

Potomac Wireless Video/Data Transmission System User Manual



Contents

1. Product description	1
2. Network introduction	1
3. Hardware interface description	4
4. Software use	5
4.1 Web instructions	5
5. Appendix	11
5.1 Wire picture	. 11
5.2 Appendix 2: Open real-time information to return information 12	
5.3 Appendix 3.Bandwidth test screenshot 1	3

1.Product description

Potomac Two-way Wireless Transmission System is a wireless image transmission transceiver specially developed by our company for automobiles and robots. Aiming at the complex ground environment, it adopts leading multi-carrier modulation technology, has strong anti-interference and penetration ability, and realizes the transmission of high-definition, stable, low-latency real-time video image signals on the move.

Potomac Two-way Wireless Transmission System is suitable for complex ground environments and can be placed on cars, firefighting robots, public security robots and other facilities.

Currently, three types of image transmission equipment are introduced according to the power amplifier transmission power. They are 0.3W video transmission equipment, 2W video transmission equipment and 10W video transmission equipment.

2.Network introduction

There are currently two networking modes: one-to-one and one-to-many. One-toone network mode is generally used to connect the main device to the computer, and the slave device to the camera. After the system is connected, the video playback software can be used on the computer to watch the picture taken by the camera.

One-to-many networking mode uses the master device to connect to the computer, and the slave device to connect to the camera. After the system is connected, the computer can use the video playback software to watch all the pictures taken by the slave device connected to the camera.

At present, in the one-to-many networking mode, a maximum of 1 master device can be connected to 16 slave devices.

2.1 One-to-one system diagram



One-to-one System Diagram



2.2 Schematic diagram of one-to-many system

Schematic diagram of one-to-many system

3.Hardware interface description



RF power: 2W



RF power: 10W

4.Software use

4.1 Web instructions

1		
Login		_
	lame	T
A GOOT		
O Pacew	ord	
	Login	
Vers	ion Information:V2.2-20210106	

Web login interface

Default username and password: admin

Wireless paran	neters		Мо	de parameter			
Frequency band	800M	Save	Master-Slave mode	Access Node	Save		
Frequency point(8060~8259)	8160	Save	TDD mode	1D4U	Save	Signal strength:	
Bandwidth	20MHZ	Save	Other parameter		Other parameter		
Frequency Hopping	Open	Save	Key Setting	FFFEEEE	Save		
Master power(-40~+25)	25	Save	IP Setting	192.168.1.20	Save		

Wireless parameter configuration interface

× Parameter configuration Bandwidth	Network Speed Test Server Networ Client parameter setting	k Speed Test Client	
test	Server IP	192.168.1.10	
Serial port	Transmission bandwidth(1-40Mbps)	20	
configuration	Test time	10	
Help	Server output		
	Open client Clean data		

Network speed test client interface

× Parameter configuration	Menu]					
Bandwidth test	UART1	Baud rate	Data bit 8	Stop bit	Check digit	Virtual serial port	Debu
Serial port configuration	UART2	Baud rate	Data bit	Stop bit	Check digit	Virtual serial port	
Help		115200	8	1	Ν		
	Network f	low control			Save		
1							-

Serial port configuration interface

Parameter nan	Parameter name		Illustrate
Me	nu		Click to open the main menu
Paran config Bandy test Serial	× neter guration width port		The content classification of the menu bar, select the corresponding option according to the situation
config Help	guration		
Wireless para	ameters		Descriptions
Equ	ipment intern	al pa	rameters
Frequency band	800M	Save	800M、1.4G、2.4G。 Changing the frequency band requires changing the corresponding antenna
Frequency point(8060~8259)	8160	Save	The specific center frequency under the working frequency band
Bandwidth	20MHZ	Save	The working bandwidth of the wireless device, the default is 20MHZ
Frequency Hopping	Open	Save	Frequency hopping function
Master power(-40~+25)	25	Save	The transmission power of the Central node, the greater the power, the longer the transmission distance

Operating instructions: some parameters only support Central node settings

Master-Slave mode	Access Node	Save	Equipment working status
			When set as the master node
			the device status indicator is
			always on and when set as the
			always on, and when set as the
			Indicator flashes
			Only one Central node can
			exist in a group of networks
TDD mode	1D4U	Save	Set TDD time slot allocation
			Upstream refers to the Access
			node to the Central node, and
			downstream refers to the
			Central node to the Access
			node
Key Setting	FFFFEEEE	Save	The Central node and the
			Access node can always be
			connected with the paired
			key
IP Setting	192.168.1.20	Save	The IP address of the device,
			the device supports pure
			transparent transmission
			Enter the at command in the
AT Debug Interface			input box and press Enter to
AT Debug Interface choose:			send the return information is
			below
			show
			After the networking is
			successful if it is the Central
			node it will display the ID
	inen message		addross SNP distance and
	penmessage		address, SNR, distance and
			Connected sub-device; if it is a
			Access node, it will display the
			SINK, distance and other
			Information from the Central
			node.
			Real-time information is
			displayed on the extended
			information interface. See

	appendix 2 for the content of
	the returned information.
	Stop real-time information
Close message	output
	Clear the real-time information
Clean	and the data returned by the
	at command
	Click to open the real-
Signal strength:	time information and
	display it and change the
	display it, and change the
	SNR value.
	Red—vveak signal
	Yellow—Average signal
	Green—Good signal
	Below is the description of the
Bandwidth	internal content of the network
tost	bandwidth test interface,
lesi	using iperf as a testing tool
	Internally
Network bandw	lath test tool
ipen server p	Turn on the internal conver of
Open server	the device
Close server	Shut down the internal
	server of the device
Clean data	Clear server output data
Network bandw	ridth test tool
iperf client p	arameters
Server ID 192 168 1 10	Device ip address
Transmission bandwidth(1, 40Mbns)	The amount of bandwidth
	that needs to be
	transmitted
	The duration of the client test
Test time 10	the default is 10 seconds
	After the client's transmission is
Server output	over, the data received by the
	server is output
	Open the internal client of the
Open server	device
	401100

	Close the internal client of
Close server	the device
Clean data	Clear client output data
Serial Port Cor	nfiguration
Baud rate	Set the baud rate
115200 🔻	
Data bit	Set the serial port data bit
8	
Stop bit	Set the serial port stop bit
	Set the serial port check bit
Check digit	
N V	
Virtual serial port	After the service is checked,
	you can use the virtual serial port of the network port to
	receive serial data through the network port.
Dobug LIART	After checking, the data
Debug OAKT	the debugging serial port. You
	can read and set the module parameters.
Network flow control	According to the strength of
	automatically limited to realize
	the priority of data transmission.
Save	save Changes

5. Appendix

5.1 Wire picture



Device power cord



Network port connection line

5.2Appendix 2 : Open real-time information to return information

			IVIOC	le parameter		
Frequency band	800M	Save	Master-Slave mode	Central Node	Save	
Frequency point(8060~8259)	8160	Save	TDD mode	1D4U	Save	Signal strength: 🔵 Gr
Bandwidth	20MHZ	Save	Othe	er parameter		
Frequency Hopping	Open	Save	Key Setting	FFFFEEE	Save	
Master power(-40~+25)	25	Save	IP Setting	192.168.1.20	Save	
Open message Close message Clean						
2021-10-27 10:33:33] IP:192. 108. 1. 10Port:Slave, RSSI- 2021-10-27 10:33:33] IP:192. 108. 1. 10Port:Master, RSSI- 2021-10-27 10:33:32] IP:192. 108. 1. 10Port:Slave, RSSI- 2021-10-27 10:33:32] IP:192. 108. 1. 10Port:Master, RSSI- 2021-10-27 10:33:31] IP:192. 108. 1. 10Port:Master, RSSI- 2021-10-27 10:33:30] IP:192. 108. 1. 10Port:Master, RSSI- 2021-10-27 10:33:30] IP:192. 108. 1. 10Port:Slave, RSSI-	57dBm, RSRP:-87dBm, Transmis 95dBm, RSRP:-185dBm, Transmis 57dBm, RSRP:-86dBm, Transmis 95dBm, RSRP:-86dBm, Transmi 95dBm, RSRP:-86dBm, Transmi 95dBm, RSRP:-86dBm, Transmi 57dBm, RSRP:-86dBm, Transmi	sion power:dBm, S ission power:25dBm sion power:dBm, S ission power:25dBm sion power:dBm, S ission power:25dBm sion power:25dBm	NR:+22[+21 +25]dB, Distance:0m, s.NR:-8[-11^-7]dB, Distance:0m, NR:+22[+21^+25]dB, Distance:0m, s.SNR:-8[-11^-7]dB, Distance:0m, NR:+23[+22^+25]dB, Distance:0m, NR:+23[+21^-25]dB, Distance:0m, NR:+23[+21^-7]dB, Distance:0m, SNR:-8[-11^-7]dB, Distance:0m,	Bit error rate per seco Bit error rate per seco	ond:0%, Total bi ond:0%, Total bi	t error rate:0% t error rate:0% t error rate:0% t error rate:0% t error rate:0% t error rate:0% it error rate:0%

Central node reports real-time information

Menu

Wireless par	ameters		Mod	le parameter		
Frequency band	800M	Save	Master-Slave mode	Access Node	Save	
Frequency point(8060~8259)	8160	Save	TDD mode	1D4U	Save	Signal strength: OGreer
Bandwidth	20MHZ	Save	Othe	er parameter		
Frequency Hopping	Open	Save	Key Setting	FFFEEEE	Save	
Master power(-40~+25)	25	Save	IP Setting	192.168.1.20	Save	
2021-10-26 10:18:591Port:Master.RSSI:-94dBm.RSRP:- 2021-10-26 10:18:5821Port:Master.RSSI:-94dBm.RSRP:-7 2021-10-26 10:18:571Port:Slave.RSSI:-48dBm.RSRP:-7 2021-10-26 10:18:571Port:Master.RSSI:-94dBm.RSRP:-7 2021-10-26 10:18:561Port:Master.RSSI:-94dBm.RSRP:-7 2021-10-26 10:18:561Port:Master.RSSI:-94dBm.RSRP:-7 2021-10-26 10:18:561Port:Master.RSSI:-94dBm.RSRP:-7 2021-10-26 10:18:551Port:Master.RSSI:-94dBm.RSRP:-7 2021-10-26 10:18:551Port:Master.RSSI:-94dBm.RSRP:-7 2021-10-26 10:18:551Port:Master.RSSI:-94dBm.RSRP:-7 2021-10-26 10:18:551Port:Master.RSSI:-94dBm.RSRP:-7 2021-10-26 10:18:541Port:Master.RSSI:-94dBm.RSRP:-7 2021-10-26 10:18:541Port:Master.RSBP:-7 2021-10-26 10:18:541Port:Master.RSBP:-7 2021-10-26 10:18:541Port:Master.RSBP:-7 2021-10-26 10:18:541Port:Master.RSBP:-7 2021-10-26 10:18:541Port:Master.RSBP:-7 2021-10-26 10:18:541Port:Master.RSBP:-7 2021-10-26 10:18:541Port:Master.RSBP:-7 2021-10-26	134dBm, Transmission power: 3dBm, Transmission power:dB 134dBm, Transmission power: 3dBm, Transmission power: 3dBm, Transmission power: 3dBm, Transmission power: 134dBm, Transmission power: 134dBm, Transmission power:	ddm, SNR:-5[-11 ^{-6]} , im, SNR:-525[-24 ² +28] ddm, SNR:-7[-10 ⁻⁶], im, SNR:-7[-10 ^{-6]} , im, SNR:-7[-10 ^{-6]} , im, SNR:-7[-10 ^{-6]} , im, SNR:-7[-10 ^{-6]} , idBm, SNR:-7[-10 ^{-6]} , idBm, SNR:-7[-10 ^{-6]} , idBm, SNR:-7[-0 ⁵ -5], idBm, SNR:-7[-0 ⁵ -5]}, idBm, SNR:-7[-0 ⁵ -5], idBm, S	dB. Distance:Om, Bit error rate dB. Distance:Om, Bit error rate B. Distance:Om, Bit error rate B. Distance:Om, Bit error rate B. Distance:Om, Bit error rate B. Distance:Om, Bit error rate D. Distance:Om, Bit error rate	per second:0%, Total bit er per second:0%, Total bit er	ror rate:0 ror rate:0 ror rate:0 ror rate:0 ror rate:0 ror rate:0 ror rate:0 ror rate:0 ror rate:0 ror rate:0 or rate:0	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
2021 10 20 10.10.30 10 11.31 AVE, K331, H900B, K3KI, K	CODE T	The other and th	ab, Distance.om, Bit error rate	per second.on, iotar bit er	IOI TALE.U	~

5.3 Appendix 3.Bandwidth test screenshot

×	Menu	是否将当前网页翻译成中文	网页翻译	关闭 🗸	*
Parameter	Network Speed Test Server Network Speed Test Client				
configuration	Close server Clean data				
Bandwidth test	 7.00-8.00 sec 983 KEytes 8.05 Mbits/sec 1.349 ms 986/1681 (59%) 8.00-7.00 sec 888 KEytes 7.27 Mbits/sec 1.895 ms 1299/1927 (67%) 5.00-6.00 sec 887 KEytes 7.28 Mbits/sec 1.949 ms 702/1329 (53%) 4.00-5.00 sec 900 KEytes 7.87 Mbits/sec 1.403 ms 388/1087 (30%) 				1
Serial port configuration	 1:31 3.00-4.00 sec 905.057485 8:00 MD014/sec 2.000 AB 1820/2010 (720) 1:31 2.00-3.00 sec 1005 KByrtes 8:21 MD14/sec 1.365 as 649/1403 (498) 1:31 1.00-2.00 sec 987 KByrtes 8:00 MD14/sec 1.665 as 469/1187 (418) 1:31 0.00-1.00 sec 930 KByrtes 7:02 MD14/sec 1.685 as 406/18 (000 1:31 0.00-1.00 sec 930 KByrtes 7:02 MD14/sec 1.685 as 406/18 (000 1:31 0.00-10 sec 930 KByrtes 7:02 MD14/sec 1.685 as 406/18 (000 1:31 0.00-10 sec 930 KByrtes 7:02 MD14/sec 1.685 as 406/18 (000 1:31 0.00-10 0.00 sec 930 KByrtes 7:02 MD14/sec 1.685 as 406/18 (000 1:31 0.00-10 0.00 sec 930 KByrtes 7:02 MD14/sec 1.635 as 406/18 (000 1:31 0.00-10 100 100 100 kB/res 1				1
Help	Accepted connection from 192.168.1.10, port 36246				
	Server open				
		激活 Wi ^{转到"设置"}	ndows 以激活 Windov	NS.	

Bandwidth test server side screenshot

Mugin Limited

×	Menu				是否将当前网页翻译成中亚	网页翻译	关闭 ~
neter	Network Speed Test Server Netwo	k Speed Test Client					
guration	Client parameter setting						
width	Server IP	192.168.1.10					
	Transmission bandwidth(1-40Mbps)	20					
rt	Test time	10	_				
tion	Server output	۲					
	Liose Clerr Liean data ipart Dana. Server output: Accepted connection from 192.168.1.20, port 559 [13] local 192.168.1.10 port 520 connected to 10] Interval Server output: Accepted connection from 192.168.1.20, port 559 [13] local 192.168.1.10 port 520 connected to 11] Interval Server output: Accepted connection from 192.168.1.20, port 559 [13] local 192.168.1.20 port 520 connected to 11] Interval Server output: Accepted connection from 192.168.1.20, port 559 [13] local 0.20 one Server output: 2.38 Wirther 2.00 Whit [13] 5.00-6.00 sec 2.38 Wirther 13.9 Whit [13] 0.00-10.00 sec 2.38 Wirther 2.00 Whit [13] 0.00-10.00 sec 2.38 Wirther 2.00 Whit [13] 7.00-8.00 sec 2.38 Wirther 2.00 Whit [13] 7.00-8.00 sec 2.38 Wirther 2.00 Whit [13] 7.00-8.00 sec 2.38 Wirther 2.00 Whit [13] 1.00-7.00 sec 2.38 Wirther 2.00 Whit	D1 192.168.1.20 port 45951. June 0.678 pm 0/173 00 June 0.678 pm 0/173 00 June 0.678 pm 0/173 00 June 0.638 pm 0/173 00 June 0.658 pm 0/173 00 June 0.788 pm 0/173 00 June 0.787 pm 0/173 00 June 0.788 pm 0/173 00 June 0.787 pm 0/173 00 June 1726 June 1726 June 1727 June 1727 June 1727 June 1727 June 1727 June 1727	Datagrams [13] 0.00-10.00 sec 23.8 MBytes D sender Datagrams	: 19.9 Mbits/sec 0.549 ms 0/1720	4 (06) receiver 激活 转时设	Vindows 置い激活 Windo	DWS.

Bandwidth test client screenshot