### Guideline to configure Serial communication with Virtual COM for 4G Router



The following content uses a Local test environment as an testing example, shown as Figure 1. For User's public Server network environment just refer to Figure 2.

Figure1



1.Connect the LAN port of the router to the computer, and set the automatic dhcp mode for the computer Network Ineterface Card, and ensure that the computer can obtain the address 192.168.1.x, netmask 255.255.255.0.



2.Open the browser, type the default IP address of the router with 192.168.1.1, then press Enter. And then input the username/password with admin/admin to login the Router.

← → C ▲ 不安全   192.168.1.1 cgi-bin/luci		07	Q R	Ê	☆	*	
0/	Cellular Router						
0		1-					
Authoriz	ation Required						
admin	admin						X
	admin						
Y		~					
	Login	X					
	A of						
		X					

3.After logging , you will see overview details about the router system, including the software/hardware version, product model, product id, networking mode, and MAC address, etc.

- → C ▲ 不多	定全 [192.168.1.1] cgi-	bin/luci/				Q. 12	☆	*		:	:
M2M wireles	s terminal						Ce	llula	r Ro	oute	r
System Status 🛛 🗸	• Overview × Sma	rtlink 🗙						₩	Tab	operati	on =
Overview	Status										2
Routes	Status										
System Log	System										
Kernel Log	Router Name	M2M		Product Name	ZR2721S						
Realtime Graphs	Firmware Version	Premium Wireless Router v2	2.5.221125	Product ID	1120ZR21908	270518					
	Local Time	Mon Nov 28 19:44:33 2022		Hardware Class	Single Model S	Single Card					
Basic Network >	Uptime	0h 8m 39s		MAC Address	34:0a:68:24:b8	B:ec					
Advanced Network >	Load Average	1.06, 1.11, 0.58		WAN Mode	4G/5G and Wi	red					
VPN Configuration >											
System Management >	MobileWAN Status	6									
	Interface	M	Nobile Network1								
ogout	Gateway										
	IPv4Address	•									
	DNS	-									
	Modem Type	Ľ	TE/WCDMA/TD-SCDM	A/EVDO/CDMA/EDGE/GI	PRS/GSM						
	Modem IMEI	8	68821041133992								
	Modem IMSI	-									
	Modem ICCID	-									
	Network Operator										

4. Check the LAN IP address of the router and PC address connected to router , shown as follows:

System Status	>	📢 Overview 🗙 Smal	rtlink × Wired Network ×				₩	Tab operatio
Basic Network								
Switch		WAN LAN MO	ST					
Hostnames		Interfaces - LAN						
Static Routes		On this page you can o several network interfa	configure the network interfac aces separated by spaces. Yo	ces. You can bridge sev ou can also use <u>VLAN</u> n	eral interfaces by ticking the otation INTERFACE. VLANNR (e.g	"bridge interfaces" field and enter ; eth0. 1).	the nam	ies of
Wired Network		Common Configura	ation					
Mobile Network		e lei						
Wireless Network		General Setup	Advanced Settings					
Static address			Status	Collecting data				
Advanced Network			Protocol	Static address	*			
VPN Configuration			IPv4 address	192.168.1.1/24	+			
System Managemen	1t >		Use custom DNS servers		+			
Logout			IPv6 assignment length	64	~			
				Assign a part of given	length of every public IPv6-p	refix to this interface		
			IPv6 assignment hint					
				Assian nrefix narts usi	no this hexadecimal suboref	x ID for this interface		

System Status 🗸 🗸	Overview      Smartlink      Wired Network		➡ Tab operation ▼
Overview Routes	et	MAC Address: 34:0A:68:24:88:EC Netmask: 255.255.255.255 Gateway: 0.0.0.0	-
System Log	Active Connections	160 / 16384 (0%)	
Kernel Log Realtime Graphs	Memory		
Basic Network →	Total Available 7	2172 kB / 123688 kB (58%)	
Advanced Network >	Buffered	7768 kB / 123688 kB (6%)	
VPN Configuration →			
System Management >	DHCP Leases Hostname IP Address	MAC-Address	Leasetime remaining
	mc007 192.168.1.236	E4:E7:49:1A:A7:F3	11h 49m 21s
	Wireless		
	Generic MAC80211 802.11bgn Wireless Controller (radio0	SSID: ZR2721S-24b8ec Mode: Master Channel: (2,437 GHz) Bitrate: ? Mbit/s BSSID: 34:0A:66:24:B8:EE Encryption: mixed WPA/WPA2 PSK (CCMP) Uptime: 0h 10m 57s SSID: default Mode: Client Channel: 6 (2,437 GHz) Bitrate: ? Mbit/s Wireless is disabled or not associated	

5.Start to configure smartlink usage.

5.1 to config 'cloud'/'uplink device' option: set it to TCP Client mode, and make sure the IP address and port of the server must be the same as that of the PC.

System Status	•	44	Overview 🗙	Smartlink 🗙	Wired Network x						₩	Tab operation -
Basic Network	>		General C	ollection Ad	vance							-
Advanced Network	~		-									_
QoS			Mode Confi	guration								
DMZ			Enabled		Uplink Device		I	Downlink Devic	e			_
Firewall			$\checkmark$		Cloud			UART_DEV		EDIT	DELE	TE
Port Forwards			ADD									
Static NAT												
Smartlink			Connection	Configuration								
M2M Platform			Enabled	Name	Working Mode	Target Addres	s Status	Conns	Protocol			
Network Monitor			V	Cloud	TCP Server	30001	Listening	0	Pass-Through	EDIT	DELE	те
Link Control			J	UART DEV	UART	COM1	Connected	1	Pass-Through	EDIT	DELE	ТЕ
Dynamic DNS									, and through	Cont	Utetete	
SNMP Service			ADD									
VPN Configuration	>											
System Management	t>		Serial Confi	guration								
Lonouit			Interf	ace	Speed	Data Bit	Stop Bit	Parity	Flow Control			
Logout			CON	11	115200	8	1	None	None		EDIT	
												_
										SAVE & AF	PPLY	RESET

System Status >	 Overview x	Smartlink 🗙	Wired Network ×			₩	Tab operation 🕶
Basic Network	0						
Advanced Network ~	General Ci	ollection Adv	/ance				
QoS	Cloud						
DMZ			Enabled				
Firewall			Name	Cloud			
Port Forwards			Working Mode	TCP Client	1		
Static NAT			Server Address	102 168 1 226-20000			
Smartlink				P.Port			
M2M Platform			Protocol	Pass-Through	-		
Network Monitor			Enable Heartheat		_		
Link Control							
Dynamic DNS	RACK TO OV	EDVIEW					DESET
SNMP Service	BACK TO OVI					 SAVE & APPET	KESET

## 5.2 Set serial port parameters, such as baud rate, data bit, and parity bit.

System S	Status	•	41	Overview ×	Smartlink 🗙	Wired Network 🛪							**	Tab operation
Basic Ne	twork	•												
Advance	d Network	~		Mode Confi	guration									
QoS				Enabled		Uplink Device			Downli	in <mark>k Devi</mark> ce				
DMZ				√		Cloud			UAF	RT_DEV		EDIT	DELE	TE
Firewa	all			ADD										
Port F	orwards													
Static	NAT			0	0									
Smarti	link			Enabled	Name	Working Mode	Target Addres	s	Status	Conns	Protocol			
M2M F	Platform			v	Cloud	TCP Client	192.168.1.236:2	0000	Disconnect	0	Pass-Through	FDIT	DELE	TE
Netwo	rk Monitor													
Link C	ontrol			V	UART_DEV	UART	COM1		Connected	1	Pass-Through	EDIT	DELE	TE
Dynan	nic DNS			ADD										
SNMP	Service													
VPN Con	figuration	>		Serial Confi	guration									
System M	lanagemen	nt >		Interf	ace	Speed	Data Bit	Stop Bit	Pari	ty	Flow Control		-	1
Logout				CON	n	115200	8	1	Non	ie	None		EDIT	
													_	

System Status >	Overview X Smartlink X Wired Network X		Mark Tab operation
Basic Network >			
Advanced Network 🗸	General Collection Advance		
QoS	СОМ1		
DMZ	Speed	9600	•
Firewall	Data Bit	8 .	
Port Forwards	Stop Bit	1 .	
Static NAT	Parity	Need	
Smartlink	raity	None	
M2M Platform	Flow Control	None	×
Network Monitor	Enable Frame	2	
Link Control	Frame Interval	60	
Dynamic DNS	п	nsec	
SNMP Service	Frame Length	1460	
VPN Configuration >	b	ytes	
System Management >	BACK TO OVERVIEW		SAVE & APPLY RESET
Logout			

# 5.3 All configuration finished , show as figure below.

System Status →	44	Overview 🗙	Smartlink ×	Wired Network a	:					De Tab	operation <del>-</del>
Basic Network >		General C	ollection Ac	lvance							
Advanced Network ~	1										
QoS		Mode Config	guration								
DMZ		Enabled		Uplink Device		Down	link Device				
Firewall		~		Cloud		UA	RT_DEV		EDIT	DELETE	
Port Forwards		ADD									
Static NAT											
Smartlink											
M2M Platform		Connection	Configuration								
Network Monitor		Enabled	Name	Working Mode	Target Address	Status	Conns	Protocol		_	
Link Control		~	Cloud	TCP Client	192.168.1.236:20000	Connected	1	Pass-Through	EDIT	DELETE	
Dynamic DNS		√	UART_DEV	UART	COM1	Connected	1	Pass-Through	EDIT	DELETE	
SNMP Service		ADD									
VPN Configuration $\rightarrow$											
System Management >		Serial Confu	guration								
Logout		Interf	ace	Speed	Data Bit Stop Bit	Parit	tv	Flow Control	1		
		CON	41	9600	8 1	Non	e	None		EDIT	
				nes Co							
									SAVE		ET
									SAVE &	KEN KEN	<b>H</b>

6.Install and run the VCOMM virtual serial port tool on the PC.

6.1 First, set the working Mode to TCP Server Mode(cause the router is set to TCP Client mode), and then set the following parameters:

irtual CUM	Remote Server IP and PORT	State	COM->Network(Byte)	NetWork->COM(Byte)	Last State	Not
	WORK MODE					
	Select VSPM work mode	port Server Device				
	VSPM run as Server, su	pport Client Device				
	O UDP broadcast	ОК				
					Standard Mode	 

Virtual COM R	Remote Server IP and PORT	State	COM->Network(Byte)	NetWork->COM(Byte)	Last State	Note
	How to Create C	modew_1.Captio ate virtual serial irtual serial by device sca Default virtual serial	X			
		ОК				

Virtual COM	Remote Server IP	and PORT	State	COM->Network(Byte)	NetWork->COM(Byte)	Last State		Note
		Message	VSPM Will Quit,I	× Restart VSPM for Apply.				
				确定				
¢								
						Standard Mo	ide	

6.2 Create a new virtual serial port , such as com6, and configure the server address and listening port of PC .



litual Seria	alVSPM run a	as Server, support Client Device Ver3.16			
Manager Config	Minimize VSPM	About Exit	-		
Virtual COM Loc	cal list IP and PO	Virtual Serial Info ×	itate		Note
		Select List IP: 192168.1.236 tcp server Client will connect this PORT: 20000 of PC side Map mode: Server Note: Note: Communication will stop.until apply complete			
<					
_			Stand	ard Mode	

### 6.3 Now you can see that the router is successfully connected to the VOMM virtual software.

🦚 Virtual	SerialVSPM run as Serv	- 🗆	×			
Manager Co	n fig Minimize VSPM About					
Virtual COM	Local list IP and PORT	State	COM->Network(Byte)	NetWork->COM(Byte)	Last State	Note
COM6	192.168.1.236:20000	Open,9600,N,8,1	168	198	192.168.1.1:18396 TCP/IP Client connected	

7. Start sending and receiving data testing between the serial port device and the virtual serial port tool on the PC.

7.1 View the com port created by the USB-232 converter on the PC (com4 for example); a new virtual com created by VCOMM tool shown as below(com6 for example).



7.2 The testing for sending and receiving data between the serial port device and the virtual serial port tool is as follows.

Security Web and the terminal termina	- 🗆 ×	Second Se	- 0	×
UDP Setup Setual TCP Client   TCP Server   UDP   Test Mode About   Abo	e/real com	UDP Setup Serial TCP Client   TCP Server   UDP   Test Model About to PC /v	irtual c	om
Serial port CON4 opened 123456122456122456122456122456122456122456122456122456122456122456122456122456122456122456122456122456122456122456122456122661226	COM4 V Baud 9600 V Data size	Serial port COME opened 1234661234661234651234561245605678000000000000000000000000000000000	Name COM6 Baud 9600 Data size	Y
send/recieve datas well	8 Parity none Tandshake	recieve /send datas well	8 Parity none Handshake OFF Mode	4
Modem Ines	Free	Modem lines OCD ORI ODSR OCTS [DTR [RTS]	Free	se pdate
Send         Image: Figure 1         Figure 2         Send         Image: Figure 2         Send	Hubgroup www.HWP-group.com Hercules SETUP etility Version 3.2.8	Send ABCDEF	HUUgr www.HW-gree Hercules SETU Version	OUP ap.com P stility 3.2.8

#### 7.3 Additional note:

You can also set the data tracking mode of the VCOMM tool. You will see the details of the data sending and receiving as follows.

<b>.</b>								
ager Config Minimize VSPM	About	Exit						
Scan and Append Device	T	State	COM->Network(Byte)	NetWork->COM(Byte)	Last State			No
New Virtual COM		Open,9600,N,8,1	168	198	192.168.1.1:18396 TCP/IP Clier	nt conne	cted	
Edit Virtual COM	į.							
Delete Virtual COM								
Rest Device	,							
Manager Device	[							
Check Connect	ľ							
Start Track COM Data	1							
Mark Note	C							

la Virtual	SerialVSPM run as Serve	r,support Client Devic	ce Ver3.16		- 0	×	SETUP utility by HW-gro	up.com	- 🗆 ×
Manager Co	nfig Minimize VSPM About B	Eat					UDP Setup Setial TCP Client   TCP Serv	ver   UDP   Test Mode	About
Virtual COM	Local list IP and PORT	State	COM->Network(Byte)	NetWork->COM(Byte)	Last State	Note	Received/Sent data		Serial
СОМБ	192 168 1.236 20000	Open,9600,N,8,1	1 288 240		192.168.1.1.18396 TCP/IP Clent connected		FFASCIEFABCIEFABCIEFABCIEFABCIEFABCIE ABCIEFABCIEFABCIEFABCIEFABCIEFACIE CIEFABCIEFABCIEFABCIEFABCIEFABCIEFABCIE FFABCIEFABCIEFABCIEFABCIEFABCIE bho666666888888888888866666666 6666666888888	VERAICEFARCEFARCEFARCEFARCEFARCEF ARCEFARCEFARCEFARCEFARCEFAR ECTEFARCEFARCEFARCEFARCEFAR ECTEFARCEFARCEFARCEFARCEFARCEFAR ECTEFARCEFARCEFARCEFARCEFARCEFARCE BERBEISSE BE	
							CD ORIODSR CTS	T DTR T RTS	Handshake
							Send		
							aaabbbb	HEX Send	HUgroup
						/	[	F HEX Send	www.HW-group.com
Track C	OM data				- /	×		□ HEXSend	Version 3.2.8
Virtual	COM Send					^	S Hercules SETUP utility by HW-gro	oun.com	- n x
时徽(9: 时徽(9: 时徽(9: 时徽(9: 时徽(9: 时徽(9:	47:35):36363636363 47:34):36363636363 45:42):363663636363 45:41):363663636363 45:40):363663636363 45:39):3636363636363	36363636363838 36363636363838 3636363636	1383838283838383 138383838383838383 138383838383	33838 33838 33838 33838 33838 33838 33838 33838 33838	$\langle \rangle$	¢	UDP Setup Seniel TCP Clerry TCP Sen Received/Sent data 13466123466123466123466123466123 6612346612346612346612346612346613466134	rer UDP Test Mode 34561234561234 * 36123456123456 12345612345612 12345612345612 DEFABCDEFABCD EFABCDEFABCDEFABCD CDEFABCDEFABCD CDEFABCDEFABCD 6666668988988	About Serial Name COM6 ¥ Baud 9600 ¥ Data size 8 ¥
Virtual	COM Receive		/			_	8888666666666888888888888886666666	16688888888888	none
时戳(9:	7:32):6161616262	26262				^	bbbb6666666668888888888888886666666	566888888888888	Handshake
时戳(9:	7:31):6161616262	26262					Modem lines		OFF -
时戳(9:	45:47):6161616262	26262					CD ORI ODSR OCTS	T DTR T RTS	Free
时戳(9:	45:46):6161616262	26262				100	Send		
时戳(9:	45:34):6161616262	26262					666666668888888888888888888888888888888	T HEX Send	HUgroup
时戳(9:	15:32):6161616262	26262						HEX Send	www.HW-group.com
						×		HEX Send	Hercules SETUP stility