

# I-TECHUE





# **USER MANUAL**

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# **USER MANUAL**

This manual is addressed to:

- machine user;

- owner;

- managers;
- handling personnel;
- installers;
- users;
- maintenance personnel.

It contains general information on the operation, precautionary practices, and maintenance information of the device I-TECH UE.

This is an essential reference guide for users. It is essential to read the manual carefully before installing and using the device and to keep it at hand for quick reference.

Partial or complete non-observance of the recommendations may lead to malfunction and damage of the device, and therefore the warranty will no longer be valid.

Following the provisions and the recommendations supplied by the manufacturer scrupulously is the only way of achieving the best results and to benefit from a quick and efficient technical assistance if needed.

The limits of this manual:

- the user manual cannot replace actual user experience;

- for particularly demanding operations, this instruction manual only represents a remainder of the main operations.

This user manual must be considered an integral part of the equipment and must be preserved for future reference until the device is dismantled. The instruction manual must be available for reference at the place of use of the device and preserved carefully.

This manual reflects the current state of machine technology and shall not be considered obsolete solely because updated at a later date on the basis of acquired experience.

The manufacturer reserves the right to update the production and the manuals with no obligation to update previous versions.

#### The manufacturer declines all responsibility for:

- improper use of the machine;
- use contrary to specific national laws;
- incorrect installation;
- defective power supply;
- improper maintenance;
- unauthorised modifications and interventions;
- use of material or spare parts that are not specific for the model;
- partial or complete non-observance of the instructions supplied;
- exceptional events.

To get further information, consult the fabricant.

# **SAFETY INFORMATION**

#### Cautions

- Read carefully the contraindications.
- Respect the limitations and hazards associated with the use of the device. Pay attention to the labels and symbols placed on the unit. Always follow your prescribing doctor's or therapist's recommendations.
- Do not operate this unit in an environment where other devices are used that intentionally radiates electromagnetic energy in an unshielded manner.
- Do not use sharp objects such as pencil point or ballpoint pen to operate the buttons on the control panel.
- Before each use inspect applicators and cables integrity.
- The device should not be placed next to or on top of other devices. Should it prove necessary to place it next to or on top of other devices, supervision is essential at all times to control its normal functioning.
- Precautions must be taken regarding the electromagnetic compatibility of the device, which must be installed and commissioned in compliance with the EMC provided in this manual.



- Portable RF devices can affect the functioning of the device. Do not use mobile phones or other devices that emit electromagnetic fields nearby. This may result in incorrect operation of the unit.
- Only use the device for the recommended applications.
- Do not use the device in presence of inflammable anesthetic mixture and in environments with high concentrations of oxygen. I.A.C.E.R. will not be held responsible for any accident if the above instructions are not complied with in full.

#### Warnings

- Make sure of the device connection to an electrical system in conformity with the current National laws.
- Care must be taken when operating this equipment around other equipment. Potential
  electromagnetic or other interference could occur to this or to the other equipment. Try
  to minimize this interference by not using other equipment in conjunction with I-TECH UE.
- Before administering any treatment to a patient you should become acquainted with the operating procedures for each mode of treatment available, as well as the indications, contraindications, warnings and precautions. Consult other resources for additional information regarding the application of Ultrasound.
- To avoid the risk of electric shock disconnect the device from the electrical system before maintenance service.
- Use of accessories, transducers and cables other than those specified here (even as internal spare parts) may result in EM immunity reduction or in EM emissions increase.
- The device must not be used in the same environment where magnetic resonance devices are working or are installed.

#### Contraindications

- Ultrasound therapy must not be performed near the uterus on pregnant women or those who suspect they might be pregnant. Therefore the ultrasound beam should not be used in this area without ensuring that the patient is not pregnant.
- This device should not be used over the thoracic area if the patient is using a cardiac pacemaker in order to avoid interferences between the ultrasound device and the pacemaker.
- Do not direct the beam towards or near the eyes.
- This device should not be used over cardiac area.
- This device should not be used over neoplastic lesions.
- Do not use near testicles not to increase their temperature.
- The treatment with ultrasounds should be avoided in those areas affected by thrombophlebitis not to make the thrombus move. Avoid treating patients with deep vein thrombosis, embolism or arteriosclerosis..
- Tissues that have previously been treated with X rays or other radiations should not be treated with ultrasounds.
- Using ultrasounds on the stellate ganglion, on the spinal column after a laminectomy, on the area surrounding the main nerves or the cranium should be avoided.
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- This device should not be used on ischemic tissues in individuals with vascular disease where the blood supply would be unable to follow the increase in metabolic demand and tissue necrosis might result.
- This device should not be used over a healing fracture.
- Avoid using ultrasounds near bone growth centres in kids/growing children.

#### **Electrotherapy contraindications**

- Do not use this device on patients who have a cardiac pacemaker, implanted defibrillator, or other implanted metallic or electronic device, because this may cause electric shock, burns, electrical interference, or death.
- Do not use this device on patients whose pain syndromes are undiagnosed.

#### Warnings for electrotherapy

- Do not apply stimulation over the patient's neck because this could cause severe muscle spasms resulting in closure of the airway, difficulty in breathing, or adverse effects on heart rhythm or blood pressure;
- Do not apply stimulation across the patient's chest, because the introduction of electrical current into the chest may cause rhythm disturbances to the patient's heart;
- Do not apply stimulation over open wounds or inflamed areas or skin eruptions (e.g., phlebitis, thrombophlebitis, varicose veins);
- Do not apply stimulation over, or in proximity to, cancerous lesions;
- Do not apply stimulation in presence of electronic monitoring equipment (e.g., cardiac monitors, ECG alarms), which may not operate properly when the electrical stimulation device is in use;
- Do not use the device in wet environment, in bath or during shower.
- Do not use the device when the patient is sleeping.
- Do not apply stimulation while the patient is driving, operating machinery, or during any activity in which electrical stimulation can put the patient at risk of injury.
- Consult with the doctor before using the device, because the device may cause heart rhythm disturbances in susceptible individuals;
- Apply stimulation only to intact, clean, healthy skin.
- This device should not be used for symptomatic local pain relief unless etiology is established or unless a pain syndrome has been diagnosed. Patients with arterial or venous thrombosis or thrombophlebitis are at risk of developing embolisms when electrical stimulation is applied over or adjacent to the vessels containing the thrombus. If a patient has a history of deep vein thrombosis, even many years past, the affected area should not be stimulated.
- Recent fractures should not be treated in order to avoid unwanted motion.
- Stimulation should not be applied immediately after a trauma or to tissues susceptible to hemorrhage.
- Do not apply electrodes directly over the eyes or inside body cavities.
- Do not use electrical stimulation with high frequency surgical equipment or microwave or shortwave therapy systems.
- Keep electrodes separated during treatment. Electrodes in contact with each other could result in improper stimulation or skin burns.



 Since the effects of stimulation of the brain are unknown, stimulation should not be applied across the head, and electrodes should not be placed on opposite sides of the head.

#### Precautions

- Ultrasounds should not be used on areas with reduced sensitivity or circulation. Patients experiencing reduced sensitivity may not be able to warn their therapist/doctor when the ultrasound is too intense. Patients experiencing circulation problems may suffer from an excessive increase of temperature in the treated area.
- If the patient feels a deep and sharp pain during the treatment, the intensity must be reduced to a comfortable level.
- The tendency to bleed is increased by the heat as more blood flows in the area. Be careful when treating patients with bleeding disorders.
- We advise moving the head if the intensity is more than 0,5 W/ sq cm.
- Avoid heating or overheating the capsule in cases of acute and subacute arthritis.
- This device should not be used for symptomatic local pain relief unless etiology is established or unless a pain syndrome has been diagnosed.
- This device should not be used when cancerous lesions are present in the treatment area.
- Cautions should be used for patients affected by the following diseases: areas of the spinal column which underwent a laminectomy, anesthesised areas, patients with bleeding disorders.
- Ultrasound should be routinely checked before each use to determine that all controls function normally, especially that the intensity control does properly adjust the intensity of the ultrasonic power output in stable manner. Also, determine that the treatment time control does actually terminate ultrasonic power output when the timer reaches zero.
- Handle the handpiece with care to preserve its characteristics.
- Before using the device pay attention to the appllicators and head integrity in order to avoid the ingress of liquids.
- The ultrasound therapy controls unit is not designed to prevent the ingress of water or liquids. Ingress of water of liquids could cause malfunction of internal components of system and therefore create risk of injury to the patient/user.
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#### Precaution for electrotherapy use

- The long-term effects of chronic electrical stimulation are unknown.
- Electrical stimulation is not a substitute for pain medications and other pain management therapies.
- The safety of electrical stimulation during pregnancy has not been established.
- Some patients may experience skin irritation or hypersensitivity due to the electrical stimulation or electrical conductive medium (gel);
- Patients with suspected or diagnosed heart disease should follow precautions recommended by their doctors;
- Patients with suspected or diagnosed epilepsy should follow precautions recommended by their doctors.

- Use caution when the patient has a tendency to bleed internally, such as following an injury or fracture.
- Use caution following recent surgical procedures as stimulation may affect the patient's healing process;
- Use caution if stimulation is applied over the menstruating or pregnant uterus;
- Use caution if stimulation is applied over areas of skin that lack normal sensation.
- Use this device only under the continued supervision of a licensed doctor/therapist.
- Electrical stimulation is ineffective for treatment pain of central nervous system.
- Use extreme caution when treating patients who may not be able to report discomfort or pain.
- Patients should not be left unattended during any treatment.
- Keep this device out of the reach of children.

#### **Unwanted effects**

- Skin irritation, inflammation, and burns are potential adverse reactions.
- Patients may experience headache and other painful sensations during or following the application of electrical stimulation near the eyes, head and face. and to the head and face;
- In case of undesired effects, suspend the therapy, stop using the device straight away and contact your doctor.
- Follow the instructions in order to minimise the undesired effects of the ultrasound therapy.
- If the handpiece moves too slowly the patient may experience sharp and/or deep peripheral pain. If it moves too quickly, or if the handpiece is not held correctly, the therapeutic effects of the ultrasound might be reduced.
- Some patients might be particularly sensitive to ultrasound and might therefore experience undesired reactions such as hot flushes in the treated area. Check the treated area before, during and after the treatment and suspend it in case of undesired effects.
- Make sure that the handpiece is in contact with the skin using a specific ultrasound gel.
   Any substance used for this purpose must be highly conductive. Air is a terrible conductor of ultrasound waves.

#### USE

I-TECH UE is a device for ultrasound therapy.

Ultrasound treatment is indicated for several chronic and sub-chronic treatments as:

- Muscle pains and contractures
- Contractures
- Capsulitis
- Bursitis
- Myositis



- Soft tissues diseases
- Tendinitis
- Tendinosis

Electrotherapy (TENS, interferential waves, premodulated, EMS and Kotz "Russian") is particularly indicated for the treatment of chronic and acute pains, for postoperated oedema and in presence of inflammations.

Electrotherapy is also indicated for rehabilitation post-trauma and for the prevention of muscle atrophy. Moreover it is indicated for local circulation increase and for muscle maintaining.

Use: hospital and domestic use. it is recommended the use only by seasoned professional.

Expected lifetime (time after which we suggest sending the device to the manufacturer for safety checks): 2 years.



# **CONDITIONS OF USE and EQUIPMENT**

Environmental conditions for use:

- Environment temperature: from +10° to +40°C;
- Relative humidity: from 10% to 93% without condensation;
- avoid direct sunlight, chemical products and vibrations.

The device is equipped with the following accessories:

	Description	Kit
1	Silicone conductive electrode 60x90mm	2 pieces
2	Silicone conductive electrode 70x110mm	2 pieces
3	Sponge for silicone electrode 70x100mm	2 pieces
4	Sponge for silicone electrode 80x120mm	2 pieces
5	4 electrodes 50x50mm	2 pieces
6	4 electrodes 50x100mm	2 pieces
7	Elastic belt for electrodes fastening 75x1200mm	1 piece
8	Elastic belt for electrodes fastening 75x600mm	1 piece
9	Electrical stimulation cables with 2 derivations red/black	2 pieces
10	Power supply 15V 3A	1 piece
11	Power supply cable	1 piece
12	Electrotherapy cable	1 piece
13	Single plug cable for combined electrotherapy	1 piece
14	Ultrasound head with 5cmq area	1 piece
	User manual	1 piece
	Electrodes positions user manual	1 piece
	Ultrasound gel	1 piece



All accessories are available on demand as spare parts. .

Moreover the multi-frequency 1/3 MHz ultrasound head with 1 cmq area is available on demand.



# **DEVICE DESCRIPTION**





#### LEGEND

- CC Constant current output mode
- CV Constant voltage output mode
- F.M. Frequency modulation
- Burst Burst frequency
- Freq. Frequency
- C.F. Carrier frequency
- Duty Duty cycle for Russian waveform (Kotz) for B5 button
- Beat H. High beat frequency selection
- A.M. Amplitude modulation
- Beat L. Low beat frequency selection
- P.Dur. Impulse duration
- Treat. Therapy time
- Cycle Contraction-recovery cycle
- Ramp Ramp time
- Duty Duty cycle for ultrasound for B8 button
- Freq. Ultrasound frequency

#### INTERFACCIA

F-4P IF-2P Rus	sian <b>888</b> ē	TENS EMS CC
	r. m. Vector Burst 8888 <sup>°</sup>	ETT <b>88.8</b> kHz
© <b>В В В</b> у звар <b>В В В В</b> и мА	<b>88.8</b> %	Deat L. 8888 µS P. Dur. 8888 Hz
i 188	± 88,88, 88,	<b>18.8</b> m.

#### LABELS







⊙/Ċ	ON /OFF button
⊜⊛	Polarity of Power Supply
$\bigcirc$	Stop treatment
►/Ⅱ	Start/Pause button
IPX7	Protected against the effects of immersion: for ultrasound handle



X	WEE Regulations
★	Applied part type BF
<b>CE</b> <sub>0476</sub>	Product in compliance with Directive 93/42/EEC (MDD)
$\wedge$	Attention. Current can be higher than 10 mA r.m.s or 10 V r.m.s. over 5 seconds period
	Fabricant name and address
$\sim$	Manufacturing date (month/year)
	Attention. Consult operating instructions
LOT	Ultrasound handle lot
SN	Serial number of ultrasound handle

Syr	nbols and definitions	Symbols and definitions				
IF-4P	Interferential waveform with 4 poles	IF-2P	Interferential waveform with 2 poles			
Russian	Russian waveform (Kotz)	TENS	<b>EMS</b> TENS/EMS waveforms			
12	Electrotherapy channels indicators	¶/₿	electrotherapy/ultr asound/combined therapy symbols			
888	Program		Ultrasound indicator			
CC	Constant current	CV	Constant voltage			
88.8	Parameter	$\odot$	Timer			



# INSTALLATION

Remove the device and all accessories from shipping cartons. Check the device equipment.

Follow the instructions below for a correct installation:

- Connect the power supply cable to the power supply
- Connect the power supply to the device connector
- Connect the power supply plug to the wall socket

Press on ON/OFF button to switch on the device.

# **ULTRASOUND TREATMENT**

Follow the instructions below for ultrasound treatment:

- 1. Connect the ultrasound handle to the socket (11) placed on back side of the device. Connect the cable when the device is switched off.
- 2. Switch on the device pressing ON/OFF button placed on lateral side, next to power supply plug.
- 3. Immediately after switching on, the device carries out a self-test (10 seconds duration). At the end display shows the last percome treatment.
- 4. Press WAVEFORM MODE (B1) button to show  $\bigcup$  icon: this icon indicates ULTRASOUND treatment.
- 5. Press B8 button to regulate ultrasound working frequency (1 or 3 MHz), by using the knob (3).
- 6. Press again B8 button to regulate the duty cycle: it's possible to adjust the value from 10% to 100% stepping 10 using the knob (3).

- 7. Press B7 button to regulate therapy time: it's possible to adjust therapy time from 1 to 30 minutes (stepping 1 minute) by using the knob (3).
- 8. Put a good quantity of conductive gel on the area to be treated or on ultrasound head. It is recommended to use a CE conductive gel CE.
- 9. Regulate the treatment intensity using the knob (8). Press the knob to adjust unit of measurement W (Watt) or W/cm<sup>2</sup> (Watt/cmq).
- 10. Keep the head in constant contact with the skin and make sure that the part is covered in gel so that the therapy is effective. The green LED located next to the head on the handpiece lights up when the device is working
- 11. The device has a head/skin coupling system for safety reasons. If the contact is not correct and if the intensity is set above 0,5W, the LED on the handpiece and the symbol on the display



will start flashing. The system is not available on the 1cm head because of the reduced contact area: the device emits an ultrasound beam even if the head is not in contact with the skin. This is not a defect but rather a technical choice, as it would be impossible to perform therapies on small and irregular areas like toes or fingers with such a system.

- 12. It's possible to stop temporary the therapy at any time pressing the knob (3). Press again the knob to continue the treatment.
- 13. Press the orange button progress..

to stop immediately the treatment in

ATTENTION. For patient safety, the device will stop ultrasound treatment and LED starts flashing on the handle if the temperature is above 42°C. It will start again when the temperature goes down to 41°C.



ATTENTION. Only in the ultrasound mode the handpiece can be used for immersion treatments. The handpiece and its cable are the only parts protected against water damage with a IPX7 grade.

### Programs features and main applications.

Make reference to the following table for programs features. All parameters are adjustable by the user.

PROG.	FREQ.	DUTY CYCLE	TIME	SUGGERITED INT.
P-01	1MHz	50%	14 min.	1.0W/cm <sup>2</sup>
P-02	1MHz	50%	20 min.	1.0W/cm <sup>2</sup>
P-03	1MHz	50%	20 min.	1.0W/cm <sup>2</sup>
P-04	1MHz	50%	30 min.	0.5W/cm <sup>2</sup>
				1.0W/cm <sup>2</sup>
P-05	1MHz	50%	16 min.	1.0W/cm <sup>2</sup>
P-06	1MHz	50%	14 min.	1.0W/cm <sup>2</sup>
P-07	1MHz	50%	14 min.	1.0W/cm <sup>2</sup>
P-08	1MHz	50%	14 min.	1.0W/cm <sup>2</sup>
P-09	1MHz	50%	14 min.	1.0W/cm <sup>2</sup>
P-10	1MHz	50%	14 min.	1.0W/cm <sup>2</sup>



TREATMENT	PRG	HANDLE POSITION	FREQ	DUTY CYCLE	TIME	HEAD	SUGGESTED INTENSITY	APPLICATIONS NUMBERS
Acne	U-01/10	Affected area	3MHz	30%	15 min	5 cmq	1,5W/cm <sup>2</sup>	Free
Muscle fatigue	U-01/10	Affected area	1MHz	70%	20 min.	5 cmq	2 W/cm <sup>2</sup>	2-3
Algodystrophy	U-01/10	Affected area	1MHz	50%	10 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Anti-inflammatory	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Arthritis	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Fingers arthritis	U-01/10	Hand fingers	1MHz	40%	15 min.	1 cmq	1.5W/cm <sup>2</sup> - 2W/cm <sup>2</sup>	10-15
Arthrosis	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.5W/cm <sup>2</sup> - 2W/cm <sup>2</sup>	10-15
Bursitis	U-01/10	Affected area	1MHz	30%	15 min.	5 cmq	2W/cm <sup>2</sup>	10-15
Brachialgia	U-01/10	Trapezium and arm	1MHz	30%	15 min.	5 cmq	2W/cm <sup>2</sup>	10-15
Capsulitis	U-01/10	Shoulder	1MHz	30%	15 min.	5 cmq	2W/cm <sup>2</sup>	10-15
Cavitations	U-01/10	Affected area	1MHz	70%	20 min.	5 cmq	2W/cm <sup>2</sup> - 3W/cm <sup>2</sup>	20-30
T-T headache	U-01/10	Cervical area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
T-T headache	U-01/10	Massetere	1MHz	50%	15 min.	5 cmq	1.5W/cm <sup>2</sup>	10-15
Cervicalgias	U-01/10	Cervical area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Whiplash	U-01/10	Cervical and dorsal + front zone	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Condropathy	U-01/10	Affected area	1MHz	60%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Muscle contractures	U-01/10	Affected area	1MHz	70%	20 min.	5 cmq	2W/cm <sup>2</sup>	4-6



Coxarthrosis	U-01/10	Нір	1MHz	60%	15 min.	5 cmq	2W/cm <sup>2</sup>	10-15
Cramps	U-01/10	Affected area	1MHz	70%	20 min.	5 cmq	2W/cm <sup>2</sup>	4-6
Cruralgy	U-01/10	Internal thigh	1MHz	40%	15 min.	5 cmq	2W/cm <sup>2</sup>	10-15
Discopathy	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Strains	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Articular pain	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Intercostal pain	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Menstrual pain	U-01/10	Abdomen	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Muscle pain	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Rheumatic pain	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Dorsalgy	U-01/10	Dorsal area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Drainage	U-01/10	Affected area	1MHz	60%	15 min.	5 cmq	2W/cm <sup>2</sup>	30
Eczemas	U-01/10	Affected area	3 MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Oedemas	U-01/10	Affected area	1MHz	30%	15 min.	5 cmq	2W/cm <sup>2</sup>	10-15
Hematomas	U-01/10	Affected area	1MHz	40%	15 min.	5 cmq	2W/cm <sup>2</sup> - 3W/cm <sup>2</sup>	10-15
Epicondylitis	U-01/10	Elbow	1MHz	40%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,2W/cm <sup>2</sup>	10-15
Epitrocleitis	U-01/10	Internal elbow	1MHz	40%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,2W/cm <sup>2</sup>	10-15
Slipped disc	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Gonarthrosis	U-01/10	Knee	1MHz	50%	15 min.	5 cmq	1.5W/cm <sup>2</sup> - 2W/cm <sup>2</sup>	10-15



Lymphoedema	U-01/10	Affected area	1MHz	30%	15 min.	5 cmq	2W/cm <sup>2</sup>	10-15
Lypolisis	U-01/10	Affected area	1MHz	60%	15 min.	5 cmq	2W/cm <sup>2</sup>	30
Lumbago	U-01/10	Lumbar area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Massage	U-01/10	Affected area	1MHz	70%	20 min.	5 cmq	2 W/cm <sup>2</sup>	Free
Mialgy	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Mononeuropathy	U-01/10	Pain zone	1MHz	50%	15 min.	5 cmq	1.5W/cm <sup>2</sup>	12-15
Neuralgia	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Periarthritis	U-01/10	Shoulder	1MHz	70%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Pubalgy	U-01/10	Internal thigh (upper zone)	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Radiculitis	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Muscle recovery	U-01/10	Affected area	1MHz	70%	20 min.	5 cmq	2 W/cm <sup>2</sup>	Free
Rizarthrosis	U-01/10	Thumb area	1MHz	30%	15 min.	5 cmq	1,5W/cm <sup>2</sup>	10-15
Rizopathy	U-01/10	Dorsal area	1MHz	60%	15 min.	5 cmq	1,5W/cm <sup>2</sup>	10-15
Wrinkle	U-01/10	Affected area	3MHz	30%	15 min	5 cmq	1,5W/cm <sup>2</sup>	Free
Sciatalgy	U-01/10	Affected area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Stretch marks	U-01/10	Affected area	3MHz	40%	15 min	5 cmq	2W/cm <sup>2</sup>	Free
Venous stasis	U-01/10	Extremities limbs	1MHz	50%	15 min.	5 cmq	2W/cm <sup>2</sup>	Free
Sprains	U-01/10	Affected area	1MHz	40%	15 min.	5 cmq	2W/cm <sup>2</sup>	4-6
Muscle sprains	U-01/10	Affected area	1MHz	40%	15 min.	5 cmq	2W/cm <sup>2</sup>	8-10



Tallonitis	U-01/10	Heel	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Tendinitis	U-01/10	Affected tendons	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Stiff neck	U-01/10	Cervical area	1MHz	50%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Carpal tunnel syndrome	U-01/10	Internal wrist	1MHz	40%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	10-15
Vascularisation	U-01/10	Affected area	1MHz	60%	15 min.	5 cmq	1.0W/cm <sup>2</sup> - 1,5W/cm <sup>2</sup>	Free
Active principle vehiculation	U-01/10	Affected area	1MHz	60%	15 min.	5 cmq	2W/cm <sup>2</sup>	Free

Indications regarding intensity and number of sessions can vary depending on the opinion of your personal doctor or therapist.

In particular, indications on intensity do not consider the width of the area to be treated. If it is very wide, the intensity can be increased by 20% with respect to what indicated and it can be reduced if it is a small area.

Similarly, the movement on the area must be appropriate to the heat felt by the patient. The slower it moves, the stronger the heat. If the patient complains about the heat, we advise reducing the intensity or moving the head faster.



# PRELIMINARY ELECTROTHERAPY INSTRUCTIONS

Before start treatment pay attention to the following indications:

- Insure there are no contraindications to treatment.
- Insure there are no abrasions or irritations in the area to be treated.
- Clean the skin with neutral soap or alcohol (70%).
- If the skin is hairy, it is suggested to shave the area for an optimal treatment.
- Test the heat sensibility of the treatment area.
- Guarantee a good contact between electrodes and skin.
- Check that electrodes are correctly placed on the skin during the treatment.
- Examine the skin after the treatment.
- Choose the electrodes dimensions taking into consideration the area to be treated.
- Follow electrode manufacturer's instructions.
- To avoid skin irritation due to high current density, do not use electrodes smaller in surface area than 25cm<sup>2</sup> self-adhesive electrode.

#### ATTENTION:

- Electrodes in contact with each other could result in improper stimulation or skin burns.
- Output current density is related to electrode size. Improper application may result in patient injury. In case of doubts about the proper electrode size, consult a doctor/therapist specialized in electrostimulation.
- Use only cables and electrodes recommended by the fabricant.

This device is supplied with 50mm×50mm and 50mm×100mm adhesive electrodes. You can select the correct adhesive electrodes according to treatment area and output current density.

It is recommended to use electrodes supplied by the fabricant to guarantee the highest level of contact with the area to be treated and the right current density in relation with the prescribed treatment. Properly dispose of electrodes after the use.

In case of doubts about the electrodes integrity it is suggested to replace them by new ones.

Do not start the treatment before electrodes are correctly placed on the skin.

Do not take away the electrodes during the therapy.

#### Pregelled electrodes positioning



Insert the cable with the Red (+) connector into one adhesive electrode. Insert the cable with the Black (-) connector into one adhesive electrode. Make sure that the connectors are inserted completely and there are no metal parts of the pins exposed.



Remove the adhesive electrodes from the protective backing and place on the treatment area. Insure that the entire electrode surface is in contact with patient skin.

As an alternative you can use silicon electrodes for electrotherapy treatments, in two different ways:

- With the use of wet sponges
- With the silicon electrodes and conductive gel

The electrodes should be placed on the treatment area and hold down using the elastic belt supplied with the device.



Insert the cable with the Red (+) connector into one rubber electrode. Insert the cable with the Black (-) connector into the other rubber electrode. Make sure that the connectors are inserted completely into the electrode.





OPTION 1: Insert the rubber electrode into the wet electrode sponge.



OPTION 2: Put conductive gel on the rubber electrode surface before placing it on the skin. Note: use only CE marked gel or supplied by the fabricant..

Use elastic belts to keep the electrodes in the right position.

# **ELECTROTHERAPY TREATMENT**

Pay attention to the follow indications to start electrotherapy treatment:

 Connect the black/red cables to the sockets on the electrotherapy cables and connect this cable to the socket (12) on the back side of the device.



- 2. Connect the electrodes to the electrotherapy cables following the instructions of the paragraph "Preliminary Electrotherapy Instructions".
- 3. Switch on the device pressing ON/OFF button placed laterally, next to power supply socket.
- 4. Immediately after switching on, the device carries out a self-test (around 10 seconds). At the end of the self-test display shows the last performed treatment.

5. Press WAVEFORM MODE (B1) button to show ELECTROTHERAPY treatment. : this icon indicates

- 6. Select waveforms by using the knob (3): TENS, EMS, IF-4P (Interferential 4 poles), IF-2P (interferential 2 poles), RUSSIAN (Kotz). The icon related to the selected waveform starts flashing.
- 7. Select the program (from P01 to P10) by pressing the PROGRAM CC/CV (B2) button: the symbol P (or S) of the program starts flashing on the display. There are two type of programs you can select: programs with one phase (P) or with three phases (S). You can select the program by keeping pressed PROGRAM CC/CV button for at least 5 seconds.

In the S programs display shows the phases total number and the number of the phase you want to set the parameters: press B3-B7 buttons and the knob (3) to select programs parameters (contraction, recovery, width impulse, frequency, etc.) for each phase (please see the following instructions regarding each parameter). Press the knob to confirm the value for each phase.

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 Select CONSTANT CURRENT (CC) or CONSTANTE VOLTAGE (CV) by pressing again PROGRAM CC/CV button. The unity of measurement changes from mA ( (milliAmpere) to V (Volts).



- 9. Select the waveform features by pressing B3-B7 buttons (each waveform has different technical features):
  - B3: select frequency modulation/vector/Burst/
  - B4: select frequency/carrier frequency
  - B5: select duty cycle/high frequency/width modulation
  - B6: select low frequency/impulse duration
  - B7: select therapy time/contraction-recovery cycle / slope



Press the button of the selected parameter and regulate the value by using the knob (3).

10. Place the electrodes on the area to be treated following the instructions of electrodes position manual. In case of treatment with 4 poles interferential waveform place the electrodes as shown in the picture on the right.



11. Select the two channels intensity by using the knobs (1-2) placed on the left upper side of the front panel.

ATTENTION. The device has a current supply safety system and the identification of the connected load: in case of disconnected electrodes/cables or damaged electrodes if the intensity is set above 10mA/10V the device emits an acoustic signal and the intensity value on the display starts flashing.

It's possible to stop temporary the therapy at any time pressing the knob (3). Press again the knob to continue the treatment.

12. Press the orange button to stop immediately the treatment in progress.

ATTENTION. For safety patient, the device is equipped with a protection system against high temperatures. The device will stop electrical stimulation when the feature board temperature reaches 80° C. The device cannot work again unless the temperature is below 60°C.

It's possible to select parameters of user programs for each waveform (TENS, EMS, IF-4P, IF-2P and RUSSIAN). The default parameters are indicated in the following tables. Make reference to the tables with technical features indicated in the paragraph TECHNICAL FEATURES.



Waveform	PRG	Phase	CC/CV	Vector	Vector	Carrier Frequency (C.F.)	High frequency (Beat. H)	Low Frequency (Beat.	Time
				(Auto)	(Manual)			L)	
		1		0	45°	4 0kHz	110Hz	100Hz	15 min
	1	2	33 CC	0	45°	4.0kHz	110Hz	100Hz	0 min
		2	23 CC	0	45°	4.0kHz	110Hz	100Hz	0 min
-		1		0	45°	4.0kHz	150Hz	100Hz	10 min
Interferential 4	2	2		0	45°	4.0kHz	150Hz	100Hz	10 min.
poles	_	2		0	45°	4.0kHz	150Hz	100Hz	0 min.
-		J 1		0	45		5047	5047	0 mm.
	3	1		0	4J 15°		50H2	5047	15 min.
	5	2		0	45		5012		0 min.
-		5		0	45 45				10 min. 15 min
	4	1		0	45 45		150Hz	90HZ	13 min.
16-46		2		0	45 45		150Hz	90HZ	0 min.
-		5		0	45		11011-	90Hz	0 mm.
	5	1		0	45 45°	4.0KHZ	110Hz	100Hz	15 mm.
	J	2		0	45	4.0KHZ	110Hz	100Hz	0 min.
-		3		0	45	4.0KHZ	110Hz	100Hz	0 min.
	6	1		0	45	4.0KHZ	110Hz	100Hz	15 min.
	0	2		0	45°	4.0kHz	110Hz	100Hz	15 min.
-		3		0	45°	4.0kHz	110Hz	100Hz	15 min.
	-	1	СС	0	45°	4.0kHz	110Hz	100Hz	15 min.
	/	2	CC	0	45°	4.0kHz	110Hz	100Hz	15 min.
-		3	CC	0	45°	4.0kHz	110Hz	100Hz	15 min.
		1	CC	0	45°	4.0kHz	110Hz	100Hz	15 min.
	8	2	CC	0	45°	4.0kHz	110Hz	100Hz	15 min.
		3	CC	0	45°	4.0kHz	110Hz	100Hz	15 min.
		1	CC	0	45°	4.0kHz	110Hz	100Hz	15 min.
	9	2	CC	0	45°	4.0kHz	110Hz	100Hz	15 min.
		3	CC	0	45°	4.0kHz	110Hz	100Hz	15 min.
		1	CC	0	45°	4.0kHz	110Hz	100Hz	15 min.
	10	2	CC	0	45°	4.0kHz	110Hz	100Hz	15 min.
		3	CC	0	45°	4.0kHz	110Hz	100Hz	15 min.



Waveform	PRG	Phase	CC/CV	Carrier frequency (C.F.)	High frequency (Beat. H)	Low frequency (Beat. L)	Time
		1	CC	2.5kHz	110Hz	100Hz	15 min.
	1	2	CC	2.5kHz	110Hz	100Hz	0 min.
		3	CC	2.5kHz	110Hz	100Hz	0 min.
		1	CC	2.5kHz	150Hz	100Hz	10 min.
Interferential 2	2	2	CC	2.5kHz	150Hz	100Hz	0 min.
poles		3	CC	2.5kHz	150Hz	100Hz	0 min.
		1	CC	2.5kHz	50Hz	50Hz	15 min.
	3	2	CC	2.5kHz	50Hz	50Hz	0 min.
		3	CC	2.5kHz	50Hz	50Hz	10 min.
		1	CC	2.5kHz	150Hz	90Hz	15 min.
IF-2P	4	2	CC	2.5kHz	150Hz	90Hz	0 min.
		3	CC	2.5kHz	150Hz	90Hz	0 min.
		1	CC	2.5kHz	110Hz	100Hz	15 min.
	5	2	CC	2.5kHz	110Hz	100Hz	0 min.
		3	CC	2.5kHz	110Hz	100Hz	0 min.
		1	CC	2.5kHz	110Hz	100Hz	15 min.
	6	2	CC	2.5kHz	110Hz	100Hz	15 min.
		3	CC	2.5kHz	110Hz	100Hz	15 min.
		1	CC	2.5kHz	110Hz	100Hz	15 min.
	7	2	CC	2.5kHz	110Hz	100Hz	15 min.
		3	CC	2.5kHz	110Hz	100Hz	15 min.
		1	CC	2.5kHz	110Hz	100Hz	15 min.
	8	2	CC	2.5kHz	110Hz	100Hz	15 min.
		3	CC	2.5kHz	110Hz	100Hz	15 min.
		1	CC	2.5kHz	110Hz	100Hz	15 min.
	9	2	CC	2.5kHz	110Hz	100Hz	15 min.
		3	CC	2.5kHz	110Hz	100Hz	15 min.
		1	CC	2.5kHz	110Hz	100Hz	15 min.
	10	2	CC	2.5kHz	110Hz	100Hz	15 min.
		3	CC	2.5kHz	110Hz	100Hz	15 min.



Waveform	PRG	Phase	CC/CV	Freq.	Width impulse (P. Dur.)	Time
		1	CC	120Hz	70µs	14 min.
	1	2	CC	120Hz	70µs	0 min.
		3	CC	120Hz	70µs	0 min.
		1	CC	200Hz	60µs	20 min.
	2	2	CC	200Hz	60µs	0 min.
		3	CC	200Hz	60µs	0 min.
		1	CC	10Hz	180µs	20 min.
	3	2	CC	10Hz	180µs	0 min.
		3	CC	10Hz	180µs	10 min.
		1	CC	80Hz	100µs	30 min.
TFNS	4	2	CC	80Hz	100µs	0 min.
		3	CC	80Hz	100µs	0 min.
		1	CC	180Hz	30µs	16 min.
	5	2	CC	180Hz	30µs	0 min.
		3	CC	180Hz	30µs	0 min.
		1	CC	120Hz	70µs	14 min.
	6	2	CC	120Hz	70µs	14 min.
		3	CC	120Hz	70µs	14 min.
		1	CC	120Hz	70µs	14 min.
	7	2	CC	120Hz	70µs	14 min.
		3	CC	120Hz	70µs	14 min.
		1	CC	120Hz	70µs	14 min.
	8	2	CC	120Hz	70µs	14 min.
		3	CC	120Hz	70µs	14 min.
		1	CC	120Hz	70µs	14 min.
	9	2	CC	120Hz	70µs	14 min.
		3	CC	120Hz	70µs	14 min.
		1	CC	120Hz	70µs	14 min.
	10	2	CC	120Hz	70µs	14 min.
		3	CC	120Hz	70µs	14 min.



Waveform	PRG	Phase	CC/CV	Freq.	Width impulse (P. Dur.)	Time
		1	CC	120Hz	70µs	14 min.
	1	2	CC	120Hz	70µs	0 min.
		3	CC	120Hz	70µs	0 min.
		1	CC	200Hz	60µs	20 min.
	2	2	CC	200Hz	60µs	0 min.
		3	CC	200Hz	60µs	0 min.
		1	CC	10Hz	180µs	20 min.
	3	2	CC	10Hz	180µs	0 min.
		3	CC	10Hz	180µs	10 min.
		1	CC	80Hz	100µs	30 min.
FMS	4	2	CC	80Hz	100µs	0 min.
LIVIS		3	CC	80Hz	100µs	0 min.
		1	CC	180Hz	30µs	16 min.
	5	2	CC	180Hz	30µs	0 min.
		3	CC	180Hz	30µs	0 min.
		1	CC	120Hz	70µs	14 min.
	6	2	CC	120Hz	70µs	14 min.
		3	CC	120Hz	70µs	14 min.
		1	CC	120Hz	70µs	14 min.
	7	2	CC	120Hz	70µs	14 min.
		3	CC	120Hz	70µs	14 min.
		1	CC	120Hz	70µs	14 min.
	8	2	CC	120Hz	70µs	14 min.
		3	CC	120Hz	70µs	14 min.
		1	CC	120Hz	70µs	14 min.
	9	2	CC	120Hz	70μs	14 min.
		3	СС	120Hz	70μs	14 min.
		1	СС	120Hz	70μs	14 min.
	10	2	СС	120Hz	70μs	14 min.
		3	CC	120Hz	70µs	14 min.



Waveform	PRG	Phase	CC/CV	Carrier frequency (C.F.)	Freq.	Duty cycle	Contraction/	Ramp	Time
							Recovery		
		4		2 5141-	5011-	F 00/	10-/10-		10
	1	1		2.5KHZ	50Hz	50%	105/105	15	10 min.
	T	2	CC	2.5kHz	50Hz	50%	10s/10s	1s	0 min.
		3	CC	2.5kHz	50Hz	50%	10s/10s	1s	0 min.
	2	1	CC	2.5kHz	50Hz	50%	4s/12s	1s	10 min.
	2	2	CC	2.5kHz	50Hz	50%	4s/12s	1s	0 min.
		3	CC	2.5kHz	50Hz	50%	4s/12s	1s	0 min.
		1	CC	2.5kHz	50Hz	50%	4s/12s	1s	10 min.
	3	2	CC	2.5kHz	50Hz	50%	4s/12s	1s	0 min.
		3	CC	2.5kHz	50Hz	50%	4s/12s	1s	0 min.
		1	CC	2.5kHz	50Hz	50%	10s/10s	1s	30 min.
	4	2	CC	2.5kHz	50Hz	50%	10s/10s	1s	0 min.
Duradan		3	CC	2.5kHz	50Hz	50%	10s/10s	1s	0 min.
Russian		1	CC	2.5kHz	50Hz	50%	5s/5s	1s	20 min.
	5	2	CC	2.5kHz	50Hz	50%	5s/5s	1s	0 min.
		3	CC	2.5kHz	50Hz	50%	5s/5s	1s	0 min.
		1	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
	6	2	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
		3	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
		1	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
	7	2	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
		3	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
		1	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
	8	2	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
		3	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
		1	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
	9	2	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
		3	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
		1	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
	10	2	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.
		3	CC	2.5kHz	50Hz	50%	10s/10s	1s	10 min.

# COMBINED TREATMENT ULTRASOUND/ELECTROTHERAPY

Follow the indications below to start the combined treatment:

- 1. In combo mode ultrasound probe works as negative of channel 2, you should connect electrotherapy cable with 1 derivation (red cable) to the green cable on the output 2. The channel 1 is turned off.
- 2. Connect the green cable to the socket (12) placed on the back side of the device.
- 3. Connect the electrode to the red cable for electrotherapy.
- 4. Place the electrode on the treatment area following the instruction of the previous paragraphs. The electrode should be placed near the painful zone, approximately 10/15 cm far from the painful point where the ultrasound head is moved.
- 5. Connect the ultrasound handle to the socket (11) placed on the back side of the device. Connect the cable when the device is switched off.
- 6. Switch on the device pressing ON/OFF button placed laterally, next to power supply socket.
- 7. Immediately after switching on, the device carries out a self-test (around 10 seconds). At the end of the self-test display shows the last performed treatment.
- 8. Press WAVEFORM MODE (B1) button to show  $\checkmark$ : this icon indicates the COMBINED ULTRASOUND/ELECTROTHERAPY treatment.
- 9. Select waveforms by using the knob (3): IF-2P, TENS, EMS and RUSSIAN (Kotz).
- 10. singola P o a tre fasi S, tenendo premuto per almeno 5 secondi il tasto PROGRAM CC/CV.
- 11. Select the program (from P01 to P10) by pressing the PROGRAM CC/CV (B2) button: the symbol P (or S) of the program starts flashing on the display. There are two type of programs you can select: programs with one phase (P) or with

three phases (S). You can select the program by keeping pressed PROGRAM CC/CV button for at least 5 seconds.

In the S programs display shows the phases total number and the number of the phase you want to set the parameters: press B3-B7 buttons and the knob (3) to select programs parameters (contraction, recovery, width impulse, frequency, etc.) for each phase (please see the following instructions regarding each parameter). Press the knob to confirm the value for each phase.



 Select CONSTANT CURRENT (CC) or CONSTANTE VOLTAGE (CV) by pressing again PROGRAM CC/CV button. The unity of measurement changes from mA ( (milliAmpere) to V (Volts).



- 13. Select the waveform features by pressing B3-B7 buttons (each waveform has different technical features):
  - B3: select frequency modulation/vector/Burst/
  - B4: select frequency/carrier frequency
  - B5: select duty cycle/high frequency/width modulation
  - B6: select low frequency/impulse duration
  - B7: select therapy time/contraction-recovery cycle / slope

Press the button of the selected parameter and regulate the value by using the knob (3).

- 14. Press FREQ. DUTY (B8) button and select the working frequency (1 or 3 MHz) by using the knob (3).
- 15. Press B8 button to regulate the duty cycle: it's possible to select the value from 10% to 100% (stepping of 10) by using the knob (3).
- 16. Press B7 button to select therapy time: it's possible to select therapy time from 1 to 30 minutes (stepping of 1) by using the knob (3).



- 17. Put a good quantity of conductive gel on the area to be treated. It is recommended to use a CE conductive gel.
- 18. Select electrotherapy intensity by using the knob (2) of the Channel (2).
- 19. Select treatment intensity by using the knob (8). Press the knob to select the unity of measurement W (Watt) or W/cm<sup>2</sup> (Watt/cmq).
- 20. Keep the head in constant contact with the skin and make sure that the part is covered in gel so that the therapy is effective. The green LED located next to the head on the handpiece lights up when the device is working. Move the handpiace at a distance of 10/15 cm from pregelled electrode.
- 21. The device has a head/skin coupling system for safety reasons. If the contact is not correct and if the intensity is set above 0,5W, the LED on the handpiece and the symbol on the display will start flashing.



- 22. It's possible to stop temporary the therapy at any time pressing the knob (3). Press again the knob to continue the treatment
- 23. Press the orange button  $\swarrow$  to stop immediately the treatment in progress.

ATTENTION. For safety patient, the device is equipped with a protection system against high temperatures. The device will stop electrical stimulation when the feature board temperature reaches 80° C. The device cannot work again unless the temperature is below 60°C.

Moreover for patient safety, the device will stop ultrasound treatment and LED starts flashing on the handle if the temperature is above 42°C. It will start again when the temperature goes down to 41°C.

# **CLEANING, MAINTENANCE AND STORAGE**

Before cleaning switch off the device and disconnect it from the mains supply. Disconnect all cables and accessories.

The dust can be removed with a dry cloth. To clean persistent dirt use 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.

#### ATTENTION.

Do not immerse the device into liquids. Should the device accidentally become submersed, contact the fabricant and/ or Authorized Service center immediately. Do not attempt to use a system that has been wet inside until inspected and tested by the fabricant or the Service Technician Certified by Authorized Service center. Do not allow liquids to enter the ventilation holes in the optional modules.

Apply the protective film to the adhesive electrodes and store them in their packages after each use.

The electrodes are intended for single patient use only.

In case of irritations or reddening, suspend the treatment and consult a doctor .

Use only CE marked electrodes and follow the instructions written in the package.

Clean the contact surface immediately after each treatment using a soft cloth or paper cloth, lightly wet if needed. Make sure that no ultrasound gel remains on the ultrasound head. Aggressive clearing agents could damage the rubber insulation and shorten the life of the cables.

Clean the ultrasound head to remove gel after each use using a soft cloth or paper cloth, lightly wet if needed.

Store the handpiece/applicators/cables with care at the end of each treatment.

To get more information about the original accessories and spare parts, contact I.A.C.E.R. Srl authorized centers.

# After cleaning the external box, dry all of the parts carefully before turning on the device.

Do not disassemble the device to clean or check it: there is no need to clean the inside of the machine and in any case this operation should be performed by skilled technical personnel authorised by I.A.C.E.R. srl.



When not using the device for a long time, place it together with all its accessories in a dry place away from dust, direct sunlight and protected from the weather. Do not place other objects on top of the device.

To reset parameters follow the instructions below:

- Switch off the device.
- Keeping pressed simultaneously the knobs of electrotherapy channels 1 and 2.
- Switch on the device by using ON/OFF button.
- Keeping pressed the knobs (1) and (2): the device emits a prolonged signal for around 5 seconds and the set up frame will showed on the display.

# **OPERATION TROUBLES**

It's suggested to replace lead wires annually for a correct use.

I-TECH UE was designed and manufactured using advanced technological solutions and high-quality components for an efficient and reliable use.

Anyway, should there be any problems during functioning, please refer to this guide before contacting an authorised service centre.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Display does not switch on	Wrong/failed connection with power supply.	Check if the mains adapter is connected to the device and to power supply.
		Check the integrity of all plugs/sockets and connection cables.
The stimulation is	Damaged/broken electrodes	Replace the electrodes.
weak.	Electrodes not correctly placed on the skin.	Check the electrodes position according to electrodes positions user manual. The distance between the electrodes should be at least of 5 cm.

The stimulation is	Stimulation intensity too high.	Decrease the intensity.
not comfortable or	The electrodes are too closely.	Reposition the electrodes.
pannui.	Damaged/broken electrodes or cables.	Replace electrodes or cables.
	The effective electrodes area is too small.	Replace electrodes with ones that have an active area no less than 25 cm2.
The	Improper electrodes.	Reposition or replace the electrodes.
stimulation is ineffective.	Unknown.	Consult the doctor.
Display shows the error E1 or E2.	Hardware problem.	Restart the device, if the problem persists contact the fabricant.
Display shows the error E3.	Temperature sensor failure.	The device will stop treatment automatically, please wait at least 30 minutes before restart treatment.
Display shows the error E4.	Excessive temperature of internal parts.	The device will stop treatment automatically, please wait at least 30 minutes before restart treatment.
Display shows the error E5.	Internal memory error.	Restart the device, if the problem persists contact the fabricant.

# **ENVIRONMENT PROTECTION**

I-TECH MEDICAL DIVISION devices are designed and manufactured to have minimum negative impact on the environment in compliance with the functioning and safety needs.

We follow the criteria to minimise waste, toxic material, noise, undesired radiations and energy consumption.



A careful research on the performance of the device guarantees a significant reduction of consumption, in line with the concept of energy saving.



This symbol indicates that the product must not be disposed of with normal domestic waste.

Please dispose of the device in accordance with the directive 2002/96/EC WEEE (Waste Electrical and Electronic Equipment).

# **TECHNICAL FEATURES**

#### Caratteristiche generali

Power supply	Input: 100V-240V, 47Hz-63Hz, 1.35A Output: 15VDC, 3A max Dimensions: 143mmx73mmx40mm
Device	Dimensions: 250mmx185mmx82mm
Environmental conditions for use	Temperature: from 10°C to 40°C Relative humidity: 10%-93%
Environmental conditions for storage	Temperature: from -20°C to 55°C Relative humidity: 20%-90%
Maximum adjustable therapy time	60 minutes for electrotherapy
Timer accuracy	+/-3%
Classification EN 60601-1	Class I
Applied part	Туре ВF

#### Ultrasound features

Ultrasound wave frequency	1MHz +/-10%
	3MHz +/-10%
Duty cycle	10%-100% stepping 10%
Working frequency	100Hz
Therapy time	Adjustable, max. 30 minutes
Output power	0.5W-10.0W, when duty cycle $\geq$ 80% for
	5 cmq ultrasound head
	0.5W-15.0V, when duty cycle $\leq$ 70% for
	5cmq ultrasound head
	0.1W-2.0W, when duty cycle $\ge$ 80% for
	1cmq ultrasound head
	0.1W-3.0W, when duty cycle $\leq$ 70% for
	1cmq ultrasound head
Effective radiating area (Aer)	1.0cmq (optional)
	5.0cmq
Effective intensity	3.0W/cmq



Accuracy	+/-20% (when value > 10% maximum
	value )
Rbn	<8.0
Beam type	Collimated
Material of ultrasound head	Aluminium
IP Protection	IPX7 only for ultrasound head

# Interferential waveform 4 poles (IF-4P)

Waveform Type	Biphasic compensated
Mode Selection	CC, constant current
	CV, voltage current
Vector	Auto: 0%-100%
	Manual: 0°-90°
Carrier frequency (C.F.)	4.0kHz
High frequency (Beat H.)	(Beat L.) – 150Hz
Low frequency (Beat L.)	1 – (Beat H.)
Output	0-100mA (CC at 1kOhm load)
	0-100V (CV at 1kOhm load)
Therapy time	Adjustable 1-60 minutes

## Interferential waveform 2 poles (IF-2P)

Waveform Type	Biphasic compensated	
Mode Selection	CC, constant current	
	CV, voltage current	
Carrier frequency (C.F.)	2.5kHz	
High frequency (Beat H.)	(Beat L.) – 150Hz	
Low frequency (Beat L.)	1 – (Beat H.)	
Output	0-100mA (CC at 1kOhm load)	
	0-100V (CV at 1kOhm load)	
Therapy time	Adjustable 1-60 minutes	
Contraction/recovery (Cycle)	Continuous, 5s/5s, 4s/12s, 10s/10s,	
	10s/20s, 10s/30s, 10s/50s	
Ramp	2 seconds	

#### **TENS and EMS**

Waveform Type	Monophasic or Biphasic compensated	
Mode Selection	CC, constant current	
	CV, voltage current	

Frequency	1-250Hz	
Frequency modulation (F.M.)	0-249Hz	
Burst rate (Burst)	1-10Hz	
Width impulse (P. Dur.)	30-400us	
Amplitude modulation (A.M.)	0%-100%	
Output	0-100mA (CC at 1kOhm load)	
	0-100V (CV at 1kOhm load)	
Therapy time	Adjustable 1-60 minutes	
Contraction/recovery (Cycle)	Continuous, 4s/4s, 4s/8s, 7s/7s,	
	5s/5s,4s/12s, 10s/10s,10s/20s,10s/30s,	
	10s/50s	
Ramp	1 seconds	

## Kotz waveform (Russian)

Waveform Type	Biphasic compensated	
Mode Selection	CC, constant current	
	CV, voltage current	
Carrier frequency (C.F.)	2.5kHz	
Burst Frequency (Freq.)	20-100Hz	
Output	0-100mA (CC at 1kOhm load)	
	0-100V (CV at 1kOhm load)	
Duty cycle	10%, 20%, 30%, 40%, 50%	
Therapy time	Adjustable 1-60 minutes	
Contraction/recovery (Cycle)	Continuous, 5s/5s, 4s/12s, 10s/10s,	
	10s/20s, 10s/30s, 10s/50s	
Ramp	1, 2 e 5 seconds	



SYMBOLS			
⊙/ỏ	ON /OFF button		
⊜∙€-⊕	Polarity of power supply		
$\bigcirc$	Stop treatment		
►/Ⅱ	Start/Pause button		
IPX7	Protected against the effects of immersion: for ultrasound handle		
X	WEE Regulations		
★	Applied part type BF		
CE <sub>0476</sub>	Product in compliance with Directive 93/42/EEC (MDD)		
$\wedge$	Device can supply a current > 10mA r.m.s. or 10V r.m.s. for a period of 5 seconds		
	Fabricant name and address		
M	Manufacturing date (month/year)		
	Attention. Consult operating instructions		
LOT	Ultrasound handle lot		

SN

Serial number of ultrasound handle

# **EM COMPATIBILITY – EMC TABLES**

Use the I-TECH UE device at least 3 metres away from televisions, monitors, mobile phones, WIFI routers or any other electronic device as they may affect its functioning.

The device must be installed and commissioned in compliance with the information on electromagnetic compatibility supplied in this manual. Also see the EMC Charts paragraph.

Using accessories, transducers and cables other than those specified, except for those transducers and cables sold by the manufacturer as spare parts for internal components, may result in increased emissions or decreased immunity of the device.

The device should not be placed next to or on top of other devices. Should it prove necessary to place it next to or on top of other devices, supervision is essential at all times to control its normal functioning.

Guidance and manufacturer's declaration – electromagnetic emissions			
FOR ALL EM DEVICES			
The I-TECH UE device is intended for use in the electromagnetic environment specified below. The customer or the user of the I-TECH UE should assures that it is used in such an environment.			
Emissions test	Compliance	Electromagnetic environment - guidance	
RF emissions CISPR 11	Group 1	The I-TECH UE 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 CISPR11	Class B	The LITECH LIE device is suitable for use in all	
Harmonic emissions IEC 61000-3-2	N.A.	establishments other than domestic and those directly connected to the public $I \circ w - v \circ I t$ a g e	
Voltage fluctuations / flicker emissions IEC 61000-3-3	N.A.	p o w e r s u p p l y network that supplies buildings used for domestic purposes.	

Guidance and manufacturer's declaration-electromagnetic Immunity				
The I-TECH UE device is intended for use in the electromagnetic environment specified below. The customer or the user of the I-TECH UE should assure that it is used in such an environment.				
Immunity test	IEC 60601 Compliance Electromagnetic test level level environment - guidan		Electromagnetic environment - guidance	
Electrostatic discharge	±6 kV contact	± 6kV contact	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material,	
(ESD) IEC 61000- 4-2	± 8kV air	± 8kV air	the relative humidity should be at least 30 %.	

Guidance and- manufacturer's declaration. Electromagnetic immunity FOR EM DEVICES THAT ARE NOT INTENDED FOR LIFE SUPPORT				
The I-TECH UE device is intended for use in. the electromagnetic environment specified below. The customer or the user of the I-TECH UE should assure that it is used in such an environment.				
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance	
Portable and mobile RF communications equipment should be used no closer to any part of the I-TECH UE device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.				
		Electromagnetic environment - guidance		
Conducted RF IEC 61000-4-6	3V effective from 150kHz to 80MHz	3V (V <sub>1</sub> )	Portable and mobile RF communications equipment should be used no closer to any	

Radiated RF IEC 61000- 4-3	3V/m from 80MHz to 2,5GHz	3V/m (E <sub>1</sub> )	recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance. $d = 1,2 \cdot \sqrt{P}$ from 150kHz to 80MHz $d = 1,2 \cdot \sqrt{P}$ from 80 MHz to 800 MHz $d = 2,3 \cdot \sqrt{P}$ from 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 <i>d</i> Is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site a survey, should be less than the compliance level b in each frequency range. Interference may occur In the vicinity of equipment marked with the following:			
NOTE LAt 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.			
*1: 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 the fixed RF transmitters, a strength in the location level above, should be additional measures may	eoretically with accura n electromagnetic sit in which the I-TECH U observed to verify no y be necessary, such as	acy. To assess the e survey should be E device is used ex rmal operation. If reorienting or relo	electromagnetic environment du to e considered. If the measured field cceeds the applicable RF compliance abnormal performance is observed, cating the I-TECH UE.

#### Recommended separation distances BETWEEN PORTABLE AND MOBILE RF COMMUNICATIONS EQUIPMENT AND THE EM DEVICES THAT ARE NOT INTENDED FOR LIFE SUPPORT

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

	Separation distance according to frequency of transmitter (m)			
Rated maximum output power of transmitter (W)	From 150kHz to 80MHz d = 1,2 ·√P	From 80MHz to 800MHz d = 1,2 ·√P	From 800MHz to 2GHz d = 2,3 ·√P	
0.01	0.12	0.12	0.23	
0.1	0.37	0.37	0.74	
1	1.17	1.17	2.33	
10	3.69	3.69	7.38	
100	11.67	11.67	23.33	

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) accordable to the transmitter manufacturer.

NOTE 1:

At 80 MHz and 800 MHz. the separation distance for the higher frequency range applies.

NOTE 2:

The seguidelines may not apply in all situations. Electromagnetic propag ationisaffectedbyabsorptionandreflectionfromstructures.objectsan dpeople.

## WARRANTY

The device has a 2 year warranty starting from the purchase date covering electric and electronic parts for household use. In case of purchase from professional operators (purchase with an invoice), the warranty is 12 months. All of the parts subject to normal wear and tear (ultrasound head) are not covered by warranty as well as all the parts that are defective due to negligence, improper maintenance, tampering or repair work carried out by personnel that has not been authorised by the manufacturer or the authorised dealer.

The warranty conditions are those described under "Warranty Regulations".

In accordance with the Medical Devices Directive 93/42/EEC, the manufacturer must be able to trace the devices at any time in order to intervene promptly in case of manufacturing faults.

In the event of future repairs under warranty, the equipment must be packaged to prevent damage during transport and sent to the manufacturer together with all of the accessories. The purchaser only has the right to repair under warranty when the equipment is returned to the manufacturer complete with the receipt or invoice proving the correct origin of the product and purchase date

#### Warranty regulations.

- 1. In the event f repairs under warranty, the purchaser must include in the package the receipt or invoicing proving the purchase date.
- 2. The electronic parts are covered by a 24-months (12 months for professional user) warranty. The warranty is given through the point of sale or directly from the manufacturer.
- 3. The warranty covers exclusively product damage causing operational defects.
- 4. The warranty covers exclusively the repair or replacement free of charge, including labour, of components found to be defective in terms of manufacture or material.
- 5. The warranty does not apply to damage caused by neglect or use not complying with the instructions provided, damage caused by work carried out by unauthorized personnel or damage caused by accidental causes or the buyer's negligence, with particular reference to external parts.
- 6. The warranty does also not apply to damage to the equipment caused by incompatible power supplies
- 7. Parts subject to wear after use are excluded from the warranty.
- The warranty does not include transport costs to be paid by the purchaser in relation to the method and speed of transport.
- 9. The warranty empire after 24 months (12 months for professional user).. After such time repair work will be carried out at the rates currently in force for the parts replaced and the labour and transport costs.

Any controversy will fall within the exclusive jurisdiction of the Venice courts



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# -TEGO MEDICAL DIVISION

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