

MINIWARE

MDP-M01 Smart Digital Monitor

User Manual V3.3



This user manual is based on MDP-M01 DFU V3.64D, APP V1.31.



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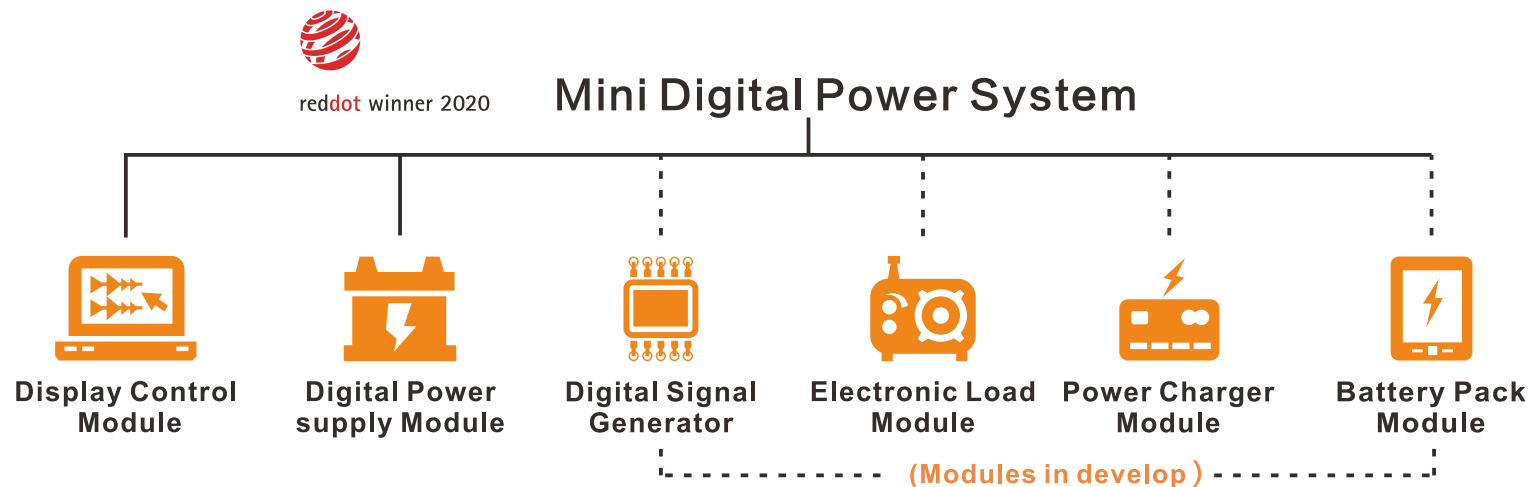
01/ Product Description

1.1 Product Introduction

MDP (Mini Digital Power System) is a system of programmable linear DC power supply based on modular design, capable of connecting up to 6 different modules for use as needed. For its novel, beautiful and trendy design, MDP won a **Red Dot in the Red Dot Award: Product Design 2020**.

Current Functional Modules: Smart Display Control Module, Digital Power Supply Module (2 models);

Modules in Develop: DC Electronic Load Module (coming soon), Digital Signal Generator Module, Power Charger Module, Battery Pack Module.



MDP-M01 is a display control module equipped with a 2.8-inch TFT display screen, the screen can be turned 90 degrees, which is convenient for users to view data and waveform. MDP-M01 can realize online display and control with MDP-P905, MDP-P906 mini digital power supply modules and other modules of MDP system through 2.4G wireless communication, and can control up to 6 sub-modules at the same time.

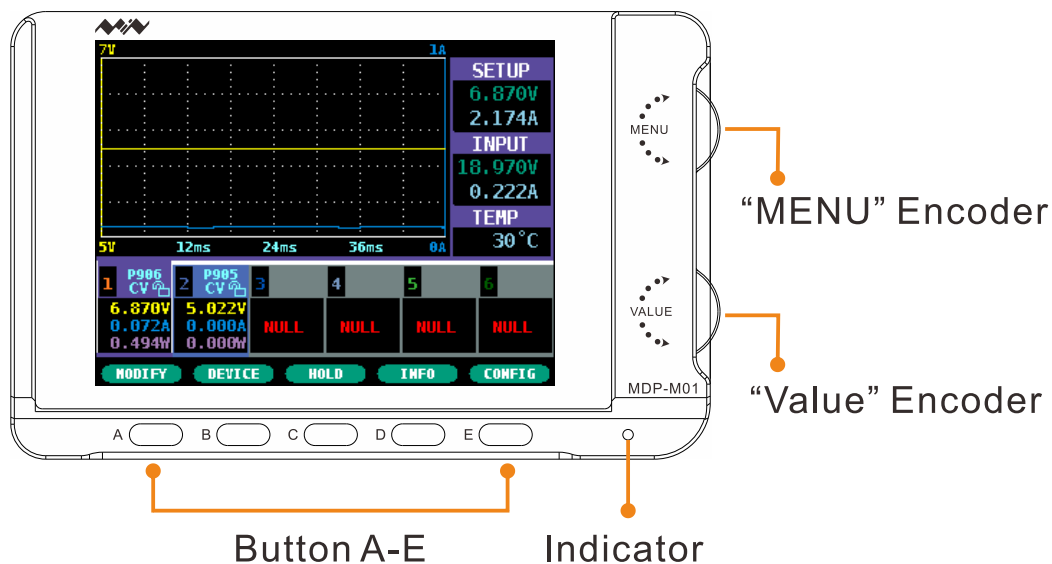
1.2 Performance Parameters



Screen Size	2.8" TFT
Screen Resolution	240*320
Power Input	Micro USB power input, or taking power from sub-module via dedicated power cable
Size	107*66*13.6(mm)
Weight	133g
Other Functions	Can control up to 6 sub-modules; Upgrade firmware through Micro USB

02/ Button Functions

2.1 Button Instructions



Encoders:

“MENU” Encoder: Move menu and cursor
(select item to be edited)

“VALUE” Encoder: Adjust numeric value

Shortcuts:

Screenshot: long press Button "E" to capture screen. The picture captured will be saved in sequence in the built-in USB flash disk of display control module.

Indicator light:

Blue: working state.

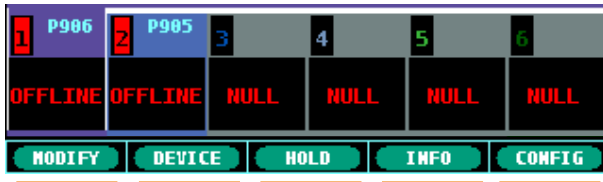
Red: sub-module alarm.

Button A-E:

Button A-E respectively corresponds to different button operations in different levels of menu. When the background color of the button in this level of menu is grey, it represents that the current button is invalid.

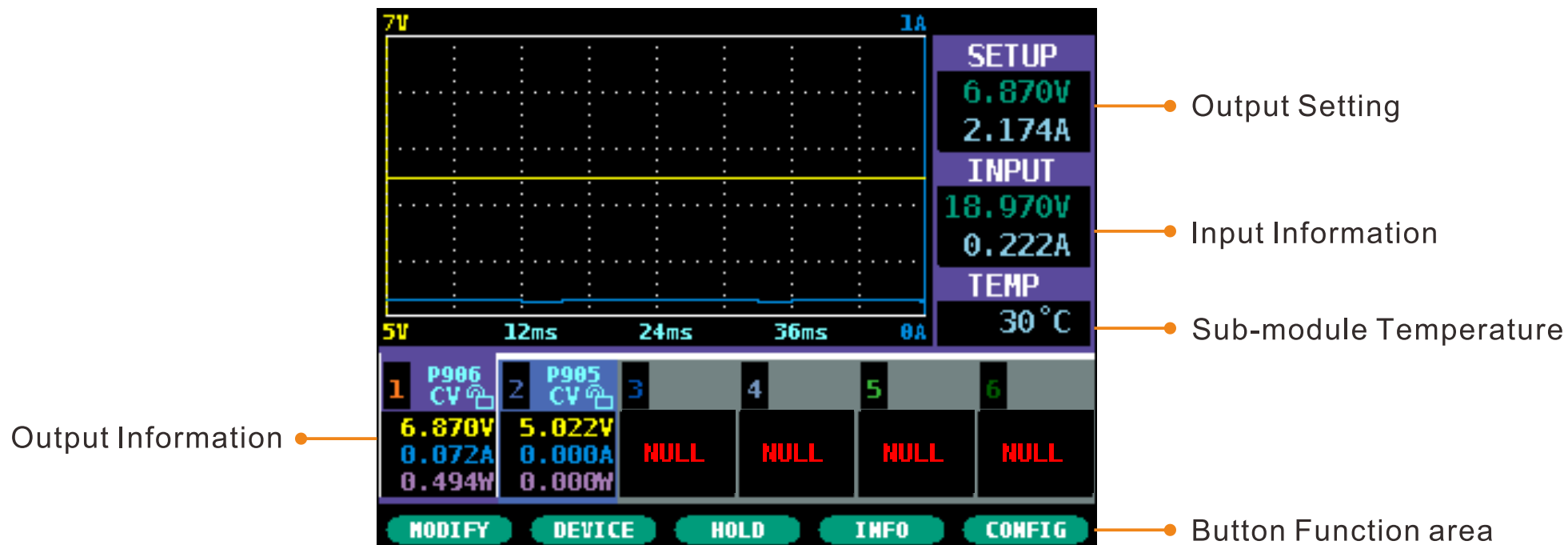
▲Note:

- 1) Total power shall be within limit during adjusting and setting current and voltage (MDP-905 90W Max, MDP-P906 300W Max);
- 2) Once display control module and power module are disconnected owing to communication distance and signal interference, the editing mode will exit automatically.



Menu Level	Button Name	Button Function
Level 1	MODIFY	Edit mode
	DEVICE	Device selection
	PLAY/HOLD	Play or hold the waveform
	INFO	Detailed information
	CONFIG	Setting
Level 2	BACK	Exit edit mode
	FORWARD	Previous item
	BACKWARD	Latter item
	OUTPUT	Output on/off
	CONFIRM	Confirm
	ESC	Back to the main menu
Level 3	Cancel	Cancel
	Help	Help
	Delete	Delete current device information
	Exchange	Exchange information of two power supplies selected

03/ Main Menu

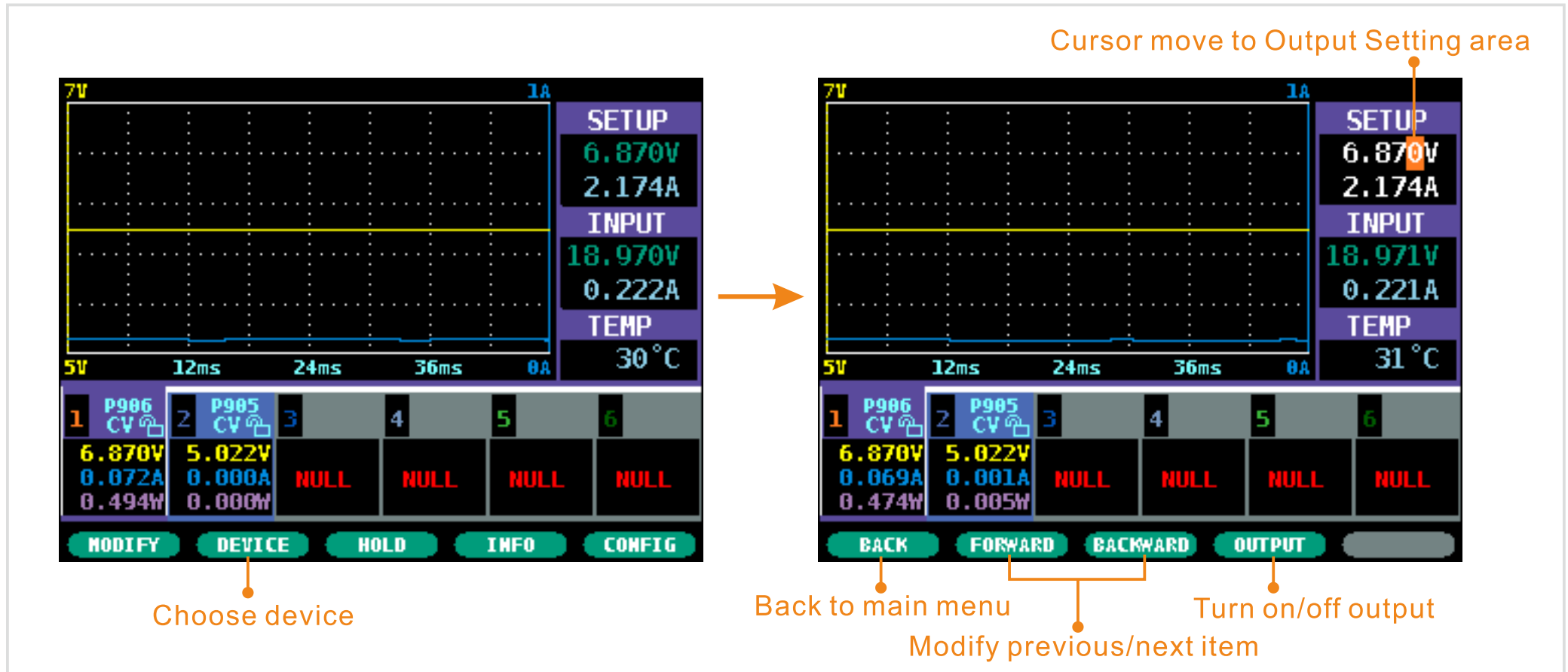


- 1) Waveform self-adaption: after long pressing Button C on the main interface, waveform will be self-adapting in full measuring range or auto ranging;
- 2) Adjust time axis: roll "MENU" encoder to adjust;
- 3) If MDP-M01 hasn't been connected to sub-module, there will be a prompt in button function area at the bottom of the screen, indicating to enter "Auto Match" interface to run wireless connection pairing;
- 4) If sub-module disconnects with MDP-M01, its corresponding channel number will be shown in red in reverse. Once it is reconnected, the original color will be shown again.

【How to Set the Output Settings:】

1) Press “DEVICE” to choose the to-be-modified sub-module;

2) Press “MODIFY” to enter modify state, the cursor will automatically move to Output Setting area;



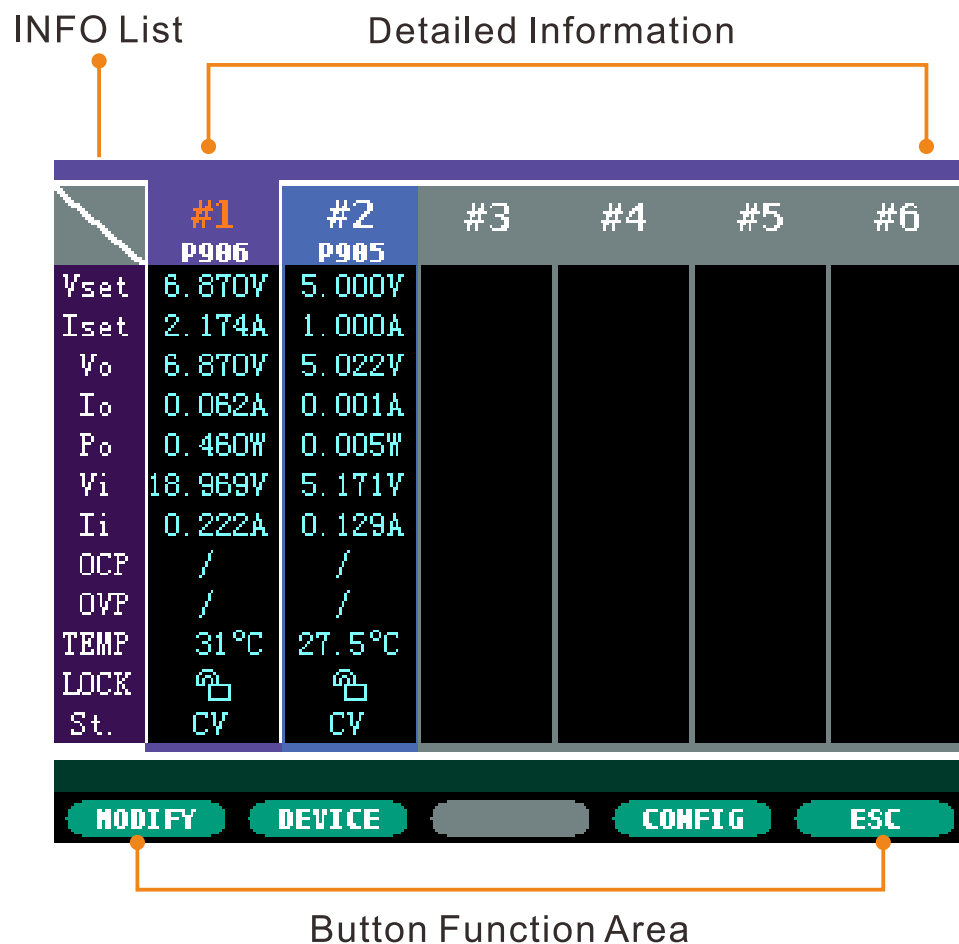
3) Roll “MENU” encoder to choose the modified number, and roll “VALUE” to choose the right value, the setting will take effect in real time;

4) Press “FORWARD” or “BACKWARD” to move to other setting item, modify according to previous steps;

5) Press “BACK” to return to main menu, or press “OUTPUT” to turn on/off output.

04/ INFO Details

In Main Menu, User can enter INFO Details interface by pressing “INFO”, to read more device information.



In INFO Details, if output setting is needed, User can refer to P6 “How to Set the Output Settings”.

Menu	Function
Vset	Set voltage (Adjustable)
Iset	Set current (Adjustable)
Vo	Real-time output voltage
Io	Real-time output current
Po	Real-time output power
Vi	Input voltage
Ii	Input current
TEMP	Corresponding device's temperature
LOCK	The current device is locked or not. When the lock icon shows open, it means the device is unlocked; when the lock icon shows locked (red), it means the device is locked, and MDP-M01 can't control the device, you can only view the information.
St.	Device Status. ON (output turns on)/ CC (constant current output)/ CV (constant voltage output)/ OFF (output turns off)

05/ Configurations



In Main Menu or INFO Details, User can enter setting interface of the selected device by pressing “CONFIG”. Roll “MENU” encoder to choose the setting menu, and press “CONFIRM” to enter setting.

Wireless Address

Device List

Wireless Frequency

		Addr	Freq(GHz)
#1	P906	B:63:93:2C:21	2.417
#2	P905	B:63:93:2C:22	2.417
#3	NULL		
#4	NULL		
#5	NULL		
#6	NULL		

Wireless Address Auto-matching

Auto Match

Auto Sort

Delete & Exchange Wireless Address and channel number

Delete && Exchange

More

More Functions: Adjust power sub-module color, adjust volume and view version information

Button Function Area

MODIFY DEVICE CONFIRM INFO ESC

Menu Name	Function
Addr	Connected wireless address (modifiable)
Freq(GHz)	Connected wireless frequency (modifiable)
Auto Match	Auto-matching of wireless address and wireless frequency; wireless address and wireless frequency can be matched automatically
Auto Sort	Auto-sorting of wireless address and wireless frequency; wireless address and wireless frequency can be automatically sorted according to its starting value
Delete & Exchange	Delete and exchange the wireless matching address and channel number of the corresponding devices
More	Modify sub-module's encoder color, adjust the button volume of display control module, view version information (including channel number and name of device, and firmware version information)



5.1 Wireless Connection

【5.1.1】 Auto Match: Auto Matching with Sub-Module

After the auto matching of display control module and sub-module, display control module will automatically match the wireless address and frequency with sub-module.

Auto-match Operation of MDP-M01:

- 1) Choose “Auto Match” on MDP-M01 display control module, and press “Confirm” to enter menu (See below picture);
- 2) When an auto-match dialogue box appears on the screen, press “Confirm” to confirm and issue a request for matching;

Submenu of Auto Match:

Start Addr: the wireless starting address during auto-matching of sub-module; the last bit of wireless address will accumulate by 1 for every additional sub-module;

Freq: the auto matched wireless frequency for sub-module.



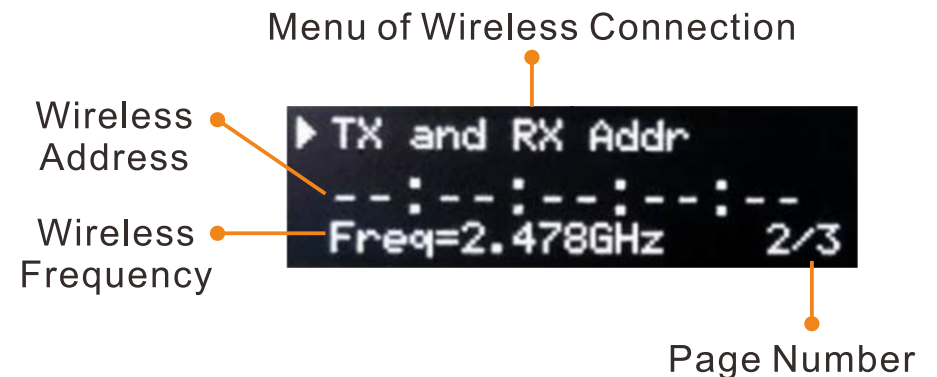
3) Wait sub-module to reply to wireless pairing.



Matching with sub-module

Auto-match Operation of Sub-module (Power Supply Module):

- 1) Long press Button “MENU” of sub-module to enter the setting menu;
- 2) Roll Encoder to select “Tx and Rx Addr”, short press Button “SET” to confirm.(See picture)



After display control module successfully matches with sub-module, the wireless address and frequency matched will be displayed on display control module and sub-module.

【5.1.2】 Auto Sort: Auto-sorting of wireless address and wireless frequency

If User require all sub-modules be listed in a certain sequence of wireless address and frequency, the “Auto Sort” function can help. MDP-M01 will automatically generate wireless addresses and frequencies according to the channel number to be sorted. User can modify corresponding wireless addresses and frequencies to the sub-modules via the TXT file in each virtual disk.



Subinterface of Auto Sort:

Ch Num: The number of sub-modules to be sorted;

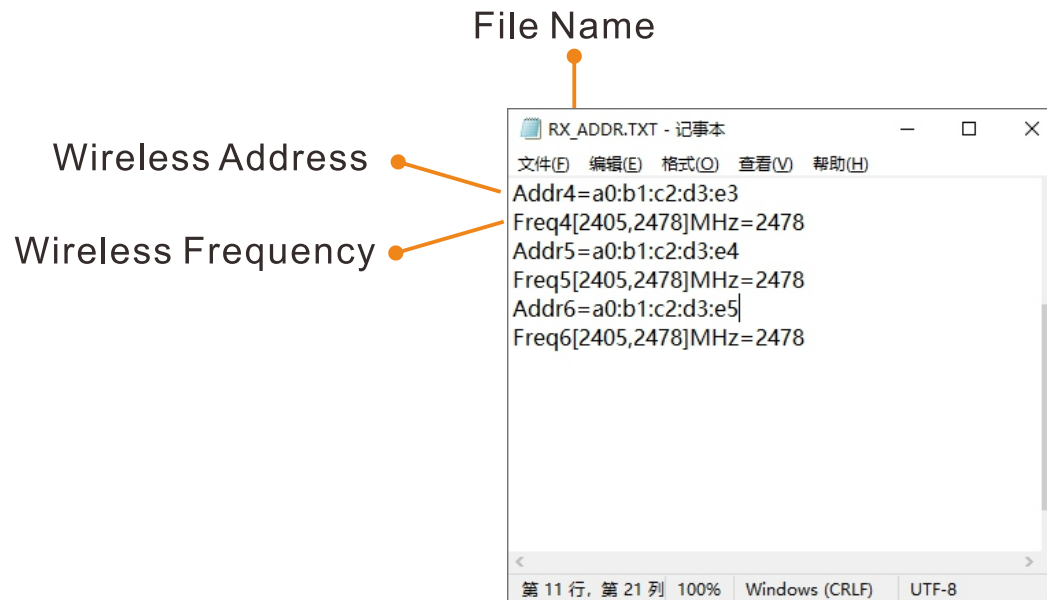
Start Addr: The wireless starting address of sub-module to be sorted; the last bit of wireless address will accumulate by 1 for every additional sub-module;

Freq: The wireless frequency of sub-modules to be sorted.

【5.1.3】 Modify wireless address and wireless frequency by config files

When allocating wireless addresses and frequencies for all sub-modules, if a certain sequence is need, User can set all wireless addresses and frequencies via the TXT file of each sub-module.

- 1) Connect MDP-M01 display control module with computer via data cable, a virtual disk will appear on the computer;
- 2) Open the file RX_ADDR.TXT in the virtual disk and modify wireless address and frequency to match sub-module; the file contents are as shown in the following figure:



- 3) Save file, restart MDP-M01 after exiting the virtual disk, and the TXT file will take effect.

5.2 Delete & Exchange

Enter the Submenu of
Deleting Device



Enter the Submenu of
Exchanging Device

【5.2.1】 Delete Device: Delete device information

Press "DEVICE" to
Select Device



【5.2.2】 Exchange Device: Exchange information of display device

Exchange and display information of Device 1 to Device 3

	Addr	Freq(GHz)
#1 => #3	B:63:93:2C:21	2.417
#2	NULL	
#3	NULL	
#4	NULL	
#5	NULL	
#6	NULL	

Press "DEVICE" to select the starting device to exchange

Exchange Device

Select (DEVICE):#1

Exchange(Wheel VALUE):#3

Roll "VALUE" Encoder to select the destination device to exchange

Exchange Cancel

DEVICE EXCHANGE CANCEL ESC

5.3 More

The menu "More" contains multiple functions, such as changing light color of sub-module encoder, adjusting the button volume of the display control module, and viewing version information (including device channel number, device name, and software version information), etc.

Enter the submenu to adjust light color of sub-module encoder



Enter the submenu to adjust button adjusting volume of display control module

Enter the submenu of version information

【5.3.1】 Led Color: Change light color of sub-module encoder

- 1) Enter the setting item "Led Color" in "More" menu;
- 2) Press "DEVICE" to select the device to change encoder light color ;
- 3) Roll "VALUE" encoder to select the light color;
- 4) Repeat step 2 and 3 to change other sub-modules' encoder light color;
- 5) Press "Confirm" to confirm change of color.

Roll "VALUE" encoder to select a color, and the corresponding sub-module light will change color at the same time. After adjusting all the sub-module lights, press "Confirm" to confirm the completion.



Press "DEVICE" to select the device

【5.3.2】 Voice Adjust: Adjust the volume of the button sound



Roll "VALUE" encoder to adjust volume. The larger the number is, the higher the volume will be. Press "Confirm" to confirm change and exit.

【5.3.3】 Version: Version information



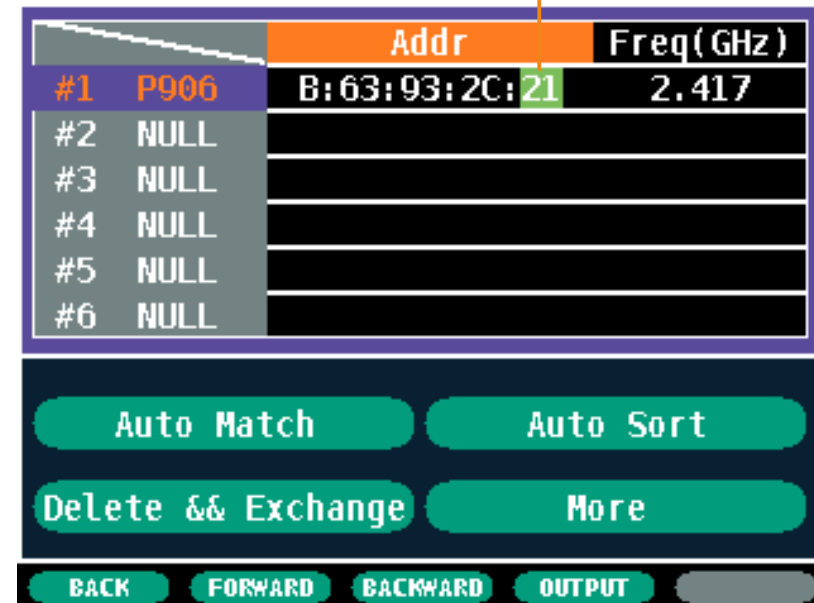


5.4 Quick Modification of Wireless Address and Wireless Frequency

After sub-module is matched with MDP-M01, its wireless address (Addr) and wireless frequency (Freq (GHz)) can be modified through “CONFIG” submenu.

- 1) Press “CONFIG” to enter submenu, then press “DEVICE” to select sub-module to modify;
- 2) Press “MODIFY” to enter setting, and select “Addr” or “Freq(GHz)” by pressing “FORWARD” and “BACKWARD” ;
- 3) The selected number will be displayed in highlight, roll “MENU” encoder to switch to the option that needs to be modified, and roll “VALUE” encoder to adjust value;
- 4) Press “BACK” to confirm modification and return to the previous step.

Roll “MENU” encoder to select the specified item, and roll “VALUE” encoder to change value.





▲ Note:

- 1) When first matching with MDP-M01, the channel number of the sub-module will be saved by default to avoid misconnection of other sub-modules with the same wireless address. Therefore, just modifying the wireless address of the matched sub-module cannot be connected as a new channel. Please first “Delete” the saved channel information, and re-match the new sub-module;
- 2) Setting range of wireless frequency: 2.405GHz-2.478GHz;
- 3) If the current sub-module selected is offline, it will automatically jump to other online sub-modules.
- 4) During matching of wireless address, if power output is turned on, it will be turned off compulsorily for safety protection.

06/ Firmware Upgrade

- 1) Visit www.miniware.com.cn, download the applicable MDP-M01 firmware to computer;
- 2) Hold Button “A”, and connect MDP-M01 with computer via Micro USB data cable to enter DFU mode. A virtual disk named “DFU Vx_xx_x” will appear on computer;
- 3) Copy the .hex firmware to the root directory of the virtual disk, and after the name suffix of firmware turns into .RDY, restart MDP-M01 to complete.

▲Note:

For all the versions upgraded from the previous firmware version to M01_v1.22 and above, User needs to first backup files into computer before upgrading firmware, and after upgrade, format diskette and then save the files back into the virtual disk.

07/ FAQ



Once the following situations happen, MDP-M01 will give the alarm or buzzer warning.

Display contents	Reason	Solution
RX_ADDR.TXT File Error	Errors in reading files of wireless config	Check whether the content of the RX_ADDR.TXT file in the flash disk is normal
Flash Error	Errors in flash chip	Contact after-sales service, you may need to replace the display control module
Wireless Error	Errors in wireless chip	

08/ Legal Statements



FCC compliance statement

This device is complied with the regulation in the 15th part of FCC regulation.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including the interference that may cause undesired operation.



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This product contains batteries and/or recyclable electronic parts.

Please do not dispose of the product together with household garbage.

Please handle it according to your local laws and regulations.