WhaleTeq AECG100 SDK Changelog

Test Environment:

- Linux Kernel Version (Ubuntu): 6.8.0.49-generic
- Raspberry Pi Version: Raspberry Pi 4 Model B (4GB RAM)
- Raspberry Pi Linux Kernel Version: 5.10.103-v7l+ (32-bit), 5.10.103-v7l+ (64-bit)
- macOS Version: macOS Sonoma 14.4.1

IMPORTANT:

1. the calling convention is _cdecl
2. If the PPG module WAP2005/ WAP2006 is connected, the Switch sampling function will be disabled
3. PPG module WAP2012: to output ppg signals, it's suggested to use WTQ*PPGEx
4. only supported FW version 1.14.44.19 and later
5. the ECG play sample rate is limited to 20K in MacOS

Version 1.0.4.1 - 2024-10-17

1. CHG: the respiration algorithm can be multi selected
2. CHG: added support apnea in ECG and PPG respiration algorithm

IMPORTANT:

1. The *enum RespirationMode* is redefined; struct ECG_WAVEFORM.RespirationMode and struct PPG_WAVEFORM.RespirationMode hold a combination of ::RespirationMode enum values
2. The *struct PPG_WAVEFORM* is updated; added apnea settings

Version 1.0.3.9 - 2024-11-20

1. FIX: failed to normally play data in MacOS; adjust the ECG play sample rate to 20K

Version 1.0.3.7 - 2024-10-30

1. FIX: DC is incorrectly adjusted (PPG module WAP2012)
2. FIX: play data may be interrupted in some Linux environments

Version 1.0.3.4 - 2024-09-10

1. FIX: failed to play data in MacOS

Version 1.0.3.3 - 2024-08-22

1. FIX: incorrect ECG signal if PWTT respiration is enabled
2. NEW: added PPG noise frequency 0.5/ 1/ 2/ 3/ 5/ 10/ 25 Hz (only supported FW version 1.14.44.19 and later)
3. NEW: added Mac library
4. FIX: AC/ DC values are incorrect for PPG module WAP2012 (WTQWaveformPlayerOutputPPG*)

Version 1.0.2.18 - 2023-02-08

1. FIX: AC/DC is not adjusted in WTQPlayECGAndPPGEx() (PPG module WAP2012)

Version 1.0.2.16 - 2022-12-23

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

Version 1.0.2.15 - 2022-06-06

1. FIX: the measured PTTp becomes incorrect if BPM > 125
2. FIX: the time constant is incorrect for ECG Exponential waveform

Version 1.0.2.14 - 2021-04-25

1. CHG: structure PPG_WAVEFORM is updated:
    - Remove AmbientLight
2. NEW: added WTQSetLEDAmbientLightMode() to configure the ambient light mode for PPG module WAP2012
3. CHG: remove enum PPGSampling::FullPD
4. CHG: set the baseline of ECG waveforms (Rectangle Pulse/ Triangle Pulse/ Exponential) to zero voltage

Version 1.0.2.13 - 2021-03-08

1. NEW: added support new PPG module WAP2008

Version 1.0.2.12 - 2021-03-03

1. NEW: added Linux and Raspberry Pi library
2. FIX: exception occurred in Raspberry Pi x86 if WTQWaveformPlayerOutputPPG3() is called

Version 1.0.2.11 - 2021-12-03

1. CHG: structure PPG_WAVEFORM is updated:
   - Add AmbientLight
2. CHG: structure HW_INFORMATION is updated; add FW build version
3. CHG: removed structure PPG_LED_PULSE
4. CHG: structure PPG_LED_PULSE_GROUP_SETTING is redefined

Version 1.0.2.10 - 2021-08-16

1. FIX: fail to call WTQWriteLEDPulseGroupSetting() immediately following the device is connected

Version 1.0.2.8 - 2021-07-06

1. FIX: in PWTT mode, incorrectly output PPG Ch2 AC

Version 1.0.2.7 - 2021-06-24

1. FIX: incorrect ECG exposential waveform; the pulse width is not necessary
2. CHG: update ECG_WAVEFORM and PPG_WAVEFORM structure
3. CHG: update enum PPGSampling
4. NEW: added support new PPG module WAP2007

IMPORTANT:

1. structure PPG_WAVEFORM is redefined;

   - rename 'RespirationEnabled' to 'RespirationMode'; the value is enum RespirationMode
   - update 'RespirationVariation' type from 'double' to 'int'

2. structure ECG_WAVEFORM is redefined:

   - rename 'RespirationEnabled' to 'RespirationMode'; the value is enum RespirationMode

3. enum PPGSampling is redefined:

- add PPGSamplingFullPD

Version 1.0.2.2 - 2021-02-19

1. FIX: when play raw ECG data, if the respiration is enabled, the ampltude of the output signal is incorrect
2. CHG: when the device is connected, reset the output lead to RA
3. CHG: when the device is connected, reset the input impedance to off
4. CHG: when the device is connected, reset the respiration to off
5. CHG: when play raw ECG data, if all the DC data are zeros, pacing relay switch is kept disabled
6. NEW: added support new PPG module WAP2012/ WAP2014

Version 1.0.2.1 - 2020-11-04

1. CHG: remove structure PPG_LED_PULSE_SETTING
2. CHG: remove WTQReadLEDPulseSetting(), WTQWriteLEDPulseSetting(); which are replaced with ReadLEDPulseGroupSetting() and WriteLEDPulseGroupSetting()

IMPORTANT:

1. structure PPG_LED_PULSE_SETTING is removed; WTQReadLEDPulseSetting() and WTQWriteLEDPulseSetting() are replaced with ReadLEDPulseGroupSetting() and WriteLEDPulseGroupSetting()

Version 1.0.1.6 - 2020-07-20

1. remove ECG respiration Basic Level 500 ohm
2. fix: the zero voltage of ECG variable DC is not precisely configured

IMPORTANT:

1. structure PPG_WAVEFORM is redefined;
   - update 'RespirationAmplitude' to 'RespirationVariation'
   - add RespirationInExhaleRatio field

Version 1.0.1.5 - 2020-04-08

1. fix after the waveform outputting is stopped, there are unexpected short signals are generated

2. fix the play raw delay issue

Version 1.0.1.4 - 2020-03-27

1. support new PPG module (only R LED); if the new R PPG module is connected, the Switch sampling function will be disabled
2. ECG noise: support 100Hz/ 120Hz
3. PPG noise: 100Hz/ 120Hz/ White Noise
4. fix continuous WTQOutputECG calls results in no waveform generated
5. fix OutputSignalCallback function prototype is incorrect

Version 1.0.1.3 - 2020-03-16

1. fix PTTp time is incorrectly output
2. update sample code
3. fix PTTp/PTTf is not correctly configured when saving waveforms to Mode A/B/C

Version 1.0.1.1 - 2019-12-06

1. add 'PacingRate' data member in struct ECG_WAVEFORM; added support async pacing rate
2. added support ECG respiration; also support ECGRespirationBaseline::ECGRespirationBaseline500
3. rename 'RespirationApnea' to 'RespirationApneaDuration' in struct ECG_WAVEFORM
4. add 'RespirationApneaCycle' in struct ECG_WAVEFORM; added support to config apnea cycle length
5. add *.lib files to \SDK
6. fix memory leak
7. added support to PPG frequency scan; WTQOutputFrequencyScanPPG ()
8. added support PPG square waveform
9. add api: bool WTQConnect (unsigned int portNumber, unsigned int millisecondsTimeout)
10. fix play raw data failed in long-run test

IMPORTANT:

1. enum PPGWaveformType is redefined; PPGWaveformTypeSquare is inserted
2. structure PPG_WAVEFORM is redefined;
   - add ACOffset field;
   - update RespirationRate type from 'double' to 'int'

- update 'RespirationSize' to 'RespirationAmplitude'
    3. structure ECG_WAVEFORM is redefined

Version 1.0.0.7 - 2018-08-07

1. initial