PIPE & WALL

VIDEO INSPECTION SYSTEMS

USER MANUAL

For

4188XX SERIES

ASSEMBLING AND OPERATING INSTRUCTIONS

(FOR MULTI-FUNCTION CASE)

(FOR SIMPLE FUNCTION CASE)

Read instructions carefully before operating this system

WARNING

1. Never use this device in an environment with explosive materials such as GAS, OIL, ETC.

2. Avoid using the device in extremely cold, hot or humid environment; otherwise it may damage the device. Do not drop or press hard on the device.

3. Avoid using the parts / components from other manufacturers to this system, which may damage the equipment due to the un-compatibility.

4. Warranty invalidation if the device is disassembled by users or if there are any physical damages.

5. Always back up your data before connecting your USB stick / Micro SD Card to this system. The manufacturer is not responsible for any data damage or loss on your USB stick / Micro SD Card for any reason.

6. Do not disconnect the unit while recording or playing. It may damage the unit and/or the USB stick / Micro SD Card.

7. The system's PUSH CABLE made of fiberglass is very rigid and not flexible. It CAN NOT be bent sharply or pushed too hard; otherwise it will be broken.

8. We reserve the right to make any change about our products without any notice in advance.

DISCLAIMER OF LIABILITY

WE SHALL NOT BE LIABLE TO DISTRIBUTOR, RESELLER, OR ANY OTHER PERSON FOR ANY INCIDENTAL, INDIRECT, SPECIAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES, OR INJURY OF ANY TYPE WHATSOEVER, AND CAUSED DIRECTLY OR INDIRECTLY BY PRODUCTS SOLD OR SUPPLIED BY US.

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Assembly Drawing and Parts List

(for Multi-function Case)

Part No.	Description
1	CAMERA（C26/C26T），OPTIONAL FOR OTHER SERIES CAMERA
2	POWER ADAPTER&BATTERY CHARGER
3	Function Case &FIBERGLASS CABLE (60M or other length)
4	4 CORE VIDEO CABLE
5	REMOTE CONTROL
6	DISC（OPTIONAL）

①   ②   ③

④   ⑤   ⑥

Note: The small parts above are under the keyboard in the function case. Please open up the keyboard from the position of "OPEN" character when you want to take them.

1

1

Specifications

Item	Description
Power adapter	110VAC~240VAC 13.5V DC 1700mA
Battery（In the case）	LI-ION battery，DC 12V，6600mAh
Length of Cable	□ 60M
Camera Light Source	12PCS LED
Camera Angle-of-View	FOV=90° /120°　F2.8/2.42mm
Camera Image	Effective Pixel Array: 976 (H) x 496(V)
Monitor Screen Size	10" TFT LCD Color Monitor

Monitor Picture Resolution	800＊600 pixel
Storage Device	USB &TF(8G~32G)
DVR Format	AVI
System Operating Temperature	-20°C to 60°C

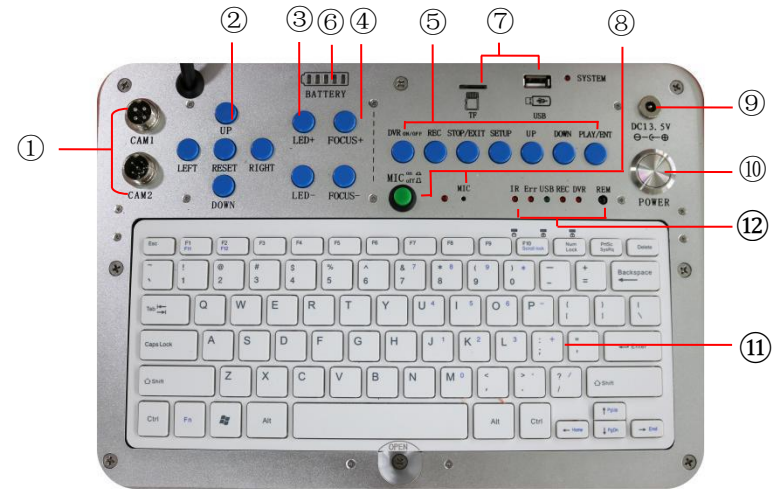# User Manual

Application

1. WATER SUPPLY

2. WASTE WATER

3. ELECTRICAL AIR CONDITIONER

4. CABLE DUCTING

5. DUCTED VACCUM SYSTEMS

6. PLUMBING

7. BUILDINGS

WARNING:

NEVER USE THIS DEVICE IN AN ENVIRONMENT WITH EXPLOSIVE MATERIALS SUCH AS GAS, OIL, ETC

Know Your Device

Control Box (for Multi-function Case)

①、Camera Input

CAM1：common camera（four core interface）

CAM2：360°rotation camera（five core interface）

②、360°Rotation Camera Button

LEFT：control camera rotation to the left

RIGHT：control camera rotation to the right

UP：control camera rotation to the upward

DOWN：control camera rotation to the downward

RESET：camera reset

③、LED+：increase the brightness

LED-：decrease the brightness

④、POCUS+：adjust the lens focal length+

POCUS-：adjust the lens focal length –

⑤、DVR Control Button

REC：Record video button

STOP/EXIT：Exit DVR video playing or return to the next higher level submenu

SETUP：DVR system setup

3

UP：DVR user menu up operation button

DOWN：DVR user menu down operation button

PLAY/ENT：DVR play or select button

⑥、BATTERY：battery indicator。

Discharge instructions state：as the battery keeps discharging, the green indicator light will be out one by one. When the green light turns into flashing red lights, it means the battery volume is insufficient. Please recharge the battery.

Charging indicator status：with the battery charging，the green light will be lighted up one by one; when the green light turns into the bright green, the battery is fully recharged.

⑦、USB& TF pin

When using USB disk &TF card as a storage device, please insert it in the right port

⑧、MIC on/off：MICROPHONE button。When you need recording the voice in the process of video taping，press the button and the indicator lights up. Voice will be recorded；At the end of the video，you must press the button again otherwise there is no audio signal output。

⑨、The power adapter input: used as the machine power supply or charging the battery；

⑩、POWER：power button

⑪、Keyboard input

Using the keyboard to input character（English letters、Numbers and symbols）. This is a new equipment which can input characters superposing on the real-time monitoring images showing three lines of characters below the display line。

⑫、IR：the remote control working indicator

ERR：Error of Indicator system or USB device.

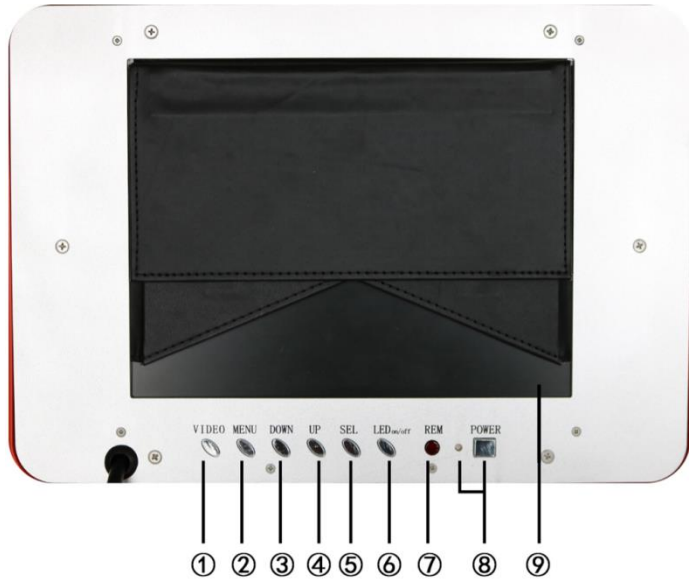USB：when users insert a new USB&TF card，this indicator light will flash.

REC：Indicator light of Video working

LED Indicator

DVR：DVR Indicator system working indicator light

REM：Remote control receiving window

Display Part (for Multi-function Case)

①、VIDEO   ②、MENU

③、DOWN   ④、UP

⑤、SEL   ⑥、LED ON/OFF

⑦、REM   ⑧、POWER

⑨、10"LCD

Display and Control Panel (for Simple Function Case)

① Camera Input

    CAM：Common camera（four core interface）

② SYSTEM: DVR system power working indicator light.

③ REM：Remote control receiving window.

④ POWER: The device power working indicator light.

⑤ DVR：DVR Indicator system working indicator light.

⑥ REC：Video recording working indicator light.

⑦ USB& TF PinWhen using USB disk &TF card as a storage device，please insert it in the right port.

⑧ MIC on/off：MICROPHONE button. When you need recording the voice in the process of video taping，press the button and the indicator lights up. Voice will be recorded；At the end of the video，you must press the button again otherwise there is no audio signal output。

⑨ The DC jack for battery power input.

⑩ USB：When users insert a new USB&TF card，this indicator light will flash.

11 ERR：Error of Indicator system or USB device.

12 IR：The remote control working indicator light

13 DVR Control Button

14 REC：Video recording button.

15 STOP/EXIT：Exit DVR video playing or return to the next previous level submenu.

16 SETUP：DVR system setup.

17 UP：DVR user menu up operation button.

18 DOWN：DVR user menu down operation button.

19 PLAY/ENT：DVR play or select button.

20 VIDEO: switching button of VIDEO1/VIDEO2 channels.

21 MENU: Display menu button.

22 DOWN: Display menu setting "down" button.

23 UP: Display menu setting "up" button.

24 SEL: Display menu setting "select" button.

25 LED ON/OFF

26 POWER：Power button.

27 10" LCD

Remark:

1) MENU key-press ： Image adjust. Press SEL/DOWN/UP key to adjust below numerical value. Numerical value is from 0 to 100. Languages option includes ENGLISH, DEUTSCH, FRANC, ESPAKOL, PORTUG, ITALIANO, ENGLES & PNCCK.

    BRIGHT-----------------------------50

    CONTRAST-------------------------50

2) COLOR-----------------------------50

3) SHARP-----------------------------50

4) LED BRIGHT-----------------------80

5) HUE--------------------------------50

6) ENGLISH

7) After exit "MENU" mode, the below keys have different functions:

8) DOWN: Press DOWN key, the image change UP and DOWN (Mirror function)

9) UP: Press UP key, the image change LEFT and RIGHT (Mirror function)

10) SEL key: Press SEL key to change the image to 16:9 image or 4:3 standard image for 10 inch monitor.

Parts Layout Inside the Case (for Simple Function Case)

①   Power Adapter

②   DC12V,4400mAh/6600mAh LI-ION BATTERY case

③   Zone for camera head

④   Remote Control

Cable Reel Base:

(1)、Φ6mm fiberglass cable

(2)、304 stainless steel holder

(3)、cable reel

(4)、① meter counter

②M/FT：Metric or Imperial switching

③RESET: Reset the counter number to zero
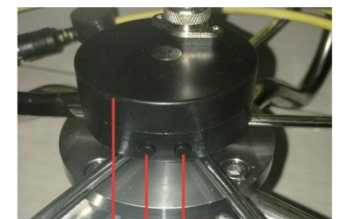
(5)、foot pad

Camera (for C26)
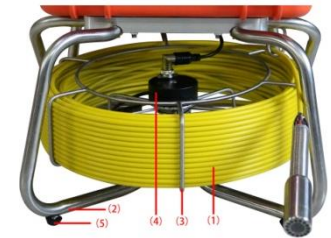

I. Working environment：

1.   Temperature: -20℃~60℃

2.   Humidity：90%RH (non-condensation)

III. Main Technical Indicators:

1.   Power source input: DC 9-13.5V

2.   Camera module:

1)   Image sensor: 1/3" color CMOS PC1099

2) Effective Pixel Array: 976 (H) x 496(V)

3) Horizontal resolution: 900TV LINES

4) Minimum illumination: 0.01LUX/F1.2

5) SNR: >45dB (AOC on)

6) Video Output: 1.0 Vp-p / 75 Ω (CVBS) with horizontal dynamic balance

7) Input voltage: DC 9-13.5V

8) Current consumption: 65mA Max(ALL LEDS LIGHTS ON≤200mA)

3. Lighting source:

1) LED quantity: 12pcs

2) Luminous flux: 107~114 lm（180 mA）

Working Current: 0~180 mA

3) Light Cup Angle: 45°

IV.   External Interface:

CAM1: Pin 1 to 4 are separately connected to VIDEO, GND, +12V, LED.

CAM2: Pin 1 to 6 are separately connected to 485A, 485B, +12V, GND, NC, VIDEO.

Remote Control (for operating DVR)

1) Enter: Enter to view and play video

2) Up: Go to up/previous item

3) REC: Start recording / snap shooting (only available for new versions)

4) Setup: System setup and recording features

5) Enter: System in

6) Down: Select down/next item

7) Exit: Stop or exit from current menu

8) Left: Select Left item

9) Right: Select Right item

10) Rewind: Review video

11) Forward: forward video

System Set-Up

1. **IMPORTANT: When you connect the Camera to the Monitor, the power must be off; otherwise both units will be damaged.**

2. Connect the reel cable to the Monitor. Connect the Battery Case's DC cable to the Monitor (for Simple Function Case).

3. If the 4188XX system's battery capacity is too low to work, please plug the Power Adapter cord into the wall AC socket and the other end into the "DC 13.5V" jack.

4. Turn on the power by pressing the POWER button on the control box for Multi-function Case. Turn on the power by switching on the Battery Case's power for Simple Function Case.

5. Press the POWER button on the front of the Monitor to turn on the 4188XX system.

6. Gently lower the Camera into a pipe duct, etc and reel out the Cable until it is at the desired depth.

7. Record the pictures if you need (see DVR Operating).

8. Video Out: By using a video cable you can transfer the picture to other larger Screen.

9. When you finish the job, carefully remove the Camera head from the pipe duct, etc, clean it with a clean, soft and dry cloth and then put the Camera into the previous position

System Menu Setting

Clock setting: set date and time	
*Time Format	Select: 24Hour - 12Hour
Year	Set year
Month	Set month
Day	Set day
Hour	Set hour
Minute	Set minutes
Second	Set seconds
Language Setting	Select: English - Chinese
System: showing software version, product version, free space and used space (when USB/ Micro SD Card is connected)	
Record setup: Storage Device Selection ---USB Device or Micro SD card	
Play Mode: No circle, One circle, List circle	
Master reset: press OK again to perform a master reset	
Firmware update: locate the directory where new firmware is stored	
Browse File: Showing all files on the current USB/ Micro SD Card medium.	
Remove USB/Micro SD Card device (only when USB/Micro SD Card device is connected)	
Always use this option before safely removing the USB /Micro SD Card device from the USB/Micro SD Card port	

Remark: When you plug in the USB key/Micro SD card before starting the device, maybe the device can't find the USB stick/Micro SD card. In this case, please remove them and try again.

DVR/Micro SD RECORDING OPERATION

(Recording via MICRO SD Card is only available for the new versions)

1. **Press the Video Button and set the screen on Video 2 channel**.

2. Take off the isolation sheet from the Remote Control Battery.

3. Press the Remote Control Button 5 to enter the Recording system, you can see DVR system Recorder **PLAY VIDEO** manual on the screen.

4. Insert your USB stick/ removable hard disc etc into the **USB** Port, or Micro SD Card into Micro SD Card Slot, you can see **USB stick/ Micro SD Card Connected** on the screen and the LED light indicator is on.

5. Press Remote Control Button 3 to start the recording and the RECORDING LED light is on. In recording, if you press the RECORDING button again, the DVR will take a photo and it is saved in the USB key or Micro SD card (only available for new versions).

6. Press Remote Control Button7 to stop recording.

7. Press Remote Control Button 1 to review recording.

8. If you need to manage your recorded pictures, press Remote Control Button 4 You can also manage the files by selecting the **SETTING** on **PLAY VIDEO** manual on the screen.

NOTE:

DVR system sometimes need 10 - 20 seconds for warmup before it can work properly, please let it run about 20 seconds each time when you try to record.

USB flash disk and Micro SD card max memory is 8G bit.

The recorded video files will be found in a directory of USB/Micro SD devices.

You can use the on-screen menu or press (REC) button to start recording. Press (■/EXIT) button to stop recording. During the recording, the screen will display recording time and time limit (up to 60 minutes).

Recording time limit

Sometimes you may forget to stop the recording after it is initiated. This unit is featured with a recording time limit. The default time limit is 60 minutes. If recording time over 1 hour, the system will record with a new file

Schedule recording

You can schedule a recording in advance. Simply enable the schedule recording in the SETUP and then the unit will ask user to setup timing. Recording schedule can be used once. You have to set up schedule again for next recording.

Recording via USB Stick / Micro SD Card

The unit can be used to record video and voice via USB devices / Micro SD Card. The

recorded video will be stored in the USB devices / Micro SD Card and played back on the TV screen.

Video recording format

The default video recording resolution is 640*480. One-hour recording will take up storage of 500MB. User may select 320*240 to save storage space.

Voice recording

A microphone button located on the front panel allows the user to press the button on to record a voice while the video is recording (This function is only available for new versions).

Video Playing

You can use on-screen menu to enter "play video" mode. The unit will display the recorded video and other compatible videos stored in USB stick / Micro SD Card. It will not list the non-compatible videos.

Select the Video File.

When you enter "play video" mode, the set will display all of the available video files on the screen.

You can use [▲] or [▼] button to select desired video and press [►/ENT] button to play.

Press and hold [▲] or [▼] button to go to previous or next video.

Use [►/ENT] button to start or pause the playing. Use [■/exit] button to stop or go back to previous menu.

The screen will display "loading, please wait …" for a few seconds before playing video.

Fast Forwarding and Rewinding

You can use [►] or [◄] button on the remote control to fast forwarding or rewinding (1x, 2x, 4x, or 8x, speed). Always press [►/ENT] button to go back to normal playing.

Compatible video format:

Divx3.11/Divx4/Divx5/MPEG1/MPEG2/MPEG4 (MPEG4 video file format: .avi, .m4v, .MPG, MPEG, .VOB)

Note: The video player of the device may not support some downloaded videos.

How to use the text writer? (for Multi-function Case)

With the signal overlay technology, the text writer is a device that can display the input characters from the keyboard (only supporting English input). Keyboard input function is basically the same as the computer keyboard operation.

I. Keyboard Functions

1. It supports the display of 3 pages.

2.The keyboard has a 0-9 number input with symbol switching through the

Shift + "key"

3. 26 English letters input and case switching with Caps Lock.

4. F5 is the character display/hide switch key. When you press F5, all the characters are

hided. Press F5 again, all characters are displayed.

5. Move the cursor through the four arrow keys of the keyboard to enter the

character at the position where you want.

6. Keys:

1)See Appendix 1 for other punctuations, Appendix 2 for function keys.

2)Keys without functions：Esc、F1、F2、F3、F4、F6、F7、F8、F9、F10、

Num Lock、Prtscsysrq、Tab、Ctrl、Fn、Alt

II. How to Operate

1**. To start the device, press the VIDEO button below the monitor to enter the**

VIDEO2 channel

2.After DVR is empowered, press the DVR ON/OFF button to turn off the

DVR and then the screen will enter the preview state. At this time, there is the

flashing cursor"I"in the lower left corner on the screen.

and then press the F1 key to clear. At this point the flashing cursor"I"will

automatically display in the normal position.

3. After the normal display of the cursor, press the DVR ON/ OFF button

on the control panel to turn on the DVR. You can now record videos, take

snapshot or input the text on the screen.

Appendix 1: Punctuations

，	。	（	）	？
：	；	*	/	@
-	<	>		

Appendix 2: Function Keys

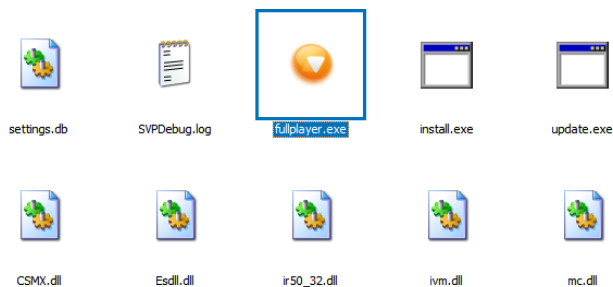| F5	Display/hide character switch
Caps lock	Case Switching
Four arrow keys	Up, Down, Left and Right Movement
Backspace、 Delete	To delete
Enter	Enter Key
Shift+ Key	Input the symbol on the corresponding key
space key	Space bar
Fn+PgUp	Page up
Fn+PgDn	Page down

Video Player Software Installation

Generally, the recorded videos can be played on the computer purchased after the year 2006. If you cannot open the recorded document on computer, there are two options:

Option 1: Go to the website "http://www.kmplayer.com/" and download the KMPlayer software for free.

Option 2: Use the software "fullplayer.exe" in the CD to replay the video (as the following pictures)

settings.db	SVPDebug.log	fullplayer.exe	install.exe	update.exe
CSMX.dll	Esdll.dll	ir50_32.dll	ivm.dll	mc.dll

Recharging the Battery

1) Plug the charger into the AC socket on the wall and insert the other end into the DC jack.

2) The battery can be recharged while the device is being used. However, once the power in the battery runs completely out, it can only be recharged when the device is turned off.

IMPORTANT MESSAGE: Do not overcharge the battery! Overcharging can result in acid leaking from or damage to the battery.

How to Take Out the Battery (for Multi-function Case)

The battery is on the right side under the keyboard. Open up the keyboard, pull the connector line out, then take out the battery.

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Battery specifications:

1. TOTAL POWER $\leqq$ 15W
2. LI-ION BATTERY   12VDC MAX. $\leqq$ 79Wh
3. CHARGER   13.5V   1700mA
4. CHARGE TIME   6 HOURS
5. WORKING TIME $\geqq$ 200 MINUTES
6. PROTECTIVE VOLTAGE   8.1V
7. THE VOLTAGE BEFOR DISCHARGING 12.6V
8. LOAD CURRENT   1200mA (INPUT 12.2V)

TROUBLE SHOOTING

Trouble	Reason / Solution
Blank screen	1. Recharge the battery
	2. Check power line and connect it again.
No signal	1. Read the manual again and reconnect it.
	2. Check the camera and screw off

	3. Clean the camera pins
	4. Check the pins and find if they are in the same level
The camera has weak or no light	Press the "MENU" button, locate the LED brightness setting and then adjust the brightness.
No recording	1. Press the "Video" button and change to Video2
	2. Press POWER button and the monitor indicator light is green.
	3. Use another USB stick /micro SD and try
Recording abnormity	Shut off the unit and restart the unit in correct steps
Flashing pictures	Deficiency of the battery power. Please recharge the battery
No working of battery recharging	Replace the battery charger