How to Connect Cellular Modem to PUSR Cloud?

This manual applies to the following products:

4G Modem: USR-G786-G/EUX/AUX, USR-DR504-G/EUX/AUX CAT1 Modem: USR-G771-E, USR-DR502-E, WH-LTE-7S1-E

Preparation

USR 4G/CAT1 modem*1 SIM card *1 4G antenna *1 Power adaptor *1 RS232 or RS485 to USB cable *1

PUSR Cloud Configuration

- 1. PUSR Cloud address: <u>https://mp.usriot.com</u>
- 2. Please register an account first, and then log in.



3. After logging in, click to add a gateway. Here "Gateway" indicates "USR Modem".

犬	USR Cloud Cons www.usr.cn	sole	IOT DM					🕫 service support 🛛 user rights	🕲 简体中文 🌔 22	20898066@qq.co
83	Quick start	Gatew	ay management 🚿 Gateway lis	ı						
8	Screen management	Gatev	vav list	I Gateways • Online gateway	• Offline gateway			More gateway features Go to DM platform	dd Batch Add	Delete
0	Scene		32	0	32					
65	Device vanagement	Plea	ase select organiz [~] Please	e select gatewar All models	✓ Pelase Choose tags ✓	Please enter SN or g Query				
⊠	Gateway , management		Gateway status	Gateway name	SN	Gateway model	Number of associat ed devices	Belonging organize Tag	Operation	
	Gateway list	0	Offline	USR-CAT1	00047955000000043595	Unknown type	0	My project1	View Edit Dela	ste More
必	gateway Y management		Waiting for the initial la	gateway	0004795500000043594	Unknown type	1	MyGroup	View Edit Delv	ete More
楍	Configuration		Waiting for the initial la	Unnamed_Gateway name_99	0004795500000043593	Unknown type	0	價證明	View Edit Del	ete More
ы	Data center 🛛 👻		Offline	Vcom2	0004795500000000024	Unknown type	0	根据网	View Edit Dek	ete More
岜	Alarm linkage 💙		e Offine	W610 T	0004795500000000023	Unknown type	0	根组织	View Edit Deb	ete More
\$	Value-Added 💪		Offline	W610	0004795500000000022	Unknown type	1	1848HR	View Edit Deli	ete More
≞	Exclusive configuration		e Offline	N520	0004795500000000021	Unknown type	1	積進的	View Edit Delv	ete More
88	Extend ~		Offine	T2	00047955000000000020	Unknown type	1	機組织	View Edit Delv	ete More
			e Offine	USR-TCP232-306	0004795500000000019	Unknown type	0	根组织	View Edit Dele	ete More
			Waiting for the initial la	VCOM3	0004795500000000018	Unknown type	0	機組织	View Edit Dele	ste More
								Total 32 10/page v Pre 1 2 3	4 Next Go to	1

4. Click "SN does not support, click here". 4G/CAT1 modems cannot be added via SN and MAC, so we need to create the communication ID and password in PUSR Cloud.

*'	USR Cloud www.us	Cons	sole tot DM	
æ	Quick start		Gateway management	> Gateway list > Add Gateway
18	Screen management	~	Add Gateway	
6	Scene management	~		
69	Device management	~	* Gateway name	USR-CAT1
2	Gateway management	^	* Belonging organize	My project1 \sim
	Gateway list			
٨	Third party gateway	~	* SN 🔘	Please Input SN SN does not support, click here
品	Configuration management	~	* MAC / IMEI	Please Input MAC/IMEI/NID number
ш	Data center	~	Positioning method	Manual positioning Automatic positioning
畄	Alarm linkage	~	Gateway address	義這广场, Jinan Shi, Shandong 250101, China Map
8	Value-Added services	~	Tag 💿	Add taos
Eh	Exclusive configuration	~	18 AB	
88	Extend	~	Network 💿 monitoring	
			USR transparency	
				Save

5. Then click Save.

*	USR Cloud www.usi	Console IoT	DM
æ	Quick start	Gateway manage	ment > Gateway list > Add Gateway
집	Screen management	Add Gateway	
Ø	Scene management	*	
69	Device management	* Gateway	name USR-CAT1
থ	Gateway management	* Belonging or	janize My project1 ~
	Gateway list		
8	Third party gateway management	Gatev	ray ID Automatic generation in system 🖾 edit ID 🦷 Return input SN
瓳	Configuration management	Communi Pas	cation Default Communication Password 🗈 Edit Password sword
Ш	Data center	Positioning m	iethod 🧿 Manual positioning 🔷 Automatic positioning
畄	Alarm linkage	~	
8	Value-Added services	Gateway ac	Idress 美谨广场, Jinan Shi, Shandong 250101, China Map
₽	Exclusive configuration	✓ Tag	a log Add tags
88	Extend	Network	 K I gateway does not have network monitoring function
		USR transparence	
			Save

6. Copy the created SN and password. Click Close, then the gateway is added successfully.



7. In "Device Template", click to add the template. Here we need to configure the Modbus

template according to the user manual of your sen	iai iviodous	aevice.
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53	Quick start	Device management > Device Template							
8	Screen	Device Template						- 1	Add Batch Delete
0	Scene , management	Please select orga V Please input temp	Query						
69	Device ^	Template Name	Belonging organize	rotal number of variables	Number of associated devices	Acquisition methods	Update time	Operation	
	Device List	MedsusTest	My project1	2	1	The cloud polling	2024-07-31 16:24:38	View Edit	Configuration Design More
	Device Template								competence of the
⋳	Gateway management	USR-TEST	My project1	2	0	The cloud polling	2024-07-26 17:41:55	View Edit	Configuration Design More
ى	Third party gateway ~	111	My project1	6	0	edge computing	2024-07-26 11:48:20	View Edit	Configuration Design More
品	management Configuration	Test	My project1	0	0	The cloud polling	2024-07-16 14:35:14	View Edit	Configuration Design More
ы	Data contor X	s3eec 16:13:06	MyGroup	6	3	edge computing	2024-06-24 16:13:26	View Edit	Configuration Design More
	Data Center	Unnamed-2024-05-24 16:12:52	MyGroup	6	0	edge computing	2024-05-24 16:13:05	View Edit	Configuration Design More
ä	Alarm linkage V	S3EEC 16:06:26	MyGroup	6	0	edge computing	2024-06-24 16:12:52	View Edit	Configuration Design More
8	services	M300	模组织	8	0	edge computing	2024-05-24 15:58:51	View Edit	Configuration Design More
Eh	configuration		根組织	1	0	edge computing	2024-04-28 15:28:14	View Edit	Configuration Design More
88	Extend ~	来命名-2024-01-17 15:53:10	模组织	1	3	The cloud polling	2024-01-17 16:01:43	View Edit	Configuration Design More
						Total 49	9 10/page ~ Pre 1 2	3 4 5	Next Go to 1

8. Configure the template name, and configure the protocol to Modbus RTU. Click to add the Modbus variables. We test with a temperature&humidity sensor in this manual.

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8	Quick start	Device manageme	nt > Device Template > Add devic	e template								
8	Screen ~ management	Add Device ten	nplate									
Ø	Scene v management	Template info	mation				State configuration					
65	Device ^ management	* Template	Modbus Sensor				* State O Gateway	O Equipment data				
	Device List	Name					Judgment					
	Device Template	* Belonging	My project1	 Sharing by 	re 🕕		mode					
⊠	Gateway management	organize		subordinate	1							
必	Third party gateway ~ management	* Acquisition	The cloud polling edge co	organizations	1							
ភ	Configuration management	methods										
ы	Data center 🛛 👻											
岜	Alarm linkage 💙	Data Nodes II:	st							Whethe	r to enable multi	slave mode
8	Value-Added 🗸 services	* Protocols	Modbus / PLC / DL/Modbus/	Modbus RTU 🛛 🗠 Advanced	Options							
6	Exclusive ~	and drivers										
88	Extend ~	Add varia	ble Import variable	Sequence					All variables	Please Inpu	t variable name	Query
		Number	Variable name	Variable Type	Value Type	Register	Write&Read	Storage Mode	Operation			
							-					

9. Add the Modbus registers according to the user manual of your Modbus device.
Register: It is the same as the Modbus master software. Fill in the decimal register address.
Function code 03H or 06H, starting address 0000H, register is 4 and address filling 1;
Function code 04H, starting address 000AH, register is 3, address filling 11;
Function code 01H or 05H, starting address 0002H, register is 0 and address is 3;
If the function code is 02H and the start address is 0003H, the register is 1, and the address is filled with 4.

*	USR Cloud	Con: r.cn	sole IoT DM						C service support
23			Device management > Device Template > #	Add device template					
	Screen management		Add Device template	_					
Ŷ	Scene management			Add variable				×	
69	Device management		* Template Modbus Sensor	* Variable name	Humidity	Variable unit	Please enter variable units		
			Name	Variable identifier					
			* Belonging My project1	* Variable Type	Directly collected variables			~	
	management Third party		organize	Register	4 9 1	40001(ushort)			
ю н	management Configuration		* Acquisition The cloud polling	er * Data format	16-bit unsigned			~	
bul				* Collection Frequency	1 minute			~	
				* Number format		Theorem dila			
1			* Protocols Modbus / PLC / DL/M	10	integen	Thousehout			
Bi			and drivers	* Storage Type	Variable Storage 🕼 🔽 All Storage				
88			Add variable Import variab	* Read/write	Write&Read Only Write Only				oles ~
			Number Variable name		Advanced Options \checkmark How to set variable permissions, click to view	w details			Operation
							Cancel		

Template Inform	ation			State co	onfiguration (
* Template	Modbus Sensor				* State 🧿 Gateway	Equipment data			
Name				juc	dgment				
* Belonging organize * Acquisition methods	My project1 The cloud polling edge computing	 Sharing by subordinate organizations 			mode				
Data Nodes list Protocols and drivers	Modbus / PLC / DL/Modbus/Modb	us RTU Y Advanced Opt	tions					Whether to enable multi slav	e mode
Add variabl	le Import variable See	quence					All variables \sim	Please Input variable name	Query
Number	Variable name	Variable Type	Value Type	Register	Write&Read	Storage Mode	Operation		
1	Humidity	Directly collected variables	ushort	40001	Read Only	All Storage	Edit Add trigger	View trigger Delete	
2	Temperature	Directly collected variables	short	40002	Read Only	All Storage	Edit Add trigger	View trigger Delete	
				Finish			Total 2 10/page	V Pre 1 Next Goto	1

10. After adding the Modbus template, click to add the device. Here the "Device" is corresponding to your serial device.

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×	Quick start	Device management > Devic	e List								
▣	Screen	Device List				0 more can be created Add Device	Batch Add Batch Delete	Batch associate gate	way Sequ	ence ± E	xport
Ø	Scene ~ management	Please select orga 🗠	Please select devic 🗸 🛛 Pelase	Cheese Ing Please In	put Device I Query		-				
69	Device ^	Device status	Device Name	Serial number	Belonging organize	Gateway	Device template	Tag	Operation		
	Device List	Offline	Sensor	0000047955000013	My project1	USR-W610	ModbusTest	-	View Edit	Configuration	Delete
e	Gateway	Office	M100	0000047955000012	MyGroup	oateway	steer 16:13:05	Electro Sensor	Man Edit	Configuration	Delete
凶	Third party gateway							Sensor	VIEW LUI	comgaration	Contro
÷	management Configuration	Offline	W610	0000047955000011	REER	W610	未命名-2024-01-17 15:53:10	-	View Edit	Configuration	Delete
00	management	Offine	N520	0000047955000010	機違択	N520	N520	-	View Edit	Configuration	Delete
ш	Data center 🛛 🗡	Offine	T2	0000047955000009	橋道沢	T2	T2		View Edit	Configuration	Delete
ä	Alarm linkage 🗠	ont configured	Sensor	0000047955000008	My project1	Relevance	Relevance	-	View Edit	Configuration	Delete
8	Value-Added 🗸 services	• Offine	302steve	0000047955000006	HE/EXIR	302steve	302steve	-	View Edit	Configuration	Delete
ßh	Exclusive	• Offine	306-Steve	0000047955000005	111	306-Steve	306-Steve	-	View Edit	Configuration	Delete
88	Extend ~	Offine	Nan	0000047955000004	My project1	श्वेद्रश्च र	Sensor-test	-	View Edit	Configuration	Delete
		● Offline	USR-I0424-EWR	0000047955000003	MyGroup	USR-IO424-EWR	USR-I0424T-2021-01-25 02-07-11	-	View Edit	Configuration	Delete
							Total 12	10/page V Pre	1 2	Next Go to 1	

11.	So we change	the Device	name to	"Sensortest",	and bind it to	the created	device template.
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*"	WWW.USF.CN	IN DM	
	Quick start	Device management >> Device List >> Add device	
▣	Screen ~ management ~	Add Device	
9	Scene v management	Rasic Information	
69	Device	Davine normalist Index Private Index Private	
	Device List	Device maine Sensortest Oppoid Philares	
	Device Template	* Belonging organize My project1 V	
M	Gateway ~ management	Device description Please enter a device description Only support JPG, GIF, PNG format, the size of 5M or less	
3	Third party gateway ~	Device location 🧿 Manual positioning 🔍 🖉 Gateway Positioning	
品	Configuration management	Devices Map 美国广场, Jinan Shi, Shandong 2场 Reliect Address	
ш	Data center 🛛 👻	Data Settings	
ä	Alarm linkage 🛛 👻	Associated Device Choose a template	
⊗	Value-Added 🗸	Template	
Б	Exclusive ~		
88	Extend ~	Networking settings	
		Associated Gateway Please select a gateway association V Add Gateway	
		Save	
			_
Device	management > Device	e List > Add device	
Add D	Device		
		Choose a template	×
Bas	sic Information		
	* Device name	Add lemplate Existing template	
*	Belonging organize	Modbus Sensor I Quantity of VariableS: 2 Acquisition methods: The cloud polling	1
	Device description	ModbusTest Variable name Value Type	
		USR-TEST Humidity ushort	
	Device Tags	O 111	
		Test	
Dat	ta Settinos	S3eec 16:13:06	
		Unnamed-2024-06-24 16:12:52	
	Template	S3EEC 16.06.26	
	Template	O M300	
		○ ī	
Net	tworking settings	○ 未命答-2024-01-17 15:53:10	
Δ	Associated Gateway	○ N520 < 1 >	
			-
		Cancel OK	
			1

12. Here the "Slave number" is the slave ID(address) of your serial device. Also bind this device to the created Gateway, click Save.

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93	Quick start		Device management (> Device List (> Add device	
2	Screen management	~	Add Device	
Ø	Scene management	~	Basic Information	
69	Device management	^	* Device name Sensortest Upload Pictures	
	Device List	late	* Belonging organize My project1 \checkmark File	
M	Gateway management	~	Device description Please enter a device description Only support JPG, GIF, PNG format, the size of 5M or less	
少 聶	Third party gateway management Configuration management	~ ~	Device Tags ③ Add tags	
Ш	Data center	~	Data Settings	
岜	Alarm linkage	~	Associated Device Modbus Sensor Delete Choose a template	
8	Value-Added services	~	Template	
≞	Exclusive configuration	~	Unnamed, Slave name_16	
88	Extend	~	" uart number 1 "slave number 1	
			Networking settings	
			Associated Gateway USR-CAT1 O Add Gateway	
			Save	

13. The cloud configuration is done, then we start to configure the modem parameters.

Device Configuration

Please use the corresponding setup software of the device to configure it: 4G modem setup software: <u>https://www.pusr.com/ndirectory/[Setup-Software]-USR-CAT4-V1.0.2_1687230152.zip</u> CAT1 modem setup software: <u>https://www.pusr.com/ndirectory/[Setup-Software]USR-CAT1-Setup-Software-V1.1.4_168723015</u> <u>3.rar</u>

In this manual, we test using a CAT1 modem, for 4G modems, the configuration steps when connecting to PUSR Cloud are same. The only difference is that after configuring all the parameters, you need to click "Restart" manually after click "Set current parameters".

🗟 Query all parame	ters	Save current parameters				
Enter Serial AT comman	d mode	Exit S	erial AT command mode			
Help message	Re	start	Query version			
Save as user defaults	Restore u	ser defaults	Restore Factory Default			
Ouery RSSI						

With CAT1 modems, after click "Set and save all parameters", it will restart automatically to take all the parameters effect.

Query	all parameters	Set and save all parameters				
Enter Serial AT	F command mode	Exit Serial AT con	mman <mark>d m</mark> ode			
Build Time	Query IMEI	Query phone number	Query version			

1. Install the SIM card and antenna in the modem, connect the modem to the PC using an RS232 or RS485 to USB cable, power on the modem using the power adaptor.

2. Open the created com port in setup software. Enter serial command mode and configure the APN parameters of your SIM card firstly. After configuring the APN parameters, the modem should connect to the network normally, and its NET indicator will be on.

[PC Serial Paramet	ters] Serial Port COM4 v	BaudRate 115200 v	Parity/Data/Stop NONI	× 8 、	v 1 v 🙂 Cla	se		
Choose Work Mod	e			Ope	eration and Hints		6	
Transparent M	Node O HTTPD Client Mode	e 🔿 SMS Mode	○ MQTT Mode	3 [🗟 Query	all parameters	R Set and save a	all parameters
			Serial	2	Enter Serial A	T command mode	Exit Serial AT con	nmand mode
PC	NetWork	M2M device	Serial device		Build Time	Query IMEI	Query phone number	Query version
ransparent Mode	Parameters				Query RSSI	Save parameters	Reset to factory setting	Restart
Enable Socket				^			· · · · · · · · · · · · · · · · · · ·	
A	IP&Port	socket.usr.cn	2317		Timestamp	RX:7228		Reset Coun
	Link Type	ТСР	✓ Persis ✓	UN				
	Time of Transitory Link(s)	10						
Backup				>[Tx->][14:40:08][a	asc]		
Socket A				AT	+SSLAUTH?			
Enable Socket								
					Rx<-][14:40:08][a	scl		
LS Encrypted para	ameters			AT	+SSLAUTH?			
SSL				\$				
Aodem Parameter	s			+5	SLAUTH:ALL			
Serial Port	Cartel David Data	200 V		^				
Senarrore	Serial Baudkate 115	HOW C		OK				
	Parity/Data/Stop NO	NE ~ 8 ~						
More	Packaging Interval(ms) 50	ackaging Length(Bytes) 1024	0-				
				Op	eration complete			
4	Enable Echo	Serial data cache	Security			•	······································	
	Serial AT command	Network AT	NTP function					
	Command Prefix	usr.cn#						
	Reboot Message	USR-DR502-E						

3. Configure the serial parameters of the modem to be same with your serial device. Change the remote IP to "tcp.mp.usriot.com", change the port to 15000.

TUSR-CAT1 V1.1.4	– D X
File Language	
[PC Serial Parameters] : Serial Port COM4 v BaudRate 115200 v Parity/Data/Stop NONI v 1	8 v 1 v Close 1
Choose Work Mode	Operation and Hints
Transparent Mode HTTPD Client Mode SMS Mode MQTT Mode Transparent Mode Transparent Mode Transparent Mode	3 Query all parameters
	2 Enter Serial AT command mode Exit Serial AT command mode
PC NetWork M2M device Serial device	Build Time Query IMEI Query phone number Query version
Transparent Mode Parameters	Query RSSI Save parameters Reset to factory setting Restart
Enable Socket	
A 5 IP&Port tcp.mp.usnot.com 15000	Timestamp Hex RX:7228 Reset Count
Link Type TCP V Persis V	OK A
Time of Transitory Link(s) 10	NTv NI(14/40/09)[coc]
Socket A	
	ATT35EAUTH:
L Enable Socket	⇒[Rx<-][14·40·08][asc]
TLS Encrypted parameters	
□ ssL \$	
Modem Parameters	+SSLAUTH:ALL
Serial Port 4 Serial BaudRate 9600 Flow Control NONE	ОК
Palayjbaca/solp interval(ms) 50 14kaging Length(Bytes) 1024	Operation complete
Enable Echo Serial data cache Security	· · · · · · · · · · · · · · · · · · ·
Serial AT command Vetwork AT INTP function	
Command Prefix Lusr.cn#	
Reboot Message USR-DR502-E	
APN CMNET,,,0	Send via Serial Port • TX:0 🕘 Send •

4. Fill in the copied communication ID and password in identity package of the modem, you can also click the gateway name to check in PUSR Cloud.

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	Quick start	Gateway management > Gateway list > Gateway Details	INSECUTIVITY - C X						
፼	management	Gateway Details Network debugging	[PC Serial Parameters] : Serial Port[COIN4	B V 1 V Close Operation and Hints	8				
Ô	Scene management	Gateway infomation	Transparent Mode O HTTPD Client Mode O SMS Mode O MQTT Mode	Query all parameters	Set and save all parameters				
69	Device value		TCP/UDP TCP/UDP Serial	Enter Serial AT command mode	Exit Serial AT command mode				
⋳	Gateway	USR-CAT1 00047955000000043597	PC NetWork M2M device Serial device	Build Time Query IMEI	Query phone number Query version				
	Gateway list	Belonging organize: My project1	Transparent Mode Parameters	Query RSSI Save parameters	leset to factory setting Restart				
\$	Third party gateway management	Communication Password: 8/D27/yr1 © Gateway address: @@#^*55. Jinan Shi, Shandong 2	Socket D	Timestamp Hex RX:7228	Reset Count				
ភ	Configuration management	Tag:	Package	>[Tx->][14:40:08][asc]					
ы	Data center 🛛 👻			AT+SSLAUTH?					
ä	Alarm linkage 💙	Gateway traffic monitoring	Enable Method of Identity Package Send package once build 7 Package Type of Identity Package Goud (for PUSR Goud)	>[Rx<-][14:40:08][asc] AT+SSLAUTH?					
\otimes	Value-Added 🗸 services	Q 2024.08.04 14-43-49 To 2024.08.05 14-43-49 Query	Device id & Password 00047955000000043597 [6f027yv]	+SSLAUTH:ALL					
₽	Exclusive configuration		TLS Encrypted parameters	ок					
	Extend ~	Byten/Ab	Modem Parameters Send Root Send Root Row Central (MORE ∨ Parameters) Send Root Parkg/back/stop ICORE ∨ 8 ∨ 1 ∨ 1	Operation complete					
			🖉 Enable Echo 🖉 Serial data cache 🗌 Security	Send via Serial Port • TX:0	🕘 Send 🔸				

5. After click "Set and save all parameters", the CAT1 modem will restart automatically. Then we can see the gateway and device both get online.

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s	Quick start	Gatewa	y management > Gatewa	/ list						Status: Online		×
▣	Screen management	Gatew	ay list	otal Gateways • Online gab	eway • Offine gateway			O More gate	way features Go to DM (Gateway name: 1	USR-CAT1	043507
Θ	Scene 、 management	The		3 0	Balana Cheses Iner	Cuoni				Charling on to		
65	Device management	Pita		All mo	ann · Preisse Cinuse lags ·	• Please enter sill or g						×
æ	Gateway ^		Gateway status	Gateway name	SN	Gateway model	Number of associat ed devices	Belonging organize	Tag	Device Name: Se Device Number:	ensortest 00000479550	00014
	Gateway list Third party		• Online	USR-CAT1	00047955000000043597	Unknown type	1	My project1		View	Edit Delet	e More
-	gateway ~ management Configuration		Offine	USR-W610	0004795500000043598	Unknown type	1	My project1		View	Edit Delet	e More
쥽	management		Waiting for the initial la	gateway	0004795500000043594	Unknown type	1	MyGroup		View	Edit Delet	a More
ш	Data center 👋		Waiting for the initial la	Unnamed_Gateway name_	0004795500000043593	Unknown type	0	根组织		View	Edit Delet	e More

6. Here we use a Modbus Slave software to simulate a temperature&humidity sensor, when we click the device name in PUSR Cloud, we can read the data from the sensor(Modbus Slave software).

