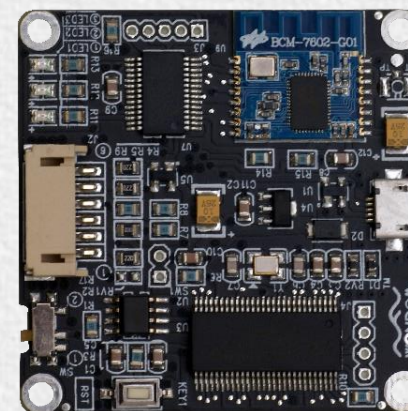


# How to realize APP control of APM2/JAB3 with WONDOM ICP3?



Miumax



ICP3

In-Circuit Programmer with Bluetooth BLE for APP Control

## Various Applications Required Products and Instructions

| Function                     | PRODUCT LIST WITH DSP INTEGRATED                                     | ICP PRODUCTS         | Software       | INSTRUCTION  | VIDEO   |
|------------------------------|--|----------------------|----------------|--|---|
| Programming with SigmaStudio | APM2 + APM3<br>JAB3 - 160<br>JAB3 - 1100<br>JAB3 - 230<br>JAB3 - 250 | <a href="#">ICP1</a> | SigmaStudio    | How to Program APM2 with WONDOM ICP<br>How to Program JAB3 with WONDOM ICP | <a href="#">How To Re-Program DSP To Get More Functions</a>               |
|                              |  | <a href="#">ICP3</a> |                |  | <a href="#">How To Reprogram DSP Function of Amplifier Board With DSP</a> |
| APP Control                  |  | <a href="#">ICP3</a> | Miumax (APP)   | How to Realize APP Control with WONDOM ICP                                 | <a href="#">How To Use APP To Change DSP Settings Of Your Amplifier?</a>  |
|                              |  | <a href="#">ICP5</a> |                |  |   |
| PC UI Control                |  | <a href="#">ICP5</a> | Miumax (PC UI) | How to Realize PC UI Control with WONDOM ICP                               | Video   |

Note: The products and documentation in red are processing and will be released soon.



## Open Source Files for APP CONTROL

| Products      | Function                           |                                       | Version                | File                     |
|---------------|------------------------------------|---------------------------------------|------------------------|--------------------------|
| APM2          | Demonstration of Signal Flow Chart | APM2_APPCtrl.dspproj                  | -                      | <a href="#">Download</a> |
|               | Restoring Program                  | APM2_APPCtrl_V1.0.Hex                 | V1.0 (For Miumax V1.0) | <a href="#">Download</a> |
|               |                                    | APM2_APPCtrl_V2.0.Hex                 | V2.0 (For Miumax V2.0) | <a href="#">Download</a> |
| JAB3 - Mono   | Demonstration of Signal Flow Chart | JAB3_APPCtrl_MONO.dspproj             | -                      | <a href="#">Download</a> |
|               | Restoring Program                  | JAB3_APPCtrl_MONO_E2Prom_V1.0.Hex     | V1.0 (For Miumax V1.0) | <a href="#">Download</a> |
|               |                                    | JAB3_APPCtrl_MONO_E2Prom_V2.0.Hex     | V2.0 (For Miumax V2.0) | <a href="#">Download</a> |
| JAB3 - Stereo | Demonstration of Signal Flow Chart | JAB3_APPCtrl_STEREO.dspproj           | -                      | <a href="#">Download</a> |
|               | Restoring Program                  | JAB3_APPCtrl_STEREO_E2Prom_V1.0.Hex   | V1.0 (For Miumax V1.0) | <a href="#">Download</a> |
|               |                                    | JAB3_APPCtrl_STEREO_E2Prom_V2.0.Hex   | V2.0 (For Miumax V2.0) | <a href="#">Download</a> |
| ICP3          | Demonstration of Signal Flow Chart | ICP3-DB-DP11224_CtrlFirmware_V1.0.hex | V1.0 (For Miumax)      | <a href="#">Download</a> |
|               |                                    | ICP3-DB-DP11224_CtrlFirmware_V2.0.hex | V2.0 (For Miumax V2.0) | <a href="#">Download</a> |
| ICP5          | -                                  | -                                     | -                      | -                        |

### Version Update Declaration

|      |                              |
|------|------------------------------|
| V1.0 | Supporting APP - Miumax V1.0 |
| V2.0 | Supporting APP - Miumax V2.0 |

**NOTES:**

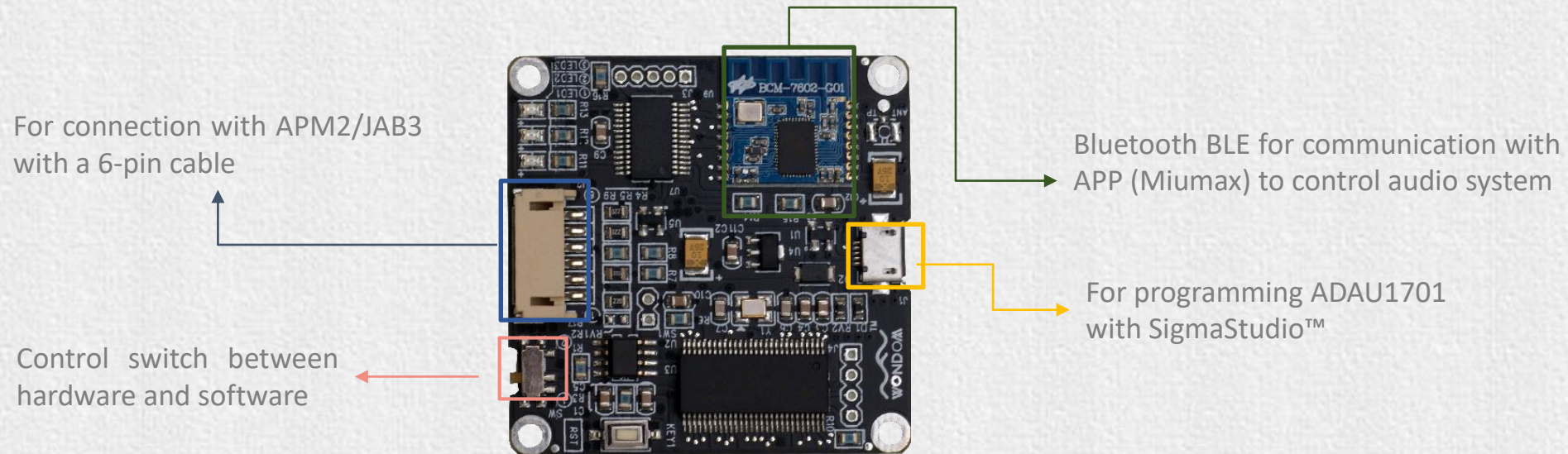
1. All the "Demonstration of Signal Flow Chart" files are just for signal flow chart demonstration and customers can not use them as running programming. If customers want JAB3 or APM2 to be recognized by PC UI or APP, please burn in the corresponding "Restoring Program" documentation we provide;
2. We will provide the ICP3\_Ctrl.hex and ICP5\_Ctrl.hex for customers but we will not provide C source code and support in the programming. If customers want to program, please use Microchip Kit3/Kit4.
3. The products in red are processing and will be released soon.

# Overview

## Function: Programming + APP Control

WONDOM ICP3 is an in-circuit programmer inheriting all functions of ICP1. We had implemented firmware upgrade and control data transmission from Bluetooth BLE, this means, with ICP3, customers can adjust the basic parameters like volume, gain, EQ through APP.

With Bluetooth integrated, customers can control audio system with DSP through APP (Miumax), which is a quick and simple start for customers who are not familiar with SigmaStudio™ software. This document is used as guide for how to realize APP control of whole audio system built with WONDOM APM2/JAB3 via WONDOM ICP3.





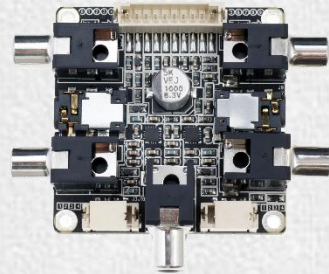
# Checklist

Before starting, please make sure you have the following items on hand.

1 WONDOM APM2+Extension Kit (APM3)/JAB3



+



OR



3 'Miumax' APP

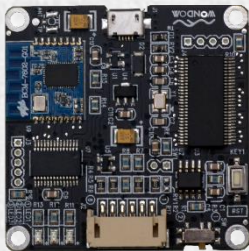


Android



iOS

2 WONDOM ICP3 with a 6-pin cable



4 Accessories

Speakers

Cables

Phone

...

# Product List

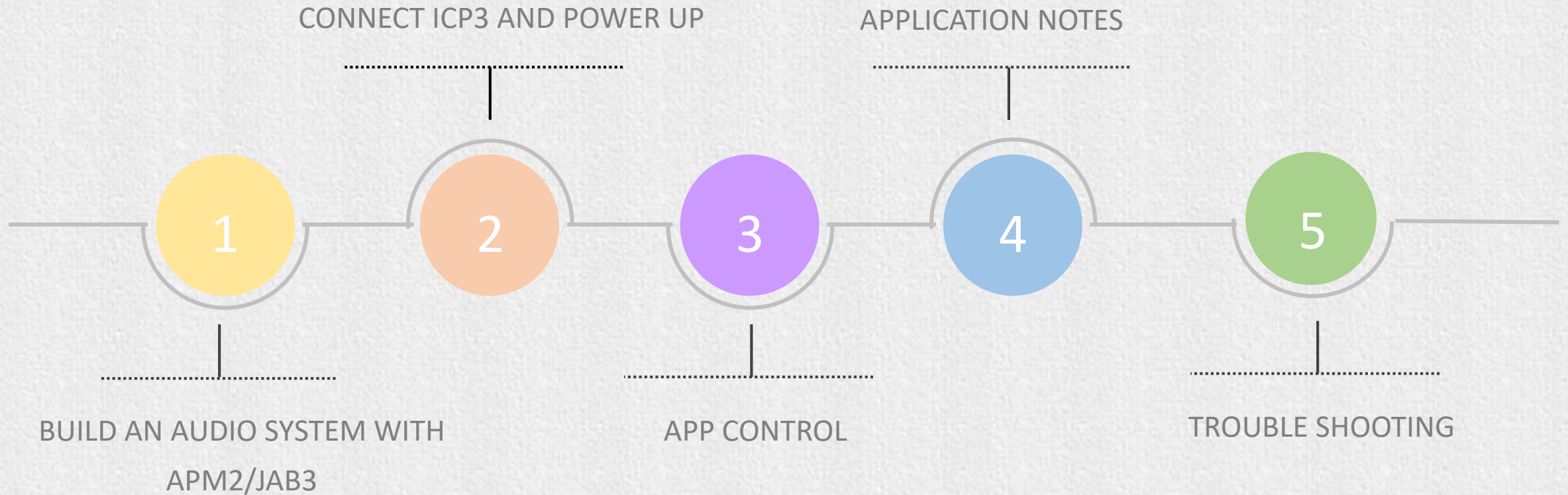
| Model     | SKU        | Description  | Basic Cables Included  |
|-----------|------------|--|--|
| ICP1      | DB-DP11219 | In-circuit Programmer for ADAU1701 Digital Signal                    | 6Pin cable x 1   |
| ICP3      | DB-DP11224 | WONDOM In-circuit Programmer with BLE Bluetooth for APP control      | 6Pin cable x 1   |
| APM2      | AA-AP23122 | ADAU1701 Audio Digital Signal Processor Kernel Board                 | -  |
| APM3      | AA-AA11428 | ADAU1701 Audio Digital Signal Processor Interface Extension Kit      | 10Pin cable x 1  |
| JAB3-1100 | AA-JA31181 | 1x 100 Watt Class D Audio Amplifier Board with Audio DSP - JAB3-1100 | Power cable x 1<br>Speaker cable x 1<br>3.5mm AUX IN cable x 1 |
| JAB3-160  | AA-JA31211 | 1 x 60 Watt Class D Audio Amplifier Board with Audio DSP - JAB3-160  |  |
| JAB3-250  | AA-JA32172 | 2 x 50 Watt Class D Audio Amplifier Board with Audio DSP - JAB3-250  |  |
| JAB3-230  | AA-JA32473 | 2 x 30 Watt Class D Audio Amplifier Board with Audio DSP - JAB3-230  |  |

Notes:

- Represents no basic cable



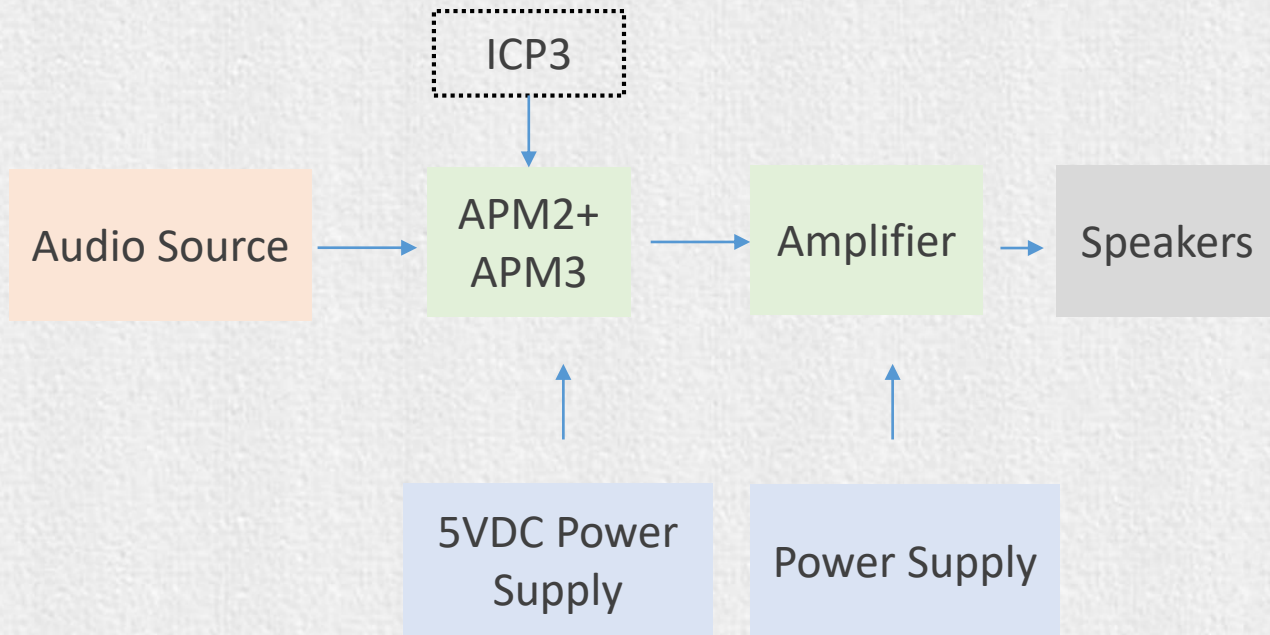
# CONTENTS



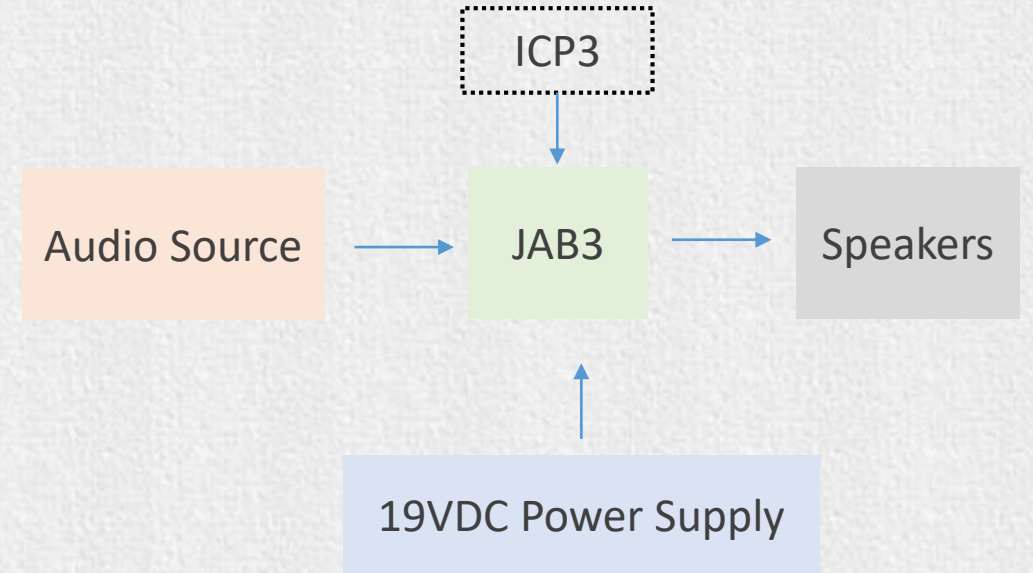
# AUDIO SYSTEM

WONDOM provides two solution for DSP,

- APM2 + Extension Kit (APM3) + Amplifier
- JAB3, an audio amplifier with ADAU1701 integrated



Build an audio system with WONDOM APM2



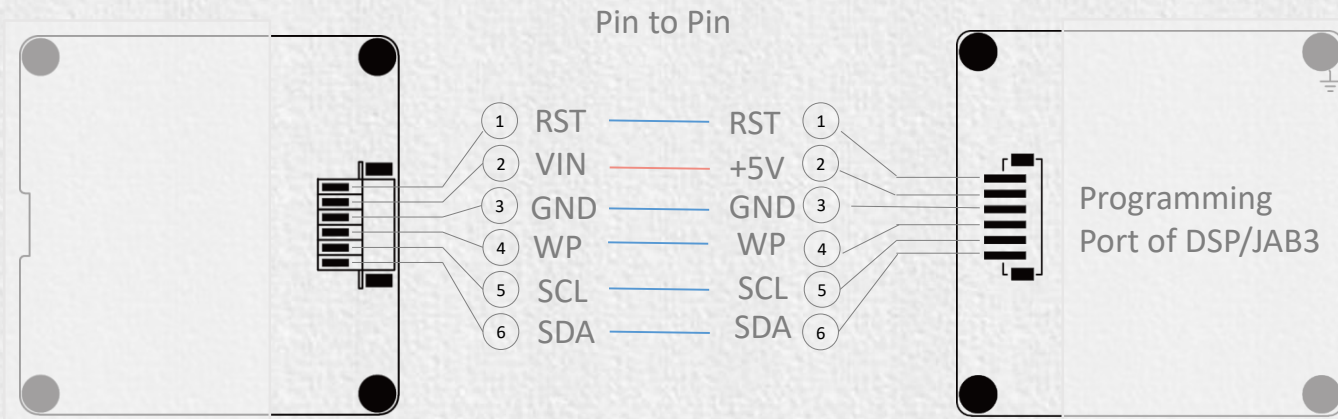
Build an audio system with WONDOM JAB3

Power up the audio system after connection is done.



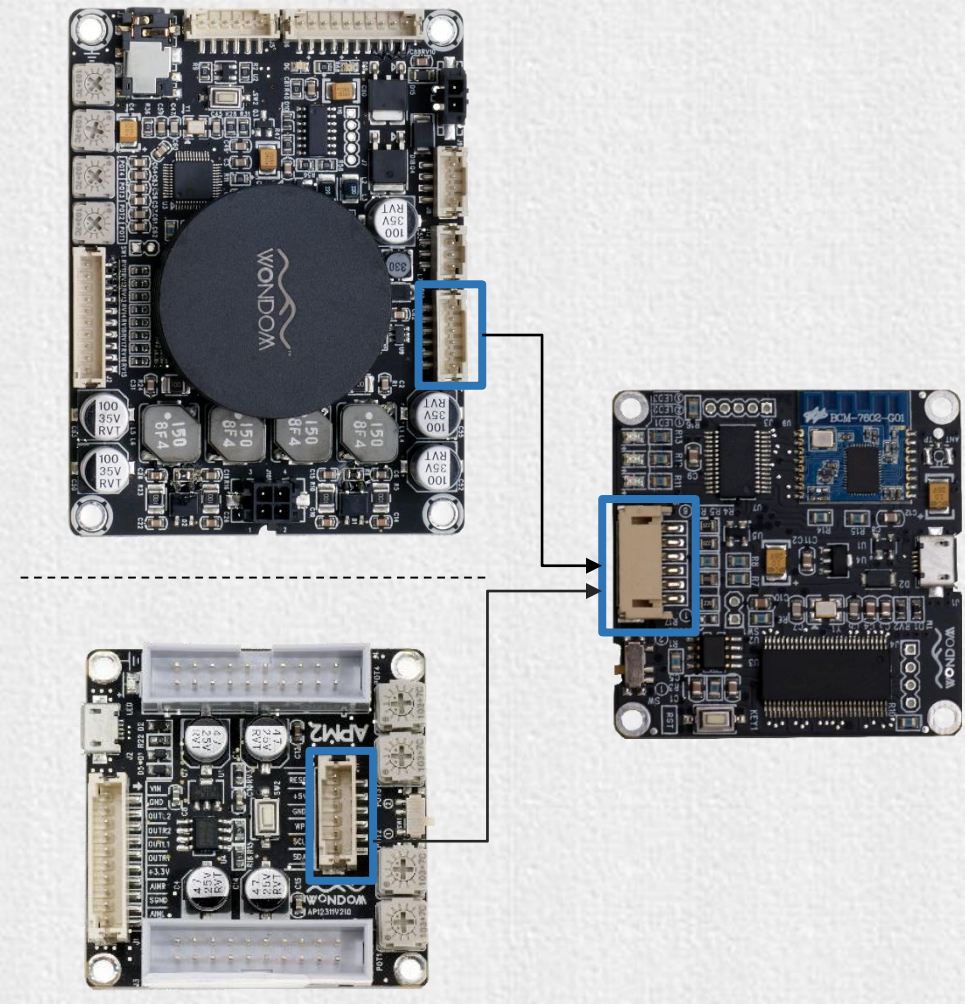
# CONNECT ICP3

1. Connect ICP3 to the APM2/JAB3 through the programming port with a 6-pin cable.



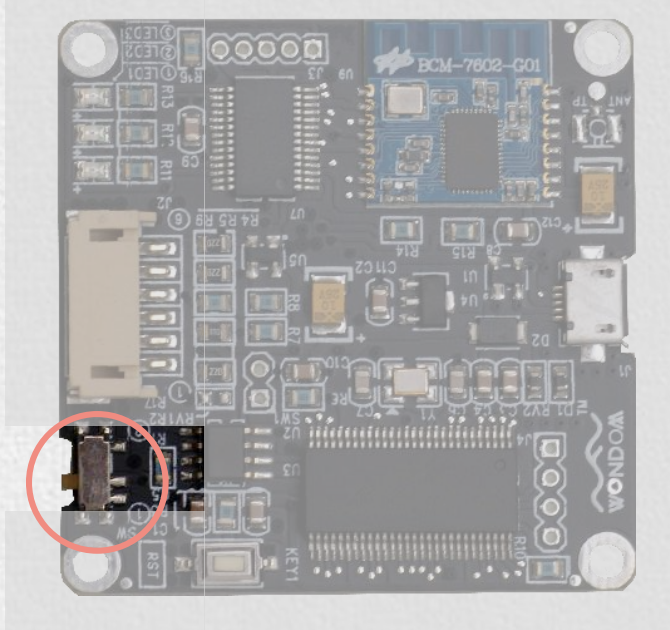
Note:

When ICP3 is connected to APM2/JAB3 pin to pin, it will be powered by APM2/JAB3 directly. No extra power supply is needed.



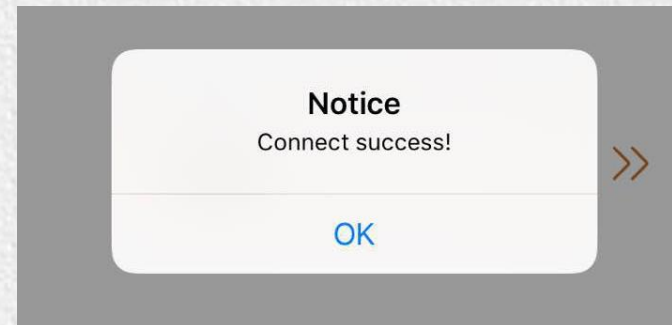


# CONNECT ICP3



2. Set switch of ICP3 at ② 'REMOTE' before running 'Miumax' APP.
3. Make sure the Bluetooth of your device is on and click 'Miumax' APP and they will pair automatically within several seconds. When the connection succeeds, you can see the prompt box.
4. Click "OK" and choose your operation mode to start.

| State of SW on ICP3 | Function |
|---------------------|----------|
| ①                   | PROGRAM  |
| ②                   | REMOTE   |

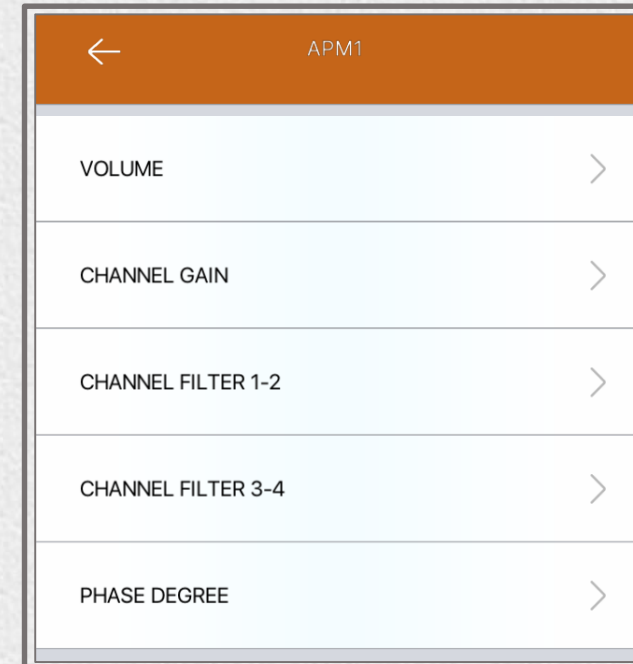




# APP CONTROL



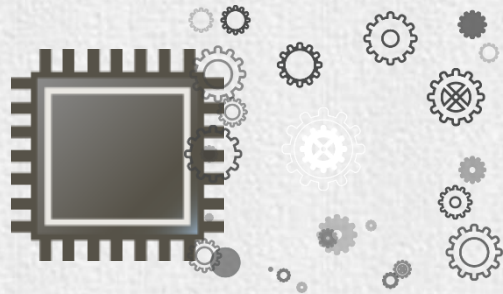
Play music and choose your device to start



Choose the corresponding items for adjustment

- ✓ VOLUME
- ✓ CHANNEL GAIN
- ✓ CHANNEL FILTER
- ✓ PHASE DEGREE
- ✓ EQ SET

# Application Notes



## Power-off Memory Function of ICP3

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Power-off Memory Function is integrated in ICP3 for APP control, which means the last setting of your APP control will be saved in ICP3 and it will be employed automatically next time you use ICP3 for APP control.

Please be noticed that it only works with JAB3.



## Switch to hardware control

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When customers want to switch to hardware control (potentiometers on board) from APP control mode, please do as follows.

Disconnect ICP3 with APM2/JAB3

Press the Reset switch on APM2/JAB3



# POINTS OF ATTENTION

1

## Connection

Please make sure the Bluetooth of your device is on and the SW of ICP3 is set at ② REMOTE before clicking APP.

2

## Adjustment

The adjustment through APP control is irreversible. Please pay attention to the limitation of your devices in case of permanent damage.

3

## Control Switch

### Setting of SW on ICP3

|   |         |
|---|---------|
| ① | PROGRAM |
| ② | REMOTE  |

### Setting of SW1 on APM2

|   |         |
|---|---------|
| ① | RUN     |
| ② | PROGRAM |

Make sure the SW1 on APM2 is set at ①(RUN) when playing music.

When switching from APP control to potentiometer control, do not forget to press the reset switch on APM2/JAB3.

# TROUBLE SHOOTING

The connection between ICP3 and APP is unsuccessful or the APP control malfunctions.



Firstly, check the following items.

1. Switch of ICP3 is set at ② (Remote)
2. Bluetooth of your device is on

If all settings are OK but there is still problem with connection, please try as follows.

1. Press the RST switch on ICP3
2. Restart the APP

When the ICP3 and the APP disconnect in use, a prompt box for reminding of reconnection appears. Press OK for reconnection and it will repair immediately.



The ICP3 and APP disconnect in use.