UT1032 Ultrasound Physical Therapy Device

med▸fit

Medically Certified Ultrasound CE 0197

User Manual and Treatment Guidelines

Please read this User Manual before using your Ultrasound

CONTENTS

This manual is valid for the UT1032

Telephone: 0161 429 7330

FORWARD

This manual contains general information on the operation, precautionary practices, and maintenance information of the UT1032. In order to maximise the use, efficiency, and life of the device, please read the manual thoroughly and become familiar with it before operating the device. In particular, pay attention to:
1. Keep yourself informed of the contraindications.
2. The device may not be used in close proximity (i.e. less than 2 meters) to shortwave equipment.
3. The device may not be used in so-called "wet rooms" (hydrotherapy rooms).
The manufacturer cannot be held responsible for the results of using this apparatus for any purposes other than those described in these operating instructions.

INTENDED USE

The UT1032 is an Ultrasound Physical Therapy Device that generates deep ultrasonic waves within body tissues for the treatment of selected medical conditions such as pain relief, muscle spasms, and joint contractures, but not recommended for the treatment of malignancies. Keep out of reach of children.

EXPLANATION OF ULTRASONIC STIMULATOR EFFECT

The UT1032 is an Ultrasound Physical Therapy Device that generates pulsed high frequency sound waves (1 MHz) that are transferred to a specific body area via a sound head probe. The pulsed sound waves travel deep into the tissue to generate vasodilation, which helps increase blood flow to the treated area.

Therapeutic ultrasound is found to help relieve pain and reduce muscle spasms and is one of the most frequently used therapies by physicians and physical therapists. Most patients will feel nothing at all during treatment, while some patients may feel slight warmth .

CONTRAINDICATIONS

1. Do not use over or near bone growth centers until bone growth is complete.
2. Do not use over a healing fracture.
3. Do not use over the eyes.
4. Do not use on patients with implanted neurostimulation systems because tissue damage can occur at the location of the implanted electrodes resulting in severe injury or death. This can also damage the system components.
5. Do not use to treat malignancies, nor in the region where malignant tumors are present.
6. Do not use on patients with demand type cardiac pacemakers.
7. Do not use on someone who is pregnant.
8. Do not use over ischemic tissues in patients with vascular disease where the blood supply would be unable to follow the increase in metabolic demand and may result in tissue necrosis (tissue death).
9. Do not use over the carotid sinus nerves or arteries, laryngeal or pharyngeal muscles.

PRECAUTIONS

1. Do not use on patients with hemorrhagic diatheses (excessive bleeding disorders).
2. Do not use over an area of the spinal cord following a laminectomy, i.e., when major covering tissues have been removed.
3. Do not use over areas that are under anesthesia.
4. Avoid bony prominences.
5. When using ultrasound, keep the sound head moving while maintaining contact with the skin.
6. If treatment becomes uncomfortable, stop treatment and contact your physician.
7. Do not immerse the portable ultrasound in water or other solvent.
8. Do not use over metallic implants, especially prostheses with a cement-matrix.
9. The device should be used only with adapter recommended for use by the manufacturer.
10. Do not modify this equipment without authorization of the manufacturer.
11. Do not service and maintain the device while it is in use.
12. The device must only be served ,repaired and opened by individuals at authorized sales centers.
13. Do not use the device if it is damaged. The continuous use of a damaged device may cause injury, improper results, or serious danger.
14. Do not store the device at an extremes temperature (below-20°C or over 55°C) or extremes humidity (below 1 0o/oRH or over 93%RH). Failing to do so may affect the performance of the device.
15. Store the device in the dry, clean place. Keep the device away from pet and pests.
16. Do not expose the product to any chemical solvent, water lint, dust, direct sunshine or high temperature.

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PRECAUTIONS

17. Keep unit out of the reach of young children. The wire can cause strangulation.
18. Keep the device out of the reach of children to avoid inhalation or swallowing of small parts.
19. Do not operate the device when connected to any other medical device.
20. Do not operate this device in an environment where other devices used intentionally radiate electromagnetic energy in an unshielded manner.
21. Please check the cables regularly. If the cables are damaged, please stop using it.
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SIDE EFFECTS

1. For patients with decreased pain response, the use of ultrasound therapy has a safety hazard, such as the decreased pain response caused by disease, surgery, ionizing radiation, chemotherapy, general or local anesthesia, such patients are prone to tissue burns.In addition, do not use in areas of sensory loss and poor blood circulation.
2. High dose of hyperthermia can easily cause aseptic heat source gangrene which is difficult to detect from the skin surface.
3. The application of ultrasound in the treatment of diseases above the shoulder carries certain risks due to the site of treatment.
4. Treating facial-related conditions may also pose a risk to the eyes.
5. Treatment of thyroid and cervical lymph nodes, whether there is such a risk is not clear.
6. In the treatment of patients with vascular diseases, gangrene may occur because the blood supply cannot meet the needs of metabolism.

LIMITED WARRANTY

We warranty each new UT1032 for one year ,wires and adapter for half year from defects in materials and workmanship from the original date of purchase. This warranty applies only to the original purchaser. The original invoice or receipt must accompany all returns.

This warranty does not cover abuse, accident, or damage resulting from failure to follow operating instructions. The warranty is voided if the unit has any alterations or has been disassembled. We shall not be liable for any direct or indirect consequential damages resulting from the use of this unit.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

If you have any problems with this device, such as setting up, maintaining or using, please contact Med-Fit UK Ltd.

⚠ CAUTIONS

1. Always use this device under the directions of a physician.

2. Patients with the following diseases, symptoms or conditions should not use the device:
   - During pregnancy or menstrual cycle.
   - Acute disease, heart disease, tubercle disease, facial neuralgia (sharp facial pain), pernicious tumor, hemophilia, high fever, abnormal blood pressure, or under any unhealthy conditions.
   - On patients with sensitive physical conditions, ringworm, dermatitis, and any infectious disease.
   - On persons who are unable to effectively express themselves such as: infants/small children, mentally disabled individuals, individuals under the influence of alcoholic beverage, or during extreme fatigue.
   - Product should not be applied on the following areas: any wounds, the mouth, neuralgia (sharp painful) spots, surgical areas, sunburned skin, sensitive skin and over skin implants made of metal, plastic or silicone materials.
   - Do not use with other electronic equipment, such as ECG machine etc., even ifthis device conforms to the EMC requirements.

3. DO NOT use on the thoracic region if you have a pacemaker.

4. DO NOT use on areas where malignant tumors are present.

5. DO NOT use on the areas of blood inhibited tissue, because there is not enough blood supplied to the area to meet the metabolic demand, and this could result in tissue necrosis (tissue death).

6. DO NOT use the device on persons with bleeding issues/disorders.

7. DO NOT use on areas under anesthesia.

⚠ WARNING

Use of controls or adjustments to performance of procedures other than those specified herein may result in hazardous exposure to ultrasonic energy.

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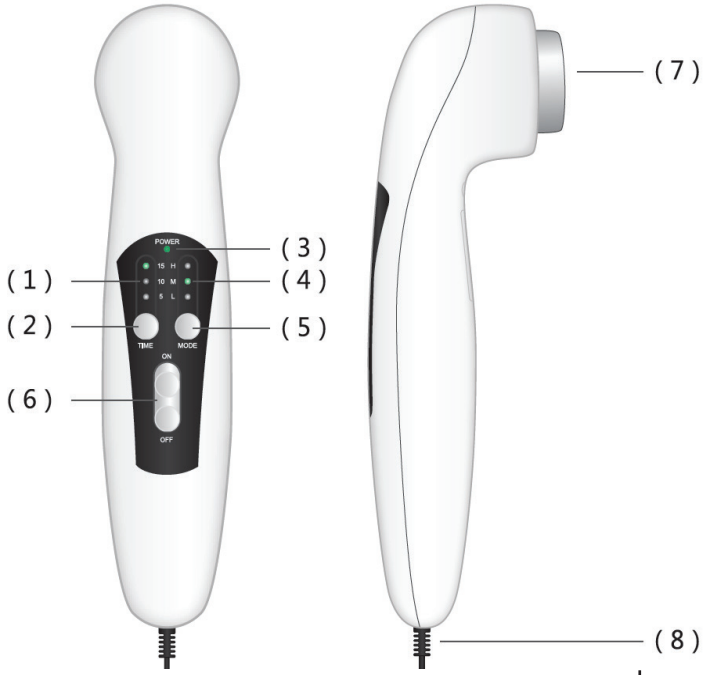
PACKAGE CONTENTS

Part	Quantity
Portable Ultrasound Device UT1032	1
Operating instructions	1
Adapter AC 100-240V 50/60Hz, 0.8A	1
Ultrasound transmission gel	1

PARTS OF THE DEVICE

(1) TIME INDICATOR LIGHT
(2) TIME BUTTON
(3) POWER INDICATOR LIGHT
(4) INTENSITY INDICATOR LIGHT
(5) MODE BUTTON
(6) POWER SWITCH
(7) ULTRASOUND HEAD



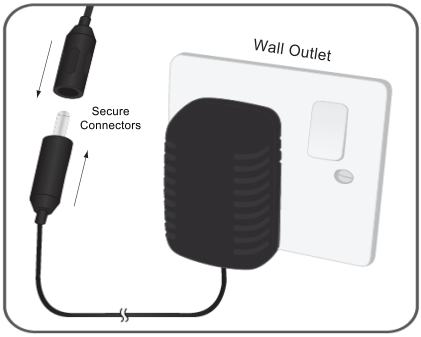
SPECIAL FEATURES

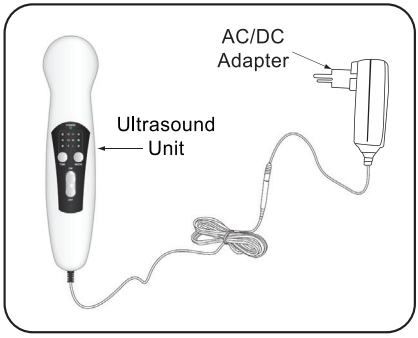
1. All the ultrasound parts are assembled and tested under strict process controls.
2. To ensure quality, the device has been designed with a single chip microprocessor.
3. Precious alloy round-headed probe creates a smooth surface on the skin.
4. The device has an attractive exterior and was ergonomically designed so that it fits to the human hand and is easy to hold and convenient to use.
5. Single-button control, microcomputer makes the device easy to use.
6. Designed with three output intensities and three treatment time selections to meet a wide range of therapy requirements.
7. The device has a head warming feature that pre-heats the sound head applicator for increased patient comfort.
8. The device should be adjusted and safety tested once each year.

STEPS TO CONNECT THE ADAPTOR

UT1032 requires the following steps for proper setup:

1. Ultrasound transmission gel is required when treating a patient with the UT1032 portable ultrasound device.
2. The AC/DC adapter is required to power the device. No battery is used.
3. Join the male connector of the AC/DC adapter to the female connector of the ultrasound unit. Be sure you have a secure fit. Then plug the AC/DC adapter into a wall outlet to power the unit. The UT1032 is now ready for treatment.
4. Follow the "INSTRUCTIONS FOR USE" section of this manual.





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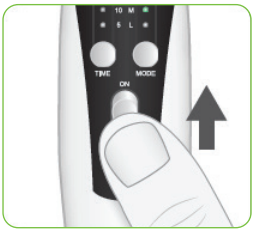
STEPS TO CONNECT THE ADAPTOR

⚠ WARNING

- The device can only be used safely with the original adapter it came with.
- DO NOT re-assemble or change the specification of the adapter. Doing so may cause damage to the unit and/or personal injury.
- Be sure to follow the specific assembly instructions stated above.

INSTRUCTIONS FOR USE

Please read this instruction manual carefully before using the UT1032 Ultrasound Physical Therapy Device.



1. Turning on the device and head warming feature:

Turn the device on by sliding the power switch upwards (towards "ON"). The power indicator light will illuminate. The device will automatically enter the preheat mode. The six indicator lights will flash alternately during this period.

When the preset temperature is reached or the maximum preheat time has ended (3 minutes), all of the indicators lights will flash five times. Once complete, the device enters standby mode. This head warming feature takes approximately three minutes from a cold/room temperature start to finish.

If the warming feature is not needed, press both the "MODE" button and the "TIME" button simultaneously. The device will go back to standby mode. When the device is in standby mode, the modulation duty cycle is defaulted at 5% and the (L) indicator light will be illuminated.

⚠ WARNING

During the head warming period, the following items should be noted:

- The device will automatically exit the head warming feature if any load is detected in the preheating process. Therefore, do not apply the ultrasound head to the patient during the warming period.
- To restart the warming feature, you will have to power off the device and turn it back on again.

INSTRUCTIONS FOR USE

2. Apply transmission gel:

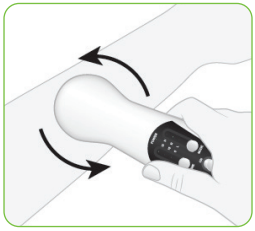
Wash the area to be treated so that it is free of oil and dirt. Apply a generous layer of ultrasound transmission gel on the treatment area. The gel acts as a coupling substance and ensures effectiveness. The area treated should be two times the diameter of the sound head .

3. Set ultrasound intensity:

Press the "MODE" button to select the modulation duty cycle. The mode button has three levels, Low (L) - 5%, Medium (M) - 50% and High (H) - 100%, each level corresponds to a LED light indicator.

4. Set treatment time:

Press the "TIME" button to cycle through the treatment time (5, 10 and 15 minutes), as shown by the "TIME" indicators. When the time is chosen, the system will start working. During working time, the user can press the "TIME" button to adjust the treatment time.



5. Place sound head on treatment area and begin treatment:

Move the sound head in a slow, flat, circular motion over the skin surface of the treatment area. Apply the sound head evenly (in time) over the treatment area **(see page 11 for Load Detection System Caution).**

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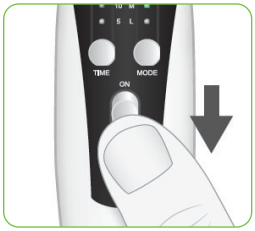
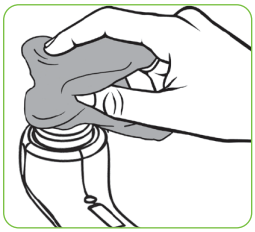
INSTRUCTIONS FOR USE



6. Turn off the device: :

After completing the treatment session, the device will automatically shut off and all indicator lights will be off. Power off the device physically by sliding the power switch downwards (towards "OFF"). Unplug the unit from its power source.



7. Clean the device after every use:

With device turned off, clean the ultrasound head/ probe with a wet towel or soft tissue. Do not immerse the device in water. Always store device in its protective case at room temperature in a dry location.

⚠LOAD DETECTION SYSTEM CAUTION:

1. The device has a load detection system for safety. When the treatment head does not have good contact with the skin, the device will stop treatment automatically, and the time indicator light will flash one time. The device will not continue the treatment program until good contact is made.
2. The device has a temperature protection function. When the temperature of the treating head exceeds 107°F (42°C}, the treatment will automatically stop and the time indicator light will flash two times. The device will not continue the treatment program until the temperature is below 104°F (40°C).

TECHNIQUES OF APPLICATIONS

Treatment area

The skin should be clean and dry before applying the coupling gel. The treatment area should be no more than twice the size of ultrasound transducer head.

Transmission media (couplant)

The higher the water conductive medium, the less the ultrasound energy is absorbed by the medium and the more energy is available to produce thermal effect. Less efficient mediums heat up, resulting in surface warmth to patient. In order of efficiency:

1. Water
2. Aqueous gel (conducts 96% of sound)
3. "Hydro" gel, (brand x), 68% of sound conducted
4. Mineral oil
5. Coupling lotion

Treatment time

Treatment time is generally between 5 and 10 minutes. Never treat over 15 minutes regardless of treatment area.

Frequency of treatment

Conditions may be treated using low intensity ultrasound once or even twice daily for 6 to 8 days until acute symptoms such as pain and swelling subside. In chronic conditions. Ultrasound treatment should continue as long as there is improvement. If no improvement is noted following three or four treatments, ultrasound should be discontinued, or different parameters (i.e., duty cycle, frequency) employed. Typically recommended treatment times are between 5 and 10 minutes.

Ultrasound treatments are similar to exercise session in that each session builds on the previous one. For most conditions and whenever possible, daily ultrasound treatments will provide the most benefits to the patient.

Ultrasound Sensation and Tolerance

It is important to remember that everyone's tolerance to ultrasound is different, and therefore the intensity should always be adjusted to the correct level. You should not feel warmth during the treatment as ultrasound is absorbed deep inside the tissues and surrounding underlying structures. If the transducer feels hot at the skin surface, it is likely that the coupling medium is inadequate. If you feel a deep aching sensation during the treatment, stop immediately.

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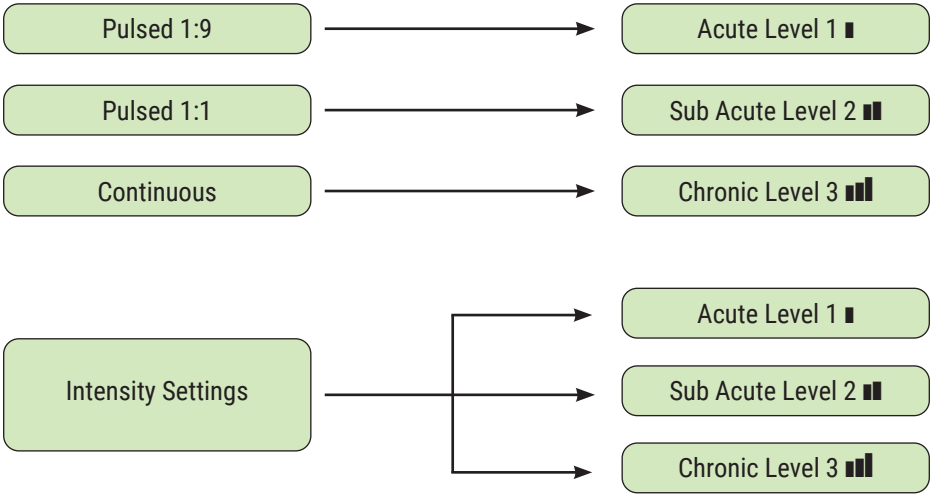
ULTRASOUND TREATMENT SETTINGS



FAQs

Q: When should I do the treatment, in the morning or night?

A: You may do treatment at anytime that fits your schedule. We recommend a maximum of two treatments in any 24 hour period.

Q: Can I go outdoors after treatments?

A: There are no restrictions.

Q: Is there any pain when using the Ultrasound Device?

A: When using your ultrasound device, it is sometimes possible to feel a slight warmth. However this sensation should never feel painful or unpleasant. If pain occurs, please stop use.

Q: Are all skin types suitable for use with the Ultrasound Device?

A: Yes. Ultrasonic therapy is suitable for all people and all skin types except for peoples and body parts of contraindications.

HELPFUL INFORMATION ON USING YOUR DEVICE

How Does Ultrasound Therapy Work?

Ultrasound therapy is another form of treatment to help ease the pain and stiffness of sore, injured and/or overworked muscles in addition to speed up healing.

Ultrasound Therapy Units produce soundwaves that emanate treatment through ultrasonic vibrations to the troublesome area. These waves move almost a million times per second creating a therapeutic vibration for targeted therapy care.

An ultrasound gel is utilised to reduce the static between the device and your skin and optimise penetration. This also ensures smooth movements over tender areas in need of pain relief. Ultrasound therapy feels excellent and is used for both for its corrective purposes in addition to relief.

Ultrasound therapy, sometimes called ultrasonic therapy is beneficial for muscle, tendon and soft tissue injuries. With the use of high-frequency sound waves that create a small amount of heat and draw blood to the injured area while breaking up scar tissue. The increased blood flow promotes healing within the injury.

Can Ultrasound Help if I have an OLD Injury & Lost Some Range of Motion?

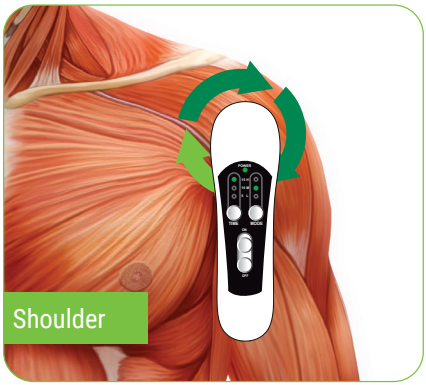
Ultrasound therapy can help breakdown scared tissue from previous injuries, which can limit range of motion. If the event that ultrasound therapy alone is not enough to restore optimal range of motion (ROM), your chiropractor may suggest Graston Therapy to break up the harder scared tissue, and pair it with ultrasound therapy and chiropractic adjustments and physical therapy exercises.

Ultrasound therapy helps calm muscle spasms, which allows for more movement and ease of range of motion.

Does Ultrasound Therapy Hurt?

No, most people find ultrasound therapy VERY RELAXING. In fact, most people feel some immediate pain relief after the therapy is complete.

POSSIBLE TREATMENT AREAS

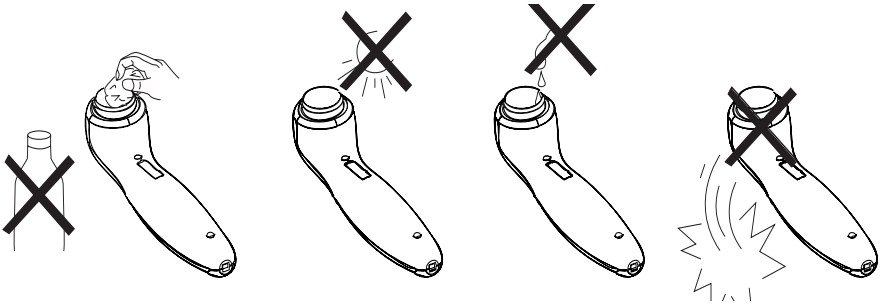


MAINTENANCE

Switch off the device and disconnect it from the power supply. The device can be cleaned with a damp cloth. Use lukewarm water and a non-abrasive liquid household cleaner (no abrasive, no alcohol content solution}. If a more sterile cleaning is needed, use a cloth moistened with an antimicrobial cleaner.

⚠ CAUTION

Do not submerse the device in liquids. Should the unit accidentally become submersed, contact the dealer or Authorized Service center immediately. Do not attempt to use the device that has been submersed in any liquid substrate until inspected and tested by a Service Technician certified by an Authorized Service Center.



CLEANING OF THE APPLICATOR

The applicator should be regularly inspected for damage, e.g. hairline cracks, which could allow the penetration of liquids. Clean the contact surface immediately after each treatment. Make sure that no ultrasound gel remains on the applicator. We further recommend cleaning the head, cable and adapter daily, using a soft cloth damped with lukewarm water. The applicator can be disinfected using a cloth moistened with an antimicrobial cleaner.

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STORAGE CONDITIONS

When not in use, store the device with the adapter in a dry room and protect it against extreme moisture, heat and direct sunlight. Never place any heavy objects on the storage case.

• Storage and transportation conditions:-20°C-SS°C; 10%-93%; 700-1060hPa

TROUBLESHOOTING

The device is manufactured through complete quality assurance system. If your device does not seem to be operating correctly, refer to the chart below to determine what may be wrong. Should none of these measures correct the problem, the device should be serviced.

Problem	Possible causes	Possible solution
Poer LED fails to light up	The plug of the adaptor is not inserted into the socket properly. The DC plug of the adaptor is not inserted into the DC receptacle on the device correctly.	Insert the plug of the adaptor into the socket again. Connect the adaptor with the device again correctly.
	Did not press the ON/OFF button.	Press the ON/OFF button again.
POWER LED is performing normally, but no output function occurs.	Output intensity button setting is incorrect.	Please make sure and set it again.

UNIT SPECIFICATIONS

Ultrasound Modulation Frequency	1MHz±10%
Max output power	6.4W±20% (Modulation duty cycle all 00%)
Output power	L: 0.32W±20% M: 3.20W±20% H: 6.40W±20%
Pulse repetition rate	100Hz±10%
Modulation duty cycle	L (5%), M (50%), H (100%)
Effective radiating area	4.0cm2±20%
Waveform	Pulsed, Continuous
RsN (Max)	5.0
Beam type	Collimated
Pulse duration	O.Sms,Sms, 1 Oms
Max effective Intensity	1.6W/cm' ±20% (Modulation duty scycle at 100%)
Effective Intensity	L: 0.08W/cm' ±20% M: 0.80W/cm' ±20% H:1.60W/cm' ±20%
Working time	Adjustable at 5 minutes, 1 0 minutes, 15 minutes
Preheat temperature	Max. 35±5 degree centigrade (NOTE: Actual preheat temperature will be influenced by the environmental)
Preheat Time	Max 3 minutes
Dimension	202 mm (L) x 49 mm (W) x 70 mm (H)
Weight	193g (without adapter)
Material of applicator	Aluminum Alloy
Degree of protection against water	IPX7 (Only for Treatment Head)
Adapter Input	Voltage: AC 100-240V, 50/60Hz, 0.BA
Output	Output voltage: DC 15V, Max. Currency: 1.2A
Time button	Choose working time: 5min - 10min - 15min - 0min (stop)
Mode button	Choose modulation duty cycle: 5% -50% - 100%
Time indication lights	5, 10, 15 minutes
Duty cycle indication lights	Low (L), Medium (M), High (H)

Programme lists

Programme	Modulation	Wave Character	Output Power
L	5%	Low	0.32W±20%
M	50%	Medium	3.20W±20%
H	100%	High	6.40W±20%

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GLOSSARY OF SYMBOLS

CE 0197 — Complies with the European Medical Device Directive (93/42/EEC) and amended by directive 2007/47/EC requirements. Notified body TÜV Rheinland (CE0197)

IPX7 — Only for Ultrasonic head: Protected against the effects of temporary immersion in water

 — Keep dry

IP22 — The first number 2: Protected against solid foreign objects of 12,5 mm Φ and greater. The second number: Protected against vertically falling water drops when enclosure tilted up to 15º. Vertically falling drops shall have no harmful effects when the enclosure is tilted at any angle up to 15º on either side of the vertical.

 — Class II symbol

 — Type BF applied part

 — Please refer to instruction manual

 — Disposal in accordance with Directive 2012/19/EU(WEEE)

 — Date of manufacture

 — The name and the address of the manufacturer

SN — Serial number.

EC REP — The name and the address of the Authorised EC-representative in Europe

 — Consult the instructions for use for important cautionary information such as warnings and precautions

LOT — Batch code

DISPOSAL

The device contains materials that can be recycled and/or are noxious to the environment. When you dispose of the unit, find out about local regulations concerning waste management.

14. EMC Information

Important information regarding Electromagnetic Compatibilty (EMC)

- Use of accessories other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.
- 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.
- Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the device, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

Table 1: Guidance and manufacturer's declaration electromagnetic Emissions

Declaration - electromagnetic emission		
The UT1032 device is intended for use in the electromagnetic environment specified below. The customer or the user of the UT1032 device should assure that it is used in such an environment.		
Emission test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The UT1032 device 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	The UT1032 device 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 61000-3-2	Class A	
Voltage fluctuations /flicker emissions IEC 61000-3-2	Complies	

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Table 2: Guidance and manufacturer's declaration electromagnetic Emissions

Guidance and manufacturer's declaration – Electromagnetic immunity			
The UT1032 device is intended for use in the electromagnetic environment specified below. The customer or the user of the UT1032 device 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	±8kV contact ±15kV air	±8kV contact ±15kV air	Floors should be wood, concrete or ceramic tile. The floor 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 ± 1kV for input/ output lines	± 2 kV for power supply lines ± 1kV for input/ output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line(s) to lines, ± 2 kV line(s) to earth	± 1 kV line(s) to lines, ± 2 kV line(s) to earth	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% UT (>95% dip in UT) for 0.5 cycle 40% UT (60% dip in UT) for 5 cycles 70% UT (30% dip in UT) for 25 cycles <5% UT (>95% dip in UT) for 5 sec	<5% UT (>95% dip in UT) for 0.5 cycle 40% UT (60% dip in UT) for 5 cycles 70% UT (30% dip in UT) for 25 cycles <5% UT (>95% dip in UT) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the use of the UT1032 device requires continued operation during mains power interruptions, it is recommended that the device be powered from an uninterruptible power supply.
Power frequency (50/60 Hz) magnetic field to IEC 61000-4-8	30A /m	30A /m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital
Note: UT is the a.c. mains voltage prior to application of the test level.			

Table 3: Guidance and manufacturer's declaration electromagnetic Emissions

Guidance and manufacturer's declaration – Electromagnetic interference immunity			
The UT1032 device is intended for use in. the electromagnetic environment specified below. The customer or the user of the UT1032 should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC61000- 4-6	3 Vrms 150kHz to 80 MHz	3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the UT1032 device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance d= 1.2 √P , 150 KHz to 80 MHz d= 1.2 √P , 80MHz to 800MHz d= 2.3 √P , 800MHz to 2.7GHz 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 Metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site surveya, should be less than the compliance level in each frequency rangeb, Interference may occur In the vicinity of equipment marked with the following symbol: 
Radiated RF IEC61000- 4-3	10V/m 80 MHz to 2.7 GHz	10 V/m	
NOTE 1 : At 80 MHz ends 800 MHz. 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.			
a Field strengths from fixed transmitters, such as base stations for radio(cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast 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 UT053 device is used exceeds the applicable RF compliance level above, should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the UT053. b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.			

Table 4: Recommended Separation Distance Between Portable and Mobile RF Communications Equipment and the UT1032 Device

The UT1032 device is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the UT1032 device can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the UT1032 device, 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 transmitterm		
	0.15 MHz to 80 MHz d= 1.2 √P	80 MHz to 800 MHz d= 1.2 √P	80 MHz to 2.7 GHz d= 2.3√P
0.01	0.12	0.04	0.07
0.1	0.38	0.11	0.22
1	1.2	0.35	0.7
10	3.8	1.1	2.2
100	12	3.5	7.0

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in Metres (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 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.

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