TC_B Communication Protocol V2.15

Version	Date	Engineer	Update Notes
V2.1	2013-05-16	David	Modified the definition of the “Record_Type”byte that is the returned value of the command: “Download T&A Records CMD: 0x40”for the Version 02.35 firmware for the M3 hardware platform. Added the improved version of “Get GPRS Parameters CMD: 0x16” and “Set GPRS Parameters CMD: 0x17:” for M3 hardware platform V02.36.
V2.2	2013-11-05	David	Added following commands: 87.Extension Command CMD: 0x2E 88.UDP Search Device Command CMD:0x02 89.UDP Device Configuration CMD:0x03
V2.3	2013-12-07	David	Added the following protocols for the “Records Auto-synchronization project” which is customized for a business acquaintance of ours in Singapore: 90.Heartbeat Package CMD: 0x7F 91.Data Modification Alert CMD: 0x7D 92.Download Personnel Changes CMD: 0x64 93.Download User’s Information(Extended) CMD: 0x65 94.Delete all Personnel Change Records\Reset flag of New Personnel Change CMD: 0x1E
V2.4		Luffy	Added following commands: 95.Get Device Configuration3CMD: 0x34 96.Set Device Configuration3CMD: 0x35
V2.5	2014-04-09	David	Added following commands 97.Connection Authentication CMD: 0x04 It is applicable to Iris Devices Only
V2.6	2014-05-22	David	Added following commands 98.Get Device Configuration 4CMD: 0x36 It is applicable to M4 Platform Only 99.Add Group CMD: 0x61 It is applicable to OA1000 Only 100.Delete Group CMD: 0x62 It is applicable to OA1000 only
V2.7	2014-12-20	David	Added following commands 101.Download a specified user’s Templates/ Images CMD: 0x66 It is applicable to OA1000 Only 102.Batch Download Users’ Templates/Images CMD: 0x67

			It is applicable to OA1000 Only
V2.8	2015-01-14	David	Modified 0x5E/0x5F/0x2F command for Panasonic project; Added Command: 103.Get Result of Last Authentication (Pass/Fail) CMD:0x79 Modified the following Commands: 79. Received Feature Values/ card numbers to execute Following Commands CMD: 0x78 95.Get Device Configuration 3 CMD: 0x34 96.Set Device Configuration 3 CMD: 0x35

V2.9	2015-03-30	David	Added following commands:
			104.Get Timezone Mode Status CMD 0x68
			// It is applicable to C2 Pro only
			105.Set Timezone Mode Status CMD 0x69
			//It is applicable to C2 Pro only

V2.10	2015-11-20	David	Added the following commands:
			106.Upload User's Images CMD: 0x6D
			107.Add Bluetooth User CMD: 0x6A
			It is applicable to M5 Only.
			108.Delete Specific Address of Bluetooth Device CMD: 0x6B
			// It is applicable to M5 Only
			109.Get Information of All Bluetooth Devices
			CMD: 0x6C //It is applicable to M5 Only
			110.Get WIFI Network ConfigurationCMD: 0x6E
			//It is applicable to VX0 Only
			111.Set WIFI Network Configuration CMD: 0x6F
			//It is applicable to VX0 Only

V2.11	2015-01-14	David	Added following commands: 112.Get Authorization Code CMD: 0x05 113.Authorize CMD: 0x06 114.UDP Start Video CMD: 0x07 115.UDP Stop Video CMD: 0x08 116.UDP Command CMD: 0x09
V2.12	2016-05-13	David	Modified CMD: 0x65 Download User’s Information
V2.13	2016-07-25	David	Added following commands: 117. Get Server URL CMD:0x0A 118. Set Server URL CMD:0x0B
V2.14	2016-09-06	David	improved User+DNS process Added following commands:

			88.UDP Search Device CMD: 0x02 89.UDP Device Setting CMD: 0x03
V2.15	2016-12-15	David	Added commands: 119.check whether a user exists CMD:0x0C Modified commands: 95.Get Device Configuration3 CMD: 0x34 96.Set Device Configuration3 CMD: 0x35

Part I Communication Protocol Overall Standard

1)Command format

STX	CH(Device No.)	CMD(Command)	LEN(Data Length)	DATA	CRC16
0xA5	4Byte	1Byte	2Byte	0-600Byte	2Byte

2)Response format:

STX	CH(Device No.)	ACK(Acknowledgment)	RET(Return Value)	LEN(Data Length)	DATA	CRC16
0xA5	4Byte	1Byte(CMD+0x80)	1Byte	2Byte	0-600Byte	2Byte

Description:

CH four bytes sequence: IDHH, IDHL, IDLH, IDLL;

CRC16 Checking is applied to all data,

CRC16 two bytes sequence: CRCL, CRCH;

All devices will response to following Commands, when CH is zero.

The Definition of the RET:

```
#define ACK_SUCCESS             0x00    //Operation Succeeded
#define ACK_FAIL                0x01    //Operation Failed
#define ACK_FULL                0x04    //Exceeded maximum allowed users
#define ACK_EMPTY               0x05    //No User
#define ACK_NO_USER             0x06    //No Such User
#define ACK_TIME_OUT            0x08    //Capture timeout
#define ACK_USER_OCCUPIED       0x0A    //User already exists
#define ACK_FINGER_OCCUPIED     0x0B    //Fingerprint already exists
#define ACK_LOCKED              0x0F    //USB Locked
```

If the RET = ACK_Failed, the length of the DATA field is always equal to 0 byte, and the LEN field has constant value of 0.

Part II Command

1	Get Device Configuration 1	CMD: 0x30
2	Set Device Configuration 1	CMD: 0x31
3	Get Device Configuration 2	CMD: 0x32
4	Set Device Configuration 2	CMD: 0x33
5	Get Device Date/Time	CMD: 0x38
6	Set Device Date/Time	CMD: 0x39
7	Get Network Configuration	CMD: 0x3A
8	Set Network Configuration	CMD: 0x3B
9	Get Records	CMD: 0x3C
10	Download T&A Records	CMD: 0x40
11	Upload T&A Records	CMD: 0x41
12	Download User's Information	CMD: 0x42
13	Upload User's Information	CMD: 0x43
14	Download Fingerprint Template	CMD: 0x44
15	Upload Fingerprint Template	CMD: 0x45
16	Get Device ID No.	CMD: 0x46
17	Set Device ID No.	CMD: 0x47
18	Get Device Model Code	CMD: 0x48
19	Set Device Model Code	CMD: 0x49
20	Get Manufacture Code	CMD: 0x4A
21	Set Manufacture Code	CMD: 0x4B
22	Delete User Data	CMD: 0x4C
23	Initialize User Profile	CMD: 0x4D
24	Erase all Records/ New Records Flag	CMD: 0x4E
25	Initialize System	CMD: 0x4F
26	Get Timezone	CMD: 0x50
27	Set Timezone	CMD: 0x51
28	Get Group Info	CMD: 0x52
29	Set Group Info	CMD: 0x53
30	Get Alarm Info	CMD: 0x54
31	Set Alarm Info	CMD: 0x55
32	Get Index Message	CMD: 0x56
33	Add Index Message	CMD: 0x57
34	Get Headers of All Short MSG	CMD: 0x58
35	Delete Index Message	CMD: 0x59
36	Get T&A Status Parameters List	CMD: 0x5A
37	Set T&A Status Parameters List	CMD: 0x5B
38	Register Fingerprint	CMD: 0x5C
39	Get Device Capacity Parameter	CMD: 0x5D
40	Unlock Without Verification	CMD: 0x5E

41	Output T&A Records in Real Time	CMD: 0x5F
42	Get a Customized T&A Status Report	CMD: 0x70
43	Set a Customized T&A Status Report	CMD: 0x71
44	Download User Info (Extended)	CMD: 0x72
45	Upload User Info(Extended)	CMD: 0x73
46	Get Communication Device ID	CMD: 0x74
47	Modify Communication Device ID	CMD: 0x75
48	Clear Admin Flag	CMD: 0x3D
49	Get Time Stamp	CMD: 0x3E
50	Set Time Stamp	CMD: 0x3F
51	Get a Random No.	CMD: 0x76
52	Encrypt Device Model and Language Setting with a Random Number	CMD:0x77
53	Get a Indexed Message	CMD: 0x26 OA3000 Only
54	Add a Message	CMD: 0x27 OA3000 Only
55	Get Headers of a Ranged Message	CMD: 0x28 OA3000 Only
56	Delete a Specified Message	CMD: 0x29 OA3000 Only
57	Get T&A Status Auto Switching Setting	CMD: 0x20 OA3000/OA1000Only
58	Set T&A Status Auto Switching Setting	CMD: 0x20 OA3000/OA1000Only
59	Get the amount of the Remaining attempts of a Specified User	CMD: 0x10(FeiYiKe Only)
60	Set the amount of daily attempts of a Specified User	CMD: 0x11(FeiYiKe Only)
61	Download User's Info (Extended)	CMD: 0x22 761 Platform Only
62	Upload User's Info (Extended)	CMD: 0x23 761 Platform Only
63	Get Device Serial Number	CMD: 0x24
64	Set Device Serial Number	CMD: 0x25
65	Get Special State	CMD: 0x2F VF30/VP30/T60 Only
66	Get Number of all Images	CMD: 0x2A OA1000/OA3000/761 Platform Only
67	Get Image Header	CMD: 0x2B OA1000/OA3000/761 Platform Only
68	Get Specified Image File	CMD: 0x2C OA1000/OA3000/761 Platform Only
69	Delete Specified Image File	CMD: 0x2D

		OA1000/OA3000/761 Platform Only
70	Update Firmware/Image/Voice Files	CMD: 0x10 761 Platform Only
71	Directory Operations	CMD: 0x12 761 Platform Only
72	Download Log Files	CMD: 0x13 761 Platform Only
73	Get Administrator's Card No./ Password	CMD: 0x1C T5 Only
74	Set Administrator's Card No./ Password	CMD: 0x1D T5 Only
75	Get Daylight Saving Timezone	CMD: 0x1A
76	Set Daylight Saving Timezone	CMD: 0x1B
77	Get Optional Language List	CMD: 0x18
78	Set Optional Language List	CMD: 0x19
79	Receive Feature Value/ Card No. to Execute Following Commands	CMD: 0x78
80	Get GPRS Parameters	CMD: 0x16
81	Set GPRS Parameters	CMD: 0x17
82	Get Device Extended Info	CMD: 0x7A
83	Modify Device Extended Info	CMD: 0x7B
84	Get Card Info	CMD: 0x7E T5s Only
85	Get Auto Restart Time	CMD:0x14 761\OA1000 Only
86	Set Auto Restart Time	CMD: 0x15 761\OA1000 Only
87	Extended Commands	CMD: 0x2E
88	UDP Search Devices	CMD: 0x02
89	UDP Set Device Parameters	CMD: 0x03
90	Heartbeat Package	CMD: 0x7F
91	Data Modification Alert	CMD: 0x7D
92	Download Personnel Change Records	CMD: 0x64
93	Download User's Info (Extended)	CMD: 0x65
94	Clear Personnel Change Records/ Flag	CMD: 0x1E
95	Get Device Configuration 3	CMD: 0x34
96	Set Device Configuration 3	CMD: 0x35
97	Connection Authentication	CMD: 0x04 Iris Device Only
98	Get Device Configuration 4	CMD:0x36 M4 Only
99	Add Department	CMD: 0x61 OA1000 Only
100	Delete Department	CMD: 0x62 OA1000 Only
101	Download Specified User's templates/images	CMD: 0x66 OA1000 Only
102	Batch Download Users' templates/Images	CMD: 0x67 OA1000 Only
103	Get result of Last Authentication (Pass/Fail)	CMD:0x79 Brazilian

		Clients Only
104	Get State Switch Info.	CMD: 0x68 C2 Pro Only
105	Set State Switch Info	CMD: 0x69 C2 Pro Only
106	Upload User's Image to Device	CMD: 0x6D
107	Add Bluetooth Device	CMD:0x6A M5 Only
108	Delete Specific Address of Bluetooth Device	CMD:0x6B M5 Only
109	Get All Bluetooth Users' Info	CMD:0x6C M5 Only
110	Get WIFI Configuration	CMD: 0x6E VX0 Only
111	Set WIFI Configuration	CMD: 0x6F VX0 Only
112	Get Authorization Seed	CMD: 0x05
113	Authorize	CMD: 0x06
114	UDP Start Video	CMD: 0x07
115	UDP Stop Video	CMD: 0x08
116	UDP Command	CMD: 0x09
117	Get a Specified Server's URL	CMD: 0x0A
118	Set a Specified Server's URL	CMD: 0x0B
119	User Exists	CMD: 0x0C

1.CMD: 0x30 Get Device Configuration 1

Function: This command retrieves the firmware version, communication password, sleep time, volume, language, date and time format, attendance state, language flag setting and 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	Version	Version Number is in ASC format.
9-11	Password Length+Password	The length of communication password is equal to Byte(9)>>4;
12	Sleep Mode Time Delay	0-250 minutes, set as 0 which means the device never goes to sleep mode.
13	Volume	0-5, mute if is set as 0, the maximum value is 5.
14	Language	Device Display Language: 0-Simplified Chinese, 1-Traditional Chinese, 3-English, 4-Spanish, 5-Portuguese
15	Time/Date Format	7-4Bit: Date Format: 0-Chinese, 1-American, 2-British 3-0BitL: Time Format: 0-24Hours, 1-12Hours(AM/PM),
16	Attendance state	0-15
17	Language Setting Flag	Language is only changeable when the flag set as ‘0x10’ (761 Only)
18	Command Version	= 0x01,would response to 0x22 0x23 (761 only) =0x02, would response to 0x24 0x25 =0x03, would response to 0x04(ST

		platform Only)

2.CMD: 0x31 Set Device Configuration 1

Function: This command sets the communication password, sleep time delay , volume, language, date format, attendance state, and language setting flag.
Any field without modification should be set as 0xFF.

Commands: (20Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x31	0x00 0x0A	10Byte	CRCL CRCH

Data Format: (10Byte)

Byte	Data
1-3	Communication Password+the length of the PS
4	Sleep Mode Time Delay
5	Volume
6	Language
7	Date/Time Format
8	Attendance State
9	Change Language
10	Reserved (NULL)

Length of the password = Byte(1) >> 4;

Response: (11Byte)

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xB1	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

3.CMD: 0x32 Get Device Configuration 2

Function: This command gets the following parameters: the Precision of the fingerprint matching, Fixed Wiegand Head Code, Wiegand Option, Work code permission, real-time mode setting, FP auto update setting, relay mode, Lock delay, Memory overflow warning, Repeat attendance delay, door sensor delay, scheduled bell delay.

Any field without modification should be set as 0xFF.

Commands: (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	15Byte	CRCL CRCH

Data Format: (15Byte)

Byte	**Data**	**Description**
1	Precision	Range(0-2): 0-Low; 1-Medium, 2-High
2	Fixed Wiegand Header	1-254
3	Wiegand Option	0-Wiegand26, 1-Anviz Wiegand, 2-fixed Wiegand 3- Wiegand26 Card Mode. 4- Wiegand34 Card Mode 5- Wiegand26 little Endian 6- Wiegand34 Big Endian
4	Work Code Setting	0-disabled; 1-enabled
5	Real time mode Setting	0-disabled; 1-enabled
6	FP Auto Updating Setting	0-disabled; 1-enabled
7	Relay Mode	0-disabled; 1-enabled
8	Locker Delay	Range(0-15 Seconds), never open lock if it is set as 0.
9-11	Low Records Memory Warning	Range(0-5000) If the remaining records capacity is lower than threshold, a warning will be triggered. No warning if it is set as 0.
12	Repeat Attendance Delay	Range(0-250 minutes): If it is set as 0, then repeated attendance will be recorded as well.
13	Door Sensor Delay	Range(0-250 seconds): no alarm if is set as 0
14	Bell Delay	Range(0-15 seconds): no bell if is set as 0.
15	Time Correction	Set a duration for time compensation 0-60 increase 0-60seconds each day 0x81-0xBC Decrease 0-60 seconds each day

4.CMD: 0x33 Set Device Configuration 2

Function: This command sets the following parameters: Precision , Fixed Wiegand Head Code, Wiegand Option, Work code permission, real-time mode, FP auto update, relay mode, Lock delay, out of records memory alert, Repeat attendance delay, door sensor delay, scheduled bell delay.
Any field without modification should be set as 0xFF.

Commands: (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	Precision	Range(0-2): 0-Low; 1-Medium, 2-High
2	Fixed Wiegand Header	1-254
3	Wiegand Option	0-Wiegand26, 1-Anviz Wiegand, 2-fixed Wiegand 3- Wiegand26 Card Mode. 4- Wiegand34 Card Mode 5- Wiegand26 little Endian 6- Wiegand34 Big Endian
4	Work Code Setting	0-disabled; 1-enabled
5	Real time mode Setting	0-disabled; 1-enabled
6	FP Auto Updating Setting	0-disabled; 1-enabled
7	Relay Mode	0-disabled; 1-enabled
8	Locker Delay	Range(0-15 Seconds), never open lock if it is set as 0.
9-11	Low Records Memory Warning	Range(0-5000) If the remaining records capacity is lower than threshold, a warning will be triggered. No warning if it set as 0.
12	Repeat Attendance Delay	Range(0-250 minutes): Within the specified time range, only the first record would be take as valid record
13	Door Sensor Delay	Range(0-250 seconds): no alarm if is set as 0
14	Bell Delay	Range(0-15 seconds): no bell if is set as 0.
15	Time Correction	Set a duration for time compensation 0-60 increase 0-60seconds each day 0x81-0xBC Decrease 0-60 seconds each day

Response: (11Byte)

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

5.CMD: 0x38 Get Device Date/Time

Function: This command retrieves the date and time setting .

Commands: (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.CMD: 0x39 Set Device Date/Time

Function: This command sets the date and time

Commands: (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)

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

7.CMD: 0x3A Get Network Configuration

Function: This command retrieves the IP address, sub-net Mask, MAC address, Default gateway, Server IP address, Remote Access Permission, Port Number, TCP/IP mode, DHCP permission.

Commands: (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 Add	Sub net	MAC Add	Default Gateway	Server IP	Remote Access	Port	Mode	DHCP Permission
Byte	1-4	5-8	9-14	15-18	19-22	23	24-25	26	27

Mode definition: 0-Server Mode, 1-Client Mode 2-Client Mode with Server URL enabled

8.CMD: 0x3B Set Network Configuration

Function: This command sets the IP address, sub-net Mask, MAC address, Default gateway, Server IP address, Remote Access Permission, Port Number, TCP/IP mode, DHCP permission.

Commands: (37Byte)

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

Data Format: (27Byte)

DATA	IP Add	Sub net	MAC Add	Default Gateway	Server IP	Remote Access	Port	Mode	DHCP Permission

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.CMD: 0x3C Get Records Info

Function: This command gets record's information, including the number of registered users, Enrolled Fingerprints, Registered Passwords, Registered Cards, Attendance Records, and New Records.

Commands: (10Byte)

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

Response: (29Byte)

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	Number of Users	Number of FPs	Number of PWs	Number of Cards	Number of All Records	Number of New Records
Byte	1-3	4-6	7-9	10-12	13-15	16-18

10.CMD: 0x40 Download T&A Records

Function: This command downloads attendance records, the max number of records is 25 each time.(data length: 25*14 = 350Byte)

Commands: (12Byte)

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

Data Format:

DATA	Parameter	Number of Records
Byte	1	2

Parameter definition:

= 0: downloading

= 1: start downloading; retrieves all the records (While retrieving all records, data parameter should be set to 1 for the inquiry of the first data package.)

= 2: start download; retrieves new records (While retrieving new records, Data parameter should be set to 1 for the inquiry of the first data package.)

= 0x10:Send the previous package again

Records <=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 FAIL	(1+N *14)	(1+N *14)Byte	CRCL CRCH

Data Format: (1+N *14Byte)

DATA	Number of Valid Records N	Record 1	Record 2	…
Byte	1	2-15	16-29	…

Data Format: (14Byte)

DATA	User ID	Date/Time	Backup Code	Record Type	Work Type
Byte	1-5	6-9	10	11	12-14

Date/Time is an accumulator which counts the number of seconds that have elapsed since 2000-01-01 00:00.

Backup code: bit 3—Card bit 2—Password bit 1—FP2 bit 0—FP1

If ‘Record Type’ bit 7(the seventh bit) is equal to 1, which means the door can be opened; or it is equal to 0, which means the door can’t be opened; the low 4 bits is attendance status.

11.CMD:0x41 Upload T&A Record

Function: This command uploads a T&A record at a time.

Commands: (24Byte)

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

Data Format: (14Byte)

DATA	User ID	Date/Time	Backup Code	Record Type	Work Code
Byte	1-5	6-9	10	11	12-14

Date/Time is an accumulator which counts the number of seconds that have elapsed since 2000-01-01 00:00.

Response: (11Byte)

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

12.CMD: 0x42 Download User's Info

Function: This command downloads user's info, maximum package size is 12 records per download. (Data Length: 12*27= 324Byte)
P.S. Platform M3 and WinCE (OA1000, OA3000,Iris) use command 0x72; Platform 761 use command 0x22

Commands: (12Byte)

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

Data Format:

DATA	Parameter	Number of Records
Byte	1	2

Parameter defined as follow:

= 0: Downloading

= 1: Start Downloading (It is required parameter with first data package)

= 0x10: Resend Last Package

Maximum Number of Records <=12

Response: (12+N *27Byte // N is the number of 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 *27Byte)

DATA	Number of Valid Records N	User Data 1	User Data 2	…
Byte	1	2-28	29-55	…

User Data Format: (27Byte)

Byte	Data	Description
1-5	User ID	
6-8	Length of the password +password	Byte(6)>>4
9-1	Card No.	
12-21	Name	
22	Department	
23	Group Code	
24	Attendance Mode	
25-26	FP Register Status	Bit 0 = 1 FP1 enrolled successfully; Bit 1 = 1 FP2 enrolled successfully
27	Special info	Byte(7-6) :1 - Normal User 3-Admin

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

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

13.CMD: 0x43 Upload User's Info

Function: This command uploads user's info, the maximum upload number is 12 records (the length of the info data: 12*27=324Byte)

P.S. Platform of M3 and WinCE (OA1000,OA3000,Iris) use command 0x73;Platform use command 0x23.

Commands: (11+N*27Byte // N is the number of records)

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

Data Format: (1+N *25Byte)

DATA	Records number N	User Info 1	User Info 2	…
Byte	1	2-28	29-55	…

Records number<=12

Data is set as 0xFF without input.

FP Registration State is Constant Zero

Response: (11Byte)

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

Data Format: (2Byte)

DATA	Flag

Byte	2

Flag: bit 0-11: Each bit represents the state of each upload(1: Succeed;0: Failed)

14.CMD: 0x44 Download FP Template

Function: This command downloads users' FP templates from a T&A device

Commands: (16Byte)

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

Data Format: (6Byte)

DATA	User ID	Backup ID
Byte	1-5	6

Back Up ID : 1-FP 1 2-FP 2

Response: (349Byte)

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	Feature value
Byte	338

It is applicable to Iris Device, 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	Iris Feature
Byte	1280

It is applicable to OA1000 PM, Response: (6155Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC4	ACK_SUCCESS ACK_FAIL ACK_NO_USER	0x18 0x00	2048*3Byte	CRCL CRCH

Data Format: (6144Byte)

DATA	Feature
Byte	2048*3

It is applicable to OA1000PU, Response: (2059Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xC4	ACK_SUCCESS ACK_FAIL ACK_NO_USER	0x08 0x00	2048Byte	CRCL CRCH

Data Format: (2048Byte)

DATA	Feature
Byte	2048

15.CMD: 0x45 Upload FP Template

Function: This command sends a fingerprint template to a T&A device.

Commands: (354Byte)

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

Data Format: (344Byte)

DATA	User ID	Backup ID	Feature
Byte	1-5	6	7-344

It is applicable to Iris Devices, Commands: (1296Byte)

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

Data Format: (1286Byte)

DATA	User ID	Backup ID	Feature Value
Byte	1-5	6	7-1286

It is applicable to OA1000PM, Commands: (6160Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x45	0x18 0x06	6150Byte	CRCL CRCH

Data Format: (6150Byte)

DATA	User ID	Backup ID	Feature Value
Byte	1-5	6	7-6150

It is applicable to OA1000PU serials, Commands: (2064Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x45	0x08 0x06	2054Byte	CRCL CRCH

Data Format: (2054Byte)

DATA	User ID	Backup ID	Feature Value
Byte	1-5	6	7-2054

Response: (11Byte)

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

16.CMD: 0x46 Get Device ID

Function: This command gets device ID.

Commands: (10Byte)

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

Response: (15Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16

0xA5	IDHH IDHL IDLH IDLL	0xC6	ACK_SUCCESS ACK_FAIL	0x00 0x04	4Byte	CRCL CRCH

Data Format: (4Byte)

DATA	Device ID
Byte	1-4

17.CMD: 0x47 Set Device ID

Function: This command modifies device ID

Commands: (14Byte)

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: (11Byte)

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

18.CMD: 0x48 Get Device Model code

Function: This command retrieves the model information of a T&A device.

Commands: (10Byte)

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

Response: (19Byte)

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

Data Format: (8Byte)

DATA	Type Code

Byte	1-8

e.g. (HEX): A5 00 00 00 01 C8 00 00 05 “TC400”000 CRCL CRCH

19.CMD: 0x49 Set Device Model Code

Function: This command sets the model information of a T&A device

Commands: (18Byte)

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

Data Format: (8Byte)

DATA	Type Code
Byte	1-8

Response: (11Byte)

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

20.CMD: 0x4A Get Manufacture Code

Function: This command gets manufacture information of a T&A device

A) ANSI version

Commands: (10Byte)

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

Response: (21Byte)

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	Info Code

Byte	1-10

B) UNICODE Version
Commands: (10Byte)
The same as ANSI version

Response: (31Byte)

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

Data Format: (20Byte)

DATA	Info Code
Byte	1-20

21.CMD: 0x4B Set Manufacture Code

Function: This command modifies manufacture information of a T&A device.

A) ANSI Version
Commands: (20Byte)

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

Data Format: (10Byte)

DATA	Info Code
Byte	1-10

Response: (11Byte)

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

B) UNICODE Version

Commands: (30Byte)

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

Data Format: (20Byte)

DATA	Info Code
Byte	1-20

Response: (11Byte)

Same as ANSI version

22.CMD: 0x4C Delete Designated User Data

Function: This command deletes all data of a specified user.

Commands: (16Byte)

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

Data Format: (6Byte)

DATA	User ID	Backup ID
Byte	1-5	6

Backup ID Definition :
bit 3-Card;
bit 2-Password
bit 1-FP 2
bit 0-FP 1(optional, it does not delete the user's information)
If Backup ID = 0xFF, all data of the user will be erased(including user's information)

Response: (11Byte)

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

23.CMD: 0x4D Initialize User Profile

Function: This command Initializes all data of a user, including: User Info, FP, PW, Card.

Commands: (10Byte)

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

Response: (11Byte)

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

24.CMD: 0x4E Erase all Records/ New Records Flag

Function: This command deletes all records/ new records flag or partial new records flag.

Commands: (14Byte)

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

Data Format: (4Byte)

DATA	Deletion Type	Number of New Records
Byte	1	2-4

Deletion Type Definition:
0-Delete All Records;
1-Delete All New Records;
2-Delete a certain number of new records flag, byte2-4 = quantity

Response: (14Byte)

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

Data Format: (3Byte)

DATA	Number of Deleted Records/New Records
Byte	1-3

If it set as type 0, the return value is the number of deleted records.
If it set as type 1, the return value is the number of deleted entire new records.
If it set as type 2, the return value is the number of deleted new records.

25.CMD: 0x4F Initialize System

Function: This command resets a T&A device to factory setting, except: language, time/date format, communication parameters, device ID, Manufacture ID/info code and Device Model code.

Commands: (10Byte)

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

Response: (11Byte)

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

26.CMD: 0x50 Get Timezone

Function: This command retrieves timezone value, the maximum number of timezone is 32.

Commands: (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: (39Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xD0	ACK_SUCCESS ACK_FAIL	0x00 0x1C	28Byte	CRCL CRCH

Data Format: (28Byte)

DATA	Mon sub-timezone	Tues sub-timezone	Wed sub-timezone	Thur sub-timezone	Fri sub-timezone	Sat sub-timezone	Sun sub-timezone
Byte	1-4	5-8	9-12	13-16	17-20	21-24	25-28

Sub-timezone Format: (4Byte)

DATA	Start Hour	Start Minute	End Hour	End Minute
Byte	1	2	3	4

27.CMD: 0x51 Set Timezone

Function: This command sets timezone, maximum number of timezone is 32

Commands: (39Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x51	0x00 0x1D	29Byte	CRCL CRCH

Data Format: (29Byte)

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

Response: (11Byte)

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

28.CMD: 0x52 Get Group Info

Function: This command retrieves information of a group which is ranged from group 2 to group 16. The group 0/1 is a normal close/ normal open group.

Commands: (11Byte)

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: (15Byte)

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	Timezone 1 No.	Timezone 2 No.	Timezone 3 No.	Timezone 4 No.
Byte	1	2	3	4

29.CMD: 0x53 Set Group Information

Function: This command sets information of a group, ranged from group 2 to group 16. The group 0/1 is a normal close/ normal open group.

Commands: (15Byte)

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

Data Format: (5Byte)

DATA	Group No.	Timezone1 No.	Timezone2 No.	Timezone3 No.	Timezone4 No.
Byte	1	2	3	4	5

Response: (11Byte)

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

30.CMD: 0x54 Get Alarm Setting

Function: This command retrieves time setting of all scheduled alarms, the maximum number of alarms is 30.

Commands: (10Byte)

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

Response: (101Byte)

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

Time Format: (2Byte)

DATA	Hour	Minute	Week day
Byte	1	2	3

Week Day Field

Bit	6	5	4	3	2	1	0
Day	Saturday	Friday	Thursday	Wednesday	Tuesday	Monday	Sunday

For instance, if the alarm are daily repeated from Monday to Friday, the binary value of the field is 0111110, and decimal value is 62.

31.CMD: 0x55 Set Alarm

Function: This command sets time of an alarm.

Commands: (14Byte)

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

Data Format: (4Byte)

DATA	No.	Hour	Minute	Week Day
Byte	1	2	3	4

Response: (11Byte)

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

32.CMD: 0x56 Get Indexed Messages

Function: This command retrieves 50 messages for each inquiry, indexed from 0 to 49. The maximum size for each message is 48 byte.

A) ANSI Version

Commands: (11Byte)

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

Data Format: (1Byte)

DATA	Index
Byte	1

Response: (70Byte)

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: (59Byte)

DATA	User ID	Start Date			End Date			Content
		Y	M	D	Y	M	D	
Byte	1-5	6	7	8	9	10	11	12-59byte

B) UNICODE Version

Commands: (11Byte)

Same as the ANSI Version

Response: (118Byte)

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: (107Byte)

DATA	User ID	Start Date			End Date			Content
		Y	M	D	Y	M	D	
Byte	1-5	6	7	8	9	10	11	12-107 Byte

33.CMD: 0x57 Add Index Message

Function: This command add a message

A) ANSI Version

Commands: (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			Content
		Y	M	D	Y	M	D	
Byte	1-5	6	7	8	9	10	11	12-59byte

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

Commands: (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			Content
		Y	M	D	Y	M	D	
Byte	1-5	6	7	8	9	10	11	12-107byte

Response: (11Byte)

The same as ANSI Version

34.CMD: 0x58 Get Headers of All Index MSG

Function: This command retrieves headers of all short Messages.

Commands: (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	MSG0 Header	MSG1 Header	....	MSG49 Header
Byte	1-11	12-22	....	540-550

Header Data Structure : (11Byte)

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

If the message doesn't exist, all 11 bytes should be set as 0xFF

35.CMD: 0x59 Delete Index Message

Function: This command deletes an index message.

Commands: (11Byte)

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

Data Format: (1Byte)

DATA	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 the index value is equal to '0xFF', all messages will be deleted.

36.CMD: 0x5A Get T&A Status Parameters List

Function: This command retrieves information of attendance status

Commands: (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 Status 0	T&A Status 1	...	T&A Status 15
Byte	1	2	...	16

If the number of T&A status is less than 16, then the unused state byte should be set as 0xFF.

The Default T&A status (index ranged from 0-254)

Index 0: IN

Index 1: OUT

Index 2: BREAK

37.CMD: 0x5B Set T&A Status Parameters List

Function: This command sets T&A Status parameters list

Commands: (26Byte)

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

Data Format: (16Byte)

DATA	T&A Status 0	T&A Status 1	...	T&A Status 15
Byte	1	2	...	16

If the number of T&A status is less than 16, then the unused status byte should be 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. CMD: 0x5C Enroll Fingerprint Online

Function: This command Enroll Fingerprint twice

Commands: (17Byte)

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

Data Format: (7Byte)

DATA	User ID	Backup ID	Number of Registration
Byte	1-5	6	7

Number of Registration: 0- the 1st time, 1- the 2nd time

Response: (12Byte)

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xDC	ACK_SUCCESS ACK_FAIL ACK_TIME_OUT ACK_FULL(only applicable to the first registration) ST_USER_OCCUPIED(only applicable to the first registration) ST_FINGER_OCCUPIED(only applicable to the first registration)	0x00 0x00	CRCL CRCH

39. CMD: 0x5D Get Device Capacity Parameter

Function: This command retrieves device capacity parameter, including maximum number of Users, fingerprints, and records.

Commands: (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	Max Number of Users	Max Number of FPs	Max Number of Records
Byte	1-3	4-6	7-9

40. CMD: 0x5E Unlock Door Without Authentication

Function: This command opens the door without authentication.

Commands: (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

Commands: (16Byte) It is applicable to Panasonic Project only

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x5E	0x00 0x06	6Byte	CRCL CRCH

Data Format: (6Byte)

DATA	Unlock CMD	User ID
Byte	1	2-6

Unlock field definition:

0: Normal Unlock

1: Forced Unlock

Response: (11Byte)

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

41.CMD: 0x5F Output T&A Records in Real Time

Function: This command, which only provides Response data packages, outputs T&A records automatically after verification.

Response: (25Byte)

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 is an accumulator which counts the number of seconds that have elapsed since 2000-01-01 00:00.

If work code is set to 0xFF000,then any user is added offline will trigger a real time event which will be saved into a database. (It will be available for generic firmware.)

42.CMD: 0x70 Get Customized T&A Statuses

Function: This command retrieves a list of user defined T&A statuses

A) ANSI Version

Commands: (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	Status No.	Status 0	Status 1	...	Status 15
Byte	1	2-11	12-21	...	152-161

The Maximum number of status is16;

B) UNICODE Version

Commands: (10Byte)

The 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	Status No.	Status 0	Status 1	...	Status 15
Byte	1	2-21	22-41	...	302-321

The Maximum number of status is16.

43.CMD: 0x71 Set Customized T&A Statuses

Function: This command sets customized T&A statuses.

A) ANSI Version

Commands: (171Byte)

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

Data Format: (161Byte)

DATA	Status No.	Status 0	Status 1	...	Status15
Byte	1	2-11	12-21	...	152-161

The Maximum number of statuses is16 byte;

The maximum length of each status string is10 byte.The contents of manufacture information code and T&A status are confined to one row, therefore total length of strings should be less than or equal to 15 byte.(Refer to 0x4A)

For instance, if the length of Manufacture Code is equal to 10 byte, the length of each T&A

status should be less than or equal to 5 byte.

Response: (11Byte)

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

Customized attendance status 0x71 is one of attendance status modes, another is supplied by 0x5B command . The default mode is 0x5B , status mode will be switched and kept accordingly upon receipt of a 0x5B or 0x71 command.

B) UNICODE Version

Commands: (331Byte)

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

Data Format: (321Byte)

DATA	T&A Status No.	T&A Status 0	T&A Status 1	...	T&A Status 15
Byte	1	2-21	22-41	...	302-321

Response: (11Byte)

The same as ANSI Version

44. CMD: 0x72 Download User Data (Extended)

Function: This command downloads user data. The maximum data package contains 12 records for each download.
data length:12*30= 360Byte

A) ANSI Version

Commands: (12Byte)

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

Data Format:

DATA	Parameter	Number of Data
Byte	1	2

Parameter definition:

= 0: downloading

= 1: Start downloading(Data parameter should be set to 1 for the inquiry of the first data package.)

= 0x10: resend the previous data package

Number of data<=12

Response: (12+N*30Byte // N is the number of valid messages)

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	No.of valid MSG N	User Data 1	User Data2	…
Byte	1	2-31	32-61	…

Data Structure : (30Byte)

DATA	User ID	PW Length + PW	Card ID	Name	Depart.	Group ID	Attend. Mode	FP Registration Status	MSByte of the PW	Reserved	Special Info
Byte	1-5	6-8	9-12	13-22	23	24	25	26-27	28	29	30

PW length = Byte(6) >> 4

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

MS Byte of the password is saved in Byte 28.

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

Special message: Digit 7-6:Permission: 1-user 3-admin

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

If byte 6-8 returns 0xFF which means password does not exist

If byte 9-12 returns 0xFF which means card ID does not exist

B) UNICODE Version

Function: The maximum data package contains 8 records for each download.(12 records for ANSI Version)

The length of the data: 8*40= 320Byte

Command:(12Byte)

Same ANSI Version

Response: (12+N *40Byte // N is the number of valid records)

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	Number of the Valid Records N	User data 1	User data 2	…
Byte	1	2-41	42-81	…

User Data Format: (40Byte)

DATA	User ID	PW Length+ PW	Card ID	Name	Department	Group ID	Attendance Mode
Byte	1-5	6-8	9-12	13-32	33	34	35

DATA	FP Enrollment Status	PWMS Byte	Reserved	Special Info
Byte	36-37	38	39	40

45. CMD: 0x73 Upload User Data(Extended)

Function: This command uploads users' data.The maximum data package contains 12 records for each upload(the length of each package is 12*30=360 Byte)

A) ANSI Version.

Commands: (11+N *30Byte // N is the number of records)

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

Data Format: (1+N *30Byte)

DATA	Records Number N	User Data1	User Data 2	…
Byte	1	2-31	32-61	…

Records Number <=12

Any empty field should be set as 0xFF.

Notice: the status of fingerprint enrollment has a constant value of 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: bit0-11: checks the upload status of the No.1 - No.12 Users' data (1:Succeed,0:Failed)

B) UNICODE Version

Function: The maximum data package contains 8 records for each upload. The length of each package is 8*30=320Byte. (12 records for ANSI)

Commands: (11+N *40Byte // N is number of records)

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

Data Format: (1+N *40Byte)

DATA	Records Number N	User data1	User Data2	…
Byte	1	2-41	42-81	…

Response: (13Byte)

Same as ANSI Version

46.CMD: 0x74 Get Communication Device ID

Function: This command retrieves communication device ID.

Commands: (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.CMD: 0x75 Modify Communication Device ID

Function: This command modifies communication device ID

Commands: (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.CMD: 0x3D Clear Admin Flag

Function: This command deletes all administrators' flag.

Commands: (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.CMD: 0x3E Get Time Stamp

Function: This command retrieves the time stamp of a User's registration, time stamp format is the number of seconds that have elapsed since 2000-01-01 00:00

Commands: (15Byte)

STX	CH	CMD	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.CMD: 0x3F Set Time Stamp

Function: This command sets a time stamp of a user's registration , value is equal to the number of seconds have elapsed since 2000-01-01 00:00

Commands: (14Byte)

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

Data Format: (4Byte)

DATA	Time Stamp (Secs)
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.CMD: 0x76 Get Random Number

Function: This command retrieves an random number.

Commands: (10Byte)

STX	CH	CMD	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 Number
Byte	1-4

52.CMD: 0x77 Encrypt Device Model and Language Options with a Random Number

Function: This command executes command 0x76 to retrieve a random number for data encryption.

Commands: (19Byte)

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

Data Format: (4Byte)

DATA	Encrypted Model	Encrypted 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.CMD: 0x26 Get Specified Index Message

Function: This command retrieves the ‘Start Date’, ‘End Date’ and ‘Content’ of indexed messages, which contains 200 records, ranged from 0 to 199, 450 byte in total.
It is applicable to OA3000 only

Commands: (12Byte)

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

Data Format: (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			Title	Content
		Y	M	D	Y	M	D		
Byte	1-5	6	7	8	9	10	11	12-61byte	62-461byte

54.CMD: 0x27 Add a Indexed Message

Function: This command adds a message. It is applicable to OA3000 only

Commands: (471Byte)

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

Data Format: (461Byte)

DATA	User ID	Start Date			End Date			Title	Content
		Y	M	D	Y	M	D		
Byte	1-5	6	7	8	9	10	11	12-61byte	62-461byte

User ID = 0 indicates 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.CMD: 0x28 Get Headers of a Ranged Message

Function: This command retrieve headers of all message. It is applicable to OA3000 Only

Commands: (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

Response: (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	MSG 50*Section Number MSG Header	MSG 50*Section Number+1 MSG Header	....	MSG 50*Section Number +49 MSG Header
Byte	1-11	12-22	.....	540-550

Header Data Structure : (11Byte)

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

If an indexed massage doesn't exist, then all 11 bytes should be set as 0xFF.

56.CMD: 0x29 Delete a indexed Message

Function: This command delete a specific indexed message. It is applicable to OA3000 only

Commands: (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 value is 0xFFFF, all messages will be erased.

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.CMD: 0x20 Get T&A Status Auto Switching Setting

Function: This command gets the setting of statuses switching. The maximum number of statuses is 16. It is applicable to OA3000/OA1000 only

Commands: (11Byte)

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

Data Format: (1Byte)

DATA	No.
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	Mon Sub-timezone	Tues Sub-timezone	Wed Sub-time zone	Thurs Sub-time zone	Fri Sub-timez one	Sat Sub-timezone	Sun Sub-timezone	Status No.
Byte	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29

Sub-Timezone Data Format: (4Byte)

DATA	Start Hour	Start Min.	End Hour	End Min.
Byte	1	2	3	4

58.CMD: 0x21 Set T&A Status Auto Switching Setting

Function: This command sets statuses switching setting. The maximum number of statuses is 16. It is applicable to OA3000/OA1000 only

Commands: (40Byte)

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

Data Format: (30Byte)

DATA	NO.	Mon Sub-timezone	Tues. Sub-timezone	Wed. Sub-timezone	Thur. Sub-timezone	Fir. Sub-timezone	Sat. Sub-timezone	Sun. Sub-timezone	Status No.
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.CMD: 0x10 Get the Number of Daily Remaining Attempts of a Specified User

It is applicable to FeiYiKe customization only.

Commands: (15Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x10	0x00 0x05	5Byte	CRCL CRCH

Data Format: (5Byte)

DATA	User ID
Byte	1-5

Response: (12Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x90	ACK_SUCCESS ACK_FAIL	0x00 0x01	1Byte	CRCL CRCH

Data Format: (1Byte)

DATA	Daily Remaining Attempts
Byte	1

60.CMD: 0x10 Set Daily Attempts Number of a Specified User

It is applicable to FeiYiKe customization only

Commands: (16Byte)

STX	CH	CMD	LEN	DATA	CRC16

0xA5	IDHH IDHL IDLH IDLL	0x11	0x00 0x06	6Byte	CRCL CRCH

Data Format: (6Byte)

DATA	User ID	Daily Attempts
Byte	1-5	6

Daily attempts is ranged from 0-2 .

Response: (11Byte)

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x91	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

61.CMD: 0x22 Download User Data(Extended)

Function : The maximum data package contains 6 records for each download(the length of each package is 6*84=504 Byte) It is applicable to the 761 Platform only.

Commands: (12Byte)

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

Data Format:

DATA	Parameter	Records Number
Byte	1	2

Parameters Definition:

= 0: Downloading

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

= 0x10: resend the previous package

Records Number <=12

Response: (12+N *84Byte // N is the number of the valid records)

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 Records Number N	User Data 1	User Data2	…

Byte	1	2-85	86-169	…

Data format: (84Byte)

DATA	User ID	PW Length+ PW	Card ID	Department	Group ID	Attend. Mode	FP Enroll State	Reserved	Reserved	Special Info
Byte	1-5	6-8	9-12	77	78	79	80-81	82	83	84

Password length = Byte(6) >> 4

FP enrollment state: bit0 = 1: FP1enrolled; bit 1 = 1 :FP2 enrolled

Special Info : bit 7-6: Permission : 1-user ; 3 -Admin

Bit4: the length of card ID 1-32bit; 0-24bit

If byte6-8 = 0xFF, the password doesn't exist.

If byte9-12 = 0xFF, the card ID doesn't exist.

62. CMD: 0x23 Upload User Data(Extended)

Function : Data package contains maximum 6 records for each download(the length of each package is 6*84=504 Byte) it is applicable to the 761 Platform only

Commands: (11+N *84Byte // N is the number of valid records)

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

Data Format: (1+N *84Byte)

DATA	Records Number N	User Data1	User Data 2	…
Byte	1	2-85	86-169	…

Records Number <=6

Any empty field should be set as 0xFF

FP Enroll State has a constant value 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	Flag
Byte	2

Flag bit0-5: represents upload status (1:Succeed; 0:Failed)

63. CMD: 0x24 Get Device Serial Number

Function: This command retrieves the device serial number

Commands: (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	SN
Byte	1-16

64.CMD: 0x25 Modify Device Serial Number

Function: This command modifies device serial number

Commands: (26Byte)

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

Data Format: (16Byte)

DATA	SN
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

65.CMD: 0x2F Get Special State

Function: This command retrieve current special state. It is applicable to VF30/VP30/T60+only

Commands: (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	Reserved
Byte	1	2-8

State definition::

Bit 1: Door alarm state: 0-Normal 1-Fired
Bit 5: Door State: 0-Closed 1- Opened
Bit 6: State of magnetic door sensor 0-Closed 1-Opened
Bit 7: Lock state 0-Closed 1-Opened

66.CMD: 0x2A Get Number of All Images

Function: This command retrieves the number of all images. It is applicable to OA1000/OA3000/761 only

Commands: (10Byte)

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

Iris device protocol

Commands: (11Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x2A	0x00 0x01	1Byte	CRCL CRCH

Data Format:

DATA	Image Type
Byte	1

Definition of the Image type: 1- Register Succeed, 2-Register Failed 3-Matching Failed, 4-Snapshot mode

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 Format: (3Byte)

DATA	Total Images Number
Byte	1-3

67. CMD: 0x2B Get Image Headers

Function: This command retrieves maximum 50 headers of image files each time. It is applicable to OA1000/OA3000/761 series only.

Commands: (12Byte)

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

Data Format:

DATA	Parameter	Records Number
Byte	1	2

Parameter Definition:

= 0: Downloading

= 1: Download Commencing (Data parameter should be set to 1 for the inquiry of the first data package.)

= 0x10: resend the previous data package

Number of records <=50

Response: (12+N *9Byte // N is the number of valid messages)

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	No. of valid data N	Header 1	Header2	…
Byte	1	2-10	11-19	…

Header Data Format: (9Byte)

DATA	User ID	Date/Time
Byte	1-5	6-9

Date/Time the number of seconds that have elapsed since 2000-01-01 00:00

Iris Device Protocol Adjustment

Commands: (13Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x2B	0x00 0x03	3Byte	CRCL CRCH

Data Format:

DATA	Parameter	Records Number	Image Type
Byte	1	2	1

Image type definition: 1- Succeed, 2-Failed, 3-Matching Failed, 4- Snapshot Mode

Response: (12+N *10Byte // N is the valid records number)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xAB	ACK_SUCCESS ACK_FAIL	(1+N *10)	(1+N *10)Byte	CRCL CRCH

Data Format: (1+N *10Byte)

DATA	Valid Data N	Header 1	Header 2	…
Byte	1	2-11	12-21	…

Image Header Data format : (10Byte)

DATA	User ID	Date/Time	No.
Byte	1-5	6-9	10

Date/Time : the number of seconds that have elapsed since 2000-01-01 00:00

68.CMD: 0x2C Get a Specified Image File

Function: This command retrieves a specified image file. It is applicable to OA1000/OA3000/761 series only

Commands: (20Byte)

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

Data Format: (10Byte)

DATA	Parameter	Image Header
Byte	1	9

Parameter Definition :

= 0: Downloading

= 1: Download Commencing (Data parameter should be set to 1 for the inquiry of the first data package.)

= 0x10: Resend the previous package

Image Header Data Format: (9Byte)

DATA	User ID	Date/Time
Byte	1-5	6-9

Date/Time : the number of seconds that have elapsed since 2000-01-01 00:00

Response: (12+N Byte N is the size of transmitted 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+N Byte N<=512)

DATA	Parameter	Content
Byte	1	N

Parameter Definition:

= 0: Downloading

= 1: Download Completed

Adjustment for Iris Device Protocol

Commands: (22Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x2C	0x00 0x0C	12Byte	CRCL CRCH

Data Format: (10Byte)

DATA	Parameter	Image Header	Image Type
Byte	1	10	1

Image Type Definition : 1- Register Succeed,
2-Register Failed,
3-Matching Failed,
4-Snapshot Mode,
5-Real-time Monitoring

Response: (12+N Byte N is the size of the transmitted package)

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+N Byte N<=51200)

DATA	Parameter	Content
Byte	1	N

Parameter Definition:

= 0: Downloading

= 1: Download Completed

69. CMD: 0x2D Delete a Specified Image

Function: This command deletes a specified image. It is applicable to OA1000/OA3000/761 series only

Commands: (19Byte)

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

Data Format: (9Byte)

DATA	Image Header
Byte	9

Image Header Data Structure : (9Byte)

DATA	User ID	Date/Time
Byte	1-5	6-9

Date/Time : The number of seconds have elapsed since 2000-01-01 00:00

Delete all image files if image header is set to 0xFF.

Response: (11Byte)

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

Iris Device Protocol Adjustment

Commands: (21Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x2D	0x00 0x0B	11Byte	CRCL CRCH

Data Format: (11Byte)

DATA	Image Header	Image Type
Byte	1-10	11

Image Type Definition:: 1-Register Succeed, 2-Register Failed, 3-Matching Failed, 4-Snapshot mode

70.CMD: 0x10 Update Firmware/Image/Voice

Function: This command updates firmware, image and voice files with 521byte packages except the last package . It is applicable to the 761Platform only

Commands: (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 Version, Image File Name, Voice File Name	Data
Byte	1	1	2	12	len

Parameter Definition:

= 0: Uploading

= 1: Upload Commencing (Data parameter should be set to 1 for the inquiry of the first data package.)

= 2: Upload Completed

Type Definition :

= 0 Firmware, = 1Image, = 2Voice, = 3Voice Configuration file

Index Definition::

Increment from 0

Firmware Type Definition:

= 0: Firmware , = 1 boot, = 2 Fonts

Response: (11Byte)

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

71.CMD: 0x12 Directory Operation

Function: This command deals with directory operation, such as retrieving folders and files name, deleting files and getting content of a file. It is applicable to the 761 platform only.

Commands: (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/ Folder Name/Content Real Data/
Byte	1	1	2	len

Parameter Definition:

= 0: transmitting

= 1: Transmission Commencing

= 2: Transmission Completed

Type Definition:

=0: Retrieve files names and sub-directory names from a directory(Specified directory name)

=1: Retrieve content of a specified file(specified file name)

=2: Delete a specified file(specified file name)

=3: Upload Firmware(no specified file name)

=4: Upload boot(no specified file name)

=5: Upload fonts (no specified file name)

=6: Upload image, Voice, configuration file (specify file name)

Index Definition:

Increment from 0

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/Directory_Name/File_Content/ Real data
Byte	1	1	2	len

Parameter Definition:

= 0: transmitting

= 1: Transmission Commencing

= 2: Transmission Completed

Type Definition:

=0: Retrieve files names and sub-directory names from a directory(Specify directory name)

=1: Retrieve content of a specified file(specify file name)

=2: Delete a specified file(specify file name)

=3: Upload Firmware(no specified file name)

=4: Upload boot(no specified file name)

=5: Upload fonts (no specified file name)

=6: Upload image, Voice, configuration file (specify file name)

Index Definition:

Increment from 0

Notice: 1, “Transmission Commencing ” package doesn’t contain any real data, which only indicates that the requested data is ready for transmission.

2.The separator for file, directory and files(directories) is 0xFE,0xFF and 0x00

respectively.

72. CMD: 0x13 Download Log Files

Function: Data package contains maximum 8 log records for each download(the length of each package is 8*73=584 Byte) It is applicable to the 761Platform only

Commands: (12Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x13	0x00 0x02	2Byte	CRCL CRCH

Data Format:

DATA	Parameter	Record Number
Byte	1	2

Parameter Definition :

= 0: Downloading

= 1: Downloading Commencing , (while retrieving all records , Data parameter should be set to 1 for the inquiry of the first data package.)

= 0x10: resend the previous package

Records Number <=8

Response: (12+N *73Byte // N is the number of valid records)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x93	ACK_SUCCESS FAIL	(1+N *73)	(1+N *73)Byte	CRCL CRCH

Data Format: (1+N *73Byte)

DATA	Number of Valid Records N	Attendance Record 1	Attendance Record 2	…
Byte	1	2-74	75-147	…

Log Data Structure : (73Byte)

DATA	User ID	Date/Time	Content
Byte	1-5	6-9	10-73

Date/Time: the number of seconds that have elapsed since 2000-01-01 00:00

73.CMD: 0x1C Get Admin Card ID/ Password

Function: This command retrieves administrator ’s card ID for T5A and administrator’s password for T50. It is applicable to T5 only.

Commands: (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) T5A

DATA	Add Card ID	Delete Card ID	Duress Card ID	Special Info
Byte	1-4	5-8	9-12	13

Special Info definition::

Bit0: add the length of card ID 1- 32bit 0 - 24bit

Bit1: delete the length of Card ID 1 - 32bit 0 - 24bit

Bit2: Duress Card ID length 1 - 32bit 0 - 24bit

The return value of RET is ACK_FAIL for T5B.

2) T50

DATA	Admin PW Length +Admin PW	Reserved
Byte	1-3	4-13

The length of administrator's password = Byte(1) >> 4

74.CMD: 0x1D Set Admin Card ID/ Password

Function: This command sets administrator's card ID for T5A and administrator password for T50. It is applicable to T5 only

Commands: (23Byte)

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

Data Format: (13Byte)

1) T5A

DATA	Add Card ID	Del Card ID	Duress Card	Special Info
Byte	1-4	5-8	9-12	13

Special Info definition :

Bit 0: add the length of the card ID 1 - 32bit 0 - 24bit
Bit 1: delete the length of the card ID 1 - 32bit 0 - 24bit
Bit 2: the length of a duress card 1 - 32bit 0 - 24bit

2) T50

DATA	Admin PW Length+ Admin PW	Reserved
Byte	1-3	4-13

Admin PW 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

The return value of RET is ACK_FAIL for T5B

75.CMD: 0x1A Get Daylight Saving Parameters

Function: This command retrieves daylight saving flag and time zone.

Commands: (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 Info						
			M	D	W of M	D of W	H	M	S	M	D	W of M	D of W	H	M	S
Byte	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Enable/disable: 0-disable 1-enable ;

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

Weeks of month definition :

0x01-0x04: previous 1-4 weeks

0x81-0x82: upcoming 1-2 weeks

Days of Week:

0-6: Sun/Mon/Tues/Wed/Thur/Fir/Sat

76.CMD: 0x1B Set Daylight Saving Parameters

Function: This command sets daylight saving flag and timezone.

Commands: (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	Start Time							End Time						
			M	D	W of M	D of W	H	M	S	M	D	W of M	D of W	H	M	S
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

77.CMD: 0x18 Get Language Options

Function: This command retrieves a list of language options.

Commands: (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

Language List Data Format: (4Byte)

DATA	Option 1	Option 2	Option 3	Option 4
Byte	1	2	3	4

Four languages can be selected from the list below. Once the setup is completed, the display language can only be selected from the 4 languages.

The list all language packs available within the SDK.

0xFF - not selected
0- simplified Chinese
1- Chinese Traditional
2- English
3- French
4- German
5- Spanish
6-Portuguese
7-Italian
8- Bulgarian
9- Slovak
10-hungarian
11-slovene
12-Turkish
13-Polish
14-Indonesian
15- Romanian
16-Russian

78.CMD: 0x19 Set Language Options

Function: This command sets 4 display languages.

Commands: (14Byte)

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

Language Options Data Format: (14Byte)

DATA	Option 1	Option 2	Option 3	Option 4
Byte	1	2	3	4

Response: (11Byte)

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x99	ACK_SUCC ESS ACK_FAIL	0x00 0x00	CRCL CRCH

Four language options can be set initially. Once set, the display language can only be switch between these 4 options.

The list all language packs available within the SDK.

0xFF - not selected
0- simplified Chinese

1- Chinese Traditional
2- English
3- French
4- German
5- Spanish
6-Portuguese
7-Italian
8- Bulgarian
9- Slovak
10-hungarian
11-slovene
12-Turkish
13-Polish
14-Indonesian
15- Romanian
16-Russian

79. CMD:0x78 Send Feature Value/ Card ID to T&A Device

Function: Feature value or card ID is sent to T&A device through communication port for tasks, such as:registration and verification etc.

1) Feature Value

Commands: (189Byte)

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

Data Format: (179Byte)

DATA	Type	Reserved	Feature Value Data
Byte	1	2-10	11-179

Type 为 1

2)Card ID

Commands: (24Byte)

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

Data Format: (14Byte)

DATA	Type	Reserved	Card ID
Byte	1	2-10	11-114

Type is 2

3) Password

Commands: (24Byte)

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

Data Format: (14Byte)

DATA	Type	User ID	Date/Time	PW Length+PW	MS Byte
Byte	1	2-6	7-10	11-13	14

Password Length = Byte(11) >> 4

Type 3

Response: (26Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF8	ACK_SUCCESS ACK_FAIL	0x00 0x0F	15Byte	CRCL CRCH

Data Format: (15Byte)

DATA	Status	User ID	Date/ Time	Backup ID	Record Type	Work Code
Byte	1	2-6	7-10	11	12	13-15

Linear Customized Response:

Response: (35Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF8	ACK_SUCCESS ACK_FAIL	0x00 0x18	24Byte	CRCL CRCH

Data Format: (24Byte)

DATA	State	User ID	Date/Time	Backup ID	Record Type	Work Code
Byte	1	2-6	7-10	11	12	13-15

DATA	Card ID	PW Length+PW	Most Significant Byte	FP Enrollment State
Byte	16-19	20-22	23	24

State Definition:

0: Unprocessed events
1: Verify successful
2: Failed to verify
3: Repeated Verification
4: invalid operation
5: invalid timezone
6: Repeated registration

80.CMD:0x16 Get GPRS Parameters

Function: This command gets GPRS parameters : APN name, GPRS server IP ,local IP , port number , user name and password.

A)Basic Version

Commands: (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	APN Name	Serve IP	Port No.	Local IP	User Name	PW	Enable/ Disable	Reserved
Byte	1-16	17-20	21-22	23-26	27-66	67-106	107	108

If the length of APN name is less than 16 byte, fill up the remaining byte with 0.

If local IP address is assigned by DHCP server dynamically, then set 23-26 byte to 0.

If the length of User name is less than 40 byte, fill up the remaining byte with 0.

If User Name contains a ‘null’ value, the user name is not set.

If the length of the Password is less than 40btye, fill up the remaining byte with 0.

Enable/Disable : 0-Disable 1-Enable

Improved Version

Commands: (10Byte)

The same as the basic version

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	APN Name	Server IP	Port	Local IP	User Name	PW	Enable/ Disable	Reserved
Byte	1-32	33-36	37-38	39-42	43-60	61-78	79	80

If the length of APN name is less than 32 byte, fill up the remaining byte with 0.

If local IP address is assigned by DHCP server dynamically, then set 33-36 byte to 0.

If the length of User name is less than 18 byte, fill up the remaining byte with 0.

If User Name contains a ‘null’ value, the user name is not set.

If the length of the Password is less than 18btye, fill up the remaining byte with 0.
Enable/Disable : 0-Disable 1-Enable

81.CMD: 0x17 Set GPRS Parameters

Function: This command sets GPRS parameters : APN name, GPRS server IP/local IP , port number , user name and password
A)Basic Version
Commands: (118Byte)

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

Data Format: (108Byte)

DATA	APN Name	Server IP	Port	Local IP	User Name	PW	Enable/ Disable	Reserved
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
Commands: (90Byte)

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

Data Format: (80Byte)

DATA	APN Name	Serve IP	Port	Local IP	User Name	PW	Enable/ Disable	Reserved
Byte	1-32	33-36	37-38	39-42	43-60	61-78	79	80

Response: (11Byte)
The same as basic version

82.CMD: 0x7A Get Device Extended Info

Function: This command retrieves vendor's name，tax registration number and address.
Commands: (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)	Tax No. (Figure, ASCII code)	Reserved
Byte	1-50	51-150	151-165	166-320

83.CMD: 0x7B Modify Device Extended Info

Function: This command retrieve vendor's name，tax registration number and address

Commands: (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 Add (UNICODE)	Vendor Tax No. (Figure 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

84.CMD: 0x7E Get Card Number

Function: This command retrieves the card number when user punched a card on T5S. It is applicable to T5S only

Commands: (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 No.
Byte	1-4

If T5s doesn't acquire any card number, which means card number is 0.

85.CMD: 0x14 Get Reboot Time

Function: This command gets setting of the reboot time. It is applicable to the 761platform and OA1000 only

Commands: (10Byte)

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x14	0x00 0x00	CRCL CRCH

Response: (20Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x94	ACK_SUCCESS ACK_FAIL	0x00 0x09	9Byte	CRCL CRCH

Data Format: (9Byte)

DATA	Reboot Time 1	Reboot Time 2	Reboot Time 3
Byte	1-3	4-6	7-9

Reboot times code is a BCD code.

For instance, Reboot Time = 22:00:00, equivalent to byte 0x22 0x00 0x00

If reboot time is set to 0xFF, then the reboot time hasn't been set.

86.CMD: 0x15 Set Reboot Time

Function: This command sets reboot times. It is applicable to the 761platform and OA1000 only

Commands: (19Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x15	0x00 0x09	9Byte	CRCL CRCH

Response: (11Byte)

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x95	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

Data Format: (9Byte)

DATA	Reboot Time 1	Reboot Time 2	Reboot Time 3
Byte	1-3	4-6	7-9

Reboot Time is a BCD code,

BCD	Byte
22:00:00	0x22 0x00 0x00

If a “Reboot Time”has value of “0xFF”, then the reboot time has been set yet.

87.CMD: 0x2E Extended Commands

Function: IRIS extended commands

Commands: (11+N Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x2E	1+N	(1+N)Byte	CRCL CRCH

Data Format: (1+N Byte)

DATA	Parameters	Data
Byte	1	N

Data Description:

Parameter	Description	Length	Data Content and Format	Suitable Devices Type
0x00	Set Admin Configuration	96	Super Admin PW 12 Byte+(Normal Admin Name 12 Byte+Normal Admin PW 12 Byte)*3+(Admin Card ID 4 byte) * 3	Iris
0x01	Set Parameters of Time Synchronization	5	Enable/Disable Flag 1Byte+Time Server IP 4Byte	761Platform
0x10	Get Admin Info	0	The response data format e.g. 0x00	Iris
0x11	Get Parameters of Time synchronization	0	The response data format e.g. 0x01	761Platform

0x60	Reboot	0		OA1000

Response: (11+N Byte)

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

P.S. If Parameter< 0x10, length of response data =11 byte;

If Parameter>=0x10, Response Data Length = 11+N,

Response Data Format

:Please refer to corresponding configuration.

88.CMD: 0x02 UDP Search Device

Function: This command uses UDP broadcast to search devices. The UDP port for device is 5050, the UDP port for PC is 5060.

Commands: (10 Byte)

STX	CH	CMD	LEN	CRC16
0xA5	0x00 0x00 0x00 0x00	0x02	0x00 0x00	CRCL CRCH

Response: (74Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x82	ACK_SUCCESS ACK_FAIL	0x00 0x3F	63Byte	CRCL CRCH

Data Format: (63Byte)

DATA	Device Model	Device SN	IP Address	Sub-net Mask	Default Gateway
Byte	1-10	11-26	27-30	31-34	35-38

DATA	MAC Address	Server IP Address	Port No.	Network Mode	Firmware Version	Reserved
Byte	39-44	45-48	49-50	51	52-59	60-63

“Device Model” is set via 0x49, e.g.“T60+、C2、OA1000 ” etc.

Network mode: 0-Server Mode; 1-Client Mode

Firmware which supports “client+DNS”, it’s Response data format as follows:

Response: (178Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16

0xA5	IDHH IDHL IDLH IDLL	0x82	ACK_SUCCESS ACK_FAIL	0x00 0xA7	167Byte	CRCL CRCH

Data Format: (167Byte)

DATA	Device Model	Device Serial No.	IP Address	Sub-net Mask	MAC Address	Server IP	Port No.
Byte	1-10	11-26	27-30	31-34	39-44	45-48	49-50

DATA	Network Mode	Firmware Version	Reserved	DNS	URL
Byte	51	52-59	60-63	64-67	68-167

Device Model is set via Command 0x49, e.g:“T60+、C2、OA1000” etc.
Network mode : 0-Server Mode 1-Client Mode 2-Client Mode +Server URL

C2 Pro has a specialized ‘Search Device’ command due to its dual NIC capability.
Commands: (11 Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	0x00 0x00 0x00 0x00	0x02	0x00 0x01	1Byte	CRCL CRCH

Data Format: (1Byte)

DATA	Search Parameter
Byte	1

Search Parameter Definition:
=0 : Search setting of all network adapters
Response: (11+46+N*28Byte, N is the Number of NIC) Network Interface Card

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x82	ACK_SUCCESS ACK_FAIL	46+N*18	(46+N*28)Byte	CRCL CRCH

Data Format: (46+N*28Byte, N is the number of NIC)

DATA	Device Model	Device SN	Server IP	Port Number	Network Mode	Firmware Version	Reserved	NIC Number
Byte	1-10	11-26	27-30	31-32	33	34-41	42-45	46

DATA	NIC1	NIC2	……
Byte	47-74	75-102	……

Device Model is set via command 0x49, e.g. T60+、C2、OA1000 etc.
Network mode : 0-Server Mode 1-Client Mode 2-Client Mode +Server URL

NIC Data Format: (28Byte)

DATA	NIC Name	IP Address	Sub-net Mask	Default	MAC Address
Byte	1-10	11-14	15-18	19-22	23-28

89.CMD: 0x03 UDP Set Device Parameter

Function: This command sets device parameters by using UDP broadcast. The device UDP port is 5050, The PC UDP port is 5060.
Commands: (67 Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	0x00 0x00 0x00 0x00	0x03	0x00 0x39	57Byte	CRCL CRCH

Data Format: (57Byte)

DATA	IP Address	Sub-net Mask	Default	MAC Address	Server IP	Port Number
Byte	1-4	5-8	9-12	13-18	19-22	23-24

DATA	Network Mode	New Device No.	Reserved	User Name	Password
Byte	25	26-29	30-33	34-45	46-57

The firmware determines whether the mac address from the UDP package is identical to its own mac address. If the addresses are matched, then the firmware verify user name and password, else the UDP package will be ignored.
If password or user name is valid, then device will return the result of setting.
User name of an iris device is “admin” , password is the corresponding phrase.
User name for 761 and 2440 platform is “0”, password is the corresponding phrase.
The rest of platforms only require password verification.

If the firmware supports “Client+DNS”, then the command data has following definition
Commands: (171 Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	0x00 0x00 0x00 0x00	0x03	0x00 0xA1	161Byte	CRCL CRCH

Data Format: (161Byte)

DATA	IP Address	Sub-net Mask	Default	MAC Address	Server IP	Port Number	Network Mode	New Device ID	Reserved	User Name	Password	DNS	URL
Byte	1-4	5-8	9-12	13-18	19-22	23-24	25	26-29	30-33	34-45	46-57	58-61	62-161

The firmware determines whether the mac address from the UDP package is identical to its own mac address. If the addresses are matched, then the firmware verify user name and password, else the UDP package will be ignored.
If password or user name is valid, then device will return the result of setting.
User name of an iris device is “admin” , password is the corresponding phrase.
User name for 761 and 2440 platform is “0”, password is the corresponding phrase.
The rest of platforms only require password verification.

Response: (11Byte)

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x83	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

90.CMD: 0x7F Heartbeat Package

Function: Heartbeat packages are sent every 5 minutes(by default) for testing network connectivity.

Commands: (10Byte)

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x7F	0x00 0x00	CRCL CRCH

Response: (11Byte)

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

91.CMD: 0x7D Data Modification Alert

Function: It is only applicable to 761 platform.If the devices are set to network client mode, any change relates to personnel information, fingerprints or T&A records will be pushed to its server automatically or uploaded after receiving this command. Furthermore, this command will also be executed, if auto data push is failed to update these data alteration within 3 minutes.

Commands: (10Byte)

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x7D	0x00 0x00	CRCL CRCH

Response: (27Byte)

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

Data Format: (16Byte)

DATA	Number of Personnel Changes	Number of New Attendance Records	Reserved
Byte	1-3	4-6	7-16

92.CMD: 0x64Download Personnel Change Records

Function: This command downloads the maximum 40 altered personnel records each time. (Record Date Length: 40*10 = 400Byte)

Commands: (12Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x64	0x00 0x02	2Byte	CRCL CRCH

Data Format:

DATA	Parameter	Records Number
Byte	1	2

Parameter Definition:

= 0: Downloading

= 1: Download Commencing , when downloading all records, this data parameter should be sent with the first request package.

= 2: Download started, when downloading only new records, this data parameter should be sent with the first request package.

= 0x10: resend the previous data package

Records Number<=40

Response: (12+N *10Byte // N is the number of valid Records)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xE4	ACK_SUCCESS FAIL	(1+N *10)	(1+N *10)Byte	CRCL CRCH

Data Format: (1+N *10Byte)

DATA	Valid Records Number N	Record 1	Record 2	…
Byte	1	2-11	12-21	…

Records Data Format: (10Byte)

DATA	User ID	Date/Time	Type
Byte	1-5	6-9	10

Date/Time: the number of seconds that have elapsed since 2000-01-01 00:00

Type Definition : bit 0- Change User info bit1- Change FP record bit 2-Delete a User

93.CMD: 0x65 Download User's Information (Extended))

Function: This command retrieves a user information.

Commands: (15Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x65	0x00 0x05	5Byte	CRCL CRCH

Data Format:

DATA	User ID
Byte	1-5

Response: (11+84Byte) It is applicable to 761 platform.

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xE5	ACK_SUCCESS ACK_FAIL	0x00 0x54	84Byte	CRCL CRCH

User Info data format : (84Byte)

DATA	User ID	PW Length(bit) +PW	Card ID No.	Name	Department	Group Number	Attendance Mode
Byte	1-5	6-8	9-12	13-76	77	78	79

DATA	FP Enrollment status	Reserved	Reserved	Special Info
Byte	80-81	82	83	84

Password Length = Byte(6) >> 4
FP Enrollment status: bit0 = 1 enrolled FP 1, bit1 = 1enrolled FP 2
Special Info bit 7-6: Permission: 1-User 3-Admin
Bit 4: Length of Card ID No. 1 - 32bit 0 - 24bit
If the return value of byte6-8 is 0xFF, then Password doesn't exist.
If the return value of byte9-12is 0xFF, then Card ID No. doesn't exist.

Response: (11+40Byte)Unicode Code

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xE5	ACK_SUCCESS ACK_FAIL	0x00 0x28	40Byte	CRCL CRCH

User Info Format : (40Byte)

DATA	User ID	PW Length(bit) +PW	Card ID No.	Name	Department	Group Number	Attendance Mode
Byte	1-5	6-8	9-12	13-32	33	34	35

DATA	User ID	PW Length(bit) +PW	FP Enrollment status	PW MS Byte	Reserved	Special Info
Byte	1-5	6-8	36-37	38	39	40

94.CMD: 0x1E Clear Change of Personnel Records/ Flags

Function: This command deletes all or partial records/flags of personnel alteration.
Commands: (14Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x1E	0x00 0x04	4Byte	CRCL CRCH

Data Format: (4Byte)

DATA	Deletion Type	New Records Number
Byte	1	2-4

Deletion Type Definition:

0- Delete all records of personnel alteration;

1-Delete all flags of personnel alteration;

2-Delete a specified number of flags of new personnel alteration, records number can be set in byte2-4.

Response: (14Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x9E	ACK_SUCCESS ACK_FAIL	0x00 0x03	3Byte	CRCL CRCH

Data Format: (3Byte)

DATA	Deletion Records/Number of Deleted New Records
Byte	1-3

If Deletion Type=0,it returns the number of deleted records;

If Deletion Type=1, it returns the number of all of deleted new records;

If Deletion Type=2, it returns the number of deleted new records.

95.CMD: 0x34 Get Device Configuration 3

Function: This command retrieves Wiegand Mode.

Commands: (10Byte)

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x34	0x00 0x00	CRCL CRCH

Response: (26Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xB4	ACK_SUCCESS ACK_FAIL	0x00 0x0F	15Byte	CRCL CRCH

Data Format: (15Byte)

DATA	Wiegand Mode	Connection Mode	Collecting Threshold	Connection PW	Magnetic Door Sensors State	Reserved	Customized Timezone	M5 T5 Anti back
Byte	1	2	3	4	5	6-13	14	15

Wiegand Mode:

= 0 Closed
= 1 big endian Wiegand 26
=2 little endian Wiegand26
= 3 big endian Wiegand 34
=4 little endian Wiegand 34

Connection Mode:
=0 offline mode
=1 online Mode

Collecting Threshold Range: 0-8

Customized Timezone:
= 0 Disable
= 1 Enable , occupy 2byte of Name field

Connection Password:
=0 When network connection established, the communication password is not required.
=1 When network connection established, the CMD 0x04 is sent to verify the communication password.

Magnetic Door Sensors State:
=0 Device send Magnetic Door Sensors State passively
=1 Device send CMD 0x2F actively which contains Magnetic Door Sensors State actively

M5/T5Anti Back :
= 0 Disable
= 1 Enable, Current state is out
=2 Enable , Current state is in
=4 Disable, Current state is out
=5 Disable , Current state is in

96.CMD: 0x35 set Device Configuration 3

Function: This command sets Wiegand Mode.
P.s: Unused items should be set as 0xFF
Commands: (25Byte)

STX	CH	CMD	LEN	Data	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x35	0x00 0x0F	15Byte	CRCL CRCH

Data Format: (15Byte)

DATA	Wiegand Mode	Connection Mode	Collecting Threshold	Connection PW	Magnetic Door Sensors State	Reserved	Customized Timezone	M5 T5 Anti Back Setting
Byte	1	2	3	4	5	6-13	14	15

Response: (11Byte)

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xB5	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

97.CMD: 0x04 Connection Authentication

Function: Device can responses to other commands if it passes the Connection Authentication. Connection will expire in 5 minutes without any data transmission

Commands: (34 Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x04	0x00 0x18	24Byte	CRCL CRCH

Data Format: (24Byte)

DATA	User Name	Password
Byte	1-12	13-24

The default User Name and Password for iris devices is “admin” and corresponding phrase. For other devices, only communication password is required for verification.

Response: (11Byte)

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x84	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

98.CMD: 0x36 Get Device Configuration4

Function: This command retrieves T&A parameters, including Firmware Version, Protocol version etc. It is applicable to the M4 platform.

Commands: (10 Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x34	0x00 0x00	0Byte	CRCL CRCH

Response: (75Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xB4	ACK_SUCCESS ACK_FAIL	0x00 0x40	64Byte	CRCL CRCH

Data Format: (64Byte)

DATA	Firmware Version	Protocol Version	Reserved
Byte	1-4	5-8	9-64

99.CMD: 0x61 Add Department

Function: This command adds a maximum 20 departments to device each time. It is applicable to OA1000only.

Commands: (10+14*N+1 Byte)N<=20

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x61	14*N+1	(14*N+1)Byte	CRCL CRCH

Data Format: (14*N+1Byte)

DATA	Number of Department	Department 1	Department N
Byte	1	2-15	14*N-12 - 14*N+1

Department format : (14Byte)

DATA	Department ID	Department Name	Super Department No.
Byte	1-2	3-12	13-14

Response: (11Byte)

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xE1	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

100.CMD: 0x62 Delete Department

Function: This command erases a department from device and is applicable to OA1000 only.

Commands: (10 Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x62	0x00 0x02	2Byte	CRCL CRCH

Data Format: (2Byte)

DATA	Department ID No.
Byte	1-2

If the Department ID number set as 0xFFFF, all Department will be erased.

Response: (11Byte)

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xE2	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

101.CMD: 0x66 Download a Specified User's Templates/Sanpshots

Function: This command downloads use's templates or sanpshots. It is applicable to OA1000 with TCP/IP network connection.

Commands: (17Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x66	0x00 0x07	7Byte	CRCL CRCH

Data Format: (6Byte)

DATA	User ID	Back up ID	Parameter
Byte	1-5	6	7

Backup ID: =1-10 from FP image 1 to FP image 10
=11 User photo

Parameter:

= 0: downloading

= 1: Download Commencing (Data parameter should be set to 1 for the inquiry of the first data package.)

= 0x10: Resend the previous Data package

Response: (11+1+N Byte, N <= 20480Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xE6	ACK_SUCCESS ACK_FAIL ACK_NO_USER	1+N	(1+N)Byte	CRCL CRCH

Data Format: (1+N Byte)

DATA	Parameter	Image Data
Byte	1	N

Parameter Definition:

= 0: Downloading

= 1: Download Completed

102.CMD: 0x67 Batch Download Users' Images

Function: This command batch downloads fingerprint images from a T&A device. It is applicable to OA1000 with a network connection only.

Commands: (12Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x67	0x00 0x02	2Byte	CRCL CRCH

Data Format: (2Byte)

DATA	Type	Parameter
Byte	1	2

Type: =1 FP Image

=2 User Photo

Parameter Definition:

= 0: Downloading

= 1: Download Commencing

= 2: Batch Download Commencing

= 0x10: Resend the previous Data Package

Response: (11+1+6+N Byte, N <= 20480Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xE7	ACK_SUCCESS ACK_FAIL ACK_NO_USER	1+6+N	(1+6+N)Byte	CRCL CRCH

Data Format: (1+6+N Byte)

DATA	User ID	Backup ID	Parameter	Image Data
Byte	1-5	6	7	N

Parameter Definition :

= 0: Downloading

= 1: Download Completed

Backup ID:

=1-10 FP image1 to FP image 10

=11 User Photo

103.CMD: 0x79 Get Result of Last Authentication (Pass/Fail)

Function: This command retrieves the result of the last bio-metric authentication. It is customized for Brazilian clients.

Commands: (10Byte)

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x79	0x00 0x00	CRCL CRCH

Return Value:

If state == null

Response: (12Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF9	ACK_SUCCESS ACK_FAIL	0x00 0x01	1Byte	CRCL CRCH

Data Format: (1Byte)

DATA	Type
Byte	1

Type 0xFF

If state == succeed

Response: (35Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF9	ACK_SUCCESS ACK_FAIL	0x00 0x18	24Byte	CRCL CRCH

Data Format: (24Byte)

DATA	Type	User ID	Date/Time	Backup ID	Records Type	Work Code	Card ID No.	PW Length + PW	PW MS Byte	FP Enrollment Status
Byte	1	2-6	7-10	11	12	13-15	16-19	20-22	23	24

Type 0

If the user did not register any card, then Card ID No. (byte 16-19) should be set as 0xFF.
If the user did not register any password, then byte 20-23 should be set as 0xFF.
FP Enrollment Status: 0- Unregistered FP
1-FP1
2-FP 2
3-FP1+FP2
If the FP is invalid
Response: (181Byte)

STX	CH	CMD	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF9	ACK_SUCCESS ACK_FAIL	0x00 0xAA	170Byte	CRCL CRCH

Data Format: (170Byte)

DATA	Type	Feature Value Data
Byte	1	2-170

Type=1

4)if the Card ID No. is invalid
Response: (16Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xF9	ACK_SUCCESS ACK_FAIL	0x00 0x05	5Byte	CRCL CRCH

Data Format: (5Byte)

DATA	Type	Card ID No.
Byte	1	2-5

If the password is invalid, then Type=2
Response: (21Byte)

STX	CH	CMD	RET	LEN	DATA	CRC16

0xA5	IDHH IDHL IDLH IDLL	0xF9	ACK_SUCCESS ACK_FAIL	0x00 0x0A	10Byte	CRCL CRCH

Data Format: (10Byte)

DATA	Type	User ID	PW Length(bit)+PW	PW MS Byte
Byte	1	2-6	7-9	10

Type=3

104.CMD: 0x68 Get Timezone Mode Status

Function: This command retrieves current setting for timezone shift. It is applicable to C2 Pro only.

Commands: (11Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x68	0x00 0x01	1Byte	CRCL CRCH

Data Format: (1Byte)

DATA	W
Byte	1

W = 0-6, it represents each week days from Sunday to Saturday

Response: (52Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xE8	ACK_SUCCESS ACK_FAIL	0x00 0x29	41Byte	CRCL CRCH

Data Format: (41Byte)

DATA	W	Sub Timezone 1	Sub Timezone 2	Sub Timezone 3	Sub Timezone 4	Sub Timezone 5	Sub Timezone 6	Sub Timezone 7	Sub Timezone 8
Byte	1	2-6	7-11	12-16	17-21	22-26	27-31	32-36	37-41

Sub Timezone Format: (5Byte)

DATA	Start H	Start M	End H	End M	Attendance Status Number
Byte	1	2	3	4	5

105.CMD: 0x69 Set Timezone Mode Status

Function: This command applies rules for timezone shift. It is applicable to C2 Pro only.

Commands: (51Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x69	0x00 0x29	41Byte	CRCL CRCH

Data Format: (41Byte)

DATA	W	Sub Timezone 1	Sub Timezone 2	Sub Timezone 3	Sub Timezone 4	Sub Timezone 5	Sub Timezone 6	Sub Timezone 7	Sub Timezone 8
Byte	1	2-6	7-11	12-16	17-21	22-26	27-31	32-36	37-41

W = 0-6, it represents each week days from Sunday to Saturday

Sub Timezone Format: (5Byte)

DATA	Start H	Start M	End H	End M	Attendance Status No.
Byte	1	2	3	4	5

Response: (11Byte)

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xE9	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

106.CMD: 0x6D Upload User's images

Function: This command uploads a user's photo to device. It is applicable to OA1000 Pro/C2 Pro only.

Commands: (10+N Byte N<=15365)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x6D	N byte	N Byte	CRCL CRCH

Data Format: (N Byte)

DATA	User ID	Photo Data
Byte	1-5	6-N

The photo should be in jpg format, the size of the file should be less than or equal to 15KB.

Response: (11Byte)

STX	CH	ACK	RET	LEN	CRC16

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

107.CMD: 0x6A Add BT Device/User

Function: This command adds a BT user into device. It is applicable to M5 only.

Commands: (38Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x6A	0x00 0x1C	28Byte	CRCL CRCH

Data Format: (28Byte)

DATA	Bluetooth ID	Reserved
Byte	1-16	17-28

Response: (11Byte)

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

108.CMD: 0x6B Delete Specific Address of Bluetooth Device

Function: This command deletes a Bluetooth device by a specified Bluetooth ID. It is applicable to M5 only.

Commands: (26Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x6B	0x00 0x10	16Byte	CRCL CRCH

Data Format: (16Byte)

DATA	Bluetooth Address
Byte	1-16

Response: (11Byte)

STX	CH	ACK	RET	LEN	CRC16

0xA5	IDHH IDHL IDLH IDLL	0xEB	ACK_SUCCESS ACK_NO_USER	0x00 0x00	CRCL CRCH

IF the “Bluetooth ID” argument set as 0, then all BT devices will be erased.

109.CMD: 0x6C Get Information of All Bluetooth Devices

Function: This command retrieves data of all Bluetooth devices. It is applicable to M5 only.

Commands: (10Byte)

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x6C	0x00 0x00	CRCL CRCH

Response: (291Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0xEC	ACK_SUCCESS ACK_FAIL	0x01 0x18	280Byte	CRCL CRCH

Data Format: (280Byte)

DATA	BT Device1	BT Device2	...	BT Device10
Byte	1-28	29-56	...	259-280

BT Device/User Data Format: (28Byte)

DATA	Bluetooth ID	Reserved
Byte	1-16	17-28

If any ‘BT device’ data field is not used, all the 28 byte data should be set as 0xFF.

110.CMD: 0x6E Get IEEE802.11 Network Setting

Function: This command retrieves SSID and password for a specified WiFi network. It is only applicable to VX0.

Commands: (11Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x6E	0x00 0x01	1Byte	CRCL CRCH

Data Format: (1Byte)

DATA	Subscript
Byte	1

Subscript range: 1-5

Response: (139Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16

0xA5	IDHH IDHL IDLH IDLL	0xEE	ACK_SUCCESS ACK_FAIL	0x00 0x80	128Byte	CRCL CRCH

Data Format: (128Byte)

DATA	SSID	Password
Byte	1-64	65-128

Both SSID and Password are ASC strings.

111.CMD: 0x6F Set IEEE 802.11 Network setting

Function: This command sets the SSID and password for a specified WIFI network. It is applicable to VX0 only.

Commands: (139Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x6F	0x00 0x81	129Byte	CRCL CRCH

Data Format: (129Byte)

DATA	Subscript	Name	Password
Byte	1	2-65	66-129

Subscript 范围: 1-5

Response: (11Byte)

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

112.CMD: 0x05 Get Authorization Code

Function: This command retrieves an authorization code. It is only applicable to C2 Pro/OA1000 Pro etc. Which belong to the A20 platform.

Commands: (10Byte)

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

Response: (31Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16

0xA5	IDHH IDHL IDLH IDLL	0x85	ACK_SUCCESS ACK_FAIL	0x00 0x14	20Byte	CRCL CRCH

113.CMD: 0x06 Authorize

Function: Device port is 5050, PC port is 5060. It is only applicable to C2 Pro/OA1000 Pro etc.which belong to the A20 platform.

Commands: (30Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x06	0x00 0x14	20Byte	CRCL CRCH

Response: (11Byte)

STX	CH	ACK	RET	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x86	ACK_SUCCESS ACK_FAIL	0x00 0x00	CRCL CRCH

114.CMD: 0x07 UDP Start Video

Function: Device(UDP port:5050) informs PC (UDP port:5060) about starting video communication. It is applicable to OA1000 Pro only.

Commands: (10 Byte)

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x07	0x00 0x00	CRCL CRCH

Response: Null

115.CMD: 0x08 UDP Stop Video

Function: This command Device informs PC about closure of video communication. It is applicable to OA1000 Pro only

Commands: (10 Byte)

STX	CH	CMD	LEN	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x08	0x00 0x00	CRCL CRCH

Response: Null

116.CMD: 0x09 UDP Command

Function: This command sends an instruction from PC (UDP port:5060) to device(UDP port 5050). It is applicable to OA1000 Pro only

Commands: (111 Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x09	0x00 0x65	101Byte	CRCL CRCH

Response: (11 Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x89	ACK_SUCCESS ACK_FAIL	0x00 0x00	0Byte	CRCL CRCH

Data Format: (101Byte)

DATA	CMD Type	Prompt Content(Unicode)
Byte	1	2-101

CMD Type: =1 Open Door

117.CMD: 0x0A Get Server URL

Function: This command retrieves the server's URL from a device.

Commands: (10 Byte)

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

Response: (115 Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x8A	ACK_SUCCESS ACK_FAIL	0x00 0x68	104Byte	CRCL CRCH

Data Format: (104Byte)

DATA	DNS	URL
Byte	1-4	5-104

118.CMD: 0x0B Set Server URL

Function: This command sets a specified server's URL to a device.

Commands: (114 Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x0B	0x00 0x68	104Byte	CRCL CRCH

Response: (11 Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x8B	ACK_SUC CESS ACK_FAIL	0x00 0x00	0Byte	CRCL CRCH

Data Format: (104Byte)

DAT A	DNS	URL
Byte	1-4	5-104

119.CMD: 0x0C Test User

Function: This command determines whether a specified user exists.

Commands: (114 Byte)

STX	CH	CMD	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x0C	0x00 0x05	5Byte	CRCL CRCH

Response: (11 Byte)

STX	CH	ACK	RET	LEN	DATA	CRC16
0xA5	IDHH IDHL IDLH IDLL	0x8C	ACK_SUC CESS ACK_FAIL	0x00 0x01	1Byte	CRCL CRCH

Data Format: (104Byte)

DATA	Exists
Byte	1

Exists

=0 not exists

=1 exists