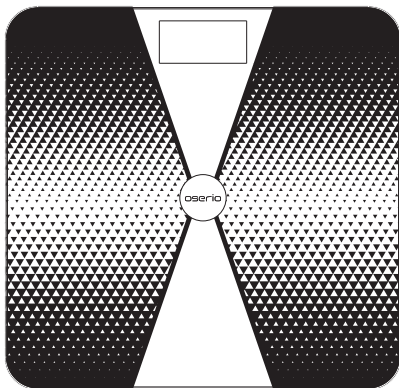


oserio®

Health is Beautiful

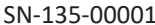
User Manual

FTG-588 oserio Body Fat Monitor



Please keep the instruction manual at hand all the time for future reference.

Explanation of the Graphic Symbols

	Designation of the serial number of every product, applied at the product. (Number as an example)
	“Please note the accompanying documents” or “Observe operating instructions”
 Chander Electronic Co., Ltd. No.103, Guoshong Rd., Caili Dist., Taichung City, 412 Taiwan	Identification of manufacturer of medical product including address
	“Electro-medical appliance” with attachment for type BF
	Carefully read this operation manual before setup and commissioning, even if you are already familiar with oserio scales.
	Dispose of old appliances separately from your household waste! Instead, take them to communal collection points.

Warning

During measurement, this product will send a low level imperceptible electrical current throughout the body. Individuals with implanted medical devices, such as:

1. Pacemakers
2. Electronic lungs and other electronic medical life support equipment
3. ECG products
 - must not use this product, as the electric current may affect the implanted device.
 - This product is not a medical device and should not be used for diagnosis or treatment.

Copyright Notice

Charder Electronic Co., Ltd.

No.103, Guozhong Rd., Dali Dist., Taichung City 41262 Taiwan

Tel: +886-4-2406 3766

Fax: +886-4-2406 5612

Website: www.oserio.com E-mail: info_cec@charder.com.tw

Copyright© Charder Electronic Co., Ltd. All rights reserved.

This user manual is protected by international copyright law. All content is licensed, and usage is subject to written authorization from Charder Electronic Co., Ltd. (hereinafter Charder) Charder is not liable for any damage caused by a failure to adhere to requirements stated in this manual.

Charder reserves the right to correct misprints in the manual without prior notice, and modify the exterior of the product for quality purposes without customer consent.

Table of Contents

1 ***Before Use***

1.1 General Information	4
1.2 Connecting to o'Care app on smartphone	6

2 ***Product Description***

2.1 Overview	7
2.2 Inserting Batteries	8

3 ***How to Use***

3.1 Self-calibration	9
3.2 Conducting measurement	9
3.3 Measurement Results Explained	11
3.4 About Bioelectrical Impedance Measurement	14

4 ***Caring for your product***

4.1 Use & Storage	16
4.2 Service and maintenance	16

5 ***Troubleshooting***

5.1 Error Messages	17
--------------------	----

6 ***Product Specifications***

6.1 Product Information	18
6.2 EMC Guidance and Manufacturer's Declaration	19

1.1 General Information

Thank you for choosing this oserio product. Before use, please read this user manual carefully, and keep it in a safe place for reference.

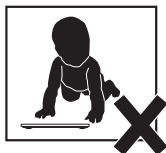
It contains important instructions regarding proper usage.

Intended Use

This product is intended to measure the weight and bioelectrical impedance of children or adults who can stand unassisted, using input data to calculate subject's body composition.

General Handling

- Product should be placed on stable, flat, solid, non-slippery surface.
- Place the product in an area free from direct sunlight, heating equipment, high humidity, or extreme temperature change.
- Never submerge in water.
- Usage on soft surfaces (ex: carpet) may result in inaccurate results.



1.1 General Information

Disposal

- All batteries contain toxic compounds; batteries should be disposed of via designated competent organizations. Batteries should not be incinerated.
- This product is not to be treated as regular household waste, but should be taken to a designated collection points for electronics. Further information should be provided by local waste disposal authorities.

Usage of Results

- The FTG-588 is not a diagnostic product.
- BIA results are calculated based on impedance values validated with representative population studies and statistical analysis. As such, the technique is best suited for tracking progress for an individual over a period of time, or for categorizing large groups of people, rather than used as a one-time analysis. Accuracy of results is highly dependent on proper measurement procedure. Please follow instructions carefully for best results.
- Pregnant women should use the weight and heart rate function only.
- Body composition calculations may be of limited accuracy.

Warning

During measurement, this machine will send a low level imperceptible electrical current throughout the body. Individuals with implanted medical products, such as:

- Pacemakers.
- ECG products.
- Electronic lungs and other electronic medical life support equipment.

should not use this product, as the electric current may affect the implanted product.

1.2 Connecting to o'Care app on smartphone

The FTG-588 is designed to be used with the o'Care smartphone app, making it easy to track body composition results for as many users as needed.

An iOS or Android device (with operational Bluetooth and Wi-Fi) is required to download the o'Care app, and retrieve measurement results from the product.

Google Play
(Android Devices)

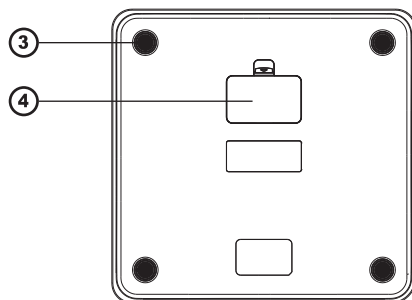
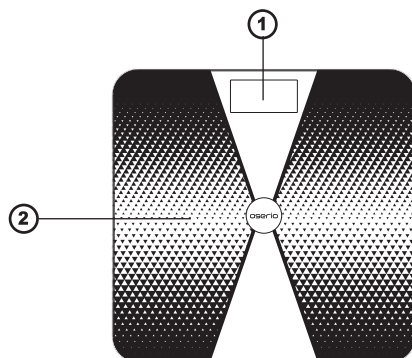


App Store
(iOS Devices)



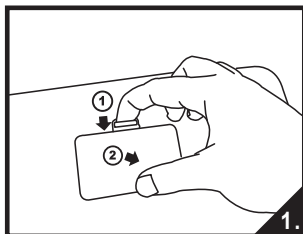
After installation, product and app is ready for use. Create a user profile as instructed by o'Care. The FTG-588 will automatically pair and sync with your smartphone if the o'Care app is open during measurement.

2.1 Overview



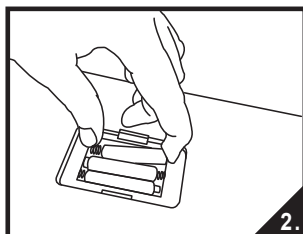
- ① LED screen
- ② Measurement platform
- ③ Feet
- ④ Battery cover

2.2 Inserting Batteries

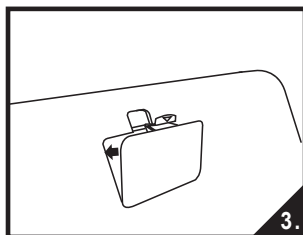


① Open battery housing cover

② Remove battery cover



2. Insert 3 AAA batteries



3. Replace battery cover

NOTE:

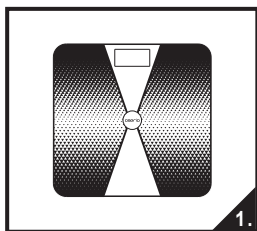
Ensure batteries are inserted in correct orientation. If batteries are inserted incorrectly, product will not function. If product will not be used for a long period of time (> 3 months), remove the batteries before storage.

3.1 Self-calibration

The product may require a quick self-calibration before being used for the first time to ensure accuracy.

1. Place product on stable, flat, solid, non-slippery surface (no carpet).
2. Step on measurement platform. Weight will be displayed on screen.
3. Step off from measurement platform. After product turns off automatically after a short period of time, self-calibration is complete.

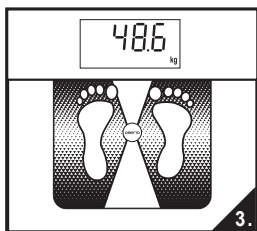
3.2 Conducting measurement



Place product on stable, flat, solid, non-slippery surface (no carpet). To ensure accuracy, we recommend performing self-calibration if product is moved. Open o'care app on smartphone and log-in. Results will be automatically transferred after measurement, so it is important to select the correct user.

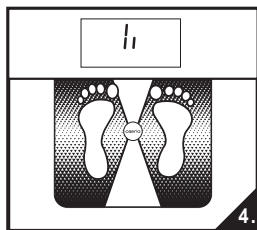


Remove shoes and socks, and ensure soles of feet are clean. Stand on product for measurement. Try to stand as still as possible.

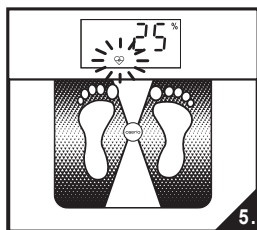


Weight measurement in process.

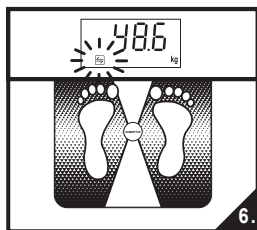
3.2 Conducting measurement



4. Impedance measurement in process.



5. Heart rate measurement in process.



After measurement completion, screen will alternate display of weight and heart rate. Product will send results to smartphone. (please open o'Care app prior to measurement, to allow product to automatically pair and sync) After result transfer is complete, product will automatically shut down.

Syncing measurement results

1. If o'care app is not open on smartphone, results will not be transferred. Product will automatically shut down 30 seconds after completion of heart rate measurement.
2. Ensure that Bluetooth is enabled on smartphone.
3. If you only need to measure weight and heart rate, smartphone transfer is not needed.

3.3 Measurement Results Explained

Body Mass Index (BMI)

BMI is a commonly used index by the World Health Organization (WHO), utilizing height and weight to classify underweight, normal, over, and obesity in adults.

Category	BMI (kg/m ²)	Risk of obesity-related disease
Under	< 18.5	Low
Normal	18.5-24.9	Average
Over	24.9-29.9	Slightly Increased
Obese I	30.0-34.9	Increased
Obese II	35.0-39.9	High
Obese III	> 40	Very High

Body Fat Percentage

Body fat percentage is useful in determining the specific cause of weight loss or gain. Average percentages differ according to specified groups and categories, most significantly by gender. Although no universally accepted published ranges or cut-off points for body fat percentage currently exist, it is still an important value in assessing change in body composition and health.

Visceral Fat Level

Abdominal fat can be divided into visceral and subcutaneous fat. Visceral obesity can occur even if your weight or BMI is within normal standards. It's possible to be thin on the outside, but fat on the inside¹. Visceral fat level has high correlation with risk of a variety of obesity-related diseases.

Basal Metabolic Rate (BMR)

Basal metabolic rate is the minimum required energy to sustain the body's vital functions while at rest. These functions include breathing, blood circulation, regulation of body temperature, cell growth, brain function, and nerve function. BMR tends to decrease with age or reduction in weight, and is positively correlated with increase in muscle.

1 Dudeja V, Misra A, Pandey RM, Devina G, Kumar G, Vikram NK. BMI does not accurately predict overweight in Asian Indians in northern India. *Br J Nutr.* 2001;86:105-112

3.3 Measurement Results Explained

Body Age

Your calculated metabolism is compared to average BMR for your age and gender group.

Body Water

Body water refers to the water contained in the tissues, blood, bones, and elsewhere. Body water in a healthy (non-obese) adult can fluctuate by roughly 5% daily, influenced by physiological activity and consumption of food and drink². Due to larger size and muscle mass, healthy adult men tend to have more body water than women (on average)³.

Typically, children have a higher percentage of body water than adults, and body water levels reportedly decrease further around middle age as part of the aging process⁴. In addition, various diseases can affect body water percentage⁵. Therefore, BIA estimations should be used with particular caution if subject's body water differs significantly from the representative populations used to formulate BIA algorithms.

Bone Mineral Mass

Higher bone mineral content may be an indicator of higher bone density.

Muscle Mass

Increase in muscle mass increases BMR, which in turn allows the body to burn calories more quickly.

2 Askew EW *Present Knowledge in Nutrition* (7th ed) 1996, p.98-107

3 Lesser GT, Markofsky J. Body water compartments with human aging using fat-free mass as the reference standard. 1979. *Am J Physiol*, 236, p.R215-R220.

4 Cameron CW, Guo SS, Zeller CM, Reo NV, Siervogel RM. Total body water for white adults 18 to 64 years of age: The Fels Longitudinal Study. 1999. *Kidney International* Vol.56 Issue 1, p.244-252

Moore FD, Haley HB, Bering EA, Brooks L, Edelman I. Further observations on total body water. 5 Changes of body composition in disease. 1952. *Surg Gynecol Obstet*, 95, p.155-180

3.3 Measurement Results Explained

Muscle Percentage

While a high body fat percentage can increase the risk of obesity-related diseases, a high muscle percentage is not inherently associated with health risks.

Skeletal Muscle

Skeletal muscle mass can be developed actively through proper nutrition and training, thus making this value an important indicator for evaluation of fitness progression.

Protein

The total amount of protein in the body.

Health Score

The overall health score is calculated using body composition readings. It works on a percentage basis, with 100 being the highest possible score attainable.

Heart Rate

The product uses patented heart rate measurement technology to measure your heart rate as part of the weighing process.

3.4 About Bioelectrical Impedance Measurement

The FTG-588 uses Bioelectrical Impedance Analysis (BIA) to calculate body composition. At its core, BIA operates by treating the human body as an electrical conductor with in an alternating current circuit, from which the alternating current resistance and impedance is measured.



Impedance

The measurement current flows from one lower limb through the lower abdomen and then into the other lower limb, and the bioelectrical impedance is measured. For reference, the impedance measurement methods for the legs are shown in the diagram.

Using a combination of existing population data and in-house research, body composition analysis formulas can calculate results based on the Impedance, Height, Gender, Age, and Weight of the subject.

These algorithms are formulated with reference to "gold standard" measurements such as Dual-Energy X-ray Absorptiometry (DXA) to confirm viability and accuracy.

Measurement Rules

For best results, body composition analysis via BIA should be conducted under specific conditions. Inconsistent measuring conditions will affect the accuracy and validity of BIA results, and interpretation of body composition. The information below regarding the effect of various factors on measurement results is largely sourced from related research by Kushner et al⁶.

Before measurement, please take note of the following:

1. Do not exercise or perform strenuous physical tasks before measurement.

Strenuous physical tasks and exercise can result in a temporary change in body composition measurements. As BIA analyzes electrical impedance in the body, activities that might affect impedance (e.g. increased perspiration, dehydration, blood circulation) may affect measurement accuracy.

⁶ Kushner RF, *Clinical characteristics influencing bioelectrical impedance analysis measurements*, 1996

3.4 About Bioelectrical Impedance Measurement

2. Affect of food and drink on measurement results.

Ingestion of food and drink can affect impedance and weight, and thus analysis results. This change generally lasts 2-5 hours after each meal. For most accurate results, BIA measurements should ideally be conducted in a fasting state (e.g. before breakfast)⁷.

3. Do not shower or bathe directly before measurement.

Perspiration can result in a temporary change in body composition measurements, as the accuracy of BIA depends largely upon interpretation of measured impedance values, which are affected greatly by hydration levels.

4. Perform the measurement under normal temperature conditions (24-28°C)

Extreme temperatures (both hot and cold) can result in temporary physiological changes. For example, excessive sweating due to heat can cause increased impedance measurements, resulting in a higher fat calculation. For best results, measurements should be conducted in an environment between 24-28°C.

5. Remove shoes and socks before measurement.

Shoes and socks will interfere with the electric current, making measurement inaccurate or in some cases, impossible.

6. Avoid physical contact with other people during measurement.

Because BIA measures the impedance encountered as the electric current travels through the subject's body, if another individual is touching the subject, the electric current may pass through the other individual, causing inaccuracy in measurement results.

7. Measure height accurately.

Inaccurate height input will affect estimation of body composition.

8. Perform the measurement in the morning.

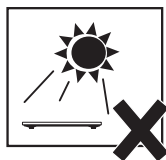
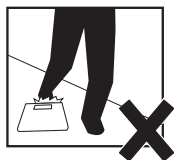
As a general rule, BIA measurements should be performed in the morning to minimize the influence of activity throughout the day on measurements⁸.

7 R Gallagher, M & Walker, Karen & O'Dea, K. The influence of a breakfast meal on the assessment of body composition using bioelectrical impedance. *European journal of clinical nutrition*. 52. 94-7.

8 Oshima Y & Shiga T. Within-day variability of whole-body and segmental bioelectrical impedance in a standing position, *European Journal of Clinical Nutrition* 2006, 60, 938-941

4.1 Use & Storage

1. Product should be stored in clean, cool, dry location when not in use, away from direct sunlight and extreme temperatures.
2. This product is not a toy. Children should not be allowed to play with it.
3. Avoid corrosive liquids and materials. Do not use detergents or cleaners to clean the product. This may damage the coating protecting the electrodes used for body composition measurement.
4. Wipe the platform and display using clean soft cloth. Avoid rough, sticky cloth, to prevent scratching the measurement platform and screen panels.

***4.2 Service and maintenance***

The FTG-588 does not contain user-maintained parts. Service and maintenance not described in this user manual should be performed only by authorized technicians.

5.1 Error Messages



Low battery warning

Replace batteries



Overload or unstable weight

Total load exceeds product's maximum capacity. Stay still and avoid movement during measurement.



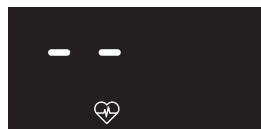
Data transfer error

Data sent from smartphone to product resulted in error. Try measurement again



Data transfer error

Data sent from product to smartphone resulted in error. Try measurement again



Heart Rate measurement error

Stay still and avoid movement during heart rate measurement.

6.1 Product Information

Model	FTG-588		
Battery	3 AAA batteries	Product Weight	1.6kg
Dimensions	Product: 290(W) x 300(D) x 25(H) mm Screen: 66(W) x 32(D)		
Operation Environment	Temperature: 5 °C~35 °C Relative Humidity: 30%~85%		
Storage Environment	Temperature: -20 °C~60 °C Relative Humidity: 10%~95%		
Capacity / Graduation	5~180 kg x 0.1 kg 11~396 lb x 0.2 lb		
Measurement Sensors	4 weight sensors Bioelectrical Impedance Analysis		
Measurement Output (displayed on o'Care app)	Weight Body Mass Index (BMI) Body Fat Percentage Visceral Fat Level (0~50) Basal Metabolic Rate Body Age Body Water Bone Mineral Mass Muscle Percentage Muscle Mass Skeletal Muscle Percentage Protein Health Score Heart Rate		

6.2 EMC Guidance and Manufacturer's Declaration

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

6.2 EMC Guidance and Manufacturer's Declaration

<i>Immunity test</i>	<i>IEC 60601 test level</i>	<i>Compliance level</i>	<i>Electromagnetic environment-guidance</i>
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%
Electrical fast transient/burst IEC 61000-4-4	± 2kV for power supply lines + 1kV for input/output lines	+ 2kV for power supply lines + 1kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1kV line(s) to line(s) ± 2kV line(s) to earth	± 1kV line(s) to line(s) ± 2kV line(s) to earth	Mains power quality should be that of a typical commercial or hospital environment.
Voltage Dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0% UT for 0,5 cycle 0% UT for 1 cycle 70% UT(30% dip in UT) for 25 cycles 0% UT for 5 s	0% UT for 0,5 cycle 0% UT for 1 cycle 70% UT(30% dip in UT) for 25 cycles 0% UT for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the product requires continued operation during power mains interruptions, it is recommended that the product be powered from an uninterruptible power supply or a battery.
Power frequency(50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	The product power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

6.2 EMC Guidance and Manufacturer's Declaration

NOTE UT is the a.c. mains voltage prior to application of the test level.

Guidance and manufacturer's declaration-electromagnetic emissions

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

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 KHz to 80 MHz	3 Vrms 150 KHz to 80 MHz	Portable and mobile RF communications equipment should be used no closer to any part of the product including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance: $d = 1,2 \sqrt{P}$ $d = 1,2 \sqrt{P}$ 80MHz to 800 MHz $d = 2,3 \sqrt{P}$ 800MHz to 2,5 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). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol: 
Radiated RF IEC 61000-4-3	6 V in ISM bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz 3 V/m 80MHz to 2,7 GHz	6 V in ISM bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz 3 V/m 80MHz to 2,7 GHz	

6.2 EMC Guidance and Manufacturer's Declaration

NOTE1 At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Rated maximum output power of transmitter <i>W</i>	Separation distance according to frequency of transmitter <i>m</i>		
	150 kHz to 80 MHz <i>d</i> =1,2√ <i>P</i>	80 MHz to 800 MHz <i>d</i> =1,2√ <i>P</i>	800 MHz to 2,5 GHz <i>d</i> =2,3√ <i>P</i>
0,01	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

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.

NOTE1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.



Manufactured by:



Krell Precision (Yangzhou) Co., Ltd.
No.28, Xinyang Rd., Development Zone.,
Yangzhou City, Jiangsu Province, 225009, P.R.China

on behalf of

Charder Electronic Co., Ltd.
No.103, Guozhong Rd., Dali Dist.,
Taichung City, 41262, Taiwan