510(k) Summary

This summary of 510(k) information is submitted as required by requirements of SMDA and 21 CFR §807.92.

1 Administrative Information

Submission Date	Jan. 8, 2021
Manufacturer information	Submitter's Name: WEONY (SHENZHEN) TECHNOLOGY CO., LTD. Address: Address: 3rd Floor B, Building 19, HeYi BeiFangYongFa Science & Technology Park, HeYi Community, ShaJing Street, BaoAn District, ShenZhen, 518104, P.R. China Contact person: Autumn Liu TEL: 86-755-86057437 E-Mail: autumn.liu@weony-sz.com
Submission Correspondent	Contact person: Ms Lucy.Yan E-Mail: Lucy.yan@aivikon.com 3rd Floor B, Building 19, HeYi BeiFangYongFa Science & Technology Park, HeYi Community, ShaJing Street, BaoAn District, ShenZhen, 518104, P.R. China
Establishment registration number	NA

2 Device Information

Common name of the device	System, Measurement, Blood-Pressure, Non-Invasive
Trade name of the device	Digital Blood Pressure Monitor WBP Series
Type/Model of the device	WBP101, WBP102, WBP103, WBP104, WBP105, WBP106, WBP107
Classification information	Classification panel: Cardiovascular Classification name: System, Measurement, Blood-Pressure, Non-Invasive Regulation Number: 870.1130 Device Class: II Product Code: DXN
type of 510(k) submission	Traditional

3 Predicate Device Information

Sponsor:	Truly Instrument Limited
Device:	Truly Automatic Arm Blood Pressure Monitor
510(K) Number:	K091434

4 Device Descriptions

Weony Digital Blood Pressure Monitor WBP Series are designed to measure the systolic and diastolic blood pressure and pulse rate of an individual (at least 18 or above) by using a non-invasive technique in which an inflatable cuff is wrapped around the upper arm. Our method to define systolic and diastolic pressure is similar to the auscultatory method but uses an electronic pressure sensor rather than a stethoscope and mercury manometer. The sensor converts tiny alterations in cuff pressure to electrical signals, by analyzing those signals to define the systolic and diastolic blood pressure and calculating pulse rate, which is a well-known technique in the market called the "oscillometric method".

The main components of the Blood Pressure Monitor are the main unit and cuff unit. ABS is used to outer housing of the main unit. The preformed cuff unit, which is applicable to arm circumference approximately between 220 and 360 mm, includes the inflatable bladder and nylon shell. All models of the arm blood pressure monitor use a single size of cuff. The device consists of the microprocessor, the pressure sensor, the operation keys, the pump, the electromagnetic deflation control valve, and the LCD. The subject devices are powered by four AA alkaline batteries or adatpter.

The device has irregular heart beat (IHB) indicator which compares the longest and the shortest time intervals of detected pulse waves to mean time interval and displays a warning signal with the reading to indicate the detection of irregular pulse rhythm when the difference of the time intervals is over a specified range.

5 Intended Use/ Indications for Use

The subject device intended to measure the diastolic, systolic blood pressures and pulse rate of an adult individual in hospitals and home environments by using a non-invasive oscillometric technique with a single upper arm cuff (22-36 cm).

The device detects the appearance of irregular heart beats during measurement and gives a warning signal with readings.

6 SE Comparison

Table 1. Substantial Equivalence Comparison

Characteristics	Subject device	Predicate device (K091434)	Remark
Device Name	Digital Blood Pressure Monitor	Truly Automatic Arm Blood Pressure Monitor DB series	NA
Device Model	WBP101, WBP102, WBP103, WBP104, WBP105, WBP106, WBP107.	DB21, DB22, DB23, DB31, DB32, DB61M, DB62M, DB63M, DB71M	NA
Manufacturer	WEONY (SHENZHEN) TECHNOLOGY CO., LTD.	Truly Instrument Limited	NA
Intended Use/ Indication for Use	The subject device intended to measure the diastolic, systolic blood pressures and pulse rate of an adult individual in hospitals and home environments by using a non-invasive oscillometric technique with a single upper arm cuff (22-36 cm). The device detects the appearance of irregular heart beats during measurement and gives a warning signal with readings.	Truly Automatic Arm Blood Pressure Monitor DB series, Models DB21, DB22, DB23, DB31, DB32, DB61M, DB62M, DB63M, DB71M are a series device intended to measure the systolic and diastolic blood pressure and pulse rate of an adult individual, by using a non-invasive technique in which an inflatable cuff is wrapped around the upper arm. The devices features include irregular pulse rhythm detection during measurement, and display a warning signal with the reading once the irregular heartbeat is detected.	SE
Intended Population	adult	adult	same
Intended Anatomical site	upper arm	upper arm	same
Prescription & OTC	OTC	OTC	same
Working Principle	Oscillometric method	Oscillometric method	same
Pressurization Source	Automatic internal pump	Automatic internal pump	same
Internal Power supply	4pcs “AA” alkaline Batteries	4- size “AA” alkaline Batteries	same
Memory Function	2 × 90 memories (SYS, DIA, Pulse)	DB21：2×60； DB22：2×50； DB23：4×99； DB31：2×60； DB32：1×99； DB61M： 4×99； DB62M：4×99； DB63M：4×99； DB71M： 4×99	SE
Cuff Size	220mm~360mm	220mm~340mm	Similar Note01
Measuring range	Pressure: 0 to 299 mmHg (in 1 mmHg increment);	Pressure: (20mmHg~280mmHg)	Similar Note02
	Pulse: 40 to 180 beat/minute	Pulse rate range (40-195) beats/minute	

Measuring resolution	1 mmHg	1 mmHg	same
Accuracy	Pressure: ±3mmHg; Pulse: ±5%	Pressure: ±3mmHg; Pulse ±5%.	same
Display Type	LCD digital display	LCD digital display	same
Cuff attachment method	By plastic host connected to monitor	By plastic host connected to monitor	same
Irregular Heartbeat Detection	The subject devices have the IHB function.	DB22, DB23, DB61M, DB62M, DB63M, DB71M have the IHB feature.	same
Operating Environment	10~40℃,	10~40℃,	same
	15%~90%RH	15%~90%RH	
Materials	Patient contact materials of the cuff have been tested in accordance with ISO 10993 tested in accordance with accordance with ISO 10993 and FDA guidance	Patient contact materials of the cuff have been tested in accordance with ISO 10993 tested in accordance with accordance with ISO 10993 and FDA guidance	Same

Note01: The subject devices have the larger arm circumference than predicate device, but the subject devices have been tested by ISO81060-2.
Note02: The subject device has a different measuring range of pressure and pulse from the predicate device, but the subject devices have been validated all the full claimed range.
The subject device is as same as predicate device in Working Principle, Intended patient population, intended application site, measuring accuracy. Only their Cuff size, measuring ranges are a little bit different (refer to Note01 to Note 02) which had been validated. Als, the differences would not raise any safety or effectiveness issue based on tests in this submission.
Thus, the subject device is Substantially Equivalent (SE) to the predicate device which is legally marketed in US.

7 Brief discussions of the non-clinical tests

The subject device conforms to the following guidances and standards:

- ✧ Non-Invasive Blood Pressure (NIBP) Monitor Guidance
- ✧ IEC 60601-1:2005+A1:2012: Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance;
- ✧ IEC 60601-1-2:2014 Medical Electrical Equipment - Part 1-2: General Requirements for Basic Safety and Essential Performance - Collateral Standard: Electromagnetic Disturbances - Requirements and Tests.
- ✧ IEC 60601-1-11: 2010 Medical Electrical Equipment - Part 1-11: General Requirements for Basic Safety and Essential Performance - Collateral Standard: Requirements for Medical Electrical Equipment and Medical Electrical Systems

Used in The Home Healthcare Environment;

- ✧ ISO 10993-5: 2009 /(R)2014 Biological evaluation of medical devices – Part 5: Tests for In Vitro cytotoxicity;
- ✧ ISO 10993-10: 2010 Biological evaluation of medical devices – Part 10: Tests for irritation and skin sensitization;
- ✧ IEC 80601-2-30: 2013 Medical electrical equipment - Part 2-30: Particular Requirements for the Basic Safety and Essential Performance of Automated Non-invasive Sphygmomanometers

8 Brief discussions of clinical tests

- ✧ ISO 81060-2:2018 Non-invasive sphygmomanometers - Part 2: Clinical validation of automated measurement type;

In this clinical investigation, 85 patients (47 males and 38 females) participated in the clinical study. Same arm sequential method was adopted during the clinical testing. The manual Mercury Sphygmomanometer was used as a reference device. All the subjects were volunteer to take part in the clinical study, all the subjects completed the clinical study without any AE or side-effect.

The results showed the accuracy of the blood pressure monitor is within acceptable scope specified in ISO 81060-2.

9 Other information (such as required by FDA guidance)

No other information.

11 Conclusions

The subject device:

Digital Blood Pressure monitor manufactured by WEONY (SHENZHEN) TECHNOLOGY CO., LTD. is respectively substantially equivalent to the predicate device Arm Blood Pressure Monitor manufactured by Truly Instrument Limited (K091434).