TC_B Communication Protocol V2.1

Part I Communication Protocol Structure

1> Command format

STX	CH（device code）	CMD（command）	LEN（data length）	DATA	CRC16
0xA5	4Bytes	1Byte	2Bytes	0-400Bytes	2Bytes

2> Response format

STX	CH （device code）	ACK（response）	RET（return value）	LEN（data length）	DATA	CRC16
0xA5	4Bytes	1Byte（command+0x80）	1Byte	2Bytes	0-400Bytes	2Bytes

Description：

1. Order of four byte CH：IDHH，IDHL，IDLH，IDLL；

2. CRC16 check means all data CRC16，order of two byte CRC16：CRCL CRCH；

3. When CH is 0，all devices connected will response to this command.

4. RET define as ：

```
#define ACK_SUCCESS             0x00    // operation successful
#define ACK_FAIL                0x01    // operation failed
#define ACK_FULL                0x04    // user full
#define ACK_EMPTY               0x05    // user empty
#define ACK_NO_USER             0x06    // user not exist
#define ACK_TIME_OUT            0x08    //capture timeout
#define ACK_USER_OCCUPIED       0x0A    //user already exists
#define ACK_FINGER_OCCUPIED     0x0B    //fingerprint already exists
```

5. When the RET != ACK_SUCCESS, the DATA and LEN in the response data are always 0.

Part II Command instruction

1. Get the information of T&A device 1 CMD：0x30

Function：Get the firmware version, communication password, sleep time, volume, language, date and time format, attendance state, language setting flag, command version.

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x30	0x00 0x00	CRCL CRCH

Response：（29Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xB0	ACK_SUCCESS ACK_FAIL	0x00 0x12	18Byte	CRCL CRCH

Data format：（18Byte）

Byte	Data	Description
1-8	Firmware version	Firmware version is ASC
9-11	Communication password and its length	Byte(9) bits 7-4 = password length Byte (9) bits 3-0 + Byte(10-11) = password
12	Sleep time	0-250 minutes, never sleep when set as 0
13	Volume	Level 0-5, mute if set as 0

14	Language	Device language, 0-simplified Chinese, 1-Traditional Chinese 2-English, 3-French, 4-Spanish, 5-Portuguese
15	Date / Time format	Bit 7-4：date format, 0-Chinese, 1-America, 2-English Bit 3-0：time format, 0-24 hours, 1-12 hours(AM/PM)
16	Attendance state	0-15, user edit in software and upload to device
17	Language setting flag	=0x10, enable language setting, user could modify menu language, other value would disable this function. (for C2 C3 C5)
18	Command version	=0x01, would response to 0x22 0x23(for C2 C3 C5) =0x02, would response to 0x24 0x25

2．**Set the configure information of T&A 1** CMD：0x31

Function：Set the communication password, sleep time, volume, language, date format, attendance state, and language setting flag.

Notice：If you just modify some of the items, for the rest, you may set them as 0xFF.

Command：（20Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x31	0x00 0x0A	12Byte	CRCL CRCH

Data format: (10Byte)

Byte	Data	Description
1-3	Communication password and its length	Byte(1) bits 7-4 = password length Byte(1) bits 3-0 + Byte(10-11) = password
4	Sleep time	0-250 minutes, never sleep when set as 0
5	Volume	Level 0-5, mute if set as 0
6	Language	Device language, 0-simplified Chinese, 1-Traditional Chinese 2-English, 3-French, 4-Spanish, 5-Portuguese
7	Date / Time format	Bit 7-4：date format, 0-Chinese, 1-America, 2-English Bit 3-0：time format, 0-24 hours, 1-12 hours(AM/PM)
8	Attendance state	0-15, user edit in software and upload to device
9	Language setting flag	=0x10, enable language setting, user could modify menu language, other value would disable this function. (for C2 C3 C5)
10	reserved	

3．Get the information of T&A device 2 CMD：0x32

Function：Get the T&A device Compare Precision, Fixed Wiegand Head Code, Wiegand Option, Work code permission, real-time mode setting, FP auto update setting, relay mode, Lock delay, Memory full alarm, Repeat attendance delay, door sensor delay, scheduled bell delay.

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x32	0x00 0x00	CRCL CRCH

Response：（26Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xB2	ACK_SUCCESS ACK_FAIL	0x00 0x0F	15 Byte	CRCL CRCH

Data format: （15Byte）

Byte	Data	Description
1	Fingerprint comparison precision	Level 0-2, 0-low, 1-medium, 2-high
2	Fixed Wiegand head code	1-254
3	Wiegand option	0-Wiegand26, 1-Anviz Wiegand, 2-fixed Wiegand 3- if user punch card, output low 26 bits of card ID, otherwise output 00000000+user id(16digit)
4	Work code permission	0-disable, 1-enable
5	Real-time mode setting	0-disable, 1-enable
6	FP auto update setting	0-disable, 1-enable
7	Relay mode	0-control lock, 1-scheduled bell
8	Lock delay	0-15 seconds, never open lock if set as 0
9-11	Memory full alarm	0-5000, balance record space less than specified value, device would give warning message
12	Repeat attendance delay,	0-250 minutes, within the specified time range, only the first record would be take as valid record
13	Door sensor delay	0-250 seconds, won't alarm if set as 0
14	Scheduled bell delay	0-15 seconds, won't ring bell if set as 0
15	reserved	

4. Set the configure information of T&A 2 CMD：0x33

function：Set the T&A device Compare Precision, Fixed Wiegand Head Code, Wiegand Option, Work code permission, real-time mode setting, FP auto update setting, relay mode, Lock delay, Memory full alarm, Repeat attendance delay, door sensor delay, scheduled bell delay.

notice：If you just modify some of the items, for the rest, you may set them as 0xFF.

Command：（25Byte）

STX	CH	CMD	LEN	Data	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x33	0x00 0x0F	15Byte	CRCL CRCH

Data format：（15Byte）

Byte	Data	Description
1	Fingerprint comparison precision	Level 0-2, 0-low, 1-medium, 2-high
2	Fixed Wiegand head code	1-254
3	Wiegand option	0-Wiegand26, 1-Anviz Wiegand, 2-fixed Wiegand 3- if user punch card, output low 26 bits of card ID, otherwise output 00000000+user id(16digit)
4	Work code permission	0-disable, 1-enable

5	Real-time mode setting	0-disable, 1-enable
6	FP auto update setting	0-disable, 1-enable
7	Relay mode	0-control lock, 1-scheduled bell
8	Lock delay	0-15 seconds, never open lock if set as 0
9-11	Memory full alarm	0-5000, balance record space less than specified value, device would give warning message
12	Repeat attendance delay,	0-250 minutes, within the specified time range, only the first record would be take as valid record
13	Door sensor delay	0-250 seconds, won't alarm if set as 0
14	Scheduled bell delay	0-15 seconds, won't ring bell if set as 0
15	reserved	

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xB3	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

5. Get the date and time of T&A CMD：0x38

function：Get the date and time of T&A

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x38	0x00 0x00	CRCL CRCH

Response：（17Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xB8	ACK_SUCCESS ACK_FAIL	0x00 0x06	6Byte	CRCL CRCH

Data format：（6Byte）

DATA	year	month	day	hour	minute	second
Byte	1	2	3	4	5	6

6. Set the date and time of T&A CMD：0x39

Function：Set the date and time of T&A

Command：（16Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x39	0x00 0x06	6Byte	CRCL CRCH

Data format：（6Byte）

DATA	year	month	day	hour	minute	second
Byte	1	2	3	4	5	6

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xB9	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

7. Get TCP/IP parameters CMD：0x3A

Function：Get the IP address, subnet Mask, MAC address, Default gateway, Server IP address,

Far limit, Com port NO., TCP/IP mode, DHCP limit.

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x3A	0x00 0x00	CRCL CRCH

Response：（38Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xBA	ACK_SUCCESS ACK_FAIL	0x00 0x1B	27Byte	CRCL CRCH

Data format：（27Byte）

DATA	IP address	subnet Mask	MAC address	Default gateway	Server IP address	Far limit	Com port NO.	TCP/IP mode	DHCP limit
Byte	1-4	5-8	9-14	15-18	19-22	23	24-25	26	27

TCP/IP Mode defined as: 0 - sever mode, 1 -client mode.

8．Set TCP/IP parameters CMD：0x3B

Function：Get the IP address, subnet Mask, MAC address, Default gateway, Server IP address, Far limit, Com port NO., TCP/IP mode, DHCP limit.

Command：（37Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x3B	0x00 0x1B	27Byte	CRCL CRCH

Data：（27Byte）

DATA	IP address	subnet Mask	MAC address	Default gateway	Server IP address	Far limit	Com port NO.	TCP/IP mode	DHCP limit
Byte	1-4	5-8	9-14	15-18	19-22	23	24-25	26	27

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xBB	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

9．Get record information CMD：0x3C

Function：Get record information, including the amount of Used User, Used FP, Used Password, Used Card, All Attendance Record, and New Record.

Command：（10 Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x3C	0x00 0x00	CRCL CRCH

Response：（29 Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xBC	ACK_SUCCESS ACK_FAIL	0x00 0x22	18Byte	CRCL CRCH

Data format：（18Byte）

DATA	User Amount	FP Amount	Password Amount	Card Amount	All Record Amount	New Record Amount
Byte	1-3	4-6	7-9	10-12	13-15	16-18

10．Download T&A records CMD：0x40

Function：download record, the downloading max number is 25 each time.（record data length: 25*14 = 350Byte）

Command：（12 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x40	0x00 0x02	2Byte	CRCL CRCH

Data format：

DATA	parameter	Record Amount
Byte	1	2

Parameter define as below ：

= 0：Normally downloading

= 1：Restart; retrieve all the records (The first data packet must send this data when retrieving all the records)

= 2: Restart; retrieve new records (The first data packet must send this data when retrieving the new records)

= 0x10：Send the last packet again

Record amount <=*25*

Response：（12 + N * 14Byte – *N is the valid records*）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC0	ACK_SUCCESS ACK_FAIL	（1 + N * 13）	（1 + N * 14）Byte	CRCL CRCH

Data format：（1 + N * 14Byte）

DATA	*Valid records* N	*Record* 1	*Record* 2	…
Byte	1	2-14	15-27	…

Record format ：（14Byte）

DATA	User code	Date&time	Backup code	Record type	Work types
Byte	1-5	6-9	10	11	12-14

Date&Time: how many seconds is it since the year 2000.

*For instance, if record is made at 2012.12.31 24:00, then = (2012-1000)*365*24*3600*

Backup code: data 3—Card data2—Password data1—FP2 data 0—FP1

If Record Type bit 7(seventh bit) is 1,it means this record can open door;if 0,can't open door;the low 4 bits is attendance state.

11. Upload T&A records CMD：0x41

Function：Upload the T&A records, 1 record each time.

Command：（24 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	041	0x00 0x0D	14Byte	CRCL CRCH

Data format：（14Byte）

DATA	User code	Date&time	Backup code	Record type	Work code
Byte	1-5	6-9	10	11	12-14

It counts the date and time from the year 2000. (It shows how many seconds is it from the year 2000.)

Response：（11 Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC1	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

12．Download staff info CMD：0x42

Function：Download staff info, <=12 records each time (info data length: 12*27= 324 Byte)

Command：（12 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x42	0x00 0x02	2Byte	CRCL CRCH

Data format：

DATA	Parameter	Info amount
Byte	1	2

Parameter defined as below:

= 0：Normally downloading

= 1：Restart the downloading（You must send this data when downloading the first data packet）

= 0x10：Send the last packet again

Info amount <=12

Response：（12 + N * 27 Byte -- *N is the valid records*）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC2	ACK_SUCCESS ACK_FAIL	（1 + N * 27）	（1 + N * 27）Byte	CRCL CRCH

Data format：（1 + N * 27 Byte）

DATA	*Valid records* N	staff info 1	staff info 2	…
Byte	1	2-28	29-55	…

staff info format：（27 Byte）

DATA	User code	Number of pwd+pwd	Card code	Name	Department	Group NO.	Attendance mode	Registered FP	Special info
Byte	1-5	6-8	9-11	12-21	22	23	24	25-26	27

Number of pwd = Byte(6) >> 4

Registered FP Define : Byte (0)=1 means already registered FP 1; Byte (1)=1 means already registered FP 2.

Special info Byte (7-6)：permission: 1-normal user , 3-administrator.

If all the byte (6-8) return 0xFF, it means the password does not exist.

If all the byte (9-11) return 0xFF, it means the card ID doesn't exist.

13．upload staff info CMD：0x43

Function：download staff info, <=12 records each time（info data length：12*27= 324 Byte）

Command：（11+ N * 27 Byte – *N is info amount*）

STX	CH	Command	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x43	1 + N * 27	（1 + N * 27）Byte	CRCL CRCH

Data format：（1 + N * 25 Byte）

DATA	*info amount* N	staff info 1	staff info 2	…
Byte	1	2-28	29-55	…

info amount <=12

If some item has no data, the setting of it is 0xFF.

The Registered FP item can not be set, it is 0 constantly.

Response：（11 Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC3	ACK_SUCCESS ACK_FAIL	0x00 0x02	2Byte	CRCL CRCH

Data content: 2 byte data , bits 15-0, low 12 bits indicate whether 1-12 employee upload successfully or not (1-succesful, 0-fail). For instance, 0000000010101110 means the second, third, Fourth, sixth, eighth user upload successfully, others failed.

14．Download FP Template CMD：0x44

Function：Download FP Template from T&A device

Command：（16 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x44	0x00 0x06	6Byte	CRCL CRCH

Data format：（6 Byte）

DATA	User code	Backup code
Byte	1-5	6

Backup code: 1- FP1, 2 –FP2.

Response：（349 Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC4	ACK_SUCCESS ACK_FAIL ACK_NO_USER	0x01 0x52	338Byte	CRCL CRCH

Data format：（338Byte）

DATA	Fingerprint template feature
Byte	338

Device belongs to iris,Response：（1291Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC4	ACK_SUCCESS ACK_FAIL ACK_NO_USER	0x05 0x00	1280Byte	CRCL CRCH

Data format：（1280Byte）

DATA	特征值
Byte	1280

15．**Upload FP Template** CMD：0x45

Function：Upload fingerprint template to the T&A device

Command：（354 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x45	0x01 0x58	344Byte	CRCL CRCH

Data format：（344 Byte）

DATA	User code	Backup code	eigenvalue
Byte	1-5	6	7-344

Device belongs to iris,Command：（1296Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x45	0x05 0x06	1286Byte	CRCL CRCH

Data format：（1286Byte）

DATA	用户号	备份号	特征值
Byte	1-5	6	7-1286

Response：（11 Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC5	ACK_SUCCESS ACK_FAIL ACK_NO_USER	0x00 0x00	CRCL CRCH

16．**Get device S/N**　　CMD：0x46

Function：Get device ID which we set in device.

Command：（10 Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x46	0x00 0x00	CRCL CRCH

Response：（15 Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC6	ACK_SUCCESS ACK_FAIL	0x00 0x04	4Byte	CRCL CRCH

Data format：（4 Byte）

DATA	Device ID
Byte	1-4

17．**Modify device S/N**　　CMD：0x47

Function：Modify device ID in device menu

Command：（14 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x47	0x00 0x04	4Byte	CRCL CRCH

Data format：（4Byte）

DATA	Device ID
Byte	1-4

Response：（11 Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC7	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

18．**Get device type code**　　CMD：0x48

Function：Read device type code info

Command：（10 Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x48	0x00 0x00	CRCH CRCL

Response：（19 Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC8	ACK_SUCCESS ACK_FAIL	0x00 0x08	8 Byte	CRCL CRCH

Data format：（8 Byte）

DATA	type code
Byte	1-8

For instance (HEX)：02 00 00 00 01 C8 00 00 05 “TC400”000 CRCL CRCH

19．**Modify device type code** CMD：0x49

Function：Modify device type code info

Command：（18 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x49	0x00 0x05	8 Byte	CRCL CRCH

Data format：（8 Byte）

DATA	type code
Byte	1-8

Response：（11 Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC9	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

20．**Get the factory info code** CMD：0x4A

Function：Read the device type info.

A）ANSI version

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x4A	0x00 0x00	CRCL CRCH

Response：（21 Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xCA	ACK_SUCCESS ACK_FAIL	0x00 0x0A	10Byte	CRCL CRCH

Data format：（10Byte）

DATA	Type code
Byte	1-10

B) UNICDE version

Command: (10 byte)

Same as ANSI version

Response (31 byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xCA	ACK_SUCCESS ACK_FAIL	0x00 0x14	20Byte	CRCL CRCH

Data form：（20Byte）

DATA	Message code
Byte	1-20

21. **Modify the factory info code** CMD：0x4B

Function：Modify the device type info.

A) ANSI version

Command：（20 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x4B	0x00 0x0A	10Byte	CRCL CRCH

Data format：（10Byte）

DATA	Type code
Byte	1-10

Response：（11 Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xCB	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

B) UNICODE Version

Command: (30 byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x4B	0x00 0x14	20Byte	CRCL CRCH

Data form (20 byte)

DATA	Message code
Byte	1-20

Response: (11Byte)

Same as ANSI version

22.Delete the designated user data CMD：0x4C

Function：Delete all the data of designated user.

Command：（16 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x4C	0x00 0x06	6Byte	CRCL CRCH

Data format：（6 Byte）

DATA	user code	Backup code
Byte	1-5	6

Backup code define : Byte(3) - card , Byte(2) – password , Byte(1) – FP2 , Byte(0) – FP1 .
(can select the function, it does not cancel the staff info)
Backup code= 0xFF cancel all the data of the user (including the staff info)

Response：（11 Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xCC	ACK_SUCCESS ACK_NO_USER	0x00 0x00	CRCL CRCH

23. Initialize the user area CMD：0x4D

Function：Initialize all the user data area, clear all the staff info, FP data, password/card data

Command：（10 Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x4D	0x00 0x00	CRCL CRCH

Response：（11 Byte）

STX	CH	ACK	RET	LEN	CRC16

0xA5	IDHH IDHL IDLH IDLL	0xCD	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

24. Clear up Records /Clear new records sign CMD：0x4E

Function：Cancel all records, or cancel all/part new records sign.

Command：（13 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x4E	0x00 0x04	4Byte	CRCL CRCH

Data format：（3 Byte）

DATA	clear type	New record amount
Byte	1	2-4

Clear type definition: 0 - Clear up Records.

1 - Clear all the new Records sign.

2 - Clear the designated amount new records sign, new record amount is decided by Byte(2-4).

Response：（11 Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xCE	ACK_SUCCESS ACK_FAIL	0x00 0x03	3Byte	CRCL CRCH

Data format：（3 Byte）

DATA	Delete records/clear new record amount
Byte	1-3

If the delete type is 0, return the amount of cancelling all records;

If the delete type is 1, return the amount of cancelling all the new records;

If the delete type is 2, return the amount of cancelling new records.

25. Initialize System CMD：0x4F

Function：Initialize the device system to recover the factory settings , but the language/ date display format /communication setting /SN /factory info code /device type code is not changed.

Command：（10 Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x4F	0x00 0x00	CRCL CRCH

Response：（11 Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xCF	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

26. Get the time zone info CMD：0x50

Function：Read the time zone info. The total time zone amount is 30.

Command：（11Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x50	0x00 0x01	1Byte	CRCL CRCH

Data format：（1Byte）

DATA	NO.
Byte	1

Response：（39 Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xD0	ACK_SUCCESS ACK_FAIL	0x00 0x1D	28Byte	CRCL CRCH

Data format：（28Byte）

DATA	Monday subsidiary time zone	Tuesday subsidiary time zone	Wednesday subsidiary time zone	Thursday subsidiary time zone	Friday subsidiary time zone	Saturday subsidiary time zone	Sunday subsidiary time zone
Byte	1-4	5-8	9-12	13-16	17-20	21-24	25-28

Subsidiary time zone format：（4Byte）

DATA	Begin hour	Begin minute	End hour	End minute
Byte	1	2	3	4

27. Set time zone info CMD：0x51

Function：Set time zone info, the total time zone amount is 32.

Command：（39 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x51	0x00 0x00	29Byte	CRCL CRCH

Data format：（29Byte）

DATA	NO.	Monday subsidiary time zone	Tuesday subsidiary time zone	Wednesday subsidiary time zone	Thursday subsidiary time zone	Friday subsidiary time zone	Saturday subsidiary time zone	Sunday subsidiary time zone
Byte	1	2-5	6-9	10-13	14-17	18-21	22-25	26-29

Response：（11 Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xD1	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

28. Get the group info CMD：0x52

Function：Read some group info. Group NO. is 0-16 and Group 0/1 is the fixed normal close/ open group. We can just read group 2-16 info.

Command：（11 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x52	0x00 0x01	1Byte	CRCL CRCH

Data format：（1Byte）

DATA	Group NO.
Byte	1

Response：（15 Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xD2	ACK_SUCCESS ACK_FAIL	0x00 0x04	4Byte	CRCL CRCH

Data format：（4Byte）

DATA	time zone 1 NO.	time zone 2 NO.	time zone 3 NO.	time zone 4 NO.
Byte	1	2	3	4

29．Set the group info CMD：0x53

Function：Set some group info. Group NO. is 0-16 and Group 0/1 is the fixed normal close/ open group. We can just set group 2-16 info.

Command：（15 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x53	0x00 0x05	5 Byte	CRCL CRCH

Data format：（5 Byte）

DATA	Group NO.	time zone 1 NO.	time zone 2 NO.	time zone 3 NO.	time zone 4 NO.
Byte	1	1	2	3	4

Response：（11 Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xD3	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

30．Get the scheduled bell info CMD：0x54

Function：Read the scheduled ring time, the total amount is 30.

Command：（10 Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x54	0x00 0x00	CRCL CRCH

Response：（101 Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xD4	ACK_SUCCESS ACK_FAIL	0x00 0x3C	90Byte	CRCL CRCH

Data format：（90Byte）

DATA	Time point 1	Time point 2	…	Time point 30
Byte	1-3	4-6	…	88-90

Time format：（2Byte）

DATA	Hour	Minute	Weekday
Byte	1	2	3

For instance, if weekday=00111110, means from Monday to Friday the bell would ring at specified time. Bits 6-1 stand for Saturday to Monday, 1 means ring, 0 means not ring.

31．Set ring info CMD：0x55

Function：Set bell schedule

Command：（14 Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x55	0x00 0x04	4Byte	CRCL CRCH

Data format：（4Byte）

DATA	NO.	Hour	Minute	Weekday
Byte	1	2	3	4

Response：（11 Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xD5	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

32. Retrieve specified short message CMD: 0x56

Function: Retrieve the start date, end date and content of specified short message. There are 50 Short message at most, index 0-49, message data is 48 bytes.

A) ANSI version

Command: (11Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x56	0x00 0x01	1Byte	CRCL CRCH

Data: short message index, 1 byte.

DATA	Message index
Byte	1

Response: (70Bytes)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xD6	ACK_SUCCESS ACK_FAIL ACK_NO_USER	0x00 0x3B	59 Byte	CRCL CRCH

Data format: (59Bytes)

DATA	User id	Start date			End date			Message content
		year	month	day	year	month	day	
Byte	1-5	6	7	8	9	10	11	12-59

B) UNICODE version

Command: (11bytes)

Same as ANSI version

Response: (118Bytes)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xD6	ACK_SUCCESS ACK_FAIL ACK_NO_USER	0x00 0x6B	107 Byte	CRCL CRCH

Data format: (107Bytes)

DATA	User id	Start date			End date			Message content
		year	month	day	year	month	day	
Byte	1-5	6	7	8	9	10	11	12-107

33. Add short message CMD：0x57

Function: add one short message

A) ANSI version

Command：（69Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x57	0x00 0x3B	59Byte	CRCL CRCH

Data format：（59Byte）

DATA	User id	Start date			End date			Message content
		year	month	day	year	month	day	
Byte	1-5	6	7	8	9	10	11	12-59

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xD7	ACK_SUCCESS ACK_FULL	0x00 0x00	CRCL CRCH

B) UNICODE version

Command：（117Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x57	0x00 0x6B	107Byte	CRCL CRCH

Data format：（107Byte）

DATA	User id	Start date			End date			Message content
		year	month	day	year	month	day	
Byte	1-5	6	7	8	9	10	11	12-107

Response：（11Byte）

Same as ANSI version

34．Read all info head of all short message CMD：0x58

Function: read all info head of all short message

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x58	0x00 0x00	CRCL CRCH

Response：（561Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xD8	ACK_SUCCESS ACK_FAIL	0x02 0x26	550Byte	CRCL CRCH

Data format：（550Byte）

DATA	Info head of message 0	Info head of message 1		Info head of message 49
Byte	1-11	12-22		540-550

Info head format：（11Byte）

DATA	User id	Start date			End date		
		year	month	day	year	month	day
Byte	1-5	6	7	8	9	10	11

If short message doesn't exist, all 11 bytes set as 0xFF

35．Delete specified index short message CMD：0x59

Function: delete specified index short message

Command：（11Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x59	0x00 0x01	1Byte	CRCL CRCH

Data format：（1Byte）

DATA	Message index
Byte	1

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16

0xA5	IDHH IDHL IDLH IDLL	0xD9	ACK_SUCCESS ACK_FAIL ACK_EMPTY	0x00 0x00	CRCL CRCH

If index is 0xFF, delete all short messages.

36. Get T&A state message CMD：0x5A

Function：Get T&A State message

Response：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x5A	0x00 0x00	CRCL CRCH

Response：（27Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xDA	ACK_SUCCESS ACK_FAIL	0x00 0x10	16Byte	CRCL CRCH

Data format：（16Byte）

DATA	T&A State 0	T&A state1	.....	T&A State 15
Byte	1	2	….	16

If actual T&A state less than 16, empty state byte set as 0xFF

Default T&A state（index range 0-254）:

Index 0：IN

Index 1：OUT

Index 2：BREAK

37. Set T&A State parameter table CMD：0x5B

Function：Set T&A State message

Command：（26Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x5B	0x00 0x10	16Byte	CRCL CRCH

Data format：（16Byte）

DATA	T&A State 0	T&A State 1	。。。	T&A State 15
Byte	1	2	。。。	16

If actual T&A state less than 16, empty state byte set as 0xFF

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xDB	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

38. Enroll user FP online CMD：0x5C

Function：enroll user FP online，verify double times

Command：（17Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x5C	0x00 0x07	7Byte	CRCL CRCH

Data format：（7Byte）

DATA	ID	Backup ID	Enroll times

Byte	1-5	6	7

Enroll times define as below：0-first 1-second

Response：（12Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xDC	ACK_SUCCESS ACK_FAIL ACK_TIME_OUT ACK_FULL(only when enroll time==1) ST_USER_OCCUPIED(only when enroll time==1) ST_FINGER_OCCUPIED(only when enroll time==1)	0x00 0x00	CRCL CRCH

39. Get device capacity parameter CMD：0x5D

Function：get device capacity parameter，including employee amount，fingerprints amount，support record amount

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x5D	0x00 0x00	CRCL CRCH

Response：（20Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xDD	ACK_SUCCESS ACK_FAIL	0x00 0x09	9Byte	CRCL CRCH

Data format：（9Byte）

DATA	Support employee amount	Support fingerprint amount	Support record amount
Byte	1-3	4-6	7-9

40. Output signal to open lock without verifying user CMD：0x5E

Function：Force T&A device output signal to open door[1]

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x5E	0x00 0x00	CRCL CRCH

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xDE	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

41. Sent T&A record in real time CMD：0x5F

Function：send T&A records after verify OK, only response message：（25Byte）

Response: (25bytes)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xDF	ACK_SUCCESS ACK_FAIL	0x00 0x0E	14Byte	CRCL CRCH

Data format：（14Byte）

DATA	User ID	*Date&Time*	Backup ID	Record type	Work code
Byte	1-5	6-9	10	11	12-14

Date&Time: how many seconds is it since the year 2000.

*For instance, if record is made at 2012.12.31 24:00, then = (2012-1000)*365*24*3600*

42. Get customized T&A state table CMD：0x70

Function：Read customize attendance state message

A) ANSI version

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x70	0x00 0x00	CRCL CRCH

response：（172Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF0	ACK_SUCCESS ACK_FAIL	0x00 0xA1	161Byte	CRCL CRCH

Data format：（161Byte）

DATA	T&A state NUM	T&A state 0 char	T&A state 1 char	。。。	T&A state 15 char
Byte	1	2-11	12-21	。。。	152-161

Attendance state largest Number is 16

B) UNICODE Version

Command：（10Byte）

Same as ANSI version

Response：（332Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF0	ACK_SUCCESS ACK_FAIL	0x01 0x41	321Byte	CRCL CRCH

Data format：（321Byte）

DATA	attendance state NUM	attendance state 0 char	attendance state 1 char	。。。	attendance state 15 char
Byte	1	2-21	22-41	。。。	302-321

Attendance state largest Number is 16

43. Set attendance state table CMD：0x71

Function：Set customized attendance message

A) ANSI Version

Command：（171Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x71	0x00 0xA1	161Byte	CRCL CRCH

Data format：（161Byte）

DATA	attendance state NUM	attendance state 0 char	attendance state 1 char	。。。	attendance state 15 char
Byte	1	2-11	12-21	。。。	152-161

Attendance state largest Number is 16

although the largest string length is 10, ,because vendor code(as 0x4A command)and attendance state display on LCD are in same row，(string length + vendor code length) should <= 15。For

example, if vendor code length is 10,and every attendance state string length should <=5

response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF1	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

Customized attendance state is one of attendance state mode, another is supplied by 0x5B command ,make following rules in order to distinct：default state is 0x5B，when 0x5B/0x71 is sent attendance device will be switch to0x5B/0x71 mode and keeping this state

B) UNICODE version

command：（331Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x71	0x01 0x41	321Byte	CRCL CRCH

Date format：（321Byte）

DATA	attendance state NUM	attendance state 0 char	attendance state 1 char	。。。	attendance state 15 char
Byte	1	2-21	22-41	。。。	302-321

Response：（11Byte）

Same as ANSI version

44．Download employees data (extended) CMD：0x72

Function：download staff information，12 records at most at one time （data length：12*30= 360Byte）

A) ANSI Version

Command：（12Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x72	0x00 0x02	2Byte	CRCL CRCH

Data format：

DATA	parameter	Data amount
Byte	1	2

Parameter defined as below：

= 0：downloading

= 1：start downloading（must send this to receive first pack）

= 0x10：resend previous information

Information amount<=12

Response：（12 + N * 30Byte – *N is valid message amount*）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF2	ACK_SUCCESS ACK_FAIL	（1 + N * 30）	（1 + N * 30）Byte	CRCL CRCH

Data format：（1 + N * 30Byte）

DATA	Valid message numbers N	Staff information 1	Staff 2	…
Byte	1	2-31	32-61	…

Staff information format：（30Byte）

DATA	User ID	PWD NUM+PWD	CARD ID	NAME	Department	Group	Attendance mode	FP enroll state	PWD 8 digit	keep	Special Info
Byte	1-5	6-8	9-12	13-22	23	24	25	26-27	28	29	30

Password length = Byte(6) >> 4

The low 20bits of password is saved in Byte 6-8, high 8 bits saved in Byte28

FP enroll state define：digit 0 = 1 FP1 enrolled，digit 1 = 1 FP 2 enrolled

Special message digit 7-6：Authority 1-normal user 3-admin

Digit 4：Length of card id 1 – 32 digit 0 – 24digit

If byte 6-8 return0xFF means password not exist

If byte 9-12 return0xFF means card ID not exist

B) UNICODE version

Could download 8 records at most each time(ANSI version is 12）data length ： 8*40= 320Byte

Command ：（12Byte）

Same as ANSI version

Response：（12 + N * 40Byte – *N is valid message numbers*）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF2	ACK_SUCCESS ACK_FAIL	（1 + N * 40）	（1 + N * 40）Byte	CRCL CRCH

Data format：（1 + N * 40Byte）

DATA	Valid data item as N	Staff message 1	Staff message 2	…
Byte	1	2-41	42-81	…

Staff information format：（30Byte）

DATA	User ID	PWD length+ PWD	card	name	dpt	group	Attendance mode	Enroll FP state	Pwd high 8 digit	keep	Special message
Byte	1-5	6-8	9-12	13-32	33	34	35	36-37	38	39	40

45. Upload staff information(extended) CMD：0x73

Function：upload staff information, 12 records at most each time（data length：12*30= 360Byte）

A) ANSI version

Command：（11 + N * 30Byte – *N is data amount*）

STX	CH	command	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x73	1 + N * 30	（1 + N * 30）Byte	CRCL CRCH

data：（1 + N * 30Byte）

DATA	Information Num N	Staff information 1	Staff information 2	…
Byte	1	2-31	32-61	…

Data amount<=12

If user data is empty, set it as 0xFF. For instance, card Id set as 0xFF if user don't enroll card.

FP enroll state can not set, this value is 0

Response：（13Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF3	ACK_SUCCESS ACK_FAIL	0x00 0x02	2Byte	CRCL CRCH

Data format：（2Byte）

DATA	flag
Byte	2

Flag bit 0-11：NO.1-12 staff enroll successfully or not（1：successful；0：fail）

B) UNICODE Version

Upload 8 user date at most each time（ANSI version 12）data length：8*40= 320Byte

Command：（11 + N * 40Byte – *N is data amount*）

STX	CH	Command	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x73	1 + N * 40	（1 + N * 40）Byte	CRCL CRCH

Data format：（1 + N * 40Byte）

DATA	Information numbers N	Staff information 1	Staff information 2	…
Byte	1	2-41	42-81	…

Response：（13Byte）

Same as ANSI version

46．Get communication device ID CMD：0x74

Function：Read communicate device id

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x74	0x00 0x00	CRCL CRCH

Response：（15Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF4	ACK_SUCCESS ACK_FAIL	0x00 0x04	4Byte	CRCL CRCH

Data format：（4Byte）

DATA	Device ID
Byte	1-4

47．Modify communication device ID CMD：0x75

Function：Modify communication device ID

Command：（14Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x75	0x00 0x04	4Byte	CRCL CRCH

Data format：（4Byte）

DATA	Device ID
Byte	1-4

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF5	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

48．Clear administrator flag CMD：0x3D

Function：Clear all administrator flag

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x3D	0x00 0x00	CRCL CRCH

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xBD	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

49. Read employees enrollment timestamp CMD：0x3E

Function：Read specified staff enrollment timestamp, timestamp= how many seconds elapse since 2000-01-01 00:00

Command ：（15Byte）

STX	CH	command	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x3E	0x00 0x04	5Byte	CRCL CRCH

Data format：（4Byte）

DATA	User ID
Byte	1-5

Response：（15Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xBE	ACK_SUCCESS ACK_FAIL	0x00 0x04	4Byte	CRCL CRCH

Data format：（4Byte）

DATA	Time stamp(seconds)
Byte	1-4

50. Set time stamp CMD：0x3F

Function：Set specified staff enrollment timestamp, timestamp= how many seconds elapse since 2000-01-01 00:00

Command：（14Byte）

STX	CH	command	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x3F	0x00 0x04	4Byte	CRCL CRCH

Data format：（4Byte）

DATA	timestamp(seconds)
Byte	1-4

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xBF	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

51. Read random number CMD：0x76

Function：Read random number

Command：（10Byte）

STX	CH	Command	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x76	0x00 0x00	CRCL CRCH

Response：（15Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF6	ACK_SUCCESS ACK_FAIL	0x00 0x04	4Byte	CRCL CRCH

Data format：（4Byte）

DATA	random

Byte	1-4

52. Encrypt device type and language with random numberCMD：0x77

Function：Encrypt device type and language with random number generated by command 0x76

Command：（19Byte）

STX	CH	Command	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x77	0x00 0x09	9Byte	CRCL CRCH

Data form：（4Byte）

DATA	Encrypt model	Encrypt language
Byte	1-8	9

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF7	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

53. Get specified index messageCMD：0x26 only for OA3000

Function：Read the start date and time, end date and time, content of specified index message.

200 message in total, index 0-199，message content is 450 byte in total.

Command：（12Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x26	0x00 0x02	2Byte	CRCL CRCH

Data form：（2Byte）

DATA	index
Byte	2

Response：（472Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xA6	ACK_SUCCESS ACK_FAIL ACK_NO_USER	0x01 0xCD	461 Byte	CRCL CRCH

Data format：（461Byte）

DATA	User ID	Start date			End date			Message title	Message content
		Y	M	D	Y	M	date		
Byte	1-5	6	7	8	9	10	11	12-61 Byte	62-461 Byte

54. Add new message CMD：0x27 only for OA3000

Function：Add a new message

Command：（471Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x27	0x01 0xCD	461Byte	CRCL CRCH

Data form：（461Byte）

DATA	User ID	Start date			End date			Message title	Message content
		Y	M	D	Y	M	D		
Byte	1-5	6	7	8	9	10	11	12-61 byte	62-461byte

User ID is 0 means it's a public message

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xA7	ACK_SUCCESS ACK_FULL	0x00 0x00	CRCL CRCH

55．Read message head of assigned section message CMD：0x28 only for OA3000

Function：Read message head of all short message

Command：（11Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x28	0x00 0x01	1Byte	CRCL CRCH

Data format：（1Byte）

DATA	Section number (0-3)
Byte	1

Data format：（561Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xA8	ACK_SUCCESS ACK_FAIL	0x02 0x26	550Byte	CRCL CRCH

Data format：（550Byte）

DATA	Message 50*section number message head	Message 50*section number +1message head		Message 50*section number +49message head
Byte	1-11	12-22		540-550

Message head format：（11Byte）

DATA	User ID	Start date			End date		
		Y	M	D	Y	M	date
Byte	1-5	6	7	8	9	10	11

If this index message does not exist, 11 bytes all set as 0xFF

56．Delete appointed index message CMD：0x29 only for OA3000

Function：Delete appointed index message content。

Command：（12Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x29	0x00 0x02	2Byte	CRCL CRCH

Data format：（2Byte）

DATA	index
Byte	2

If index is 0xFFFF delete all information

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xA9	ACK_SUCCESS ACK_FAIL ACK_EMPTY	0x00 0x00	CRCL CRCH

57．Get T&A state auto switch setting CMD：0x20 only for OA3000/OA1000

Function：read T&A state auto switch setting，T&A state amount is 16

Command：（11Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x20	0x00 0x01	1Byte	CRCL CRCH

Data format：（1Byte）

DATA	State index
Byte	1

Response：（40Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xA0	ACK_SUCCESS ACK_FAIL	0x00 0x1D	29Byte	CRCL CRCH

Data format：（29Byte）

DATA	Monday Sub-period	Tuesday Sub-period	Wednesday Sub-period	Thursday Sub-period	Friday Sub-period	Saturday Sub-period	Sunday Sub-period	State Number
Byte	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29

Sub-period format：（4Byte）

DATA	Start hour	Start min	End hour	End Min
Byte	1	2	3	4

58．Set T&A state auto switch setting CMD：0x21 only for OA3000/OA1000

Function：Set T&A state auto switch setting, 16 T&A state in total.

Command：（40Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x21	0x00 0x1E	30Byte	CRCL CRCH

Data form：（30Byte）

DATA	Series NO	Monday Sub-period	Tuesday Sub-period	Wednesday Sub-period	Thursday Sub-period	Friday Sub-period	Saturday Sub-period	Sunday Sub-period	State Number
Byte	1	2-5	6-9	10-13	14-17	18-21	22-25	26-29	30

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xA1	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

59．Download staff information (extended) CMD：0x22 761 platform use only

Function ：download staff information, download 6 staff information at most each time（data length：6*84= 504Byte）

Command ：（12Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x22	0x00 0x02	2Byte	CRCL CRCH

Data format：

DATA	parameter	Data items
Byte	1	2

Parameter items define as follow：

= 0：downloading

= 1：start downloading（must send this message to receive first package）

= 0x10：resend last package

Data amount <=12

Response:（12 + N * 84Byte – *N is valid data numbers*）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xA2	ACK_SUCCESS ACK_FAIL	（1 + N * 84）	（1 + N * 84）Byte	CRCL CRCH

Data format：（1 + N * 84Byte）

DATA	Valid data N	Staff information 1	Staff information 2	…
Byte	1	2-85	86-169	…

Staff information format：（84Byte）

DATA	user	Pwd numbers+pwd	Card	name	dpt	group	Attendance mode	FP enroll state	keep	keep	Special information
Byte	1-5	6-8	9-12	13-76	77	78	79	80-81	82	83	84

Password digit = Byte(6) >> 4

FP enroll state define：digit 0 = 1 means enrolled 1，digit 1 = 1 means enrolled 2

Special information digit 7-6：authority 1-normal user 3-administrator

Digit 4：length of card number 1 – 32bit 0 – 24 bit

If byte 6-8 return 0xFF means password not exist

If byte 9-12 return 0xFF means card not exist

60．Upload staff information (extend) CMD：0x23 761plate use only

function：Upload staff information，upload 6 is maximum（data length：6*84= 504Byte）

command ：（11 + N * 84Byte – *N is data numbers*）

STX	CH	command	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x23	1 + N * 84	（1 + N * 84）Byte	CRCL CRCH

Data form：（1 + N * 84Byte）

DATA	Information numbers N	Staff information1	Staff information 2	…
Byte	1	2-85	86-169	…

Information numbers<=6

If no data this value is 0xFF

FP enroll state can not set, this value is 0

Response ：（13Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xA3	ACK_SUCCESS ACK_FAIL	0x00 0x02	2Byte	CRCL CRCH

Data format：（2Byte）

DATA	mark
Byte	2

Mark digit 0-5：NO.1-6 staff upload successful or not（1：successful；0：fail）

61．Get device serial number CMD：0x24

Function：Get device serial number

command：（10Byte）

STX	CH	CMD	LEN	CRC16

0xA5	IDHH IDHL IDLH IDLL	0x24	0x00 0x00	CRCL CRCH

Response ：（27Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xA4	ACK_SUCCESS ACK_FAIL	0x00 0x10	16Byte	CRCL CRCH

Data format：（16Byte）

DATA	Serial number
Byte	1-16

62．Modify device serial number CMD：0x25

Function ： Modify device serial number

Command ：（26Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x25	0x00 0x10	16Byte	CRCL CRCH

Data form：（16Byte）

DATA	Serial number
Byte	1-16

Response ：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xA5	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

63．Get special state CMD：0x2F VF30/VP30/T60+use only

Function：Get special state in current

Command ：（12Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x2F	0x00 0x00	CRCL CRCH

Response ：（19Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xAF	ACK_SUCCESS ACK_FAIL	0x00 0x08	8Byte	CRCL CRCH

Data format：（8Byte）

DATA	state	keep
Byte	1	2-8

State defined as below:

digit 1：door sensor state 0-normal 1-warning

64．Get photo amount CMD：0x2A OA1000/OA3000/761platform use only

Function：Get photo amount

Command ：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x2A	0x00 0x00	CRCL CRCH

Response ：（14Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xAA	ACK_SUCCESS ACK_FAIL	0x00 0x03	3 Byte	CRCL CRCH

Data form ：（3Byte）

DATA	Photo amount
Byte	1-3

65．Get photo head information CMD：0x2B OA1000/OA3000/761 platform only use

Function:Get photo head information，the maximum is 50 file head information in every times

Command:（12Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x2B	0x00 0x02	2Byte	CRCL CRCH

Data format:

DATA	Parameter	Information numbers
Byte	1	2

Parameter item define as follow：

= 0：downloading

= 1：start downloading

= 0x10：resend last package

Information amount<=50

Response:（12 + N * 9Byte – *N is valid information* ）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xAB	ACK_SUCCESS ACK_FAIL	（1 + N * 9）	（1 + N * 9）Byte	CRCL CRCH

Data format:（1 + N * 9Byte）

DATA	Valid information N	Photo file head 1	Photo file head 2	…
Byte	1	2-10	11-19	…

Photo file head form：（9Byte）

DATA	user	Date time
Byte	1-5	6-9

Date time = how many seconds elapse since 2000-01-01 00:00

66．Read specified photo file CMD：0x2C OA1000/OA3000/761platform use only

Function：Read specified photo file

command：（20Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x2C	0x00 0x0A	10Byte	CRCL CRCH

Data format：（10Byte）

DATA	Parameter	photo head
Byte	1	9

Parameter item define as follow：

= 0：downloading

= 1：start downloading

= 0x10：resend last package

Information number<=50

Photo file head form：（9Byte）

DATA	User	Date time
Byte	1-5	6-9

Date time = how many seconds elapse since 2000-01-01 00:00

Response ：（12+NByte　N is real capacity send file package N<=512）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xAC	ACK_SUCCESS ACK_FAIL	(1+N)	(1+N)Byte	CRCL CRCH

Data format：（1+NByte N<=512）

DATA	Parameter	File content
Byte	1	N

Parameter define as follow：

= 0：downloading

= 1：download done

67．Delete specified photo CMD：0x2D　OA1000/OA3000/761plat form use only

Function ： Delete specified photo information

Command ：（19Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x2D	0x00 0x09	9Byte	CRCL CRCH

Data format ：（9Byte）

DATA	Photo head file
Byte	9

Photo head file format：（9Byte）

DATA	User	Date time
Byte	1-5	6-9

Data time = how many seconds elapse since 2000-01-01 00:00

If photo file head is 0xFF delete all

Response ：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xAD	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

68．Update firmware, photo, voice CMD：0x10　761platform use only

Function ： Update firmware ,photo ,voice，must be upload 512 byte every times except package end

command ：（Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x10	16+len	16+len Byte	CRCL CRCH

Data format：

DATA	Parameter	Type	Index	firmware ,photo ,voice, name	Actual byte
Byte	1	1	2	12	len

Parameter define as following ：

= 0：uploading

= 1：start uploading

= 2：end uploading

Type defined as below:

= 0 firmware，= 1photo ，= 2 voice ，= 3 language files

Index item define as follow：

Start from 0, increase by 1 each time

Firmware type define as below：

= 0：firmware，= 1 booter, = 2 character library

Response ：（11Byte）

DLE STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x90	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

69．directory file operationCMD：0x12 761 platforms

Function ： Retrieve file directory and file name, delete file, read file content

Command ：（10+4+len Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x12	4+len	4+len Byte	CRCL CRCH

Data format：

DATA	parameter	type	Index	File name/directory/file content actual byte
Byte	1	1	2	len

Parameter define as following ：

= 0：upload normal

= 1：start upload

= 2：end upload

Type define as below：

=0：get directory and file name from specified directory（must specify directory name）

=1：get specified file content（must specify file name）

=2：delete specified file（must specify file name）

=3：upload firmware（not specify file name）

=4：upload booter（not specify file name）

=5：upload character library （not specify file name）

=6：upload photo, voice , configuration file（must specify file name）

Index item define as below：

0 increase form start

Response ：（11+4+len Byte）

DLE STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x92	ACK_SUCCESS ACK_FAIL	4+len	4+len Byte	CRCL CRCH

Data format：

DATA	Parameter	type	index	File name/catalogue/file content Real byte
Byte	1	1	2	len

Parameter define as following ：

= 0：upload normal

= 1：start upload

= 2：end upload

Type define as below：

=0：get catalogue and file name from appoint catalogue（must be have catalogue name）

=1：get file name from appoint file（must be have file name）

=2：delete appoint file（must be have file name）

=3：upload firmware（not follow file name）

=4：upload boot（not follow file name）

=5：upload word store （not follow file name）

=6：upload photo，voice ,file（must be have file name）

Index item define as below：

0 increase form start

Notice ： 1. The first pack doesn't include any data, it just send transmission request or indicate It's ready

2．directory marked by 0xFF，file marked by 0xFE，multiple directory or file name marked by 0x00

70．Download log record CMD：0x13 761 platform use only

Function ： download log record, 8 records at most each time(record data length ： 8*73 = 584Byte）

Command ：（12Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x40	0x00 0x02	2Byte	CRCL CRCH

Data format ：

DATA	Parameter	Record number
Byte	1	2

Parameter item define as follow:

= 0：downloading normal

= 1：download start ， all record

= 0x10：resend last data package

Record items <=8

Response ：（12 + N * 73Byte – *N is valid record item*）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC0	ACK_SUCCESS FAIL	（1 + N * 73）	（1 + N * 73）Byte	CRCL CRCH

Data form ：（1 + N * 73Byte）

DATA	Valid record item N	Attendance record 1	Attendance record 2	…
Byte	1	2-74	75-147	…

Log record form：（73Byte）

DATA	User id	Date time	Record content
Byte	1-5	6-9	10-73

Data time = how many seconds elapse since 2000-01-01 00:00

71. Read admin card number/admin password CMD：0x1C only for T5

Function ：Get T5A admin card number /T50 admin password

Command ：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x1C	0x00 0x00	CRCL CRCH

Response ：（24Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x9C	ACK_SUCCESS ACK_FAIL	0x00 0x0D	13Byte	CRCL CRCH

Data format: (13Byte)

1) if model is T5A，then

DATA	Add card ID	Delete card id	Keep	Special information
Byte	1-4	5-8	9-12	13

Special information defined as below:

bit 0：Add card length 1 – 32 bit 0 - 24 bit

bit 1：Delete card length 1 - 32 bit 0 - 24 bit

if device model is T5B，RET code return ACK_FAIL

2) *if device model is* T50，

DATA	Manage pwd length+ Manage length	keep
Byte	1-3	4-13

Manage password length = Byte(1) >> 4

72. Set admin card number/admin password CMD：0x1D only for T5

Function：Set T50 admin card number/admin password

Command: (23Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x1D	0x00 0x0D	13Byte	CRCL CRCH

Data format：（13Byte）

1) If device model is T5A，

DATA	Add card ID	Delete card id	Keep	Special information
Byte	1-4	5-8	9-12	13

Special information defined as below:

Digit 0：Add card length 1 – 32digit 0 - 24 digit

digit 1：Delete card length 1 - 32 bit 0 - 24 bit

2) *if device model is T50，RET code return ACK_FAIL*

DATA	Manage PWD length+ Manage PWD	reserved
Byte	1-3	4-13

Manage password length = Byte(1) >> 4

Response ：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x9D	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

if device model is T50，RET code return ACK_FAIL

73．Read daylight saving parameter CMD：0x1A

Function：Get daylight saving flag and time zone

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x1A	0x00 0x00	CRCL CRCH

Response：（27Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x9A	ACK_SUCCESS ACK_FAIL	0x00 0x10	16Byte	CRCL CRCH

Data format：（16Byte）

DATA	enable /disable	date/week option	Start time							Special information						
			M	D	Week of month	Day of week	Hour	Minute	Second	M	D	Week of month	Day of week	Hour	Minute	Second
Byte	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Enable/disable：0-disable 1-enable；

date/week option：1-date format 2-week format；

weeks of month defined as below：

0x01-0x04：former 1-4week

0x81-0x82：latter 1-2 week

Days of week defined as below：

0-6：Sunday /Monday/Tue/Wed/Thu/Fri/Sat

74．Set daylight saving time parameter CMD：0x1B

Function：Set daylight saving flag and time zone

Command：（26Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x1B	0x00 0x10	16Byte	CRCL CRCH

Data format：（16Byte）

DATA	enable /disable	date/week option	Start time							Special information						
			M	D	Week of month	Day of week	Hour	Minute	Second	M	D	Week of month	Day of week	Hour	Minute	Second
Byte	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x9B	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

75．Read optional language combination CMD：0x18

Function：Read optional language combination

Command ：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x18	0x00 0x00	CRCL CRCH

Response：（15Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x98	ACK_SUCCESS ACK_FAIL	0x00 0x04	4Byte	CRCL CRCH

Data format：（4Byte）

DATA	optional language 1	optional language 2	optional language 3	optional language4
Byte	1	2	3	4

We could set 4 optional languages, can only switch language among this 4 language once set.

Optional languages defined as below：0xFF not select

0- simplified Chinese

1- Chinese Traditional

2-english；

3-Frech；

4-German；

5-Spain；

6-Portugal；

7-Italian；

8- Bulgarian；

9- Slovak；

10-hungary；

11-slovene；

12-Turklish；

13-Poland；

14-Bahasa；

15- Romanian；

16-Russian ；

76. Set optional language combination CMD：0x19

Function：Set optional language combination

Command：（14Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x19	0x00 0x04	4Byte	CRCL CRCH

Data format：（14Byte）

DATA	optional language 1	optional language 2	optional language 3	optional language4
Byte	1	2	3	4

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16

0xA5	IDHH IDHL IDLH IDLL	0x99	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

77. Receive feature value /card ID to execute following operation CMD：0x78

Function：Device receive feature value/card ID from communication port, then register or match, no response.

1) If it is feature value

Command：（189Byte）

STX	CH	ACK	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x78	0x00 0xB3	CRCL CRCH

Data format：（179Byte）

DATA	Type	keep	Feature value data
Byte	1	2-10	11-179

Type is 1

2) If it is card ID

Command：（24Byte）

STX	CH	ACK	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x78	0x00 0x0E	CRCL CRCH

Data format：（14Byte）

DATA	Type	keep	card
Byte	1	2-10	11-114

Type is 2

78. Get GPRS parameter CMD：0x16

Function：get GGSN name，GPRS server/local IP address、Port number、User name and Password。

A)Basic version

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x16	0x00 0x00	CRCL CRCH

Response：（119Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x96	ACK_SUCCESS ACK_FAIL	0x00 0x6C	108Byte	CRCL CRCH

Data format：（108Byte）

DATA	GGSN name	server IP address	Port	local IP address	User name	Password	Enable/Disable	keep
Byte	1-16	17-20	21-22	23-26	27-66	67-106	107	108

If GGSN name length less than 16 byte, add 0

If local IPaddress is dynamic,23-26 byte is 0

If User name length less than 40 byte, add 0;if name is null,and not set User name

If Password length less than 40,add 0

Enable/disable：0-disable 1-enable

B) Improved version

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x16	0x00 0x00	CRCL CRCH

Response：（91Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x96	ACK_SUCCESS ACK_FAIL	0x00 0x50	80Byte	CRCL CRCH

Data format：（80Byte）

DATA	GGSN name	server IPaddress	Port	local IP address	User name	password	Enable/Disnable	Keep
Byte	1-32	33-36	37-38	39-42	43-60	61-78	79	80

If GGSN name length less than 32 byte, add 0

If local IPaddress is dynamic,33-36 byte is 0

If User name length less than 18 byte, add 0;if name is null,and not set User name

If Password length less than 18 byte,add 0

Enable/disable：0-disable 1-enable

79.Set GPRS parameter CMD：0x17

Function：set GGSN name，GPRS server/local IP address、Port number、User name and Password。

A)Basic version

Command：（118Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x17	0x00 0x6C	108Byte	CRCL CRCH

Data format：（108Byte）

DATA	GGSN name	server IPaddress	Port	local IP address	User name	password	Enable/Disnable	Keep
Byte	1-16	17-20	21-22	23-26	27-66	67-106	107	108

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x97	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

B) Improved version

Command：（90Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x17	0x00 0x50	80Byte	CRCL CRCH

Data format：（80Byte）

DATA	GGSN name	server IPaddress	Port	local IP address	User name	password	Enable/Disnable	Keep
Byte	1-32	33-36	37-38	39-42	43-60	61-78	79	80

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x97	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

80.Get device extended information code CMD：0x7A

Function：Read vendor name/tax code/address

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x7A	0x00 0x00	CRCL CRCH

Response：（331Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xFA	ACK_SUCCESS ACK_FAIL	0x01 0x40	320Byte	CRCL CRCH

Data format：（320Byte）

DATA	vendor name (UNIODE)	vendor address (UNICODE)	vendor tax code (digit ASCII code)	reserved
Byte	1-50	51-150	151-165	166-320

81.Modify device extend message code CMD：0x7B

Function：Modify vendor name/tax code/address

Command ：（330Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x7B	0x01 0x40	320Byte	CRCL CRCH

Data format：（320Byte）

DATA	vendor name (UNIODE)	vendor address (UNICODE)	vendor tax code (digit ASCII code)	reserved
Byte	1-50	51-150	151-165	166-320

Response：（11Byte）

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xFB	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

82. inquire information of card number CMD：0x7E T5S use only

Function：inquire information of punched card on T5S

Command：（10Byte）

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x7E	0x00 0x00	CRCL CRCH

Response：（15Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xFE	ACK_SUCCESS ACK_FAIL	0x00 0x04	4Byte	CRCL CRCH

Data format：（4Byte）

DATA	Card Number
Byte	1-4

If T5S doesn't get card number,card number is 0.

83.Sending Email CMD：0x7F only for C5

Function：setting for sending email

Command：（11+N Byte）

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x7F	1+N	(1+N)Byte	CRCL CRCH

Data format：（1+N Byte）

DATA	Parameter	Data
Byte	1	N

Illustration for Data：

Parameter value	Parameter illustration	Data length	Data content and format
0x00	Setting mail server	N	SMTP address+Ending flag+User name+ Ending flag +Password+ Ending flag
0x01	Setting reading record	N	（Enable flag+Starting Hour+ Starting minute+Ending Hour+ Ending minute）*5+Email address Note:it can be set 5 time slots,email addresses are separated with “;”
0x02	Setting reading access record	N	（Enable flag+Starting Hour+ Starting minute+Ending Hour+ Ending minute）*2+ Email address Note:it can be set 2 time slots,email addresses are separated with “;”
0x03	Setting abnormal-access record	2	Flag of sending abnormal-access record Note:0-not sending 1-sending
0x10	Getting mail server	0	
0x11	Getting reading record	0	
0x12	Getting reading access record	0	
0x13	Getting abnormal-access record	0	

Response：（11+N Byte）

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xFF	ACK_SUCCESS ACK_FAIL	N	(N)Byte	CRCL CRCH

Note： Parameter value< 0x10,length of Response is 11

Parameter value >=0x10,length of Response is 11+N