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4G Wireless Routing DTU User Manual

V1.02



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Chapter 1. Overview

The 920_DTU is a DTU device based on the Qualcomm MDM9x07 platform. Support 4G full Netcom (depending on the configuration, some versions may not support CDMA or some frequency bands), support Wi-Fi AP function, support Ethernet interface, support RS232 and RS485 interface.

The device provides a 10M/100M1000M adaptive Ethernet interface. The IP address is automatically assigned by default. After the network cable is plugged in, the PC can use this device to bring 4G network functions.

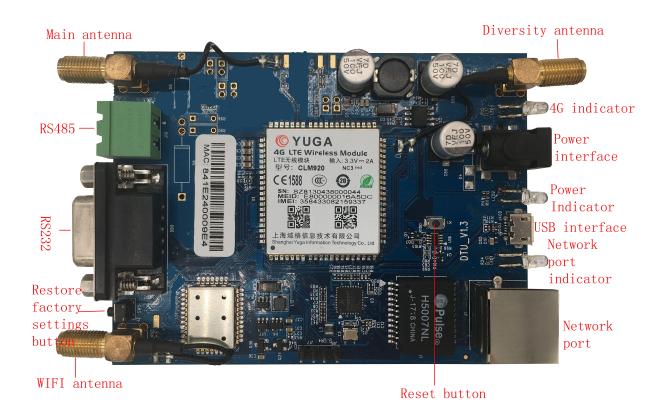
The device provides Wi-Fi AP functionality and supports 802.11b/g/n. The default name of Wi-Fi SSID is DTU_AP_xxxx, and the default password is 12345678.

The device provides RS232 serial port and RS485 serial port, which can be used for DTU transparent transmission data. After RS232 transparent transmission is configured in WEBUI, the data received by the RS232 serial port can be transmitted to the server.

The default address of the device is 192.168.100.1. You can log in to the http://192.168.100.1 WEBUI management page to set various settings. The login account is admin:admin.

The following is the appearance of the device and the motherboard:





Note:

- ☆ The DC power supply voltage range is 5V to 36V. It is recommended to use the power adapter.
- \diamond The 4G indicator is green, and the 4G will always be on when connected to the network.
- \diamond The power indicator is red and is constant after the power is connected.
- ♦ The Ethernet indicator is green. It is always on after the RJ45 interface is connected to the network cable, and blinks during communication.
- ♦ The RS232 jumper cap must be connected, and the AT serial jumper cap cannot be connected.
- ☆ The Restore Factory button is used to delete user data. The reset button only resets the system and reboots.

Chapter 2. WEBUI Management System

The device default settings can work, or you can modify the default settings through the WEBUI management page. The WEBUI management page supports Internet Explorer 11 and higher, Firefox, Chrome, Safari and other major browsers.

2.1 Login

Open the browser, enter the address 192.168.100.1 and press Enter. The browser will display the login interface of the web management system, enter the username admin, password admin, and click Login to enter the management system.

Note:

If you enter the wrong username/password three times in a while, the login function will be locked. You will not be able to log in to the web management system during the lockout period. You can try to enter the password again after the lockout time has elapsed.

The default username/password is simple. For security reasons, users should change to a more secure username/password after logging in to the system. For details on how to change the username/password, see the "Login Account" section.

User Name	123	
Password		
	Login	
Ec	orget Password	<u>1?</u>



2.2 System Status

2.2.1 Network Status

This page displays the current 4G network status and related information, such as the connected network type (LTE, WCDMA, TD-SCDMA, etc.), signal strength value, MCC/MNC, etc.

			China Mot	ile LTE	ail	WiFi English	▼ Logou
Status	IMEI	123456789012347					
Network Status	MEID	1234568901234E					
LAN Status	SIM state	SIM PIN Disabled					
Device Status	IMSI	460029214735336					
Traffic Statistics	Mobile Number						
Basic Setting							
Advanced Setting	Registration State Operator Name	Registered China Mobile					
Application Setting	Network Type	LTE					
System Setting	rssi	-49					
	rsrq	-5					
	rsrp	-72					
	snr	29.60					
	Data Connection State	Connected					
	IP Address	10.51.48.165					
	DNS Address	211.136.112.50					
	DNS Address	211.136.150.66					
	Modem Version	CLM920_DTU-V1					

Note:

If you cannot register the network or cannot access the Internet, you can check the status of this page to check whether the SIM card recognizes the normal, current network type and signal strength.

This page will be refreshed automatically, so it may not match the 4G network indicator or status bar. After the page is automatically refreshed, it can be refreshed manually.

If there is a problem with the network, you can modify the settings by referring to the Mobile Network Settings page.

2.2.2 LAN status

The device functions as a router, Wi-Fi AP and Ethernet are a local area network. This page displays information about the LAN related settings status and the LAN client list.



					China Mobile LT	⊑ all°	MiFi English	•
Status	Gateway Nam	e	mydtu.com					
Network Status	Gateway IP A		192.168.100.1					
LANStatus	Network Mask		255.255.255.0 Enabled					
Device Status			Linabled					
Traffic Statistics	DHCP Clie							
Basic Setting	No.	Host Name		MAC Add			IP Address	
Advanced Setting	0	zff-PC		1c:1b:0d:40	UD:Ud		192.168.100.195	
Application Setting	Wi-Fi Clier	nt List						
System Setting	No.		MAC Address			Connected	Time	
	ARP List							
	No.	м	AC Address		IP Addr	ess	Dev	vice

2.2.3 Device status

This page shows the status of the device, such as system time, boot time, device version number, etc.

			China Mobile	LTE	all	MiFi English	▼ Logout
Status	Current Time	2019-2-19 15:54:02					
Network Status	Device Boot Time	00:01:26					
LAN Status	Memory Free	68.42 MB					
Device Status	Wi-Fi Hardware	rtl8189es					
Traffic Statistics	Wi-Fi MAC Address	00:57:08:00:19:1A					
Basic Setting	CPU	MDM9607					
Advanced Setting	Network Mode	Mobile Net Mode					
Application Setting	WAN Connection Status	Connected					
System Setting	WEBUI Version	3.42 DTU					
	Kernel Version	3.18.20					
	Modem Version	CLM920 DTU-V1					

Note:

The current time displayed is the time the device is synchronized from the network. If there is a problem with the network connection, the time may be incorrect. The functions of data flow statistics of this system need to be strictly in accordance with time.

This page can view the version number of WEBUI. You can view this page by general device information.

2.2.4 Traffic Statistics

This page shows 4G traffic statistics



4G Wireless Routing DTU User Manual

				China Mobile LTE	KawiFi English ▼
Status		Rece	ived Data	Transmitted Data	Connected Time
Network Status	Current Monthly Dat	a			
LAN Status	Current Connection Da	ata 69	.58 KB	55.99 KB	00:01:27
Device Status		Total/Monthly		Available/Monthly	Start Date
Traffic Statistics	Data Traffic	Total monthly		Available monuny	Start Date
Basic Setting					
Advanced Setting					
Application Setting					
System Setting					

Note[.]

The data traffic on the device side may be inconsistent with the carrier.

The traffic statistics function depends on the system time. Traffic statistics are not available until the device time is synchronized to the network time.

In addition, if the device is often interrupted during use, it may cause inaccurate traffic data.

2.3 Basic settings

2.3.1 LAN Setting

This page can set the LAN gateway address, gateway name, and enable the DHCP service in the LAN. It is recommended to keep the default settings. Modify this setting only if it conflicts with other network segments.

After setting the gateway name, you can log in to the WEBUI management page directly using the gateway name. For example, you can use http://mydtu.com to log in to the WEBUI management page without entering an IP address. The gateway name must be a valid domain name

			China Mobile		English V Logout
Status	Note: Gateway Name is a	a domain To access WEB.			
Basic Setting	Gateway IP address network.	s and network segment are a subnet in	router. It is recommend to	o keep it if it is n	iot conflict with you local
LAN Setting		keep DHCP service enabled, or you ha	ve to set IP address and	DNS manully.	
Wi-Fi Setting					
Mobile Network Setting	Gateway Name	mydtu.com			
PIN Management	Gateway IP Address	192.168.100.1			
Advanced Setting	Network Mask	255.255.255.0			
Application Setting	DHCP State	Enable	Ŧ		
System Setting	DHCP Start	192.168.100.100			
	DHCP End	192.168.100.200			
	DHCP Lease	120	Minutes		
		Save Refresh	P.		

2.3.2 WI-FI Setting

This setting modifies the Wi-Fi AP SSID name, transport channel, security mode and password. After the broadcast network name is set to deactivate, other devices will not be able to search for this Wi-Fi AP.

				China Mobile	LTE	atl	MiFi English	Logout
Status	SSID	DTU_AP_191A						
Basic Setting	Broadcast SSID	🖲 Enable 🔘 [Disable					
LAN Setting	Channel	Auto	۲					
Wi-Fi Setting	Band Width Security Mode	20MHz WPA2-PSK-AE	•					
Mobile Network Setting	Password	12345678	3 •					
PIN Management		Save	Refresh					
Advanced Setting								
Application Setting								
System Setting								

2.3.4 Mobile network settings

This setting modifies the 4G related parameters. For example, the preferred network type (LTE, GSM, etc.) can be modified. After being set to the AUTO mode, the device will automatically find the optimal network according to the SIM card, for example, look up the LTE network first. If there is no LTE, look for the WCDMA or EVDO network, and then look for the GSM or CDMA 1x network. It is recommended to keep this setting.

APN setting function, the device presets most of the operator APN related settings, and the APN is set to the automatic selection mode to automatically match. If the SIM card is special, it may not be automatically matched. In this case, you can set the APN manually.

If you can't access the network after setting the APN according to the SIM card operator's requirements, you can try to modify the authentication type. The three authentication types are different. You can try it. $_{\circ}$

				China Mobile	LTE	WiFi	English 🔻 L
Status		et prefered network mode		0 0 1	set prefered r	network mode acc	ording to the SIM
Basic Setting	3 35 22	: It may not work if wrong et APN mode to auto mo	20 15 150 10 10-		a to SIM If	sat to NV mode	it will not coarch
LAN Setting		dont work, you may set it					
Wi-Fi Setting							
Mobile Network Setting	Prefered Network Mode	LTE	۲				
PIN Management	APN Mode	Auto	•				
Advanced Setting	APN Name						
Application Setting	User Name						
System Setting	Password						
	IP Address						
	Auth Type		٣				
		Save	Refresh				

2.3.5 PIN management

This page can display the SIM PIN status, activate, disable the SIM PIN function, modify the SIM PIN, and unlock the SIM PIN. In addition, if the function of automatically inputting SIM PIN is enabled, and the PIN code verification is enabled on the SIM card, and the PIN code attempts are 3, the device will automatically input the set PIN code to verify.

		(China Mobile	LTE	ath	WiFi English	Logout
Status		you can auto verify PIN when powe	r on. If you enable this	function and	d SIM req	ure verification an	d SIM
Basic Setting	PIN left retries is 3, then	it will try that PIN.					
LAN Setting	SIM Card Status	SIM PIN Disabled					
Wi-Fi Setting	PIN Management	Enable •					
Mobile Network Setting	PIN		Remaining Attempts:	3			
PIN Management		Apply					
Advanced Setting							
Application Setting	Auto-unlock PIN upon Power-on	Disable					
System Setting		Save					

2.4 Advanced settings

2.4.1 Data usage setting

The traffic restriction feature limits how much traffic the device can use. If the traffic restriction feature is enabled, the mobile data network will be automatically disconnected when the traffic arrives, and then reconnected automatically after the next month. Frequent power-off restarts may result in data loss and inaccurate statistics. If you need to restart the device, use the restart function of the WEB management page.

Status	Note: You may send SM	IS to your service provider to	o require accurate data usage, then correct device data usage if they are not sa
Basic Setting	Monthly Used	1.22 GB	Correct
Advanced Setting	Note: If enabled traffic I	imit function, mobile data co	nnection will automatically disconnect when data usage reaches the limit. It will
Data Usage Setting	reconnect when n	next month cycle.	
MAC Filter	Data Usage Limit	Disable	×
Port forward	Start Date		T
Port Map	Start Date	1	
DMZ		Save	Refresh
VPN			
APN			
Network Mode			
Wi-Fi Enabler			
Ethernet Enabler			
USB Debug			
Application Setting			
System Setting			

China Mobile LTE ____ K_WiFi English • Logout



2.4.2 MAC filter

This setting is used to filter the client connected to the WIFI to prevent the illegal client from connecting to the device through WIFI. The default setting is blacklist mode. Under this setting, hosts in the blacklist cannot connect to the device, and other hosts can connect to the device. In whitelist mode, only hosts in the whitelist can connect to the device, and other hosts cannot connect to it.

Note:

Before setting to whitelist mode, you must first add yourself to the whitelist, otherwise you may not be able to connect to the device. When this happens, you can try to restore the factory value.

				China Mobile LTE
Status	Note: Please add yourse save it into device		o accept mode, or	you will disconnect from the device. Add all list then press save to
Basic Setting				
Advanced Setting	MAC Filter Mode	Disable	•	
Data Usage Setting		Save	Refresh	
MAC Filter				
Port forward	Deny List			
Port Map	0			MAC Address
DMZ		bbA	Del	
VPN		Add	Dei	
APN	Accept List			
Network Mode				
Wi-Fi Enabler				MAC Address
Ethernet Enabler		Add	Del	
USB Debug				
Application Setting				
System Setting				

2.4.3 Port forward

Port forwarding is a function of forwarding a port or a range of port packets on a network to a set IP address.

				China	a Mobile LTE	•••• KWiFi Englis	h 🔻 Loqout
Status	Note: Po	ort forward function					
Basic Setting		ecause of restirct from SIM					
Advanced Setting	lf y	you have edit the list, save	button should be press	sed to save it to devi	ce.		
Data Usage Setting							
MAC Filter	Port Forv	vard List					
Port forward		Protocol	Port		Destinat	ion Address	
Port Map			Add	Del	Save		
DMZ							
VPN							
APN							
Network Mode							
Wi-Fi Enabler							
Ethernet Enabler							
USB Debug							
Application Setting							

2.4.4 Port Map

Port mapping is to modify the data packet of one port of the network network to another port and send it to the set IP address.

				China Mobile	LTE
Status	Note:	Port map function			
Basic Setting				ort map doesnt work for most SIM. uld be pressed to save it to device.	
Advanced Setting		in you have eut th	e list, save button sho	uid be pressed to save it to device.	
Data Usage Setting					
MAC Filter	Port M	ap List			
Port forward		Protocol	Port	Destination Address	Destination Port
Port Map				Add Del Save	
DMZ					
VPN					
APN					
Network Mode					
Wi-Fi Enabler					
Ethernet Enabler					
USB Debug					
Application Setting					
System Setting					

2.4.5 DMZ

This setting can modify the DMZ host settings. If you need a host on the LAN to use the server, you can set the host IP address as the DMZ host. After being set as a DMZ host, packets sent to the router on the network are automatically forwarded to the DMZ host, and the host is also directly exposed to the Internet. May cause network security issues.



In general, IoT NICs may use this feature.

Status			ernal network. It enable int	ernal client to provide netw	ork service. All internal access to
Basic Setting		rd to the DMZ host. tirct from SIM operator, DMZ	doesnt work for most SIM		
Advanced Setting	Decause of res	and non-one operator, owe	doesne work for most onw		
Data Usage Setting	DMZ Status	Disable	۲		
MAC Filter		Save	Refresh		
Port forward					
Port Map					
DMZ					
VPN					
APN					
Network Mode					
Wi-Fi Enabler					
Ethernet Enabler					
USB Debug					
Application Setting					

2.4.6 VPN

The VPN function is used to access the virtual private network. Can be used to remotely access corporate LANs, etc. Note that the LAN segment of the router cannot conflict with the remote network segment.

				China Mobile	LTE	all	MiFi English	▼ Logout
Status	Note: VPN is used to	o access remote virtual private	network.					
Basic Setting	VPN Mode	None	•					
Advanced Setting		Save	Refresh					
Data Usage Setting		Save	Neiresh					
MAC Filter								
Port forward								
Port Map								
DMZ								
VPN								
APN								
Network Mode								
Wi-Fi Enabler								
Ethernet Enabler								
USB Debug								
Application Setting								
System Setting								

2.4.7 APN

This page sets the APN used to register the network..

				China Mobile	LTE	WiF	i English	Logout
Status		a special APN used to r						
Basic Setting	Do not set this option	n if you dont know this,	error setting make	it dont register to net	work.			
Advanced Setting	Registration APN Status	Disable	•					
Data Usage Setting		Save	Refresh					
MAC Filter								
Port forward								
Port Map								
DMZ								
VPN								
APN								
Network Mode								
Wi-Fi Enabler								
Ethernet Enabler								
USB Debug								
Application Setting								
System Setting								

2.4.8 Network Mode

This page is whether the network used by the DTU is a mobile network or an Ethernet network.

				China Mobile	LTE 1	WiFi English •	Logout
Status	Note: Mobile network m	node is used to make data con	nection on SIM	mobile network. All o	lata are forwa	rd on SIM operator network.	
Basic Setting		mode is used to make data co nernet to a network a router, or				so you dont need to SIM. You	
Advanced Setting	nust competien	ismer to a network a router, or	levice carrier	orward Drift data to	internet.		
Data Usage Setting	Network Mode	Mobile Net Mode	۲				
MAC Filter		Save	Refresh				
Port forward							
Port Map							
DMZ							
VPN							
APN							
Network Mode							
Wi-Fi Enabler							
Ethernet Enabler							
USB Debug							
Application Setting							
System Setting							

2.4.9 WIFI Enable

This page is used to turn off or turn on the wifi function.

				China Mobile	LTE .I	WiFi English	Logout
Status		needed, it can be shutdown he	ere. You may can n	not access this WEB	if Wi-Fi have be	en shutdown. Then you can	
Basic Setting	enable it by fai	ctory reset button.					
Advanced Setting	Wi-Fi State	Enable					
Data Usage Setting		Save	Refresh				
MAC Filter							
Port forward							
Port Map							
DMZ							
VPN							
APN							
Network Mode							
Wi-Fi Enabler							
Ethernet Enabler							
USB Debug							
Application Setting							
System Setting							

2.4.10 Ethernet Enable

If you do not need the Ethernet function, you can turn off the Ethernet here. After turning off the Ethernet, you may not be able to access this page to open the Ethernet function. You can only restore this function by restoring the factory settings button.

Status			nere. You may can not access	this WEB if ethernet have been shutdo	wn. Then you
Basic Setting	can enable it by	factory reset button.			
Advanced Setting	Ethernet State	Enable			
Data Usage Setting		Save	Refresh		
MAC Filter					
Port forward					
Port Map					
DMZ					
VPN					
APN					
Network Mode					
Wi-Fi Enabler					
Ethernet Enabler					
USB Debug					
Application Setting					
System Setting					

2.4.11 USB debug

This function switches the USB configuration to debug mode. In debug mode, you can use the adb tool to debug. You can use the DIAG to capture the log of the modem. However, there is no RNDIS configuration in the debug mode, so you cannot provide network functions through USB.

China Mobile LTE

Wireless Routing DTU		China Mobile LTE
Status	Note: Switch USB configuration to debug mode.	
Basic Setting	USB Debug	
Advanced Setting	USB Debug	
Data Usage Setting		
MAC Filter		
Port forward		
Port Map		
DMZ		
VPN		
APN		
Network Mode		
Wi-Fi Enabler		
Ethernet Enabler		
USB Debug		
Application Setting		

2.5 Application setting

2.5.1 RS232

The main function of DTU is to use TCP to transparently transmit serial data and server data. This function receives the RS232 serial port data, transmits it to the set server, and can receive the data on the server and transfer it to the device on the RS232 serial port.

				China Mobile	LTE	WiFi English	Logout
Status	Note: RS232 transport is use	d to transfer data receive	ed from UART to	server, and transfer	data receive	d from server to UART.	
Basic Setting	Serial Transport Status	Enable	•				
Advanced Setting	Baud Rate	115200	•				
Application Setting	Data Bit	8					
R\$232	Parity Bit	None Parity	•				
R \$485	Stop Bit	1	•				
PING	Frame Time Frame Length	50 1024					
Reboot When Disconnect	Server Address	1024					
Auto Reboot Setting	Server Port	0					
System Setting	Transfer protocol	TCP	•				
	Registration package status	Disable	•				
	Heart beat status	Disable	٠				
		Save	Refresh				

2.5.2 RS485

The RS485 transparent transmission setting function is basically the same as RS232. Since RS485 is half-duplex, it is not possible to transparently pass server data to the serial port. If you need to modify this feature, please contact your supplier.

		China Mobile LTE
Status	Note: RS485 transport is u	used to transfer data received from UART to server.
Basic Setting	Serial Transport Status	Disable v
Advanced Setting	Conta manoport citatao	Save Refresh
Application Setting		Save Neiresn
R\$232		
R \$485		
PING		
Reboot When Disconnect		
Auto Reboot Setting		
System Setting		

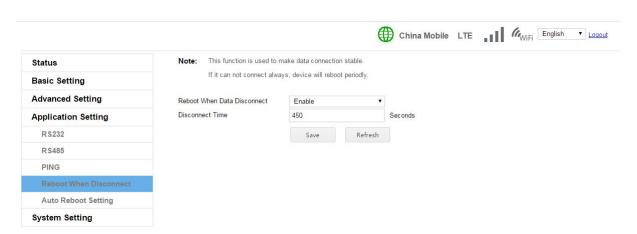
2.5.3 PING check

This function is used to detect whether the device is connected to the Internet. If the device is abnormal and cannot access the Internet, you can restart the device for recovery. Note: This feature consumes 4G mobile data traffic

			¢	🗭 China Mobile	e LTE	.ıl	M WiFi	English	▼ Logou
Status	Note: This function is use	d to make data connectio	on stable. Ping a	server periodly, if it o	does not re	sponse, th	nen reboot de	evice.	
Basic Setting		ived any data for a IDLE it timeout for the setting			sponse in t	he setting	time, then t	he data	
Advanced Setting	Connection is OK. I	in timeout for the setting	count, device v	AII TEDOOL					
Application Setting	PING Check Status	Enable	•						
R\$232	Server Address	114.114.114.114							
R \$485	PING if Idle Time			Seconds					
PING	PING Timeout Time PING Timeout Count	30		Seconds					
Reboot When Disconnect	This Thicsur Count	•							
Auto Reboot Setting		Save	Refresh						
System Setting									

2.5.4 Reboot when disconnect

The disconnection detection function is a function to increase the connection stability of the mobile data network. After detecting that the mobile data connection is disconnected and cannot be reconnected within the set time, the device is restarted to restore the data connection.



2.5.5 Auto reboot setting

To maintain device stability, you can set the device to automatically restart. It can be set to restart every few hours, for example, every 72 hours. It can also be set to restart at a fixed time every day, such as restarting at 00:00 every day, or restarting at 21:00 every day.

				China Mobile	LTE	 /iFi English	Logout
Status	Note: Device will reboot in	n periodly.					
Basic Setting	Auto Reboot Status	Disable					
Advanced Setting		Save	Refresh				
Application Setting		Sure	Rencon				
R \$232							
R \$485							
PING							
Reboot When Disconnect							
Auto Reboot Setting							
System Setting							

2.6 System setting

2.6.1 Update Firmware

If there is a bug fix or feature update, you can update the system version with this setting. Only use certified upgrade packages, otherwise it may not boot.

	China Mobile LTE IN China Mobile LTE	<u>Jut</u>
Status	Note: Please use authorized update package, or device may not boot.	
Basic Setting	Please do not unplug power source when updating.	
Advanced Setting	Select firmware	
Application Setting		
System Setting		
Update Firmware		
User Management		
Telnet Service		
Reboot		



2.6.2 User management

Modify login and password.

		China Mobile LTE
Status	Note: Modify WEB login	n user name and password.
Basic Setting	New User Name	
Advanced Setting	New Password	
Application Setting		Save
System Setting		
Update Firmware		
User Management		
Telnet Service		
Reboot		

2.6.3 Telnet service

Remote access to devices when enabled.

			China M	obile LTE	aff	WiFi English	▼ Logout
Status	Note: Telnet service, w	when enabled, you are able to ac	cess device remotely.				
Basic Setting	Telnet Service	Disable	•				
Advanced Setting		Save					
Application Setting		5470					
System Setting							
Update Firmware							
User Management							
Telnet Service							
Reboot							

2.6.4 Reboot

Reboot the device and restart the device with this setting to ensure that the data has been saved to the system without losing unsaved data..

