

User Manual

Version 1.0.0 March 2017

GTP-500M

(2G/3G Intelligent Multi-Function Controller)



Table of Contents

1.	Introc	luction	6
	1.1 Fe	eatures	8
	1.2 Sp	pecification	10
2.	Gettir	ng Started	11
	2.1 LE	ED Indicator	13
	2.2 In	stallation	14
3.	Instal	ling the Utility	15
	3.1 In	stalling the M2M Utility	16
4.	RMV	function operation description	19
	4.1 G	ateway Function	20
	4.1.1	The main menu	20
	4.1.2	File Menu	22
	4.2 C	onnecting to the GTP-500M	23
	4.3 Pa	arameters	24
	4.3.1	System	25
	4.3.2	COM Port	27
	4.4 D	ownload/Upload Parameters	28
	4.5 Sy	/stem	29
	4.5.1	Signal Quality	29
	4.5.2	Reboot the GTP-500M	30
	4.5.3	Recover to the Factory Settings	30
	4.5.4	Inquiring Firmware Version	30
	4.5.5	Inputting the PIN/PUK Code	31
	4.6 Vi	rtual com to access remote the parameters	33
	4.6.1	The necessary software installed	33
	4.6.2	Setting the VXServer and VXComm Driver	34
5.	RTU F	Function Utility operation description	39
	5.1 R	TU Function	40
	5.1.1	The main menu	40

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual	Version 1.0.0	Page : 2
--	---------------	-----------------

Copyright © 2017 ICP DAS Co., Ltd. All Rights Reserved E-mail: service@icpdas.com

	5.2 Login	.42
	5.3 Main Parameters	.43
	5.3.1 Main Info	.43
	5.3.2 DI Info	.51
	5.3.3 Al Info	.53
	5.3.4 Modbus Device	. 56
	5.3.5 Import/Export Parameters	.58
	5.3.6 Device Status	.60
	5.3.7 Device Time	.62
	5.3.8 Counter value	.03
	5.3.10 Signal Quality	66
	5.3.11 Version	. 67
	5.3.12 System	.68
	5.3.13 Additional Function	.69
	5.4 Data logger	.70
	5.5 The naming rule of logger file name	.71
		70
	5.6 The data format of the data logger file	. / Z
	5.6 The data format of the data logger file5.7 Delete Data Logger File Automatically	.72
6.	 5.6 The data format of the data logger file 5.7 Delete Data Logger File Automatically SMS Function Utility operation description 	.72 .73 .74
6.	 5.6 The data format of the data logger file 5.7 Delete Data Logger File Automatically SMS Function Utility operation description	.72 .73 .74 .75
6.	 5.6 The data format of the data logger file	.72 .73 .74 .75 .78
6.	 5.6 The data format of the data logger file	.72 .73 .74 .75 .78 .79
6.	 5.6 The data format of the data logger file	.72 .73 .74 .75 .78 .79 .80
6.	 5.6 The data format of the data logger file	.72 .73 .73 .75 .75 .78 .79 .80
6.	 5.6 The data format of the data logger file	.72 .73 .74 .75 .78 .79 .80 .80 .83
6.	 5.6 The data format of the data logger file 5.7 Delete Data Logger File Automatically SMS Function Utility operation description 6.1 Main menu 6.2 Operation Language 6.3 Login 6.4 Device parameter 6.4.1 Phone /Periodic report/Alarm 6.4.2 DI mode and SMS content 6.4.3 Import/Export Parameters 	.72 .73 .74 .75 .78 .79 .80 .80 .80 .83 .87
6.	 5.6 The data format of the data logger file 5.7 Delete Data Logger File Automatically SMS Function Utility operation description 6.1 Main menu 6.2 Operation Language 6.3 Login 6.4 Device parameter 6.4.1 Phone /Periodic report/Alarm 6.4.2 DI mode and SMS content 6.4.3 Import/Export Parameters 	.72 .73 .74 .75 .78 .79 .80 .80 .80 .83 .87 .88
6.	 5.6 The data format of the data logger file 5.7 Delete Data Logger File Automatically SMS Function Utility operation description 6.1 Main menu 6.2 Operation Language 6.3 Login 6.4 Device parameter 6.4.1 Phone /Periodic report/Alarm 6.4.2 DI mode and SMS content 6.4.3 Import/Export Parameters 6.5 SMS Recorder 6.5.1 Counter Report record 	.72 .73 .75 .75 .78 .79 .80 .80 .80 .83 .87 .88
6.	 5.6 The data format of the data logger file 5.7 Delete Data Logger File Automatically SMS Function Utility operation description 6.1 Main menu 6.2 Operation Language 6.3 Login 6.4 Device parameter 6.4.1 Phone /Periodic report/Alarm 6.4.2 DI mode and SMS content 6.4.3 Import/Export Parameters 6.5 SMS Recorder 6.5.1 Counter Report record 6.5.2 Event Report record 	.72 .73 .75 .75 .78 .79 .80 .80 .80 .83 .87 .88 .88 .88
6.	 5.6 The data format of the data logger file 5.7 Delete Data Logger File Automatically SMS Function Utility operation description 6.1 Main menu 6.2 Operation Language 6.3 Login 6.4 Device parameter 6.4 Device parameter 6.4.1 Phone /Periodic report/Alarm 6.4.2 DI mode and SMS content 6.4.3 Import/Export Parameters 6.5 SMS Recorder 6.5.1 Counter Report record 6.5.2 Event Report record 6.6 Device Time 	.72 .73 .75 .78 .79 .80 .80 .80 .83 .87 .88 .88 .88 .88 .89 .91
6.	 5.6 The data format of the data logger file 5.7 Delete Data Logger File Automatically SMS Function Utility operation description 6.1 Main menu 6.2 Operation Language 6.3 Login 6.4 Device parameter 6.4.1 Phone /Periodic report/Alarm 6.4.2 DI mode and SMS content 6.4.3 Import/Export Parameters 6.5 SMS Recorder 6.5.1 Counter Report record 6.5.2 Event Report record 6.6 Device Time 6.7 Counter Value 	.72 .73 .74 .75 .78 .79 .80 .80 .80 .80 .83 .87 .88 .88 .88 .88 .89 .91
6.	 5.6 The data format of the data logger file 5.7 Delete Data Logger File Automatically SMS Function Utility operation description 6.1 Main menu 6.2 Operation Language 6.3 Login 6.4 Device parameter 6.4.1 Phone /Periodic report/Alarm 6.4.2 DI mode and SMS content 6.4.3 Import/Export Parameters 6.5 SMS Recorder 6.5.1 Counter Report record 6.5.2 Event Report record 6.6 Device Time 6.7 Counter Value 6.8 Change Password 	.72 .73 .74 .75 .78 .79 .80 .80 .80 .80 .83 .87 .88 .88 .88 .88 .89 .91 .93 .95
6.	 5.6 The data format of the data logger file 5.7 Delete Data Logger File Automatically SMS Function Utility operation description 6.1 Main menu 6.2 Operation Language 6.3 Login 6.4 Device parameter 6.4.1 Phone /Periodic report/Alarm 6.4.2 DI mode and SMS content 6.4.3 Import/Export Parameters 6.5 SMS Recorder 6.5.1 Counter Report record 6.5.2 Event Report record 6.6 Device Time 6.7 Counter Value 6.8 Change Password 6.9 DI/DO/AI Status 	.72 .73 .74 .75 .78 .79 .80 .80 .80 .80 .83 .87 .88 .88 .88 .88 .89 .91 .93 .95 .96

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manua	I Version 1.0.0	Page : 3
---	-----------------	-----------------

6.10 SD/Battery information	97
6.11 Signal Quality	98
6.12 Version	99
6.13 System	100
6.13.1 Recover to Factory Settings	100
6.13.2 Reset GTP-500M	100
6.14 SMS Command	101
6.14.1 @TIME(Time set and inquiry)	102
6.14.2 II. @DOCn(DO Control)	103
6.14.3 @ACTV(Counter value inquiry)	104
6.14.4 @DIV(DI/DO status inquiry)	105
6.14.5 @AIV (AI status inquiry)	106
6.14.6 @SD(information of SD card)	107
6.14.7 @BAT (Battery inquiry)	108
6.14.8 @PASS(Password inquiry)	109
6.15 Send/Receive SMS and Call out by COM	110
6.15.1 Send data to COM port of GTP-500M by SMS command	110
6.15.2 Sending SMS by COM(RS-232/RS-485)	110
6.15.3 Sending Sound by COM (RS-232/RS-485)	111
6.16 Data Records and Audio file format	112
6.16.1 Data Records Format	112
6.16.2 Audio File Format	112
6.17 DO output by DTMF	114
Appendix A. Firmware Update	115
Appendix B. Revision History	117

Important Information

Warranty

All products manufactured by ICP DAS are under warranty regarding defective materials for a period of one year, beginning from the date of delivery to the original purchaser.

Warning

ICP DAS assumes no liability for any damage resulting from the use of this product.ICP DAS reserves the right to change this manual at any time without notice. The information furnished by ICP DAS is believed to be accurate and reliable. However, no responsibility is assumed by ICP DAS for its use, not for any infringements of patents or other rights of third parties resulting from its use.

Copyright

Copyright @ 2016 by ICP DAS Co., Ltd. All rights are reserved.

Trademark

Names are used for identification purpose only and may be registered trademarks of their respective companies.

Contact us

If you encounter any problems while operating this device, feel free to contact us via mail at: service@icpdas.com. We guarantee to respond within 2 working days.

1. Introduction

The GTP-500M is an intelligent multi-function Controller, with high cost-effective cost, for industry applications. You can choose different firmware and expansion I/O board for your demands.

2G/3G Gateway. It is designed for linking RS-232/485 devices to a GPRS/WCDMA network. The user-friendly Axiom Driver/Utility and VxServer allow users to easily turn the built-in COM ports of the GTP-500M into standard COM ports on a PC. By virtue of its protocol independence, a small-core OS and high flexibility, the GTP-500M is able to meet the demands of every network-enabled application.

2G/3G Remote Terminal Unit. It can be used in M2M application fields to transfer the local I/O and Modbus device's data via WCDMA/GPRS by the defined period or DI/AI triggers. Moreover, there are M2M API tool and OPC server for engineers to develop the WCDMA/GPRS applications by VB, VC or SCADA development tools conveniently without any IP address management effort.

2G/3G SMS and Voice function. It provides the sound alarm application with the pre-defined voice files. In addition, the DTMF function of the GTP-500M is for the applications with the keypad of phones to control the local I/O. It can be a remote control and alarm system allowing you to use your mobile phone to monitor and control your business from any location. Its alarm facilities provide a flexible way to distribute critical alarm information to any number of mobile phone users.



 GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual
 Version 1.0.0
 Page : 6

 Copyright © 2017 ICP DAS Co., Ltd. All Rights Reserved
 E-mail: service@icpdas.com





 GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual
 Version 1.0.0
 Page : 7

 Copyright © 2017 ICP DAS Co., Ltd. All Rights Reserved
 E-mail: service@icpdas.com

1.1 Features

Hardware

- Supports input voltage 10~30Vpc.
- Power Reverse Polarity Protection
- Support GPRS 850/900/1800/1900 MHz frequency
- Support WCDMA 850/900/1900/2100 MHz frequency
- Expansion board for different demands.

Software

- Built-in Watch-dog Function.
- Support 3 different functional firmware.
- Intelligent multiport serial to 2G/3G gateway(RMV).
 - Support remote maintenance PLC devices that used serial communication as Siemens S7-200 series, Siemens S7-300 series, WP-8000, LP-8000, iP-8000 and XP-8000.
 - Support GPRS/WCDMA network automatic re-connection function.
 - Virtual COM Extend Real COM Ports via GPRS/WCDMA.
 - •1 x RS-485 port for Virtual COM. 1 x Utility port for Configuration
- Intelligent 3G Remote Terminal Unit (RTU).
 - Support Modbus RTU protocol to connect to Max 3 Modbus RTU devices via RS-485 port.
 - Support M2M OPC server for SCADA system.
 - Easy-to-use API tool for users to develop their applications by various program development tools.
 - •Can be the 3G/GPRS I/O devices (Expansion board only).
 - Support data transferring by E-mail.
 - •Local I/O linkage function to make the simple local control.
- Intelligent 3G SMS/Voice alarm controller (SMS).

- Support SMS DBS software (<u>http://m2m.icpdas.com/SMS_DBS.html</u>).
- Identify ASCII or Unicode SMS Automatically.
- Support max. 140 ASCII Characters.
- Support max. 70 Unicode Characters.
- Built-in ASCII Commands and SMS tunnel Communication Modes.
- Max. 10 Default Phone Numbers.
- Support SMS setting and control.
- •DO control by dual-tone multi-frequency (Expansion board only).
- Digital input support NC (normal close)/NO (normal open)/Counter modes (Expansion board only).
- Periodic SMS report.
- Voice Alarm and SMS triggered by DI trigger or exceed AI/Counter preset limits (Expansion board only).
- Support simple command to send SMS via RS232.

1.2 Specification

Module	GTP-500M	
System		
CPU	ARM microprocessor	
WDT(Watchdog)	Yes	
2G System		
Frequency Band	850/900/1800/1900 MHz	
Dewer Clean	Class 4 (2 W @ 850/900 MHz)	
Power Class	Class 1 (1 W @ 1800/1900 MHz)	
3G System		
Frequency Band	850/900/1900/2100 MHz	
Power Class	Class 3(250mW @ WCDMA/HSPA)	
Serial Ports		
Utility Port(COM 1)	RS-232: TxD, RxD, GND	
COM2	RS-485: D+, D- (use for communication with other devices)	
Baud Rate	2400、4800、9600、19200、38400、57600 and 115200 bps	
Power		
Protection	Power reverse polarity protection	
Frame Ground Protection	ESD, Surge, EFT, Hi-Pot	
Required Supply Voltage	+10Vdc ~ +30Vdc	
Mechanical		
Casing	Metal	
Dimensions(W x L x H)	117mm x 137mm x 58mm	
Environment		
Operating Temperature	-25 to +75°C	
Storage Temperature	-30 to +80°C	
Relative Humidity	5 to 95% RH, Non-condensing	
Input/output		
Channel Number	Options	

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual Version 1.0.0

Page : 10

2. Getting Started

Appearance and Pin Assignments



GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual

Version 1.0.0

Page : 11

Copyright © 2017 ICP DAS Co., Ltd. All Rights Reserved E-mail: service@icpdas.com

Dimensions



2.1 LED Indicator

There are four LED indicators to help users to judge the various conditions in the GTP-500M. The description is as the following:



LED Name	LED Status	LED Description
DWP (Pod)	ON	The power of the module is ON
FWR (Red)	OFF	The power of the module is OFF
	Blinking pre 3 sec	3G modem normal(2G network)
3G (Green)	Twinkling twice per 3 sec	3G modem normal(3G network)
	OFF	3G modem fail
STA1 (Green)	n) Reserved	
	Blinking (1 sec)	Connected
STAZ (Orange)	Blinking (50 ms)	Wrong PIN/PUK code

2.2 Installation

- (1) Install antenna.
- (2) Plug in the normal SIM card (Before apply the SIM card, confirm it is OK by mobile phone.)
- (3) Connect the DC.+VS and DC.GND to the power supply or battery.



Tips & Warnings

The product's enclosure may be with high temperature, do not touch before cooling or else will be burned.

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual Version 1.0.0 Page : 14

Copyright © 2017 ICP DAS Co., Ltd. All Rights Reserved E-mail: service@icpdas.com

3. Installing the Utility

User can set the parameters or see the debug information with the Utility. It needs the runtime environment with .NET Framework 2.0 or above to execute the in the PC. You can download the .NET Framework 2.0 and .NET Framework 3.5 on the Microsoft website. Please download and install it before you use the utility.

Microsoft .NET Framework 2.0
 <u>https://www.microsoft.com/en-us/download/details.aspx?id=1639</u>

 Microsoft .NET Framework 3.5
 <u>https://www.microsoft.com/en-us/download/details.aspx?id=21</u>

3.1 Installing the M2M Utility

Plug in the shipment CD into the PC, Execute M2M_Utility_Setup_Vx.xx.exe. The installation figure is as follows:

(1)Press "Next" to start the installation procedure.



(2)Select the installation path. The default path is "C:\ICPDAS\ M2M_Utility". Press "Next" to the next step.



GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual Version 1.0.0 Page : 16

Copyright © 2017 ICP DAS Co., Ltd. All Rights Reserved E-mail: service@icpdas.com

(3)Select the "Start Menu Folder", Press "Next" to the next step.

🔂 Setup - M2M_Utility	
Select Start Menu Folder Where should Setup place the program's shortcuts?	
Setup will create the program's shortcuts in the following Start	Menu folder.
To continue, click Next. If you would like to select a different folder, clic	k Browse.
ICPDAS\M2M_Utility	Browse
< Back Next >	Cancel

(4)Select additional tasks. Press "Next" to the next step.

👸 Setup - M2M_Utility	
Select Additional Tasks Which additional tasks should be performed?	
Select the additional tasks you would like Setup to perform while installin then click Next.	g M2M_Utility,
Additional icons:	
Create a desktop icon	
< Back Next >	Cancel

(5)Click "Install" to start to install the M2M Utility.

🔂 Setup - M2M_Utility	
Ready to Install Setup is now ready to begin installing M2M_Utility on your computer.	
Click Install to continue with the installation, or click Back if you want to change any settings.	review or
Destination location: C:\ICPDAS\M2M_Utility	*
Start Menu folder: ICPDAS\M2M_Utility	
4	-
< Back Install	Cancel

(6)Click "Finish" to finish installing M2M Utility.



4. RMV function operation description

There are two ways to open the Utility that the GTP-500M is operating. "Auto Run-up" and "Manual Run-up", If you don't know the function which GTP-500M is operating, you can use "Auto Run-up" to find the correct function utility. Or you can use "Manual Run-up" to choose the utility.

M2M Utility	Description and products introduction.
Auto Run-up(Choose COM Port) COM1 Open -Sup Choose Device -Sup 1. Connect GTP-500M to PC with RS-232. 2. Choose the COM Port number. 3. Click "Open" and wait. Note: Please make sure the PWR LED is ON.	igent serial to 2G/3G Gateway(RMV). port remote maintenace PLC devices that used serial. port network automatic re-connection. ual COM extend real COM Ports. Click to visit ICPDS M2M website. M2M Website
M2M Utility Auto Run-up(Choose COM Port) Intel COM1	lie

COM1 • Open	-S
Manual Run-up(Choose Device) RTU RMV SMS	2. It will show the devices which are supported by this utility.
GTP-500M	3. Double click the device name and the utility will be startup. M2M Website

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual Version 1.0.0 Page : 19

Copyright © 2017 ICP DAS Co., Ltd. All Rights Reserved E-mail: service@icpdas.com

4.1 Gateway Function

4.1.1 The main menu

The main menu of Gateway Function includes the following sections:



(1)Tool Menu:

These tools include all the function operation of the M2M Utility. The description is as the following:

Project:

The parameters of the GTP-500M can be saved as the project file. The operation functions include "New", "Open", "Save", "Save as...", and etc.

- Exit: Exit the M2M Utility.
- ♦ COM Port: The COM Port number of the host PC connecting to the GTP-500M.
- ◆ Connect: Connecting to the GTP-500M.
- Download: Downloading the settings to the GTP-500M device.
- ◆ Upload: Uploading the settings from the GTP-500M device to M2M Utility.
- System:

Providing some system operations including "Signal Quality" . "Reboot GTP-500M" .

"Recover Default Settings" . "Firmware Version" . "Input PIN/PUK"

(2) Parameter groups:

There are four parameter groups in the Gateway Function including: "System" and "COM Port".

(3)Parameters:

Show or set the parameters.

(4)Description:

A particular or minute account.

(5)Status Bar:

This bar can show the operation procedure of the M2M Utility. From left to right, they are:

- ◆ The used com port number.
- ◆ Communication configuration of the COM Port.
- ◆ The current status of the COM port.
- ◆ The address of the GTP-500M.
- ◆ The result for operating the functions

4.1.2 File Menu

This tool provides users to operate the project file. It can save the GTP-500M configuration as the file or upload the settings from the file. It is convenient to manage a lot of GTP-500Ms. The explanation is as the following:

Z	🔓 M2M Utility
	Project Exit
	New
	Open
	Save
	Save as

New: Opening a new file.

Open: Opening an exited file.

Save: Saving the file. If the parameters are changed or save the uploading parameters from the GTP-500M, you can use this function to save these configurations.

Save as: Saving the file as another name.

4.2 Connecting to the GTP-500M

For connecting to the GTP-500M, you can follow the steps below.

(1)Select the COM port of the host PC and connect to the Utility port of GTP-500M.

Γ	Project	Exi
	COM1	-
	COM1	
	COM3	

(2)Press "Connect" to connect to the GTP-500M. If the connection is failed, check the COM port settings and wiring.

Project	Exit
COM1	✓ Connect

4.3 Parameters

The parameters would be shown in the right of the windows if click the tree field in the left side of the M2M Utility. Press the parameters' "Value" filed can change these parameters as the following figure.

🎉 GTP-500 Utility	Dana, Lorent & con	X D			
Project Exit					
COM3 → ✓ Disconnect ↓ Write ▲ Read ● System → @ Show Log					
□ Prject(none)	Parameters	Value			
System	Net ID	1			
COM Port	Function	VxComm -			
COM1	Remote Server	1.2.3.4			
001112	Remote Server Port	11000			
	Internet User Name	GUEST			
	Internet Password	GUEST			
	Internet APN	INTERNET			
	Virtual IP	127.0.11.33			
	Device Alias	ICPDAS			
	Heartbeat Time	10			
	Com End Method	Time			
	Com End Param.	2			
	Description				
	The parameter decide device function. VxComm:Virtual Serial Port, Modbus				
	ICP/RTU Converter:Modbus TCP Server	r to Modbus RTU slave function, VSPE:			
COM3 115200,n,8,1 COM Port Connected 0 Read all parameters successfully!!					

4.3.1 System

There are 12 items in the system field below.

🐝 GTP-500 Utility	Dana, Commert & com			
Project Exit				
COM3 - 🛩 Discor	nnect 🕹 Write 📥 Read 🍩 System 🕞 饠	Show Log		
□ Prject(none)	Parameters	Value		
System	Net ID	1		
COM Port	Function	VxComm -		
COM2	Remote Server	1.2.3.4		
00m2	Remote Server Port	11000		
	Internet User Name	GUEST		
	Internet Password	GUEST		
	Internet APN	INTERNET		
	Virtual IP	127.0.11.33		
	Device Alias	ICPDAS		
	Heartbeat Time	10		
	Com End Method	Time 🔹		
	Com End Param.	2		
	Description			
	The parameter decide device function. V TCP/RTU Converter:Modbus TCP Serve support 'VIRTUAL SERIAL PORTS EMU	'xComm:Virtual Serial Port, Modbus r to Modbus RTU slave function, VSPE: LATOR' software.		
COM3 115200,n,8,1 CC	DM Port Connected 0 Read all parameters succe	essfully!!		

Parameters	Description		
Net ID	GTP-500M ID. Read only		
Function	VxComm		
Remote Server	The remote VxServer server's IP or domain name		
Remote Server Port	The remote VxServer server's Port		
Internet User name	Internet user name		
Internet password	Internet password		
Internet APN	Internet APN (access point name)		
Virtual ID	Virtual IP. Range: 127.0.0.1~127.255.255.254 , This parameter can		
	not be the same with other device.		
Module Alias	Module Alias. (max. 7 character)		
Heartbeat Time	Heartbeat time. Range: 10 sec. ~ 65535 sec.		

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual

Version 1.0.0

 $\mathsf{Page}: 25$

Com End Method					
	Com End Method Com End Param.		Remark		
	Time: Fixed Time. It is as complete a data when no data came at a fixed time	2 ms~ 65535 ms			
Com End Param.	Length: Fixed Length , It is as complete a data when the length of a data more than fixed length	1 ~ 1000	The GTP-500M will transmit a data when there is a data more than		
	2: Fixed end byte. It is as complete a data when receives the fixed end byte. Like "CR" (0x0d)	0 ~ 255	1000 bytes.		

4.3.2 COM Port

The parameters of COM Port (Read only).

Prject(none)	Parameters	Value	Description
System	Port	COM1 (RS-232)	Read Only
	Data Bit	8	Read Only
COM2	Stop Bit	1	Read Only
001112	Parity Bit	none	Read Only
	Baudrate	115200	Read Only

Parameters	Description
Port	COM Port name
Data Bit	7 or 8 bits
Stop Bit	1 or 2 bits
Parity Bit	None, Even, Odd
Baudrate	$2400 \mathrel{\scriptstyle\scriptstyle{\wedge}} 4800 \mathrel{\scriptstyle\scriptstyle{\wedge}} 9600 \mathrel{\scriptstyle\scriptstyle{\wedge}} 19200 \mathrel{\scriptstyle\scriptstyle{\wedge}} 38400 \mathrel{\scriptstyle\scriptstyle{\wedge}} 57600$ and 115200 bps

4.4 Download/Upload Parameters

(1)Write parameters

As the configuration is finishing, the function can write the parameters to the GTP-500M by clicking "Write" as the following figure.

55 GTP-500	Utility	
Project	Exit	
COM3	🚽 🛩 Disconnect 🕼 Write 🖾 Read 🛛 🧠 System 👻 🎯 Show Log	

(2)Read parameters

"Read" button can upload the parameters from the GTP-500M as the following figure.

🎉 GTP-500	Utility			-	effective a leading in	a function care store	
Project	Exi	t					
COM3	-	✓ Disconnect	🕹 Write	📥 Read	🗠 System 🕞 🎪 Show Lo	g	

4.5 System

4.5.1 Signal Quality

Click "System->Signal Quality" can show the signal quality windows to know the GSM/WCDMA signal strength.





Field Description:

The strength is divided into 5 sections shown in percentage.

Operation:

♦ Read: Read the GSM/WCDMA signal strength from the GTP-500M.

4.5.2 Reboot the GTP-500M

It can recover the GTP-500M to the default settings by clicking "System->Recover Default Settings".



4.5.3 Recover to the Factory Settings

It can recover the GTP-500M to the default settings by clicking "System->Recover Default Settings".



4.5.4 Inquiring Firmware Version

Press "System->Firmware Version" in tool menu, and the window would show the versions of the M2M Utility and firmware.



🚺 Version Information
Firmware Version:
GTP-500 Ver1.0.0 2015/10/08
Utility Version:
M2M Utility Ver 1.00
Read

4.5.5 Inputting the PIN/PUK Code

When the GTP-500M starts and the STA2 LED is blanking per 50 ms, it is needed to input the PIN or PUK code in the GTP-500M. In this condition, click "System->Input PIN/PUK" button to set the PIN/PUK code.

System
Signal Quality
Reboot GTP-500
Recover Default Settings
Firmware Version
Input PIN/PUK

(1)Asking for inputting PIN code:

If the PIN code is effective, the "Enter SIM PIN/SIM PUK" window would pop-up as follows. If the number of times for inputting the wrong PIN code is more than the allowed number, the PIN code would be ineffective. And the "PUK code" window would pop up.

🖷 Entry SIM PIN / SIM PUK
Times Remain to Input SIM PIN :
3
2
Please Input SIM PIN Code:
OK

(2)Asking for inputting PUK code:

If the PIN code is ineffective, the "PUK code" window would pop-up as follows. As the number of times for inputting the wrong PUK code is more than allowed number, the SIM card would be ineffective forever. Therefore, it is important to input the correct PUK code.

😸 Entry SIM PIN / SIM PUK	
	_
Times Remain to Input SIM PUK:	
10	
Please Input SIM PUK Code :	
Please Input New SIM PIN Code :	
OK OK	

4.6 Virtual com to access remote the parameters

4.6.1 The necessary software installed





Download Microsoft .Net Framework Version 2.0

http://www.microsoft.com/downloads/details.aspx?FamilyID=0856eacb-4362-4b0d-8edd-aa b15c5e04f5&DisplayLang=en

Download VxServer software

http://m2m.icpdas.com/VxServer.html

Download VxComm Driver software

http://ftp.icpdas.com/pub/cd/8000cd/napdos/driver/vxcomm_driver/2k/

4.6.2 Setting the VxServer and VxComm Driver

(1) Verify that the device has been connected up.

Virtual ID	Modulo	Aliac	Com Numbor	Hoarthoat	Pomoto Cliont IP	Pomoto Clight Port	Signal Qualit
127 0 11 22	DMV 531				111 82 243 58	6725	
127.0.11.22	KIVIV-JS I		4	110	111.02.243.30	0720	- 30 //
Date / Time	Message		00//		02 242 58 DODT. CT25)		
111/12/26 16:57:35 111/12/26 16:57:32	Ine Remote Server Start	ed/Local IP: 61-219	.22 establishes a new o 167 34 Local POPT: 11	onnection. (IP: 111	.82.243.58, PURT: 6725)		
11/12/20 10.37.32	Genver Gran	eu(Locarii : 01.213.	Tor.54, Locart OKT. TT	000)			

(2) Execute VxComm Utility, then click "Search Servers".

🐲 ¥xComm Utility [v2.11.0	4, May.12, 201	11]							- I I I I I I I I I I I I I I I I I I I
<u>File S</u> erver <u>P</u> ort <u>T</u> ools									
	ø		Configure Serve	r				Co	nfigure Port
	- V×Comm	Servers				Port	Virtual COM	Baudrate	
Add Server(s)									
K Remove Server									
🧿 Web									
Search Servers									
Configuration (UDP)									
Exit									
	Name Ali	as IP Address	Sub-net Gateway	MAC Address	DHCP	1			

(3)Select your device, then click "Add Server(s)".

🛷 VxComm Utility [v2.11.0	14, May 12,	2011]						
Eile Server Port Lools								
	ø			Configure Server				Configure Port
VxComm	VxCom	nm Servers	5				Port	Virtual COM Baudrate
Add Server(s)								
Web								
Configuration (UDP)								
Exit								
	Name	Alias	IP Address	Sub-net Mask	Gateway	MAC Address	DHCP	P
	RMV-531	ICPDAS	127.0.11.22	255.255.255.255	127.0.11.22	ff:ff:7f:00:0b:16	6 OFF	
								_

(4) IP Range \rightarrow check "Maps virtual COM ports to "Port I/O" on servers".

Adding Servers		X			
IP Range Advanced Options					
Server Information Server Name :	Get name automatically	,			
IP Range Start : 192.168.255.1	☑ Skip duplicated IP				
Includes the following special IP : □ 0 (Net) ▼ 254 (Gateway) □ 255 (Broadcast)					
Virtual COM and I/O Port Mappings					
 □ Fixed baudrate, use current settings of servers. ☑ Maps virtual COM ports to "Port I/O" on servers. 					
	ОК	Cancel			

(5)Advanced Options, please follow the below parameter settings.

Parameters	Fixed value
Keep Alive Time	1
Connection Broken	3
Connect Timeout	1
Command Port	10000
Virtual I/O Port	9999

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual

Version 1.0.0

Page : 35

Adding Servers			×
IP Range Advanced Options			
The following items are all PC s	ide settings, not dev	ice settings.	
Keep Alive Time (Seconds) :	1		
Connection Broken (Seconds) :	3		
Connect Timeout (Seconds) :	1		
Command Port (TCP):	10000		
Virtual I/O Port (TCP):	9999		
		ОК	Cancel

(6)Tools \rightarrow Restart Driver.

💞 ¥xComm Utility [v2.11.0	14, May.12, 2011]			
<u>File Server Port</u> Tools				
System In Restart Di	formation river Configure Server			Configure Port
driver & utility	-VxComm Servers	Port	Virtual COM	Baudrate
Add Server(s) Add Server(s) Remove Server Web Meb Search Servers Configuration (UDP) Exit	⊢RMV-531 ((27.0.11.22)	Port VO Port 1 Port 2	COM8 COM9 COM10	N/A Dynamic Dynamic

(7) Click "Restart Driver".


😻 VxComm Utility [v2.11.04,	, May.12, 2011]					
<u>File</u> Server Port Tools						
System Infor	rmation er	Configure Server			Configur	e Port
driver & utility	V×Comm Servers		Port	Virtual COM	Baudrate	
Add Server(s) Control Control	-RMV-531 (127.0.11.22)		Port Port Port	1/0 COM8 1 COM9 2 COM10	N/A Dynamic Dynamic	
Configuration (VDP)						
Exit						

(8)According the Port I / O of VxComm Utility to select the com port of M2M Utility, then click "M2M Utility => Connect"

🛷 ¥xComm Utility [v2.11.04, May.1	2, 2011]			
<u>File Server Port Tools</u>				
System Information	Configure Server			Configure Port
driver & utility	omm Servers	Por	Virtual COM	Baudrate
VXComm	MV-531 (127.0.11.22)	Port	1/0 COM8	N/A
become part of your PC		Port	2 COM10	Dyp
Add Server(s)				$\langle \rangle$
X Remove Server				
Meh				
Search Servers				
Configuration (UDP)				
Exit				
			/	
W DMAY FO	1 V1 01 2012/01/25			
M RIVIV-55.	1 Ver1.01 2013/01/25			
Project	Evit			
FIUJECI				
COM8	▼ <	Jad Uplo	ad 🧠 S	System -
		1		,
	\checkmark			

SRMV-531 Ver1.01 2013/01/2 Project Exit	25	
COM8	nect Devenload Depload System -	Description
COM8 115200,n,8,1 COI	M Port Connected 0 Disconnect	

(9) The remaining steps, please refer to Chapter 4

5. RTU Function Utility operation description

Please refer to page.19 to start the RTU function utility.

*RTU Function need to install the expansion I/O board to execute the full function. Users can view the I/O expansion board on website(<u>http://m2m.icpdas.com/GTP-500M.html</u>).

M2M Utility	×
Auto Run-up(Choose COM Port)	Intelligent 3G Remote Terminal Unit(RTU). -Support max 3 Modbus RTU devices via RS-485 Port. -Support M2M OPC server for SCADA system. -Support data transferring by e-mail. M2M Website

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual	Version 1.0.0	Page : 39
--	---------------	-----------

5.1 RTU Function

5.1.1 The main menu

The main menu of M2M Utility includes the following sections:



Tool Menu

♦"COM":

Set the COM port number in PC connecting to GTP-500M series.

Login/Logout:

Before operating GTP-500M, users need to login to M2M Utility. After login the system successfully, the menu item "login" would become "logout" and the M2M Utility would be operated normally. Once the power is reset, the login procedure needs to do again.

Language:

M2M Utility only supports English interface.

♦ File:

There are import and export functions in "File" item. The functions would be enabled when "Main parameters" window is open.

Export:

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual Version 1.0.0 Page : 40

Copyright © 2017 ICP DAS Co., Ltd. All Rights Reserved E-mail: service@icpdas.com

The function can export the parameters to the defined .par file from the "Main parameters" windows.

♦ Import:

The parameters would be shown in "Main parameters" window from the defined .par file.

♦ Version:

Including the firmware and Utility version information.

System:

Provide users for recovering GTP-500M to factory, resetting GTP-500M and debug mode.

♦Exit:

To exit M2M utility

Function Item

Main Parameters:

The main parameter setting of GTP-500M includes ID, SIM number, operation mode, data logger period and GPS item.

Device Status:

Display these peripheral devices status including micro SD, 3G/GPRS, GPS and Modbus RTU.

◆ Device Time:

Display or set the RTC time of GTP-500M in this item. It is also can get the information of the last and next time of the return report in E-mail mode.

DO Control/DI Status/AI Value(only support expansion I/O board):

Display the status of I/O and control the DO output.

Counter Value(only support expansion I/O board):

Inquire and set the counter value.

♦ Signal Quality:

Inquire signal type and quality

Status Line

Show the related information during the operation procedure including:

- ◆ The com port number of PC.
- The communication setting of COM Port.
- ◆ The status of COM Port.
- ◆ The result of Utility operation.

5.2 Login

It needs to login to GTP-500M to set its parameters. The description is below:

(1)Select the COM port number of PC.

(2)Press the "Login" button.

(3) If you are the first time to login, please set the system time of GTP-500M.



If the pin code in GTP-500M is not correct, the STA led would be blanking per 50 ms and M2M Utility would ask for users to input PIN or PUK code. If GTP-500M login without expansion board, "DO Control AI/DI Status" and "Counter Value" will be unable.

Note: Input PIN/PUK code step please refer to chapter 4.5.5

5.3 Main Parameters

There are four group in the left side of the "Main Parameters" window. They are Main Info, DI Info, AI Info and Modbus Device groups. Users can inquire or set these parameters of these groups in the right side.

5.3.1 Main Info

System Info

- Main Info	Darameters	Value	Discription
System Info	Machine Name	GTP-500M	1~20 Char.
- Network Info	SIM Card Number		0~20 Char.
- RTU Mode	Mode	RTU	
Server Info	Data Logger Period(sec)	0	0~65535
E-Mail Mode	Enable GPS	Enable	
- AI Info Mođbus Device	Read From	Device Vrite to Dev	ice

Item	Description
Machine Name	Device Name. This name would be shown in the
	E-Mail mode.(Range : 1~20 characters)
SIM Card Number	This text field can show or input the phone number of
	the plug-in SIM card.
	(Range : 0~20 characters)
Mode	Operation mode:
	1.RTU mode- In this mode, GTP-500M would
	transfer I/O data (local I/O, Modbus device or GPS

	data) to the M2M RTU center by WCDMA/GPRS
	connection periodically.
	2.E-Mail mode: Transfer I/O data by the e-mail
	attached file through WCDMA/GPRS connection
	periodically.
Data Logger	This time is used for recording I/O data to I/O logger
Period(sec)	files periodically by second unit. If the value is 0, this
	I/O data logger function is disabled.
	(Range : 0~65535 sec)
Enable GPS	Enable: Enable the GPS function.
	Disable: Disable the GPS function

Network Info

🚳 Main Parameters			2
🖃 Main Info 🛛 Para	meters	Value	Discription
System Info APN	I	internet	0~31 Char.
	Name	guest	0~31 Char.
RTU Mode User	Password	guest	0~31 Char.
 Berver Into E-Mail Mode Receiver Address RS485 Info DI Info AI Info Modbus Device 	Read From De	vice Write to Device	
Item	Description		
GPRS APN	The setting is im	portant factor when conne	ecting to a
	WCDMA/GPRS	network. Check wi	ith your
	WCDMA/GPRS se	ervice provider for details.	
	Access point nam	e (APN) is the name used	to identify

	a general packet radio service (WCDMA/GPRS) bearer		
	service in the 2G/3G mobile network. The APN defines		
	the type of service that is provided in the packet data		
	connection. You can get this APN by ISP.		
	(Range : 0~31 Characters)		
GPRS User Name	The setting is important factor when connecting to a		
	WCDMA/GPRS network. Check with your		
	WCDMA/GPRS service provider for details.		
	(Range : 0~31 Characters)		
GPRS User	The setting is important factor when connecting to a		
Password	WCDMA/GPRS network. Check with your		
	WCDMA/GPRS service provider for details.		
	(Range : 0~31 Characters)		

RTU Mode

🚳 Main Parameters			23
🖃 Main Info	Parameters	Value	Discription
- System Info	Machine ID	1	1~65535
- Network Info	Data Update Period(sec)	0	0~999999
- RTU Mode	Heartbeat Period(sec)	0	0~999999
- Server Info			
Receiver Address			
🖶 AI Info			
Mođbus Device			
	🛕 Read From De	vice 🛛 🤜 Write to Device	
Item	Description		
Machine ID	The device Sta	tion ID would be shown	in the RTU

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual Version 1.0.0 Page : 45

Center software. It can identify the different device in

	the Remote OPC Server.
	(Range: 1 ~ 65535)
Data Update	Set the report time interval. The GTP-500M would
Period(sec)	send the data to M2M RTU Center periodically
	depending on this update time. The based unit is
	second.
	(Range: 0 ~ 999999 sec)
Heartbeat Period(sec)	Set the heartbeat time interval. When the GTP-500M
	update time is too long to terminate the
	WCDMA/GPRS connection by ISP, the heartbeat
	time will report smaller package to keep
	WCDMA/GPRS connection. (unit: sec)
	(Range: 0 ~ 999999 sec)
	Note: Some ISP companies would terminate the
	WCDMA/GPRS connection when the connection has
	not any data flow for some time.

Server Info

🚱 Main Parameters			X
🖃 Main Info	Parameters	Value	Discription
- System Info	Server Domain Name		0~31
-Network Info	Server IP	192.168.0.1	
RTU Mode	Server Port	10000	0~65535
Server Info	Primary DNS	168.95.1.1	
E-Mail Mode	Second DNS		
DI Info AI Info Modbus Device	Read From De	evice Write to Device	2

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual

Page : 46

Version 1.0.0

Copyright © 2017 ICP DAS Co., Ltd. All Rights Reserved E-mail: service@icpdas.com

Item	Description
Server Domain Name	The server domain name. In RTU mode, it indicates
	the PC running M2M RTU Center.
	In E-mail mode, it indicates the E-mail server.
	(Range : 0 ~ 31 Characters)
Server IP	The IP address of the server
	In RTU mode, it indicates the PC running M2M RTU
	Center.
	In E-mail mode, it indicates the E-mail server.
Server Port	The port of the server is used to connect to a TCP
	Server.
	In RTU mode, the port is 10000.
	In E-mail mode, the port is 25.
	(Ranged : 0~65535)
Primary DNS	The primary Domain name server IP
Second DNS	The secondary Domain name server IP

E-mail Mode

🚱 Main Parameters			X
🗏 Main Info	Parameters	Value	Discription
- System Info	E-mail Authority	none	
Network Info	Server User Name		0~35 char.
RTU Mode	Server User Password		0~35 char.
Server Info	E-mail Subject	GTP-500M Data Report	0~128 char.
E-Mail Mode	E-mail From	from@mail	1~51 char.
DS495 Lafe	Max. size of one E-mail file(KB)	1300	110~2500
DI Info	Max. sizeof one attached file(KB)	600	100~1200
	Report Period(min)	0	0~65535
Modbus Device	Report Base Time(hour)	00	0~23
	Report Base Time(min)	00	0~59
	A Read From De	vice Write to Device	

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual

Version 1.0.0

Page : 47

 $Copyright @ \ 2017 \ ICP \ DAS \ Co., \ Ltd. \ All \ Rights \ Reserved \\ E-mail: \ service @ icpdas.com$

Item	Description
E-mail Authority	The GTP-500M only support two way of authority to
	login e-mail server
	1.none: No authority
	2.auth-long: AUTH-LONG
Server User Name	The user name to login to the e-mail server
	◎Not support SSL
	(Range : 0 ~ 35 characters)
Server Password	The password to login to the e-mail server
	(Range : 0 ~ 35 characters)
E-mail Subject	The subject of the e-mail
	(Range : 0 ~ 128 characters)
E-mail From	The sender of the e-mail. This field dose not allow the
	empty string in E-mail mode
	(Range : 1 ~ 51 characters)
Max. size of one	The maximum size of one E-mail file.
E-mail file(KB)	The suggestion size is 1300 KBytes
	(Range : 110 ~ 2500 KB)
Max. size of one	The maximum size of one attached file in a e-mail. The
attached file	suggestion size is 600 KBytes
(KB)	(Range : 100 ~ 1200 KB)
Report Period(min)	The interval time to report the e-mail. (Range : 0~65535
	min)
Report Base	The hour of first time to send the e-mail
Time(hour)	(Range : 0~23 hour)
Report Base	The minute of first time to send the e-mail
Time(min)	(Range : 0~59 minute)

Receiver Address

🛞 Main Parameters				×
⊡ Main Info	Parameters		Value	Discription
- System Info	E-mail addr.	1		0~51 char.
- Network Info	E-mail addr.	2		0~51 char.
- RTU Mode	E-mail addr.	3		0~51 char.
Server Info	E-mail addr. 4	4		0~51 char.
- E-Mail Mode	E-mail addr.	5		0~51 char.
RS485 Info	E-mail addr. (6		0~51 char.
DI Info	E-mail addr.	7		0~51 char.
AI Info	E-mail addr.	8		0~51 char.
Mođbus Device	E-mail addr.	9		0~51 char.
	E-mail addr.	10		0~51 char.
		Read From De	vice Write	to Device
Item		Description		
E-mail Addr. 1 ~		In E-Mal mod	e, users can set	the e-mail addresses
E-mail Addr. 10		of receivers in	these fields.	
		(Range : 0 ~ \$	51 Characters)	

RS-485 Info

🚱 Main Parameters					X
🖃 Main Info	Parameters		Value		Discription
- System Info	Baudrate		9600		
Network Info	Data Bit		8		
	Stop Bit		1		
E-Mail Mode	Parity Bi	t	none		
 Receiver Address RS485 Info DI Info AI Info Modbus Device 		Read From De	vice	Write to Device	
Item		Description			
Baudrate	Baudrate		The baud rate of the COM2 (RS-485)		
Data Bit	The data bit o		e COM2		
Stop Bit	The stop bit of the		e COM2		
Parity Bit	The parity bit of t		ne COM2		
		(none, odd, even)	1		

5.3.2 DI Info

🚳 Main Parameters			X
<u>⊪</u> Main Info	Parameters	Value	Discription
🖨 DI Info	Туре	Disable	
DIO	Triggered Hold Time(sec)	0	0~65535
-DI1	Return Hold Time(sec)	0	0~65535
DI2	DO Channel	0	0~1
D13	DO On Time(sec)	0	0~65535
D14	DO Off Condition	Disable	
	Read From	Device Vrite to D	Device

Item	Description
Туре	The function is used to set the type of DI
	channel:
	1.Disable: Disable the linkage function
	between DI and DO channels.
	2.DI NO: The DI channel is normal Open.
	When the DI channel is close (high), it is the
	trigger signal of GTP-500M.
	3.DI NC: The DI channel is normal close.
	When the DI channel is open (low), it is the
	trigger signal in the system.
	4.DI Counter: Set the DI channel as counter
	mode.
Triggered Hold Time(sec)	This value represents the holding time of the
	DI signal for triggering the event. The unit is
	second.
	(Range : 0 ~ 65535 sec)
Return Hold Time(sec)	When the trigger condition is activated, it

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual

Version 1.0.0

	needs to keep the non-trigger status to be	
	triggered again according to the "Return Hold	
	Time". The unit is second.	
	(Range : 0 ~ 65535 sec)	
DO Channel	The text will define which DO channel will	
	output according to the DI triggering.	
	(Channel 0 ~ 1)	
DO On Time(sec)	The DO channel would keep outputting	
	according to this time, when DI channel is	
	triggered and "DO Off Condition" is "time".	
	The unit is second.	
	(Range : 0 ~ 65535 sec)	
DO Off Condition	These conditions of the DO terminating	
	outputting when DO is output by DI trigger.	
	1.Disable: Disable the DO linkage with DI	
	channel.	
	2.Time: The DO output would keeping "ON"	
	according to the "DO on Time" when DI is	
	triggered.	
	3. Input Status: The DO channel output would	
	be kept contiguously according to the time	
	of the "Return Hold Time" when the DI	
	returns to the non-trigger status	

5.3.3 Al Info

🚳 Main Parameters			8
🐏 Main Info	Parameters	Value	Discription
	Condition 1	Disable	
🖻 AI Info	Alarm Value(mA)	0	0~20
AI0	Triggered Hold Time(sec)	0	0~65535
Modbus Device	Return Hold Time(sec)	0	0~65535
	DO Channel	0	0~1
	DO On Time(sec)	0	0~65535
	DO Off Condition	Disable	
	Condition 2	Disable	
	Alarm Value(mA)	0	0~20
	Triggered Hold Time(sec)	0	0~65535
	Return Hold Time(sec)	0	0~65535
	DO Channel	0	0~1
	DO On Time(sec)	0	0~65535
	DO Off Condition	Disable	
	Read From De	evice Write to Device	,

Item	Description
Condition 1	There are three modes of the AI triggers in this
	condition.
	1. Disable : Disable the DO linkage
	2. High Alarm : The DO is activated when the Al
	exceeds the alarm value.
	3. Low Alarm : The DO is activated when the Al
	is lower than the alarm value.
Alarm Value	The alarm value of AI channel
	(Range : 0 ~ 20 mA)
Triggered Hold Time(sec)	This value represents the holding time of the AI
	signal for triggering the event. The unit is
	second.
	(Range : 0 ~ 65535 sec)
Return Hold Time(sec)	When the trigger condition is activated, it needs
	to keep the non-trigger status to be triggered
	again according to the "Return Hold Time". The
	unit is second.

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual

Version 1.0.0

Page : 53

	(Range : 0 ~ 65535 sec)
DO Channel	The DO channel will be activated according to
	the AI alarm.
	(Channel 0 ~ 1)
DO On Time(sec)	The DO channel would keep outputting by this
	time, when AI alarm is triggered and "DO Off
	Condition" is "time". The unit is second.
	(Range : 0 ~ 65535 sec)
DO Off Condition	These conditions of the DO terminating
	outputting when DO is output by AI trigger.
	1. Disable: Disable the DO linkage with Al
	channel.
	2. Time: The DO output would keeping
	outputting according to the "DO on Time"
	when AI alarm is triggered.
	3. Input Status: The DO channel output would
	be kept contiguously according to the time of
	the "Return Hold Time" when the AI returns to
	the non-trigger status
Condition 2	The second condition of AI trigger. The trigger
	modes are as condition 1.
Alarm Value	The alarm value of AI channel
	(Range : 0 ~ 20 mA)
Triggered Hold Time(sec)	This value represents the holding time of the AI
	signal for triggering the event. The unit is
	second.
	(Range : 0 ~ 65535 sec)
Return Hold Time(sec)	When the trigger condition is activated, it needs
	to keep the non-trigger status to be triggered
	again according to the "Return Hold Time". The
	unit is second.
	(Range : 0 ~ 65535 sec)
DO Channel	The DO channel will be activated according to

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual

Version 1.0.0

Page : 54

	the AI alarm.					
	(Channel 0 ~ 1)					
DO On Time(sec)	The DO channel would keep outputting by this					
	time, when AI alarm is triggered and "DO Off					
	Condition" is "time". The unit is second.					
	(Range : 0 ~ 65535 sec)					
DO Off Condition	These conditions of the DO terminating					
	outputting when DO is output by AI trigger.					
	1. Disable: Disable the DO linkage with Al					
	channel.					
	2. Time: The DO output would keeping					
	outputting according to the "DO on Time"					
	when AI alarm is triggered.					
	3. Input Status: The DO channel output would					
	be kept according to the time of the "Return					
	Hold Time" when the AI returns to the					
	non-trigger status					

5.3.4 Modbus Device

GTP-500M are allowed to connect to three Modbus RTU devices. Therefore, users can get these data of Modbus devices form the remote site by applying the GTP-500M. One Modbus RTU device support how much channels of I/O is as follows:

- DI : 32 Channels
- DO: 32 Channels
- AI :16 Channels
- AO :16 Channels

The section is shown how to set the settings to connect to the Modbus devices.

Adding a Modbus device by M2M Utility

Following these steps to add a Modbus device to the GTP-500M:

- (1)Select "Modbus Device" in the left window and press the right button of the mouse as the following figure.
- (2)Select "Add Device" to add a Modbus device.
- (3)There are Modbus device of ICP DAS for users to select. If the Modbus device connected to GTP-500M is not in the list, please select "Customer" item to add this Modbus device.



GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual Version 1.0.0 Page : 56

Copyright © 2017 ICP DAS Co., Ltd. All Rights Reserved E-mail: service@icpdas.com

Remove a Modbus RTU device

Follow these steps to remove a Modbus device from GTP-500M.

(1)Select the Modbus device that you want to remove and click the right button of the mouse.

(2)Select "Delete Device" to remove this Modbus device.



Description of parameters

Item	Description
Device name	The name of the Modbus RTU device
Device Address	The ID of the Modbus RTU device
DI Channels	The number of DI channel
DI Address	The start address of reading the DI value
DO Channels	The number of DO channels
DO Address	The start address of reading the DO value
AI Channels	The number of AI channel

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual

Version 1.0.0

Page : 57

Copyright © 2017 ICP DAS Co., Ltd. All Rights Reserved E-mail: service@icpdas.com

AI Address	The start address of reading the AI value			
AI Format	The format of AI value. Custom modbus device only support 16 bits			
	value.			
АІ Туре	AI type			
AO Channels	The number of AO channels			
AO Address	The start address of reading the AO value			
AO Format	The format of AO value. Custom modbus device only support 16			
	bits value.			
АО Туре	AO type			

5.3.5 Import/Export Parameters

There are Import Parameters and Export Parameters in the list as the figure. These functions would be enabled as "Main Parameters" window is open.

🥵 G T 540 Utility G T 540.U ¥ 1.0.0 2010/05/23				
COM1 - Logout Language -	File • Version System • Exit			
🐻 Main Parameters	Import Parameters			
📮 Main Info 🛛 🛛 🏾 🏾 🏾 🏾	Export Parameters	Discription		
System Info Mac	hine Name GT-540			

Import Parameters

This function would read these parameters from *.par and show in "Main Parameters" window. When pressing "Import Parameters" button, the following window would pop-up. Select the path and the file to finish the importing process.

Import Setting								? 🔀
查詢(]):	🚞 Release		~	G	ø	Þ	•	
 ・ 	 ≥h-CHS ≥h-CHT GT-540 par GT-540_auth, p GT-540_sprat GT-540S_Email GT-540S_Email test.par 	er il par						
網路上的芳鄰	檔名(N):	GT-540.par				*		開啓())
	檔案類型(<u>T</u>):	Paramater file(*.par)				~		取消

Export Parameters

This function would export these parameters to the *.par file. When pressing "Export Parameters" button, the following window would pop-up. After selecting the path and set the file name, press "SAVE" button to finish the process.

Export Setting		? 🗙
儲存於①:	: 🔁 Release 🔽 🕜 🎓 🖽 -	
式最近的文件 反応 東面 我的文件	 □ zh-CHS □ zh-CHT □ GT-540.par □ GT-540.spar □ GT-540S.par □ GT-540S.Email.par □ test.par 	
(1) またします。 (1) またしまます。 (1) またします。 (1) また) (1) また)		
網路上的芳鄰	檔名⑪: 存檔類型①: Paramater file(*.par)	儲存③

5.3.6 Device Status

The window would show the status of micro SD card, WCDMA/GPRS connection, GPS and the Modbus devices connected to GTP-500M.

55	GT540 Utility	- GT540.U¥1.0.0 20	10/05/23				
C	OM1 - La	ogout Language 🕶	File - Version System - Exit				
	🐻 The Periphe	eral Device Status					
	Device	Discription	Status				
	SD Card :	Status	OK				
		Free Size(Byte)	1898676224				
	GPRS :	Status	Connected				
		Error Code	8				
	GPS :	Status	Enable				
		Data	\$GPRMC,003547.027, V,8960.0000, N,00000.0000, E,0.00,0.00,060180,,,,N*7E				
	M-7016	Address	5				
		Status	OK				
		Status Code	4				
	M-7060	Address	10				
		Status	Status OK				
		Status Code	4				
	M-7080B	Address	1				
		Status	OK				
		Status Code	4				
			🛆 Read				
Γα	M1 9600,n,8,1	COM Port Connected	Read all parameters successfully!				

Operation description

◆Read:

Pressing this button would update the status of the GTP-500M.

Field instruction

♦ SD Card

Status: Shows the status of micro SD card. (OK- normal, Error- abnormal).

Free Size(Byte): The remainder space of SD card.

Network

Status: Shows the status of WCDMA/GPRS connection.

Error Code: This code is for the connection status.

♦ GPS

Status: Shows the GPS function is enable or disable.

Data: The current \$GPRMC data of GPS.

◆M-7016/M-7060/M7080B

This field shows the status of Modbus device connected to the GTP-500M.

Address: Modbus RTU address

Status: The connection status between the GTP-500M and Modbus RTU device.

Status Code: The code is for the connection status.

5.3.7 Device Time

This window provides the function to inquire or modify the time of GTP-500M. Besides, in the E-Mail mode, the next and last report times are also shown in the window. The text field operation is below.

📷 Device Time		X		
Device Time / Report Info	Command			
Device Time :				
2010/06/17 17:30:13	Set	Set as Now		
E-Mail Report Time:				
Disable				
Last E-Mail Report Time : Read				
Never				
]		

Field instruction

Device Time:

Show or set the time of GTP-500M.

◆E-Mail Report Time:

This field show the next time to send the mail when mail mode is enabled. If the time is changed, the information would be updated.

◆Last E-Mail Report Time:

This field show the last time to send the mail when the mail mode is enabled.

Operation description

♦ Set as Now:

Set the time of GTP-500M according to the time of PC.

♦ Set:

Set the time of GTP-500M according to the time of the field.

◆Read:

This button would read the time of GTP-500M, the next time to send the mail and the last time to send the mail.

5.3.8 Counter Value

If GTP-500M login without expansion board, this function will be unable. This window provides the function to inquire and modify the counter values of DI0 ~ DI5. The explanation of operation and text field is below:

EE Counters V	/alue	X
Name	Value	Set Value
DI 0	000000000	0
DI 1	000000000	0
DI 2	000000000	0
DI 3	000000000	0
DI 4	000000000	0
DI 5	000000000	0
	Read 💎 Set	Value

Text field

♦ Name:

The DI name of DI0 ~ DI5 ·

♦Value:

The current counter value (maximum: 999999999)

♦ Set Value:

Input the defined counter value. The maximum is 9999999999. This field is enabled when DI is set as counter mode. (If users want to clear these counter values, set 0 to these counter values.)

Operation

Read:

Read the current counter value and alarm settings from GTP-500M. If the DI channel is not set as counter, the counter value is 0.

♦ Set Value :

Change the counter value into GTP-500M according to the "Set Value" field

When the DI channels are set as counter and data logger is enabled, the CIx field would be added in csv files as the figure below. (x: the number of DI channel)

А	B	С	D	E	F	G	Н	I	J
Date	CI0	CI1	DI2	DI3	di4	di5	doo	DO1	AI0
20100223 175626	11111	22222	0	0	0	0	0	0	-0.494
20100223 175636	11111	22222	0	0	0	0	0	0	-0.497
20100223 175704	11111	22222	0	0	0	0	0	0	-0.494
20100223 175714	11111	22222	0	0	0	0	0	0	-0.494

5.3.9 DO control/DI status/AI Status

If GTP-500M login without expansion board, this function will be unable. This function is used to control DO0 and DO1 channels and show the status of DI channels and AI value.



Text field

♦ DI0 ~ DI5, DO0 ~ DO1:

Gray: The voltage logic is high.

Red: The voltage logic is low.

AI Value:

The AI current value.

♦Gain:

Gain value. It can calibrate the AI value

♦ Offset:

Offset value. It can calibrate the AI value

Operation

◆Read:

Read back the status of DI/DO and AI value from GTP-500M.

◆DO0 ~ DO1 ON:

Set the DO output on

◆DO0 ~ DO1 OFF:

Set the DO output off

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual

Version 1.0.0

Page : 65

5.3.10 Signal Quality

This window can show WCDMA/GPRS signal strength.

🔡 Signal Quality		×
3G : HSPA		
	50%	
	Read	
	Ittau	

Text field

The strength is divided into 5 sections shown in percentage. And the top-left corner of the window can show the signal type.

Operation

♦Read:

Read the WCDMA/GPRS signal strength.

5.3.11 Version

Press "Version" in tool menu, and the window would show the version of Utility and firmware.



Text field

◆ Firmware Version:

Show the firmware version of GTP-500M.

♦ Utility Version:

Show the Utility version of GTP-500M.

Operation

◆Read:

Read the version information from GTP-500M.

5.3.12 System

"System" menu item has 4 functions. They are "Recover to Factory Settings", "Reset GTP-500M", "Debug" and "Additional Fun." as the figure below.

55 N	M2M Utility RTU_ GTP-500M_RTU.Ver1.0.0			
	OM1 - Logout Language - File - Version	Sys	stem 🔻	
			Recover to Factory Settings	
			Reset GTP-500M	
1			Debug	
			Additional Fun.	

Recover to Factory Settings

The function is used to recover GTP-500M as factory settings including password.

- ◆ Make sure the STA led is blanking per 1 sec.
- ♦ Select the Recover to Factory Settings.

Reset GTP-500M

The function is used to reset GTP-500M by software.

- ◆ Make sure STA led is blanking per 1 second
- ♦ Select "Reset GTP-500M" button to reset GTP-500M.

Debug

In this Debug mode, users can test mail function and show debug messages. The test or debug messages could be saved as the file.

登 67534 Unlify GT540.0EM.UV1.0.0 2009/09/15 COM1 Logout Language ・ File ・ Version System ・ Exit	
E Debug	
Mail Test Monitor Save Message	Clear
DI Status Q	uality

Operation

Mail Test:

In the E-mail mode, click the button to send the E-mail to the defined e-mail address.

Monitor:

This function can transfer the debug messages from GTP-500M and show in the Window.

◆Save message:

Save the debug messages as files.

◆Clear:

Clear the information in the debug filed.

5.3.13 Additional Function

This function can set the timeout of Modbus Command and Reset Interval time in E-mail mode.

🛃 Additional Function			
-Additional Function			
Modbus Timeout:	200	ms	Set
Reset Time(E-mail mode):	0	hour	Set
	Read		

Text field

Modbus Timeout:

The timeout of Modbus RTU command and the default value is 200ms.

Reset Time (E-mail mode):

In E-mail mode GTP-500M will reset itself per "Reset Time". The default value is 0 and it mean that this function is disabled.

Operation

◆Read:

Read all two settings above from GTP-500M.

♦Set:

Write the two settings above to GTP-500M.

5.4 Data logger

The data logger would be enabled as the "Data Logger Period" is not 0. The logger files would be saved as .csv file in micro SD card. The different modes provide the different file path, but the same file name and data format.

RTU Mode

The current file is stored in the path of RUNTIME. The system would store the data to the new file at the time 00: 00 every day and copy the old file to the path of LOGFILE. In this mode, the timing of changing file name is as follows.

- (1)At 24 o'clock every day
- (2) Change Modbus RTU device connected to GTP-500M.
- (3)Change the interval time of record.
- (4)Change DI type as counter
- (5) Disable/Enable GPS

E-Mail Mode

The current file of data logger is stored in the path of RUNTIME. As arriving the time to send e-mail, the system would move the file to the path of UPLOAD and package the file as e-mail file in the path of EMAIL. The logger file would be stored in the path of LOGFILE. When finishing sending E-mail, the E-mail file would be deleted. In this mode, the timing of changing file name is as follows.

(1)The logger file is over the setting of "Max. size of one attached file".

- (2)The upload time is arrived.
- (3) Change Modbus RTU device connected to GTP-500M.
- (4)Change the interval time of record.
- (5)Change DI type as counter
- (6)Disable/Enable GPS

5.5 The naming rule of logger file name

The file of I/O data logger is csv type. The naming rule is according to the time of creating file. The description is as follows.

- ♦yyyy: year
- ♦mm: month
- ♦dd: day
- ♦HH: hour(24h)
- ♦MM: minute
- ♦SS: second
- ◆ Period: Data Logger Period

5.6 The data format of the data logger file

The content of the file apply comma char to separate the different field. The first row data is the name of the fields. After the first row data, it is I/O data. The format of I/O data is date, time, local I/O, Modbus data and GPS data. The max number of Modbus device is three. Users can refer the following complete example to understand that.

Date	CI0	CI1	DI2	DI3	DI4	DI5	DO0	DO1	AI0	Module [M-7016] Addr.	DI0	DO0
20100520 175518	119	230	0	1	1	0	0	0	0.059	5	1	0
20100520 175519	119	230	0	1	1	0	0	0	0.058	5	1	0

DO1	DO2	DO3	AI0	Al1	AO0	Module [M-7060] Addr.	DI0	DI1	DI2	DI3	DO0
0	0	0	0.03	0.67	1.50	5	1	0	0	0	1
•	•	3	1	0	•	-				-	
0 0	0	0.03 0.67 1.50	5	1	1 0	0	0	1			
	0	0	4	1	0	5		0	U	0	I

DO1	DO2	DO3	Module [M-7080B] Addr.	DO0	DO1	CI0	CI1
0	0	0	1	0	0	655361	5961
0	0	0	1	0	0	655361	5961
5.7 Delete Data Logger File Automatically

At 24 o'clock every day, the GTP-500M would check the free space of micro SD card, if the free space of the micro SD card has less than 50MB, it would delete the oldest data logger files in the path of LOGFILE automatically until the free space has larger than 50MB.

6. SMS Function Utility operation description

Please refer to page.19 to start the SMS function utility.

*SMS Function need to install the expansion I/O board to execute the full function. Users can view the I/O expansion board on website(<u>http://m2m.icpdas.com/GTP-500M.html</u>).

Auto Run-up(Choose COM Port) Intelligent 3G SMS alarm controller(SMS). Manual Run-up(Choose Device) -Need I/O expansion board. RTU RMV GTP-500M -Built-in ASCII commands and SMS tunnel Communication Modes. -Max. 10 default Phone Numbers. -Support SMS setting and control. -Support simple command to send SMS via RS-232 Port. -M2M Website

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual	Version 1.0.0	Page : 74
--	---------------	------------------

6.1 Main menu

The main menu of M2M Utility includes the following sections.



Tool Menu

♦ "COM":

Set the COM port number in PC connecting to GTP-500M.

Login/Logout:

Before operating GTP-500M, users need to login to M2M Utility. After login the system successfully, the menu item "login" would become "logout" and the M2M Utility would be operated normally. Once the power is reset, the login procedure needs to do again.

Language:

M2M Utility supports English, Tradition and Simplified Chinese interface. Users can select which language interface they want from the "Language" item. The language setting would

be influencing on the encode of SMS.

♦ File:

There are import and export functions in "File" item. The functions would be enabled when "Main parameters" window is open.

Export: The function can export the parameters as .par file from the "Main parameters" windows.

Import: The parameters would be shown in "Main parameters" window from the specific .par file.

♦ Version:

GTP-500M Firmware and Utility version information.

♦ System:

Provide users for recovering GTP-500M to factory and resetting GTP-500M.

◆Exit:

To exit the Utility.

Function items

Main parameters:

The main parameter setting of GTP-500M includes ID, SIM number, 10 phone number authority, counter return report, event, DI mode, AI alarm and SMS message.

SMS record:

Inquire the report recorder of event and counter. The maximum number of recorder in GTP-500M is 64.

Device time:

Display and set the RTC time of GTP-500M. It is also can get the information of the last and next time of the return report.

◆Counter Value:

Inquire and set the counter value.

Change Password:

Change the login password

DO Control/DI/AI Status:

Display the status of I/O, control the DO output and AI status.

SD/Battery information:

Show total size and free size of SD card, and show the voltage and volume of Li-Battery.

Signal Quality:

Show GSM/WCDMA signal strength in GTP-500M

Status Line

Show the related information during the operation procedure including.

- ◆ The com port number of PC
- The communication setting of COM Port
- ◆ The status of COM Port
- ◆ The result of Utility operation

6.2 Operation Language

M2M Utility supports English, Traditional Chinese and Simplified Chinese from the "language" menu bar. The text display in M2M Utility and the encode of SMS are depended on the selected language interface.

The format of SMS accords to the selected language. If the 7 BITS format is set, the maximum characters can be sent in SMS is 140. If UCS2, the maximum number is 70 characters. Therefore, if users want to send the Chinese message, it need to select UCS2 encode. After setting the language, it needs to reset GTP-500M to enable the setting.



Copyright © 2017 ICP DAS Co., Ltd. All Rights Reserved E-mail: service@icpdas.com

6.3 Login

It needs to login into GTP-500M to set its parameters. The description is below.

- (1)Select the COM port number of PC.
- (2)Input the login password. The default is "111111"
- (3)Press the "login" button

(4) If you are the first time to login, please set the time of GTP-500M.

COM8 • Login Language •	File • Version System •	Exit	
	Login to SMS Decive		25
Main Parameter	Please Innu	t Password :	Counter Value
or les	5 -	ogin	ĺ
Change	DO Control	SD/Battery	Signal
Password	Please login to Device	monnadon	Quanty

If the pin code in GTP-500M is not correct, the STA led would be blanking per 50 ms and M2M utility would ask for users to input Pin or PUK code.

Note: Input PIN/PUK code step please refer to chapter 4.5.5

6.4 Device parameter

There are 2 pages in "Device parameter" window. They are "Phone/Time Report/Alarm" and "DI Type/Text Message" pages.

After configuring the 2 pages, press "Write to Device" button to save these settings to GTP-500M. Then, reset GTP-500M to enable these settings.

The "Read Form Device" button can help users to read back these settings from GTP-500M. In addition, these setting would be read from GTP-500M when the "Main Parameter" window pops up from the main menu.

6.4.1 Phone /Periodic report/Alarm

The following page is "Phone/Periodic Report/Alarm". Users can refer the explanation below.

5 M2M_SMS Utility V1.0.0	and the local sector						
COM1 - Logout Language - File - Version System - Exit							
🛞 Device Parameters							
Phone/Auto-Report/Alarm DI Type/A	AI Alarm/ Text Message	Read From Device 😽 Write to Device					
Device Information :	Data Log						
Machine ID: GTP-500M	🗖 Enable Da	ta log					
SIM Card Number:	Interval(1~999	999s): <mark>300</mark>					
Phone Number:							
Phone 1 :	Command 🗇 DTMF 👘 Au	to Event Event Setting					
Phone 2 :	Command DTMF Au	to Event Event Setting					
Phone 3 :	Command DTMF Au	to <u>Event</u> Event Setting					
Phone 4 :	Command DTMF Au	to Event Event Setting					
Phone 5 :	Command DTMF Au	to Event Event Setting					
Phone 6 :	Command DTMF Au	to Event Event Setting					
Phone 7 :	Command DTMF Au	to Event Event Setting					
Phone 8 :	Command DTMF Au	to 🔄 Event Event Setting					
Phone 9 :	Command 🗖 DTMF 📄 Au	to 🔄 Event Event Setting					
Phone10:	🖻 Command 📄 DTMF 📄 Au	to Event Event Setting					
Auto-Report Power Down Alarm Low Battery Volume Alarm Enable Auto-Report Enable Alarm Enable Alarm							
Report Interval:	After Power Down :	Alert Voltage(mV) : 3570					
Report Time: 0 \checkmark min Alert Percent(%) 10 0 \checkmark : 0 \checkmark : 10 \checkmark							
COM1 [15200,n,8,1] COM Port Connected Re	ad all parameters successfully!!						

Machine ID

The device ID would be shown in the report and alarm SMS messages. It can be used for recognizing the GTP-500M. The length of characters is 20 without supporting Unicode and ";" characteristic.

SIM Card Number

This text field can show or input the phone number of the plug-in SIM card. Take Taiwan for example: 0928xxxxxx. If the phone number is international number, the "international prefix number" and "national number" must be added in the front of phone number. For example: 002-86-928xxxxxx.

Data log

The users can select to enable or disenable data log function, and set the time interval of data log which the minimum setting is 1 sec. The GTP-500M will delete older file when the free size of SD card is less than 50MB. The format of data log as below.

Data,Time,DI0, DI1, DI2, DI3, DI4, DI5, DO0, DO1,AI

Phone numbers (1 ~ 10)

This field is used to set which phone numbers to receive SMS/voice message or send SMS command. Every phone number can be set the authority as follows.

- Command: Authority to send the SMS commands to GTP-500M
- ◆ DTMF: Dual-Tone Multi-Frequency, the user can control DO by DTMF.
- ♦ Counter Report: Authority to receive the counter SMS report periodically.
- ◆ Event: Authority to receive the event SMS report



- System Event: SMS or Sound event of system
- ◆ DI/AI Message Report: SMS message of DI or AI event
- ◆ DI/AI Sound Report: Sound message of DI or AI event

Auto-Report

- ◆ Enable Auto-Report: Enable the function in this item.
- ◆ Report Interval: The time interval for counter report and it is set by day (1 ~ 31 days)
- ◆ Report time: Hour/Minute/Second

The SMS format of counter report is fixed. It cannot be modified by users:

CRPT;Machine ID;Report Date;Report Time;DI0;DI1;DI2;DI3;DI4;DI5

CRPT: Counter report

Machine ID: Device ID

Report Date: Report date, format: YYYYMMDD (Y=year, M=month, D=day)

Report Time: Report time, format: HHmmSS (H=hour, m=minute, S=second)

DI0 ~ DI5: The counter values of DI0 ~ DI5.

Note:

If CRPT function is enabled and the return time is changed, the next time to send the SMS report is re-calculated according to the current time of GTP-500M and the CRPT time. There would 2 conditions on the day.

When the GTP-500M time is over the CRTP time, GTP-500M would send the CRTP SMS after 1 minute.

If the GTP-500M time does not reach the CRTP time, GTP-500M would not send the CRTP SMS until GTP-500M time reaches the CRTP time.

Power Down Alarm

The function supports to send alert SMS when the external power is off. The alert time after the event happened can be set by minutes ($0 \sim 60$ minutes).

Low Battery Volume Alarm

The function supports to send alert SMS when the volume of battery is low. The low battery value can be set as 10%~ 50% less than total volume.

6.4.2 DI mode and SMS content

Another page in "Device parameter" is about DI and event setting. The explanation is below.

🎉 SMS-534	Utility V1.	0							
COM8	COM8 - Logout Language - File - Version System - Exit								
🛞 Device	Parameters					_	_		
Phone/Au	ito-Report	t/Alarm	DI Type/AI Al	arm/ Text N	lessage	4	🛆 Read	From Devi	ce 😾 Write to Device
Format	of Event	Short Mes	sage						
🗖 Dis	sable SM '	Title 🛛	🛛 Disable MI	D 🗖 D:	isable Data/	Time	Show Sys	tem Event	🗹 Disable Checksum
	ALARM		Machine ID		Date;Time		Event N	lessage	Event Message
DI Typ	e								
NO.	Used	Тур	e	Trigger S	ec D	O ON	DO Ch.	Time(sec)	Message
DI0:			-	0		Enable	0	0	Event Message
DI1:			-	0		Enable	0	0	Event Message
DI2:			-	0		Enable	0 🌻	0	Event Message
DI3:			-	0		Enable	0 🌻	0	Event Message
DI4:			-	0		Enable	0	0	Event Message
DI5:			-	0		Enable	0	0	Event Message
AI Alar	m								
NO.	Used	Туре	Value(mA)	Trigger Sec	e Reset Sec	DO ON	DO C	h. Time(sec) Message
AI_H.	1:		0.00	0	0	🗌 Enabl	le ⁰ 🗧	0	Event Message
AI_H	2		0.00	0	0	🗌 Enabl	le <mark>0</mark>	0	Event Message
AI_LI			0.00	0	0	🗌 Enabl	le <mark>0 🍦</mark>	0	Event Message
AI_L2	2		0.00	0	0	🗌 Enabl	le ⁰ 🍦	0	Event Message
					0.11				
TCOM8 [152	.W,n,8,1) a	JM Port Con	nected [Read all	parameters su	coesstully!!				

The format of event Shot Message

The format of event SMS can be modified by users by the check boxes. The complete format of even SMS is below.

ALARM;Machine ID;Report Date;Report Time;Event Message

ALARM: Indicate alarm report

Machine ID: Device ID

Report Date: Report date, format: YYYYMMDD (Y=year, M=month, D=day)

Report Time: Report time, format: HHmmSS (H=hour, m=minute, S=second)

Event Message: User-defined content

The three messages of event SMS can be set or canceled by users to match various applications. They include Utility.

♦ Disable SM Title:

Enable the function. The title string "ALARM" would not be sent in SMS.

◆ Disable MID:

Enable the function. The machine ID would not be sent in SMS.

Disable report Data/Time:

Enable the function. The data and time would not be sent in SMS.

Disable ID:

Disable this function. A check ID would be sent in SMS and custom can use ICPDAS's SMS management software (SMS-534 SMS Database System software).

Show System Event

The window shows the system event message according to the selected language. The content is fixed and cannot be changed. There are 4 system events in GTP-500M as follows.

```
◆Event 1:
```

The external power is off. (This function can be disabled)

◆Event 2:

The volume of battery is lower than the setting value. (This function can be disabled). n is the remaining percentage volume of battery.

◆Event 3:

The time of GTP-500M is abnormal. This function can not be disabled. It could make the wrong timing for report and the cause is the silver battery of GTP-500M is abnormal. After changing the silver battery, the time of GTP-500M must be set.

◆Event 4:

The counter value is reaching the preset limits. This function can be disabled. n represents the number of DI channel. (n: $0 \sim 5$)

Sound upload:

Users can upload sound file to SD card. If the file has existed, it shows "OK". If it doesn't exist , it shows "N/A"

🝓 System Event	Message		X
Event ID	Systm Event Message	Sound	Upload Sound
1	System Power Off!!	N/A	
2	Battery Low!! <n%></n%>	N/A	
3	System Time Exception!!	N/A	
4	Counter Alarm!! <cin></cin>	N/A	

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual Version 1.0.0 Page : 84

Copyright © 2017 ICP DAS Co., Ltd. All Rights Reserved E-mail: service@icpdas.com

DI type

There are 3 modes of DI type for users to select. It needs to reset GTP-500M to enable new setting after changing these parameters.

♦Use:

Enable DI function

◆Type:

DI0 ~ DI5 could be set as Counter function, NC or NO mode.

Counter: Counter function (frequency : 5 ~ 40Hz)

DI-NC: Normal Close mode. When the DI circuit is broken, the event is triggered. GTP-500M would send the alarm SMS. Refer to section 2.4.2 for the detail.

DI-NO: Normal Open mode. When the DI circuit is shorten, the event is triggered. GTP-500M would send the alarm SMS. Refer to section 2.4.3 for the detail.

Trigger Time(sec):

Set the hold time of the DI triggered signal (0~9999 seconds)

♦DO ON:

This function enable DO output when the DI event is triggered.

♦DO Ch.:

Set the DO channel.

◆Time(sec):

Set the output time of DO channel (0~999 seconds). If the power is just provided by Li-battery, GTP-500M would not be into sleep mode until the output time is reaching.

Event message:

Set the user-defined message content. These message would be included in event SMS.



GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual

Page : 85

Version 1.0.0

Al type

There are 2 modes of AI type for users to select.

♦Use:

Enable AI alarm function

◆Type:

AI_H1, AI_H2, AI_L1, AI_L2 could be set as high alarm or Low alarm mode.

Upper Limit: Set AI as over alarm.

Lower Limit: Set AI as low alarm.

◆Value:

Al alarm value

Trigger Time(sec):

Set the hold time of the AI triggered signal (0~9999 seconds)

◆ Reset time (sec):

Set the time when the AI needed to restore the number of seconds (0~999).

♦DO ON:

This function enable DO output when AI event is triggered.

♦DO Ch.:

Set the DO channel.

◆Time (sec) :

Set the output time of DO channel (0~999 seconds). If the power is just provided by Li-battery, GTP-500M would not be into sleep mode until the output time is reaching.

Event message:

Set the user-defined message content. These message would be included in event SMS.

🚯 Customize Ev	ent Me	ssage		• ×
AI Number	:	0		
Event ID	:	12		
Sound	:	N/A	Upload file	
Txt Message				95
AIO Triggere	:d!!			
	к		Cance	el 📃

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual

Page : 86

Version 1.0.0

6.4.3 Import/Export Parameters

Users can use the import and export functions from the menu bar. This function would be enabled when the "Device Parameter" window is open. The explanation is below.

🐝 SMS-534 Utility V1.0		
COM8 - Logout Language -	File • Version System • Exit	
S Device Parameters	Import Parameters	
F F	Export Parameters	A Dood Erom Darrico Write to Darrico

Import Parameters

This function is used for reading back the setting of device parameters from .par file and displaying in "Device parameter" window. When press "import" button, a file selection window would pop up for users to choice the .par file.

Export Parameters

The function is used for saving the setting of "Device parameter" window as .par file. When press "Export" button, a file selection window would pop-up for users to save the setting as .par file in specific path.

6.5 SMS Recorder

This window provides the inquiring, saving and deleting counter value, and event SMS record function.

6.5.1 Counter Report record

In this page, users can inquire the record of CRPT reports.

🗾 Short k	dessage Records							×	
Counter Re	Counter Report Record Event Report Record								
	Read Save Delete All								
No	Report Time	Number	CIO	CI1	CI2	CI3	CI4	CI5	

Operation

♦Read:

Read all the CRPT report from GTP-500M. The maximum number of CRPT report record is 64.

◆Save:

Save these records to a file (*.csv).

Delete all:

Delete all CRPT report records from GTP-500M.

Text field

♦No:

The number of RTCP records.

Report time:

CRPT report time.

Number:

It represents the SMS sending to the quantity of phone numbers.

♦CI0(~5):

The $DIO(\sim 5)$ counter value. If the DI is not set as counter, the value is 0.

6.5.2 Event Report record

In this page, users can inquire all event report of GTP-500M. The explanation is below.

Short N Counter Ri	Message Records eport Record Event Report R	Record		
	Read 📙 Save 🛛	🔐 Delete	All	Total Number: 0
No	Report Time	Event ID	Number	Evnet Message

Operation

◆Read:

Read all the CRPT report from GTP-500M. The maximum number of CRPT report records is 64.

♦ Save:

Save these records to a file.

Delete all:

Delete all event report records of GTP-500M.

Text field

◆No.:

Record number.

◆ Report time:

Event report time of GTP-500M.

♦ Event ID:

Event identification.

♦ Number:

The SMS quantity sent to the defined phone numbers.

♦ Event message:

The event content.

6.6 Device Time

This window provides the function to inquire and modify the time of GTP-500M. Besides, the next and last report times are also shown. The text field operation is below.

📷 Device Time		
Device Time / Counter Report Info	Command	
Device Time :		
2009/07/21 13:30:36	Set	Set as Now
Next Counter Report Time:		
2009/07/22 10:20:00		
Last Counter Report Time :	Re	ad
2009/07/21 13:30:01		

Text field

Device time:

Show the time of GTP-500M. Users also can change the time in this field to key in the specific time.

Next Counter Report Time:

Show the next CRPT time.

◆Last Counter report time:

Show the last CRPT time

Operation

"Set as Now":

Set the PC time to GTP-500M. After setting the time successfully, the information of GTP-500M time and CRPT report time would be updated.

♦ Set:

Set the GTP-500M time according the "Device Time" field. After setting the time successfully, the information of GTP-500M time and CRPT report time would be updated.

◆Read:

Read back the time of GTP-500M, the next report time and the last report time.

Note

If the counter report function is enable and reset the time of GTP-500M, the next time to send the SMS report is re-calculated according to the current time of GTP-500M and the CRPT time. There would 2 conditions on the day:

- When the GTP-500M time is over the CRPT time, GTP-500M would send the CRPT SMS after 30 seconds.
- ♦ If the GTP-500M time does not reach the CRPT time, GTP-500M would not send the CRTP SMS until GTP-500M time reaches the CRPT time.

6.7 Counter Value

The window provides the function to inquire and modify the counter values of DI0 ~ DI5. The explanation of operation and text field is below.

E Counters V	alue			×
Name	Value	Set Value	Counter Alarm	Alarm Value
DI 0	000000000	0	🗌 Enable	+ 0
DI 1	000000000	0	🗌 Enable	+ 0
DI 2	000000000	0	🗌 Enable	+ 0
DI 3	000000000	0	🗌 Enable	+ 0
DI 4	000000000	0	🗌 Enable	+ 0
DI 5	000000000	0	🗌 Enable	+ 0
	Read 💎 Set	Value	set 2 🕹	Alarm

Text field

♦Name:

The DI name of DI0 ~ DI5.

◆Value:

The current counter value (maximum: 999999999).

♦ Set Value:

Input the defined counter value. The maximum is 999999999. This field is enabled when DI is set as counter mode.

Counter Alarm:

Enable the counter alarm.

◆Alarm Value:

Counter alarm value = current value + alarm value. This field cannot be 0.

Operation

◆Read:

Read the current counter value and alarm settings from GTP-500M. If the counter is not set

as counter, the counter value is 0.

♦ Set Value:

Change the counter value into GTP-500M according to the "Set Value" field.

♦ Set Alarm:

Set the counter alarm into GTP-500M.

6.8 Change Password

This window provides the function of changing login password. The default password is "111111". This password is also applied in SMS command to GTP-500M. These SMS commands are described in chapter 6.14.

K Change Password		
Old Password :		
New Password :		
Confirm Again :		
Change		

Text field

♦ Old password:

Input the current password.

New password:

Input the new password (maximum : 12 characters)

◆ Confirm Again:

Input new password again.

Operation

Change:

Updated the password.

6.9 DI/DO/AI Status

The function is used for controlling DO and reading the status of DIs and AI (Expansion board only).



DI Status

♦Red:

The voltage logic is high.

♦ Grey:

The voltage logic is low.

AI Status

♦ AI Value:

Al value of the current.

♦Gain:

User cannot change this value.

♦ Offset:

User cannot change this value.

Control DO

◆ DO0, Do1 ON:

Set the DO output on.

◆ DO0, DO1 OFF:

Set the DO output off.

GTP-500M (2G/3G Intelligent Multi-Function Controller) User Manual

Version 1.0.0

Page : 96

6.10 SD/Battery information

This function provides users to check free size of SD card and the remaining volume of battery.

SD/Battery Information			
SD Total Size(MB)	1886		
SD For She (MD)	1837		
SD Free Size(MB) .	1		
External Power	100		
Level (%) :	100		
Voltage(mV) :	4418		
Read			

Text field

♦ SD Total Size:

Shows the current device's SD Card GTP-500M the total capacity, the size of the total capacity will be displayed with the PC side or the SD will be slightly different specifications, such as display 0 so that SD is not installed or not initialized.

♦ SD Free Size:

Shows the current SD card free space, such as display 0 so that SD is not installed or not initialized.

External Power:

The external power is on or off. (1- on, 0-off). It needs to open the external power when using utility to configure GTP-500M.

◆Level:

Show the percentage of battery volume.

♦ Voltage:

The voltage value of battery.

Operation

◆Read:

Read the above information from GTP-500M.

6.11 Signal Quality

This window can show signal strength.

🖳 Signal Quality		—
	46%	
	Deed	
	Kead	

Signal Quality field

The strength is divided into 5 sections shown in percentage.

Operation

♦Read:

Read the signal strength.

6.12 Version

Version Information		
Firmware Version		
GTP-500M_SMS.FV1.0.0 2017/03/01		
Utility Version		
M2M_SMS Utility V1.0.0		
IMEI :		
359739070875281		
Read		

Press "Version" in tool menu, and the window would show the version of Utility and firmware.

Text field

Firmware version:

Show the version information of GTP-500M's firmware.

♦ Utility version:

Show the version information of GTP-500M's utility.

♦IMEI:

Show the IMEI of 3G module.

Operation

◆Read:

Read this information from GTP-500M.

6.13 System

"System" menu item has 2 functions of recovering factory setting and resetting GTP-500M.

🎉 SMS-534 Utility V1.0	
COM8 - Logout Language - File - Version	System - Exit Recover to Factory Settings Reset Device

6.13.1 Recover to Factory Settings

The function is used to recover GTP-500M as factory settings including password. The steps are below:

(1)Select the Recover to Factory Settings.

6.13.2 Reset GTP-500M

The function is used to reset GTP-500M by software.

(1)Select "Rest GTP-500M" button to reset GTP-500M.

6.14 SMS Command

These SMS commands help users to control or get the information of GTP-500M. GTP-500M can only receive these commands according to the phone numbers set in GTP-500M. These phone numbers must be set to have "Allowed" authority. If the phone number is not in the list, GTP-500M would not reply to any command.

SMS command	Description
@TIME	Time set and inquiry
@DOCn	DO control
@ACTV	Counter value inquiry
@DIV	DI/DO inquiry
@AIV	AI inquiry
@BAT	Battery inquiry
@SD	The free size of SD card inquiry
@PASS	Password inquiry

Command Table

6.14.1 @TIME(Time set and inquiry)

(1)Description

This command is used to set or inquire the time of GTP-500M.

(2)Request

Set

@TIME; YYYYMMDD; HHmmSS

Inquiry

@TIME

Description

YYYYMMDD: Y=year, M=month, D=day

HHmmSS: H=hour, m=minute, S=second

Example:

Set the time as 2010/06/10 10:03:00:

@TIME;20090410;100300

Inquiry the time:

@TIME

(3)Response

Format

!MID;TIME;Result;YYYYMMDD;HHmmSS

Description

MID: Machine ID

TIME: Command type name

Result: Command result

 $\text{OK} \rightarrow \text{Command}$ is successfully.

 $\mathsf{ER} \rightarrow \mathsf{The}$ format is wrong or authority is not allowed.

Others: The same as the above description.

Example:

!GTP-500M;TIME;OK;20090410;100300

6.14.2 II. @DOCn(DO Control)

(1)Description

Set DO0 and DO1 output. The number of DO is decided by expansion board.

(2)Request

Set

@DOCn;CMD;Second

Description

n: 0 ~ n(0 is DO0,1 is DO1)

CMD:

ON → Set DO ON

OFF → Set DO OFF

PLUS \rightarrow The DO channel is set to on during the defined time.



Second: The command is used for PLUS mode. (0~999 seconds)

Example:

Set DO1 output to on::

@DOC1;ON

Set DO1 output to on during 20 seconds:

@DOC1;PLUS;20

(3)Response

Format

!MID;DOCn; Result; CMD;Second

Description

MID: Machine ID

DOC: Command type name

Result: Command result

 $\mbox{OK} \rightarrow \mbox{Command}$ is successfully.

 $\mathsf{ER} \rightarrow \mathsf{The}$ format is wrong or authority is not allowed.

CMD, Second: The same as the above description.

Example:

!GTP-500M;DOC1;OK;ON !GTP-500M;DOC1;OK;PLUS;20

6.14.3 @ACTV(Counter value inquiry)

(1)Description

Inquire the counter values of DI. The number of DI is decided by expansion board.

(2)Request

Inquiry

@ACTV

Example:

@ACTV

(3)Response

Format

!MID;ACTV;Result;DI0;DI1;DI2;DI3;DI4;DI5

Description

MID: Machine ID

ACTV: Command type name

Result: Command result

 $OK \rightarrow Command is successfully.$

 $\mathsf{ER} \rightarrow \mathsf{The}$ format is wrong or authority is not allowed.

DI0 ~ 5: The DI0 ~ 5 counter value. If the DI is not set as counter, the value is 0.

Example:

!GTP-500M;ACTV;OK;3;3;3;3;3;3

6.14.4 @DIV(DI/DO status inquiry)

(1)Description

Inquire the status values of DI/DO. The number of DI/DO is decided by expansion board.

(2)Request

Inquiry

@DIV

Example:

@DIV

(3)Response

Format

!MID;DIV; Result;DI0;DI1;DI2;DI3;DI4;DI5;DI6;DI7;DI8;DI9;DO0;DO1

Description

MID: Machine ID

DIV: Command type name

Result: Command result

 $OK \rightarrow Command is successfully.$

 $\mathsf{ER} \rightarrow \mathsf{The}$ format is wrong or authority is not allowed.

DI0 ~ DIn: The status of DI0(~n) channels.

 $0 \rightarrow$ Low Voltage

- 1 \rightarrow High Voltage
- DO0 ~ DO1: The status of DO channel.
 - $0 \rightarrow$ Low Voltage
 - 1 → High Voltage

Example:

!GTP-500M;DIV;OK;0;0;0;0;0;0;0;0;0;0;1;0

6.14.5 @AIV (AI status inquiry)

(1)Description

Inquiry the Value of AI. The number of AI is decided by expansion board.

(2)Request

Inquiry

@AIV

Example:

@AIV

(3)Response

Format

!MID;AIVn; Result;AI value; AI value(calibration);Gain;Offset

Description

MID: Machine ID

AIV: Command type name

Result: Command result

 $OK \rightarrow Command is successfully.$

 $\mathsf{ER} \rightarrow \mathsf{The}$ format is wrong or authority is not allowed.

AI value: Real value of AI

Al value(calibration): Calibration value of Al

Gain: Gain

Offset: Offset

Example:

!GTP-500M;AIV;OK;0.053;0.002;1.0000;0.000

6.14.6 @SD(information of SD card)

(1)Description

This command is to inquire the information of SD card.

(2)Request

Inquiry

@SD

Example:

@SD

(3)Response

Format

!MID;SD;Result;SDisOK;SDTotalSize;SDFreeSize

Description

MID: Machine ID

SD: Command type name

Result: Command result

 $OK \rightarrow Command is successfully.$

 $\mathsf{ER} \rightarrow \mathsf{The}$ format is wrong or authority is not allowed.

SdisOK: The status of the SD Card

SDTotalSize: The total size of SD card(MB)

SDFreeSize: The free size of SD card(MB)

Example:

!GTP-500M;SD;OK;1988;1952

6.14.7 @BAT (Battery inquiry)

(1)Description

This command is to inquire the information of battery.

(2)Request

Inquiry

@BAT

Example:

@BAT

(3)Response

Format

!MID;BAT;Result;Pext;Percent;Voltage

Description

MID: Machine ID

BAT: Command type name

Result: Command result

 $OK \rightarrow Command is successfully.$

 $\mathsf{ER} \rightarrow \mathsf{The}$ format is wrong or authority is not allowed.

Pext: External Power status.

 $0 \rightarrow \text{OFF}$

 $1 \rightarrow ON$

Percent: The percentage of battery volume (%)

Voltage: The voltage value of battery (mV)

Example:

!GTP-500M;BAT;OK;1;57;3899
6.14.8 @PASS(Password inquiry)

(1)Description

If you forget the password, you can use this command to inquire password. The phone number must be set the authority of "SMS Command".

(2)Request

Inquiry

@PASS

Example:

@PASS

(3)Response

Format

!MID;PASS;Result;Password;Password

Description

MID: Machine ID

PASS: Command type name

Result: Command result

 $OK \rightarrow Command is successfully.$

 $\mathsf{ER} \rightarrow \mathsf{The}$ format is wrong or authority is not allowed.

Password: the current password

Example:

!GTP-500M;PASS;OK;111111;11111

6.15 Send/Receive SMS and Call out by COM

GTP-500M provides sending/receiving SMS function from COM 1. This function can provide PLC or PAC to send or receive SMS through GTP-500M. That can extend GTP-500M to various applications.

COM port setting:

- ◆ Baud rate: 115200 bps
- ♦ Data bit: 8
- ◆ Parity check: none
- ♦ Stop bit: 1
- ♦ Flow control: none

6.15.1 Send data to COM port of GTP-500M by SMS command

It is possible to use SMS to send data to com port of GTP-500M. The command header is"+++". The first setting phone number just has the authority to use this function with the "Allowed" enabling. The command support 7 Bits format. Both of RS-232 and RS-485 will receive data.

Command

+++Message(0x0D)

Description

Message: The message is sent to com1 of GTP-500M (Maximum 130 char).

Example

SMS content: +++Hello(0x0D)

To COM Port: Hello

6.15.2 Sending SMS by COM(RS-232/RS-485)

This function is used to send SMS to the first setting phone number by this command"+++". This command supports ASCII code, not Unicode.

Request

+++Message

Description

Message: The user-defined SMS content and the end of the message have to add ASCII code 0x0d.

Example

Command from COM1: +++Hello(0x0D)

Received SMS content: Hello

6.15.3 Sending Sound by COM (RS-232/RS-485)

The GTP-500M can call out through the command, this mode must be specified telephone voice file to play, and voice files must be placed in the root directory of SD card.

Format

@CALL;Phone Number;Wav file name(0x0d)

Description

@CALL: Command type name

Phone Number: The receiver's phone number.

If you want to make international calls, need to add "+" and country code

Wav file name: When it is necessary to play the audio file, file name cannot exceed 6 characters.

The file name, extension and the case must be the same with the SD card.

Example

@CALL;0912XXXXX;CALL01.WAV(0x0d)

6.16 Data Records and Audio file format

The GTP-500M have data log and play audio file with SD card, this chapter will present information on record formats and audio file format acceptable.

6.16.1 Data Records Format

When DI is HIGH, the record value of 1, when the DI is LOW, the record is 0; the following are examples of Data log format.

Date	Time	DI0	DI1	DI2	DI3	DI4	DI5	DO0	DO1	AI
20100525	151520	0	0	0	0	0	0	0	0	0.044
20100525	151521	0	0	0	0	0	0	0	0	0.044

Data log file will be placed in the SD of the Data log folder, placed according to years, when the SD card capacity of less than 50MB, it will delete the older data, have ensured that new information may continue to record.

6.16.2 Audio File Format

GTP-500M voice telephony functions, through the play SD card Audio files to voice alarm, the user can upload Audio files by Utility, or the voice file is too large, users are recommended to choose copy audio files into the SD card by the card reader, the following is the voice file name corresponding to the event.

RDI0.WAV~RDI5.WAV	DI0~DI5
RAI0.WAV~RAI3	AI_H1: RAI0.WAV
	AI_H2: RAI1.WAV
	AI_L1: RAI2.WAV
	AI_L2: RAI3.WAV
ANSWER.WAV	When call is connected, it will play this
	file
OK.WAV	When DTMF is success, it will play this

	file
ERROR.WAV	When DTMF is Failure, it will play this
	file

The following WAV file format needed

File type	*.Wav
Audio type	PCM
Data bit	16 bits
Channel	Single track
Sample rate	8 kHz,11 kHz

6.17 DO output by DTMF

Dual-Tone Multi-Frequency(DTMF), this technology is through the local telephone or cell phone to make and receive voice calls at the time, from the keyboard, press the 0 to 9, *, # these keys, it will transmit through the encoding to the GTP-500M. Command length is 3 or 5 characters, the command divided into three mode: output DO, DO turn off, and the DO output with the PLUS, the following description of the command.

1/ au	Freedier
кеу	Function
1	DO's Channel
2	Control mode:
	0:off
	1:on
	2:PLUS mode
3 and 4	The command is used for PLUS mode
	(0~99 sec),the DO will open, and than
	Do close after this time.
5	End char

If the input format is correct, it will return the voice which is same as OK.WAV, and If the input format is error, it will return the voice which is same as ERROR.WAV.

Example

DO0 output \rightarrow Keyin $\begin{bmatrix} 0 \\ 1 \end{bmatrix}$ #DO1 close \rightarrow Keyin $\begin{bmatrix} 1 \\ 0 \end{bmatrix}$ #DO0 output 10 sec \rightarrow Keyin $\begin{bmatrix} 0 \\ 2 \end{bmatrix}$ $\begin{bmatrix} 1 \\ 0 \end{bmatrix}$ #

Appendix A. Firmware Update

The firmware on the GTP-500M can be change or updated via RS-232. The latest firmware file ("*.fw") and the latest version of the Firmware Update utility, Firmware_Update_Tool.exe are available from the FTP link below. A notification will not be sent when a new version is released.

ftp://ftp.icpdas.com.tw/pub/cd/usbcd/napdos/gtp-500m/firmware

ftp://ftp.icpdas.com.tw/pub/cd/usbcd/napdos/gtp-500m/software/update_tool

Follow the process described below to update the firmware for the GTP-500M using the ICP DAS Firmware Update tool.

Step 1: Power off GTP-500M. Pin11 connect to "DC.GND", and connect COM1 to PC.

COM Port & Power Input PIN Assignment			
Terminal⊬ No.∞	Pin⊷ Assignment⊷		
Frame Grounde 01e		F.G.₽	
Power Input:↓	02#	DC. GND∉	
10 ~ 30 VDC+	03ø	DC. +VS₊∂	
	04.0	RST-₽	
Reset₽	05₽	RST+₽	
COM 2₊	06₽	D-+?	
RS-485+	07₽	D+⊷	
COM 1ℯ	080	<u>TxD</u> ⊷	
Utility Port _e	090	RxD-	
RS-232.	10 _°	GND₄	
Initial₽	11e	INIT₽	

Step 2: Reboot GTP-500M · GTP-500M will enter "Firmware update mode" (PWR, STA1, STA2

Led will turn ON).

Step 3: Execute Firmware Update tool(Firmware_Update_Tool.exe).

- a. Select COM port.
- b. Select the firmware you want to update/change.
- c.Click "Firmware Update" button.

🖇 Firmware Update Tool v1.04	
1. Download Interface COM COM Port: C USB COM1 www.icpdas.com	
2. Firmware Path D:\GSM\GT534\GT-534\GT-534_V1.01\firmware\GT534_v1.01.fw Browser	2
3. Firmware Update Click "Firmware Update" button to start firmware updating !! Firmware Update	3
Exit	

d. If update success, it will show "Update Success!!"

🕸 Firmware Update Tool v1.04
1. Download Interface COM COM Port : C USB COM1 www.icpdas.com
2. Firmware Path D:VGSMVGT534VGT-534VGT-534_V1.01\firmwareVGT534_v1.01.fw
Browser
5. Finnware Update Firmware Update Success ! Please Reboot Module !
Firmware Update
Exit

e. Disconnect Pin11(Init), and reboot GTP-500M.

Appendix B. Revision History

This chapter provides revision history information to this document.

The table below shows the revision history.

Revision	Date	Description		
1.0.0	March 2017	First release.		