

Atom VoiceS3R Mic 麦克风

Atom VoiceS3R 麦克风相关 API 与案例程序。

案例程序

编译要求

- M5Stack 板管理版本 $\geq 3.2.2$
- 开发板选项 = M5AtomS3R
- M5Unified 库版本 $\geq 0.2.8$

```
1  #include <M5Unified.h>
2
3  static constexpr const size_t record_number = 256;
4  static constexpr const size_t record_length = 200;
5  static constexpr const size_t record_size = record_number * record_length;
6  static constexpr const size_t record_samplerate = 16000;
7  static size_t rec_record_idx = 2;
8  static int16_t *rec_data;
9
10 void setup() {
11     M5.begin();
12     M5.Speaker.setVolume(255);
13     auto cfg = M5.Mic.config();
14     cfg.noise_filter_level = (cfg.noise_filter_level + 8) & 255;
15     M5.Mic.config(cfg);
16
17     rec_data = (typeof(rec_data))heap_caps_malloc(record_size * sizeof(int16_t), MALLOC_CAP_8BIT);
18     memset(rec_data, 0, record_size * sizeof(int16_t));
19
20     // Since the microphone and speaker cannot be used at the same time, turn off the speaker here.
21     M5.Speaker.end();
22     M5.Mic.begin();
23 }
24
25 void loop() {
26     M5.update();
27
28     if (M5.Mic.isEnabled()) {
29         auto data = &rec_data[rec_record_idx * record_length];
30         if (M5.Mic.record(data, record_length, record_samplerate)) {
31             if (++rec_record_idx >= record_number) {
32                 rec_record_idx = 0;
33             }
34         }
35     }
36
37     if (M5.BtnA.wasClicked()) {
38         if (M5.Speaker.isEnabled()) {
39             while (M5.Mic.isRecording()) {
40                 M5.delay(1);
41             }
42
43             // Since the microphone and speaker cannot be used at the same time, turn off the microphone here.
44             M5.Mic.end();
45             M5.Speaker.begin();
46
47             int start_pos = rec_record_idx * record_length;
48             if (start_pos < record_size) {
49                 M5.Speaker.playRaw(&rec_data[start_pos], record_size - start_pos, record_samplerate, false, 1);
50             }
51         }
52     }
53 }
```

```

51     if (start_pos > 0) {
52         M5.Speaker.playRaw(rec_data, start_pos, record_samplerate, false, 1, 0);
53     }
54
55     do {
56         M5.delay(1);
57         M5.update();
58     } while (M5.Speaker.isPlaying());
59
60     // Since the microphone and speaker cannot be used at the same time, turn off the speaker here
61     M5.Speaker.end();
62     M5.Mic.begin();
63 }
64 }
65 }

```

将以上程序编译并上传至 Atom VoiceS3R，该程序会使用麦克风采集声音并循环缓存，短按设备正面的按键播放最近几秒的缓存录音。

| API

Atom VoiceS3R 麦克风部分使用了M5Unified库中的Mic_Class，更多相关的 API 可以参考下方文档：

- [M5Unified - Mic Class](#)