Jinko金科

Operating Instruction

JK802/804/808

Multi-channel Handheld Temperature Meter

Safety Summary

 Warning  Danger :

The following general safety precautions must be observed during all phases of operation, service, and repair of this instrument. Failure to comply with these precautions or with specific WARNINGS elsewhere in this manual may impair the protection provided by the equipment. In addition it violates safety standards of design, manufacture, and intended use of the instrument.

Disclaimer	The Jinko Instruments assumes no liability for the customer's failure to comply with these requirements.
Ground The Instrument	To avoid electric shock hazard, the instrument chassis and cabinet must be connected to a safety earth ground by the supplied power cable with earth blade.
DO NOT Operate In An Explosive Atmosphere	Do not operate the instrument in the presence of inflammable gasses or fumes. Operation of any electrical instrument in such an environment constitutes a definite
Keep away from live circuit	Operating personnel must not remove instrument covers. Component replacement and internal adjustments must be made by qualified maintenance personnel. Do not replace components with the power cable connected. Under certain conditions, dangerous voltages may exist even with the power cable removed. To avoid injuries, always disconnect power and discharge circuits before touching
Operations not included in the manual are forbidden	The protection measurements will be failure while beyond the scope.
	Warning: TO AVOIDE INSTRUMENT DAMAGED, PLEASE DO NOT PUT DC VOLT OR CURRENT IN THE TESR TERMINAL MAKE SURE THE CAPACITOR IS DISCHARGED BEFORE TESTING

Safety Sign:

Provide double insulation or reinforced insulation protection

Waste Electrical and Electronic Equipment (WEEE) order 2002/96/EC

Do not leave in the trash can

CERTIFIACTION, LIMITED & LIMITATION OF LIABILITY

Changzhou Jinailian Electronic Technology Co.,Ltd（shortened form JINKO）certifies that this product met its published specifications at the time of shipment from the factory. Jinko further certifies that its calibration measurements are traceable to the People's Republic of China National Institute of Standards and Technology, to the extent allowed by the Institution's calibration facility or by the calibration facilities of other International Standards Organization members.

This Jinko instrument product is warranted against defects in material and workmanship for a period corresponding to the individual warranty periods of its component products. The warranty period is 1 year and begins on the date of shipment. During the warranty period,Jinko will, at its option, either repair or replace products that prove to be defective. This warranty extends only to the original buyer or end-user customer of a Jinko authorized reseller, and does not apply to fuses, disposable batteries or to any product which, in Jinko's opinion, has been misused, altered, neglected or damaged by accident or abnormal conditions of operation or handling.

For warranty service or repair, this product must be returned to a service facility designated by Jinko. The buyer shall prepay shipping charges to Jinko and the Buyer shall pay all shipping charges, duties, and taxes for products returned to Jinko from another country.

Jinko warrants that its software and firmware designated by Jinko for use with an instrument will execute its programming instruction when properly installed on that instrument. Jinko does not warrant that the operation of the instrument, or software, or firmware, will be uninterrupted or error free.

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by the Buyer, Buyer-supplied software or interfacing, unauthorized modification or misuse, operation outside the environmental specifications for the product, or improper site preparation or maintenance.

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People's Republic of China
Jiangsu Province Changzhou Jinailian Electronic Technology Co.,Ltd
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Contents

1. Installation and Setup Wizard

This chapter provides the following information:

Packing List
Power Requirements
Operation Environment
Cleaning
Replace Battery
Adjusting Tilt Stand

Packing List

After you receive the instrument, carry out checks during unpacking according to the following procedure.
Check that the packing box or shock-absorbing material used to package the instrument has not been damaged.
Referring to the packing list, check that all packaged items supplied with the meter have been provided as per the specified optioned.
If damaged or accessories shortage, please contact the sales department or our
agent.

Power Supply

The Handheld Temperature Meter only can use our configured AC Adapter JKL909 and Li-battery JKL805
AC Adapter

Input Voltage: 90V-260VAC, 49Hz~62Hz

Power: Max 10VA

Warning: Other model AC Adapter is forbidden. Only L909 and L805 rechargeable Li-battery can be used.

Operation Environment

Ensure the operation environment meets the following requirements Temperature Range: 0℃～55℃,

Humidity: 23℃,<70%RH

Altitude: 0~2000m

Cleaning

Do not attempt to clean the internal of JK802/804/808

Warning:
Don't Use Organic Solvents (such as alcohol or gasoline) to clean the Instrument.

Use a dry cloth or a cloth slightly dipped in water to clean the casing.

Replace Battery

Build-in rechargeable Li-battery, battery has been installed in the instruments before factory. Change the battery according to the following steps:

Figure 1- 1 Battery Change

1. Use the screwdriver to loosen the screw in the battery cover and remove the cover.
2. Remove the plug on the old battery, plug a new one, main direction of the plug.
3. Put the new battery in the instrument, recover and tighten the screws.

Adjusting Tilt Stand

Two positions are provided: degree 60 and degree 45 Degree 45 can provide a better stability for the instrument

Figure 1- 2 Position of Degree 60

Folded up the bottom of the bracket to achieve degree 45 position

Figure 1- 3 Position of Degree 45

2. Overview

This chapter provides the following information:

Overview
Main Specification
Main Function

Overview

Thank you for purchasing JK802 /804 / 808 Multi-channel Handheld Temperature Meter

The JK802/804/808 adopts high-performance ARM microprocessor control, collects multi-channel temperature data simultaneously. The JK802/804/808 can be compatible with a variety of temperature sensors, fast response, data stability while with the burnout detection function. Also you can separately calibrate the data of each channel. True-color TFT liquid crystal display, keypad and touch screen double control. Use Li- battery supply power and USB communication. Switch in both English and Chinese.

Main Specification

Graduation: thermocouple J ,K, T, E, S, N, B
Basic Accuracy:see the appendix(accuracy table)
Measurement Range: -200.0℃~1800.0℃（change according to different thermocouple type）
Resolution: 0.1℃
Channel: 802 2 channels
804 4 channels
808 8 channels

Main Function

FUNCTION

1. Comparator Setting
2. Speed Setting
3. Beep Setting
4. Baud Rate Setting
5. Temperature Unit Setting

Sorting Setting

Build-in sorting data, each temperature data can be set both up limit and low limit

Correction Function

Each channel data can been corrected by the user.

System Setup

Keypad Lock Function
Switch in Both Chinese and English
Data File will Be Saved Automatically
Touch Screen Setup
Power Saving Mode

Interface

USB Host Port:
USB high-speed mode: 48 MHz, USD-HID Protocol, ASCII Transi

3. Startup

This chapter describes:

- Front Panel Summery
- LCD Screen
- Interface
- Extern power and Battery
- Power up
- **Connection of the Thermocouple**

Front Panel Summery

Figure 3-1 Front Panel

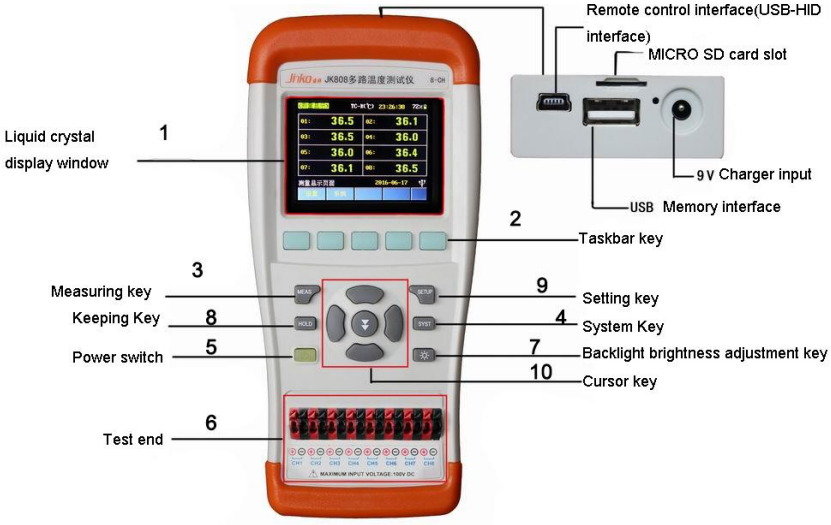
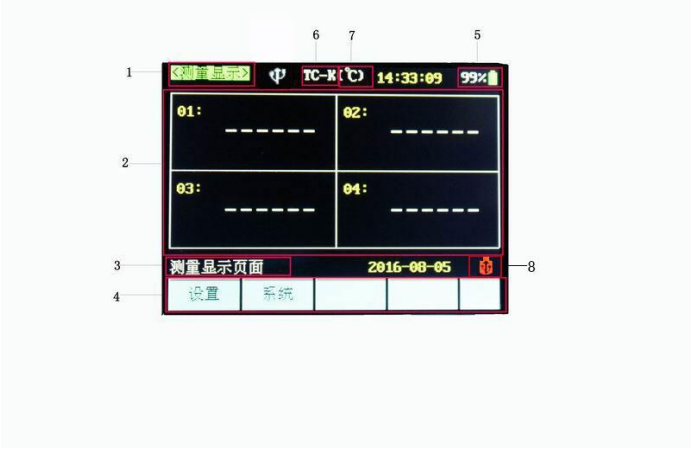


Table 3-1Description of the Front Panel

1	TFT-LCD Screen
2	Select Keys
3	MEA Measurement Key——Enter Measurement Page (Page 15:[MEAS] Page)
4	SYS System Key ——Enter System Setting Page (Page 20: [SYSTEM] Page)
5	Power On/Off Battery Charging Indicator
6	Sensor access terminal
7	Background Brightness——30%,50%,70%, 100% Unlock the Keypad Lock
8	HOLD NULL
9	SETU Enter Setup (Page 17:[ETUP] page)

LCD Screen

Figure 3-2 LCD



Screen

Table 3-2LCD Screen descriptions

1	The Page Title
2	The white fields are label; the yellow fields are list box.
3	Help and message information
4	Function Area, Use the select keys to select
5	Battery Percentage and Keypad Lock Indicators
6	Display the current sensor model
7	Displays the current temperature unit
8	Memory flag

Interface

Figure 3-3 Interface panel

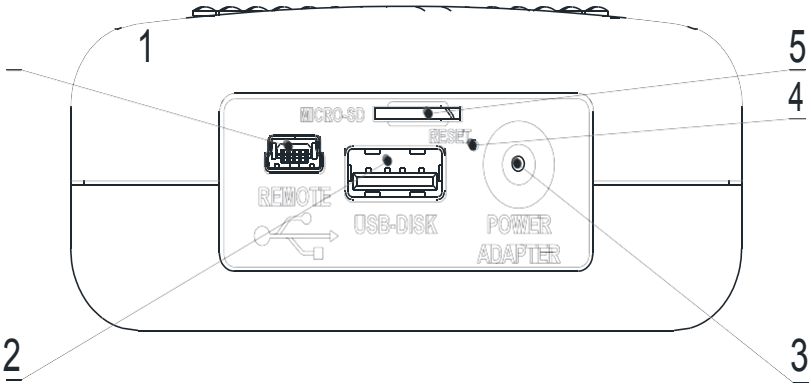


Table 3-3Interface panel description

1	Remote Control Interface(USB-HID)
2	USB Memory Interface
3	Power Adapter Jack(+9VDC)
4	RESET
5	MICROSD Memory Interface

Extern power and Battery

The Battery can only be charged by Power Adapter JKL909。

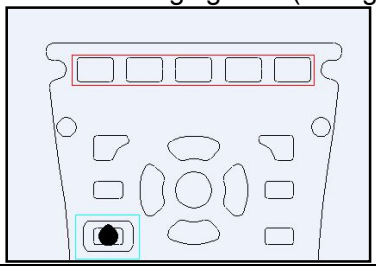
While using the external power supply, the power adapter is also charging the battery.

Figure 3-4 Power Adapter

3.4.1 **Charge Li Battery**

When the battery power is low, you could use the power adapter to charge the battery. The Power key is orange indicating while charging the battery.

Figure 3-5 Charging LED (Orange)



Attention! The key is also orange which charging even when the LCR meter is off previously.)

Power up

Press the Power key softly to start it.

Connection of the Thermocouple

JK802 having 2 input ports
JK804 having 4 input ports
JK808 having 8 input ports

Figure 3-4 Thermocouple Terminals

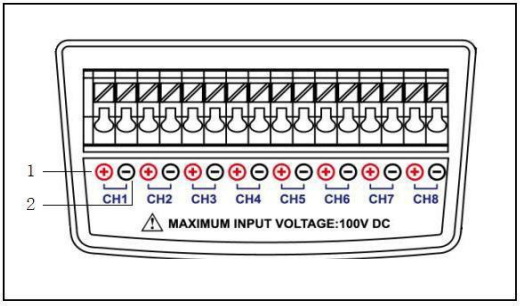


Table 3-4 Interface baffle description

1	“＋” positive pole of the thermocouple
2	“－”negative pole of the thermocouple

Warning : Do not exceed channel isolation voltage 100V, otherwise it will damage the instrument.

4. [MEAS] Page

This section includes all measure result display information.

<Measure Display>Page

<MEAS DISPLAY>

When press the [Meas] key, the <MEAS DISPLAY> page appears. <MEASURE DISPLAY> page mainly highlights the measurement results, and current sorting results will be displayed in different font and color.

The following measurement controls can be set:

Channel Setting

Figure 4-1 JK802<MEAS DISPLAY> Page

Figure 4-2 JK804 <MEAS DISPLAY> Page

Figure 4-3 JK808<MEAS DISPLAY> Page

CHAN【01】

Steps to Set Sensor Model

Step 1	Press[Meas] key to enter <MEASURE	
Step 2	Use the cursor keys to select[01]field	
Step 3	Use side soft keys to select	
	Soft key	Function
	OFF	Close the current channel
	ON	Open the current channel

*The same steps to close or open other channels

设置用户修正的步骤

Step 1	Press[Meas] key to enter <MEASURE	
Step 2	Use the cursor keys to select[01]field	
Step 3	Use side soft keys to select	
	Soft key	Function
	AMEND	Use touch screen to type in
	CLEAR	Delete amend value

*The same steps to correct other channel values

5. [SETUP]Page

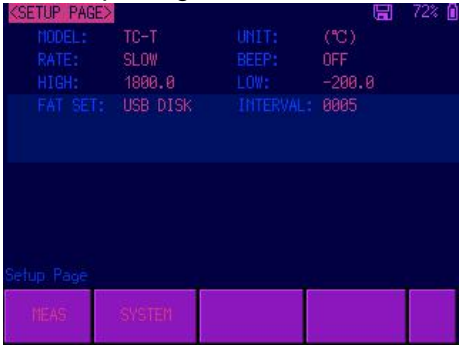
This section includes all setup functions
At any time,press [SETUP]to enter <SETUP> page.
<SETUP> Page

<Setup>Page

In < SETUP> page, the Instrument does not display any results,testing is not in progress.
The setup includes

MODEL –Chose the type of the thermocouple
UNIT –Temperature Unit Setting
RATE – Sampling Rate
BEEP – Beep Setting
HIGH – High Limit
LOW – Low Limit
FAT SET – FAT Memory set
INTERVAL – Date Save Interval

Figure5- 1<Setup> Page



[MODEL] Setting

The model set includes :8 types thermocouple T , K , J , N , E, S , R , B

Steps to set the model

Step 1	Press [Setup] keyto enter <SETUP>page	
Step 2	Use cursor keys to select[MODEL]field	
Step 3	Use soft key to select	
	Soft Key	Function
	TC-T	Setting the thermocouple T type
	TC-K	Setting the thermocouple K type
	TC-J	Setting the thermocouple J type

	TC-N	Setting the thermocouple N type
	TC-R	Setting the thermocouple R type
	TC-S	Setting the thermocouple S type
	TC-E	Setting the thermocouple E type
	TC-B	Setting the thermocouple B type

[UNIT]Setting

Units Includes:(℃),(K),(F)

Steps to set beep feature

Step 1	Press [Setup] key to enter <SETUP> page	
Step 2	Use cursor keys to select[UNIT]field	
Step 3	Use soft keys to select	
	Soft Key	Function
	(℃)	Degree Celsius
	(K)	Degree Kelvin
	(F)	Degree Fahrenheit

[RATE] Setting

The Rate set include: Slow, Med and Fast

Steps to set rate

Step 1	Press [Setup] keyto enter <SETUP>page	
Step 2	Use cursor keys to select[RATE]field	
Step 3	Use soft keys to select	
	Soft Key	Function
	SLOW	Set the sampling rateto slow
	MED	Set the sampling rateto med
	FAST	Set the sampling ratetofast

[BEEP] setting

The Beep set include: OFF and ON.

Steps to Set the Beep:

Step 1	Press [Setup] keyto enter <SETUP >page	
Step 2	Use cursor keys to select[UNIT]field	
Step 3	Use soft keys to select	
	Soft Key	Function
	OFF	Turn off the Beep feature
	ON	Turn on the Beep feature

[HIGH] setting

Steps to set Highlimit

Step 1	Press [Setup] key to enter < SETUP > page
Step 2	Use cursor keys to select [1800.0] field

Step 3	Use soft keys to select	
	Soft Key	Function
	UPPER VALUE	Use touch screen to type in
	RESET	Restore Defaults

[LOW] setting

Steps to set Lowlimit

Step 1	Press [Setup] key to enter < SETUP > page	
Step 2	Use cursor keys to select [-200.0] field	
Step 3	Use soft keys to select	
	Soft Key	Function
	UPPER VALUE	Use touch screen to type in
	RESET	Restore Defaults

[FAT SET] setting

Steps to set FAT

Step 1	Press [Setup] key to enter < SETUP > page	
Step 2	Use cursor keys to select [FAT SET] field	
Step 3	Use soft keys to select	
	Soft Key	Function
	MICRO SD	Select MicroSD Memory Card
	USB DISK	Select USB FAT Memory

[INTERVAL

Steps to set interval

Step 1	Press [Setup] key to enter < SETUP > page	
Step 2	Use cursor keys to select [INTERVAL]	
Step 3	Use soft keys to select	
	Soft Key	Function
	UPPER VALUE	Use touch screen to type in
	RESET	Restore Defaults

Note:

First select [USB DISK] or [MICRO SD] , and then insert the MICRO SD card or USB memory card, the instrument automatically starts recording data.

Example :

Instrument current time is :2013 -11-20 15:30:35

Memory created under the root directory folder name : 20131120 , file name : 153035.CSV

The data format is Float type, reserve 1 digit behind the decimal point, channels are separated by “, ” .

MODEL-TC-T（℃）	CH01	CH02	CH03	CH04	CH05	CH06	CH07	CH08
2013-12-04 15:00:00	28.0	28.1	100.5	19.2	32.4	54.3	21.6	41.9
2013-12-04 15:00:05	28.1	28.0	100.4	19.2	32.4	54.2	21.5	42.0
2013-12-04 15:00:10	28.0	28.1	100.5	19.1	32.3	54.2	21.5	42.0
2013-12-04 15:00:15	28.0	28.1	100.5	19.2	32.4	54.2	21.5	42.0

6. [SYSTEM]Page

This section includes all system information.

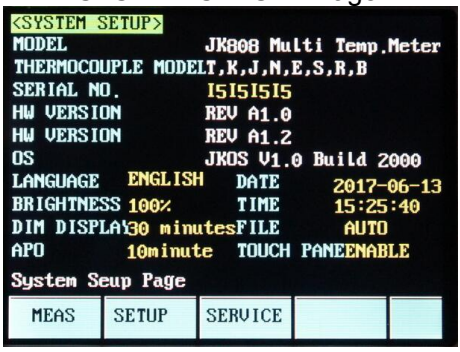
At any time, press [SYST] key to enter [SYSTEM] page.

<SYSTEM CONFIG> page

Following information can be configured in the <SYSTEM CONFIG> page.

System date and time configuration [DATE/TIME]
LANGUAGE
FILE
TOUCH PANEL
BRIGHTNESS
DIM DISPLAY
APO – Auto Power Off

Figure 6-1 <SYSTEM SETUP> Page



[DATA]

Procedure to set data

Step 1	Press [SYST] key to enter<SYSTEM CONFIG> page.	
Step 2	Select[DATA]	
Step 3	YEAR INCR+	+1Year
	YEAR DECR-	-1Year
	MONTH INCR+	+1Month
	MONTH DECR-	-1Month

	DAY INCR+	+1Day
	DAY DECR-	-1Day

[TIME]

Procedure to set time

Step 1	Press [SYST] key to enter<SYSTEM CONFIG> page.	
Step 2	Select[TIME]	
Step 3	HOUR INCR+	+1Hour
	HOUR DECR-	-1Hour
	MINUTE INCR+	+1Minute
	MINUTE DECR-	-1Minute
	SECOND INCR+	+1Second
	SECOND DECR-	-1Second

[LANGUAGE]

You can switch system language in both Chinese and English.

Procedure to change language

Step 1	Press [SYST] key to enter<SYSTEM CONFIG> page.	
Step 2	Select[LANGUAGE]	
Step 3	中文 (CHS)	Switch into Chinese
	ENGLISH	Switch into English

[FILE]

Procedure of file setting

Step 1	Press [SYST] key to enter<SYSTEM CONFIG> page.	
Step 2	Select [FILE] field	
Step 3	AUTO	All parameters set by user will be in saved
	IGNORED	The parameters will be lost after power off
	SAVE NOW	All parameters set by user will be in saved

[TOUCH PANEL]

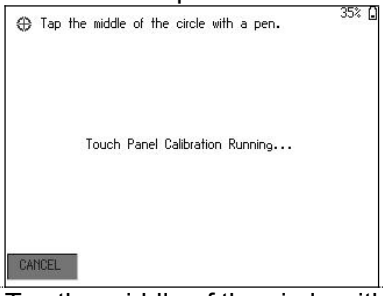
Tips	The LCR meter can work well without touch panel. But you cannot type number without touch panel. When you need to input numbers, the touch panel will be activated even it is shut down in system setting.

Procedure of setting touch panel

Step 1	Press [SYST] key to enter<SYSTEM CONFIG> page.	
Step 2	Select [TOUCH PANEL] field	
Step 3	ENABLE	Enable touch panel
	DISABLE	Disable touch panel
	CALIBRATE	Calibrate touch panel
	RESET	Reset touch panel data

Procedure to calibrate touch panel

Tips	You will need a screen pen to calibrate touch pane. Do not use your finger!

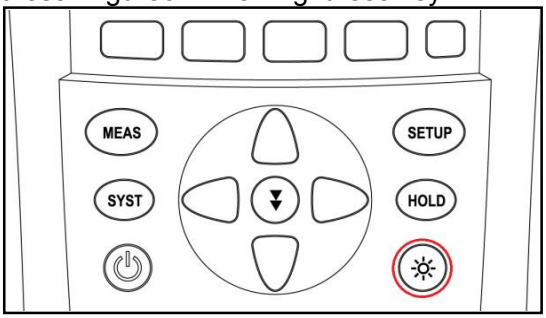
Step 1	Press[SYST]key to enter<SYSTEM CONFIG> page.
Step 2	Select[TOUCH PANEL]soft key
Step 3	Select[CALIBRATE]soft key
Step 4	Use a screen pen to click screen softly to start calibration 
Step 5	Tap the middle of the circle with a pen on Left-Up corner. Then tap the middle of the circle with a pen on the Right-
Step 6	Click on the screen softly to exit.

[BRIGHTNESS]

Four degrees of brightness 30%,50%,70%,100%

Tips	If powered by external power, the brightness is 100%. If powered by battery, the low brightness can make the meter work longer.

Also, press [☼]to change the brightness. Figure6-2The Brightness key



Procedure to change brightness

Step 1	Press [SYST] key to enter<SYSTEM CONFIG> page.	
Step 2	Select [BRIGHTNESS] field.	
Step 3	30%	30% of full brightness
	50%	50% of full brightness
	70%	70% of full brightness
	100%	Full brightness

DIM DISPLAY [DIM]

Procedure to dim display:

Step 1	Press [SYST] key to enter<SYSTEM CONFIG> page.	
Step 2	Select [DIM DISPLAY]	
Step 3	5 minutes	5 minutes later, brightness becomes 30%
	10 minutes	10 minutes later, brightness becomes
	20 minutes	20 minutes later, brightness becomes
	30 minutes	30 minutes later, brightness becomes
	OFF	Dim display off

Tips: Timer will be reset when press any keys or touch screen.

AUTO POWER OFF [APO]

Procedure of set auto power off:

Step 1	Press [SYST] to enter<SYSTEM CONFIG> page.	
Step 2	Select[APO]	
Step 3	5 minutes	5 minutes later, power off
	10 minutes	10 minutes later, power off
	20 minutes	20 minutes later, power off
	30minutes	30 minutes later, power off

	OFF	[APO]off

Tips: Timer will be reset when press any keys or touch screen.

7. RemoteControl

This chapter provides the following information to remotely control the JK802/804/808 via the USB interface.

USB-HID

The USB-Serial Interface allows you to connect JK802 /804/ 808 to a USB port on you PC.
You needn't to install a driver in Windows system.

Figure7-1 The Jinko USB logo in windows device manager

Programming guide

The instrument goes along with data communication and acquisition software. You can also go to our website: www.jk17.com to download.

Tips: If you want to program the software by yourself, you need to know some basic knowledge about USB and USB-HID. Go towww.usb.org to find out more.

Basic API functions:

```
CreateFile( devDetail-
>DevicePath,
ENERIC_READ | GENERIC_WRITE,
FILE_SHARE_READ | FILE_SHARE_WRITE,
NULL,
OPEN_EXISTING,
FILE_FLAG_OVERLAPPED
, NULL);
```

Use CreateFile to open HID equipment, equipment communication channels can be found through functionSetupDiGetInterfaceDeviceDetail.

```
ReadFile( h
Dev,
```

recvBuffer,

```
    IN_REPORT_LEN,
        &recvBytes,
    &ol);
```

Use ReadFileto read HID equipment. Report based on the data fransferred from
IN.

```
        WriteFile( hD
    ev,
    reportBuf, OUT_REPORT_LEN,
    &sendBytes,
    &ol);
```

WriteFile is used to transfer an output report to HID equipment.
Communication
Parameters VIP:0825
PID:0826
Packet size:64bits

Tips:	Any problems in programming, please contact our tech department, you can send an email to 5117jk17@163.com.
	USB is always a vailable, yo u needn't set any parameters.

Command set

Command packet

Use 64 bits/pack to transfer data; every USB-HID command is 1 pack.

Tips:	Command packets have a fixed format, the user must follow the format agreed by the instrument of writing, and otherwise it is impossible to establish communication. The command word is case-insensitive. Each command packet contains the first 60 bytes of checksum, fill in the last four bytes.

PC command pack format(a C language-defined pack structure):

```
#define program pack(1)
typedef    __packed struct
{
 uint          cSize;        //packet size 4bytes          =60
 char  sHeader[24];  //command 24bytes
 char          sPara[28];//parameter          28bytes
 uint     nSignature;        //signature          4bytes
 uint     nChecksum;         //Checksum          4bytes
} TUSB_CMD;
```

#define program pack()

Here,

cSize: 60
nSignature: 0x88805550
sCmd,sPara: reference at
SCPI set nChecksum:
32 checksum

A complete send command pack(from PC) as follows: cSize: 0x0000003C,
sHeader:
IDN? sPara:
(blank
)
nSignature:
0x8880555
0 nChecksum:
0x00002BC1

As command pack format and number of bits are fixed, so command words and parameters which are not qualified with the specified number of bytes must be filled hexadecimal. HEX:0x00.

Table 7-1A complete command pack in Hex format.

0	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***10***	***11***	***12***	***13***	***14***	***15***
00	00	00	40	49	44	4E	3F	**00**	**00**	**00**	**00**	**00**	**00**	**00**	**00**
16	***17***	***18***	***19***	***20***	***21***	***22***	***23***	***24***	***25***	***26***	***27***	***28***	***29***	***30***	***31***
00	**00**	**00**	**00**	**00**	**00**	**00**	**00**	**00**	**00**	**00**	**00**	00	00	00	00
32	***33***	***34***	***35***	***36***	***37***	***38***	***39***	***40***	***41***	***42***	***43***	***44***	***45***	***46***	***47***
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
48	***49***	***50***	***51***	***52***	***53***	***54***	***55***	***56***	***57***	***58***	***59***	***60***	***61***	***62***	***63***
00	00	00	00	00	00	00	00	88	80	55	50	00	00	2B	C1

Instrument response pack is 64 bytes, not sufficient for 0x00fill out. (Not ASCII“0”)
A response pack (from instrument):
ASCII format: JK802,REV A1.0,00000000,Jinko Instruments Inc.

To test instrument USB-HID, we have free “Jinailian HID communication tester” software, you can download from:www.jk17.com

Notation Conventions and Definitions

A definition is not a part of a command, just used in interpretation and is not included in transfer.
The following conventions and definitions are used in this chapter todescribe
USB-HID operation

Table7-2 Notation Conventions and Definitions

<>	Name of a parameter
[ ]	The content is optional
|	Select from several options

Parameter types

Parameters may be of four types as follows.

Table7-3 Available data type

Format		Samples
<NR1>	Integer	100,+100,-100
<NR2>	Rational	1.23,+1.23,-1.23
<NR3>	Floating-point	1.23E4,+1.23E4,-1.23E4,-1.23e-4
<NR4>	Floating-point with magnificatio	1.23K,1.23N,1.23U (magnification in following Table)

Table7-4 Magnification

Definition	Suffix
1E18 (EXA)	EX
1E15 (PETA)	PE
1E12 (TERA)	T
1E9 (GIGA)	G
1E6 (MEGA)	MA
1E3 (KILO)	K
1E-3 (MILLI)	M
1E-6 (MICRO)	U
1E-9 (NANO)	N
1E-12 (PICO)	P
1E-15 (PEMTO)	F
1E-18 (ATTO)	A

Command Reference

All commands in this reference are fully explained and listed in the following functional command order.

MODEL Model subsystems
BEEP Beep subsystem
RATE Rate subsystem
UNIT Unit subsystem
CHANON Chanon subsystem
HIGH High subsystem
LOW Low subsystem
FETC? Fetc? subsystem
IDN? Version check
RST Hot start subsystem

ERR Error subsystem

MODELSubsystem

model <tc-t|tc-k|tc-j|tc-n|tc-e|tc-s|tc-r|tc-b>

	To set the model
sHead	Model
sPar	<tc-t|tc-k|tc-j|tc-n|tc-e|tc-s|tc-r|tc-b>

model?

	To check the current model
sHead	Model?
sPar	
Response	<tc-t|tc-k|tc-j|tc-n|tc-e|tc-s|tc-r|tc-b>

BEEPSubsystem

beep <on|off>

	To set the beep
sHead	Beep
sPar	<on|off>

beep?

	To check the current beep
sHead	beep?
sPar	
Response	<on|off>

RATESubsystem

rate<slow|med|fast>

	To set the rate
sHead	Rate
sPar	<slow|med|fast>

rate?

	To check the current rate
sHead	rate?
sPar	
Response	<slow|med|fast>

UNIT SubSystem

unit<unit-c|unit-k|unit-f>

	To set the unit
sHead	Unit
sPar	<unit-c|unit-k|unit-f>

unit

?	To check the current unit

sHeader	Unit?
sPara	
Response	<(℃)|(K)|(F)>

CHANON SubSystem

Chanon<integer>

	To set the channel status
sHead	chanon
sPar	<integer> 8-bit data , each bit representing a channel 0: off 1: Open Example: 11111110 , channel 1 is closed , 2 to 8 channels is

chanon?

	To check the current channel status
sHead	chanon?
sPar	
Response	<integer>

HIGH SubSystem

high<float>

	To set upper limit
sHead	High
sPar	<float>

high?

	To query current upper limit
sHead	High?
sPar	
Response	<float>

LOWSubSystem

low<float>

	To set low limit
sHead	Low
sPar	<float>

low?

	To query current low limit
sHead	low?
sPar	
Response	<float>

FETC? SubSystem

FETC

	To query test result

sHeader	FETC?
sPara	
Response	<float,float,float,float,float,float,float,float> **RET>28.0,27.9,28.1*<NL>***

SYST System SubSystem

SYST:KEYL <ON | OFF | 1 | 0>

	To lock/unlock keypad and touch screen
sHead	SYST:KEYL
sPar	<ON | OFF | 1 | 0>

Tips: When the keypad and screen is locked, press[HOLD]to unlock ! Power key cannot be locked

IDN Subsystem

IDN

	To check version information
sHead	IDN?
sPar	
Response	JK802,REV A1.0,<Serial Number>,Jinko Instruments Inc.

RST Subsystem

RST

	To start in heat
sHead	RST
sPar	

Error Subsystem

ERR

	To check the message sent previously
sHead	ERR?
sPar	
Response	In the following Table

Table 7-5The Error Code and message

0, No error
1, Bad command
2, Parameter error
3, Missing parameter
4, Invalid multiplier
5, Numeric data error
6, Value too long

7, Invalid command

8. Specification

This chapter describes the specifications and supplemental performance characteristics of the JK802/804/808:

Specifications
Dimension

General Specification

The Data is Achieved under the Following Conditions:

Temperature: 23℃±5℃
Humidity: 65% R.H.
Warm-up Time: >60 minutes
Calibration Time：

12months Test Environment:

Temperature and humidity range: 15℃~35℃,80% RH or less
Storage temperature and humidity range: 10℃~40℃,10~90% RH

Thermocouple Type: T,K,J,N,E,S,R,
B Display: 5 digits
Test Speed: Fast, Medium, Slow
Max Reading: 1800.0℃
Min Reading: -200.0℃
Beep: ON/OFF
Interface: USB-
HID Program Language: SCPI
Auxiliary Function: Keypad Lock

Accuracies

Instrument Accuracy does not include the standard contact compenstation Precision.

Model	Range（℃）	Accuracy（℃）
T	-150℃ to 0℃	±1.0℃
	0℃ to 400℃	±0.8℃
K	-100℃ to 0℃	±1.2℃
	0℃ to 1350℃	±0.8℃
J	-100℃ to 0℃	±1.0℃
	0℃ to1200℃	±0.7℃
N	-100℃ to 0℃	±1.5℃
	0℃ to 1300℃	±0.9℃
E	-100℃ to 0℃	±0.9℃
	0℃ to 850℃	±0.7℃
S	0℃ to 100℃	±4.5℃
	100℃ to 300℃	±3.0℃
	300℃ to 1750℃	±2.2℃
R	0℃ to 100℃	±4.5℃
	100℃ to 300℃	±3.0℃
	300℃ to 1750℃	±2.2℃
B	600℃ to 800℃	±5.5℃
	800℃ to 1000℃	±3.8℃
	1000℃ to 1800℃	±2.5℃

Standard connection compensation need to add ±0.5℃ based on thermocouple measuring accuracy.

The measuring accuracy of thermocouple sensor gives priority to sensor supplier's standard.

Dimension

Jinko Instruments

Changzhou
Jinailian Electronic Technology
Co.,Ltd

JK802/804/808
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