

Communication protocol

Based on HQT communication protocol, it is as follows

HEAD				DATA	BCC CHECK		END
SOH	TYPE	ID	FC		8 BITS	BCC	
0x09					BCC1	BCC2	0x0D

SOH

controller start sign is defined <0x09>

Reader start sign is defined <0x0A>

END

Controller and reader, both are fixed as <0x0D>

The address of the reader is from 1 <0x31> to 8 <0x38>, format is ASCII.,

If the address of the reader is same as the address signed by the controller, the reader will send the data to the controller. The reader will send the same address back to the controller.

Error Code is 2 byte, the first byte is fixed as <0x0E> , the second byte is as direction.

8 BITS BCC is the check code for all , please check attachment A

1. RS485 communication protocol is set as "E,8,1", Baud rate "19200".

Error Code Table

Data Field Error Code #2	Error Description
A	(Invalid Function Code Received)
B	(Data or Message Format Error)
C	(Database Error Message)
D	(Check Sum Error)
E	(Memory Error)
F	(Set or Get Protection Data)
G	(Other Error Message)

Error Code #1 is fixed as <0x0E>.

Controller & Reader Protocol Table

FC	DESCRIPTION
B	Get Module Factory Code
C	Set Module ID Code
D	Get Module ID Code
F	Read Card ID Data
G	Read Card ID Data

Get Module Factory Code)

FC: B

COMMENTS:

It is used to read the reader's default code, total is 8, address 1&2 is year, address 3&4 is week, address 5 to 8 is serial number.

Controller Transceiver Message:

Reader(ID): <1> ~ <8>

DATA: <None>

HEAD				DATA	BCC CHECK		END
SOH	TYPE	ID	FC		8 BITS	BCC	
0x09	A	1	B		BCC1	BCC2	0x0D

Reader Response Message:

DATA: <98030001>

HEAD				DATA	BCC CHECK		END
SOH	TYPE	ID	FC		8 BITS	BCC	
0x0A	A	1	B	98030001	BCC1	BCC2	0x0D

Set reader ID Code

FC: C

COMMENTS:

It is used to set the address.

Controller Transceiver Message):

Reader(ID): fixed as <X>

DATA: default is <98030001> , reader code <1>

HEAD				DATA	BCC CHECK		END
SOH	TYPE	ID	FC		8 BITS	BCC	
0x09	A	X	C	98030001 1	BCC1	BCC2	0x0D

Reader Response Message:

DATA: <None>

HEAD				DATA	BCC CHECK		END
SOH	TYPE	ID	FC		8 BITS	BCC	
0x0A	A	X	C		BCC1	BCC2	0x0D

Get Module ID Code

FC: D

COMMENTS:

It is used to read only, reader's default adress.

Controller Transceiver Message:

Reader(ID): fixed as <X>

DATA: default is <98030001>

HEAD				DATA	BCC CHECK		END
SOH	TYPE	ID	FC		8 BITS	BCC	
0x09	A	X	D	98030001	BCC1	BCC2	0x0D

Reader Response Message:

DATA: reader code is <1>

HEAD				DATA	BCC CHECK		END
SOH	TYPE	ID	FC		8 BITS	BCC	
0x0A	A	X	D	1	BCC1	BCC2	0x0D

Read Card Data

FC: F

Controller Transceiver Message):

Reader(ID): <1> ~ <8> , DATA: <None>

HEAD				DATA	BCC CHECK		END
SOH	TYPE	ID	FC		8 BITS	BCC	
0x09	A	1	F		BCC1	BCC2	0x0D

Reader Response Message:

DATA: <0000FF1A >

HEAD				DATA	BCC CHECK		END
SOH	TYPE	ID	FC		8 BITS	BCC	
0x0A	A	1	F	0000FF1A	BCC1	BCC2	0x0D

Reader Response Message) :

DATA: <None>

HEAD				DATA	BCC CHECK		END
SOH	TYPE	ID	FC		8 BITS	BCC	
0x0A	A	1	F		BCC1	BCC2	0x0D

Read Card Data

FC: G

COMMENTS:

Controller Transceiver Message:

Reader(ID): <1> ~ <8> , (DATA): <None>

HEAD				DATA	BCC CHECK		END
SOH	TYPE	ID	FC		8 BITS	BCC	
0x09	A	1	G		BCC1	BCC2	0x0D

Reader Response Message:

DATA: <00000FF1A >

HEAD				DATA	BCC CHECK		END
SOH	TYPE	ID	FC		8 BITS	BCC	
0x0A	A	1	G	00000FF1A	BCC1	BCC2	0x0D

Remark:

If Power is ON , the data is not sent, read the card, LED and buzzer well be on;If the data is Sent ,read the card ,LED will always on.

Attachment A

BCC CHECK CODE

A	B	A XOR B
1	1	0
1	0	1
0	1	1
0	0	0

The SYRDS1-485 format looks like table below:

HEAD				DATA	BCC CHECK		END
SOH	TYPE	ID	FC		8 BITS	BCC	
09(HEX)	"A"	"1"	"F"	NONE	BCC1	BCC2	0D(HEX)

For Example, reader ID is 1, function code is F.

1. Assign the values:

MES SAGE SEG MENT	HE X VA LUE	COMMENTS
SOH	09 _(H) EX)	Start sign
TYPE	41 _(H) EX)	SYRDSSS1 use "A"(41)
ID	31 _(H) EX)	Reader ID is 1 , that means "1" in the example
FC	46 _(H)	Function sign is 1 that means "F" in the

	EX)	example	
A	DAT	--	function code is F,without data
	BCC	??	result
	END	0D(HEX)	End sign

2. "SOH" and "TYPE" XOR, ANS means the result.

```

      SO      000      100
H      0      1
      XO      XO
      R      R
      TYP     010     000
E      0      1
      ----
      ANS     010     100
      0      0

```

3.the result of step 2, ANS and ID,XOR.

```

      ANS     010     100
      0      0
      XO      XO
      R      R
      ID      001     000
      1      1
      ----
      ANS     011     100
      1      1

```

4.将其它 Byte 运算完后,最后一个结即是 BCC 的值.

ANS	011	100
1	1	
	XO	XO
R	R	
FC	010	011
0	0	
	----	----
ANS	001	111
1	1	
	3	F

则 BCC 之值为:

Hi Byte 为 33_(HEX) (字符 "3" ASCII code 为 33_(HEX)).

Low Byte 为 46_(HEX) (字符 "F" ASCII code 为 46_(HEX)).

以下为用 **BASIC** 程序来产生"BCC"的范例

Program to generate BCC values:

```
10 *****
20  *          Generate Block Check Character          *
30 *****
40 MESSAGE$ = CHR$(10) +TYPE$ + ID$ + FC$ + DATA$
50 BCC = 0
60 FOR I = 1 TO LEN ( MESSAGE$ )
70 BCC = BCC XOR ASC ( MID$ ( MESSAGE$ , I , 1 ) )
80 NEXT I
```

若有程式方面之問題,請聯絡代理商或經銷商.