LungPass Pro

User Manual

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1.1 INDICATIONS FOR USE

LungPass Pro is a prescription device intended to monitor and record lung sounds and automatically detect crackles and wheezes. When interpreted by healthcare providers, LungPass Pro aids in diagnosis and patient management.

LungPass Pro is intended to be used in healthcare settings on adults, adolescents, and/or children over three years old.

1.2 BEFORE YOU START USING LUNGPASS PRO

Important:

To ensure that you use this product safely and effectively, please follow the safety information provided in this user manual. LungPass Pro should be set up and operated according to the instructions laid out here. Retain these instructions for future reference.

Before each use, check for visible damage to the stethoscope, packaging, or accessories. Remove all packaging material. Check if all the required contents are present. If you have any doubts, do not use the stethoscope, and contact your local distributor.

What's in the box:

- 1 LungPass Pro electronic stethoscope
- 1 Micro-USB cable for charging
- 1 Pouch for storage
- 1 Quick Start Guide

System Requirements:

To use LungPass Pro, users should connect their LungPass Pro electronic stethoscope with an Internet-enabled smartphone using the LungPass Pro app. The app can be used with iOS 12 and newer models, Android 6.0 and more recent models. The smartphone should support Bluetooth 5.

1.3 WARNINGS

- LungPass Pro does NOT provide a diagnosis and cannot be used for diagnosis and clinical decision making without a healthcare professional's over-read of the findings and consultation.
- Only a doctor can provide a diagnosis and prescribe or introduce changes to one's treatment.
- Proper administration and usage of the product is the healthcare professional's responsibility. The quality of the computer interpretations depends heavily upon the quality of the inputted data. Always make sure the instructions on conducting a lung exam using LungPass Pro are followed and that the recording is of high quality (by listening to the recording).
- The patient should be capable of breathing in and out deeply through an open mouth during the lung sound recording process.
- LungPass Pro is not intended for children less than 3 years old.
- If the manual is not followed, hyperventilation of the lungs may occur.
- MR-unsafe! Do not expose the device to a magnetic resonance (MR) environment. The device may present a risk of projectile injury due to the presence of ferromagnetic materials that can be attracted by the MR magnet core. Thermal injury and burns may occur due to the metal components of the device that can heat during MR scanning. The device may generate artefacts in the MR image. The device may not function properly due to the strong magnetic and radio frequency fields generated by the MR scanner.
- Keep packaging material, small parts, and the USB cable away from children and pets to

avoid the danger of choking, suffocation, and device damage.

- Children must not play or use the device.
- Do not use the device on pets.

1.4 PRECAUTIONS

General:

- Always check the stethoscope before each use and do not use it if the stethoscope is damaged in any way.
- Do not use the stethoscope in or near water, including in a bathtub, shower, hot tub, or swimming pool. Never use the stethoscope if it has fallen into the water.
- In the event of a fault, stop using LungPass Pro, do not open or shake the stethoscope under any circumstances. Refer to the "Troubleshooting" chapter. If you need additional help, please contact your local distributor.
- Repairs must only be carried out by Customer Service or authorized retailers. Under no circumstances should you open, modify and/or attempt to repair the device yourself, as faultless functionality can no longer be guaranteed after that. Failure to comply will result in the voiding of the warranty.
- To reduce the risks associated with environmental contamination, please follow applicable regulations when disposing of the stethoscope.

Cleaning:

- To reduce risks associated with infections, follow cleaning instructions carefully as explained in this instruction for use.
- Keep this device clean and protected from dust and lint.
- Using the stethoscope to examine multiple patients without disinfection may cause cross-contamination.
- Do not attempt to sterilize the stethoscope. This may cause device damage.

Do not apply your stethoscope:

- On skin that is not normal, intact, clean, or healthy.
- On skin where body hair may be touching the stethoscope's membrane.
- On open wounds or rashes, or over swollen, red, infected, or inflamed areas.
- Over any recent scars, broken or inflamed skin, areas of infection or susceptibility to acne.

During charging:

- For all users, including those with impaired sensory capabilities, the stethoscope should not be handled at any time during the charge cycle.
- Before using the device for the first time, ensure that the technical specifications of the mains output of power adapter match with the technical specification of this instruction for use. The use of different power adapter can be unsafe.
- Unwind the cable fully to avoid overheating.
- Once the battery is fully charged, let the stethoscope cool down for a couple of minutes as the battery may heat up during charging.
- Always ensure that the charger is positioned so that it is easy to unplug it from the power outlet. To disconnect the power cord, pull it out by the plug. Do not drag the cord itself. Doing so may result in damage to the cord or the plug socket leading to fire or electric shock.
- Remove the charger block from the power outlet immediately if the stethoscope has fallen into the water during charging.
- It is highly recommended to recharge the battery as soon as possible once the yellow LED lights start blinking.

Electrical interference:

- To reduce the risk of device interference, keep the stethoscope at least 1 meter (3.3 feet) away from all RF emitters, including Wi-fi routers and radios.

- To reduce the risks associated with strong electromagnetic fields, avoid using the stethoscope near strong radio frequency (RF) signals or portable and/or mobile RF devices. If such devices start making sudden noises, move away from those devices.
- Avoid using the LungPass Pro system when it is in the presence of equipment with known electromagnetic interference, such as MRI, CT, and ultrasound machines. Such equipment may affect the quality of signals recorded by the stethoscope.
- Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.
- Disperse any static electricity before using the unit.
- Never place the unit or USB cord in the microwave.
- Never touch the unit with wet or damp hands.
- The unit and cables must not come into contact with hot surfaces or sharp-edged objects.
- Protect the device and its accessories against impacts, humidity, dirt, marked temperature fluctuations and direct sunlight.
- To reduce risks associated with inaccurate data collection, store and operate LungPass Pro according to these instructions.
- The product is not suitable used in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.
- Never throw the device into a fire, this can cause an explosion.

Connections and accessories:

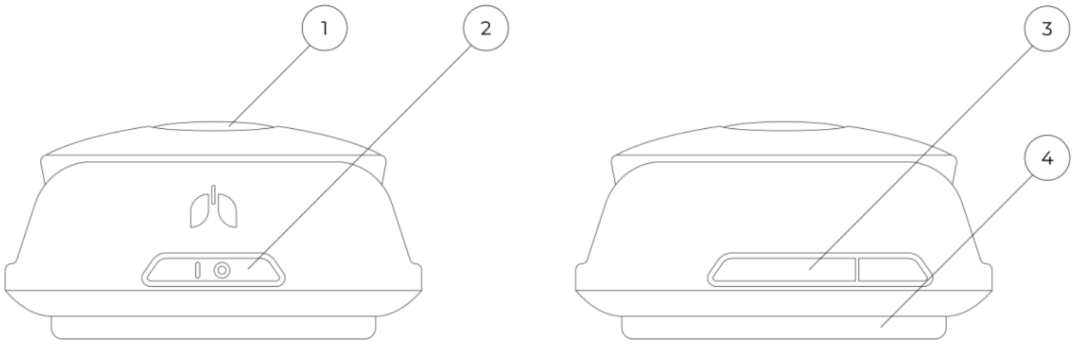
- Use of accessories, transducers and cables other than those specified or provided by the manufacturer of LungPass Pro could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

App related:

- To transmit and record lung sounds the stethoscope and the mobile device must be paired via Bluetooth, and the mobile device must be connected to the Internet. Otherwise, data cannot be saved and may be lost.

- The device uses a Class 2 Bluetooth wireless connection to transfer data. To ensure Bluetooth connection, make sure that the distance between the stethoscope and the mobile device is free of objects (e.g. wall, furniture, mobile device cover). To improve Bluetooth connection, reduce the distance between the stethoscope and your smartphone. The recommended distance between the stethoscope and your smartphone should not be more than 5 meters.
- To protect patient data stored in the software use networking security features such as strong passwords, biometric authorization, and two-factor authentication when available.
- For cybersecurity purposes, it is highly recommended to run regular virus checks on the mobile device and enable a firewall when using a web browser.
- Always use the latest version of the LungPass Pro App available at Google Play Store and Apple App Store. Downloading software and firmware updates from other unauthorized channels could cause cybersecurity risks.
- Users are notified about new app or firmware versions available unless disabled in the app store settings.
- The minimum recommended upload speed for the mobile app is 4000 Kbps. 4G cellular data service or similar is recommended for the app.

2.1 LUNGPASS PRO STETHOSCOPE



#	Stethoscope part
1	LED light
2	Control button
3	Micro-USB port (covered by a protective flap)
4	Silicone ring around the membrane

The cross-reference to the stethoscope part numbers is indicated in parentheses in this manual.

2.2 LED GUIDE ON THE STETHOSCOPE

LED color	Stethoscope status
blinking blue	searching for a connection with the app
blinking yellow when searching for a connection with the App	the battery is running low (20%)

glowing blue	connection with the app established; ready for recording
blinking white	audio recording/transmission in progress
blinking yellow when charging	charging in process
glowing green when charging	fully charged
glowing pink when updating firmware	firmware update mode activated
glowing green when updating firmware	firmware update in progress

2.3 CHARGING THE STETHOSCOPE

Before using LungPass Pro for the first time, please charge the stethoscope for at least 30 minutes:

1. Connect the micro-USB cable provided to the stethoscope's micro-USB port (3) for charging.
2. Connect the micro-USB cable provided to a USB power source (output: 5 V/0.1A min, not included in the package).
3. The stethoscope will start charging automatically. Blinking yellow LED (1) will turn on, indicating that the device is charging.
4. The LED light (1) will change to glowing green once fully charged. Disconnect the stethoscope from the charger.

Note:

Do not use the stethoscope or attempt to record lung sounds while charging.

Recharge the battery periodically at least every six months when not in use. The battery slowly loses charge when not in use. If the charge falls to an unacceptably low level the battery will be damaged.

2.4 INSTALLING THE LUNGPASS PRO APP

1. Search for LungPass Pro in the Google Play Store (for Android) and Apple App Store (for iOS) on a smartphone.
2. Follow the instructions to download the app and wait until it has finished installing.
3. Open the app and either create a new account or enter your existing credentials to log in.

2.5 CONNECTING THE STETHOSCOPE TO THE APP

To use LungPass Pro, you need to connect the stethoscope to the LungPass Pro app.

When establishing a such connection and accessing respective app functionality for the first time, you will be asked to grant specific permissions to the app (e.g. storage access required to save audio recordings) and turn on Bluetooth on your smartphone (in case it is turned off). These are mandatory for the proper functioning of the product.

Steps to connect the stethoscope to the app:

1. In the app, start a lung exam by tapping on a respective button on the main screen.
2. You will be taken to a 'Connect the device' screen.
3. Press and hold the Control button (2) on the stethoscope for 3 seconds, then let go.
4. The stethoscope will search for the app (blinking blue LED (1)) and connect automatically (glowing blue LED (1)).
5. You will be taken to the lung sound recording screen.

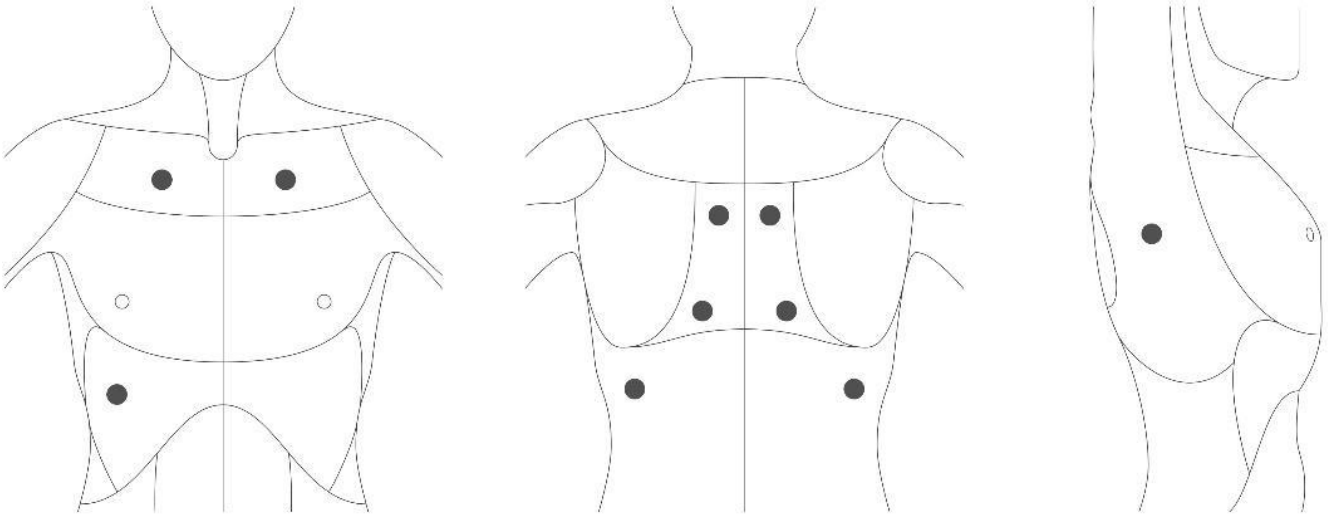
2.6 CONDUCTING A LUNG EXAM

Getting ready:

- The stethoscope should be sufficiently charged (the LED (1) is not blinking yellow during the connection process) and cleaned before use.
- Lung sounds should be recorded in a quiet environment. Close-proximity conversation, loud background noises and other external sounds will affect the record quality, analysis and a repeat sound recording may be required.
- Remove clothing and accessories from the upper body of the patient whose lung sounds you will be recording.

Steps to conduct a lung exam:

1. In the app, start a lung exam by tapping on a respective button on the main screen.
2. Connect the stethoscope to the app (see section 2.5).
3. Place the stethoscope firmly onto a patient's clean, intact, unbroken skin at a generally accepted placement position for listening to the lungs:



4. Instruct the patient to take deep breaths in and out through an open mouth during the

recording.

5. Press and hold the Control button (2) on the stethoscope for one second, then let go to start the recording.
    - It is recommended that the recording start coincides with the patient's inspiration.
    - It is recommended that one recording contains two complete breathing cycles.
6. Once the recording is complete, you will see the lung sound analysis result for that recording displayed in the app. Listen to the recording you made to ensure it is of high quality, i.e. you can clearly hear the breathing cycle, and no artefacts are present. You can re-do, save, or discard the recording made.
    - It is recommended to re-do a recording made if you do not believe it is of high quality.
7. Follow steps 3 – 6 to further record lung sounds at required placement positions.
8. Once you have completed the exam, you can save it by selecting a relevant patient's profile from the list of already existing patients or by creating a new patient's profile.
9. Once the exam is saved, it is impossible to modify the recordings made. You can access the exam through the Journal tab.

Important:

Do not move your fingers on the stethoscope while recording.

Do not move the stethoscope while recording.

If the patient starts feeling out of breath or lightheaded due to deep breathing during the recording process, the recording process should be stopped immediately, and the patient should get some rest. Do not continue recording until the patient feels better.

In case of artefact detection, ask the patient to breathe deeper through an open mouth, making two complete breathing cycles within one recording. Make sure to eliminate the possible causes of artefacts when doing a recording.

In case of heartbeat detection, reposition the stethoscope further away from the heart and ask the patient to breathe deeper through an open mouth, making two complete breathing cycles within one recording.

For patients with low BMI, especially young children, the heartbeat analysis might be

constantly present in the exam.

2.7 LUNG SOUND ANALYSIS

The app provides an automatic computer analysis of lung sound recordings using an AI algorithm. It differentiates between 5 types of sounds:

- Normal breathing, Wheezes, Crackles, Artefacts, and Heartbeat.

The algorithm uses spectrograms – a visual representation of sounds, to do such analysis.

Normal breathing, wheezes, crackles, and heartbeat analysis is provided when the spectrogram you created received the highest match with a respective class of spectrograms derived from recordings labelled by respiratory specialists.

Artefacts analysis is provided when the spectrogram you created received the highest match with a class of spectrograms derived from recordings of skin or hair rubbing against the stethoscope membrane, fingers moving across the stethoscope during the recording, stethoscope repositioning during the recording, electromagnetic interference, background noise, etc.

2.8 PATIENT MANAGEMENT USING THE APP

To manage your patients' profiles and records, use the Profiles and the Journal tabs, accessible through the main screen.

On the Patients tab, you can:

- See the list of created patient profiles.
- Search through the list for a particular patient profile.
- Create a new patient profile, by listing their ID, name, sex, date of birth, chronic conditions, etc.

On the Journal tab, you can:

- See the list of all saved lung exams in chronological order.
- Filter the list by period or by a patient's profile to see the list of respective lung exams.
- Open a lung exam card to access the recordings made, incl. their analysis. It is possible to share these recordings with other healthcare providers.

2.9 TURNING THE STETHOSCOPE OFF

1. Press and hold the Control button (2) on the stethoscope for 4 seconds until the LED (1) is off; or
2. Exit the Lung exam screen. The stethoscope will go into search mode for 30 seconds (blinking blue LED (1)) and then turn off automatically.

2.10 CLEANING THE STETHOSCOPE

Before cleaning, the stethoscope must be switched off and disconnected from the USB charging block. Clean before first use and after each use. Use sodium hypochlorite solution (0.05-0.65%) to clean any part of the system which touches a patient.

Note:

Use disposable lint-free wipes or cloth.

Use only an Environmental Protection Agency (EPA) approved disinfectant

Wear personal protective equipment recommended on the cleaning product labelling.

Do not reuse clothes or wipes.

Do NOT soak or immerse equipment parts or components.

The stethoscope must be operated only when it is completely dry.

Slight discoloration after exposure to sodium hypochlorite solution can be expected.

Do not use any chemical or abrasive cleaning agents for cleaning.

Never submerge the stethoscope in water, and do not hold it under running water.

Do not wash the stethoscope in a dishwasher. This might result in device damage.

2.11 ACCOUNT MANAGEMENT USING THE APP

To manage your (provider) account, select the Settings icon on the top right of the main screen. On the Settings screen, you can:

- Edit your email address.
- Change password.
- Enable access control to patients' data (strongly recommended).
- Log out from the app.
- Delete account.

2.12 TROUBLESHOOTING

If you keep receiving analysis results inconsistent with the perceived patient's health status, listen to the recordings made using headphones. If you cannot clearly hear two complete breathing cycles in a recording, make sure to eliminate factors that may contribute to the reduction of recording quality:

- It is crucial that the patient takes full deep breaths in and out through an open mouth during the recording.
- The stethoscope is sensitive to noises created due to friction at its surface. Do not move your fingers across the stethoscope, and do not move the stethoscope itself during the recording.
- Nothing should be touching the stethoscope's membrane during the recording, e.g. hair, skin, accessories.

You can find further support by selecting the Settings icon on the top right of the main screen and choosing one of the following resources:

- Tutorial – interactive in-app guidance on how to use LungPass Pro;
- Online FAQ – a web resource with frequently asked questions and answers.
- Contact customer support – an option to contact our specialists directly (see section ''FOR HELP AND ASSISTANCE'').

2.13 FOR HELP AND ASSISTANCE

Should you have any questions about your LungPass Pro device, please visit https://lungpass.com or contact your local distributor. We will be happy to help.

3.1 TECHNICAL SPECIFICATION

Model/type:	LungPass Pro Electronic Stethoscope (LUS110)
Recording frequency range	from 50 Hz to 4 kHz
Power input	5Vdc – 0,1A (min)
External power supplier (not included)	Input: 100 – 240VAC, 50 – 60Hz 0.5 A max Output: 5V DC, 0,1A (min) Micro USB plug
Internal Power source	Li-Po battery 80mAh, nominal voltage 3.7 V, model: 381323
Battery operation times from fully charged	>100 sound recordings
Expected service life:	1500h

Dimensions:	2.6 x 2.6 x 1.3 in
Weight:	2.8 oz
Permissible operating conditions	50˚F to 113˚F (+10˚C to +35˚C), 10% to 95% relative humidity, 70kPa to 106kPa ambient pressure
Permissible storage and transport conditions	-4˚F to 140˚F (-20˚C to +60˚C), 10% to 95% relative humidity, 70kPa to 106kPa ambient pressure
Audio Sensitivity	-44 dBFS
Bit Rate	16 bit per sample
Input impedance	2200ohm
GAIN	+27dB
Classification	Internally powered equipment, IP22, No sterilization, not category AP / APG equipment
Equipment conditions of use	continuous operation
Application part:	Type BF applied part
Data transfer via	Bluetooth® low energy technology, frequency band 2.40-2.48 GHz maximum transmission power radiated in the frequency band <20dBm. Data transmission range < 10 meters (32.8 feet). Compatible with Bluetooth® ≥ 5 smartphones.
Li-ion battery (non-	3,7 V - 80 mA/h

replaceable)	
Materials	The body of the electronic stethoscope is made of the biocompatible material POLYLAC ® ABS. Electronic stethoscope ring made of biocompatible silicone.

Technical information is subject to change without notification to allow for updates.

3.2 DESCRIPTION OF THE SYMBOLS

There are several technical markings on your stethoscope. These can be explained as follows:

	Manufacturer (ISO 7000-3082)
	Refer to the instruction manual/booklet (ISO 7010-M002)
	The serial number (ISO 7000-2498)
FW Nr X.Y	Firmware version
	The electromagnetic radiation from the stethoscope is below the limits specified by the Federal Communications Commission, and the manufacturer has followed the requirements of the Supplier's Declaration of Conformity authorization procedures
	Non-ionizing electromagnetic radiation (IEC 60417 - 5140)
	Contains Bluetooth® wireless technology. The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG Inc., and

	any use of such marks by [licensee name] is under license. Other trademarks and trade names are those of their respective owners
IP22	Indicates protection against access to hazardous parts with a finger, solid objects ≥ 12.5mm diameter, and vertically falling water drops when the enclosure tilted up to 15 degrees
	Type BF Applied Part (IEC 60417-5333)
	This way up (ISO 7000-0623)
	Fragile (ISO 7000-0621)
	Keep dry (ISO 7000-0626)
	General symbol for recovery/recyclable.
	Caution: Federal law restricts this device to sale or use by or on the order of a physician or other practitioner licensed by the laws of the state in which they practice

3.3 ELECTROMAGNETIC COMPLIANCE

FCC statement

Contains FCC ID: P4I-BTM020

This stethoscope contains an intentional radiator approved by the FCC under the FCC ID numbers shown above. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: "Harmful interference" is defined in 47 CFR §2.122 by the FCC as follows: Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radio communication service operating in accordance with the ITU Radio Regulations.

Guidance and Manufacturer's Declaration - Electromagnetic Emission

LungPass Pro is intended for use in the electromagnetic environment specified below. The user of LungPass Pro should assure that it is used in such an environment.

Applicable Emission Test	Compliance	Electromagnetic Environment-Guidance
RF emissions CISPR 11	Group 1	Lungpass Pro uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	LungPass Pro is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic Emissions IEC 6100-3-2	Class A	
Voltage fluctuations/flicker emission	Complies	

IEC 6100-3-3

Guidance and Manufacturer's Declaration - Electromagnetic Immunity

LungPass Pro is intended for use in the electromagnetic environment specified below. The user of the LungPass Pro should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment – Guidance
Electrostatic Discharge (ESD) IEC 61000-4-2	+/- 8 kV contact +/- 15 kV air	+/- 8 kV contact +/- 15 kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%
Electrical Fast Transient/ Burst IEC 61000-4-4	+/- 2 kV for power supply lines	+/- 2 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment
Surge IEC 61000-4-5	+/- 1 kV line to line	+/- 1 kV line to line	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycle 70% U_T (30% dip in U_T) for 25 cycle <5% U_T (>95% dip in U_T) for 5s	5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycle 70% U_T (30% dip in U_T) for 25 cycle <5% U_T (>95% dip in U_T) for 5s	Mains power quality should be that of a typical commercial or hospital environment.
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Conduced RF IEC61000-4-6	3Vrms 150KHz to 80MHz	3Vrms 150KHz to 80MHz	Portable and mobile RF communications equipment should be used no closer to any part of the LungPass Pro, including cables, than the recommended separation distance calculated from the equation appropriate for the frequency of the transmitter. **Recommended separation distances:** $d = 1.2\sqrt{P}$
	6Vrms in ISM and amateur radio bands between 150KHz to 80MHz 80% AM at 1kHz	6Vrms in ISM and amateur radio bands between 150KHz to 80MHz 80% AM at 1kHz	$d = 2\sqrt{P}$

Radiated RF IEC61000-4-3	10V/m 80MHz -2.7 GHz	10V/m 80MHz -2.7 GHz	d = 1.2√P, 80 MHz to 800 MHz d = 2.3√P, 800 MHz to 2,5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey [a] , should be less than the compliance level in each frequency range [b]. Interference may occur in the vicinity of equipment marked with the following symbol: 

Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcasts and TV broadcasts cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the LungPass Pro is used exceeds the applicable RF compliance level above, the LungPass Pro should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the LungPass Pro.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

NOTE 1: U_T is the a.c. mains voltage prior to application of the test level.

NOTE 2: At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 3: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Recommended separation distances between portable and mobile RF communications equipment and the LungPass Pro system

The LungPass Pro is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The user of LungPass Pro can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the LungPass Pro system as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m			
	150 kHz to 80 MHz (out ISM and amateur radio bands) $d=1.2\sqrt{P}$	150 kHz to 80 MHz (in ISM and amateur radio bands) $d=2\sqrt{P}$	80MHz to 800MHz $d=1.2\sqrt{P}$	800MHz to 2.7GHz $d=2.3\sqrt{P}$
0.01	0.12	0.2	0.12	0.23
0.1	0.38	0.632	0.38	0.73
1	1.2	2	1.2	2.3
10	3.8	6.32	3.8	7.3
100	12	20	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

3.4 DISPOSAL CONSIDERATIONS

Dispose of contents/container in accordance with the applicable regulations, be it local, regional, national, or international ones. Waste Electrical and Electronic Equipment can have potentially harmful effects on the environment. Incorrect disposal can cause harmful toxins to build up in the air, water and soil and can be harmful to humans and other living beings.

Some product materials can be reused if you bring them to a recycling point. By reusing some parts or raw materials from used products, you contribute to protecting the environment. Please get in touch with your local authorities if you need more information about collection points in your area

4.1 PRIVACY POLICY

The Privacy Policy can be found at https://www.lungpass.com/privacy-policy/.

4.2 DISCLAIMER

Caution: Federal (USA) law restricts this device to sale by or on the order of a health care professional. Rx only.

This material is intended for health care professionals and is not intended for laypersons. Distribution to any other recipient is prohibited. Each health care professional should exercise his or her own independent judgment in the diagnosis and treatment of an individual patient, and this information does not purport to replace the comprehensive training health care professionals have received.

This User Manual is intended for the correct application of the product. LungPass Pro may be used and disseminated only for the purpose of and to the company's exact specifications. ChestPal Ltd will not accept responsibility if the guidelines and instructions supplied with this product are not followed.

This equipment's sale and operation are subject to the law in various countries. Compliance with the legislation rests with the equipment's importer, dealer, or user.

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4.3 WARRANTY

ChestPal Ltd provides a limited warranty for LungPass Pro. Please visit http://www.lungpass.com/return-and-warranties for a full description of the warranty.

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