#### 1.1 What is RT809H?

RT809H is a kind of cost-effective, reliable and fast universal programmer series, suitable for all the computers or laptops based on Pentium IV processors or the better processors. When working it can communicate with the USB2.0 fast port of computer directly, with driver program inside software, which makes installing operation more convenient.

#### 1.2 Programmer Characteristic:

- · Supporting Windows XP, Windows Vista, Windows 7, windows 8 and windows 10
- Do not need external power source, with low-power consumption, can be used as VGA signal generator, easy to repair.
- With Intellisense functionality, when reading and writing most types of chip off line, it support the function of intelligent identification and being put at will.
- Support 24/25/93/95 series serial SPI Flash. EEPROM offline read and write.
- Support 26/27/28/29/30/39/49/50 series NOR Flash/ PROM read and write;
- · Support TSOP48/BGA footprint NAND Flash parameter automatic identification and offline reading;
- Support the mainstream device, including E/EPROM, MCU, EC, SPI NOR flash, parallel NOR flash, SPI NAND, parallel NAND, ONENAND, MCP, EMMC, EMCP, etc.

NAND_AUTO	Can recognize most of the NAND and go on to read and write.
EMMC_AUTO	Using BGA socket, supporting EMMC off-line fast read- writing(8bit main line)
EMMC_AUTO_4BIT	Using BGA socket, supporting EMMC off-line fast read- writing(4bit main line)
EMMC_AUTO_ISP	Read-write EMMC with flying line way.(1bit main line)

Support the EMMC recognition in the on-line or off-line way, BOOT/USER/RPOM/GPP area read and write.

- I2C/ serial port ISP has strong function, compatible with most of the LCD chip scheme, can check the printing
  information on line, read and write NOR/NAND/EMMC chip on line, read and write the EC chip of laptop on line or
  off line.
- Support the IT8/KB90/NPCE/NEC16 series of laptop mainboard's EC chip to read and write.
- High-speed USB port,USB driver with WHQL certification, the reading and writing speed can be as much as 25 MB/S.
- Full driver structure, free software upgrade, the universal switch socket to reduce the using cost for the user.

#### **1.3 Instruction Tissue**

This instruction consists of three parts:

The part one is to introduce RT809H, including the system requirement, software and hardware installing, etc ;

The part two is the detailed instruction of software commands and each function;

The part three is appendix, including the user support and the wrong message.

#### 1.4 System Requirement

Minimum system configuration:

- Pentium IV and above compatibles, desktop or laptop computer, at least a universal serial main line port conform to USB2.0 high-speed standard.
- Windows XP/Vista operating system.
- The hard disk with at least 1G free space.

#### 1.5 Programmer External Port Instruction

• Front view : HMI is reserved man-machine port, also be used by the footprint chip of TSOP56, BGA64, etc.



DC lateral view : Except the USB outlet connected to the computer, there is a DC power supply outlet, 9-12V
power supply range(negative electrode outside and positive electrode inside), switching automatically between
external power source and USB power supply.

(Please use the power of good quality, or the programmer will may be damaged and no warranty.)



· Flashing port lateral view:



- Port instruction:
- . The leftmost button is the power button, also as the VGA signal switching button;
- The IDC10 black outlet at the middle is ISP port, the main function is ISP of all sorts of MCU and flying line to read and write EMMC, etc. Use the Dupont line to connect this port with the key signal of the board waiting for flashing, one to one correspondence connection.
- "VGA ISP"can be used as VGA signal output, be connected with the VGA port of the board when flashing.
- "VGA IN" is the VGA signal input, can be connected with the computer graphics.

When unconnected, VGA ISP will output the VGA signal produced by itself; When connected, VGA ISP output the computer graphics signal; • "HDMI Digital high-definition interface" can connect with the HMDI port of the flashing board.

#### 1.6 Programmer Packing

• The standard packing:

Programmer mainframe 1 DIP 48 pin simple soldering board 1 SOP simple soldering board 1 USB2.0 high-speed cable 1 VGA connecting line 1



![](images/screenshot\_1545105337614.png

## **II** Installing

If you are the first time to use RT809H USB universal programmer, please surf the programmer official web to download the latest software.

http://www.ifix.net.cn/thread-56912-1-1.html

Like this:

The file downloaded is ZIP format, should be unzipped before using.

Before unzipped	RUBBERT 2	
After unzipped	iFix prog RH30541300 SHINGLEXCE	

### 2.1 Software download

If you are the first time to use RT809H USB universal programmer, please surf the programmer official web to download the latest software. Website: http://www.ifix.net.cn/thread-56912-1-1.html or Click here to enter directly Multilanguage version, 20181116 RT809H 20181116 ENG.rar (55.79 MB, 下载次数: 1112) YouTube RT809H Video tutorials, 20180920 Part YouTube RT809H Video tutorials-180920.doc (50 KB, 下载次数: 231) **Toolchain for TV repair:** 1460) ToolChain RT809H ENG.part1.rar (100 MB, 下载次数: 1460) 1289) ToolChain RT809H ENG.part2.rar (100 MB, 下载次数: 1289) 1164) ToolChain RT809H ENG.part3.rar (79.02 MB, 下載次数: 1164) \*\*\*\*\*\* Like this: The downloaded file is RAR format, should be unzipped before using. 322 RU1810(4)=) 2(0)1 SHILLS FINIS (relr Download file: ■ RT809H\_20181... 58,506,395 58,498,908 应用程序 2018/11/17 1... CA4ACO...

# 2.2 Installing the Main Software

#### Installation process

Step 1 the mouse to this icon, double-click the right mouse button to start installation;



Step 2 the language in demand, if you need Chinese click "OK" directly;

RT809H	
iFix prog	Please select a language.
	[English 💌
	OK Cancel

Step 3 the "Next";



Step 4't change the path, click "Next";

	×
se Install Location	
ose the folder in which to install RT809H.	
T809H in the following folder. To install in a different e and select another folder. Click Next to continue. b of free disk space is required.	
Browse	
echnology Co.,Ltd	
ł	echnology Co.,Ltd Cancel

# Step 5 the "Next" again;

Ma RT809H	
Fix prog	Select shortcuts Select additional shortcuts.
	Select any additional shortcuts for RT809H that you would like created by the installation:
🔽 Create a Deskt	op icon
Copyright 2018, Higi	n Core Electronic Technology Co.,Ltd < Back Next > Cancel

## Step 6 the "Install";

8 RT809H	
Fix prog	Ready to Install Setup is now ready to begin installing RT809H on your computer.
Click Install to contin settings.	ue with the installation, or click Back if you want to review or change any
Destination folder: D:\RT809H	
Additional shortcuts Create a Desktop	•
Copyright 2018, High (	lore Electronic Technology Co.,Ltd
	< Back Install Cancel

Pla RT809H	
Fix	<b>Installing</b> Please wait while RT809H is being installed.
Please wait while RT	809H is being installed. The installation will take several minutes.
Copy: List.xls	
Copyright 2018, High	Core Electronic Technology Co.,Ltd
	< Back Next > Cancel

Step 7 to install, waiting to finish the progress bar;

Step 8 the "Finish", at this point three windows will pop up, if you don't need to view Readme or visit product web site, you can cancel the three ticks and then click "Finish".

1Pla prag RT809H	
	Completing the RT809H Setup Wizard
	RT809H has been installed on your computer. Click Finish to close this wizard.
	☑ Launch RT809H ☑ View Readme
	Visit product web site
	Finish Cancel

In the case where the box in front of "Launch RT809H" has a tick, the driver will be installed automatically;

If you cancelled all the ticks, clicking "Finish" is OK, the driver also will be installed automatically when you open the RT809H icon on the desktop at first time.

In the case where the box in front of "Launch RT809H" has a tick, the driver will be installed automatically;

If you cancelled all the ticks, clicking "Finish" is OK, the driver also will be installed automatically when you open the RT809H icon on the desktop at first time.

#### Automatic installation driver process:

1809H				
Â	开始安装编程器 备的驱动, 请点"取消"按钮 器。	 	升级安装或者 ,安装前请拔	 
			ОК	Cancel

Two black frames flashed and quickly disappeared, that is a normal phenomenon.



RT809H software main interface

18-17 19-28-28 March			he managers as we a
Smart Identify SmartID	Auto ISP AutoISP	Buffer Buffer	Tool Chain <u>T</u> oolchain
Read	Enter chip printing	History	ок
Save	Manufacturers	Partnumber	
Open	ABLIC	28032116@TSÖP48 A25L010	<u>*</u>
Write	ACE TECHNOLOGY ACTRANS SYSTEM INC ADESTO TECHN.	A25L010(ISP) A25L010@SOP8-150 A25L010@SOP8-200	
Verify	AIT SEMICONDUCTOR AKM(ASAHI KASEI)	A25L010@SOP8-200 A25L010@TSSOP8 A25L010@USON8	
Erase	AMD	∆25I 010@WSON8	
Blank	001: Programmer is not connec	ted.	
Protect			
Cancel			
RT809H 编程器			
	4		

#### RT809H programmer is not connected:

F) Device (D) Operation	n (P) Buffer (U) Setting (N)	TOOIS (L) Help (H) Langu	lage ( <u>G</u> )
Smart Identify <u>S</u> martID	Auto ISP AutoISP	Buffer Buffer	Tool Chain <u>T</u> oolchain
Read	Enter chip printing	History	ок
Save	Manufacturers	Partnumber	
Open	ABLIC	28032116@TSOP48 A25L010	<u> </u>
Write	ACE TECHNOLOGY ACTRANS SYSTEM INC	A25L010(ISP) A25L010@S0P8-150	
⊻erify	ADESTO TECHN. AIT SEMICONDUCTOR AKM(ASAHI KASEI)	A25L010@SOP8-200 A25L010@TSSOP8 A25L010@USON8	
Erase	ΔMD T	4251.010@WSON8	•
Blank	001: 序列号: 002: >	-OK	<
Protect			
Cancel			
RT809H 编程器			

RT809H programmer is connected:

The serial number is the important document of technical support and warranty. Please do not leak, properly kept.

# 2.3 Manual Installing the drivers

Step 1 the computer with the programmer using the UCB line in packing, the computer will tell that there is a new hardware;

Search automatically for updated driver software Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.
Browse my computer for driver software Locate and install driver software manually.

Step 2 "Browse my computer for driver software";



Step 3 the arrow at the right side down, change the path into "D:\809H\DRIVER", then click "Next";

G	Update Driver Software - Mstar USB Debug Tool	
G	Browse for driver software on your computer Bearch for driver software in this location: D:\RT809H\DRIVER Browse Include subfolders	
	Let me pick from a list of device drivers on my computer This list will show installed driver software compatible with the device, and all driver software in the same category as the device.	
	Next Cancel	

Browse for driver soft	Browse For Folder	×
	Select the folder that contains drivers for y	our hardware.
earch for driver software in t		
D:\RT809H\DRIVER	> 🍶 RT809F	*
Include subfolders	A 📕 RT809H	
	Þ 🎍 BMP Þ 🎴 CVT_GMI	
	CVT_RTD266X	
	DRIVER	
	D 🎉 GMI	-
Let me pick from This list will show insta software in the same ci	Folder: DRIVER	
	ОК	Cancel
		ill.

Step 4 "Complete", USB Serial Converter A driver has installed already;

	×	
🚱 🧕 Update Driver Software - USB Serial Converter A		
	1	
The best driver software for your device is already installed		
Windows has determined the driver software for your device is up to date.		
USB Serial Converter A		
•		
	lose	

Browse for driver soft	Browse For Folder	
browse for driver sold	Select the folder that contains drivers for your	hardware.
Search for driver software in t		
D:\RT809H\DRIVER	> 🎉 RT809F	~
Include subfolders	A M RT809H BMP	
	CVT_GMI	
	CVT_RTD266X	
	DRIVER	
Let me pick from	D 🎉 GMI	-
This list will show insta	Folder: DRIVER	
software in the same c		
	ОК	Cancel

Step 5 go on to install the driver of USB Serial Converter B,click "Next";

Step 6 "complete", the driver has been installed already;

Update Driver Software - USB Serial Converter B	×
Windows has successfully updated your driver software	
Windows has finished installing the driver software for this device:	
USB Serial Converter B	
	Close

Open the operating software of 809H, the serial number of programmer will show. The serial number is the important

document of technical support and warranty.

Please do not leak, properly kept.

	on (P) Buffer (U) Setting (N)	Tools (L) Help (H) Lang	uage ( <u>G</u> )
Smart Identify <u>S</u> martID	Auto ISP AutoISP	Buffer <u>B</u> uffer	Tool Chain Toolchain
Read	Enter chip printing	History	016
Save	Manufacturers	▼ Partnumber	
Open	ABLIC	28032116@TSOP48 A25L010	
Write	ACE TECHNOLOGY ACTRANS SYSTEM INC	A25L010(ISP) A25L010@SOP8-150	
Verify	ADESTO TECHN. AIT SEMICONDUCTOR AKM(ASAHI KASEI)	A25L010@SOP8-200 A25L010@TSSOP8 A25L010@USON8	
Erase	AMD	4251 010@WSON8	
Blank	001: 序列号: 002: >	-OK	<
Protect			
Cancel			
<u>C</u> ancel RT809H 编程器			
	4		

# 2.4 Installing tool chain panel

If it is not installed or the path is not correct, when we click "tool chain panel" on the main software interface,

Sindowing the following ingule, it is an une serial numbers.

as shown in the following figure, it is all the serial numbers.

Тос	plck	nai	in_RT809H.exe					
It	is	а	self-extracting	file	package,	just	unzip	it





Move the mouse over this icon, double-click the left-click, or right-click to select Open to start the installation



Click "Unzip

Note: if you are not familiar with [Path] do not modify it at will.

WinRAR 自解	王文件			-		×
		/RT809H 文件夹 _RT809H exe 中提 t\DDR_Phase_toolt		haze_22	2 tbl. svr	awork
	解压进度					
			解压		取消	

If installed, there will b	e prompted to select "All yes"or	"Cancel"
	确认文件替换	×
	下列文件已经存在 AML\Amlogic.apm	
	你是否确实要将已经存在的文件: 11,579 字节 修改于 2018/4/2 10:59 替换为这个吗? 11,579 字节 修改于 2018/4/2 10:59	
	是( <u>u</u> )         全部选是( <u>k</u> )         重命名( <u>k</u> )           否( <u>u</u> )         全部选否( <u>L</u> )         取消( <u>c</u> )	
	Choose all Yes to continue unzippin	
<b>WinRAR</b> 自解日	文件	- 🗆 X
	正解压文件到 D:/ET809H 文件夹 正在从 ToolChain_RT809H.exe 中提取	
	正在解压 RTD\rticev4-5.0.0.704-release\vip_7 解压进度	support\Skin\xNR.bap
28	潮行正	取消

When the unzipping is complete, the interface automatically disappears

From the main software interface

Click the "Tool chain Panel"





## III The Software Instruction

#### 3.1 Software Interface Instruction

Smart Identify SmartID	Auto ISP AutoISP Buffer Buffer	Tool Chain Toolchain
Read	Enter chip printing History	ок
Save	Manufacturers Partnumber	
Open	ABLIC 28032116@TSOP48 A25L010	
Write	ACE TECHNOLOGY A25L010(ISP) ACTRANS SYSTEM INC A25L010@SOP8-150	
⊻erify	ADESTO TECHN. A25L010@SOP8-200 AIT SEMICONDUCTOR A25L010@TSSOP8 AKM(ASAHI KASEI) A25L010@USON8	
Erase		
Blank	001: Programmer is not connected.	
Protect		
Cancel		
RT809H 编程器		
	4	



Smart Identify <u>S</u> martID	Click this icon to recognize intelligently the type of most of the chip,easy to operate.
Auto ISP AutoISP	When connecting the mainboard to flash, click this icon it will recognize the mainboard scheme, easy to operate.
Buffer <u>B</u> uffer	Click this icon to check,read or write the hexadecimal data.
Tool Chain <u>I</u> oolchain	Click this icon to jump into the third-party flashing software.
Enter chip printing History	To input the printing letter on the chip type.
Ωκ	Click it after inputting the printing letter.



Software config	
Programming settings of serial devic: ISP setting	The others are not needed to select, when ISP online flashing the mainboard, you should change the line sequence by yourself in the ISP setting.
Setting (N) Tools (L) Help (H) Language ( Programming setup options (O) Uninstall USB driver (U) Reinstall USB driver (D)	Click this icon to uninstall the programmer driver.
Setting (N) Tools (L) Help (H) Language ( Programming setup options (O) Uninstall USB driver (U) Reinstall USB driver (D) USB firmware repair (R)	Click this icon to reinstall the programmer driver.
Reinstall USB driver (D) USB firmware repair (R) Add chip partnumber (A)	Click this icon to repair the programmer firmware.
USB firmware repair (R) Add chip partnumber (A) Add ISP software (I)	Click this icon to add the new chip.
Add chip partnumber (A) Add ISP software (I) TV Tool setting (T)	Click this icon to add the new flashing software.
Add chip partnumber (A) Add ISP software (I) TV Tool setting (T) Serial Print Information (P)	To set the parameters like serial port line sequence,Baud rate and so on.
Add ISP software (I) TV Tool setting (T) Serial Print Information (P)	Click this icon to check the priting information of the repair mainboard.

Serial Print Information (P) USB Serial port selftest (S)	Click this icon to self-test the serial port.		
USB Voltage detection (C)	onok and toon to sen-test the senal port.		
USB Serial port selftest (S) USB Voltage detection (C)	Click this icon to to BOOT upgrade.		
RT809H BOOT Update(B)			
Parameter setting	Click the icon of parameter setting to set the ISP on- line serial port.		
Serial Print	Click "serial port print"to open the serial port printing function.		
001: Programmer is not connected.	Display the printing information here.		

3.2 The Toolchain

# **IV** Detailed Operation

- 4.1 24XX,25XX,93XX Series Chips' Reading and Writing
- 4.2 PLCC Encapsulation Chip's Reading and Writing
- 4.3 TSOP48 Encapsulation Chip's Reading and Writing
- 4.4 EMMC's Reading
- 4.5 Laptop EC Chip's Reading and Writing

# 4.1 24XX,25XX,93XX Series Chips' Reading and Writing

#### 4.1.1 93XX's Reading and Writing

Step 1:93XX chip's selecting

Enter chip printing		History	
93			<u>O</u> K
Manufacturers		Partnumber	
IALL	*	93AA46	
ACE TECHNOLOGY		93AA46(8BIT)	
AIT SEMICONDUCTOR		93AA46(8BIT)(ISP)	
AKM(ASAHI KASEI)		93AA46(8BIT)@SOIC8	
ANACHIP		93AA46(8BIT)@SOIC8-200	
APLUS FLASH TECH.		93AA46(ISP)	
ATC		93AA46@SOIC8	
ATMEL	-	934446@SOIC8-200	

Input "93" in the "Input Chip Printing Letter", select the detailed chip type at the lower right, then click "OK" after selecting.



Use the putting position of simple switch board, when welding chip the 1 foot is at the lower left. (Support the 93XX,24XX,25XX to be placed at will)



When using the bounce seat, one foot of the chip should correspond to the top left corner.



Step 2: Reading the chip

Click "Read" in the icon.

Read

Change the name of the file read.

File <u>n</u> ame:	93C66_20181221_112802	
Save as type:	BIN(*.BIN)	

Select the saving path at the top right corner.

🕽 💽 🗢 🔚 Desktop 🔸			• 4 <sub>7</sub>	م
Organize 🔻 New folder				d
☆ Favorites				9012 kb9012
E Desktop		5	1	Add a search filter Date modified: Size:
🚺 Downloads 🗐 配 Google 云端列	Libraries	WPS网盘	Administ	

Step 3 the chip

Click "Write" in the picture, and then click "Open"

en
3

Select the file going to be written and click "Open".



Then it will hint that the writing succeed, after verifying the writing will finish.

028: Verification successful, Elapsed time: 0.081 seconds . 029: Elapsed time: 0.647 seconds, average speed of 1582 bytes/sec. 030: > -OK 031: Chip pins contact is detected OK. 032: Start writing chip ..... 033: Auto erasing .. 034: Erase successful, Elapsed time: 0.055 seconds. 035: Start writing. 036: Write successful, Elapsed time: 0.485 seconds. 037: Auto verifying .. 038: Verification successful, Elapsed time: 0.082 seconds. 039: Elapsed time: 0.644 seconds, average speed of 1590 bytes/sec. -OK-040: >--041: C:\USERS\ADMINISTRATOR\DESKTOP\93C66\_20181221\_112802.BIN 042: File has been loaded, checksum: 16bits\_0x06E1 , 32bits\_0x000106E1 : 4

#### 4.1.2 24XX,25XX's Reading and Writing

Step 1:24,25 chip's selecting

Use Smart Identify SmartID to identify the type of the chip, easy to use.

Or input the letter of chip.

Enter chip printing	History	
24_01	•	<u>ο</u> κ
Manufacturers	Partnumber	
GENEREAL MODE	24_01 24_01_1.8V	

Step 2 other steps are the same with 93XX's.

# 4.2 PLCC Encapsulation Chip's Reading and Writing

According to the difference of the encapsulation, when selecting the different switching seat to install, the user should follow the principle that make the gap upwards and the bottom aligned. (Please buy the established switching seat on the official website.)



Then input the type in the "Enter chip printing", the way of reading, saving and writing are the same with 93XX.

Enter chip printing	History	
W49F002U@PLCC32	-	ОК
Manufacturers	Partnumber	
Winbond	W49F002U W49F002U@PLCC32	

## 4.3 TSOP48 Encapsulation Chip's Reading and Writing

Select simple seat or the bounce seat with 48 feet;



□Put the chip on the programmer, click the icon to see if it can recognize the type of the chip;

Can also enter the chip printing.

Enter chip printing		History	
		•	OK
Manufacturers		Partnumber	
ALL	~	24_01	A
ALL		24_02	
AMD		24_02 #ISP	
AMIC		24_04	
APLUS FLASH		24 04 #ISP	
ATMEL		24_08	
AUO		24 08 #ISP	
BergMicro		24 1024	-

If it is the NAND chip, input the "NAND \_AUTO" in the "Enter chip printing".

Enter chip printing	History	
NAND_AUTO	-	OK
Manufacturers	Partnumber	
ALL ALL MTK ST	MT53XX_NAND_BOOT NAND_AUTO NAND_ID NAND01GW3B2BN6@ NAND256W3A@TSOP4	TSOP48

The way of reading, saving and writing are the same with 93XX.

Attention using the bounce seat, please check carefully if contacts are in good condition. If the reading fail, try more times. If it still fails, please weld on the simple board to try. Otherwise it is important to weld well and clean the soldering paste, or it is easy to make some mistake under situation of high frequency.

## 4.4 EMMC's Reading

Choose the approved EMMC seat, don't use the third-party seat, the sign of the chip should be in the direction of lower left. (EMMC must be planted beads, and be cleaned up or it will make the mistake easily)



Click Smart Identify SmartID to choose the printing letter, the default is EMMC\_AUTO\_4BIT.Can also input "EMMC" in the

"Enter chip printing".

Enter chip printing	History	
emmc	•	ОК
Manufacturers	Partnumber	
ALL	EMMC_AUTO EMMC_AUTO_4BIT EMMC_AUTO_ISP	

EMMC\_AUTO\_4BIT reading, but with high stability, higher successful rate, software default.

EMMC\_AUTO\_8BIT reading, suitable for most of the EMMC chips.

If read and write on line, please choose EMMC\_AUTO\_ISP.

Click "Setting" then the dialog box in the middle pop up.

		ALL		EMMC_AU
Write		eMMC		<b>X</b>
Verify		eMMC Area	VCCQ volt	
		💟 User	3.3V	
Erase		Boot1	1.8V	
ad block detection I	021	RPMB		F
Setting (N)	023			w
	025			
Cancel	026 027 028	确定	取消	

The left is the 5 partitions of EMMC, the "USER" is the user area, "RQMB" is the encryption area, the data in it can not

come out so don't have to be chosen.

The right is VCCQ power supply choice, it's 3V generally, very few chip need to choose 1.8V.

The success hint of reading chips:



The software will create a folder automatically after EMMC already read the data, there will be the data of

corresponding area, it's alright to save the whole folder.



(When the capacity of EMMC is more than 4G, the file read be divided into 2 parts automatically, it is normal that there

will be 5 files.)

When writing EMMC, drag just an icon into the display area of software then all the file will be loaded to the software.