

# WhaleTeq SECG5.0 Changelog

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## Version 1.5.5.19 - 2023-10-04

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Note: Please use firmware version 1.3.19.02+ to ensure that all changes work.

### Common

1. NEW: Add function to clear the cache and restart the app
2. CHG: Improve file browse dialog, add automatic scrolling
3. CHG: Improve the performance of reading variable DC calibration data from SECG
4. FIX: Variable DC calibration value may be incorrect when the connected SECG serial number changed
5. FIX: The dialog box message does not reset when updating FW consecutively
6. FIX: App crashes during version updates
7. FIX: App resources do not restore when downgrading versions
8. FIX: App may crash when accessing the file names with non-ASCII characters

### ECG

1. CHG: The chart scale of ECG page now can restore when switch back from PPG pages
2. CHG: Adjusted Auto Sequence: If it includes deleted scripts, but there are other valid scripts, it can still be executed. Invalid ones will be automatically skipped.
3. FIX: Status not immediately update issue when deleting scripts in Auto Sequence
4. FIX: The app may crash when reading an old script
5. FIX: The app may crash when reading a txt file which format is incorrect
6. FIX: The app may crash when select a .hea file in File Replay
7. FIX: Incorrect 620k $\Omega$  status in Output Summary
8. FIX: Incorrect BPM and QRS Duration values in Output Summary when running Auto Heart Rate
9. FIX: The graph may not be cleared when switching from ECG page to other pages
10. FIX: ECG Respiration apnea time 60s setting does not work
11. FIX: Incorrect waveform amplitude in UI when enable ECG Respiration
12. FIX: Incorrect P wave amplitude in CAL waveform
13. FIX: Rounding error of BPM in decimal places

### PPG

1. NEW: Add support for PPG reflective module and green light module
2. NEW: Add buttons to browse Raw Files
3. NEW: Add buttons to set Sampling, and move them to left side
4. CHG: Play Raw Files now supports Sync Pulse and Inverted Pulse
5. CHG: Updated method for PPG Play Raw second setting Output Setting, consistent with AECG
6. CHG: Improve the performance of PPG Sampling waveform
7. CHG: Trigger Level setting is now updated when clicking OK, except for restoring to default values, which are set immediately
8. CHG: Update Sync Pulse mode, now all channels output the signal respectively instead of outputting single waveform
9. FIX: Improve performance when output PPG first time from start-up
10. FIX: Correct the definition of PPG inverted waveform (inverted refers to output being opposite of the original waveform, but it does not reverse in the UI), and set inverted as default
11. FIX: PPG module output may be abnormal after using Sampling
12. FIX: Incorrect PPG waveform amplitude when using Respiration Baseline mode or Raw Files
13. FIX: Signals not reset when changing files in PPG Load Raw File page

## **Spo2**

14. NEW: Add function to import and delete SpO2 Table
15. NEW: Add new SpO2 Tables: P\_R-curve(T), G\_R-curve(T)
16. CHG: Update the default SpO2 Table file names, please remove the old copy manually
17. FIX: Incorrect initial values of PI and SpO2
18. FIX: Incorrect behavior when adjusting formula coefficient in SpO2 (should recalculate SpO2)
19. FIX: Too low accuracy of R Value decimal, only three places

## **PWTT**

20. NEW: Add new function: Auto PWTT
21. NEW: Add functions to save, load, and reset parameters
22. NEW: Add Sampling in this page
23. NEW: Add Load Raw Files function
24. CHG: Now all kinds of PPG waveforms can be loaded from the SpO2 page
25. CHG: When PWTT page loads SpO2 parameters, parameters can be adjusted using SpO2 value
26. FIX: PI value may be correct when loading parameters from SpO2 page

27. FIX: Remove redundant parameters when loading ECG 2-27 waveform (only three items left now)

## Standard Assistant

1. FIX: The buttons on parameters dialog may be covered

## Version 1.5.4.9-hotfix - 2023-07-04

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1. Fix that waveform does not show when running frequency scan

## Version 1.5.4.7 - 2023-07-04

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### Changed:

1. Release the Standard Assistant files
  - GB9706.225-2021 (2023/6/30)
  - GB9706.227-2021 (2023/6/30)
  - YY9706.247-2021 (2023/6/26)

### Fixed:

2. Fix the crash in File Replay when playing the files which the file name are too long.

## Version 1.5.3.0 - 2023-05-17

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### New:

1. Support PPG-2TF-660 module, and add pages "SpO<sub>2</sub>" and "PWTT"
  - Note: Require firmware version 1.3+
2. Add new Standard Assistant GB9706.225-2021、GB9706.227-2021、YY9706.247-2021 (beta)
3. Add serial number of connected PPG module on title bar
4. Add the 3rd, 4th code of firmware version on Setting dialog (1.3+)
5. Add scroll bar on Output Summary box

### Changed:

6. Change the page title "Signal Waveform" to "ECG"
7. Ignore file extension case when searching update files
8. Improve the performance of upgrading firmware

9. Improve the preview waveform of Baseline Overload Test, and not reset when turning off

## **Fixed:**

10. Fix the display issue of Hardware ID
11. Fix the issue of automatically adjusting ECG parameters
12. Fix the crash when saving SDK Log without a USB device
13. Fix the output and preview waveform of Baseline Overload Test
14. Fix some spelling mistakes of Output Summary
15. Fix the HRV parameters display issue in Output Summary
16. Fix the issue of loading DC calibration data
17. Fix the ECG wave modulation of Respiration, and make it synchronous with PPG wave modulation
18. Fix the display issue of ECG Noise 50Hz
19. Fix the preview waveform of Pacing Overshooting
20. Fix the failure of loading some txt files
21. Fix the display issue of the file name with non-alphabetic characters
22. Fix the issue of reconnecting to hardware
23. Fix the failure of importing license
24. Fix missing description line in exported raw data file
25. Fix missing waveform when outputting pacing
26. Fix the crash when saving files to USB device in some case
27. Fix the input variable dialog size mistake of Standard Assistant
28. Fix the combo box display issue of Standard Assistant

## **Version 1.4.5.5 - 2022-12-16**

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### **New:**

1. Add feature of DC offset variable mode, and make it available in new scripts
2. Add firmware version showing on Setting dialog
3. Add feature of restoring the last status of Auto Sequence

### **Changed:**

4. Update the upper limit of script playing period of Auto Sequence, and change the UI widgets
5. Update the feature of ECG Respiration wave modulation that the 3 modulation can be mixed now, and update the script

- Note: the wave modulation setting in previous scripts will be no effect anymore.
6. Update T wave in ECG waveform: fixed period 180ms, and will be removed when it exceeds the QT Interval

### **Fixed:**

7. Fix missing error message when failed to copy files to USB device
8. Fix that there will be one extra directory when exporting SDK Log
9. Fix that file names which is too long cannot be displayed on Auto Sequence
10. Fix that the parameters may not be adjusted when the ECG frequency exceeds 2Hz
11. Fix the display issue of ECG Respiration parameters
12. Fix that the parameters of ECG Respiration wave modulation are sometimes no effect
13. Fix that the parameters of Baseline Overload Test are sometimes no effect
14. Fix the display issue after turning off the screen when playing
15. Correct the Pacing waveform start position of non-ECG waveforms
16. Correct the Pacing Overshooting waveform
17. Fix that the Common Mode switch cannot be used after playing
18. Fix that Common Mode would not be toggled immediately
19. Fix some issue of Standard Assistant IEC60601-2-27:2011

## **Version 1.3.3.11 - 2022-03-22**

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1. ECG will be set to IEC60601-2-27 waveform when pacing is turned on.
2. Improve the performance of Auto Sequence.
3. Fix pacing waveform pulse time issue.
4. Fix pacing overshooting waveform.
5. Fix Assistant IEC60601-2-27 bugs
6. Fix Assistant YY1139 bugs

## **Version 1.3.2.2 - 2022-01-07**

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1. **Add new Standard Assistant: YY1139-2013**
2. Fix crash when switching IEC60601-2-27 HRV Test patterns
3. Fix failing to return to the main window after overwriting the dump raw file
4. Fix dumping raw data no device issue.
5. Fix crash if a file name is too long in File Replay.
6. Fix several mistakes in Output Summary
7. Fix the noise of pacing waveform of specific parameters.

## Version 1.3.1.11 - 2021-11-29

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1. Improve the sample rate to 20kHz
2. Improve the performance of waveform graph
3. Synchronize electrode button when frequency scan
4. Fix the bug of BPM button
5. Fix the bug of setting dialog displaying
6. Fix the pacing waveform with overshooting
7. Fix Auto Heart Rate output summary
8. Fix AAMI EC13 preview waveform
9. Fix the waveform of ECG frequency scan
10. Fix pulse width button state
11. Fix time label display bug
12. Fix Assistant IEC60601-2-25 bugs
13. Fix Assistant IEC60601-2-27 bugs
14. Fix Assistant YY1079-2008 bugs
  - 4.1.2.1 electrode display bug
  - 4.1.4 several bugs
  - 4.2.6 output waveform bug
  - 4.2.7.3 electrode display bug
  - 4.2.8.1 electrode display bug
  - 4.2.8.8 specific item no output issue
15. Fix crash when switching assistant tests

## Version 1.2.1.23 - 2021-09-08

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1. Update Assistant YY0885-2013

## Version 1.2.1.21 - 2021-08-25

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1. Change the step of pacing overshoot amplitude from 0.1 to 0.01 mV.

## Version 1.2.1.20 - 2021-08-05

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### Common:

1. Change the default values of some items in Auto Heart Rete
2. Fix short duration pacing waveform (make it more accurate)

3. Fix negative pacing amplitude overshooting
4. Fix Auto Pacing bugs
5. Fix Baseline overload test bugs
6. Fix the output summary of Auto Pacing

### **Assistant:**

1. Add pre-test command SetDCOffsetVariableMode(false)
2. Change IEC60601-2-27 Global Parameter: Full scale output value range to 0~10
3. Modify YY1079-2008 4.2.8.4
4. Fix 201.12.4.107.2 (IEC60601-2-25:2011)
5. Fix 201.12.1.101.8 (IEC60601-2-27:2011)
6. Fix 201.12.1.101.9 (IEC60601-2-27:2011)
7. Fix 201.12.1.101.12 (IEC60601-2-27:2011)
8. Fix 201.12.1.101.13 (IEC60601-2-27:2011)
9. Fix 201.12.1.101.17 (IEC60601-2-27:2011)
10. Fix Global Parameter radio button text bug (IEC60601-2-27:2011)
11. Fix 51.104.3 (YY0782-2010)
12. Fix 4.1.4 overshoot amplitude spec (YY1079-2008)
13. Fix 4.2.8.1 DC output (YY1079-2008)
14. Fix 4.2.8.1 input variable (YY1079-2008)
15. Fix 4.2.8.8 (YY1079-2008)

## **Version 1.2.1.1 - 2021-06-02**

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### **Common:**

1. Reduce APK size
2. Modified the disabled-color of switch buttons
3. Add loop option on standard waveform and file replay page
4. Add delete button in file browse dialog
5. Show warning before overwriting file
6. Disable the script in sequence which file is lost
7. Implement Sine Wave dynamic range test
8. Implement standard waveform raw data dumping
9. Fix ECG parameters reset and auto-set issue
10. Fix NST Noise on HRV pattern issue

### **Assistant:**

1. Support "(Please fill the ref value)" for unsolved reference value.
2. Support multiple report value input.
3. Support noise on ANE20000 waveform
4. Fix the side effect of multiple input result table value.
5. Fix YY Standard, wrong table header text shown.
6. Fix IEC60601-2-27 bugs
7. Fix IEC60601-2-25 bugs
8. Fix YY1079 bugs
9. Fix YY0782 bugs

## **Version 1.1.23.6 - 2021-02-25**

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1. Fix bugs in Assistant IEC60601-2-27
2. Fix ECG parameters auto adjustment
3. Implement electrode button state in Assistant
4. Implement noise on ANE20000 waveform

## **Version 1.1.23.1 - 2021-01-28**

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1. Fix pacing of some Assistant test items
2. Reduce the size of APK file

## **Version 1.1.22.17 - 2021-01-27**

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1. Improve USB driver
2. Change the minimum pulse width to 1 ms
3. Update Assistant files
4. Fix the potential bug of "dump standard"
5. Fix the display bug of baseline overload test
6. Fix standard waveform IEC60601-2-47 pattern 1
7. Fix auto adjusting for ECG parameters
8. Fix several bugs of Assistant
9. Fix the display bug of "Auto Sequence"

## **Version 1.1.22.2 - 2020-11-04**

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1. Initial version