output file name cases are preserved as with the input file. Why are they not when running in a command prompt window?

Loading of data is now faster.

'1' bit mean length detection now less often reports 'not found.'

Fixed checking of the number of pulses in the header which was not done if the final pulse length was greater than 255.

Added TeePro6C4.bpl to used runtime packages.

#### 19/12/03 Version 10

Added displaying of time elapsed before the first point on the graph.

#### 28/11/03 Version 9

Fixed slightly incorrect baud rate reporting for Acorn files.

Improved CSW file reading.

Fixed incorrectly enabled button.

Changed some user interface writing.

#### 30/10/03 Version 8

Fixed 'loading data' message.

Add use of graph with pilot pulse mean length button.

Added pause size displaying in seconds with more accuracy than ms.

Added displaying of total of '0' and '1' bits after using mean finding button.

Added displaying of baud rate for Acorn tapes after using mean finding button.

#### 14/10/03 Version 7

Fixed multiplication constant for calculating mean T states for pilots and 0s and 1s bug. It was being held from use with the first file loaded and used with a later loaded file, which might have a different sample rate.

Improved the exception handling.

#### 2/10/03 Version 6

Fixed time span calculation bug. The bug only affected CSW files not with a sample rate of 44100.

Fixed mean '0' and '1' bit pulse lengths in samples bug. Previously they were 0.5 too much.

Fixed almost unnoticeable mistake with the wavelength counts graph.

Added 'exception handling' to the program.

#### 30/9/03 Version 5

Changed to a tabbed interface.

Added '0' and '1' bits mean pulse length finder with graph.

Added a feature for coupling pulses, so as to view the pulses as bytes.

Added total bytes in range information.

Added automatic updating of total pulses in range.

Increased file summary information. (Polarity information is omitted for V1.01 files.)

#### 24/9/03 Version 4

Added selecting of range using mouse.

Changed the word average to mean.

17/9/03 Version 3

Pulses coupling feature added.

Brought back non-rounding of pulse length in samples.

Added instructions.

15/9/03 Version 2

Time span calculation added.

Changing of files enabled.

Removed figures of calculated values after the decimal point.

Calculated values rounded to whole number.

Improved user interface.

Moved TEE6C4.BPL from zip file to WOS driver's directory.