



CAM ~ WAVE

CW-F25

Instruction Manual

for United States

IDX Company, Ltd.



IDX thanks you for choosing the CW-F25, We are confident that you will benefit from its unique features.

Please read this instruction manual to safely operate and to maximize performance.

- The material contained in this manual consists of information that is the property of IDX Company, Ltd. and is intended solely for the use by the purchasers of the equipment described in this manual.
- IDX Company, Ltd. prohibits the duplication of any portion of this manual or the use herein for any application other than the operation or maintenance of the equipment described in this manual without the expressed written permission of IDX Company, Ltd.

■ FCC notice

FCC conditions

This device complies with part 15 of the FCC Rules. 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 interference that may cause undesired operation.

■ EU Conformity Statement

This product and the supplied accessories (if applicable) are marked with "CE" and comply with the applicable harmonized European standards listed under the R&TTE Directive 1999/5/EC and the Low Voltage Directive 2006/95/EC.



Responsible for CE-marking:

IDX Technology Europe, Ltd.
Unit9, Langley Park, Waterside Drive, Langley,
Berkshire SL3 6AD England
Tel: +44 1753 547692

Manufacture:

IDX Company, Ltd.
6-28-11 Shukugawara, Tama-ku, Kawasaki-shi, Kanagawa-ken
214-0021 Japan

Contents

I.	Introduction.....	4
1.	Product overview.....	4
2.	Safety Notes.....	6
3.	Notes of the radio waves.....	9
4.	Packing list.....	10
5.	Names of parts.....	12
II.	Preparation.....	16
1.	Installation of plates.....	16
2.	Installation of antenna.....	19
3.	Preparing for power supply.....	21
4.	Menu setting.....	23
III.	Operation of CW-F25.....	28
1.	Basics.....	28
2.	Return video.....	30
3.	IP camera setup - wireless LAN bridge -.....	32
4.	Intercom operation.....	34
5.	GPI connection - as tally.....	36
6.	RS-422 remote.....	39
IV.	Useful information.....	41
1.	Troubleshooting.....	41
2.	Revert to default settings.....	46
3.	Firmware update.....	46
V.	References.....	48
1.	List of setup menus - Rule.....	48
2.	Setup menus - Transmitter.....	49
3.	Setup menus - Receiver.....	56
4.	Status LED.....	63
5.	Specification.....	64
6.	Connector and pin assignment.....	68
7.	Important notice.....	69
8.	Index.....	71
VI.	Warranty & Service.....	76
1.	Product warranty.....	76
2.	About exemptions.....	76
3.	Support & Service contact.....	77

I. Introduction

1. Product overview

CW-F25 is a wireless video transmission system capable of transmitting downlink and uplink¹ video, audio, and various data. Based on IEEE 802.11n Wireless LAN technology with newly developed 4x4 MIMO and beam-forming technology, the CW-F25 transmits H.264 High Profile signals up to 25Mbps.

- High-quality video

CW-F25 supports HD-SDI&3G-SDI I/O and full HD video - up to 1920x1080 resolution. This system utilizes H.264 High Profile compression and supports up to 25Mbps transmission rate.

- Adaptive variable-bit rate control

CW-F25 has an adaptive variable-bit rate control function to prevent sudden disconnection of video and audio link due to the distance between the transmitter and receiver and/or the deterioration of radio waves caused by obstacles, weather conditions and RF interference. To minimize unexpected signal dropouts, CW-F25 has a function to automatically or manually reduce the video transmission bit rate.

- Beamforming

Combined with 4x4 MIMO and beamforming technology, the CW-F25 transmission distance and transferable data rate boasts superior performance compared with other Wi-Fi based products available in the market. Beamforming enables radio waves to form a strong directional beam between the transmitter and receiver. This results in minimal interference from other 5GHz radio waves, rock solid stability, and a wireless link far tighter than others.

¹ In this manual, the video that is transmitted from a transmitter to a receiver is referred to as "downlink video" and the video that is transmitted from a receiver to a transmitter is referred to as "return video".

- Bidirectional signal and data transmission

CW-F25 is not an ordinal downlink video transmission system; it supports a variety of bidirectional signal and data such as return video, intercom, tally and RS-422 remote.

- Wireless LAN bridge

CW-F25 has an Ethernet I/O equipped. This functions as a wireless LAN bridge, which makes it possible to connect an IP camera, remote controller, etc.. In addition, the Ethernet can operate simultaneously with SDI video.

- DFS - Dynamic Frequency Selection

CW-F25 has a DFS function built-in. This detects weather radar and avoids conflict with official radio waves. With DFS functionality, CW-F25 is free to use in indoor and/or outdoor environments without violating local law.

2. Safety Notes

Prior to using this product, please carefully study and follow the instructions and recommendations outlined in this manual. Following instructions will guide you to use this product safely and correctly. After reading, please keep the manual in a convenient place for future reference. Incorrect usage may lead to injury, fire, electric shock and/or product failure.

■ Explanation of displays

 Warning	This display means "mishandling may cause death or serious injury" ^{*1} .
 Cautions	This display means "mishandling may cause injury" ^{*2} , or physical-loss-or-damage ^{*3} is possible."

*1 A serious injury means the loss of sight, a physical injury, a burn (high temperature and low temperature), electric shock, fracture, poisoning, etc. requiring medical treatment and/or hospitalization for treatment.

*2 An Injury means a burn (high temperature and low temperature), an electric shock, etc. which requires medical treatment but excludes hospitalization and regular hospital attendance for treatment.

*3 Physical loss or damage means damage in connection with property, household goods, livestock, pets, etc..

■ Explanation of signs

 Prohibited	This display means prohibited action (must not be carried out).
 Instruction	This display shows instructions (must be carried out).



Warning



If you notice smoke, strange smells, strange noises, or excessive heat coming from this product, stop using it, turn off the power, and unplug the power cable.

Continued use under these conditions may cause a fire, electric shock, or injury.



Be careful not to touch the power supply plug if your hands are wet.
It may cause a fire, an electric shock, an injury, or failure.



Do not pour liquid or anything wet or moist over this product. Do not expose this product to wetness.

It may cause a fire, an electric shock, an injury, or failure.



If liquid gets into the interior of this product, turn off the power immediately and pull the power supply plug out of the electrical receptacle.

Continued use may cause a fire, an electric shock, an injury, or failure.



Do not insert or drop foreign substances and objects, such as metal or any combustible or conductive material inside this product. If a foreign substance or object enters, turn the power off immediately and pull the power supply plug out of the electrical receptacle.

Continued use may cause a fire, an electric shock, an injury, or failure.



Do not dismantle or modify this product.

It may cause a fire, an electric shock, an injury, or failure.



Do not damage the power cable by bending it forcefully, using it to carry a heavy item or exposing it to heat.

If the power cord is damaged it may cause a fire, an electric shock, an injury, or failure.



Do not use this product if the power cable is damaged.

It may cause a fire, an electric shock, an injury, or failure.



Insert the plug and connector of the power cable completely.

Failure to insert them completely may cause a fire, electric shock, or injury.



Before using an external power supply, always check that the voltage is within the specified range.

Input voltage out of specification can cause a fire, an electric shock, an injury, or failure.



Before using an external power supply, always check that the polarity of the connector is correct.

Reverse polarity connection can cause a fire, an electric shock, an injury, or failure.



Caution



Keep this product away from direct sunlight, high temperatures and high humidity.

It may cause a fire or failure.



Do not use this product in extremely low temperatures or in a place subject to extreme changes in temperature. Keep this product away from places where condensation is likely to occur, and do not use it with condensation forming on it.

It may cause a failure. Use it within the ambient temperature limits 0°C - 50°C (32°F - 138°F), and 20% - 80% humidity.



Keep this product away from dusty conditions and places where magnetic fields are strong.

It may cause a fire or failure.



Do not place this product on an unstable surface, such as an unstable tabletop or uneven surface.

It may collapse and fall, or become unbalanced and fall and cause an injury or failure.



Do not cover the ventilation holes of this product.

If the ventilation holes are plugged, the interior temperature of this product will rise and it may cause a fire or failure.



Do not drop, collide with other hardware or apply a strong shock to this product.

It may cause failure.



Do not place anything on this product.

It may cause failure.



Keep packing materials, such as plastic bags, out of the reach of children.

Children may choke if they put them in their mouths or over their heads.



Do not use this product if the fan stops.

Doing so may cause a fire or failure. Request for servicing from your local representative.



Keep all cables organized.

People tripping on cables may cause the product to fall or topple over and injure someone. Be careful when connecting and positioning cables.

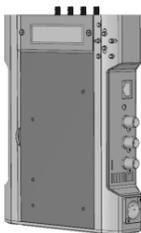
3. Notes of the radio waves

- This product has been approved for technical standard compliance certification as a wireless device of radio stations with low power specified under the FCC Radio wave regulations. Therefore, a license for radio station use is not required to operate this product.
- This product complies with United States' laws and regulations and can only operate within the USA. If used in foreign countries, there is a possibility that laws and regulations are being violated.
- You may only use the antennas supplied with this product. If non-approved antennas are used, the radio specifications change, which can lead to a violation of law and regulations.
- This product is pursuant to the FCC regulations and can be used in both indoor and outdoor environments. Please note that it is a user's responsibility to confirm an appropriate authority and use of wireless equipment in each country.
- This product uses 5GHz band radio frequencies and has been shown not to interfere with medical devices. However, when in use, it is recommended to keep at least 30cm (12in.) away from medical devices to ensure safety.

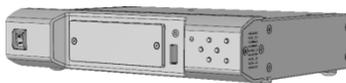
4. Packing list

Check the components in the package.

- CW-F25 TX - Transmitter



- CW-F25 RX - Receiver



Supplied accessories

- Readme First..... x1

- Standard antenna x8



- Headset x2



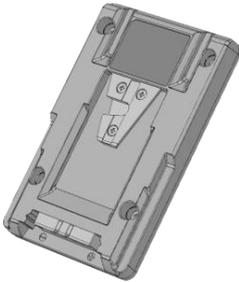
- V-Plate..... x2 Model# P-V2CL

This plate can mount on both TX and RX to supply +14VDC with IDX ENDURA series Lithium Ion batteries



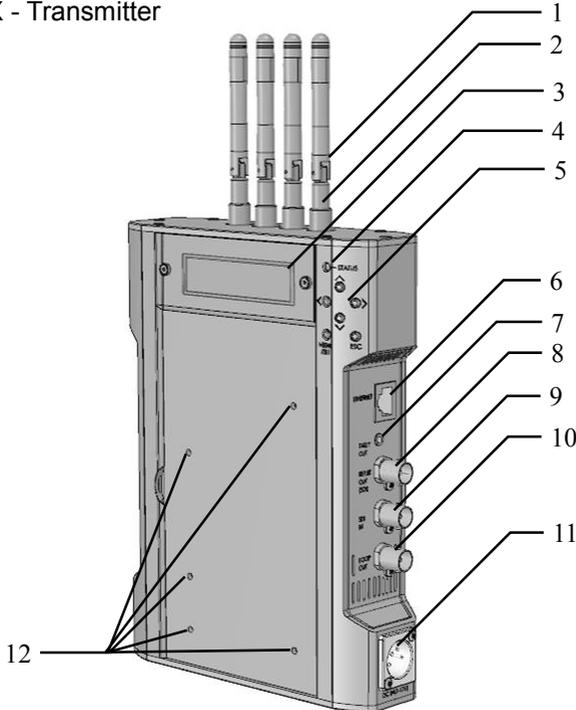
- V-Mount Adapter Plate.... x1 Model# A-MT2V(CW)

This adapter plate is for mounting on the back of the TX so the TX can easily attach to the back of a camera. By using this plate, the battery or EXT DC power can be supplied to the camera through the multi pin connector on the plate. The power to the camera will remain active even when the TX is powered off.

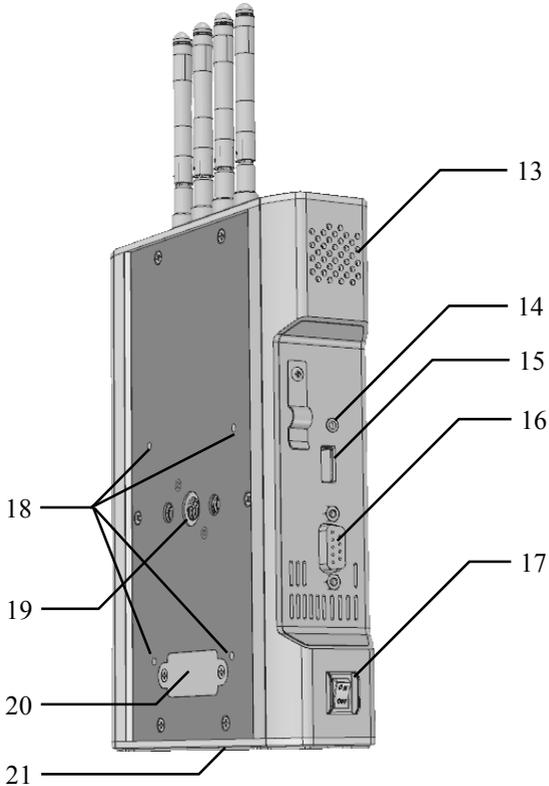


5. Names of parts

1) TX - Transmitter

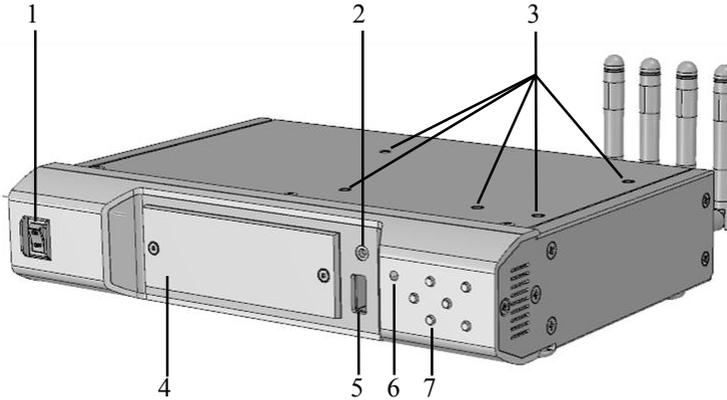


- | | |
|---|--------------------------------------|
| 1. Antennas | 6. Ethernet connector |
| 2. Antenna connector
RP-SMA x4 | 7. GPI OUT
Contact closure output |
| 3. LCD
Displays setup menu and
status. | 8. SDI IN |
| 4. Status LED | 9. SDI THROUGH OUT |
| 5. Menu setting buttons
Move cursor: Up, Down, Left, Right
ENTER, ESC | 10. SDI OUT |
| | 11. DC power connector
XLR-4 male |
| | 12. Screw holes for V-Plate |

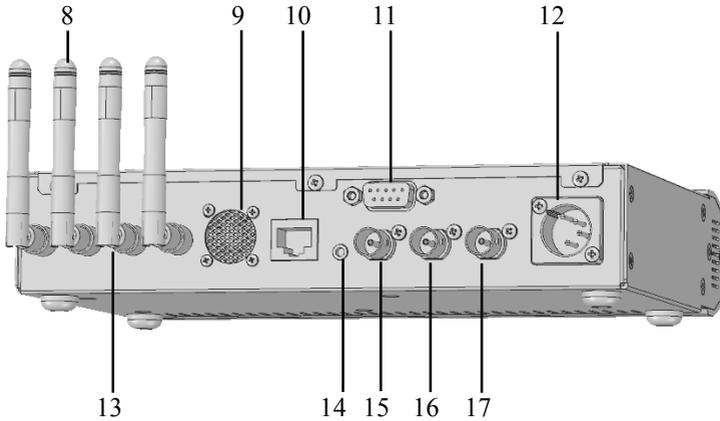


- 13. Ventilation holes
- 14. Intercom connector
- 15. USB connector
- 16. RS-422 connector
D-Sub 9pin female
- 17. Power ON/OFF switch
- 18. Screw hole for V-Mount adopter plate
- 19. 3/8 inch screw hole for tripod
- 20. Power supply terminal in inside
for V-Mount adapter plate.
- 21. 3/8 inch screw hole
for tripod
(On the bottom)

2) RX - Receiver



- | | |
|---|---|
| 1. Power ON/OFF switch | 5. USB connector |
| 2. Intercom connector | 6. Status LED |
| 3. Screw holes for V-Plate.
mounting screw holes | 7. Menu setting buttons
Move cursor: Up, Down, Left, Right
ENTER, ESC |
| 4. LCD
Displays setup menu and
status. | |



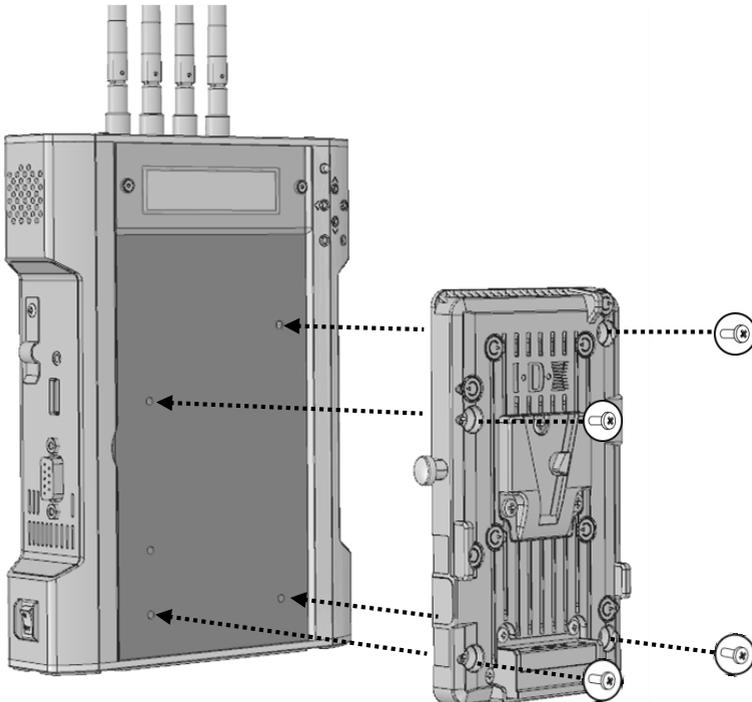
- | | |
|---|-------------------------------------|
| 8. Antennas | 13. Antenna connector
RP-SMA x4 |
| 9. Ventilation holes | 14. GPI IN
Contact closure input |
| 10. Ethernet connector | 15. SDI IN |
| 11. RS-422 connector
D-Sub 9pin female | 16. SDI THROUGH OUT |
| 12. DC power connector
XLR-4 male | 17. SDI OUT |

II. Preparation

1. Installation of plates

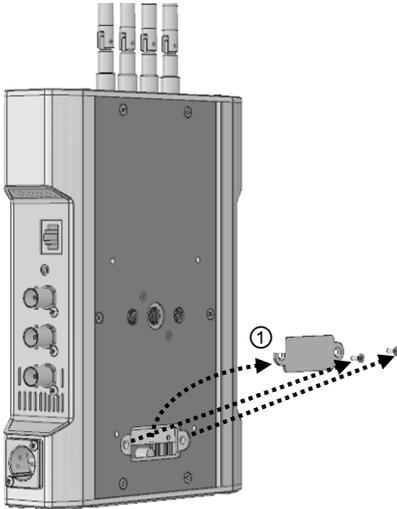
This section describes how to install the V-Plate and V-Mount adapter plate.

1.1. How to install the P-V2CL onto transmitter



Mount the P-V2CL onto TX by using supplied screws as shown in figure above.

1.1. How to install the A-MT2V(CW) onto transmitter

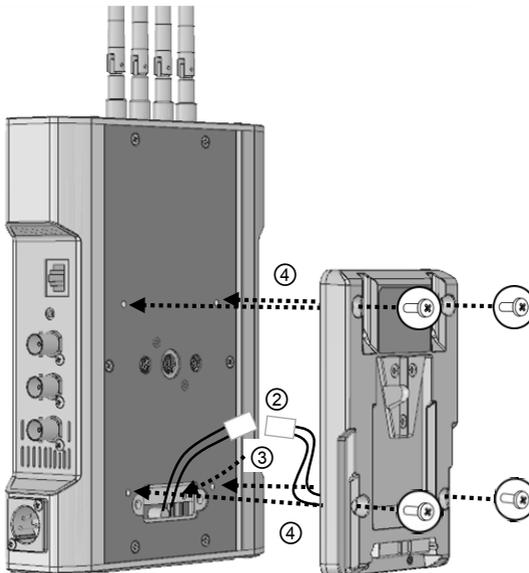


① Unscrew and remove the metal cover on the back of the transmitter.

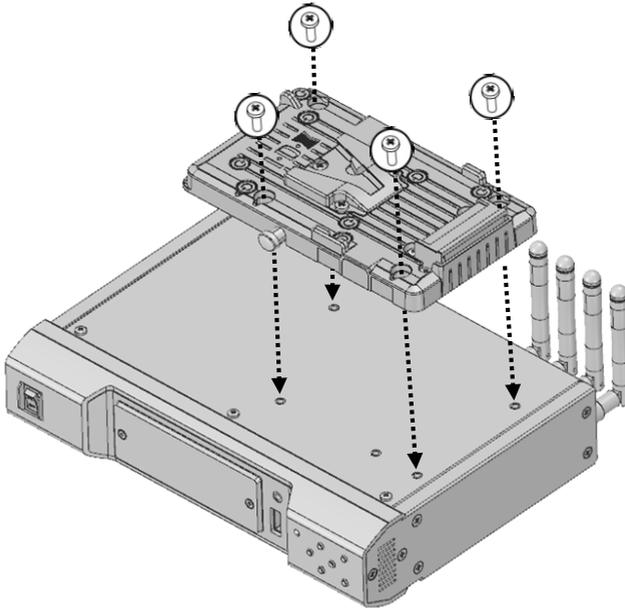
② Pull out the power connector from the inside of the transmitter and firmly connect with the mating connector on the A-MT2V(CW).

③ Carefully restore the cable and connector to the inside of the transmitter.

④ After restoring the cable and connector, mount the A-MT2V(CW) onto the transmitter by using the supplied screws.



1.2. How to install the P-V2CL onto receiver



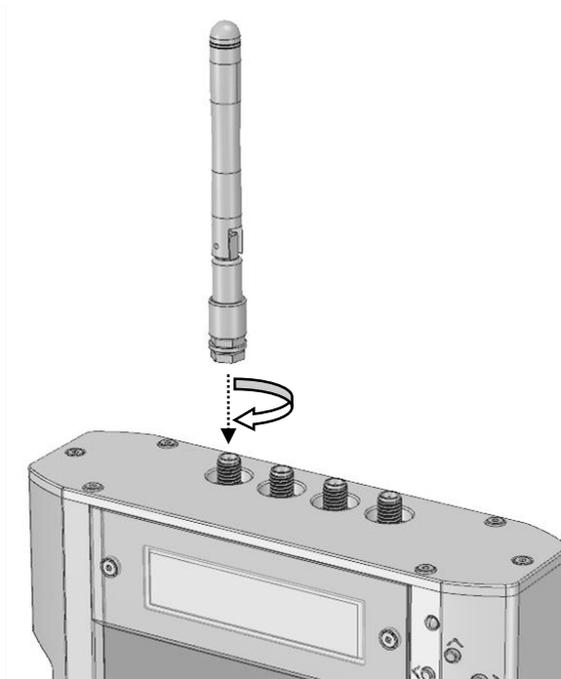
Mount the P-V2CL onto the receiver by using the supplied screws as shown in the figure above.

2. Installation of antenna

2.1. Installing standard antennas

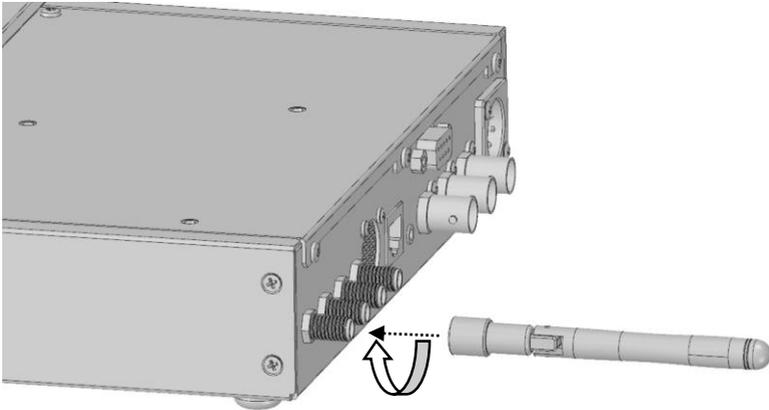
Transmitter

Attach all four antennas tightly by rotating/screwing in a clockwise direction.

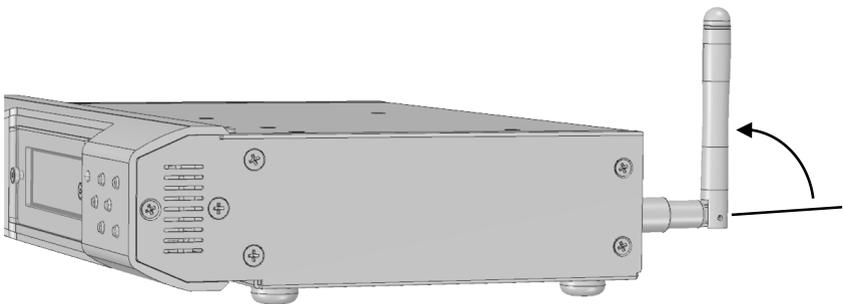


Receiver

Attach all four antennas tightly by rotating/screwing in a clockwise direction.



Stand up all the antennas at 90 degrees when in operation.



3. Preparing for power supply

An AC adapter is not included in the package. Recommended power supplies for the CW-F25 are shown below.

3.1. Recommended products

- AC adapter IDX IA-60a IA-200a IA-300a AC-100
- Power base station IDX EB-2 EB-4 EB-424L
- Batteries IDX ENDURA series battery with P-V2CL.

3.2. Note

- P-V2CL is an adapter for V-Mount batteries.
- Input voltage range is DC 7V to 17V.
- Power input connector is Cannon 4-pin male.
 - Pin assignment #1: negative (-)
 - #4: positive (+)

Caution

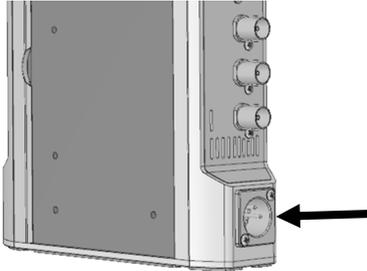
- ✓ Please make sure the input voltage range is within the specified range.
- ✓ Please be cautious and confirm that the connector polarity is correct.
- ✓ Compatible battery are 7.4V lithium-ion batteries or 14V lithium-ion batteries. 24V batteries are not compatible.

3.3. Power on and Power off

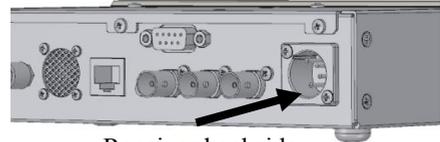
1) Connecting the power supply

Plug the Cannon connector to the DC input on TX and RX.

* Insert firmly until it clicks.

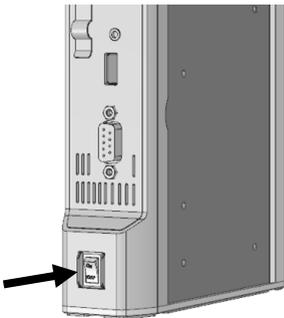


Transmitter right side

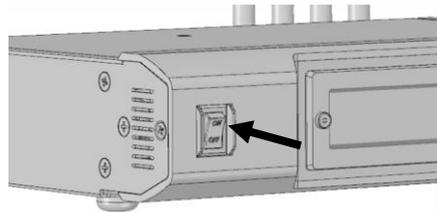


Receiver backside

2) Turn on the power switch



Transmitter left side



Receiver front

- 3) LCD backlight will turn on while the status LED lights RED.
The LCD will display information 15 seconds after the unit is powered on.
The status LED will then start flashing GREEN.
- 4) Turn off the power:
Turn OFF the power switch before removing the power cable.

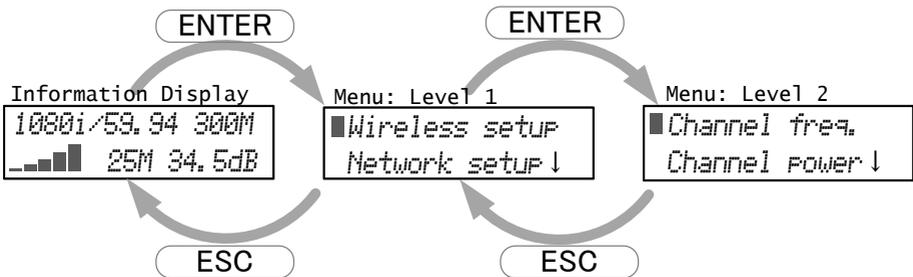
4. Menu setting

CW-F25 is equipped with an LCD display and push buttons for changing the menu settings. This section describes how to navigate and change system settings displayed on the LCD.

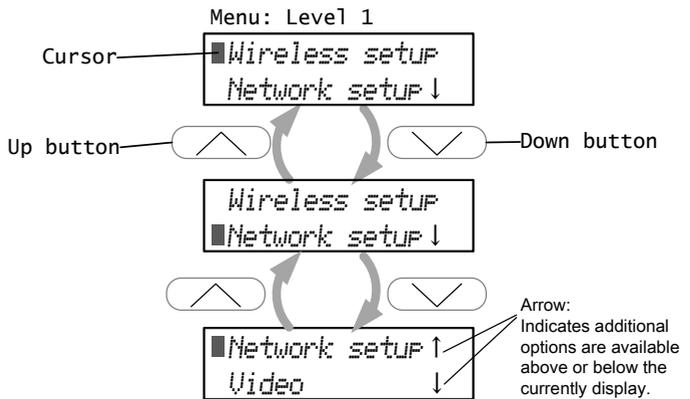
4.1. LCD and the push button

The LCD displays system setup menus and current status.

The settings menu has a hierarchal layout that can be navigated up, down, left and right. The ENTER button is used to cycle through (down) the current status display and menu levels. The ESC button allows you to cycle (up) back to the previous screen. See example below.



A cursor appears at the top left corner of the menu. This can be moved up or down with the UP and DOWN buttons. (See the right)

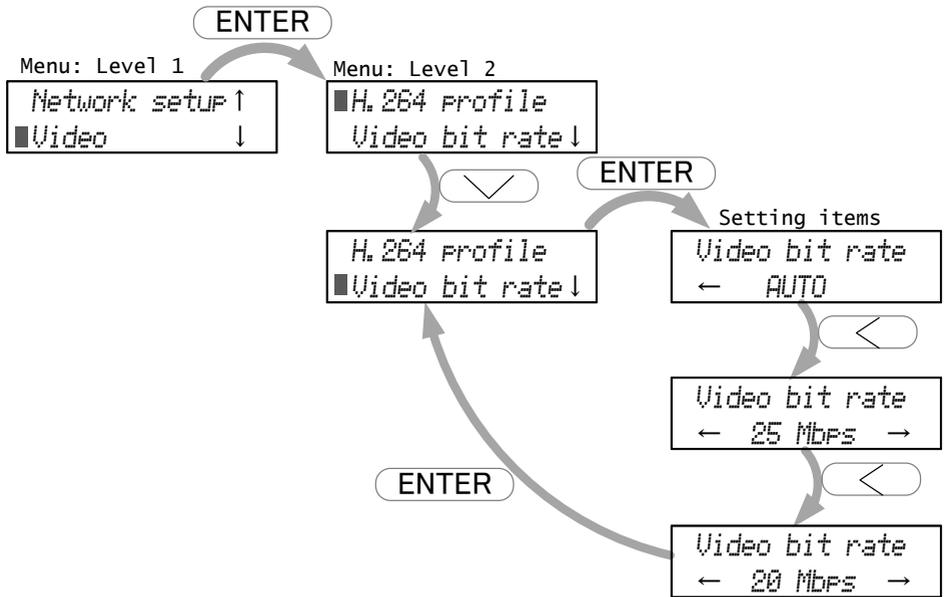


Select a menu by pressing ENTER; this takes you to the next menu level where you can navigate settings with the Left and Right arrow buttons. Use the arrow buttons to move the cursor to the desired setting and press ENTER to initiate the change.

ESC means cancel. If the ESC button is pressed, the menu will return to the previous level without saving changes.

Example;

The figure below illustrates changing the video bit rate by navigating down the menu. `Video` > `Video bit rate`, changed to `20Mbps` from `AUTO`.

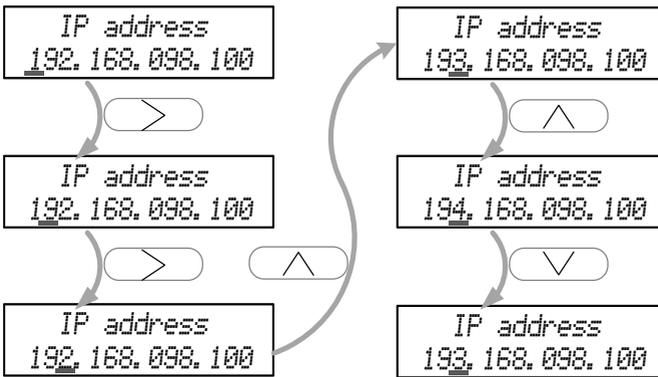


Some setting items require an alphanumeric to be entered.

Use the LEFT and RIGHT arrow buttons to move the cursor position. Use the UP and DOWN arrow buttons to change the alphanumeric value. Press ENTER to set the value. To cancel the input, press ESC.

Example;

For changing Network IP address. `Network setup > IP address`.

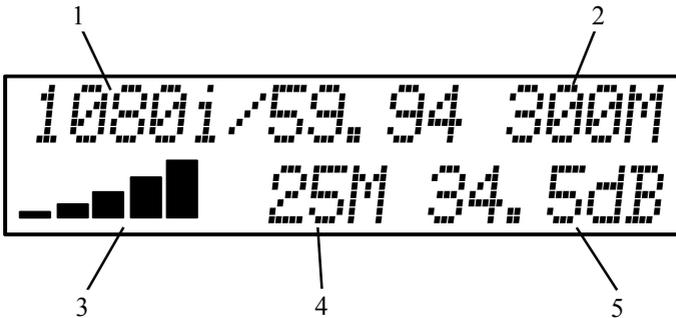


Button Functions Table

Button	Behavior in the menus	Behavior in the setup items
ENTER	Display the menu. Select menu items down to next level.	Initiate changes.
ESC	Go back to upper level.	Cancel
Up	Move cursor.	Select character.
Down		
Left	-	Move between setting items. Move cursor.
Right		

4.2. Information display

The LCD displays the video transmission status as shown in the figure below.



1. Video format

Displays the resolution and frame/field rate of video input.

Displays the "NO_VIDEO_IN" if there is no SDI input signal.

2. Wireless link speed

Displays the wireless link speed of the current connection.

"300M" indicates that the link speed is 300Mbps; this is the maximum speed of 802.11n.

3. Received signal strength

Displays the signal strength in 5 steps with bars. More bars indicate better reception.

4. Video bit rate

Displays the current H.264 video bit rate.

Display "AUTO" if the bit rate is set to AUTO.

5. SNR (Signal Noise Ratio)

Displays the S/N ratio of receiving radio waves.

High values indicate good reception.

4.3. Default settings

CW-F25 is shipped with default settings that enable immediate use; however, please be sure to check the frequency every time prior to use.

- Transmitter only - setting the radio frequency

Please select and set to desired frequency.

Menu: >

- Other settings may be set as required.

For more information about settings, please refer to P.48 "References".

III. Operation of CW-F25

1. Basics

This section explain about basic video transmission. Let's transmit downlink video.
For more information about settings, refer to  mark.

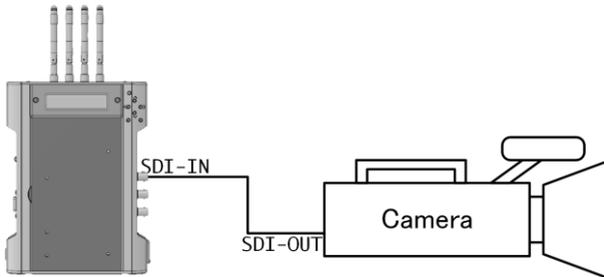
1. Install the antennas to the transmitter and receiver.

 P.19 "Installation of antenna"

2. Connect power supply to transmitter and receiver.

 P.21 "Preparing for power supply"

3. Connect transmitter to camera or SDI source.
Connect receiver to monitor or switcher.



4. Power ON the transmitter and receiver.

 P.22 "Power on and Power off"

5. Set the frequency in the setup menu of the transmitter.

 P.49 "Setup menus - Transmitter"

6. If the connection is successful, the transmitted video will be displayed on the monitor.

Note:

If you select the **DFS** radio frequencies, the signal will link after about one minute of mandatory scanning time. The one minute scanning time is a strict FCC rule for DFS frequency use.

2. Return video

CW-F25 is capable of transmitting return video as well.

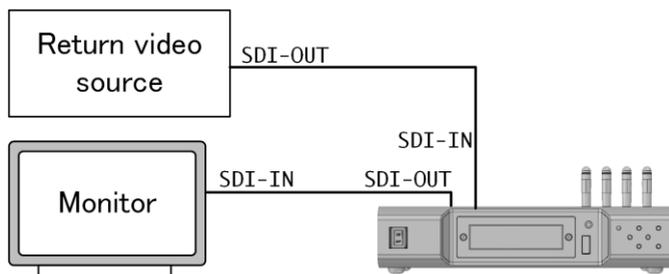
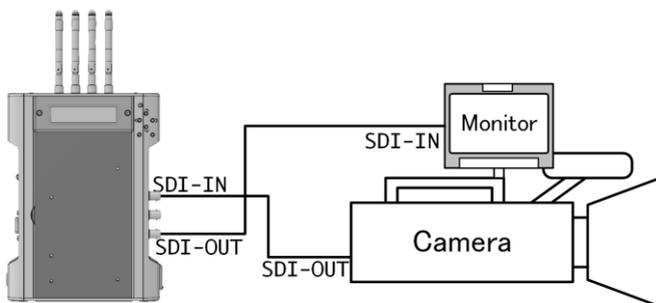
7. Install the antennas to the transmitter and receiver.

 P. 19 "Installation of antenna"

1. Connect power supply to transmitter and receiver.

 P.21 "Preparing for power supply"

2. Camera and monitor setup shown below.



3. Power ON the transmitter and receiver.

 P.22 "Power on and Power off"

4. Set the frequencies in the setup menu of the transmitter.

 P.49 "Setup menus - Transmitter"

5. Enable the return video in the setup menu of the receiver.

Video > Return Video > ON

Video > Embedded Audio > ON

Please select OFF If audio in the return video is not required.

* Factory default setting is both ON.

 P.56 "Setup menus - Receiver"

The last setting is memorized even after the power is turned OFF.

6. If the connection is successful, the downlink video will display on the monitor and the return video will display on the camera side monitor.

3. IP camera setup - wireless LAN bridge -

The Ethernet terminal on the CW-F25 functions as a wireless LAN bridge. All the devices connected to the Ethernet terminal on the CW-F25 will function as if they were directly connected to a LAN.

An example of IP camera setup.

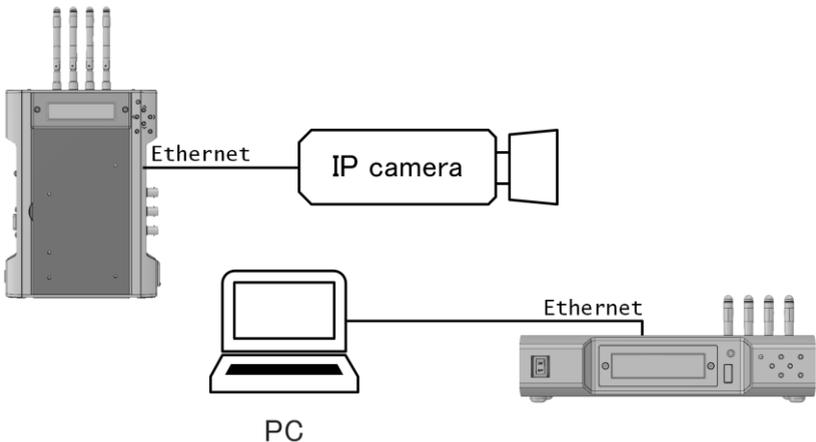
1. Install the antennas to the transmitter and receiver.

 P. 19 "Installation of antenna"

2. Connect power supply to transmitter and receiver.

 P.21 "Preparing for power supply"

3. An IP camera connects to the Ethernet terminal on the transmitter, and the Ethernet terminal on the receiver connects to a PC. See example below.



4. Power ON the transmitter and receiver.

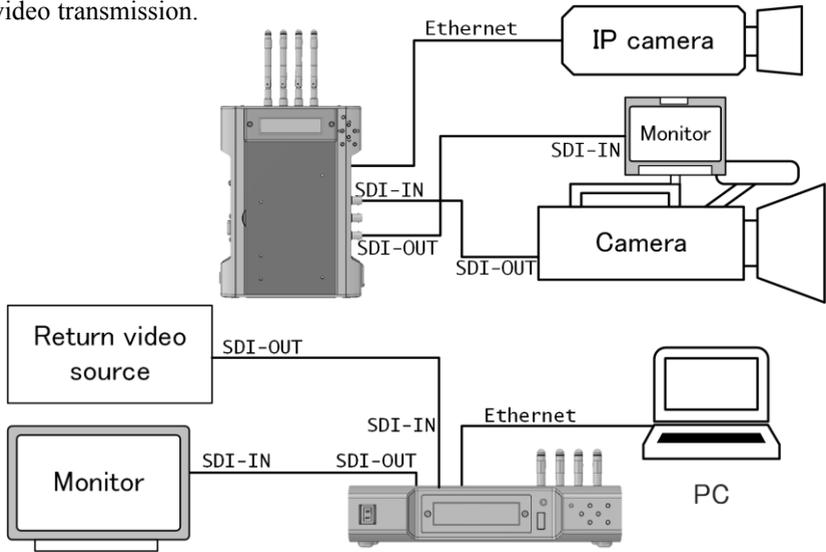
 P.22 "Power on and Power off"

5. Set the radio frequency in the setup menu of the transmitter.

 P.49 "Setup menus - Transmitter"

6. When the wireless link is established, video transmission will start and the PC will be enabled to control the IP camera.

The Wireless LAN bridge function can be used at the same time as downlink video and return video transmission.



Note:

- During transmission the Downlink and return video take priority over the Ethernet data communication. Therefore, it is recommended to lower the frame rate and video resolution on the IP camera when operating both SDI and Ethernet. Setting values will depend on the transmission distance and operational environment; Please test prior to use.
- Ethernet interface does not support PoE (Power Over Ethernet). Please prepare a separate power source for IP cameras and other Ethernet devices.
- CW-F25 has no DNS and DHCP server. Therefore, please assign a static IP address to the IP camera and other Ethernet devices or prepare a separate DNS and DHCP server.
- Please do not connect the Ethernet terminal of transmitter and receiver to the same LAN network. CW-F25 will act as wireless LAN bridge resulting in Ethernet topology loop. Ethernet topology loop will cause faults, such as degradation of performance and/or network failure.

4. Intercom operation

Using a headset, voice communication is possible between transmitter and receiver.

1. Install the antennas to the transmitter and receiver.

 P. 19 "Installation of antenna"

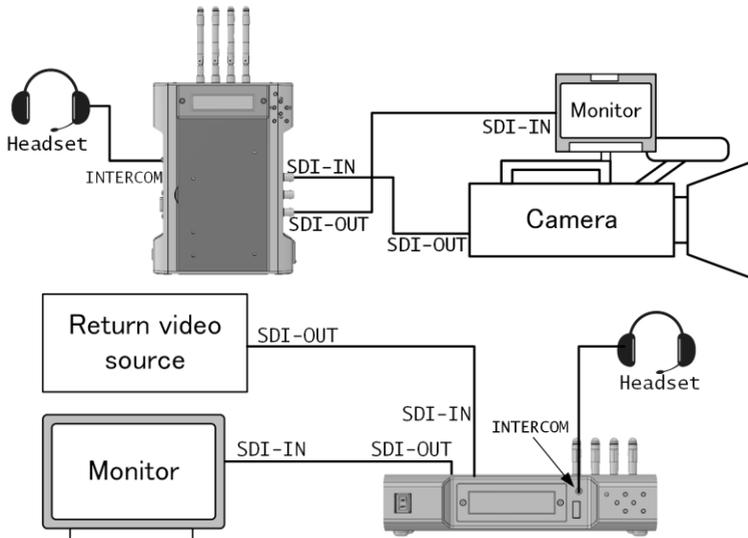
2. Connect power supply to transmitter and receiver.

 P.21 "Preparing for power supply"

3. Camera and monitor setup, etc..

 P.28 "Basics", P.30 "Return video"

4. Connect the headsets to the transmitter and receiver.



5. Power ON the transmitter and receiver.

 P.22 "Power on and Power off"

6. Set the radio frequency in the setup menu of the transmitter.

 P.49 "Setup menus - Transmitter"

7. Enable the intercom in the setup menu of the transmitter and receiver.
`[Intercom] > [Intercom] > [ON]`
* Default setting is ON..
Last setting is memorized even after power is turned OFF.
8. CW-F25 supports bidirectional voice communication when using the headsets on both transmitter and receiver.

Volume control

Sound and microphone volume can be set in the menu.

- Sound volume

`[Intercom] > [Phone level] > [0] to [10]`, 0 is minimum. 10 is maximum.

- Microphone volume

`[Intercom] > [Mic Level] > [0] to [10]`, 0 is minimum. 10 is maximum.

Using another headset

The Intercom jack is a CTIA compliant 4-pole mini jack. Please check the pin assignment prior to using non-IDX supplied headset.

Please refer to P.68 "Connector and pin assignment" for pin assignment.

5. GPI connection - as tally

The GPI input is located on the receiver and the GPI output is located on the transmitter. The GPI signal feed to the receiver will transmit to and output from the transmitter. The GPI output also can be used to output the status of the wireless connection. This can be set in the settings menu.

1. Install the antennas to transmitter and receiver.

 P. 19 "Installation of antenna"

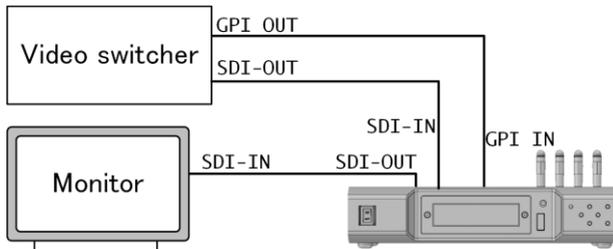
2. Connect the power supply to transmitter and receiver.

 P.21 "Preparing for power supply"

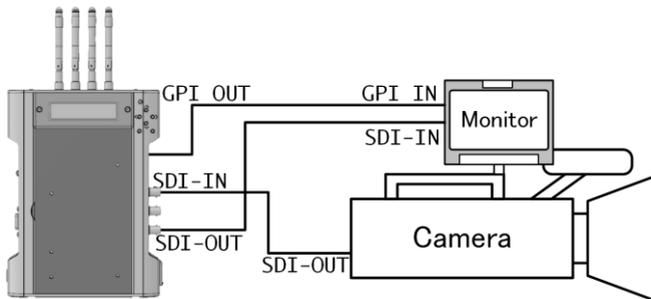
3. Camera and monitor setup, etc..

 P.28 "Basics", P.30 "Return video"

4. Connect a contact closure output from the switcher to receiver.
See example below.



5. Connect the transmitter and tally LED unit or a monitor which has tally input.
See example below.



6. Power ON the transmitter and receiver.

 P.22 "Power on and Power off"

7. Set the radio frequency in the setup menu of the transmitter.

 P.49 "Setup menus - Transmitter"

8. Setting the GPI function in the setup menu of the transmitter.

Tally > **Tally mode** > **Remote** or **Link Status** Select one.

Each function is described below.

Remote Contact signal input to the receiver will be transmitted and output from the transmitter.

Contact signal means; open=off / short=on.

Link Status Outputs the state of the wireless connection.

- Disconnect: open,
- Waiting: open/short alternately (flashing),
- Connect: short.

* Default setting is **Remote**.

Last setting is memorized even after power is turned OFF.

9. Setting the GPI function in the settings menu of the receiver.

Tally > **Remote Tally** > **ON** or **OFF** Select one.

ON means a GPI input is enabled. OFF is disabled.

* Default setting is **ON**.

Last setting is memorized even after power is turned OFF.

Cable and connector

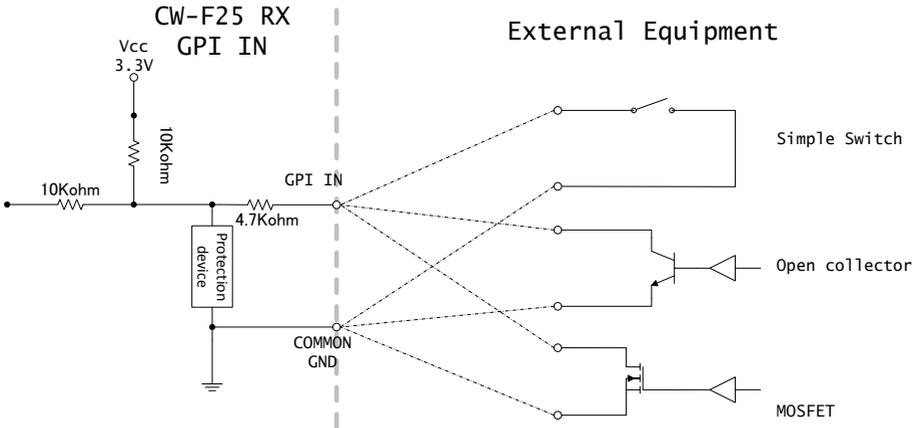
The GPI connector is a two-pole mini jack.

Please refer to P. 68 "Connector and pin assignment".

Please prepare GPI cable, locally.

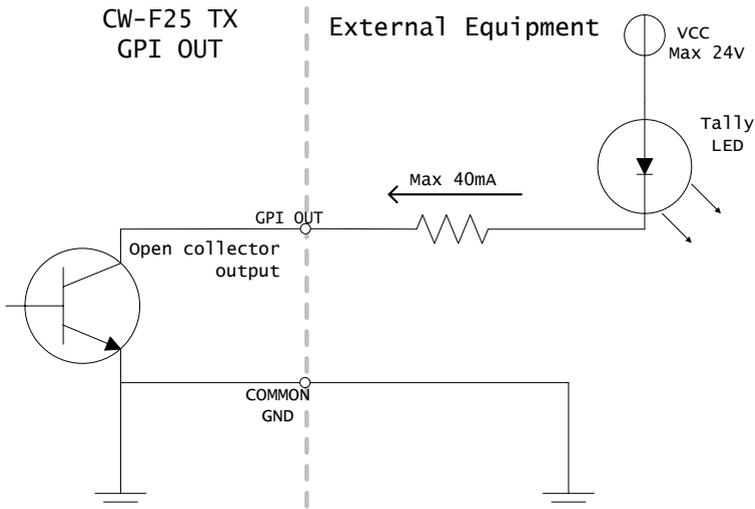
Equivalent circuit of the GPI input of receiver

GPI input is a non-voltage contact.



Equivalent circuit of the GPI output of transmitter.

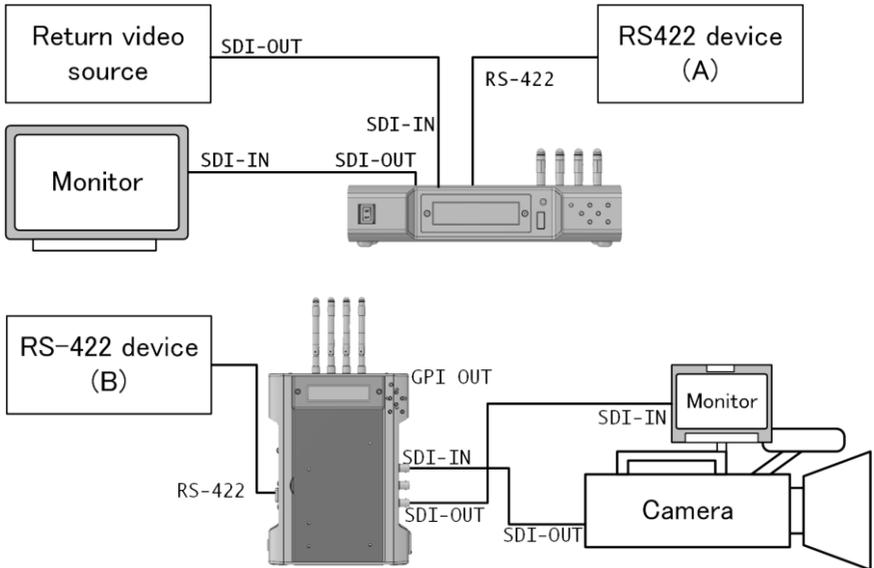
GPI output is an open collector.



6. RS-422 remote

CW-F25 works as a media converter for RS-422 and wireless LAN. It is possible to wirelessly connections multiple RS-422 devices.

1. Install the antennas to transmitter and receiver.
☞ P. 19 "Installation of antenna"
2. Connect the power supply to transmitter and receiver.
☞ P.21 "Preparing for power supply"
3. Camera and monitor setup, etc..
☞ P.28 "Basics", P.30 "Return video"
4. Connect the RS-422 device to the transmitter and receiver.



5. Power ON the transmitter and receiver.
☞ P.22 "Power on and Power off"
6. Set the radio frequency in the settings menu of the transmitter.
☞ P.49 "Setup menus - Transmitter"

7. Enable the RS-422 interface in the setup menu of receiver.

Remote > **Interface** > **RS-422**

* Default setting is OFF.

Last setting is memorized even after power is turned OFF.

8. Set communication parameters of RS-422 in the settings menu of the receiver.

Remote > **Baud rate** > Select baud rate. * Default is 38400 bps.

Remote > **Data bit** > Select data bit length. * Default is 8 bit.

Remote > **Parity** > Select parity. * Default is "none".

Remote > **Stop bit** > Select stop bit length. * Default is 1 bit.

Last setting is memorized even after power is turned OFF.

9. CW-F25 setup is successful when two-way transmission of RS-422 is active.

RS-422 cable and connector

The RS-422 connector is a D-Sub 9 pin female.

Please refer to P. 68 "Connector and pin assignment".

Please prepare RS-422 cable, locally.

Note

A transmission delay occurs due to in radio transmission. The amount of delay depend on the environment and transmission distance. Please test prior to using the system.

IV. Useful information

1. Troubleshooting

Check the following before requesting for repair service. If the problem is not resolved, please contact your dealer or our support & service team.

Please refer to P.77 "Support & Service contact".

1) Power does not turn on

- Check if the LED is emitting light. If it is lit or flashing, the power is turned ON. If the LEDs are active, there is a possibility that the LCD backlight has failed.
- Please make sure the input voltage is within specifications.
Voltage range of CW-F25 is DC7-17V.
- Please check that the AC adaptor or power supply is turned ON.
Is the AC adaptor connected to a commercial power source correctly?
- Does the battery have sufficient capacity and output voltage?
- Is the battery mounted to the P-V2CL correctly? The battery must be seated straight down from the upper side of the V-Plate. Improper battery handling may damage the pins on the V-Plate.
- Is the polarity correct on the 4-pin Cannon connector?
Pin assignment of Cannon XLR-4 is: #1 = negative, #4 = positive.
- Is the Cannon connector locked in place?
- When installing the A-MT2V(CW), make sure the connection of both connectors are firmly plugged in. When mounting, ensure that wires are not being pinched between the A-MT2V(CW) and CW-F25.

2) Status LED does not emit

- Please check the power supply. Refer P.41 "Power does not turn on".
- Status LED starts to emit about 15 second after the power is turned ON. This time delay is caused by the circuit initialization time; it is not a malfunction.

3) LCD backlight does not light

- Please check the power supply. See the P. 41 "Power does not turn on".

- LCD backlight will light immediately after the power is turned ON. It will remain lit during operation. If the LCD does not turn on while the CW-F25 is on, please contact IDX Service or your local representative.

4) TX and RX does not link

- Please check the LED status. A Solid Red LED indicates initialization of the system; a Flashing Green LED indicates signal searching; a Solid Green LED indicates the system has connected successfully. If the video signal is not transmitted even when the Green LED is solid, please refer P.43 "No video out".
- Please reboot the power if the status LED does not change to solid Green after one minute. It is a system failure if this situation has not recovered after power reboot .
- If DFS is selected, the system automatically goes into a standby state for about 1 minute (LED flashes Green). During the standby state, the CW-F25 is searching for radar radio waves.
- Please check if antennas are firmly connected. It may become loosen during operation.
- Is the distance between transmitter and receiver too close?
When used with standard antennas, separate the TX and RX antennas by 3m.
- Is the distance too far in between the antennas? Please re-try after reducing the distance.
- Are there any radio-wave-shielding objects in between the antennas? Obstacles which are made with concrete, metal and glass with electromagnetic shielding, will cause a disturbance or blockage of radio waves.
- Transmission path will be affected by the surrounding buildings, obstacles and environment; therefore, there are places where radio waves are weak despite a short distance.
- Are 5GHz wireless LANs used in your neighborhood? Wireless LANs can co-exist with other 5GHz wireless devices, but if frequencies overlap, interference or failed connection may occur. Please try with a different frequency.
- Is there a high power electromagnetic or microwave source nearby? Wireless connections in this environment are weakened due to the reduced signal reception on the receiving end. The reception can be weakened even if the high power RF source is operating on a different frequency band. Please avoid using the CW-F25 in this type of environment.
- Is the SSID setting on the transmitter and receiver the same? The SSID must be the same on the TX and RX to communicate. *Same SSID is set as factory default.
- Is the password setting on the transmitter and receiver the same? The password must be the same on the TX and RX to communicate. *Same password is set as factory default.

- Please check the following item when the IP address has changed.
 - Subnet must be the same. Please check the **Netmask**.
 - IP address must not conflict.
Please Check the **IP Address** and the **Codec Local IP**.
 - **Codec Local IP** of the transmitter and **Codec Remote IP** of the receiver must be the same. The receiver attempts to connect to the address set in the Codec Remote IP. Please check when the IP address is changes.
For details, please refer P.49 "Setup menus - Transmitter" & P.56 "Setup menus - Receiver".

5) No video out

- Please check the SDI connection.
 - Transmitter:
 - Output of return video is 'SDI OUT' connector.
 - Output of loop-out is 'SDI THRU OUT' connector.
 - Receiver:
 - Output of downlink video is SDI OUT connector.
 - Output of loop-out is 'SDI THRU OUT' connector.
 - Input of return video is 'SDI IN' connector.
- Please confirm that the video format is compatible the system. Incompatible formats will not transmit.
Please refer P.64 "Specification".
- Video input and output are SDI compatible only. This product does not support analog signals.
- Please check the camera settings. Is the SDI output enabled?
- Please check the settings of the monitor. Is the input selection correct?
- Please check coaxial cable. Is it damaged? Is the cable length too long? Does the video output when you change the cable?

6) No audio out

- If the embedded audio of downlink video is not outputting, please check **Embedded Audio** setting of the transmitter. Is it turned ON?
- If the embedded audio of the return video is not outputting, please check **Embedded Audio** setting of the receiver. Is it turned ON?
- The SDI embedded audio supports 4CH . (SDI Embedded Audio Group 1)

- CW-F25 only supports SDI embedded audio. It does not support analog audio and AES/EBU.

7) Video interruption & disturbance

- Please check the video rate setting. High bit rate transmission requires more channel capacity. Reduce the bit rate setting or set it to **AUTO**.
Video block noise and/or drop frame will occur if there is not sufficient channel capacity available.
- Video distortion or blackouts occur if the input video format is changed during transmission.
- Video will freeze temporarily if the H.264 profile is changed during transmission.
- Is there any radio-wave-shielding objects in between the TX and RX? Obstacles which are made with concrete, metal and glass with electromagnetic shielding, will cause a disturbance or blockage of radio waves.
- Transmission path will be affected by the surrounding buildings, obstacles and environment; therefore, there are places where radio waves are weak despite a short distance.
- Are 5GHz wireless LANs used in your neighborhood? Wireless LANs can co-exist with other 5GHz wireless devices, but if frequencies overlap, interference or failed connection may occur. Please try with a different frequency.
- Is there a high power electromagnetic or microwave source nearby? Wireless connections in this environment are weakened due to the reduced signal reception on the receiving end. The reception can be weakened even if the high power RF source is operating on a different frequency band. Please avoid using the CW-F25 in this type of environment.

8) Intercom trouble

- Please check the settings. Is the **Intercom** setting turned ON?
- Re-adjust the microphone and phone level in the setup menu.
- Is plug correctly inserted? Please insert the plug all the way and firmly. Poor contact will occur if the plug is loose.
- When using third-party headsets, please check the pin assignment of the plug. CW-F25 is a CTIA compliant but third-party headsets might have a different pin arrangement.
- Some headsets have volume control. Please check the volume.

9) GPI trouble

- Please check **Tally** setting of the transmitter and receiver.
- If remote tally is required, please select **Remote Tally** on the transmitter side and set **Tally** > **ON** on the receiver side.
- Check pin assignment of the GPI cable.
- Please check the specifications of the equipment connected to the GPI output. Vcc of the external device must be 24V or less and the current should be less than 40mA.
- The GPI port does not supply power. Equipment with an ON/OFF switch dependent on voltage will not work on this port.

10)RS-422 trouble

- Please check **Remote** settings. Default value is OFF. Set ON for use.
- It will not communicate if the baud rate, data bits, parity, and stop bits, are not matched.
- Please check the pin assignment of the RS-422 cable.
- If using a long cable, please replace it with shorter a one.
- CW-F25 does not support RS-232C.

11)Ethernet trouble

- Please check the IP address setting. Ensure the IP address is not a duplicate of another device.
- If connecting to an existing LAN network, please check the network address or IP address of CW-F25. It is recommended to set the IP address of the CW-F25 to not conflict with the subnet of existing LAN networks.
- Pay attention when setting the IP address to avoid duplication, especially if the CW-F25 will operate on an existing LAN subnet.
- When connecting to an existing LAN network, please do not connect the transmitter and receiver at same time; the network will establish a wireless bridge and create a loop in the LAN network. A path loop in the wireless bridge will cause performance degradation. Eventually leading to a LAN network failure.

2. Revert to default settings

If the CW-F25 does not operate properly, it can be recovered by restoring the factory default setting. Follow the steps below to restore Factory settings.

- 1) In the setup menu, select **System** > **Default set**.
- 2) **Default set? Yes/No** will display.
- 3) Select **Yes**, then push ENTER.
- 4) CW-F25 will restart automatically.

3. Firmware update

Updated firmware will be distributed for improvements, enhancements, and bug fixes. When updating the firmware, complete the following steps:

Please prepare a USB memory stick.

Update procedure

- 1) Please download an updated file from IDX the webpage. It is compressed in a ZIP file format.
- 2) Unzip the files.
- 3) If a "README" file exist in the extracted file, then read carefully and follow instructions.
- 4) The following two files are included in the update.
Each file is a firmware for the transmitter and the receiver.

ti810x_update_tx.tar.gz	for the transmitter.
ti810x_update_rx.tar.gz	for the receiver.
- 5) Copy the all files to a USB memory stick.
Note: The files must be at the top level of the USB memory stick. Do not stored in a folder.
- 6) Turn the transmitter power ON, and wait the status LED until green flashing.
- 7) Insert the USB memory stick to the USB port.
- 8) Select **System** > **Firmware update** > **Yes** in the menu, and press ENTER.
- 9) Firmware update starts. Please do not turn the power off while updating.
- 10) The transmitter will restart automatically when the update is complete.

- 11) Wait the status LED until green flashing. Then disconnect the USB memory stick.
- 12) Next, turn the receiver power ON, and wait the status LED until green flashing.
- 13) Insert the USB memory stick to the USB port.
- 14) Select **System** > **Firmware update** > **Yes** in the menu, and press ENTER.
- 15) Firmware update starts. Please do not turn the power off while updating.
- 16) The receiver will restart automatically when the update is complete.
- 17) Wait the status LED until green flashing. Then disconnect the USB memory stick.

- 18) Firmware update is complete.

V. References

1. List of setup menus - Rule

This section describes a list of setup menus and detailed descriptions of each item.

Rule

- Menu list from the left, Menu Level 1 > Level 2 > (level 3) > represents the display content or settings item.
- Choice of settings item is separated by a slash (/).
- Default value is the item that is indicated by an _ (underscore).
- Supplemental explanation is indicated by an * (asterisk).

2. Setup menus - Transmitter

Wireless setup	Channel freq.	<u>5190 / 5230 / 5755 / 5795 / DFS</u>		
	SSID	*SSID set at the factory		
	Password	*Password set at the factory		
	WDS	<u>ON / OFF</u>		
	WDS MAC	*Default is all zeros		
Network setup	IP address	<u>192.168.98.100</u>		
	Netmask	<u>255.255.255.0</u>		
	Gateway	<u>192.168.98.1</u>		
	Codec Local IP	<u>192.168.98.112</u>		
Video	H.264 profile	<u>Baseline / Main / High</u>		
	Video bit rate	<u>3 / 5 /10 /20 / 25 / AUTO</u>		
	Embedded audio	<u>ON / OFF</u>		
Tally	Tally mode	<u>Remote / Link status</u>		
Intercom	Intercom	<u>ON / OFF</u>		
	Mic level	<u>0 - 10</u>	*Default value is 8	
	Phone Level	<u>0 - 10</u>	*Default value is 8	
	About	*Display model name and firmware version		
Status	Wireless info	<u>Link Status</u>	* Display link status	
		<u>Channel freq.</u>	*Display frequency	
		<u>SSID</u>	*Display SSID	
	Networking	<u>IP address</u>	*Display IP address	
		<u>Netmask</u>	*Display Netmask	
		<u>MAC address</u>	*Display MAC address	
		<u>WDS</u>	*Display WDS setting status	
System	Default set	<u>Yes / No</u>		
	Firmware update	<u>Yes / No</u>		
	System reboot	<u>Yes / No</u>		
	Codec reboot	<u>Yes / No</u>		

Details of the setup menus - transmitter**Wireless setup > Channel freq.** **Setting frequency**

Items	5190MHz/ 5230MHz/ 5755MHz / 5795MHz / DFS
-------	---

If DFS is selected, it automatically selects from the following five frequencies

5270, 5310, 5510, 5550, 5670MHz

When DFS is selected, the system will scan the spectrum for available frequencies for approximately 60 seconds. After scanning is complete, communication starts while the frequency is automatically selected by the system.

Wireless setup > SSID **Setting SSID**

Items	Enter the SSID. 1-16 characters. Characters are alphabet, numbers, and other symbols.
-------	--

Set the SSID for wireless LAN.

Default SSID is set at the factory.

Default SSID has been set to not overlap with other CW-F25 units. Therefore there is no need to re-set the SSID for normal use.

If a space is entered between characters, the system will recognize the SSID characters up to the space. Characters after the space will not be recognized. Ensure the character string is the same on the transmitter and receiver.

Transmission interruption will occur when the SSID setting is changed during transmission. However, it will re-connect soon after.

Wireless setup > Password **Setting password**

Items	Enter the Password for Wireless LAN. 8 - 16 characters. Characters are alphabet, numbers, and other symbols.
-------	---

Set password for wireless LAN.

Default password is set at the factory.

If a space is entered between characters, the system will recognize the password characters up to the space. Characters after the space will not be recognized. Ensure the character string is the same on the transmitter and receiver.

Transmission interruption will occur when the password setting is changed during transmission. However, it will re-connect soon after.

Wireless setup > WDS **Setting WDS**

Items	ON / OFF
-------	----------

Setting up WDS configuration of wireless LAN.

WDS stands for Wireless Distribution System. WDS can extend the transmission range by acting as an intermediate wireless access point and repeating the signal.

Set to ON when using the WDS function. Then register the MAC address of the wireless LAN repeater to the WDS MAC.

In WDS mode, please use non-DFS frequencies. WDS does not work if DFS is selected.

Note:

- Transmission delay will increase when using a wireless LAN repeater. The amount of delay depends on the wireless environment and the performance of the repeater.
- Wireless access points must have a WDS function to be used as a repeater for CW-F25.

Wireless setup > WDS MAC Register WDS MAC address

Items	Enter the WDS MAC address. 12-digit. Available characters are 0-9, A-F.
-------	--

Register a MAC address of the wireless LAN repeater for use with WDS.

Network setup > IP address Setting IP address (1)

Items	Enter IP address.
-------	-------------------

Set IP address.

Default IP address of transmitter is 192.168.98.100. Please change if it overlaps with existing equipment on the LAN. Power cycle to allow changes to take effect.

Network setup > Netmask Setting IP Netmask

Items	Enter IP Netmask.
-------	-------------------

Enter IP Netmask. Default value is 255.255.255.0

Power cycle to allow changes to take effect.

Network setup → Gateway Setting IP gateway

Items	Enter IP gateway address.
-------	---------------------------

Enter IP address of gateway. Default value is 192.168.98.1.

Setting changes are not required if a router or IP gateway are not used.

Power cycle to allow changes to take effect.

Network setup > Codec Local IP Setting IP address (2)

Items	Enter IP address.
-------	-------------------

Enter the codec module IP address which is built in the unit.

Default IP address of the transmitter is 192.168.98.112. Please change if it overlaps with existing equipment on the LAN. Power cycle to allow changes to take effect.

Note:

Must be the same subnet as "Setting the IP address (1)".

For example.

Setting of the IP address (1): 192.168.111.10 Netmask 255.255.255.0

Setting of the IP address (2): 192.168.111.11

Video > H.264 profile Setting H.264 profile

Items	Baseline / Main / <u>High</u>
-------	-------------------------------

Set the H.264 profile of downlink video transmission.

Baseline Baseline profile

Main Main profile

High High profile

Default setting is the High profile.

If the profile is changed during transmission, blackout and video distortion may occur.

Note:

Baseline Profile supports progressive video, but does not support interlaced video and PsF.

Video > Video bit rate Setting H.264 bit rate

Items	3Mbps / 5Mbps / 10Mbps / 20Mbps / 25Mbps / <u>AUTO</u>
-------	--

Set H.264 bit rate of downlink video transmission.

Default setting is "AUTO".

"AUTO" enables an adaptive variable rate control function. The bit rate will automatically adjust according to the wireless channel capacity.

If a single bit rate is selected, transmission with a constant bit rate is achieved.

Video > Embedded audio**Setting embedded audio**

Items	<u>ON</u> / OFF
-------	-----------------

Set ON/OFF of SDI embedded audio on downlink video transmission.

ON: SDI embedded audio channel 1-4 of group1 will be transmitted.

OFF: SDI embedded audio will not be transmitted.

Tally > Tally mode**Setting GPI output**

Items	<u>Remote</u> / Link status
-------	-----------------------------

Set GPI output.

Default setting is "Remote"

Remote: Contact state is either open or closed. Input for GPI terminal of receiver is output from GPI output terminal of transmitter.

Link status: Becomes independent from the GPI status of receiver. The following are the statuses of the wireless LAN connection which is output from the GPI terminal on the transmitter.

Not linked: Open

Waiting for link: Alternating short and open (flashing)

Linked: Short

Intercom > Intercom**Setting intercom**

Items	<u>ON</u> / OFF
-------	-----------------

Enable or disable the intercom.

Default is ON.

Intercom > Mic level**Setting microphone gain**

Items	0(min) - 10(max)
-------	------------------

Set the audio input gain of intercom.

Gain can be adjusted in between 0 ~ 10. Default value is 8.

Intercom > Phone level**Setting headphone volume**

Items	0(min) - 10(max)
-------	------------------

Set the intercom audio output volume.

Gain can be adjusted in between 0 ~ 10. Default value is 8.

Status > About
Display info.

Items	Display model name and firmware version.
--------------	--

Displays the model name and firmware version.

Status > Wireless info > Link Status
Display connection status

Items	Display connection status.
--------------	----------------------------

Displays the connection status of the wireless LAN. "Connect" or "Disconnect".

Status > Wireless info > Channel freq.
Display frequency

Items	Display radio frequency.
--------------	--------------------------

Displays the radio frequency currently in use.

Frequency will be selected automatically if DFS is enabled. The display will show the frequency in use.

Status > Wireless info > SSID
Display SSID

Items	Display SSID
--------------	--------------

Display SSID.

Status > Networking > IP address
Display IP address

Items	Display IP address
--------------	--------------------

Displays the IP address currently in use.

Status > Networking > Netmask
Display Netmask

Items	Display Netmask
--------------	-----------------

Displays the IP Netmask currently in use.

Status > Networking > MAC address **Display MAC address**

Items	Display MAC address
-------	---------------------

Displays the MAC address of the unit.

Status > WDS **Display WDS status**

Items	Display WDS status
-------	--------------------

Displays the WDS status whether it is enabled or disabled.

System > Default set **Revert to default**

Items	Yes / No
-------	----------

Clear the settings and revert to the factory defaults.

System > Firmware update **Firmware update**

Items	Yes / No
-------	----------

Update firmware.

See the P.46 "Firmware update".

System > System reboot **Restart (1)**

Items	Yes / No
-------	----------

Restart the unit.

System > Codec reboot **Restart (2)**

Items	Yes / No
-------	----------

Restart the codec module only.

3. Setup menus - Receiver

Wireless setup	SSID		*SSID set at the factory	
	Password		*Password set at the factory	
Network setup	IP address	<u>192.168.98.200</u>		
	Netmask	<u>255.255.255.0</u>		
	Gateway	<u>192.168.98.1</u>		
	Codec Local IP	<u>192.168.98.111</u>		
	Codec Remote IP	<u>192.168.98.112</u>		
Video	Return video	<u>ON</u> / OFF		
	Embedded audio	<u>ON</u> / OFF		
Tally	Remote Tally	<u>ON</u> / OFF		
	Interface	RS-422 / <u>OFF</u>		
Remote	Baud rate	9600/19200/ <u>38400</u> /57600/115200/ 230400/460800 bps		
	Data bit	<u>8</u> / 7		
	Parity	<u>none</u> / odd / even		
	Stop bit	<u>1</u> / 2		
	Intercom	<u>ON</u> / OFF		
Intercom	Mic level	0 - 10	*Default value is 8	
	Phone Level	0 - 10	*Default value is 8	
Status	About	*Display model name and firmware version		
	Wireless info	Link Status	*Display link status	
		Channel freq.	*Display frequency	
	Networking	SSID	*Display SSID	
		IP address	*Display IP address	
		Netmask	*Display Netmask	
System	MAC address	*Display MAC address		
	Default set	Yes / <u>No</u>		
	Firmware update	Yes / <u>No</u>		
	System reboot	Yes / <u>No</u>		
	Codec reboot	Yes / <u>No</u>		

Details of the setup menus - receiver

Wireless setup > SSID

Setting SSID

Items	Enter the SSID. 1-16 characters. Characters are alphabet, numbers, and other symbols.
-------	--

Set the SSID for wireless LAN. Default SSID is set at the factory.

Default SSID has been set to not overlap with other CW-F25 units. Therefore there is no need to re-set the SSID for normal use.

If a space is entered between characters, the system will recognize the SSID characters up to the space. Characters after the space will not be recognized. Ensure the character string is the same on the transmitter and receiver.

Transmission interruption will occur when the SSID setting is changed during transmission. However, it will re-connect soon after.

Wireless setup > Password

Setting password

Items	Enter the Password for Wireless LAN. 8 - 16 characters. Characters are alphabet, numbers, and other symbols.
-------	---

Set password for wireless LAN.

Default password is set at the factory.

If a space is entered between characters, the system will recognize the password characters up to the space. Characters after the space will not be recognized. Ensure the character string is the same on the transmitter and receiver.

Transmission interruption will occur when the password setting is changed during transmission. However, it will re-connect soon after.

Network setup > IP address

Setting IP address (1)

Items	Enter IP address
-------	------------------

Set IP address.

The Default IP address of receiver is 192.168.98.200. Please change if it overlaps with existing equipment on the LAN. Power cycle to allow changes to take effect.

Network setup > Netmask

Setting IP Netmask

Items	Enter IP Netmask
-------	------------------

Enter IP Netmask. The default value is 255.255.255.0

Power cycle to allow changes to take effect.

Network setup > Gateway Setting IP gateway

Items	Enter IP gateway address.
-------	---------------------------

Enter IP address of gateway. The Default value is 192.168.98.1.

Setting changes are not required if a router or IP gateway are not used.

Power cycle to allow changes to take effect.

Network setup > Codec Local IP Setting IP address (2)

Items	Enter IP address.
-------	-------------------

Enter the codec module IP address which is built in the unit.

The Default IP address of the receiver is 192.168.98.111. Please change if it overlaps with existing equipment on the LAN. Power cycle to allow changes to take effect.

Note:

Must be the same subnet as "Setting the IP address (1)".

For example.

Setting of the IP address (1): 192.168.111.20 Netmask 255.255.255.0

Setting of the IP address (2): 192.168.111.21

Network setup > Codec Remote IP Setting IP address (2)

Items	Enter IP address.
-------	-------------------

Enter the codec module IP address which is built in the transmitter.

The Default IP address of the transmitter is 192.168.98.112. Please change if it overlaps with existing equipment on the LAN. Power cycle to allow changes to take effect.

Important:

Please set same address as [Codec Local IP of transmitter side](#).

If the setting have two different IP addresses, the system will not link.

Video > Return video Setting return video

Items	ON / OFF
-------	----------

Set ON/OFF of return video transmission.

ON: Return video transmission is enabled.

OFF: Return video transmission is disabled.

Video > Embedded audio**Setting embedded audio**

Items	<u>ON</u> / OFF
-------	-----------------

Set ON/OFF of SDI embedded audio on return video transmission.

ON: SDI embedded audio channel 1-4 of group1 will be transmitted.

OFF: SDI embedded audio will not be transmitted.

Tally > Remote Tally**Setting GPI input**

Items	<u>ON</u> / OFF
-------	-----------------

Set GPI input.

Default is ON.

ON: Contact state is either open or closed. Input of GPI terminal on the receiver is outputting from the GPI output terminal of the transmitter.

OFF:GPI input of the receiver is disabled.

Remote > Interface**Setting RS-422**

Items	RS-422 / <u>OFF</u>
-------	---------------------

Settings of remote RS-422.

Default setting is OFF.

If "RS-422" is selected, remote transmission of RS-422 is enabled.

Remote > Baud rate**Setting baud rate**

Items	9600 / 19200 / <u>38400</u> / 57600 / 115200 / 230400 / 460800 (bps)
-------	---

Set baud rate of RS-422.

Default value is 38400bps.

Must match the baud rate of the RS-422 equipment.

Remote > Data bit**Setting data bit length**

Items	<u>8</u> / 7 (bit)
-------	--------------------

Set the data bit length of the RS-422.

Default value is 8bit.

Must match the baud rate of the RS-422 equipment.

Remote > Parity

Set parity

Items	<u>n</u> one / odd / even
-------	---------------------------

Set parity of RS-422.

none	no parity
odd	odd parity
even	even parity

Default value is "none".

Must match the baud rate of the RS-422 equipment.

Remote > Stop bit

Setting stop bit length

Items	<u>1</u> / 2 (bit)
-------	--------------------

Set stop bit length of RS-422.

Default is 1 bit.

Must match the baud rate of the RS-422 equipment.

Intercom > Intercom

Setting intercom

Items	<u>O</u> N / OFF
-------	------------------

Set the intercom enable or disable.

Default is ON.

Intercom > Mic level

Setting microphone gain

Items	0(min) - 10(max)
-------	------------------

Set the audio input gain of intercom.

Gain can be adjusted between 0 ~ 10. Default value is 8.

Intercom > Phone level

Setting headphone volume

Items	0(min) - 10(max)
-------	------------------

Set the intercom audio output volume.

Volume can be adjusted in between 0~10. Default value is 8.

Status > About **Display info.**

Items	Display model name and firmware version.
--------------	--

Displays model name and firmware version.

Status > Wireless info > Link Status **Display connection status**

Items	Display connection status.
--------------	----------------------------

Displays connection status of the wireless LAN. "Connect" or "Disconnect".

Status > Wireless info > Channel freq. **Display frequency**

Items	Display radio frequency.
--------------	--------------------------

Displays radio frequency currently in use.

Frequency will be selected automatically if DFS is enabled. The frequency in use is visible on the display.

Status > Wireless info > SSID **Display SSID**

Items	Display SSID
--------------	--------------

Displays SSID that is currently connected.

If not connected, cannot display SSID.

Status > Networking > IP address **Display IP address**

Items	Display IP address
--------------	--------------------

Displays the IP address currently in use.

Status > Networking > Netmask **Display Netmask**

Items	Display Netmask
--------------	-----------------

Displays the IP Netmask currently in use.

Status > Networking > MAC address **Display MAC address**

Items	Display MAC address
-------	---------------------

Displays MAC address of the unit.

System > Default set **Revert to default**

Items	Yes / <u>No</u>
-------	-----------------

Clear the settings and revert to the factory defaults.

System > Firmware update **Firmware update**

Items	Yes / <u>No</u>
-------	-----------------

Update firmware.

See P.46 "Firmware update".

System > System reboot **Restart (1)**

Items	Yes / <u>No</u>
-------	-----------------

Restart the unit.

System > Codec reboot **Restart (2)**

Items	Yes / <u>No</u>
-------	-----------------

Restart the codec module only.

4. Status LED

Status LED will simply display the operating state.
See the LED status table below.

Color	State	Meanings
-	Off	Hardware initialization will take a place immediately after power is turned ON.
RED	On	Software initialization will take a place after hardware initialization is complete.
GREEN	Flashing	Waiting for connection. This is including the waiting time for DFS connection
GREEN	On	Connected.
RED	Flashing	Error occurred.

5. Specification

1) Transmitter

Video & Audio	
Video signal	3G-SDI(Level A/B) HD-SDI
Audio signal	SDI Embedded Audio
Video format	3G: 4:2:2 YCbCr 10bit 1080p/60, 1080p/59.94, 1080p/50 HD: 4:2:2 YCbCr 10bit 1080i/60, 1080i/59.94, 1080i/50, 1080p/30, 1080p/29.97, 1080p/25, 1080p/24, 1080p/23.98, 1080PsF/30, 1080PsF/29.97, 1080PsF/25, 1080PsF/24, 1080PsF/23.98, 720p/59.94, 720p/50
Audio format	PCM 24bit 48kHz
Wireless transmission	
Frequencies	5GHz Wi-Fi band 5150-5250MHz(2CH) 5250-5350MHz(2CH, with DFS) 5470-5725MHz(3CH, with DFS, Exclude 5600-5650MHz) 5725-5850MHz(2CH)
Channel bandwidth	40MHz
Transmission power	23dbm (200mW) max.
Wi-Fi standard	IEEE 802.11n
DFS function	The transmitter works as a DFS master.
Wi-Fi security	WPA2-PSK (AES)
Antenna connector	R-SMA Jack x 4
Antenna	Standard 2dBi Omni-directional dipole x4
Function	4x4 MIMO (Multi-Input / Multi-Output) Beam forming, DFS
H.264 codec	
Video bit rate	3, 5, 10, 20, 25Mbps (Downlink video) 1 Mbps (Return video)
H.264 profile	Baseline profile / Main profile / High profile
Audio channels	4ch
Adaptive Variable Rate Control	Adjusts the video rate automatically. Select a constant or variable rate on the setting.

Transmission delay	Minimum 250msec one-way. Includes wireless transmission delay & codec delay.	
Transmission mode		
Transmission mode	Unicast (1 TX to 1 RX)	
GPI		
Electrical spec.	Open collector output.	
Function	Remote / Link status, selectable	
Remote signal		
Interface	RS-422	
Baud rate	9600/19200/38400/57600/115200/230400/460800 bps.	
Intercom		
Input	Unbalanced, monaural	Impedance 2.2K ohm
Output	Unbalanced, stereo	Impedance 32 ohm
Connector	CTIA compliant 4-pole mini jack	
Ethernet		
Interface	GbE (1000BASE-T)	
Function	Acts as a LAN terminal of the wireless bridge.	
Indication and operation		
Power switch	Power ON/OFF	
Status LED	System status LED, Green/Red 2 colors.	
LCD	16col x 2 rows with backlight	
Push buttons	Enter, ESC, Up, Down, Left, Right	
Input and Output terminal		
Video input	BNC x1 (SDI)	
Video output	BNC x2 (SDI Buffered out / SDI return video out)	
GPI	3.5Φ 2p mini jack x1	
Remote	D-Sub 9pin x1 (RS-422)	
Intercom	3.5Φ 4p mini jack x1	
Ethernet	RJ-45 x1 (GbE)	
電源端子	ITT Cannon XLR-4 male (#1- / #4+)	
USB	USB type A x1	
General		
Dimensions	203mm x 155.5mm x 44mm (without protruding parts)	
Mass	1160g (approx.)	
Power input	DC 7-17V	
Power consumption	15W MAX	
Temperature	0~50 deg C (operational)	
Regulation / Certification	FCC Part 15.407	
	RoHS	

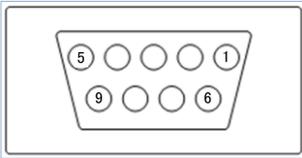
2) Receiver

Video & Audio	
Video signal	3G-SDI(Level A/B) HD-SDI
Audio signal	SDI Embedded Audio
Video format	3G: 4:2:2 YCbCr 10bit 1080p/60, 1080p/59.94, 1080p/50 HD: 4:2:2 YCbCr 10bit 1080i/60, 1080i/59.94, 1080i/50, 1080p/30, 1080p/29.97, 1080p/25, 1080p/24, 1080p/23.98, 1080PsF/30, 1080PsF/29.97, 1080PsF/25, 1080PsF/24, 1080PsF/23.98, 720p/59.94, 720p/50
Audio format	PCM 24bit 48kHz
Wireless transmission	
Frequencies	5GHz Wi-Fi band 5150-5250MHz(2CH) 5250-5350MHz(2CH, with DFS) 5470-5725MHz(3CH, with DFS, Exclude 5600-5650MHz) 5725-5850MHz(2CH)
Channel bandwidth	40MHz
Transmission power	23dbm (200mW) max.
Wi-Fi standard	IEEE 802.11n
DFS function	The receiver works as a DFS slave.
Wi-Fi security	WPA2-PSK (AES)
Antenna connector	R-SMA Jack x 4
Antenna	Standard 2dBi Omni-directional dipole x4
Function	4x4 MIMO (Multi-Input / Multi-Output) Beam forming, DFS
H.264 codec	
Video bit rate	3, 5, 10, 20, 25Mbps (Downlink video) 1 Mbps (Return video)
H.264 profile	Baseline profile / Main profile / High profile
Audio channels	4ch
Adaptive Variable Rate Control	Adjust the video rate automatically. Select of a constant or variable rate on the setting.

Transmission delay	Minimum 250msec one-way. Include wireless transmission delay & codec delay.	
Transmission mode		
Transmission mode	Unicast (1 TX to 1 RX)	
GPI		
Electrical spec.	Non-voltage contact input	
Works	transmits the contact signal from an external device.	
Remote signal		
Interface	RS-422	
Baud rate	9600/19200/38400/57600/115200/230400/460800 bps.	
Intercom		
Input	Unbalanced, monaural	Impedance 2.2K ohm
Output	Unbalanced, stereo	Impedance 32 ohm
Connector	CTIA compliant 4-pole mini jack	
Ethernet		
Interface	GbE (1000BASE-T)	
Function	Acts as a LAN terminal of the wireless bridge.	
Indication and operation		
Power switch	Power ON/OFF	
Status LED	System status LED, Green/Red 2 colors.	
LCD	16col x 2 rows with backlight	
Push buttons	Enter, ESC, Up, Down, Left, Right	
Input and Output terminal		
Video input	BNC x1 (SDI)	
Video output	BNC x2 (SDI Buffered out / SDI downlink video out)	
GPI	3.5Φ 2p mini jack x1	
Remote	D-Sub 9pin x1 (RS-422)	
Intercom	3.5Φ 4p mini jack x1	
Ethernet	RJ-45 x1 (GbE)	
電源端子	ITT Cannon XLR-4 male (#1- / #4+)	
USB	USB type A x1	
General		
Dimensions	213mm x 150mm x 51mm (without protruding parts)	
Mass	1190g (approx.)	
Power input	DC 7-17V	
Power consumption	15W MAX	
Temperature	0~50 deg C (operational)	
Regulation / Certification	FCC Part 15.407	
	RoHS	

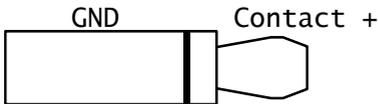
6. Connector and pin assignment

1) RS-422 D-Sub 9pin

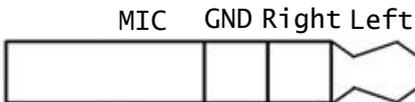


Pin#	RS-422
1	TXD-
2	TXD+
3	RTS-
4	RTS+
5	GND
6	RXD-
7	RXD+
8	CTS-
9	CTS+

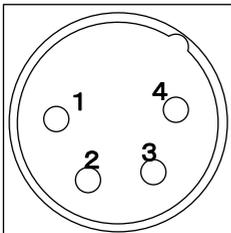
2) GPI IN/OUT 3.5φ 2P mini plug/jack



3) Intercom 3.5φ 4P mini plug/jack (CTIA compliance)



4) DC Power Input ITT-Cannon XLR-4-32-F512



1	-
2	NC
3	NC
4	+

7. Important notice

- * In the areas where other wireless devices are in operation, transmission may be interrupted.
- * CW-F25 is programmed differently for different regions. Using CW-F25 outside of the region it was purchased in may violate local laws.
- * The maximum transmission range varies depending on the surrounding environment such as radio wave conditions, composition of the wall, weathering, etc.. therefore the specification of the transmission range is not a definite range.
- * Unstable signal reception may be caused by the height, angle and distance between TX and RX.
- * Keep TX and RX 3m (10ft) apart during set up/linking. the system may not link if the TX and RX are too close.
- * Do not use in direct sunlight conditions.
- * Plug and unplug the connectors when the power SW is off.
- * The video signal of the CW-F25 is based on the SMPTE standard, but due to the characteristics of the radio transmission processing, it does not guarantee compatibility for all the equipment.
- * 3G-SDI video (1080p/50, 59.94, 60) is not possible to bidirectional transmission. Please use only one direction of the downlink or return.
- * Transmission delay is usually 6 to 7 frames. Worsening of the radio wave cause the delay increase of +2 to +3 frames.
- * Bad radio wave condition will cause a incompletely received. In this case CW-F25 outputs the freeze picture of the last frame. By returning to a good radio wave condition, the CW-F25 displays a jump of several video frames, and then return to the normal transmission.
- * Lip-sync is usually ± 0 frame. Bad radio wave condition cause the audio advanced +2 frames to the video. It is worse case. This is within the range of the lip-sync acceptability threshold "+90ms to -185ms" defined by the ITU-R BT.1359-1.
- * The return video will be transmitted under the bandwidth limitation. For this reason, the return video is reducing the image quality and fps, but it is normal.
- * Before using an external power supply, always check that the voltage is within the specified range and that the polarity of the connector is correct, as this will avoid smoke or fire.
- * When a battery is mounted on CW-F25 or CW-F25 is mounted on a device, please

ensure that they are correctly and firmly locked.

8. Index

3

3G-SDI..... 4, 64, 66

5

5GHz..... 4, 9, 42, 44, 64, 66

8

802.11n 4, 26, 64, 66

A

Adaptive variable-rate control 4

A-MT2V 17, 41

antenna..... 10, 19, 20, 28, 30, 32, 34, 36, 39, 42

audio 4, 31, 43, 44, 49, 53, 56, 59, 60

AUTO..... 24, 44, 49, 52

B

backlight..... 22, 41, 42, 65, 67

battery 11, 21, 41

bit rate 4, 24, 26, 44, 49, 52, 64, 66

bps..... 40, 56, 59, 65, 67

button 23, 24

C

cable..... 7, 17, 22, 37, 40, 43, 45

camera 11, 28, 31, 32, 34, 36, 43

cancel 24, 25

Cannon 21, 22, 41, 65, 67, 68

CE 2

certification 9

channel 44, 52, 53, 59

Channel 27, 49, 50, 54, 56, 61, 64, 66

channel capacity 44, 52
 coaxial..... 43
 codec..... 43, 49, 52, 55, 56, 58, 62
 connect..... 28, 30, 32, 34, 36, 37, 39, 54, 61
 Connector 35, 37, 40, 65, 67, 68
 contact signal 37, 67
 CTIA 35, 44, 65, 67, 68
 cursor..... 12, 14, 23, 24, 25
 CW-F25....1, 4, 5, 10, 21, 23, 27, 28, 30, 32, 33, 35, 39, 40, 41, 42, 44, 45, 46,
 50, 51, 57, 78

D

DC 11, 12, 15, 21, 22, 65, 67, 68
 default.....27, 31, 35, 42, 46, 48, 51, 52, 53, 54, 55, 57, 58, 59, 60, 62
 DFS..... 5, 42, 49, 50, 51, 54, 61, 63, 64, 66
 DHCP..... 33
 disconnect 37, 54, 61
 display 6, 22, 23, 26, 31, 46, 48, 54, 61, 63
 DNS 33
 downlink video 4, 5, 28, 30, 31, 33, 43, 52, 53, 67
 D-Sub..... 13, 15, 40, 65, 67, 68
 Dynamic Frequency Selection..... 5

E

embedded audio 49, 53, 56, 59
 ENTER 12, 14, 23, 24, 25, 46, 47
 ESC..... 12, 14, 23, 24, 25, 65, 67
 Ethernet 5, 12, 15, 32, 33, 45, 65, 67

F

FCC..... 2, 9, 29, 65, 67
 firmware 46, 47, 49, 55, 56, 62
 frame rate..... 33
 frequency 27, 28, 29, 32, 34, 37, 39, 42, 44, 49, 50, 54, 56, 61

G

gain 53, 60
 gateway..... 49, 51, 56, 58
 GPI..... 12, 15, 36, 37, 38, 45, 53, 59, 65, 67, 68

H

H.264 4, 26, 44, 49, 52, 64, 66
 HD-SDI 4
 Headset 10, 11

I

IDX 1, 2, 11, 21, 35, 42, 46, 76, 77, 78, 1
 IEEE 4, 64, 66
 indoor 5, 9
 intercom 5, 13, 14, 34, 35, 44, 49, 53, 56, 60, 65, 67, 68
 interference 2, 4, 42, 44
 IP 5, 25, 32, 33, 43, 45, 49, 51, 52, 54, 56, 57, 58, 61
 IP address 25, 33, 43, 45, 49, 51, 52, 54, 56, 57, 58, 61
 IP camera 5, 32, 33

J

jack 35, 37, 65, 67, 68

L

LAN 5, 32, 33, 39, 45, 50, 51, 52, 53, 54, 57, 58, 61, 65, 67
 LCD 12, 14, 22, 23, 26, 41, 42, 65, 67
 LED 12, 14, 22, 36, 41, 42, 63, 65, 67
 license 9
 link 4, 26, 29, 32, 42, 49, 53, 56, 58
 lithium-ion 21

M

MAC 49, 51, 55, 56, 62
 menu 12, 14, 23, 24, 25, 28, 30, 31, 32, 34, 35, 36, 37, 39, 40, 44, 46, 47
 mic 35, 49, 53, 56, 60
 MIMO 4, 64, 66
 monitor 28, 29, 30, 31, 34, 36, 39, 43

N

netmask 43, 49, 51, 52, 54, 56, 57, 58, 61
 network 25, 49, 51, 52, 56, 57, 58

O

outdoor..... 5, 9

P

password..... 49, 50, 56, 57

PC 32

phone 35, 49, 53, 56, 60

plug 7, 44, 68

PoE..... 33

Power base station..... 21

power supply 7, 21, 22, 28, 30, 32, 34, 36, 39, 41

profile..... 44, 49, 52, 64, 66

push button 23

P-V2CL 16, 18, 21, 41

R

reboot 42, 49, 55, 56, 62

regulations 9

remote..... 37, 40, 43, 45, 49, 53, 56, 58, 59, 60, 65, 67

Remote..... 37, 40, 43, 45, 49, 53, 56, 58, 59, 60, 65, 67

return video..... 4, 5, 30, 31, 33, 34, 36, 39, 43, 56, 58, 59, 64, 65, 66

RP-SMA 12, 15

RS-422 5, 13, 15, 39, 40, 45, 56, 59, 60, 65, 67, 68

S

S/N ratio 26

screw hole 13, 14

SDI..... 5, 12, 15, 26, 28, 33, 43, 44, 53, 59, 64, 65, 66, 67

setup ..12, 14, 23, 25, 27, 28, 30, 31, 32, 34, 35, 36, 37, 39, 40, 44, 46, 48, 49,
50, 51, 52, 56, 57, 58

signal strength 26

SMA 12, 15, 64, 66

SNR..... 26

SSID..... 42, 49, 50, 54, 56, 57, 61

status 12, 14, 37, 41, 49, 54, 55, 56, 61, 62, 63, 65, 67

Status LED..... 12, 14, 41, 42, 63, 65, 67

switch..... 13, 14, 22, 45, 65, 67

system..... 46, 47, 49, 51, 55, 56, 62, 65, 67, 77, 1

T

tally..... 5, 36, 45
 Tally 37, 45, 49, 53, 56, 59
 transmission 4, 5, 26, 28, 32, 33, 40, 44, 50, 51, 52, 53, 57, 58, 59, 64, 65, 66,
 67

U

USB..... 13, 14, 46, 47, 65, 67

V

Vcc..... 45
 video format 43, 44
 V-Mount 11, 13, 16, 21
 V-Plate 12, 14, 16, 41

W

WDS..... 49, 50, 51, 55
 weather radar 5
 wireless..... 4, 5, 26, 27, 33, 42, 44, 49, 50, 51, 54, 56, 57, 61, 64, 66
 Wireless LAN 4, 5, 33, 42, 44, 50, 57

X

XLR-4..... 12, 15, 41, 65, 67, 68

VI. Warranty & Service

1. Product warranty

- Warranty period of this product is 1 years after purchase.
* Except for the antenna and accessories.
- Warranty covers manufacturing defects caused by poor workmanship or materials.
- Warranty may be voided even within the warranty period when IDX notices the following: Improper use of this product / Malfunction due to excess or deficiency of power / Malfunction due to power short circuit / Malfunction due to electrical surge / Physical damages caused by dropping or vibration / Malfunction due to water / Unauthorized use and/or modification done by customer
- Original serial numbers and/or QC labels removed or tampered with voids any warranty.

2. About exemptions

IDX does not take responsibility for failure generated by or as a result of any of the following items.

- Damage caused by natural disasters, such as earthquakes, thunder storms, flood damage and fire or acts by third parties outside the responsibility of our company other accidents, and intentional negligence and misuse by the user, or use under unusual conditions.
- Consequential damage through misuse of this product, or malfunction (change, disappearance of the information contents, loss of profits, enterprise failure, etc.)
- Damage produced by non-compliant items mentioned in the operating manual.
- Damage produced from using non-compatible hardware and software not approved or tested by IDX.

3. Support & Service contact

When any assistance is needed, please contact your local IDX dealer or appropriate IDX office below.

- WEB
http://idxtek.com/idx_contact/form
- Contact us
IDX System Technology, Inc.
19001 Harborage Way, Suite 105
Torrance, CA 90501 USA
Tel: +1-310-328-2850
Fax: +1-310-328-8202
E-mail: idx.usa@idx.tv

CW-F25 Instruction manual, US version.
XXWK140187
5th Edition, 12 Apr. 2016

IDX Company, Ltd.

6-28-11 Shukugawara,
Tama-ku, Kawasaki-shi, Kanagawa-ken,
214-0021 JAPAN



FOR SALES AND SERVICE CONTACT

In Japan / Asia

IDX Company, Ltd.

6-28-11 Shukugawara, Tama-Ku,
Kawasaki-Shi, Kanagawa-Ken
214-0021,
JAPAN

TEL: 81-44-850-8801

FAX: 81-44-850-8838

E-mail: idx.japan@idx.tv

In the United States

IDX System Technology, Inc.

19001 Harborgate Way,
Suite 105 Torrance
CA 90501
USA

TEL: 1-310-328-2850

FAX: 1-310-328-8202

E-mail: idx.usa@idx.tv

In Europe / Middle East.

IDX Technology Europe Ltd.

Unit 9, Langley Park,
Waterside Drive, Langley,
Berkshire SL3 6AD
ENGLAND

TEL: 44-1753-547692

FAX: 44-1753-546660

E-mail: idx.europe@idx.tv