```
All datas are display at HEX


Si5351C Operation
Protocol format:
============================================
|Start frame|Command|Address|Data|End frame|
============================================
Start frame:0x55
  Command:
     Read Si5351 Regs:0x01
     Write Si5351 Regs:0x02
  Address:
     Refer to register lists in AN619
  Data:
     Refer to register lists in AN619
End frame:0xAA

DAC Operation
Protocol format:
============================================
|Start frame|Command|Data(16bits)|End frame|
============================================
Start frame:0x55
  Command:
     Read DAC Regs:0x03
     Write DAC Regs:0x04
  Data:
     Right-align
End frame:0xAA


Response Operation
When each operation above is input,
one or more operations below will be return as response.
Protocol format:
============================================
|Start frame|Command|Reserved_0|Reserved_1|End frame|
============================================
Start frame:0x55
{
  Command:
     Wrong Operation input. Regs:0x05
     Operation fails to run. Regs:0x05
     Operation is done. Regs:0x06
     Last operation is running & busy. Regs:0x07
  Rserved_[0-1]:
     0x00
}

{
  Command:
     Si5351 read operation's data back. Regs:0x08
  Rserved_0:
     Same with the read operation's address_bit.
  Rserved_1:
     The address's data which has been successfully read.
}

{
  Command:
     DAC read operation's data back. Regs:0x09
  Rserved_[0-1]:
     Right-align, the DAC's 10-bit value.
}

End frame:0xAA


Example: Write operation
step1:  PC send operation to the board.
     unsigned char buff[5] = {0x55,0x02,0x03,0xff,0xAA};
     PC send this buff to board.
```

```
74        As protocol, it is,
75        ==========================================
76        |Start frame|Command|Address|Data|End frame|
77        | 0x55      | 0x02 | 0x03  |0xff| 0xAA    |
78        ==========================================
79        This operation is to write 0XFF at the Si5351's address 0X03,
80        to SET the CLK_EN[0-7].
81   step2:  The board send response to PC.
82        unsigned char buff[5] = {0x55,0x06,0x00,0x00,0xAA};
83        The board send the buff to PC when operation is done.
84        As protocol, it is,
85        ===================================================
86        |Start frame|Command|Reserved_0|Reserved_1|End frame|
87        | 0x55      | 0x06 |   0x00    |   0x00   | 0xAA    |
88        ===================================================
89        This response is to show that the operation is successfully done.
90
91   Example: Read operation
92   step1:  PC send operation to the board.
93        unsigned char buff[5] = {0x55,0x01,0x03,0x00,0xAA};
94        PC send this buff to board.
95        As protocol, it is,
96        ==========================================
97        |Start frame|Command|Address|Data|End frame|
98        | 0x55      | 0x01 | 0x03  |0x00| 0xAA    |
99        ==========================================
100       This operation is to read the Si5351's value at address 0X03.
101       Note that the Data here can be any value but has no effect.
102
103  step2:  The board send read response to PC.
104       unsigned char buff[5] = {0x55,0x08,0x03,0xff,0xAA};
105       The board send the buff to PC when the value is read.
106       As protocol, it is,
107       ===================================================
108       |Start frame|Command|Reserved_0|Reserved_1|End frame|
109       | 0x55      | 0x08 |   0x03    |   0xff   | 0xAA    |
110       ===================================================
111       This response is to show that the value at Si5351's address 0x03 is 0XFF.
112  step3:  The board send successfully response to PC.
113       unsigned char buff[5] = {0x55,0x06,0x00,0x00,0xAA};
114       The board send the buff to PC when read operation is done.
115       As protocol, it is,
116       ===================================================
117       |Start frame|Command|Reserved_0|Reserved_1|End frame|
118       | 0x55      | 0x06 |   0x00    |   0x00   | 0xAA    |
119       ===================================================
120       This response is to show that the read operation is successfully done.
121
```