

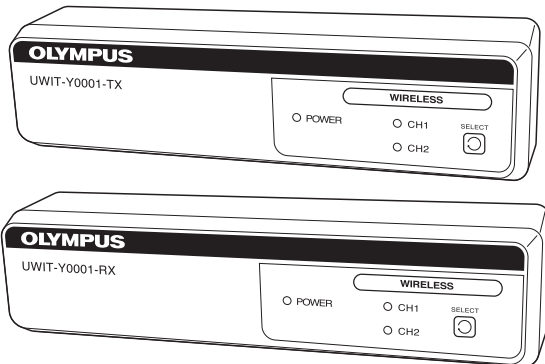
### INSTRUCTIONS

#### WIRELESS TRANSMITTER

UWIT-Y0001-TX

#### WIRELESS RECEIVER

UWIT-Y0001-RX



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**USA: CAUTION:** Federal law restricts this device to sale by or on the order of a physician.



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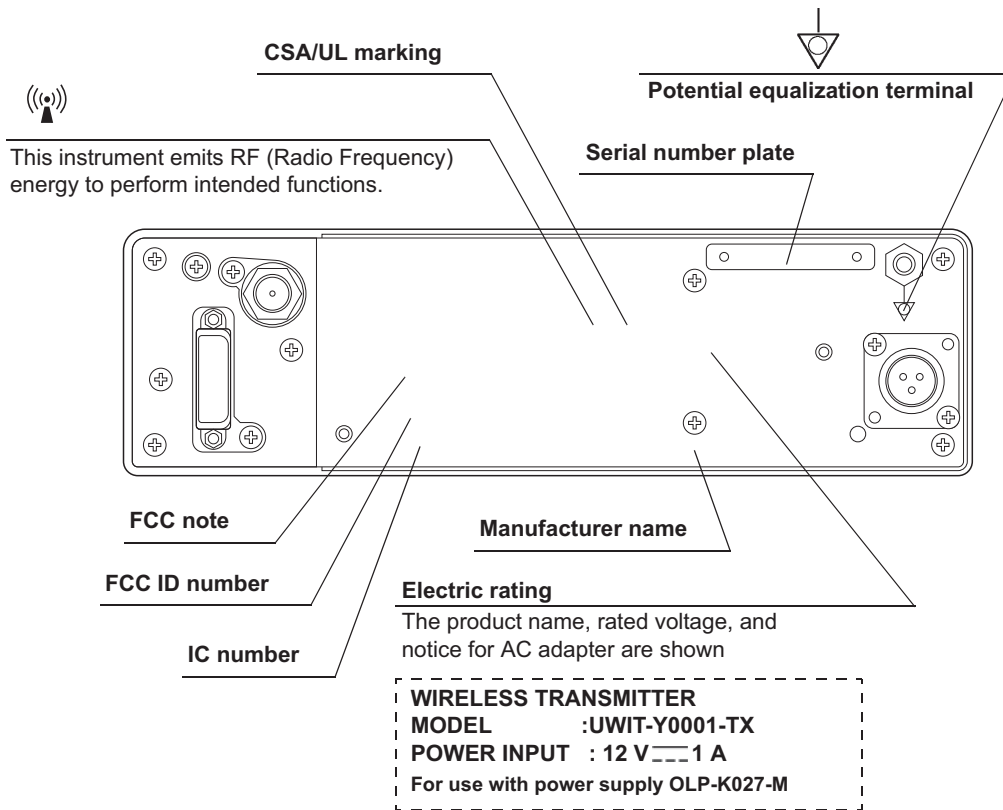
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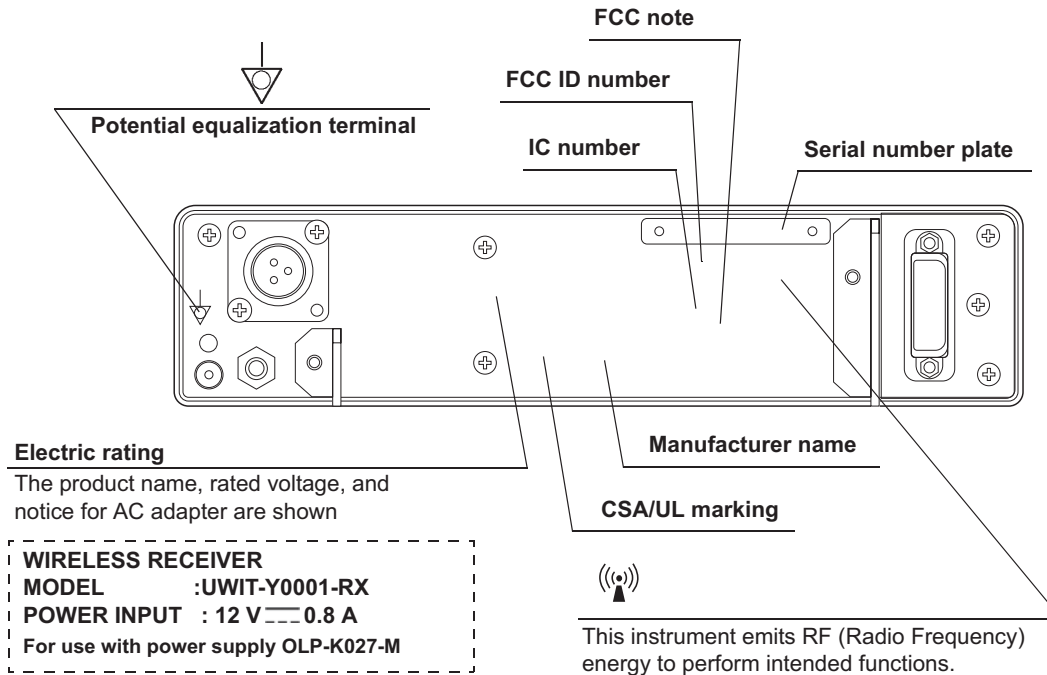
## Labels and Symbols

Safety-related labels and symbols are attached on the locations shown below. If labels or symbols are missing or illegible, contact Olympus.

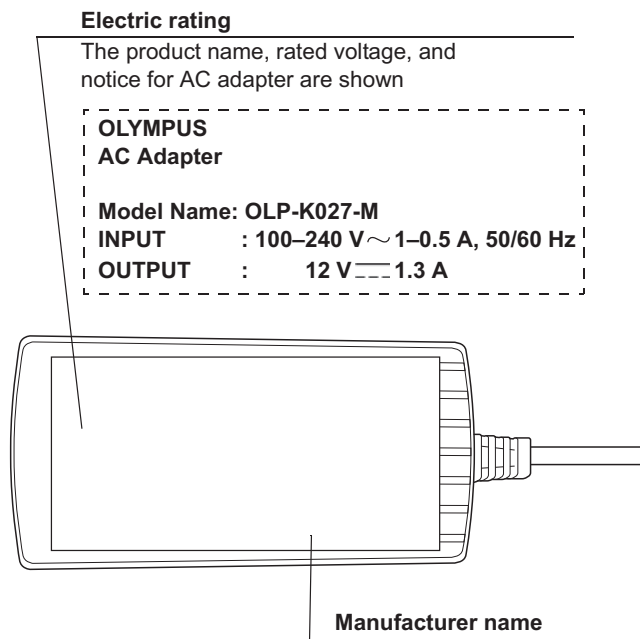
### ○ Wireless Transmitter





## ○ Wireless Receiver



## ○ AC Adaptor



**○ Back cover of this instruction manual**

Symbol	Description
	Manufacturer
	Authorized representative in the European Community

## ***Important Information — Please Read Before Use***

### **■ *Intended use***

---

The Olympus Wireless Image Transmitter Unit UWIT-Y0001 is a paired transmitter and receiver, intended for delivery of video signals over a radio-frequency link to a video display during endoscopic and general surgical procedures. The Olympus UWIT-Y0001 is a non-sterile reusable device not intended for use in the sterile field. It is intended for use by qualified physicians having complete knowledge of these surgical procedures.

### **■ *Instruction manual***

---

This instruction manual contains essential information on using this Wireless Image Transmitter Unit safely and effectively. Before use, thoroughly review this manual and the manuals of all equipment which will be used during the procedure and use the equipment as instructed.

Keep this and all related instruction manuals in a safe, accessible location. If you have any questions or comments about any information in this manual, please contact Olympus.

### **○ *Terms used in this manual***

Video system center:

The video system center is a device that converts signals from a videoscope or video converter, camera head into monitor images.

Wall mains outlet:

The wall mains outlet is a wall AC mains power outlet socket having the exclusive terminal for grounding.



## ■ *User qualifications*

---

If there is an official standard on user qualifications to perform endoscopy and endoscopic treatment that is defined by the medical administration or other official institutions, such as academic societies on endoscopy, follow that standard. If there is no official qualification standard, the operator of this instrument must be a physician approved by the medical safety manager of the hospital or person in charge of the department (department of internal medicine, etc.). The physician should be capable of safely performing the planned endoscopy and endoscopic treatment following guidelines set by the academic societies on endoscopy, etc., and considering the difficulty of endoscopy and endoscopic treatment. This manual does not explain or discuss endoscopic procedures.

## ■ *Instrument compatibility*

---

Refer to the “■ System chart” on page 43 to confirm that this Wireless Image Transmitter Unit is compatible with the ancillary equipment being used. Using incompatible equipment can result in patient injury or equipment damage and makes it impossible to obtain the expected functionality.

This instrument complies with the EMC standard for medical electrical equipment; edition 3 (IEC 60601-1-2: 2007), edition 2 (IEC 60601-1-2: 2001). However, when connected with an instrument that complies with the EMC standard for medical electrical equipment; edition 1 (IEC 60601-1-2: 1993), the whole system complies with edition 1.

## ■ *Repair and modification*

---

This Wireless Image Transmitter Unit does not contain any user-serviceable parts. Do not disassemble, modify or attempt to repair it; patient or operator injury, equipment damage and/or the impossibility to obtain the expected functionality can result. Some problems that appear to be malfunctions may be correctable by referring to Chapter 7, “Troubleshooting”. If the problem cannot be resolved using the information in Chapter 7, contact Olympus. This instrument is to be repaired by Olympus technicians only.

Change or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

## ■ **Signal words**

---

The following signal words are used throughout this manual:

<b>DANGER</b>	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
<b>WARNING</b>	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
<b>CAUTION</b>	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices or potential equipment damage.
<b>NOTE</b>	Indicates additional helpful information.

## ■ **Dangers, warnings, and cautions**

---

Follow the dangers, warnings and cautions given below when handling this Wireless Image Transmitter Unit. This information is to be supplemented by the dangers, warnings, and cautions given in each chapter.

### **DANGER**

- Strictly observe the following precautions. Failure to do so may place the patient and medical personnel in danger of electric shock.
  - Keep fluids away from all electrical equipment. If fluids are spilled on or into the unit, stop operation of the Wireless Image Transmitter Unit immediately and contact Olympus.
  - Do not prepare, inspect or use this Wireless Image Transmitter Unit with wet hands.
- Never install and operate the Wireless Image Transmitter Unit in locations where:
  - The concentration of oxygen is high;
  - Oxidizing agents (such as nitrous oxide (N<sub>2</sub>O)) are present in the atmosphere;
  - Flammable gases are present in the atmosphere;
  - Flammable liquids are near.

Otherwise, explosion or fire may result because this Wireless Image Transmitter Unit is not explosion-proof.

**WARNING**

- In case of Wireless Image Transmitter Unit failure or malfunction, always keep another Wireless Image Transmitter Unit in the room ready for use.
- Only use the supplied AC adaptor. Do not use the supplied AC adaptor to power other devices. The equipment may fail or the power cord may burn.
- Always use the power cord and connection cables that were shipped with the monitor or mobile workstation. Using other power cords or connection cables may result in an electric shock or malfunction.

**CAUTION**

- Do not use a pointed or hard object to press the buttons on the front panel. This may damage the buttons.
- Do not touch the electrical contacts inside the Wireless Image Transmitter Unit's connectors.
- Do not apply excessive force to this Wireless Image Transmitter Unit and/or other instruments connected. Otherwise, damage and/or malfunction can occur.

## **EMC (Electromagnetic Compatibility)**

- In order to provide the intended functionality (HDTV image transmission), the Wireless Image Transmitter Unit (UWIT-Y0001) emits RF (Radio Frequency) energy while in operation. This may affect electrical devices in the vicinity.



- The Wireless Image Transmitter Unit (UWIT-Y0001) utilizes RF signals shown below. Accordingly, it is subject to electromagnetic interference from other in-band equipment in the vicinity.

<b>Central Frequency</b>	60.48 GHz (When using CH1) 62.64 GHz (When using CH2)
<b>Frequency range of possible interference</b>	59.40 – 61.56 GHz (When using CH1) 61.56 – 63.72 GHz (When using CH2)
<b>Modulation method</b>	OFDM
<b>High-frequency output</b>	Less than +40 dBm

## Summary of Equipment Functions

This Wireless Image Transmitter Unit transmits HDTV video signals over a radio frequency channel with no compression and low latency between a pair of transmitter and receiver. This instrument supports the functions listed below.

### ■ **Transmitting function of HDTV video signal over radio frequency channel**

---

- When using the HD-SDI input connector for the Wireless Transmitter
  - A paired Wireless Transmitter and Receiver can transmit 1080i (60/50 Hz) digital HDTV video signal over radio frequency channel
- When using the DVI input connector for the Wireless Receiver
  - A paired Wireless Transmitter and Receiver can transmit 1080p (60/50 Hz) digital HDTV video signal and SXGA: 1280 × 1024 (60 Hz) digital video signal over radio frequency channel

### ■ **Pair changing function**

---

By using the SELECT button of the Wireless Transmitter and Receiver, the Channel (CH1 or CH2) for pairing Transmitter and Receiver can be set manually.

→See Section 5.2, "Connection of the Wireless Transmitter and Receiver".

## | Summary of Equipment Functions

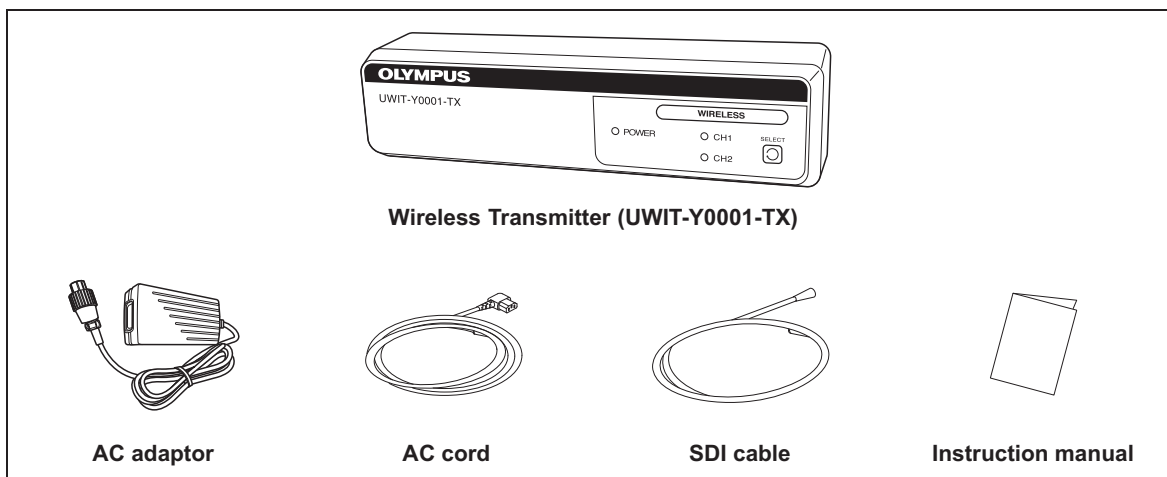
# Chapter 1 Checking the Package Contents

## 1.1 Checking the package contents

Ch.1

Match all items in the package with the components shown below. Inspect each item for damage. If the Wireless Image Transmitter Unit is damaged, a component is missing, or you have any questions, do not use the Wireless Image Transmitter Unit; immediately contact Olympus.

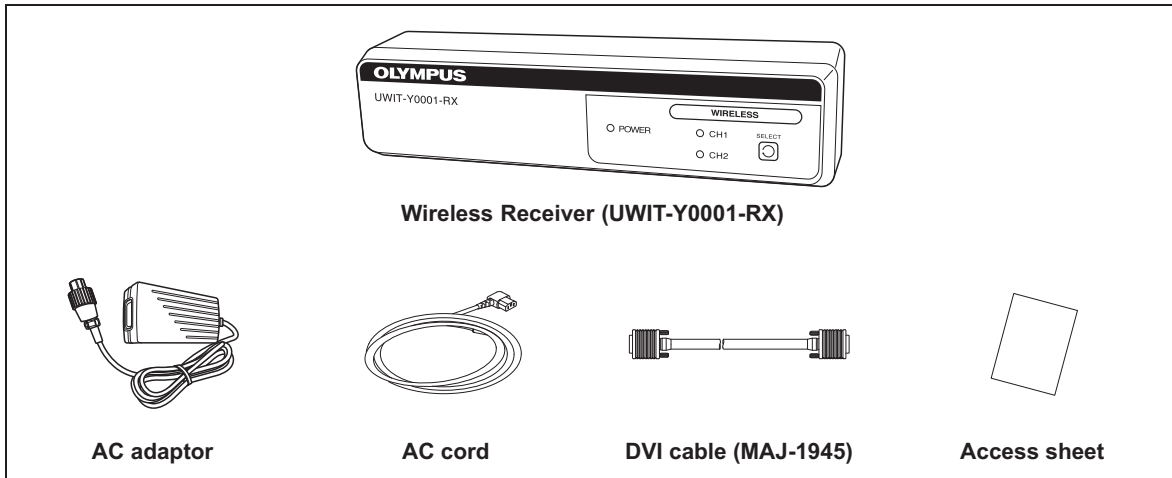
### ○ Wireless Transmitter



1.1 Checking the package contents

○ Wireless Receiver

Ch.1



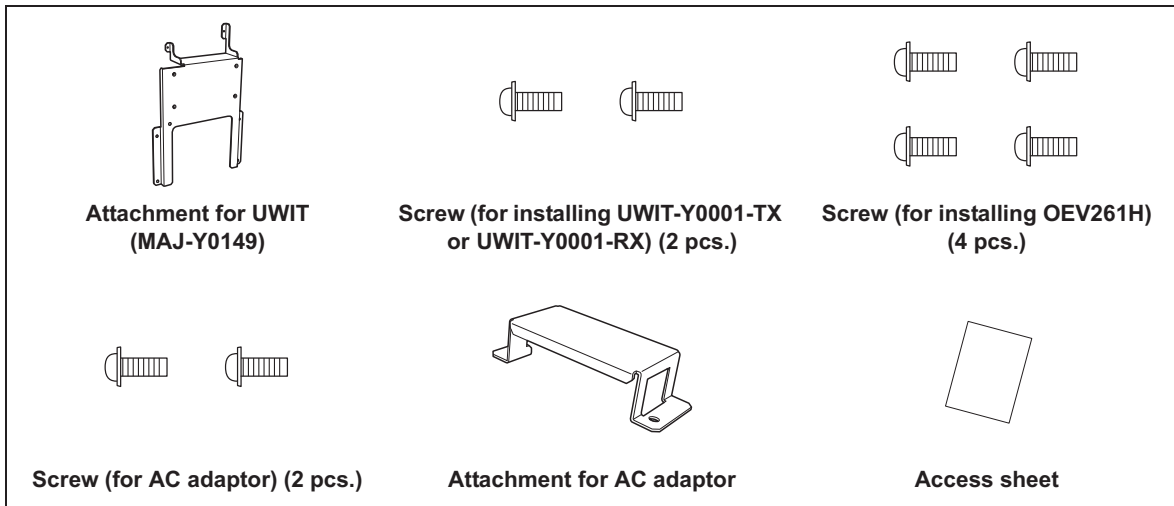


**Optional equipment**

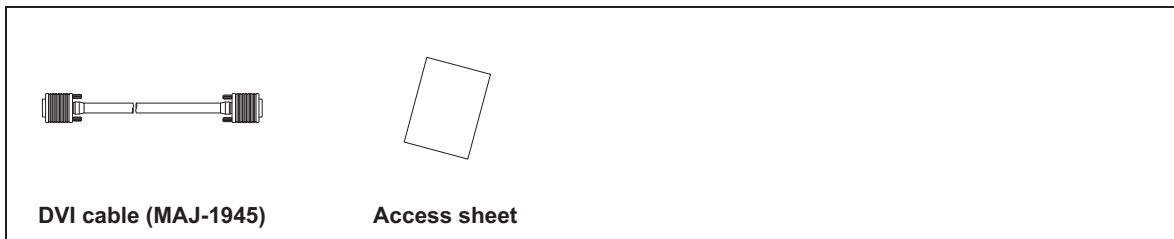
The following products are optional Olympus products that may be purchased separately.

**○ Attachment for UWIT (MAJ-Y0149)**

**Ch.1**



**○ DVI cable (MAJ-1945)**



| 1.1 Checking the package contents

**Ch.1**




# Chapter 2 *Nomenclature and Functions*

The instrument nomenclature, functions, and specifications are described in this chapter.



## 2.1 *Symbols and descriptions*

Ch.2

### ○ Front panel

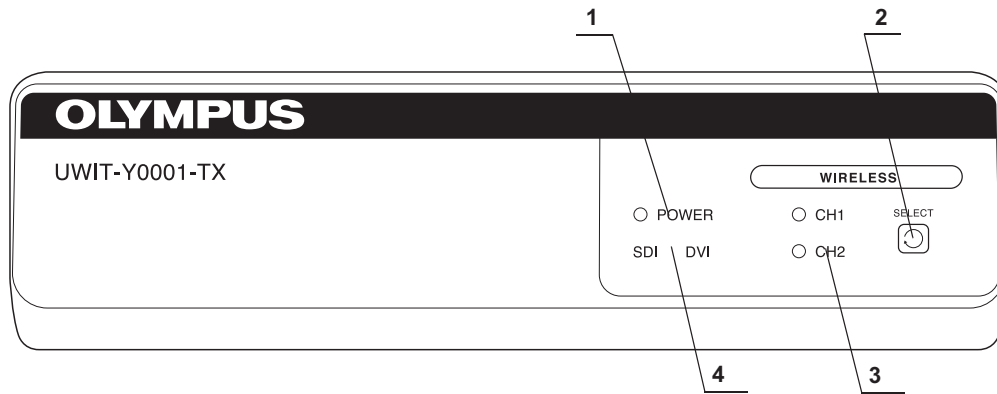
Symbol	Description
	Select

### ○ Rear panel

Symbol	Description
	Serial number
	Potential equalization terminal

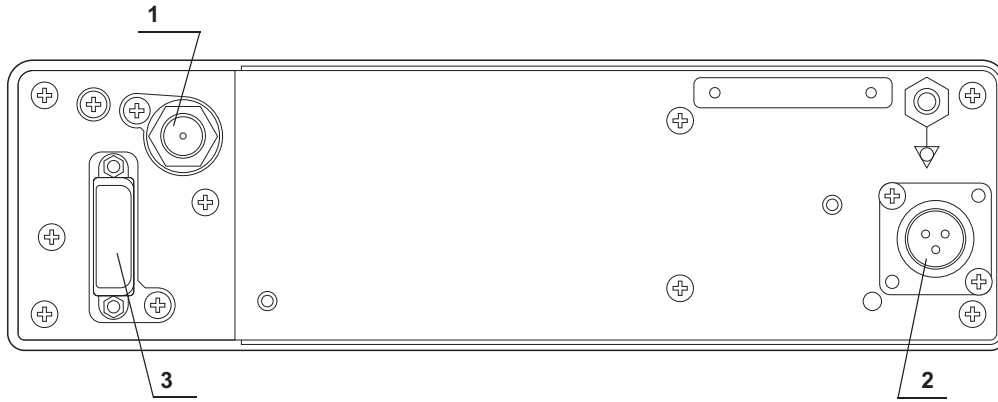
## 2.2 Front panel of Wireless Transmitter

Ch.2



No.	Nomenclature	Description
1	Power indicator	Lights up when the Wireless Transmitter is ON.
2	SELECT button	When pressed and held for 1 second, the SELECT button switches between the CH1 and CH2 Channels.
3	Channel Status display	The selected Channel (CH1 or CH2) will have a steady light or blink. It blinks while searching to connect to the Wireless Receiver. It will have a steady light when connection has been established.
4	Video selection status display	Selected video input selection (SDI or DVI) will have a steady light or blink. It will have a steady light when the Wireless Transmitter detects supported video format, and it will blink when the Wireless Transmitter cannot detect any video signal or unsupported video format is detected.

## 2.3 Rear panel of Wireless Transmitter

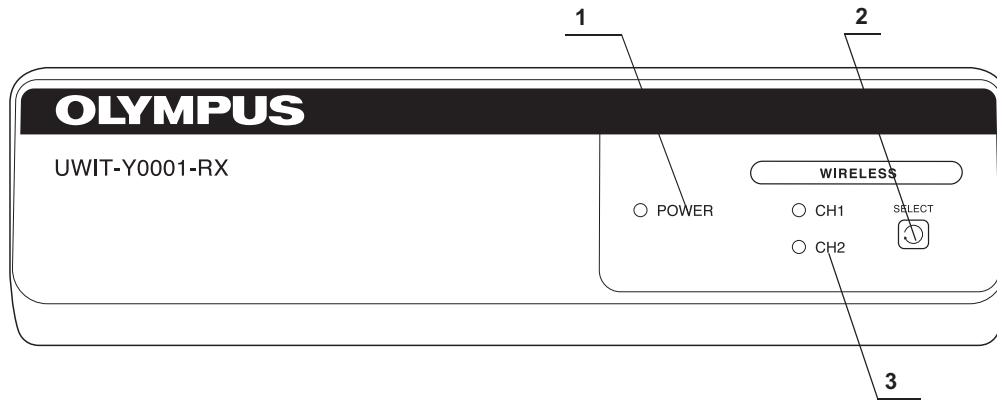


**Ch.2**

No.	Nomenclature	Description
1	HD-SDI IN terminal	Inputs HD-SDI video signal.
2	DC IN terminal	This is the 12V DC input terminal. Connect the supplied AC adaptor to this terminal.
3	DVI IN terminal	Inputs digital video signal.

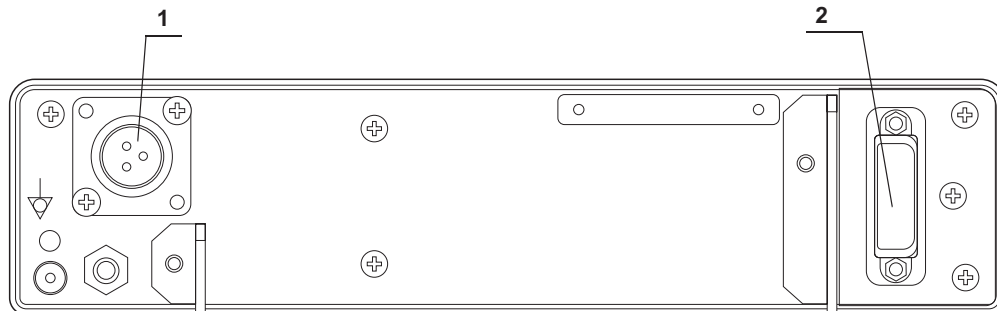
## 2.4 Front panel of Wireless Receiver

Ch.2



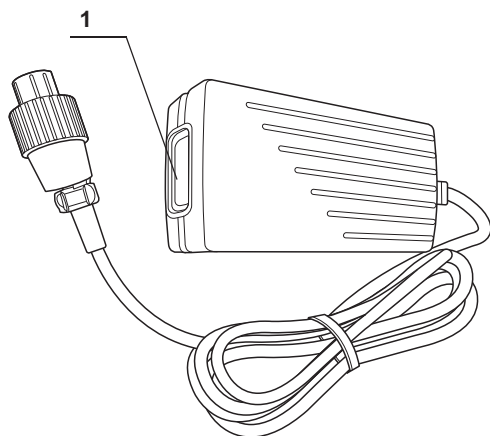
No.	Nomenclature	Description
1	Power indicator	Lights up when the Wireless Receiver is ON.
2	SELECT button	When pressed and held for 1 second, the SELECT button switches between the CH1 and CH2 Channels.
3	Channel Status display	The selected Channel (CH1 or CH2) will have a steady light or blink. It blinks while searching to connect to the Wireless Transmitter. It will have a steady light when connection has been established.

## 2.5 Rear panel of Wireless Receiver



No.	Nomenclature	Description
1	DC IN terminal	This is the 12V DC input terminal. Connect the supplied AC adaptor to this terminal.
2	DVI OUT terminal	Outputs digital video signal.

## 2.6 AC adapter



**Ch.2**

No.	Nomenclature	Description
1	AC IN terminal	This is the AC input terminal.

| 2.6 AC adapter

**Ch.2**





## Chapter 3 Installation and Connection

Prepare this Wireless Image Transmitter Unit and compatible equipment (shown in the “■ System chart” on page 43) before each use. Referring to the instruction manuals of each system component, install and connect the equipment according to the procedure described in this chapter.

### 3.1 Precautions for installation and connection

#### WARNING

Review this chapter thoroughly, and prepare the instruments properly before use. If the equipment is not properly prepared before each use, equipment damage, patient and operator injury and/or fire can occur.

**Ch.3**

#### CAUTION

- Use appropriate cables only. Otherwise, equipment damage or malfunction can result.
- Properly and securely connect all cables. If the cable connector has a locking mechanism, such as connection screws, lock the cable connector. Otherwise, equipment damage or malfunction, such as no images on the monitor can result.
- The cables should not be sharply bent, pulled, twisted or crushed. Cable damage can result.
- Use this instrument only under the conditions described in “■ Environment” on page 46 and “■ Specifications” on page 48. Otherwise, improper performance, compromised safety and/or equipment damage may result.

## 3.2 Installation of the equipment

Use Attachment for UWIT (MAJ-Y0149) for installing the Wireless Transmitter or Receiver. Check the unused mounting screw holes on the rear panel of OEV261H installed to LCD arm, and fix the Wireless Transmitter or Receiver using supplied screws.

- 1 Check the rear panel of OEV261H installed to LCD arm, and align the unused mounting screw holes of OEV261H with the mounting screw holes on the Attachment for UWIT (MAJ-Y0149).

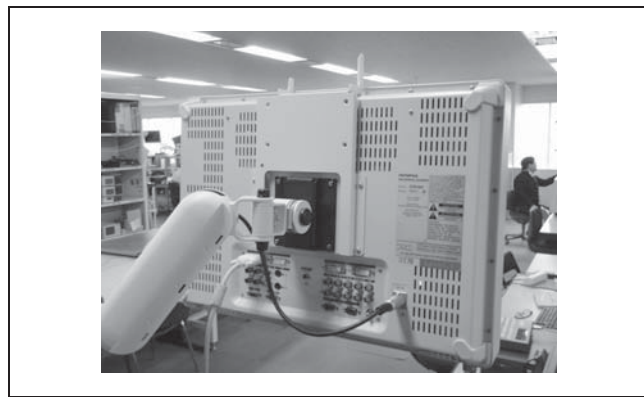


Figure 3.1

- 2 Fix the Attachment for UWIT onto the top back of the high definition LCD monitor OEV261H using the four screws provided with the Attachment for UWIT.
- 3 Align the mounting screw holes on the rear of the Wireless Transmitter or Receiver with the mounting screw holes on the Attachment for UWIT.

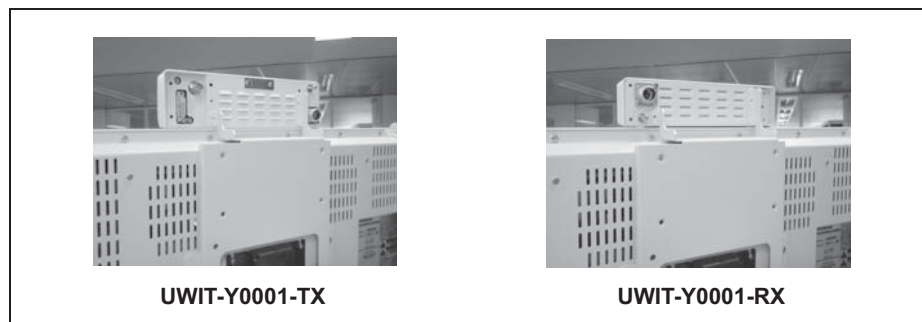


Figure 3.2

- 4 Fix the Wireless Transmitter or Receiver onto the Attachment for UWIT using two screws provide with the Attachment for UWIT.

**CAUTION**

- Ensure that the Wireless Transmitter or Receiver is fixed firmly to the high definition LCD monitor OEV261H. Otherwise, the Wireless Transmitter or Receiver may fall and cause injury to the operator or damage the Wireless Transmitter or Receiver.
- Use a monitor mount with sufficient load resistance to support the combined weight of the monitor and the Wireless Transmitter or Receiver. If the monitor with the Wireless Transmitter or Receiver falls, patient or operator injury and/or equipment damage may result.
- Do not use screws other than those provided with the Attachment for UWIT. Otherwise, the Wireless Transmitter or Receiver cannot be fixed firmly to the Attachment for UWIT and the Wireless Transmitter or Receiver may drop, causing injury to the operator or damage the Wireless Transmitter or Receiver.
- Do not install the monitor on mobile workstations other than those listed in this instruction manual. Otherwise, the mobile workstation may tip, injury to the operator or damage of the monitor/equipment on the mobile workstation may result.
- When installing the Wireless Transmitter and Receiver to the high definition LCD monitor OEV261H which is on the ceiling arm, ensure that there is no mechanical interference with other moving part of the ceiling arm/pendant.
- Check if the unit is intended to install by referring to front or rear panel of the Wireless Transmitter or Receiver before the installation.

**Ch.3**

## 3.3 Installation of the AC adaptor

### WARNING

Keep fluids away from the AC adaptor. Failure to do so may place the patient and medical personnel in danger of an electric shock.

### ■ Installation on the Attachment for UWIT (MAJ-Y0149)

Ch.3

Fix the AC adaptor to the Attachment for UWIT using the attachment for AC adapter provided with the Attachment for UWIT.



Figure 3.3

## 3.4 Connecting AC adaptor to Wireless Transmitter or Receiver

- 1 Connect the power cord to the AC IN terminal on the AC adaptor.

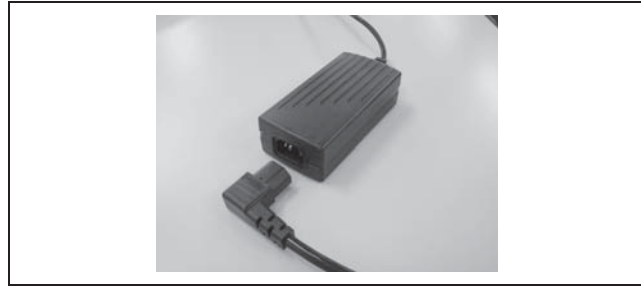


Figure 3.4

- 2 Insert the DC cord into the DC IN terminal on the Wireless Transmitter or Receiver. Fix DC cord by winding finger screw.

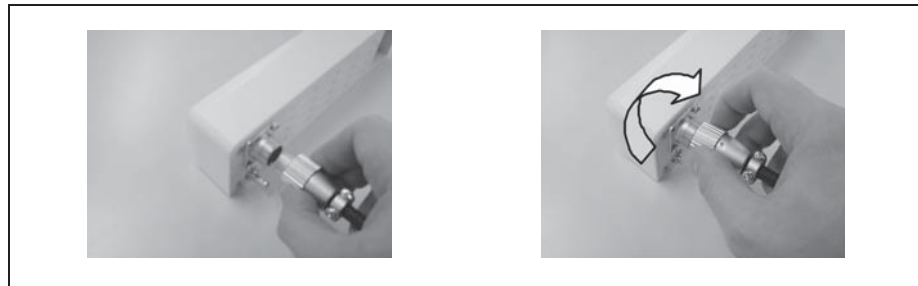


Figure 3.5

Ch.3

## 3.5 Connecting AC adaptor to an AC mains power supply

### ■ When using the power cord of mobile workstation (WM-NP1, WM-WP1, WM-DP1)

- 1 Connect the power cord provided with the mobile workstation to AC IN terminal of AC adaptor and to the power socket of the mobile workstation.

Ch.3

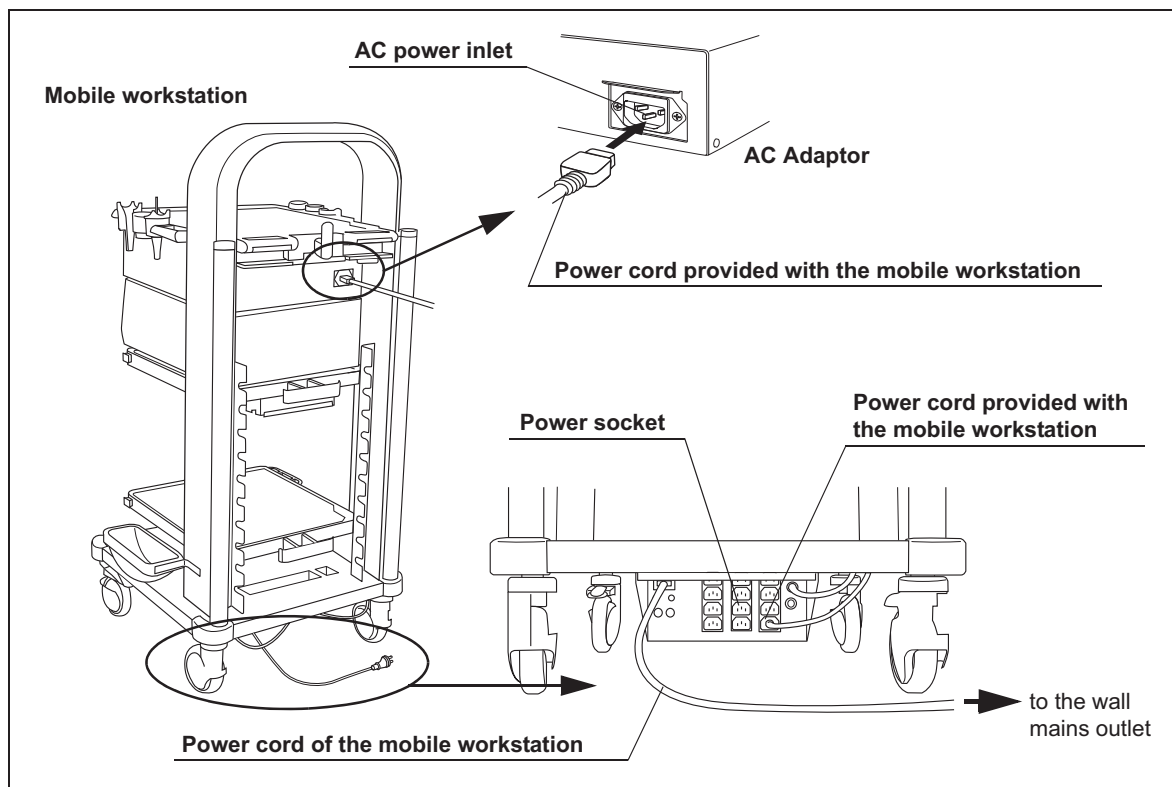


Figure 3.6

- 2 Connect the power cord of the mobile workstation to wall mains outlet.

### ■ When using the supplied AC cord

Connect supplied AC cord to wall mains outlet.

## 3.6 Connecting video cables to Wireless Transmitter

### ■ Selection of video input terminal

Using SDI IN terminal or DVI IN terminal can be selected for the video input terminal of the Wireless Transmitter. Appropriate video input terminal must be selected according to the video cables to connect with devices as referring to “■ System chart” on page 43. In the video selection status display to show SDI or DVI, the one lights on or blinks indicates the selected video input terminal. When selecting the different video input terminal, follow the operation below.

**Ch.3**

- 1** Confirm that the power indicator light of Wireless Transmitter is on.

If the video input terminal to be used is already selected, skip following operation. Confirm if the SDI or DVI has a steady light or blinks in the video selection status display on the front panel of the Wireless Transmitter. If SDI has a steady light or blinks, it means HD-SDI IN terminal is selected. If DVI has a steady light or blinks, it means DVI IN terminal is selected.

- 2** Press and hold SELECT button for about 6 seconds.

While press and hold SELECT button, Channel (CH1 or CH2) will switch in about 1 second, however, continue to hold the SELECT button.

- 3** Release the finger after confirm that the selection of SDI or DVI is completed in the video selection status display.

The one selected blinks or lights on and the other unselected lights off.

### ■ Connection diagram (When using HD-SDI)

Ch.3

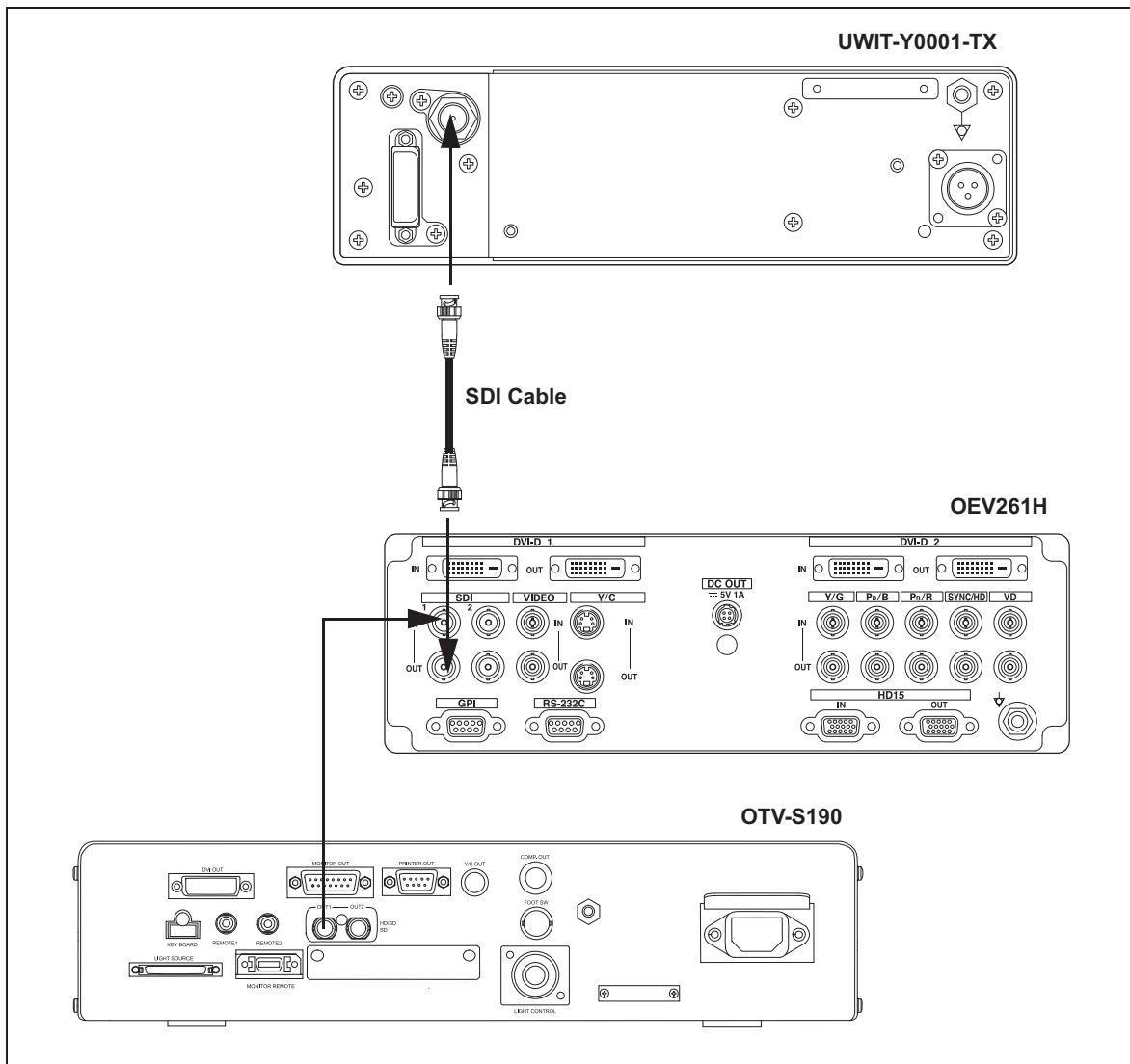


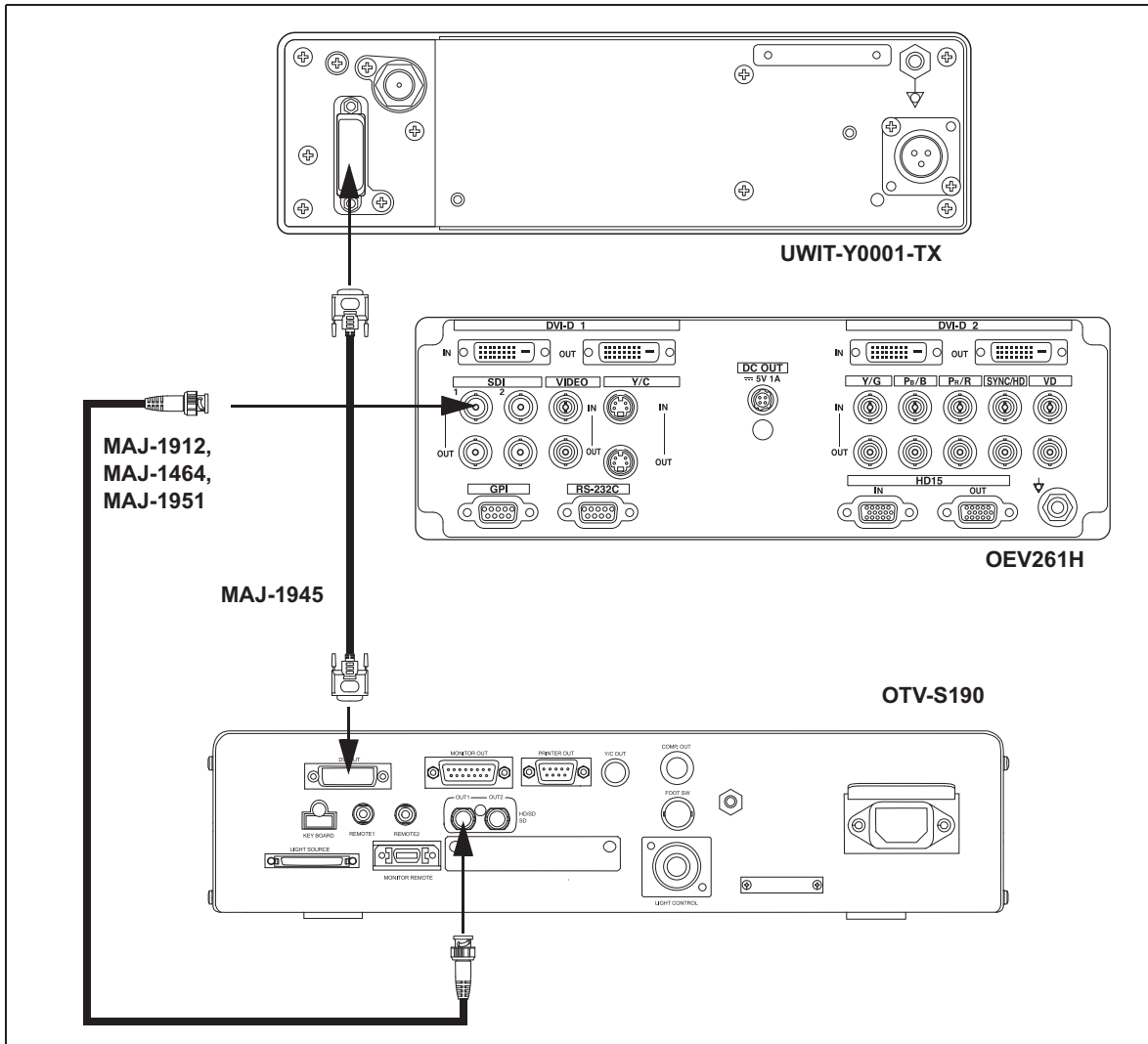
Figure 3.7

#### CAUTION

- Ensure that the Wireless Transmitter is fixed firmly to the HD-SDI OUT terminal of the high definition LCD monitor OEV261H.
- HD-SDI OUT terminal of the high definition LCD monitor OEV261H through outputs the HD-SDI video signal of HD-SDI IN terminal from such as video system center. Select HD-SDI output in the video output selection of the video system center. The Wireless Transmitter doesn't support SD-SDI. Do not select SD-SDI in the video output selection.



**■ Connection diagram (When using DVI)**



Ch.3

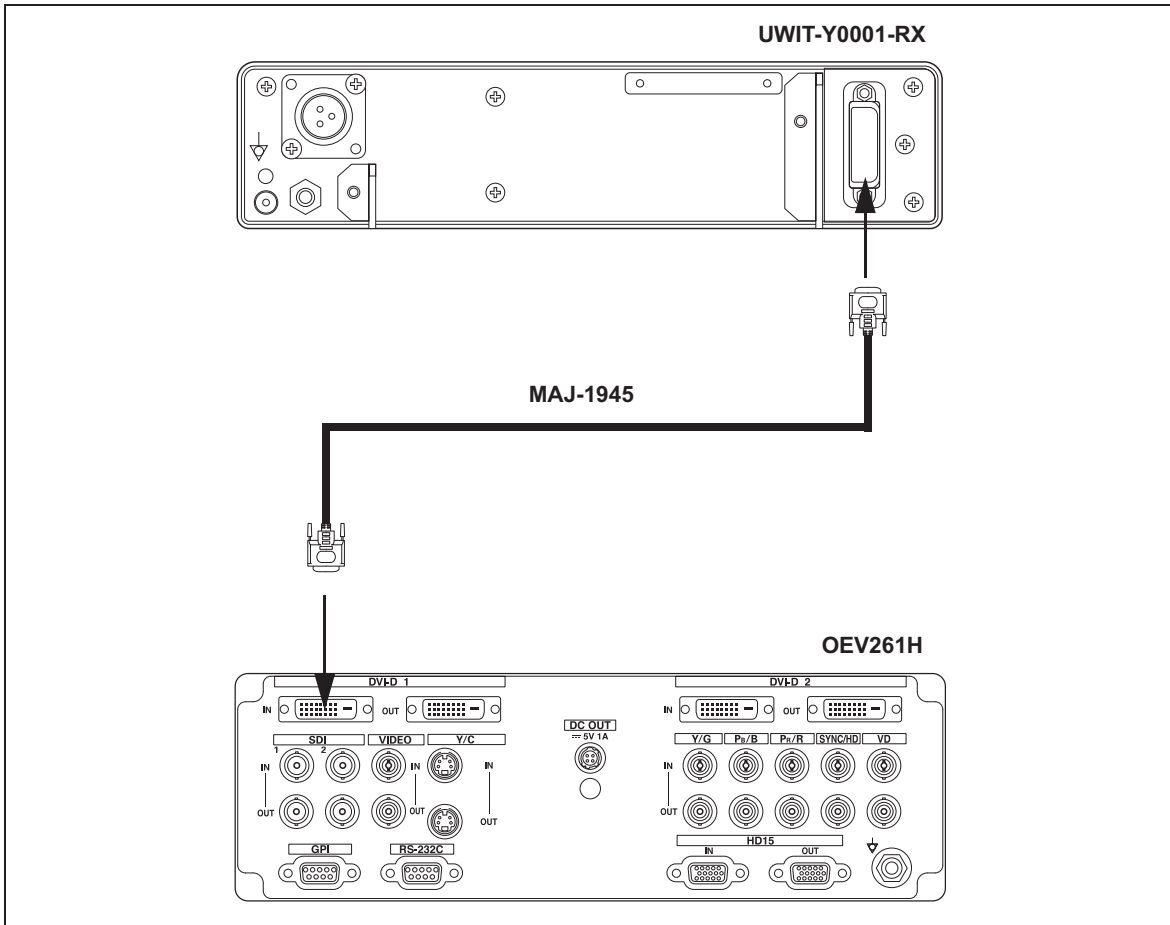
Figure 3.8

**CAUTION**

- Ensure that the Wireless Transmitter fixed firmly to the DVI-D OUT terminal of the video system center or Image management HUB IMH-20.
- Select 1080p in the video output selection of the video system center. Do not select the resolutions such as WUXGA in the video output selection that the Wireless Transmitter doesn't support.
- Connect the video system center and OEV261H directly by video cable such as SDI cable (MAJ-1912, MAJ-1464, MAJ-1951).

## 3.7 Connecting video cables to Wireless Receiver

### ■ Connection diagram



Ch.3

Figure 3.9

#### CAUTION

Ensure that the Wireless Receiver is fixed firmly to the DVI-D IN terminal of the high definition LCD monitor OEV261H.

## Chapter 4 *Inspection*

Prepare the Wireless Image Transmitter Unit and other ancillary equipment before each particular case. Refer to the respective instruction manuals for each piece of equipment.

### **WARNING**

- Review Chapter 3, “Installation and Connection” thoroughly, and prepare the instruments properly before inspection. If the equipment is not properly prepared before each use, equipment damage, patient and operator injury and/or fire can occur.
- Before each case, inspect the Wireless Image Transmitter Unit as instructed below. Inspect other equipment to be used with this Wireless Image Transmitter Unit as instructed in their respective instruction manuals. Should the slightest irregularity be observed, do not use the Wireless image transmitter unit and see Chapter 7, “Troubleshooting”. If the irregularity is still observed after consulting Chapter 7, contact Olympus. Damage or irregularity may compromise patient or user safety and may result in more severe equipment damage.

**Ch.4**

### **4.1 *Inspection of the power supply***

Power indicator lights on when the Wireless Transmitter or Receiver is powered. If power indicator doesn't light on, check the equipment as follows;

Confirm that the AC cord, AC adaptor, and the Wireless Transmitter or Receiver are connected as described in Section 3.4, “Connecting AC adaptor to Wireless Transmitter or Receiver” and in Section 3.5, “Connecting AC adaptor to an AC mains power supply”.

## 4.2 *Inspection of the displayed image*

Place the Wireless Transmitter and Receiver face to face without any obstruction in between.

Typical communication distance of the Wireless Transmitter and Receiver is about 10 m. Ensure that the distance between the Wireless Transmitter and Receiver is within 10 m.

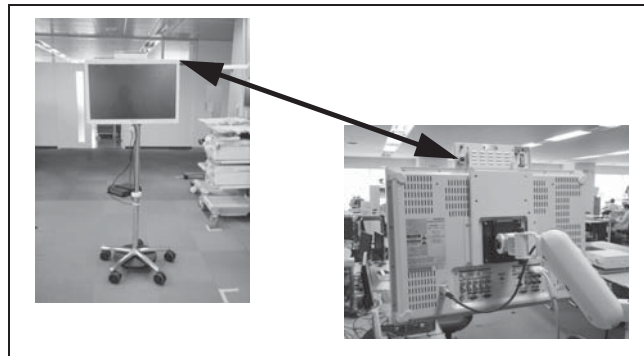


Figure 4.1

Ch.4

### CAUTION

- Do not stand or place obstacles in front of the Wireless Transmitter or Receiver, which may interrupt the RF path.
- Noises or interruptions may appear on the image due to the RF interference when the unit using same 60 GHz frequency bands is activated near the Wireless Transmitter or Receiver. Confirm that the image is displayed normally before use.
- If the instruments located near the Wireless Transmitter or Receiver use same 60 GHz frequency bands or tend to accept influence of radio frequency, check the instruments works normally by referring to such as the panel display of the instruments after wireless transmission starts between the Wireless Transmitter and Receiver.
- Do not place as described below. Noises may appear on the image because the Wireless Transmitter or Receiver cannot perform normally.
  - Do not place the Wireless Transmitter or Receiver low because the RF path may be interrupted by the operator/patient or device.
  - Do not place the Wireless Transmitter or Receiver in different direction such as to the ceiling or the floor because the RF path may become insufficient to stabilize the Wireless Transmitter.
  - Do not set either one of the Wireless Transmitter or Receiver upright.

- 1** Turn on the Wireless Transmitter, Receiver and peripheral devices and confirm the image is displayed on the monitor which is connected to the Wireless Receiver.
- 2** Confirm that the endoscopic image is normal by observing any object such as the palm of your hand.

## 4.2 Inspection of the displayed image

**Ch.4**



## Chapter 5 Operation

### 5.1 Turn the Wireless Transmitter and Receiver ON

#### ■ *When the mobile workstation (WM-NP1, WM-WP1, WM-DP1) is used*

---

Turn the mobile workstation ON.

**CAUTION**

After using the Wireless Transmitter or Receiver, turn the mobile workstation off.

#### ■ *When the mobile workstation (WM-NP1, WM-WP1, WM-DP1) is not used*

---

Ch.5

Connect the AC cord of the Wireless Transmitter or Receiver to the wall mains outlet.

**CAUTION**

After using the Wireless Transmitter or Receiver, disconnect the AC cord from the wall mains outlet or from the AC adaptor.

## 5.2 Connection of the Wireless Transmitter and Receiver

### CAUTION

- If multiple pairs of Wireless Transmitters and Receivers are to be used in adjacent areas, the connection between the paired Wireless Transmitter and Receiver may not complete, or the Wireless Transmitter may establish connection to the incorrect Receiver (cross-talk). To avoid connection issues or cross-talk when multiple Wireless Image Transmitter Units are installed, select different Channels and/or turn off other Unit(s).
- When the Wireless Transmitter is turned off after the Wireless Transmitter and Receiver are connected, the Wireless Receiver automatically searches a Wireless Transmitter which is ready to connect. If the Wireless Receiver detects another Wireless Transmitter which is ready to connect, they may connect automatically. Operate as below to reconnect with the original Wireless Transmitter.

### Ch.5

### NOTE

- A Wireless Transmitter can connect to only one Wireless Receiver at a time.
- When the Wireless Transmitter or Receiver is turned OFF after connection has been established, the Wireless Transmitter search same Receiver automatically when turn ON. If the Wireless Receiver is ON and ready to connect, the Wireless Transmitter connects to it automatically.

**1** Prepare the Wireless Transmitter and Receiver to be connected, and turn them ON.

**2** Press and hold the SELECT button of Wireless Transmitter for about 1 second.

The Wireless Transmitter will seek connection to the Wireless Receiver when the SELECT button is pressed and held for about 1 second. Ensure that the Wireless Transmitter and Receiver have the same channel selected. To change the Channel, press and hold the SELECT button again until the intended channel blinks.

**3** The CH light will blink during the connection process. The CH light will be steady once the Wireless Transmitter and Receiver are connected.

If CH light continues to blink and connection cannot be established, please refer to Chapter 7, "Troubleshooting".



# Chapter 6 Care, Storage, and Disposal

## 6.1 Care

### WARNING

- After wiping with a piece of moistened gauze, dry the Wireless Image Transmitter Unit thoroughly before using it again. If it is used while still wet, there is the risk of an electric shock.
- When cleaning the Wireless Image Transmitter Unit, always wear appropriate personal protection equipment such as eye wear, face mask, moisture-resistant clothing, and chemical-resistant gloves that fit properly and are long enough so that your skin is not exposed. Blood, mucus, and other potentially infectious material adhering to the Wireless Image Transmitter Unit could pose an infection control risk.

### CAUTION

- Do not clean the video connector socket and the AC mains power inlet. Cleaning them can deform or corrode the contacts, which could damage the Wireless Image Transmitter Unit.
- Do not wipe the external surface with hard or abrasive wiping material. The surface will be scratched.

**Ch.6**

After using the Wireless Image Transmitter Unit, immediately perform the following cleaning procedures. If cleaning is delayed, residual organic debris will begin to solidify, and it may be difficult to effectively clean the Wireless Image Transmitter Unit. Always remove debris routinely.

- 1** Disconnect the power cords of Wireless Image Transmitter Unit from the wall mains outlet or the power socket of the mobile workstation.
- 2** When the Wireless Image Transmitter Unit is soiled with blood or other potentially infectious materials, wipe off all debris using a piece of gauze moistened with neutral detergent.
- 3** Remove dust, dirt, and other stains on the surface by wiping with a piece of gauze moistened with 70% ethyl or isopropyl alcohol.
- 4** Make sure to dry the Wireless Image Transmitter Unit after wiping with 70% ethyl or isopropyl alcohol.

## 6.2 Storage

### CAUTION

Do not store the Wireless Image Transmitter Unit in a location exposed to direct sunlight, X-rays, radio activity or strong electromagnetic radiation (e.g., near microwave medical treatment equipment, short-wave medical treatment equipment, MRI, radio equipment, or cellular phones). Damage to the Wireless Image Transmitter Unit may result.

- 1** Disconnect the power cords of the Wireless Image Transmitter Unit from the wall mains outlet or the power socket of the mobile workstation.
- 2** Disconnect the cables connected to the Wireless Image Transmitter Unit.
- 3** Store the equipment in the level position in a clean, dry, and stable location.

## 6.3 Disposal

### Ch.6

When disposing of this instrument or any of its components (such as fuses), follow all applicable national and local laws and guidelines.

# Chapter 7 Troubleshooting

## 7.1 Troubleshooting

If any irregularity is observed during inspection as described in Chapter 4, “Inspection” or using as described in Chapter 5, “Operation”, do not use the Wireless Image Transmitter Unit and attempt to solve the problem as described in Section 7.2, “Troubleshooting guide”. If the problem still cannot be resolved, contact Olympus.

### **DANGER**

Never use the Wireless Image Transmitter Unit if an irregularity is observed. Damage or irregularity of the Wireless Image Transmitter Unit may compromise patient or user safety and may result in more severe equipment damage.

**Ch.7**

## 7.2 Troubleshooting guide

The following table shows the possible causes of and countermeasures against troubles that may occur due to equipment setting errors or deterioration of consumable.

Troubles or failures other than those listed in the following table need repair. If repair is performed by persons who are not qualified by Olympus, patient or user injury and/or equipment damage may result. Be sure to contact Olympus for repair.

### WARNING

If an irregularity is observed, turn the Wireless Image Transmitter Unit OFF once and turn it ON again. If the irregularity cannot be solved, turn the Wireless Image Transmitter Unit OFF and disconnect the power cord to stop the flow of electricity completely.

Irregularity description	Possible cause	Solution
The power fails to come on.	The AC adaptor is not connected correctly.	Connect AC adaptor to Wireless Transmitter or Receiver as described in Section 3.4, "Connecting AC adaptor to Wireless Transmitter or Receiver".
	The AC cord is not connected correctly.	Connect AC cord to AC adaptor as described in Section 3.5, "Connecting AC adaptor to an AC mains power supply".
	The mobile workstation is OFF.	Turn the mobile workstation ON.
The endoscopic image does not appear on the monitor while SDI is blinking in the video selection status display.	The video system center is OFF.	Turn the video system center ON.
	The SDI cable is not connected correctly.	Connect the SDI cable correctly.
	A wire in the cable is disconnected.	Replace the cable with new one.
	Unsupported video signal such as SD-SDI is input.	Input HD-SDI video signal.
The endoscopic image does not appear on the monitor while DVI is blinking in the video selection status display.	The video system center is OFF.	Turn the video system center ON.
	The DVI cable is not connected correctly.	Connect the DVI cable correctly.
	A wire in the cable is disconnected.	Replace the cable with new one.
	Unsupported video signal such as WUXGA is selected as an input from the video system center.	Input digital video signal of 1080p (60Hz/50Hz) or SXGA: 1280 × 1024 (60Hz).
	HDCP is input	The Wireless Transmitter doesn't support HDCP. Connect with the device which doesn't output HDCP signal.

<b>Irregularity description</b>	<b>Possible cause</b>	<b>Solution</b>
The endoscopic image does not appear on the monitor while CH1 or CH2 blinks.	The CH of the transmitter and the receiver is different.	Press the SELECT button of the transmitter and set to same CH.
	Other ID of the receiver remains in transmitter.	Press the SELECT button to clear the remained receiver ID. Press the SELECT button again if the CH of the transmitter and the receiver is different.
	The Wireless Transmitter or Receiver is used in same frequency range in the vicinity. (RF interference).	Confirm the CH of the Wireless Transmitter or Receiver in the vicinity and set different CH.
The endoscopic image does not appear on the monitor while CH1 or CH2 lights on.	The monitor is OFF.	Turn the monitor ON.
	Different video input terminal is selected in monitor.	Select appropriate video input terminal in monitor.
The endoscopic image does not appear on the monitor while nothing lights on the Wireless Transmitter or Receiver.	The power cord is disconnected.	Connect the power cord to AC adaptor referring to Section 3.5, "Connecting AC adaptor to an AC mains power supply".
	The mobile workstation is OFF.	Turn the mobile workstation ON.
Nothing lights on or blinks other than power indicator.	This symptom may be caused by a malfunction in the circuit of the Wireless Transmitter or Receiver.	Turn the Wireless Transmitter or Receiver off, wait 10 seconds or more and turn on again. If the irregularity cannot be solved, contact Olympus.
The Wireless Transmitter or Receiver repeats reboot automatically.	This symptom may be caused by a malfunction in the circuit of the Wireless Transmitter or Receiver.	Turn the Wireless Transmitter or Receiver off, wait 10 seconds or more and turn on again. If the irregularity cannot be solved, contact Olympus.

## **7.3** *Returning the Wireless Image Transmitter Unit for repair*

### **CAUTION**

Olympus is not liable for any injury or damage which occurs as a result of repairs attempted by non-Olympus personnel.

When returning the Wireless Image Transmitter Unit for repair, contact Olympus. With the Wireless Image Transmitter Unit, include a description of the malfunction or damage and the name and telephone number of the individual at your location who is most familiar with the problem. Include a repair purchase order.

# Appendix

The equipment compatible with this endoscope and the EMC information are described in this Appendix.

## Combination equipment

### ■ System chart

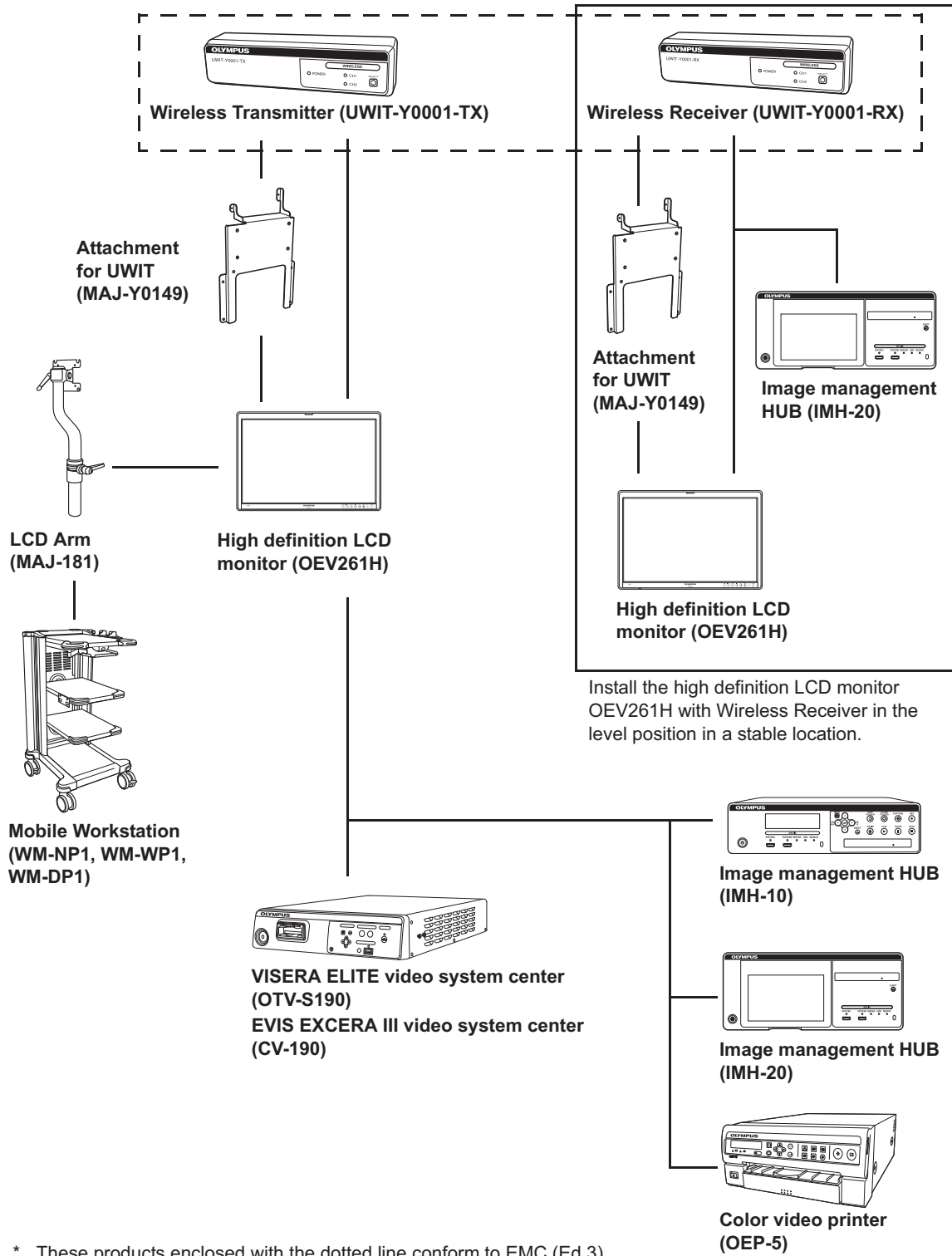
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The recommended combinations of equipment that can be used with this Wireless Image Transmitter Unit are listed below. New products released after the introduction of the Wireless Image Transmitter Unit may also be compatible for use in combination with it. For further details, contact Olympus.

#### **WARNING**

If combinations of equipment other than those shown below are used, the full responsibility should be assumed by the medical treatment facility. Such combinations do not only allow the equipment to manifest their full functionality but may also imperil the safety of the patient and medical personnel. In addition, the endurance of the Wireless Image Transmitter Unit and ancillary equipment is not guaranteed. Troubles caused in this case are not covered by free-of-charge repair. Be sure to use the equipment in one of the recommended combinations.

**App.**



App.



## ***FCC (for Wireless Transmitter and Receiver)***

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television, reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## ***FCC/IC (for Wireless Transmitter and Receiver)***

**App.**

This equipment complies with FCC/IC radiation exposure limits set forth for a controlled environment and meets the FCC radio frequency (RF) Exposure Guidelines in Supplement C to OET65 and RSS-102 of the IC radio frequency (RF) Exposure rules. This equipment has very low levels of RF energy that it deemed to comply without maximum permissive exposure evaluation (MPE). But it should be installed and operated keeping the radiator at least 20 cm or more away from person's body (excluding extremities: hands, wrists, feet and ankles).

Cet équipement est conforme aux limites d'exposition aux rayonnements énoncées pour un environnement contrôlé et respecte les règles les radioélectriques (RF) de la FCC lignes directrices d'exposition dans le Supplément C à OET65 et d'exposition aux fréquences radioélectriques (RF) CNR-102 de l'IC. Cet équipement émet une énergie RF très faible qui est considérée conforme sans évaluation de l'exposition maximale autorisée. Cependant, cet équipement doit être installé et utilisé en gardant une distance de 20 cm ou plus entre le dispositif rayonnant et le corps (à l'exception des extrémités: mains, poignets, pieds et chevilles).

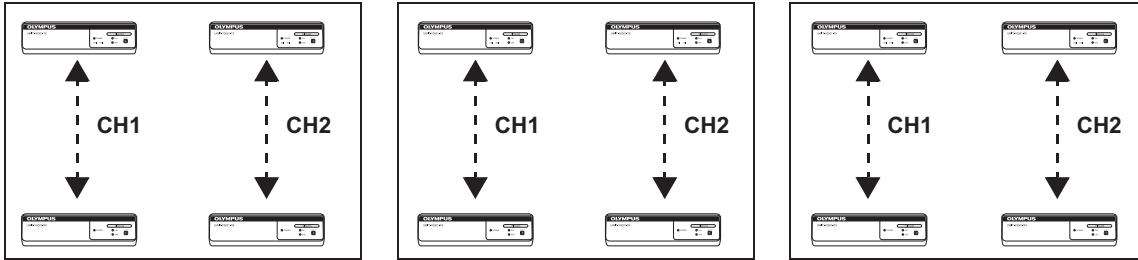
## Specifications

### ■ Environment

Operating environment	Ambient temperature	10 – 40°C (50 – 104°F)
	Relative humidity	30 – 85% (without condensation)
	Atmospheric pressure	700 – 1060 hPa
	Usage location	Indoor use only
Transportation and storage environment	Ambient temperature	–25 to +70°C (–13 to +158°F)
	Relative humidity	10 – 90%
	Atmospheric pressure	700 – 1060 hPa

*App.*

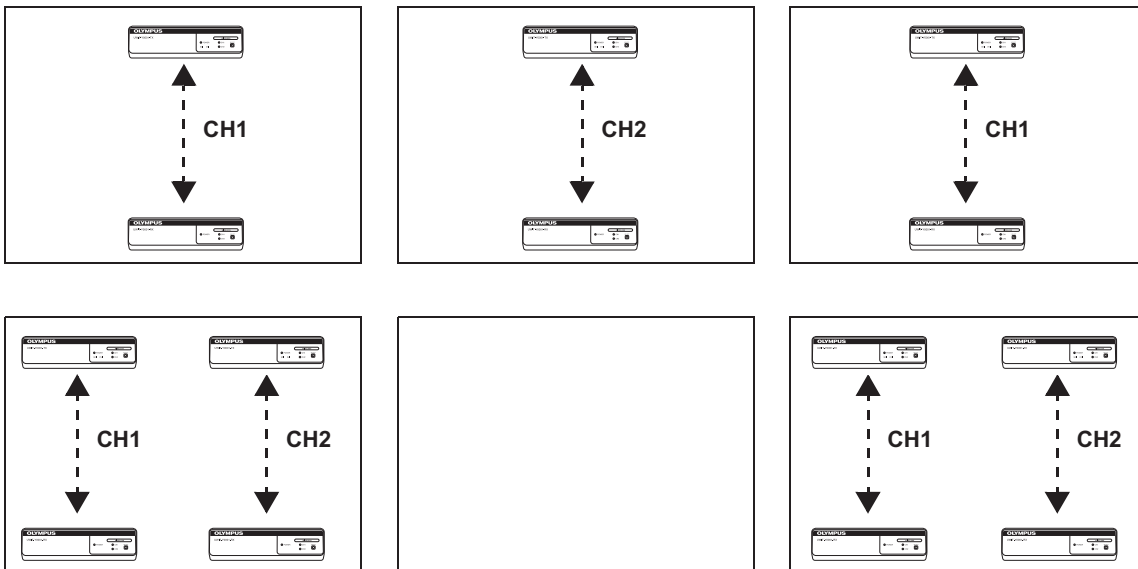
Maximum 2 pairs (2 Transmitters, 2 Receivers) can be used simultaneously in a room completely enclosed by walls and doors. Set CH1 for one pair and CH2 for the other.



**CAUTION**

- Inspect the unit before use as described in this manual.
- Do not use more than 2 pairs in an enclosed room simultaneously. If more than 2 pairs are used simultaneously, interference may cause noise or interruption of images.
- The RF signal may go beyond the wall of room due to the material of the wall (e.g., part of the wall is glass). In that case, confirm before use that no interference from neighboring rooms by using different Channels in neighboring rooms as shown below. If interference still occurs, consider installing the Wireless Image Transmitter Unit in alternating rooms (every other room).

**App.**



## ■ Specifications

UWIT-Y0001-TX	<b>Dimensions</b>		234 (W) × 69 (H) × 43 (D) mm
	<b>Dimensions (maximum)</b>		234 (W) × 69 (H) × 59 (D) mm
	<b>Weight</b>		0.41 kg
	<b>Voltage</b>		DC 12 V, 1 A
	<b>Video signal input</b>	<b>SDI input connector</b>	BNC (×1)
<b>DVI input connector</b>		DVI (×1) No support for HDCP	
UWIT-Y0001-RX	<b>Dimensions</b>		208 (W) × 54 (H) × 45 (D) mm
	<b>Dimensions (maximum)</b>		208 (W) × 54 (H) × 60 (D) mm
	<b>Weight</b>		0.31 kg
	<b>Voltage</b>		DC 12 V, 0.8 A
	<b>Video signal output</b>	<b>DVI output connector</b>	DVI (×1)
AC adaptor	<b>Dimensions</b>		120 (W) × 38 (H) × 60 (D) mm
	<b>Dimensions (include cable)</b>		3020 (W) × 38 (H) × 60 (D) mm
	<b>Weight</b>		0.34 kg
	<b>Voltage</b>	<b>AC IN</b>	100 – 240 V, 50/60 Hz, 1 – 0.5 A
<b>DC OUT</b>		12 V, 3 A	

App.

<b>EMC</b>	<b>Applied standard</b>	IEC 60601-1-2: 2001 <ul style="list-style-type: none"> <li>This instrument complies with the EMC standard for medical electrical equipment, edition 2 (IEC 60601-1-2: 2001). However, when connecting to an instrument that complies with the EMC standard for medical electrical equipment, edition 1 (IEC 60601-1-2: 1993), the whole system complies with edition 1.</li> <li>CISPR 11 of emission: Group 1, Class B</li> </ul>
<b>Year of manufacture</b>		The last digit of the year of manufacture is the second digit of the serial number. In this example, the year is 2009.  Ex. 7 <u>9</u> 01234 (serial number)
<b>FCC ID</b>		UWIT-Y0001-TX: S8Q-RU5796 UWIT-Y0001-RX: S8Q-RU5808  This device complies with part 15 of the FCC Rules (FCC Part 15 Subpart C §15.255). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

<p><b>IC</b></p>		<p>UWIT-Y0001-TX: 4763B-RU5796            UWIT-Y0001-RX: 4763B-RU5808</p> <p>This device complies with Industry Canada license-exempt RSS standard(s).            Operation is subject to the following two conditions:            (1) This device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.</p> <p>Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:            (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.</p> <p>This Class B digital apparatus complies with Canadian ICES-003.            Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.</p>
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**App.**



## EMC information

This model is intended for use in the electromagnetic environments specified below. The user and the medical staff should ensure that it is used only in these environments.

### ○ Magnetic emission compliance information and recommended electromagnetic environments

Emission standard	Compliance	Guidance
RF emissions CISPR 11	Group 1	This instrument uses RF (Radio Frequency) energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
Radiated emissions CISPR 11	Class B	This instrument's RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
Main terminal conducted emissions CISPR 11		
Harmonic emissions IEC 61000-3-2	Class A	This instrument's harmonic emissions are low and are not likely to cause any problem in the typical commercial power supply connected to this instrument.
Voltage fluctuations/flicker emissions IEC 61000-3-3	Complies	This instrument stabilizes its own radio variability and has no effect such as flicker in lighting apparatus.

**App.**

## ○ Electromagnetic immunity compliance information and recommended electromagnetic environments

Immunity test	IEC 60601-1-2 test level	Compliance level	Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	Contact: $\pm 2, \pm 4, \pm 6$ kV Air: $\pm 2, \pm 4, \pm 8$ kV	Same as left	Floors should be made of wood, concrete, or ceramic tile that hardly produces static. If floors are covered with synthetic material that tends to produce static, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	$\pm 2$ kV for power supply lines $\pm 1$ kV for input/output lines	Same as left	Mains power quality should be that of a typical commercial (original condition feeding the facilities) or hospital environment.
Surge IEC 61000-4-5	Differential mode: $\pm 0.5, \pm 1$ kV Common mode: $\pm 0.5, \pm 1, \pm 2$ kV	Same as left	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions, and voltage variations on power supply input lines IEC 61000-4-11	$< 5\% U_T$ ( $> 95\%$ dip in $U_T$ ) for 0.5 cycle	Same as left	Mains power quality should be that of a typical commercial or hospital environment. If the user of this instrument requires continued operation during power mains interruptions, it is recommended that this instrument be powered from an uninterruptible power supply or a battery.
	$40\% U_T$ ( $60\%$ dip in $U_T$ ) for 5 cycle		
	$70\% U_T$ ( $30\%$ dip in $U_T$ ) for 25 cycle		
	$< 5\% U_T$ ( $> 95\%$ dip in $U_T$ ) for 5 seconds		
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	Same as left	It is recommended to use this instrument by maintaining enough distance from any equipment that operates with high current.

### NOTE

$U_T$  is the AC mains power supply prior to application of the test level.

**App.**

**○ Cautions and recommended electromagnetic environment regarding portable and mobile RF communications equipment, such as cellular phones**

Immunity test	IEC 60601-1-2 test level	Compliance level	Guidance
Conducted RF IEC 61000-4-6	3 Vrms (150 kHz – 80 MHz)	3 V (V <sub>1</sub> )	Formula for recommended separation distance (V <sub>1</sub> =3 according to the compliance level) $d = \left[ \frac{3.5}{V_1} \right] \sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m (80 MHz – 2.5 GHz)	3 V/m (E <sub>1</sub> )	Formula for recommended separation distance (E <sub>1</sub> =3 according to the compliance level) $d = \left[ \frac{3.5}{E_1} \right] \sqrt{P}$ 80 MHz – 800 MHz $d = \left[ \frac{7}{E_1} \right] \sqrt{P}$ 800 MHz – 2.5 GHz

**NOTE**

**App.**

- Where “P” is the maximum output power rating of the transmitter\*<sup>1</sup> in watts (W) according to the transmitter\*<sup>1</sup> manufacturer, and “d” is the recommended separation distance in meters (m).
- This instrument complies with the requirements of IEC 60601-1-2: 2001 and IEC 60601-1-2: 2007. However, under an electromagnetic environment that exceeds its noise level, electromagnetic interference may occur on this instrument.
- Electromagnetic interference may occur on this instrument near a high-frequency electrosurgical equipment and/or other equipment marked with the following symbol:



\*<sup>1</sup> The word “Transmitter” is generic term used for conventional portable and mobile RF communication equipment such as cellular phones.



## ○ Recommended separation distance between portable and mobile RF communications equipment and this instrument

Rated maximum output power of transmitter* <sup>1</sup> P (W)	Separation distance according to frequency of transmitter* <sup>1</sup> (m) (calculated as V <sub>1</sub> =3 and E <sub>1</sub> =3)		
	150 kHz – 80 MHz $d = 1.2\sqrt{P}$	80 MHz – 800 MHz $d = 1.2\sqrt{P}$	800 MHz – 2.5 GHz $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

### NOTE

The guidance may not apply in some situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people. Portable and mobile RF communications equipment such as cellular phones should be used no closer to any part of this instrument, including cables than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter\*<sup>1</sup>.

**App.**

\*1 The word “Transmitter” is generic term used for conventional portable and mobile RF communication equipment such as cellular phones.

## **FCC WARNING**

Change or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

Declaration of Conformity

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Model: UWIT-Y0001-TX, UWIT-Y0001-RX

Responsible Party: OLYMPUS AMERICA INC.

Address: 3500 Corporate Parkway, P.O. Box 610 Center Valley,  
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Telephone Number: (484)896-5000

**App.**







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