

Control Software of VD-Pro

User Manual

V1.0

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FOXTECH

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Compatible Browser

The wireless video transmission system control software provides a WEB configuration management interface. The WEB interface is compatible with the following browsers:

- Microsoft Edge
- Microsoft IE (Version 11)
- Google Chrome
- FireFox
- 360
- QQ

An example of the WEB interface :

Menu

Wireless parameters			Mode parameter		
Frequency band	1.4G	Save	Master-Slave mode	Central Node	Save
Frequency point(14279~14478)	14379	Save	TDD mode	1D4U	Save
Bandwidth	20MHZ	Save	Other parameter		
Frequency Hopping	Open	Save	Key Setting	FFFFFFEE	Save
Master power(-25~+40)	40	Save	IP Setting	192.168.1.30	Save

AT Debug Interface choose:

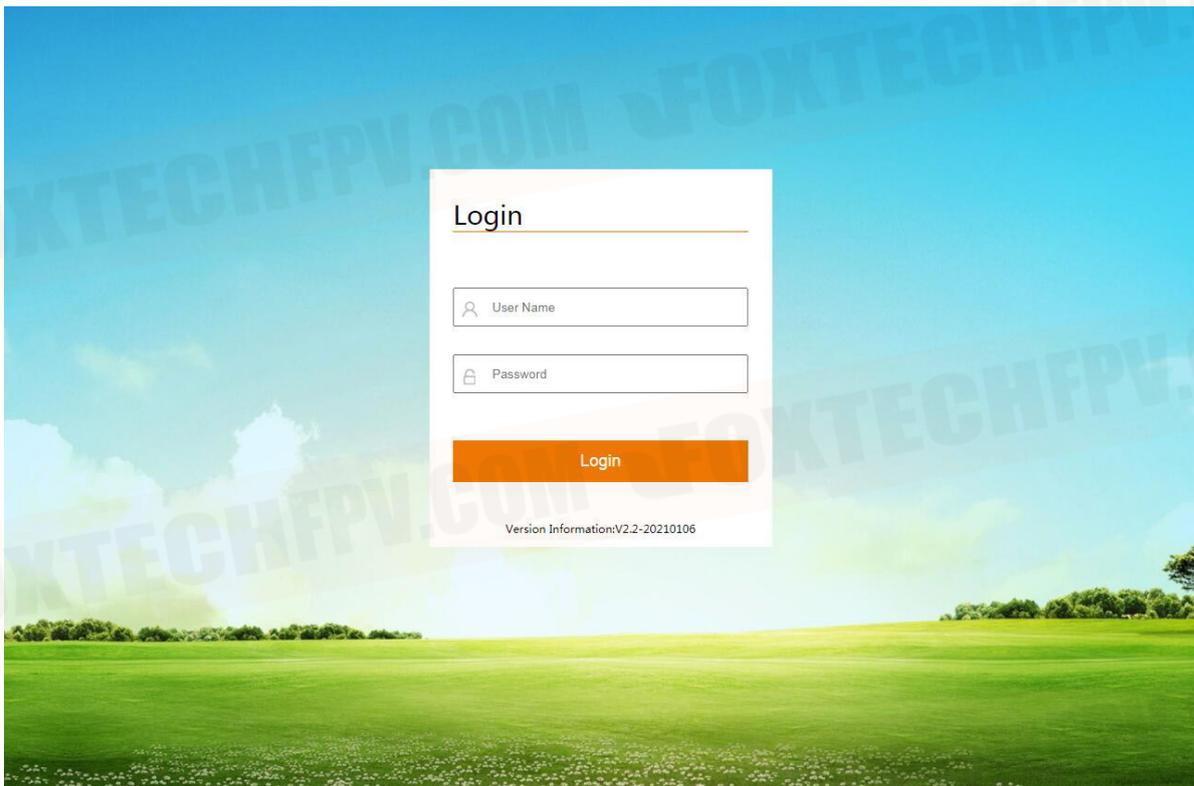
Device connected successful

Login to WEB Interface

The WEB interface of the wireless video transmission system control software is protected by the user name and password. This chapter introduces the pages and attributes of the protection.

Login Interface of WEB

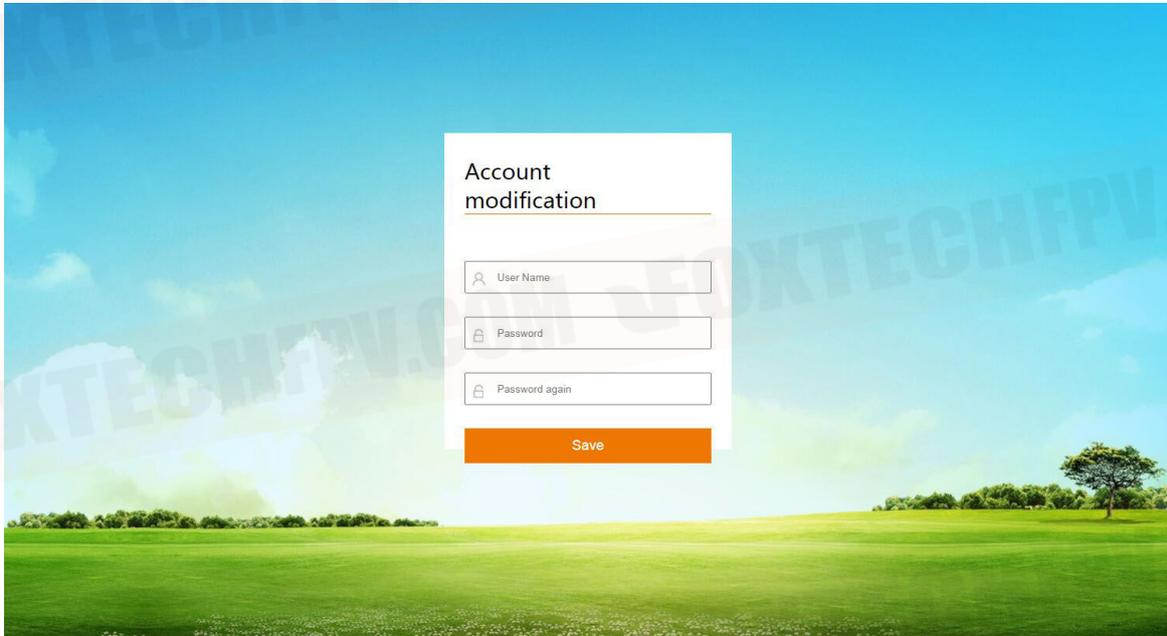
The WEB interface of the wireless video transmission system control software is protected by the user name and password. Login page of WEB interface as shown below:



- Need to enter a user name. The default user name is admin.
- A password is required. The default password is admin. .
- Click to login, if the user name and password are entered correctly, you can enter the WEB interface.

User Name and Password Modification

After successfully logging in to the WEB interface, the user can choose to modify the user name and password. The modification function is in the "System Configuration" tab, and the password is protected by a black dot. The content involved is shown in the figure below:



The screenshot displays a web form titled "Account modification" overlaid on a background image of a green field under a blue sky. The form contains the following elements:

- A title "Account modification" with a horizontal line underneath.
- A text input field labeled "User Name" with a person icon on the left.
- A password input field labeled "Password" with a lock icon on the left and a black dot mask.
- A second password input field labeled "Password again" with a lock icon on the left and a black dot mask.
- An orange "Save" button at the bottom of the form.

Configuration Items of the Control Software

The configuration items of the wireless video transmission video system control software on the WEB interface are:

- Pairing key
- Wireless module address
- Wireless module working mode
- Central node launch node
- Wireless module frequency band
- Wireless module transmit power

The configuration items on the WEB interface are shown in the red box in the following figure:

The screenshot shows a web interface with a sidebar on the left containing 'Parameter configuration', 'Bandwidth test', 'Serial port configuration', and 'Help'. The main content area is titled 'Menu' and contains several configuration sections:

- Wireless parameters:**

Frequency band	1.4G	Save
Frequency point(14279~14478)	14379	Save
Bandwidth	20MHZ	Save
Frequency Hopping	Open	Save
Master power(-31~-+34)	34	Save
- Mode parameter:**

Master-Slave mode	Access Node	Save
TDD mode	1D4U	Save
- Other parameter:**

Key Setting	FFFFFFE	Save
IP Setting	192.168.1.20	Save

Below these tables, there is an 'AT Debug Interface' section with a 'choose:' dropdown, an input field, and buttons for 'Open message', 'Close message', and 'Clean'. A status message at the bottom reads 'Device connected successful'.

Password

The pairing key is a text input box used to set the password used for the control software networking. The transmitting node and the central node with the same key can establish a wireless link. The configuration that the pairing key can receive is hexadecimal data, up to 64, and it must be an even number.

Wireless Module IP Address

The wireless module address is a text input box used to set the IP address of the wireless video transmission system control software. The IP address uses dotted decimal mode.

Wireless Module Working Mode

The working mode of the wireless module is two radio buttons, which are used to set whether the control software is the central node or the transmitting node. The networking mode of the wireless video transmission system control software is a star-type networking mode, which requires at least one central node and no more than 16 transmitting nodes.

Wireless Module Frequency Band

Wireless module frequency band used to set the working frequency band of the control software. The central node and the transmitting node have different configurations for the frequency band.

Transmit Power of the Wireless Module

The transmit power is a drop-down list used to select the transmit power of the wireless video transmission system control software.

Uplink and Downlink Allocation

The uplink and downlink allocation is a single selection box used to select the ratio of the uplink and downlink of the wireless channel. When the wireless link is established, different channels are used for uplink and downlink data transmission. The ratio of the channels used in the uplink and downlink is determined by this configuration item. This configuration item of uplink and downlink allocation is only available on the central node.

The description of each option is as follows:

- 1Down4Up: 20% of the channels are used for downlink transmission, and 80% of the channels are used for uplink transmission.
- 2Down3Up: 40% of the channel is used for downlink transmission, and 60% of the channel is used for uplink transmission.
- 3Down2Up: 60% of the channel is used for downlink transmission, and 40% of the channel is used for uplink transmission.
- 4Down1Up: 80% of the channels are used for downlink transmission, and 20% of the channels are used for uplink transmission.

Transmission Bandwidth

The transmission bandwidth is a drop-down list for selecting the frequency width of the wireless video transmission system control software when it is working. The available frequency widths are 1.4MHz, 3MHz, 5MHz, 10MHz, 20MHz. The configuration item of transmission bandwidth is only available on the central node.

Submit Configuration

After the configuration is modified, click the "Submit Configuration" button to make the configuration effective.

When you click the "Submit Configuration" button, the above configuration items will be checked, to see whether the input is empty and whether the input is legal.

When the configuration is modified, the wireless video transmission system control software will restart. After clicking the "Submit Configuration" button, the WEB interface will pop up a prompt box "Submitting the configuration will cause the system to restart. Please confirm whether to submit." Please make sure that the module restart will not affect the data currently being transferred when submitting the configuration.



Please confirm when submitting the configuration, the wireless module restart will not affect the data being transmitted! !

After clicking the "Submit Configuration" button, the wireless video transmission system control software restarts. After the module is working stably, the web page needs to be refreshed.

VD Pro can be connected with ground station through Ethernet port, IP address is 192.168.1.10, Port number: serial port 1-8234, serial port 2-8235.



The transmitting node information is displayed on the WEB interface of the central node.

If it is a central node, a list is designed on the WEB interface, which can display the information of all the currently connected transmitting nodes. An example is as follows:

Menu

Wireless parameters

Frequency band	1.4G	Save
Frequency point(14279-14478)	14379	Save
Bandwidth	20MHZ	Save
Frequency Hopping	Open	Save
Master power(-31→34)	34	Save

Mode parameter

Master-Slave mode	Central Node	Save
TDD mode	1D4U	Save

Signal strength: ● Green

Other parameter

Key Setting	FFFFFFEE	Save
IP Setting	192.168.1.10	Save

AT Debug Interface choose:

Open message Close message Clean

```
[2021-03-16 16:24:31]IP:192.168.1.20Port:Slave, RSSI:-77dBm, RSRP:-107dBm, Transmission power:34dBm, SNR:+13[+12~+16]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:31]IP:192.168.1.20Port:Master, RSSI:-82dBm, RSRP:-112dBm, Transmission power:34dBm, SNR:+11[+9~+13]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:30]IP:192.168.1.20Port:Slave, RSSI:-78dBm, RSRP:-108dBm, Transmission power:34dBm, SNR:+13[+11~+16]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:30]IP:192.168.1.20Port:Master, RSSI:-82dBm, RSRP:-111dBm, Transmission power:34dBm, SNR:+11[+8~+14]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:29]IP:192.168.1.20Port:Slave, RSSI:-78dBm, RSRP:-107dBm, Transmission power:34dBm, SNR:+14[+13~+16]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:29]IP:192.168.1.20Port:Master, RSSI:-84dBm, RSRP:-114dBm, Transmission power:34dBm, SNR:+9[+7~+11]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:28]IP:192.168.1.20Port:Slave, RSSI:-78dBm, RSRP:-107dBm, Transmission power:34dBm, SNR:+13[+12~+16]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:28]IP:192.168.1.20Port:Master, RSSI:-85dBm, RSRP:-115dBm, Transmission power:34dBm, SNR:+8[+6~+10]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:27]IP:192.168.1.20Port:Slave, RSSI:-77dBm, RSRP:-107dBm, Transmission power:34dBm, SNR:+13[+12~+15]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:27]IP:192.168.1.20Port:Master, RSSI:-84dBm, RSRP:-114dBm, Transmission power:34dBm, SNR:+9[+8~+12]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
```

The displayed content includes:

- Transmitting node IP address.
- Master/slave antenna logo.
- RSSI value of the wireless link.
- The RSRP value of the wireless link.
- The RSRQ value of the wireless link.
- The SNR value of the wireless link.
- The distance DIST from the central node to the transmitting node.
- The MAX_SNR value of the wireless link.
- Signal strength based on RSRP values.

Transmitting Node IP Address

The IP address of the transmitting node is used as the identifier of the transmitting node.

Master/Slave Identification

The identification of the master antenna and the slave antenna.

RSSI Value of Wireless Link

RSSI (Received Signal Strength Indication), the signal strength indicator of the wireless link.

RSRP Value of Wireless Link

RSRP (Reference Signal Receiving Power) is a key parameter of wireless signal strength.

RSRQ Value of Wireless Link

RSRQ (Reference Signal Receiving Quality) radio link signal reception quality index.

Value of Wireless Link

SNR (Signal – Noise Ratio) an indicator of data transmission on wireless links.

DIST from the Central Node to the Transmitting Node

The distance between the central node and the transmitting node, unit is meter. DIST is an estimated value of the distance between two points and cannot be used for accurate distance measurement.



DIST is an estimated value of the distance between the transmitting node and the center node, and cannot be used as an accurate distance measurement

MAX_SNR Value of Wireless Link

The maximum value of SNR in 10 seconds.

MIN_SNR Value of Wireless Link

The minimum value of SNR in 10 seconds.

The Signal Strength of the Wireless Link

According to the SNR value, the quality of the wireless signal is represented by a graphical method. Use methods commonly used in the industry to intuitively reflect wireless signal quality.

Transmitting Node Information Update

The information of the transmitting node is updated every 2 seconds.

The wireless signal information of the transmitting node displayed on the WEB interface of the transmitting node.

If it is a transmitting node, a two-line list is designed on the WEB interface, which can display the information of the wireless signal of the transmitting node. The example is as follows:

Menu

Wireless parameters

Frequency band	1.4G	Save
Frequency point(14279~14478)	14379	Save
Bandwidth	20MHZ	Save
Frequency Hopping	Open	Save
Master power(-31~+34)	34	Save

Mode parameter

Master-Slave mode	Central Node	Save
TDD mode	1D4U	Save

Signal strength: ● Green

Other parameter

Key Setting	FFFFFFEE	Save
IP Setting	192.168.1.10	Save

AT Debug Interface choose:

```
[2021-03-16 16:24:31] IP:192.168.1.20Port:Slave, RSSI:-77dBm, RSRP:-107dBm, Transmission power:34dBm, SNR:+13[+12~+16]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:31] IP:192.168.1.20Port:Master, RSSI:-82dBm, RSRP:-112dBm, Transmission power:34dBm, SNR:+11[+8~+13]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:30] IP:192.168.1.20Port:Slave, RSSI:-78dBm, RSRP:-108dBm, Transmission power:34dBm, SNR:+13[+11~+16]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:30] IP:192.168.1.20Port:Master, RSSI:-82dBm, RSRP:-111dBm, Transmission power:34dBm, SNR:+11[+8~+14]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:29] IP:192.168.1.20Port:Slave, RSSI:-78dBm, RSRP:-107dBm, Transmission power:34dBm, SNR:+14[+13~+16]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:29] IP:192.168.1.20Port:Master, RSSI:-84dBm, RSRP:-114dBm, Transmission power:34dBm, SNR:+9[+7~+11]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:28] IP:192.168.1.20Port:Slave, RSSI:-78dBm, RSRP:-107dBm, Transmission power:34dBm, SNR:+13[+12~+16]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:28] IP:192.168.1.20Port:Master, RSSI:-85dBm, RSRP:-115dBm, Transmission power:34dBm, SNR:+8[+6~+10]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:27] IP:192.168.1.20Port:Slave, RSSI:-77dBm, RSRP:-107dBm, Transmission power:34dBm, SNR:+13[+12~+15]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
[2021-03-16 16:24:27] IP:192.168.1.20Port:Master, RSSI:-84dBm, RSRP:-114dBm, Transmission power:34dBm, SNR:+9[+8~+12]dB, Distance:30m, Bit error rate per second:0%, Total bit error rate:0%
```

The displayed content includes:

- Master/Slave antenna logo
- The EARFCN value of the wireless link
- RSSI value of the wireless link.
- The RSRP value of the wireless link.
- RSRQ value of the wireless link.
- The SNR value of the wireless link.
- The distance DIST from the central node to the transmitting node.
- Wireless transmit power.
- The second error ratio SER of the wireless link.
- The MAX_SNR value of the wireless link.
- The MIN_SNR value of the wireless link.
- Signal strength calculated based on RSRP value.

Master/Slave Identification

The identification of the main antenna and the secondary antenna.

EARFCN

EARFCN E-UTRA Absolute Radio Frequency Channel Number , The frequency index of the wireless link.

RSSI Value of Wireless Link

RSSI Received Signal Strength Indication the signal strength indicator of the wireless link.

RSRP Value of Wireless Link

RSRP Reference Signal Receiving Power, is a key parameter of wireless signal strength.

RSRQ Value of Wireless Link

RSRQ (Reference Signal Receiving Quality) stands for LTE reference signal reception quality, a radio link signal reception quality index.

SNR Value of Wireless Link

SNR Signal – Noise Ratio , data transmission indicator of wireless links.

The Distance DIST from the Central Node to the Transmitting Node

The distance between the central node of DIST and the transmitting node, unit: meter. DIST is an estimated value of the distance between two points and cannot be used for accurate distance measurement.



DIST is an estimated value of the distance between the transmitting node and the center node, and cannot be used as an accurate distance measurement.

Transmit Power of Wireless Link

TX POWER: The transmit power of the wireless link, the unit is db.

SER Second Error Ratio of Wireless Link

The estimated value of the error rate in the last 1 second, the unit is a percentage.

MAX_SNR Value of Wireless Link

The maximum value of SNR in 10 seconds.

MIN_SNR Value of Wireless Link

The minimum value of SNR in 10 seconds.

The Signal Strength of the Wireless Link

According to the SNR value, the quality of the wireless signal is represented by a graphical method. Use methods commonly used in the industry to intuitively reflect wireless signal quality.

Transmitting Node Information Update

The information of the transmitting node is updated every 2 seconds.

This content is subject to change.

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