

WhaleTeq AECG100 Changelog

Limitation:

1. Auto Sequence page: support PPG noise frequency only upto 1K Hz
2. only supported FW version 1.14.44.19 and later

Version 1.0.9.4 - 2025-01-21

1. FIX: in PPG page, crash when saving waveform raw data if PPG noise is not Off

Version 1.0.9.1 - 2025-01-06

1. CHG: the respiration algorithm can be multi selected
2. CHG: added support apnea in ECG and PPG respiration algorithm
3. FIX: crash when outputting signal by play data mode with noise amplitude 0mV
4. FIX: fail to download physionet database

Important:

1. If the saved waveform configuration file includes the respiration function, this configuration file will not be compatible with the current version.

Version 1.0.8.19 - 2024-10-30

1. FIX: DC is incorrectly adjusted (PPG module WAP2012)

Version 1.0.8.16 - 2024-08-31

1. FIX: the noise signal is not added to PPG in the simulation waveform

Version 1.0.8.15 - 2024-08-27

1. FIX: AC/ DC values are incorrect in Player > Play for PPG module WAP2012
2. FIX: in Auto Sequence page, hang issue occurs if the output status of the loaded PPG file is not enabled
3. FIX: in PPG page, noise is not added if the respiration is enabled

Version 1.0.8.14 - 2024-08-19

1. NEW: added PPG noise frequency 25 Hz (only supported FW version 1.14.44.19 and later)

Version 1.0.8.12 - 2024-06-27

1. FIX: in Auto Sequence page, ECG pacing (.ecg) is invalid (the pacing duration minimum value is limited to 0.1 ms)
2. NEW: added PPG noise frequency 0.5/ 1/ 2/ 3/ 5/ 10 Hz (only supported FW version 1.14.42.1 and later)
3. FIX: in Auto Sequence page, crash if loading the file saved from ECG page with sine/ 50Hz waveform

Version 1.0.8.10 - 2024-03-20

1. FIX: in Auto Sequence page, failed to load the PPG setting file (*.ppg) (only for PPG module WAP2009/ WAP2010/ WAP2013/ WAP2014)
2. CHG: in SpO2 and PPG page, if the settings are saved as a PC file, the output enabled status are also saved
3. FIX: in PPG page, the respiration is not effective if the PPG signal only outputs IR

Version 1.0.8.8 - 2024-02-15

1. NEW: added support new PPG module WAP2013 (PPG-2RS-880)/ WAP2014 (PPG-2RS-940)

Version 1.0.8.7 - 2023-09-15

1. NEW: added support new PPG module WAP2009 (PPG-2R-880)

Version 1.0.8.4 - 2023-08-25

1. CHG: update the range of pacing duration to 0.03ms to 2ms (only supported FW version 1.15 and later)
2. FIX: save incorrect PWTT raw data

Version 1.0.7.3 - 2023-06-16

1. NEW: added support YY 9706.247 (2021)
2. FIX: fix ui defects
3. FIX: incorrect ECG signal if PWTT respiration is enabled

Version 1.0.6.86 - 2023-02-22

1. CHG: change the minimum value of PPG DC to 30mV (PPG module WAP2012)
2. CHG: update the warning text in Auto SpO2 page (PPG module WAP2012)
3. FIX: failed to popup warning message if the DUT is not detected (PPG module WAP2012)
4. FIX: in some cases, failed to get the correct R value in SpO2 table (PPG module WAP2012)
5. CHG: update the notification text when outputting in SpO2 table dialog

Version 1.0.6.80 - 2022-09-27

1. CHG: in Auto Test SpO2 page, fine tune the final stable DC (PPG module WAP2012)

Version 1.0.6.79 - 2022-08-23

1. FIX: the PI of DUT is not accurate when testing in auto sequence (PPG module WAP2012)

Version 1.0.6.78 - 2022-07-28

1. CHG: in Auto Test SpO2 page, add warning message about the SpO2 accuracy

Version 1.0.6.76 - 2022-07-08

1. CHG: adjust DC levels to make PI more accurate (PPG module WAP2012)

Version 1.0.6.73 - 2022-06-13

1. FIX: in FPGA programming mode, the device may block and fail to return to normal state
2. FIX: in ECG page, the time constant is incorrect for Exponential waveform
3. FIX: failed to copy correct values in SpO2 Table dialog
4. FIX: in PPG page, the supported channels are incorrect

Version 1.0.6.71 - 2022-06-10

1. FIX: in PWTT page, the measured PTTp becomes incorrect if BPM > 125
2. CHG: in Auto Test SpO2 page, update the DC levels for the transmission rates
3. CHG: update the names of SpO2 sample tables

Version 1.0.6.67 - 2022-05-26

1. CHG: if PPG module WAP2012 is connected, show the ambient light mode in the simulation graph
2. CHG: update transmission rate options (PPG module WAP2012)

Version 1.0.6.63 - 2022-04-29

1. CHG: in ECG page, support frequency range to 0.05Hz ~ 5Hz for Rectangle Pulse/ Triangle Pulse
2. CHG: in ECG page, set the baseline of Rectangle Pulse/ Triangle Pulse/ Exponential waveforms to zero voltage

Version 1.0.6.59 - 2022-04-20

1. FIX: crash when running auto sequence items

Version 1.0.6.57 - 2022-04-13

1. FIX: (PPG module WAP2012 connected) in PWTT page, if 'Sync Pulse' is off, output the selected channel and display the selected in the PPG checkbox

Version 1.0.6.56 - 2022-04-08

1. FIX: the fixed DC offset is not configured to device when running the sequence items in Auto Sequence page
2. CHG: by default, set the Transmission Rate to Medium Finger in Auto SpO2 page

Version 1.0.6.54 - 2022-03-25

1. FIX: crash when detecting the signal strength
2. FIX: crash when restoring PPG waveform from standalone mode settings
3. CHG: move 'Ambient Light' setting to PPG context menu

Version 1.0.6.52 - 2022-03-18

1. CHG: remove the Signal Strength function under PPG button

Version 1.0.6.51 - 2022-03-16

1. CHG: by default, turn off PPG Dynamic LED Strength feature
2. CHG: support to output only R or IR for PPG module WAP2012 if SynPulse is OFF
3. NEW: added support to auto find the trigger level (only available in PPG module WAP2012; run in Auto SpO2 page)

Version 1.0.6.49 - 2022-03-08

1. CHG: removed support to adjust PPG LED Level
2. CHG: remove waveform type in Auto SpO2 page
3. NEW: added support new PPG module WAP2008

Version 1.0.6.48 - 2022-02-25

1. CHG: by default, do not turn off PPG Dynamic LED Strength feature

Version 1.0.6.47 - 2022-02-17

1. CHG: support to configure transmission rate for PPG module WAP2012

Version 1.0.6.46 - 2022-01-07

1. FIX: failed to output PPG waveforms; not compatible with old fw
2. FIX: in PWTT page, the PPG waveform invert status is incorrect for PPG module WAP2007
3. FIX: in PWTT page, it's failed to run respiration
4. FIX: fail to output ECG waveform when noise is enabled

Version 1.0.6.40 - 2021-12-23

1. FIX: incorrect LED output for PPG module WAP2007; LED-R should not outputted if LED-R is not included in pulse group setting

Version 1.0.6.39 - 2021-12-21

1. CHG: update the model description of PPG module WAP2007 to R(660nm)/IR(880nm)
2. CHG: remove Player tab in new SpO2 page for PPG module WAP2012 (still in development)
3. CHG: show the FW build version in About dialog

4. CHG: update Pulse Configuration; removed one-trigger mode functionality; added IR-First functionality
5. CHG: keep the original SpO2 page when PPG module WAP2012 is connected

Version 1.0.6.36 - 2021-12-16

1. CHG: update PPG module name; WAP2012: PPG-2TF-660
2. CHG: removed support PPG module WAP2014
3. CHG: fine tune FPGA update process
4. CHG: support 16b-bit DAC for PPG module WAP2012
5. NEW: support to configure the ambient light for PPG module WAP2012 (still in development)

Version 1.0.6.33 - 2021-11-16

1. FIX: for FW compatible, when 3-channel simulation PPG module is connected, set all the output enable bits on

Version 1.0.6.32 - 2021-09-07

1. FIX: in PPG page, exception issue may occur when adjusting waveform voltage

Version 1.0.6.31 - 2021-09-03

1. NEW: in PWTT page, added support to lock PTTp or PTTf when BPM is changed

Version 1.0.6.30 - 2021-08-24

1. CHG: hide "Dynamic LED Strength Adjustment" feature (in development)
2. FIX: incorrect RLD unit

Version 1.0.6.28 - 2021-08-13

1. CHG: check the FPGA hardware status; if it's not activated, don't show the PPG information

Version 1.0.6.25 - 2021-08-11

1. FIX: incorrect ECG exponential waveform; the baseline should be shifted

Version 1.0.6.24 - 2021-08-09

1. FIX: required to stop PD sampling when detecting DUT signal strength
2. FIX: only allow only one Signal Strength window being opened
3. FIX: failed to only output PPG Ch2 waveform

Version 1.0.6.22 - 2021-08-06

1. FIX: FGPA calibration data is incorrectly cleared when restoring factory setting

Version 1.0.6.21 - 2021-07-16

1. FIX: refer to incorrect PD mapping table in the output setting of PPG play raw
2. FIX: can not configure the PD mapping table for PPG Ch3

Version 1.0.6.20 - 2021-07-08

1. FIX: in PWTT page, incorrectly output PPG Ch2 AC
2. FIX: in PPG page, incorrectly display the outputted waveform

Version 1.0.6.19 - 2021-06-28

1. NEW: added support LED output for PPG module WAP3001

Version 1.0.6.18 - 2021-06-24

1. FIX: IR should be outputted for PPG module WAP2007
2. CHG: added support PD sampling for PPG module WAP2012
3. NEW: added support to configure Ch3 LED/Trigger level for PPG module WAP3001

Version 1.0.6.16 - 2021-06-09

1. FIX: the respiration settings of ECG and PPG are not saved to and restored back from the file or the device
2. NEW: added support new PPG module WAP3001

Version 1.0.6.15 - 2021-06-07

1. FIX: in Auto Sequence page, PWTT modulation respiration not works

Version 1.0.6.14 - 2021-05-31

1. CHG: in PPG page, still keep the PPG respiration setting when the respiration is disabled
2. NEW: in PWTT page, added support modulation respiration
3. NEW: added support new PPG module WAP2007

Version 1.0.6.11 - 2021-03-26

1. FIX: the PWTT preview graph incorrectly display the time indicator of PTTp/PTTf
2. FIX: in SpO2 page, if R PPG module is connected, the enabled status of the Signal > Output button is not correctly updated

Version 1.0.6.9 - 2021-03-18

1. FIX: incorrect ECG exponential waveform; the pulse width is not necessary

Version 1.0.6.7 - 2021-03-02

1. FIX: the working mode is not correctly configured for single-LED PPG module

Version 1.0.6.6 - 2021-02-05

1. NEW: added support Dynamic LED Strength Adjustment function

Version 1.0.6.5 - 2021-02-01

1. FIX: potential blocking issue when playing raw data

Version 1.0.6.4 - 2021-01-27

1. NEW: added support new PPG module WAP2012/ WAP2014
2. NEW: added support Finger Signal function for PPG module WAP2012/ WAP2014
3. FIX: when R PPG module is connected, the enabled PPG channels are not correctly updated based on Pulse Configuration
4. FIX: in PPG page, when R PPG module is connected, the BPM is not all synchronized to all channels

Version 1.0.6.1 - 2020-12-01

1. NEW: support to save the items in SpO2 Table dialog to *.seq file and import to Auto Sequence page
2. NEW: in Auto Sequence page, if Shift key is pressed, the duration of all items will be updated synchronously
3. FIX: blocking issue in SpO2 page when doing PD sampling and creating SpO2 table in the same time
4. FIX: if the PPG is other than PPG waveform, the amplitude in the simulation graph is incorrect

Version 1.0.5.34 - 2020-08-25

1. PPG page: support PPG respiration; baseline/ amplitude/ frequency modulation
2. remove support new PPG module (only R LED)
3. fix: the output setting of PPG in the Waveform Player is not correctly displayed
4. PPG page: if the signal is outputting with the PPG respiration, the PD sampling keeps missing packets; update to do one thing in the same time
5. fix: the zero voltage of ECG variable DC is not precisely configured
6. PPG page: the AC offset is not saved to the device

Version 1.0.5.26 - 2020-06-15

1. PPG page: temporarily disable the PPG respiration

Version 1.0.5.25 - 2020-06-10

1. sync the curve colors in the preview graph with the colors in the signal output graph
2. update the PPG-G default settings for R PPG module
3. in signal/ player graphs, only display the enabled output channels
4. fix: when R PPG module is connected, in PPG Respiration dialog, Amplitude-G is not sync with Amplitude-R
5. SpO2 page: when "Use SpO2 Table" is checked, by default, select an empty Table item
6. ECG page: remove ECG respiration Basic Level 500 ohm
7. fix Assistant IEC 60601 2-47 201.12.4.4.101: the frequency is incorrect for digital test
8. fix: when R PPG module is connected, the settings in the PPG Configuration dialog are incorrectly changed
9. fix: PPG channel-1 switch sampling may be influenced by PPG channel-2 trigger status
10. fix: Assistant: modify "201.12.4.4.108 Frequency response b) Triangular Pulse" to "201.12.4.4.108 Frequency response b) Sinusoidal Signal"

11. SpO2 page: fix DC + DC Offset is over 3000 mV when changing DC value
12. PWTT page: by default, check the 'Lock DC' checkbox instead of 'Lock AC'

Version 1.0.5.21 - 2020-04-09

1. SpO2 page: by default, check the 'Lock DC' checkbox instead of 'Lock AC'
2. PPG page: by default, check the 'Lock DC' checkbox instead of 'Lock AC'
3. fix bug: PPG waveforms not output if Tab key is entered in SpO2 table generation dialog
4. added support to save noise to waveform raw data in WhaleTeq format (license key is required)
5. PPG page: remove 'Frequency Scan' function
6. if PPG module R/IR is connected, popup message to notify users to connect the Aux power
7. ECG page: update the range of frequency scan to 0.05~500Hz; the start frequency must be less or equal to the stop frequency
8. After the waveform outputting is stopped, there are unexpected short signals are generated
9. fix the Pulse Sequence in the PPG Pulse Configuration form may contain empty selection

Version 1.0.5.17 - 2020-02-03

1. Auto Sequence page: fix ECG/ PPG noise not working (limitation: support PPG noise frequency only upto 1K Hz)

Version 1.0.5.16 - 2019-12-18

1. support new PPG module (only R LED); if the new R PPG module is connected, the Switch sampling function will be disabled
2. support to save/recall the waveform player setting to/from a file (*.pecg, *.pspo, *.ppwv, *.pppg); the player setting file can be added to auto sequence test
3. added options of PTTp and PTTf in Auto PWTT testing

Version 1.0.5.4 - 2019-07-10

1. PPG page: add Lock AC and Lock DC
2. ECG page: add noise frequency options - 100Hz/ 120Hz
3. PPG page: add noise frequency optinos - 100Hz/ 120Hz/ White Noise

Version 1.0.5.3 - 2019-07-08

1. support PPG respiration to PPG-G

Version 1.0.4.61 - 2020-03-16

1. fix signal not outputting in standalone mode after saving waveforms to Mode A/B/C
2. fix PTTp/PTTf is not correctly configured when saving waveforms to Mode A/B/C

Version 1.0.4.58 - 2020-01-07

1. fix crash when right-click in the spo2 table generation dialog if the table is empty
2. fix download database failed
3. fix incorrect QT interval range in ECG page
4. fix load *.ppg files to auto sequence failed if DC > 2500mV
5. fix load *.ppg files to auto sequence failed if noise frequency is 5K Hz
6. fix crash when adjusting amplitude in ECG page
7. fix ECG amplitude can not be adjusted to 1.00mV
8. fix PPG AC Offset is incorrectly configured
9. fix PPG frequency scan not working in some conditions
10. PWTT page: fix incorrect PTTp time for some BPM
11. PWTT page: fix exception issue when adjusting BPM

Version 1.0.4.47 - 2019-09-06

1. fix crash when loading PPG waveform file (10 BPM)

Version 1.0.4.45 - 2019-08-08

1. fix crash when recalling the files which are saved in the previous version2. PPG page: incorrect AC offset value is applied if the waveform type is not PPG waveform
2. ECG page: support pacing duration up to 0.1 ms

Version 1.0.4.41 - 2019-07-23

1. fix ECG play raw data failed in long-run test
2. fix incorrect ECG signal ratio if respiration is enabled
3. update ECG respiration spec: respiration rate 4 ~ 200

4. SpO2 page: when adjusting AC/DC or the formula parameters, if the SpO2 value is not in the range 0-100, display the SpO2 value in red color

Version 1.0.4.18 - 2019-03-15

1. PWTT page: fix 'Reset' function; the PTTp in Time Difference should be reseted to 500ms
2. SpO2 Table form: immediately play the PPG waveforms based on the current selected row settings if the settings are valid; if not valid, stop playing
3. PPG page: fix crash when dragging DP point in preview graph
4. PPG page: fix the maximum value of AC Offset is not updated when SP is changed

Version 1.0.4.17 - 2019-03-07

1. PPG page: the voltage proportional adjustment is incorrectly after Reset function
2. PPG page: added support AC offset function (AC Offset maximum value = 30mV - noise amplitude - VolSP amplitude)
3. fix PD/switch sampling synchronization issue
4. PWTT page: add AF database in the WhaleTeq Database if it's trial version
5. support to minimum 10 BPM in ECG/ PWTT/ SpO2/ PPG pages
6. update the QT interval from 260ms-450ms to minimum=100ms - maximum=900ms
7. disable 'Play' button in Auto Sequence page when the total time is 0 sec
8. fix crash if the parameters of the SpO2 formula are invalid values
9. update hardware versionnaming rule

Version 1.0.4.11 - 2019-01-18

1. fix bug: in PPG page, save Waveform=Square to file, and then recall it, the waveform type is incorrectly restored to PPG
2. PPG page: enhance PPG waveform voltage adjustment process; if the SP voltage is changed, the DN/DP voltage will also be proportional changed
3. PPG page: when the Waveform type - Square is selected, the voltage trackbar is incorrectly displayed (only AC should be displayed)
4. PWTT page: fix compatibility issue; the *.pwv file saved from 1.0.3.x vesion is not correctly restored back

Version 1.0.4.9 - 2019-01-08

1. adjust the maximum value of pulse width based on the frequency in ECG page

Version 1.0.4.8 - 2018-12-26

1. added support to save waveform raw data in WhaleTeq format (license key is required)
2. added support PPG frequency scan
3. added support to set respiration apnea cycle
4. added support PPG square waveform
5. in PWTT page, added support to load ECG square waveform from ECG page and load PPG square waveform from PPG page
6. added support Auto PWTT testing in PWTT page
7. fix when only sampling is running, it should be allowed to modify PPG settings (Invert/ Synchronized Pulse)
8. the PPG Invert and Synchronized Pulse settings of the PPG items in the auto sequence are refer to the global PPG settings

Version 1.0.3.70- 2019-02-21

1. fix run assistant crash
2. add ECG respiration Basic Level 500 ohm

Version 1.0.3.69- 2019-01-19

1. fix bug: fix incorrect max/min value of numeric control in ECG and PWTT file in Auto Sequence page
2. fix PPG max amplitude is still 28mV after the noise amplitude is changed from 2mV to 0mV

Version 1.0.3.67- 2019-01-10

1. update the spec of SpO2 PI range
2. disable ECG respiration when ECG signal play is stopped
3. fix incorrect sampling status between PPG and SpO2 pages
4. fix failed to recall ppg file in auto sequence

Version 1.0.3.64- 2019-01-03

1. fix WhaleTeq-format file parser if newline is inserted
2. fix PD mapping table list is not immediately updated
3. fix memory leak

4. in PWTT page, added support Signal -> Save even when the ECG/PPG waveforms are loaded from other tabs
5. fix pacing rate not synchronized when 'Sync with main function' is enabled
6. fix recall failed if PPG module (R/IR) is connected
7. enhance the recall performance in Auto Sequence
8. check fw compatibility; show error message and close the application if the connected device fw is ver.1.4
9. fix live update issues

Version 1.0.3.52- 2018-11-29

1. fix crash when loading incorrect WhaleTeq-format file in play raw function
2. fix incorrect enabled status of pacing setting group in pacing dialog
3. disable the PPG Invert and Synchronized Pulse settings if the device is outputting

Version 1.0.3.50- 2018-11-28

1. fix incorrect SpO2 preview when AC value is changed

Version 1.0.3.49- 2018-11-26

1. fix calibration curve calculation issue
2. fix standard assistant issues
3. fix failed to play mimic db

Version 1.0.3.46- 2018-11-19

1. fix incorrect pacing rate in standard assistant

Version 1.0.3.45- 2018-11-16

1. fix ui issues in SpO2 page
2. adjust time periods of PPG waveform based on the time ratio when BPM or frequency is changed

Version 1.0.3.44- 2018-11-16

1. fix play raw data issue; non-looping mode is not workable
2. fix failed to play pwtt in auto sequence

Version 1.0.3.43- 2018-11-13

1. added support to choose which channels to output in PPG page
2. fix spo2 table generation issues
3. fix incorrect PTTp calculation

Version 1.0.3.39- 2018-10-26

1. fix crash issue: incorrectly-defined spo2 table may results in crash

Version 1.0.3.38- 2018-10-25

1. SpO2: added support polynomial calibration curve

Version 1.0.3.35- 2018-09-13

1. update SPO2 fine tune process
2. added support both PD sampling and switch sampling
3. ECG: support frequency to 0.05Hz to 500Hz for sine/ triangle/ square
4. added support async pacing rate

Version 1.0.2.22- 2018-05-03

1. fix ECG output lead setting is not synced between ECG page and PWV page
2. fix incorrect PTTp time when playing the ECG and PPG waveforms
3. add 'Model Name' in device information
4. update terms - 'PWV' to 'PWTT', 'SPO2' to 'SpO2'
5. update 'Max Peak' in PD sampling; show the peak value of the current drawing samples
6. update Assistant YY0885 , 51.5.5 pass criteria

Version 1.0.2.5 - 2018-01-25

1. update frequency spec in ECG page
2. fix frequency accuracy issue
3. update ECG simulated waveform

Version 1.0.2.4 - 2018-01-23

1. fix AP issues
2. added support firmware update feature
3. added support assistant key function
4. move RLD test from PWV page to ECG page
5. update pd sampling function; load the pd sampling calibration data when connected
6. set the default value of PPG 'Inverted' status to be true
7. do not invert the displayed PPG waveform even the PPG 'Inverted' is checked
8. added support PWV database player
9. added support PPG database player

Version 1.0.1.3 - 2017-12-15

1. fix AP crash issues
2. ECG amplitude added by noise amplitude should be in the HW limitation range
3. PPG amplitude added by noise amplitude should be in the HW limitation range
4. update the default waveform settings

Version 1.0.0.0 - 2017-09-25

1. initial version