

**SONY**

3-798-840-22 (1)

# Wireless Microphone System

## Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

## Owner's Record

The model and serial numbers are located at the rear of both the receiver and the transmitter. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. WCS-990T Serial No. \_\_\_\_\_  
Model No. WCS-990R Serial No. \_\_\_\_\_

## WCS-990

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## Information

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

### Note

Please note that accordingly only Sound and TV-Radio Receivers meant for the entire population are allowed to be received via this set. It is prohibited to receive all other transmission such as police radio or mobile radio.

## Features

This wireless microphone system is designed to be used with a video camera recorder, etc. By attaching the receiver unit onto a video camera recorder, etc. you can receive the sound picked up by the transmitter unit. You can enjoy vivid sound which matches the zoomed up images recorded by your video camera recorder.

You can also use this system with a tape recorder as a conventional wireless microphone system to record the sound.

- The operational distance between the transmitter unit and the receiver unit can be up to approximately 100 feet (30 m). However, this distance may become shorter if there are some obstacles in between the transmitter unit and the receiver unit.
- The built-in crystal-controlled oscillators used in both the transmitter and the receiver units assure a long stable operation.
- The radio frequency can be selected so that a less busy channel can be used while the air is busy.
- Compact design featuring built-in antennas.
- The transmitter unit is equipped with a plug in power\* type MIC jack (monaural/ 3.5 mm dia.) An optional microphone other than the supplied one can be connected to this jack.
- The transmitter and receiver units are equipped with clip type holders with the adjustable clips which can be rotated 360 degrees so that the transmitter and receiver units can be attached onto your clothes etc. with optimum angles.
- The receiver unit is equipped with the MIX MIC jack to which an optional microphone such as the ECM-T140 (lavalier microphone) can be connected, so that the sound transmitted from the transmitter unit can be mixed with the sound picked up by the optional microphone.
- The receiver unit is equipped with the  $\odot$  (earphone) jack to which the supplied earphone can be connected, so that you can monitor the sound being recorded. You can use the earphone connected to the receiver unit to monitor the subject using the transmitter unit.
- The supplied lavalier microphone has a built-in wind screen effect so that you can use the microphone in the open air without a wind screen.

### \* Plug in power system

The system that power is supplied directly to the microphone from the microphone jack of the connected equipment.

## Precautions

This wireless microphone system uses FM radio waves for transmission. Therefore, there may be cases where the transmission of the sound may be hindered when the system is used near certain obstacles. FM radio waves may also be deflected by walls etc. Under such circumstances, the sound may be intermittent or distorted at times. However, these are the characteristics of FM radio waves and this does not indicate a malfunction.

- The system should never be dropped or subjected to extreme shock.
- Keep the system away from extremely high temperatures (above 140° F or 60° C) and humidity.
- Do not use this system in the following locations as doing so can cause microphonics (electrical disturbance noise) which will impair the performance of this system.
  - A very noisy (more than 70 phone) location.
  - A location with a lot of vibration.
  - A location near a rotating machine or a transformer.
  - Near a speaker of a PA system.
  - Near recording studio equipment.
- You do not need to have a license to operate this microphone system. However, observe the following points.
  - Avoid using the system near a broadcasting station, airport or inside an airplane.
  - If radio interference from other radio equipment occurs, alter the radio channel or change the location. (You are not protected by law against any radio interference caused by other radio equipment.)
- When this system is connected to a radio cassette player, etc. and the system's lavalier microphone is placed too close to the speaker of the radio cassette player, acoustic feedback (a howling effect) may occur. If this happens, change the direction of the microphone until the howling stops, or decrease the volume of the radio cassette player.
- When using the system outdoors, avoid getting the system wet.
- Should any liquid fall onto the system, wipe it thoroughly with a dry soft cloth.
- The system is a monaural type. Therefore, if you use this system with equipment capable of stereo recording, the recorded sound will become monaural.

## Specifications

### System

RF Power	94 dB $\mu$ V/m, complies with the FCC Part 15
Carrier frequency	912 – 916 MHz
Channel	Ch1, Ch2
Modulation	FM
Frequency response	100 – 15,000 Hz
Dynamic range	More than 78 dB
Output level	-56.2 $\pm$ 4 dBm (0 dBm = 1 mW/Pa, 1,000 Hz)
Output impedance	Approx. 1 k $\Omega$

### Transmitter

Oscillator	Crystal-Controlled
Antenna	Built-in antenna
Signal processing	Compressor
Maximum sound pressure level	More than 118 dB <sub>SPL</sub>
Operating voltage	3V LR03 (Size AAA) $\times$ 2
Battery life	Approx. 20 hours with Sony Alkaline battery AM4 (N) $\times$ 2
Mic input jack	3.5 mm dia. (Plug in power)
Dimensions	Approx. 2 <sup>3</sup> / <sub>8</sub> $\times$ 2 <sup>7</sup> / <sub>8</sub> $\times$ 1 <sup>13</sup> / <sub>16</sub> inches (60 $\times$ 70 $\times$ 20 mm) (W $\times$ H $\times$ D)
Mass	Approx. 2.3 oz (65 g) incl. batteries

### Receiver

Oscillator	Crystal-controlled
Antenna	Built-in antenna
Signal processing	Expander
Operating voltage	3V LR03 (Size AAA) $\times$ 2
Battery life	Approx. 20 hours with Sony Alkaline battery AM4 (N) $\times$ 2
Rec. output plug	Monaural mini plug
Monitor output level	Approx. 2 mW at 8 $\Omega$
Earphone jack	3.5 mm dia. monaural
Mixing mic. jack	3.5 mm dia. monaural
Cord length	Approx. 17 <sup>3</sup> / <sub>4</sub> inches (45 cm)
Dimensions	Approx. 2 <sup>3</sup> / <sub>8</sub> $\times$ 2 <sup>7</sup> / <sub>8</sub> $\times$ 1 <sup>13</sup> / <sub>16</sub> inches (60 $\times$ 70 $\times$ 20 mm) (W $\times$ H $\times$ D)
Mass	Approx. 2.6 oz (73 g) incl. batteries

### Supplied accessories

Electret condenser lavalier microphone (1)	
Directivity	Omni-directional
Cord length	Approx. 39 <sup>3</sup> / <sub>8</sub> inches (1.0 m)
Dynamic earphone (1)	
Cord length	Approx. 39 <sup>3</sup> / <sub>8</sub> inches (1.0 m)

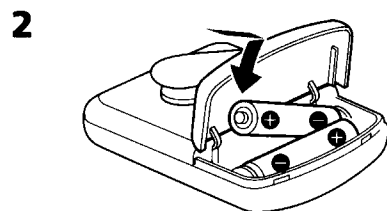
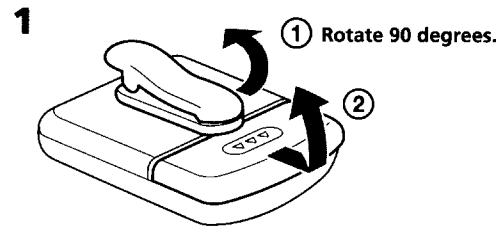
### Optional accessory

Electret condenser lavalier microphone ECM-T140

Design and specifications are subject to change without notice.

## Battery Installation

Insert two size AAA (LR03) batteries each into the transmitter and receiver units.



Two size AAA (LR03) batteries each

### Battery life

Sony alkaline batteries AM4 (N) (not supplied) will give 20 hour continuous operation of the transmitter and receiver units respectively.

### When to replace the batteries

When the batteries become weak, the BATT indicator fails to light up or becomes dimmer even if the POWER switch is set to the ON position. In this case, replace the batteries with new ones.

### Notes on batteries

To avoid damage to the system caused by battery leakage and corrosion;

- Install the batteries with the correct polarity.
- Do not try to recharge the batteries.
- Remove the batteries if the system is not to be used for a long period of time.

In case of battery leakage, wipe off any deposit in the battery compartments before installing new batteries.

## How to Use

**1-a** Connect the receiver to the microphone jack of your video camera recorder, and attach it to the grip belt of your video camera recorder.

At this time, the built-in microphone of the video camera recorder does not function.

**1-b** Connect the receiver to the microphone jack of your tape recorder.

*To monitor the sound being recorded*

Connect the supplied earphone to the Ⓜ (earphone) jack of the receiver.

**2** Connect the lavalier microphone to the transmitter unit and attach it to your clothes.

**3** Select the radio frequency with the CHANNEL selector switch.

Select the same position on the receiver and transmitter units.

**4** Turn the power on.  
The BATT indicator lights up.

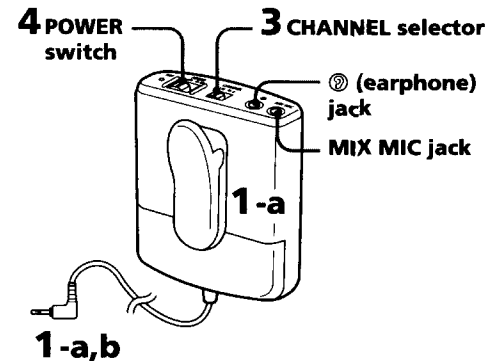
### The maximum distance that the radio transmission can reach

The optimum distance is up to approximately 100 feet (30 m) without the system picking up some interference. However, the distance may vary according to the surroundings and environment. If the system picks up some noise while using it within the above mentioned distance, reduce the distance between the transmitter unit and the receiver unit.

### To record the ambient sound in the vicinity of the video camera recorder at the same time

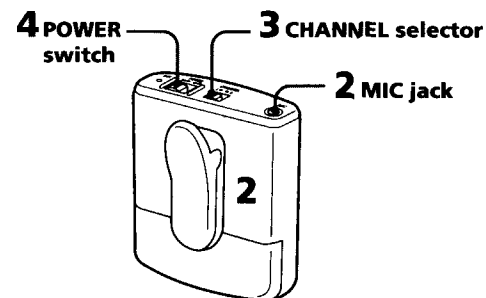
Connect the optional microphone to the MIX MIC jack of the receiver unit. You can mix the sound transmitted by the transmitter unit and the sound from the optional microphone.

### Receiver unit

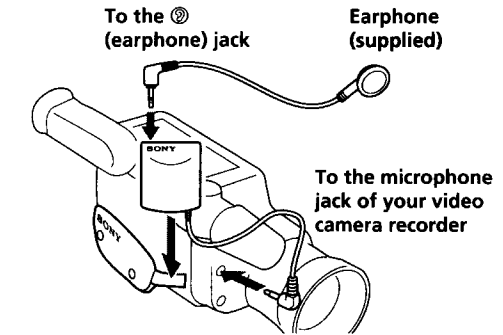


Approx. 100 feet (30 m)

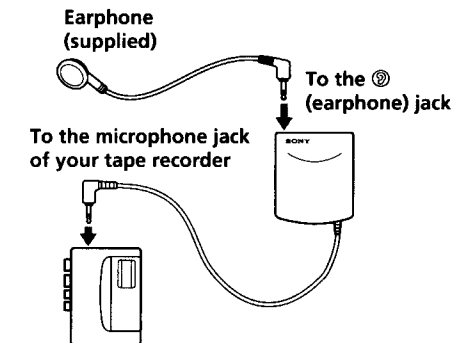
### Transmitter unit



### 1-a



### 1-b



### 2

