



Wireless-49 TENS/EMS System

User manual



This manual is valid for the HI-Dow Wireless TENS/EMS System (Model HD-5N-N)

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Indications for Use

To be used for the temporary relief of pain associated with sore or aching muscles in the shoulder, waist, back, upper extremities (arm), and lower extremities (leg) due to strain from exercise or normal household work activities. Choose Mode 3, 4,5 and 10 an

It is intended for muscle conditioning, used for stimulating muscles improve or facilitate muscle performance. Choose Mode 1, 2, 6, 7, 9

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Hi-Dow Wireless TENS/EMS System Model HD-5N-N

GENERAL DESCRIPTION

The Hi-Dow Wireless TENS/EMS System is a battery operated wireless pulse generator that sends electrical impulses from a REMOTE control to a RECEIVER (round disk) with ELECTRODES attached to them that are placed on the body to stimulate the nerves causing pain. When this happens, the nerves "FEEL" gentle electrical sensations instead of the pain.

The Wireless REMOTE controls the INTENSITY and MODE functions of the RECEIVER. The RECEIVER with the electrodes attached to it adheres easily and firmly to the skin.

See the pictures in this Manual that show the different COMPONENTS and CONTROLS of the Hi-DOW System and how to operate it properly to get the best PAIN RELIEF.

Because the Hi-Dow system is Wireless - Needing No Lead Wires - you must use only Hi-Dow SNAP Electrodes.

PULSE PARAMETERS

Rated Supply Vo	ltage (V)	DC 3,7 V 1000 O					
Load Resistance	(0)						
PULSE DURATION(µs)	PULSE repetition frequencies(Hz)	PULSE repetition amplitudes(Vrms)	DC component (V)	Mode decomposition	Remarks		
100	51	50~90	÷	See Remark	Mode 1		
100	6	50~90	-	See Remark	Mode 2		
100	1.16	50~90	**	See Remark	Mode 3		
100	<50	50-90		See Remark	Mode 4.1; 4.2		
100	8	50~90	-	See Remark	Mode 5		
100	<60	50~90		See Remark	Mode 6.1; 6.2; 6.3; 6.4		
100	51	50-90	-	See Remark	Mode 7.1; 7.2		
100	<70	50-90	+	See Remark	Mode 8.1; 8.2; 8.3; 8.4		
100	<60	50~90		See Remark	Mode 9.1; 9.2; 9.3		

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Mode Description when used as TENS (Pain Relief)

Mode#3-Tapping: simulates a second heart beat. By tapping the muscle you increase the body's natural blood flow and oxygen supply to target area. This also helps flush any inflammation or swelling in target area. Mode #4-Reflexiology: This mode has been designed for the shoes. It simulates a reflexiology session through the socks and/or shoes using several different stimulation patterns.

Mode #5- Auricular Therapy: This mode is also known as "alpha stim" or "micro current". When used properly

you should use the earflap attachment. It works 2 ways. By simulating an alpha wave in the brain it has been known to help sleep patterns, behavior, and endorphin release. Also, it will relax the sub occipital muscles and vaso dilate, helping with migraines and headaches.

Mode 48 - Ramping wave: This mode is designed to start out with number 3, tapping. It will get faster and deeper

into the belly of the muscle as it continues until it goes to a fully facilitated contraction. Then it will allow the muscle to release. This has been used to increase endurance and build fatigue resistance.

Mode Description when used as EMS (Muscle Stimulation)

Mode #1 - Kneading: simulates the thumbs fingers and palms of a real massage therapist. The sensation shoulded like a vibration. Focuses on hypertension and stress and helps to break that down returning full range of motion and flexibility.

Mode #2 - Acupressure: a much more rapid and focused pulse that focuses on any knot or adhesion in the body. It outs enough pressure on it to break it down and release any acidic (lactic) content within.

Mode #6 - Atlas: It is used for muscle confusion and athletic enhancement.

Mode #7 - Contract and Hold. This mode is the longest contraction on the machine. It is designed to simulate a flex movement to help build muscle tissue. Mode #9 - Tapping and kneading: a mixture of the fast and slow contractions.

CONTRAINDICATIONS Do not use this device if you have a cardiac pacemaker, implanted defibrillator, or other implanted metallic or electronic device. Such use could cause electric shock, burns, electrical interference, or death.

WARNINGS

- The long-term effects of chronic electrical stimulation are unknown.

 If you are in the care of a physician, consult with your physician before using this device.

 If you have had medical or physical treatment for your pain, consult with your physician before using this device.

 If your pain does not improve, becomes more than mild, or continues for more than five days, stop using the device and consult with your physician.

 Do not apply stimulation over your neck or mouth because this could cause severe muscle spasms resulting in closure of your airway, difficulty in breathing, or adverse effects on heart rhythm or blood pressure.

- Do not apply stimulation across your chest because the introduction of electrical current into the chest may
 cause rhythm disturbances to your heart, which could be lethal.
 Do not apply stimulation over open wounds or rashes, or over swotlen, red, infected, or inflamed areas or skin
 eruptions (e.g., phlebbits, thrombophlebbits, varicose veins).

- eruptions (e.g., phiebitis, thrombophiebitis, varicose veins).

 Do not apply stimulation over, or in proximity to, cancerous lesions.

 Do not apply stimulation in the 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 apply stimulation while sleeping.

 Do not apply stimulation while driving, operating machinery, or during any activity in which electrical stimulation can put you at risk of injury.

 Do not use the device on children, if it has not been evaluated for pediatric use.

 Consult with your physician before using this device, because the device may cause lethal rhythm disturbances to the heart in susceptible individuals; and
 Apply stimulation only to normal, intact, clean, healthy skin.

- Apply stimulation only to normal, intact, clean, healthy skin.
 The device can't be used while charging.
 The device should not be applied over the carotid sinus nerves, particularly in patients with a known sensitivity to the carotid sinus reflex

- FCC WARNING STATEMENT

 The party responsible for compliance could void the Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.
 This device complies with Part 15 of the PCC rules. Operation is subject to the following two conditions:
 1) This device may not cause harmful interference, and
 2) This device must accept any interference received, including interference that may cause undesired operation.

PRECAUTIONS

- Hi-Dow Wireless TENS/EMS System is not effective for pain of central origin, including headache.
 Hi-Dow Wireless TENS/EMS System is not a substitute for prescribed pain medications and other pain manage.

- therapies.

 Hi-Dow Wireless TENS/EMS System have no curative value.

 Hi-Dow Wireless TENS/EMS System is a symptomatic treatment and, as such, suppresses the sensation of pain that would otherwise serve as a protective mechanism.

 The long-term effects of electrical stimulation are unknown.

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

 The safety of electrical stimulation during pregnancy has not been established.

 You may experience skin irritation or hypersensitivity due to the electrical stimulation or electrical conductive medium (gel).

- If you have suspected or diagnosed heart disease, you should follow precautions recommended by your physician.
 If you have suspected or diagnosed epilepsy, you should follow precautions recommended by your physician.
 Use caution if you have a tendency to bleed internally, such as following an injury or fracture.
 Consult with your physician prior to using the device after a recent surgical procedure, because stimulation may

- Consult with your physician prior to using the device after a recent surgical procedure, because stimulation may disrupt the 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.

 Keep this device out of the reach of children.

 Use this device only with the leads, electrodes, and accessories recommended by the manufacturer.

 Replace self-adhesive electrodes when they do not adhere (stick) firmly to the skin.

 The device should not be used while driving, operating machinery, or during any activity in which involuntary muscle contractionsmay put the user at undue risk of injury.

ADVERSE REACTIONS

- ADVERSE REACTIONS
 You may experience skin irritation and burns beneath the stimulation electrodes applied to your skin.
 You may experience headache and other painful sensations during or following the application of electrical stimulation near your eyes and to your head and face.
 You should stop using the device and should consult with your physician if you experience adverse reactions from the device.

GENERAL INFORMATION

- 1 REMOTE Control
- 2 RECEIVERS (NUMBERED 1 and 2)
- 1 piece of Lower back sized adhesive electrode pads (4x9 inches rectangular shape)
 1 set of LARGE single sided adhesive electrode pads (2,4x2,4 inches round shape)
- 2 Electrode Wires (8 inches)
- USB Cable for Recharging
- User Manual

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*In case of any discrepancy between the physical and picture, refer to the actual product

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- QUICK START GUIDE FOR SIMPLE USE

 1. Snap the electrode pads onto the round RECEIVER. Both connection points on the RECEIVER'S must be engaged.
 2. Remove the electrode pad film and securely place the adhesive pads elective on the skin over the pain area.
 3. Turn on the REMOTE using the ON/OFF switch on the side. Then turn on the RECEIVER by pressing the power butter.
 4. Choose Channel 1 or Channel 2 by pressing "C" on the REMOTE, number 1 or 2 will display on LCD screen. For more RECEIVERS by pushing "C" on the REMOTE and seeing 3 or 4 appear in the LCD display.
 5. Set the mode of the selected RECEIVER to Mode 1, Mode 2, Mode 3, Mode 4, Mode 5, Mode 6, Mode 7, Mode 8 or Mode 9 to pressing "C" on the REMOTE 1. 3. 4. 5. 6. 7. 8. 9 will appear in the LCD display not to the "M".
- 5. Set the mode of the selected RECEIVER to Mode 1, Mode 2, Mode 3, Mode 4, Mode 6, Mode 6,

- Notes:

 1. The patient is an intended OPERATOR. While using the unit, no service and no maintenance shall be done.

 2. The device is very safe at the maximum output value.

 3. It is recommended that, at a minimum, 3x4.5 [cm] self-adhering electrode pads are used at the treatment area.

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INSTRUCTIONS FOR USE

The REMOTE control is the sleek looking handset. It has a LCD display, C button for choosing RECEIVER 1/Channel 1 or RECEIVER 2/Channel 2 (For more RECEIVER). RECEIVER 3/Channel 3, RECEIVER 4/Channel 4), and M button to control the MIODE functions of the RECEIVERS.

The defaults string time of REMOTE is 45 minutes. The REMOTE will shut off automatically after that time, or you can manually turn off.

ON/OFF.
The ON/OFF button is located on the side of the REMOTE. The LCD display illuminates when the REMOTE is "ON". If the LCD display is blank, the unit is "OFF" or the REMOTE and/or the RECEIVERS need to be recharged.

RECEIVER(S) CONTROL

Push and hold the power button on each RECEIVER until you can see the green light. Push again, and the RECEIVER turns off. If the green light becomes red, the RECEIVER needs to be recharged.

INTERSITY adjusting on the REMOTE is just below the LCD Screen figured as + and -. The more you push + the higher up the Intensity level of the Channel shown in the LCD display goes. The more you push - the lower down the Intensity level of the Channel shown in the LCD display goes.

CHANNEL and RECEIVER CONTROLS

CHANNEL and RECEIVER CONTROLS

This is a 4 Channel TENS/EMS unit.

There are 2 ROUND RECEIVERS – the CHANNELS labeled as 1 and 2.

Both CHANNELS are controlled by the REMOTE.

Push the *C* on the REMOTE to set CHANNEL 1, 2, 3 and 4. CHANNEL 1, 2, 3 or 4 will appear on the LCD screen.

Then set the MODE for CHANNEL 1, 2, 3 or 4 by pushing the *M* on the REMOTE.

*Note: To add more RECEIVERS, first match the REMOTE and RECEIVERS, please refer to the "Troubleshooting" on page 27

*Note: Each Round Receiver must be connected to either 1 large (2 pins on it) or 2 small (1 pin on each) electrodes to function. Using only 1 small electrode will result in non-function.

MODES - Pre-Programmed Mode Functions
Simply push the "M" button on the REMOTE to change from Mode 1 to Mode 2 and so on up to Mode 9. The MODE FUNCTION being used will appear in the LCD screen as 1, 2, 3, 4, 5, 6, 7, 8, 9.

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MAINTENANCE, STORAGE and DISPOSAL

- Maintenance

 1. Make sure your skin is free from any dirr, oil or lotions.

 2. Before applying the electrodes, suggest spraying HiDow conductor on your fingers and rub them on both pads. This will help the electrodes maintain their adhesiveness.

 3. When you finish using the device, turn it off.

 4. Take off the electrodes.

 5. Place the protective films back on the electrodes or place the electrodes on the pad holder.

 6. Place be pack in the box until next use.

- scorage

 1. For prolonged application, store the device in a cool, dry room and protect it against heat, sunshine and moisture.

 2. Store the device in a cool, well-ventilated place.

 3. Never place any heavy objects on the device.

- Ossponson

 1. The device must be disposed in accordance with the laws in your area.

 2. The electrodes are disposable and should be routinely replaced before they start to lose their adhesive nature. And the electrodes should be disposed in accordance with the laws in your area. Note: The expected service time of the device is 3 years, and expected service time of electrodes is 2 years.

SUGGESTED MODE USES

- SUGGESTED MODE

 1. Legs, Arms, Hands Mode 1, Mode 3, Mode 7, Mode 8, Mode

 2. Feet Mode 4

 3. Ears Mode 5

 4. Calorie Consumption Mode 6

- 4. Calorie Consumption-Mode 6
 5. Knees Mode 1. Mode 3
 6. Lower Neck, Hip, Stomach Mode 1, Mode 2, Mode 3, Mode 7, Mode 8, Mode 9
 7. Shoulders, Upper Back, Mode 1, Mode 2, Mode 3, Mode 7, Mode 8, Mode 9
 8. Neck Mode 1, Mode 2, Mode 3, Mode 7, Mode 8, Mode 7, Mode 8, Mode 9
 9. Combination Waves Mode 7, Mode 8 and Mode 9 are for multiple types of sensations that alternate automatically for your convenience and work well on all Pain Conditions.

intensity until you feel a "tingling" sensation. All modes are different and therefore feel different. You may try all modes in the beginning and choose one that feels pleasant. Never increase the intensity to a level so that it hurts, always stay under the point of discomfort, Start with short sessions of 5-10 minutes until your body gets used to the stimulation.

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ELECTRODE OPTIONS

Follow application procedures outlined in electrode packing, to maintain stimulation and prevent skin initiation.

Use "ONLY" H-DOW SNAP electrodes with this WIRELESS system. Replace Electrodes when they don't stick any longer.

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CONTIGUOUS PLACEMENT

This is the most common placement technique, it involves placing the electrodes alongside the area of localized pain site, in such a way as to direct the flow of current through or around the area of pain.

In a single channel application, this would involve placing each pad on either side of the pain site if the pain is localized on a limb and deep within the tissue. Pad placement on the posterior and anterior aspects of the affected limb will allow the current to flow completely.

ELECTRODE PLACEMENT

The placement of electrodes can be one of the most important parameters in achieving success with TENS therapy. Of utmost importance is the willingness of the user to try the various styles of electrode placement to find which method best fits his or her needs.

Every user responds to electrical stimulation differently and their needs may vary from the conventional settings suggested here. If the initial results are not positive, feel free to experiment.

NOTE: You may have to ask for help if you cannot reach the area to be stimulated.

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APPLICATION OF RE-USABLE SELF ADHESIVE ELECTRODES

- Apprication

 1. Clean and dry the skin area thoroughly with soap and water prior to application of electrodes.

 2. Remove the electrode pad film and securely place the adhesive pad attached to the RECEIVER firmly onto the skin over or near the pain area.

- Between uses, store the electrodes in the rescaled bag in a cool dry place.
 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-acturation with water will reduce the adhesive properties.

- Notes:

 1. Do not apply to broken skin.

 2. The electrodes should be discarded when they are no longer adhering.

 3. The electrodes are intended for single patient use only.

 4. If initiation occurs, discontinue use and consult your clinician.

TIPS FOR SKIN CARE

To avoid skin irritation, especially if you have sensitive skin, follow these suggestions:

1. Wash the area of skin where you will be placing the electrodes, using mild soap and water before applying electrodes, and after taking them off. Be sure to rinse soap off thoroughly and dry skin well.

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2. Excess hair may be clipped with scissors; do not shave stimulation area.
3. When the area with the skin preparation your clinician has recommended. Let this dry. Apply electrodes as directed.
4. Many skin problems arise from the "pulling stress" from achiesive patches that are excessively stretched across the skin during application. For pevent this, apply electrodes from enter outward, avoid stretching over the skin.
5. To minimize the "pulling stress", tape extra lengths of lead wires to the skin in a loop to prevent tugging on

electrodes.

6. When removing electrodes, always remove by pulling in the direction of hair growth.

7. It may be helpful to rub skin lotion on electrode placement area during application down time when you are not wearing electrodes.

8. Never apply electrodes over initiated or broken skin.

BATTERY INFORMATION

Rechargeable Batteries

Prior to the use of a new unit, the rechargeable battery in the REMOTE and the RECEIVER may need to be charged.

After being stored for 60 days or more, the batteries may lose their charge. After long periods of storage, batteries should be charged prior to use.

Battery Charging for REMOTE and RECEIVER





"Via a computer USB port

1. Connect the small end of the USB cable to the unit and bigger end to the
USB port on a computer (computer must be turned on).

2. REMOTE: The unit is finished charging when the battery icon indicates full.
RECEIVER. While charging, the indicator light is yellow, and the light is
green after finishing.

Notes:

Notes: 1. The adapter is a separate power supply to the device, NOT a part of the ME EQUIPMENT, and it is a combination of a ME EQUIPMENT SYSTEM.

The device can't be used while charging.

REGULAR APPLICATION PRINCIPLES

- Find the exact pain point. The points which the electrode pads are attached to should be the most painful point in normal time.
- point in normal time.

 Intensity The intensity must be gradually increased and it's better to reach the highest intensity you can stand, without feeling uncomfortable.

 Application duration: 2-3 times/day, 45 minutes every time, over 10 days for one course.

 There are two ways to place the pads, in twin and opposed modes.

Figure 1: Twin mode

Fix the two pads at the top and bottom or both ends on the same side of the human body













Figure 2: Opposed mode
Fix the two pads respectively on the opposite sides
of the application position, as shown below

REGULAR APPLICATION METHODS

--- Pain in the trunk

1. Probably pain points in the trunk
According to traditional chinese medicine (TCM), the most sensible pressure pain point is the key point, the most proper position to be applied. Find the pressure pain point with reference to Fig.1. Apply one paid onto it. Apply the other paid onto a proper point in wymmetrical to the chosen pressure pain point or near to it, but the two pads should not be overlapping. If there are several separated pressure pain points, apply them one by one.

Recommended positions of pads for application on the neck, shoulder and back (See Fig.3)
Figure 3



Mode 1 for 30 minutes, Mode 2 or Mode 3 for 30 minutes by turns for A. B and C. Longer time is needed for those parts of great pain. It is advisable to use fairly large intensity.

Recommended positions of pads for application of the waist (See Fig. 4)



Mode 1 for 30 minutes, Mode 2 for 20 minutes or Mode 7, 8, 9 for 30 minutes, it is advisable to do some waist exercise after the application.

Long application is needed for more serious aches and pains.

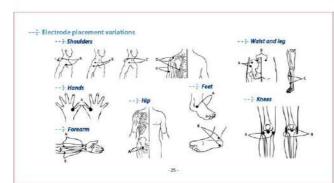


① Position of pads
For joint pain, two pads should be applied to the two symmetrical sides of the
painful point, see Fig. 2 (opposed mode).

2) Mode and length of operation time Mode 1 for 30 minutes, the Mode 3 for 30 minutes, 2-3 times a day.

Position of pads
 Apply the pads to each end of the painful muscle or apply one pad to the muscle and the other to the tendon. The position can be slightly regulated according to sensation.
 Mode and length of time
 Mode 2 for 20 minutes, then Mode 3 for 20 minutes. Consult the doctor if the injury has laceration of muscle or

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Cause	Solution
Battery is depleted.	Make sure the REMOTE has been fully charged
The battery is low.	Charge the RECEIVER soon or it will turn off automatically.
Adhesive gel pads need to be replaced.	Replace the adhesive gel pads, Pads can be purchased from your local distributor or from www.hidow.com.
Charging cable not plugged in fully.	Ensure the USB cable is firmly in the REMOTE/RECEIVER on one side and plugged into the AC adapter into the electrical socket on the other side.
	Battery is depleted. The battery is low. Adhesive gel pads need to be replaced. Charging cable not plugged

Problem	Cause	Solution
During use the skin feels a painful burning sensation or the stimulation becomes weakened.	Adhesive gel pads are not adhering firmly to the skin or the gel pads are too dry.	Put a few drops of water on your fingers and rub them on both pads which will bely the electrodes maintain their adhesiveness. And male sure the pads are pressed firmly to the skin during application.
When pressing "M" (Mode) and "#" "" (Introduced and "#" "" (Introduced and subject to any reaction.	The RECEIVER is not turned on.	Make sure both RENOTE and RECEVERS are harred on and the Channel number on the remote matches the RECEVER number correctly. If still no any reaction, the user docuted match the REMOTE and RECEVERs as to the following stops Press the "Chatton on the REMOTE for more from a scook, you will see "Chanton on the REMOTE for more from a scook, you will see the REMOTE and the REMOTE stop of the REMO
The REMOTE can not control the RECEIVER well.	There is no electrical signal transmission between them.	Make sure the distance between the REMOTE and RECEIVER is less than 8 meters.

CONFORMITY TO SAFETY STANDARDS
HI-Dow International Inc. declares that the device compiles with the following normal

Statement of EMC IEC 60601-1-2:2014

Conformity to MDD Requirements

IEC 60601-1:2005+AMD1:2012/ANSI/AAMI E560601-1:2005+A1:2012, IEC 60601-1-11:2015, IEC 60601-2-10:2012

Conformity to FCC Requirements
The devices are in compliance with FCC Part 15 Subpart C.

TECHNICAL INFORMATION

Channel	Dual, independent intensity control			
Power Supply	Remote: DC3.7V			
гожет заррту	Receiver DC3.7V			
Dimensions	Remote: 108mm x 53.6mm x 14.9mm			
Difficiality	Receiver @57mm x 12mm			
Net weight	Remote: 64g			
Net weight	Receiver Z4g			
Operating conditions	5°C to 40°C (41°F to 104°F) with a relative humidity (non-condensing) of 30% - 75%, atmospheric pressure from 700 to 1,050 HPa			
Storage and transportation conditions	-10°C to 55°C (14°F to 131°F) with a relative humidity (non-condensing) 10% - 90%, atmospheric pressure from 700 to 1,060 HPa			

ACCESSORIES LIST

NO	Accessories Name	Quantity	Specification
ij	AC adapter	1 piece	Input:AC 100-240V 50/60Hz 0.5A
2	Lower back sized adhesive electrode pads	1 piece	4x9 inches - rectangular shape
3	LARGE single sided adhesive electrode pads	1 pair	2.4x2.4 inches - round shape
4	USB cable	1 piece	39 inches
5	Electrode Wires	2 pcs	8 inches

EXPLANATION OF SYMBOLS

EC Rep	Authorized Representative in the European Community
C E	CE Mark: conforms to essential requirements of the Medical Device Directive 93/42/EEC
	Class II equipment
쎄	Date of manufacture:
	Manufacturer
5N	Specifies serial number
木	Type BF applied part
<u>B</u>	DISPOSAL: Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.

WIRELESS SPECIFICATIONS

Frequency band: 2400-2483.5Mhz Modulation method: GFSK Transmit Power: 048m (1mW) Receiver Sensitivity: -88dBm Effective transmission distance: <8 meters

DESCRPTIONS FOR SAFE WIRELESS TRANSMISSION

The Remote and the Receivers have a unique address. Before leaving the factory, the Remote and the matched. The address information to each other is saved as to prevent any un-authorized access, in the wireless transmission, the address information will be sent out together; only the correct address information can be received.

ELECTROMAGNETIC COMPATIBILITY DESCRIPTIONS

This product needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided, and this unit can be affected by portable and mobile RF communications equipment. 10 co not use a mobile phone or other devices that entil electromagnetic fields, near the unit. This may result in incorrect operation of the unit.

3) Caution: This init has been thoroughly tested and inspected to assure proper performance and operation!

3) Caution: this machine should not be used adjacent to or stacked with other requirement and that if adjacent or stacked use is necessary, this machine should be observed to verify normal operation in the configuration in which it will be used.

Guidance and manufacture's declaration - electromagnetic emission

The device is intended for use in the electromagnetic environment specified below. The customer or the

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The device uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The device is suitable for use in all establishments, including domes establishments and those directly connected to the public low-volta
Harmonic emissions IEC 61000-3-2	Class A	power supply network that supplies buildings used for domestic purposes.
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacture's declaration - electromagnetic immunity

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

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±15 kV air	±8 kV contact ±15 kV air	Floors should be wood, concrete or ceramic tile. If floor are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input /output lines	±2KV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	±1 kV differential mode	Mains power quality should be that of a typical commercial or hospital environment.

Voltage dips, short interruptions and voltage variations on power supply input lines	<5% U _T (>95% dip in U _T) for 0.5 cycle 40% U _T (50% dip in U _T) for 5 cycles. 70% U _T (30% dip in U _T) for 25 cycles <5% U _T (>95% dip in U _T) for 5% cycles	<5% U _T (>95% dip in U _T) for 0.5 cycle 40% U _T (60% dip in U _T) for 5 cycles 70% U _T (30% dip in U _T) for 25 cycles <5% U _T (>95% dip in U _T) for 5 sec	Mains power quality should be that of a typical commercia or hospital environment. If the user of the device requires continued operation during power mains interruptions, it is recommended that the device be powered from an uninterruptible power supply or a battery.
	for 5 sec		
Power frequency (50Hz/60Hz) magnetic field IEC 61000-4-8	3 A/m & 30 A/m	3 A/m & 30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

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Guidance and manufacture's declaration - electromagnetic immunity

The device is intended for use in the electromagnetic environment specified below. The customer or the user of the device 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 device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
Conducted RF	3 Vrms & 6 Vrms	3 Vrms& 6 Vrms	
IEC 61000-4-6	150 kHz to 80 MHz		Recommended separation distance
			d=1,2√P
Radiated RF	2011-7212000	0.000 222000	7/A-5 <u>2</u>
EC 61000-4-3	3 V/m & 10 V/m	3 V/m & 10 V/m	d-1,2√P 80 MHz to 800 MHz
	80 MHz to 2.6 GHz		d=2,3√P 800 MHz to 2,5 GHz

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Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).

Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, a should be less than the compliance level in each frequency range.

Interference may occur in the vicinity of equipment marked with the following symbol:



NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.

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

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- a Field strengths from fixed transmittens, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio. AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmittens, an electromagnetic site survey should be considered. If the measured field strength in the location in which the device is used exceeds the applicable RF compliance level above, the device should be observed to verify normal operation, if abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the device.
- b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

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Recommended separation distances between portable and mobile RF communications equipment and the device .

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

Rated maximum	Separation distance according to frequency of transmitter (m)				
output power of transmitter (W)	150 kHz to 80 MHz d=1,2√P	80 kHz to 800 MHz d=1,2√P	800 kHz to 2,5 GHz d=2,3√P		
10,0	0.12	0.12	0.23		
0.1	0.38	0.38	0.73		
1	1.2	1.2	2.3		
10	3.8	3.8	7.3		
100	12	12	23		

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

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

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

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WARRANTY

All Hi-Dow TENS models carry a warranty of two years from the date of purchase. The warranty applies to the TENS/EMS stimulator REMOTE and RECEIVER only.

The warranty does not apply to damage resulting from failure to follow the operating instructions, accidents, abuse, alteration or disassembly by unauthorized personnel.

CONTACT INFORMATION