

# UHF Synthesized Tuner

Model:

**WRR-810A**

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## **Operating Instructions** page 2

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

## **Mode d'emploi** page 22

Avant la mise en service de cet appareil, prière de lire attentivement ce mode d'emploi que l'on conservera pour toute référence ultérieure.

## **Manual de instrucciones** página 42

Antes de utilizar la unidad, lea detenidamente este manual de instrucciones, y consérvelo para futuras referencias.

## 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. WRR-810A      Serial No. \_\_\_\_\_

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 the U.S.A.

#### Declaration of Conformity

Trade Name :	SONY
Model No. :	WRR-810A
Responsible Party :	Sony Electronics Inc.
Address :	1 Sony Drive, Park Ridge, NJ.07656
	USA
Telephone No. :	201-930-6970

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### Notice for customers in Canada

Use of Sony wireless devices is regulated by the Industry Canada as described in their Telecommunication Regulatory Circular TRC-78. 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.

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# Overview

The WRR-810A is a highly reliable portable tuner for the 800 MHz band Sony UHF wireless microphone system to be used for broadcast or movie production purposes. This tuner is suitable for Electronic News Gathering (ENG) and Electronic Field Production (EFP).

## Features

### **Phase Locked Loop (PLL) Synthesized System**

The WRR-810A with its refined PLL synthesized circuit can operate on 94 wireless channels.

### **Easy multichannel operation for preset wireless channel groups**

In addition to a group allowing all 94 wireless channels to be selected, the WRR-810A has six preprogrammed groups, that is combination of wireless channels which permits simultaneous operation of multiple channels without intermodulation.

### **Compact and lightweight**

The high-density mounting technology has enabled a compact and lightweight tuner. Using the supplied accessories, it can be easily fitted onto a Camcorder.

### **Two size AA battery operation**

Powered by two LR6 (size AA) alkaline batteries, the tuner offers 6 hours of consecutive operation at room temperature.

### **Versatile displays**

With a liquid-crystal display and two LEDs, a variety of information, such as the received wireless channels, RF level and battery condition, can be obtained.

### **Tone squelch circuit for noise elimination**

The unit uses a squelch circuit to selectively receive the RF carrier accompanied by a tone signal from the transmitter.

### **Wide dynamic range**

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

### **Output monitoring**

The audio output can be monitored through headphones (monitoring level adjustable).

## System Configuration

The WRR-810A can be used with the WRT-810A/830A/867A UHF synthesized wireless microphone or WRT-820A/860A UHF synthesized transmitter.

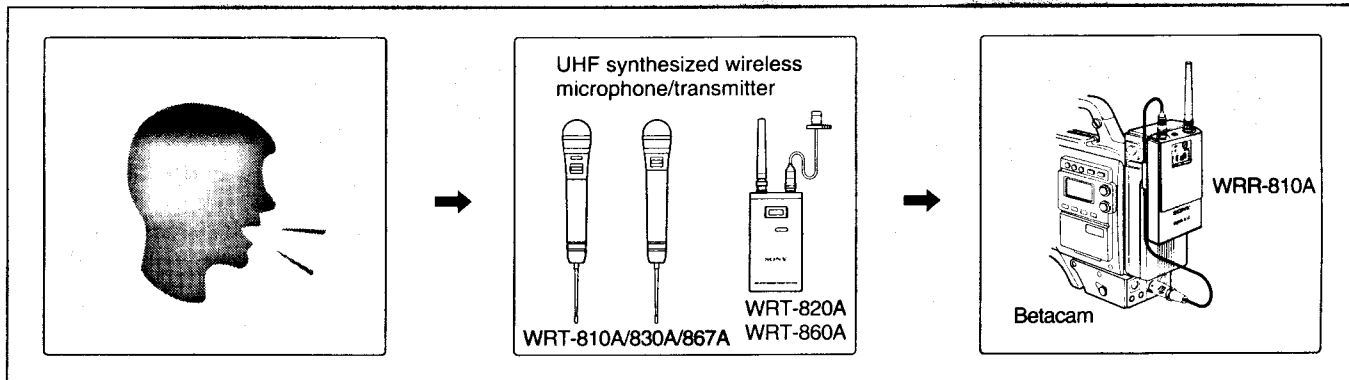
Sony 800 MHz band system models

Frequency band		Model name	
TV channel	Frequency (MHz)	Transmitter or microphone	Tuner
64	770.125 - 775.875	WRT-810A WRT-820A WRT-830A <sup>a)</sup> WRT-860A <sup>a)</sup> WRT-867A <sup>a)</sup>	WRR-810A WRR-820A <sup>b)</sup> WRR-840A <sup>b)</sup>
65	776.125 - 781.875		
66	782.125 - 787.875		
67	788.125 - 793.875		
68	794.125 - 799.875		
69	800.125 - 805.875		

a) These models cover only 68 and 69 channels.

b) For these models, the AN-820A UHF antenna and the WD-820A UHF antenna divider are required.

## Signal flow



# Wireless Channels Selectable

The WRR-810A stores seven groups of selectable wireless channels: groups 00 (94 channels), 11 (11 channels), 12 (8 channels), 13 (8 channels), A1 (19 channels), A2 (13 channels), and A3 (13 channels) as shown in tables from pages 6 to 11.

The wireless channel groups other than group 00 are designed so that you can use all wireless channels of any one group simultaneously within the same UHF wireless microphone system without causing intermodulation. It is therefore recommended that you make it a rule to use a wireless channel group other than group 00 unless the use of group 00 is specifically necessary.

Each “wireless channel” is represented by a 2-digit TV channel number and another 2-digit number, for example: 68-23.

## Notes

To eliminate interference or noise, please note the following.

- Do not use **two or more** wireless microphones or transmitters whose wireless channels are the same.
- If there is a TV broadcasting station nearby, to avoid possible interference from its broadcast, do not use that station's channel.
- The number of wireless channels actually usable in a multi-channel system may be smaller than the normal capacity of that system if there is interference from TV broadcasting or other RF signals.
- To operate two or more UHF synthesized wireless microphones/transmitters using the same wireless channel of the same group, ensure that the wireless microphones/transmitters are at least 100 m (330 feet)<sup>1)</sup> apart as far as they are installed within sight of each other.
- When using two or more WRR-810As, do not directly put one unit upon the other.

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1) The distance depends on the operating environment and conditions.

## Wireless Channels Selectable

### Wireless Channel Lists (1) – For 64-Version Model Using TV Channels 64 and 65

**Group 00: All channel access**

Use to scan for open channels. Use only for a one channel system.

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
64-01	770.125	64-25	773.125	65-01	776.125	65-25	779.125
64-02	770.250	64-26	773.250	65-02	776.250	65-26	779.250
64-03	770.375	64-27	773.375	65-03	776.375	65-27	779.375
64-04	770.500	64-28	773.500	65-04	776.500	65-28	779.500
64-05	770.625	64-29	773.625	65-05	776.625	65-29	779.625
64-06	770.750	64-30	773.750	65-06	776.750	65-30	779.750
64-07	770.875	64-31	773.875	65-07	776.875	65-31	779.875
64-08	771.000	64-32	774.000	65-08	777.000	65-32	780.000
64-09	771.125	64-33	774.125	65-09	777.125	65-33	780.125
64-10	771.250	64-34	774.250	65-10	777.250	65-34	780.250
64-11	771.375	64-35	774.375	65-11	777.375	65-35	780.375
64-12	771.500	64-36	774.500	65-12	777.500	65-36	780.500
64-13	771.625	64-37	774.625	65-13	777.625	65-37	780.625
64-14	771.750	64-38	774.750	65-14	777.750	65-38	780.750
64-15	771.875	64-39	774.875	65-15	777.875	65-39	780.875
64-16	772.000	64-40	775.000	65-16	778.000	65-40	781.000
64-17	772.125	64-41	775.125	65-17	778.125	65-41	781.125
64-18	772.250	64-42	775.250	65-18	778.250	65-42	781.250
64-19	772.375	64-43	775.375	65-19	778.375	65-43	781.375
64-20	772.500	64-44	775.500	65-20	778.500	65-44	781.500
64-21	772.625	64-45	775.625	65-21	778.625	65-45	781.625
64-22	772.750	64-46	775.750	65-22	778.750	65-46	781.750
64-23	772.875	64-47	775.875	65-23	778.875	65-47	781.875
64-24	773.000			65-24	779.000		

**Group 11: 11-channel group**

Use when both TV channels 64 and 65 are open.

Channel	Frequency (MHz)
64-05	770.625
64-14	771.750
64-25	773.125
64-41	775.125
64-47	775.875
65-12	777.500
65-16	778.000
65-30	779.750
65-37	780.625
65-40	781.000
65-42	781.250

**Group A1: 19-channel group**

It is possible to obtain a 19-channel intermodulation-free combination when the three versions of the tuner are set to Group A1. The channels listed as Group A1 for the 66- and 68-version models can be used in

**Group 12: 8-channel group**

Use when TV channel 64 is on the air.

Channel	Frequency (MHz)
65-01	776.125
65-05	776.625
65-11	777.375
65-25	779.125
65-28	779.500
65-36	780.500
65-41	781.125
65-43	781.375

**Group A2: 13-channel group**

To simultaneously use up to 13 channels selected in the frequency band of odd-numbered TV channels of those receivable by the three versions of the tuner. The channels listed as Group A2 for the 66- and 68-version models

**Group 13: 8-channel group**

Use when TV channel 65 is on the air.

Channel	Frequency (MHz)
64-03	770.375
64-13	771.625
64-18	772.250
64-26	773.250
64-37	774.625
64-40	775.000
64-44	775.500
64-46	775.750

**Group A3: 13-channel group**

To simultaneously use up to 13 channels selected in the frequency band of even-numbered TV channels of those receivable by the three versions of the tuner. The channels listed as Group A3 for the 66- and 68-version

## Wireless Channel Lists (2) – For 66-Version Model Using TV Channels 66 and 67

### Group 00: All channel access

Use to scan for open channels. Use only for a one channel system.

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
66-01	782.125	66-25	785.125	67-01	788.125	67-25	791.125
66-02	782.250	66-26	785.250	67-02	788.250	67-26	791.250
66-03	782.375	66-27	785.375	67-03	788.375	67-27	791.375
66-04	782.500	66-28	785.500	67-04	788.500	67-28	791.500
66-05	782.625	66-29	785.625	67-05	788.625	67-29	791.625
66-06	782.750	66-30	785.750	67-06	788.750	67-30	791.750
66-07	782.875	66-31	785.875	67-07	788.875	67-31	791.875
66-08	783.000	66-32	786.000	67-08	789.000	67-32	792.000
66-09	783.125	66-33	786.125	67-09	789.125	67-33	792.125
66-10	783.250	66-34	786.250	67-10	789.250	67-34	792.250
66-11	783.375	66-35	786.375	67-11	789.375	67-35	792.375
66-12	783.500	66-36	786.500	67-12	789.500	67-36	792.500
66-13	783.625	66-37	786.625	67-13	789.625	67-37	792.625
66-14	783.750	66-38	786.750	67-14	789.750	67-38	792.750
66-15	783.875	66-39	786.875	67-15	789.875	67-39	792.875
66-16	784.000	66-40	787.000	67-16	790.000	67-40	793.000
66-17	784.125	66-41	787.125	67-17	790.125	67-41	793.125
66-18	784.250	66-42	787.250	67-18	790.250	67-42	793.250
66-19	784.375	66-43	787.375	67-19	790.375	67-43	793.375
66-20	784.500	66-44	787.500	67-20	790.500	67-44	793.500
66-21	784.625	66-45	787.625	67-21	790.625	67-45	793.625
66-22	784.750	66-46	787.750	67-22	790.750	67-46	793.750
66-23	784.875	66-47	787.875	67-23	790.875	67-47	793.875
66-24	785.000			67-24	791.000		



**Group 11: 11-channel group**

Use when both TV channels 66 and 67 are open.

Channel	Frequency (MHz)
66-05	782.625
66-14	783.750
66-25	785.125
66-41	787.125
66-47	787.875
67-12	789.500
67-16	790.000
67-30	791.750
67-37	792.625
67-40	793.000
67-42	793.250

**Group A1: 19-channel group**

The channels listed as Group A1 for the 64- and 68-version models can be simultaneously used in combination.

See "Group A1" on pages 7 and 11.

Channel	Frequency (MHz)
66-02	782.250
66-24	785.000
66-29	785.625
67-16	790.000
67-18	790.250
67-39	792.875

**Group 12: 8-channel group**

Use when TV channel 66 is on the air.

Channel	Frequency (MHz)
67-01	788.125
67-05	788.625
67-11	789.375
67-25	791.125
67-28	791.500
67-36	792.500
67-41	793.125
67-43	793.375

**Group A2: 13-channel group**

The channels listed as Group A2 for the 64- and 68-version models can be simultaneously used in combination.

See "Group A2" on pages 7 and 11.

Channel	Frequency (MHz)
67-07	788.875
67-33	792.125
67-45	793.625

**Group 13: 8-channel group**

Use when TV channel 67 is on the air.

Channel	Frequency (MHz)
66-03	782.375
66-13	783.625
66-18	784.250
66-26	785.250
66-37	786.625
66-40	787.000
66-44	787.500
66-46	787.750

**Group A3: 13-channel group**

The channels listed as Group A3 for the 64- and 68-version models can be simultaneously used in combination.

See "Group A3" on pages 7 and 11.

Channel	Frequency (MHz)
66-06	782.750
66-32	786.000
66-44	787.500

## Wireless Channels Selectable

### Wireless Channel Lists (3) – For 68-Version Model Using TV Channels 68 and 69

#### Group 00: All channel access

Use to scan for open channels. Use only for a one channel system.

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
68-01	794.125	68-25	797.125	69-01	800.125	69-25	803.125
68-02	794.250	68-26	797.250	69-02	800.250	69-26	803.250
68-03	794.375	68-27	797.375	69-03	800.375	69-27	803.375
68-04	794.500	68-28	797.500	69-04	800.500	69-28	803.500
68-05	794.625	68-29	797.625	69-05	800.625	69-29	803.625
68-06	794.750	68-30	797.750	69-06	800.750	69-30	803.750
68-07	794.875	68-31	797.875	69-07	800.875	69-31	803.875
68-08	795.000	68-32	798.000	69-08	801.000	69-32	804.000
68-09	795.125	68-33	798.125	69-09	801.125	69-33	804.125
68-10	795.250	68-34	798.250	69-10	801.250	69-34	804.250
68-11	795.375	68-35	798.375	69-11	801.375	69-35	804.375
68-12	795.500	68-36	798.500	69-12	801.500	69-36	804.500
68-13	795.625	68-37	798.625	69-13	801.625	69-37	804.625
68-14	795.750	68-38	798.750	69-14	801.750	69-38	804.750
68-15	795.875	68-39	798.875	69-15	801.875	69-39	804.875
68-16	796.000	68-40	799.000	69-16	802.000	69-40	805.000
68-17	796.125	68-41	799.125	69-17	802.125	69-41	805.125
68-18	796.250	68-42	799.250	69-18	802.250	69-42	805.250
68-19	796.375	68-43	799.375	69-19	802.375	69-43	805.375
68-20	796.500	68-44	799.500	69-20	802.500	69-44	805.500
68-21	796.625	68-45	799.625	69-21	802.625	69-45	805.625
68-22	796.750	68-46	799.750	69-22	802.750	69-46	805.750
68-23	796.875	68-47	799.875	69-23	802.875	69-47	805.875
68-24	797.000			69-24	803.000		

**Group 11: 11-channel group**

Use when both TV channels 68 and 69 are open.

Channel	Frequency (MHz)
68-05	794.625
68-14	795.750
68-25	797.125
68-41	799.125
68-47	799.875
69-12	801.500
69-16	802.000
69-30	803.750
69-37	804.625
69-40	805.000
69-42	805.250

**Group 12: 8-channel group**

Use when TV channel 68 is on the air.

Channel	Frequency (MHz)
69-01	800.125
69-05	800.625
69-11	801.375
69-25	803.125
69-28	803.500
69-36	804.500
69-41	805.125
69-43	805.375

**Group 13: 8-channel group**

Use when TV channel 69 is on the air.

Channel	Frequency (MHz)
68-03	794.375
68-13	795.625
68-18	796.250
68-26	797.250
68-37	798.625
68-40	799.000
68-44	799.500
68-46	799.750

**Group A1: 19-channel group**

The channels listed as Group A1 for the 64- and 66-version models can be simultaneously used in combination. See "Group A1" on pages 7 and 9.

Channel	Frequency (MHz)
68-06	794.750
68-20	796.500
68-24	797.000
68-40	799.000
69-04	800.500
69-17	802.125
69-23	802.875
69-47	805.875

**Group A2: 13-channel group**

The channels listed as Group A2 for the 64- and 66-version models can be simultaneously used in combination. See "Group A2" on pages 7 and 9.

Channel	Frequency (MHz)
69-11	801.375
69-22	802.750
69-30	803.750
69-36	804.500
69-40	805.000
69-43	805.375
69-45	805.625

**Group A3: 13-channel group**

The channels listed as Group A3 for the 64- and 66-version models can be simultaneously used in combination. See "Group A3" on pages 7 and 9.

Channel	Frequency (MHz)
68-10	795.250
68-21	796.625
68-29	797.625
68-35	798.375
68-39	798.875
68-42	799.250
68-44	799.500

# Precautions

## On operation

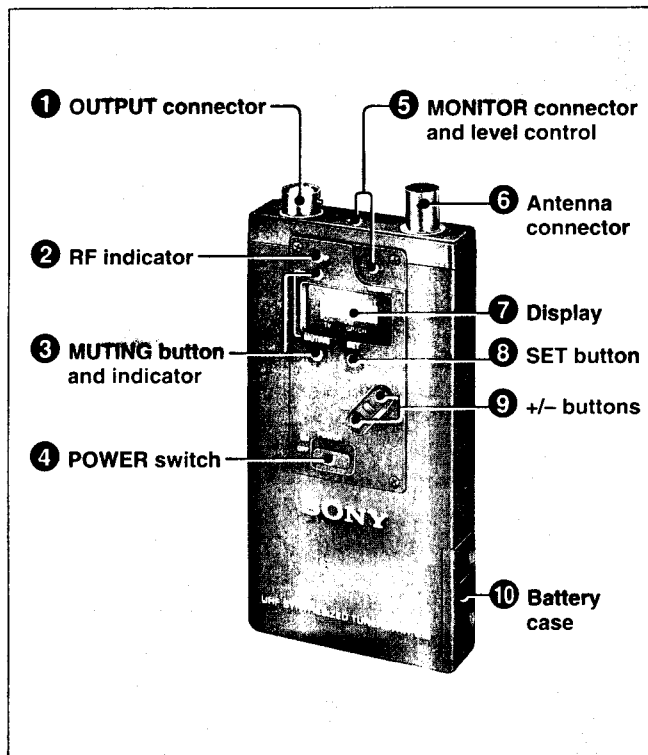
- The tuner must be used within the temperature range of 0°C to 50°C (32°F to 122°F). Avoid using for an extended period time in extremely high temperature, or the place subject to direct sunlight, especially outdoors, because the finish of the case might be damaged. Never install the tuner on or near heat sources, such as lighting equipment, power amplifiers.
- The tuner is designed to be portable and is built to resist humidity and dust. However, try to avoid using in very humid or dusty places, because such use may shorten the life of the tuner.
- To avoid degradation of the signal-to-noise ratio, do not use the tuner in noisy places or in locations subject to vibration, for example:
  - near electric equipment such as motors, transformers or dimmers
  - near air conditioning equipment or places subject to direct air flow from an air conditioner
  - near a public address loudspeaker
  - in a location where adjacent equipment might knock against the tuner.
- The switching of lights may produce electrical interference over the entire frequency range. Position the tuner and the wireless microphone in a place where such interference is at minimum.

- The tuner is precisely adjusted at the factory and no adjustment before use is necessary. Do not touch the inside of the unit or try to repair it by yourself.

## On cleaning

Clean the tuner with a dry, soft cloth. Never use thinner or benzine, since these will damage the finish.

# Parts Identification

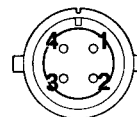


Location of parts

## ① OUTPUT connector

Feeds the audio output signal to the microphone input of a Betacam, mixer, or tape recorder.

Pin assignment



1 : NC  
2 : Hot  
3 : Cold  
4 : GND

## ② RF (radio frequency) indicator

Indicates the strength of the input signal.

**On in green:** More than 30 dBμ

**On in red:** Between 15 and 30 dBμ

**Off:** Less than 15 dBμ

## ③ MUTING button and indicator

Each time the button is pressed for more than 1 second, muting function is turned on or off. When muting function is turned on, the indicator (yellow) lights. Normally, set this button to ON.

### Note

To turn off the muting function when the tuner does not receive any signals, turn down the monitor level and the input level of the amplifier being used in the system.

## Parts Identification

### ④ POWER switch

Turns the tuner on or off.

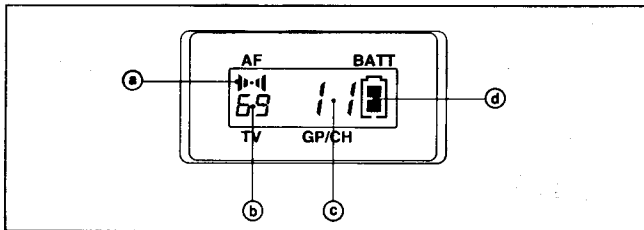
### ⑤ MONITOR connector and level control

Connect the headphones (impedance: 24 to 45 ohms) to the connector to monitor the audio output signal. The monitoring level can be adjusted with the control.

### ⑥ Antenna connector

Connect the supplied antenna.

### ⑦ Display



### ⑧ AF indication

Lights when the reference output level is obtained.

### ⑨ TV indication

Shows the TV channel number of the selected wireless channel in wireless channel selection mode.

### ⑩ GP/CH indication

Shows the group name or the wireless channel to be received.

### ⑪ Battery indication

Shows the battery condition.

See "Battery indication" on page 15.

### ⑫ SET button

When this button is pressed for more than 1 second, the tuner enters the wireless channel selection mode and the GP/CH indication flashes. Also press this button to proceed or release the wireless channel selection.

See "Wireless Channel Selection" on page 16.

### ⑬ +/- (group/channel selection) buttons

Increases or decreases the wireless channel. Set the wireless channel of the tuner first. Then set the same wireless channel on the transmitter or the wireless microphone.

See "Wireless Channel Selection" on page 16.

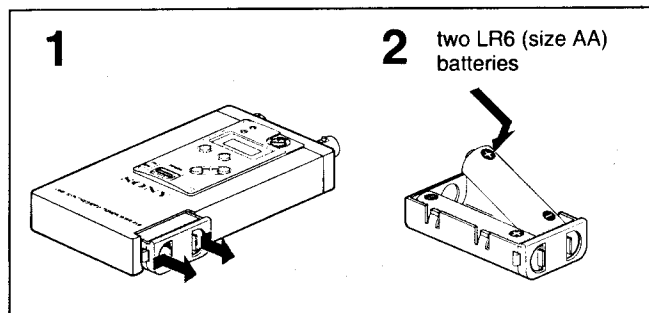
### ⑭ Battery case

Insert two LR6 (size AA) batteries.

# Power Supply

The WRR-810A operates on two LR6 (size AA) batteries.

## Battery insertion






- 1 Remove the battery case.
- 2 Insert the batteries observing the polarity.
- 3 Set the battery case in the original position.

### Note on batteries

When you will not be using the tuner for some time, be sure to remove the batteries in order to avoid battery discharge or leakage. If a battery does leak, clean all leakage from the unit and insert new batteries. Leakage left in the unit may cause poor battery contact. If there seems to be poor battery contact, consult your Sony dealer.

## Battery indication

When the POWER switch is set to ON, the BATT indication on the display shows the battery condition as follows.

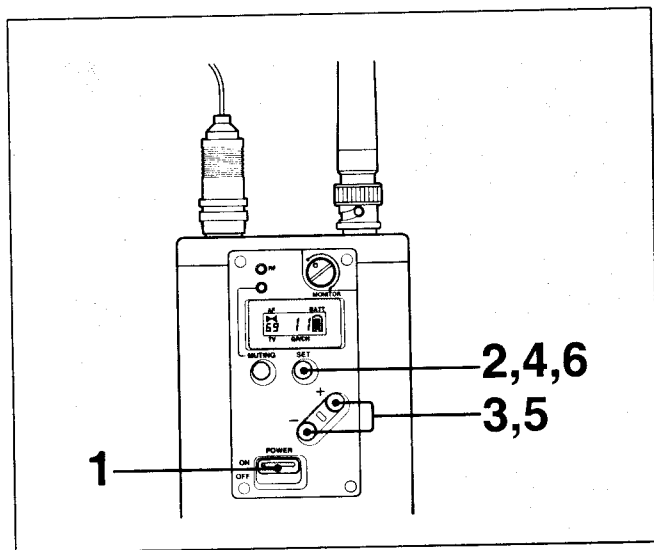
	1	2	3	4
BATT indication	Lights 	Lights 	Flashes 	Goes off
Battery condition	Good	Less than half-charge	Almost exhausted	Completely exhausted

When the indication shows the status of 3 above, immediately replace the batteries with the new ones.

### Note

When the inserted batteries were not new, the battery indication may not be correct. It is recommended to always use new alkaline batteries.

# Wireless Channel Selection

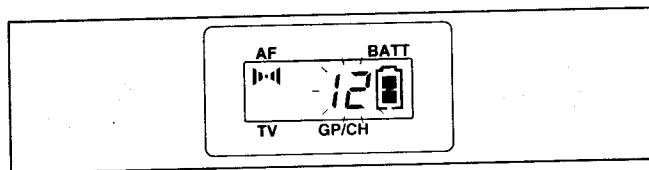


- 1** Set the POWER switch to ON.  
The display shows the same status as before the receiver was last turned off.

## Note

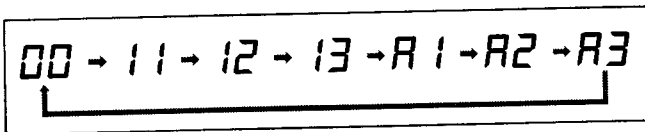
Noise may occur when the power is turned on or off. Be sure to turn down the input level of the connected equipment before operating the POWER switch.

- 2** Press the SET button for more than 1 second.  
The tuner enters in group selection mode and the group name flashes on the GP/CH display.



When no button is pressed for more than 25 seconds, the group selection mode or the subsequent wireless channel selection mode is automatically released.

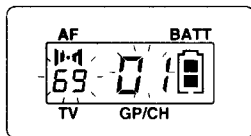
- 3** Press the + or – button to select the desired group.  
Pressing the + button cyclically changes the group in the following order and pressing the – button changes it in the reverse order.



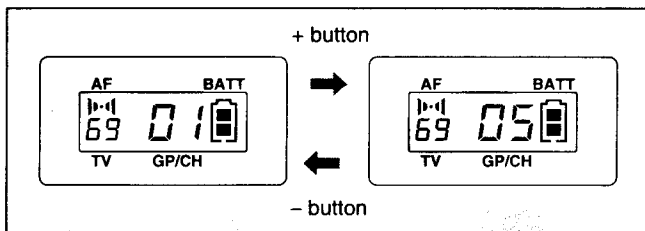
If you hold the button down, the group will continuously change.



- 4** When the desired group is displayed, press the SET button again.  
The tuner now enters the wireless channel selection mode, and both of the TV channel number and 2-digit number flash on the display.



- 5** Press the + or – button to select the desired wireless channel.  
Pressing the + button cyclically changes the wireless channel in the listed order in the respective table (page 7, 9 or 11) and pressing the – button changes it in the reverse order.



- 6** When the desired wireless channel is displayed, press the SET button.  
The display stops flashing and the selected wireless channel is now set.

The selected group and wireless channel are stored in memory when the display stops flashing.

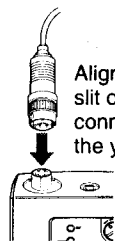
**Note**

Do not remove the batteries during group and wireless channel selection. If they are inadvertently removed, re-insert them immediately and repeat the above steps from the beginning.

# Connections

## Antenna and Output Cable

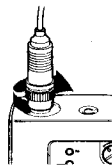
### Output cable



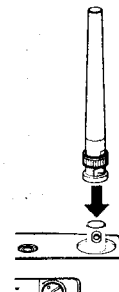
Align the inner slit of the cable connector with the yellow line.



Push and rotate the ring.



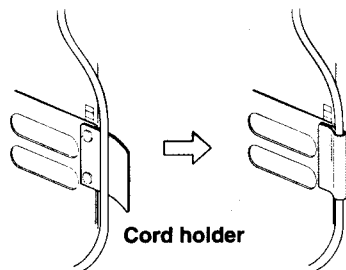
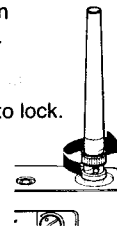
### Antenna



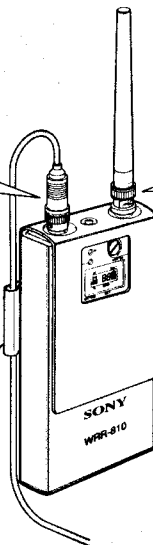
Align the slot with the projection and connect.



Turn to lock.



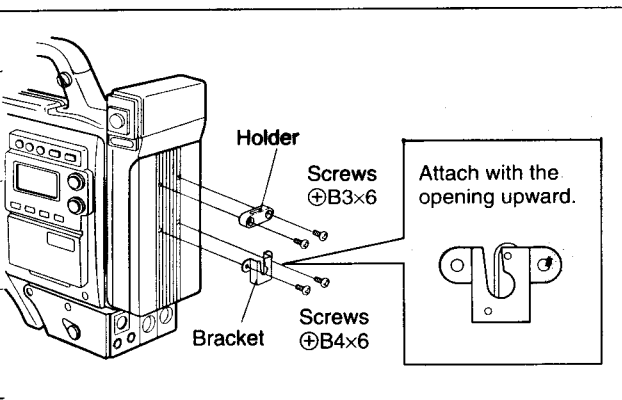
Cord holder



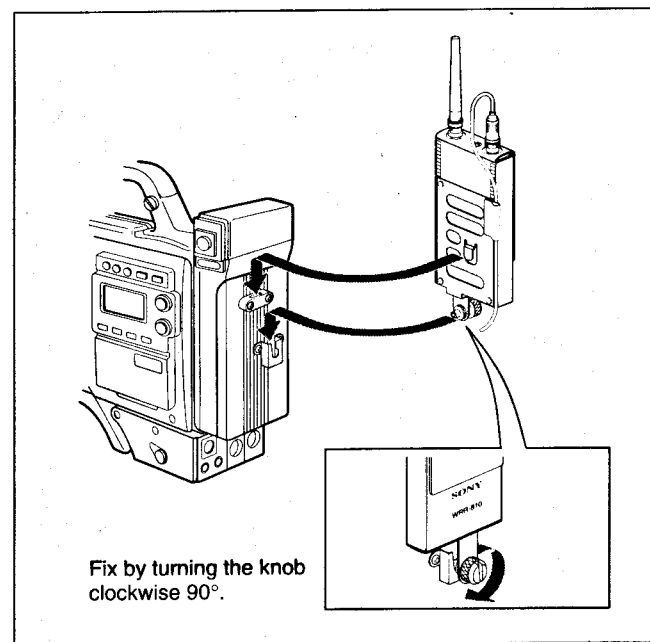
When the supplied attachment case is to be used, set the tuner in the case in advance and then connect the supplied antenna and output cable.

## Connection to the Betacam

Attach the supplied holder and bracket to the Betacam.

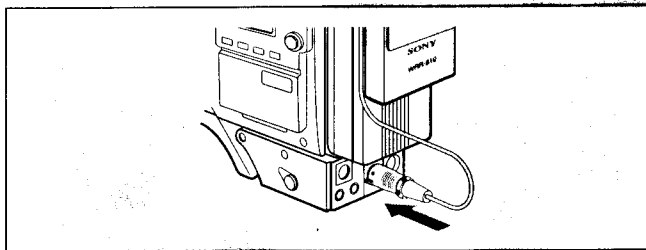


**2** Attach the tuner by aligning the attachment plate of the case with the holder and bracket.



## Connections

### 3 Connect the output cable.



## Error Messages

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

Error Messages

Messages	Contents	Measures
Er01	An error occurred in backup memory data.	The data was initialized. Perform the receiving group/channel selection and muting setting again.
Er02	The PLL synthesized circuit is in trouble.	Contact your Sony dealer.
Er03	The battery voltage exceeds the allowable value.	Use the specified batteries.

# Specifications

## Tuner section

Type of reception	110KF3E
Circuit system	Dual conversion superheterodyne
Receiving frequencies	64-version: 770.125 - 781.875 MHz (TV channels 64 and 65) 66-version: 782.125 - 793.875 MHz (TV channels 66 and 67) 68-version: 794.125 - 805.875 MHz (TV channels 68 and 69)

## Local oscillators

1st: Crystal controlled PLL synthesizer

2nd: Crystal

## Intermediate frequencies

1st: 49.5 MHz

2nd: 10.7 MHz

Reference deviation

±5 kHz at 1 kHz

Selectivity

60 dB or more

Muting level

15 dBμ

Antenna connector

BNC-R type, 50 ohms

Frequency range

100 Hz to 15,000 Hz

De-emphasis

50 μs

Signal-to-noise ratio (±5 kHz deviation at 1 kHz modulation)

40 dB or more, RF input level 15 dBμ

(A-weighted)

60 dB or more, RF input level 60 dBμ

(A-weighted)

Distortion

0.8% or less (±22.5 kHz deviation at 1 kHz modulation)

Tone signal frequency

32.768 kHz

Output level

-58 dBu (600-ohm load, 1 kHz

modulation, ±5.0 kHz deviation)

150 ohms, balanced

Output impedance

SMC9-4S

Output connector

3.5 mm dia. headphone jack

Monitor level

5 mW or more (24 to 45-ohm load)

## General

Power requirements

DC 3 V, two batteries LR6 (size AA)

Operating voltage

1.9 to 3.6 V

Current consumption

180 mA DC or less (at DC 3 V)

Battery life

Approx. 6 hours of continuous use with two Sony LR6 batteries at 25°C

Operating temperature

0°C to +50°C (32°F to 122°F)

Storage temperature

-20°C to +60°C (-4°F to +140°F)

Dimensions

63 × 120 × 17 mm (w/h/d)

(2 1/2 × 4 3/4 × 11/16 inches)

Mass

220 g (7.8 oz) including batteries

Supplied accessories

Antenna (1)

Attachment case (1)

Attachment kit (1)

Holder (1)

Bracket (1)

Screws (⊕B4 × 6) (2)

Screws (⊕B3 × 6) (2)

Output cable (equivalent to the EC-

0.4CM microphone cable) (1)

Operating instructions (1)

## Optional accessories

Microphone cable

EC-0.4CF

(SMC9-4P type ↔ XLR-3-11C)

Headphones

Recommended impedance: 24 to 45

ohms

Design and specifications are subject to change without notice.

0 dBμ = 1 μV

0 dBu = 0.775 Vrms