

(d)- (8) Instruction book:

SONY.

UHF Synthesized Transmitter

Operating Instructions

WRT-805A

© 1992 by Sony Corporation

(d)- (8) Instruction book:

English

Owner's Record

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

Model No. WRT-805A 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 licence.

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

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 licence 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 licence is issued on no-interference, no-protection basis with respect to broadcast signals.

Avis pour les clients au Canada:

L'usage des appareils sans-fil Sony est réglé par l'Industrie Canada comme décrit dans leur Cahier des Normes Radioélectriques CNR-123. Une licence est normalement requise. Le bureau de l'Industrie Canada doit être contacté. Lorsque l'opération de l'appareil est dans les limites de la bande de radiodiffusion, la licence est émanée sur la base de non-interférence, non-protection avec les signaux de radiodiffusion.

Table of Contents

Precautions	1	Settings	6
Introduction	2	Initiating Setting Mode	6
Features	2	Changing the Channel Selection	7
Channels and Carrier Frequencies	3	Changing the Input Attenuation Setting	7
Parts Identification	4	Resetting the Accumulated Time Indication	8
Power Supply	5	Error Messages	8
Connections	6	Specifications	9
Notes on Microphone System Operation	6		

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 an active gas, clean its surface as well as the connectors with a dry, soft cloth soon after use. Lengthy use of the unit 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 thinner or benzene, which will damage the finish of the unit.
- The unit has been factory adjusted precisely. Do not tamper with its internal parts or attempt to repair it.

(d)- (8) Instruction book:

Introduction

The WRT-805A is a transmitter to be used in combination with the WRR-800A/801A UHF Synthesized Diversity Tuner for an 800 MHz band UHF synthesized wireless microphone system for broadcast or movie production purpose.

The WRT-805A can also be used in conventional Sony Wireless Microphone System composed of the WRT-810A/820A UHF Synthesized Transmitter, the WRR-810A/820A/840A/850A UHF Synthesized Diversity Tuner, etc.

The microphone/transmitter and tuners of the wireless microphone system are classified by frequency band. A 12 MHz frequency band (or two consecutive-numbered TV channels, such as 68 and 69 of the WRT-805A) is assigned to each microphone/transmitter and tuner model. In building up a UHF wireless microphone system, be sure to combine a microphone/transmitter and a tuner having the same TV channel number.

Model name	Frequency band	
	TV channel	Frequency(MHz)
WRT-805A(64)	64	770.125~775.875
	65	776.125~781.875
WRT-805A(66)	66	782.125~787.875
	67	788.125~793.875
WRT-805A(68)	68	794.125~799.875
	69	800.125~805.875

Features

Easy selection of 94 channels

The unit can operate on any one of 94 carrier frequencies selected by a simple button operation.

Compact and lightweight

Innovative high-density mounting technology has enabled the creation of this compact and lightweight transmitter, which lets you move anywhere for Electronic News Gathering (ENG) and Electronic Field Production (EFP). The curved design of the moulded case allows a comfortable fit to your waist.

Battery status information

This transmitter has capability of transmitting "Battery status information" to the WRR-800A/801A/850A to give advance warning of battery depletion. The information is sent to the WRR-800A/801A/850A in approx. 1 hour advance to battery exhaust so that they can safely replace battery of the microphone. When the WRR-800A/801A/850A receives the information, the LED and the LCD on the panel start flashing.

Operation powered by easily available battery

The built-in high-efficiency DC-DC converter allows stable operation, for about 6 hours continuously, with just a single LR6 (size AA) alkaline battery.

LCD for coordinated operation control

The LCD shows the current channel number, the residual battery power, input attenuation setting, AF input level and RF output.

An accumulated operation time indication is also provided for simple control of the time of battery use (in 1-minute increments).

Saved channel and input attenuation settings

The unit stores the channel and the input attenuation setting when it is turned off. The saved settings are retained even if the battery is removed. Therefore, when using the unit next time, you need not make the same settings again.

Highly reliable electronic attenuator

The built-in input level attenuator is adjustable in a range of 0 to 21 dB in 3-dB steps. It reduces signal distortion when an excessively strong audio signal is inputted.

RF carrier with tone signal

The unit transmits the RF carrier accompanied by a tone signal, enabling the tuner with a tone squelch circuit to take out only the target audio signal received.

Wide dynamic range and low noise

The compander (compressor/expander) system enables transmission over a wide dynamic range with minimum noise.

Audio input connector (3.5-mm dia.) with locking mechanism

The screw-type locking mechanism ensures reliable connection.

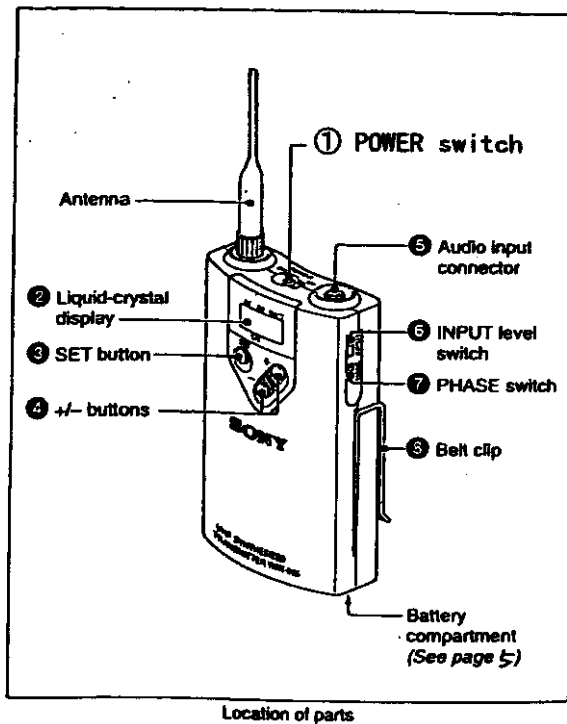
(d)- (8) Instruction book:

Channels and Carrier Frequencies

The WRT-805A can transmit on any selected wireless channel among those listed below.

WRT-805A (64)				WRT-805A (66)				WRT-805A (68)			
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
64-01	770.125	65-01	778.125	66-01	782.125	67-01	788.125	68-01	794.125	69-01	800.125
64-02	770.250	65-02	778.250	66-02	782.250	67-02	788.250	68-02	794.250	69-02	800.250
64-03	770.375	65-03	778.375	66-03	782.375	67-03	788.375	68-03	794.375	69-03	800.375
64-04	770.500	65-04	778.500	66-04	782.500	67-04	788.500	68-04	794.500	69-04	800.500
64-05	770.625	65-05	778.625	66-05	782.625	67-05	788.625	68-05	794.625	69-05	800.625
64-06	770.750	65-06	778.750	66-06	782.750	67-06	788.750	68-06	794.750	69-06	800.750
64-07	770.875	65-07	778.875	66-07	782.875	67-07	788.875	68-07	794.875	69-07	800.875
64-08	771.000	65-08	779.000	66-08	783.000	67-08	789.000	68-08	795.000	69-08	801.000
64-09	771.125	65-09	779.125	66-09	783.125	67-09	789.125	68-09	795.125	69-09	801.125
64-10	771.250	65-10	779.250	66-10	783.250	67-10	789.250	68-10	795.250	69-10	801.250
64-11	771.375	65-11	779.375	66-11	783.375	67-11	789.375	68-11	795.375	69-11	801.375
64-12	771.500	65-12	779.500	66-12	783.500	67-12	789.500	68-12	795.500	69-12	801.500
64-13	771.625	65-13	779.625	66-13	783.625	67-13	789.625	68-13	795.625	69-13	801.625
64-14	771.750	65-14	779.750	66-14	783.750	67-14	789.750	68-14	795.750	69-14	801.750
64-15	771.875	65-15	779.875	66-15	783.875	67-15	789.875	68-15	795.875	69-15	801.875
64-16	772.000	65-16	779.000	66-16	784.000	67-16	790.000	68-16	796.000	69-16	802.000
64-17	772.125	65-17	779.125	66-17	784.125	67-17	790.125	68-17	796.125	69-17	802.125
64-18	772.250	65-18	779.250	66-18	784.250	67-18	790.250	68-18	796.250	69-18	802.250
64-19	772.375	65-19	779.375	66-19	784.375	67-19	790.375	68-19	796.375	69-19	802.375
64-20	772.500	65-20	779.500	66-20	784.500	67-20	790.500	68-20	796.500	69-20	802.500
64-21	772.625	65-21	779.625	66-21	784.625	67-21	790.625	68-21	796.625	69-21	802.625
64-22	772.750	65-22	779.750	66-22	784.750	67-22	790.750	68-22	796.750	69-22	802.750
64-23	772.875	65-23	779.875	66-23	784.875	67-23	790.875	68-23	796.875	69-23	802.875
64-24	773.000	65-24	779.000	66-24	785.000	67-24	791.000	68-24	797.000	69-24	803.000
64-25	773.125	65-25	779.125	66-25	785.125	67-25	791.125	68-25	797.125	69-25	803.125
64-26	773.250	65-26	779.250	66-26	785.250	67-26	791.250	68-26	797.250	69-26	803.250
64-27	773.375	65-27	779.375	66-27	785.375	67-27	791.375	68-27	797.375	69-27	803.375
64-28	773.500	65-28	779.500	66-28	785.500	67-28	791.500	68-28	797.500	69-28	803.500
64-29	773.625	65-29	779.625	66-29	785.625	67-29	791.625	68-29	797.625	69-29	803.625
64-30	773.750	65-30	779.750	66-30	785.750	67-30	791.750	68-30	797.750	69-30	803.750
64-31	773.875	65-31	779.875	66-31	785.875	67-31	791.875	68-31	797.875	69-31	803.875
64-32	774.000	65-32	780.000	66-32	786.000	67-32	792.000	68-32	798.000	69-32	804.000
64-33	774.125	65-33	780.125	66-33	786.125	67-33	792.125	68-33	798.125	69-33	804.125
64-34	774.250	65-34	780.250	66-34	786.250	67-34	792.250	68-34	798.250	69-34	804.250
64-35	774.375	65-35	780.375	66-35	786.375	67-35	792.375	68-35	798.375	69-35	804.375
64-36	774.500	65-36	780.500	66-36	786.500	67-36	792.500	68-36	798.500	69-36	804.500
64-37	774.625	65-37	780.625	66-37	786.625	67-37	792.625	68-37	798.625	69-37	804.625
64-38	774.750	65-38	780.750	66-38	786.750	67-38	792.750	68-38	798.750	69-38	804.750
64-39	774.875	65-39	780.875	66-39	786.875	67-39	792.875	68-39	798.875	69-39	804.875
64-40	775.000	65-40	781.000	66-40	787.000	67-40	793.000	68-40	799.000	69-40	805.000
64-41	775.125	65-41	781.125	66-41	787.125	67-41	793.125	68-41	799.125	69-41	805.125
64-42	775.250	65-42	781.250	66-42	787.250	67-42	793.250	68-42	799.250	69-42	805.250
64-43	775.375	65-43	781.375	66-43	787.375	67-43	793.375	68-43	799.375	69-43	805.375
64-44	775.500	65-44	781.500	66-44	787.500	67-44	793.500	68-44	799.500	69-44	805.500
64-45	775.625	65-45	781.625	66-45	787.625	67-45	793.625	68-45	799.625	69-45	805.625
64-46	775.750	65-46	781.750	66-46	787.750	67-46	793.750	68-46	799.750	69-46	805.750
64-47	775.875	65-47	781.875	66-47	787.875	67-47	793.875	68-47	799.875	69-47	805.875

Parts Identification



① POWER switch

Turns the power of the transmitter ON or OFF.

When you set this switch to ON without holding any other button, the transmitter is set to normal Transmit mode and transmits the signal of the selected channel.

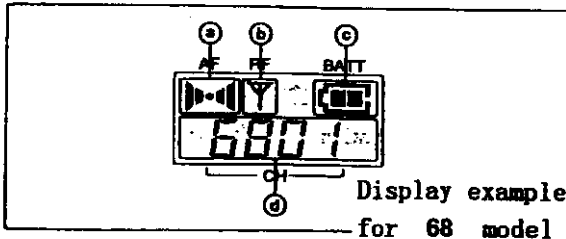
When you set this switch to ON while holding the SET button down, Setting mode is initiated. No signal is transmitted in Setting mode.

For setting mode, see "Settings" on page 6.

Note

Be sure to connect a microphone or guitar cable before turning the power ON.

② Liquid-crystal display



③ AF (audio input) indication

Lights when an audio signal over the reference level is being supplied.

Parts Identification

④ RF (antenna output) indication

Lights when a signal is being transmitted from the antenna.

⑤ BATT (battery) indication

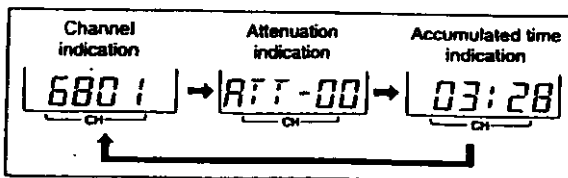
Displays the status of the battery.

See "Battery indication" on page 5

⑥ CH (channel) indication

Displays the transmission channel.

Each time you press the SET button in normal Transmit mode, the channel indication changes to the input attenuation and accumulated time indications.



In Attenuation indication mode, it displays the input attenuation setting in dB, which can be changed in a range of 0 to 21 dB in 3-dB steps.

In Accumulated time indication mode, it displays the accumulated time of battery use (in 1-minute increments).

For adjustments, see "Changing the Channel Selection" on page 7, "Changing the Input Attenuation Setting" on page 7 or "Resetting the Accumulated Time Indication" on page 8.

③ SET button

In normal transmit mode, press this button to change the indication items in the lower half of the liquid-crystal display.

When you set the POWER switch to ON while holding this button down, setting mode is initiated. In Setting mode, press this button to select the item to be set.

For Setting mode, see "Settings" on page 6.

④ + (+ selection) / - (- selection/reset) buttons

In setting mode, select the transmission channel and attenuator level using either of these buttons, or reset the accumulated time indication to "00:00" with the - button.

For Setting mode, see "Settings" on page 6.

⑤ Audio input connector (ø3.5 mm, with locking mechanism)

To connect a microphone or other audio source.

Pin assignment



See "Connections" on page 6.

⑤ INPUT level switch

Select the reference input level appropriate for the connected audio source.

–60 dBV: For a microphone

–40 dBV: For an electric guitar

⑦ PHASE switch

Select the input phase appropriate for the connected audio source.

= : For a microphone other than the ECM-44BMP or an electric guitar

ø : For the ECM-44BMP

Switch functions

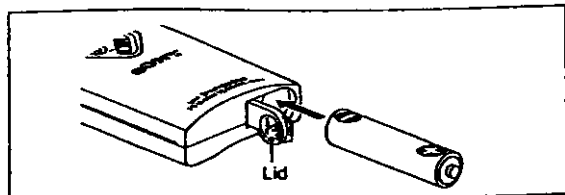
⑥ PHASE switch	⑤ INPUT level switch	
	–60 dBV	–40 dBV
=	ECM-121BMP ECM-122BMP ECM-310BMP	GC-0.7MP
ø	ECM-44BMP	—

⑧ Belt clip

You can easily carry the transmitter attached to your clothing on your belt, etc. Depending on your selection of the mount holes for the belt clip, you can adjust the position or even carry the unit with the antenna downward.

Power Supply

The transmitter can operate on one LR6 (size AA) alkaline battery continuously for about 6 hours at 25°C (77°F).

Inserting the battery

1 Slide the lid in the direction of the arrow (▼) to open the battery compartment.

2 Match the polarities and insert the battery.

3 Close the lid and slide it in the reverse direction to lock.

Power Supply

Battery indication

When you turn the power on, the battery status appears in the BATT indication on the liquid-crystal display.

	1	2	3	4
BATT Indication	Lights 	Lights 	Flashes 	Goes off
Battery condition	Good	Less than half-charge	Almost exhausted	Completely exhausted

When the battery reaches stage 3 shown in the table, the BATT indication on the WRR-800A/801A/850A also starts flashing.

Promptly replace the battery when the indications flash.

Note

The indication may be incorrect if the battery is not new when inserted. If you plan to use the transmitter for a long period, it is best to replace the battery with new one.

Notes on battery

- Use a new alkaline battery.
- Be careful to insert the battery with the correct polarity.
- When not using the transmitter for a long period, remove the battery to avoid leakage. If the battery does leak, clean all leakage from the unit and insert a new battery. Leakage left in the unit may cause poor battery contact. If there seems to be poor battery contact, consult your Sony dealer.

Connections

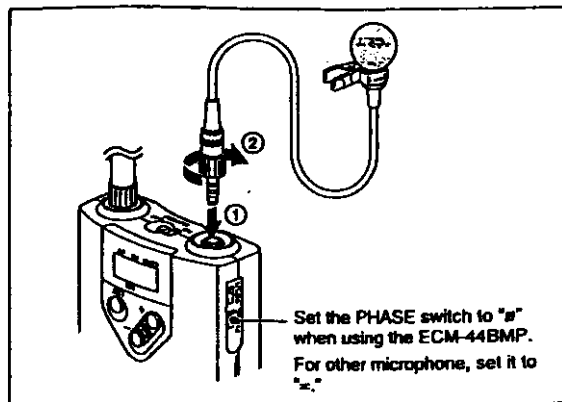
Caution

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

To connect a microphone

When using one of the following optional Sony Electret Condenser Microphones equipped with a miniature phone plug, connect it as illustrated below.

Sony Electret Condenser Microphones
ECM-44BMP/ECM-122BMP/ECM-121BMP/ECM-310BMP

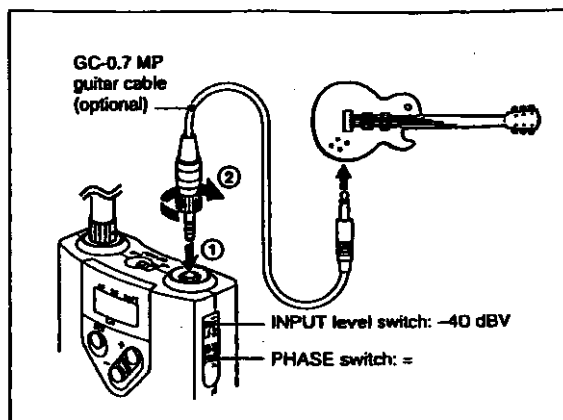


Notes on Microphone System Operation

- To operate with 2 or more channels, maintain a distance of at least 30 cm (1 ft.) between each pair of transmitters. For details of operation with 2 or more channels, refer to the Operating Instructions for the WRR-800A/801A UHF Synthesized Diversity Tuners.
- Ensure that the tuners set to channels not being used are either turned off or set to the minimum output level.
- When powering the transmitter on or off, to keep the noise to a minimum, set the audio output level from the tuner or mixer to a minimum.
- Powering the transmitter on without checking the channel selection first may interfere with the operation of other microphones/transmitters, if the current setting is already being used.

To connect an electric guitar

For connection of an electric guitar, use the optional GC-0.7 MP Guitar Cable.



To optimize the output level

Depending on the sound volume of the guitar, set the INPUT level switch and the ATT (attenuator) level appropriately. If noise is so loud as to damage the guitar sound even if the INPUT level switch is set at "-40 dBV" and the ATT level is "0 dB," change the INPUT level switch to "-60 dBV" and adjust ATT to a level which optimizes the output level. For the ATT level adjustment, see page 7.

Settings

Initiating Setting Mode

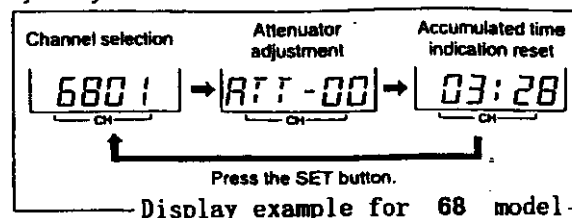
In Setting mode, you can change the transmission channel and the attenuation level, or reset the accumulated time indication.

To enter Setting mode

While holding down the SET button, set the POWER switch to ON. Hold the SET button down until a display appears on the liquid-crystal display.

The transmitter enters Setting mode and the indication before the transmitter was previously turned OFF flashes on the liquid-crystal display.

Each time you press the SET button, Channel selection mode, Attenuator adjustment mode (page 7) and Accumulated time indication reset mode (page 8) are cyclically switched.



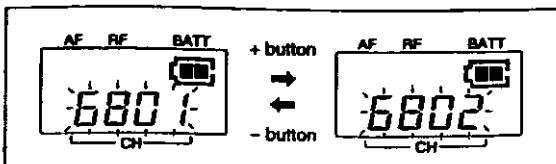
Changing the Channel Selection

1 Set the unit to Setting mode.

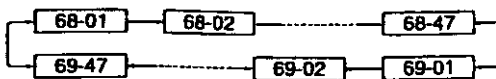
If the channel number is not displayed, press the SET button to obtain the channel number indication.

2 Press the + or – button to select the channel.

Pressing the + button cyclically changes the channel indication in the order shown in the table of "Channels and Carrier Frequencies" on page 6. Pressing the – button changes it in reverse order.



If you keep either button pressed, the channel setting will be incremented or decremented successively. The display will cycle from 68-01 through 69-47.



Display example for 68 model

3 Once the desired channel number appears, set the POWER switch to OFF to release Setting mode. Or, press the SET button to continue operations in Setting mode.

The next time you turn on the power only by setting the POWER switch to ON, the transmitter will be set to Transmit mode with the selected channel.

Notes

- The unit cannot transmit in Setting mode.
- Make sure that the channel selected is the same as that selected on the tuner used in the same system.
- Depending on the noise or interference conditions, the selectable channels may not necessarily all be usable. If necessary, you can determine the usable channels by stepping the channel selection through a number of channels on a tuner with the transmitter set to OFF. Those channels on which the RF indicator of the tuner does not light are usable.
- If there is a TV broadcasting station near by, do not use the station's channel.
- The unit may not operate correctly if it is turned on again immediately after turning off the power while in setting mode. Pause for a few seconds or more before turning on the power again.

Settings

Changing the Input Attenuation Setting

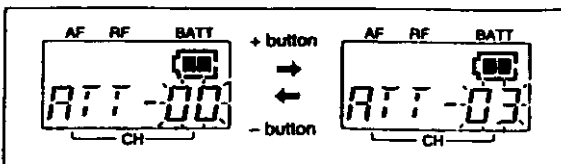
You can change the input attenuation setting in 3-dB steps in a range of 0 to 21 dB. You can change it either in Setting mode or in Transmit mode.

Changing in Setting mode

1 Set the unit to Setting mode.

2 If the attenuation level is not displayed, press the SET button to obtain the attenuation indication.

3 Press the + or – button to select the attenuation setting.



If you keep either button pressed, the level will be incremented or decremented successively.

4 Once the desired level appears, set the POWER switch to OFF to release Setting mode. Or, press the SET button to continue operations in Setting mode.

The next time you turn on the power only by setting the POWER switch to ON, the transmitter will be set to Transmit mode with the selected attenuation setting.

Changing in Transmit mode

You can also change the input attenuation setting during transmission.

1 If the attenuation level is not displayed, press the SET button to obtain the attenuation indication.

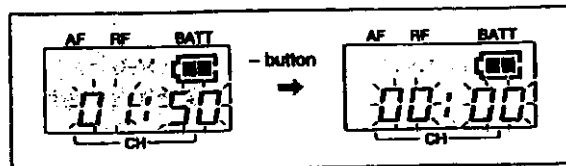
2 Press the + or – button to select the attenuation setting.

Resetting the Accumulated Time Indication

The time indication accumulates time in hours and minutes when the WRT-805A is on. Reset the indication to "00:00" whenever you replace the battery so that it can display the running time of the battery.

- 1 Set the unit to Setting mode.
- 2 If the attenuation level is not displayed, press the SET button to obtain the accumulated time indication.
- 3 Press the - button.

The time indication resets to "00:00."



While you see "00:00" indication, you can go back to previous value by pressing the + button.

- 4 Set the POWER switch to OFF to release Setting mode.

Error Messages

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

Messages	Contents	Measures
Error 11	An error occurred in backup memory data.	The data was initialized. Set the transmitting channel and the input attenuation again.
Error 21	The PLL synthesized circuit is in trouble.	Contact your Sony dealer.
Error 31	The battery voltage exceeds the allowable value.	Use the specified battery.
Error 41	Defect of an internal circuit	Contact your Sony dealer.
Error 51	Defect of the A/D converter circuit	
Error 61	Defect of an internal circuit	

Specifications

Transmitter and modulator section

Oscillator	Crystal controlled PLL synthesizer
Type of emission	110KF3E
Carrier frequencies	94 settings at 125 kHz intervals
	WRT-805A (64) 770.125 to 781.875 MHz
	WRT-805A (66) 782.125 to 793.875 MHz
	WRT-805A (68) 794.125 to 805.875 MHz
RF power output	10 mW
Frequency stability	Within $\pm 0.005\%$
Spurious radiation	20 nW or less
Tone signal	32.768 kHz
Type of antenna	1/4 wavelength helical or 1/4 wavelength wire

Audio section

Pre-emphasis	50 μ s
Reference deviation	± 5 kHz (-60 dBV, 1 kHz input)
Frequency response	70 to 15,000 Hz
Signal-to-noise ratio	57 dB or more (A-weighted, modulation frequency 1 kHz, with reference deviation at WRR-800A/801A)
Audio attenuator	0 to 21 dB, variable in 3-dB steps
Reference input level	$-60/-40$ dBV ¹ at audio attenuator 0 dB

Power section

Power requirements	1.5 V DC (one LR6/size AA alkaline battery)
Battery life	Approx. 6 hours at 25°C or 77°F with Sony LR6 alkaline battery
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	58 x 95 x 21 mm (w/h/d) (2 ³ / ₁₆ x 3 ³ / ₁₆ x 7 ¹ / ₃₂ inches)
Mass	Approx. 100 g (3.5 oz) including battery

Supplied accessory

Operating Instructions (1)

Design and specifications are subject to change without notice.

1) 0 dBV = 1 Vrms