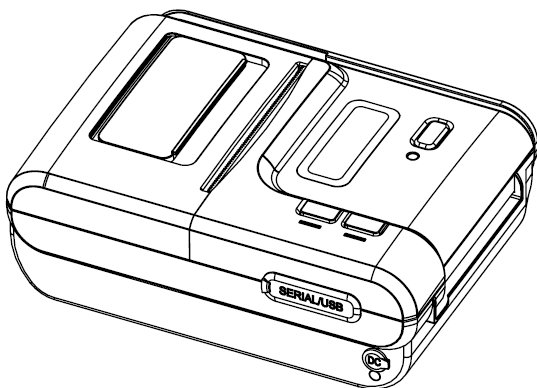


SPRT[®]

SP-T6

Portable Thermal Printer



User's Manual

Beijing Spirit Technology Development Co.,Ltd

www.sprinter.com.cn

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Operating Precautions

Please read this chapter carefully before using the printer!

Notes on Safety

Be sure to use the specified battery and power supply provided by our company. Connection to an improper power supply may cause fire, explosion or damage to the printer.

Don't put the battery into the fire or water, don't disassemble or modify the battery, don't be short circuit, otherwise may result in injury or fire even explosion.

If the printer would not be used for a long time, be sure to take off the battery, otherwise the battery may leak liquid which is corrosive, if improper operation causes battery leak, and the liquid is spattered on the skin or clothes, please wash it with water, if spattered in the eyes, please rinse them with water thoroughly and see a doctor.

Please do not open the paper case cover when it is printing or just when printing is over, do not touch the print head with hand or body, overheat may cause scald.

Notes on Using

Be sure not to print continuously over 1 meter, otherwise may cause damage to the print head.

Water or other liquid should not spill into the printer, also the printer should not be appeared in the rain, or else may cause printer damage.

Please do not open the paper case cover when it is printing, otherwise the printer may work improperly.

If print with serial interface, should not unplug the interface cable in the course of printing, or else some printing data may be lost.

When print in Ir or IrDA mode, be sure the Ir window of the host equipment face rightly the Ir window of the printer, the distance should be within the range of 50mm, and the angle should be within the range of 30°.

When print with Bluetooth interface, the communication distance should be within 10 meters, otherwise the printer doesn't print or prints rubbish codes.

Too high (45°C) or too low (5°C) temperature and too high (85%) or too low (20%) relative humidity both effect the print quality.

The print paper in poor quality or stored for too long time also may reduce the print quality even damage the printer.

In the black mark detecting mode, the printer requires that the ready-print black mark is accordant with the black mark printing rules (details please refer to Chapter 5), otherwise the black mark can not be detected correctly.

Be sure to use up the electricity of the battery before charge it, as it can ensure the using life of the battery.

Notes on Handling

The printer should be placed in such an environment that the temperature is between -20°C and 60°C , and the relative humidity is between 5% and 95%.

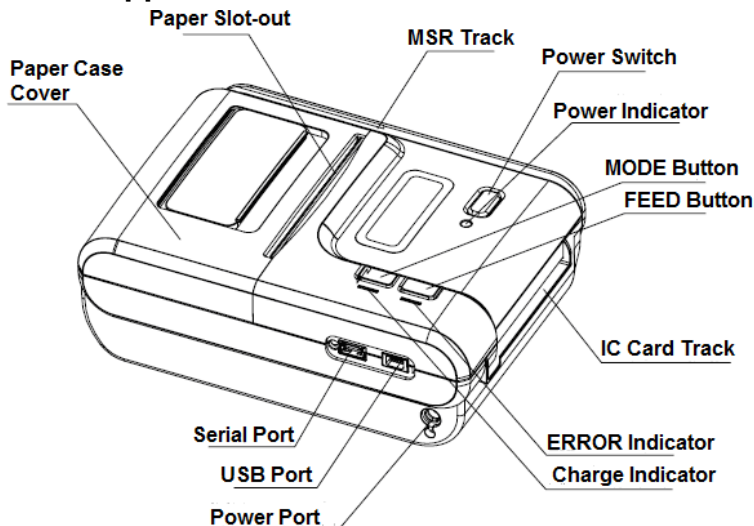
If the printer will be stored for a long time, please be sure to take out the battery, otherwise may damage the battery and printer.

Normal thermal paper can't be kept too long, if you need to keep the receipt for a long period, please choose long term effective thermal paper.

The print paper should be keep away from high temperature environment and point-blank sunshine.

Chapter 1 Outer Appearance and Model

1.1 Outer Appearance



1.2 Model Classification

By now, all the models can support serial and USB.

SP-RMT6xx XX

- BT——Serial, USB, Bluetooth
- Blank——Only Serial and USB
- SM——Smart IC Card and Magnetic Card,
with LCD display
- M——Only Magnetic Card

Chapter 2 General Specifications

2.1 Specifications

Print	Printing Method	Thermal Line
	Printing Speed	50mm/sec
	Resolution	8dots/mm,384dots/line,203dpi
	Effective Printing Width	48mm
Character	Print Font	ANK: 12*24 ,9*24 Chinese: 24 x 24
	Character per Line	32/42
Paper Spec	Paper Type	Thermal paper
	Paper Width	57.5± 0.5mm
	Paper Roll Diameter	Max: 40.0mm
	Roll Core Inner Diameter	13mm(min.)
	Paper Thickness	0.06 to 0.07mm
Paper Supply Method		Drop-in Easy loading
Reliability	Smart Card	ISO 7816 Compliant (EMV level 1 Certified) /Life is more than 100000 times
	MSR	ISO7810/7811/7812 1&2&3&Track Reading Life is more than 300000 times
	MCBF	15 million lines

	Auto-cutter	N/A
	TPH	50km
Barcodes		1-D:UPC-A UPC-E EAN-13 EAN-8 CODE39 ITF25 CODABAR CODE93 CODE128 2-D:PDF417、QR code、DATA Matrix
human-machine interface	Button	POWER, FEED, MODE
	Indicator	ERROR, POWER
	LCD	128X32 Dots FSTN (Blue LED Backlight)
	Display Content	printer status(serial, Bluetooth, paper out error), baud rate, speed, density, battery capacity
Memory		FLASH : 512kb, RAM :128kb
Receive buffer size		16KB
Emulation		ESC/POS
Driver		Windows 98 / ME / 2000 / NT / XP / 2003Server / VISTA
SDK		WinCE 4.2, WinCE 5.0, Symbian, Linux
Multilanguage		21 codepages
Setup Software		support set bitmap download,

		baud rate, font, speed, density, password, black mark, Bluetooth etc.
Sensor		Paper End Sensor
Interface		RS-232,USB, Bluetooth
Power Adaptor		DC9V/2A
Battery Power		1500mAh/7.4V
Battery Duration		90 meters continuous printing
Battery Charging Time		less than 3 hours
Battery One Charge Standby Time		about 100hours
Drop Duration		1.2 meters
Accessories	Standard	paper, power supply(Adapter),serial cable, leather case
	Optional	vehicle charger ,external charger ,battery, CD-ROM, USB cable
Physical	Weight	270g(excluding roll paper)
	Dimension (WxLxH)	87x119x50mm
	Color	Black
Environment	Operating Temp	0~ 50 °C
	Storage Temp	-20~60°C
	Operating	10~80%

	Humidity	
	Storage Humidity	10~90%

2.2 Other Features

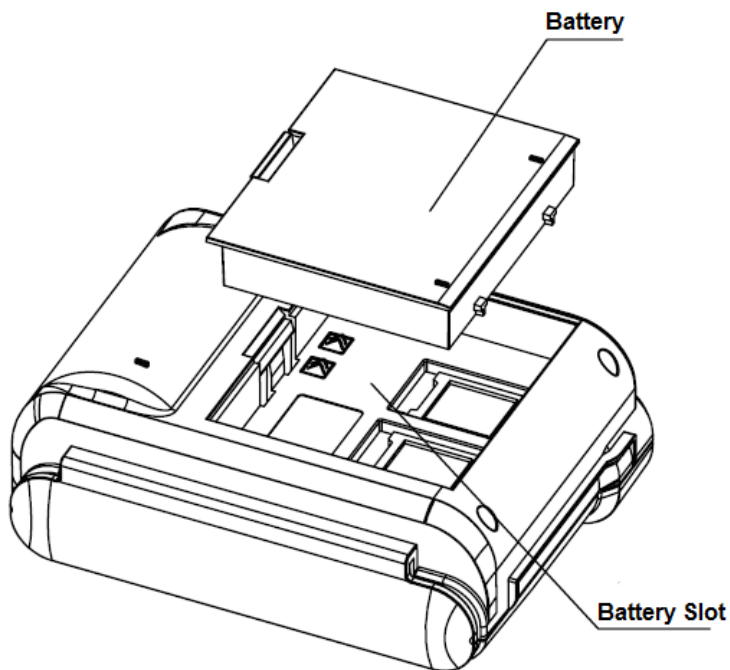
- Paper loading method: drop-in easy loading (details please refer to 3.1.2 Paper Installation).
- Black mark localization: available (details please see 4.2 ready printing black mark specification).
- Paper out detection: when paper is out, the FEED indicator blinks, and the buzzer rings once a second, and will show on the screen.
- Print commands: ESC/POS compatible command set (refer to <T6 Printer Developer Guide>).
- Power supply: 1500mAh rechargeable polymer lithium battery.
- Low power alarm: when the battery is low, the Battery icon will be blank, and the printer will cut off power after 10 minutes
- Sleeping: the printer will fall after in 5 minutes without receiving data or pressing any buttons. And can be awoken by pressing [FEED] button or sending data to it.;
- Battery full charge time: quick charge, 1~3hours will be full;
- Battery duration: under 25% print density, at least 90 meters, the standby time is over 15 days.

These parameters are just for reference, long term usage will cause the capacity decline, and can not ensure the time of printing.

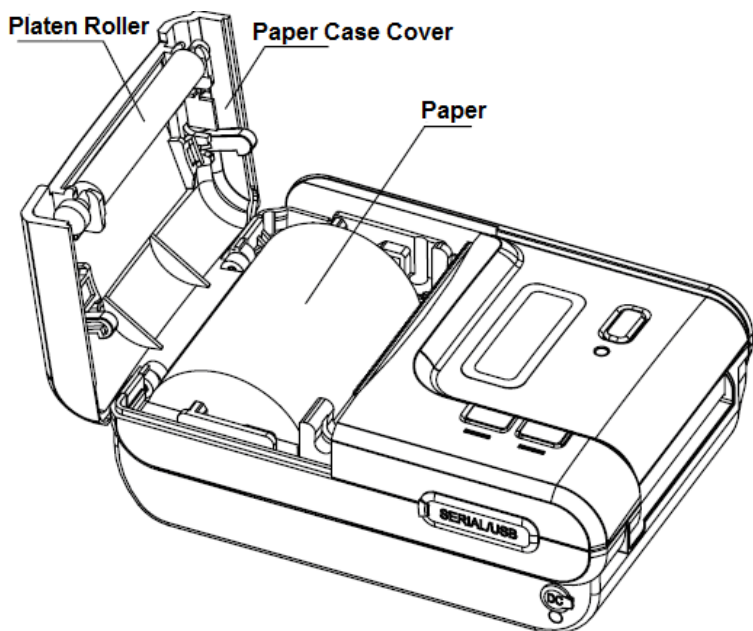
Chapter 3 Operation

3.1 Using Preparation

3.1.1 Battery Installation



3.1.2 Paper Installation



3.2 Operation Specifications

3.2.1 Printer On

1, When connect with the external power source, and touch with the printer normally, it will show 'Battery Charging'. If not, or the battery is full, there is nothing on the screen except battery icon. Under this state, press 'power' button for 1 second, the indicator is on with blue color, when loosen will hear "beep", this means hardware self-test properly. But if you hear "toot", it means there may some mistakes when hardware self-test, and will show "ERROR1" or "ERROR2"

on the screen. Under this state, please connect with our technical support.

2. Without the external power source and under the halt state, press the power button for 1 second, the indicator is on with blue color, when loosen will hear “beep”, this means hardware self-test properly, and the printer engages in work. But if you hear “toot”, it means there may some mistakes when hardware self-test, and will show “ERROR1” or “ERROR2” on the screen. Under this state, please connect with our technical support.

3.2.2 Printer Off

At power on, the printer will be off after press the power button for 1 second, all the indicators are off. If there is external power source, and battery touch well with printer, it will show “Battery Charging”. If not, or the battery has been full, there will be nothing on the screen except the battery icon.

3.2.3 Self-test

After receiving the printer, user can check its current setting, status at any time. Self-test ways are as below: Power off(if the printer is under on mode),then hold down the [FEED]button and press the power button at the same time. Then loosen the [FEED] button, the current setting and status will be printed out.

3.2.4 Paper Feeding(Manual Feed)

Under the normal work state, press [FEED] button, the paper feeding begins, and stop when hold down [FEED] button. When the printer works in black mark mode, press [FEED] button, the printer begins to feed paper and stops at the position of black mark. If the paper is not black mark paper, the printer stops automatically after feeds paper for 30cm.

3.2.5 Battery Charging

The battery will run out after a period of usage. When it nearly runs out, printer will give the alarm through the battery icon on the screen, at this time ,user needs to charge up.

The charging method is as following: connect the adapter to the power socket with 220V, 50HZ, then plug the power charging cable to the power socket of the printer, so the power charging begins. During the course of power charging, the charging indicator goes red, and turns to blue when the charging is over. It takes about 3 hours to charge the battery. Using the printer during the course of charging power will make the charging time go longer.

3.2.6 System Parameters Setting

Under halt state, press power and [MODE] buttons, it will show “mode setting”, when loosen, it will enter “serial mode”. Details please see the attachment below.

3.2.7 Quitting System Parameters Setting

Hold down [MODE] and [FEED] buttons, loosen [MODE] button first, and then [FEED] button.

3.3 Printer Setting

Users can set the printer parameter by using the 〈T6 Setting Tools〉 software attaching through computer. The setting including: serial baud rate and data format, black mark setting, language, letterform, print density, bluetooth device name and password(only T6-BT) etc. Regard to the setting method please refer to the〈T6 Setting Tools Software Help〉 offered with the software together.

3.4 Printer Interface Connection and Printing

3.4.1 Serial Interface Connection

The standard accessories for T6 printer include DB-9 serial interface cable (the other end connected to the printer is 5PIN Mini USB plug).If serial port works properly when connect to serial.

The printer serial is Uart Asynchronous Serial Port, the baud rate range is: 1200bps, 2400bps, 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps. Way of changing the baud rate please see 3.3 printer setting.

3.4.2 USB Connection

The standard accessories for T6 printer include USB cable (the other end,5PIN Mini USB plug connected with printer)

3.4.3 Bluetooth Connection

Handheld Terminal, laptop and other Information Terminal devices with Bluetooth can drive T6-BT to print by the Bluetooth interface.T6-BT Portable Micro Thermal Printer is compatible with Bluetooth 2.0 standard. Power grade is CLASS 2, effective communication distance is 10 meters.

The name of the printer is T6_Bluetooth_Printer, the initial password is “1234”; users can change the printer name and password by using <T6 Setting Tools> software. Please see the details in help file of <T6 Setting Tools>.

Before working, T6-BT Portable Micro Thermal Printer need to match with primary device. Usual matching function is as below:

1. Turn on the printer;
2. Host device searches for the outer Bluetooth device;
3. If there are other Bluetooth devices, please select T6_Bluetooth_Printer;
4. Enter the password “1234”;
5. Pairing finished.

Please see details in primary device bluetooth function declaration for reference.

Notice:

- 1, When pairing, please make T6BT power on.
- 2, After T6BT has paired with the host, it can't paired with other Bluetooth device until it unconnected with the host.
- 3, If the printer name has been changed, please be sure not turn on more than one printer, otherwise it will be difficult to justify which printer been paired.

3.4.4 Function of Bluetooth Address Blinding

Default address is not bound.

3.5 Indicators and Buzzer

There are three indicators, they are blue and red [CHARGE] light, red [ERROR] light and blue [POWER] indicator. The meanings of each indicator are as below:

[CHARGE] indicator

Blue light constant on: charging complete;

Red light constant on: on charging;

Two lights on: there are some mistakes, please check whether the battery connecting well.

[ERROR] indicator:

Red light flashing: when there are some mistakes with the printer, it will flash every second;

[POWER] indicator:

Blue light constant on: the printer is in proper working order.

There is also a buzzer to indicate various status of the printer.

The meanings are as below:

One low one high: power on;

One high one low: power off;

One high one low: reading the card or the card data is correct;

One high one low: receiving the command of reading the card;

One high: when entering the setting mode, there will be a high sound when press the buttons every time;

Two high: out of paper;

Four high: overheating;

One low: reverting to the normal condition from wrong

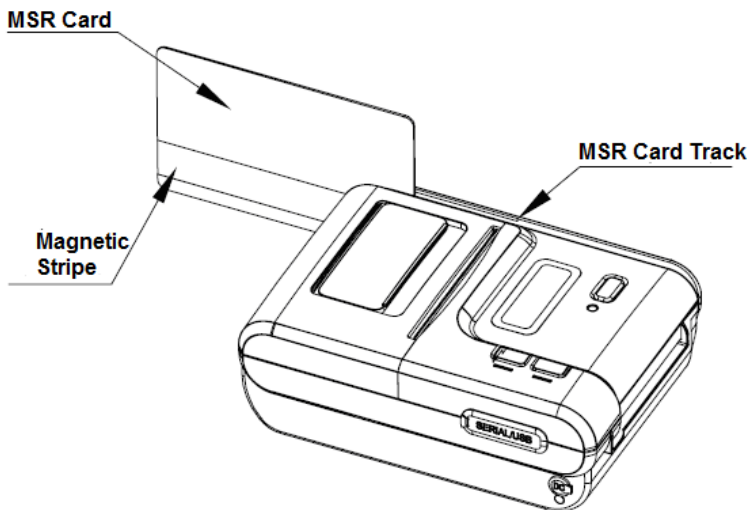
condition;

Three low: low battery, sounds every five minutes.

3.6 MSR Card Operation

3.6.1 Functions of MSR Card

T6 has the function of reading MSR cards. The MSR card slot is as the picture below:



3.6.2 Reading MSR Card Information

Setting the card mode by sending 1CH 4DH 31H (32H,33H,36H) to the printer through serial, USB or blue tooth. At this time the backlight of the screen is lighting, and showing “punch the card” on the screen, this means the printer has entered the card mode.

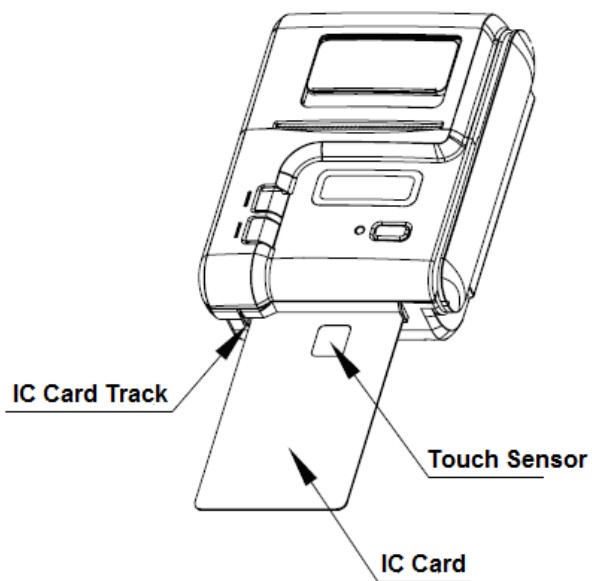
At this time, users only need to punch the card lightly as the

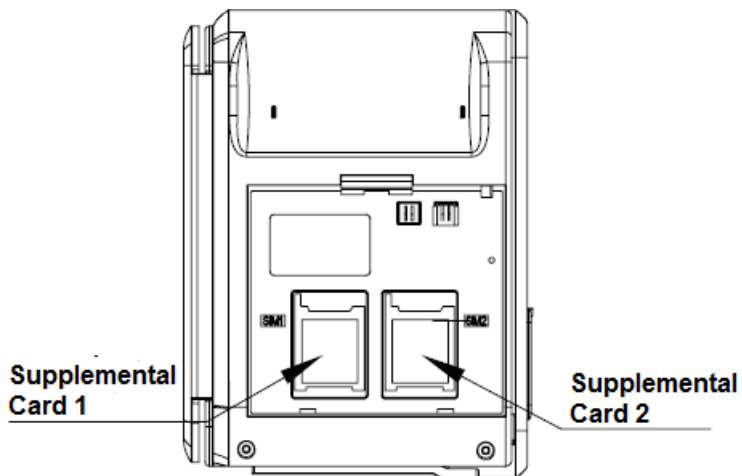
direction shown in the picture above. If succeed, the printer will send out the beeping of “one high one low”, and showing “punch the card successfully”, at the same time, sending the information of the card to client-side according to relevant transfer channel, and quitting the card mode back to the normal printing mode. If it does not succeed, he printer will send out the beeping of “two high”, and showing “failure to punch the card”, and back to the card mode waiting for continue to punch the card.

The detailed operation of this command and data format of the magnetic card please see < T6 Technical Manual>

3.7 Operation of IC Card

T6 printers built in the function of reading and writing the IC Card, there are three slots of IC Card, one is main, the other two are auxiliary. The positions are as the picture below:





The printers will enter the IC Card mode when sending 1BH 4EH command to the printers under normal printing mode.

Under IC Card mode, except the command of quitting the IC Card mode, all other command operations abide by an agreement called block, at the same time, every block of data is contained between two 7EH, only this kind of data format can be identified by the printer and card reader.

Under IC Card mode, there is only one method can quit this mode, that is 7E047E command, this command is not abide by the block agreement, it is a special IC Card command.

A complete IC Card operation: first sending 1BH 4EH to enter the IC Card mode, it will show "please plug in the card", then plug the card in the direction shown in the picture; and then sending the command: 7EH 42H 00H 01H 12H 51H

7EH, the function of this command is to power up to the IC Card, it matches the block agreement and packed format completely. The detailed description of block agreement please see < T6 Printer Developing Guide >; After powering up the IC Card, it needs to select the type of the IC Card first, CPU card is default; then users can operate the IC Card by sending reading and writing command. About the detailed operations of IC Card please see < T6 Printer Developing Guide > for reference.

The command below is the process to complete a simple IC Card operation, the operation of auxiliary cards is the similar with main card, just different in the order codes, please see <T6 Printer Developing Guide> for reference.

Selecting IC Card mode: 1BH 4EH

Selecting type of main card: 7EH 42H 40H 03H 17H 02H
00H 14H 7EH

Powering up the main card: 7EH 42H 00H 01H 12H 51H
7EH

Reading the data of main card: 7EH 42H 00H 01H 13H
50H 7EH

Powering down the main card: 7EH 42H 40H 01H 11H
12H 7EH

Quiting the IC mode: 7EH 04H 7EH

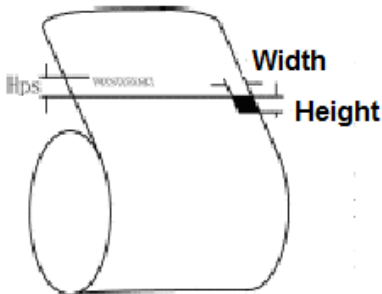
Chapter 4 Other Information

4.1 Printer Developing Guide

<T6 Technical Manual> is a technical manual for engineer to develop printer utility, and users can claim our company for it. This manual including the technical description of hardware interface(serial port communication, Bluetooth, USB interface),technical documentation of printing control instruction set, and others such as how to print black mark and locate by it.

4.2 Description of Black Mark Pre-print

If user use pre-print black mark to locate the receipt, please be sure to abide by the following black mark pre-print regulation when print the black mark, if not, it will cause that the printer can not identify the black mark. The black mark pre-print regulations are as below:



Print Position: As the picture above, the black mark should be printed on the right edge of the letters.

Width range: $\text{width} \geq 7\text{mm}$

Height range: $4\text{mm} \leq \text{height} \leq 6\text{mm}$

Reflectivity to infrared ray: $< 10\%$ (infrared ray reflectivity of other parts of the black mark paper is $> 65\%$)

Hps: it is the distance between edges of black mark and loading position.

$4.5\text{mm} \leq \text{Hps} \leq 6.5\text{mm}$

**Manufacture has right to amend the content of the
instruction without prior announcement!**

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Appendix

Appendix is the usage of setting printer parameter:

Description: Hold on [MODE] button and power on the printer to make the printer enter into SETUP mode. Then use [FEED] button to select setup items, press [FEED] button each time, the setup item moves to next one, and it displays the first parameter of the current item. Use [MODE] button to select each parameter of each setup item, press [MODE] button each time, the parameter moves to next one.

