

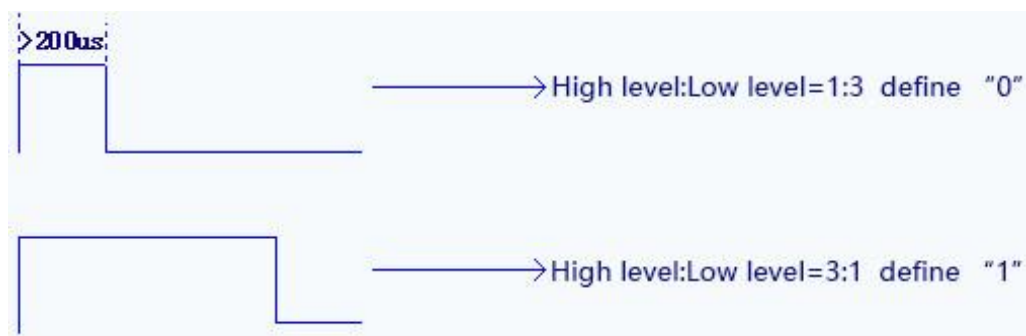
Hardware configuration



Definition of communication protocol

Timing diagram showing PA1 (Peripheral Address 1) and DATA signals. The diagram illustrates the relationship between the PA1 signal and the DATA signal, with specific timing constraints indicated by annotations:

- PA1 signal period: $>2\text{ms}$
- DATA signal period: $>1200\mu\text{s}$
- PA1 signal period (after first DATA burst): $>400\mu\text{s}$
- PA1 signal period (after second DATA burst): $>400\mu\text{s}$
- DATA signal period (after second PA1 burst): $>1200\mu\text{s}$



CMD format

CMD(HEX)	Function	Instruction
00	NO.0	Send the number first and function CMD is followed, such as setting volume to 21 steps, send "0x02" " 0x01" " 0x0C "
01	NO.1	
02	NO.2	
03	NO.3	
04	NO.4	
05	NO.5	
06	NO.6	
07	NO.7	
08	NO.8	
09	NO.9	
0A	Clear digital	Clear digital sent
0B	Select and enter	Setting function with digital
0C	Volume Setting	
0D	EQ Setting	
0E	Set cycle mode	
0F	Set channel	
10	Select music to	

	inter-cut	
11	Play	
12	Pause	
13	Stop	
14	Previous music	
15	Next music	
16	Switch to parent directory	
17	Switch to sub-directory	
18	SD card selected	
19	U Disk selected	
1A	Flash selected	
1B	System sleep	
1C	End playing	

Noted:

1. The music files must be named by five numbers such as 00001.mp3、00255.mp3.
2. "Music interlude" only has level 1 interlude. Continuous interlude will cover the previous interlude (the interlude will be played immediately). When the interlude is finished, it will return to the first interlude breakpoint and continue to play.
3. "Select music" and "Inter-cut" are based on the name of music; For example, the music name is "00123.mp3", send the data "0x01" "0x02" "0x03" "0x0B" in sequence to complete selecting music.
4. "Prev" "Next" "Parent directory" "Sub-directory" are both based on track number sequence, "Parent directory" is to play the last music in upper directory, "Sub-directory" is to play the first music in the next directory.