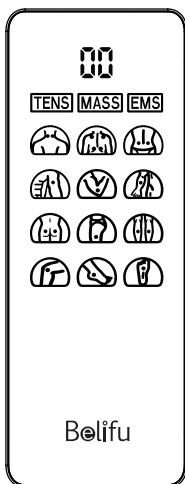


HEAT TENS & EMS & MASSAGE UNIT

Model : FDES115



Instruction Manual

The illustrations in this Manual book are effect drawings,
please refer to the real object.
Thanks for using our product.
Take good care of this instruction.

Precaution:

**Please read the instructions carefully before use.
If you have any questions, please refer to the
salesman, or ask your doctor.**

Table of Contents

1. Product Profile	4
2. Intended use	5
3. Contraindications	5
4. Product structure description	5
5. Product description	8
6. Treatment procedures	11
7. Operation	12
8. After the treatment is completed	16
9. Troubleshooting	20
10. Product specifications	21
11. Final disposal	22
12. Standardized symbolic description ..	22
13. Electromagnetic compatibility information	23
14. Guarantee	31

1. Product Profile

Working principle

It acts on the human body through the electricity pulse wave, the electric energy is sucked by the human body and the energy form is changed, which causes a series of physical and chemical changes, produces local or systemic physiological reactions, and finally affects the pathological process and plays a corresponding role.

Customer service

✉ support@belifu.com

Please download the manual on below link:
<https://belifu.com/downloads/>

Accessories

1) 2 Channels TENS & EMS
& MASSAGE UNIT



2) Electrode wires with pads



3) Type-C data cable



4) Storage bag



5) Reusable gel pads



6) Manual book



- Please use a 5V/1A adapter (input: AC100V~240V, 50Hz~60Hz, 0. 2A). Adapters that do not meet the requirements may reduce the safety of the product. Please make sure that the selected adapters meet the relevant safety medical level safety certification requirements

(example: IEC60601-1).

- After the connection, it will be charged automatically.

Note:

- This product does not come with an adapter, please purchase separately.
- If you have any problems with the adapters, consult the seller or contact support@belifu.com
- Please charge the unit for 8 hours after the battery is used up at the first time. Moreover, please charge it about 3 hours in the later use, it will show 3 bars which means full charged.

2. Intended use

For TENS mode: To be used for temporary relief of pain associated with sore and aching muscles due to strain from exercise or normal household work activities.

For EMS mode: To be used to stimulate healthy muscles in order to improve and facilitate muscle performance.

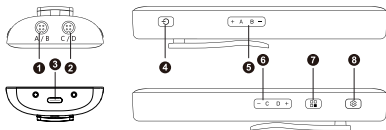
For MASSAGE mode: To be used for recovery of fatigue, improves blood circulation neuralgia.

3. Contraindications

- Acute disease, especially in patients suspected or suffering from hypertension, thrombosis or malignant mass.
- Patients with various skin diseases.
- Patients with chronic pain disorders (e. g. metabolic disorders) with reduced pain.
- Patients undergoing medication.

4. Product structure description

4.1 Low frequency therapeutic apparatus

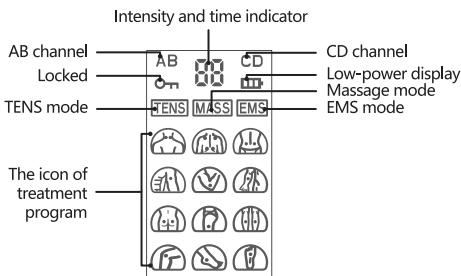


① AB channel electrode connection port

② CD channel electrode connection port

③ Type-C charging interface	④ Power
⑤ AB channel intensity adjustment button / B- unlock button	⑥ CD channel intensity adjustment button / -C unlock button
⑦ Time key/Pause key	⑧ Program selection/Heat key

4. 2 Display



4. 3 Warnings and Notes

⚠ Warning

We recommend not to use this therapeutic apparatus in the following cases:

- 1) Do not use this device if the patient has any implantable electronic or metal equipment. (e. g. pacemaker).
- 2) Has epilepsy.
- 3) Severe lower extremity arterial circulation problems.
- 4) Abdominal or inguinal hernia site.
- 5) Do not use this device if you have a heart disease without consulting a doctor.
- 6) Do not use this device on pregnant women.
- 7) Do not use this device over, or in proximity to, cancerous lesions.
- 8) Be Fever.
- 9) Has cancer.
- 10) Do not use therapeutic instruments in high humidity environments, such as bathing or showering in a bathroom bathtub.
- 11) Can not be used after drinking.

- 12) Low-frequency therapeutic instruments can not be used when using high-frequency surgical instruments.
- 13) Near the genitals.
- 14) Recommendation: do not use low-frequency therapeutic instruments near shortwave or microwave therapeutic equipment, (e. g. 1 M), where the output of the low frequency therapeutic instrument used is unstable.
- 15) The high frequency surgical equipment and stimulator. When connected to a patient, burns may occur at the stimulator electrode and may damage the stimulator.
- 16) Patients undergoing medical treatment and feeling abnormal.
- 17) Heart patients with neurological abnormalities in the brain.
- 18) Patients whose body temperature exceeds 38°C .
- 19) Infectious diseases Patients.
- 20) Patients who can not express their will.
- 21) Do not use this product while charging.

Note:

- 1) Electrode pad is too long may cause suffocation. Keep the product and keep away from children.
- 2) Make sure you are always aware of all warning items.
- 3) Stimulators should not be used in the throat and mouth. This may result in severe throat muscle spasms and muscle contraction, which is sufficient to block the airway and cause dyspnea.
- 4) The application of electrodes near the thorax may increase the risk of cardiac fibrillation
- 5) This stimulator should not treat unattended patients, or suffer from emotional distress, dementia, and low IQ people.
- 6) Use guidance has been detailed; any improper use may lead to danger.
- 7) Do not use this device for any undiagnosed pain symptoms, consult a doctor for diagnosis before use.
- 8) Electrodes can not be placed in arteries, head and pubic area.
- 9) Patients suffering from heart disease, cancer or other health-threatening conditions should consult a doctor before using this device.
- 10) If the intensity of stimulation makes you feel

uncomfortable, reduce the intensity of stimulation to a comfortable level. If the problem remains, please contact your doctor.

- 11) Do not use this equipment in rooms where aerosol (spray) and pure oxygen are used.
- 12) Please do not use this equipment near any highly flammable substances, gases or explosives.
- 13) Please check that the cable and related connections are in good condition before each use.
- 14) Turn off the device before using or removing the electrode pad.
- 15) Electronic stimulators can only use electrode wires and electrodes recommended by manufacturers.

Consult your doctor before using the device especially in the following cases:

- Acute disease, especially patients suspected or suffering from hypertension, thrombosis or malignant mass.
- Patients with various skin diseases.
- Patients with chronic pain disorders (e. g. metabolic disorders) with reduced pain.
- Patients undergoing medication.


Adverse reaction

- Skin allergies caused by electrode sheetpad gels and electrode irritation burns are potential adverse reactions. If the skin appears sensitive response, should be discontinued and consult your doctor.
- If the intensity of stimulation makes you feel uncomfortable, reduce the intensity of stimulation to a comfortable level, and if the problem persists, please contact your doctor.

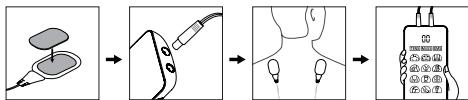
5. Product description

5. 1 Instructions

Please make sure the battery is sufficient before use, if the battery is insufficient, please charge it in time.

 Do not use this product while charging.

- 1) Paste the gel on the electrode pad.
- 2) Insert the electrode plug into the treatment instrument.
- 3) Attach electrodes pad to the site to be treated.
- 4) Press the Power button and select the program (Refer to 7).



! Attention about electrode

- Do not use it by overlapping.
- Do not bend the electrode pad.
- Please try not to touch the adhesive surface with your fingers.
- After bathing or sweating after exercise, please wipe the parts to be treated before use.
- Do not pull the electrode wire. This will damage the wires and electrode pad.
- Do not apply to damaged skin.
- If the electrode pad is not sticky, please replace it in time.
- The electrode pad is only for one patient.
- If you're allergic, stop using immediately and consult your doctor.
- Please read the instruction of self-adhesive electrode before use.
- When the electrode pad is stuck to the clothes, don't tear it off heavily. As long as the inside of the side with the electrode pad is covered with water, it can be removed easily.

5. 2 TENS/MASS/EMS

TENS

Percutaneous nerve electrical stimulation, meaning electrical stimulation of the nerve through the skin. It's a non-drug method of treating pain. TENS electrical stimulation produced by electrical pulses is sent to the nerve to modify your perception of pain. Electrical stimulation can't cure physical problems, it just help control pain. Electrical stimulation doesn't work for everyone, but for most patients it's reducing or eliminating in addition to pain is effective, so that patients can return to normal activity.

MASS

Suitable for relaxing body, relieving fatigue, reducing stress and improving sleep.

EMS

Muscle electrical stimulation has been widely used in sports and rehabilitation for many years and is widely used as approved methods. The uses of EMS in sports and fitness are to complement traditional muscle training, increase the effectiveness of muscle groups and adapt them to the body ratio to achieve the desired aesthetic effect. EMS applications two aspects of the effect. On the one hand to achieve the effect of muscle tissue enhancement (activation application); on the other hand to achieve the effect of relaxation and rest (relaxation application).

5. 3 Paste the electrode pad to the area requiring treatment

1) Shoulder: The shoulder may be stiff and painful due to long-term of movement and weight bearing.



Stick the electrodes to the cervical spine.



Stick the electrodes to the shoulder.

2) Lower back: there are many possible causes of lower back pain. Lower back pain, which is suitable for low frequency therapy, mainly includes lumbar acid or muscle pain, nerve pain and so on.



Take the spine as the center, paste on one side of the pain or left and right.

3) Joint: excessive movement leads to increased load and joint pain.



Please paste two places in the pain joint.

4) Arm: arm pain may be due to muscle congestion and fatigue and poor blood circulation.



Please paste the upper and lower parts of the arm.

5) Foot: cold feet may be caused by the destruction of the balance of the nervous system and poor blood circulation in the hands and feet. The swelling or tiredness of the feet may be due to the deterioration of blood and fluid reflux.



Please paste one on the sole of foot and another on the calf or bare foot.

6) Leg: leg pain or fatigue may be due to muscle congestion and fatigue and poor blood circulation.



Please paste on your legs.

7) Hip: hip pain may be caused by a long sitting.















Please paste around the buttocks.

6. Treatment procedures

6.1 Choice of treatment modes.

TENS	MASS	EMS
It is suitable for relieving all kinds of acute and chronic pain, intractable pain or pain caused by daily work related activities.	Promote blood circulation and eliminate fatigue	Suitable for strengthening muscle, preventing muscle atrophy and promoting muscle regeneration.

6.2 Choice of treatment procedure, select from 12 programs.

 cervical spine	 shoulder	 lower back
 upper arm	 joint	 arm
 hip	 thigh	 calf
 knee	 heel	 sole of foot

6.3 Strength settings: 40 intensity levels

Choose the appropriate intensity between 0~40 according to your personal preference.

6.4 Heat Setting: 3 temperature levels

The principle of graphene heating is based on the characteristics of single-layer graphene, which has fast heating speed, good flexibility, stable and safe heating, and releases far-infrared light beneficial to the human body, which promotes blood circulation in the human body. It is a material with high thermal conductivity and has very good thermal conductivity.

The heating temperature of the product has 3 levels:

E1-Low temperature(95 °F /35°C),


E2-Medium temperature(98.6 °F /37°C),

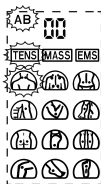
E3-High temperature(102.2 °F /39°C).


7. Operation

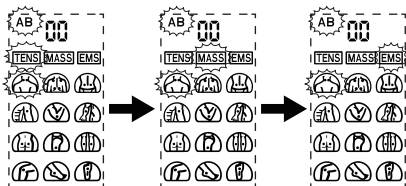
Note: When using 1 wire, please make sure that both pads are stuck to your body; when using 2 wires, please make sure that 4 pads are stuck to your body.


Please confirm the wire is plugged well and pads are stuck to your skin before adjusting the unit.

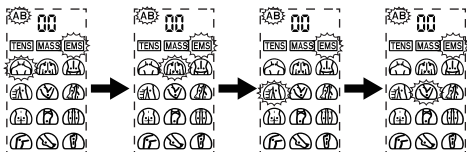
1) Press the power button []. The “AB” icon will flash.





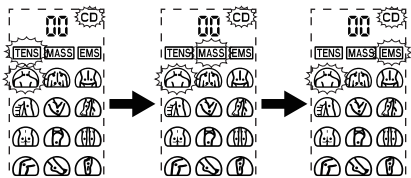
2) Press the [] button again to select the treatment mode of the AB channel. “TENS” , “MASS” or “EMS” .




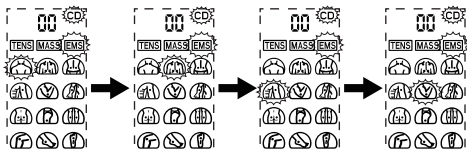
- 3) Press the [] button to select the treatment program of AB channel.








- 4) Press the D+ [] button to wake up the CD channel (The "CD" icon will flash), press the [] button to select the treatment mode of the CD channel.

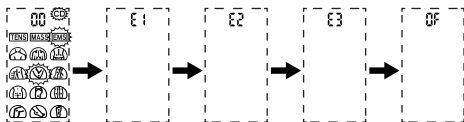


- 5) Press the [] button to select the treatment program of the CD channel.





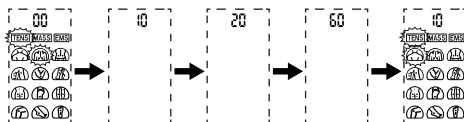
- 6) Adjust the heat function

Long press the [] button for 3 seconds to enter the heat mode. In the heat mode, press [] button once to adjust to "E1-low", press [] button twice to adjust to "E2-medium", press [] button three times to adjust to "E3-high", press [] button four times to "0F-off" (Heat-off).









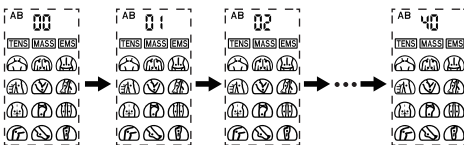
7) Set treatment time

Press the [] button to set the treatment time (10~60mins) . The default time is 30 mins. The treatment time can be increased by 10 minutes. When it is adjusted to 60 mins, continue to press the [] button to jump to 10 mins.



8) Adjust treatment intensity

Press the +A [] or D+ [], the screen will display the channel symbol in use and the current treatment intensity level. The maximum intensity is 40. Press the +A [] or D+ [] to increase the intensity by 1 level of AB channel or CD channel. The machine will start working once the intensity is higher than 0. Press B- [] or -C [] to decrease the intensity by 1.





Note:

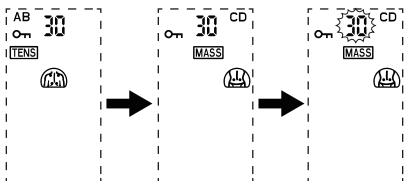
Please confirm the wire is plugged well and pads are stucked well before adjusting the intensity.



Please set up the mode, time and heat, the machine will start working once the intensity increases.

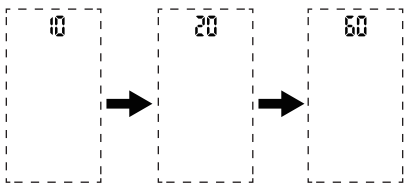
If the electrode pads are not properly attached, the intensity will be decreased to 0, the treatment will stop.


9) Pause the treatment.

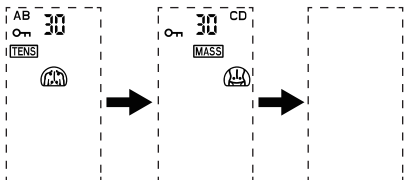
During treatment, the machine will automatically enter the locked state after 30 seconds of inactivity, you can press the intensity minus key "B-" or "-C" to unlock the screen. In the locked state, "AB" channel, "CD" channel, "Program" and "Mode" icons will flicker, press [] to suspend treatment when changing the massage points, and press [] again to continue the treatment. Only in the locked state can the treatment be paused.



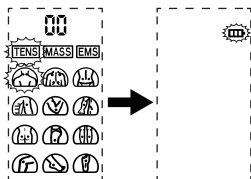
10) If the time needs to be adjusted again during treatment, please long press [] until the time flashes, press the [] button to increase the treatment time by 10 mins.



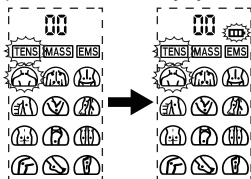
11) Long press [] to shut down. (If there is no treatment, it will also shut down automatically after 180 seconds.)



- 12) When charging, the screen will only displays the battery symbol. The symbol flashes when the battery is not fully charged. When the battery is fully charged, the symbol will stay on.



- 13) When the battery is in low power state, a low power alarm will appear, and the battery symbol will flash.



8. After the treatment is completed

8. 1 Arrangement

The electrode pad, and the HEAT TENS & EMS & MASSAGE UNIT can be cleaned, but you cannot clean the gel.

Cleaning the electrode pad

- 1) Remove the gel and discard before cleaning the pad.
- 2) When the pad have become dirty or soiled, wipe the surface with a soft cloth slightly moistened with water or a neutral detergent.
- 3) Let air dry before placing new gel onto the pads, do not use old gel.
- 4) Gel are replaceable and can contact support@belifu.com

8. 2 Cleaning the unit

- 1) Turn the unit off and disconnect the Electrode pad from the unit.
- 2) Clean with a cloth lightly moistened.
 - Do not use chemicals (like thinner, benzene).

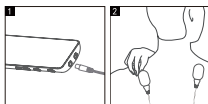
- Do not let water get into the internal area.

When should you replace the gel ?

If the gel no longer stick to your skin firmly or if more than 25% of the gel surface is detached from your skin.

Storing the pads with gel

- 1) Turn the unit off and unplug the wire from the unit.
- 2) Remove the pads from your body.




Maintenance and custody precautions

- Replacement cycle.
The electrode sheetpad is consumable. When paste surface is damaged, please stop using and buy other from Belifu official store.
- Do not expose electrodes to high temperature, humidity, direct sunlight.
- Do not wipe dirts on pads with thinner, gasoline, etc.
- During maintenance, please handle the electrodes carefully.
 - Not bendable
 - Do not force or drag.
 - Do not touch water
- Do not keep it in the following places.
 - Places with water.
 - High temperature, humidity, direct sunlight, dusty.
 - places of inclination, vibration, shock.
 - Places where chemicals are kept and where corrosive gases are produced.
- Keep children away from the wires.
- Do not carry out any repairs privately.

If you do not comply with the above notice and the correct method of use, we will not be responsible for the quality of the product.

8. 3 Application program






1) For EMS mode

Pro. Name	Time min.	Frequency (Hz)	Pulse width (uS)	Wave (EMS)	Ramp up and ramp down time (s)	Keep Time (s)	Release Time(s)
	30	2	180	Con.	/	/	/













	30	50	250	IM	5/5	10	10
	30	50	300	IM	2/2	4	4
	30	50	300	IM	2/2	4	10
	30	50	180	Con.	/	/	/
	30	50	200	IM	1/1	4	6
	30	65	300	IM	2/2	6	6
	30	20	300	IM	3/3	6	6
	30	50	300	IM	2/2	4	4
	30	75	300	IM	3/3	6	10
	30	50	200	IM	2/2	4	4
	30	50	200	IM	5/5	1	1

2) For TENS mode

Program Name	Time min.	Frequency(Hz)	Pulse width(uS)	Wave(TENS)
	30	2	180	Con.
	30	80-2	100-200	Modulation
	30	80/2	200/250	Hans
	30	80-1	200	Frequency modulation
	30	2	180	Con.
	30	50	250	Intensity modulation
	30	80	200	Con.


	30	100	180/300	Con.
	30	80	250	Burst
	30	1-150	120-200	Modulation
	30	2-60	100-200	Modulation
	30	80	80-180	Pulse width modulation

3) For MASSAGE mode

Pro. Name	Time min.	Frequen- cy (Hz)	Pulse width (uS)	Ramp up and ramp down time (s)	Keep Time(s)	Release Time(s)
	30	3	300	0/0	Con.	0
	30	33	80-300	6/6	0	0
	30	25	150-280	6/6	0	0
	30	8	80	0/0	Con.	0
	30	3/8	80	0/0	7	3
	30	8	320	0/0	Con.	0
	30	10	250	0/0	Con.	0
	30	5	300	0/0	Con.	0
	30	40	80-250	6/6	0	0
	30	5	150-300	6/6	0	0
	30	120	100-200	4/0	0	1
	30	80	50-300	4/0	0	1

9.Troubleshooting

Problems	Causes	Solutions
Skin feels a painful burning sensation, or the stimulation becomes weakened.	Adhesive gel pads are not adhering firmly to the skin. The gel pads are too dry.	Apply a few drops of water to the adhesive surface of each pad and make sure the pads are pressed firmly to the skin during application.
Unit is on, but no sensation is felt in the pads.	Both pads are not firmly on the skin. There is a loose connection. The intensity level needs to be increased.	Make sure all pads are firmly pressed to the skin. Make sure all connections are well from the unit to the wires and the wires to the pads. Increase the intensity level.
Adhesive gel pads do not stick to skin even after cleaning and moistening the gel pad.	Adhesive gel pads need to be replaced.	Replace the pads. Pads can be purchased from Belifu official store or contact support@belifu.com.
Unit does not turn on or the screen is dim.	Battery is low.	Recharge the battery.
Does not provide adequate pain relief.	Not using it long enough.	Use your massager 20-30 minutes at a time, 3-6 times per day.
Unit turns on, all of the modes and channels flash. Can not select a mode and adjust the intensity. Does not work.	Always use two pads (one channel) or four pads (two channels) at the same time as it will not work with just one pad or three pads.	When you use two pads (one channel) or four pads (two channels) at the same time, make sure you have placed all pads on your body, otherwise it won't work.
The pluses strong on one side and weak on the other side.	Different nerve distribution in different parts of the body, different skin sensitivity, or insufficient skin contact with the electrodes.	Please wipe the skin with a wet towel before use to ensure adequate contact with the electrode. It suggested that the two electrodes should be symmetrical when attached to the body.


Key failure	The machine is locked	Press strength minus key "B-" or "-C" to unlock
Feeling unwell	Too strong. Too close between electrodes. Electrodes or conductors are damaged. The electrode area is too small.	Decrease intensity. Reorient electrode position. Replace the electrode wire or pads. Replace the electrode pad with a size larger than 4cm×4cm in area.
Unable to pause the treatment	The machine is unlocked. Only in the locked state can the treatment be paused.	During treatment, the machine will automatically enter the locked state after 30 seconds of inactivity, then you can press the [] to suspend the treatment.

10. Product specifications




Product name	HEAT TENS & EMS & MASSAGE UNIT
Model	FDES115
Charge time	About 3 hours
Battery run time	Last for approximately 8 hours of use in standard mode; Last for approximately 2 hours of use in heating mode
Output current	Max.1200mA (at 500 ohm load)
Output voltage (peak)	Max.35Vpp (at 500 ohm load)
Power supply	3.7Vdc, 1500mAh lithium battery; Input: 5Vdc, 1A
Load resistance	500Ω
Life time	5 years
Weight	110g
Size	(L)147.7mm*(W)55.9mm*(H)18.8mm
Size of electrode pad	One piece: (L)65mm*(W)40mm
Type of waveform	TENS, EMS, MASSAGE
Pulse type	Two-way symmetrical square wave










Number of channels	2 channels
Strength grade	40
Output frequency	1Hz~150Hz
Output pulse width	80~300uS(TENS) 180, 200, 250and300uS(EMS) 50~320uS(MASSAGE)
Treatment time	30 min(Some waveforms differ as detailed in the waveform sheet)
Operating environment	Temperature: 5°C ~40°C (41.0 °F ~104 °F) Humidity: 30% RH~85% RH Atmospheric pressure: 70 kPa~106 kPa
Storage environment	Temperature: -10°C ~50°C (14.0 °F ~122 °F) Humidity: 15% RH~90% RH, No condensation Atmospheric pressure: 70 kPa~106 kPa
Electric shock	II equipment
Applied part	BF Application Section(Electrode pad is type BF applied part)
Grade of waterproof	IP22
Accessories	HEAT TENS & EMS & MASSAGE UNIT、 Electrode pad、 Type-C data cable 、 Manual book、 Gels、 Storage bag

11. Final disposal

 Please do not dispose of the product in the household waste at the end of its useful life. To protect the environment, dispose of empty batteries at appropriate collection sites according to national or local regulations.

12. Standardized symbolic description

	Note: please refer to the instruction before using
	Attention: see Instructions for use!
	Type BF applied parts

	Electric shock protection type :Class II equipment
	Disposal in accordance with Directive 2002/96/EC (WEEE)
	Complies with the European Medical Device Directive (93/42/EEC), Notified Body is SGS Belgium NV
	Manufacturer: Famidoc Technology Co. , Ltd
	Authorized representative in the European Community
	Serial number
	Temperature limitation
	Humidity limitation
	Atmospheric pressure limitation
IP22	Level of protection for ingress of water or particulate matter into ME EQUIPMENT

13. Electromagnetic compatibility information



Note:

- Important information regarding Electro Magnetic Compatibility (EMC).
- With the increasing number of electronic devices such as PC's and mobile (cellular) telephones, medical devices in use may be susceptible to electromagnetic interference from other devices. Electromagnetic interference may result in incorrect operation of the medical device and create

a potentially unsafe situation. Medical devices should also not interfere with other devices. In order to regulate the requirements for EMC (Electro Magnetic Compatibility) with the aim to prevent unsafe product situations, the EN60601-1-2 standard has been implemented. This standard defines the levels of immunity to electromagnetic interferences as well as maximum levels of electromagnetic emissions for medical devices. Nevertheless, special precautions need to be observed.

- Do not use mobile (cellular) telephones and other devices, which generate strong electrical or electromagnetic fields, near the medical device. This may result in incorrect operation of the unit and create a potentially unsafe situation. Recommendation is to keep a minimum distance of 7 m. Verify correct operation of the device in case the distance is shorter.

 **Warning:**

- Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.
- Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the FDES115, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

Guidance and manufacturer's declaration – electromagnetic emission		
The FDES115 is intended for use in the electromagnetic environment specified below. The customer or the user of FDES115 should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment-guidance
RF emissions CISPR 11	Group 1	The FDES115 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 FDES115 suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer's declaration – electromagnetic immunity – for all EQUIPMENT and SYSTEMS

Guidance and manufacturer's declaration – electromagnetic immunity


The FDES115 is intended for use in the electromagnetic environment specified below. The customer or the user of the FDES115 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 ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air	± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrostatic transient / burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
surge IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	± 1 kV differential mode	Mains power quality should be that of atypical commercial or hospital environment.

<p>Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11</p>	<p>0 % U_T; 0, 5 cycle U_T At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % U_T; 1 cycle and 70 % U_T; 25/30 cycles Single phase: at 0° 0 % U_T; 250/300 cycle</p>	<p>0 % U_T; 0, 5 cycle U_T At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % U_T; 1 cycle and 70 % U_T; 25/30 cycles Single phase: at 0° 0 % U_T; 250/300 cycle</p>	<p>Mains power quality should be that of a typical commercial or hospital environment. If the user of the FDES115 requires continued operation during power mains interruptions, it is recommended that the FDES115 be powered from an uninterruptible power supply or a battery.</p>
<p>Power frequency (50/60 Hz) magnetic field IEC 61000-4-8</p>	<p>30A/m</p>	<p>30A/m</p>	<p>Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.</p>
<p>Note: U_T is the a. c. mains voltage prior to application of the test level.</p>			

Guidance and manufacturer's declaration – electromagnetic immunity – for EQUIPMENT and SYSTEM

<p>Guidance and manufacturer's declaration – electromagnetic immunity</p>			
<p>The FDES115 is intended for use in the electromagnetic environment specified below. The customer or the user of the FDES115 should assure that it is used in such an environment.</p>			
<p>Immunity test</p>	<p>IEC 60601 test level</p>	<p>Compliance level</p>	<p>Electromagnetic environment - guidance</p>

<p>Conducted RF</p> <p>IEC 61000-4-6</p>	<p>3 Vrms</p> <p>150 kHz to 80 MHz</p> <p>6V in ISM and amateur radio bands between 0, 15 MHz and 80 MHz</p>	<p>3V</p> <p>150 kHz to 80 MHz</p> <p>6 V in ISM and amateur radio bands between 0, 15 MHz and 80 MHz</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the FDES115, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance</p> $d = \left[\frac{3.5}{V_1} \right] \sqrt{P}$ $d = \left[\frac{12}{V_2} \right] \sqrt{P}$ $d = \left[\frac{3.5}{E_1} \right] \sqrt{P}$
<p>Radiated RF</p> <p>IEC 61000-4-3</p>	<p>10 V/m</p> <p>80 MHz to 2.7 GHz</p> <p>385MHz-5785MHz Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communication equipment (Refer to table 9 of IEC 60601-1-2:2014)</p>	<p>10 V/m</p> <p>80 MHz to 2.7 GHz</p> <p>385MHz-5785MHz Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communication equipment (Refer to table 9 of IEC 60601-1-2:2014)</p>	<p>80 MHz to 800 MHz</p> $d = \left[\frac{7}{E_1} \right] \sqrt{P}$ <p>800 MHz to 2.7 GHz where p is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).^b Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,^a should be less than the compliance level in each frequency range.^b Interference may occur in the vicinity of equipment marked with the following symbol: </p>

Proximity magnetic fields IEC 61000-4-39	30 kHz, CW, 8A/m (This test is applicable only to ME EQUIPMENT and ME SYSTEMS intended for use in the HOME HEALTH-CARE ENVIRONMENT) 134, 2 kHz , Pulse modulation 2, 1 kHz 65 A/m 13, 56 MHz Pulse modulation 50 kHz 7, 5 A/m	30 kHz, 8A/m 134, 2 kHz, 65 A/m 13, 56 MHz 7, 5 A/m	The (Product name) does not contain magnetically sensitive components.
--	---	---	--

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

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

^a The ISM (industrial, scientific and medical) bands between 150 kHz and 80 MHz are 6, 765 MHz to 6, 795 MHz; 13, 553 MHz to 13, 567 MHz; 26, 957 MHz to 27, 283 MHz; and 40, 66 MHz to 40, 70 MHz. The amateur radio bands between 0, 15 MHz and 80 MHz are 1, 8 MHz to 2, 0 MHz; 3, 5 MHz to 4, 0 MHz; 5, 3 MHz to 5, 4 MHz; 7 MHz to 7, 3 MHz; 10, 1 MHz to 10, 15 MHz; 14 MHz to 14, 2 MHz; 18, 07 MHz to 18, 17 MHz; 21, 0 MHz to 21, 4 MHz; 24, 89 MHz to 24, 99 MHz; 28, 0 MHz to 29, 7 MHz and 50, 0 MHz to 54, 0 MHz.

^b Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the FDES115 is used exceeds the applicable RF compliance level above, the FDES115 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the FDES115.

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

Recommended separation distances between portable and mobile RF communications equipment.

Recommended separation distances between portable and mobile RF communications equipment and the FDES115.

The FDES115 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the FDES115 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the FDES115 as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output of transmitter W	Separation distance according to frequency of transmitter			
	150 kHz to 80 MHz outside ISM and amateur radio bands $d = \left[\frac{3.5}{V_1} \right] \sqrt{P}$	150 kHz to 80 MHz in ISM and amateur radio bands $d = \left[\frac{12}{V_2} \right] \sqrt{P}$	80 MHz to 800 MHz $d = \left[\frac{3.5}{E_1} \right] \sqrt{P}$	800 MHz to 2.7 GHz $d = \left[\frac{7}{E_2} \right] \sqrt{P}$
0.01	0.12	0.20	0.035	0.07
0.1	0.38	0.63	0.11	0.22
1	1.2	2.00	0.35	0.70
10	3.8	6.32	1.10	2.21
100	12	20.00	35	70

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.

Notes on FCC certification

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced for help.
- Consult the dealer or support@belifu.com for help.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.

14. Guarantee

- 1) The warranty period for device is two year from date of delivery.
In case of a warranty claim, the date of delivery has to be proven by means of the sales receipt or invoice.
- 2) Repairs under warranty do not extend the warranty period.
- 3) The following cases are not included in the warranty.
 - All damage which has arisen due to improper treatment, e.g. nonobservance of the user instruction.
 - All damage which is due to repairs or tampering by the customer or unauthorized third parties.
 - Damage which has arisen during transport from the manufacturer to the consumer or during transport to the service centre.
 - Accessories which are subject to normal wear and tear.
- 4) Liability for direct or indirect consequential losses caused by the unit is excluded even if the damage to the unit is accepted as a warranty claim.



Famidoc Technology Co., Ltd.
Add.: No. 212 Yilong Road, Hexi Industrial
Zone, Jinxia, Changan Town, Donguang 523853,
Guangdong Province, P.R. China.



Name: Shanghai International Holding Corp.
GmbH(Europe)
Add: Eiffestrasse 80, 20537 Hamburg Germany