UniFinger Command Line Tool

Support Tool

Rev. 1.3

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Revision History

Rev No.	Issued date	**Description**
1.0	Nov 13, 2004	Initial Release
1.2	Feb 4, 2005	Commands are added according to the changes in Packet Protocol Manual V2.1 and V2.2. More examples are added.
1.3	Jun 7, 2005	Commands are added according to the changes in Packet Protocol Manual V2.3.

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1. Overview

UniFinger Command Line Tool – ufcmd – is an application for testing UniFinger SFM series modules. You can try every command defined in the *Packet Protocol Manual* and view the data exchanged between the host and the module. This application is implemented on top of the UniFinger SFM Series SDK. By inspecting the source code, users can learn how to develop applications using the SDK.

2. Usage

2.1. Synopsis

ufcmd [GLOBAL OPTIONS] -c COMMAND [-p1 param1] [–p2 param2] [–f flag] [-i inputfile] [-o outputfile]

2.2. Description

2.2.1. Command

All the commands defined in the *Packet Protocol Manual*. The format can be character acronym, hex number, or decimal number. For example, to send SF(System Parameter Save) command to the module, you can use one of the followings.

ufcmd –c SF

ufcmd –c sf

ufcmd –c 0x40

ufcmd –c 64

2.2.2. Global Options

These options set configuration parameters of the module. These values are saved into ufcmd.cfg file. If any of these options are omitted, the values saved in the file will be used.

-P [portname]: Serial port name. This option should be specified at least once before using ufcmd.

-b [baudrate]: Baud rate for serial communication. Available baud rates

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are 9600, 19200, 38400, 57600, and 115200. This option should be specified at least once before using ufcmd.

-n [0|1]: 1 - network mode, 0 – single mode. The default is 0.

-m [module_id]: Module id. It is used only in network mode. The default is 0.

-a [0|1]: 1 - ascii mode, 0 – binary mode. The default is 0.

-t [timeout]: Read time out for serial communication in milliseconds. The default is 1000.

-x[0~4]: Logging level. The default is 2.

-x0: No logging

-x1: Logging error messages only.

-x2: x1 + SDK level messages.

-x3: x2 + packet contents

-x4: x3 + raw data

-s [transfer_size]: size of data packet body in bytes. It is used only for EIX, VIX, and IIX commands. The default is 4096.

Example 1: ufcmd –P COM1 –b 115200 –t 5000 –x3 –c ss

Example 2: ufcmd –P /dev/ttyS0 –b 38400 –n 1 –m 2 –a 1 –x4 –c ss

2.2.3. Command Specific Options

The meaning of these options varies according to the semantics of each command. Please refer the *Packet Protocol Manual* for details.

-p1 [param1]: The first 4 byte parameter.

-p2 [param2]: The second 4 byte parameter.

-f [flag]: 1 byte parameter

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-i [intputfile]: Reads data from the input file. This option is useful only for EI, EIX, ET, II, IIX, IT, VI, VIX, VT, and VH commands. For EI, EIX, II, IIX, VI, and VIX, the format should be 8bit bitmap file. If the input file is a directory and the command is one of EI, EIX, ET, II, IIX, and IT, the command will be executed repeatedly for each file in that directory – only supported in Win32 version.

-o [outputfile]: Saves the received data to the output file. This option is useful only for RI, RIX, RT, SI, SIX, ST, KS, MR, and LR commands. For RI, RIX, SI, and SIX, the format will be 8 bit bitmap file.

-B: Send this command using Broadcast Packet Protocol. The modules will not return any response packets.

2.2.4. Special Options

-F [batchfile]: Until EOF, read a line from the batch file and execute it. In a batch file, 'ufcmd' can be omitted.

3. Examples

(1) When reading Baudrate parameter using SR command,

```
>ufcmd -c sr -f 0x71 –x2
[API] System Parameter Read(SR): Baudrate(0x71)
     Baudrate(0x71): 0x35
```

Same command with –x3 option,

```
>ufcmd -c sr -f 0x71 –x3
[API] System Parameter Read(SR): Baudrate(0x71)
     [COM] Send: 40 03 00 00 00 00 00 00 00 00 71 b4 0a
     [COM] Receive: 40 03 00 00 00 00 35 00 00 00 61 d9 0a
     Baudrate(0x71): 0x35
```

(2) When set input port0 to Enroll by Scan with minimum time of 20msec,

```
>ufcmd -c iw –p1 0x10 –p2 2
[API] Write IN port Configuration(IW): Enroll 0x2 IN0
```

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```
     [COM] Send: 40 47 10 00 00 00 02 00 00 00 00 99 0a

     [COM] Receive: 40 47 00 00 00 00 00 00 00 00 61 e8 0a
```

(3) When reading list of user IDs using LT command,

```
>ufcmd -c lt –x4

[API] List User IDs(LT)

     [COM] Send: 40 18 00 00 00 00 00 00 00 00 00 58 0a

     [COM] Receive: 40 18 1e 00 00 00 78 00 00 00 61 4f 0a

     Num of user id: 0x1e

[API] Get User Data: 0x1e

     [DATA] Receive: 01 00 00 00 02 00 00 00 04 00 00 00 05 00
00 00 05 00 00 00 07 00 00 00 07 00 00 00 02 00 00 00 08 00 00
00 08 00 00 00 09 00 00 00 0a 00 00 00 0b 00 00 00 0b 00 00 00
04 00 00 00 0a 00 00 00 03 00 00 00 03 00 00 00 09 00 00 00 06
00 00 00 06 00 00 00 0c 00 00 00 0c 00 00 00 0d 00 00 00 0d 00
00 00 01 00 00 00 0e 00 00 00 0f 00 00 00 0f 00 00 00 0e 00 00
00 0a

[UniFingerCom.cpp(586)] User IDs(0x1e): 0x1 0x2 0x4 0x5 0x5
0x7 0x7 0x2 0x8 0x8 0x9 0xa 0xb 0xb 0x4 0xa 0x3 0x3 0x9 0x6
0x6 0xc 0xc 0xd 0xd 0x1 0xe 0xf 0xf 0xe
```

(4) When verifying an image using VIX command,

```
>ufcmd -c vix –p1 1 –p2 16384 –i test.bmp

[API] Verify by image(VIX): 0x1 0x4000 0x1000

     [COM] Send: 40 82 01 00 00 00 00 40 00 00 00 03 0a

     [COM] Receive: 40 82 01 00 00 00 00 00 00 00 61 24 0a

     [COM] Send: 40 82 04 00 00 00 00 10 00 00 00 d6 0a

     [COM] Receive: 40 82 01 00 00 00 00 00 00 00 83 46 0a

     [COM] Send: 40 82 04 00 01 00 00 10 00 00 00 d7 0a

     [COM] Receive: 40 82 01 00 00 00 00 00 00 00 83 46 0a

     [COM] Send: 40 82 04 00 02 00 00 10 00 00 00 d8 0a

     [COM] Receive: 40 82 01 00 00 00 00 00 00 00 83 46 0a

     [COM] Send: 40 82 04 00 03 00 00 10 00 00 00 d9 0a

     [COM] Receive: 40 82 01 00 00 00 00 00 00 00 83 46 0a

     [COM] Receive: 40 82 01 00 00 00 00 00 00 00 62 25 0a

     [COM] Receive: 40 82 01 00 00 00 00 00 00 00 61 24 0a

     Verify: Succeed 0
```

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(5) When processing a batch file named cmdlist,

```
>ufcmd –F cmdlist
[API] Get Time(TR)
     [COM] Send: 40 3b 00 00 00 00 00 00 00 00 00 7b 0a
     [COM] Receive: 40 3b 03 04 12 00 13 34 2a 00 61 66 0a
     Fri Apr 18 19:52:42 2003
[API] Read IN port Configuration(IR): IN0
     [COM] Send: 40 48 00 00 00 00 00 00 00 00 00 88 0a
     [COM] Receive: 40 48 10 00 00 00 0a 00 00 00 61 03 0a
     Enroll 0xa
[API] System Parameter Read(SR): Timeout Period(0x62)
     [COM] Send: 40 03 00 00 00 00 00 00 00 00 62 a5 0a
     [COM] Receive: 40 03 00 00 00 00 3a 00 00 00 61 de 0a
     Timeout Period(0x62): 0x3a
```

The contents of cmdlist are as follows,

```
-c tr
-c ir -p1 0
-c sr -f 0x62
```

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Appendix A. Installation

Win32

- Requirements: Microsoft Visual C++ 6.0 or later, SFMSDK.lib
- Output: ufcmd.exe
- Build instruction
  1. Run Microsoft Visual C++ 6.0 or later.
  2. Open SDK_HOME\Platform\Win32SDK\Win32SDK.dsw.
  3. Set Win32Cmd as the active project.
  4. Check if the path of SFMSDK.lib is set correctly in Project/Settings/Link/library modules.
  5. Select Build/Rebuild All.

Linux

- Requirements: g++, glibc, gmake
- Output: ufcmd
- Build instruction

  > cd $SDK_HOME

  > cd UFCmd/Platform/Linux

  > Check if the path of libsdk.a is set correctly in the Makefile.

  > make all

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