UART mode

Hardware configuration ：

UART cntorl mode
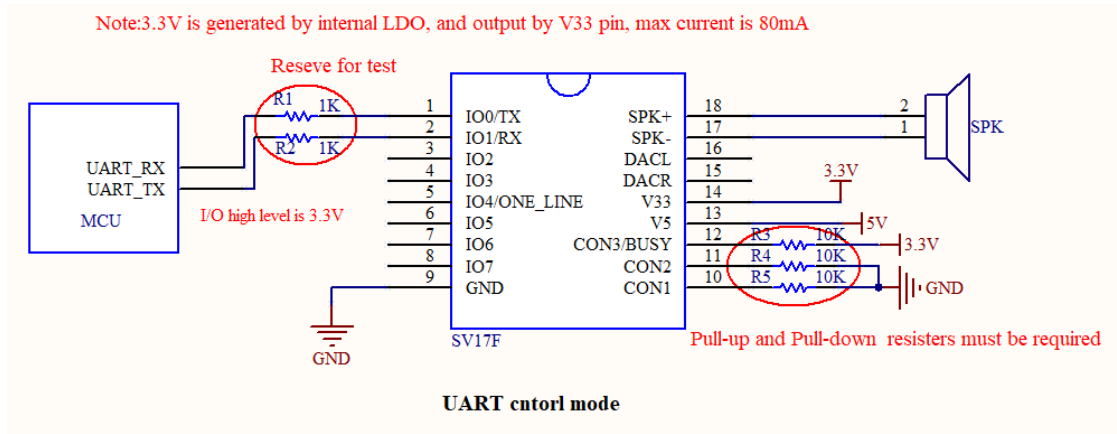
Configure pins	CON3	CON2	CON1
IO setting	1	0	0

Communication format

Full duplex serial communication;

Baud: 9600bps，Data：8 bits ，stop:1bit，Check: N.

Start-CMD Type-data length (n) -data1 - data n - CRC(SM)

※ CMD CODE ： fixed AA.

※ CMD TYPE : Used to distinguish CMD types.

※ DATA LENGTH：The number of bytes of data in CMD

※ DATA ： Data in CMD，there is no data when the length of data is one, only

　　　　　CMD.

※ CRC ： The sum of all data from the start code to the end data before the CRC, and select the low 8 bits.

※ DATA FORMAT: Send the high 8 bits first, and the low 8 bits follow.

Communication mechanism

1. DY-SV5W module works as slave, all operations are controlled by master.

2. DY-SV5W module cannot start communication, all communications start by master.

3. 3.3V level is compatible for DY-SV5W module , if the controller is 5V level, a 1K resister must be connected in series .

4. All data is HEX in protocol, unless special introduction.

Communication Protocol

The definition of data as follows.

1. Definition of playing state ： It is in stop state when power on.

　※ 00(Stop)　01(Play)　02(Pause)

2. The definition of devices: It is in stop state when switch device.

　※ USB:00　　SD:01　　FLASH:02　　NO_DEVICE：FF

3. Volume：The volume all are 31 steps which are 0-30, it is 20th step when power on.

4. The definition of playing modes：It is in single stop mode when power on.

　※ Full cycle(00)：Play all music in sequence.

　※ Single cycle(01)：Play the current music always.

　※ Single stop(02)：Stop playing after playing the current music once.

　※ Random broadcast(03)：Play music randomly in device.

　※ Repeat folder(04)：Play all music in current folder in sequence.

　※ Random broadcast in folder(05): Play music randomly in current folder.

　※ Order play in folder (06)：Play music in current folder in sequence,

　　　and stop when complete playing the last music.

　※ Order play (07)：Play music in device in sequence, and stop when

　　　complete playing the last music.

5. Definition of EQ：It is NORMAL(00) when power on.

※ NORMAL(00) POP(01) ROCK(02) JAZZ(03) CLASSIC(04)

6. Definition of combination play：It is combined by file name, the file is stored in DY folder， the file is named as two bytes , the number name is recommended such as 01.mp3, 02.mp3, and it is also named by two letters.

Communication CMD

Check the play state (01)

CMD：AA 01 00 AB

Return：AA 01 01 *play state* SM

Description：Play state can be checked anytime

play state：00 stop；01 play；02 pause

Play (02)

CMD：AA 02 00 AC

Return：None

Description：It will play from start of current music when send this CMD

Pause (03)

CMD：AA 03 00 AD

Return：None

Stop (04)

CMD：AA 04 00 AE

Return：None

Previous music (05)

CMD：AA 05 00 AF

Return：None

Next music (06)

CMD：AA 06 00 B0

Return：None

Play specified music (07)

CMD：AA 07 02 High Byte Low Byte SM

Music NO.

Return：None

For example： AA 07 02 00 08 BB is to play the specified 8th music.

Music query is based on stored sequence.

Specified device and path play (08)

CMD：AA 08 length device path SM

Return：None

Description：length＝length of device＋ length of path ＝1＋ length of path

Detailed format please reference "description of path format" 。

Check Device Online (09)

CMD：AA 09 00 B3

Return： AA 09 01 device SM

Description：device：USB:00   SD:01   FLASH:02

Check Current Playing Device (0A)

CMD: AA 0A 00 B4

Return: AA 0A 01 device SM

Device：USB:00   SD:01   FLASH:02   NO_DEVICE：FF

Switch to selected device (0B)

CMD：AA 0B 01 device SM

Return： None

Description：Play the first music after switching.

For example：

AA 0B 01 00 B6   Switch to U disk

AA 0B 01 01 B7   Switch to TF card

AA 0B 01 02 B8   Switch to Flash

Noted: SV5W module only supports TF card

Check Number Of all Music (0C)

CMD：AA 0C 00 B6

Return：AA 0C 02 High Byte Low Byte SM

Music NO.

Check Current Music (0D)

CMD：AA 0D 00 B7

Return：AA 0D 02 High Byte Low Byte SM

Music NO.

Previous folder directory (0E)

CMD：AA 0E 00 B8

Return：None

Description：Play the last music in folder after switching.

Previous folder directory (0F)

CMD：AA 0F 00 B9

Return：None

Description：Play the first music in folder after switching.

End playing (10)

CMD：AA 10 00 BA

Description：It can end the current playing，it will end and return to play original
music, if the current operation is interlude.

Check the first music in folder (11)

CMD：AA 11 00 BB

Return：AA 11 02 High Byte Low Byte SM

Music NO.

Description：Return the sequence number of the first music.

Check Number of music in folder (12)

CMD：AA 12 00 BC

Return：AA 12 02 High Byte Low Byte SM

Music NO.

Description：The number returned do not include the music in sub-directory.

Volume setting (13)：

CMD：AA 13 01 VOL SM

Return：None

For example：AA 13 01 14 D2   Set volume to 20steps

Volume+ (14)：

CMD：AA 14 00 BE

Return：None

Volume- (15)：

CMD：AA 15 00 BF

Return：None

Select specified file to interlude (16)：

CMD：AA 16 03 device High Byte Low Byte SM

Music NO.

Return：None

For example：AA 16 03 00 00 09 CC   Interlude and play the 9th music in U disk.

The number of music is based on sequence stored.

Select specified path to interlude (17)：

CMD：AA 17 length device path SM

Return：None

Description：length＝length of device+ length of path ＝1+ length of path

"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. The path format is the same as **"Specified device and path play (08)"**

End interlude：

CMD：AA 10 00 BA

Return：None

Cycle mode setting (18):

CMD：AA 18 01 mode SM

Return：None

For example： AA 18 01 02 C5   set single stop

Cycle times setting (19):

CMD：AA 19 02 High Byte Low Byte SM

                       Times

Return：None

Description：This CMD is effective for Full cycle(00), Single cycle(01), Repeat folder.

For example：AA 19 02 00 06 CB   set cycle for 6 times.

Set EQ (1A)

CMD：AA 1A 01 EQ SM

Return：None

For example：AA 1A 01 02 C7   Set EQ to ROCK

Combination play setting(1B)

CMD：AA 1B length High Byte Low Byte ..... High Byte Low Byte SM

                  The first music   *the nth music*

Return：None

For example： AA 1B 04 30 31 30 32 8C，Set the two files named "01", "02" to Combination play.

End Combination play (1C)

CMD：AA 1C 00 C6

Return：None

Description：End Combination playing and return to play original music before Combination playing.

Select file but do not play (1F)

CMD：AA 1F 02 <u>High Byte</u> <u>Low Byte</u> SM

Music NO.

Return：None

Description of path format

Path format as follow

1. Specified all music in "XXX" folder in root directory

　/XXX*/*MP3

2. Specified music in root directory

　/YYY*MP3　　　　　*"YYY" is the music name*

3. Specified a piece of music in "XXX" folder in root directory
　/XXX*/YYY*MP3　　*"XXX" is the folder name, and "YYY" is the music name*

Description：

(1) The path starts with "/"

(2) XXX is the folder name，YYY is the music name; The length of ″ XXX ″ is max

8 bytes，and the length of ″ YYY ″ is also max 8 bytes, all letters are required to be

capitalized, regardless of whether the folder or file name is capitalized.

(3) A letter is a byte

(4) Play the first music in "DY" folder：/DY*/00001*MP3

(5) Play the 255th music in "DY" folder：/DY*/00255*MP3

(6) Play the 65535th music in "DY" folder：/DY*/65535*MP3

(7) Play the first music in root directory：/00001*MP3

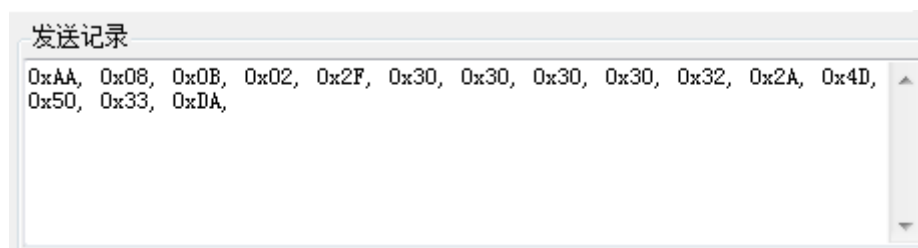(8) Play the 255th music in root directory：/00255*MP3

(9) Play the 65535th music in root directory：/65535*MP3

(10) Testing the specified path playing by uart tuning tool.

10.1 Play the music "00002.MP3" in root directory

The corresponding data sent as follows

0xAA, 0x08, 0x0B, 0x02, 0x2F, 0x30, 0x30, 0x30, 0x30, 0x32, 0x2A, 0x4D, 0x50, 0x33, 0xDA,

10.2 Play the music "00004.MP3" in folder "DY" in root directory.

The corresponding data sent as follows

0xAA, 0x08, 0x0F, 0x02, 0x2F, 0x44, 0x59, 0x2A, 0x2F, 0x30, 0x30, 0x30, 0x30, 0x34, 0x2A, 0x4D, 0x50, 0x33, 0xD6,