



# PPG-2TF-660 2.0

## Transmittance SpO<sub>2</sub> Module

Works with the AECG100 main console or SECG 5.0 AIO Multi Vital Sign Simulator as the first transmittance SpO<sub>2</sub> performance tester designed for R&D in oximeter manufacturers

Outputs R and IR analog signals to test heart rate and blood oxygen saturation (SpO<sub>2</sub>) functions  
Individually adjustable AC, DC, and PI parameters of R/IR, and equipped with raw data playback function  
Suitable for the development of transmittance PPG products such as finger clip oximeters and patient monitors

- Works with the AECG100 main console or SECG 5.0 AIO Multi Vital Sign Simulator to test heart rate, PPG, PWTT, and SpO<sub>2</sub> functions
- Adjustable SpO<sub>2</sub> parameters, such as AC, DC, and PI (fine adjustment down to 0.01%, meeting FDA recommendations) values of R/IR, to confirm the accuracy of oximeters
- Built-in 14 types of ambient light signals and respiratory variation simulation – add-on signals for more authentic testing
- Equipped with Auto Sequence function – sorts the parameters of different test items into a designated order for automated testing while eliminating the need to develop automated testing programs
- Raw data playback – plays recorded raw data or customized waveforms for repeated verification to facilitate the development process
- Provides SDK supporting multiplatform for users to flexibly develop automated testing programs
- Equipped with MCX to BNC ports to connect to an oscilloscope – outputs amplified and stable signals for viewing the voltage of AC analog signals of R/IR, optical signals received by the PPG-2TF-660 2.0, and the switch status of R/IR LED of oximeter
- Adjustable PPG waveform characteristic points, such as the Systolic Peak (SP), Dicrotic Notch (DN), and Diastolic Peak (DP), in a wide range and precise values for flexible test settings <sup>(1)</sup>
- Exclusive Auto Test SpO<sub>2</sub> Mode <sup>(2)</sup> – automatically calculates the DUT's DC value of R/IR and fills in the SpO<sub>2</sub> table to rapidly build the R curve, bringing convenience for testing the consistency of quality on oximeters <sup>(1)</sup>
- Built-in 6 transmission rates – simulates 5 finger types varying in color brightness and thickness, and neonatal foot test mode for measuring newborns to optimize algorithms <sup>(1)</sup>

Note: (1) Only available when paired with the AECG100.

(2) This mode is mainly for developers to quickly test for reference, not for after-sales calibration and testing on oximeters. If users require development tests on SpO<sub>2</sub> parameters and specifications, please use the SpO<sub>2</sub> Mode.

## • Testing Scenario



(The image illustrates the testing scenario of the PPG-2TF-660 2.0 and AEGC100.  
Please refer to the user manual for detailed installation and instructions when using PPG-2TF-660 2.0 with AEGC100 or SECG 5.0 AIO.)

## • Specifications

Parameters	Specifications	
Heart Rate	Setting Range	10 — 300BPM
	Minimum Step Size	1BPM
	Accuracy	±1BPM
LED DC Level Reference Output	Setting Range <sup>(1)</sup>	300 — 3000mV
	Minimum Step Size	1mV
LED AC Level Reference Output	Setting Range <sup>(1)</sup>	0.1 — 300mV
	Minimum Step Size	0.01mV
PI (AC level / DC level) <sup>(2)</sup>	Setting Range	0.01% — 20% (AC / DC, varies with AC or DC level)
LED1 Absolute Irradiance (100%) <sup>§</sup>	Intensity	2.36mW / m <sup>2</sup> nm
	Accuracy	±10%
LED2 Absolute Irradiance (ambient light) <sup>§</sup>	Intensity	0.25mW / m <sup>2</sup> nm
	Accuracy	±10%
LED Scan Rate	Rate	50 — 40kHz (Normal mode / Standalone mode) <sup>(3)</sup> 10kHz (Raw data mode)
	Accuracy	±5μs
	PD Sample Rate	Rate
PD Response Time	Accuracy	±5μs
	Rising	1μs Typical <sup>(4)</sup>
SpO <sub>2</sub> % parameter specifications (SpO <sub>2</sub> and PPG Test Modes)	Falling	1μs Typical <sup>(4)</sup>
	Setting Range	1% — 100%
SpO <sub>2</sub> % parameter specifications (Auto Test SpO <sub>2</sub> Test Mode)	Minimum Step Size	1%
	Accuracy	91% — 100%: ±1% + specified accuracy of the DUT 81% — 90%: ±2% + specified accuracy of the DUT 71% — 80%: ±3% + specified accuracy of the DUT Below 70%: with unspecified accuracy
SpO <sub>2</sub> % parameter specifications (Auto Test SpO <sub>2</sub> Test Mode)	Accuracy	91% — 100%: ±1% + specified accuracy of the DUT 81% — 90%: ±3% + specified accuracy of the DUT 71% — 80%: ±5% + specified accuracy of the DUT Below 70%: with unspecified accuracy

§ Data Collection Method : To connect the spectrometer with a 2-inch integrating sphere, and fix the integrating sphere on the DUT to measure the absolute irradiance of the LED of the DUT.

Note:

- (1) The AEGC100 and SECG 5.0 AIO test systems adjust AC/DC output according to the linearity of LED electro-optical conversion.
- (2) The PI value may vary according to the different calculation methods of each manufacturer.
- (3) When used with the AEGC100, it supports normal mode, standalone mode, and raw data mode; when used with the SECG 5.0 AIO, only the raw data mode is applicable.
- (4) PD response time varies with the light intensity of the DUT.

## • Ordering Information

Part No.	Description	Quantity
100-AE00018	Model No.: PPG-2TF-660 2.0 Model Name: Transmittance SpO <sub>2</sub> module Package contents: • PPG-2TF-660 2.0 x 1 • USB Type-C to Type-C cable (male to male, 150cm, black) x 1 • MCX (RF) male to BNC cable (30cm) x 2	1

## Compatible Products

Part No.	Description	Quantity
100-AE00001	Model No.: AEGC100 The main console unit for ECG testing.	1
100-EC00002	Model No.: SECG 5.0 AIO Model Name: Multi Vital Sign Simulator The standalone ECG simulator with 12 leads (RA, LA, LL, N, V1 — V6) output for ECG performance tests.	1

## Optional Accessories

Part No.	Description	Quantity
K27-1500301	USB Type-C to Type-C cable (male to male) (150cm) (black)	1
K29-0300601	MCX (RF) male to BNC cable (30cm)	1

## Optional Calibration Service and Warranty Extension

Part No.	Description
YY0007	Model No.: C3 Provides (3) years of calibration service coverage. WhaleTeq equipment can be calibrated to original performance on the basis of (1) year interval.
YY0008	Model No.: R3 Extends the limited warranty from (1) year to (3) years.



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Scan for more information

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