## USR-M100 Connects to PUSR Platform

## 1. Introduction of the application

When the M100 is used with the PUSR cloud, there are generally two situations: Cloud polling and edge computing. The specific block diagram of the function is illustrated in the picture below. In this case, we will explain how these two situations are achieved.

#### 1.1 Cloud polling

PUSR cloud actively sends polling query command, and the M100 forwards the data to the serial device intact. The response data will be sent back to PUSR cloud and analyzed and visualized by the platform.



#### 1.2 Edge computing

The PUSR platform sends the collection rules and reporting rules to the M100, which actively polls the terminal device at high speed. The M100 reports data to the cloud only when the data meets the reporting conditions. Edge computing can achieve a response speed of milliseconds. It's very fast speed.



## 2. Preparation Work

USR-M100 \* 1 USB to RS485 converter \* 1 Network cable \* 1 Power supply 12V/1A \* 1 Modbus slave software

### 3. Settings of PUSR

1> Log into the platform: <u>https://mp.usriot.com</u>

🛠 USR pass	⑧ 篇雄中文 ▼
	Warm tip: pass account can login to USR ioT.
ONE card pass and enioy USR	USR pass Password login Email login
USR INT	q35261
	kain
	Experience USR Sign in pass   Forget password
About us i USR official website	
Copyright © 2023 Usr All Rights Reserved Shandong USR IOT Information Co., Ltd	GPL resource Cookle Policy Terms of Service Privacy Policy

#### 2> Add Gateway

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8	Quick start	Gateway	management > Gat	eway list								
	Screen management	Gatewa	iy list				Total Gateways     • Online gateway       5     2					
\$	Scene management	Please	e enter SN or g	Query Advanced Sear	sh						Add Delete	Transfer gateway More
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Ð	management		Gateway status	Gateway name	SN	Gateway model	k	sociated devi ces	Firmware Version	Belonging organize	Gateway address	Operation
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3> Edit the device, the SN and MAC/IMEI can be found in webpage.

#### USR IOT Communication Expert of Industrial IoT

Status

#### ✓ Status

#### Overview

- > Network
- > Port
- > Gateway
- > Cloud Service
- > System

System	
Model Name	USR-M100
Firmware Version	V2.0.04
Туре	H7
Run Time	0day: 2hour: 2min
OS	RT-Thread
MAC Address	D4-AD-20-38-A4-5C
IMEI	86005905957
SN	0040342207150014
Current Network Card Type	EtherNET
System Time	2023-07-13 19:21:41

#### Jinan USR IOT Technology Limited. http://www.pusr.com

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ē	Screen management	Device > Networking devices > Add device					
	Product / scene mana gement	Add Device Add Devices In Bulk					
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	Networking devices						
	Variable template	* Device name USR-M100 Upload Pictures					
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		* Belonging organize #함(음(근	Close 1 / 5M or less
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		Device Configuration	
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			Care Care Care Care Care Care Care Care

4> Add variable template

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21 32	Screen management Product / scene mana gement	Device > Variable template Variable template					
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щ	Data center 🗸	<					
۲	Value-Added services						
	Maintenance manage ment						
\$	Extend ~						
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5> Edit the variable template, in this step, users need to choose use Cloud Polling or Edge Computing. These two options correspond to the two topologies in the first chapter respectively. Here we choose Cloud polling first.

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ß			<ul> <li>Acquisition          The cloud polling dege computing methods     </li> </ul>			
ш			Sharing by 🔘 🦳			
3			subordinate organizations			
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♦			Next, configure the slave and variables			
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	V5.4.2					

6> Add and edit the slave,

Slave name: User-defined

Uart number: 1, for Cloud Polling, the serial device can only connect to the first serial port.

Slave number: also known as Slave address which can be found in the documentation of the terminal serial device.

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2	Device > Variable template > Add variable templat	
$\odot$	Add variable template	
Ċ	Template M100-test	Add Slave ×
	Name:	Protocol and Product     Morbus / Morbus BTLL/ Clavel Collection     ✓
5	Salves List	* Slave name Modbus-test
N	Number Slave name	* uart number 1 Export variable Export variable Sequence
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<u>111</u>		Advanced Options ~
٢		Cancel
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	Add Slave	Add variable

7> Add and edit the variable,

# Variable name: User-defined

#### Register:

The number in the first box corresponds to the register type and function code.

The number in the second box is equal to the register address + 1, and should be decimal data.

For example: If you want to send this command 03 03 00 0A 00 05 0A 0D, select 4 in the first box and fill in 11 in the second box.

**Data format**: should be consistent with that of the terminal serial device.

#### Advanced Option:

This function is to calculate the actual collected value or sent value.

The other parameters can be set Other parameters can be set according to customer needs.

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<b>\$</b>			* Storage Type 🗌 Variable Storage 🕼 🗹 All Storage	
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			Acquisition 🕖 %sr10	
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		Add Slave	Control formula	
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8> Enable the variable template.

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9> Bind the added device with the variable template.

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		* Device name	Add template Existing template trans	sparent transmission							
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### 10> Check the variable, it has no data yet.

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ß	Configuration manage ment		Belonging organize:根组织 Device Model: USR-M100			Business Region Construction Area 汉历街				
⊡	Gateway managemen t		Variable template: M100-test Device Location: Swatch Jina Associated Product/Scenario:	n Mixc, East Jingshi Road, <mark>Ji</mark> nan Shi, S	放东路49号 复星住宅区 ∋fang Rr					
Δ	Alarm linkage 🛛 🗡		Tag:		洛回路	E Jiefang Rd				
ш	Data center					単石街 参春街 Jinan Central 中弘广场 Business District 文triew				
0	Value-Added services				- under the B	◎ Mapbox © OpenStreetMap Improve this map				
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\$	Extend ~	Pelase Choose Slave		Please enter the variable name	Query					
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# 4. Cloud polling

### 4.1. Select Cloud Polling

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		Device > Variable template			
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		test	* Template Name M100-test	2023-06-14 19:35:26	View Edit Delete Configuration
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4.2. Settings of USR-M100

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> Status		
> Network	Supports connection to LISP Cloud platform to achieve cloud dateway functions such as edge acquisition, edge computing, and	
> Port	edge reporting.	
✓ Gateway		
MQTT Gateway	SETTING	
Edge Computing	USR Cloud setting	
IO Fuction		
✓ Cloud Service	USR Cloud ON ~	
USR Cloud	Usrcloud Private OFF	
Alibaba Cloud		
AWS IoT	Binding Port Port 1,	
AZURE IOT	Edge computing OFF V	
✓ System		
System Setting	Save&Apply	
Management		
Feedback		
	Jinan USR IOT Technology Limited. http://www.pusr.com	

#### Device online 4.3.

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### 4.4. Settings of Modbus slave

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### 4.5. Test result

术	USR Cloud Console	}					O service support	😲 user rights	⑦ 简体中文	15588836112
₽ Ø	Screen managementr' Product / scene mana gement	Device > Networking device Device Overview	<ul> <li>Data view</li> <li>Configuration Application</li> </ul>	n		12 Modbus Slave - (Mbslave1) 12 File Edit Connection Setup 1	Qisplay View Window Help	-	<ul> <li>σ ×</li> </ul>	
e	Device ^	Device info			Devices Map	D 🗃 🖬 🎒 🛄 🖳 🔔	<b>? №</b>			
5 5	Networking devices Variable template Configuration manage ment Cateway managemen t Aarm linkage		USR-M100 02700123031600055984 Belonging organize:#BBIR Device Model: USR-M100 Variable template: M100-test Device Location: Swatch Jina Associated Product/Scenario Tag:	n Mixe, East Jingshi Road, Jinan Shi, S X	新波大街 Jinan Busines Constru SISH499 新居住平区 費 Pible efan Rd	Region	20 25 0 0 0 0 0 0 0			
ш (	Data center  Value-Added services				原石街 C地块 梦鹅街	教春街 Ji 8 中払广坊 Bus 9 ◎ Mapbox © つ	0			
8	Maintenance manage ment	Data Nodes Overviev	(			For Help, profis F1.	Port	15: 115200-8-N-1		
♦	Extend Y	Pelase Choose Slave		Please enter the variable name	Query					
Ð	loT	Variable ID	Variable name	Slave name	Update time	Current value		Operation		
		14262414	Temprature	Modbus-test	2023-07-07 16:18:00	32.5 Ø		History query	Active Acquisi	tion
		14262415	Humility	Modbus-test	2023-07-07 16:18:00	45 🖉		History query	Active Acquisi	tion
	V5.4.2						Total 2	Pre 1	Next Go to	1

### 5. Edge computing

### 5.1 Select Edge Computing

1> Add variable template, here we can add 2 slave, one about Modbus RTU(Refer to the settings in Chapter 3), another one is about the built-in IO of M100.

Note: If select Edge Computing option, the terminal serial device can connect to both the 2 serial port of M 100





ጵ	USR Cloud Conso	ble											O service suppor	t 🗘 u	ser rights 🏾 🤇	3 简体中文	15588836112
21 12	Screen management	Device > Add vari	Variable template > Add v	ariable template													
୯	Device ^	Ter	mplate M100 Edge test		B	elonging 根約 anize:	瞑			Acquisition edge comp methods:	outing Shai	ing by					
	Networking devices Variable template										organizat	ions:					
5	Configuration manage ment	Salve	Salves List				Da	ata Nodes list									
æ	Gateway managemen V	Num	ber Slave name		Opera	tion		Please Input va	riable name	Query			Import va	iable	Export v	iriable S	equence
≞	Alarm linkage 🛛 🗡	1	Modbus RTU	_	Edit	Delete	,	Number	Variable name	Register	Value Type	Write&Read	Storage Type	Operat	ion		
щ	Data center 🛛 🗸	2	USR-M100-IO	J	Edit	Delete	_	1	DO1	DO0001	bit	Write&Read	Variable Storage、Timi	Edit	Add trigger	View trigger	Delete
0	Value-Added services	×					2	2	DO2	DO0002	bit	Write&Read	Variable Storage、Timi	Edit	Add trigger	View trigger	Delete
▣	Maintenance manage ment						3	3	DI1	DI0001	bit	Read Only	Variable Storage、Timi	Edit	Add trigger	View trigger	Delete
\$	Extend $\checkmark$						_	5	DI2	D10002	float ARCD	Read Only	Variable Storage, Timi	Edit	Add trigger	View trigger	Delete
Ŀ	loT							5	AI2	AI0003	float-ABCD	Read Only	Variable Storage, Timi	Edit	Add trigger	View trigger	Delete
				Add Slave								Add variable					
										Save	J						
	V5.4.2	4															•

2> Bind the added device with the variable template

嚮	USR Cloud Cons	sole					○ service support	🟮 user rights	简体中文     简体中文	15588836112
Bi OS		Device > Networking device	es > Editing device							
Ċ	Device ^	Basic Information	Replace template				×			
		* Device name	Add template Existing template trans	sparent transmission						
3		* Belonging organize	M100 Edge test	Number of slaveS: 1	Quantity of VariableS: 2 Acquisition n	nethods: edge computing				
e E		SN 💿	M100-test	Owned Slave	Variable name Temprature	Value Type ushort	- 11			
ш				3	Humility	ushort				
۲		Device Configuration								
E &		Template								
Š		transmission								
		Network				< 1 →				
						Cancel				

### 5.2 Settings of M100

Be Communication Expert of Industrial IoT	Honest Do Best! 中文   English
VSR IOT       Communication Legant of Industrial IoT         > Status       Network         > Port       Supports connecting to USR Cloud platform to achieve cloud gateway functions such as edge acquisition, edge computing, and edge reporting.         > Gateway       Status         C Cloud Service       USR Cloud         USR Cloud       USR Cloud         AWS IoT       ZURE IoT         > System       Sige computing OFF         Inding Port       Fort.         Edge computing ON       Suve&Apply	Honest Do Best ! 中文   English

### 5.3 The test result

Å	USR Cloud Cons	ole					) service support 🛭 user rights	🚯 简体中文   👩 15588836112
~		🕌 Modbus Slave - [Mbslave		– 🗆 🗙		安城街		
ē	Screen management/	Elle Edit Connection S	etup Display View Window Help	- 8 X	Jir Busi Cons	an Central Iness Region truction Area	燕L	
Ŷ	Product / scene mana gement	ID = 3: F = 03			TT BLOG	汉臣街		
୯	Device ^	Alias	00000 451	n Shi, S	「加速時です。 「海田市区 石 「路 「加速日本 1000000000000000000000000000000000000	· · · · · · · · · · · · · · · · · · ·	- 2#	
	Networking devices	1	47		高	了了了。 Jiefang Rd		
	Variable template	3	0		FIF 刷石街 C地块	象春街 Jinan Central		
ß	Configuration manage	4 5	0		● mepber 路 第第街	中弘广场 Business District 来///me © Mapbox © OpenStreetMap Improve this m	nap	
Æ	Gateway managemen	6	0					
۵	t Alarm linkage	8	0					
		5	0	me	Que			
<u></u>	Data center Y	~		lave name	Update time	Current value	Operation	
8	Value-Added services	For Help, press F1. 14306886	Port 15: 115200-8 Temprature	I-N-1 Modbus RTU	2023-07-07 18:04:16	45.1 🖉 ℃	History query	Active Acquisition
▣	Maintenance manage ment							
\$	Extend ~	14306887	Humility	Modbus RTU	2023-07-07 18:03:21	47 🖉	History query	Active Acquisition
Ŀ	loT	14306888	DO1	USR-M100-IO	2023-07-07 18:03:03		History query	Active Acquisition
		14306889	D02	USR-M100-IO	2023-07-07 18:02:10		History query	Active Acquisition
		14306890	DI1	USR-M100-IO	2023-07-07 18:02:10	۲	History query	Active Acquisition
		14306891	DI2	USP-M100-IO	2023-07-07 18-02-10			
		14506631	676	03(4)10010	2023-07-07-10.02.10	۲	History query	Active Acquisition
		14306892	Al1	USR-M100-IO	2023-07-07 18:02:10	0	History query	Active Acquisition
		14306893	AI2	USR-M100-IO	2023-07-07 18:02:10	0	History query	Active Acquisition
	V5.4.2						T. 10 0	°C ( S.

## 6. Device monitoring on PUSR platform

### 6.1 Checking gateway details

#### 1> Click the gateway name

ጵ	USR Cloud Conse	ole									) service support 🛭 user rig	ints 🚯 简体中文 👩 15588836112
83	Quick start	Gat	eway management > Ga	teway list								
ē	Screen management/	Ga	Total Gateway list     • Online gateway     • Online gateway       5     2     3									
Ŷ	Scene management	Please enter SN or g Query Advanced Search									Add Delete	Transfer gateway More
G	Device management						parameter loc	Number of as				
Æ	management		Gateway status	Gateway name	SN	Gateway model	k	sociated devi ces	Firmware Version	Belonging organize	Gateway address	Operation
	Gateway list Batch configuration		Offline	USR-G816	01302323060800000979	USR-G816w-G	-	0	V1.0.10.wifi-EN	PUSR	美莲广场, Jinan Shi, Shandong 2501	View Edit Delete More
	Firmware upgrade	- 0	Waiting for the in	ti Unnamed_Gateway na	00005450000000000003	未知型号	-	0	-	PUSR	山东曾济南市历下区坤顺路	View Edit Delete More
2	Configuration management		Waiting for the in	ti Unnamed_Gateway na	00005450000000000001	未知型号	-	0	-	PUSR	山东省济南市历下区坤顺路	View Edit Delete More
ш	Data center 🛛 🗸		Online	未命名_网关名称_84	01301822120100009921	USR-G806s-EAU		0	V1.0.06-EN	根组织	山东曾济南市历下区坤顺路	View Edit Delete More
≞	Alarm linkage 🛛 🗡		Online	USR-M100	02700123031600055984	USR-M100	-	1	V2.0.03.000000.0000	根组织	Swatch Jinan Mixc, East Jingshi Ro	View Edit Delete More
۲	Value-Added services										Total 5 10/page $\vee$ Pre	1 Next Go to 1
▣	Maintenance management				$\mathbf{X}$							
♦	Extend ~											
Ŀ	IoT											
	V6.0.1											

2> Users can check gateway details of M100, like basic information and traffic monitoring.

术	USR Cloud Cons	ole			O service support 🔮 user rights 🚷 商体中文 👼 15588836112
53	Quick start	Gateway infomation			
ē	Screen management		USR-M100 02700123031600055984		
Ŷ	Scene management∕		Belonging organize: 根组织	Gateway model: USR-M100	Bettery level:
୯	Device management?		Gateway address: Swatch Jinan Mixc, East Jingshi Road, Jinan Shi, S Tag:	MAC: D4AD2000883A IMEI: 862819047614136	Networking type: Ethernet signal intensity:
Ŀ	Gateway ^ management			NID: Firmware Version: V2.0.03.000000.0000	
	Gateway list			Hardware version: -	
	Batch configuration	Gateway traffic monitoring	ב		
ß	Configuration management	<ul> <li>2023-08-23 18:55:40</li> </ul>	To 2023-08-24 18:55:40 Query		
ш	Data center 🛛 🗸	Bytes/kb		-O- Main gateway(-)	
≞	Alarm linkage 🛛 🗡				
۲	Value-Added servicès				
▣	Maintenance management				
\$	Extend ~				
Ŀ	ют				
	V6.0.1		3	3	

### 6.2 Parameters configuration

1> On parameter configuration page, uses can send AT command to set and check parameters of USR-M100.

ጵ	USR Cloud Cons	le	Q service support	🔋 user rights	简体中文     简体中文	15588836112
83	Quick start	Galeway management -> Galeway list -> Galeway Details				
ē	Screen management/	Gateway Details Network debugging Parameter configuration				
Ŷ	Scene management	General information				
୯	Device management	Gateway USR-M100 Gateway 02700123031600055984				
⊡	Gateway management	nalina. Jik. Belonging 機通訳 Gateway USR-M100				
	Gateway list	organze: model: Firmware V2.0.03.000000.0000				
	Batch configuration	Version:				
_	Firmware upgrade					
3	management					
щ	Data center 🛛 🗸	+OK=DHCP,172.16.11.126,255.255.254.0,172.16.10.1				
≞	Alarm linkage 🛛 🗡					
۲	Value-Added services					
▣	Maintenance management					
\$	Extend ~					
Ŀ	loT	useful Gateway restart Query version Reload to factory settings				
		Please Input				
		Send				
	V6.0.1					

### 6.3 Firmware upgrade

1> Click "More" button on the following figure.

术	USR Cloud Cons	sole									⊖ service support 🐧 user rig	hts 🚯 简体中文 , 15588836112
83	Quick start	Gateway	management > Gat	eway list								
ē	Screen management	Gateway list     Total Gateway     • Ofline gateway     • Ofline gateway       3										
Ŷ	Scene management∕	Pleas	e enter SN or g	Query Advanced Sear	ch						Add Delete	Transfer gateway More
୯	Device management							Number of as				
Æ	Gateway ^ management		Gateway status	Gateway name	ŚN	Gateway model	parameter loc k	sociated devi ces	Firmware Version	Belonging organize	Gateway address	Operation
	Gateway list		Offline	USR-G816	01302323060800000979	USR-G816w-G	-	0	V1.0.10.wifi-EN	PUSR	美莲广场, Jinan Shi, Shandong 2501	View Edit Delete More
	- Firmware upgrade		Waiting for the initi	Unnamed_Gateway na	00005450000000000003	<b>共和型号</b>	-	0	-	PUSR	山东省济南市历下区坤顺路	View Edit Delete More
ß	Configuration management		Waiting for the initi	Unnamed_Gateway na	00005450000000000001	未知型号		0		PUSR	山东省济南市历下区坤顺路	View Edit Delete More
щ	Data center 🛛 🗸	<b>_</b> _	Online	未命名_网关名称_84	01301822120100009921	USR-G806s-EAU		0	V1.0.06-EN	根组织	山宋宣宗中中下区坤顺路	View Edit Delete More
≞	Alarm linkage 🛛 🗡		Online	USR-M100	02700123031600055984	USR-M100	-	1	V2.0.03.000000.0000	根组织	Swatch Jinan Mixc, East Jingshi Ro	View Edit Delete More
۲	Value-Added services										Total 5 10/page $\checkmark$ Pre	Disable 1 N€
▣	Maintenance management											Configuration page
♦	Extend ~											Reboot gateway
Ŀ	ют											
	V6.0.1											

#### 2>Set firmware upgrade parameters

×	USR Cloud Cons	ole										○ service support ♥ user rig	hts 🚯 简体中文 , 15588836112	
53		Gatewa	y management > Gat	eway list										
		Gatew	ay list			Total Gateways Offine gateway Off					ne gateway			
Ŷ		Please enter SN or g Query Advanced Search				Firmware Upgrade			×		Add Delete	Transfer gateway More		
Ċ						* Task Name	Firmware upgrade							
Æ			Gateway status	Gateway name	SN	* Gateway name	USR-M100	-			Belonging organize	Gateway address	Operation	
			Offline	USR-G816	0130232306	* Gateway model	USR-M100				PUSR	美莲广场, Jinan Shi, Shandong 2501	View Edit Delete More	
		0	Waiting for the initi	Unnamed_Gateway na	0000545000	* Firmware	V2.0.03.000000.0000		^		PUSR	山东曾济南市历下区坤顺路	View Edit Delete More	
2			Waiting for the initi	Unnamed_Gateway na	0000545000	Upgrade Version	V1.0.09.000000.0000				PUSR	山东省济南市历下区坤顺路	View Edit Delete More	
ш			Online	未命名_网关名称_84	0130182212	* Task Time	V1.0.17.000000.0000				根组织	山东省济南市历下区坤顺路	View Edit Delete More	
ß			Online	USR-M100	0270012303		V2.0.03.000000.0000				根组织	Swatch Jinan Mixc, East Jingshi Ro	View Edit Delete More	
۲								Can	Cel			Total 5 10/page V Pre	1 Next Goto 1	
⊜														
♦														
Ŀ														
	V6.0.1													

3>To check firmware upgrade task

