



# VC\_Burner DeBugger Specification

Version V1.0.0

Copyright©2022

## Document resume

Version	Date	Develop/revise content	Edition	Approve
V1.0.0	2022.04.24	First Edition	Shihai Mo	Hong Xv

## Content

1. Product overview.....	4
1.1. Characteristics.....	5
2. Main parameters.....	6
2.1. Static requirements .....	7
2.2. Electrical characteristics .....	7
3. Appearance size.....	8
4. indicator light description.....	9
5. Pin definition.....	10
6. Schematic .....	12
7. Applicable product model.....	12
8. Product packaging information .....	13
9. Contact US .....	13
Disclaimer and copyright notice .....	14
Notice .....	14

## 1. Product overview

VC\_Burner DeBugger is a burning tool designed for Ai-Thinker's offline voice module, which can upgrade all products of the VC series.

The main control uses a P2064AF2 chip with a high -performance 32 -bit RISC kernel with a maximum frequency of 120MHz. With the ability of the USB device character to automatically, it guarantees the burning speed while ensuring the stability of the records.

## 1.1. Characteristics

- Processor:
  - ✓ High -performance 32 -bit RISC
  - ✓ Configurable CPU frequency, up to 120MHz
- USB version :
  - ✓ USB2.0
- Compatibility system
  - ✓ Windows 7 X64 and above versions (do not support the Linux system)
- Compatible offline voice products:
  - ✓ VC-01
  - ✓ VC-02
  - ✓ VC-01-Kit
  - ✓ VC-02-Kit
- Power supply voltage: 5V
- Output voltage: 5V
- Output interface: JTAG interface
- Software compatibility: special burning software (Windows system) system

## 2. Main parameters

**Table 1 Description of the main parameters**

<b>Model</b>	VC_Burner
<b>Suitbale module</b>	VC-01、VC-02
<b>Size</b>	65.2*23.0(±0.2)mm
<b>Working temperature</b>	-40 °C ~ 85 °C
<b>Storage environment</b>	-40 °C ~ 125 °C , < 90%RH
<b>Power supply</b>	Power supply voltage 5V current is greater than 500mA
<b>Interfaces</b>	JTAG
<b>Compatibility system</b>	Windows7 X64 and above systems
<b>USB version</b>	USB 2.0

## 2.1. Static requirements

VC\_Burner DeBugger is an electrostatic sensitive device that requires special precautions during handling.



Figure 1 ESD anti-static diagram

## 2.2. Electrical characteristics

Table 2 Electrical Characteristics Table

Parameters	Conditions	Min. value	Typical value	Max. value	Unit	
Supply voltage	VDD	4.5	5	5.3	V	
I/O	$V_{IL}/V_{IH}$	-	-0.3/0.75VIO	-	0.25VIO/4.5	V
	$V_{OL}/V_{OH}$	-	N/0.8VIO	-	0.1VIO/N	V

### 3. Appearance size

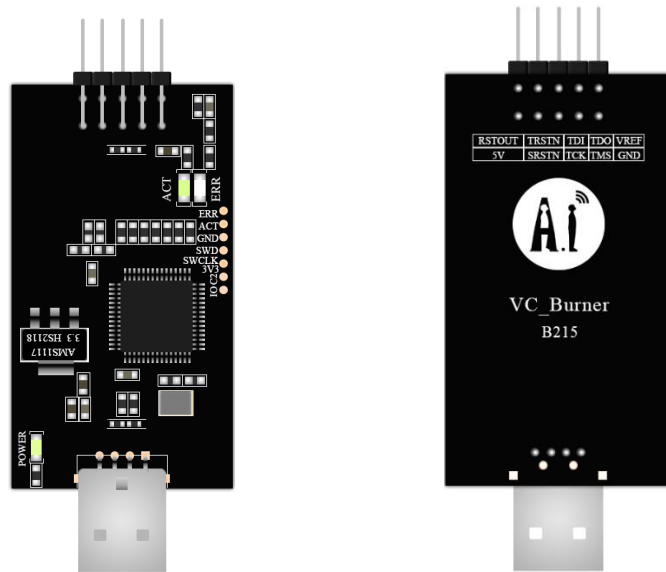


Figure 2 VC-Burner Debugger appearance(for reference only)

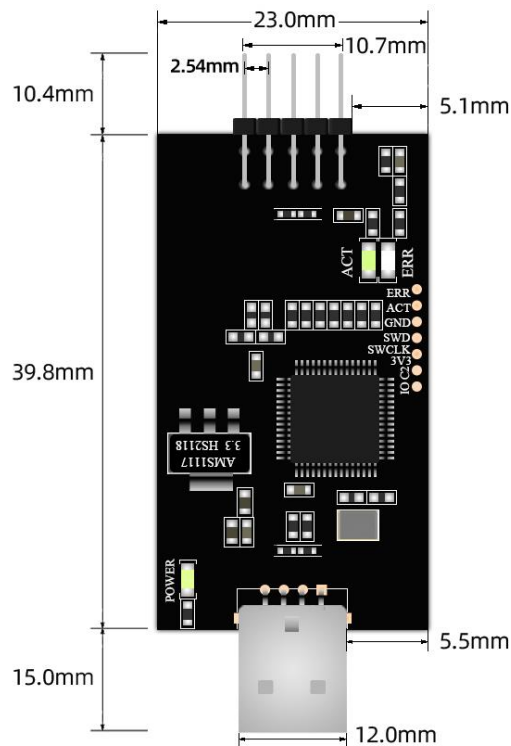


Figure 3 Development board size



## 4. indicator light description

VC\_Burner has a total of 3 indicators, namely: "Power" indicator, "ACT" indicator and "ERR" indicator. As shown below:

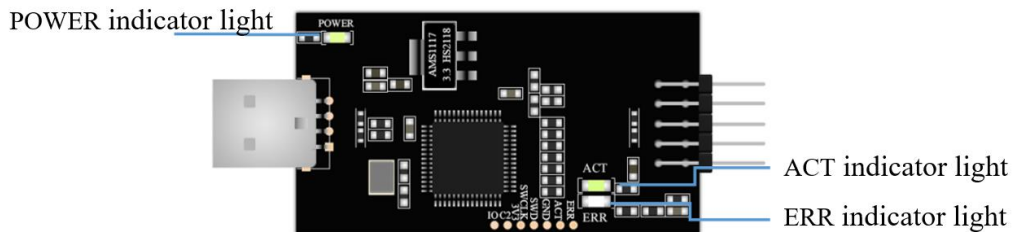


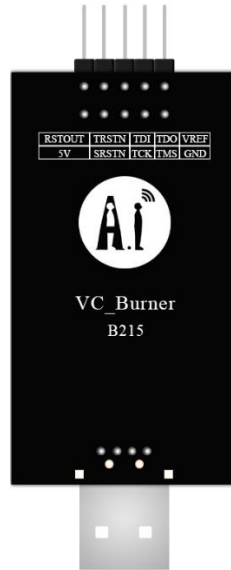
Figure 4 VC\_Burner indicator light position

Table 3 indicator light status

indicator light	Features	Color	LED state	
“POWER”	Power indicator	green	Power-on	Always bright
			Power-off	Extinguish
“ACT”	Burn indication	green	JTAG has been connected, not burned	Extinguish
			Burning	Cycle flashes
			Finish	Cycle flashes, VC is extinguished after resetting
“ERR”	Burning error instructions	red	JTAG is not connected	Always bright
			Burning errors	Always bright
			JTAG has been connected, not burned	Extinguish

## 5. Pin definition

VC\_Burner has a total of 10 interface. As shown in below pin diagram, the pin function definition table is the interface definition.



**Figure 5 debugger pin diagram (Bottom view)**

**Table 4 Pin function definition table**

Pin sequence	Name	Function description
1	VREF	Reference voltage input
2	TDO	JTAG test data output
3	TDI	JTAG test data input
4	TRSTN	Default Suspended
5	RSTOUT	3.3V output
6	5V	5V output
7	SRSTN	JTAG Signaling signal output
8	TCK	JTAG Clock line
9	TMS	JTAG Data and mode control pin
10	GND	Digital power

## 6. Schematic

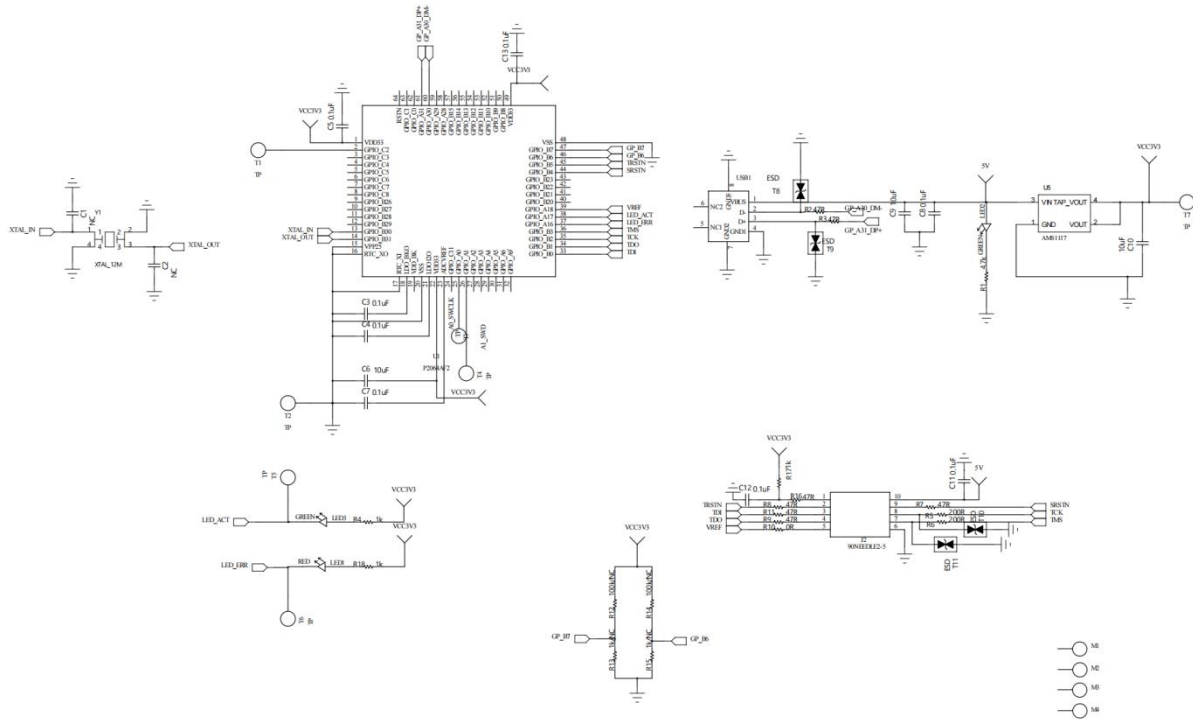


Figure 6 Debugger schematic diagram

## 7. Applicable product model

Table 5 Applicable product model table

Product model	Power supply	Package	Size
VC-01	3.6-5V, I>500mA	SMD-24	25.5*24*3.2(±0.2)mm
VC-02	3.6-5V, I>500mA	SMD-20	18*17*3.2(±0.2)mm
VC-02-Kit	5V, I>500mA	DIP-19	42.2*35.6(±0.2)mm
VC-01-Kit	5V, I>500mA	DIP-19	42.2*35.6(±0.2)mm

Product related information: <https://docs.ai-thinker.com>

## 8. Product packaging information

Table 6 packaging information table

Packing list	Packaging method	per package number (Static bag bag)	per package number (sealed bag)
VC_Burner	Static bag	1pcs	20pcs

## 9. Contact US

[Ai-Thinker official website](#)

[Office forum](#)

[Develop DOCS](#)

[LinkedIn](#)

[Tmall shop](#)

[Taobao shop](#)

[Alibaba shop](#)

[Technical support email: support@aithinker.com](mailto:support@aithinker.com)

[Domestic business cooperation: sales@aithinker.com](mailto:sales@aithinker.com)

[Overseas business cooperation: overseas@aithinker.com](mailto:overseas@aithinker.com)

Company Address: Room 403,408-410, Block C, Huafeng Smart Innovation Port, Gushu 2nd Road, Xixiang, Baoan District, Shenzhen.

Tel: 0755-29162996



Wechat mini program



Wechat official account

## Disclaimer and copyright notice

The information in this article, including the URL address for reference, is subject to change without notice.

The document is provided "as is" without any guarantee responsibility, including any guarantee for merchantability, suitability for a specific purpose, or non-infringement, and any guarantee mentioned elsewhere in any proposal, specification or sample. This document does not bear any responsibility, including the responsibility for infringement of any patent rights arising from the use of the information in this document. This document does not grant any license for the use of intellectual property rights in estoppel or other ways, whether express or implied.

The test data obtained in the article are all obtained from Ai-Thinker's laboratory tests, and the actual results may vary slightly.

All brand names, trademarks and registered trademarks mentioned in this article are the property of their respective owners, and it is hereby declared.

The final interpretation right belongs to Shenzhen Ai-Thinker Technology Co.,Ltd.

## Notice

Due to product version upgrades or other reasons, the contents of this manual may be changed.

Shenzhen Ai-Thinker Technology Co.,Ltd. reserves the right to modify the contents of this manual without any notice or prompt.

This manual is only used as a guide. Shenzhen Ai-Thinker Technology Co.,Ltd. makes every effort to provide accurate information in this manual. However, Shenzhen Ai-Thinker Technology Co.,Ltd. does not guarantee that the contents of the manual are completely free of errors. All statements and information in this manual and the suggestion does not constitute any express or implied guarantee.