SONY®

WIRELESS CAMERA TRANSMITTER

WLL-CA55

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OPERATION MANUAL Japanese/English
1st Edition

WLL-CA55 (J/UC/CE)
3-808-859-01(1)

English

English

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.

AVERTISSEMENT

Afin d'éviter tout risque d'incendie ou d'électrocution, ne pas exposer cet appareil à la pluie ou à l'humidité.

Afin d'écarter tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

WARNUNG

Um Feuergefahr und die Gefahr eines elektrischen Schlages zu vermeiden, darf das Gerät weder Regen noch Feuchtigkeit ausgesetzt werden.

Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten nur qualifiziertem Fachpersonal.

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-CA55) 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-CA55) has been shown to be 1.19 W/kg at Head.

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 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

Pour les utilisateurs aux Canada

L'utilisation doit répondre aux deux conditions suivantes : (1) ce matériel ne doit pas provoquer de brouillage et (2) il doit accepter tout brouillage, même celui qui est susceptible d'affecter son fonctionnement.

La mention « IC: » devant le numéro de certification/homologation signifie uniquement que les spécifications techniques d'Industrie Canada sont remplies.

Exposition humaine aux champs de radiofréquences (Industrie Canada)

L'installateur de ce matériel radio doit s'assurer que l'antenne est située ou orientée de telle manière à ne pas émettre un champ de radiofréquence dépassant les limites spécifiées par Santé Canada pour la population générale ; consultez le Code de sécurité 6, disponible sur le site Web de Santé Canada : http://www.hc-sc.gc.ca/rpb

WLL-CA50 (UC/CA)
3-742-686-02 (1)

C E ⓪

For the customers in Europe

Hereby, Sony Corporation, declares that this WLL-CA55 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 2421, 2449 and 2477 MHz only allowed in Spain.

Note for the users in France

For using 100 mW RF power in France, only the carrier frequencies in the range of 2463.5 to 2483.5 MHz are allowed.

Note for the users in Italy

The usage of the above mentioned device is regulated by the Italian law:
- d.P.R 5.10.01, n.447, article 5 (general authorization), and 6 (free usage) and for private usage;
- D.M.28.5.03 for providing to the public audience access to R-LAN networks and services.

Pour les clients en Europe

Sony Corporation déclare par ces présentes que le WLL-CA55 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.

Pour les utilisateurs residant en France

Pour l'utilisation de la puissance radioelectrique de 100 mW en France, seules les frequences porteuses comprises entre 2463,5 et 2483,5 MHz sont acceptees.

Pour les utilisateurs residant en Italie

L'utilisation de l'appareil mentionne ci-dessus est regie par la loi italienne :
- d.P.R 5.10.01, n.447, article 5 (autorisation generale), et 6 (utilisation libre) pour l'usage prive ;
- D.M.28.5.03 pour autoriser l'acces au public aux reseaux et services locaux sans fil.

Für Kunden in Europa

Hiermit erklärt Sony Corporation, dass die vorliegende Einheit WLL-CA55 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.

Hinweis fur Benutzer in Frankreich

Fur die Benutzung von 100-mW-HF-Signalen in Frankreich sind nur die Tragerfrequenzen im Bereich von 2463,5 bis 2483,5 MHz zugelassen.

Hinweis fur Benutzer in Italien

Der Gebrauch des oben genannten Gerats ist durch das italienische Gesetz geregelt:
- d.P.R 5.10.01, n.447, Artikel 5 (allgemeine Genehmigung) sowie 6 (freier Gebrauch) und fur privaten Gebrauch;
- D.M.28.5.03 fur den Zugang der Offentlichkeit zu R-LAN-Netzwerken und -Diensten.

Per clienti in Europa

Sony Corporation dichiara con la presente che questo WLL-CA55 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.

Nota per gli utilizzatori in Francia

Per l'uso della potenza RF a 100 mW in Francia, sono consentite solo le frequenze portanti nell'intervallo compreso tra 2463,5 e 2483,5 MHz.

Nota per gli utilizzatori in Italia

Si la presente inoltre che l'uso dell'apparato in esame é regolamentato da:
- d.P.R 5.10.01, n447, articoli 5 (autorizzazione generale), e 6 (di libero uso), per uso privato;
- D.M.28.5.03, per la formula al pubblico dell'accesso R-LAN alle reli e ai servizi di telecomunicazioni.

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Para los clientes de Europa

Sony Corporation declara aquí que este modelo, WLL-CA55, 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.

Nota para los usuarios de Francia

Para utilizar alimentacion RF de 100 mW en Francia, solo se permiten las frecuencias portadoras en el intervalo de 2463,5 a 2483,5 MHz.

Nota para los usuarios de Italia

El uso del dispositivo antes mencionado esta regulado por la ley italiana:
- d.P.R 5.10.01, n.447, artículo 5 (autorizacion general), y 6 (uso libre) y para el uso privado;
- D.M.28.5.03 para proporcionar a la audiencia publica acceso a las redes y servicios R-LAN.

Para clientes na Europa

A Sony Corporation declara que o WLL-CA55 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.

Nota para clientes em Franca

Para utilizar a potencia RF 100 mW em Franca, so sao permitidas as frequencias do portador de 2463,5 a 2483,5 MHz.

Nota para clientes em Italia

A utilizacao do dispositivo acima mencionado e regulada pela lei italiana:
- d.P.R 5.10.01, n.447, artigo 5 (autorizacao geral) e 6 (utilizacao livre) e para utilizacao privada;
- D.M.28.5.03 para fornecer acesso ao publico aos servicos e redes R-LAN.

Voor klanten in Europa

Sony Corporation verklaart hierbij dat deze WLL-CA55 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.

Opmerking voor de gebruikers in Frankrijk

Voor het gebruik van 100 mW RF energie in Frankrijk, zijn alleen de draagfrequenties binnen het bereik van 2463,5 tot 2483,5 MHz toegestaan.

Opmerking voor de gebruikers in Italie

Het gebruik van het bovenvermelde apparaat is bij de Italiaanse wet geregeld:
- d.P.R 5.10.01, n.447, artikel 5 (algemene vergunning), en 6 (vrij gebruik) en voor prive-gebruik;
- D.M.28.5.03 betreffende het verlenen van toegang tot R-LAN netwerken en diensten aan het algemeen publiek.

För kunder i Europa

Sony Corporation förkunnar härmed att denna WLL-CA55 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.

Att observera for kunder i Frankrike

Vid anvandning av 100 mW RF-strom i Frankrike ar endast barfrekvenser inom omradet 2463,5 till 2483,5 MHz tillatna.

Att observera for kunder i Italien

Anvandningen av ovanstaende apparat styrs av italiensk lag:
- d.P.R 5.10.01, n.447, artikel 5 (generellt tillstand), och 6 (fri anvandning) och for privat anvandning;
- D.M.28.5.03 for givandet av allmant tilltrade till R-LAN-natverk och tjanster.

For kunder i Europa

Sony Corporation erklærer herved, at denne WLL-CA55 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.

Bemarkning til kunder i Frankrig

Ved brug af 100 mW RF-effekt i Frankrig er kun barefrekvenser i omradet 2463,5 til 2483,5 MHz tilladt.

Bemarkning til kunder i Italien

Brugen af ovenfor navnte udstyr er reguleret af folgende love i Italien:
- d.P.R 5.10.01, n.447, paragraf 5 (generel autorisation) og 6 (fri brug) samt til privat brug,
- D.M.28.5.03 om at give offentligheden adgang til R-LAN-netvark og -tjenester.

Euroopassa oleville asiakkaille

Sony Corporation vakuuttaa täten, että tämä WLL-CA55 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.

Huomautus ranskalaisille kayttajille

Vain 2463,5 ja 2483,5 MHz valiset kantoaallon taajuudet ovat sallittuja kaytettaessa 100 mW RF-virtaa Ranskassa.

Huomautus italialaisille kayttajille

Ylla mainitun laitteen kaytosta saadetaan Italian laissa:
- d.P.R 5.10.01, n.447, artikla 5 (yleisvaltuus) ja 6 (vapaa kaytto) seka yksityiskayttoa koskien;
- D.M.28.5.03 koskien R-LAN-verkkojen ja -palveluiden tarjontaa yleisolle.

Για τους πελάτες στην Ευρώπη

Με το παρόν, η Sony Corporation, δηλώνει ότι αυτή η συσκευή WLL-CA55 συμμορφώνεται με τις απαραίτητες απαιτήσεις και τις λοιπές σχετικές διατάξεις της Οδηγίας 1999/5/EE.
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.

Σημείωση για τους χρήστες στην Γαλλία

Για χρήση ραδιοφωνικών συχνοτήτων (RF) ισχύος 100 mW στη Γαλλία, επιτρέπονται μόνο οι φέρουσες συχνότητες εύρους από 2463,5 έως 2483,5 MHz.

Σημείωση για τους χρήστες στην Ιταλία

Η χρήση της προαναφερόμενης συσκευής ρυθμίζεται από την Ιταλική νομοθεσία:
- d.P.R 5.10.01, n.447, άρθρο 5 (γενική άδεια χρήσης), και 6 (ελεύθερη χρήση) και για ιδιωτική χρήση;
- D.M.28.5.03 για την παροχή στο ευρύτερο κοινό πρόσβαση σε τοπικά δίκτυα και υπηρεσίες R-LAN.

WLL-CA50 (UC/CA)
3-742-686-**02** (1)

Table of Contents

Using the CD-ROM Manual

The supplied CD-ROM includes operation manuals (Japanese, English, French, German, Italian, and Spanish versions).

CD-ROM System Requirements

The following are required to access the supplied CD-ROM disc.
- Computer: PC with MMX Pentium 166 MHz or faster CPU, or Macintosh computer with PowerPC CPU
  - Installed memory: 32 MB or more
  - CD-ROM drive: ×8 or faster
- Monitor: Monitor supporting resolution of 800 × 600 or higher

When these requirements are not met, access to the CD-ROM disc may be slow, or not possible at all.

Preparations

The following software must be installed on your computer in order to use the operation manuals contained in the CD-ROM disc.
- Microsoft Internet Explorer Version 4.0 or higher, or Netscape Navigator Version 4.0 or higher
- Adobe Acrobat Reader Version 4.0 or higher

Notes
- If Microsoft Internet Explorer is not installed, it may be downloaded from the following URL:
  http://www.microsoft.com/ie
- If Netscape Navigator is not installed, it may be downloaded from the following URL:
  http://home.netscape.com/
- If Adobe Acrobat Reader is not installed, it may be downloaded from the following URL:
  http://www.adobe.com/products/acrobat/readstep.html

To Read the CD-ROM Manual

To read the operation manual contained in the CD-ROM disc, do the following:

1 Insert the CD-ROM disc in your CD-ROM drive.

A cover page appears automatically in your browser. If it does not appear automatically in the browser, double click the index.htm file on the CD-ROM disc.

2 Select and click the operation manual that you want to read.

A PDF file of the operation manual opens.

Note
If you lose the CD-ROM disc or become unable to read its content, for example because of a hardware failure, contact a Sony service representative.

- MMX and Pentium are registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.
- PowerPC is a registered trademark of International Business Machines Corporation.
- Macintosh is a registered trademark of Apple Computer, Inc.
- Microsoft is a registered trademark of Microsoft Corporation in the United States and/or other countries.
- Netscape Navigator is a registered trademark of Netscape Communications Corporation in the U.S. and other countries.
- Adobe and Acrobat are registered trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Overview

The WLL-CA55 is a transmitter for a wireless camera system that transmits MPEG-2 video and audio in the 2.4 GHz band. It is designed to be mounted on a Sony portable video camera.
You can select the transmission frequency in 1-MHz or 12-MHz steps.
The transmission distance is about 500 m (with no obstruction).

Features

Robust transmission thanks to COFDM system

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

Time-interleaving function built in

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

Low power consumption

Low power consumption allows battery operation when mounted on a portable video camera.

Scramble function built in

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

EL display and jog dial

High operability is achieved with the compact design. You can obtain clear vision even with low temperature.

When the WLL-RX55 wireless camera receiver and an optional wireless microphone system are used in combination, the following functions are also available.

Tally/Intercom signals for the camera

Tally and intercom signals from the WLL-RX55 can be received.

Wireless camera control

Connecting an optional remote control panel or remote control unit to the WLL-RX55 enables wireless camera control.

GENLOCK function

The necessary system delay is minimized by receiving a reference signal for external synchronization from the WLL-RX55.
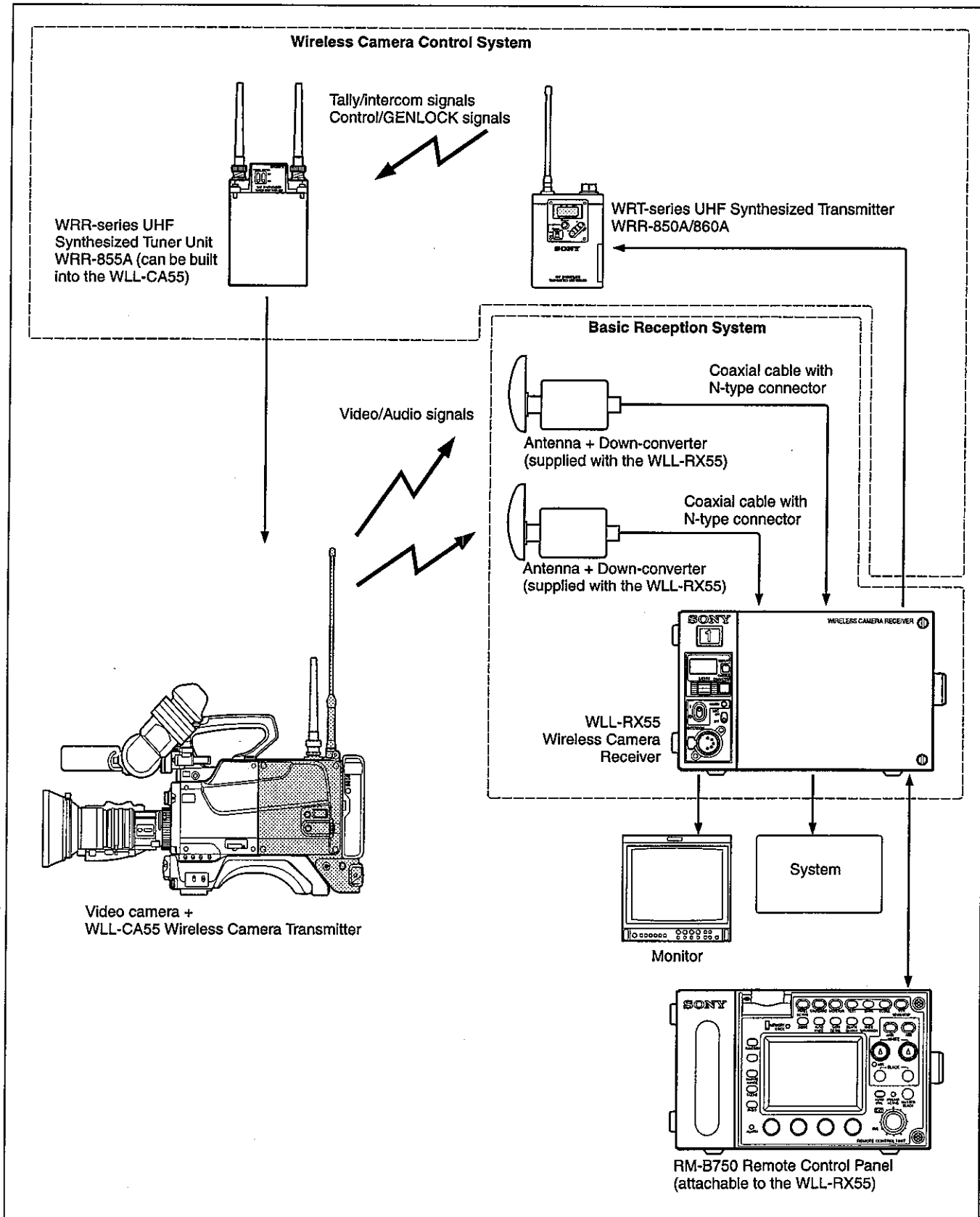
Applicable Models

The WLL-CA55 can be used docked on one of the following Sony video camera models equipped with the 68-pin interface:
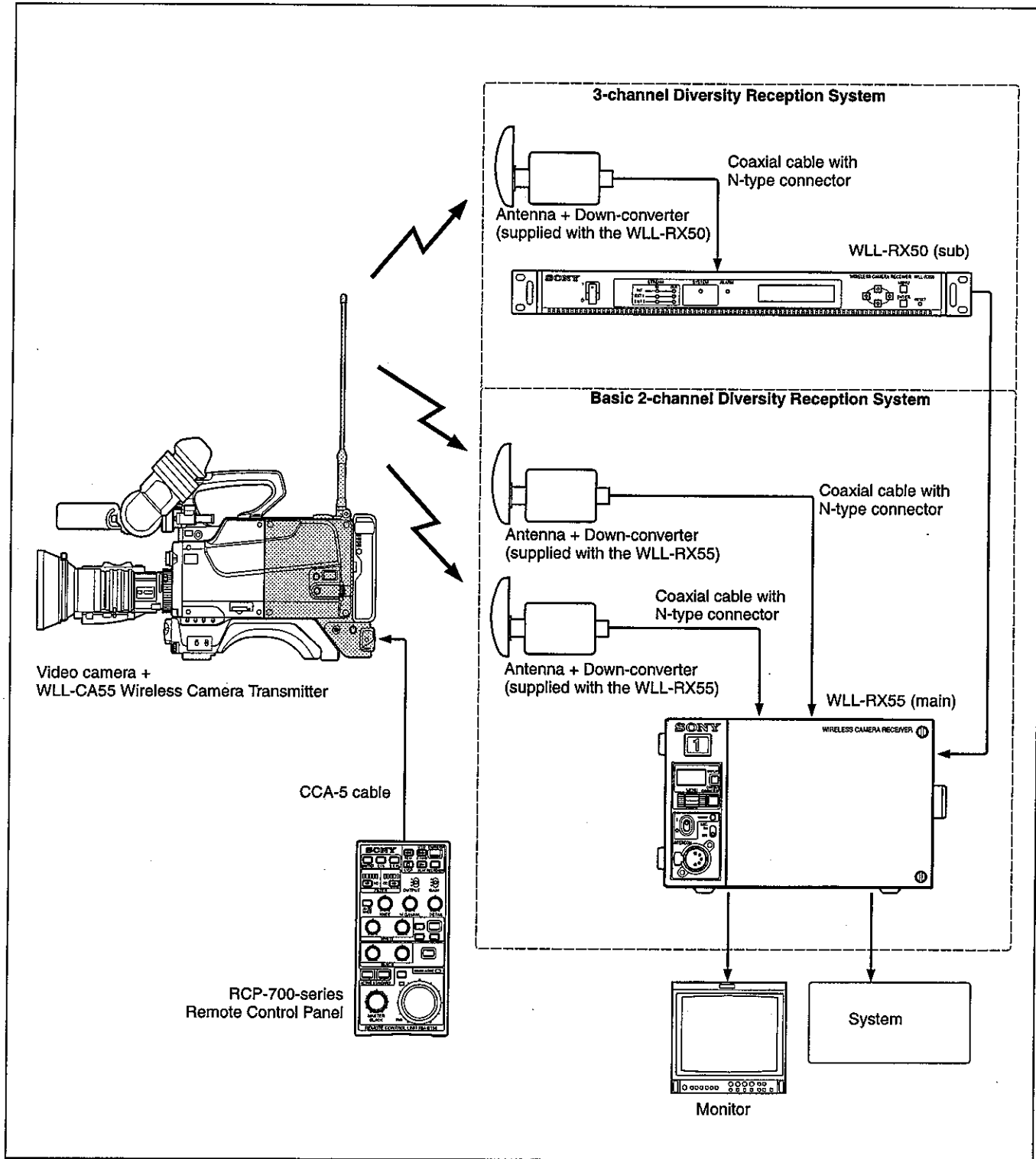BVP-E10 series
BVP-950 series

System Configuration Example

2-channel diversity reception system (one WLL-CA55 to one WLL-RX55)

Wireless Camera Control System

Tally/intercom signals
Control/GENLOCK signals

WRR-series UHF
Synthesized Tuner Unit
WRR-855A (can be built
into the WLL-CA55)

WRT-series UHF Synthesized Transmitter
WRR-850A/860A

Basic Reception System

Coaxial cable with
N-type connector

Video/Audio signals

Antenna + Down-converter
(supplied with the WLL-RX55)

Coaxial cable with
N-type connector

Antenna + Down-converter
(supplied with the WLL-RX55)

WLL-RX55
Wireless Camera
Receiver

Video camera +
WLL-CA55 Wireless Camera Transmitter

System

Monitor

RM-B750 Remote Control Panel
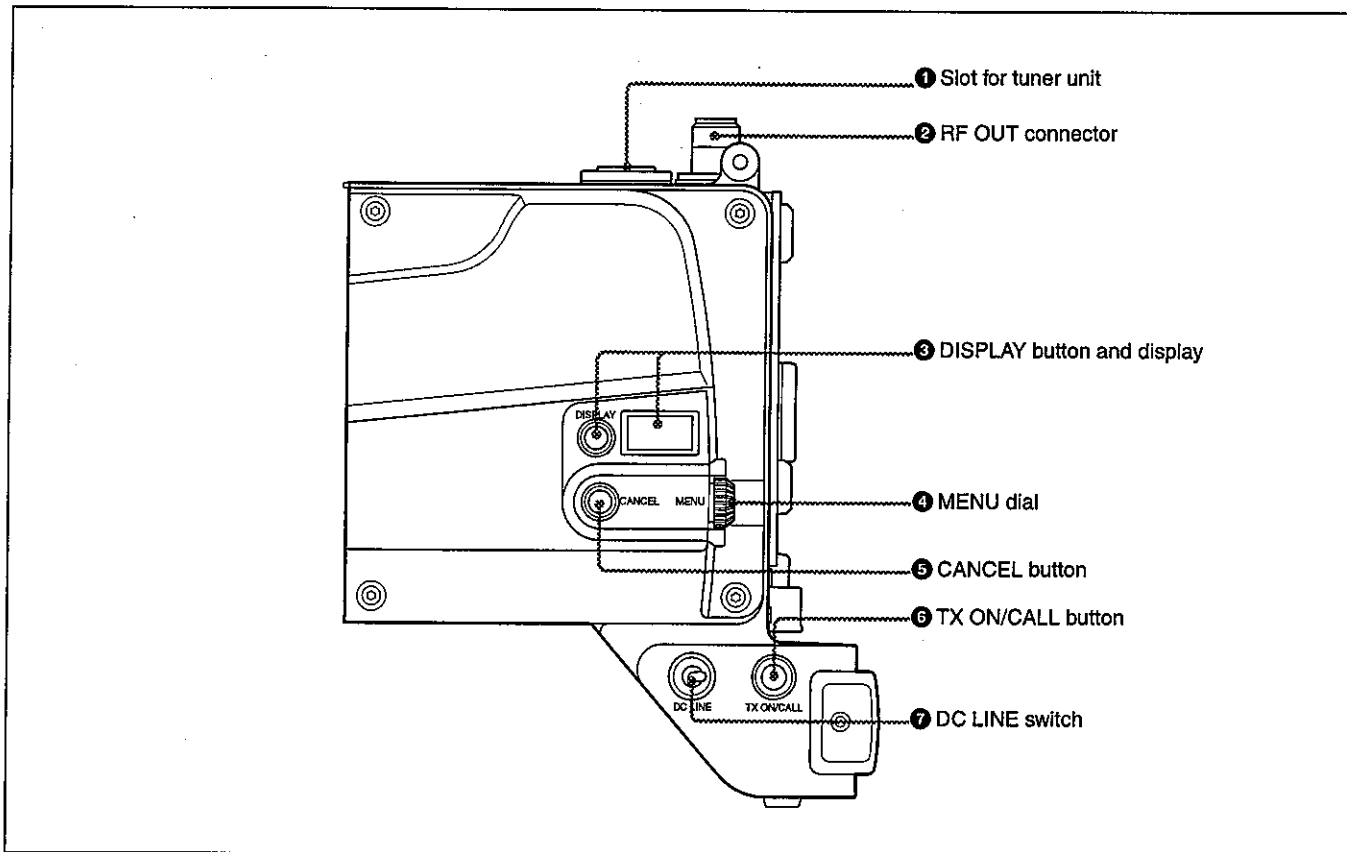(attachable to the WLL-RX55)

3-channel diversity reception system (one WLL-CA55 to one WLL-RX55 plus one WLL-RX50)

This system does not use the wireless camera control functions.

Locations and Functions of Parts

Inside panel

❶ Slot for tuner unit
❷ RF OUT connector
❸ DISPLAY button and display
❹ MENU dial
❺ CANCEL button
❻ TX ON/CALL button
❼ DC LINE switch

❶ Slot for tuner unit
Mount a WRR-855A UHF synthesized tuner unit of the wireless microphone system.

For details on mounting, see "Mounting the WRR-855A" on page 42.

❷ RF OUT connector
Mount the supplied transmission antenna.

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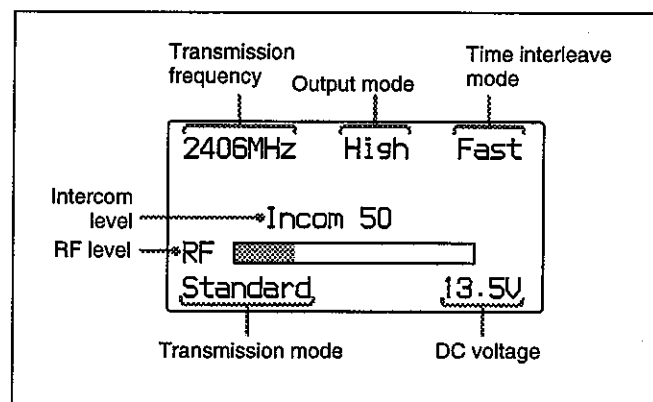
Do not use any antenna other than the supplied one.

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

Intercom level
RF level

2406MHz   High   Fast
Incom 50
RF
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 automatically enter Screen Save mode if you do not operate the transmitter in normal Transmission mode for a while.
To obtain the display again, press the DISPLAY button.

❹ MENU dial

Use this dial for making menu settings, including transmission frequency and intercom level.

For details on menu operations, see "Menu Settings" on page 45.

❺ 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 45.

❻ TX ON (transmission start)/CALL button

Press to start transmission.
During transmission, the button functions as the CALL button.
To terminate transmission, turn off the power of the transmitter by setting the DC LINE switch to OFF.
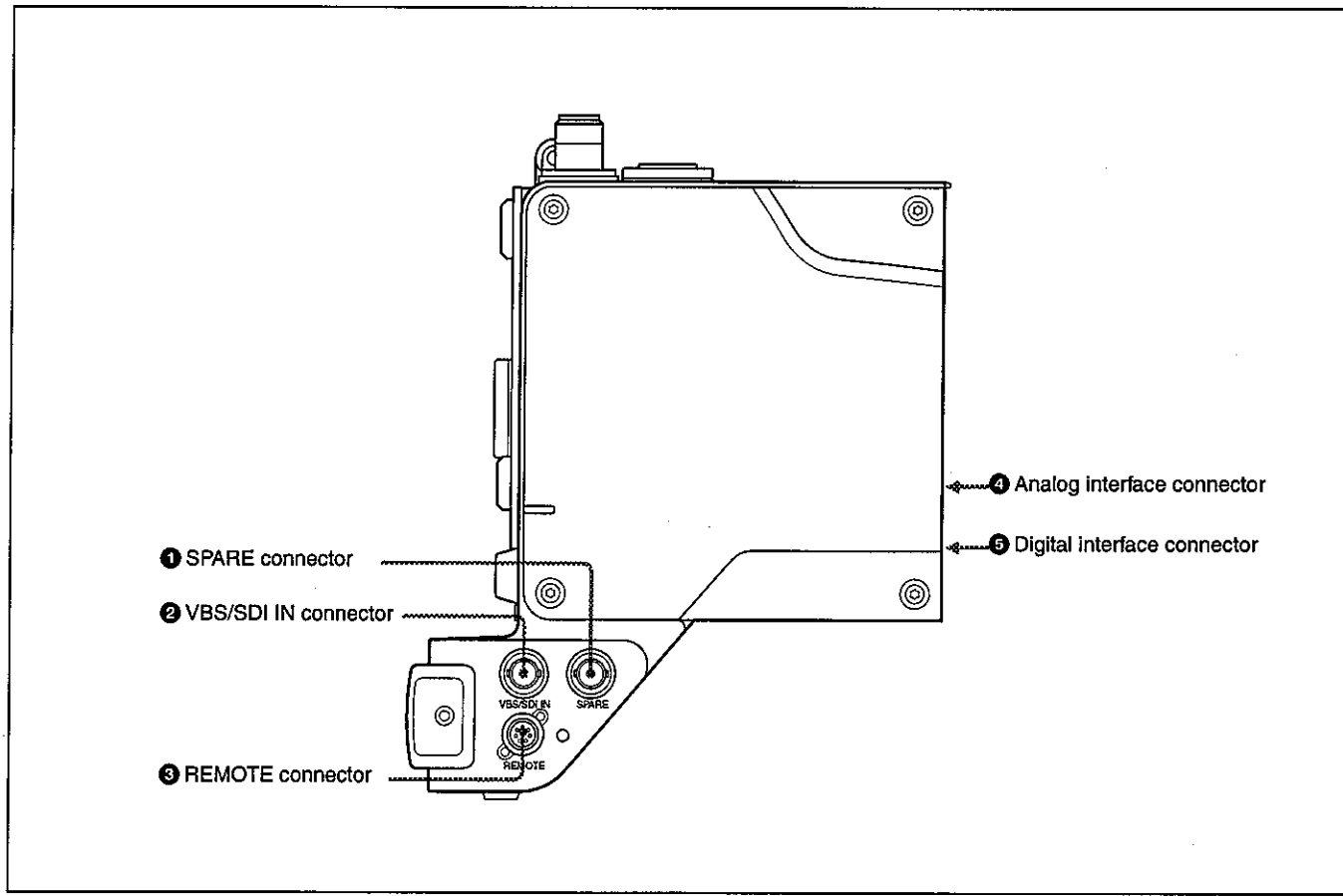
❼ DC LINE switch

To turn the power to the unit ON/OFF.
When the unit is not being used, leave the switch in the OFF position (right).
When you set it to the center ON position, power is supplied to the transmitter only.
When you slide it further to the left ON position, power is also supplied to the camera on which the transmitter has been mounted.

Outside panel

SPARE connector

VBS/SDI IN connector

REMOTE connector

Analog interface connector

Digital interface connector

❶ SPARE connector (BNC type)
For external SDI signals.

For details on the connection, consult your Sony dealer.

❷ VBS/SDI IN connector (BNC type)
To accept an external synchronization (GENLOCK)
signal, return video signal, or external SDI signal.
When the camera is connected (camera power ON), the
connector functions as VBS IN, and the GENLOCK signal
or a return video signal is supplied to the camera's RET2.
When only this is on, the connector functions as SDI IN,
and the external signal supplied to this connector will be
transmitted. No signal is supplied to the camera's RET2.
The output signal assignment to RET1 can be changed
with the Setup menu (page 46) of this unit.

❸ REMOTE connector (8-pin)
Connect an RCP-700-series remote control panel.
The connection cable can be extended to 50 m at
maximum.

Note

This connector cannot be used when you use the wireless
camera control functions via the WLL-RX55 using the
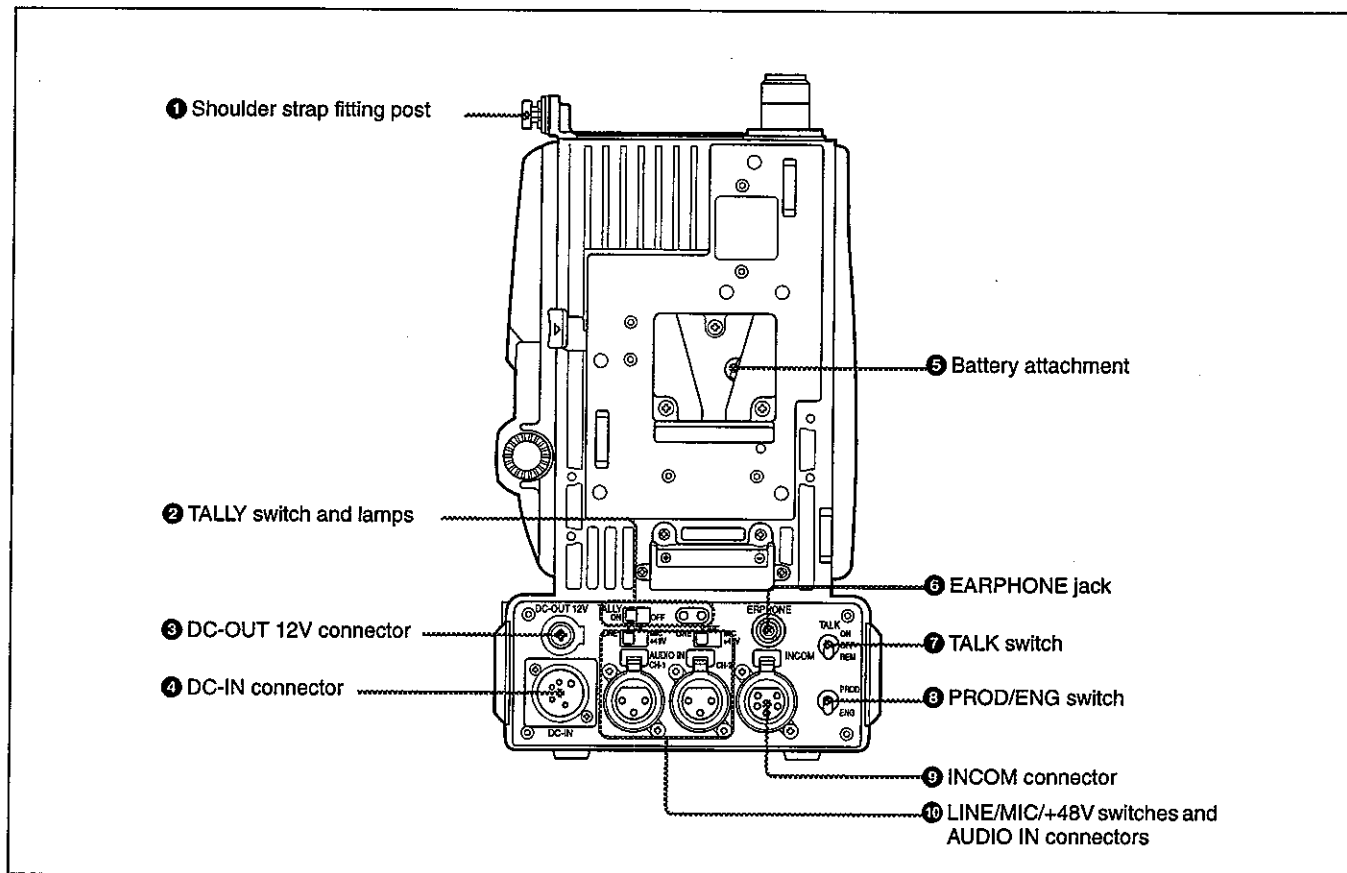WRR-855A/860A tuner unit.

❹ Analog interface connector (68-pin)
For data communication with an analog camera.

❺ Digital interface connector (68-pin)
For data communication with a digital camera.

Back panel

❶ Shoulder strap fitting post
❷ TALLY switch and lamps
❸ DC-OUT 12V connector
❹ DC-IN connector
❺ Battery attachment
❻ EARPHONE jack
❼ TALK switch
❽ PROD/ENG switch
❾ INCOM connector
❿ LINE/MIC/+48V switches and AUDIO IN connectors

❶ Shoulder strap fitting post
Attach one end of a shoulder strap to this fitting post and the other end to the fitting post of the camera.

❷ TALLY switch and lamps
With the switch set to ON, the red lamp (for red tally) or green lamp (for green tally) lights when a tally signal from the WLL-RX55 is received.
The operation mode of the red lamp can be changed with the Back R Tally setting of the Setup menu (page 46).

❸ DC-OUT 12V connector
To supply power (max. 200 mA) to a portable tuner, such as the WRR-860A UHF Synthesized Diversity Tuner.

Note

Do not connect any other equipment other than a portable tuner.

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

❺ 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.

❻ EARPHONE jack
Connecting an earphone permits you to monitor the audio from the microphone or the intercom. You can set the monitor level with the Earphone setting of the Audio menu (page 46).

❼ TALK switch
To select the voice transmission mode to the WLL-RX55:
OFF: To send of the camera operator to the WLL-RX55.
ON: To send the voice of the camera operator to the WLL-RX55.
REM (remote): Transmission of the camera operator's voice to the WLL-RX55 is turned on and off by the VTR button on the video camera or lens or the INCOM button of the camera.

Note

To turn on/off the transmission of voice by the VTR button on the video camera or lens, menu setting on the camera is required.

Refer to the operation manual of the camera.

❽ PROD/ENG (producer/engineer) switch
To switch the intercom line:
PROD: To select the producer line
ENG: To select the engineer line

❾ INCOM (intercom) connector (XLR 5-pin)
Used to connect a headset to enable receiving of program/
intercom audio and sending intercom audio.
Perform the Incom settings of the Audio menu according
to the headset to be used.

*For details on the headset settings, see "Audio Menu" on
page 46.*

**❿ LINE/MIC (microphone) /+48V switches and
AUDIO IN connectors (XLR 3-pin)**
Used to connect to the audio output connectors of an audio
device to be used as the line-input signal source or to
microphones.
Set the switches according to the connected device.
The left set is for channel 1 and the right set is for channel
2.
LINE (left position): Line input (–20 dB)
MIC (center position): Microphone input (no power
    supply)
+48V (right position): Microphone input (supplying
    +48 V phantom power to the connected microphone).
    To supply +12V AB power, use the Audio menu.
The connector for channel 1 also accepts signal for
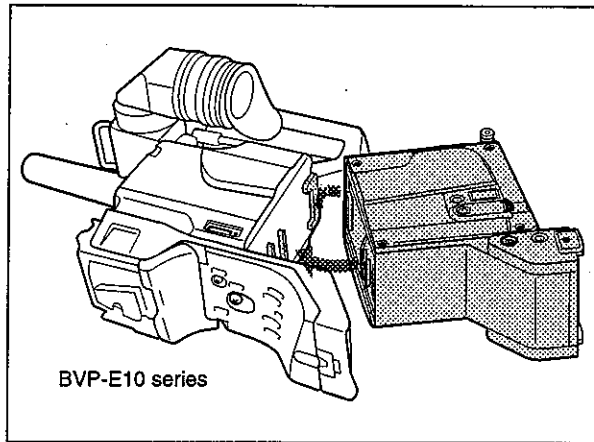wireless camera control.

For details, see "Audio Menu" on page 46.
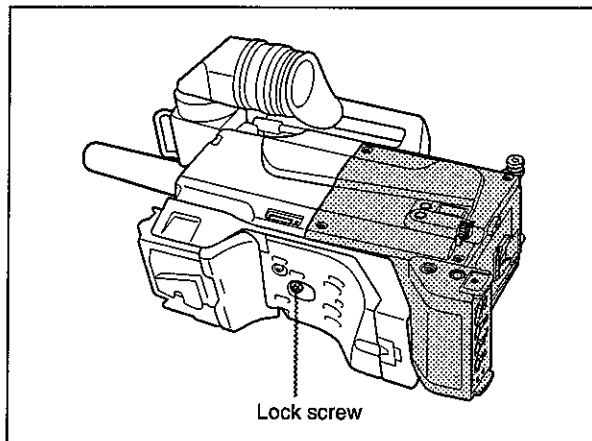
Attaching to the Video Camera

Attach the WLL-CA55 to the video camera as shown below so that the 68-pin connectors on both units are connected.

Attaching to the BVP-E10-series camera

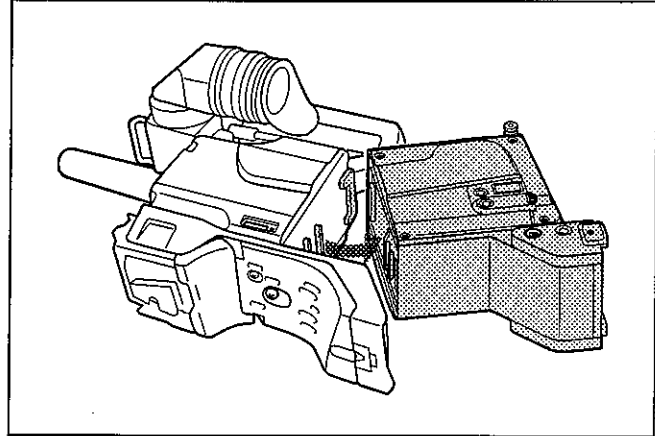**1** Hook the upper part then push the lower part securely.

BVP-E10 series

2 Tighten the lock screw on the bottom of the camera with a coin.
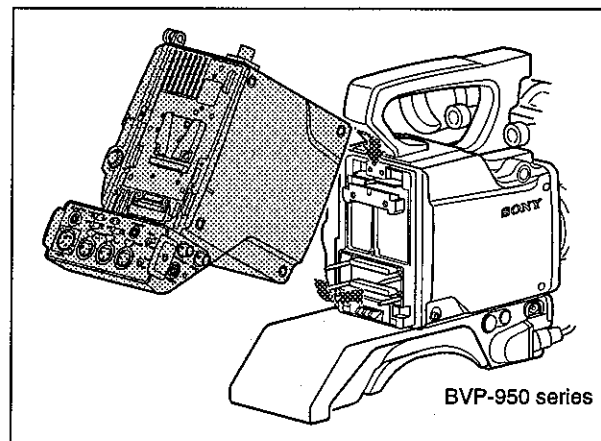

Lock screw

To remove the transmitter

Loosen the screw on the bottom of the camera until it idles, then remove the transmitter while pushing the screw.

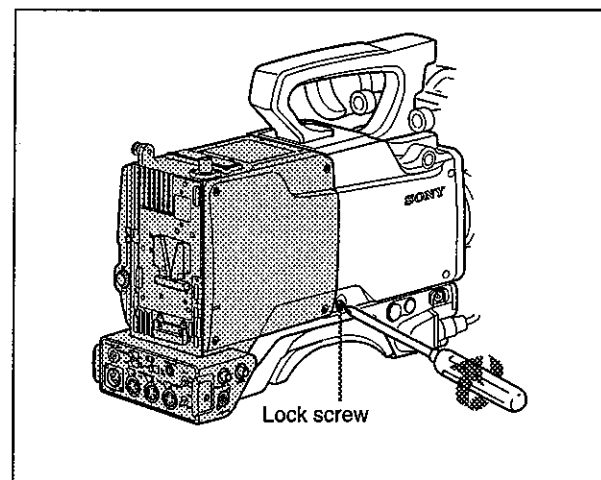## Attaching to the BVP-950-series camera

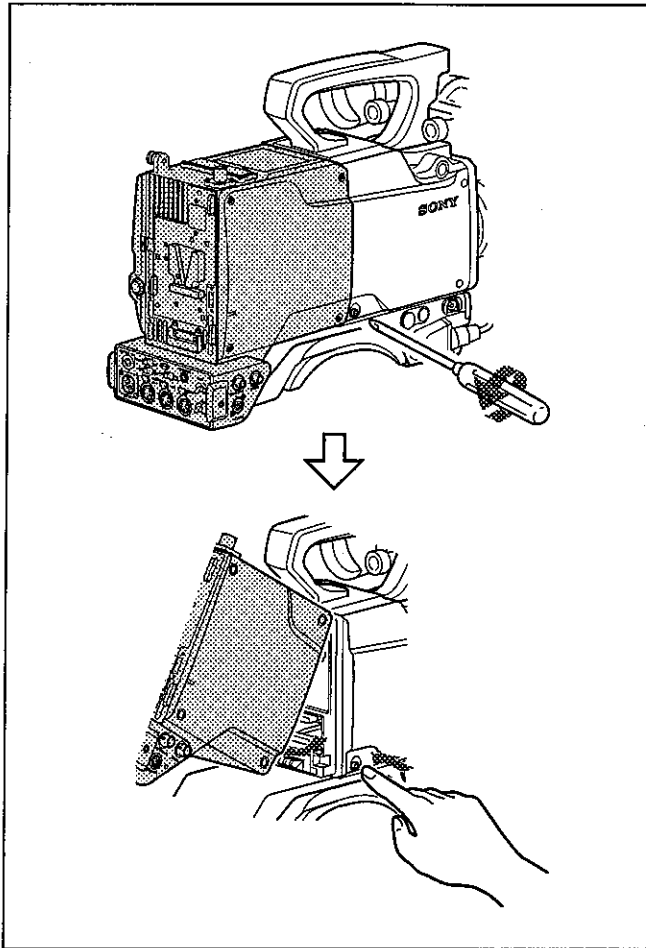**1** Hook the upper part then push the lower part securely.

BVP-950 series

2 Tighten the lock screw on the side panel of the camera with a screwdriver.

Lock screw

To remove the transmitter

Loosen the screw on the side of the camera, then remove the transmitter.

Mounting the Portable Tuner

Mount the WRR-855A or WRR-860A UHF synthesized tuner unit of the wireless microphone system.

Mounting the WRR-855A

1 Remove the cover of the slot for tuner unit.
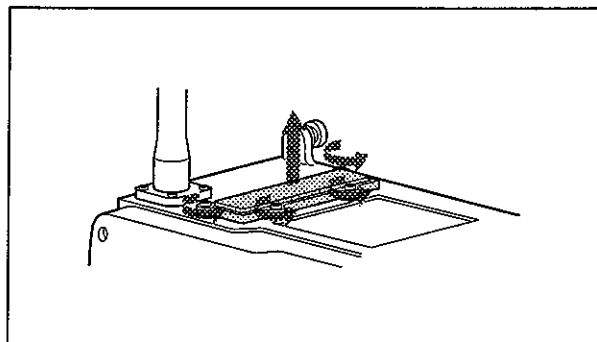
2 Observing the direction, insert the tuner unit into the slot, then secure the screws.
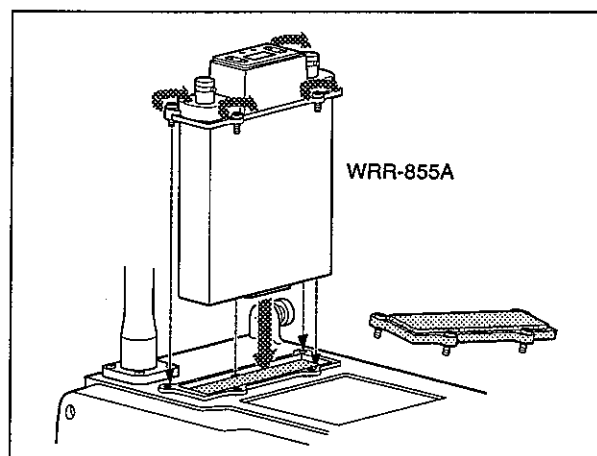
After mounting, attach the antennas to the tuner unit referring to the instructions of the tuner unit.

Note

When using the WRR-855A for wireless camera control, check that "Data" of the Audio menu (page 46) is set to "Slot in."
When using it as an audio tuner, set "CH-1" of the Audio menu to "Slot in."

Mounting the WRR-860A

1 **(1)** Attach the WRR tuner fitting (not supplied) to the back panel of this unit.

① Pass a screwdriver through the holes and tighten the screws.
② Loosen the adjustment screws.
③ Adjust the metal fitting position for the battery pack to be attached, and tighten the adjustment screws to fix its position.
④ Attach the Betacam holder kit supplied with the tuner unit.

(2) Attach the battery pack.

For more information about attach the battery pack, see "Operating on the Battery Pack" on page 44.
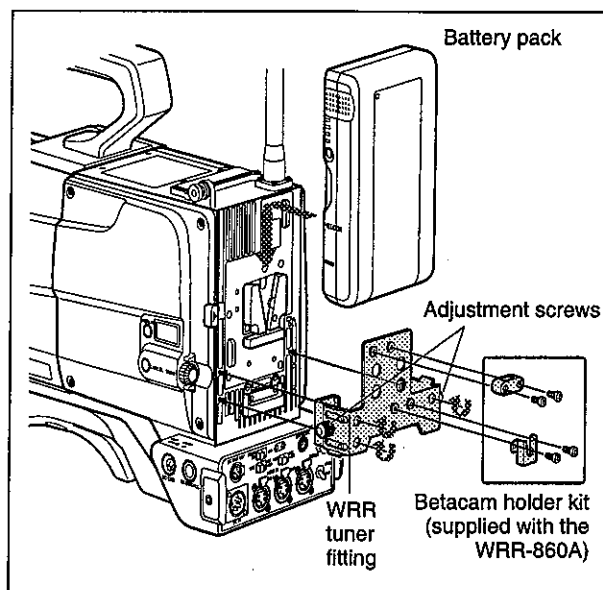
2 Mount the tuner unit on the WRR tuner fitting.
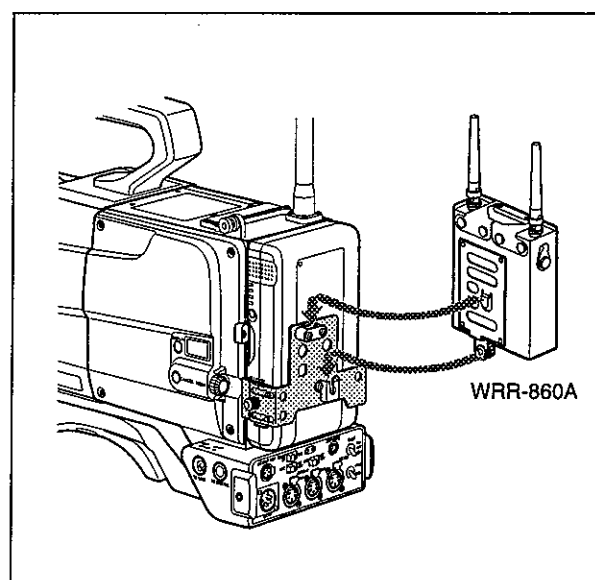
3 Connect the tuner power cord to the DC OUT connector of this unit, and the audio output cable AUDIO IN CH-1connector.
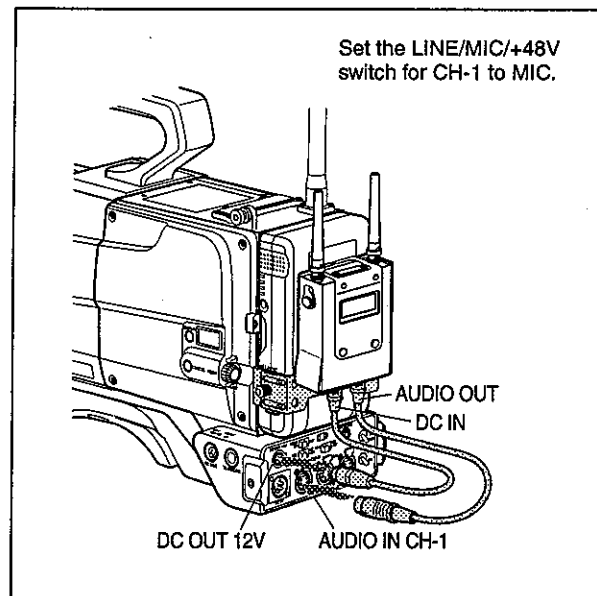
Note

When using the WRR-860A for wireless camera control, set "Data" of the Audio menu (page 46) to "Audio 1."
When using it as an audio tuner, check that "CH-1" of the Audio menu is set to "Audio 1."

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. The average operation time with the BP-IL75 is approx. 100 minutes.

Note

The continuous operation time may vary depending on the ambient temperature.

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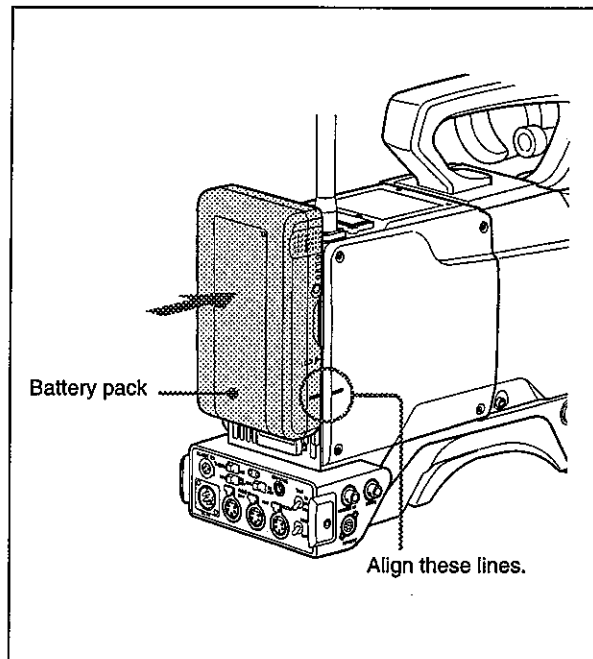
2 Slide the battery pack down until its "LOCK" arrow points to the matching line on the transmitter.

"LOCK" arrow

Matching line on the transmitter
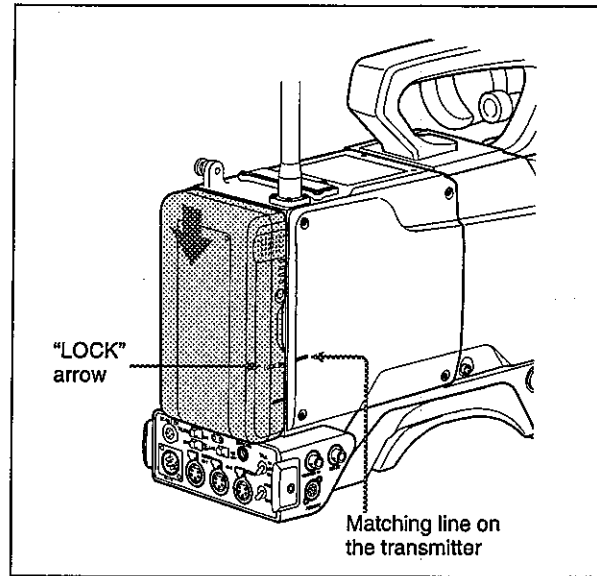
To detach the battery pack

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

Holding the button in, pull the battery pack upward.
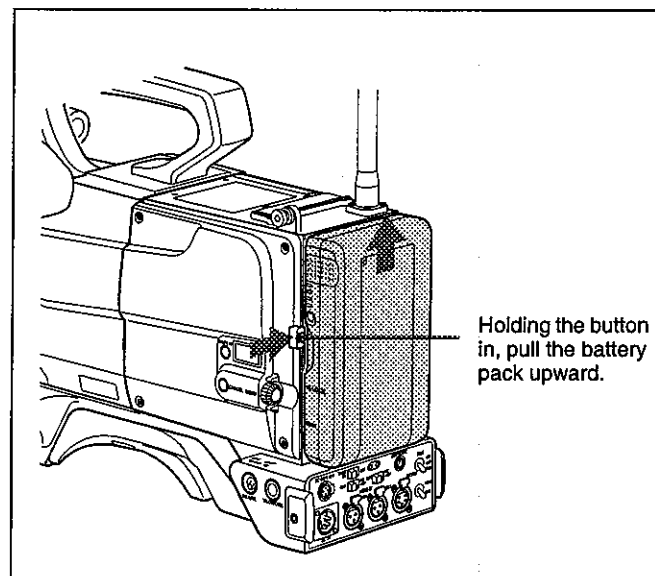
Note

When an InfoLithium battery is used, the battery remaining indication on the display changes to a percentage value.

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)
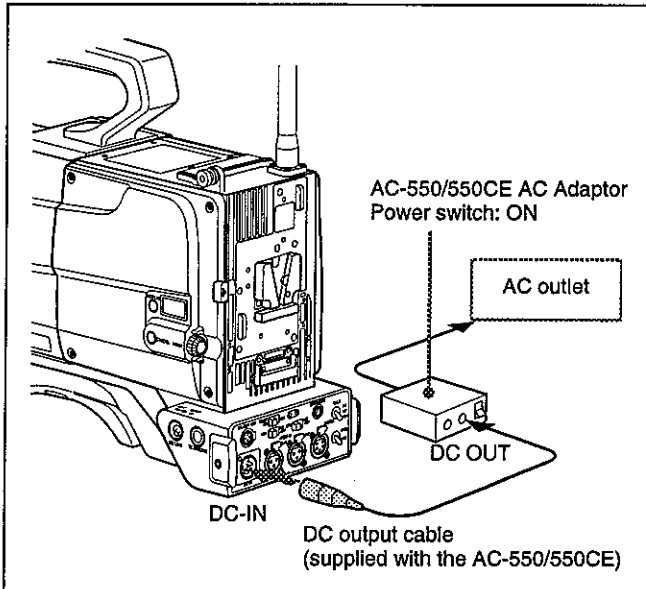
When using the AC-DN2B AC adaptor

Mount the AC-DN2B 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 menus permit you to set the following items.
The menu settings are maintained even if you turn the unit off.

Menu Items

Wireless Menu

| Menu	Submenu	Values (default)
Freq (Ch)	—	1–7 (4)
Freq (MHz)	—	2406–2478 MHz (2442 MHz)
RF Power	—	High, Low (Low)
Mode	—	Standard, Robust, HiPicture, STDLD, ROBLD (Standard)
Interleave	—	Fast, Run, Walk, Off (Fast)
Emission	—	OFDM, CW, Off (OFDM)
Scramble	Scramble	*** (AAA)

Freq (Ch): Set the transmission frequency by the channel.
The frequency can be selected in 12-MHz steps.
Ch 1: 2406 MHz
Ch 2: 2418 MHz
Ch 3: 2430 MHz
Ch 4: 2442 MHz
Ch 5: 2452 MHz
Ch 6: 2466 MHz
Ch 7: 2478 MHz
Set the WLL-RX50/RX55 receiver to be used in combination to the same channel.
If you select "Freq (MHz)" and set a frequency that does not coincide with any of the Ch1 to Ch7 frequencies, the channel column shows "Ch -".
Freq (MHz): 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/RX55 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.

HiPicture: Mode for transmission with higher picture quality. The stability is decreased when compared with Standard mode.
STDLD: Low-delay mode of the Standard mode. The stability is decreased when compared with Standard mode.
ROBLD: Low-delay mode of the Robust mode. The stability is decreased when compared with Robust mode.
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 system delay also increases in this order.
Emission: Select the RF emission format. When Off is selected, no RF carrier will be emitted.
Scramble: Set a 3-digit scramble code, using the submenu.

Note
Set the same value as the Descramble code of the WLL-RX50/RX55 receiver to be used in combination.

Audio Menu

Item	Submenu	Values (default)
Incom	MIC	Dynamic, Carbon (Dynamic)
	MIC	Balance, Unbalance (Balance)
	Gain	−60, −50, −40, −30, −20 dB (−60 dB)
	Side Tone	High, Low (Low)
	Low Limit	0–99 (0)
Audio	Data	Audio 1, Slot in (Slot in)
	CH-1	CAM, Audio 1, Slot in (Audio 1)
	Gain	−60, −50, −40, −30, −20 dB (−60 dB)
	CH-2	Audio 2
	Gain	−60, −50, −40, −30, −20 dB (−60 dB)
	Audio 1	+48, +12 (+48)
	Audio 2	+48, +12 (+48)
Earphone	Level	0–99 (50)
	CH-1	ON, OFF (ON)
	CH-2	ON, OFF (OFF)
	Incom	ON, OFF (ON)

Incom: Specify the characteristics of the headset microphone for intercom:
MIC: Select "Dynamic" or "Carbon" on the first line. When you select "Dynamic," select "Balance" or "Unbalance" on the second line.

Gain: Select the microphone gain. Set according to the headset to be used.
Side Tone: Select the side tone level.
Low Limit: Set the low limit of the receive level. You can specify whether the intercom receive audio would be completely cut or be remained when you adjust it using a rotary encoder.
Audio: Specify the external audio inputs:
Data: Select the input for wireless camera control signals.
Slot in: To use the WRR-855A mounted in the slot
Audio 1: To use the WRR-860A connected to the AUDIO IN CH-1 connector
CH-1: Select the input to the AUDIO IN CH-1 connector.
CAM: To input camera control signals by connecting the RCP-700-series Remote Control Panel
Audio 1: To use the WRR-860A for audio input
Slot in: To use the WRR-855A for audio input

Note
When "Slot in" has been selected for "Data," the Data setting has priority even if you select "Slot in" for "CH-1."

Gain: Select the microphone gain at the AUDIO IN CH-1 connector.
CH-2: Fixed to Audio 2 (input to the AUDIO IN CH-2 connector).
Gain: Select the microphone gain at the AUDIO IN CH-2 connector.
Audio 1: Select the supply power voltage for the microphone connected to the AUDIO IN CH-1 connector.
Audio 2: Select the supply power voltage for the microphone connected to the AUDIO IN CH-2 connector.
Earphone: Specify the earphone output:
Level: Select the earphone output level (it changes in synchronization with the intercom receive level setting).
CH-1: Turn the channel 1 audio ON and OFF.
CH-2: Turn the channel 2 audio ON and OFF.
Incom: Turn the intercom audio ON and OFF.

Setup Menu

Item	Submenu	Values (default)
Default Set	—	No, Yes (No)
Back R Tally	Call	on, off (on)
	Batt Alarm	on, off (on)
LowBatt	—	10 to 11.5 V (11.1 V)
Video	—	NTSC, PAL
RET1	—	VBS/CHARA (CHARA)

Item	Submenu	Values (default)
TS Set	PGM No.	(0x0001)
	PID video	(0x0100)
	PID audio	(0x0101)
	PID PMT	(0x0200)
	PID PCR	(0x0050)

Default Set: Select Yes to return the menu items other than the video system to their factory settings.

Back R Tally: Select the indications of the red tally lamp:

    Call: Turn on and off the call signal input indication.

    Batt Alarm: Turn on and off the alarm indication against the low battery voltage.

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

Video: Select the video system.

RET1: Select the output signal when the RET1 button of the camera is pressed:

    VBS: The input signal to the VBS IN connector is output.

    CHARA: The same status indications as those on the display of this unit are displayed on the viewfinder.

```
CH6   2466MHz   Low   Fast




              +




CA                        RX
Standard   RF   Lev      15.4V
```
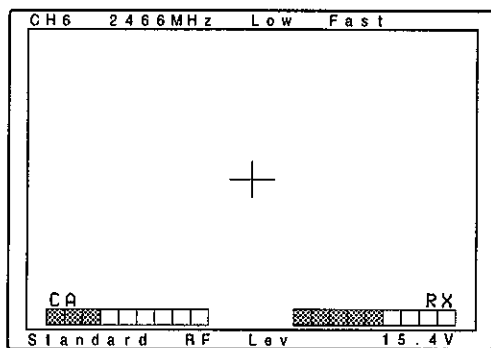
TS Set: Using the submenu, set the transmission parameters.

Status menu

To check the statuses. No settings can be made with this menu.

Item	Submenu	Values (default)
PLD Version	IF	x.xx
	VPR	x.xx
	DPR	x.xx
Serial No.	—	xxxxxx
Sys Timer	—	xxxxx H
EL Timer	—	xxxxx H

PLD Version: The version of the PLD software of each internal board is displayed.

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

Sys Timer: The accumulated operating time of the system is displayed.

EL Timer: The accumulated operating time of the EL display is displayed.

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 36)*, you can start the menu operation.

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

2 Press the MENU dial.

The unit enters Menu Item Selection mode, and the Main Menu is displayed on the display.

```
      * Menu *
→Wireless
 Audio
 Setup
 Status
```
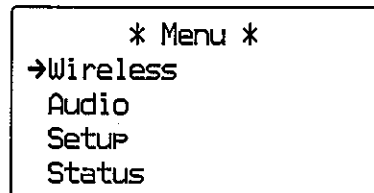
3 Rotate the MENU dial to move the cursor (→) to the item to be set.

Downward rotation moves the cursor downwards, and upward rotation moves it upward.

4 Press the MENU dial.

The items of the selected menu item is displayed.

Example: "Wireless" selected

```
     * Wireless *
→Freq:  Ch 1
 Freq:  2406MHz
 RF Power:  High
 Mode:  Standard
```

5 Turn the MENU dial to move the cursor (→) to the item to be set.

Downward rotation moves the cursor downwards, and upward rotation moves it upward, scrolling the display.

Example:

```
┌─────────────────────────────┐
│  RF Power: High             │
│ →Mode: Standard             │
│  Interleave: Fast           │
│  Emission: OFDM             │
│  Scramble  >>               │
└─────────────────────────────┘
```

6 Press the MENU dial.

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

Example:

```
┌─────────────────────────────┐
│ ₊ RF Power: High            │
│ ?⟨Mode: Standard            │
│  Interleave: Fast           │
│  Emission: OFDM             │
│  Scramble  >>               │
└─────────────────────────────┘
```
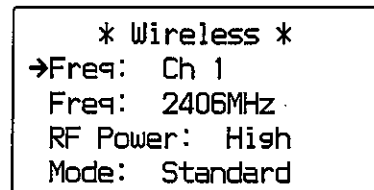
The item with >> has submenus. Select the lower
layer for setting.

7 Turn the MENU dial to display the desired value.

Example:

```
┌─────────────────────────────┐
│ ₊ RF Power: High            │
│ ?⟨Mode: Robust              │
│  Interleave: Fast           │
│  Emission: OFDM             │
│  Scramble  >>               │
└─────────────────────────────┘
```

To cancel the change
Press the CANCEL button. The status in step **5** is
restored.

8 Press the MENU dial.

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 **4**:

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

The corresponding submenu appears.

Example:

```
┌─────────────────────────────┐
│        * Audio *            │
│ →Incom           >>  ┐      │
│  Audio           >>  │      │
│  Earphone        >>  │      │
└──────────────────────┼──────┘
                       │
        ┌──────────────▼──────┐
        │        * Incom *    │
        │ →MIC: Dynamic       │
        │  MIC: Balance       │
        │  Gain: -20dB        │
        │  Side Tone: High    │
        └─────────────────────┘
```

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 dial to set the cursor (↓) to the digit
to be set.

Example:

```
┌─────────────────────────────┐
│        Scramble             │
│                             │
│            ↓                │
│           ABC               │
└─────────────────────────────┘
```

2 Press the MENU dial.

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

Example:

```
┌─────────────────────────────┐
│        Scramble             │
│                             │
│           ?                 │
│           ABC               │
└─────────────────────────────┘
```

3 Turn the MENU dial 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 dial.

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.

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 dial to fix.

Transmission

To start transmission

1 Turn on the camera.

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

3 Press the TX ON/CALL button.

Video shot with the camera is immediately transmitted.

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

Error Messages

When an error is generated, one of the following error messages is displayed.

Com Error

Cause: The communication with the WLL-RX55 was lost although it had once been established.
Measures: Check that the condition of the transmission fro this unit to the WLL-RX55, and the UHF condition from the WLL-RX55 to this unit.

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.

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 camera. Or check the consistency between the transmitter and the camera. Or check the input signal to the VBS/SDI-IN connector.

NTSC

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

Phase Adj

Cause: The V phase of the camera is being adjusted (The picture may not be displayed properly).
Measures: Wait until the adjustment ends. The message will automatically disappear.

TX OFF

Reason: The transmitter is waiting for a trigger for transmission.
Measures: Press the TX ON/CALL button to start transmission.

If any of the following error messages is displayed, first check the power to the camera, and connection of input signals (68-pin consistency, etc.), then consult with a Sony service or sales representative.

CHU Com NG

Reason: Communication between this unit and the camera cannot be made.

DPR PLD NG

Cause: Trouble has occurred in the PLD on the DPR board.

ENC Config NG

Reason: The encoder cannot be initialized.

RF PLL Unlock

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

VPR PLD NG

Cause: Trouble has occurred in the PLD on the VPR board.

Specifications

General

Power requirements
  12 V DC
Current consumption
  1.25 A
Operating temperature
  −20°C to +45°C (−4°F to +113°F)
Storage temperature
  −20°C to +60°C (−4°F to +140°F)
Dimensions $132 \times 214 \times 176$ mm (w/h/d)
  ($5\,^1/_4 \times 8\,^1/_2 \times 7$ inches)
Mass   2 kg (4 lb 7 oz), excluding
  antenna,battery pack and tuner unit

RF block

Transmission frequency range
  2402 to 2474 MHz
  (model available in USA and
    Canada)
  2402 to 2482 MHz
  (model available in other countries)
Transmission center frequency 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 voltage),
    200 mA
VBS/SDI IN   BNC type, 75-ohm input
SPARE   BNC type, 75-ohm output
AUDIO IN (CH-1/CH-2)
  XLR 3-pin (female)
INCOM   XLR 5-pin (female)
EARPHONE   mini jack
REMOTE   round 8-pin
Slot for WRR   D-sub 15-pin

Supplied accessories

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

Optional accessories

UHF Synthesized Tuner Unit: WRR-855A/860A
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.