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D12C1_Usermanual_Eng



Shandy ;Samen

Forwell Wireless Co., Ltd.

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New Exciting Product

D12C1 Series Cellular DTU



User Manual

D12C1 Series DTU
User Manual

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ADDRESS: 2-4A, Chaguang Industrial Park, Nanshan District, Shenzhen, P.R.China

Tel: 86-755-26621490

Fax: 86-755-26621490

Web: <http://www.forwellwireless.com>

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Chapter 1

1 Prologue

This document is just suit for the following mode type; it helps you quickly to used D12C1 DTU function and resolves some common questions.

类型	说明
D22C111	GPRS DTU

1.1 Version

Version	Date	Description	Author
1.00	2008-10-27	Nearly complete	Gavin

1.2 Referenced Documents

D12C1_DTU_Datasheet_Eng

1.3 Notice

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Chapter 2

2 Introduction

2.1 Brief

D12C1 Series is a GPRS/CDMA DTU with TCP/IP Protocol embedded. It has two comparatively individual parts: IP Module with TCP/IP, software interface is AT commands; and GPRS/CDMA Module, supports all the AT Commands. All the standard AT Commands are transferred to GPRS/CDMA Module via the transparent Mode of IP Module.

D12C1 Series is usually applicable to the HOST, which has no TCP/IP but has serial interface, such as SCM Data Collection Transmission System.

2.2 Features

- Compact and easy to integrate into your solution;
- Multi-flexible and compact data interface, TTL, 232 and 485, TTL and 232 are reduced to Rx, Tx, GND;
- Supports more IP Protocol families;
- Data transmission via Transparent transfer Mode, enters transmission mode when power on;
- Multi-operating status LED;
- Optimized modularization design, easy to upgrade.

2.3 Specification

D22C111 Radio Frequency

Use of GSM phase 2/2+

GSM(EGSM)900MHz

DCS(GSM)1800MHz

Output power: Class 4 (2 W) at EGSM900 Class 1 (1 W) atDCS1800

D22C111 Power consumption::

Speech mode: 300mA
Sleep mode: 3.5mA
Power down : 50μA
GPRS Modem average: 360mA

Dimension

Interface: RS-232/485/TTL DB9
antenna: 50ohm/SMA/Female
input voltage: 5~25V (9V)
Operating voltage of SIM card: 3V/1.8V
Max speed rate of CSD: 14.4KBPS
Module reset: AT commands
Voice decode standards(three kinds of rate):
Half-speed (ETS 06.20)
Full-speed(ETS 06.10)
Enhanced full-speed (ETS06.50/06.60/06.80)
volume:75*50/72*16mm
weight:200g

Environment

Ambient temperature: -20oC to +60oC
Storage temperature: -30℃~85℃。
humidity: ≤90%

Electromagnetic Compatible

Electrostatic Discharge (ESD): 3 class
Radiated, radio-frequency, electromagnetic field immunity test: 3 class

2.4 Application

- Remote Data Monitor and Control
- Water, gas and oil flow metering
- AMR (automatic meter reading)
- Power station monitoring and control
- Remote POS (point of sale) terminals
- Traffic signals monitor and control
- Fleet management
- Power distribution network supervision
- Central heating system supervision
- Weather station data transmission
- Hydrologic data acquisition
- Vending machine
- Traffic info guidance
- Parking meter and Taxi Monitor
- Telecom equipment supervision (Mobile base station, microwave or optical relay station)

Chapter 3

3 Getting Started

3.1 Panel introduction



note: About Hardware description ,please according to following file
M1_Modem_DTU_Hardware_Description_V600R.doc

3.2 The LED state

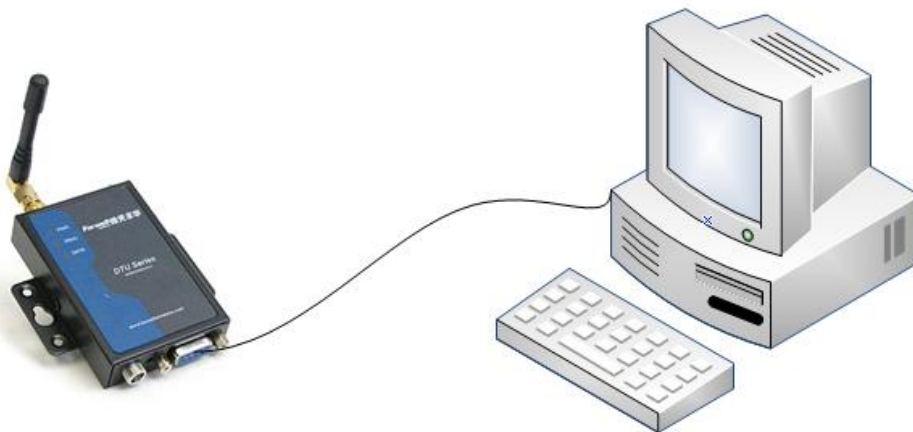
In order to check the module working state. Our product have three Led, pwr LED is power state, Ring LED is Ring state, Data LED is Data state.

	PWR	Ring	Data
Start-up	Lights up 3s, flashing 0.5s,wink 0.5s ,lights up0.5s	wink	Lights up 0.5s
Logon network	flashing	wink	flashing
Sleep state	Lights up 0.5s, wink 0.5s	wink	wink
date Transfer	Lights up 0.5s, wink 0.5s	wink	flashing

No date transfer	Lights up 0.5s, wink 0.5s, Lights up 1s	wink	wink
Voice call	Lights up 0.5s, wink 0.5s	Lights up 1s, wink 4s	wink
reboot	After 5s. wink	wink	wink

3.3 Connect to products

Please connect antenna and cable with our products, make sure The port is COM1 or COM2?



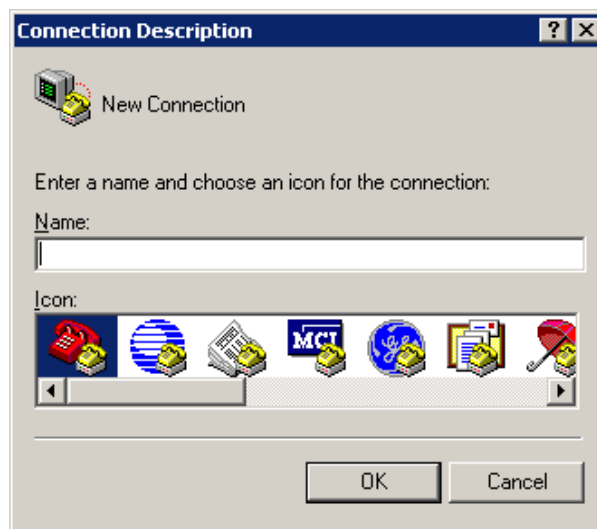
3.4 Insert SIM Card

Open the back cover. insert into SIM card as follow

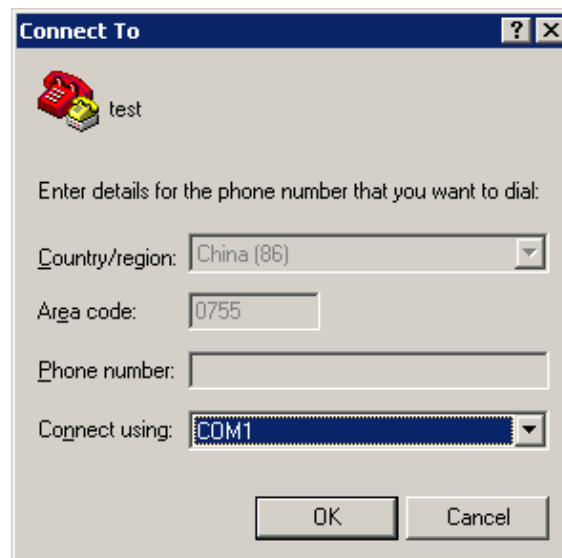


3.5 Note: Hyper Terminal

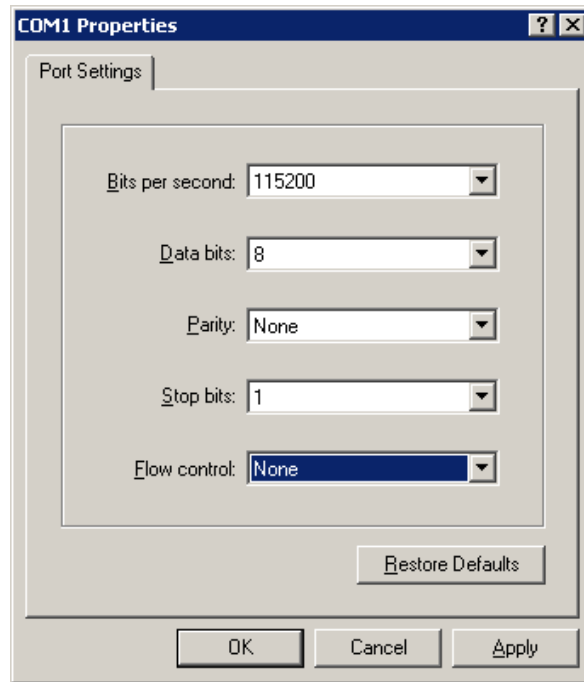
Open the HyperTerminal and input *******(any) as follows



Choose a right port

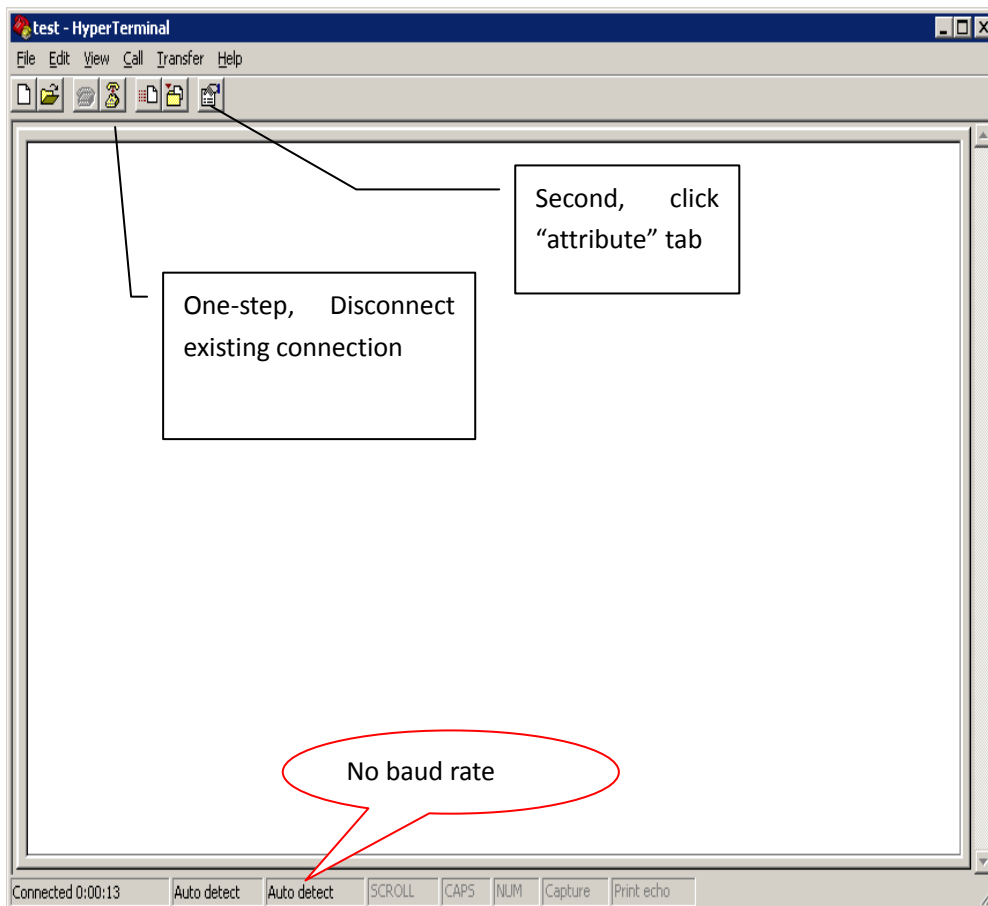


The right configuration as following

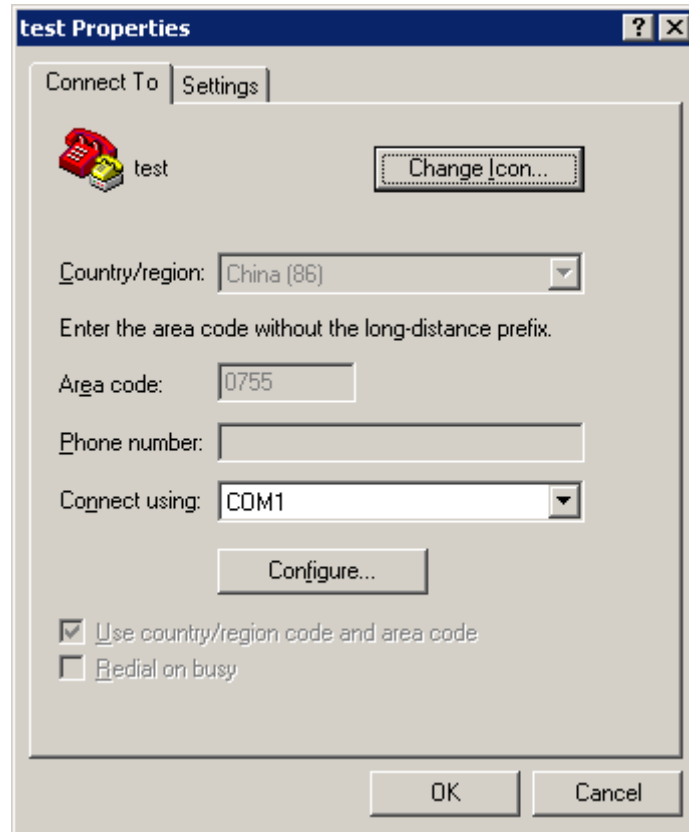


(图 3-3)

When your start-up Hyper Terminal, it is not connected really, you can see the red mark of follow picture without any number .And then, first Disconnect existing connection, second ,Click the red arrowhead

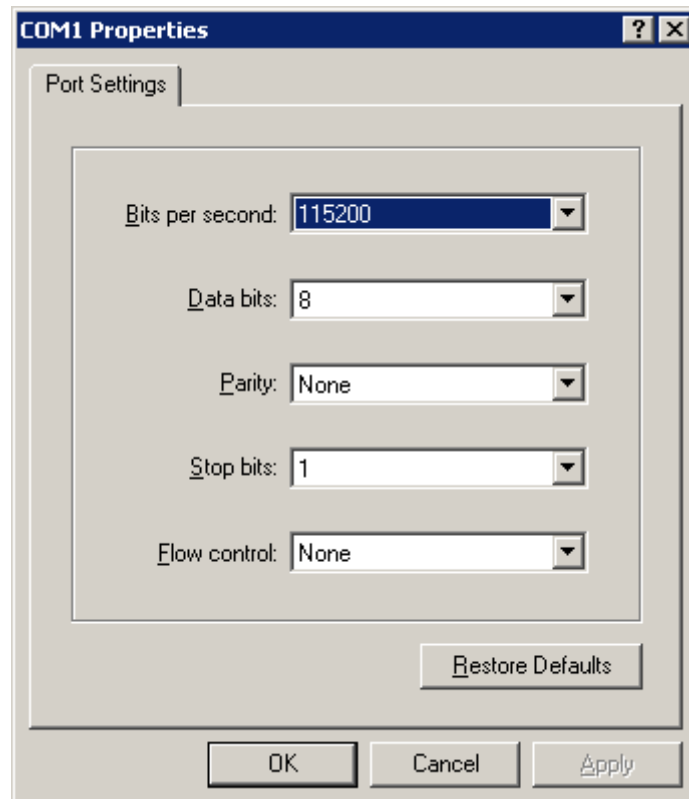


click the "configure", and make sure again of you modify configure

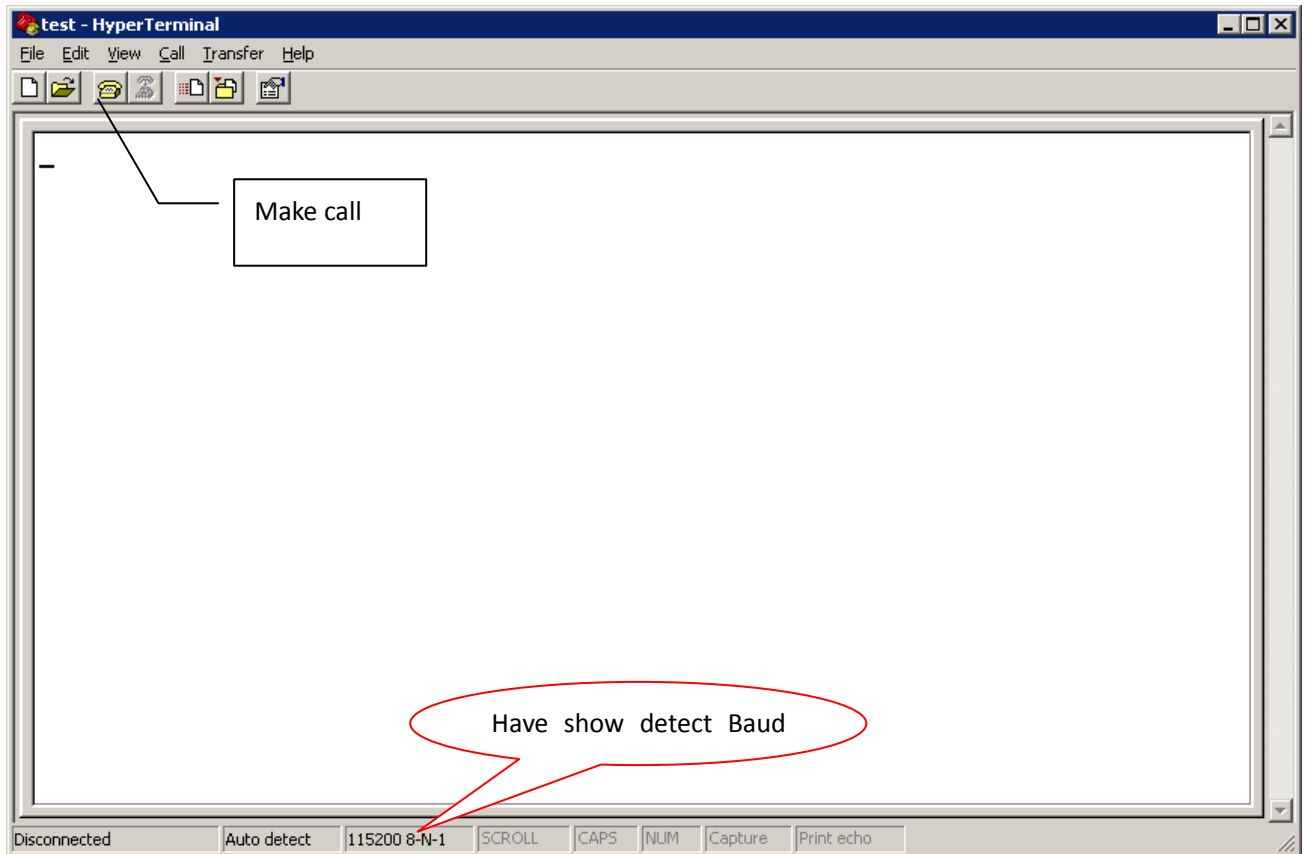


(图 3-5)

make sure your modify configure again, click "OK"



Then you can see it appeared baud rate on white label, then click the black label to make call



provide power supply with our products, you configured the Hyper Terminal successfully

3.6 Test command

Test AT command

AT<CF> //Test "at"command
 OK //Response ok parameter if successfully connected, you can make
 sure the module have no malfunction

AT+CSQ<CF> // to check the Signal quality
 +CSQ: **, ## // ** Should be the number between 10 and 31, the signal quality
 becomes better as the number grows. ## should be is 99,
 Or you should checking the equipment of antenna or SIM card.

Chapter 4

4 Configure DTU by PC

4.1 UDP Mode

4.1.1 UDP client Transparent transfer Mode always online

```

AT+GPRSCONFIG=1,"cmnet","wap","wap"
AT+CLIENTCONFIG=1,"210.105.96.117",7777 // set the Server IP and port
AT+IDLETIME=0 //always online
AT+REGINFO=0 //close the Registration information packet
AT+KEEPALIVE=40,"alive packet" // set the keep alive packet,(in second)
AT+DTUID=12345678901 //set the DTU ID, in 11 figures
AT+DATAMODE=1
AT+SOCKETOPEN=1,"UDP" //switch to Socket mode
AT+DATAOPEN
.....
..... //communication
.....
+++ //Switch to the configuration model, this command can't be displayed
AT+SOCKETCLOSE
    
```

4.1.2 UDP client Transparent transfer Mode transitory link.

```

AT+GPRSCONFIG=1,"cmnet","wap","wap"
AT+CLIENTCONFIG=1,"210.105.96.117",7777 // set the Server IP and port
AT+IDLETIME=5 //the time of last data(in minute)
AT+REGINFO=2,1,"reginfo" //start the Registration information packet

AT+KEEPALIVE=40,"alive packet" //set the keep alive packet,(in second)
AT+DTUID=12345678901 //set the DTU ID, in 11 figures
AT+TELE=1,"13812151578" //set the number to wake up DTU
AT+SMS="wave up" //set the SMS to wake up DTU, must use the TELE number.
    
```

```
AT+DATAMODE=1
AT+SOCKETOPEN=1,"UDP" //switch to Socket mode
AT+DATAOPEN
.....
.....
..... //communication
.....
+++ //Switch to the configuration model, this command can't be displayed
AT+SOCKETCLOSE
```

4.2 TCP Mode

4.2.1 TCP client Transparent transfer Mode always online

```
AT+GPRSCONFIG=1,"cmnet","wap","wap"
AT+CLIENTCONFIG=1,"210.105.96.117",7777 // set the Server IP and port
AT+IDLETIME=0 //always online
AT+REGINFO=0 //close the Registration information packet
AT+KEEPALIVE=40,"alive packet" //set the keep alive packet,(in second)
AT+DTUID=12345678901 //set the DTU ID, in 11 figures
AT+DATAMODE=1
AT+SOCKETOPEN=1,"TCP" //switch to Socket mode
AT+DATAOPEN
.....
.....
..... //communication
.....
+++ //Switch to the configuration model, this command can't be displayed
AT+SOCKETCLOSE
```

4.2.2 TCP client Transparent transfer Mode transitory link.

```
AT+GPRSCONFIG=1,"cmnet","wap","wap"
AT+CLIENTCONFIG=1,"210.105.96.117",7777 // set the Server IP and port
AT+IDLETIME=5 //the time of last data(in minute)
AT+REGINFO=2,1,"reginfo" //start the Registration information packet
AT+KEEPALIVE=40,"alive packet" //set the keep alive packet,(in second)
AT+DTUID=12345678901 //set the DTU ID, in 11 figures
```

```

AT+TELE=1,"13812151578" //set the number to wake up DTU
AT+SMS="wave up" //set the SMS to wake up DTU, must use the
TELE number.

AT+DATAMODE=1
AT+SOCKETOPEN=1,"TCP" //switch to Socket mode
AT+DATAOPEN
.....
.....
..... //communication
.....
+++ //Switch to the configuration model, this command can't be displayed
AT+SOCKETCLOSE
    
```

4.3 For Example

```

AT //switch AT command mode to AT command mode
OK
at+wopen=0 // To restore the value of the factory
OK
at+wopen=3 // To restore the value of the factory
OK
at+wopen=1 // To restore the value of the factory
OK
at //
OK
at+gprsconfig? //query the model,APN,username and password
+GPRSCONFIG:0,"internet", "", ""
OK
at+clientconfig? //query the Address of client and port
+CLIENTCONFIG: 1, "192.168.1.5", 5000
OK
at+idletime? //query the survival time after no data(in minutes)
+IDLETIME: 1
OK
at+reginfo? //query the way to send the registation packet,
interval,and content
+REGINFO: 1, 0, "This is the %VER @ %IP"
OK
at+tele? //query the Wake-up number
OK
at+sms? //query the SMS for Wake-up
+SMS:
    
```

```
OK
at+keepalive? //query the keepalive packet
+KEEPAKIVE: 10, "This is the Keep Alive Packet"
OK
at+socketopen? //Socket to connect a state inquiry
OK
at+gprsconfig=1,"cmnet","wap","wap" //setting an order for OpenAT model; APN:cmnet,
username:wap, password:wap;
OK
at+clientconfig=1," www.forwellwireless.com/",80 //set up the client server:"
www.forwellwireless.com", port:80
OK
at+idletime=0 //set up to connect of always online
OK
at+reginfo=0 //Regiftry setting for each packet sent immediatlyto
connect, close the Registration information packet
OK
at+keepalive=20,"This is the Keep Alive Packet! " //Set keepalive packet for 20
seconds,Says: "This is the Keep Alive Packet! "
OK
at+dtuid=32165498721 //set the DTU ID, in 11 figures
OK
at+datamode=0
OK
at+cfun=1 //Restart the DTU
OK
at+dataopen //DATA transmission
OK
.....
.....
.....(Sending DATA)
.....
..... // +++ delay 1 secnod, return to the command mode
OK
OK
at+socketclose //close the data transmission
```

5 How to send SMS

Operation Procedure and interrelated commands

AT+CMGF——SMS format setting

AT+CPMS——SMS saving carrier setting

AT+CNMI——hint modes of SMS receiving & sending setting

AT+CMGS——SMS sending

AT+CMGL——SMS displaying

Note: some commands mentioned above can be used only when inserted SIM card with SMS function

● +CPMS-----command choose of SMS carrier saving

Note: this command can be used to choose or query about SMS saving carrier after inserting SMS card

Format: AT+CPMS=<mem1>[,<mem2>][,<mem3>]

value: +CPMS:<used1>,<total1>,<used2>,<total2>,<used3>,<total3>

OK

ERROR

commands	value
AT+CPMS="SM"	+CPMS: 8,15,8,15,1,40 OK Note: the total memory of SIM card is15, the current memory is8, the total memory of ME module is 40, the current memory is1
AT+CPMS="SM","SM"	+CPMS: 8,15,8,15,1,40 OK Note: the total memory of SIM card is15, the current memory is8, the total memory of ME module is 40, the current memory is1
AT+CPMS="SM","SM","SM"	+CPMS: 8,15,8,15,8,15 OK Note: the total memory of SIM card is15, the current memory is8, the total memory of ME module is 40, the current memory is1
AT+CPMS="ME","SM","SM"	+CPMS: 1,40,8,15,8,15

	OK Note: the total memory of SIM card is15, the current memory is8, the total memory of ME module is 40, the current memory is1
AT+CPMS="ME","SM","ME"	+CPMS: 1,40,8,15,1,40 OK Note: the total memory of SIM card is15, the current memory is8, the total memory of ME module is 40, the current memory is1
AT+CPMS="ME"	ERROR Note: commands format error, {} default
AT+CPMS?	+CPMS: "SM",8,15,"SM",8,15,"ME",1,40 OK Note: the current SMS saving carrier setting as bellow: mem1 is SM, mem2 IS ME
AT+CPMS!	ERROR Note: commands format error
AT+CPMS=?	+CPMS: ("ME","SM"),("ME","SM"),("ME","SM") OK

+CMGF-----SMS format commands setting

Note: this command for SMS sending format setting

Format: 0 and 1 is optional when input "AT+CMGF=<mode>" under the config mode, 0 is for PDU format, 1 is for TAXE format, when input Chinese, PDU format must be used.

Commands	value
AT+CGMF=0	OK
AT+CGMF=1	OK
AT+CGMF?	+CMGF: 0 OK
AT+CGMF=?	+CMGF: (0,1) OK

+CMGS----- SMS sending command

Note: after inputting the SIM cards, this command is for sending SMS under the config mode

format: AT+CMGS=<da>[,<toda>]<CR>

Text is entered<ctrl-z/ESC>

Note: CTRL-Z is for confirm, ESC is for exit

Commands	value
AT+CMGS=13510090403 > TEST	+CMS ERROR:500 Command error
AT+CMGS="13510090403" > IT IS TEST NOW	OK
AT+CMGS="15019232232" > TEST	OK note: ESC is for EXIT

+CMGR-----SMS reading command

Note: this command is for reading the SMM saved in the SIM card

Format: after inserting the SIM card, use AT+CMGR=<index> under the config mode

command	value
AT+CMGR=5	OK note: area 5 is default
AT+CMGR=2	+CMGL: 2,"REC READ","+8613682326205","N?R","03/08/28 17:30:35+00" 998B76844F60002E518D5FCD5FCD5427+CMGS: 235 OK
at+cmgr=14	+CMGR: "STO UNSENT","15019232232", test,cmgw OK

+CMGW-----SMS saving command

Note: this command is for writing and saving SMS to the saving carrier

format: use AT+CMGW="SIM card number" under the config mode

<CR>content<CTRL-Z is for confirm>/<ESC is for exit>

commands	value
AT+CMGW="13534139079" > SHELLEY123456	+CMGW: 1 OK
AT+CMGW="13534139079" > SF	OK note: <ESC is for EXIT>

+CMGD-----Delete SMS Commands

Note: Insert the SIM card, use this command to delete messages saved in SIM card

Format: AT+CMGD=<index>

Commands	Value
AT+CMGD=1	OK Note: Delete SMS 1

+CMGL-----SMS List

Note: Show SMS List

Format: AT+CMGL=<stat>

Value: +CMGL:<index1>,<stat>,<oa/da>,[<alpha>],[<scts>][,<tooa/toda>,<length>]

<CR><LF><data><CR><LF>

+CMSS

Note: Sent the SMS which stored in the vector

Format: AT+CMSS=<index>

Command	Value
AT+CMSS=1	ERROR
AT+CMSS=1	OK

Chapter 5

6 Command function

6.1 Setting registration package

AT+REGINFO=<method>,<delay>,<RegInfoString>

<method>

- 0 if this function is disabled
- 1 if the registration information packet is sent after each time the connection is made on a different IP.
- 2 if the registration information packet is sent after each time the connection is made.

<delay>

- The delay (in seconds) between <method> is triggered and the string is being sent. 0 means that the string will not sent immediately.

< RegInfoString>

- The actually registration information packet being sent.
- Two variables could not used in string
 - %IP – The IP address of the module.
 - %VERSION – The version string defined in “AT+VERSION”

AT+VERSION? (Read Only)

+VERSION: <version>

<version>

- A string that indicate the version of the program.

AT+DTUID=<DTUID>

- The command is used to set the DTU identifier for unit
- <DTUID> is the DTU identifier set for the unit

AT+DATAMODE=<mode>

Set the format of the data packets that will sent thought-out the network

<mode>:

- 0 (default) for the data the encapsulated with headers (format from the customer docment).

note: In this mode must set AT+REGINFO=0

- 1 for the direct data mode, no packet header encapsulated.

6.2 Setting keepalive package

AT+KEEPALIVE=<Period>,<KeepAliveString>

<Period>

- The time (in seconds) between each keep alive packet is being sent. 0 means this feature is being off.

<KeepAliveString>

- The actually string being sent as a keep alive packet. Note: no variables is supported in this string

6.3 Setting client address and port

AT+CLIENTCONFIG=<index>,<IpAddress>,<port>

<index>

- The index of the client configuration set.

<IpAddress>

- The IP address (in string) which the socket is going to connect.

<port>

- The TCP/IP port (in number) which the socket is going to connect.

Note:

This command can be set a number of centers, for multi-center to send.

for example:

AT+CLIENTCONFIG=1,"forwell.3322.org",12701

AT+CLIENTCONFIG=2,"forwell.3322.org",12702

AT+CLIENTCONFIG=3,"forwell.3322.org",12703

.....

AT+CLIENTCONFIG=8,"forwell.3322.org",12708

And you can delete the client like this:

AT+CLIENTCONFIG=1

AT+CLIENTCONFIG=2

AT+CLIENTCONFIG=3

.....

AT+CLIENTCONFIG=8

6.4 Set in a transparent transfer mode

AT+SOCKETOPEN=<index>,<protocol>

<index>

- The index of the socket setting being set in "AT+CLIENTCONFIG".

<protocol>

- The protocol being used in the connection. Only “TCP” and “UDP” is supported at this moment.

AT+SOCKETOPEN?

+SOCKETOPEN:<idx>,<active>,<protocol>,<ip>,<port>

<idx>

- The index of the socket connection (not same as the one of “AT+CLIENTCONFIG”)

<active>

- “1” for active and “0” for inactive

<protocol>

- The protocol being used in the connection. Only “TCP” and “UDP” is supported at this moment.

<IpAddress>

The IP address (in string) which the socket is going to connect.

<port>

The TCP/IP port (in number) which the socket is going to connect.

Note: The terminal is still in AT mode after issue this command.

6.5 Other AT commands

6.5.1 AT+IPCONFIG?

+ IPCONFIG: <IpAddress>

<IpAddress>

- The IP address that the module got.

6.5.2 AT+TELE=<index>,<Tel_num>

<index>

- The index of the telephone number being stored.

< Tel_num>

- The telephone number being used in the wakeup function by SMS or by ring alert.

6.5.3 AT+SMS=<sms>

<sms>

- The SMS message being used to wakeup function, given that the telephone number is in the list on “AT+TELE”

6.5.4 AT+CSQ

-This command is used to read the received signal strength indication and the channel bit error rate with or without a SIM card inserted.

6.5.5 AT+CFUN=1

-This command is used to Reset the product

6.5.6 To restore the value of the factory

AT+WOPEN=0

AT+WOPEN=3

AT+WOPEN=1

6.6 Baud Rate

AT+IPR? //query current baud rate

AT+IPR=n //setting a new baud rate

AT&W //to save the baud rate

Note:

n=(1200,2400,4800,9600,19200,38400,57600,115200,230400,460800,921600),(0,300,600,1200,2400,4800,9600,19200,38400,57600,115200,230400,460800,921600)

Note: Possible values, according to V25 ter recommendation: the first set of values indicates the range of auto-detectable baud rates .The second set of values indicates the baud rates supported by the DCE.

Note: AT+IPR change the CDMA Module baud rate, AT+iBDRF, AT+iBDRM is TCP/IP Module baud rate for command mode, AT+iSNSI is TCP/IP Module baud rate for Socket. To change baud rate, you must take the right order, firstly CDMA Module, secondary TCP/IP Module

6.7 APN configuration

AT+GPRSCONFIG=<method>,<APN>,<login>,<password>

<method>

-0 change to AT+WAP method

-1 use AT command

<APN>

- APN that required for TCP/IP connection over GPRS.

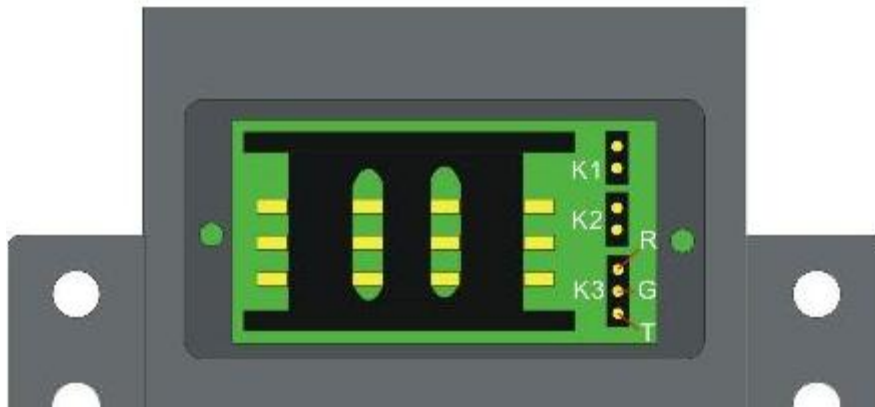
< login >

- Login that required for TCP/IP connection over GPRS.

< password >

- Password that required for TCP/IP connection over GPRS.

6.8 Watch Dog



K1	K2	Monitor Timeout
Open	Open	∞
Open	Close	15 minutes 30 minutes
Close	Open	30 minutes 10 minutes
close	Close	5 minute

RG Close	GT Close	Open
Monitor Reserved	Monitor Send	Disable the Function

6.9 Idle time control

AT+IDLETIME=n

//n (in minutes) requires to be idle (on both sides) in order to let the DTU to disconnect itself from connection. (Keep alive and registration information packet is not counted). 0 means the feature is disabled.

Note: In the common Transparent transfer Mode and AT+IDLETIME=2, the DTU should re-online immediately. In the Socket with trigger up and AT+IDLETIME=1, the DTU should be offline until be trigger up

6.10 Transparent transfer Mode Communication

6.10.1 Description

D12C1-DTU has two operating modes, one is Command Mode, and the other is Transparent transfer Mode. Socket communication is implemented in Command Mode, when operating need commands to be sent. While in Transparent transfer Mode, as long as you initialize its parameter, you can transfer data via the parameter directly. That's because Transparent transfer Mode helps the equipment connect to D12C1 set TCP/UDP Socket connection via serial link.

6.10.2 Environment requests

You should be sure about the following test environment before starting the test:

- A computer online as Transparent transfer Mode server, which should have public network IP address.
- Assure that the application service center has no gateway programming implementation, and no restriction to 1024 port
- Copy Server.exe (Download from www.forwellwireless.com) and implement in the computer.
- Setup listening mode (Default one is 1024).
- Get the IP address of the computer.
- Another machine for communication between Socket Client server and server.。
- Open the hyper terminal of the client

6.10.3 Initialization setting

Transparent transfer Mode is established by first defining all related parameters using AT commands. Once in Transparent transfer Mode, no additional AT commands may be sent, as the host serial link will be dedicated to data, any characters will be sent as data. In this mode, no response for any commands, it's normal.

```
AT+CLIENTCONFIG=1,"XXX.XX.XXX.XXX",80
// Set Socket communication server IP, xxx.xxx.xxx.xxx means IP address, or name of the server,
but it should be the one which DNS can read. <Port Number> means server listen port. If
successfully sets, returns with I/OK.
```

AT+GPRSCONFIG=<method>,"apn","login","password"

//<method>

-0 change to AT+I method

-1 use AT command

<APN>

- APN that required for TCP/IP connection over GPRS.

< login >



- Login that required for TCP/IP connection over GPRS.

< password >

- Password that required for TCP/IP connection over GPRS.

Chapter 7

7 Production list

name	unit	number	description	Sketch-map
Host	Entries	1	Standard supply	
power	Entries	1	Supply 9V	
antenna	Entries	1	Standard supply	
Production-CD	piece	1	Standard supply	

7.1 AT Command

1、 AT+GPRSCONFIG=<method>,<APN>,<login>,<password>

<method>

- 0 disable
- 1 enable

<APN>

- APN that required for TCP/IP connection over GPRS.

<login>

- Login that required for TCP/IP connection over GPRS.

<password>

- Password that required for TCP/IP connection over GPRS.

2、 AT+REGINFO=<method>,<delay>,<RegInfoString>

<method>

- 0 if this function is disabled

- 1 if the registration information packet is sent after each time the connection is made on a different IP.

- 2 if the registration information packet is sent after each time the connection is made.

<delay>

- The delay (in seconds) between <method> is triggered and the string is being sent. 0 means that the string will not sent immediately.

< RegInfoString>

- The actually registration information packet being sent.
- Two variables could not used in string

3、 AT+KEEPALIVE=<Period>,<KeepAliveString>**<Period>**

- The time (in seconds) between each keep alive packet is being sent. 0 means this feature is being off.

<KeepAliveString>

- The actually string being sent as a keep alive packet. Note: no variables is supported in this string

4、 AT+IDLETIME=<time>**<time>**

- The time (in minutes) requires to be idle (on both sides) in order to let the DTU to disconnect itself from connection. (Keep alive and registration information packet is not counted). 0 means the feature is disabled.

5、 AT+CLIENTCONFIG=<index>,<IpAddress>,<port>**<index>**

- The index of the client configuration set.

<IpAddress>

- The IP address (in string) which the socket is going to connect.

<port>

- The TCP/IP port (in number) which the socket is going to connect.

6、 AT+DTUID=<DTUID>

The command is used to set the DTU identifier for unit

<DTUID>

- the DTU identifier set for the unit

7、 AT+DATAMODE=<mode>

Set the format of the data packets that will sent thought-out the network

<mode>

- 0 (default) for the data the encapsulated with headers (format from the customer document).

- 1 for the direct data mode, no packet header encapsulated.

8、AT+SOCKETOPEN=<index>,<protocol>

<index>

- The index of the socket setting being set in “AT+CLIENTCONFIG”.

<protocol>

- The protocol being used in the connection. Only “TCP” and “UDP” is supported at this moment.

“AT+SOCKETOPEN?”

+SOCKETOPEN:<idx>,<active>,<protocol>,<ip>,<port>

<idx>

The index of the socket connection (not same as the one of “AT+CLIENTCONFIG”)

<active>

“1” for active and “0” for inactive

<protocol>

The protocol being used in the connection. Only “TCP” and “UDP” is supported at this moment.

<IpAddress>

The IP address (in string) which the socket is going to connect.

<port>

The TCP/IP port (in number) which the socket is going to connect.

Note: The terminal is still in AT mode after issue this command.

9、AT+DATAOPEN

This command is to turn the terminal into data mode for data truncations.

10、AT+SOCKETCLOSE=<idx>,<idx>,...

The command is used the close the active socket connections.

<idx>

- The index of the active connection which could be got from the AT command

11、AT+SOCKETCLOSE

The command is used to close all active socket connections.

12、+++

The command is used to return to command mode,and this command delay for 1 second. If the other characters enter in this time,they will become a data to transmission.

13、AT+IPR

AT+IPR?

- query current baud rate

AT+IPR=n;&w

- setting a new baud rate and save

Note:

n=(1200,2400,4800,9600,19200,38400,57600,115200,230400,460800,921600),(0,300,600,1200,2400,4800,9600,19200,38400,57600,115200,230400,460800,921600)

Note: Possible values, according to V25 ter recommendation: the first set of values indicates the range of auto-detectable baud rates .The second set of values indicates the baud rates supported by the DCE.