

# microlife®

A partner for people. For life.

# WatchBP O3 2G



---

Presenter

---

Department / Title

---

Date

# Contents

---

- WatchBP O3
- [WatchBP Analyzer Software](#)
- [Reports](#)
  - [PDF report \(Example\)](#)
  - [XLSX report example](#)
- [Connecting with Bluetooth to PC](#)
- [How to upgrade the device](#)
- [Special patients validations](#)

In order to go direct to the subject click on the text  
To go back click at the upper left on each slide





# WatchBP O3

Professional 24-hour ambulatory blood pressure monitor



AFIB



24-hour ABPM



Central Blood pressure measurement



Upgradeable device version



Pill button



PC Link



For use in End stage renal disease



For use in children



For use in diabetes patients

# WatchBP O3

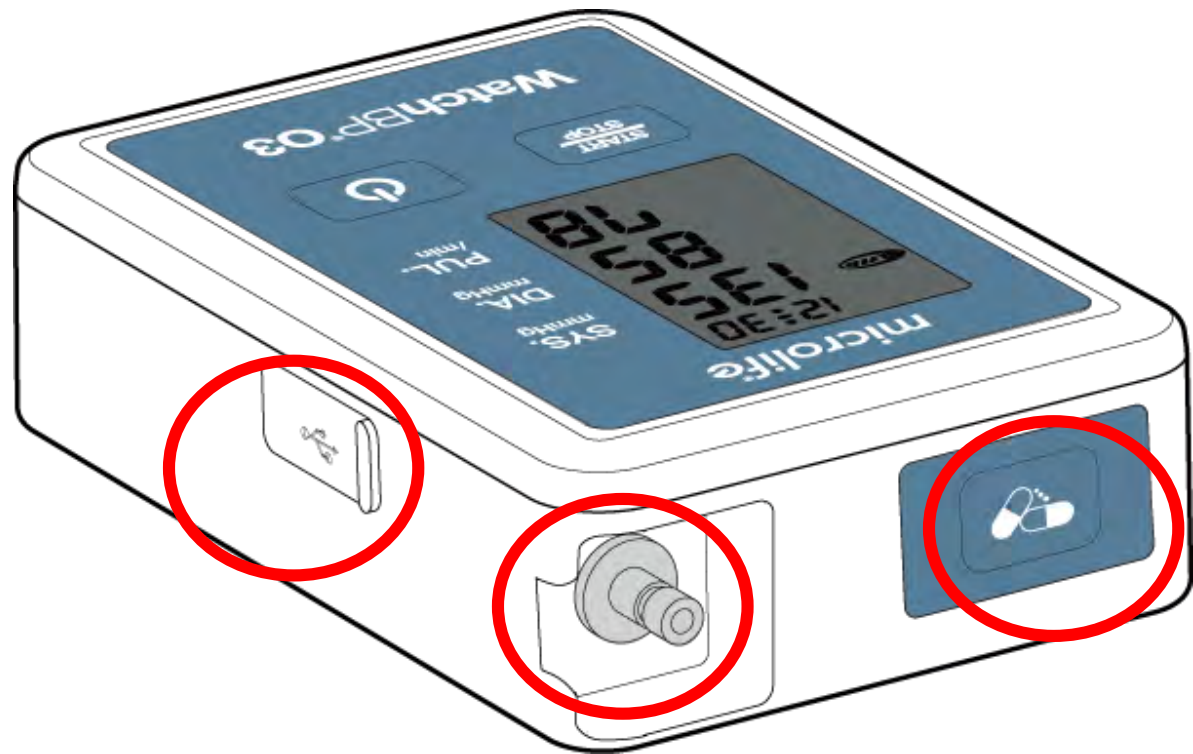
---

- Medication button
- Solid & easier to clean
- USB & BT 4.2 connectivity
- Upgradable Device version
  - Standard: standard ABPM
  - Advanced: AFIB
  - Premier: AFIB and Central BP
- New WatchBP Analyzer



# WatchBP O3

- Medication button on top of device
  - No need to remove device from pouch before pushing
- Solid tube connector
- Flat surface
  - Easier to clean



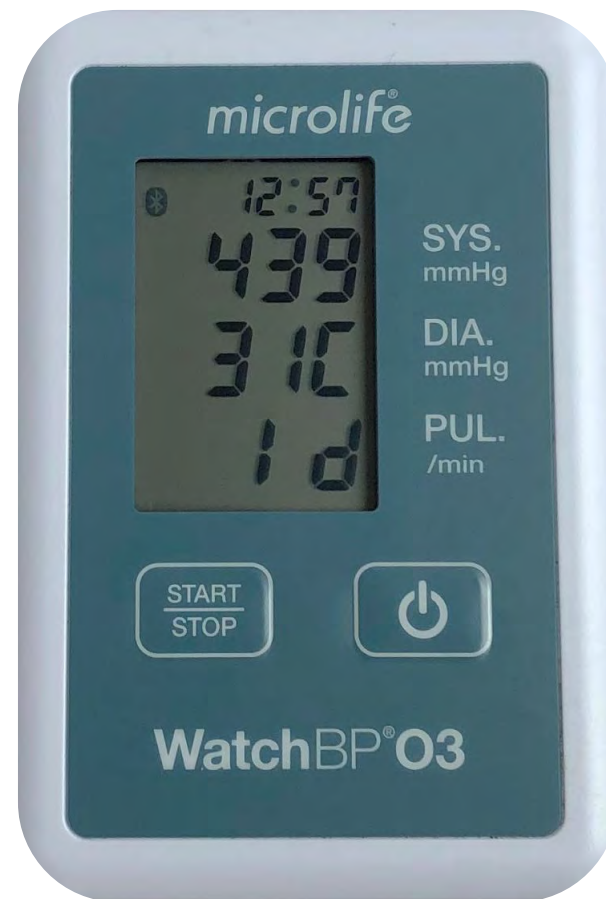
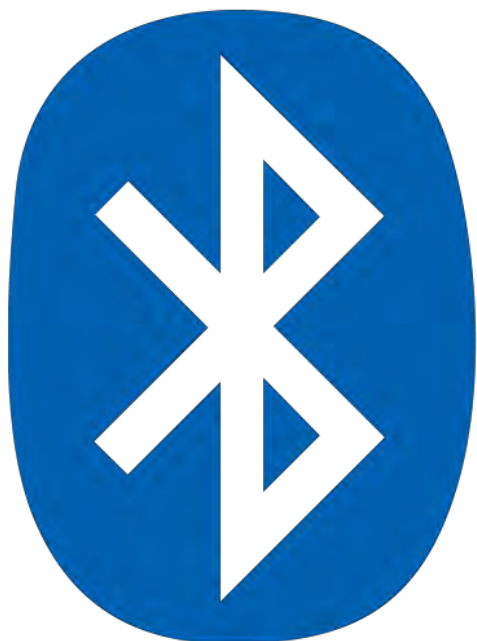
# WatchBP O3

- Same delivery but without waste belt and shoulder strap



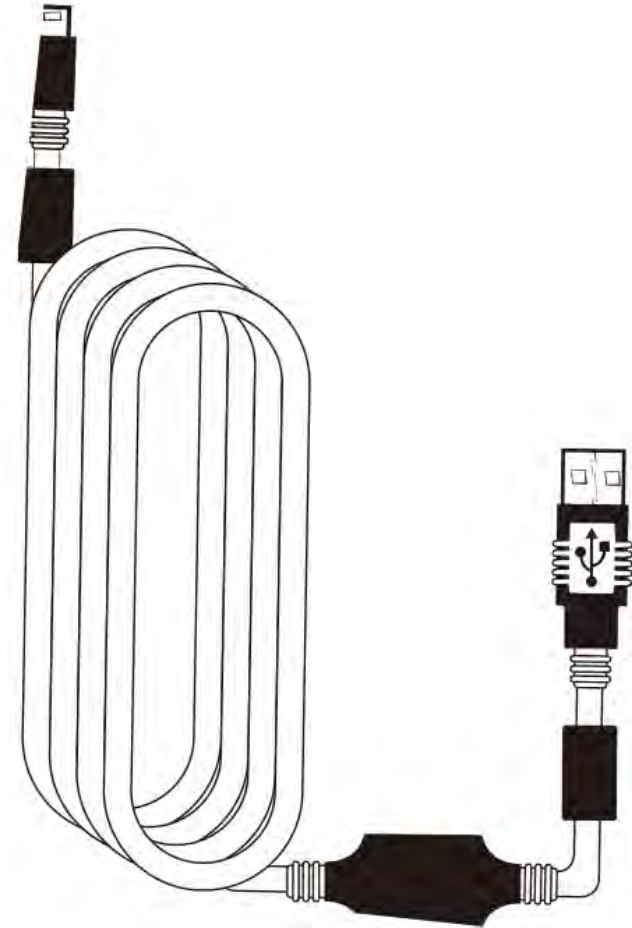
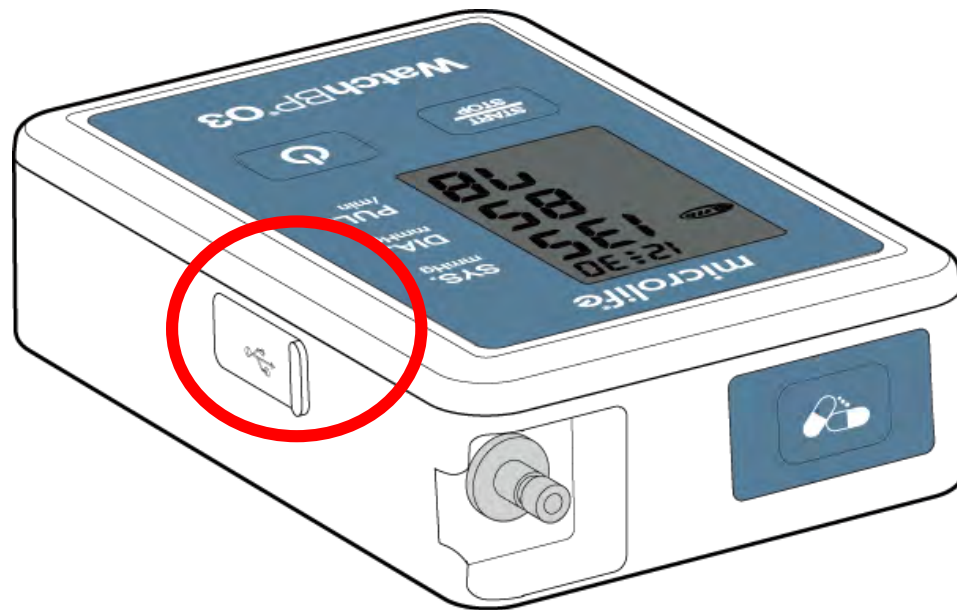
# Bluetooth WatchBP O3 Connectivity

- BT 4.2 connectivity



# USB WatchBP O3 Connectivity

- Universal connection





# SDK's available

---

SDK / sample code for integration for:

- **Windows 10** (USB and BT)
  - dll library file and sample code is available



- **IOS** (iPhone/iPad) & **Android** (BT only)
  - sample code and communication protocol available



# WatchBP Analyzer Software

The screenshot displays the WatchBP Analyzer v1.0.0.23 software interface. The top left shows the device configuration for 'WatchBP 03' with fields for Device Name, Device ID (000000000000), User ID (WW), Batteries (5 V, Normal battery), and Option (AFIB, Central BP). Action buttons include 'Program device', 'Measure', and 'Download'. The top right has 'Language' and 'About' links.

The 'Patient' section features a search bar and a table with columns: Name, ID, Gender, Age, DOB, and Physician. The table lists three patients: Wonder Woman (WW, Female, 30, 12.14.1988, doctor1), Jon Snow (JS, Male, 40, 07.24.1978, Dr. 1), and Green Lantern (GL, Male, 30, 07.27.1988, Dr. 1). Action buttons 'New', 'Edit', and 'Delete' are on the right.

The 'Measurement Settings' section on the left shows a list of measurements for 'WatchBP Office' and 'WatchBP 03'. The 'WatchBP 03' section is expanded, showing a list of measurements with dates and times.

The 'Measurement Report' section displays a table with columns: Date, SYS, DIA, HR, MAP, PP, cSYS, cDIA, cPP, AFIB, Exclude, PVP wave, CODE, and NOT. The table contains 10 rows of measurement data, with the 7th, 8th, and 9th rows highlighted. The 7th row has a 'CODE' of 8 and 'NOT' status of Man. The 8th row has a 'CODE' of 8 and 'NOT' status of Man.

At the bottom right, the copyright notice reads: 'Copyright © Microlife Corporation. All rights reserved.'

# Measurement interval times

- from 5 min to 1 hour

**Program ABPM**

**Setting Day and Night Period**

Day Period	6	~	22	with	5	minutes interval time
	<input checked="" type="checkbox"/>				10	minutes interval time
Night Period	22	~	6	with	5	minutes interval time
	<input checked="" type="checkbox"/>				5	minutes interval time

**Setting Highest Inflation Pressure**

Auto     Manual

180 mmHg

**\*Auto is Recommended**

**Setting Ambulatory Option**

Hide BP reading

Silent Mode

**Program**    **Cancel**

**\*Program device will automatically clear all measurement data on the device**

# Central blood pressure measurement (Optional)

## Validated against invasive blood pressure measurement



### ORIGINAL ARTICLE

#### Measurement Accuracy of a Stand-Alone Oscillometric Central Blood Pressure Monitor: A Validation Report for Microlife WatchBP Office Central

Hao-Min Cheng<sup>1,2,4,5</sup>, Shih-Hsien Sung<sup>3,4,6</sup>, Yuan-Ta Shih<sup>7</sup>, Shao-Yuan Chuang<sup>8</sup>, Wen-Chung Yu<sup>3,4,5</sup>, Chen-Huan Chen<sup>2,4,5,6</sup>

#### BACKGROUND

The superiority of prognostic value of blood pressure (BP) measured at central aorta (CBP) over conventional brachial BP measured by cuff-based BP monitors has reignited the development of new non-invasive techniques for estimating CBP. The present study validated the accuracy of CBP measured by a newly developed stand-alone CBP monitor.

#### METHODS

The CBP monitor provided readings of brachial systolic BP (SBP), brachial diastolic BP (DBP), central SBP, and central pulse pressure (PP). Brachial PP and central DBP were calculated from the relevant readings. The accuracy of the brachial and central SBP, PP, and DBP was validated against the simultaneously recorded invasively measured central aortic SBP, PP, and DBP according to the invasive standard requirements for the noninvasive brachial BP monitors from the Association for the Advancement of Medical Instrumentation (AAMI) in 85 subjects (255 measurements; age range, 30–93 years).

#### RESULTS

The mean differences of cuff BP with reference to the invasively measured central SBP, PP, and DBP were  $-2.6 \pm 9.0$ ,  $-8.6 \pm 11.2$ , and  $6.1 \pm 7.0$  mm Hg, respectively, with the former two being obviously underestimated at high CBP and overestimated at low CBP. In contrast, the corresponding differences for the central SBP, PP, and DBP measured by the CBP monitor were  $-0.6 \pm 5.5$ ,  $-0.4 \pm 7.0$ , and  $-0.2 \pm 6.5$  mm Hg, respectively, without obvious systematic bias. The distribution of measurement errors for central SBP, PP, and DBP surpassed the AAMI criteria.

#### CONCLUSION

Central SBP, PP, and DBP can be measured accurately by a stand-alone automatic BP monitor.

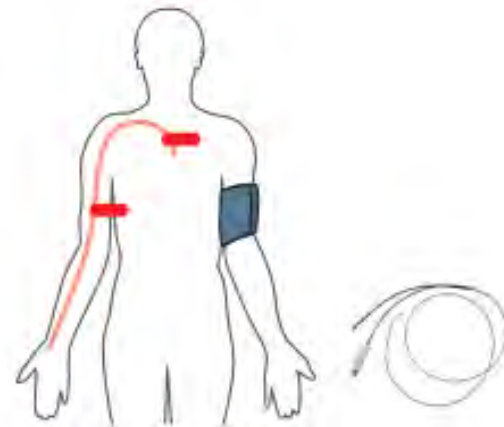
**Keywords:** blood pressure; central pulse pressure; hypertension; oscillometric signals; pressure wave reflection; pulse volume plethysmography; pulse wave analysis.

doi:10.1093/ajh/hps021

The blood pressure (BP) amplification from central aorta to peripheral arteries, which varies substantially between subjects, causes conceivable discrepancy between central BP (CBP) and BP recorded at a person's upper arm.<sup>1–8</sup> Although mean BP and diastolic BP (DBP) are relatively constant in the conduit arteries, systolic BP (SBP) and pulse pressure (PP) measured from peripheral arteries are usually higher than those measured at the origin of the arterial tree, namely, the aortic root.<sup>9,10</sup> CBP can be estimated noninvasively, mainly by using the technique of applanation tonometry.<sup>5,6,9</sup>

Thereafter, it has been shown that the noninvasively measured CBP and the conventional brachial BP respond to anti-hypertensive medications differently.<sup>10,11</sup> Furthermore, the superior prognostic value of CBP over conventional brachial BP demonstrated in previous studies<sup>12–14</sup> has reignited the development of more convenient noninvasive methods for CBP measurements, including tonometry-based<sup>15</sup> and brachial cuff-based techniques.<sup>16,17</sup>

We have developed and validated a novel oscillometric method to estimate central SBP and PP.<sup>16,18,19</sup> Noninvasively



Downloaded from <http://ajh.aphipublications.com/> by guest on December 17, 2012

Correspondence: Chen-Huan Chen (chenchi@vghtpe.gov.tw).

Initially submitted March 20, 2012; date of first revision 04 June, 2012; accepted for publication July 19, 2012.

<sup>1</sup>The Joanna Briggs Institute, Faculty of Health Sciences, University of Adelaide, Adelaide, Australia; <sup>2</sup>Department of Medical Research and Education, Taipei Veterans General Hospital, Taipei, Taiwan; <sup>3</sup>Department of Medicine, Taipei Veterans General Hospital, Taipei, Taiwan; <sup>4</sup>Cardiovascular Research Center, National Yang-Ming University, Taipei, Taiwan; <sup>5</sup>Department of Medicine, National Yang-Ming University, Taipei, Taiwan; <sup>6</sup>Institute of Public Health and Community Medicine Research Center, National Yang-Ming University, Taipei, Taiwan; <sup>7</sup>Department of Biomedical Engineering, Chung Yuan Christian University, Chung-Li, Taiwan; <sup>8</sup>Division of Preventive Medicine and Health Service, Research Institute of Population Health Sciences, National Health Research Institutes, Miaoli, Taiwan.

© American Journal of Hypertension, Ltd 2012. All rights reserved. For Permissions, please email: [journals.permissions@oup.com](mailto:journals.permissions@oup.com)

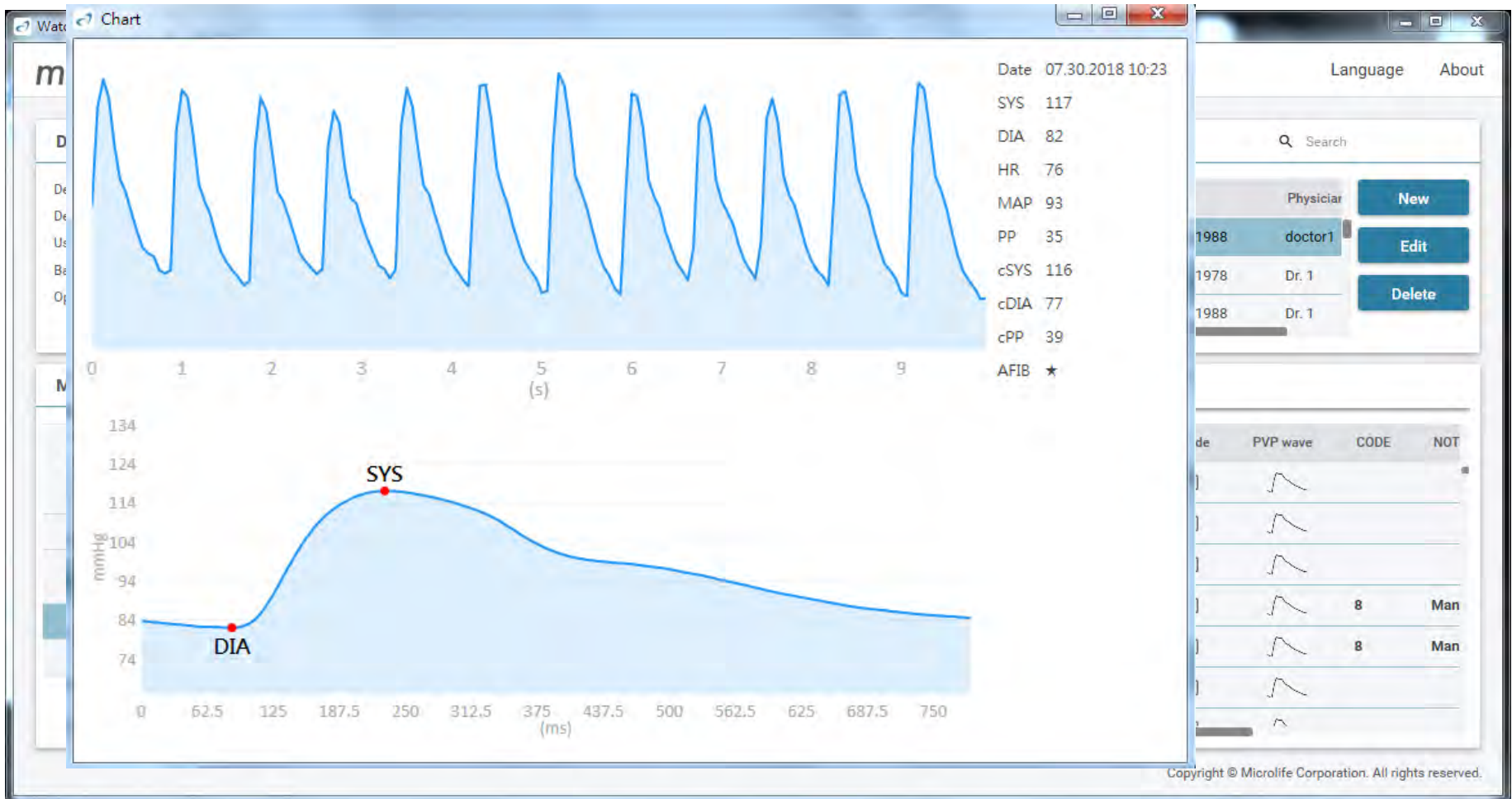
# WatchBP Analyzer – Pulse wave analysis

- For central blood pressure measurement Pulse Waves can be displayed

The screenshot displays the WatchBP Analyzer v1.0.0.23 interface. The top left shows the device name 'WatchBP 03' and ID '000000000000'. The top right shows the patient list with columns for Name, ID, Gender, Age, DOB, and Physician. The bottom left shows measurement settings for 'WatchBP Office' and 'WatchBP 03'. The bottom right shows a measurement report table with columns for Date, SYS, DIA, HR, MAP, PP, cSYS, cDIA, cPP, AFIB, Exclude, PVP wave, CODE, and NOT. A red box highlights the 'Exclude' and 'PVP wave' columns.

	Date	SYS	DIA	HR	MAP	PP	cSYS	cDIA	cPP	AFIB	Exclude	PVP wave	CODE	NOT
4	04.20.2017 03:00	120	84	60	96	36	109	81	28		<input type="checkbox"/>			
5	04.20.2017 04:00	151	79	75	103	72	137	72	65		<input type="checkbox"/>			
6	04.20.2017 05:00	185	90	78	121	95	184	78	106		<input type="checkbox"/>			
7	04.20.2017 06:00	120	84	60	96	36	109	81	28		<input type="checkbox"/>		8	Man
8	04.20.2017 06:30	151	79	75	103	72	137	72	65		<input type="checkbox"/>		8	Man
9	04.20.2017 07:00	185	90	78	121	95	184	78	106		<input type="checkbox"/>			
10	04.20.2017 07:30	185	90	78	121	95	184	78	106		<input type="checkbox"/>			

# WatchBP Analyzer – Pulse wave analysis



# Central blood pressure measurement (CBPM)

- The schedule for CBPM can be programmed separately from the regular measurement schedule

**Program ABPM**

**Setting Day and Night Period**

Day Period	6	~	22	with	5	minutes interval time
	<input checked="" type="checkbox"/>		Central BP measurement		10	minutes interval time
Night Period	22	~	6	with	5	minutes interval time
	<input checked="" type="checkbox"/>		Central BP measurement		5	minutes interval time

**Setting Highest Inflation Pressure**

Auto     Manual

180 mmHg

*\*Auto is Recommended*

**Setting Ambulatory Option**

Hide BP reading

Silent Mode

**Program**    **Cancel**

**\*Program device will automatically clear all measurement data on the device**

# Battery indicator

WatchBP Analyzer v1.0.0.23

## microlife® WatchBP

Device		Patient	
Device Name:	WatchBP 03	Name	
Device ID:	000000000000	Wonder Woman	
User ID:	WW	Jon Snow	
<b>Batteries</b>	<b>5 V, Normal battery</b>	Green Lantern	
Option:	AFIB, Central BP		

**Program device**

Measure

**Download**

Measurement Settings      Measurement Report



# WatchBP O3 and WatchBP Office 2G have the same software; WatchBP Analyzer

The screenshot displays the WatchBP Analyzer v1.0.0.23 interface. The main window is titled "microlife WatchBP". It features a "Device" section on the left with fields for Device Name (WatchBP O3), Device ID (000000000000), User ID (WW), Batteries (5 V, Normal battery), and Option (AFIB, Central BP). Below this is a "Measurement Settings" section with a list of devices and their measurement times. A "Measurement" table is visible, showing columns for Date, SYS, DIA, HR, MAP, PP, cSYS, cDIA, cPP, AFIB, Exclude, PVP wave, CODE, and NOT. Two callout boxes provide detailed views of the device configuration:

**Device 1:**

- Device Name: **WatchBP O3**
- Device ID: 000000000000
- User ID: WW
- Batteries: 5 V, Normal battery
- Option: AFIB, Central BP

**Device 2:**

- Device Name: **WatchBP Office**
- Device ID: CB879C63AA39
- Batteries: 5.3 V
- Option: AFIB

# Reports



AutoSave

File Home Insert Page Layout Formulas Data Review View Help Search

Clipboard Font Alignment Number

Patient ID	123.568	Health facility	Hospital							
Name	willem	Physician	willem							
Sex	Male	Email	johsmith@hotmail.com							
Age	30	Phone	46469436546							
Date of birth	06.08.1988	Study date	17.11.2018							
*Average with first measurement										
Average	SYS 92.0	DIA 57.0	HR 65.0							
DATE	TIME	SYS	DIA	HR	MAP	PP	cSYS	cDIA	cPP	CODE
17.11.2018	10:05	97	59	62	69	38				
17.11.2018	10:06	86	51	66	70	35				
17.11.2018	10:07	92	60	66	65	32				

# WatchBP Analyzer- Report Customization

The screenshot displays the WatchBP Analyzer v1.0.0.23 interface. The main window is titled "microlife WatchBP" and has tabs for "Measurement" and "Report".

**Device Information:**

- Device Name: WatchBP Office
- Device ID: CB879C63AA39
- Batteries: 5.2 V
- Option: AFIB, Central BP

**Patient Information:**

Name	ID
Green Lantern	GL
Harley Quinn	HQ
Super Man	SM

**Measurement Settings:**

- WatchBP 03
- 09.05.2018 15:34
- 11.05.2018 11:01
- 09.18.2018 10:32
- 09.18.2018 10:48 (Selected)
- WatchBP Office
- 10.26.2018 08:51

**Report Customization Options:**

- Hide error and event messages
- Hide AFIB result
- Customization:**
  - Physician: Dr. Quinzel
  - Centre/Hospital: Quinzel Clinic
  - Customized logo: C:\Microlife\sample logo.png

**Buttons:** "Generate PDF Report" (highlighted in red)

# Report in PDF or in XLSX

microlife WatchBP

Bluetooth About

### Device

Device Name:

Device ID:

Batteries:

Option:

### Patient

Search

Name	ID	Gender	Age	DOB	Physician	
Jason	A123456789	Male	25	13.12.1993	doctor1	<input type="button" value="New"/> <input type="button" value="Edit"/>
willem	123.568	Male	30	06.08.1988	willem	<input type="button" value="Delete"/>
WillemI	12345	Male	30	13.12.1988	doctor1	

### Measurement Sets

- WatchBP 03
  - 15.08.2018 11:38
  - 15.08.2018 13:56
  - 15.08.2018 14:02
  - 15.08.2018 14:48
- WatchBP Office
  - 13.12.2018 11:33
  - 13.12.2018 11:35
  - 13.12.2018 11:39
  - 13.12.2018 11:42

### Measurement Report

#### Setting Office Blood Pressure Threshold

SYS	135	mmHg
DIA	85	mmHg

#### Report Option

- Hide error and event messages
- Hide AFIB result
- Average without first measurement

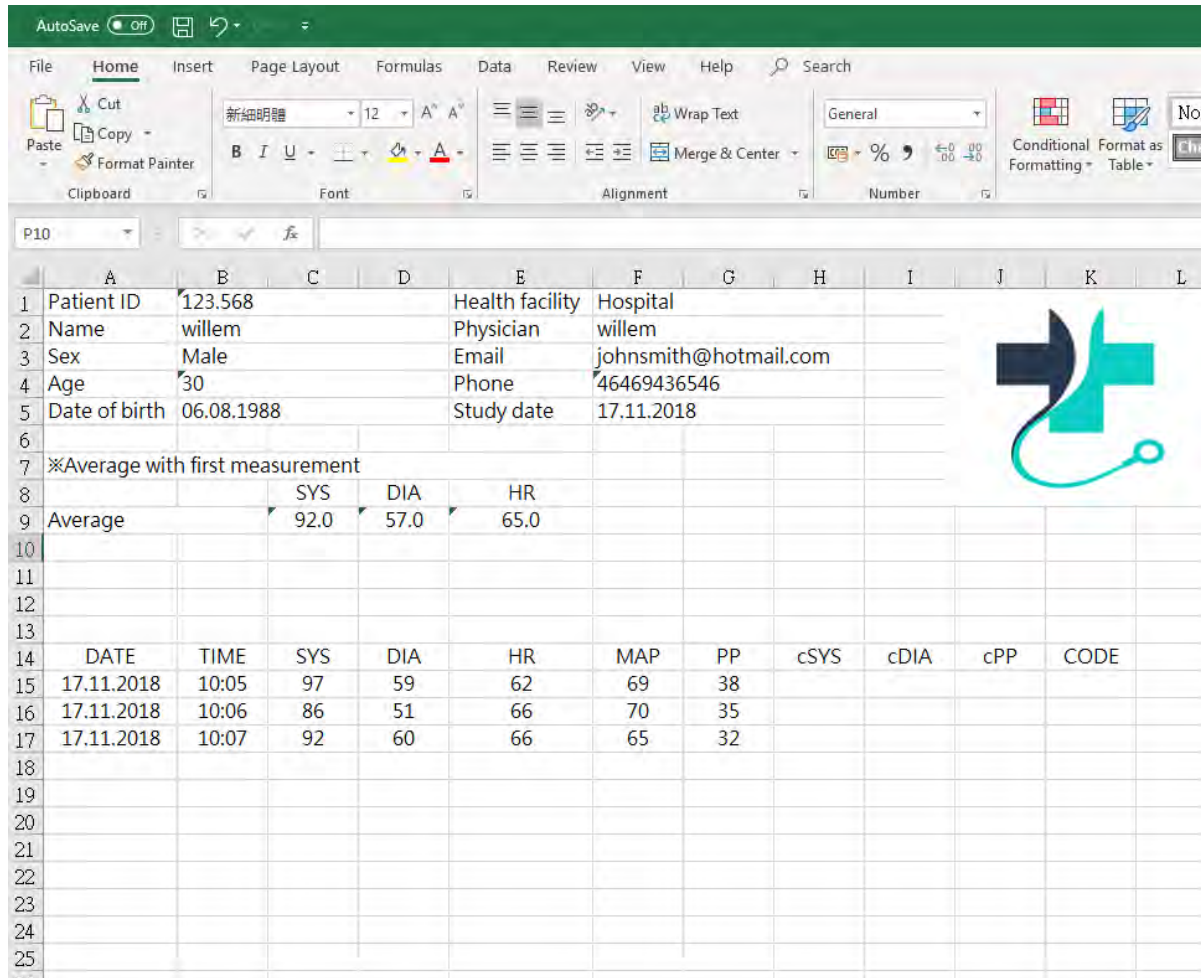
#### Customization

Physician: willem

Centre/Hospital: Hospital

Customized logo: C:\Users\wille\Pictures\715vwwP5ZEL.png

# XLSX report Hospital logo can be implemented



The screenshot shows an Excel spreadsheet with a patient report template. The report includes patient details, a summary of measurements, and a table of multiple measurements. A hospital logo is visible in the background of the spreadsheet.

A	B	C	D	E	F	G	H	I	J	K	L
1	Patient ID	123.568		Health facility	Hospital						
2	Name	willem		Physician	willem						
3	Sex	Male		Email	johnsmith@hotmail.com						
4	Age	30		Phone	46469436546						
5	Date of birth	06.08.1988		Study date	17.11.2018						
6											
7	※Average with first measurement										
8			SYS	DIA	HR						
9	Average		92.0	57.0	65.0						
10											
11											
12											
13											
14	DATE	TIME	SYS	DIA	HR	MAP	PP	cSYS	cDIA	cPP	CODE
15	17.11.2018	10:05	97	59	62	69	38				
16	17.11.2018	10:06	86	51	66	70	35				
17	17.11.2018	10:07	92	60	66	65	32				
18											
19											
20											
21											
22											
23											
24											
25											

# PDF report

## WatchBP O3

Ambulatory Blood Pressure Measurement Report

**Patient ID** HQ  
**Name** Harley Quinn  
**Sex** Female  
**Age** 68  
**Date of birth** 07.02.1950

**Health facility** Quinzel Clinic  
**Physician** Dr. Quinzel  
**Email** Hadey@abc.com  
**Phone** 1-234-567-890  
**Study date** 12.13.2018



### Day and Night Period

	TIME	INTERVAL
Day:	7-20h	30 min
Night:	20-7h	30 min

### Actual Awake / Asleep

Awake:	7-20 h
Asleep:	20-7 h

### BP Threshold

Day:	135/85 mmHg
Night:	120/70 mmHg

### Readings

Total Readings:	83
Successful:	80 (95.2%)

### White Coat Window

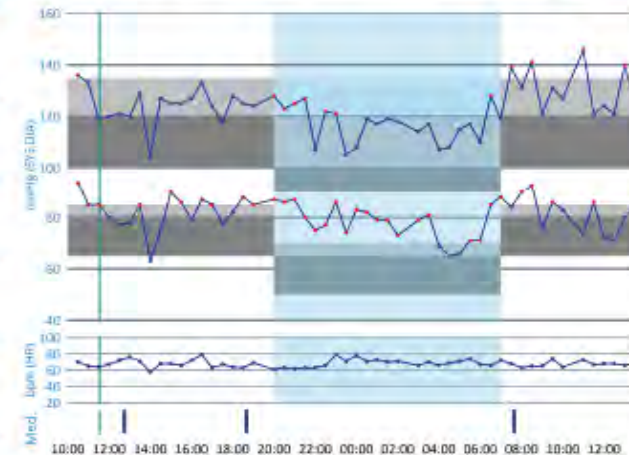
	SYS	DIA	HR
Readings	2	2	2
1st hr Max:	138	94	70

### Night-time Dip%

	SYS	DIA
Dip%	8 %	8 %

### BP Load

Day readings	≥ 135/85	53.8 %
Night readings	≥ 120/70	65.7 %



### Average Blood Pressure (SD)

	SYS	DIA	HR	MAP	PP	cSYS	cDIA	cPP
24-hr	124(8)	81(8)	68(4)	95	42	(-)	(-)	-
Awake	127(8)	83(8)	68(3)	97	44	(-)	(-)	-
Asleep	117(5)	78(6)	69(5)	90	38	(-)	(-)	-

TIME	SYS	DIA	HR	MAP	CODE	TIME	SYS	DIA	HR	MAP	CODE	TIME	SYS	DIA	HR	MAP	CODE
12.13.2018						21:30	127	80	63	95		09:00	121	78	65	91	
10:30	136	94	70	106		22:00	107	75	63	85		09:30	131	85	74	101	
11:00	133	85	65	101		22:30	122	77	65	92		10:00	127	83	64	97	
11:30	119	85	64	98		23:00	121	88	79	97		11:00	148	73	73	97	
12:00	120	80	67	93		23:30	105	74	71	84		11:30	121	88	67	97	
12:30	121	77	72	91		12.14.2018						12:00	134	72	66	99	
12:45					1	00:00	106	85	78	91		12:30	121	71	66	87	
13:00	120	78	78	92		00:30	119	82	71	84		13:00	140	80	66	100	
13:30	128	85	71	96		01:00	117	79	73	91		13:30	128	84	66	98	
14:00	104	63	58	79		01:30	119	79	70	92		14:00	132	79	62	96	
14:30	127	75	68	92		02:00	116	73	71	88		14:30	148	68	67	106	
15:00	125	80	68	101		03:00	114	79	68	90		15:00	131	85	71	102	
15:30	125	86	66	99		03:30	117	81	70	93		15:30	130	77	66	94	
16:00	127	79	72	95		04:00	107	89	66	81		16:00	122	81	66	94	
16:30	133	87	79	102	5	04:30	108	85	69	79		16:30	123	85	74	98	
17:00	124	85	63	98		05:00	115	88	71	92		17:00	128	81	69	96	
17:30	118	76	67	91		05:30	117	71	74	86		17:30	130	78	71	95	
18:00	128	82	64	97		06:00	110	71	67	84							
18:30	125	89	63	100		06:30	126	85	66	99							
18:45					1	07:00	119	88	72	98							
19:00	124	82	68	98		07:30	139	84	65	102							
20:00	128	87	81	100		07:58					1						
20:30	123	85	63	96		08:00	131	80	63	103							
21:00	129	87	82	99		08:30	141	85	65	109							

### Comment:

Daytime Normotension, Isolated 24-h Diastolic Hypertension, Isolated NightTime Diastolic Hypertension, White Coat Hypertension, Non-Dipper

### Signature:

microlife®

microlife

# PDF report, Hospital logo can be implemented

## WatchBP O3

Ambulatory Blood Pressure Measurement Report

**Patient ID** HQ  
**Name** Harley Quinn  
**Sex** Female  
**Age** 68  
**Date of birth** 07.02.1950  
**Health facility** Quinzel Clinic  
**Physician** Dr. Quinzel  
**Email** Harley@abc.com  
**Phone** 1-234-567-890  
**Study date** 12.13.2018



### Day and Night Period

Day:  
Night:

### Actual

Awake  
Asleep

### BP Tr

Day:  
Night:

### Readi

Total  
Success

### White

Readi

1st hr Max. 136 94 70

### Night-time Dip%

Dip%	SYS	DIA
	8 %	8 %

### BP Load

Day readings	≥ 135/85	53.8 %
Night readings	≥ 120/70	85.7 %

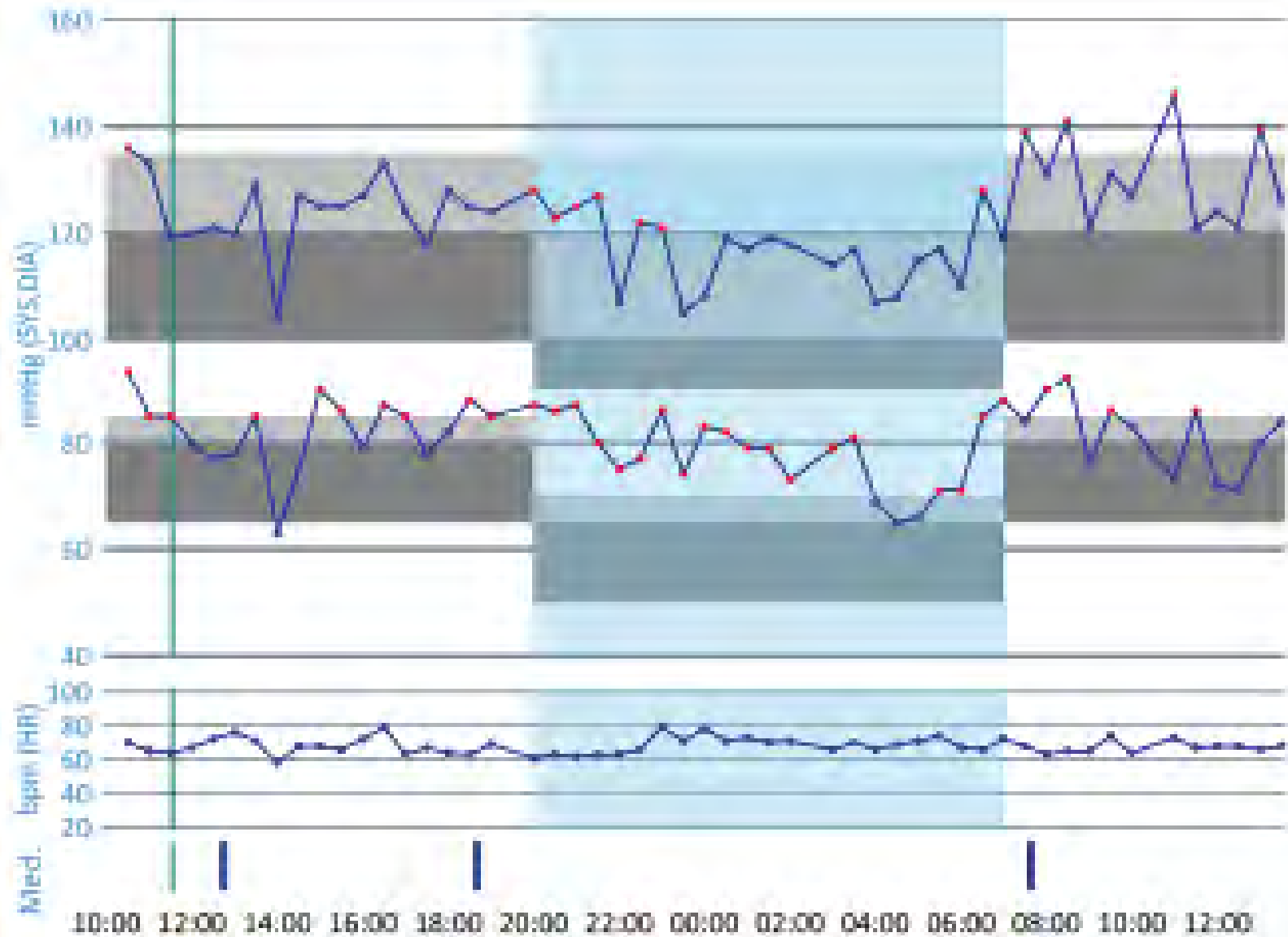
### Average Blood Pressure (SD)

	SYS	DIA	HR	MAP	PP	cSYS	cDIA	cPP
24-hr	124(8)	81(8)	68(4)	95	42	(-)	(-)	-
Awake	127(8)	83(8)	68(3)	97	44	(-)	(-)	-
Asleep	117(5)	79(6)	69(5)	90	38	(-)	(-)	-

TIME	SYS	DIA	HR	MAP	CODE	TIME	SYS	DIA	HR	MAP	CODE	TIME	SYS	DIA	HR	MAP	CODE
------	-----	-----	----	-----	------	------	-----	-----	----	-----	------	------	-----	-----	----	-----	------

12.13.2018						21:30	127	80	63	95		09:00	121	78	65	91	
10:30	136	94	70	808		22:00	107	75	63	85		09:30	131	85	74	101	
11:00	133	85	85	801		22:30	122	77	66	92		10:00	127	83	84	97	
11:30	119	85	84	98		23:00	121	85	79	97		11:00	148	73	73	97	

# PDF report, graph





# PDF report, Automated comment

15:00	125	90	68	101		03:00	114	79	68	90	15:00	131	88	71	102
15:30	125	86	66	99		03:30	117	81	70	93	15:30	130	77	68	94
16:00	127	79	72	95		04:00	107	69	68	81	16:00	122	81	69	94
16:30	133	87	79	102	8	04:30	106	65	69	79	16:30	123	88	74	98
17:00	124	85	63	98		05:00	115	68	71	82	17:00	128	81	69	96
17:30	118	78	67	91		05:30	117	71	74	86	17:30	130	78	71	95
18:00	128	82	64	97		06:00	110	71	67	84					
18:30	125	88	63	100		06:30	128	85	66	99					
18:40					1	07:00	119	88	72	98					
19:00	124	85	69	98		07:30	139	84	68	102					
20:00	128	87	61	100		07:38									1
20:30	123	86	63	98		08:00	131	90	63	103					
21:00	125	87	62	99		08:30	141	93	65	109					

**Comment:**

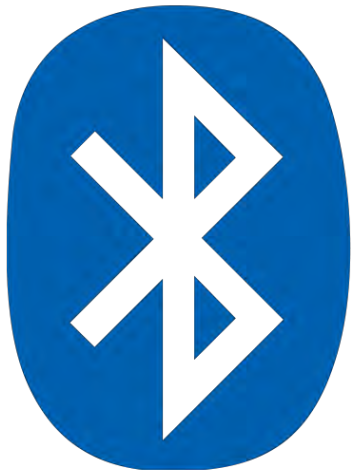
**Signature:**

Daytime Normotension, Isolated 24-h Diastolic Hypertension, Isolated NightTime Diastolic Hypertension, White Coat Hypertension, Non-Dipper

Page 1 of 1

# Bluetooth WatchBP O3 Connectivity

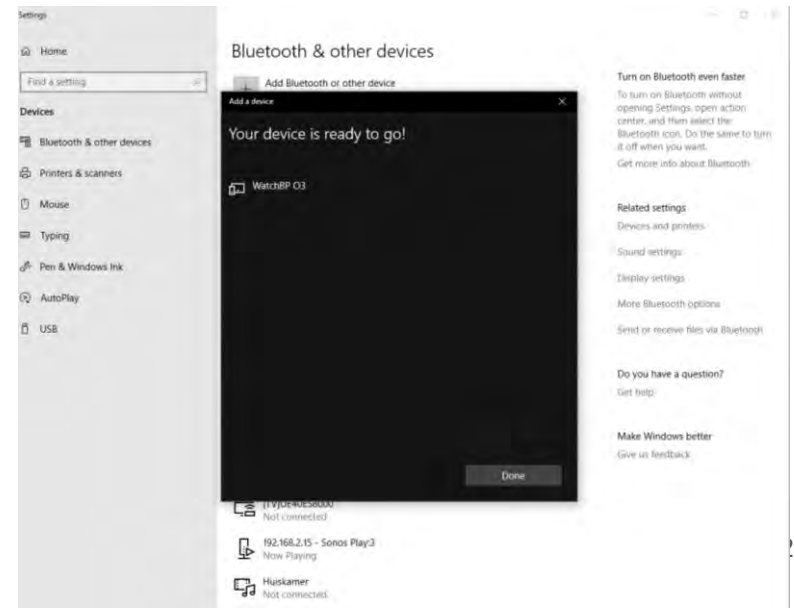
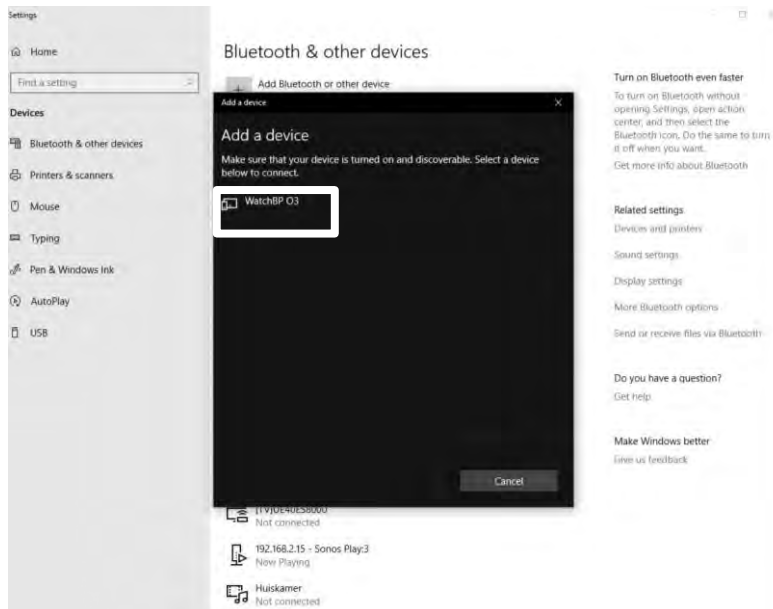
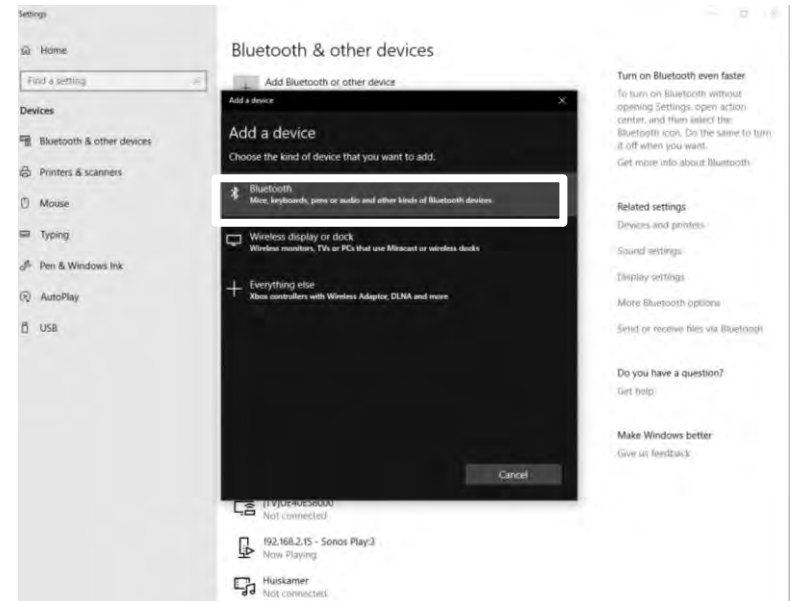
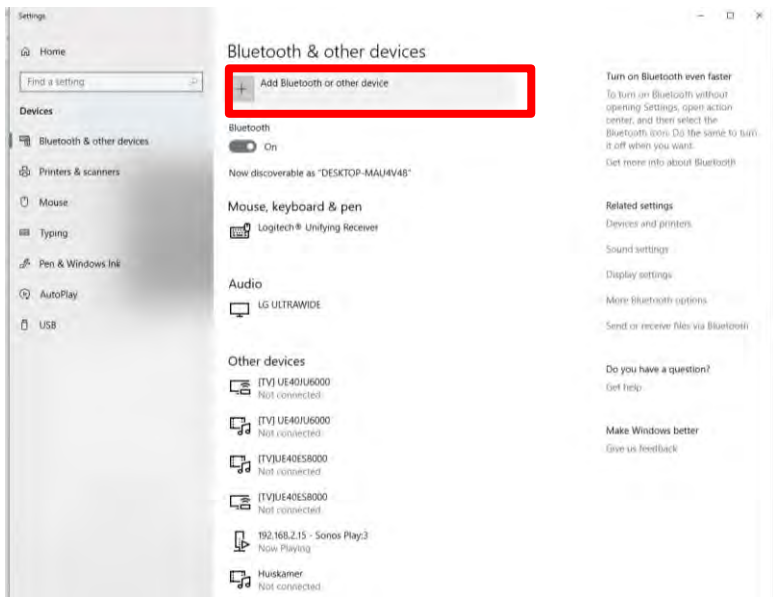
- BT 4.2 connectivity
- To activate press Start/Stop for 5 seconds until the unique key appears on the Display



microlife®



# Bluetooth WatchBP O3 Connectivity



# BT connectivity (3 steps to connect)

1. Open WatchBP Analyzer and
2. Click on “Bluetooth”, on the device and then on “Connect”

The image shows a screenshot of the WatchBP Analyzer software interface. A 'Bluetooth' dialog box is open in the foreground, and the main application window is visible in the background. Red boxes and numbers highlight the steps to connect:

- 1.** A red box highlights the 'Bluetooth' button in the top right corner of the main application window.
- 2.** A red box highlights the device information in the Bluetooth dialog: Name: WatchBP O3, MAC: EB28AF43931C, Pair: True, Signal Strength: No data.
- 3.** A red box highlights the 'Connect' button at the bottom of the Bluetooth dialog.

The main application window shows the 'Patient' table with the following data:

Name	ID	Gender	Age	DOB	
Jason	A123456789	Male	25	13.12.1993	New
willem	123.568	Male	30	06.08.1988	Edit
WillemII	12345	Male	30	13.12.1988	Delete

Copyright © Microlife Corporation. All rights reserved.  
26/09/2017 10:01

# Upgrade the device, easy and convenient



# Upgrade the device, easy and convenient

- Features that can be activated
  1. AFIB
  2. Central blood pressure measurement & AFIB

Device	
Device Name:	WatchBP Office
Device ID:	CB879C63AA39
Batteries	5.3 V
Option:	1. AFIB

Program device

Measure

Download

Device	
Device Name:	WatchBP Office
Device ID:	CB879C63AA39
Batteries	5.2 V
Option:	2. AFIB, Central BP

Program device

Measure

Download

# WatchBP Analyzer – activate device feature

WatchBP Analyzer v1.0.0.23

**microlife WatchBP** Language About

**Device**

Device Name: **WatchBP Office** [Program device](#)

Device ID: **CB879C63AA39** [Measure](#)

Batteries: **5.3 V** [Download](#)

Option: **AFIB**

**Patient** 🔍 Search

Name	ID	Gender	Age	DOB	Physician	
Green Lantern	GL	Male	30	07.27.1988	Dr. 1	<a href="#">New</a> <a href="#">Edit</a>
Harley Quinn	HQ	Female	68	07.02.1950	Dr. Quinz	<a href="#">Delete</a>
Super Man	SM	Male	30	09.05.1988	doctor2	

**Measurement Settings**

watchBP US

- 09.05.2018 15:34
- 11.05.2018 11:01
- 09.18.2018 10:32
- 09.18.2018 10:48

WatchBP Office

- 10.26.2018 08:51
- 10.26.2018 08:52

**Measurement Report**

Date	SYS	DIA	HR	MAP	PP	cSYS	cDIA	cPP	AFIB	Exclude	PVP wave	CODE	NOTE
04.20.2017 07:00	120	84	60	96	36	109	81	28		<input type="checkbox"/>			
04.20.2017 07:20	151	79	75	103	72	137	72	65		<input type="checkbox"/>			
04.20.2017 07:40	185	90	78	121	95	184	78	106		<input type="checkbox"/>			
04.20.2017 08:00	120	84	60	96	36	109	81	28		<input type="checkbox"/>			
04.20.2017 08:20	151	79	75	103	72	137	72	65		<input type="checkbox"/>			
04.20.2017 08:40	185	90	78	121	95	184	78	106		<input type="checkbox"/>			

Copyright © Microlife Corporation. All rights reserved.

# WatchBP Analyzer – activate device feature

- Click on “About”

The screenshot shows the WatchBP Analyzer v1.0.0.23 application window. The 'About' dialog box is open, displaying the following information:

- Device Name:
- Device ID: CB879C63AA39
- Firmware Version: RP2.2018.10.18
- Option: AFIB (Activated) and AFIB & Central BP (Activate)
- Buttons: User Manual, Activate, ? (help), Okay
- Text: Please consult Microlife or the local distributor with the option "Activation"

The main application window shows a table of patient data and a table of device settings. The 'About' button in the top right corner of the main window is highlighted with a red box.

Gender	Age	DOB	Physician	
Male	30	07.27.1988	Dr. 1	New
Female	68	07.02.1950	Dr. Quinz	Edit
Male	30	09.05.1988	doctor2	Delete

cDIA	cPP	AFIB	Exclude	PVP wave	CODE	NOTE
81	28		<input type="checkbox"/>	✓		
72	65		<input type="checkbox"/>	✓		
78	106		<input type="checkbox"/>	✓		
81	28		<input type="checkbox"/>	✓		
72	65		<input type="checkbox"/>	✓		
78	106		<input type="checkbox"/>	✓		



# WatchBP Analyzer – activate device feature

- Click on “?” of the preferred option to activate

The screenshot displays the WatchBP Analyzer v1.0.0.23 interface. The 'About' dialog box is open, showing the following information:

- Device Name: WatchBP Analyzer
- Device ID: CB879C63AA39
- Firmware Version: RP2.2018.10.18
- Option: AFIB & Central BP

The 'AFIB & Central BP' option is selected, and its associated '?' button is highlighted with a red box. The background shows a table of patient data and a list of measurements.

Gender	Age	DOB	Physician	
Male	30	07.27.1988	Dr. 1	New
Female	68	07.02.1950	Dr. Quinz	Edit
Male	30	09.05.1988	doctor2	Delete

cDIA	cPP	AFIB	Exclude	PVP wave	CODE	NOTE
81	28		<input type="checkbox"/>	✓		
72	65		<input type="checkbox"/>	✓		
78	106		<input type="checkbox"/>	✓		
81	28		<input type="checkbox"/>	✓		
72	65		<input type="checkbox"/>	✓		
78	106		<input type="checkbox"/>	✓		

# WatchBP Analyzer – activate device feature

- Click on “Copy” for the required information activate

The screenshot displays the WatchBP Analyzer v1.0.0.23 software interface. The main window shows a sidebar with 'Device' and 'Measurement' sections. The 'About' dialog box is open, displaying the following information:

- WatchBP Analyzer Version: 1.0.0.23
- Device ID: CB879C63AA39
- Firmware Version: RP2.2018.10.18
- Option: AFIB (Activated)
- Option: AFIB & Central BP (Activate)

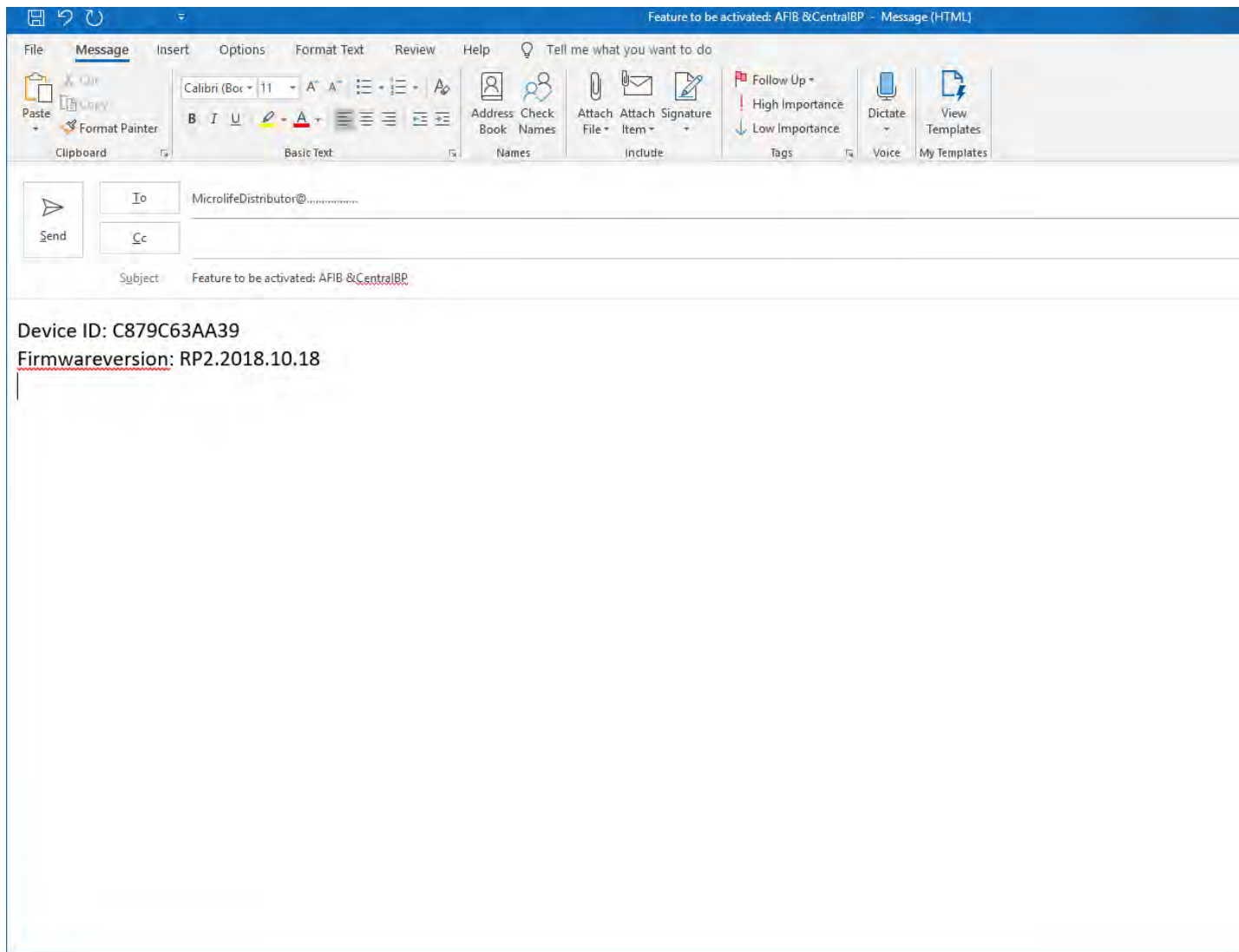
A red box highlights the 'Activate' button and a question mark icon. Below the dialog box, a message reads: "Please consult Microlife or the local distributor with the option 'Act...".

In the bottom right corner, a 'Copy' button is highlighted with a mouse cursor, and a 'Close' button is also visible.

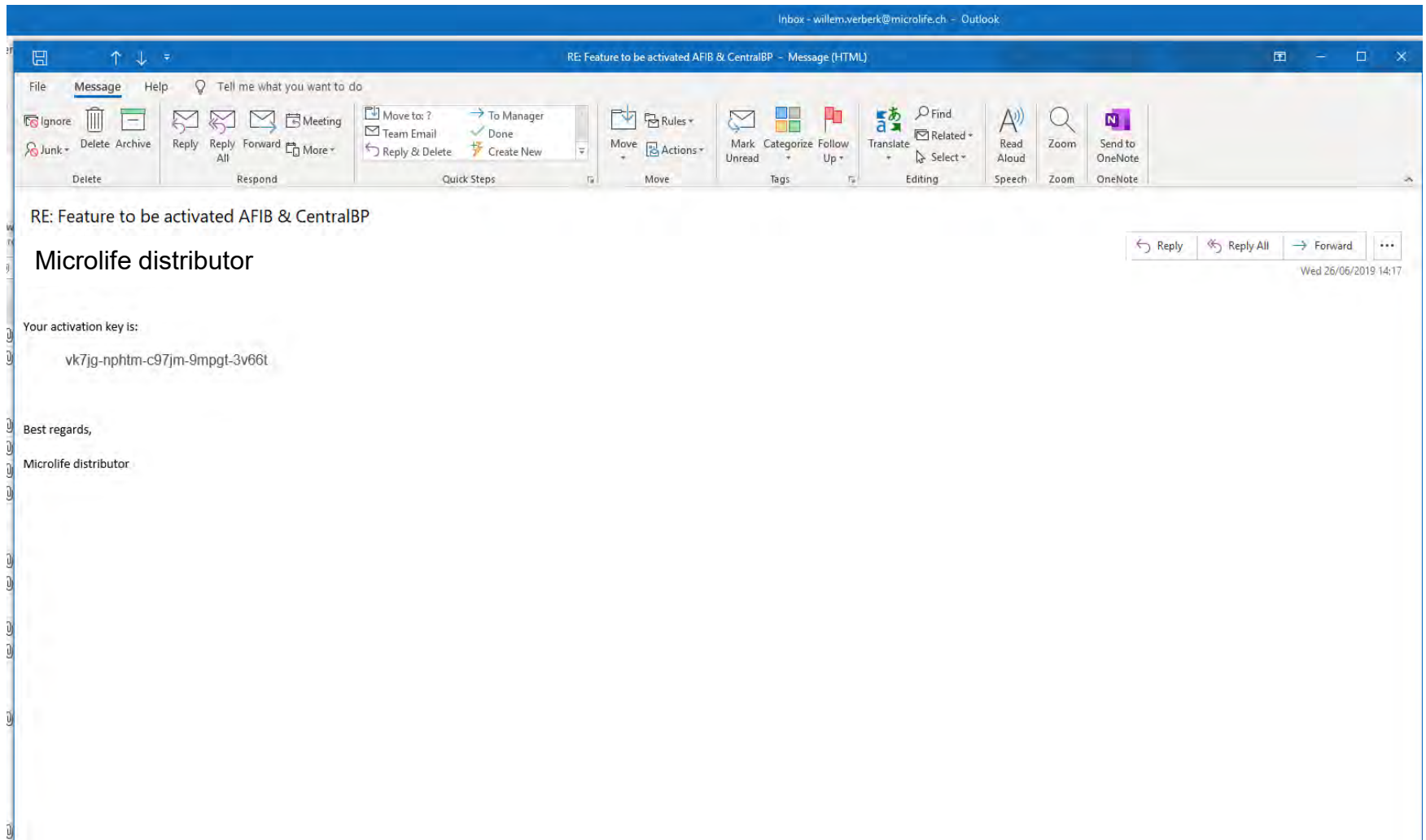
The background interface includes a table with columns: Gender, Age, DOB, Physician, and buttons for New, Edit, and Delete.

Gender	Age	DOB	Physician	
Male	30	07.27.1988	Dr. 1	New
Female	68	07.02.1950	Dr. Quinz	Edit
Male	30	09.05.1988	doctor2	Delete

# Send request to Microlife distributor or Microlife



# Activation key will be sent by distributor



# WatchBP Analyzer – activate device feature

- Click on “Activate”

The screenshot shows the WatchBP Analyzer v1.0.0.23 software interface. A red box highlights the 'About' dialog box for a device. The dialog box contains the following information:

- About**
- WatchBP Analyzer Version: 1.0.0.23 (with a **User Manual** button)
- Device ID: CB879C63AA39
- Firmware Version: RP2.2018.10.18
- Option: AFIB (with **Activated** and **?** buttons)
- Option: AFIB & Central BP (with a red-bordered **Activate** button and a **?** button)
- Please consult Microlife or the local distributor with the option "Activation"
- Okay** button

The background interface shows a table of device data:

Gender	Age	DOB	Physician	
Male	30	07.27.1988	Dr. 1	<b>New</b>
Female	68	07.02.1950	Dr. Quinz	<b>Edit</b>
Male	30	09.05.1988	doctor2	<b>Delete</b>

Below this is another table with columns: cDIA, cPP, AFIB, Exclude, PVP wave, CODE, NOTE.

cDIA	cPP	AFIB	Exclude	PVP wave	CODE	NOTE
81	28		<input type="checkbox"/>	✓		
72	65		<input type="checkbox"/>	✓		
78	106		<input type="checkbox"/>	✓		
81	28		<input type="checkbox"/>	✓		
72	65		<input type="checkbox"/>	✓		
78	106		<input type="checkbox"/>	✓		

# WatchBP Analyzer – activate device feature

- Copy in activation key and click on confirm

**Device**

Device Name:  
Device ID:  
Batteries  
Option:

**Measurement**  
WATCHBP US

**About**

WatchBP Analyzer Version: 1.0.0.23

Device ID: CB879C63AA39

Firmware Version: RP2.2018.10.18

[User Manual](#)

**Activation**

vk7jg-nphtm-c97jm-9mpgt-3v66t

[Confirm](#) [Cancel](#)

Gender	Age	DOB	Physician	
Male	30	07.27.1988	Dr. 1	<a href="#">New</a>
Female	68	07.02.1950	Dr. Quinz	<a href="#">Edit</a>
Male	30	09.05.1988	doctor2	<a href="#">Delete</a>

cDIA	cPP	AFIB	Exclude	PVP wave	CODE	NOTE
81	28		<input type="checkbox"/>	✓		
72	65		<input type="checkbox"/>	✓		
78	106		<input type="checkbox"/>	✓		
81	28		<input type="checkbox"/>	✓		
72	65		<input type="checkbox"/>	✓		
78	106		<input type="checkbox"/>	✓		

Copyright © Microlife Corporation. All rights reserved.

# WatchBP Analyzer – activate device feature

- The option(s) are visible

WatchBP Analyzer v1.0.0.23

microlife WatchBP

Language About

Search

Physician New

Dr. 1 Edit

Dr. Quinz Delete

doctor2

Device

Device Name: WatchBP Office Program device

Device ID: CB879C63AA39 Measure

Batteries 5.3 V

Option: AFIB Download

Patient

Name

Green Lant

Harley Quir

Super Man

Measurement Settings

watchBP 03

09.05.2018 15:34

11.05.2018 11:01

09.18.2018 10:32

09.18.2018 10:48

WatchBP Office

10.26.2018 08:51

10.26.2018 08:52

Measurement Report

Date	SYS	DI									
04.20.2017 07:00	120	84	66	56	56	109	81	28			
04.20.2017 07:20	151	79	75	103	72	137	72	65	<input type="checkbox"/>	✓	
04.20.2017 07:40	185	90	78	121	95	184	78	106	<input type="checkbox"/>	✓	
04.20.2017 08:00	120	84	60	96	36	109	81	28	<input type="checkbox"/>	✓	
04.20.2017 08:20	151	79	75	103	72	137	72	65	<input type="checkbox"/>	✓	
04.20.2017 08:40	185	90	78	121	95	184	78	106	<input type="checkbox"/>	✓	

Device

Device Name: WatchBP Office Program device

Device ID: CB879C63AA39 Measure

Batteries 5.2 V

Option: AFIB, Central BP Download

Copyright © Microlife Corporation. All rights reserved.

# The device covers many “special patients” validations

## Special population validations with oscillometric devices

company	Stiff arteries					Pregnancy alone	Very low BP values		Cuff fit		AF	(n)
	ESRD	Diabetes	elderly	Dialysis	Pre-Eclampsia		Hypo-tension	Children & adolescents	Obesity	Cuff Wide-range		
Microlife												<b>11</b>



# AFIB has been investigated in many clinical studies



Full Paper	Patients	Number of subjects	Age (Years)	AF (n)	Non-AF arrhythmia	Sinus (n)	Sensitivity (%)	Specificity (%)
<a href="#">Wiesel 2004</a>	outpatients	450	31-99	54	1	395	100	92
<a href="#">Stergiou 2009</a>	outpatients	73	49-92	27	23	23	100	89
<a href="#">Wiesel 2009</a>	outpatients	405	34-98	93	64	248	97	89
<a href="#">Wiesel 2013</a>	outpatients	139	26-89	14	n.s.	125	99	92
<a href="#">Oxford 2014</a>	Primary care	999	75+	79	n.s.	920	95	90
<a href="#">Wiesel 2014</a>	outpatients	183	50-100	30	n.s.	153	100	92
<a href="#">Gandolfo 2015</a>	Stroke patients	207	27-101	38	n.s.	169	89	99
<a href="#">Chan 2017</a>	Primary care	2052	68	24	156	1872	83	99
<a href="#">Chan 2017</a>	Primary care	5969	67	72	430	5467	81	99

Confirmed with 12-lead ECG

**Overall: Sensitivity 98%, Specificity 92%**