SONY®

WIRELESS CAMERA TRANSMITTER
WLL-CA50

OPERATION MANUAL   English
1st Edition

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

For the customers in the U.S.A.

Important Notice

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance 20 cm between the radiator and body (excluding extremities: hands, wrists and feet).

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. The Wireless Camera Transmitter (WLL-CA50) has been tested and found to comply with the Federal Communications Commission (FCC) guidelines on radio frequency energy (RF) exposures. The maximum SAR levels tested for the Wireless Camera Transmitter (WLL-CA50) has been shown to be 1.16 W/kg at Body in conditions of Antenna side, High Channel and 16QAM modulation.

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

For the customers in Canada
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 opoeration of the device.

The term "IC" before the certification/registration number only signifies that the 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: *http://www.hc-sc.gc.ca/rpb*

C E (!)

For the customers in Europe
Hereby, Sony Corporation, declares that this WLL-CA50 is in compliance with the essential requirements and other relevant provisions of the Directive 1999/5/EC.
For details, please access the following URL:
http://www.compliance.sony.de/

This product is intended to be used in the following countries :
Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, Sweden, United Kingdom, Iceland, Norway, Switzerland, Liechtenstein, and Lithuania.

Note for the users in Spain
Carrier frequencies other than 2421, 2449 and 2477 MHz cannot be used in Spain.

Pour les clients en Europe
Sony Corporation déclare par ces présentes que le WLL-CA50 est conforme aux exigences essentielles et aux dispositions applicables de la Directive 1999/5/EC.
Pour les détails, accédez à l'URL suivante :
http://www.compliance.sony.de/

Ce produit est prévu pour être utilisé dans les pays suivants :
Autriche, Belgique, Danemark, Finlande, France, Allemagne, Grèce, Irlande, Italie, Luxembourg, Pays-Bas, Portugal, Espagne, Suède, Royaume-Uni, Islande, Norvège, Suisse, Liechtenstein et Lituanie.

Pour les utilisateurs en Espagne
Les fréquences porteuses autres que 2421, 2449 et 2477 MHz ne peuvent pas être utilisées en Espagne.

Für Kunden in Europa
Hiermit erklärt Sony Corporation, dass die vorliegende Einheit WLL-CA50 den wesentlichen Anforderungen und anderen relevanten Bestimmungen der Richtlinie 1999/5/EC entspricht.
Einzelheiten finden Sie unter folgendem URL:
http://www.compliance.sony.de/

Dieses Produkt ist für den Gebrauch in den folgenden Ländern vorgesehen:
Österreich, Belgien, Dänemark, Finnland, Frankreich, Deutschland, Griechenland, Irland, Italien, Luxemburg, Niederlande, Portugal, Spanien, Schweden, Großbritannien, Island, Norwegen, Schweiz, Liechtenstein und Litauen.

Hinweis für Benutzer in Spanien
Andere Trägerfrequenzen als 2421, 2449 und 2477 MHz können in Spanien nicht verwendet werden.

Per clienti in Europa
Sony Corporation dichiara con la presente che questo WLL-CA50 è conforme ai requisiti essenziali e altre clausole pertinenti della direttiva 1999/5/EC.
Per i dettagli, consultare l'URL che segue:
http://www.compliance.sony.de/

Questo prodotto è destinato all'uso nei seguenti paesi:
Austria, Belgio, Danimarca, Finlandia, Francia, Germania, Grecia, Irlanda, Italia, Lussemburgo, Paesi Bassi, Portogallo, Spagna, Svezia, Regno Unito, Islanda, Norvegia, Svizzera, Liechtenstein e Lituania.

Nota per gli utilizzatori in Spagna
Non è possibile usare in Spagna frequenze portanti diverse da 2421, 2449 e 2477 MHz.

Para los clientes de Europa
Sony Corporation declara aquí que este modelo, WLL-CA50, cumple los requisitos esenciales y demás provisiones pertinentes de la Directiva 1999/5/EC.
Para obtener información detallada, vaya a la siguiente dirección URL:
http://www.compliance.sony.de/

Este producto está destinado a utilizarse en los siguientes países: Alemania, Austria, Bélgica, Dinamarca, España, Finlandia, Francia, Grecia, Holanda, Irlanda, Islandia, Italia, Liechtenstein, Lituania, Luxemburgo, Noruega, Portugal, Reino Unido, Suecia y Suiza.

Nota para los usuarios de España
En España sólo se puede utilizar las frecuencias 2421, 2449 y 2477 MHz.

Para clientes na Europa
A Sony Corporation declara que o WLL-CA50 está em conformidade com os requisitos essenciais e outras disposições importantes da Directiva 1999/5/CE.
Para mais informações, aceda ao URL apresentado em seguida:
http://www.compliance.sony.de/

Este produto pode ser utilizado nos seguintes países:
Áustria, Bélgica, Dinamarca, Finlândia, França, Alemanha, Grécia, Irlanda, Itália, Luxemburgo, Holanda, Portugal, Espanha, Suécia, Reino Unido, Islândia, Noruega, Suíça, Liechtenstein e Lituânia.

Nota para os utilizadores em Espanha
Só é possível utilizar frequências portadoras 2421, 2449 e 2477 MHz em Espanha.

Voor klanten in Europa
Sony Corporation verklaart hierbij dat deze WLL-CA50 voldoet aan de primaire vereisten en andere relevante voorschriften van richtlijn 1999/5/EC van de Europese Unie. Voor verdere informatie bezoekt u de volgende website:
http://www.compliance.sony.de/

Dit product is bedoeld voor gebruik in de volgende landen:
Belgi, Denemarken, Duitsland, Finland, Frankrijk, Griekenland, Ierland, Itali, Liechtenstein, Litouwen, Luxemburg, Nederland, Noorwegen, Oostenrijk, Portugal, Spanje, Verenigd Koninkrijk, IJsland, Zweden en Zwitserland.

Opmerking voor klanten in Spanje
In Spanje kunnen geen andere draaggolffrequenties worden gebruikt dan 2421, 2449 en 2477 MHz.

För kunder i Europa
Sony Corporation förkunnar härmed att denna WLL-CA50 uppfyller de huvudsakliga kraven och andra relevanta villkor i direktivet 1999/5/EC.
Se följande URL för närmare detaljer:
http://www.compliance.sony.de/

Denna produkt är avsedd för användning i följande länder:
Österrike, Belgien, Danmark, Finland, Frankrike, Tyskland, Grekland, Irland, Italien, Luxemburg, Nederländerna, Portugal, Spanien, Sverige, Storbritannien, Island, Norge, Schweiz, Liechtenstein och Litauen.

Att observera för kunder i Spanien
Andra bärfrekvenser än 2421, 2449 och 2477 MHz går inte att använda i Spanien.

For kunder i Europa
Sony Corporation erklærer herved, at denne WLL-CA50 er i overensstemmelse med de essentielle krav og andre relevante bestemmelser i direktiv 1999/5/EC.
åbn venligst den følgende URL angående detaljer:
http://www.compliance.sony.de/

Dette produkt er beregnet til brug i de følgende lande:
Østrig, Belgien, Danmark, Finland, Frankrig, Tyskland, Grækenland, Irland, Italien, Luxembourg, Holland, Portugal, Spanien, Sverige, Storbritannien, Island, Norge, Svejts, Liechtenstein og Litauen.

Bemærkning for brugere i Spanien
Bærefrekvenser andre end 2421, 2449 og 2477 MHz kan ikke anvendes i Spanien.

Euroopassa oleville asiakkaille
Sony Corporation vakuuttaa täten, että tämä WLL-CA50 vastaa direktiivin 1999/5/EC olennaisia vaatimuksia ja muita asiaankuuluvia määräyksiä. Katso tarkemmat tiedot osoitteesta:
http://www.compliance.sony.de/

Tämä tuote on tarkoitettu käytettäväksi seuraavissa maissa:
Itävalta, Belgia, Tanska, Suomi, Ranska, Saksa, Kreikka, Irlanti, Italia, Luxemburg, Alankomaat, Portugal, Espanja, Ruotsi, Yhdistynyt kuningaskunta, Islanti, Norja, Sveitsi, Liechtenstein ja Liettua.

Huomautus Espanjassa oleville käyttäjille
Espanjassa ei voi käyttää muita kantotaajuuksia kuin 2421, 2449 ja 2477 MHz.

Για τους πελάτες στην Ευρώπη
Με το παρόν, η Sony Corporation, δηλώνει ότι αυτή η συσκευή WLL-CA50 συμμορφώνεται με τις απαραίτητες απαιτήσεις και τις λοιπές σχετικές διατάξεις της Οδηγίας 1999/5/ΕΕ.
Για λεπτομέρειες, παρακαλούμε επισκεφτείτε την ακόλουθη διεύθυνση URL:
http://www.compliance.sony.de/

Το προϊόν αυτό προορίζεται για χρήση στις ακόλουθες χώρες:
Αυστρία, Βέλγιο, Δανία, Φιλανδία, Γαλλία, Γερμανία, Ελλάδα, Ιρλανδία, Ιταλία, Λουξεμβούργο, Ολλανδία, Πορτογαλία, Ισπανία, Σουηδία, Ηνωμένο Βασίλειο, Ισλανδία, Νορβηγία, Ελβετία, Λιχνενστάιν και Λιθουανία.

Σημείωση για τον χρήστη στην Ισπανία
Στην Ισπανία δεν μπορούν να χρησιμοποιηθούν φέρουσες συχνότητες άλλων των 2421, 2449 και 2477 MHz.

Table of Contents

Overview

The WLL-CA50 is a 2.4-GHz-band wireless camera transmitter that transmits video and audio signals from a Camcorder with high quality using digital modulation/demodulation technologies.

You can select the transmission frequency in the range of 2406 to 2478 MHz in 1-MHz or 12-MHz steps.

The standard transmission distance is approximately 500 m (with no obstruction) in High Output mode.

Features

Robust transmission thanks to COFDM system

Thanks to Sony's newly developed OFDM IC for modulation, the unit lets you configure a robust transmission system resistant to multipath fading.

COFDM: Coded Orthogonal Frequency Division Multiplexing

MPEG-2 format

Compression in MPEG-2 format yields high picture quality and low delay.

Small and lightweight transmitter

Thanks to Sony's newly developed OFDM IC and high-density surface-mount technology, the unit is small and light. It is easy to dock the unit onto a Camcorder.

No operation license is required

Basically, 2.4-GHz band wireless equipment does not require an operation license.

Time-interleaving function built in

Thanks to time-interleaving technology, the unit is strong in mobile transmission.

Low power consumption

Low power consumption allows battery operation when mounted on a Camcorder.

Diversity reception

It is possible to configure diversity reception systems with this unit and multiple receivers for more stable transmission resistant to multipath fading.

Scramble function built in

Thanks to the scramble function, it is possible to maintain security during transmission.

Applicable Models

The WLL-CA50 can be used docked on one of the following Sony Digital Camcorder models equipped with the 40-pin digital interface:
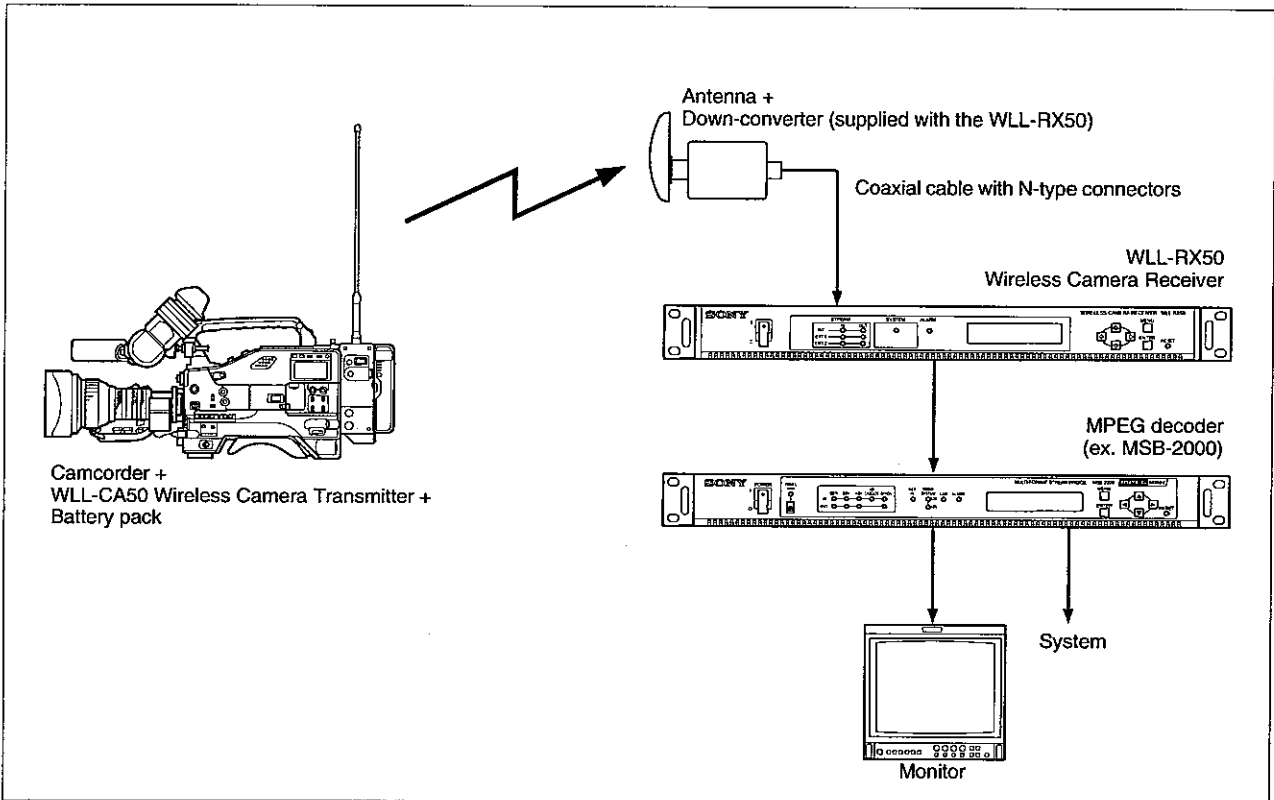
DVW-series Camcorder: ex. DVW-707 series
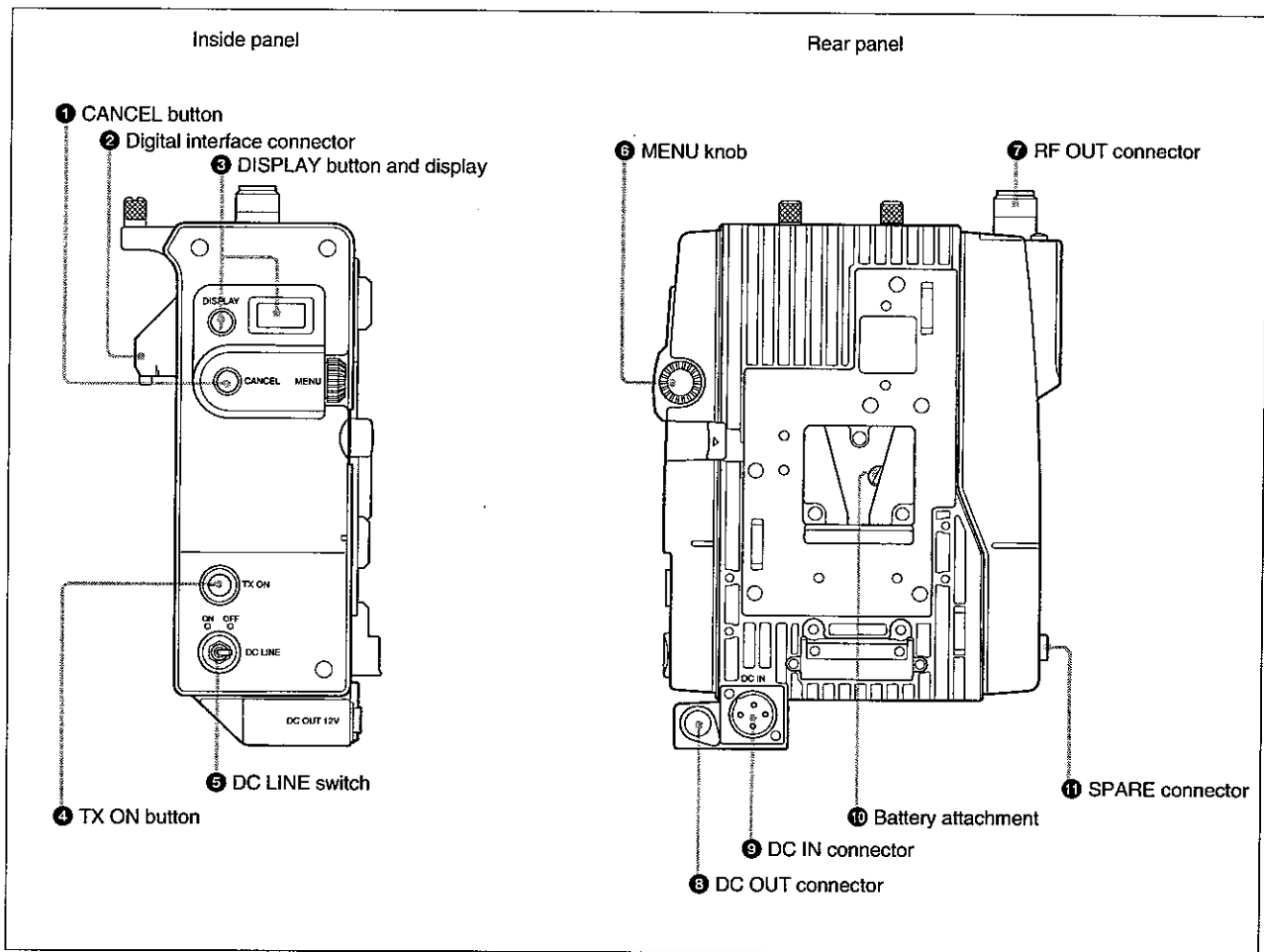DNW-series Camcorder: ex. DNW-7 series
MSW-series Camcorder: ex. MSW-900 series

System Configuration Example

Basic system

Antenna +
Down-converter (supplied with the WLL-RX50)

Coaxial cable with N-type connectors

WLL-RX50
Wireless Camera Receiver

MPEG decoder
(ex. MSB-2000)

Camcorder +
WLL-CA50 Wireless Camera Transmitter +
Battery pack

System

Monitor

Locations and Functions of Parts

Inside panel
Rear panel

❶ CANCEL button
❷ Digital interface connector
❸ DISPLAY button and display

❻ MENU knob
❼ RF OUT connector

DISPLAY
CANCEL   MENU
TX ON
ON OFF
DC LINE
DC OUT 12V

DC IN

❺ DC LINE switch
❹ TX ON button

⓫ SPARE connector
⓾ Battery attachment
❾ DC IN connector
❽ DC OUT connector

❶ CANCEL button
Press the button to return to the upper menu layer in a menu operation.

For details on menu operations, see "Menu Settings" on page 11.

❷ Digital interface connector (40-pin)
For data communication with a Camcorder. This connector is used when the transmitter is directly docked on a Camcorder.
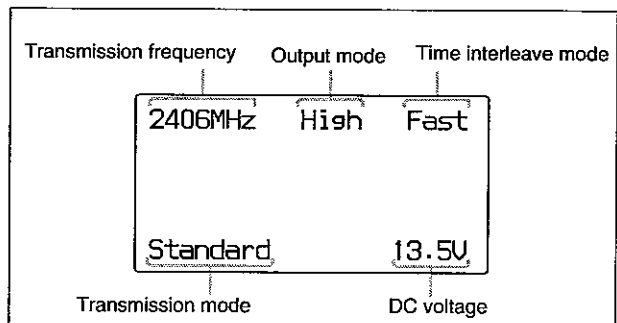
❸ DISPLAY button and display
The display shows various information, such as the operation statuses, setting menus, and alarm messages. You can turn the display ON/OFF with the DISPLAY button.
When you turn on the power to this unit, CPU initialization begins, and an initialization message appears.

When the initialization ends, the display changes to the status indications.

Status Indications

Transmission frequency   Output mode   Time interleave mode

```
2406MHz   High   Fast


Standard          13.5V
```

Transmission mode   DC voltage

If an error is generated, an alarm message will be displayed at the center of the display.

The display will be automatically turned off if you do not operate the transmitter in normal Transmission mode for a while.
To turn the display on again, press the DISPLAY button.

❹ TX ON (transmission start) button
Press to start transmission.
To terminate transmission, turn off the power of the transmitter by setting the DC LINE switch to OFF.

❺ DC LINE switch
To turn the power to the unit ON/OFF.
This button has no effect on the Camcorder. Turn the power to the Camcorder on and off on the Camcorder side.

❻ MENU knob
Use this knob for making menu settings, including transmission frequency.

For details on menu operations, see "Menu Settings" on page 11.

❼ RF OUT connector
Mount the supplied transmission antenna.

Note
Do not use any antenna other than the supplied one.

❽ DC OUT connector
To supply power to a portable tuner, such as the WRR-860A UHF Synthesized Diversity Tuner.

❾ DC IN connector
When operating the unit on AC power, connect to the AC-550/550CE AC Adaptor (optional) using the DC output cable supplied with the AC-550/550CE.

❿ Battery attachment
Attach an optional battery pack.
The AC-DN2B AC adaptor can also be attached for AC operation.
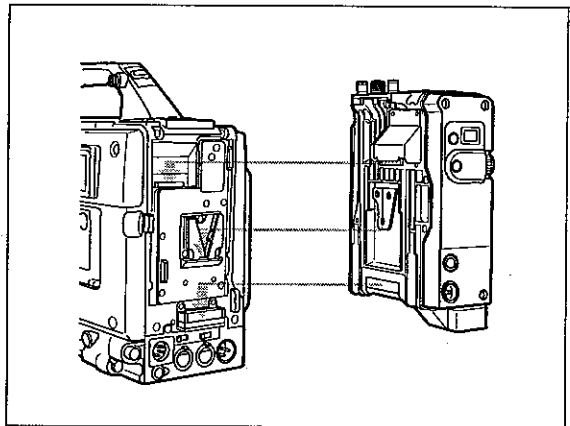When power is supplied to the DC IN connector, it has priority.

⓫ SPARE connector
To accept external SDI signals.
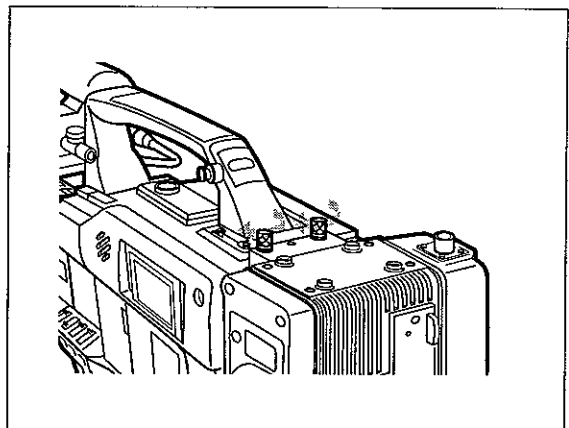
For details on the connection, consult your Sony dealer.

Attaching to the Camcorder

When the cover has been attached to the back of the Camcorder, first remove it.

1   Fit the connectors of the transmitter to the corresponding receptacles on the Camcorder downward to dock.

2   Tighten the screws on the top.

Power Supply

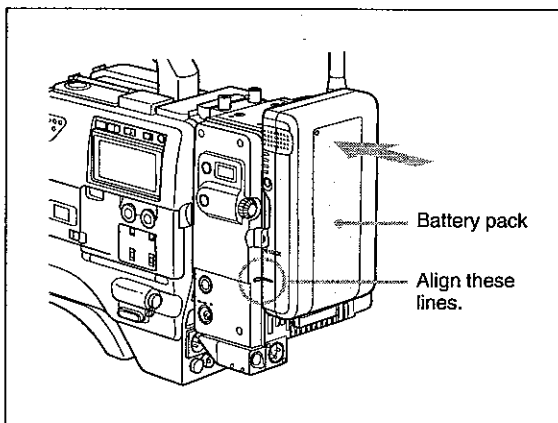This transmitter operates on a battery pack or AC power (with an AC-550/550CE or AC-DN2B).

Operating on the Battery Pack

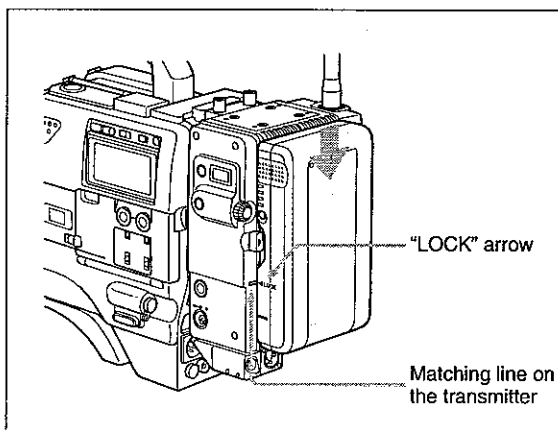Before use, charge the battery pack with a battery charger.

For details on charging method and time, refer to the manuals for the battery pack and battery charger.

To attach a battery pack

1 Press the battery pack against the back of the transmitter, aligning the side line of the battery pack with the matching line on the transmitter.
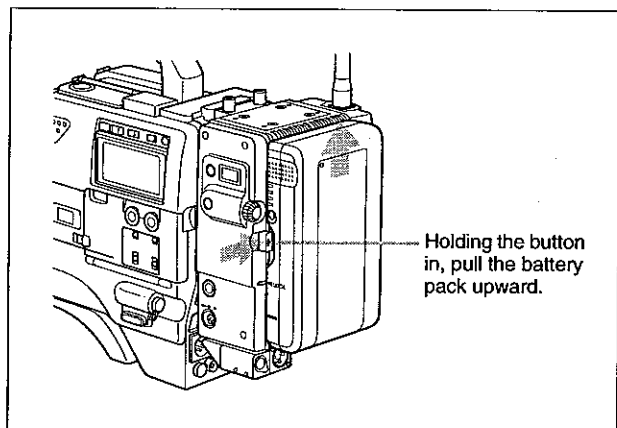

Battery pack

Align these lines.

2 Slide the battery pack down until its "LOCK" arrow points to the matching line on the transmitter.

"LOCK" arrow

Matching line on the transmitter

To detach the battery pack

Before removing the battery pack, set the DC LINE switch to OFF.

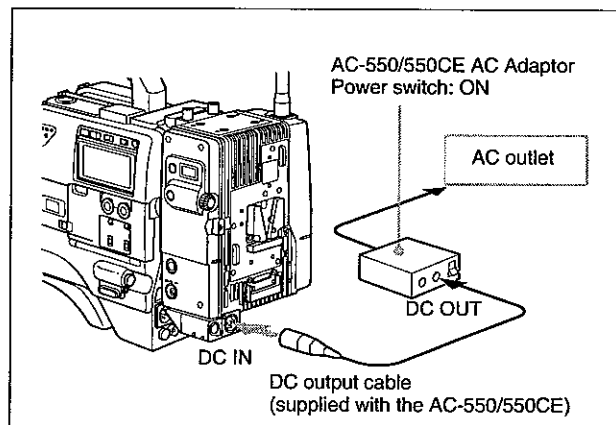Holding the button in, pull the battery pack upward.

Operating on AC Power

Using an optional AC-550/550CE or AC-DN2B AC adaptor, you can operate the transmitter on AC power.

When using an AC-550/550CE

Connect the transmitter to the AC power supply through the AC-550/550CE AC Adaptor as shown below, and set the POWER switch of the AC-550/550CE to ON.

AC-550/550CE AC Adaptor
Power switch: ON

AC outlet

DC OUT

DC IN

DC output cable
(supplied with the AC-550/550CE)

When using the AC-DN2B AC adaptor

Mount the AC-DN2B on the Camcorder just as you would a battery pack, then connect to the AC power supply.
The AC-DN2B can supply power up to 150 W.

Note

Do not use the AC-DN1, which can supply only small power.

Menu Settings

You can perform various settings using menus on the display.
The unit provides the Main Menu and Advanced Menu, and some of the menu items have submenus.
The menus permit you to set the following items. The menu settings are maintained even if you turn the unit'off.

Menu Items

Main Menu
Press the MENU knob. The Main Menu is displayed.

Menu	Submenu	Values (default)
Freq	—	2406 to 2478 MHz (2442 MHz)
RF Power	—	High, Low (Low)
Mode	—	Standard, Robust, Hi Picture, Custom (Standard)
Interleave	—	Fast, Run, Walk, Off (Fast)
Scramble	Scramble	*** (AAA)

Freq: Set the transmission frequency. It can be selected in the range of 2406 to 2478 MHz in 1-MHz or 12-MHz steps (select with Advanced Menu). Set the WLL-RX50 receiver to be used in combination to the same frequency.

RF Power: Select the RF output.
　　High: For long-distance transmission
　　Low: For short distance less than 10 meters

Mode: Select the transmission parameters.
　　Standard: Standard mode
　　Robust: Mode for more stable transmission. The picture quality is degraded when compared with Standard mode.
　　Hi Picture: Mode for transmission with higher picture quality. The stability is decreased when compared with Standard mode.
　　Custom: Set the parameters, using Custom Set of the Advanced Menu.

Interleave: Select the time interleave mode. No compensation is performed if this is set to OFF. Normally use Fast mode. Interleaving has more effect in the order of Fast, Run, and Walk, but the the system delay also increases in this order.

Scramble: Set a 3-digit scramble code, using the submenu. (default: AAA).

Note
Set the same value as the Descramble code of the WLL-RX50 receiver to be used in combination.

Advanced Menu
While holding the CANCEL button down, press the MENU knob. The Advanced Menu is displayed.

Item	Submenu	Values (default)
Freq Step	—	12 MHz, 1 MHz (12 MHz)
Custom Set	MOD	16QAM, QPSK (16QAM)
	Code Rate	3/4, 1/2 (1/2)
	Video	1.5 to 15 Mbps (10 Mbps)
	Audio	32 to 448 kbps (384 kbps)
TS Set	Program No.	(0x0001)
	PID video	(0x0100)
	PID audio	(0x0101)
	PID PMT	(0x0200)
	PID PCR	(0x0050)
Serial No.	Serial No.	—
Emission	—	OFDM, CW, Off (OFDM)
LowBatt	—	10 to 11.5 V (11.0 V)
Video	—	NTSC, PAL (NTSC)
Default Set	—	No, Yes (No)

Freq Step: Select the step to set the transmission frequency with the Basic Menu.

Custom Set: Using the submenu, set the parameters when you select Custom for Mode of the Main Menu.

TS Set: Using the submenu, set the transmission parameters.

Serial No.: The 6-digit serial number of this unit can be displayed using the submenu.

Emission: Select the RF emission format. When Off is selected, no RF carrier will be emitted.

LowBatt: Select the battery voltage at which an alarm message to be displayed.

Video: Select the video system.

Default Set: Select Yes to return all the menu items to the factory settings.

Note
When setting Video and Audio in Custom Set, be sure to select the recommended values for the selected MOD and Code Rate settings:

Conditions		Recommended values	
MOD	Code Rate	Video	Audio
16QAM	3/4	15 Mbps or less	384 kbps or less
16QAM	1/2	10 Mbps or less	384 kbps or less
QPSK	3/4	8 Mbps or less	192 kbps or less
QPSK	1/2	5 Mbps or less	192 kbps or less

Setting the Menu Items

1 Set the DC LINE switch to ON to turn on the transmitter.

The display lights.
When it turns to the status indications *(see page 8)*, you can start the menu operation.

If the display is not on, press the DISPLAY button.

2 **To set the Main Menu items**, press the MENU knob.

To set the Advanced Menu items, press the MENU knob while holding the CANCEL button pressed.

The corresponding menu appears on the display.

3 Turn the MENU knob to move the cursor (→) to the item to be set.

Example:
```
  Freq.: 2442MHz
→RF Power: High
  Mode: Standard
  Interleave: Fast
  Scramble  >>
```

4 Press the MENU knob.

The cursor (→) changes to a flashing question mark (?).

Example:
```
  Freq.: 2442MHz
?RF Power: High
  Mode: Standard
  Interleave: Fast
  Scramble  >>
```

5 Turn the MENU knob to display the desired value.

Example:
```
  Freq.: 2442MHz
?RF Power: Low
  Mode: Standard
  Interleave: Fast
  Scramble  >>
```

To cancel the change
Press the CANCEL button. The status in step **3** is restored.

6 Press the MENU knob.

The question mark (?) changes back to the cursor (→), and the new setting becomes valid.

Set other items in the same manner, and when menu settings are completed, press the CANCEL button to exit. The normal status display is restored.
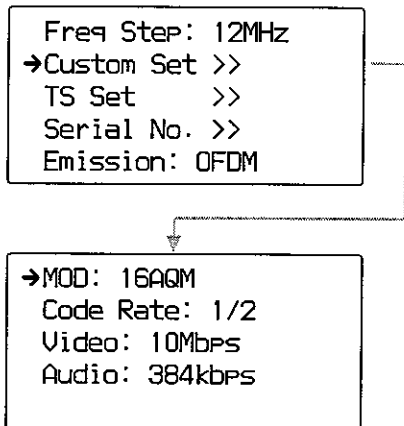
When setting an item having submenu

Proceed as follows after step **3**:

4 Set the cursor (→) to an item having a submenu and press the MENU button.

The corresponding submenu appears.

Example:
```
  Freq Step: 12MHz
→Custom Set >>
  TS Set     >>
  Serial No. >>
  Emission: OFDM
```

```
→MOD: 16QQM
  Code Rate: 1/2
  Video: 10Mbps
  Audio: 384kbps
```
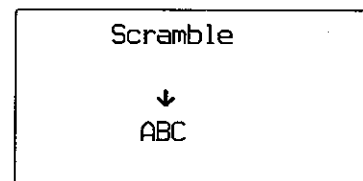
When setting the scramble code, etc.

Follow the steps below for the items such as scramble code and packet IDs) for which multiple digits must be set.

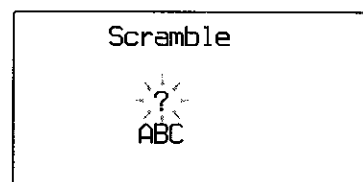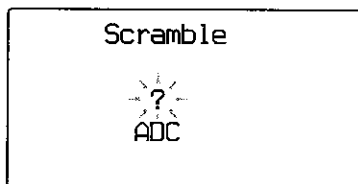**1** Turn the MENU knob to set the cursor (↓) to the digit to be set.

Example:
```
    Scramble

        ↓
      ABC
```

2 Press the MENU knob.

The cursor (↓) changes to a flashing question mark (?).

Example:
```
    Scramble

        ?
      ABC
```

3 Turn the MENU knob to display the desired value.

Example:

```
Scramble

    ?
   ADC
```

To cancel the change
Press the CANCEL button. The status in step **1** is restored.

4 Press the MENU knob.

The question mark (?) changes back to the cursor (↓).

Set other digits in the same manner. When all the digits have been set, press the CANCEL button to return to the upper layer (Main Menu or Advanced Menu).

To release Menu mode, press the CANCEL button again. The normal status display is restored.

Notes
• When changing the Freq or RF Power value, transmission will be interrupted after the setting process, showing "TX-OFF."
Other items can be changed without interrupting transmission.
• When you change the menu values, the new settings will first become valid when you press the MENU knob to fix.

Transmission

To start transmission

1 Turn on the camcorder.

2 Set the DC LINE switch to ON to turn on the transmitter.

3 Press the TX ON button.

Video shot with the camcorder is immediately transmitted.

To stop transmission
Set the DC LINE switch to OFF.
You can also set it to OFF with a menu operation.

Messages

A message may be displayed according to input signals, set values, or operating statuses.

Low Battery
Reason: The power voltage is lower than the value specified on the menu.
Measures: Replace the battery, or increase the power voltage.

No Video
Reason: No video signal is detected.
Measures: Check the power to the Camcorder. Or check the consistency between the transmitter and the Camcorder. Or check the input signal to the SPARE connector.

NTSC
Reason: An NTSC signal being supplied although the transmitter has been set for PAL use.
Measures: Use a Camcorder of the PAL system. Or change the transmitter setting to NTSC.

PAL
Reason: A PAL signal being supplied although the transmitter has been set for NTSC use.
Measures: Use a Camcorder of the NTSC system. Or change the transmitter setting to PAL.

Emission CW
Reason: CW has been selected with a menu operation.
Measures: Change the menu setting to OFDM. Or turn the transmitter off, then turn it on again.

TX OFF
Reason: The tranmitter is waiting for a tragger for transmission.
Measures:: Press the TX ON button to start trasmission.

Error Messages

When an error is generated, one of the following error messages is displayed.
Check the power to the Camcorder, and connection of input signals (40-pin consistency, etc.) before contacting your Sony dealer.

CAM Com NG
Reason: Communication with the Camcorder cannot be made.

PLD Config NG
Reason: The PLD cannot be initialized.

ENC Config NG
Reason: The encoder cannot be initialized.

RF PLL Unlock
Reason: The PLL of the transmission module does not lock.

Specifications

General

Power requirements 12 V DC
Current consumption
               770 mA
Operating temperature
               0°C to +40°C (+32°F to +104°F)
Storage temperature –20°C to +60°C
               (–4°F to +140°F)
Dimensions   97 × 209 × 152 mm (w/h/d)
               (3 $^7/_8$ × 8 $^1/_4$ × 6 inches)
Mass   1.2 kg (2 lb 10 oz), excluding antenna

RF block

Transmission freqeuncy range
               2402 to 2474 MHz
               (model available in USA and
               Canada)
               2402 to 2482 MHz
               (model available in other countries)
Transmission center freqeuncy range
               2406 to 2470 MHz
               (model available in USA and
               Canada)
               2406 to 2478 MHz
               (model available in other countries)
Occupied bandwidth
               8 MHz
RF power output   36 mW (model available in USA and
               Canada)
               3.6 mW (model available in other
               countries)
Antenna gain   4.0 dBi
Antenna directivity Omni-directional
Modulation   16QAM-OFDM, QPSK-OFDM

Input/output

DC IN   External DC input, 10.5 to 17 V DC
               XLR 4-pin (male)
RF OUT   Special connector, 50 ohms
DC OUT   10.5 to 17 V DC (DC IN volatage),
               300 mA
SPARE   BNC type, 75-ohm input

Supplied accessories

Transmission antenna (1)
Operation Manual (1)
CD-ROM (1)

Optional accessories

Battery Pack: BP-L60A/L40A/M50/M100/IL75
AC Power Adaptor: AC-550/550CE, AC-DN2B

Design and specifications are subject to change without
notice.

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