

Module ASR

SKU:M147

MODULE
ASR

M5 ASR

EXT.GPIO 2.54-8P

MIC

DIP SWITCH

M5STACK

DEBUG RST

USB-C ONLY DATA NOT FOR POWER

SPK 8Ω@0.8W

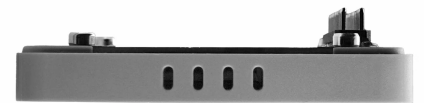
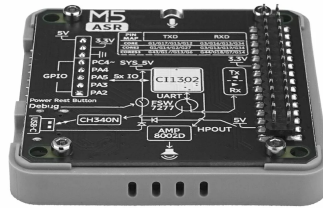
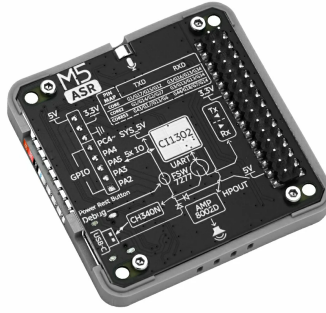
UART INTERFACE

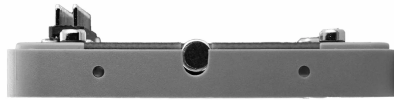
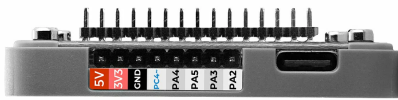
COMPATIBLE & NOT INCLUDE

zh en ja ko

CI1302
OFFLINE VOICE RECOGNITION
53 BUILT-IN INSTRUCTIONS
(MAX TO 300 INSTRUCTIONS)

CORE CORE2 CORE S3





Description

Module ASR is an AI intelligent offline voice module designed based on the CI1302 chip. Equipped with a microphone for clear audio acquisition and a built-in speaker for high-quality audio feedback. It supports mid-session voice interruption, allowing for flexible interruption and quick response to new commands during recognition. Integrated AEC (Echo Cancellation) effectively removes echoes and noise interference, improving recognition accuracy. The product comes preloaded with 53 English wake-up and feedback command words and supports activating the device through UART commands or voice keyword triggers. Users can customize recognition words in **Chinese, English, Japanese, and Korean** by regenerating firmware, supporting up to 300 command words. The device communicates via a UART interface and allows switching between different UART pins through a DIP switch. It is ideal for AI assistants, smart homes, security monitoring, automotive systems, robotics & smart hardware, and healthcare applications — a perfect choice for intelligent voice interaction.

Features

- Intelligent offline voice module
- AEC noise reduction processing
- Built-in 53 English commands; support up to 300 commands
- UART communication interface
- Support for custom wake-up words
- Firmware burning via reserved USB Type-C interface
- Equipped with microphone and built-in speaker
- Development Platform
 - UiFlow2

- Arduino

| Includes

- 1 x Module ASR

| Applications

- AI Assistant
- Smart Home
- Security Monitoring
- Vehicle System
- Robotics & Smart Hardware
- Healthcare

| Specifications

Specification	Parameter
AI Voice Chip	CI1302
Command Words	Up to 300 commands supported; 53 preset commands from factory
Wake-up Method	Voice keyword or UART serial communication to activate device
Microphone	Analog microphone, model GMI4527P-2C-32db
Speaker	Chamber speaker 8Ω@0.8W (used for wake-up feedback output)
Communication	UART serial communication, default baud rate: 115200@8N1
Noise Reduction	AEC echo cancellation noise reduction
Wake-up Range	Ambient noise 40dB: up to 6.4m Ambient noise 54dB: up to 1.8m
Power Consumption	Standby: DC 5V@52.14mA Working: Low volume: DC 5V@43.38mA Medium volume: DC 5V@85.26mA High volume: DC 5V@161.34mA
Product Size	54.0 x 54.0 x 13.1mm
Product Weight	15.2g
Package Size	132.0 x 95.0 x 13.1mm
Gross Weight	28.9g

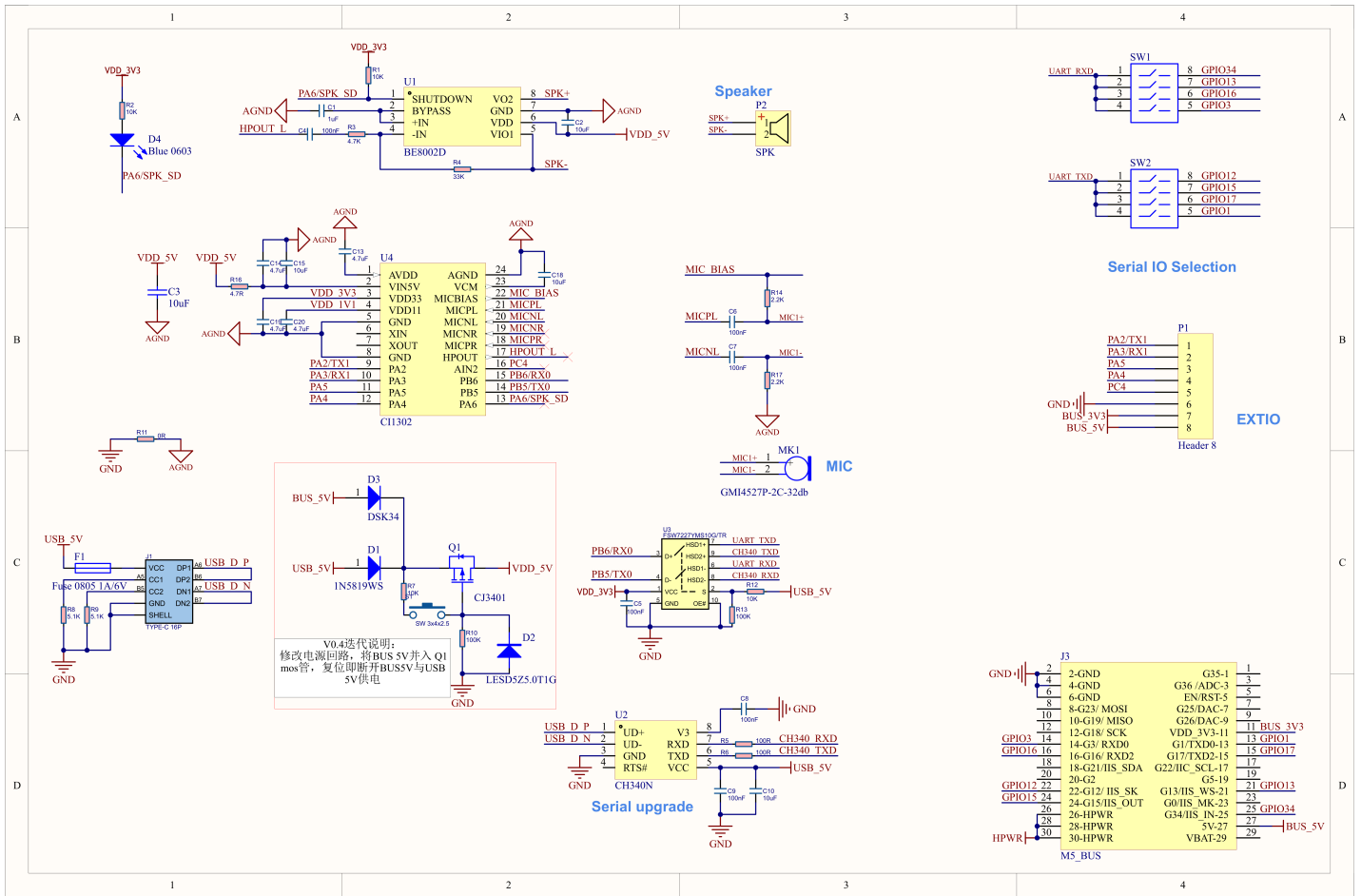
Learn

USB Type-C Interface

The USB Type-C interface on Module ASR is only for program downloading and cannot provide 5V power to the M5-Bus.

Schematics

- [Module ASR Schematics PDF](#)



PinMap

M5-Bus

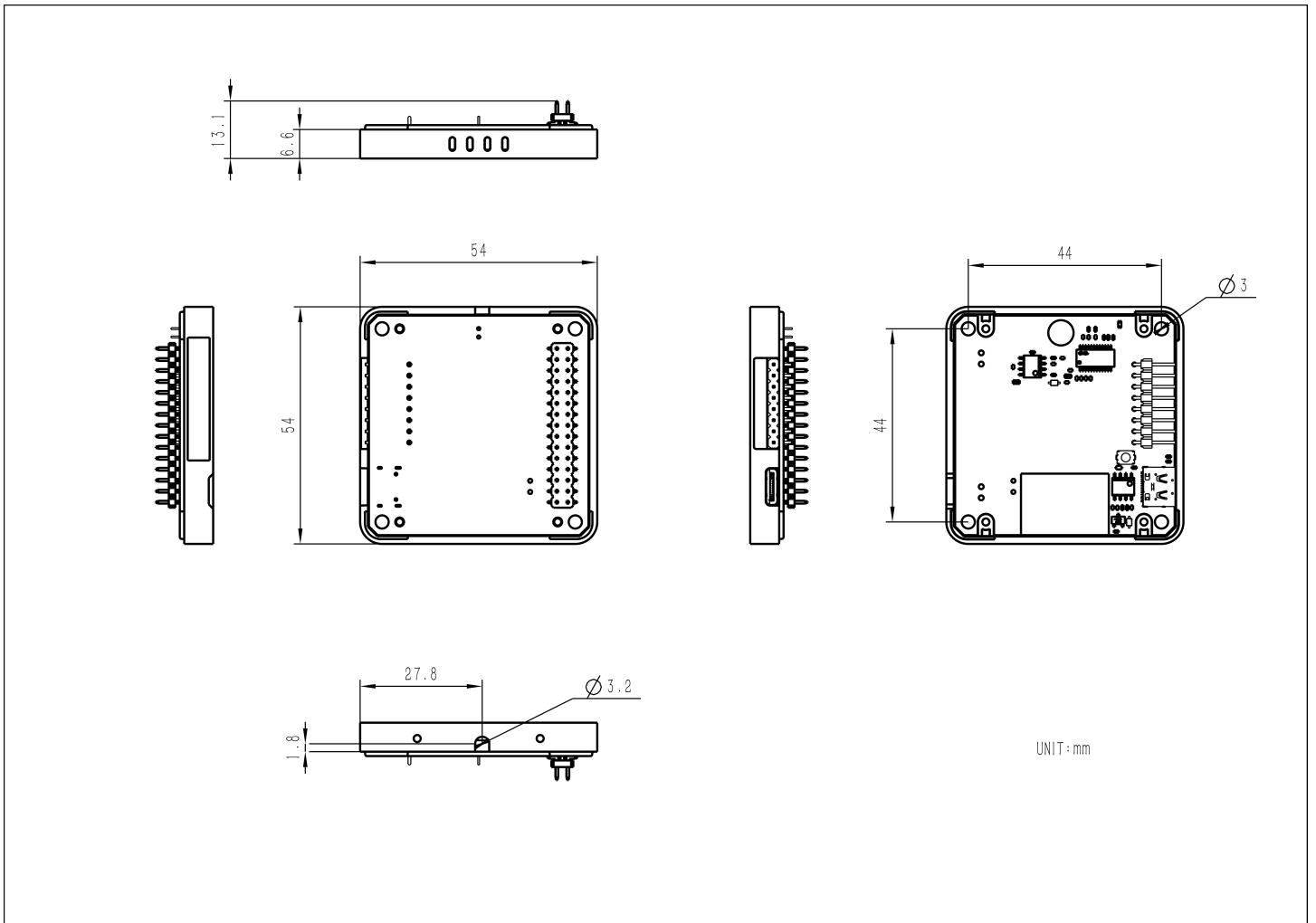
DIP Switch

The pins marked **SW** on the M5-Bus below can be toggled via DIP switch for compatibility with different main controllers.

PIN	LEFT	RIGHT	PIN
GND	1	2	
GND	3	4	
GND	5	6	
	7	8	
	9	10	
	11	12	3V3
UART_RX (SW)	13	14	UART_TX (SW)
UART_RX (SW)	15	16	UART_TX (SW)
	17	18	
	19	20	
UART_TX (SW)	21	22	UART_RX (SW)
UART_TX (SW)	23	24	
HPWR	25	26	UART_RX (SW)
HPWR	27	28	5V
HPWR	29	30	

| Model Size

- o [Module ASR Model Size PDF](#)



Datasheets

- [CI1302 Datasheet](#)

Softwares

Quick Start

- [Module ASR Custom Firmware Generation and Flashing](#)

Arduino

- [Module ASR Arduino Tutorial](#)
- [Module ASR Arduino Driver Library](#)

UiFlow2

- [Module ASR UiFlow2 Docs](#)

Protocol

- [Module ASR Factory Preset Commands](#)

Command Num	Wakeup word	UART input	UART0 output	Speaker Play
0x31	hi, A S R		AA 55 31 55 AA	I'm here
0x32	hello		AA 55 32 55 AA	I'm here
0xFF	Hi, M five		AA 55 FF 55 AA	I'm here
	Command word			Speaker Play
1. 方向控制 (Direction Control)				
0x01	up		AA 55 01 55 AA	OK
0x02	down		AA 55 02 55 AA	OK
0x03	left		AA 55 03 55 AA	OK
0x04	turn left		AA 55 04 55 AA	OK
0x05	right		AA 55 05 55 AA	OK
0x06	turn right		AA 55 06 55 AA	OK
0x07	forward		AA 55 07 55 AA	OK
0x08	front		AA 55 08 55 AA	OK
0x09	backward		AA 55 09 55 AA	OK
0x0A	back		AA 55 0A 55 AA	OK
2. 操作命令 (Operation Commands)				
0x10	open		AA 55 10 55 AA	OK
0x11	close		AA 55 11 55 AA	OK
0x12	start		AA 55 12 55 AA	OK
0x13	stop		AA 55 13 55 AA	OK
0x14	turn on		AA 55 14 55 AA	OK
0x15	turn off		AA 55 15 55 AA	OK
0x16	play		AA 55 16 55 AA	OK
0x17	pause		AA 55 17 55 AA	OK
0x18	turn on the lights		AA 55 18 55 AA	OK
0x19	turn off the lights		AA 55 19 55 AA	OK
0x1A	previous		AA 55 1A 55 AA	OK
0x1B	next		AA 55 1B 55 AA	OK
3. 数字 (Numbers)				
0x20	zero		AA 55 20 55 AA	OK
0x21	one		AA 55 21 55 AA	OK
0x22	two		AA 55 22 55 AA	OK
0x23	three		AA 55 23 55 AA	OK
0x24	four		AA 55 24 55 AA	OK
0x25	five		AA 55 25 55 AA	OK
0x26	six		AA 55 26 55 AA	OK
0x27	seven		AA 55 27 55 AA	OK
0x28	eight		AA 55 28 55 AA	OK
0x29	nine		AA 55 29 55 AA	OK
4. 确认与问候 (Acknowledgment & Greetings)				
0x30	ok		AA 55 30 55 AA	OK
0x31	hi, A S R		AA 55 31 55 AA	I'm here
0x32	hello		AA 55 32 55 AA	I'm here
5. 系统控制				
0x40	increase volume		AA 55 40 55 AA	OK
0x41	decrease volume		AA 55 41 55 AA	OK
0x42	maximum volume		AA 55 42 55 AA	OK
0x43	medium volume		AA 55 43 55 AA	OK
0x44	minimum volume		AA 55 44 55 AA	OK
0x45	check firmware version		AA 55 45 55 AA	Version One
6. IO控制				
0x50	PA2 high level	AA 55 50 55 AA	AA 55 50 55 AA	PA2 high level
0x51	PA2 low level	AA 55 51 55 AA	AA 55 51 55 AA	PA2 low level
0x52	PA3 high level	AA 55 52 55 AA	AA 55 52 55 AA	PA3 high level
0x53	PA3 low level	AA 55 53 55 AA	AA 55 53 55 AA	PA3 low level
0x54	PA4 high level	AA 55 54 55 AA	AA 55 54 55 AA	PA4 high level
0x55	PA4 low level	AA 55 55 55 AA	AA 55 55 55 AA	PA4 low level
0x56	PA5 high level	AA 55 56 55 AA	AA 55 56 55 AA	PA5 high level
0x57	PA5 low level	AA 55 57 55 AA	AA 55 57 55 AA	PA5 low level
0x58	PC4 high level	AA 55 58 55 AA	AA 55 58 55 AA	PC4 high level
0x59	PC4 low level	AA 55 59 55 AA	AA 55 59 55 AA	PC4 low level
0x5A	inversion level	AA 55 5A 55 AA	AA 55 5A 55 AA	inversion level

Internal Firmware

- Module ASR Internal Firmware

Other

- Firmware Burning Tool

Video

- Module ASR Product Introduction and Function Demonstration

