



Smart Tag Product Manual

VS-ST04-01

Ver: 1.0.0

Vitalsilicon Technologies Co.,Ltd

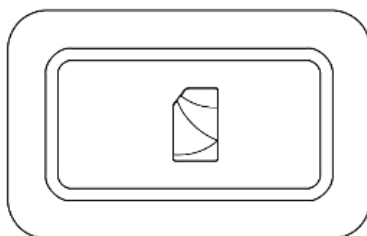


1 Product Overview

VS-ST04-01 is an intelligent tag product that can be integrated into various carriers such as clothing. It is capable of monitoring the wearer's physiological characteristic indicators including neck temperature, sweat volume, indoor positioning, movement status, exercise amount, exercise intensity, sleep quality, fatigue index and stress index. These physiological characteristic data can be presented in a data or graphical form through the WeChat Mini Program or the integrated management platform.

2 Product Form

The VS-ST04-01 intelligent tag adopts a flexible packaging process. It is packaged with fluorine-free hydrophobic woven fabric through a hot-pressing process. Meanwhile, the internal structure is divided and arranged using EVA foam, resulting in excellent overall flexibility and bendability. The product has a length and width of 74*53mm, with the maximum thickness of the central area being 4.6mm. The width of the surrounding edge area is more than 10mm and the thickness is approximately 0.5mm, which is used for sewing onto application carriers such as clothing.



Smart Tag:VS-ST04-01



Application Case: Smart Clothing (T-shirt)



3 Product Functions

3.1 Neck Temperature Monitoring

After the user puts on the smart clothing (taking integration into a T-shirt as an example, the same below), the real-time changes in the user's neck temperature can be viewed through the WeChat Mini Program or the integrated management platform.

3.2 Sweat Volume Monitoring

After the user puts on the smart clothing, the real-time changes in the user's neck sweat volume can be viewed through the WeChat Mini Program or the integrated management platform.

3.3 Movement Status Monitoring

After the user puts on the smart clothing, the real-time changes in the user's movement status or posture can be viewed through the WeChat Mini Program or the integrated management platform, including some dangerous actions such as falling and handstand, and special alarms can be given for dangerous actions.

Movement Status	Description
Static	When the user stays still in place, the "Static" status is displayed.
Active	When the user is walking or running, the "Active" status is displayed.
Lying Down	When the user is lying down, the "Lying Down" status is displayed.
Falling	When the user falls down, the "Falling" status is displayed.
Handstand	When the user does a handstand, the "Handstand" status is displayed.

3.4 Real-time High-precision Positioning

After the user puts on the smart clothing, with the support of a high-precision indoor positioning base station, the real-time positioning changes and movement trajectory of the user can be viewed through the WeChat Mini Program or the integrated management platform.



3.5 Exercise Amount and Exercise Intensity

After the user puts on the smart clothing, indicators such as the user's exercise amount and exercise intensity, such as step count, can be viewed through the WeChat Mini Program or the integrated management platform.

3.6 Sleep Quality

After the user puts on the smart clothing, the user's sleep quality can be viewed through the WeChat Mini Program or the integrated management platform, including the analysis of statuses such as deep sleep, light sleep, rapid eye movement (REM) and wakefulness, and a user sleep quality report is presented.

3.7 Fatigue Index

After the user puts on the smart clothing, the fatigue level of the user's physical functions can be viewed through the WeChat Mini Program or the integrated management platform. When the fatigue index exceeds 60 due to factors such as ambient temperature and humidity, and activity amount, it is recommended to suspend activities and rest for recovery.

3.8 Stress Index

After the user puts on the smart clothing, the user's behavioral stress index can be viewed through the WeChat Mini Program or the integrated management platform. When the stress index is relatively high, it is recommended that the user relax appropriately and adjust psychological stress.

4 Product Usage Instructions

Taking smart clothing as an example, when using it for the first time, it is necessary to shake the clothing, and then send a specific command through the WeChat Mini Program or the integrated management platform to activate the product. Only after activation can it be used normally.



After the product is activated, when the user puts on the smart clothing, the intelligent tag will be awakened from the dormant state, and the WeChat Mini Program or the integrated management platform will display the user's physiological characteristic data, as described in the product functions in Section 3. When the system detects that the user takes off the smart clothing, the intelligent tag will re-enter the dormant state.

5 Scope of Application

This product is applicable to any clothing/home textile carriers, such as T-shirts, down jackets, jackets, outdoor jackets, pants, sleeping bags, pajamas, etc.

6 Safety Requirements and Precautions

- Please ensure that the tag part of the smart clothing is in direct contact with the skin; otherwise, the collected data will be inaccurate.
- Please ensure that the smart clothing is used under the required operating environment conditions (see Technical Parameters). Using it in an environment that does not meet the conditions will cause measurement errors.
- Do not modify or disassemble this product in any form, and do not impact, squeeze or put it into fire.
- Do not place it in a high-temperature environment or under direct sunlight. If it is placed in fire or heated to above 100°C, there is a risk of fire and explosion.
- This product is not a medical device and is not used for medical purposes.

7 Storage and Transportation

- The transportation tools for this product should be clean and free of pollution. When transporting the product, it is necessary to avoid exposure to sunlight and rain, and it must not be mixed with toxic, harmful, odorous items or items that



affect product quality for loading and transportation.

- When handling, please take and place it gently to prevent impact and severe vibration.
- The packaging should be firm, moisture-proof, clean, beautiful and free of odors, and easy for loading, unloading, storage and transportation.
- When washing this product, do not use strong oxidizing detergents or disinfectants. The washing water temperature or drying temperature should not be higher than 50°C. When drying, avoid high-temperature environments or direct sunlight.
- Do not store it in a high-temperature environment or under direct sunlight.
- It should be stored in a cool, ventilated and dry space, and must not be stored together with toxic, harmful, odorous, volatile or corrosive items.

8 Main Technical Parameters

Name	Smart Tag	Size	74*53*4.6mm
Communication	Bluetooth 4.2	Weight	< 10g
Communication Distance	20m (in open area)	Material	White fluorine-free hydrophobic woven fabric
Power Supply	CR2025 3V/170mAh	Battery Life	1 year*
Temperature Measurement Range	0°C~45°C, $\pm 0.5^{\circ}\text{C}$	Sweat Volume Range	0~100%, $\pm 5\%$
Positioning Accuracy	$\leq 1\text{m}$ (with our company's positioning base station)	Movement Status	static, walking, running, falling, lying flat, etc.
Exercise Intensity	0-100	Exercise Amount	0-65536 (or higher)
Sleep Quality	0-100	Fatigue Index	0-100
Stress Index	0-100	Data Caching	Supports local storage of 7-day data
Operating Environment	0-50°C, 5-95%RH, 700-1060hPa	Storage Environment	-20~60°C, 5-95%RH, 700-1060hPa
Washing Method	Machine washable ≥ 50 times, water temperature/drying temperature $\leq 50^{\circ}\text{C}$	Certification	SRRC, CE, FCC, ROHS

*Battery life calculation method: 12 hours of operation and 12 hours of dormancy per day, used every



other day.

9 Disposal of Waste Products

Before discarding the product, the battery must be removed from the product. After removing the waste battery, please hand it over to the waste battery recycling department or put it into a waste battery recycling bin.

10 Statement

- This manual is intended for equipment users and maintenance personnel only, and should be properly kept.
- Without the explicit written permission of our company, no unit or individual may arbitrarily copy, reproduce, transcribe or translate part or all of the content of this manual, and may not disseminate it in any way (electronic, photocopying, recording, etc.) for profit-making purposes.
- The product specifications and information mentioned in this manual are for reference only. Due to the improvement of product functions and performance, changes to the equipment may occur without prior notice. Unless otherwise specified, this manual is only for use as a guide, and the statements made herein do not constitute any form of warranty.



FCC Caution.

This device complies with part 15 of the FCC 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.

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

Note: This equipment 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 equipment 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 equipment 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 radio/TV technician for help.

***RF warning for Portable device:**

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

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