

# *Ambu Wireless*

Next Generation

**Ambu® Wireless**

Next Generation – discover new independence

# Ambu® – Your strong partner

– More than 50 years' experience in medical training

With the innovative development of the first self-inflating resuscitation bag, the Ruben bag, Holger Hesse and Henning Ruben recognised the need for medical demonstration devices. Following the first realistic demonstration training device for using a resuscitation bag, developed by Ambu in 1956, other innovations were developed which enabled the user to learn how to carry out medical procedures safely and with long-term success. With the launch of the Phantom, Ambu entered the field of professional medical training in 1959 and has kept its finger on the pulse ever since, continuously developing and improving its product range. It is important to Ambu that the products are geared perfectly to the needs of the user – that's why they are developed in close cooperation with doctors, nurses, paramedics and medical research groups.



All Ambu manikins are continuously adapted and enhanced to meet the changing requirements of modern professional training. This means taking into account not only the latest medical techniques, but also the change in training concepts and didactic teaching

methods. In addition to the anatomical and physiological authenticity of the manikins, quality and durability above all lie at the heart of these developments. The functionality and durability of all Ambu manikins is tested intensively. The mechanical construction of the manikins also keeps maintenance costs down. Together with good customer service and comprehensive spare parts availability, Ambu manikins

offer a long-term, cost-effective and reliable solution for professional medical training, as well as basic first-aid training.



# The future begins with W ...

... for wireless. Ambu showed this back in 2009 by being the first provider on the manikin market to develop a fully integrated wireless solution. Ambu Wireless Technology was born and now allows a new level of scenario-based training. In 2016, Ambu is going one step further. Based

on customer feedback, we have enhanced Ambu Wireless Technology and created a completely new concept that is perfectly tailored to the needs of modern course concepts for Advanced Life Support (ALS).



\* 1996  
MegaCode  
Trainer

\* 1999  
Cardiac Care  
Trainer System

\* 2003  
MegaCode  
Simulation  
System

\* 2009  
Ambu  
Wireless

\* 2015  
AmbuMan Compression  
AmbuMan Basic  
Kit i.o. Access

\* 1997  
Airway Management  
Trainer

\* 2001  
UniMan

\* 2008  
Airway Man

\* 2011  
Ambu SAM

\* 2016

Ambu Wireless  
Next  
Generation  
2016

# We're turning everything upside down: From WWW to MMM

## Ambu® Manikin Management Module

The core of the concept is the AmbuMan, which features the latest integrated Ambu Wireless Technology.

Control, documentation and monitoring of the manikin takes place wirelessly via the browser-based Ambu Manikin Management Module.

The Ambu Manikin Management Module is the central interface where all of the data come together:

compression depth, hand position, ventilation volume, stomach inflation.

### Infinite

According to the 2015 ERC Guidelines, realistic scenario-based training is essential – unleash your creativity and discover the new possibilities the AmbuMan Advanced offers.

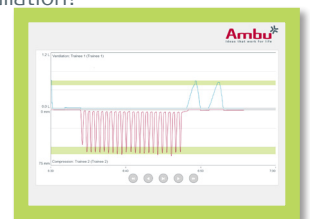


### Realistic

Familiar realistic anatomy. A highlight of the AmbuMan Advanced is the representation of a patient monitor with 12 lead ECG display.

### Easy

Open the Ambu Manikin Management Module in the browser – without any additional software installation!



### Flexible

Connect from virtually any PC, tablet or smartphone – wirelessly and platform-independent!



### Secure

Complete separation of the network configuration level and the training/control level – ready to start in minutes!

### Independent

The AmbuMan Wireless features a licence-free self-training module as standard which allows training stations to be set up and instructor interdependent trainings to be conducted at any time.

### Unlimited

Parallel multiple access of different terminal devices for performance visualisation possible. Furthermore, the monitoring module can be adapted to your individual requirements.

### Individual

The option to provide individual evaluation in group training ensures effective training. Each participant receives their own personal results (up to four participants).

# Ambu® Wireless Manikins

- Realistic training, more flexible than ever before

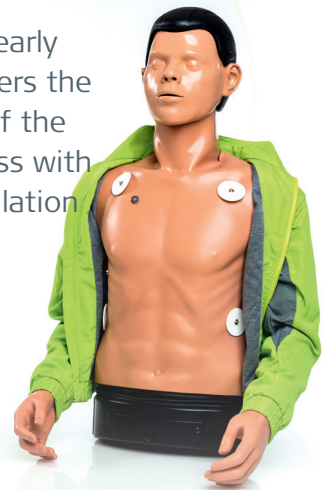
## Ambu Man Wireless

The all-rounder for CPR: can be used both with healthcare professionals and for training non-professionals. Features the licence-free self-training module and Ambu hygiene system.



## Ambu Man Defib

The specialist in early defibrillation. Offers the basic functions of the AmbuMan Wireless with additional defibrillation option.



## Ambu Man Airway Wireless

The specialist in airway management: for training in both endotracheal intubation and alternative techniques like laryngeal mask or laryngeal tube.

## Ambu Man Advanced

The professional for professionals. Ambu's new generation of manikins, perfectly adapted to the training of Advanced Life Support (ALS).



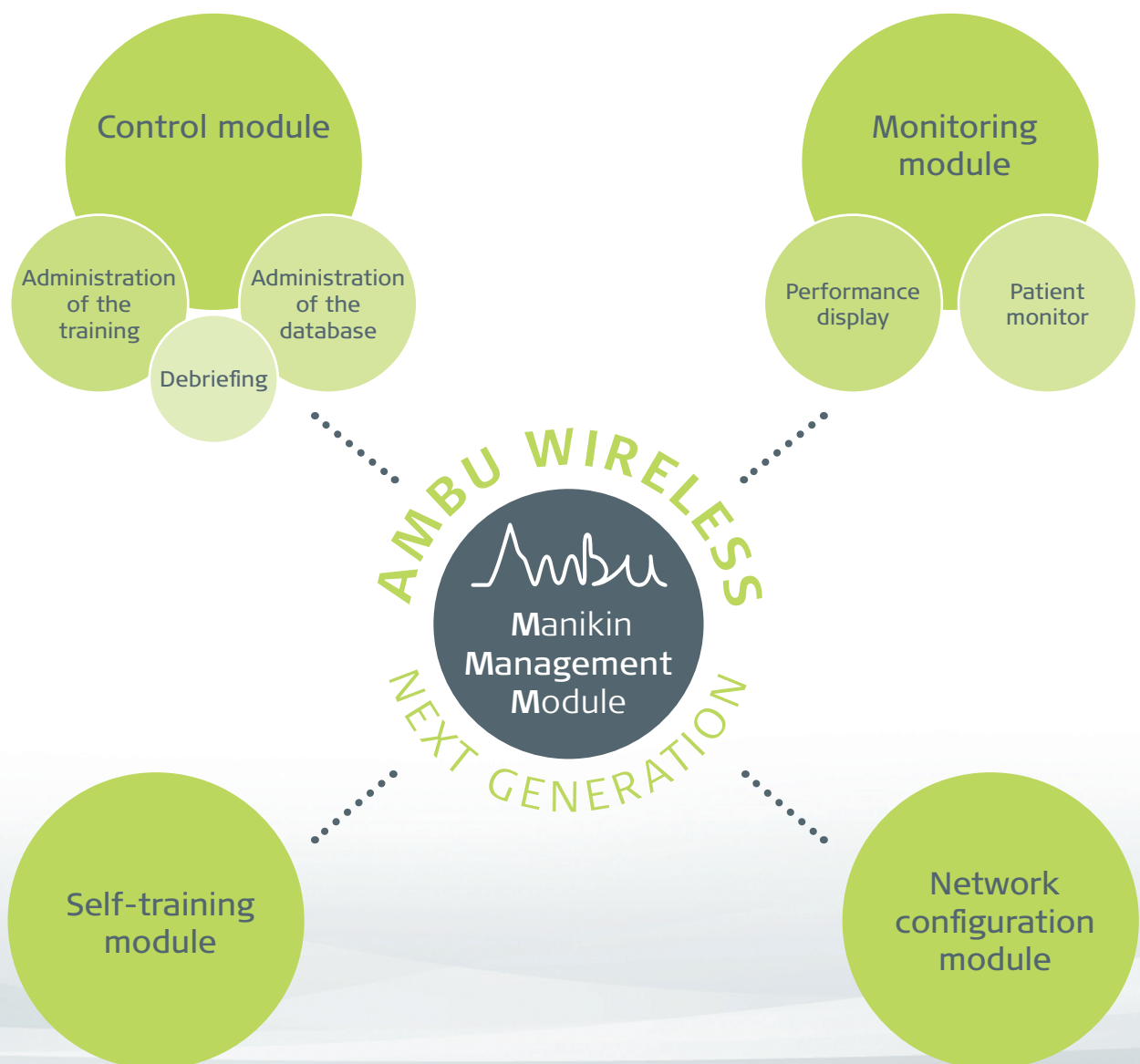
# Ambu® Wireless Next Generation

## – Discover NEW independence

The network configuration level has been separated completely from the training and control level. This provides added convenience and security for your training. Once the manikin has been set up, it is ready to start within minutes. Complete separation makes unintentional access at network level during

training impossible, and unwanted interruptions in training are no longer possible.

At the training and control level, the different modules can be configured individually and adapted to the requirements of your course concepts.



### Flexible and intuitive control

Discover the new flexibility and operating system independence. Ambu Wireless supports all modern network connection options that the TCP/IP protocol offers. You can connect with your Ambu manikin wirelessly from virtually any PC, tablet or smartphone. Furthermore, all AmbuMan Wireless Manikins are equipped with NFC technology, which allows a fast and uncomplicated connection.\*

### The wireless star – connect your manikins

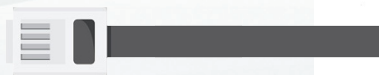
To conduct a group training session, you connect several manikins together to form what is known as a star network: all of the manikins are connected to a central hub, the master manikin. For training, we recommend connecting five manikins to one master to ensure that the displays remain clear.



WLAN



LAN



\*Requirement: the terminal device must support NFC.

# Ambu® Wireless

## – Discover infinite scenarios

With Ambu Wireless you can provide targeted training. Create your own scenario down to the finest detail. Simulate resuscitation in conjunction with standard emergency procedures, like transportation and repositioning. Even airway management in a trapped car can be realistically simulated and practised. Meanwhile, you can supervise the scenario from a safe distance. Thanks to the wireless transmission of the most important parameters of the CPR, the training can be conducted with a high level of mobility.



### **Wireless mobility and flexibility**

As the trainer, you can observe the training session from the sidelines, without having to pay attention to wiring. The manikin is the centrepiece of the training, and after an initial one-time configuration in the network configuration module, the manikin is ready for the next training session within minutes. You can concentrate fully on the training and unwanted access to the network becomes a thing of the past.

If training is taking place in a building, you can use the training rooms according to your requirements and adapt the network to the space available; or transmit the training parameters to other rooms onto different terminal devices simultaneously, for example onto a Smart Wall or different tablets. If you are conducting training outdoors, Ambu Wireless offers the highest level of mobility, with a range of up to 50 m.

### **CPR feedback in real time and debriefing**

The Ambu Manikin Management Module allows a new level of debriefing. The option to provide individual evaluation in group training ensures effective training in all course content. Each participant receives their own individual results.

With the Ambu Manikin Management Module, you receive immediate feedback on the training

parameters. For example, you can display the compression depth and ventilation volume on the stomach instrument and in the monitoring module of the Ambu Manikin Management Module. You can also incorporate the realistic patient monitor into your training, which gives the trainee feedback on the physiological parameters and a 12 lead ECG display.

### **Durability and robustness**

The Ambu training range offers innovation based on tried-and-tested quality. Ambu manikins are highly regarded worldwide for their robust design and the high quality of materials used in their construction.

### **Your creativity**

With all of the ideas you have for creating realistic training, scenario-based training comes alive. The days of forming a circle with a manikin in the middle are long gone. Discover new possibilities.



The 2015 ERC Guidelines outline the curricular content and requirements of resuscitation training. As a manufacturer of professional manikins, we show you the possibilities of implementing this content in your training sequences using our products.

### Simulation and training of realistic scenarios

Simulating situations as realistically as possible is seen as an essential part of resuscitation training according to the new ERC Guidelines. We share this view; with the wireless generation, you can create realistic scenarios and better prepare your participants for a genuine emergency. There are virtually no limits to your creativity or the individual configuration of emergency settings.

### Debriefing – clear recommendation from the ERC on improving CPR

Debriefing following training, during which objective facts are discussed openly, can help improve CPR. With the Ambu Manikin Management Module, you can start an in-depth discussion by referring to all of the events that have been recorded. Illustrate to the participants which measures were successful and in which activities or situations there was need for improvement.

### Increased focus on non-technical skills (NTS)

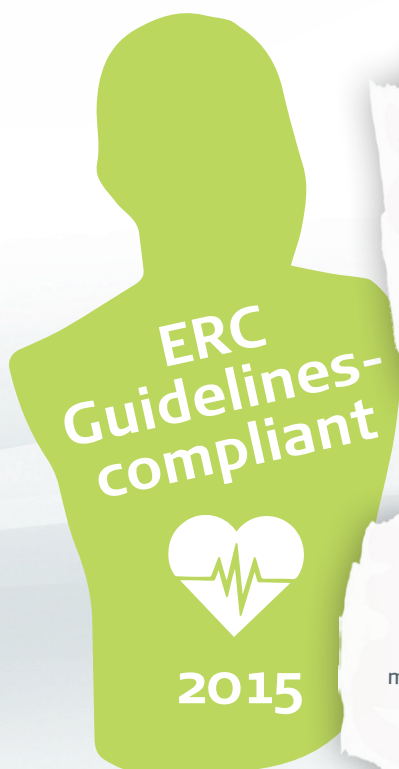
Using scenario-based training, important skills like leadership, teamwork, task allocation and structured communication can be taught creatively and comprehensively.

### Refresher courses to maintain skills

After a while, knowledge and skills acquired though training begin to decline. The Ambu Manikin Management Module offers a database function. This allows you to save your participants' individual performance and compare them with each other in subsequent training sessions.

### Effective preparation for training

Alongside your individual preparation for the training, as the instructor you can also structure and allocate groups of participants before the actual training day using the course planner integrated into the Ambu Manikin Management Module.



#### Ambu Manikin Module – for evaluating and debriefing

"Data-driven performance-focused debriefing has been shown to improve performance of resuscitation teams. We highly recommend their use for teams managing patients in cardiac arrest."<sup>1</sup>

#### AmbuMan Advanced for ALS training

"The use of lower fidelity manikins however is appropriate for all levels of training on ERC courses."<sup>1</sup>

#### Scenario-based training – essential component of resuscitation training

"Continued emphasis on minimally interrupted high-quality chest compressions throughout any ALS intervention: chest compressions are paused briefly only to enable specific interventions. This includes minimising interruptions in chest-compressions to attempt defibrillation."<sup>1H</sup>

# Ambu® Manikin Management Module

– The „software“ that can do MORE



## A new level of debriefing

For the first time, the Ambu Manikin Management Module makes it possible to carry out individual appraisals in group training. Using the switch function, every trainee is assigned their individual training content. This means that every trainee receives their individual appraisal and results (up to four participants).



## Customisable ECG simulation

The Ambu Manikin Module contains an ECG module which you can use to simulate an ECG, cardiac arrhythmias and artefacts wirelessly on the AmbuMan Advanced and AmbuMan Defib. It was particularly important that the ECGs were physiologically accurate and that they would be correctly detected by an external defibrillator. The module offers extended options and you can change existing ECG rhythms or create your own.



## Interaction

All parameters can be exported/imported. This gives you the option of changing the parameters between different Ambu Wireless manikins and therefore of interacting between different centres.

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# WIRELESS Ambu Manikin Management Module GENERATION



## Event management

Select the events from the algorithms, such as „Shake and shout“ or „head tilt and chinlift“, to fix them within the time-frame of the resuscitation. During the resuscitation and as part of the evaluation or subsequent review, you can measure and discuss the times between the events. Use the software to create your own events, like „Defi 150j“ or „Ami 300 mg“.



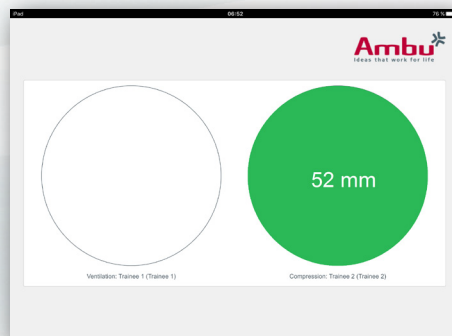
## Playback of sound files

On the AmbuMan Advanced it is possible to play back sound files, such as breathing in the scenario. You can also install your own individual sound files onto your manikin.



## Customisable displays

Make the most of the flexible display options within the monitoring module. The display can be adjusted flexibly to the requirements of the audience.

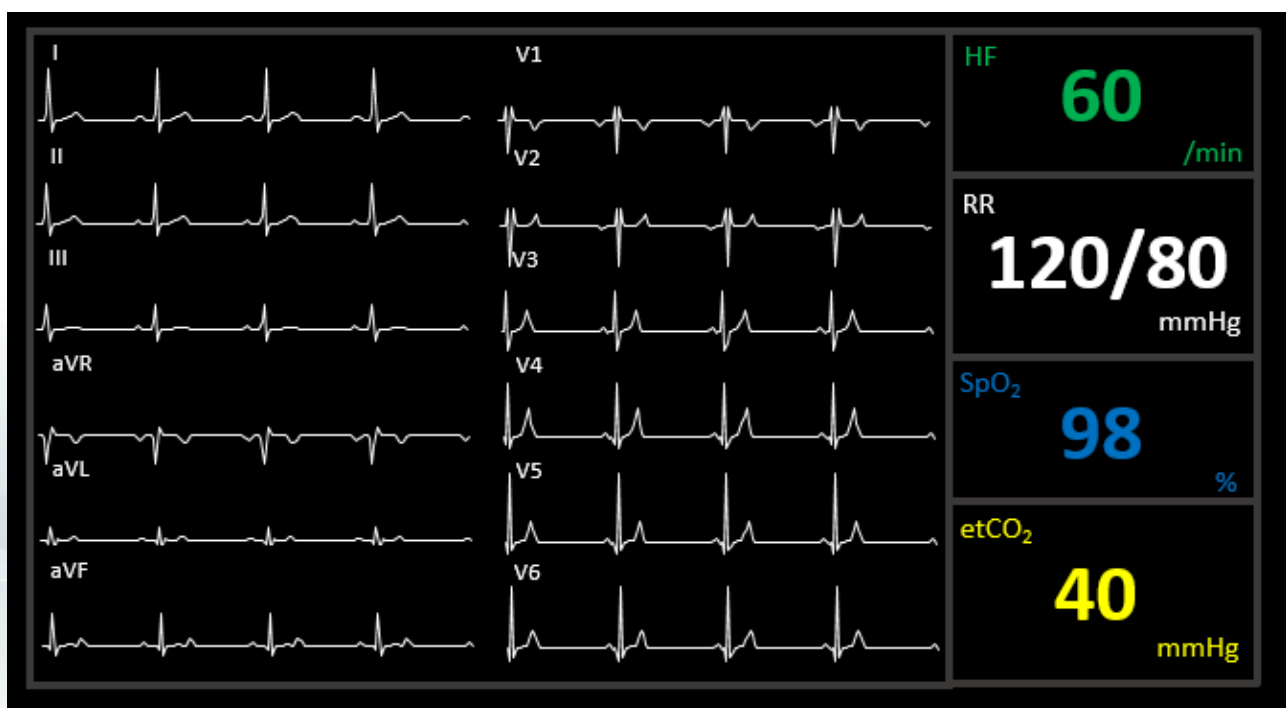
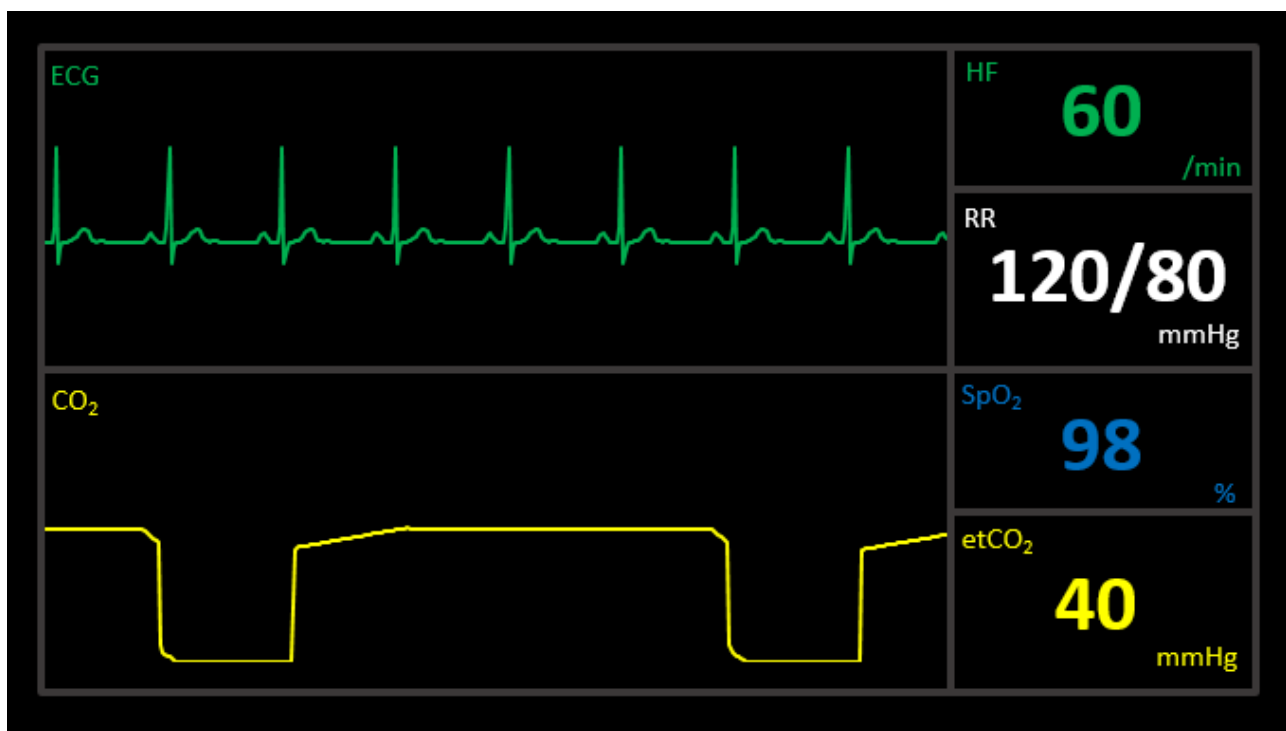


# Patient monitor

– Realistic representation of physiological parameters

A highlight of the Ambu® Man Advanced is the representation of a realistic patient monitor with the following display options: **12 lead ECG, heart rate, blood pressure, oxygen saturation, capnography and capnometry.**

The physiological parameters can be configured individually by the trainer and changed during the training session, and are immediately visible to the trainee.



# On your marks – get set – go!

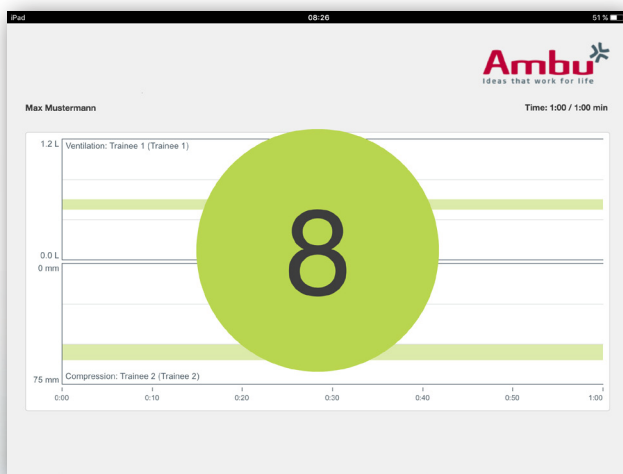
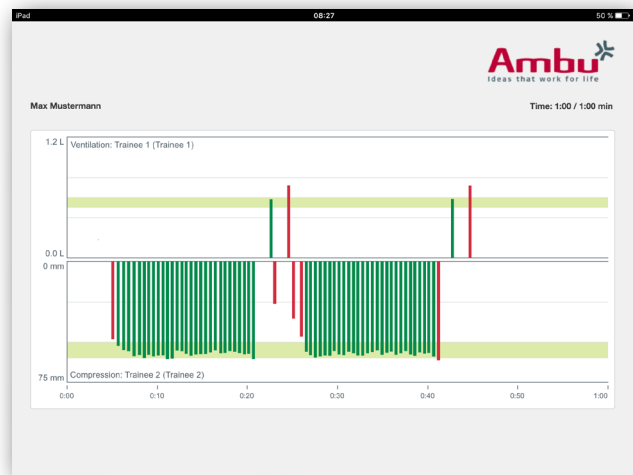
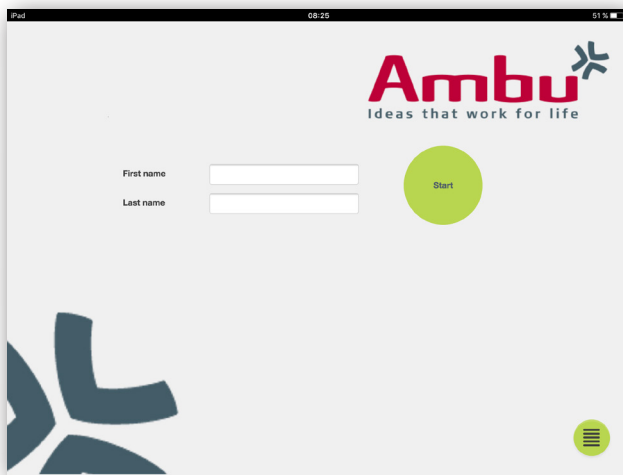
## – Self-training module

Nothing is more important than revising learned content and practising the basics of CPR until they become automatic and routine in emergency situations.

The Ambu® Man Wireless, Ambu® Man Defib and Ambu® Man Airway Wireless feature a self-training module as standard which allows training stations to be set up and instructor independent training to be conducted at any time. This means

that resuscitation teams can train continuously and trainees can prepare for their tests.

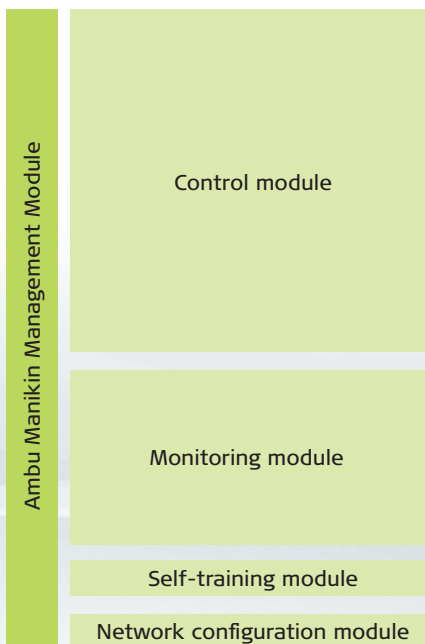
This module comes as standard and licence-free with the AmbuMan Wireless, AmbuMan Defib and AmbuMan Airway Wireless, allowing cost-effective and continuous self-training.



| Performance                | Grade | Total | Average    | Recommendation  | Evaluation |
|----------------------------|-------|-------|------------|-----------------|------------|
| Ventilation minute volume  | ●     |       | 9.5 L/min  | 1.5 - 3.6 L/min | Too high   |
| Cardiac output volume      | ●     |       | 1.1 L/min  | 2 - 4.8 L/min   | Too low    |
| Ventilation rate           | ●     |       | 16 /min    | 3 - 6 /min      | Too high   |
| Ventilation volume         | ●     | 16    | 594 mL     | 500 - 600 mL    | OK         |
| Stomach inflation          | ●     | 0     |            | 0               | 16 OK      |
| ECC rate                   | ●     |       | 111.1 /min | 100 - 120 /min  | OK         |
| Compression depth          | ●     | 111   | 41.8 mm    | 50 - 60 mm      | Too low    |
| Pause between compressions | ●     | 8     | 3.6 sec    | 0 - 9 sec       |            |
| Compression/relax ratio    | ●     |       | 50/50      | 50/50           |            |
| Wrong hand position        | ●     | 0     |            | 0               | 111 OK     |
| Leaning                    | ●     | 0     |            | 0               | 111 OK     |

# Ambu® Man Wireless Manikins

| Specifications  |  |
|---|--|
| Mouth-to-mouth ventilation  |  |
| Mouth-to-nose ventilation   |  |
| Bag valve mask ventilation  |  |
| Use of Guedel airways   |  |
| Airway management: endotracheal tube, laryngeal tube, laryngeal mask, other SGAs  |  |
| Jaw-thrust manoeuvre  |  |
| Gastric insufflation  |  |
| Ambu hygiene system   |  |
| Lung bag  |  |
| Face masks  |  |
| Chest compression   |  |
| Hand position display   |  |
| Adjustable chest stiffness  |  |
| Pulse   |  |
| Placement of defibrillation electrodes  |  |
| Defibrillation (up to 360 joules)   |  |
| ECG display   |  |
| Transthoracic pacing option   |  |
| i.v. access   |  |
| i.o. access   |  |
| Advanced feedback display (ventilation volume, compression depth, hand position, gastric insufflation)  |  |
| Ambu Wireless Technology  |  |
| Ambu Manikin Management Module  |  |
| Operating system -independent access and control options  |  |
| Browser-based access and control option   |  |
| Parallel control of up to 6 manikins  |  |
| Scenario-based training (individually programmable)   |  |
| Manual event management   |  |
| User-defined programming of ECG rhythms   |  |
| Debriefing (individual documentation of up to 4 participants)   |  |
| Playback of sound files e.g. breathing  |  |
| Parameter export/import   |  |
| Patient monitor display of physiological parameters like 12 lead ECG, heart rate, blood pressure, oxygen saturation, capnography and capnometry |  |
| Performance display (customisable)  |  |
| Parallel display of up to 6 manikins  |  |
| Parallel multiple access of different terminal devices  |  |
| Licence-free self-training  |  |
| Secure separation of network level and training/control level   |  |







Targeted training

Infinite

Security

Flexible

Easy

Independence

*wireless*

Convenience

Platform independence

Realistic

Individual

Interactive

Efficient