

# ***UHF Synthesized Transmitter***

---

DRAFT version [REDACTED]

Operating Instructions [REDACTED]

U3032/U4244 [REDACTED]

**WRT-8P**

## Owner's Record

The model number plate is located on the side and the serial number is located inside the battery compartment. Record the model and serial numbers in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

### Notice for customers in the U.S.A.

Use of Sony wireless devices is regulated by the Federal Communications Commission as described in Part 74 subpart H of the FCC regulations and users authorized thereby are required to obtain an appropriate license.

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

**IMPORTANT NOTE:** To comply with the FCC RF exposure compliance requirements, no change to the antenna or the device is permitted. Any change to the antenna or the device could result in the device exceeding the RF exposure requirements and void user's authority to operate this device.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

#### FCC Radiation Exposure Statement:

The available scientific evidence does not show that any health problems are associated with using low power wireless devices. There is no proof, however, that these low power wireless devices are absolutely safe. Low power Wireless devices emit low levels of radio frequency

energy (RF) in the microwave range while being used. Whereas high levels of RF can produce health effects (by heating tissue), exposure to low level RF that does not produce heating effects causes no known adverse health effects. Many studies of low level RF exposures have not found any biological effects. Some studies have suggested that some biological effects might occur, but such findings have not been confirmed by additional research.

### Notice for customers in Canada:

Use of Sony wireless devices is regulated by the Industry Canada as described in their Radio Standard Specification RSS-123. A license is normally required. The local district office of Industry Canada should therefore be contacted. When the operation of the device is within the broadcast band, the license is issued on no-interference, no-protection basis with respect to broadcast signals.

Operation of this device 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.

The term "IC:" before the radio certification number only signifies that Industry Canada technical specifications were met.

### IC Exposure of Humans to RF Fields

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website: [www.hc-sc.gc.ca/rpb](http://www.hc-sc.gc.ca/rpb).

---

# Table of Contents

<b>Overview</b> .....	4
<b>Precautions</b> .....	4
<b>Parts Identification</b> .....	5
<b>Power Supply</b> .....	7
Inserting the battery .....	8
<b>Settings</b> .....	9
Entering setting mode .....	9
Setting the transmission channel .....	9
Resetting the accumulated battery use time indication ...	10
Setting the RF output power level .....	10
Setting the audio input level .....	11
Setting the +48 V power supply .....	11
<b>Attachment and Insertion Procedures</b> .....	12
Attaching a microphone or a cable .....	12
Inserting into the supplied soft case .....	13
<b>Notes on Microphone System Operations</b> .....	13
<b>System Configuration</b> .....	14
<b>Error Messages</b> .....	15
<b>Specifications</b> .....	16

GB

---

## Overview

The WRT-8P is a plug-on transmitter for a UHF synthesized wireless microphone system to be used for broadcast or movie production purpose.

This transmitter is suitable for ENG<sup>1)</sup> and EFP<sup>2)</sup>.

The microphone/transmitter and tuner of the wireless microphone system are classified by frequency band.

A 24-MHz frequency band is assigned to each microphone/transmitter and tuner model. In building a UHF wireless microphone system, be sure to combine a microphone/transmitter and a tuner having the same wireless channel (frequency).

1) ENG: Electronic News Gathering

2) EFP: Electronic Field Production

## Features

The features of the WRT-8P are as follows:

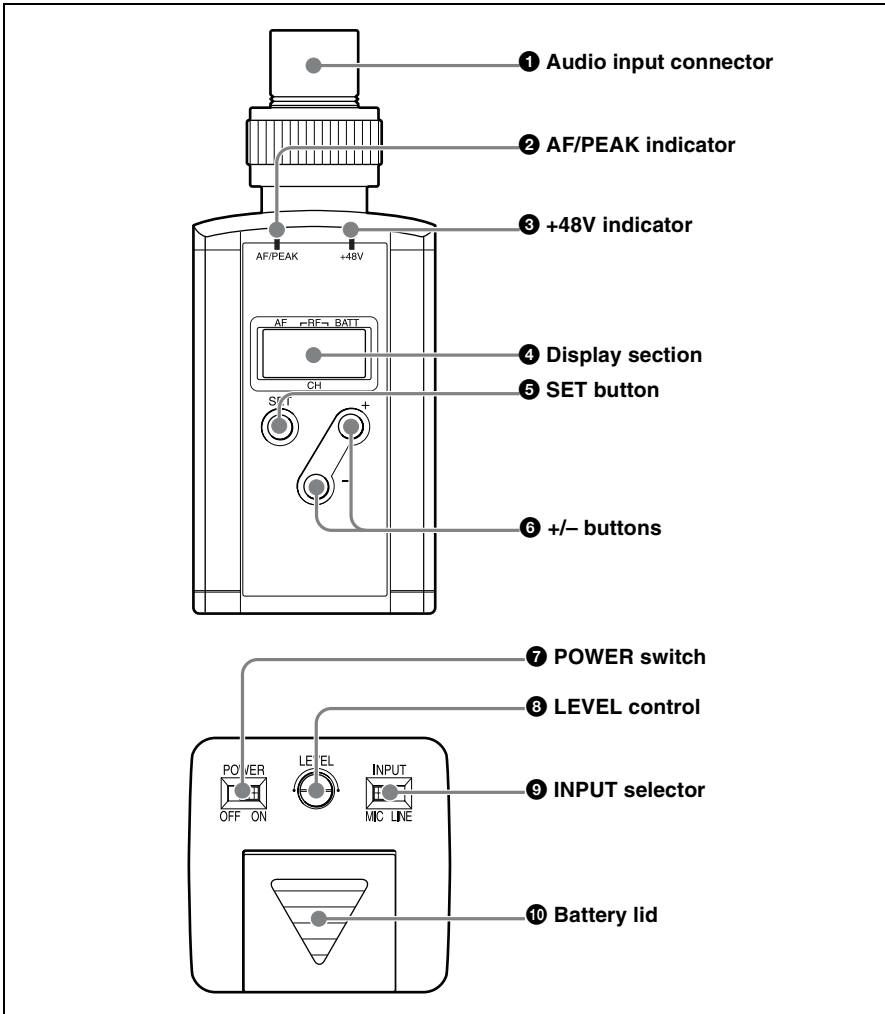
- Converts a wired microphone to a wireless microphone via an XLR-type connector.
- Compact and lightweight metal body provides high durability and good balanced handling.
- 250 mW high RF output power for stable long-distance transmission.
- Selectable RF output power: 250 mW/50 mW.
- +48 V power supply for microphone.
- Switchable input level (MIC or LINE).
- Attenuator function allows adjustment of the audio input level.
- An LCD with a backlighting provides extensive information.
- Optimized balance when combined with the F-112 Dynamic Microphone.

---

## Precautions

- The unit is designed for use in ambient temperature range of 0°C to 50°C (32°F to 122°F).
- Do not place the unit on or near heat sources, such as lighting equipment, power amplifiers, or in a place subject to direct sunlight or excessive moisture. In such places, the external finish or internal parts of the unit may be damaged.
- If the unit is used in a very humid or dusty place or in a place subject to expose to an active or corrosive gas, clean its surface as well as the connectors with a dry, soft cloth immediately after use.
- Using the unit in extended period of time in such places or not cleaning it after its use in such places may shorten its life.
- When cleaning the unit, never use organic solvents such as thinners or benzene, which will damage the finish of the unit.
- The unit has been adjusted precisely at the factory. Do not tamper with its internal parts or attempt to repair it.

# Parts Identification



## 1 Audio input connector

Connects a microphone with an XLR-3-12C type output connector or an audio cable with XLR-3-12C type connectors.

For details, see “System Configuration” (page 14).

## Caution

When connecting a microphone or a cable to the unit, be sure to turn the unit off.

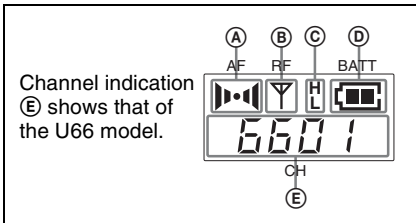
## 2 AF/PEAK (audio input/peak level) indicator

Lights up green or red to indicate the strength of the audio input signal level.

## 3 +48V indicator

Lights up when the INPUT selector is set to MIC position and the +48 V power supply is enabled.

## 4 Display section



### A AF indication

Appears whenever the input audio signal is stronger than the reference level.

### B RF (radio frequency) indication

Appears during signal transmission.

### C RF power indication

Shows the RF output power setting.

*For details, see "Setting the RF output power level" (page 10).*

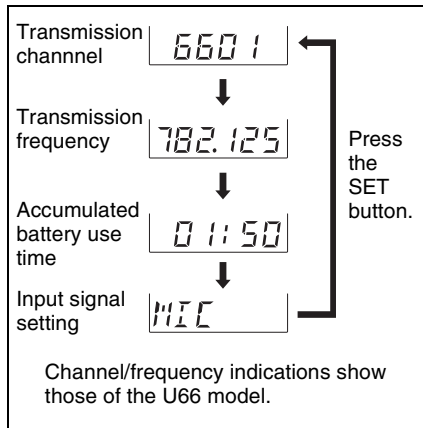
### D BATT (battery) indication

Shows the battery condition.

*For details, see "Battery condition indication" (page 7).*

### E CH (channel) indication

Shows transmitting channel. Each time you press the SET button in transmitting mode, the indication changes as follows.



## 5 SET button

In transmitting mode, press this button to change the parameters displayed in the CH indication area.

The SET button is also used to enter the setting mode and select the item to be set.

*For details on the setting mode, see "Settings" (page 9).*

## 6 +/- buttons

In setting mode, these buttons are used to select the transmission channel or frequency, RF output power setting, or to turn on/off the +48 V power supply for the connected microphone.

## 7 POWER switch

Turns the power of the unit ON or OFF.

### Note

Be sure to connect a microphone or a cable from the audio mixer, etc. before turning the POWER switch to ON.

## 8 LEVEL (audio input level) control

Rotate to adjust the audio level input from the audio input connector.

*For details on adjusting the audio input level, see "Setting the audio input level" (page 11).*

## 9 INPUT (input signal) selector

Set according to the equipment connected to the audio input connector.

**MIC:** Select when a microphone is connected.

**LINE:** Select when an audio mixer, etc. is connected to the audio input connector.

*For details on the use of this selector, see “Setting the audio input level” (page 11).*

### Note

To avoid producing noise, turn off the unit before changing the INPUT selector position from LINE to MIC when the +48 V power supply is activated.

## 10 Battery lid

Slide the battery lid to release the lock and open the battery compartment.

The battery compartment accommodates one 6LR61 (9 V) alkaline battery.

*For details on how to insert the battery, see “Inserting the battery” (page 8).*

# Power Supply





The WRT-8P can be powered by one 6LR61 (9 V) alkaline battery for about 1.5 to 4 hours of continuous operation at 25°C (77°F). (Battery life depends on the RF output power and +48 V power supply settings.)


Details on the battery condition indication and notes on battery are given below:

## Battery condition indication

When you turn the power on, the battery condition is shown by the BATT indication in the display section.

When the indication starts to flash as described in column 4 or 5 in the table below, replace the battery with a new one. Be sure to check the expiration date printed on the new battery before using it.

	BATT indication	Battery status
1	Lights 	Good
2	Lights 	Less than 50% charged
3	Lights 	Less than 20% charged
4	Flashes 	Almost drained

	<b>BATT indication</b>	<b>Battery status</b>
5	Flashes. Other indications in the display section do not appear. 	Almost drained. The unit does not turn on when the POWER switch is turned ON.

### Note

The indicated battery condition may not be correct if the battery was not new when installed. If you plan to use the unit for a long period of time, it is recommended that you replace the battery with a brand new one.

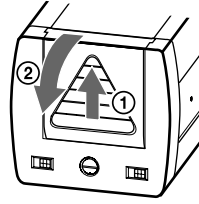
## Notes on battery

Battery may leak or explode if mistreated. Be sure to follow these instructions.

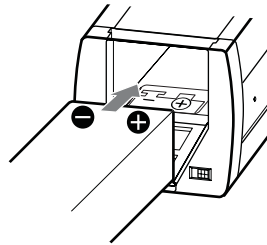
- Be sure to install the battery with the correct polarity.
- The battery is not rechargeable.
- When not using the unit for a long period of time, remove the battery to avoid leakage. If the battery does leak, clean all leakage from the battery compartment and the unit. Leakage left in the compartment and the unit may cause poor battery contact. If there seems to be poor battery contact, consult your Sony dealer.

## Inserting the battery

- 1 Slide the battery lid to release the lock (①), and open the battery compartment (②).



- 2 Insert a new 6LR61 (9 V) alkaline battery matching its polarity markings with those in the battery compartment, then close the lid.





---

# Settings

## Notes

- The transmitter cannot transmit in setting mode.
- Make sure that the channel selected on the transmitter is the same as that selected on the tuner being used in the same system.
- Depending on the noise or interference conditions, all selectable channels may not be usable. If necessary, you can determine usable channels by cycling the channel selection through a number of channels on the tuner with the transmitter set to OFF. Those channels for which the RF indicator on the tuner does not light are usable.
- If there is a TV broadcasting station nearby, do not use the station's channel.
- The transmitter may not operate correctly if it is turned on immediately after being turned off in setting mode. Wait for a few seconds before turning the power on again.
- The channel numbers and frequencies of your transmitter are shown on the “Sony Wireless Microphone System Frequency List” supplied with this Operating Instructions.

---

## Entering setting mode

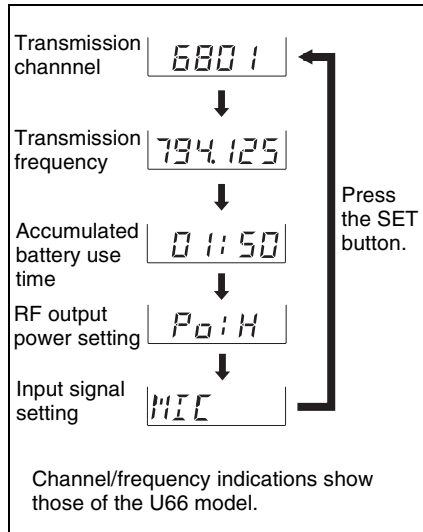
In setting mode, you can change the transmission channel or frequency and RF output power setting. You can also reset the accumulated battery use time indication or turn on/off the +48 V power supply for the connected microphone.

## To enter setting mode

Turn on the transmitter while pressing down the SET button.

The transmitter enters setting mode and the parameters that were displayed when the unit was last turned off start to flash.

Each time you press the SET button, the setting items are cyclically switched as shown below.



---

## Setting the transmission channel

The transmission channel can be selected through either the channel number or the frequency.

- 1** Set the transmitter to the setting mode.
- 2** Press the SET button repeatedly until the channel number (or frequency) indication appears.
- 3** Press the + or – button to select the channel number (or frequency).

Pressing the + button cycles the indications in the order shown in the tables in the pdf files “Sony Wireless Microphone System Frequency List” supplied with this Operating Instructions.

Pressing the – button cycles the indications in the opposite direction. Hold down the + or – button to change the channel number (or frequency) faster.

- 4 Set the POWER switch to OFF to complete the setting, or press the SET button to set other items.

The results are stored in memory. The change becomes effective the next time you turn on the transmitter by setting the POWER switch to ON, and the transmitter enters transmit mode with the selected transmission channel.

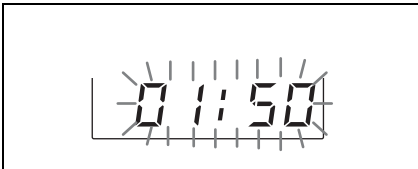
---

## Resetting the accumulated battery use time indication

The accumulated battery use time is the total time (in hours and minutes) that the battery has been used. It is recorded whenever the transmitter is on.

Reset the indication to “00:00” whenever you replace the battery.

- 1 Set the transmitter to the setting mode.
- 2 Press the SET button repeatedly until the accumulated time indication appears.



- 3 Press the – button.

The time indication resets to “00:00.” While “00:00” is still displayed, previous value can be resumed by pressing the + button.

- 4 Set the POWER switch to OFF to complete the setting, or press the SET button to set other items.

The results are stored in memory. The change becomes effective the next time you turn on the transmitter by setting the POWER switch to ON.

---

## Setting the RF output power level

You can select the RF output power level from “H” (250 mW) or “L” (50 mW) in setting mode.

- 1 Set the transmitter to the setting mode.
- 2 Press the SET button repeatedly until the RF output power indication appears.

Current RF  
output power  
setting



- 3 Press the + button to select “H” (250 mW), or press the – button to select “L” (50 mW).
- 4 Set the POWER switch to OFF to complete the setting, or press the SET button to set other items.

The results are stored in memory. The change becomes effective the next time you turn on the transmitter by setting the POWER switch to ON, and the transmitter

enters transmit mode with the selected RF output power level.

## Setting the audio input level

You can adjust the audio input level, regardless of the INPUT selector position.

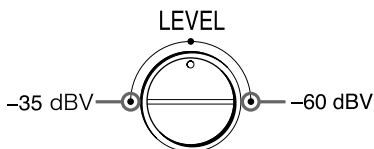
- 1 Set the INPUT selector according to the equipment connected to the audio input connector.

When a microphone is connected to the audio input connector, set the selector to MIC position; when a mixer, etc. is connected, set it to LINE position.

- 2 Turn the LEVEL control so that the AF/PEAK indicator lights up green continuously.

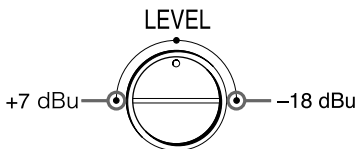
### When the INPUT selector is set to MIC position

Reference input level can be adjusted within a range shown below.



### When the INPUT selector is set to LINE position

Reference input level can be adjusted within a range shown below.

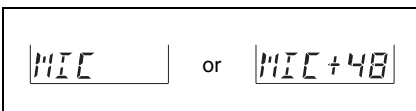


Occasional lighting of the AF/PEAK indicator in red is acceptable.

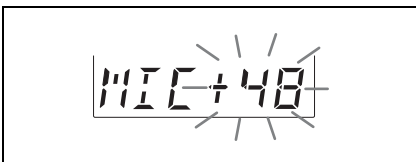
## Setting the +48 V power supply

You can set the +48 V power supply for the electric condenser microphone in setting mode.

- 1 Set the transmitter to the setting mode.
- 2 Press the SET button repeatedly until the "MIC" or "MIC+48" indication appears.



- 3 Press the + button to select "MIC+48," or press the - button to select "MIC."



Select "MIC+48" to supply the +48 V power to the connected microphone when the INPUT selector is set to MIC position in transmit mode; select "MIC" to cancel the +48 V power supply.

- 4 Set the POWER switch to OFF to complete the setting, or press the SET button to set other items.

The results are stored in memory. The change becomes effective the next time you turn on the transmitter by setting the POWER switch to ON, and the transmitter enters transmit mode with the selected power supply setting.

**Note**

+48 V power supply setting can be performed when the INPUT selector is set to either LINE or MIC. However, +48 V power supply takes place when next time the transmitter is turned on and the INPUT selector is set to MIC.

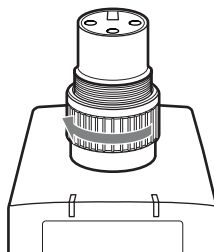
---

## Attachment and Insertion Procedures

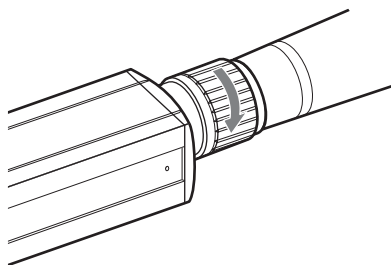
---

### Attaching a microphone or a cable

- 1 Turn the connector ring clockwise.

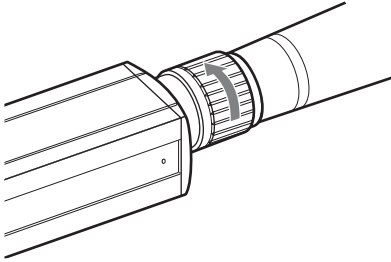


- 2 Push the microphone or cable connector (XLR-3-12C type connector) against the audio input connector of the unit until it is fully inserted.
- 3 Turn the connector ring counterclockwise to secure the latch.



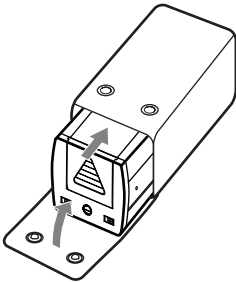
## Detaching a microphone or a cable

Turn the connector ring clockwise to loosen the latch, then pull out the microphone or cable connector.



## Inserting into the supplied soft case

Insert the unit into the supplied soft case with the rear side up, and close the flap.



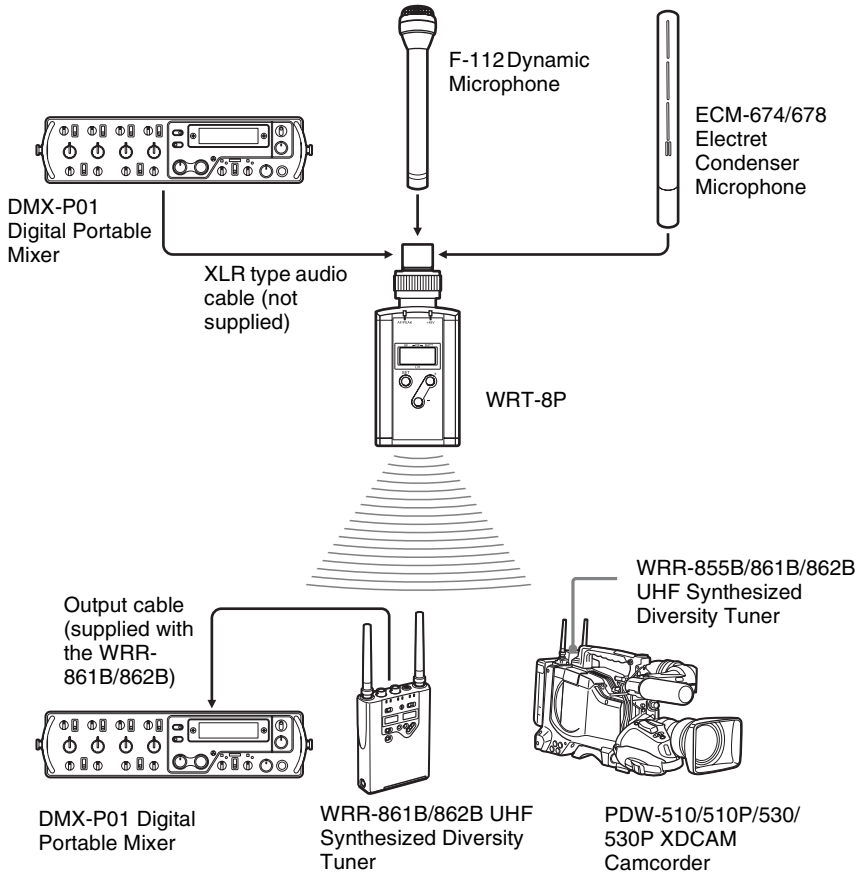
---

# Notes on Microphone System Operations

- To operate with two or more channels, maintain a distance of at least 30 cm (one ft.) between each pair of transmitters.
- Ensure that the tuners set to channels not being used are either turned off or set to the minimum output level.
- When turning the transmitter on or off, to keep the noise to a minimum, turn down the audio output level from the tuner or mixer to a minimum level.
- Turning on the transmitter without checking the channel selection first may interfere with the operation of other microphones/transmitters, if the current setting is already being used.
- To prevent noise generation, set the RF output power level to L (50 mW) when multiple channels are used simultaneously, and keep the transmitters at least 6 m (20 feet) away from the antennas.
- When there is a strong interference signal around the microphone system, such as an interference caused by an active cellular phone, noise may occur on the microphone system.
- Before attaching/detaching the microphone or cable, turn down the volume of the equipment connected to the tuner. Otherwise, noise will be produced.

# System Configuration

The illustration below shows the typical system configuration.



---

# Error Messages

When a problem occurs, one of the following error messages may appear on the display.

<b>Messages</b>	<b>Meanings</b>	<b>Remedy</b>
ERROR 11	An error has occurred in the backup memory data.	Contact your Sony dealer.
ERROR 21	The PLL synthesized circuit is abnormal.	Turn off the unit and turn it on again. If the message appears again, contact your Sony dealer.
ERROR 31	The battery voltage exceeds the allowable limit.	Use the specified battery.

# Specifications

## Transmitter and modulator section

### Oscillator

Crystal controlled PLL synthesizer

### Carrier frequencies

566.125-589.875MHz  
(U3032 Model)

638.125-661.875MHz  
(U4244 Model)

### Operating frequency band

24 MHz

### RF power output

250 mW/50 mW ERP

### Tone signal

32.768 kHz

### Battery condition signal

32.782 kHz

### Pre-emphasis

50  $\mu$ s

### Deviation

$\pm 10$  kHz  
(-60 dBV, 1 kHz input, MIC)  
 $\pm 10$  kHz  
(-18 dBu, 1 kHz input, LINE)

- 1) 0 dBV=1 Vrms
- 2) 0 dBu=0.775 Vrms

### Maximum deviation

$\pm 40$  kHz

### Audio input attenuation

0 to 25 dB (MIC, LINE)

### Audio input pad

40 dB (LINE)

### Frequency response

50 to 18,000 Hz

### Signal-to-noise ratio

60 dB or more (A-weighted,  
modulation frequency 1 kHz,  
with  $\pm 10$  kHz deviation at  
tuner)

## Power section

### Power requirements

9.0 V DC (one 6LR61 alkaline  
battery)

Battery life (at 25°C (77°F) with a Sony  
6LR61 alkaline battery)

Approx. 1.5 hours (250 mW, +48 V  
on)

Approx. 2.5 hours (50 mW, +48 V  
on)

Approx. 2.5 hours (250 mW)

Approx. 4 hours (50 mW)

## General

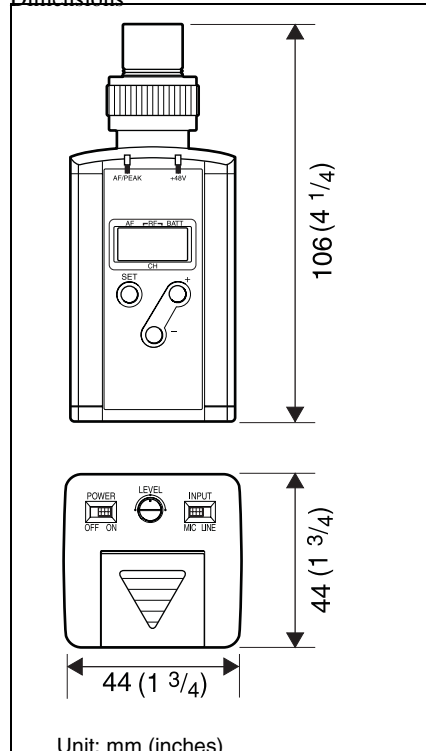
### Operating temperature

0°C to 50°C (32°F to 122°F)

### Storage temperature

-30°C to 60°C (-22°F to 140°F)

### Dimensions



Unit: mm (inches)



44 × 106 × 44 mm ( $1\frac{3}{4} \times 4\frac{1}{4} \times$   
 $1\frac{3}{4}$  inches) (w/h/d)

Mass Approx. 230 g (8 oz) (including  
battery)

## **Supplied accessories**

Operating Instructions (1)

Sony Wireless Microphone System

Frequency List (1)

Soft case (1)

Design and specifications are subject to  
change without notice.

<http://www.sony.net/>

Sony Corporation  
Printed in Japan