

Four Channels
Pre-Programmed
TENS and EMS
INSTRUCTION MANUAL

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#### WARNINGS

- Warning against servicing and maintenance while the ME EQUIPMENT is in use.
- Battery not automatically maintained in a fully usable condition. It is necessary for periodic checking or replacement of battery.
- Adaptor is the mains disconnect device. Not position ME EQUIPMENT to make it difficult to disconnect the adaptor.
- WARNING: No modification of this equipment is allowed.
- Warning on potential hazard from simultaneous connection of a PATIENT to a high frequency surgical ME EQUIPMENT and the STIMULATOR that may result in burns and possible damage to the STIMULATOR.
- Warning that operation in close proximity (e.g. 1 m) to a shortwave or microwave therapy ME EQUIPMENT may produce instability in the STIMULATOR output.
- The aged electrodes, or loosened electrodes may degrade stimulation performance. It is necessary for periodic checking or replacement of electrodes.

#### EMC safety information:

- 1. This equipment needs to be installed and put into service in accordance with the information provided in the manual.
- 2. Wireless communications equipment such as home network devices, mobile phones, cordless telephones and their base stations, walkie-talkies can affect this equipment and should be kept at least a distanced away from the equipment. Distanced away from a typical cell phone with a maximum output power of 2W in the range of 800 MHz to 2.5 GHz is 1.0 m. For wireless equipment with different output power of P, the distanced can be calculated with  $d=0.7\sqrt{P}$

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#### WHAT IS EMS?

Electrical Muscle Stimulation (EMS) is an advanced muscle exercise and muscle toning technique that is an efficiently & effectively supplement to your workout routine. Our EMS units are portable, light weight and battery-powered electronic units. EMS units are designed to exercise body muscles by applying a chosen intensity and frequency of electrical current repeatedly in a series of stimulated contraction & relaxation phases. EMS is recommended for anyone participating in body building, power lifting, martial arts, boxing, or anyone simply wishing to achieve their optimal athletic physique.

The medical Advisory Committee has allowed the use of EMS systems by athletes since 1972 Olympics. Bodybuilders, professional athletes, physiotherapist, sports doctors, US/Canadian Track and Field athletes use EMS units to supplement their routine exercises and training. EMS are ideal for today's hectic lifestyle. When time is limited and you can't get to the gym, you can hook up to your EMS unit in the privacy of your home or office, while catching up on paper work, talking on the phone, watching TV or surfing the net.

#### HOW DOES EMS WORK?

The EMS unit has a series of wire connections with two adhesive electrodes attached at the end of each channel. The unit delivers a gentle electronic impulse to your muscles via the adhesive electrodes. Your muscles will respond to the impulse by contracting and relaxing rhythmically as instructed by you through the unit. When a muscle contracts as a result of the EMS stimulations, the chemical reactions taking place within the muscles are similar to those associated with voluntary contraction as in "normal exercising". These chemical reactions utilize glycogen, fat and other nutrients stored in the muscle. These series of muscle contraction will enable an individual to tone, firm, strengthen, and combat flabbiness and improve contour.

### WHAT IS TENS?

Transcutaneous Electrical Nerve Stimulation (TENS), designed for symptomatic relief and management of chronic intractable pain, TENS is a non-invasive drug-free method of pain management. "Transcutaneous" means across the skin. It relieves pain by sending tiny electrical impulses through electrodes placed on or near the area of pain or pressure point to underlying nerve fibers.

You can set the TENS machine for different wavelength frequencies, such as a steady flow or a burst of electrical current, and for intensity of electrical current. Your physical therapist or doctor usually determines these settings.

After you receive an introduction to and instruction in this therapy, you can do TENS at home. Our TENS units are compact, battery-powered devices about the size of a pocket radio.

#### HOW DOES TENS WORK?

The theory of TENS suggests that there are two pain-relieving mechanisms. When TENS delivers steady mild electrical current, some people experience less pain. The electricity from the electrodes stimulate the nerves in an affected area and may block the pain signal traveling to the brain. If the pain signal does not get through to the brain, the pain is not perceived. This theory is often referred to as the 'gate control' theory.

Another theory is that the electrical stimulation of the nerves may help the body's own natural pain control mechanism. Low frequency electrical current may cause the body to release the pain killing substances, called 'endorphins'. No matter what pain theory is used, TENS has been proven useful in the field of pain management.

Many people feel an immediate benefit from TENS. However a minority may only achieve benefit after repeated treatment sessions over an extended period of time.

#### INDICATIONS FOR USE

TENS is used in symptomatic relief of chronic intractable pain, post-traumatic and post-surgical pain.

EMS is intended to be used in:

Relaxation of Muscle Spasm.

Prevention or retardation of disuse atrophy.

Increase local blood circulation.

Muscle re-education.

Immediate post surgical stimulation of calf muscles to prevent venous thrombosis.

Maintaining or increasing range of motion.

This device is for home and clinical use. The patient is also an intended operator.

#### WARNINGS

- 1. The long-term effects of chronic electrical stimulation are unknown.
- 2. Stimulation should not be applied over the carotid sinus nerves, particularly in patients with a known sensitivity to the carotid sinus reflex.
- 3. Stimulation should not be applied over the neck or mouth. Severe spasm of the laryngeal and pharyngeal muscles may occur and the contractions may be strong enough to close the airway or cause difficulty in breathing.
- 4. Stimulation should not be applied transthoracically in that the introduction of electrical current into the heart may cause cardiac arrhythmias.
- 5. Stimulation should not be applied transcerebrally.
- 6. Stimulation should not be applied over swollen, infected, or inflamed areas or skin eruptions, e.g., phlebitis, thrombophlebitis, varicose veins, etc.

- 7. Stimulation should not be applied over, or in proximity to, cancerous lesions.
- 8. The safety of TENS and EMS devices for use during pregnancy or birth has not been established.
- $9.\ TENS\ and\ EMS\ devices\ are\ not\ effective\ for\ pain\ of\ central\ origin,\ for\ example,\ headaches.$
- 10. TENS and EMS devices should be used only under the continued supervision of a physician.
- 11. TENS and EMS devices have no curative value.
- 12. TENS and EMS devices are symptomatic treatment that suppresses pain sensation that would otherwise serve as a protective mechanism on the outcome of the clinical process.
- 13. TENS and EMS devices should be kept out of the reach of children.
- 14. Electronic monitoring equipment (such as ECG monitors and ECG alarms) may not operate properly when TENS/EMS stimulation is in use.
- 15. Do not use TENS and EMS devices if you are fitted with pacemaker or defibrillator.
- 16. For external use only.
- 17. Do not use the TENS/EMS unit while driving or operating machinery.
- 18. Follow the national regulation to dispose unit.
- 19. Do not attempt to plug the electrode lead wire into AC Power sockets such as wall sockets and line powered receptacles.

### **PRECAUTIONS**

- 1. The safety of TENS and EMS devices for use during pregnancy or birth has not been established.
- 2. Caution should be taken for patients with suspected or diagnosed heart problems.
- 3. Caution should be taken for patients with suspected or diagnosed epilepsy.
- 4. Caution should be taken in the presence of the following:
  - (a) When there is a tendency to hemorrhage following acute trauma or fracture;

- (b) Following recent surgical procedures when muscle contraction may disrupt the healing process;
- (c) Over the menstruating or pregnant uterus; and
- (d) Over areas of the skin which lack normal sensation.
- 5. Some patients may experience skin irritation of hypersensitivity due to the electrical stimulation or electrical conductive medium. The irritation can usually be reduced by using an alternate conductive medium, or alternate electrode placement.
- Electrode placement and stimulation settings should be based on the guidance of the prescribing practitioner.
- 7. TENS and EMS devices should be kept out of the reach of children.
- 8. This device should be used only with the leads and electrodes recommended for use by the manufacturer.
- 9. TENS and EMS devices should not be used while driving, operating machinery, or during any activity in which involuntary muscle contractions may put the user at undue risk of injury.
- 10. Isolated cases of skin irritation may occur at the site of electrode placement following long-term application.
- 11. Effectiveness is highly dependent upon patient selection by a person qualified in the management of pain patients.
- 12. If the stimulation level are uncomfortable or become uncomfortable, reduce the stimulation amplitude to a comfortable level and contact your physician if problems persist.
- 13. To avoid cross contamination, do not use another person's electrodes or allow your electrodes to be used by any other person.
- 14. Removing or inserting the electrode while the system is on will result in discomfort.

#### CONTRAINDICATIONS

- 1. TENS and EMS stimulators should not be used on the carotid sinus (neck) region.
- 2. TENS and EMS stimulators should not be used on patients with cardiac demand pacemakers.
- 3. TENS and EMS stimulators should not be used on the site that causes current to flow transcerebrally (through the head).
- 4. Do not apply TENS and EMS for undiagnosed pain syndromes until etiology is established.

#### ADVERSE REACTIONS

- 1. If the stimulation levels are uncomfortable or become uncomfortable, reduce the stimulation intensity to a comfortable level and contact your physician if problems persist.
- 2. Possible skin irritation or electrode burns under the electrodes may occur.

#### **DISCLOSURE**

Always consult with your physician before using these TENS/EMS. The Company does not make any diagnosis or give medical recommendations. These products are not intended to cure, heal, or prevent diseases. Do not use TENS/EMS if you are fitted with pace maker, defibrillator or during pregnancy. The medical evaluation of your physician is advised at all times. Any self-help application is the responsibility of the user. Consulting with a doctor is always recommended.

#### INSTALL THE UNIT

#### Get Ready to Start

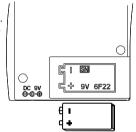
Always make sure the power of the unit is switched off before install the unit or remove the electrodes from skin.

### Battery and Mains power adaptor

The device can be used with 6F22 9V battery or rechargeable battery. The battery compartment is located in the casing on the back of the unit. Make sure that the device are switched to power off, remove the battery cover and insert the battery into the compartment. Make sure that you are installing the battery properly. Please install battery according to their positive (+) and negative (-) ends correctly.

#### **PRECAUTIONS**

- 1. Follow the national regulation to dispose battery
- 2. Remove battery if equipment is not likely to be used for some time.



#### Rechargeable batteries

If you use rechargeable batteries, please follow the instructions. Before using the battery charger, read all instructions and cautionary markings on the battery and battery charger instruction manual. After long periods of storage, batteries should be charged prior to use.

Battery charging

- 1. First, make sure the battery is properly seated.
- 2. The charger must be plugged in to a power source. For use in doors where there is a standard 110 or 220/240VAC mains electrical outlet. The use of any attachment not supplied with the charger may result in the risk of fire, electric shock, or injury to persons.

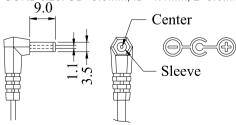
- 3. According to the battery manufacturer's instructions for charging time.
- 4. After the charging process is completed, unplug the charger and remove the battery.
- 5. WARNINGS:

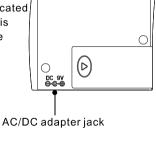
Avoid charging in extreme temperatures, recommended atmospheric temperatures for charging should be between (0°C and 40°C) or (32°F and 104°F); Although overcharging the batteries for up to 24 hours will not damage them, repeated overcharging may decrease useful battery life; Do not incinerate the rechargeable battery as it may explode; Do not allow the battery terminals to become shorted; Batteries should always be stored in a fully charged state; Non-rechargeable batteries may not be charged due to the risk of explosion.

#### Mains power adaptor

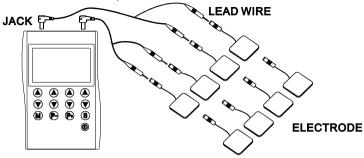
The device can be used with AC/DC adapter. The adapter jack is located in the casing on the bottom of the unit. Please ensure the lead wire is connected correctly. AC/DC adapter Specification: Switching Mode Power Supply, Input: 100-240VAC, 47~63HZ, Output Voltage: 9V/650mA, Min. 5.0W.

DC CORD size: OD=3.5mm, ID=1.1mm, L=9.0mm





## Connect device, lead wires and electrodes



#### Connect lead wires

Connect one to four lead wires to the jacks in the top of the unit. Please ensure the lead wires are connected correctly.

#### **Connect electrodes**

Connect electrodes to the lead wires, the unit can be used with two to eight electrodes. Make sure that no bare metal of the pins is exposed.

#### Placement of electrodes

Proper placement of electrodes is important to effective TENS/EMS therapy. Make sure the skin is clean and dry before placing the electrodes. Apply electrodes to the exact site indicated by your physician. Check the electrodes are placed firmly to the skin and make good contact between the skin and the electrodes.

#### Stimulation Modes

#### Modes for EMS:

The EMS is an intermittent stimulation. The pulse active and inactive duration are adjustable by setting ON time and OFF time. The contraction gradually increases during ramp up time and reaches maximum contraction during ON time. During ramp down time, the contraction gradually decreases until the OFF time starts.

S (EMS Synchronous) Mode:

Stimulation of 4 channels will occur simultaneously.

A (EMS Alternate) Mode:

Stimulation of Channel 1, 2, 3 and 4 will occur alternately. Always use 2, 3 or 4 channels and 4, 6 or 8 electrodes.

#### Modes for TENS:

N (Normal) Mode:

Continuous output, pulse rate and pulse width are adjustable.

M (Mixed Frequency) Mode:

This mode has a combination of high and low frequency stimulation. Per cycle time is 6 seconds. Each cycle contains two phases. During the first 3 sec. phase, the Pulse Rate runs at high-frequency, then during the second 3 sec. phase, the Pulse Rate runs at low-frequency. The cycle is then repeated. The low-frequency is fixed at 2 Hz. The high-frequency is adjustable from 2 to 120 Hz in which from 2 to 20 Hz at 1 Hz per step and from 20 to 120 Hz at 5 Hz per step.

B (Burst) Mode:

Pulse rate (Frequency) is fixed at 100 Hz, Pulse width is adjustable from 50 to 400uS, Burst rate is adjustable from 0.5 to 5 Hz in which from 0.5 to 1 Hz at 0.5 Hz per step and from 1 to 5 Hz at 1 Hz per step.

SD (Width Modulation) Mode:

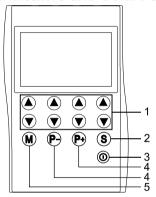
Pulse Width is modulated over a period of 2 seconds from its original setting value down to 40% of its setting, then modulated over another 2 seconds period at its original value. The cycle is then repeated. Per cycle time is 4 seconds.

MR (Rate Modulation) Mode:

Pulse Rate is modulated over a period of 6 seconds from its original setting value down to 60% of its setting, then modulated over another 6 seconds period at its original setting. The cycle is then repeated. Per cycle time is 12 seconds.

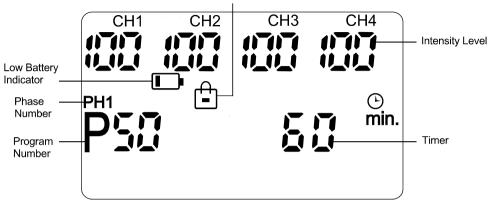
### INSTRUCTIONS FOR USE

#### Indicators and Controls



- 1. ▲▼ Intensity increase/decrease Buttons: These buttons control the Intensity level of stimulating pulses. If the stimulation levels are uncomfortable or become uncomfortable, reduce the stimulation intensity to a comfortable level and contact your physician if problems persist.
- 2. SET/Unlock Button: All buttons except Power ON/OFF, Intensity Decrease and SET/Unlock will be auto-locked after 30 seconds idle time, there will be a cicon displayed on the LCD screen. You can press the SET/Unlock button to de-lock key pad. In programming mode, you can enter further settings, by press the SET/Unlock button after de-lock key pad.
- 3. Power ON/OFF Button: This button switches the power ON/OFF. For power on press and hold power ON/OFF button for 1 second. If the Intensity setting of four channels is 0, it will power off automatically after 30 seconds. This button can be used as an emergency stop button.
- 4. Program number increase/decrease Button: This button will carry the digits for selecting a program number (P1-P50 or P100). Use P- to step backward through the programs. Use P+ to step forward through the programs. In programming mode, the button is a increase/decrease control button will carry the digits to increase/decrease the settings.
- 5. Compliance timer mode Button: When the unit being powered off, you can press and hold M button then press power ON/OFF button to activate the compliance timer mode. When the unit being powered on, you can turn the device into programming mode for programmable programs P1 P5 and confirm settings in programming mode, by press the M button.

#### Key lock Indicator



#### Turn Unit On

Press and hold power ON/OFF Button (1) for one second to turn unit On

### Turn Unit Off

Press the Power ON/OFF button to switch off unit. When the electrodes are removed, clean the skin thoroughly with mild soap and water. If there is skin irritation, consult your physicians. When a therapy session is completed and you don't press the Power ON/OFF button to switch off unit, the unit will be signaling "Bi" sound 15 seconds then power off automatically.

## Select a Program

The unit with 45 or  $\overline{95}$  preset programs and 5 programmable programs. The Number of programs is P1-P50 or P100. Press the button P+ or P- to carry the digits for selecting a program number. Use P+/P- to step forward/backward through the programs. When selecting a program the Intensity level will be reset at 0 for both channels. The last used program is saved when the unit is turned off and will be reloaded as default program the next time the unit is turned on. For further information on the preset programs, please see the attached manual for settings of each preset Program. How to set and store settings on the programmable programs P1 - P5? See chapter Programming mode.



## **Adjust Intensity**

The Intensity is adjustable from level 0 to level 100 at 1mA per step. Press Intensity increase/ decrease buttons to set the Intensity level. You must set the mode, rate and width before starting to set the Intensity. Please consult physicians for your suitable setting. If the stimulation levels are uncomfortable or become uncomfortable, reduce the stimulation intensity to a comfortable level and contact your physician if problems persist.

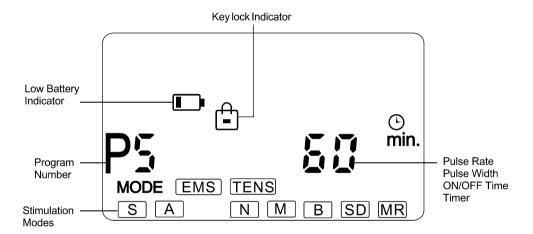






## Programming mode

# Indicators for Programming mode



The unit has 5 programmable programs available to be set and stored by user. To set a programmable program, follow the programming procedure below. **Please consult physicians for your suitable setting.** 

### De-lock key pad:

If there is a 💣 icon displayed on the LCD screen. Press the SET/Unlock button to de-lock key pad.





### Select a programmable Program number:

The Number of programmable programs is P1-P5. Press the program number button P+ or P- to carry the digits for selecting a program number P1-P5.







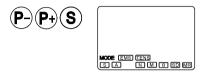
## Activate Programming mode:

Press M button to activate the Programming mode.



#### Set the stimulation mode:

By pressing the SET button to enter the stimulation mode setting, then press P+ or P- button to set stimulation mode. There are 7 modes available, S, A, N, B, M, SD and MR. For further information on the stimulation modes, please see chapter stimulation modes.



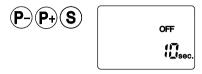
### Adjust ON (Contraction) Time: (For S and A mode only)

The ON Time is adjustable from 2 to 90 seconds at one second per step. By pressing the SET button to enter the ON Time setting mode, then press P+ or P- button to adjust On Time.



### Adjust OFF (Relaxation) Time: (For S and A mode only)

The OFF Time is adjustable from 2 to 90 seconds at one second per step. By pressing the SET button to enter the OFF Time setting mode, then press P+ or P- button to adjust OFF Time.



### Adjust the Ramp Time: (For S and A mode only)

The Ramp Time is adjustable from 1 to 8 seconds at one second per step. By pressing the SET button to enter the Ramp Time setting mode, then press P+ or P- button to adjust Ramp Time.



#### Adjust the Pulse or Burst Rate:

The Pulse Rate is adjustable from 2 to 120 Hz in which from 2 to 20 Hz at 1 Hz per step and from 20 to 120 Hz at 5 Hz per step. In Burst mode, Pulse rate is fixed at 100 Hz, Burst rate is adjustable from 0.5 to 5 Hz in which from 0.5 to 1 Hz at 0.5 Hz per step and from 1 to 5 Hz at 1 Hz per step. By pressing the SET button to enter the Pulse or Burst Rate set mode, then press P+ or P- button to adjust Pulse or Burst Rate.





#### Adjust the Pulse Width

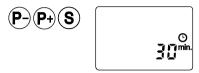
The Pulse Width is adjustable from 50 to 400uS at 10uS per step. By pressing the SET button to enter the Pulse Width set mode, then press P+ or P- button to adjust Pulse Width.





#### Adjust the Timer

The Timer is adjustable from 5 to 90 minutes at 5 minutes per step then to Continuous mode. By pressing the SET button to enter the Timer set mode, then press P+ or P- button to adjust Timer.



#### Store the settings and exit:

If programming procedure is completed. You can Press M button to store the settings and exit the programming mode. The new programmable program is now selected and ready for use. The programmable program is also stored in the device for future use. A programmable program can be changed by redoing the programming.

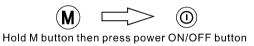


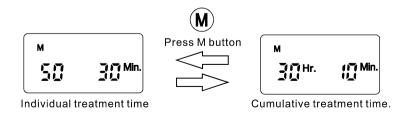
#### COMPLIANCE TIMER

The patient compliance timer can memorize 100 sets of therapy session records; the total record time is 400 hours. If a single treatment session is less than one minute, it will not be recorded. The patient compliance timer can maximally only record 240 minutes for a single therapy session.

#### **Compliance Timer Mode**

When the unit being powered off, you can press and hold M button then press power ON/OFF button to activate the compliance timer mode. You can press M button to switch around the records of Individual treatment time and Cumulative treatment time.





### Individual Compliance time:

Press P+ button or P- button to see each session record. The session count will flash on the LCD screen.

Press and hold SET button for 3 seconds to delete the on showing record. The unit will sound "Bi" when the on showing record is deleted.





#### Cumulative Compliance time:

Press M button to switch the individual treatment time record to cumulative treatment time record. When cumulative treatment time record coming up, there will be an "M" icon displaying and flashing on the LCD screen.

Press and hold SET button for 3 seconds to delete ALL records including individual treatment time record and cumulative treatment time record. After ALL records are deleted, the unit will sound "Bi".







#### LOW BATTERY INDICATOR

When the low power indicator flashes, the battery should be replaced with a new one. However, the device will continue to operate for several more hours.



#### CARE AND STORAGE INSTRUCTIONS

- Clean with a damp cloth if necessary. Never expose the device to water and near excessive heat.
- 2. Keep this device in the carrying case and store at room temperature.
- 3. The device should be operating under the temperature range of  $+10^{\circ}$ C  $\sim +35^{\circ}$ C, relative humidity  $20\% \sim 90\%$ .
- 4.The packed device should be stored and transported under the temperature range of  $0^{\circ}\text{C} \sim +60^{\circ}\text{C}$ , relative humidity  $20\% \sim 90\%$ .

## **SPECIFICATION**

S: EMS Synchronous, A: EMS Alternate, N: Normal, M: Mixed Frequency, B: Burst, SD: Width Modulation, MR: Rate Modulation

	Four Channels TENS and EMS
Channel	Four
Amplitude	Adjustable 0-100mA, Max output 100mA peak to peak
	(22mA rms) into 500ohm load each channel.
Wave form	Asymmetrical rectangular biphasic pulse.
Power source	DC 9V battery and / or mains power adaptor
Size	13.5(L)x8.6(W)x2.3(H)(cm)
Weight	160 grams
Pulse Rate	2Hz~20 Hz at 1 Hz/step and 20~ 120 Hz at 5 Hz/step
Pulse Width	50uS~400uS, 10uS/step.
Output mode	S, A, N, M, B, SD, MR
Contraction Time	2~90 seconds
Relaxation Time	2~90 seconds
Ramp Time	1~8 seconds
Timer	5~90 Minutes or continue.
Charge delivered	24 microcoulombs per pulse into 500 ohm load.

### **ACCESSORIES**

Self-Adhesive Electrodes 8 PCS. 9 V Battery 1 PC. Lead Wires 4 PCS. Instruction Manual 1 PC. Carrying Case 1 PC.

AC/DC adapter Optional accessory.

### **LABEL**

The label contains important message about this device, serial number, supply voltage, the name of manufacturer, CE number and classification. Please do not remove it.

## CE label



### Serial number and Date of manufacture

0000012015

### **GRAPHICAL SYMBOLS**

- 1. 

  A CAUTION, Consult accompanying documents.
- 2. I Read the instruction manual before use.
- 3. 🖈 Body floating applied part.
- 4. 

  Do not insert the plug into AC power supply socket.
- 5. M Date of manufacture.
- 6. Manufacturer.
- 7. Follow the national requirement to dispose unit.
- 8. === Direct Current.
- 9. SN Serial number.
- 10. Low Battery
- 11. © Timer
- 12. 🖆 Lock
- 13. Follow Instruction for Use
- 14. IP22 Protection against ingress of solid objects greater than 12mm and dripping water when tilted up to 15°

#### APPLICATION OF SELF-ADHESIVE ELECTRODES

#### Application and Storage

- Clean the skin where the electrodes are going to be applied thoroughly with normal soap and water to remove all traces of oils, either natural or left by shower gels, bath oils and some soft soaps.
- 2. Connect the lead wire male connectors to the electrode female wire connectors.
- 3. Carefully peel electrodes from the protective liner.
- 4. Firmly place the electrodes on the skin location.
- 5. After use, turn the stimulator off, replace the electrodes onto the protective liner and reseal them in the plastic bag.
- 6. Always remove electrodes from the skin or protective liner by lifting the edges. Never pull on the tail wire as this may damage the electrode beyond use.
- 7. Store electrodes in a cool area, this will help preserve their life.
- 8. It may be helpful to improve repeated application by spreading a few drops of cold water over the adhesive and turn the surface up to air dry. Over Saturation with water will reduce the adhesive properties.

#### **Important**

- 1. Do not apply electrodes to broken skin.
- 2. Do not connect electrodes while driving a vehicle or when operating machinery.
- 3. Do not apply to skin that is known to cause irritation. If you experience any irritation to the skin, discontinue use and contact your Doctor.
- 4. The electrodes are intended for single patient use only.

#### **TROUBLESHOOTING**

If your unit does not operate correctly, refer to the list below to determine what may be wrong. Should none of these measures correct the problem, the unit should be serviced.

- 1. The LCD screen lights up, but unit does not function properly. Check all control settings. Check electrodes and lead wires in proper position.
- 2. The Low Battery indicator flashes. Replace battery with a new one.
- 3. The LCD screen does not lights up. Replace battery with a new one.
- 4. If there is any other problem, please return the device to your distributor. Do not try to repair a defective device.

#### **WAVEFORM**

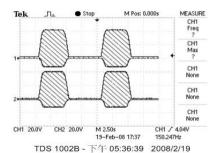
Test Equipment: Tektronix TDS1002B Oscilloscope

Load: 500 Ohm Test Parameters:

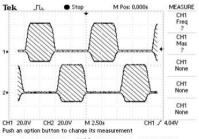
Pulse Rate: 120Hz, Pulse width: 300µSec., ON Time: 5 Seconds, OFF Time: 5 Seconds,

Ramp Time: 1 Seconds

#### 1. S Mode (EMS Synchronous)

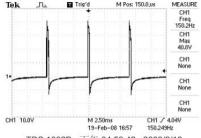


#### 2. A Mode (EMS Alternate)



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#### 3. N Mode (Normal Mode)

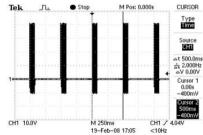


TDS 1002B - 下午 04:56:42 2008/2/19

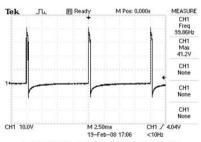
#### Tek Trig'd M Pos: 150.0 us MEASURE CH1 Max 40.8V CH1 Rise Time 5.360 us CH1 Fall Time 79.52 us CH1 Pos Width 300.2 us CH1 None CH1 10.0V M 50.0 us CH1 / 4.04V 19-Feb-08 16:11 150,248Hz

TDS 1002B - 下午 04:10:06 2008/2/19

#### 4. B Mode (Burst Mode)

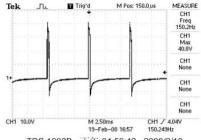


TDS 1002B - 下午 05:04:18 2008/2/19

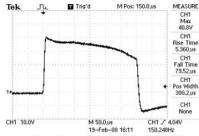


TDS 1002B - 下午 05:05:07 2008/2/19

#### 5. M Mode (Mixed Frequency)

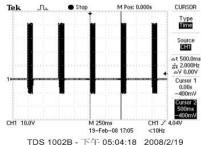


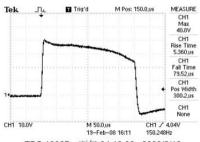
TDS 1002B - 下午 04:56:42 2008/2/19



TDS 1002B - 下午 04:10:06 2008/2/19

#### First phase the Pulse Rate runs at high-frequency.

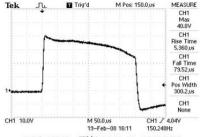




TDS 1002B - 下午 04:10:06 2008/2/19

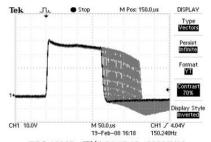
Second phase the Pulse Rate runs at low-frequency.

#### 6. SD Mode (Width Modulation)

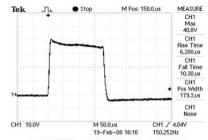


TDS 1002B - 下午 04:10:06 2008/2/19

#### Pulse Width runs at its width setting.



TDS 1002B - 下午 04:17:12 2008/2/19

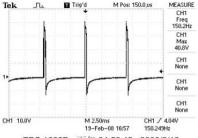


TDS 1002B - 下午 04:15:01 2008/2/19

Pulse Width down to 60% of its setting.

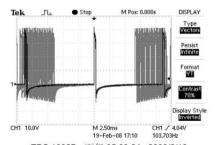
Pulse Width is modulated from its original setting value down to 60% of its setting,

#### 7. MR Mode (Rate Modulation)

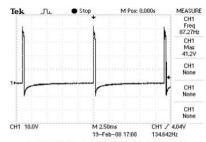


TDS 1002B - 下午 04:56:42 2008/2/19

#### Pulse Rate runs at its rate setting.



TDS 1002B - 下午 05:09:24 2008/2/19



TDS 1002B - 下午 05:06:52 2008/2/19

Pulse Rate down to 60% of its setting.

Pulse Rate is modulated from its original setting value down to 60% of its setting,

#### WARRANTY

One year (12 months) from the date of delivery.

Accessories (lead wire, electrodes, carrying case, and belt clip): 90 days from the date of original consumer purchase.

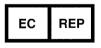
### MANUFACTURER:

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